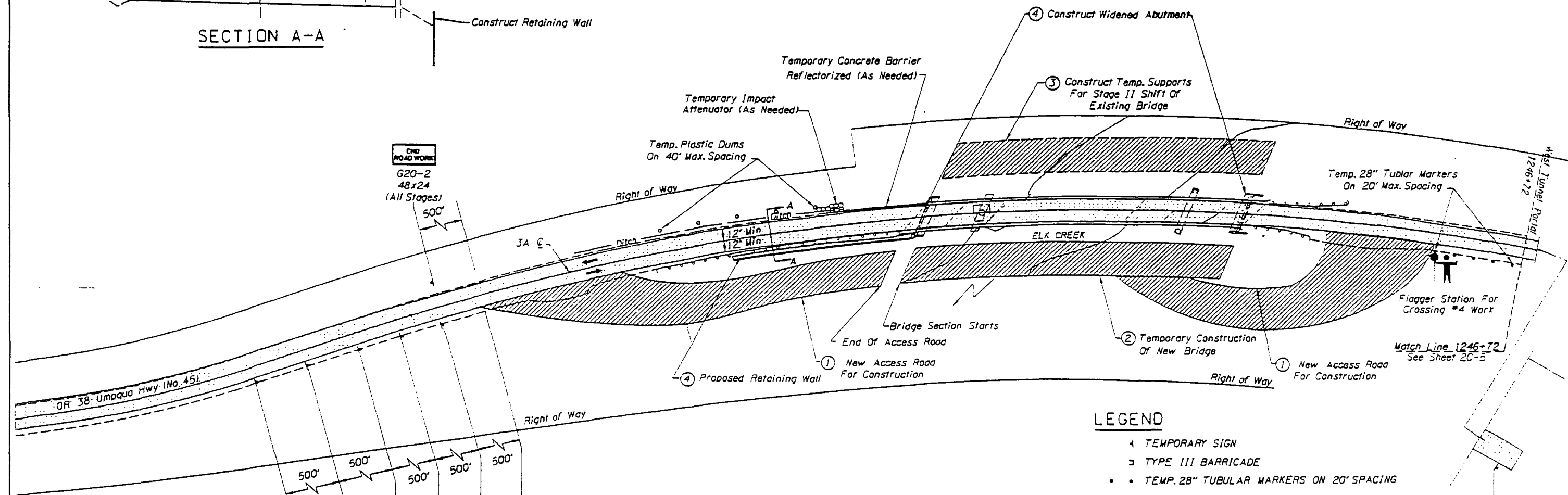
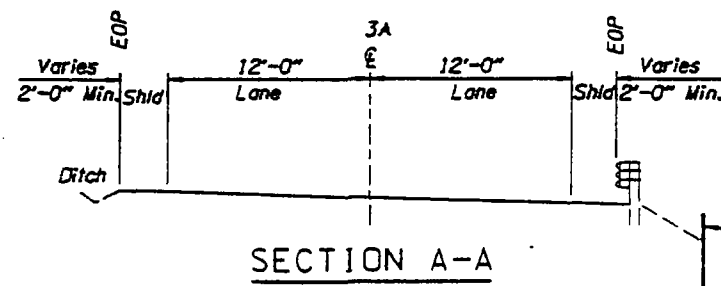


STAGE I - OFF ALIGNMENT BRIDGE CONSTRUCTION

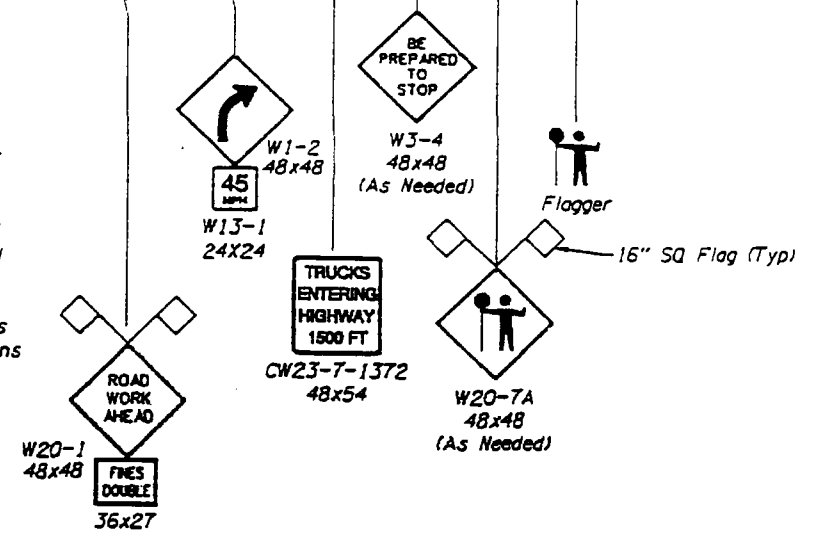


LEGEND

- ▲ TEMPORARY SIGN
- ▤ TYPE III BARRICADE
- • TEMP. 28" TUBULAR MARKERS ON 20' SPACING
- ○ TEMP. PLASTIC DRUMS ON 40' SPACING
- ▨ UNDER CONSTRUCTION
- ▤ UNDER TRAFFIC
- ⊞ TEMPORARY IMPACT ATTENUATOR

NOTES

1. Flagger On Both Ends Of Tunnel.
2. Mirror Road Signs For Bridge #3 To East Beyond Bridge #4.
3. All Signs For Advance Warning Of Flagging Stations Shall Be Covered When No Flagger Is Posted.
4. All Traffic Control Signs & Devices Shall Conform To The Specifications And ODOT Approved QPL.

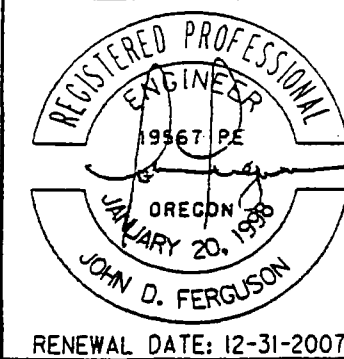


CONSTRUCTION SEQUENCE

- ① Construction Of Access Road On SW Corner And SE Corner.
- ② Construction Of New Bridge On South Side Of Existing Bridge.
- ③ Construct Temporary Support For Stage II Existing Bridge.
- ④ Construct Widened Abutments And Retaining Wall.
- ⑤ Remove Ledge/Widen Roadway

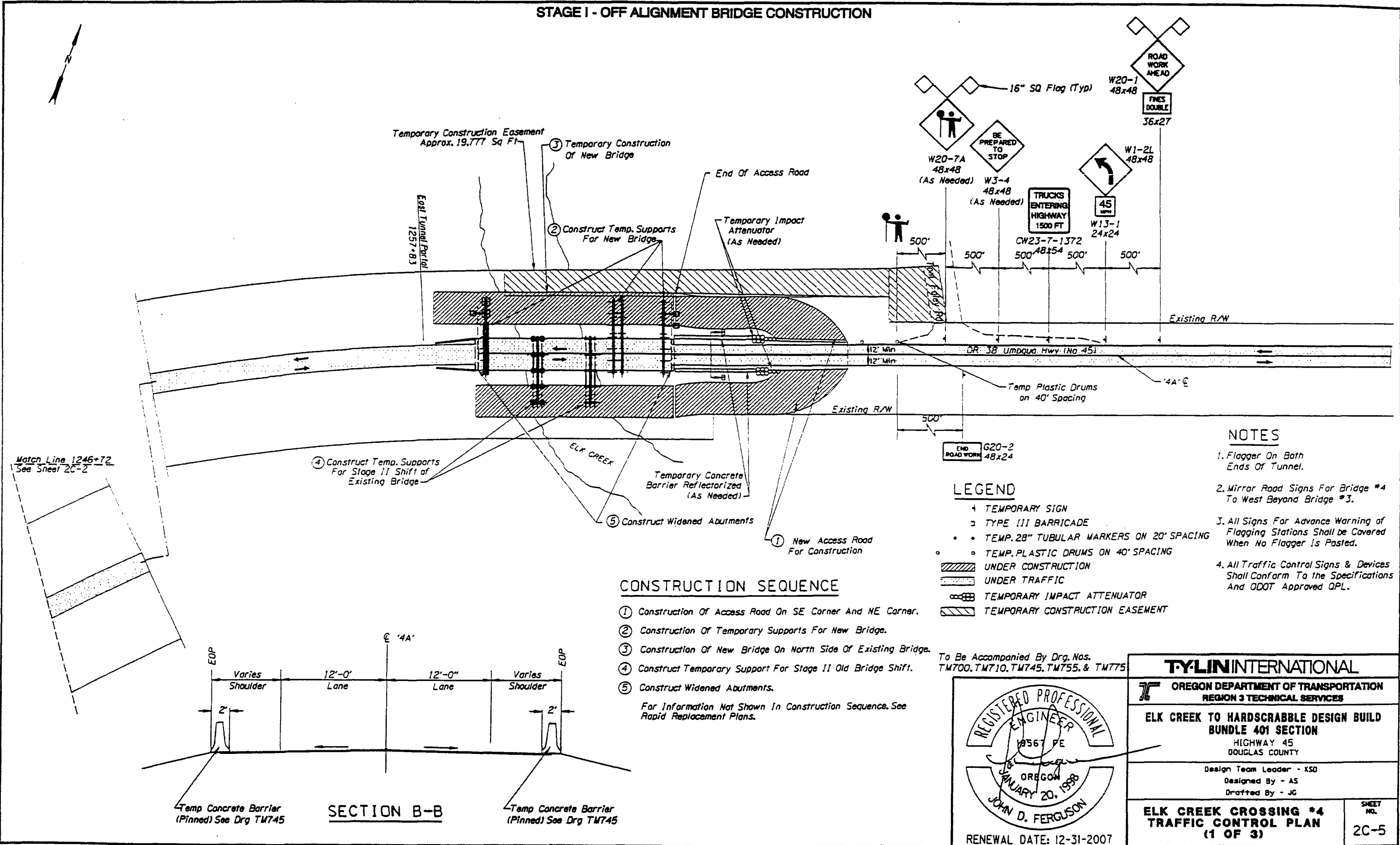
For Information Not Shown in Construction Sequence, See Rapid Replacement Staging Plans.

To be Accompanied By Drg. Nos. TM700, TM710, TM745, TM755, & TM775



<b>TYLIN INTERNATIONAL</b>	
OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	
ELK CREEK TO HARDCRABBLE DESIGN BUILD BUNDLE 401 SECTION HIGHWAY 45 DOUGLAS COUNTY	
Design Team Leader - KSD Designed By - AS Drafted By - JG	
<b>ELK CREEK CROSSING #3 TRAFFIC CONTROL PLAN (1 OF 3)</b>	SHEET NO. <b>2C-2</b>

STAGE I - OFF ALIGNMENT BRIDGE CONSTRUCTION



Match Line 1246+72  
See Sheet 2C-2

NOTES

1. Flagger On Both Ends Of Tunnel.
2. Mirror Road Signs For Bridge #4 To West Beyond Bridge #3.
3. All Signs For Advance Warning of Flagging Stations Shall be Covered When No Flagger Is Posted.
4. All Traffic Control Signs & Devices Shall Conform To the Specifications And ODOT Approved QPL.

LEGEND

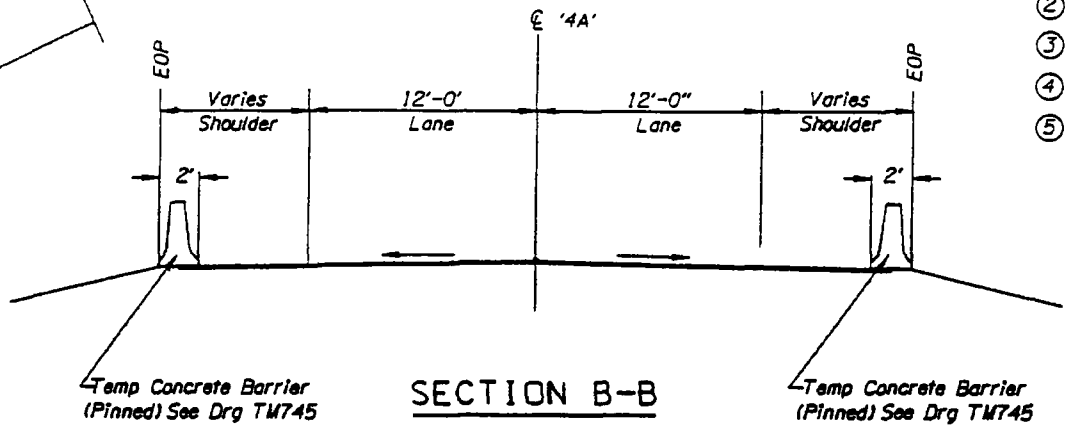
- ▲ TEMPORARY SIGN
- ▬ TYPE III BARRICADE
- TEMP. 28" TUBULAR MARKERS ON 20' SPACING
- TEMP. PLASTIC DRUMS ON 40' SPACING
- ▨ UNDER CONSTRUCTION
- ▤ UNDER TRAFFIC
- ∞∞∞ TEMPORARY IMPACT ATTENUATOR
- ▩ TEMPORARY CONSTRUCTION EASEMENT

CONSTRUCTION SEQUENCE

1. Construction Of Access Road On SE Corner And NE Corner.
2. Construction Of Temporary Supports For New Bridge.
3. Construction Of New Bridge On North Side Of Existing Bridge.
4. Construct Temporary Support For Stage II Old Bridge Shift.
5. Construct Widened Abutments.

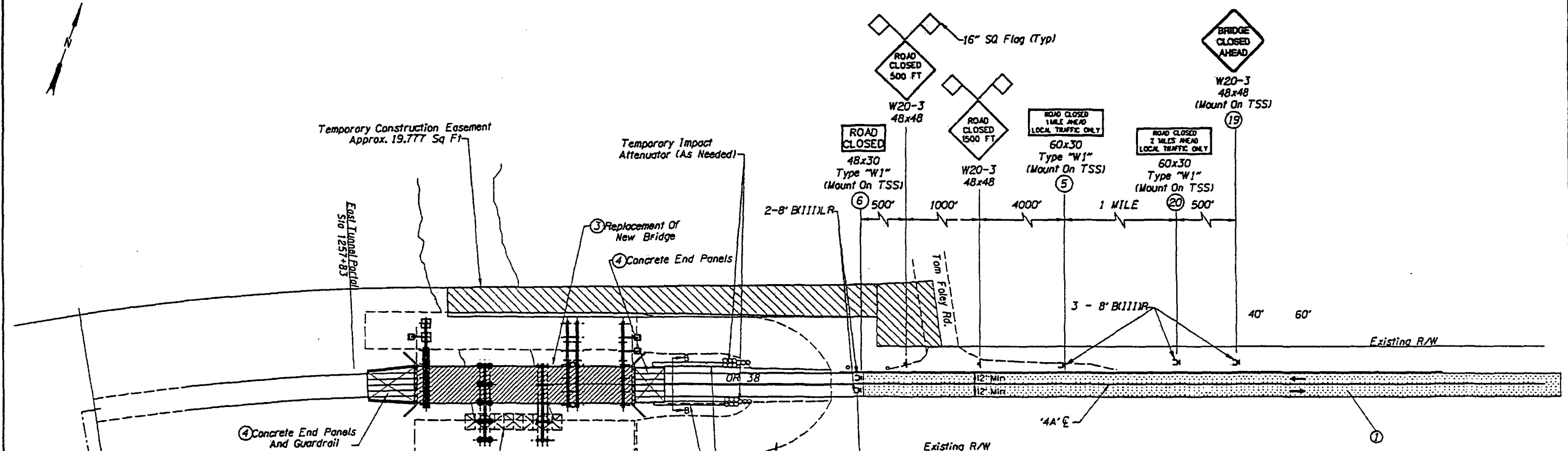
For Information Not Shown In Construction Sequence. See Rapid Replacement Plans.

To Be Accompanied By Drg. Nos. TM700, TM710, TM745, TM755, & TM775



<b>TYLIN INTERNATIONAL</b>	
OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	
ELK CREEK TO HARDCRABBLE DESIGN BUILD BUNDLE 401 SECTION HIGHWAY 45 DOUGLAS COUNTY	
Design Team Leader - XSD Designed By - AS Drafted By - JG	
<b>ELK CREEK CROSSING #4 TRAFFIC CONTROL PLAN (1 OF 3)</b>	SHEET NO. <b>2C-5</b>

STAGE II - RAPID BRIDGE REPLACEMENT



CONSTRUCTION SEQUENCE

- ① Open Detour (Sheet 2C) and Close Roadway.
- ② Shift Old Bridge From Existing Location to Temp. Supports.
- ③ Shift New Bridge into Permanent Location.
- ④ Install Concrete End Panels and Guardrail.
- ⑤ Open Bridge to Traffic and End Use of Detour.

LEGEND

- TEMPORARY SIGN
- TYPE III BARRICADE
- TEMP. 28" TUBULAR MARKERS ON 20' SPACING
- TEMP. PLASTIC DRUMS ON 40' SPACING (OR AS NOTED)
- UNDER CONSTRUCTION
- UNDER TRAFFIC
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY CONSTRUCTION EASEMENT
- PORTABLE CHANGEABLE MESSAGE SIGN

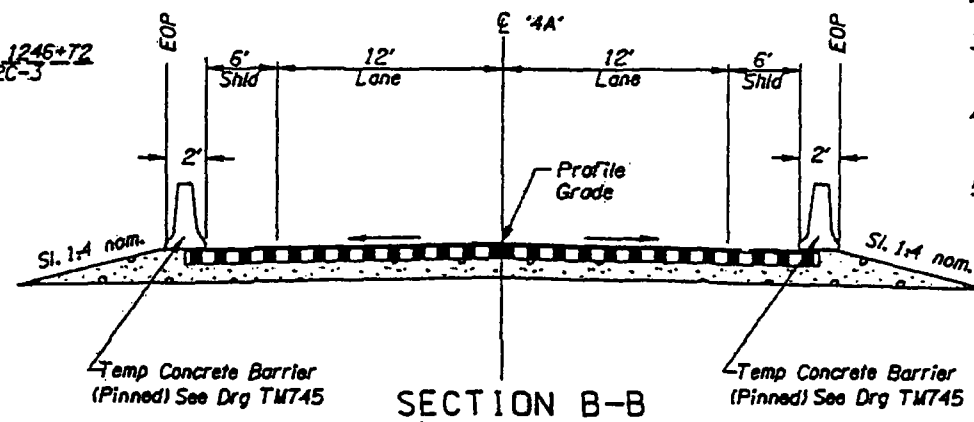
NOTES

1. See Detour Plan On Sheet 2C For Nighttime Closures To Facilitate Rapid Replacement.
2. Locate PCMS Sign 2 Miles Ahead Of Work Zone.
3. Mirror Road Signs For Bridge #4 To West Beyond Bridge #3.
4. All Signs Shall Be Located As Directed By The Engineer.
5. Signs Numbered ⑤ ⑥ ⑱ And ⑳ Are The Same Signs Shown On Sheet 2C. Detour Plan.

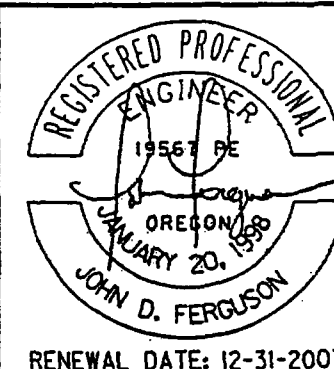
For Information Not Shown in Construction Sequence, See Rapid Replacement Staging Plans.

To Be Accompanied By Drg. Nos. TM700, TM710, TM745, TM750, TM755, & TM775

Match Line 1245+72 See Sheet 2C-3



SECTION B-B



TYLIN INTERNATIONAL

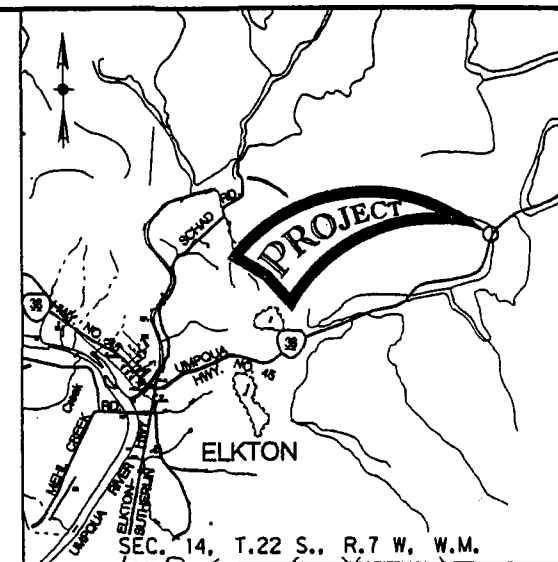
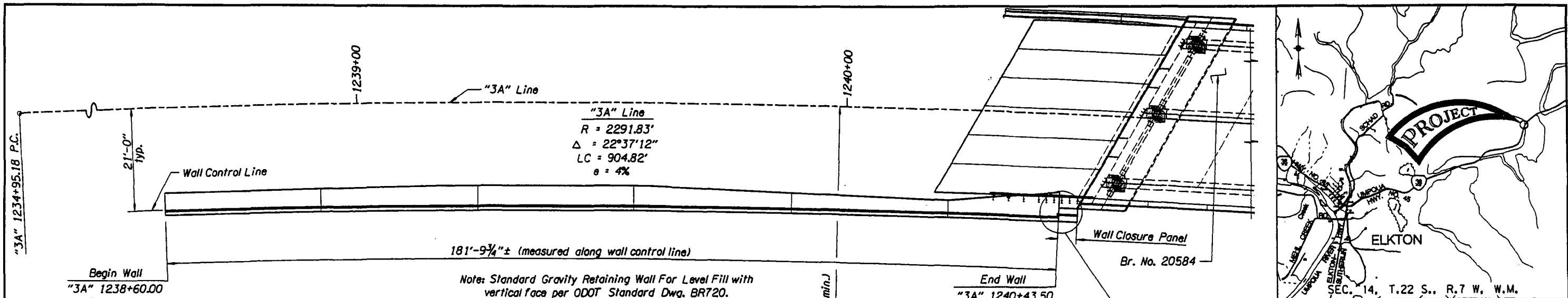
OREGON DEPARTMENT OF TRANSPORTATION  
REGION 3 TECHNICAL SERVICES

ELK CREEK TO HARDCRABBLE DESIGN BUILD  
BUNDLE 401 SECTION  
HIGHWAY 45  
DOUGLAS COUNTY

Design Team Leader - KSO  
Designed By - AS  
Drafted By - JG

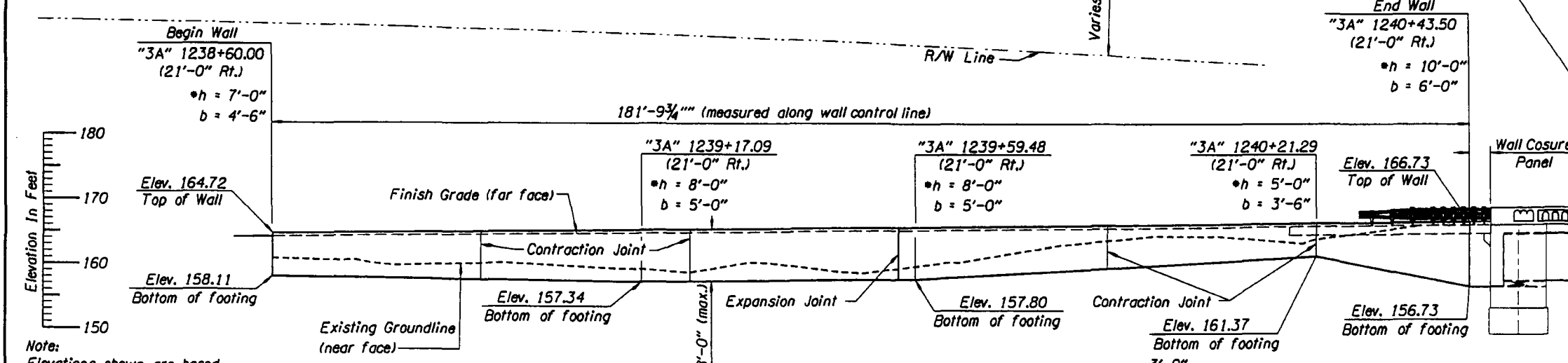
ELK CREEK CROSSING #4  
TRAFFIC CONTROL PLAN  
(2 OF 3)

SHEET NO. 2C-6

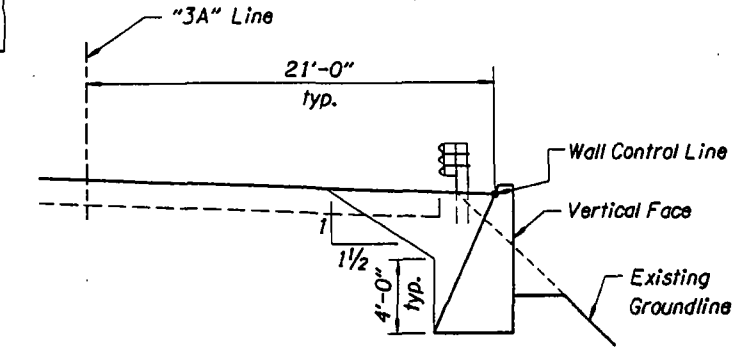
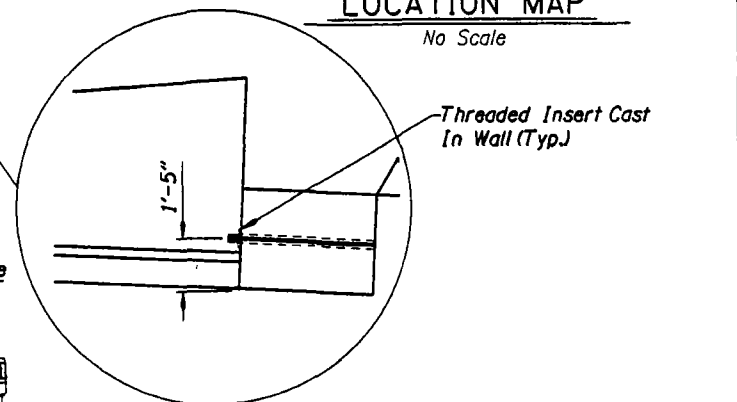


**PLAN**  
Scale: 1" = 10'-0"

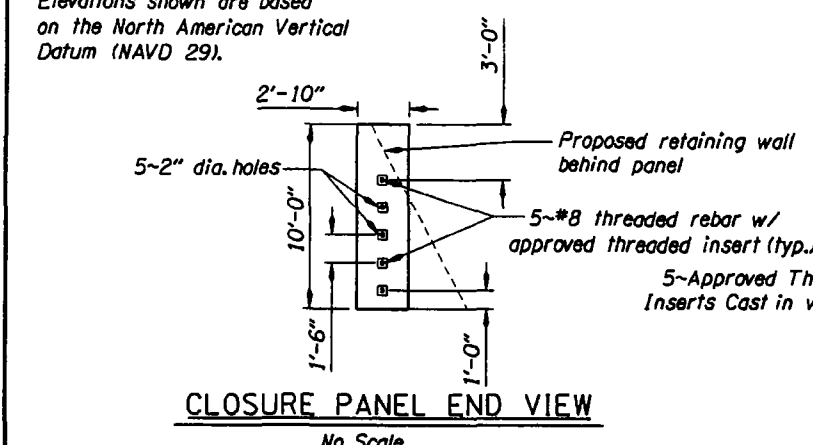
**LOCATION MAP**  
No Scale



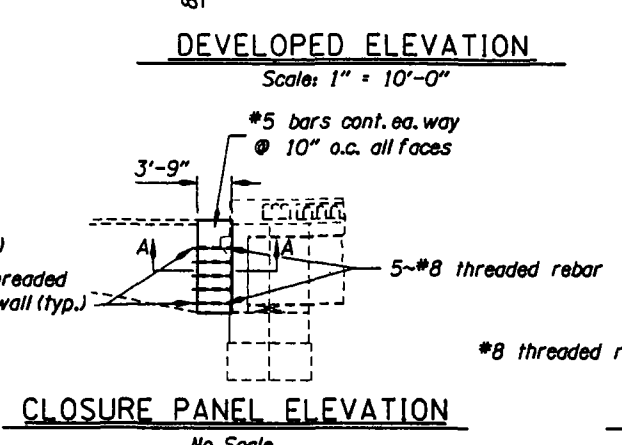
**DEVELOPED ELEVATION**  
Scale: 1" = 10'-0"



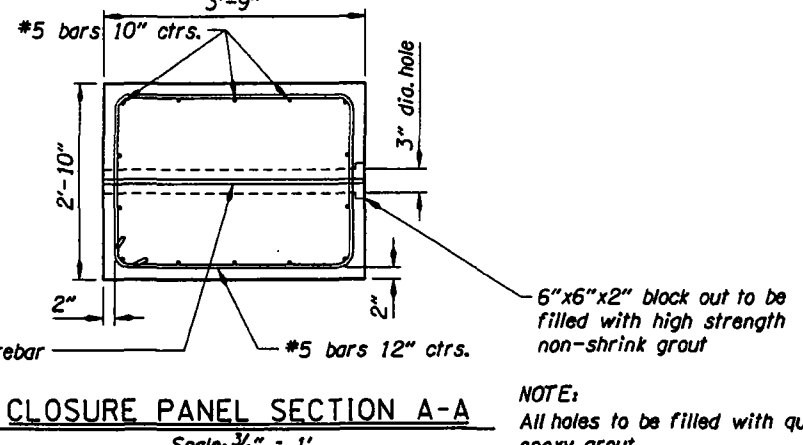
**TYPICAL GRAVITY RETAINING WALL SECTION**  
(ODOT Std. Retain. Wall Shown)  
No Scale



**CLOSURE PANEL END VIEW**  
No Scale



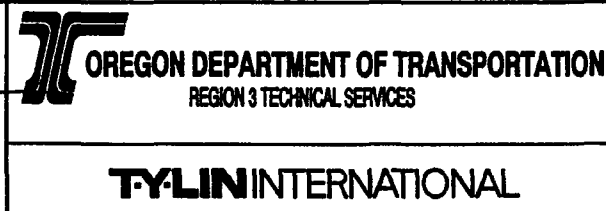
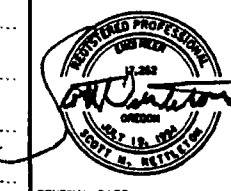
**CLOSURE PANEL ELEVATION**  
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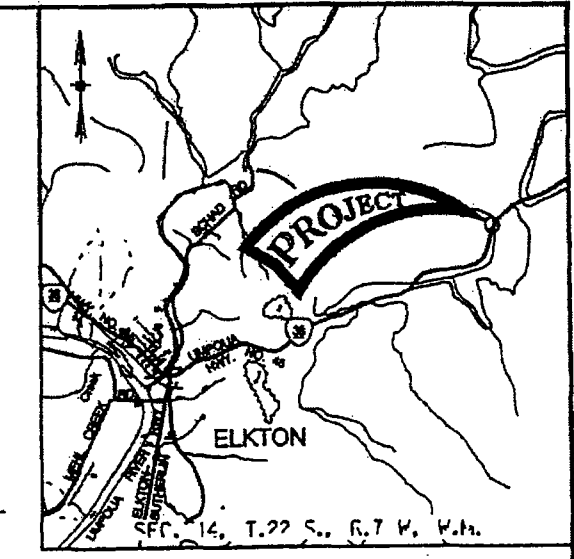
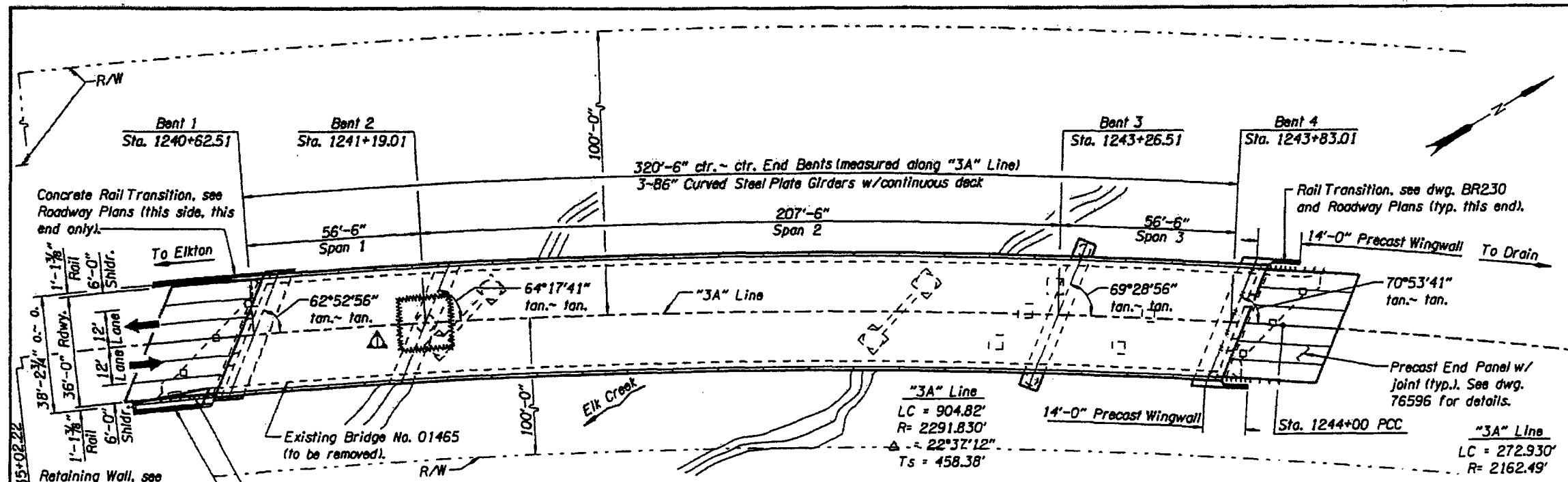


**CLOSURE PANEL SECTION A-A**  
Scale: 3/4" = 1'

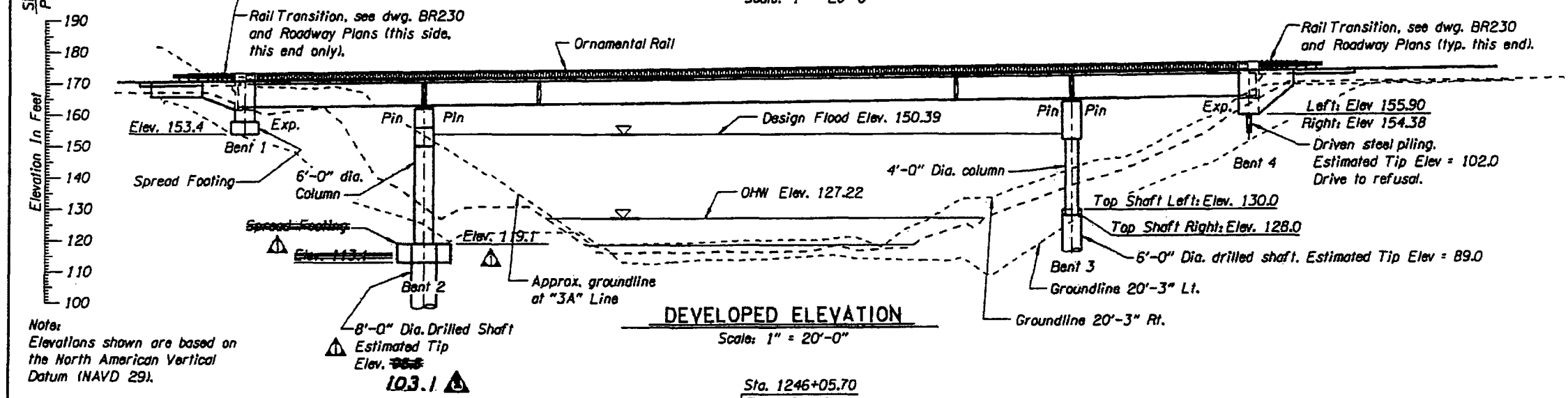
Note: For details not shown for the ODOT Standard Retaining Wall Option, see dwg. BR720. Retaining wall type is not finalized, see ODOT Retaining Wall Manual for options. \*Values for h and b differ from the Std. Dwg. BR720.

DATE	REVISION	BY	DRAFTER: Tom Hernandez	STRUCTURE NO. 20706	RETAINING WALL HWY. 45 (OR 38) AT M.P. 39.58 RIGHT (ELK CREEK CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Douglas County	SHEET OF
			DESIGNER: Anthony Calcagno			
ACCOMPANIED BY DWGS. BR720			CHECKER: Joe Krajewski	CALC. BOOK XXXX	RETAINING WALL PLAN AND ELEVATION	76559
			REVIEWER: Scott M. Nettleton			





**PLAN: Br. No. 3**  
Scale: 1" = 20'-0"



**DEVELOPED ELEVATION**  
Scale: 1" = 20'-0"

Note: Elevations shown are based on the North American Vertical Datum (NAVD 29).

Note: Geotechnical Engineer to field verify competent rock at Bents 1, 2 and 3.

**GRADELINE AT "3A" LINE**  
No Scale

HYDRAULIC DATA				
ITEMS	UNITS	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	ft. <sup>3</sup> /s	44,400	50,100	67,200
RECURRENCE INTERVAL	years	50	100	500
HIGH WATER ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	feet	148.91	151.20	157.37
BACKWATER	feet	0.21	0.27	0.42

<table border="1"> <tr> <th>DATE</th> <th>REVISION</th> <th>BY</th> </tr> <tr> <td>5-29-07</td> <td>Foundation Revised</td> <td>T.H.</td> </tr> <tr> <td>8-9-07</td> <td>Drilled Shaft Elev.</td> <td>T.H.</td> </tr> </table>	DATE	REVISION	BY	5-29-07	Foundation Revised	T.H.	8-9-07	Drilled Shaft Elev.	T.H.	DRAFTED: Tom Hernandez DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p>	STRUCTURE NO. 20584 DATE: May 2007 CALC. BOOK: XXXX	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 1 OF 37 DRAWING NO. 76560
DATE	REVISION	BY													
5-29-07	Foundation Revised	T.H.													
8-9-07	Drilled Shaft Elev.	T.H.													

**GENERAL NOTES:**

Provide all materials and perform all work according to the DB Standard Specifications of Contract C13319 and approved Special Provisions (TBD).

Bridge is designed with an allowance of 25psf for future wearing and all the following Live Loads according to the current AASHTO LRFD Bridge Design Specifications:

Service I, II and Strength-1 Limits States:  
HL-93: Design truck or trucks per LRFD 3.6.1.3 or the design tandems and the design lane loads.

Strength-2 Limits States:  
ODOT Type STP-5BW Permit truck  
ODOT Type STP-5C Permit truck  
Bridge is designed in accordance with AASHTO LRFD Bridge Design Specifications and AASHTO Guide Specifications for Horizontally Curved Steel Highway Bridges 2003

Foundation elements are designed by Allowable Stress Design in accordance with AASHTO Standard Specifications For Highway Bridges.

Seismic design is by multi-mode analysis in accordance with the "AASHTO LRFD Bridge Design Specifications" as modified by the "ODOT Bridge Design & Drafting Manual". Bridge is designed for the following seismic parameters:

Return Period	Peak Bedrock Acceleration (A)	Importance Category	Response Modification Factor (R)			Site Coefficient (S)
			Columns	Superstructure to Abutment Connections	All Other Components	
500 year (serviceable)	0.15 g	Essential	*2.0	0.8	1.0	1.0
1000 year (no-collapse)	0.27 g	Other	**3.0	0.8	1.0	1.0

- \* Multi-column bents = 3.5
- \*\* Multi-column bents = 5.0

Provide column and drilled shaft spiral reinforcement according to ASTM Specification A706, AASHTO Specifications M31 (ASTM A615) Grade 60, AASHTO M225 (ASTM A496), or AASHTO M32 (ASTM A82).

Provide all other reinforcing steel according to ASTM Specification A706, or AASHTO M31 (ASTM A615) Grade 60. Provide field bent stirrups according to ASTM Specification A706. Use the following splice lengths unless shown otherwise:

Bar Size	*3	*4	*5	*6	*7	*8	*9	*10	*11	*14	*18
Splice Length	Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"	Not Permitted

Splice reinforcing steel at alternate bars, staggered at least one splice length or as far as possible, unless shown otherwise.

Support the bottom mat reinforcing steel from the forms with precast mortar blocks at ~~36"~~ <sup>24"</sup> maximum centers each way. Support the top mat of reinforcing steel from the bottom mat of reinforcing steel with wire bar supports as shown in Chapter 3 of the CRSI Manual of Standard Practice (SBU, BBU, or CHCU). Place wire bar supports at ~~36"~~ <sup>24"</sup> maximum centers.

Use uncoated reinforcing steel in the deck and bridge end panel. This includes top and bottom longitudinal bars, and top and bottom transverse bars, and all bars extending into the sidewalk, curb, and parapet.

Place bars 2" clear of the nearest face of concrete unless shown otherwise. The top bends of stirrups extending from beam stems into the top slab may be shop or field bent unless shown otherwise. The top bends of stirrups extending from prestressed units may be shop or field bent unless shown otherwise.

Provide Class HPC4350 - 1/2, 1 or 3/4 concrete in deck and end panels.

Provide Class 3600 - 1/2, 1 or 3/4 concrete in columns, pier caps, footings.

**GENERAL NOTES Cont:**

Provide Class 4350 - 1/2 concrete in drilled shafts.

Provide Class 3600 - 1/2, 1 or 3/4 concrete for all other concrete.

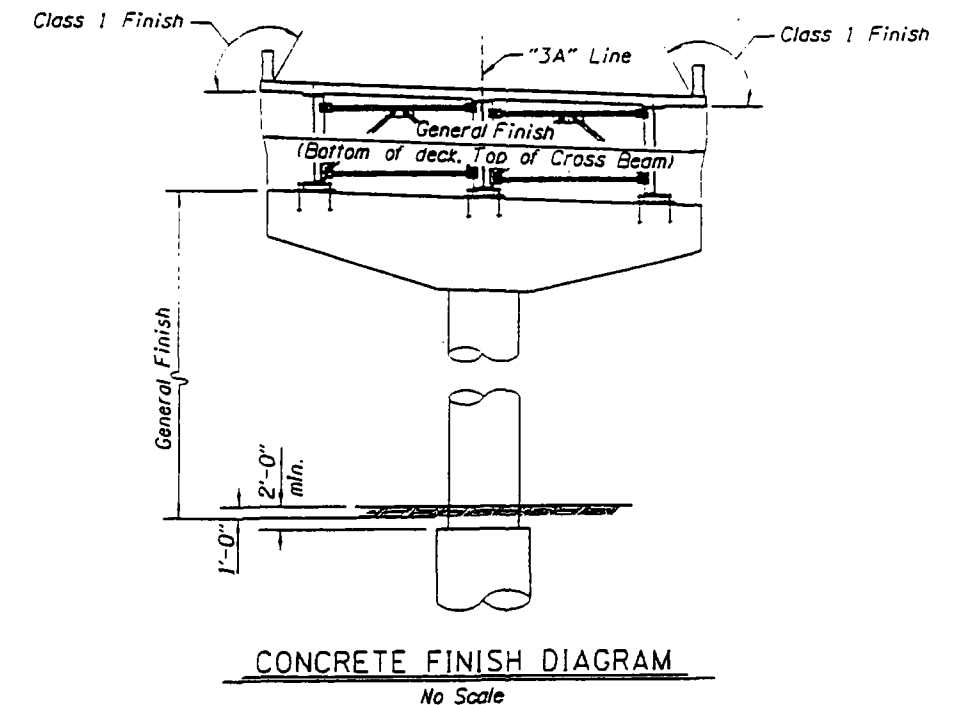
Provide structural steel according to ASTM A709 Grade 50W or AASHTO M270 Grade 50W Specifications.

Tighten high-strength fasteners using the direct tension indicator tightening or turn-of-nut tightening methods.

See the Special Provisions for detailed coating and tightening requirements.

At Bent 4, provide HP14x117 (ASTM A36) with approved driving shoe. Drive piling to an ultimate capacity of 600 kips per pile\*. Minimum penetration for lateral capacity is 55 to 65 feet below pile cap.

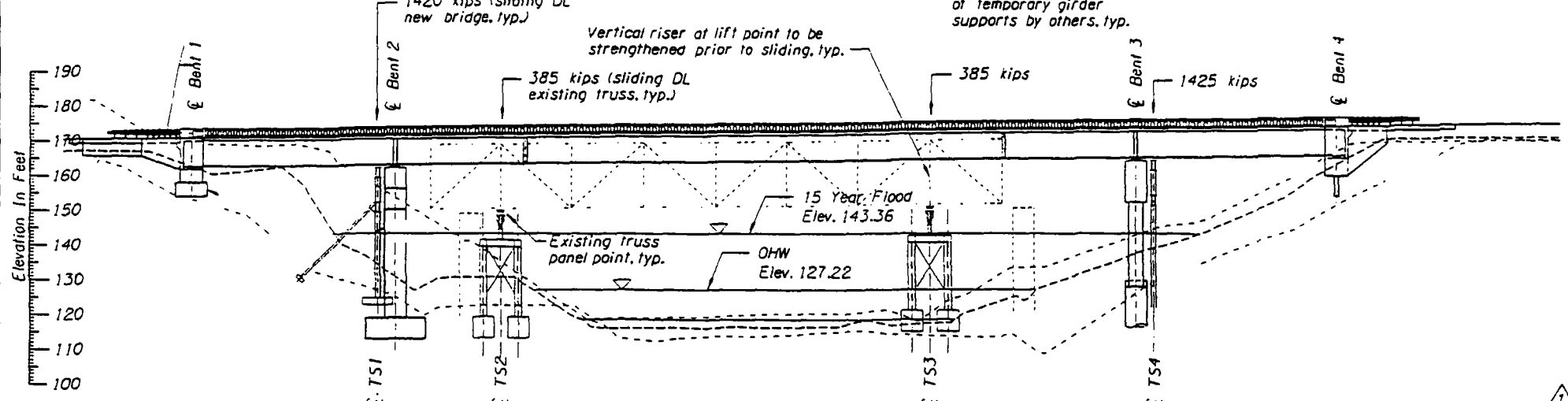
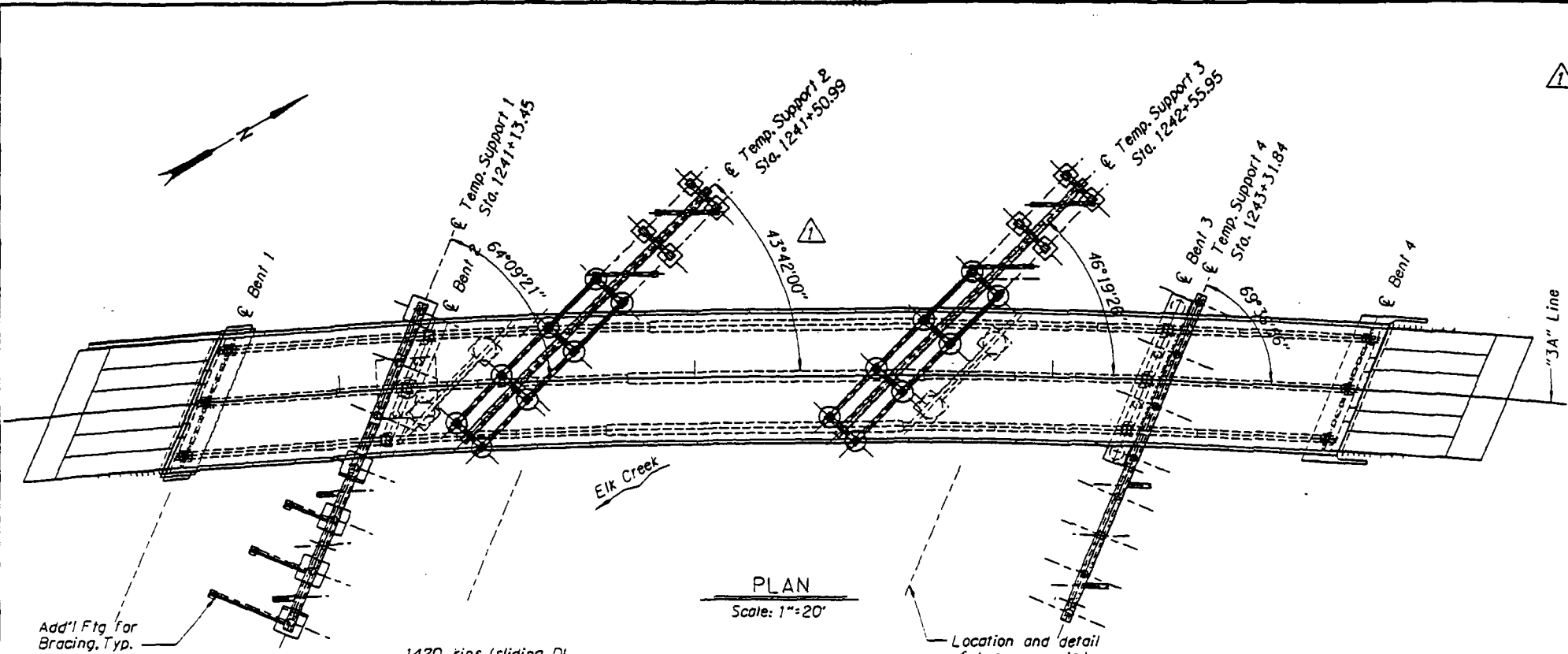
\*Using driving criteria as described in the Geotechnical Report. Estimated Tip Elevation is 102 according to Table 5 of the Geotechnical Report.



CONCRETE FINISH DIAGRAM  
No Scale

DATE: 5-29-07	REVISION: Revised Notes	BY: T.H.	DRAWN: D. Axtell		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p>	STRUCTURE NO.: 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 2 OF 37		
ACCOMPANIED BY DWGS. See Sheet 1.			DESIGNER: Dennis J. Trefren			DATE: May - 2007		TY-LIN INTERNATIONAL	GENERAL NOTES AND CONCRETE FINISH DIAGRAM	DRAWING NO. 76561
			CHECKER: Gopi Sripathy			CALC. BOOK: XXXX				
			REVIEWER: Scott M. Nettleton			REVISION DATE:				





Note:  
Elevations shown are based on the North American Vertical Datum 1929 (NAVD 29).

TABLE 1 - Skidshoe Loads per Shoe

Bridge No.3 Temporary Support	Maximum Vertical Load (k)	Allowable Lateral Load (k)
Temporary Support 1	805	40
Temp. Supports 2 & 3	210	11
Temporary Support 4	812	41

**GENERAL CONSTRUCTION NOTES:**  
 Temporary works and temporary foundation elements are designed by Allowable Stress Design in accordance with AASHTO Standard Specifications For Highway Bridges. Pipe pile sections are designed in accordance with AASHTO LRFD Specifications. Plans cover structural support for sliding operation. The capacity, stability and alignment of all sliding components are the responsibility of Mammoet.

All structural steel for rolled sections and plates shall be ASTM A709, Grade 36, unless noted otherwise. All structural steel for pipe sections shall be ASTM A252 (Grade 3), unless noted otherwise. Concrete Strength Class 3600. Reinforcing Steel ASTM A706 or AASHTO M31 (ASTM A 615) Grade 60.

Field verify all measurements prior to ordering or fabricating any steel. Field verify all foundation elevations and confirm with Engineer. Any foundation elevations that vary more than 2 feet from that shown on the plans must be approved by the engineer prior to building foundation.

The following structural tolerances are necessary on the Lower Beams that will be supporting the guide rails for the skidshoes supplied by Mammoet:  
 Alignment shall not vary more than 1/4" in 20'.  
 Vertical profile shall be level and shall not vary by more than 1/4" in 20'.  
 Tighter tolerances may be required for bridge geometry.

New bridge loads at time of sliding do not include the allowance of 25 psf for future wearing surface. Unfactored dead loads applied to skidshoes for sliding are shown in Table 1 on this sheet and do not include impact. Temporary works are designed for 5% lateral load along station, 10% lateral load along direction of sliding and stream flow corresponding to a 15-year flood event, as directed by the Contractor. Stream flow loads are based on the following 15-year data obtained by Hans Hadley of West Consultants via email dated May 2, 2007:  
 Water surface elevation at u/s face = 143.36 ft  
 Average velocity = 10.0 ft/sec  
 Maximum velocity = 10.8 ft/sec

Contours and alignment reflect the as-built conditions as established April 2007. See General Plan and Elevation on Drawing No. 301 for profile grade and curve data.

Geotechnical data is based on the Geotechnical Investigation Report for Elk Creek Crossing #3 - Bridge No. 01465, dated April 17, 2007 by PBS Geotechnical Engineers, as shown on Table 2 of drawing "Foundation Details".

Temporary Support 1 and possibly Temporary Support 2 may require that a level shelf be cut into the rock at various footing locations and lateral support foundation locations. The contractor shall locate the limits of each footing, determine if rock excavation is necessary in order to pour a footing or construct a CMP footing and proceed accordingly.

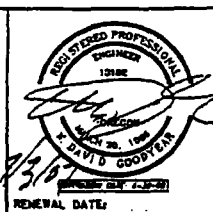
Temporary Supports 2 & 3 are based on CMP footings with a connecting grade beam. Differences in bottom of stream elevation may require that changes be made in the grade beam or that rock anchors be used to anchor the CMP footings. The contractor shall locate the limits of each footing and the depth of each footing prior to fabrication of any pipe columns and grade beams and confirm any changes with the engineer prior to fabrication of any pipe columns and grade beams.

Temporary Support 4, Provide 24 x 0.500, ASTM A252 (Grade 3) pipe piling driven open ended to an ultimate capacity of 1680 kips per pile. Drive all piling to the specified ultimate capacity using driving criteria developed from the ODOT Gates Equation. Wall thickness of 0.500" required for temporary support loads. Contractor to determine wall thickness and pile driving tips required for driving.

Monitor & remove all debris in contact with temporary supports from stream flow. Keep free of debris at all time. Monitor scour at in-water foundations and notify engineer immediately if scour occurs.

DATE	REVISION	BY
7/3/07	Edit angle & notes.	CW

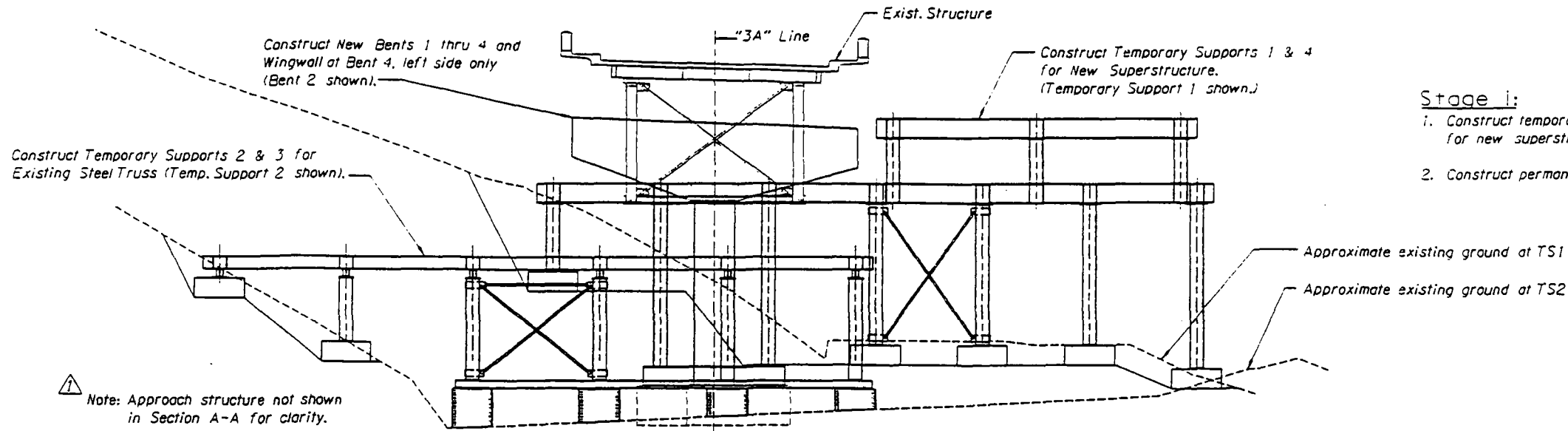
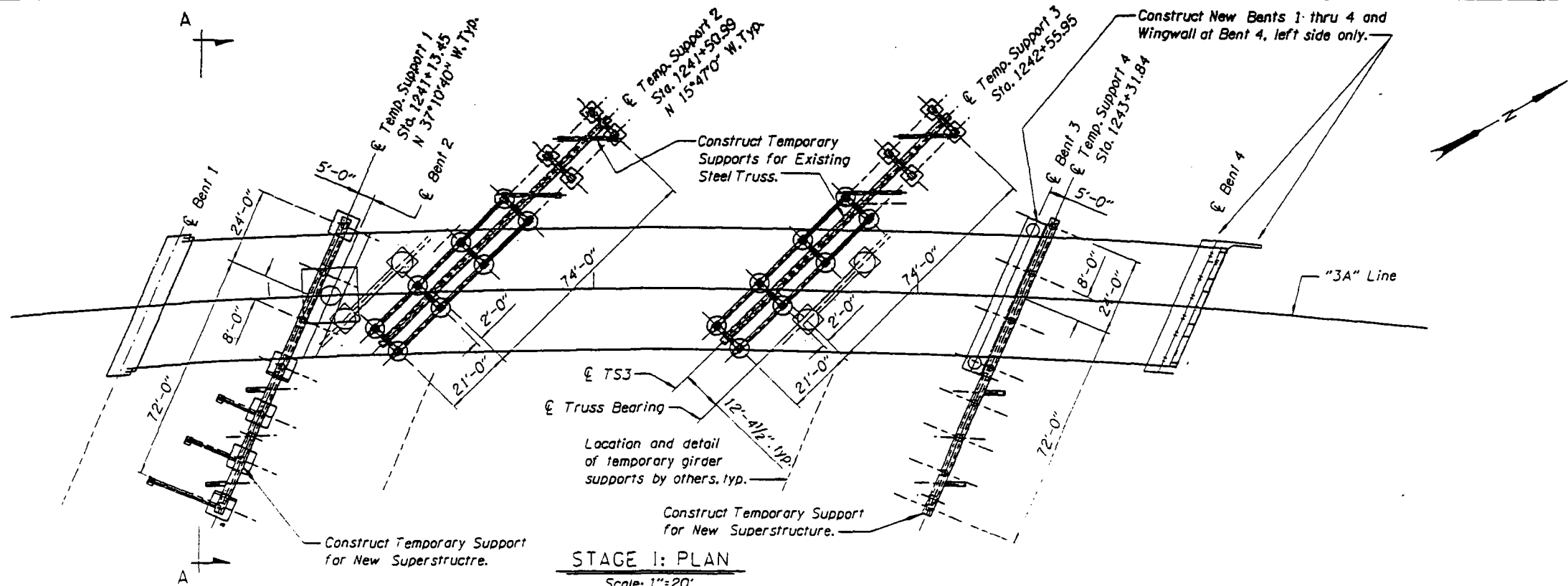
DRAFTER: J. Schiewe  
 DESIGNER: C. Werts  
 CHECKER: J. Walsh  
 REVIEWER: D. Goodyear



**OREGON DEPARTMENT OF TRANSPORTATION**  
 REGION 3 TECHNICAL SERVICES  
**TYLIN INTERNATIONAL**

STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 3 OF 37
DATE July - 2007		DRAWING NO. 76562
CALC. BOOK XXXX	Umpqua Hwy. 45 (M.P. 39.64) Douglas County	

THIS IS THE FILENAME LOCATION



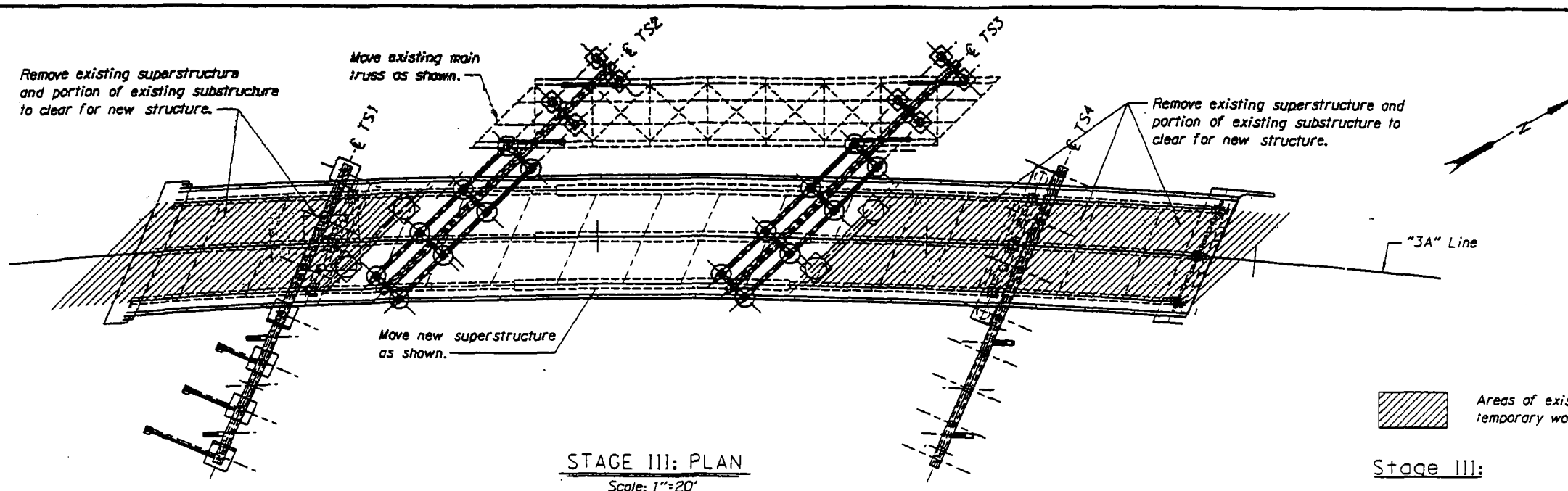
- Stage I:
1. Construct temporary supports for existing steel truss and for new superstructure.
  2. Construct permanent substructure for new superstructure.

