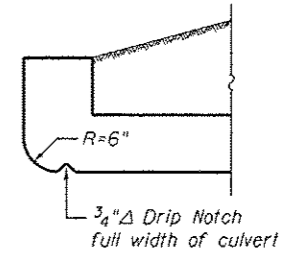
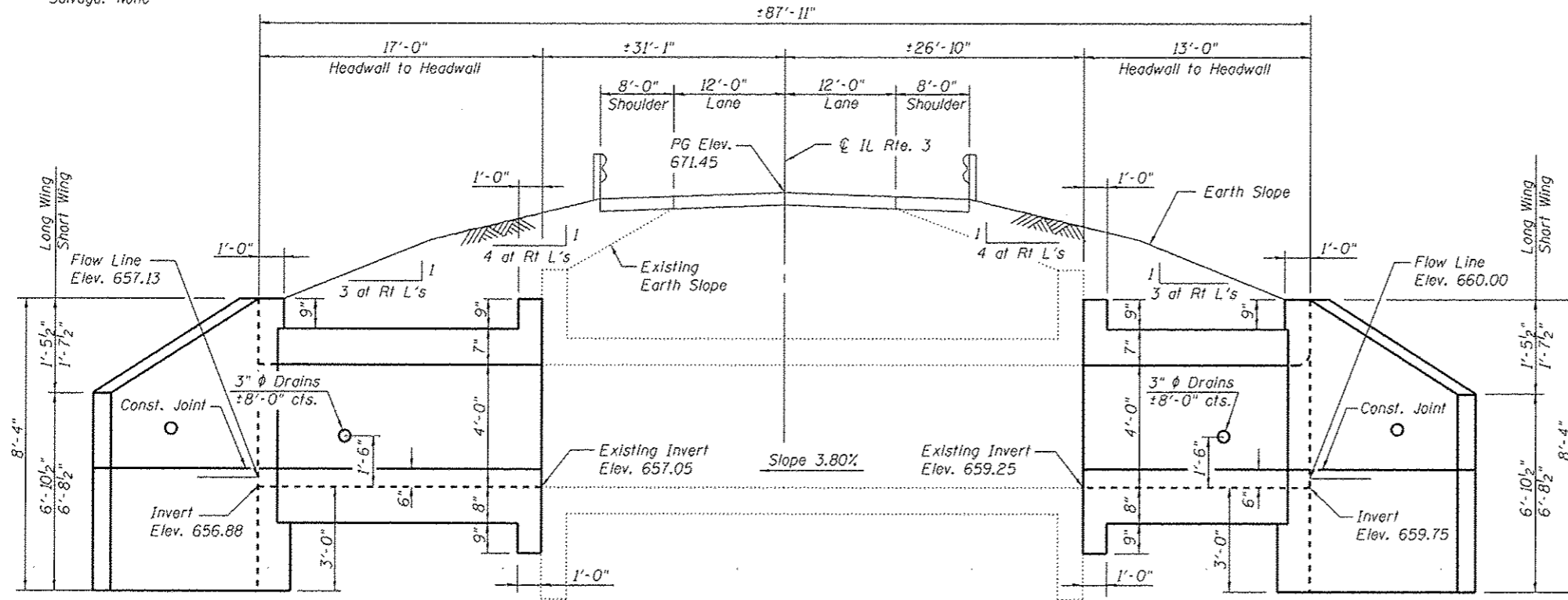


Existing Structure: The existing structure is a ±57'-11" long reinforced cast-in-place concrete box culvert with a 4'-0" x 4'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 149+66.

Salvage: None



HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site. A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls. Calculated max. soil pressure under barrel = 2,269 psf. For Riprap details and quantities see Roadway Plans. For Total Bill of Material see sheet 3 of 3.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

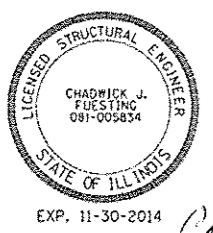
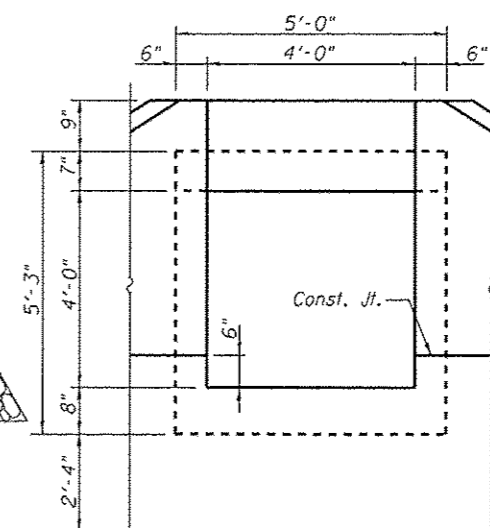
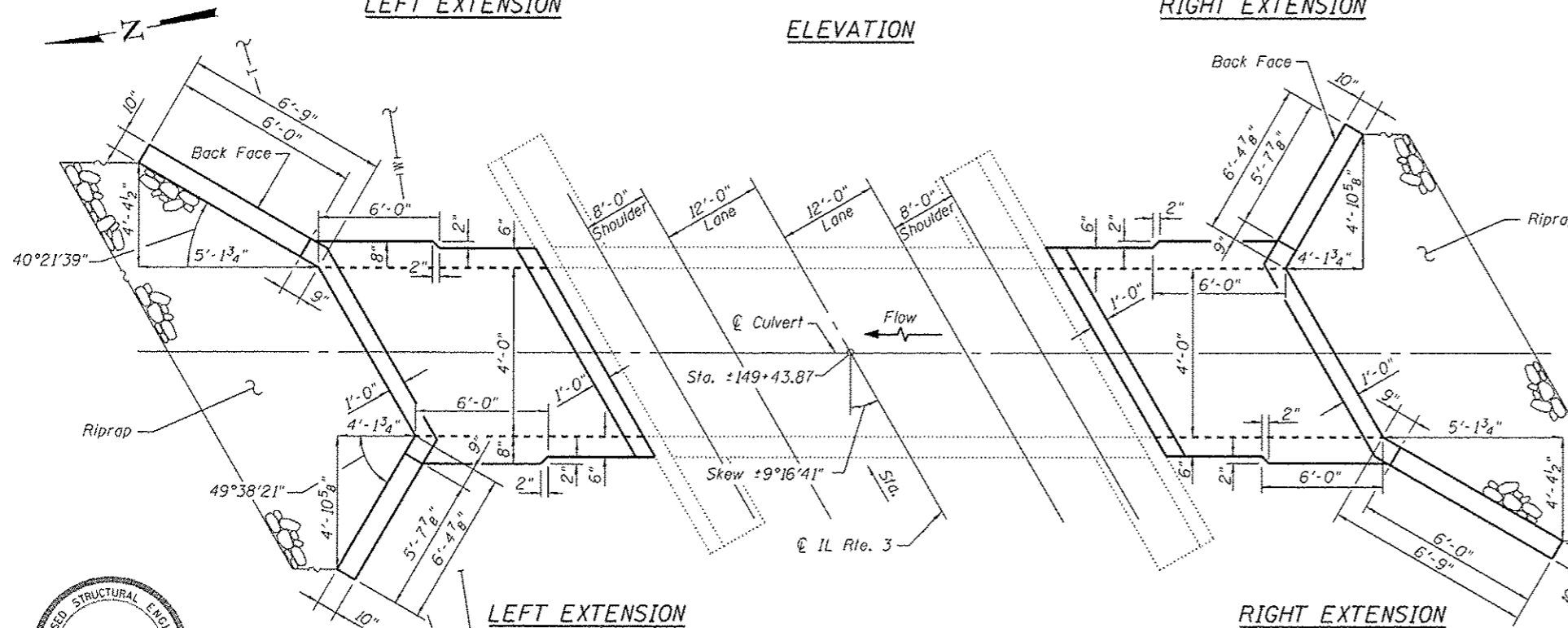
LOADING HS 20-44

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

DESIGN STRESSES

EXISTING CONSTRUCTION	NEW CONSTRUCTION
$f_y = 40,000$ psi	$f_y = 60,000$ psi
$f'_c = 3,000$ psi	$f'_c = 3,500$ psi

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 3
F.A.S. RTE. 752 - SEC. 101-2RS-1
JERSEY COUNTY
STATION 149+43.87



Existing underground telephone line to be relocated
Existing underground waterline to be relocated

Chris Purdy 6/18/14

USER NAME	DESIGNED	REVISIONS
jdj@stmann	JD	-
Illinois Design Firm Number 184.001670	BB	-
PLDT SCALE	WS	-
PLDT DATE 8/8/2014	CJF	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

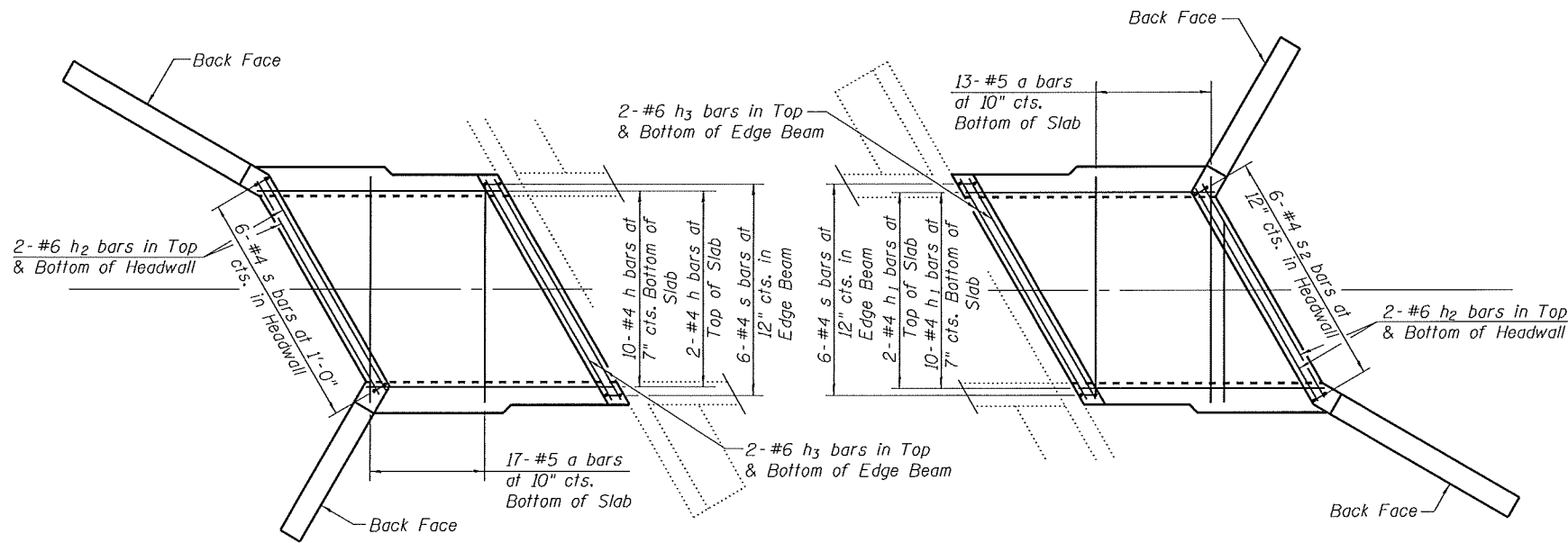
SHEET NO. 1 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	201

CONTRACT NO. 76789

ILLINOIS FED. AID PROJECT

FILE NAME: 149+43.87-76789-001.dgn

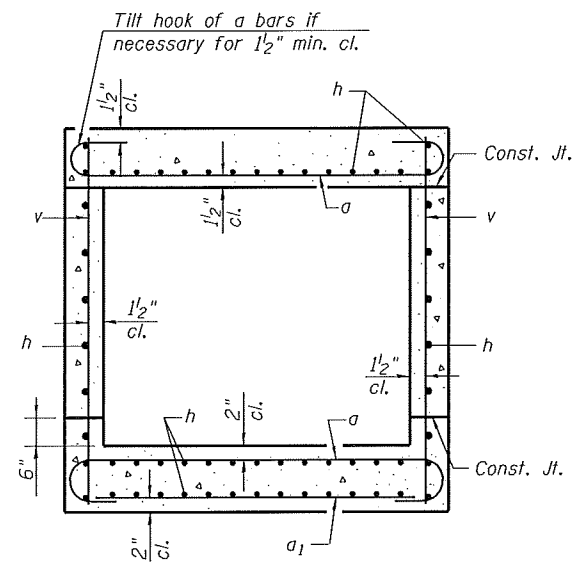


LEFT EXTENSION

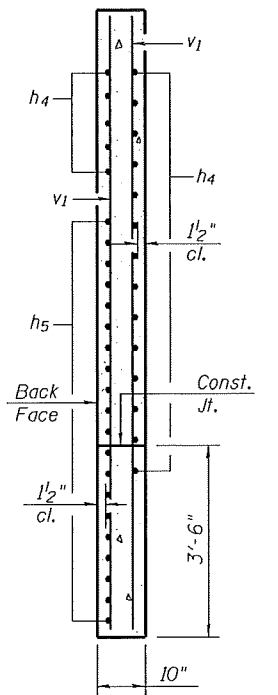
TOP SLAB PLAN
SHOWING REINFORCEMENT

RIGHT EXTENSION

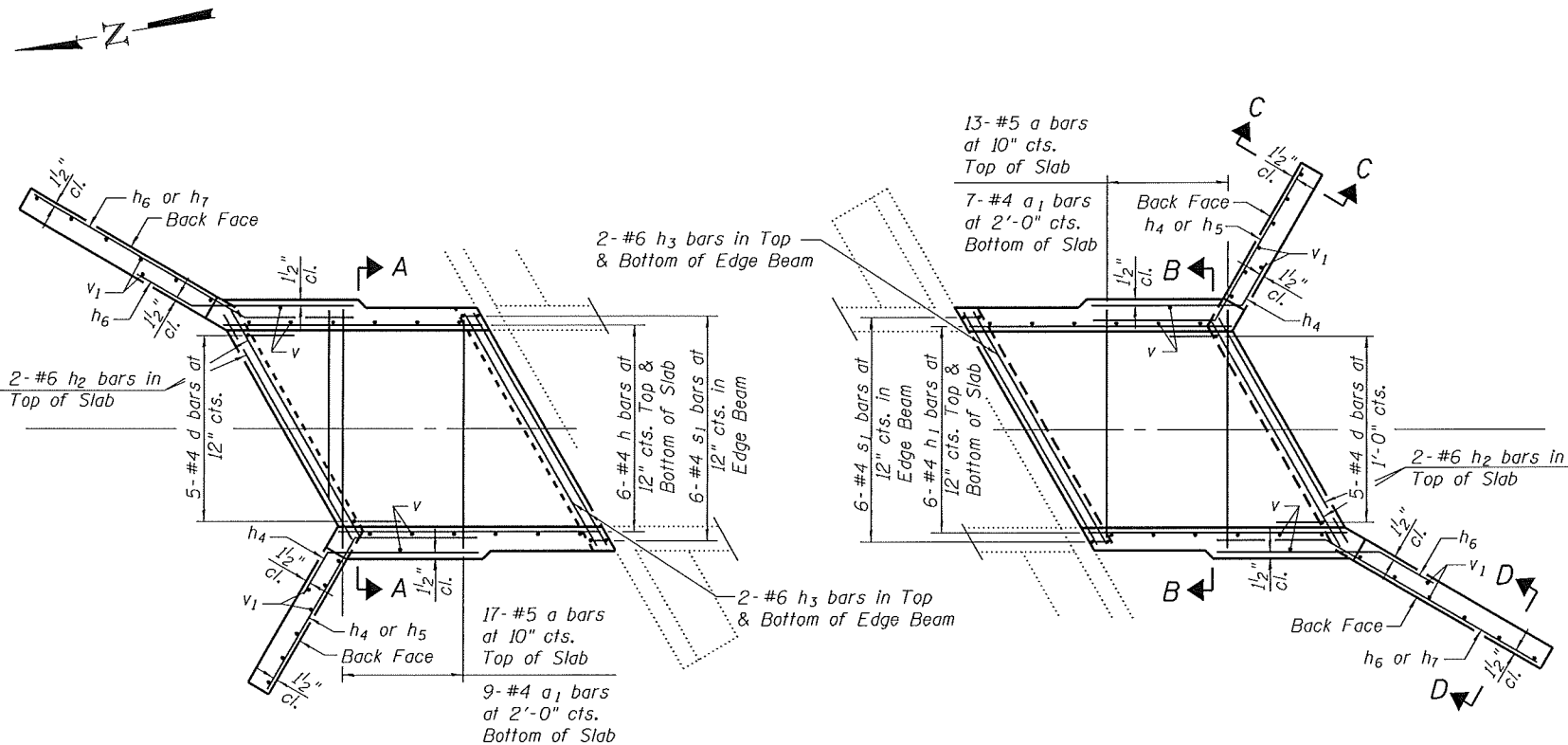
(v, v1, h6, h7, h8 & h9 bars not shown for clarity)



SECTION A-A



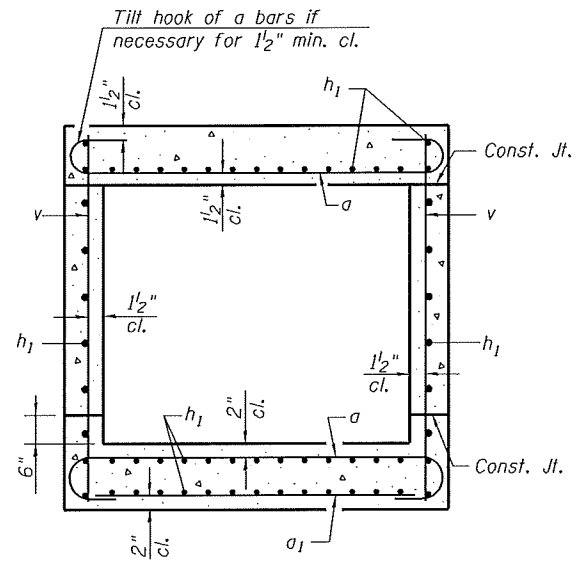
SECTION C-C



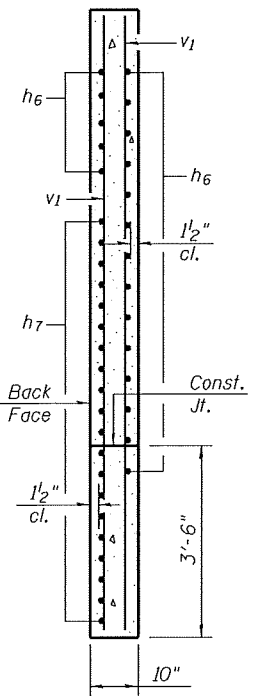
LEFT EXTENSION

BOTTOM SLAB PLAN
SHOWING REINFORCEMENT

RIGHT EXTENSION



SECTION B-B



SECTION D-D

Notes:
For Elevation, Bar Bends, and Total Bill of Material see sheet 3 of 3.

FILE NAME = 149+43.87-76789-002.dgn



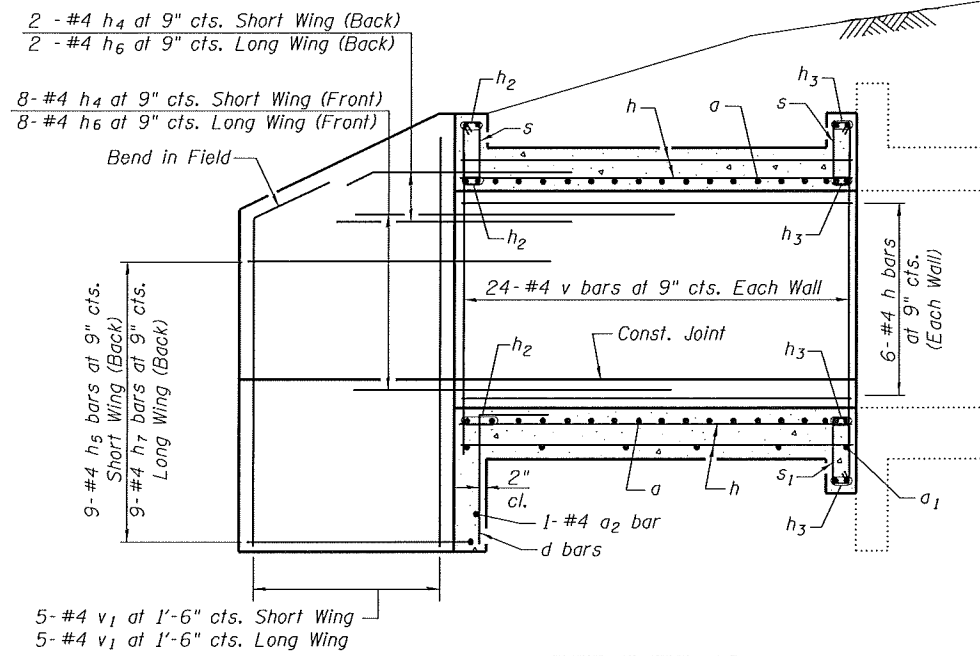
USER NAME = jdirkelmann	DESIGNED - JD	REVISED -
Illinois Design Firm Number 184.001670	CHECKED - BB	REVISED -
PLOT SCALE =	DRAWN - WS	REVISED -
PLOT DATE = 8/8/2014	CHECKED - CJF	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

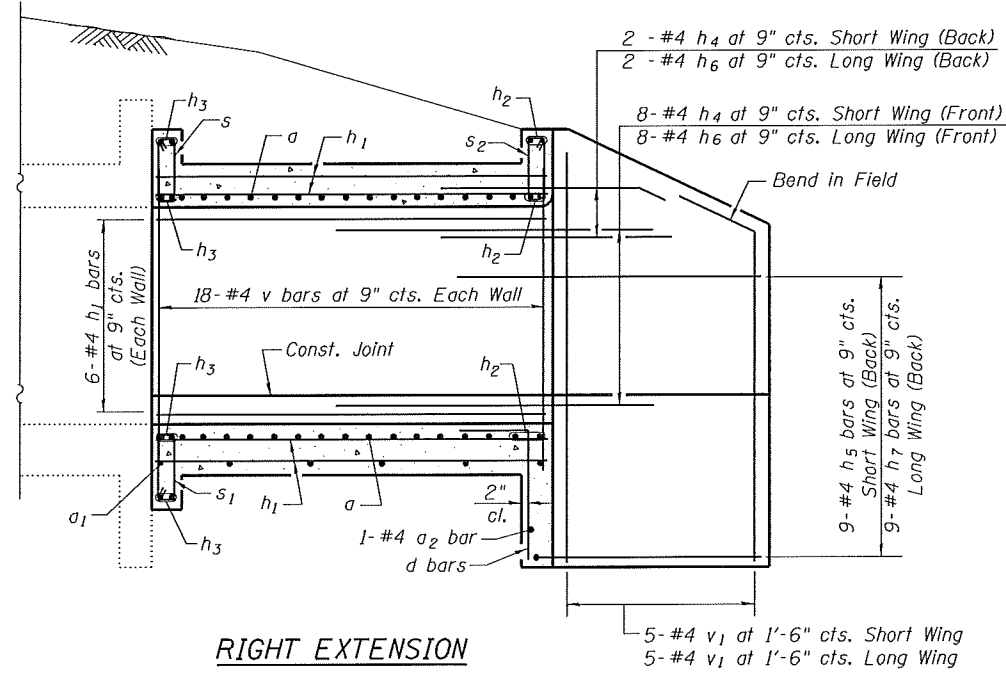
BOX CULVERT EXTENSION DETAILS
STATION 149+43.87

SHEET NO. 2 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	202
CONTRACT NO. 76789				
ILLINOIS FED. AID PROJECT				

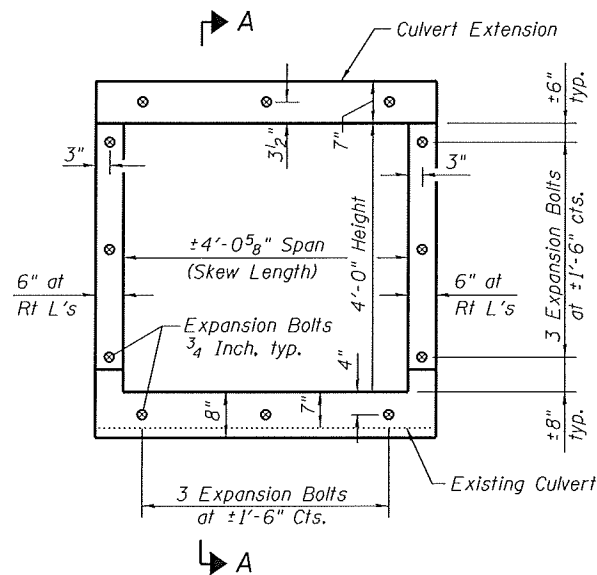


LEFT EXTENSION



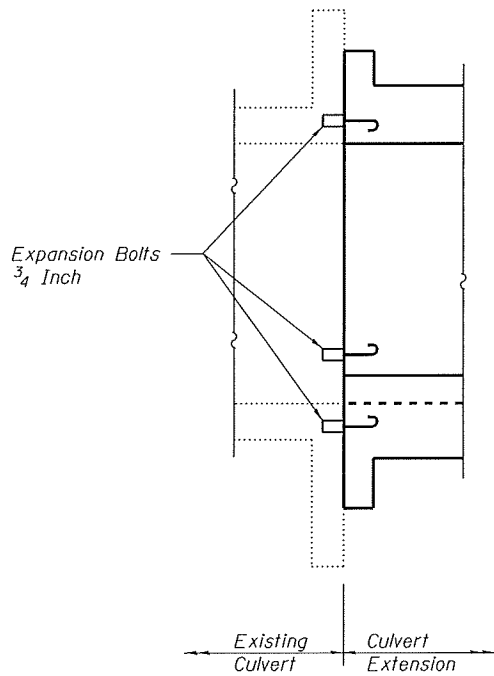
RIGHT EXTENSION

ELEVATION

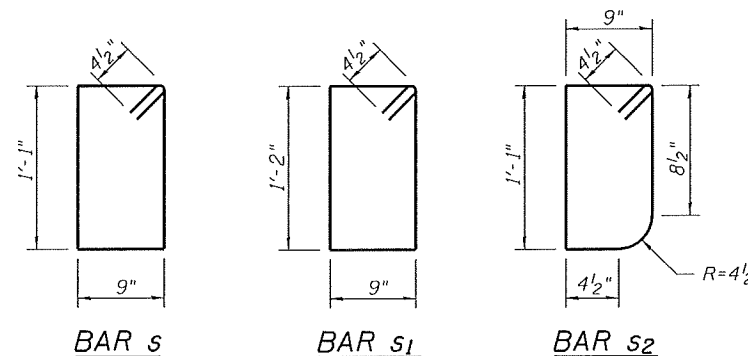
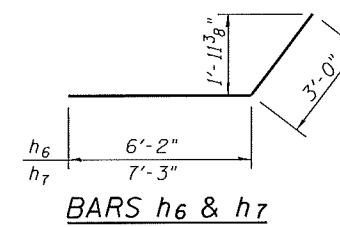
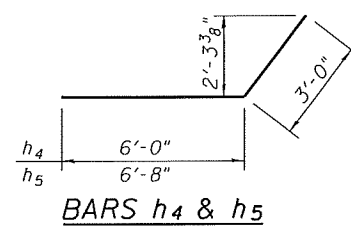
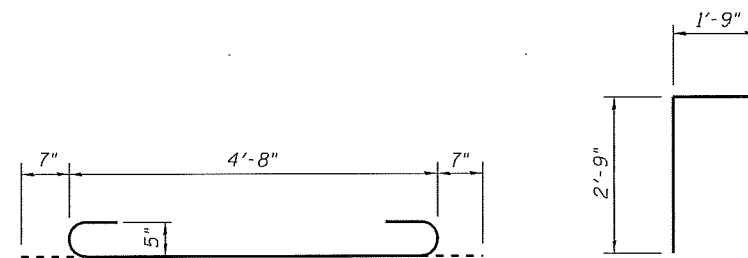


EXPANSION BOLT LAYOUT

Note:
Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete.



SECTION A-A



TOTAL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	60	#5	5'-10"	
a1	16	#4	4'-8"	
a2	2	#4	4'-11"	
d	10	#4	4'-6"	
h	36	#4	16'-8"	
h1	36	#4	12'-8"	
h2	12	#6	4'-3"	
h3	16	#6	4'-9"	
h4	20	#4	9'-0"	
h5	18	#4	9'-8"	
h6	20	#4	9'-2"	
h7	18	#4	10'-3"	
s	18	#4	4'-5"	
s1	12	#4	4'-7"	
s2	6	#4	4'-3"	
v	88	#4	4'-11"	
v1	24	#4	8'-0"	
Concrete Box Culverts			Cu. Yd.	20.6
Reinforcement Bars			Pound	2360
Expansion Bolts 3/4 Inch			Each	24

FILE NAME = 149+43.87-76789-003.dgn



USER NAME = jdirkelmann
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 8/8/2014

DESIGNED - JD
CHECKED - BB
DRAWN - WS
CHECKED - CJF

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
STATION 149+43.87

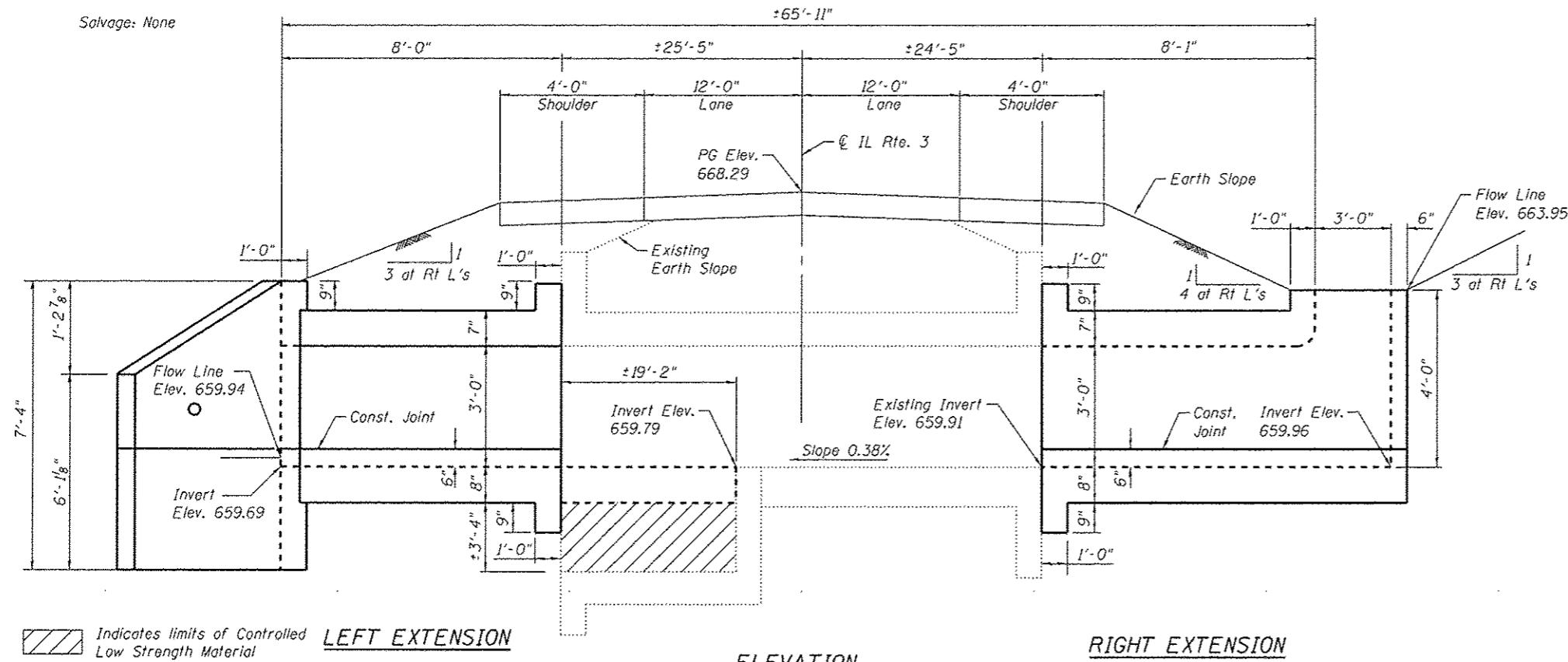
SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	203

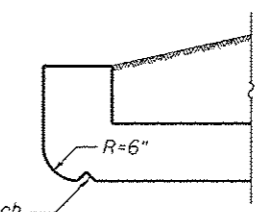
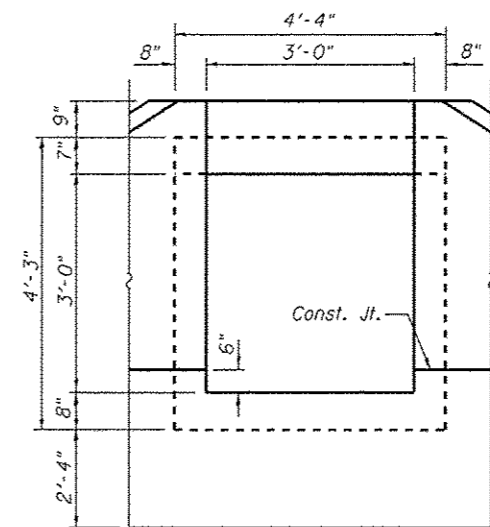
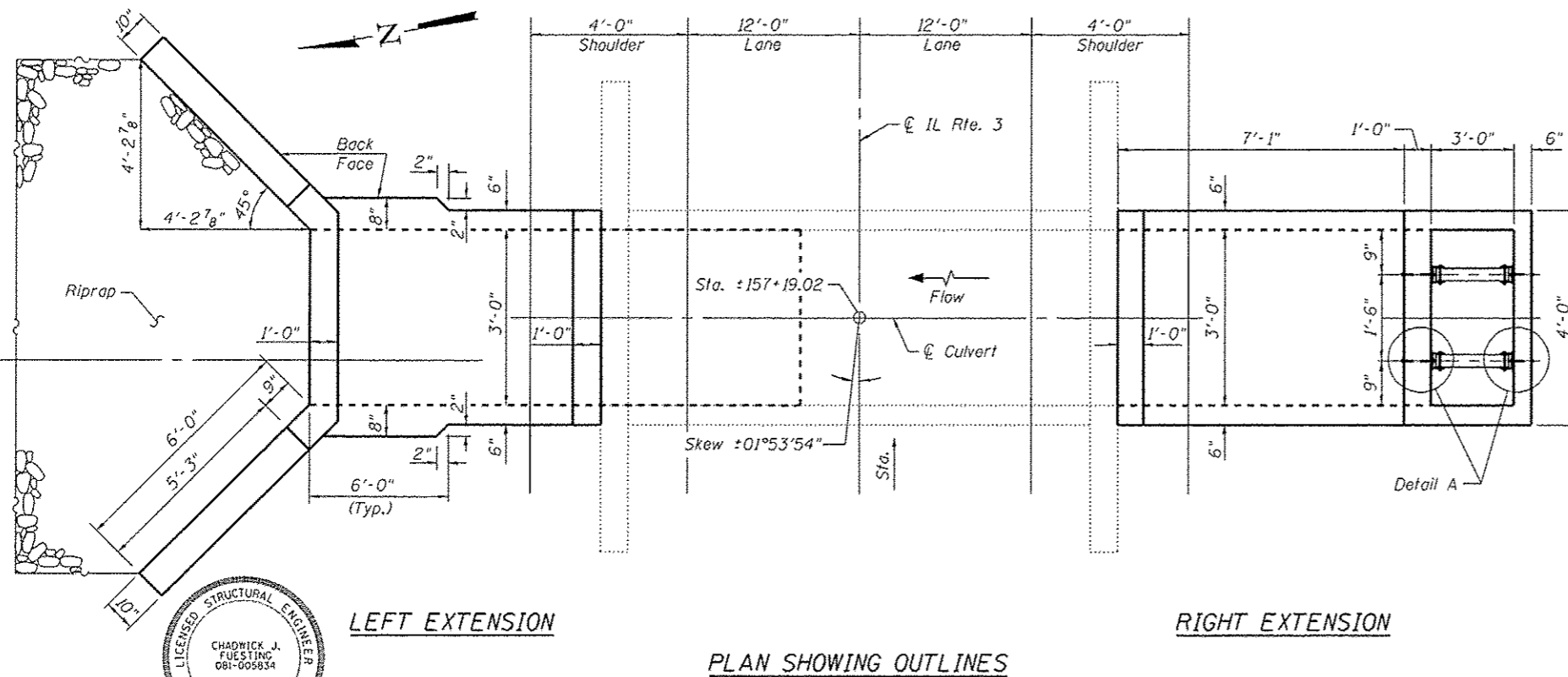
CONTRACT NO. 76789
ILLINOIS FED. AID PROJECT

Existing Structure: The existing structure, is a ±49'-10" long reinforced cast-in-place concrete box culvert with a 3'x7' opening outlet side and 3'x3' opening inlet side. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 157+40.

Salvage: None



Indicates limits of Controlled Low Strength Material



HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests falling to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 1,740 psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completed filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

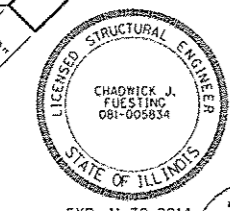
Allow 50#/sq. ft. for future wearing surface on extension.

DESIGN STRESSES

EXISTING CONSTRUCTION	NEW CONSTRUCTION
fy = 40,000 psi	fy = 60,000 psi
f'c = 3,000 psi	f'c = 3,500 psi

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 3
F.A.S. RTE. 752 - SEC 101-2RS-1
JERSEY COUNTY
STATION 157+19.02

Notes:
See Sheet 2 of 3 for Existing Drop Inlet Removal.
See Sheet 3 of 3 for Detail A.



Chadwick J. Fuesting 8/18/14

FILE NAME = 157+19.02-76789-001.dgn



USER NAME	DESIGNED	REVISION
Illinois Design Firm Number 184.001670	CHECKED - JD	REVISION -
PLOT SCALE =	CHECKED - BB	REVISION -
PLOT DATE = 4/16/14 PM 0/8/2014	DRAWN - EW	REVISION -
	CHECKED - CJF	REVISION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

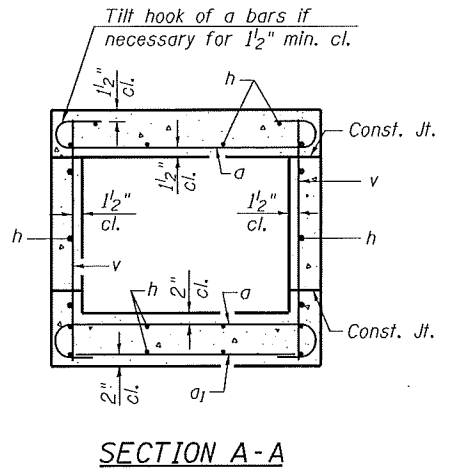
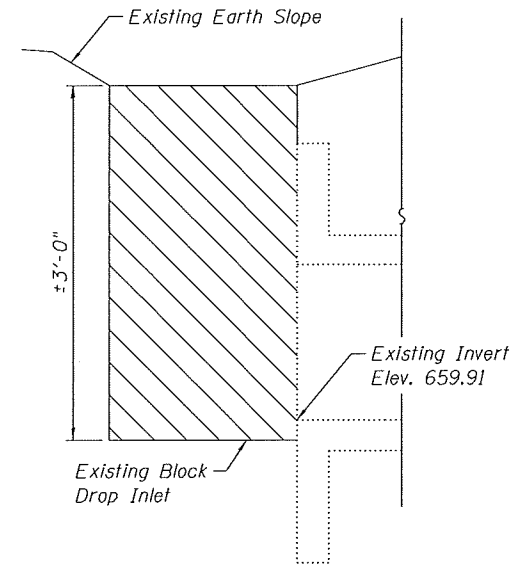
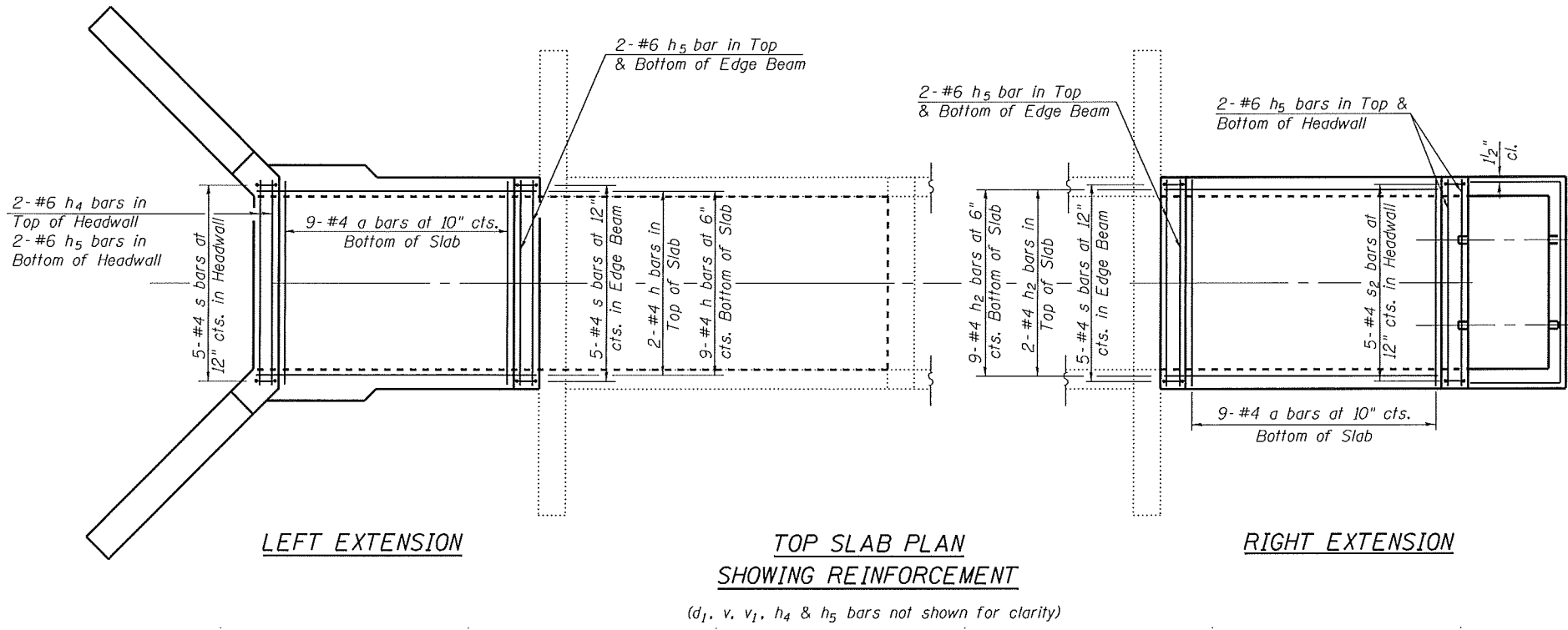
SHEET NO. 1 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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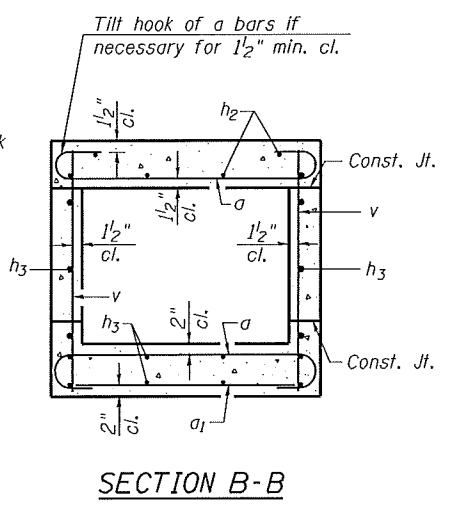
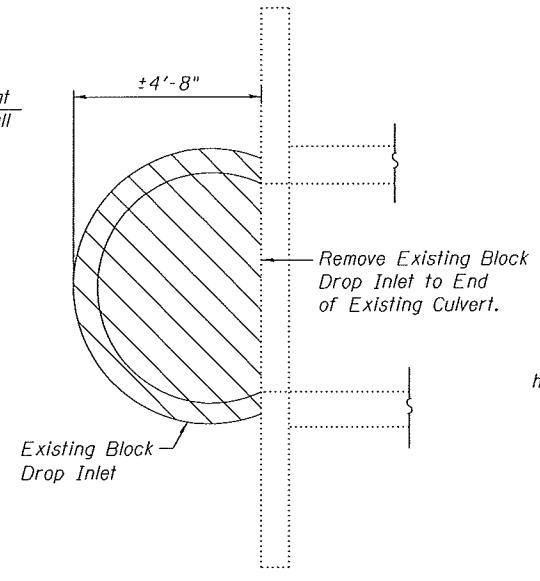
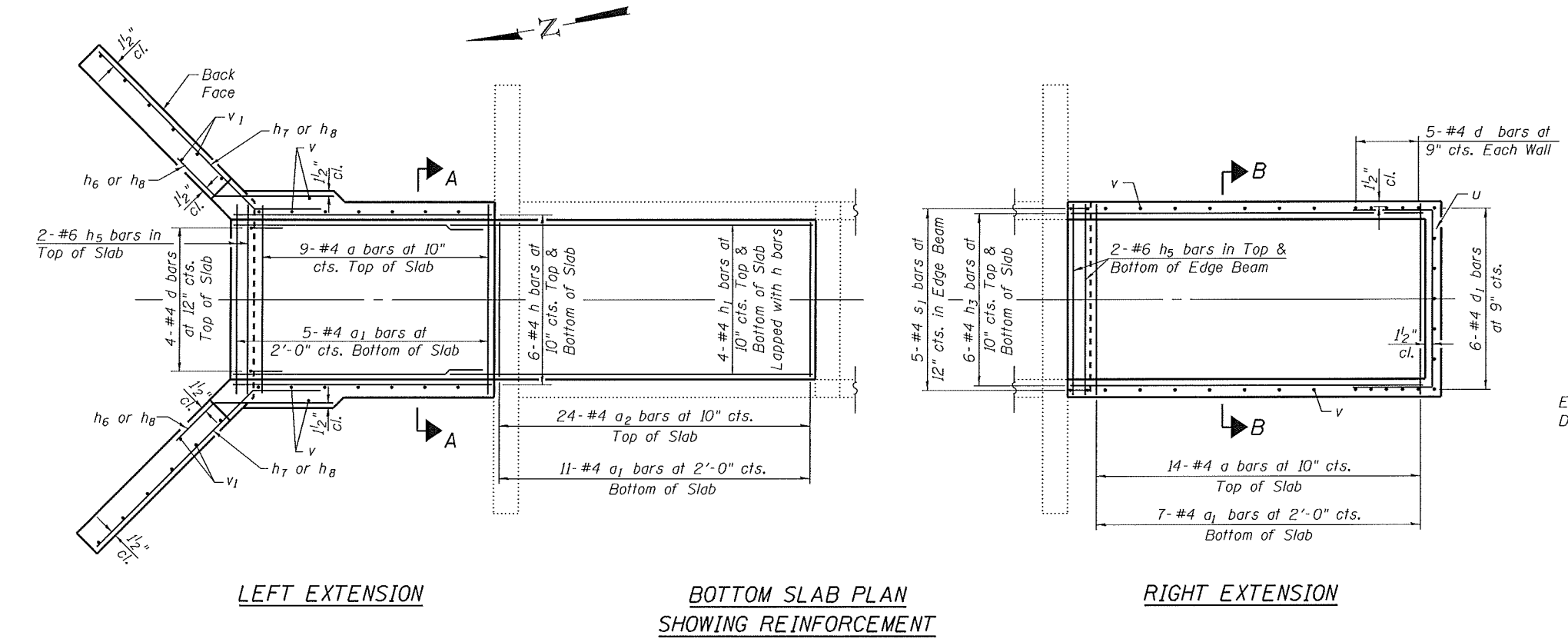
CONTRACT NO. 76789

ILLINOIS FED. AID PROJECT

MIN. BAR LAP
#4 bar = 1'-4"



Indicates Limits of Existing Block Drop Inlet Removal to be paid for as Removal of Existing Structures, see Roadway Plans.



Notes:
For Elevation, Bar Bends, and Total Bill of Material see sheet 3 of 3.

FILE NAME = 157+19.02-76789-002.dgn

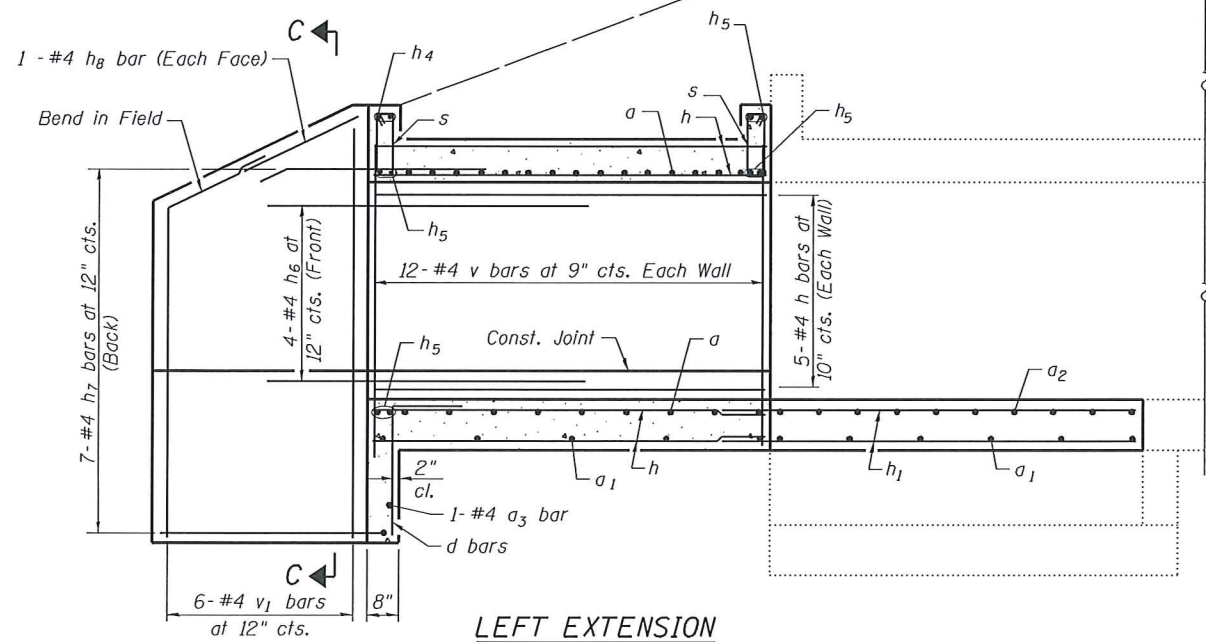


USER NAME =	DESIGNED - JD	REVISED -
Illinois Design Firm Number 184.001670	CHECKED - BB	REVISED -
PLOT SCALE =	DRAWN - EW	REVISED -
PLOT DATE = 4/6-41 PM 8/8/2014	CHECKED - CJF	REVISED -

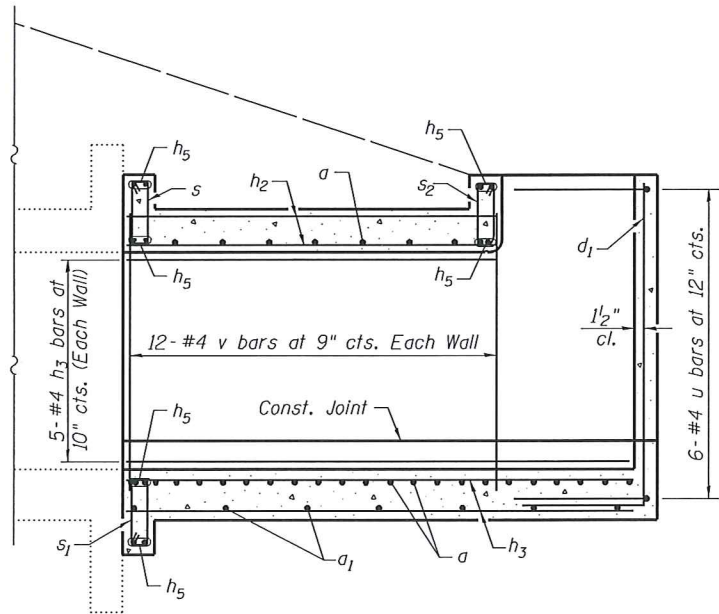
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
STA 157+19.02
SHEET NO. 2 OF 3 SHEETS

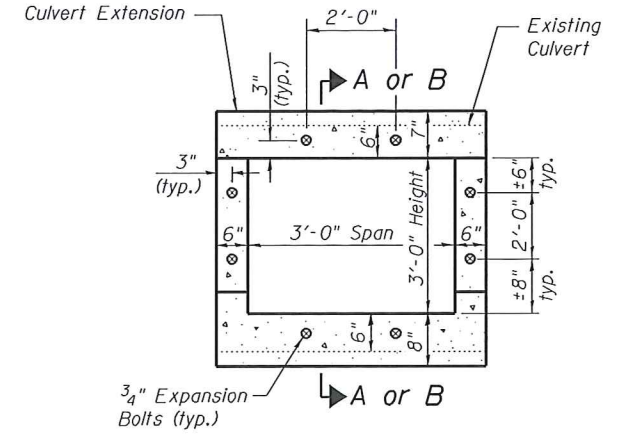
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	205
CONTRACT NO. 76789				
ILLINOIS FED. AID PROJECT				



LEFT EXTENSION



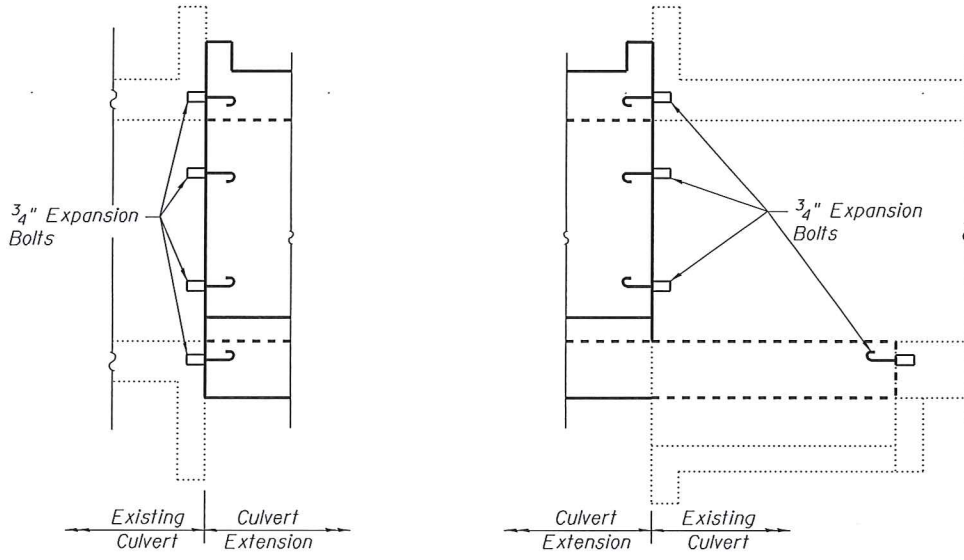
RIGHT EXTENSION



Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

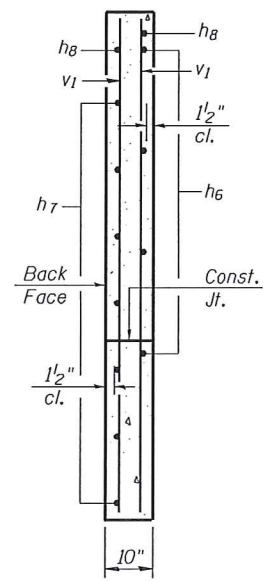
EXPANSION BOLT LAYOUT

ELEVATION

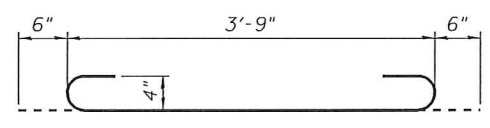


SECTION A-A (Showing South Extension)

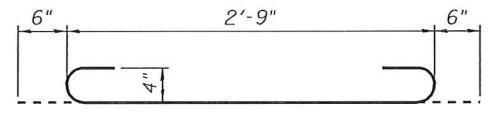
SECTION B-B (Showing North Extension)



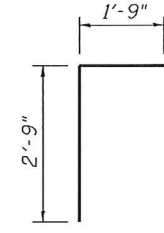
SECTION C-C



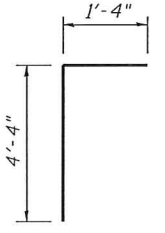
BAR a



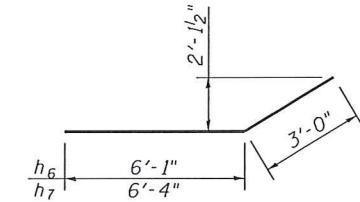
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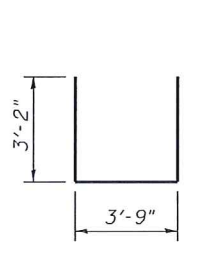
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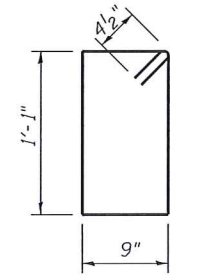
BAR d1



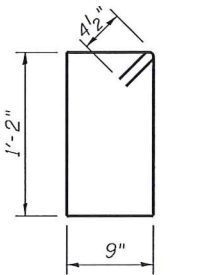
BARS h6 & h7



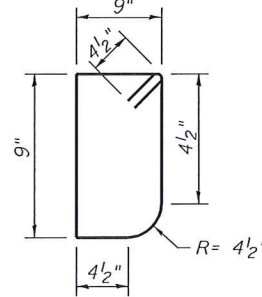
BAR u



BAR s



BAR s1

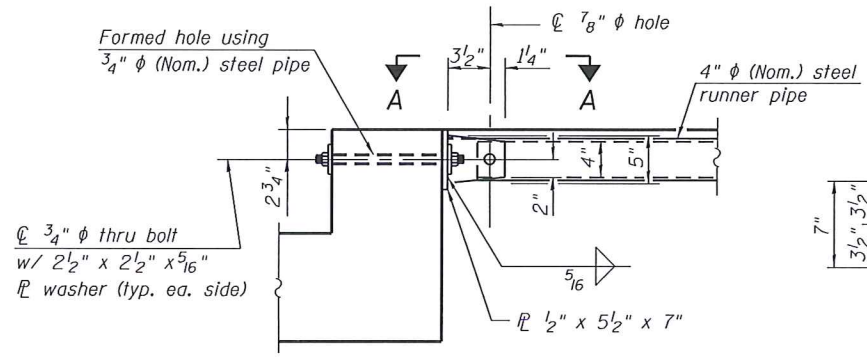


BAR s2

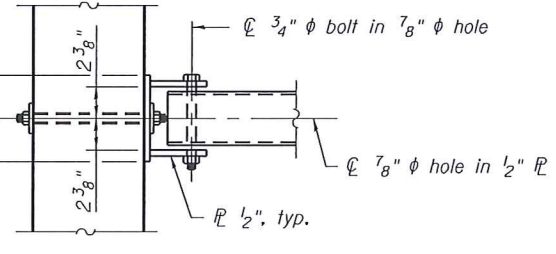
TOTAL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	41	#4	4'-9"	U
a1	23	#4	3'-9"	U
a2	24	#4	3'-9"	U
a3	1	#4	3'-10"	U
d	4	#4	4'-6"	L
d1	16	#4	5'-8"	L
h	33	#4	7'-9"	U
h1	8	#4	20'-6"	U
h2	11	#4	7'-10"	U
h3	22	#4	10'-10"	U
h4	2	#6	3'-3"	U
h5	20	#6	3'-9"	U
h6	8	#4	9'-1"	U
h7	14	#4	9'-4"	U
h8	4	#4	5'-1"	U
s	15	#4	4'-5"	U
s1	5	#4	4'-7"	U
s2	5	#4	3'-7"	U
u	6	#4	10'-1"	U
v	50	#4	3'-11"	U
v1	14	#4	7'-0"	U

Concrete Box Culverts	Cu. Yd.	10.8
Reinforcement Bars	Pound	1410
3/4" Expansion Bolts	Each	16
Concrete Removal	Cu. Yd.	2.0
Controlled Low-Strength Material	Cu. Yd.	7.1
Traversable Pipe Grate	Foot	6



DETAIL A



VIEW A-A

FILE NAME = 157-19-02-76789-003.dgn



USER NAME =
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 4:05:42 PM 8/8/2014

DESIGNED - JD
CHECKED - BB
DRAWN - EW
CHECKED - CJF

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

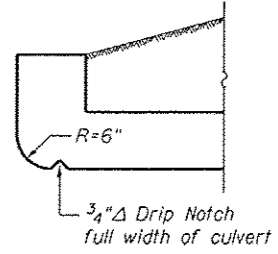
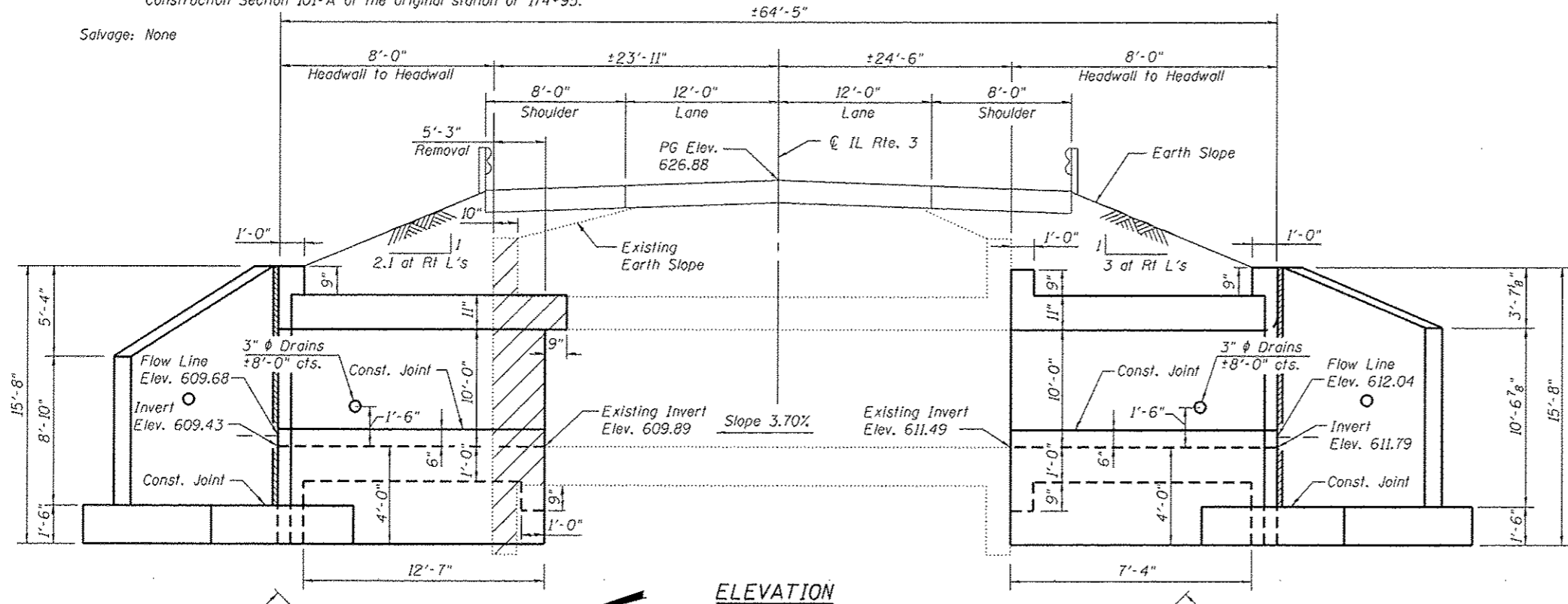
BOX CULVERT EXTENSION DETAILS
STA 157+19.02

SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	206

CONTRACT NO. 76789
ILLINOIS FED. AID PROJECT

Existing Structure: The existing structure, SN 042-2470, is a ±48'-5" long reinforced cast-in-place concrete box culvert with a 10'-0" x 10'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 174+95.



HEADWALL DETAILS AT UPSTREAM END

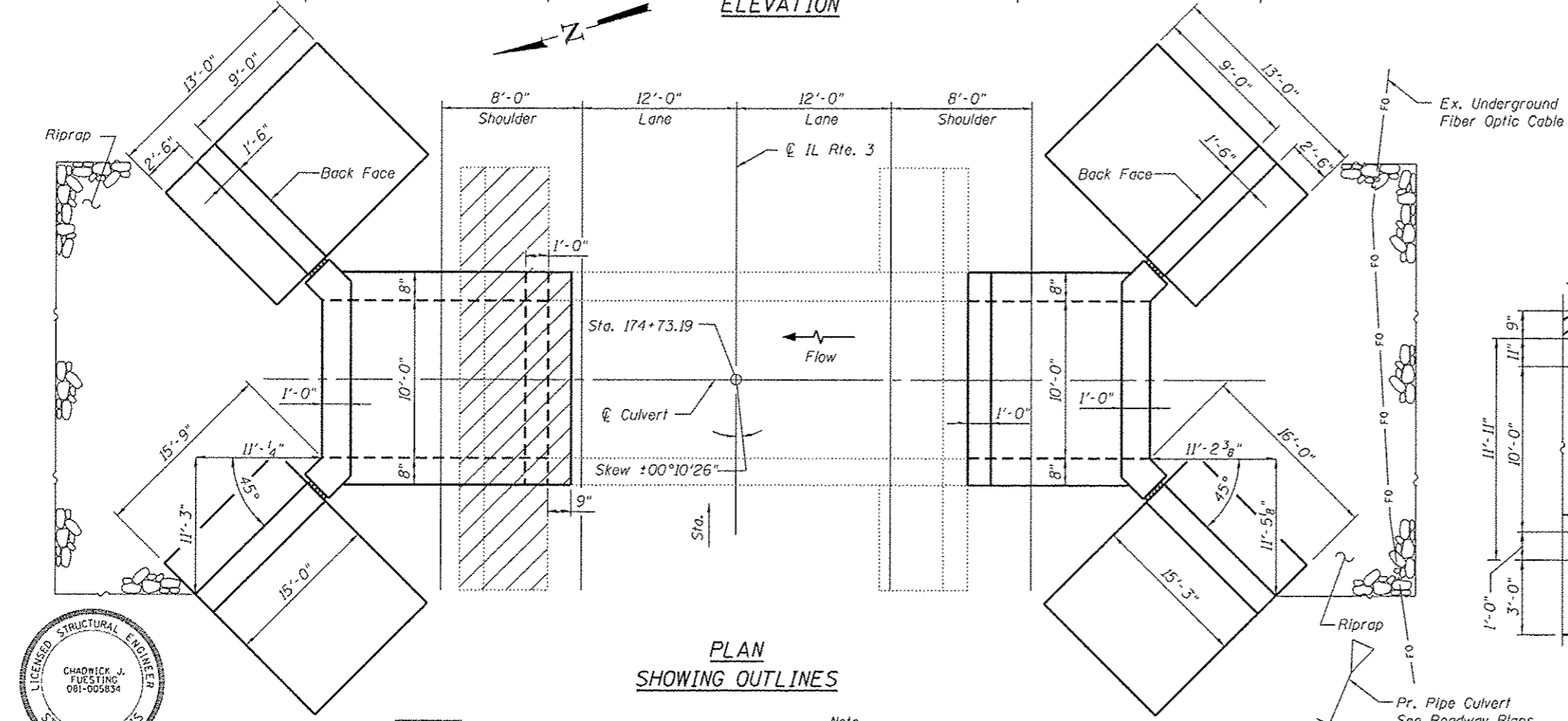
GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated. Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests falling to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

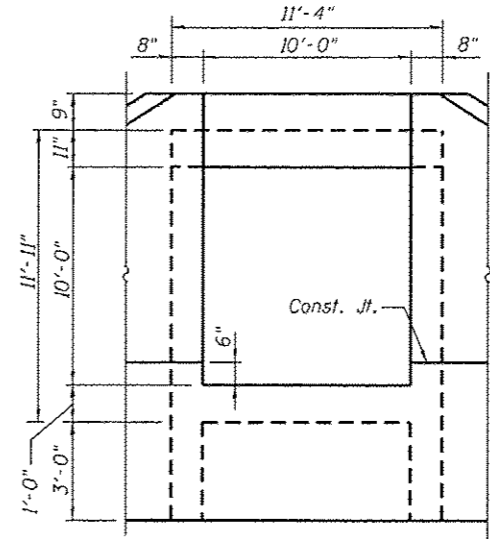
Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site. A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls. Calculated max. soil pressure under barrel = 2.211 psf. For Riprap details and quantities see Roadway Plans. For Total Bill of Material see sheet 3 of 4.



ELEVATION

PLAN SHOWING OUTLINES



BOX CULVERT END ELEVATION (Dimensions Shown at Rt L's)

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

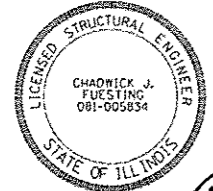
Allow 50#/sq. ft. for future wearing surface on extension.

DESIGN STRESSES

EXISTING CONSTRUCTION	NEW CONSTRUCTION
$f_y = 40,000$ psi	$f_y = 60,000$ psi
$f'_c = 3,000$ psi	$f'_c = 3,500$ psi

GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 3
F.A.S. RTE. 752 - SEC. 101-2RS-1
JERSEY COUNTY
STATION 174+73.19
STRUCTURE NUMBER 042-2470



Conc Twenty 8/13/14

Indicates Limits of Concrete Removal

Note: Limits of Rock Excavation for Structures includes limits of culvert extension below the assumed rock elevation.

FILE NAME = 174+73.19-76789-021.dgn

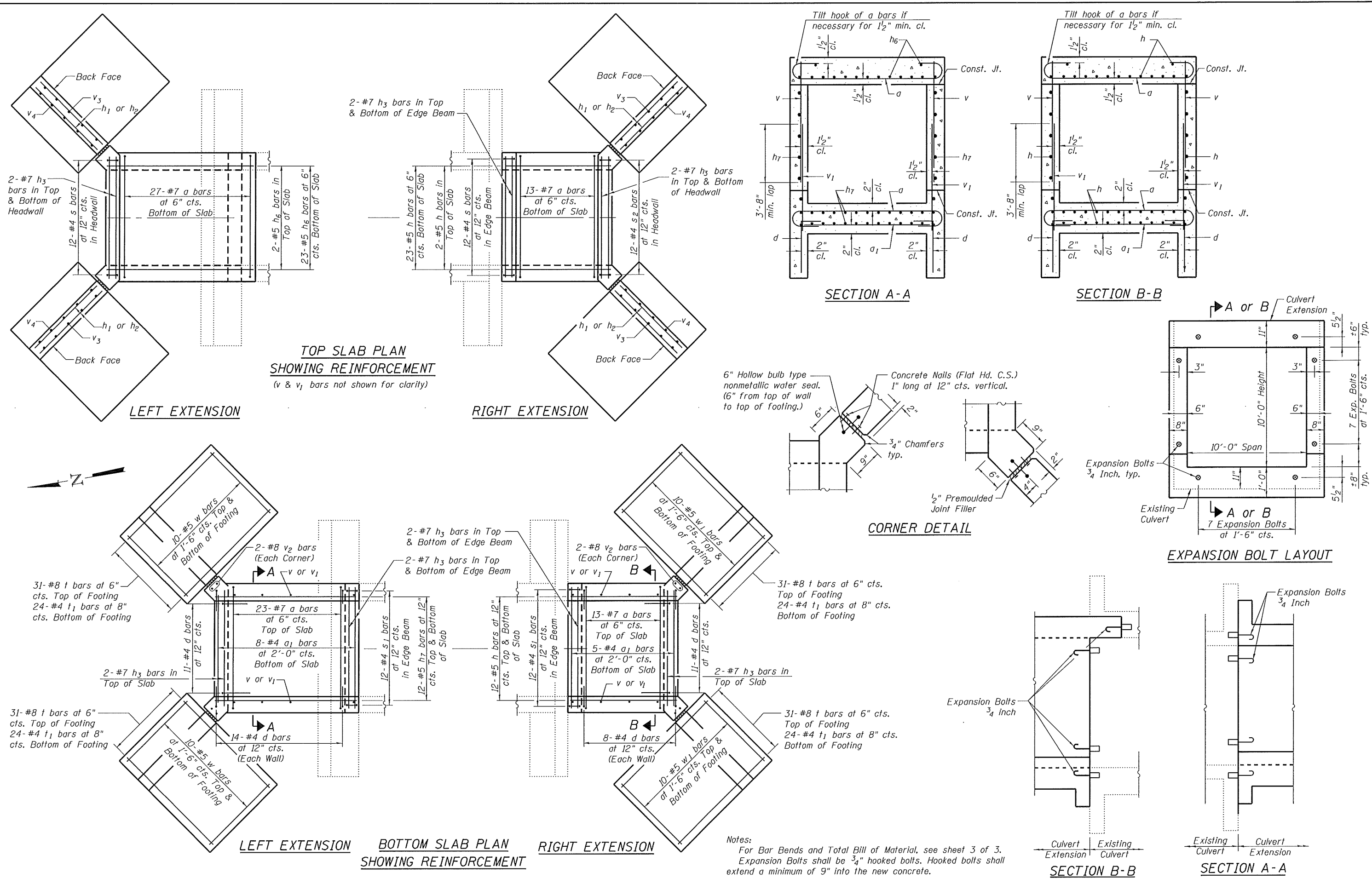


USER NAME	DESIGNED	REVISIONS
jankelmann	- JD	-
Illinois Design Firm Number 184,001670	- BB	-
PLOT SCALE	- WS	-
PLOT DATE 8/8/2014	- CJF	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	207

CONTRACT NO. 76789
ILLINOIS FED. AID PROJECT



Notes:
For Bar Bends and Total Bill of Material, see sheet 3 of 3.
Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete.

FILE NAME = 174-7319-76785-002.dgn



USER NAME = jalinkmann
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 8/8/2014

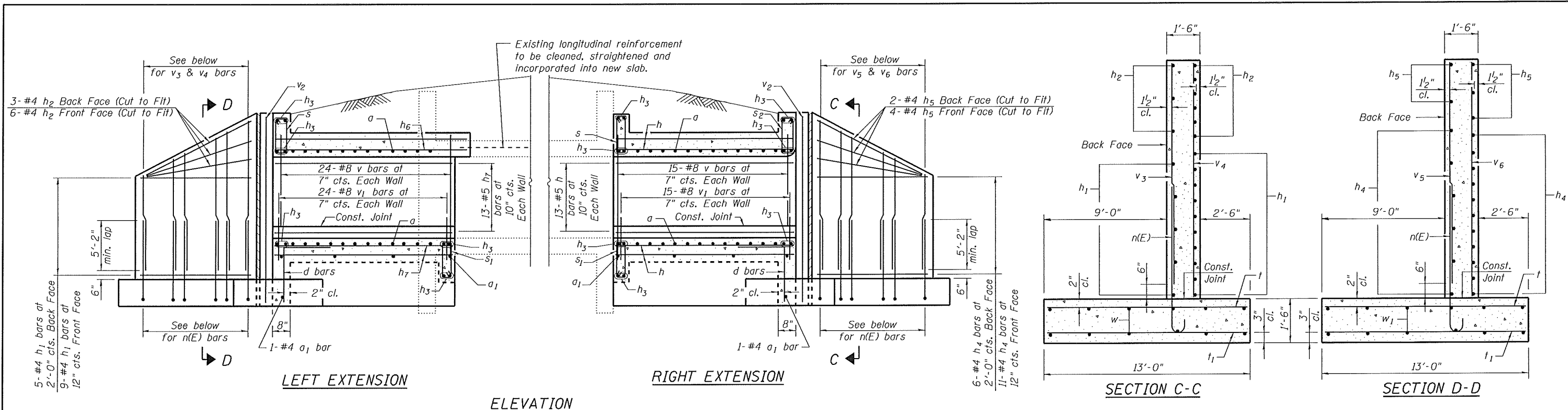
DESIGNED - JD
CHECKED - BB
DRAWN - WS
CHECKED - CJF

REVISED -
REVISED -
REVISED -
REVISED -

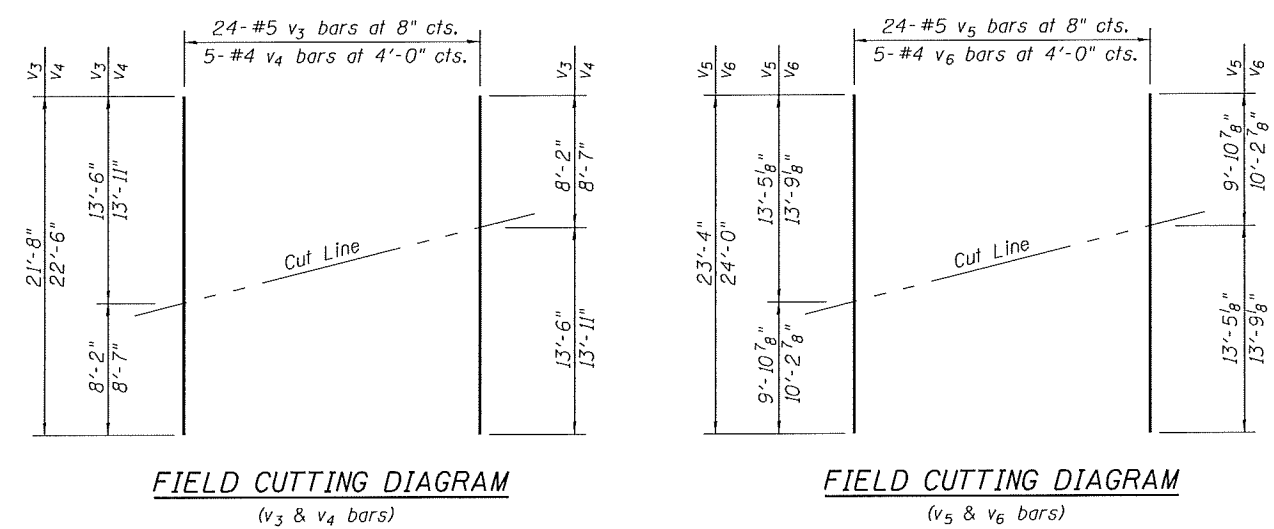
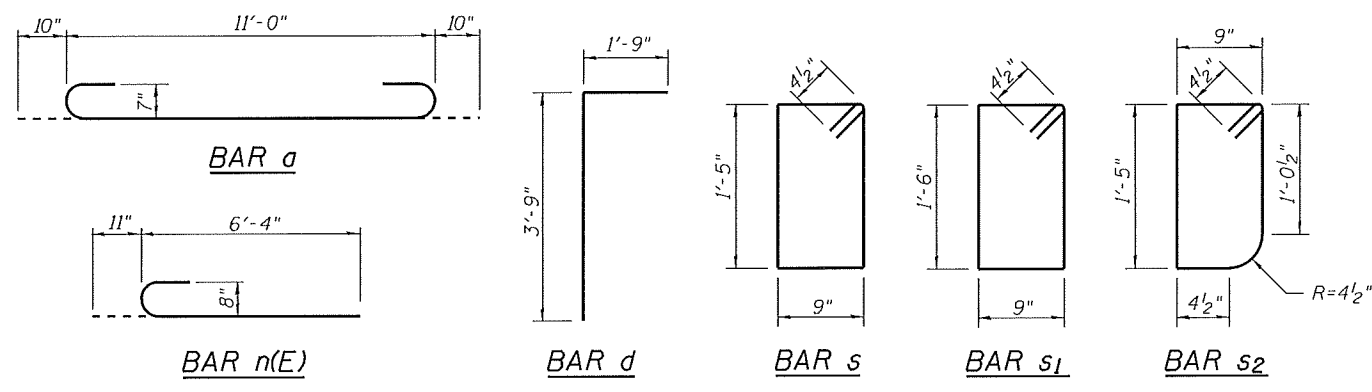
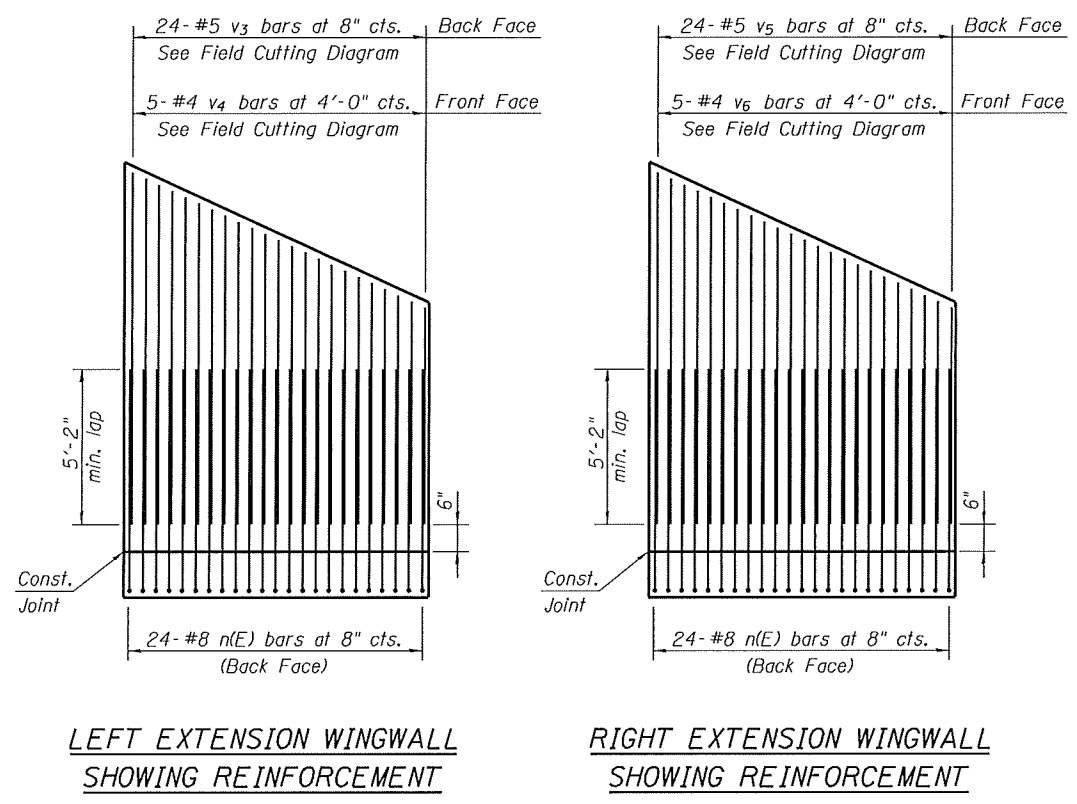
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
STRUCTURE NUMBER 042-2470
SHEET NO. 2 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	208
CONTRACT NO. 76789				
ILLINOIS FED. AID PROJECT				



MINIMUM BAR LAP
 (Per Sidewall Reinforcement)
 #8 bar = 3'-8"



TOTAL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	76	#7	12'-8"	U
a1	15	#4	11'-0"	—
d	66	#4	5'-6"	L
h	75	#5	7'-8"	—
h1	28	#4	14'-9"	—
h2	18	#4	15'-8"	—
h3	24	#7	11'-0"	—
h4	34	#4	15'-0"	—
h5	12	#4	13'-2"	—
h6	25	#5	13'-8"	—
h7	50	#5	12'-11"	—
n(E)	96	#8	7'-3"	U
s	24	#4	5'-1"	—
s1	24	#4	5'-3"	—
s2	12	#4	4'-11"	—
t	124	#8	12'-8"	—
t1	96	#4	12'-8"	—
v	78	#8	10'-2"	—
v1	78	#8	5'-2"	—
v2	8	#8	15'-4"	—
v3	24	#5	21'-8"	—
v4	5	#4	22'-6"	—
v5	24	#5	23'-4"	—
v6	5	#4	24'-0"	—
w	40	#5	14'-8"	—
w1	40	#5	14'-11"	—
Concrete Removal			Cu. Yd.	26.9
Rock Excavation for Structures			Cu. Yd.	137.0
Reinforcement Bars			Pound	16,650
Reinforcement Bars, Epoxy Coated			Pound	1860
Expansion Bolts 3/4 Inch			Each	56
Concrete Box Culverts			Cu. Yd.	121.7
Epoxy Crack Injection			Foot	16

Notes:
 Order v3 thru v6 bars full length. Cut as shown.
 Use remainder of bar in opposite Wingwall.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
 STRUCTURE NUMBER 042-2470
 SHEET NO. 3 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752	101-2RS-1	JERSEY	438	209

CONTRACT NO. 76789
 ILLINOIS FED. AID PROJECT

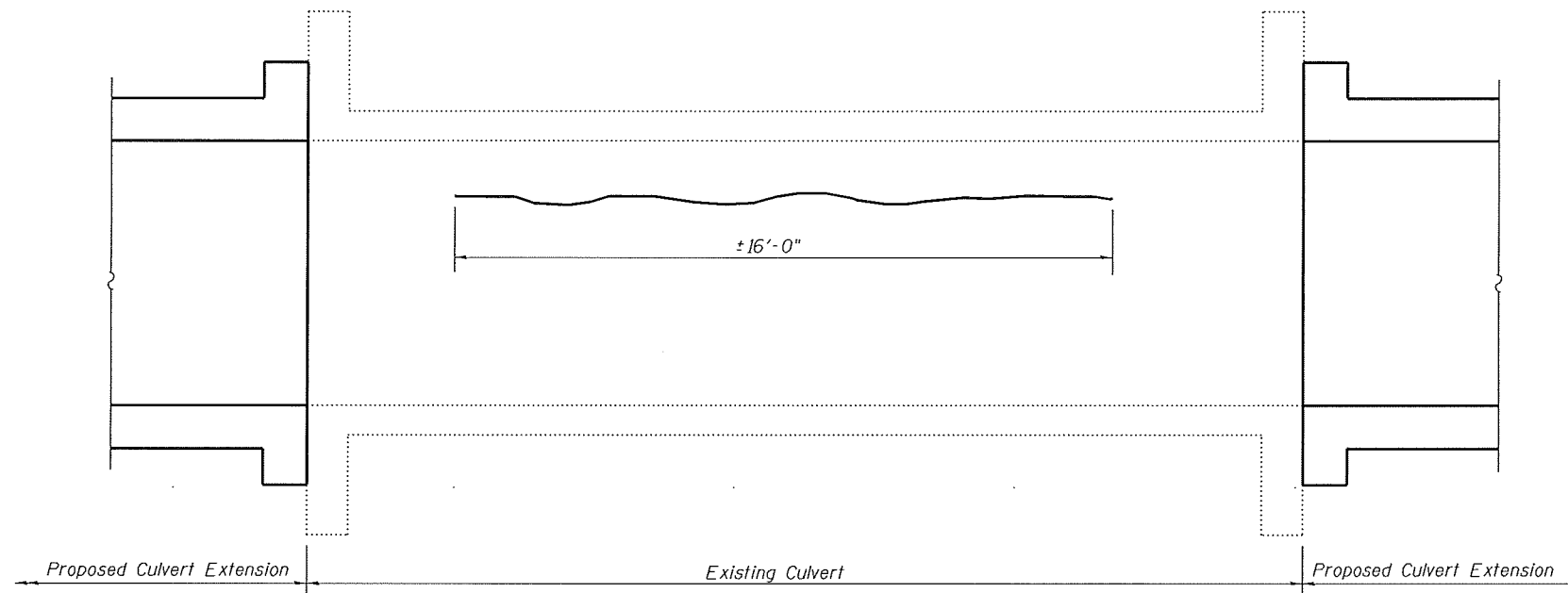
FILE NAME = 174+731.9-76789-003.dgn

LOCHMUELLER GROUP
 1125 S. GALELLE & COMPANY
 3701 S. ILLINOIS ST. #204
 PHOENIX, AZ 85026-1429

USER NAME = jdrinkeimann
 Illinois Design Firm Number 184.001670
 PLOT SCALE =
 PLOT DATE = 8/8/2014

DESIGNED - JD
 CHECKED - BB
 DRAWN - WS
 CHECKED - CJF

REVISED -
 REVISED -
 REVISED -
 REVISED -



ELEVATION
(Showing Inside Face of East Wall)

