

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
150	351	VERMILION	26	1
		ILLINOIS	CONTRACT NO. 70B88	

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

# PROPOSED HIGHWAY PLANS

F.A.S. ROUTE 1512 (U.S. ROUTE 150)  
SECTION 351

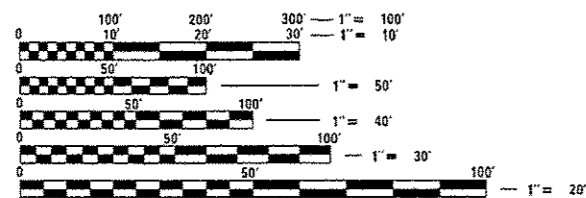
SCOUR MITIGATION  
VERMILION COUNTY

C-95-027-16

S.N. 092-0187 OVER STONY CREEK  
0.7 MILES EAST OF MUNCIE  
STA. 1513+67.50

CURRENT ADT: 2150 (2015)

DESIGN DESIGNATION  
N.A.

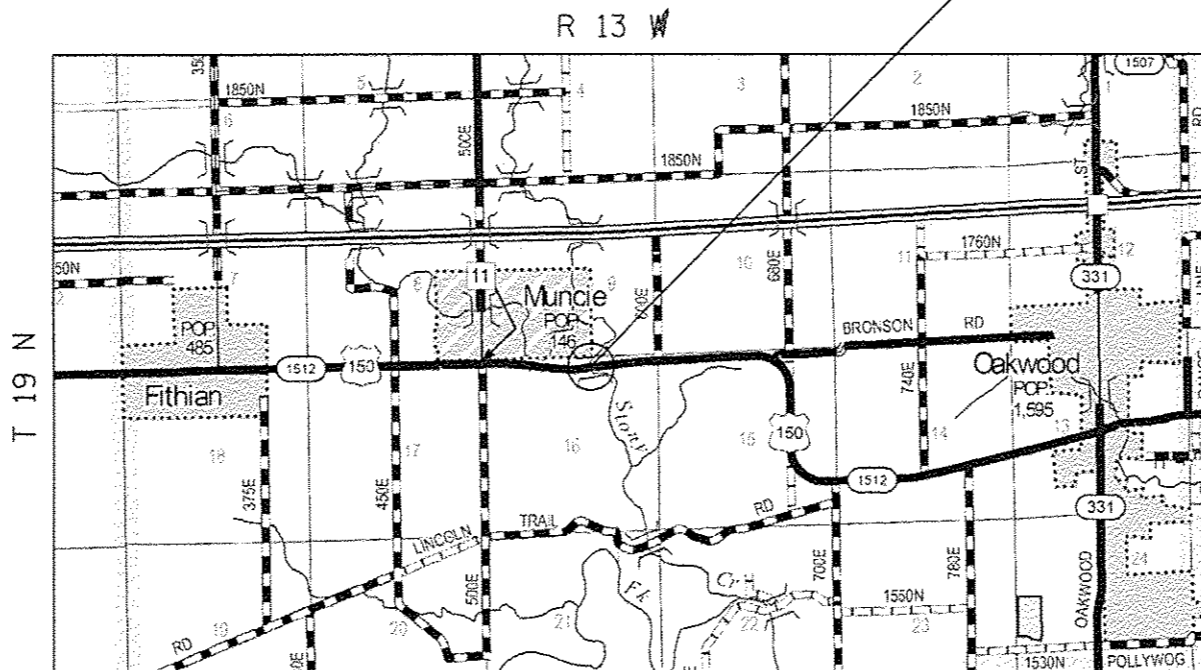


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123 OR 811  
OAKWOOD TOWNSHIP

PROJECT ENGINEER / DESIGNER: TIM BRANDENBURG  
(217) 465-4181

CONTRACT NO. 70B88



GROSS LENGTH = N.A. FT. = N.A. MILE  
NET LENGTH = N.A. FT. = N.A. MILE



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED March 11, 2016

Tom A. Jamson  
REGION THREE ENGINEER

Maayle 2016  
Margaret M. Addis PE  
ENGINEER OF DESIGN AND ENVIRONMENT

Maayle 2016  
Kevin A. ...  
DIRECTOR OF PROGRAM DEVELOPMENT

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OF THE STATE OF ILLINOIS

## INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS / LIST OF STANDARDS / GENERAL NOTES
3	SUMMARY OF QUANTITIES
4	TYPICAL SECTION THRU SN 092-0187
5	TYPICAL PIER END VIEW
6	SN 092-0187 OVERALL SCOUR MITIGATION PLAN
7	BASELINE LAYOUT
8	SN 092-0187 PIER FOOTER PLAN & DETAILS
9	PIER & FOOTER DETAILS
10 to 14	1988 AS-BUILT PLANS (FOR INFORMATION ONLY)
15 to 26	CHANNEL CROSS SECTIONS

## GENERAL NOTES

G.N.-100  
ENGLISH UNITS OF MEASUREMENT SHALL GOVERN OVER AND SUPERSEDE ANY METRIC UNITS SHOWN IN THIS CONTRACT. WHERE INCLUDED, METRIC UNITS ARE FOR INFORMATION ONLY.

G.N.-100A  
ELECTRONIC FILES AND/OR ELECTRONIC SURVEY INFORMATION INCLUDING CADD FILES WILL NOT BE AVAILABLE TO THE CONTRACTOR.

G.N.-105.09A  
ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

## LIST OF HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS $\geq$ 45 MPH
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701901-05	TRAFFIC CONTROL DEVICES

## COMMITMENTS

THERE ARE NO COMMITMENTS WITH THIS CONTRACT

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>INDEX OF SHEETS / HIGHWAY STANDARDS / GENERAL NOTES</b>	U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 48,0000 1" = 100'	CHECKED -	REVISED -	150			351	VERMILION	26	2	
PLOT DATE = 3/11/2016	DATE - 1/19/2016	REVISED -	CONTRACT NO. 70888			ILLINOIS FED. AID PROJECT				
SCALE:		SHEET OF SHEETS STA. TO STA.								

LOCATION OF WORK: VERMILION CO.  
 FAS 1512 (US 150)  
 RURAL TWO-LANE  
 SCOUR MITIGATION

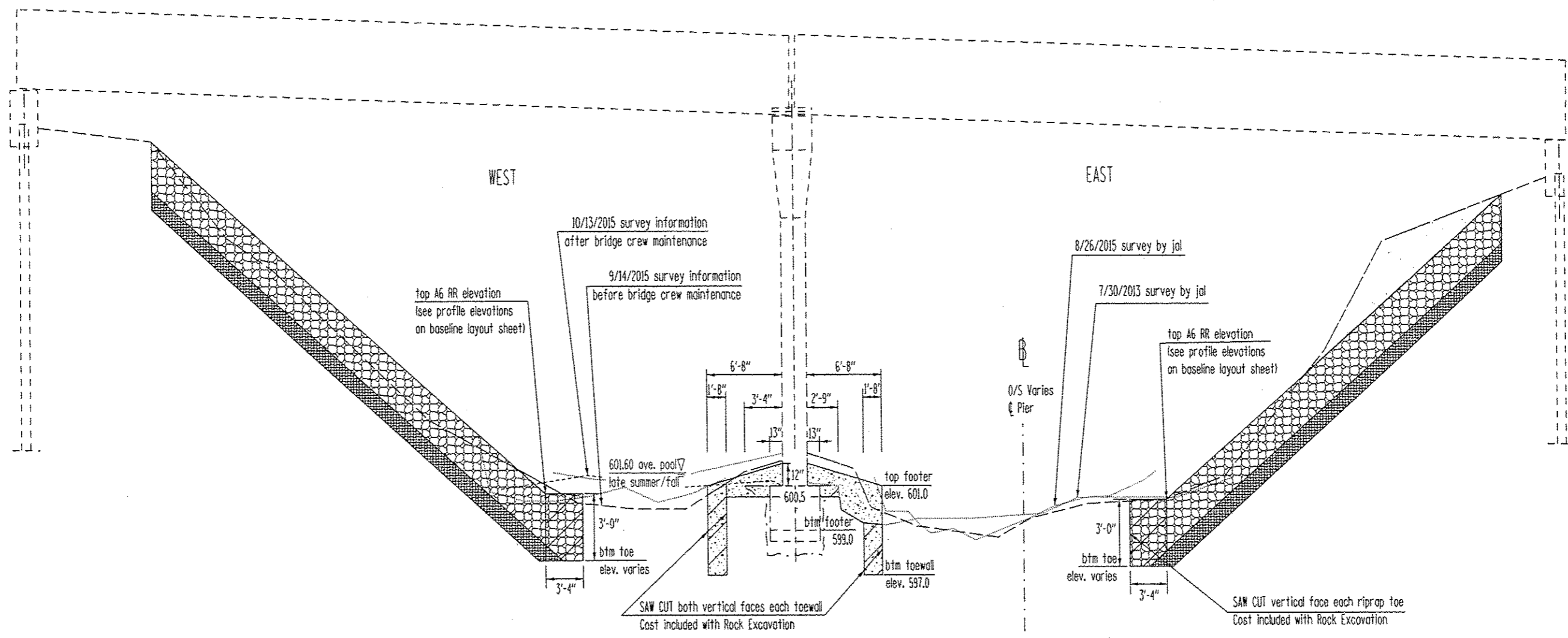
STRUCTURE NUMBER: 092-0187  
 FUNDING BREAKOUT: 100% STATE  
 CONSTRUCTION TYPE CODE: 0014

CODE NO.	DESCRIPTION	UNIT	TOTAL QUANTITY
* 20200200	ROCK EXCAVATION	CU YD	114.0
20300100	CHANNEL EXCAVATION	CU YD	368.0
28100111	STONE RIPRAP CLASS A6	SQ YD	971.0
28200200	FILTER FABRIC	SQ YD	971.0
50300225	CONCRETE STRUCTURES	CU YD	45.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4010.0
67100100	MOBILIZATION	L SUM	1.0
70100450	TRAFFIC CONTROL & PROTECTION, STANDARD 701201	L SUM	1.0

\* NO SPECIALTY ITEMS

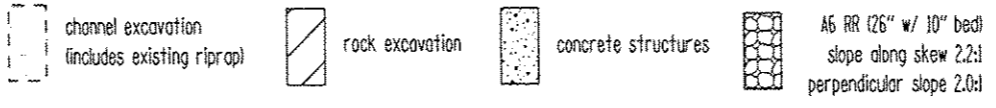
*\*Specialty Items*

FILE NAME *	USER NAME * brandenburgj	DESIGNED - TJB	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>				U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
path \\IL084EBID\INTEG\illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\0570\Drawings\Hydro\TUB\0572822-Hyd.dgn	DRAWN * TJB	CHECKED -	REVISED -						150	351	VERMILION	25	3
PLOT SCALE * 48.0000' / 1" =	DATE - 1/19/2016	DATE - 1/19/2016	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FEG. AID PROJECT		
#MODELNAME*											CONTRACT NO. 70B88		



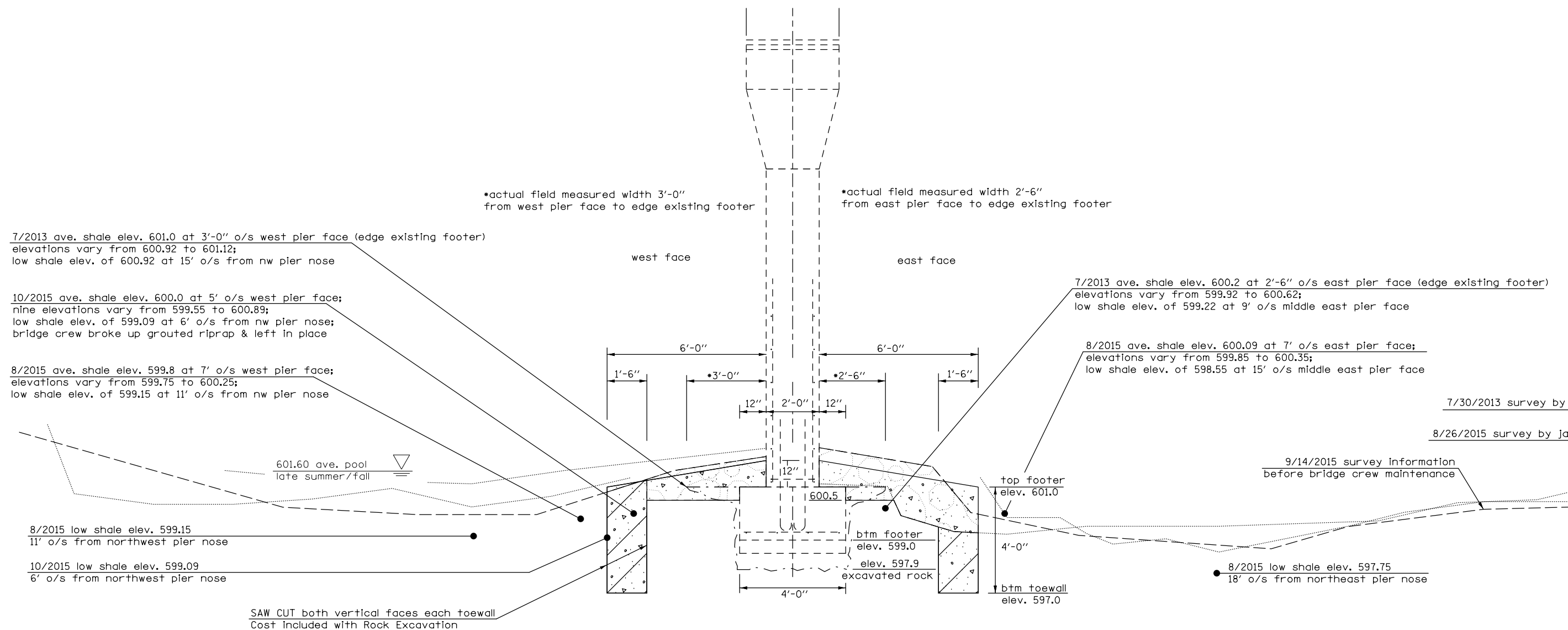
The intent of the Channel Excavation around the existing pier and footing is to remove existing grouted riprap and any loose material, leaving sound material undisturbed thus avoiding potential undermining by removal of the supporting shale material. Grouted riprap shall be broken utilizing hand held jack hammers. Bucket ripped removal is not allowed. Cost included with Channel Excavation.

The intent of the Channel Excavation along the streambanks is to re-establish the waterway opening as designed with the 1988 construction of this structure. This may seem excessive at some channel cross-sections, however is necessary to provide the designed conveyance of flow through this structure thus lessening potential scour concerns. As directed by the Engineer, excess existing riprap removed as part of Channel Excavation may be distributed within existing right-of-way and permanent easement throughout the jobsite and along streambanks as long as the waterway opening is not decreased. Remaining excess material shall be removed from the jobsite.