DATE: 7/3/07 REVISION: Add note. BY: CW	DRAFTER: David J. Roe DESIGNER: C. Werts CHECKER: J. Walsh REVIEWER: D. Goodyear			STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 4 OF 37
				DATE: July - 2007		CALC. BOOK XXXX

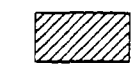
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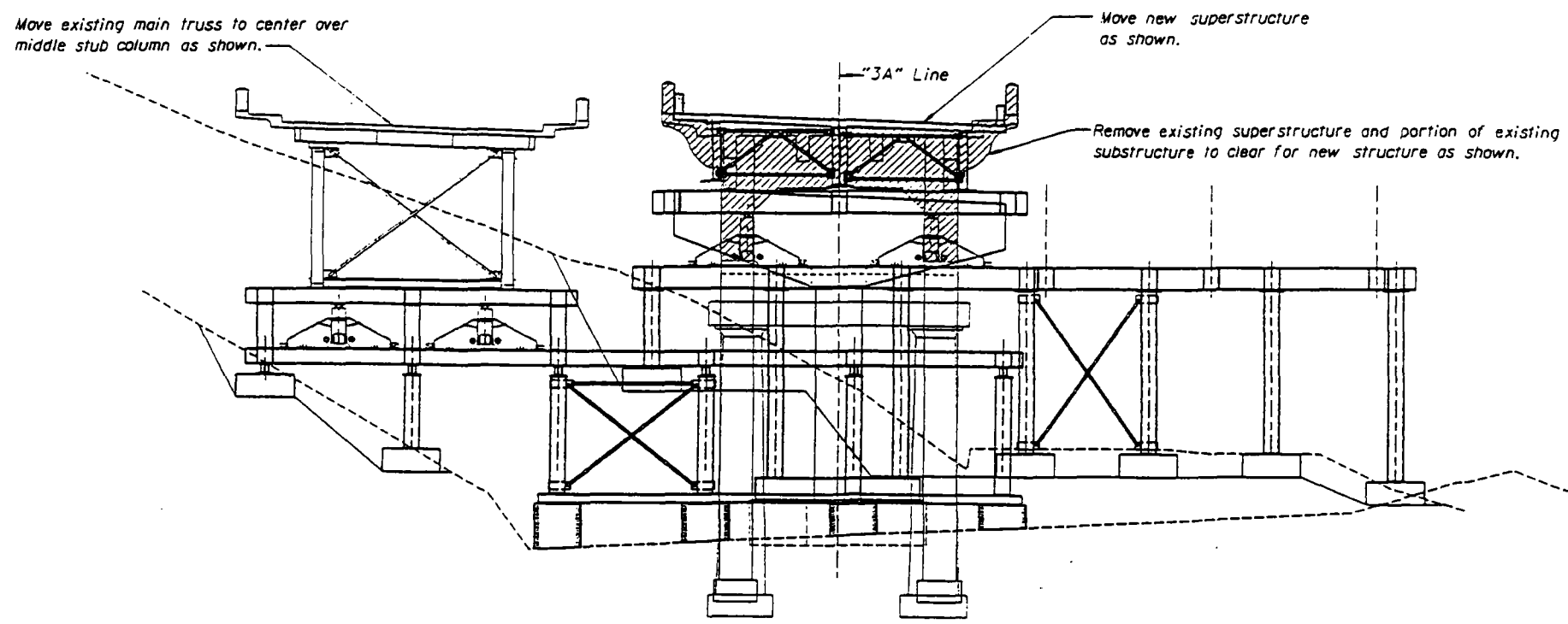


STAGE III: PLAN  
Scale: 1"=20'

 Areas of existing structure and temporary works to be removed.

Stage III:

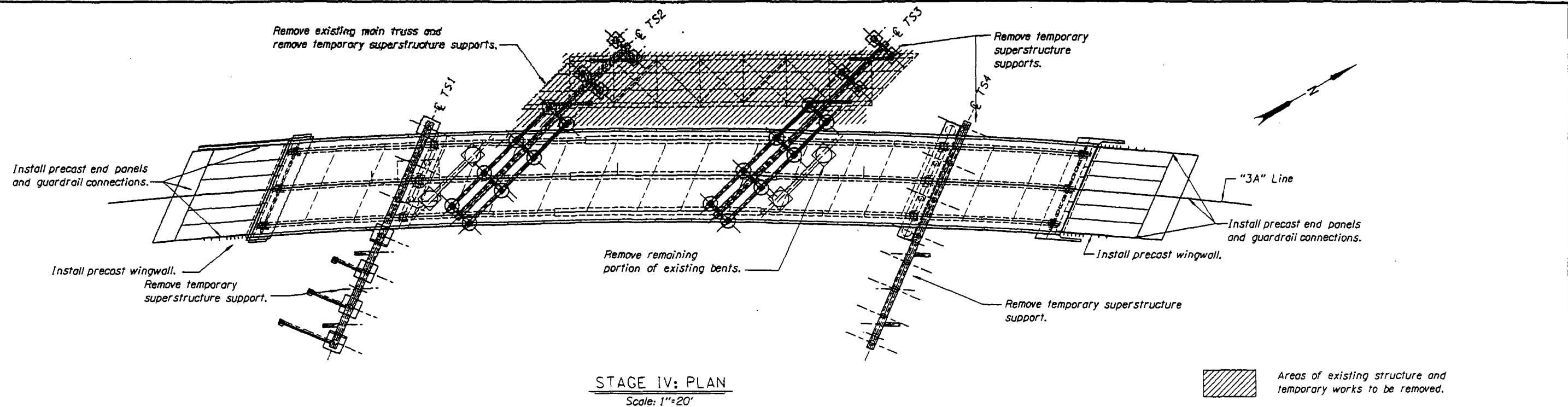
1. Install skidshoes and upper beams for existing truss and shim tight ends of outriggers after 10% initial lift. Check grades at new abutment for end of new structure.
2. Close traffic on existing bridge.
3. Remove existing truss bearings.
4. Move existing main truss to center over middle stub column.
5. Install stub columns for main truss and remove skidshoes.
6. Remove existing superstructure and portion of existing substructure to clear for new structure.
7. Install skidshoes for new structure and shim tight ends of outriggers after 10% initial lift. Remove stub columns.
8. Move new superstructure into final position on alignment.
9. Install permanent bridge bearings. Adjust grade at abutment as necessary.
10. Remove skidshoes.



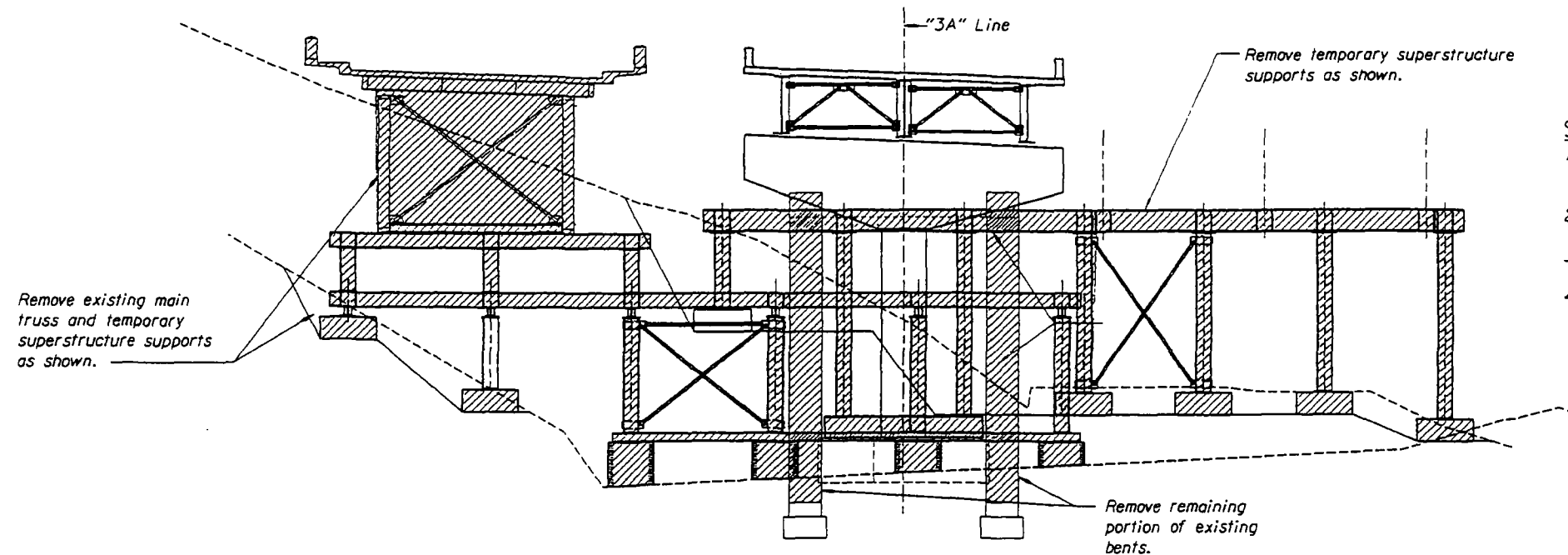
STAGE III: SECTION  
Not to Scale

 DATE 7/3/07  REVISION Move view. BY CW ACCOMPANIED BY DWGS.	REVISION BY DAFTER: David J. Roe DESIGNER: C. Werts CHECKER: J. Walsh REVIEWER: D. Goodyear	  OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES 	STRUCTURE NO. 20584 DATE July - 2007 CALC. BOOK XXXX	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County RAPID REPLACEMENT STAGE III: PLAN AND SECTION	SHEET 6 OF 37 DRAWING NO. 76565
	RENEWAL DATE:		Umpqua Hwy. 45 (M.P. 39.64) Douglas County		

THIS IS THE FILENAME LOCATION



STAGE IV: PLAN  
Scale: 1"=20'



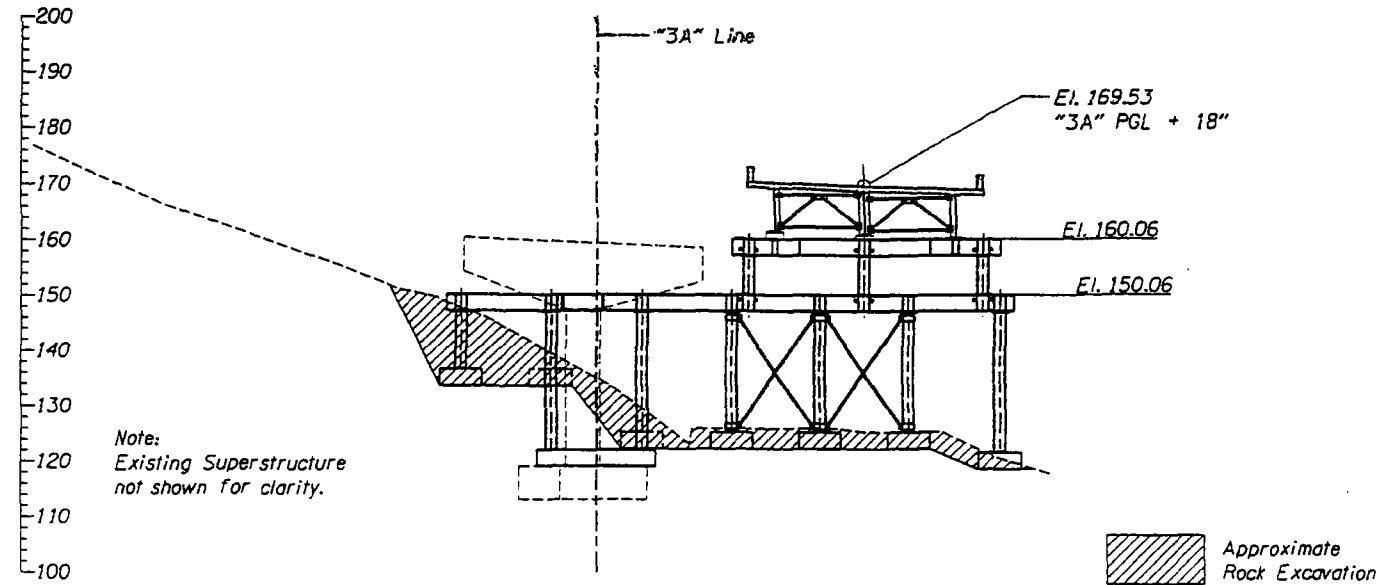
STAGE IV: SECTION  
Not to Scale

Stage IV:

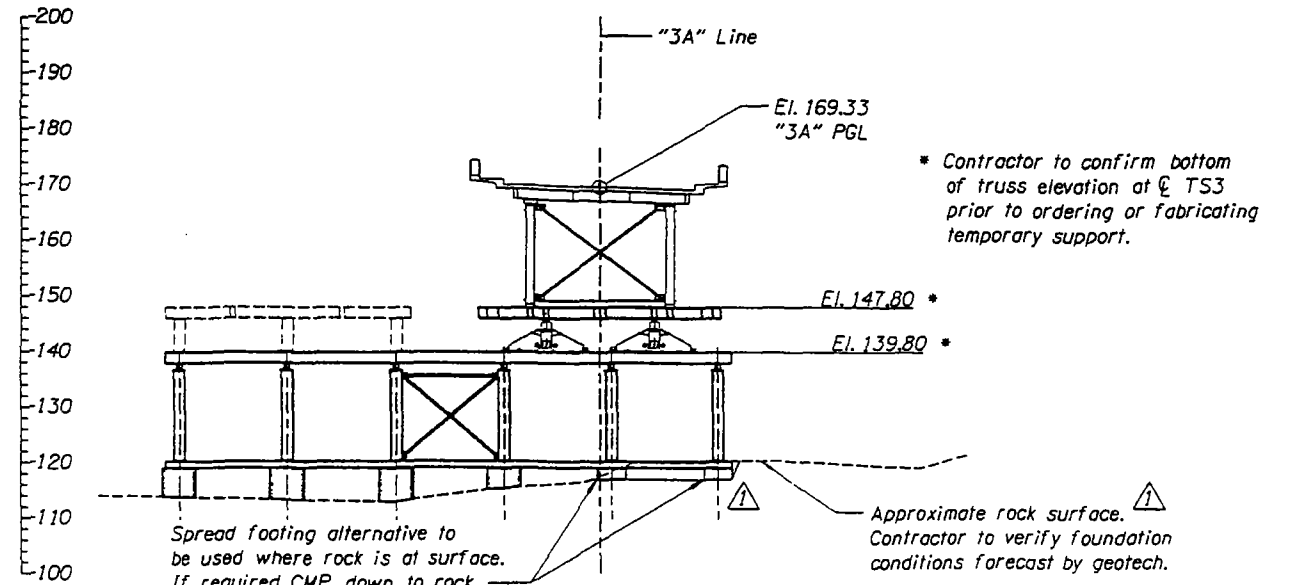
1. Install precast end panels, guardrail connections and precast wingwalls.
2. Open traffic on new bridge.
3. Remove all temporary supports.
4. Remove remaining portion of existing bents to 2 foot below final groundline or as directed by the engineer.

DATE	REVISION	BY	DRAFTER: David J. Roe		 <b>OREGON DEPARTMENT OF TRANSPORTATION</b> REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 7 OF 37
						DATE July - 2007		Umpqua Hwy. 45 (M.P. 39.64) Douglas County
ACCOMPANIED BY DWGS.			CHECKER: J. Walsh	RENEWAL DATE:	<b>TYLIN INTERNATIONAL</b>	CALC. BOOK XXXX	RAPID REPLACEMENT STAGE IV: PLAN AND SECTION	76566

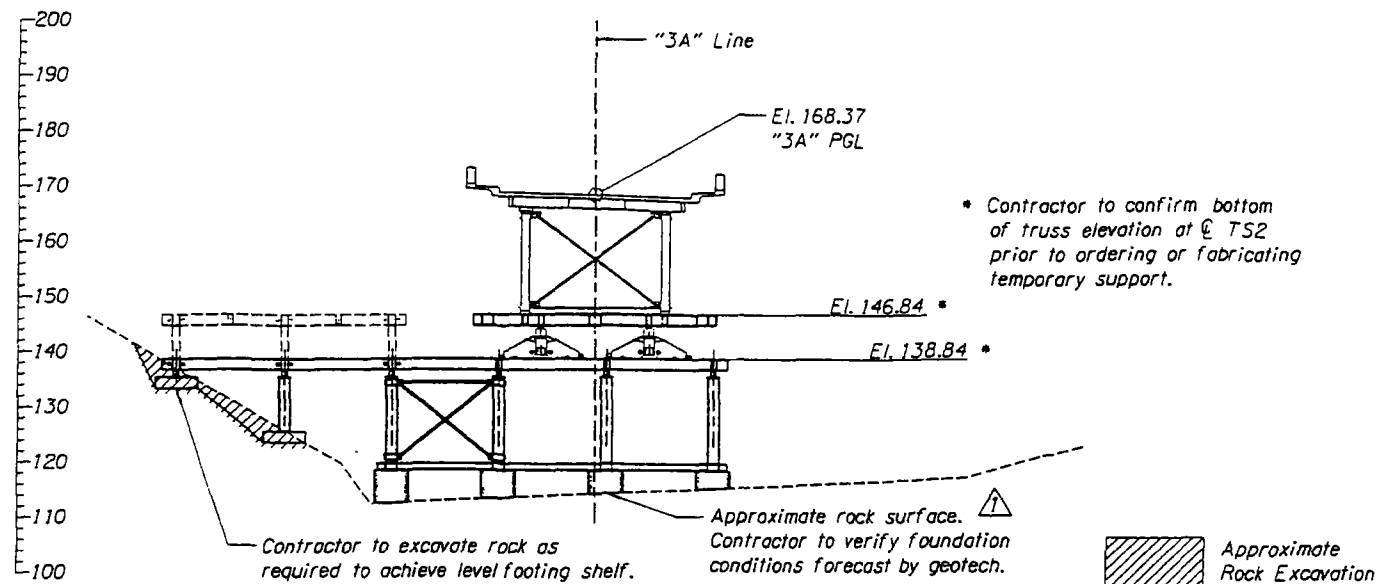
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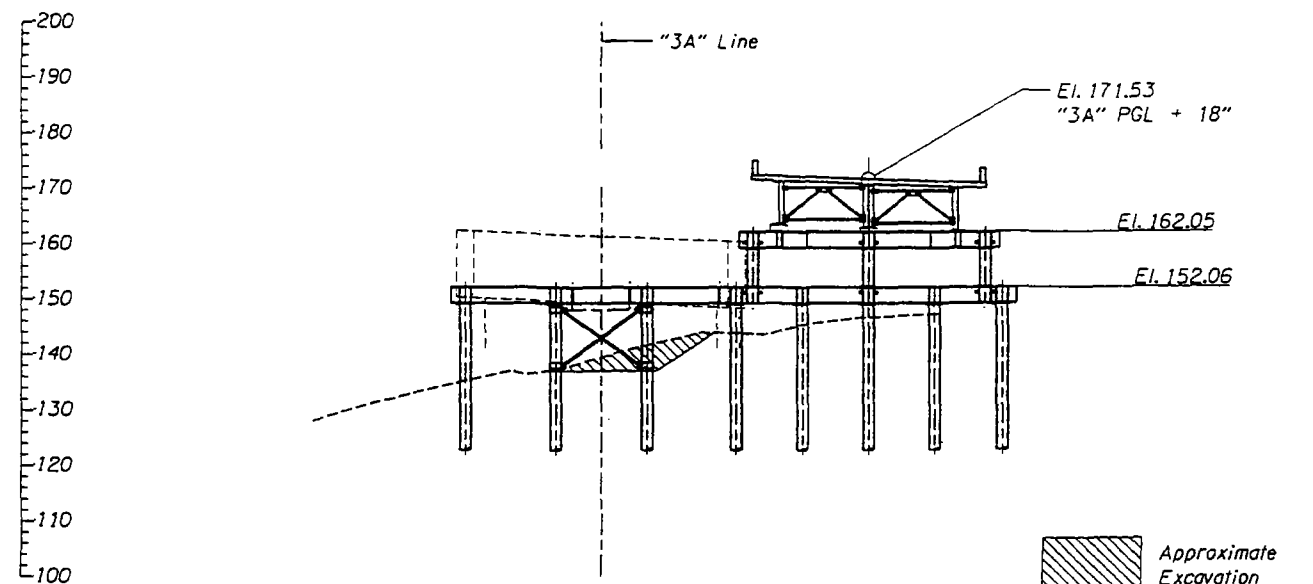
TEMPORARY SUPPORT 1 (NEW BRIDGE) STA. 1241+13.45  
 Stage 2 shown, others similar.  
 Scale: 1/16"=1'



TEMPORARY SUPPORT 3 (EXIST. BRIDGE) STA. 1242+55.95  
 Stage 3 shown, others similar.  
 Scale: 1/16"=1'



TEMPORARY SUPPORT 2 (EXIST. BRIDGE) STA. 1241+50.99  
 Stage 3 shown, others similar.  
 Scale: 1/16"=1'

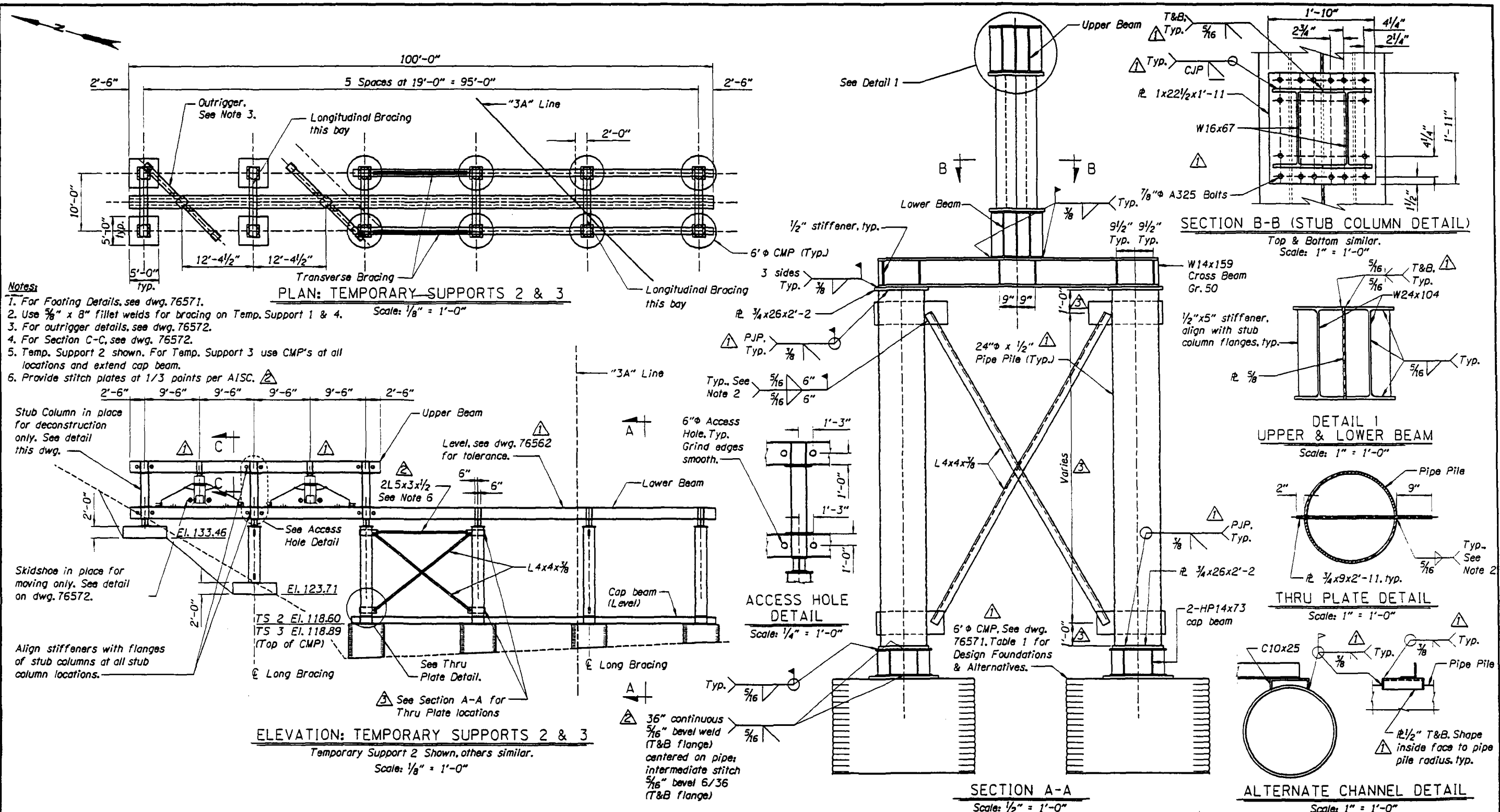


TEMPORARY SUPPORT 4 (NEW BRIDGE) STA. 1243+31.84  
 Stage 2 shown, others similar.  
 Scale: 1/16"=1'

	DATE	REVISION	BY	DRAFTER: David J. Roe DESIGNER: C. Werts CHECKER: J. Walsh REVIEWER: D. Goodyear		OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
	7/3/07	Edit callouts. Revise foundation.	CW				20584		8 OF 37
ACCOMPANIED BY DWGS.							DATE		DRAWING NO.
							July - 2007		76567
							CALC. BOOK	TEMPORARY SUPPORT SECTIONS	
							XXXX		

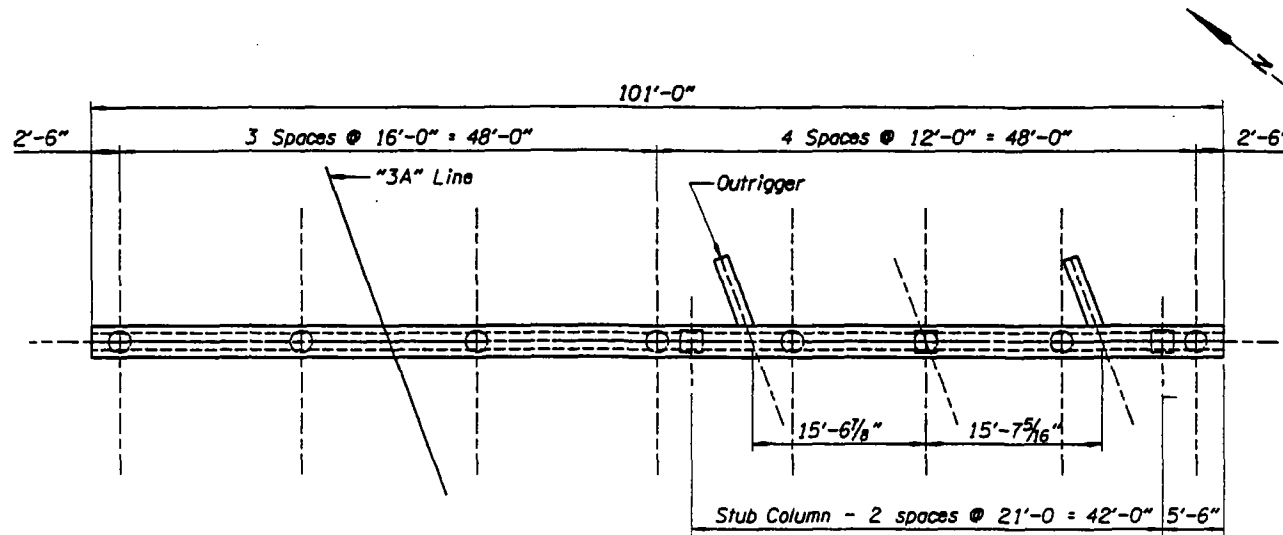
THIS IS THE FILENAME LOCATION



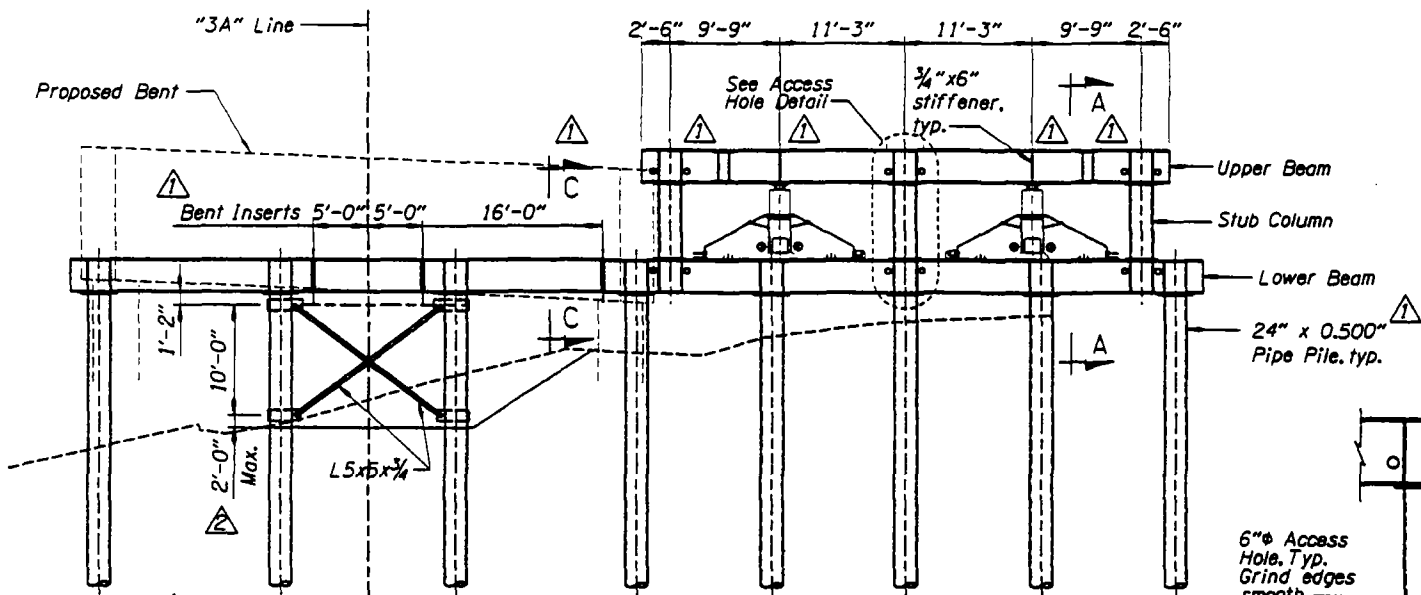


DATE	REVISION	BY	DRAPTER	J. Schiewe	STRUCTURE NO.	20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 10 OF 37
7/3/07	Edit notes. Revise stiff.	CW	DESIGNER	C. Werts	DATE	July - 2007		
8/21/07	Weld callout, stitch plate	CW	CHECKER	J. Walsh	CALC. BOOK	XXXX	Umpqua Hwy. 45 (M.P. 39.64)	DRAWING NO.
9/6/07	Add dimensions	CW	REVIEWER	D. Goodyear			Douglas County	76569
ACCOMPANIED BY DWGS.			RENEWAL DATE: 8/15/07		TYLIN INTERNATIONAL		TEMPORARY SUPPORTS 2 & 3	

THIS IS THE FILENAME LOCATION

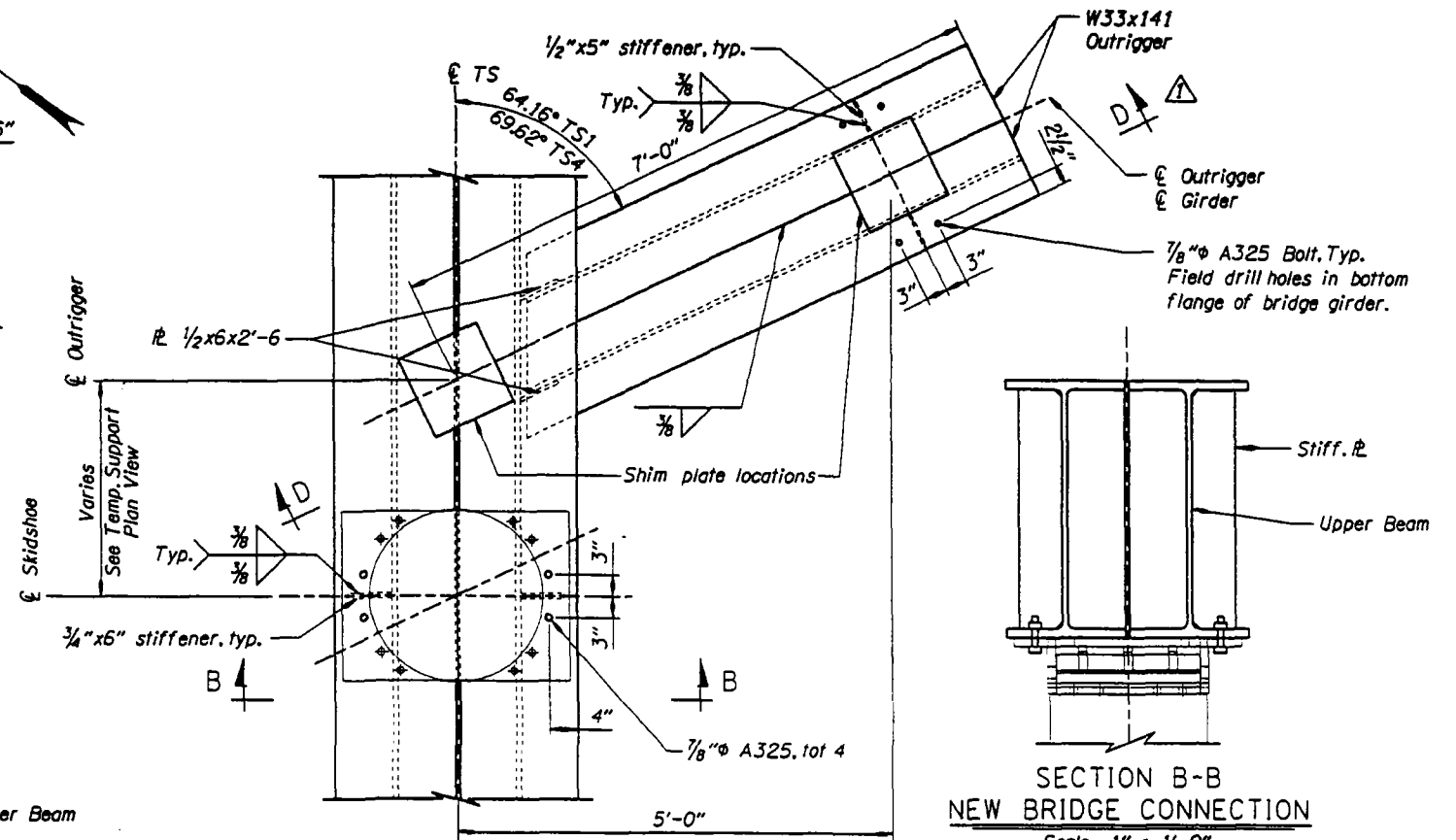


PLAN: TEMPORARY SUPPORT 4  
Scale: 1/8" = 1'-0"

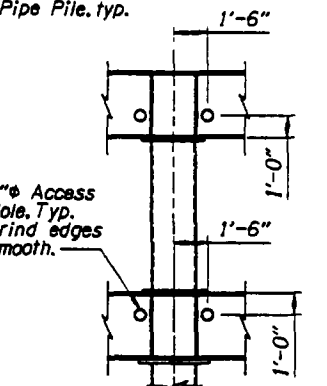


ELEVATION: TEMPORARY SUPPORT 4  
Scale: 1/8" = 1'-0"

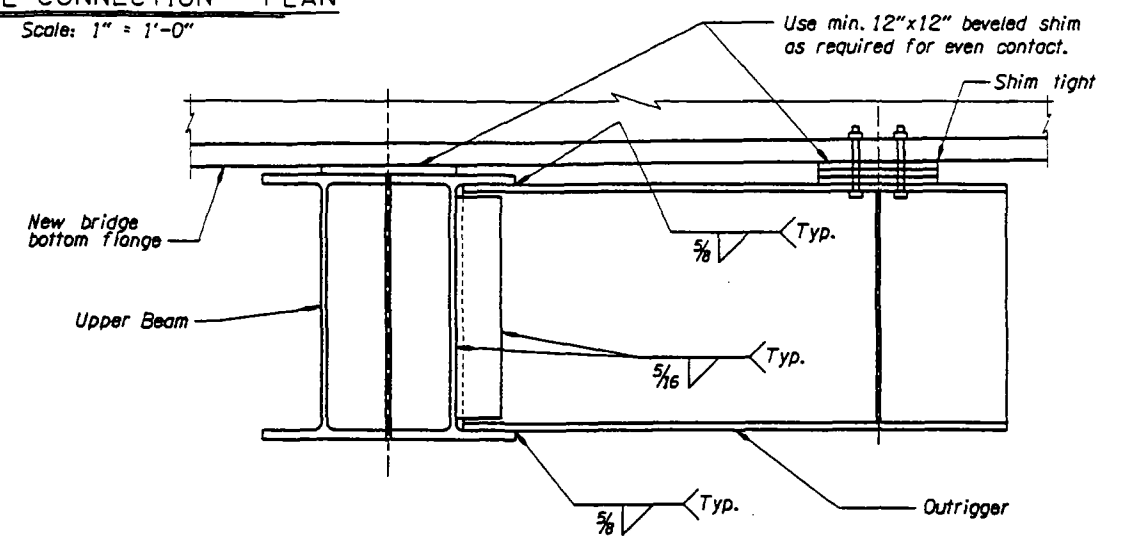
Notes:  
1. For Section A-A and Section C-C, see dwg. 7656B.  
2. For bracing connection & thru plate detail, see dwg. 76569.



OUTRIGGER LAYOUT & SKIDSHOE CONNECTION - PLAN  
Scale: 1" = 1'-0"

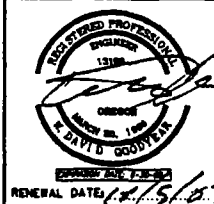


ACCESS HOLE DETAIL  
Scale: 1/4" = 1'-0"



SECTION D-D  
Scale: 1" = 1'-0"

DATE	REVISION	BY	BY
7/3/07	Add/edit notes, dim. & stiff.	CW	DRAFTER: J. Schiewe
9/6/07	Add dimension	CW	DESIGNER: C. Werts
ACCOMPANIED BY DWGS.			CHECKER: J. Walsh
			REVIEWER: D. Goodyear



OREGON DEPARTMENT OF TRANSPORTATION  
REGION 3 TECHNICAL SERVICES

TYLIN INTERNATIONAL

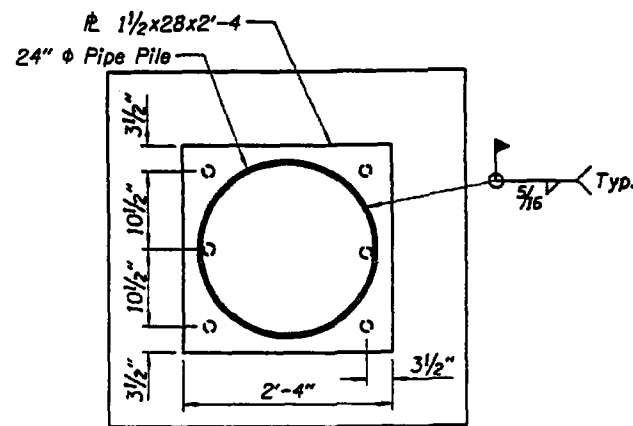
STRUCTURE NO.  
20584  
DATE  
July - 2007  
CALC. BOOK  
XXXX

ELK CREEK BRIDGE (CROSSING NO. 3)  
ELK CREEK TO HARDCRABBLE CREEK SECTION  
Umpqua Hwy. 45 (M.P. 39.64) Douglas County

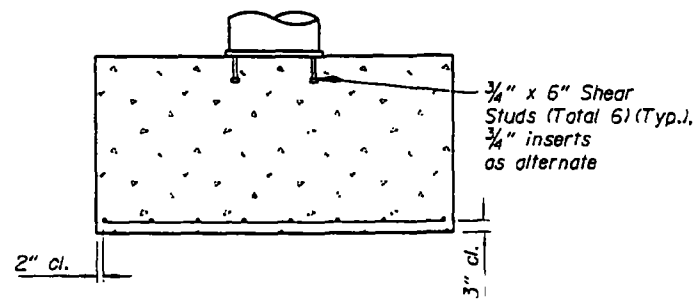
TEMPORARY SUPPORT 4

SHEET  
11  
OF  
37  
DRAWING NO.  
76570

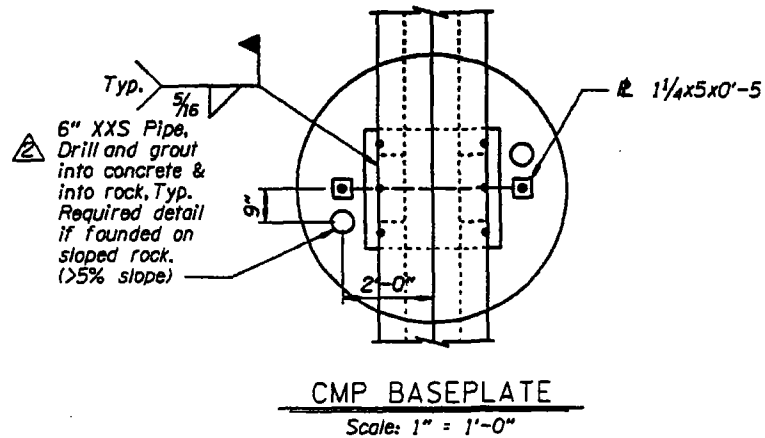




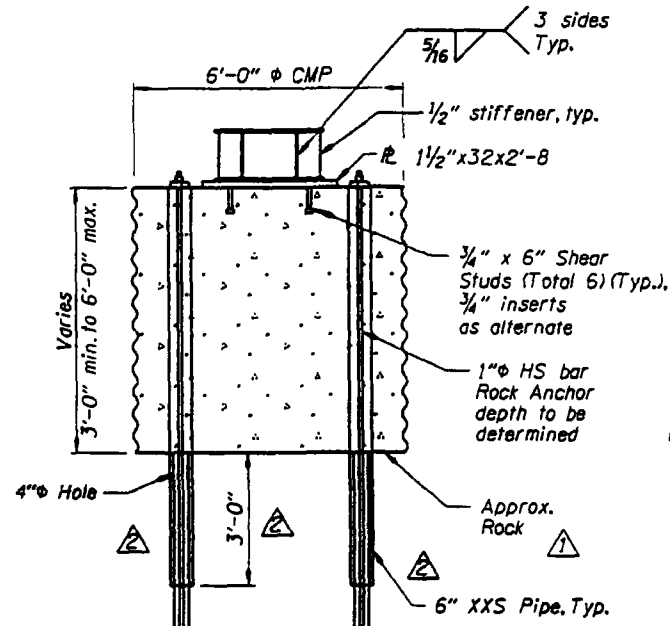
**FOOTING BASEPLATE**  
Scale 1/4" = 1'-0"



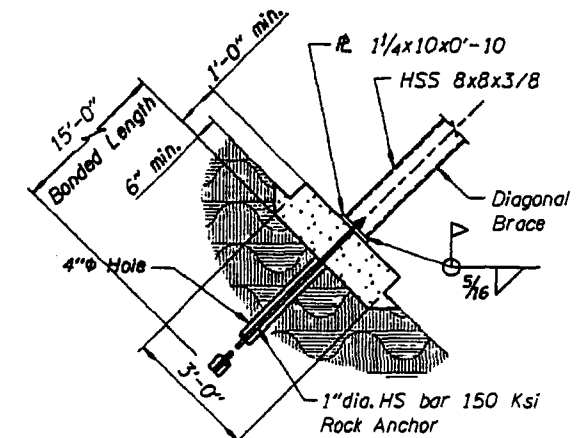
**FOOTING SECTION**  
Scale 1/2" = 1'-0"



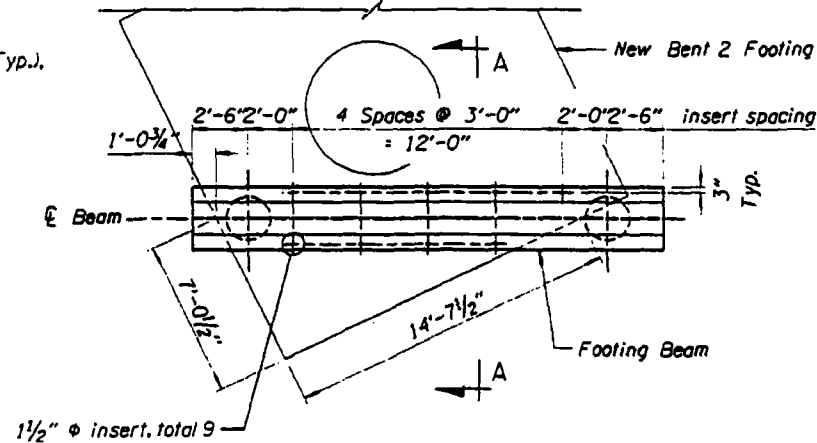
**CMP BASEPLATE**  
Scale: 1" = 1'-0"



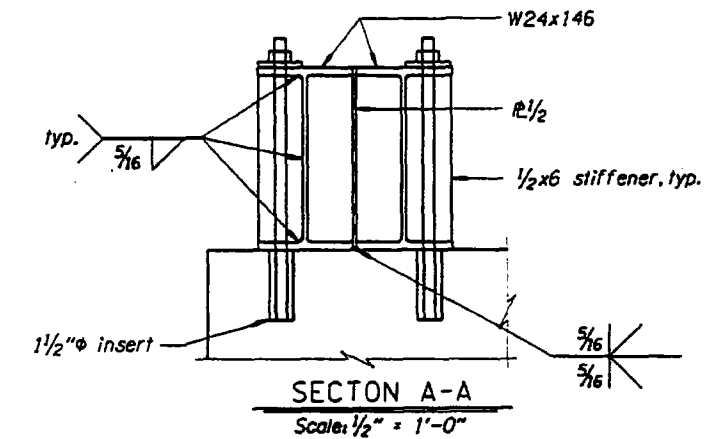
**CMP SECTION**  
Scale: 1/2" = 1'-0"



**DIAGONAL BRACE FOOTING**  
Scale: 1/2" = 1'-0"



**FOOTING BEAM DETAIL**  
Scale: 1/4" = 1'-0"



**SECTION A-A**  
Scale: 1/2" = 1'-0"

TABLE 1 - Design Foundations

Bridge No.3 Temporary Support	Design Foundation	Alternate Foundation	Btm. Mat Reinf. for Spread Ftg.
Temporary Support 1	7'-6"x7'-6"x2'-6" Ftg.	8' Dia. CMP **	*9 @12" Ea. Way
Temp. Support 1 Brace	3'x3'x1' Ftg.	-	*5 @12" Ea. Way
Temporary Support 2 & 3	6' Dia. CMP **	5'x5'x2'-0" Ftg.*	*5 @12" Ea. Way
Temporary Support 4	24x0.5 Dia. Piles	-	-

\* Spread footing size based on capacity in Table 2. Verify in field prior to construction.  
\*\* 6" CMP is 16 Gauge and 8" CMP is 10 Gauge.

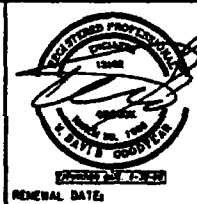
TABLE 2 - Geotechnical Recommendations

Bridge No.3 Temporary Support	Closest Log Boring	Recommended Foundation Type	Allow. Soil Capacity (ksf)	Approx. Pile Depth to Refusal (ft)
Temporary Support 1	B-4	Spread Ftg.	15	-
Temporary Support 2 & 3	B-4	Spread Ftg.	15	-
Temporary Support 4	B-5	Pile Fnd.	3	50 - 60

DATE	REVISION	BY
7/3/07	Add callout.	CW
9/13/07	Add 6" XXS pipes to CMP.	CW

ACCOMPANIED BY DWGS. See Sheet 1.

DESIGNER: D. Roe  
DESIGNER: C. Werts  
CHECKER: J. Walsh  
REVIEWER: D. Goodyear



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

**TYLIN INTERNATIONAL**

STRUCTURE NO.  
20584

DATE  
July - 2007

CALC. BOOK  
XXXX

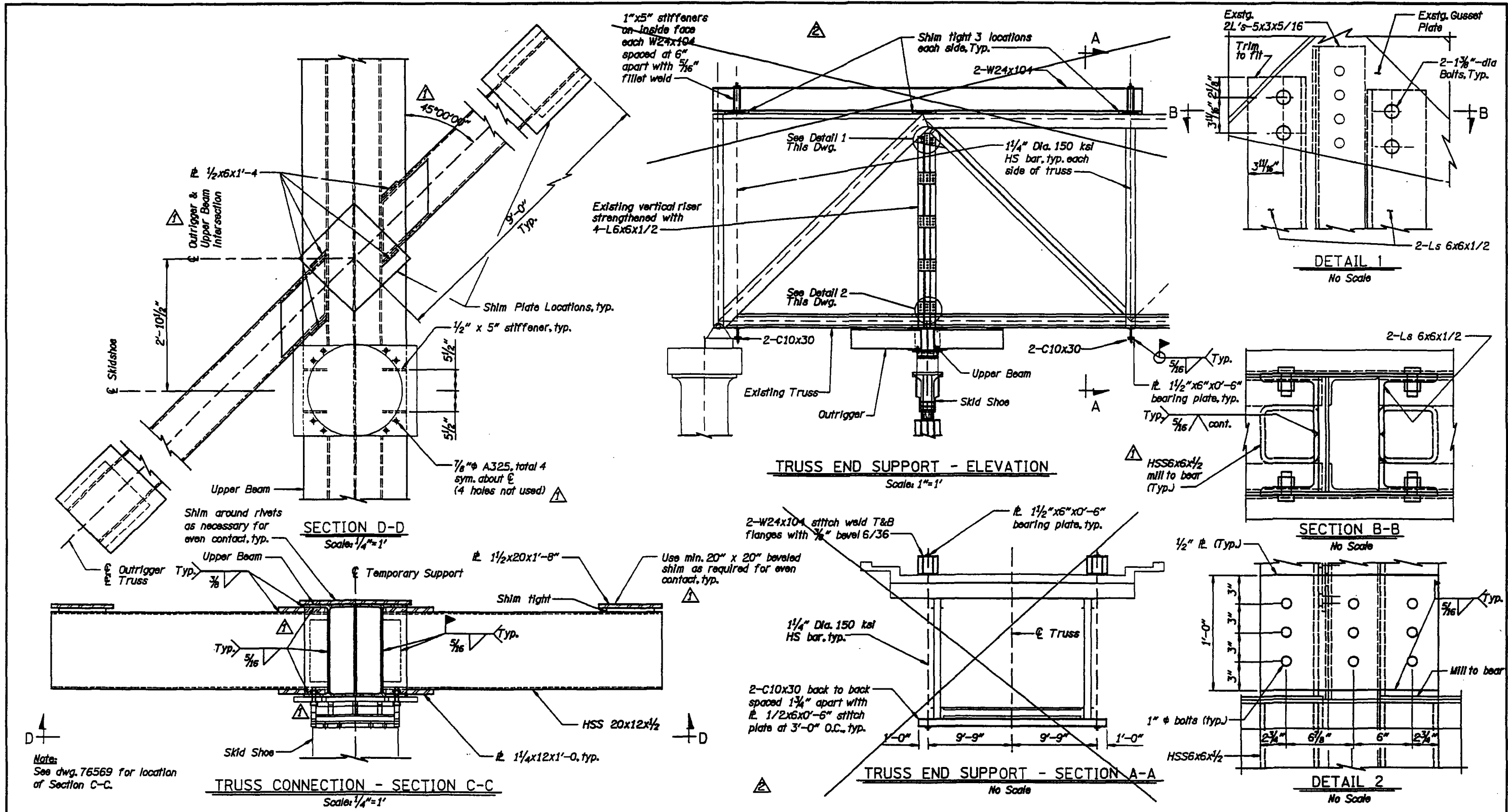
ELK CREEK BRIDGE (CROSSING NO. 3)  
ELK CREEK TO HARDCRABBLE CREEK SECTION

Umpqua Hwy. 45 (M.P. 39.64) Douglas County

TEMPORARY SUPPORT FOUNDATION DETAILS

SHEET  
12  
OF  
37

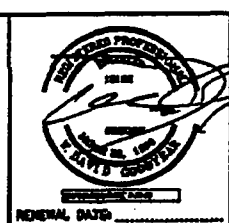
DRAWING NO.  
76571



Notes:  
See dwg. 76569 for location of Section C-C.

DATE	REVISION	BY
7/3/07	Edit notes. Revise stiff.	CW
3/25/08	Remove Truss End Supports.	CW

DRAFTED	D. Roe
DESIGNED	C. Werts
CHECKED	J. Walsh
REVIEWED	D. Goodyear



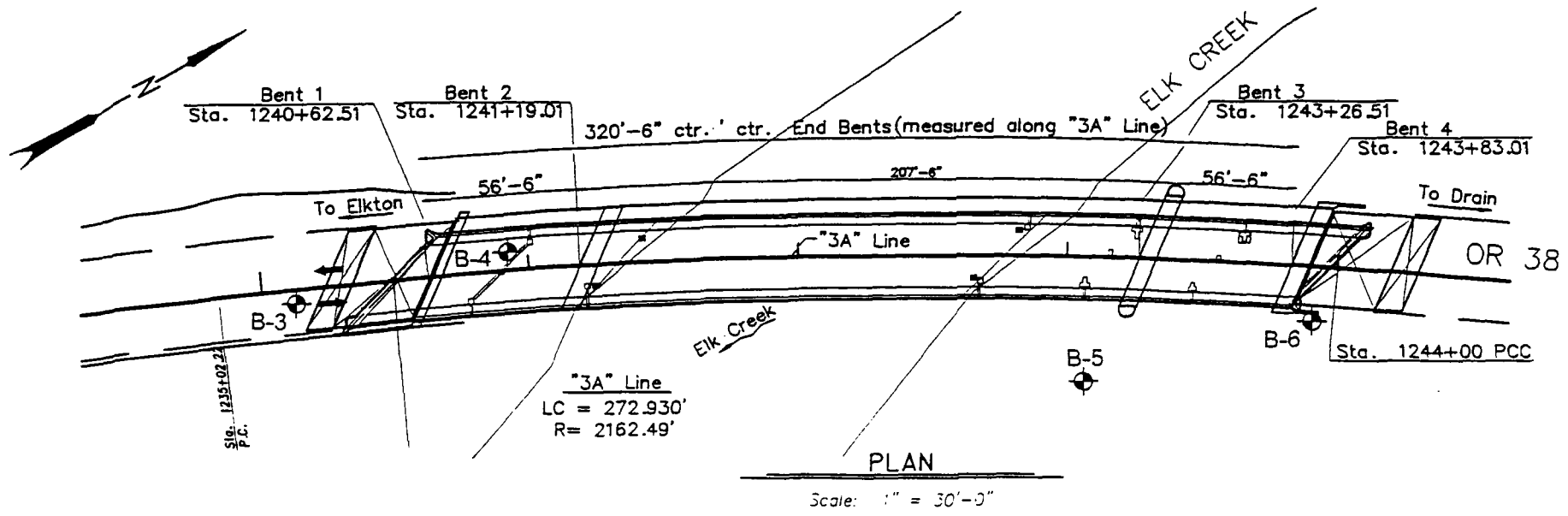
**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

**TYLIN INTERNATIONAL**

STRUCTURE NO.	20584
DATE	July - 2007
CALC. BOOK	XXXX

ELK CREEK BRIDGE (CROSSING NO. 3)  
ELK CREEK TO HARDCRABBLE CREEK SECTION  
Umpqua Hwy. 45 (M.P. 39.64)  
Douglas County

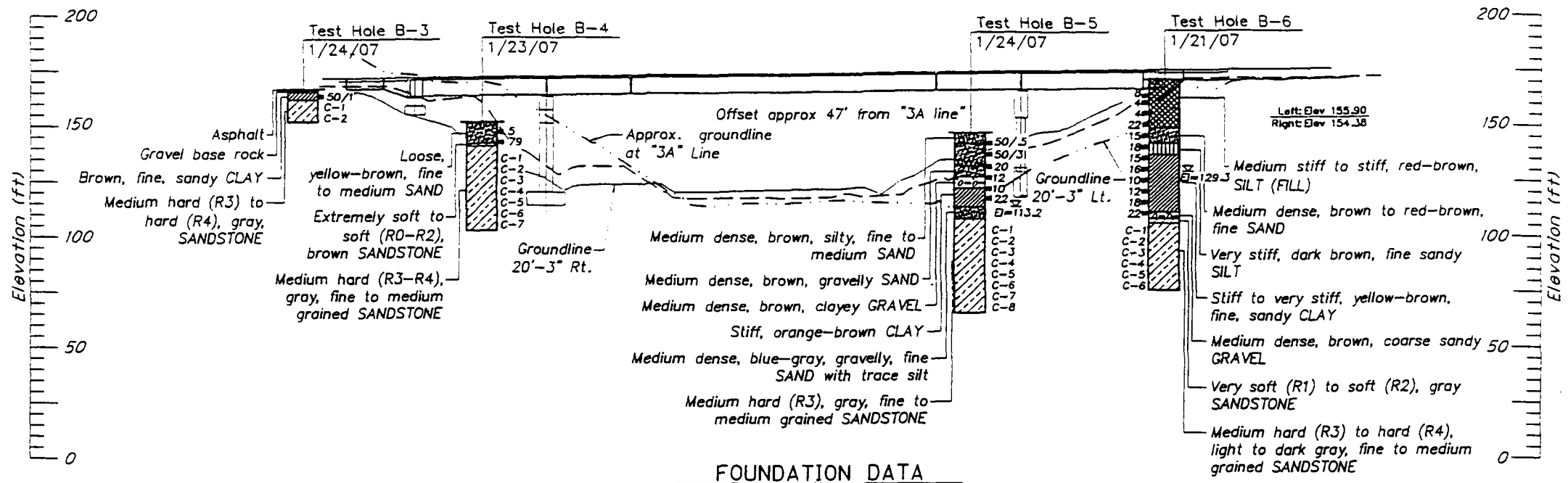
SHEET	13
OF	37
DRAWING NO.	76572



Test Boring	Core Run	% Rec.	Hardness	R.Q.D.	qu (psi)
B-3	C-1	97	R3-R4	93	9,715
	C-2	100	R3-R4	100	
B-4	C-1	98	R3	85	7,233
	C-2	100	R4	97	
	C-3	100	R4	100	
	C-4	98	R4	90	
	C-5	100	R4	100	
	C-6	100	R4	91	
	C-7	100	R4	95	
B-5	C-1	93	R3	82	9,267
	C-2	100	R3	99	
	C-3	93	R3	86	
	C-4	98	R3	95	
	C-5	100	R3	100	
	C-6	100	R3	100	
	C-7	100	R3	100	
	C-8	100	R3	100	
B-6	C-1	100	R3-R4	75	8,904
	C-2	100	R3-R4	91	
	C-3	98	R3-R4	82	
	C-4	100	R4	100	
	C-5	100	R4	100	
	C-6	100	R4	100	

in accordance with ASTM D1586-84  
N values are reported for an interval of 300 mm except as noted.

- 24 = Standard Penetration Test
- N value
- C = Core Sample
- U = Undisturbed Sample
- RQD = Rock Quality Designation
- z = Elevation of groundwater measured in the test hole on the date shown
- qu = Unconfined Compressive Strength



**LEGEND OF MATERIALS**

- Asphalt
- Concrete
- Fill
- Gravel
- Sand
- Silt
- Clay
- Sandstone

Foundation data shown on this drawing is a consolidation of information and/or revision in terminology from the Boring Logs. The Boring Logs used in compiling this drawing are available upon request.