Note:
The limits of Epoxy Crack Injection shown are approximate. The limits of Epoxy Crack Injection may vary in the field. Changes in the quantity of Epoxy Crack Injection shall be approved by the Engineer.

~~~~~~ Indicates Epoxy Crack Injection Required

FILE NAME = I74+73.19-76789-004.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdinkeImann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184,001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

|               |           |
|---------------|-----------|
| DESIGNED - JD | REVISED - |
| CHECKED - BB  | REVISED - |
| DRAWN - WS    | REVISED - |
| CHECKED - CJF | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EXISTING BOX CULVERT REPAIR DETAILS  
STRUCTURE NUMBER 042-2470**

SHEET NO. 4 OF 4 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 210       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

Existing Structure: The existing structure is a ±35'-7" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 191+53.

Salvage: None

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

For Riprap details and quantities see Roadway Plans.

Calculated max. soil pressure under barrel = 3,361 psf.

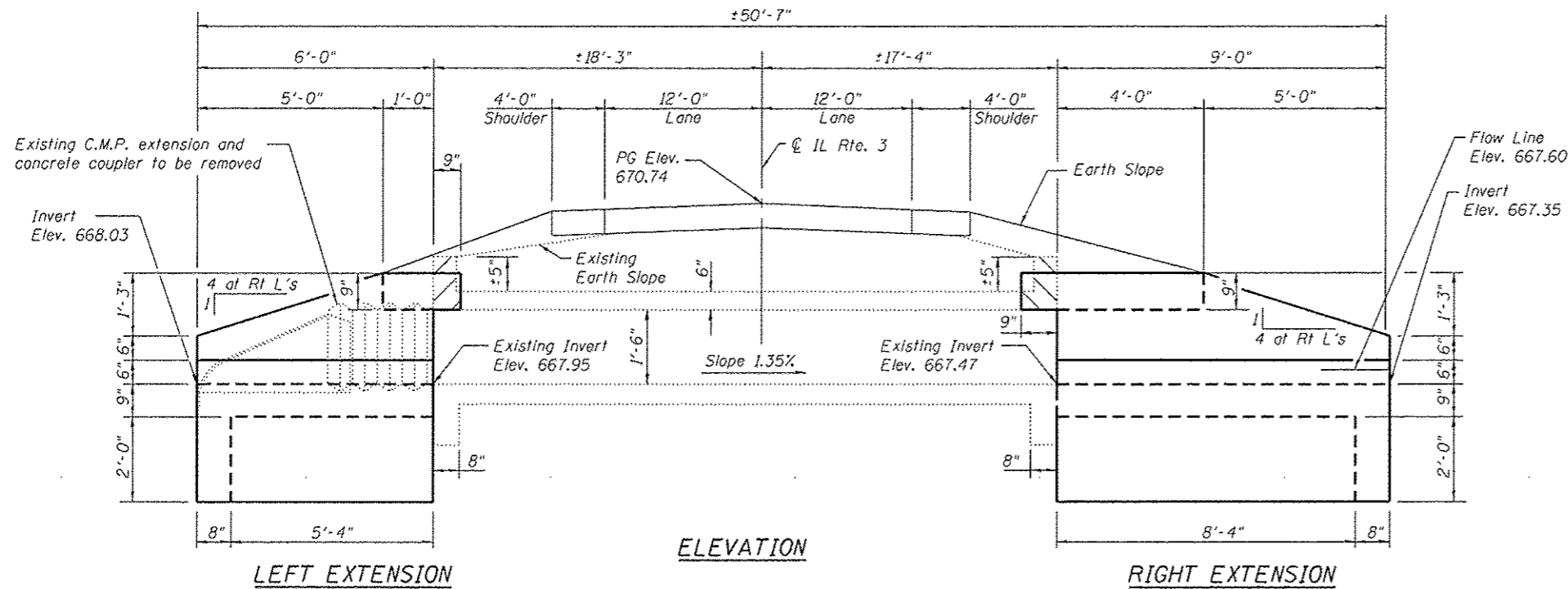
Partial Removal of the existing structure during construction shall be completed according to Section 501.05 of the Standard Specifications.

For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1/2" unless noted otherwise.

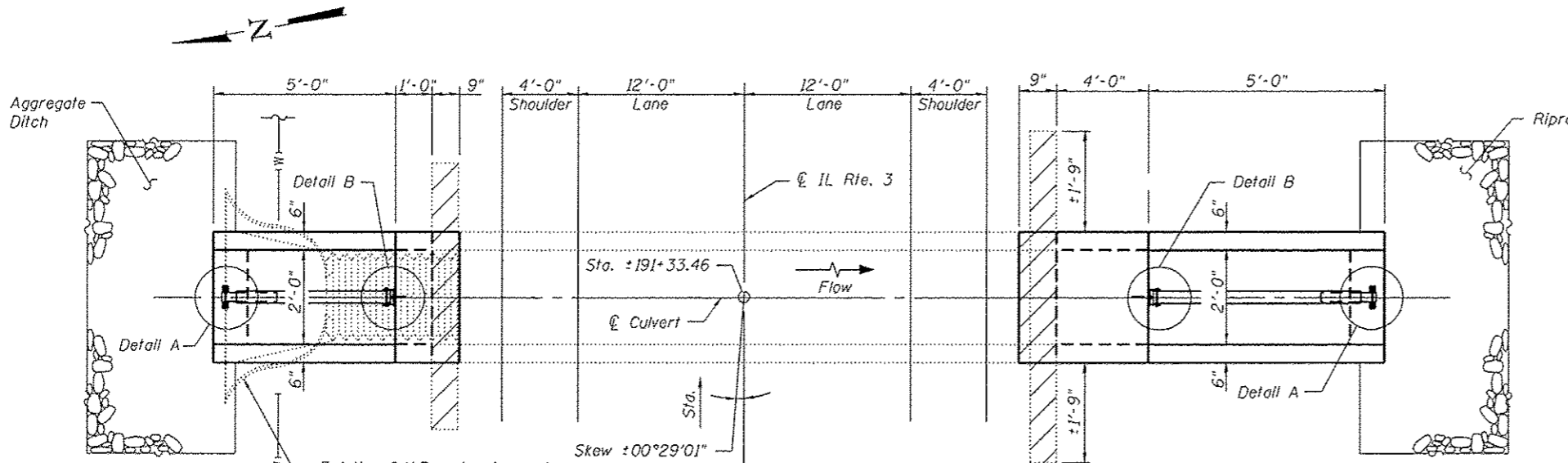
The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completed filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/2 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.



**ELEVATION**

Indicates Limits of Concrete Removal



**LEFT EXTENSION**

**PLAN SHOWING OUTLINES**

**RIGHT EXTENSION**

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION      | NEW CONSTRUCTION           |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |

**GENERAL PLAN & ELEVATION**

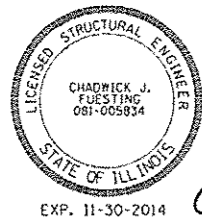
**ILLINOIS ROUTE 3**

**F.A.S. RTE. 752 - SEC. 101-2RS-1**

**JERSEY COUNTY**

**STATION 191+33.46**

Note:  
For Details A and B see sheet 3 of 3.



*Culverting 8/8/14*

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

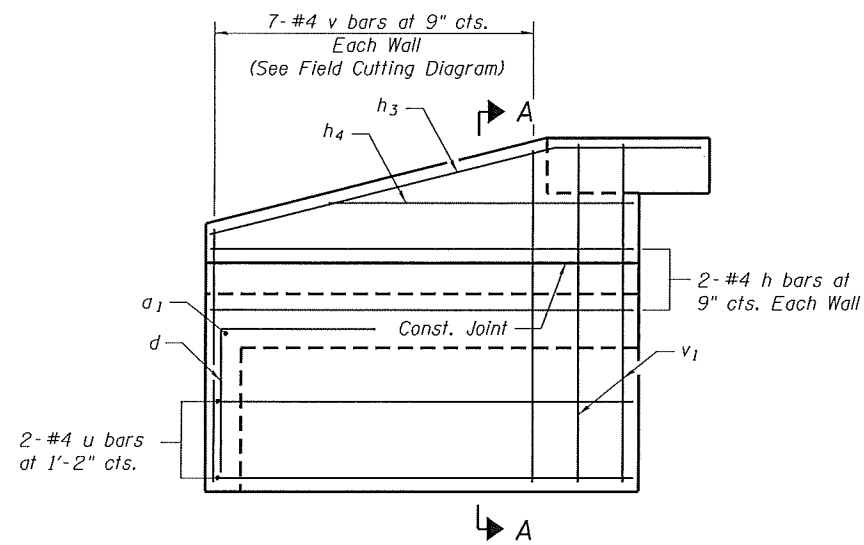
SHEET NO. 1 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 211       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

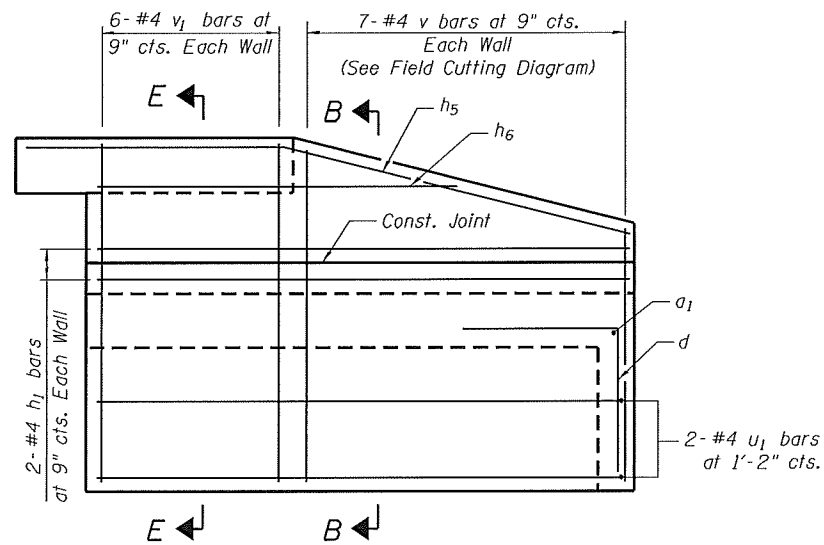
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|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrnkolmann                | DESIGNED = JD | REVISED = |
| Illinois Design Firm Number 184.001670 | CHECKED = BB  | REVISED = |
| PLOT SCALE =                           | DRAWN = WS    | REVISED = |
| PLOT DATE = 8/8/2014                   | CHECKED = CJF | REVISED = |



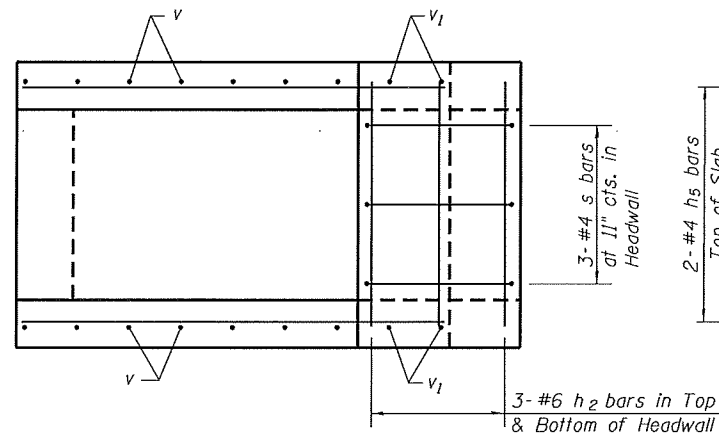


**LEFT EXTENSION**

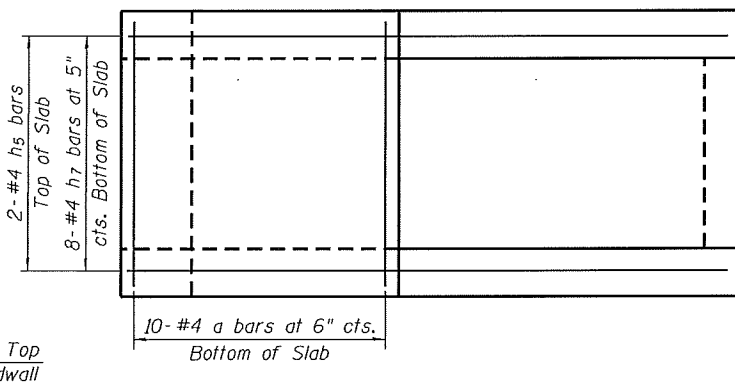


**RIGHT EXTENSION**

**ELEVATION**  
(Showing Reinforcement)

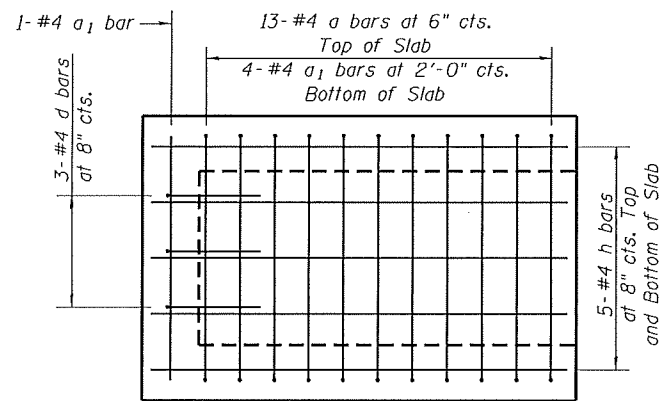


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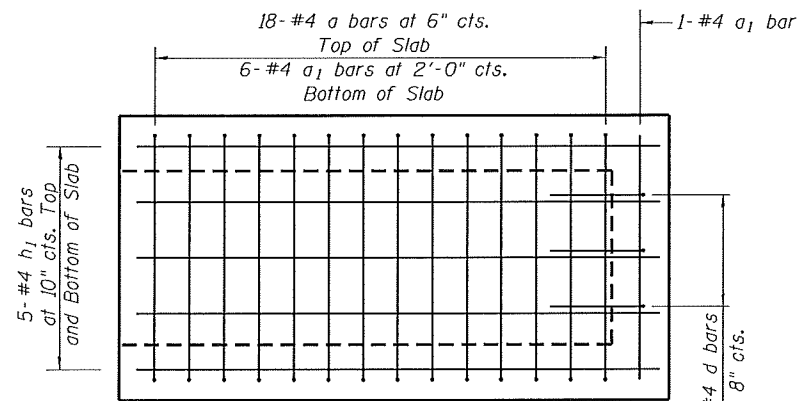


**RIGHT EXTENSION**

**TOP SLAB**  
(Showing Reinforcement)

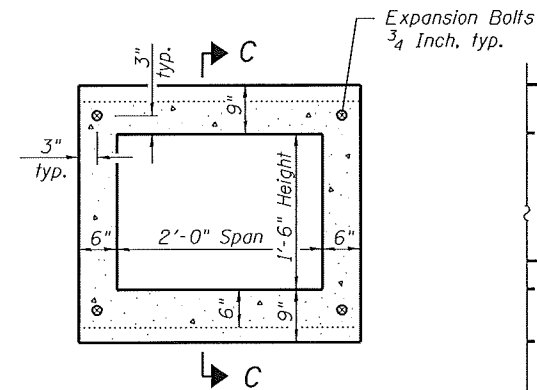


**LEFT EXTENSION**

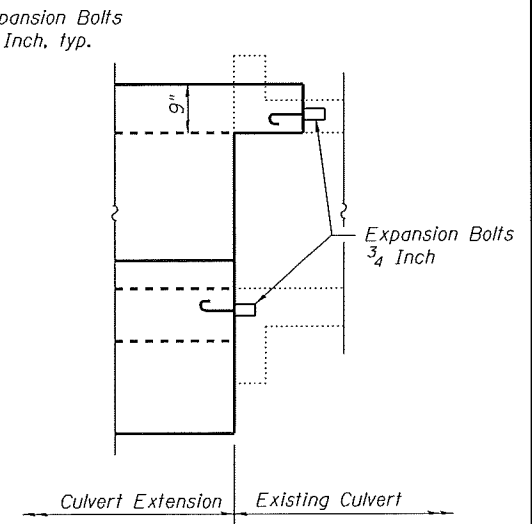


**RIGHT EXTENSION**

**BOTTOM SLAB**  
(Showing Reinforcement)

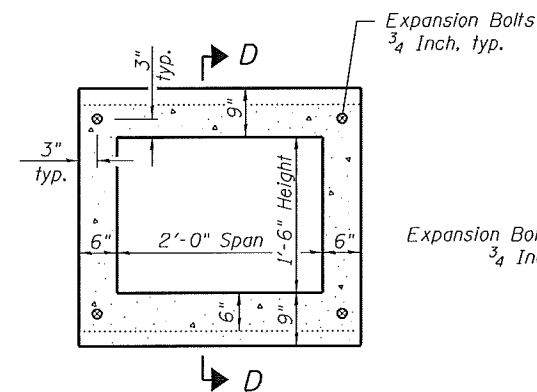


**LEFT EXTENSION**  
**EXPANSION BOLT LAYOUT**

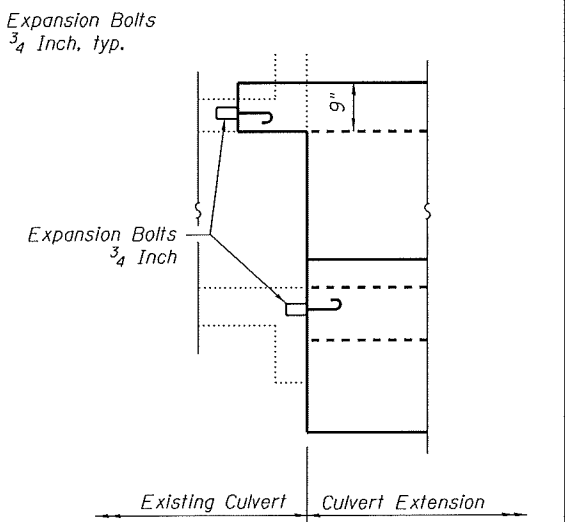


**SECTION C-C**

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete



**RIGHT EXTENSION**  
**EXPANSION BOLT LAYOUT**



**SECTION D-D**

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

Note:  
For Section A-A, B-B, and E-E see Sheet 3 of 3.  
For Bar Bend and Total Bill of Material, see Sheet 3 of 3.

FILE NAME = 191+33.46-76785-002.dgn



USER NAME = jdrinke1menn  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

REVISED -  
REVISED -  
REVISED -  
REVISED -

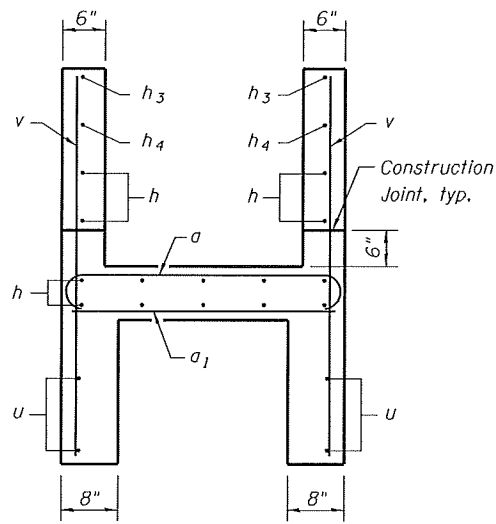
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS,  
STATION 191+33.46

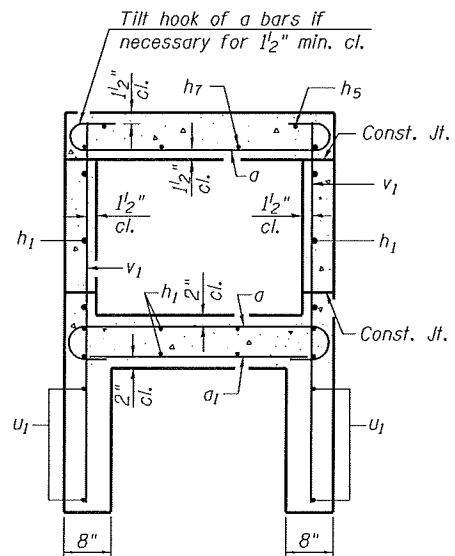
SHEET NO. 2 OF 3 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-----------|--------|--------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438          | 212       |
| CONTRACT NO. 76789 |           |        |              |           |

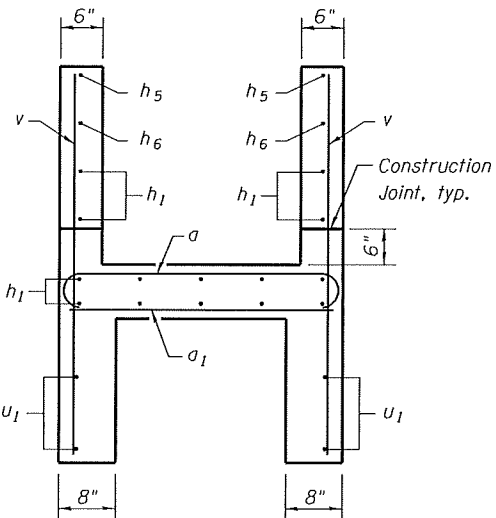
ILLINOIS FED. AID PROJECT



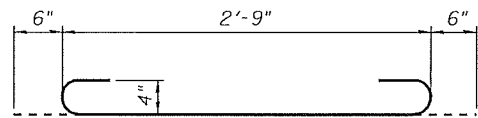
SECTION A-A



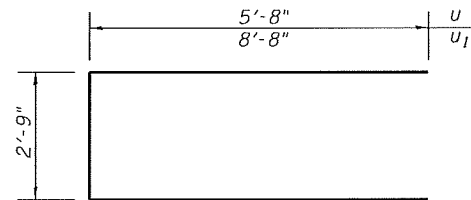
SECTION E-E



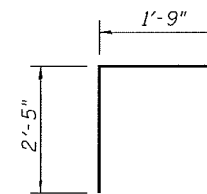
SECTION B-B



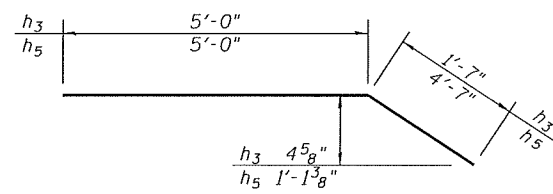
BAR a



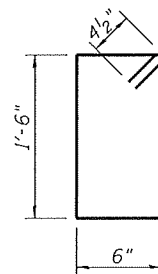
BARS u & u1



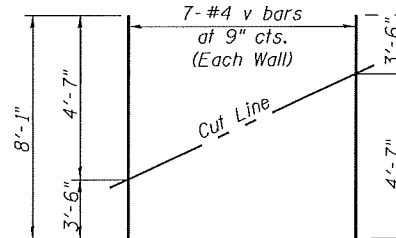
BAR d



BARS h3 & h5

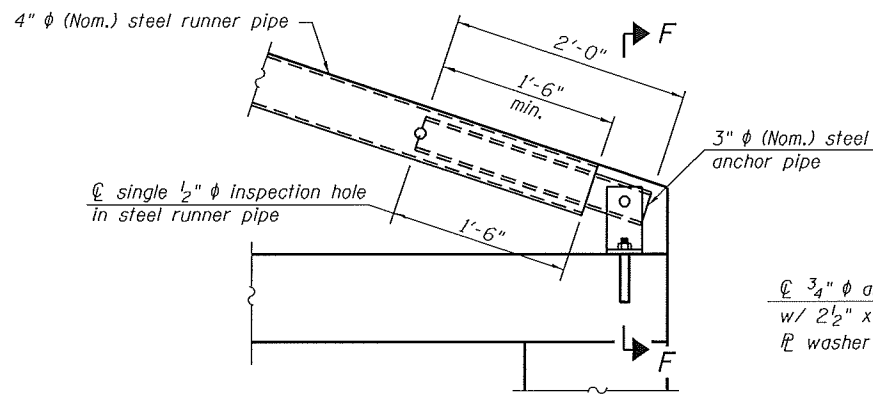


BAR s

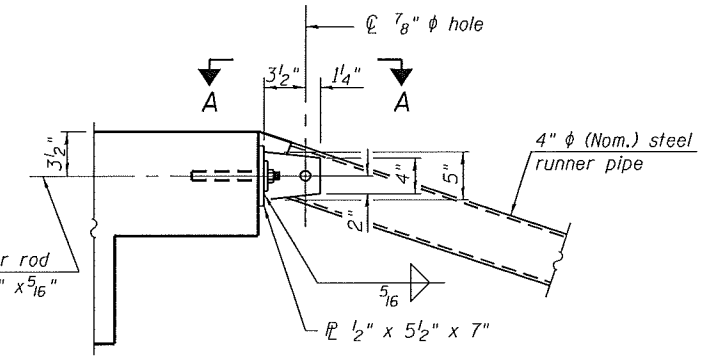


FIELD CUTTING DIAGRAM

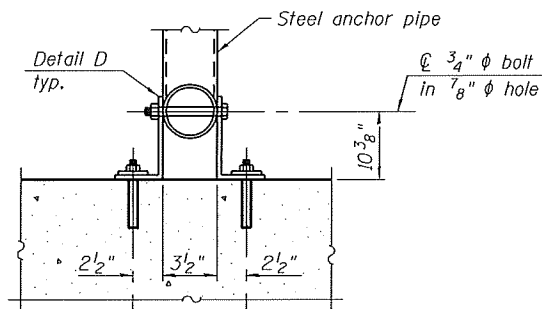
Order v bars full length. Cut as shown and use remainder of bars in opposite wall.



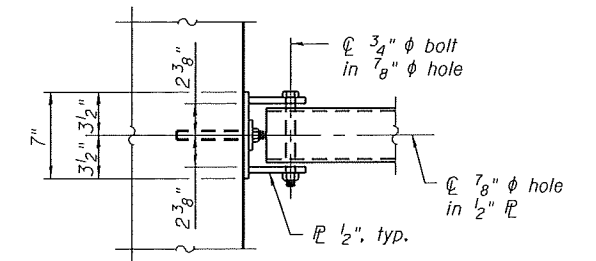
DETAIL A



DETAIL B



DETAIL D



VIEW A-A

3/4" hole in 7/8" hole for 5/8" anchor rods w/ 2 1/2" x 2 1/2" x 5/16" washer

SECTION F-F

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape |
|--------------------------|-----|------|---------|-------|
| a                        | 41  | #4   | 3'-9"   |       |
| a1                       | 12  | #4   | 2'-9"   |       |
| d                        | 6   | #4   | 4'-2"   |       |
| h                        | 14  | #4   | 5'-9"   |       |
| h1                       | 14  | #4   | 8'-9"   |       |
| h2                       | 6   | #6   | 2'-9"   |       |
| h3                       | 2   | #4   | 6'-7"   |       |
| h4                       | 2   | #4   | 3'-10"  |       |
| h5                       | 2   | #4   | 9'-7"   |       |
| h6                       | 2   | #4   | 6'-6"   |       |
| h7                       | 8   | #4   | 4'-6"   |       |
| s                        | 3   | #4   | 4'-9"   |       |
| u                        | 2   | #4   | 14'-1"  |       |
| u1                       | 2   | #4   | 20'-1"  |       |
| v                        | 14  | #4   | 8'-1"   |       |
| v1                       | 16  | #4   | 4'-8"   |       |
| Concrete Removal         |     |      | Cu. Yd. | 0.3   |
| Reinforcement Bars       |     |      | Pound   | 550   |
| Expansion Bolts 3/4 Inch |     |      | Each    | 8     |
| Concrete Box Culverts    |     |      | Cu. Yd. | 4.4   |
| Traversable Pipe Grate   |     |      | Foot    | 10    |

FILE NAME = 191+33.46-76789-003.dgn



USER NAME = jdnkeimann  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

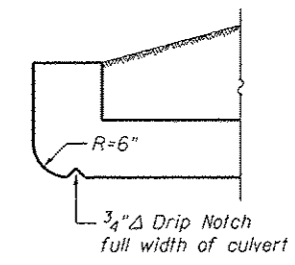
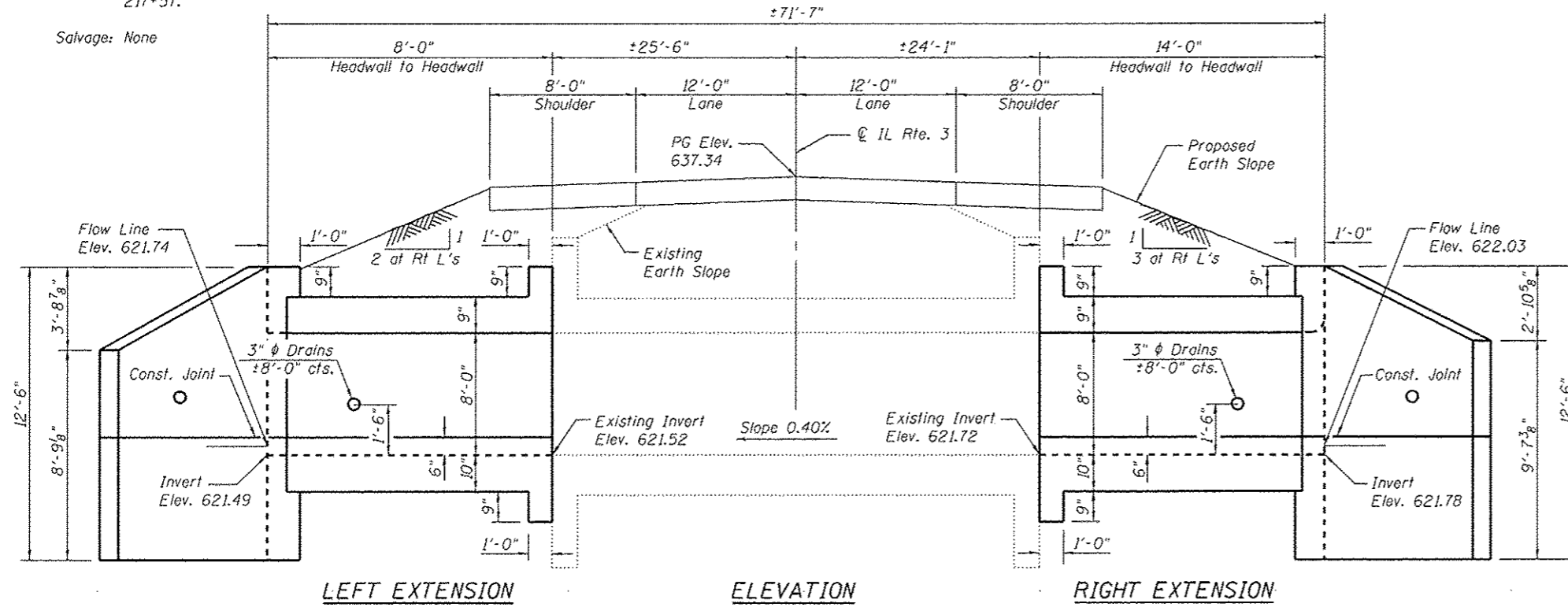
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 191+33.46

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 213       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |

Existing Structure: The existing structure, SN 042-2471, is a  $\pm 49'-7"$  long reinforced cast-in-place concrete box culvert with a  $8'-0"$  x  $8'-0"$  opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 217+57.



HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

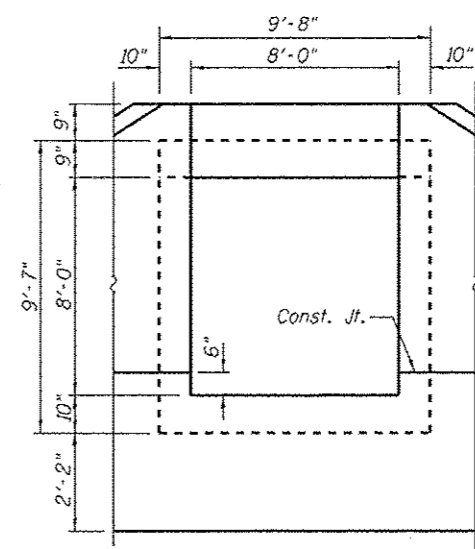
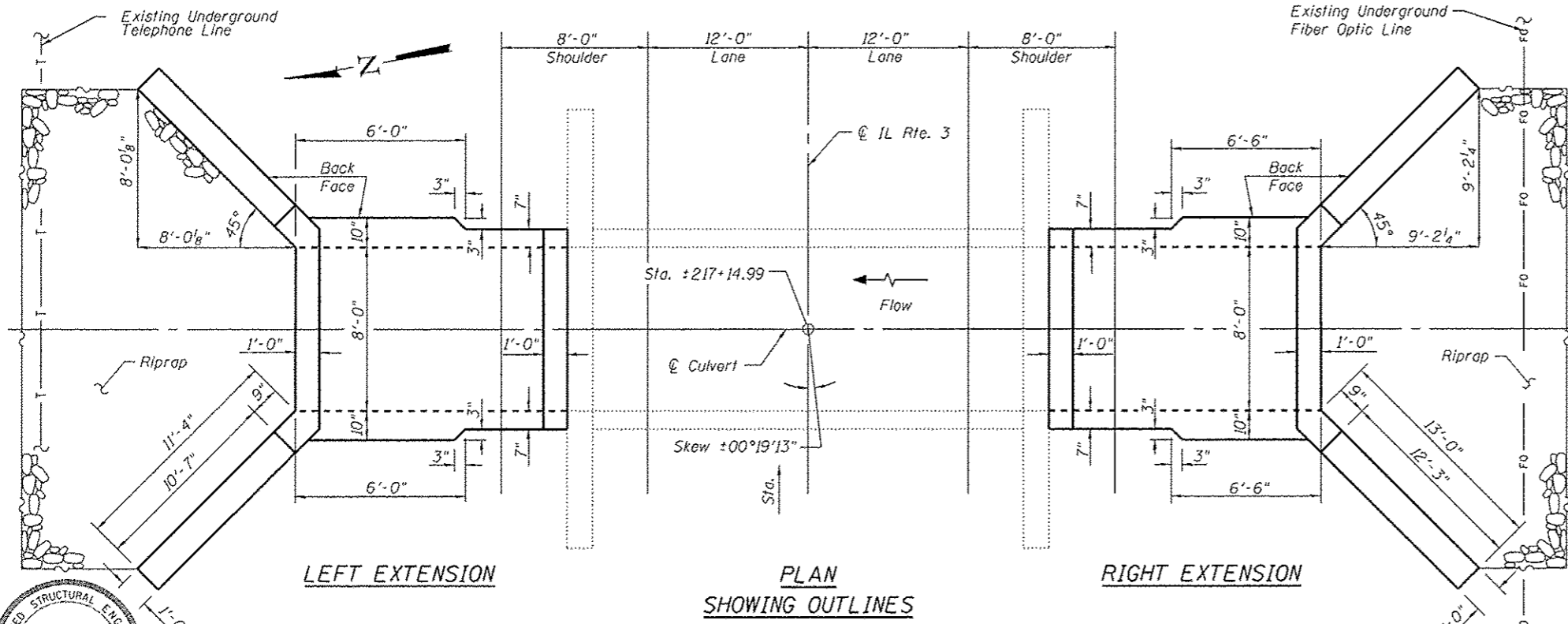
A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 2,062 psf.

For Riprap details and quantities see Roadway Plans.

Epoxy Crack Injection shall be according to the Standard Specifications Section 590.

For Total Bill of Material see sheet 3 of 4.



DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

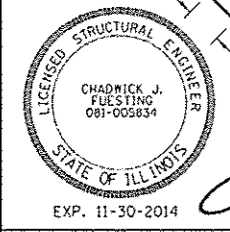
LOADING HS 20-44

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

DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |

GENERAL PLAN & ELEVATION  
ILLINOIS ROUTE 3  
F.A.S. RTE. 752 - SEC. 101-2RS-1  
JERSEY COUNTY  
STATION 217+14.99  
STRUCTURE NO. 042-2471

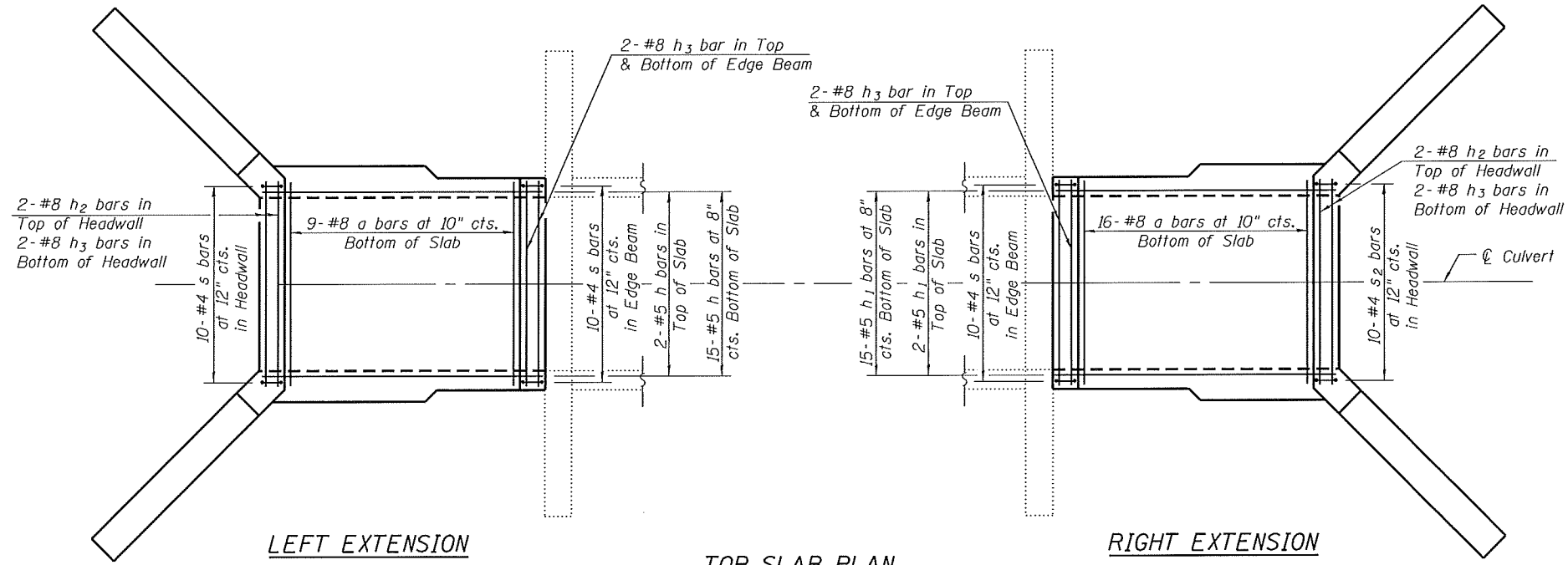


Checked Fuesting 8/8/14

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

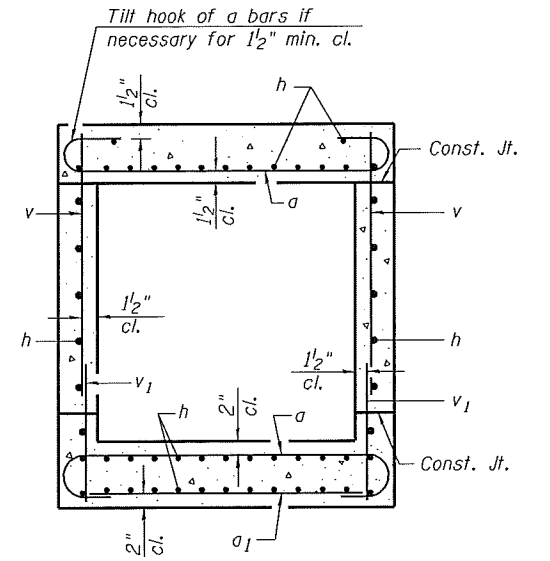
| USER NAME                              | DESIGNED | CHECKED | REVISIONS |
|----------------------------------------|----------|---------|-----------|
| jdukelmann                             | JD       | BB      |           |
| Illinois Design Firm Number 184.001670 |          |         |           |
| PLOT SCALE                             | DRAWN    | WS      |           |
| PLOT DATE                              | CHECKED  | CJF     |           |
|                                        |          |         |           |

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-----------|--------|--------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438          | 214       |
| CONTRACT NO. 76789 |           |        |              |           |

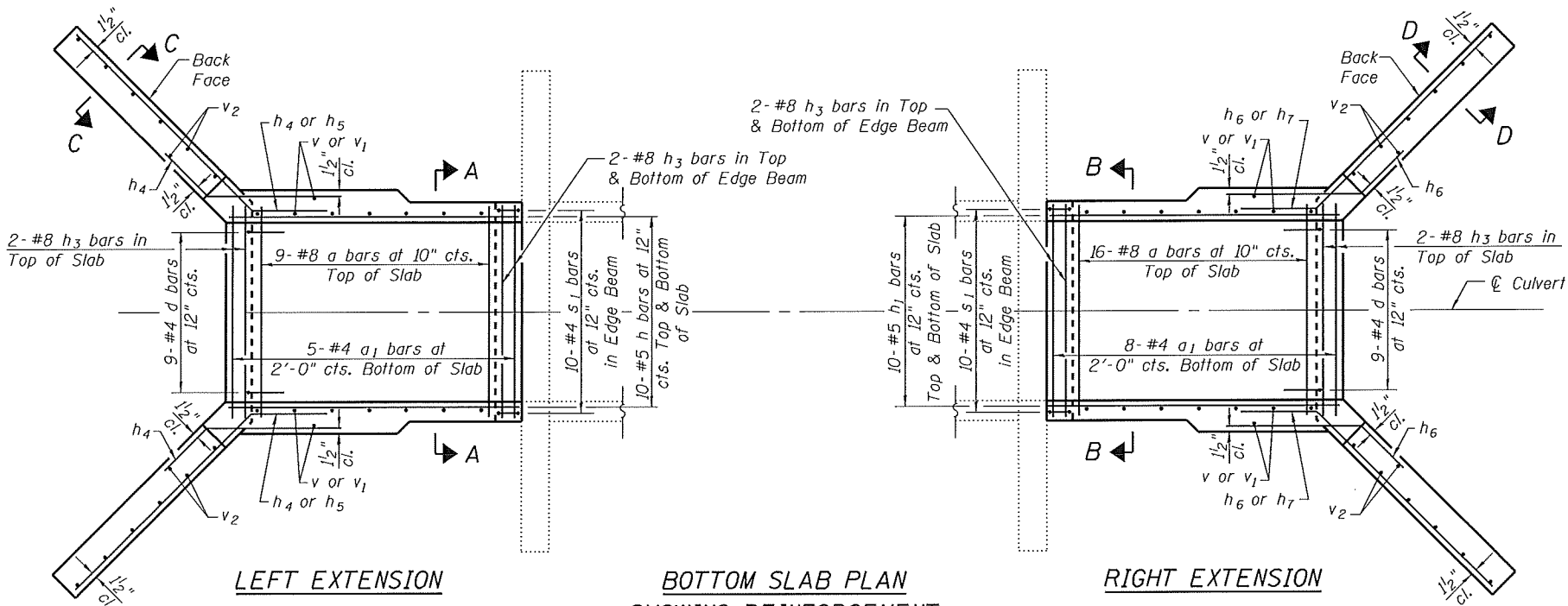


TOP SLAB PLAN  
SHOWING REINFORCEMENT

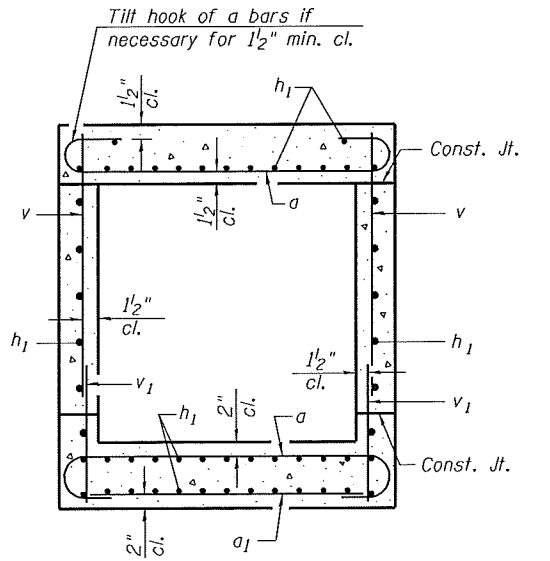
(v, v1, v2, h4, h5, h6 & h7 bars not shown for clarity)



SECTION A-A



BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT



SECTION B-B

Notes:  
For Section C-C see sheet 3 of 4.  
For Section D-D see sheet 3 of 4.  
For Bar Bends and Total Bill of Material see sheet 3 of 4.

FILE NAME = 217-14-95-76789-002.dgn



USER NAME = jclinkelmann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

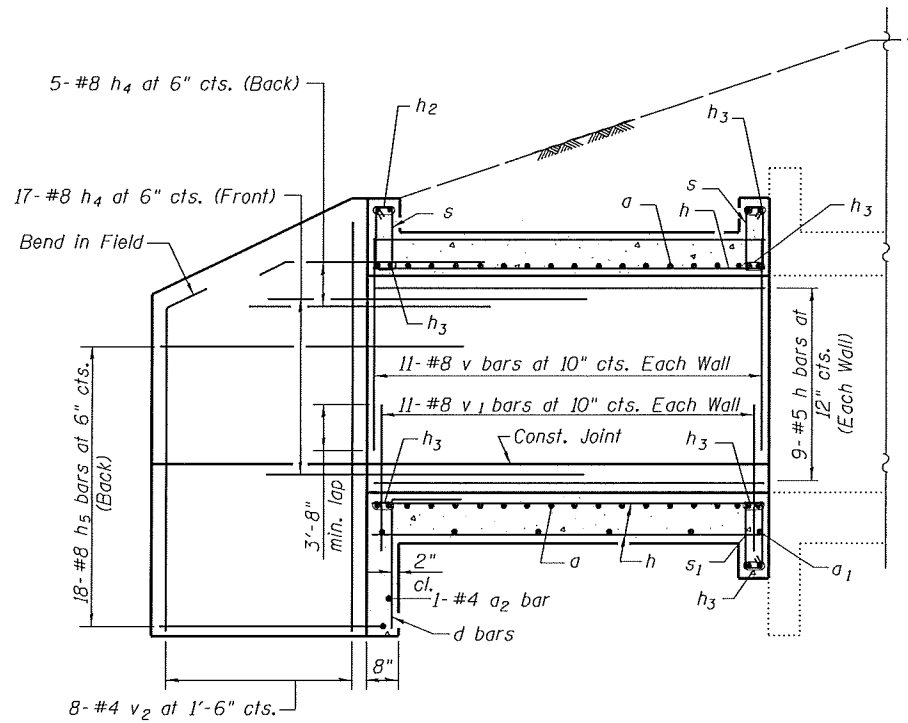
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REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

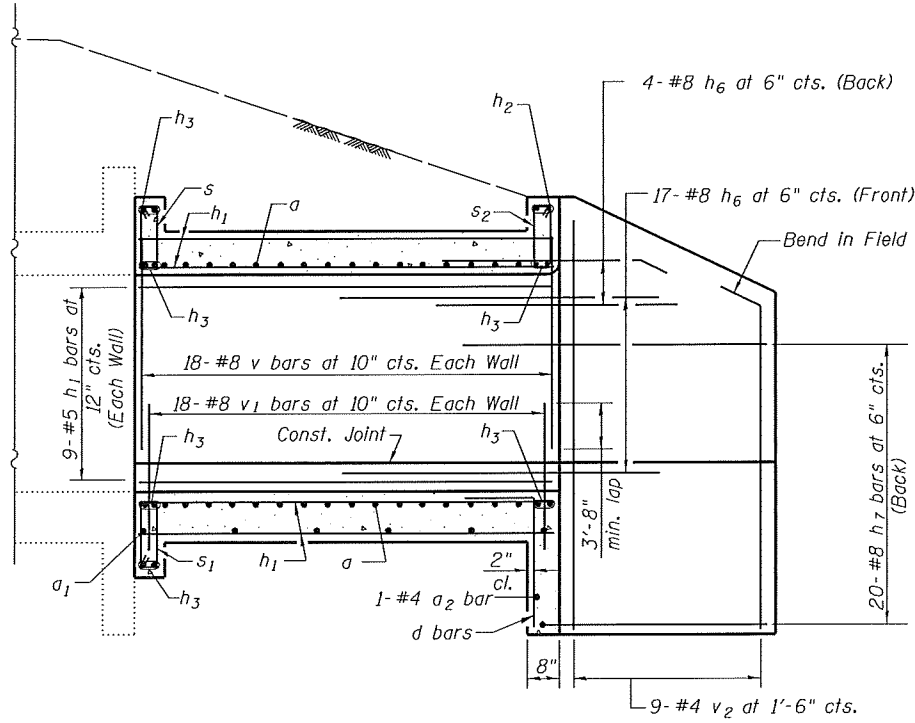
BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2471

SHEET NO. 2 OF 4 SHEETS

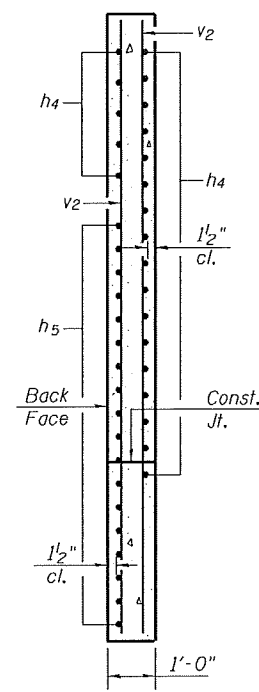
| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 215       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |



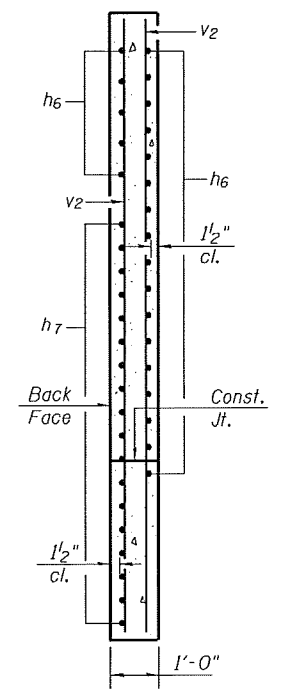
LEFT EXTENSION



RIGHT EXTENSION

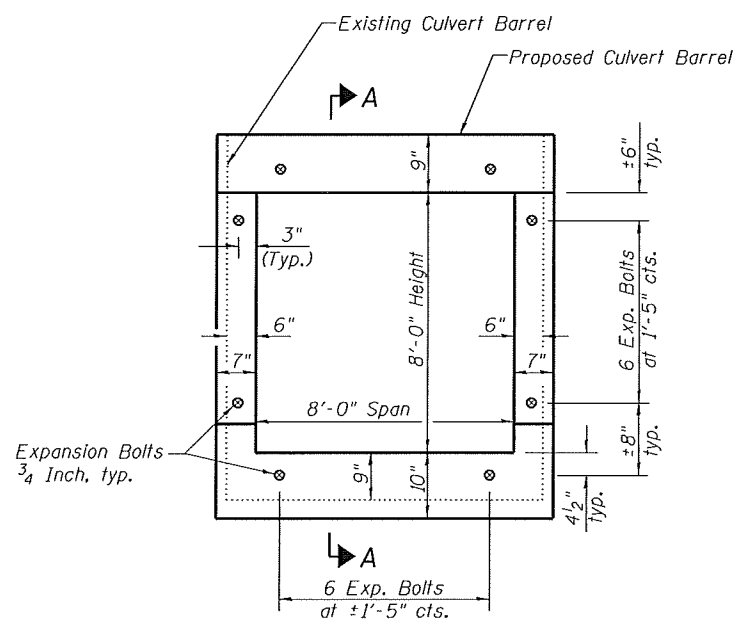


SECTION C-C

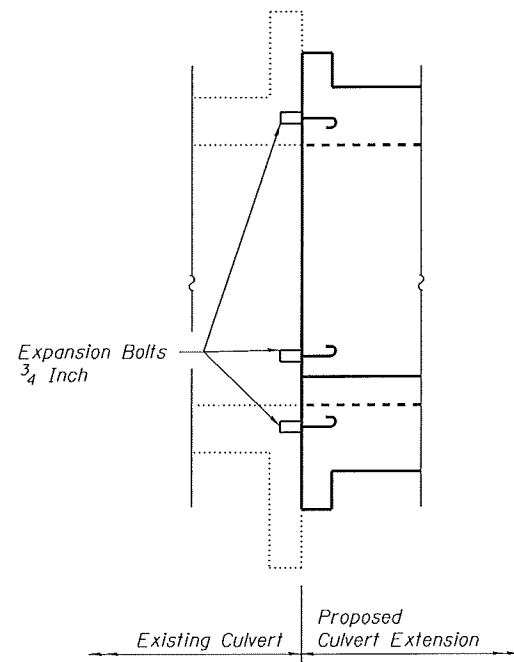


SECTION D-D

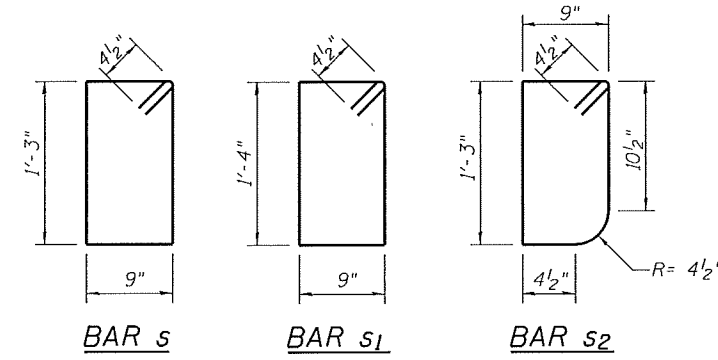
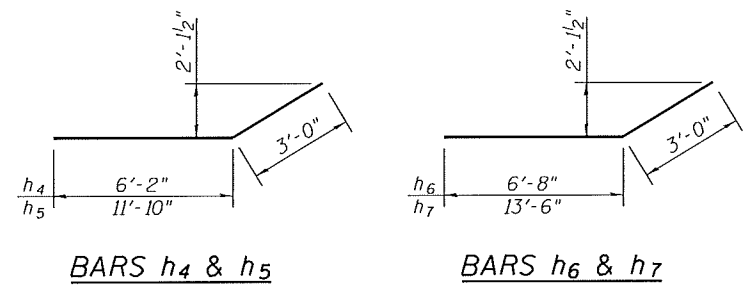
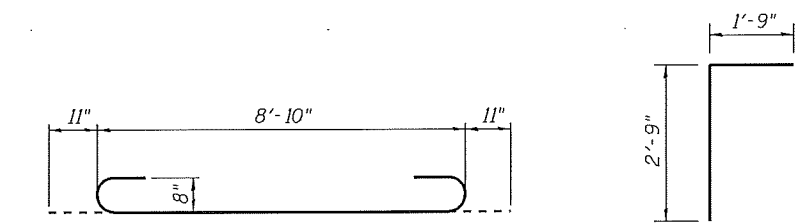
**ELEVATION**  
Dimensions at Rt. L's to  $\phi$  Roadway



EXPANSION BOLT LAYOUT



SECTION A-A



**TOTAL BILL OF MATERIAL**

| Bar                      | No. | Size | Length  | Shape  |
|--------------------------|-----|------|---------|--------|
| a                        | 50  | #8   | 10'-8"  |        |
| a1                       | 13  | #4   | 8'-10"  |        |
| a2                       | 2   | #4   | 9'-4"   |        |
| d                        | 18  | #4   | 4'-6"   |        |
| h                        | 55  | #5   | 7'-9"   |        |
| h1                       | 55  | #5   | 13'-9"  |        |
| h2                       | 4   | #8   | 8'-8"   |        |
| h3                       | 24  | #8   | 8'-11"  |        |
| h4                       | 44  | #8   | 9'-2"   |        |
| h5                       | 36  | #8   | 14'-10" |        |
| h6                       | 42  | #8   | 9'-8"   |        |
| h7                       | 40  | #8   | 16'-6"  |        |
| s                        | 30  | #4   | 4'-9"   |        |
| s1                       | 20  | #4   | 4'-11"  |        |
| s2                       | 10  | #4   | 4'-7"   |        |
| v                        | 62  | #8   | 8'-0"   |        |
| v1                       | 62  | #8   | 5'-0"   |        |
| v2                       | 38  | #4   | 12'-2"  |        |
| Reinforcement Bars       |     |      | Pound   | 11,470 |
| Expansion Bolts 3/4 Inch |     |      | Each    | 48     |
| Concrete Box Culverts    |     |      | Cu. Yd. | 43.1   |
| Epoxy Crack Injection    |     |      | Foot    | 26     |

FILE NAME = 217-14-99-76785-003.dgn



USER NAME = jdrinke1mann  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

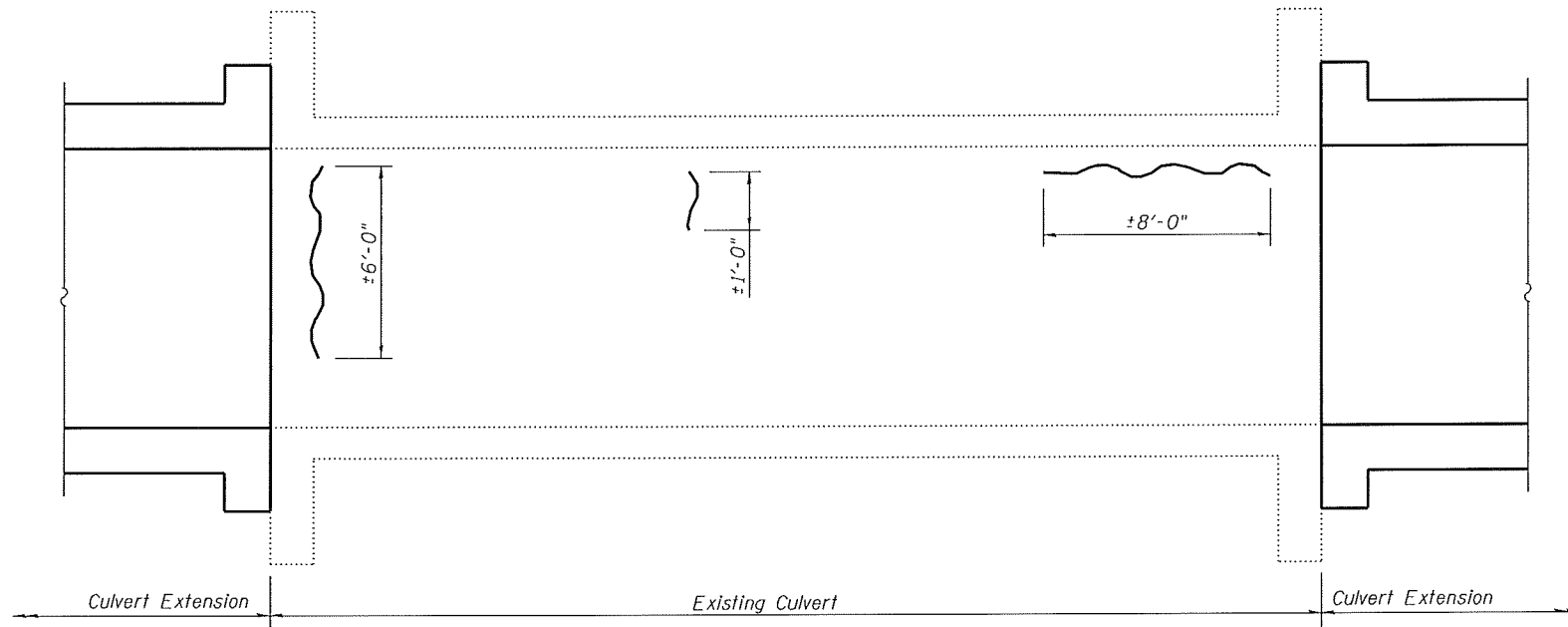
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

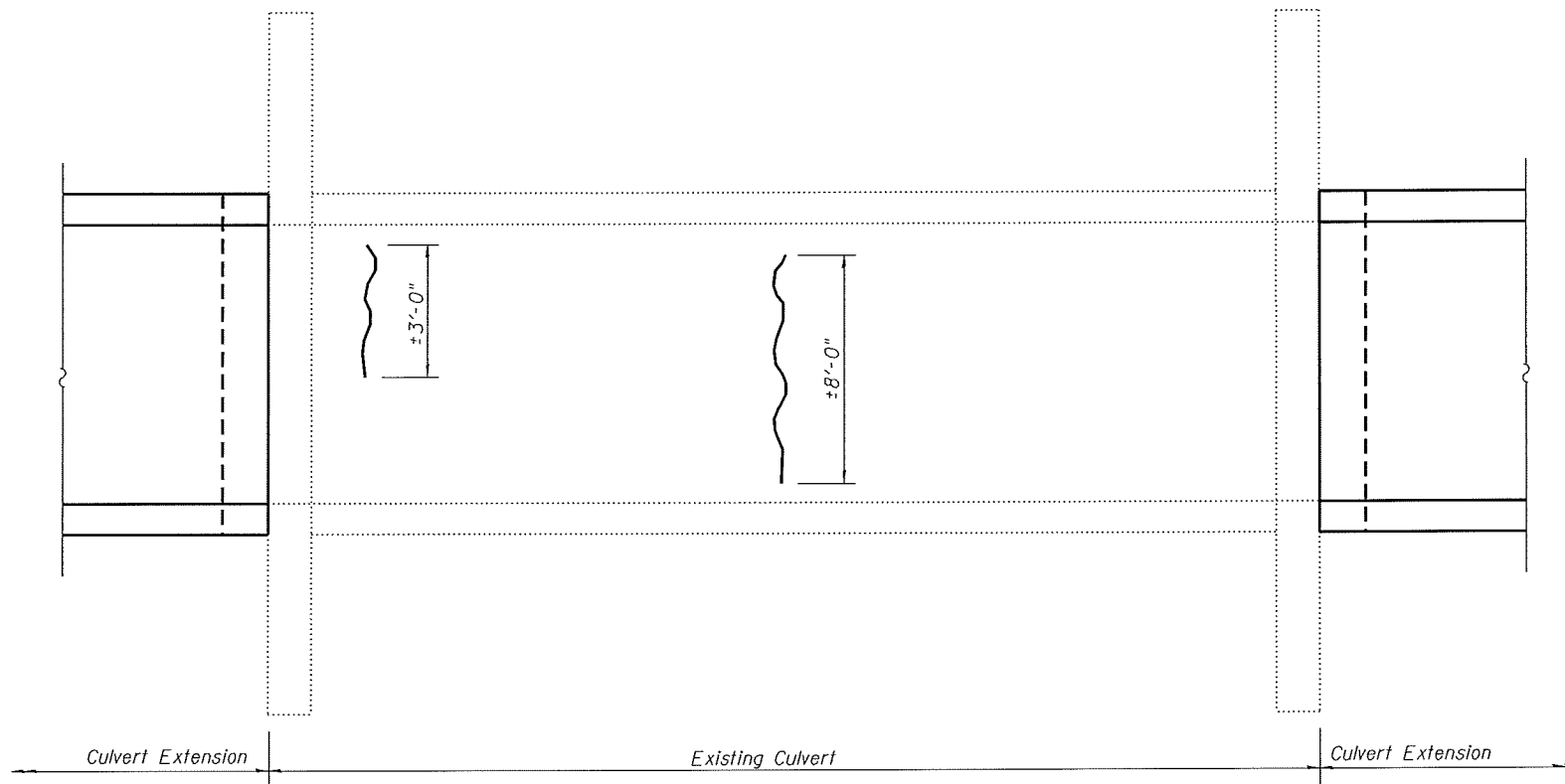
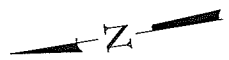
BOX CULVERT EXTENSION DETAILS  
 STRUCTURE NUMBER 042-2471

SHEET NO. 3 OF 4 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 216       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



**ELEVATION**  
(Showing Inside Face of East Wall)



**PLAN**  
(Showing Bottom of Top Slab)

*Note:*  
The limits of Epoxy Crack Injection shown are approximate. The limits of Epoxy Crack Injection may vary in the field. Changes in the quantity of Epoxy Crack Injection shall be approved by the Engineer.

~~~~~ Indicates Epoxy Crack Injection Required

FILE NAME = 217+14.99-76789-004.dgn



| | | |
|--|---------------|-----------|
| USER NAME = jdrinkelmann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 104,001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

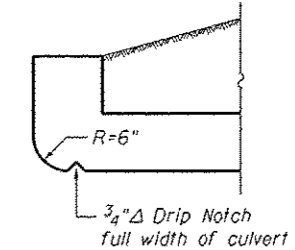
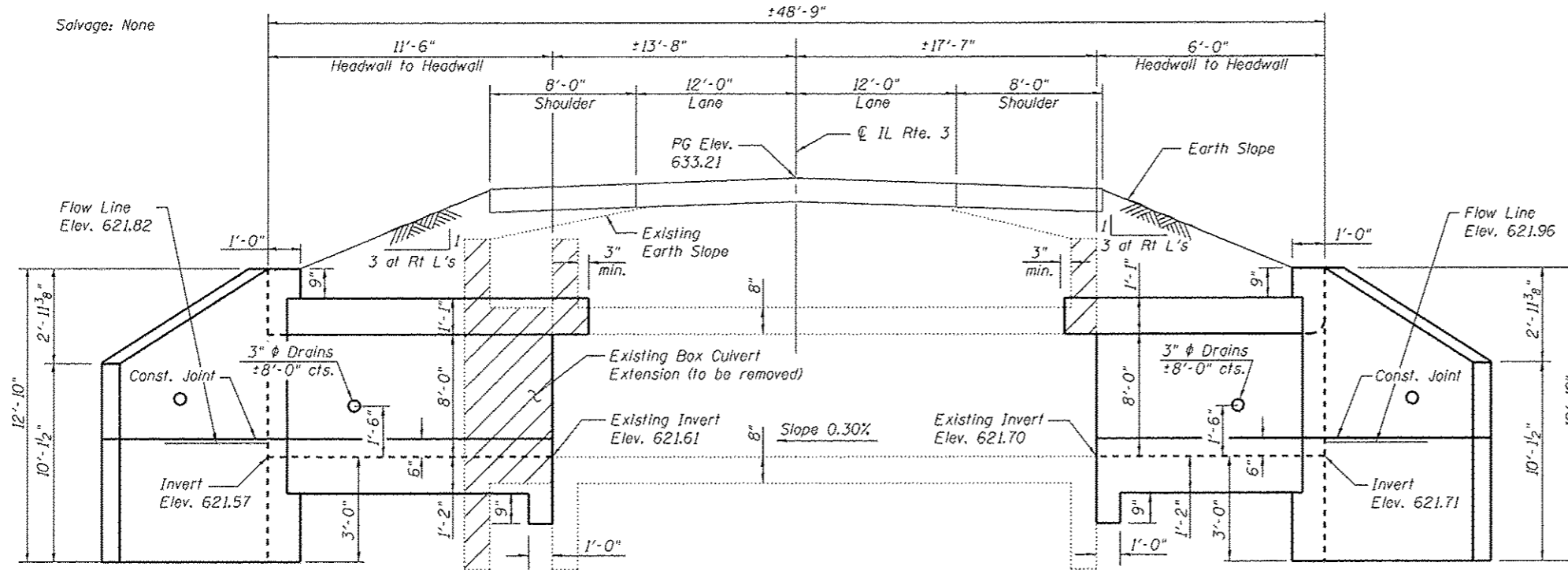
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING BOX CULVERT REPAIR DETAILS
STRUCTURE NUMBER 042-2471**

SHEET NO. 4 OF 4 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 217 |
| CONTRACT NO. 76789 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

Existing Structure: The existing structure, SN 042-2472, is a $\pm 31'-3"$ long reinforced cast-in-place concrete box culvert with a $10'-0"$ x $8'-0"$ opening. The original structure was constructed as S.B.I. Route 109, Construction Section 101-A at the original station of 234+60.



HEADWALL DETAILS AT UPSTREAM END

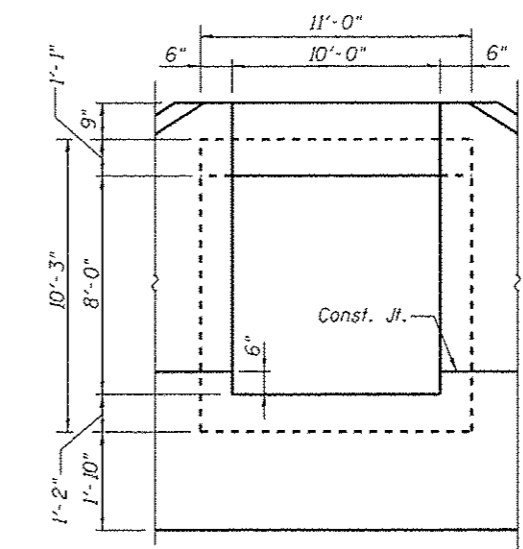
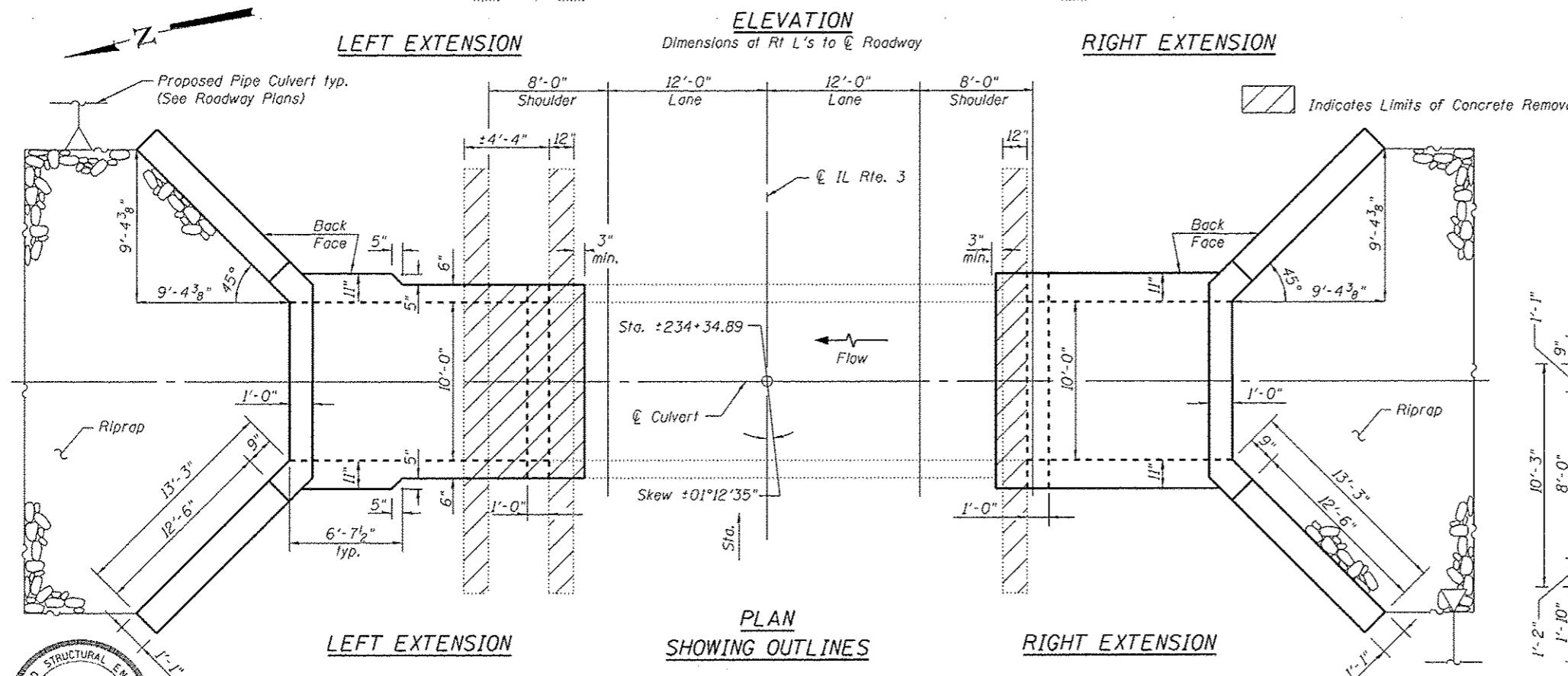
GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site. A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls. Calculated max. soil pressure under barrel = 1,778 psf. For Riprap details and quantities see Roadway Plans. For Total Bill of Material see sheet 3 of 3.



BOX CULVERT END ELEVATION (Dimensions Shown at Rt L's)

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

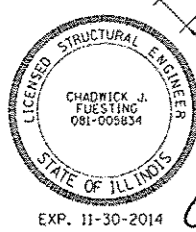
LOADING HS 20-44

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

DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|-----------------------|--------------------|
| $f_y = 40,000$ psi | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi | $f'_c = 3,500$ psi |

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 3
F.A.S. RTE. 752 - SEC. 101-2RS-1
JERSEY COUNTY
STATION 234+34.89
STRUCTURE NO. 042-2472



Check Tuesday 8/16/14

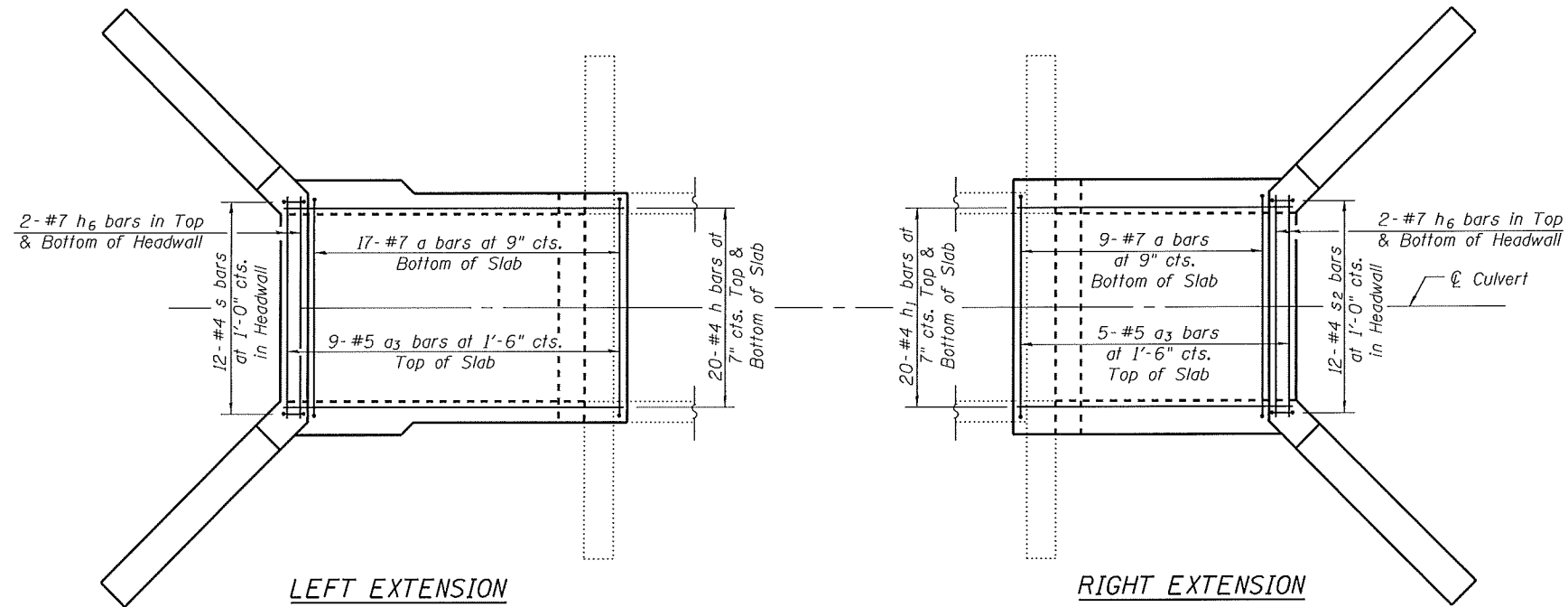
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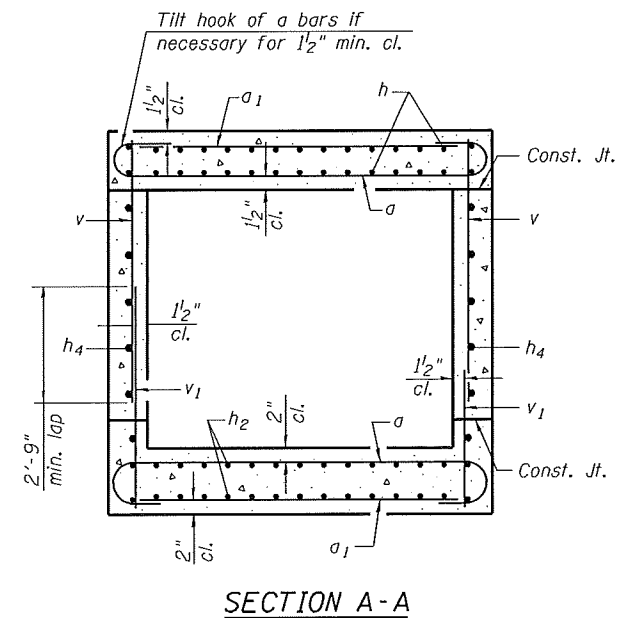
| | | |
|--|---------------|-----------|
| USER NAME = jdkinkmann | DESIGNED = JD | REVISIONS |
| Illinois Design Firm Number 184.001670 | CHECKED = BB | REVISIONS |
| PLOT SCALE = | DRAWN = WS | REVISIONS |
| PLOT DATE = 8/8/2014 | CHECKED = CJF | REVISIONS |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

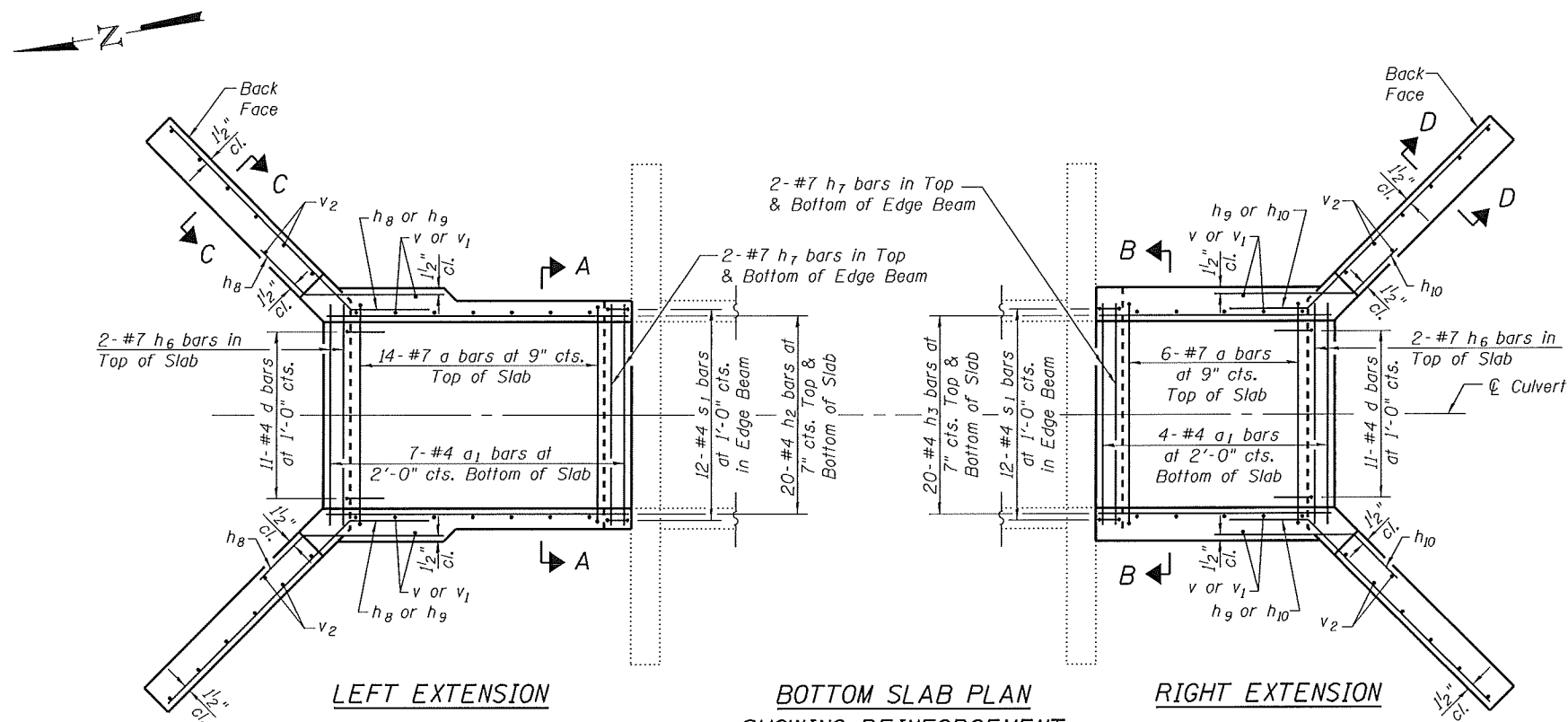
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 218 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |



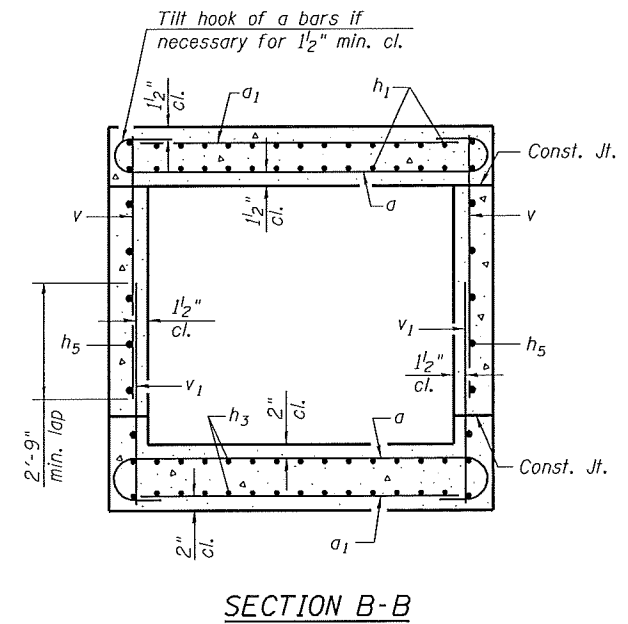
**TOP SLAB PLAN
SHOWING REINFORCEMENT**
(v, v₁, h₈ & h₉ bars not shown for clarity)



SECTION A-A



**BOTTOM SLAB PLAN
SHOWING REINFORCEMENT**



SECTION B-B

Notes:
For Section C-C see sheet 3 of 3.
For Section D-D see sheet 3 of 3.
For Bar Bends and Total Bill of Material see sheet 3 of 3.

FILE NAME = 234*34*89-76789-002.dgn



| | | |
|--|---------------|-----------|
| USER NAME = jdrinkeimann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

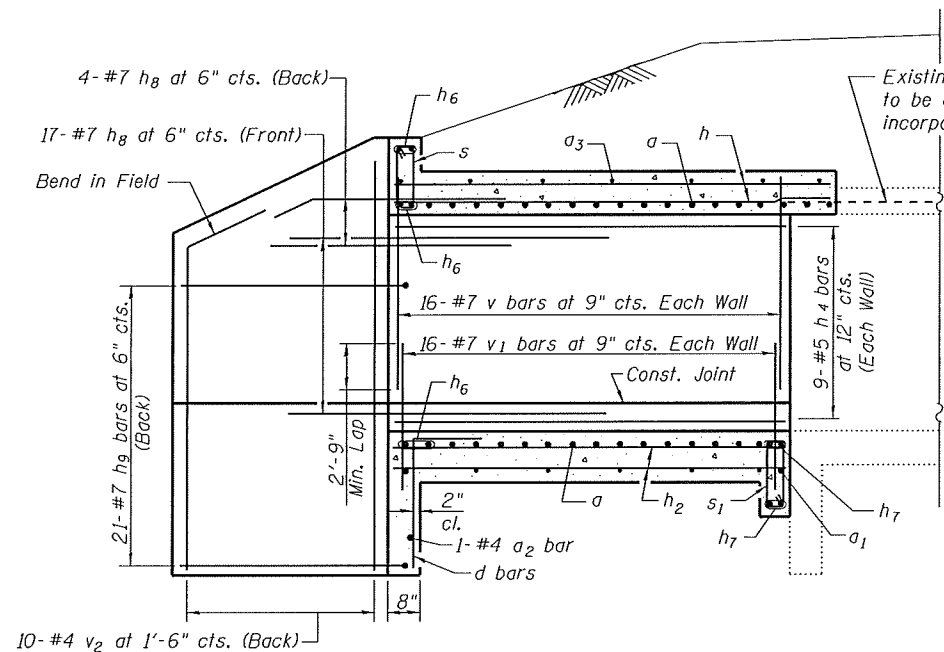
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT EXTENSION DETAILS
STRUCTURE NUMBER 042-2472**

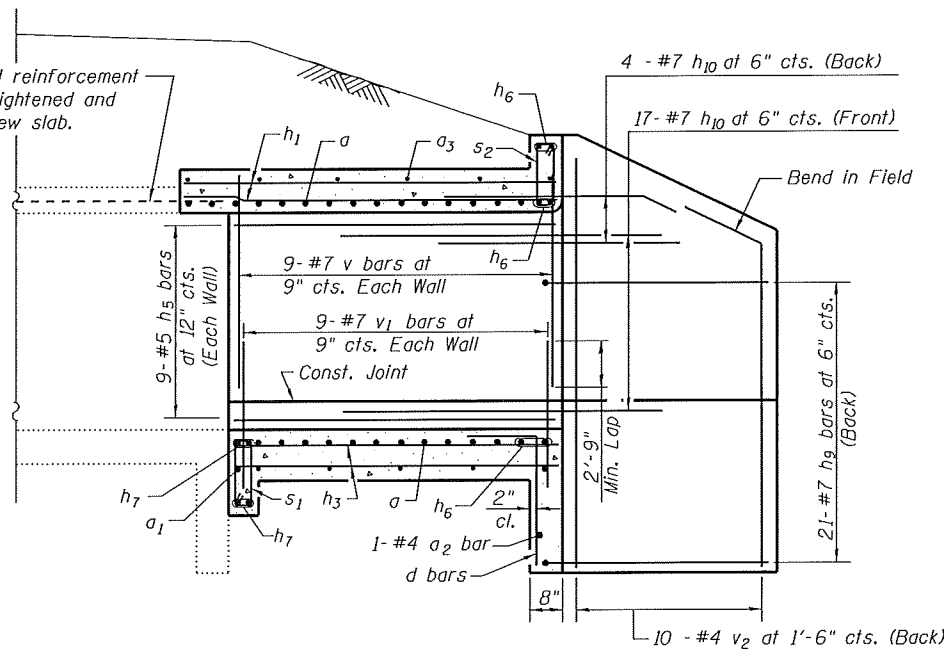
SHEET NO. 2 OF 3 SHEETS

| | | | | |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 752 | 101-2RS-1 | JERSEY | 438 | 219 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

Note:
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost shall be included in Concrete Removal.

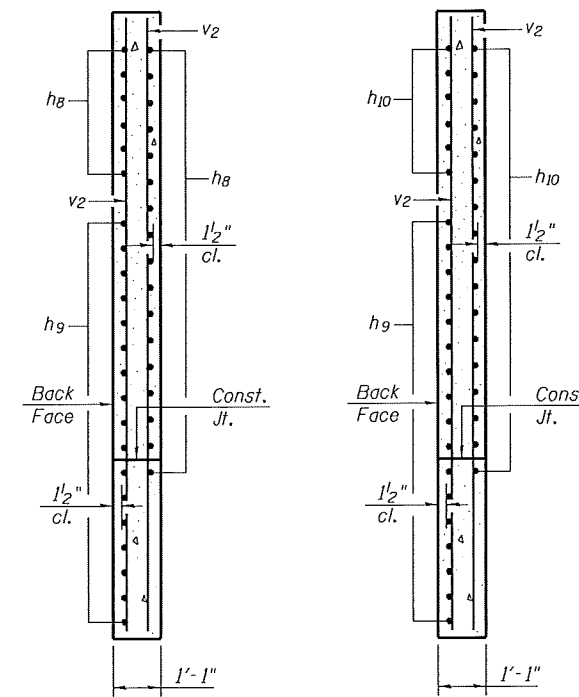


LEFT EXTENSION



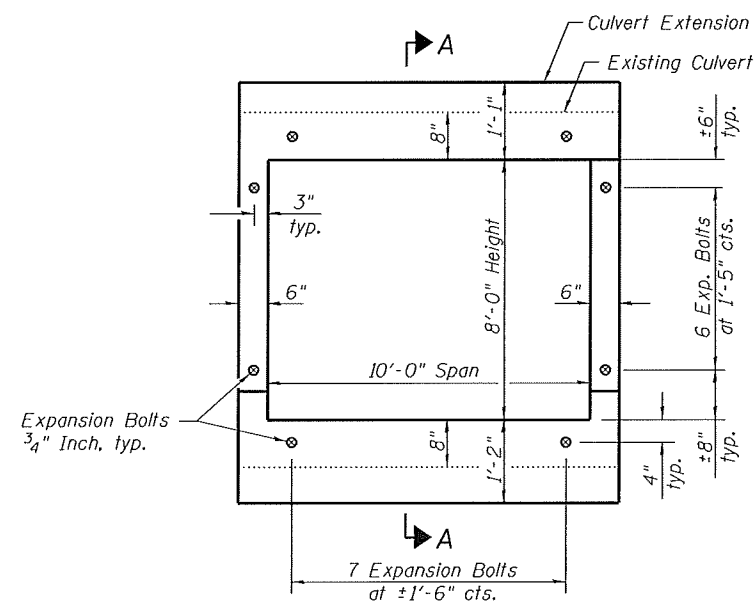
RIGHT EXTENSION

ELEVATION



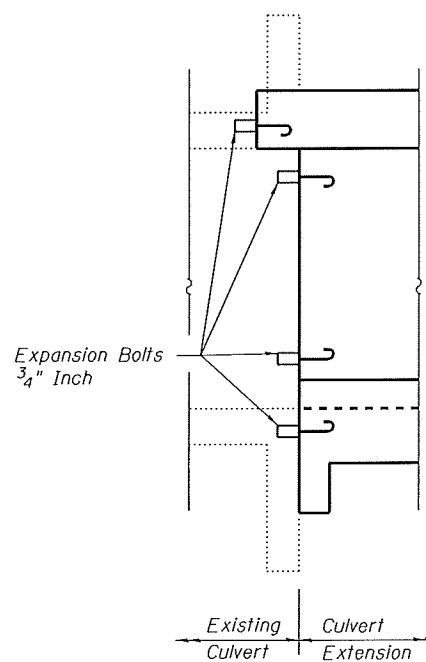
SECTION C-C

SECTION D-D

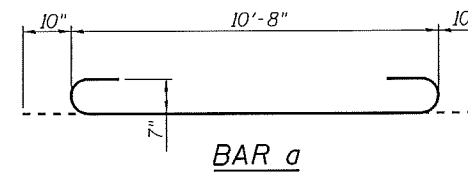


EXPANSION BOLT LAYOUT

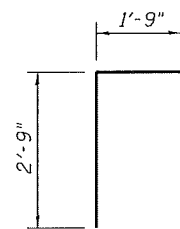
Note:
Expansion Bolts shall be 3/4\"/>



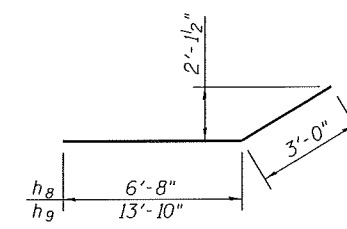
SECTION A-A



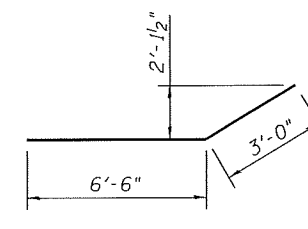
BAR a



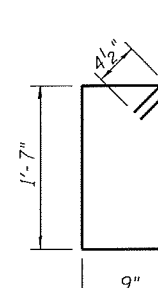
BAR d



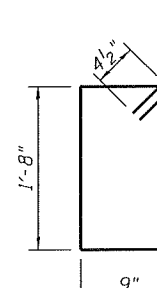
BARS h8 & h9



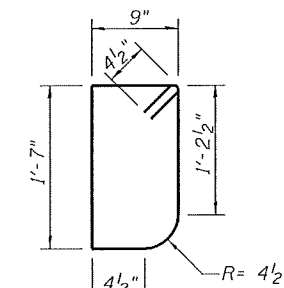
BAR h10



BAR s



BAR s1



BAR s2

TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|-------------------------|-----|------|---------|-------|
| a | 46 | #7 | 12'-4" | U |
| a1 | 11 | #4 | 10'-8" | — |
| a2 | 2 | #4 | 11'-7" | — |
| a3 | 14 | #5 | 10'-8" | — |
| d | 22 | #4 | 4'-6" | L |
| h | 40 | #4 | 12'-6" | — |
| h1 | 40 | #4 | 7'-0" | — |
| h2 | 40 | #4 | 11'-2" | — |
| h3 | 40 | #4 | 5'-8" | — |
| h4 | 18 | #5 | 11'-3" | — |
| h5 | 18 | #5 | 5'-9" | — |
| h6 | 12 | #7 | 10'-11" | — |
| h7 | 8 | #7 | 10'-8" | — |
| h8 | 42 | #7 | 9'-8" | — |
| h9 | 84 | #7 | 16'-10" | — |
| h10 | 42 | #7 | 9'-6" | — |
| s | 12 | #4 | 5'-5" | I |
| s1 | 24 | #4 | 5'-7" | I |
| s2 | 12 | #4 | 5'-3" | I |
| v | 54 | #7 | 8'-4" | — |
| v1 | 54 | #7 | 4'-5" | — |
| v2 | 44 | #4 | 12'-6" | — |
| Reinforcement Bars | | | Pound | 9700 |
| Concrete Removal | | | Cu. Yd. | 34.0 |
| Expansion Bolts 3/4\"/> | | | | |

FILE NAME = 234-34-89-76789-003.dgn



| | | |
|--|---------------|-----------|
| USER NAME = jdrinkeImann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
STRUCTURE NUMBER 042-2472

SHEET NO. 3 OF 3 SHEETS

| | | | | |
|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752 | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 220 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

Existing Structure: The existing structure is a ±35'-7" long reinforced cast-in-place concrete box culvert with a 2'-6" x 2'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 242+81.

Salvage: None

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

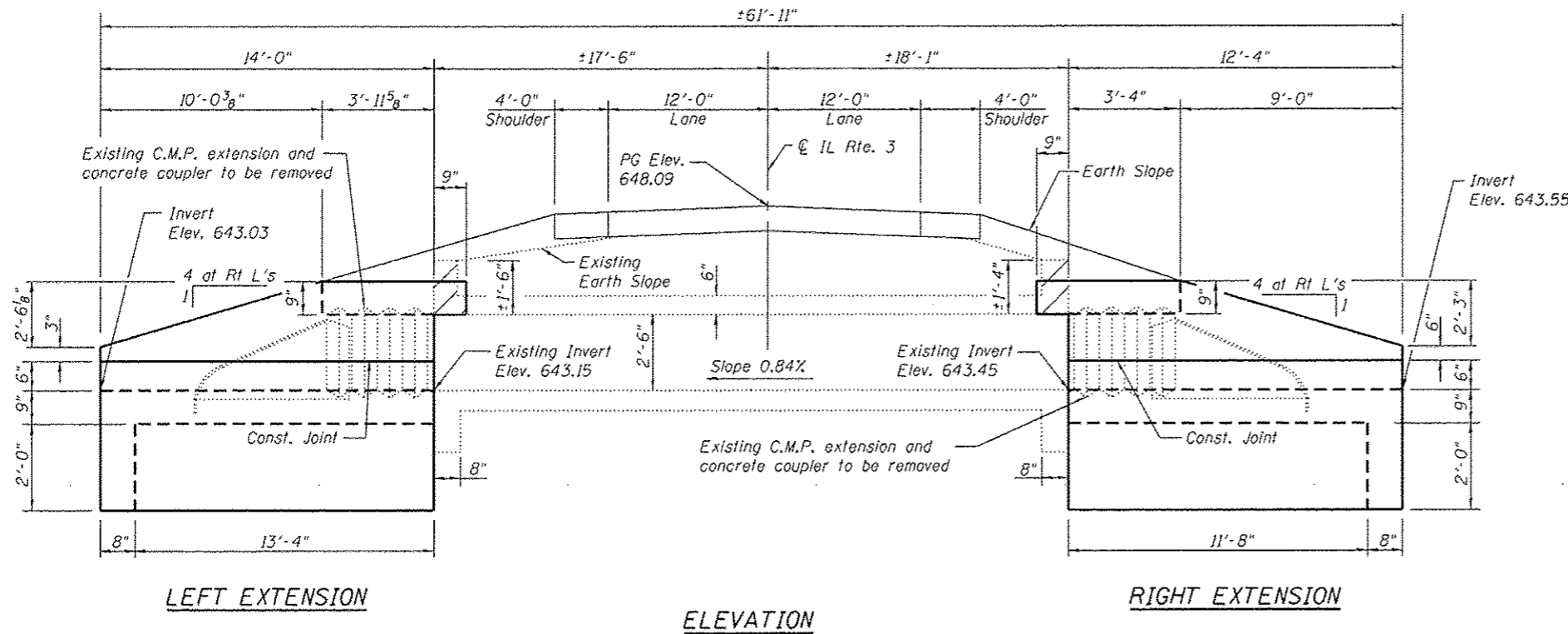
For Aggregate Ditch details and quantities see Roadway Plans. Calculated max. soil pressure under barrel = 3,100 psf.

Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.

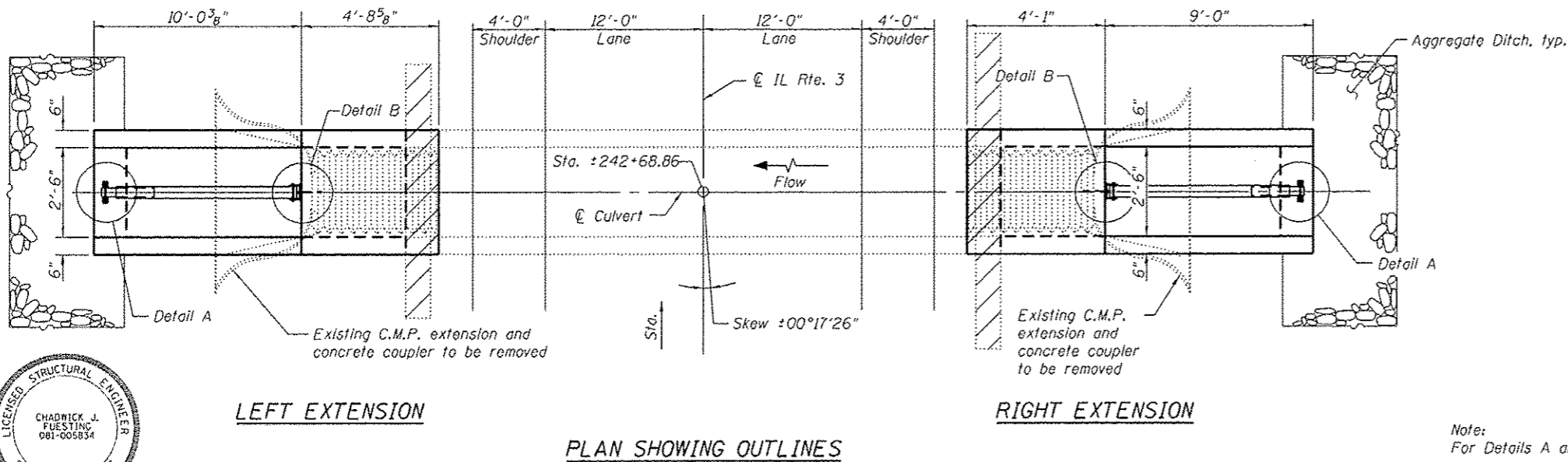
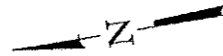
For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completed filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Gate.



Indicates Limits of Concrete Removal



DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

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

DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |

GENERAL PLAN & ELEVATION

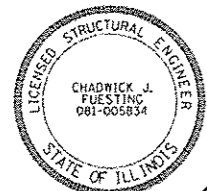
ILLINOIS ROUTE 3

F.A.S. RTE. 752 - SEC. 101-2RS-1

JERSEY COUNTY

STATION 242+68.86

Note:
For Details A and B see sheet 3 of 3.



EXP. 11-30-2014

Constructing 6/12/14

FILE NAME = 242+68.86-76789-021.dgn



USER NAME = jdukeimann
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 8/8/2014

DESIGNED - JD
CHECKED - BB
DRAWN - WS
CHECKED - CJF

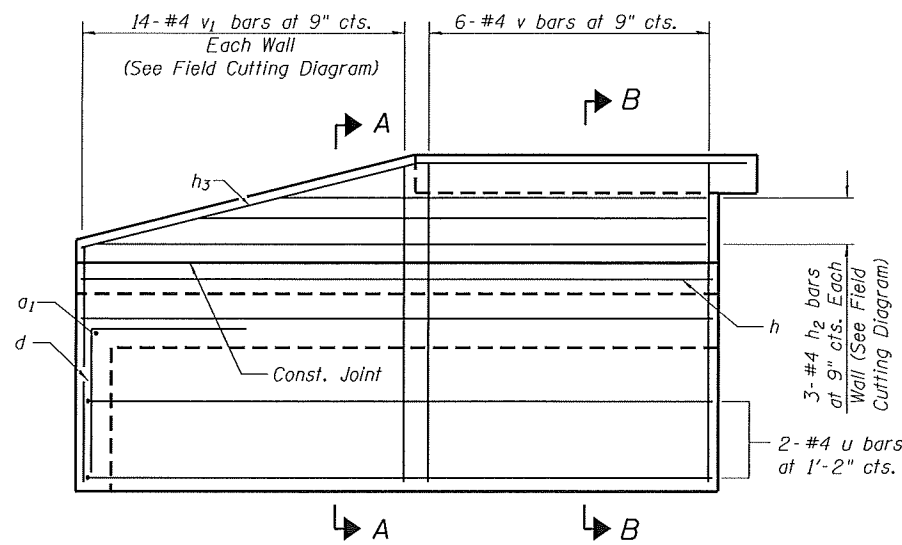
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

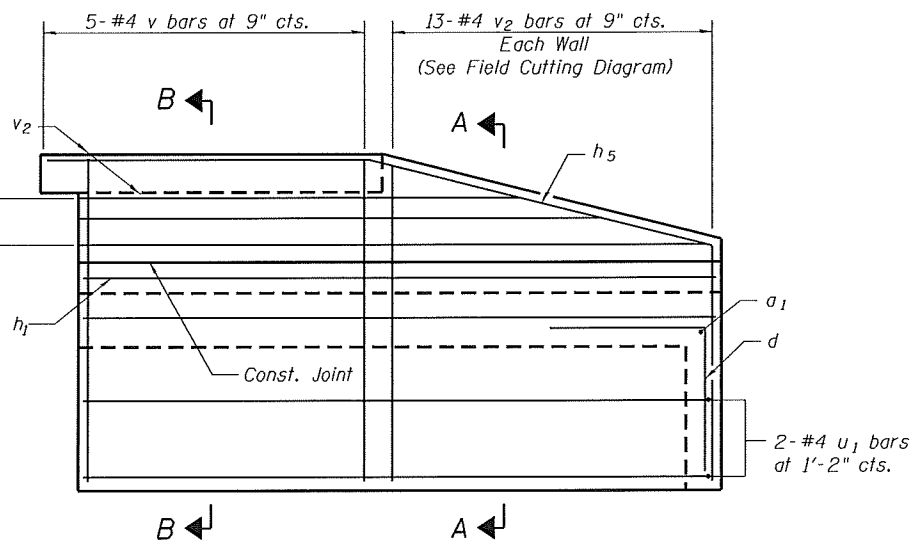
SHEET NO. 1 OF 3 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-----------|--------|--------------|--------------------|
| 752 | 101-2RS-1 | JERSEY | 438 | 221 |
| | | | | CONTRACT NO. 76789 |

ILLINOIS FED. AID PROJECT

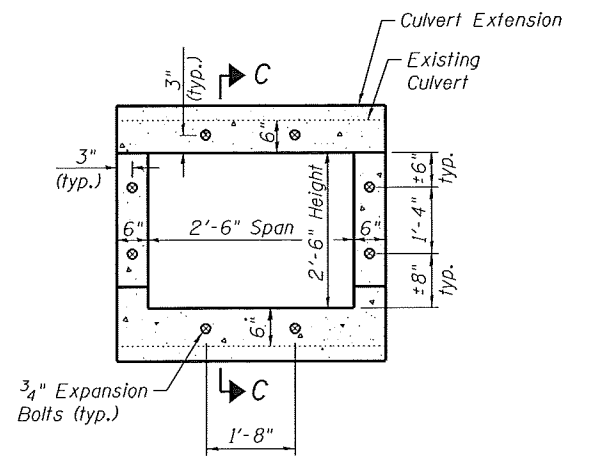


LEFT EXTENSION



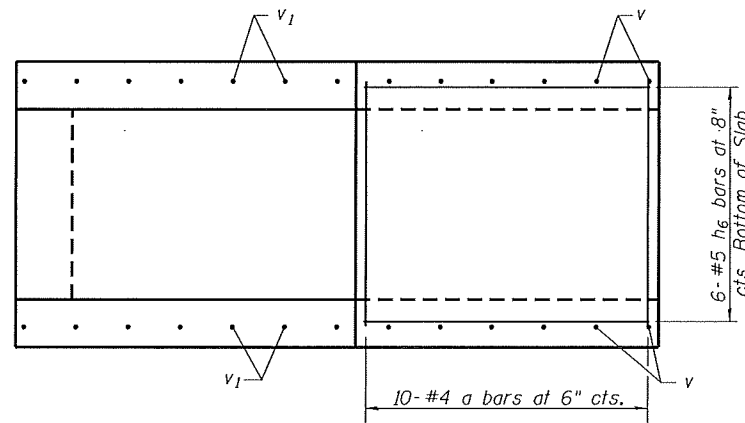
RIGHT EXTENSION

ELEVATION
(Showing Reinforcement)

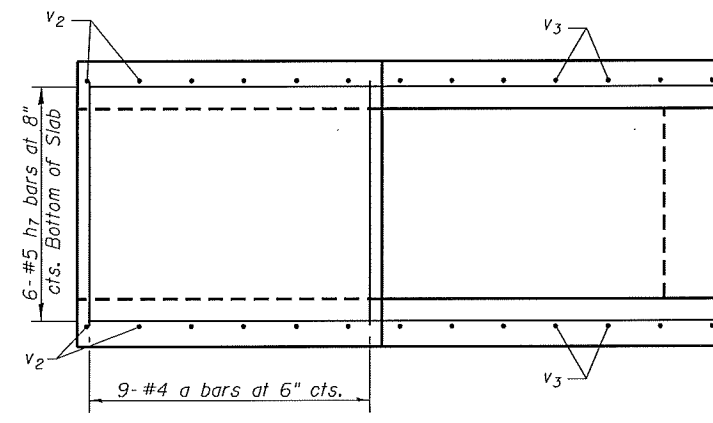


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

EXPANSION BOLT LAYOUT

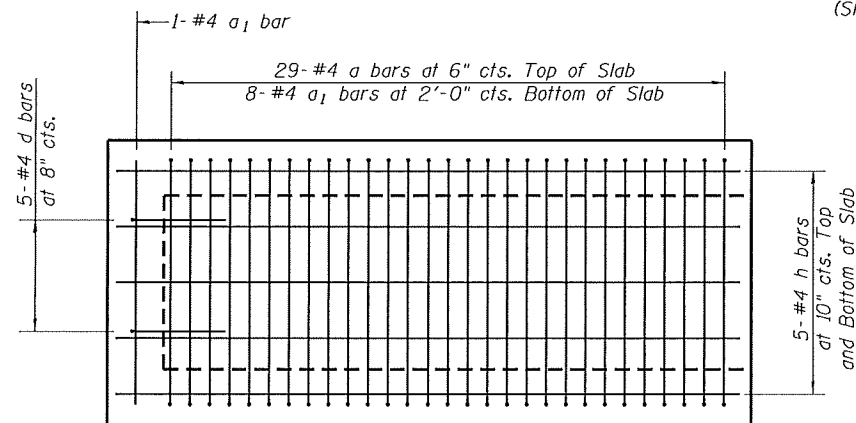


LEFT EXTENSION

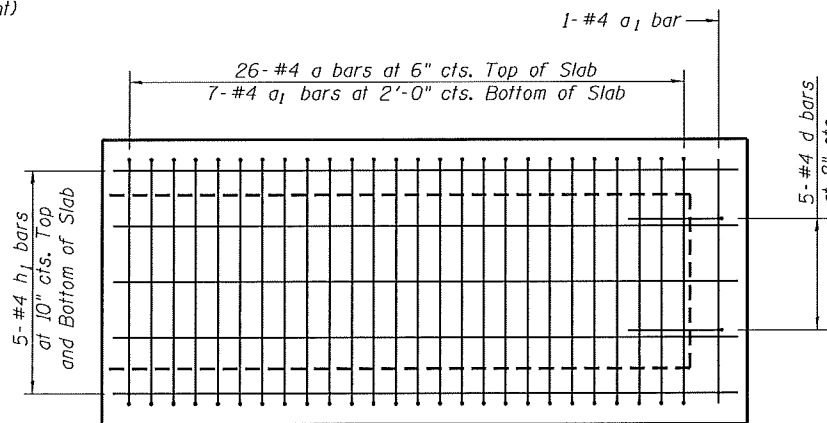


RIGHT EXTENSION

TOP SLAB
(Showing Reinforcement)

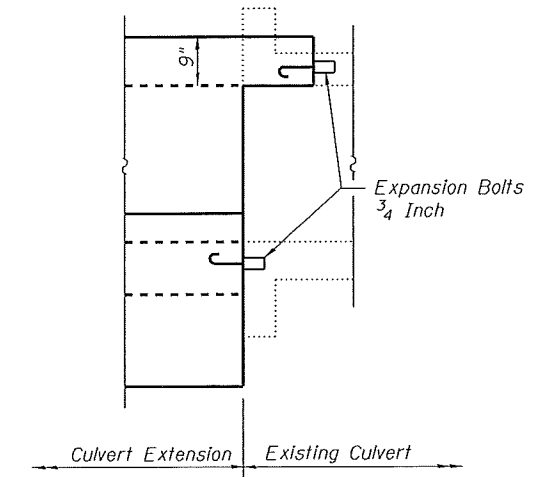


LEFT EXTENSION



RIGHT EXTENSION

BOTTOM SLAB
(Showing Reinforcement)



SECTION C-C

Note:
For Sections A-A and B-B, see sheet 3 of 3.
For Bar Bends and Total Bill of Material, see sheet 3 of 3.

FILE NAME = 242+68.86-76789-002.dgn



| | | |
|--|---------------|-----------|
| USER NAME = jdirkelmann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

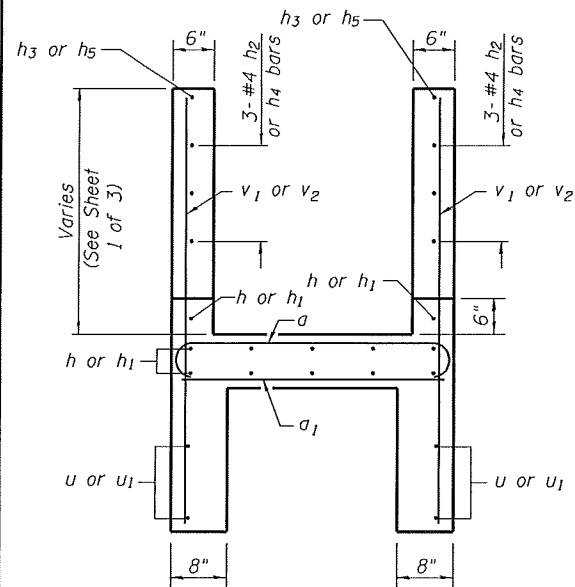
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS,
STATION 242+68.86

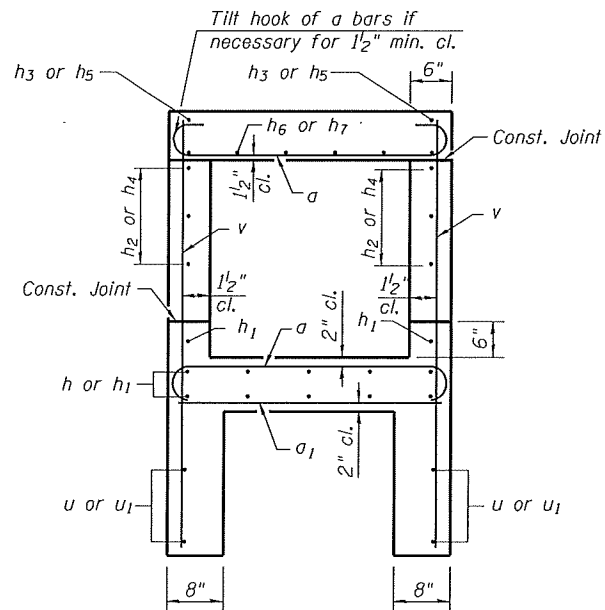
SHEET NO. 2 OF 3 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 222 |
| ILLINOIS FED. AID PROJECT | | | | |

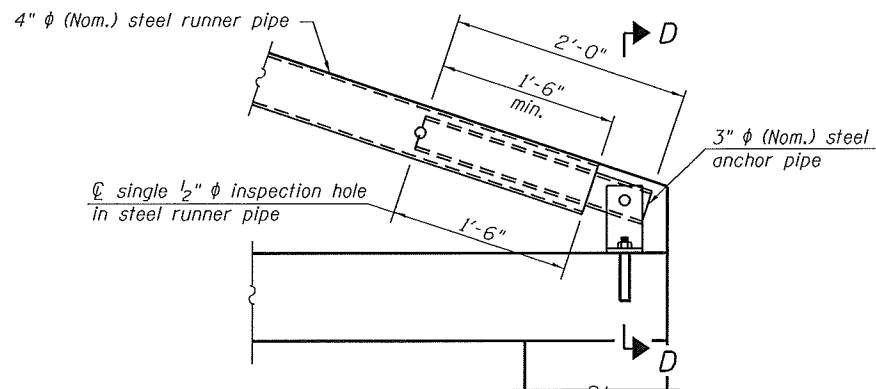
CONTRACT NO. 76789



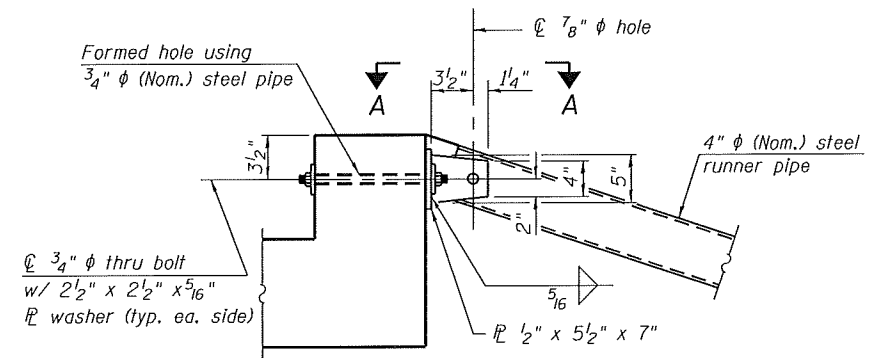
SECTION A-A



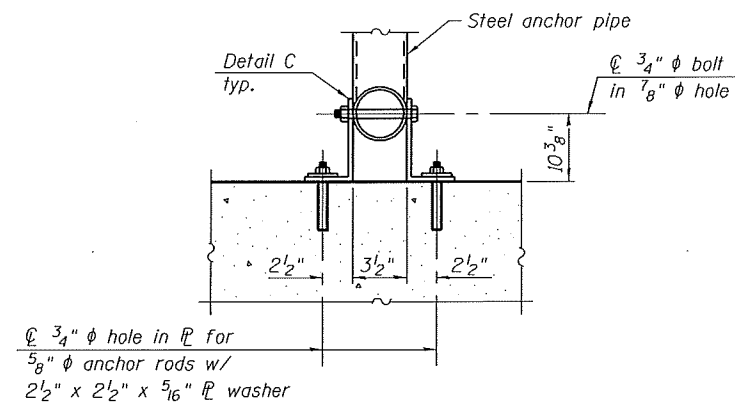
SECTION B-B



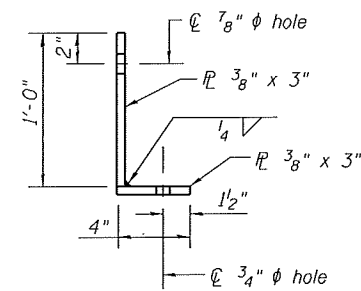
DETAIL A



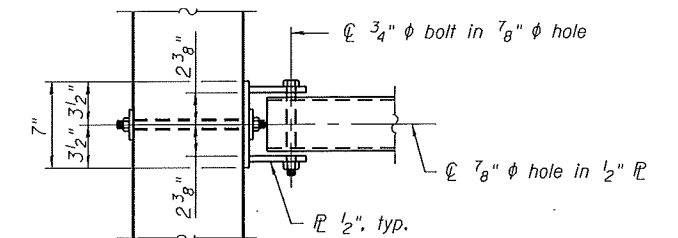
DETAIL B



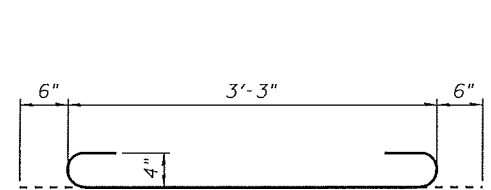
SECTION D-D



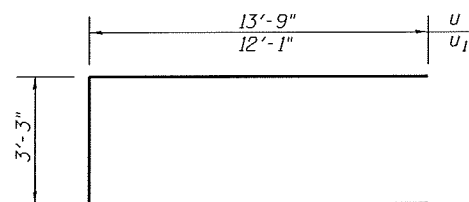
DETAIL C



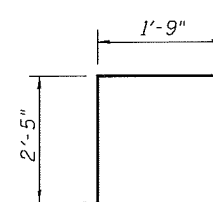
VIEW A-A



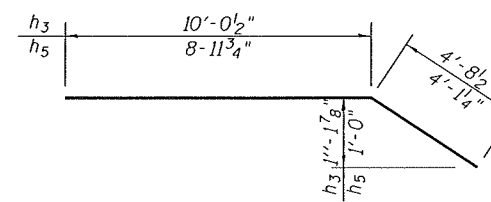
BAR a



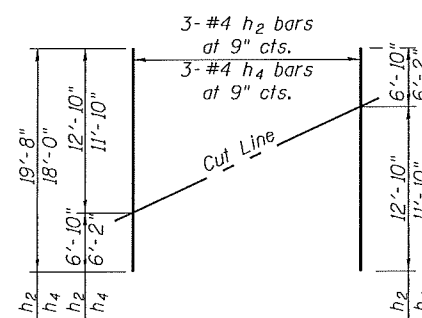
BARS u & u1



BAR d

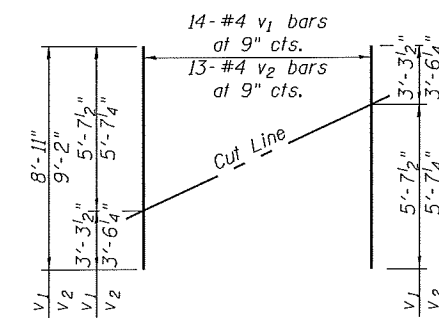


BARS h3 & h5



FIELD CUTTING DIAGRAM

Order h2 & h4 bars full length. Cut as shown and use remainder of bars in opposite wall.



FIELD CUTTING DIAGRAM

Order v1 & v2 bars full length. Cut as shown and use remainder of bars in opposite wall.

TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length | Shape | |
|--------------------------|-----|------|--------|---------|-----|
| a | 74 | #4 | 4'-3" | U | |
| a1 | 17 | #4 | 3'-3" | U | |
| d | 10 | #4 | 4'-2" | L | |
| h | 12 | #4 | 13'-9" | U | |
| h1 | 12 | #4 | 12'-1" | U | |
| h2 | 3 | #4 | 20'-9" | U | |
| h3 | 2 | #4 | 14'-9" | L | |
| h4 | 3 | #4 | 18'-0" | U | |
| h5 | 2 | #4 | 13'-1" | L | |
| h6 | 6 | #5 | 4'-5" | U | |
| h7 | 6 | #5 | 3'-10" | U | |
| u | 2 | #4 | 30'-9" | U | |
| u1 | 2 | #4 | 27'-5" | U | |
| v | 22 | #4 | 5'-8" | U | |
| v1 | 14 | #4 | 8'-11" | U | |
| v2 | 13 | #4 | 9'-2" | U | |
| Concrete Removal | | | | Cu. Yd. | 1.0 |
| Reinforcement Bars | | | | Pound | 980 |
| Expansion Bolts 3/4 Inch | | | | Each | 16 |
| Concrete Box Culverts | | | | Cu. Yd. | 8.4 |
| Traversable Pipe Grate | | | | Foot | 22 |

FILE NAME = 242+68.06-76789-003.dgn



USER NAME = jdirkelmann
 Illinois Design Firm Number 184.001670
 PLOT SCALE =
 PLOT DATE = 8/8/2014

DESIGNED - JD
 CHECKED - BB
 DRAWN - WS
 CHECKED - CJF

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

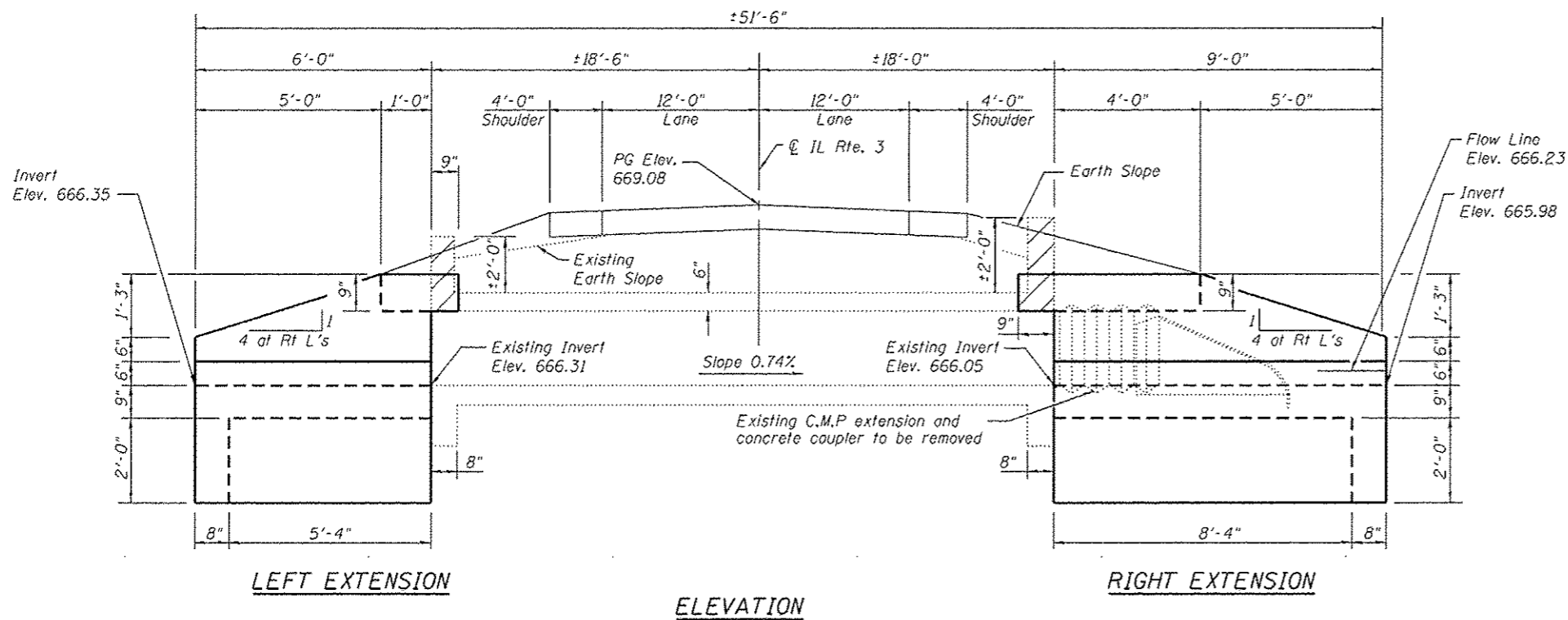
BOX CULVERT EXTENSION DETAILS
 STATION 242 + 68.86

SHEET NO. 3 OF 3 SHEETS

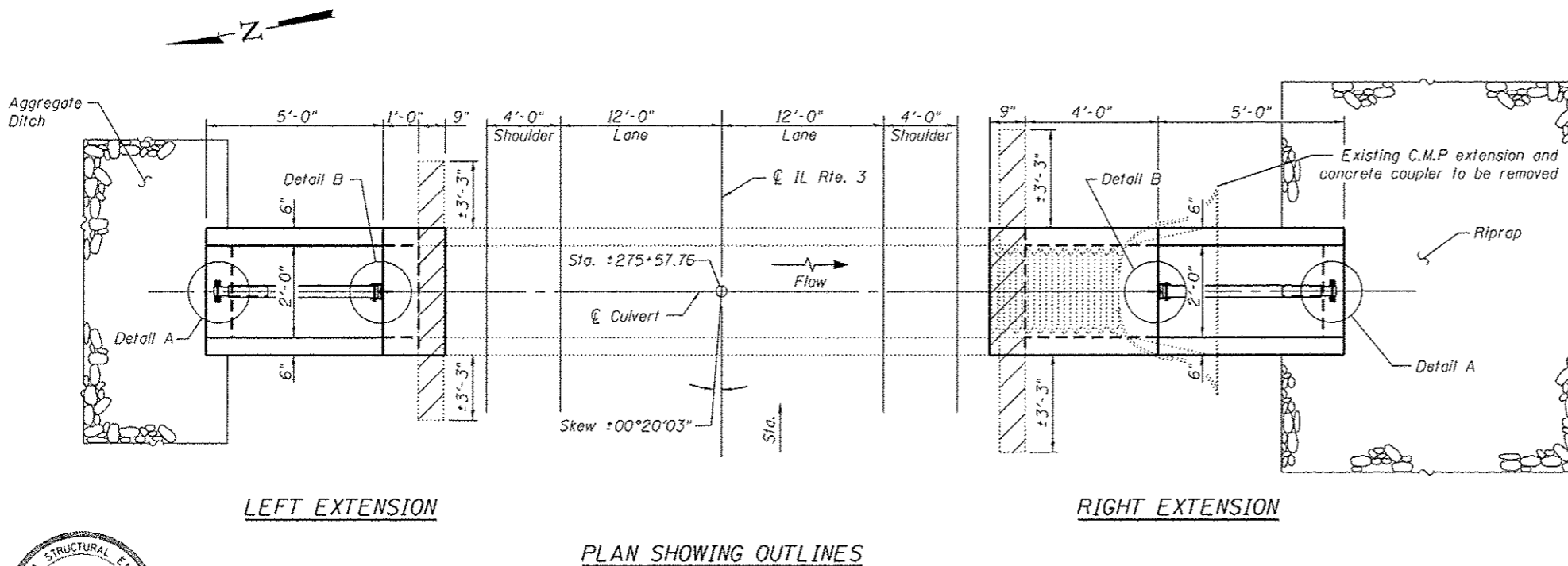
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|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 752 | 101-2RS-1 | JERSEY | 438 | 223 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

Existing Structure: The existing structure is a ±36'-6" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 275+75.

Salvage: None



Indicates Limits of Concrete Removal



GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

For Riprap and Aggregate Ditch details and quantities see Roadway Plans. Calculated max. soil pressure under barrel = 3,361 psf.

Partial Removal of the existing structure during construction shall be completed according to Section 501.05 of the Standard Specifications.

Existing C.M.P. extension and concrete coupler to be removed and shall be paid for as Removal of Existing Structures, see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completed filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

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

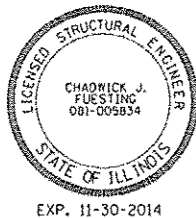
DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|-----------------------|------------------|
| fy = 40,000 psi | fy = 60,000 psi |
| f'c = 3,000 psi | f'c = 3,500 psi |

GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 3
 F.A.S. RTE. 752 - SEC. 101-2RS-1
 JERSEY COUNTY
 STATION 275+57.76

Note:
 For Details A and B see sheet 3 of 3.



Chad Fuesting 8/8/14

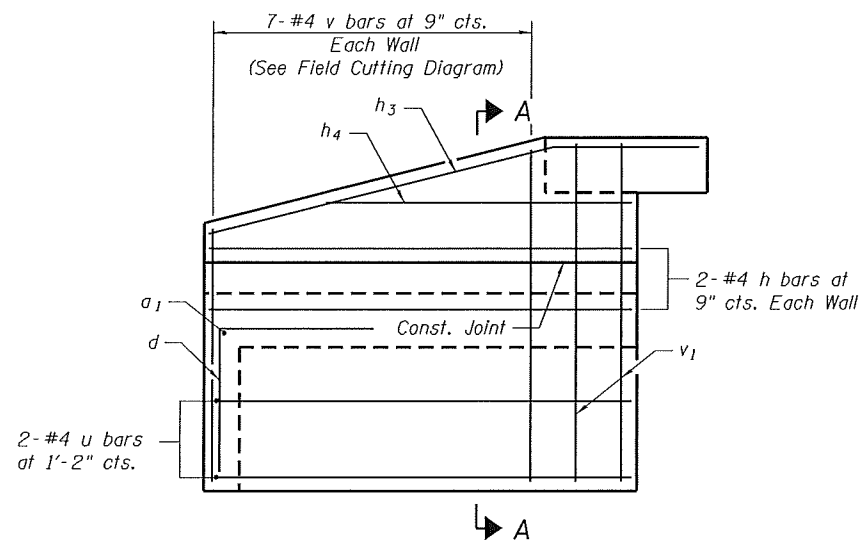
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

| | | |
|--|--------------|------------|
| USER NAME: jdrinkelmann | DESIGNED: JD | REVISED: - |
| Illinois Design Firm Number 184.001670 | CHECKED: BB | REVISED: - |
| PLOT SCALE: - | DRAWN: EW | REVISED: - |
| PLOT DATE: 8/8/2014 | CHECKED: CJF | REVISED: - |

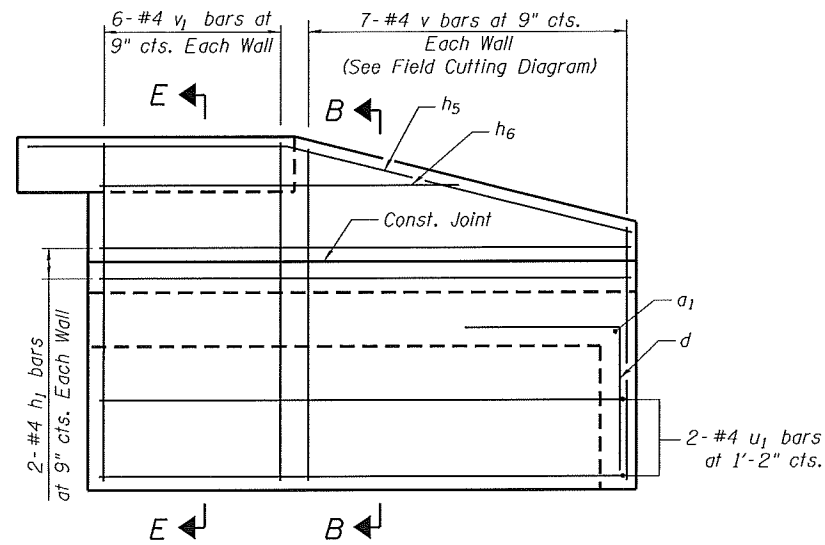
SHEET NO. 1 OF 3 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 224 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

FILE NAME = 275+57.76-76789-021.dgn

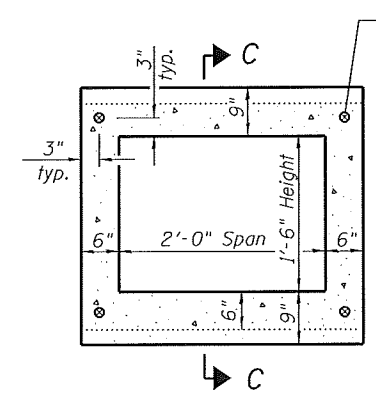


LEFT EXTENSION

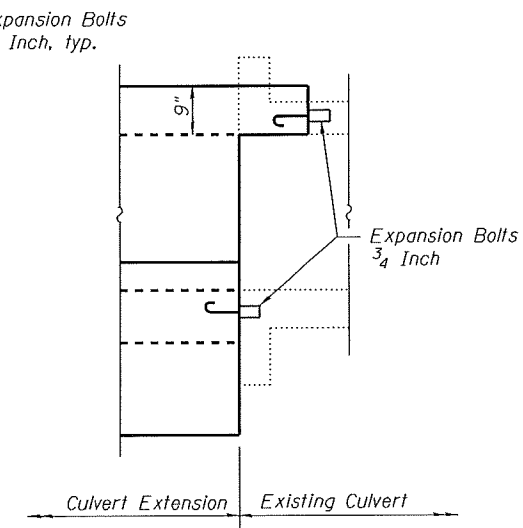


RIGHT EXTENSION

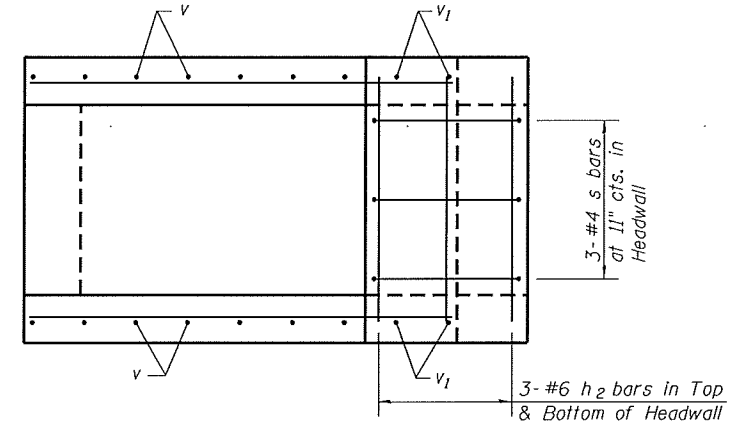
ELEVATION
(Showing Reinforcement)



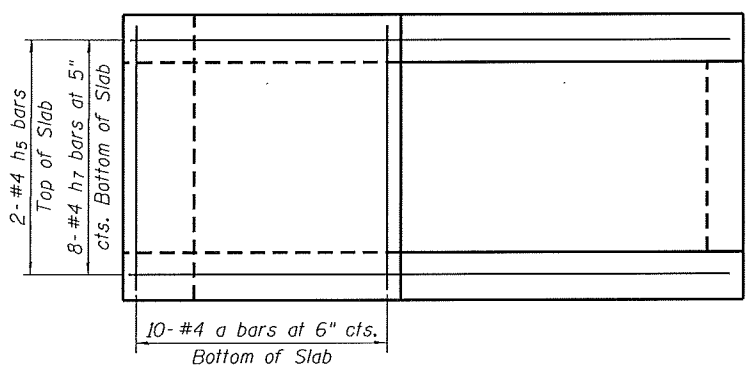
LEFT EXTENSION EXPANSION BOLT LAYOUT



SECTION C-C

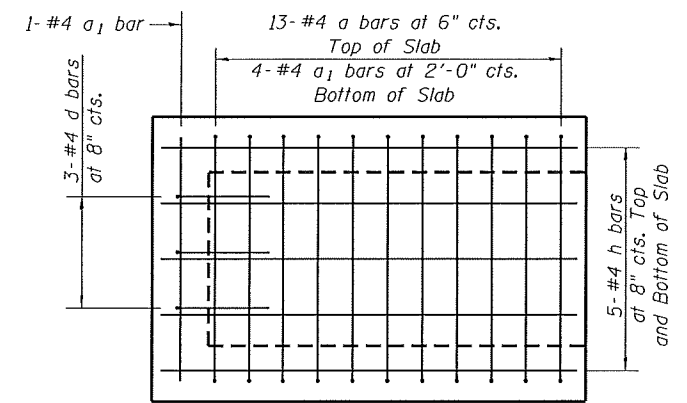


LEFT EXTENSION

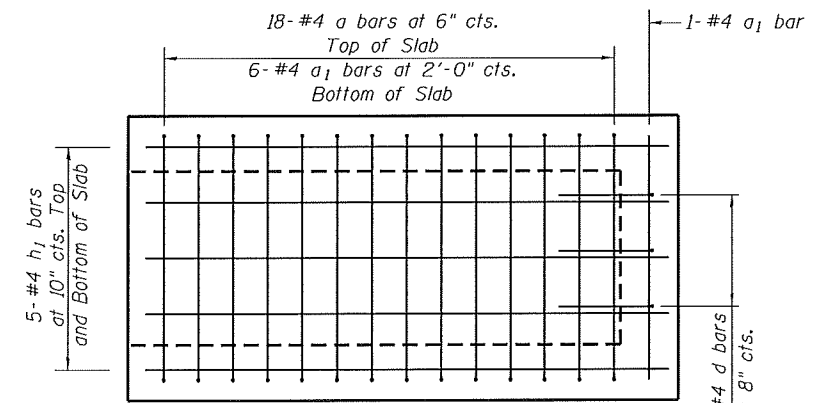


RIGHT EXTENSION

TOP SLAB
(Showing Reinforcement)

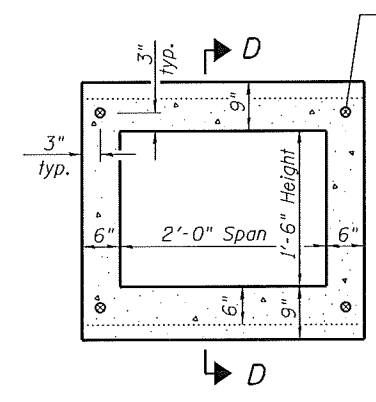


LEFT EXTENSION

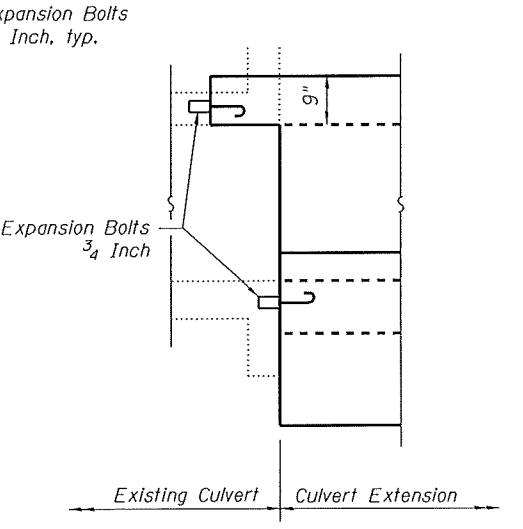


RIGHT EXTENSION

BOTTOM SLAB
(Showing Reinforcement)



RIGHT EXTENSION EXPANSION BOLT LAYOUT



SECTION D-D

Note:
For Section A-A, B-B, and E-E see Sheet 3 of 3.
For Bar Bend and Total Bill of Material, see Sheet 3 of 3.

FILE NAME = 275-57.76-76789-002.dgn



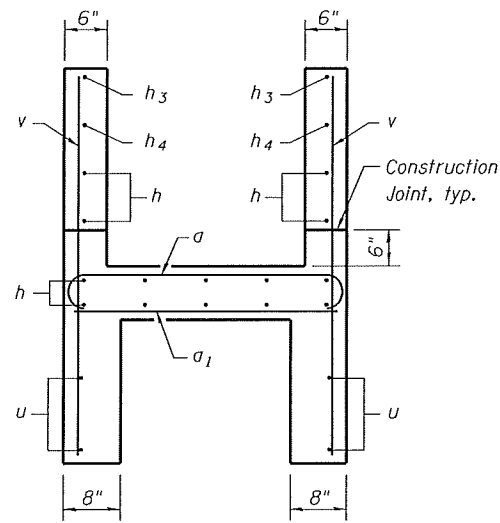
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|--|---------------|-----------|
| USER NAME = jdirke1mann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

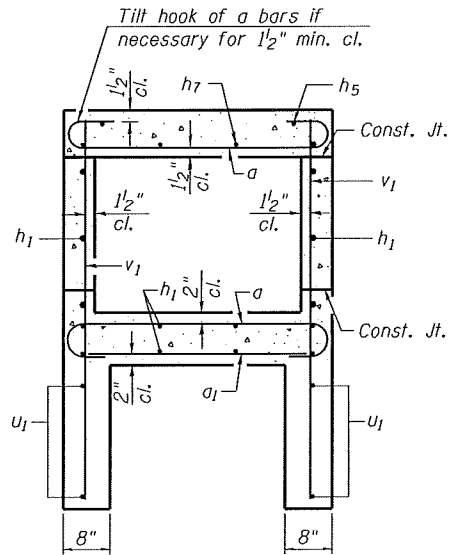
BOX CULVERT EXTENSION DETAILS,
STATION 275 + 57.76

SHEET NO. 2 OF 3 SHEETS

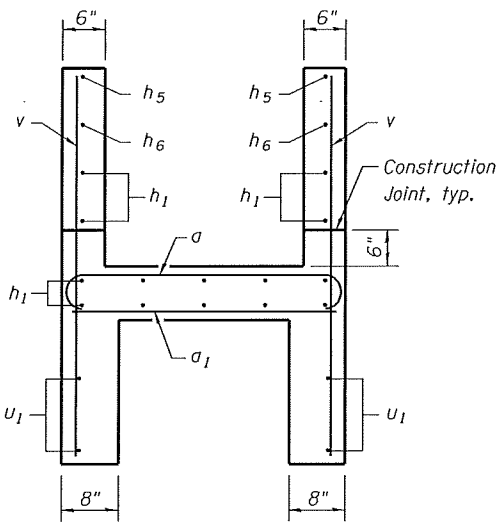
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| F.A.S. RTE. 752 | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 225 |
| CONTRACT NO. 76789 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



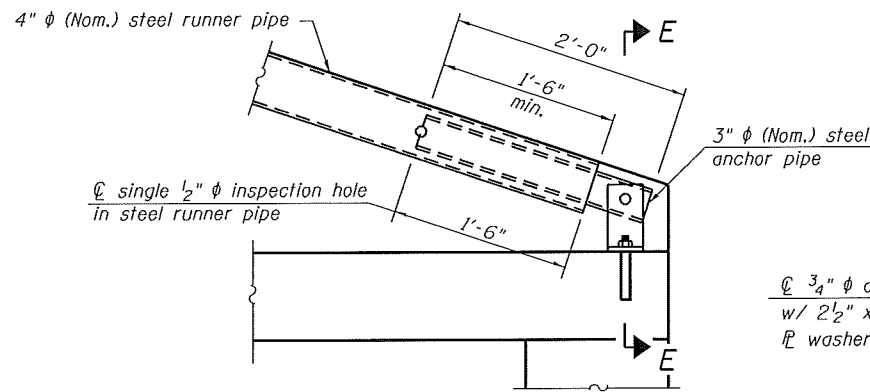
SECTION A-A



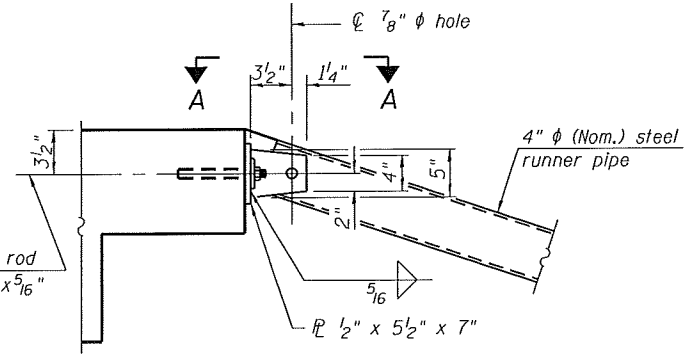
SECTION E-E



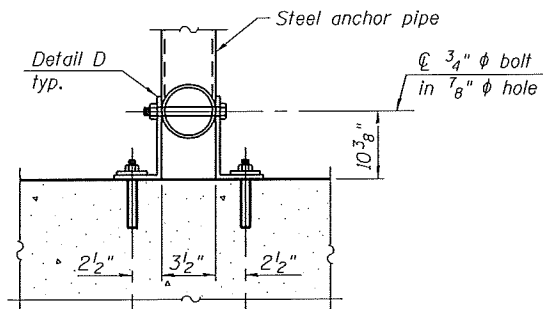
SECTION B-B



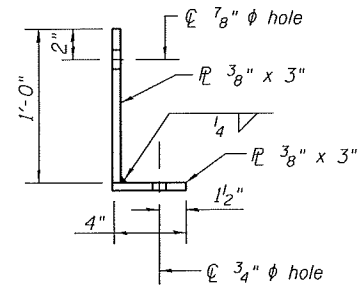
DETAIL A



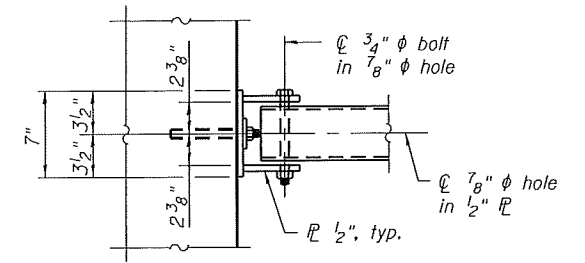
DETAIL B



SECTION F-F

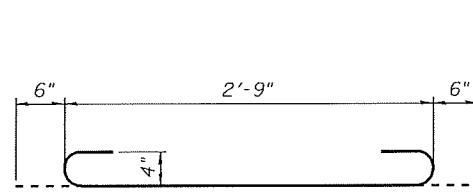


DETAIL D

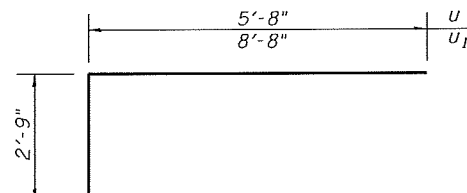


VIEW A-A

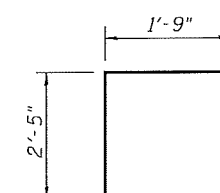
3/4" hole in PL for 5/8" anchor rods w/ 2 1/2" x 2 1/2" x 5/16" PL washer



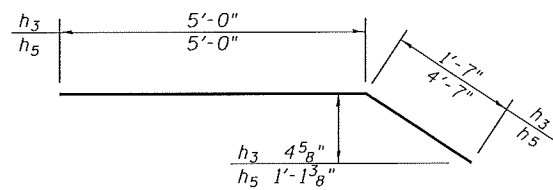
BAR a



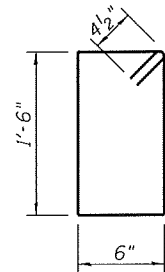
BARS u & u1



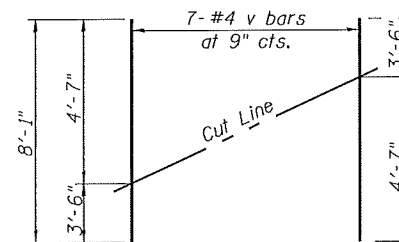
BAR d



BARS h3 & h5



BAR s



FIELD CUTTING DIAGRAM

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

TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|--------------------------|-----|------|---------|-------|
| a | 41 | #4 | 3'-9" | |
| a1 | 12 | #4 | 2'-9" | |
| d | 6 | #4 | 4'-2" | |
| h | 14 | #4 | 5'-9" | |
| h1 | 14 | #4 | 8'-9" | |
| h2 | 6 | #6 | 2'-9" | |
| h3 | 2 | #4 | 6'-7" | |
| h4 | 2 | #4 | 3'-10" | |
| h5 | 2 | #4 | 9'-7" | |
| h6 | 2 | #4 | 6'-6" | |
| h7 | 8 | #4 | 4'-6" | |
| s | 3 | #4 | 4'-9" | |
| u | 2 | #4 | 14'-1" | |
| u1 | 2 | #4 | 20'-1" | |
| v | 14 | #4 | 8'-1" | |
| v1 | 16 | #4 | 4'-8" | |
| Concrete Removal | | | Cu. Yd. | 1.2 |
| Reinforcement Bars | | | Pound | 550 |
| Expansion Bolts 3/4 Inch | | | Each | 8 |
| Concrete Box Culverts | | | Cu. Yd. | 4.4 |
| Traversable Pipe Grate | | | Foot | 10 |

FILE NAME = 275+57.76-76789-003.dgn



USER NAME = jdrinke1mann
 Illinois Design Firm Number 184.001670
 PLOT SCALE =
 PLOT DATE = 8/8/2014

DESIGNED - JD
 CHECKED - BB
 DRAWN - WS
 CHECKED - CJF

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
 STATION 275 + 57.76

SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE. 752 SECTION 101-2RS-1 COUNTY JERSEY TOTAL SHEETS 438 SHEET NO. 226 CONTRACT NO. 76789 ILLINOIS FED. AID PROJECT

Existing Structure: The existing structure is a ±50'-0" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 291+00.

