





DATE: May 21, 2014

TO: Derek Case, MS 47345 

THRU: Dave Becher, MS NB82-65

FROM:  John Chi, Project Engineer, MS NB82-50

SUBJECT: Contract 008432, SR 250, West Connection Bridge  
Federal Aid No. BR-0520(051)  
**Change Order No. 9 – “Project Clear All 1”**  
Log No. 328

**Description & Evolution of Change**

For review and further processing, is PE recommended Change Order No. 9. This change order provides for the settlement and resolution of the outstanding issues and incorporates both WSDOT and the Contractor initiated changes in accordance with Section 1-04.4 to provide an equitable adjustment to Mowat-American A Joint Venture for the following items associated with the contract:

- ✓ • All Protest by the Contractor as defined in Section 1-04.5 from work performed and issues arising prior to January 10, 2014.
- ✓ • All Disputes and Claims as defined in Section 1-09.11 from work performed and issues arising prior to January 10, 2014.
- ✓ • Impacts associated with the Westside Pontoon Moorage being utilized by Contract 008066 for the restricted access area shown on page 5 of the change order.
- And Priced change orders as identified below:
  1. PCO 704 Plan Sheet Revisions - FB&L Contractor notified WSDOT of changes made to their work leading into the WCB work. These changes require the WCB to modify the ITS blockout, associated ITS, and bearing locations at pier 36. The Engineer of Record initiated changes to the WCB structure that were intended to be made prior to bid opening but did not make the addendum deadline.
  2. PCO 705 Girder Bearing Recess Changes resolved the following issues:
    - The profile grade of the girders was found to be too steep to accommodate the original bearing recess design during the review of the prestressed girder shop drawings. The bridge designer (Brian Harris), HQ Construction (Mark Gaines) and HQ Bridge and Structures (Geoff Swett) developed the design of a wedge-shaped steel plate to be welded to the girder bearing recess.
    - Span 35 Intermediate Diaphragm Reinforcing: The conflict between harped strands and #7 bars in the 1/4 point and 3/4 point was discovered during shop drawing review of the WF83G prestressed girders. The revision consists of swapping the locations of reinforcing bars; there is no adjustment in quantities or labor for this change.

Derek Case  
Contract 008432, Change Order No. 9  
May 22, 2014  
Page 2

3. PCO 711 Girder Stirrup Changes - The stirrup bars in the girders for spans 25 through 29 were not long enough in the original design to allow for proper field bending around the bridge deck steel. The lengths have been adjusted to properly accommodate the deck reinforcement.
4. PCO 713 Pier 30 Differing Site Condition - The contractor believed that the subsurface conditions encountered during pile driving operations are substantially different than what was anticipated at Pier 30. WSDOT investigated the claim and found no entitlement.
5. PCO 715 Tiltmeter Alarms - The tiltmeters had calibration issues since installation. The baseline zero did not reflect field conditions giving false alarms. Subcontractor Terra Dynamics wanted additional compensation for any additions or changes to the current setup. During an internal meeting on November 13, 2014 it was agreed that the tiltmeters will be recalibrated to reflect current site conditions.
6. PCO 716 FB&L Pontoon Issue w/o additional roadway closures - On January 15, 2014 Mowat American A Joint Venture claimed that the FB&L pontoon storage area is impacting jobsite access slowing completion of their daily activities. Prior to the FB&L contractor storing the pontoons at the west side staging area, the contractor had unrestricted access to the project work area and the plans do not show a staging area near the project limits.

The following three issues are exempt from this change order:

- Pier 30 Test Pile Costs
- Property Damage Claims
- Unidentified or latent conditions below the water surface or regarding to the existing SR 520 bridge.

John Chi, Project Engineer, gave verbal approval for this change on February 13, 2014.

Dave Becher, SR 520 Engineering Manager, gave approval for this change on February 23, 2014

Derek Case, Assistant State Construction Engineer, gave approval for this change on February 27, 2014.

→ Craig McDaniel, Deputy State Construction Engineer, gave approval for this change on February 27, 2014.

Anthony Sarhan, FWHA Major Projects Oversight Manager, gave approval for this change on February 27, 2014.

**Entitlement/Price**

Reimbursement for the new item of work "CO#9 Project Clear All 1" shall at the agreed lump sum amount of \$2,020,000.00.

**Contract Time/Disclaimer**

This change order adds 14 days to the contract time.

**Closing**

If you require any further information, please contact John Chi at 425-225-8741.

jc:ak  
Attach.

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

DATE: 04/09/14  
Page 1 of 33


CONTRACT NO: 008432  
CONTRACT TITLE: SR 520 WEST CONNECTION BRIDGE  
CHANGE ORDER NO: 9 R1 PROJECT CLEAR ALL 1

FEDERAL AID NO: BR-0520(051)

PRIME CONTRACTOR: SW0158161 MOWAT - AMERICAN, A JOINT VENTURE  
PO BOX 1330  
WOODINVILLE WA 98072-1330




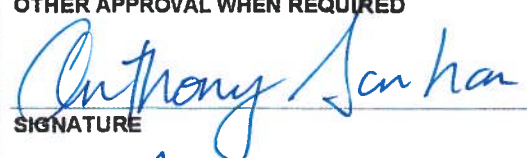
Ordered by Engineer under the terms of Section 1-04.4 of the Standard Specifications

Change proposed by Contractor

<p><b>ENDORSED BY:</b>  <b>CONTRACTOR</b> <u>4/29/14</u> <b>DATE</b></p>	<p><b>SURETY CONSENT:</b>  <b>ATTORNEY IN FACT</b>  <b>DATE</b></p>
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ORIGINAL CONTRACT AMOUNT: 22,129,243.20  
CURRENT CONTRACT AMOUNT: 22,736,493.20  
ESTIMATED NET CHANGE THIS ORDER: 2,020,000.00  
ESTIMATED CONTRACT TOTAL AFTER CHANGE: 24,756,493.20

Approval Required:      ( ) Region      ( ) Olympia Service Center      ( ) Local Agency

<p><input checked="" type="checkbox"/> APPROVAL RECOMMENDED      ( ) EXECUTED</p> <p> <b>PROJECT ENGINEER</b> <u>5/6/14</u> <b>DATE</b></p>	<p><b>EXECUTED:</b>  <b>STATE CONSTRUCTION ENGINEER</b> <u>5-29-14</u> <b>DATE</b></p>
<p>( ) APPROVAL RECOMMENDED <sup>TH</sup>      ( ) EXECUTED</p> <p><b>REGIONAL ADMIN:</b>  <b>BY:</b> <u>5/27/14</u> <b>DATE</b></p>	<p><b>OTHER APPROVAL WHEN REQUIRED</b>  <b>SIGNATURE</b> <u>FHWA</u> <b>REPRESENTING</b></p> <p><u>5/27/14</u> <b>DATE</b></p>

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

DATE: 04/09/14  
Page 2 of 33

**CONTRACT NO:** 008432

**CHANGE ORDER NO:** 9 R1

All work, materials, and measurements to be in accordance with the provisions of the Standard Specifications and Special Provisions for the type of construction involved.

This contract is revised as follows:

**DESCRIPTION**

This change order incorporates both WSDOT and the Contractor initiated changes in accordance with Section 1-04.4 to provide an equitable adjustment to Mowat-American A Joint Venture for the settlement and resolution of all of the following items associated with contract number 008432:

1. Priced change orders (PCOs) as identified below.
2. All Protest by the Contractor as defined in section 1-04.5 from work performed and issues arising prior to January 10, 2014.
3. All disputes and Claims as defined in Section 1-09.11 from work performed and issues arising prior to January 10, 2014.
4. Impacts associated with the Westside Pontoon Moorage being utilized by Contract 008066 (SR 520 Evergreen Point Floating Bridge and Landings Project) for the restricted access area shown on page 5 of this change order

The priced change orders the following:

- PCO 704 Plan Sheet Revisions - Bearings, ITS, etc.
- PCO 705 Girder Bearing Recess Changes
- PCO 711 Girder Stirrup Changes
- PCO 713 Pier 30 Differing Site Condition
- PCO 715 Tiltmeter Alarms
- PCO 716 FB&L Pontoon Issue w/o additional roadway closures

Three issues are exempted from this equitable adjustment. They are identified below:

1. Pier 30 Test Pile Costs
2. Property Damage Claims as defined in Section 1-07.14.
3. Unidentified or latent conditions below the water surface or regarding the existing SR 520 Bridge.

These three issues will be resolved separately.

**CONSTRUCTION**

The Contractor shall perform work in accordance with the revised plan sheets and as directed by the Engineer.

Section 6-02.3(25)N is supplemented with the following:

In lieu of oak block wedges shown in the plans, Douglas fir blocks may be used if the grain is vertical or Glue laminated beam (Glulam) blocks meeting or exceeding the allowable compression parallel to grain design stresses for structural #2 Douglas Fir.

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

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**CONTRACT NO:** 008432

**CHANGE ORDER NO:** 9 R1

Contract Provisions Page 155, line 13, Table A for the "Vibration Monitors to Measure Peak Particle Velocities (PFV) caused by Construction Activities" and under the "Existing West Approach Bridge Structure" is revised to read "1.52 inches per second" Threshold Value and "2.00 inches per second" Allowable Limit.

**MEASUREMENT**

No specific unit of measurement shall apply to the new lump sum item "CO#9 Project Clear All".

**PAYMENT**

Reimbursement for the new item of work "CO#9 Project Clear All 1" shall be at the agreed lump sum amount of \$2,020,000.00.

The Contractor, Mowat-American Joint Venture, by signing this change order agrees and certifies that upon payment of this change order in the amount of \$2,020,000.00 any and all issues, disputes, claims, equitable adjustments and extended overhead in any manner arising out of, or pertaining to, Contract No. 008432 as of January 10, 2014 have been satisfied in full and the State of Washington is released and discharged from any such disputes, claims or request for extra compensation in any manner arising out of Contract 008432 with the exception of the three issues listed above.

**TIME**

This change order adds 14 days to the contract time. Contract Provision page 155, lines 2 to 4 is revised to read "This Project shall be Physically Complete by September 15, 2014. All Contractor owned material, equipment, and tools shall be removed from the State Right of Way by this date."

**WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
CHANGE ORDER**

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Page 4 of 33

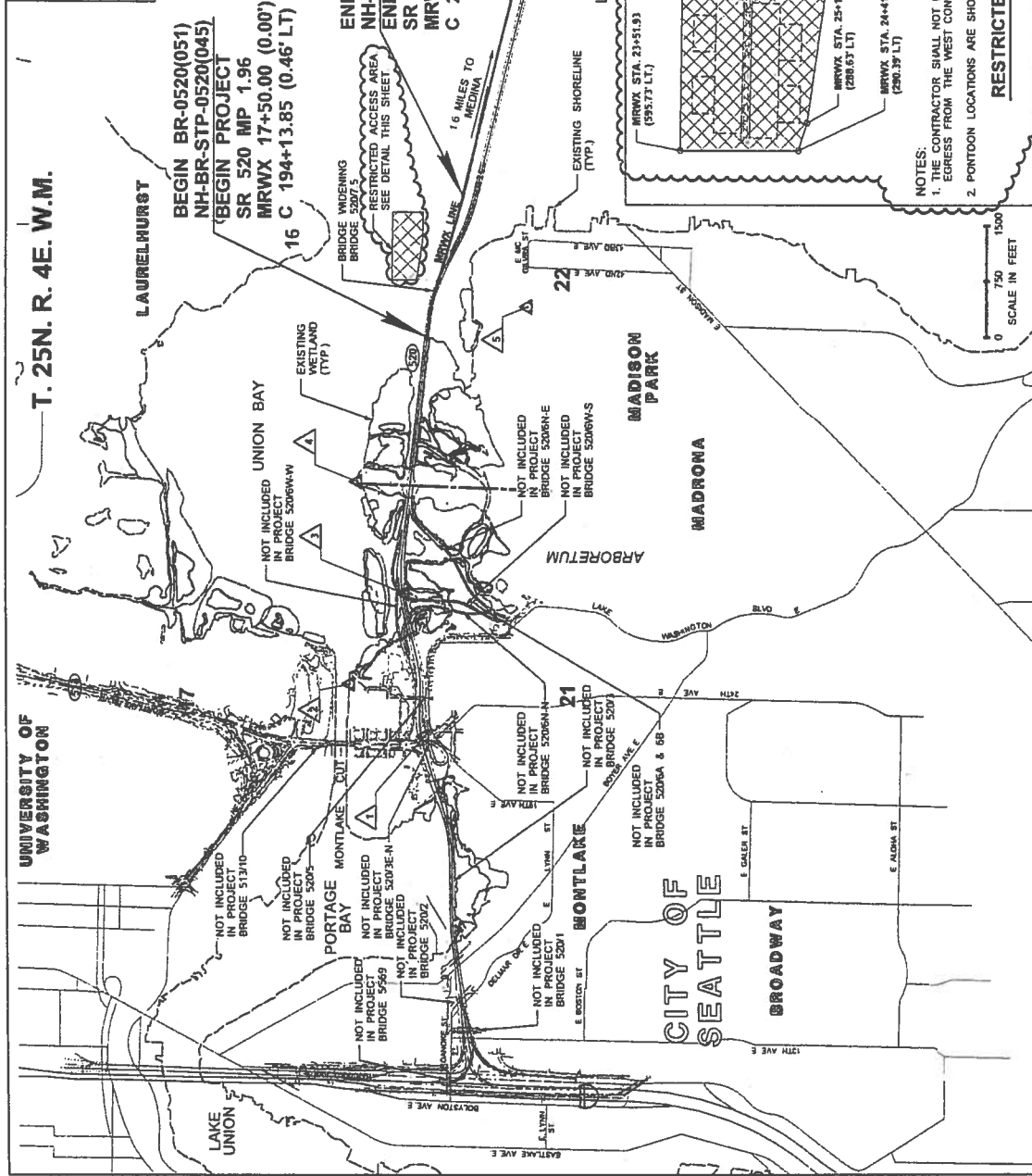
<b>CONTRACT NO: 008432</b>				<b>CHANGE ORDER NO: 9 R1</b>			
ITEM NO	GROUP NO	STD ITEM	ITEM DESCRIPTION	UNIT MEASURE	UNIT PRICE	EST QTY CHANGE	EST AMT CHANGE

1005	01		CO#9 PROJECT CLEAR ALL 1	L.S.	0.00	0.00	2,020,000.00
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2,020,000.00  
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MONUMENTATION TABLE					
CONTROL POINT	STATION	OFFSET	NORTHING*	EASTING*	ELEVATION DESCRIPTION
△ WSDOT GP17520-130			565500.18	160594.131	82.595 BRASS DISC
△ SY4180			567546.345	160695.636	23.402 BRASS DISK
△ WSDOT GP17520-131			566807.167	160795.358	53.461 BRASS DISC
△ SY3915			567438.963	1609405.764	23.310 FOSTER IMAG
△ 90011			565158.561	1611729.754	COPPER PIN

\* PROJECT DATUM COORDINATES



NOTES:  
 1. THE CONTRACTOR SHALL NOT USE THE RESTRICTED ACCESS AREA FOR INGRESS TO OR EGRESS FROM THE WEST CONNECTION BRIDGE WORK AREAS DELINEATED ON SHEET B67  
 2. POINTON LOCATIONS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

FILE NAME 1:19248 PVI	DATE 2/18/2014	DESIGNED BY S. DHAR	CHIEFED BY J. BEAN	PROJ. ENGR. K. WALCOK	REGIONAL ADM. J. MEREDITH
PROJ. NO. 12A009	DATE 02/14/2014	BY KW	REVISION C.O. #9 - RESTRICTED ACCESS		
FED.AID PROJ.NO. BR-0520(051)	STATE WA	COUNTY KING	LOCATION NO.		
Washington State Department of Transportation			VICINITY MAP		
SR 520 WEST CONNECTION BRIDGE			SR 520 WEST CONNECTION BRIDGE		

Contract 8432  
 Date 4-5-14  
 Change Order 921  
 Sheet 5 of 33

Contract 2932  
 Date 7-14  
 Change Order 92  
 Sheet 6 of 35

**LEGEND**

NEW  
 EXISTING  
 N/A  
 WSDOT RIGHT OF WAY

NEMA 4X JUNCTION BOX FOR FIBER OPTIC COMMUNICATION

CONDUIT

WSDOT RIGHT OF WAY

**ABBREVIATION**

EX EXISTING  
 ITS INTELLIGENT TRANSPORTATION SYSTEMS  
 MAX MAXIMUM  
 MIN MINIMUM  
 N/A NOT APPLICABLE  
 NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION  
 NTS NOT TO SCALE  
 RGS RIGID GALVANIZED STEEL  
 SMFO SINGLE MODE FIBER OPTIC  
 STD STANDARD  
 TWP TWISTED WIRE PAIR  
 TYP TYPICAL  
 WSDOT WASHINGTON STATE DEPARTMENT OF TRANSPORTATION