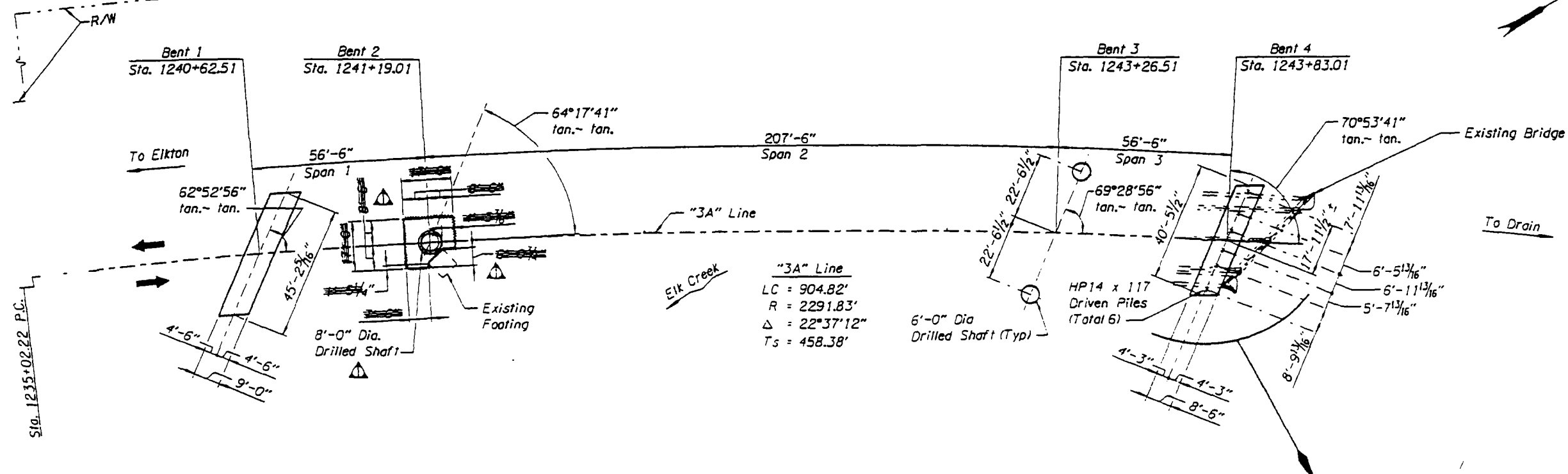
Commentary: Contractors should note the presence of boulders up to 3 feet in diameter in creek channel.

Note: Elevations shown are based on the North American Vertical Datum (NAVD 29).

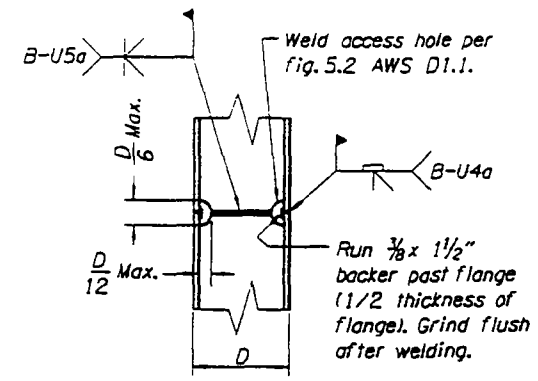
**FOUNDATION DATA**  
Scale: 1" = 30'-0" horizontal  
Scale: 1" = 30'-0" vertical

Existing Br. No. 01465

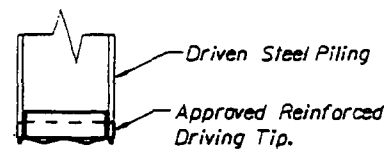
DATE	REVISION	BY	DRAFTER: DJ			STRUCTURE NO. 20584	<b>ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION</b> Umpqua Hwy. No. 45 (M.P. 39.64) Douglas County	SHEET 14 OF 37
			DESIGNER: AH			LAST REVISION JUNE 2007		DRAWING NO. 76573
			CHECKER: JM			CALC. BOOK		
			REVIEWER: RA					
						FOUNDATION DATA		



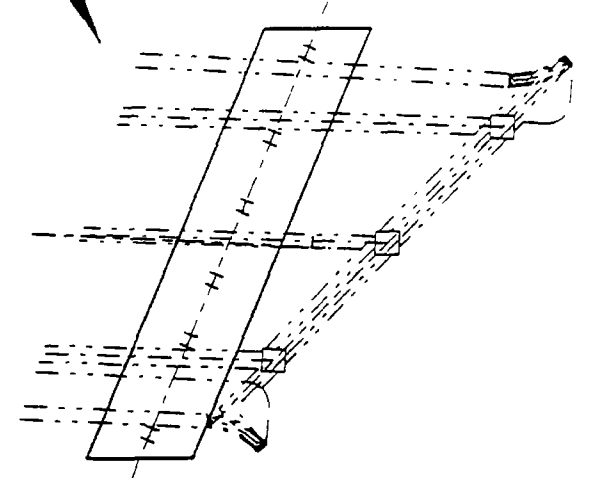
"3A" Line  
 LC = 904.82'  
 R = 2291.83'  
 Δ = 22°37'12"  
 Ts = 458.38'



**H-PILE SPLICE**  
 No Scale



**DRIVING SHOE**  
 (Bt. 4 Only)  
 No Scale



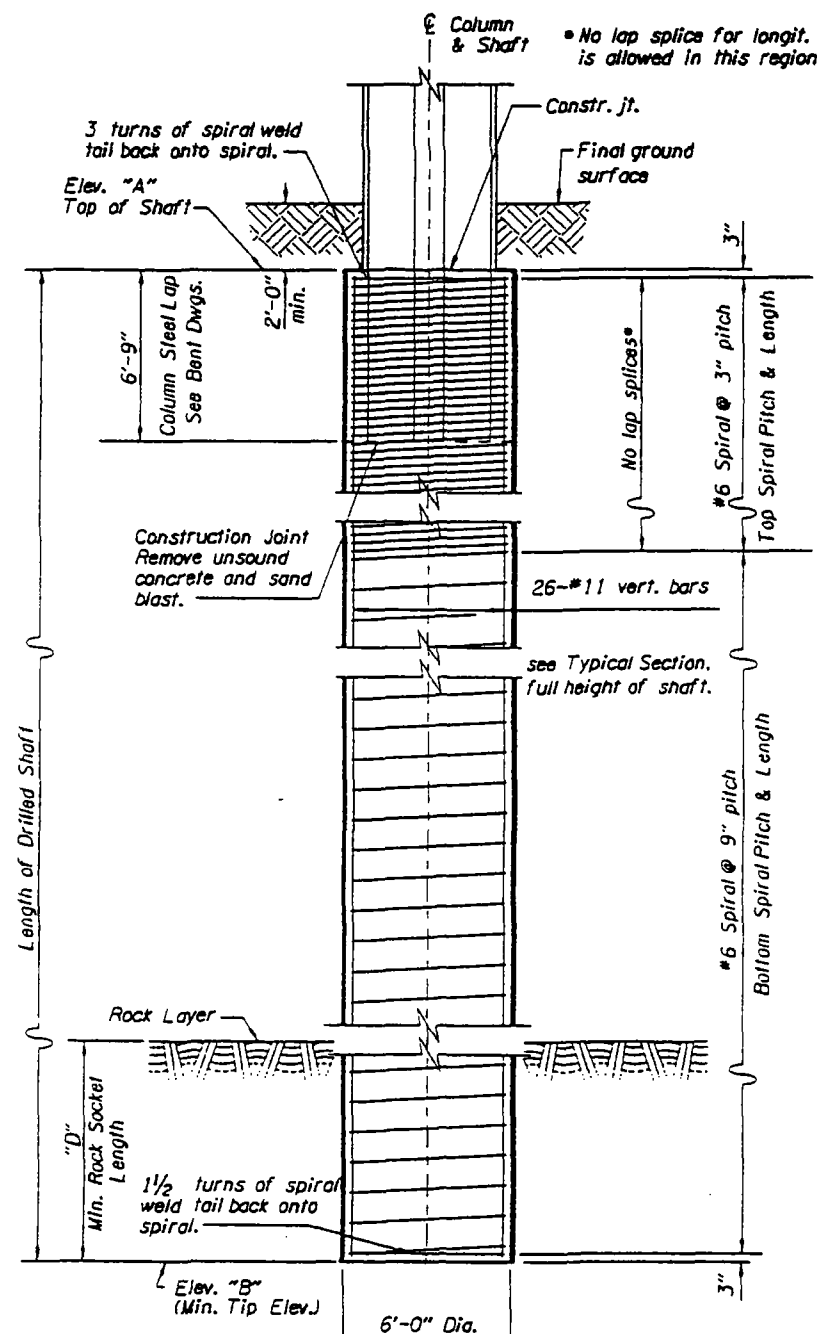
**PARTIAL PLAN DETAIL (BENT 4)**  
 No Scale

**PLAN**  
 Scale: 1" = 20'-0"

\* Provide ASTM A706, except ASTM A615 Grade 400 or ASTM A496 may be used if copies of the chemical composition analysis are submitted and approved as weldable by the engineer.

Existing Br. No. 01465

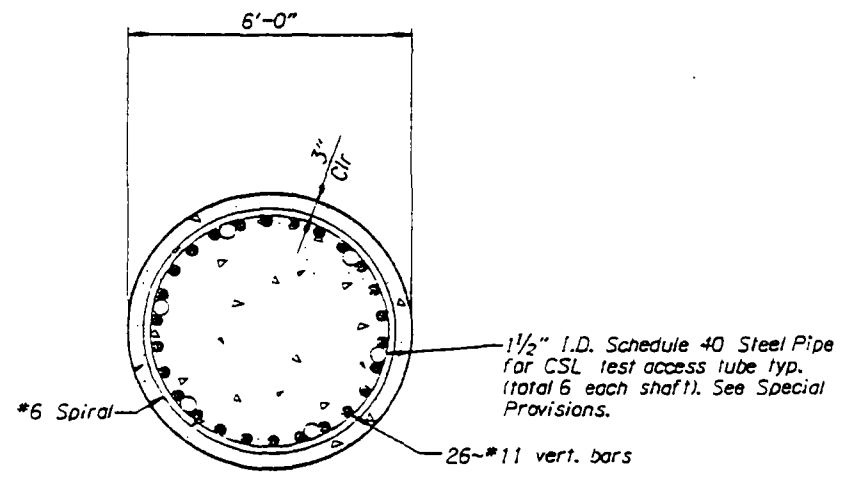
DATE	REVISION	BY	DRAWN		 <b>OREGON DEPARTMENT OF TRANSPORTATION</b> REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
6-29-07	Foundation Revision	T.H.	D. Axtell			20584		15
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER		<b>TYLON INTERNATIONAL</b>	DATE	FOOTING PLAN	OF
			REVIEWER			May - 2007		37
			GENERAL DATE			CALC. BOOK		DRAWING NO.
						XXXX		76574



TYP. DRILLED SHAFT ELEV.  
No Scale

Note:  
Column hoops not shown.  
See dwg. no. 76583 for details.

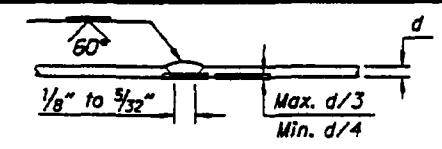
No lap splice for longit. reinforcement is allowed in this region.



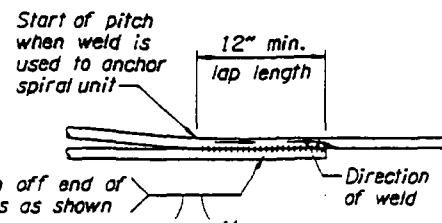
TYPICAL DRILLED SHAFT SEC.  
1/2" = 1'-0"

SHAFT SCHEDULE

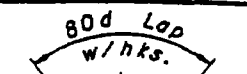
Bent	Vert. Bars	Vert. Bars Length	Top Spiral Length	Bott. Spiral Length	Elev. "A" (ft.)	Elev. "B" (ft.)**	"D" (ft.)
3L+	26	50'-6"	20'-6"	30'-0"	130.0	79.0	12'-0"
3R+	26	50'-6"	20'-6"	30'-0"	128.0	77.0	12'-0"



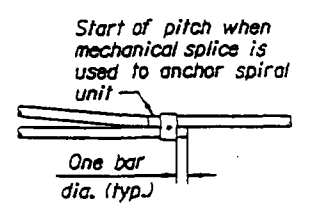
ALTERNATE WELDED SPLICE (EXCEPT ASTM A82)  
Weld reinforcing steel splices in accordance with ANSI/AWS D1.4-79. "Structural Welding Code Reinforcing Steel"



WELDED SPLICE  
See Note A  
Note: Make flare weld in direction shown



LAPPED SPLICE  
See Note A  
10", 135° Hks. (Typ.) may be field bent.

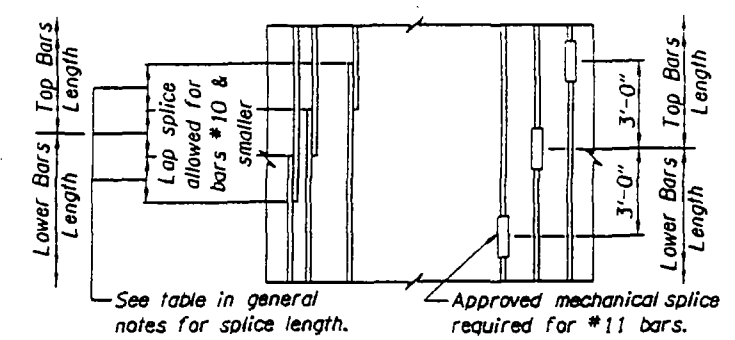


MECHANICAL SPLICE  
(Not allowed for ASTM A82 spirals)

Note - A:  
Provide ASTM A706 reinforcement for all welded splices, except ASTM A615 Grade 60, ASTM A82 ASTM A496 may be used if copies of the chemical composition analysis are submitted and approved by the Engineer as weldable. Anchor spirals at each end or discontinuity with one extra turn and a splice to itself as shown. Where permitted on plans provide closed hoops conforming to the requirements of this detail. Lapped splice is not allowed within the greater of 1/6 the shaft height or column diameter whichever is greater, or 18" from top of footing or bottom of cap.

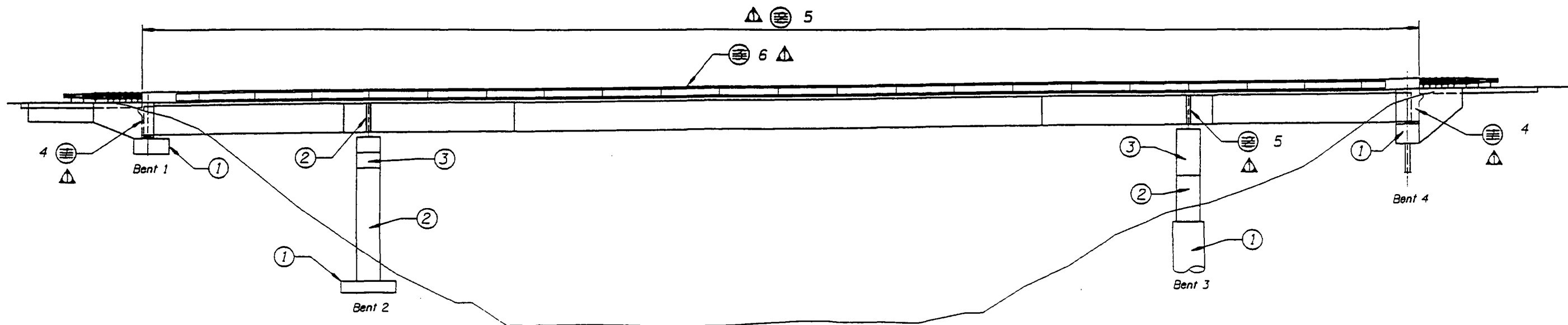
SPIRAL SPLICE / TERMINATION DETAIL  
No Scale

Bent	Ultimate Downward Load (kips)	Ultimate Uplift Load (kips)
3L+	2309	0
3R+	2309	0



TYPICAL SPLICE DETAIL  
(Also use @ Top & Lower Bar Connection)  
No Scale

DATE	REVISION	BY	DRAWN: D. Axtell		STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 16 OF 37
			DESIGNER: Dennis J. Treffen		DATE: May - 2007		DRAWING NO. 76575
			CHECKER: Gopi Sripathy		CALC. BOOK: XXXX		
			REVIEWER: Scott M. Northon				
ACCOMPANIED BY DWGS. See Sheet 1.					TYLIN INTERNATIONAL		



**CONCRETE POUR SCHEDULE DIAGRAM**

No Scale

**TEMPORARY CONDITION**

1. Erect girders in temporary location, on temporary supports.  
Span arrangement is approximately 51'-6", 217'-6" & 51'-6".
2. Place concrete diaphragms at Bents 1 & 4.
3. Place concrete deck (see Deck Pour Sequence Diagram) and diaphragms at Bents 2 & 3.
4. Place ornamental barrier rail.
5. Slide bridge into permanent position.
6. Lower bridge into permanent position. Bents 1 & 4 touch down first, then Bents 2 & 3. 4" later than Bents 1 & 4.

**SUBSTRUCTURE PLACEMENT SCHEDULE**

- ① Place concrete in substructure Bent 1 & 2 footing and Bent 3 shaft and Bent 4 pile cap.
- ② Place column concrete Bents 2 & 3.
- ③ Place bent cap concrete at Bents 2 & 3.

**BRIDGE IN FINAL POSITION**

1. Bolt up bearings.
2. Stress uplift restraint bars at Bents 1 & 4.
3. Install precast wingwalls at Bent 4 and curtain walls at Bent 1.
4. Backfill at Bents 1 & 4.
5. Install guard rail transitions at Bents 1 & 4.
6. Install approach slabs and precast end panels at Bents 1 & 4.
7. Open bridge to traffic.
- △ 8. Place Concrete Shear Lugs, all bents.

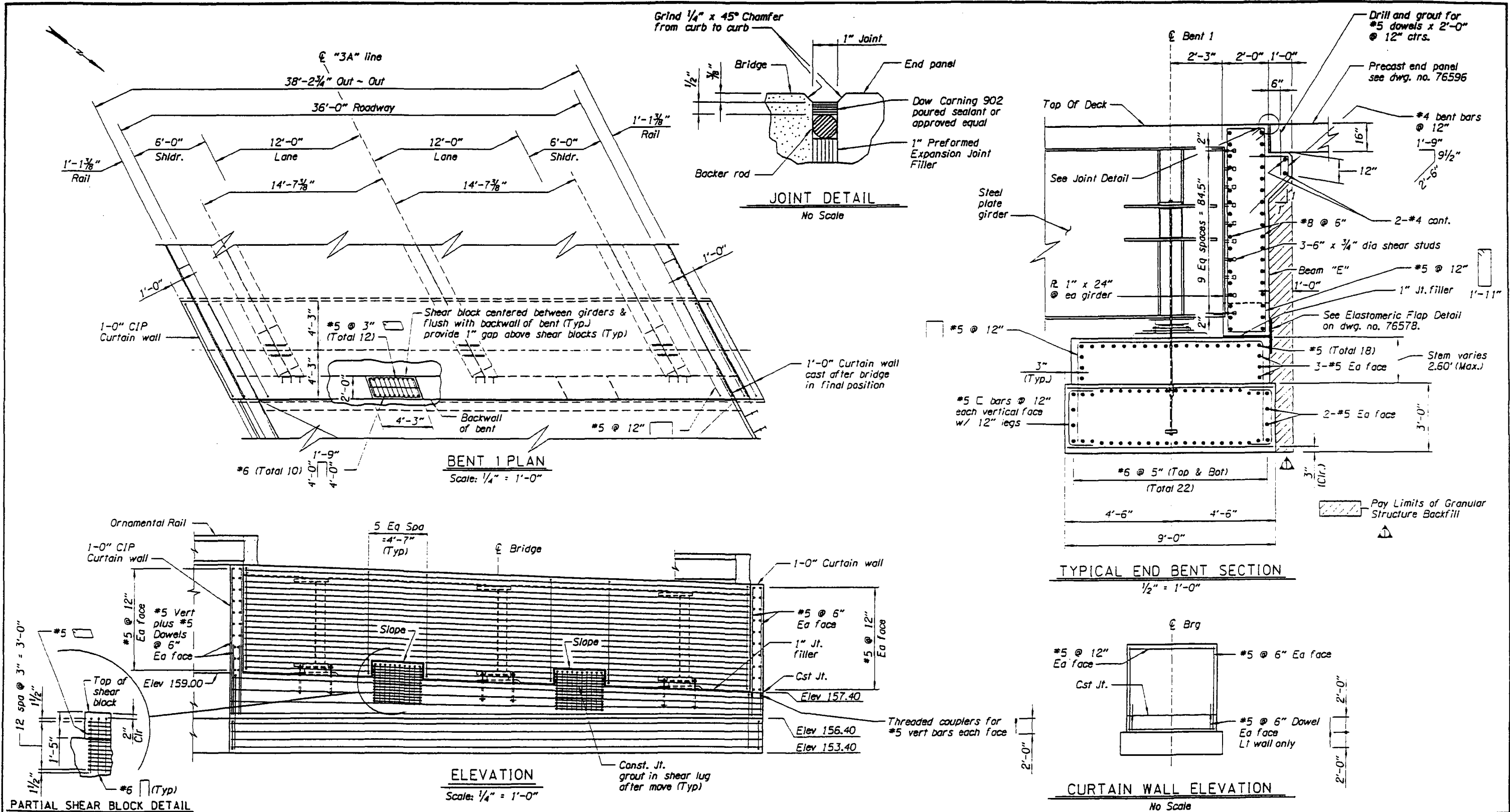
**SUPERSTRUCTURE PLACEMENT SCHEDULE (On Temporary Supports)**

- △ ④ Cast Bent 1 & 4 diaphragms.
- △ ⑤ Cast deck from Bent 1 to Bent 4 and diaphragms at Bents 2 & 3.
- △ ⑥ Place ornamental rail.

*Note:*  
Deck concrete shall be placed and screeded parallel to bents.

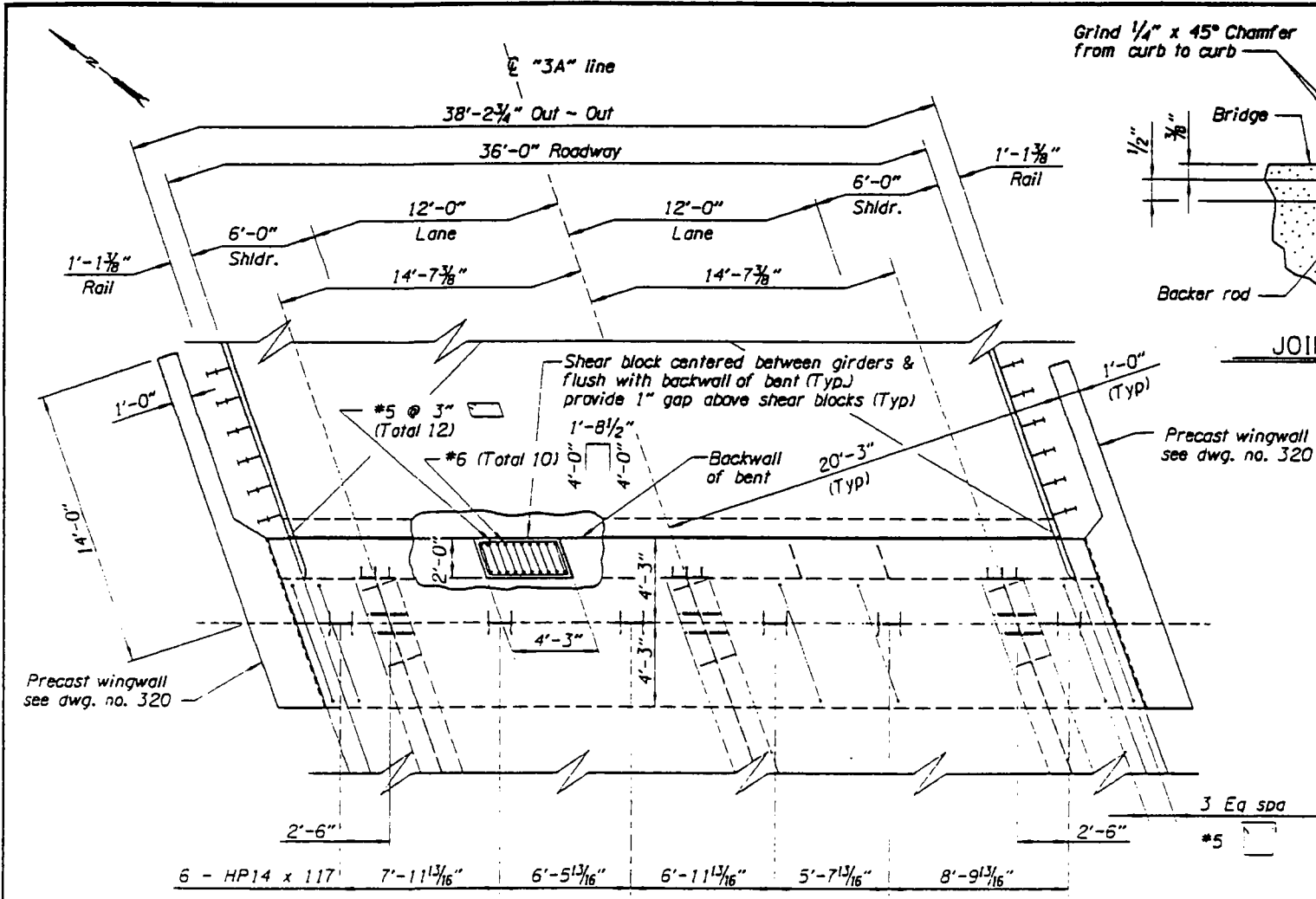
Existing Br. No. 01465

△	DATE	REVISION	BY	DRAFTER			STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET	
△	7-2-07	Revised Notes	T.H.	DESIGNER			Dennis J. Trefren		20584	17
				CHECKER			Gopi Sripathy		DATE	OF
				REVIEWER			Scott M. Nettleton		May - 2007	37
ACCOMPANIED BY DWGS. See Sheet 1.				RENEWAL DATE		TYLIN INTERNATIONAL	CALC. BOOK	CONSTRUCTION & CONCRETE POUR SEQUENCE	DRAWING NO.	
							XXXX	76576		

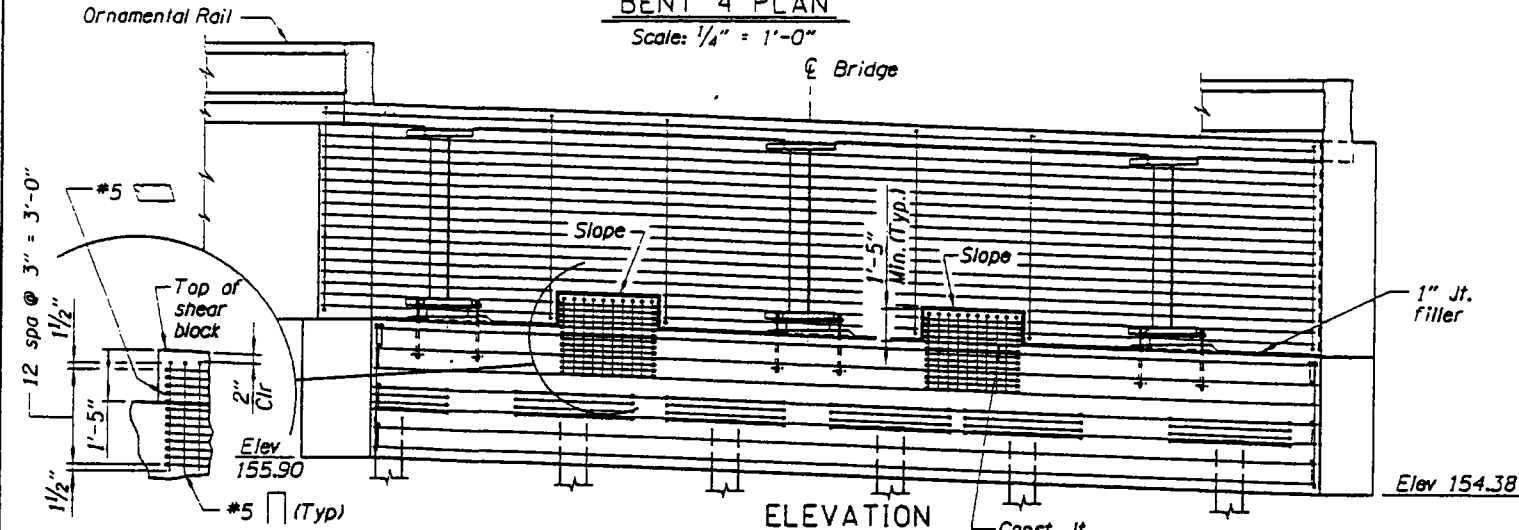


DATE	REVISION	BY	DRAWN	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET
7-2-07	Structure Backfill	T.H.	T. Macias	20584		18
DESIGNER: Dennis J. Trefren			CHECKER: Gopi Sripathy	DATE	Umpqua Hwy. 45 (M.P. 39.64)	OF
REVIEWER: Scott M. Nettleton				May - 2007		37
ACCOMPANIED BY DWGS. See Sheet 1.			REVISION DATE	CALC. BOOK	Douglas County	DRAWING NO.
				XXXX	BENT 1 PLAN & ELEVATION	76577

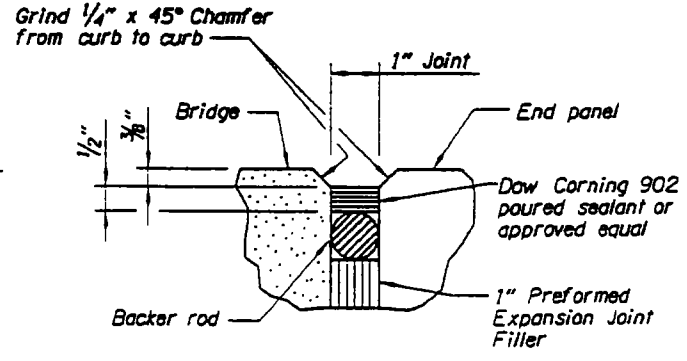




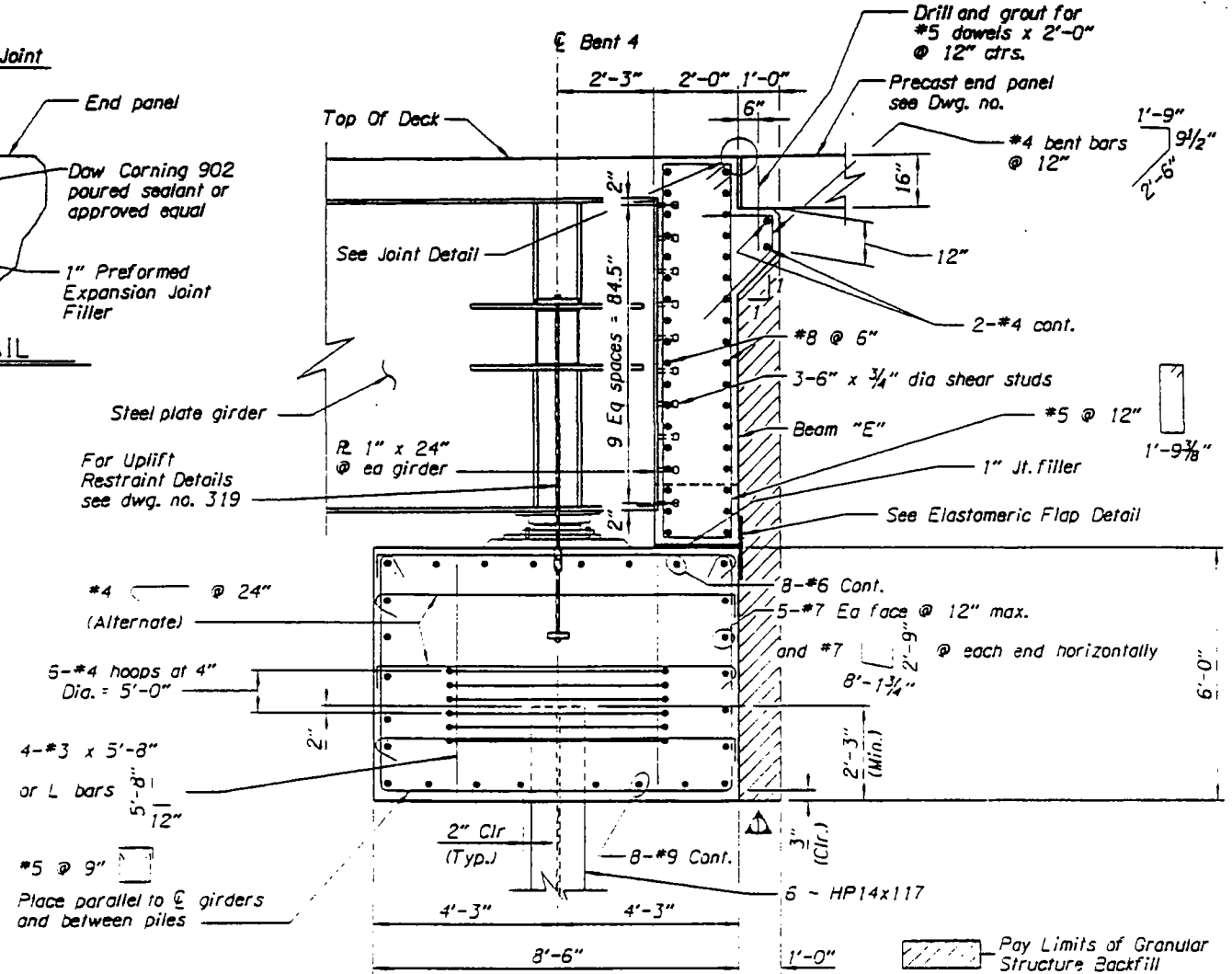
**BENT 4 PLAN**  
Scale: 1/4" = 1'-0"



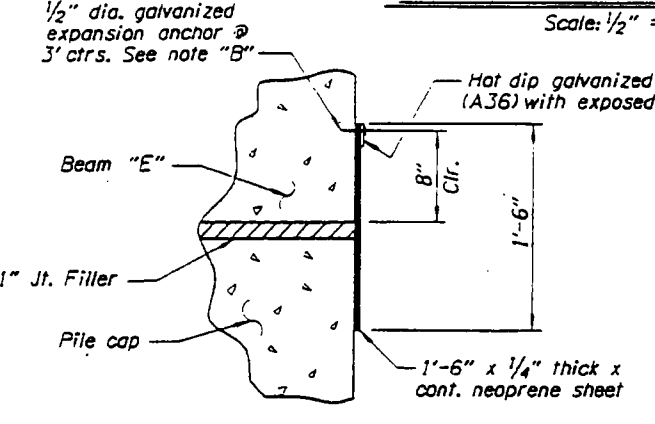
**ELEVATION**  
Scale: 1/4" = 1'-0"



**JOINT DETAIL**  
No Scale



**TYPICAL END BENT SECTION**  
Scale: 1/2" = 1'-0"



**ELASTOMERIC FLAP DETAIL**  
Scale: 1/2" = 1'-0"

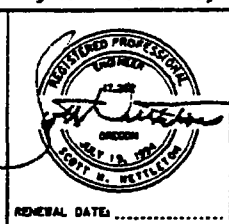
**Note "B":**  
1/2" dia. drilled expansion anchors at 3'-0" ctrs. Expansion anchors shall be hot dip galv. and resin bonded to Beam "E". The minimum pullout strength shall be 5 kips. Install anchors according to manufactures recommendations. Hole depth shall be as required to develop specified pullout strength. Use low impact rotary drill.

- Notes:**
1. Place elastomeric flap at Bent 1 & Bent 4
  2. Adjust position of Elastomeric Flap to accomodate shear lug.

DATE	REVISION	BY
7-2-07	Structure Backfill	T.H.

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER: T. Macias  
 DESIGNER: Dennis J. Trefren  
 CHECKER: Gopi Sripathy  
 REVIEWER: Scott M. Nettleton



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

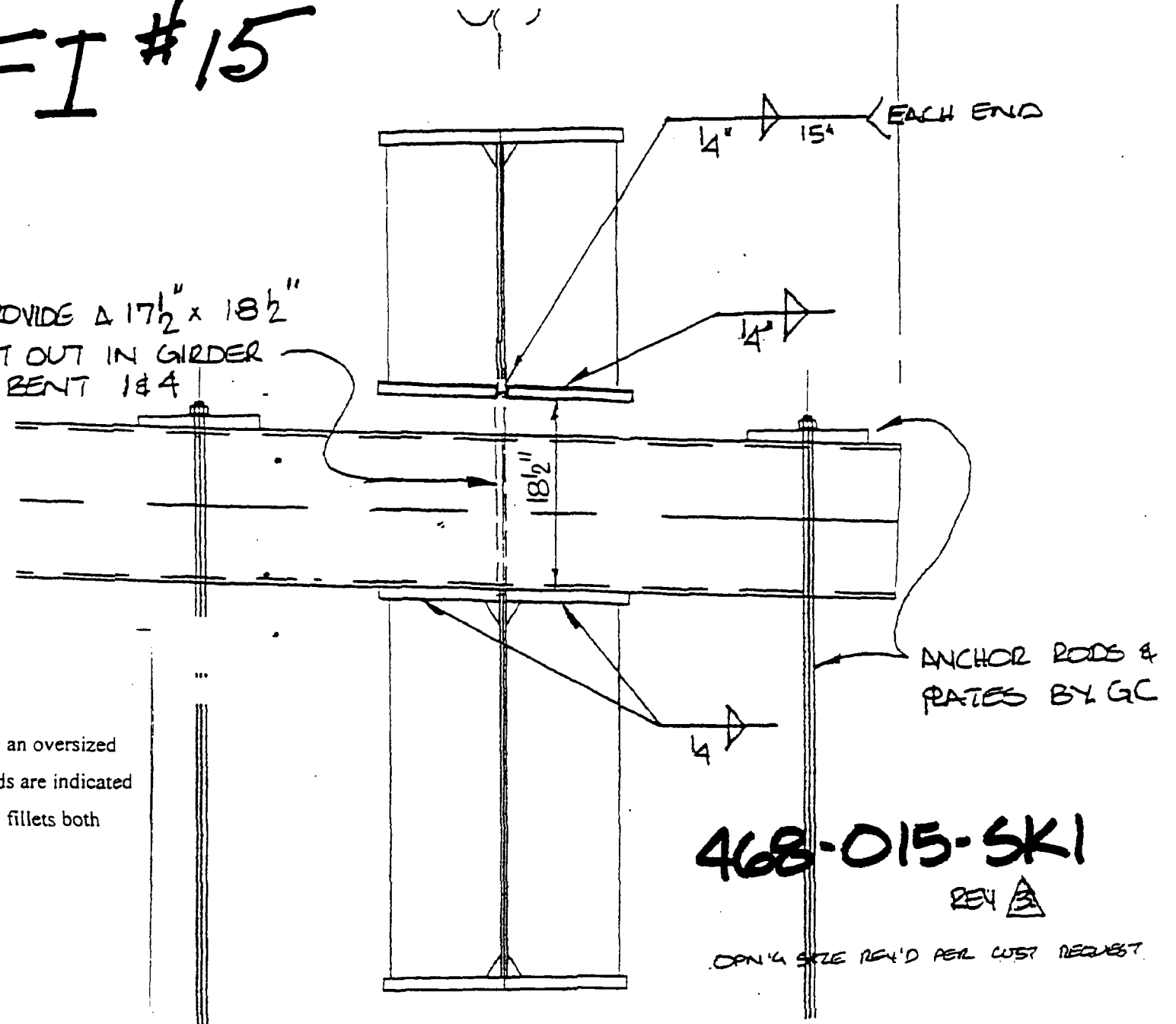
**TYLIN INTERNATIONAL**

STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 19 OF 37
DATE May - 2007		DRAWING NO. 76578
CALC. BOOK XXXX	Umpqua Hwy. 45 (M.P. 39.64) Douglas County	

RFI #15

changes To Dwg # 76579

PROVIDE  $\Delta 17\frac{1}{2}'' \times 18\frac{1}{2}''$   
CUT OUT IN GIRDER  
@ BENT 1&4



Drawings / Sketches Attached: 468-015-SK1

REQUEST:

To facilitate the installation of the St 12 x 16 Hold Down Device we propose to supply an oversized cut out in the web of the girders and adjust the vertical stiffeners accordingly. No welds are indicated on the customer drawings for the stiffeners to the side plates thus we have assumed  $\frac{1}{4}''$  fillets both sides. Please review the attached sketch and confirm or advise.

RFI 15

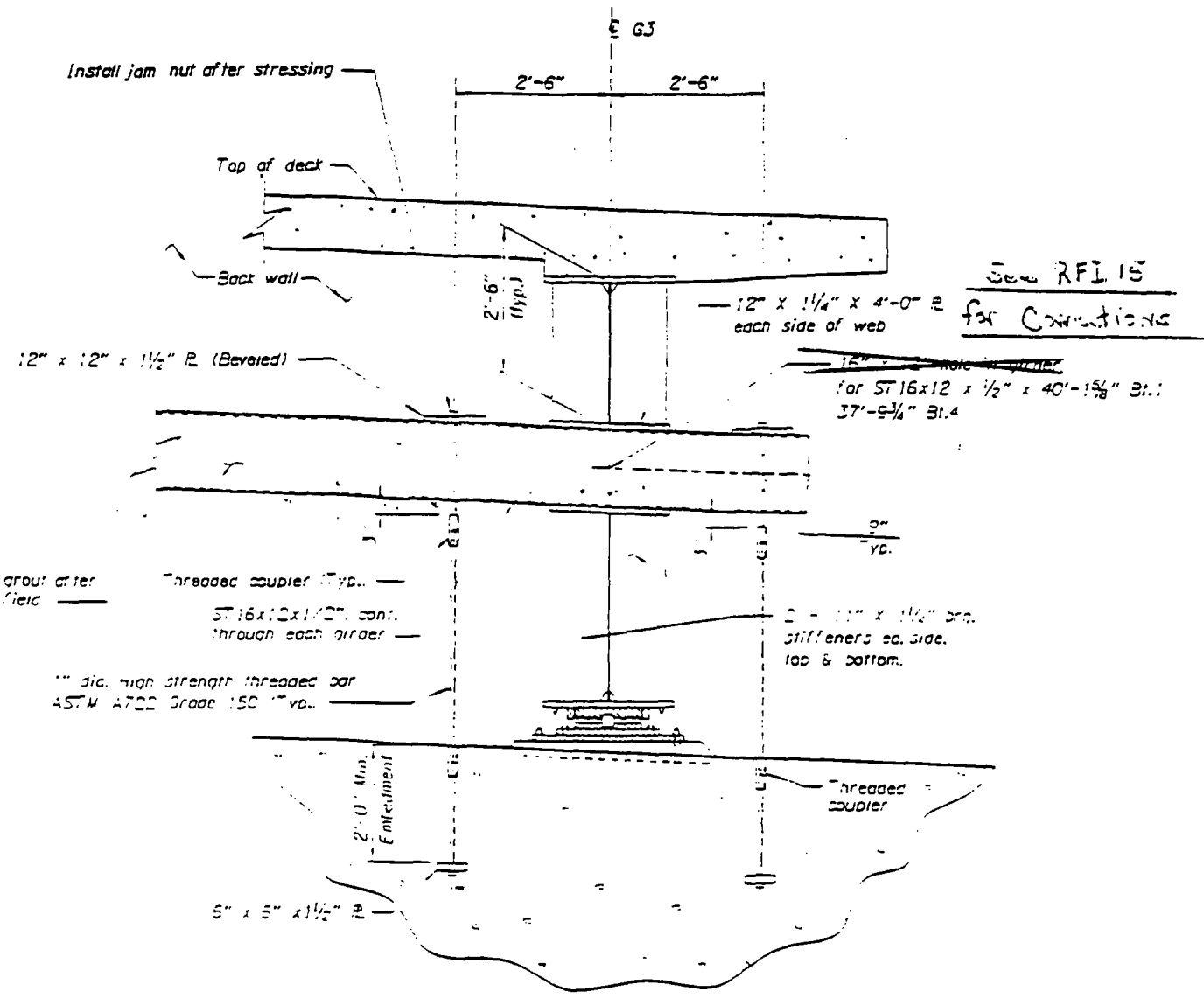
This will be acceptable.

D. J. [Signature] 9/5/07

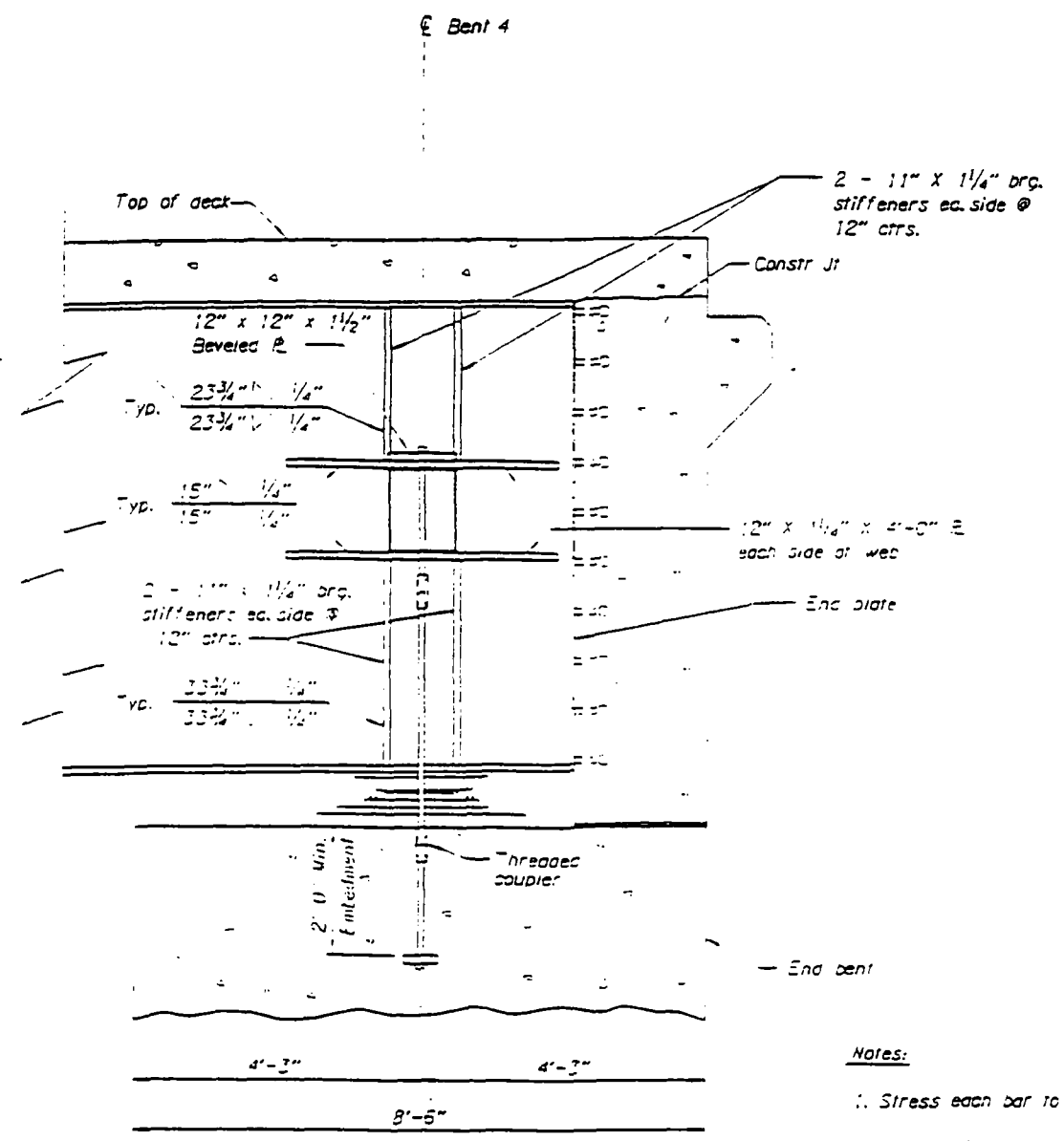
468-015-SK1

REV A

OPENING SIZE REV'D PER CUST REQUEST



( BENT 4 SHOWN, BENT 1 SIMILAR )  
**END BENT UPLIFT RESTRAINT ELEVATION**  
 Scale: 3/4" = 1'-0"



( BENT 4 SHOWN, BENT 1 SIMILAR )  
**END BENT UPLIFT RESTRAINT SECTION**  
 Scale: 3/4" = 1'-0"

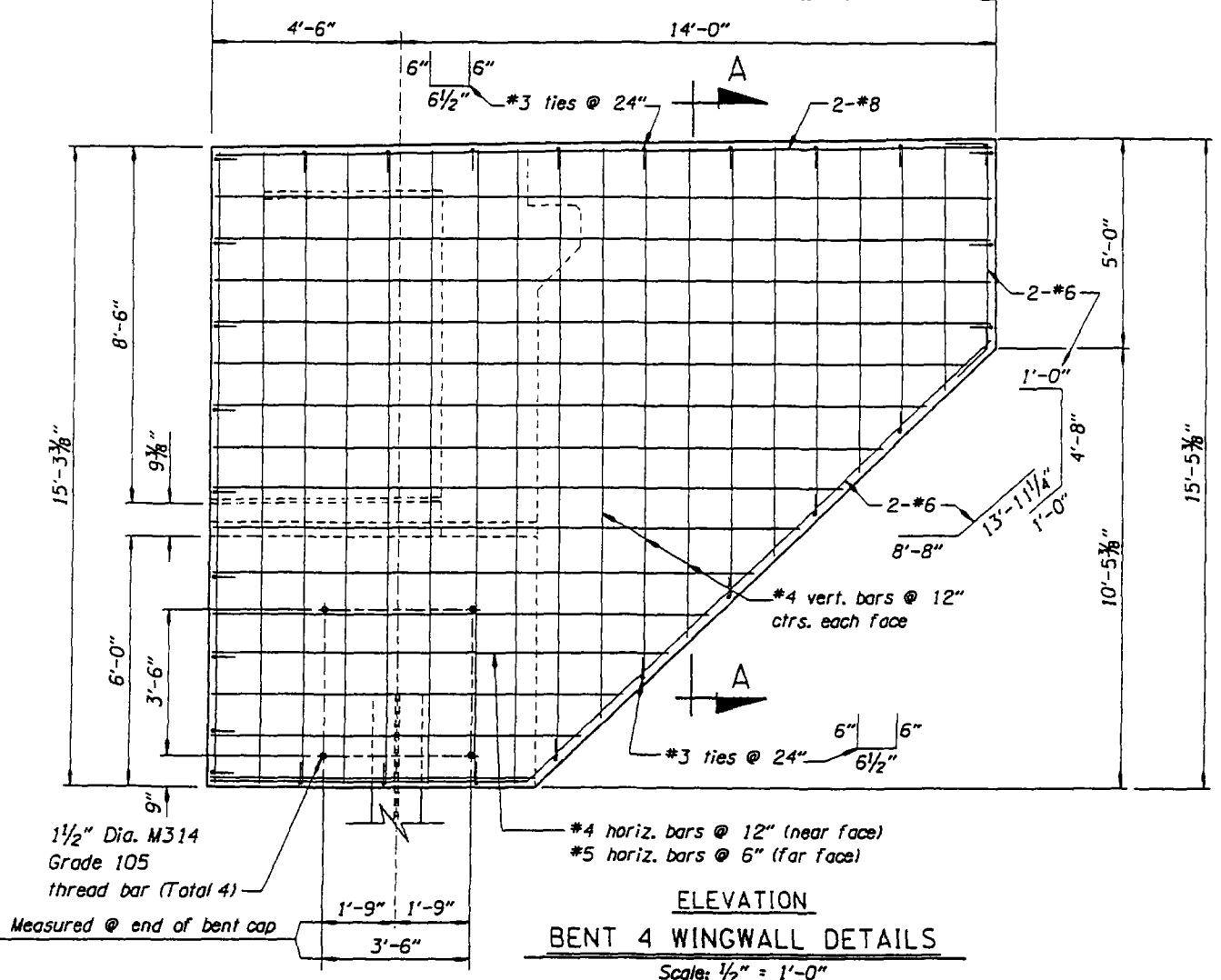
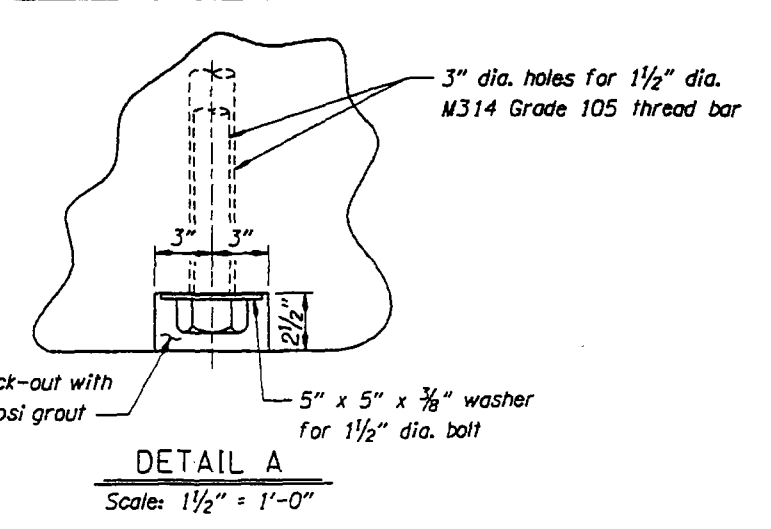
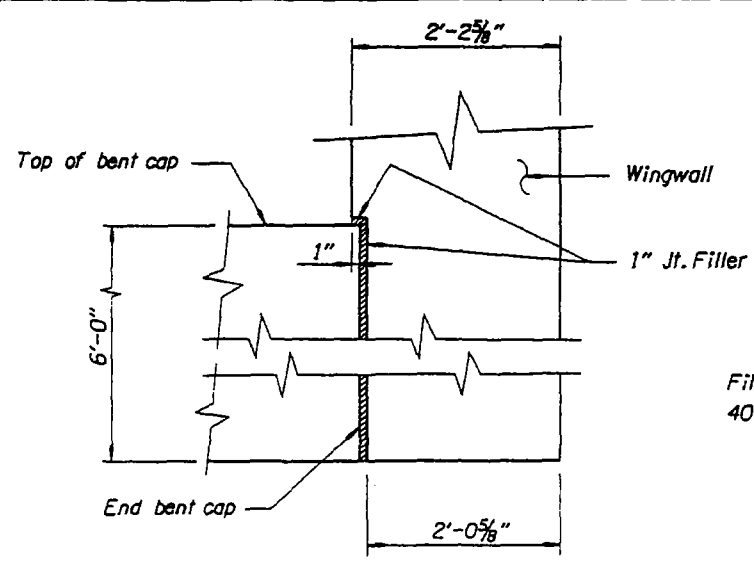
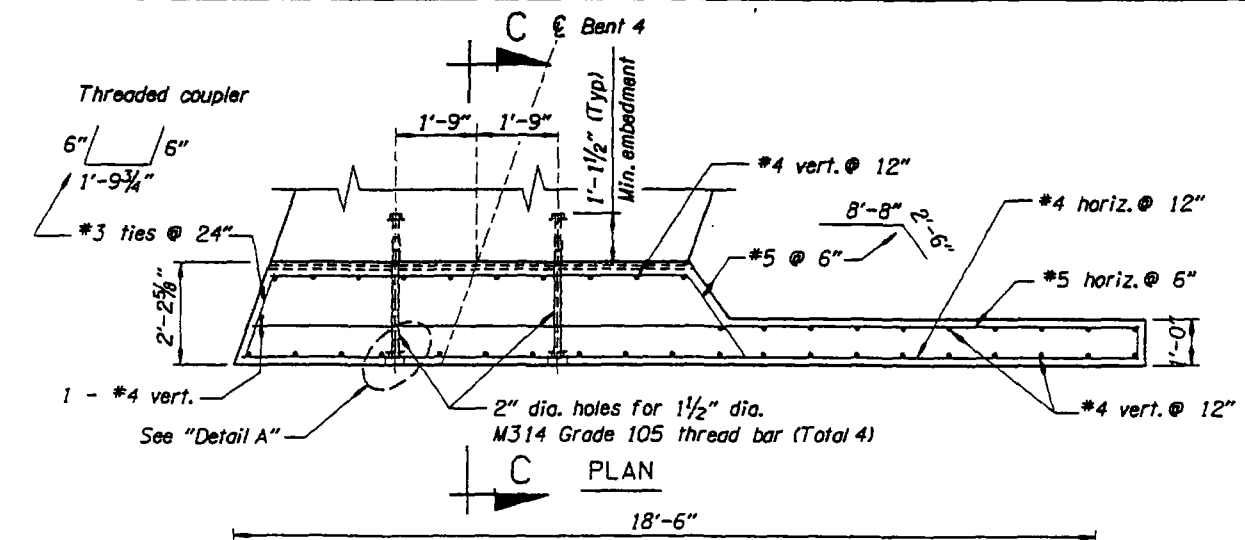
- Notes:**
1. Stress each bar to 80.5 kips.
  2. Provide jam nuts after stressing.
  3. High strength bars to be galvanized.
  4. Girder G3 shown however Detail is typical for Girders G1 & G2.

DATE	REVISION	BY	DRAWN: D. Axtell	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 20 OF 37
			DESIGNER: Dennis J. Tretren			
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Gopi Sripathy	CALC. BOOK XXXX	BENT 4 MISCELLANEOUS DETAILS	76579
			REVIEWER: Scott M. Nettleton			

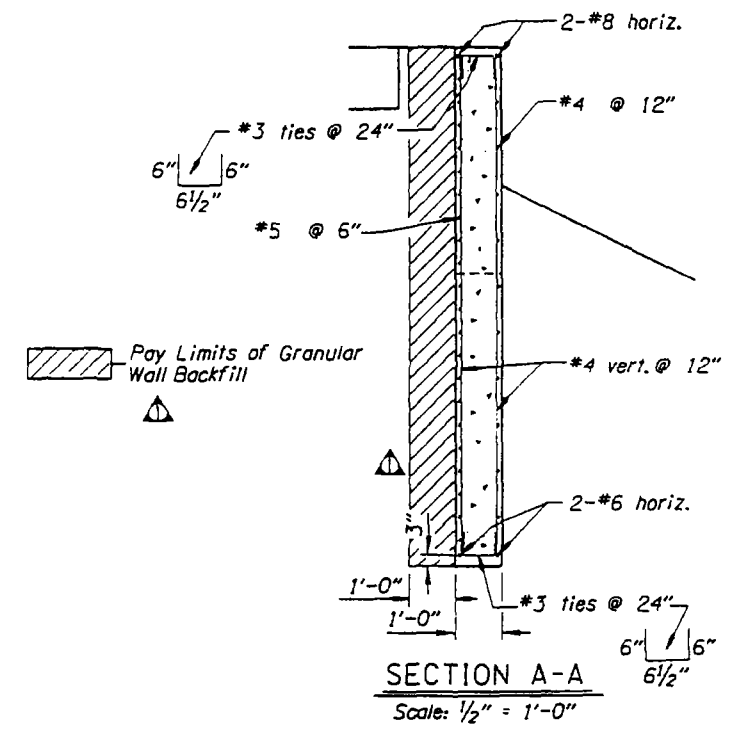
THIS IS THE FILENAME LOCATION . 20584B\_PEBT4.T2.dgn

6/8/2007 12:56:45 PM

1:2.7



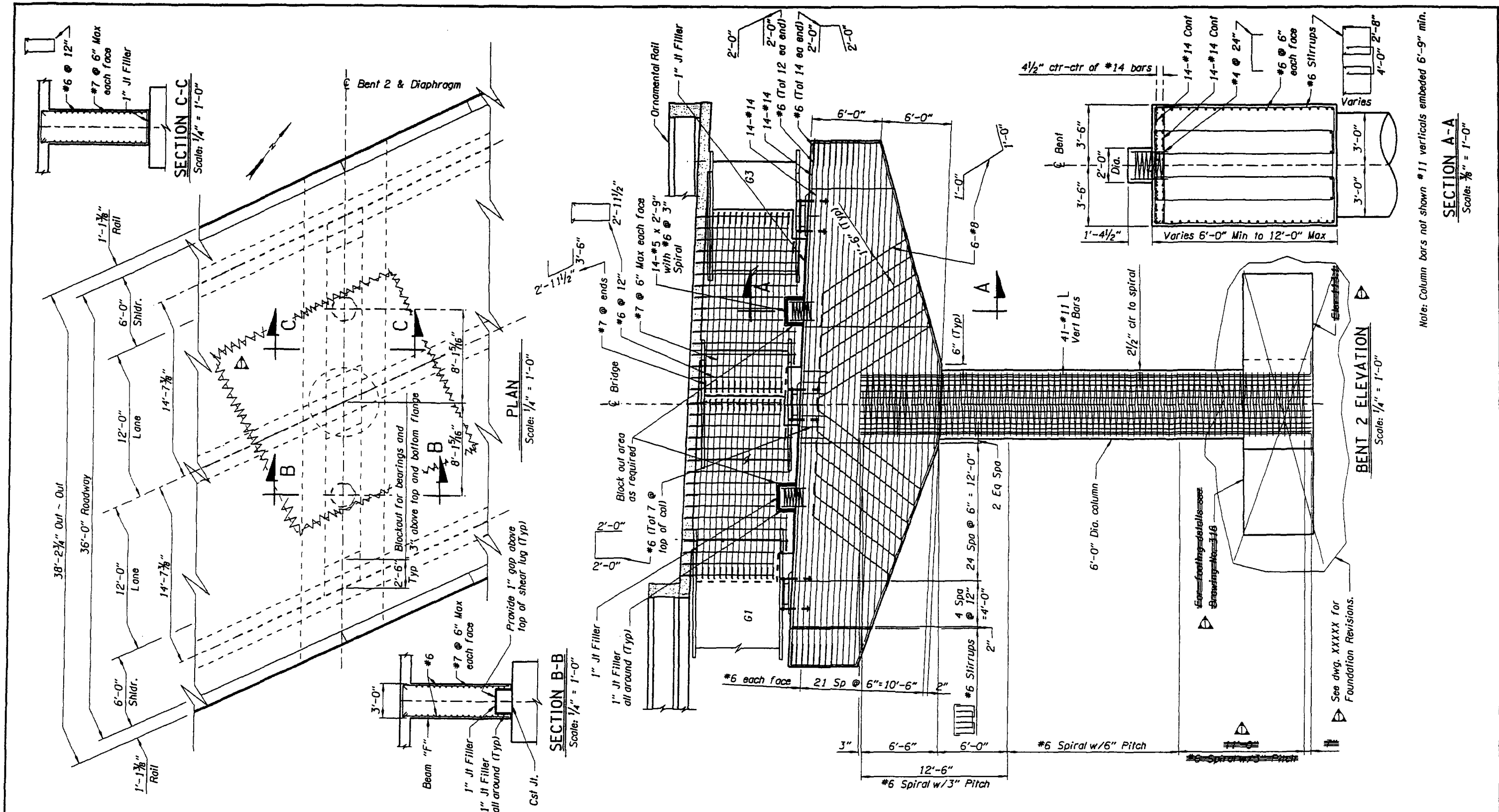
SECTION C-C  
No Scale



Note: Right side wingwall shown. Left side similar

ELEVATION  
BENT 4 WINGWALL DETAILS  
Scale: 1/2" = 1'-0"

DATE 7-2-07	REVISION Wall Backfill	BY T.H.	DRAWN BY D. Axtell		STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 21 OF 37
ACCOMPANIED BY DWGS. See Sheet 1.			DESIGNER Dennis J. Trefren		DATE May - 2007		DRAWING NO. 76580
			CHECKER Gopi Sripathy	TYLIN INTERNATIONAL	CALC. BOOK XXXX	BENT 4 WINGWALL DETAILS	
			REVIEWER Scott M. Nettleton	RENEWAL DATE			



Note: Column bars not shown #11 verticals embedded 6'-9" min.