*David Carl Puzey* 5/3/16  
Expires 11/30/16

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL SECTION THRU SN 092-0187</b>		U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw\11084EB10INTEG.illinois.gov\PW100T\Do	Documents\DOT Offices\District 5\Projects\057	057	057				150	351	VERMILION	26	4
PLLOT SCALE = 40,0000' / in.	CHECKED - VHV	DATE - 1/15/2016	REVISED -				CONTRACT NO. 70B88				
MODELNAME =	PLLOT DATE = 3/11/2016	DATE - 1/15/2016	REVISED -				ILLINOIS FED. AID PROJECT				

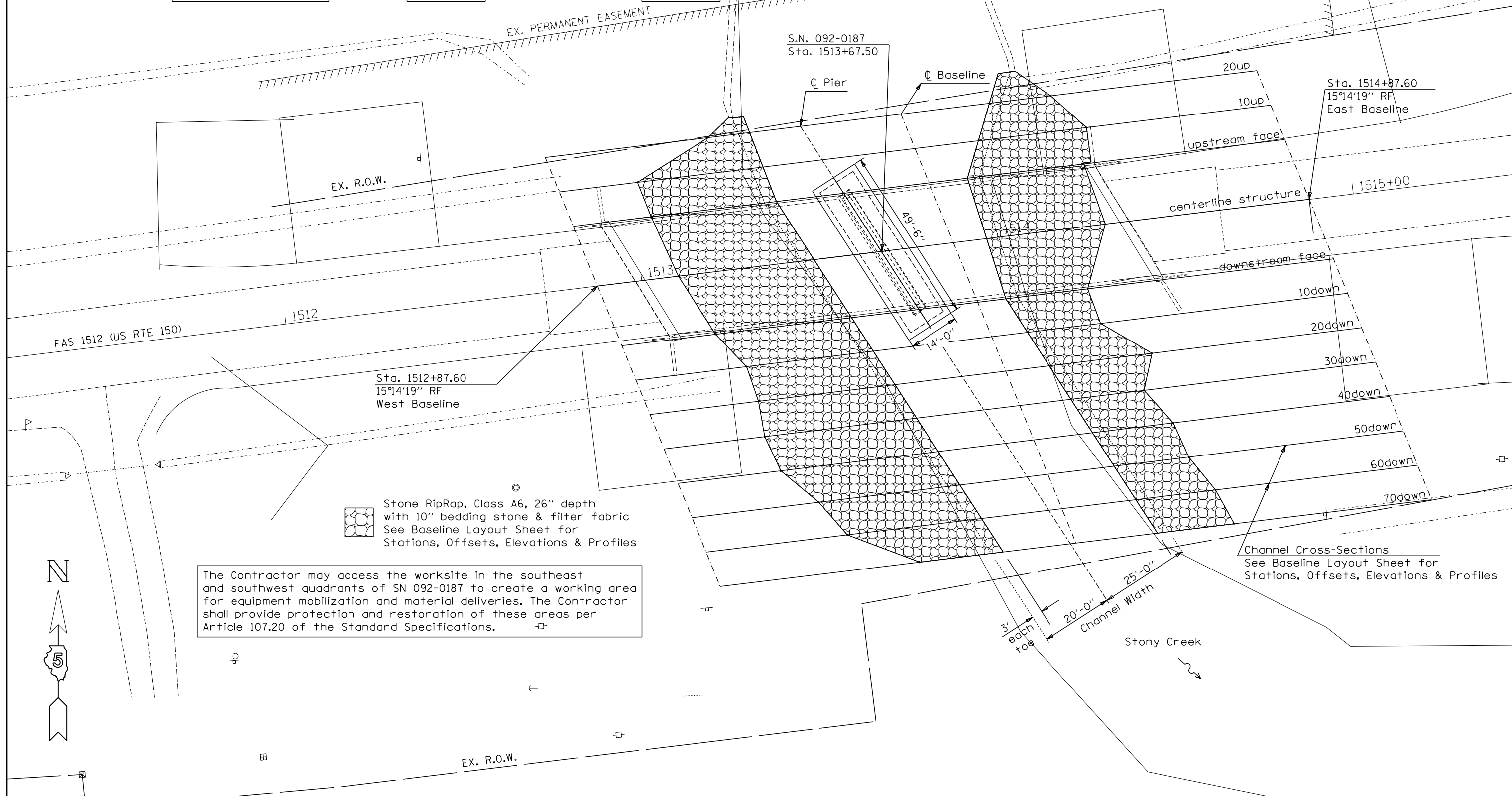



VIEW UPSTREAM; DIMENSIONS PERPENDICULAR TO PIER

- channel excavation  
(includes existing riprap)
- rock excavation
- concrete structures

FILE NAME =	USER NAME = brändenburgtj	DESIGNED - TJB	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL PIER END VIEW</b>			U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
pw:\11\084EBIDINTEG.illinois.gov\PWIDOT\Documents\DOT Offices\District 5\Projects\0577\DRAWING\Hydro\TUB\0570B22-Hyd1.dgn			REVISED -		SCALE: 10:10	SHEET	OF	SHEETS	STA.	TO	STA.	150	35I	VERMILION	26	5
\$MODELNAME\$	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -		CONTRACT NO. 70B88											
	PLOT DATE = 3/11/2016	DATE - 1/19/2016	REVISED -		ILLINOIS FED. AID PROJECT											

Location	RipRap Repair Area (Sq Yd)	Filter Fabric (Sq Yd)	Bedding Thickness (inches)	Bedding Stone (Cu Yd)	Bedding Stone (Tons)	RipRap Thickness (inches)	RipRap Class A6 (Cu Yd)	RipRap Class A6 (Tons)
Left/East	403.0	403.0	10.0	111.9	201.5	26.0	291.1	436.6
Right/West	568.0	568.0	10.0	157.8	284.0	26.0	410.2	615.3
Totals =	971.0	971.0		270.0	486.0		702.0	1052.0
Estimated Rates:					1.8 tons/cy			1.5 tons/cy



 Stone RipRap, Class A6, 26" depth with 10" bedding stone & filter fabric. See Baseline Layout Sheet for Stations, Offsets, Elevations & Profiles.

The Contractor may access the worksite in the southeast and southwest quadrants of SN 092-0187 to create a working area for equipment mobilization and material deliveries. The Contractor shall provide protection and restoration of these areas per Article 107.20 of the Standard Specifications.

Channel Cross-Sections  
 See Baseline Layout Sheet for Stations, Offsets, Elevations & Profiles

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -
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PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/14/2016	DATE - 1/19/2016	REVISED -	

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

**SN 092-0187 OVERALL SCOUR MITIGATION PLAN**  
 SCALE: SHEET \_\_\_ OF \_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
150	35I	VERMILION	26	6
CONTRACT NO. 70B88				
ILLINOIS FED. AID PROJECT				

baseline layout from US 150 centerline					
	west baseline		baseline	east baseline	
cross section	sta	offset	skew	sta	offset
20 up	1512+77.42	37.37' lt	15°14'19" rf	1514+77.42	37.42' lt
10 up	1512+80.14	27.37' lt		1514+80.14	27.42' lt
upstream face	1512+82.87	17.37' lt		1514+82.87	17.42' lt
centerline	1512+87.60	0		1514+87.60	0
downstream face	1512+92.33	17.36' rt		1514+92.33	17.32' rt
10 down	1512+95.05	27.36' rt		1514+95.05	27.31' rt
20 down	1512+97.78	37.36' rt		1514+97.78	37.31' rt
30 down	1513+00.50	47.36' rt		1515+00.50	47.31' rt
40 down	1513+03.23	57.36' rt		1515+03.23	57.31' rt
50 down	1513+05.95	67.36' rt		1515+05.95	67.31' rt
60 down	1513+08.67	77.35' rt		1515+08.67	77.31' rt
70 down	1513+11.40	87.35' rt		1515+11.40	87.31' rt

channel cross section layout from baselines (view upstream; dimensions along skew; parallel to US 150)																						
cross section	offsets from west baseline											cl baseline offset	offsets from east baseline									
	west baseline	wingwall/abutment	riprap end		riprap break		profile	riprap toe		cl pier	riprap toe		profile	riprap break		riprap end		wingwall/abutment		east baseline		
	offset	offset	elev	offset	elev	offset		elev	offset		elev			offset	elev	offset	elev	offset	elev		offset	elev
20 up	0			45.8	603.90	54.3	600.00	1.7% north	57.5	600.00	71.7	100	75.2	600.00	0.9% north	71.9	600.00	57.9	608.40			0
10 up	0	11.5		22.0	614.70	54.1	600.17	""	57.3	600.17	73.9	100	82.2	600.10	""	78.9	600.10	51.8	615.50	51.8		0
upstream face	0	10.1		21.9	614.80	53.8	600.34	""	57.1	600.34	76.0	100	89.2	600.20	""	85.9	600.20	56.5	615.07	56.5		0
centerline	0	13.4		22.7	616.43	57.5	600.67	1.7% north	60.8	600.67	79.7	100	90.6	600.35	0.9% north	87.3	600.35	57.3	613.95	53.2		0
downstream face	0	16.7		26.3	616.80	61.2	601.00	break	64.6	601.00	83.4	100	92.1	600.50	break	88.7	600.50	69.1	609.40	50.0		0
10 down	0	11.5		31.1	615.40	63.4	600.78	1.9% south	66.7	600.78	85.6	100	89.9	600.35	1.3% south	86.6	600.35	69.4	608.10			0
20 down	0			30.5	616.40	65.5	600.57	""	68.8	600.57	87.7	100	87.8	600.21	""	84.5	600.21	58.9	611.80			0
30 down	0			28.3	618.20	67.6	600.35	""	71.0	600.35	89.9	100	85.7	600.07	""	82.3	600.07	65.1	607.90			0
40 down	0			28.9	618.70	69.8	600.14	""	73.1	600.14	92.0	100	83.5	599.93	""	80.2	599.93	60.8	608.70			0
50 down	0			35.6	616.40	71.9	599.93	""	75.3	599.93	94.2	100	81.4	599.78	""	78.0	599.78	60.4	607.80			0
60 down	0			39.7	615.30	74.1	599.71	""	77.4	599.71	96.3	100	79.2	599.64	""	75.9	599.64	56.8	608.30			0
70 down	0			56.1	608.60	76.2	599.50	1.9% south	79.6	599.50	98.4	100	77.1	599.50	1.3% south	73.8	599.50	55.5	607.70			0

channel cross section layout from cl pier (view upstream; dimensions along skew; parallel to US 150)																						
cross section	offsets from cl pier; west side											cl pier offset	offsets from cl pier; east side									
	riprap end		riprap break		profile	riprap toe		cl baseline offset	riprap toe		profile		riprap break		riprap end							
	offset	elev	offset	elev		offset	elev		offset	elev			offset	elev	offset	elev				offset	elev	offset
20 up				25.9	603.90	17.4	600.00	1.7% north	14.2	600.00	0.00	28.3	53.1	600.00	0.9% north	56.4	600.00	70.4	608.40			
10 up				51.9	614.70	19.8	600.17	""	16.6	600.17	0.00	26.1	43.9	600.10	""	47.2	600.10	74.4	615.50			
upstream face				54.1	614.80	22.2	600.34	""	18.9	600.34	0.00	24.0	34.8	600.20	""	38.1	600.20	67.5	615.07			
centerline				57.0	616.43	22.2	600.67	1.7% north	18.9	600.67	0.00	20.3	29.7	600.35	0.9% north	33.0	600.35	63.0	613.95			
downstream face				57.1	616.80	22.2	601.00	break	18.9	601.00	0.00	16.6	24.5	600.50	break	27.9	600.50	47.5	609.40			
10 down				54.5	615.40	22.2	600.78	1.9% south	18.9	600.78	0.00	14.4	24.5	600.35	1.3% south	27.8	600.35	45.0	608.10			
20 down				57.2	616.40	22.2	600.57	""	18.9	600.57	0.00	12.3	24.5	600.21	""	27.8	600.21	53.4	611.80			
30 down				61.6	618.20	22.3	600.35	""	18.9	600.35	0.00	10.1	24.5	600.07	""	27.8	600.07	45.0	607.90			
40 down				63.1	618.70	22.2	600.14	""	18.9	600.14	0.00	8.0	24.5	599.93	""	27.8	599.93	47.2	608.70			
50 down				58.6	616.40	22.3	599.93	""	18.9	599.93	0.00	5.8	24.4	599.78	""	27.8	599.78	45.4	607.80			
60 down				56.6	615.30	22.2	599.71	""	18.9	599.71	0.00	3.7	24.5	599.64	""	27.8	599.64	46.9	608.30			
70 down				42.3	608.60	22.2	599.50	1.9% south	18.9	599.50	0.00	1.6	24.5	599.50	1.3% south	27.9	599.50	46.1	607.70			

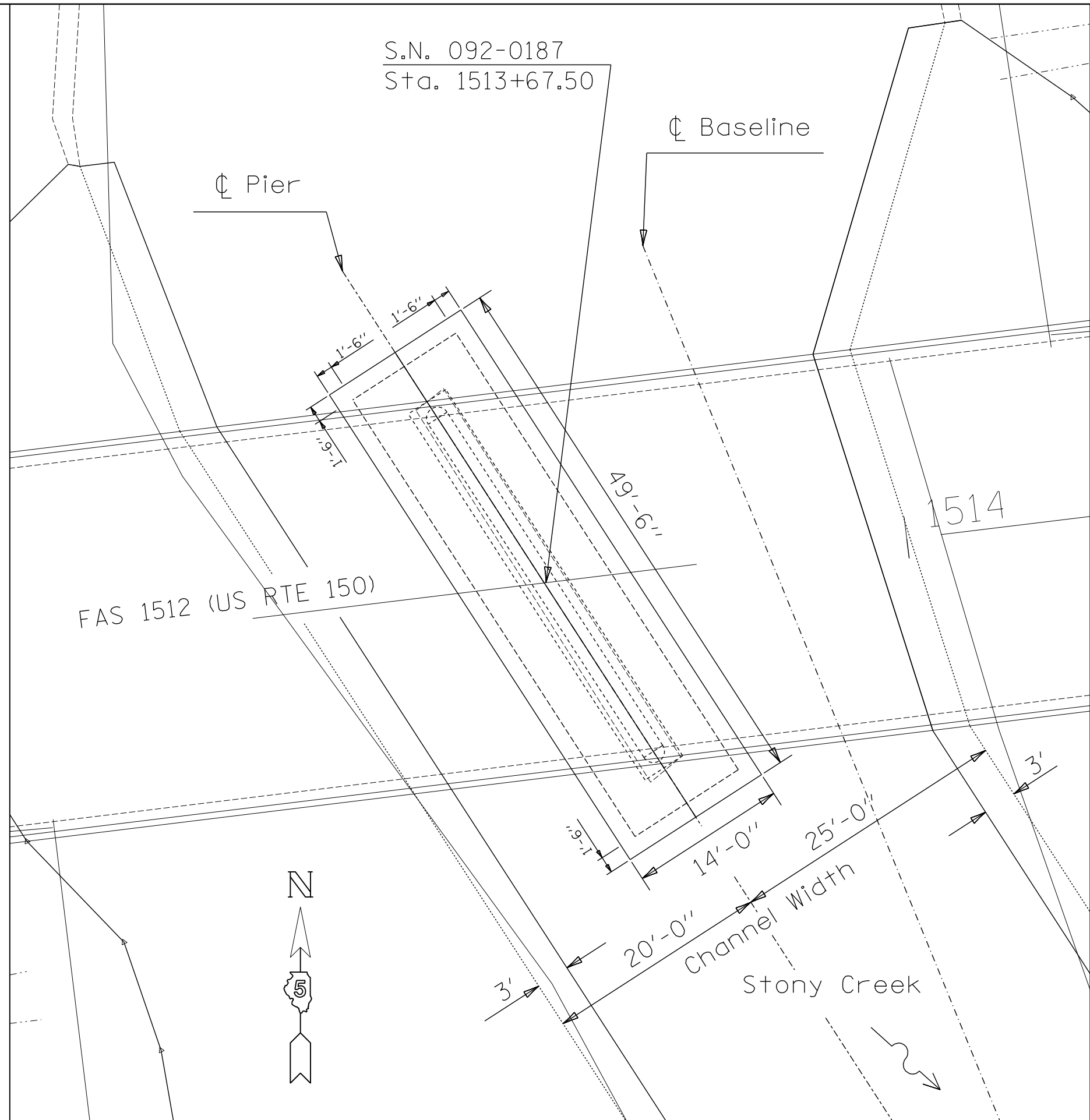
GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Sequence of Construction

1. Remove existing grouted riprap and any loose material around pier and footing. Grouted riprap shall be broken utilizing hand held jack hammers. Bucket ripped removal is not allowed. Remaining sound material around footing should not be disturbed. Cost included with Channel Excavation.
2. Drill and epoxy grout a1 bars into the pier face and b2 bars into the pier footing as required and in accordance with Article 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated. Note, quantities for installation of b, b1 & b2 bars around top of footing have been included in the event the footing is exposed after removal of loose material. However, it is not anticipated that this will occur and thus not expected to use all of the b, b1 & b2 bar quantities.
3. Perform Rock Excavation along the footprint of the proposed toewall. This shall be accomplished by saw cutting both vertical faces of the shale excavation trench to provide a smooth surface, eliminate bucket ripped removal and avoid disturbing the shale support for the structure. Due to the time restrictions mentioned below, it is anticipated that the Rock Excavation be completed prior to dewatering. This may be accomplished by setting offset stringlines for equipment alignment and the use of a 4" rock saw or other mechanical means is anticipated. Cost of saw cutting included with Rock Excavation.
4. Dewater an area around the pier to allow construction of the proposed pier improvements in a dry environment. This may be accomplished by any means necessary, however a suggested system is sand bags with non-permeable geomembrane. Cost of dewatering system is included with Concrete Structures.
5. Place Reinforcement Bars and pour Concrete Structures. Due to the sensitive nature of the shale excavation, as soon as the Rock Excavation is complete and cleaned of loose material, reinforcement bars shall be set and concrete structures placed within 24 hours in the excavation to avoid shale softening due to prolonged air exposure and moisture. The maximum time allowed for the excavated shale to remain open to air and moisture is 24 hours. This may be accomplished by completing the rock excavations and pours by construction of the entire toewall within the 24 hour period followed by the remainder of the proposed footing protection or in either two halves or four segments each within the 24 hour period as determined by the contractors anticipated production. To assist in meeting this time restriction, it is recommended to complete as much of the reinforcement bar cage as possible and lift into place. Bonded Construction Joints as described in Article 503.09 are expected as a result of this time restriction.