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Existing Block Drop Inlet to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.

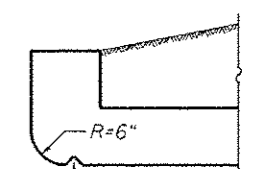
Calculated max. soil pressure under barrel = 1,966 psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.



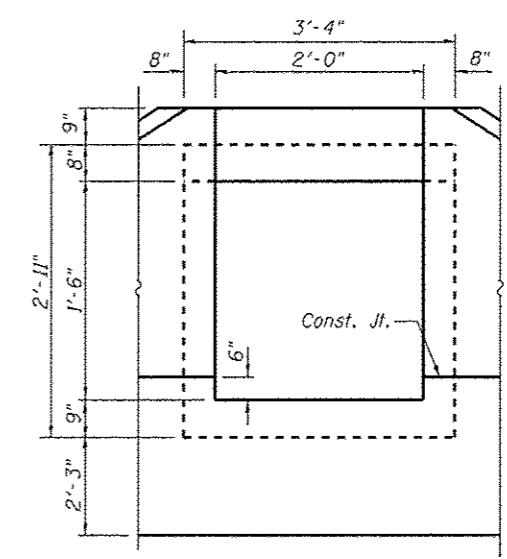
HEADWALL DETAILS AT UPSTREAM END

DESIGN SPECIFICATIONS
2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44
Allow 50#/sq. ft. for future wearing surface on extension.

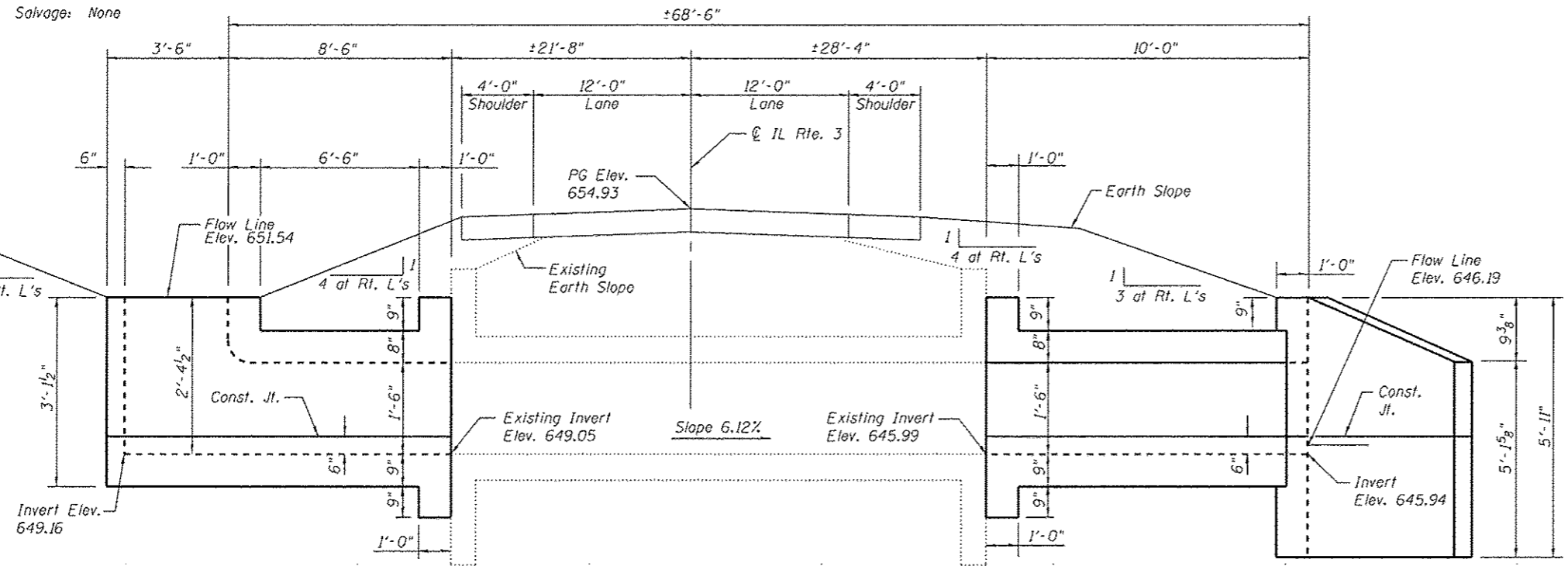
DESIGN STRESSES
EXISTING CONSTRUCTION NEW CONSTRUCTION
fy = 40,000 psi fy = 60,000 psi
f'c = 3,000 psi f'c = 3,500 psi

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 3
F.A.S. RTE. 752 - SEC. 101-2RS-1
JERSEY COUNTY
STATION 290+69.78



BOX CULVERT SOUTH END ELEVATION
(Dimensions Shown at Rt L's)

Note:
See Sheet 2 of 3 for Existing Block Drop Inlet Removal,
See Sheet 3 of 3 for Detail A.

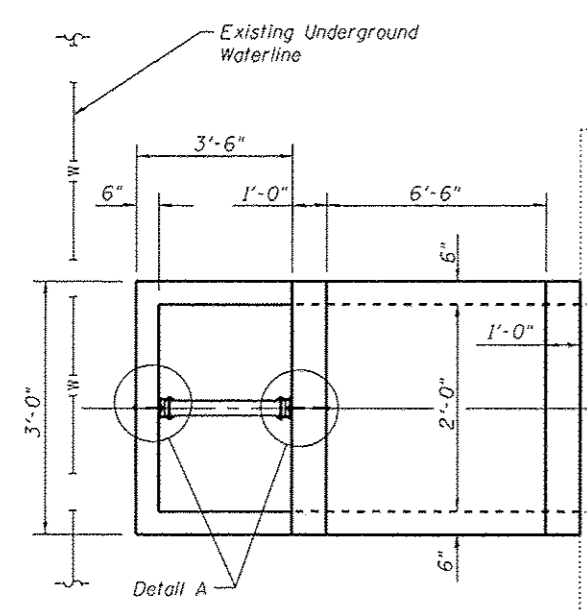
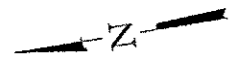


LEFT EXTENSION

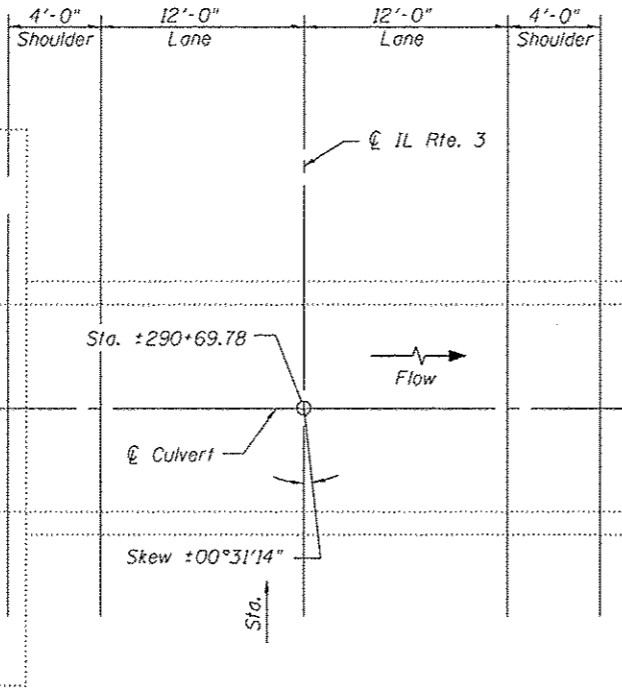
ELEVATION

(Existing Block Drop Inlet not shown for clarity)

RIGHT EXTENSION

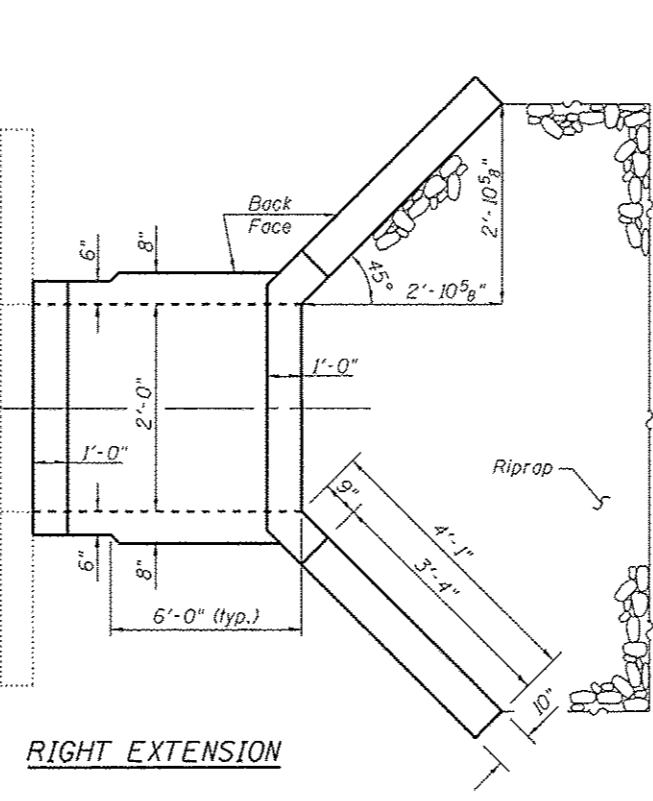


LEFT EXTENSION



PLAN SHOWING OUTLINES

(Existing Block Drop Inlet not shown for clarity)



RIGHT EXTENSION



Chad Fuesting 8/18/14

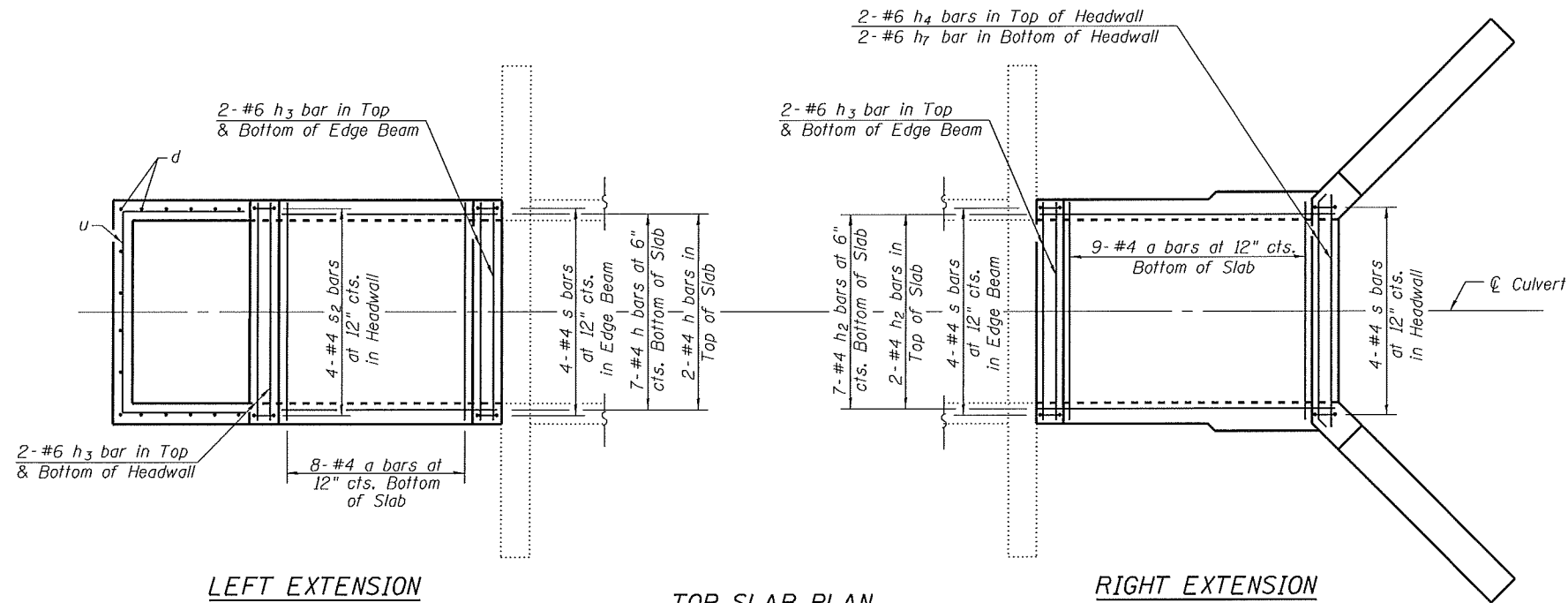
FILE NAME : 228-69-78-76789-081.dgn



| | | |
|--|---------------|-----------|
| USER NAME : jdkinkelmenn | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE : | DRAWN - WS | REVISED - |
| PLOT DATE : 8/8/2014 | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 227 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

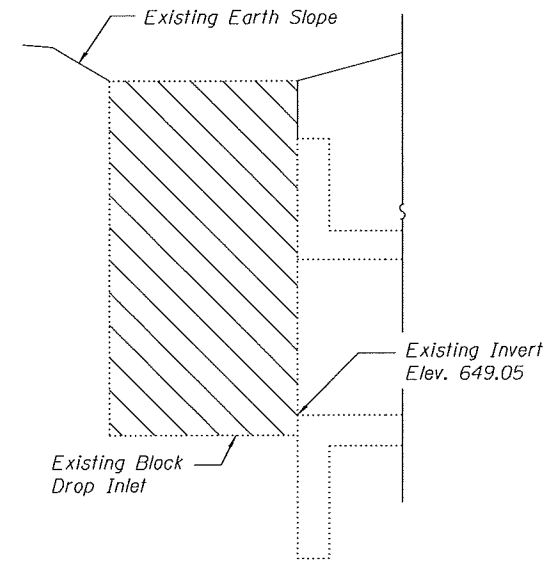


LEFT EXTENSION

TOP SLAB PLAN
SHOWING REINFORCEMENT

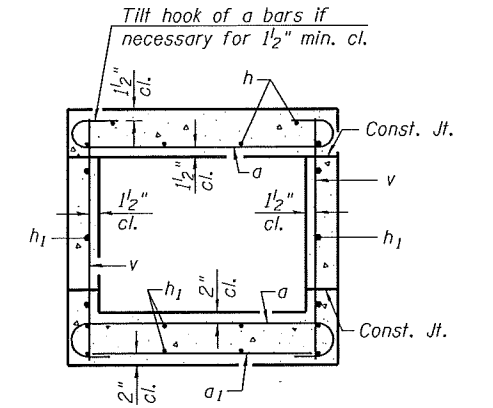
(v, v_1 , h_5 & h_6 bars not shown for clarity)

RIGHT EXTENSION



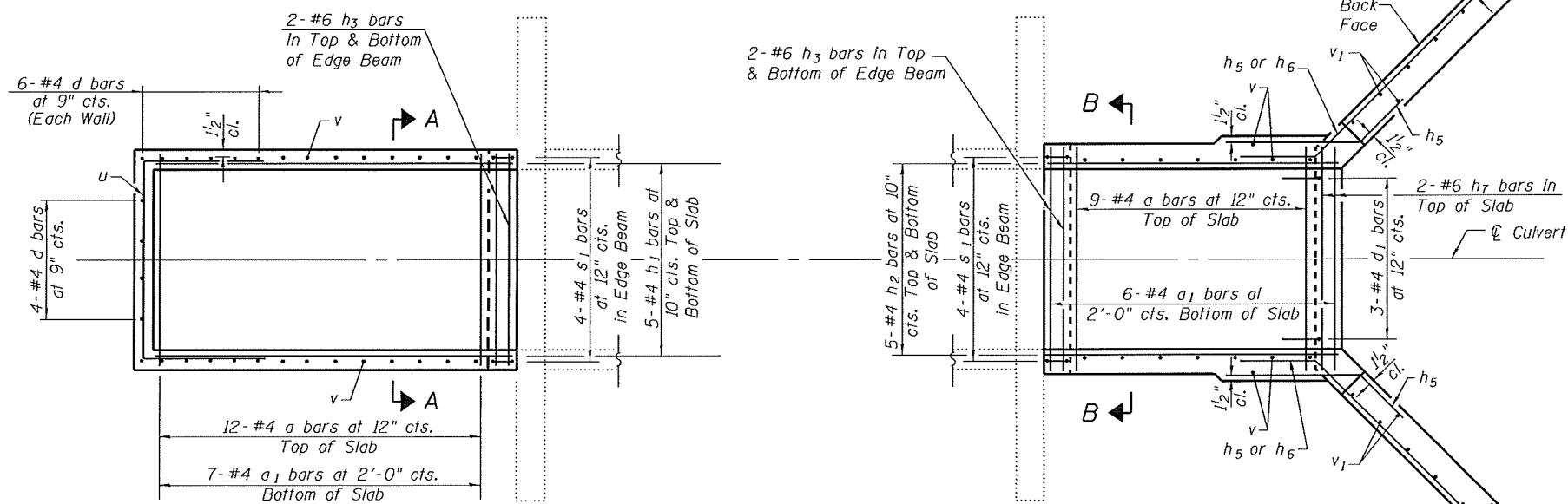
EXISTING INLET ELEVATION

(North End of Existing Culvert)



SECTION A-A

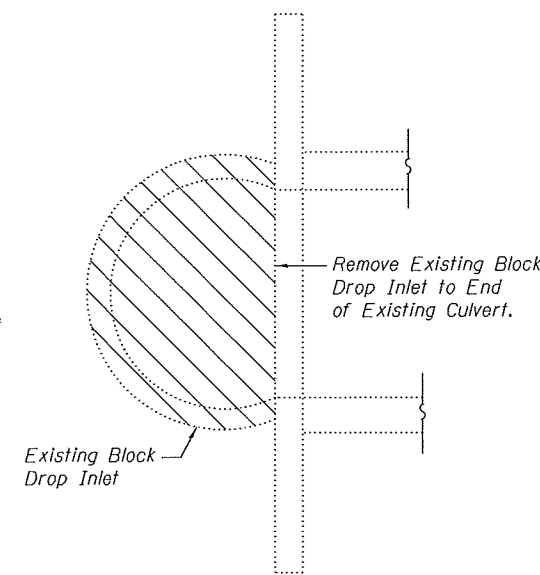
Indicates Limits of Existing Block Drop Inlet Removal to be paid for as Removal of Existing Structures, see Roadway Plans.



LEFT EXTENSION

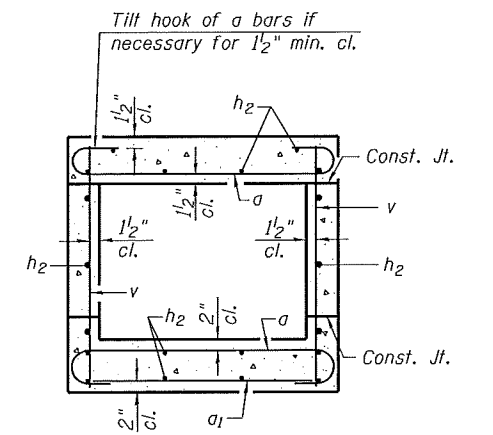
BOTTOM SLAB PLAN
SHOWING REINFORCEMENT

RIGHT EXTENSION



EXISTING INLET PLAN

(North End of Existing Culvert)



SECTION B-B

Note:
For Elevation, Bar Bends, and Total Bill of Material see sheet 3 of 3.

FILE NAME = 290+69.78-76789-002.dgn



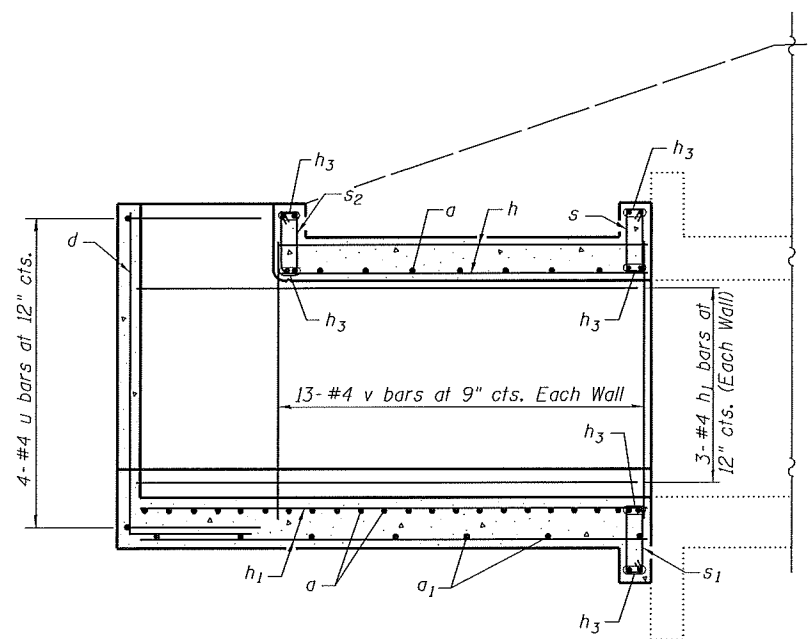
| | | |
|--|---------------|-----------|
| USER NAME = jdrinkeimann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184,001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

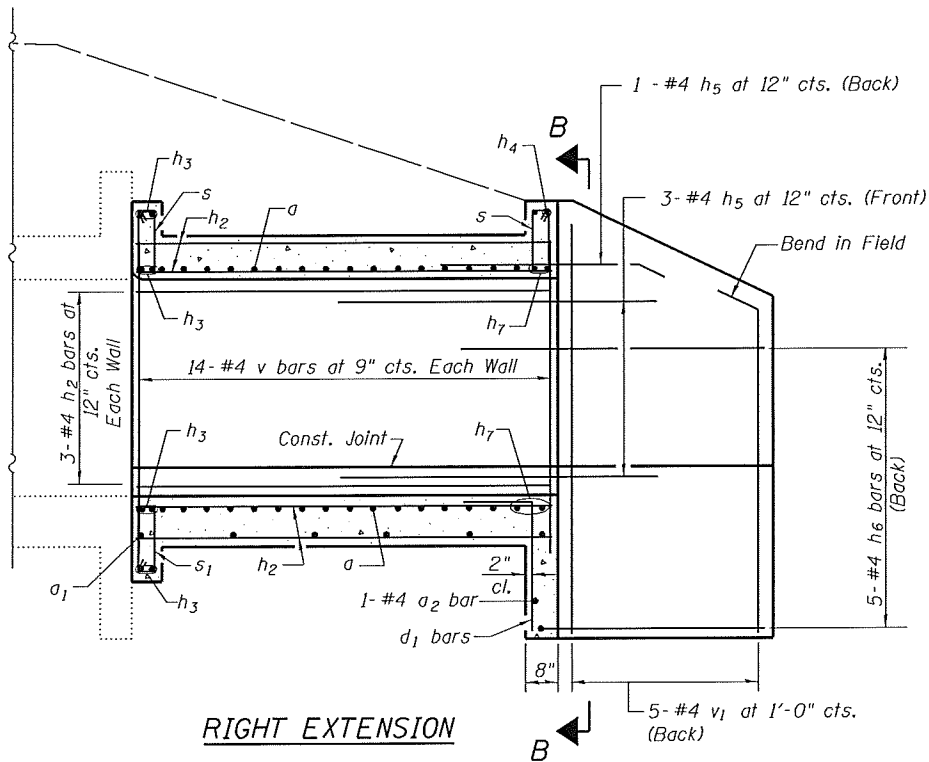
BOX CULVERT EXTENSION DETAILS
STATION 290+69.78

SHEET NO. 2 OF 3 SHEETS

| | | | | |
|--------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 752 | 101-2RS-1 | JERSEY | 438 | 228 |
| CONTRACT NO. 76789 | | | ILLINOIS FED. AID PROJECT | |

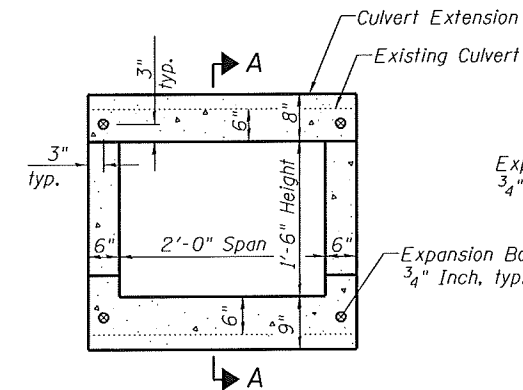


LEFT EXTENSION



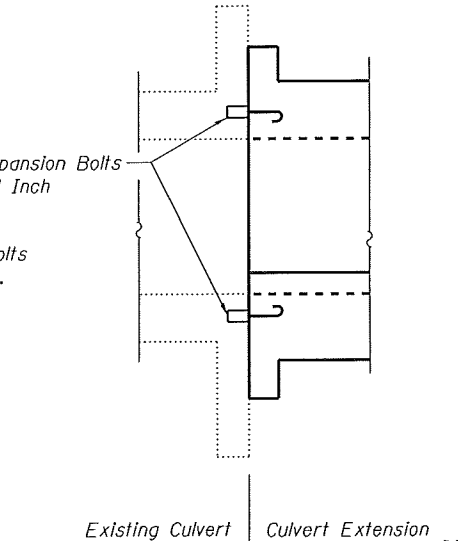
RIGHT EXTENSION

ELEVATION

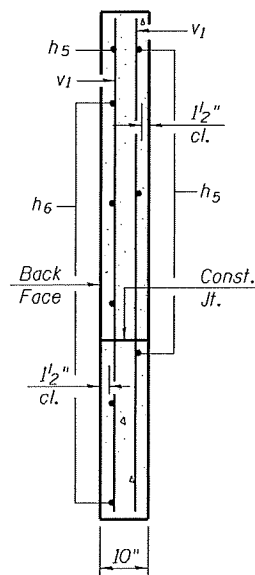


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

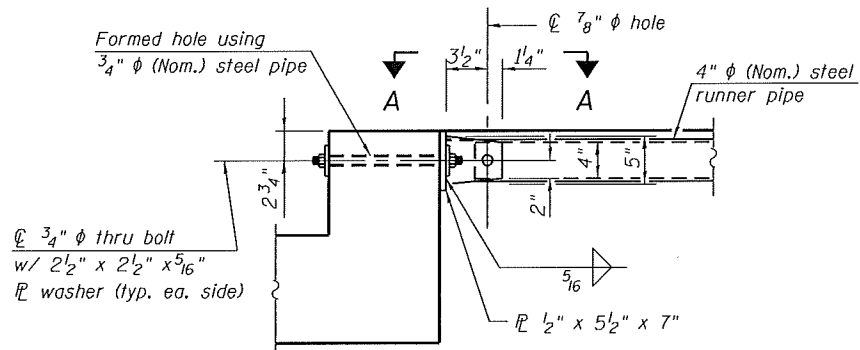
EXPANSION BOLT LAYOUT



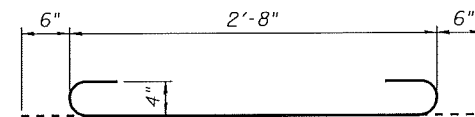
SECTION A-A



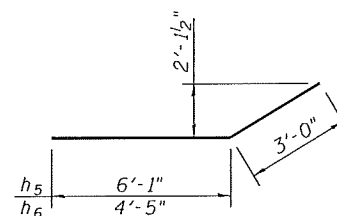
SECTION B-B



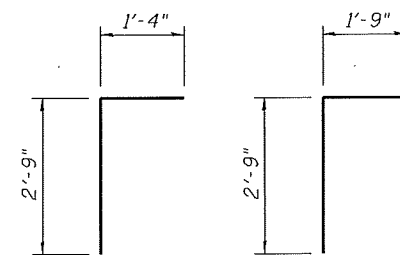
DETAIL A



BAR a

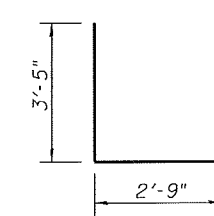


BARS h5 & h6

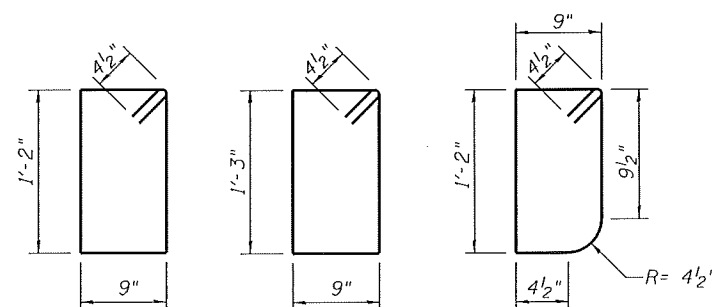


BAR d

BAR d1



BAR u



BAR s

BAR s1

BAR s2

TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|--------------------------|-----|------|---------|-------|
| a | 38 | #4 | 3'-8" | |
| a1 | 13 | #4 | 2'-8" | |
| a2 | 1 | #4 | 2'-10" | |
| d | 16 | #4 | 4'-1" | |
| d1 | 3 | #4 | 4'-6" | |
| h | 9 | #4 | 8'-3" | |
| h1 | 16 | #4 | 11'-5" | |
| h2 | 25 | #4 | 9'-8" | |
| h3 | 20 | #6 | 2'-9" | |
| h4 | 2 | #6 | 2'-3" | |
| h5 | 8 | #4 | 9'-1" | |
| h6 | 10 | #4 | 7'-5" | |
| h7 | 4 | #6 | 3'-1" | |
| s | 12 | #4 | 4'-7" | |
| s1 | 8 | #4 | 4'-9" | |
| s2 | 4 | #4 | 4'-5" | |
| u | 4 | #4 | 9'-7" | |
| v | 56 | #4 | 2'-7" | |
| v1 | 12 | #4 | 5'-7" | |
| Concrete Box Culverts | | | Cu. Yd. | 7.0 |
| Reinforcement Bars | | | Pound | 960 |
| Expansion Bolts 3/4 Inch | | | Each | 8 |
| Traversable Pipe Grate | | | Foot | 3 |

FILE NAME = 290-69.78-767891-003.dgn



USER NAME = jdrinkelmann
 Illinois Design Firm Number 184.001670
 PLOT SCALE =
 PLOT DATE = 8/8/2014

DESIGNED - JD
 CHECKED - BB
 DRAWN - WS
 CHECKED - CJF

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

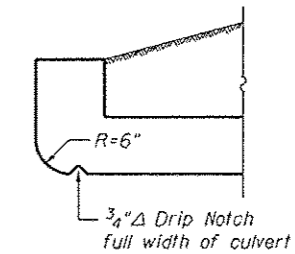
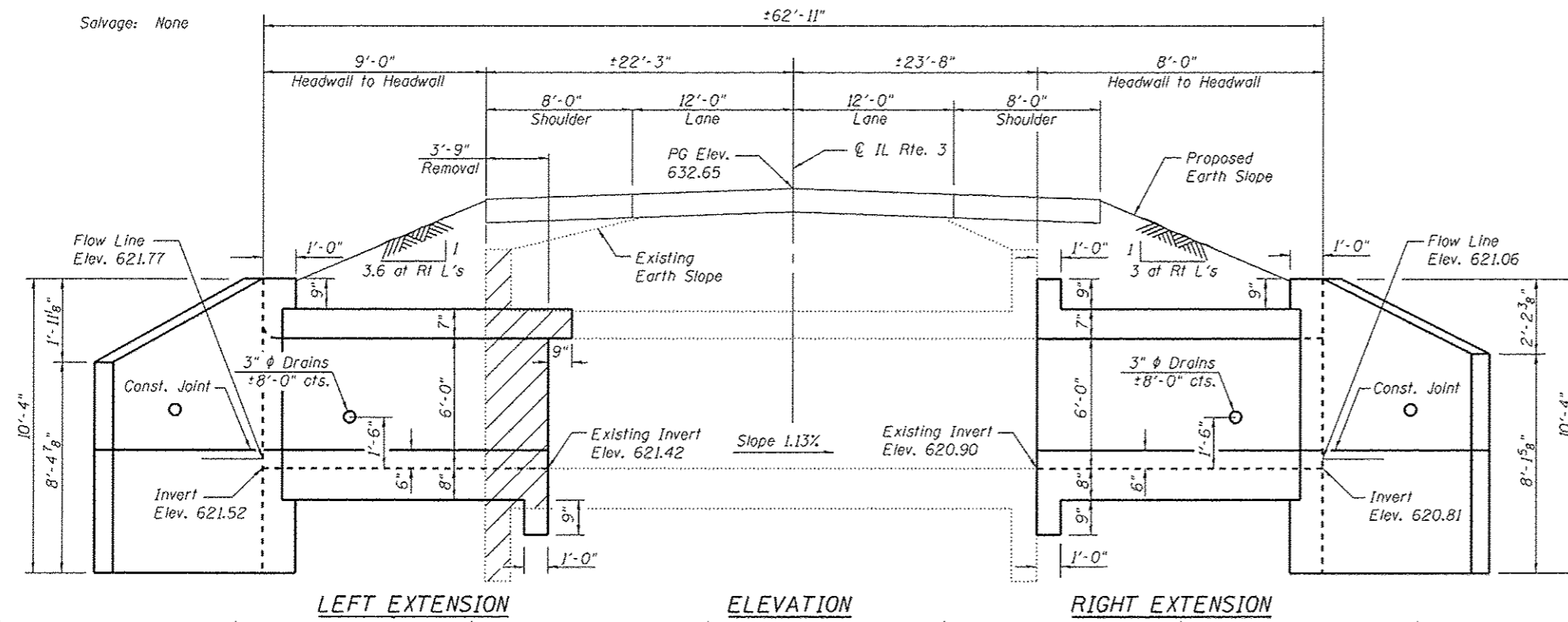
BOX CULVERT EXTENSION DETAILS
 STATION 290 + 69.78

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 229 |
| CONTRACT NO. 76789 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

Existing Structure: The existing structure, SN 042-2473, is a ±45'-11" long reinforced cast-in-place concrete box culvert with a 6'-0" x 6'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 300+28.00.

Salvage: None



HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

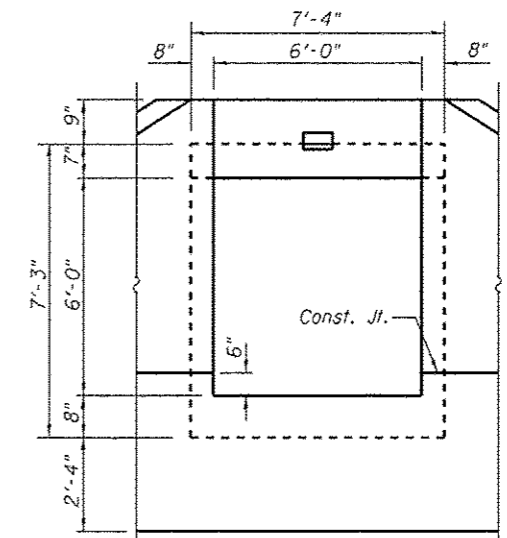
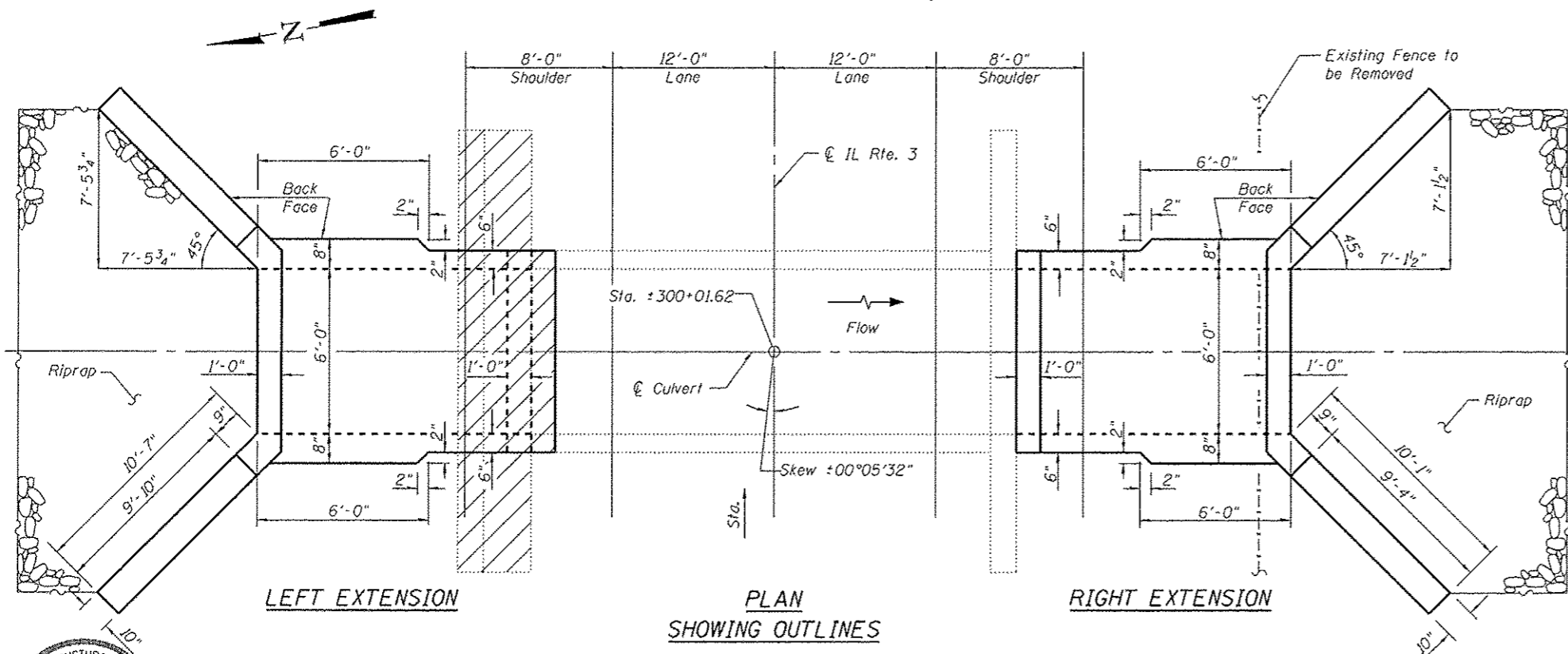
A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 1,812 psf.

For Riprap details and quantities see Roadway Plans.

Epoxy Crack Injection shall be according to the Standard Specifications Section 590.

For Total Bill of Material see sheet 3 of 4.



DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

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

DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |

GENERAL PLAN & ELEVATION

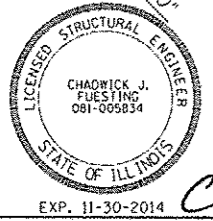
ILLINOIS ROUTE 3

F.A.S. RTE. 752 - SEC. 101-2RS-1

JERSEY COUNTY

STATION 300+01.62

STRUCTURE NO. 042-2473



Constructing 8/8/14

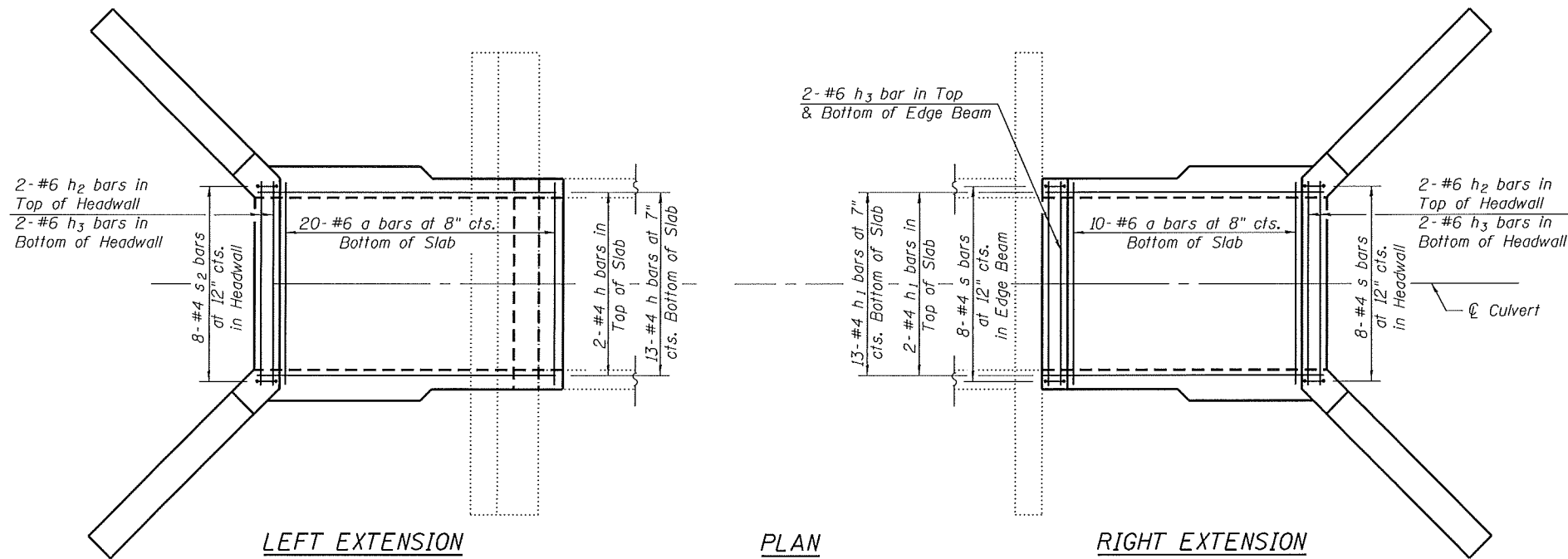
FILE NAME = 300+01.62-76789-001.dgn



| | | |
|--|---------------|------------|
| USER NAME = Jinkalmann | DESIGNED - JD | REVISION - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISION - |
| PLDT SCALE = | DRAWN - WS | REVISION - |
| PLDT DATE = 8/8/2014 | CHECKED - CJF | REVISION - |

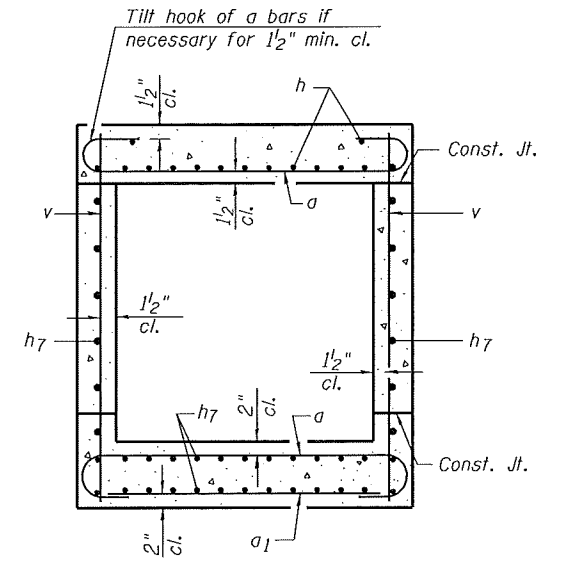
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 230 |
| | | | CONTRACT NO. 76789 | |
| ILLINOIS FED. AID PROJECT | | | | |

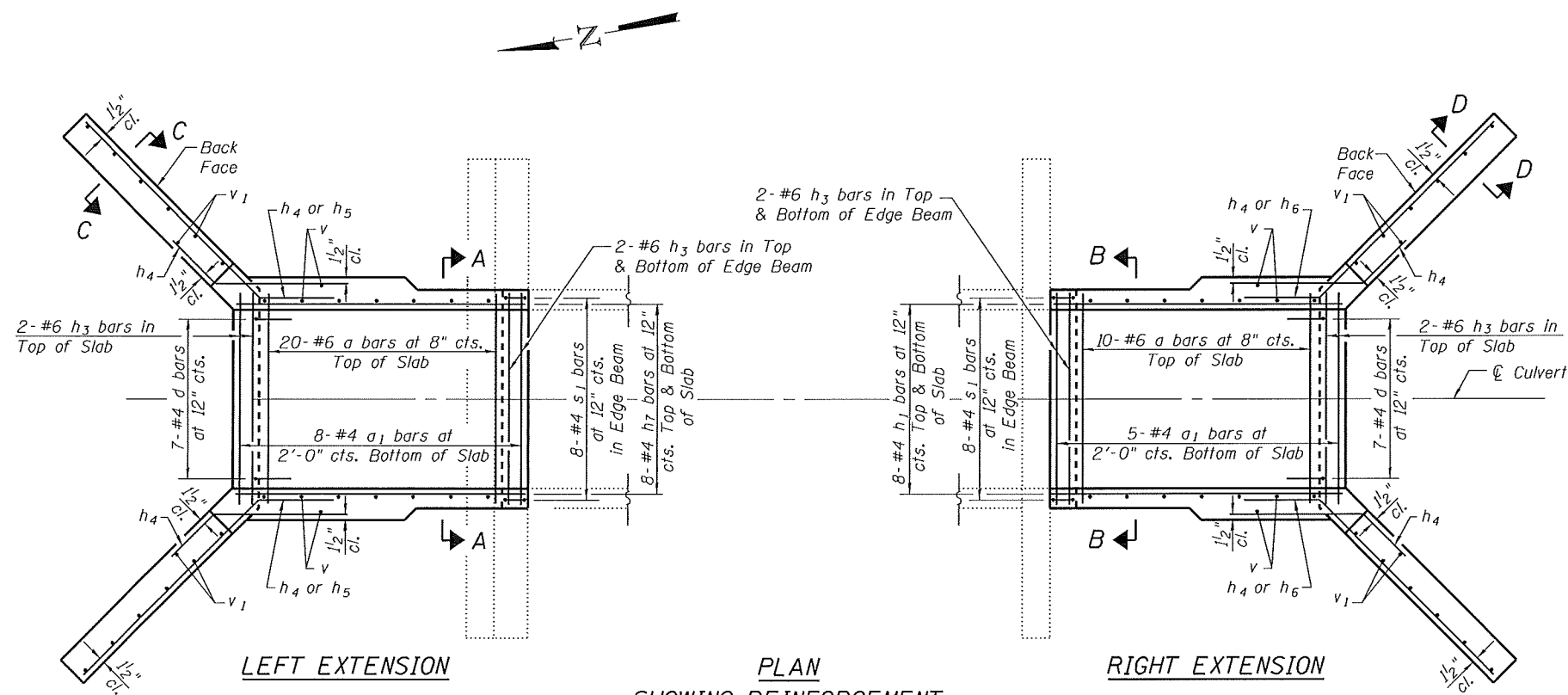


PLAN
SHOWING REINFORCEMENT

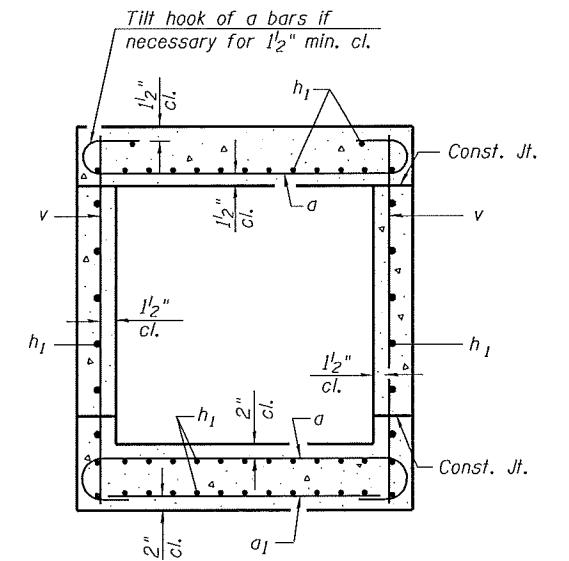
(v, v₁, h₄, h₅ & h₆ bars not shown for clarity)



SECTION A-A



PLAN
SHOWING REINFORCEMENT



SECTION B-B

Notes:
For Section C-C see sheet 3 of 4.
For Section D-D see sheet 3 of 4.
For Bar Bends and Total Bill of Material see sheet 3 of 4.

FILE NAME = 300-01.62-76789-002.dgn



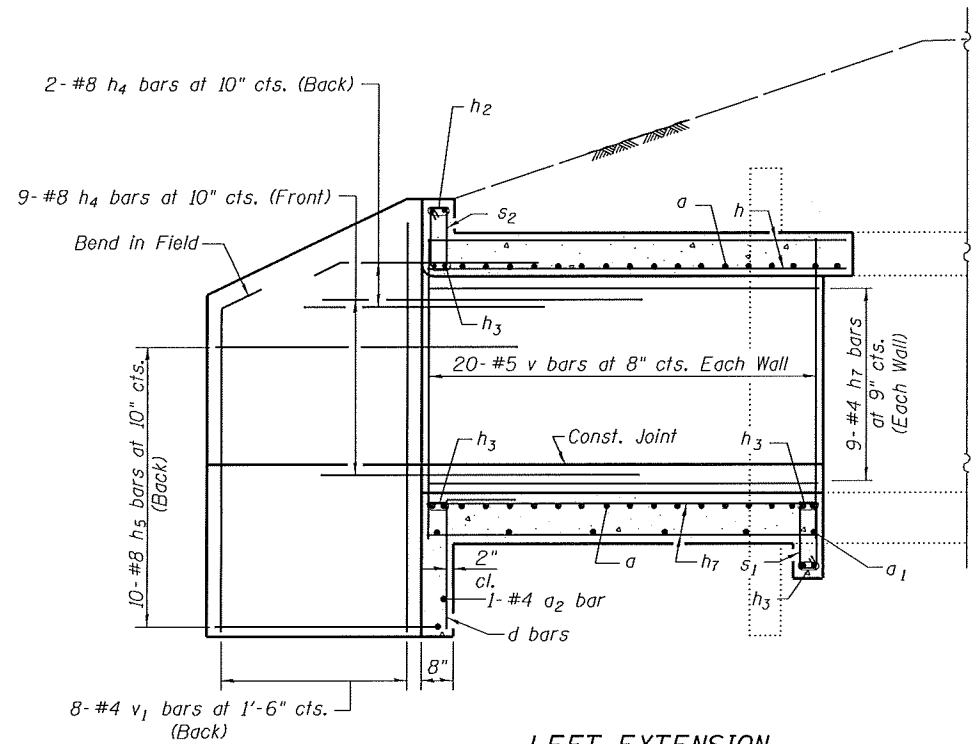
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|--|---------------|-----------|
| USER NAME = JdInkelmann | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB | REVISED - |
| PLOT SCALE = | DRAWN - WS | REVISED - |
| PLOT DATE = 8/8/2014 | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

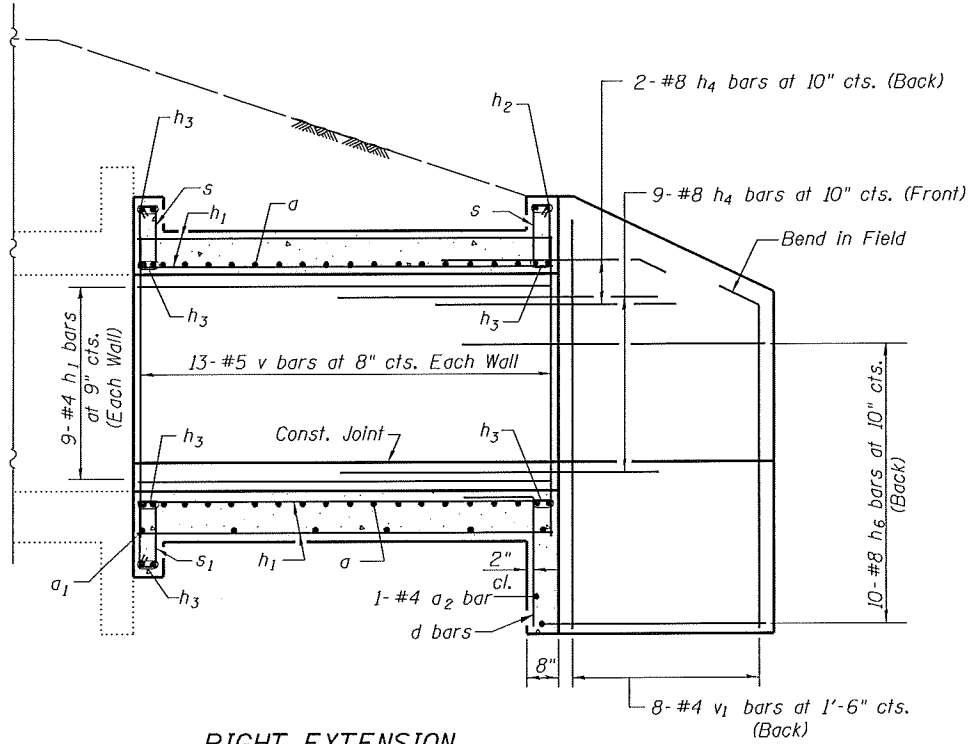
BOX CULVERT EXTENSION DETAILS
STRUCTURE NUMBER 042-2473

SHEET NO. 2 OF 4 SHEETS

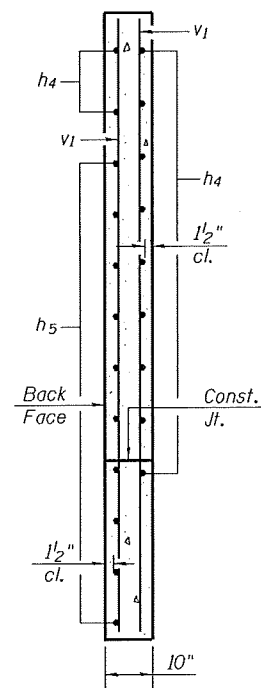
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 231 |
| CONTRACT NO. 76789 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



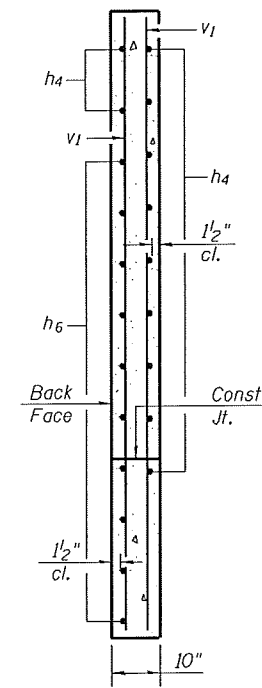
LEFT EXTENSION



RIGHT EXTENSION

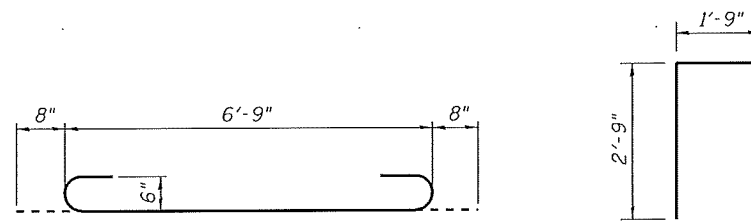


SECTION C-C



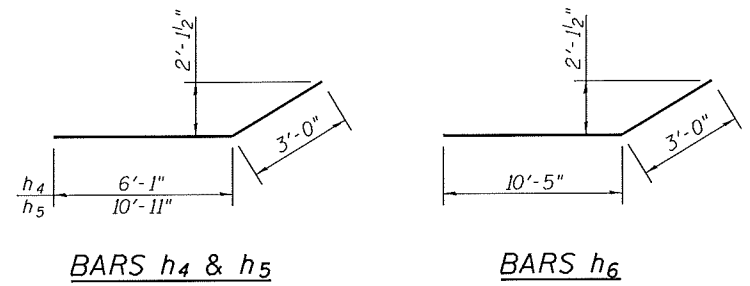
SECTION D-D

ELEVATION
Dimensions at Rt. L's to ∇ Roadway



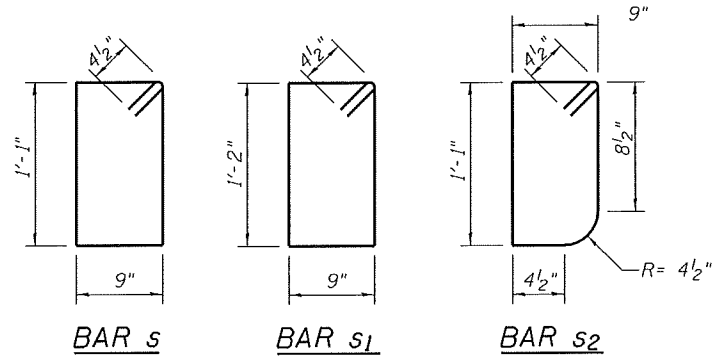
BAR a

BAR d



BARS h4 & h5

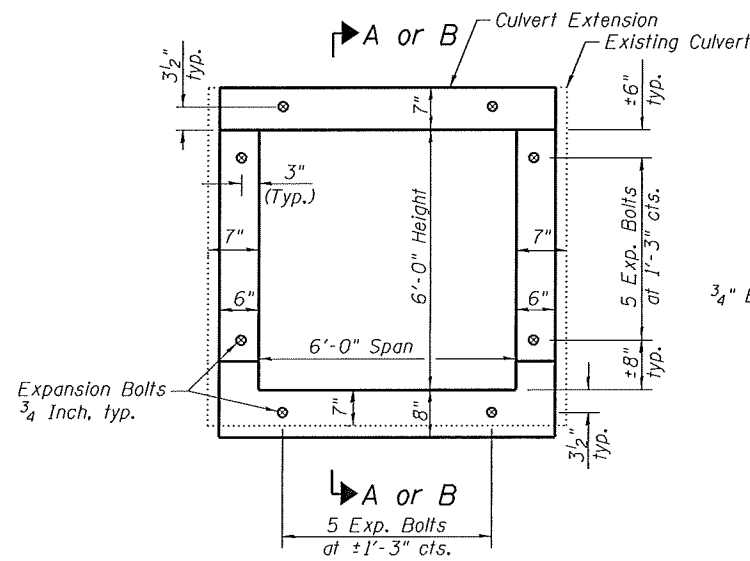
BARS h6



BAR s

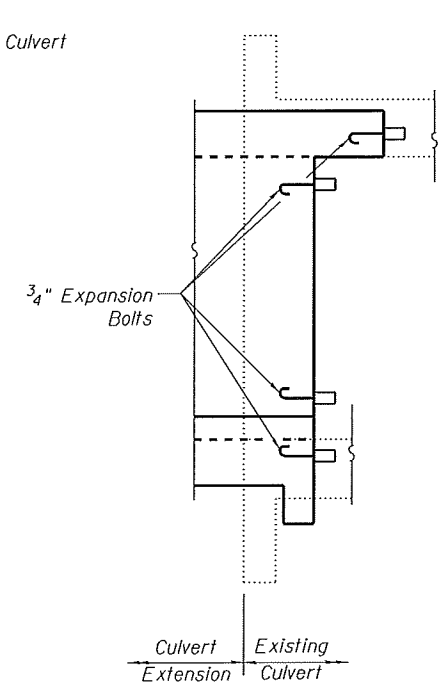
BAR s1

BAR s2

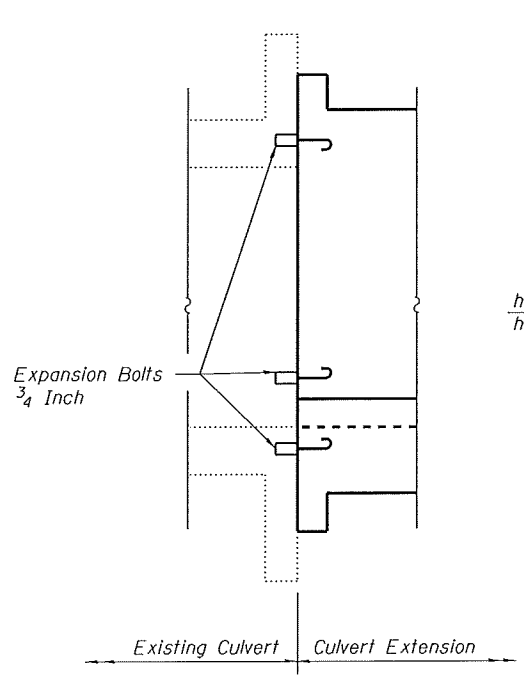


EXPANSION BOLT LAYOUT

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete



SECTION B-B



SECTION A-A

TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|--------------------------|-----|------|---------|-------|
| a | 60 | #6 | 8'-1" | |
| a1 | 13 | #4 | 6'-9" | |
| a2 | 2 | #4 | 6'-10" | |
| d | 14 | #4 | 4'-6" | |
| h | 15 | #4 | 13'-3" | |
| h1 | 49 | #4 | 7'-9" | |
| h2 | 4 | #6 | 6'-3" | |
| h3 | 20 | #6 | 6'-9" | |
| h4 | 44 | #8 | 9'-1" | |
| h5 | 20 | #8 | 13'-11" | |
| h6 | 20 | #8 | 13'-5" | |
| h7 | 34 | #4 | 12'-6" | |
| s | 16 | #4 | 4'-5" | |
| s1 | 16 | #4 | 4'-7" | |
| s2 | 8 | #4 | 4'-3" | |
| v | 70 | #5 | 6'-11" | |
| v1 | 36 | #4 | 10'-0" | |
| Concrete Removal | | | Cu. Yd. | 9.5 |
| Reinforcement Bars | | | Pound | 5,150 |
| Expansion Bolts 3/4 Inch | | | Each | 40 |
| Concrete Box Culverts | | | Cu. Yd. | 25.6 |
| Epoxy Crack Injection | | | Foot | 6 |

FILE NAME = 300-01.62-76789-003.dgn



USER NAME = jdirkeImann
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 8/8/2014

DESIGNED - JD
CHECKED - BB
DRAWN - WS
CHECKED - CJF

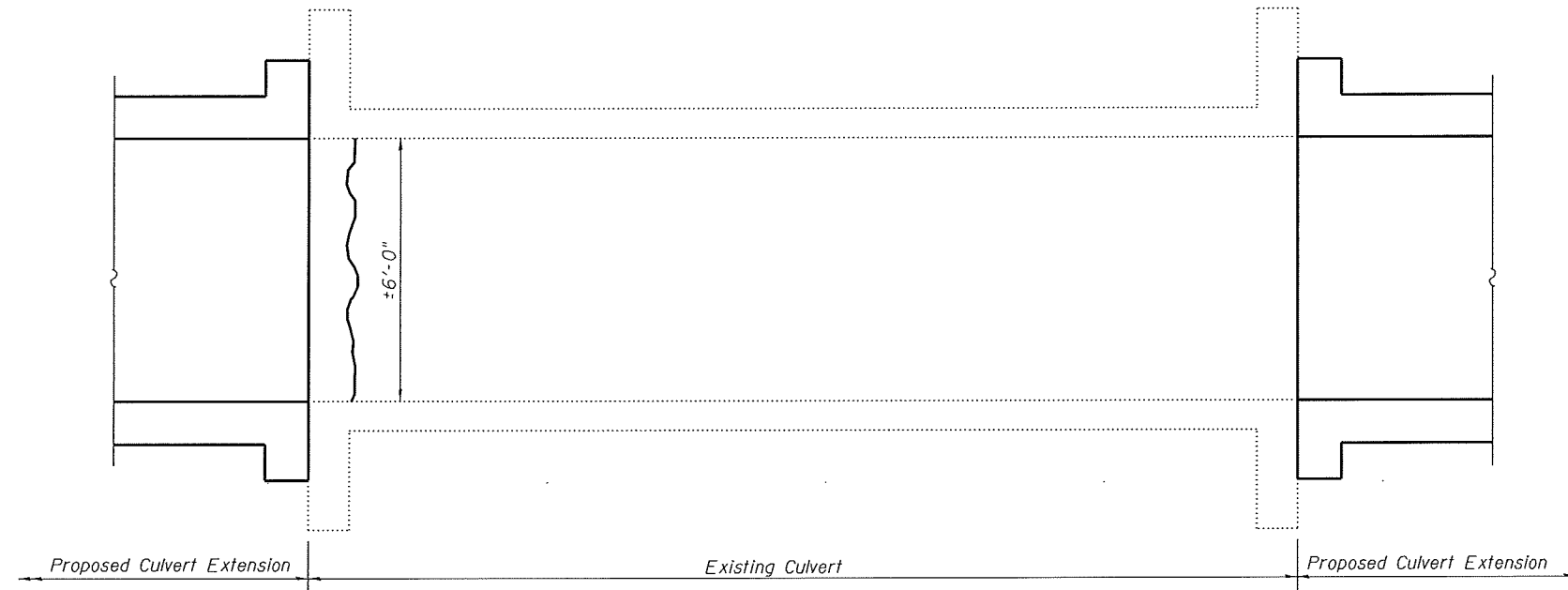
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS
STRUCTURE NUMBER 042-2473

SHEET NO. 3 OF 4 SHEETS

| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752 | 101-2RS-1 | JERSEY | 438 | 232 |
| CONTRACT NO. 76789 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



ELEVATION
 (Showing Inside Face of East Wall)

