

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE	80% FEDERAL 20% STATE	80% FEDERAL 20% STATE
				ROADWAY	STRUCTURE	STRUCTURE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				0004 ROADWAY	0010 S.N. 046-2018	0010 S.N. 046-0161
50401325	FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE BEAMS, IL45N	FOOT	602			602.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	102180		14630	87550
50800515	BAR SPLICERS	EACH	618			618
51201900	FURNISHING STEEL PILES HP14X89	FOOT	414			414
51500100	NAME PLATES	EACH	2		1	1
52200010	TEMPORARY SHEET PILING	SQ FT	521		521	
52200020	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	520			520
54003000	CONCRETE BOX CULVERTS	CU YD	88.5		88.5	
54011208	PRECAST CONCRETE BOX CULVERTS 12' X 8'	FOOT	80		80	
54213453	END SECTIONS 18"	EACH	4	4		
54213459	END SECTIONS 24"	EACH	4	4		
54213483	END SECTIONS 48"	EACH	2	2		
5421D018	PIPE CULVERTS, CLASS D, TYPE 1 18" (TEMPORARY)	FOOT	116	116		
5421D024	PIPE CULVERTS, CLASS D, TYPE 1 24" (TEMPORARY)	FOOT	166	166		

MODEL: PLOT04  
FILE NAME: Y:\01011352-02\_66F88\CADD\Highway\CADD\_Sheets\0366F88.sht.scp01.dgn



USER NAME = skm  
ESCA PROJECT NO. 1352.02  
PLOT SCALE = 0.1667' / in.  
PLOT DATE = 3/5/2021

DESIGNED - SMA  
DRAWN - SMA  
CHECKED - RDP/SKM  
DATE - 03/21

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET NO. 4 OF 8 SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	(13)BR-1; (12)BR	KANKAKEE	103	6
ILLINOIS FED. AID PROJECT			CONTRACT NO. 66F88	

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE	80% FEDERAL 20% STATE	80% FEDERAL 20% STATE
				ROADWAY	STRUCTURE	STRUCTURE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				0004 ROADWAY	0010 S.N. 046-2018	0010 S.N. 046-0161
5421D048	PIPE CULVERTS, CLASS D, TYPE 1 48" (TEMPORARY)	FOOT	60	60		
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	116	116		
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	166	166		
542D0253	PIPE CULVERTS, CLASS D, TYPE 1 48"	FOOT	48	48		
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	153			153
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	265		190	75
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	400	400		
* 63000030	STRONG POST GUARDRAIL ATTACHED TO CULVERT	FOOT	37.5	37.5		
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4		
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	8	8		
63200310	GUARDRAIL REMOVAL	FOOT	928	928		
64200108	SHOULDER RUMBLE STRIPS, 8 INCH	FOOT	2425	2425		
* 66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	8	8		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	17	17		

\* SPECIALTY ITEM

MODEL: PLOTS  
FILE NAME: Y:\01011352-02\_66F88\CADD\Highway\CADD\_Sheets\0366F88\_sht\_scp01.dgn



USER NAME = skm  
ESCA PROJECT NO. 1352.02  
PLOT SCALE = 0.1667' / in.  
PLOT DATE = 3/5/2021

DESIGNED - SMA  
DRAWN - SMA  
CHECKED - RDP/SKM  
DATE - 03/21

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE SHEET NO. 5 OF 8 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	(13)BR-1; (12)BR	KANKAKEE	103	7
			CONTRACT NO. 66F88	
ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE	80% FEDERAL 20% STATE	80% FEDERAL 20% STATE
				ROADWAY	STRUCTURE	STRUCTURE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				0004 ROADWAY	0010 S.N. 046-2018	0010 S.N. 046-0161
X7030005	TEMPORARY PAVEMENT MARKING REMOVAL	SQ FT	1335	1335		
X7040125	PINNING TEMPORARY CONCRETE BARRIER	EACH	138	138		
X7050167	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	2	2		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1		
Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	84	84		
Z0033700	LONGITUDINAL JOINT SEALANT	FOOT	1680	1680		
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	133			133
Z0065001	DRILLING AND SETTING PILES (IN SOIL)	CU FT	1443			1443
Z0065002	DRILLING AND SETTING PILES (IN ROCK)	CU FT	472			472
Z0073410	TEMPORARY SUPPORT SYSTEM, LOCATION 1	EACH	1			1
Z0073420	TEMPORARY SUPPORT SYSTEM, LOCATION 2	EACH	1		1	

\* SPECIALTY ITEM

MODEL: PLOT08  
FILE NAME: Y:\01011352-02\_66F88\CADD\Highway\CADD\_Sheets\0366F88\_sht\_scp01.dgn



USER NAME = skm  
ESCA PROJECT NO. 1352.02  
PLOT SCALE = 0.1667' / in.  
PLOT DATE = 3/5/2021

DESIGNED - SMA  
DRAWN - SMA  
CHECKED - RDP/SKM  
DATE - 03/21

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE SHEET NO. 8 OF 8 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	(13)BR-1; (12)BR	KANKAKEE	103	10
CONTRACT NO. 66F88				
ILLINOIS FED. AID PROJECT				

REV. 5/24/21 REV. 5/10/21 REV. 4/29/21

BENCHMARK: Chiseled square on South Wingwall of West Abutment, SN 046-0030, Elev. 612.86

**EXISTING STRUCTURE:**  
 SN 046-0030 was originally built in 1959 as SBI-17, Section 13-BR. It is a two span 14½" reinforced concrete slab on pile supported open concrete abutments and a pier supported on a spread footing. The distance back to back of the abutments is 60'-0" and the clear distance between the bridge rails is 30'-0". There is no skew. In 1982 the concrete guardrails were replaced with tubular thrie beam rail. Traffic will be maintained using stage construction.

No salvage.

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD  
 Bridge Design Specifications  
 9th Edition

**LOADING HL-93**

Allow 50 psf for future wearing surface

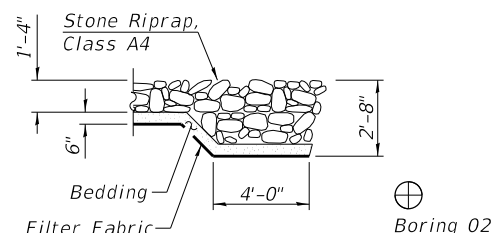
**DESIGN STRESSES**

**FIELD UNITS**

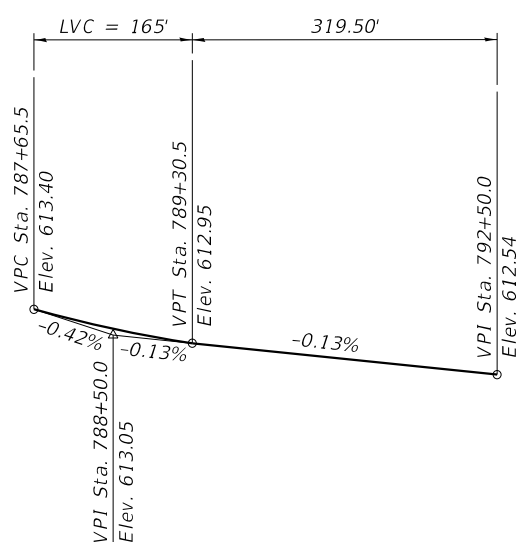
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST UNITS**

