

SEC. 11, T.21N., R.17E., W.M.
KITITAS COUNTY

BOUNDARY CULVERT

US 97

TO JCT. SR 970
10.0 MILES

TO JCT. US 2
25.3 MILES

SC LINE PROFILE

Y LINE PROFILE

D LINE PROFILE

DATUM
NAVD 88

REFERENCE LINE
ELEVATION 3080.0

NOTE: 500 YR. M.R.I.
W.S. ELEV. 3104.7
Q = 532 CFS

ELEVATION

GRADE ELEVATIONS SHOWN ARE FINISH GRADES AT TOP OF
HMA OVERLAY ON Y LINE AND ARE EQUAL TO PROFILE GRADE.
SEE STD. PLAN A-50.10 FOR EMBANKMENT DETAILS AT BRIDGE ENDS.

Bridge Design Engr.	khaileghi, B	M:\Z-Team\US 97 SWAUK CRK BOUNDARY\window files\LAYOUT BOUNDARY.WND									
Supervisor	Zeldenrust, RP					REGION NO.	STATE		FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By						10	WASH.				
Checked By											
Detailed By	Avery, D 03/17					JOB NUMBER					
Bridge Projects Engr.						CONTRACT NO.					
Prelim. Plan By											
Architect/Specialist		DATE	REVISION	BY	APPD						

SR 97 FILE NO. SHEET B1

Thu Jul 06 10:32:21 2017

BRIDGE
AND
STRUCTURES
OFFICE

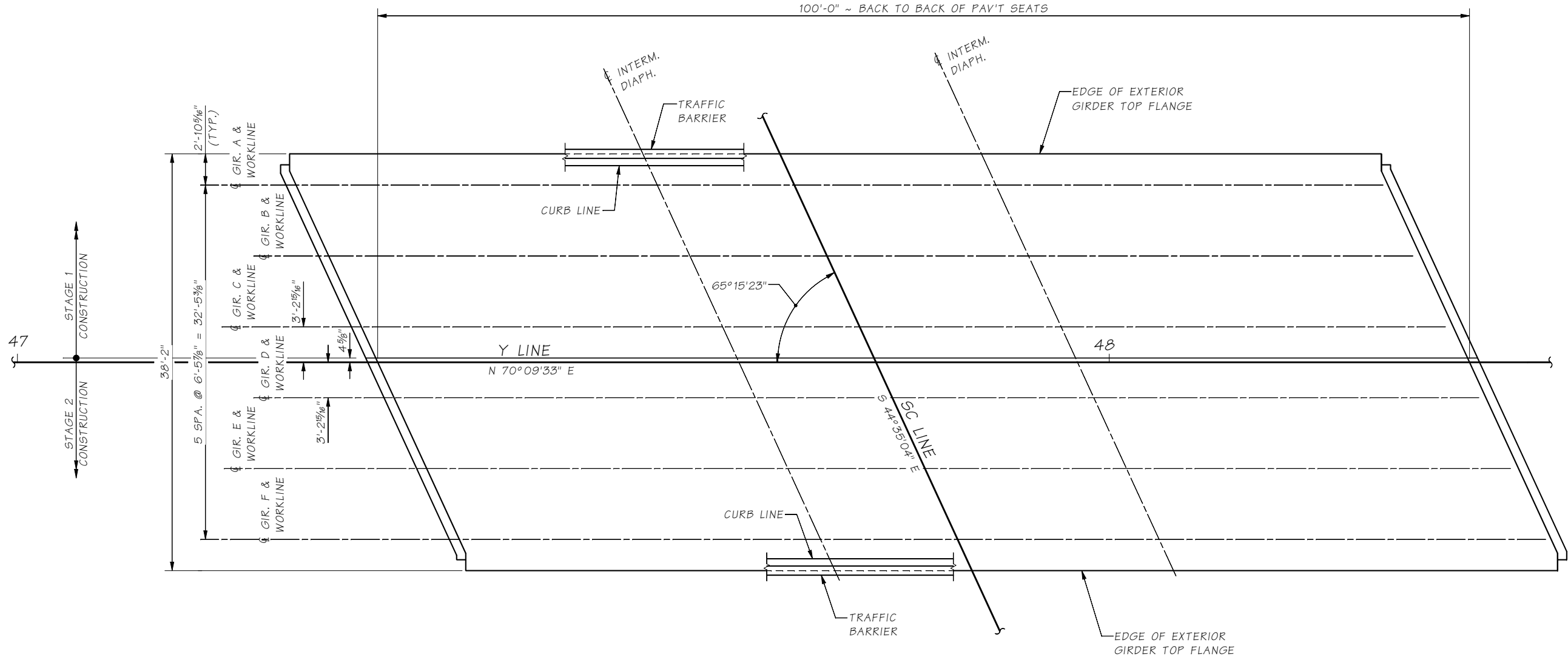


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P.C. GIRDERS (WF39DG)
W/3" MIN. HMA OVERLAY
LOADING: HL-93

US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE
LAYOUT

BRIDGE
SHEET
NO.
B1
SHEET
OF
SHEETS



FRAMING PLAN
BEARING OF PIERS IS S 44°35'04" E

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Checked By									
Detailed By	Avery, D	03/17							
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist									
	DATE	REVISION	BY	APP'D					