Note:
 The limits of Epoxy Crack Injection shown are approximate. The limits of Epoxy Crack Injection may vary in the field. Changes in the quantity of Epoxy Crack Injection shall be approved by the Engineer.

~~~~~ Indicates Epoxy Crack Injection Required

FILE NAME = 300-0162-76789-004.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdirkeimann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

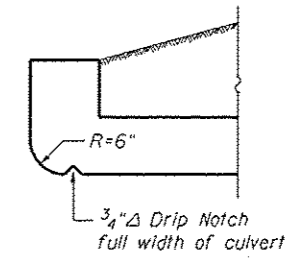
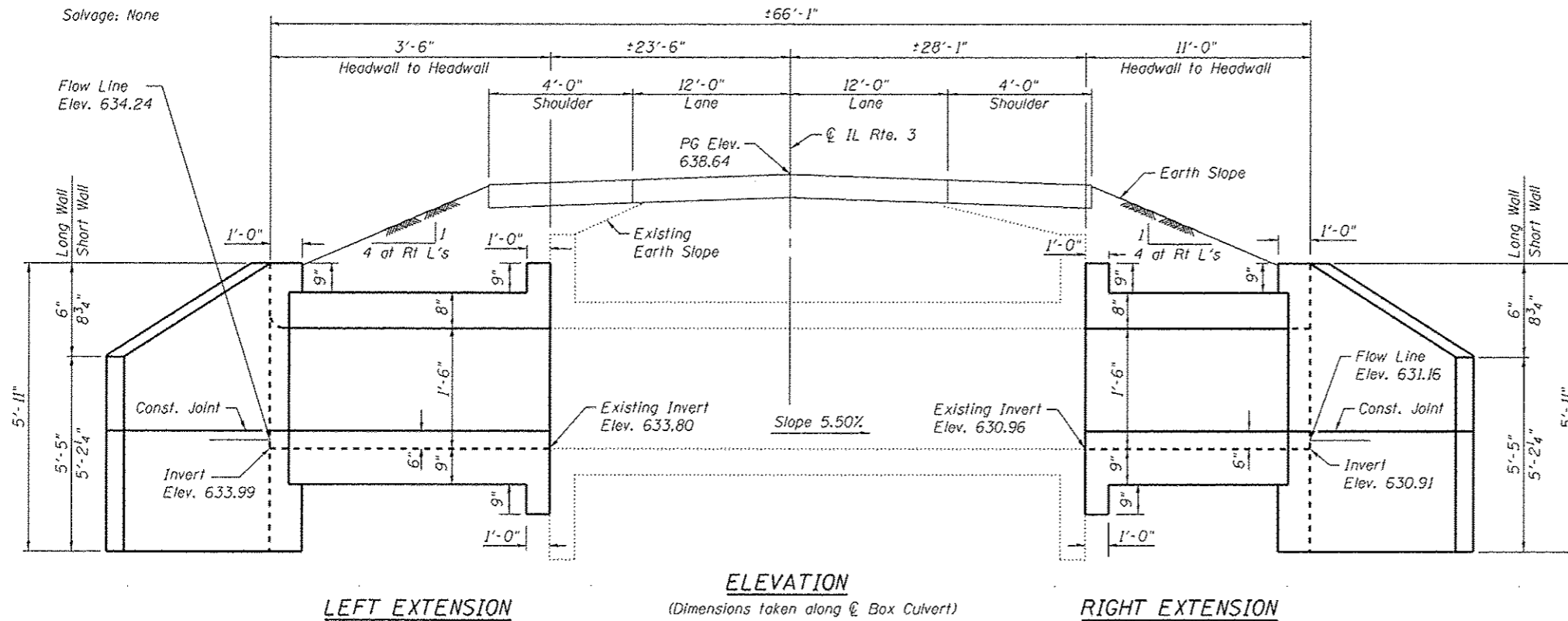
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EXISTING BOX CULVERT REPAIR DETAILS**  
**STRUCTURE NUMBER 042-2473**

SHEET NO. 4 OF 4 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752                       | 101-2R5-1 | JERSEY | 438                | 233       |
| ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |

Existing Structure: The existing structure is a +51'-7" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 321+83.



**GENERAL NOTES**

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

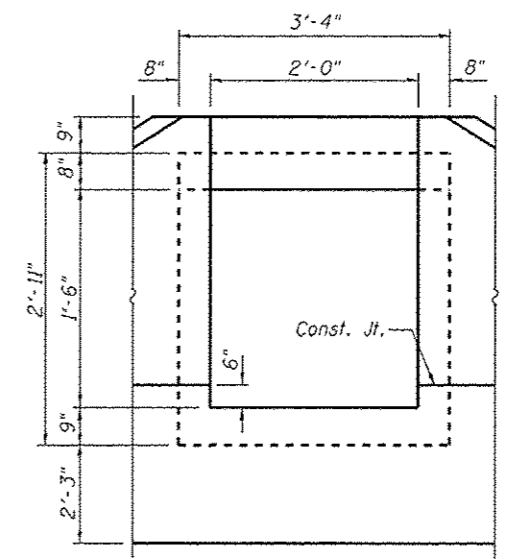
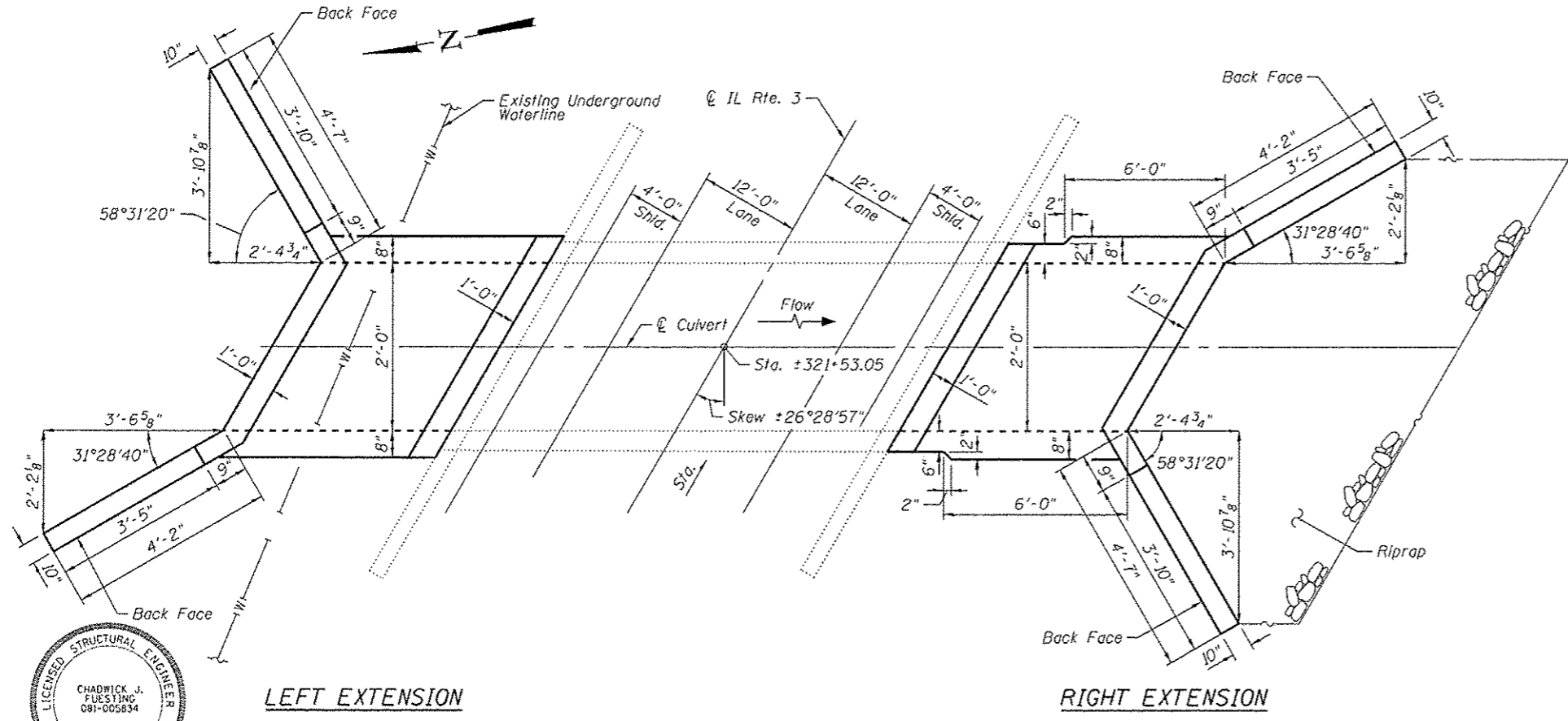
Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 1,958 psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.



**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

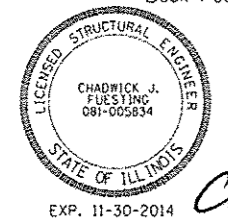
**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |

**GENERAL PLAN & ELEVATION**  
**ILLINOIS ROUTE 3**  
**F.A.S. RTE. 752 - SEC 101-2RS-1**  
**JERSEY COUNTY**  
**STA 321+53.05**



*Culvert Rectifying 8/8/14*

FILE NAME = 321+53.05-76789-001.dgn

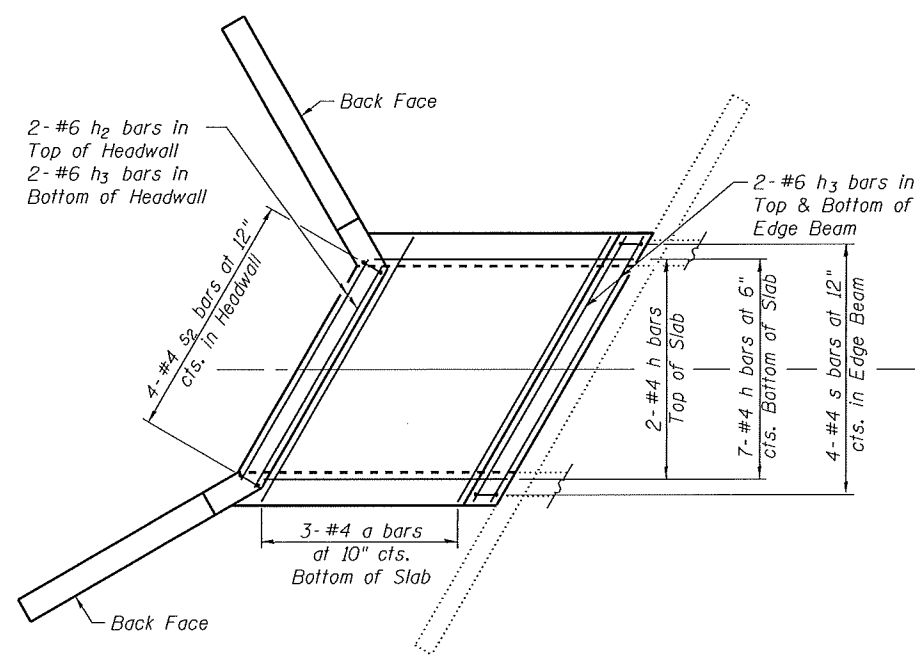


| USER NAME                              | DESIGNED | REVISIONS |
|----------------------------------------|----------|-----------|
| Illinois Design Firm Number 184,001670 | JD       | -         |
| PLOT SCALE                             | BB       | -         |
| PLOT DATE 4/11/03 PM 01/8/2014         | EW       | -         |
|                                        | CJF      | -         |

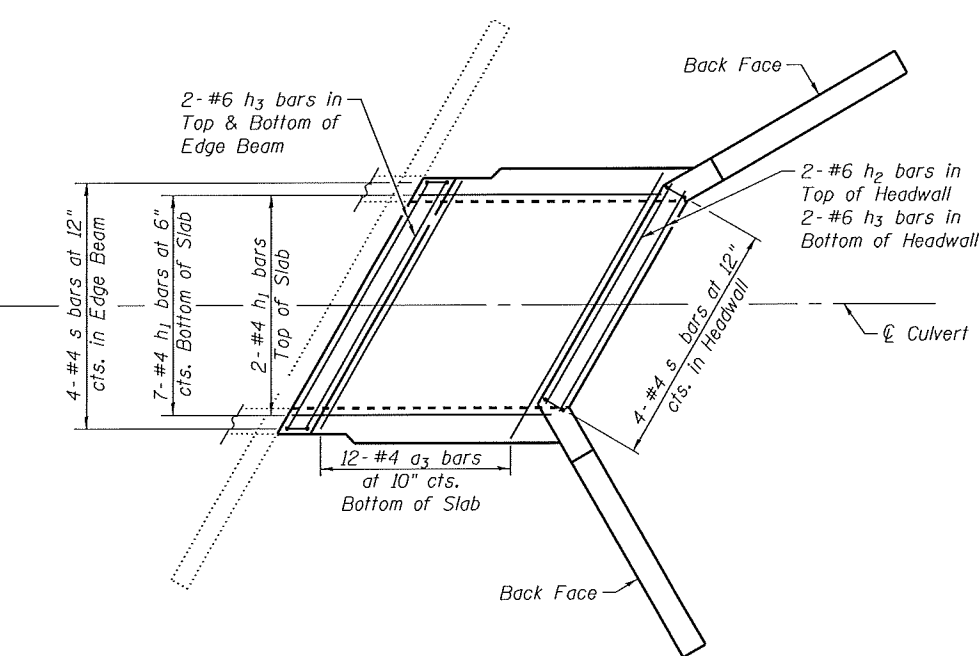
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------|-----------|--------|--------------------|-----------|
| 752         | 101-2RS-1 | JERSEY | 438                | 234       |
|             |           |        | CONTRACT NO. 76789 |           |

ILLINOIS FED. AID PROJECT

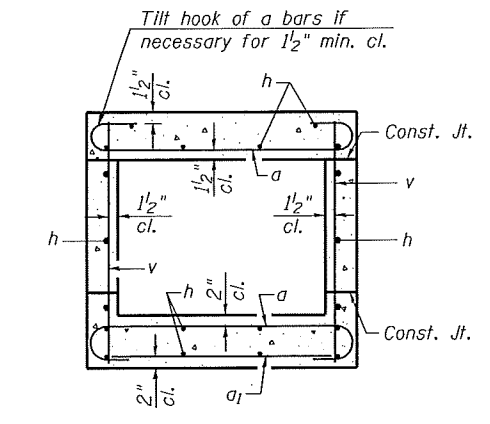


**LEFT EXTENSION**

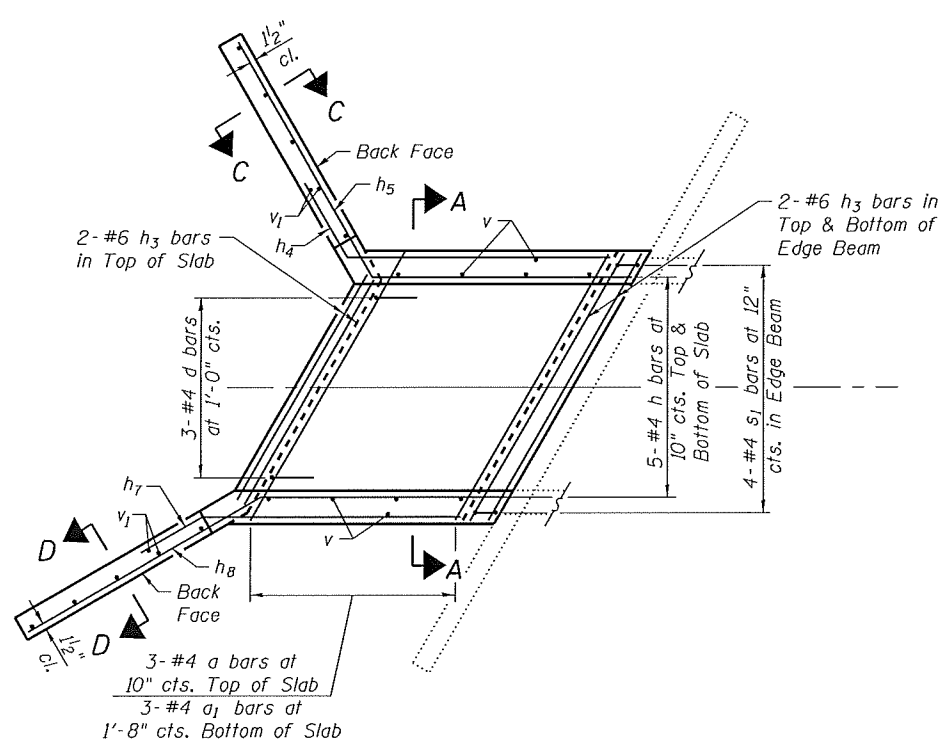
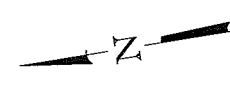


**RIGHT EXTENSION**

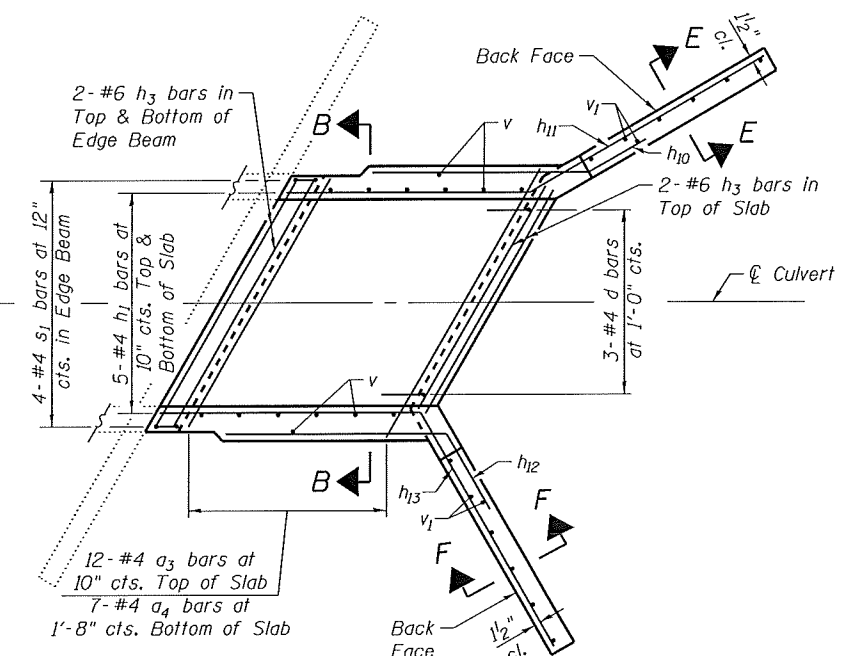
**TOP SLAB PLAN  
SHOWING REINFORCEMENT**  
(v, h4 & h5 bars not shown for clarity)



**SECTION A-A**

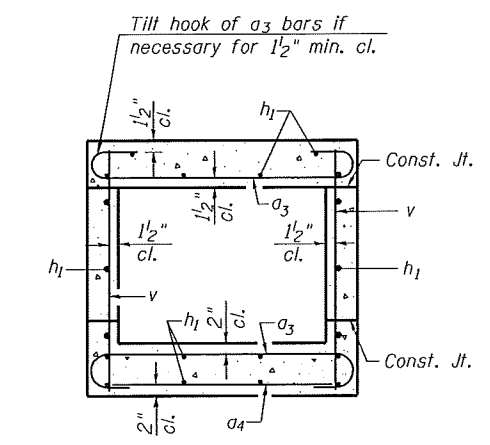


**LEFT EXTENSION**



**RIGHT EXTENSION**

**BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT**



**SECTION B-B**

Notes:  
For Section C-C, D-D, E-E, and F-F see sheet 3 of 3  
For Elevation, Bar Bends and Total Bill of Material see sheet 3 of 3.

FILE NAME = 321+53.05-76789-002.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME =                            | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 4/1/04 PM 8/8/2014         | CHECKED - CJF | REVISED - |

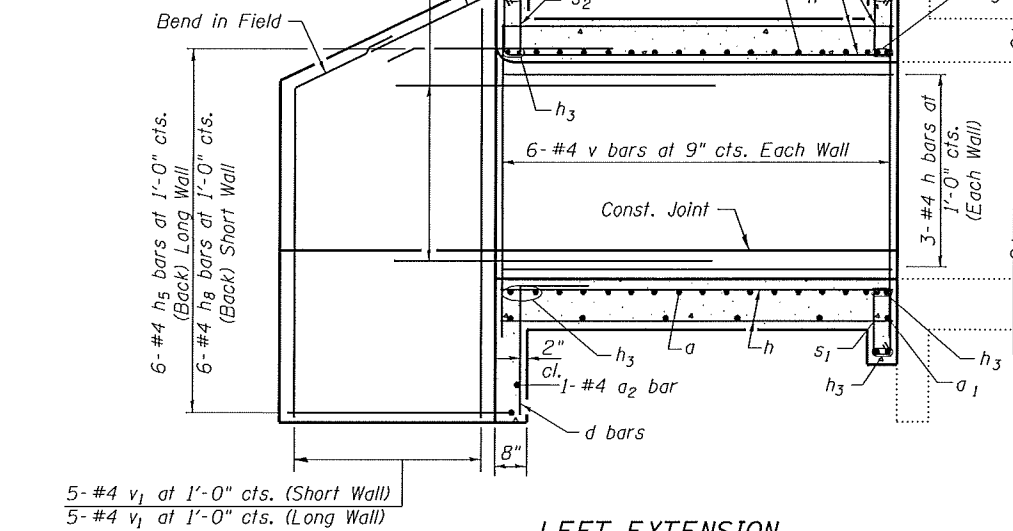
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT EXTENSION DETAILS  
STA 321+53.05**

SHEET NO. 2 OF 3 SHEETS

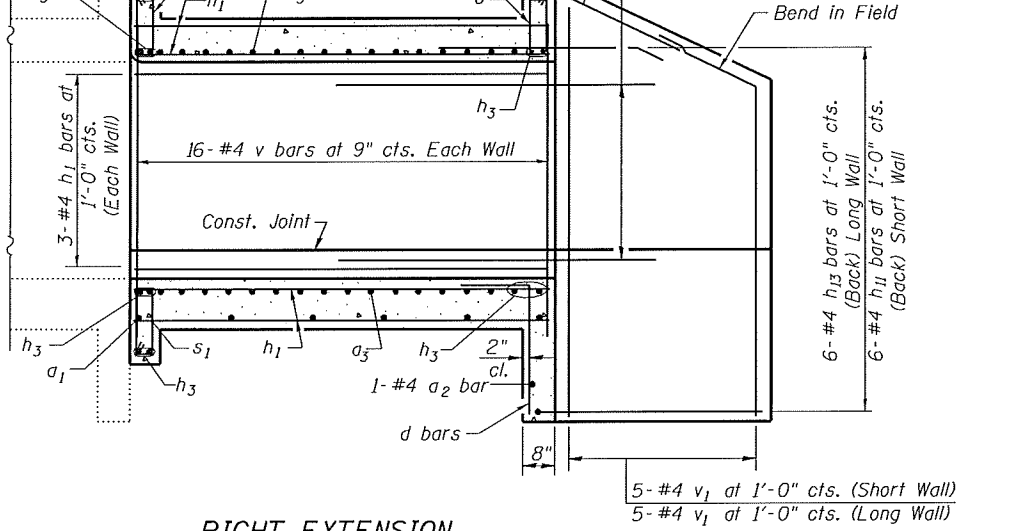
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|--------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 752                | 101-2RS-1 | JERSEY | 438                       | 235       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |

1 - #4 h<sub>9</sub> bar Each Face (Short Wall)  
 1 - #4 h<sub>6</sub> bar Each Face (Long Wall)  
 3 - #4 h<sub>4</sub> at 1'-0" cts. (Front) Long Wall  
 3 - #4 h<sub>7</sub> at 1'-0" cts. (Front) Short Wall

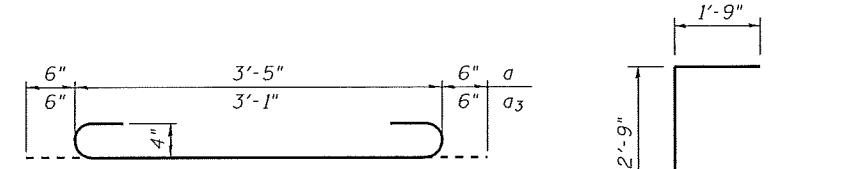


LEFT EXTENSION

1 - #4 h<sub>9</sub> bar Each Face (Short Wall)  
 1 - #4 h<sub>6</sub> bar Each Face (Long Wall)  
 3 - #4 h<sub>12</sub> at 1'-0" cts. (Front) Long Wall  
 3 - #4 h<sub>10</sub> at 1'-0" cts. (Front) Short Wall

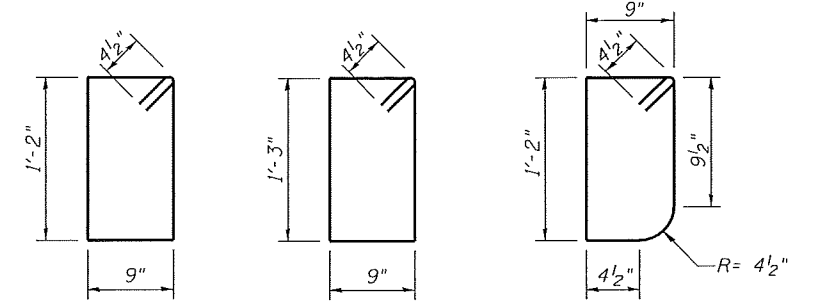


RIGHT EXTENSION



BAR a & a<sub>3</sub>

BAR d

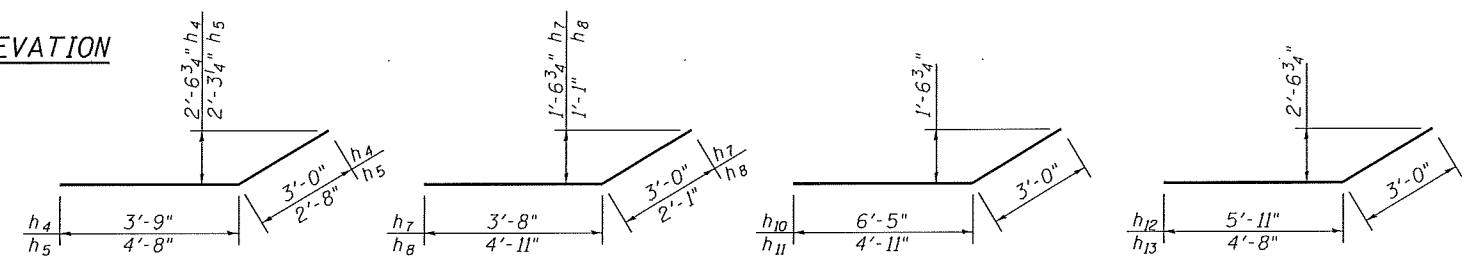


BAR s

BAR s<sub>1</sub>

BAR s<sub>2</sub>

ELEVATION

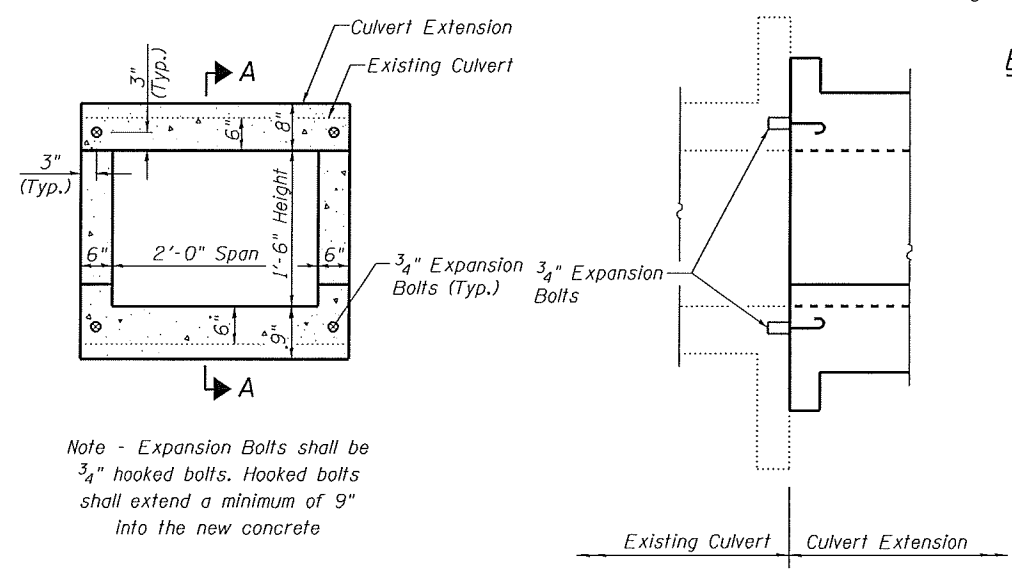


BARS h<sub>4</sub> & h<sub>5</sub>

BARS h<sub>7</sub> & h<sub>8</sub>

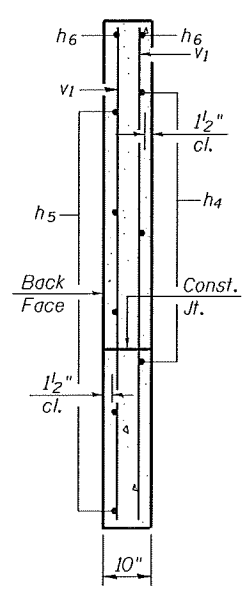
BARS h<sub>10</sub> & h<sub>11</sub>

BARS h<sub>12</sub> & h<sub>13</sub>

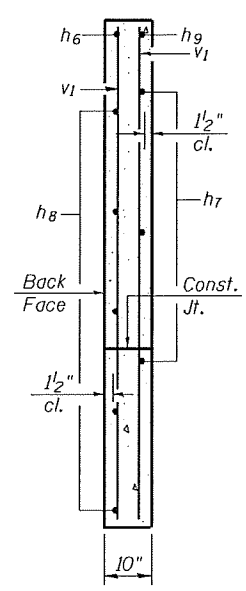


EXPANSION BOLT LAYOUT

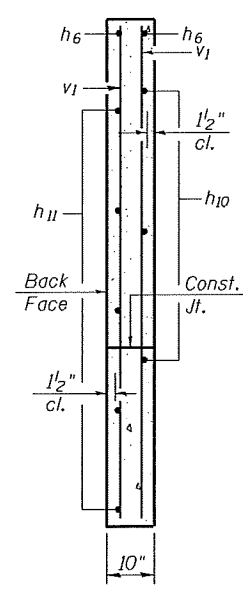
SECTION A-A



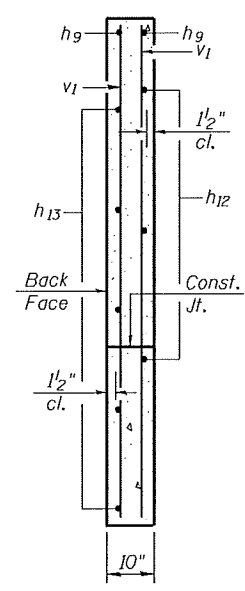
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

TOTAL BILL OF MATERIAL

| Bar                   | No. | Size    | Length | Shape |
|-----------------------|-----|---------|--------|-------|
| a                     | 6   | #4      | 4'-5"  | U     |
| a <sub>1</sub>        | 3   | #4      | 3'-5"  | —     |
| a <sub>2</sub>        | 2   | #4      | 3'-2"  | —     |
| a <sub>3</sub>        | 24  | #4      | 4'-1"  | U     |
| a <sub>4</sub>        | 7   | #4      | 3'-1"  | —     |
| d                     | 6   | #4      | 4'-6"  | L     |
| h                     | 25  | #4      | 3'-2"  | —     |
| h <sub>1</sub>        | 25  | #4      | 10'-8" | —     |
| h <sub>2</sub>        | 4   | #6      | 2'-5"  | —     |
| h <sub>3</sub>        | 24  | #6      | 3'-5"  | —     |
| h <sub>4</sub>        | 3   | #4      | 6'-9"  | —     |
| h <sub>5</sub>        | 6   | #4      | 7'-4"  | —     |
| h <sub>6</sub>        | 4   | #4      | 3'-7"  | —     |
| h <sub>7</sub>        | 3   | #4      | 6'-8"  | —     |
| h <sub>8</sub>        | 6   | #4      | 7'-0"  | —     |
| h <sub>9</sub>        | 4   | #4      | 3'-2"  | —     |
| h <sub>10</sub>       | 3   | #4      | 9'-5"  | —     |
| h <sub>11</sub>       | 6   | #4      | 7'-11" | —     |
| h <sub>12</sub>       | 3   | #4      | 8'-11" | —     |
| h <sub>13</sub>       | 6   | #4      | 7'-8"  | —     |
| s                     | 12  | #4      | 4'-7"  | □     |
| s <sub>1</sub>        | 8   | #4      | 4'-9"  | □     |
| s <sub>2</sub>        | 4   | #4      | 4'-5"  | □     |
| v                     | 48  | #4      | 2'-7"  | —     |
| v <sub>1</sub>        | 24  | #4      | 5'-7"  | —     |
| Concrete Box Culverts |     | Cu. Yd. | 6.2    |       |
| Reinforcement Bars    |     | Pound   | 950    |       |
| Expansion Bolts 3/4"  |     | Each    | 8      |       |

FILE NAME = 321+53.05-76789-0203.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME =                            | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 4/17/05 PM 8/8/2014        | CHECKED - CJF | REVISED - |

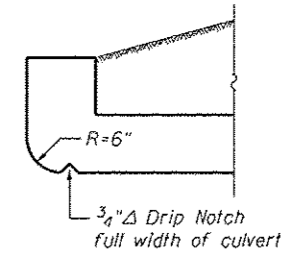
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STA 321 + 53.05

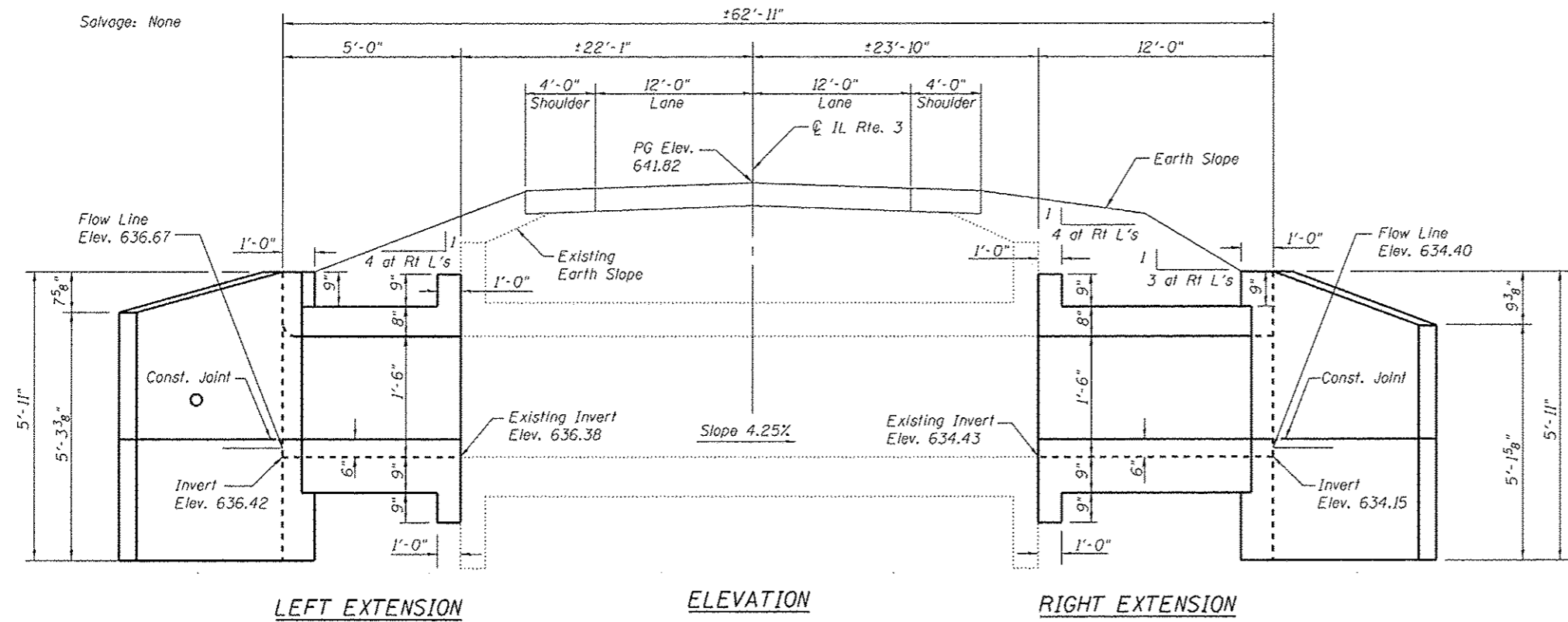
SHEET NO. 3 OF 3 SHEETS

|                           |                   |               |                    |               |
|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438   | SHEET NO. 236 |
|                           |                   |               | CONTRACT NO. 76789 |               |
| ILLINOIS FED. AID PROJECT |                   |               |                    |               |

Existing Structure: The existing structure, is a ±45'-11" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 327+00.



HEADWALL DETAILS AT UPSTREAM END



GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

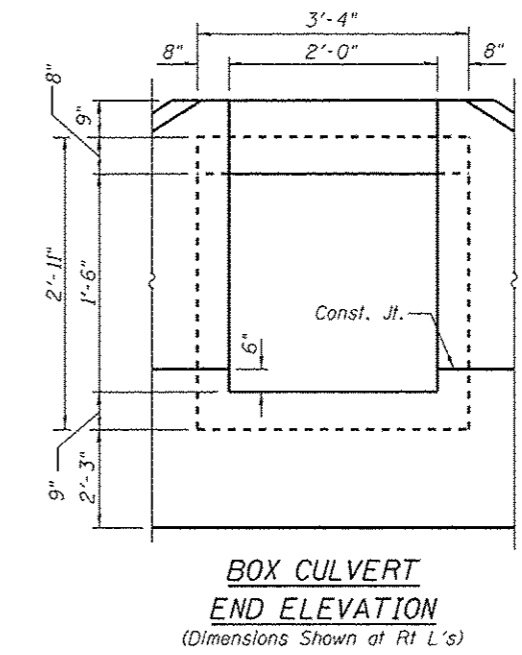
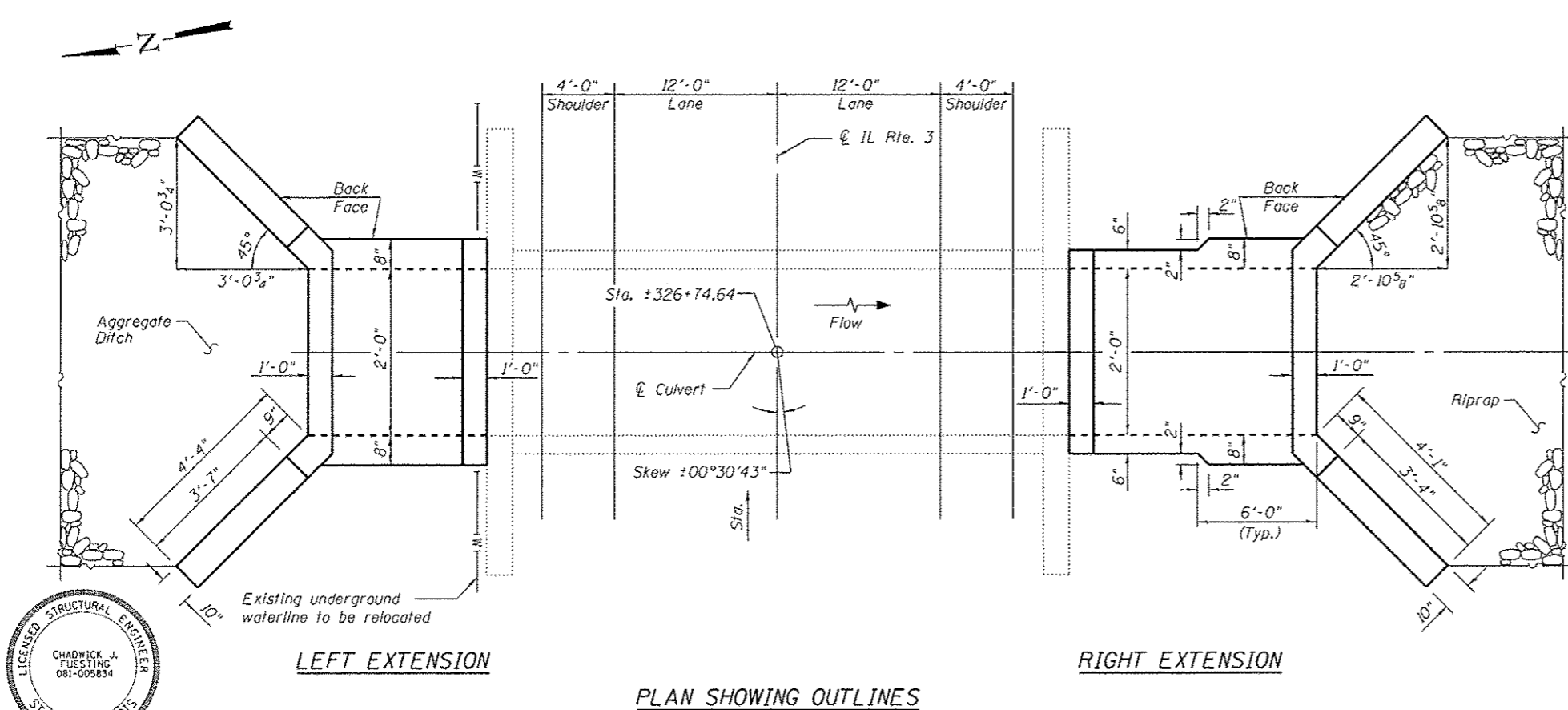
Precast alternative not allowed at this site.

A distance half the length of the wing wall but not less than 6'-0" of the barrel shall be poured monolithically with the wing walls.

Calculated max. soil pressure under barrel = 1,885 psf.

For Riprap and Aggregate Ditch details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.

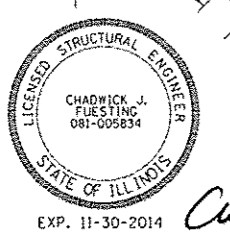


DESIGN SPECIFICATIONS  
2002 AASHTO Standard Specifications  
for Highway Bridges

LOADING HS 20-44  
Allow 50#/sq. ft. for future wearing  
surface on extension.

DESIGN STRESSES  
EXISTING CONSTRUCTION NEW CONSTRUCTION  
fy = 40,000 psi fy = 60,000 psi  
f'c = 3,000 psi f'c = 3,500 psi

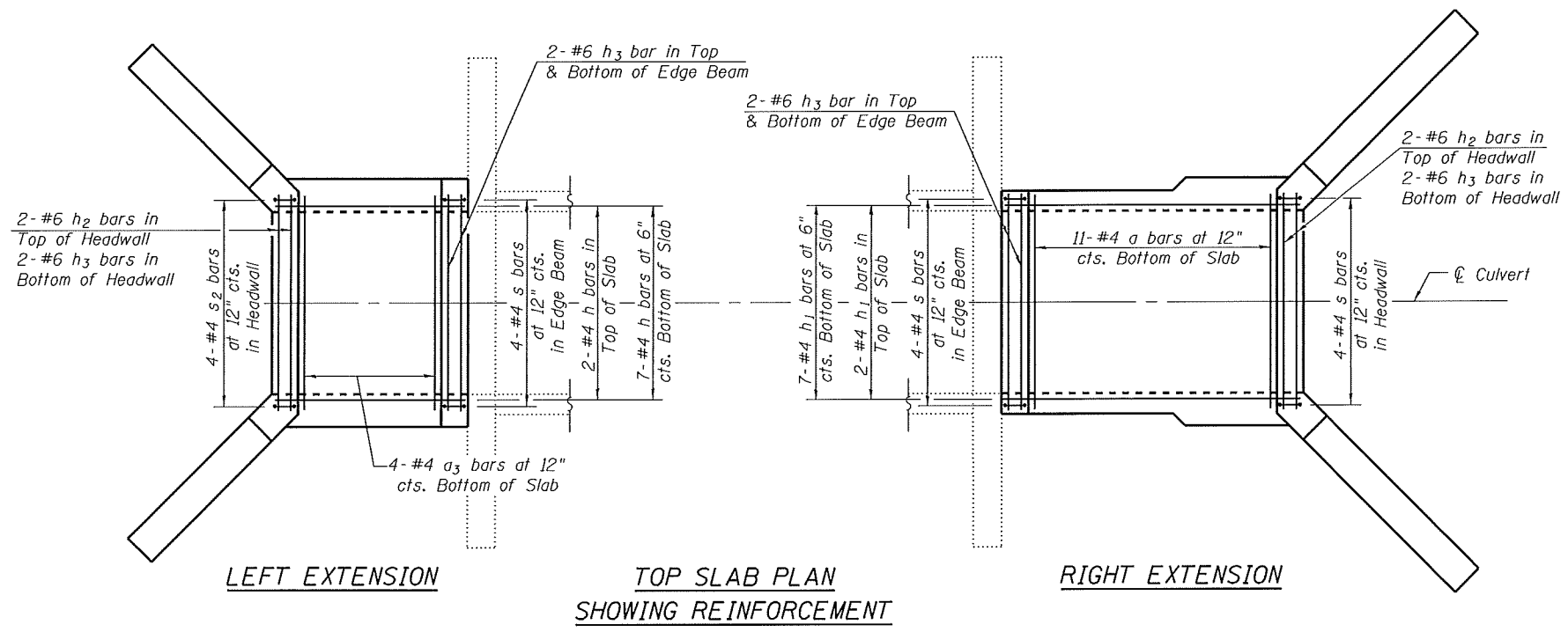
GENERAL PLAN & ELEVATION  
ILLINOIS ROUTE 3  
F.A.S. RTE. 752 - SEC. 101-2RS-1  
JERSEY COUNTY  
STATION 326+74.64



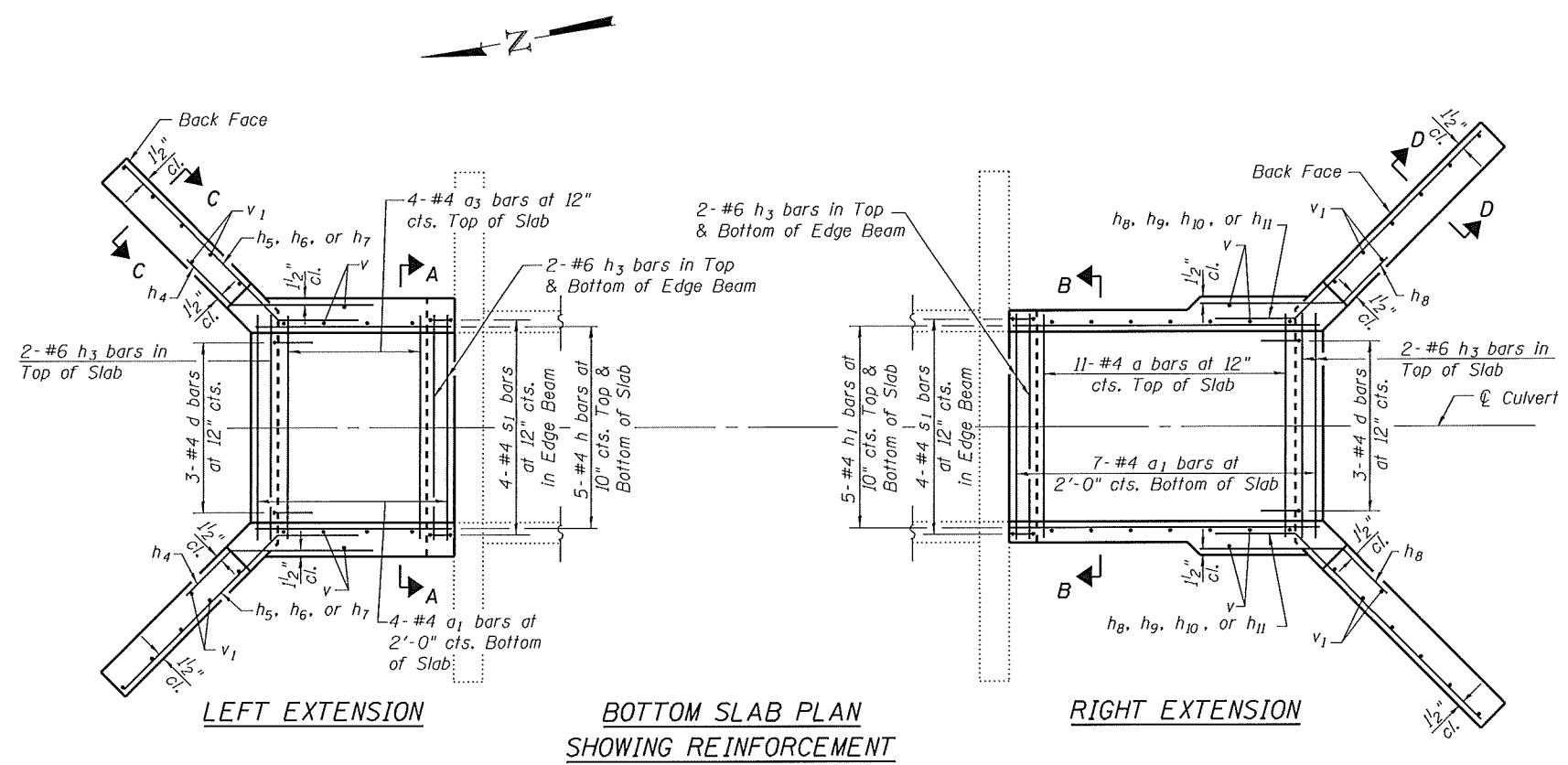
Cul Facility P/B/14

FILE NAME = 326+74.64-76789-021.dgn

|                                                                                                             |                                        |               |          |                                                           |                           |                          |                      |                         |                      |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------|----------|-----------------------------------------------------------|---------------------------|--------------------------|----------------------|-------------------------|----------------------|
| <p>LOCHMULLER GROUP<br/>1918 S.W. BRADLEY K. SMITH DRIVE<br/>TROY, ALABAMA 36069<br/>PHONE 334-341-1400</p> | USER NAME = jdrinkelmann               | DESIGNED - JD | REVISD - | <p>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</p> | <p>F.A.S. RTE. 752</p>    | <p>SECTION 101-2RS-1</p> | <p>COUNTY JERSEY</p> | <p>TOTAL SHEETS 438</p> | <p>SHEET NO. 237</p> |
|                                                                                                             | Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISD - |                                                           |                           |                          |                      |                         |                      |
|                                                                                                             | PLOT SCALE =                           | DRAWN - WS    | REVISD - |                                                           |                           |                          |                      |                         |                      |
|                                                                                                             | PLOT DATE = 8/6/2014                   | CHECKED - CJF | REVISD - |                                                           |                           |                          |                      |                         |                      |
| SHEET NO. 1 OF 3 SHEETS                                                                                     |                                        |               |          |                                                           | CONTRACT NO. 76789        |                          |                      |                         |                      |
|                                                                                                             |                                        |               |          |                                                           | ILLINOIS FED. AID PROJECT |                          |                      |                         |                      |



(v, v<sub>1</sub>, h<sub>4</sub>, h<sub>5</sub>, h<sub>6</sub>, h<sub>7</sub>, h<sub>8</sub>, h<sub>9</sub>, h<sub>10</sub>, & h<sub>11</sub> bars not shown for clarity)



Notes:  
 For Sections C-C and D-D, see sheet 3 of 3.  
 For Elevation, Bar Bends and Total Bill of Material see sheet 3 of 3.

FILE NAME = 326+74.64-76789-002.dgn



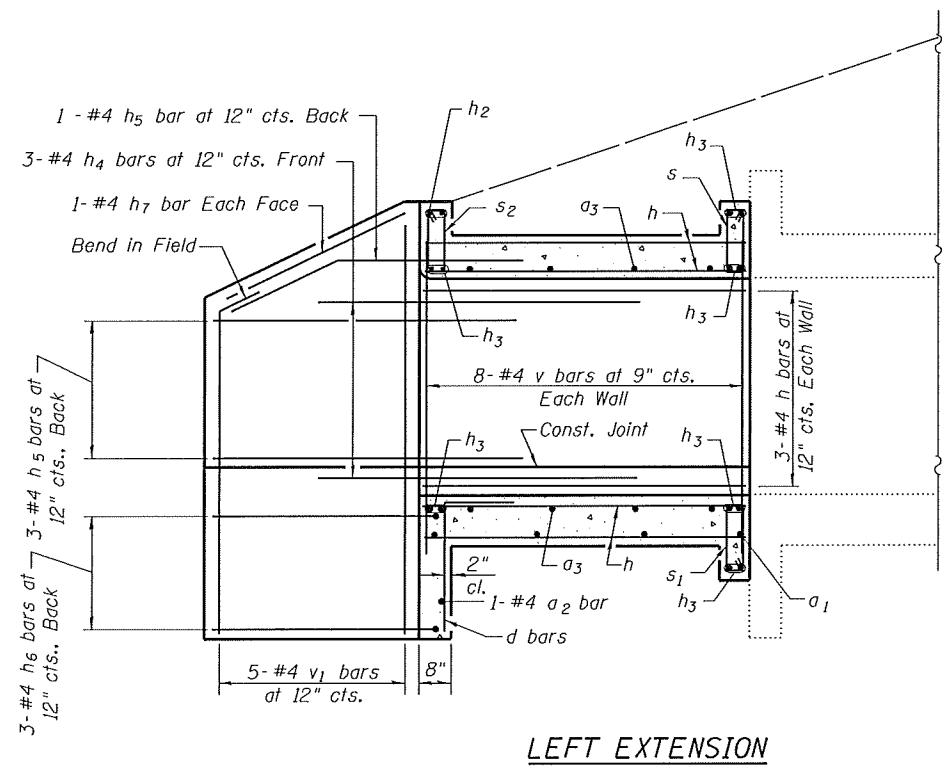
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|----------------------------------------|---------------|-----------|
| USER NAME = jdirkelmann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

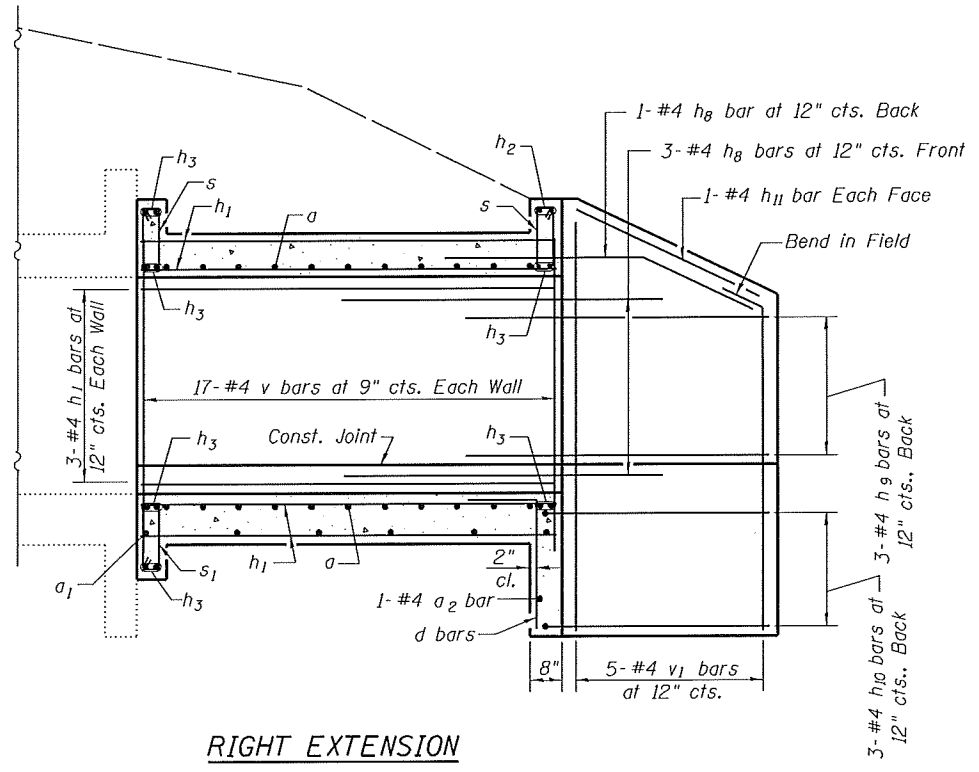
BOX CULVERT EXTENSION DETAILS  
 STATION 326 + 74.64

SHEET NO. 2 OF 3 SHEETS

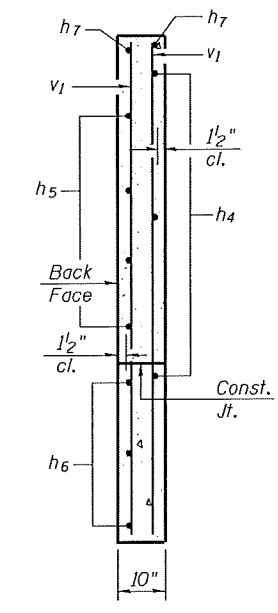
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 238       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



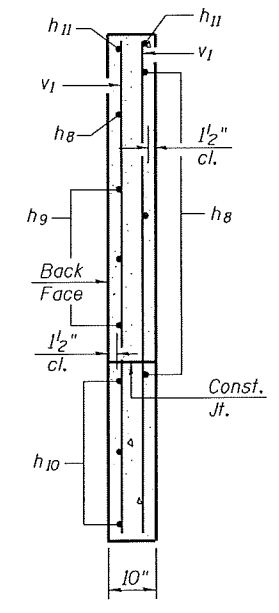
LEFT EXTENSION



RIGHT EXTENSION

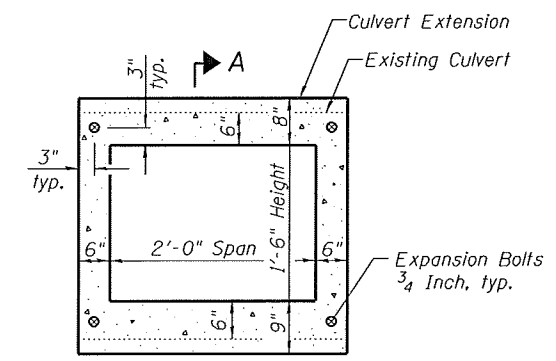


SECTION C-C



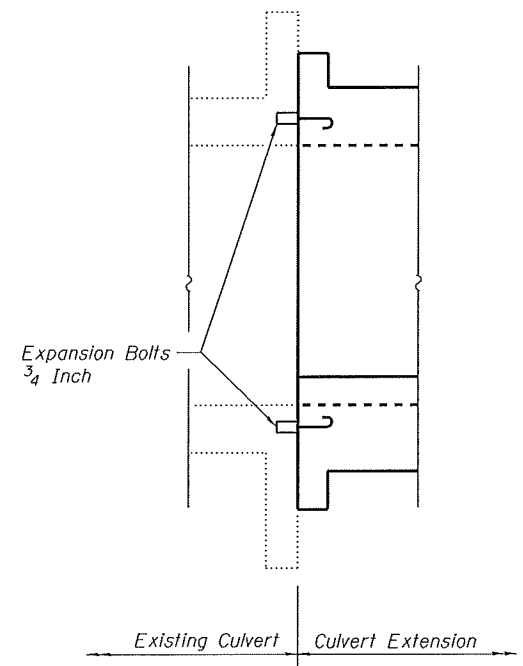
SECTION D-D

ELEVATION

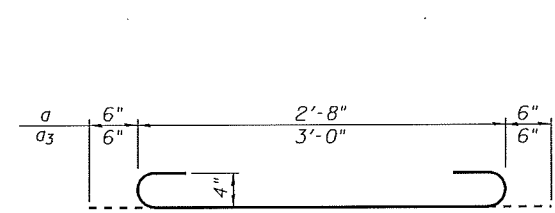


EXPANSION BOLT LAYOUT

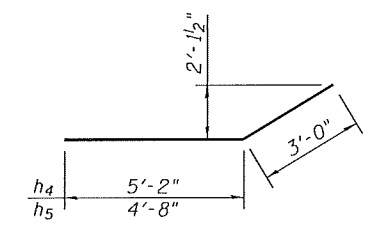
Note - Expansion Bolts shall be 3/4\"/>



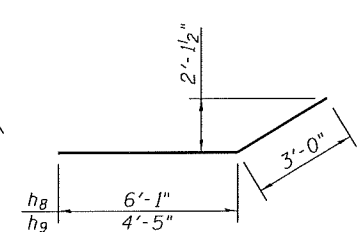
SECTION A-A



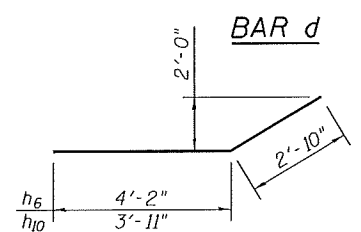
BAR a & a3



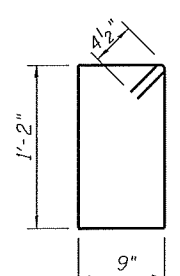
BARS h4 & h5



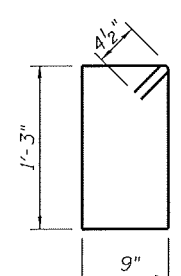
BARS h8 & h9



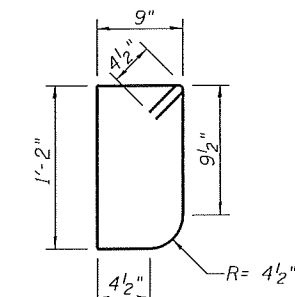
BARS h6 & h10



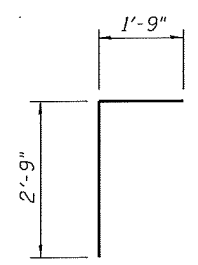
BAR s



BAR s1



BAR s2



BAR d

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length | Shape       |
|--------------------------|-----|------|--------|-------------|
| a                        | 22  | #4   | 3'-8"  | [hook]      |
| a1                       | 11  | #4   | 2'-8"  | [hook]      |
| a2                       | 2   | #4   | 2'-10" | [hook]      |
| a3                       | 8   | #4   | 4'-0"  | [hook]      |
| d                        | 6   | #4   | 4'-6"  | [hook]      |
| h                        | 25  | #4   | 4'-9"  | [hook]      |
| h1                       | 25  | #4   | 11'-9" | [hook]      |
| h2                       | 4   | #6   | 2'-3"  | [hook]      |
| h3                       | 24  | #6   | 3'-0"  | [hook]      |
| h4                       | 6   | #4   | 8'-2"  | [hook]      |
| h5                       | 8   | #4   | 7'-8"  | [hook]      |
| h6                       | 6   | #4   | 7'-0"  | [hook]      |
| h7                       | 4   | #4   | 3'-4"  | [hook]      |
| h8                       | 8   | #4   | 9'-1"  | [hook]      |
| h9                       | 6   | #4   | 7'-5"  | [hook]      |
| h10                      | 6   | #4   | 6'-9"  | [hook]      |
| h11                      | 4   | #4   | 3'-2"  | [hook]      |
| s                        | 12  | #4   | 4'-7"  | [hook]      |
| s1                       | 8   | #4   | 4'-9"  | [hook]      |
| s2                       | 4   | #4   | 4'-5"  | [hook]      |
| v                        | 54  | #4   | 2'-7"  | [hook]      |
| v1                       | 24  | #4   | 5'-7"  | [hook]      |
| Concrete Box Culverts    |     |      |        | Cu. Yd. 7.6 |
| Reinforcement Bars       |     |      |        | Pound 1000  |
| Expansion Bolts 3/4 Inch |     |      |        | Each 8      |

FILE NAME = 326-74.64-76789-003.dgn



USER NAME = jdrnkemann  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 326 + 74.64

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 239       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



Existing Structure: The existing structure is a ±35'-0" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 336+47.

Salvage: None

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

For Riprap details and quantities see Roadway Plans.

Calculated max. soil pressure under barrel = 3,504 psf.

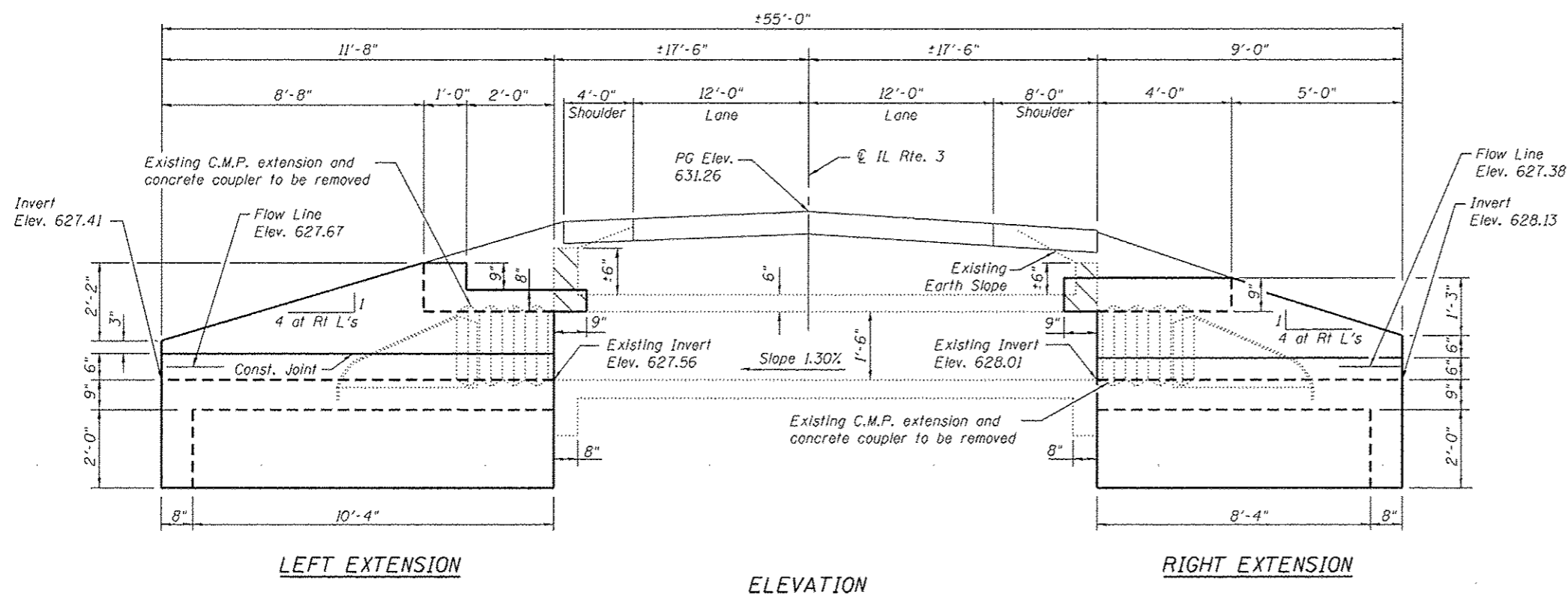
Partial Removal of the existing structure during construction shall be completed according to Section 501.05 of the Standard Specifications.

Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.

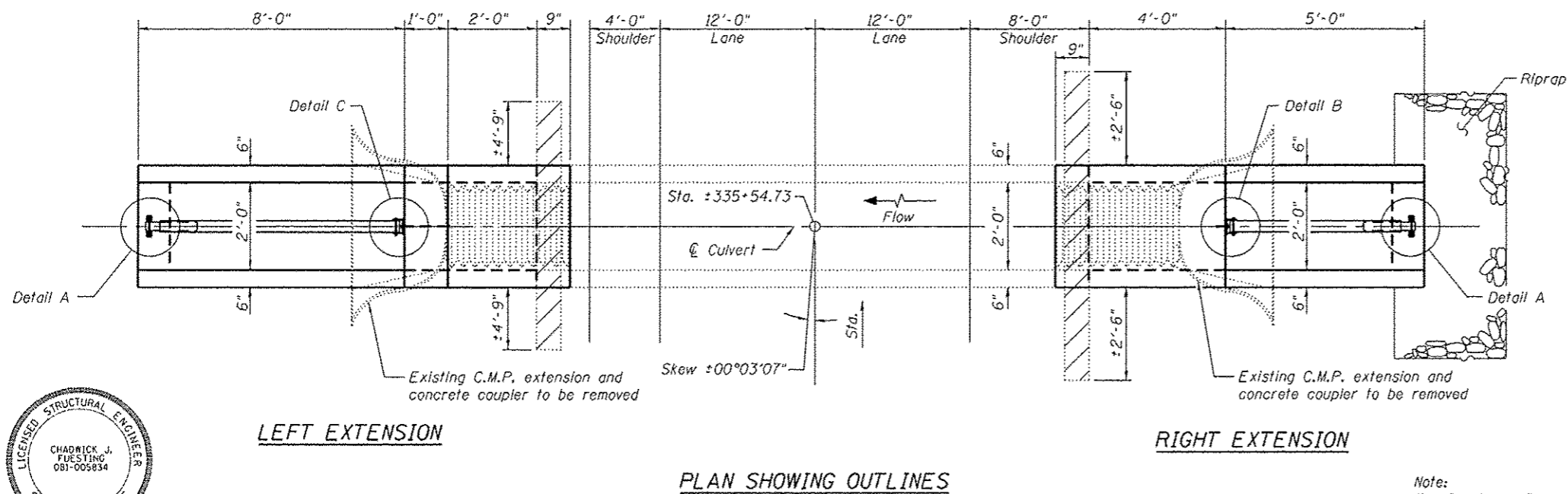
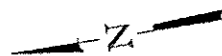
For Total Bill of Materials see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Gate.



Indicates Limits of Concrete Removal



**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION      | NEW CONSTRUCTION           |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |

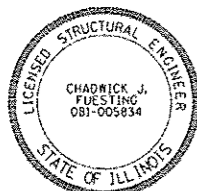
**GENERAL PLAN & ELEVATION**

ILLINOIS ROUTE 3

F.A.S. RTE. 752 - SEC. 101-2RS-1

JERSEY COUNTY

STATION 335+54.73



*Chief Engineer 8/18/14*

Note: For Details A, B and C see sheet 3 of 3.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

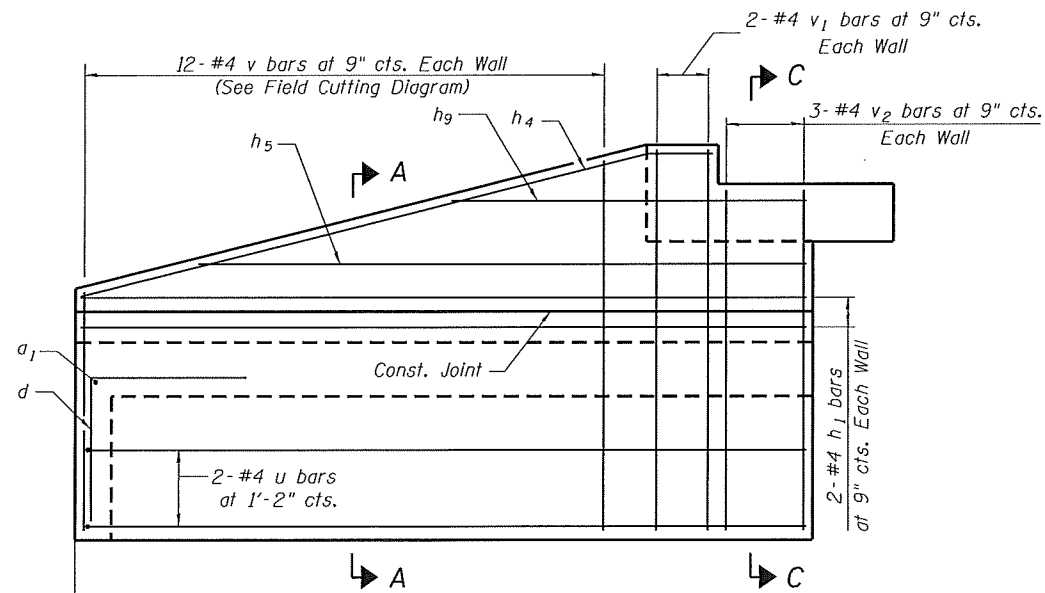
| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------|-----------|--------|--------------------|-----------|
| 752         | 101-2RS-1 | JERSEY | 438                | 240       |
|             |           |        | CONTRACT NO. 76789 |           |

ILLINOIS FED. AID PROJECT

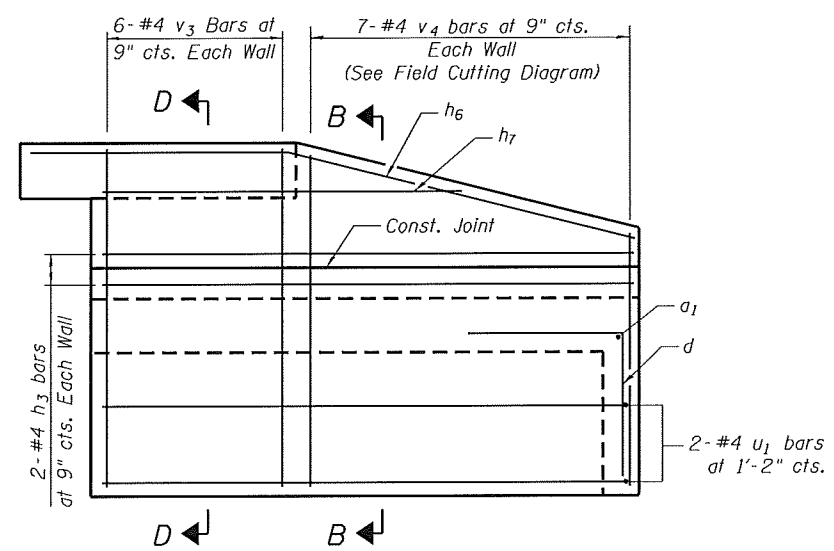
FILE NAME : 335+54.73-76789-001.dgn

|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME : jdmann                     | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE :                           | DRAWN - EW    | REVISED - |
| PLOT DATE : 8/8/2014                   | CHECKED - CJF | REVISED - |



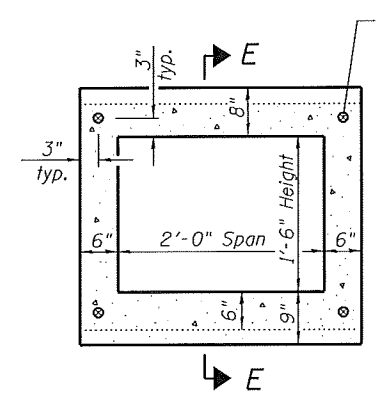


LEFT EXTENSION

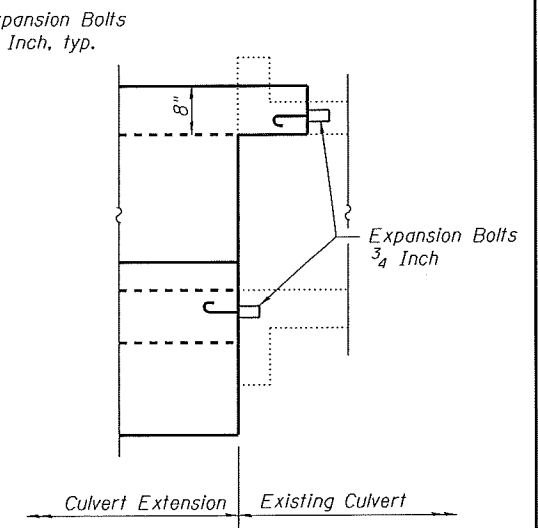


RIGHT EXTENSION

ELEVATION (Showing Reinforcement)

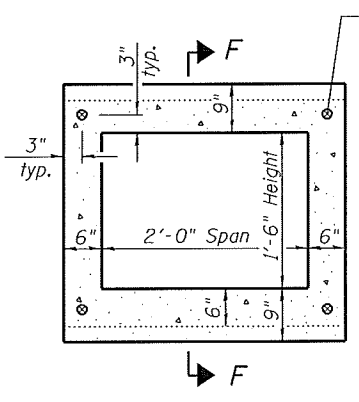


LEFT EXTENSION EXPANSION BOLT LAYOUT

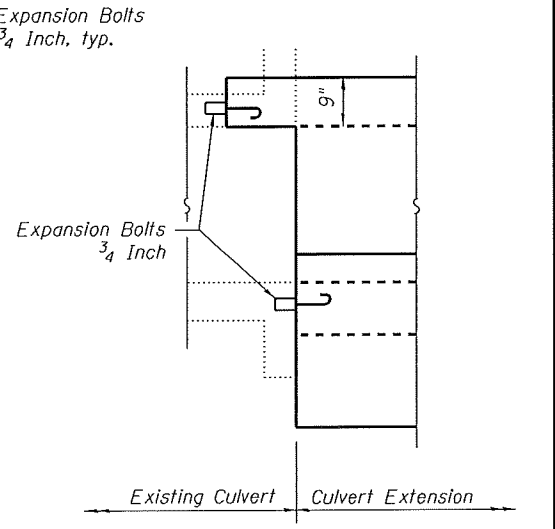


SECTION E-E

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete



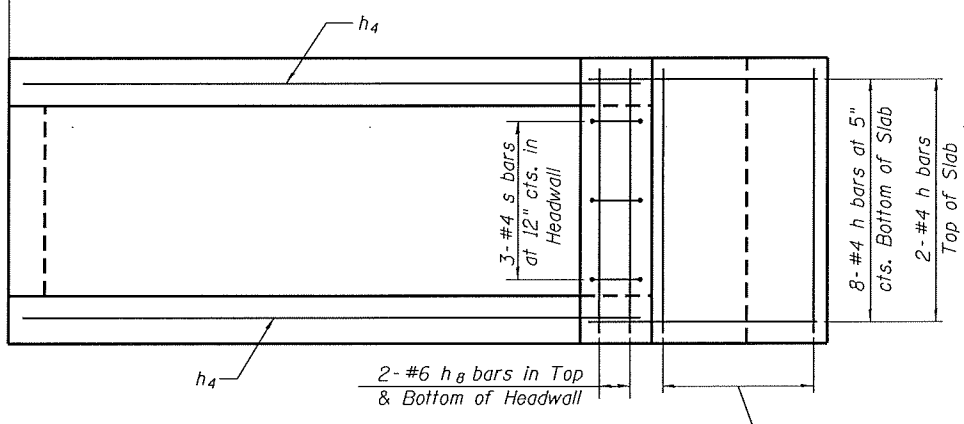
RIGHT EXTENSION EXPANSION BOLT LAYOUT



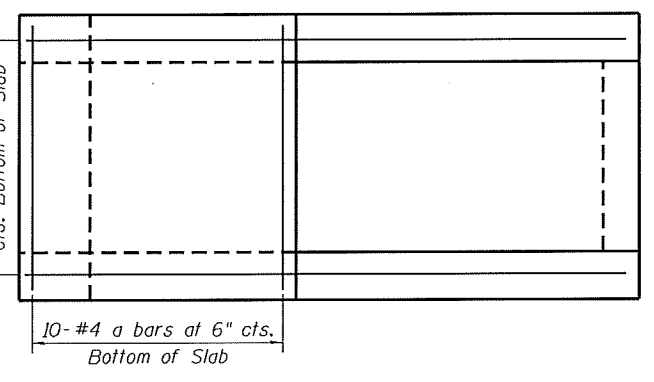
SECTION F-F

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

Note: For Section A-A, B-B, C-C and D-D, see sheet 3 of 3. For Bar Bends and Total Bill of Material, see sheet 3 of 3.

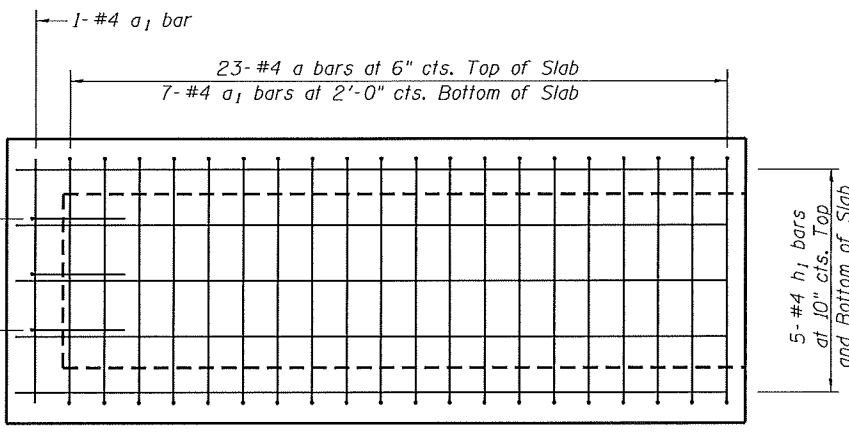


LEFT EXTENSION

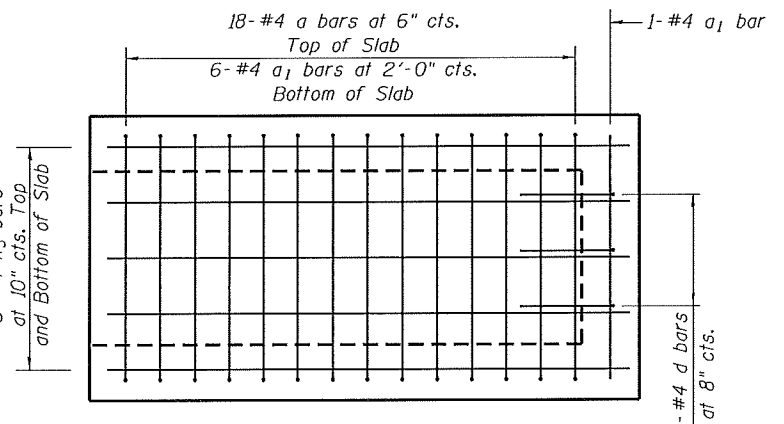


RIGHT EXTENSION

TOP SLAB (Showing Reinforcement)



LEFT EXTENSION



RIGHT EXTENSION

BOTTOM SLAB (Showing Reinforcement)

FILE NAME = 335-54.73-76789-002.dgn

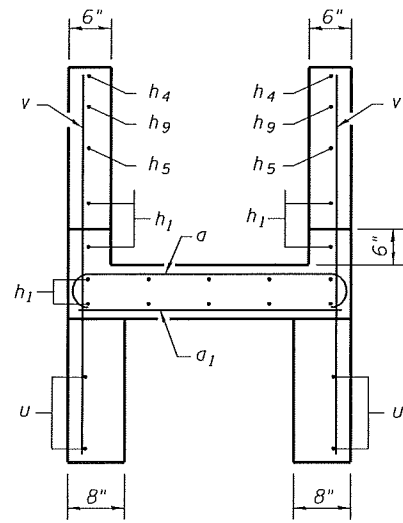


|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdirnkemann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

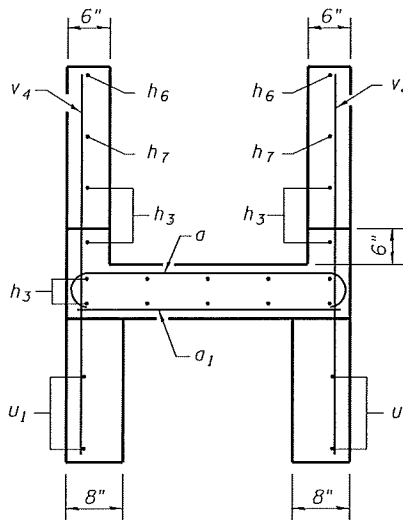
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS,  
STATION 335 + 54.73  
SHEET NO. 2 OF 3 SHEETS

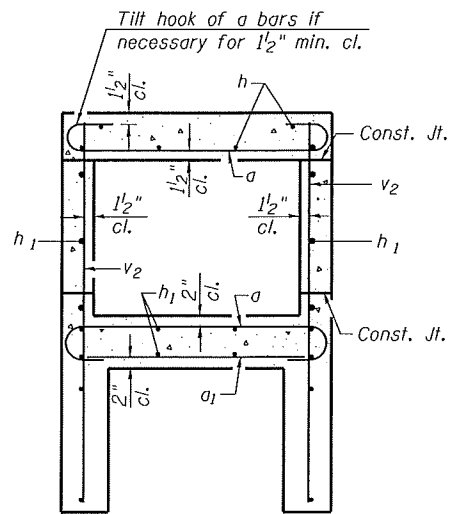
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|---------------------------|-------------------|---------------|------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 241 |
| CONTRACT NO. 76789        |                   |               |                  |               |
| ILLINOIS FED. AID PROJECT |                   |               |                  |               |



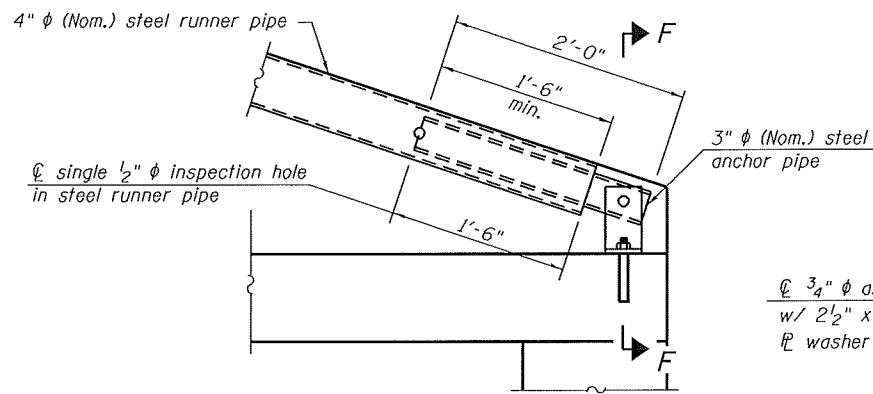
SECTION A-A



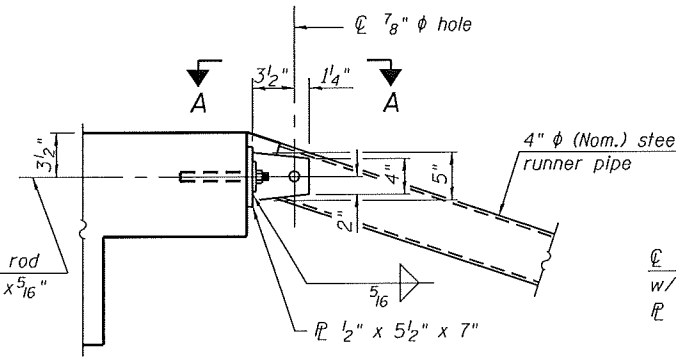
SECTION B-B



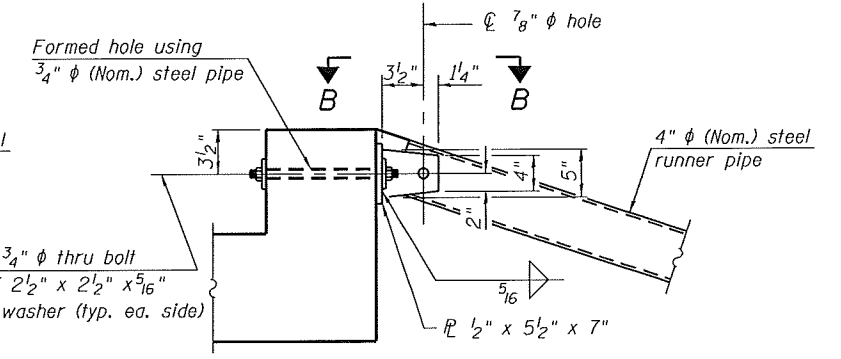
SECTION C-C



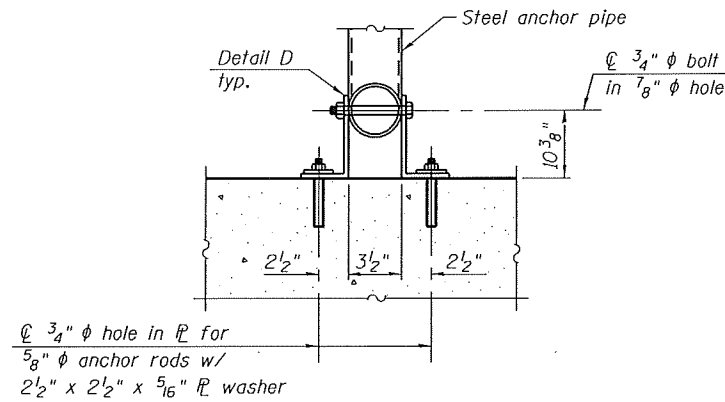
DETAIL A



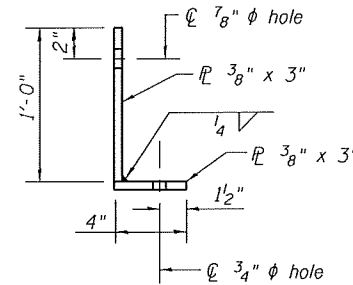
DETAIL B



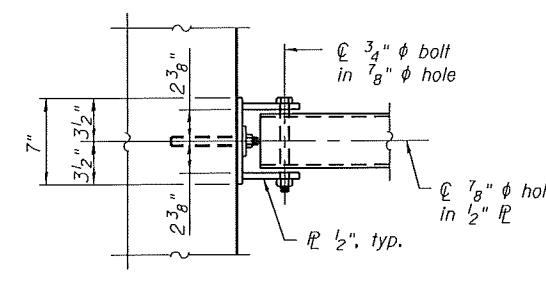
DETAIL C



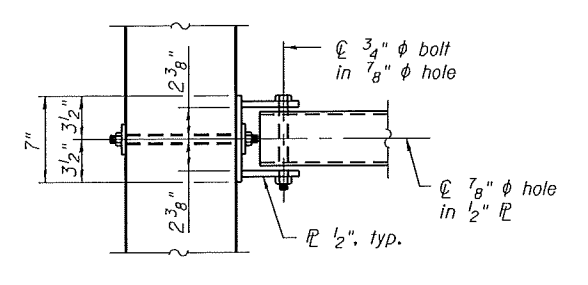
SECTION F-F



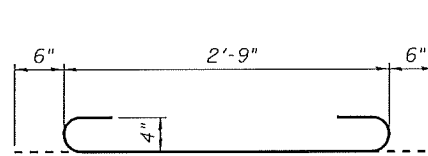
DETAIL D



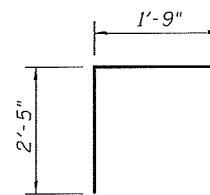
VIEW A-A



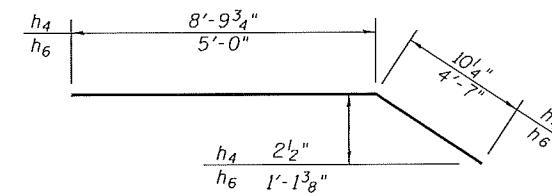
VIEW B-B



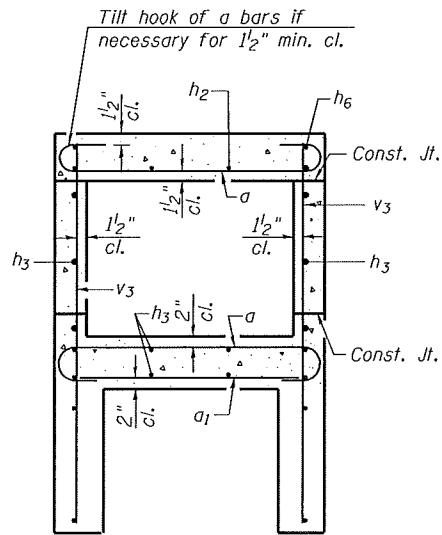
BAR a



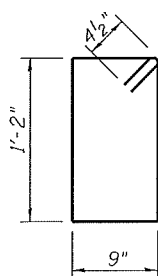
BAR d



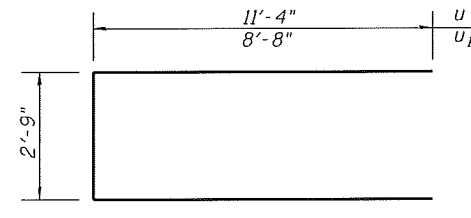
BARS h4 & h6



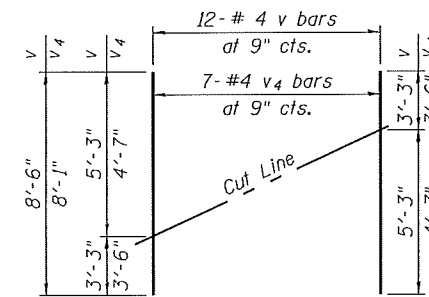
SECTION D-D



BAR s



BARS u & u1



FIELD CUTTING DIAGRAM

Order v & v4 bars full length. Cut as shown and use remainder of bars in opposite wall.

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape |
|--------------------------|-----|------|---------|-------|
| a                        | 57  | #4   | 3'-9"   |       |
| a1                       | 15  | #4   | 2'-9"   |       |
| d                        | 8   | #4   | 4'-2"   |       |
| h                        | 10  | #4   | 3'-6"   |       |
| h1                       | 14  | #4   | 11'-5"  |       |
| h2                       | 8   | #4   | 4'-6"   |       |
| h3                       | 14  | #4   | 8'-9"   |       |
| h4                       | 2   | #4   | 9'-8"   |       |
| h5                       | 2   | #4   | 8'-4"   |       |
| h6                       | 2   | #4   | 9'-7"   |       |
| h7                       | 2   | #4   | 6'-6"   |       |
| h8                       | 4   | #6   | 2'-9"   |       |
| h9                       | 2   | #4   | 3'-5"   |       |
| s                        | 3   | #4   | 4'-7"   |       |
| u                        | 2   | #4   | 25'-5"  |       |
| u1                       | 2   | #4   | 20'-1"  |       |
| v                        | 12  | #4   | 8'-6"   |       |
| v1                       | 4   | #4   | 5'-4"   |       |
| v2                       | 6   | #4   | 4'-7"   |       |
| v3                       | 12  | #4   | 4'-8"   |       |
| v4                       | 7   | #4   | 8'-1"   |       |
| Concrete Removal         |     |      | Cu. Yd. | 0.5   |
| Reinforcement Bars       |     |      | Pound   | 750   |
| Expansion Bolts 3/4 Inch |     |      | Each    | 8     |
| Concrete Box Culverts    |     |      | Cu. Yd. | 5.9   |
| Traversable Pipe Grate   |     |      | Foot    | 14    |

FILE NAME = 335-54-73-76789-083.dgn



USER NAME = jdukelmann  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 335 + 54.73

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 242       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |

Existing Structure: The existing structure is a ±75'-7" long reinforced cast-in-place concrete box culvert with a 2'-0" x 2'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 344+29.

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

A distance half the length of the wing wall but not less than 6'-0" of the barrel shall be poured monolithically with the wing walls.

Existing Block Drop Inlet to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.

For Riprap details and quantities see Roadway Plans.

Bars noted thus, 4x2-#5 indicates 4 lines of bars with 2 lengths of bars per line.

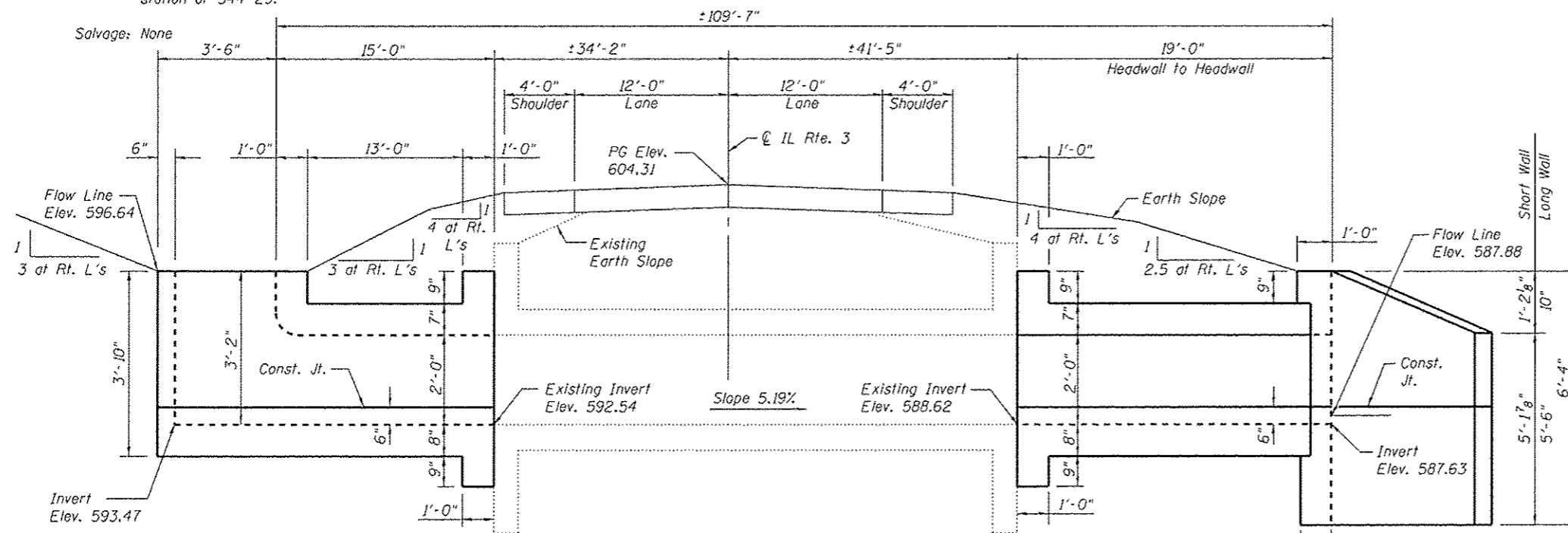
The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Calculated max. soil pressure under barrel = 2.450 psf.

For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

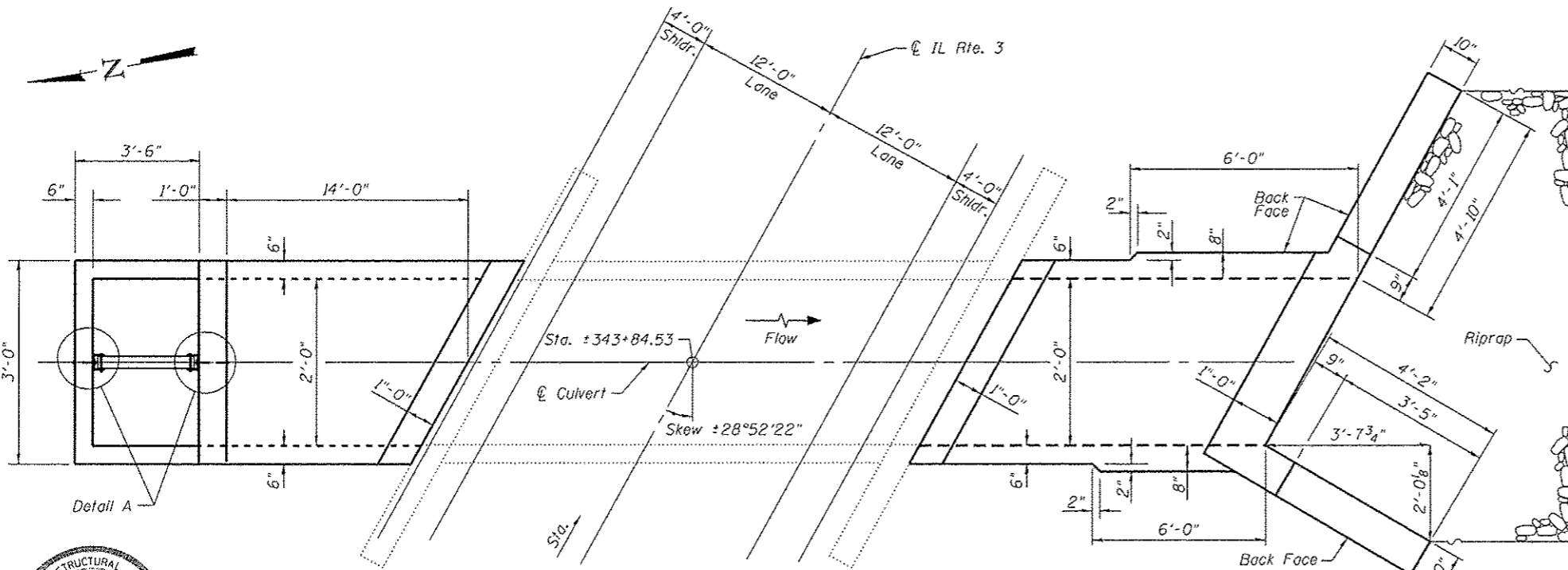


LEFT EXTENSION

ELEVATION

(Existing Block Drop Inlet not shown for clarity)

RIGHT EXTENSION

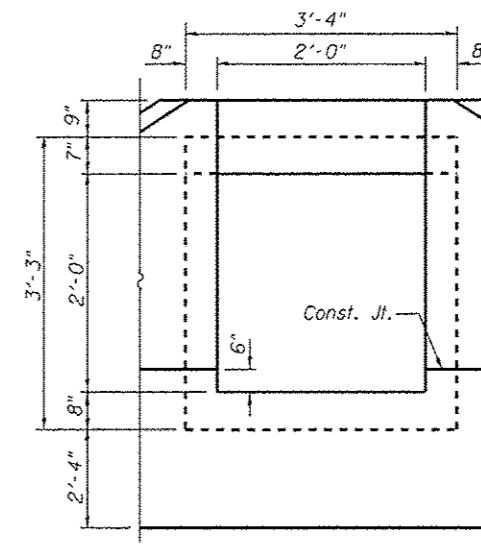


LEFT EXTENSION

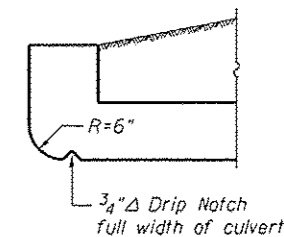
PLAN SHOWING OUTLINES

(Existing Block Drop Inlet not shown for clarity)

RIGHT EXTENSION



BOX CULVERT SOUTH END ELEVATION  
(Dimensions Shown at Rt L's)



HEADWALL DETAILS AT UPSTREAM END

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|-----------------------|------------------|
| fy = 40,000 psi       | fy = 60,000 psi  |
| f'c = 3,000 psi       | f'c = 3,500 psi  |

**GENERAL PLAN & ELEVATION**

ILLINOIS ROUTE 3

F.A.S. RTE. 752 - SEC. 101-2RS-1

JERSEY COUNTY

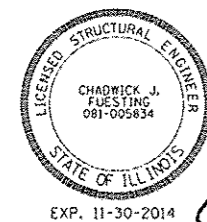
STATION 343+84.53

Note:  
See Sheet 2 of 3 for Existing Block Drop Inlet Removal.  
See sheet 3 of 3 for Detail A.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

| F.A.S. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO.          |
|-----------------------------|-----------|--------|--------------|--------------------|
| 752                         | 101-2RS-1 | JERSEY | 438          | 243                |
|                             |           |        |              | CONTRACT NO. 76789 |
| [ILLINOIS] FED. AID PROJECT |           |        |              |                    |



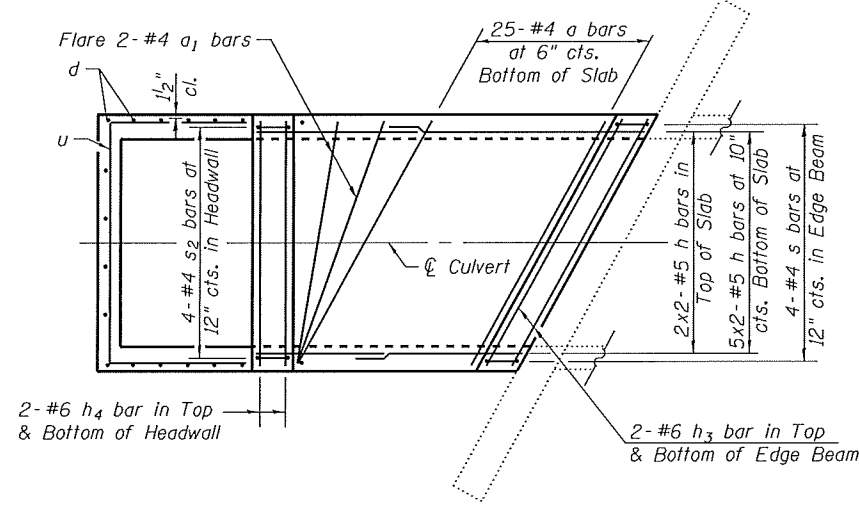
*Chadwick Fuesting 8/8/14*

| USER NAME                              | DESIGNED | CHECKED | REVISIONS |
|----------------------------------------|----------|---------|-----------|
| jdinko                                 | JD       | BB      |           |
| Illinois Design Firm Number 184.001670 |          | EW      |           |
| PLOT SCALE                             |          | CJF     |           |
| PLOT DATE 8/8/2014                     |          |         |           |

FILE NAME = 343+84.53-76789-021.dgn

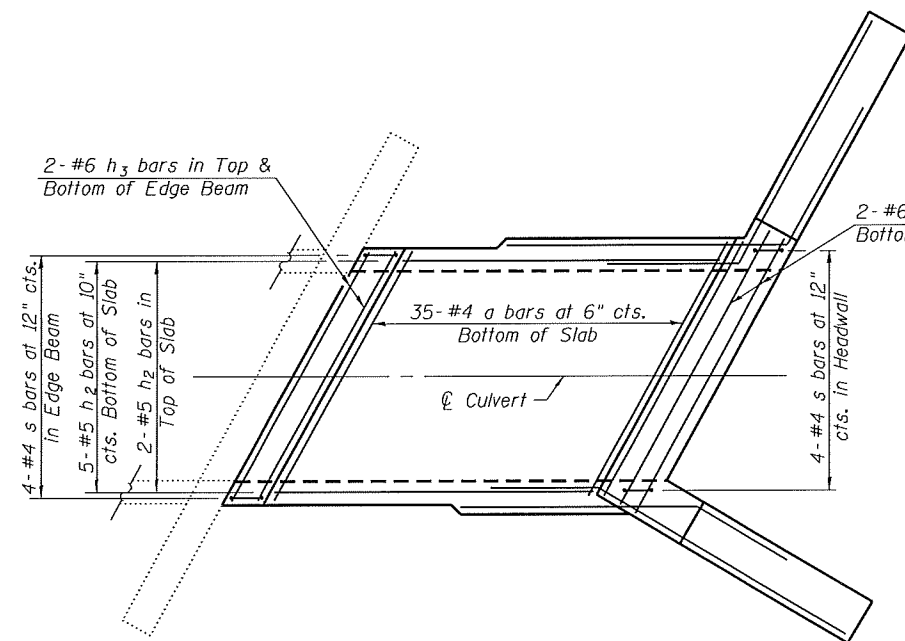
**MINIMUM BAR LAP**

#5 BARS = 1'-8"

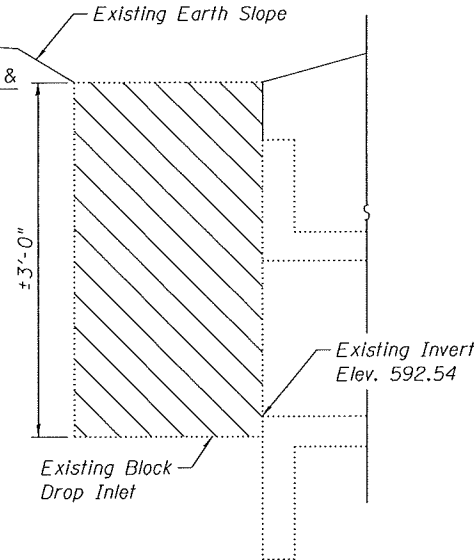


**LEFT EXTENSION**

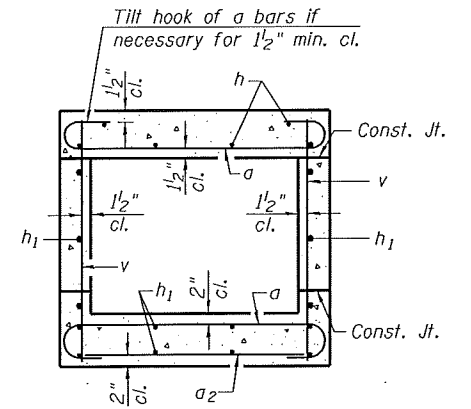
**TOP SLAB PLAN  
SHOWING REINFORCEMENT**  
(v, h4 & h5 bars not shown for clarity)



**RIGHT EXTENSION**

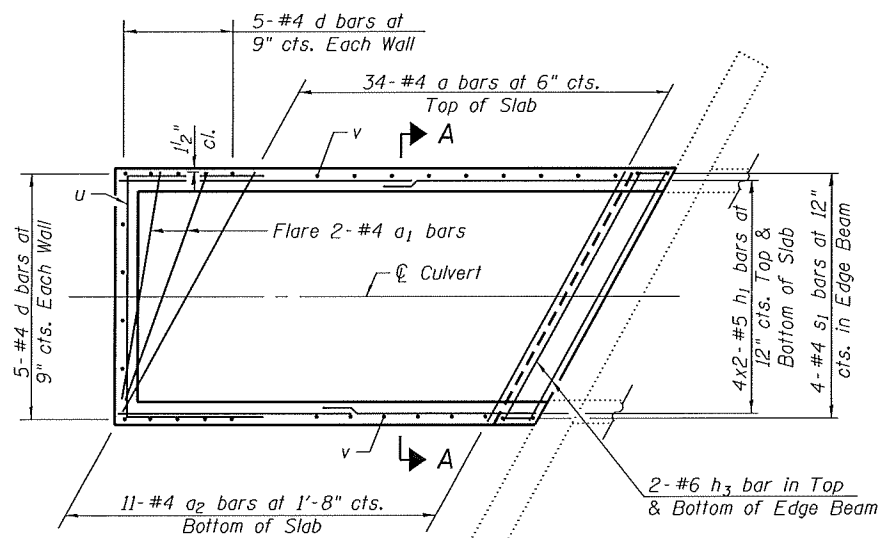
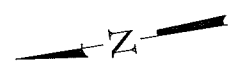


**EXISTING INLET ELEVATION**  
(Left End of Existing Culvert)  
(See Roadway Plans)



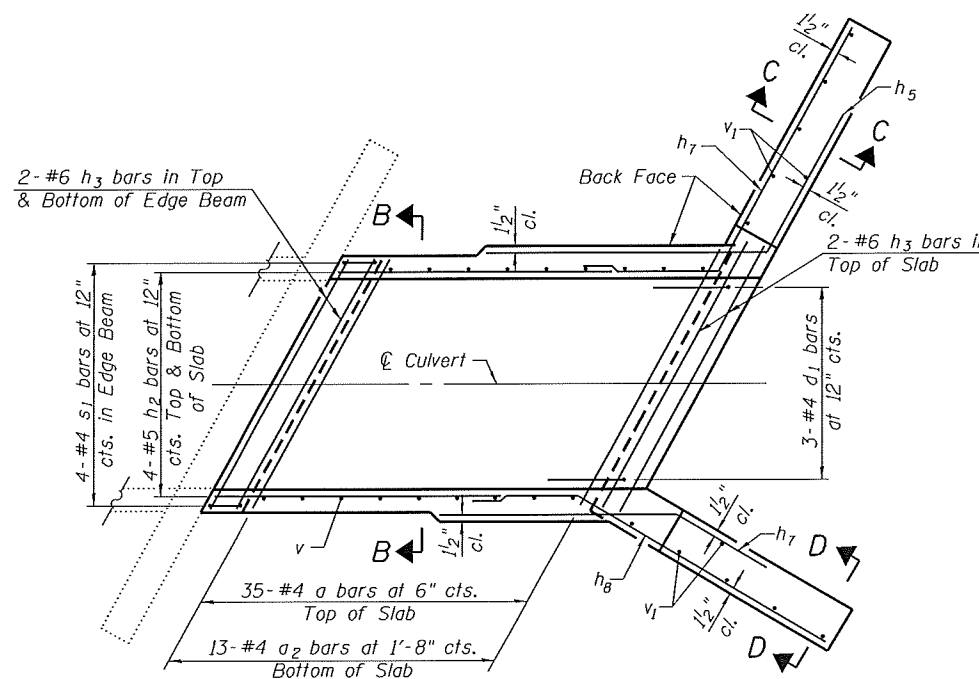
**SECTION A-A**

Indicates Limits of Existing Block Drop Inlet Removal to be paid for as Removal of Existing Structures, see Roadway Plans.

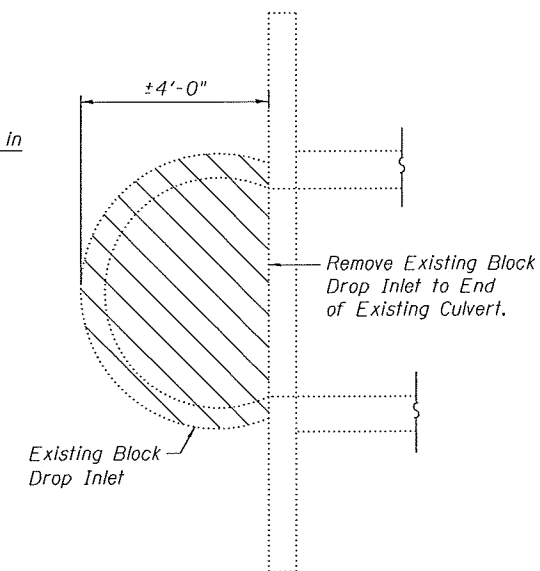


**LEFT EXTENSION**

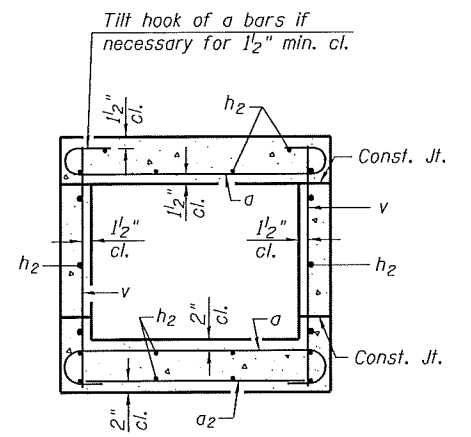
**BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT**



**RIGHT EXTENSION**



**EXISTING INLET PLAN**  
(Left End of Existing Culvert)  
(See Roadway Plans)



**SECTION B-B**

Note:  
For Elevation, Bar Bends and Total Bill of Material see sheet 3 of 3.  
For Sections C-C and D-D see sheet 3 of 3.

FILE NAME = 343-84.53-76789-002.dgn



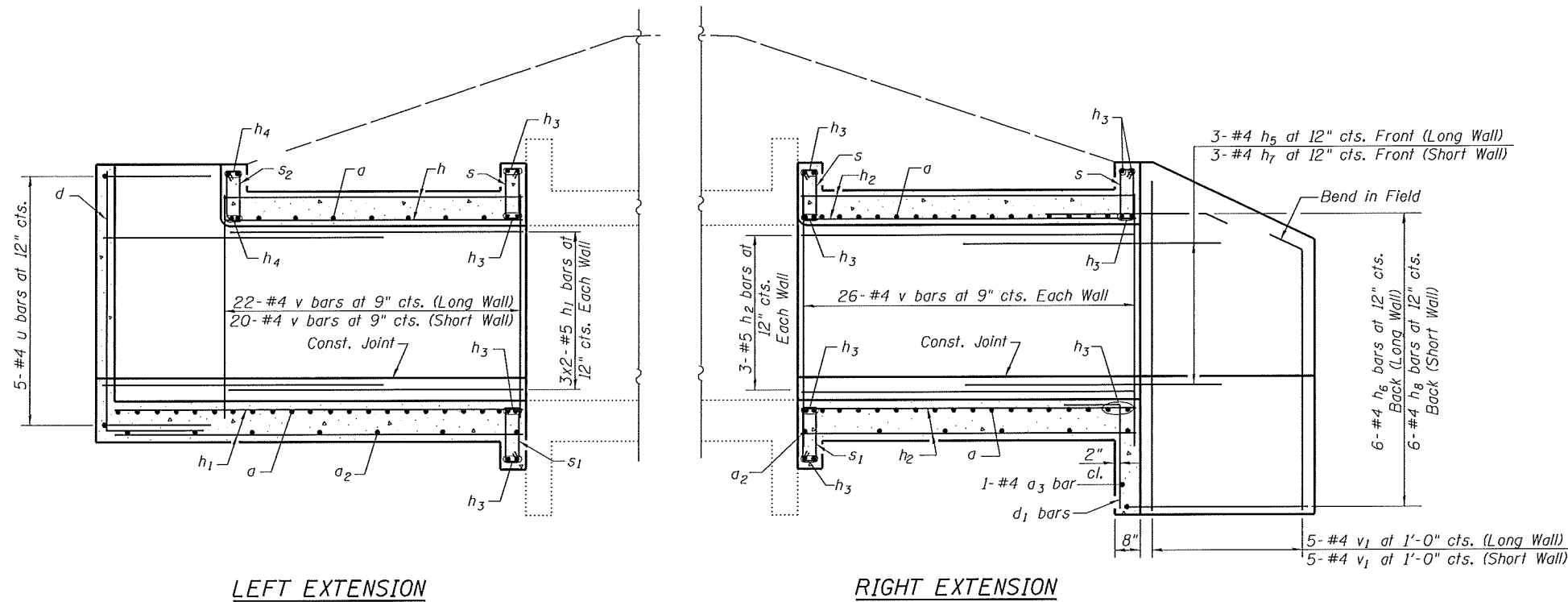
|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinke1mann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT EXTENSION DETAILS  
STATION 343+84.53**

SHEET NO. 2 OF 3 SHEETS

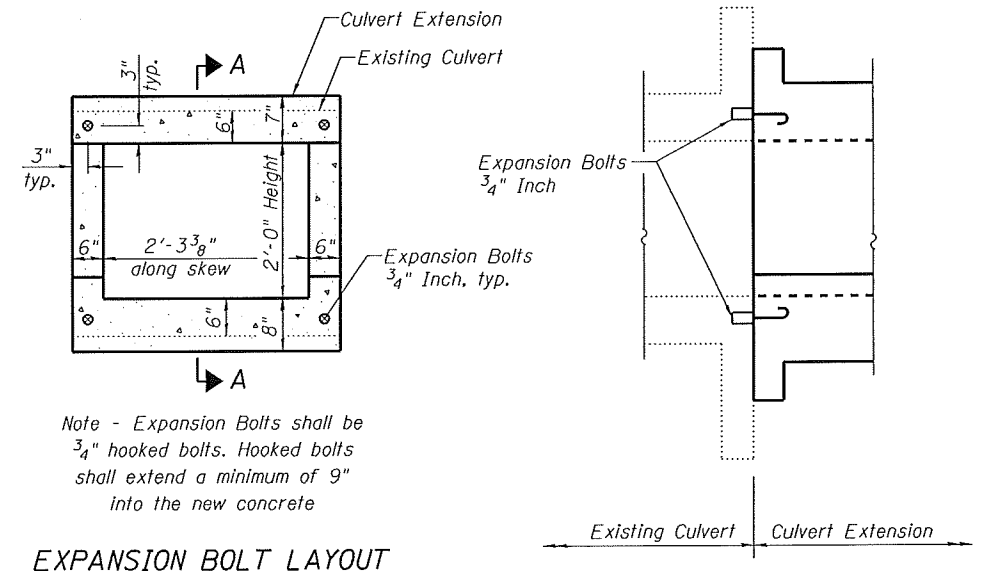
|                           |                   |               |                  |               |
|---------------------------|-------------------|---------------|------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 244 |
| CONTRACT NO. 76789        |                   |               |                  |               |
| ILLINOIS FED. AID PROJECT |                   |               |                  |               |



LEFT EXTENSION

RIGHT EXTENSION

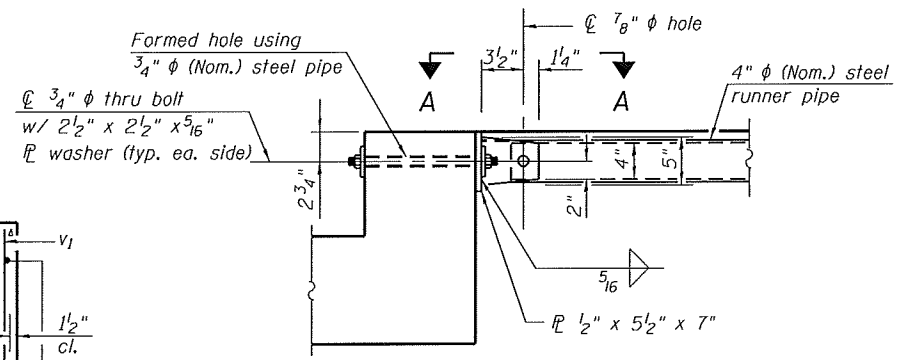
ELEVATION



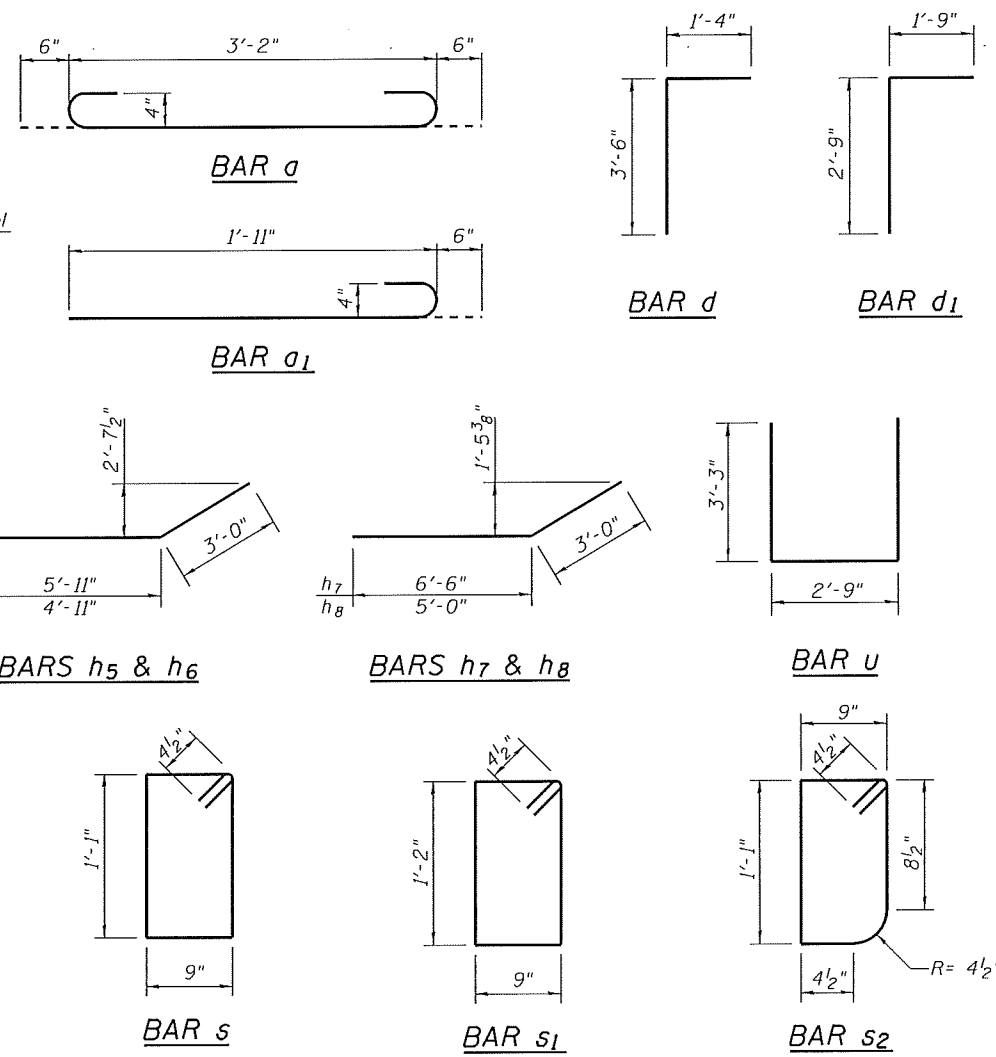
EXPANSION BOLT LAYOUT

SECTION A-A

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

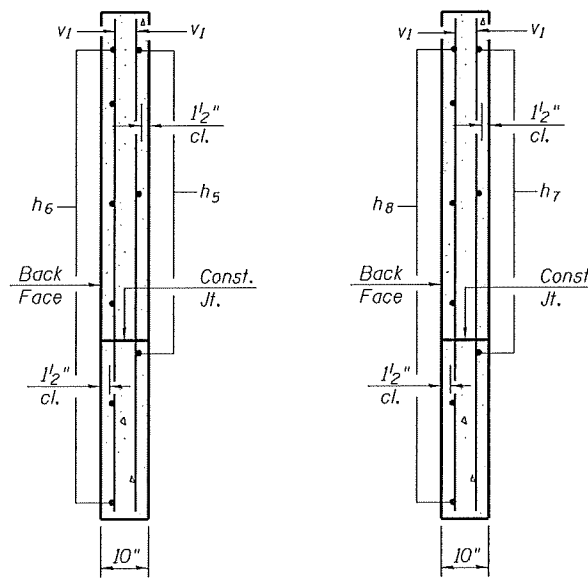


DETAIL A



TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape |
|--------------------------|-----|------|---------|-------|
| a                        | 129 | #4   | 4'-2"   | [U]   |
| a1                       | 4   | #4   | 2'-5"   | [U]   |
| a2                       | 24  | #4   | 3'-2"   | [—]   |
| a3                       | 1   | #4   | 3'-6"   | [—]   |
| d                        | 15  | #4   | 4'-10"  | [L]   |
| d1                       | 3   | #4   | 4'-6"   | [L]   |
| h                        | 14  | #5   | 8'-7"   | [—]   |
| h1                       | 28  | #5   | 10'-4"  | [—]   |
| h2                       | 21  | #5   | 18'-8"  | [—]   |
| h3                       | 22  | #6   | 3'-1"   | [—]   |
| h4                       | 4   | #6   | 2'-9"   | [—]   |
| h5                       | 3   | #4   | 8'-11"  | [—]   |
| h6                       | 6   | #4   | 7'-11"  | [—]   |
| h7                       | 3   | #4   | 9'-6"   | [—]   |
| h8                       | 6   | #4   | 8'-0"   | [—]   |
| s                        | 12  | #4   | 4'-5"   | [O]   |
| s1                       | 8   | #4   | 4'-7"   | [O]   |
| s2                       | 4   | #4   | 4'-3"   | [O]   |
| u                        | 5   | #4   | 9'-3"   | [L]   |
| v                        | 96  | #4   | 2'-11"  | [—]   |
| v1                       | 12  | #4   | 6'-0"   | [—]   |
| Concrete Box Culverts    |     |      | Cu. Yd. | 10.5  |
| Reinforcement Bars       |     |      | Pound   | 1870  |
| Expansion Bolts 3/4 Inch |     |      | Each    | 8     |
| Traversable Pipe Grate   |     |      | Foot    | 3     |



SECTION C-C

SECTION D-D

VIEW A-A

FILE NAME = 343-84.53-76789-003.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinke mann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

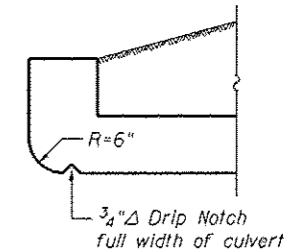
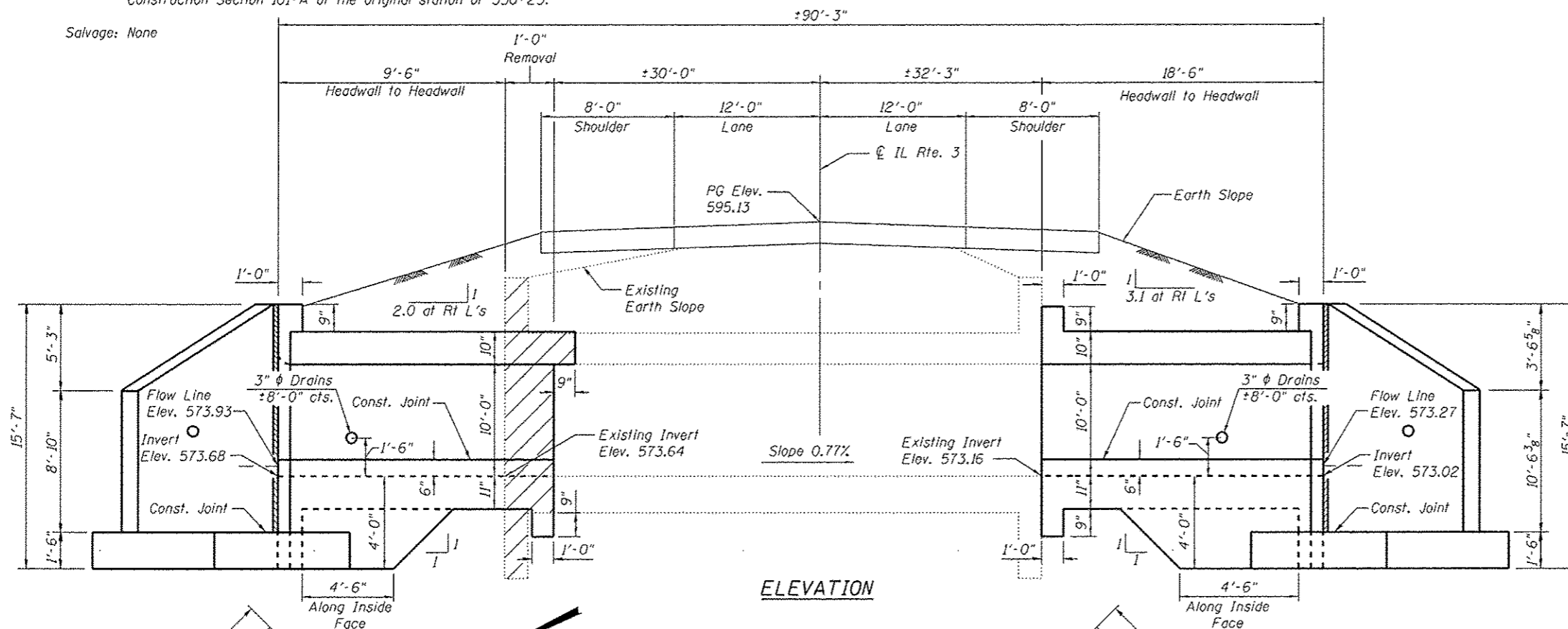
BOX CULVERT EXTENSION DETAILS  
STATION 343 + 84.53

SHEET NO. 3 OF 3 SHEETS

|                           |                   |               |                    |               |
|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438   | SHEET NO. 245 |