**SECTION A-A**  
Scale: 3/8" = 1'-0"

**BENT 2 ELEVATION**  
Scale: 1/4" = 1'-0"

**SECTION C-C**  
Scale: 1/4" = 1'-0"

**SECTION B-B**  
Scale: 1/4" = 1'-0"

**PLAN**  
Scale: 1/4" = 1'-0"

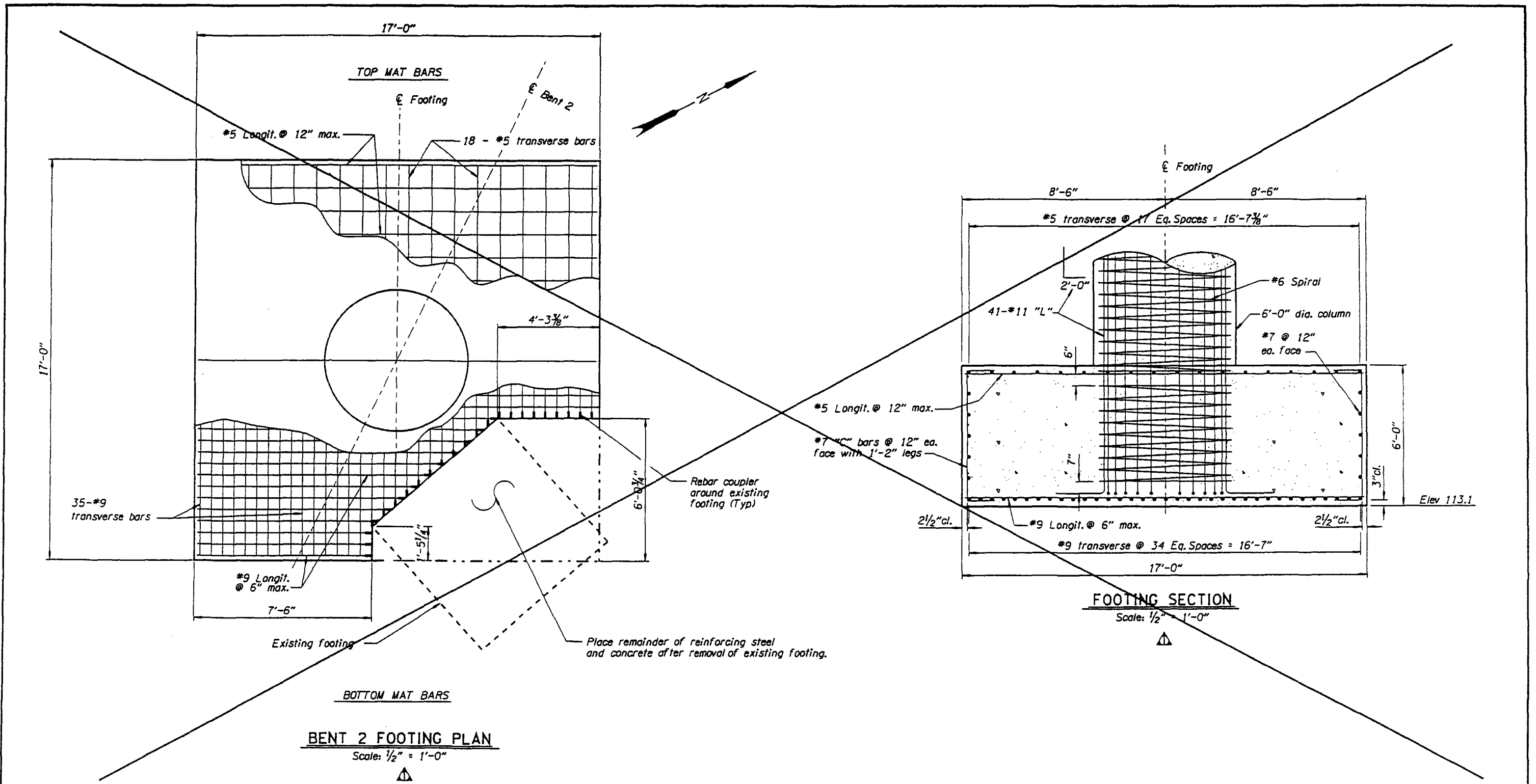
See dwg. XXXXX for Foundation Revisions.

DATE	REVISION	BY	DRAWN	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 22 OF 37
6-29-07	Foundation Revised	T.H.	R. Crooks	20584		
ACCOMPANIED BY DWGS. See Sheet 1.			DESIGNER: Dennis J. Trefren	DATE	Umpqua Hwy. 45 (M.P. 39.64)	DRAWING NO. 76581
			CHECKER: Gopi Sripathy	May - 2007	Douglas County	
			REVIEWER: Scott M. Nettleton	CALC. BOOK XXXX	<b>BENT 2 PLAN &amp; ELEVATION</b>	



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

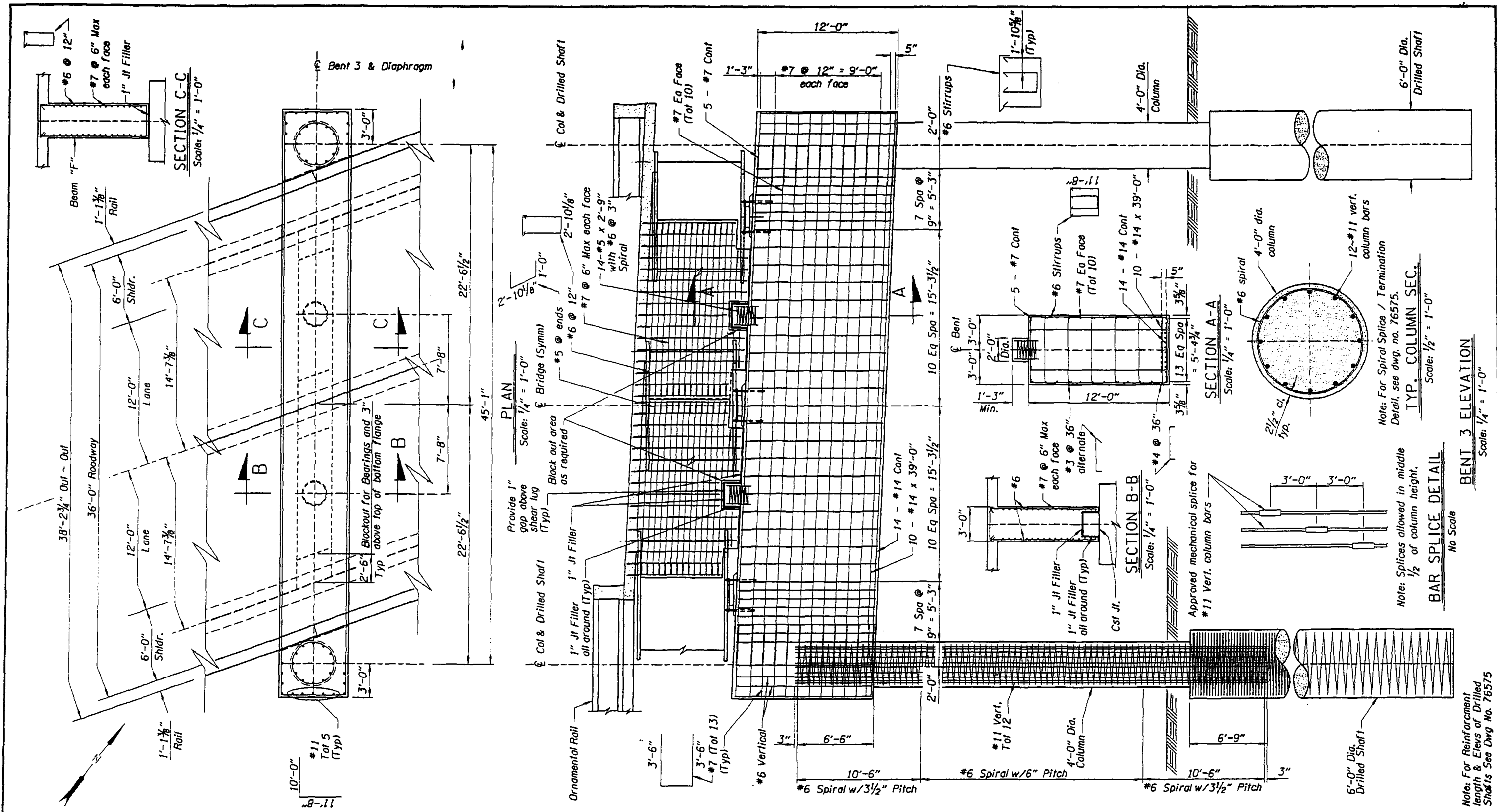
**TYLIN INTERNATIONAL**



**BENT 2 FOOTING PLAN**  
Scale: 1/2" = 1'-0"

**FOOTING SECTION**  
Scale: 1/2" = 1'-0"

DATE	REVISION	BY	DRAFTER		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
6-29-07	Foundation Revised	T.H.	Dennis J. Trefren			20584		23
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER	RENEWAL DATE	 TYLIN INTERNATIONAL	DATE	BENT 2 FOOTING DETAILS	OF
			Scott M. Nettleton			May - 2007		37
						CALC. BOOK		DRAWING NO.
						XXXX		76582



DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER: R. Crooks  
 DESIGNER: Dennis J. Trafren  
 CHECKER: Gopi Sripathy  
 REVIEWER: Scott M. Nettleton



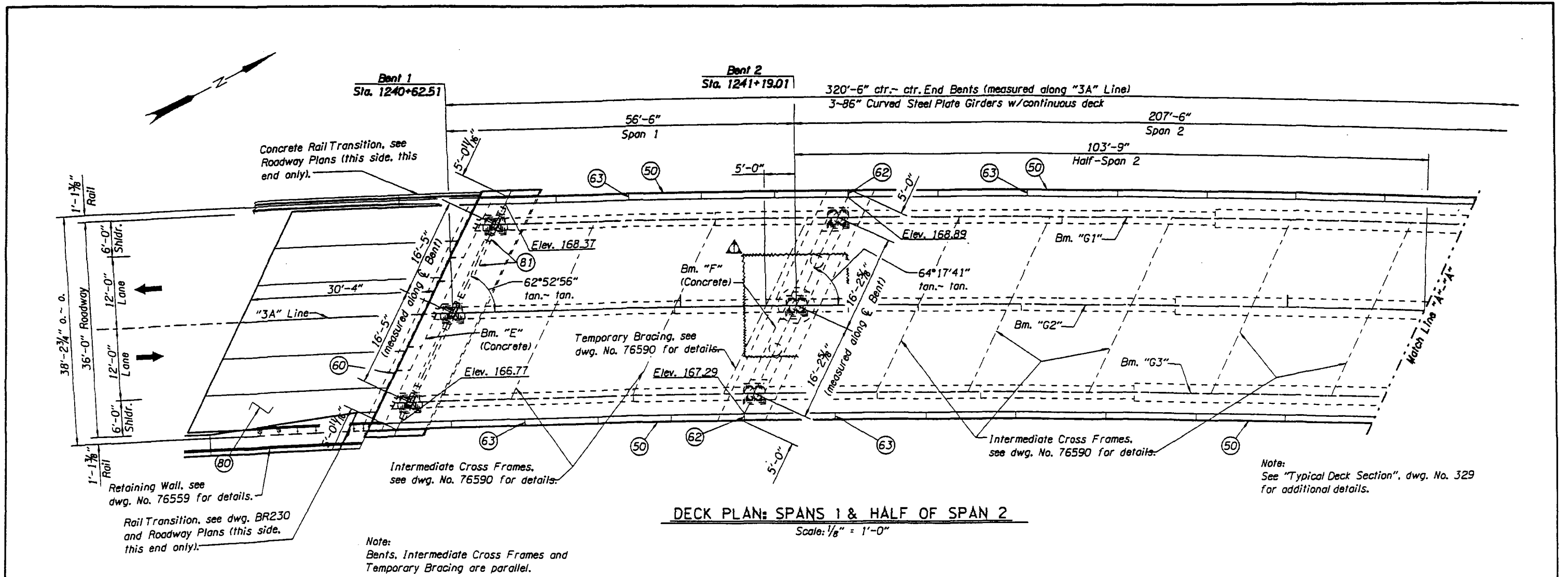
**OREGON DEPARTMENT OF TRANSPORTATION**  
 REGION 3 TECHNICAL SERVICES  
**TYLINT INTERNATIONAL**

STRUCTURE NO. 20584  
 DATE: May - 2007  
 CALC. BOOK: XXXX

ELK CREEK BRIDGE (CROSSING NO. 3)  
 ELK CREEK TO HARDCRABBLE CREEK SECTION  
 Umpqua Hwy. 45 (M.P. 39.64) Douglas County  
**BENT 3 PLAN & ELEVATION**

SHEET 24 OF 37  
 DRAWING NO. 76583





Note:  
See "Typical Deck Section", dwg. No. 329  
for additional details.

**DECK PLAN: SPANS 1 & HALF OF SPAN 2**  
Scale: 1/8" = 1'-0"

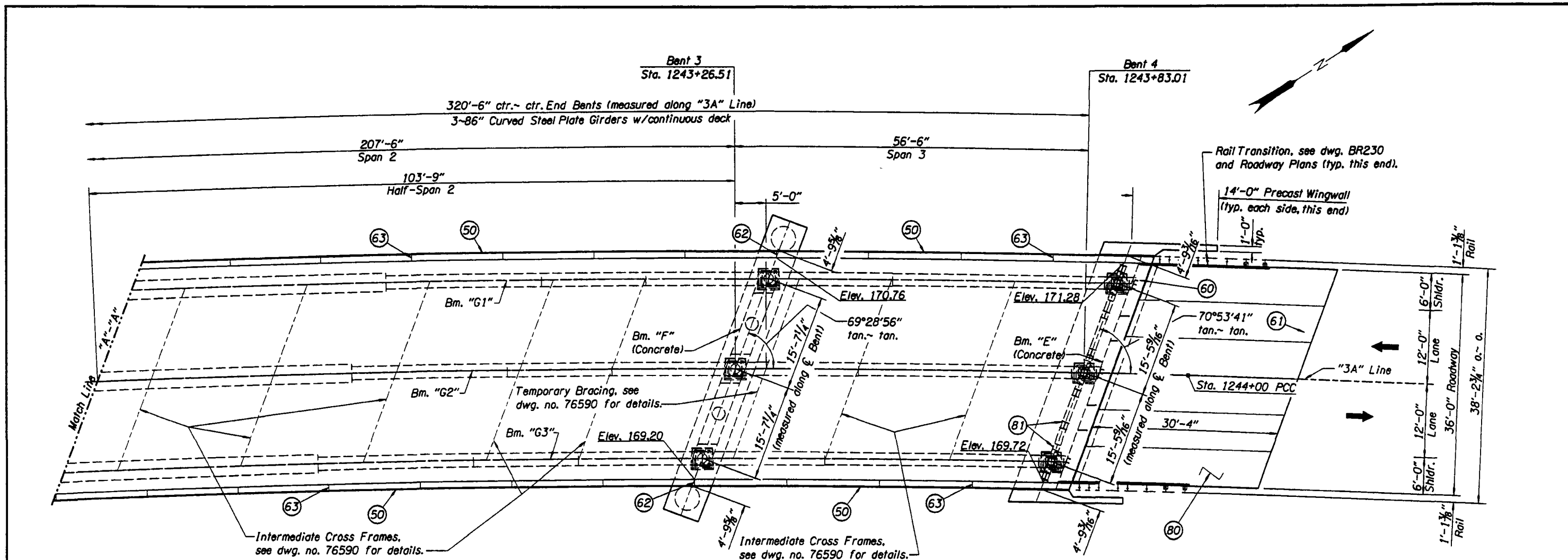
**Reference Numbers:**

- (50) Ornamental Concrete Bridge Rail, see dwg. no. 76630 & BR221 for details.
- (60) 1" Preformed Expansion Joint, see Detail "A", dwg. no. BR165 (typ. each end).
- (62) Type "B" Joint at  $\hat{c}$  Interior Bents at rail, see dwg. no. BR221.

**Reference Numbers Cont.:**

- (63) Place Scoring Joint @ 15'-0" max. ctrs. between open, Type "B" joints where shown, See dwg. BR221.
- (80) 30'-4" Precast Concrete End Panel at Bridge Ends, see dwg. no. 76596 & BR165.
- (81) End Bent Uplift Restraint, see dwg. no. 76579 for details.

DATE 6-29-07 REVISION Foundation Revised BY T.H.	DRAFTER: Tom Hernandez DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 25 OF 37
				DATE May - 2007		CALC. BOOK XXXX
ACCOMPANIED BY DWGS. See Sheet 1.				DECK PLAN: SPAN 1 AND HALF OF SPAN 2		



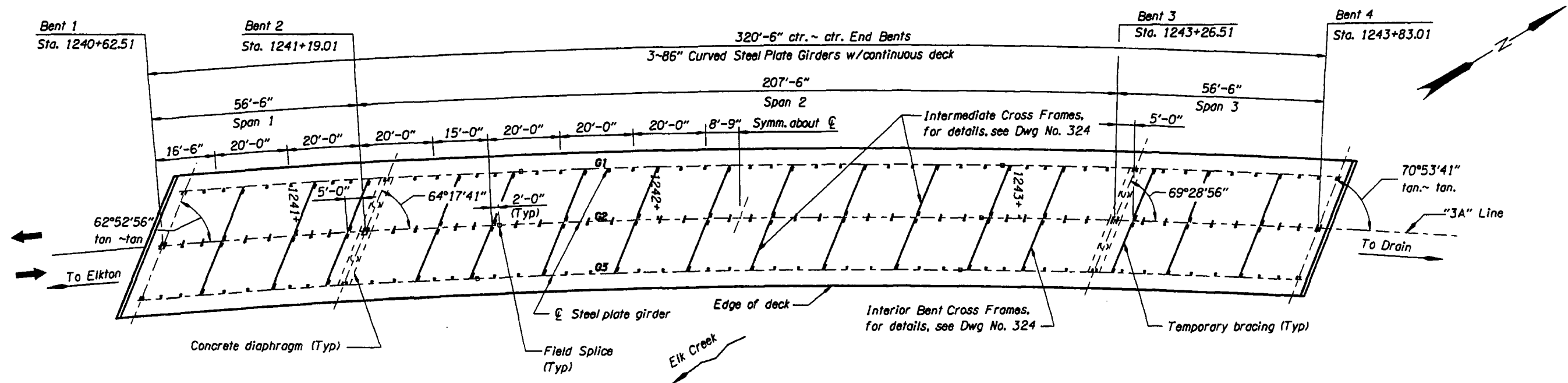
**DECK PLAN: HALF OF SPAN 2 & SPAN 3**

Scale: 1/8" = 1'-0"

Note:  
Bents, Intermediate Cross Frames and  
Temporary Bracing are parallel.

Note:  
For Reference Numbers, see dwg. no. 76584.

△	DATE	REVISION	BY	DRAFTER: Tom Hernandez		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 26 OF 37
				DESIGNER: Dennis J. Trefren			DATE May - 2007		DRAWING NO. 76585
ACCOMPANIED BY DWGS. See Sheet 1.				CHECKER: Gopi Sripathy		CALC. BOOK XXXX	DECK PLAN: HALF OF SPAN 2 AND SPAN 3		
				REVIEWER: Scott M. Nettleton			RENEWAL DATE:		

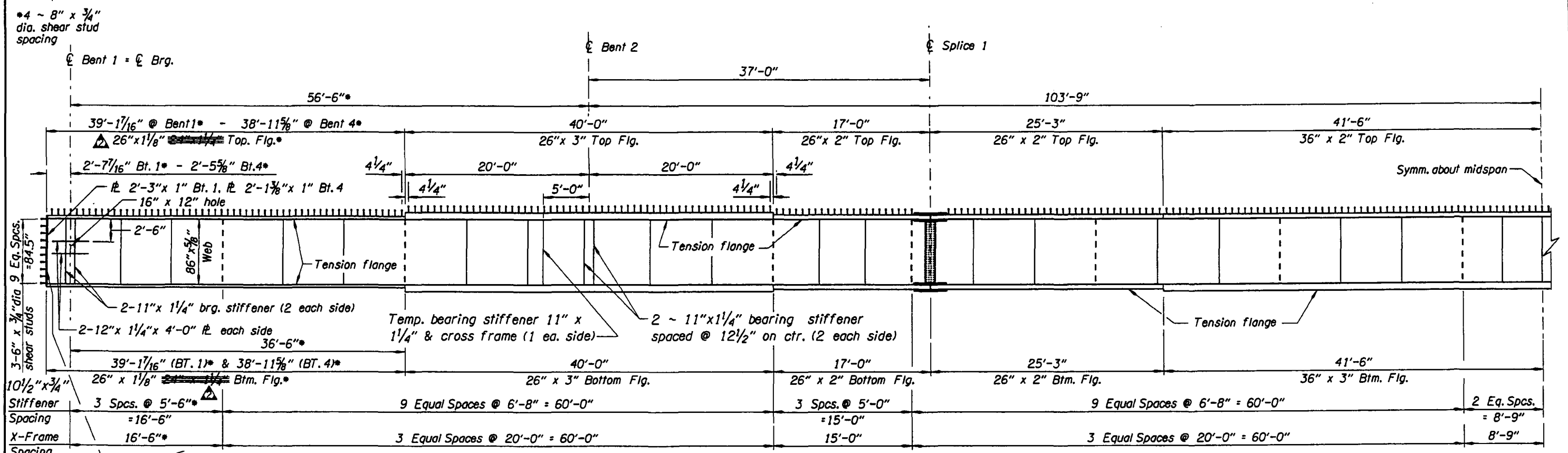
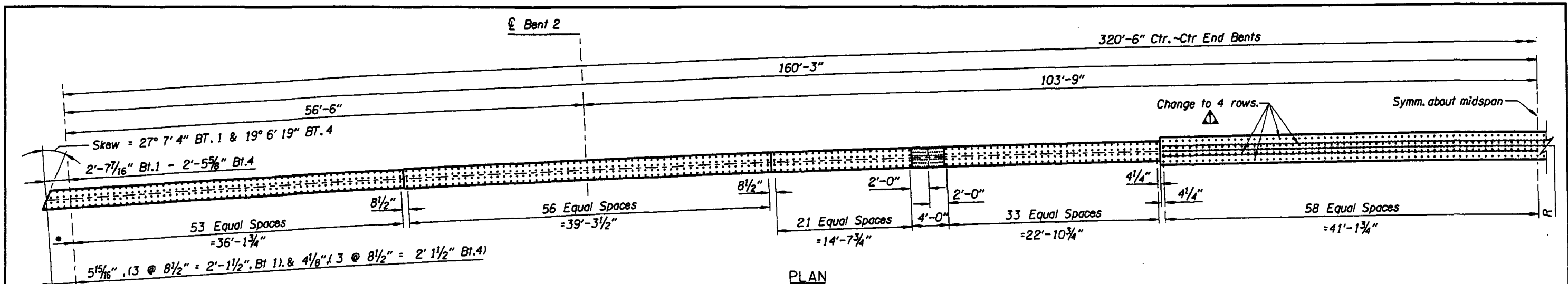


**FRAMING PLAN**  
Scale: 1" = 15'-0"

Note: All dimensions are along "3A" Line

- Changes:
- 1.) G1 & G3: Stiffeners normal to girder centerline between braces.
  - 2.) G2: Stiffeners on Rt. side only, place normal to girder centerline between braces.

	DATE	REVISION	BY	DRAFTER: D. Axtell DESIGNER: Dennis J. Trefren CHECKER: Gopisripathy REVIEWER: Scott M. Nettleton		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
	6-29-07	Stiffener Placement	T.H.				20584		27
ACCOMPANIED BY DWGS. See Sheet J.							DATE		OF
							May - 2007		37
							CALC. BOOK		DRAWING NO.
							XXXX		76586



**GIRDER DETAIL (SYMM. ABOUT MIDSPAN)**

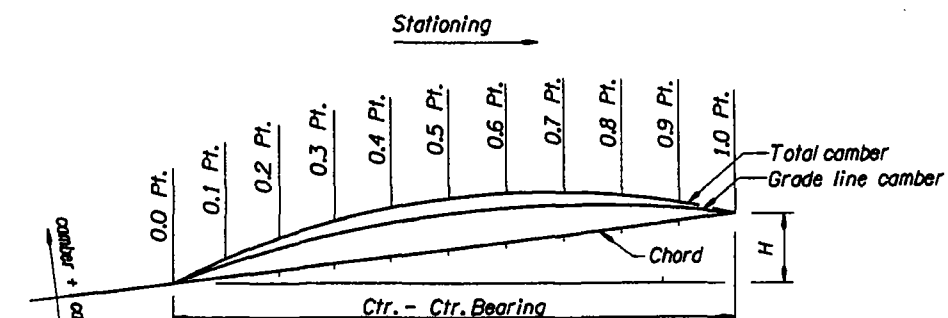
No Scale  
(Unless noted otherwise)

Note:  
Girder 2 shown. Girders 1 & 3 similar.  
\*Dimensions slightly different for G1 & G3.

DATE	REVISION	BY	DRAFTER: <i>D. Abbot</i>			STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
6-29-07	Shear Studs	T.H.	DESIGNER: Dennis J. Trefren			20584		28
6-29-07	Flange Revised	T.H.	CHECKER: Gopi Sripathy	REVIEWER: Scott M. Nettleton	REGION 3 TECHNICAL SERVICES	DATE	STEEL GIRDER DETAILS	OF
ACCOMPANIED BY DWGS. See Sheet 1.			REVISION DATE:	TYLIN INTERNATIONAL	DATE	May - 2007		37
						CALC. BOOK		DRAWING NO.
						XXXX		76587

BEAM CAMBER-G1													
SPAN NO.	ITEM	CAMBER (in)											H (in)
		0.0 Pt.	0.1 Pt.	0.2 Pt.	0.3 Pt.	0.4 Pt.	0.5 Pt.	0.6 Pt.	0.7 Pt.	0.8 Pt.	0.9 Pt.	1.0 Pt.	
1	Beam Dead Load	-2.875	-2.596	-2.314	-2.013	-1.749	-1.463	-1.176	-0.885	-0.595	-0.298	-	6.240
	End Diaphragm Load	2.601	2.315	2.029	1.745	1.470	1.201	0.942	0.693	0.457	0.225	-	
	Deck Dead Load	-5.904	-5.341	-4.771	-4.198	-3.627	-3.045	-2.456	-1.855	-1.251	-0.629	-	
	SIDL - Rail	-0.943	-0.853	-0.762	-0.671	-0.580	-0.487	-0.393	-0.297	-0.201	-0.101	-	
	4" Preload	-4.000	-3.618	-3.232	-2.846	-2.460	-2.066	-1.667	-1.260	-0.853	-0.428	-	
	SIDL - FWS	-	-0.008	-0.015	-0.022	-0.027	-0.030	-0.030	-0.027	-0.021	-0.013	-	
	Shrinkage	-	0.079	0.140	0.184	0.210	0.218	0.210	0.184	0.140	-0.079	-	
	Subtotal	-11.121	-10.022	-8.925	-7.821	-6.763	-5.672	-4.570	-3.447	-2.324	-1.165	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-11.121	-10.022	-8.925	-7.821	-6.763	-5.672	-4.570	-3.447	-2.324	-1.165	-	
2	Beam Dead Load	-	1.261	2.426	3.330	3.864	4.037	3.871	3.346	2.449	1.278	-	
	End Diaphragm Load	-	-0.858	-1.556	-2.049	-2.323	-2.409	-2.329	-2.026	-1.576	-0.871	-	
	Deck Dead Load	-	2.706	5.254	7.248	8.429	8.812	8.443	7.280	5.302	2.741	-	
	SIDL - Rail	-	0.440	0.853	1.165	1.345	1.402	1.345	1.166	0.855	0.433	-	
	4" Preload	-	1.843	3.573	4.880	5.634	5.872	5.634	4.884	3.581	1.855	-	
	SIDL - FWS	-	0.079	0.181	0.270	0.328	0.349	0.328	0.270	0.181	0.078	-	
	Shrinkage	-	0.901	1.602	2.103	2.403	2.503	2.403	2.103	1.602	0.901	-	
	Subtotal	-	6.372	12.333	16.947	19.680	20.566	19.695	17.023	12.394	6.425	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-	6.372	12.333	16.947	19.680	20.566	19.695	17.023	12.394	6.425	-	
3	Beam Dead Load	-	-0.304	0.603	-0.900	-1.198	-1.491	-1.784	-2.072	-2.362	-2.654	-2.966	
	End Diaphragm Load	-	0.229	0.465	0.707	0.961	1.226	1.503	1.784	2.074	2.370	2.698	
	Deck Dead Load	-	-0.640	-1.267	-1.885	-2.500	-3.101	-3.696	-4.280	-4.867	-5.457	-6.086	
	SIDL - Rail	-	-0.102	-0.202	-0.300	-0.397	-0.492	-0.587	-0.680	-0.773	-0.867	0.967	
	4" Preload	-	-0.422	-0.836	-1.241	-1.642	-2.035	-2.428	-2.813	-3.198	-3.586	-4.000	
	SIDL - FWS	-	-0.012	-0.021	-0.027	-0.029	-0.029	-0.026	-0.021	-0.015	-0.008	-	
	Shrinkage	-	0.079	0.140	0.184	0.210	0.218	0.210	0.184	0.140	0.079	-	
	Subtotal	-	-1.172	-2.324	-3.462	-4.595	-5.704	-6.208	-7.898	-9.001	-10.123	-11.321	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-11.321	
	Total	-	-1.172	-2.324	-3.462	-4.595	-5.704	-6.208	-7.898	-9.001	-10.123	-	

BEAM CAMBER-G2													
SPAN NO.	ITEM	CAMBER (in)											H (in)
		0.0 Pt.	0.1 Pt.	0.2 Pt.	0.3 Pt.	0.4 Pt.	0.5 Pt.	0.6 Pt.	0.7 Pt.	0.8 Pt.	0.9 Pt.	1.0 Pt.	
1	Beam Dead Load	-2.359	-2.129	-1.899	-1.668	-1.437	-1.203	-0.967	-0.729	-0.488	-0.246	-	
	End Diaphragm Load	2.327	2.066	1.807	1.551	1.301	1.059	0.828	0.608	0.399	0.196	-	
	Deck Dead Load	-4.753	-4.301	-3.848	-3.393	-2.935	-2.468	-1.995	-1.512	-1.017	-0.514	-	
	SIDL - Rail	-0.813	-0.735	-0.657	-0.578	-0.499	-0.419	-0.339	-0.257	-0.173	-0.087	-	
	4" Preload	-4.000	-3.616	-3.232	-2.844	-2.455	-2.062	-1.668	-1.264	-0.851	-0.428	-	
	SIDL - FWS	-	0.007	-0.014	-0.020	-0.025	-0.028	-0.028	-0.025	-0.020	-0.012	-	
	Shrinkage	-	0.075	0.133	0.175	0.200	0.208	0.200	0.175	0.133	0.075	-	
	Subtotal	-9.598	-8.647	-7.710	-6.777	-5.850	-4.913	-3.969	-3.004	-2.017	-1.016	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-9.598	-8.647	-7.710	-6.777	-5.850	-4.913	-3.969	-3.004	-2.017	-1.016	-	
2	Beam Dead Load	-	1.045	2.011	2.761	3.205	3.349	3.211	2.775	2.029	1.058	-	
	End Diaphragm Load	-	-0.739	-1.325	-1.733	-1.956	-2.026	-1.961	-1.744	-1.340	-0.749	-	
	Deck Dead Load	-	2.244	4.369	6.038	7.028	7.348	7.039	6.066	4.406	2.272	-	
	SIDL - Rail	-	0.382	0.741	1.013	1.171	1.221	1.172	1.018	0.747	0.387	-	
	4" Preload	-	1.840	3.569	4.879	5.640	5.881	5.645	4.903	3.598	1.864	-	
	SIDL - FWS	-	0.075	0.172	0.258	0.312	0.332	0.313	0.258	0.174	0.075	-	
	Shrinkage	-	0.858	1.526	2.003	2.289	2.384	2.289	2.003	1.526	0.858	-	
	Subtotal	-	5.705	11.063	15.219	17.689	18.489	17.708	15.279	11.140	5.765	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-	5.705	11.063	15.219	17.689	18.489	17.708	15.279	11.140	5.765	-	
3	Beam Dead Load	-	-0.250	-0.497	-0.742	-0.987	-1.227	-1.467	-1.704	-1.942	-2.178	-2.455	
	End Diaphragm Load	-	0.200	0.406	0.619	0.845	1.082	1.330	1.586	1.849	2.116	2.435	
	Deck Dead Load	-	-0.524	-1.036	-1.539	-2.035	-2.517	-2.994	-3.463	-3.933	-4.399	-4.942	
	SIDL - Rail	-	-0.089	-0.176	-0.261	-0.346	-0.429	-0.511	-0.592	-0.673	-0.754	-0.848	
	4" Preload	-	-0.420	-0.830	-1.231	-1.632	-2.024	-2.410	-2.792	-3.175	-3.557	-4.000	
	SIDL - FWS	-	-0.012	-0.020	-0.025	-0.028	-0.028	-0.025	-0.020	-0.014	-0.007	-	
	Shrinkage	-	0.075	0.133	0.175	0.200	0.208	0.200	0.175	0.133	0.075	-	
	Subtotal	-	-1.020	-2.020	-3.004	-3.983	-4.935	-5.877	-6.810	-7.755	-8.704	-9.810	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-	-1.020	-2.020	-3.004	-3.983	-4.935	-5.877	-6.810	-7.755	-8.704	-9.810	

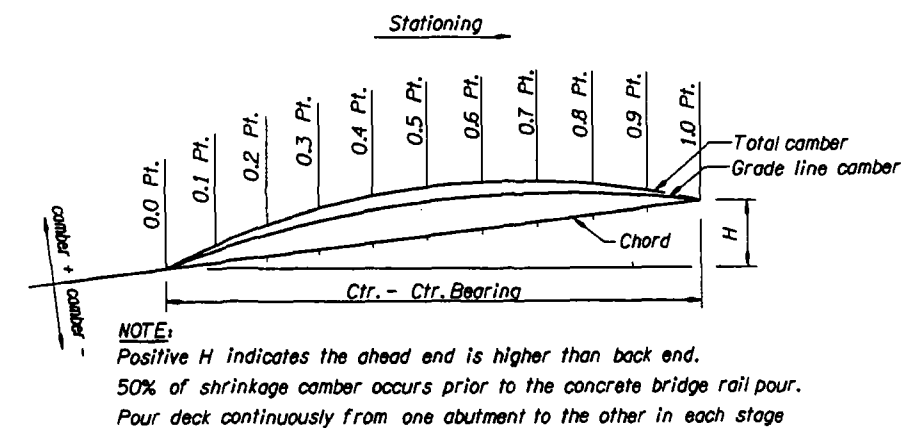


NOTE:  
 Positive H indicates the ahead end is higher than back end.  
 50% of shrinkage camber occurs prior to the concrete bridge rail pour.  
 Pour deck continuously from one abutment to the other in each stage

CAMBER DIAGRAM  
 No Scale

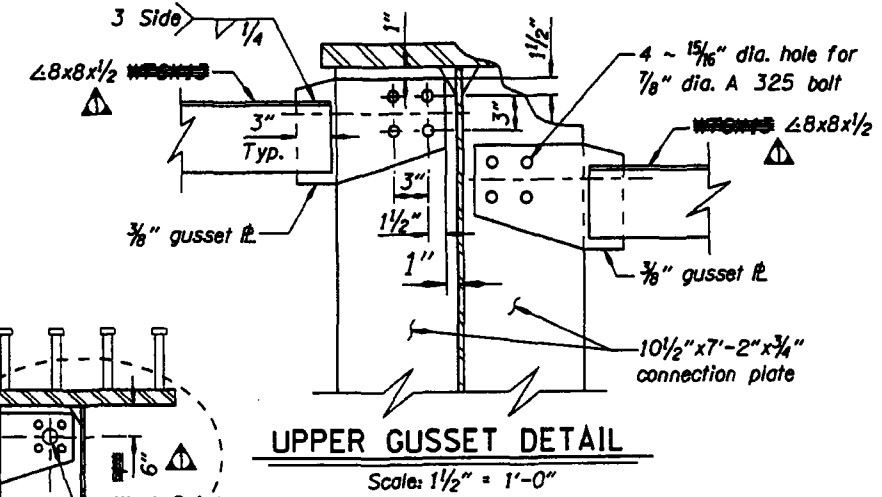
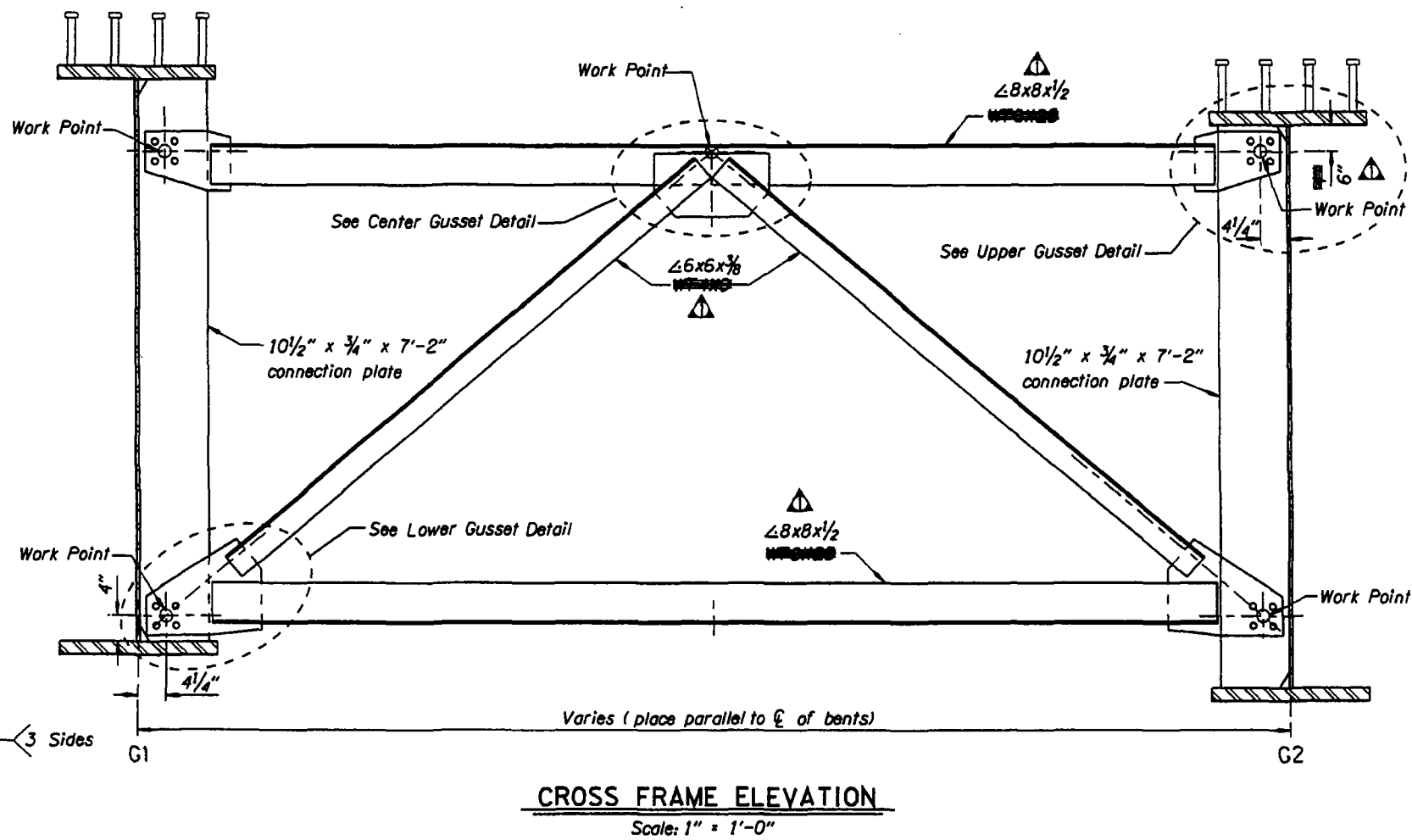
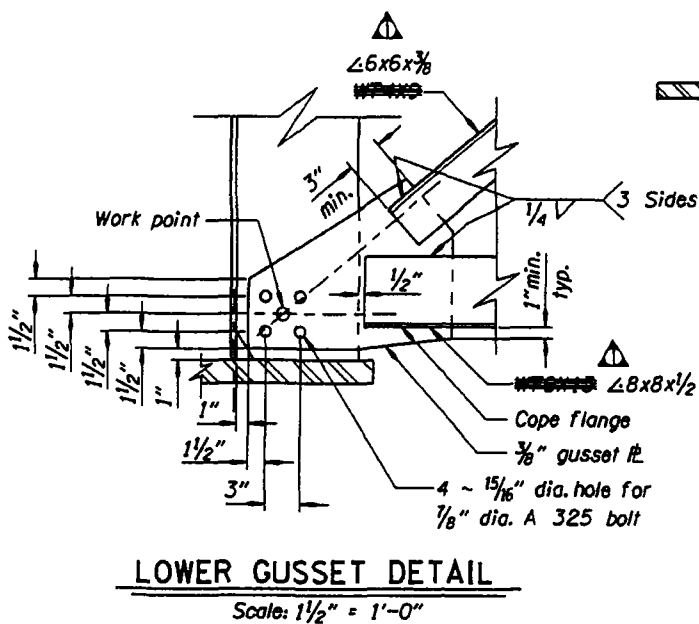
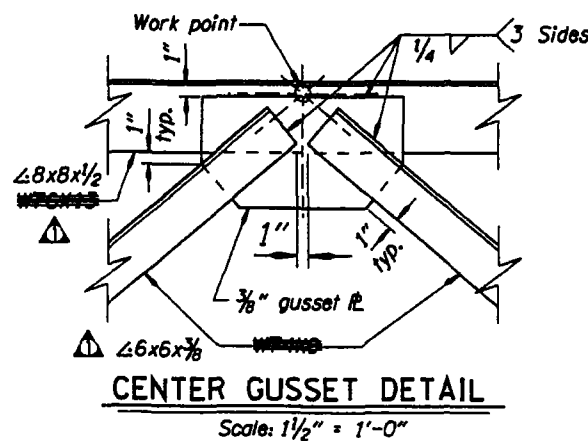
DATE	REVISION	BY	DRAFTER: R. Crooks		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 29 OF 37
			DESIGNER: Dennis J. Trefren			DATE May - 2007		DRAWING NO.
			CHECKER: Gopi Sripathy			CALC. BOOK XXXX		76588
			REVIEWER: Scott M. Nettleton					

BEAM CAMBER-G3													
SPAN NO.	ITEM	CAMBER (in)											H (in)
		0.0 Pt.	0.1 Pt.	0.2 Pt.	0.3 Pt.	0.4 Pt.	0.5 Pt.	0.6 Pt.	0.7 Pt.	0.8 Pt.	0.9 Pt.	1.0 Pt.	
1	Beam Dead Load	-1.847	-1.669	-1.490	-1.311	-1.130	-0.948	-0.763	-0.576	-0.387	-0.194	-	6.240
	End Diaphragm Load	2.055	1.821	1.589	1.359	1.137	0.921	0.718	0.524	0.343	0.168	-	
	Deck Dead Load	-3.648	-3.306	-2.963	-2.617	-2.270	-1.914	-1.551	-1.177	-0.794	-0.402	-	
	SIDL - Rail	-0.684	-0.619	-0.553	-0.487	-0.421	-0.354	-0.286	-0.217	-0.146	-0.074	-	
	4" Preload	-4.000	-3.620	-3.234	-2.848	-2.462	-2.070	-1.673	-1.269	-0.854	-0.433	-	
	SIDL - FWS	-	-0.007	-0.013	-0.018	-0.023	-0.026	-0.026	-0.024	-0.019	-0.011	-	
	Shrinkage	-	0.071	0.126	0.166	0.190	0.198	0.190	0.166	0.126	0.071	-	
	Subtotal	-8.124	-7.329	-6.538	-5.756	-4.979	-4.193	-3.391	-2.573	-1.731	-0.875	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-8.124	-7.329	-6.538	-5.756	-4.979	-4.193	-3.391	-2.573	-1.731	-0.875	-	
2	Beam Dead Load	-	0.832	1.606	2.208	2.565	2.680	2.568	2.217	1.619	0.842	-	22.290
	End Diaphragm Load	-	-0.621	-1.100	-1.426	-1.602	-1.656	-1.605	-1.435	-1.113	-0.630	-	
	Deck Dead Load	-	1.768	3.458	4.792	5.585	5.841	5.591	4.810	3.485	1.788	-	
	SIDL - Rail	-	0.326	0.633	0.867	1.003	1.047	1.006	0.874	0.642	0.333	-	
	4" Preload	-	1.864	3.620	4.958	5.736	5.987	5.753	4.998	3.671	1.904	-	
	SIDL - FWS	-	0.071	0.164	0.247	0.299	0.316	0.299	0.249	0.167	0.072	-	
	Shrinkage	-	0.815	1.450	1.903	2.175	2.265	2.175	1.903	1.450	0.815	-	
	Subtotal	-	5.055	9.831	13.549	15.761	16.480	15.787	13.616	9.921	5.124	-	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-	5.055	9.831	13.549	15.761	16.480	15.787	13.616	9.921	5.124	-	
3	Beam Dead Load	-	-0.197	-0.392	-0.586	-0.777	-0.966	-1.153	-1.339	-1.524	-1.709	-1.902	6.240
	End Diaphragm Load	-	0.171	0.350	0.536	0.731	0.941	1.161	1.388	1.622	1.861	2.119	
	Deck Dead Load	-	-0.407	-0.806	-1.197	-1.578	-1.950	-2.314	-2.672	-3.029	-3.384	-3.752	
	SIDL - Rail	-	-0.076	-0.150	-0.223	-0.295	-0.366	-0.435	-0.505	-0.574	-0.643	-0.715	
	4" Preload	-	-0.425	-0.839	-1.248	-1.650	-2.048	-2.434	-2.825	-3.211	-3.597	-4.000	
	SIDL - FWS	-	-0.011	-0.019	-0.024	-0.026	-0.026	-0.023	-0.019	-0.013	-0.007	-	
	Shrinkage	-	0.071	0.126	0.166	0.190	0.198	0.190	0.166	0.126	0.071	-	
	Subtotal	-	-0.874	-1.730	-2.576	-3.405	-4.217	-5.008	-5.806	-6.603	-7.408	-8.250	
	Gradeline	-	-	-	-	-	-	-	-	-	-	-	
	Total	-	-0.874	-1.730	-2.576	-3.405	-4.217	-5.008	-5.806	-6.603	-7.408	-8.250	

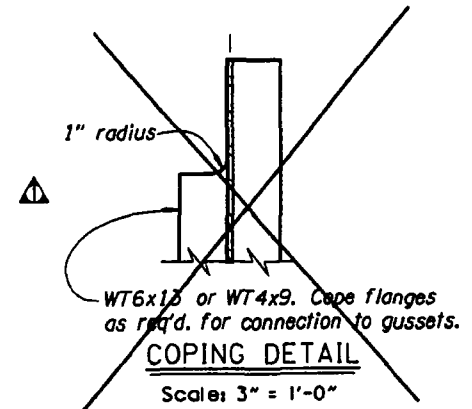


**CAMBER DIAGRAM**  
 No Scale

DATE	REVISION	BY	DRAFTER: R. Crooks DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton			STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 30 OF 37
	DATE May - 2007	DATE				DATE		CALC. BOOK XXXX
ACCOMPANIED BY DWGS. See Sheet 1.			GENERAL DATE:					

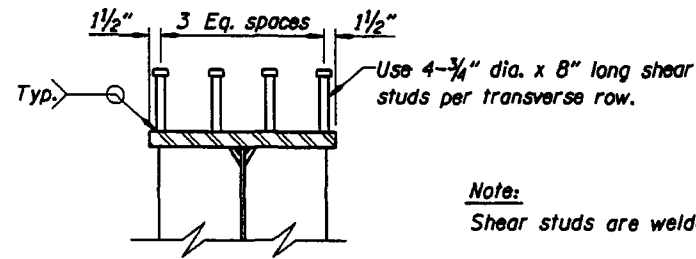


**Notes:**  
All bolts are 7/8" dia. A325



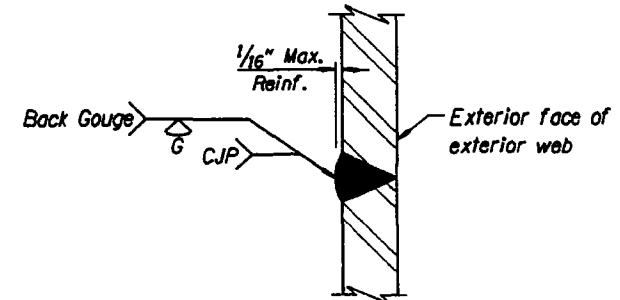
DATE	REVISION	BY	DRAFTER: D. Axtell DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET
6-29-07	Revised Cross Frames	T.H.				20584		31
ACCOMPANIED BY DWGS. See Sheet 1.				 TYLIN INTERNATIONAL		DATE	CROSS FRAME DETAILS	OF
						Feb. - 2007		37
						CALC. BOOK		DRAWING NO.
						XXXX		76590



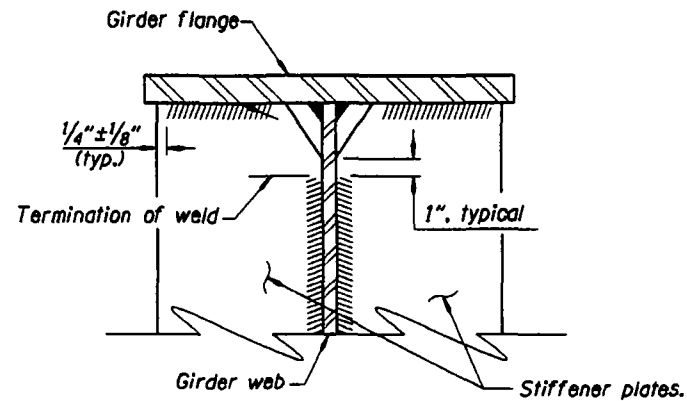


**SHEAR STUD DETAIL**  
Scale 1"=1'-0"

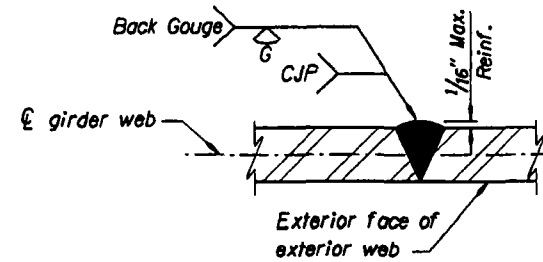
**Note:**  
Shear studs are welded normal to girder.



**EQUAL THK. LONGITUDINAL WEB SPLICE**



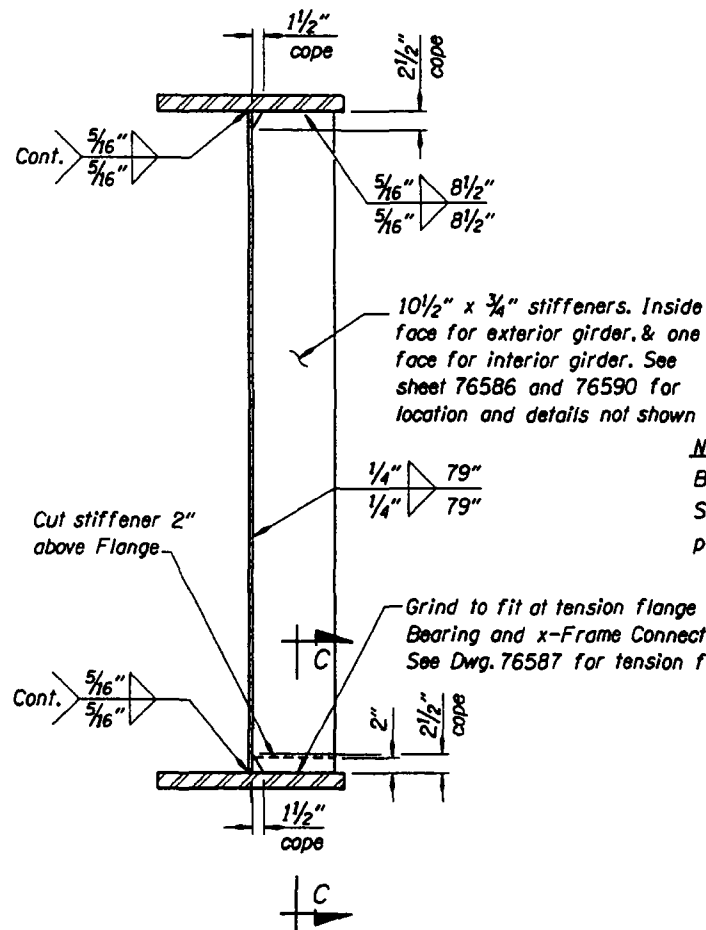
**WELD TERMINATION DETAIL**  
No Scale



**EQUAL THK. VERTICAL WEB SPLICE**

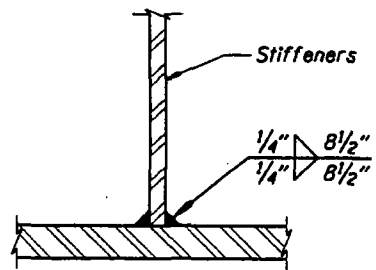
**Welding Note:**  
Welding shall conform to AWS D 1.5

**WEB SPLICE - TYPICAL**  
No Scale

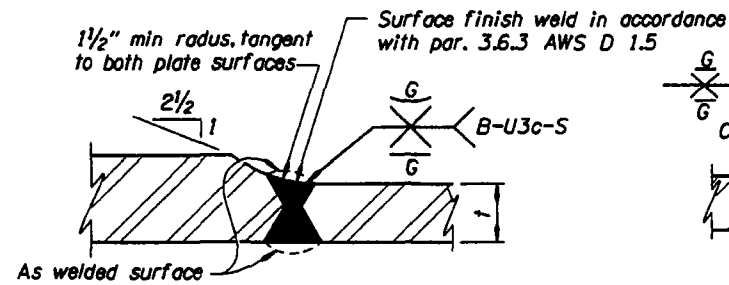


(Left ext. Girder Shown)  
**STIFFENER DETAILS**  
(BEARING STIFFENER SIMILAR)  
Scale 1"=1'-0"

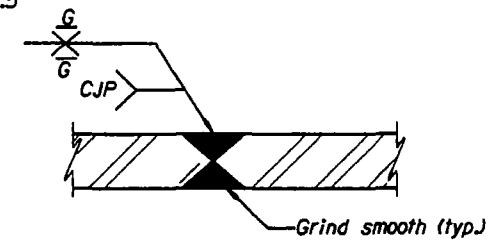
**Note:**  
Bearing And X-Frame Stiffeners to be placed parallel to bents.



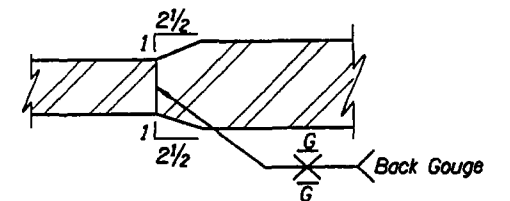
**WELD SECTION C-C**  
Scale 1 1/2"=1'-0"



**UNEQUAL THICKNESS FLANGE SPLICE**



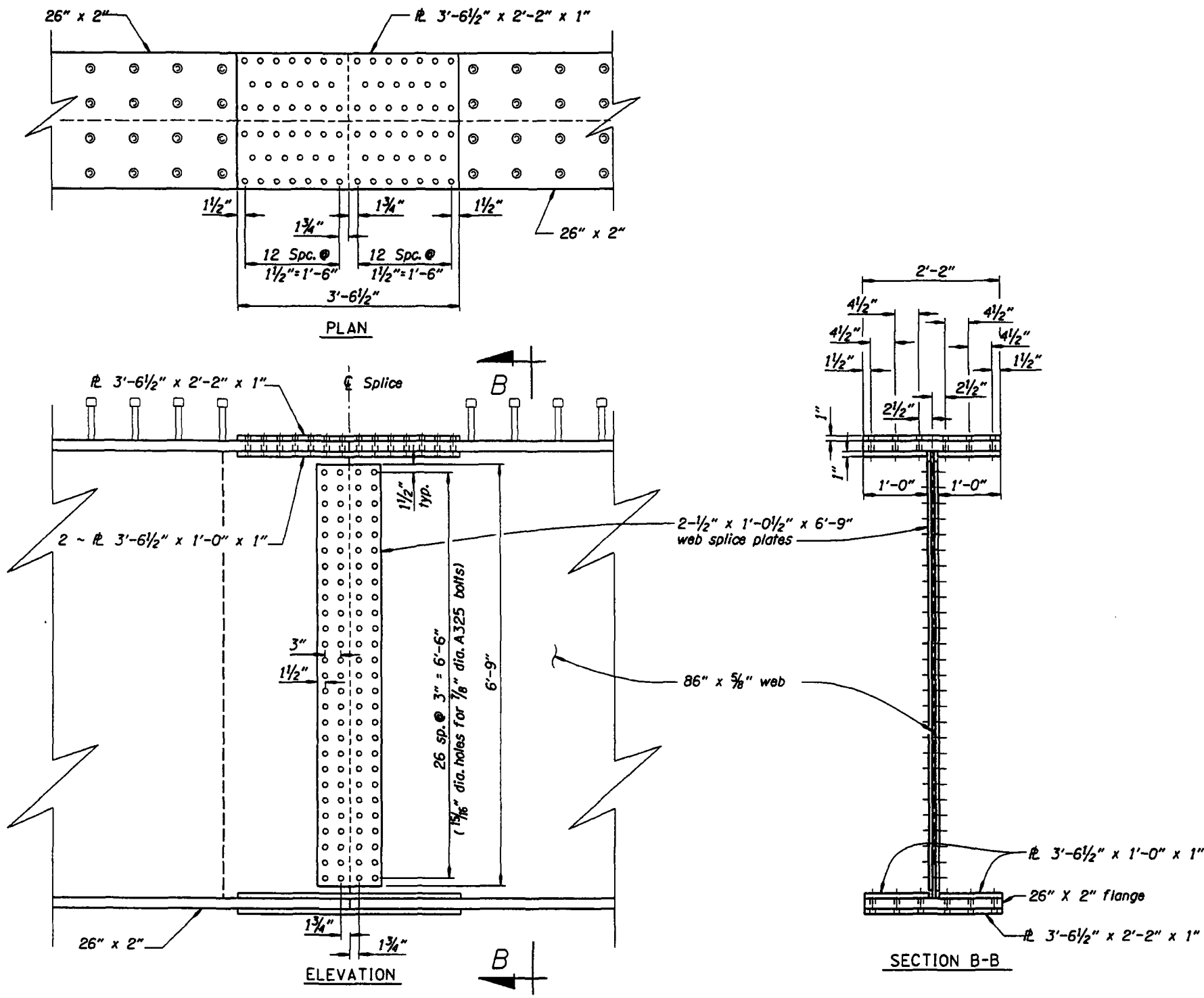
**EQUAL THICKNESS FLANGE SPLICE**



**UNEQUAL FLANGE WIDTH**

**FLANGE SPLICE - TYPICAL**  
No Scale

DATE	REVISION	BY	DESIGNER: D. Axtell	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 32 OF 37
			DESIGNER: Dennis J. Trefren			
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Gopi Sripathy	CALC. BOOK XXXX	MISCELLANEOUS WELD DETAILS	DRAWING NO. 76591
			REVIEWER: Scott M. Nettleton			

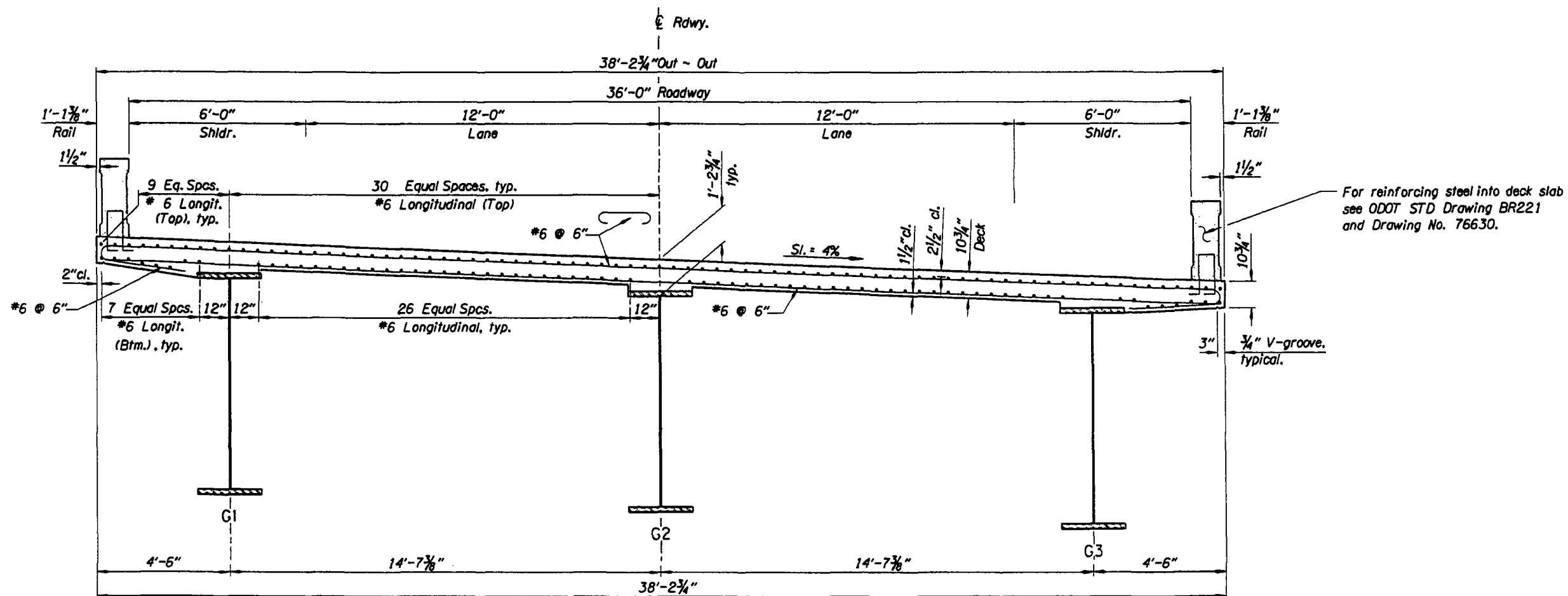


- Notes:
1. All bolts are 7/8" dia. A325 with 15/16" dia. holes.
  2. The contact surface of bolted parts shall have a Class "B" surface treatment prior to bolting.