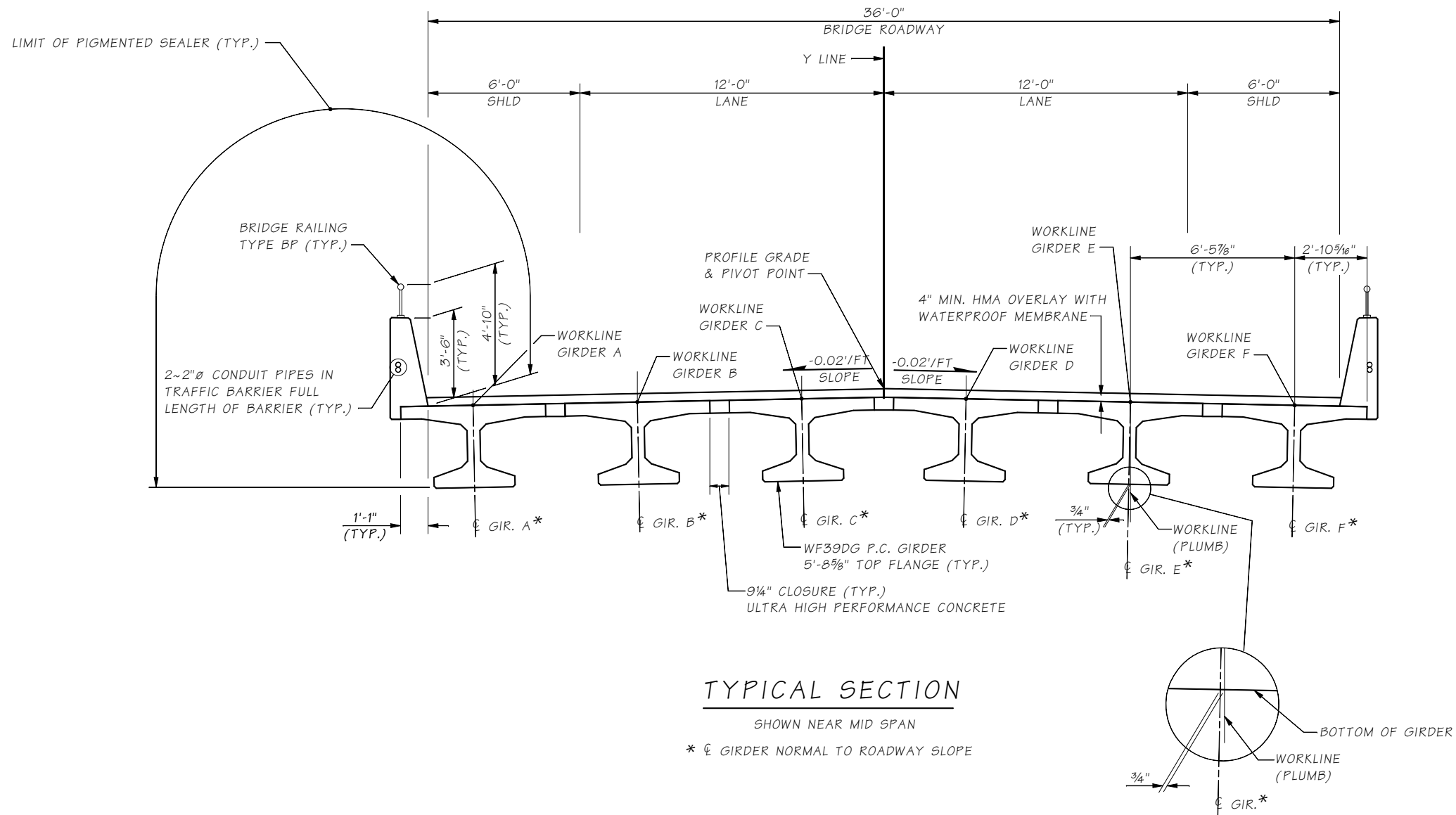
BRIDGE
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US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE
FRAMING PLAN AND CORNER DETAIL

BRIDGE
SHEET
NO.
B13
SHEET
OF
SHEETS



Bridge Design Engr.	khaleghi, B	M:\Z-Team\US 97 SWAUK CRK BOUNDARY\window files\TYP SECT.WND								
Supervisor	Zeldenrust, RP					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By	Norton, B.	03/17				10	WASH.			
Checked By						JOB NUMBER				
Detailed By	Avery, D	03/17				CONTRACT NO.				
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION		BY	APPD				

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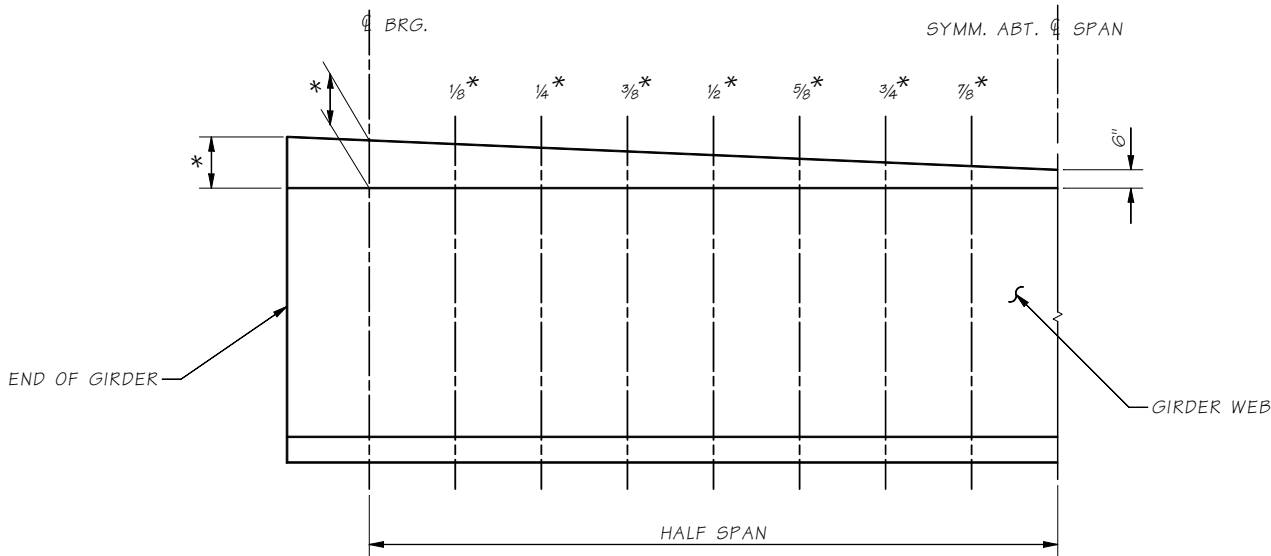