FILE NAME =	USER NAME = brandenburtj	DESIGNED - TJB	REVISED - _____
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\$MODELNAME\$	PLOT DATE = 3/14/2016	DATE - 1/19/2016	REVISED - _____

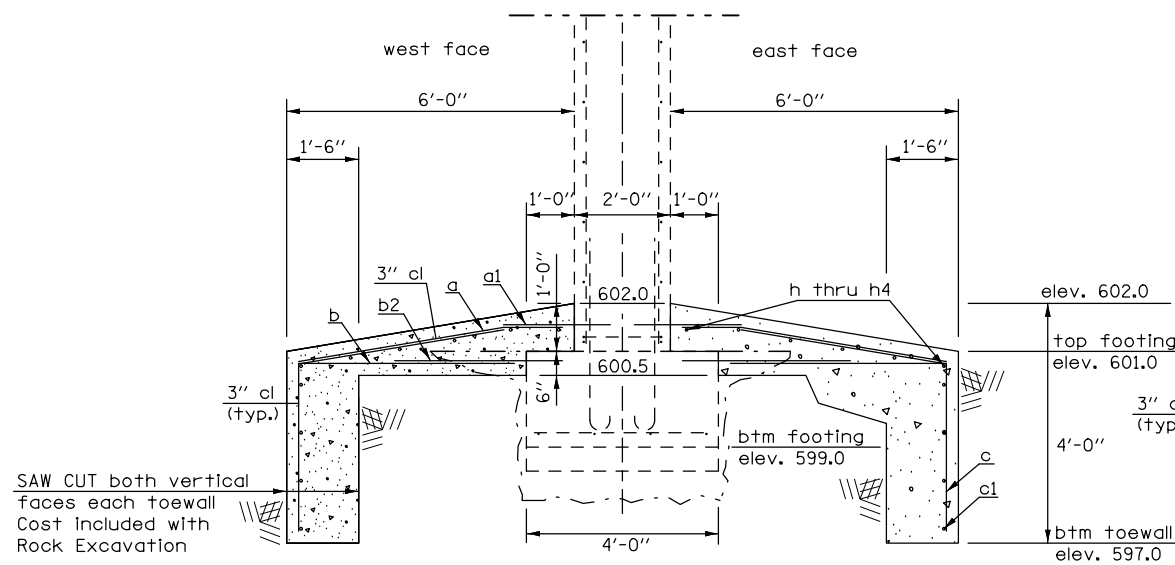
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SN 092-0187 PIER FOOTING PLAN & DETAILS**

SCALE: \_\_\_\_\_ SHEET \_\_\_\_ OF \_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

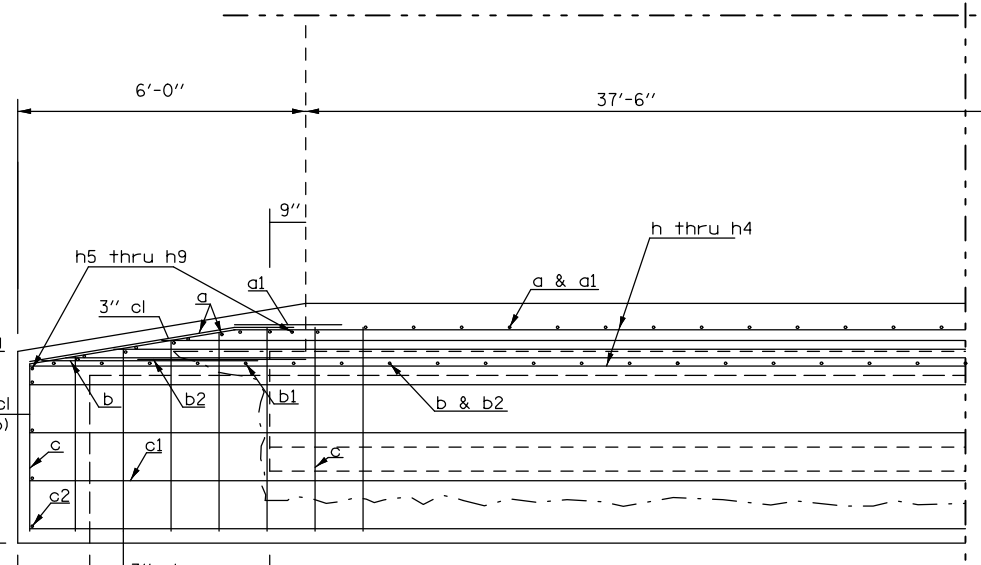
U.S. RTE. 150	SECTION 35I	COUNTY VERMILION	TOTAL SHEETS 26	SHEET NO. 8
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B88	



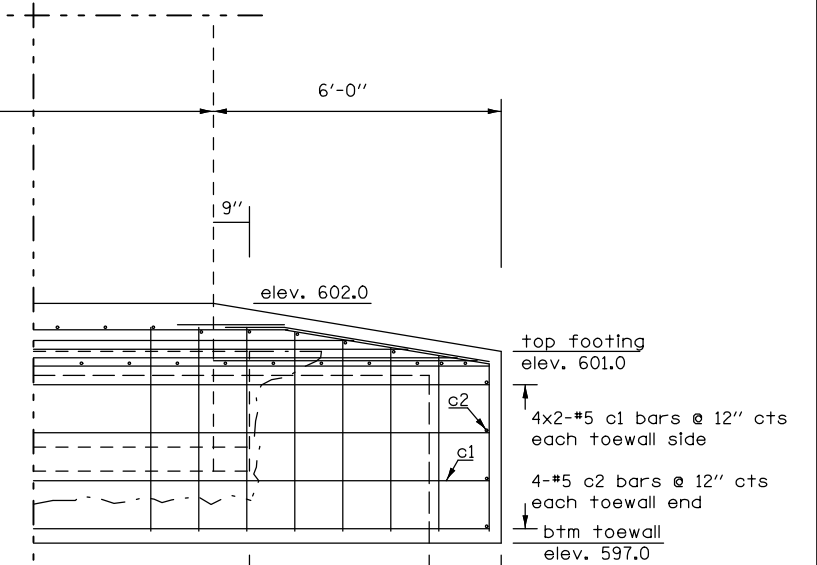


END VIEW

DIMENSIONS PERPENDICULAR TO PIER

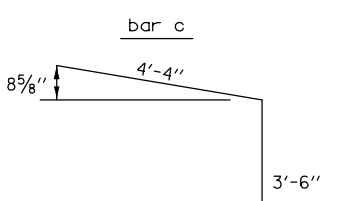
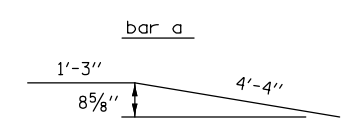


ELEVATION VIEW

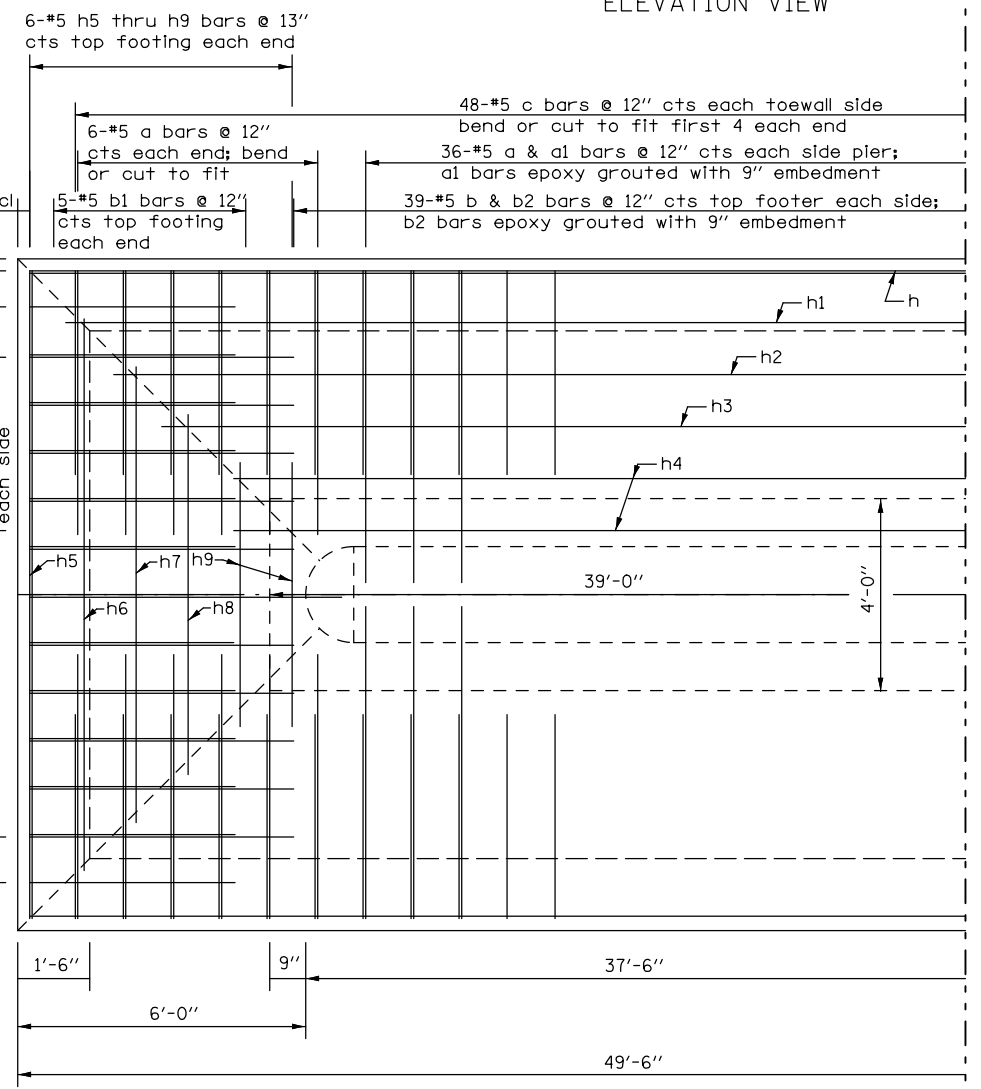


PYRAMID SHAPED ENDS

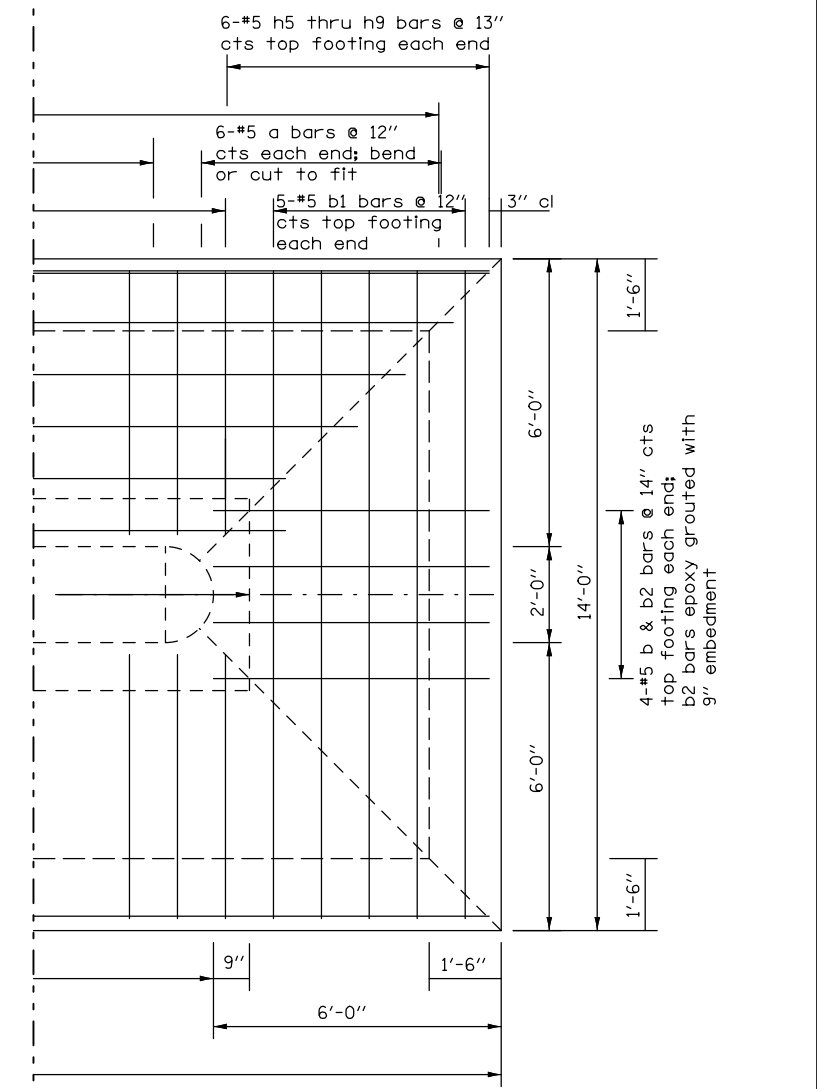
BILL OF MATERIAL				
Bar	No.	Size	Length	Shape
a(E)	118	5	5'-7"	
a1(E)	74	5	2'-3"	
b(E)	86	5	4'-6"	
b1(E)	10	5	13'-6"	
b2(E)	86	5	3'-6"	
c(E)	122	5	7'-10"	
c1(E)	16	5	27'-0"	
c2(E)	8	5	13'-6"	
h(E)	4	5	27'-0"	
h1(E)	4	5	26'-3"	
h2(E)	4	5	25'-3"	
h3(E)	4	5	24'-3"	
h4(E)	8	5	22'-9"	
h5(E)	2	5	13'-6"	
h6(E)	2	5	11'-6"	
h7(E)	2	5	9'-6"	
h8(E)	2	5	7'-6"	
h9(E)	4	5	5'-6"	
<b>Concrete Structures</b>	<b>Cu Yds</b>	<b>45</b>		
<b>Reinforcement Bars, Epoxy Coated</b>	<b>Lbs</b>	<b>4,010</b>		



13-#5 c bars @ 12" cts each toewall end  
bend or cut to fit first 4 each end  
11-#5 a bars @ 12" cts each end;  
bend or cut to fit  
1-#5 a1 bar epoxy grouted with  
9" embedment at pier nose  
6x2-#5 h thru h4 bars @ 13"  
13" cts top footing  
each side



FOOTING PLAN VIEW  
DIMENSIONS ALONG PIER



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIER & FOOTING DETAILS

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -
p:\1\1084EBID\INTEG\11\inois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\DRAWING\Hydro\TUB\0570B22-Hyd1.dgn		CHECKED -	REVISED -
\$MODELNAME\$	PLOT SCALE = 48.0000' / in.	DATE - 1/26/2016	REVISED -

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

U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
150	35I	VERMILION	26	9
CONTRACT NO. 70B88				
ILLINOIS FED. AID PROJECT				

**D.M. #2** CHISELED "D" TOP EAST END OF NORTH WINGWARD OF EXISTING HIGHWAY BRIDGE. 14'-6" LT., STA. 1514+56.45 (STATIONING REFERENCED TO EXISTING ALIGNMENT). ELEVATION 618.90.

EXISTING STRUCTURE #091-0009 WAS BUILT (WIDENED) IN 1925 AND S&B ROUTE 10, SECTION 35. THE STRUCTURE IS A BRANDED FILLED CONCRETE ARCH WITH AN 80'± WIDE SPAN. THE CONTRACTOR SHALL REMOVE THE EXISTING STRUCTURE AFTER OPENING THE NEW STRUCTURE TO TRAFFIC. NO GALVANE.

TRAFFIC WILL BE MAINTAINED BY USING EXISTING STRUCTURE WHILE PROVIDED STRUCTURE IS BUILT ON NEW UPSTREAM ALIGNMENT. NO DETOUR.

**WATERWAY INFORMATION**

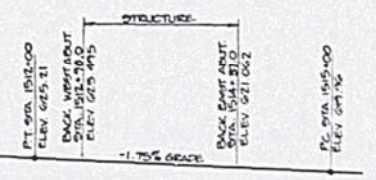
DRAINAGE AREA = 69.09 SQ MI. LOW GRADE ELEV. = 648.00 @ STA. 1516+58							
FLOOD	PERIOD	Q	OPENING SQ. FT.	NAT.	HEAD - FT.	HEADWATER EL.	
	YR.	C.F.S.	EXIST.	PROP.	H.W.E.	EXIST.	PROP.
DESIGN	50	2654	816	956	619.02	0.26	0.0
BASE	100	7240	866	1120	644.25	0.36	0.0
MAX. CALC.	500	9325	975	1266	645.71	0.60	0.0

**DESIGN STRESSES**

**CAST-IN-PLACE CONCRETE:**  
 $f'_c = 3,500$  psi.  $f_y = 60,000$  psi. (REINFORCEMENT)

**PRECAST, PRESTRESSED CONCRETE:**  
 $f'_c = 6,000$  psi.  $f'_s = 4,000$  psi.  
 $f_y = 60,000$  psi.  $f'_s = 270,000$  psi. ( $\frac{1}{4}$ "  $\phi$  STRANDS)  
 $f'_s = 189,000$  psi. ( $\frac{1}{2}$ "  $\phi$  STRANDS)

LOADING HASHTO HS 20-44 WITH ALLOWANCE FOR 25% FUTURE WEARING SURFACE. MD3 ASHTO SPECIFICATIONS & 1931 TRB INTERIM SPECIFICATIONS



**GENERAL NOTES**

- SEE PROPOSAL FOR BORING DATA.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (AASHTO M-53) GRADE 60.
- THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS. SEE SHEET 2.
- THE CONTRACTOR SHALL DRIVE ONE HP 10x42 TEST PILE IN A PERMANENT LOCATION AT THE WEST ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
- THE CONTRACTOR SHALL REMOVE FROM THE JOB SITE AND PLACE OUTSIDE THE FLOODPLAIN ALL MATERIAL EXCAVATED FOR STRUCTURE AND ROCK EXCAVATION AT THE PIER AND ABUTMENTS. IF SUITABLE FOR FILL, THE MATERIAL MAY BE USED TO CONSTRUCT ROADWAY APPROACH EMBANKMENTS.