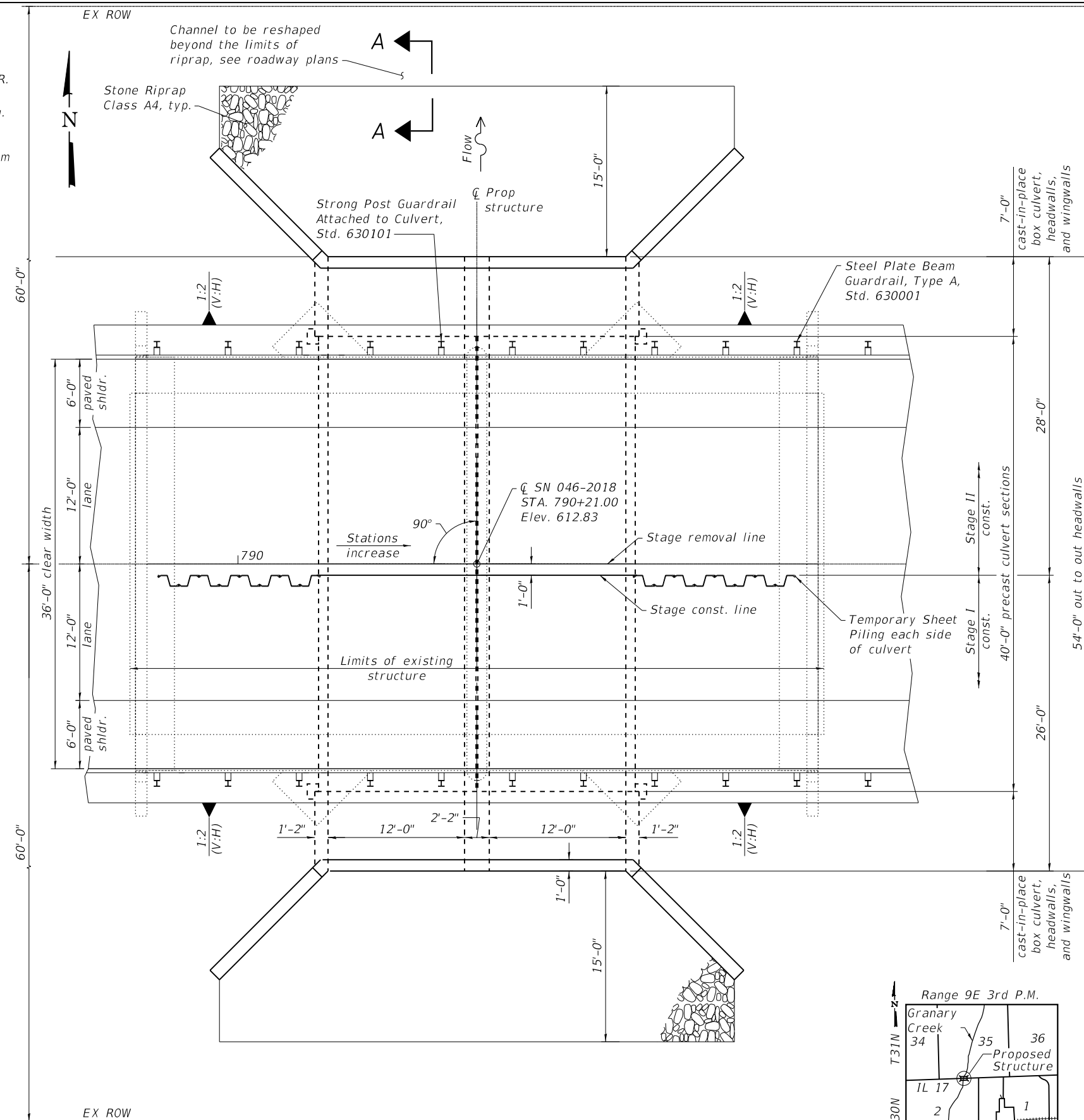
$f'_c = 5,000$  psi  
 $f_y = 65,000$  psi (welded wire reinforcement)



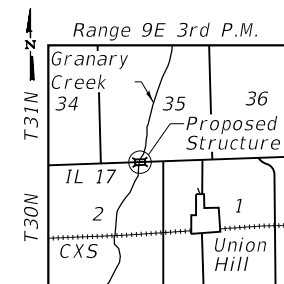
**SECTION A-A**



**IL 17 PROFILE GRADE**  
 (Along centerline roadway)



**PLAN**



**LOCATION SKETCH**

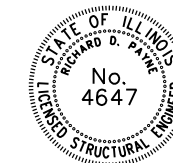
**GENERAL NOTES**

The design fill height for the precast portion of this box is 1.8 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577. Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification. Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard. Precast concrete box culverts and cast-in-place box culvert shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the wingwalls, and not closer than 2 ft from the face of embankment.

Boring 01

**STRUCTURE INDEX OF SHEETS**

General Plan	Sheet No. 1 of 10
General Data	Sheet No. 2 of 10
Stage Construction Details	Sheet No. 3-4 of 10
Temporary Concrete Barrier for Stage Construction	Sheet No. 5 of 10
Box Culvert Details	Sheet No. 6-8 of 10
Boring Logs	Sheet No. 9-10 of 10



Expires: 11-30-2022

Signature: *Richard D. Payne*

Date: 05-17-2021

**GENERAL PLAN**  
**IL 17 OVER GRANARY CREEK**  
**FAP ROUTE 41 - SECTION 13BR-1**  
**KANKAKEE COUNTY**  
**STATION 790+21 IL 17**  
**STRUCTURE NO. 046-2018**