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US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE
TYPICAL SECTION

BRIDGE
SHEET
NO.
B14
SHEET
OF
SHEETS

GIRDER SCHEDULE																																					
SPAN	GIRDER	GIRDER SERIES	TOP FLANGE WIDTH W	PLAN LENGTH (ALONG GIRDER GRADE) (SEE GIRDER NOTE 1)	GIRDER END DETAILS						MIN. CONC. COMP. STRENGTH		NUMBER OF STRANDS (SEE GIRDER NOTE 2)		LOCATION OF C.G. STRANDS			STRAIGHT STRANDS TO EXTEND		MIDSPAN VERTICAL DEFLECTION D		REINFORCEMENT DETAILS										SHIPPING AND HANDLING DETAILS					
					END 1 TYPE	END 2 TYPE	θ1	θ2	P1	P2	@ 28-DAYS F/C (ksi)	@ RELEASE F/C (ksi)	STRAIGHT	HARPED	E	F _{CE}	F _o	END 1	END 2			ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		MAXIMUM MIDSPAN VERTICAL DEFLECTION AT SHIPPING	L	L1	L2	K _θ MINIMUM SHIPPING SUPPORT ROTATIONAL SPRING CONSTANT	W _{CC} MINIMUM SHIPPING SUPPORT CNTR.-TO-CNTR. WHEEL SPACING
																				LOWER BOUND @ 40 DAYS	UPPER BOUND @ 120 DAYS	SPACING	LENGTH	SPACING	LENGTH	SPACING	LENGTH	SPACING	LENGTH	SPACING	LENGTH						
1	-	A-F	5'-8 ⁵ / ₈ "	97'-7"	A	A	65.26	65.26	1'-4"	1'-4"	6.6	5.7	24	14	2 ⁵ / ₈ "	5"	10"	① TO ③	① TO ③	2 ¹ / ₂ "	6"	2 ¹ / ₂ "	2'-6"	4"	3'-4"	6"	6'-0"	9"	28'-6"	12"	TO MIDSPAN	3"	-	4'-1"	4'-1"	40,000	6'-0"



GIRDER TOP FLANGE THICKENING DETAIL

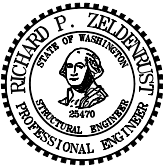
(AT GIRDER CASTING)
* SEE GIRDER TOP FLANGE THICKNESS TABLE.

* GIRDER TOP FLANGE THICKNESS TABLE										
	AT END OF GIRDER	AT CL BEARING	1/8	1/4	3/8	1/2	5/8	3/4	7/8	AT CL OF SPAN
TOP FLANGE THICKENING + 6"	11.5"	11.2"	10.0"	9.0"	8.0"	7.3"	6.7"	6.3"	6.1"	6.0"
TOP FLANGE THICKENING	5.5"	5.2"	3.98"	2.92"	2.03"	1.30"	0.73"	0.32"	0.08"	0.0"

GIRDER NOTES

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL PRETENSIONED AND TEMPORARY STRANDS SHALL BE 0.6"Ø AASHTO M203 GRADE 270 LOW RELAXATION STRANDS, JACKED TO 202.5 KSI (43.94 KIPS PER STRAND).
3. STRUCTURAL STEEL SHAPES AND ASSEMBLIES SHALL BE ASTM A36. THEY SHALL BE PAINTED WITH A PRIMER COAT IN ACCORDANCE WITH STD. SPEC. 6-07.3(9). WELD TIES SHALL BE PAINTED WITH A FIELD PRIMER COAT OF AN ORGANIC ZINC PAINT AFTER FIELD WELDING.

Bridge Design Engr.	Khaleghi, B	M:\Z-Team\US 97 SWAUK CRK BOUNDARY\window files\GIR 1.WND									
Supervisor	Zeldenrust, RP				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS		
Designed By	Norton, B.	03/17			10	WASH.					
Checked By					JOB NUMBER						
Detailed By	Avery, D	03/17			CONTRACT NO.						
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist		DATE		REVISION	BY	APPD					



BRIDGE AND STRUCTURES OFFICE

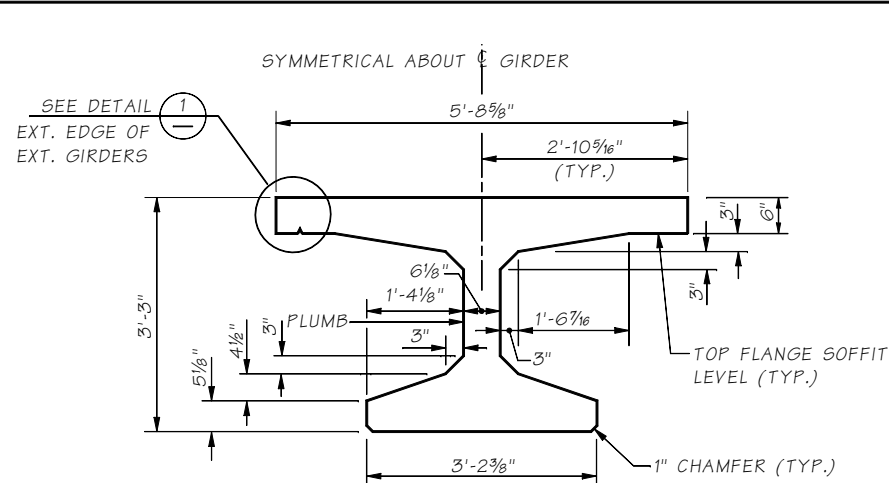


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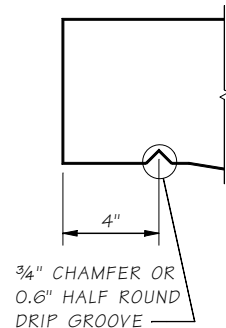
US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE