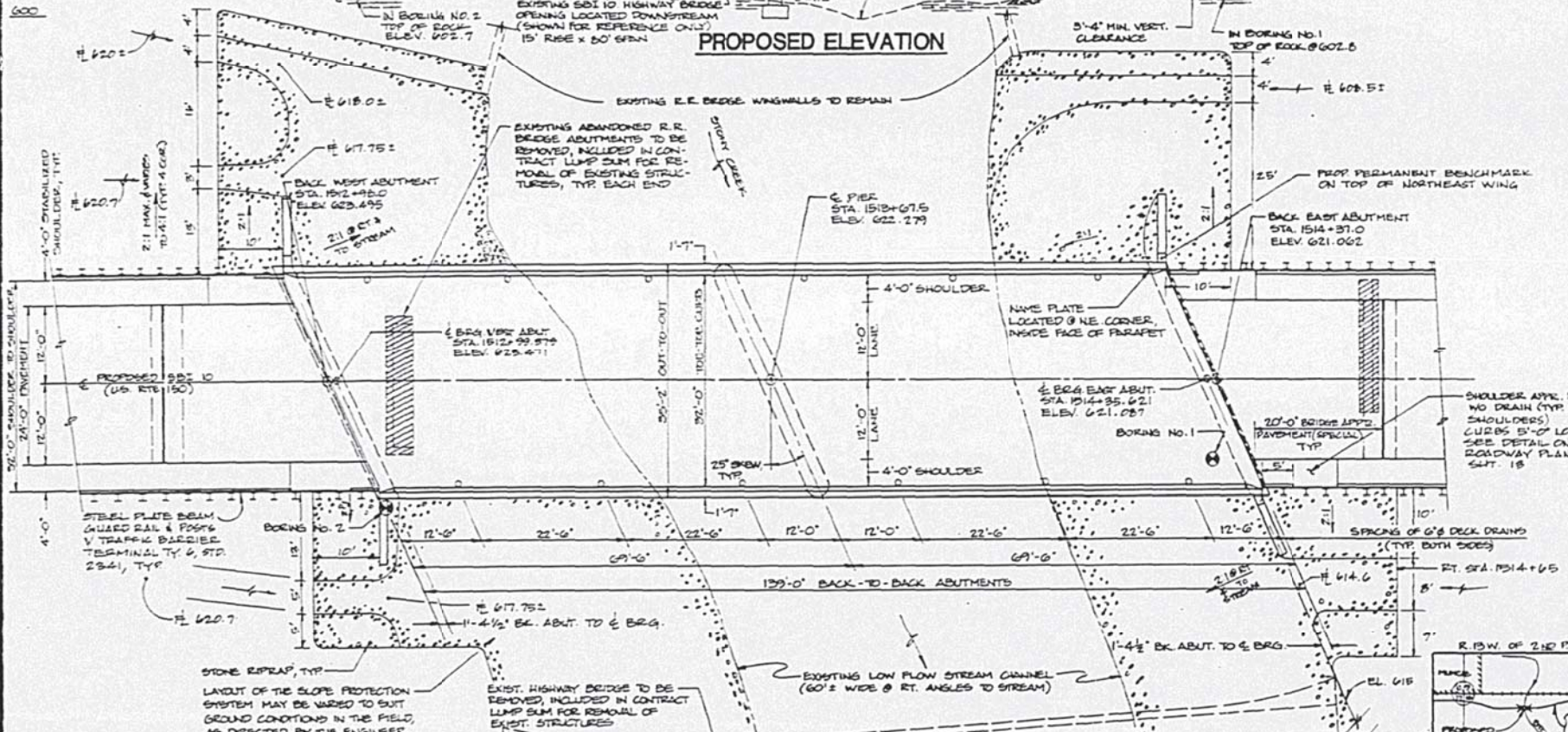
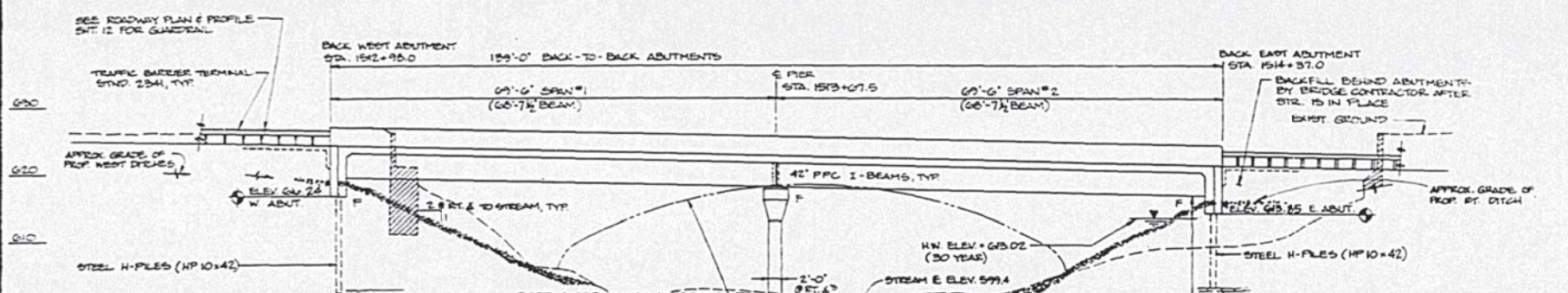
STATION 1513+67.5  
 BUILT 198... BY  
 STATE OF ILLINOIS  
 S.B.I. RT. 10 SEC. 35BR  
 F.A. PROJ. ACBRS (18534)  
 LOADING HS20  
 STR. NO. 092-0187

- SEE STANDARD 2115
- LOCATE AS SHOWN IN PLAN VIEW
- F.A. PROJECT NUMBER TO BE PROVIDED BY DISTRICT

**LETTERING FOR NAME PLATE**

**TOTAL BRIDGE BILL OF MATERIAL**

ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
ROCK EXCAVATION FOR STRUCTURES	CU YD.		29	29
POROUS GRANULAR EMBANKMENT	CU YD.		21	21
REMOVAL OF EXISTING STRUCTURES	LUMP SUM		1	1
COPPER DRIMS	EACH		1	1
FLOOR DRAINS	EACH	12		12
PROTECTIVE COAT	SQ. YD.	453		453
CLASS X CONCRETE	CU YD.		91.6	91.6
FURNISHING & ERECTING PRECAST, PRESTRESSED I-BEAMS, 42 IN.	LN FT.	680		680
STRUCTURE EXCAVATION	CU YD.		104	104
REINFORCEMENT BARS	FOUND	900	7,160	8,060
REINFORCEMENT BARS, EPOXY COATED	FOUND	32,670		32,670
STEEL PILES HP 10x42	LN FT.		154	154
TEST PILES STEEL HP 10x42	EACH		1	1
METAL SHOES	EACH		9	9
NAME PLATES	EACH		1	1
STONE RIPRAP, 60#	SQ. YD.		1,370	1,370
ABUTMENT DRAINS	EACH		2	2
PERMANENT BENCH MARKS	EACH		1	1
<b>Class X Concrete Superstructure</b>	<b>CU YD.</b>	<b>195.9</b>		<b>195.9</b>



DESIGNED	RJL
CHECKED	RJS
DRAWN	CEB
CHECKED	RL

PHILIP J. LANE  
 ILLINOIS REGISTERED  
 STRUCTURAL ENGINEER  
 NO. 4084

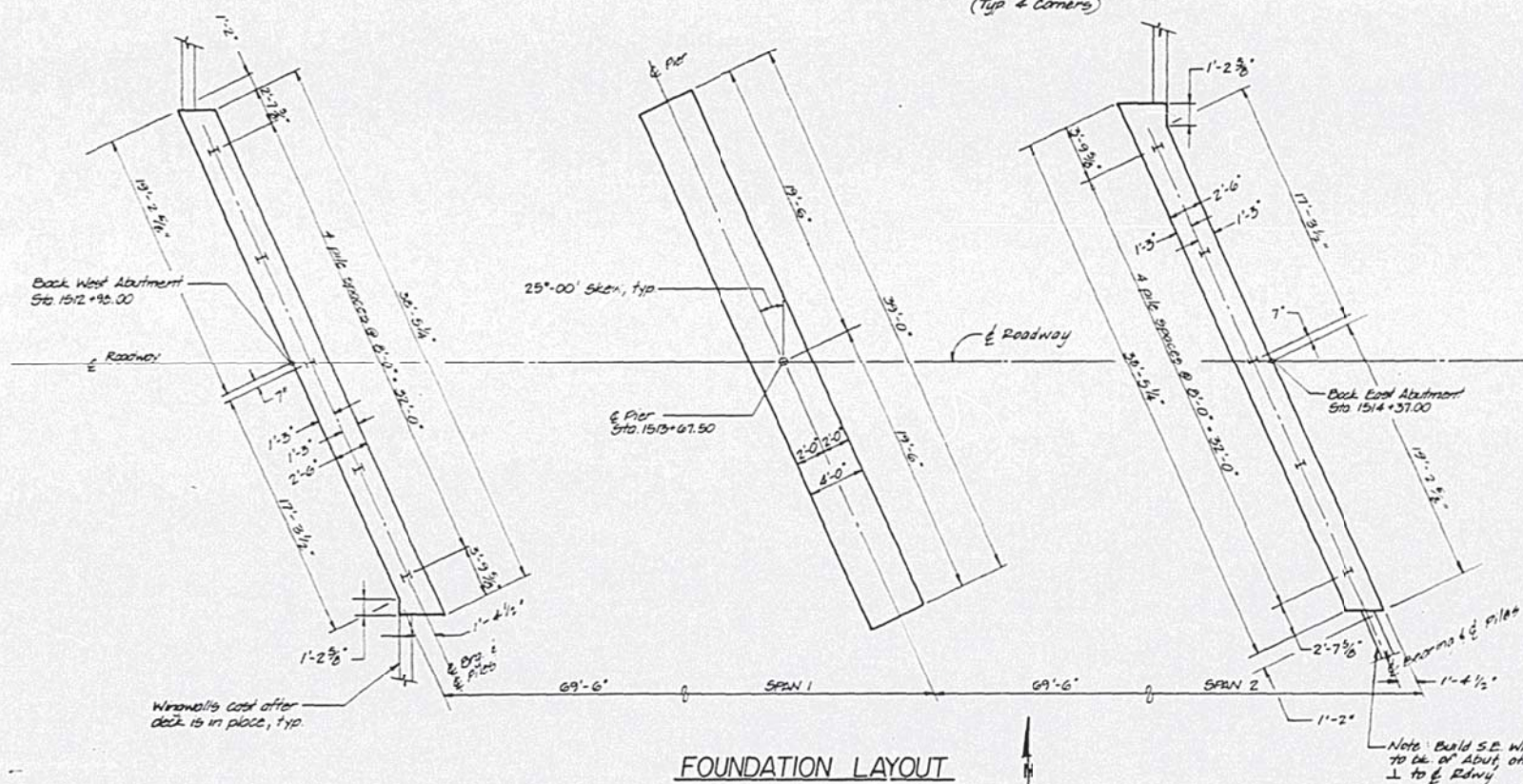
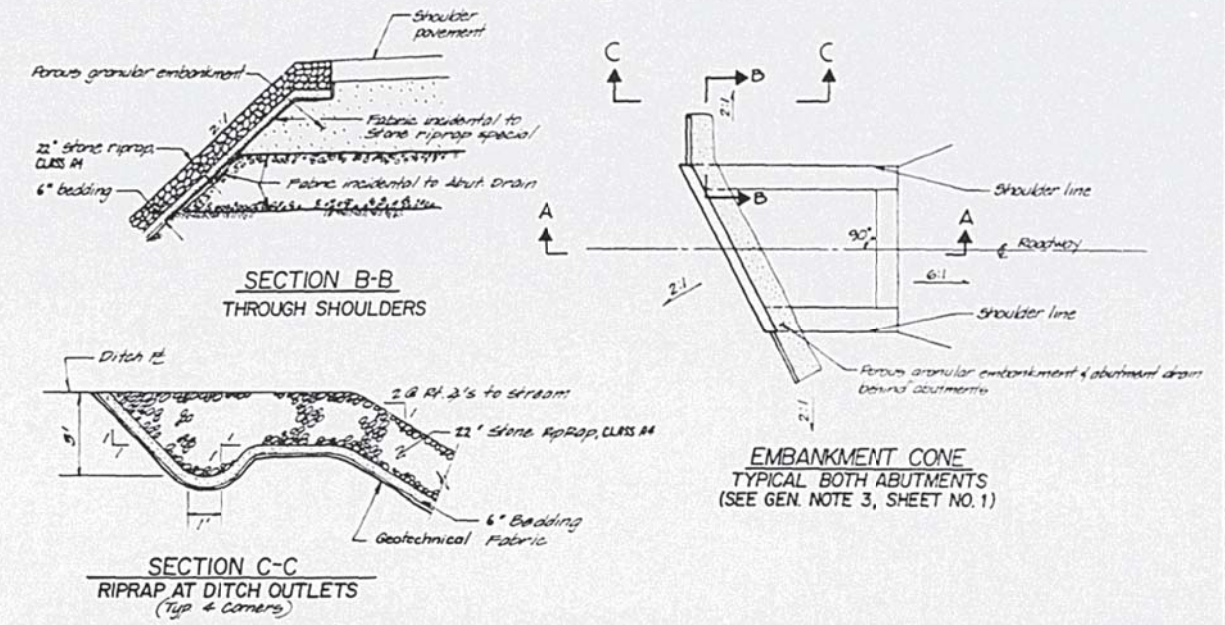
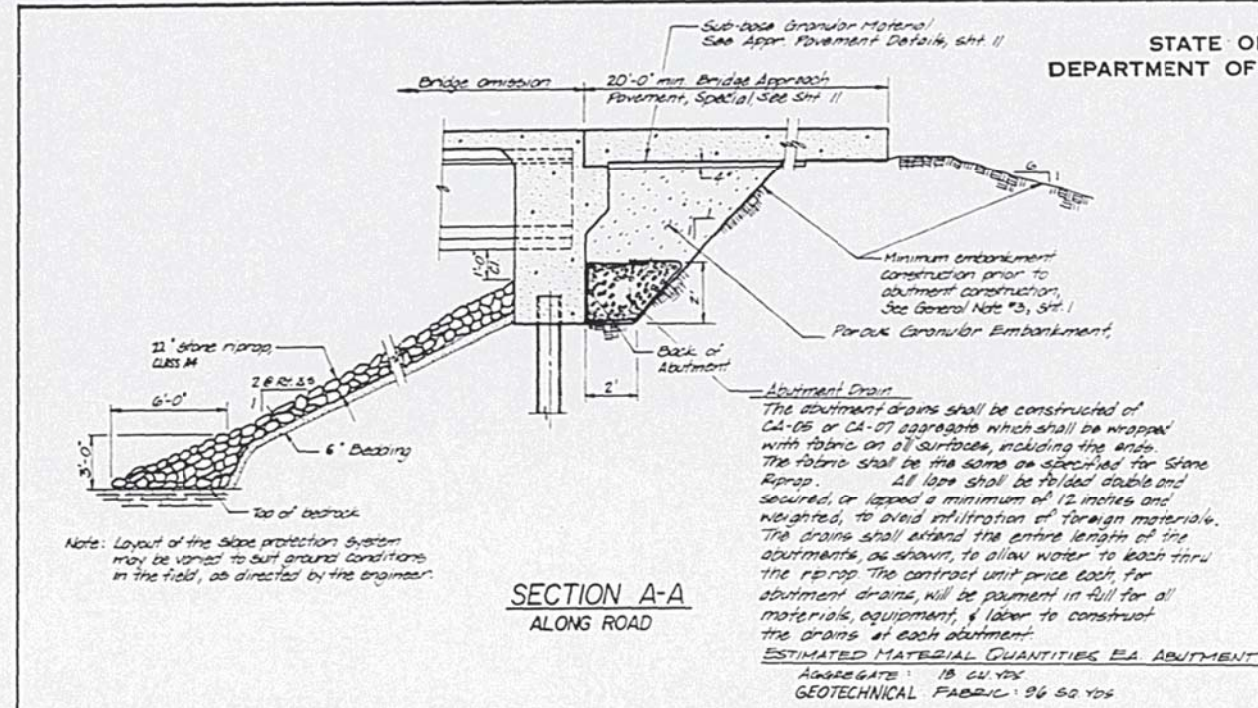


APPROVED  
 FOR STRUCTURAL ADEQUACY ONLY  
 James J. Rayburn

**GENERAL PLAN & ELEVATION**  
 U.S. ROUTE 150  
 OVER STONY CREEK  
 STATION 1513+67.5  
 S.B.I. 10, SECTION 35 BR  
 VERMILION COUNTY, ILLINOIS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
11084EBID	35B	VERMILION	44	15
SHEET NO. 2 SHEETS 12				