| ILLINOIS FED. AID PROJECT |                   |               | CONTRACT NO. 76789 |               |

Existing Structure: The existing structure, SN 042-2474, is a ±62'-3" long reinforced cast-in-place concrete box culvert with a 10'-0" x 10'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 350+25.

Salvage: None



**HEADWALL DETAILS AT UPSTREAM END**

**GENERAL NOTES**

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

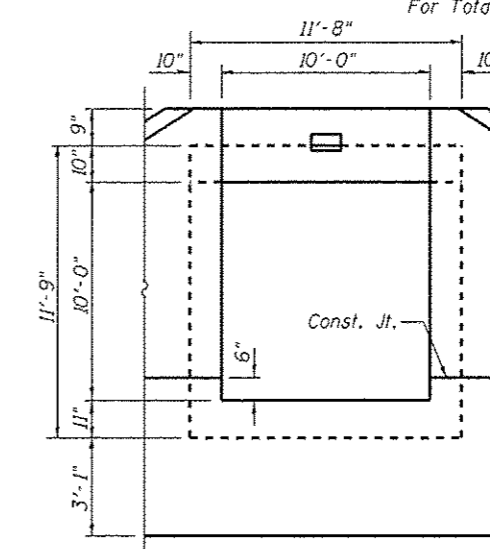
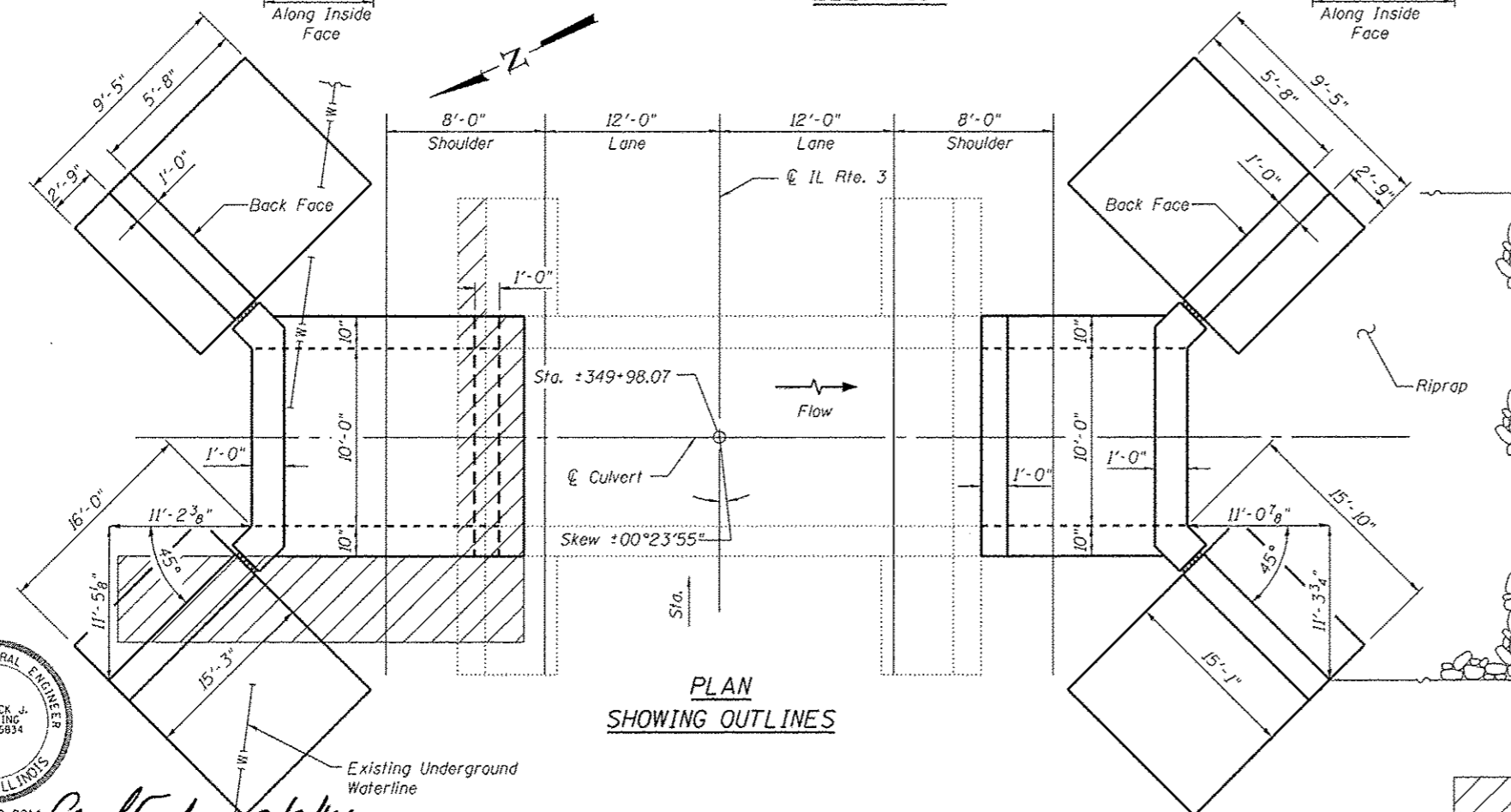
A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 2,618 psf.

For Riprap details and quantities see Roadway Plans.

For Limits of Existing Concrete Removal see sheet 3 of 4.

For Total Bill of Material see sheet 4 of 4.



**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

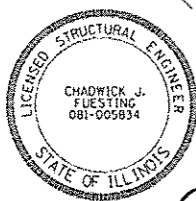
Allow 50#/sq. ft. for future wearing surface on extension.

**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION |
|-----------------------|------------------|
| fy = 40,000 psi       | fy = 60,000 psi  |
| f'c = 3,000 psi       | f'c = 3,500 psi  |

**GENERAL PLAN & ELEVATION**

ILLINOIS ROUTE 3  
F.A.S. RTE. 752 - SEC. 101-2RS-1  
JERSEY COUNTY  
STATION 349+98.07  
STRUCTURE NO. 042-2474



Consent Fuesting 8/8/14

FILE NAME = 349+98.07-76789-001.dgn



| USER NAME                              | DESIGNED      | REVISIONS   |
|----------------------------------------|---------------|-------------|
| jdinkelmans                            | - JD          | -           |
| Illinois Design Firm Number 184,001670 | CHECKED - BB  | REVISIONS - |
| PLOT SCALE                             | DRAWN - EW    | REVISIONS - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISIONS - |

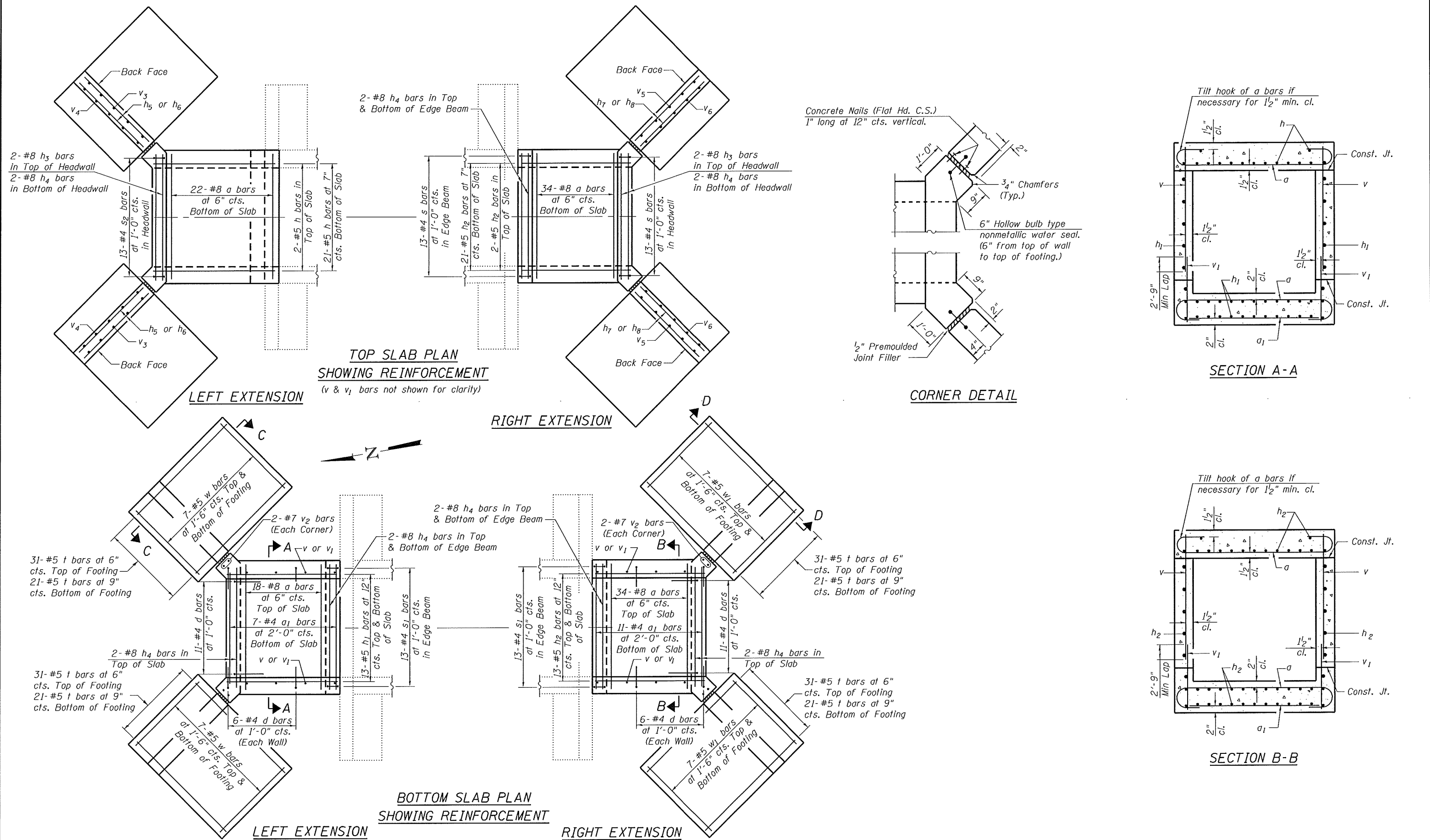
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO.          |
|-------------|-----------|--------|--------------|--------------------|
| 752         | 101-2RS-1 | JERSEY | 438          | 246                |
|             |           |        |              | CONTRACT NO. 76789 |

ILLINOIS FED. AID PROJECT



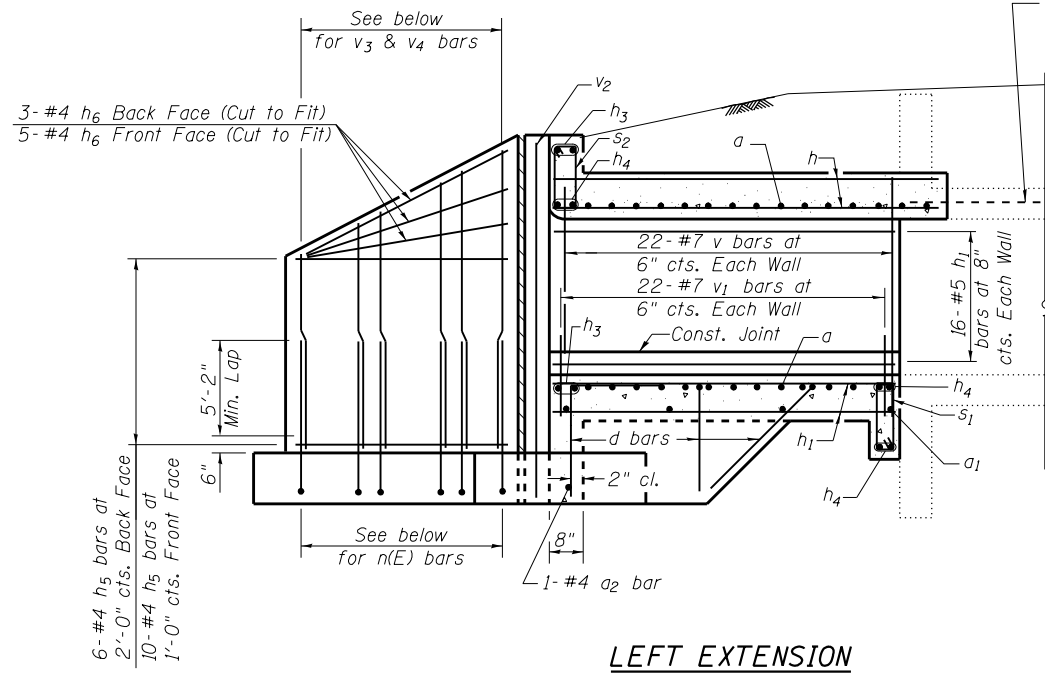
FILE NAME = 349-98.07-76789-002.dgn



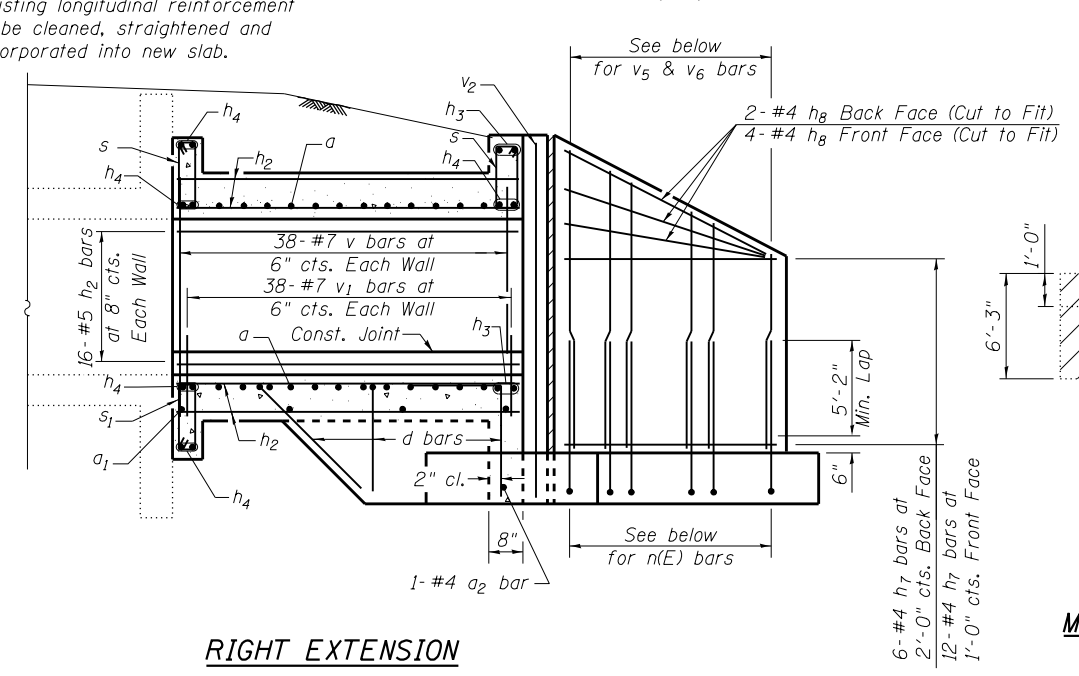
Notes:  
For Section C-C and D-D, see Sheet 3 of 4.  
For Bar Bends and Total Bill of Material, see Sheet 4 of 4.

|                                                                                              |                                        |               |           |                                                                 |                                                                          |  |                           |                   |               |                  |                    |  |
|----------------------------------------------------------------------------------------------|----------------------------------------|---------------|-----------|-----------------------------------------------------------------|--------------------------------------------------------------------------|--|---------------------------|-------------------|---------------|------------------|--------------------|--|
| <p>1123 S.A. BRADLEY &amp; SMITH DRIVE<br/>TROY, ILLINOIS 62234<br/>PHONE (618) 432-1423</p> | USER NAME = jdirkeimann                | DESIGNED - JD | REVISED - | <b>STATE OF ILLINOIS</b><br><b>DEPARTMENT OF TRANSPORTATION</b> | <b>BOX CULVERT EXTENSION DETAILS</b><br><b>STRUCTURE NUMBER 042-2474</b> |  | F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 247      |  |
|                                                                                              | Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |                                                                 |                                                                          |  |                           |                   |               |                  |                    |  |
|                                                                                              | PLOT SCALE =                           | DRAWN - EW    | REVISED - |                                                                 |                                                                          |  |                           |                   |               |                  |                    |  |
|                                                                                              | PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |                                                                 |                                                                          |  |                           |                   |               |                  | CONTRACT NO. 76789 |  |
|                                                                                              |                                        |               |           |                                                                 | SHEET NO. 2 OF 4 SHEETS                                                  |  | ILLINOIS FED. AID PROJECT |                   |               |                  |                    |  |

Note:  
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost shall be included in Concrete Removal.

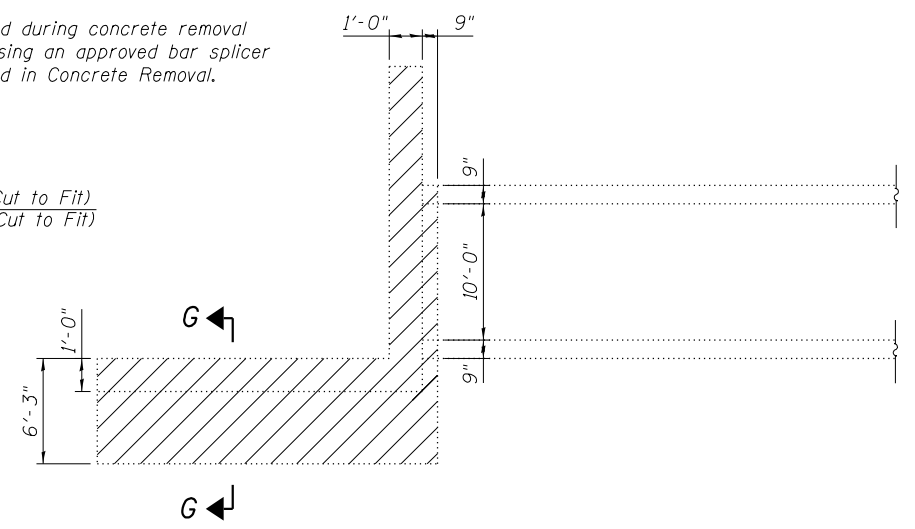


**LEFT EXTENSION**



**RIGHT EXTENSION**

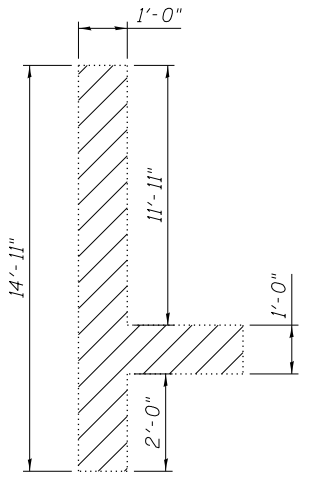
**ELEVATION**



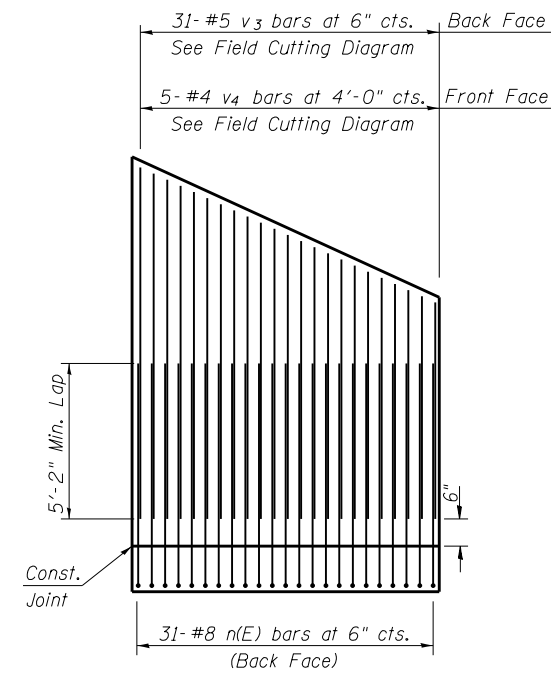
**EXISTING PLAN**  
(North End of Existing Culvert)

Indicates Limits of Concrete Removal

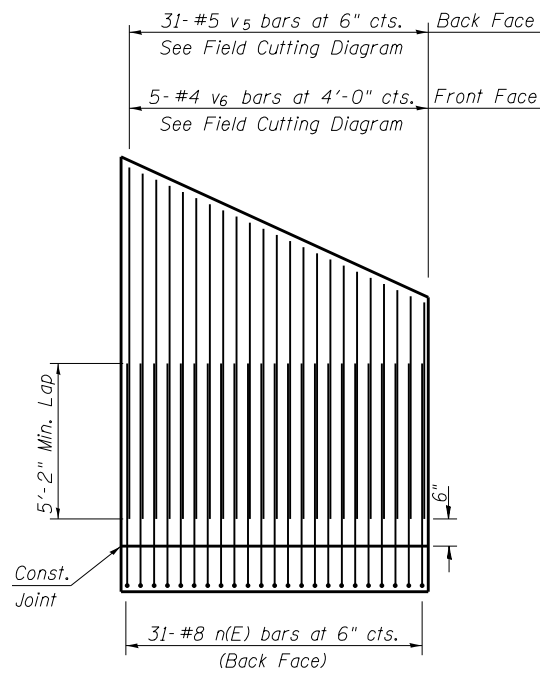
**MIN. BAR LAP**  
#7 bar = 2'-9"



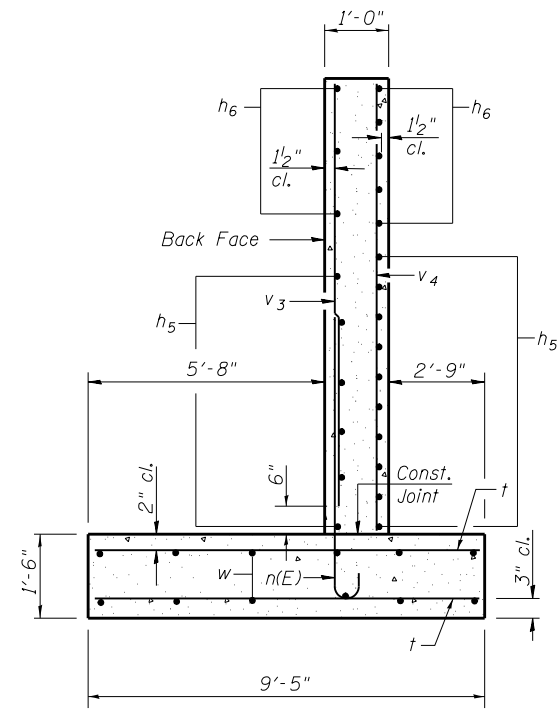
**EXISTING SECTION G-G**  
(North End of Existing Culvert Wall & Footing)



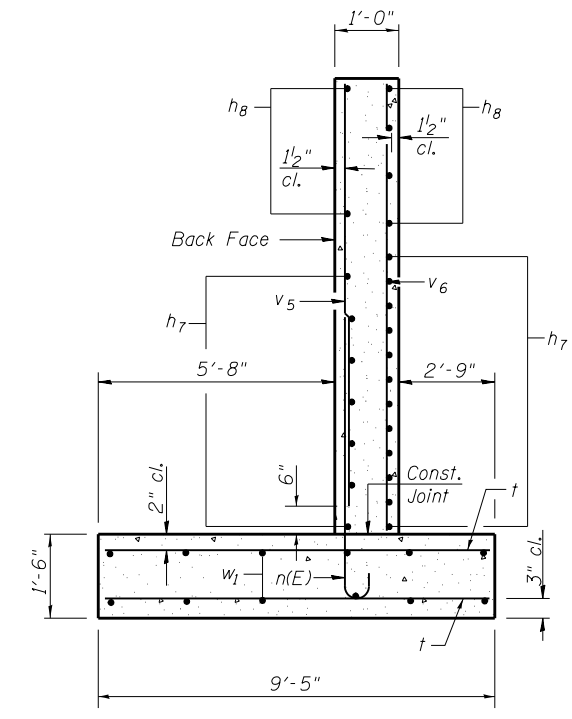
**LEFT EXTENSION WING WALL**  
**SHOWING REINFORCEMENT**



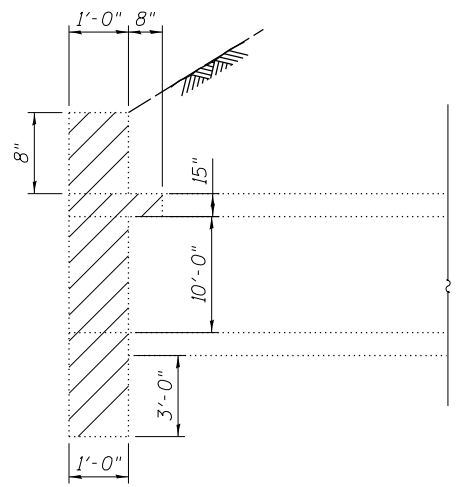
**RIGHT EXTENSION WING WALL**  
**SHOWING REINFORCEMENT**



**SECTION C-C**



**SECTION D-D**



**EXISTING ELEVATION**  
(North End of Existing Culvert)

FILE NAME = 3491-98.07-75785-003.dgn



USER NAME = jdrinkelmann  
Illinois Design Firm Number 184,001670  
PLOT SCALE =  
PLOT DATE = 10/16/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - EW  
CHECKED - CJF

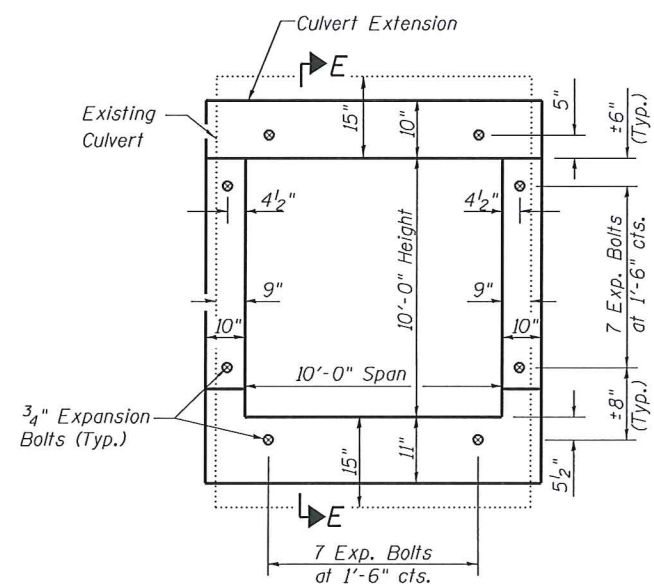
REVISED -  
REVISED -  
REVISED -  
REVISED -

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

**BOX CULVERT EXTENSION DETAILS**  
**STRUCTURE NUMBER 042-2474**

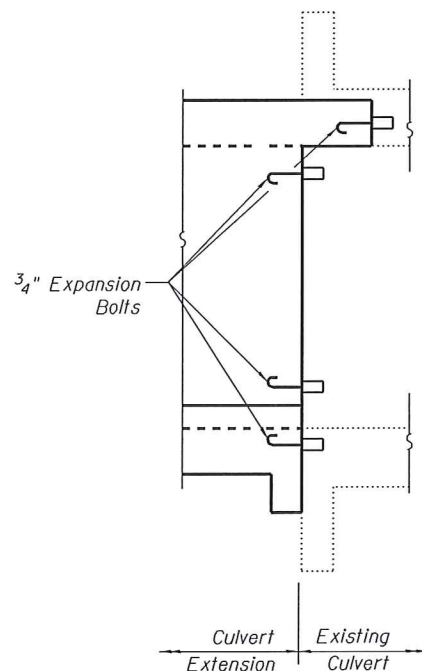
SHEET NO. 3 OF 4 SHEETS

| F.A.S. RTE.                                     | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------------------------------------------|-----------|--------|--------------|-----------|
| 752                                             | 101-2RS-1 | JERSEY | 438          | 248       |
| CONTRACT NO. 76789                              |           |        |              |           |
| FED. ROAD DIST. NO. 8 ILLINOIS FED. AID PROJECT |           |        |              |           |

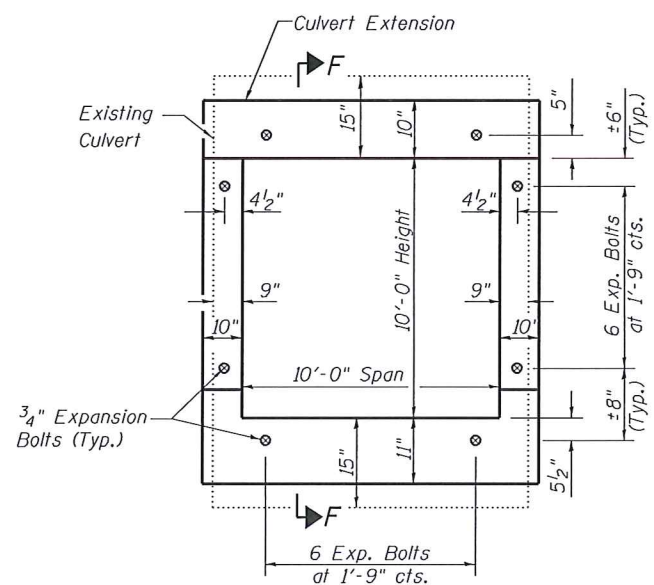


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

LEFT EXTENSION EXPANSION BOLT LAYOUT

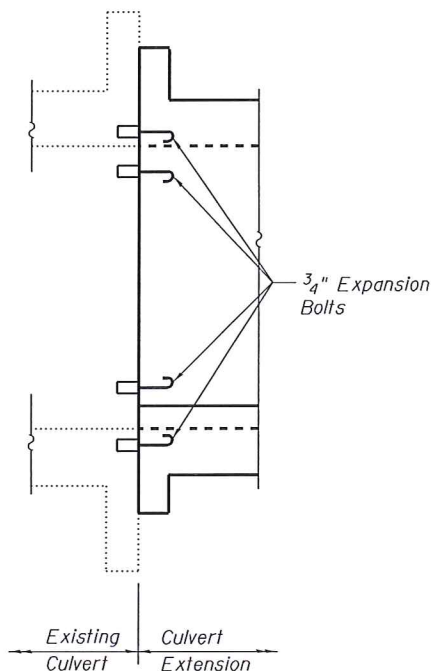


SECTION E-E

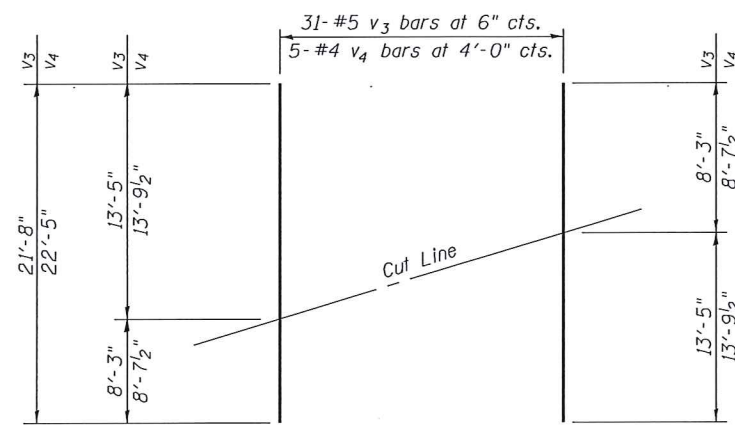
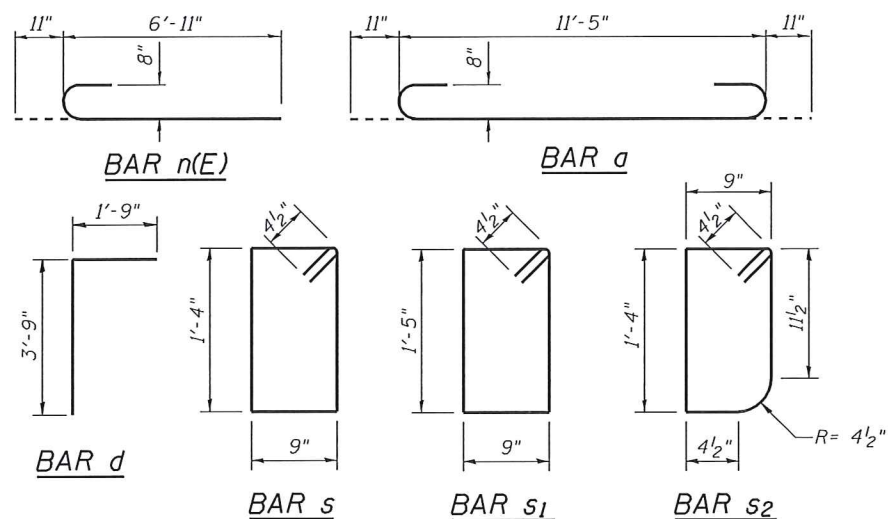


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

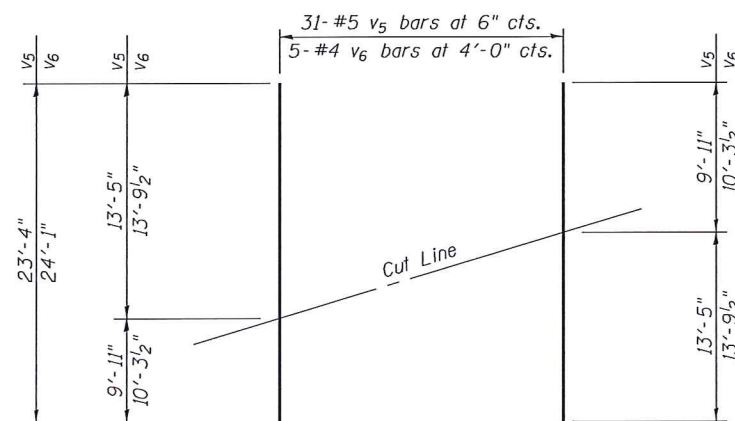
RIGHT EXTENSION EXPANSION BOLT LAYOUT



SECTION F-F



FIELD CUTTING DIAGRAM (v3 & v4 bars)



FIELD CUTTING DIAGRAM (v5 & v6 bars)

TOTAL BILL OF MATERIAL

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| a                                | 108 | #8      | 13'-3"  | U     |
| a1                               | 18  | #4      | 11'-5"  | —     |
| a2                               | 2   | #4      | 11'-10" | —     |
| d                                | 46  | #4      | 5'-6"   | L     |
| h                                | 23  | #5      | 11'-0"  | —     |
| h1                               | 58  | #5      | 10'-3"  | —     |
| h2                               | 81  | #5      | 18'-3"  | —     |
| h3                               | 4   | #8      | 11'-2"  | —     |
| h4                               | 20  | #8      | 11'-5"  | —     |
| h5                               | 32  | #4      | 15'-0"  | —     |
| h6                               | 16  | #4      | 15'-10" | —     |
| h7                               | 36  | #4      | 14'-10" | —     |
| h8                               | 12  | #4      | 15'-2"  | —     |
| n(E)                             | 124 | #8      | 7'-10"  | U     |
| s                                | 26  | #4      | 4'-11"  | U     |
| s1                               | 26  | #4      | 5'-1"   | U     |
| s2                               | 13  | #4      | 4'-9"   | U     |
| t                                | 208 | #5      | 9'-1"   | —     |
| v                                | 120 | #7      | 10'-1"  | —     |
| v1                               | 120 | #7      | 4'-2"   | —     |
| v2                               | 8   | #7      | 15'-4"  | —     |
| v3                               | 31  | #5      | 21'-8"  | —     |
| v4                               | 5   | #4      | 22'-5"  | —     |
| v5                               | 31  | #5      | 23'-4"  | —     |
| v6                               | 5   | #4      | 24'-1"  | —     |
| w                                | 28  | #5      | 14'-11" | —     |
| w1                               | 28  | #5      | 14'-9"  | —     |
| Concrete Box Culverts            |     | Cu. Yd. | 105.6   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 2,600   |       |
| Reinforcement Bars               |     | Pound   | 16,680  |       |
| Expansion Bolts 3/4"             |     | Each    | 52      |       |
| Concrete Removal                 |     | Cu. Yd. | 21.2    |       |
| Rock Excavation For Structures   |     | Cu. Yd. | 0.9     |       |

Notes:  
Order v3 through v6 bars full length. Cut as shown.  
Use remainder of bar in opposite Wing Wall.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2474

SHEET NO. 4 OF 4 SHEETS

| F.A.S. RTE.                                     | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------------------------------------------|-----------|--------|--------------------|-----------|
| 752                                             | 101-2RS-1 | JERSEY | 438                | 249       |
| FED. ROAD DIST. NO. 8 ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |

FILE NAME = 349+98.07-76789-004.dgn



USER NAME = jdinkelmann  
Illinois Design Firm Number 184,001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - EW  
CHECKED - CJF  
REVISED -  
REVISED -  
REVISED -  
REVISED -

Existing Structure: The existing structure is a ±34'-0" long reinforced cast-in-place concrete box culvert with a 3'-0" x 3'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 354+46.

Salvage: None

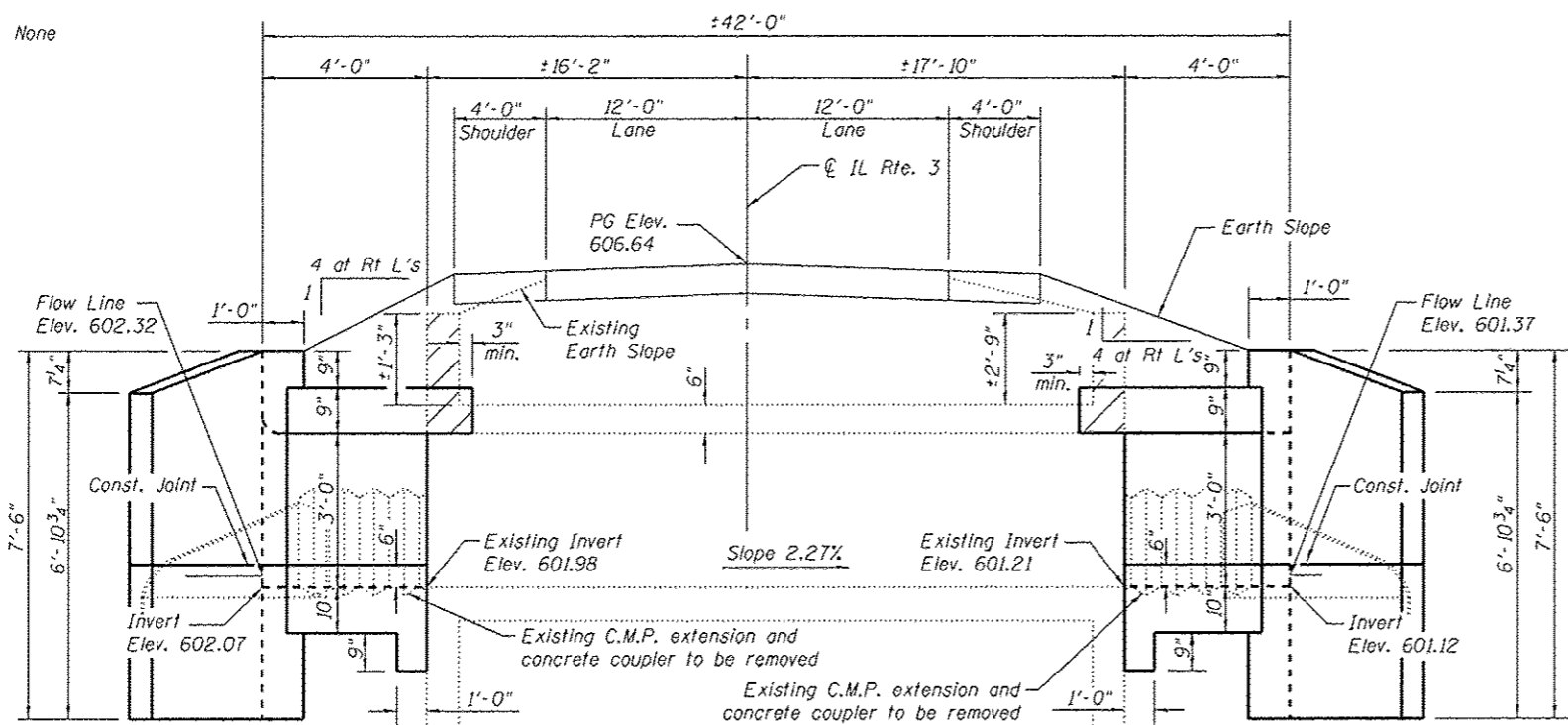
**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

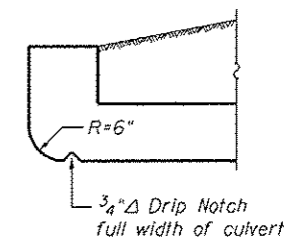
Precast alternative not allowed at this site.  
 A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.  
 Calculated max. soil pressure under barrel = 2,783 psf.  
 For Riprap details and quantities see Roadway Plans.  
 Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.  
 For Total Bill of Material see sheet 3 of 4.  
 The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.  
 The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Gate.



LEFT EXTENSION

ELEVATION

RIGHT EXTENSION



HEADWALL DETAILS AT UPSTREAM END

**DESIGN SPECIFICATIONS**

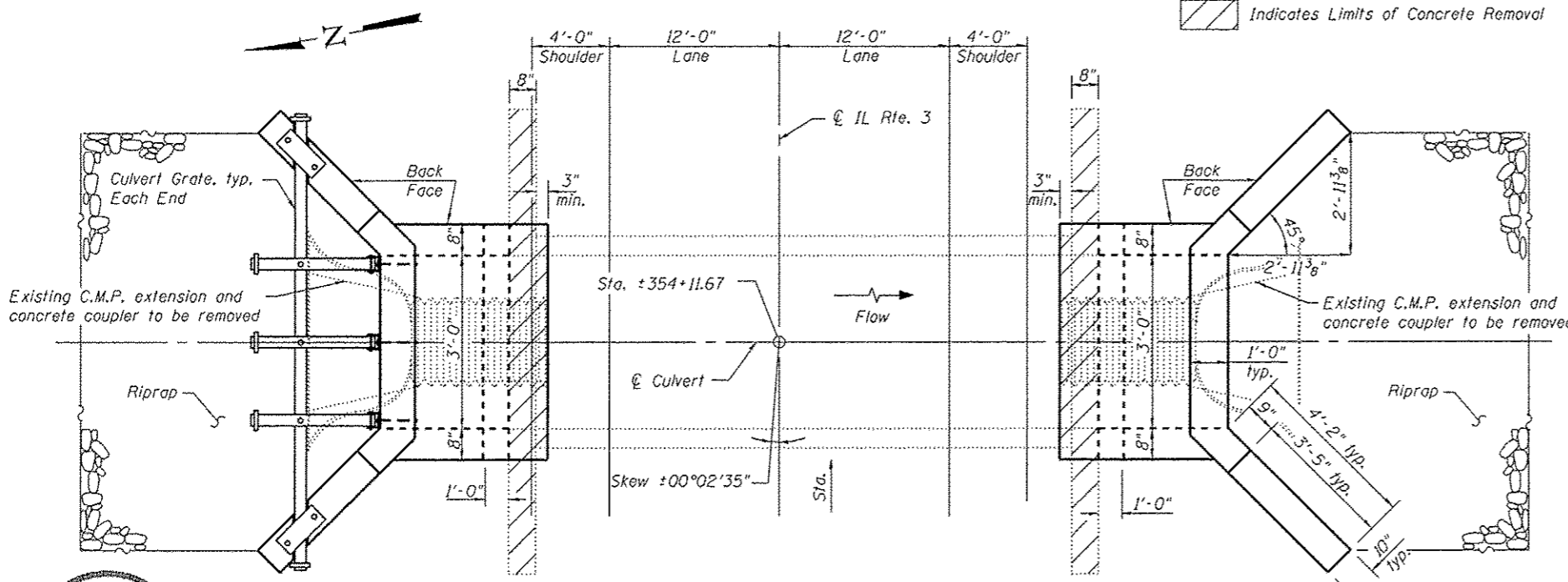
2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION      | NEW CONSTRUCTION           |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |



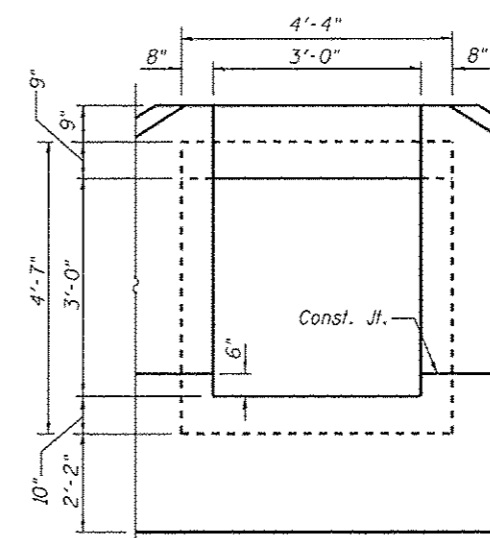
LEFT EXTENSION

PLAN SHOWING OUTLINES

RIGHT EXTENSION

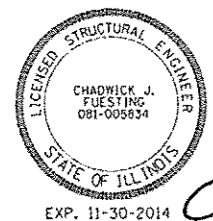
(Culvert Gate not shown for clarity)

Note:  
 See Sheet 2 of 4 for Existing Corrugated Metal Pipe Extension and Limits of Concrete Removal.  
 See Sheet 4 of 4 for Culvert Gate Details.



BOX CULVERT END ELEVATION (Dimensions Shown at Rt L's)

**GENERAL PLAN & ELEVATION**  
**ILLINOIS ROUTE 3**  
**F.A.S. RTE. 752 - SEC. 101-2RS-1**  
**JERSEY COUNTY**  
**STATION 354+11.67**



Client Fuesting 8/6/14

FILE NAME: 354+11.67-76789-001.dgn



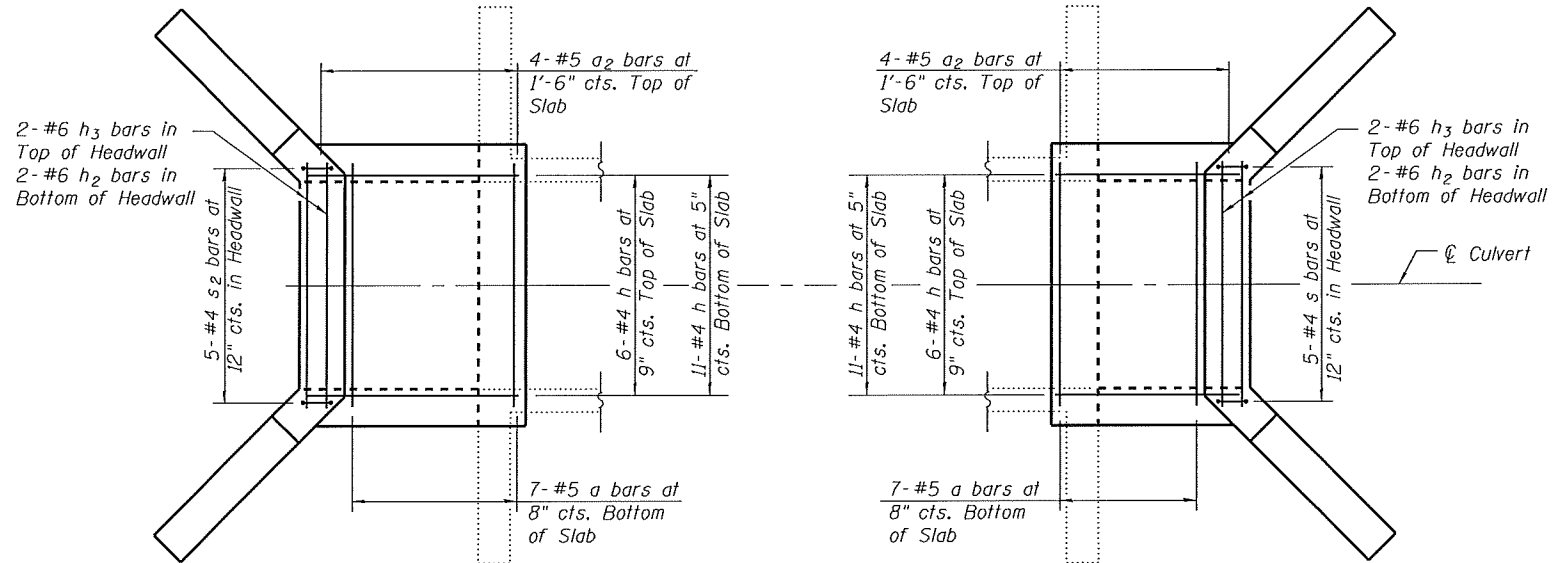
| USER NAME  | DESIGNED | REVISIONS |
|------------|----------|-----------|
| jdirkalmen | - JD     | -         |
| Checked    | - BB     | -         |
| Drawn      | - EW     | -         |
| Checked    | - CJF    | -         |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-----------|--------|--------------|-----------|
| 752         | 101-2RS-1 | JERSEY | 438          | 250       |

CONTRACT NO. 76789

ILLINOIS FED. AID PROJECT

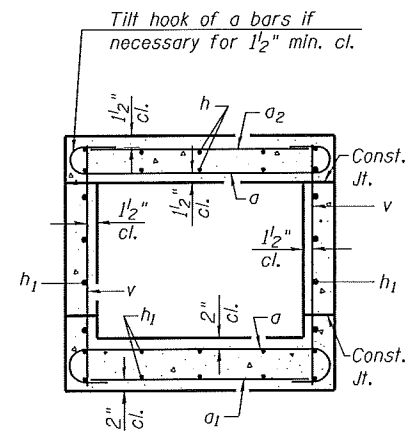


LEFT EXTENSION

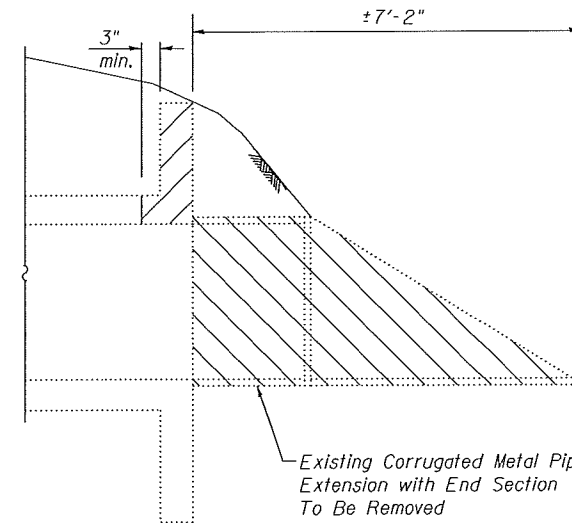
TOP SLAB PLAN  
SHOWING REINFORCEMENT

(v, v1, h4 & h5 bars not shown for clarity)

RIGHT EXTENSION



SECTION A-A



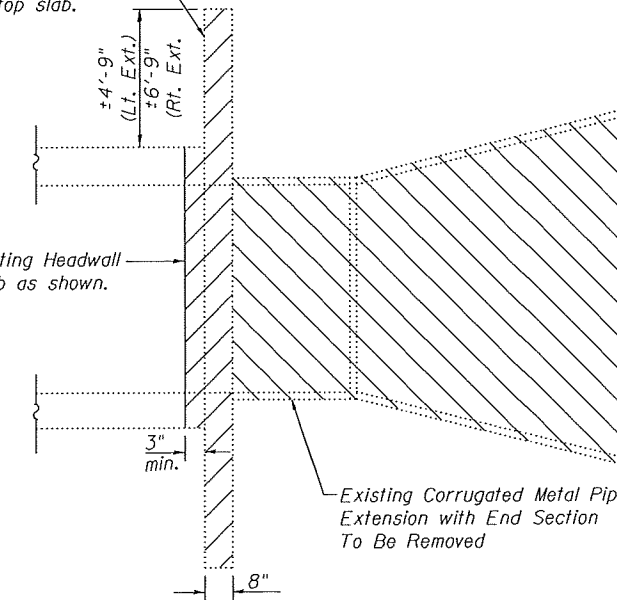
EXISTING ELEVATION

(Typical Both Ends of Existing Culvert)

- Indicates Limits of Concrete Removal
- Indicates Removal of Existing Corrugated Metal Pipe Extension to be paid for as Removal of Existing Structures, see Roadway Plans.

Remove portion of Wing Walls to bottom of top slab.

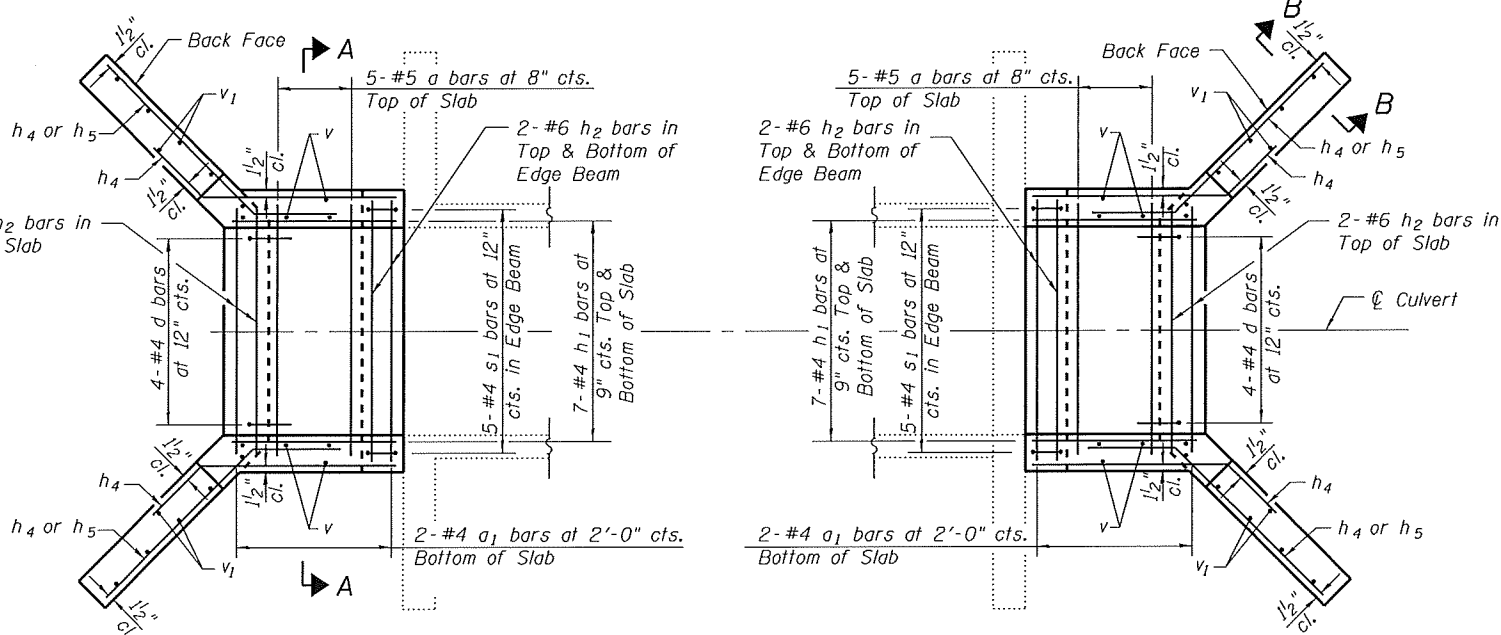
Remove Existing Headwall and Top Slab as shown.



EXISTING PLAN

(Typical Both Ends of Existing Culvert)

Notes:  
For Section B-B see sheet 3 of 4.  
For Elevation, Bar Bends and Total Bill of Material see sheet 3 of 4.



LEFT EXTENSION

BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT

RIGHT EXTENSION

FILE NAME = 354+11.67-76789-002.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinkeimann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

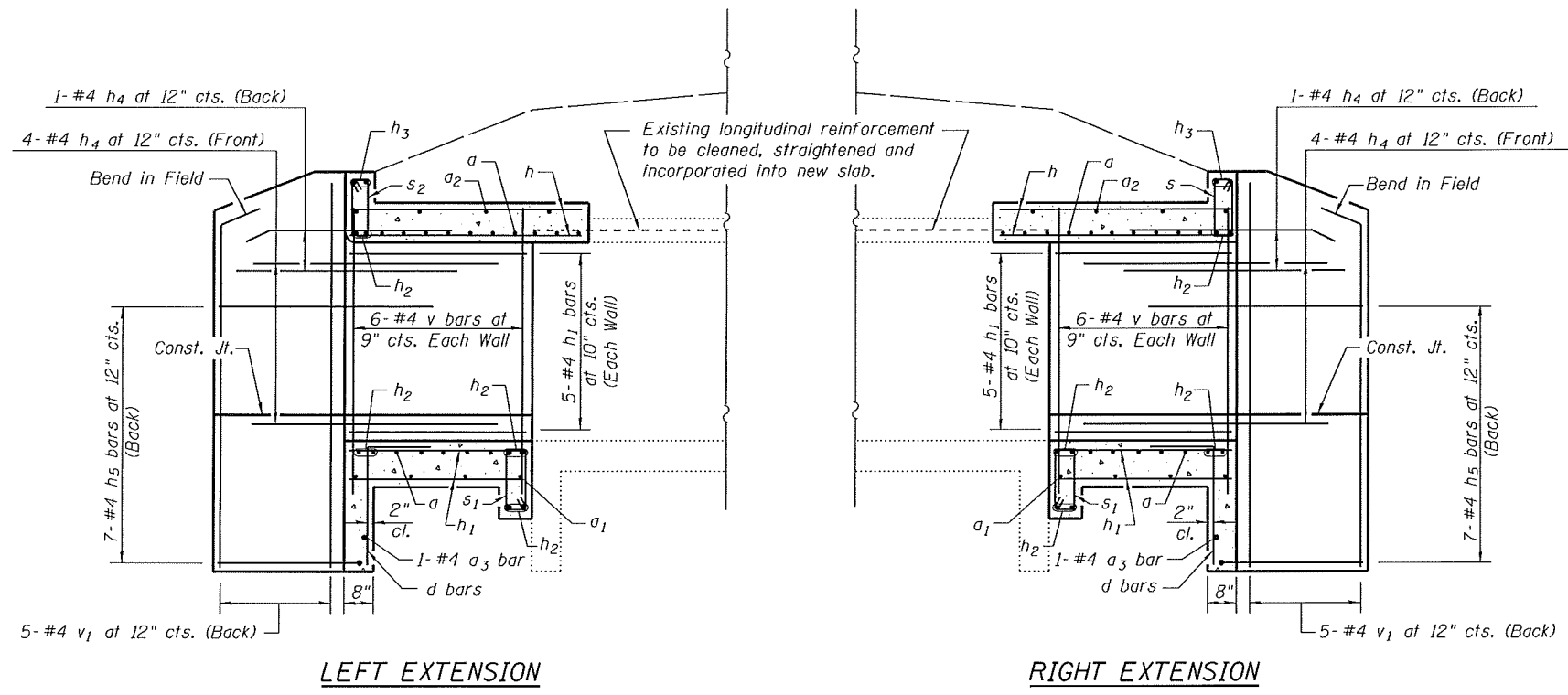
BOX CULVERT EXTENSION DETAILS  
STATION 354 + 11.67

SHEET NO. 2 OF 4 SHEETS

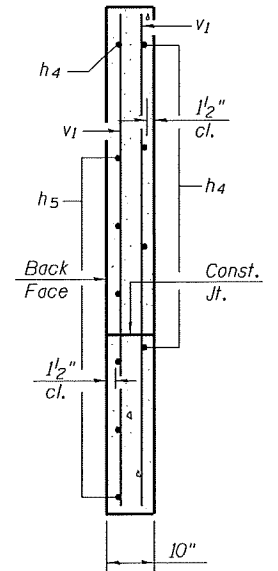
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|---------------------------|-------------------|---------------|------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 251 |
| CONTRACT NO. 76789        |                   |               |                  |               |
| ILLINOIS FED. AID PROJECT |                   |               |                  |               |



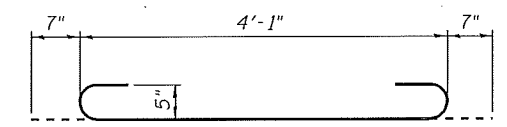
Note:  
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost shall be included in Concrete Removal.



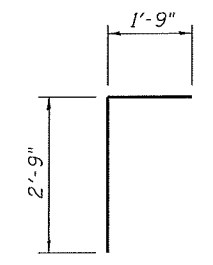
ELEVATION



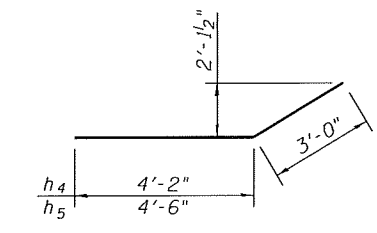
SECTION B-B



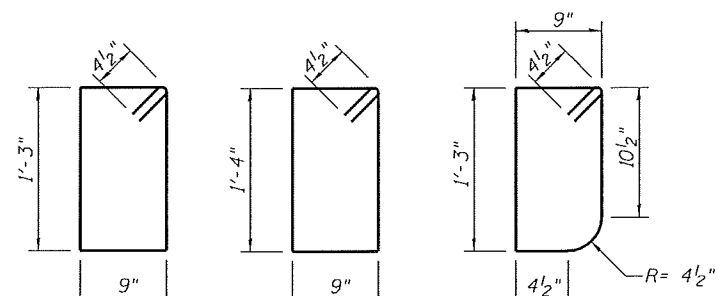
BAR a



BAR d



BARS h4 & h5



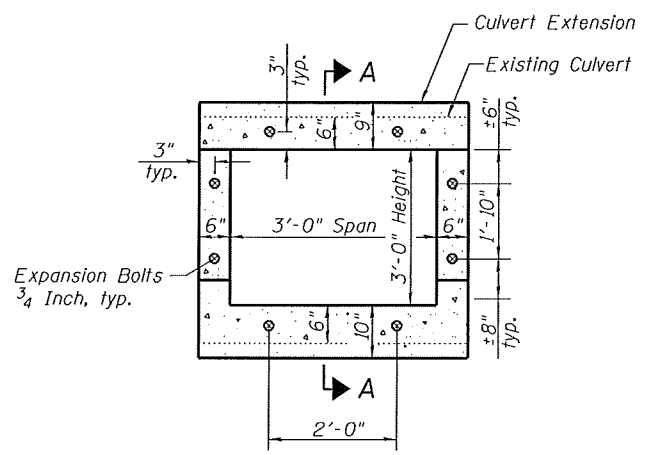
BAR s

BAR s1

BAR s2

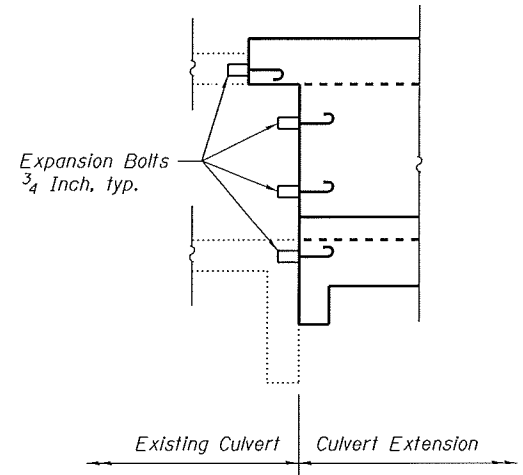
TOTAL BILL OF MATERIAL

| Bar | No. | Size | Length                   | Shape       |
|-----|-----|------|--------------------------|-------------|
| a   | 24  | #5   | 5'-3"                    |             |
| a1  | 6   | #4   | 4'-1"                    |             |
| a2  | 8   | #5   | 4'-1"                    |             |
| a3  | 2   | #4   | 3'-10"                   |             |
| d   | 8   | #4   | 4'-6"                    |             |
| h   | 34  | #4   | 4'-8"                    |             |
| h1  | 48  | #4   | 3'-9"                    |             |
| h2  | 16  | #6   | 4'-0"                    |             |
| h3  | 4   | #6   | 3'-3"                    |             |
| h4  | 20  | #4   | 7'-2"                    |             |
| h5  | 28  | #4   | 7'-6"                    |             |
| s   | 5   | #4   | 4'-9"                    |             |
| s1  | 10  | #4   | 4'-11"                   |             |
| s2  | 5   | #4   | 4'-7"                    |             |
| v   | 28  | #4   | 4'-3"                    |             |
| v1  | 24  | #4   | 7'-2"                    |             |
|     |     |      | Concrete Removal         | Cu. Yd. 2.0 |
|     |     |      | Reinforcement Bars       | Pound 1050  |
|     |     |      | Expansion Bolts 3/4 Inch | Each 16     |
|     |     |      | Concrete Box Culverts    | Cu. Yd. 7.9 |
|     |     |      | Traversable Pipe Grate   | Foot 19     |



EXPANSION BOLT LAYOUT

Note - Expansion Bolts shall be 3/4 inch hooked bolts. Hooked bolts shall extend a minimum of 9 inches into the new concrete



SECTION A-A

FILE NAME = 354-11.67-76789-003.dgn



USER NAME = jdinke1mann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

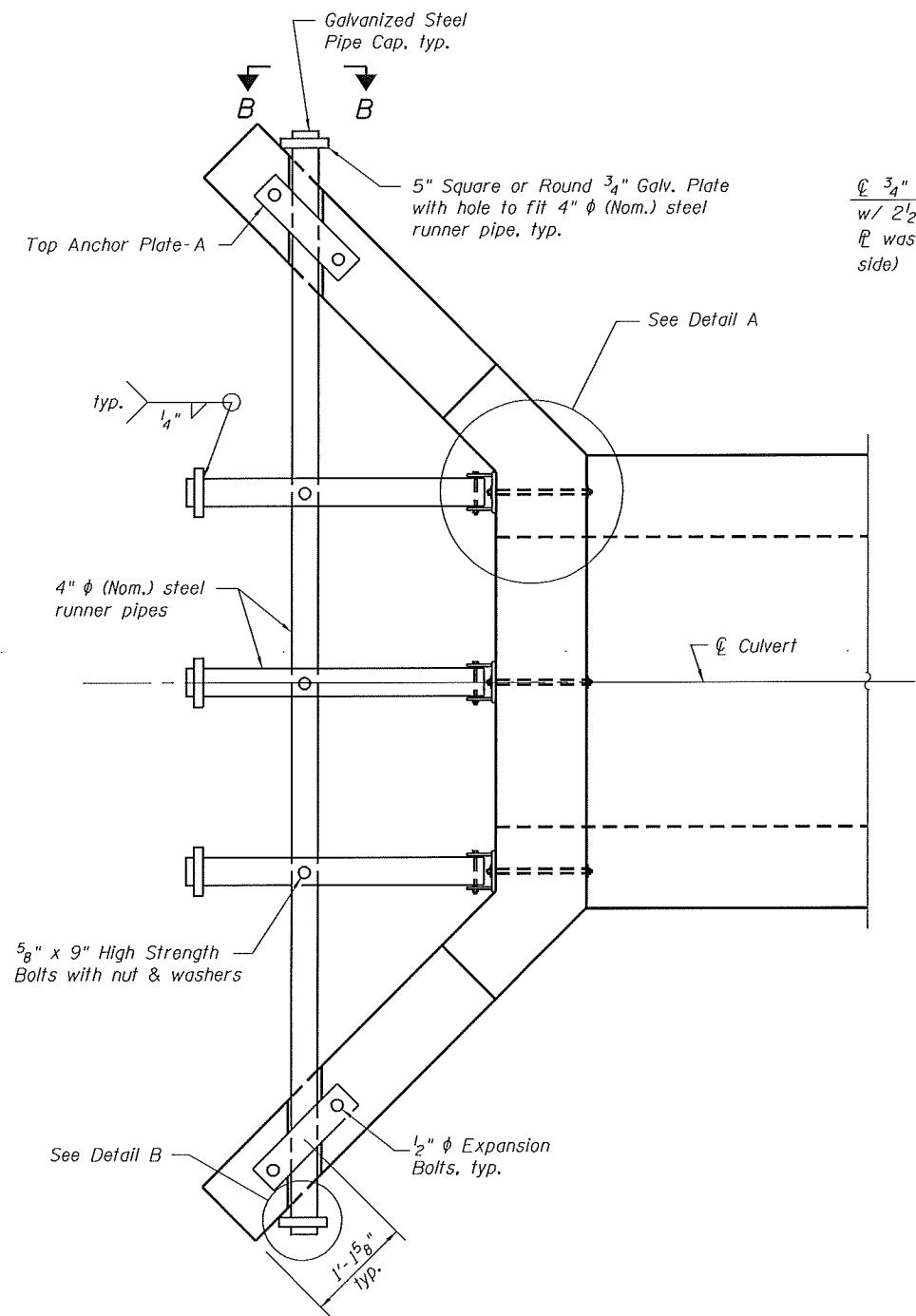
REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

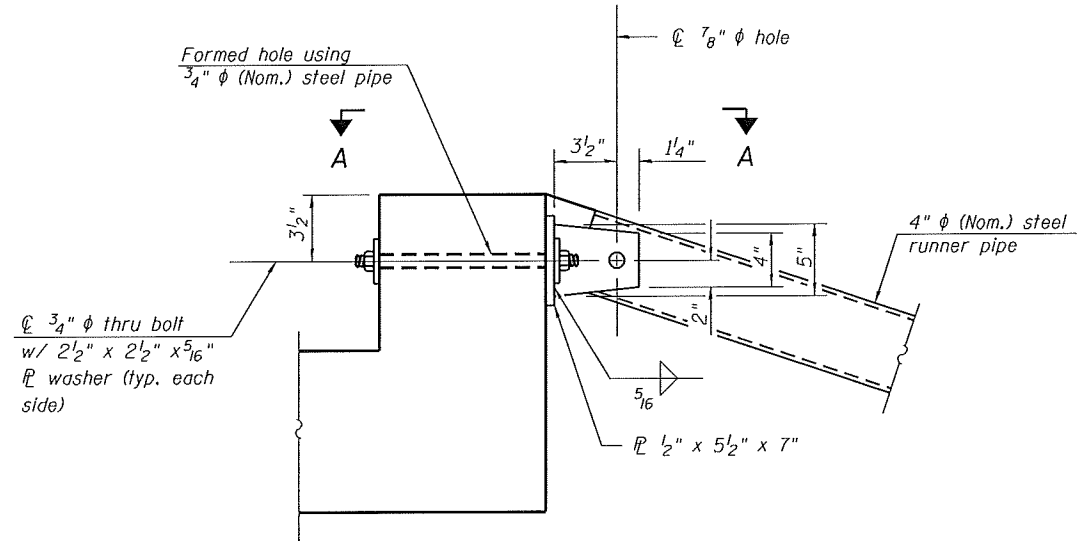
BOX CULVERT EXTENSION DETAILS  
STATION 354 + 11.67

SHEET NO. 3 OF 4 SHEETS

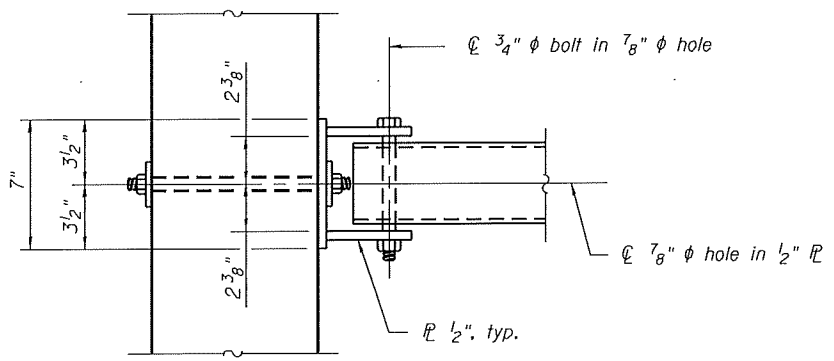
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438                | 252       |
| ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |



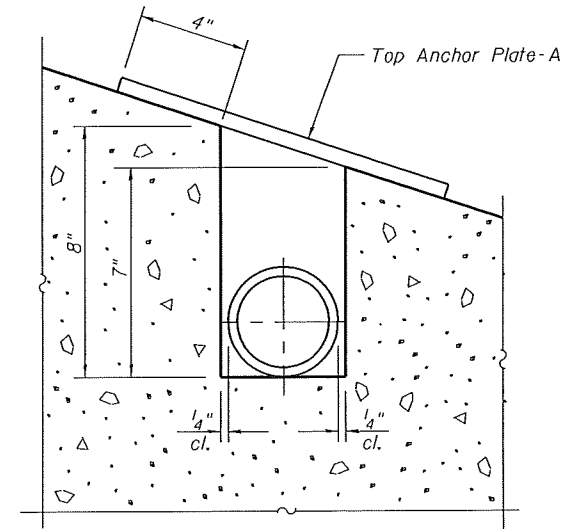
**CULVERT GRATE**  
(2 - required)



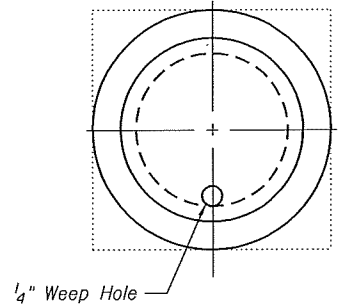
**DETAIL A**



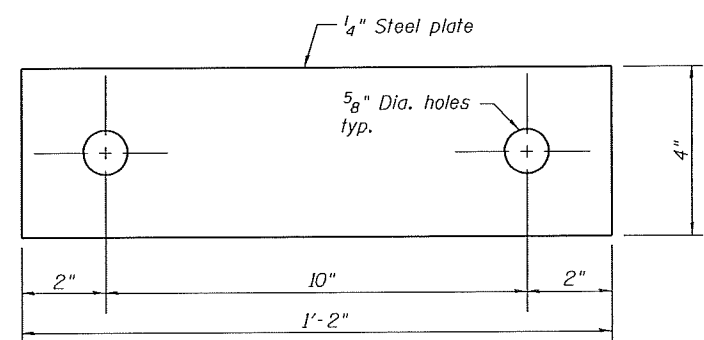
**VIEW A-A**



**DETAIL B**



**VIEW B-B**



**TOP ANCHOR PLATE-A**  
(4 - required)

FILE NAME = 354+11.67-76789-004.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdyrkeimann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

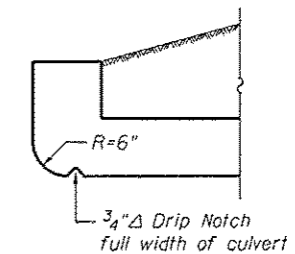
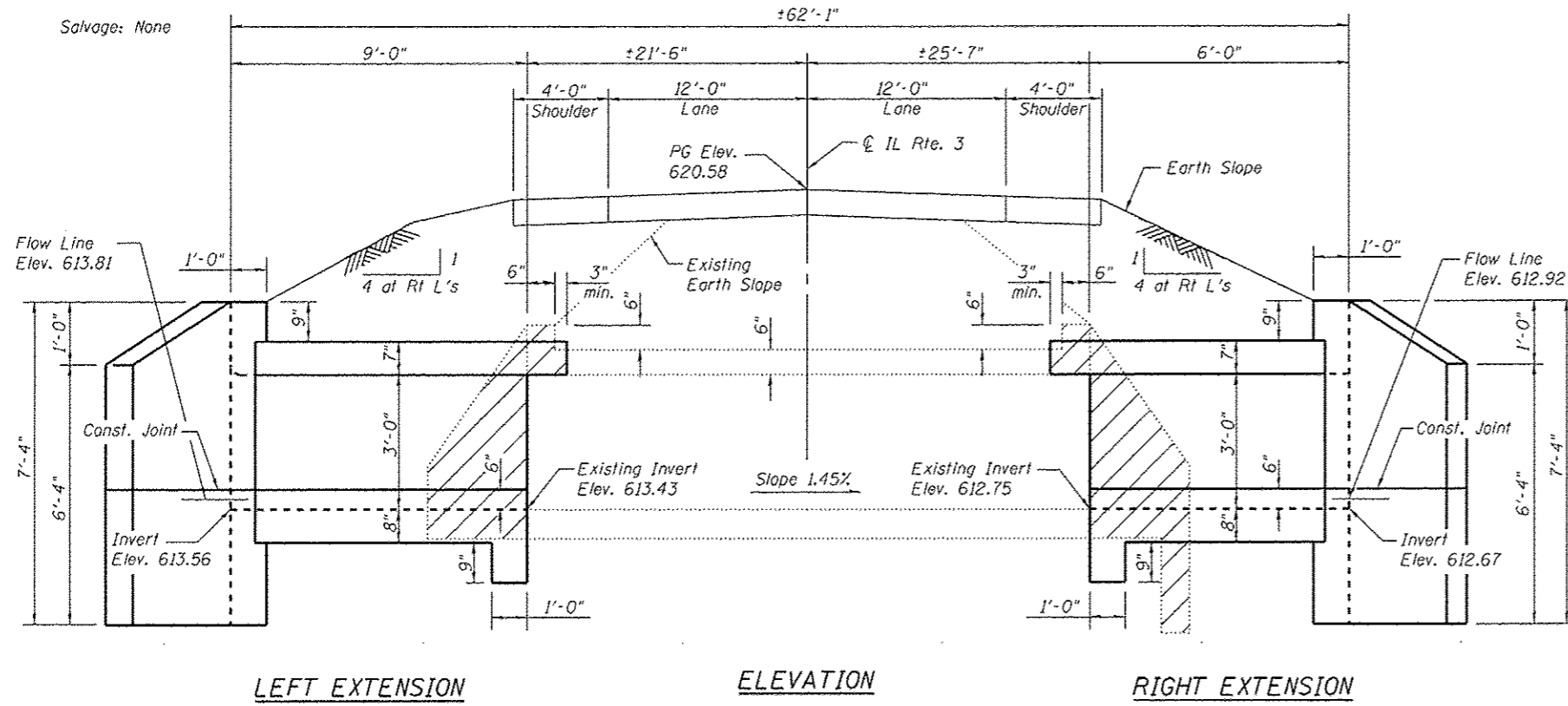
BOX CULVERT EXTENSION DETAILS  
STATION 354+11.67

SHEET NO. 4 OF 4 SHEETS

|                           |                   |               |                  |               |
|---------------------------|-------------------|---------------|------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 253 |
| CONTRACT NO. 76789        |                   |               |                  |               |
| ILLINOIS FED. AID PROJECT |                   |               |                  |               |



Existing Structure: The existing structure is a ±47'-1" long reinforced cast-in-place concrete box culvert with a 3'-0" x 3'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 371+05.



HEADWALL DETAILS AT UPSTREAM END

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion balls shall be according to Standard Specification Article 1006.09.

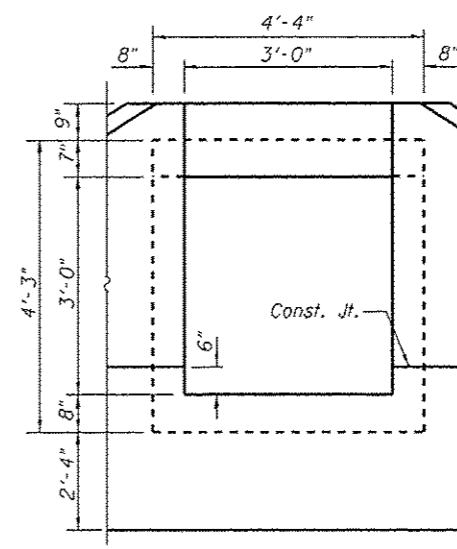
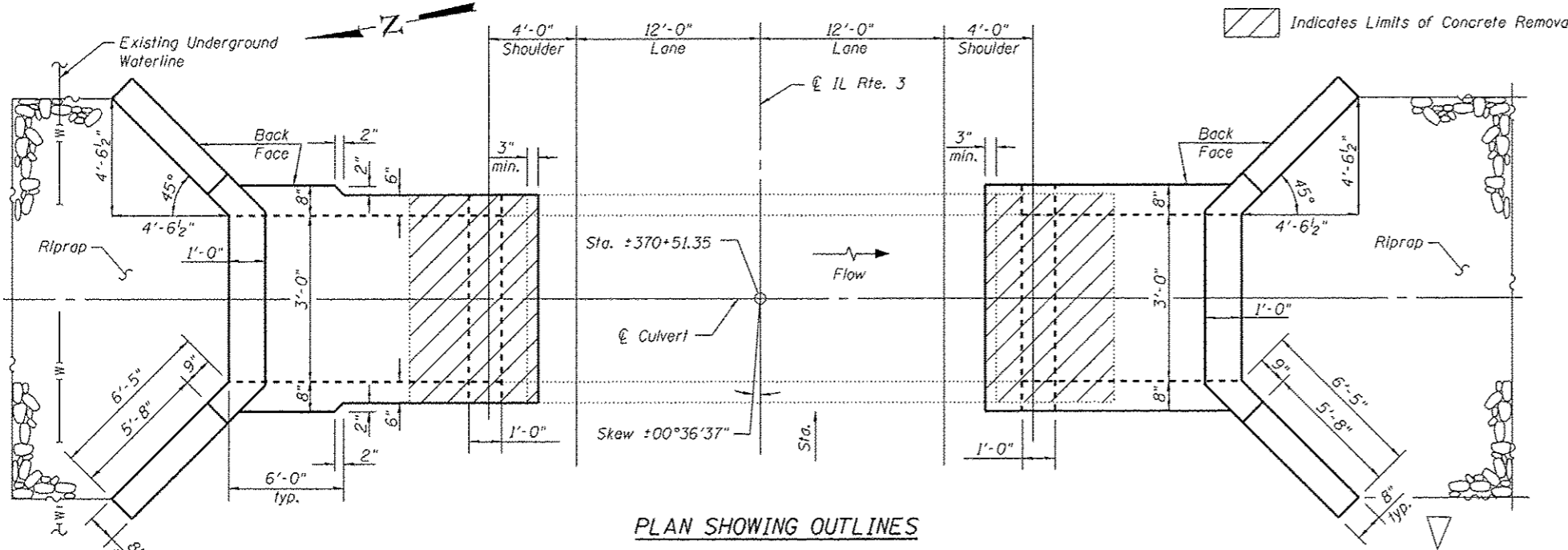
Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 1,667 psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.



BOX CULVERT END ELEVATION (Dimensions Shown at Rt L's)

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

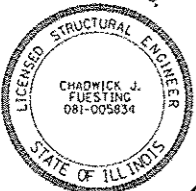
**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |

**GENERAL PLAN & ELEVATION**

ILLINOIS ROUTE 3  
F.A.S. RTE. 752 - SEC. 101-2RS-1  
JERSEY COUNTY  
STATION 370+51.35

Note: See Sheet 2 of 3 for Limits of Concrete Removal.



Cloud Fuenty 8/18/14

FILE NAME: 370+51.35-76789-001.dgn

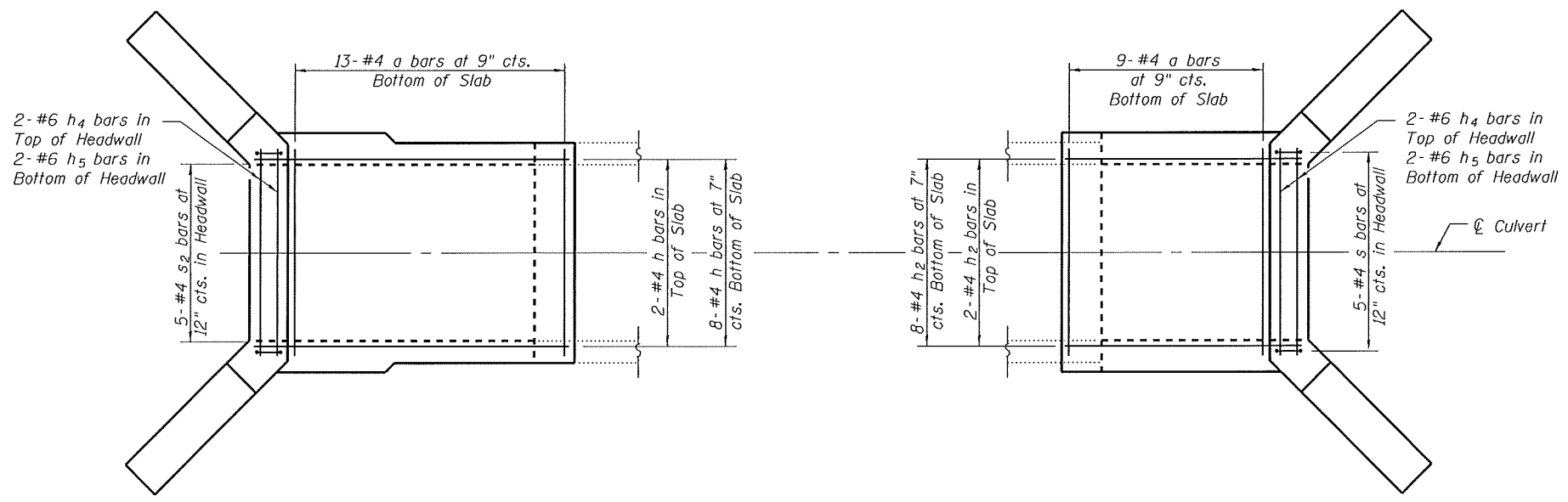


| USER NAME                              | DESIGNED      | CHECKED | REVISIONS |
|----------------------------------------|---------------|---------|-----------|
| jdinkelmann                            | JD            | BB      | -         |
| Illinois Design Firm Number 104.001670 |               |         |           |
| PLOT SCALE                             | DRAWN - WS    |         |           |
| PLOT DATE - 8/8/2014                   | CHECKED - CJF |         |           |

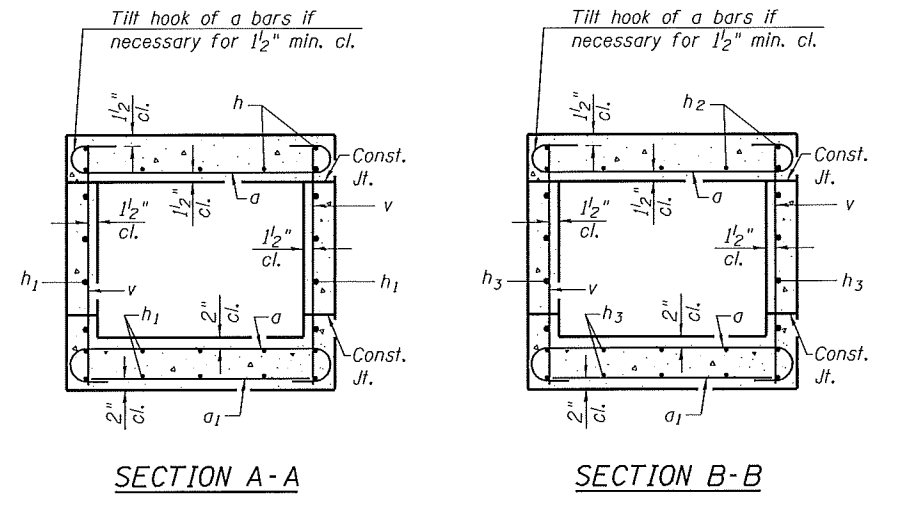
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

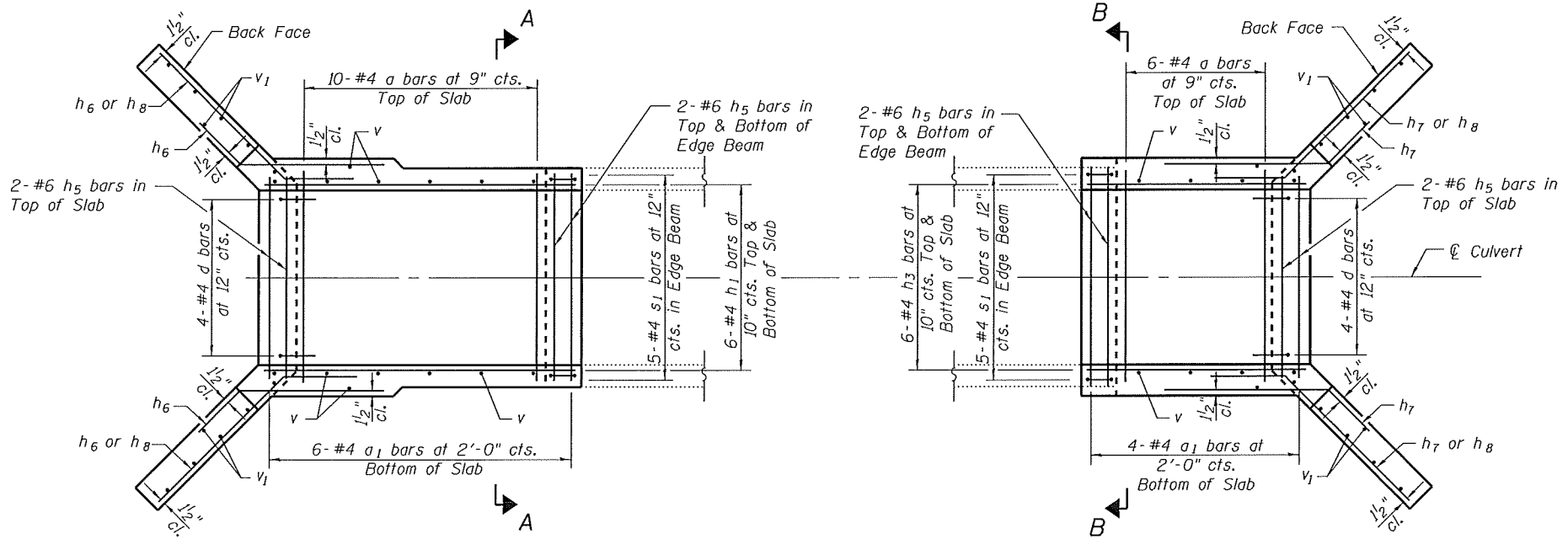
| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 254       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |



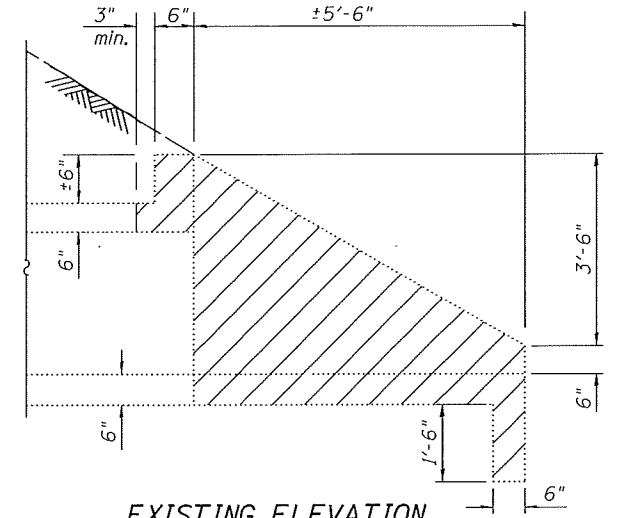
**TOP SLAB PLAN  
SHOWING REINFORCEMENT**  
(v, v<sub>1</sub>, h<sub>6</sub>, h<sub>7</sub>, & h<sub>8</sub> bars not shown for clarity)



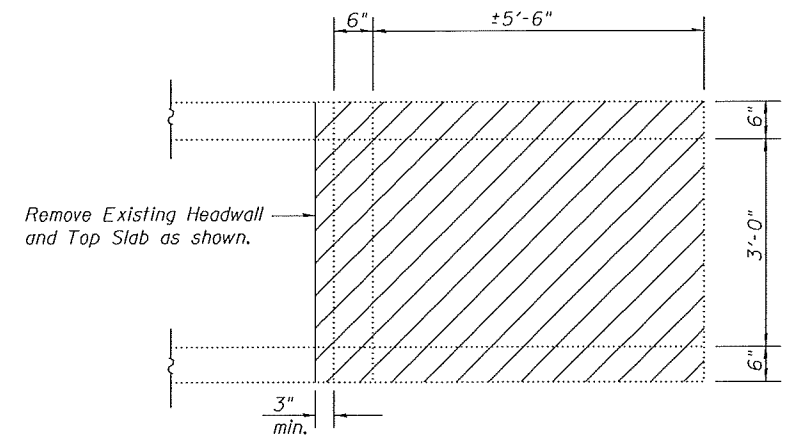
**SECTION A-A**      **SECTION B-B**



**BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT**



**EXISTING ELEVATION**  
(Typical at Both Ends of Existing Culvert)



**EXISTING PLAN**  
(Typical at both ends of Existing Culvert)

Notes:  
For Elevation, Bar Bends and Total Bill of Material see sheet 3 of 3.

Indicates Limits of Concrete Removal

FILE NAME = 370+51.35-76789-002.dgn



USER NAME = jdirkelmann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

REVISED -  
REVISED -  
REVISED -  
REVISED -

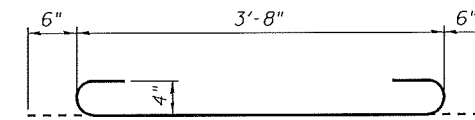
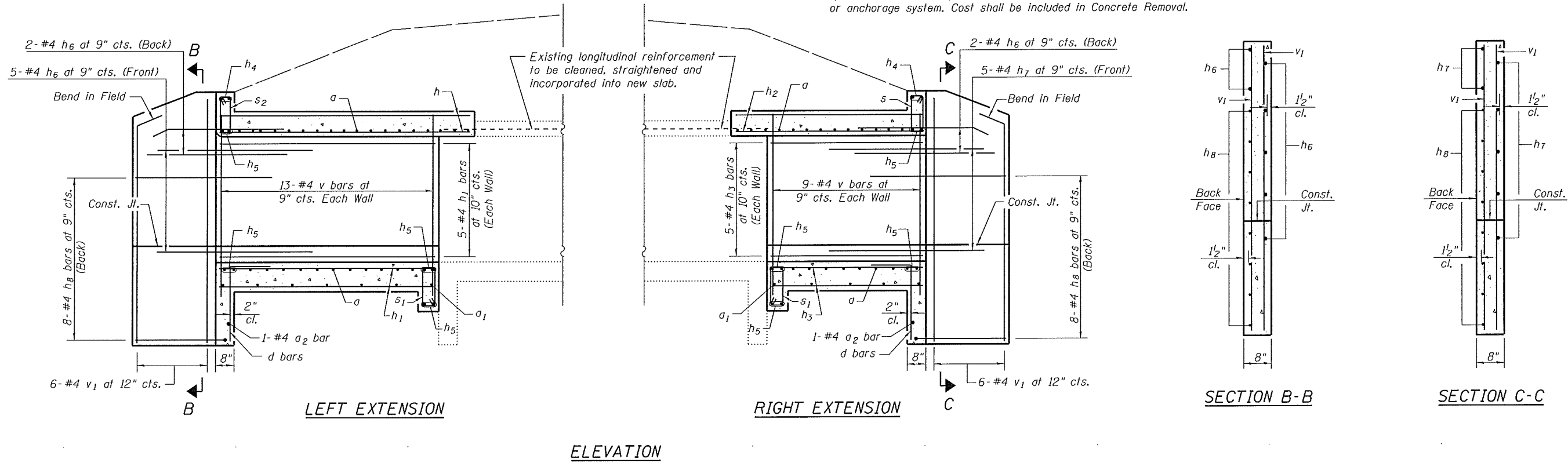
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
STATION 370+51.35

SHEET NO. 2 OF 3 SHEETS

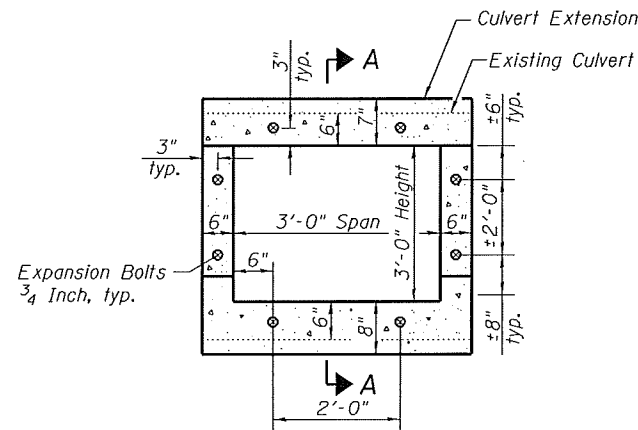
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-----------|--------|--------------|--------------------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 255                |
|                           |           |        |              | CONTRACT NO. 76789 |
| ILLINOIS FED. AID PROJECT |           |        |              |                    |

Note:  
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost shall be included in Concrete Removal.

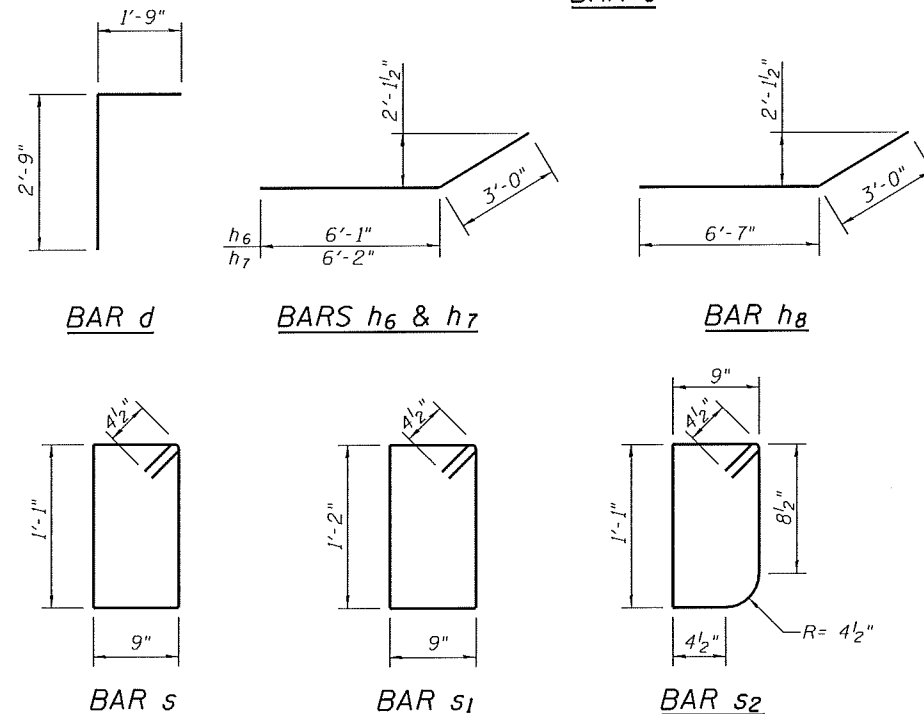
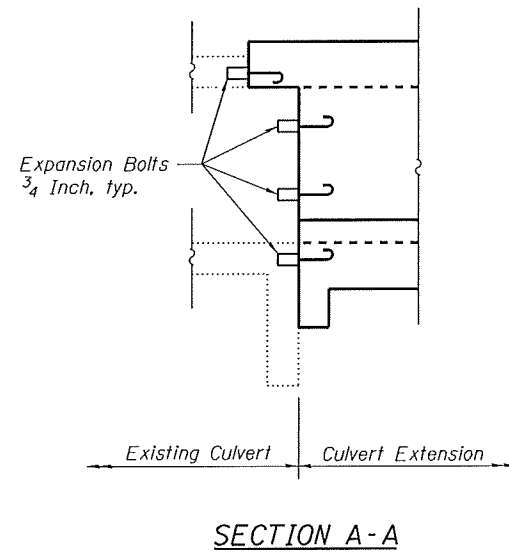


**TOTAL BILL OF MATERIAL**

| Bar                      | No. | Size | Length | Shape        |
|--------------------------|-----|------|--------|--------------|
| a                        | 38  | #4   | 4'-8"  | U            |
| a <sub>1</sub>           | 10  | #4   | 3'-8"  | —            |
| a <sub>2</sub>           | 2   | #4   | 3'-5"  | —            |
| d                        | 8   | #4   | 4'-6"  | L            |
| h                        | 10  | #4   | 9'-6"  | —            |
| h <sub>1</sub>           | 22  | #4   | 8'-8"  | —            |
| h <sub>2</sub>           | 10  | #4   | 6'-6"  | —            |
| h <sub>3</sub>           | 22  | #4   | 5'-8"  | —            |
| h <sub>4</sub>           | 4   | #6   | 2'-9"  | —            |
| h <sub>5</sub>           | 16  | #6   | 3'-8"  | —            |
| h <sub>6</sub>           | 18  | #4   | 9'-1"  | L            |
| h <sub>7</sub>           | 10  | #4   | 9'-2"  | L            |
| h <sub>8</sub>           | 32  | #4   | 9'-7"  | L            |
| s                        | 5   | #4   | 4'-5"  | U            |
| s <sub>1</sub>           | 10  | #4   | 4'-7"  | U            |
| s <sub>2</sub>           | 5   | #4   | 4'-3"  | U            |
| v                        | 48  | #4   | 3'-11" | —            |
| v <sub>1</sub>           | 28  | #4   | 7'-0"  | —            |
| Concrete Box Culverts    |     |      |        | Cu. Yd. 10.3 |
| Reinforcement Bars       |     |      |        | Pound 1290   |
| Expansion Bolts 3/4 Inch |     |      |        | Each 16      |
| Concrete Removal         |     |      |        | Cu. Yd. 2.0  |



Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete



FILE NAME = 370+51.35-76789-003.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdinkeImann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

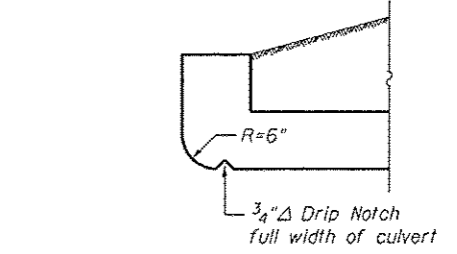
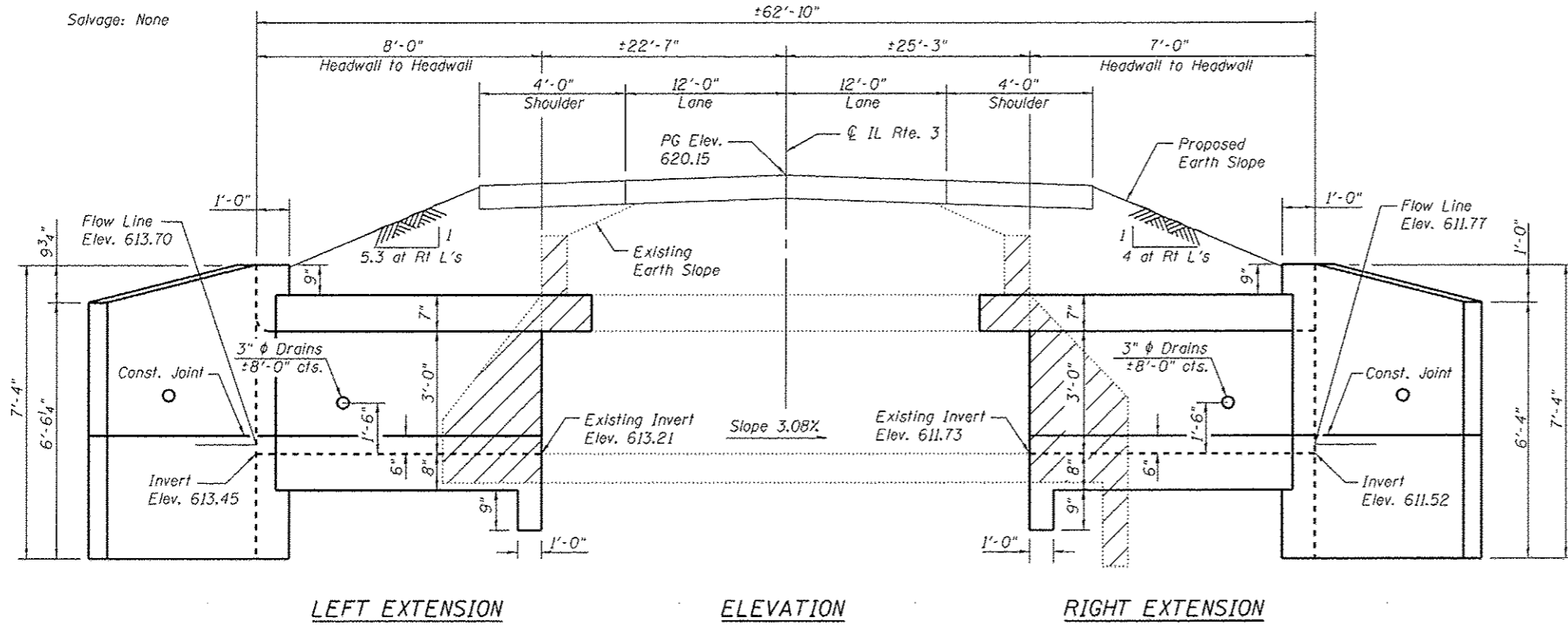
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
STATION 370+51.35

SHEET NO. 3 OF 3 SHEETS

|                           |                   |               |                    |               |
|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438   | SHEET NO. 256 |
| ILLINOIS FED. AID PROJECT |                   |               | CONTRACT NO. 76789 |               |

Existing Structure: The existing structure is a ±47'-10" long reinforced cast-in-place concrete box culvert with a 3'-0" x 3'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 371+50.



HEADWALL DETAILS AT UPSTREAM END

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

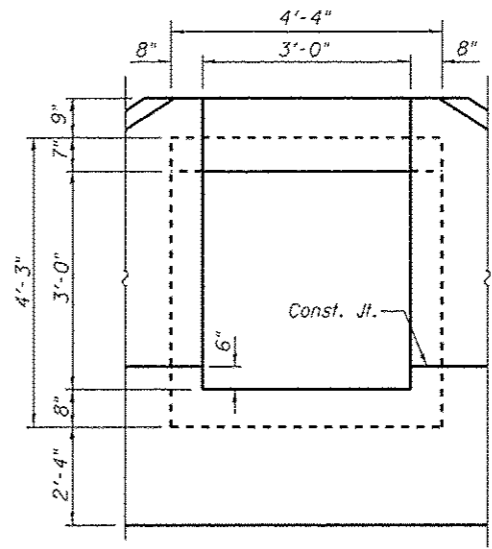
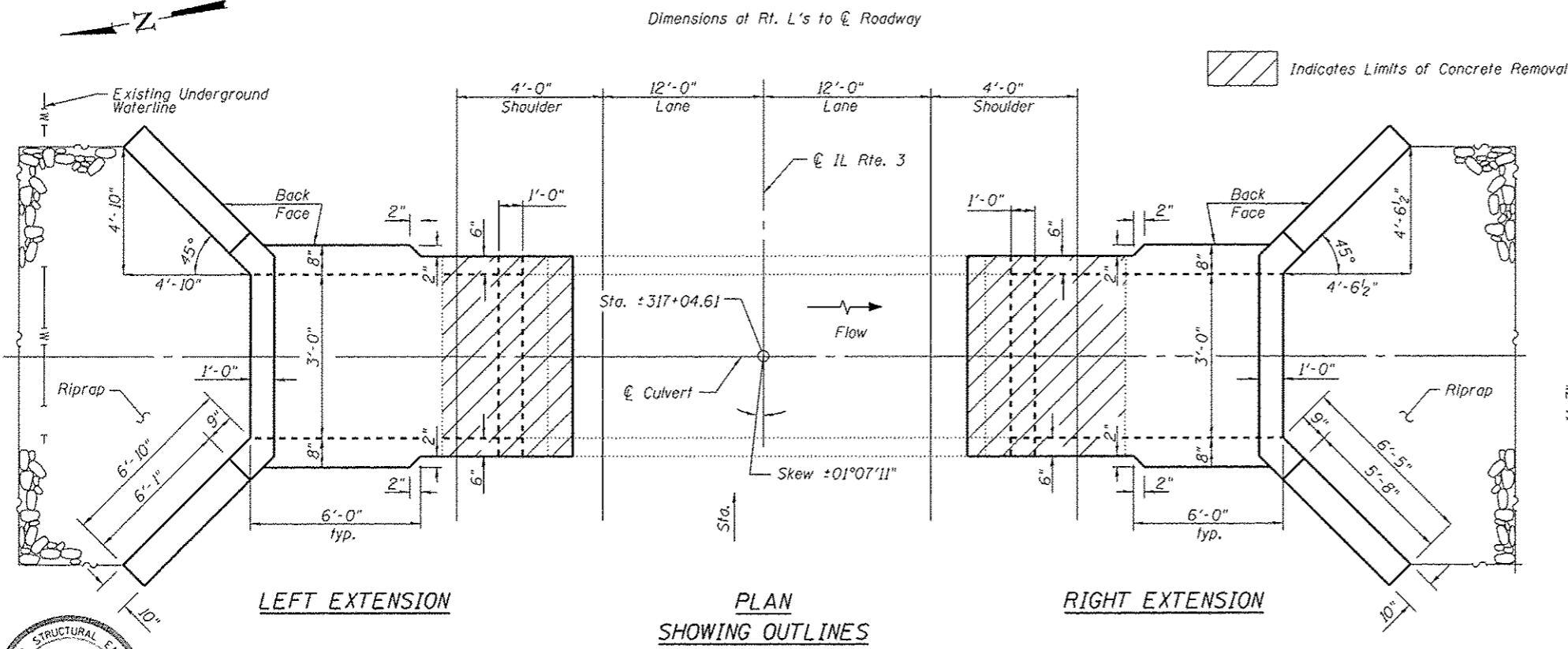
Expansion bolts shall be according to Standard Specification Article 1006.09. Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 1,866 psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.



BOX CULVERT END ELEVATION (Dimensions Shown at Rt L's)

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION      | NEW CONSTRUCTION           |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |

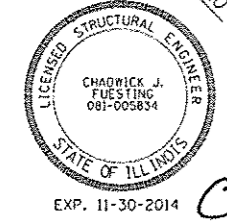
**GENERAL PLAN & ELEVATION**

ILLINOIS ROUTE 3

F.A.S. RTE, 752 - SEC. 101-2RS-1

JERSEY COUNTY

STATION 371+04.61



Checked by *Chad Fuesting* 8/16/14



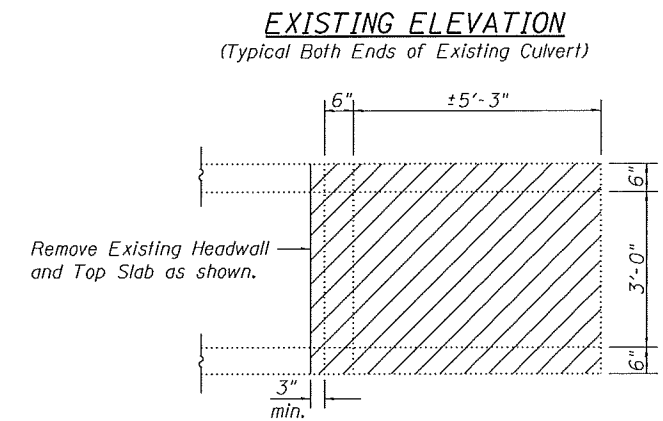
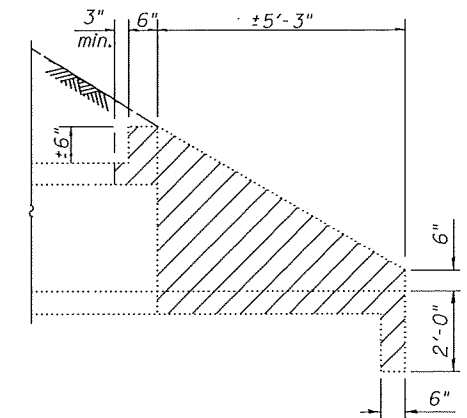
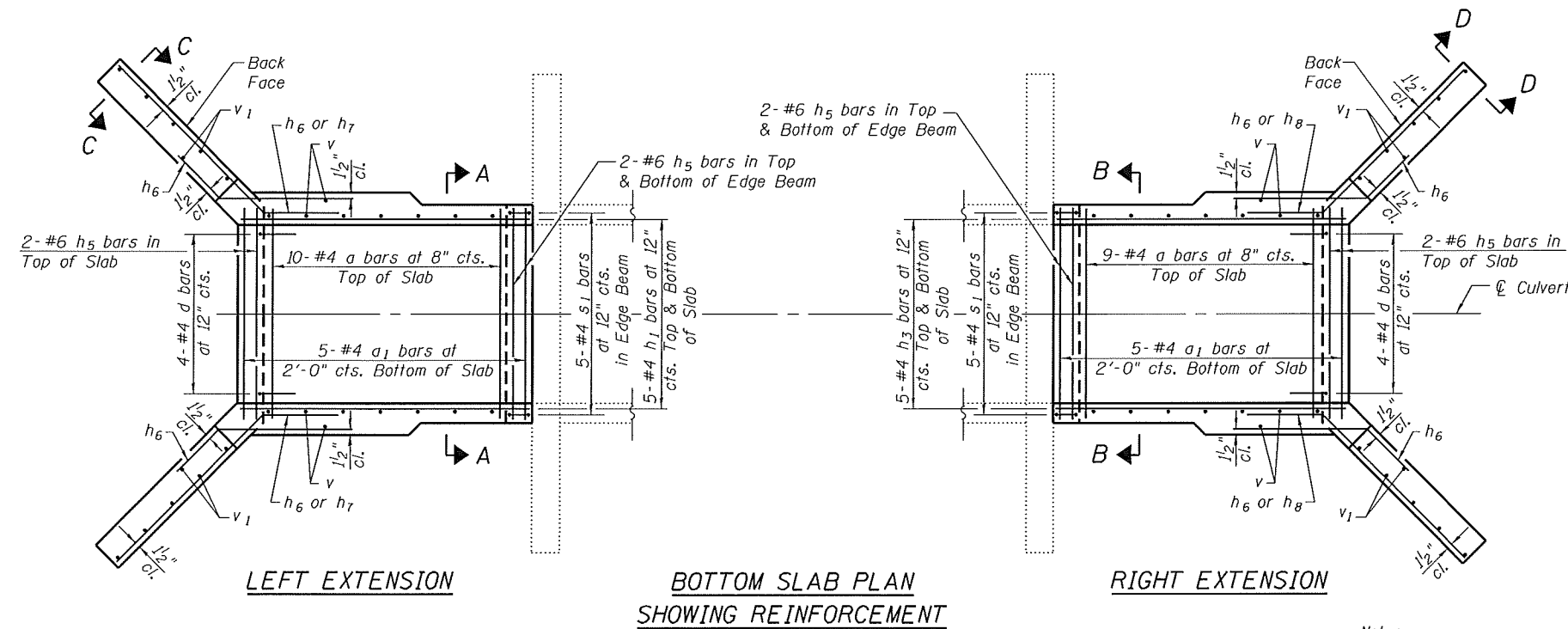
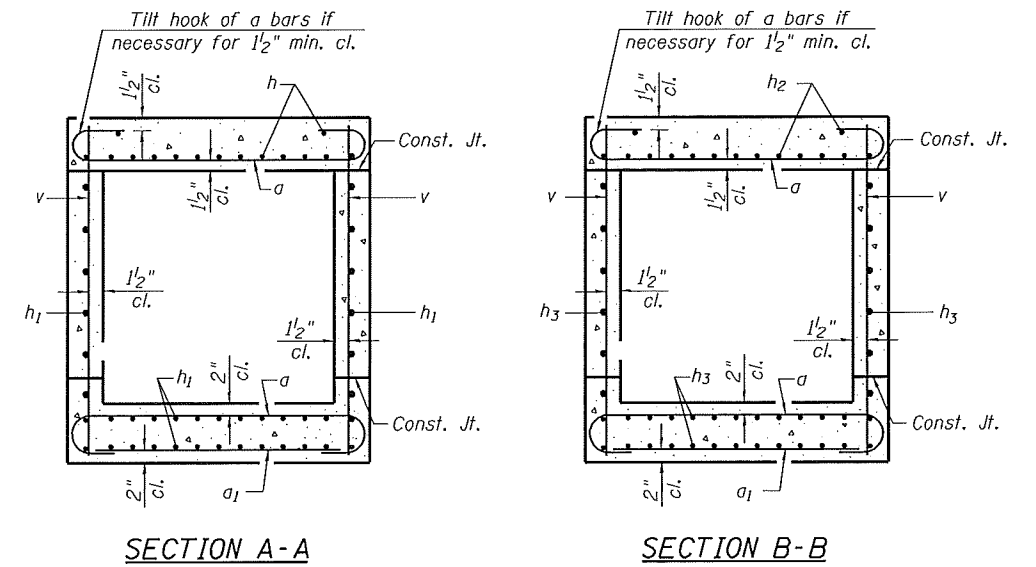
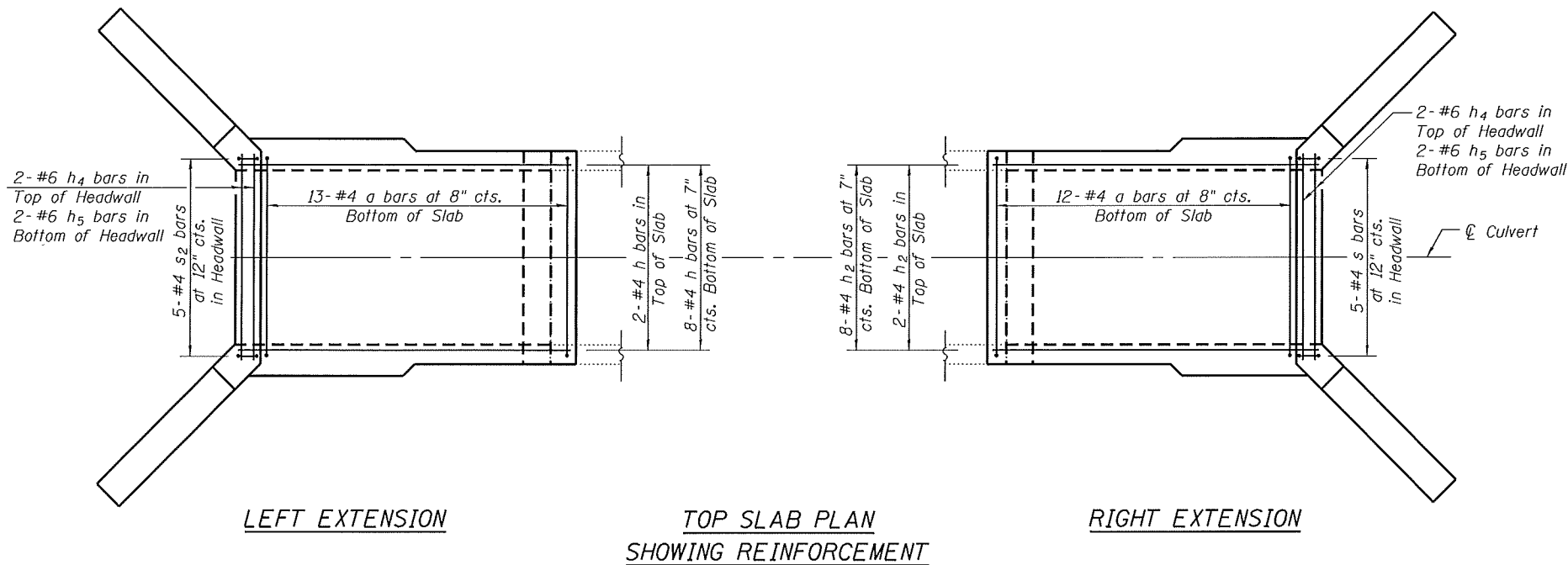
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|----------------------------------------|--------------|------------|
| USER NAME: jdrinkeimann                | DESIGNED: JD | REVISED: - |
| Illinois Design Firm Number 184,001670 | CHECKED: BB  | REVISED: - |
| PLOT SCALE: -                          | DRAWN: WS    | REVISED: - |
| PLOT DATE: 8/8/2014                    | CHECKED: CJF | REVISED: - |

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

Note: See Sheet 2 of 3 for Limits of Concrete Removal.

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 257       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

FILE NAME: 371+04.61-76789-001.dgn



Notes:  
 For Section C-C and D-D see sheet 3 of 3.  
 For Bar Bends and Total Bill of Material see sheet 3 of 3.

Indicates Limits of Concrete Removal

FILE NAME = 371+04.61-76789-002.dgn



USER NAME = jainkelmann  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

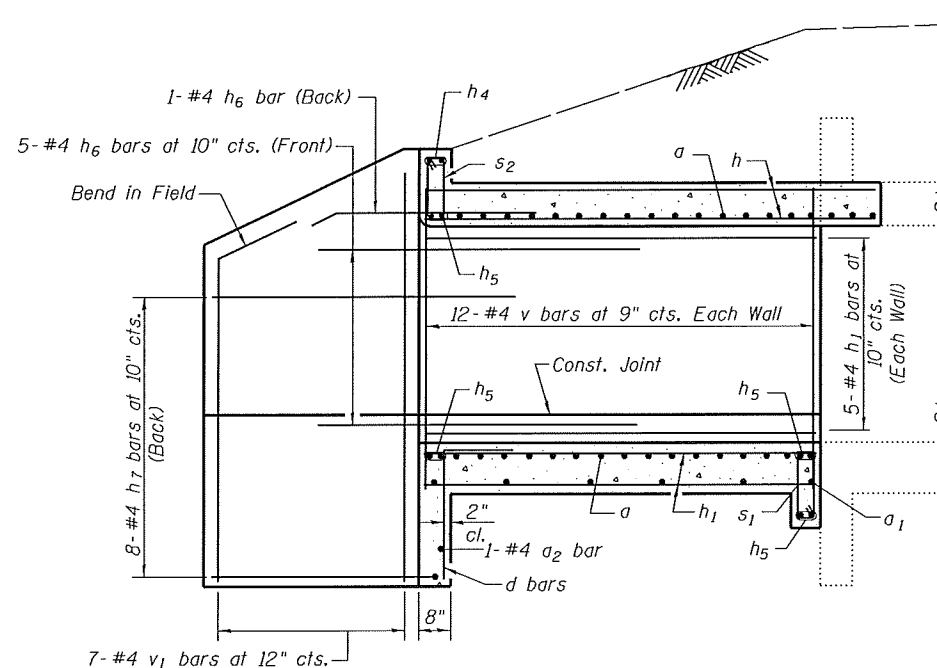
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 371+04.61

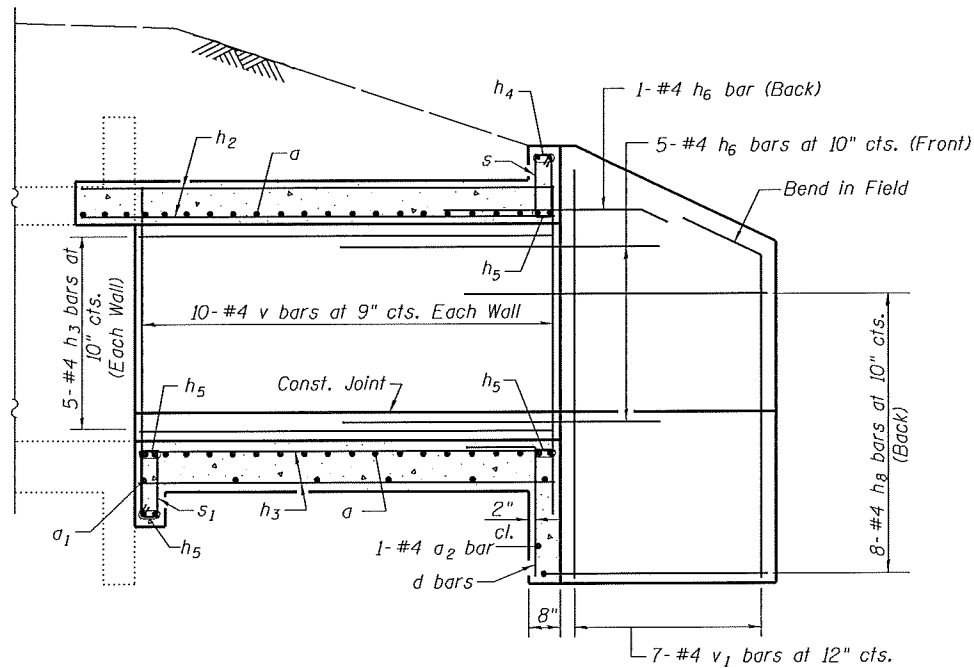
SHEET NO. 2 OF 3 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-----------|--------|--------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438          | 258       |
| CONTRACT NO. 76789 |           |        |              |           |

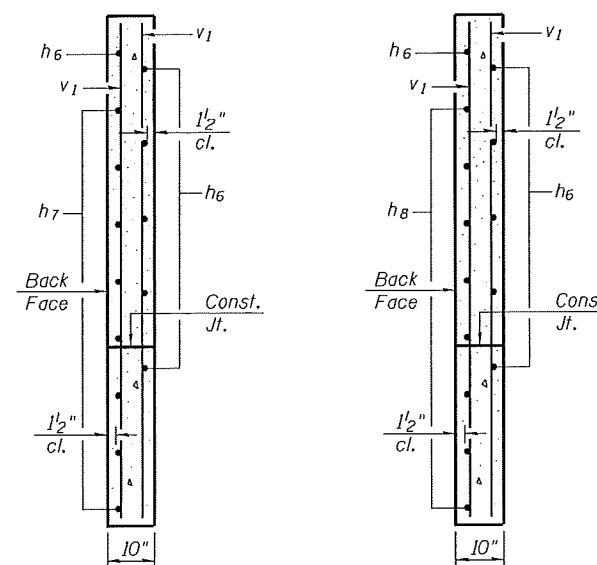
ILLINOIS FED. AID PROJECT



LEFT EXTENSION



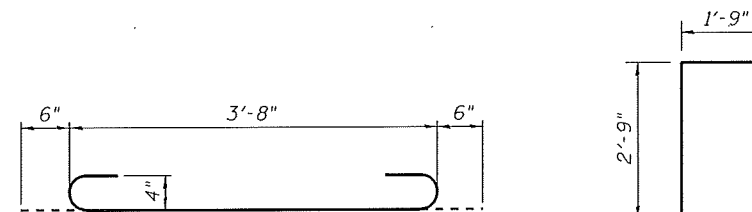
RIGHT EXTENSION



SECTION C-C

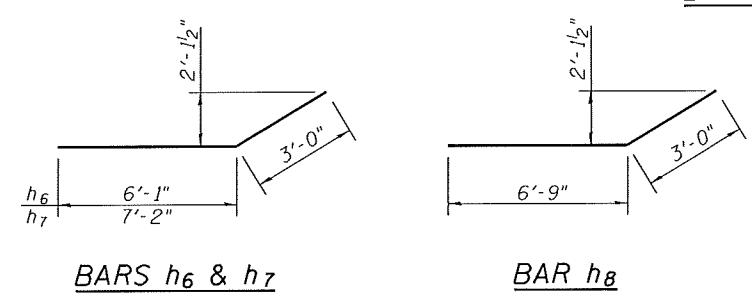
SECTION D-D

ELEVATION



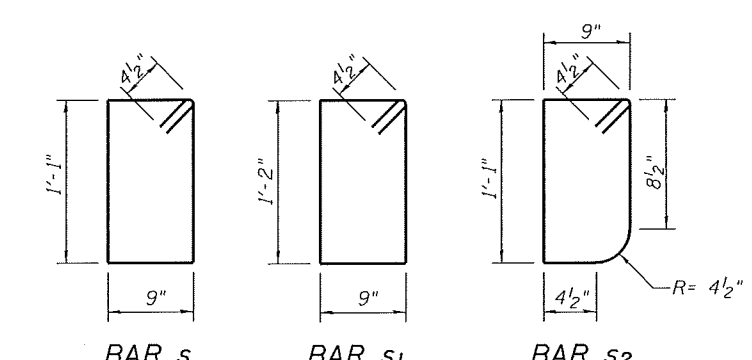
BAR a

BAR d



BARS h6 & h7

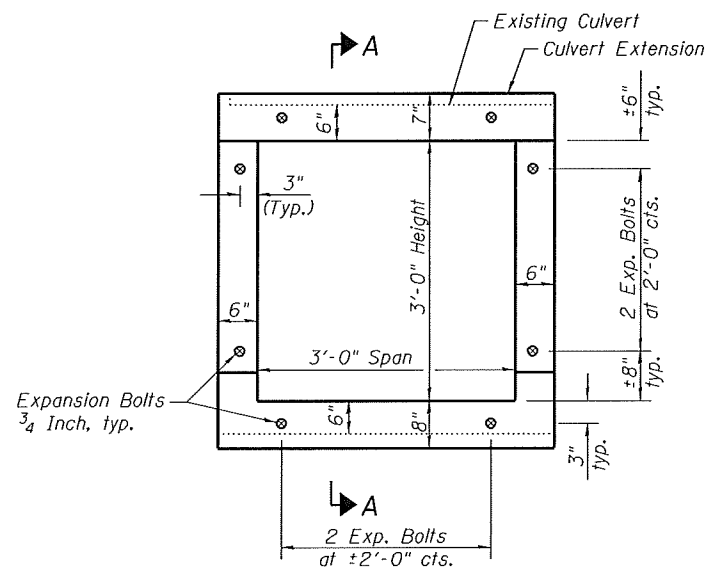
BAR h8



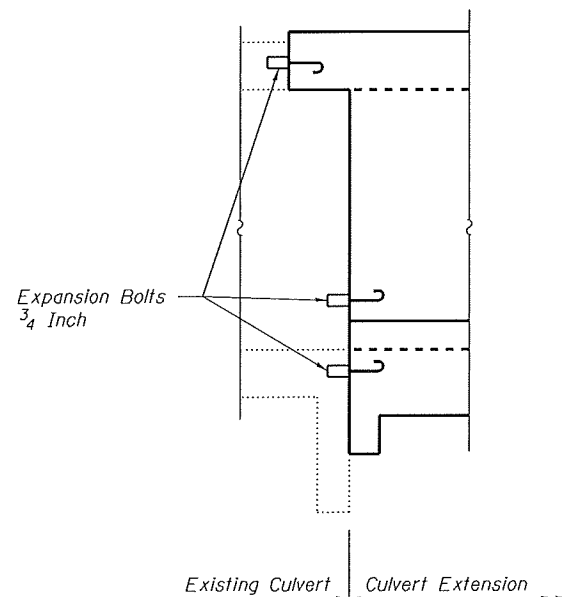
BAR s

BAR s1

BAR s2



EXPANSION BOLT LAYOUT



SECTION A-A

Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

TOTAL BILL OF MATERIAL

| Bar                            | No. | Size | Length  | Shape |
|--------------------------------|-----|------|---------|-------|
| a                              | 44  | #4   | 4'-8"   |       |
| a1                             | 10  | #4   | 3'-8"   |       |
| a2                             | 2   | #4   | 3'-10"  |       |
| d                              | 8   | #4   | 4'-6"   |       |
| h                              | 10  | #4   | 8'-6"   |       |
| h1                             | 20  | #4   | 7'-8"   |       |
| h2                             | 10  | #4   | 7'-6"   |       |
| h3                             | 20  | #4   | 6'-8"   |       |
| h4                             | 4   | #6   | 3'-3"   |       |
| h5                             | 16  | #6   | 3'-9"   |       |
| h6                             | 24  | #4   | 9'-1"   |       |
| h7                             | 16  | #4   | 10'-2"  |       |
| h8                             | 16  | #4   | 9'-9"   |       |
| s                              | 5   | #4   | 4'-5"   |       |
| s1                             | 10  | #4   | 4'-7"   |       |
| s2                             | 5   | #4   | 4'-3"   |       |
| v                              | 48  | #4   | 3'-11"  |       |
| v1                             | 32  | #4   | 7'-0"   |       |
| Concrete Removal               |     |      | Cu. Yd. | 1.9   |
| Rock Excavation for Structures |     |      | Cu. Yd. | 4.6   |
| Reinforcement Bars             |     |      | Pound   | 1300  |