**CONSTRUCTION NOTES**

- 1 INSTALL COMMUNICATION CONDUIT BETWEEN GIRDERS USING A STRUCTURAL HANGER SYSTEM SEE SHEET TSD01 FOR DETAILS
- 2 ATTACH COMMUNICATION CONDUIT TO CROSSBEAM SEE SHEET TSD01 FOR DETAILS
- 3 TERMINATE AND CAP CONDUIT AT PIER 36 FOR FUTURE CONNECTION BY OTHERS.
- 4 MAINTAIN CLEARANCE TO EXISTING COMMUNICATION CONDUIT AND ALL COMMUNICATION CABLES
- 5 SEE SHEET TSD03 FOR DETAILS.
- 6 INSTALL NEMA 4X JUNCTION BOX ON CROSSBEAM SEE SHEET TSD01 FOR DETAILS.
- 7 INSTALL CONDUIT USING EXISTING CONDUIT MOUNTING BRACKETS (WEST OF PIER 36) SEE SHEET TSD01 FOR DETAILS.
- 8 INSTALL 36"x32"x18" NEMA 4X JUNCTION BOX ON DAMPIGNAM SEE TSD04 FOR DETAILS

**COMMUNICATION WIRE NOTES**

ITEM NO.	NEW CONDUIT CONDUIT	INNERDUCT	CONDUCTORS		DESCRIPTION
			EXISTING	NEW	
1	4"RGS	A	1-24SMFO	-	MAINLINE DATA COMMUNICATION DISTRIBUTION DATA COMMUNICATION
2	-	D	1-24SMFO	-	DISTRIBUTION DATA COMMUNICATION DATA COMMUNICATION CABLE TO BE INSTALLED BY OTHERS
			1-24TWP	-	EMPTY

FILE NAME	PROJECT NO.	STATE	FED.AID PROJ.NO.
124235.PIN	124A009	WA	BR-0520(051)
DATE	JOB NUMBER	CONTRACT NO.	LOCATION
6/25/07	124A009		
DRAWN BY	DESIGNED BY	CHECKED BY	PROJ. ENGR.
M. KLINGBEIL	M. KLINGBEIL	J. YANG / D. SIMS	K. WALCOX
REGIONAL ADM.	J. MEREDITH	REVISION	

  
 Washington State  
 Department of Transportation

DATE: 6/20/13

PROJECT NO.	SR 520
SHEET NO.	281
TOTAL SHEETS	281
<b>WEST CONNECTION BRIDGE</b>	
<b>ITS GENERAL NOTES &amp; LEGEND</b>	



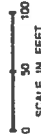
SEC. 22, T. 25N. R. 4E. W.M.

END BR-0520(051)  
 END PROJECT  
 SR 520 MP 2.33  
 MRWX 37+11.94 (0.00')  
 C 213+86.91 (201.66' LT)

PROVIDE EXTRA RACK  
 SPACE FOR FUTURE CONDUIT  
 INSTALLATION AS SHOWN ON SHEET T5001

MATCH LINE MRWX 25+00 SEE SHEET T501

Contract 8432  
 Date 4-9-17  
 Change Order 91  
 Sheet 2 of 33



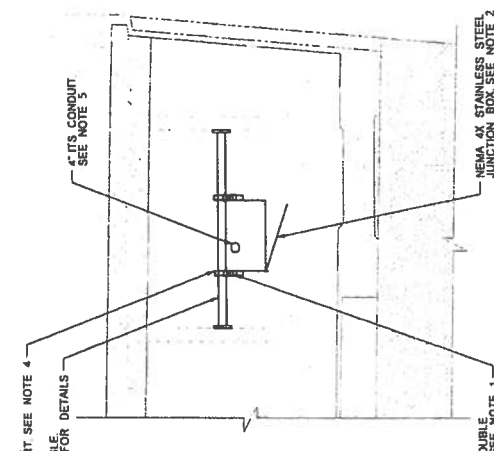
NOTE:  
 SEE SHEET T5001 FOR LEGEND, ABBREVIATIONS, GENERAL NOTES, CONSTRUCTION NOTES AND WIRE NOTES

FILE NAME	PROJECT NO.	DATE	DESIGNED BY	CHECKED BY	PROJ. ENGR.	REGIONAL ADM.	DATE	BY	
PT:\GIS\Projects\2017\SR520\T5001.dwg	10 WASH	01/20/13	M. KUNDURU	J. YANG / D. SIMS	K. WALCOX	J. MEREDETH			
CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	CONTRACT NO.	
12A009	12A009	12A009	12A009	12A009	12A009	12A009	12A009	12A009	
FED.AID PROJ.NO.		FED.AID PROJ.NO.		FED.AID PROJ.NO.		FED.AID PROJ.NO.		FED.AID PROJ.NO.	
BR-0520(051)		BR-0520(051)		BR-0520(051)		BR-0520(051)		BR-0520(051)	
SR 520		SR 520		SR 520		SR 520		SR 520	
WEST CONNECTION BRIDGE		WEST CONNECTION BRIDGE		WEST CONNECTION BRIDGE		WEST CONNECTION BRIDGE		WEST CONNECTION BRIDGE	
ITS PLAN		ITS PLAN		ITS PLAN		ITS PLAN		ITS PLAN	
Washington State Department of Transportation		Washington State Department of Transportation		Washington State Department of Transportation		Washington State Department of Transportation		Washington State Department of Transportation	
PLAN SHEET T502		PLAN SHEET T502		PLAN SHEET T502		PLAN SHEET T502		PLAN SHEET T502	
SHEET 48 OF 281 SHEETS		SHEET 48 OF 281 SHEETS		SHEET 48 OF 281 SHEETS		SHEET 48 OF 281 SHEETS		SHEET 48 OF 281 SHEETS	

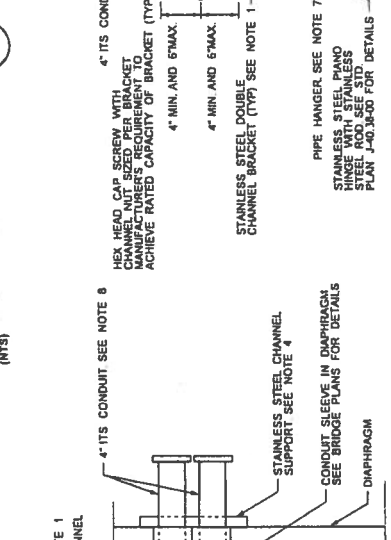
Contract 8432  
Date 9-2-74  
Change Order 9 PL  
Sheet 8 of 33

**NOTES:**

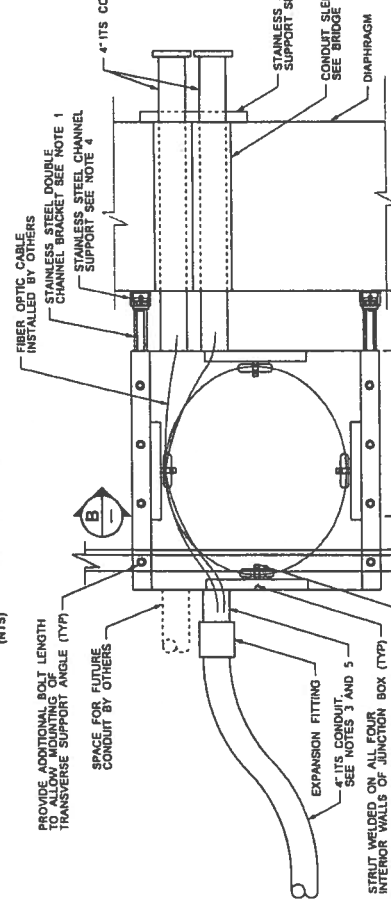
1. INSTALL STAINLESS STEEL DOUBLE CHANNEL BRACKET SHALL BE A MINIMUM OF 42" IN LENGTH TO SUPPORT A UNIFORM LOAD NO LESS THAN 400 LBS.
2. INSTALL 3/8"x3/4" NEMA 4X STAINLESS STEEL JUNCTION BOX. THE JUNCTION BOX SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS SHEET AND ALL BOX MOUNTING PLATES SHALL BE DESIGNED TO SUPPORT A MINIMUM OF 450 LBS.
3. MAINTAIN A MINIMUM OF 36" BENDING RADIUS.
4. INSTALL STAINLESS STEEL CHANNEL SUPPORT SEE STD. PLAN J-60.13-00
5. INSTALL 4" ITS CONDUIT SEE BRIDGE PLANS FOR UTILITY HANGER SUPPORT
6. SEE SHEET TSM01 FOR ABBREVIATIONS, GENERAL NOTES, CONSTRUCTION NOTES AND WIRE NOTES.
7. INSTALL 6" PIPE HANGER, CABLE BUFFER AND MOUNTING HARDWARE ON ALL FOUR INTERIOR WALLS OF JUNCTION BOX SEE STD. PLAN J-60.10-01 FOR DETAILS.
8. INSTALL TWO 4" ITS CONDUITS THROUGH CONDUIT SLEEVES IN DIAPHRAGM AND EXTEND 6" BEYOND DIAPHRAGM CAP CONDUITS FOR FUTURE USE.



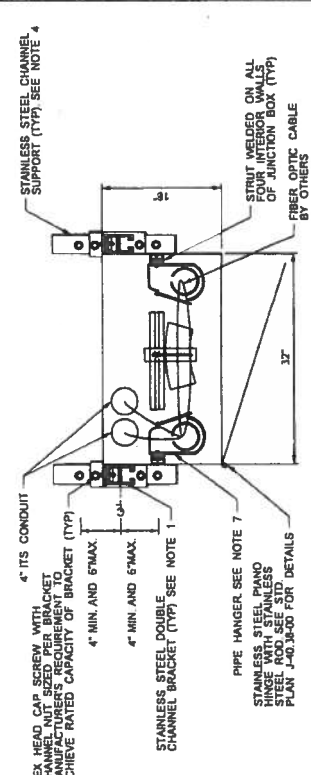
**SECTION A**  
JUNCTION BOX DETAILS  
(M75)



**JUNCTION BOX INSTALLATION ON PIER 36 (LOOKING NORTH)**  
(M75)

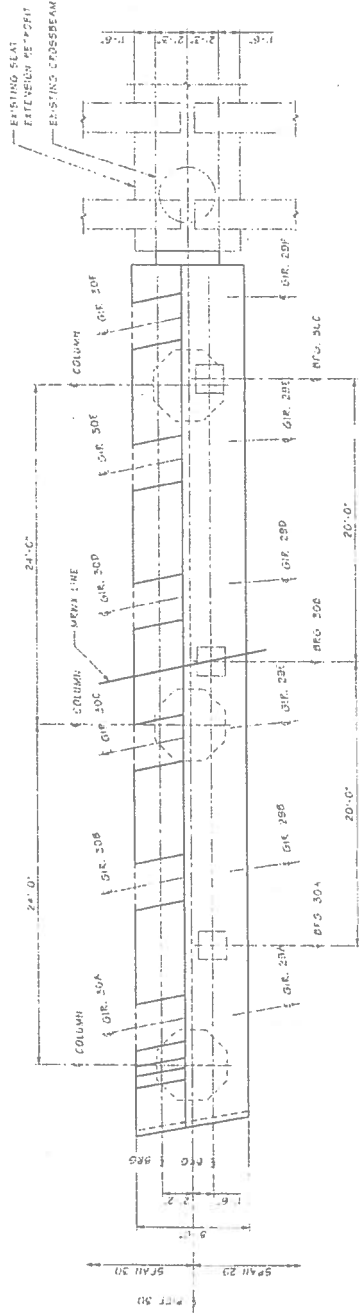


**JUNCTION BOX INSTALLATION ON PIER 36 (TOP VIEW)**  
(M75)



**SECTION B**  
JUNCTION BOX DETAILS  
(M75)

FILE NAME	P:\MCA\DCP\In\Bridges\CAD\PLAN\PIER36\JUNCTIONBOX36.TB7	DATE	12/10/03	DATE	6/30/03
TIME	1:31:05 PM	DATE	10/10/03	DATE	7/21/03
DESIGNED BY	M. KUNDURU	DATE	10/10/03	DATE	6/30/03
ENTORED BY	M. KUNDURU	DATE	12/10/03	DATE	6/30/03
CHECKED BY	J. YANG / D. SHMS	DATE		DATE	
PROJ. ENGR.	K. WILCOX	DATE		DATE	
REGIONAL ADM.	J. MEREDITH	DATE		DATE	
FED AID PROJ. NO.		BR-0570(051)		REVISION	
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION		SR 520 WEST CONNECTION BRIDGE		ITS DETAILS	
SR 520 WEST CONNECTION BRIDGE		ITS DETAILS		M75004	
DATE		5/19/04		PAGE	
DATE		2/21/01		PAGE	



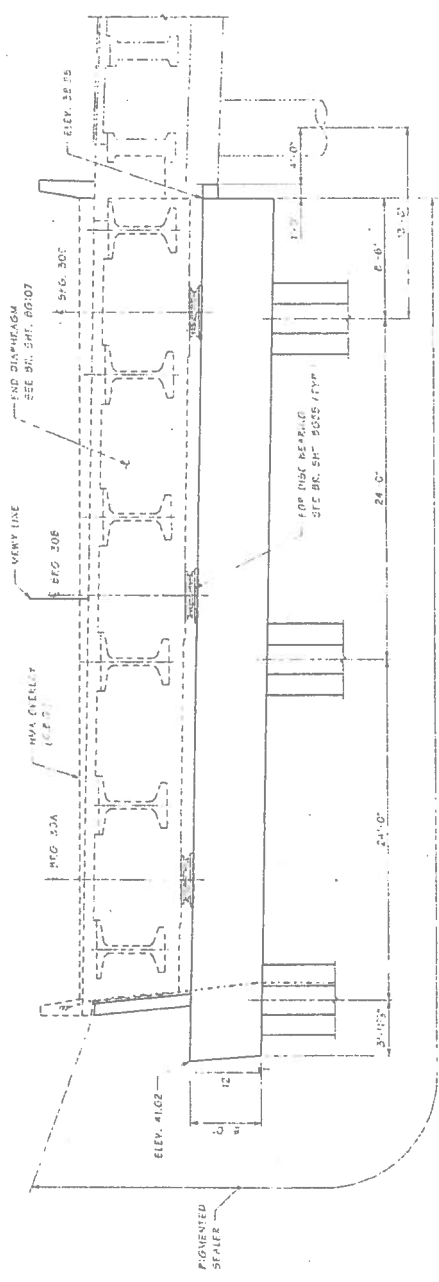
PLAN - PIER 30

SUBSTRUCTURE PORTION OF CROSS-BEAM SECTION

FIXATIONS TOP OF GRADE: MAC #

LOCATION	CIP	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
RIGHT SPAN 3L GIRDERS	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5

\* ADJUST GIROUT LUG THICKNESS AT  $\pm$  OF BEAMS FROM THE 2" SHOWN ON BR. SH. 8054 45, REQUIRED TO MAINTAIN THESE ELEV. DIMS.



