F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	10B-1-R(87)	KANE	24	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 1
8 Sheets

DESCRIPTION OF IMPROVEMENT:

The Improvement includes total replacement of the existing structure with a widened cross section. The existing structure, 045-0025, built in 1931 and widened in 1957, is a two-span reinforced concrete deck girder bridge approximately 65' end to end and approximately 70' out to out. The existing structure shall be replaced with a twin cell reinforced concrete box culvert.
Stage construction shall be used to maintain one lane of traffic at all times.
The contractor shall remove the existing structure to the bottom of abutment & pier footing and cut-off existing piles to elevation 639.0 ±.
No salvage.

BENCH MARK:

1. B.M. #"A 50 Reset 1944"
   Standard tablet set in S.E. corner of abutment C. B. & Q. Railroad over Ill. Rte. 47: Elevation 644.52
2. T.B.M. #5
   "△" with drill hole S.W. corner of bridge on ℄ Ill. Rte. 47 over Rob Roy Creek in S.W. corner Ill. 47 & U.S. 30: Elevation 657.72

* Dimensions are shown radially to the ℄ Ill. Rte. 47

** Dimensions are shown perpendicular to the tangent to ℄ Ill. Rte. 47 at Sta. 51+79.74

DESIGN DATA

DESIGN SPECIFICATIONS:
1983 AASHTO with 1984 thru 1988 Interim Specifications as applicable.

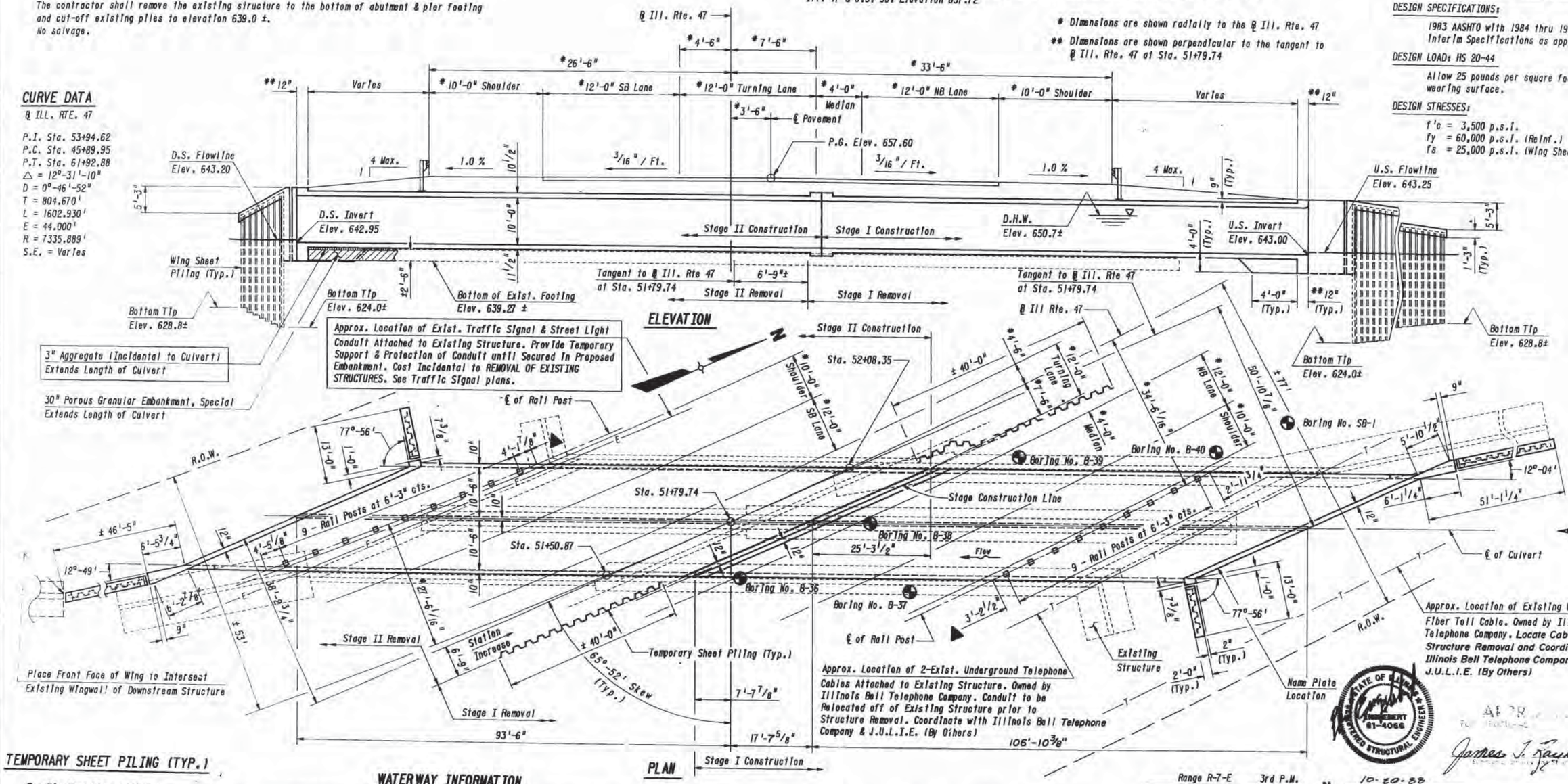
DESIGN LOAD: HS 20-44
Allow 25 pounds per square foot for future wearing surface.

DESIGN STRESSES:
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)
fs = 25,000 p.s.i. (Wing Sheet Piling)

CURVE DATA

℄ ILL. RTE. 47

P.I. Sta. 53+94.62
P.C. Sta. 45+89.95
P.T. Sta. 61+92.88
△ = 12°-31'-10"
D = 0°-46'-52"
T = 804.670'
L = 1602.930'
E = 44.000'
R = 7335.889'
S.E. = Varies



ELEVATION

3" Aggregate (Incidental to Culvert) Extends Length of Culvert

30" Porous Granular Embankment, Special Extends Length of Culvert

Approx. Location of Exist. Traffic Signal & Street Light Conduit Attached to Existing Structure. Provide Temporary Support & Protection of Conduit until Secured in Proposed Embankment. Cost Incidental to REMOVAL OF EXISTING STRUCTURES. See Traffic Signal plans.

Place Front Face of Wing to Intersect Existing Wingwall of Downstream Structure

Approx. Location of 2-Exist. Underground Telephone Cables Attached to Existing Structure. Owned by Illinois Bell Telephone Company. Conduit to be Relocated off of Existing Structure prior to Structure Removal. Coordinate with Illinois Bell Telephone Company & J.U.L.I.E. (By Others)

Approx. Location of Existing Underground Fiber Toll Cable. Owned by Illinois Bell Telephone Company. Locate Cable prior to Structure Removal and Coordinate with Illinois Bell Telephone Company and J.U.L.I.E. (By Others)

TEMPORARY SHEET PILING (TYP.)

Top Tip Elevation = 659.5 ±
Bottom Tip Elevation = 613.7 ±

WATERWAY INFORMATION

DRAINAGE AREA = 5.8 SQ. MI. LOW GRADE ELEVATION = 657.57 AT STA. 52+00

FLOOD	FREQ. YR.	Q C.F.S.	OPENING S.F. EXIST.	OPENING S.F. PROP.	MAT. H.W.E.	HEAD - FEET EXIST.	HEAD - FEET PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
DESIGN	50	550	135	155	650.7	0.1	0.1	650.8	650.8
BASE	100	645	150	170	651.4	0.1	0.1	651.5	651.5
OVERTOPPING									
MAX. CALC.	500	830	175	190	652.5	0.2	0.2	652.7	652.7

Donohue Engineers & Architects

DESIGN BY: J.R.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: D.F.K.	CHECKED BY: LEN
PROJECT NUMBER 15921.311			

DATE:
W.U.=
W.U.=

PLAN

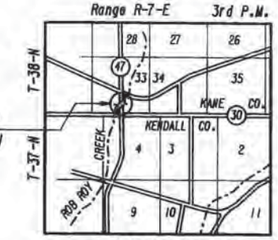
Sta. 50+00.00	Sta. 51+00.00	Sta. 52+00.00	Sta. 53+00.00
Elev. 657.63	Elev. 657.60	Elev. 657.57	Elev. 657.62

PROFILE GRADE LINE

℄ ILL. RTE. 47

▲ Dimensions of Post Spacing are given along ℄ of Rail Post.