WFDG36 GIRDER DETAILS
SHEET 1 OF 4

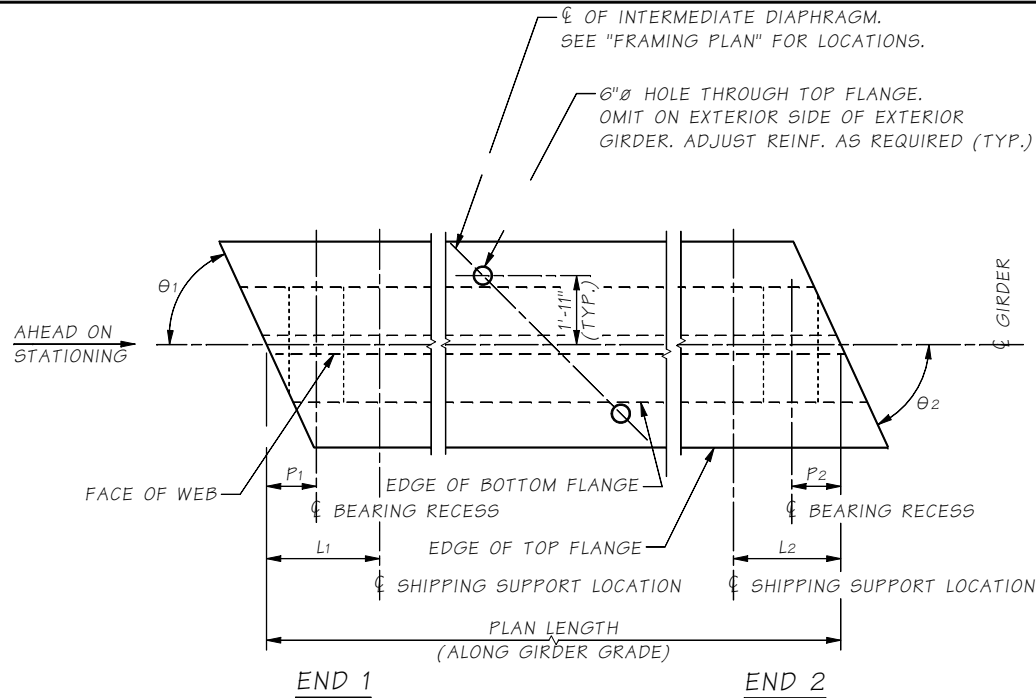
BRIDGE SHEET NO.
B15
SHEET
OF
SHEETS



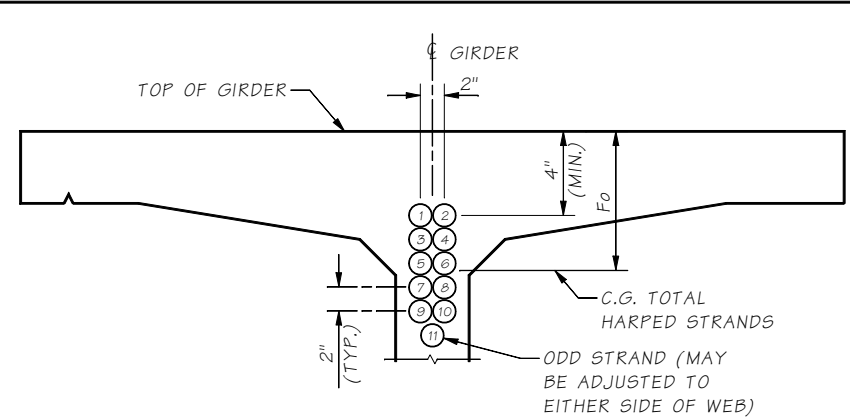
SECTION A
REINFORCEMENT AND STRANDS NOT SHOWN



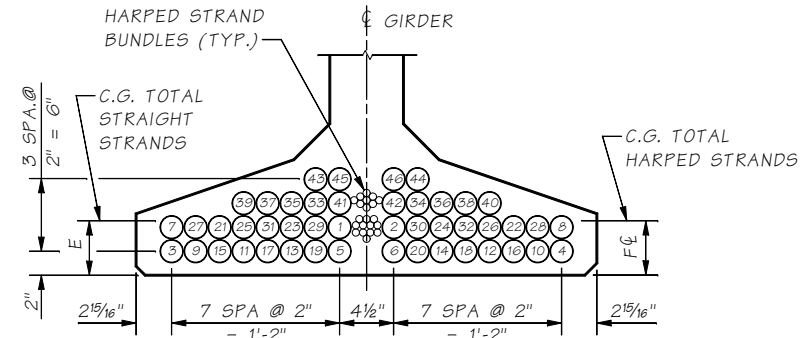
DETAIL 1
EXTERIOR EDGE OF EXTERIOR GIRDERS