ELEVATION - PIER 30

LOOKING AHEAD ON STATION

NOTE:  
HORIZONTAL DIMENSIONS AND  
ELEVATIONS ARE AT  $\pm$  PIER  
UNLESS NOTED OTHERWISE

NO.	DATE	BY	APP.	REVISION
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NO.	DATE	BY	APP.	REVISION
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9				

Washington State Department of Transportation

Parametrix  
CORPORATION

10000 NE 86th Street, Redmond, WA 98053

DATE: 8-24-13

SR 520 WEST CONNECTION BRIDGE

CROSS-BEAM GEOMETRY PIER 30

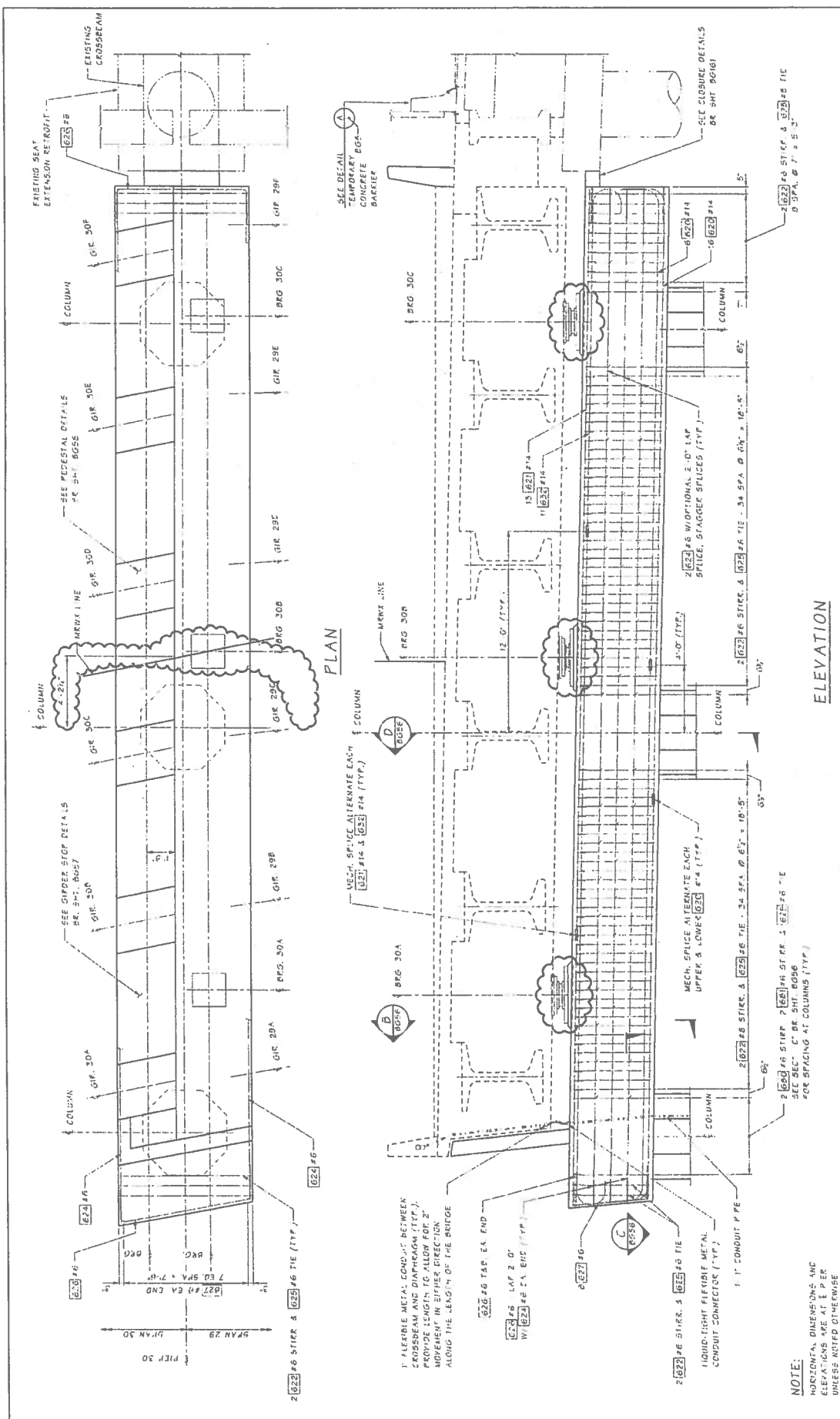
NO.	DATE	BY	APP.	REVISION
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Contract 8432  
Date 8-8-13  
Change Order 9  
of 23  
Sheet 9 of 23

SHEET 854

Contract 8432  
 Date 4-8-14  
 Change Order 941  
 Sheet 10 of 33

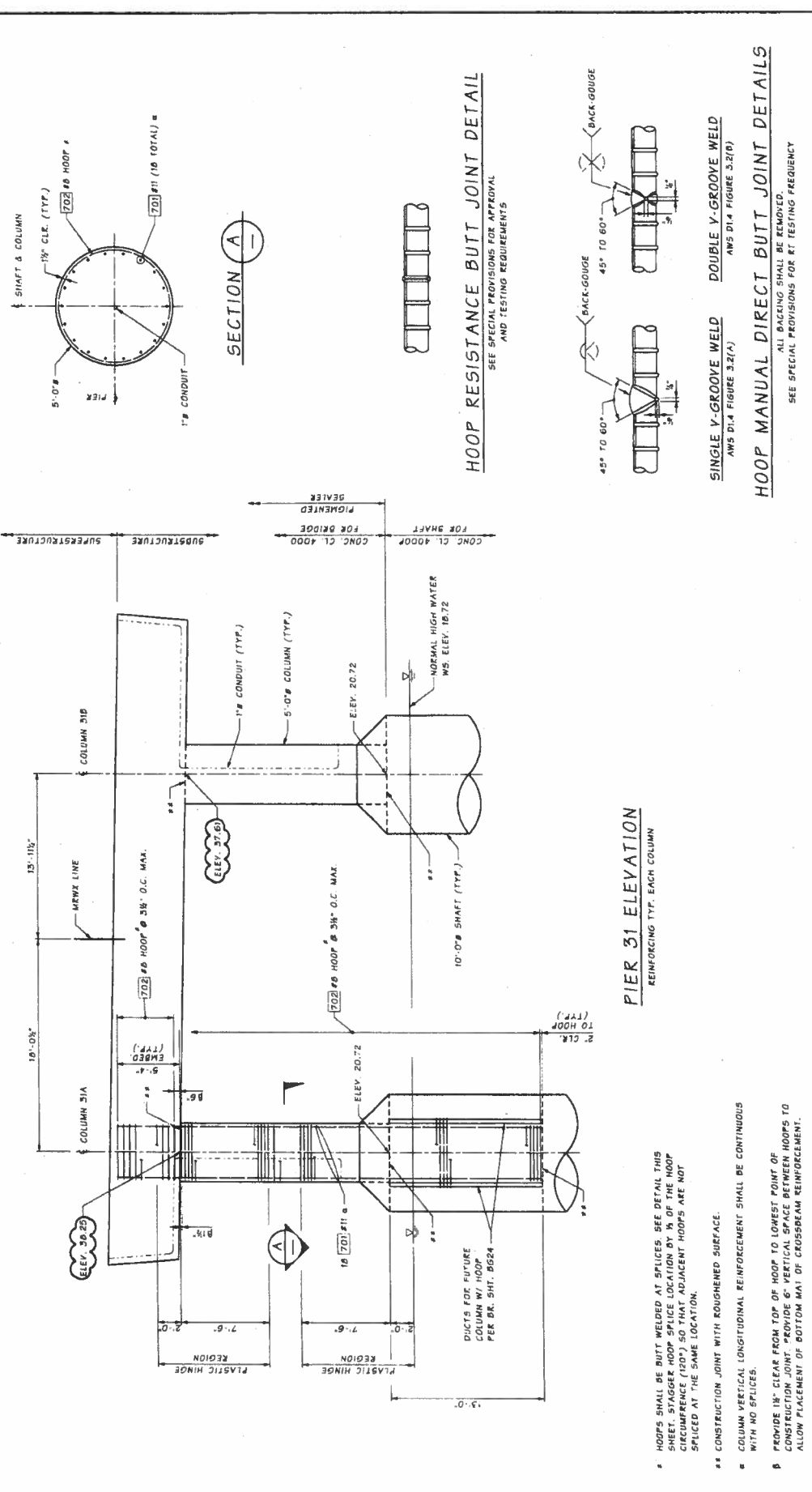
SR 520 FILE NO 7052 WCB  
 PROJECT SHEET NUMBER 0095



Bridge Design Engineer Mervyn J. Pichler, P.E. 1112 12/20/09		PER CAD/PROJ/ISSUE/REVISIONS SHEET NO. 001 DATE 11/12/09		TOTAL SHEETS 13 SHEET NO. 10	
Designer Mervyn J. Pichler, P.E. 1112 12/20/09		CHECKED BY JOHN MILLER 1112 12/20/09		STATE WASH. JOB NUMBER 12-0009	
Project Manager Mervyn J. Pichler, P.E. 1112 12/20/09		PROJECT NO. 12-0009		DATE 11/12/09	
Project Engineer Mervyn J. Pichler, P.E. 1112 12/20/09		PROJECT NO. 12-0009		DATE 11/12/09	



SR 520 WEST CONNECTION BRIDGE  
 CROSSBEAM PLAN & ELEVATION  
 PIER 30



**PIER 31 ELEVATION**  
 REINFORCING TYP. EACH COLUMN

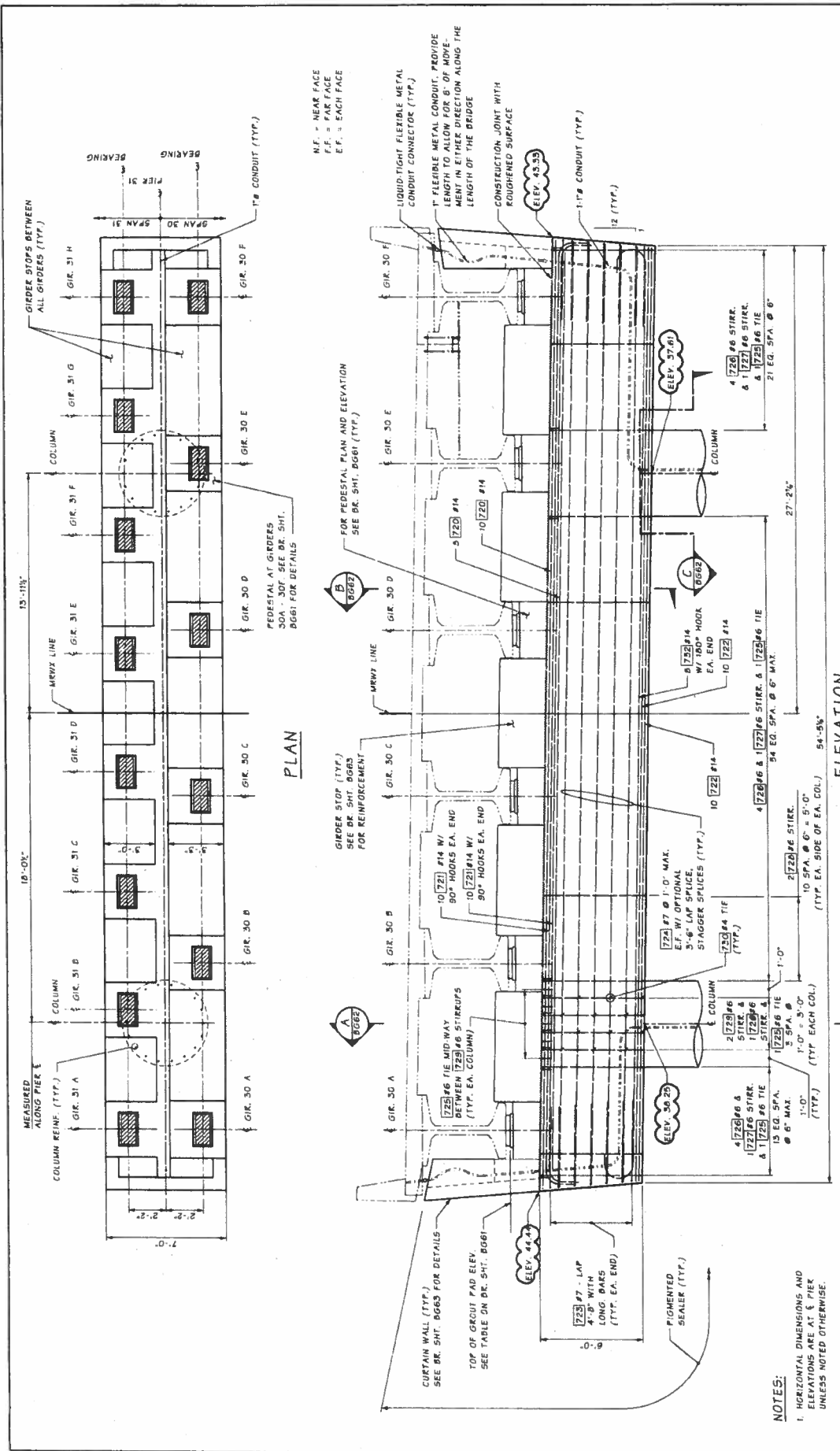
**HOOP RESISTANCE BUTT JOINT DETAIL**  
 SEE SPECIAL PROVISIONS FOR APPROVAL AND TESTING REQUIREMENTS

**HOOP MANUAL DIRECT BUTT JOINT DETAILS**  
 ALL BACKING SHALL BE REMOVED.  
 SEE SPECIAL PROVISIONS FOR RT TESTING FREQUENCY

Bridge Design Firm H.R. ENGINEERING INC. 4-26-13	FEDERAL AID PROJECT NO. 04-0932(051)	SHEET TOTAL 177	SHEET NO. 261
State WA	COUNTY KING	PROJECT NO. 100	SHEET NO. 261
Designer Zheng Shunshun	Checker Henna B	Date 12/20/09	Scale AS SHOWN
Drawn By Vipul M	Bridge Program Dir. [Blank]	DIVISION BRIDGE	DATE 12/20/09
Project Name WEST CONNECTION BRIDGE	PROJECT NO. SR 520	SHEET NO. 0659	SHEET TOTAL 281

- \* HOOPS SHALL BE BUTT WELDED AT SPICES. SEE DETAIL THIS SHEET. STAGGER JOINT LOCATION BY 1/4 OF THE HOOP LENGTH TO GO THAT ADJACENT HOOPS ARE NOT SPICED AT THE SAME LOCATION.
- \*\* CONSTRUCTION JOINT WITH ROUGHENED SURFACE.
- α COLUMN VERTICAL LONGITUDINAL REINFORCEMENT SHALL BE CONTINUOUS WITH NO SPICES.
- β PROVIDE 18" CLEAR FROM TOP OF HOOP TO LOWEST POINT OF CONSTRUCTION JOINT. PROVIDE 6" VERTICAL CLEARANCE BETWEEN HOOPS TO ALLOW PLACEMENT OF BOTTOM PART OF CROSSBRAIN REINFORCEMENT.

Washington State Department of Transportation  
 WEST CONNECTION BRIDGE  
 COLUMN DETAILS - PIER 31



PLAN

ELEVATION

NOTES:  
 1. HORIZONTAL DIMENSIONS AND ELEVATIONS ARE AT 1/8" PER UNLESS NOTED OTHERWISE.  
 2. COLUMN REINFORCEMENT NOT SHOWN FOR CLARITY.