MODEL: PLOT  
 FILE NAME: Y:\IDOT\1352-02\_66F88\CADD\SP\_SN\_046-2018\0462018-66F88-01-GenPlan.dgn



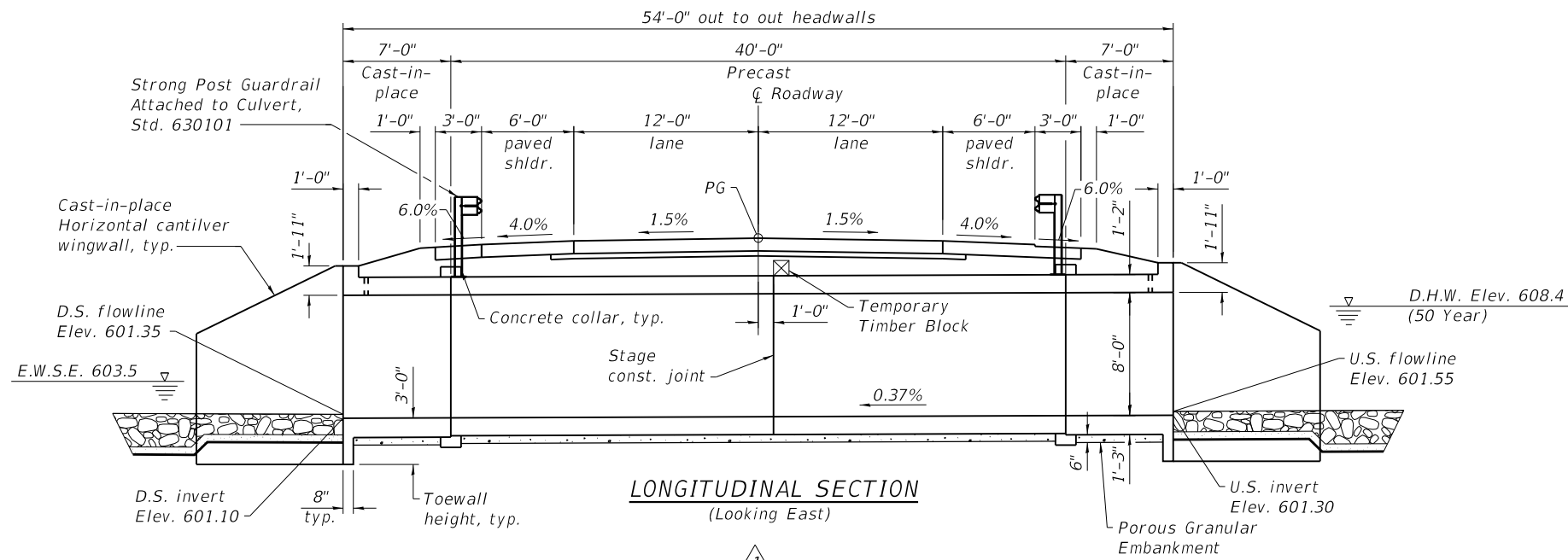
USER NAME = shi	DESIGNED - RDP 11/20	REVISED - 05/17/2021 RDP
ESCA PROJECT NO. 1352.02	CHECKED - RDP 11/20	REVISED -
PLOT SCALE = 0:2" = 1' / in.	DRAWN - KAH 11/20	REVISED -
PLOT DATE = 5/17/2021	CHECKED - RDP 11/20	REVISED -

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

SHEET 1 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	13BR-1	KANKAKEE	103	32
CONTRACT NO. 66F88				

ILLINOIS FED. AID PROJECT

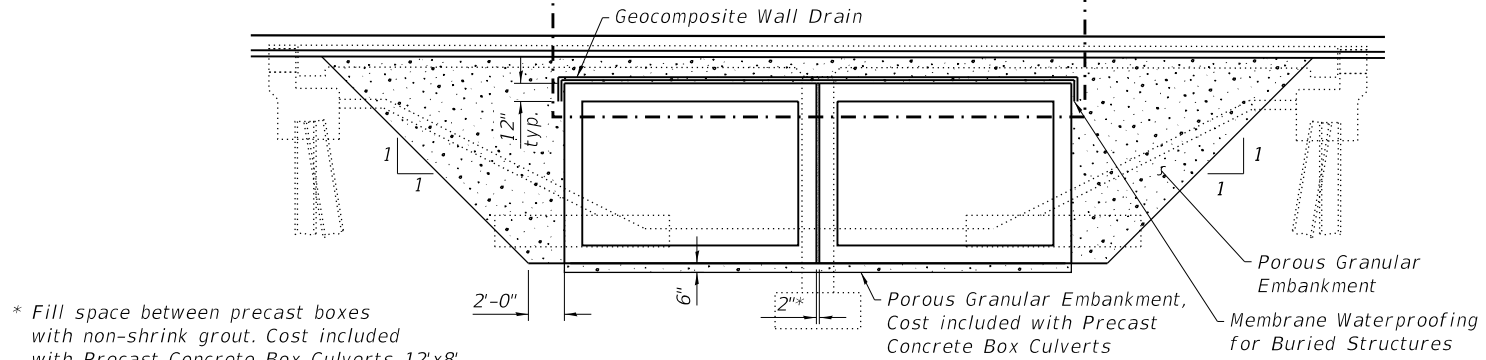


**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. Modify existing channel to match culvert at each end as directed by the Engineer, cost included in the pay item for Stone Riprap, Class A4.

STATION 790+21.00  
BUILT 20\_\_ BY  
STATE OF ILLINOIS  
F.A.P. RT. 41 SEC. 13BR-1  
LOADING HL-93  
STR. NO. 046-2018

**NAME PLATE**  
See Std. 515001

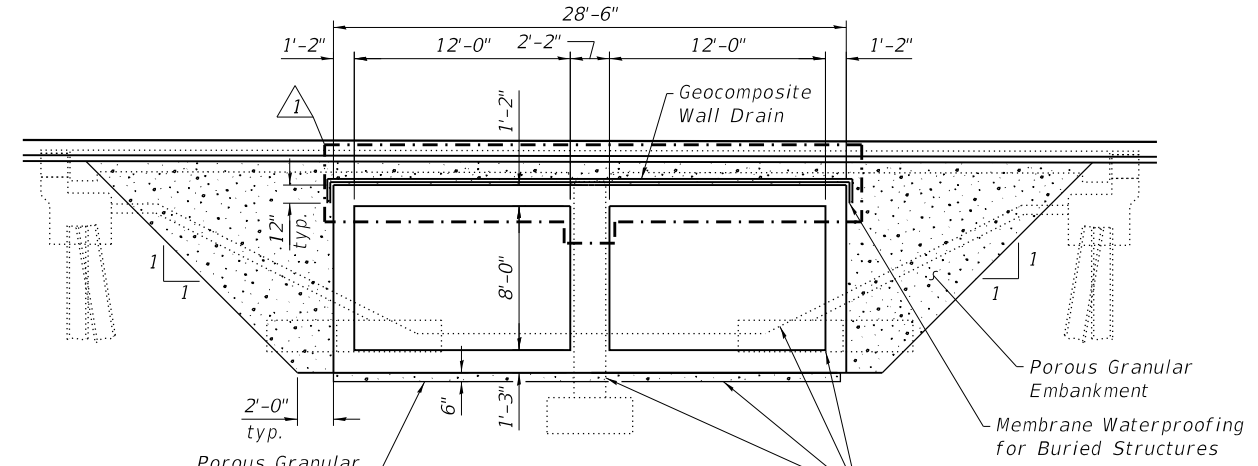


\* Fill space between precast boxes with non-shrink grout. Cost included with Precast Concrete Box Culverts 12'x8'

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu. Yd.	507
Stone Riprap, Class A4	Sq. Yd.	136
Filter Fabric	Sq. Yd.	136
Removal of Existing Structures No. 2	Each	1
Reinforcement Bars, Epoxy Coated	Pound	14630
Name Plates	Each	1
Temporary Sheet Piling	Sq. Ft.	521
Concrete Box Culverts	Cu. Yd.	88.5
Precast Concrete Box Culverts 12' x 8'	Foot	80
Geocomposite Wall Drain	Sq. Yd.	190
Membrane Waterproofing System for Buried Structures	Sq. Yd.	190
Temporary Support System, Location 2	Each	1

See roadway plans for quantities of Temporary Concrete Barrier, Earth Excavation, and Pavement Removal.