Note:
See Sheet 2 for Total Bill of Material and General Notes.



LOCATION SKETCH

STATE OF ILLINOIS
ROBERT 81-4066
REGISTERED STRUCTURAL ENGINEER

AE R
FOR THE DIRECTOR
James I. Faulkner
10-20-88

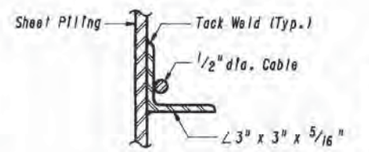
GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 10B-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

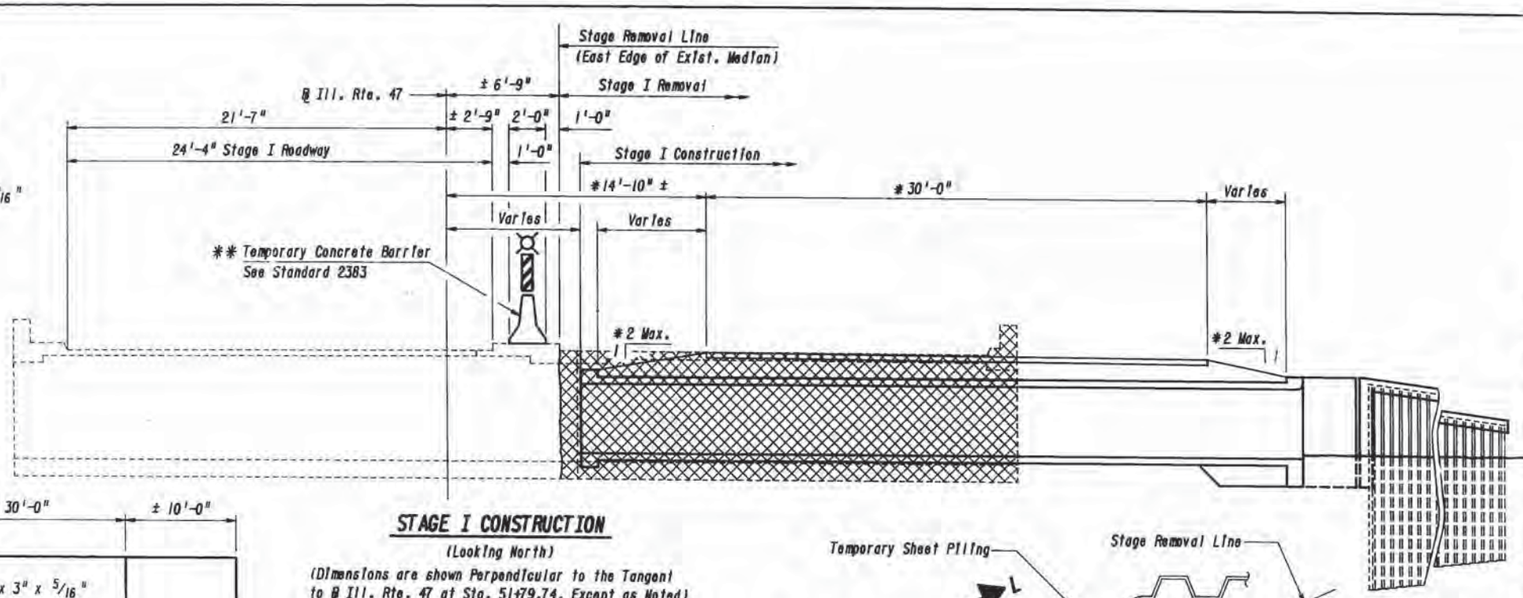
D1

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	108-1-R(87)	KANE	24	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 2
8 Sheets



SECTION A-A

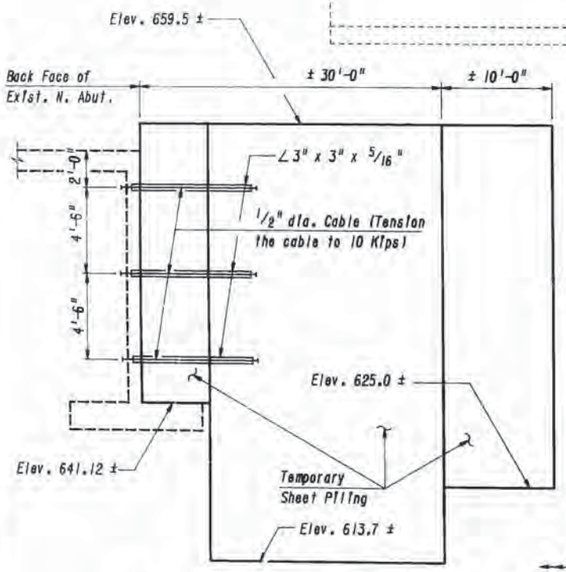


STAGE I CONSTRUCTION

(Looking North)

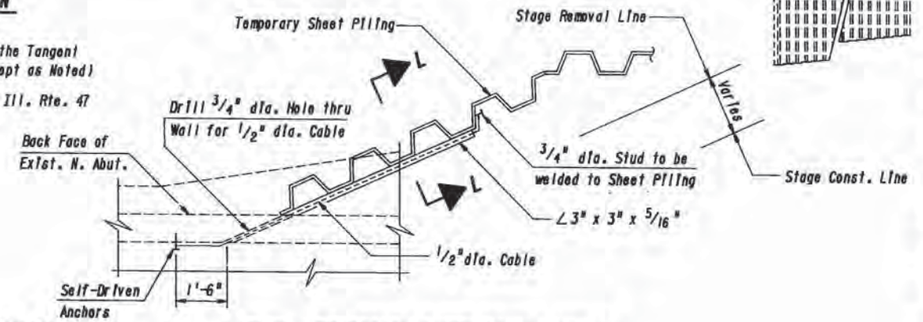
(Dimensions are shown Perpendicular to the Tangent to @ Ill. Rte. 47 at Sta. 51+79.74, Except as Noted)

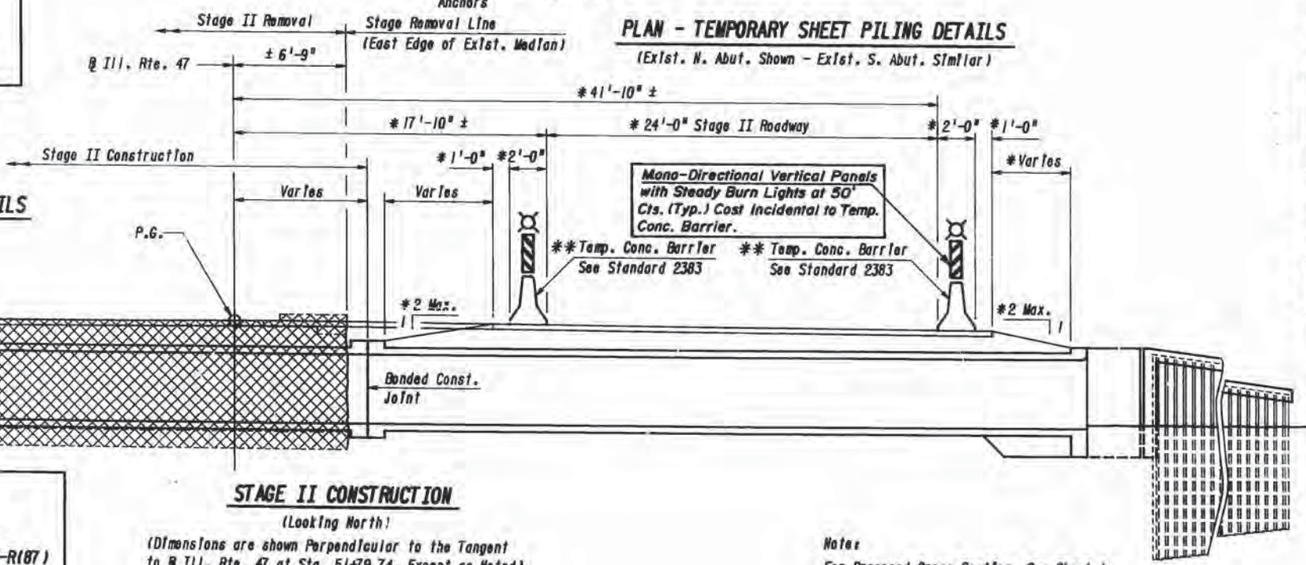
* Dimensions are shown Radially to @ Ill. Rte. 47