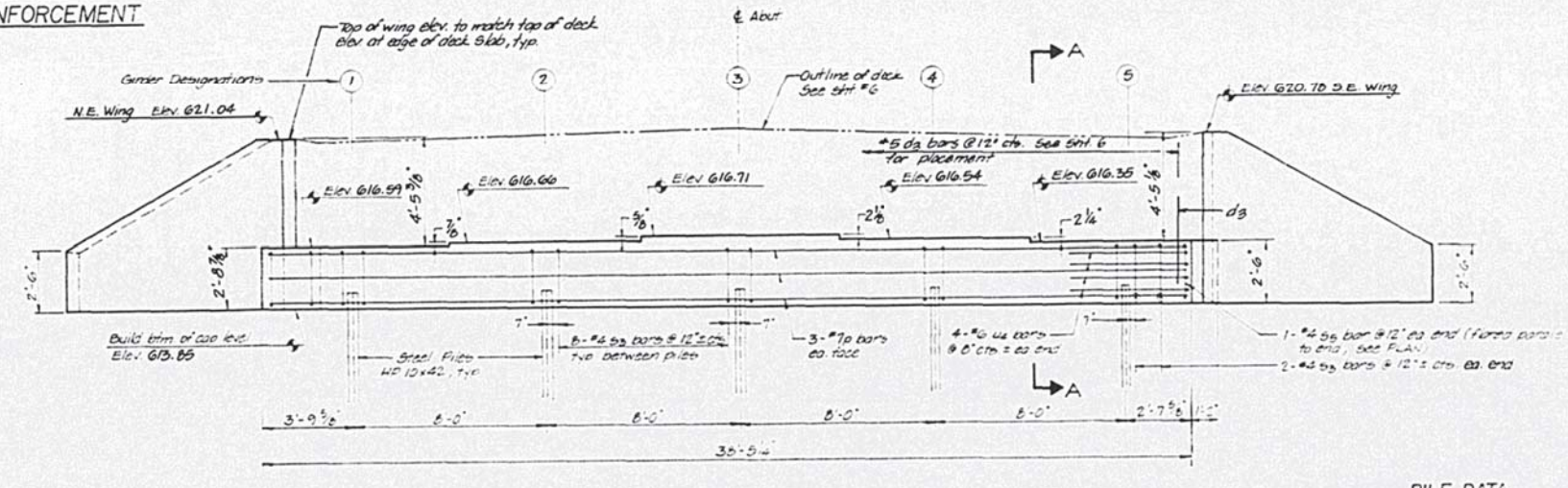
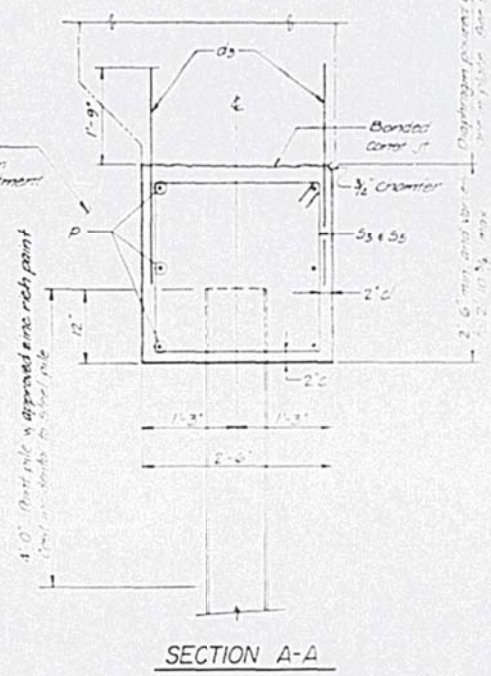
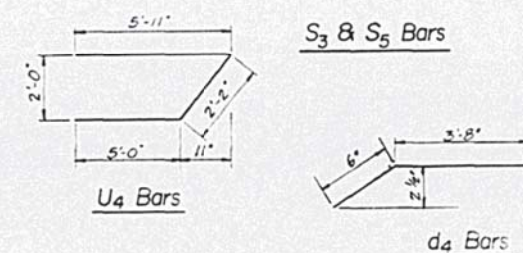
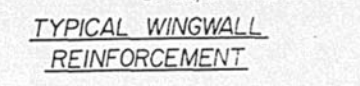
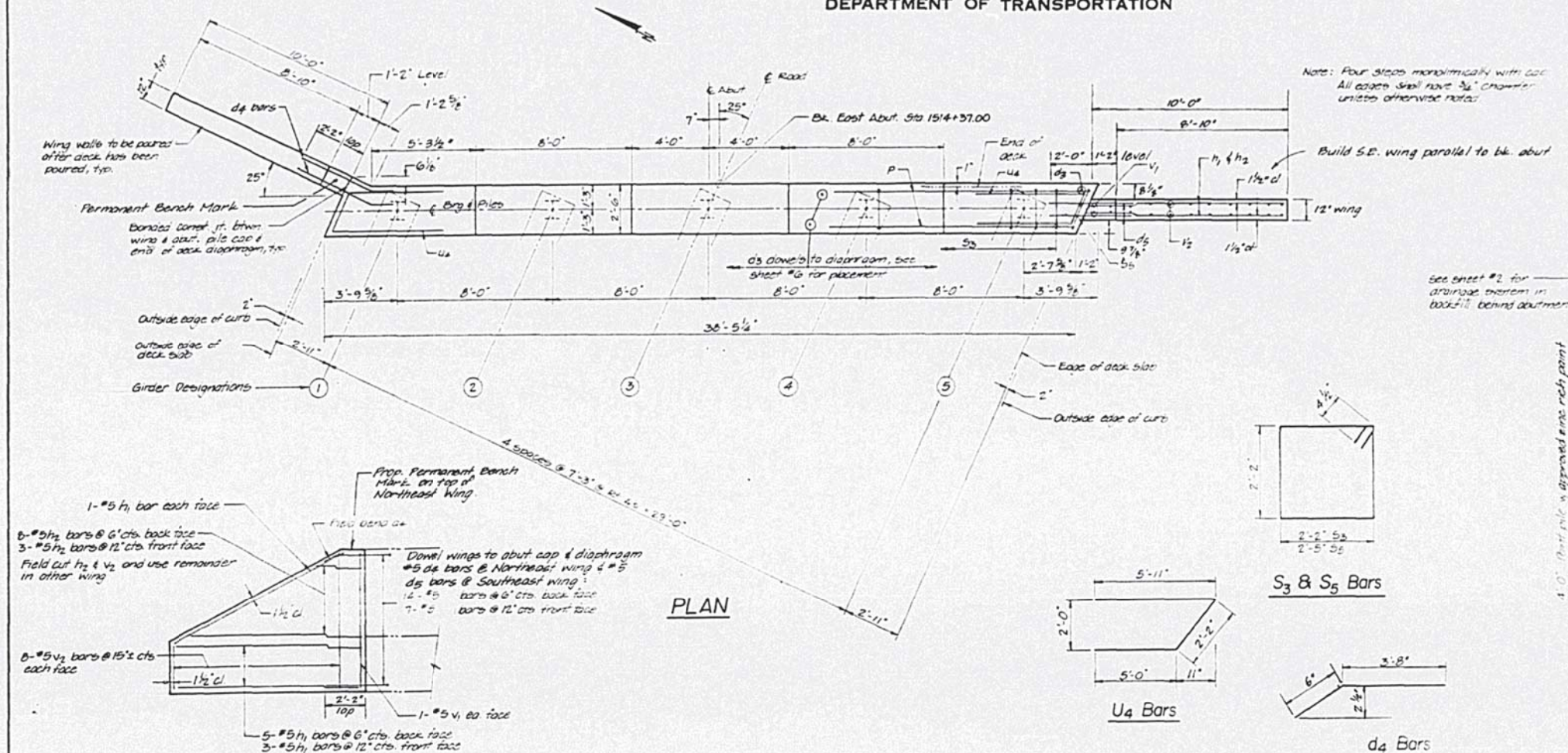
DESIGNED	P.L.
CHECKED	R.D.
DRAWN	C.E.D.
CHECKED	P.L.

<b>SUBSTRUCTURE LAYOUT</b>	
U.S. ROUTE 150 OVER STONY CREEK STATION 1513+67.5 S.B.I. 10, SECTION 35 BR VERMILION COUNTY, ILLINOIS	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	SHEET NO.	TOTAL SHEETS
10	5656	44	22

SHEET NO. 9  
SHEETS 12



PILE DATA

TYPE: Steel HP 10x42 with metal shoes

CAPACITY: Driven to refusal

EST. LENGTH: 14'

NO. REQUIRED: 5

EAST ABUTMENT BILL OF MATERIAL

Bar	Qty	Size	Length	Shape
d <sub>4</sub>	21	#5	3'-2"	□
d <sub>5</sub>	67	#5	3'-6"	□
d <sub>6</sub>	21	#5	4'-2"	□
h <sub>1</sub>	20	#5	9'-8"	□
h <sub>2</sub>	11	#5	11'-0"	□
v <sub>1</sub>	4	#5	6'-7"	□
v <sub>2</sub>	16	#5	3'-11"	□
s <sub>3</sub>	6	#7	3'-11"	□
s <sub>5</sub>	30	#4	9'-5"	□
s <sub>5</sub>	2	#4	9'-11"	□
u <sub>4</sub>	8	#6	13'-11"	□

Reinforcement Bars lbs 1800  
Class X Concrete cu yd 19.5  
Steel Piles HP 10x42 Lin Ft 70  
Metal Shoes Each 5

EAST ABUTMENT DETAILS

U.S. ROUTE 150  
OVER STONY CREEK  
STATION 1513+67.5  
S.B.I. 10, SECTION 35 BR  
VERMILION COUNTY, ILLINOIS

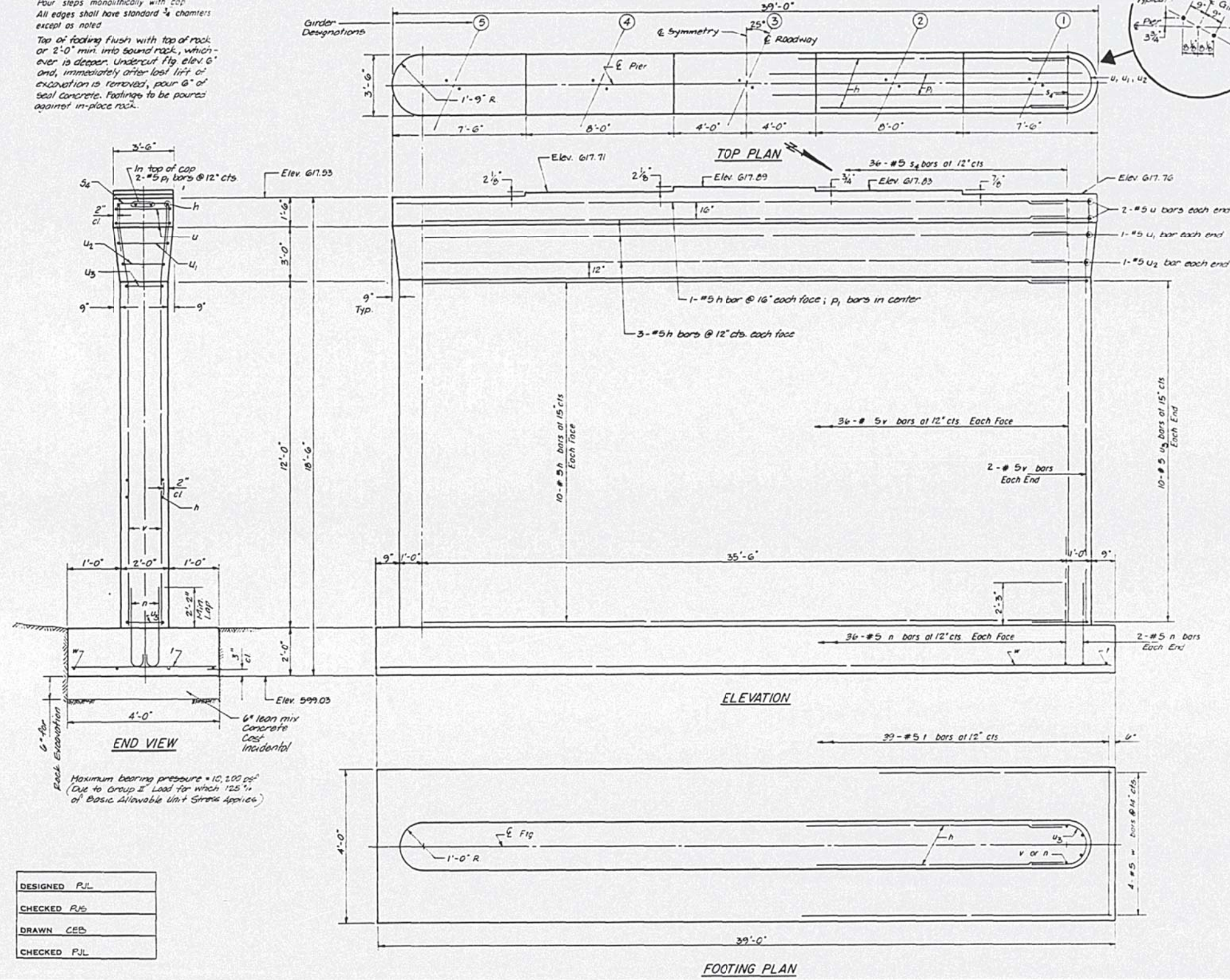
DESIGNED	RJL
CHECKED	RJS
DRAWN	CEB
CHECKED	RJL

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

See Sheet 6 Section D-D  
1'-9" x 1'-6" dowels to deck  
diaphragm, cast incidental

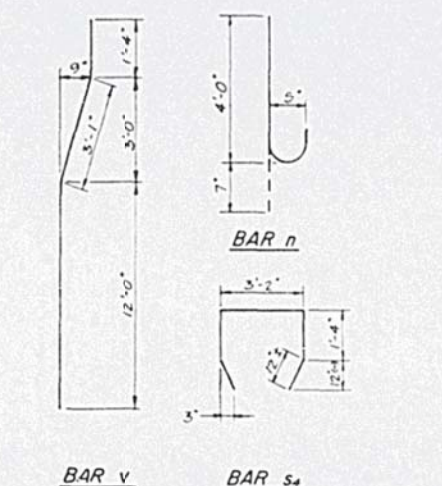
SHEET NO.	10	SHEETS	12
PROJECT NO.	35BR VERMILION	SECTION	4-4
DATE	2/3		

Notes:  
Four steps monolithically with cap  
All edges shall have standard 1/4 chamfers  
except as noted  
Top of footing flush with top of rock  
or 2'-0" min. into sound rock, which  
ever is deeper. Undercut 1/2 elev. 6"  
and, immediately after last lift of  
excavation is removed, pour 6" of  
seal concrete. Footings to be poured  
against in-place rock.



Bar	R	C
U	1'-7"	2'-6"
U <sub>1</sub>	1'-4"	2'-1"
U <sub>2</sub>	1'-1"	1'-8"
U <sub>3</sub>	10"	1'-3"

2'-3" typ



**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
h	28	#5	35'-6"	—
n	76	#5	4'-7"	U
p <sub>1</sub>	2	#5	36'-0"	—
s <sub>4</sub>	36	#5	7'-10"	U
u	4	#5	5'-8"	—
u <sub>1</sub>	2	#5	7'-0"	—
u <sub>2</sub>	2	#5	6'-7"	—
u <sub>3</sub>	20	#5	5'-9"	—
v	76	#5	16'-5"	—
w	4	#5	36'-8"	—
Class X Concrete		Cu Yds	64.6	
Reinforcement Bars		Lbs	3,560	
Coffering		Each	1	
Rock Excav.		Cu Yds	27	

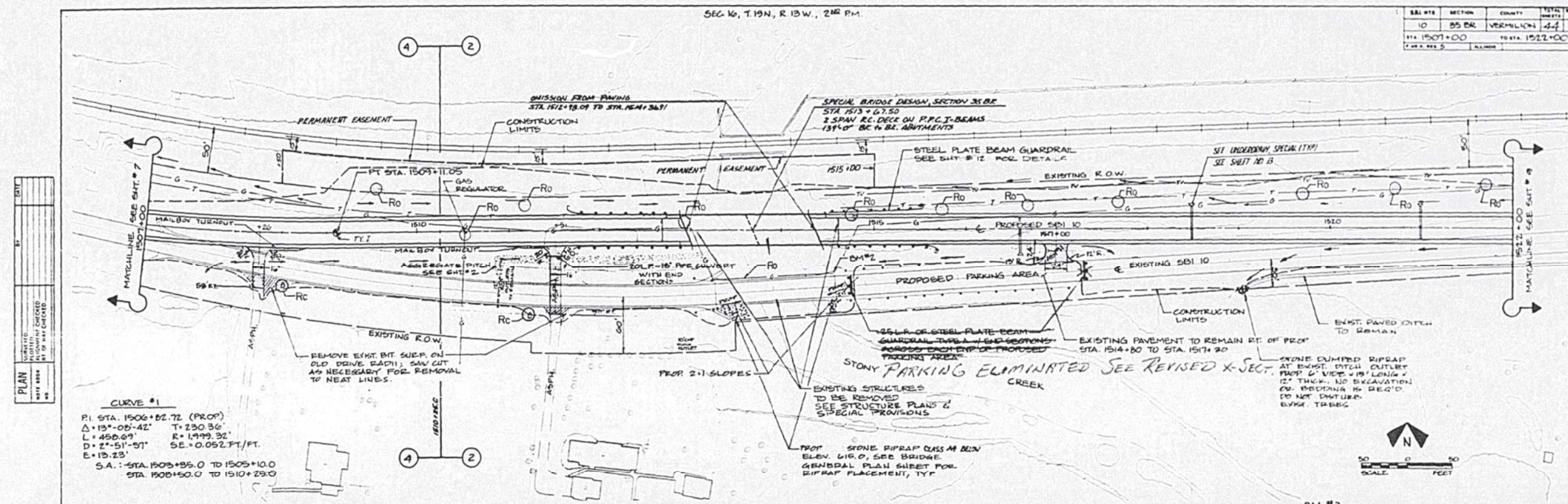
**PIER DETAILS**  
U.S. ROUTE 150  
OVER STONY CREEK  
STATION 1513+67.5  
S.B.I. 10, SECTION 35 BR  
VERMILION COUNTY, ILLINOIS

DESIGNED	PJL
CHECKED	RJS
DRAWN	CEB
CHECKED	PJL

Scale 50'-1"

SEC. 16, T. 19N, R. 13W., 2ND PM.