FIELD SPLICE DETAIL  
Scale 1" = 1'-0"

DATE	REVISION	BY	DRAFTER: D. Axtell DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton		OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 33 OF 37
			ACCOMPANIED BY DWGS. See Sheet 1.			DATE May - 2007		DRAWING NO. 76592

TYLIN INTERNATIONAL



**Notes:**

- 1.) Shear studs not shown for clarity.
- 2.) No splices allowed at centerline of Bents 2 & 3.
- 3.) Place transverse bars normal to  $\phi$  roadway.

**TYPICAL SECTION**

Scale:  $\frac{1}{2}'' = 1'-0''$

**TYPICAL DECK REINFORCING**

Place longitudinal bars on top for both mats.  
Place bottom mat bars directly below and in line with top mat bars.

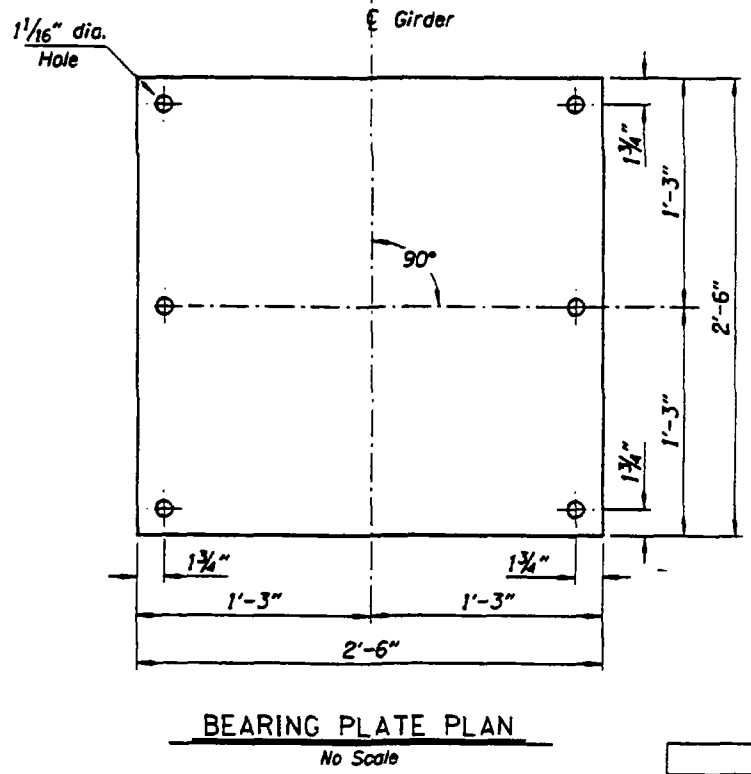
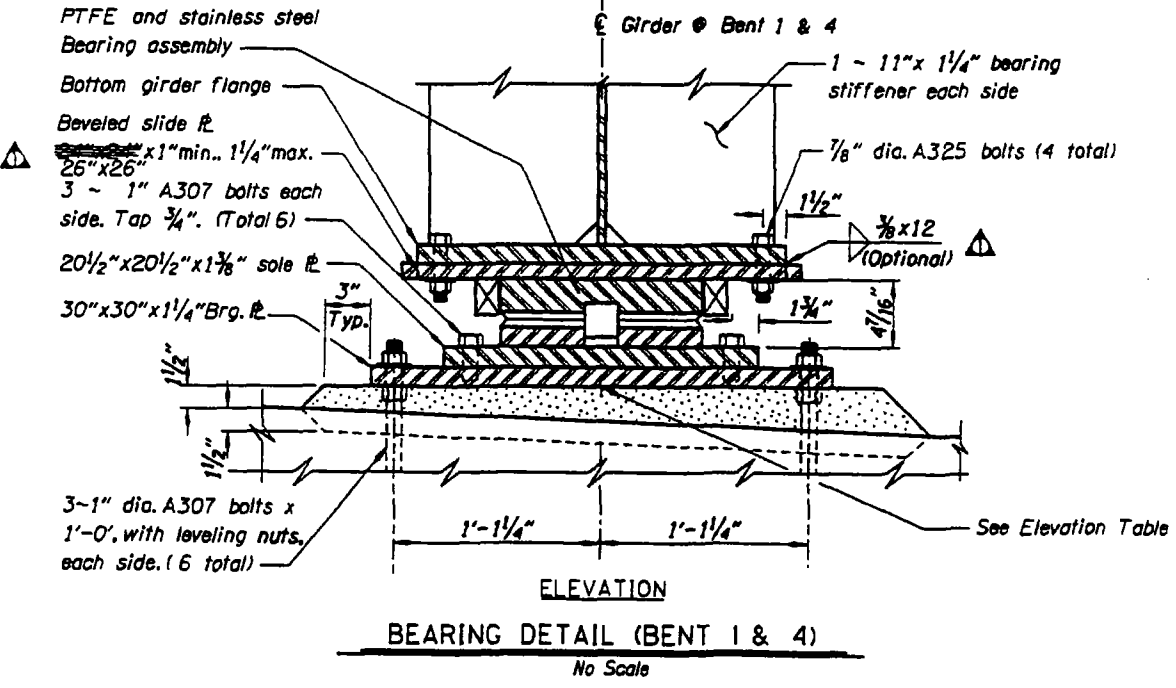
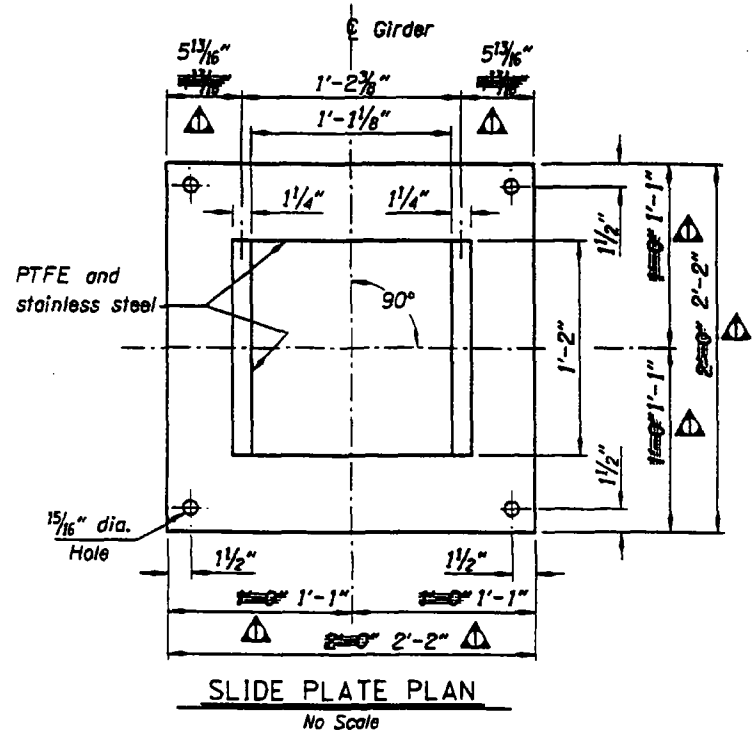
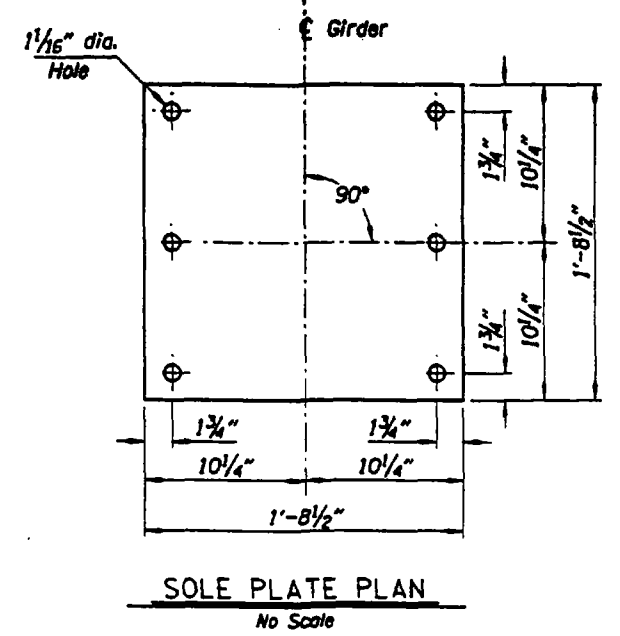
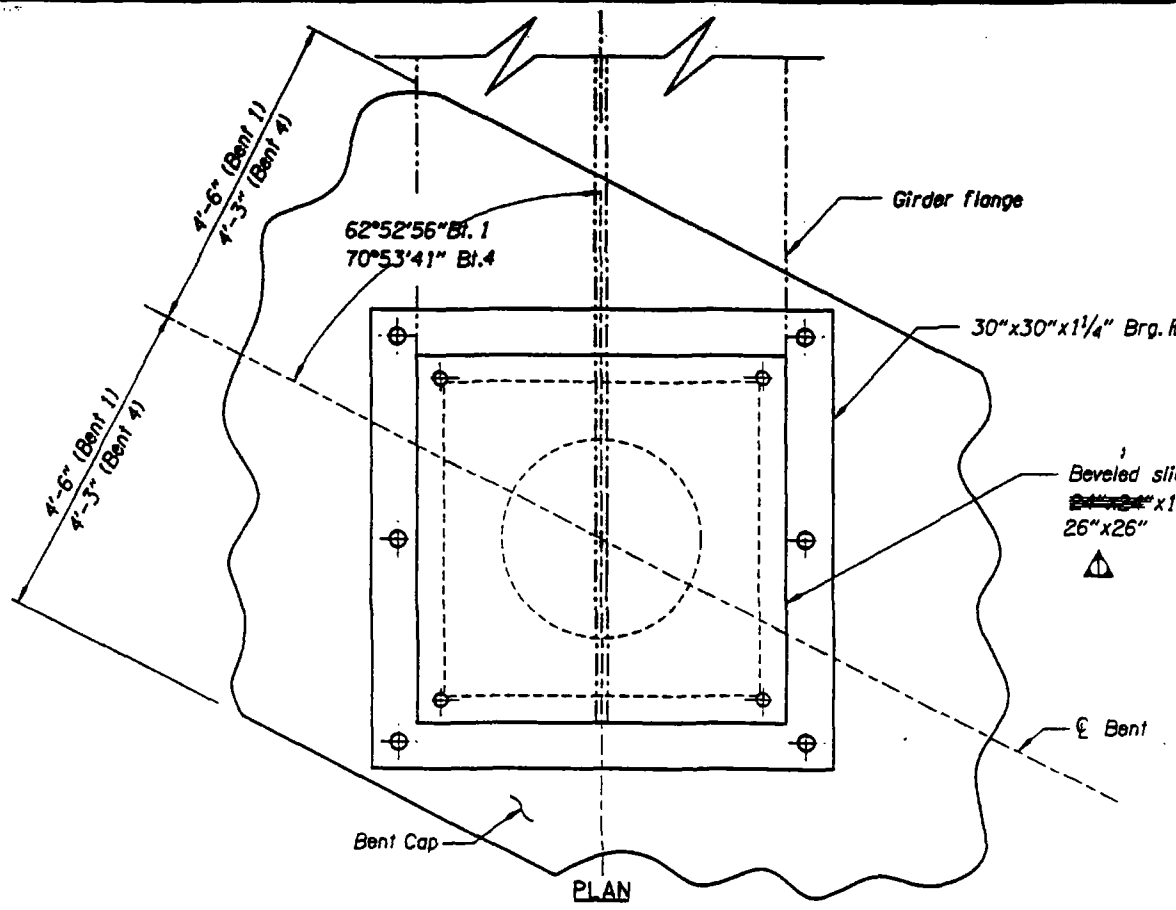
**TRANSVERSE BARS:**

#6 Top & bottom mat transverse bars at 6" max. Top bars shall have hook as noted at each end.

**LONGITUDINAL BARS:**

79 - #6 Top mat longitudinal bars at 6" max.  
70 - #6 Bottom mat longitudinal bars at 6" max.

DATE	REVISION	BY	DRAFTER: D. Axtell		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 34 OF 37
			DESIGNER: Dennis J. Trefren			DATE May - 2007		DRAWING NO. 76593
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Gopi Sripathy	RENEWAL DATE:	TYLIN INTERNATIONAL	CALC. BOOK XXXX	TYPICAL DECK SECTION	
			REVIEWER: Scott M. Nettleton					



- NOTES:
1. Dimensions may vary per manufacturer.
  2. Bearing height based on Model 500 kip Disktron Unidirectional bearing manufactured by R. J. Watson, Inc.
  3. Grout shall have a minimum 28 day strength = 4000 psi.

Top of Grout Pad Elevations		
	Bent 1	Bent 4
G <sub>1</sub>	159.05	161.96
G <sub>2</sub>	158.40	161.32
G <sub>3</sub>	157.74	160.69

Bearing Schedule								
Bent	No. Req'd	Type	Design Load Capacities in kips per Bearing			Calculated movements		Movement per 10°F Temp. change
			Vertical	Lateral	Longit.	68°F Temp. Rise	62°F Temp. Fall	
1 & 4	6	Guided	500	50	50	1/8"	3/4"	1/8"

DATE	REVISION	BY
2/11/08	Plate Dimension, Weld Option	T.H.

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER: D. Axtell
DESIGNER: Dennis J. Trefren
CHECKER: Gopi Sripathy
REVIEWER: Scott M. Nettleton



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

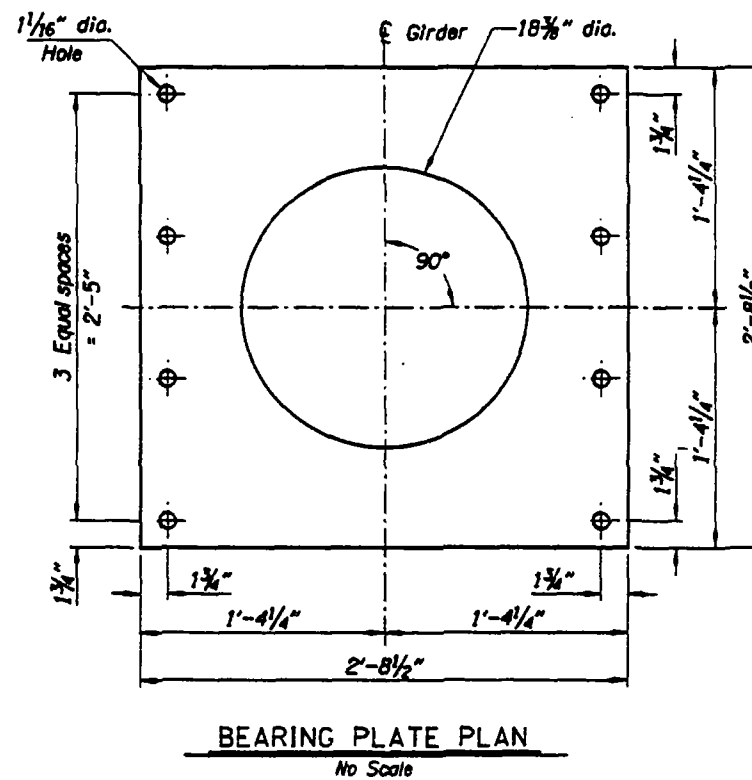
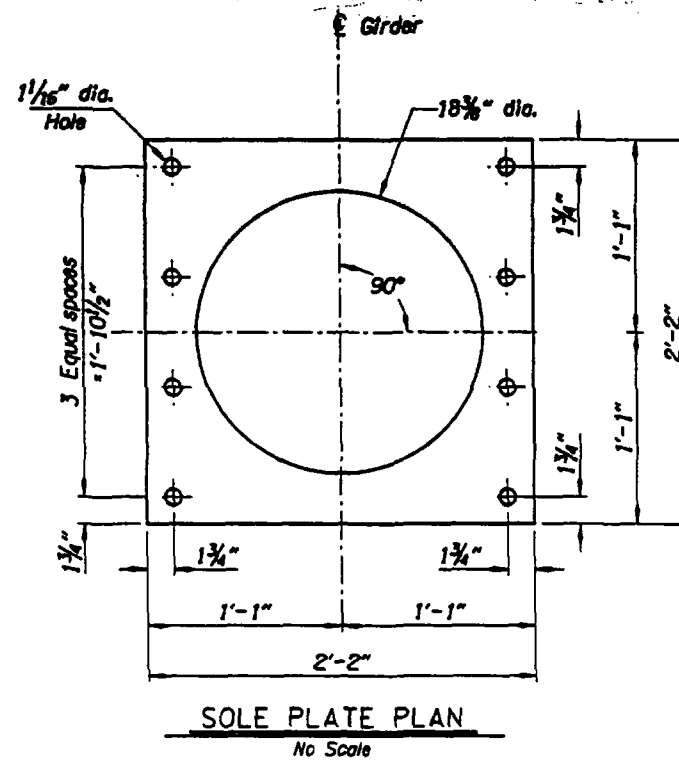
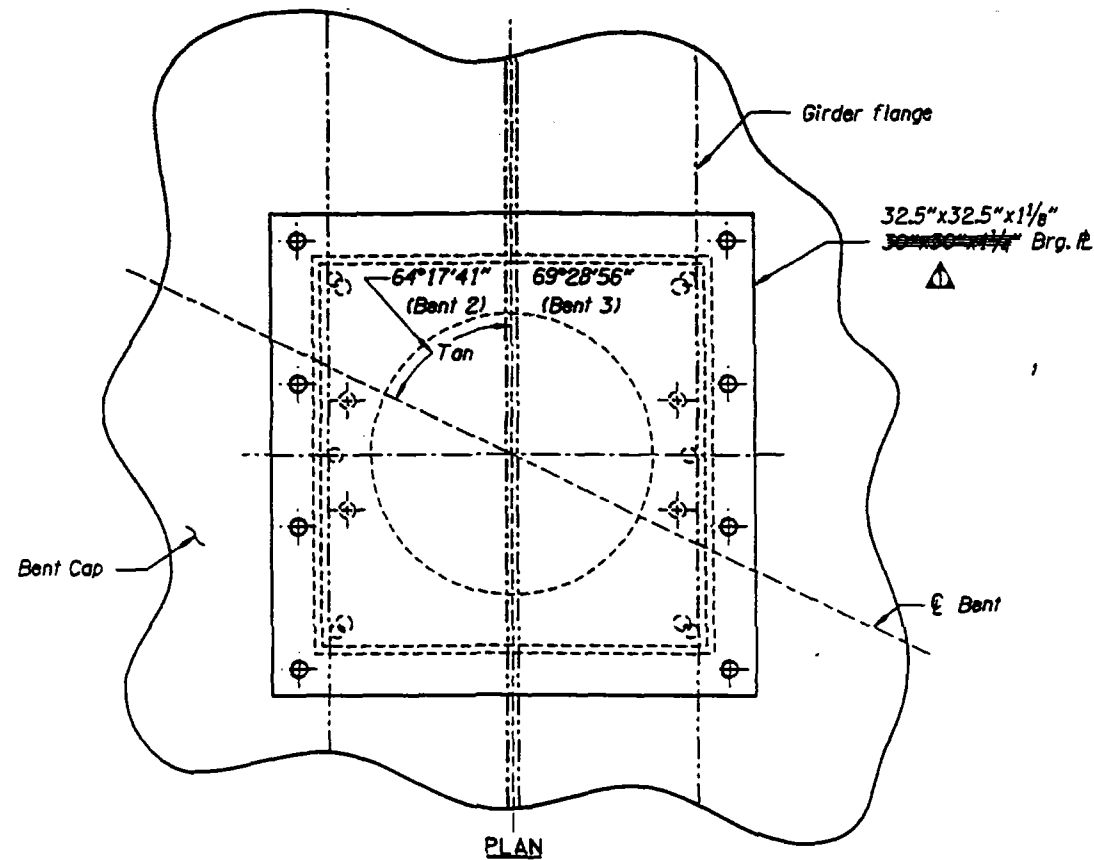
**TYLIN INTERNATIONAL**

STRUCTURE NO. 20584
DATE May - 2007
CALC. BOOK XXXX

ELK CREEK BRIDGE (CROSSING NO. 3)  
ELK CREEK TO HARDCRABBLE CREEK SECTION  
Umpqua Hwy. 45 (M.P. 39.64) Douglas County

BEARING DETAILS (BENT 1 AND 4)

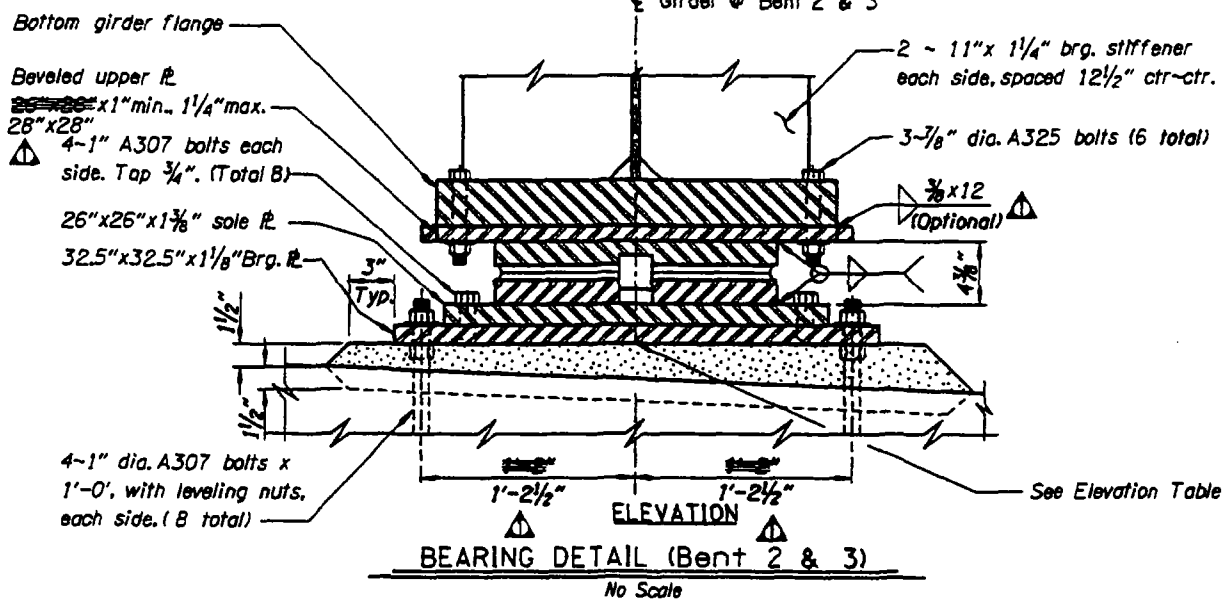
SHEET 35 OF 37
DRAWING NO. 76594



NOTES:

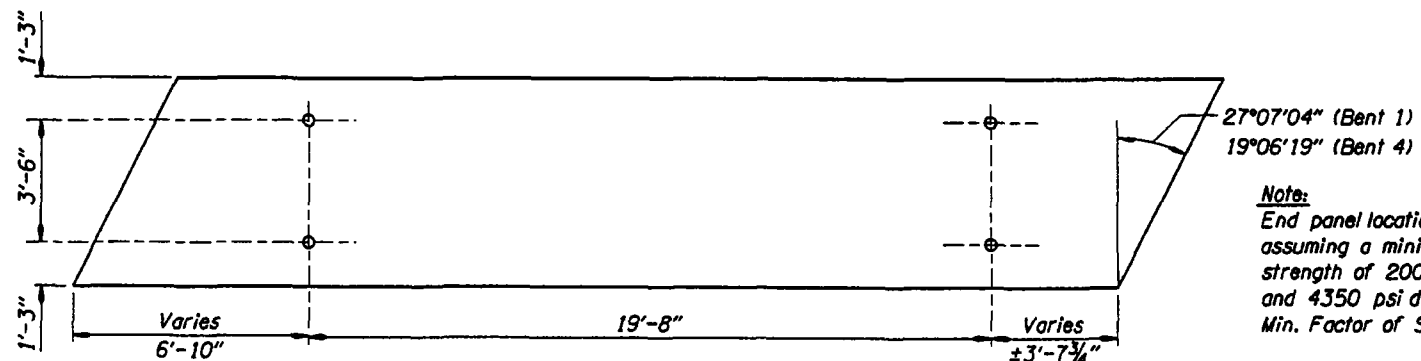
1. Dimensions may vary per manufacturer.
2. Bearing height based on Model 1100 kip Disktron Fixed bearing manufactured by R.J. Watson, Inc.
3. Grout shall have a minimum 28 day strength = 4000 psi

Top of Grout Pad Elevations		
	Bent 2	Bent 3
G <sub>1</sub>	159.43	161.31
G <sub>2</sub>	158.78	160.68
G <sub>3</sub>	158.13	160.05



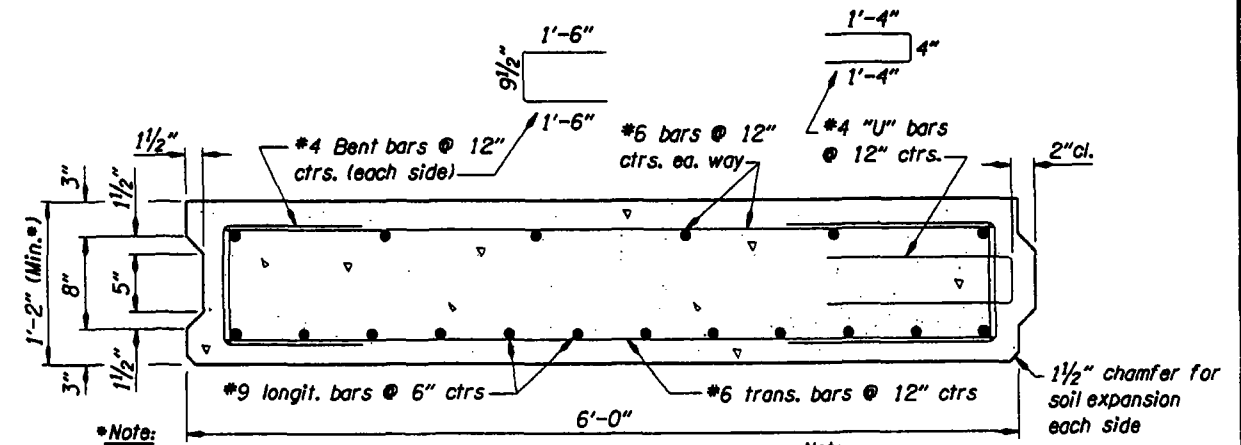
Bearing Schedule					
Bent	No. Req'd	Type	Design Load Capacities in kips per Bearing		
			Vertical	Lateral	Longit.
2 & 3	6	Fixed	1100	110	110

DATE: 2/11/08	REVISION: Plate Dimension, Weld Option	BY: T.H.	DRAWN: D. Axtell	DESIGNER: Dennis J. Yrefren	CHECKER: Copi Sripathy	REVIEWER: Scott M. Nettleton	STRUCTURE NO.: 20584	DATE: May - 2007	CALC. BOOK: XXXX	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 36 OF 37 DRAWING NO. 76595
ACCOMPANIED BY DWGS. See Sheet 1.							TYLIN INTERNATIONAL		BEARING DETAILS (BENT 2 AND 3)		



(4 POINT PICK OPTION FOR PANELS)  
**END PANEL PICK-UP LOCATION**  
 Scale: 3/8" = 1'-0"

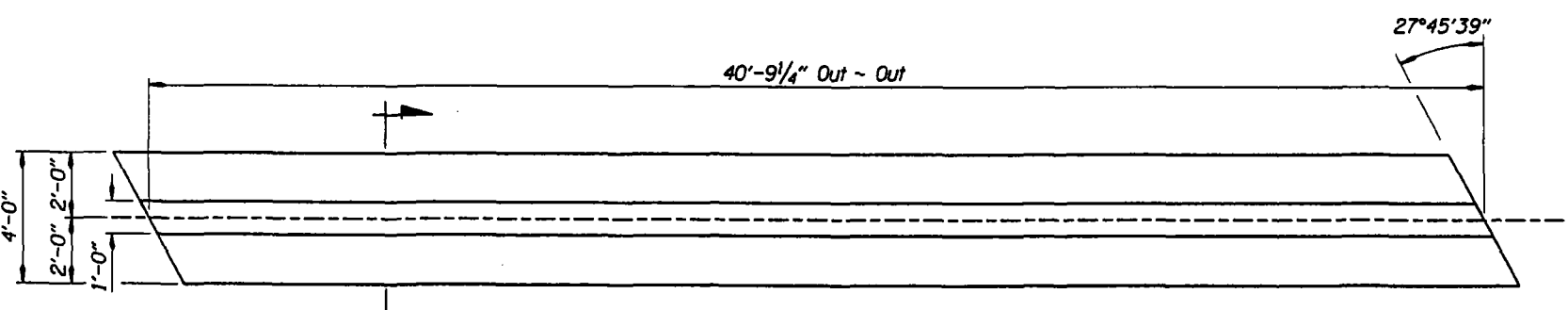
**Note:**  
 End panel locations are determined assuming a minimum concrete strength of 2000 psi at stripping and 4350 psi during erection. Min. Factor of Safety = 1.5



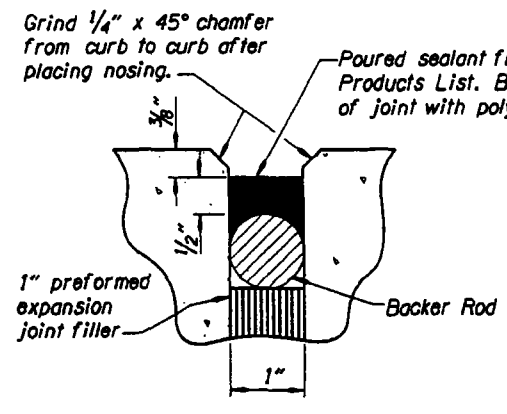
**END PANEL SECTION**  
 Scale: 1 1/2" = 1'-0"

**Note:**  
 Adjust height at end panel seat

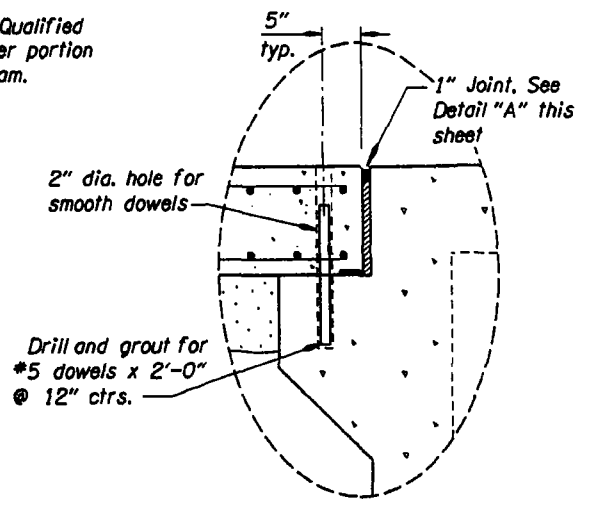
**Note:**  
 Omit keyway on exterior face of exterior panel.



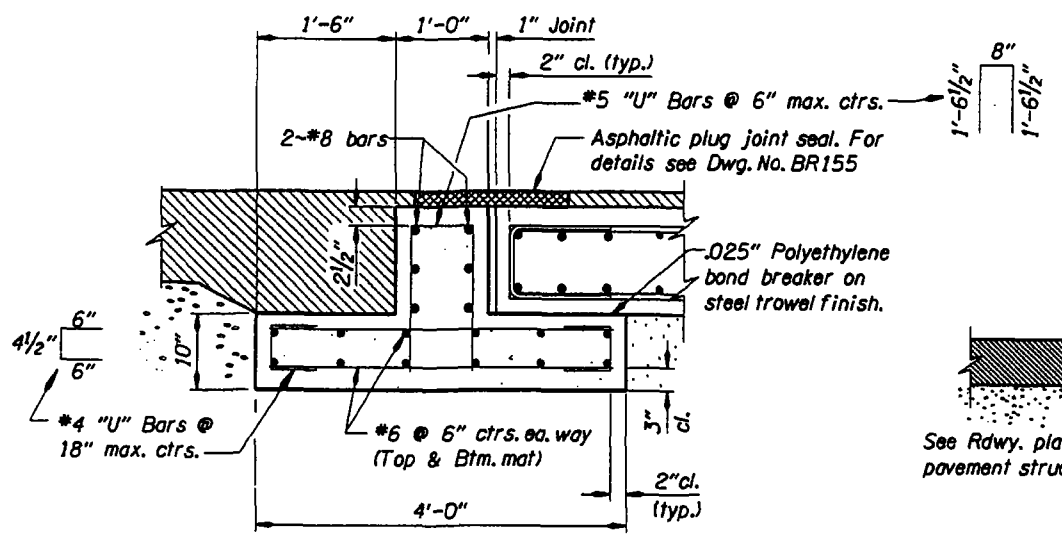
**END PANEL FOOTING PLAN**  
 Scale: 1/2" = 1'-0"



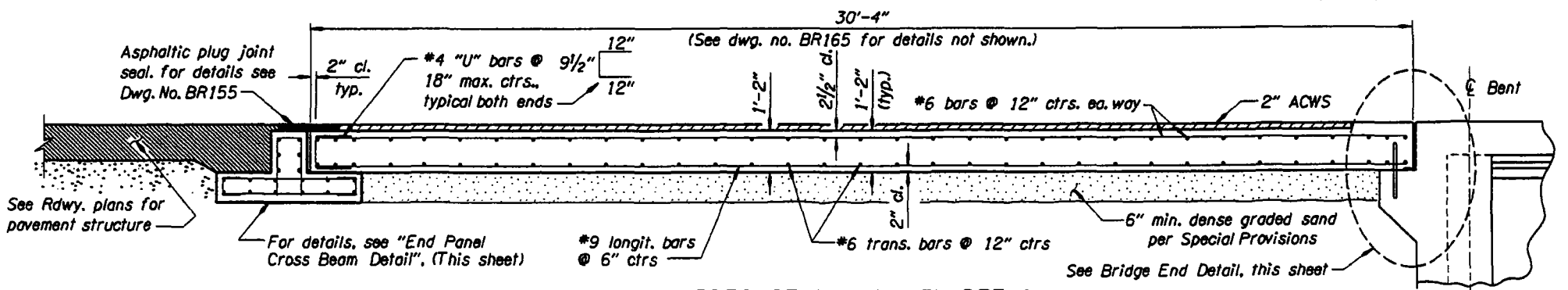
**DETAIL "A"**  
 No Scale



**BRIDGE END DETAIL**  
 Scale: 1" = 1'-0"

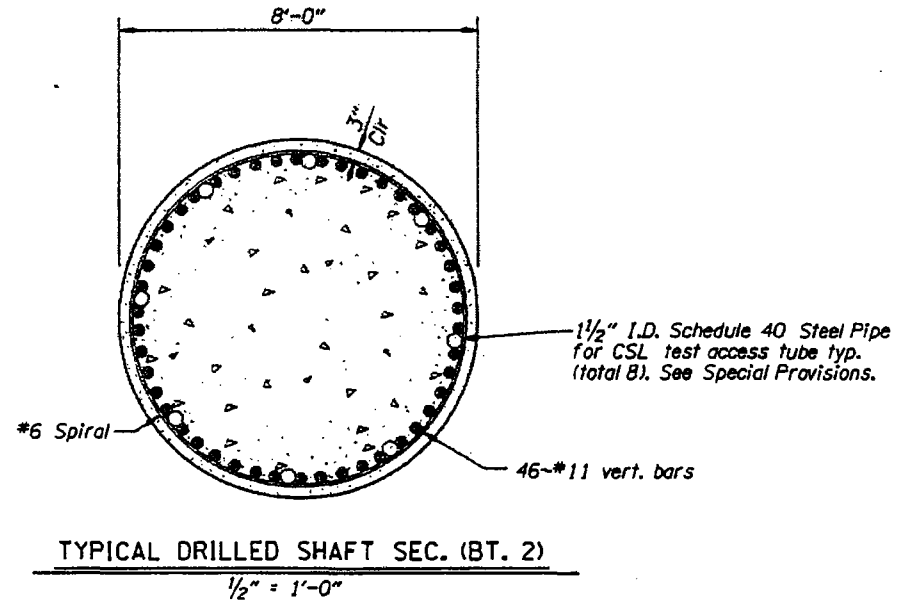
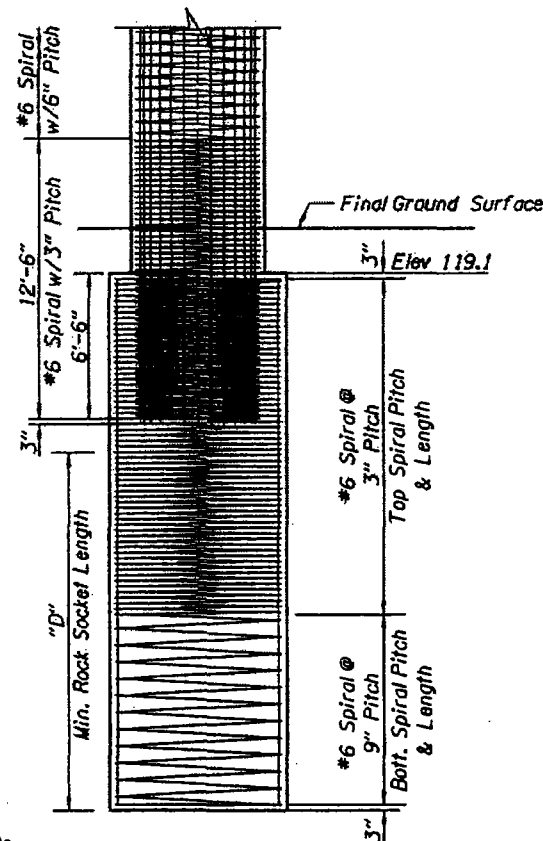


**END PANEL FOOTING SECTION**  
 Scale: 1" = 1'-0"



**PRECAST END PANEL DETAIL**  
 Scale: 1/2" = 1'-0"

DATE	REVISION	BY	DRAFTER: D. Axtell		 <b>OREGON DEPARTMENT OF TRANSPORTATION</b> REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	<b>ELK CREEK BRIDGE (CROSSING NO. 3)</b> <b>ELK CREEK TO HARDSCRABBLE CREEK SECTION</b> Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 37 OF 37
			DESIGNER: Adrian Kidarsa			DATE May - 2007		DRAWING NO. 76596
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Anthony Calcagno			CALC. BOOK XXXX	<b>PRECAST END PANEL DETAILS</b>	
			REVIEWER: Scott M. Nettleton	RENEWAL DATE:				



TYPICAL DRILLED SHAFT SEC. (BT. 2)

Note:  
For Drilled Shaft details not shown, see dwg. 76575.  
For Column details not shown, see dwg. 76581.

BENT 2 PARTIAL FOOTING ELEVATION

Scale: 1/4" = 1'-0"

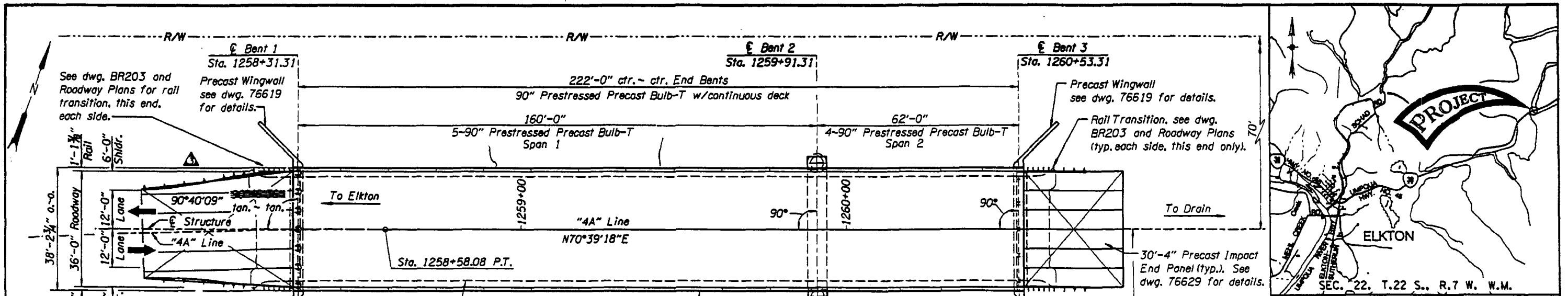
Bent	Vert. Bars	Vert. Bars Length	Top Spiral Length	Bott. Spiral Length	Elev. "A" (ft.)	Elev. "B" (ft.)**	"D" (ft.)
2	46	15'-6"	7'-9"	7'-9"	119.1	103.1	16'-0"

Bent	Ultimate Downward Load (Kips)	Ultimate Uplift Load (Kips)
2	4618	0

Note: For details not shown, see dwg. 76575.

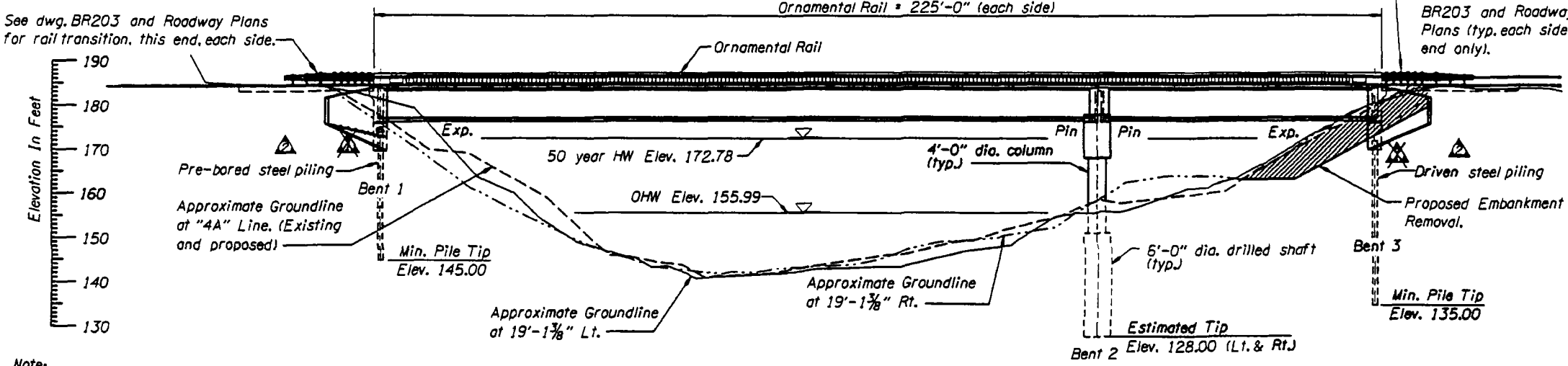
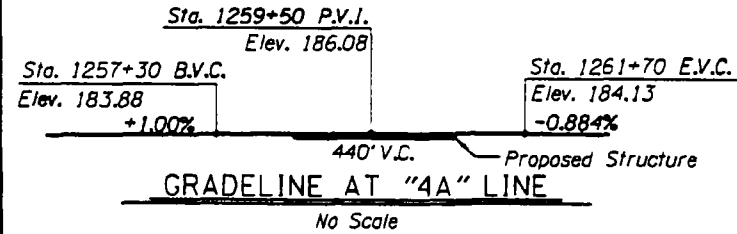
DATE: 8-9-07 REVISION: Drilled Shaft Elevation BY: T.H. DRAFTER: Tom Hernandez DESIGNER: Dennis J. Trefren CHECKER: Gopi Sripathy REVIEWER: Scott M. Nettleton		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20584	ELK CREEK BRIDGE (CROSSING NO. 3) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. 45 (M.P. 39.64) Douglas County	SHEET 1 OF 1
			DATE: May - 2007		CALC. BOOK: XXXX



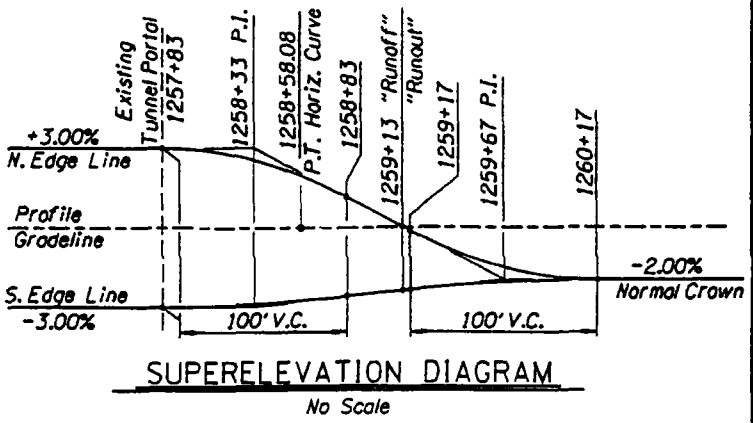
**PLAN**  
Scale: 1" = 15'-0"

**HYDRAULIC DATA**

ITEMS	UNITS	DESIGN FLOOD	BASE FLOOD	500-YEAR FLOOD
DISCHARGE	ft <sup>3</sup> /s	38,300	43,300	58,200
RECURRENCE INTERVAL	years	50	100	500
HIGH WATER ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	feet	172.78	174.54	182.79
BACKWATER	feet	1.19	1.25	4.46



**ELEVATION**  
Scale: 1" = 15'-0"



Note:  
Elevations shown are based on the North American Vertical Datum (NAVD 29).

DATE	REVISION	BY			STRUCTURE NO.	<b>ELK CREEK BRIDGE (CROSSING NO. 4)</b> <b>ELK CREEK TO HARDCRABBLE CREEK SECTION</b> Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET	
08-28-07	Revised Pile Cap Depth	JK			DRAFTER: Tom Hernandez		20585	OF
12-26-07	Deleted Revision	TH			DESIGNER: Adrian Kidarsa		DATE	39
10-08-07	Revised Bent Angle	AK			CHECKER: Michael M. Wolohan		June - 2007	DRAWING NO.
ACCOMPANIED BY DWGS. 76598 thru 76630. BR. 155, BR. 165, BR. 203, BR. 221, BR. 350.			REVIEWER: Scott M. Nettleton	RENEWAL DATE: 12-31-08		CALC. BOOK XXXX	<b>76597</b>	



**GENERAL NOTES:**

Provide all materials and perform all work according to the DB Standard Specifications of Contract C13319 and approved Special Provisions.

Bridge is designed with an allowance of 25 psf for future wearing surface and all the following Live Loads according to the 2004 AASHTO LRFD Bridge Design Specifications (3rd Edition):

Service and Strength-1 Limits States:

HL-93: Design truck or trucks per LRFD 3.6.1.3 or the design tandems and the design lane loads.

Strength-2 Limits States:

ODOT Type STP-5BW Permit truck  
ODOT Type STP-5C Permit truck

Bridge is designed in accordance with 2004 AASHTO LRFD Bridge Design Specifications (3rd Edition) with 2005 Interims. The foundation elements are designed by Allowable Stress Design in accordance with AASHTO Standard Specifications For Highway Bridges.

Seismic design is by multi-mode analysis in accordance with the "AASHTO LRFD Bridge Design Specifications" as modified by the "ODOT Bridge Design & Drafting Manual". Bridge is designed for the following seismic criteria:

Return Period	Peak Bedrock Acceleration (A)	Importance Category	Response Modification Factor (R)			Site Coefficient (S)	
			Columns		Superstructure to Substructure Connections		
			Longit.	Transv.			
500 year (serviceable)	0.15 g	Essential	2.0	3.5	0.8	1.0	1.0
1000 year (no-collapse)	0.27 g	Other	3.0	5.0	0.8	1.0	1.0

At Bent 1, install HP 14 x 89 (ASTM A572 Gr.50) in pre-bored holes filled with CLSM. Pile installation procedure shall be approved by Geotechnical Engineer prior to installation. Estimated Tip Elevation shall be field verified by Geotechnical Engineer.

At Bent 3, provide HP 14 x 89 (ASTM A572 Gr.50), with approved driving shoe. Drive piling to an ultimate capacity of 600 kips per pile using driving criteria described in Geotechnical Report.

Pile tip elevation for minimum pile penetration at:

Bent 1 is Elevation 145 feet according to Table 2 of Geotechnical Report.  
Bent 3 is Elevation 135 feet according to Table 2 of Geotechnical Report.  
Pile tip elevations at Bent 3 assume 1 ft. penetration into rock or refusal.

Provide column and drilled shaft spiral reinforcement in accordance with detailed plans. Contractor to propose additional length for field adjustment of drilled shaft reinforcement at time of drilling.

Provide all reinforcing steel according to ASTM A615 Grade 60. Provide all field bent bars according to ASTM Specification A706. Use the following splice lengths unless shown otherwise:

Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18
Splice Length	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"	Not Permitted	

Splice reinforcing steel at alternate bars, staggered at least one splice length or as far as possible, unless shown otherwise.

**GENERAL NOTES Cont.:**

Support the bottom mat reinforcing steel from the forms with an approved support system at  $\frac{24"}{36}$  maximum centers each way. Support the top mat of reinforcing steel from the bottom mat of reinforcing steel with wire bar supports as shown in Chapter 3 of the CRSI Manual of Standard Practice (SBU, BBU, or CHCU). Place wire bar supports at 24" maximum centers.

Use uncoated reinforcing steel in all concrete and precast bridge end panel.

Place bars 2" clear of the nearest face of concrete unless shown otherwise. The top bends of stirrups extending from beam stems into the top slab may be shop or field bent unless shown otherwise.

Provide Class HPC4350 -  $\frac{3}{4}$ " concrete in deck (except in prestressed sections).

Provide Class 4350 -  $\frac{3}{4}$ " concrete in columns, bent caps, shear lugs and diaphragms.

Provide Class 4350 -  $\frac{1}{2}$ " concrete in drilled shafts.

Provide Class 3600 -  $\frac{3}{4}$ " concrete in wingwalls.

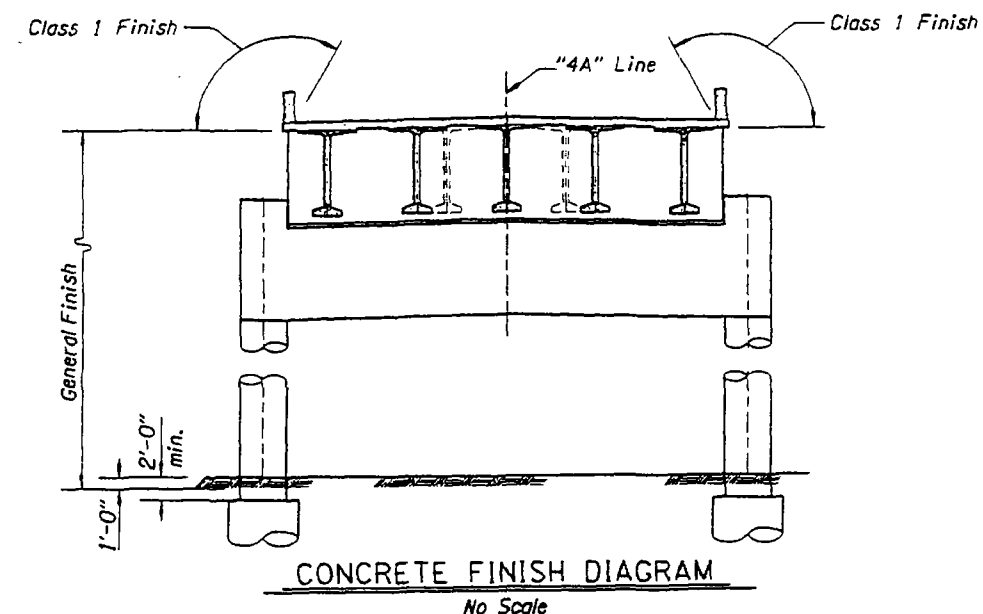
Provide Class HPC4350 -  $1\frac{1}{2}$ " or  $\frac{3}{4}$ " concrete in precast reinforced concrete end panels.

Provide Class 3600 -  $1\frac{1}{2}$ " or  $\frac{3}{4}$ " in ornamental concrete bridge rail.

Provide Class 3600 -  $1\frac{1}{2}$ " , 1" or  $\frac{3}{4}$ " concrete for all other concrete.

Provide concrete in precast prestressed beams according to detail plans.

Provide prestressing steel according to detail plans.



CONCRETE FINISH DIAGRAM  
No Scale

DATE: 7-2-07	REVISION: Revised Notes	BY: T.H.	DRAFTER: D. Axtell		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p>	STRUCTURE NO.: 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 2 OF 34
ACCOMPANIED BY DWGS. See Sheet 1.			DESIGNER: Adrian Kiorso			DATE: June - 2007		DRAWING NO. 76598
			CHECKER: Michael M. Wolohan			CALC. BOOK XXXX		
			REVIEWER: Scott M. Nettleton	RENEWAL DATE: 12-31-08	TYLIN INTERNATIONAL	GENERAL NOTES AND CONCRETE FINISH DIAGRAM		

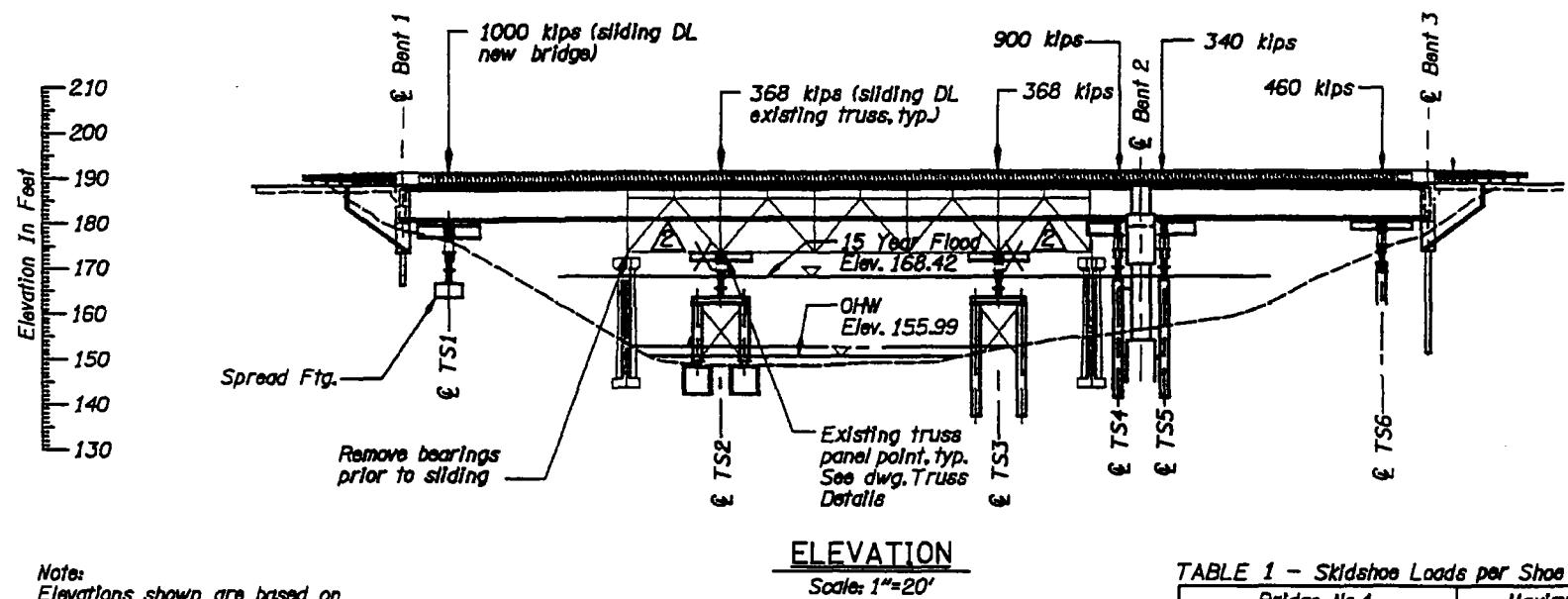
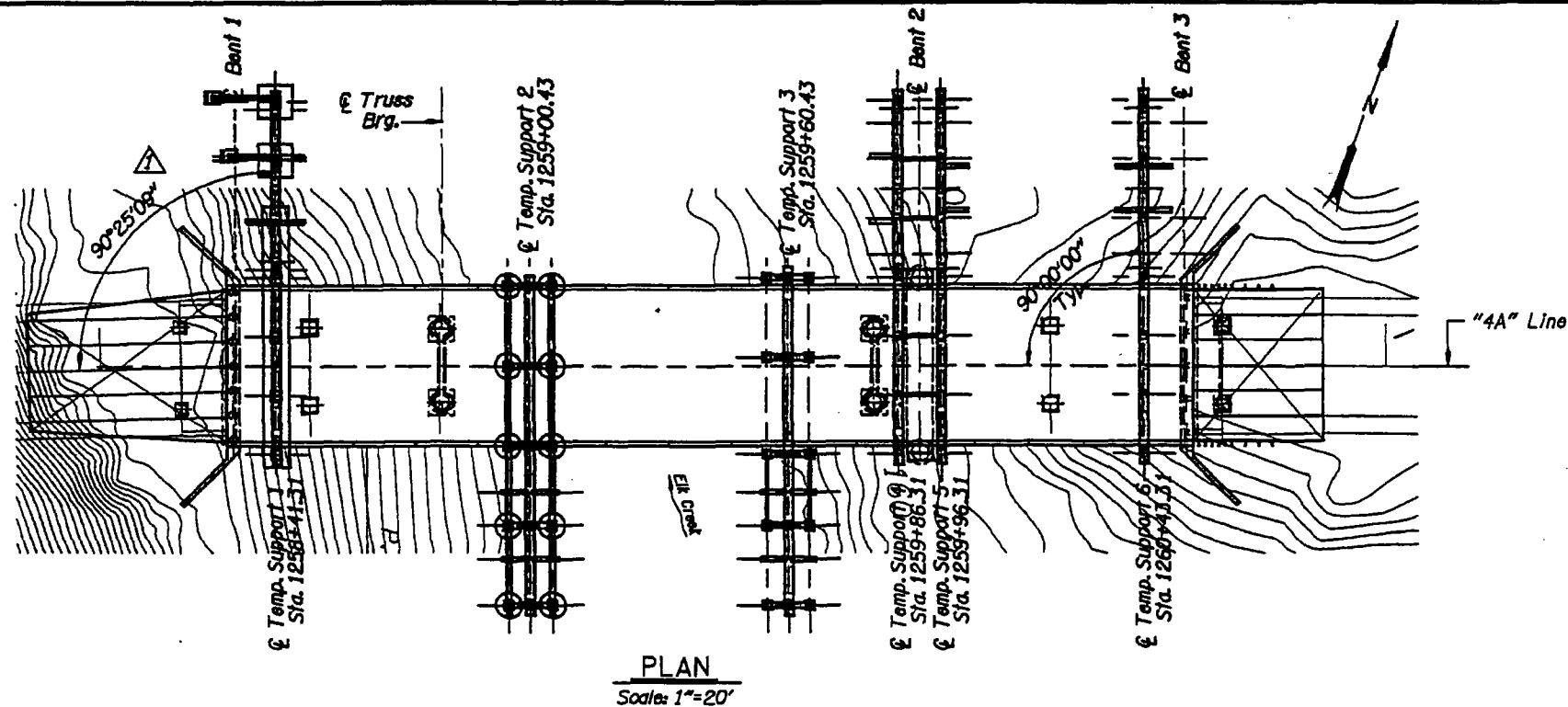


TABLE 1 - Skidshoe Loads per Shoe

Bridge No.4 Temporary Support	Maximum Vertical Load (k)	Allowable Lateral Load (k)
Temp. Supports 1 & 4	550	27
Temp. Supports 2 & 3	200	10
Temp. Supports 5 & 6	250	12

**GENERAL CONSTRUCTION NOTES:**

Temporary works and temporary foundation elements are designed by Allowable Stress Design in accordance with AASHTO Standard Specifications For Highway Bridges. Pipe pile sections are designed in accordance with AASHTO LRFD Specifications.