N.F. = NEAR FACE  
 F.F. = FAR FACE  
 E.F. = EACH FACE

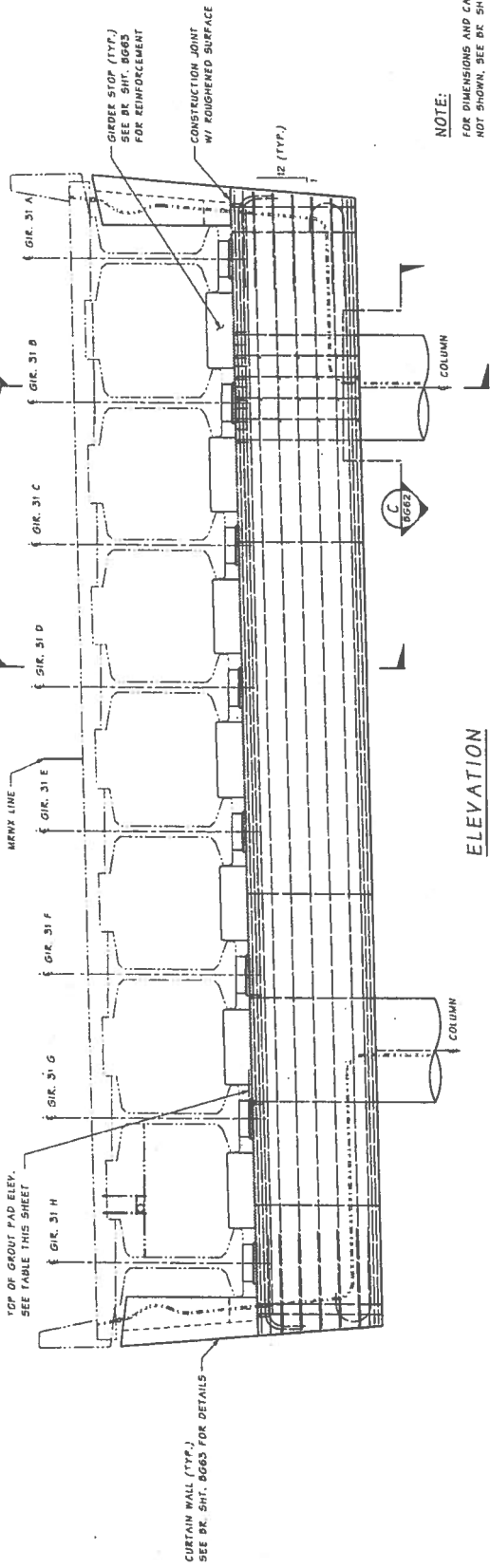
Project No. 7052		Sheet B060	
SR 520		WEST CONNECTION BRIDGE	
Washington State Department of Transportation		CROSSBEAM PLAN & ELEVATION PIER 31 LOOKING AHEAD	
Scale: 1/8" = 1'-0"	Scale: 1/8" = 1'-0"	Scale: 1/8" = 1'-0"	Scale: 1/8" = 1'-0"
Drawn By: [Name]	Checked By: [Name]	Approved By: [Name]	Date: [Date]
Project No. 7052	Sheet B060	Scale: 1/8" = 1'-0"	Scale: 1/8" = 1'-0"

Contract 8432  
 Date 4-2-14  
 Change Order 981  
 Sheet 12 of 33

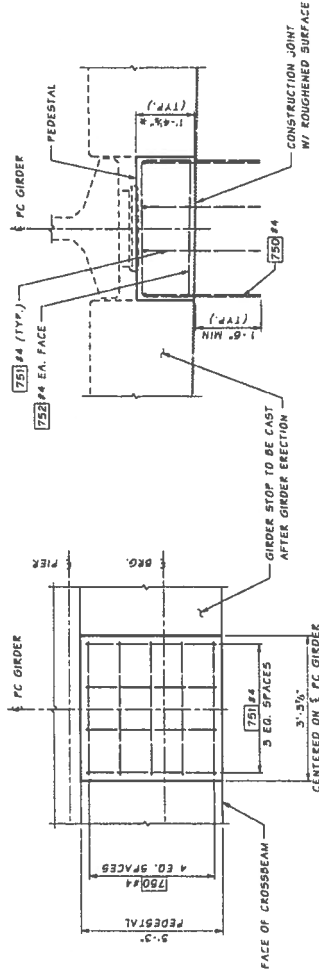
SR 520 FILE NO. 7052 SHEET B060

Contract 8432  
 Date 4-8-14  
 Change Order 921  
 Sheet 13 of 33

SR 520 FILE NO 7092  
 PROJECT 158 VOLUME 11 WB  
 SHEET 6661



ELEVATION  
 LOOKING BACK ON STATION



PLAN - PEDESTAL DETAIL  
 SPAN 30 GIRDERS A-F

ELEVATION - PEDESTAL DETAIL

\* ADJUST GROUT PAD THICKNESS AT E OF BEARING FROM THE F. SHOWN ON BR. SHIT. 6664 AS REQUIRED TO MAINTAIN THESE ELEVATIONS.

\* MEASURED AT E PC GIRDER AND E BEARING

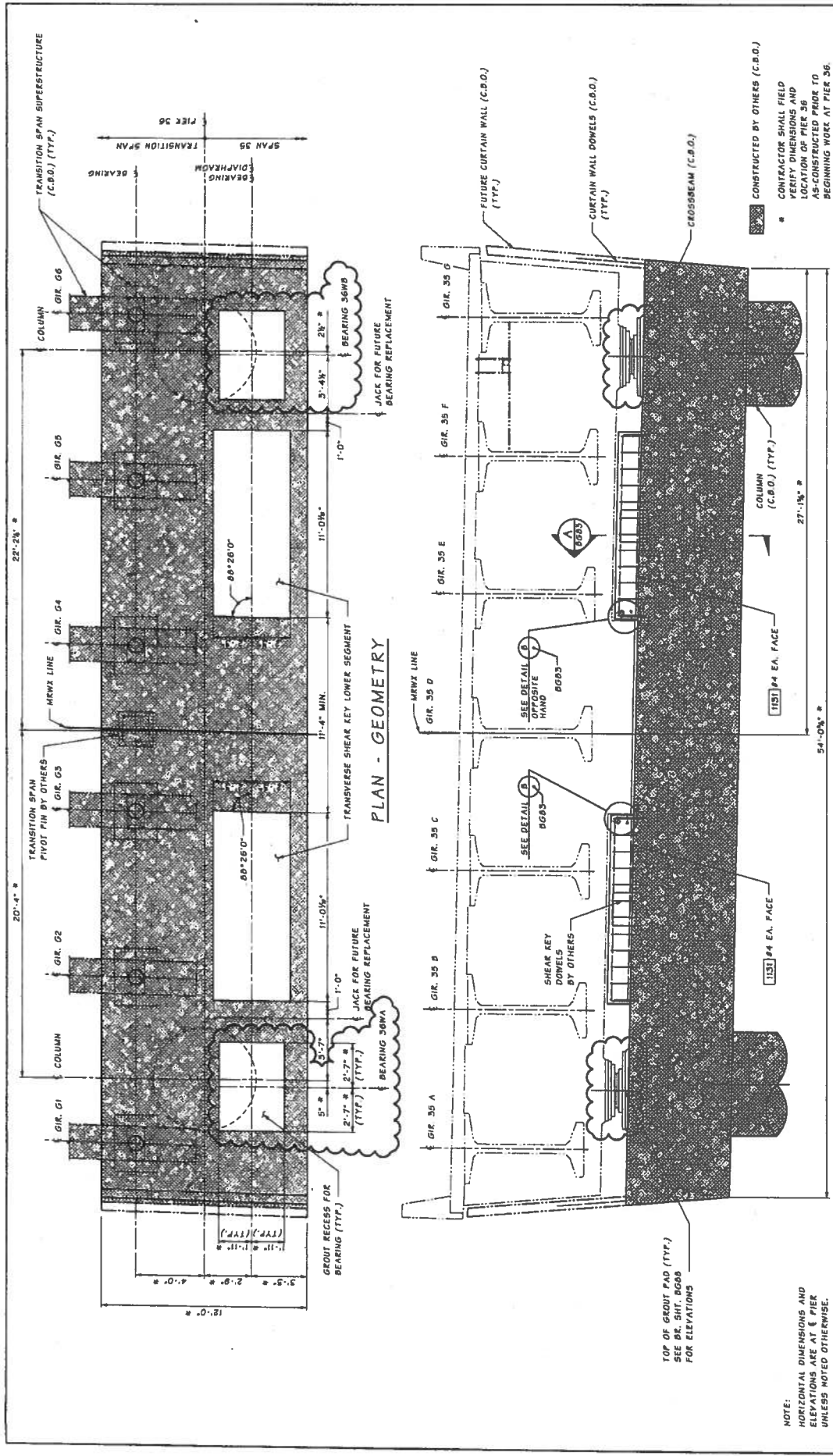
TABLE OF ELEVATIONS @ TOP OF GROUT PAD *	
LOCATION	ELEVATION
BEGIN SPAN 31 GIRDERS	44.45
BEGIN SPAN 31 GIRDERS	44.48
BEGIN SPAN 31 GIRDERS	44.52
BEGIN SPAN 31 GIRDERS	44.10
BEGIN SPAN 31 GIRDERS	44.04
BEGIN SPAN 31 GIRDERS	43.90
BEGIN SPAN 31 GIRDERS	43.76
BEGIN SPAN 31 GIRDERS	43.62
BEGIN SPAN 31 GIRDERS	43.49

TABLE OF ELEVATIONS @ TOP OF GROUT PAD *	
LOCATION	ELEVATION
END SPAN 30 GIRDERS	43.80
END SPAN 30 GIRDERS	43.70
END SPAN 30 GIRDERS	43.51
END SPAN 30 GIRDERS	43.31
END SPAN 30 GIRDERS	43.12
END SPAN 30 GIRDERS	42.93

Bridge Designer/Eng. Supervisor Designed By Checked By Drawn By Project Manager/Eng. Approver/Professional	Date Revision Date Revision	State 19 WASH JUNE 2014 12:40:09	State 19 WASH JUNE 2014 12:40:09	State 19 WASH JUNE 2014 12:40:09	State 19 WASH JUNE 2014 12:40:09	State 19 WASH JUNE 2014 12:40:09	State 19 WASH JUNE 2014 12:40:09		
SR 520 FILE NO 7092 PROJECT 158 VOLUME 11 WB SHEET 6661		SR 520 WEST CONNECTION BRIDGE CROSS-BEAM ELEVATION PIER 31 LOOKING BACK		Washington State Department of Transportation 					

Contract 8432  
 Date 4-2-14  
 Change Order 921  
 Sheet 14 of 33

SR 520  
 FILE NO Z592  
 SHEET PG02  
 Project 13e Vour 17 WCB



**PLAN - GEOMETRY**

**ELEVATION**

REVISION		DATE	BY	APP'D

Bridge Design Eng.				
Supervisor				
Checked By				
Drawn By				
Scale				




**NOTE:**  
 HORIZONTAL DIMENSIONS AND ELEVATIONS ARE AT 6' PIER UNLESS NOTED OTHERWISE.

\* CONSTRUCTED BY OTHERS (C.B.O.)  
 CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND LOCATION OF PIER 36 AS-CONSTRUCTED PRIOR TO BEGINNING WORK AT PIER 36.

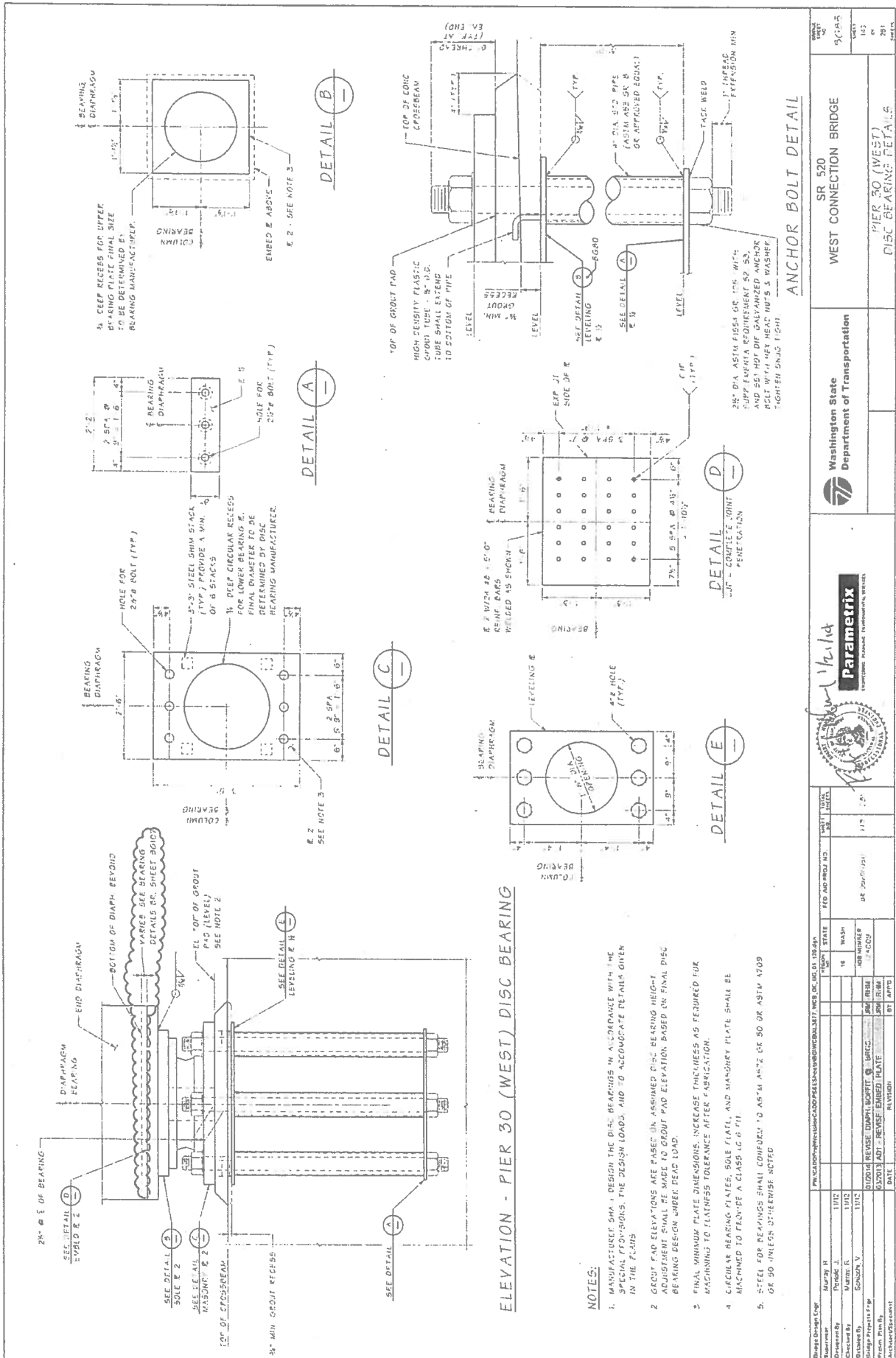


HDR  
 ENGINEERING INC.  
 C-27-13

Washington State  
 Department of Transportation

SR 520  
 WEST CONNECTION BRIDGE  
 CROSSBEAM PLAN & ELEVATION  
 PIER 36





ELEVATION - PIER 30 (WEST) DISC BEARING

NOTES:

1. MANUFACTURER SHALL DESIGN THE DISC BEARINGS IN ACCORDANCE WITH THE SPECIAL PROVISIONS, THE DESIGN LOADS, AND TO ACCOMMODATE DETAILS GIVEN IN THE PLANS.
2. GROUT PAD ELEVATIONS ARE BASED ON ASSUMED DISC BEARING HEIGHT. ADJUSTMENT SHALL BE MADE TO GROUT PAD ELEVATION, BASED ON FINAL DISC BEARING DESIGN UNDER DEAD LOAD.
3. FINAL MINIMUM PLATE DIMENSIONS, INCREASE THICKNESS AS REQUIRED FOR MACHINING TO FINISHES TOLERANCE AFTER FABRICATION.
4. CIRCULAR BEARING PLATES; SOLE FLAT, AND MANDREY PLATE SHALL BE MACHINED TO PROVIDE A CLASS LC 6 FIN.
5. STEEL FOR BEARINGS SHALL CONFORM TO ASTM A572 OR 50 OR ASTM A709 OR 50 UNLESS OTHERWISE NOTED.