ELEVATION - TEMPORARY SHEET PILING DETAILS

(Exist. N. Abut. Shown - Exist. S. Abut. Similar)
See Sheet 1 for Location





PLAN - TEMPORARY SHEET PILING DETAILS

(Exist. N. Abut. Shown - Exist. S. Abut. Similar)

STAGE II CONSTRUCTION

(Looking North)

(Dimensions are shown Perpendicular to the Tangent to @ Ill. Rte. 47 at Sta. 51+79.74, Except as Noted)

* Dimensions are shown Radially to @ Ill. Rte. 47

TOTAL BILL OF MATERIAL

	Item	Unit	Total
	Porous Granular Embankment, Special	Cu.Yd.	475
	Removal of Existing Structures	L.Sum	1
	Class X Concrete Box Culverts	Cu.Yd.	603.3
	Reinforcement Bars	Lbs.	115,600
***	Temporary Sheet Piling	Sq.Ft.	4,905
	Name Plates	Each	1
***	Steel Plate Beam Guard Rail, Attached to Structures (Special)	Lin.Ft.	126
***	Steel Sheet Piling	Sq.Ft.	2,670
***	Removal and Disposal of Unsuitable Material	Cu.Yd.	505

*** See Special Provisions

GENERAL NOTES:

See proposal for boring data.

Exposed edges shall be beveled 3/4".

Class X Concrete shall be used throughout.

For backfilling and embankment, see Standard Specifications.

Nonmetallic water seal used in the wingwall cap shall extend from bottom of cut-off wall to within 6" of top of headwall.

Original survey information supplied by the I.D.O.T. and was used as a basis for the preparation of base plans.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53, Grade 60.

At least six feet of the Barrel shall be poured monolithically with wingwalls.

It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer & the cost shall be included in the unit bid price of "Class X Concrete Box Culverts".

The information shown for the temporary sheet piling is estimated. It is the Contractor's responsibility to provide a design of the Temporary Sheet Piling and associated members, if required, subject to the approval of the Engineer.

Cost of 3/4" dia. Studs, 1/2" dia. Cable, 3" x 3" x 5/16" angles, and Self-Driven Anchors shall be Incidental to Temporary Sheet Piling.

Install each cable/angle assembly after excavating one foot below the assembly location.

Sheet Piling for wings shall conform to the requirements of AASHTO M-202.

Precast option will not be allowed in the construction of the culvert.

STATION 51+79.74
BUILT 198 BY
STATE OF ILLINOIS
F.A. RTE. 100 SEC. 108-1-R(87)
F.A. PROJ.
LOADING HS20
STR. NO. 045-2011

NAME PLATE
See Std. 2113

Note:

For Proposed Cross Section, See Sheet 1.

See Roadway plans for placement of final layer of bituminous concrete on east portion of structure.

☒ Hatched area indicates "Removal of Existing Structures".

** For quantity of Temporary Concrete Barrier, See Roadway Plans.

Donohue
Engineers & Architects

DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
J.R.L.	J.H.R.	D.F.K.	LEN

PROJECT NUMBER 15921.311

CULVERT DETAILS

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 108-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D2

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	108-1-R(87)	KANE	24	11
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 3
8 Sheets

WING SHEET PILING (TYP.)

Section Designation: PZ22
Min. Section Modulus = 15.53 In.^{3}
24 Sections of PZ22 Steel Sheet Piling (N.E. Wing)
6 Sections of PZ22 Steel Sheet Piling (S.E. Wing)

NOTES

Exposed edges shall be beveled $^3/_4$".

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

Work this sheet with Sheets 5 & 6

For Sec. A-A, Sec. B-B, Sec. D-D and Half Section Thru Barrel & Half End Elevation, See Sheet 5.

For Bill of Material, See Sheet 6.

Lap #4 h_3 bars 1'-4" min.

Lap #5 h & p_1 bars 1'-8" min.

Lap #7 h_1 bars 2'-9" min.

Lap #9 h_2 bars 4'-9" min.

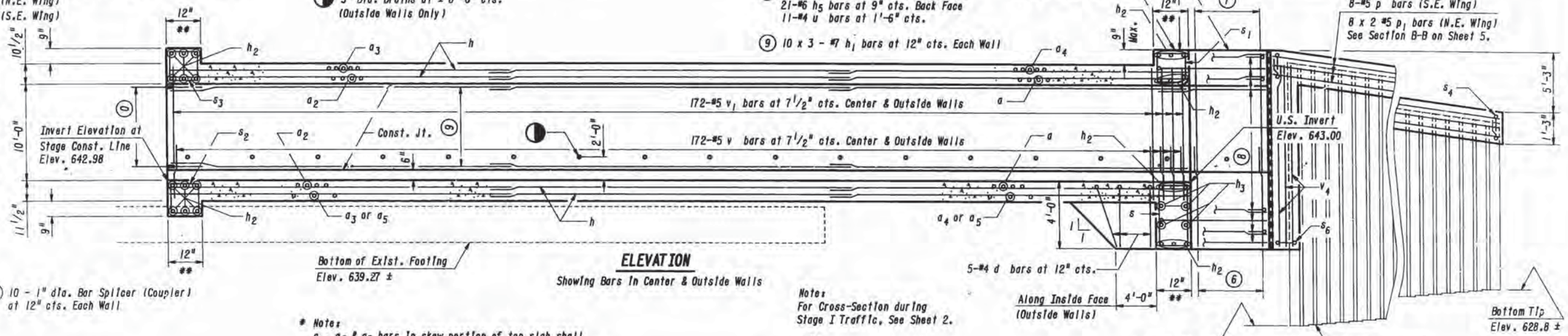
TEMPORARY SHEET PILING (TYP.)

Top Tip Elevation = 659.5 ±
Bottom Tip Elevation = 613.7 ±

** Dimensions are shown Perpendicular to the Tangent to ℄ Ill. Rte. 47 at Sta. 51+79.74

3" Dia. Drains at ± 8'-0" cts. (Outside Walls Only)

(6) 4-#4 v_2 bars at ± 2'-0" cts. Each Face
(7) 4-#4 v_3 bars at ± 2'-0" cts. Each Face
(8) 21-#5 h_4 bars at 9" cts. Front Face
21-#6 h_5 bars at 9" cts. Back Face
11-#4 u bars at 1'-6" cts.
(9) 10 x 3 - #7 h_1 bars at 12" cts. Each Wall