| Expansion Bolts 3/4 Inch       |     |      | Each    | 16    |
| Concrete Box Culverts          |     |      | Cu. Yd. | 9.7   |

FILE NAME = 371+04.61-76785-003.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinkeImann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

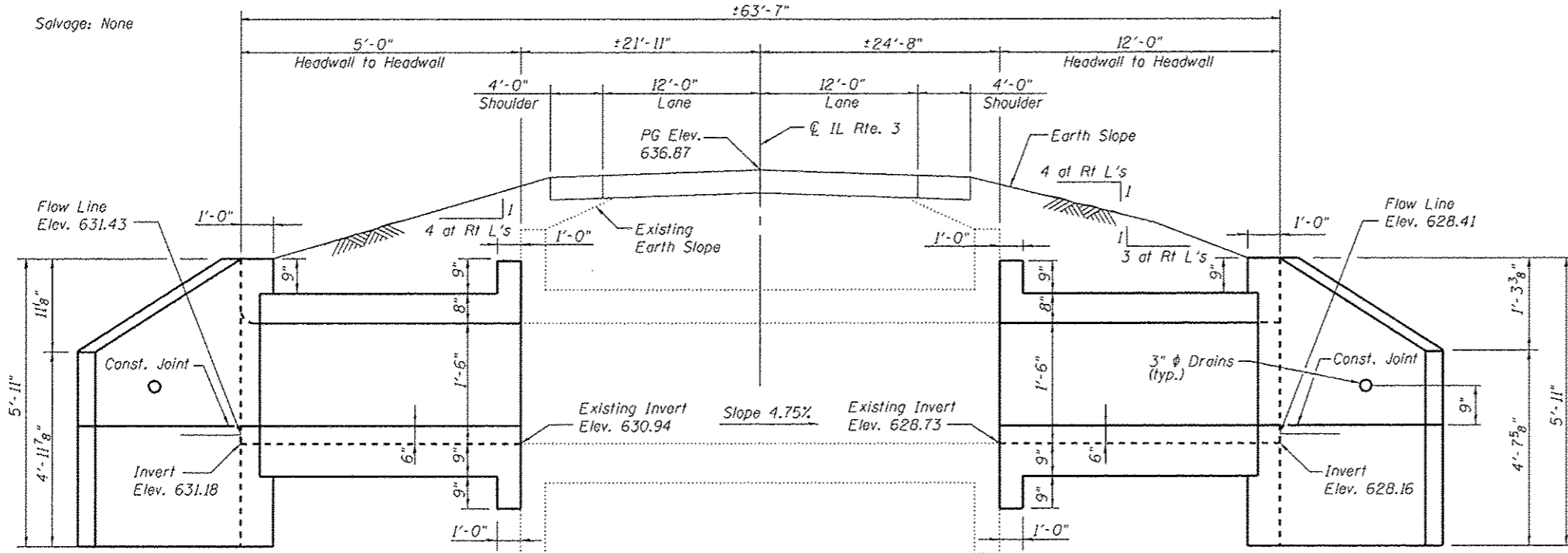
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
STATION 371+04.61

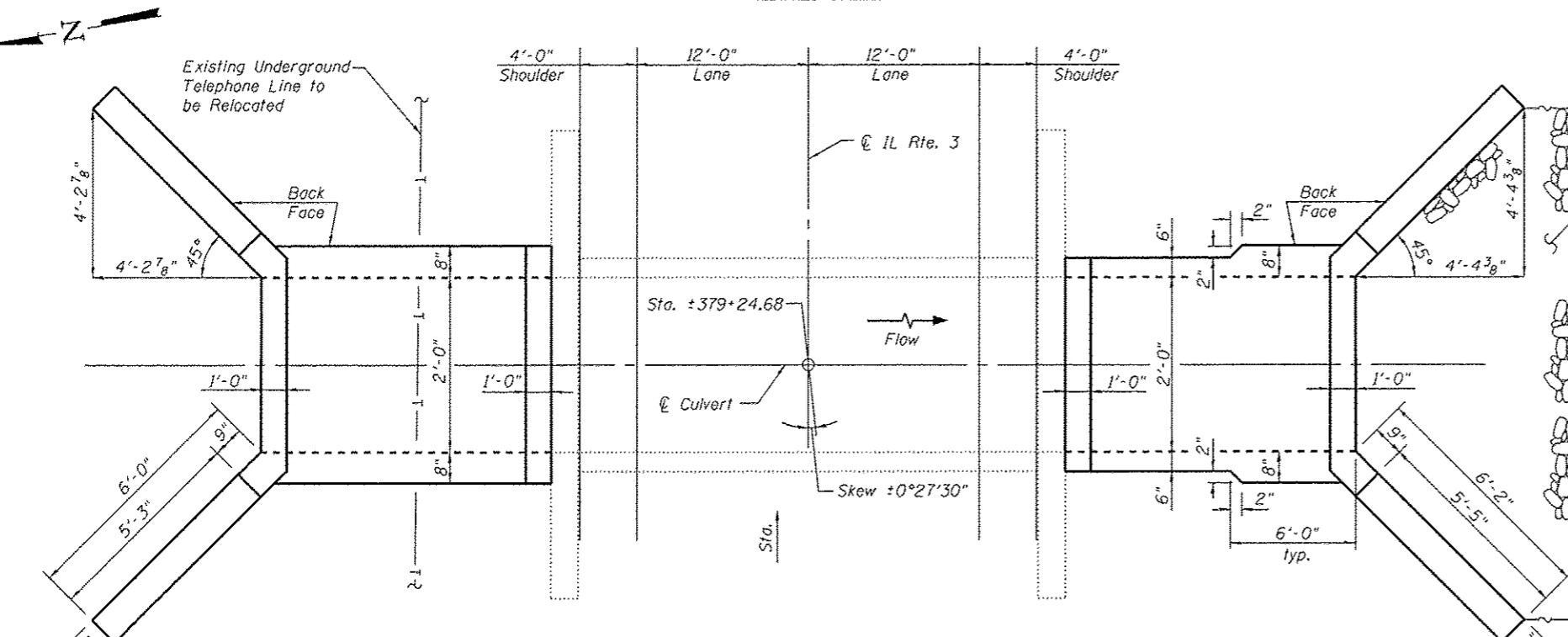
SHEET NO. 3 OF 3 SHEETS

|                           |                   |               |                    |               |
|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438   | SHEET NO. 259 |
|                           |                   |               | CONTRACT NO. 76789 |               |
| ILLINOIS FED. AID PROJECT |                   |               |                    |               |

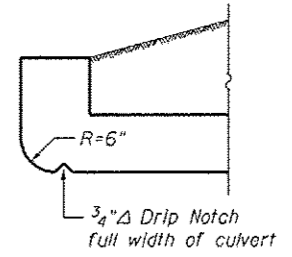
Existing Structure: The existing structure, is a ±46'-7" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109, Construction Section 101-A at the original Station of 379+75.



**ELEVATION**



**PLAN  
SHOWING OUTLINES**



**HEADWALL DETAILS AT UPSTREAM END**

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion Bolts shall be according to Standard Specifications Article 1006.09.

Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = --- psf.

For Riprap details and quantities see Roadway Plans.

For Total Bill of Material see sheet 3 of 3.

**DESIGN SPECIFICATIONS**

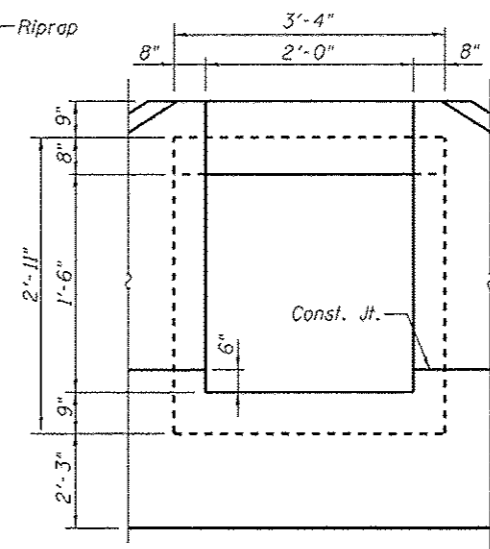
2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

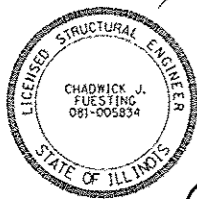
**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |



**BOX CULVERT  
END ELEVATION  
(Dimensions Shown at Rt L's)**

**GENERAL PLAN & ELEVATION  
ILLINOIS ROUTE 3  
F.A.S. RTE. 752 - SEC. 101-2RS-1  
JERSEY COUNTY  
STATION 379+24.68**



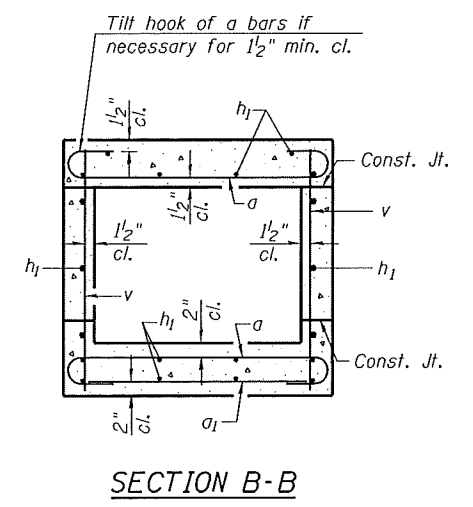
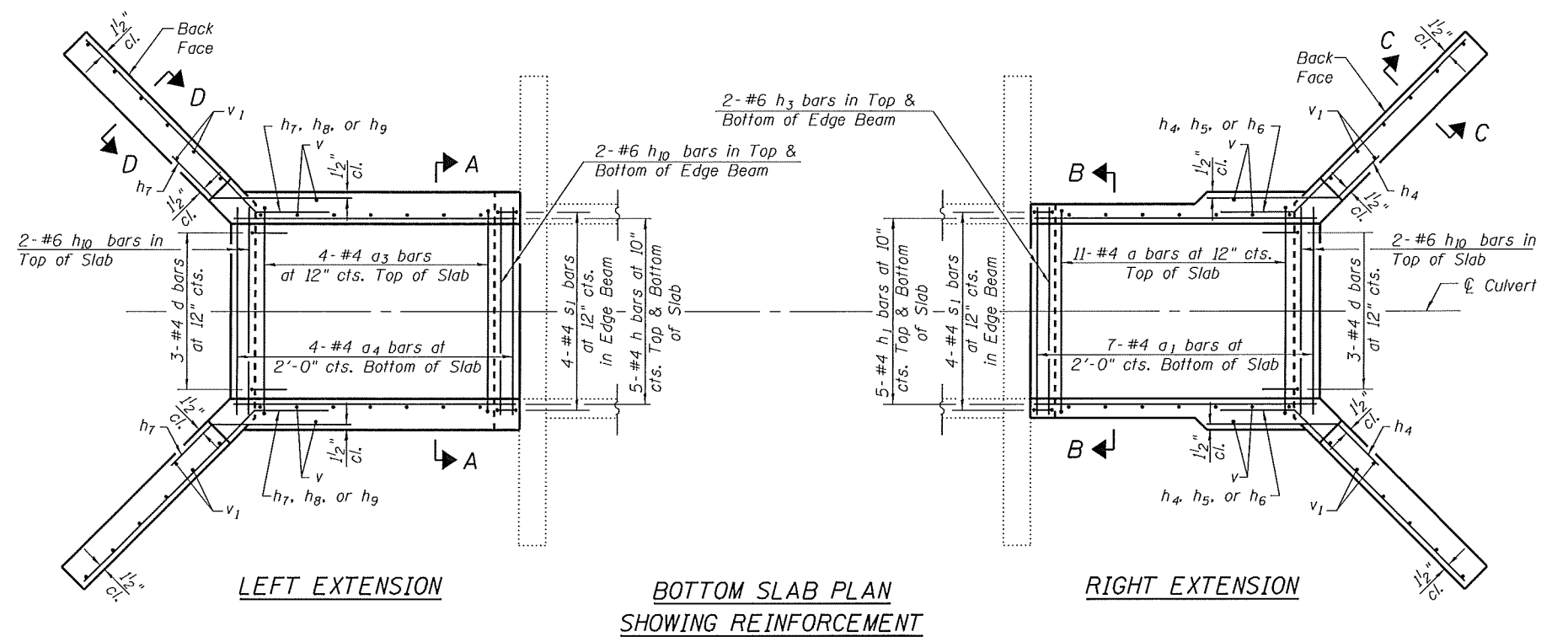
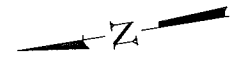
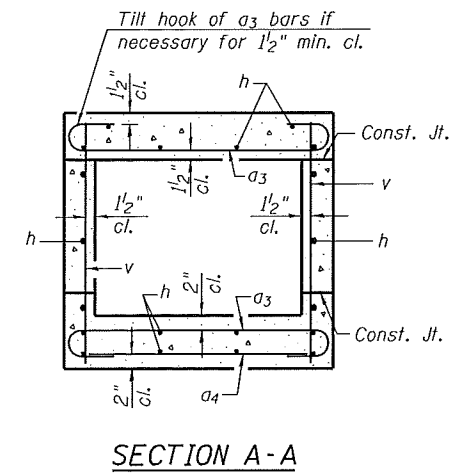
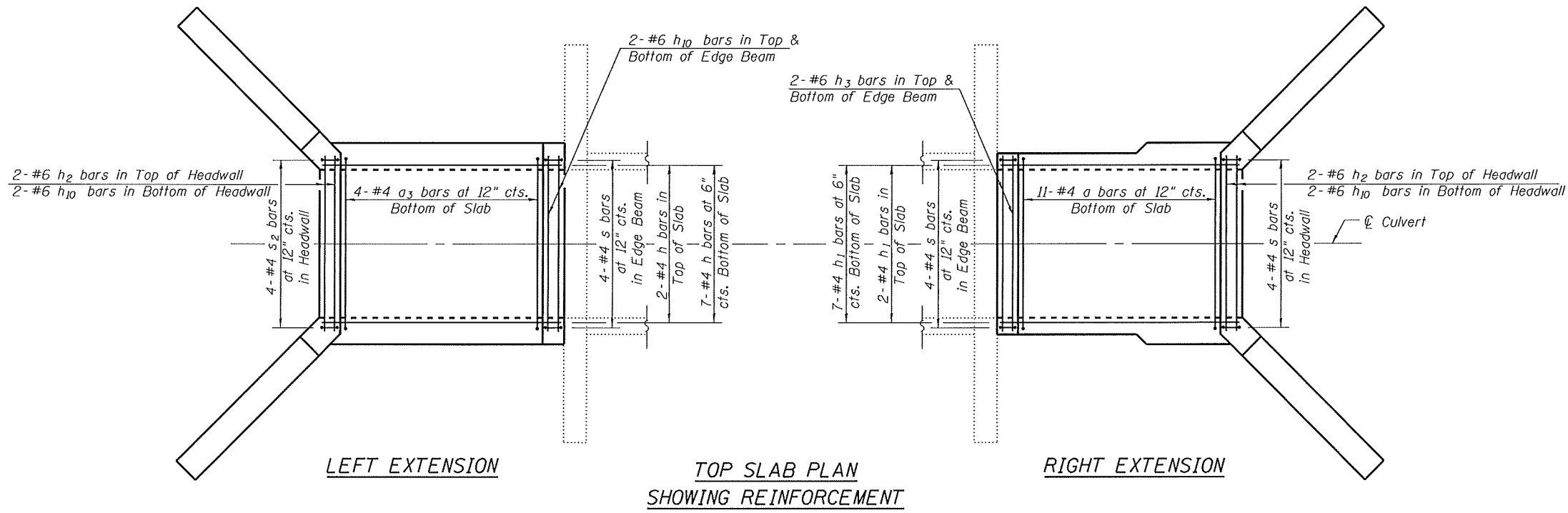
*Culvert 8/18/14*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-----------|--------|--------------|-----------|
| 752         | 101-2RS-1 | JERSEY | 438          | 260       |

CONTRACT NO. 76789  
ILLINOIS FED. AID PROJECT





Notes:  
 For Section C-C, see sheet 3 of 3.  
 For Section D-D, see sheet 3 of 3.  
 For Elevation, Bar Bends, and Total Bill of Material, see sheet 3 of 3.

FILE NAME = 379+24.68-76789-002.dgn



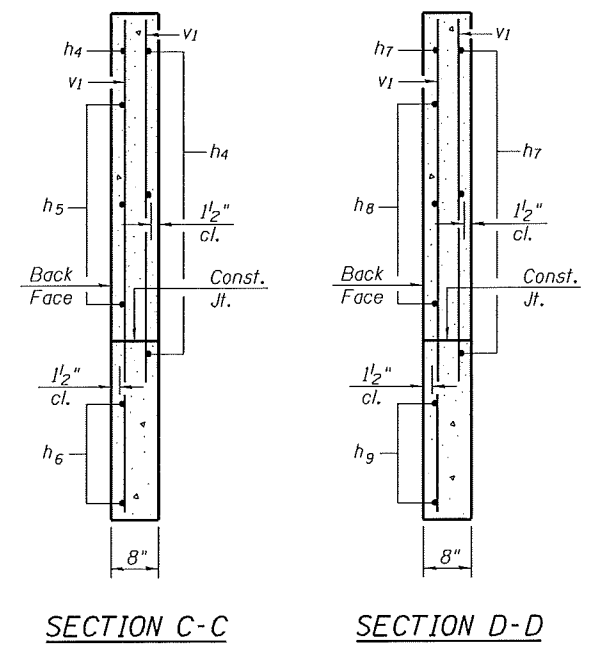
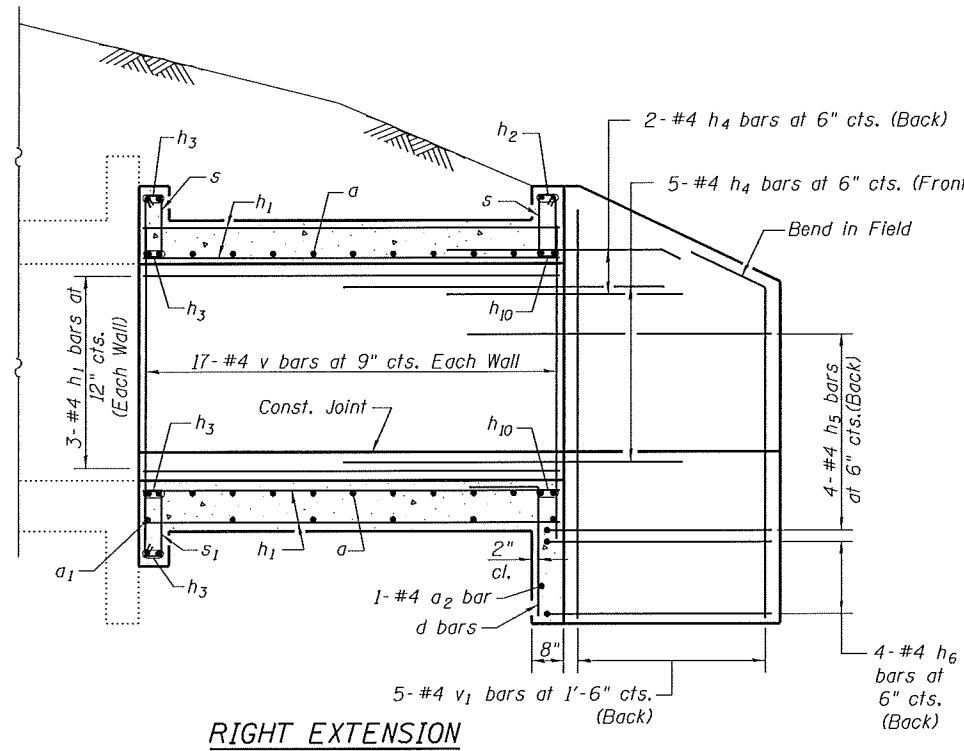
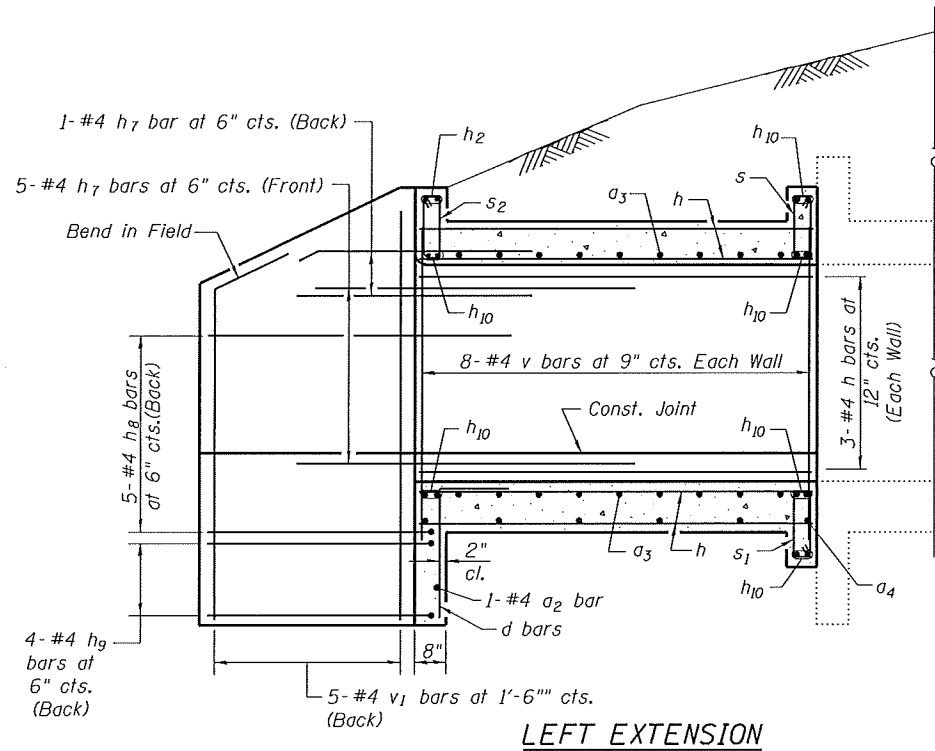
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| USER NAME = jcinkeImann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

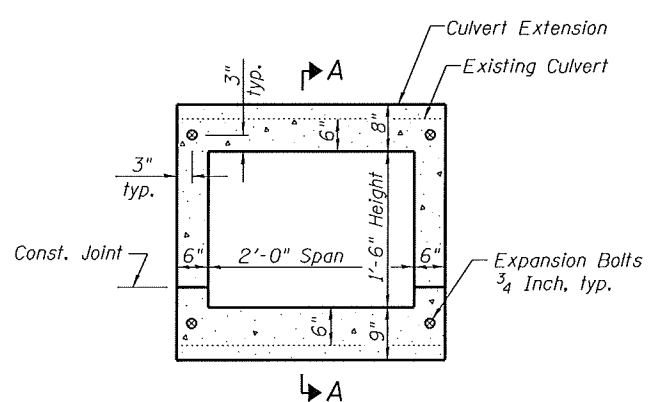
BOX CULVERT EXTENSION DETAILS  
 STATION 379+24.68

SHEET NO. 2 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 423          | 261       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

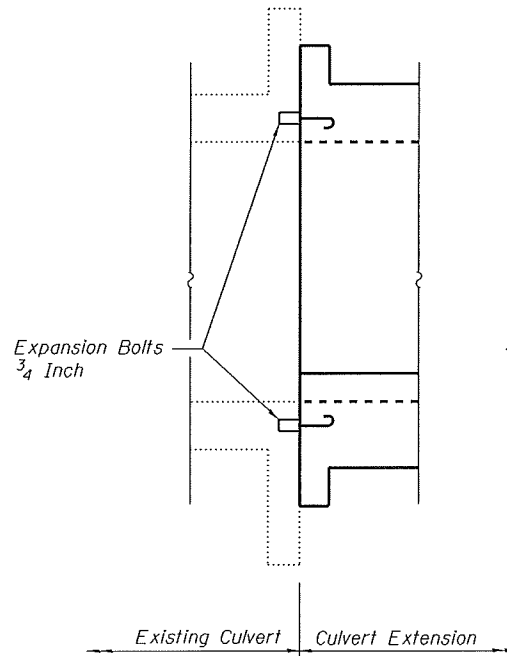


ELEVATION.

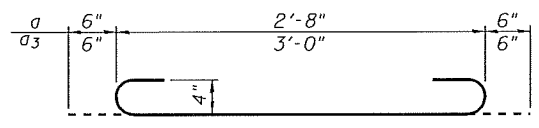


EXPANSION BOLT LAYOUT

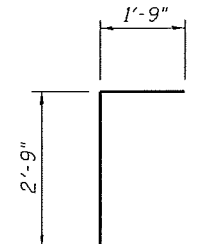
Note:  
Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete.



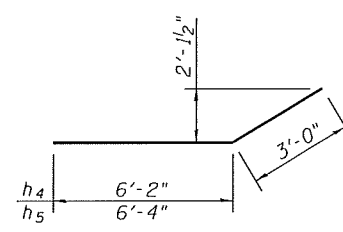
SECTION A-A



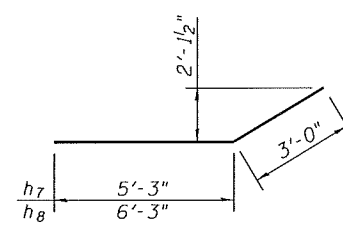
BAR a & a3



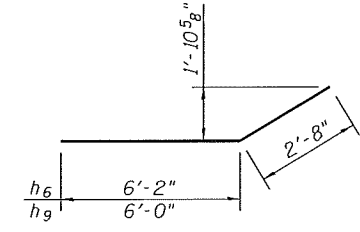
BAR d



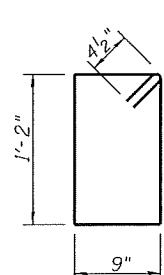
BARS h4 & h5



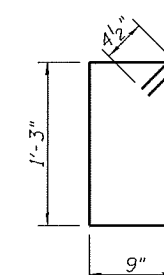
BARS h7 & h8



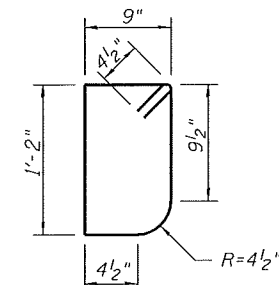
BARS h6 & h9



BAR s



BAR s1



BAR s2

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape  |
|--------------------------|-----|------|---------|--------|
| a                        | 22  | #4   | 3'-8"   | U      |
| a1                       | 7   | #4   | 2'-8"   | —      |
| a2                       | 2   | #4   | 2'-5"   | —      |
| a3                       | 8   | #4   | 4'-0"   | U      |
| a4                       | 4   | #4   | 3'-0"   | —      |
| d                        | 6   | #4   | 4'-6"   | L      |
| h                        | 25  | #4   | 4'-8"   | —      |
| h1                       | 25  | #4   | 11'-8"  | —      |
| h2                       | 4   | #6   | 1'-10"  | —      |
| h3                       | 8   | #6   | 2'-9"   | —      |
| h4                       | 14  | #4   | 9'-2"   | —      |
| h5                       | 8   | #4   | 9'-4"   | —      |
| h6                       | 8   | #4   | 8'-10"  | —      |
| h7                       | 12  | #4   | 8'-3"   | —      |
| h8                       | 10  | #4   | 9'-3"   | —      |
| h9                       | 8   | #4   | 8'-8"   | —      |
| h10                      | 16  | #6   | 3'-1"   | —      |
| s                        | 12  | #4   | 4'-7"   | —      |
| s1                       | 8   | #4   | 4'-9"   | —      |
| s2                       | 4   | #4   | 4'-5"   | —      |
| v                        | 54  | #4   | 2'-8"   | —      |
| v1                       | 24  | #4   | 5'-8"   | —      |
| Reinforcement Bars       |     |      | Pound   | 1130.0 |
| Expansion Bolts 3/4 Inch |     |      | Each    | 8      |
| Concrete Box Culverts    |     |      | Cu. Yd. | 8.4    |

FILE NAME = 379+24.68-76789-003.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinkelmann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

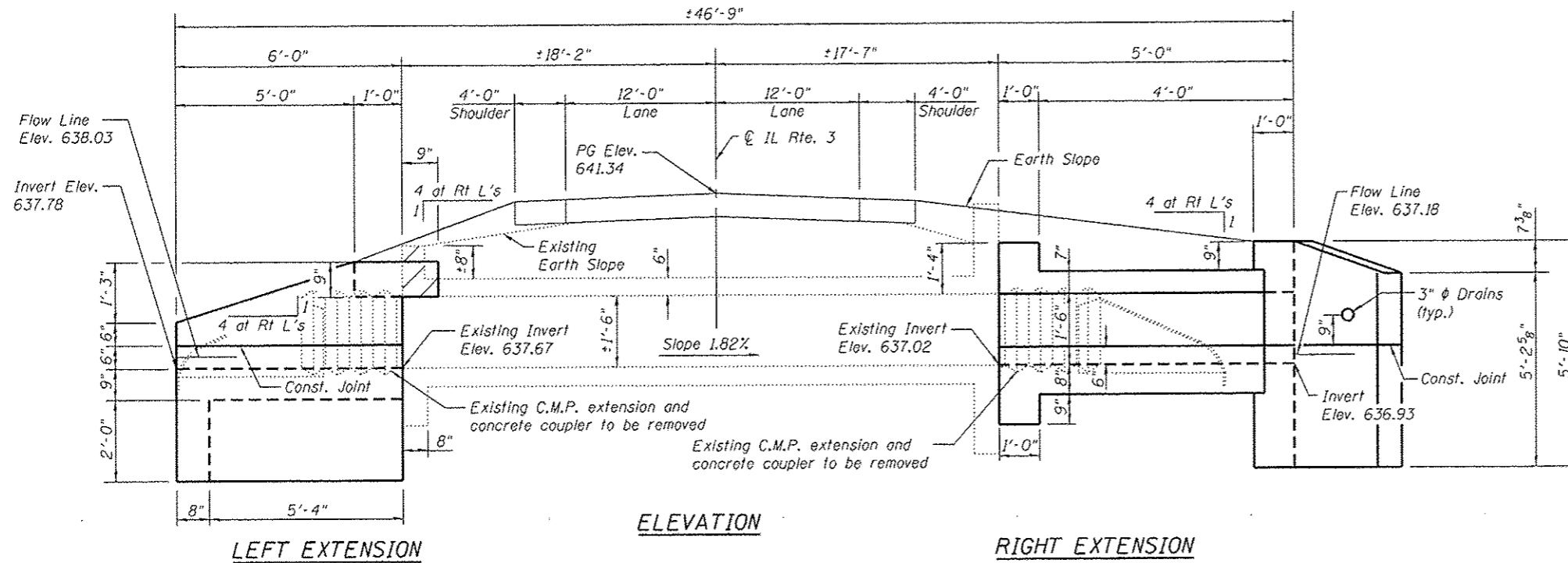
BOX CULVERT EXTENSION DETAILS  
STATION 379+24.68

SHEET NO. 3 OF 3 SHEETS

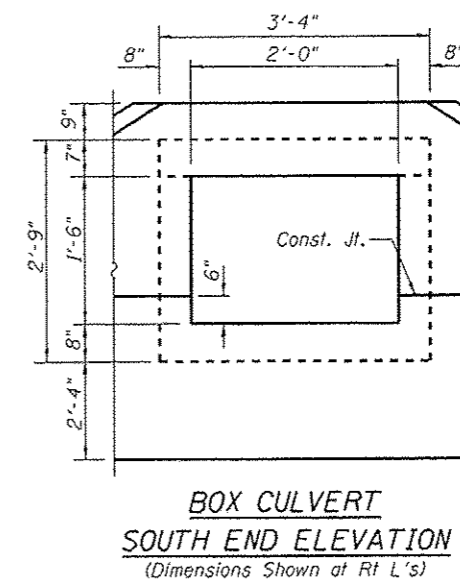
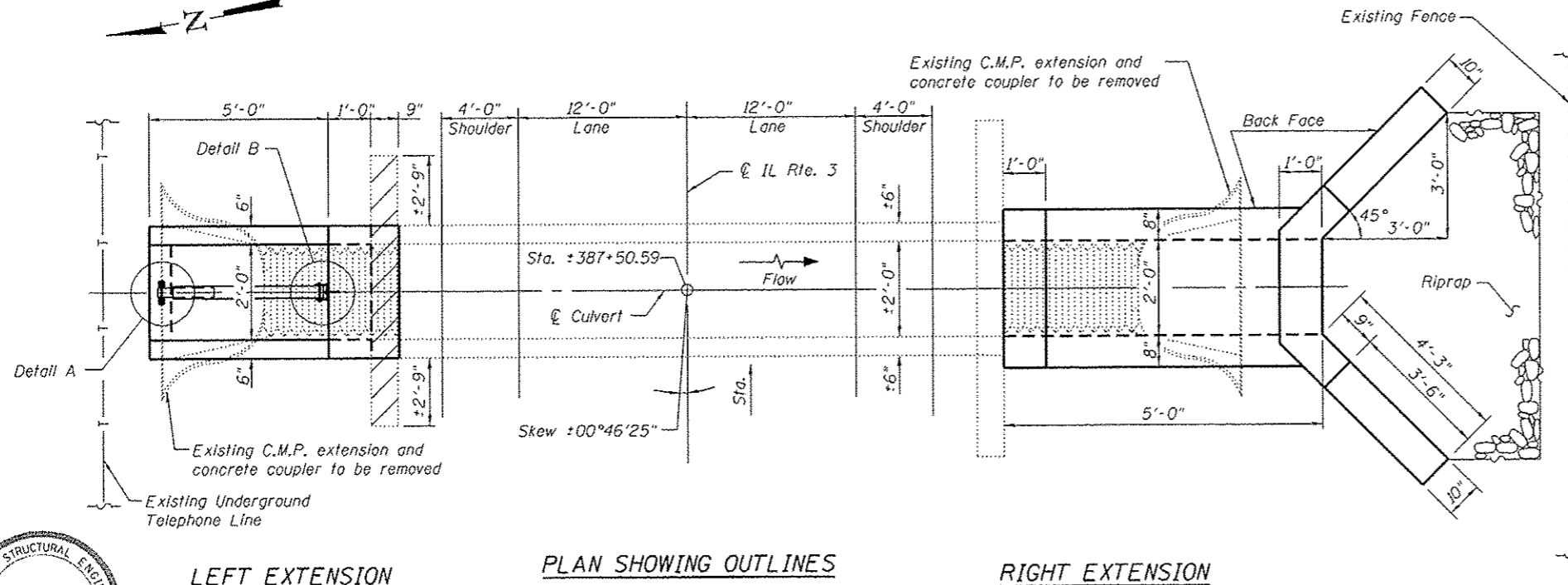
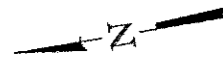
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|---------------------------|-------------------|---------------|--------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 423   | SHEET NO. 262 |
| ILLINOIS FED. AID PROJECT |                   |               | CONTRACT NO. 76789 |               |

Existing Structure: The existing structure is a ±35'-9" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 388+00.

Salvage: None



Indicates Limits of Concrete Removal



**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site. A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls. For Riprap details and quantities see Roadway Plans. Calculated max. soil pressure under barrel = 3,473 psf.

Partial Removal of the existing structure during construction shall be completed according to Section 501.05 of the Standard Specifications. Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans. For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completed filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |



Grand Freeway 8/8/14

Note: For Details A and B see sheet 3 of 3.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

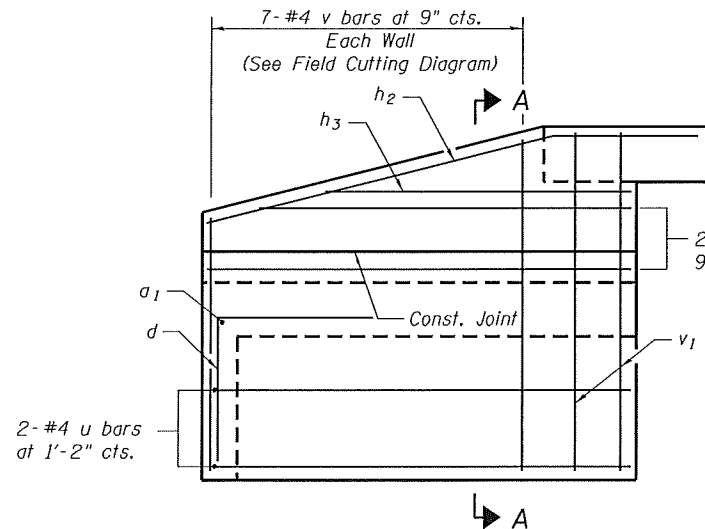
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|----------------------------------------|---------------|-----------|
| USER NAME = jdinkelmann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - EW    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO.          |
|-------------|-----------|--------|--------------|--------------------|
| 752         | 101-2RS-1 | JERSEY | 438          | 263                |
|             |           |        |              | CONTRACT NO. 76789 |

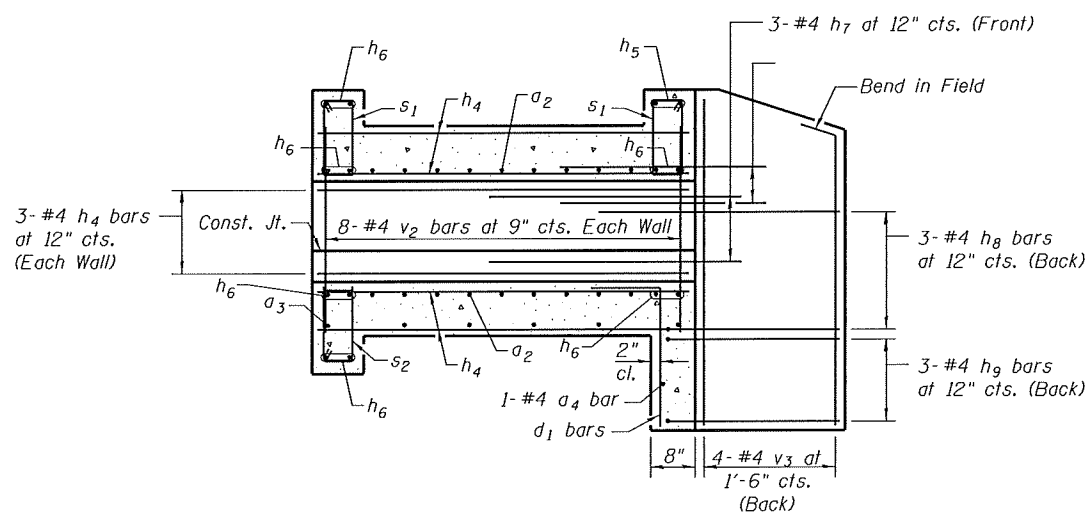
SHEET NO. 1 OF 3 SHEETS

ILLINOIS FED. AID PROJECT

FILE NAME = 387+50.59-76789-001.dgn

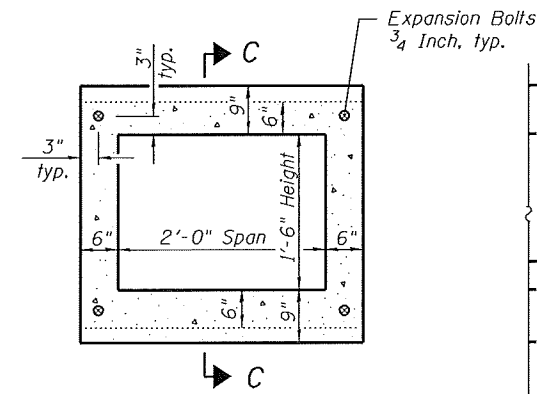


**LEFT EXTENSION**



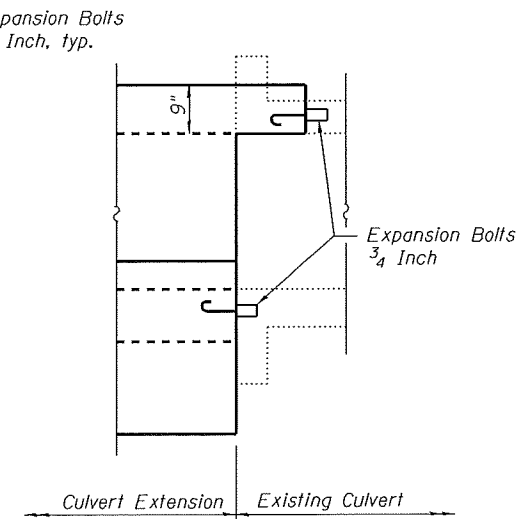
**ELEVATION**  
(Showing Reinforcement)

**RIGHT EXTENSION**

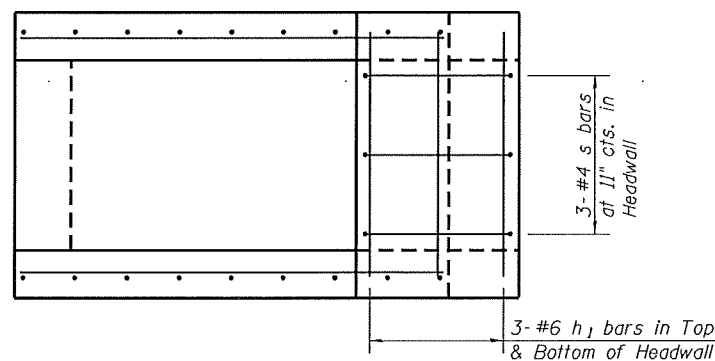


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

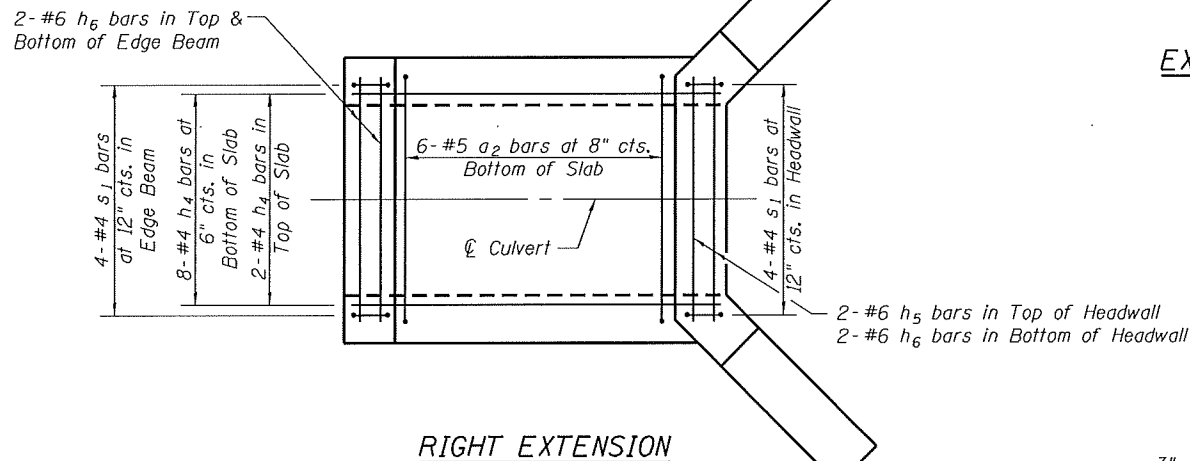
**LEFT EXTENSION EXPANSION BOLT LAYOUT**



**SECTION C-C**

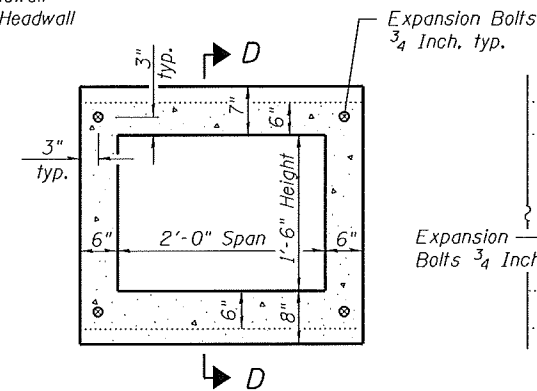


**LEFT EXTENSION**



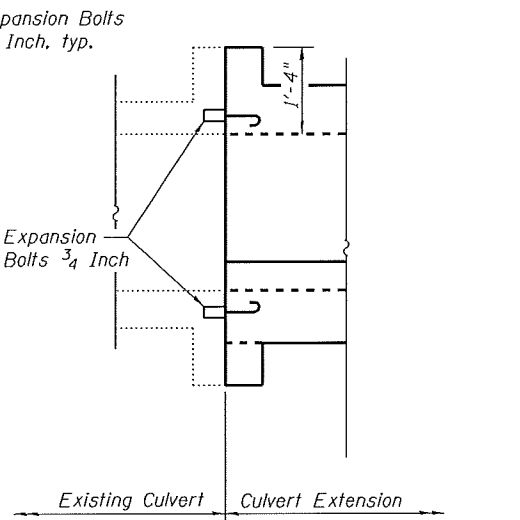
**TOP SLAB**  
(Showing Reinforcement)

**RIGHT EXTENSION**

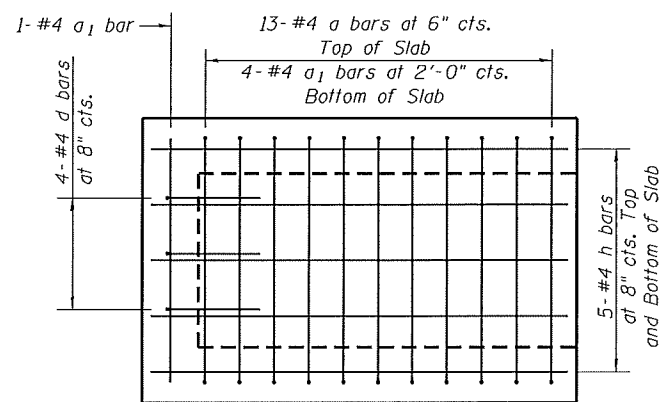


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

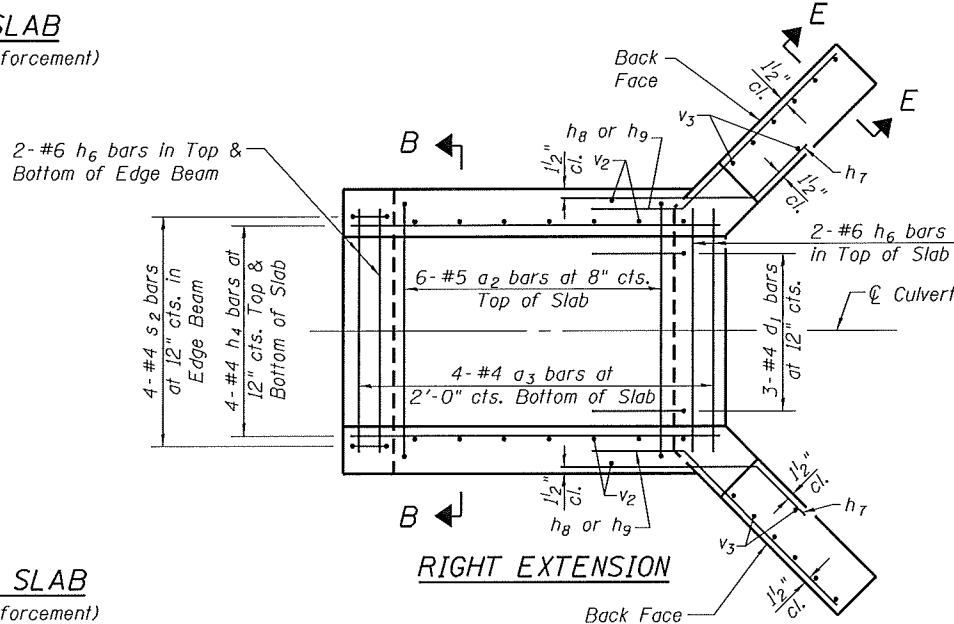
**RIGHT EXTENSION EXPANSION BOLT LAYOUT**



**SECTION D-D**



**LEFT EXTENSION**



**BOTTOM SLAB**  
(Showing Reinforcement)

**RIGHT EXTENSION**

Note:  
For Sections A-A, B-B, and E-E see sheet 3 of 3.

FILE NAME = 387+50.59-76789-002.dgn



USER NAME = jdrkelmnn  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

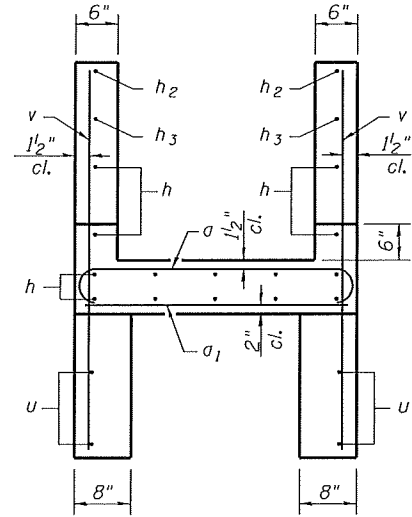
REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

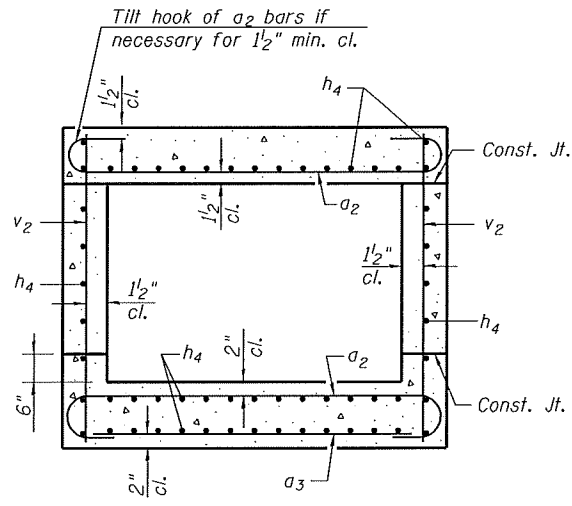
BOX CULVERT EXTENSION DETAILS,  
STATION 387+50.59

SHEET NO. 2 OF 3 SHEETS

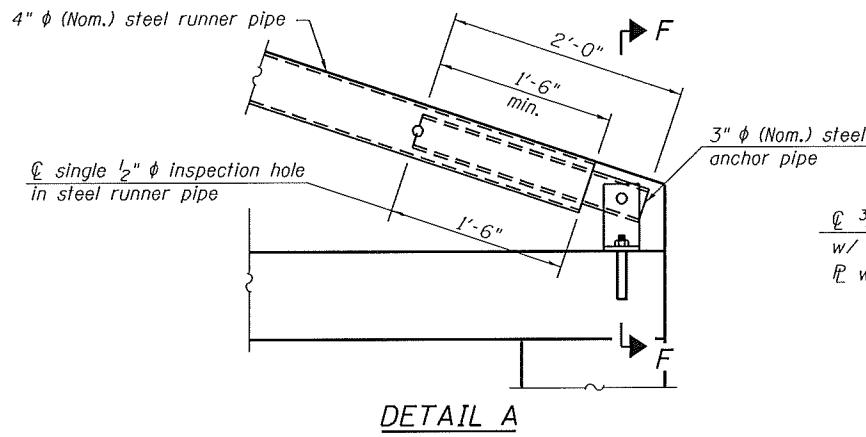
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 264       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



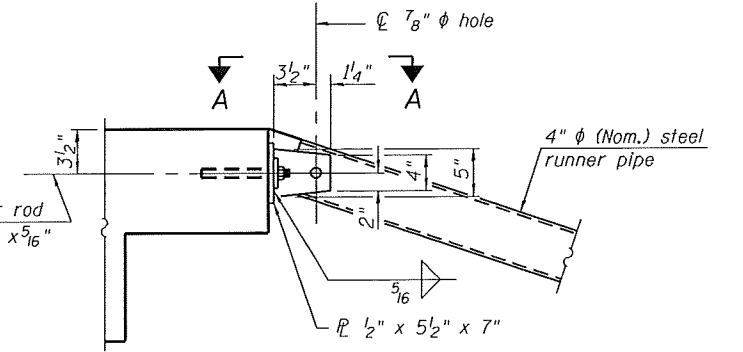
SECTION A-A



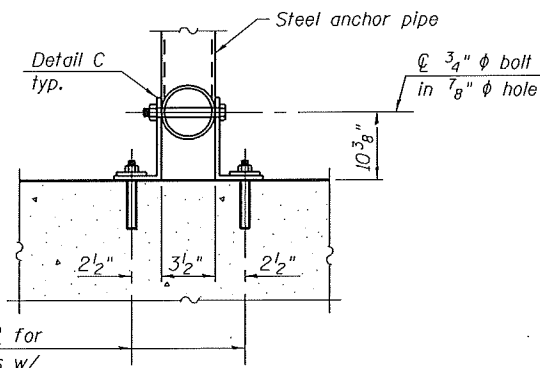
SECTION B-B



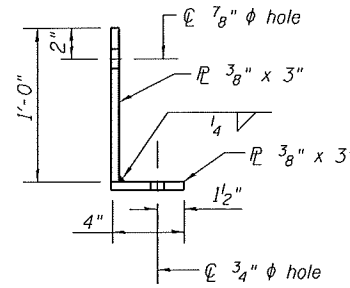
DETAIL A



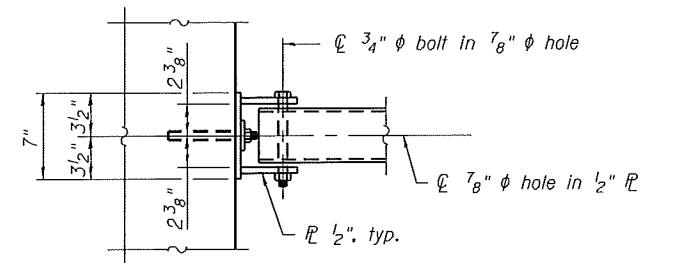
DETAIL B



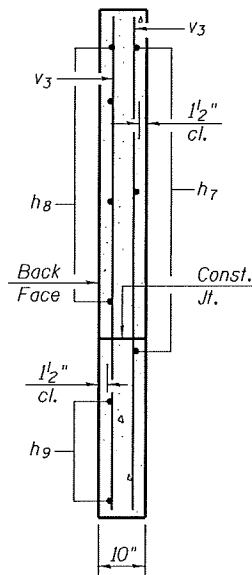
SECTION F-F



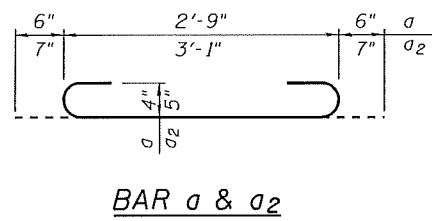
DETAIL C



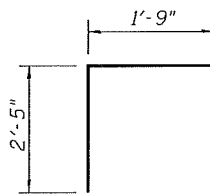
VIEW A-A



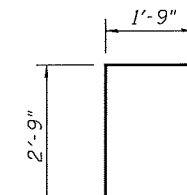
SECTION E-E



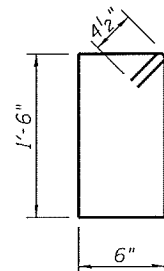
BAR a & a2



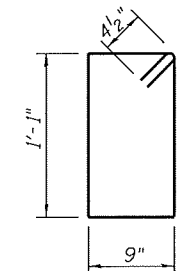
BAR d



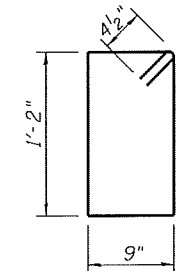
BAR d1



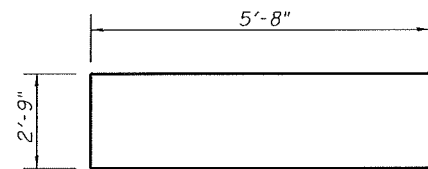
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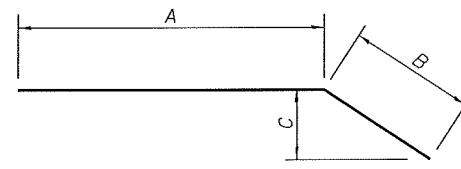
BAR s1



BAR s2

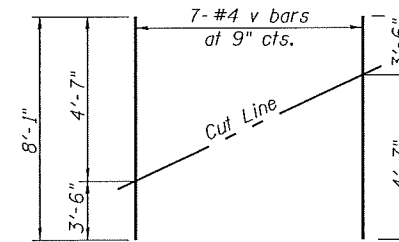


BARS u



BARS

| Bar | A     | B      | C         |
|-----|-------|--------|-----------|
| h2  | 5'-0" | 1'-7"  | 0'-4 5/8" |
| h7  | 5'-2" | 3'-0"  | 2'-1 1/2" |
| h8  | 4'-7" | 3'-0"  | 2'-1 1/2" |
| h9  | 4'-1" | 2'-10" | 2'-0"     |



FIELD CUTTING DIAGRAM

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

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length | Shape   |     |
|--------------------------|-----|------|--------|---------|-----|
| a                        | 13  | #4   | 3'-9"  | U       |     |
| a1                       | 5   | #4   | 2'-9"  | U       |     |
| a2                       | 12  | #5   | 4'-3"  | U       |     |
| a3                       | 4   | #4   | 3'-1"  | U       |     |
| a4                       | 1   | #4   | 2'-10" | U       |     |
| d                        | 4   | #4   | 4'-2"  | L       |     |
| d1                       | 3   | #4   | 4'-6"  | L       |     |
| h                        | 14  | #4   | 5'-9"  | U       |     |
| h1                       | 6   | #6   | 2'-9"  | U       |     |
| h2                       | 2   | #4   | 6'-7"  | U       |     |
| h3                       | 2   | #4   | 3'-10" | U       |     |
| h4                       | 24  | #4   | 4'-9"  | U       |     |
| h5                       | 2   | #6   | 2'-3"  | U       |     |
| h6                       | 12  | #6   | 3'-1"  | U       |     |
| h7                       | 6   | #4   | 8'-2"  | U       |     |
| h8                       | 6   | #4   | 7'-7"  | U       |     |
| h9                       | 6   | #4   | 6'-11" | U       |     |
| s                        | 3   | #4   | 4'-9"  | U       |     |
| s1                       | 8   | #4   | 4'-5"  | U       |     |
| s2                       | 4   | #4   | 4'-7"  | U       |     |
| u                        | 2   | #4   | 14'-1" | U       |     |
| v                        | 7   | #4   | 8'-1"  | U       |     |
| v1                       | 4   | #4   | 4'-8"  | U       |     |
| v2                       | 18  | #4   | 2'-5"  | U       |     |
| v3                       | 10  | #4   | 5'-6"  | U       |     |
| Concrete Removal         |     |      |        | Cu. Yd. | 0.2 |
| Reinforcement Bars       |     |      |        | Pound   | 630 |
| Expansion Bolts 3/4 Inch |     |      |        | Each    | 8   |
| Concrete Box Culverts    |     |      |        | Cu. Yd. | 4.5 |
| Traversable Pipe Grate   |     |      |        | Foot    | 5   |

FILE NAME = 387+50.59-76789-003.dgn



USER NAME = jdknelmenn  
 Illinois Design Firm Number 184,001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 387+50.59

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 265       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

Existing Structure: The existing structure is a ±35'-5" long reinforced cast-in-place concrete box culvert with a 2'-0" x 1'-6" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 397+50.

Salvage: None

**GENERAL NOTES**

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

For Riprap details and quantities see Roadway Plans.

Calculated max. soil pressure under barrel = 1.963 psf.

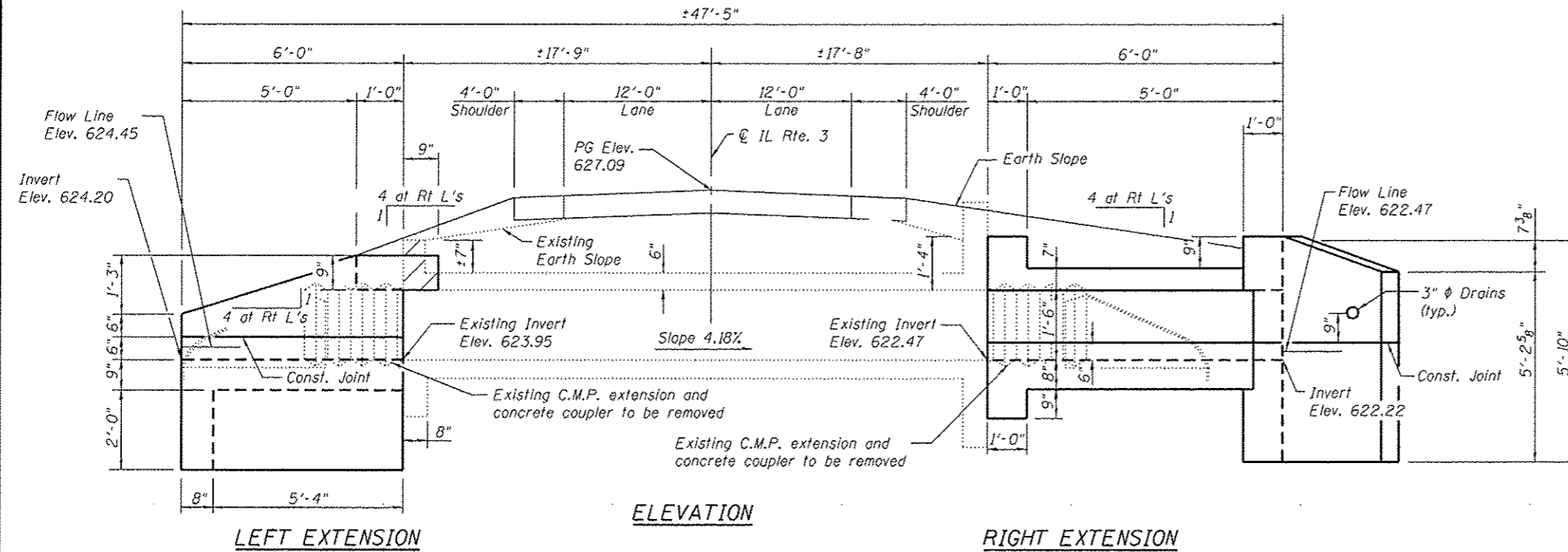
Partial Removal of the existing structure during construction shall be completed according to Section 501.05 of the Standard Specifications.

Existing C.M.P. extension and concrete coupler to be removed shall be paid for as Removal of Existing Structures, see Roadway Plans.

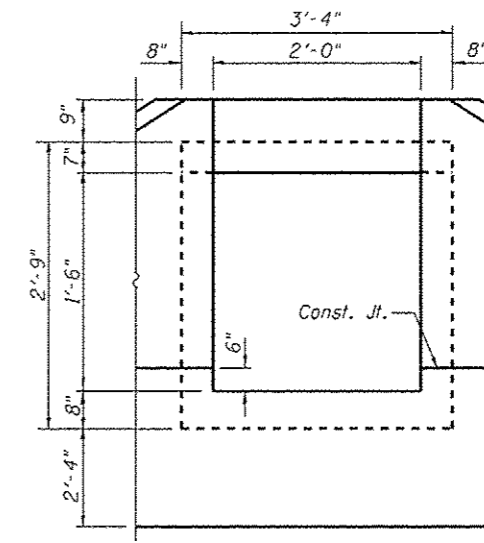
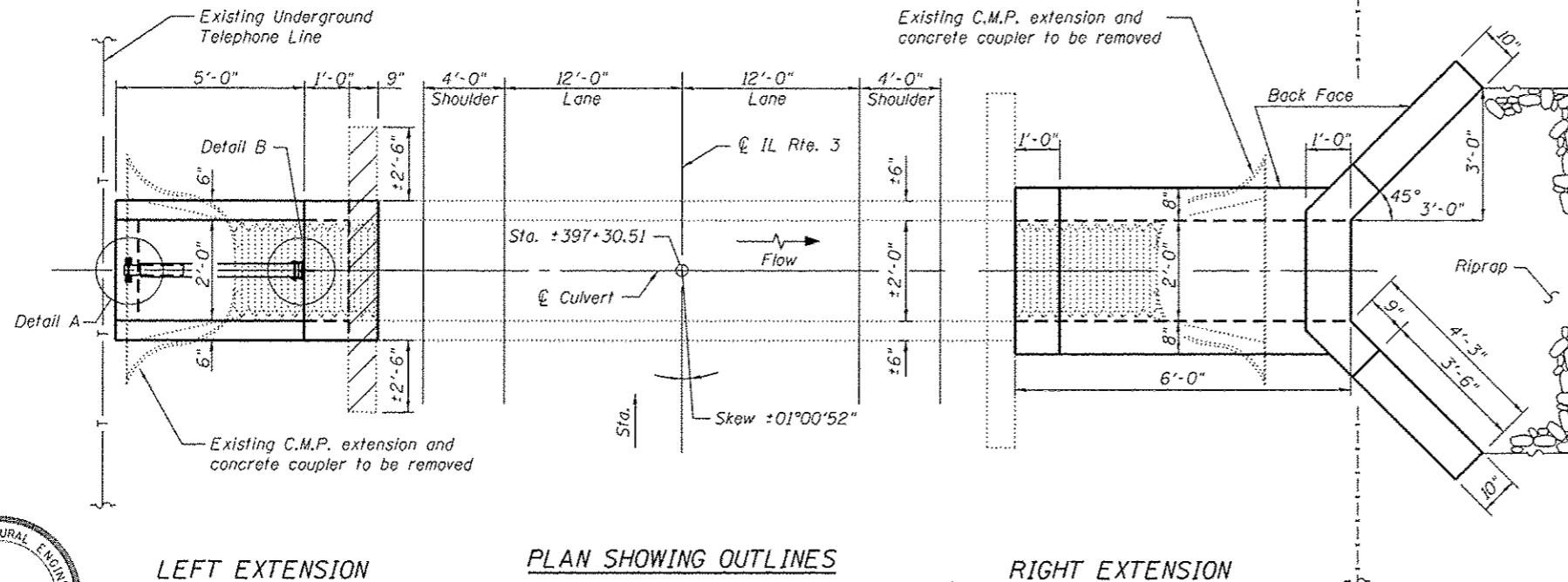
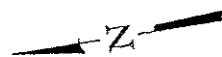
For Total Bill of Material see sheet 3 of 3.

The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1/2" unless noted otherwise.

The Contractor may install the thru bolts using drilling and grouting in lieu of providing a formed hole using steel pipe. Installation shall be in accordance with Article 509.06 using a method that results in the annulus surrounding the bolt being completely filled with adhesive. The method of drilling shall not result in spalled concrete at the exit face. Epoxy grouted thru bolts shall be snug tightened followed by an additional 1/3 turn on the interior nut at final installation. Cost included with Traversable Pipe Grate.



Indicates Limits of Concrete Removal



**DESIGN SPECIFICATIONS**

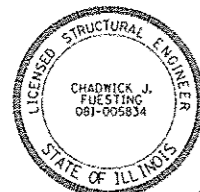
2002 AASHTO Standard Specifications for Highway Bridges

**LOADING HS 20-44**

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

**DESIGN STRESSES**

| EXISTING CONSTRUCTION      | NEW CONSTRUCTION           |
|----------------------------|----------------------------|
| $f_y = 40,000 \text{ psi}$ | $f_y = 60,000 \text{ psi}$ |
| $f'_c = 3,000 \text{ psi}$ | $f'_c = 3,500 \text{ psi}$ |



EXP. 11-30-2014

Chief Fuesting 8/16/14

FILE NAME : 397+30.51-76789-021.dgn

Note:  
For Details A and B see sheet 3 of 3.

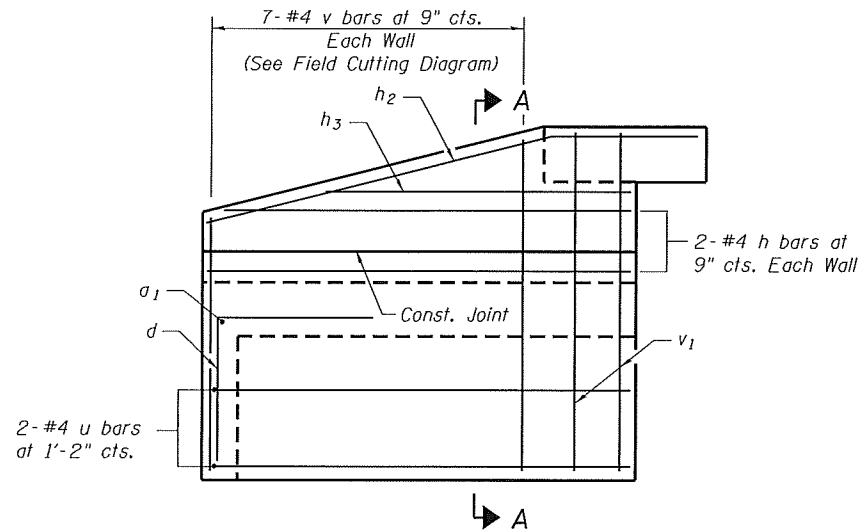
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

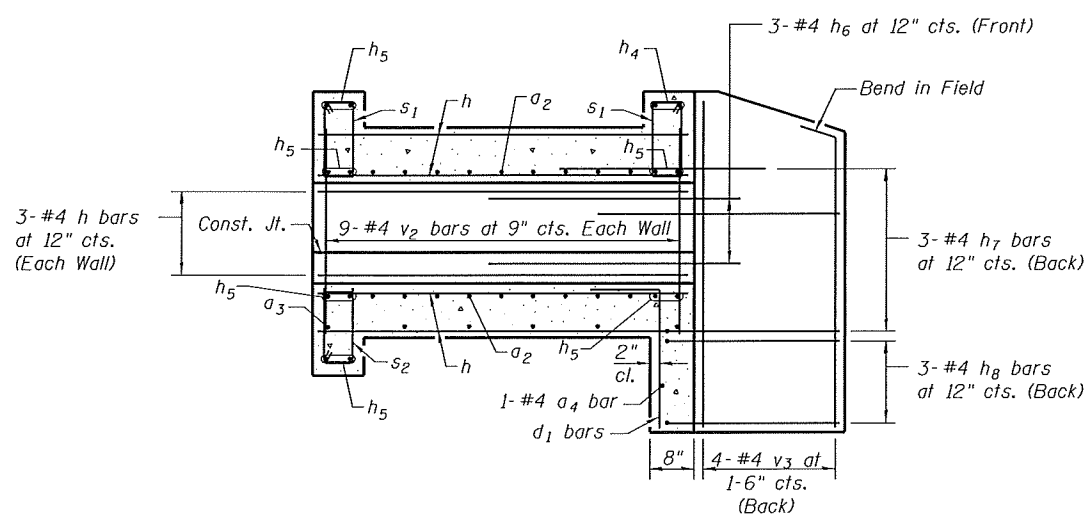
**GENERAL PLAN & ELEVATION**  
**ILLINOIS ROUTE 3**  
**F.A.S. RTE. 752 - SEC. 101-2RS-1**  
**JERSEY COUNTY**  
**STATION 397+30.51**

| F.A.S. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-----------------------------|-----------|--------|--------------------|-----------|
| 752                         | 101-2RS-1 | JERSEY | 438                | 266       |
|                             |           |        | CONTRACT NO. 76789 |           |
| [ILLINOIS] FED. AID PROJECT |           |        |                    |           |

|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME : jdkolmann                  | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184,001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE :                           | DRAWN - EW    | REVISED - |
| PLOT DATE : 8/8/2014                   | CHECKED - CJF | REVISED - |

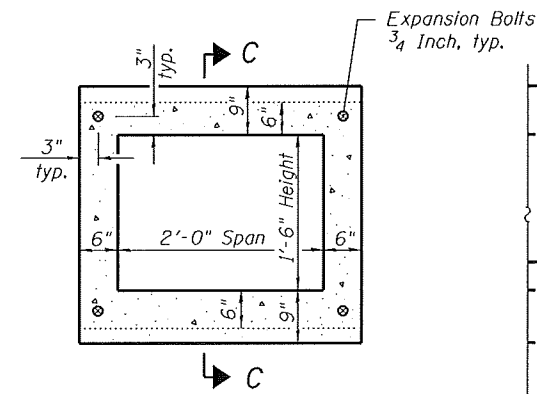


**LEFT EXTENSION**



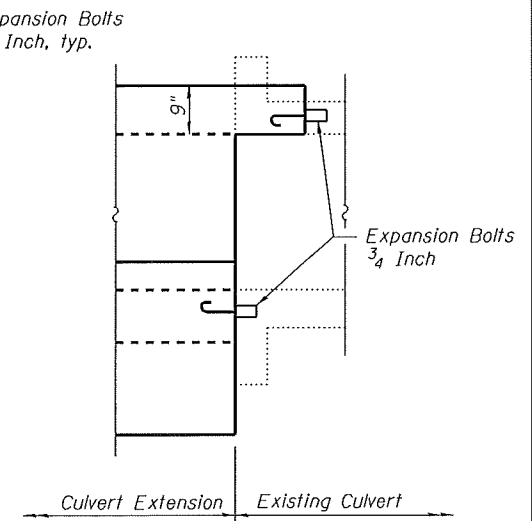
**ELEVATION**  
(Showing Reinforcement)

**RIGHT EXTENSION**

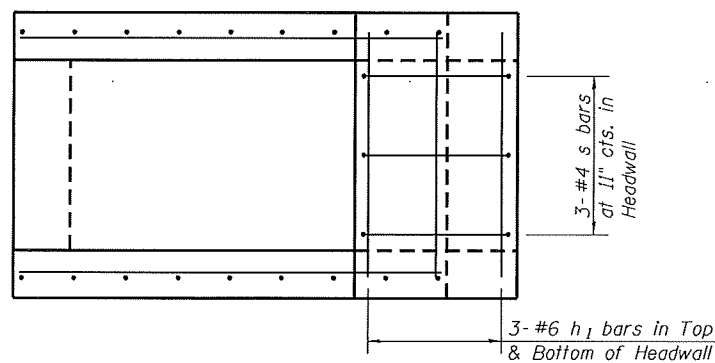


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

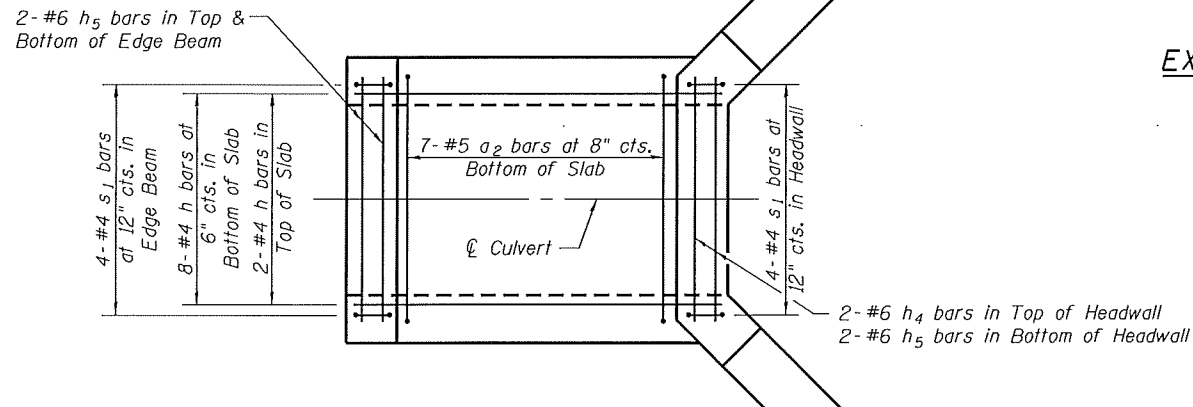
**LEFT EXTENSION EXPANSION BOLT LAYOUT**



**SECTION C-C**

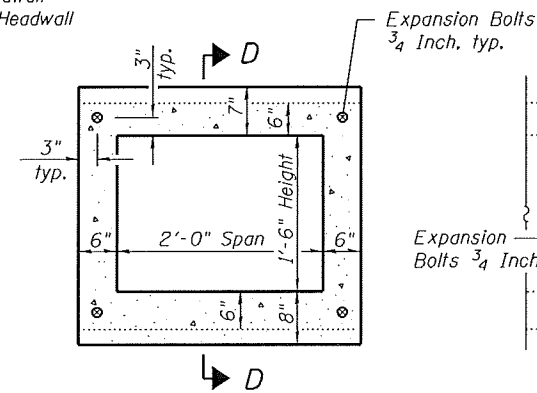


**LEFT EXTENSION**



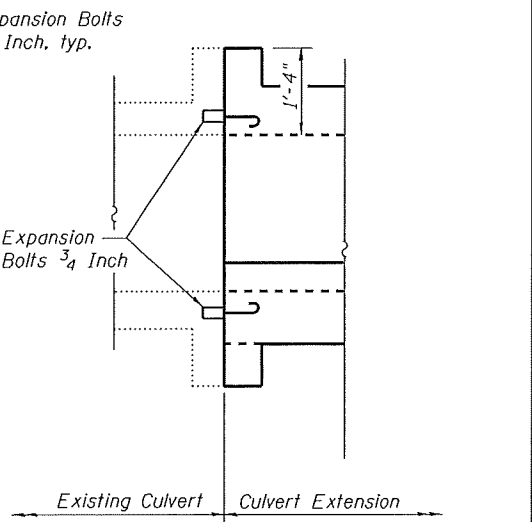
**TOP SLAB**  
(Showing Reinforcement)

**RIGHT EXTENSION**

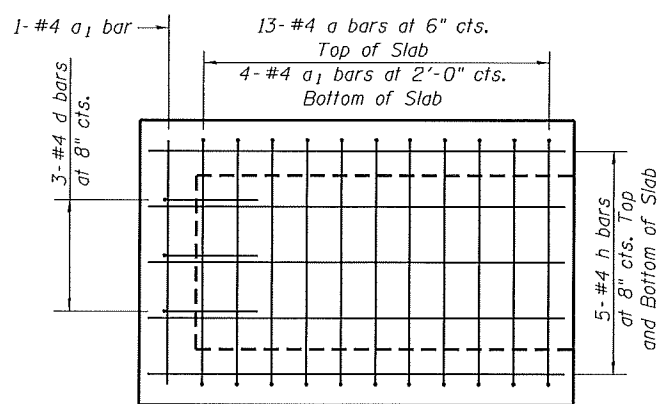


Note - Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete

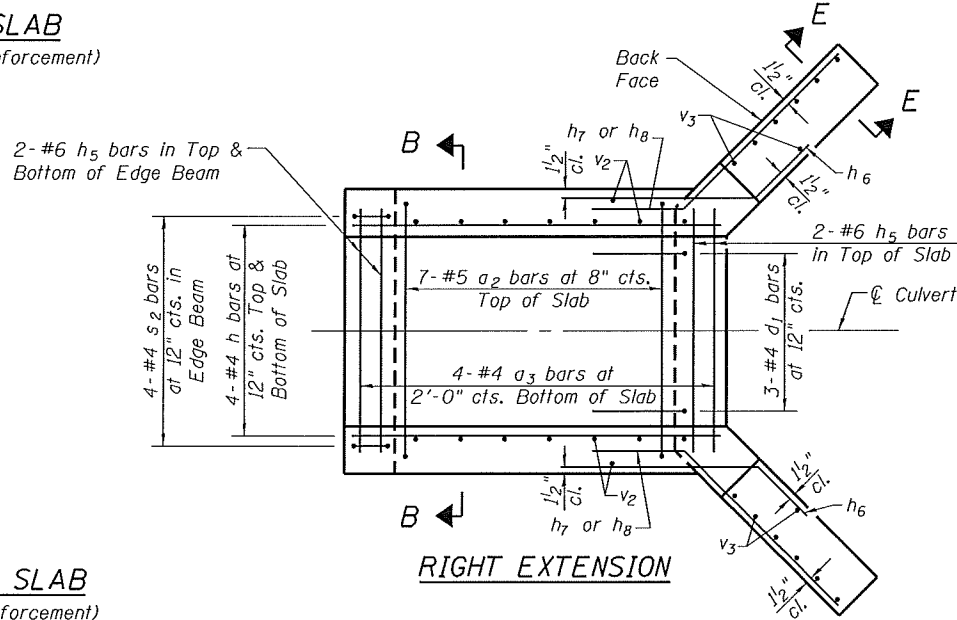
**RIGHT EXTENSION EXPANSION BOLT LAYOUT**



**SECTION D-D**



**LEFT EXTENSION**



**BOTTOM SLAB**  
(Showing Reinforcement)

**RIGHT EXTENSION**

Note:  
For Section A-A, B-B, and E-E see Sheet 3 of 3.

FILE NAME = 397-30.51-76789-002.dgn



USER NAME = jdirkeImenn  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

REVISED -  
REVISED -  
REVISED -  
REVISED -

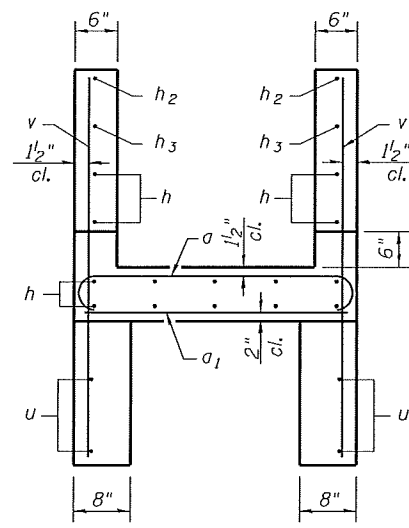
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS,  
STATION 397+30.51

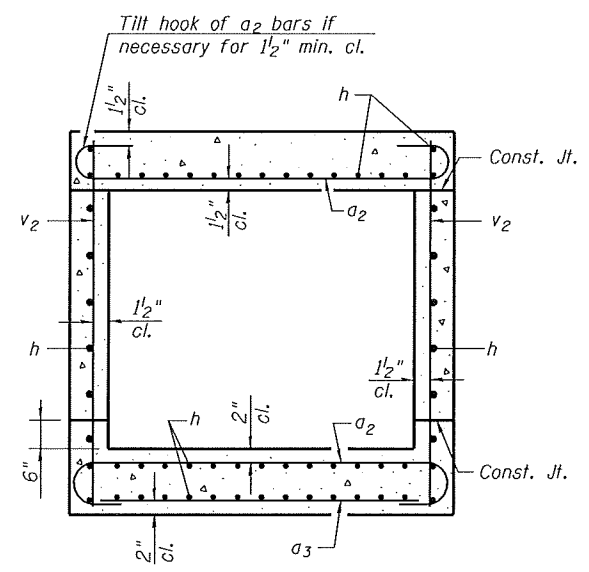
SHEET NO. 2 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 267       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |

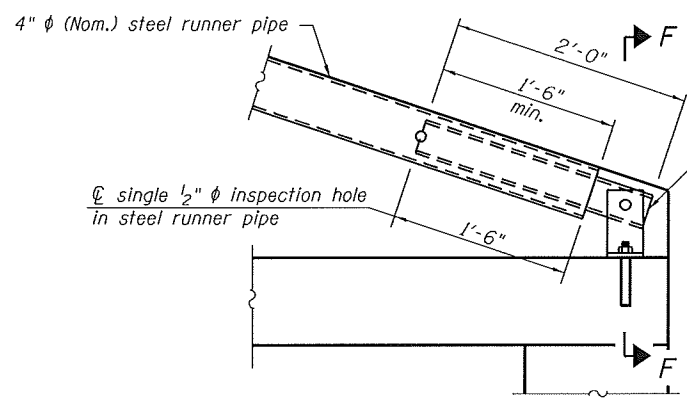




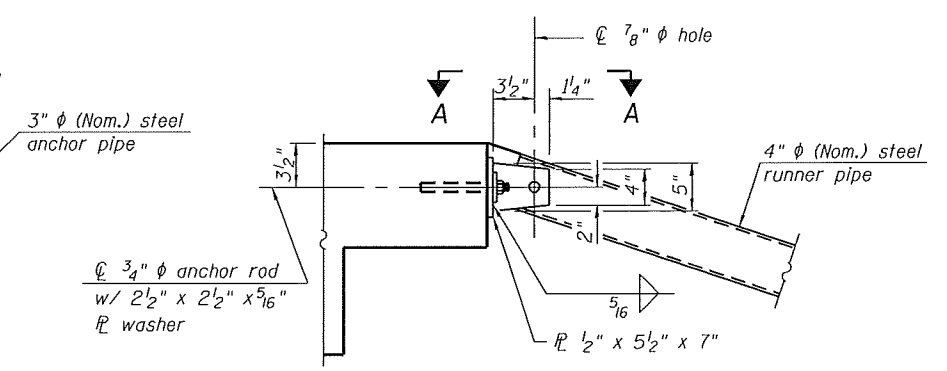
SECTION A-A



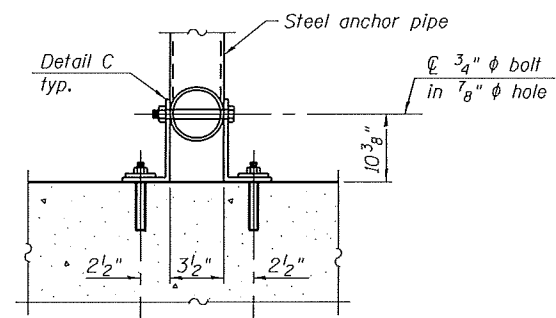
SECTION B-B



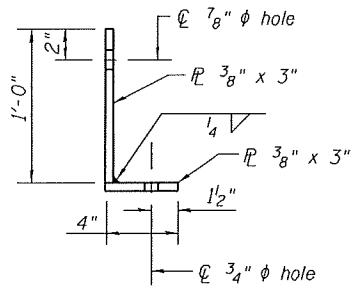
DETAIL A



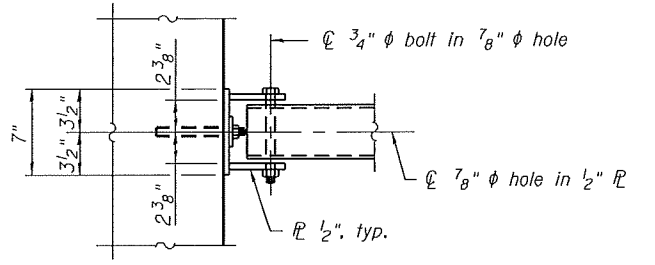
DETAIL B



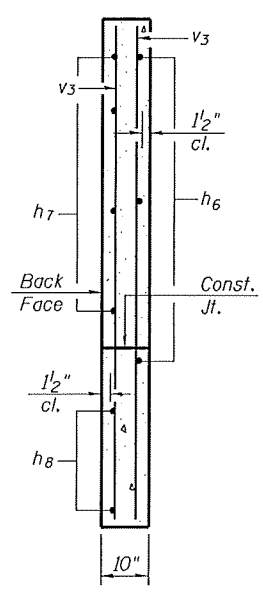
SECTION F-F



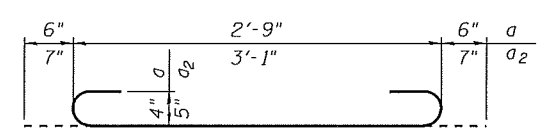
DETAIL C



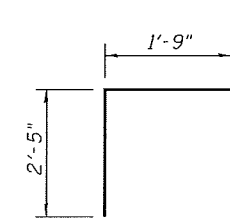
VIEW A-A



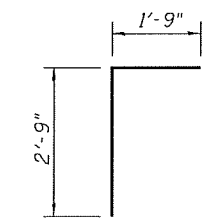
SECTION E-E



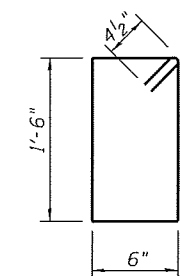
BAR a & a2



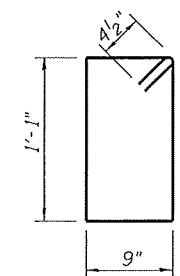
BAR d



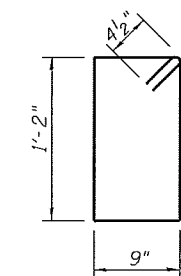
BAR d1



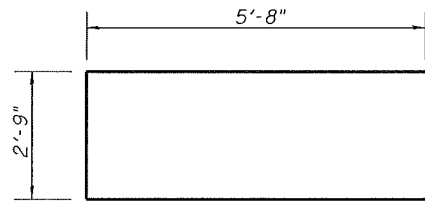
BAR s



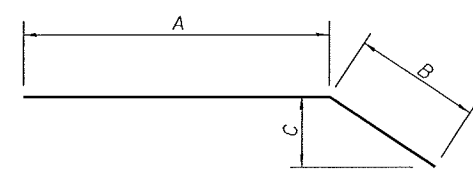
BAR s1



BAR s2

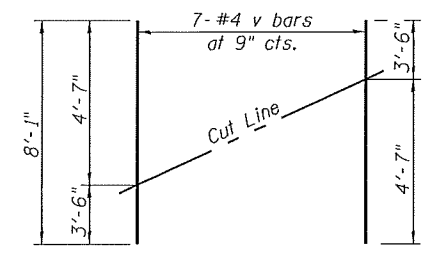


BARS u



BARS

| Bar | A     | B      | C         |
|-----|-------|--------|-----------|
| h2  | 5'-0" | 1'-7"  | 0'-4 5/8" |
| h6  | 6'-2" | 3'-0"  | 2'-1 1/2" |
| h7  | 4'-7" | 3'-0"  | 2'-1 1/2" |
| h8  | 4'-1" | 2'-10" | 2'-0"     |



FIELD CUTTING DIAGRAM

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

TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape |
|--------------------------|-----|------|---------|-------|
| a                        | 13  | #4   | 3'-9"   | U     |
| a1                       | 5   | #4   | 2'-9"   | U     |
| a2                       | 14  | #5   | 4'-3"   | U     |
| a3                       | 4   | #4   | 3'-1"   | U     |
| a4                       | 1   | #4   | 2'-10"  | U     |
| d                        | 3   | #4   | 4'-2"   | L     |
| d1                       | 3   | #4   | 4'-6"   | L     |
| h                        | 38  | #4   | 5'-9"   | U     |
| h1                       | 6   | #6   | 2'-9"   | U     |
| h2                       | 2   | #4   | 6'-7"   | U     |
| h3                       | 2   | #4   | 3'-10"  | U     |
| h4                       | 2   | #6   | 2'-3"   | U     |
| h5                       | 12  | #6   | 3'-1"   | U     |
| h6                       | 6   | #4   | 9'-2"   | U     |
| h7                       | 6   | #4   | 7'-7"   | U     |
| h8                       | 6   | #4   | 6'-11"  | U     |
| s                        | 3   | #4   | 4'-9"   | U     |
| s1                       | 8   | #4   | 4'-5"   | U     |
| s2                       | 4   | #4   | 4'-7"   | U     |
| u                        | 2   | #4   | 14'-1"  | U     |
| v                        | 7   | #4   | 8'-1"   | U     |
| v1                       | 4   | #4   | 4'-8"   | U     |
| v2                       | 20  | #4   | 2'-5"   | U     |
| v3                       | 10  | #4   | 5'-6"   | U     |
| Concrete Removal         |     |      | Cu. Yd. | 0.2   |
| Reinforcement Bars       |     |      | Pound   | 660   |
| Expansion Bolts 3/4 Inch |     |      | Each    | 8     |
| Concrete Box Culverts    |     |      | Cu. Yd. | 4.7   |
| Traversable Pipe Grate   |     |      | Foot    | 5     |

FILE NAME = 397-3051-76789-003.dgn



USER NAME = jdkinkelmenn  
 Illinois Design Firm Number 184.001670  
 PLOT SCALE =  
 PLOT DATE = 8/8/2014

DESIGNED - JD  
 CHECKED - BB  
 DRAWN - WS  
 CHECKED - CJF

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

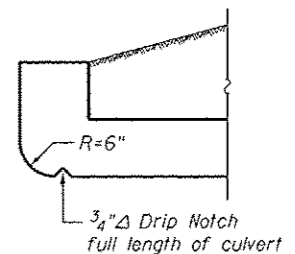
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STATION 397 + 30.51

SHEET NO. 3 OF 3 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 268       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |

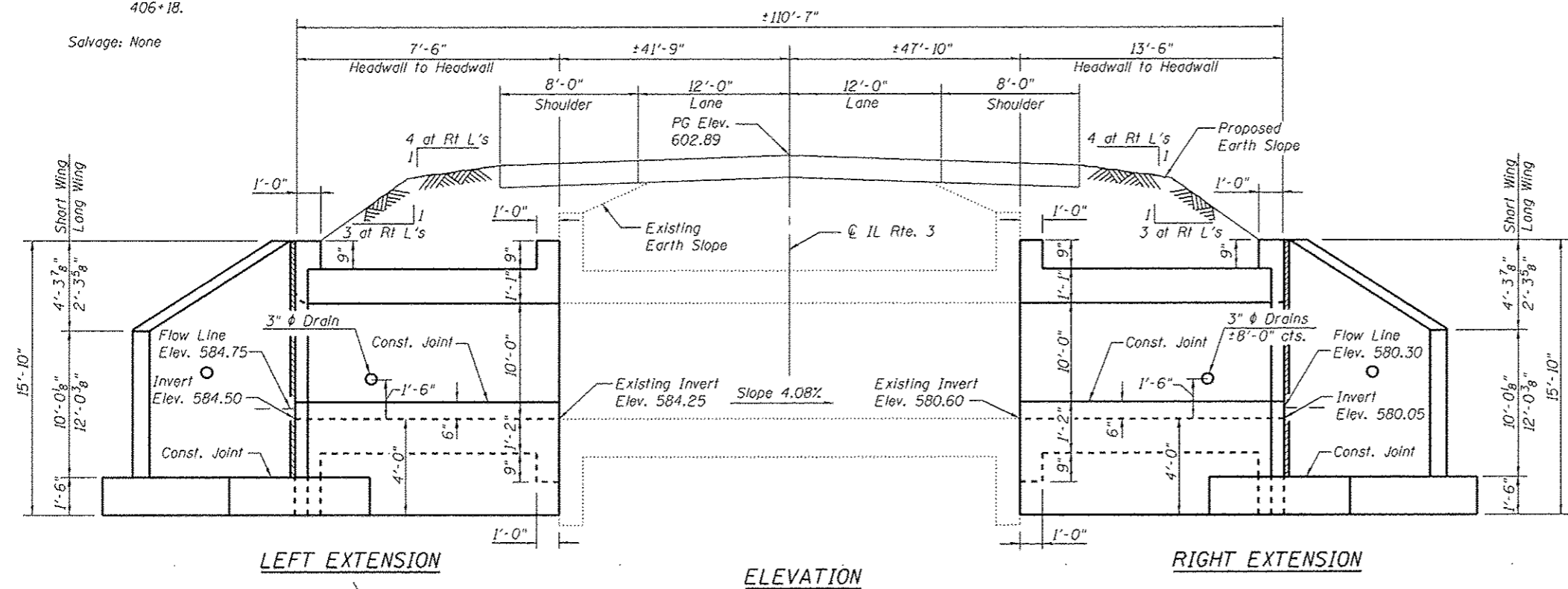
Existing Structure: The existing structure, SN 042-2475, is a ±89'-7" long reinforced cast-in-place concrete box culvert with a 10'-0" x 10'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 406+18.



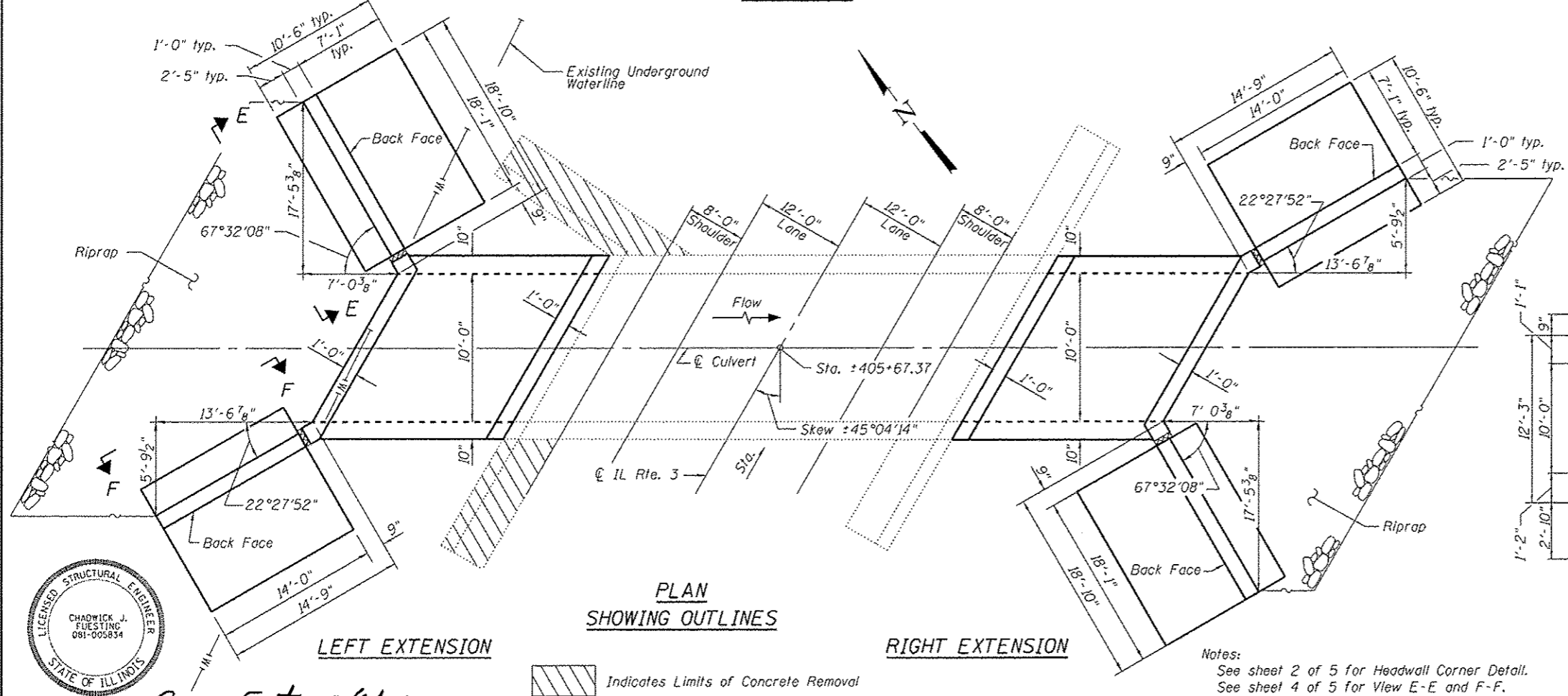
HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

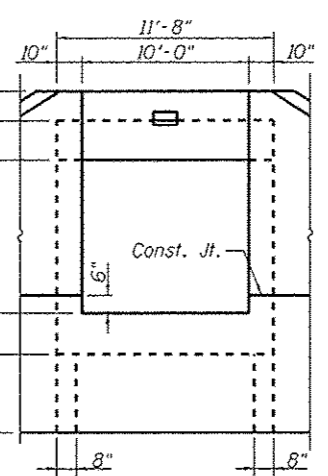
Reinforcement bars designated (E) shall be epoxy coated.  
 Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.  
 The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.  
 Expansion bolts shall be according to Standard Specification Article 1006.09.  
 Precast alternative not allowed at this site.  
 A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.  
 Calculated max. soil pressure under barrel = 2,673 psf.  
 For Riprap details and quantities see Roadway Plans.  
 For Total Bill of Material see sheet 4 of 5.



ELEVATION



PLAN SHOWING OUTLINES



BOX CULVERT END ELEVATION (Dimensions Shown at RI L's)

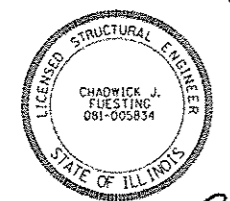
DESIGN SPECIFICATIONS  
 2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44  
 Allow 50#/sq. ft. for future wearing surface on extension.

DESIGN STRESSES

| EXISTING CONSTRUCTION | NEW CONSTRUCTION   |
|-----------------------|--------------------|
| $f_y = 40,000$ psi    | $f_y = 60,000$ psi |
| $f'_c = 3,000$ psi    | $f'_c = 3,500$ psi |

GENERAL PLAN & ELEVATION  
 ILLINOIS ROUTE 3  
 F.A.S. RTE. 752 - SEC. 101-2RS-1  
 JERSEY COUNTY  
 STATION 405+67.37  
 STRUCTURE NO. 042-2475

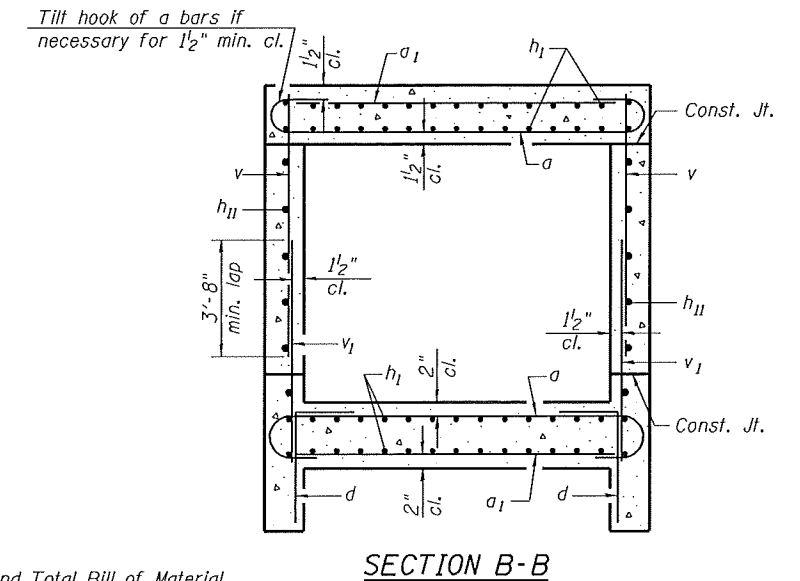
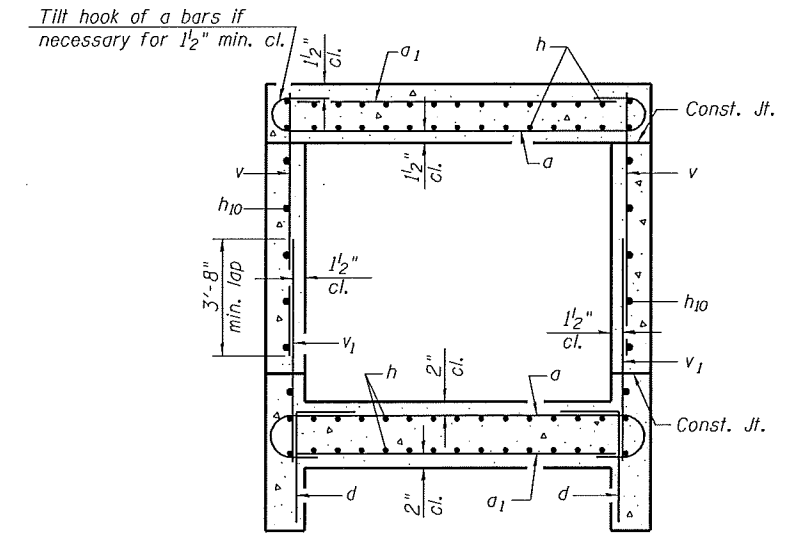
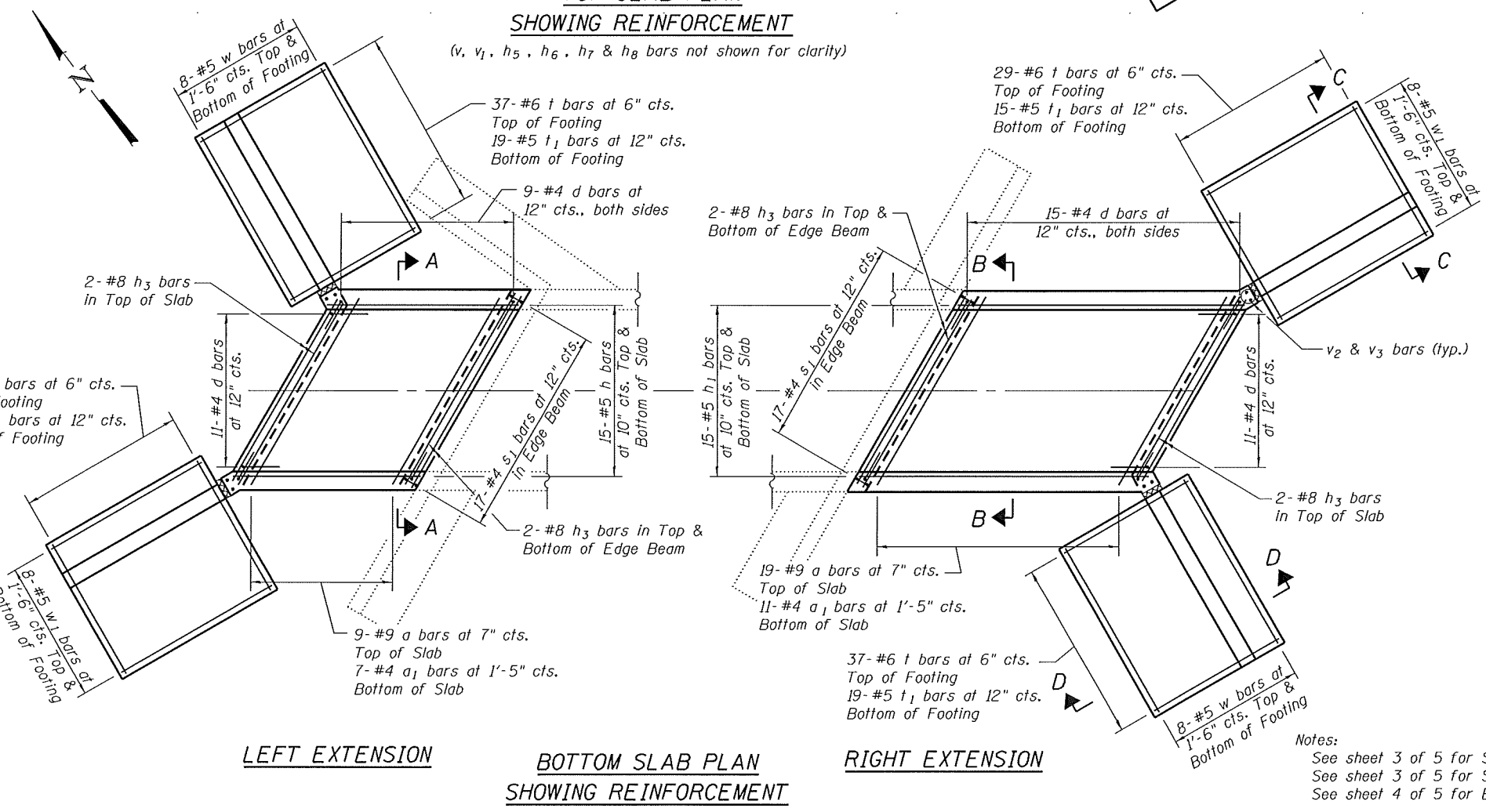
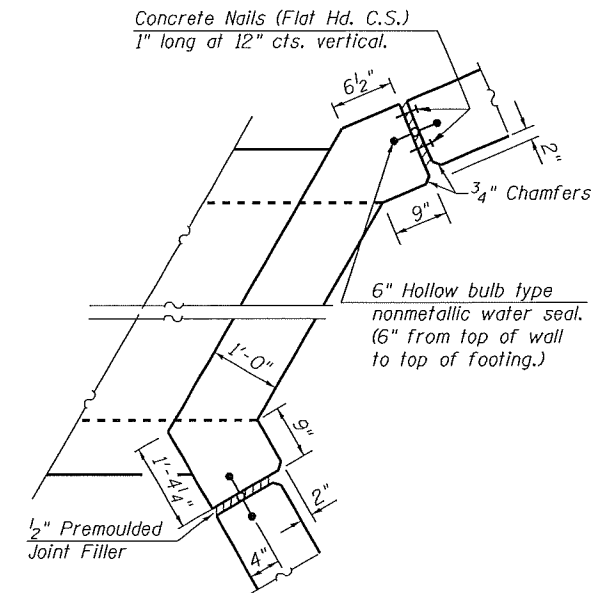
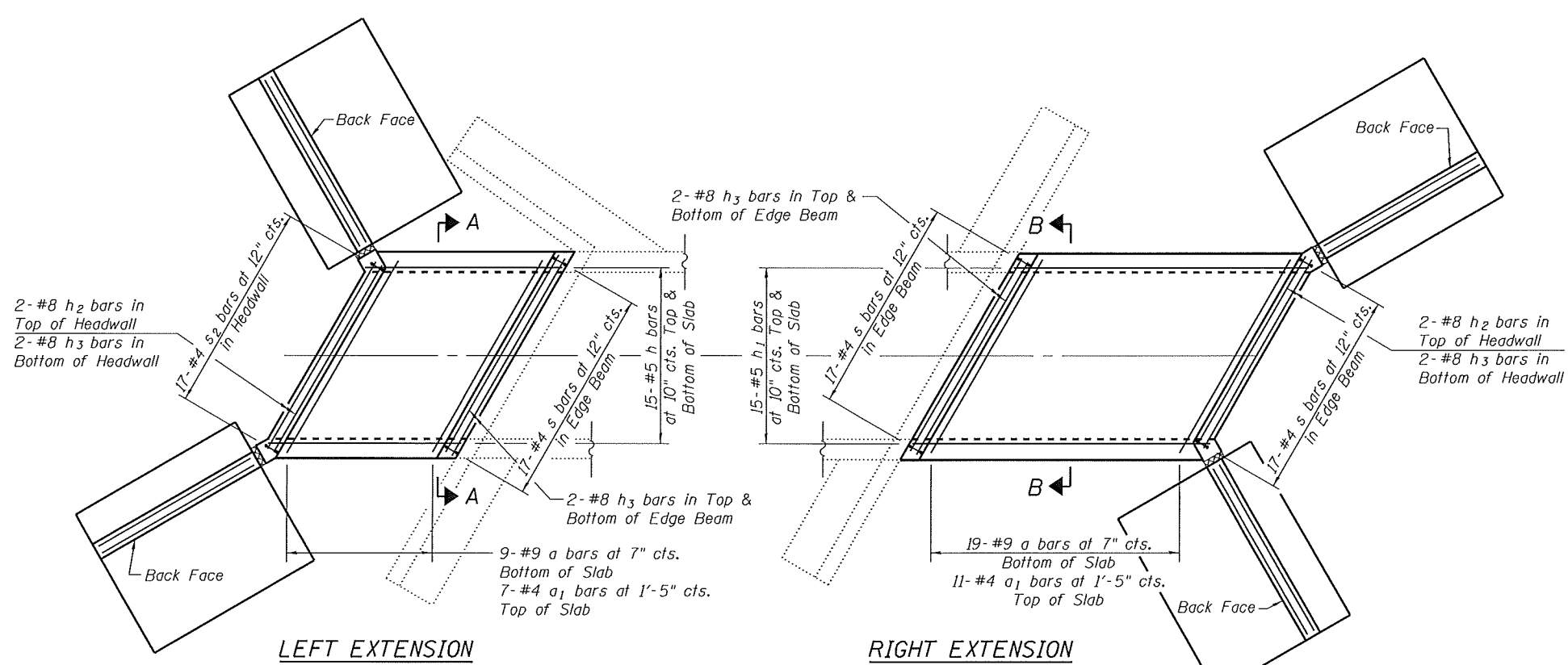


Client Party 8/12/14

| USER NAME                              | DESIGNED | REVISIONS |
|----------------------------------------|----------|-----------|
| Jankelmann                             | JD       | -         |
| Illinois Design Firm Number 184.001670 | BB       | -         |
| PLOT SCALE                             | WS       | -         |
| PLOT DATE 8/8/2014                     | CJF      | -         |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 269       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |



Notes:  
 See sheet 3 of 5 for Section C-C.  
 See sheet 3 of 5 for Section D-D.  
 See sheet 4 of 5 for Bar Bends and Total Bill of Material.

FILE NAME = 495-67.37-76789-002.dgn



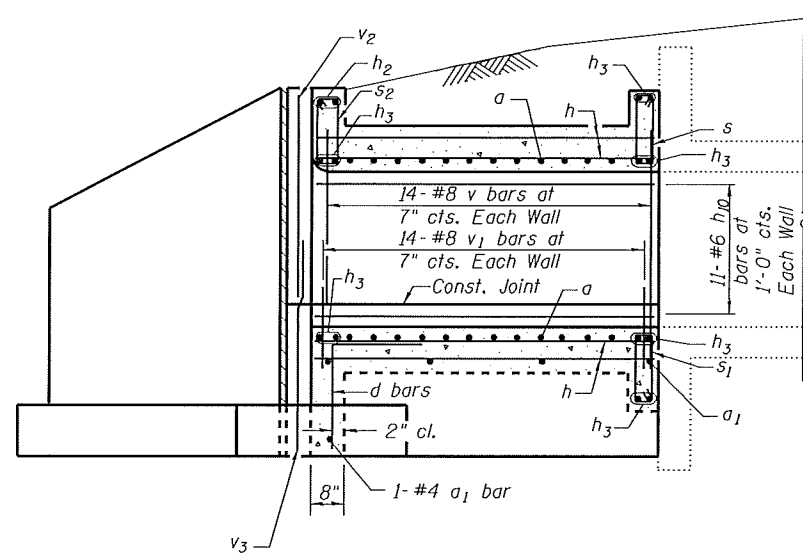
|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdirkelmann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSION DETAILS  
 STRUCTURE NUMBER 042-2475

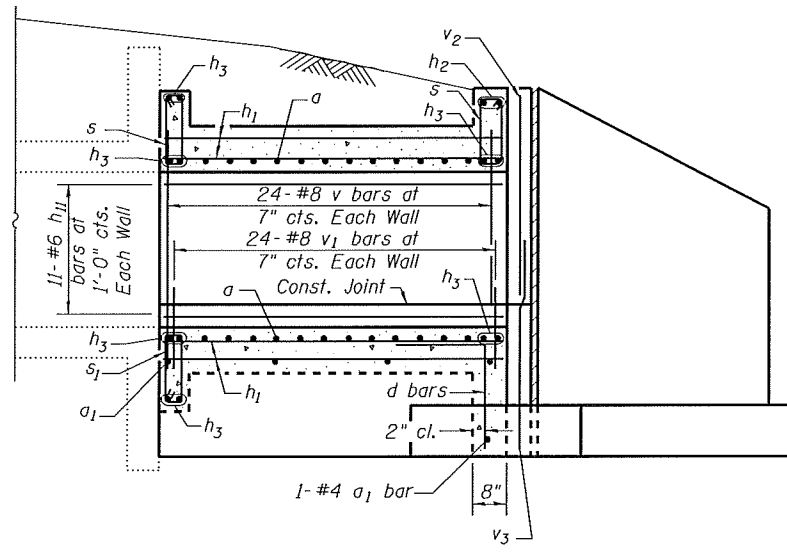
SHEET NO. 2 OF 5 SHEETS

| F.A.S. RTE.        | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| 752                | 101-2RS-1 | JERSEY | 438                       | 270       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |



**LEFT EXTENSION**

(See View E-E & F-F on sheet 4 of 5 for Wingwall Reinforcement Layout)

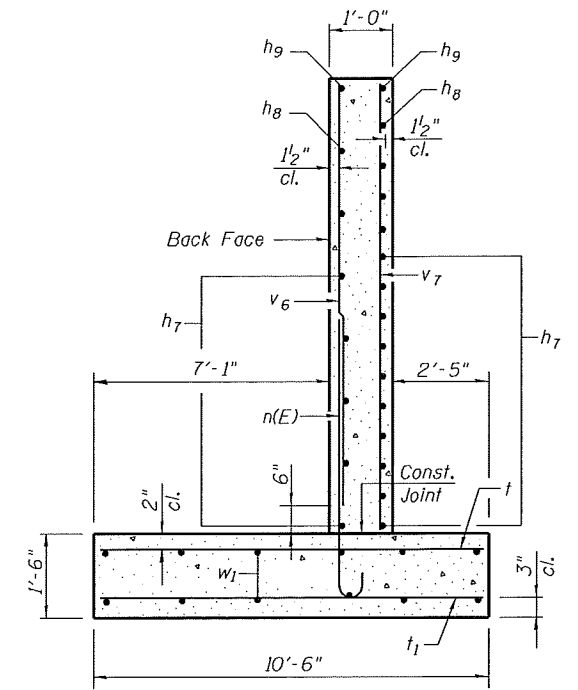


**RIGHT EXTENSION**

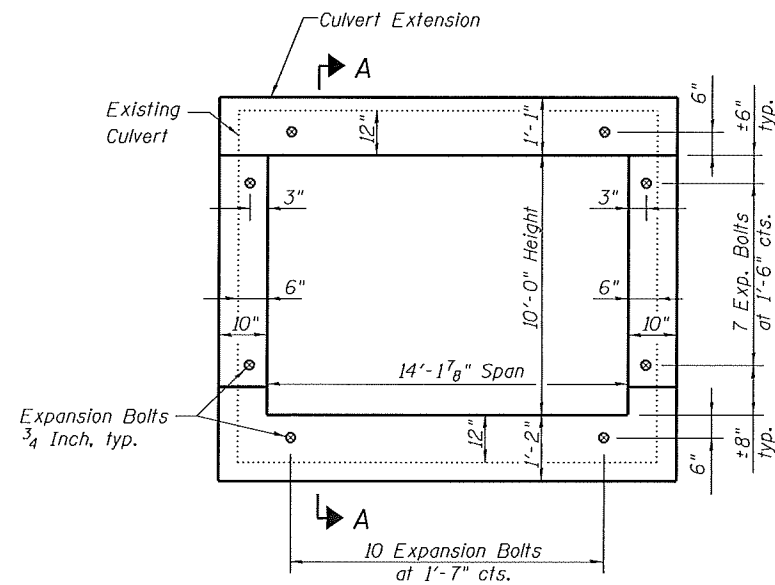
(See View E-E & F-F on sheet 4 of 5 for Wingwall Reinforcement Layout)

**ELEVATION**

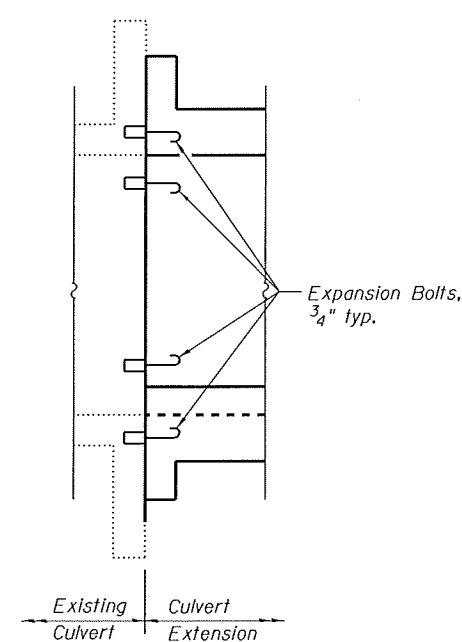
Min. Bar Lap  
#8 bar = 3'-8"



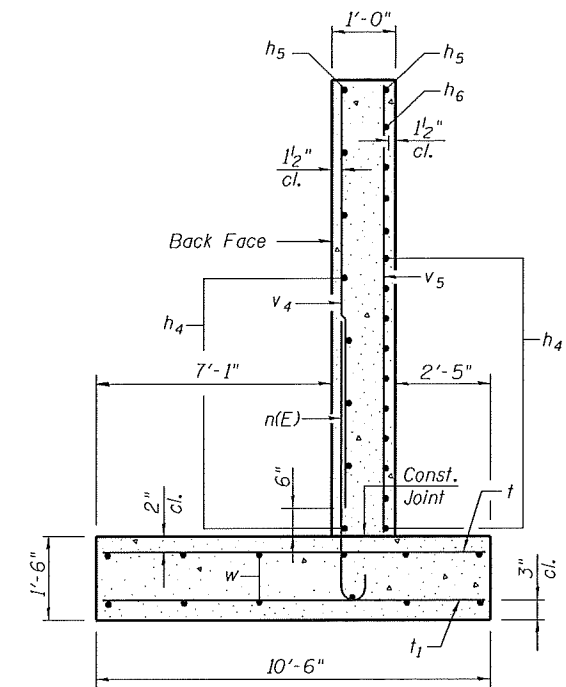
**SECTION C-C**



**EXPANSION BOLT LAYOUT**



**SECTION A-A**



**SECTION D-D**

Note:  
Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete.

FILE NAME = 405-67.37-76789-003.dgn



USER NAME = jdirkelmann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

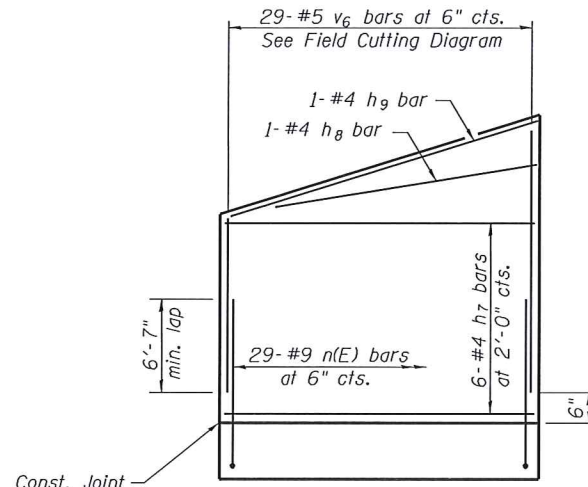
REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

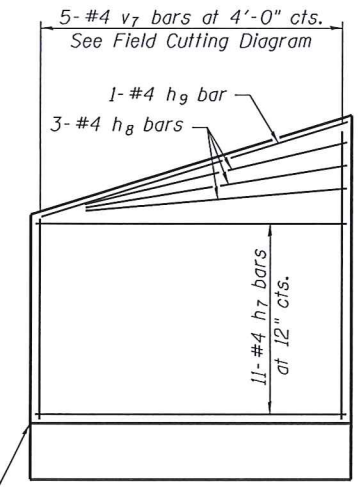
BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2475

SHEET NO. 3 OF 5 SHEETS

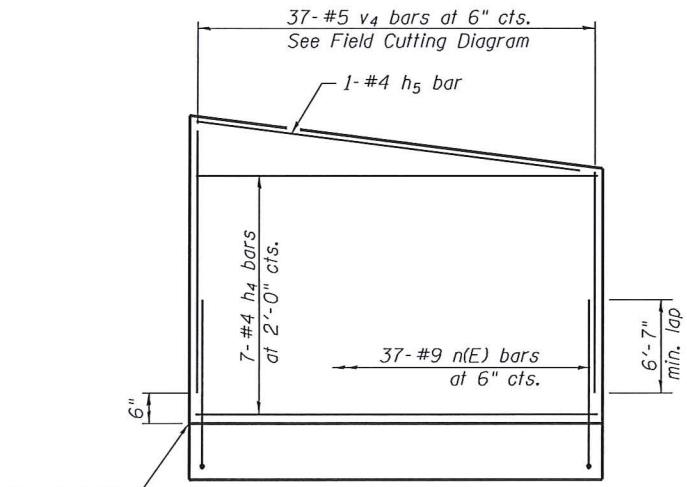
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 271       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



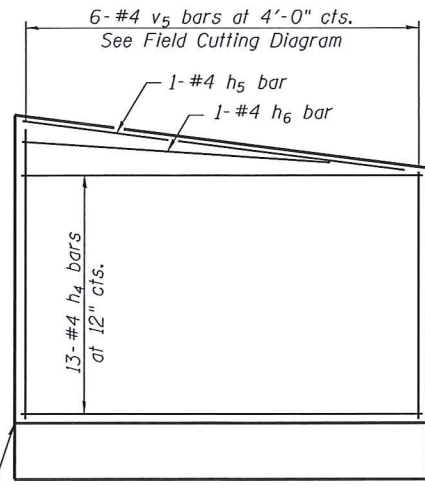
**VIEW E-E**  
Showing Back Face Reinforcement



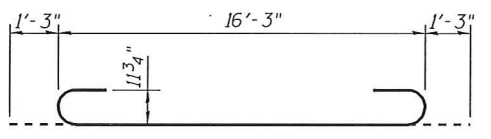
**VIEW E-E**  
Showing Front Face Reinforcement



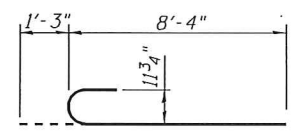
**VIEW F-F**  
Showing Back Face Reinforcement



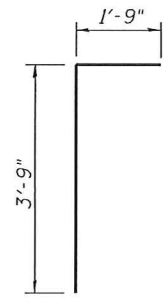
**VIEW F-F**  
Showing Front Face Reinforcement



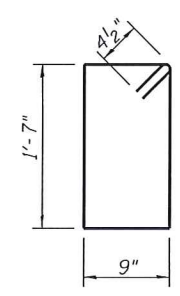
**BAR a**



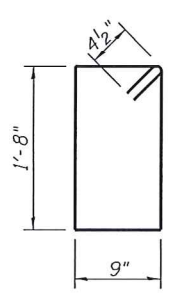
**BAR n(E)**



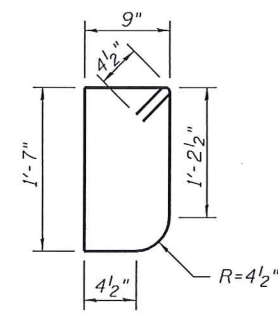
**BAR d**



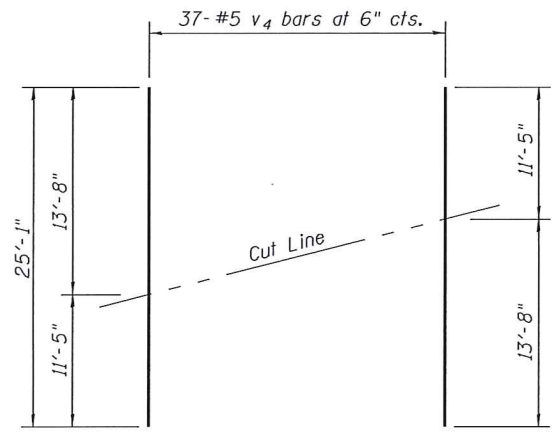
**BAR s**



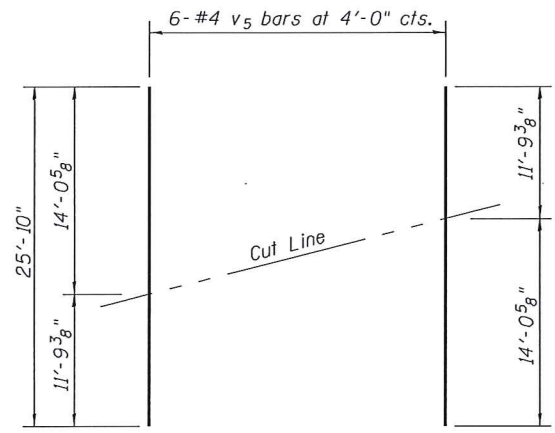
**BAR s1**



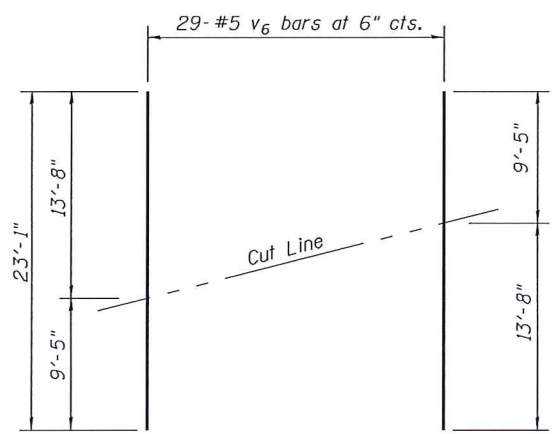
**BAR s2**



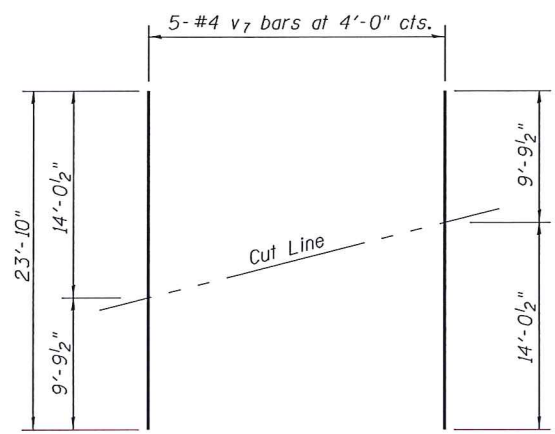
**FIELD CUTTING DIAGRAM**  
(v4 bars)



**FIELD CUTTING DIAGRAM**  
(v5 bars)



**FIELD CUTTING DIAGRAM**  
(v6 bars)



**FIELD CUTTING DIAGRAM**  
(v7 bars)

**TOTAL BILL OF MATERIAL**

| Bar                                                                  | No. | Size | Length  | Shape  |
|----------------------------------------------------------------------|-----|------|---------|--------|
| a                                                                    | 56  | #9   | 18'-9"  | U      |
| a1                                                                   | 38  | #4   | 16'-3"  | —      |
| d                                                                    | 70  | #4   | 5'-6"   | L      |
| h                                                                    | 60  | #5   | 7'-2"   | —      |
| h1                                                                   | 60  | #5   | 13'-2"  | —      |
| h2                                                                   | 4   | #8   | 15'-7"  | —      |
| h3                                                                   | 24  | #8   | 16'-2"  | —      |
| h4                                                                   | 40  | #4   | 17'-9"  | —      |
| h5                                                                   | 4   | #4   | 17'-1"  | —      |
| h6                                                                   | 2   | #4   | 15'-0"  | —      |
| h7                                                                   | 34  | #4   | 13'-9"  | —      |
| h8                                                                   | 8   | #4   | 11'-7"  | —      |
| h9                                                                   | 4   | #4   | 14'-1"  | —      |
| h10                                                                  | 22  | #6   | 7'-2"   | —      |
| h11                                                                  | 22  | #6   | 13'-2"  | —      |
| n(E)                                                                 | 132 | #9   | 9'-7"   | U      |
| s                                                                    | 51  | #4   | 5'-5"   | —      |
| s1                                                                   | 34  | #4   | 5'-7"   | —      |
| s2                                                                   | 17  | #4   | 5'-3"   | —      |
| t                                                                    | 132 | #6   | 10'-2"  | —      |
| t1                                                                   | 68  | #5   | 10'-2"  | —      |
| v                                                                    | 76  | #8   | 10'-4"  | —      |
| v1                                                                   | 76  | #8   | 5'-4"   | —      |
| v2                                                                   | 8   | #8   | 11'-1"  | —      |
| v3                                                                   | 8   | #8   | 8'-2"   | —      |
| v4                                                                   | 37  | #5   | 25'-1"  | —      |