Design Engineer	Checked By	Drawn By	Project No.	Sheet No.	Project Name
Murray D	Prindle J	Murray D	SR 520	143	WEST CONNECTION BRIDGE
Checked By	Drawn By	Project No.	Sheet No.	Project Name	
Murray D	Schultz V	SR 520	281	PIER 30 (WEST) DISC BEARING DETAILS	
Project Manager	Architect/Engineer	Date	Revision	By	App'd
George J. Adams & Associates, Inc.	George J. Adams & Associates, Inc.	11/12/74	1		



Parametrix  
 CONSULTING ENGINEERS, ARCHITECTS, SURVEYORS

Washington State  
 Department of Transportation

SR 520  
 WEST CONNECTION BRIDGE

PIER 30 (WEST)  
 DISC BEARING DETAILS

Sheet No.	Project Name
143	WEST CONNECTION BRIDGE
281	PIER 30 (WEST) DISC BEARING DETAILS

Contract No. **8432**  
 Date: **4-11-84**  
 Change Order No. **981** of **33**


### GIRDER SCHEDULE

SPAN	GIRDER	HIGHT	END 1 TYPE	END 2 TYPE	4" DIA. @ BEELN	4" DIA. @ BEELN	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	N° PLAYS	SECTION OF 5" STRANDS		5" HIGHT 5" STRAND EXTENSION	D	REINFORCEMENT														
																				1	2			1	2	1	2	3	4									
20	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	80-5"	6.2	4.6	2.4	2	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
21	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	80-9"	6.2	4.2	2.4	2	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
22	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.2	4.6	2.4	5	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
23	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.2	4.8	2.4	5	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
24	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.2	4.6	2.4	2	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
25	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.2	4.2	2.4	6	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
26	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
27	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
28	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
29	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
30	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
31	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"
32	A	WFSB	D	18"	PARTIAL	3'-0"	1'-0"	4'-10"	4'-10"	80	1'-0"	N/A	87-6 1/2"	6.9	5.3	2.4	10	2	2	2	2	2	19"	19"	7	5"	5"	5"	5"	20"	20"	20"	20"	20"	20"	20"	20"	20"

### GIRDER NOTES

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHORLAGE.
2. ALL PRESTRESSED AND TEMPORARY STRANDS SHALL BE 6.0" PARALLEL TO 202.5 KSI.
3. FOR END TYPE A AND D, SET ALL STRANDS FLUSH WITH THE GIRDER ENDS AND FOR END TYPE B CUT ALL STRANDS TO BELOW CONCRETE SURFACE AND GROUT WITH AN APPROVED EPoxy BEGUT.
4. THE TOP SURFACE OF THE GIRDER FLANGE SHALL BE ROUGHENED IN ACCORDANCE WITH SECTION 5-02.3(2)(c) OF THE STANDARD SPECIFICATIONS.
5. LIFTING EMBEDMENTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6-02.3(2)(c) OF THE STANDARD SPECIFICATIONS.
6. CAUTION SHALL BE EXERCISED IN HANDLING AND PLACING GIRDERS. ALL GIRDERS SHALL BE SPECIFICALLY IDENTIFIED AND MARKED TO PREVENT GIRDERS BEING MIXED UP. ALL GIRDERS SHALL BE BRACED INTERNALLY TO PREVENT TIPPING UNTIL THE DIAPHRAGMS ARE CURED AND CURVED.
7. ITEMS FOR BRACING SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER AS TO NOT CAUSE DAMAGE TO THE GIRDER DURING THE 5" RAIL RELEASE OPERATION.
8. TEMPORARY TOP STRANDS SHALL BE EITHER PRESTRESSED OR POST-TENSIONED IN ACCORDANCE WITH SECTION 6-02.3(2)(c) OF THE STANDARD SPECIFICATIONS AND SHALL BE IDENTIFIED BY GIRDER DETAILS SHEETS. THE LIFTING LOCATION "Y" AND CONCRETE RELEASE STRENGTH "F<sub>c</sub>" SHOWN IN THE GIRDER SCHEDULE ASSUME THAT THE TEMPORARY TOP STRANDS ARE PRESTRESSED. ALTERNATIVELY, POST-TENSIONED TEMPORARY TOP STRANDS MAY BE USED IF THE LIFTING POINTS IN THE GIRDER SCHEDULE ARE MAINTAINED AND THE STRANDS ARE STRESSED PRIOR TO LIFTING THE GIRDER FROM THE FORM.
9. FOR DIAPHRAGMS, CYT HOLES AND P.L. AC INSETS ON THE INTERIOR FACE OF EPPORAD GIRDERS SHALL BE IDENTIFIED BY GIRDER DETAILS SHEETS. INSETS SHALL BE 1/4" WIDE AND 1/2" HIGH AND SHALL BE MAINTAINED EQUAL.
10. DEPARTMENT WEDED WIRE REINFORCEMENT CONFORMING TO SECTION 3-07.7 WITH DEPARTMENT WIRE CONFORMING TO SECTION 3-07.8 MAY BE SUBSTITUTED FOR MILD STEEL REINFORCEMENT IN ARCHITECTURAL DESIGN SPECIFICATION REQUIREMENTS INCLUDING DEVELOPMENT AND ANCHORAGE, ARE MET WELDED WIRE REINFORCEMENT SHALL FULFILL THE SAME AREA AND SPACING AS THE WILD STEEL REINFORCEMENT. IF IT IS NECESSARY TO SUBSTITUTE WELDED WIRE REINFORCEMENT FOR MILD STEEL REINFORCEMENT, THE WELDED WIRE SHALL BE IDENTIFIED BY GIRDER DETAILS SHEETS AND THE WELDED WIRE SHALL MEET THE REQUIREMENTS OF SECTION 3-07.7 AND 3-07.8. THE WELDED WIRE SHALL BE IDENTIFIED BY GIRDER DETAILS SHEETS AND THE WELDED WIRE SHALL MEET THE REQUIREMENTS OF SECTION 3-07.7 AND 3-07.8.
11. 2" x 2" DECK FURRED GANTRY AT MIDSPAN (NO ACCOUNT FOR DEFLECTION DUE TO DECK CURVATURE) AND BRIDGE DECK JOINTS. SEE DETAIL "SECRET SETTING POINTS ONE" ON BRIDGE SHEET 05122.

Project No. **SR 520**  
 Project Name **WEST CONNECTION BRIDGE**  
 Department **Washington State Department of Transportation**



Sheet No. **981** of **981**  
 Project **SR 520**

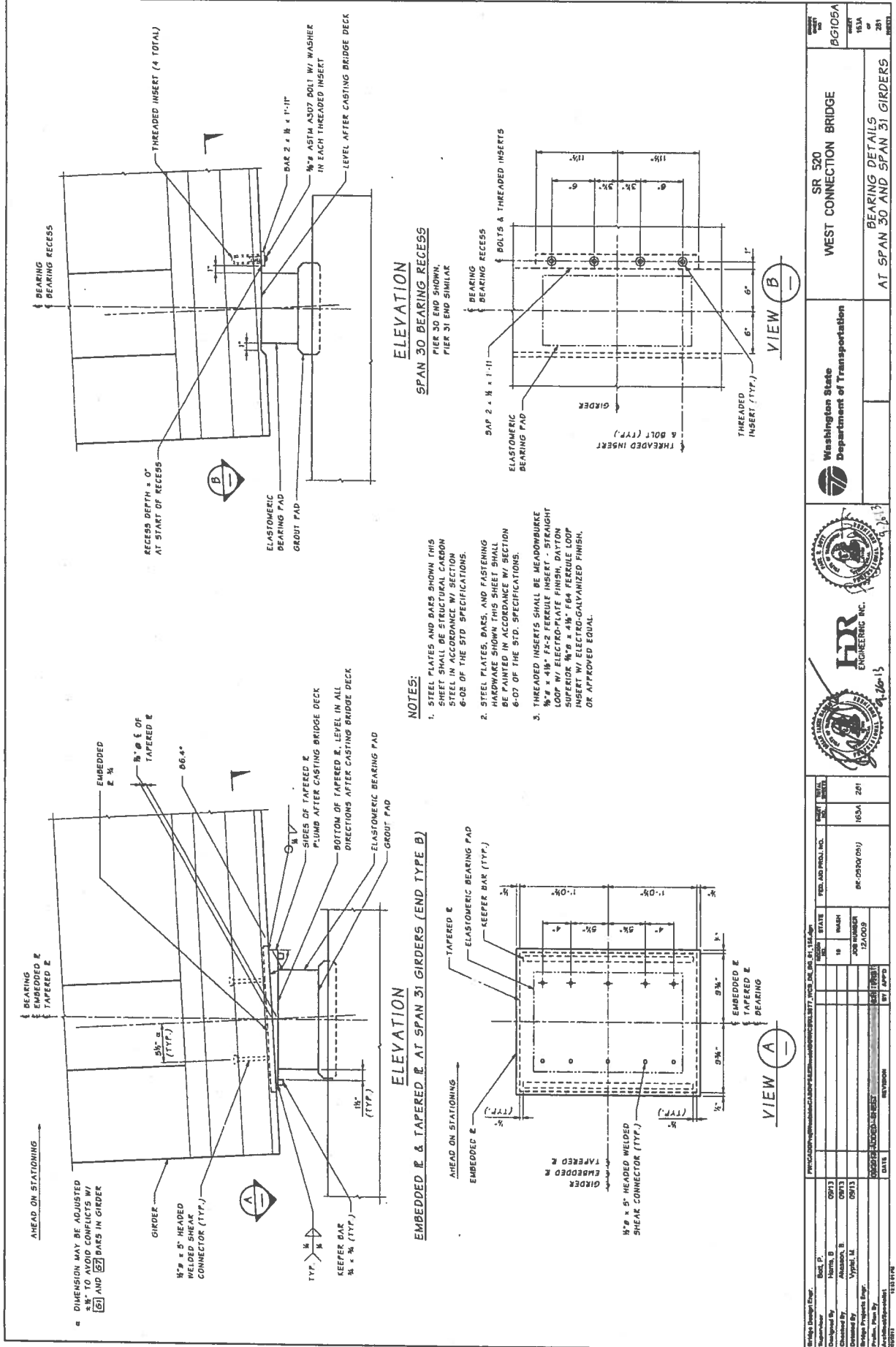
CONTRACTOR SHALL VERIFY LOCATION, SPACING, AND DIMENSIONS OF REINFORCEMENT. SEE DETAIL "SECRET SETTING POINTS ONE" ON BRIDGE SHEET 05122.

Revision No. **157**  
 Date **11/17/83**

Section **WF GIRDER NOTES AND SCHEDULE SPANS 25-29**



Contract 8432  
Date 7-8-14  
Change Order 921  
Sheet 18 of 33



**NOTES:**

1. STEEL PLATES AND BARS SHOWN THIS SHEET SHALL BE STRUCTURAL CARBON STEEL IN ACCORDANCE W/ SECTION 6-02 OF THE STD SPECIFICATIONS.
2. STEEL PLATES, BARS, AND FASTENING HARDWARE SHOWN THIS SHEET SHALL BE PAINTED IN ACCORDANCE W/ SECTION 6-07 OF THE STD SPECIFICATIONS.
3. THREADED INSERTS SHALL BE MENDONBURKE 1/2" x 4 1/8" FK-2 FERRULE INSERT - STRAIGHT LOOP W/ ELECTRO-PLATE FINISH, DAYTON SUPERIOR 1/2" x 4 1/8" F84 FERRULE LOOP INSERT W/ ELECTRO-GALVANIZED FINISH, OR APPROVED EQUAL.

<p>Design Engineer: <b>Mark D. Morrison</b></p> <p>Checked By: <b>Robert W. ...</b></p> <p>Designed By: <b>Robert W. ...</b></p> <p>Bridge Projects Eng. <b>Robert W. ...</b></p> <p>Printed: <b>7/22/14</b></p> <p>AutoCAD: <b>7/22/14</b></p>	<p>DATE: <b>7/22/14</b></p> <p>BY: <b>APD</b></p> <p>REV: <b>12/10/09</b></p> <p>NO: <b>18</b></p> <p>STATE: <b>WA</b></p> <p>FILE AND PROJ. NO.: <b>66-0309(01)</b></p> <p>CONTRACT NO.: <b>163A 201</b></p> <p>SHEET NO.: <b>18</b></p> <p>TOTAL SHEETS: <b>201</b></p>	<p>Washington State Department of Transportation</p> <p>SR 520 WEST CONNECTION BRIDGE</p> <p>BEARING DETAILS AT SPAN 30 AND SPAN 31 GIRDERS</p>
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Contract 8432  
 Date 4-8-74  
 Change Order 701  
 Sheet 19 of 23

SR 520 FILE NO 2052 SHEET B0107  
 PROJECT NO 50 YOU 111 CCB

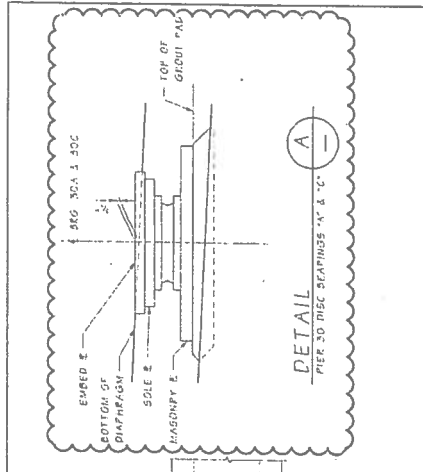
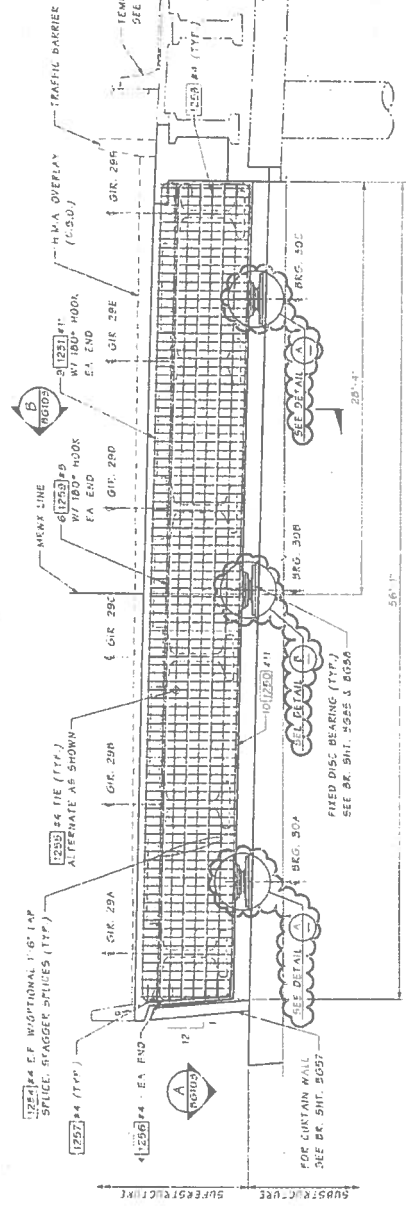


TABLE OF ELEVATIONS BOTTOM E OF GIRDER # FACE OF DIAPHR.

GIRDER	29 A	29 B	29 C	29 D	29 E	29 F
ELEVATION	42.91	42.44	41.96	41.52	41.07	40.64

PIER 30 DIAPHRAGM PLAN - GEOMETRY

- NOTES
- SEE FRAMING PLAN FOR GIRDER SPACING
  - HORIZONTAL DIMENSIONS ARE AT PIER UNLESS NOTED OTHERWISE



PIER 30 DIAPHRAGM ELEVATION  
 DIMENSIONS ARE MEASURED ALONG E DIAPHRAGM

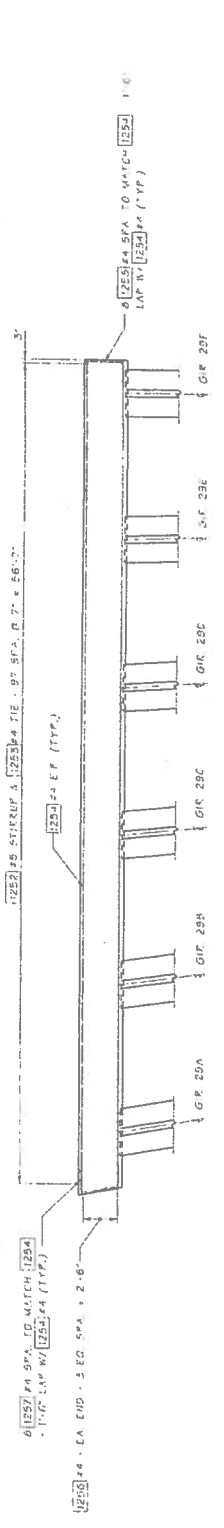
Bridge Design Firm Parametrix	City WASH	State WA	FED AID PROJ NO	STATE AID PROJ NO	DATE
Engineer FRED J. WYLLIE	Project No. 1112	Job No. 1112	REVISED	BY	DATE
Checked By WYLLIE	Project No. 1112	Job No. 1112	REVISED	BY	DATE
Drawn By WYLLIE	Project No. 1112	Job No. 1112	REVISED	BY	DATE
Checked By WYLLIE	Project No. 1112	Job No. 1112	REVISED	BY	DATE
Drawn By WYLLIE	Project No. 1112	Job No. 1112	REVISED	BY	DATE

Washington State Department of Transportation  
 SR 520 WEST CONNECTION BRIDGE  
 END DIAPHRAGM PLAN AND ELEVATION AT PIER 30 (WEST)