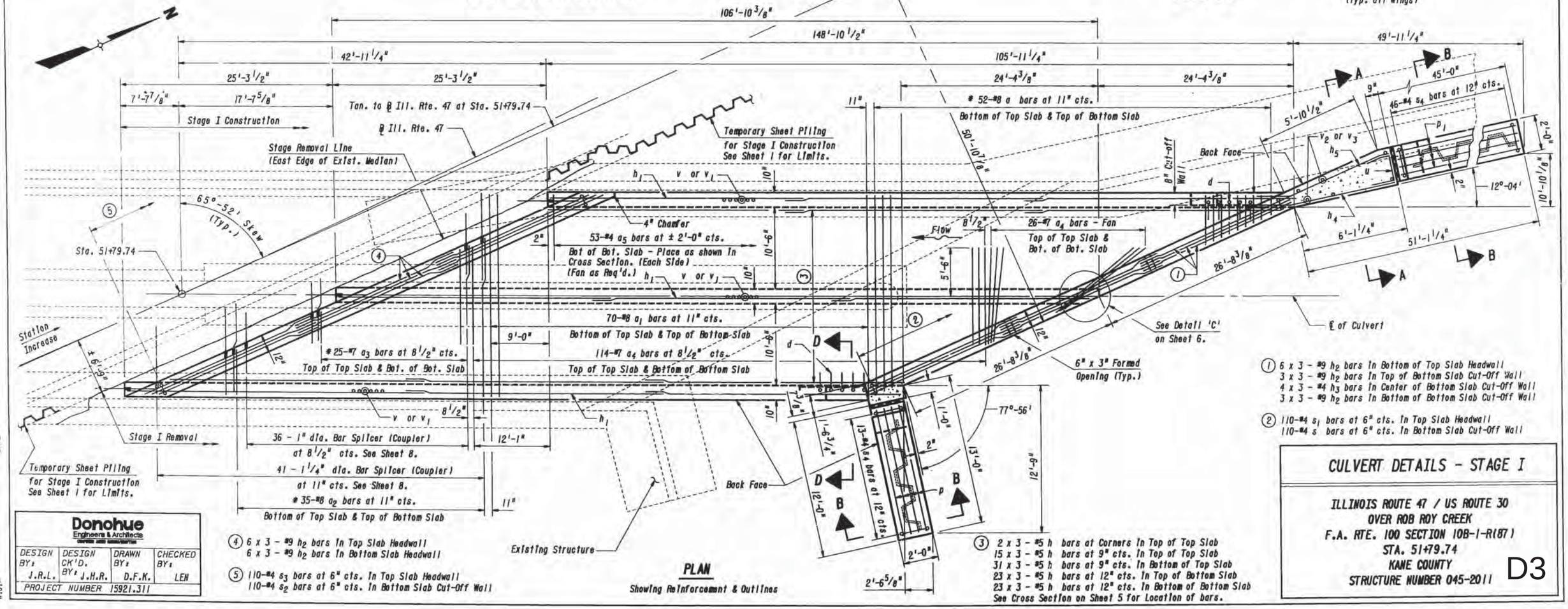
(0) 10 - 1" dia. Bar Splicer (Coupler) at 12" cts. Each Wall

ELEVATION

Showing Bars In Center & Outside Walls

* Note:
a_1, a_2 & a_3 bars in skew portion of top slab shall be ordered full length and cut to fit. Balance of bars to be used in bottom slab of culvert.

Note:
For Cross-Section during Stage I Traffic, See Sheet 2.



PLAN

Showing Reinforcement & Outlines

(1) 6 x 3 - #9 h_2 bars In Bottom of Top Slab Headwall
3 x 3 - #9 h_2 bars In Top of Bottom Slab Cut-Off Wall
4 x 3 - #4 h_3 bars In Center of Bottom Slab Cut-Off Wall
3 x 3 - #9 h_2 bars In Bottom of Bottom Slab Cut-Off Wall

(2) 110-#4 s_1 bars at 6" cts. In Top Slab Headwall
110-#4 s bars at 6" cts. In Bottom Slab Cut-Off Wall

(3) 2 x 3 - #5 h bars at Corners In Top of Top Slab
15 x 3 - #5 h bars at 9" cts. In Top of Top Slab
31 x 3 - #5 h bars at 9" cts. In Bottom of Top Slab
23 x 3 - #5 h bars at 12" cts. In Top of Bottom Slab
23 x 3 - #5 h bars at 12" cts. In Bottom of Bottom Slab
See Cross Section on Sheet 5 for Location of bars.

(4) 6 x 3 - #9 h_2 bars In Top Slab Headwall
6 x 3 - #9 h_2 bars In Bottom Slab Headwall

(5) 110-#4 s_3 bars at 6" cts. In Top Slab Headwall
110-#4 s_2 bars at 6" cts. In Bottom Slab Cut-Off Wall

CULVERT DETAILS - STAGE I

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 108-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D3

Donohue
Engineers & Architects

DESIGN BY: J.R.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: D.F.K.	CHECKED BY: LEN
PROJECT NUMBER 15921.311			

FILE= STAGE1A.ROXX
W.U.=
W.U.=
DATE=

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	108-1-R(87)	KANE	24	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 4
8 Sheets

TEMPORARY SHEET PILING (TYP.)

Top Tip Elevation = 659.5 ±
Bottom Tip Elevation = 613.7 ±

NOTES

Exposed edges shall be beveled $^3/_4$".

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

Work this sheet with Sheets 5 & 6.

For Sec. A-A, Sec. B-B, Sec. D-D and Half Section Thru Barrel & Half End Elevation, See Sheet 5.

For Bill of Material, See Sheet 6.

Lap #4 h_3 bars 1'-4" min.

Lap #5 h_6 & p_2 bars 1'-8" min.

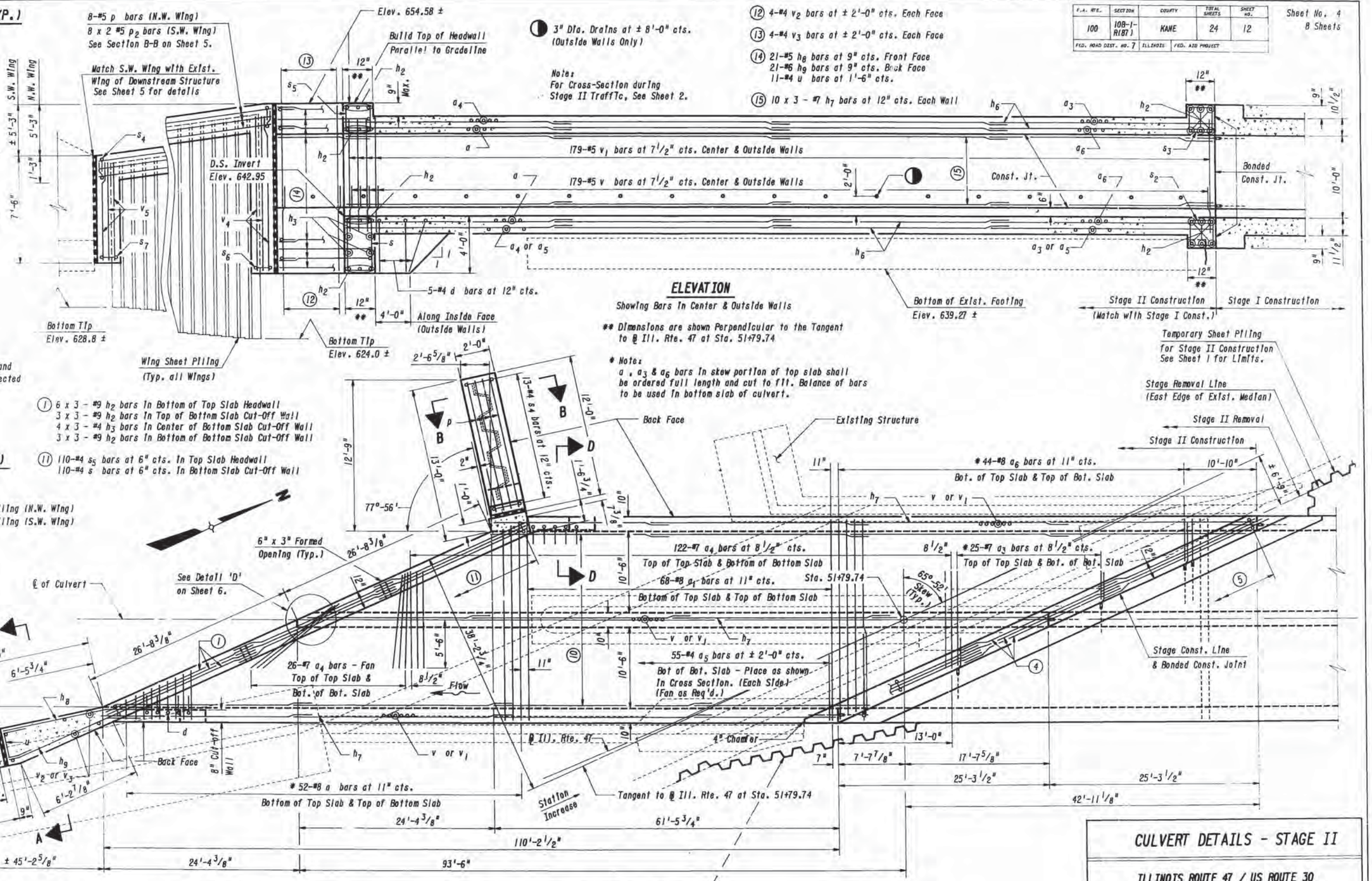
Lap #7 h_7 bars 2'-9" min.