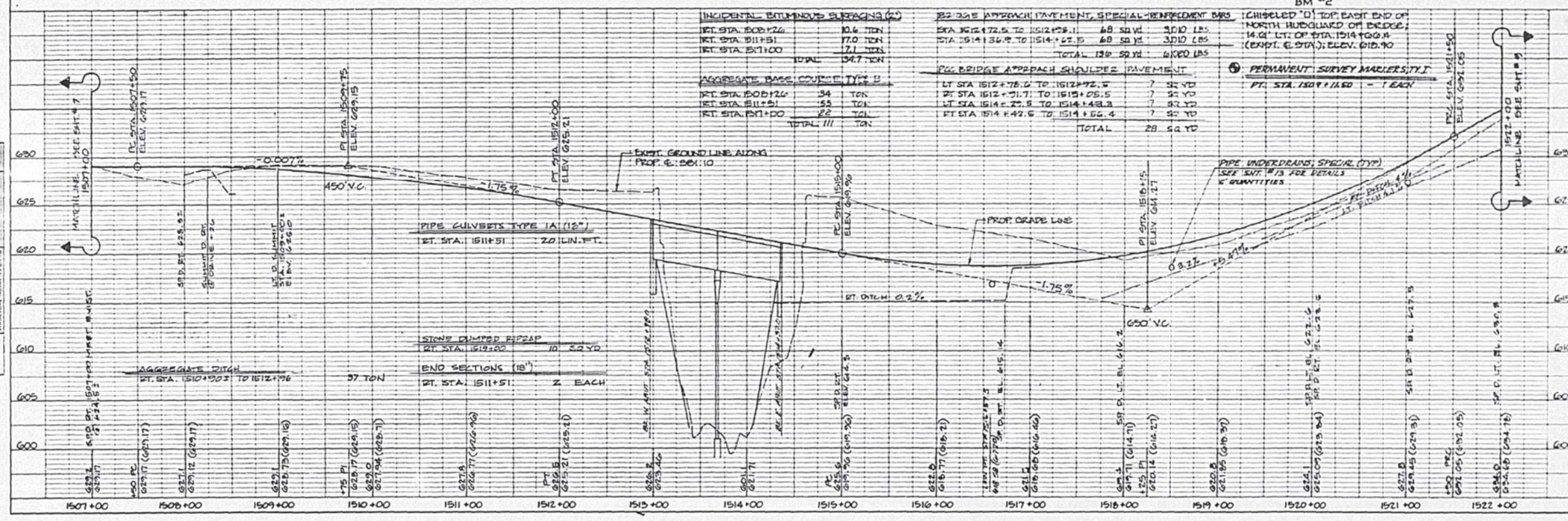
SHEET NO.	SECTION	COUNTY	TOTAL SHEETS
10	35	VERMILION	44
STA. 1507+00 TO STA. 1522+00			8



DATE	BY	REVISION

**CURVE #1**  
 P.I. STA. 1506+02.72 (PROP.)  
 $\Delta = 13^{\circ}05'42''$  T = 230.36'  
 L = 450.09' R = 1,999.32'  
 D = 2" - 51' - 51" SE = 0.052 FT./FT.  
 E = 19.23'  
 S.A.: STA. 1503+95.0 TO 1505+10.0  
 STA. 1500+50.0 TO 1510+29.0

DATE	BY	REVISION



INCIDENTAL BITUMINOUS SURFACING (2")		P2.35E APPROACH PAVEMENT, SPECIAL-REINFORCED BARS	
RT. STA. 1507+26	10.6 TON	STA. 1512+72.5 TO 1512+72.1	68 SQ. YD. 3,010 LBS.
RT. STA. 1511+51	17.0 TON	STA. 1514+36.8 TO 1514+02.5	68 SQ. YD. 3,010 LBS.
RT. STA. 1517+00	7.1 TON		
TOTAL	34.7 TON	TOTAL	136 SQ. YD. 6,020 LBS.

AGGREGATE BASE COURSE TYPE B		P2.35E BRIDGE APPROACH SHOULDER PAVEMENT	
RT. STA. 1507+26	34 TON	LT. STA. 1512+76.0 TO 1512+72.5	7 SQ. YD.
RT. STA. 1511+51	55 TON	RT. STA. 1512+71.7 TO 1512+05.5	7 SQ. YD.
RT. STA. 1517+00	22 TON	LT. STA. 1514+23.8 TO 1514+43.3	7 SQ. YD.
TOTAL	111 TON	RT. STA. 1514+42.6 TO 1514+56.4	7 SQ. YD.
		TOTAL	28 SQ. YD.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

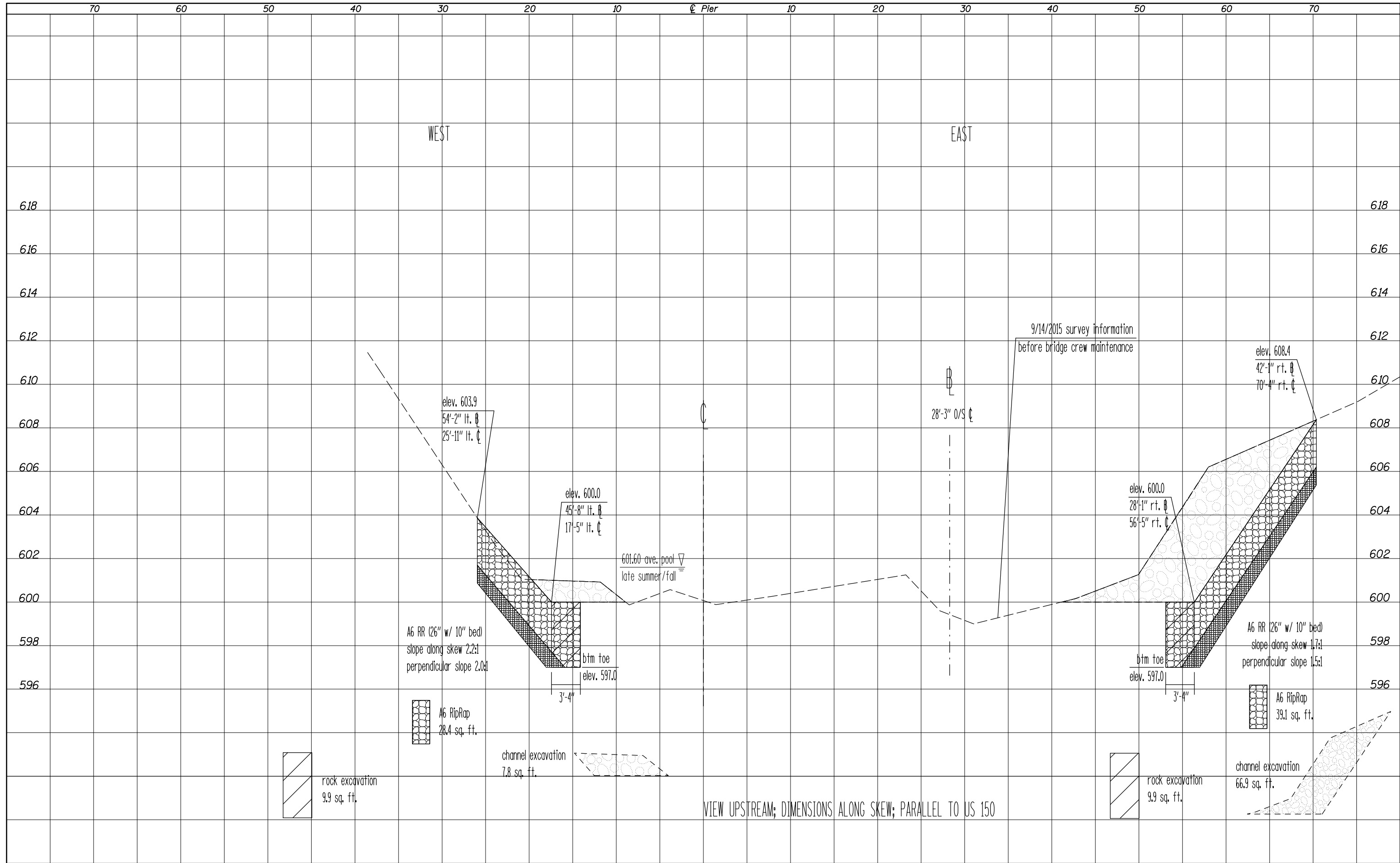
1988 AS-BUILT PLANS (FOR INFORMATION ONLY)

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -
pw:\11\084EBID\INTEG\11\inois.gov\PIW00T\Documents\100T\Offices\District 5\Projects\057\DRAWING\DATA\Hydro\TUB\0570B22-Hyd1.dgn		CHECKED -	REVISED -
\$MODELNAME\$	PLOT DATE = 3/11/2016	DATE - 1/19/2016	REVISED -

U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
150	35I	VERMILION	26	14
CONTRACT NO. 70B88				
ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY NOTE BOOK NO.	

DATE	
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ORIGINAL SURVEY NOTE BOOK NO.	

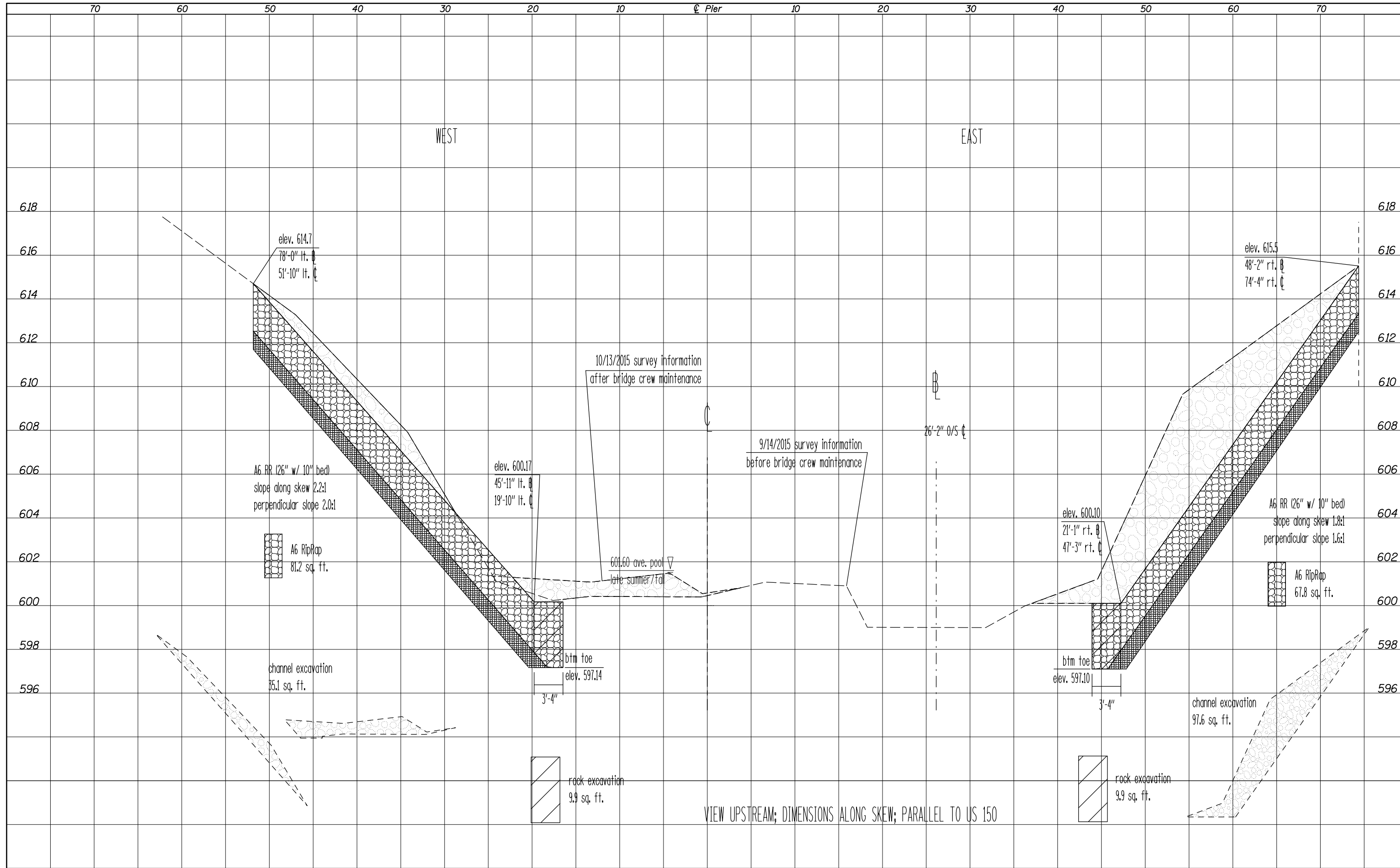


VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CHANNEL CROSS SECTION 20FT FROM UPSTREAM FACE</b>			U.S. RTE. 150	SECTION 35I	COUNTY VERMILION	TOTAL SHEETS 26	SHEET NO. 15
CONTRACT NO. 70B88	SCALE: 2:5	SHEET 217 OF 217 SHEETS	STA. TO STA.		ILLINOIS FED. AID PROJECT							
DESIGNED - TJB	REVISOR -	DATE - 1/15/2016	REVISOR -									
PLANNED - TJB	REVISOR -	DATE -	REVISOR -									

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY NOTE BOOK NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY NOTE BOOK NO.	



VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISIED -	U.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
\\IL084EBIDINTEG.illinois.gov\PWIDOT\Documents\DOT Offices\District 5\Projects\0570888\CAD\Drawings\Hydraulics\0570822-Hyd.dgn				150	35I	VERMILION	26	16
PLOT SCALE = 40.0000' / in.	CHECKED -	REVISIED -		CONTRACT NO. 70B88				
PLOT DATE = 3/11/2016	DATE - 1/15/2016	REVISIED -		ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

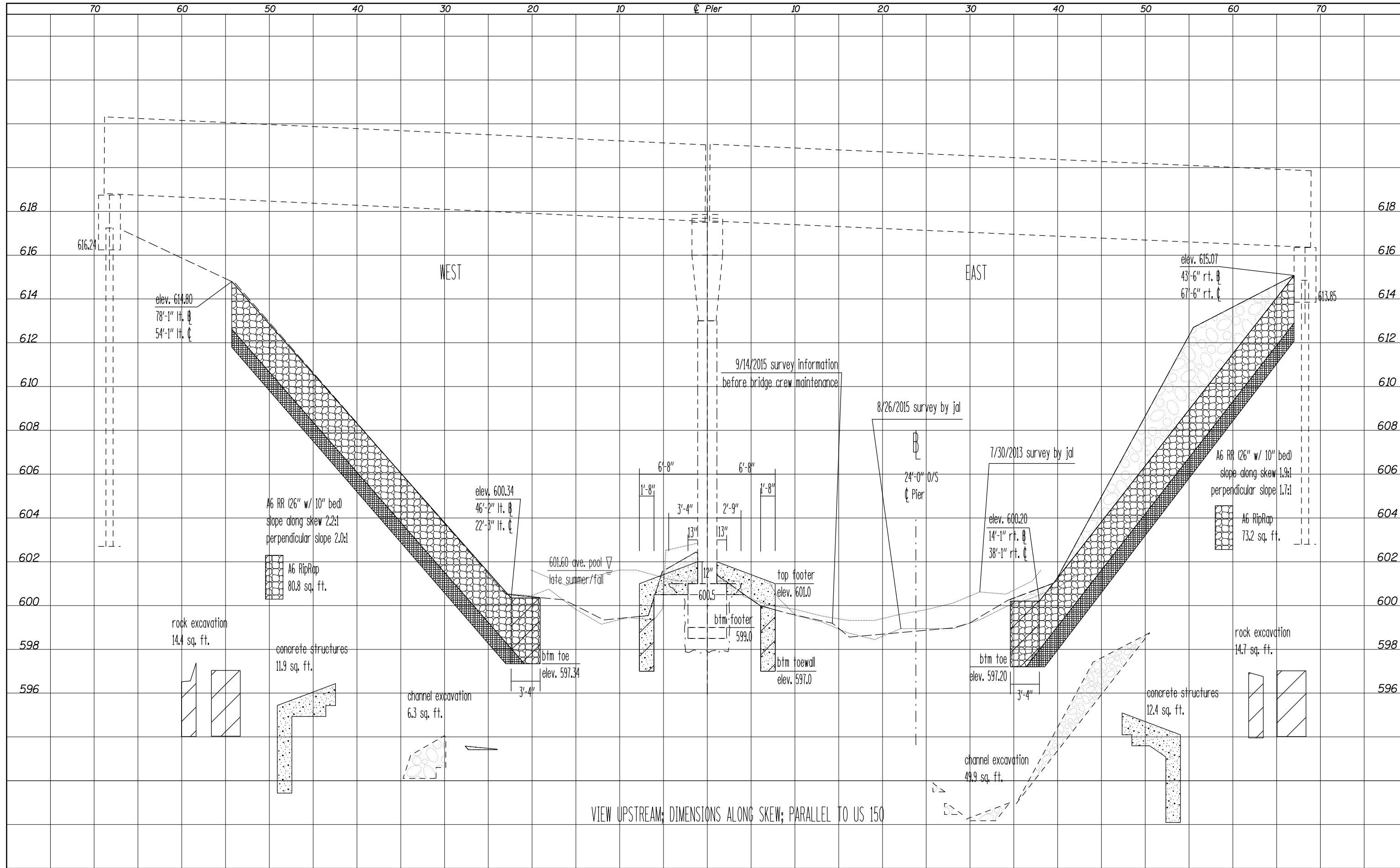
CHANNEL CROSS SECTION 10FT FROM UPSTREAM FACE

SCALE: 2:5 SHEET 217 OF 217 SHEETS STA. TO STA.