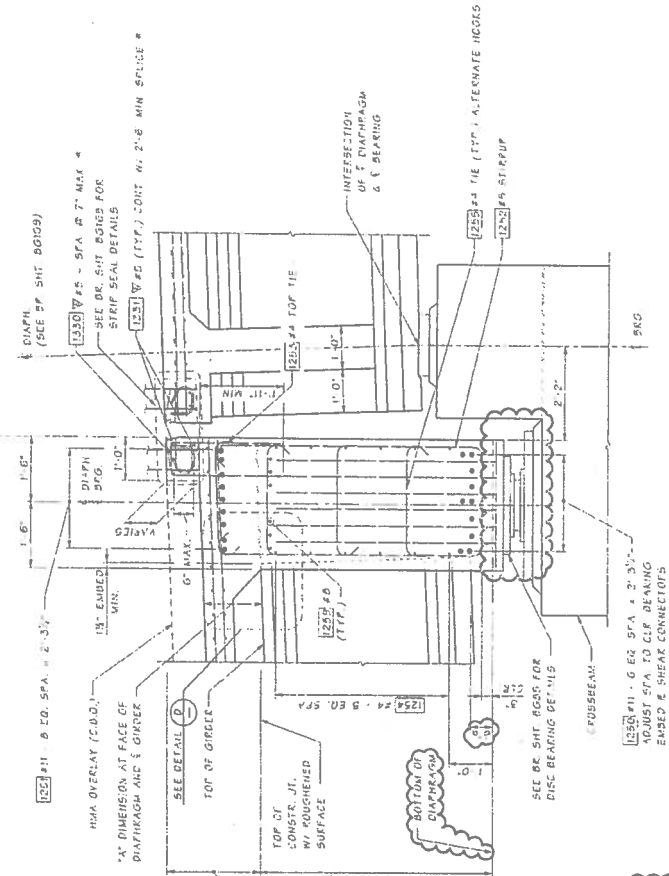
DATE: 10/15/74  
 DRAWN BY: J. WYLLIE  
 CHECKED BY: J. WYLLIE  
 PROJECT NO: 1112  
 JOB NO: 1112  
 STATE AID PROJ NO: 1112  
 FEDERAL AID PROJ NO: 1112

Contract 8432  
 Date 4-8-79  
 Change Order 021  
 Sheet 20 of 33

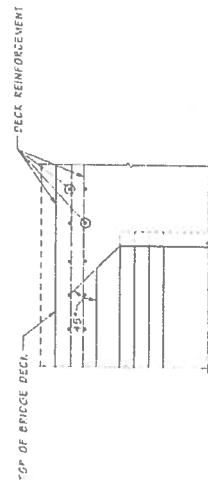
SR 520 FILE NO 792  
 WEST CONNECTION BRIDGE SHEET BG106



SECTION A  
 BG107



SECTION B  
 FOR DETAILS  
 BG107, BG136, BG137



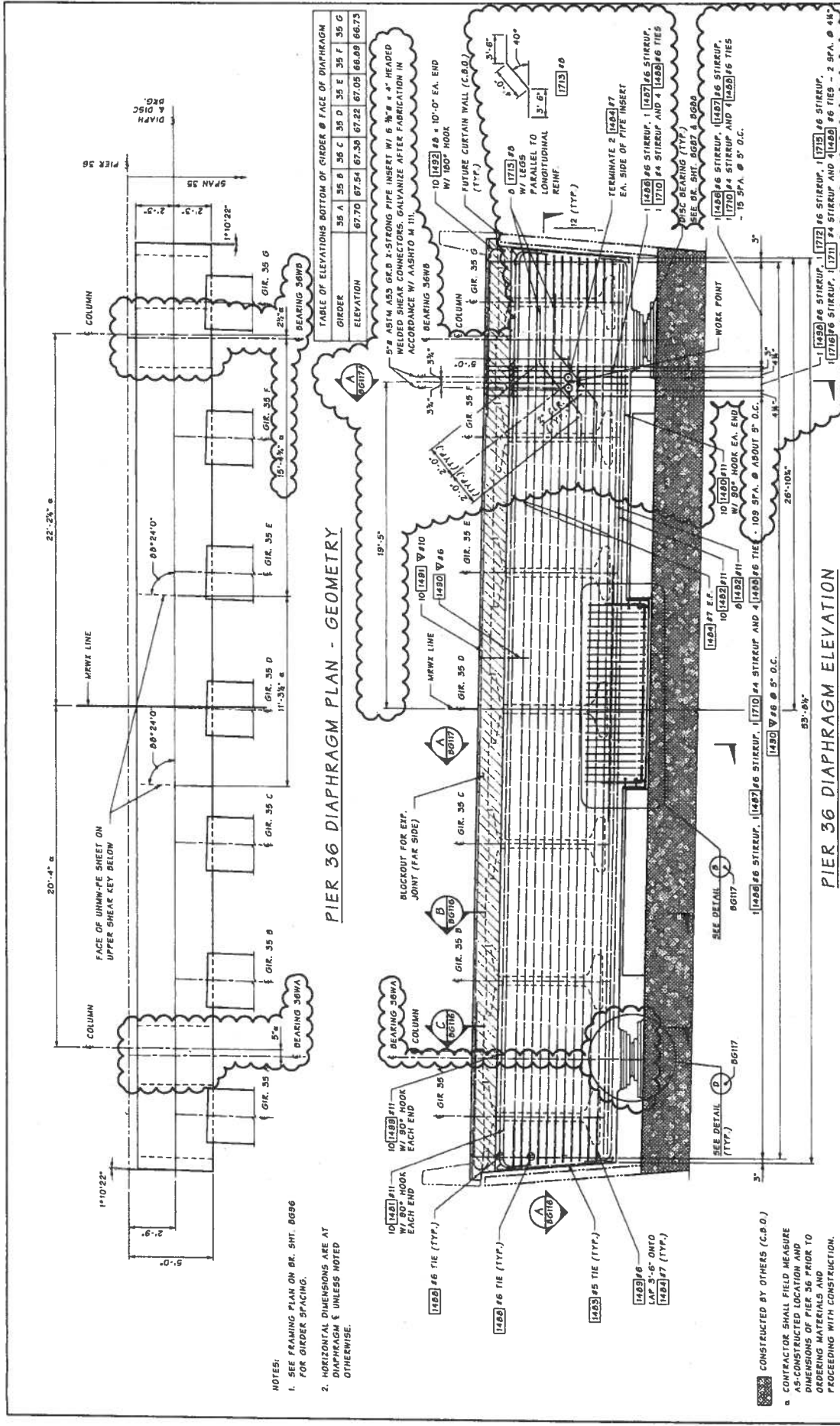
DETAIL  
 D  
 DIAPHRAGM REINFORCING  
 NOT SHOWN FOR CLARITY

- NOTES:
1. GIRDERS SHALL BE HELD HORIZ. IN PLACE WHEN DIAPHRAGM ARE PLACED
  2. CUT/RELEASE 3/8" DIA TEMPORARY STRANDS BEFORE CASTING DIAPHRAGM. SEE TEMPORARY STRAND CUTTING SEQUENCE
  3. FOR CONCRETE PLACEMENT PROCEDURE SEE "SUPERSTRUCTURE" CONSTRUCTION SEQUENCE SHEET.

REVISIONS:  
 1. DIMENSION OF G1R AT FACE OF DIAPHRAGM AT GIRDER & DIAPHRAGM

PROJECT: SR 520 WEST CONNECTION BRIDGE DRAWN BY: [Signature] CHECKED BY: [Signature]		SHEET NO: 20 OF: 33	
DESIGNED BY: [Signature] CREATED BY: [Signature]		DATE: 4-8-79	
DRAWN BY: [Signature] CHECKED BY: [Signature]		SCALE: 1/2" = 1'-0"	
PROJECT NO: 792 SHEET NO: 20		DRAWING NO: BG106	
PROJECT TITLE: WEST CONNECTION BRIDGE		DRAWING TITLE: END DIAPHRAGM DETAILS AT PIER 30 (WEST)	
PROJECT LOCATION: [Location]		DRAWING DATE: 4-8-79	
PROJECT OWNER: Washington State Department of Transportation		DRAWING BY: [Signature]	
PROJECT NO: 792		SHEET NO: 20	
DRAWING NO: BG106		SCALE: 1/2" = 1'-0"	
PROJECT TITLE: WEST CONNECTION BRIDGE		DRAWING TITLE: END DIAPHRAGM DETAILS AT PIER 30 (WEST)	
PROJECT LOCATION: [Location]		DRAWING DATE: 4-8-79	
PROJECT OWNER: Washington State Department of Transportation		DRAWING BY: [Signature]	
PROJECT NO: 792		SHEET NO: 20	
DRAWING NO: BG106		SCALE: 1/2" = 1'-0"	
PROJECT TITLE: WEST CONNECTION BRIDGE		DRAWING TITLE: END DIAPHRAGM DETAILS AT PIER 30 (WEST)	
PROJECT LOCATION: [Location]		DRAWING DATE: 4-8-79	
PROJECT OWNER: Washington State Department of Transportation		DRAWING BY: [Signature]	





NOTES:  
 1. SEE FRAMING PLAN ON BR. SHT. 8636 FOR GIRDER SPACING.  
 2. HORIZONTAL DIMENSIONS ARE AT DIAPHRAGM & UNLESS NOTED OTHERWISE.

PIER 36 DIAPHRAGM PLAN - GEOMETRY

TABLE OF ELEVATIONS BOTTOM OF ENDS @ FACE OF DIAPHRAGM

GIRDER	35 A	35 B	35 C	35 D	35 E	35 F	35 G
ELEVATION	67.70	67.54	67.30	67.22	67.05	66.88	66.73

5" AS14 A53 GR.B X-STRONG PIPE INSERT W/ 6" #4 \* HEADED WELDED SHEAR CONNECTORS, GALVANIZE AFTER FABRICATION IN ACCORDANCE W/ AASHTO M 111.  
 BEARING 36WB  
 10" [1428] #5 + 10'-0" EA. END W/ 180° HOOK  
 COLUMN & GIR. 35 G  
 FUTURE CURTAIN WALL (C.B.O.)  
 W/ LEGS PARALLEL TO LONGITUDINAL REINF.  
 [1713] #8  
 12 (TYP.)  
 TERMINATE @ [1428] #7 EA. SIDE OF PIPE INSERT  
 [1428] #6 STIRRUP, 1 [1427] #6 STIRRUP, 1 [1710] #4 STIRRUP AND 4 [1428] #6 TIES  
 SEE BR. SHT. 8637 & 8638  
 DISC BEARING (TYP.)  
 [1428] #6 STIRRUP, 1 [1427] #6 STIRRUP, 1 [1710] #4 STIRRUP AND 4 [1428] #6 TIES - 15 5PA @ 5' O.C.

CONSTRUCTED BY OTHERS (C.B.O.)  
 a CONTRACTOR SHALL FIELD MEASURE ALL DIMENSIONS OF PIER 36 PRIOR TO ORDERING MATERIALS AND PROCEEDING WITH CONSTRUCTION.

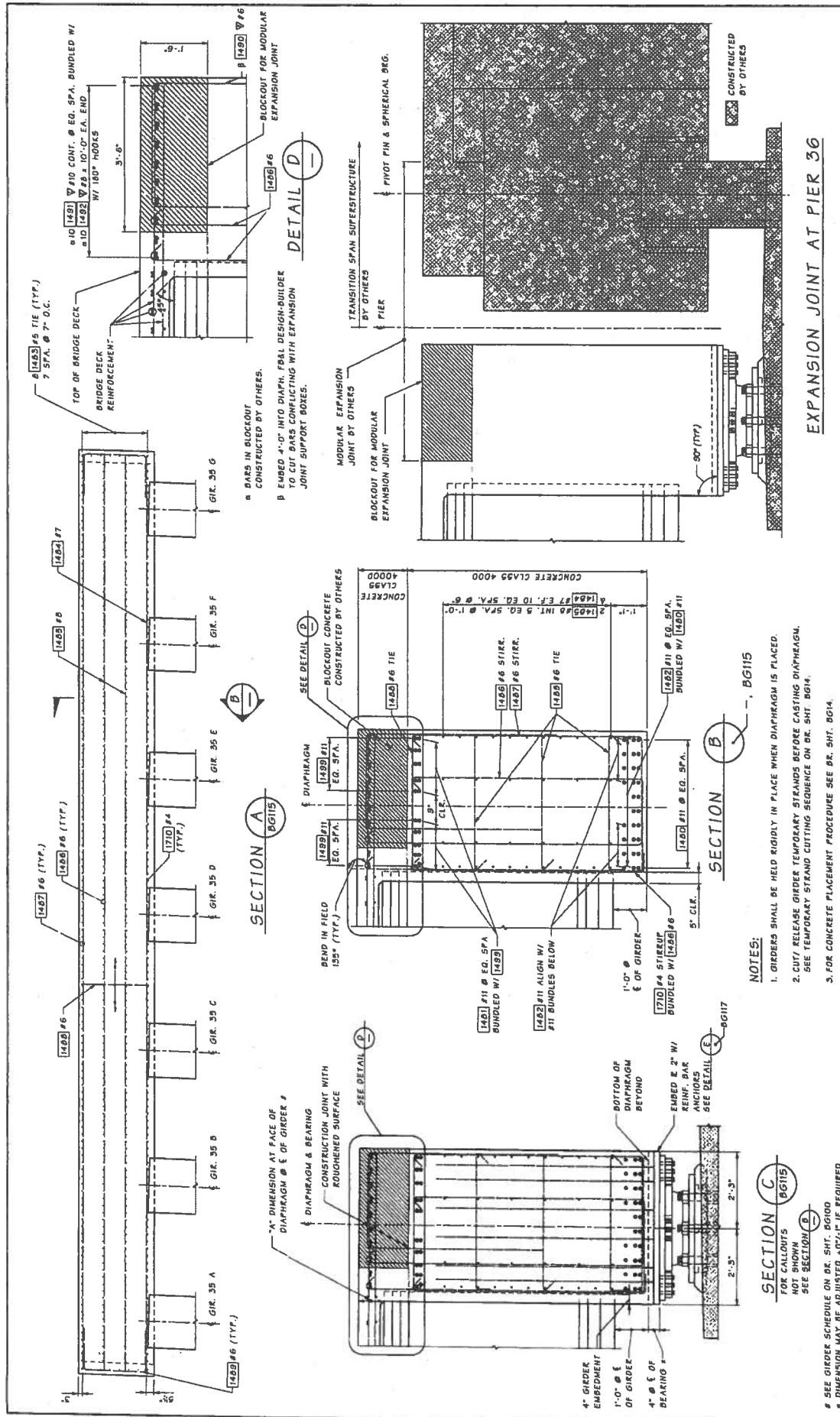
PROJECT NO.	SR 520	DATE	6-22-13
PROJECT NAME	WEST CONNECTION BRIDGE	PROJECT NO.	PG115
PROJECT LOCATION	END DIAPHRAGM	PROJECT NO.	173
PROJECT ELEVATION	PLAN & ELEVATION AT PIER 36	PROJECT NO.	281
DESIGNER	BR 6552/001	DATE	12/10/09
CHECKER	BR 6552/001	DATE	12/10/09
APPROVER		DATE	

Contract 8-32  
 Date 4-8-14  
 Change Order 981  
 Sheet 22 of 33

SR 520 FILE NO. 7052 SHEET 8615  
 PROJECT VOLUME: WCB

Contract 8432  
 Date 4-24-74  
 Change Order 961  
 Sheet 22 of 33

SR 520 FILE NO. 2052  
 PROJECT: VOLUME 1  
 SHEET: BG116



SR 520 WEST CONNECTION BRIDGE END DIAPHRAGM DETAILS AT PIER 36 1 OF 2		Washington State Department of Transportation	SR 520 WEST CONNECTION BRIDGE END DIAPHRAGM DETAILS AT PIER 36 1 OF 2
Designer: [Blank] Checked By: [Blank] Drawn By: [Blank]	Date: [Blank] Scale: [Blank]	Project No.: 84-0330(05) Job Number: 12-A-009	Sheet No.: 174 of 201
Engineer: [Blank] Checked By: [Blank] Drawn By: [Blank]	Date: [Blank] Scale: [Blank]	Project No.: 84-0330(05) Job Number: 12-A-009	Sheet No.: 174 of 201