Remove existing pier, footings and slopewalls as required to construct porous granular embankment, box culvert, & temporary sheet piling

**SN 046-2018 WATERWAY INFORMATION**

Flood Event		Freq. Yr.	Discharge (C.F.S.)	Waterway Opening (Sq. ft.)		Natural H.W.E. (ft.)	Head (ft.)		Headwater Elev. (ft.)	
				Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design		10	322	163	150	607.8	0.3	0.0	608.1	607.8
Base		50	480	190	165	608.4	0.5	0.1	608.9	608.5
Scour Design Check		100	550	198	169	608.6	0.7	0.2	609.3	608.8
Overtop Existing		200	592	202	172	608.7	0.7	0.3	609.4	609.0
Overtop Proposed		-	-	-	-	-	-	-	-	-
Max. Calc.		500	713	211	177	608.9	1.0	0.5	609.9	609.4

Drainage Area = 4.96 Sq. Mi.      Exist. Overtopping Elev. N/A at Sta. N/A  
Prop. Overtopping Elev. N/A at Sta. N/A

10 Year Velocity through Existing Structure = 2.0 ft/s  
10 Year Velocity through Proposed Structure = 2.1 ft/s

Notes: Excavation for construction of the box culvert, including the excavation necessary to construct the granular backfill, is included in Earth Excavation, see roadway plans.

MODEL: PLOT FILE NAME: Y:\IDOT\1352-02\_66F88\CADD\SP\_SN\_046-2018\0462018-66F88-02-GenData.dgn



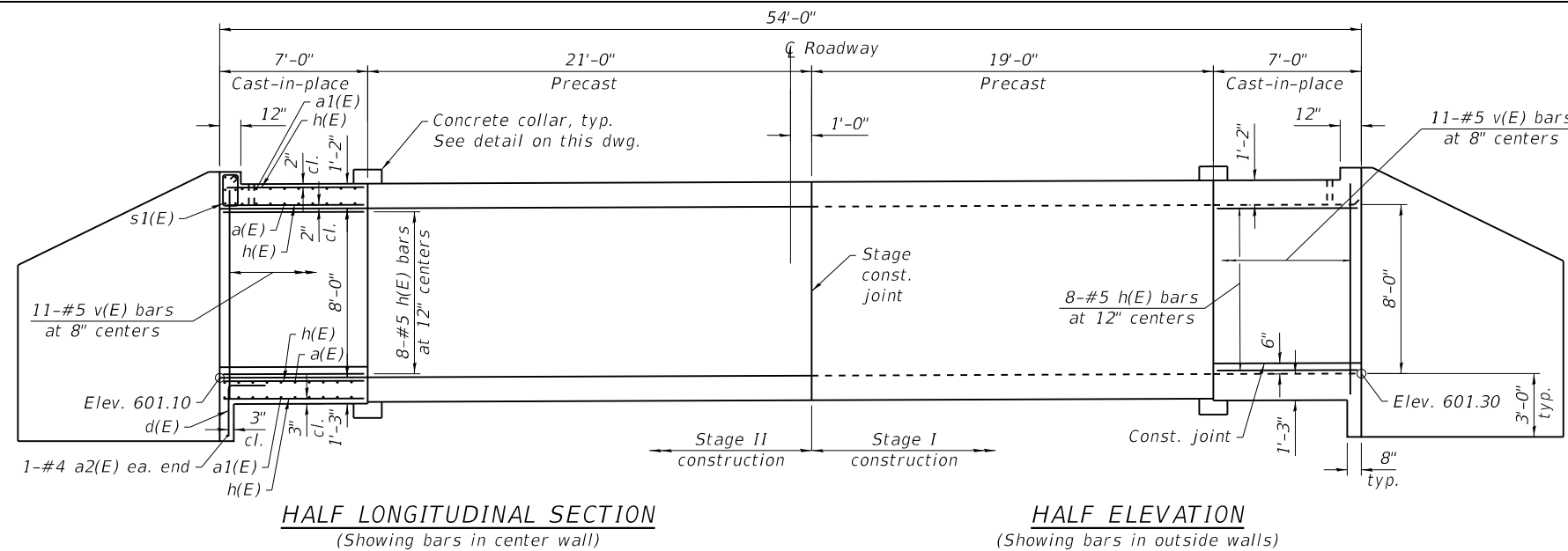
USER NAME = shi	DESIGNED - RDP 11/20	REVISED - 05/17/2021 RDP
ESCA PROJECT NO. 1352.02	CHECKED - RDP 11/20	REVISED -
PLOT SCALE = 0:2" = 1' / in.	DRAWN - KAH 11/20	REVISED -
PLOT DATE = 5/17/2021	CHECKED - RDP 11/20	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
STRUCTURE NO. 046-2018**