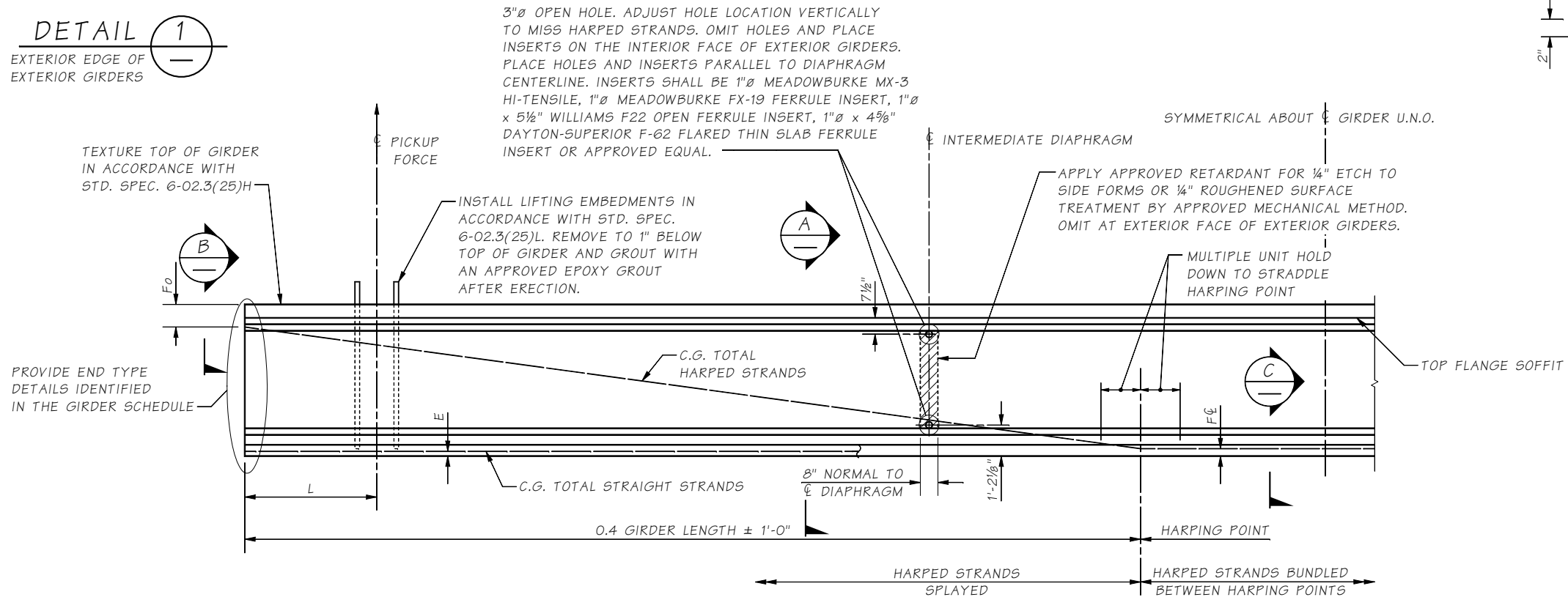
GIRDER PLAN



VIEW B
HARPED STRAND LOCATION SEQUENCE SHALL BE AS SHOWN ①, ② ETC.



SECTION C
STRAIGHT STRAND LOCATION SEQUENCE SHALL BE AS SHOWN ①, ② ETC.



GIRDER ELEVATION

Bridge Design Engr.	Khalighi, B	M:\Z-Team\US 97 SWAUK CRK BOUNDARY\window files\GIR 2.WND
Supervisor	Zeldenrust, RP	
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Checked By		
Detailed By	Avery, D	03/17
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		
DATE	REVISION	BY APPD