| v5                                                                   | 6   | #4   | 25'-10" | —      |
| v6                                                                   | 29  | #5   | 23'-1"  | —      |
| v7                                                                   | 5   | #4   | 23'-10" | —      |
| w                                                                    | 32  | #5   | 17'-8"  | —      |
| w1                                                                   | 32  | #5   | 13'-8"  | —      |
| Reinforcement Bars                                                   |     |      | Pound   | 17,940 |
| Reinforcement Bars, Epoxy Coated                                     |     |      | Pound   | 4,310  |
| Expansion Bolts 3/4 Inch                                             |     |      | Each    | 68     |
| Concrete Box Culverts                                                |     |      | Cu. Yd. | 111.5  |
| Concrete Removal                                                     |     |      | Cu. Yd. | 29.0   |
| Rock Excavation for Structures                                       |     |      | Cu. Yd. | 162.2  |
| Structural Repair of Concrete (Depth less than or equal to 5 inches) |     |      | Sq. Ft. | 53     |

Notes:  
Order v4 thru v7 bars full length. Cut as shown.  
Use remainder of bar in opposite Wingwall.

FILE NAME = 405-67.37-76789-004.dgn



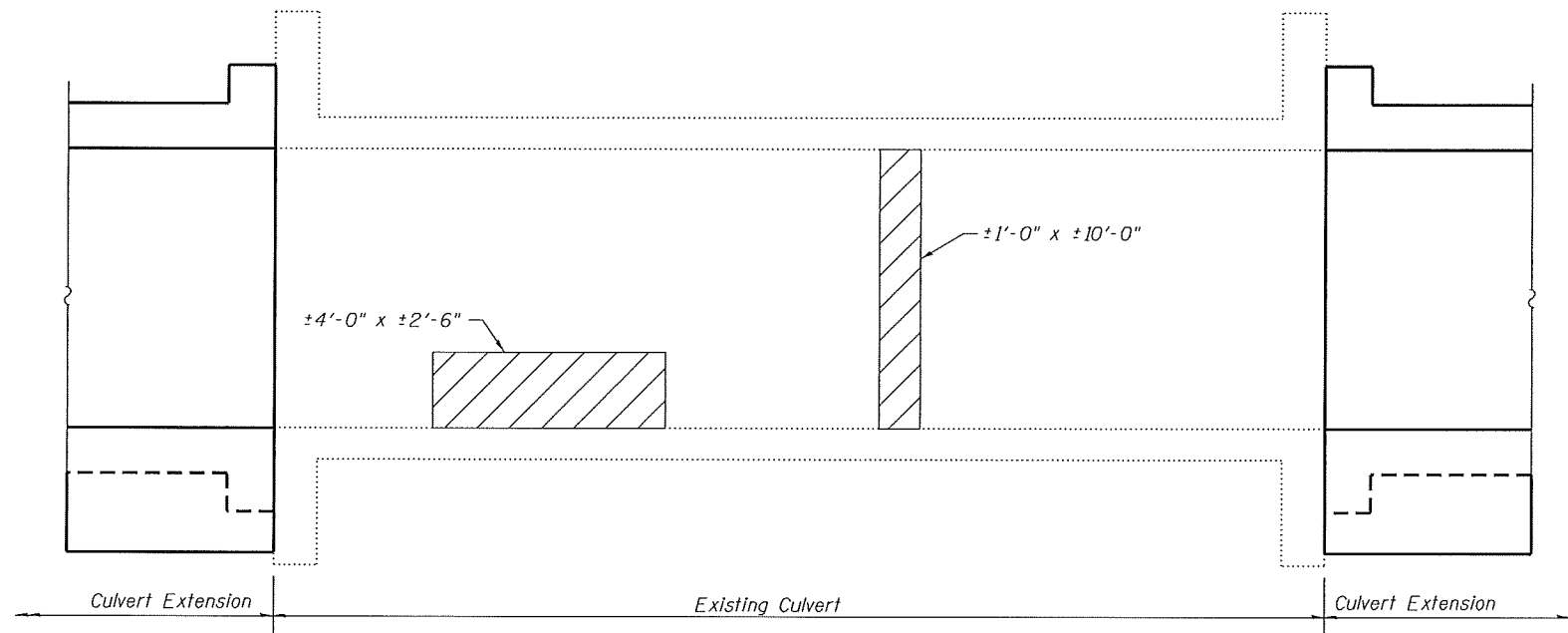
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|----------------------------------------|---------------|-----------|
| USER NAME = jdirkelmann                | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

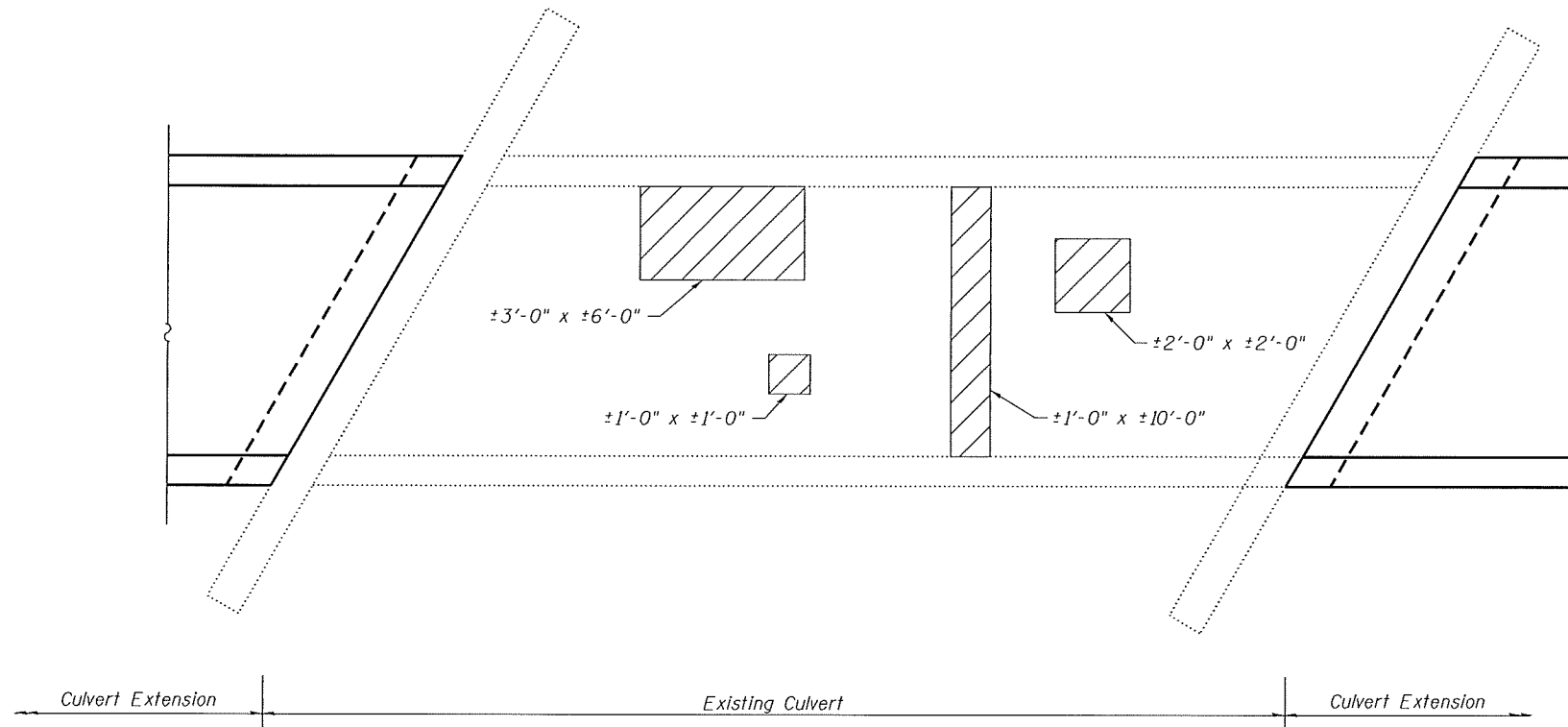
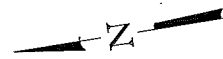
BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2475

SHEET NO. 4 OF 5 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-----------|--------|--------------|--------------------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 272                |
|                           |           |        |              | CONTRACT NO. 76789 |
| ILLINOIS FED. AID PROJECT |           |        |              |                    |



**ELEVATION**  
(Showing Inside Face of East Wall)



**PLAN**  
(Showing Bottom of Top Slab)

*Note:*  
Temporary shoring and cribbing shall be considered for the concrete areas designated for repair. (See Special Provisions for Structural Repair of Concrete). Cost included with Structural Repair of Concrete.

FILE NAME = 405-67.37-76785-205.dgn



USER NAME = jdirke1menn  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BOX CULVERT REPAIR DETAILS  
STRUCTURE NUMBER 042-2475

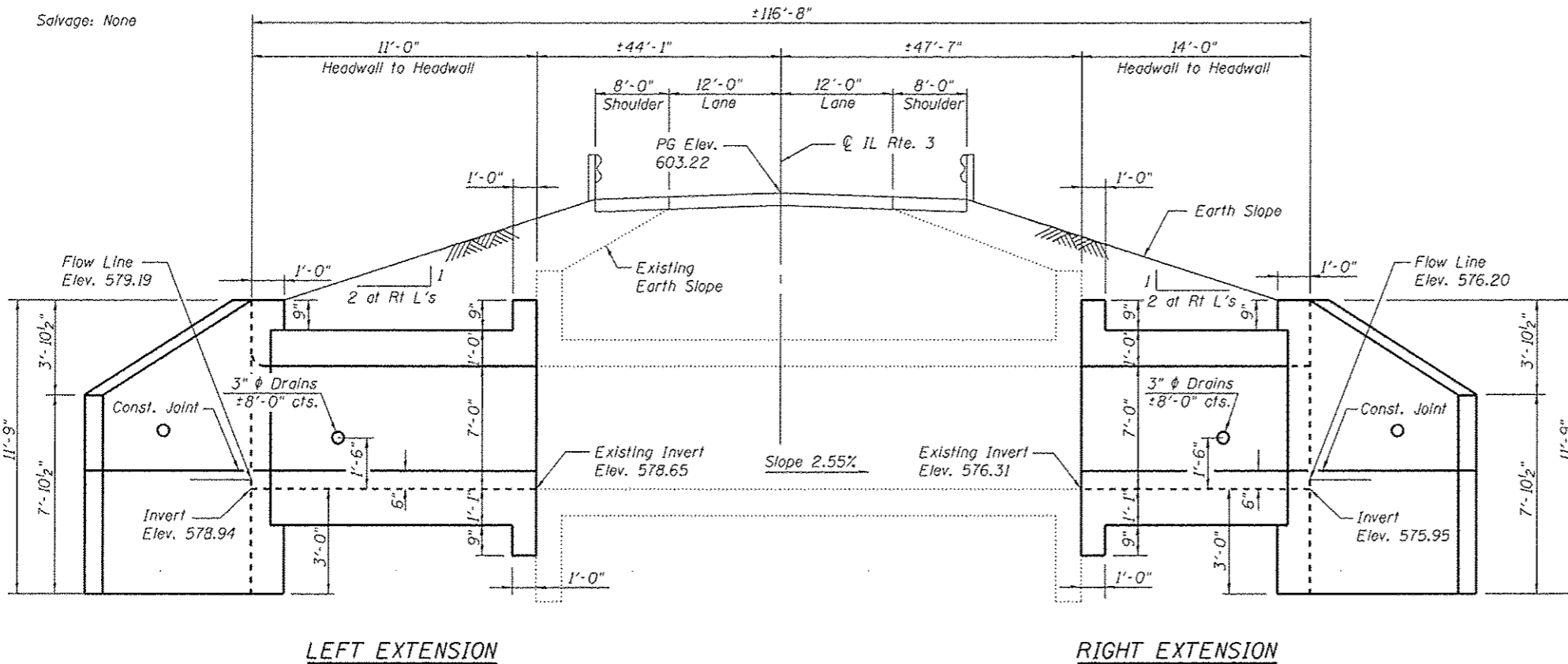
SHEET NO. 5 OF 5 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|--------|--------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438          | 273       |
| CONTRACT NO. 76789        |           |        |              |           |
| ILLINOIS FED. AID PROJECT |           |        |              |           |



Existing Structure: The existing structure, SN 042-2476, is a ±91'-8" long reinforced cast-in-place concrete box culvert with a 7'-0" x 7'-0" opening. The original structure was constructed as S.B.I. Route 109 Construction Section 101-A at the original station of 412+18.

Salvage: None

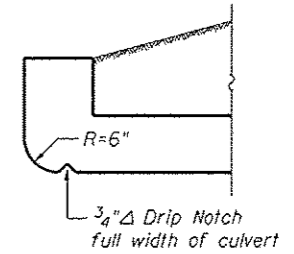


LEFT EXTENSION

ELEVATION

Dimensions at Rt L's to CL Roadway

RIGHT EXTENSION



HEADWALL DETAILS AT UPSTREAM END

GENERAL NOTES

Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity furnished at the unit price for the work.

The verification of allowable soil bearing pressure underlying the proposed box culvert shall be verified by a dynamic cone penetration (DCP) test or other acceptable measures as provided by the District Geotechnical and Field Engineers. The results of the test must exceed the calculated bearing pressures shown on the plans prior to placement of the Concrete Box Culvert. Tests failing to exceed the calculated bearing pressures as shown on the plans will require subsurface modification that must be coordinated with the District Geotechnical and Field Engineers.

Expansion bolts shall be according to Standard Specification Article 1006.09.

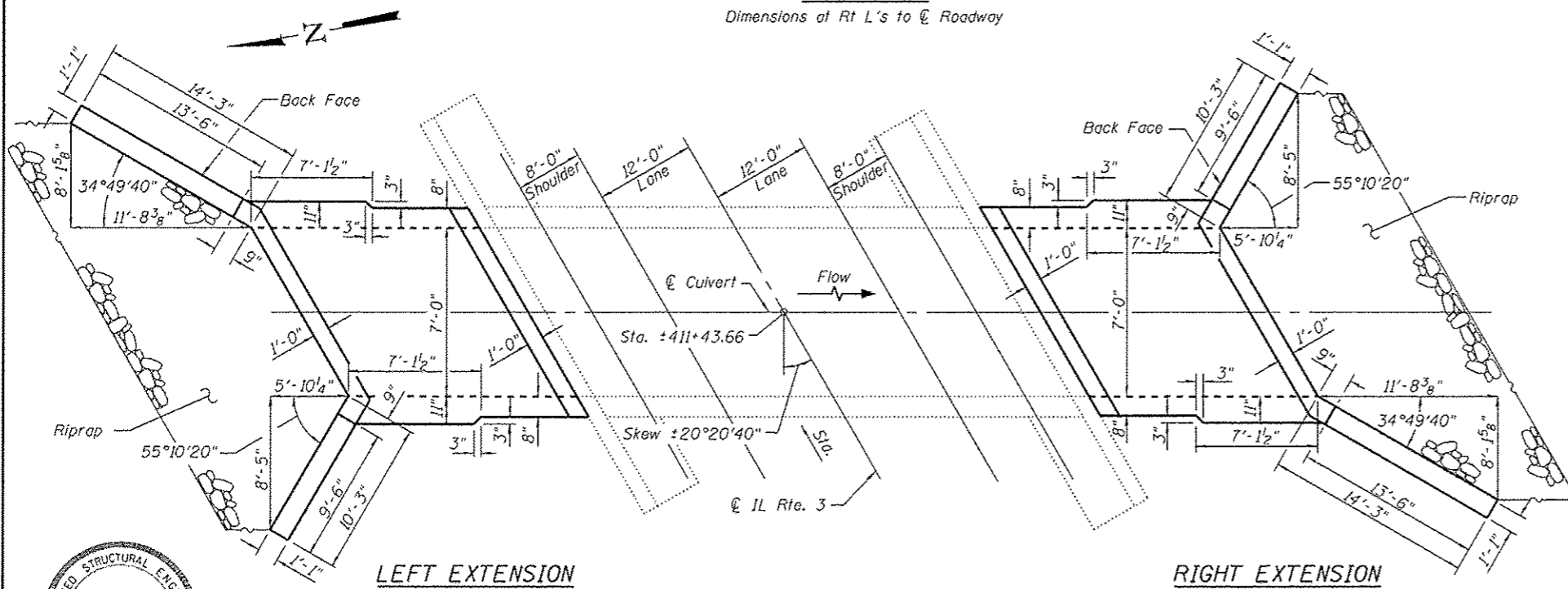
Precast alternative not allowed at this site.

A distance half the length of the wingwall but not less than 6'-0" of the barrel shall be poured monolithically with the wingwalls.

Calculated max. soil pressure under barrel = 3,596 psf.

For Riprap details and quantities see Roadway Plans.

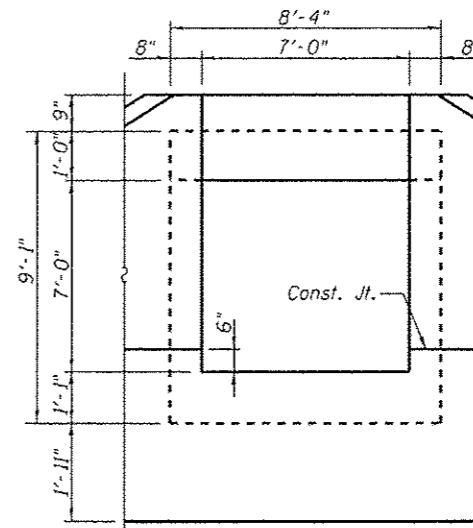
For Total Bill of Material see sheet 3 of 3.



LEFT EXTENSION

PLAN SHOWING OUTLINES

RIGHT EXTENSION



DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS 20-44

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

DESIGN STRESSES

EXISTING CONSTRUCTION NEW CONSTRUCTION

f<sub>y</sub> = 40,000 psi f<sub>y</sub> = 60,000 psi

f'c = 3,000 psi f'c = 3,500 psi

GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 3

F.A.S. RTE. 752 - SEC. 101-2RS-1

JERSEY COUNTY

STATION 411+43.66

STRUCTURE NO. 042-2476



Cent Kustig 8/16/14

FILE NAME = 411+43.66-76789-201.dgn



USER NAME = jdkinkolmann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

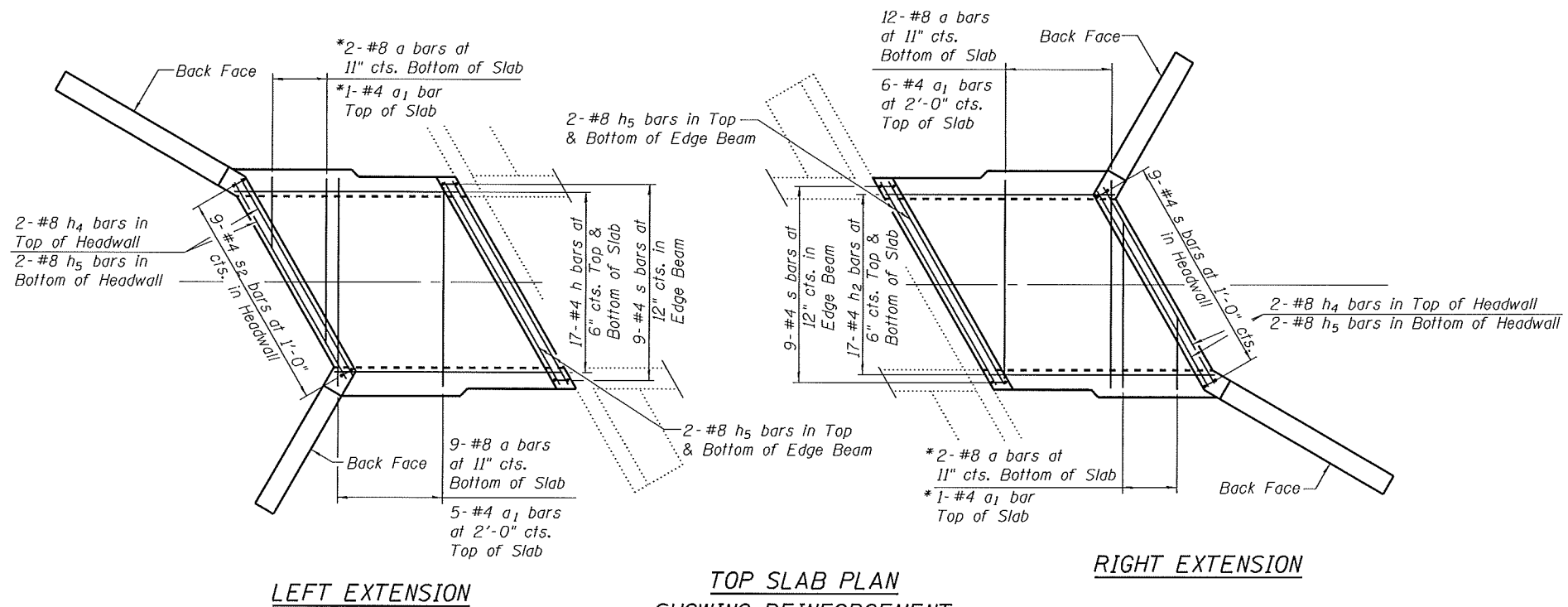
REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| 752                       | 101-2RS-1 | JERSEY | 438                | 274       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |





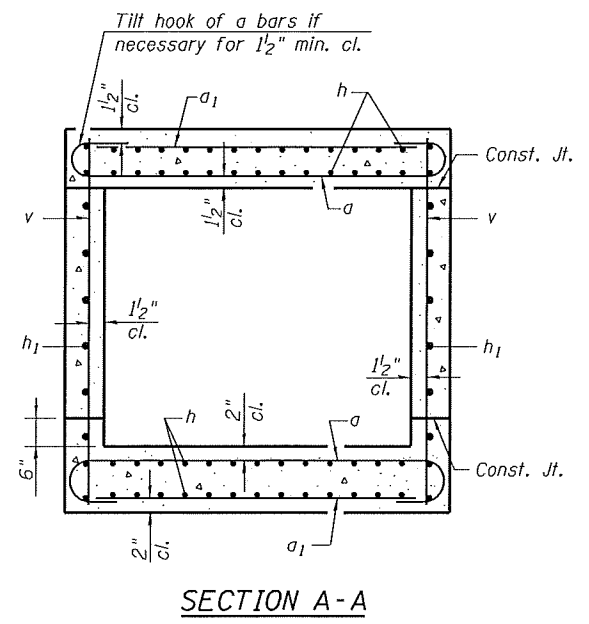
LEFT EXTENSION

TOP SLAB PLAN  
SHOWING REINFORCEMENT

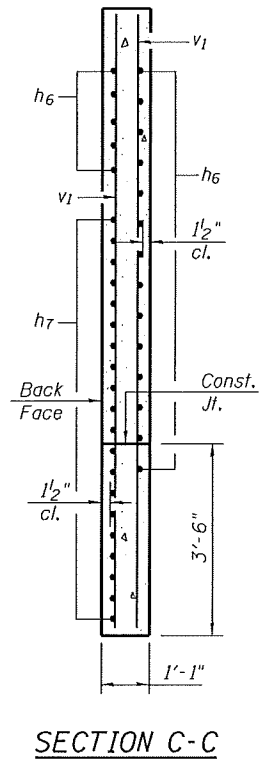
RIGHT EXTENSION

(v, v<sub>1</sub>, h<sub>6</sub>, h<sub>7</sub>, h<sub>8</sub> & h<sub>9</sub> bars not shown for clarity)

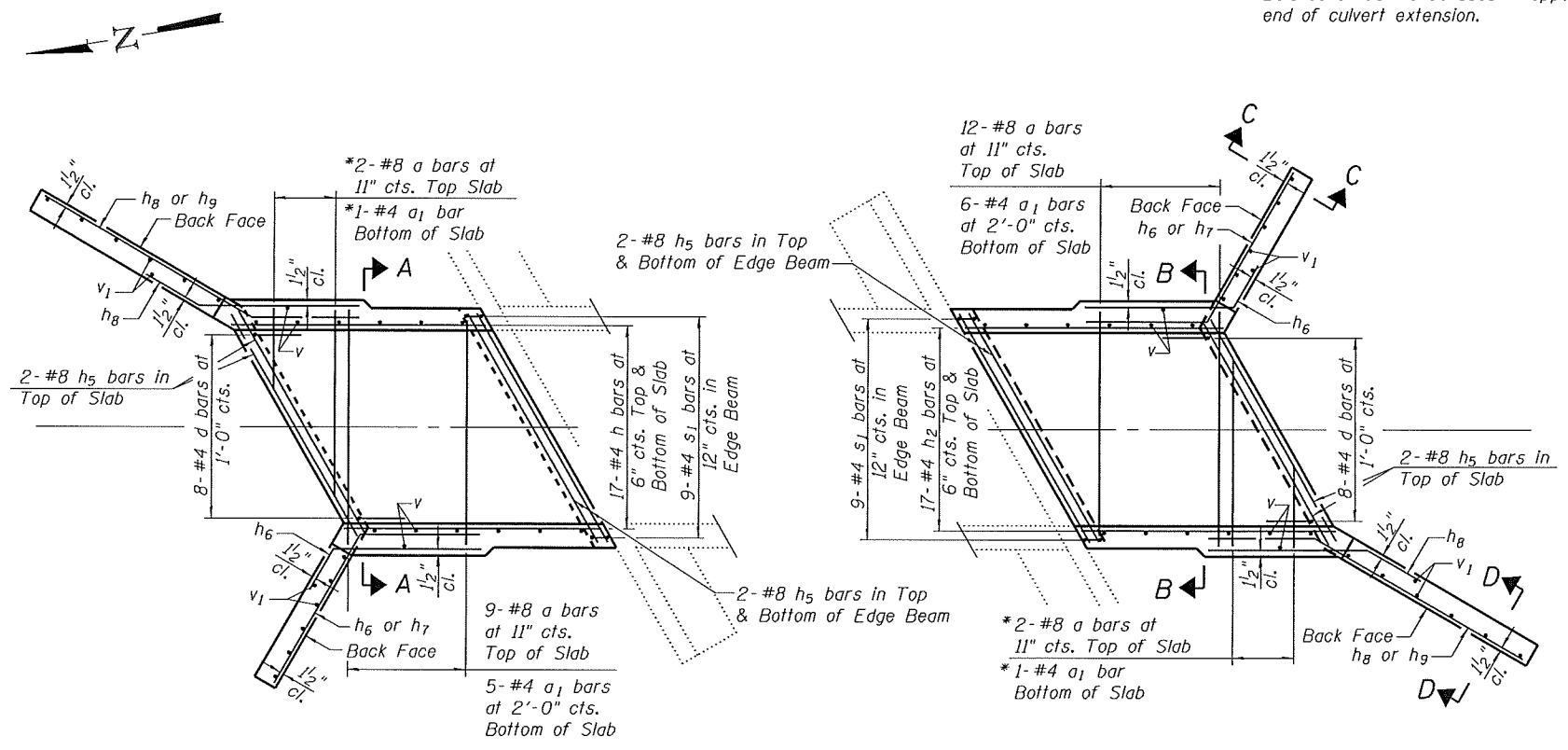
\*a & a<sub>1</sub> bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert extension.



SECTION A-A



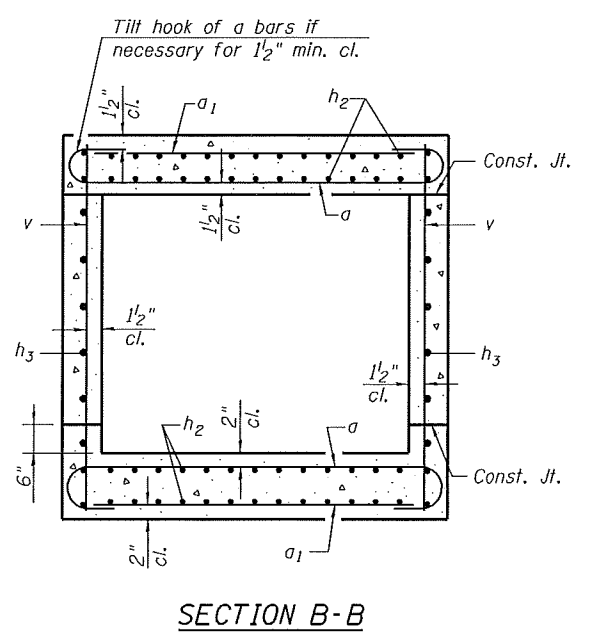
SECTION C-C



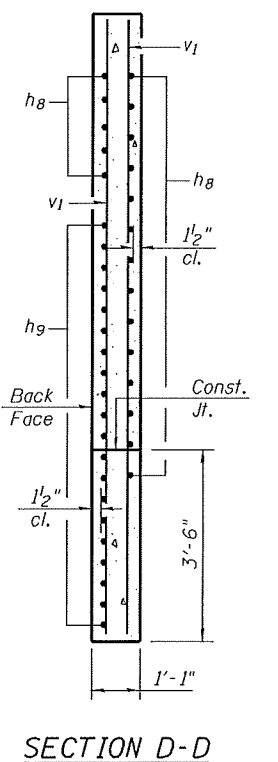
LEFT EXTENSION

BOTTOM SLAB PLAN  
SHOWING REINFORCEMENT

RIGHT EXTENSION



SECTION B-B



SECTION D-D

Notes:  
For Elevation, Bar Bends, and Total Bill of Material see sheet 3 of 3.

FILE NAME = 411-4366-76789-002.dgn



|                                        |               |           |
|----------------------------------------|---------------|-----------|
| USER NAME = jdrinkelmann               | DESIGNED - JD | REVISED - |
| Illinois Design Firm Number 184.001670 | CHECKED - BB  | REVISED - |
| PLOT SCALE =                           | DRAWN - WS    | REVISED - |
| PLOT DATE = 8/8/2014                   | CHECKED - CJF | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

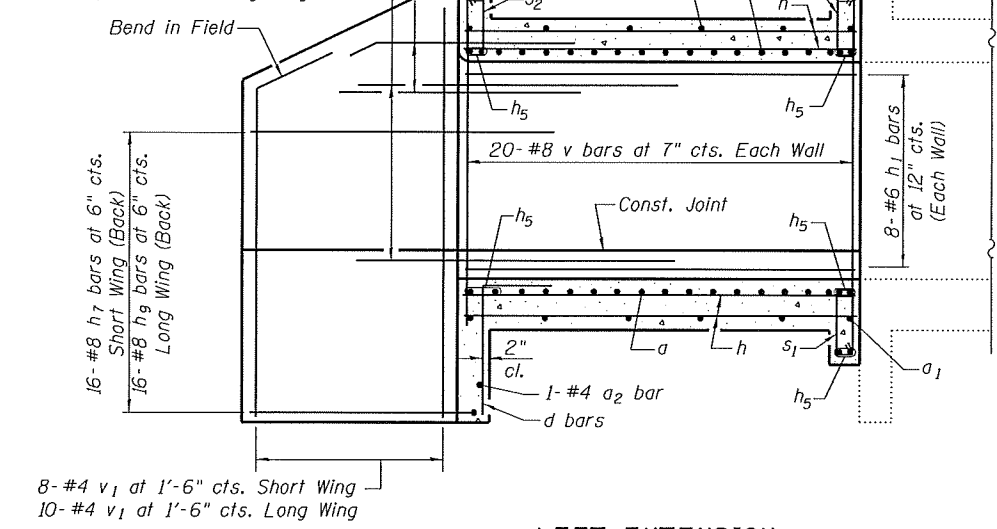
BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2476

SHEET NO. 2 OF 3 SHEETS

|                           |                   |               |                  |               |
|---------------------------|-------------------|---------------|------------------|---------------|
| F.A.S. RTE. 752           | SECTION 101-2RS-1 | COUNTY JERSEY | TOTAL SHEETS 438 | SHEET NO. 275 |
| CONTRACT NO. 76789        |                   |               |                  |               |
| ILLINOIS FED. AID PROJECT |                   |               |                  |               |

5 - #8 h<sub>6</sub> at 6" cts. Short Wing (Back)  
5 - #8 h<sub>8</sub> at 6" cts. Long Wing (Back)

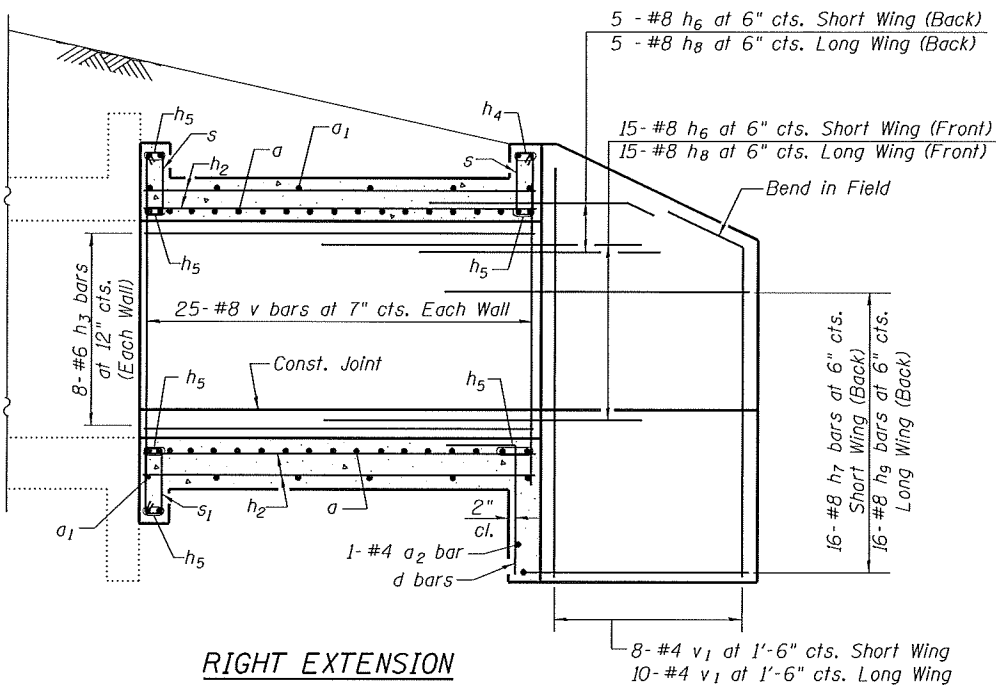
15 - #8 h<sub>6</sub> at 6" cts. Short Wing (Front)  
15 - #8 h<sub>8</sub> at 6" cts. Long Wing (Front)



LEFT EXTENSION

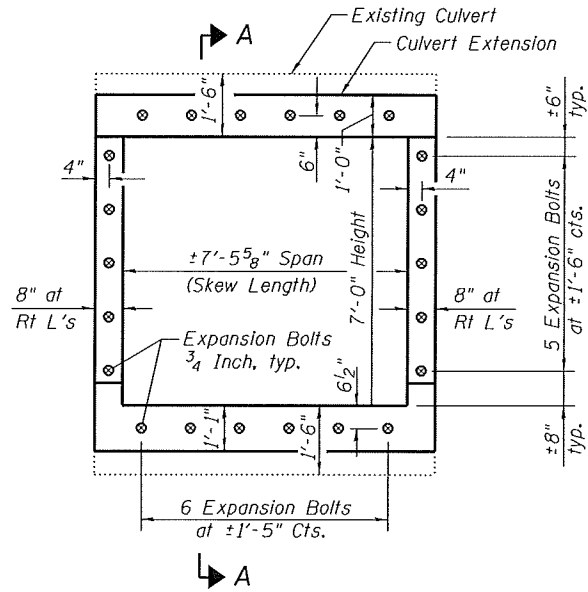
5 - #8 h<sub>6</sub> at 6" cts. Short Wing (Back)  
5 - #8 h<sub>8</sub> at 6" cts. Long Wing (Back)

15 - #8 h<sub>6</sub> at 6" cts. Short Wing (Front)  
15 - #8 h<sub>8</sub> at 6" cts. Long Wing (Front)



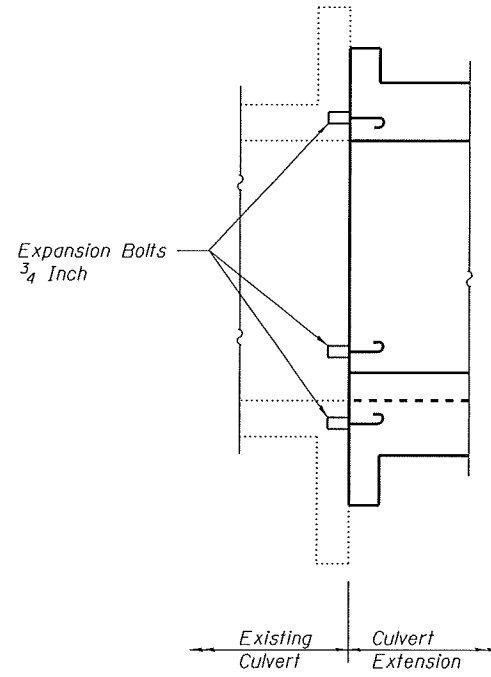
RIGHT EXTENSION

ELEVATION

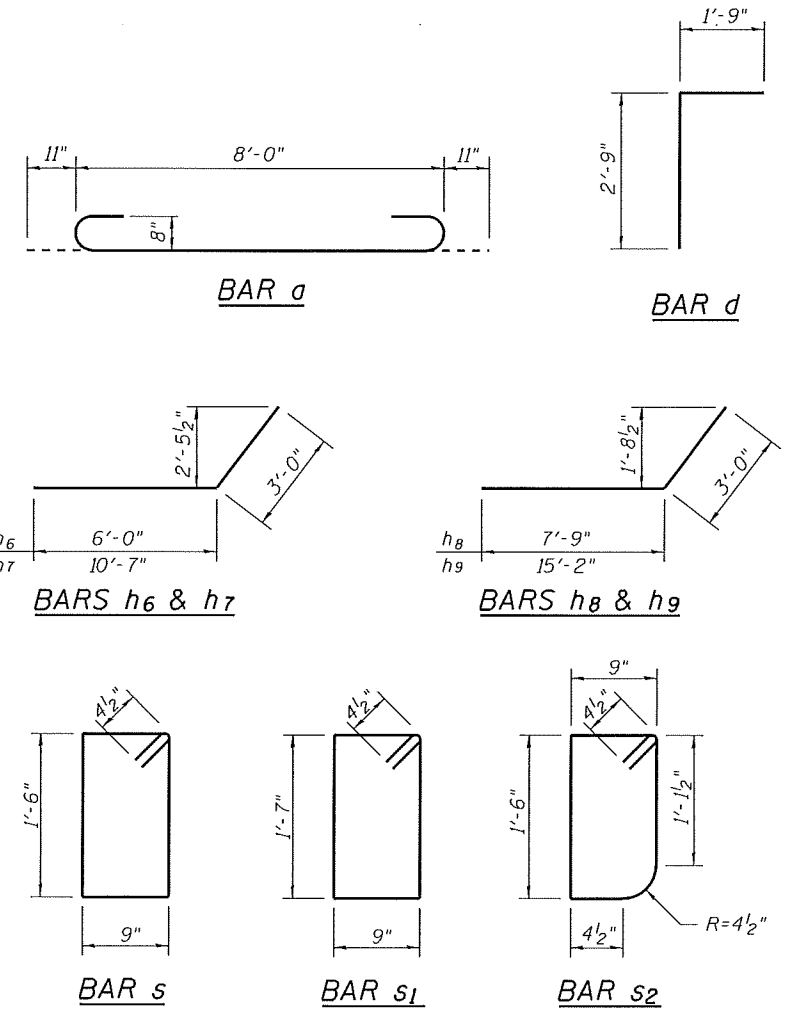


EXPANSION BOLT LAYOUT

Note:  
Expansion Bolts shall be 3/4" hooked bolts. Hooked bolts shall extend a minimum of 9" into the new concrete.



SECTION A-A



TOTAL BILL OF MATERIAL

| Bar                      | No. | Size | Length  | Shape  |
|--------------------------|-----|------|---------|--------|
| a                        | 50  | #8   | 9'-10"  |        |
| a1                       | 26  | #4   | 8'-0"   |        |
| a2                       | 2   | #4   | 9'-2"   |        |
| d                        | 16  | #4   | 4'-6"   |        |
| h                        | 68  | #4   | 10'-8"  |        |
| h1                       | 16  | #6   | 10'-9"  |        |
| h2                       | 68  | #4   | 13'-8"  |        |
| h3                       | 16  | #6   | 13'-9"  |        |
| h4                       | 4   | #8   | 8'-5"   |        |
| h5                       | 24  | #8   | 8'-6"   |        |
| h6                       | 40  | #8   | 9'-0"   |        |
| h7                       | 32  | #8   | 13'-7"  |        |
| h8                       | 40  | #8   | 10'-9"  |        |
| h9                       | 32  | #8   | 18'-2"  |        |
| s                        | 27  | #4   | 5'-3"   |        |
| s1                       | 18  | #4   | 5'-5"   |        |
| s2                       | 9   | #4   | 5'-1"   |        |
| v                        | 94  | #8   | 8'-9"   |        |
| v1                       | 40  | #4   | 11'-5"  |        |
| Concrete Box Culverts    |     |      | Cu. Yd. | 47.1   |
| Reinforcement Bars       |     |      | Pound   | 11,360 |
| Expansion Bolts 3/4 Inch |     |      | Each    | 44     |

FILE NAME = 411-4366-76789-003.dgn



USER NAME = jdrinkelmann  
Illinois Design Firm Number 184.001670  
PLOT SCALE =  
PLOT DATE = 8/8/2014

DESIGNED - JD  
CHECKED - BB  
DRAWN - WS  
CHECKED - CJF

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

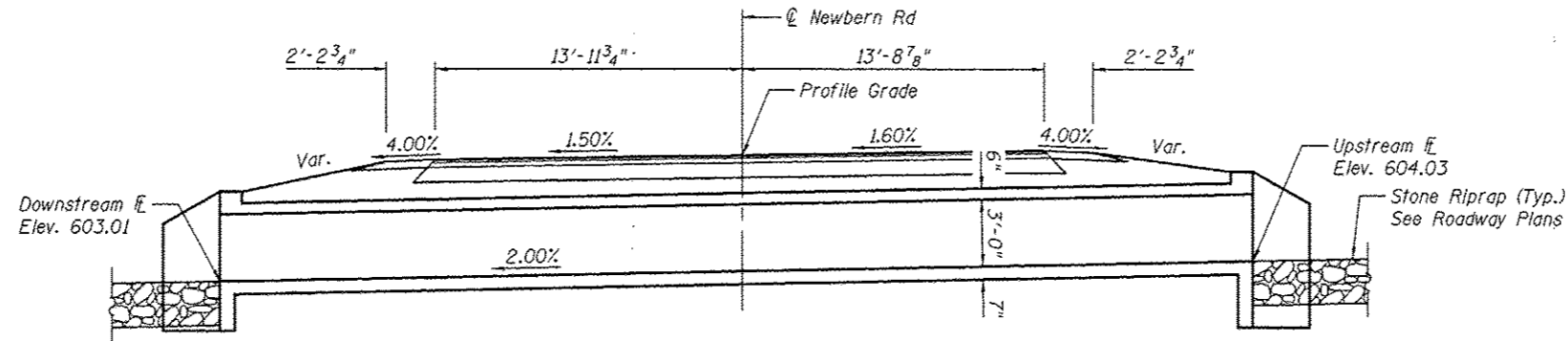
BOX CULVERT EXTENSION DETAILS  
STRUCTURE NUMBER 042-2476

SHEET NO. 3 OF 3 SHEETS

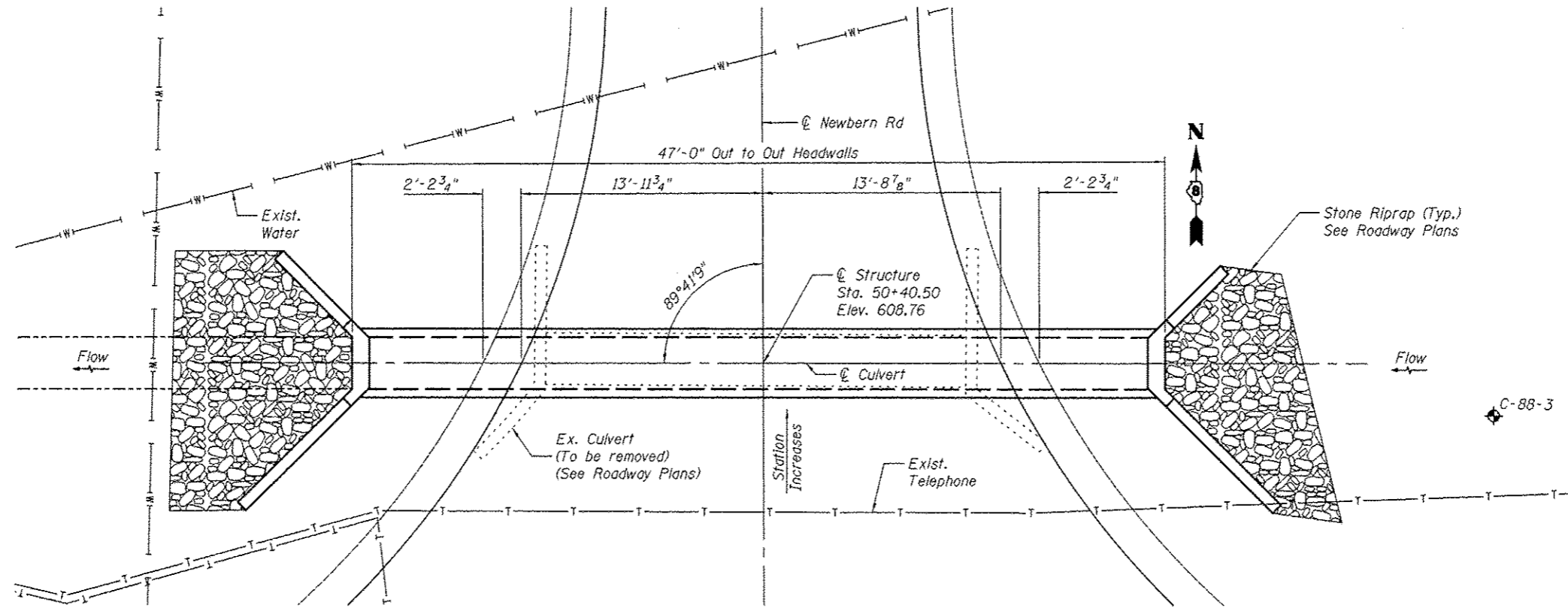
| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-----------|--------|--------------|-----------|
| 752         | 101-2RS-1 | JERSEY | 438          | 276       |

CONTRACT NO. 76789  
ILLINOIS FED. AID PROJECT

PRINT DATE: 8/7/2014 11:45:07 AM Y:\141018 IDOT BLA W034 Culvert Replacements\IDGN\Bridges\Final\Plotsheets\16789-277\_5040\_GPE.dgn



**ELEVATION**



**GENERAL PLAN**

**INDEX OF SHEETS**

1. General Plan and Elevation
2. Cast in Place Culvert Details

**GENERAL NOTES**

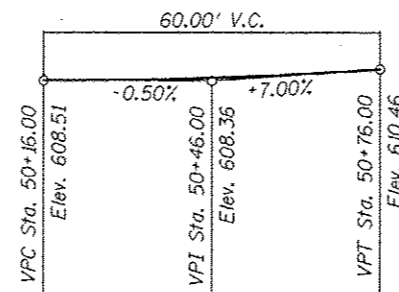
Precast alternate is not allowed.

**DESIGN STRESSES**

**FIELD UNITS**

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

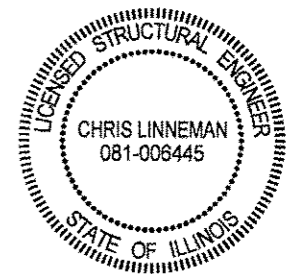
**LOADING HL-93**



**PROFILE GRADE**  
(Newbern Rd)

**TOTAL BILL OF MATERIAL**

| ITEM                  | UNIT    | TOTAL |
|-----------------------|---------|-------|
| Reinforcement Bars    | Pound   | 2,870 |
| Concrete Box Culverts | Cu. Yd. | 18.3  |
|                       |         |       |
|                       |         |       |
|                       |         |       |



Signed:   
 Date: 8/7/2014  
 License Expires: 11/30/2014

**GENERAL PLAN & ELEVATION**  
**NEWBERN ROAD**  
**SECTION 101-2RS-1**  
**JERSEY COUNTY**  
**STATION 50+40.50**

**EFK Moen, LLC**  
 Civil Engineering Design  
 303 Fountain Parkway, Suite 240  
 Fairview Heights, IL 62208  
 Phone 618-206-4250

|                           |                 |           |
|---------------------------|-----------------|-----------|
| USER NAME = cdl           | DESIGNED - CMC  | REVISED - |
| PLOT SCALE = 0.1867" / 1" | CHECKED - CTW   | REVISED - |
| PLOT DATE = 8/7/2014      | DRAWN - JAA     | REVISED - |
|                           | DATE - 8/7/2014 | REVISED - |

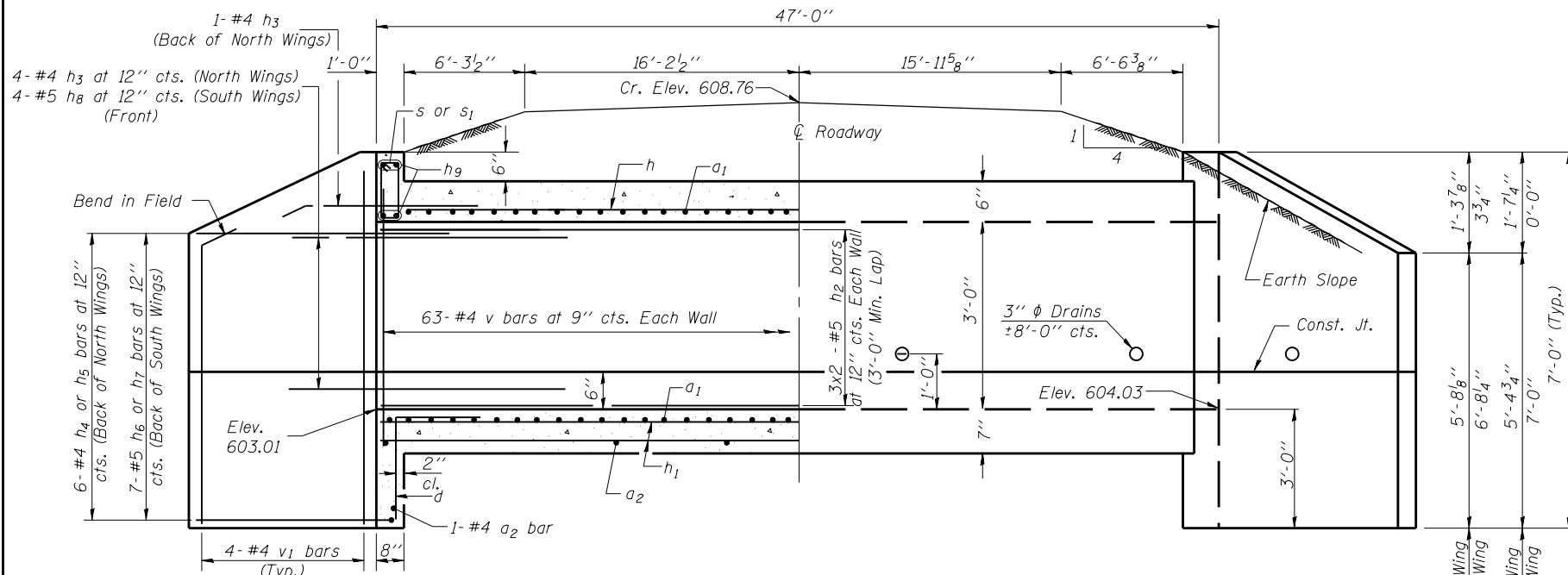
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION**  
**3'x3' BOX CULVERT - STA. 50+40.50 NEWBERN RD.**

SHEET NO. 1 OF 2 SHEETS

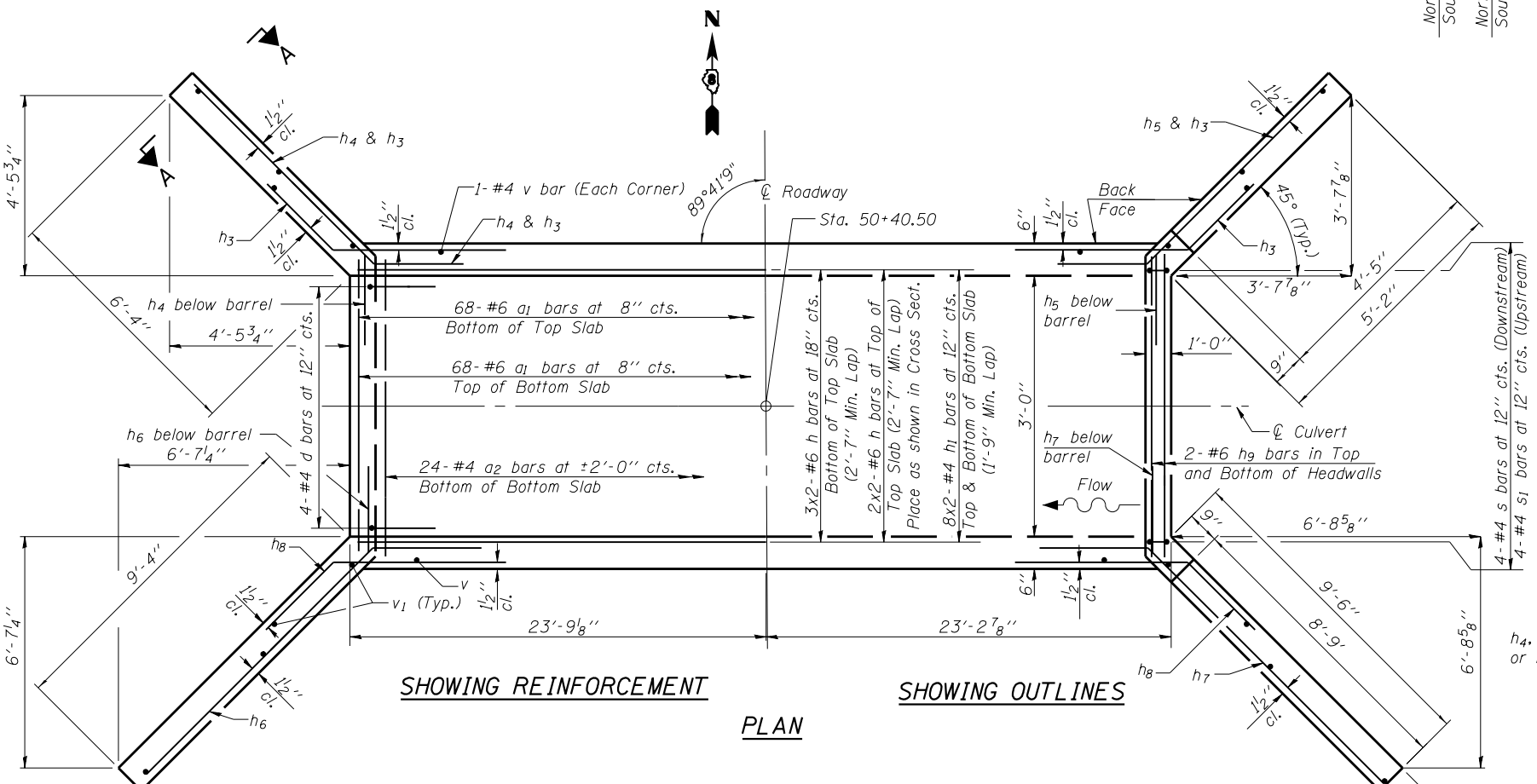
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| • 749/752                 | 101-2RS-1 | JERSEY | 438                | 277       |
| ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |

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HALF LONG. SECTION

HALF ELEVATION



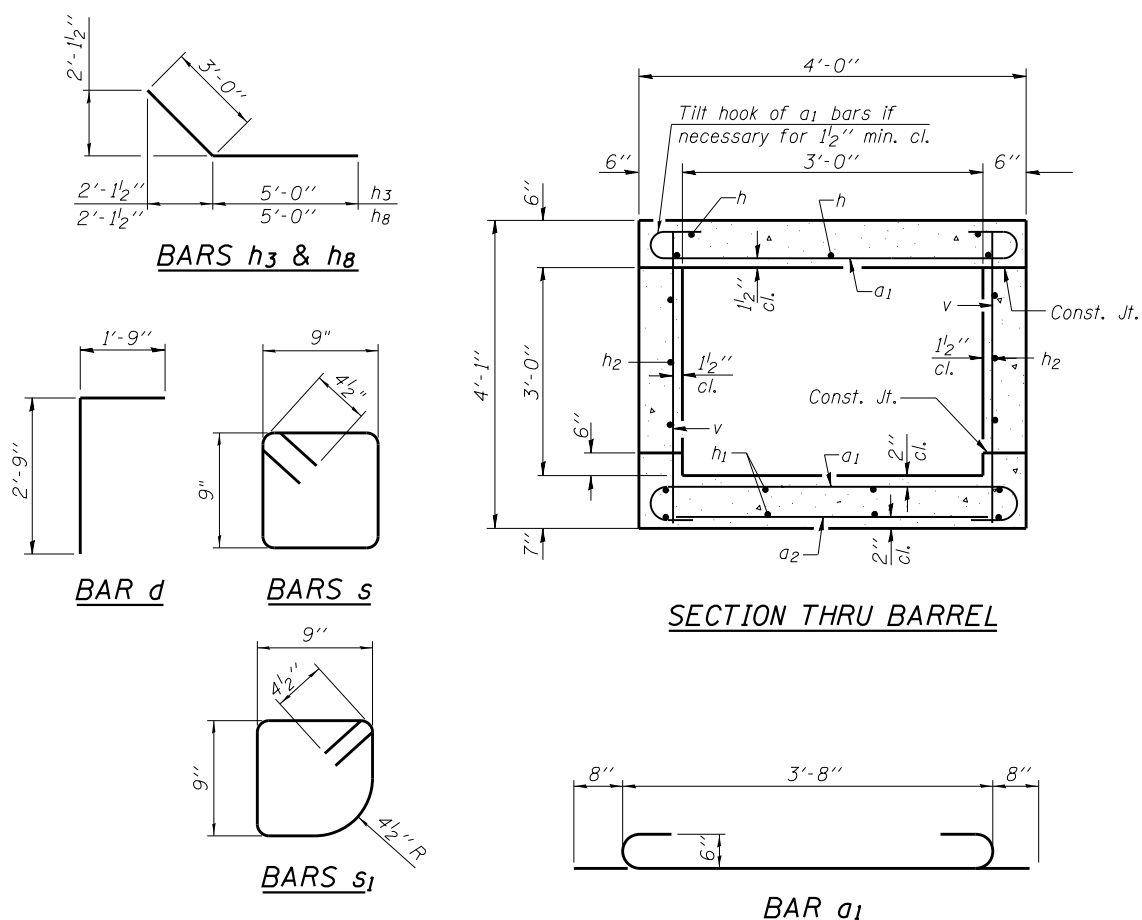
SHOWING REINFORCEMENT

SHOWING OUTLINES

PLAN

NOTES

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.  
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.



BARS h3 & h8

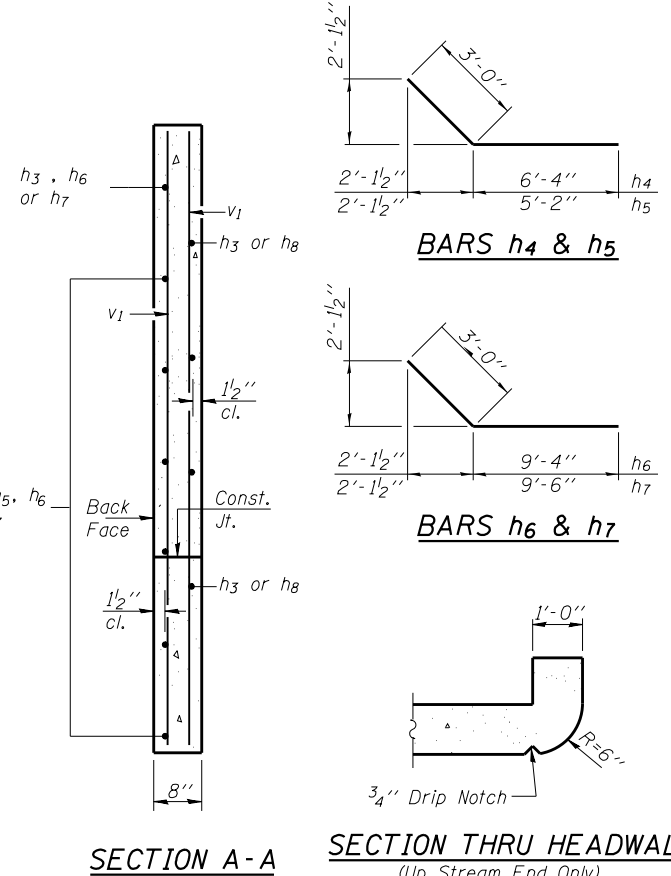
BAR d

BARS s

BARS s1

BAR a1

SECTION THRU BARREL



SECTION A-A

SECTION THRU HEADWALL  
(Up Stream End Only)

BILL OF MATERIAL

| Bar                   | No. | Size | Length  | Shape |
|-----------------------|-----|------|---------|-------|
| a1                    | 136 | #6   | 5'-0"   | U     |
| a2                    | 26  | #4   | 3'-8"   | U     |
| d                     | 8   | #4   | 4'-6"   | U     |
| h                     | 10  | #6   | 24'-8"  | U     |
| h1                    | 16  | #4   | 24'-3"  | U     |
| h2                    | 12  | #5   | 24'-10" | U     |
| h3                    | 10  | #4   | 8'-0"   | U     |
| h4                    | 6   | #4   | 9'-4"   | U     |
| h5                    | 6   | #4   | 8'-2"   | U     |
| h6                    | 7   | #5   | 12'-4"  | U     |
| h7                    | 7   | #5   | 12'-6"  | U     |
| h8                    | 8   | #5   | 8'-0"   | U     |
| h9                    | 8   | #6   | 3'-0"   | U     |
| s                     | 4   | #4   | 3'-9"   | U     |
| s1                    | 4   | #4   | 3'-8"   | U     |
| v                     | 130 | #4   | 3'-9"   | U     |
| v1                    | 16  | #4   | 6'-8"   | U     |
| Reinforcement Bars    |     |      | Pound   | 2,870 |
| Concrete Box Culverts |     |      | Cu. Yd. | 18.3  |

**EFK Moen, LLC**  
 Civil Engineering Design  
 303 Fountains Parkway, Suite 240  
 Fairview Heights, IL 62208  
 Phone 618-206-4250

USER NAME = cdl  
 DESIGNED - CMC  
 CHECKED - CTW  
 DRAWN - JAA  
 DATE - 10/16/2014

DESIGNED - CMC  
 CHECKED - CTW  
 DRAWN - JAA  
 DATE - 10/16/2014

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

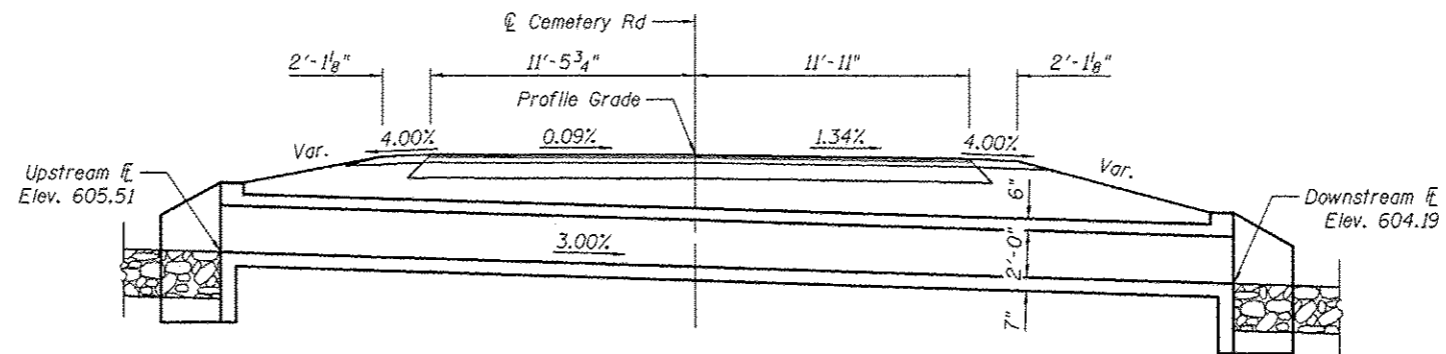
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CAST IN PLACE CULVERT DETAILS  
 3'x3' BOX CULVERT - STA. 50+40.50 NEWBERN RD.

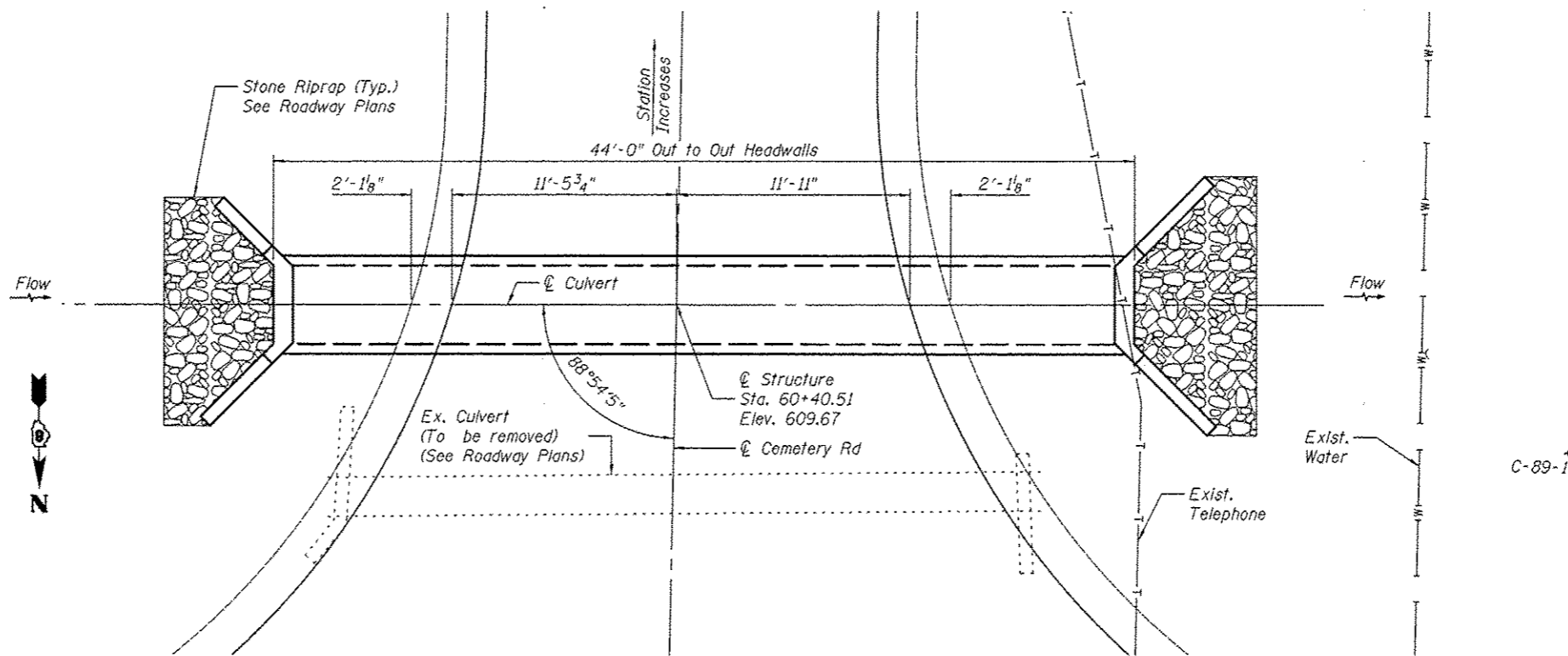
SHEET NO. 2 OF 2 SHEETS

F.A.S. RT. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 • 101-2RS-1 JERSEY 438 278  
 • 749/752 CONTRACT NO. 76789

ILLINOIS FED. AID PROJECT



**ELEVATION**



**GENERAL PLAN**

**INDEX OF SHEETS**

1. General Plan and Elevation
2. Cast in Place Culvert Details

**DESIGN STRESSES**

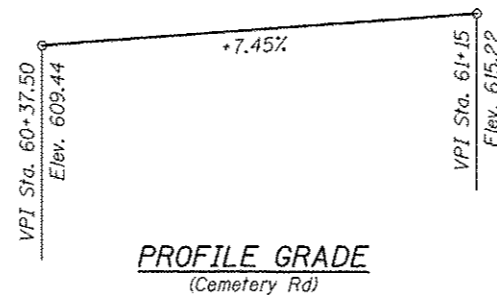
**FIELD UNITS**

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

**LOADING HL-93**

**GENERAL NOTES**

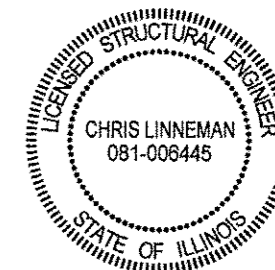
Precast alternate is not allowed.



**PROFILE GRADE**  
(Cemetery Rd)

**TOTAL BILL OF MATERIAL**

| ITEM                  | UNIT    | TOTAL |
|-----------------------|---------|-------|
| Reinforcement Bars    | Pound   | 2,470 |
| Concrete Box Culverts | Cu. Yd. | 15.8  |
|                       |         |       |
|                       |         |       |



Signed: *[Signature]*  
 Date: 8/7/2014  
 License Expires: 11/30/2014

**GENERAL PLAN & ELEVATION**  
**CEMETERY ROAD**  
**SECTION 101-2RS-1**  
**JERSEY COUNTY**  
**STATION 60+40.51**

PRINT DATE: 8/7/2014 11:45:08 AM Y:\14018 IDOT BLA W034 Culvert Replacements\DCN\Bridges\Final\Plotsheets\76789-279\_6040\_CPE.dgn

**EFK Moen, LLC**  
 Civil Engineering Design  
 303 Fountains Parkway, Suite 240  
 Fairview Heights, IL 62208  
 Phone 618-286-4250

|                            |                 |           |
|----------------------------|-----------------|-----------|
| USER NAME = cdl            | DESIGNED - CMC  | REVISED - |
|                            | CHECKED - CTW   | REVISED - |
| PLOT SCALE = 8.1667' / in. | DRAWN - JAA     | REVISED - |
| PLOT DATE = 8/7/2014       | DATE - 8/7/2014 | REVISED - |

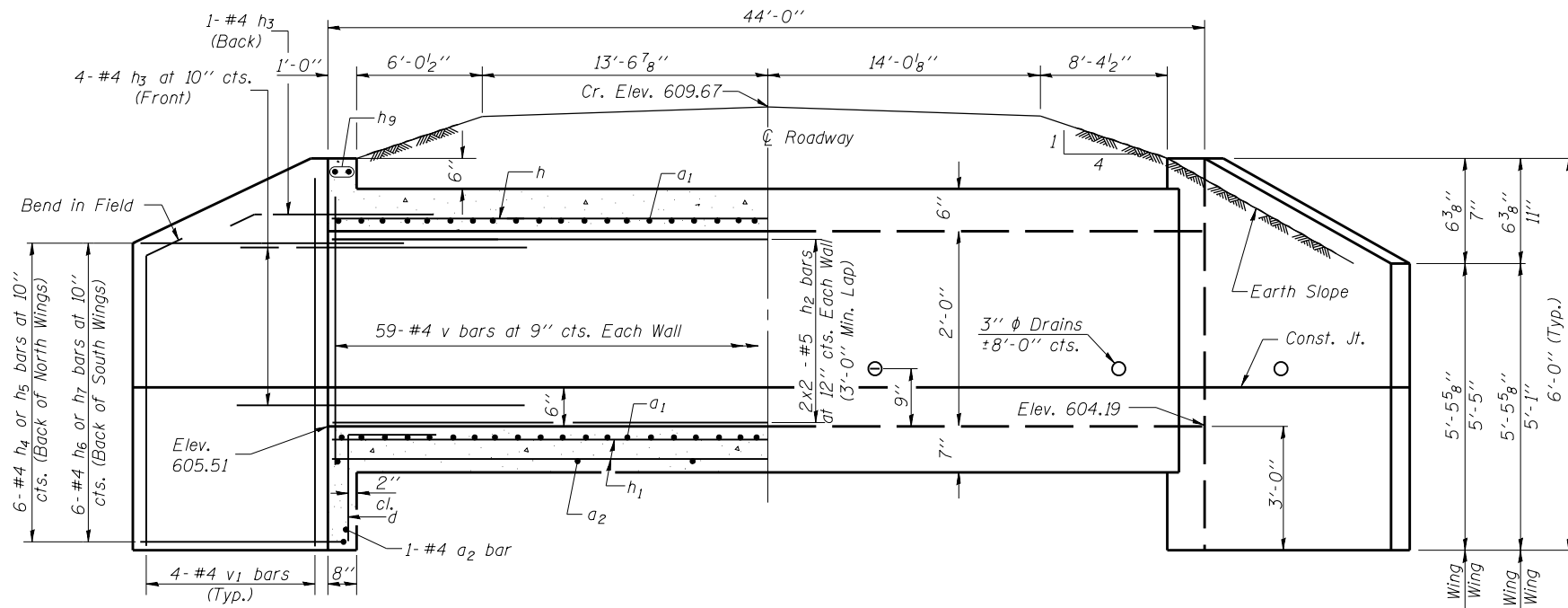
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION**  
**4'x2' BOX CULVERT - STA. 60+40.51 CEMETERY RD.**

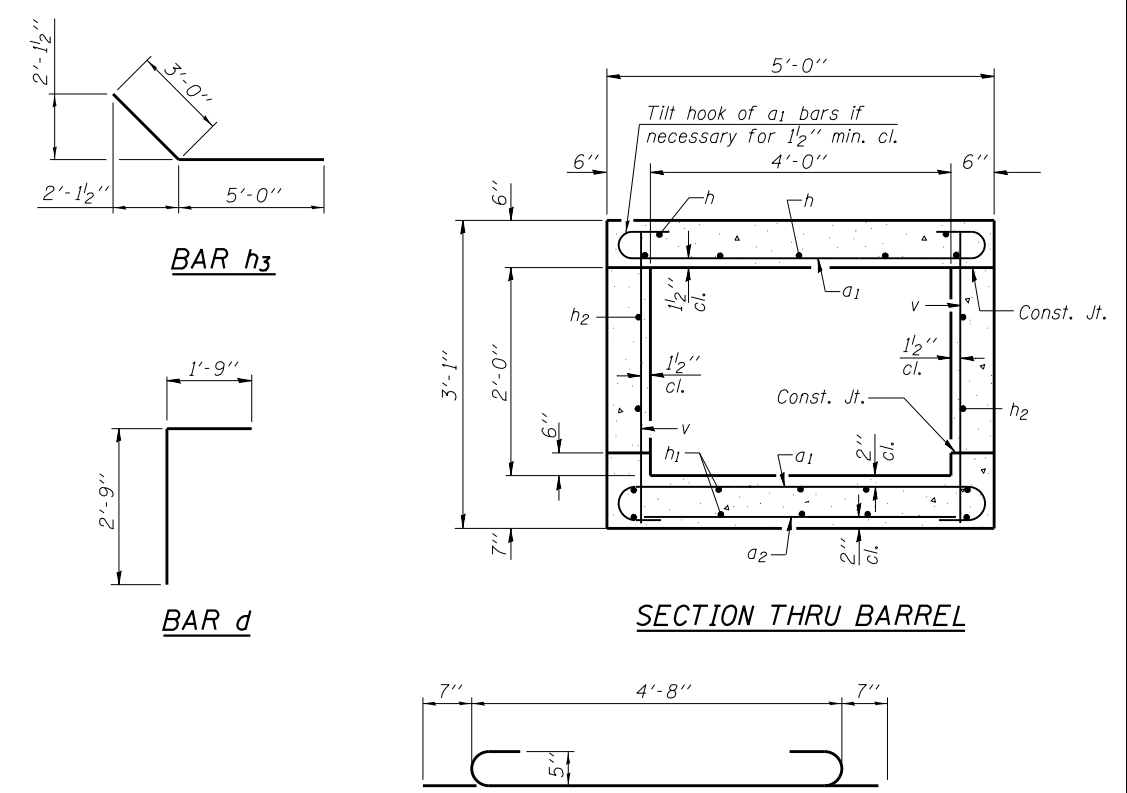
SHEET NO. 1 OF 2 SHEETS

| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-----------|--------|--------------------|-----------|
| •                         | 101-2RS-1 | JERSEY | 438                | 279       |
| • 749/752                 |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

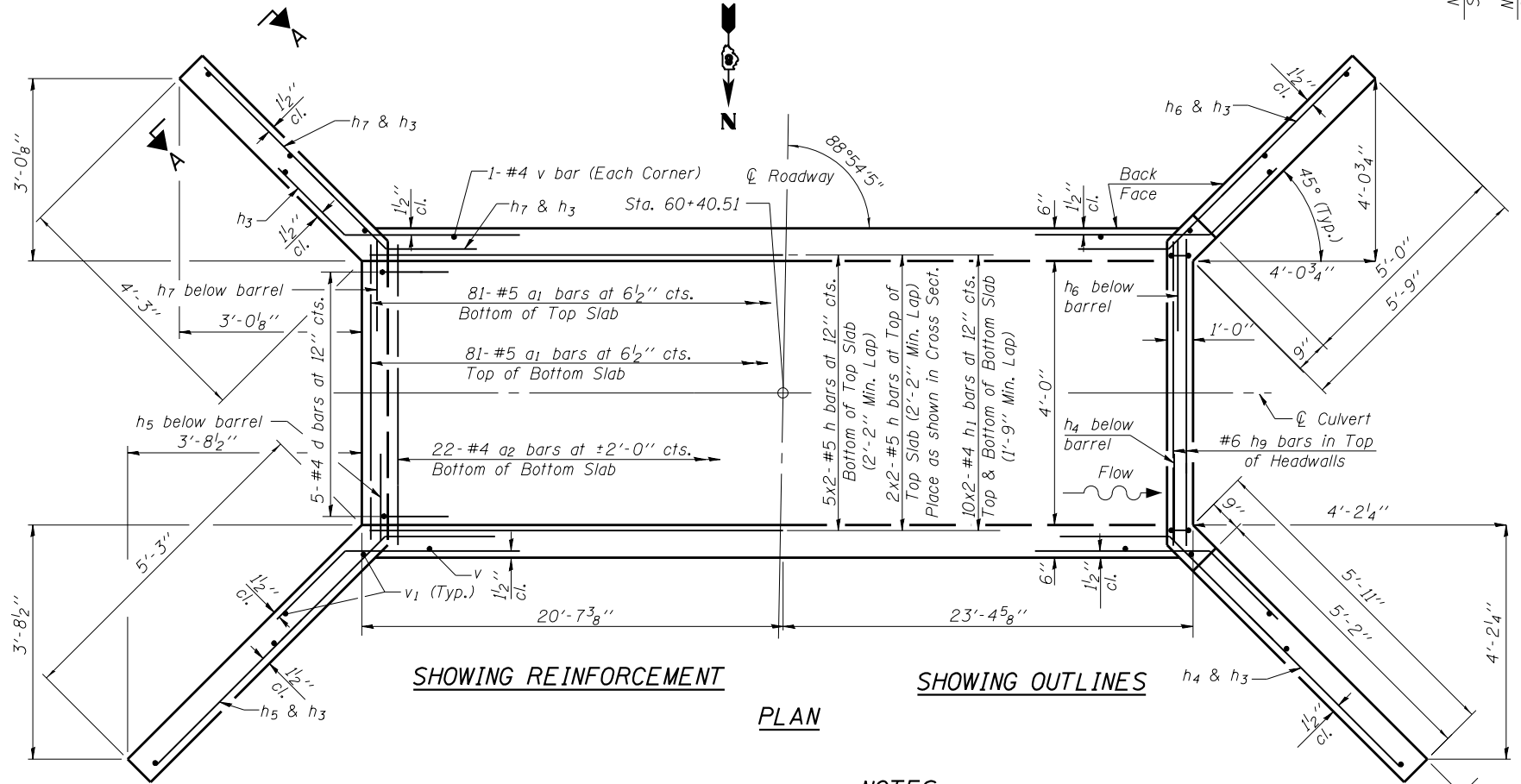
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**HALF LONG. SECTION** **HALF ELEVATION**



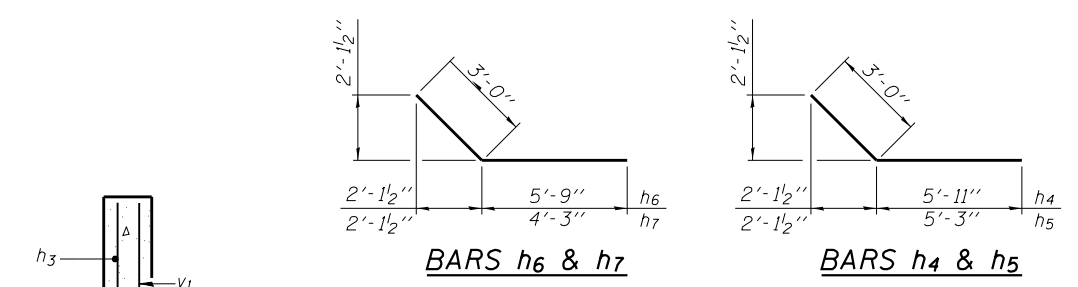
**BAR h3**  
**BAR d**  
**SECTION THRU BARREL**  
**BAR a1**



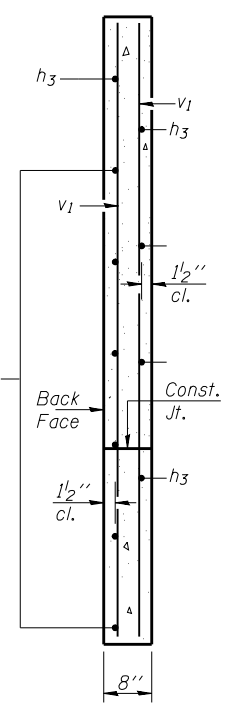
**SHOWING REINFORCEMENT** **SHOWING OUTLINES**  
**PLAN**

**NOTES**

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.  
Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.



**BARS h6 & h7** **BARS h4 & h5**



**SECTION A-A** **SECTION THRU HEADWALL**  
(Up Stream End Only)

**BILL OF MATERIAL**

| Bar                   | No. | Size | Length  | Shape |
|-----------------------|-----|------|---------|-------|
| a1                    | 162 | #5   | 5'-10"  | U     |
| a2                    | 24  | #4   | 4'-8"   | I     |
| d                     | 10  | #4   | 4'-6"   | L     |
| h                     | 14  | #5   | 22'-11" | I     |
| h1                    | 20  | #4   | 22'-9"  | I     |
| h2                    | 8   | #5   | 23'-4"  | I     |
| h3                    | 20  | #4   | 8'-0"   | I     |
| h4                    | 6   | #4   | 8'-11"  | I     |
| h5                    | 6   | #4   | 8'-3"   | I     |
| h6                    | 6   | #4   | 8'-9"   | I     |
| h7                    | 6   | #4   | 7'-3"   | I     |
| h8                    | 4   | #6   | 4'-0"   | I     |
| v                     | 120 | #4   | 2'-9"   | I     |
| v1                    | 16  | #4   | 5'-8"   | I     |
| Reinforcement Bars    |     |      | Pound   | 2,470 |
| Concrete Box Culverts |     |      | Cu. Yd. | 15.8  |

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Fairview Heights, IL 62208  
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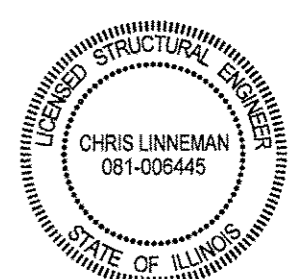
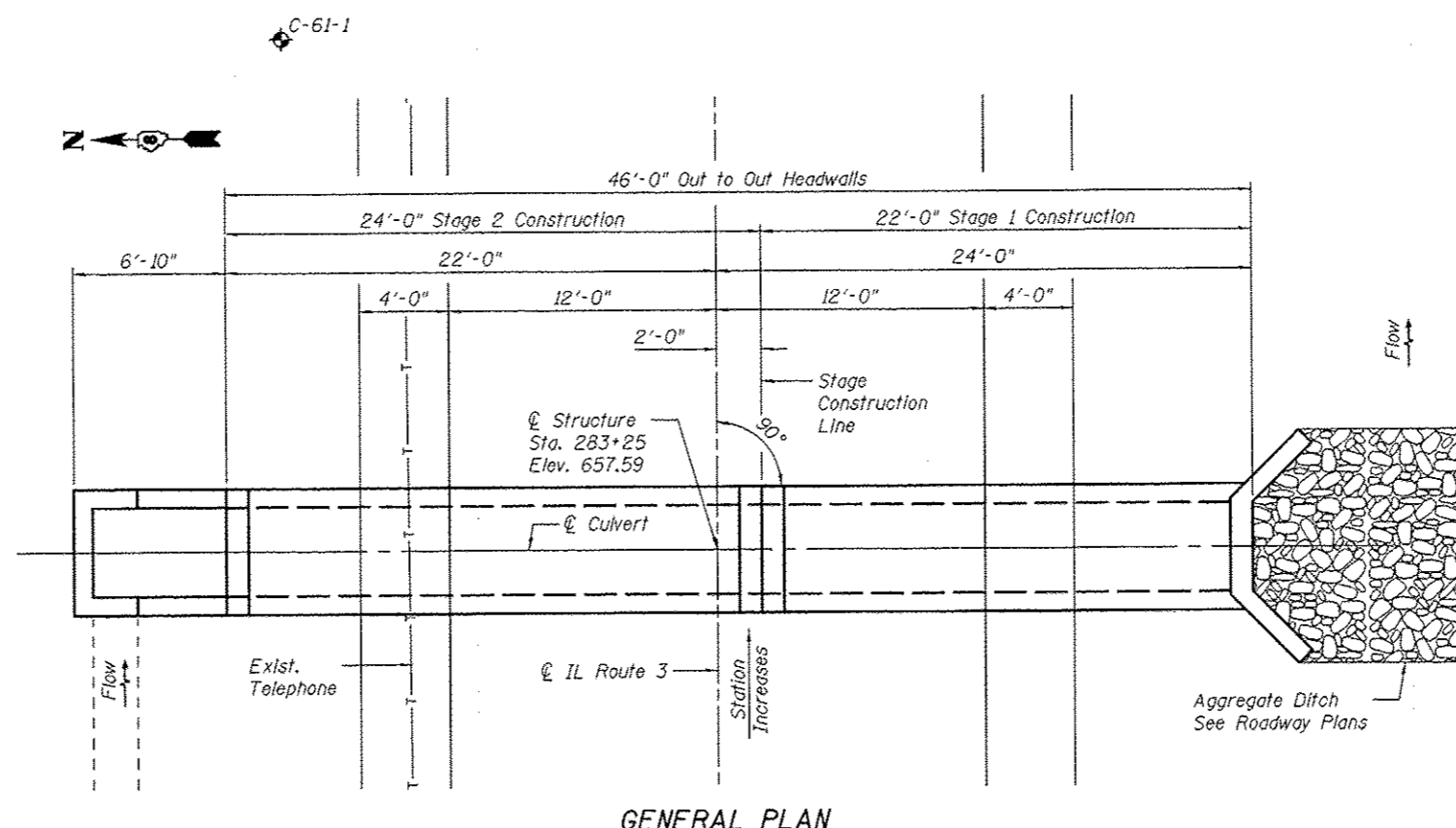
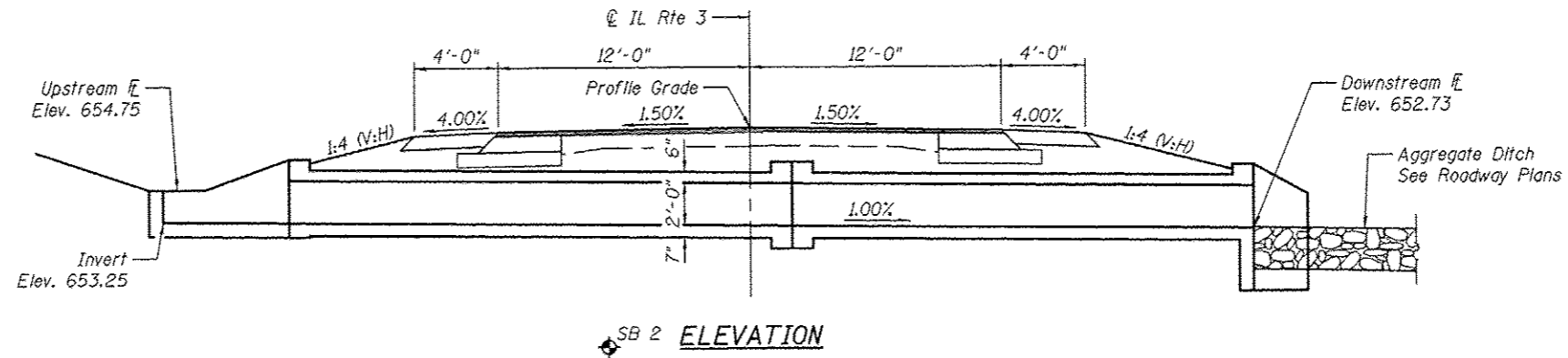
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| USER NAME = cdl           | DESIGNED - CMC    | REVISED - |
| PLOT SCALE = 0.1667' / 1" | CHECKED - CTW     | REVISED - |
| PLOT DATE = 10/16/2014    | DRAWN - JAA       | REVISED - |
|                           | DATE - 10/16/2014 | REVISED - |

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

**CAST IN PLACE CULVERT DETAILS**  
**4'x2' BOX CULVERT - STA. 60+40.51 CEMETERY RD.**

SHEET NO. 2 OF 2 SHEETS

|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101-2RS-1 | JERSEY | 438                | 280       |
| ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |



Signed: *[Signature]*  
 Date: 8/7/2014  
 License Expires: 11/30/2014

**INDEX OF SHEETS**

1. General Plan and Elevation
2. Cast In Place Culvert Details

**GENERAL NOTES**

Precast alternate is not allowed.

**DESIGN STRESSES**

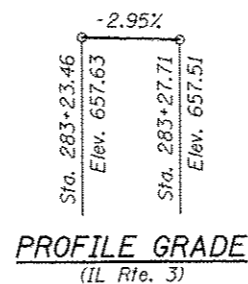
**FIELD UNITS**

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

**LOADING HL-93**

**TOTAL BILL OF MATERIAL**

| ITEM                   | UNIT    | TOTAL |
|------------------------|---------|-------|
| Reinforcement Bars     | Pound   | 3,810 |
| Bar Splicers           | Each    | 21    |
| Concrete Box Culverts  | Cu. Yd. | 16.3  |
| Traversable Pipe Grate | Foot    | 18    |



**GENERAL PLAN & ELEVATION**  
**IL RTE. 3**  
**SECTION 101-2RS-1**  
**JERSEY COUNTY**  
**STATION 283+25**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION  
 4'x2' BOX CULVERT - STA. 283+25

SHEET NO. 1 OF 4 SHEETS

| F.A.S. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-----------------------------|-----------|--------|--------------------|-----------|
| *                           | 101-2RS-1 | JERSEY | 438                | 281       |
| * 749/752                   |           |        | CONTRACT NO. 76789 |           |
| [ILLINOIS] FED. AID PROJECT |           |        |                    |           |

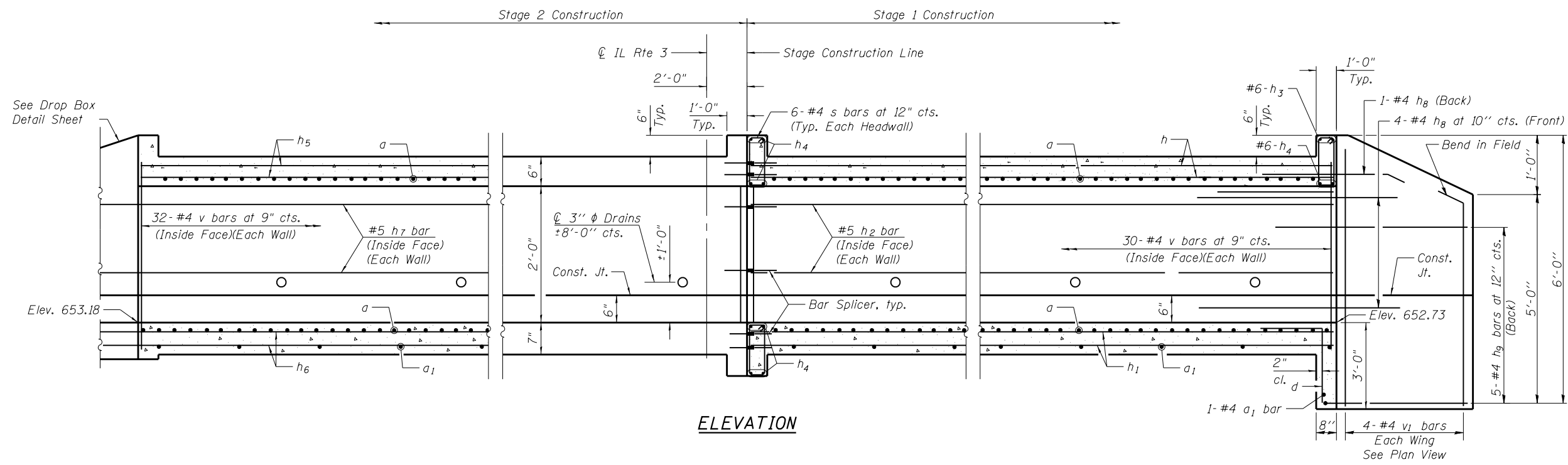
**EFK Moen, LLC**  
 Civil Engineering Design  
 303 Fountain Parkway, Suite 240  
 Fairview Heights, IL 62208  
 Phone 618-206-4250

|                           |                 |           |
|---------------------------|-----------------|-----------|
| USER NAME = cd1           | DESIGNED - CMC  | REVISED - |
| PLOT SCALE = 0.1667' / 1" | CHECKED - CTW   | REVISED - |
| PLOT DATE = 8/7/2014      | DRAWN - JAA     | REVISED - |
|                           | DATE - 8/7/2014 | REVISED - |

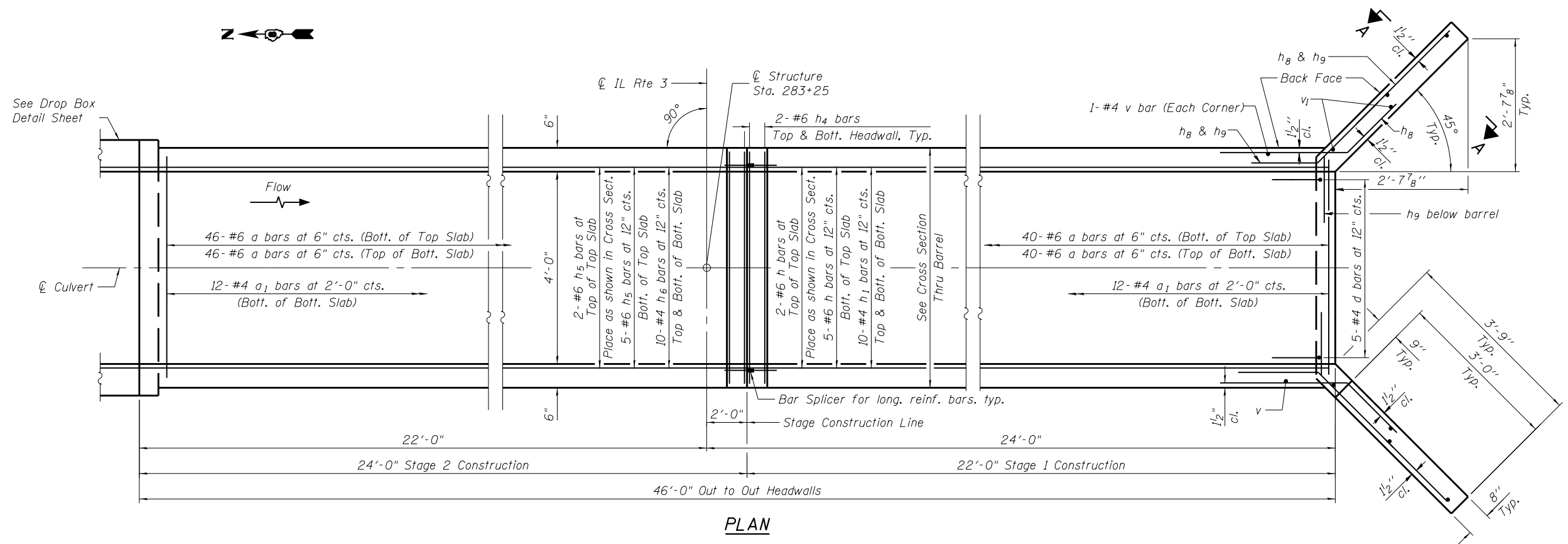
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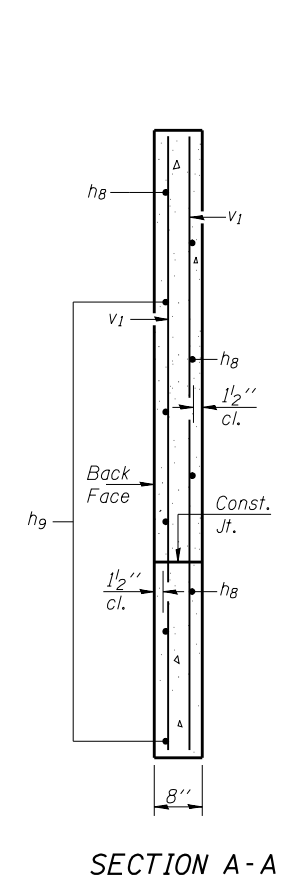
**ELEVATION**



**PLAN**

**NOTES**

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.  
 For Bill of Material and reinforcing details, see Sheet 3 of 4.  
 For Section Thru Barrel, see Sheet 3 of 4.  
 For Bar Splicer details, see Sheet 4 of 4.  
 See Sheet 3 of 4 for dimensions, details and reinforcing of drop structure.



**SECTION A-A**

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 Civil Engineering Design  
 303 Fountains Parkway, Suite 240  
 Fairview Heights, IL 62208  
 Phone 618-206-4250

|                           |                   |           |
|---------------------------|-------------------|-----------|
| USER NAME = cdl           | DESIGNED - CMC    | REVISED - |
| PLOT SCALE = 0.1667' / 1" | CHECKED - CTW     | REVISED - |
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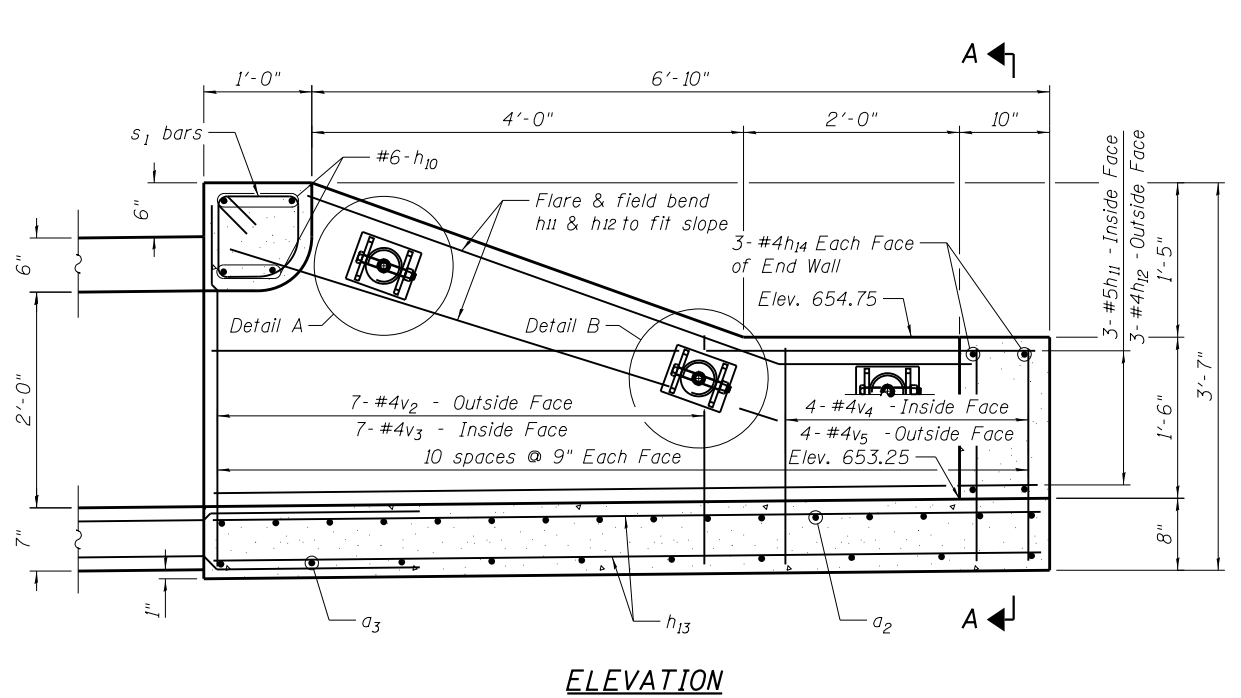
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CAST IN PLACE CULVERT DETAILS**  
**4'x2' BOX CULVERT - STA. 283 + 25**

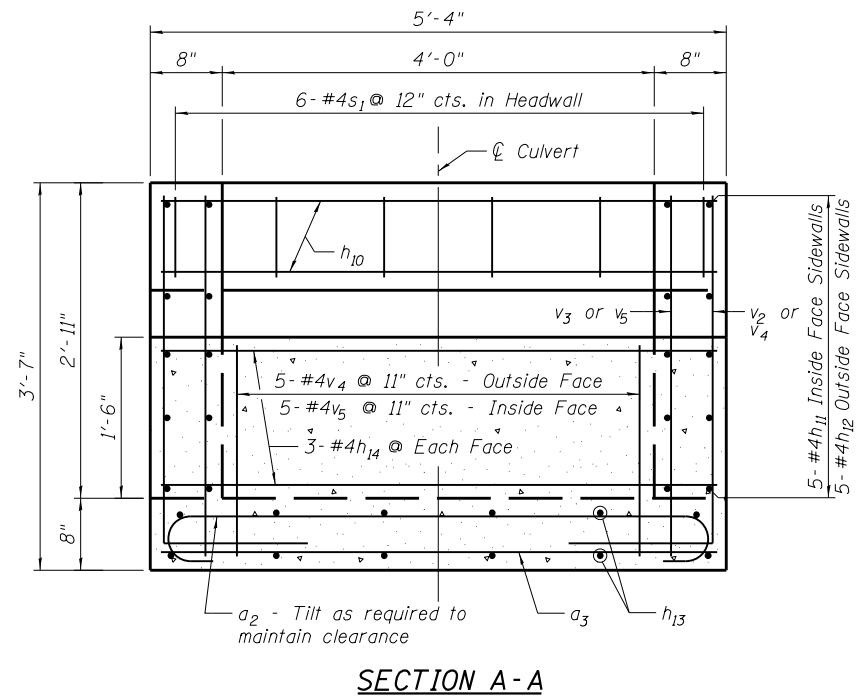
SHEET NO. 2 OF 4 SHEETS

|                           |           |        |                    |           |
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| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101-2RS-1 | JERSEY | 438                | 282       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

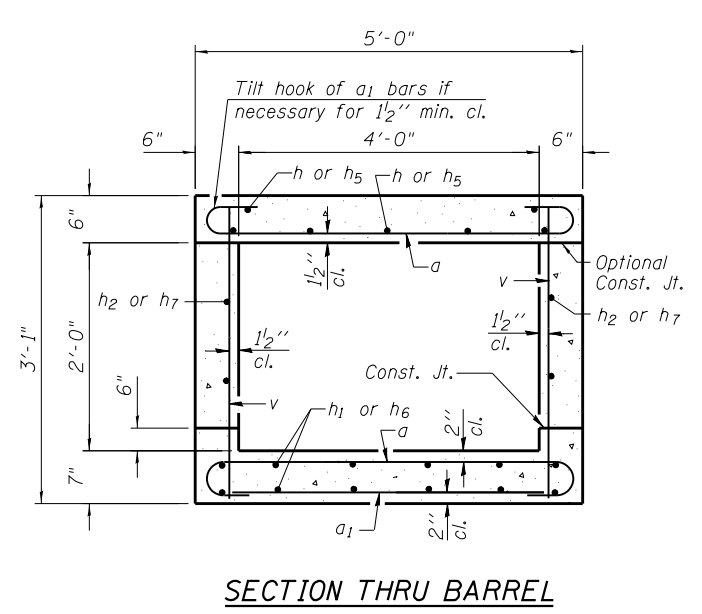
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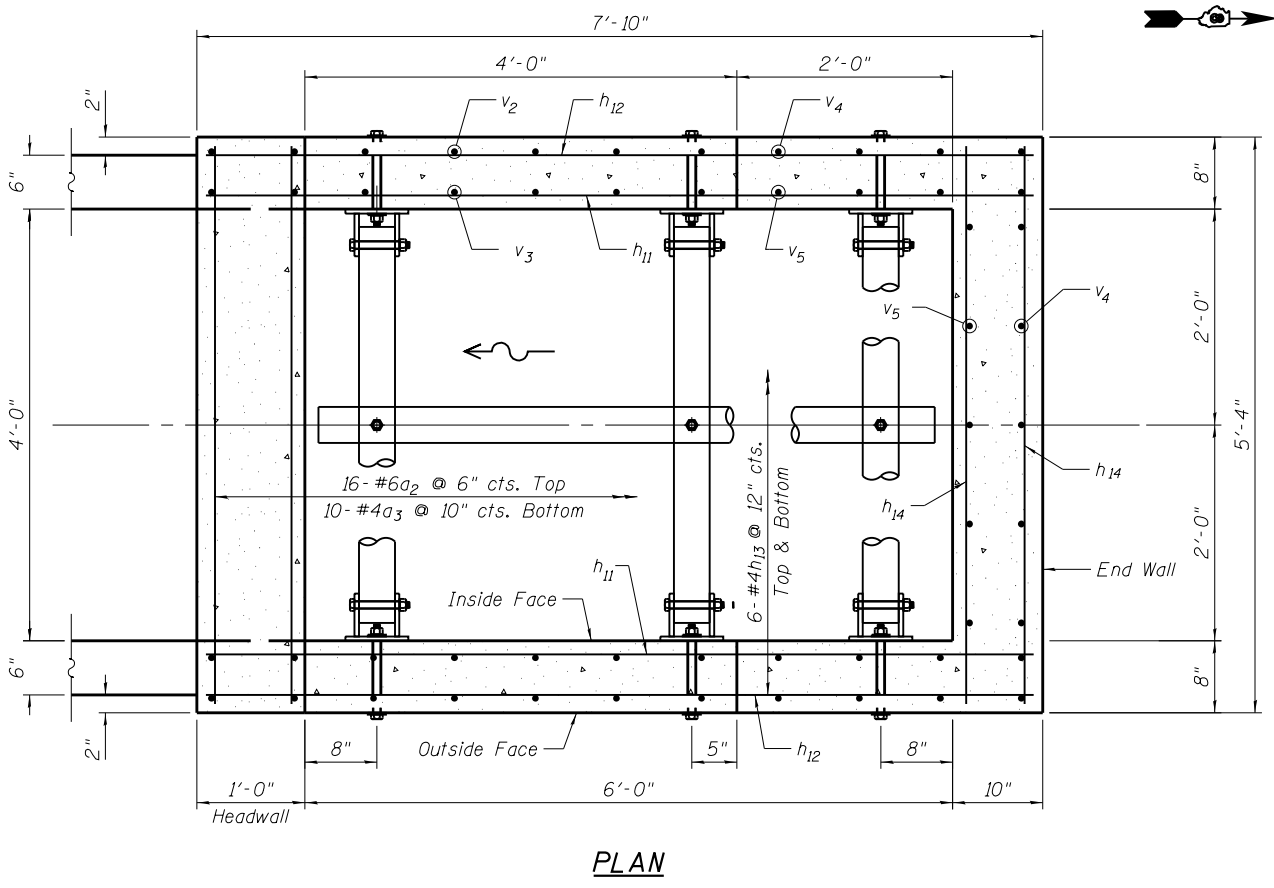
ELEVATION



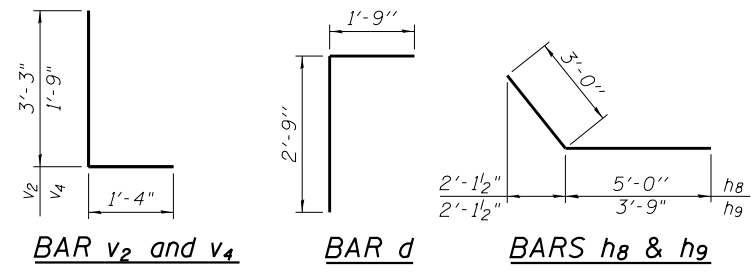
SECTION A-A



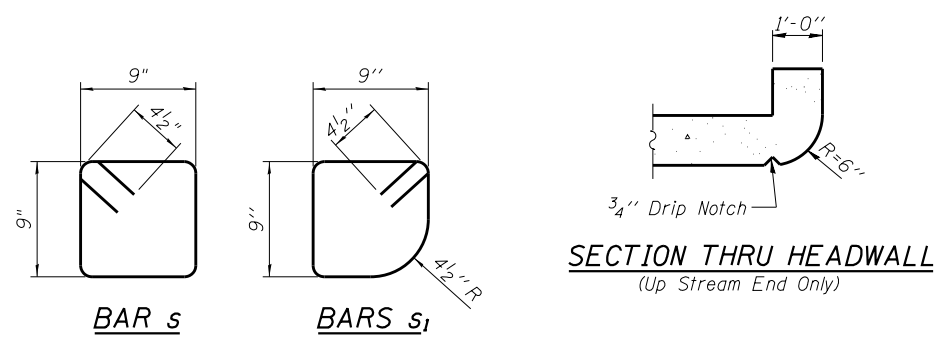
SECTION THRU BARREL



PLAN

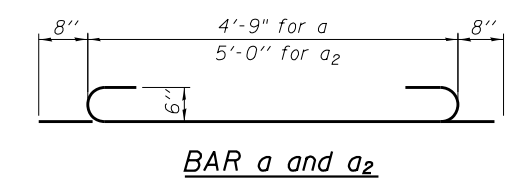


BAR v<sub>2</sub> and v<sub>4</sub>    BAR d    BARS h<sub>8</sub> & h<sub>9</sub>



BAR s    BARS s<sub>1</sub>

SECTION THRU HEADWALL  
(Up Stream End Only)



BAR a and a<sub>2</sub>

NOTES

For Traversable Pipe Gate notes and details, see Sheet 4 of 4.

BILL OF MATERIAL

| Bar                   | No.     | Size  | Length  | Shape |
|-----------------------|---------|-------|---------|-------|
| a                     | 172     | #6    | 6'-0"   | U     |
| a <sub>1</sub>        | 26      | #4    | 4'-8"   | U     |
| a <sub>2</sub>        | 16      | #6    | 6'-4"   | U     |
| a <sub>3</sub>        | 10      | #4    | 5'-0"   | U     |
| d                     | 5       | #4    | 4'-6"   | L     |
| h                     | 7       | #6    | 21'-9"  | —     |
| h <sub>1</sub>        | 10      | #4    | 21'-9"  | —     |
| h <sub>2</sub>        | 4       | #5    | 21'-9"  | —     |
| h <sub>3</sub>        | 2       | #4    | 3'-11"  | —     |
| h <sub>4</sub>        | 18      | #6    | 4'-9"   | —     |
| h <sub>5</sub>        | 7       | #6    | 23'-9"  | —     |
| h <sub>6</sub>        | 10      | #4    | 26'-4"  | —     |
| h <sub>7</sub>        | 4       | #5    | 26'-11" | —     |
| h <sub>8</sub>        | 10      | #4    | 8'-0"   | —     |
| h <sub>9</sub>        | 10      | #4    | 6'-9"   | —     |
| h <sub>10</sub>       | 4       | #6    | 5'-1"   | —     |
| h <sub>11</sub>       | 10      | #5    | 10'-8"  | —     |
| h <sub>12</sub>       | 10      | #4    | 7'-6"   | —     |
| h <sub>13</sub>       | 12      | #4    | 7'-6"   | —     |
| h <sub>14</sub>       | 6       | #4    | 5'-1"   | —     |
| s                     | 30      | #4    | 3'-9"   | U     |
| s <sub>1</sub>        | 6       | #4    | 4'-0"   | U     |
| v                     | 128     | #4    | 2'-9"   | —     |
| v <sub>1</sub>        | 8       | #4    | 5'-8"   | —     |
| v <sub>2</sub>        | 14      | #4    | 4'-7"   | L     |
| v <sub>3</sub>        | 14      | #4    | 3'-3"   | —     |
| v <sub>4</sub>        | 13      | #4    | 3'-1"   | L     |
| v <sub>5</sub>        | 13      | #4    | 1'-9"   | —     |
| Reinforcement Bars    | Pound   | 3,810 |         |       |
| Bar Splicers          | Each    | 21    |         |       |
| Concrete Box Culverts | Cu. Yd. | 16.3  |         |       |
| Traversable Pipe Gate | Foot    | 18    |         |       |

**EFK Moen, LLC**  
Civil Engineering Design  
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Fairview Heights, IL 62208  
Phone 618-206-4250

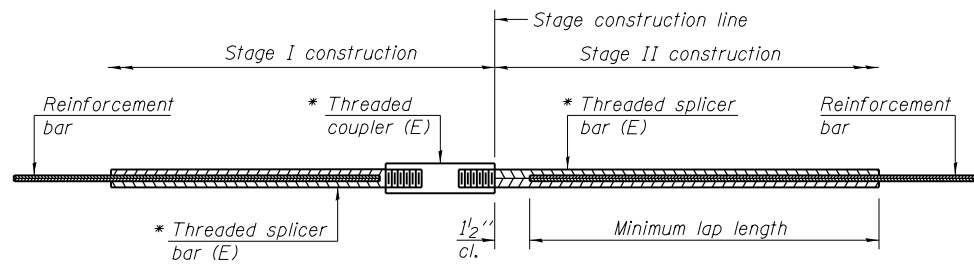
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| PLOT DATE = 8/7/2014     | DRAWN - JAA     | REVISED - |
|                          | DATE - 8/7/2014 | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DROP BOX DETAILS  
4'x2' BOX CULVERT - STA. 283+25  
SHEET NO. 3 OF 4 SHEETS

|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101-2RS-1 | JERSEY | 438                | 283       |
| ILLINOIS FED. AID PROJECT |           |        | CONTRACT NO. 76789 |           |

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**STANDARD BAR SPLICER ASSEMBLY**

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

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

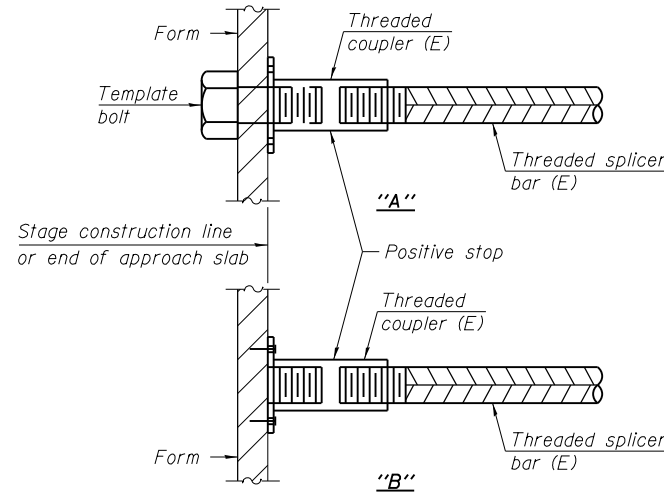
Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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

| Location    | Bar size | No. assemblies required | Table for minimum lap length |
|-------------|----------|-------------------------|------------------------------|
| Top Slab    | #6       | 7                       | 1                            |
| Bottom Slab | #4       | 10                      | 1                            |
| Walls       | #5       | 4                       | 2                            |

**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.

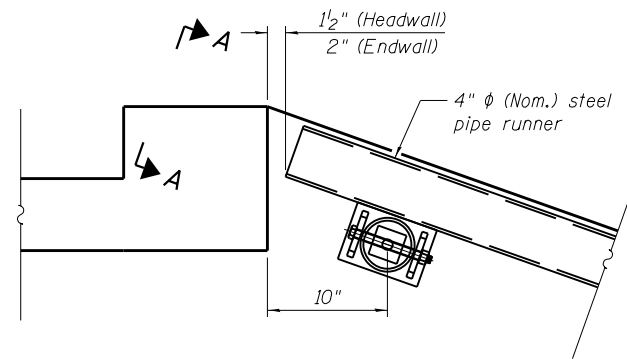


**INSTALLATION AND SETTING METHODS**

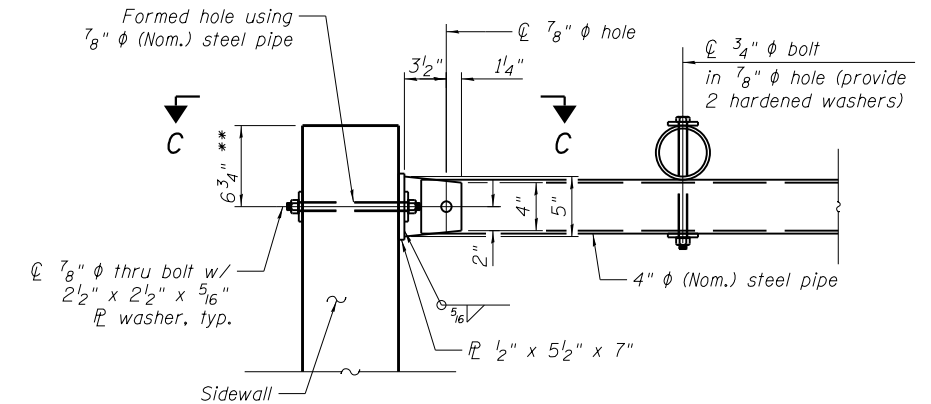
- "A" : Set bar splicer assembly by means of a template bolt.
- "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
- (E) : Indicates epoxy coating.

**GENERAL NOTES**

- Length and number of steel pipes shall be determined by the Contractor except as shown. All steel pipes shall be standard weight (Sch. 40) unless otherwise noted.
- All components of the Steel Pipe Grate System shall be galvanized according to the requirements of AASHTO M 111 of M 232 as applicable.
- Fabrication of the Steel Pipe Grate System shall conform to the requirements in Section 505 of the Standard Specifications unless noted otherwise.
- Structural Steel shapes and plates shall conform to the requirements of Article 1006.04 of the Standard Specifications. Steel pipes shall conform to the requirements of ASTM A 53 (Type E or S), Grade B.
- Bolts and thru bolts shall conform to the requirements of Article 1006.08 of the Standard Specifications except threaded rods conforming to the requirements of ASTM F1554, Grade 105 may be used for the thru bolts.
- The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be 1 1/2" unless noted otherwise.
- Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench.
- All cost associated with fabricating, furnishing and installing the Traversable Pipe Grate System shall be included in the contract unit price for Traversable Pipe Grate.

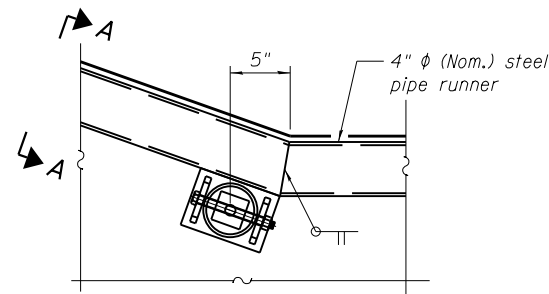


**DETAIL A**

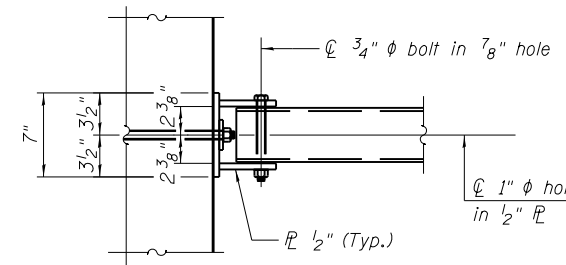