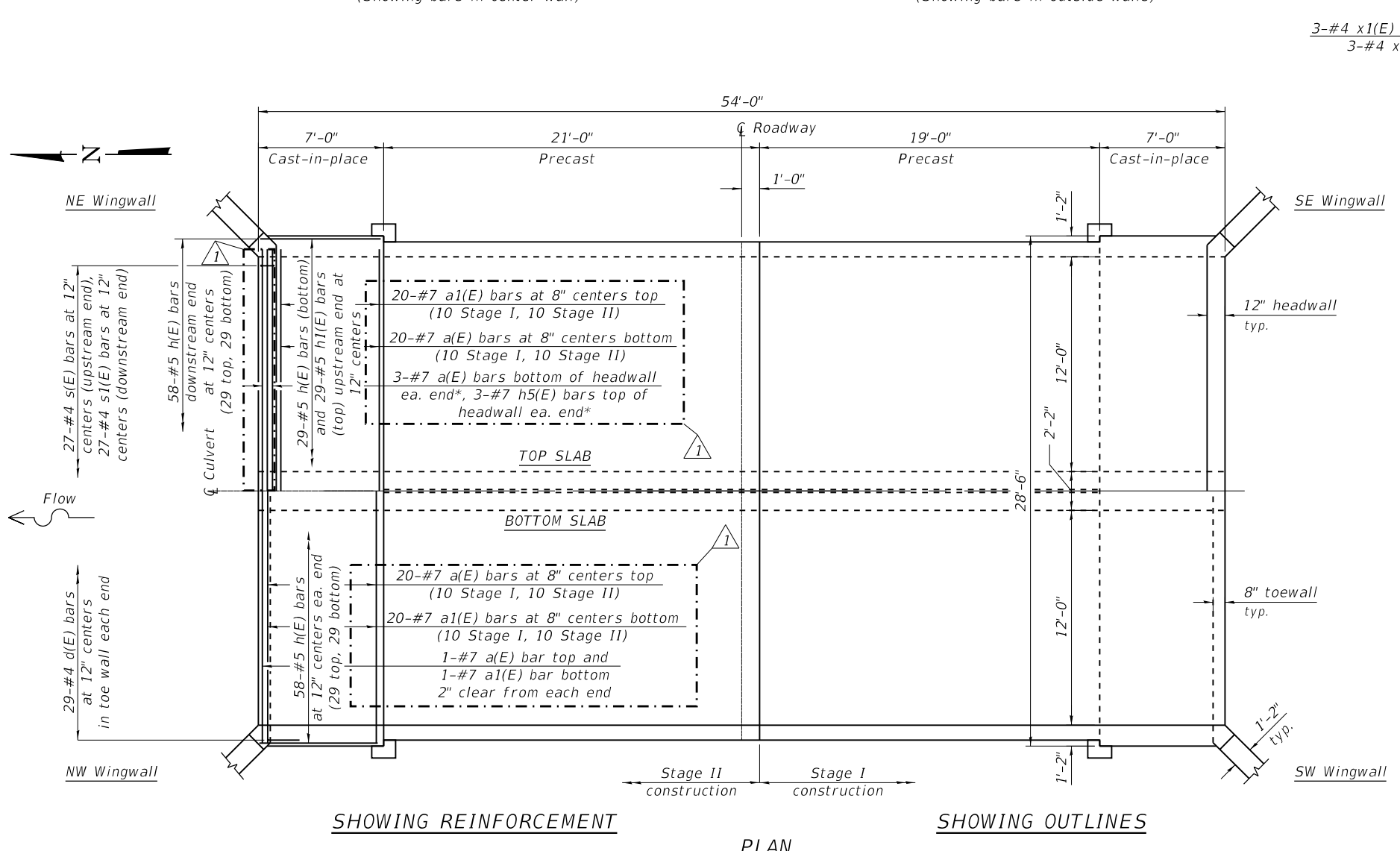
SHEET 2 OF 10 SHEETS

F.A.P. RTE. 41	SECTION 13BR-1	COUNTY KANKAKEE	TOTAL SHEETS 103	SHEET NO. 33
ILLINOIS FED. AID PROJECT			CONTRACT NO. 66F88	



**HALF LONGITUDINAL SECTION**  
(Showing bars in center wall)

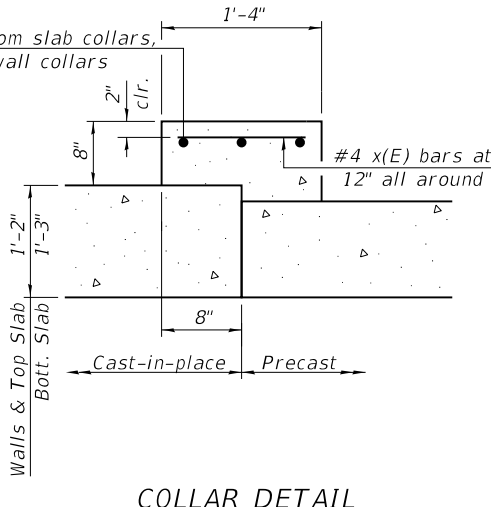
**HALF ELEVATION**  
(Showing bars in outside walls)



**SHOWING REINFORCEMENT**

**PLAN**

**SHOWING OUTLINES**



**COLLAR DETAIL**

\* See Headwall Details on Sheet 8 of 10

Notes: See Sheet 7 of 10 for wingwall details.  
See Sheet 8 of 10 for additional details and Bill of Material.  
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the horizontal cantilever wingwalls.

(Sheet 1 of 3)

MODEL: PLOT  
FILE NAME: Y:\IDOT\1352-02\_66F88\CADD\SP\_SN\_046-2018\0462018-66F88-06-CulvertDtls.dgn



USER NAME = shi	DESIGNED - RDP 11/20	REVISED - 05/17/2021 RDP
ESCA PROJECT NO. 1352.02	CHECKED - RDP 11/20	REVISED -
PLOT SCALE = 0:2" = 1' / in.	DRAWN - KAH 11/20	REVISED -
PLOT DATE = 5/17/2021	CHECKED - RDP 11/20	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT DETAILS  
STRUCTURE NO. 046-2018**

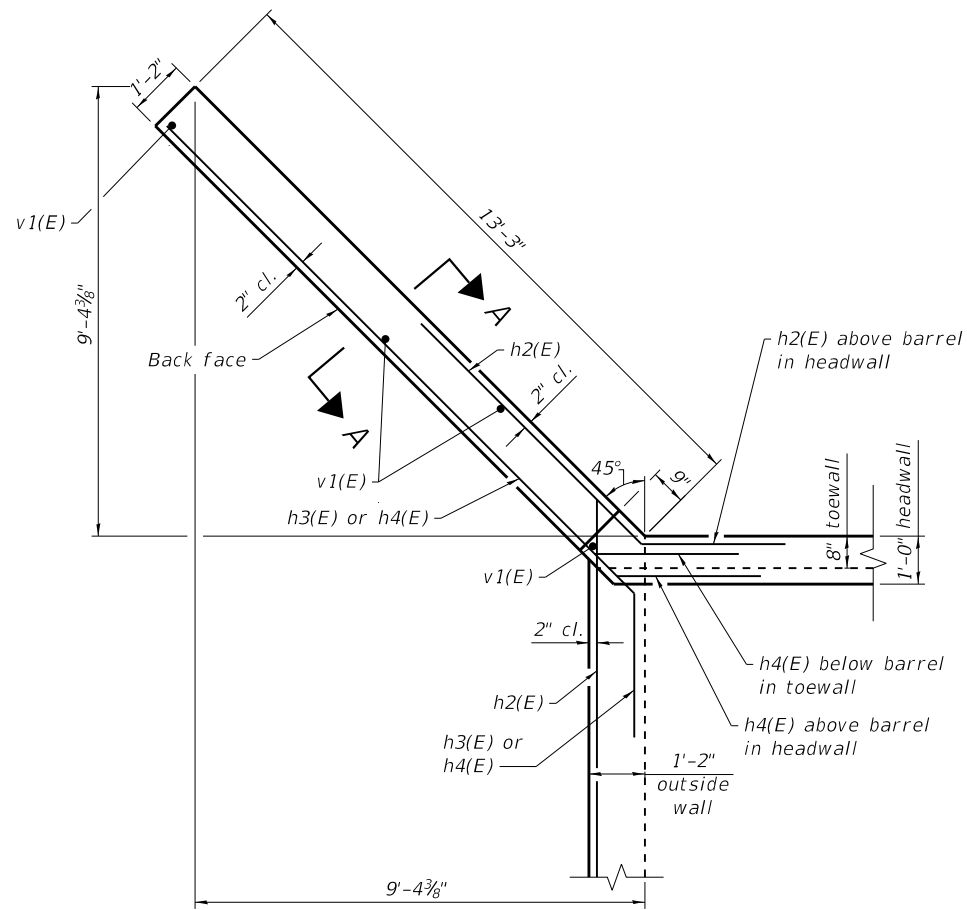
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	13BR-1	KANKAKEE	103	37
CONTRACT NO. 66F88				