Plans cover structural support for sliding operation. The capacity, stability and alignment of all sliding components are the responsibility of Mammoet.

All structural steel for rolled sections and plates shall be ASTM A709, Grade 36, unless noted otherwise. All structural steel for pipe sections shall be ASTM A252 (Grade 3), unless noted otherwise. Concrete Strength Class 3600. Reinforcing Steel ASTM A706 or AASHTO M31 (ASTM A 615) Grade 60.

Field verify all measurements prior to ordering or fabricating any steel. Field verify all foundation elevations and confirm with Engineer. Foundation elevations that vary more than 2 feet from that shown on the plans must be approved by the Engineer prior to building foundation.

The following structural tolerances are necessary on the Lower Beams that will be supporting the guide rails for the skidshoes supplied by Mammoet:

Alignment shall not vary more than 1/4" in 20'.  
Vertical profile shall be level and shall not vary by more than 1/4" in 20'.  
Tighter tolerances may be required for bridge geometry.

New bridge loads at time of sliding do not include the allowance of 25 psf for future wearing surface. Unfactored dead loads applied to skidshoes for sliding are shown in Table 1 on this sheet and do not include impact.

Temporary works are designed for 5% lateral load along station, 10% lateral load along direction of sliding and stream flow corresponding to a 15-year flood event, as directed by the Contractor. Stream flow loads are based on the following 15-year data obtained by Hans Hadley of West Consultants via email dated May 2, 2007:

Water surface elevation at u/s face = 168.42 ft  
Average velocity = 10.1 ft/sec  
Maximum velocity = 11.3 ft/sec

Contours and alignment reflect the as-built conditions as established April 2007. See General Plan and Elevation on Drawing No. 401 for profile grade and curve data.

Geotechnical data is based on the Geotechnical Investigation Report of Elk Creek Crossing #4 - Bridge No. 01406, dated April 19, 2007 by PBS Geotechnical Engineers, and as shown on Table 2 of the drawing "Foundation Details".

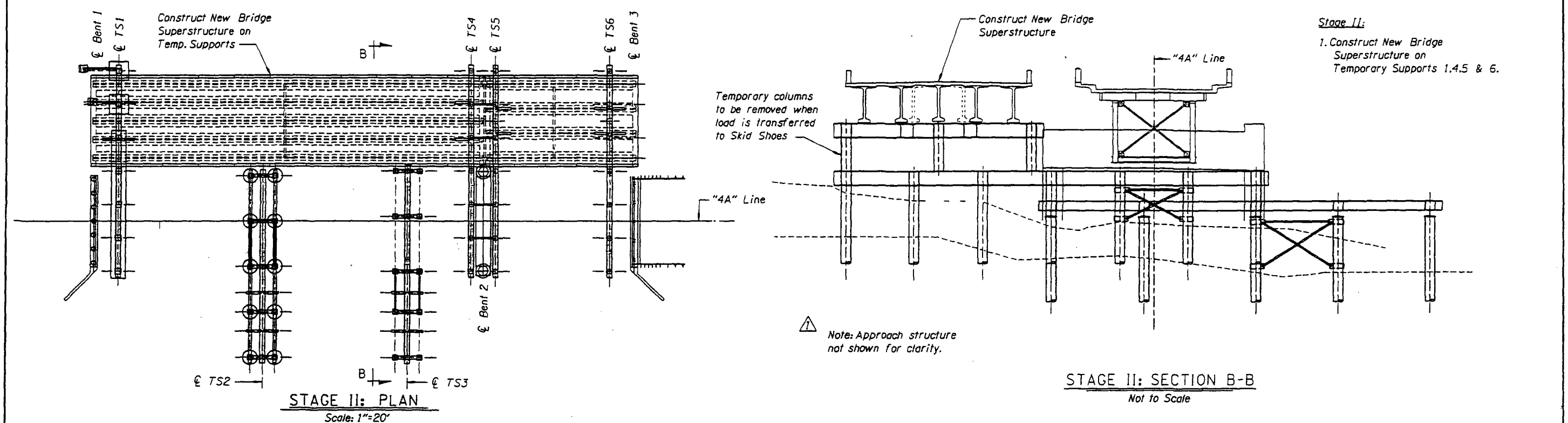
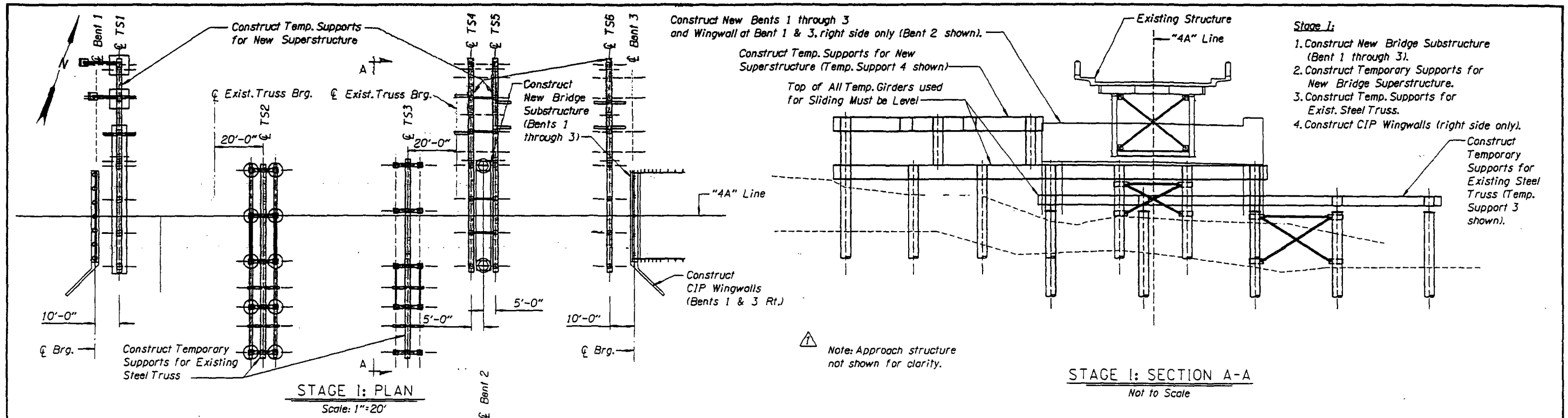
Temporary Support 2 is based on CMP footings with a connecting grade beam. Differences in bottom of stream elevation may require that changes be made in the grade beam and that rock anchors be used to anchor the CMP footings. The contractor shall locate the limits of each footing and the depth of each footing prior to fabrication of any pipe columns and grade beams and confirm any changes with the engineer prior to fabrication of any pipe columns and grade beams.

Temporary Supports 3, 4, 5 & 6 Provide 24 x 0.500, ASTM A252 (Grade 3) pipe piling driven open ended to ultimate capacities of 360, 1180, 430 & 530 kips per pile, respectively for piles at each temporary support. Drive all piling to the specified ultimate capacity using driving criteria developed from the ODOT Gates Equation. Wall thickness of 0.500" required for temporary support loads. Contractor to determine wall thickness and pile driving tips required for driving.

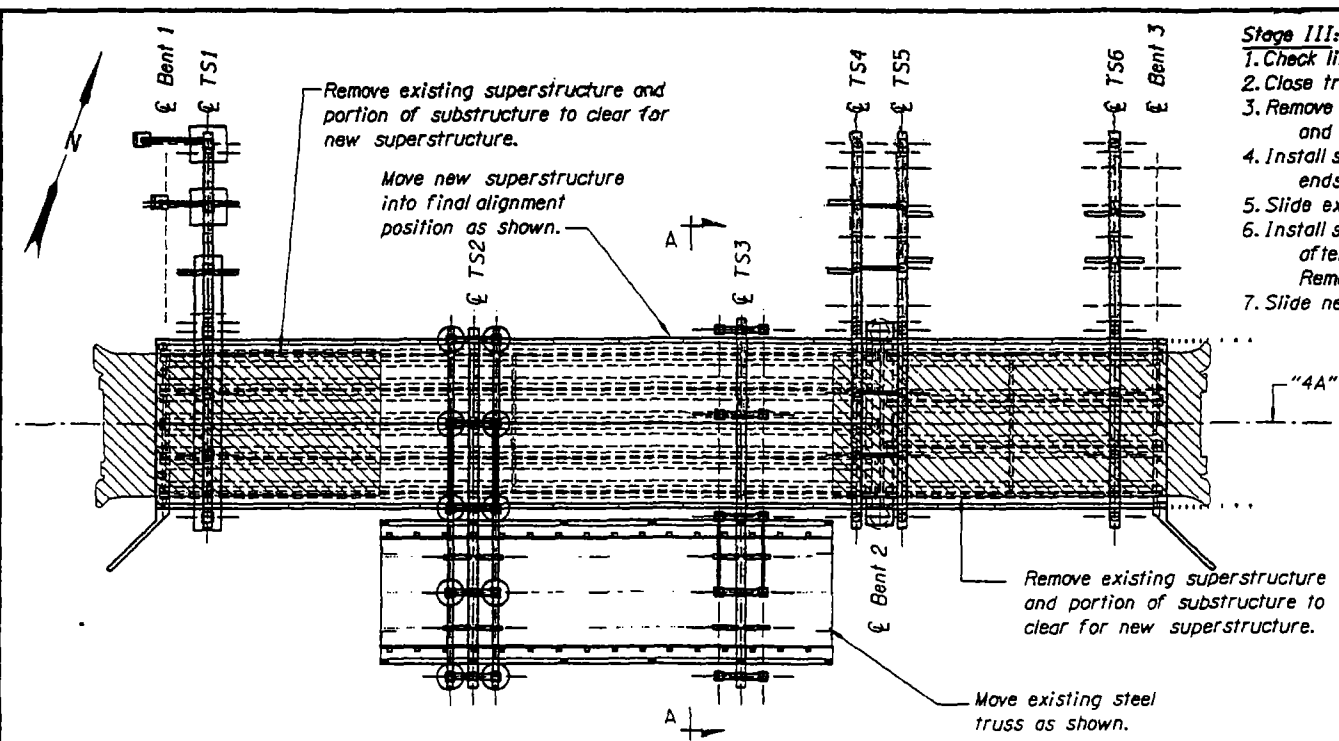
Monitor and remove all debris in contact with temporary supports from stream flow. Keep free of debris at all time. Monitor scour at in-water foundations and notify engineer immediately if scour occurs.

Note:  
Elevations shown are based on the North American Vertical Datum 1929 (NAVD 29).

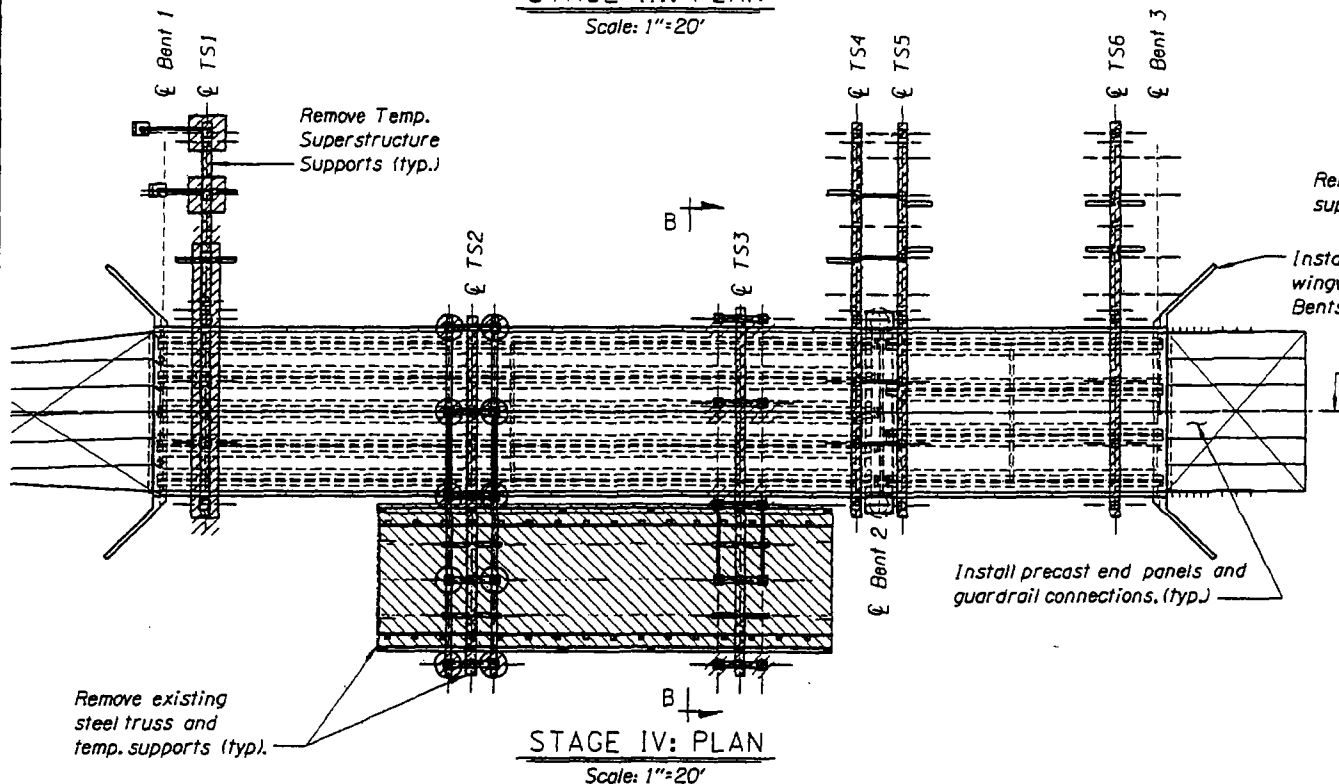
DATE	REVISION	BY	DRAWN	 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET
7/3/07	Dim. skew angle and edit notes.	CW	DESIGNED		20585		3
3/29/08	Remove outside outriggers.	CW	CHECKED		DATE		OF
ACCOMPANIED BY DWGS. See Sheet 1.			REVISION	TYLIN INTERNATIONAL	July - 2007	DRAWING NO.	34
			D. Goodyear		CALC. BOOK	76599	
					XXXX		



DATE	REVISION	BY	DRAFTER: David J. Roe		STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDSCRABBLE CREEK SECTION	SHEET 4 OF 34
	7/3/07	Add notes.					
ACCOMPANIED BY DWGS. X			CHECKER: J. Walsh		CALC. BOOK XXXX	RAPID REPLACEMENT STAGING I	DRAWING NO. 76600
X			REVIEWER: D. Goodyear		RENEWAL DATE:		

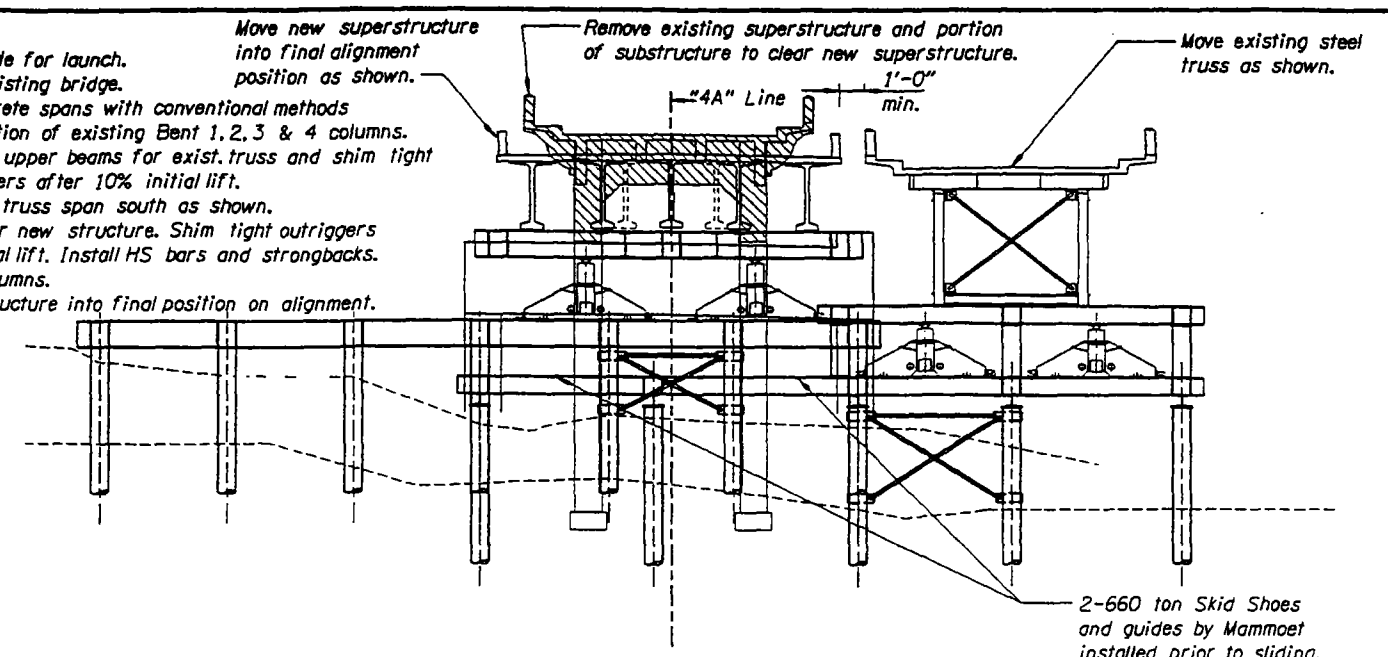


STAGE III: PLAN  
Scale: 1"=20'



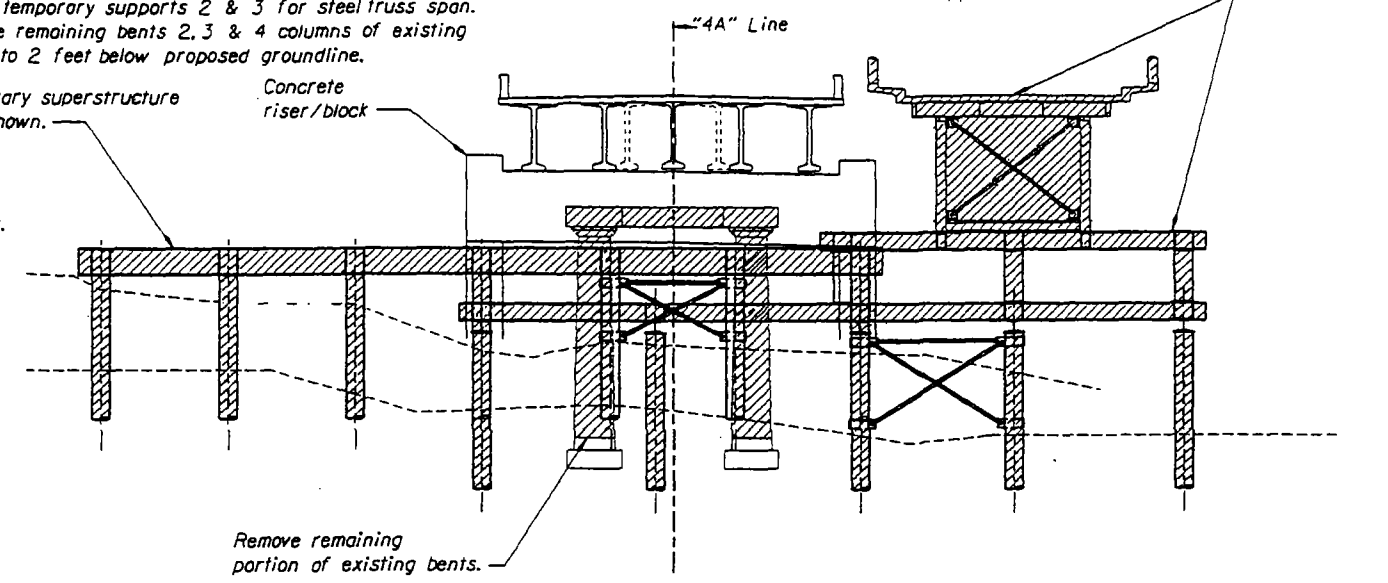
STAGE IV: PLAN  
Scale: 1"=20'

- Stage III:**
1. Check line and grade for launch.
  2. Close traffic on existing bridge.
  3. Remove Reinf. concrete spans with conventional methods and remove portion of existing Bent 1, 2, 3 & 4 columns.
  4. Install skidshoes & upper beams for exist. truss and shim tight ends of outriggers after 10% initial lift.
  5. Slide existing steel truss span south as shown.
  6. Install skidshoes for new structure. Shim tight outriggers after 10% initial lift. Install HS bars and strongbacks. Remove stub columns.
  7. Slide new superstructure into final position on alignment.



STAGE III: SECTION A-A  
Not to Scale

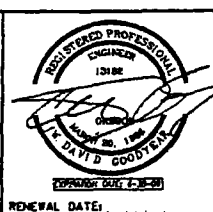
- Stage IV:**
1. Place concrete riser/block above left column of Bent 2.
  2. Install precast wingwalls at Bents 1 & 3 left.
  3. Place backfill behind bridge abutments.
  4. Install precast end panels and guardrail connections.
  5. Construct roadway approaches to bridge abutments.
  6. Open traffic on new bridge.
  7. Remove temporary supports 1, 4.5 & 6 for new superstructure.
  8. Remove steel truss span.
  9. Remove temporary supports 2 & 3 for steel truss span.
  10. Remove remaining bents 2, 3 & 4 columns of existing bridge to 2 feet below proposed groundline.



STAGE IV: SECTION B-B  
Not to Scale

DATE	REVISION	BY
		DAFTER: David J. Roe
		DESIGNER: C. Werts
		CHECKER: J. Walsh
		REVIEWER: D. Goodyear

ACCOMPANIED BY DWGS. X

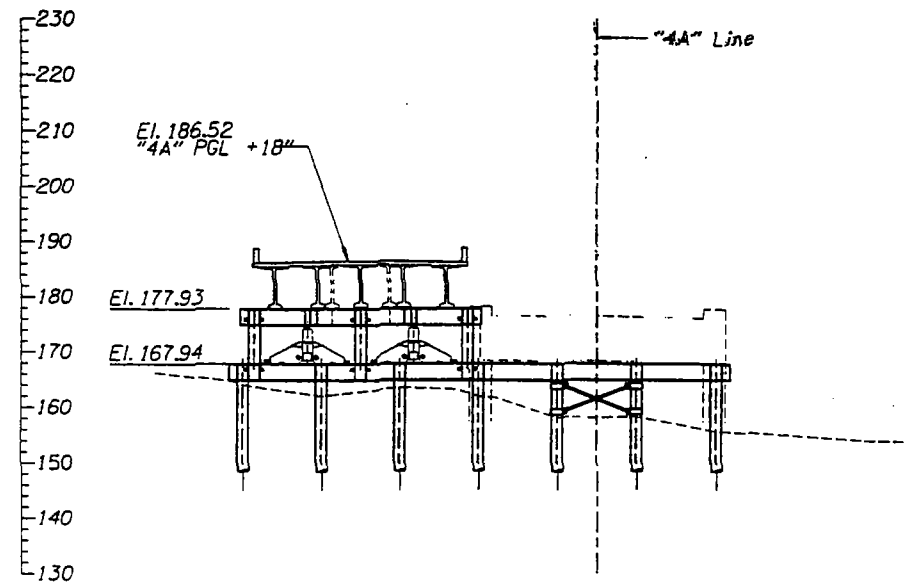


**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

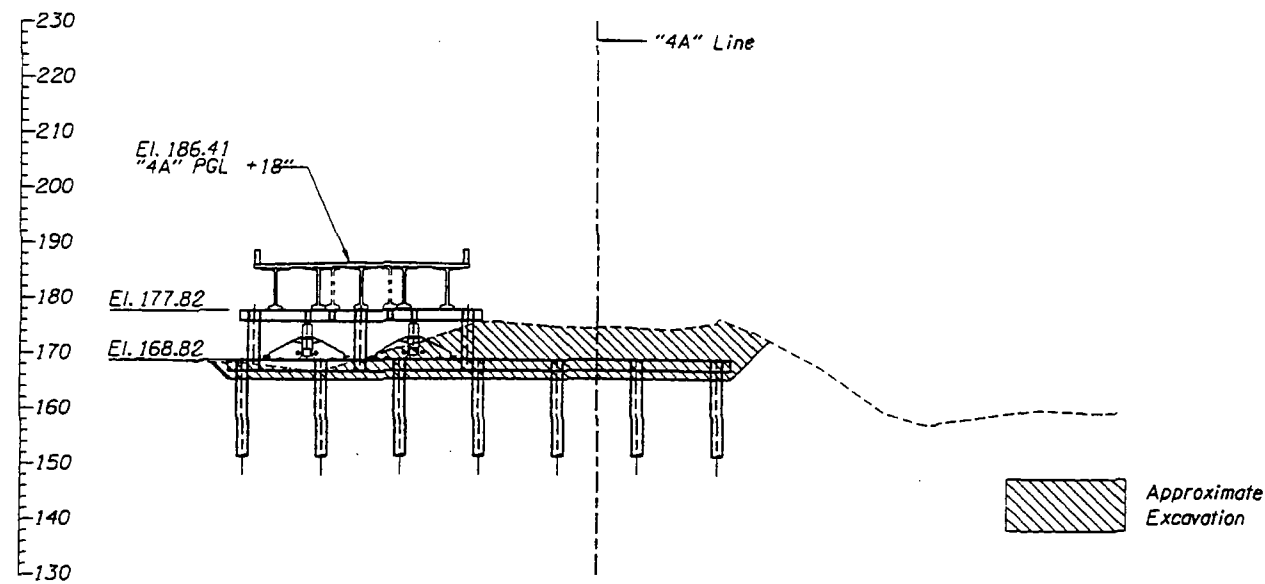
**TYLIN INTERNATIONAL**

STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 5 OF 34
DATE July - 2007	Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	DRAWING NO.
CALC. BOOK XXXX	RAPID REPLACEMENT STAGING 2	76601





TEMPORARY SUPPORT 5 STA. 1259+96.31  
 Stage 2 shown, others similar.  
 Scale: 1/16"=1'



TEMPORARY SUPPORT 6 STA. 1260+43.31  
 Stage 2 shown, others similar.  
 Scale: 1/16"=1'

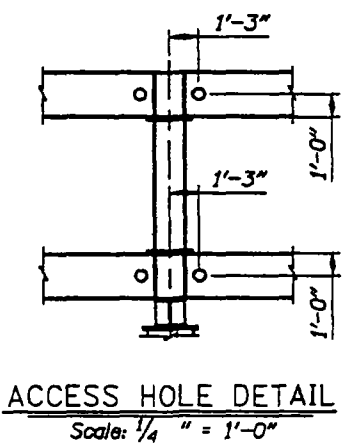
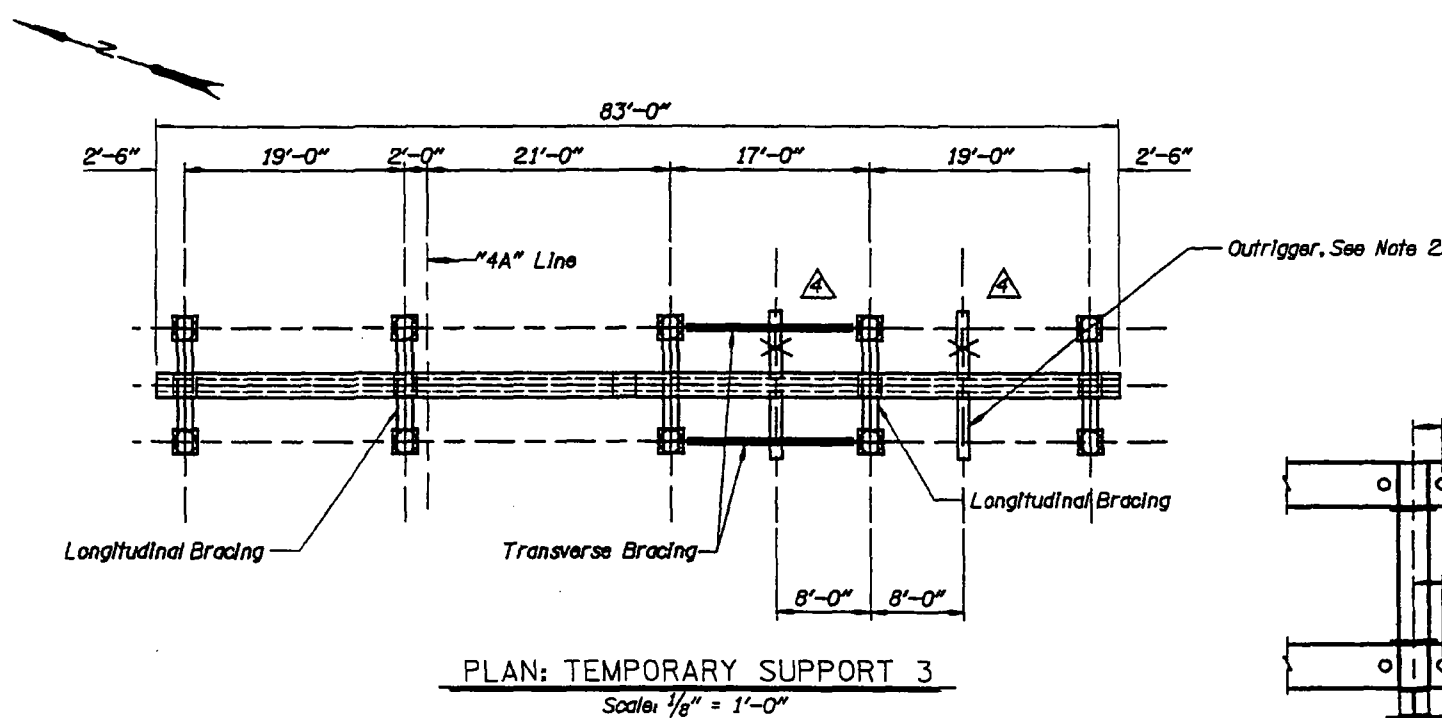
△	DATE	REVISION	BY	DRAFTER: David J. Roe DESIGNER: C. Werts CHECKER: J. Walsh REVIEWER: D. Goodyear			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 7 OF 34
	ACCOMPANIED BY DWGS.						DATE July - 2007		CALC. BOOK XXXX



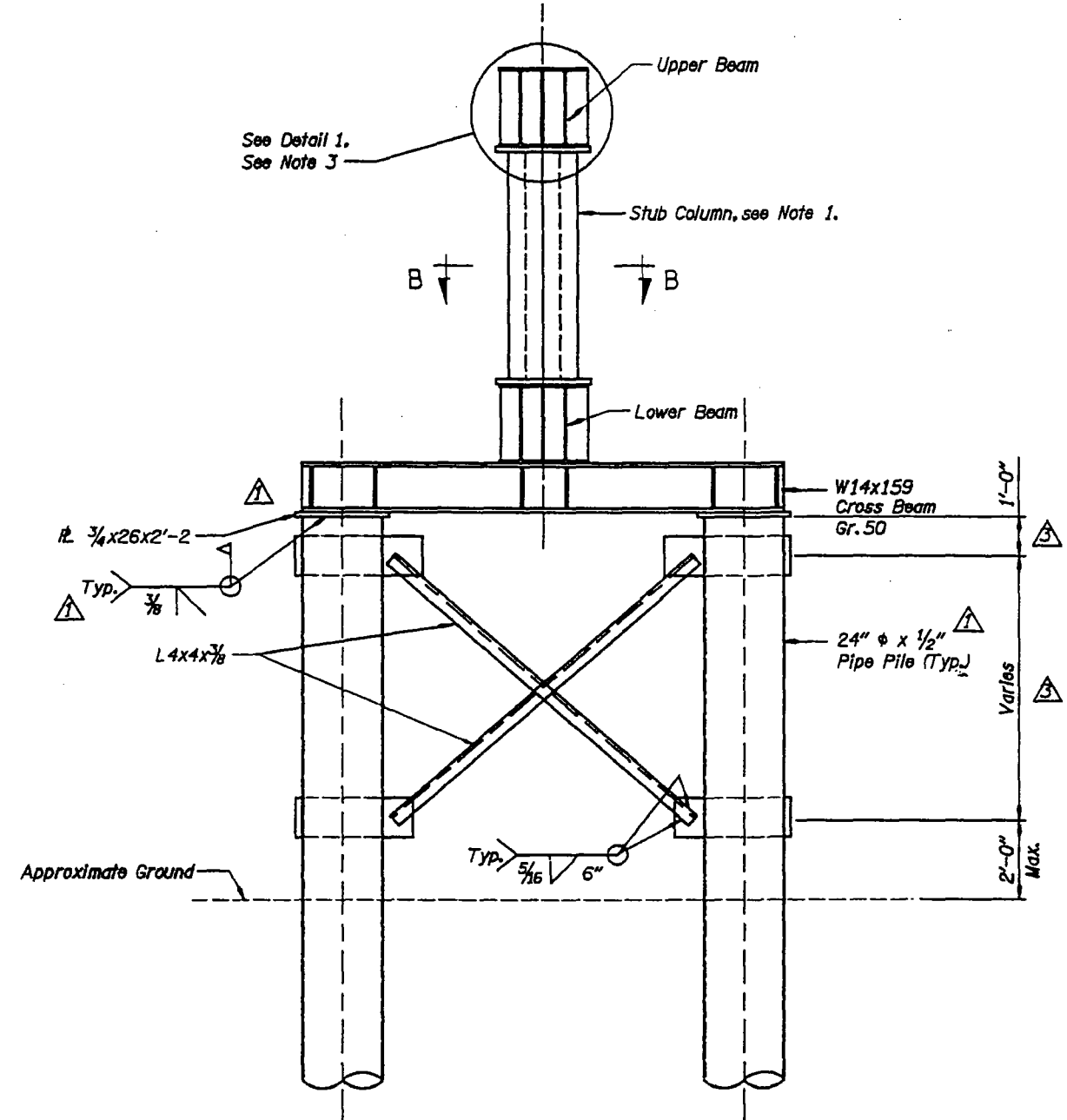
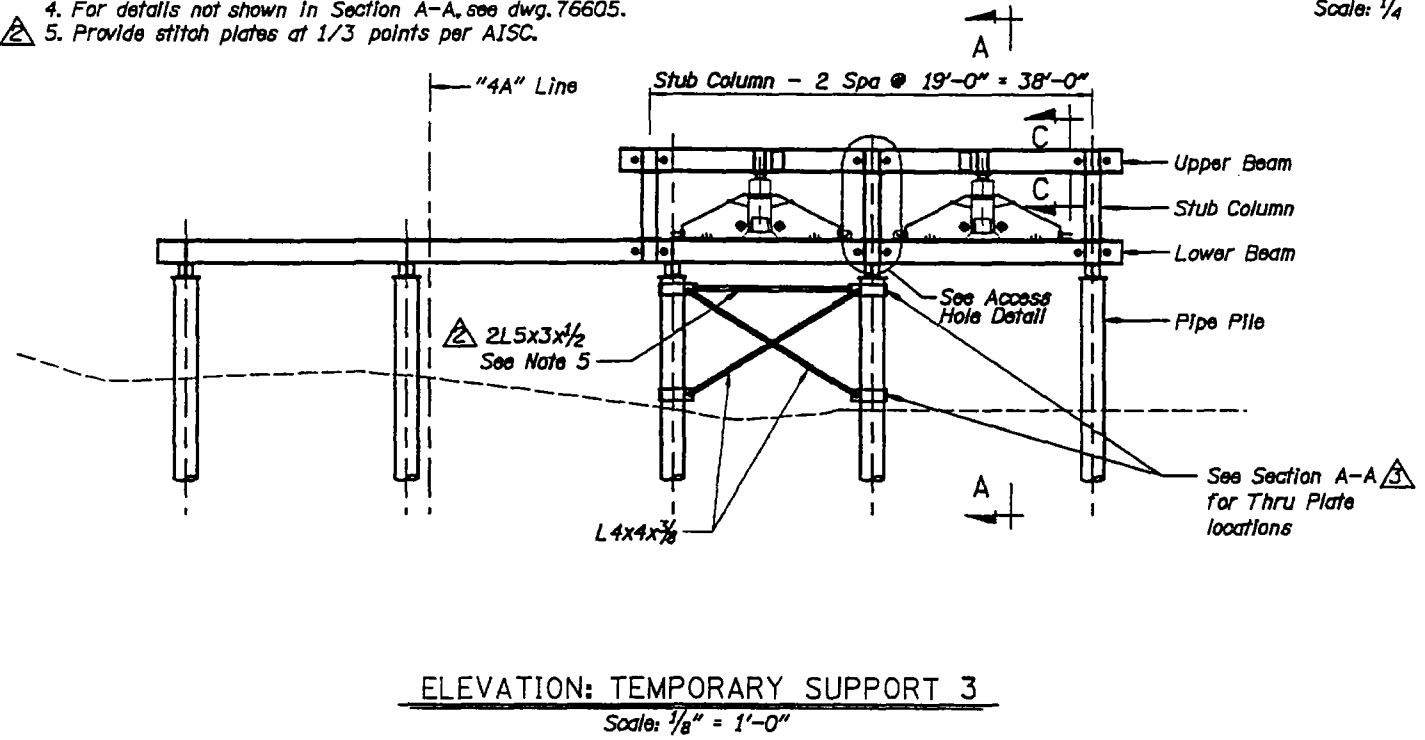








Notes:  
 1. For Section B-B, see dwg. 76605.  
 2. For outrigger & truss connection details, see dwg. 76610.  
 3. For Detail 1, see dwg. 76605.  
 4. For details not shown in Section A-A, see dwg. 76605.  
 5. Provide stitch plates at 1/3 points per AISC.



SECTION A-A  
 Outrigger not shown for clarity.  
 See Note 4.  
 Scale: 1/2" = 1'-0"

DATE	REVISION	BY
7/3/07	Edit pile callout.	CW
8/21/07	Stitch plate	CW
9/06/07	Add dimensions	CW
3/29/08	Remove outside outriggers.	CW

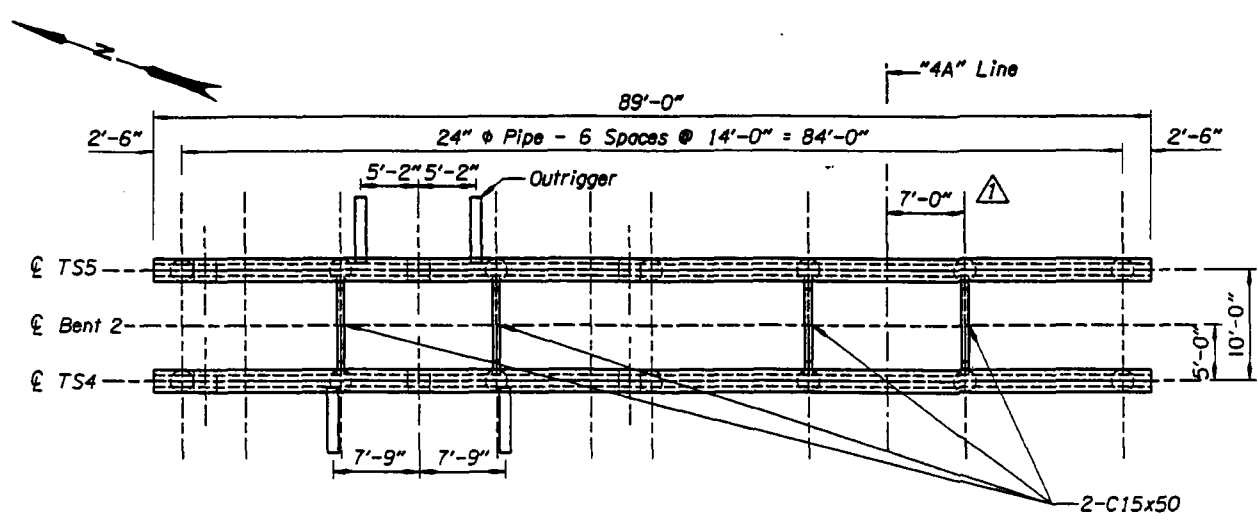
ACCOMPANIED BY DWGS. See Sheet 1.

REGISTERED PROFESSIONAL ENGINEER  
 OREGON DEPARTMENT OF TRANSPORTATION  
 REGION 3 TECHNICAL SERVICES

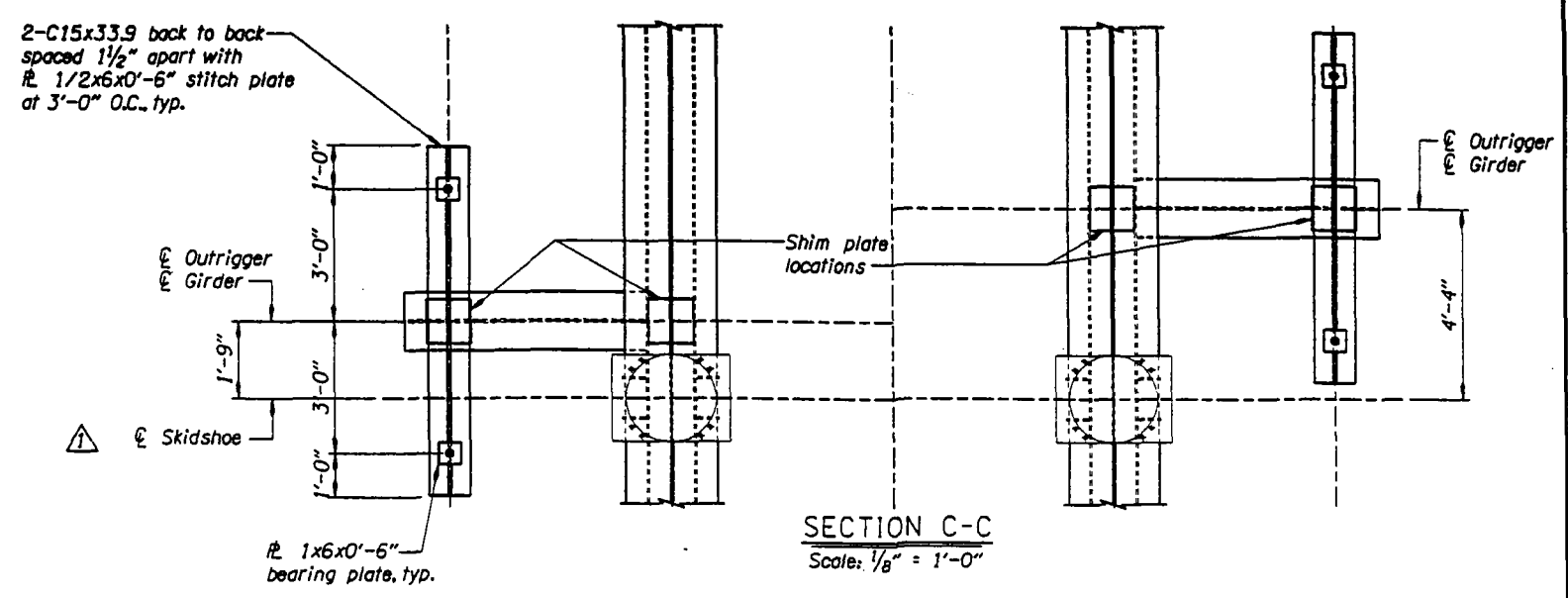
TYLIN INTERNATIONAL

REVISION: D. Goodyear

STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 10 OF 34
DATE July - 2007	Umpqua Hwy. No. 45 (M.P. 39.97)	DRAWING NO.
CALC. BOOK XXXX	TEMPORARY SUPPORT 3	76606

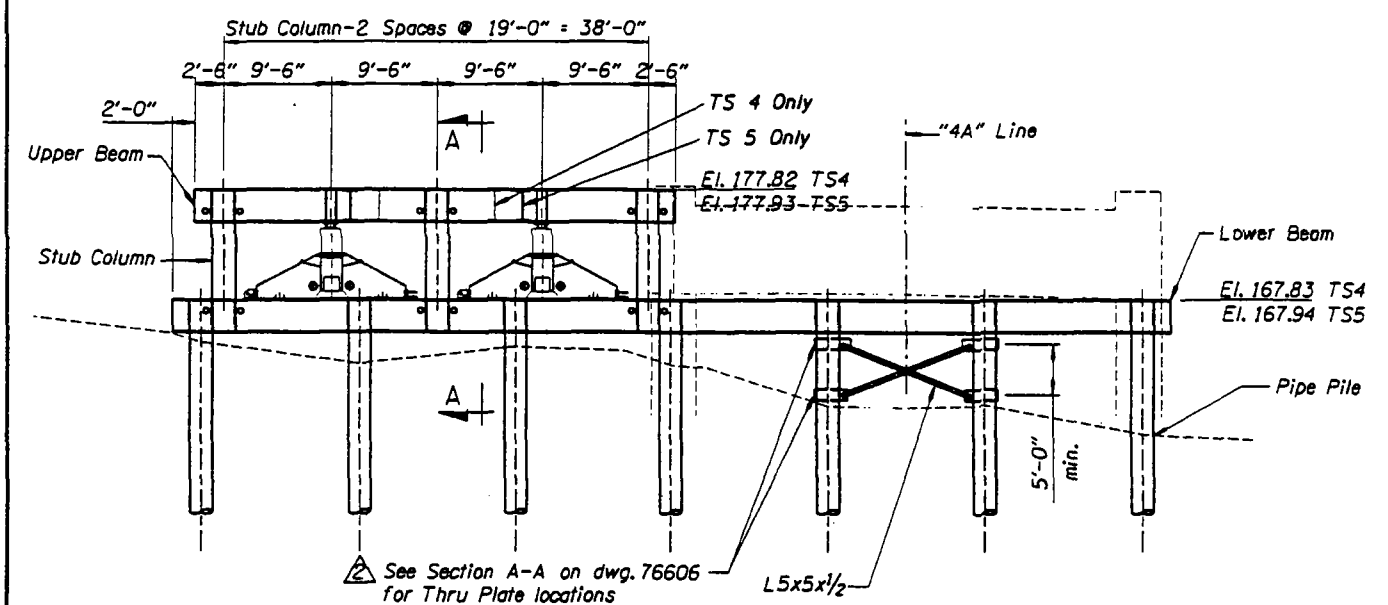


PLAN: TEMPORARY SUPPORTS 4 & 5  
Scale: 1/8" = 1'-0"

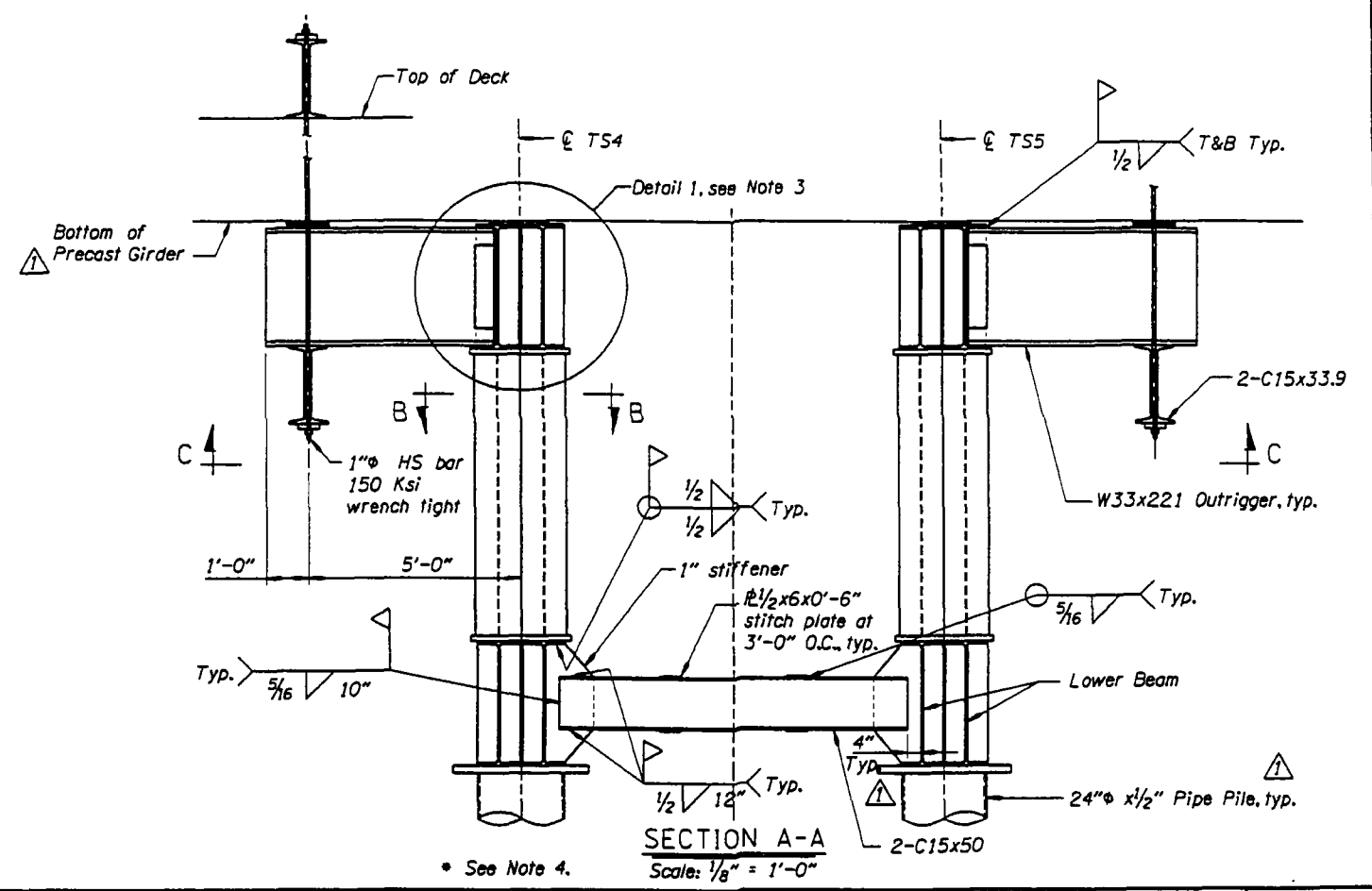


SECTION C-C  
Scale: 1/8" = 1'-0"

- NOTES:**
1. For Footing Details, see dwg. 76609.
  2. For Section B-B, see dwg. 76604.
  3. For Detail 1, see dwg. 76604.
  4. For details not shown in Section A-A, see dwg. 76604.



ELEVATION: TEMPORARY SUPPORTS 4 & 5  
Scale: 1/8" = 1'-0"

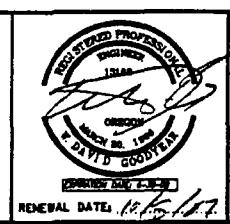


SECTION A-A  
Scale: 1/8" = 1'-0"

DATE	REVISION	BY
7/3/07	Add/edit notes & dim.	CW
9/6/07	Add note	CW

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER: D. Roe  
DESIGNER: C. Werts  
CHECKER: J. Walsh  
REVIEWER: D. Goodyear

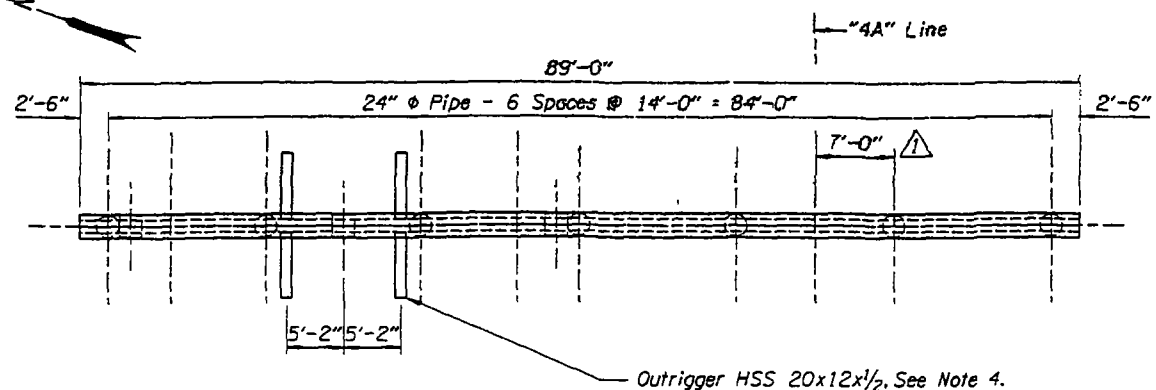


**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

**TYLIN INTERNATIONAL**

STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 11 OF 34
DATE July - 2007	Umpqua Hwy. No. 45 (M.P. 39.97)	Douglas County
CALC. BOOK XXXX	TEMPORARY SUPPORTS 4 & 5	DRAWING NO. 76607

THIS IS THE FILENAME LOCATION

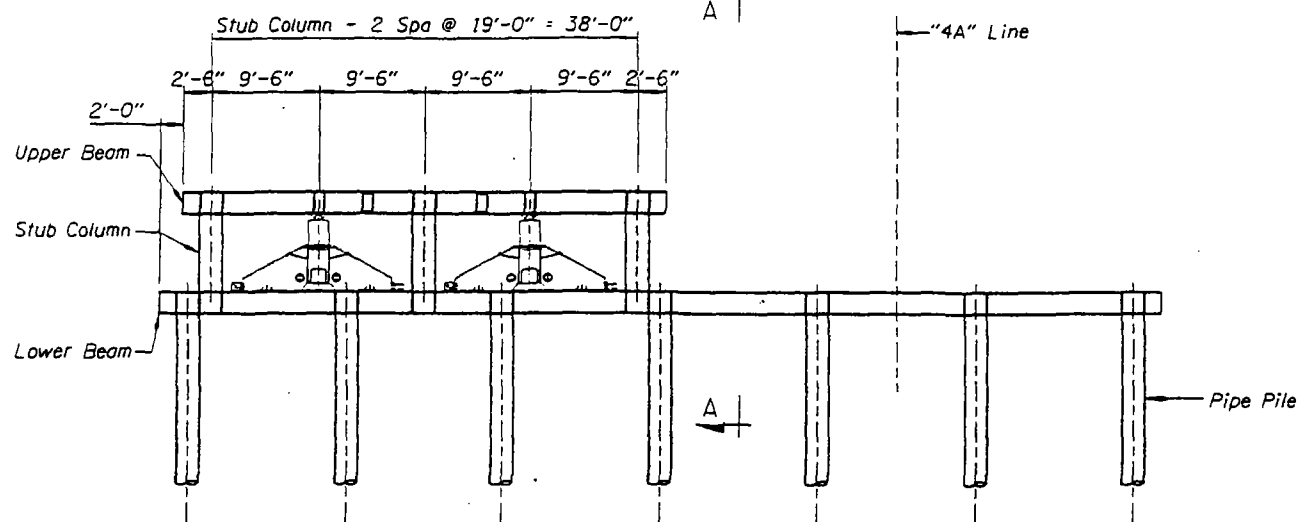


PLAN: TEMPORARY SUPPORT 6

Scale: 1/8" = 1'-0"

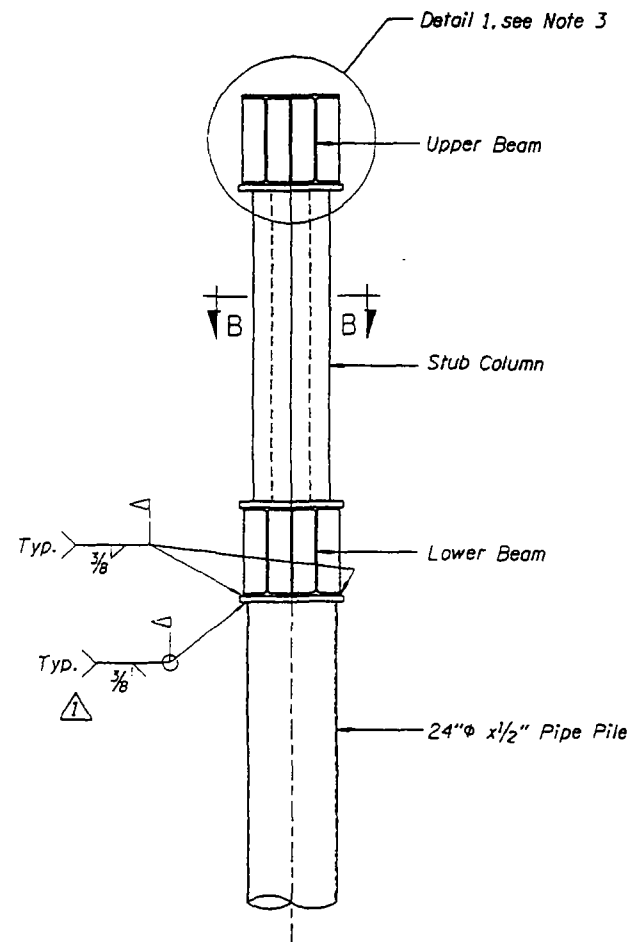
NOTES:

1. For Footing Details, see dwg. 76609.
2. For Section B-B, see dwg. 76605.
3. For Detail 1, see dwg. 76605.
4. For Outrigger & Connection details, see dwg. 76610.
5. For details not shown in Section A-A, see dwg. 76605.