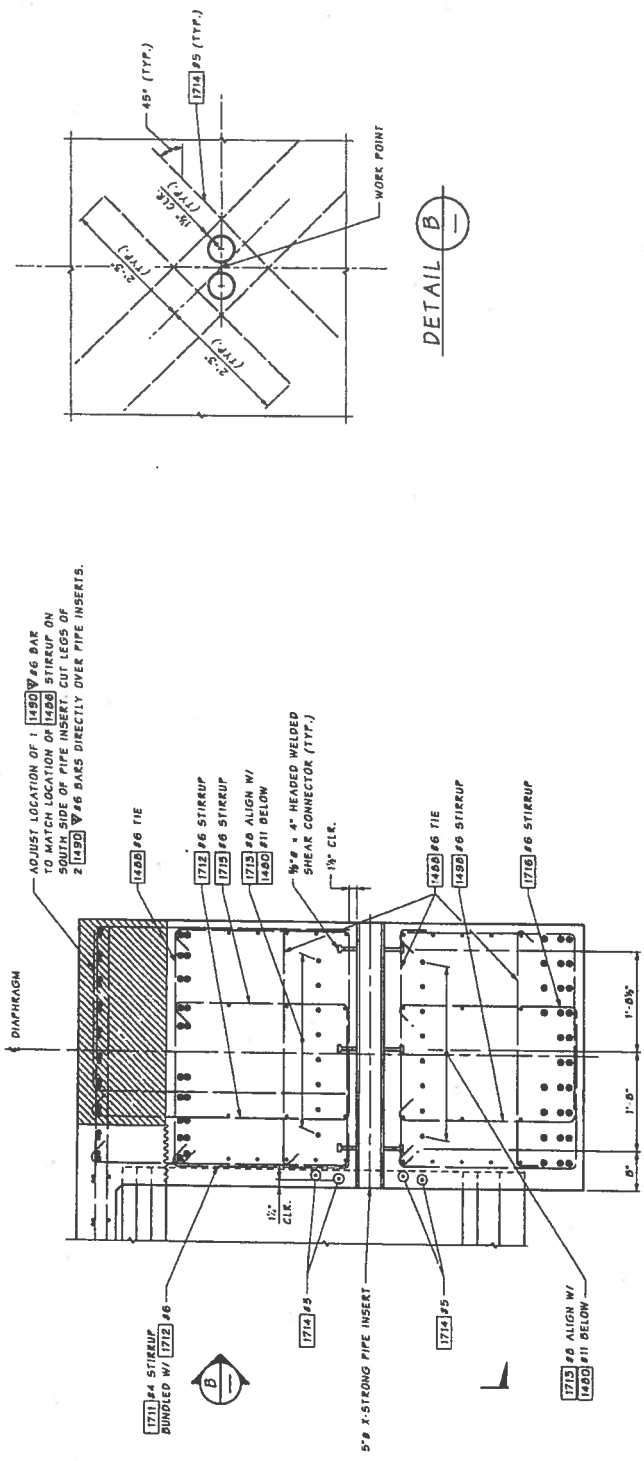


CONSTRUCTED BY OTHERS



Contract 8432  
 Date 4-18-81  
 Change Order 981  
 Sheet 23 of 33

SR 520 FILE NO. 2052 SHEET BG117A  
 Project 158 Vau1: KCB



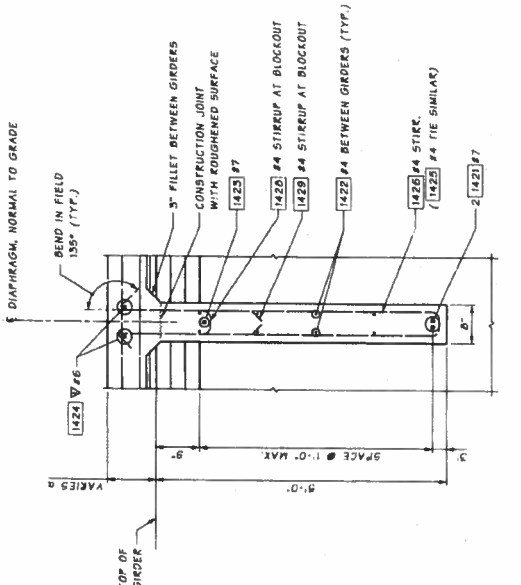
DETAIL B

SECTION A  
 FOR CALLOUTS NOT SHOWN  
 SEE SECTION B

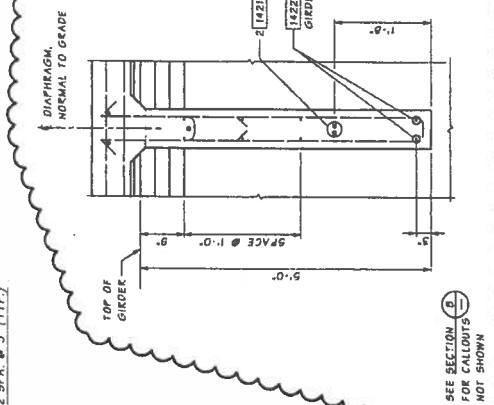
SHEET NO. BG117A OF 281	
SR 520 WEST CONNECTION BRIDGE END DIAPHRAGM DETAILS AT PIER 36 2A OF 2	
Washington State Department of Transportation	
1-13	
SHEET NO. 04-0320(051) JOB NUMBER 12AD009	DATE 175A 201
STATE WASH COUNTY KING	PROJECT NO. 84-0320(051)
DRAWN BY: [Signature] CHECKED BY: [Signature]	DATE: [Date]

Contract 8432  
 Date 1-8-74  
 Change Order 9 R1  
 Sheet 24 of 33

SR 520 FILE NO 2092  
 PROJECT: Volume 1  
 SHEET: B6121

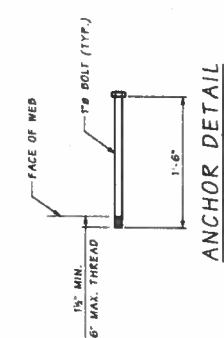


**SECTION B**  
 AT MID SPAN INTERMEDIATE DIAPHRAGM  
 SEE GIRDER SCHEDULE ON BR. SHT. B6100 FOR DIMENSION 'A'.



**SECTION C**  
 AT MID SPAN AND 3/4 SPAN INTERMEDIATE DIAPHRAGMS  
 SEE SECTION B FOR CALLOUTS NOT SHOWN

**ELEVATION INTERMEDIATE DIAPHRAGM**  
 DIMENSIONS ARE ALONG DIAPHRAGM  
 SHOWN AT MID-SPAN INTERMEDIATE DIAPHRAGM  
 OTHER INTERMEDIATE DIAPHRAGMS SIMILAR



**ANCHOR DETAIL**  
 ASTM A-307

- NOTES:**
- GIRDERS SHALL BE HELD RIGIDLY IN PLACE WHEN DIAPHRAGMS ARE PLACED.
  - IT MAY BE NECESSARY TO THREAD #7 REINFORCING BARS THROUGH HOLES IN GIRDERS PRIOR TO PLACING EXTERIOR GIRDERS.
  - CUT/RELEASE GIRDER TEMPORARY STRANDS BEFORE CASTING DIAPHRAGM. SEE TEMPORARY STRAND CUTTING SEQUENCE ON BR. SHT. B614.
  - LONGITUDINAL DIMENSIONS ARE NORMAL TO  $\xi$  DIAPHRAGM.
  - FOR CONCRETE PLACEMENT PROCEDURE SEE "SUPERSTRUCTURE CONSTRUCTION SEQUENCE" ON BR. SHT. B614.

Bridge Design Eng.	State	Proj. No.	Proj. Name	Sheet No.	Sheet Title
Checked By	1112	10	SR 520	179	B6121
Designed By	1112	10	SR 520	179	B6121
Drawn By	1112	10	SR 520	179	B6121
Bridge Project No.	1112	10	SR 520	179	B6121
Project No.	1112	10	SR 520	179	B6121
Revision					



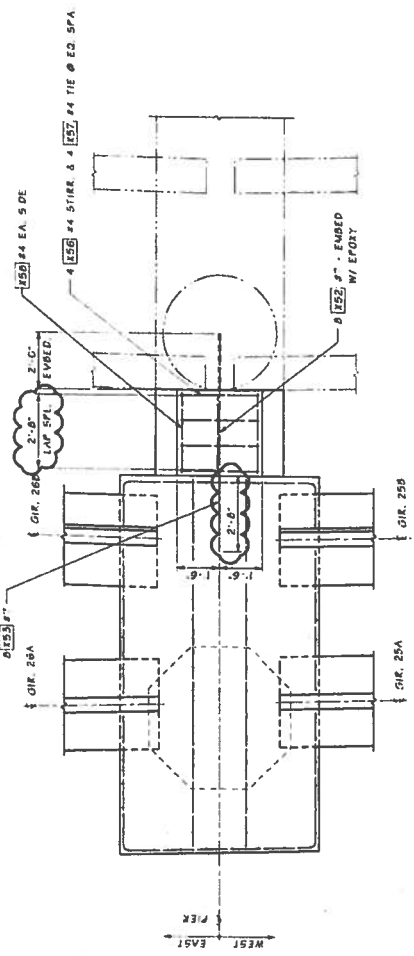
SR 520  
 WEST CONNECTION BRIDGE  
 INTERMEDIATE DIAPHRAGM DETAILS - WF83G

Contract 8432  
 Date 4-8-14  
 Change Order 9/1  
 Sheet 25 of 33

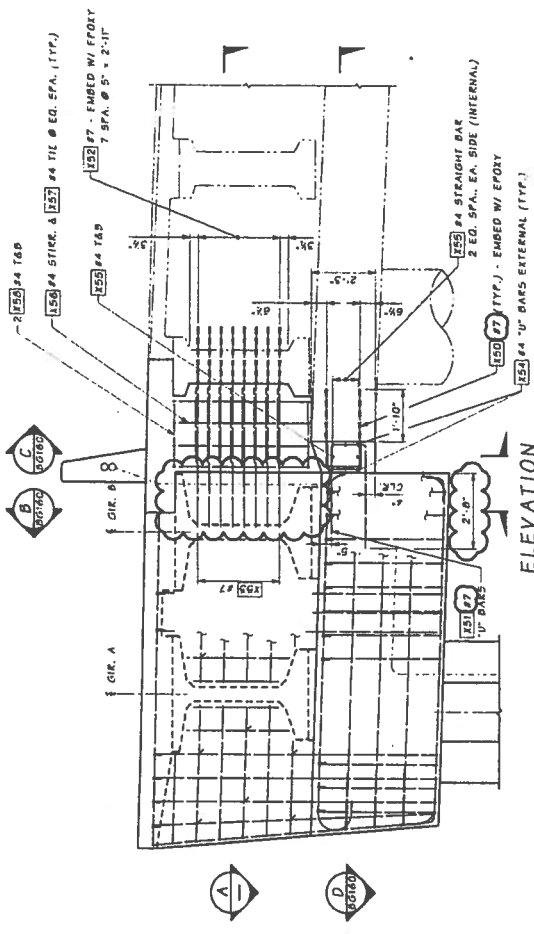
SR 520 FILE NO. 2052 SHEET B6159  
 PROJECT USE ONLY: WCB

**BAR MARKS**

PIER 26	1	5
PIER 27	1	5
PIER 28	1	4
PIER 29	1	4
PIER 25	1	4



**SECTION A**



**ELEVATION**

- NOTES:**
- PIER 26 SHOWN, PIERS 27 THRU 29 SIMILAR.
  - LOCATE EXISTING STEEL AND STEAMPS PRIOR TO DRILLING.
  - SHAP REINFORCEMENT NOT SHOWN FOR CLARITY.

**CLOSURE CONSTRUCTION SEQUENCE**

- EPOXY EMBED (#7) BARS INTO EXISTING CROSSBEAM AND EXISTING DIAPHRAGM.
- CONSTRUCT NEW CROSSBEAM.
- PLACE ORDERS.
- PLACE BRIDGE DECK.
- PLACE LOWER CROSSBEAM CLOSURE.
- PLACE DIAPHRAGM AND DECK CLOSURE.

Bridge Design Firm Parametrix Checked By M. A. L. Bridge Project No. 12A009	DATE 12/27/13	REVISIONS 1 217 281	PROJECT NO. SR-0524(251)	SHEET NO. 217 281	SHEET TOTAL 281
Washington State Department of Transportation			SR 520 WEST CONNECTION BRIDGE		
CLOSURE DETAILS 1 PIERS 26 THRU 29			66159		

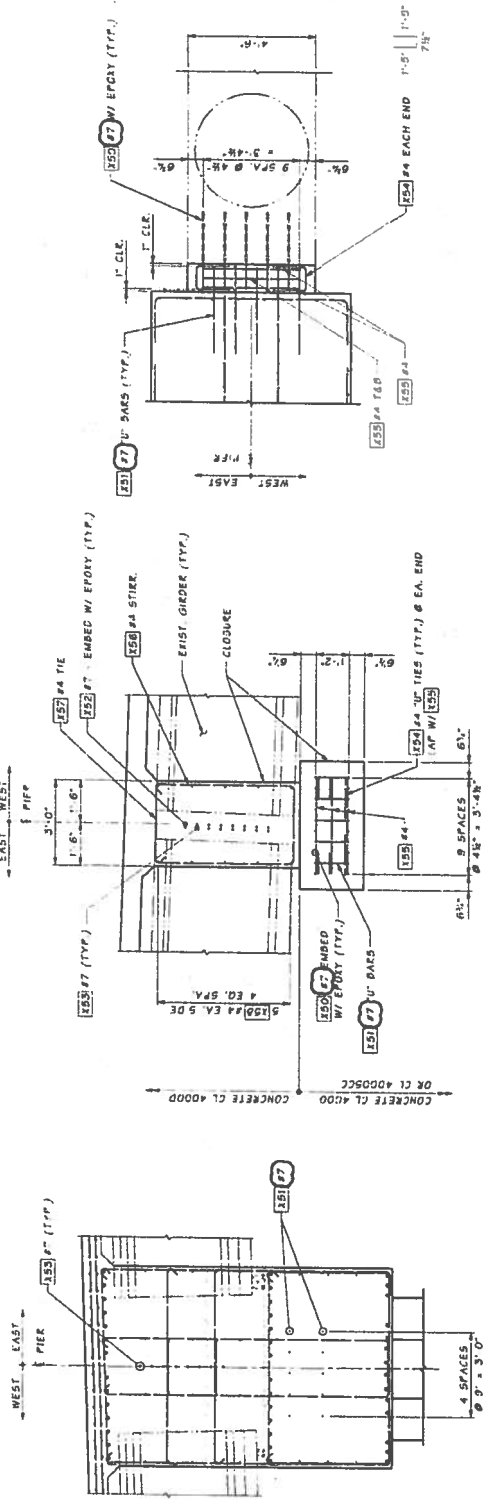
Contract 8432  
 Date 4-2-14  
 Change Order 781  
 Sheet 26 of 33

SR 520 WEST CONNECTION BRIDGE  
 SHEET BG160

Project No. 7092	Scale	DATE	BY	REVISION
SR 520 WEST CONNECTION BRIDGE				
Project Name	Project No.	Project Title	Project State	Project City
Bridge Project Name	2009	SR 520 WEST CONNECTION BRIDGE	WASH	SPRINGFIELD
Drawn By	Checked By	Designated By	Scale	Sheet
Parametrix	Parametrix	Parametrix	210	261
Project No.	Project Title	Project State	Project City	Project Sheet
2009	SR 520 WEST CONNECTION BRIDGE	WASH	SPRINGFIELD	261
Project No.	Project Title	Project State	Project City	Project Sheet
2009	SR 520 WEST CONNECTION BRIDGE	WASH	SPRINGFIELD	261



Washington State Department of Transportation  
 SR 520 WEST CONNECTION BRIDGE  
 CLOSURE DETAILS 2  
 PIERS 26 THRU 29

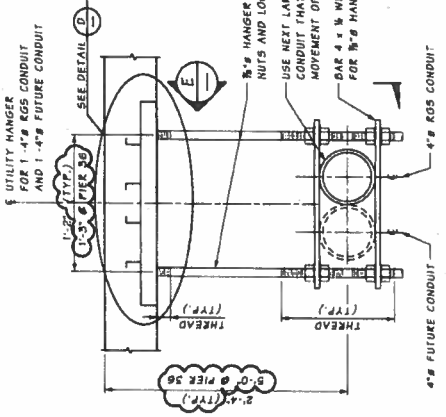


**BAR MARKS**  
 PIER 26 - X X 2  
 PIER 27 - X X 3  
 PIER 28 - X X 4  
 PIER 29 - X X 5

**NOTES:**  
 1. PIER 26 SHOWN, PIERS 27 THRU 29 SIMILAR.  
 2. LOCATE EXISTING STEEL AND STRANDS PRIOR TO DRILLING.  
 3. SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

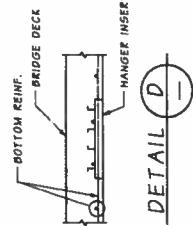
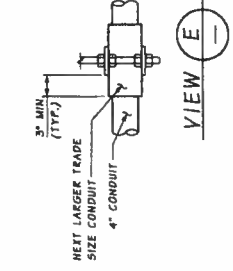
Contract 84-3-2  
 Date 4-8-78  
 Change Order 981  
 Sheet 27 of 33

SR 520 FILE NO. 2052 SHEET BG164  
 PROJECT: VULTRIC WB

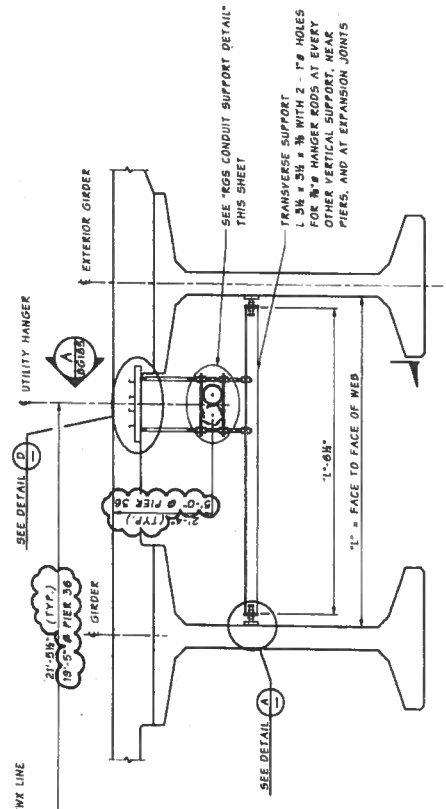


RGS CONDUIT SUPPORT DETAIL

NOTE:  
 1. ALL MATERIALS SHALL BE GALVANIZED  
 AFTER FABRICATION PER AASHTO M 111 OR  
 AASHTO M 232.