SHEET 6 OF 10 SHEETS

ILLINOIS FED. AID PROJECT

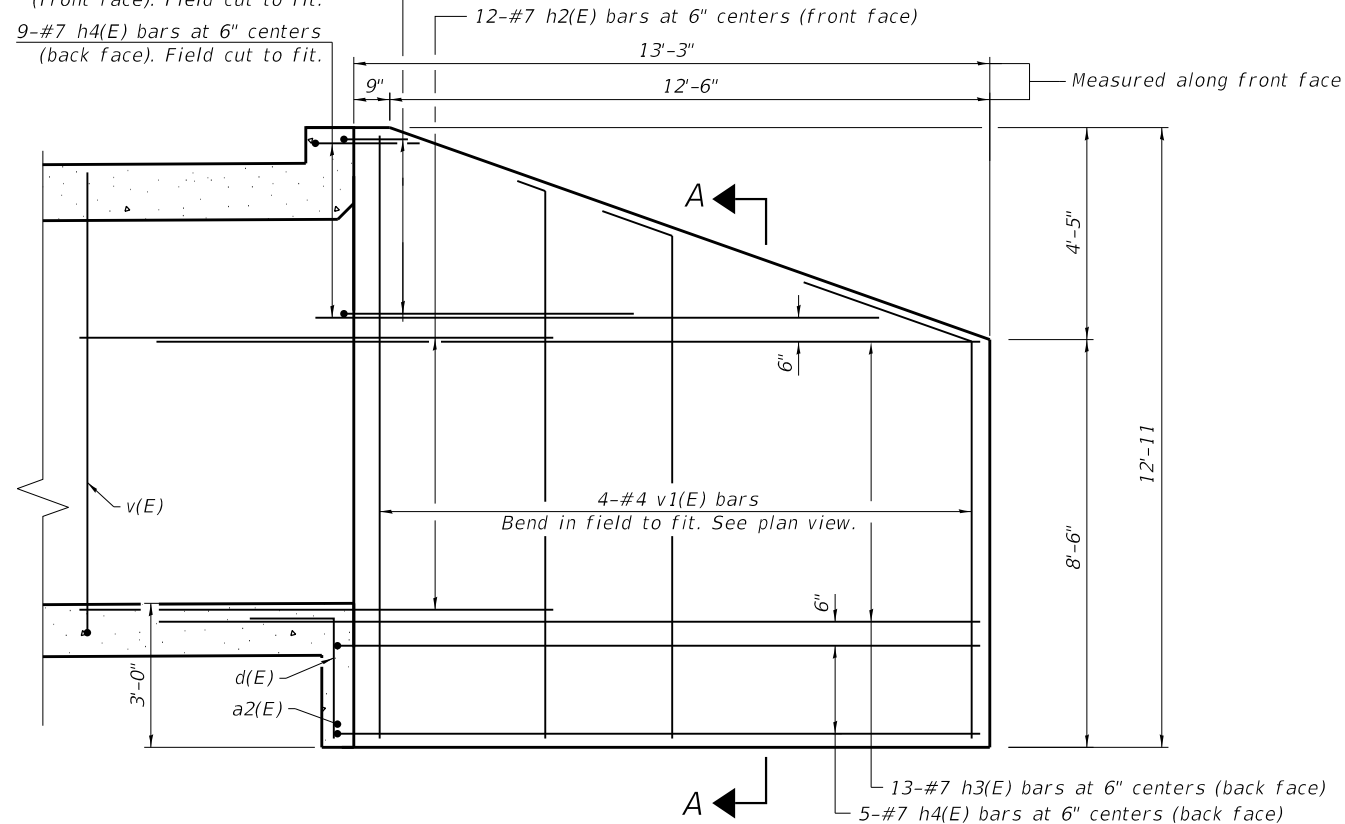
5/17/2021 9:06:53 AM

REV. 5/24/21



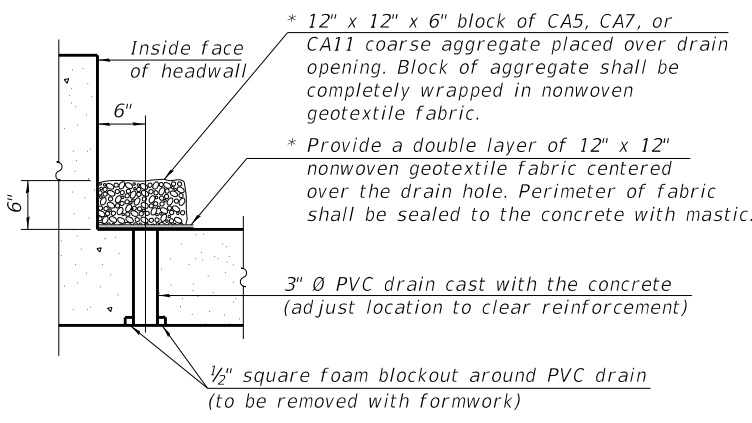
**WINGWALL PLAN**  
(All wingwalls similar)

9-#7 h2(E) bars at 6" centers  
(front face). Field cut to fit.  
9-#7 h4(E) bars at 6" centers  
(back face). Field cut to fit.