ELEVATION: TEMPORARY SUPPORT 6

Scale: 1/8" = 1'-0"

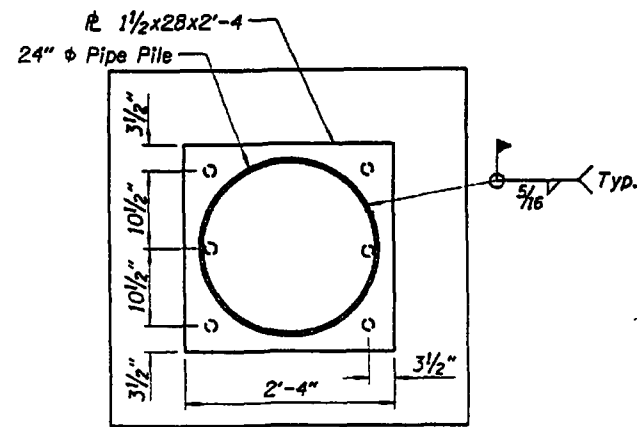


SECTION A-A

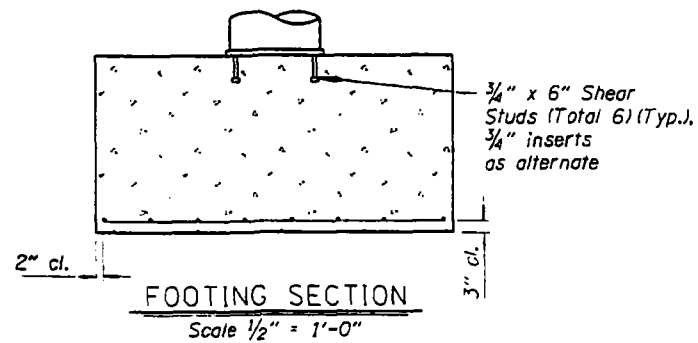
Scale: 1/4" = 1'-0"

DATE 7/3/07	REVISION Add/edit notes & dim.	BY CW	DRAFTER: D. Roe DESIGNER: C. Werts CHECKER: J. Walsh REVIEWER: D. Goodyear		 OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES	STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 12 OF 34
						DATE July - 2007		DRAWING NO. 76608
ACCOMPANIED BY DWGS. See Sheet 1.			REVIEWER: D. Goodyear	RENEWAL DATE:	TYLIN INTERNATIONAL	CALC. BOOK XXXX	TEMPORARY SUPPORT 6	

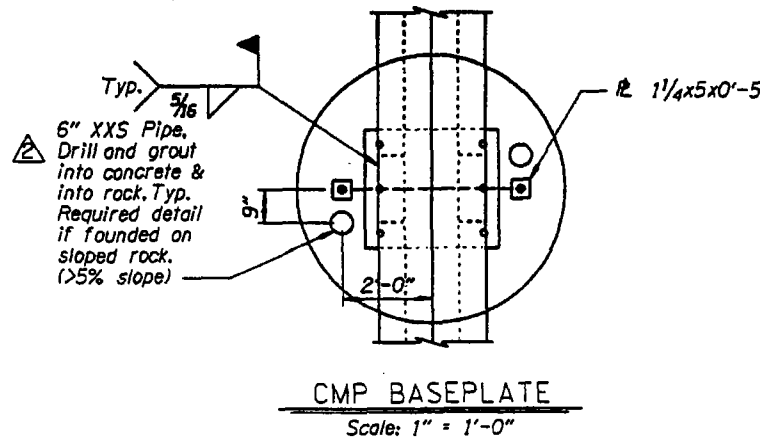
THIS IS THE FILENAME LOCATION



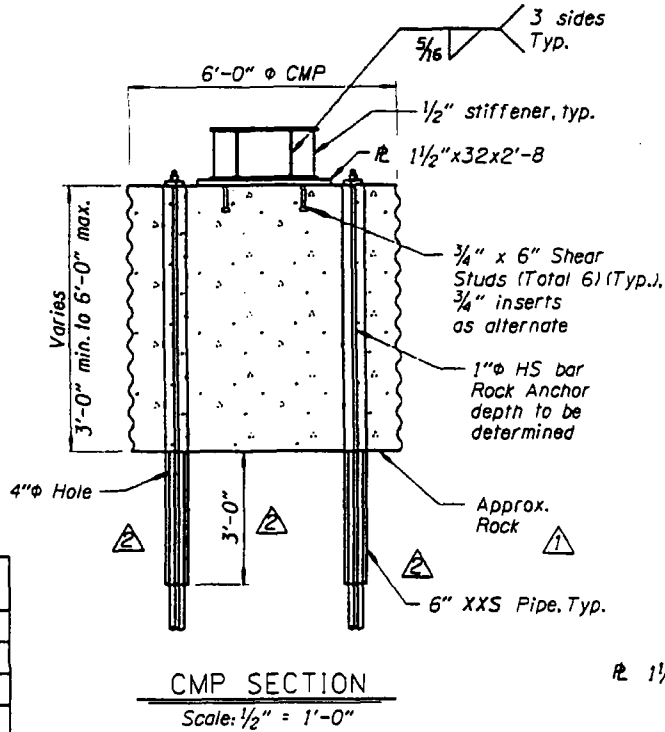
FOOTING BASEPLATE  
Scale 1/4" = 1'-0"



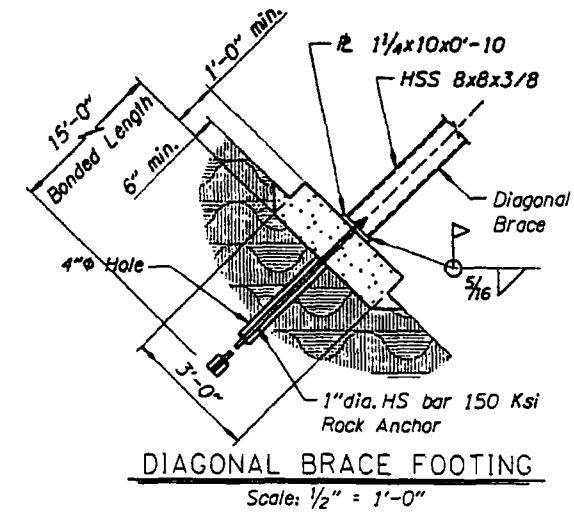
FOOTING SECTION  
Scale 1/2" = 1'-0"



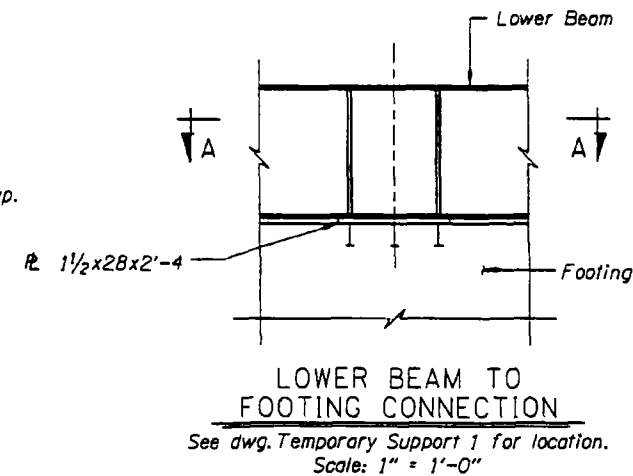
CMP BASEPLATE  
Scale: 1" = 1'-0"



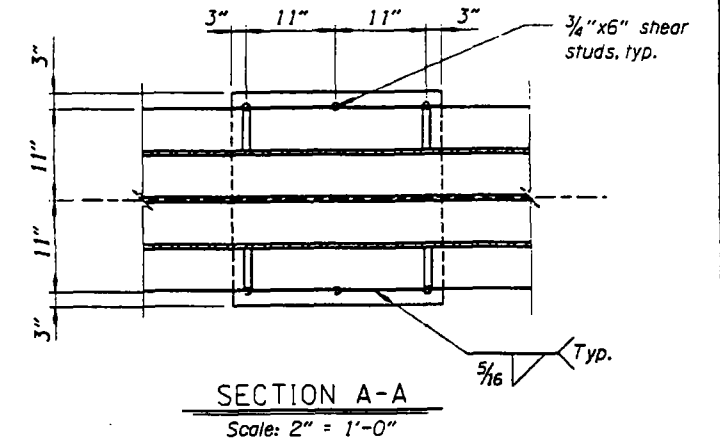
CMP SECTION  
Scale: 1/2" = 1'-0"



DIAGONAL BRACE FOOTING  
Scale: 1/2" = 1'-0"



LOWER BEAM TO FOOTING CONNECTION  
See dwg. Temporary Support 1 for location.  
Scale: 1" = 1'-0"



SECTION A-A  
Scale: 2" = 1'-0"

TABLE 1 - Design Foundations

Bridge No.4 Temporary Support	Design Foundation	Alternate Foundation	Btm. Mat Reinf. for Spread Ftg.
Temporary Support 1	8'x8'x2'-6" Ftg.	24x0.5 Dia. Piles	*8 @12" Ea. Way
Temp. Support 1 Brace	3'x3'x1' Ftg.	-	*5 @12" Ea. Way
Temporary Support 2	6' Dia. CMP **	5'x5'x2'-0" Ftg.*	*5 @12" Ea. Way
Temporary Support 3	24x0.5 Dia. Piles	-	-
Temporary Support 4 & 5	24x0.5 Dia. Piles	-	-
Temporary Support 6	24x0.5 Dia. Piles	-	-

\* Spread footings must be founded on rock for this alternative.  
\*\* 6' Dia. CMP is 16 Gauge

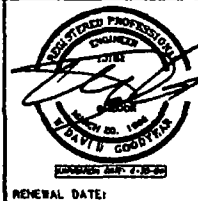
TABLE 2 - Geotechnical Recommendations

Bridge No.4 Temporary Support	Closest Log Boring	Recommended Foundation Type	Allow. Soil Capacity (ksf)	Approx. Pile Depth to Refusal (ft)
Temporary Support 1	B-1	Spread Ftg.	10	-
Temporary Support 2	B-2	Spread Ftg.	10	-
Temporary Support 3	B-2	Pile Fnd.	3	16 - 18
Temporary Support 4 & 5	B-2	Pile Fnd.	3	16 - 18
Temporary Support 6	B-3	Pile Fnd.	3	45

DATE	REVISION	BY
7/3/07	Add callout.	CW
9/13/07	Add 6" XXS pipes to CMP.	CW

ACCOMPANIED BY DWGS. See Sheet 1.

DRAWN: D. Roe  
DESIGNER: C. Werts  
CHECKER: J. Walsh  
REVIEWER: D. Goodyear



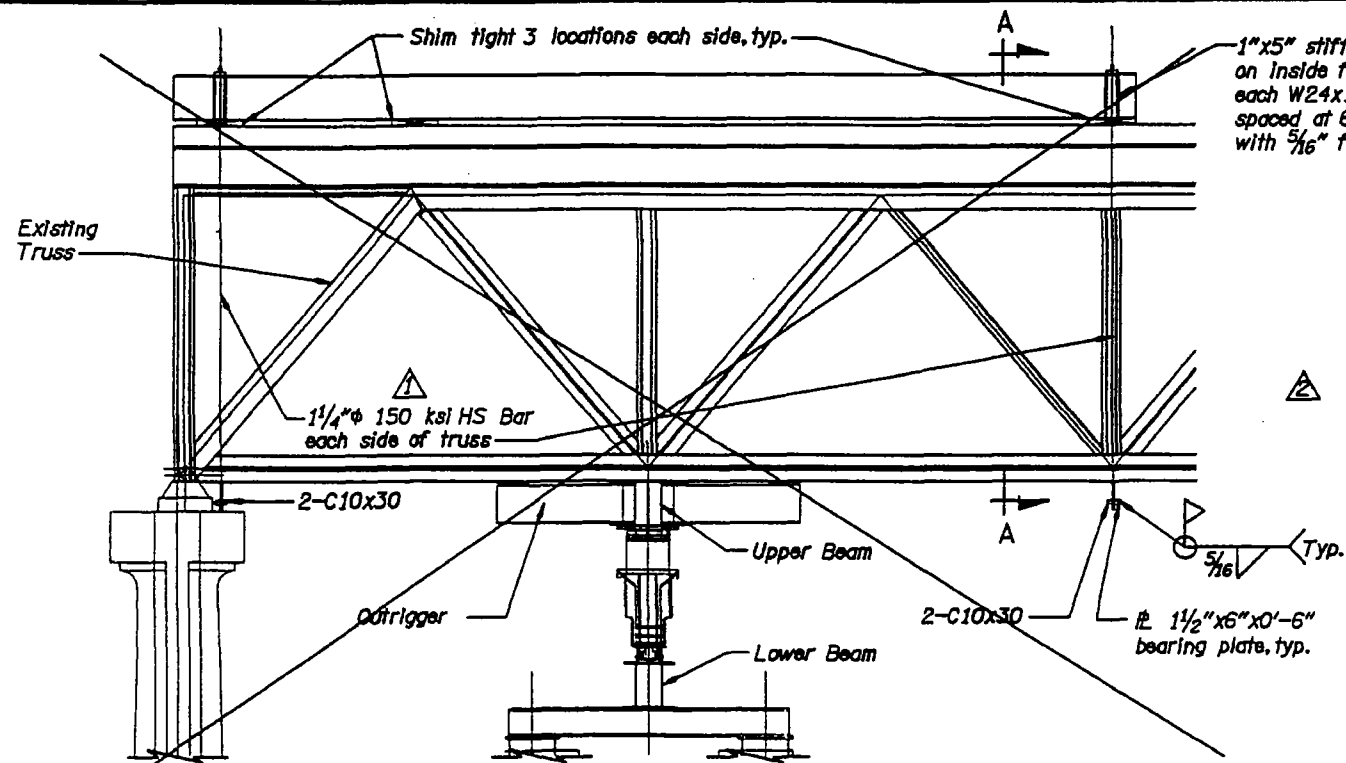
OREGON DEPARTMENT OF TRANSPORTATION  
REGION 3 TECHNICAL SERVICES

TYLIN INTERNATIONAL

STRUCTURE NO.  
20585  
DATE  
July - 2007  
CALC. BOOK  
XXXX

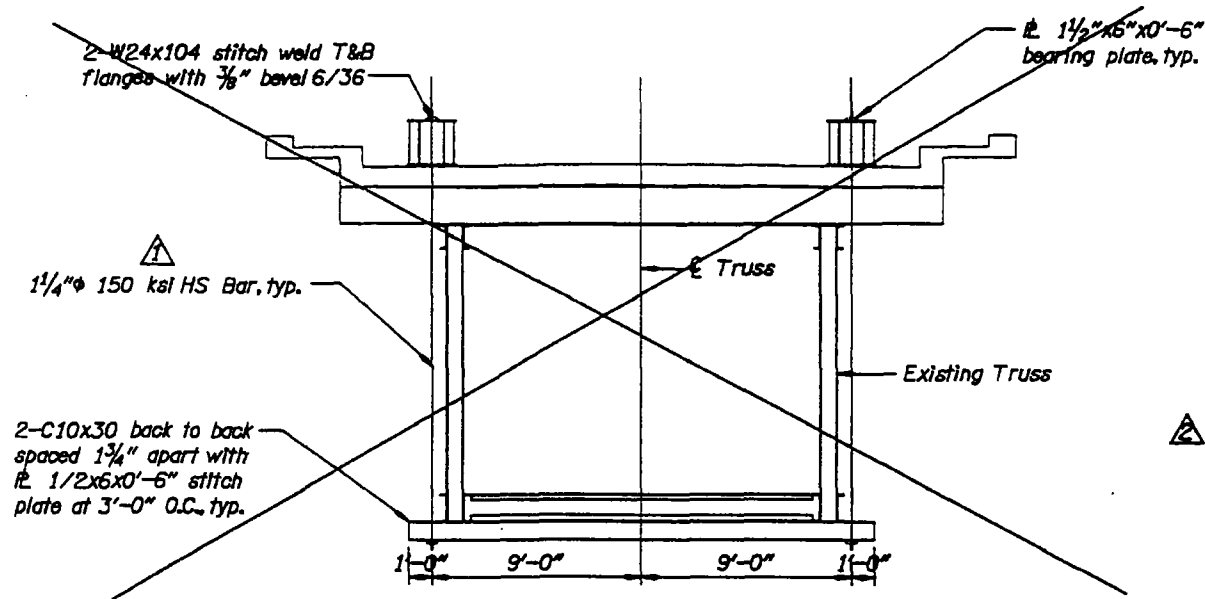
ELK CREEK BRIDGE (CROSSING NO. 4)  
ELK CREEK TO HARDCRABBLE CREEK SECTION  
Umpqua Hwy. No. 45 (M.P. 39.97)  
Douglas County  
TEMPORARY SUPPORT FOUNDATION DETAILS

SHEET  
13  
OF  
34  
DRAWING NO.  
76609



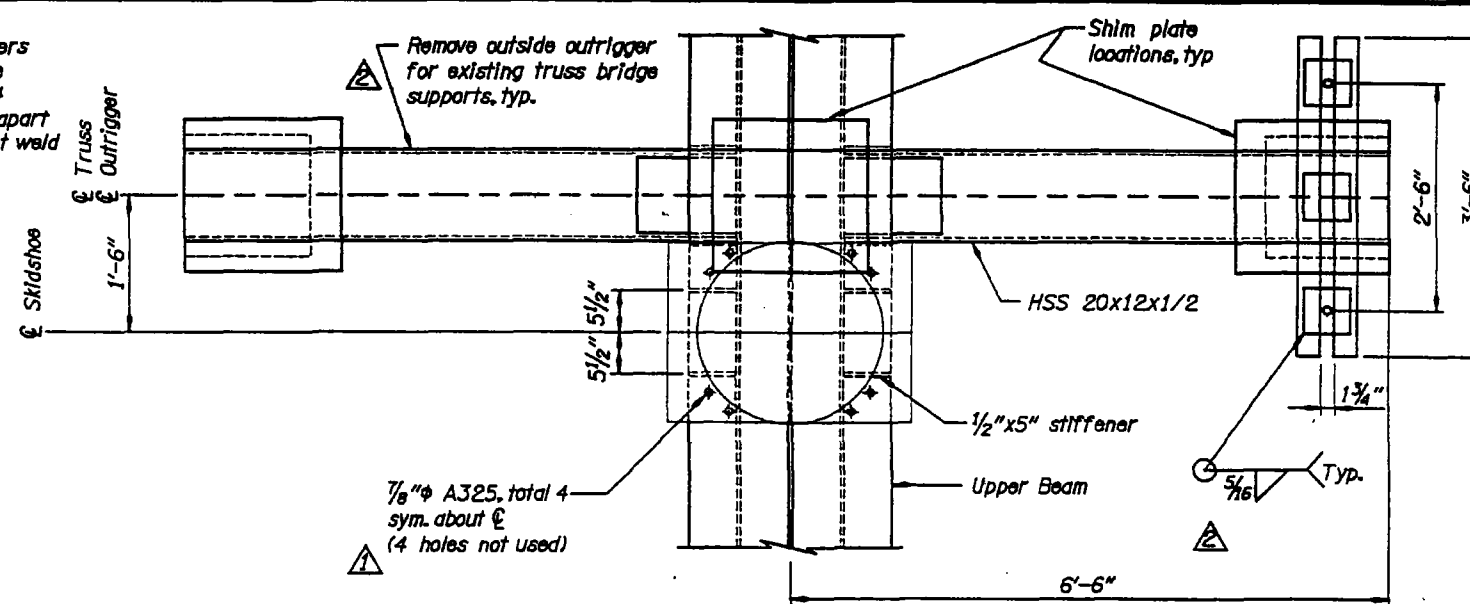
TRUSS END SUPPORT - ELEVATION

Scale: 1/4" = 1'



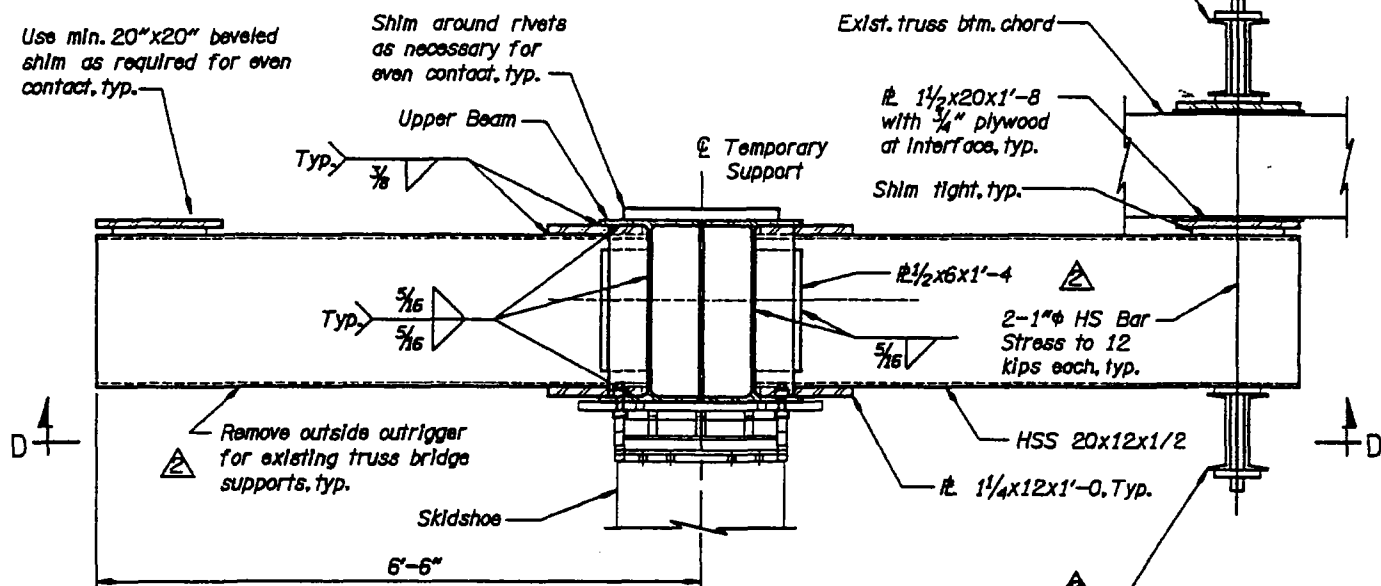
SECTION A-A

Scale: 1/4" = 1'



SECTION D-D

Scale: 1/4" = 1'



TRUSS CONNECTION - SECTION C-C

Typ. at TS 2 & TS 3, similar at TS 6.

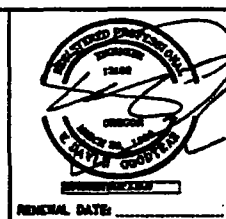
Scale: 1/4" = 1'

\* See dwg. 76605 & 76606 for Section C-C location

DATE	REVISION	BY
7/3/07	Edit callouts.	CW
3/29/08	Remove outside outriggers.	CW
	Remove Truss End Supports.	

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER	D. Roe
DESIGNER	C. Werts
CHECKER	J. Walsh
REVIEWER	D. Goodyear



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

**TYLIN INTERNATIONAL**

STRUCTURE NO.	20585
DATE	July - 2007
CALC. BOOK	XXXX

ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	
Umpqua Hwy. No. 45 (M.P. 39.97)	Douglas County
TEMPORARY SUPPORT TRUSS DETAILS	

SHEET	14
OF	34
DRAWING NO.	76610

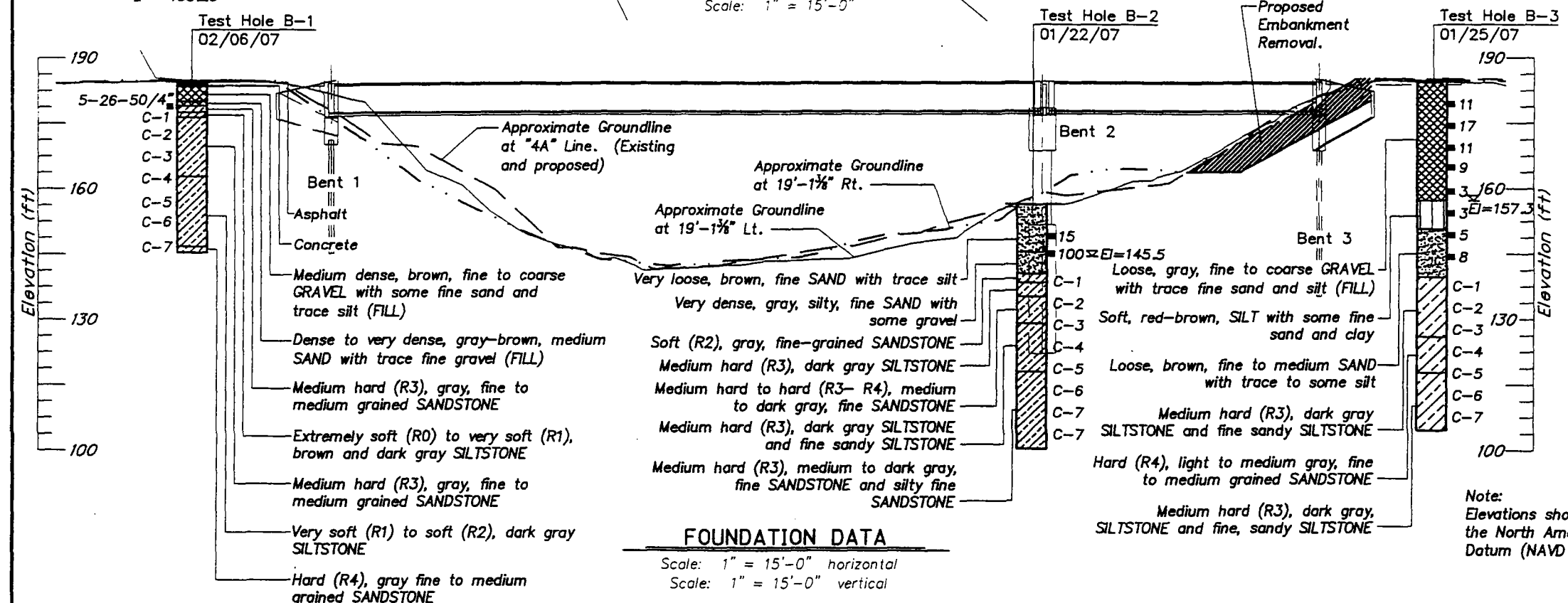
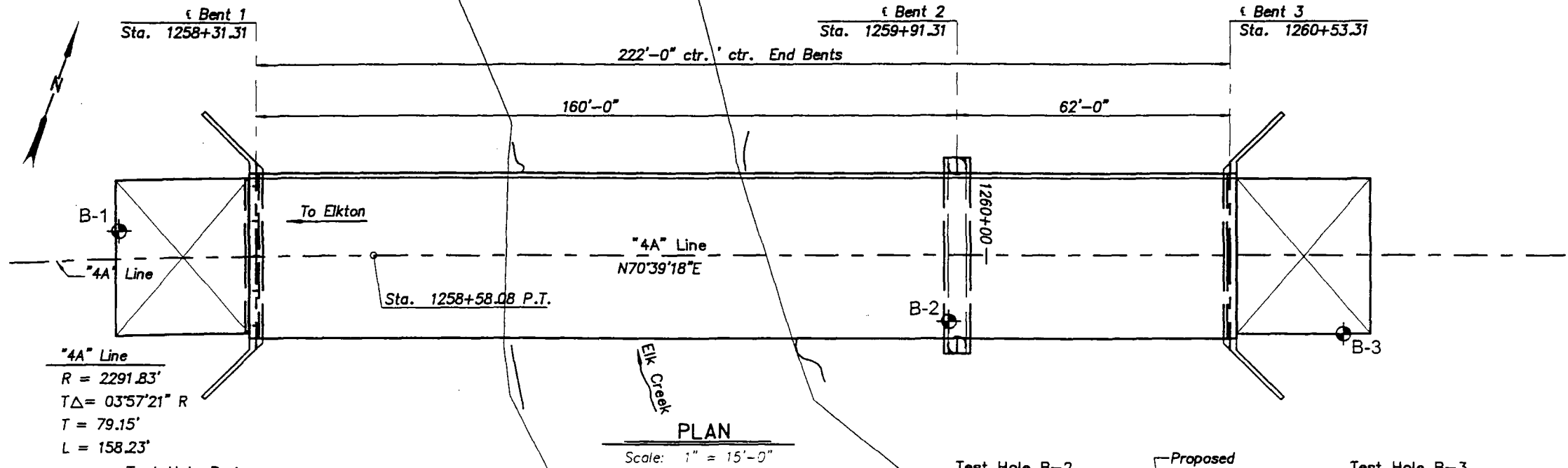
**LEGEND OF MATERIALS**

	Asphalt		Concrete		Fill
	Gravel		Sand		Silt
	Topsoil		Peat		Sandstone and Siltstone

Test Boring	Core Run	% Rec.	Hardness	R.Q.D.	qu (psi)
B-1	C-1	91	R0-R3	45	8,185
	C-2	96	R3-R4	81	
	C-3	98	R3-R4	93	
	C-4	90	R1-R3	50	
	C-5	73	R1-R2	0.7	
	C-6	100	R1-R2	94	
	C-7	100	R2-R4	53	
B-2	C-1	98	R2-R3	78	11,831
	C-2	100	R3-R4	86	
	C-3	98	R3	29	
	C-4	98	R3	8	
	C-5	92	R0-R3	25	
	C-6	98	R3	24	
	C-7	100	R1-R2	55	
	C-8	97	R1-R2	67	
B-3	C-1	96	R3	25	n/a
	C-2	100	R3	50	
	C-3	100	R3-R4	90	
	C-4	100	R4	92	
	C-5	98	R3	94	
	C-6	100	R3	93	
	C-7	100	R3	97	

In accordance with ASTM D1586-84 N values are reported for an interval of 300 mm except as noted.

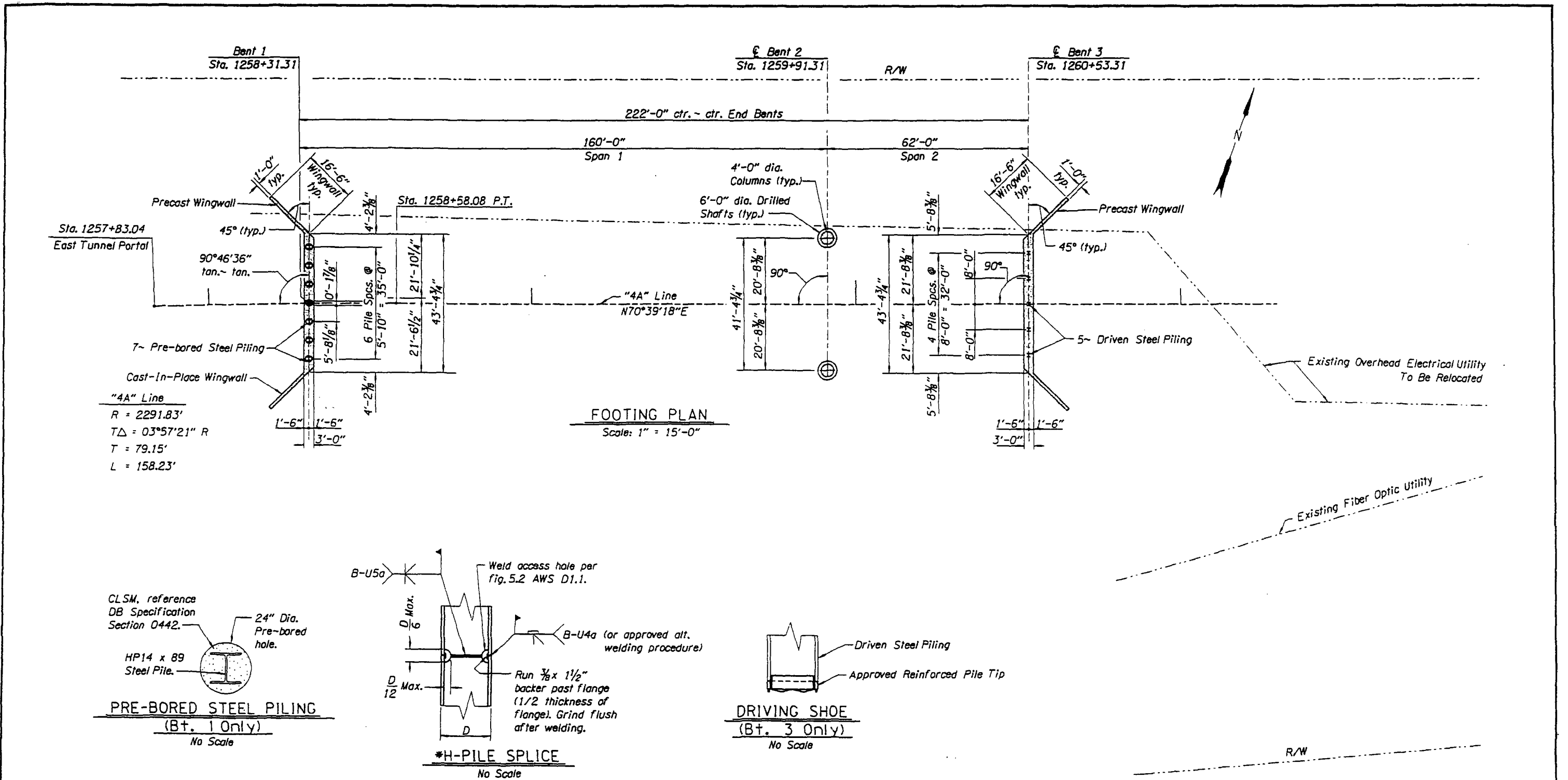
- 24 = Standard Penetration Test
- N value
- C = Core Sample
- U = Undisturbed Sample
- RQD = Rock Quality Designation
- z = Elevation of groundwater measured in the test hole on the date shown
- qu = Unconfined Compressive Strength



Note: Elevations shown are based on the North American Vertical Datum (NAVD 29).

Foundation data shown on this drawing is a consolidation of information and/or revision in terminology from the Boring Logs. The Boring Logs used in compiling this drawing are available upon request.

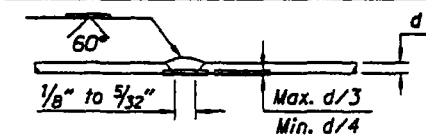
	DATE	REVISION	BY	DRAFTER: DJ DESIGNER: AH CHECKER: JM REVIEWER: RA	STRUCTURE NO. 20585 LAST REVISION JUNE 2007 CALC. BOOK	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97)	SHEET 15 OF 34 DRAWING NO. 76611
					OREGON DEPARTMENT OF TRANSPORTATION ENGINEERING AND ENVIRONMENTAL PBS	Douglas County	
						FOUNDATION DATA	



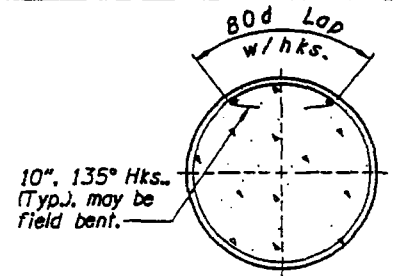
• Provide ASTM A706, except ASTM A615 Grade 400 or ASTM A496 may be used if copies of the chemical composition analysis are submitted and approved as weldable by the engineer.

DATE	REVISION	BY	DRAFTER: Tom Hernandez			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 16 OF 34
			DESIGNER: Adrian Kidarsa			DATE June - 2007		DRAWING NO. 76612
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Joseph Krajewski	GENERAL DATE: 12-31-04	TYLIN INTERNATIONAL	CALC. BOOK XXXX	FOOTING PLAN	
			REVIEWER: Scott M. Nettleton					

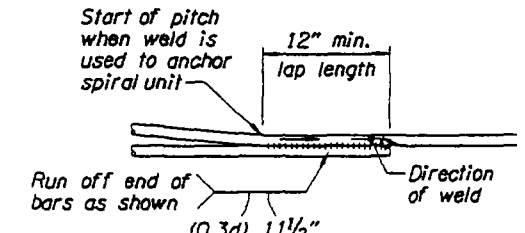
6'9"  
50"  
119



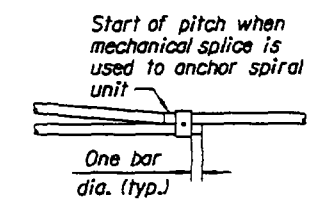
**ALTERNATE WELDED SPLICE**  
(EXCEPT ASTM A82)  
Weld reinforcing steel splices in accordance with ANSI/AWS D1.4-79, "Structural Welding Code Reinforcing Steel"



**LAPPED SPLICE**  
See Note A



**WELDED SPLICE**  
See Note A



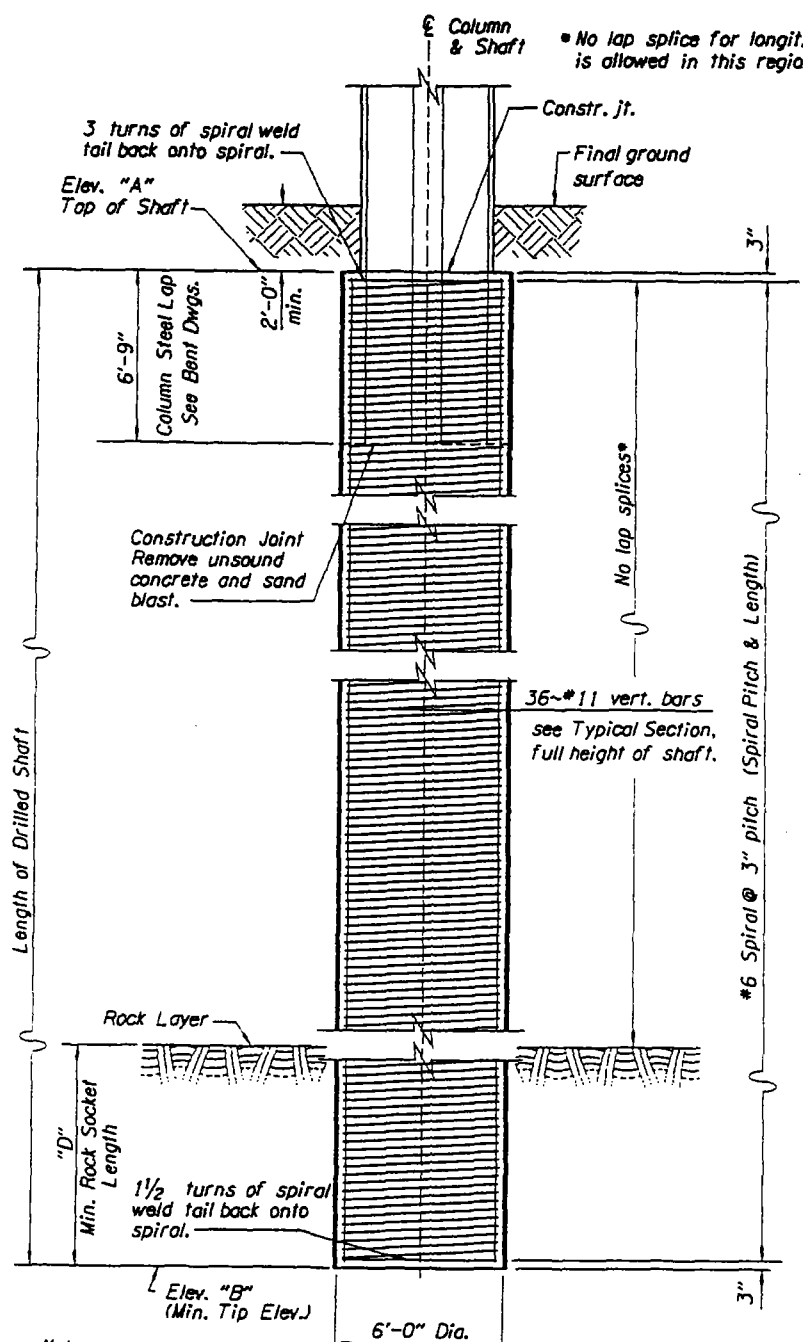
**MECHANICAL SPLICE**  
(Not allowed for ASTM A82 spirals)

**Note - A:**  
Provide ASTM A706 reinforcement for all welded splices, except ASTM A615 Grade 60, ASTM A82 ASTM A496 may be used if copies of the chemical composition analysis are submitted and approved by the Engineer as weldable. Anchor spirals at each end or discontinuity with one extra turn and a splice to itself as shown. Where permitted on plans provide closed hoops conforming to the requirements of this detail. Lapped splice is not allowed within the greater of 1/6 the shaft height or column diameter whichever is greater, or 18" from top of footing or bottom of cap.

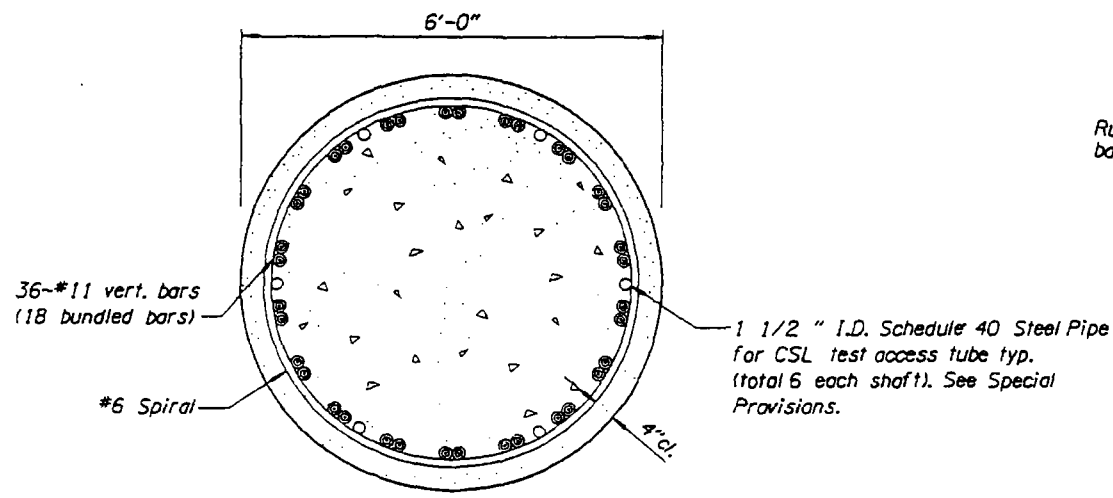
**SPIRAL SPLICE / TERMINATION DETAIL**

No Scale

Bent	Ultimate Downward Load (kips)	Ultimate Uplift Load (kips)
2 Lt.	1560 kips	0
2 Rt.	1560 kips	0



**TYP. DRILLED SHAFT ELEV.**  
No Scale



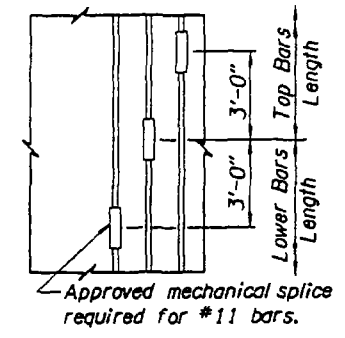
**TYPICAL DRILLED SHAFT SEC.**  
Scale: 3/4" = 1'-0"

**\*\*Note:**  
Elevation "B" may be adjusted to match minimum penetration below competent rock surface as approved by the geotechnical engineer

**SHAFT SCHEDULE**

Bent	Vert. Bars	Vert. Bars Length	Spiral Length	Elev. "A" (ft.)	Elev. "B" (ft.)**	"D" (ft.)
2 Lt.	36~#11	22'-6"	22'-6"	151.00	128.00	12
2 Rt.	36~#11	22'-6"	22'-6"	151.00	128.00	12

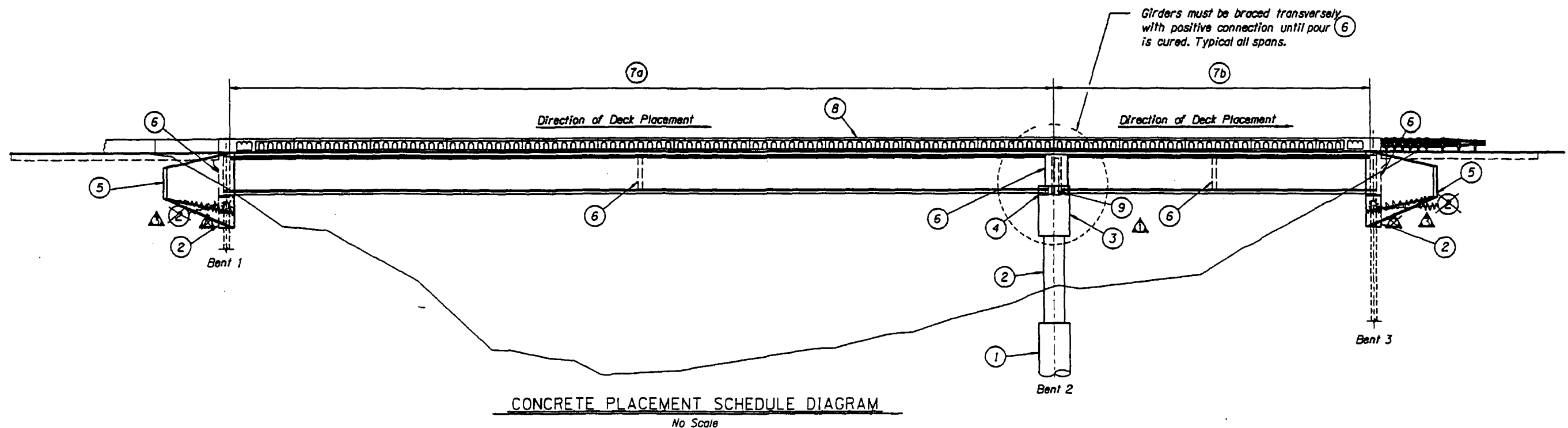
Field verify elevations as directed by the geotechnical engineer



**TYPICAL SPLICE DETAIL**  
(Also use @ Top & Lower Bar Connection)  
No Scale

DATE	REVISION	BY	DRAFTER: D. Axtell			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 17 OF 34
			DESIGNER: Adrian Kidarsa			DATE June - 2007		DRAWING NO. 76613
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Mike Wolohan / S. H. Garlick	REVIEWER: Scott M. Nettleton		CALC. BOOK XXXX	DRILLED SHAFT DETAILS	





**Typical Construction and Concrete Placement Sequence:**

Stage I

1. Place pre-bored steel piling at Bent 1 and driven steel piling at Bent 3.
2. Placement ① is the drilled shafts at Bent 2.
3. Placement ② includes columns at Bent 2 and pilecaps at Bents 1 and 3.
4. Placement ③ is the Cross Beam at Bent 2.
5. Placement ④ is the right shear lug at Bent 2 (optional, see Stage IV).
6. Placement ⑤ includes the cast-in-place wingwalls at Bents 1 and 3.

Stage II

Note: All concrete placement in stage II shall occur on temporary supports

1. Place Prestressed Bulb-T Girders on temporary supports.
  2. Placement ⑥ includes transverse Beams "D", "E", "F".
  3. Placement ⑦a - ⑦b is the deck placement, see Detail "A".
- Sequence of span placements can proceed in reverse order as shown, see "Concrete Pour Schedule diagram". Deck concrete shall be placed a minimum of 7 days after Placement ⑥
4. Placement ⑧ is the ornamental rails. Placement ⑧ shall not start until Placement ⑦ achieves design strength or a minimum of 7 days after Placement ⑦.

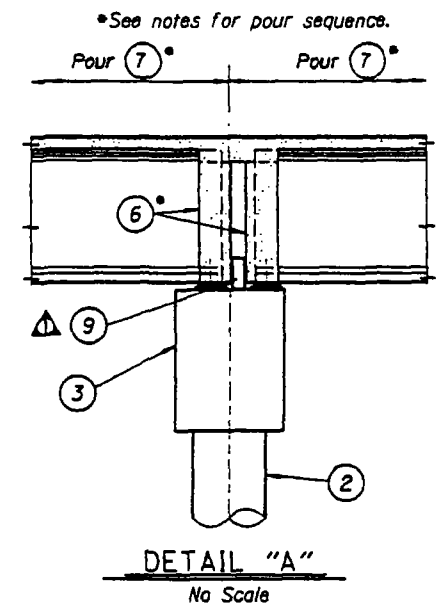
**Typical Construction and Concrete Placement Sequence Cont.:**

Stage III

1. Move superstructure to final position after crossbeam and pilecap concrete has achieved their design strength. See dwg. no. 76600 for positive connection between superstructure and temporary supports.

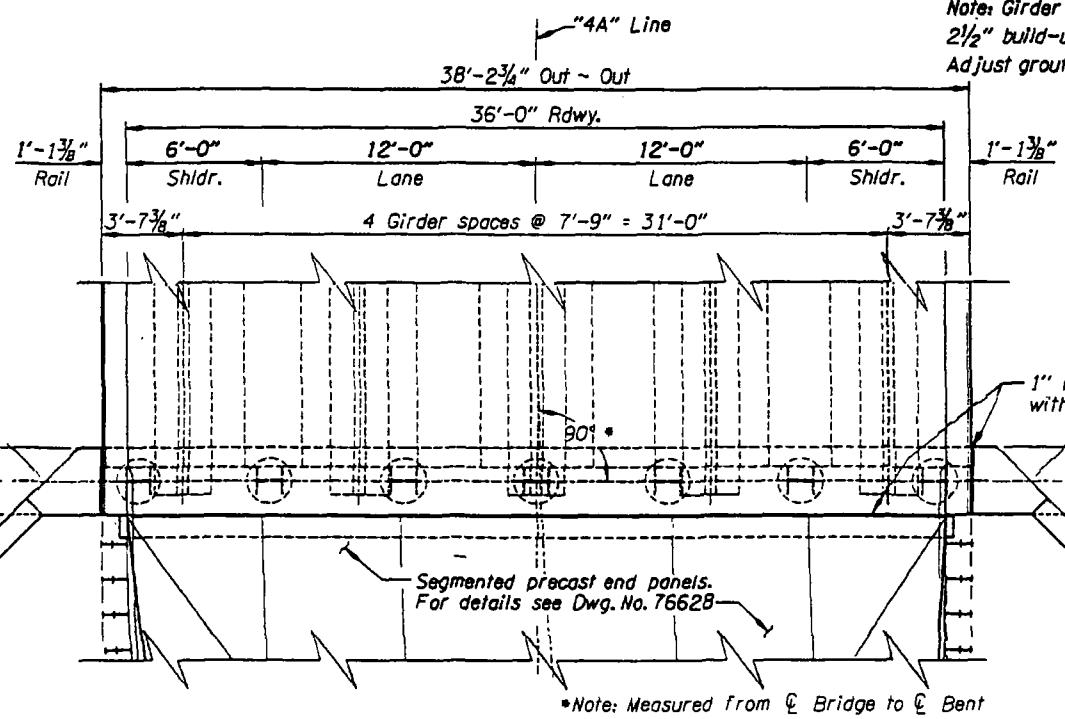
Stage IV

1. Placement ⑨ is the left shear lug at Bent 2, and the intermediate shear lugs at all bents. The right shear lug at Bent 2 may be placed with Placement ⑨ as an option.
2. Install precast wingwalls at Bents 1 and 3.



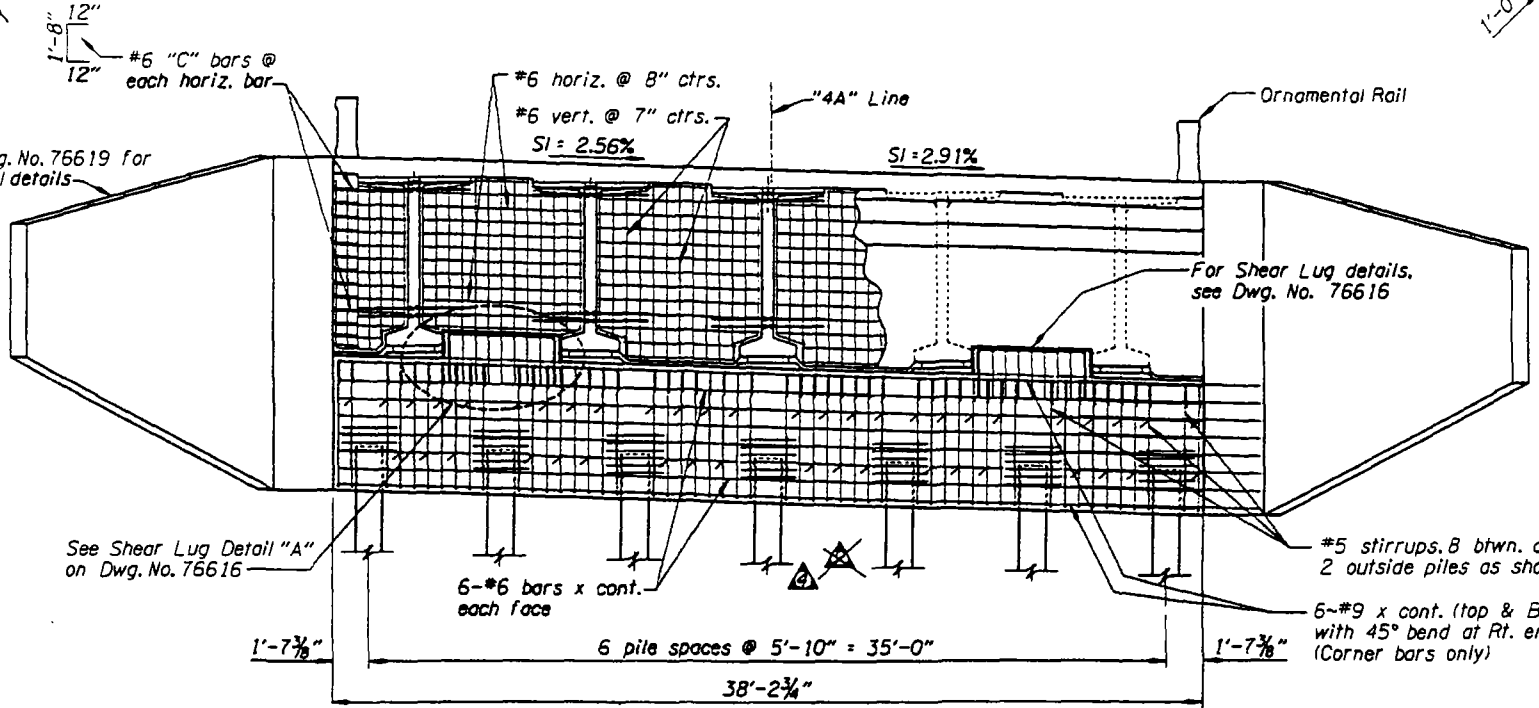
▲	DATE	REVISION	BY	DRAFTER: Tom Hernandez		STRUCTURE NO. 20585	<b>ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDSCRABBLE CREEK SECTION</b>  Umpqua Hwy. No. 45 (M.P. 39.97)      Douglas County	SHEET 18 OF 34
▲	7-2-07	Number Note	T.H.	DESIGNER: Adrian Kidarsa		DATE June - 2007		DRAWING NO.
▲	7-28-07	Rev. Cap & Wingwall Depth	J.K.	CHECKER: Michael M. Wolohan		CALC. BOOK XXXX		<b>76614</b>
ACCOMPANIED BY DWGS. See Sheet J.				REVIEWER: Scott M. Nettleton	RENEWAL DATE: 12-31-09	<b>CONCRETE POUR SCHEDULE DETAILS</b>		

Note: Girder seat elevations are provided at top of concrete pad, assuming 2 1/2" build-up. Field verify elevations using measured final beam camber. Adjust grout pad as req'd. before bridge sliding in Stage III

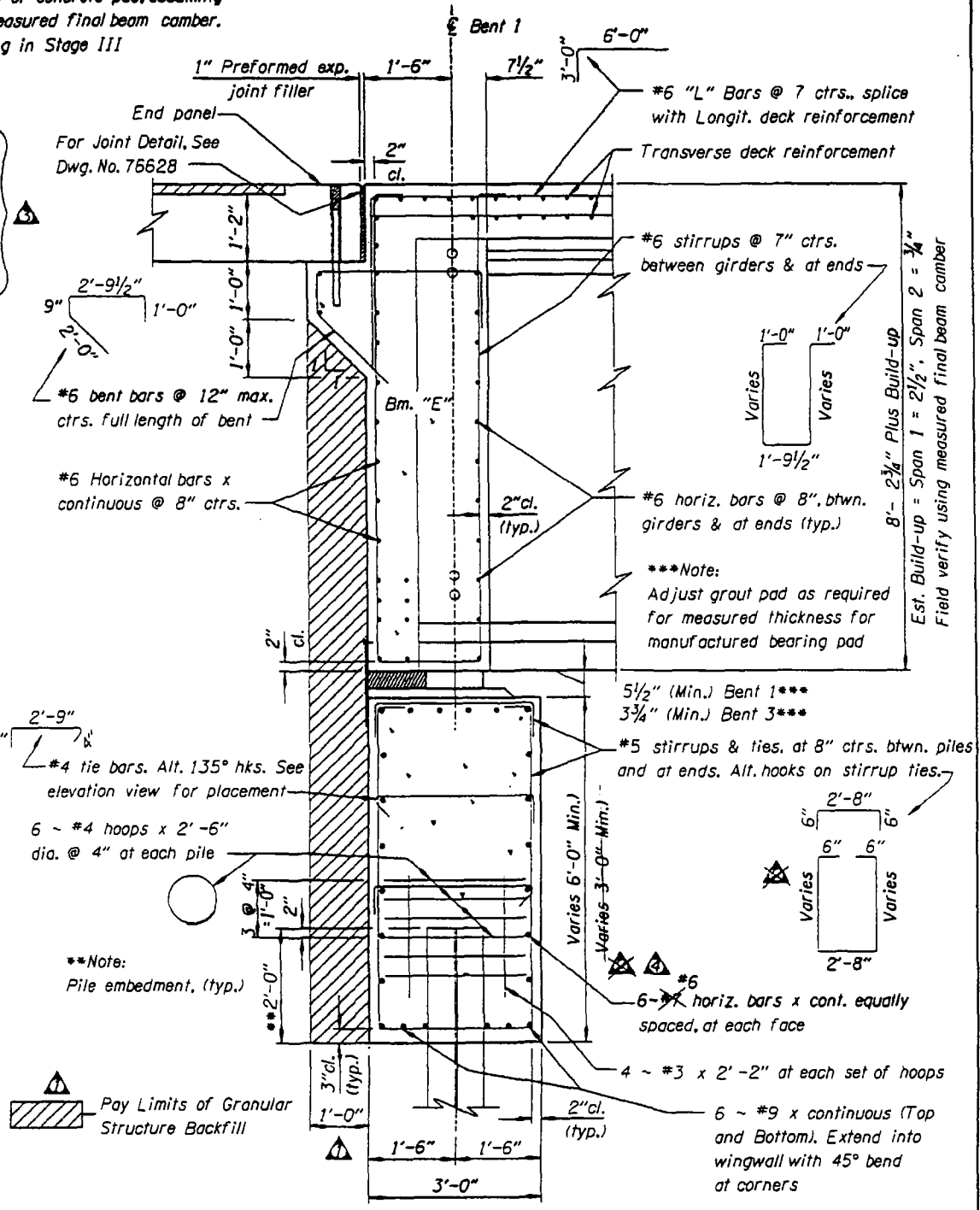


GIRDER SEAT ELEVATIONS		
GR1A	-176.35	176.21
GR2A	-176.15	176.01
GR3A	-175.95	175.80
GR4A	-175.72	175.57
GR5A	-175.50	175.35

PLAN  
Scale: 1/4" = 1'-0"



ELEVATION  
Scale: 1/4" = 1'-0"



TYPICAL BENT SECTION  
BENT 1 SHOWN (BENT 3 SIMILAR)  
Scale 3/4" = 1'-0"

DATE	REVISION	BY
12-20-2007	Delete Revision	SN
8-08-2007	Added Granular Backfill (Typ. bt. Sec.)	JG
8-28-2007	Revised Pile Cap Depth (3ft)	DA
9-17-2007	Up Date Girder Seat Elevations	SN

DRAFTER: D. Axtell  
 DESIGNER: Adrin Kidarsa  
 CHECKER: Michael M. Wolohan  
 REVIEWER: Scott M. Nettleton



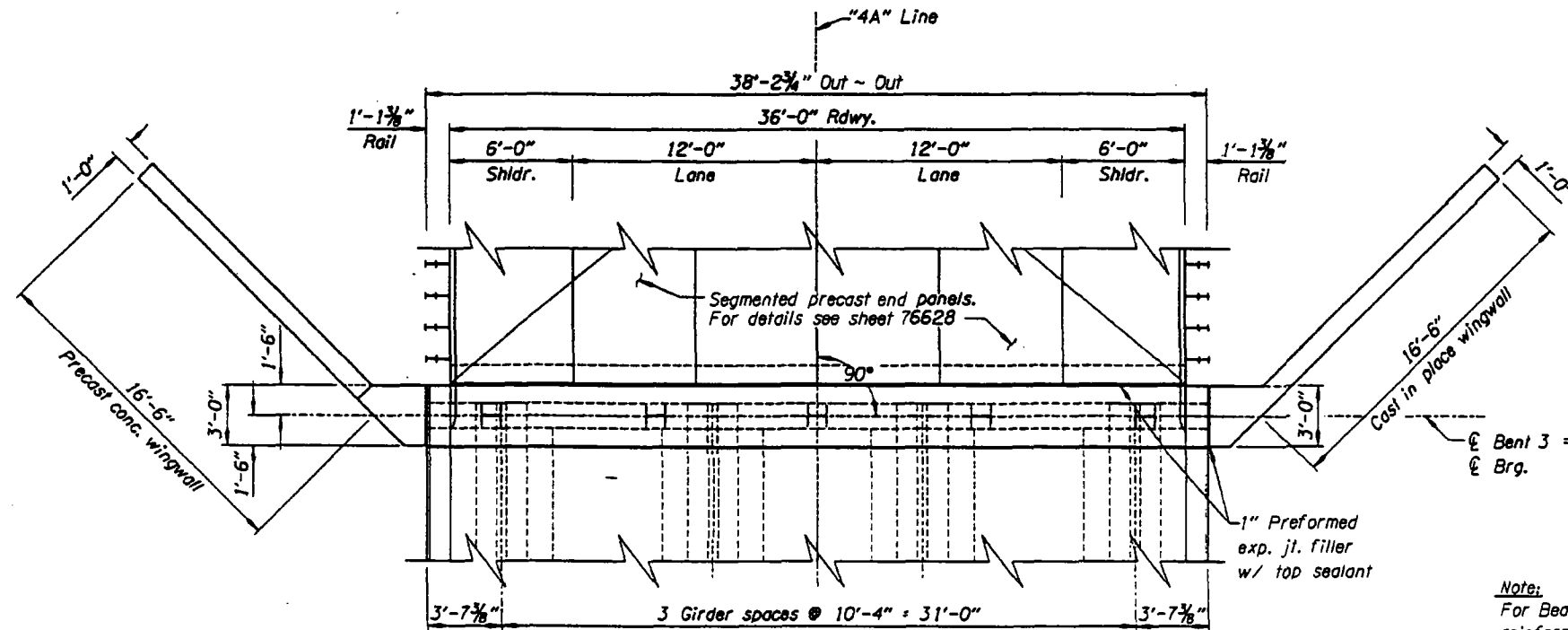
OREGON DEPARTMENT OF TRANSPORTATION  
 REGION 3 TECHNICAL SERVICES  
 TYLIN INTERNATIONAL

STRUCTURE NO. 20585  
 DATE June - 2007  
 CALC. BOOK XXXX

ELK CREEK BRIDGE (CROSSING NO. 4)  
 ELK CREEK TO HARDCRABBLE CREEK SECTION  
 Umpqua Hwy. No. 45 (M.P. 39.97)  
 Douglas County