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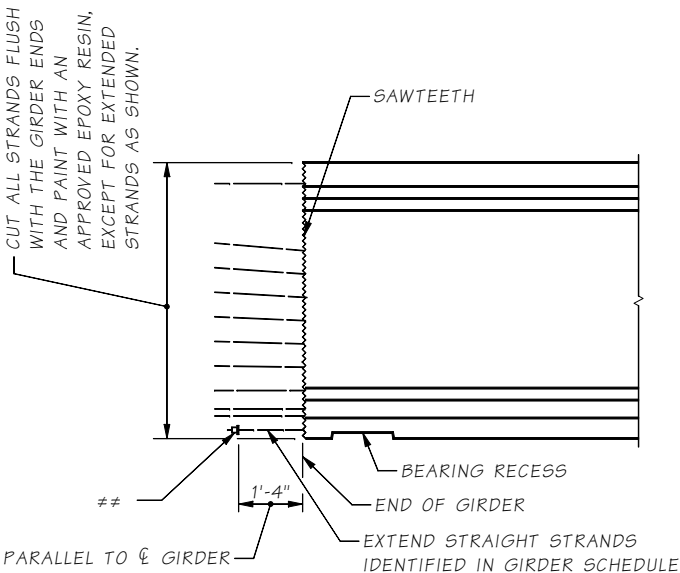
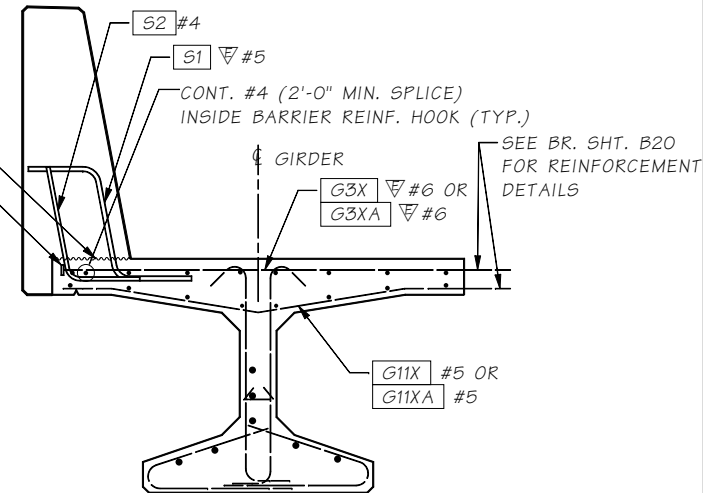
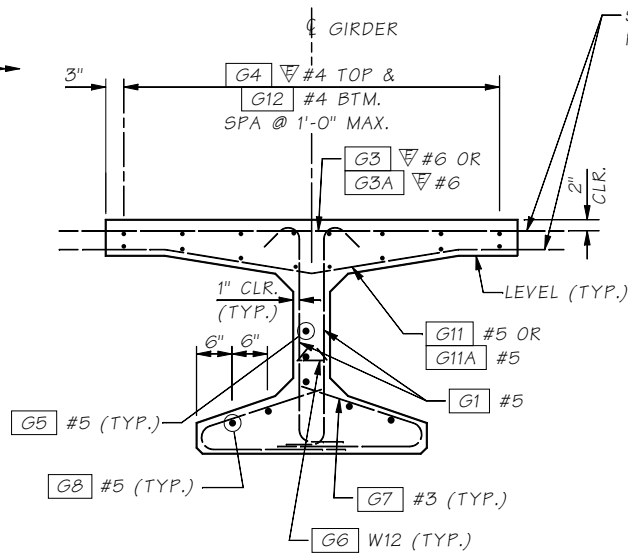
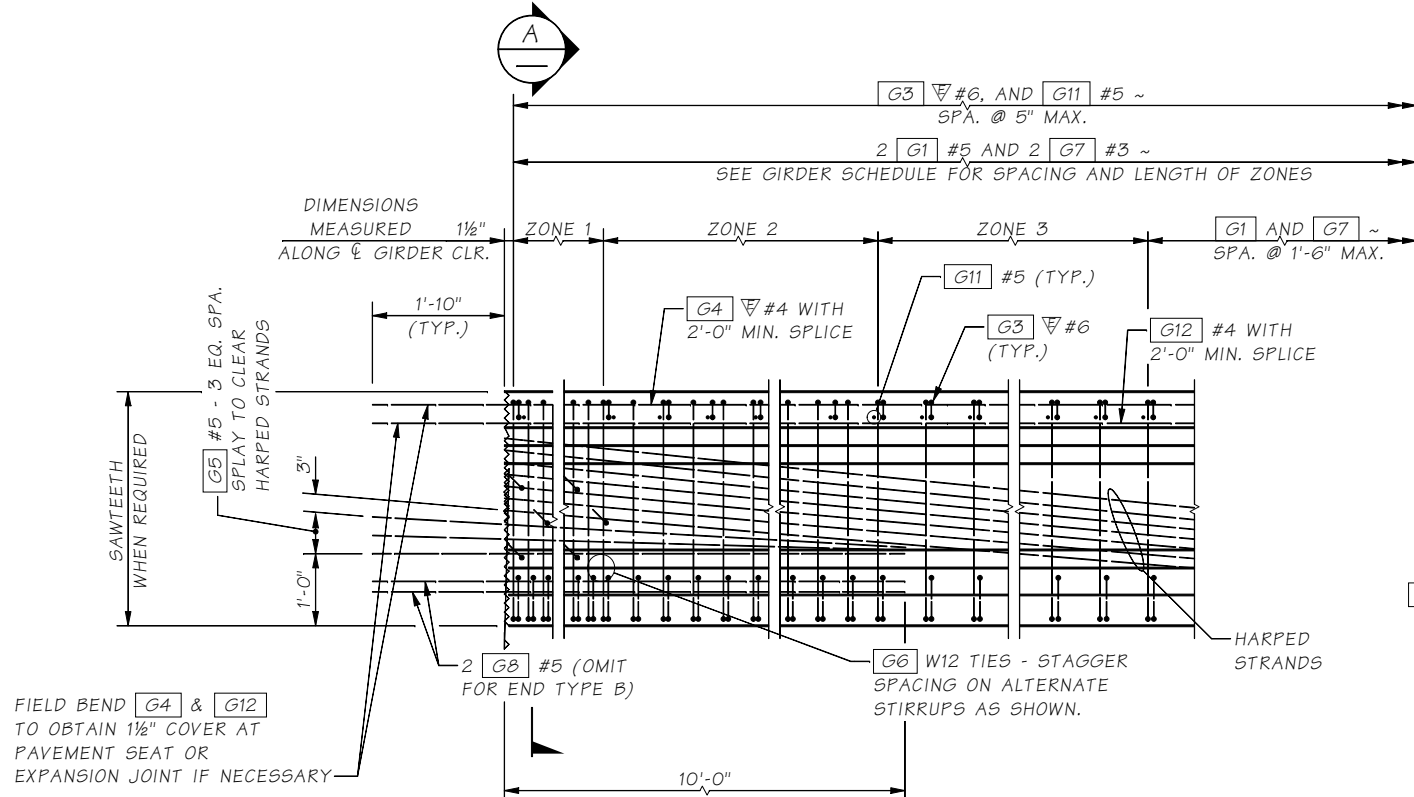
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US 97
SWAUK CREEK CAMPGROUND FISH PASSAGE
BOUNDARY BRIDGE
WF DECK GIRDER
DETAILS 2 OF 4

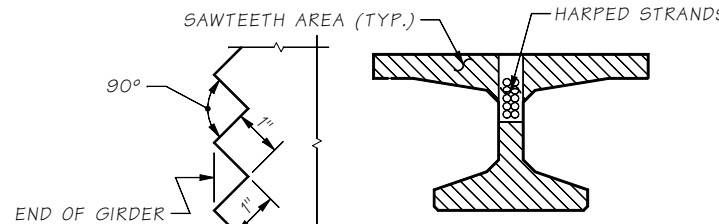
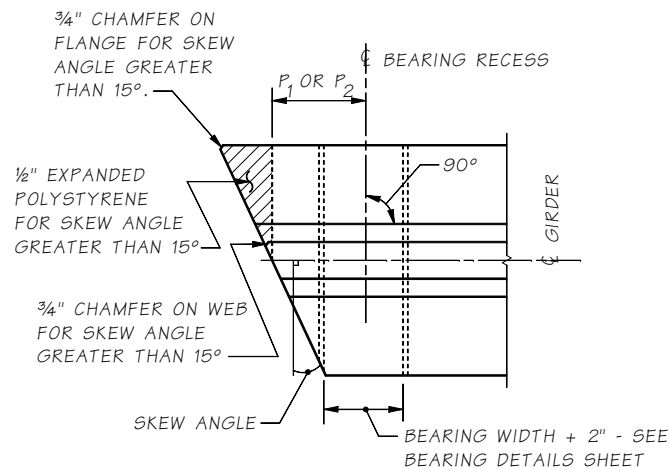
BRIDGE SHEET NO.
B16
SHEET
OF
SHEETS

GIRDER REINFORCEMENT NOTES

1. DEFORMED WELDED WIRE REINFORCEMENT MAY BE SUBSTITUTED FOR MILD REINFORCEMENT IN ACCORDANCE WITH STANDARD SPECIFICATION 6-02.3(25)A.