Lap #9 h_2 bars 4'-9" min.

S.W. Wingwall length is approximate and may require field adjustments as directed by the Engineer.

WING SHEET PILING (TYP.)

Section Designation: PZ22
Min. Section Modulus = 15.53 In.^{3}
6 Sections of PZ22 Steel Sheet Piling (N.W. Wing)
21 Sections of PZ22 Steel Sheet Piling (S.W. Wing)



ELEVATION

Showing Bars In Center & Outside Walls

** Dimensions are shown Perpendicular to the Tangent to ℄ Ill. Rte. 47 at Sta. 51+79.74

* Note: a, a_3 & a_6 bars in skew portion of top slab shall be ordered full length and cut to fit. Balance of bars to be used in bottom slab of culvert.

(1) 6 x 3 - #9 h_2 bars In Bottom of Top Slab Headwall
3 x 3 - #9 h_2 bars In Top of Bottom Slab Cut-Off Wall
4 x 3 - #4 h_3 bars In Center of Bottom Slab Cut-Off Wall
3 x 3 - #9 h_2 bars In Bottom of Bottom Slab Cut-Off Wall

(11) 110-#4 s_5 bars at 6" cts. In Top Slab Headwall
110-#4 s bars at 6" cts. In Bottom Slab Cut-Off Wall

(10) 2 x 4 - #5 h_6 bars at Corners In Top of Top Slab
15 x 4 - #5 h_6 bars at 9" cts. In Top of Top Slab
31 x 4 - #5 h_6 bars at 9" cts. In Bottom of Top Slab
23 x 4 - #5 h_6 bars at 12" cts. In Top of Bottom Slab
23 x 4 - #5 h_6 bars at 12" cts. In Bottom of Bottom Slab
See Cross Section on Sheet 5 for Location of bars.

(4) 6 x 3 - #9 h_2 bars In Top Slab Headwall
6 x 3 - #9 h_2 bars In Bottom Slab Headwall

(5) 110-#4 s_3 bars at 6" cts. In Top Slab Headwall
110-#4 s_2 bars at 6" cts. In Bottom Slab Cut-Off Wall

PLAN

Showing Reinforcement & Outlines

Temporary Sheet Piling for Stage II Construction See Sheet 1 for Limits.

CULVERT DETAILS - STAGE II

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 108-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D4

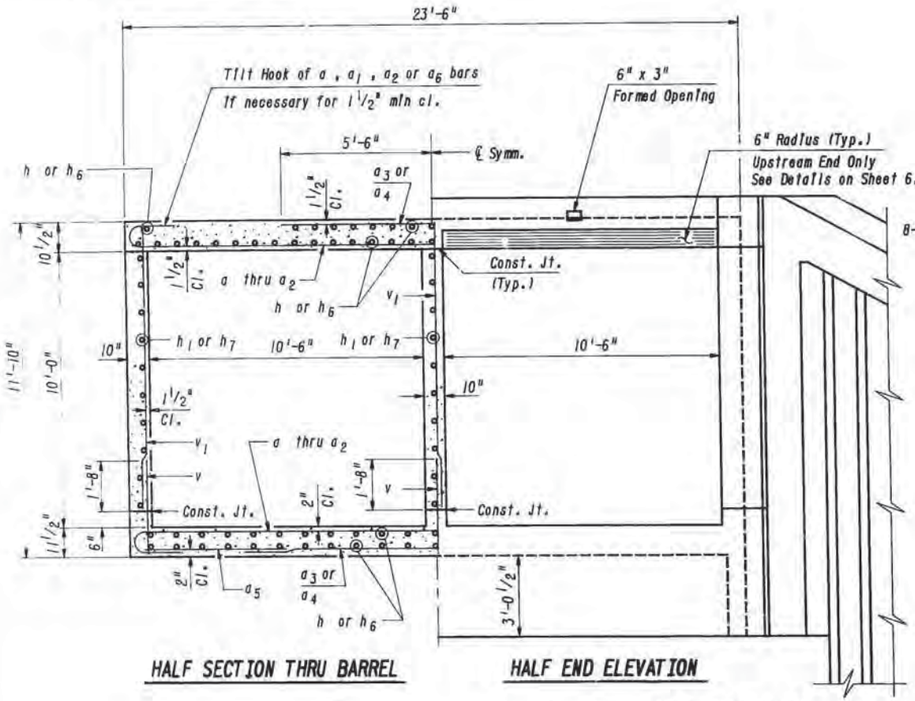
Donohue Engineers & Architects

DESIGN BY: J.R.L.	DESIGN CK'D. BY: J.H.R.	DRAWN BY: D.F.K.	CHECKED BY: LEN
PROJECT NUMBER 15921.311			

DATE=
FILE= S14628A.MBX
W.U.=
W.U.=

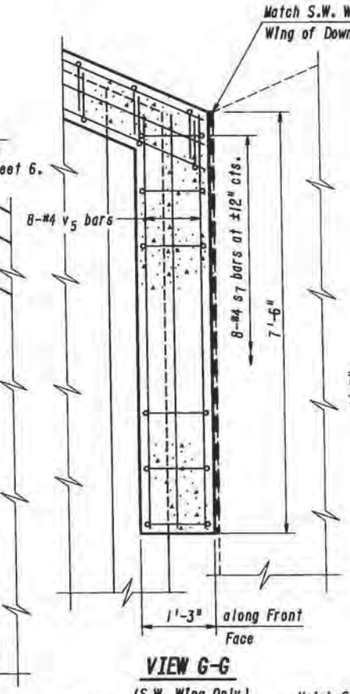
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	108-1-R(87)	KANE	24	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 5
8 Sheets

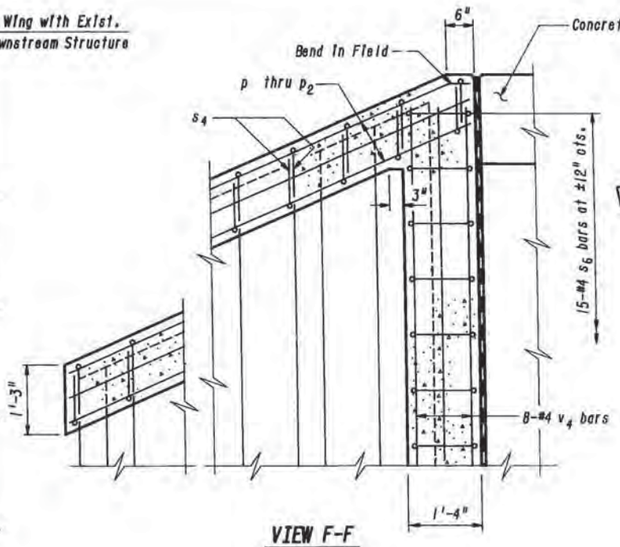


HALF SECTION THRU BARREL

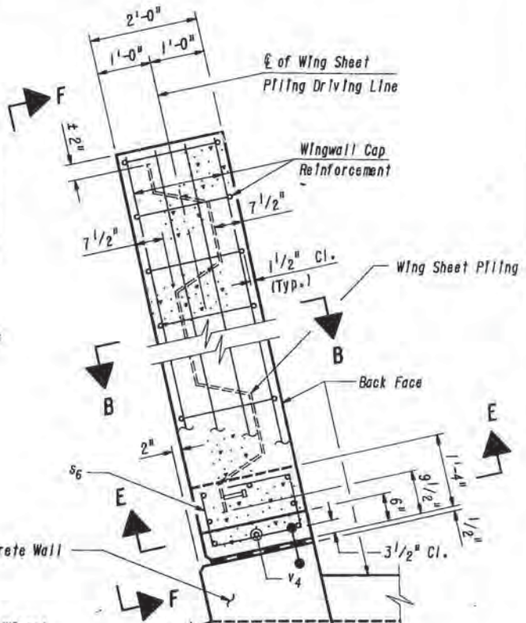
HALF END ELEVATION



VIEW G-G
(S.W. Wing Only)