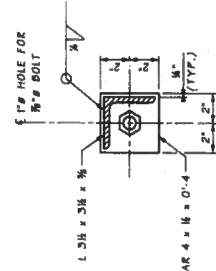


\* COOPER D-LINE B22-1-20, POWERSTRUT P5 349-20, USE WITH 1/2" HANGER RODS. (1) 1/2" DIA. SPRING NUT, CHANGE THREADS ON HANGER ROD FOR THREAD COMPATIBILITY WITH SPRING NUT. INSERT TO BE INSTALLED LONGITUDINALLY AND TRANSVERSELY. PLACE INSERT TO PROVIDE FOR TRANSVERSE ADJUSTMENT OF HANGER RODS. HANGER RODS SHALL NOT BE WITHIN 2" OF THE END OF THE INSERT. TWO INSERTS MAY BE USED TO ACCOMMODATE SUPERELEVATION.

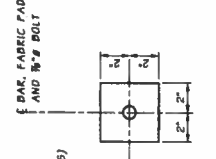


HANGER UTILITY SUPPORT

- STEP 1 - TURN OUTER NUT TO ALIGN VERTICAL HANGER RODS.
- STEP 2 - AFTER PROVIDING A TIGHT FIT BETWEEN FABRIC PAD AND P.S. GIRDER WEB, TURN OUTER NUT ONE FULL TURN AWAY FROM CONCRETE (TYP. FOR BOTH ENDS OF HORIZONTAL BRACING).
- STEP 3 - TURN INNER NUT 1/2 TURN AGAINST BAR AFTER SNUG TIGHTENING.



SECTION C



SECTION B



DETAIL A

Design Engineer Checked By Drawn By Project Manager Date	Designer Checked By Drawn By Project Manager Date	State Wash Job Number 12/AD09	Fed. Aid Proj. No. DC-0802(C05)	Sheet No. 242 of 201	Project No. 2052	Title WEST CONNECTION BRIDGE	Project No. BG164
Revision DATE BY REVISION			Revision DATE BY REVISION		Revision DATE BY REVISION		

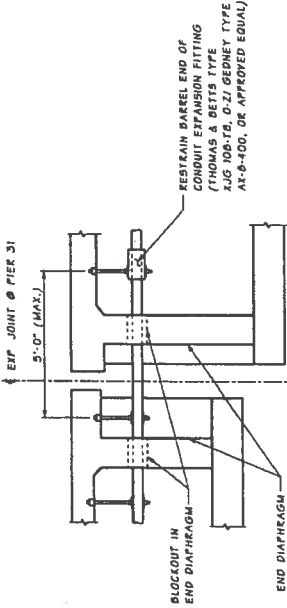


Washington State  
 Department of Transportation

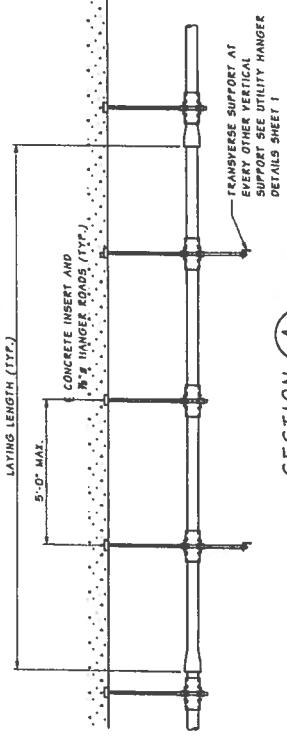
SR 520  
 WEST CONNECTION BRIDGE  
 UTILITY HANGER - DETAILS 1

Contract 8432  
 Date 4-8-74  
 Change Order 921  
 Sheet 25 of 33

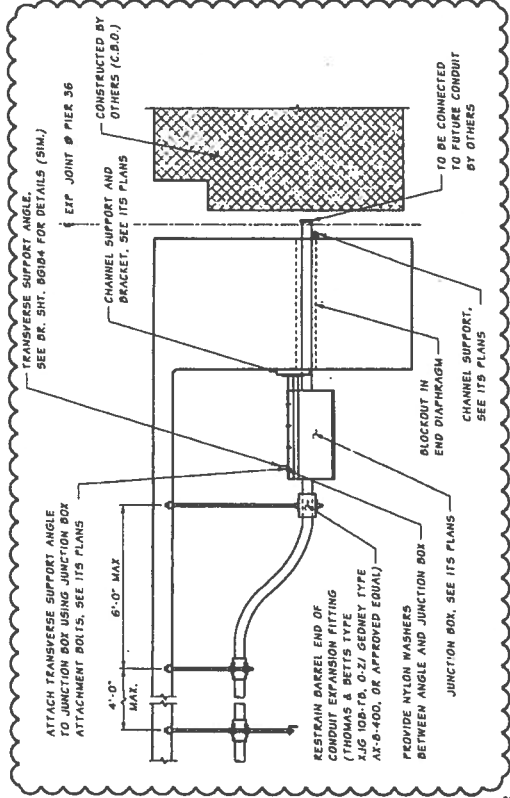
SR 520 FILE NO 2052 SHEET PG165



UTILITY CONDUIT  
 PLACEMENT DETAIL ~ RGS  
 PIER 31



SECTION A  
 265 CONDUIT  
 B3104

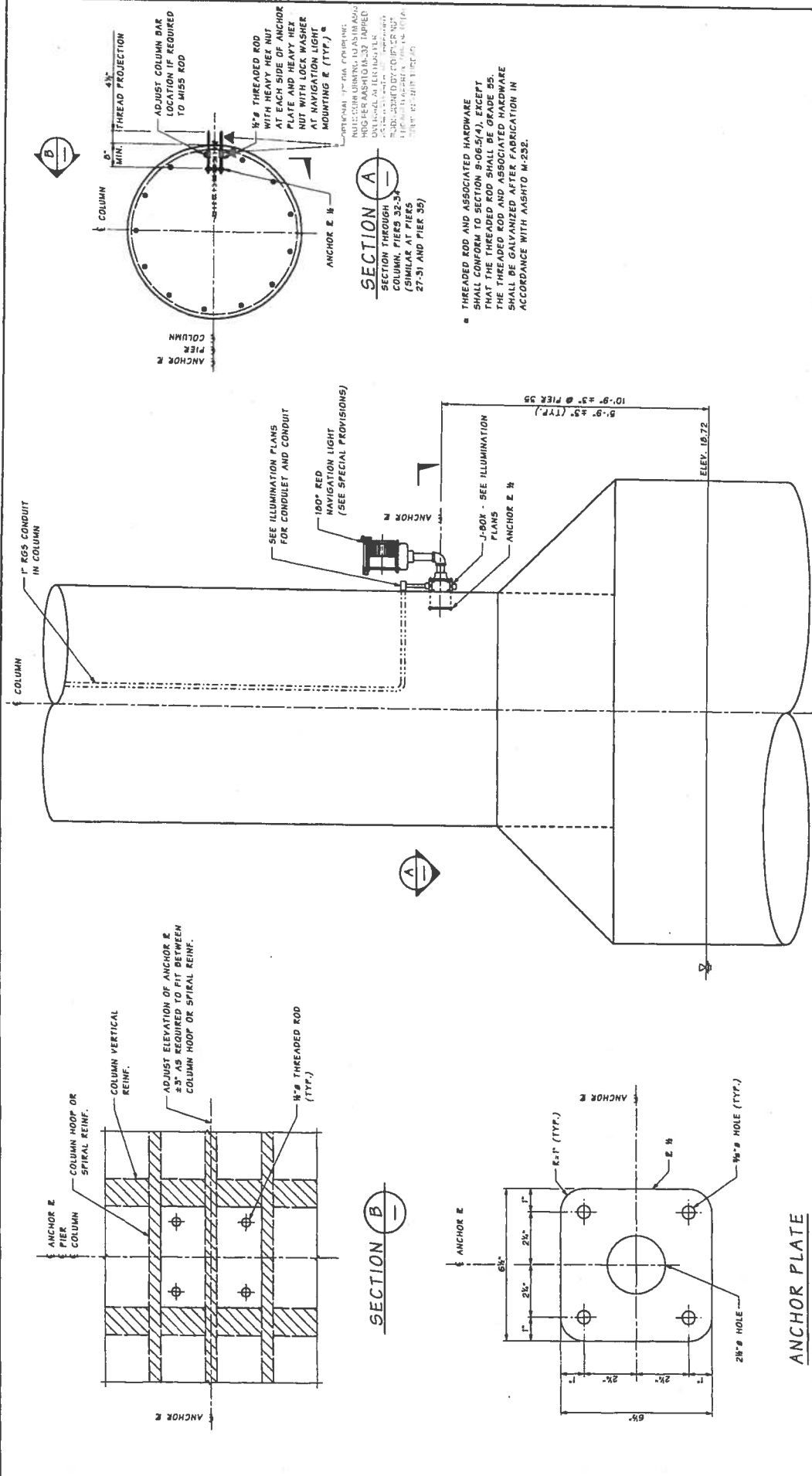


UTILITY CONDUIT  
 PLACEMENT DETAIL ~ RGS  
 PIER 35

NOTES:  
 1. SET POSITION OF EXPANSION FITTING BASED ON MANUFACTURER RECOMMENDATIONS AND TEMPERATURE AT TIME OF INSTALLATION.  
 2. PROVIDE ONE ADDITIONAL EXPANSION FITTING OF THE SAME TYPE AT EACH END OF THE CONDUIT. THE CENTER OF THE PIER 35 & THE DESIGN TEMPERATURE RANGE IS 125 DEGREES (-15° TO 110°)

UTILITY CONDUIT  
 PLACEMENT DETAIL ~ RGS  
 PIER 36

SR 520 FILE NO 2052	WEST CONNECTION BRIDGE	PG165
SR 520 FILE NO 2052	UTILITY HANGER - DETAILS 2	243 281
Washington State Department of Transportation		
HDR ENGINEERING, INC. 6-27-73		
DESIGNED BY: Zhang, Shihua, J.	STATE: WA	PROJECT NO.: 88-0527(05)
CHECKED BY: Harris, B.	COUNTY: 19	DATE: 2-4-74
DRAWN BY: Vogel, M.	JOB NUMBER: 174009	BY: [Signature]
DATE: 2-4-74	REVISION:	BY: [Signature]



**ELEVATION - NAVIGATION LIGHT ON COLUMN**  
 (PIER 31-34 SHOWN, PIERS 27-30 AND PIER 35 SIMILAR)

**SECTION B**

**ANCHOR PLATE**  
 (ASTM A36 - GALVANIZE PER AASHTO M 111)

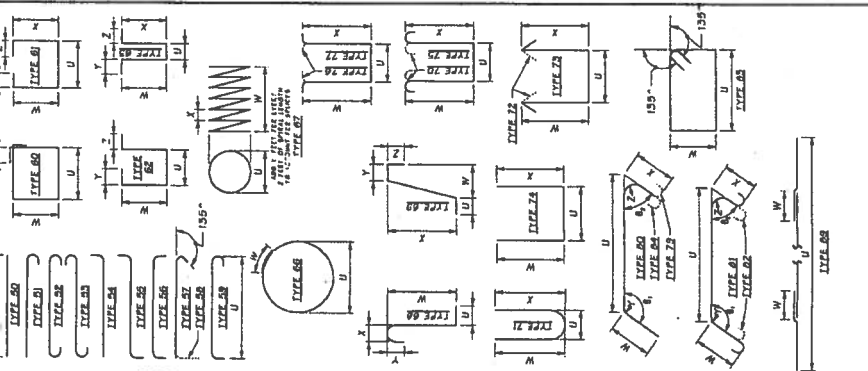
Design Engineer: [Blank] Designer: [Blank] Designed By: [Blank] Checked By: [Blank] Drawn By: [Blank] Project: [Blank]		STATE: WA COUNTY: KING JOB NUMBER: 12A/009	PIER AND PIVOT NO.: [Blank] BRIDGE NUMBER: [Blank]	SHEET NO.: 245 OF: 261	PROJECT: SR 520 WEST CONNECTION BRIDGE	DRAWING NO.: BG127
Date: 4-8-14 Change Order: 29 of 33		DATE: 12/10/09 SECTION: THREADED COPPER NUT OPTION	BRIDGE NUMBER: 12A/009	SHEET NO.: 245 OF: 261	PROJECT: SR 520 WEST CONNECTION BRIDGE	DRAWING NO.: BG127
CONTRACT: 24.2 DATE: 4-8-14 CHANGE ORDER: 29 OF 33 SHEET: 27 OF 33		DATE: [Blank] SECTION: [Blank]	BRIDGE NUMBER: [Blank]	SHEET NO.: [Blank] OF: [Blank]	PROJECT: SR 520 WEST CONNECTION BRIDGE	DRAWING NO.: BG127
CONTRACT: 24.2 DATE: 4-8-14 CHANGE ORDER: 29 OF 33 SHEET: 27 OF 33		DATE: [Blank] SECTION: [Blank]	BRIDGE NUMBER: [Blank]	SHEET NO.: [Blank] OF: [Blank]	PROJECT: SR 520 WEST CONNECTION BRIDGE	DRAWING NO.: BG127



Washington State  
 Department of Transportation

SR 520  
 WEST CONNECTION BRIDGE  
 NAVIGATION LIGHTING DETAILS 2

**BENDING DIAGRAMS**



- NOTES:**
- 1. SEE PLANS FOR REINFORCEMENT NOT SHOWN.
  - 2. BEND FOR TRANSVERSE BARS DUE TO ROADWAY CROWN. CONDITIONS HAS NOT BEEN SHOWN. THESE BARS SHALL BE BENT AS REQUIRED TO CONFORM TO THE CONFIGURATION OF THE STRUCTURE.
  - 3. BARLIST IS FOR QUANTITY ESTIMATION ONLY. REINFORCEMENT FABRICATION DETAILS SHALL BE DETERMINED FROM THE PLANS.

MARK	LOCATION	WEIGHT LBS.	LENGTH IN.	DIMENSIONS (Due to One)						WEIGHT LBS.	LENGTH IN.	LOCATION	WEIGHT LBS.	LENGTH IN.
				U	W	X	Y	Z	F					
110	PIER 25 110C-CROSSSEAM LONG	313	30	4.0	4.0	4.0	4.0							
111	111C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
112	112C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
113	113C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
114	114C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
115	115C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
116	116C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
117	117C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
118	118C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
119	119C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
120	120C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
121	121C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
122	122C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
123	123C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
124	124C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
125	125C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
126	126C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
127	127C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
128	128C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
129	129C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
130	130C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
131	131C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
132	132C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
133	133C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
134	134C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
135	135C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
136	136C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
137	137C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
138	138C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
139	139C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							
140	140C-CROSSSEAM LONG	140	13	3.0	3.0	3.0	3.0							

SR 520 WEST CONNECTION BRIDGE BARLIST 1

Washington State Department of Transportation

HDR ENGINEERING INC.

SR 520 WEST CONNECTION BRIDGE

BARLIST 1

SR 520 WEST CONNECTION BRIDGE

BARLIST 1

Contract No. 42-14  
Change Order 021  
Sheet 20 of 33

SR 520 WEST CONNECTION BRIDGE  
FILE NO. 2052 SHEET D612

Project: SR 520 WEST CONNECTION BRIDGE  
Date: 11/12/12  
Drawn By: J. J. J. J.  
Checked By: J. J. J. J.  
Scale: AS SHOWN