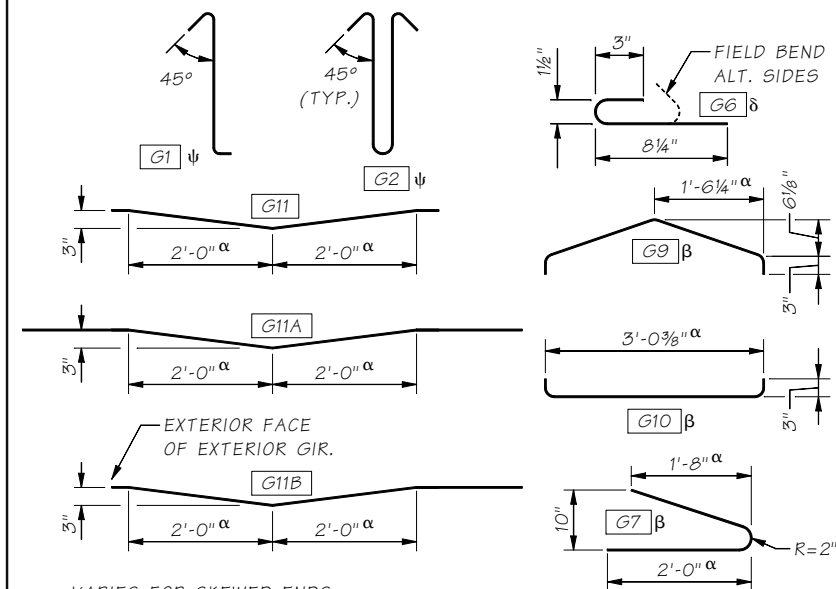


STRAND CHUCK TACK WELDED TO ASTM A36 $\frac{1}{2} \times 4 \times 0'-4$ WITH $\frac{3}{4}$ " \emptyset HOLE PRIOR TO INSTALLING ON STRAND, ASTM A108 $2\frac{3}{4}$ " $\emptyset \times 1\frac{1}{8}$ " STEEL STRAND ANCHOR, OR APPROVED EQUAL (TYP.). VERIFY STRAND GRIPS ARE SEATED TIGHTLY IMMEDIATELY BEFORE PLACING DIAPHRAGM CONCRETE. SECURELY TIE ANCHOR TO THE REBAR CAGE TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.



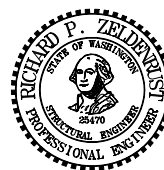
BENDING DIAGRAM

(ALL DIMENSIONS ARE OUT TO OUT)



α - VARIES FOR SKEWED ENDS.
 δ - #3 OR #4 MAY BE SUBSTITUTED. FIELD BENDING IS OPTIONAL.
 β - PAIRS OF G7 BARS, OR G9 AND G10 BARS, MAY BE USED INTERCHANGEABLY AS BOTTOM FLANGE TIES.
 ψ - 1 G2 MAY BE SUBSTITUTED FOR 2 G1 WITHIN ZONE 1.

Bridge Design Engr.	Khaileghi, B	M:\Z-Team\US 97 SWAUK CRK BOUNDARY\window files\GIR 3.WND					
Supervisor	Zeldenrust, RP	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Designed By	Norton, B.	10	WASH.				
Checked By		JOB NUMBER					
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Bridge Projects Engr.							
Prelim. Plan By							
Architect/Specialist		DATE	REVISION	BY	APPD		