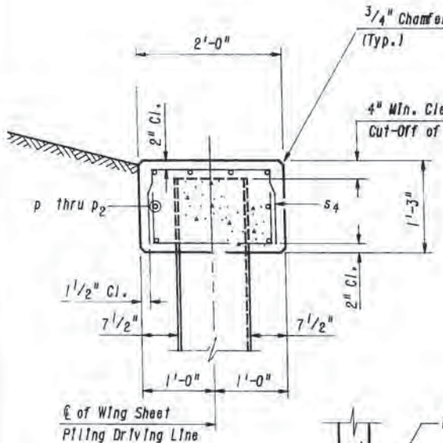


VIEW F-F



WING SHEET PILING (TYP.)

Section Designation: PZ22
Min. Section Modulus = 15.53 In.^{3}
24 Sections of PZ22 Steel Sheet Piling (N.E. Wing)
6 Sections of PZ22 Steel Sheet Piling (S.E. & N.W. Wings)
21 Sections of PZ22 Steel Sheet Piling (S.W. Wing)



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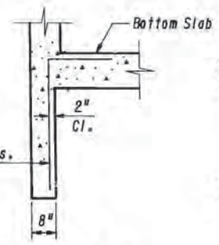
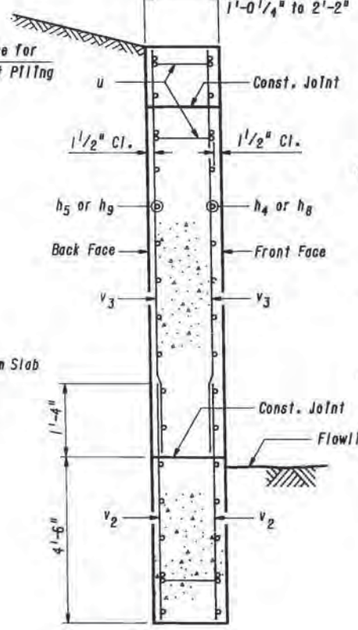
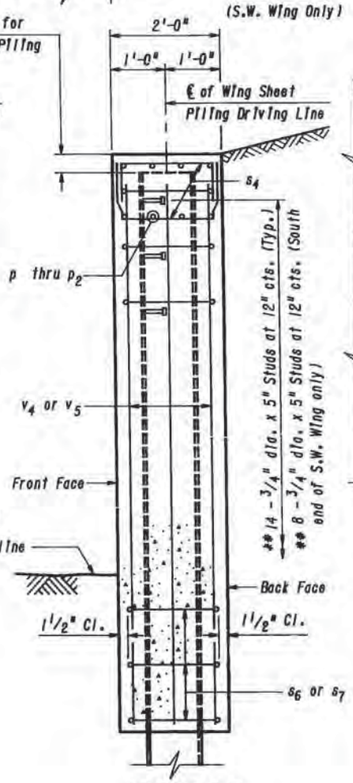


SECTION D-D



SECTION A-A



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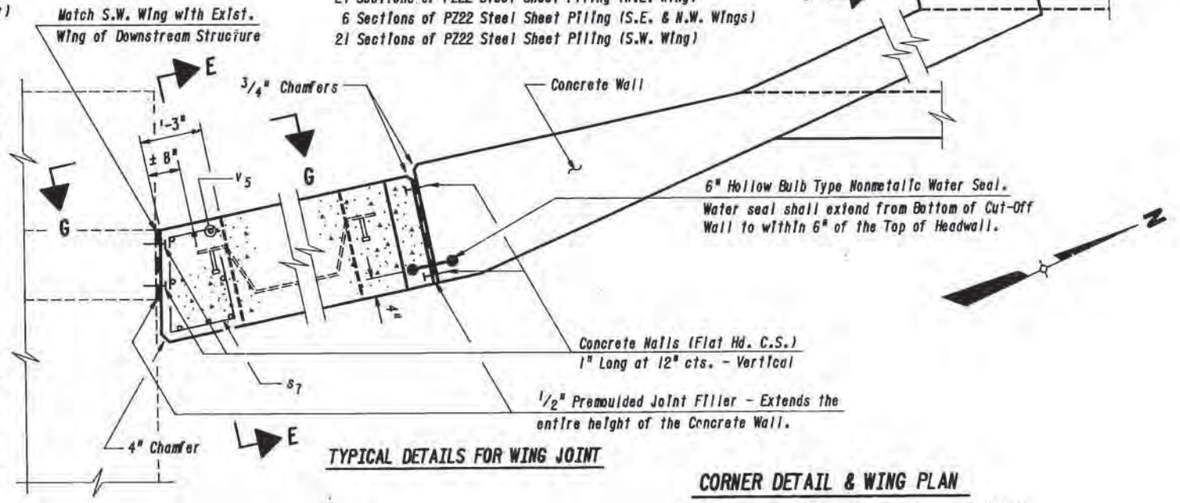


TYPICAL DETAILS FOR WING JOINT

CORNER DETAIL & WING PLAN

(West Wings Shown - East Wings Similar Except as Noted)

NOTES

Holes shall be field drilled or torched in the steel sheet piling and shall provide the minimum diameter necessary to allow placement of s_4 bars. Cost shall be incidental to Steel Sheet Piling.

** 3/4" dia. x 5" Granular or solid flux filled headed studs conforming to Article 710.38 of the Standard Specifications and shall be automatically and welded as shown in Section E-E on this sheet. Cost of studs including installation shall be incidental to Steel Sheet Piling.

Class X Concrete (Encasing the top and end of Steel Sheet Piling) shall be included in Class X Concrete, Box Culverts.

Work this sheet with Sheets 3, 4 & 6.

Donohue
Engineers & Architects

DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
J.R.L.	J.H.R.	D.F.K.	LEN

PROJECT NUMBER 15921.311

DATE:
W.U.=
W.U.=

CULVERT DETAILS - STAGES I & II

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 108-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D5

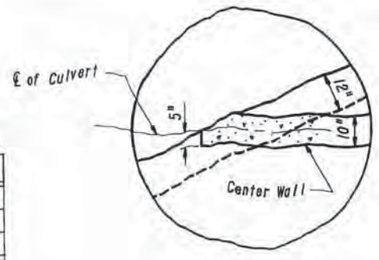
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	108-1-R(87)	KANE	24	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 6
8 Sheets

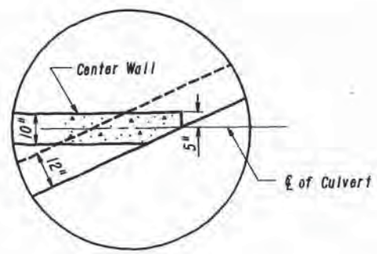
BILL OF MATERIAL, STAGE I CONST.