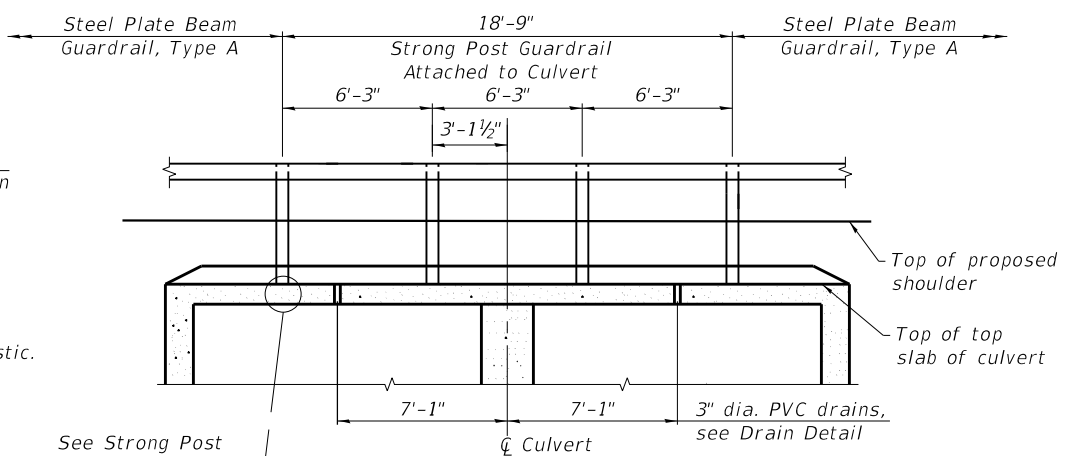
**WINGWALL ELEVATION**  
(All wingwalls similar)

\* Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.



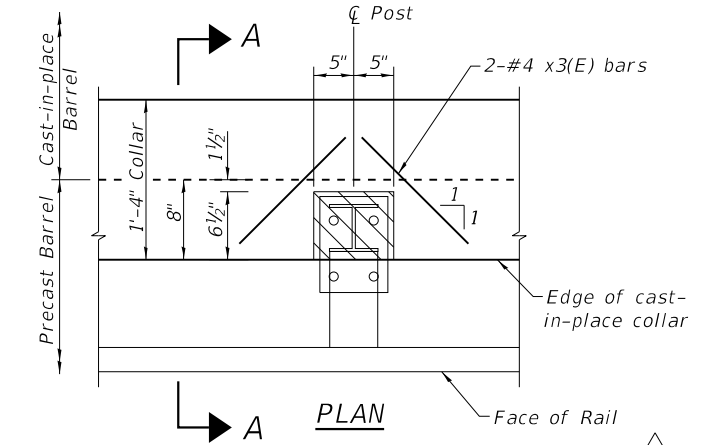
**DRAIN DETAIL**

All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.  
One drain required at the center of each span at each headwall.

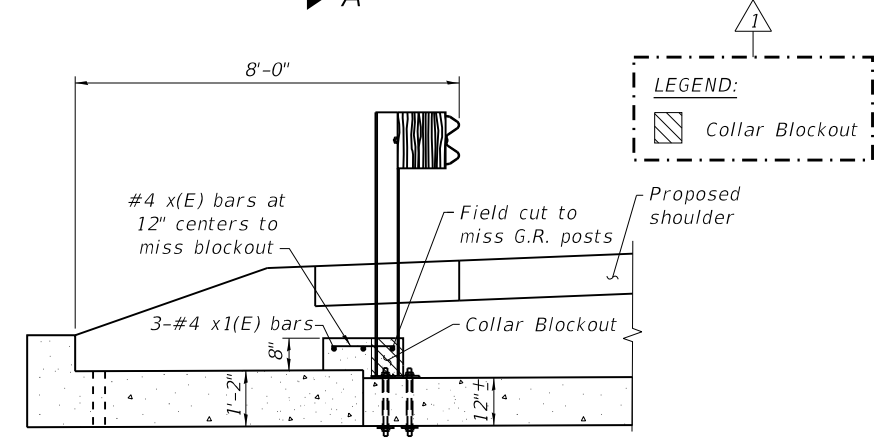


**INSIDE ELEVATION OF RAILING**

See Strong Post Guardrail Attached to Culvert Detail this sheet, typ.



**PLAN**



**SECTION A-A**

**STRONG POST GUARDRAIL ATTACHED TO CULVERT DETAIL**

See Std. 630101 for mounting plate detail and anchor rod detail.  
Space reinforcement to miss anchor rods.

Note: Fill blockout with concrete after G.R. post is set

MODEL: PLOT FILE NAME: Y:\DOT\1352-02\_66F88\CADD\SP\_SN\_046-2018\0462018-66F88-07-CulvertDtls.dgn



USER NAME = shi	DESIGNED - RDP 11/20	REVISED - 05/17/2021 RDP
ESCA PROJECT NO. 1352.02	CHECKED - RDP 11/20	REVISED -
PLOT SCALE = 0.1667' / in.	DRAWN - KAH 11/20	REVISED -
PLOT DATE = 5/17/2021	CHECKED - RDP 11/20	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

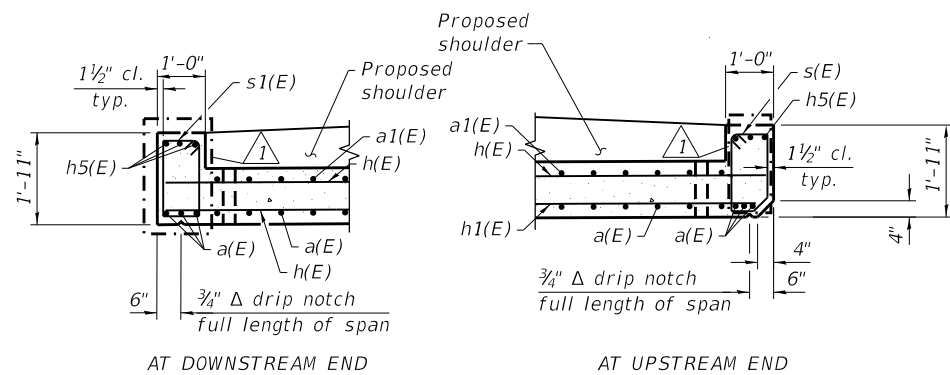
**BOX CULVERT DETAILS  
STRUCTURE NO. 046-2018**