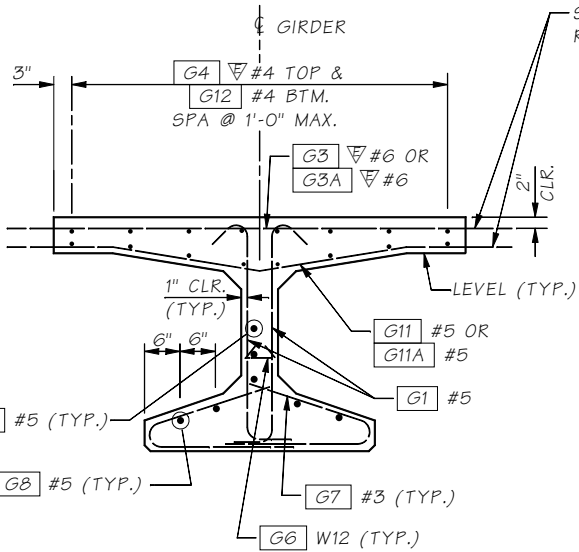
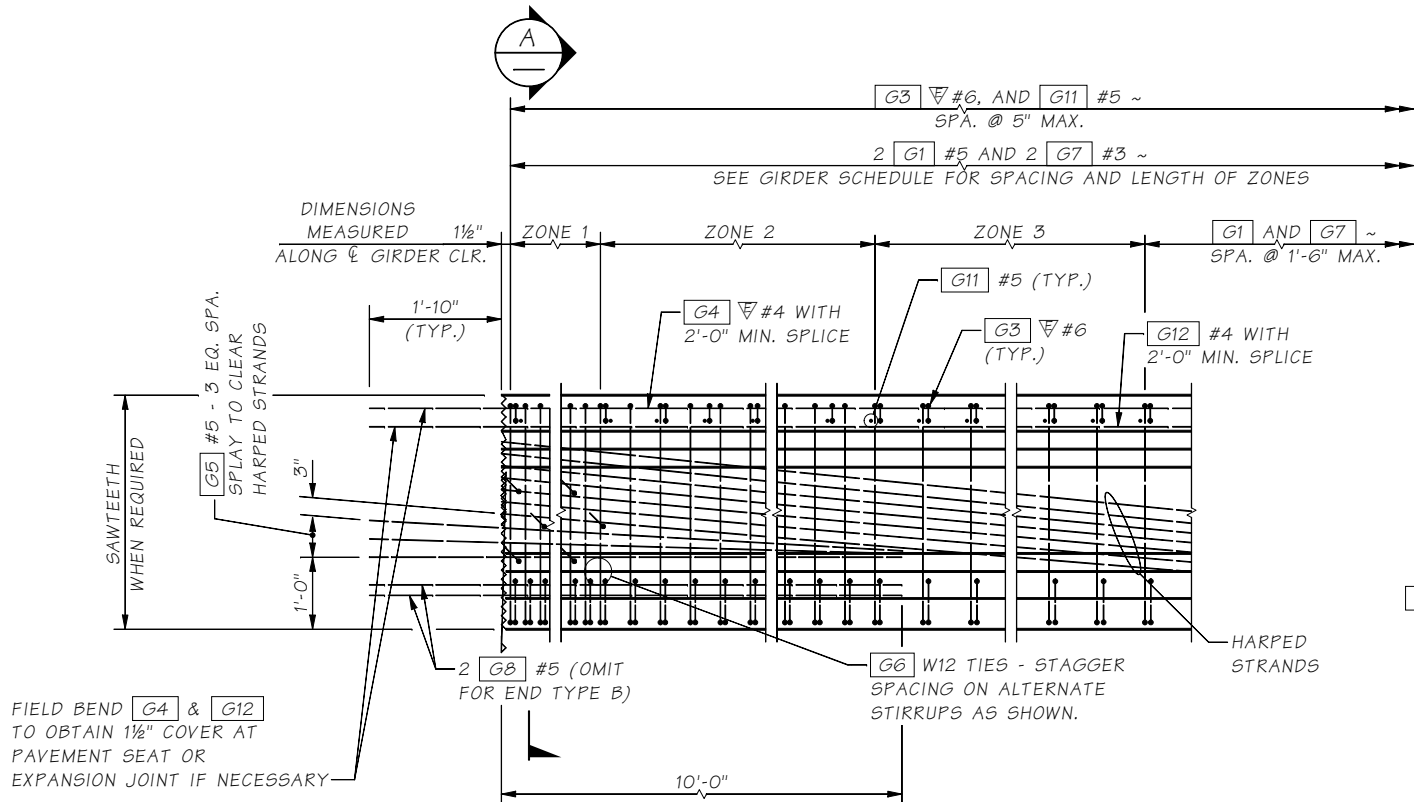
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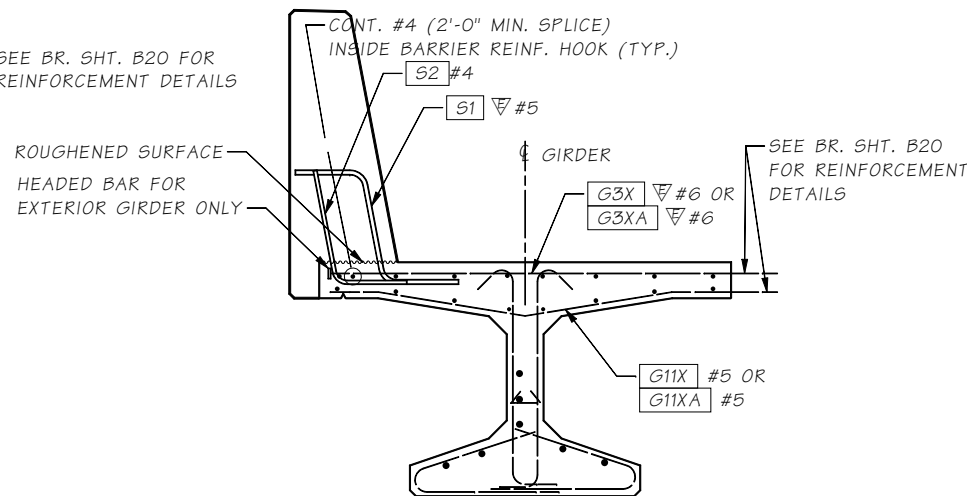
US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE
WF DECK GIRDER
SHEET 3 OF 4

BRIDGE SHEET NO.
B17
SHEET
OF
SHEETS



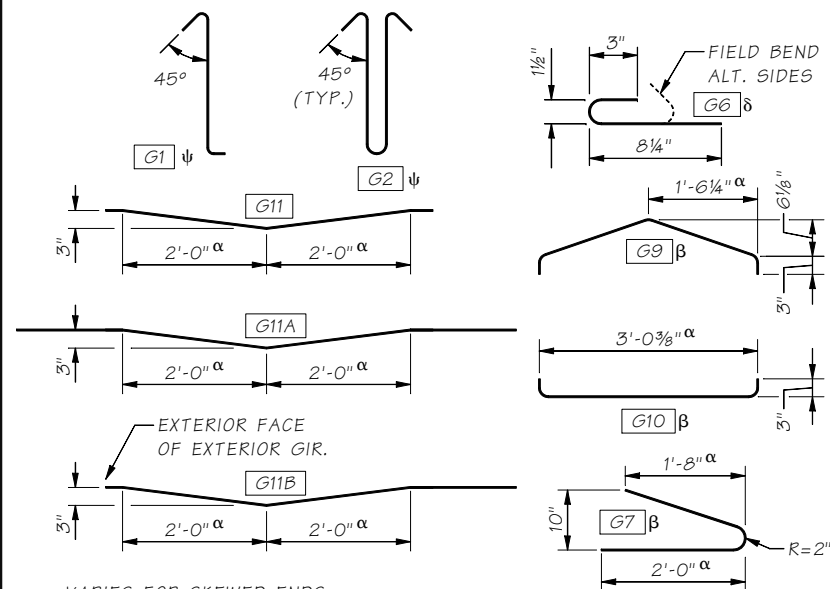
GIRDER REINFORCEMENT NOTES

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US 97
SWAUK CREEK CAMPGROUND
FISH PASSAGE
BOUNDARY BRIDGE
WF DECK GIRDER
SHEET 4 OF 4

BRIDGE
SHEET
NO.
B18
SHEET
OF
SHEETS