BAR	NUMBER	SIZE	LENGTH	SHAPE
a	52	# 8	25'-7"	
a_1	140	# 8	24'-11"	
a_2	35	# 8	23'-7"	
a_3	25	# 7	14'-6"	
a_4	280	# 7	11'-0"	
a_5	106	# 4	7'-3"	
d	10	# 4	5'-6"	
h	282	# 5	36'-8"	
h_1	90	# 7	37'-5"	
h_2	72	# 9	22'-0"	
h_3	12	# 4	19'-10"	
h_4	21	# 5	9'-0"	
h_5	21	# 5	9'-2"	
p	8	# 5	11'-8"	
p_1	16	# 5	23'-2"	
s	110	# 4	9'-3"	
s_1	110	# 4	4'-9"	
s_2	110	# 4	4'-9"	
s_3	110	# 4	4'-11"	
s_4	118	# 4	3'-7"	
s_6	30	# 4	4'-7"	
v	516	# 5	3'-0"	
v_1	516	# 5	10'-3"	
v_2	8	# 4	5'-8"	
v_3	8	# 4	11'-0"	
v_4	16	# 4	14'-6"	
u	11	# 4	4'-4"	

Class X Concrete Box Culverts	Cu.Yd.	294.7
Reinforcement Bars	Lbs.	56,270
Temporary Sheet Piling	Sq. Ft.	3,575
Steel Sheet Piling	Sq. Ft.	1,400



DETAIL 'D'

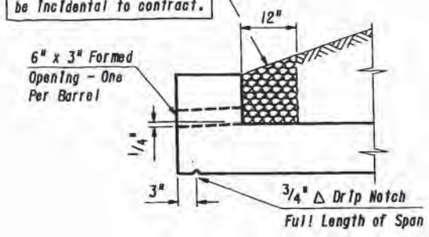


DETAIL 'C'

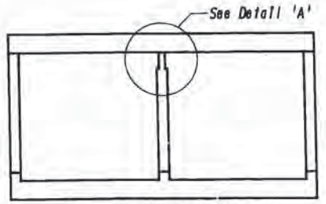
BAR	LOCATION	NO.
h	Top of top slab	15
h	Bottom of top slab	31
h	Top of bottom slab	23
h	Bottom of bottom slab	23
h_1	Each outside wall	10
h_1	Center wall	10

3 Lengths Each Required
(1'-8" Min. Lap for h bars)
(2'-9" Min. Lap for h_1 bars)

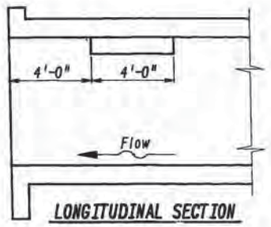
Course aggregate full length of headwall. To be placed by Grading Contractor. Cost shall be Incidental to contract.



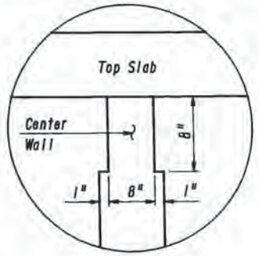
DRAIN DETAIL
(Downstream End Only)



SECTION THRU BARREL NEAR DOWNSTREAM END



LONGITUDINAL SECTION



DETAIL 'A'

NOTE: Notch formed by rough-finished board attached to and removed with formwork.

BAR	LOCATION	NO.
h_6	Top of top slab	15
h_6	Bottom of top slab	31
h_6	Top of bottom slab	23
h_6	Bottom of bottom slab	23
h_7	Each outside wall	10
h_7	Center wall	10

4 Lengths Each Required
(1'-8" Min. Lap for h_6 bars)
(2'-9" Min. Lap for h_7 bars)

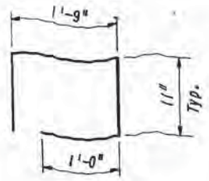
PHOEBE NESTING SITE ON BOX CULVERT

BILL OF MATERIAL, STAGE II CONST.

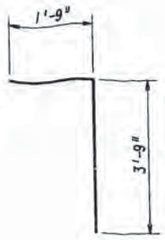
BAR	NUMBER	SIZE	LENGTH	SHAPE
a	52	# 8	25'-7"	
a_1	136	# 8	24'-11"	
a_3	25	# 7	14'-6"	
a_4	296	# 7	11'-0"	
a_5	110	# 4	7'-3"	
a_6	44	# 8	30'-0"	
d	10	# 4	5'-6"	
h_2	72	# 9	22'-0"	
h_3	12	# 4	19'-10"	
h_6	376	# 5	29'-5"	
h_7	120	# 7	30'-3"	
h_8	21	# 5	9'-4"	
h_9	21	# 5	9'-6"	
p	8	# 5	11'-8"	
p_2	16	# 5	21'-8"	
s	110	# 4	9'-3"	
s_2	110	# 4	4'-9"	
s_3	110	# 4	4'-11"	
s_4	108	# 4	3'-7"	
s_5	110	# 4	4'-11"	
s_6	30	# 4	4'-7"	
s_7	8	# 4	4'-11"	
v	537	# 5	3'-0"	
v_1	537	# 5	10'-3"	
v_2	8	# 4	5'-8"	
v_3	8	# 4	11'-0"	
v_4	16	# 4	14'-6"	
v_5	8	# 4	7'-1"	
u	11	# 4	4'-4"	

Class X Concrete Box Culverts	Cu.Yd.	308.6
Reinforcement Bars	Lbs.	59,330
Temporary Sheet Piling	Sq. Ft.	1,330
Steel Sheet Piling	Sq. Ft.	1,270

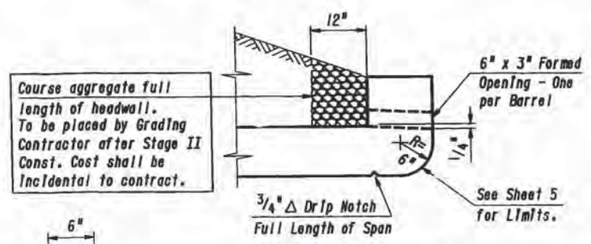
Notes:
Work this sheet with Sheets 3, 4 & 5.



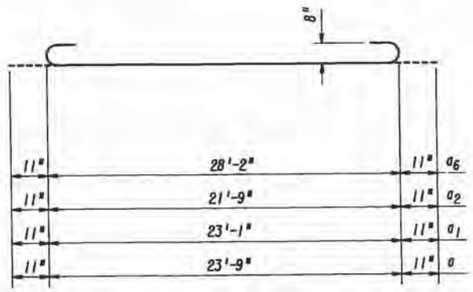
BAR s_6



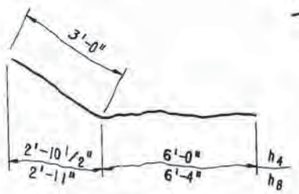
BAR d



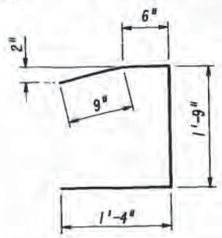
DRAIN DETAIL
(Upstream End Only)



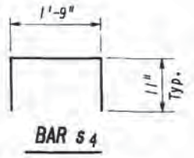
BAR a , a_1 , a_2 & a_6



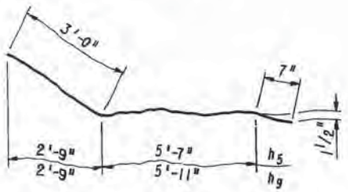
BAR h_4 & h_8



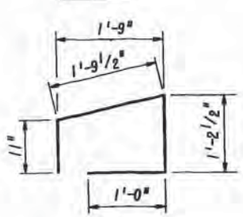
BAR u



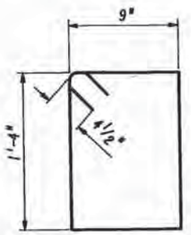
BAR s_4



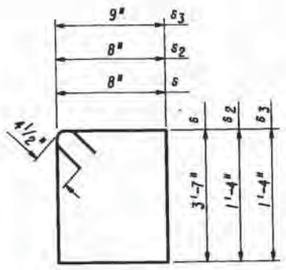
BAR h_5 & h_9



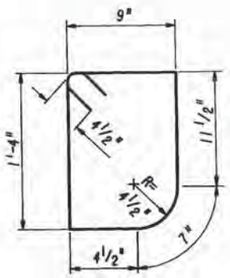
BAR s_7



BAR s_5
(Downstream)



BAR s , s_2 & s_3



BAR s_1
(Upstream)

Notes:
Work this sheet with Sheets 3, 4 & 5.