SHEET 7 OF 10 SHEETS

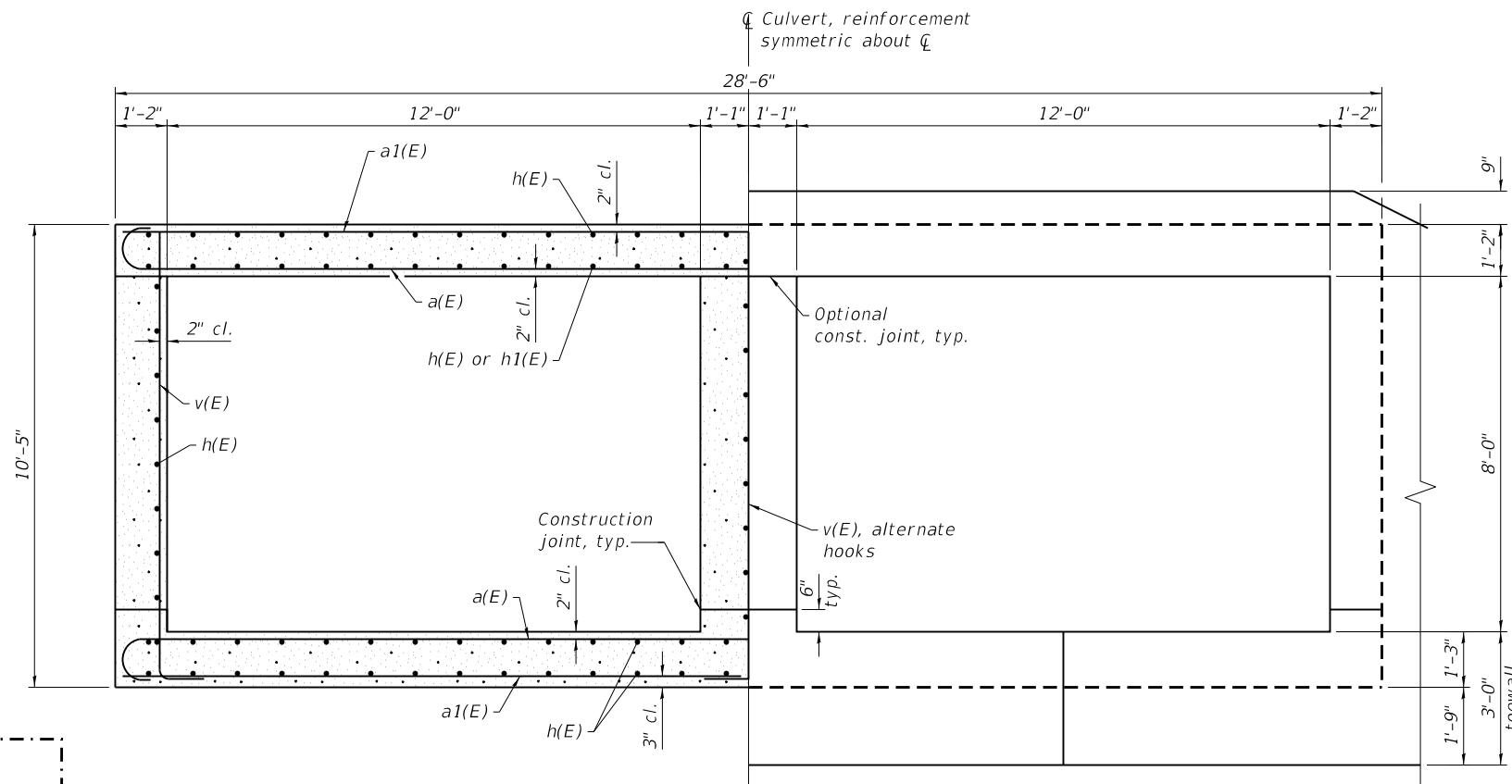
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	13BR-1	KANKAKEE	103	38
CONTRACT NO. 66F88				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	48	#7	29'-6"	
a1(E)	42	#7	28'-2"	
a2(E)	2	#4	28'-2"	
d(E)	58	#4	4'-4"	
h(E)	251	#5	6'-8"	
h1(E)	29	#5	6'-4"	
h2(E)	84	#7	9'-6"	
h3(E)	52	#7	16'-9"	
h4(E)	56	#7	16'-3"	
h5(E)	6	#7	28'-2"	
s(E)	27	#4	5'-3"	
s1(E)	27	#4	5'-5"	
v(E)	66	#5	10'-10"	
v1(E)	16	#4	12'-7"	
x(E)	166	#4	1'-0"	
x1(E)	12	#4	29'-6"	
x2(E)	12	#4	15'-8"	
x3(E)	16	#4	1'-5"	
Concrete Box Culverts			Cu. Yd.	88.5
Reinforcement Bars, Epoxy Coated			Pound	14630

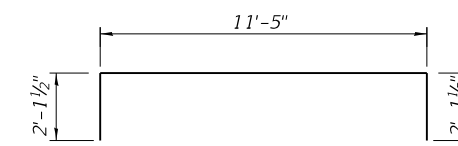


**HEADWALL DETAILS**



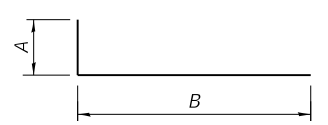
**HALF SECTION THROUGH CAST-IN-PLACE BARREL**

**HALF END ELEVATION**

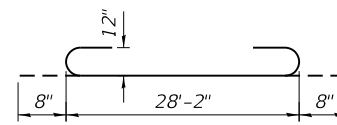


**BAR x2(E)**

BAR	A	B
d(E)	1'-9"	2'-7"
v(E)	10"	10'-0"

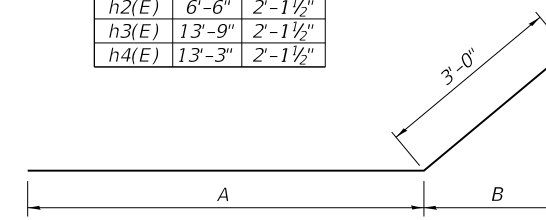


**BARS d(E) & v(E)**

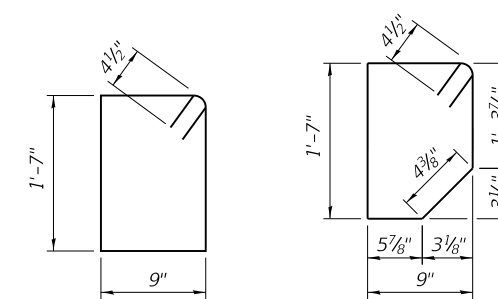


**BAR a(E)**

BAR	A	B
h2(E)	6'-6"	2'-1 1/2"
h3(E)	13'-9"	2'-1 1/2"
h4(E)	13'-3"	2'-1 1/2"



**BARS h2(E) THRU h4(E)**



**BAR s1(E)**

**BAR s(E)**

(Sheet 3 of 3)

MODEL: PLOT  
FILE NAME: Y:\IDOT\1352-02\_66F88\CADD\SP\_SN\_046-2018\0462018-66F88-08-CulvertDtls.dgn



USER NAME = shi	DESIGNED - RDP 11/20	REVISED - 05/17/2021 RDP
ESCA PROJECT NO. 1352.02	CHECKED - RDP 11/20	REVISED -
PLOT SCALE = 0.1667' / in.	DRAWN - KAH 11/20	REVISED -
PLOT DATE = 5/17/2021	CHECKED - RDP 11/20	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT DETAILS  
STRUCTURE NO. 046-2018**

SHEET 8 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41	13BR-1	KANKAKEE	103	39
CONTRACT NO. 66F88				
ILLINOIS FED. AID PROJECT				

5/17/2021 8:54:35 AM

REV. 5/24/21