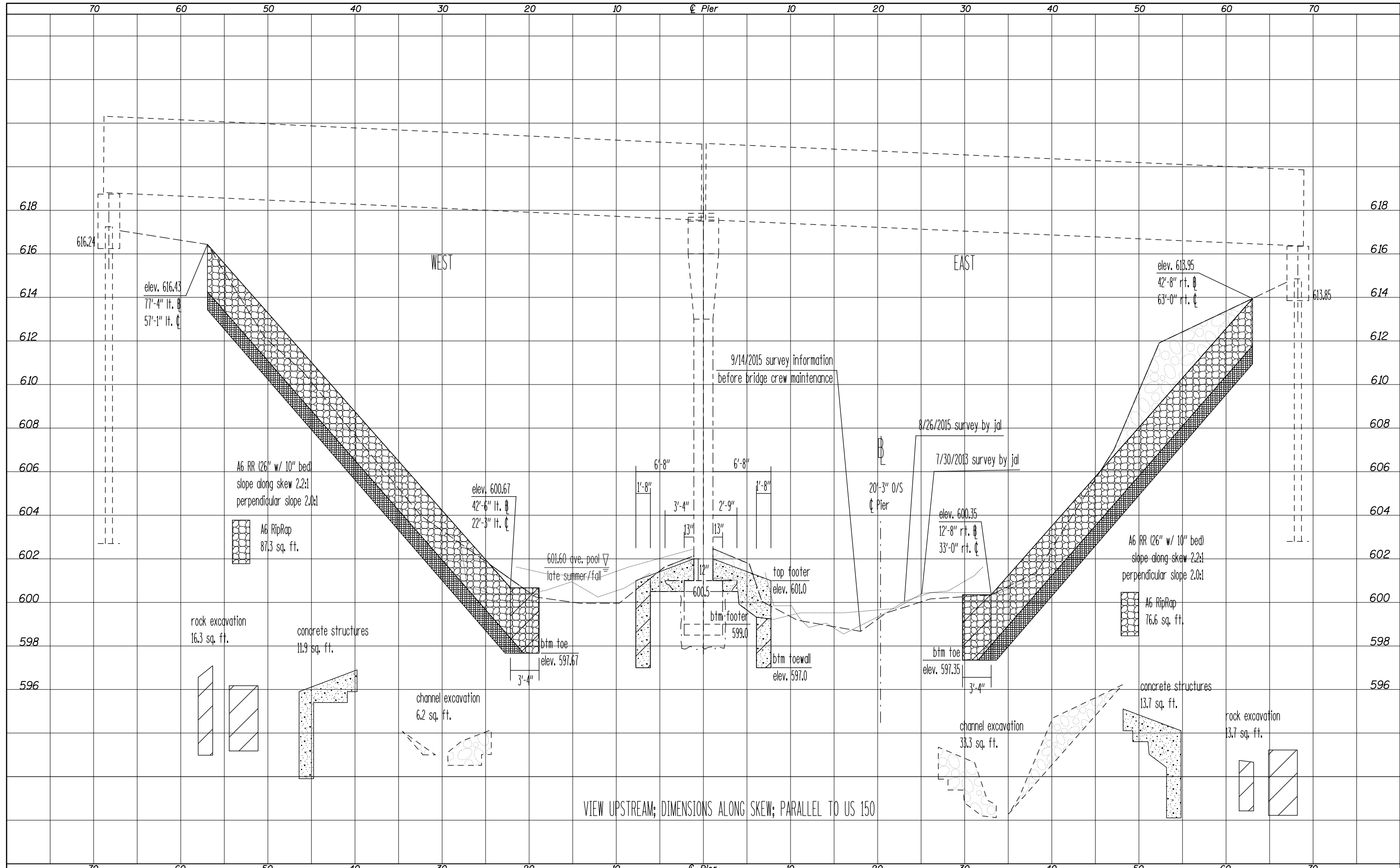
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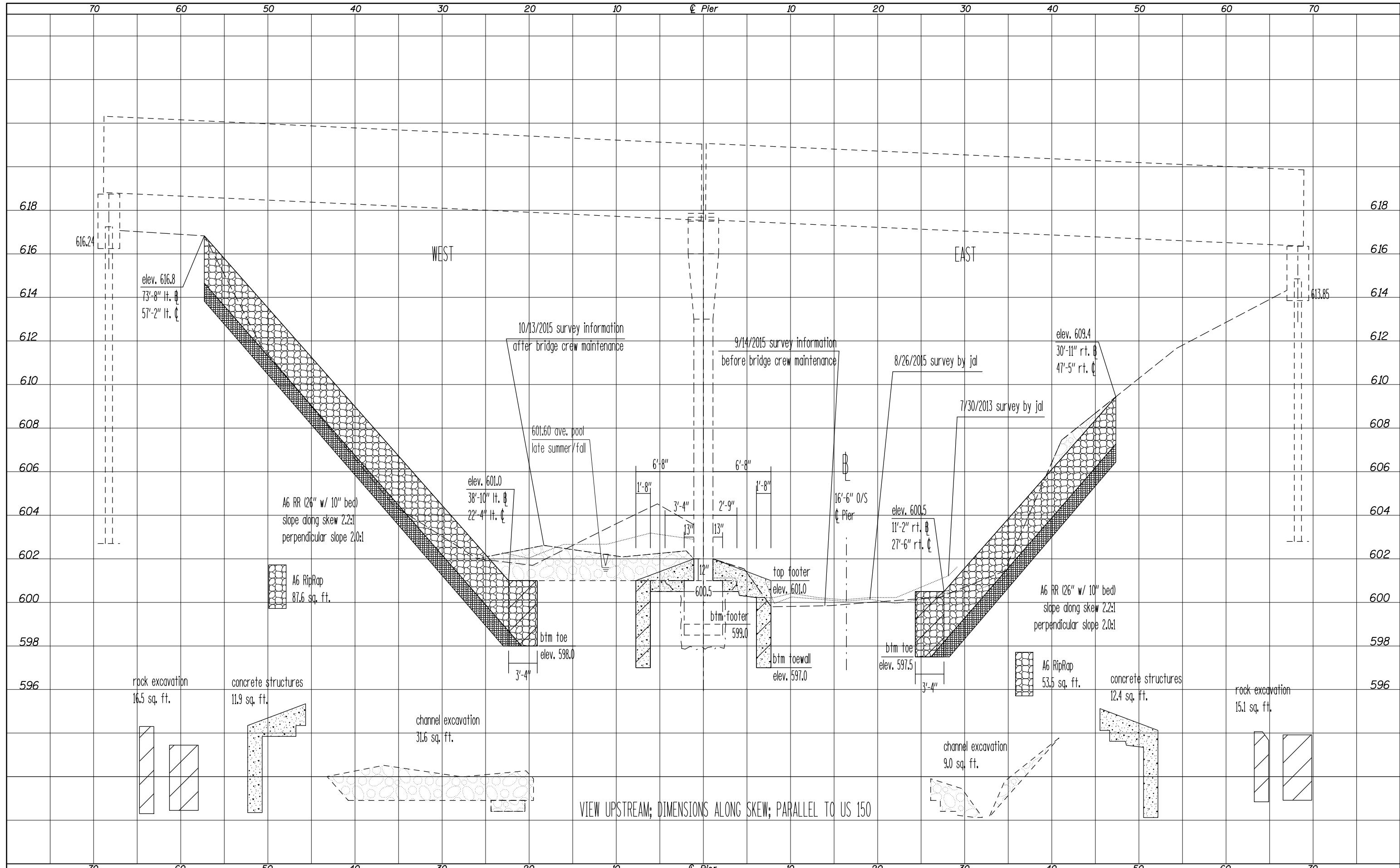
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
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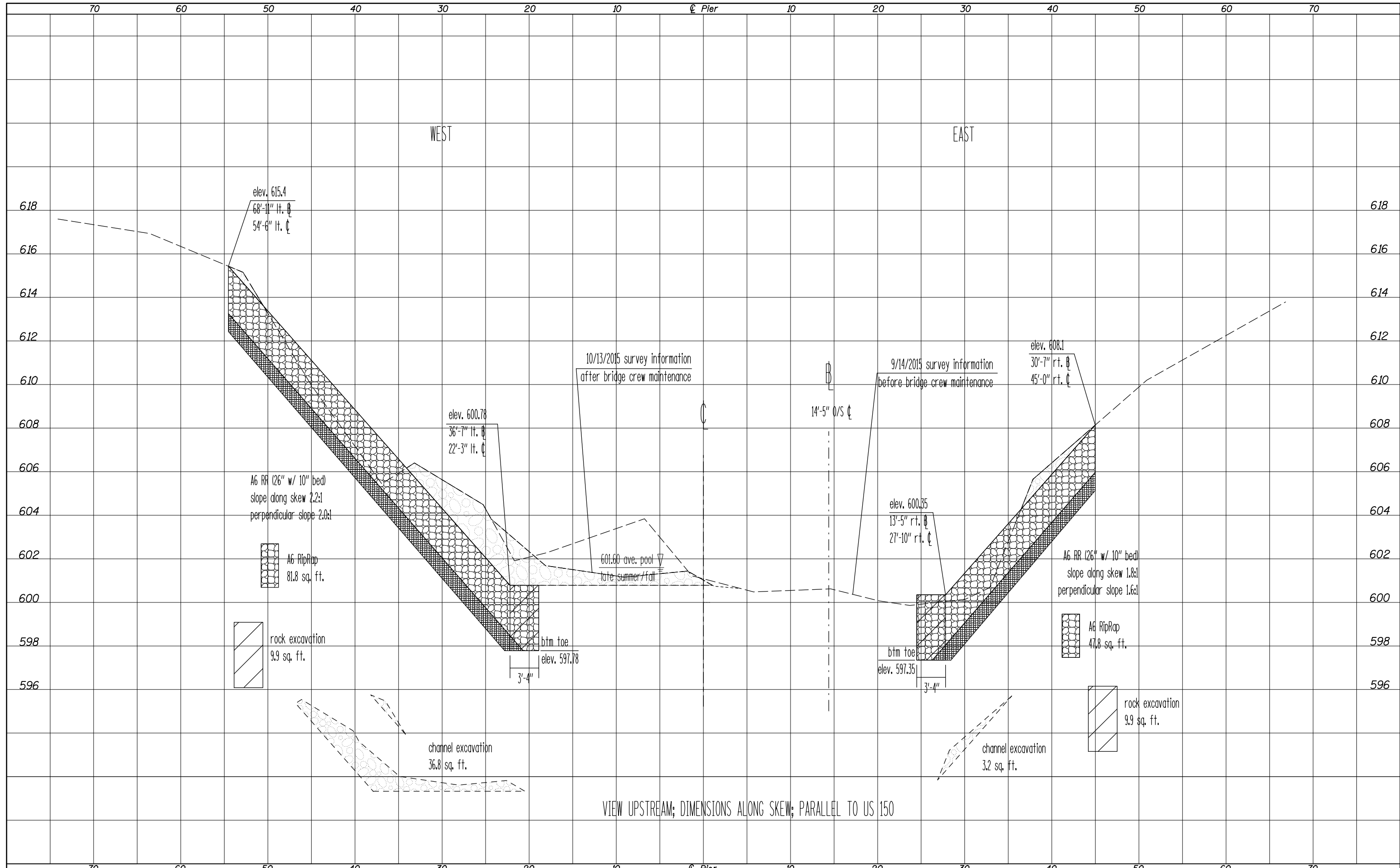
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
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PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
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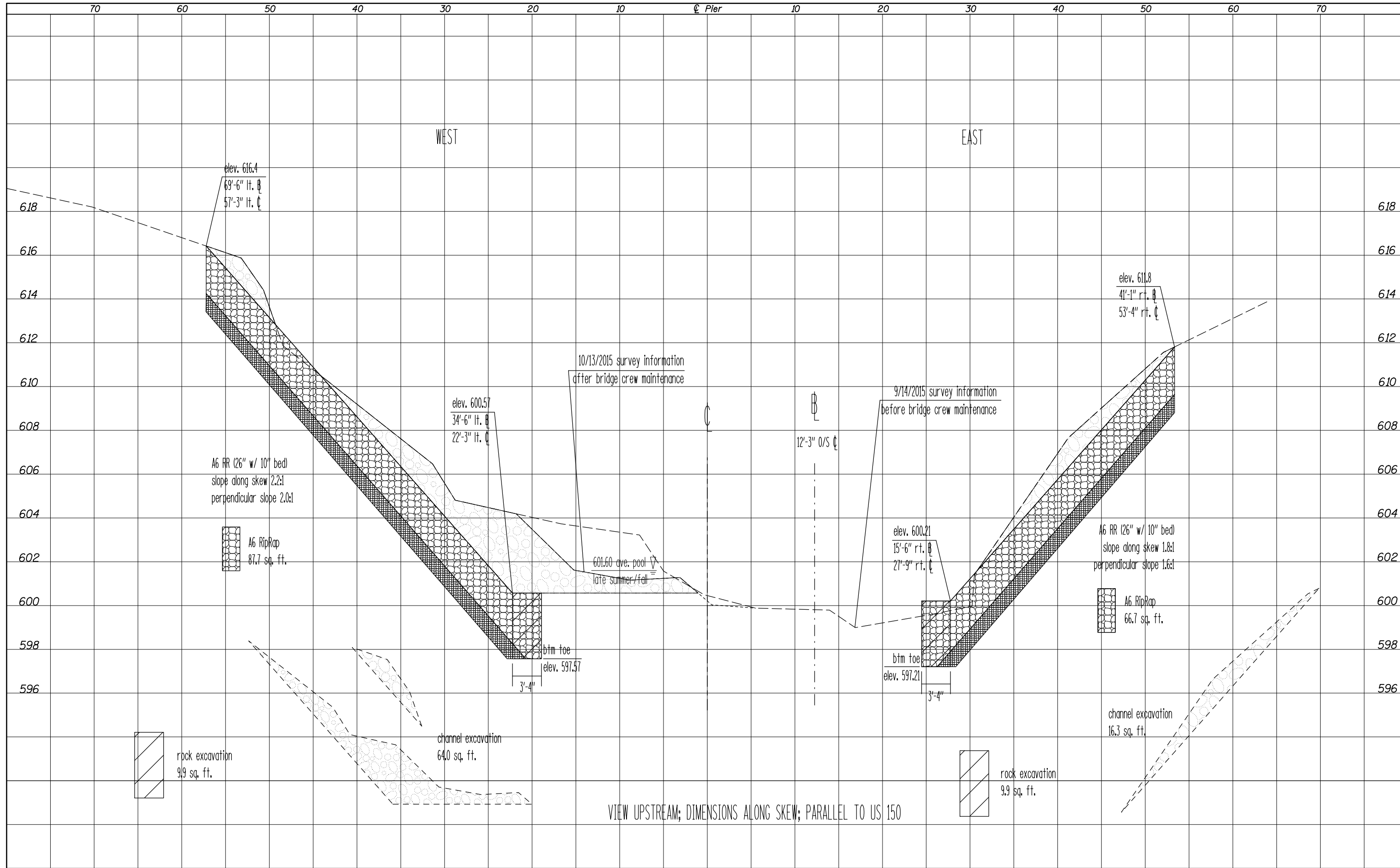
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TEMPLATE	
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ORIGINAL SURVEY	
NOTE BOOK	
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
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AREAS CHECKED	
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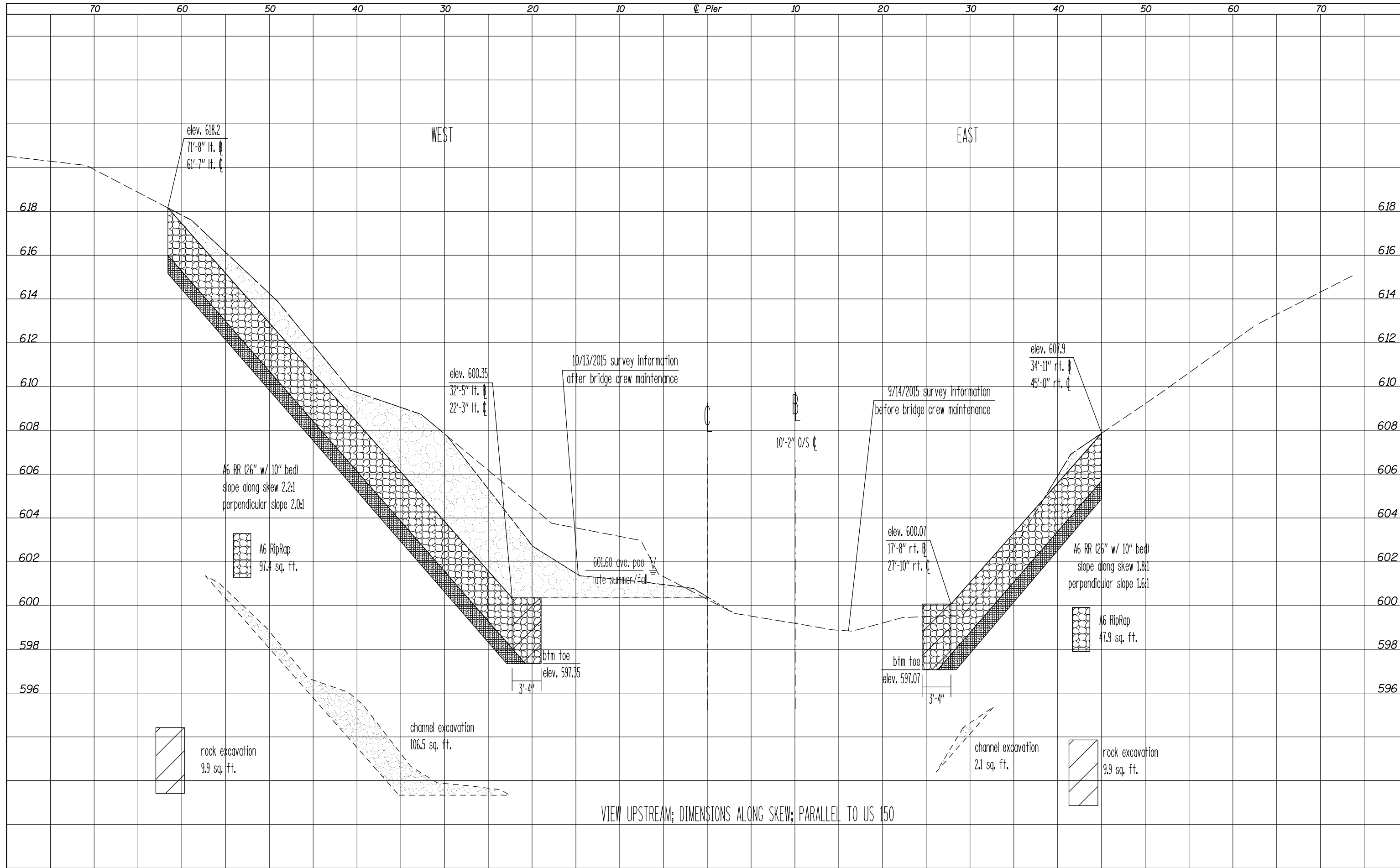
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
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TEMPLATE	
AREAS CHECKED	
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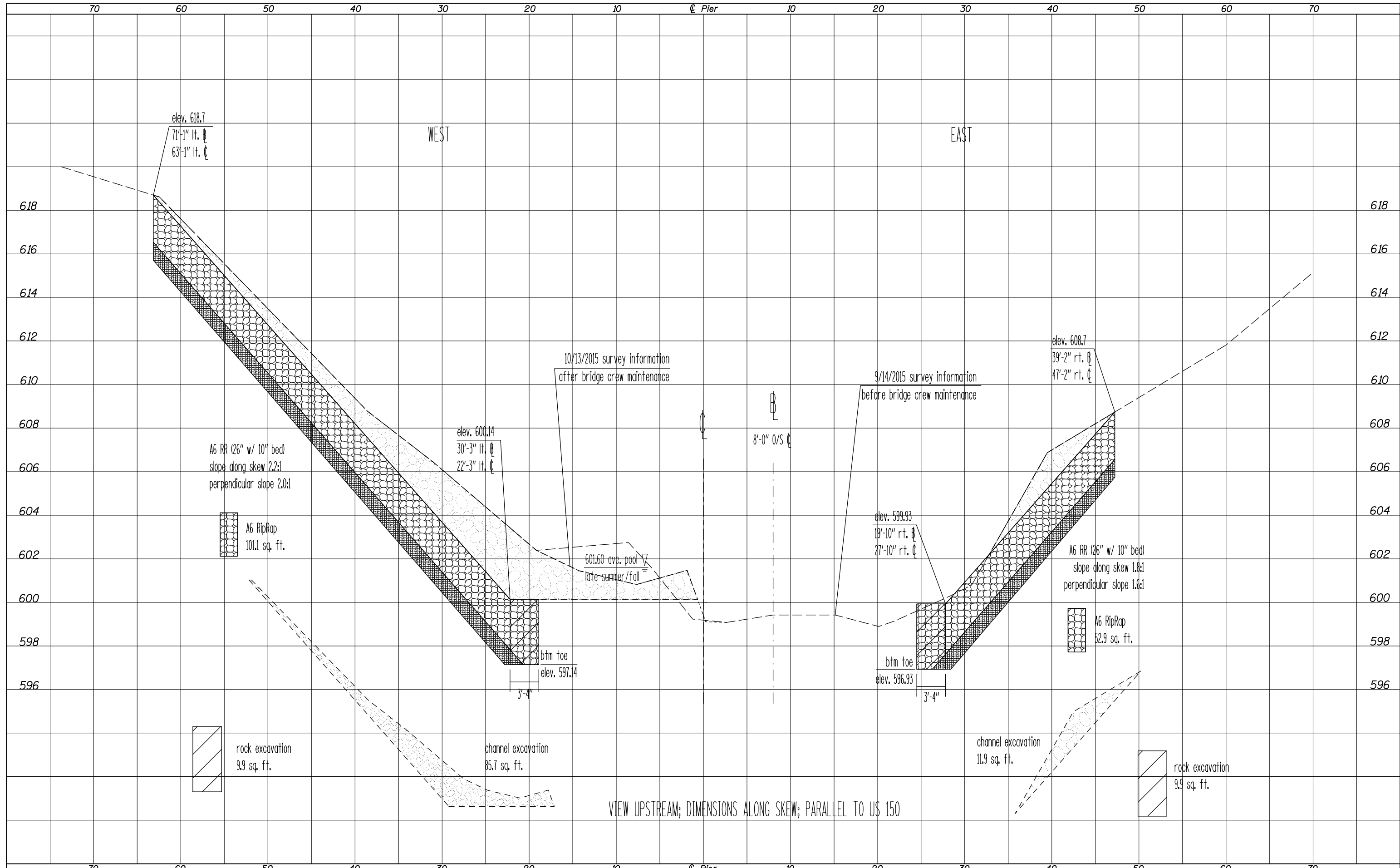
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AREAS CHECKED	
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
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SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
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FINAL SURVEY	
NOTE BOOK	
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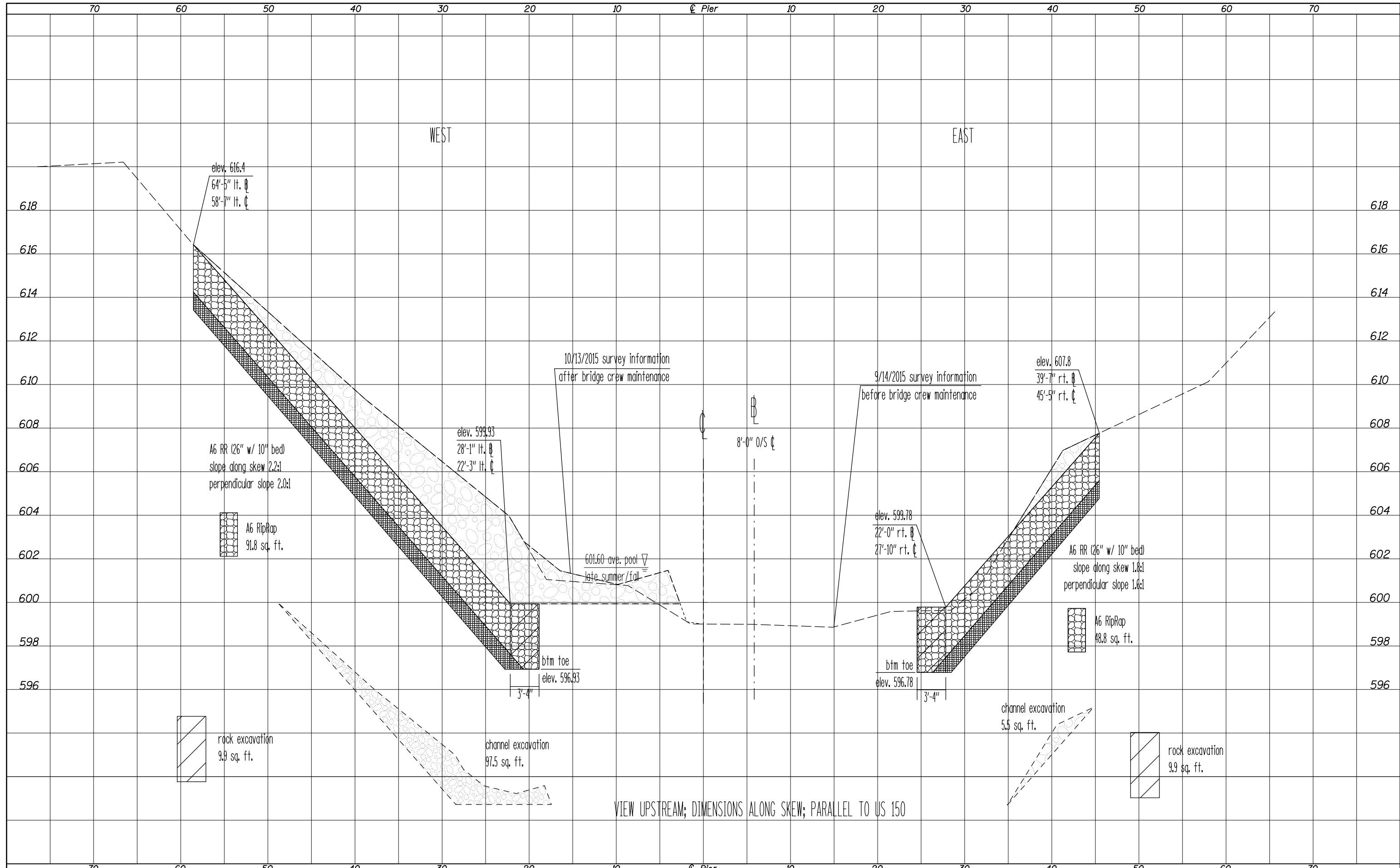
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ORIGINAL SURVEY	
NOTE BOOK	
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VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
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TEMPLATE	
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ORIGINAL SURVEY	
NOTE BOOK	
NO.	