CULVERT DETAILS - STAGES I & II

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 108-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D6

Donohue
Engineers & Architects

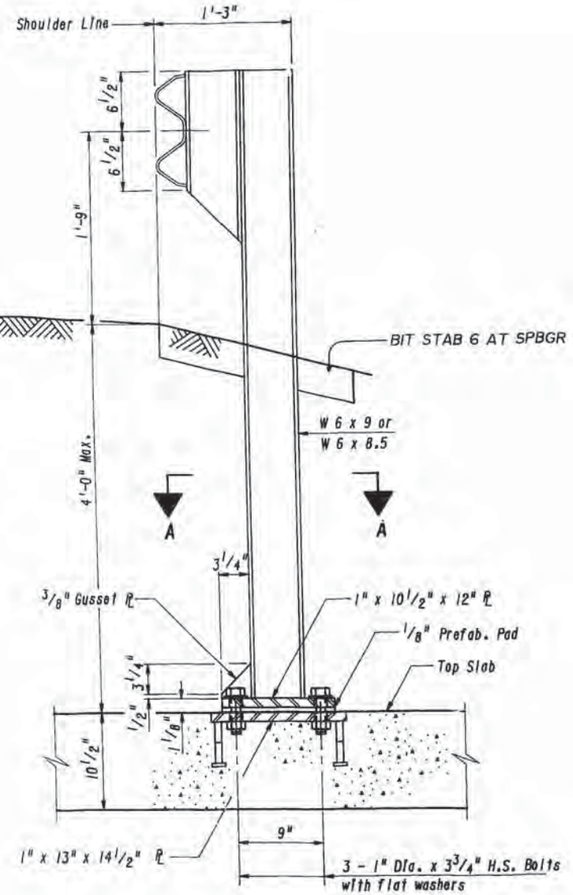
DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
J.R.L.	J.H.R.	D.F.K.	LEN

PROJECT NUMBER 15921.311

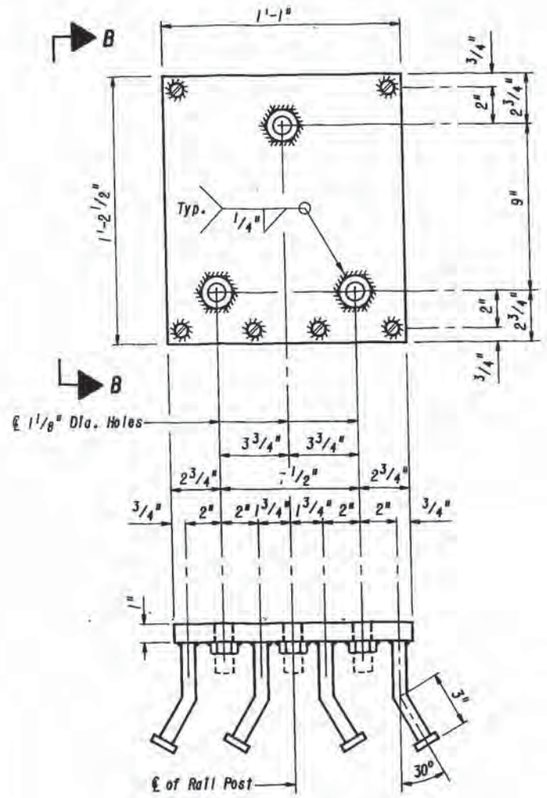
DATE=

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
100	10B-1-R(87)	KANE	24	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sheet No. 7
8 Sheets

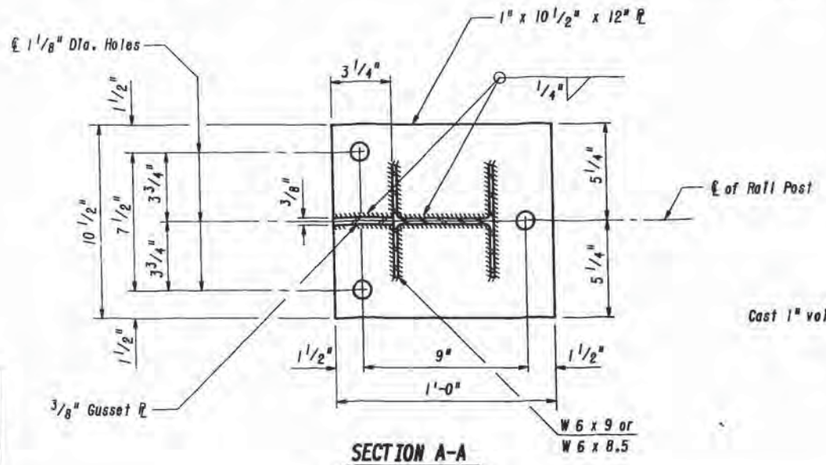


SECTION AT RAIL POST

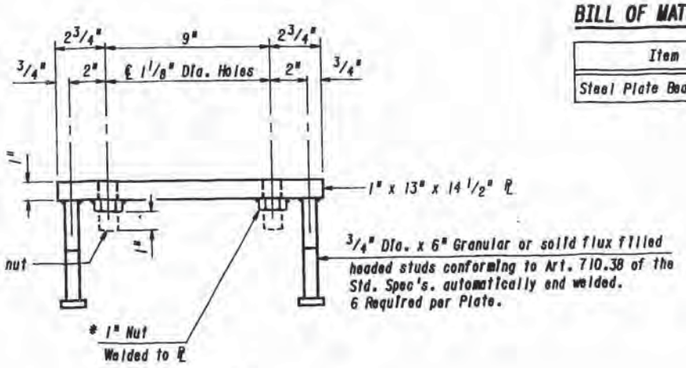


ANCHOR DEVICE

* Threaded areas shall be plugged or blacked off during pouring of Top Slab.



SECTION A-A



VIEW B-B

NOTES

For rail post spacing, see sheet 1.

Bolts , nuts & washers shall conform to the requirements of A.S.T.M. Designation A-307.

All other structural steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-183.

All bolts, nuts & washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

All posts, plates and anchor devices shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 and A.S.T.M. A-385.

The 1" bolts connecting the posts to the anchor devices shall be tightened to a snug fit and given an additional 1/8 turn.

Cost of special posts, attachments for connecting guard rail and anchor devices to culvert shall be included in the cost of STEEL PLATE BEAM GUARD, ATTACHED TO STRUCTURES, SPECIAL

Where guard rail is attached to the structure, measurement of payment will be from center to center of the first post driven adjacent to structure.

For details of guard rail element not shown, see Standard 2230.

Field Cutting of Posts. Care shall be taken in cutting the upper portion of the post (if necessary) to have a smooth cut with minimum damage to galvanizing. The cut areas shall be repaired in accordance with A.A.S.H.T.O. M-36 paragraph 23.1.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Plate Beam Guard, Attached to Structures, Special	Lin. Ft.	126

STEEL PLATE BEAM GUARD RAIL

ILLINOIS ROUTE 47 / US ROUTE 30
OVER ROB ROY CREEK
F.A. RTE. 100 SECTION 10B-1-R(87)
STA. 51+79.74
KANE COUNTY
STRUCTURE NUMBER 045-2011

D7

Donohue
Engineers & Architects

DESIGN BY:	DESIGN CK'D. BY:	DRAWN BY:	CHECKED BY:
J.R.L.	J.H.R.	D.F.K.	LEN

PROJECT NUMBER 15921.311

FILE= RAIL.80X
W.U.=
W.U.=
DATE=