**SECTION A-A**

\*\* Measured perpendicular to top of sidewall. In addition, formed hole shall be located a minimum of 6" measure horizontally from any vertical joints necessary for construction of the culvert end section



**DETAIL B**



**VIEW C-C**

**BILL OF MATERIAL**

| ITEM         | UNIT | TOTAL |
|--------------|------|-------|
| Bar Splicers | Each | 21    |

**EFK•Moen, LLC**  
Civil Engineering Design  
303 Fountains Parkway, Suite 240  
Fairview Heights, IL 62208  
Phone 618-206-4250

|                             |                 |           |
|-----------------------------|-----------------|-----------|
| USER NAME = cdl             | DESIGNED - CMC  | REVISED - |
| PLOT SCALE = 0.2" = 1' - 0" | CHECKED - CTW   | REVISED - |
| PLOT DATE = 8/7/2014        | DRAWN - JAA     | REVISED - |
|                             | DATE - 8/7/2014 | REVISED - |

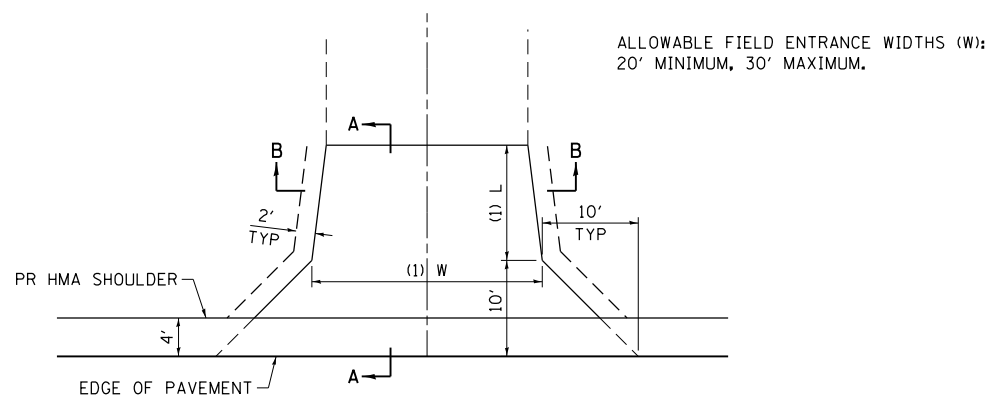
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY DETAILS**  
**4'x2' BOX CULVERT - STA. 283 + 25**

SHEET NO. 4 OF 4 SHEETS

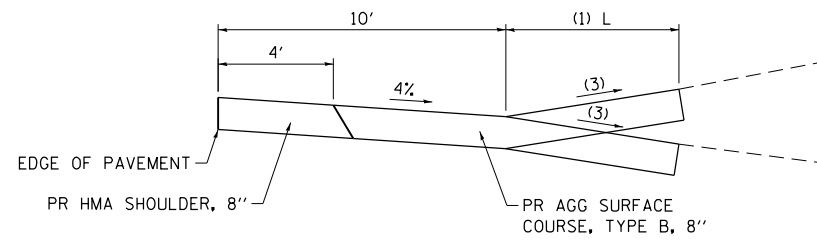
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|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101-2RS-1 | JERSEY | 438                | 284       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

**FIELD ENTRANCE DETAIL**

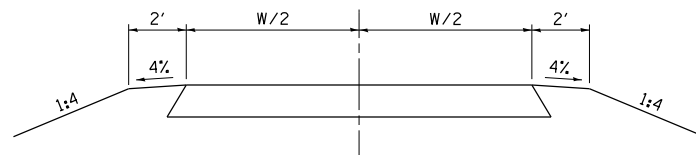


ALLOWABLE FIELD ENTRANCE WIDTHS (W):  
20' MINIMUM, 30' MAXIMUM.

**PLAN**

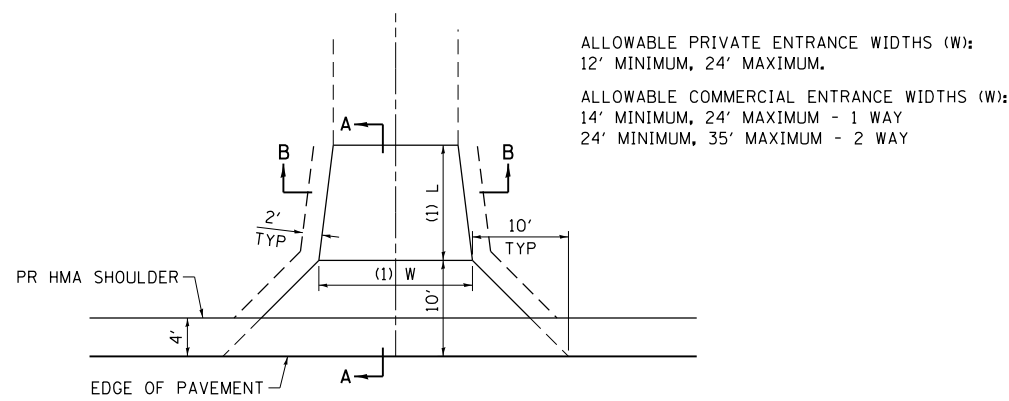


**SECTION A-A**  
(NOT TO SCALE)



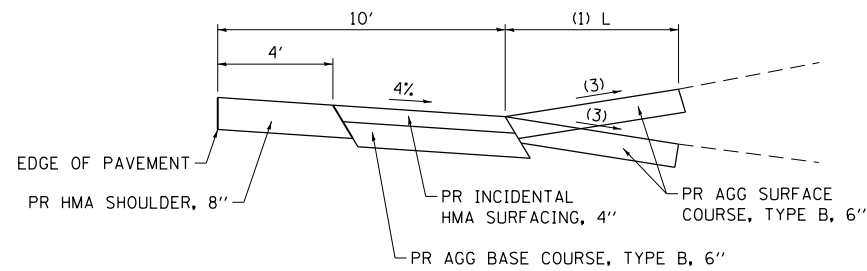
**SECTION B-B**  
(NOT TO SCALE)

**AGGREGATE PRIVATE/COMMERCIAL ENTRANCE DETAIL**

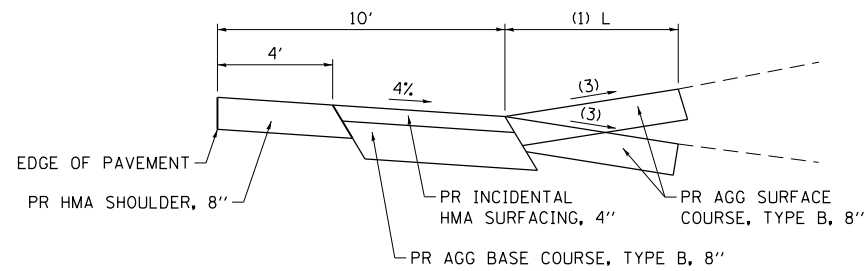


ALLOWABLE PRIVATE ENTRANCE WIDTHS (W):  
12' MINIMUM, 24' MAXIMUM.  
ALLOWABLE COMMERCIAL ENTRANCE WIDTHS (W):  
14' MINIMUM, 24' MAXIMUM - 1 WAY  
24' MINIMUM, 35' MAXIMUM - 2 WAY

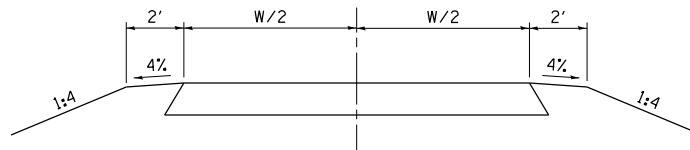
**PLAN**



**SECTION A-A PRIVATE ENTRANCE**  
(NOT TO SCALE)

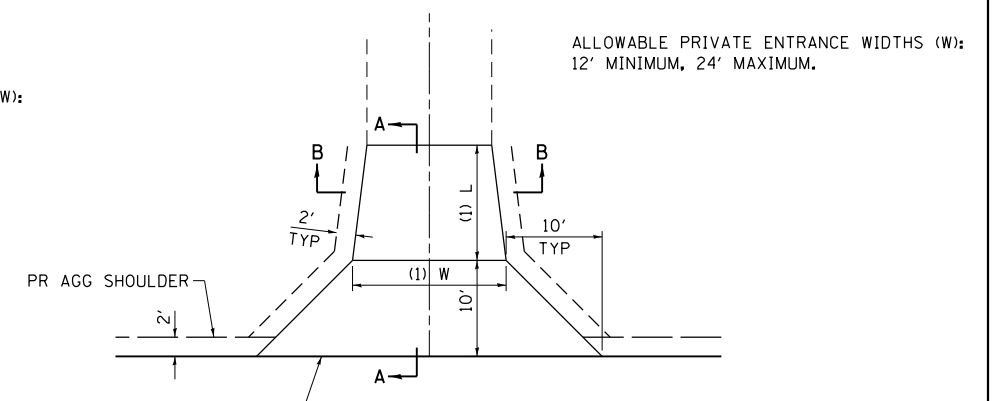


**SECTION A-A COMMERCIAL ENTRANCE**  
(NOT TO SCALE)



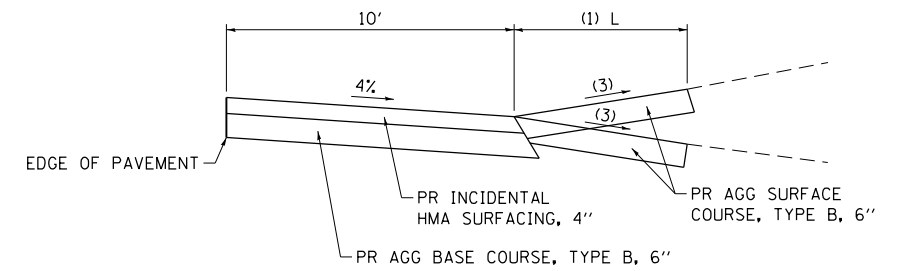
**SECTION B-B**  
(NOT TO SCALE)

**AGGREGATE PRIVATE ENTRANCE DETAIL OFF SIDE ROADS**

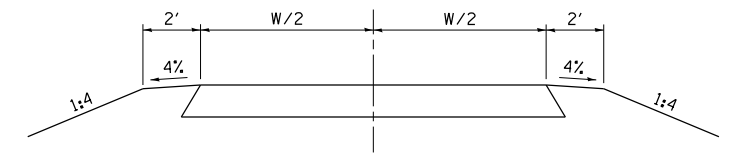


ALLOWABLE PRIVATE ENTRANCE WIDTHS (W):  
12' MINIMUM, 24' MAXIMUM.

**PLAN**



**SECTION A-A PRIVATE ENTRANCE**  
(NOT TO SCALE)



**SECTION B-B**  
(NOT TO SCALE)

**NOTES:**

- (1) SEE ENTRANCE SCHEDULE FOR W AND L DIMENSIONS
- (2) RADIUS VARIES SEE PLAN & PROFILE SHEETS
- (3) SEE CROSS SECTIONS FOR SLOPE

FILE NAME = S:\Projects\085-022B-VHY IL 3\_Gravel\asn\lgn\CADD\_Sheets\085022B-VHY-01-ent-deta-1.dgn



USER NAME = l\_jackson  
MODEL NAME = DETAIL 1  
PLOT SCALE = 20.0000' / in.  
PLOT DATE = 8/11/2014

DESIGNED - ACM  
DRAWN - EDW  
CHECKED - LWJ  
DATE - 8-11-14

REVISED -  
REVISED -  
REVISED -  
REVISED -

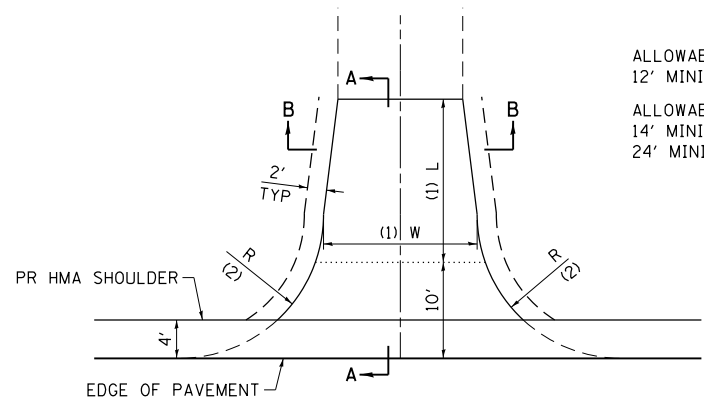
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**AGGREGATE & FIELD ENTRANCE  
DETAILS**

SCALE: SHEET 1 OF 9 SHEETS

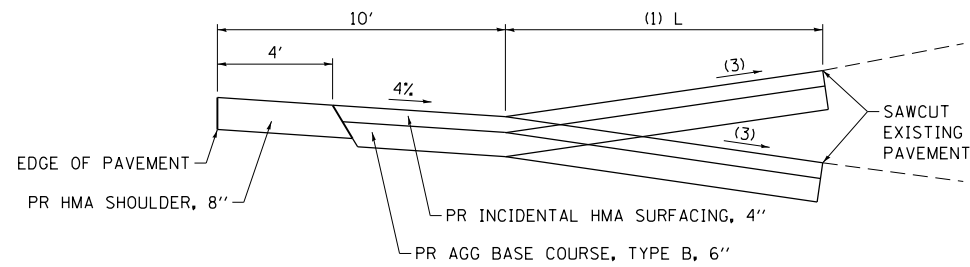
|                           |           |        |                           |           |
|---------------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
| •                         | 101-2RS-1 | JERSEY | 438                       | 285       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |

**BITUMINOUS PRIVATE/COMMERCIAL  
ENTRANCE DETAIL**

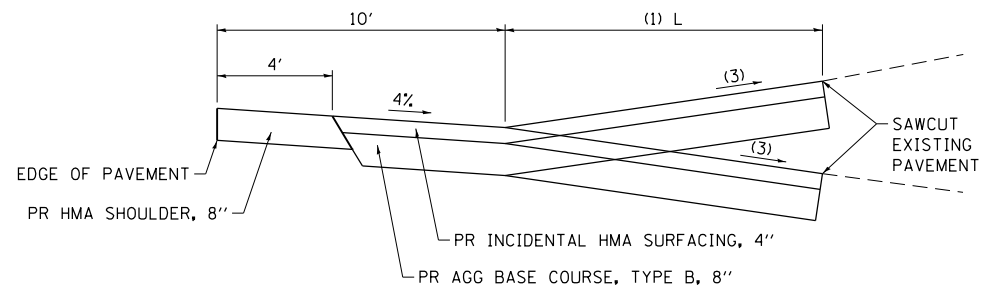


**PLAN**

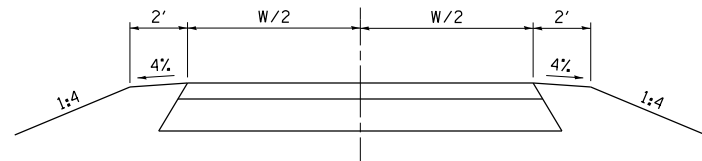
ALLOWABLE PRIVATE ENTRANCE WIDTHS (W):  
12' MINIMUM, 24' MAXIMUM.  
ALLOWABLE COMMERCIAL ENTRANCE WIDTHS (W):  
14' MINIMUM, 24' MAXIMUM - 1 WAY  
24' MINIMUM, 35' MAXIMUM - 2 WAY



**SECTION A-A PRIVATE ENTRANCE  
(NOT TO SCALE)**

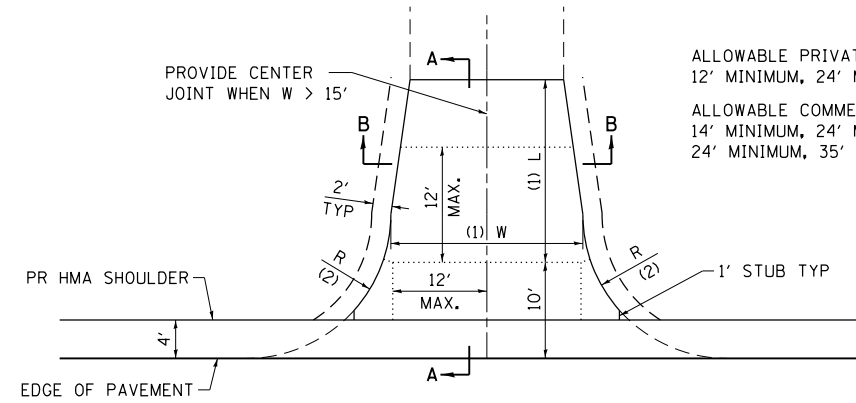


**SECTION A-A COMMERCIAL ENTRANCE  
(NOT TO SCALE)**



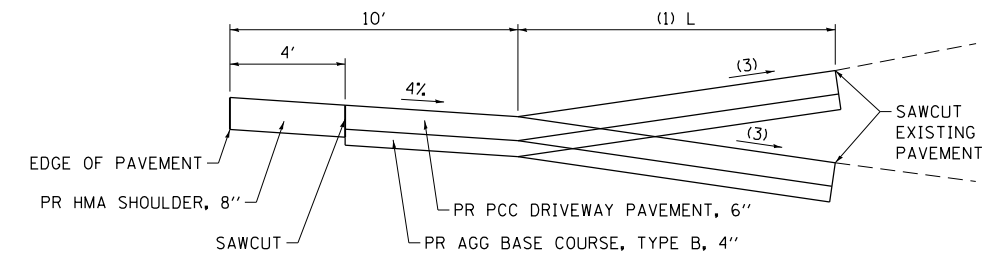
**SECTION B-B  
(NOT TO SCALE)**

**CONCRETE PRIVATE/COMMERCIAL  
ENTRANCE DETAIL**

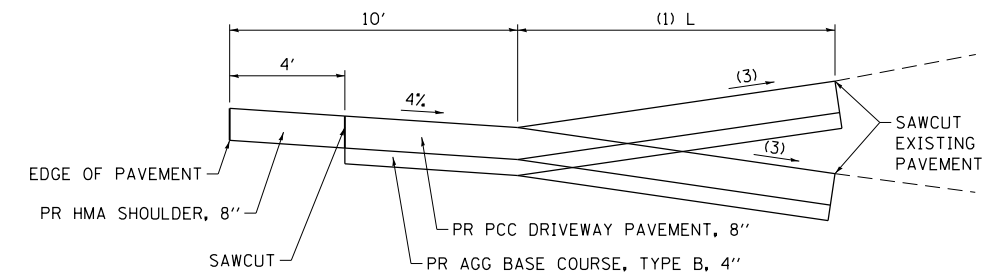


**PLAN**

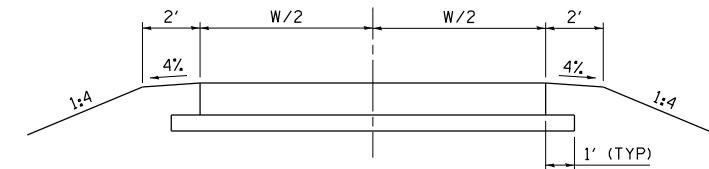
ALLOWABLE PRIVATE ENTRANCE WIDTHS (W):  
12' MINIMUM, 24' MAXIMUM.  
ALLOWABLE COMMERCIAL ENTRANCE WIDTHS (W):  
14' MINIMUM, 24' MAXIMUM - 1 WAY  
24' MINIMUM, 35' MAXIMUM - 2 WAY



**SECTION A-A PRIVATE ENTRANCE  
(NOT TO SCALE)**



**SECTION A-A COMMERCIAL  
(NOT TO SCALE)**



**SECTION B-B  
(NOT TO SCALE)**

**NOTES:**

- (1) SEE ENTRANCE SCHEDULE FOR W AND L DIMENSIONS
- (2) RADIUS VARIES SEE PLAN & PROFILE SHEETS
- (3) SEE CROSS SECTIONS FOR SLOPE

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**HOT-MIX-ASPHALT & CONCRETE ENTRANCE  
DETAILS**

SCALE: SHEET 2 OF 9 SHEETS

|                           |           |        |                           |           |
|---------------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
| •                         | 101-2RS-1 | JERSEY | 438                       | 286       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |

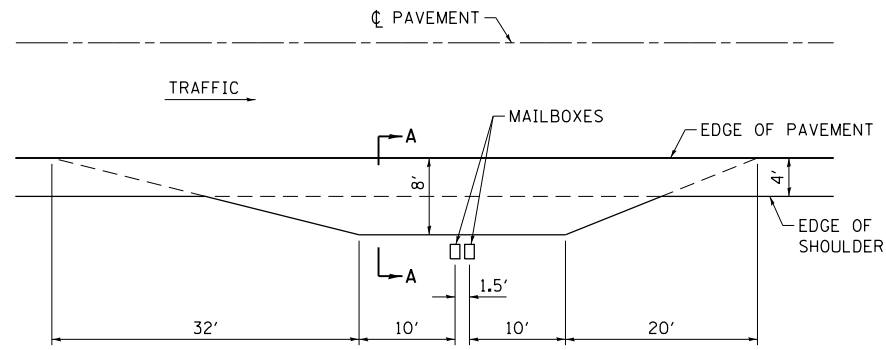
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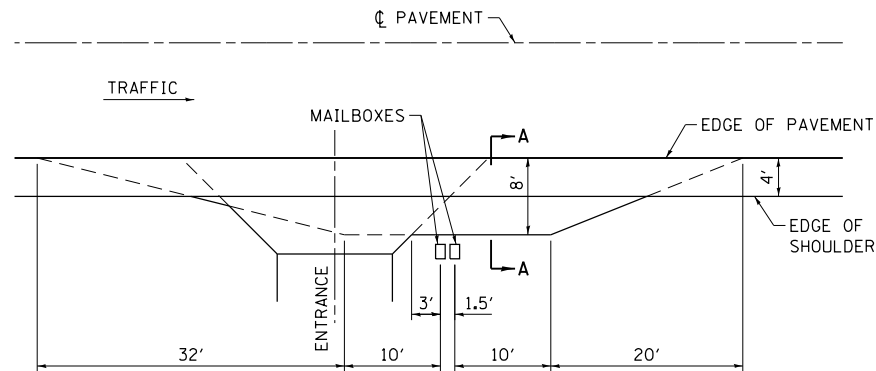
USER NAME = ljackson  
MODEL NAME = DETAIL 2  
PLOT SCALE = 20.0000' / in.  
PLOT DATE = 8/11/2014

DESIGNED - ACM  
DRAWN - EDW  
CHECKED - LWJ  
DATE - 8-11-14

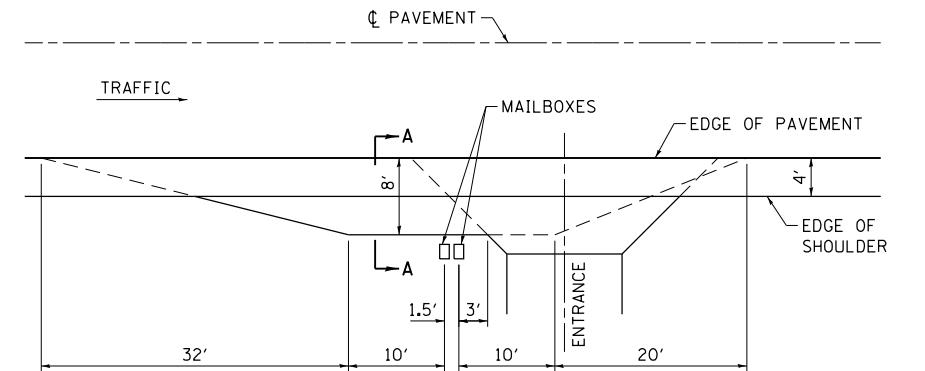
REVISED -  
REVISED -  
REVISED -  
REVISED -



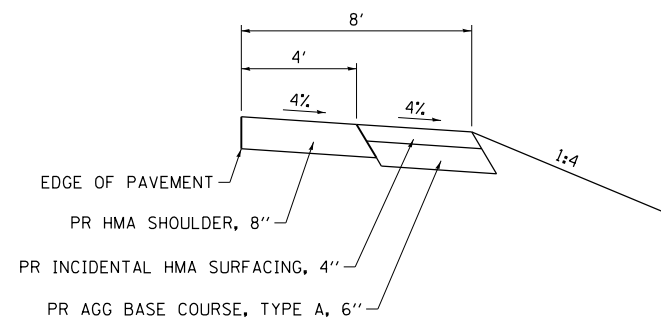
**MAILBOX NOT AT ENTRANCE**



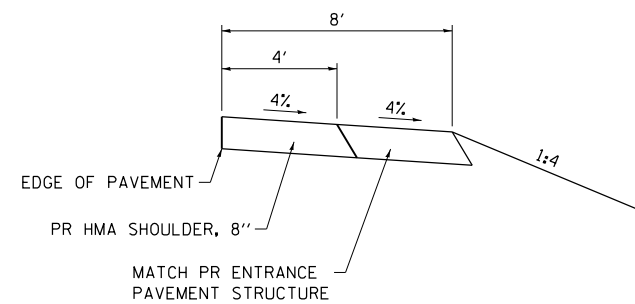
**MAILBOX ON FARSIDE OF ENTRANCE**



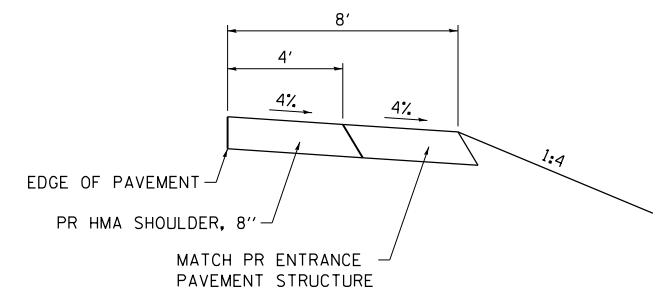
**MAILBOX ON NEAR SIDE OF ENTRANCE**



**SECTION A-A**  
(NOT TO SCALE)



**SECTION A-A**  
(NOT TO SCALE)



**SECTION A-A**  
(NOT TO SCALE)

**NOTE:**

FOR SINGLE MAILBOX OMIT SPACE BETWEEN MAILBOXES AS SHOWN ON DETAILS.

FILE NAME = S:\Projects\08-0228-VH\IL\_3\_Cret\turn\lgm\CADD\_Sheets\0876789-sh-t-details.dgn



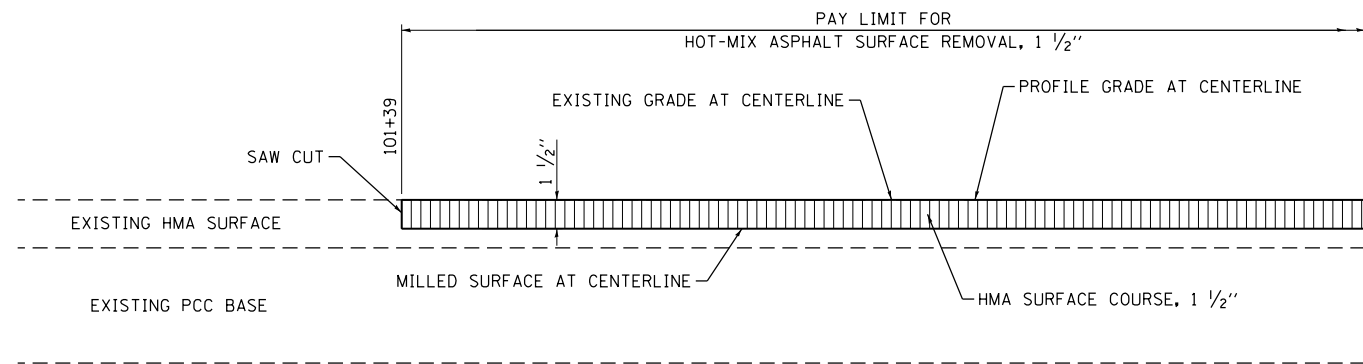
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|-----------------------------|----------------|-----------|
| USER NAME = l_jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 3       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

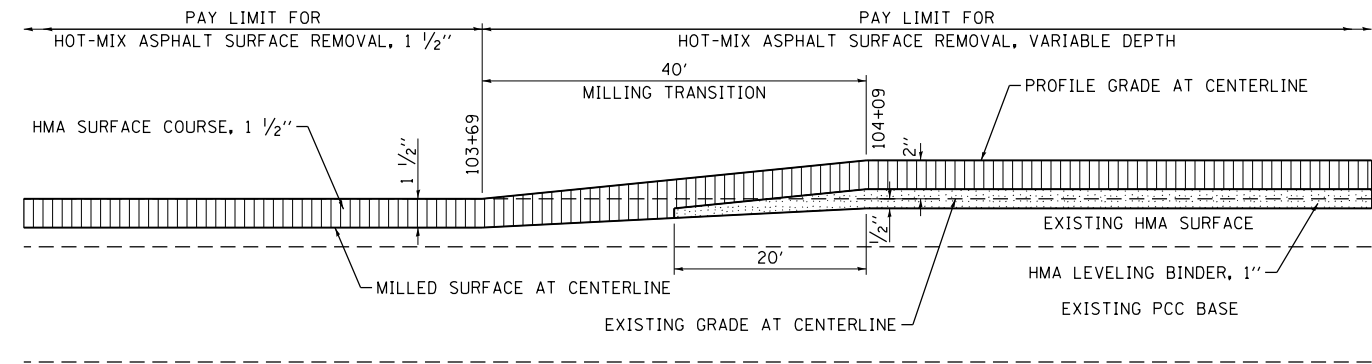
**MAILBOX TURNOUT  
DETAILS**

SCALE: SHEET 3 OF 9 SHEETS

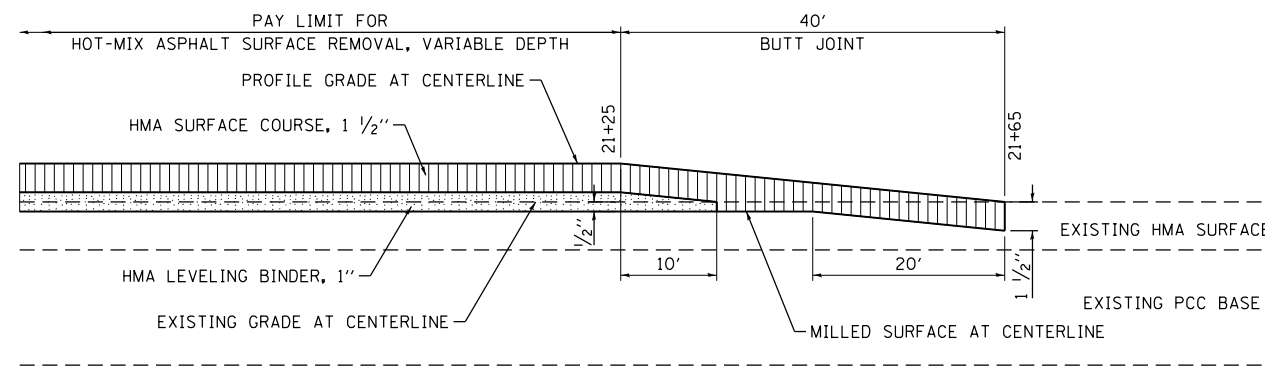
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|---------------------------|-----------|--------|---------------------------|-----------|
| •                         | 101-2RS-1 | JERSEY | 438                       | 287       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |



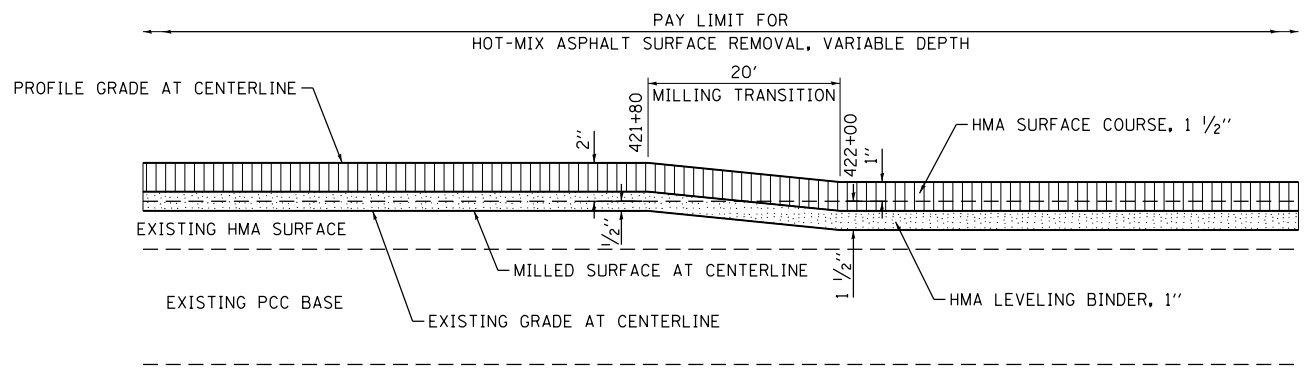
**MILLING DETAIL**  
STA 101+39.00 TO STA 103+69.00



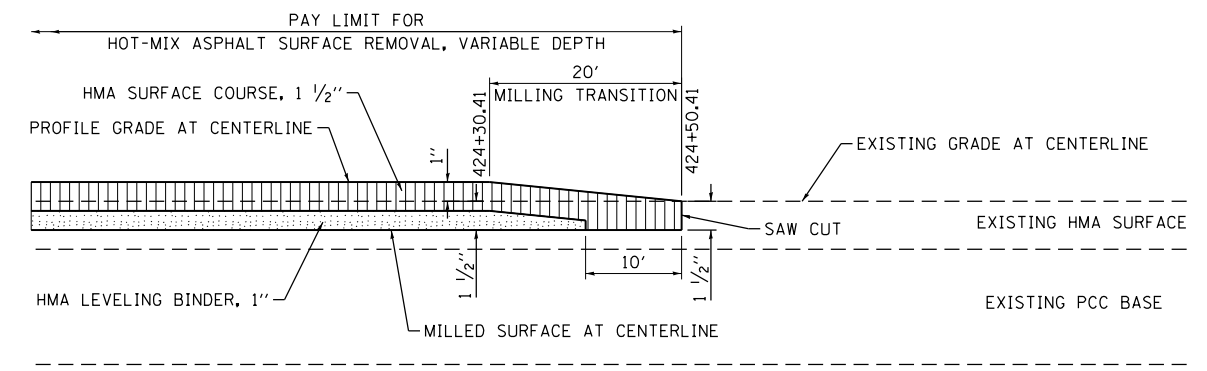
**MILLING TRANSITION DETAIL**  
STA 103+69.00 TO STA 104+09.00



**BUTT JOINT DETAIL**  
OTTERVILLE ROAD STA 21+25 TO STA 21+65



**MILLING TRANSITION DETAIL**  
STA 421+80.00 TO STA 422+00.00



**MILLING TRANSITION DETAIL**  
STA 424+30.41 TO STA 424+50.41

- HOT-MIX ASPHALT SURFACE COURSE
- HOT-MIX ASPHALT BINDER COURSE OR LEVEL BINDER

**NOTES:**

1. BUTT JOINTS AND TEMPORARY RAMPS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. BUTT JOINTS SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO THE PLACING OF THE PROPOSED HOT-MIX ASPHALT COURSES.
3. TAPER THE TEMPORARY RAMP AT A RATE OF 40:1.

FILE NAME = S:\Projects\089-082B-VHY IL 3 Cretan\Drawn\CADD\_Sheets\089082B-VHY-11-14-14.dwg



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = l_jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 4       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

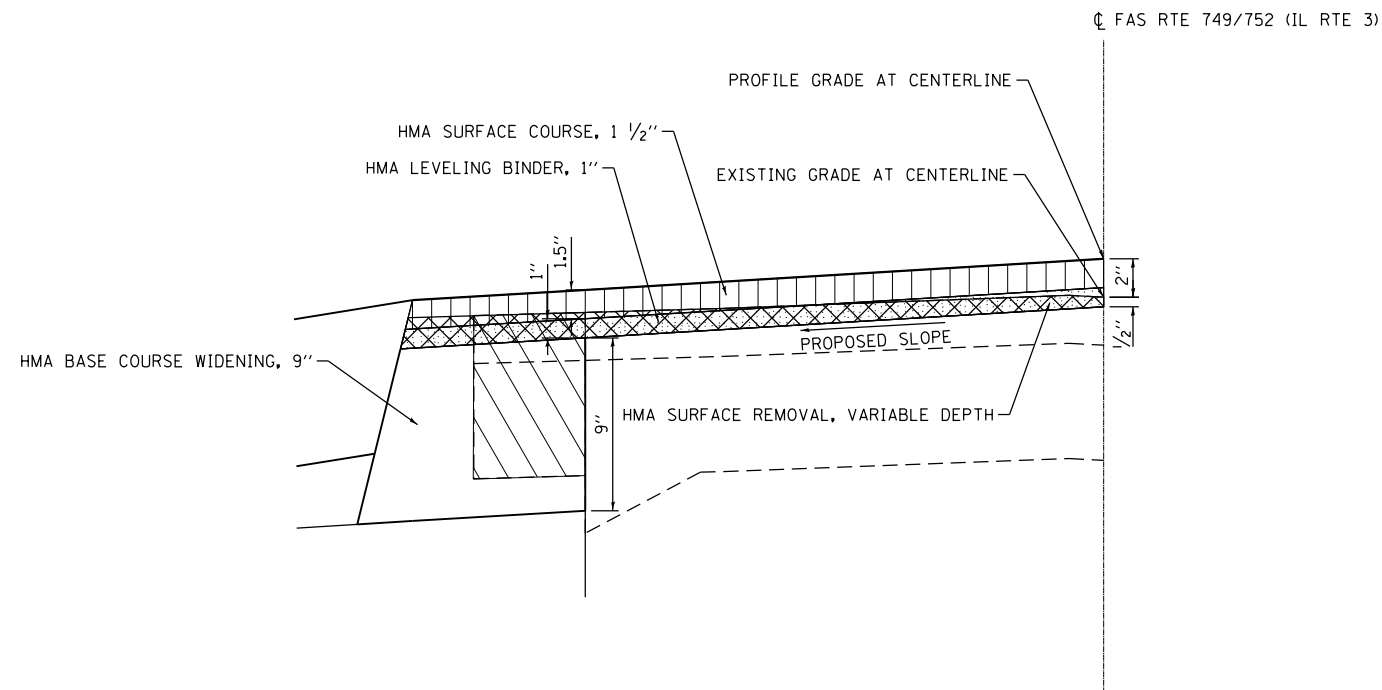
|                                                              |                     |
|--------------------------------------------------------------|---------------------|
| <b>ASPHALT MILLING TRANSITION AND BUTT JOINT<br/>DETAILS</b> |                     |
| SCALE:                                                       | SHEET 4 OF 9 SHEETS |

|                           |           |        |                           |           |
|---------------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
| •                         | 101-2RS-1 | JERSEY | 438                       | 288       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |

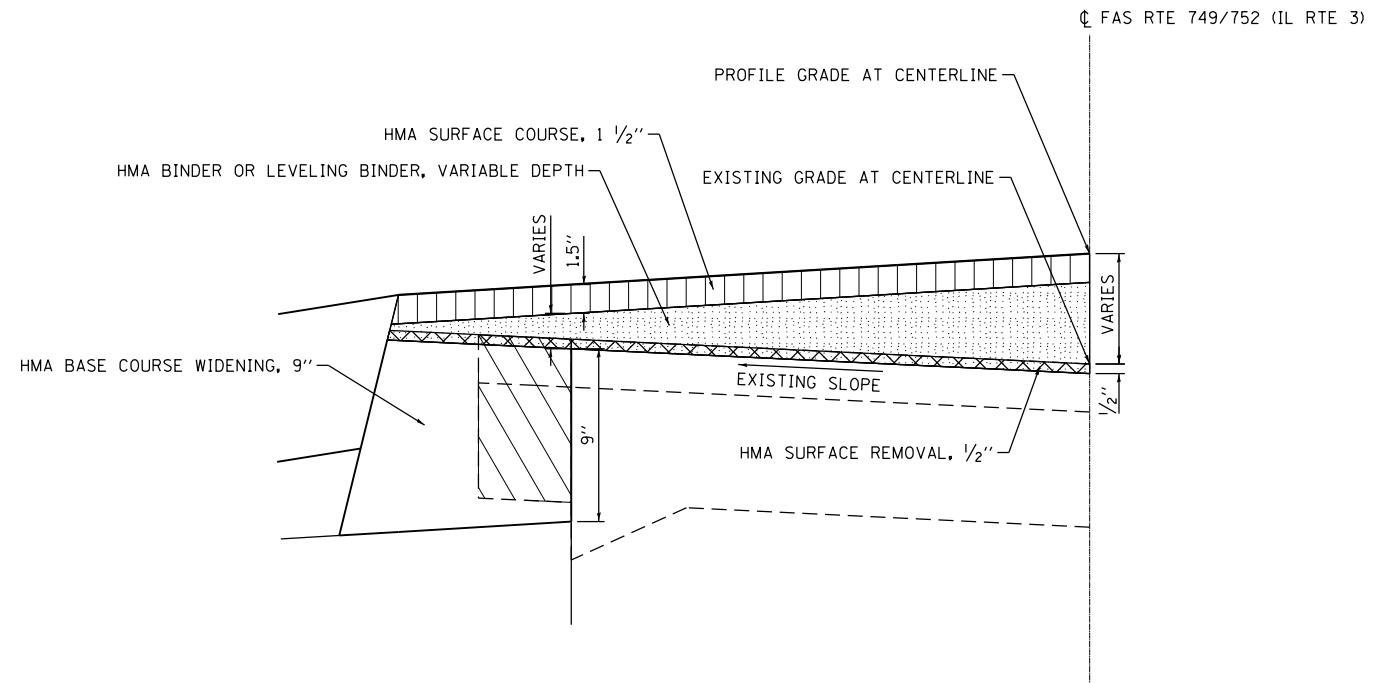


NOTES:

1. REFER TO THE ROAD PROFILE AND TYPICALS SECTIONS FOR MILLING THICKNESSES AT  $\phi$  AND LOCATIONS WHERE EACH OCCURS.
2. MILLING TO THE BOTTOM OF WHEEL RUTS SHALL NOT BE NECESSARY UNLESS REQUIRED TO OBTAIN SLOPE OR THE DESIGN DEPTH AT CENTERLINE.
3. NOMINAL MILLING AREAS SHALL BE PAID FOR UNDER THE FOLLOWING:  
 HOT-MIX ASPHALT SURFACE REMOVAL,  $1/2''$   
 HOT-MIX ASPHALT SURFACE REMOVAL,  $1 1/2''$
4. VARIABLE MILLING AREAS SHALL BE PAID FOR UNDER THE FOLLOWING:  
 HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH
5. THE TOTAL FINAL PAVEMENT THICKNESS IN THE BASE COURSE WIDENING AREAS SHALL BE AT LEAST  $11 1/2''$ . IF THE BASE COURSE WIDENING IS PLACED PRIOR TO MILLING THE EXISTING SURFACE, THE THICKNESS OF THE WIDENING SHALL BE ADJUSTED, AT NO ADDITIONAL COST TO THE CONTRACT, TO INSURE THAT THE REQUIRED TOTAL THICKNESS WILL BE PROVIDED.
6. THE QUANTITIES OF VARIOUS SURFACE REMOVALS ASSUMES THAT THE BASE COURSE WIDENING WILL BE IN PLACE PRIOR TO THE MILLING OPERATIONS AND WILL BE MILLED ALONG WITH THE EXISTING PAVEMENT.



**HOT-MIX ASPHALT SURFACE REMOVAL DETAIL (VARIABLE DEPTH)**



**HOT-MIX ASPHALT SURFACE REMOVAL DETAIL (NOMINAL DEPTH)**

- HOT-MIX ASPHALT SURFACE REMOVAL
- PAVEMENT REMOVAL
- HOT-MIX ASPHALT SURFACE COURSE
- HOT-MIX ASPHALT BINDER COURSE OR LEVEL BINDER

FILE NAME = S:\Projects\089-002B-VHY IL 3 Cref\asn\dgn\CADD\_Sheets\089752\89-sht-detail1.dgn



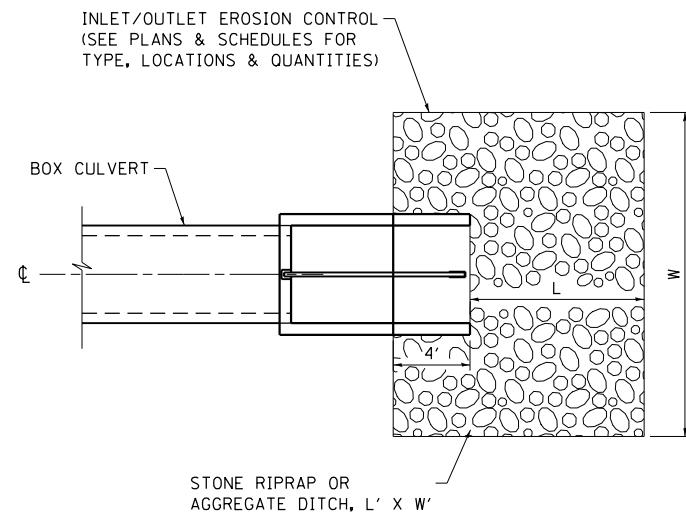
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|-----------------------------|----------------|-----------|
| USER NAME = l_jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 5       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

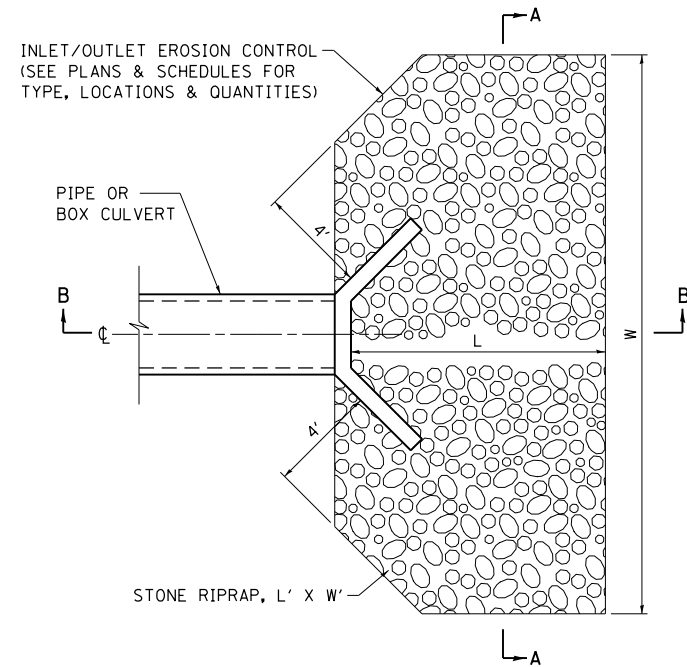
**HMA SURFACE REMOVAL  
DETAILS**

SCALE: SHEET 5 OF 9 SHEETS

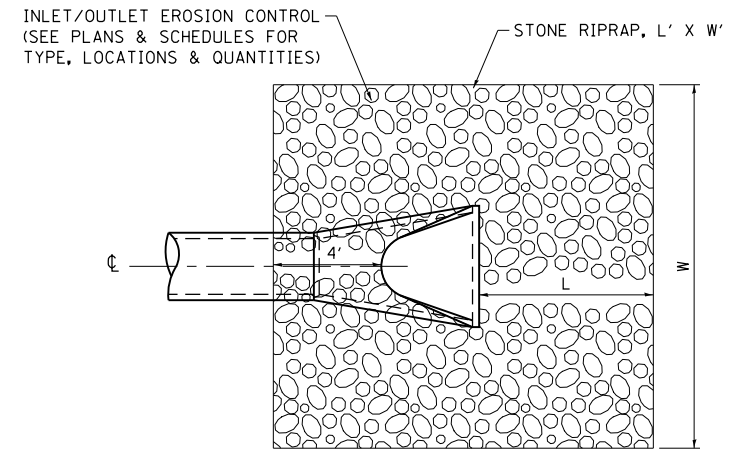
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|---------------------------|-----------|--------|---------------------------|-----------|
| •                         | 101-2RS-1 | JERSEY | 438                       | 289       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |



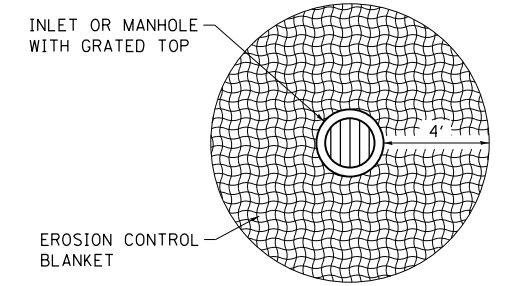
**CULVERT END SECTION**



**CULVERT HEADWALL**

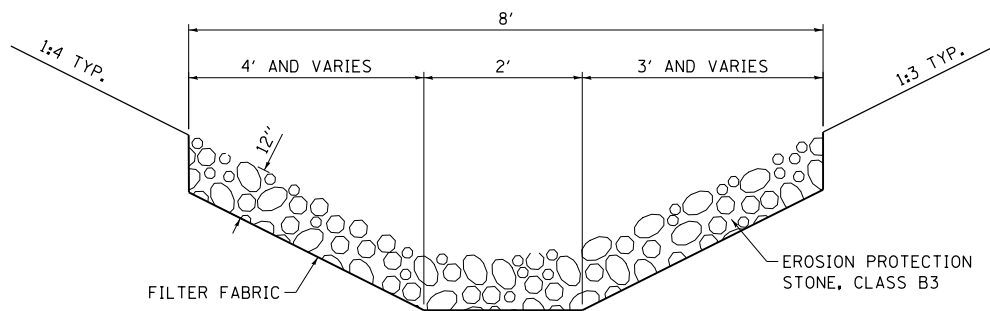


**FLARED END SECTION**

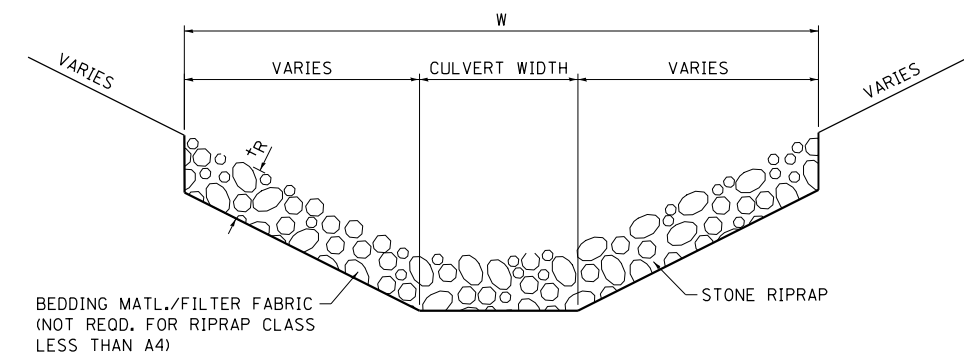


**AREA INLETS**

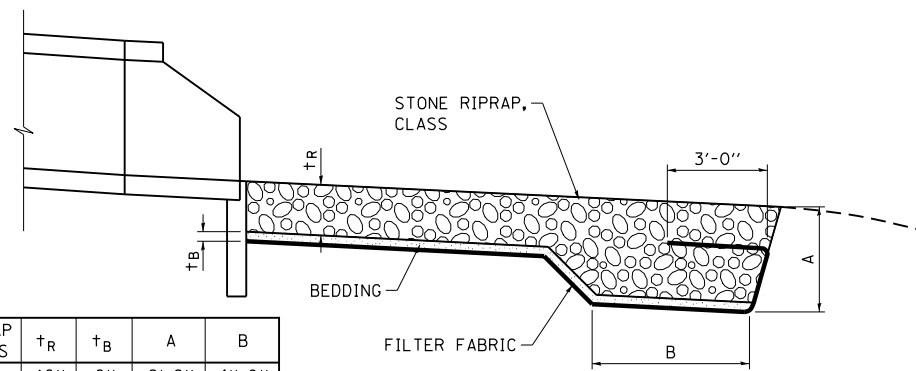
**PERMANENT EROSION CONTROL AT INLET/OUTLET STRUCTURES**



**AGGREGATE DITCH DETAIL**



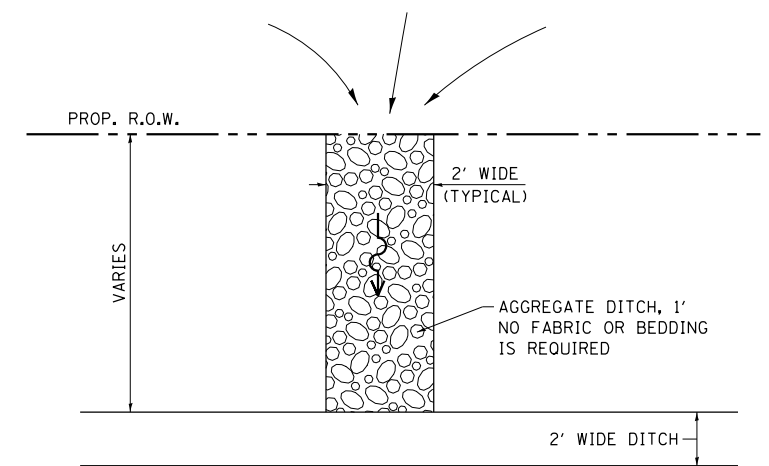
**RIPRAP DETAIL SECTION A-A**



**RIPRAP DETAIL SECTION B-B**

| RIPRAP CLASS | t <sub>R</sub> | t <sub>B</sub> | A     | B     |
|--------------|----------------|----------------|-------|-------|
| A4           | 16"            | 6"             | 2'-8" | 4'-0" |
| A5           | 22"            | 8"             | 3'-8" | 5'-6" |
| A6           | 26"            | 10"            | 4'-4" | 6'-6" |
| A7           | 30"            | 12"            | 5'-0" | 7'-6" |

NOTE: DETAIL SHALL BE MODIFIED TO AVOID UTILITY CONFLICTS, WHEN NECESSARY, AT THE DIRECTION OF THE ENGINEER.



**FIELD DRAINAGE OUTLET DETAIL**

NOTE: TO BE INSTALLED AT THE DIRECTION OF THE ENGINEER.

FILE NAME = S:\Projects\08-0228-VHY IL 3\_Gravel\cm\lgm\CADD\_Sheets\0876789-sh-erocn1.dgn



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = ljackson        | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 6       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

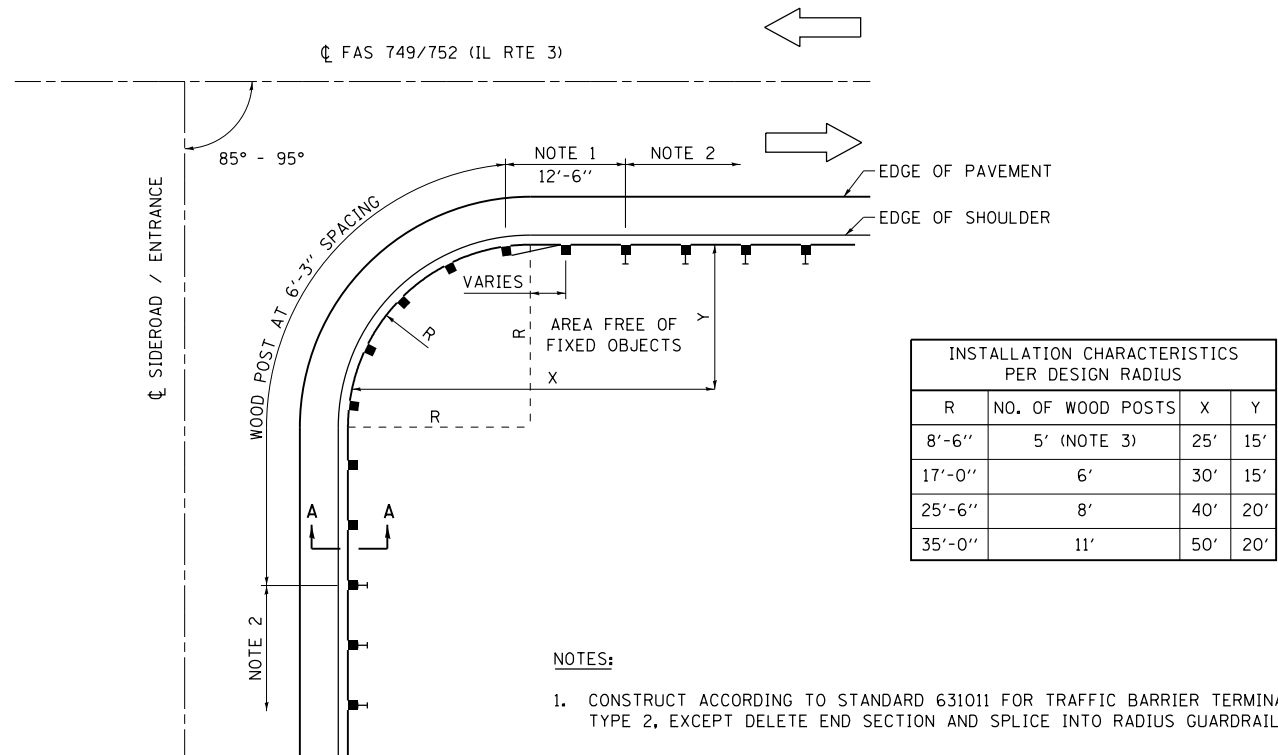
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PERMANENT EROSION CONTROL  
DETAILS**

SCALE: SHEET 6 OF 9 SHEETS

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|-------------|-----------|--------|---------------------------|-----------|
| •           | 101-2RS-1 | JERSEY | 438                       | 290       |
| • 749/752   |           |        | <b>CONTRACT NO. 76789</b> |           |

ILLINOIS FED. AID PROJECT



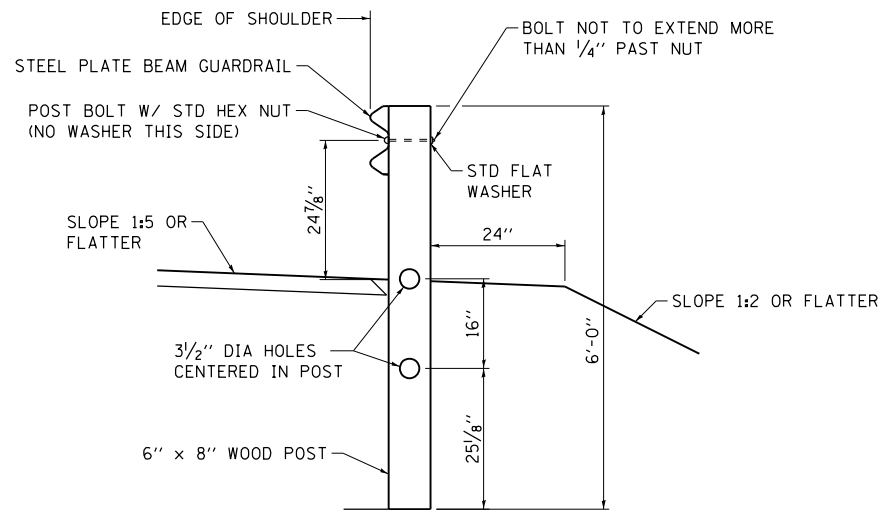
| INSTALLATION CHARACTERISTICS PER DESIGN RADIUS |                   |     |     |
|------------------------------------------------|-------------------|-----|-----|
| R                                              | NO. OF WOOD POSTS | X   | Y   |
| 8'-6"                                          | 5' (NOTE 3)       | 25' | 15' |
| 17'-0"                                         | 6'                | 30' | 15' |
| 25'-6"                                         | 8'                | 40' | 20' |
| 35'-0"                                         | 11'               | 50' | 20' |

**NOTES:**

1. CONSTRUCT ACCORDING TO STANDARD 631011 FOR TRAFFIC BARRIER TERMINAL TYPE 2, EXCEPT DELETE END SECTION AND SPLICE INTO RADIUS GUARDRAIL.
2. STEEL PLATE BEAM GUARDRAIL TYPE A, TYPE B OR TRAFFIC BARRIER TERMINAL AS SPECIFIED.
3. FOR THE 8'-6" RADIUS, THE RAIL IS NOT BOLTED TO THE POST LOCATED AT THE MIDPOINT OF THE CURVE.

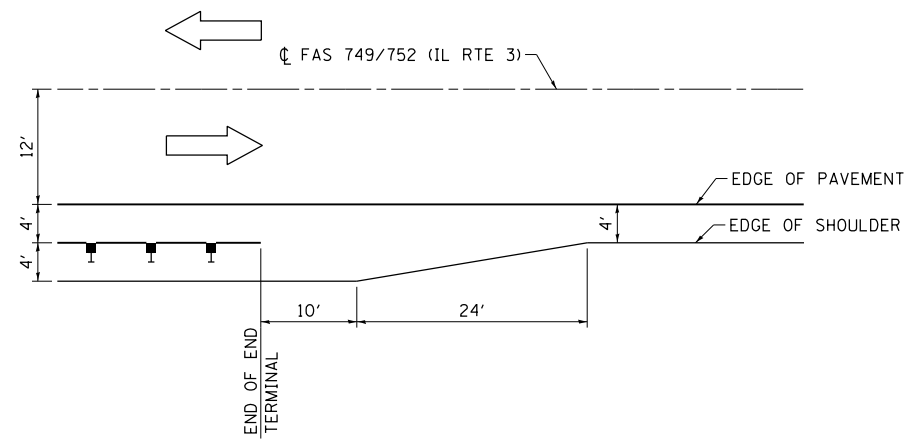
**PLAN VIEW SHORT RADIUS GUARDRAIL DETAIL**

(NOT TO SCALE)



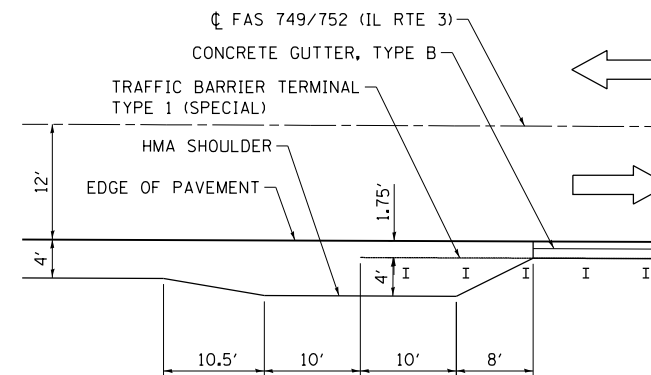
**SECTION A-A**

(NOT TO SCALE)



**SHOULDER TRANSITION AT GUARDRAIL END TERMINAL**

(NOT TO SCALE)



**SHOULDER TRANSITION AT GUARDRAIL END TERMINAL AND CONCRETE GUTTER**

(NOT TO SCALE)

FILE NAME = S:\Projects\089-002B-VHY IL 3\_Corridor\logn\CADD\_Sheets\089752\89-shr-detailed.dgn

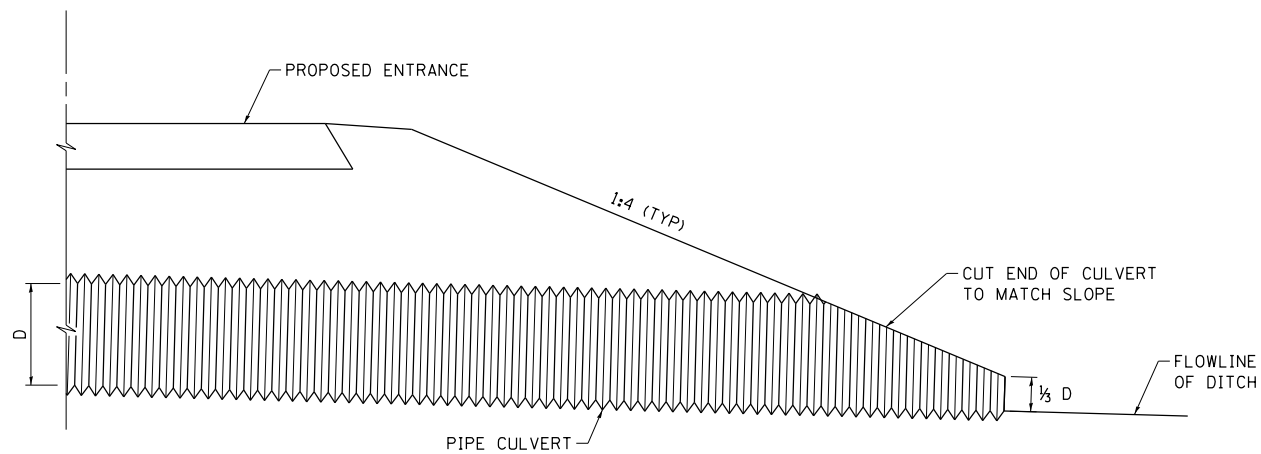


|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = ljackson        | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 7       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/22/2014       | DATE - 8-11-14 | REVISED - |

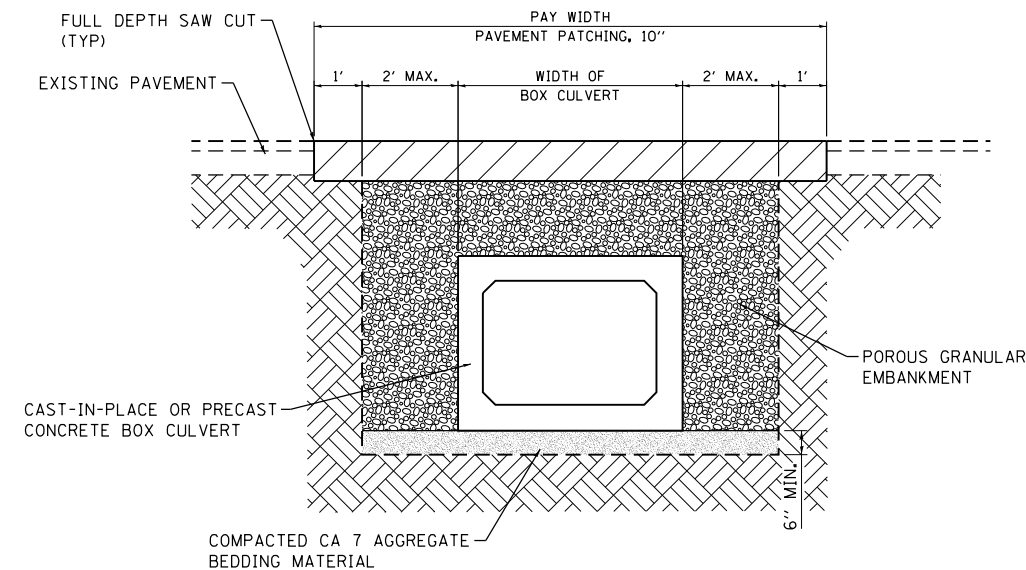
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

|                              |                     |
|------------------------------|---------------------|
| <b>GUARDRAIL<br/>DETAILS</b> |                     |
| SCALE:                       | SHEET 7 OF 9 SHEETS |

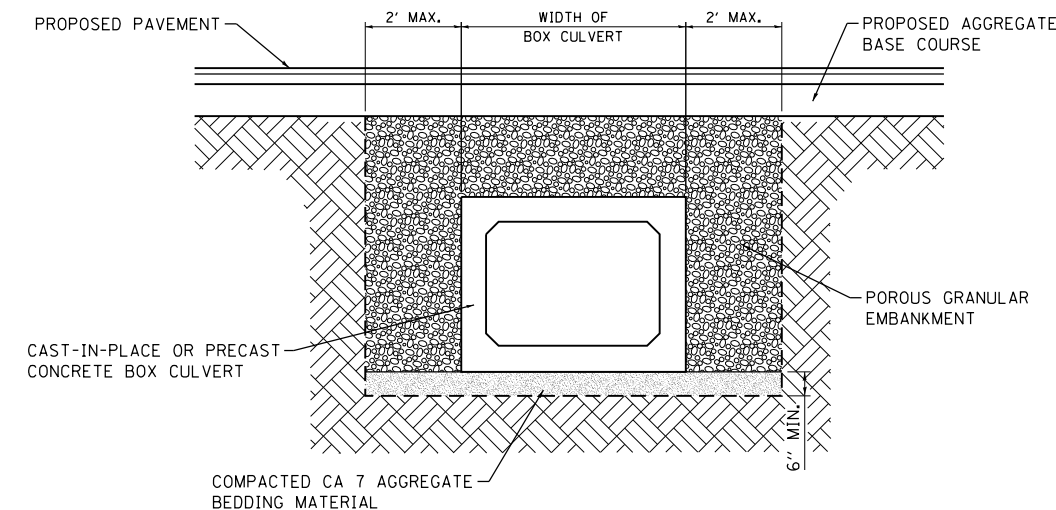
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|---------------------------|-----------|--------|---------------------------|-----------|
| • 749/752                 | 101-2RS-1 | JERSEY | 438                       | 291       |
| ILLINOIS FED. AID PROJECT |           |        | <b>CONTRACT NO. 76789</b> |           |



**PROPOSED PIPE CULVERT END TREATMENT DETAIL**  
(NOT TO SCALE)



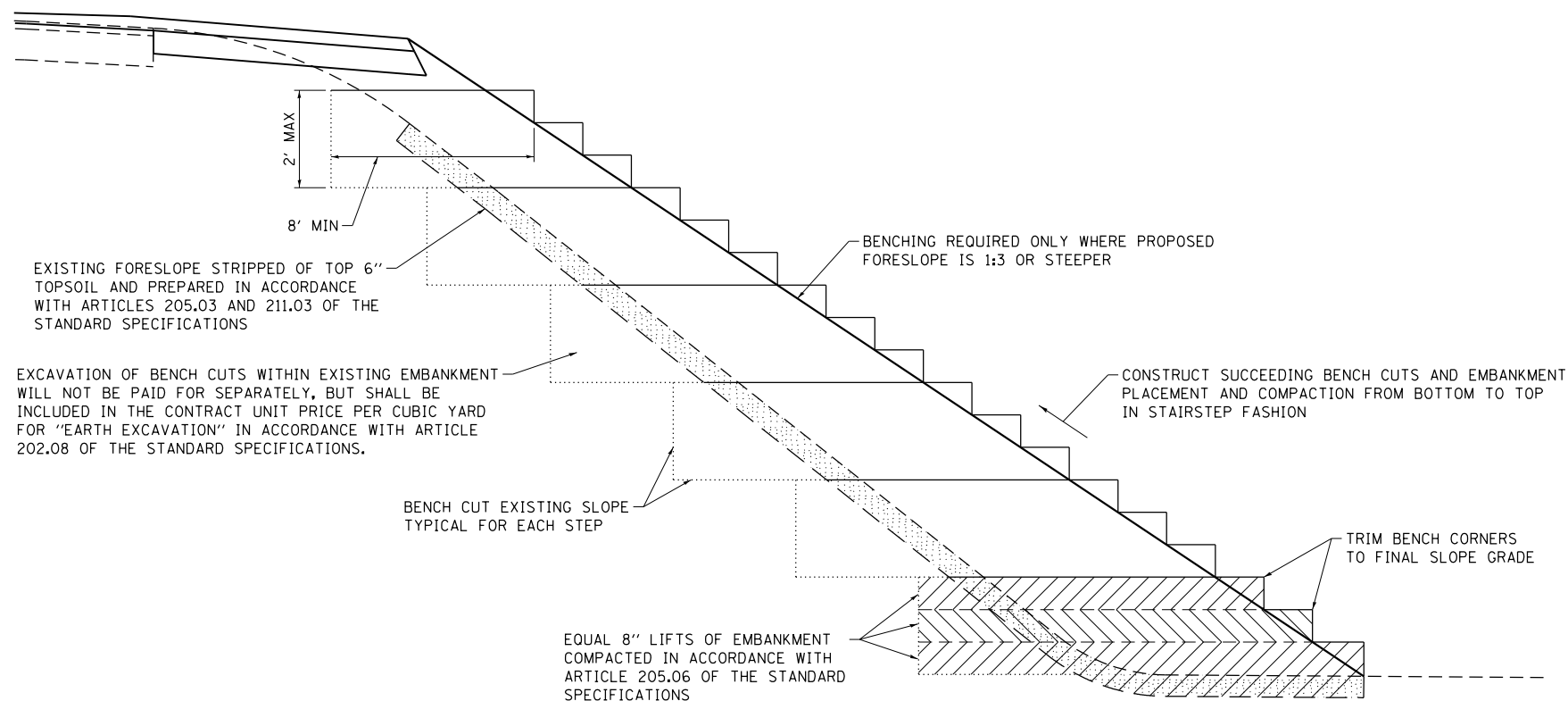
**CULVERT REPLACEMENT DETAIL W/PAVEMENT PATCHING**



**CULVERT REPLACEMENT DETAIL W/PAVEMENT RECONSTRUCTION**

**NOTES:**

1. STRUCTURE EXCAVATION, BEDDING, AND BACKFILL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR CONCRETE BOX CULVERTS OR PRECAST CONCRETE BOX CULVERTS OF THE SIZED SPECIFIED.
2. LIMITS OF POROUS GRANULAR EMBANKMENT TO EXTEND 2 FEET OUTSIDE THE EDGE OF PAVEMENT OR SHOULDER.



**TYPICAL BENCHING DETAIL FOR EMBANKMENTS**

FILE NAME = S:\Projects\08-0228-VHY IL 3\_Greentown\dm\CA00\_Sheets\0876789-sh-t-detail1.dgn



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = l_jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = DETAIL 8       | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

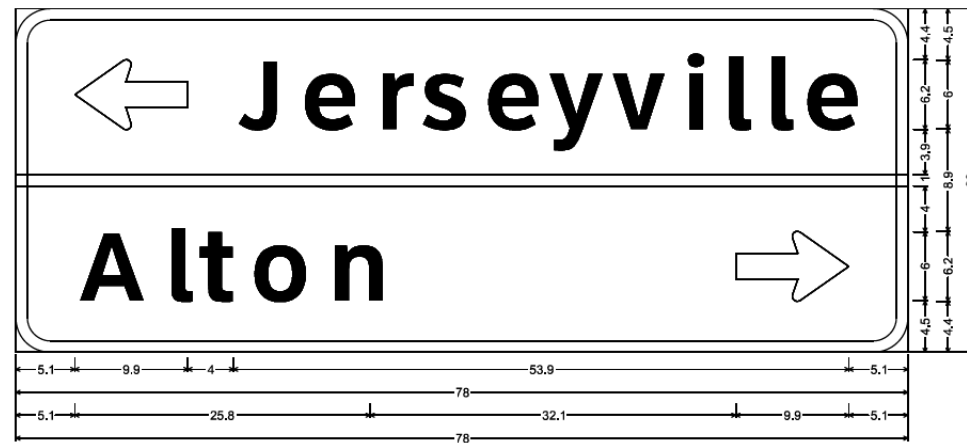
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EMBANKMENT AND CULVERT  
DETAILS**

SCALE: SHEET 8 OF 9 SHEETS

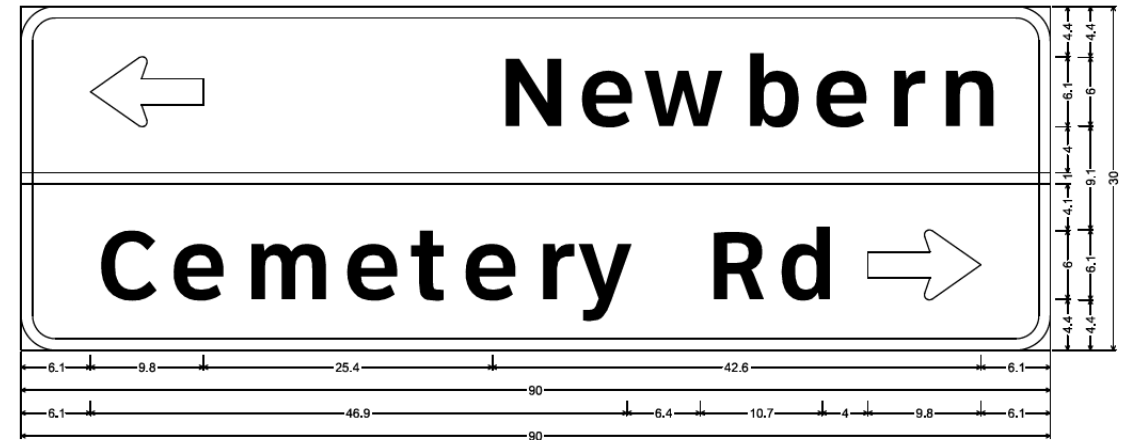
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|---------------------------|-----------|--------|--------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| •                         | 101-2RS-1 | JERSEY | 438                | 292       |
| • 749/752                 |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

STA 421+12 RT



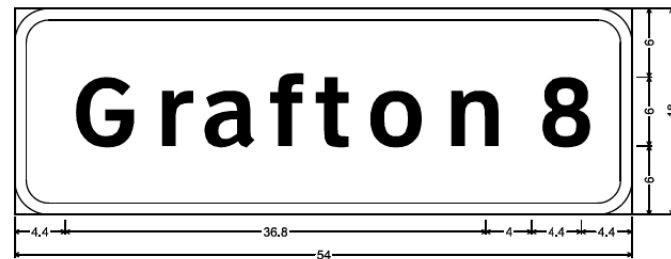
3.0" Radius, 1.0" Border, White on Green;  
Standard Arrow Custom 9.9" X 6.1" 180°; [Jerseyville] ClearviewHwy-5-W; [Alton] ClearviewHwy-5-W; Standard Arrow Custom 9.9" X 6.1" 0°;

STA 353+23 RT



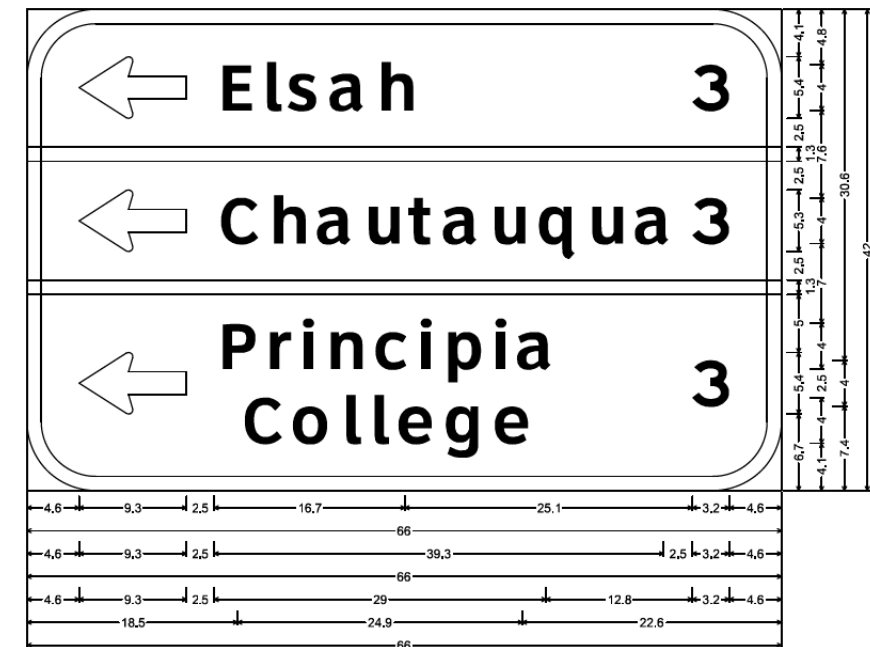
3.0" Radius, 1.0" Border, White on Green;  
Standard Arrow Custom 9.9" X 6.1" 180°; [Newbern] ClearviewHwy-5-W; [Cemetery Rd] ClearviewHwy-5-W; Standard Arrow Custom 9.9" X 6.1" 0°;

STA 420+20 LT



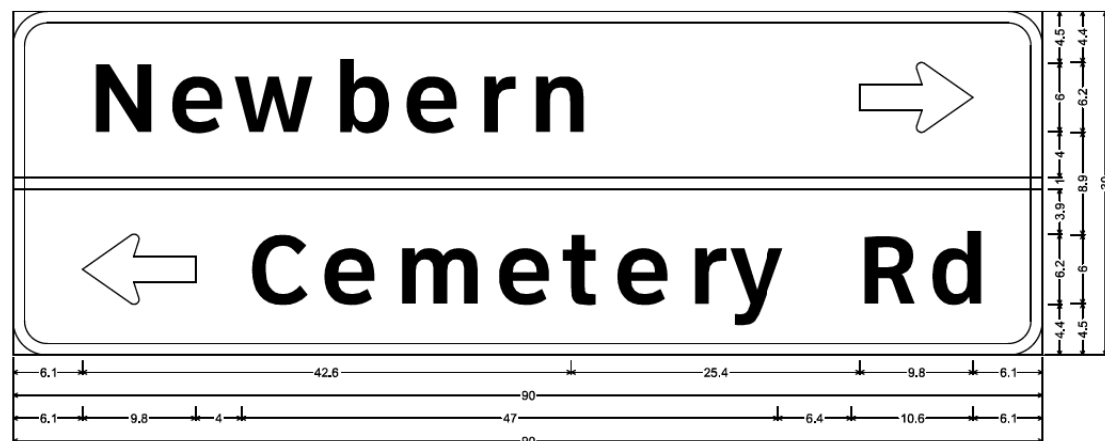
3.0" Radius, 1.0" Border, White on Green;  
[Grafton] ClearviewHwy-5-W; [8] ClearviewHwy-5-W;

STA 261+70 LT



6.0" Radius, 1.3" Border, White on Green;  
Standard Arrow Custom 9.4" X 5.4" 180°; [Elsa h] ClearviewHwy-5-W; [3] E 2K;  
Standard Arrow Custom 9.4" X 5.4" 180°; [Chautauqua] ClearviewHwy-5-W; [3] E 2K;  
Standard Arrow Custom 9.4" X 5.4" 180°; [Principia] ClearviewHwy-5-W; [College] ClearviewHwy-5-W; [3] E 2K;

STA 375+15 LT



3.0" Radius, 1.0" Border, White on Green;  
[Newbern] ClearviewHwy-5-W; Standard Arrow Custom 9.9" X 6.1" 0°; Standard Arrow Custom 9.9" X 6.1" 180°; [Cemetery Rd] ClearviewHwy-5-W;

FILE NAME = S:\Projects\089-0028-VHY\_IL\_3\_Cref\asn\sgn\CADD\_Sheets\08976789-shd-deta1.sldgn

SIGN DESIGNS PROVIDED BY IDOT



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = l_jackson       | DESIGNED -     | REVISED - |
| MODEL NAME = DETAIL 9       | DRAWN -        | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED -      | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

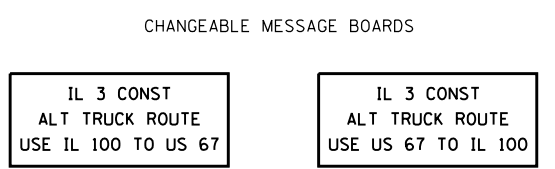
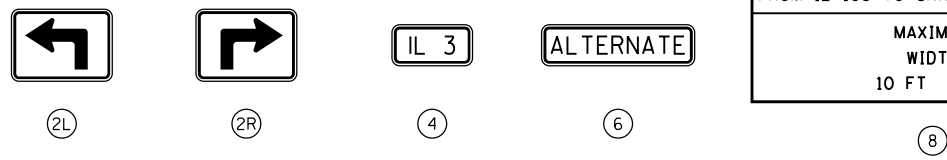
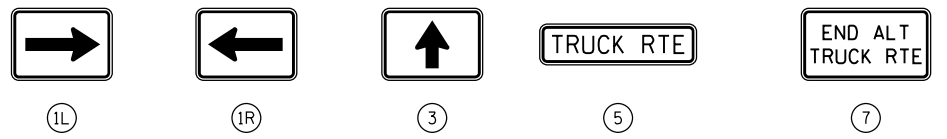
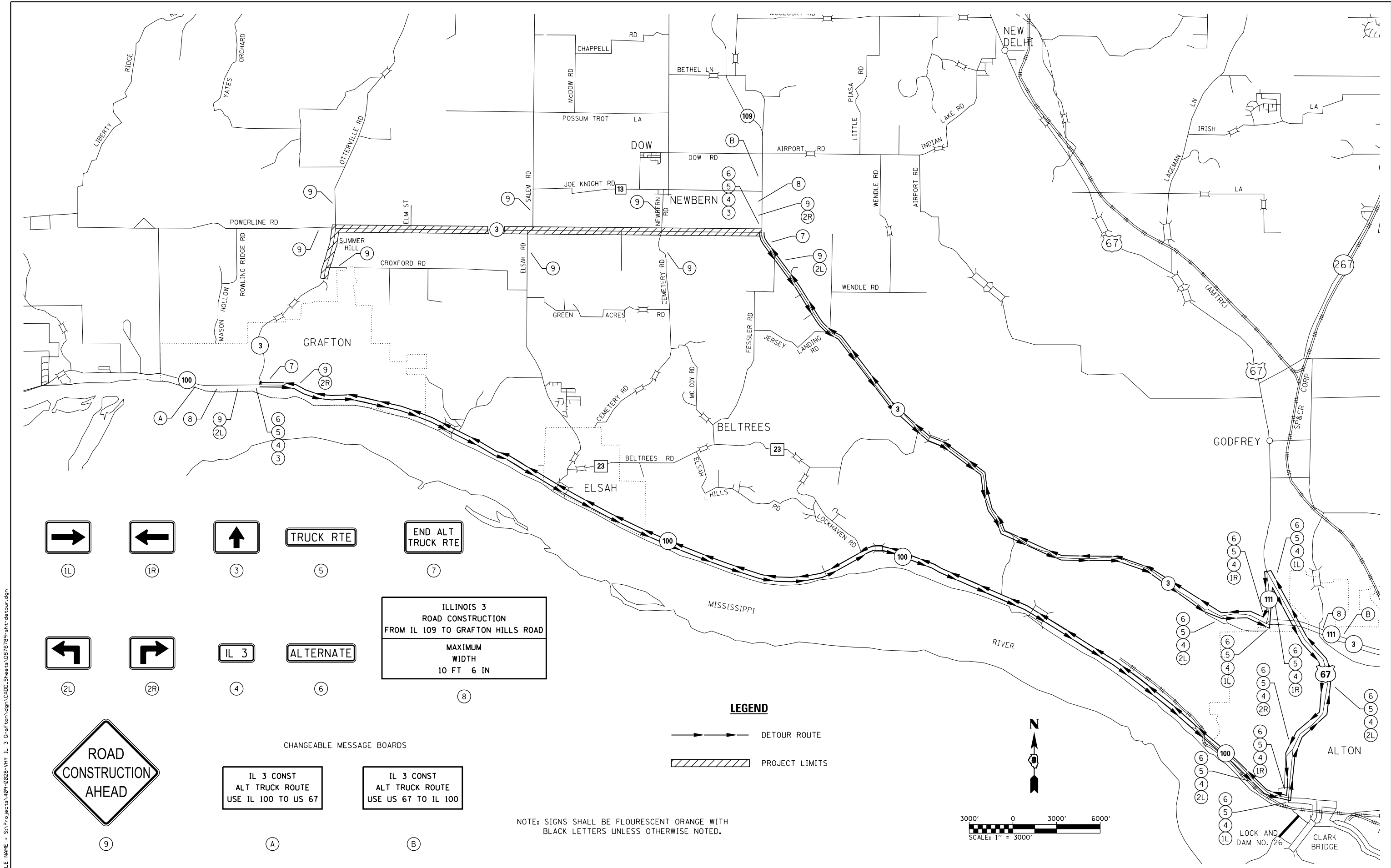
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SIGN PANEL  
DETAILS

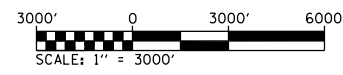
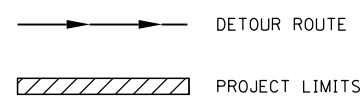
SCALE: SHEET 9 OF 9 SHEETS

| F.A.S. RTE. | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------|-----------|--------|--------------------|-----------|
| •           | 101-2RS-1 | JERSEY | 438                | 293       |
| • 749/752   |           |        | CONTRACT NO. 76789 |           |

ILLINOIS FED. AID PROJECT



**LEGEND**



NOTE: SIGNS SHALL BE FLOURESCENT ORANGE WITH BLACK LETTERS UNLESS OTHERWISE NOTED.

FILE NAME = S:\Projects\485-002B-VHY\_IL\_3\_Grafton\dm\CAOD\_Sheets\0876789-sh-t-detour.dgn



|                                 |                |           |
|---------------------------------|----------------|-----------|
| USER NAME = ljackson            | DESIGNED - ACM | REVISED - |
| MODEL NAME = 1 Wide Load Detour | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 5999.9888' / in.   | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/22/2014           | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

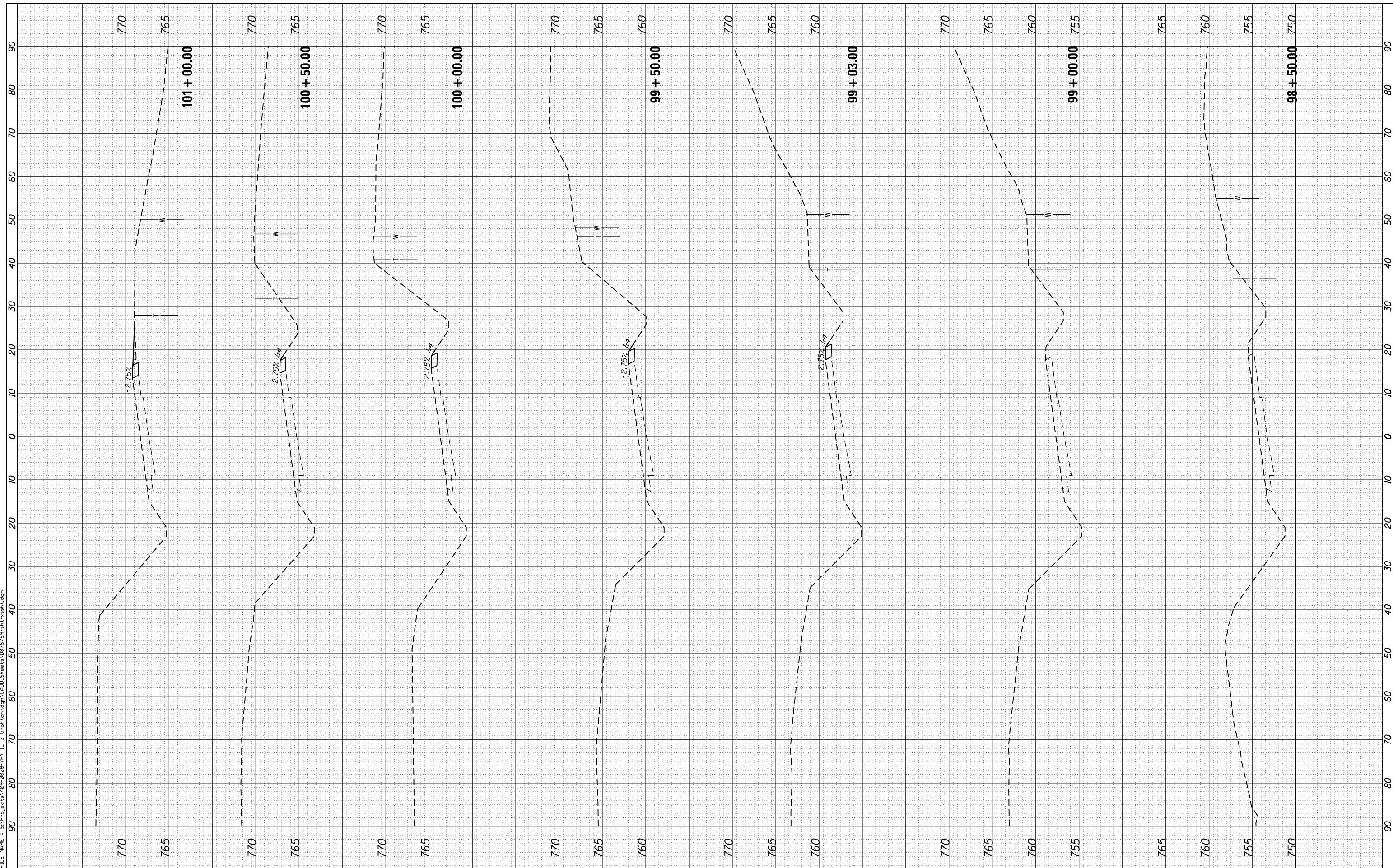
|                                                         |                 |
|---------------------------------------------------------|-----------------|
| <b>STAGING AND TRAFFIC CONTROL<br/>WIDE LOAD DETOUR</b> |                 |
| SCALE: 1"=3000'                                         | SHEET OF SHEETS |

|                           |           |        |                           |           |
|---------------------------|-----------|--------|---------------------------|-----------|
| F.A.S. RTE.               | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
| •                         | 101-2RS-1 | JERSEY | 438                       | 294       |
| • 749/752                 |           |        | <b>CONTRACT NO. 76789</b> |           |
| ILLINOIS FED. AID PROJECT |           |        |                           |           |

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|------------------|--------------------------------|----|------|
| FINAL SURVEY NO. | SURVEYED PLOTTED AREAS CHECKED | BY | DATE |
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| ORIGINAL SURVEY NO. | SURVEYED PLOTTED AREAS CHECKED | BY | DATE |
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FILE NAME = S:\P\Projects\089-002B-VH-IL-3-Grat\cm\egp\CADD\_Sheets\0876789-plt-ssht-egp.dgn



USER NAME = l.jackson  
 MODEL NAME = Default  
 PLOT SCALE = 20.0000' / in.  
 PLOT DATE = 8/11/2014

DESIGNED - ACM  
 DRAWN - EDW  
 CHECKED - LWJ  
 DATE - 8-11-14

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 FAS ROUTE 752 (IL ROUTE 3)**  
 SCALE: SHEET 1 OF 138 SHEETS STA. 98+50.00 TO STA. 101+00.00

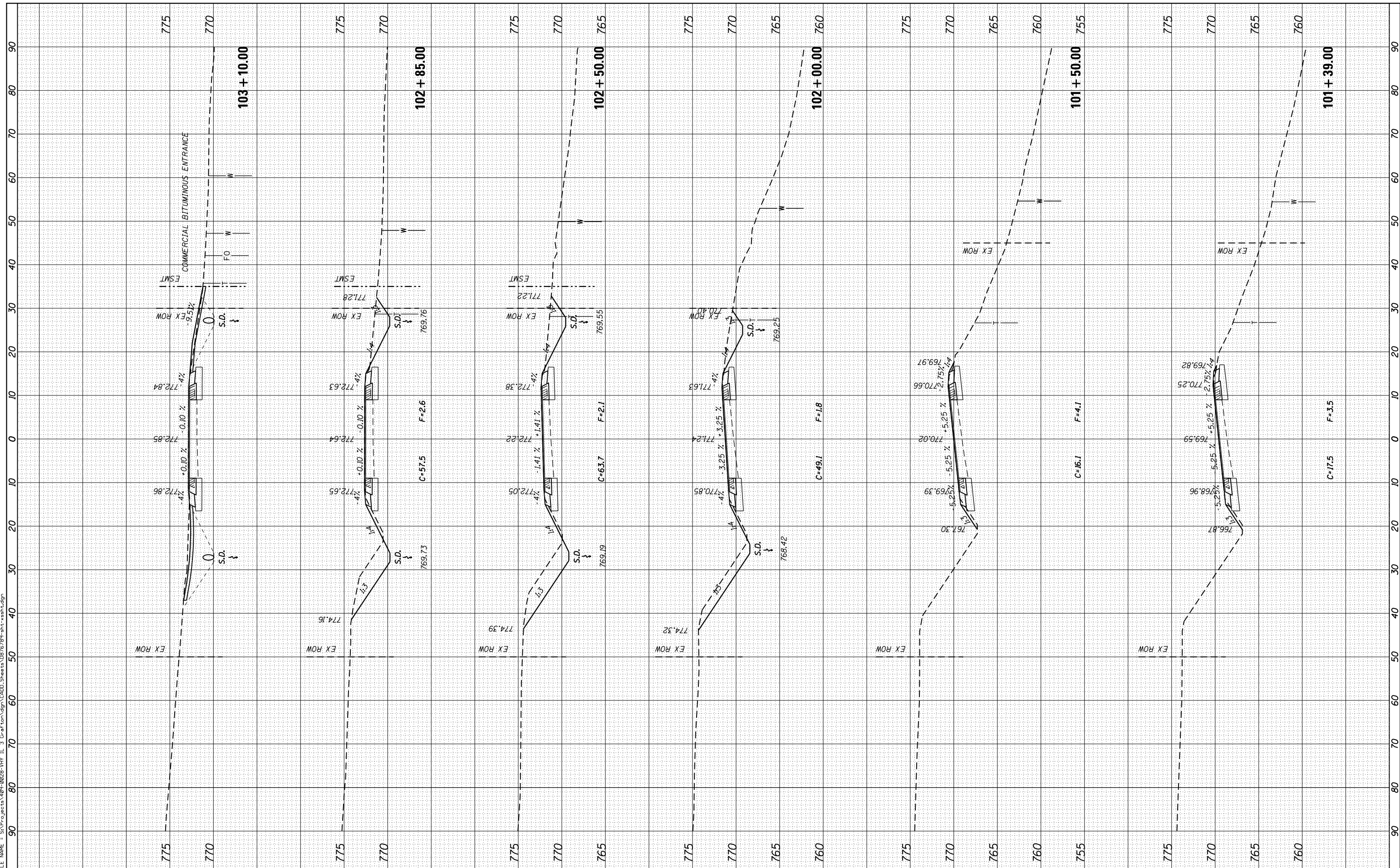
| F.A. RTE.          | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| • 749/752          | 101 2RS-1 | JERSEY | 438                       | 295       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |



|                  |               |      |
|------------------|---------------|------|
| FINAL SURVEY NO. | SURVEYED      | DATE |
| NOTE BOOK NO.    | PLOTTED       |      |
| AREAS CHECKED    | TEMPLATE      |      |
| AREAS CHECKED    | AREAS CHECKED |      |

|                     |               |      |
|---------------------|---------------|------|
| ORIGINAL SURVEY NO. | SURVEYED      | DATE |
| NOTE BOOK NO.       | PLOTTED       |      |
| AREAS CHECKED       | TEMPLATE      |      |
| AREAS CHECKED       | AREAS CHECKED |      |

FILE NAME = S:\P\Projects\089-0028-VH-IL-3\Grat\cm\gpa\CADD\_Sheets\089\752\95-4\rt-ssht-3.dgn



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = l.jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = Default        | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

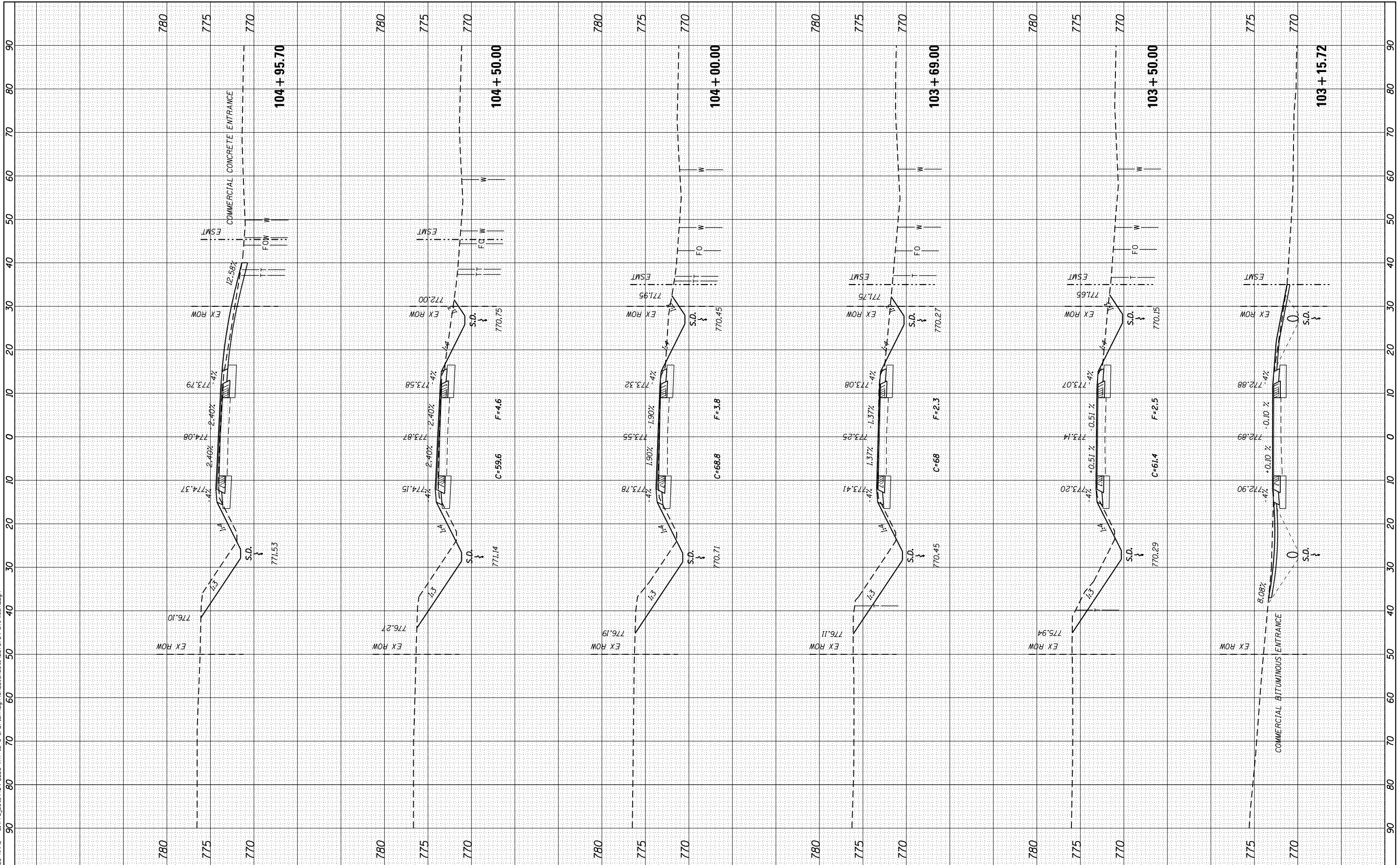
|                                                      |                                                       |
|------------------------------------------------------|-------------------------------------------------------|
| <b>CROSS SECTIONS<br/>FAS ROUTE 752 (IL ROUTE 3)</b> |                                                       |
| SCALE:                                               | SHEET 2 OF 138 SHEETS STA. 101+39.00 TO STA.103+10.00 |

|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101 2RS-1 | JERSEY | 438                | 296       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

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|------------------|-----------------------------------------|----|------|
| FINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED | BY | DATE |
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| ORIGINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED | BY | DATE |
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FILE NAME = S:\P\Projects\809-002B-VH-IL-3\Grd\cm\egp\CADD\Sheets\08161894.plt-ssht.dgn



USER NAME = ljackson  
 MODEL NAME = Default  
 PLOT SCALE = 20.0000' / in.  
 PLOT DATE = 8/11/2014

DESIGNED - ACM  
 DRAWN - EDW  
 CHECKED - LWJ  
 DATE - 8-11-14

REVISED -  
 REVISED -  
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 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

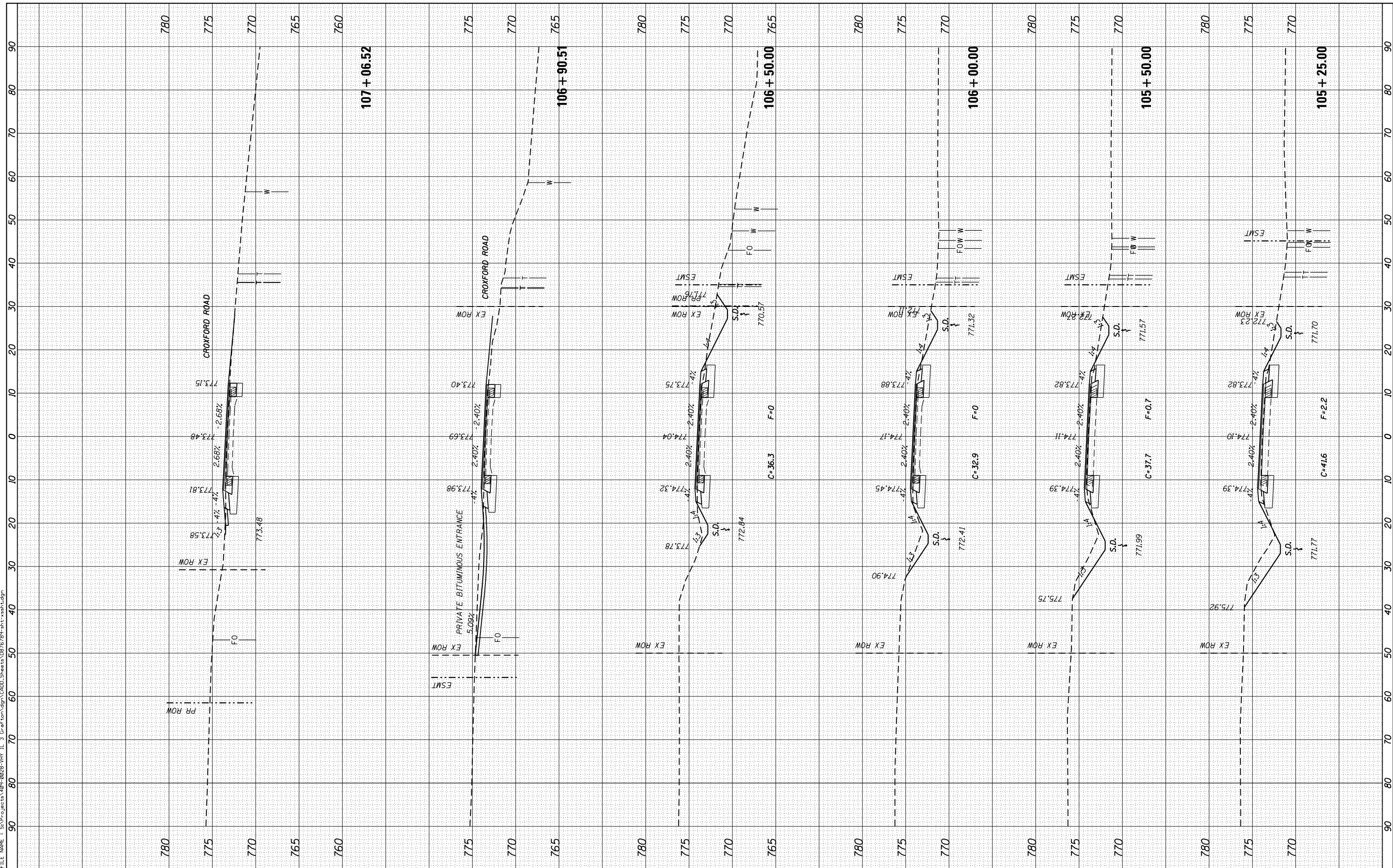
CROSS SECTIONS  
 FAS ROUTE 752 (IL ROUTE 3)  
 SCALE: SHEET 3 OF 138 SHEETS STA. 103+15.72 TO STA. 104+95.70

| F.A. RTE.          | SECTION   | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-----------|--------|---------------------------|-----------|
| • 749/752          | 101 2RS-1 | JERSEY | 438                       | 297       |
| CONTRACT NO. 76789 |           |        | ILLINOIS FED. AID PROJECT |           |

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|------------------|-----------------------------------------|----|------|
| FINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED | BY | DATE |
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| ORIGINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED | BY | DATE |
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FILE NAME = S:\P\Projects\089-0228-VH-IL-3-Grat\cm\egp\CADD\_Sheets\0876789-81t-ssht.dgn



|                             |                |           |
|-----------------------------|----------------|-----------|
| USER NAME = l.jackson       | DESIGNED - ACM | REVISED - |
| MODEL NAME = Default        | DRAWN - EDW    | REVISED - |
| PLOT SCALE = 20.0000' / in. | CHECKED - LWJ  | REVISED - |
| PLOT DATE = 8/11/2014       | DATE - 8-11-14 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

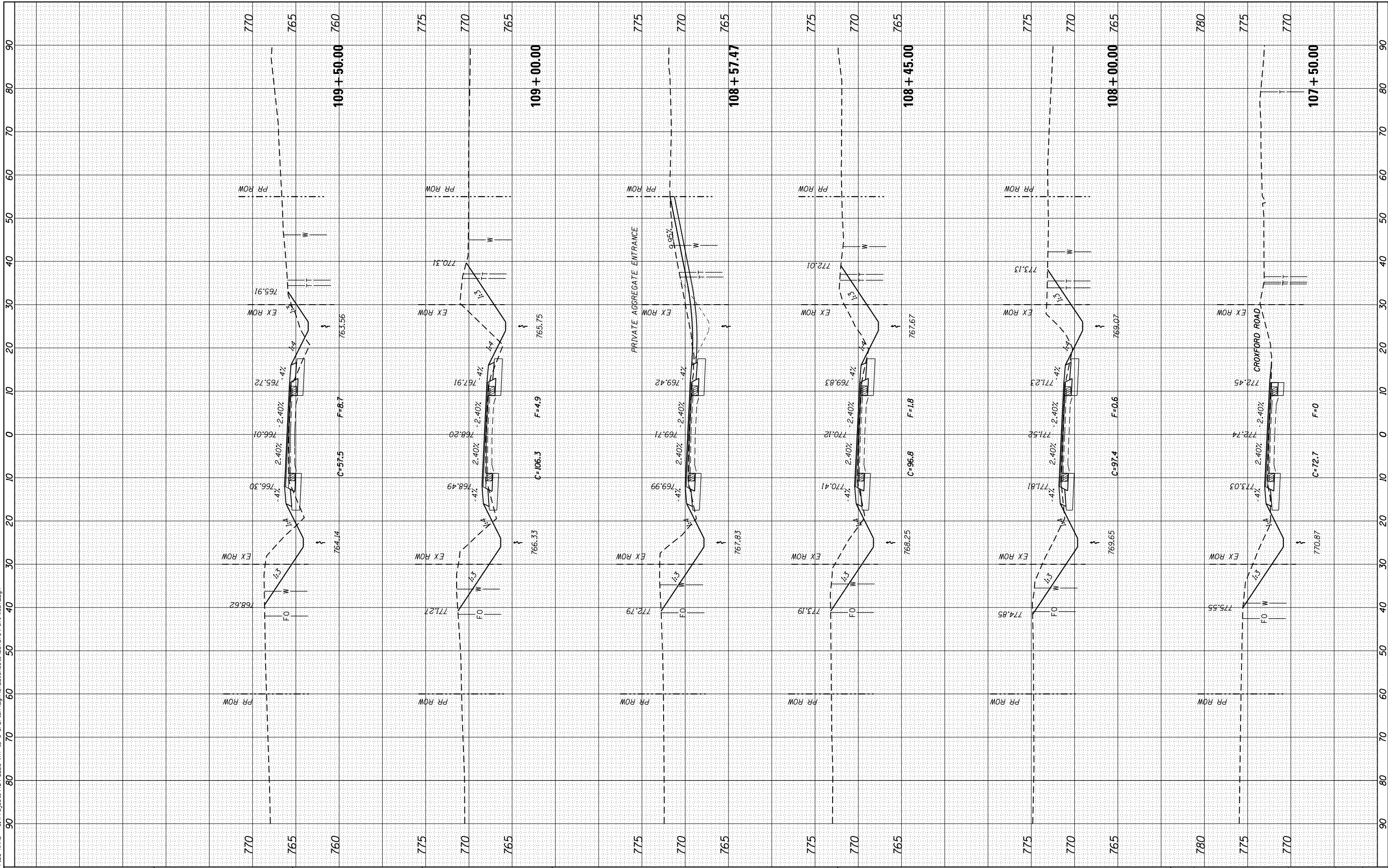
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|------------------------------------------------------|--------------------------------------------------------|
| <b>CROSS SECTIONS<br/>FAS ROUTE 752 (IL ROUTE 3)</b> |                                                        |
| SCALE:                                               | SHEET 4 OF 138 SHEETS STA. 105+25.00 TO STA. 107+06.52 |

|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101 2RS-1 | JERSEY | 438                | 298       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |

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| BY            | DATE |
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| PLOTTED       |      |
| TEMPLATE      |      |
| AREAS CHECKED |      |
| AREAS CHECKED |      |

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|---------------|------|
| BY            | DATE |
| SURVEYED      |      |
| PLOTTED       |      |
| TEMPLATE      |      |
| AREAS CHECKED |      |
| AREAS CHECKED |      |

FILE NAME = S:\P\Projects\089-0029-VH-IL-3\Grat\csm\cadd\Sheet\089-0029-VH-IL-3-Grat.cad



|              |                |
|--------------|----------------|
| USER NAME =  | l.jackson      |
| MODEL NAME = | Default        |
| PLOT SCALE = | 20.0000' / in. |
| PLOT DATE =  | 8/11/2014      |
| DESIGNED -   | ACM            |
| DRAWN -      | EDW            |
| CHECKED -    | LWJ            |
| DATE -       | 8-11-14        |

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| REVISED - |  |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
FAS ROUTE 752 (IL ROUTE 3)**

SCALE: SHEET 5 OF 138 SHEETS STA. 107+50.00 TO STA. 109+50.00

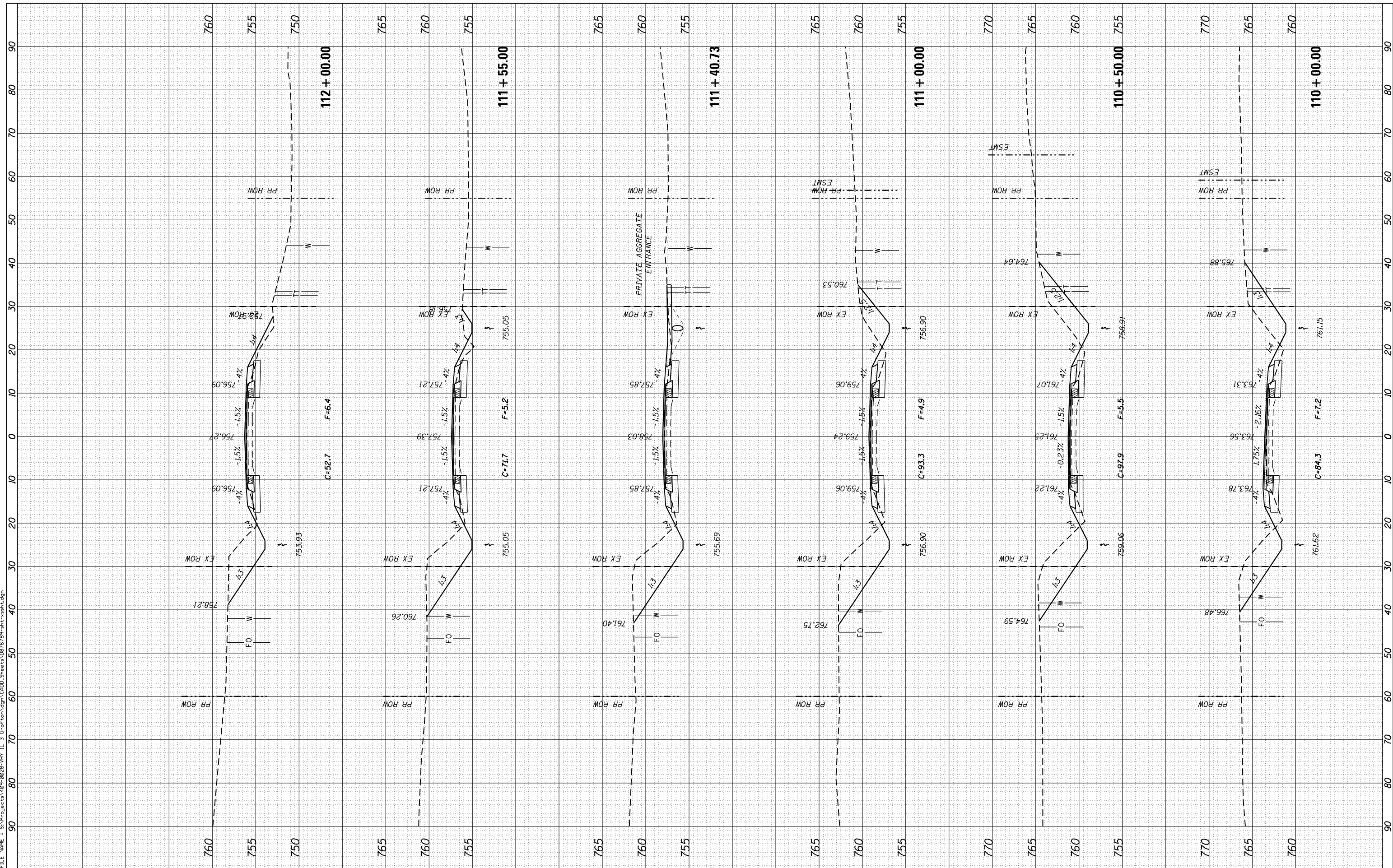
|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| •                         | 101 2RS-1 | JERSEY | 438                | 299       |
| • 749/752                 |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |



|                  |                                         |
|------------------|-----------------------------------------|
| FINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED |
| BY               | DATE                                    |
| NO.              | DATE                                    |

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|---------------------|-----------------------------------------|
| ORIGINAL SURVEY NO. | SURVEYED PLOTTED TEMPLATE AREAS CHECKED |
| BY                  | DATE                                    |
| NO.                 | DATE                                    |

FILE NAME = S:\P\Projects\809-0028-VH-IL-3-Grat\csm\cadd\cadd\Sheets\0876789-811-ssht-3.dgn



|              |                |
|--------------|----------------|
| USER NAME =  | l_jackson      |
| MODEL NAME = | Default        |
| PLOT SCALE = | 20.0000' / in. |
| PLOT DATE =  | 8/11/2014      |
| DESIGNED -   | ACM            |
| DRAWN -      | EDW            |
| CHECKED -    | LWJ            |
| DATE -       | 8-11-14        |

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| REVISED - |  |
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| REVISED - |  |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
FAS ROUTE 752 (IL ROUTE 3)**

SCALE: SHEET 6 OF 138 SHEETS STA. 110+00.00 TO STA. 112+00.00

|                           |           |        |                    |           |
|---------------------------|-----------|--------|--------------------|-----------|
| F.A. RTE.                 | SECTION   | COUNTY | TOTAL SHEETS       | SHEET NO. |
| • 749/752                 | 101 2RS-1 | JERSEY | 438                | 300       |
|                           |           |        | CONTRACT NO. 76789 |           |
| ILLINOIS FED. AID PROJECT |           |        |                    |           |