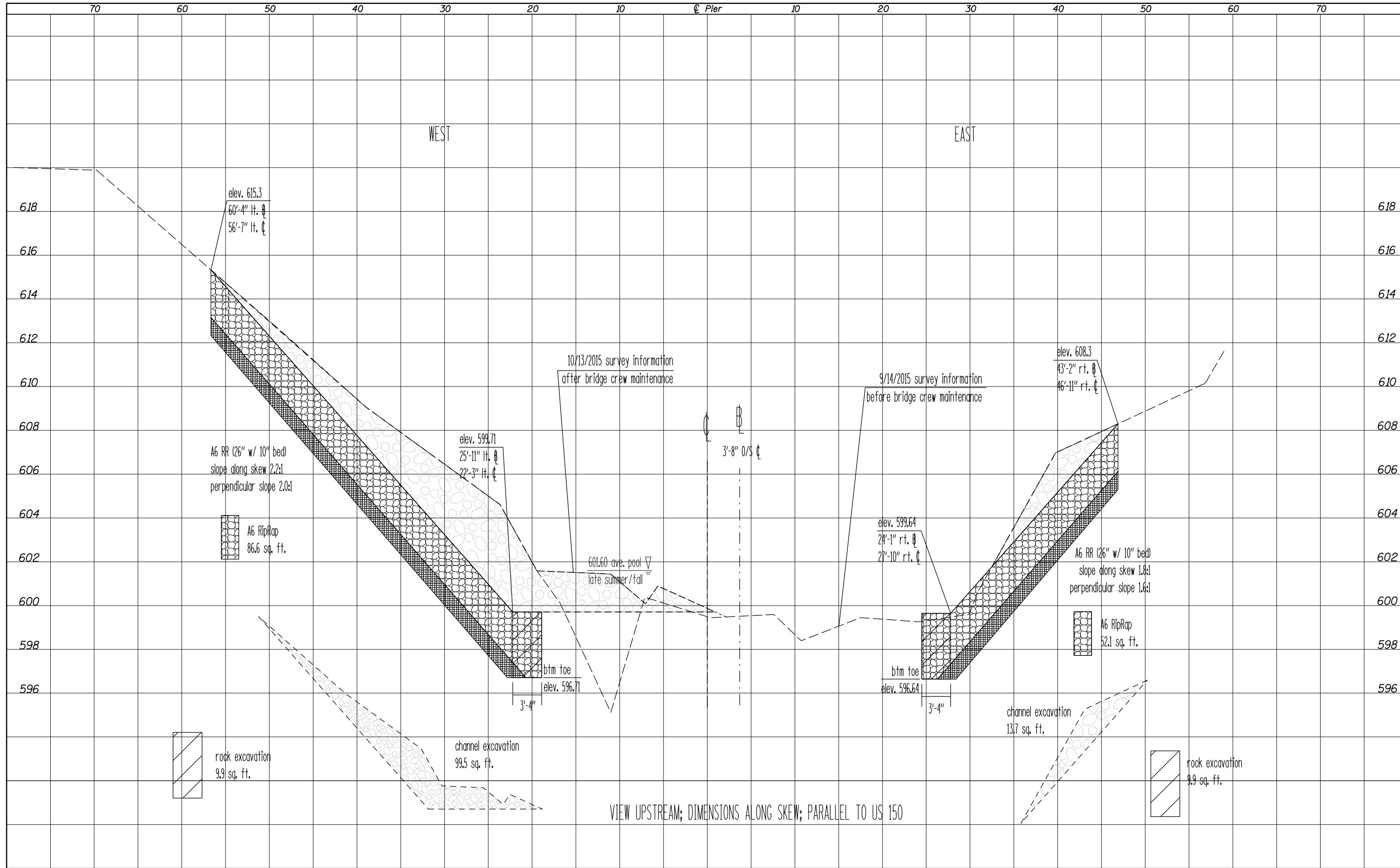


FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISÉD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CHANNEL CROSS SECTION 50FT FROM DOWNSTREAM FACE	U.S. RTE. 150	SECTION 35I	COUNTY VERMILION	TOTAL SHEETS 26	SHEET NO. 24	CONTRACT NO. 70B88
PLLOT SCALE = 40.0000' / in.	CHECKED -	DATE - 1/15/2016	REVISÉD -	SCALE: 2:5	SHEET 217 OF 217 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



VIEW UPSTREAM; DIMENSIONS ALONG SKEW; PARALLEL TO US 150

FILE NAME =	USER NAME = brandenburgtj	DESIGNED - TJB	REVISIED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	CHANNEL CROSS SECTION 60FT FROM DOWNSTREAM FACE			U.S. RTE. 150	SECTION 35I	COUNTY VERMILION	TOTAL SHEETS 26	SHEET NO. 25
CONTRACT NO. 70B88	SCALE: 2:5	SHEET 217 OF 217 SHEETS	STA. TO STA.		ILLINOIS FED. AID PROJECT							
CONTRACT NO. 70B88	SCALE: 2:5	SHEET 217 OF 217 SHEETS	STA. TO STA.		ILLINOIS FED. AID PROJECT							
CONTRACT NO. 70B88	SCALE: 2:5	SHEET 217 OF 217 SHEETS	STA. TO STA.		ILLINOIS FED. AID PROJECT							

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	