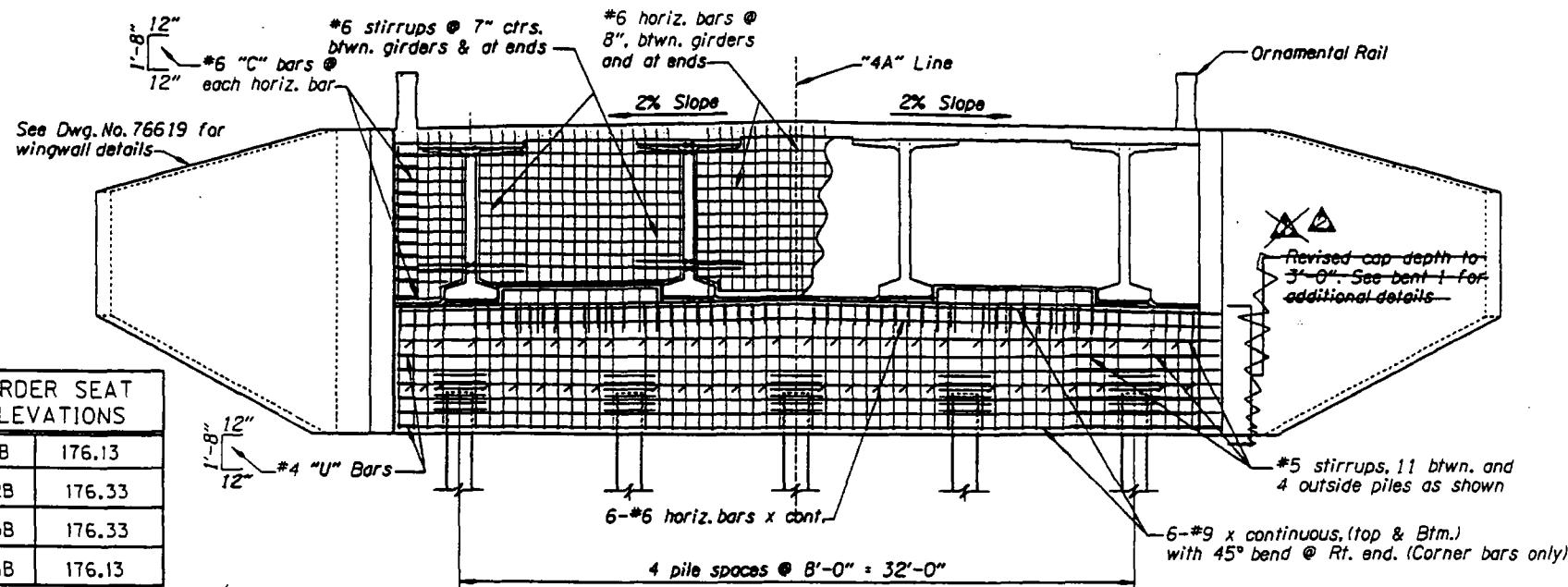
SHEET 19 OF 34  
 DRAWING NO. 76615





PLAN  
Scale: 1/4" = 1'-0"

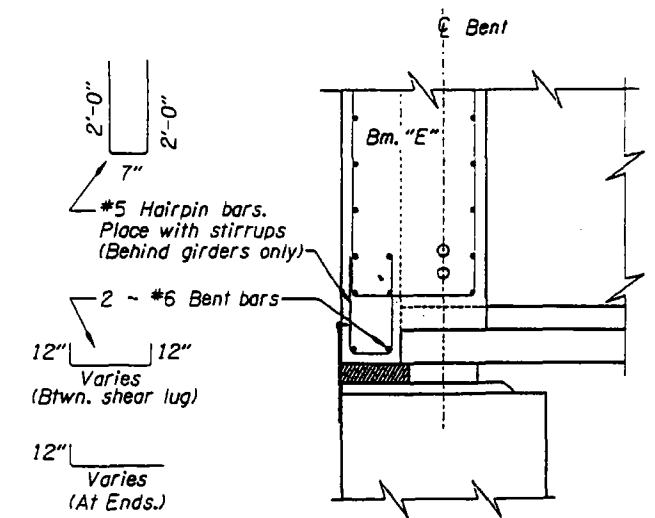
Note:  
For Beam "E" and pilecap reinforcement details, see Bent 1 Details, Dwg. No. 76615



ELEVATION  
Scale: 1/4" = 1'-0"

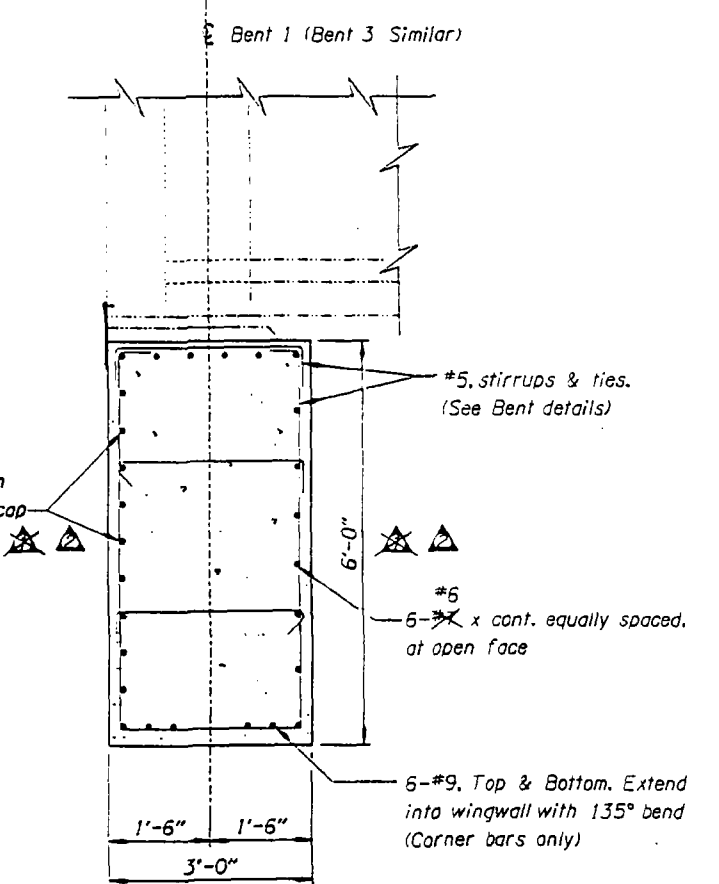
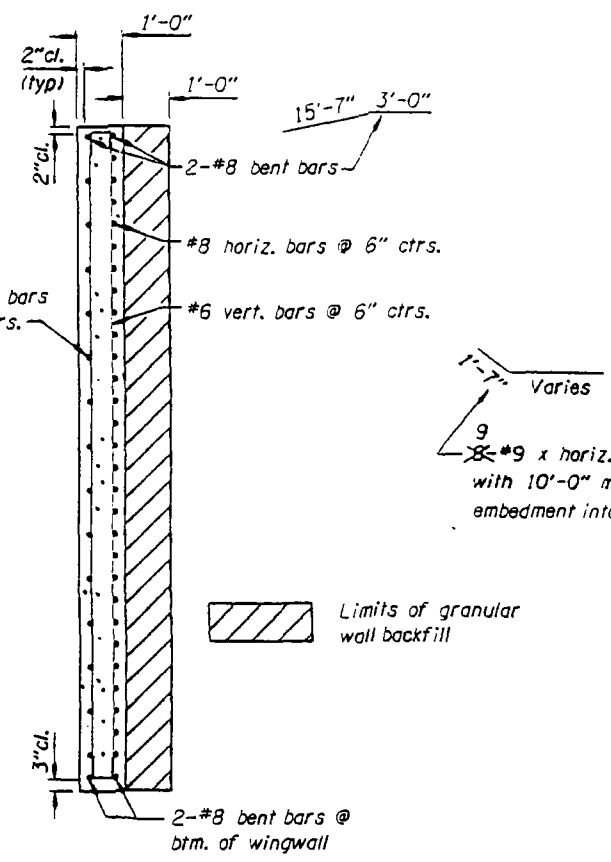
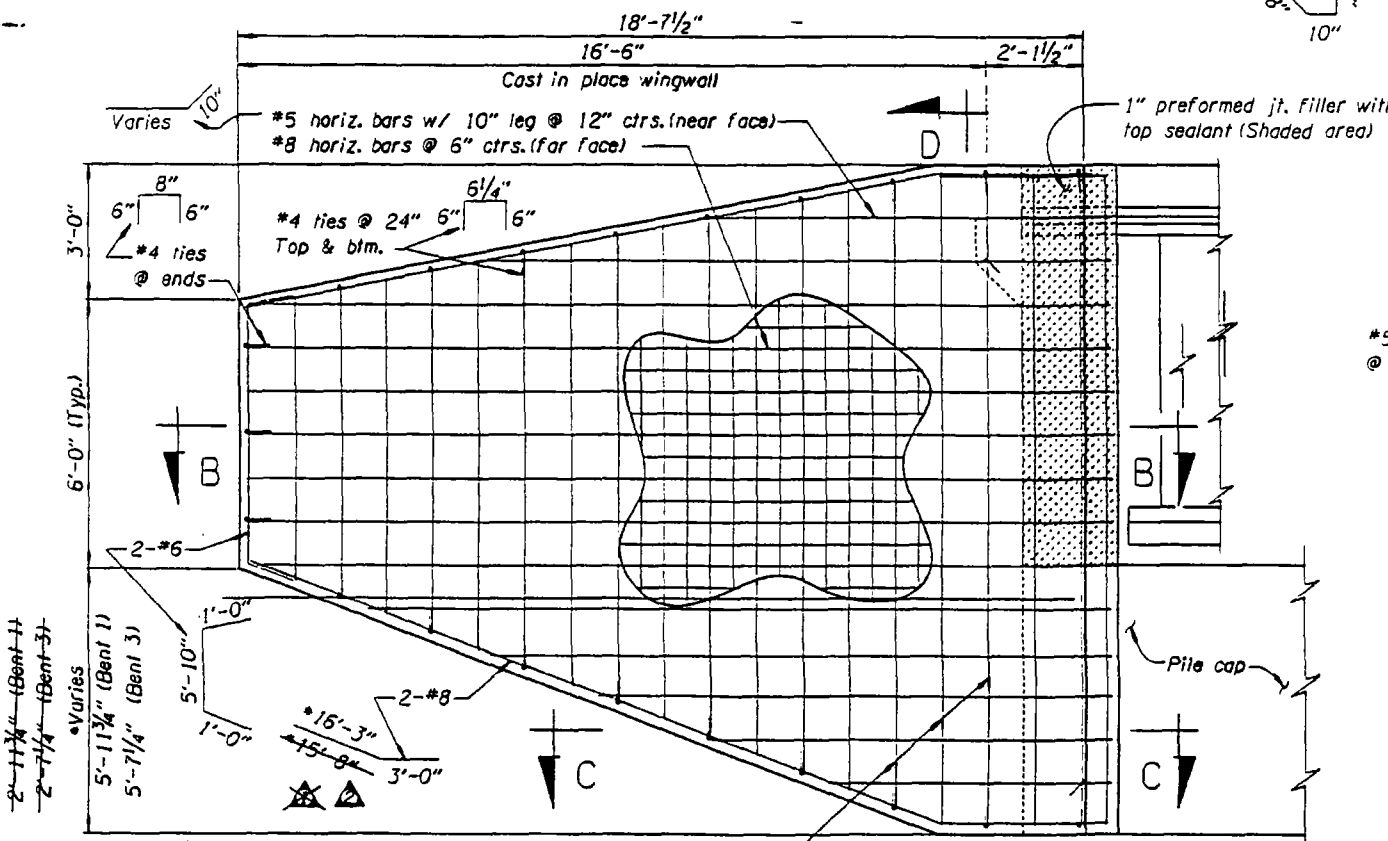
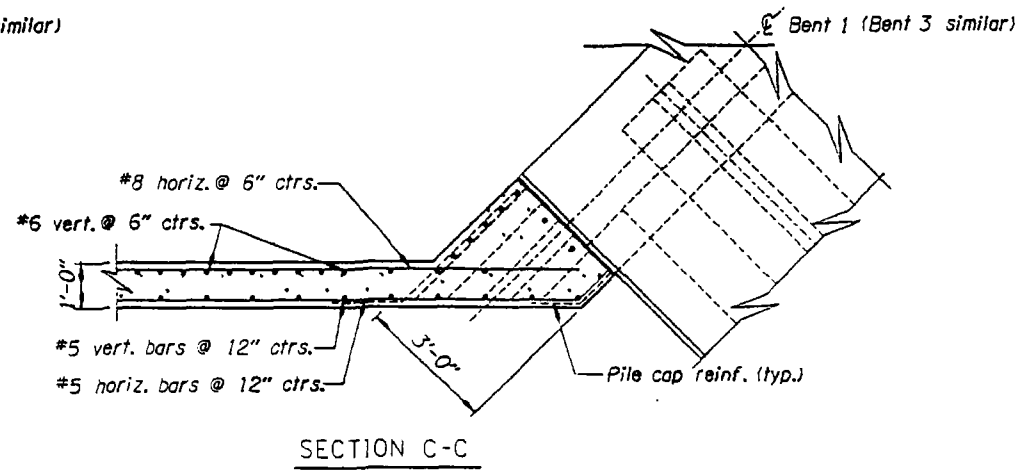
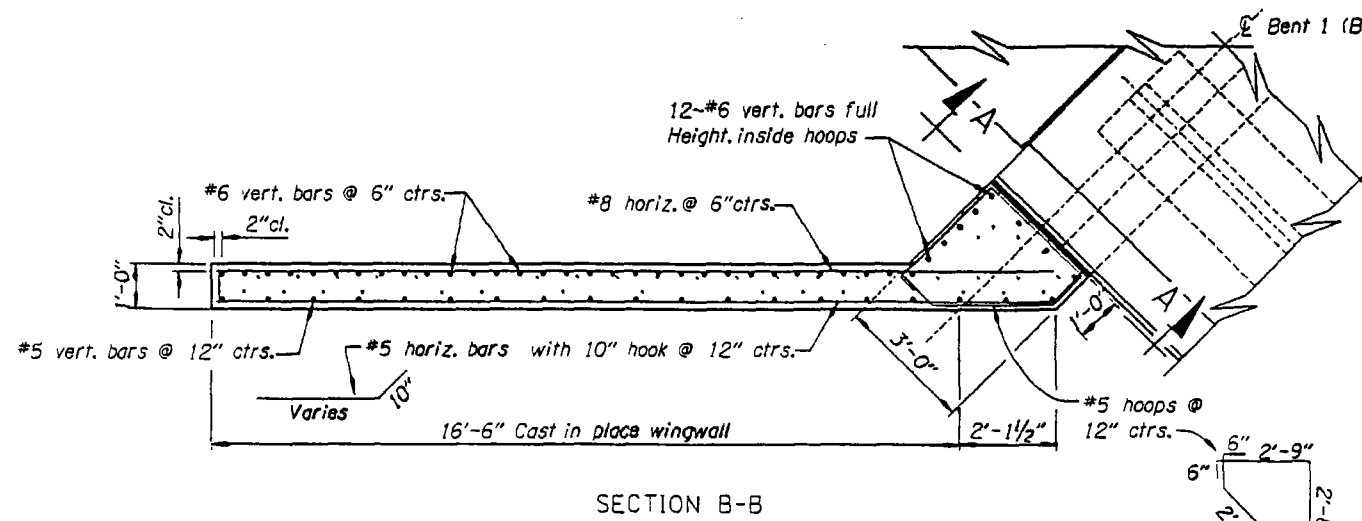
GIRDER SEAT ELEVATIONS	
GR1B	176.13
GR2B	176.33
GR3B	176.33
GR4B	176.13

Note: Girder seat elevations are provided at top of concrete pad, assuming 3/4" build-up. Field verify elevations using measured final beam camber. Adjust grout pad as required before bridge sliding (Stage III)



BEAM "E" SECTION VIEW AT GIRDER  
Scale 3/4" = 1'-0"

<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>8-28-2007</td> <td>Revised Pile Cap Depth (Was: 6'-Now:3')</td> <td>DA</td> </tr> <tr> <td>12-20-2007</td> <td>Delete Revision</td> <td>SN</td> </tr> </tbody> </table>	DATE	REVISION	BY	8-28-2007	Revised Pile Cap Depth (Was: 6'-Now:3')	DA	12-20-2007	Delete Revision	SN	DRAFTER: D. Axtell DESIGNER: Adrian Kidarsa CHECKER: Joseph Krajewski REVIEWER: Scott M. Nettleton		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p> <p><b>TYLIN INTERNATIONAL</b></p>	STRUCTURE NO. 20585 DATE June - 2007 CALC. BOOK XXXX	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 21 OF 34 DRAWING NO. 76617
DATE	REVISION	BY													
8-28-2007	Revised Pile Cap Depth (Was: 6'-Now:3')	DA													
12-20-2007	Delete Revision	SN													



\*Note: Field verify base on measured girder camber

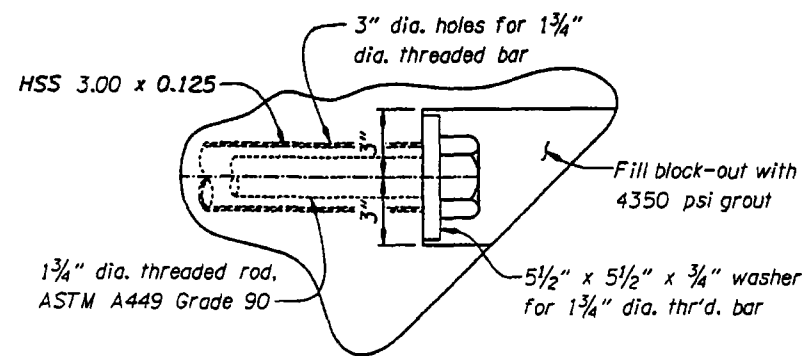
#5 vert. bars @ 12" ctrs. near face

ELEVATION C.I.P. WINGWALL DETAILS Scale: 1/2" = 1'-0"

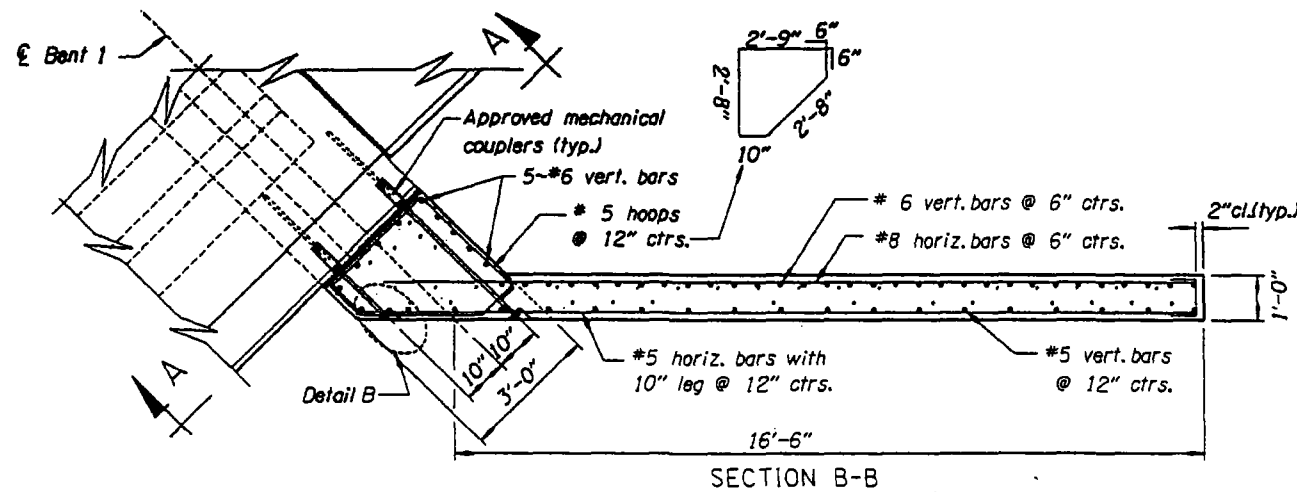
SECTION D-D

SECTION A-A @ WINGWALL Scale 3/4" = 1'-0"

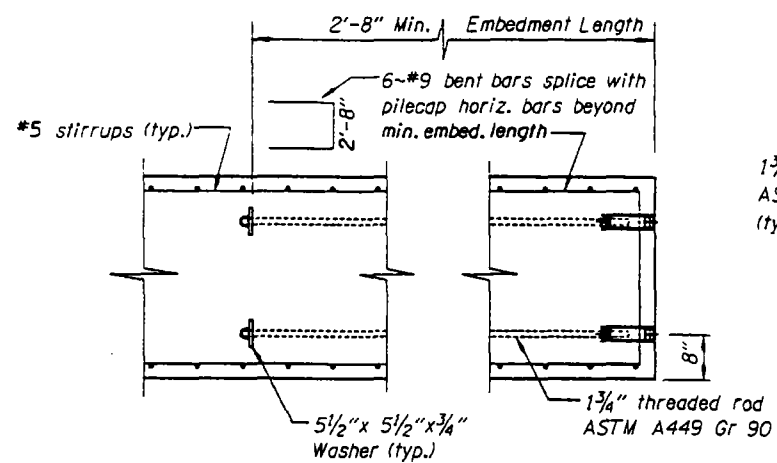
DATE	REVISION	BY	D. Axtell			STRUCTURE NO.	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET
08-28-07	Revised Pile Cap & Wingwall Depth	JK	DRAFTER:			20585		DATE
12-20-07	Delete revision	SN	DESIGNER: Adrian Kidarsa	RENEWAL DATE: 12-31-08	June - 2007	34	DRAWING NO.	
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Michael M. Walsh		CALC. BOOK		76618	
			REVIEWER: Scott M. Nettleton		XXXX			



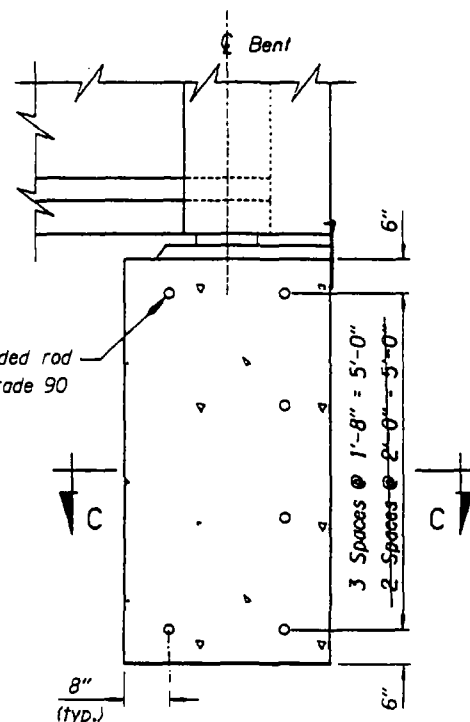
**DETAIL B**  
Scale: 1/2" = 1'-0"



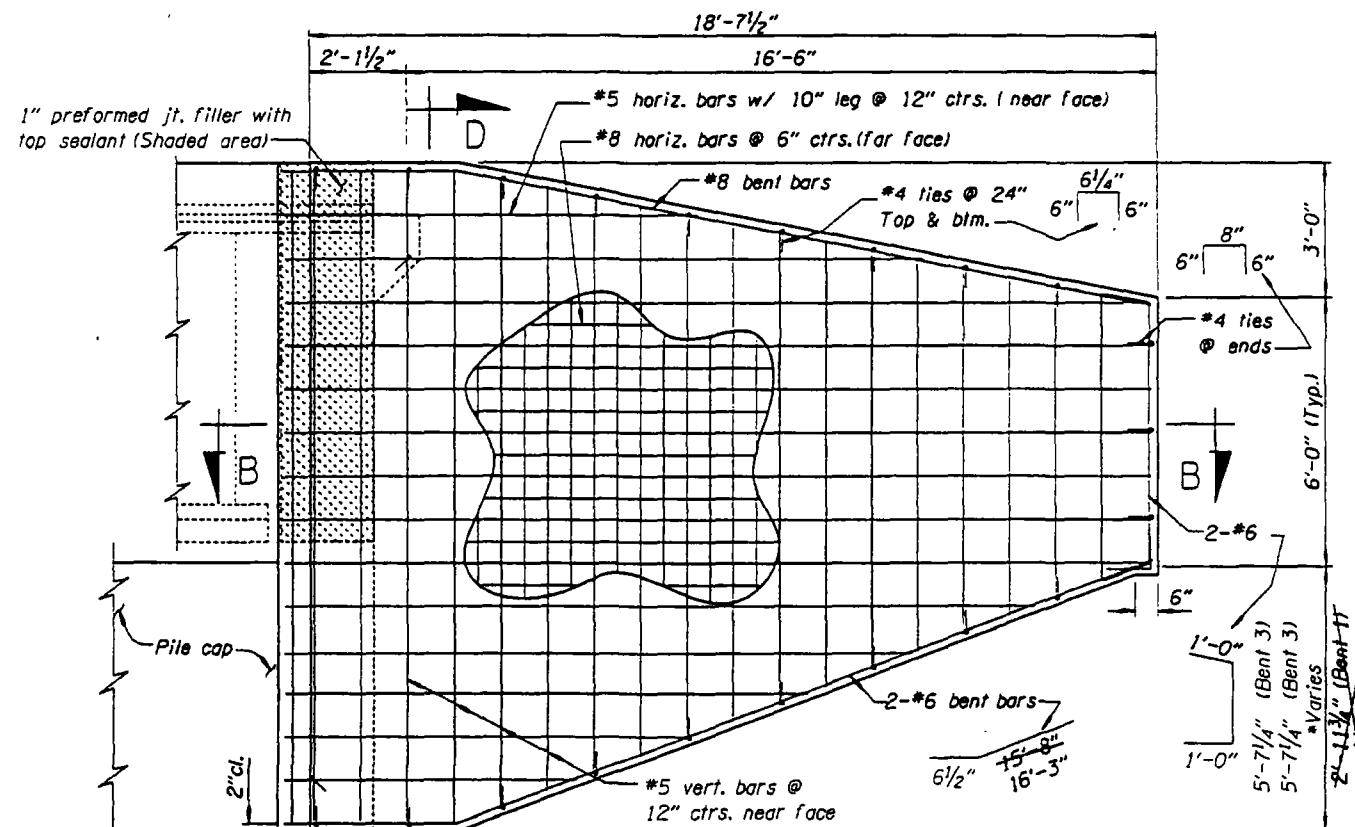
**SECTION B-B**  
Note: Bent 1 shown, Bent 3 similar



**PILECAP CONNECTION DETAIL**  
(Section C-C)  
Scale 3/4" = 1'-0"



**SECTION A-A**  
Scale 3/4" = 1'-0"

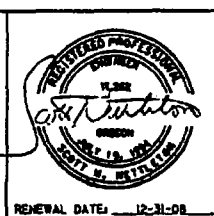


**PRECAST WINGWALL DETAILS**  
Scale: 1/2" = 1'-0"  
Note: For Section D-D, see Dwg. No. 76618

DATE	REVISION	BY
08-28-07	Revised Pile Cap & Winwall Depth	JK
12-20-07	Delete Revision	SN

ACCOMPANIED BY DWGS. See Sheet 1.

DRAFTER: D. Axtell  
DESIGNER: Adrin Kidarsa  
CHECKER: Mike M. Wolohan  
REVIEWER: Scott M. Nettleton



**OREGON DEPARTMENT OF TRANSPORTATION**  
REGION 3 TECHNICAL SERVICES

**TYLIN INTERNATIONAL**

STRUCTURE NO. 20585  
DATE June - 2007  
CALC. BOOK XXXX

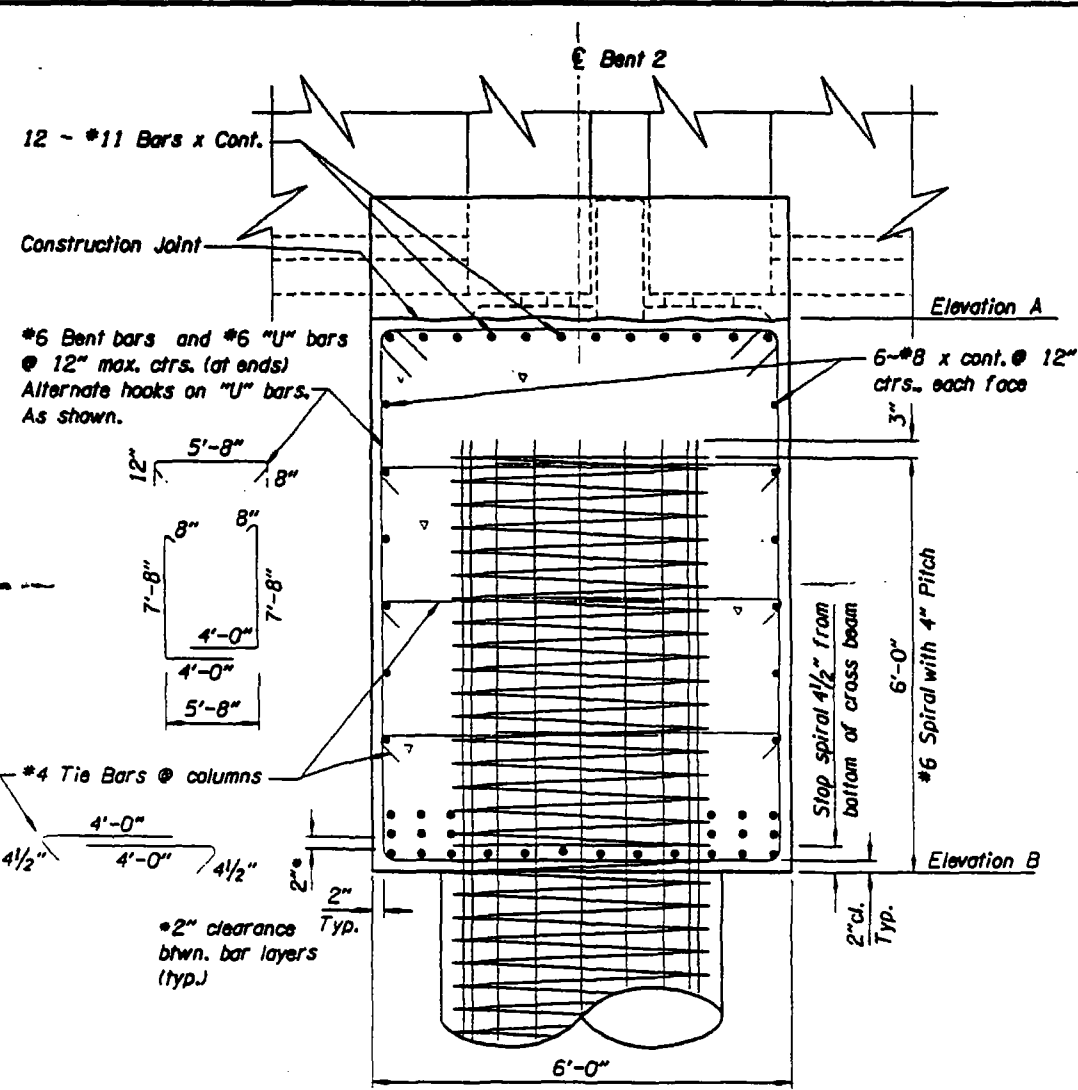
ELK CREEK BRIDGE (CROSSING NO. 4)  
ELK CREEK TO HARDCRABBLE CREEK SECTION  
Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County

**PRECAST WINGWALL DETAILS**

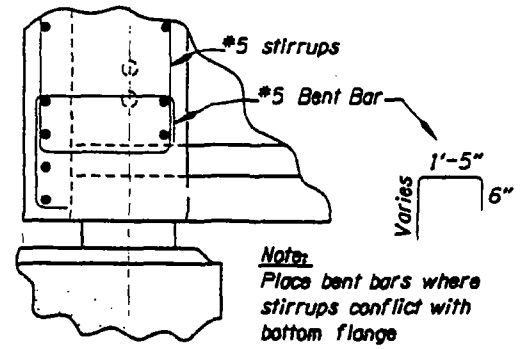
SHEET 23 OF 34  
DRAWING NO. 76619







TYPICAL SECTION @ COLUMN  
Scale: 3/4" = 1'-0"



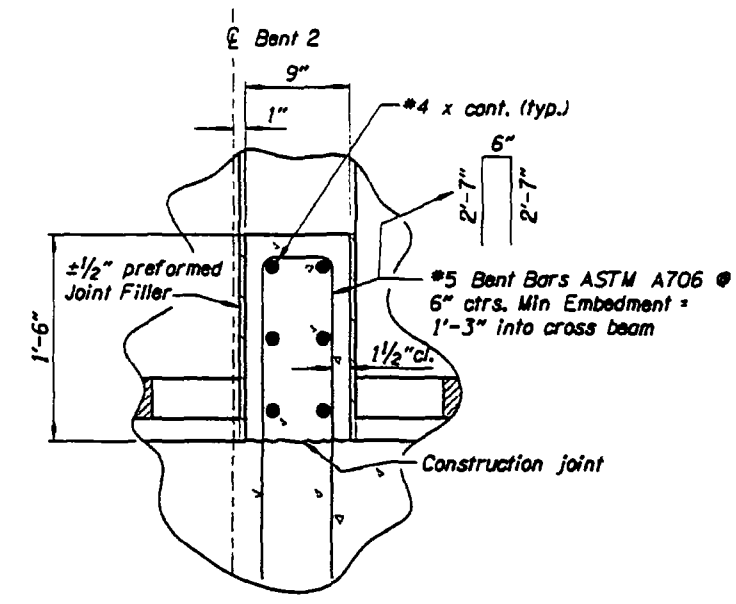
DETAIL "F"  
Scale: 1" = 1'-0"

BENT CAP ELEVATIONS		
	Lt.	Rt.
ELEV. A	175.70	175.67
ELEV. B	167.70	167.67

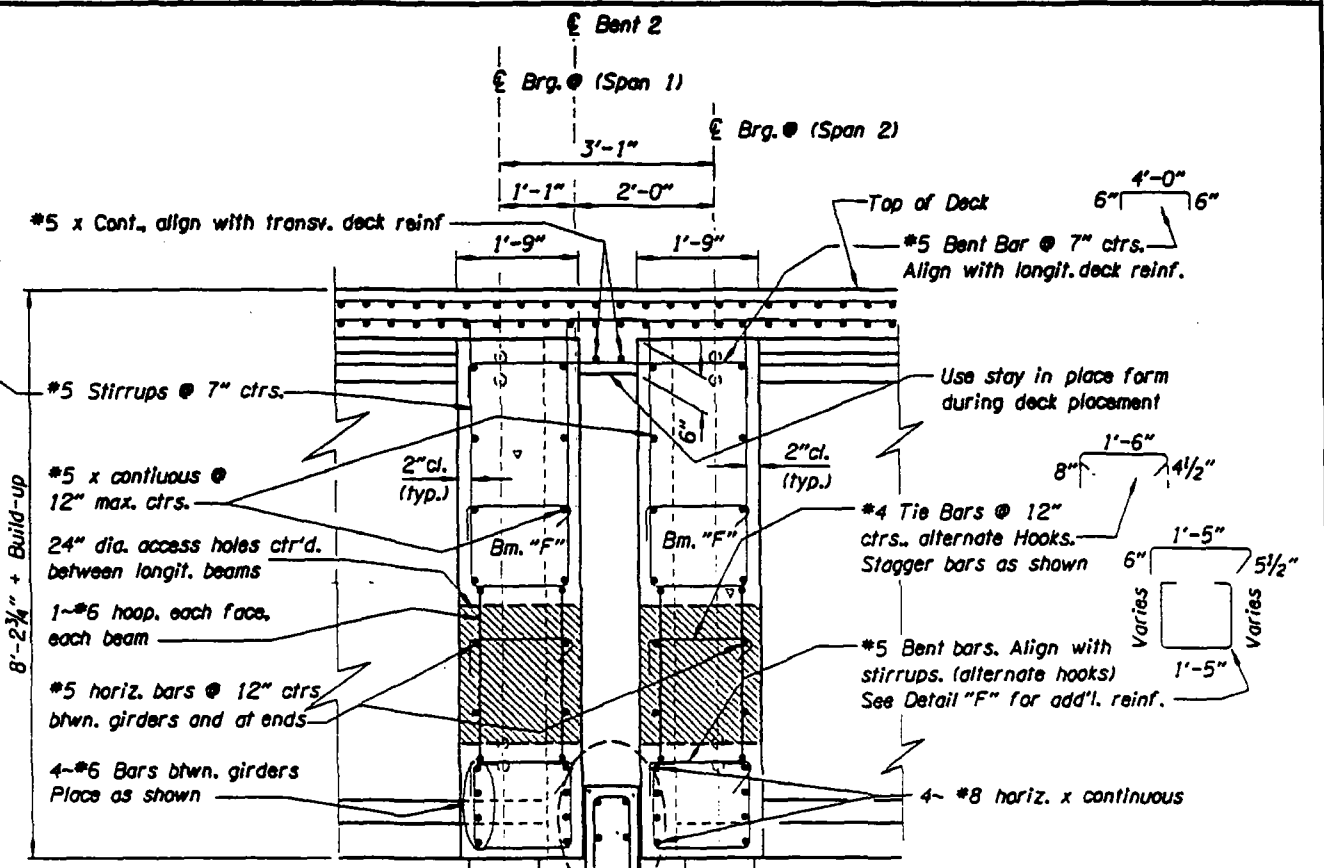
Note: Field verify elevations based on final measured girder camber.

GIRDER SEAT ELEVATIONS		
GR1A	-176.01	175.89
GR2A	-176.16	176.04
GR3A	-175.30	176.18
GR4A	-176.15	176.01
GR5A	-175.99	175.84
GR1B	-176.01	176.29
GR2B	-176.20	176.48
GR3B	-176.20	176.46
GR4B	-175.99	176.24

Note: Girder seat elevations are provided at top of concrete pad. Field verify elevations based on final measured girder camber.



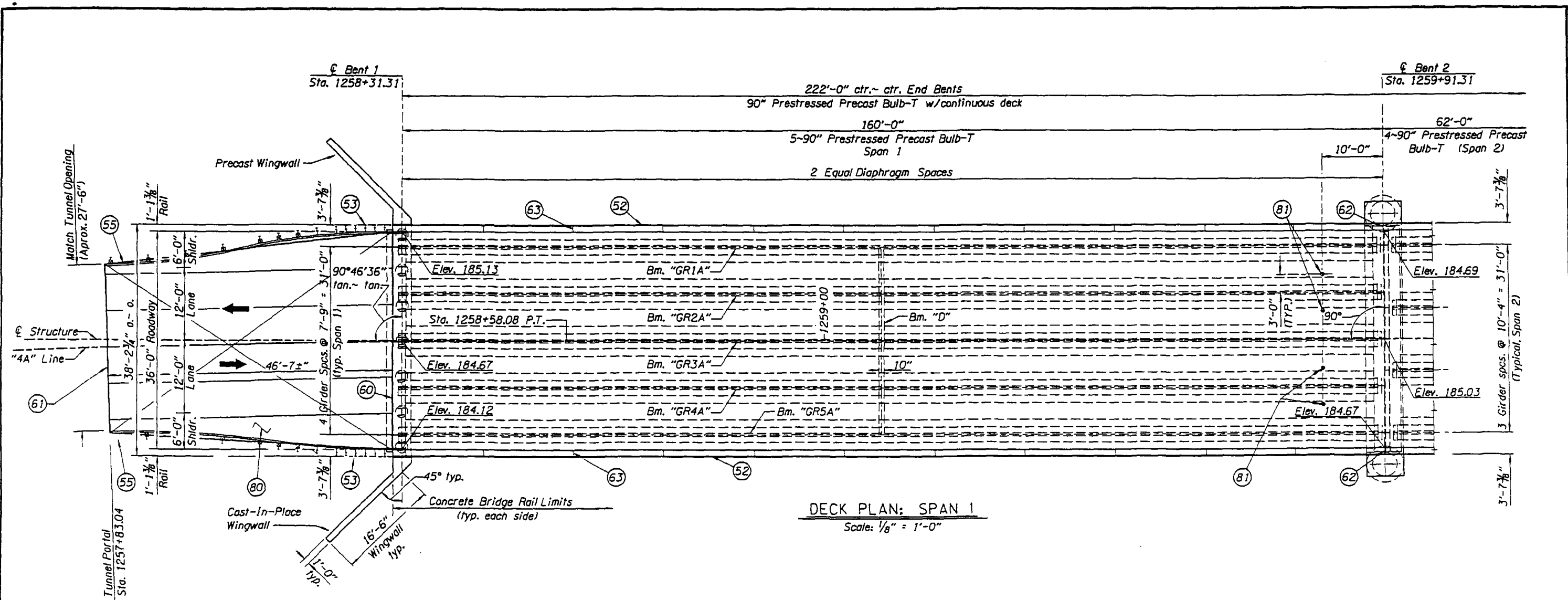
LONGITUDINAL SHEAR LUG DETAIL  
Scale: 1/2" = 1'-0"



TYPICAL BENT SECTION  
Scale: 3/4" = 1'-0"

DATE: 9-17-2007	REVISION: Up Date Girder Seat Elevations	BY: SN	DRAWN: D. Axtell			STRUCTURE NO.: 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 25 OF 34
ACCOMPANIED BY DWGS. See Sheet 1.			DESIGNER: Adrian Kidoros			CHECKER: Mike Wolohan / S. H. Garlick		REVIEWER: Scott M. Nettleton





DECK PLAN: SPAN 1  
Scale: 1/8" = 1'-0"

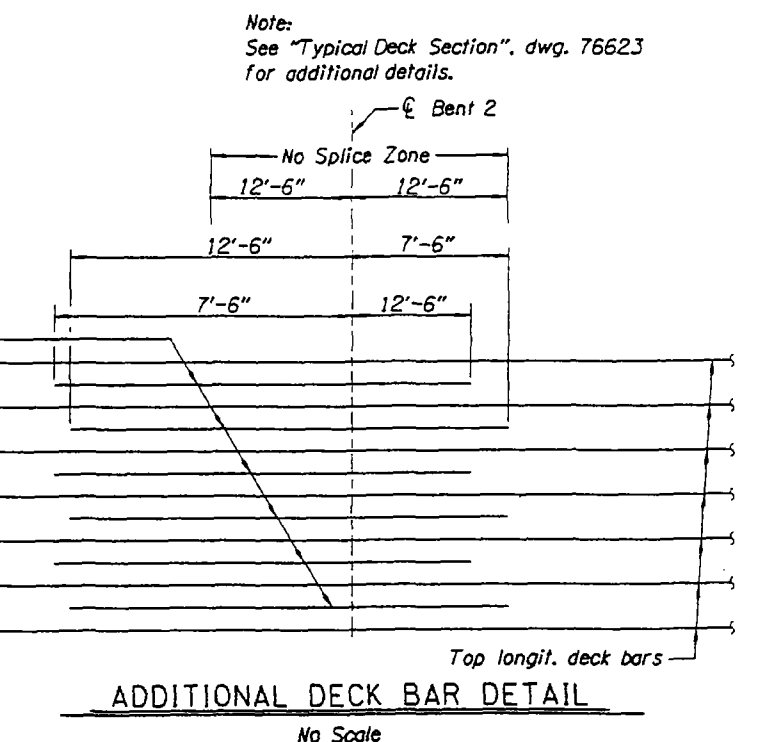
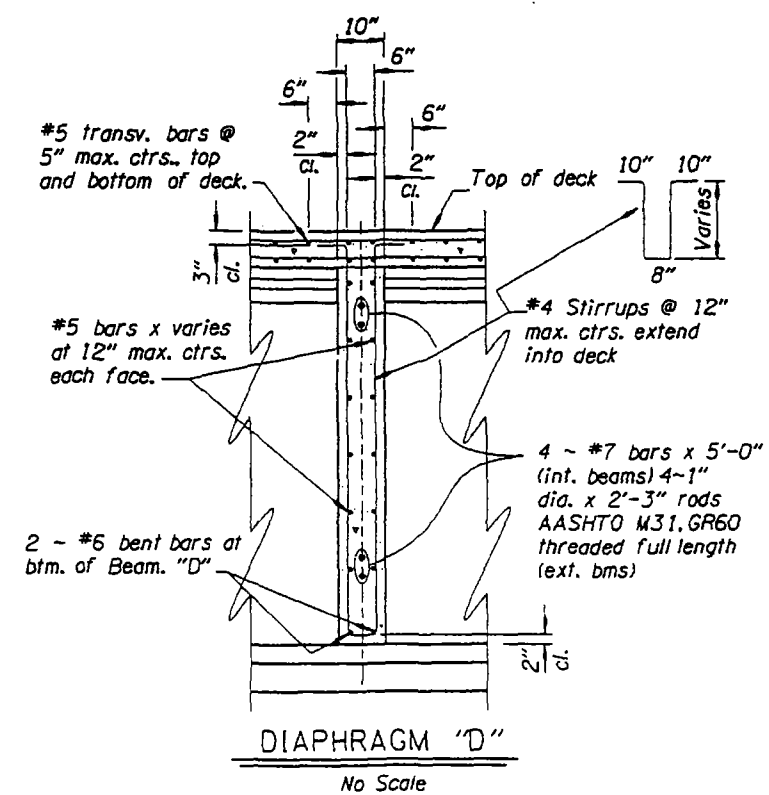
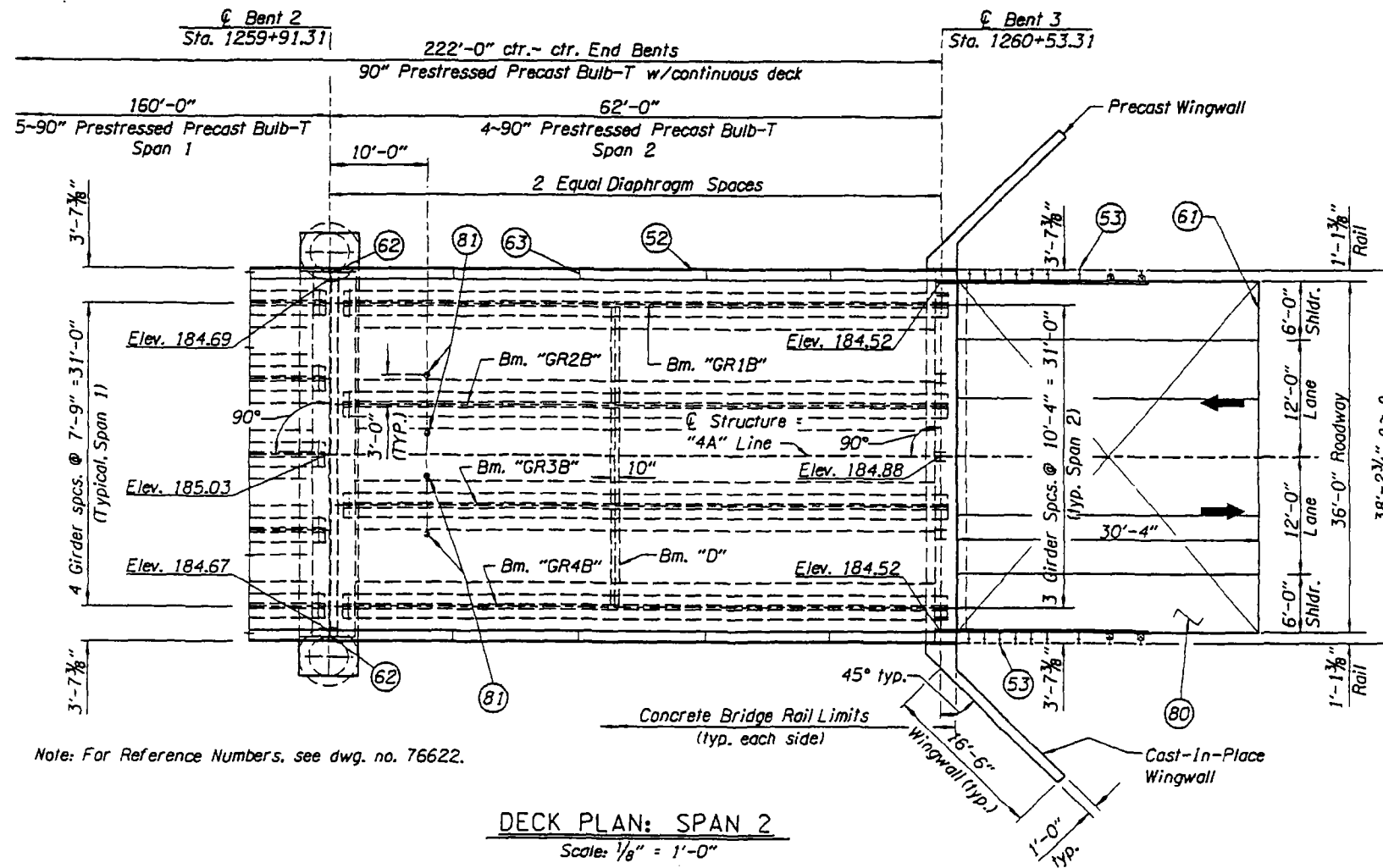
**Reference Numbers:**

- (52) Ornamental Concrete Bridge Rail, see dwg. 76630 for details.
- (53) Bridge Transition to Guardrail, see std. dwg. BR203 for details.
- (55) Tunnel Transition to Guardrail, see sht. 2B-3, 2B-4 & dwg. RD520 for details.
- (60) 1" Prefomed Expansion Joint, see Detail "A" & dwg. no. BR165 (typ. each end).

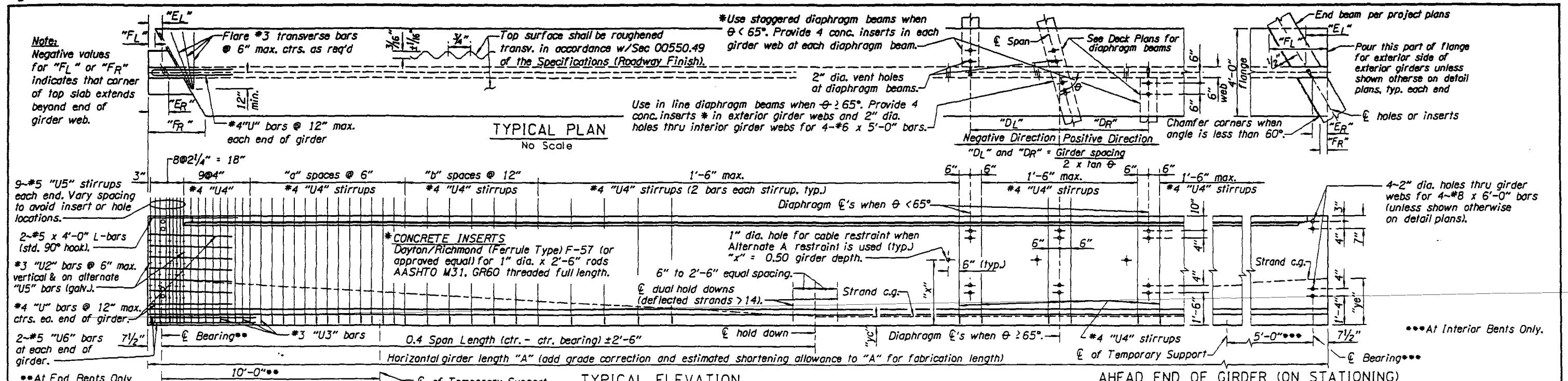
**Reference Numbers Cont.:**

- (61) Sawcut Pavement 1/4" wide by 1 1/2" deep. Fill with Traffic Loop Sealant.
- (62) Type "B" Joint at Interior Bents and at rail ends, see dwg. no. 76630.
- (63) Place Scoring Joint @ 15'-0" max. ctrs. between open, Type "B" joints where shown. See dwg. 76630.
- (80) 46'-7± (@ Bt. 1) & 30'-4" (@ Bt. 3) Precast Reinforced Concrete Panel at Bridge Ends, see dwg. no. 76628, 76629 & BR165.
- (81) Provide 2" dia. hole for 1" dia. H.S. bar from Temporary Supports. (See Dwg. 76607) Patch hole with non-shrink grout after superstructure placement into final position and H.S. bar removed.

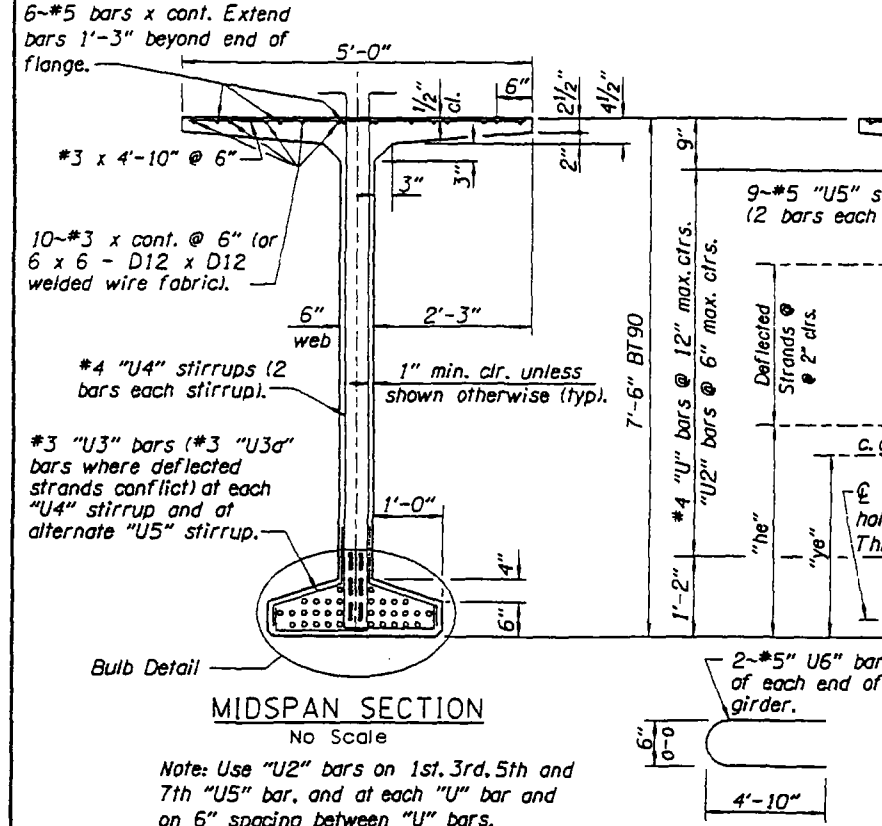
DATE	REVISION	BY	DRAFTER: Tom Hernandez			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 26 OF 34
						DATE June - 2007		Umpqua Hwy. No. 45 (M.P. 39.97)
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Michael M. Wolohan	REVIEWER: Scott M. Nettleton	TYLIN INTERNATIONAL	CALC. BOOK XXXX	DECK PLAN: SPAN 1	



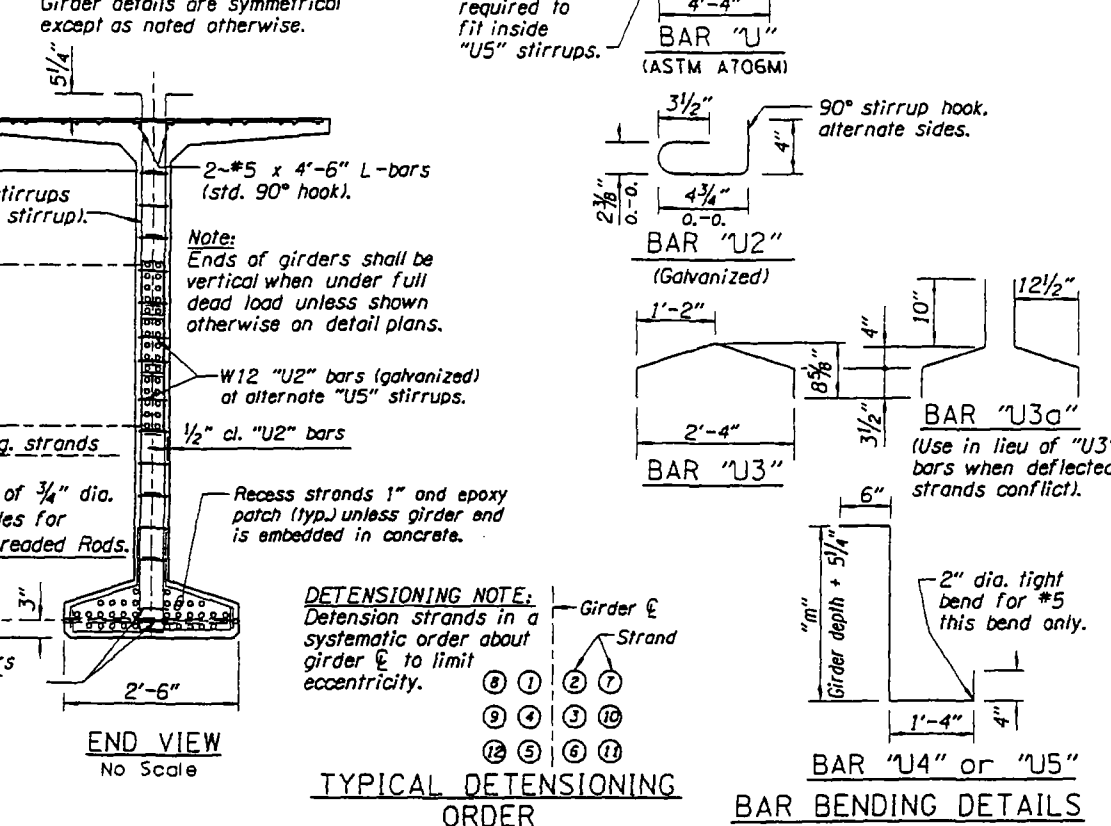
DATE	REVISION	BY	DRAWN BY: Tom Hernandez			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDSCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 27 OF 34
			DESIGNER: Adrian Kidorso			DATE: June - 2007		DRAWING NO. 76623
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Michael M. Wolohan		TYLIN INTERNATIONAL	CALC. BOOK XXXX	DECK PLAN: SPAN 2	
			REVIEWER: Scott M. Nettleton	RENEWAL DATE: 12-31-08				



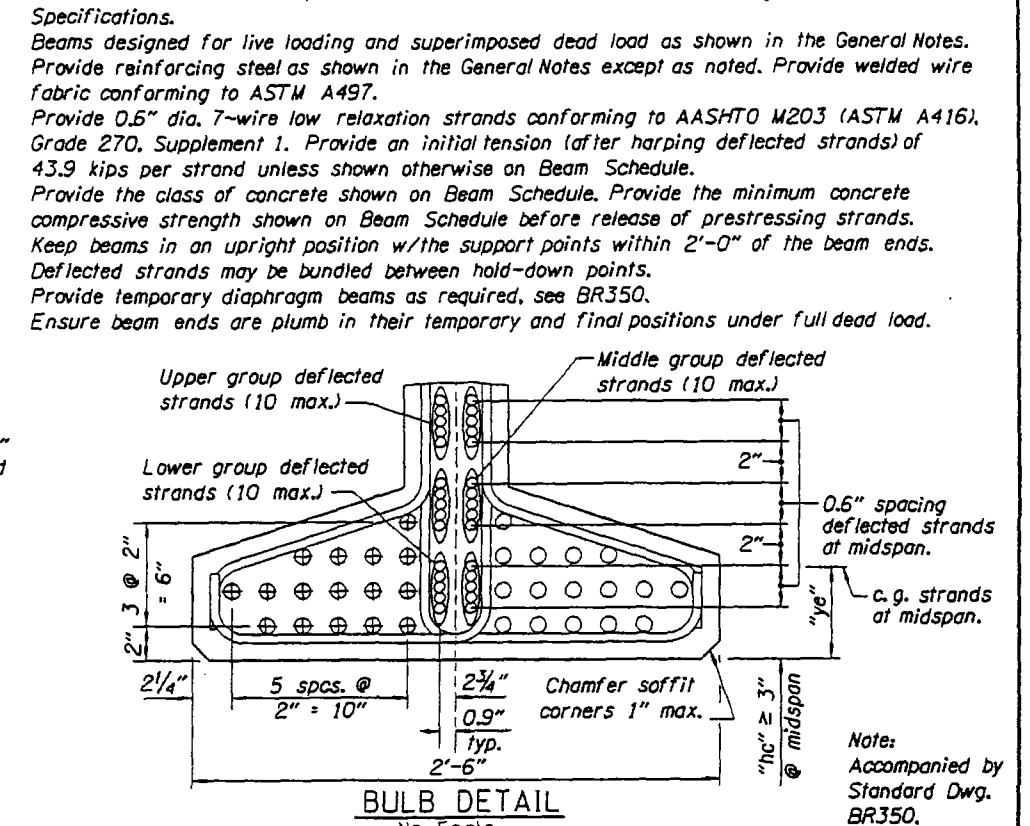
**BACK END OF GIRDER (ON STATIONING)**  
No Scale



**TYPICAL ELEVATION**  
No Scale



**AHEAD END OF GIRDER (ON STATIONING)**  
No Scale



DATE	REVISION	BY	DRAWN: Tom Hernandez		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p>	STRUCTURE NO. 20585	<p>ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDSCRABBLE CREEK SECTION</p> <p>Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County</p>	SHEET 28 OF 34
			DESIGNER: Adrian Kadarso			DATE June - 2007		DRAWING NO. 76624
			CHECKER: Michael M. Wolohan			CALC. BOOK XXXX		
			REVIEWER: Scott M. Nettleton					

GIRDER SCHEDULE (Span 1 and Span 2)

GIRDER TYPE	GIRDER NO.	NO. REQUIRED	LT. = LT. EXT. RT. = RT. EXT.	SPAN NUMBER	SPAN CTR.-CTR. BENTS ALONG GIRDER C	"A", 0-0 GIRDER (HORIZ. LENGTH AFTER SHORTENING)	GIRDER WT. KIPS	CONCRETE STRENGTH AT 28 DAYS, KSI	CONCRETE STRENGTH AT RELEASE, KSI	INITIAL TENSION PER STRAND, kips	NO. OF STRANDS PER GIRDER "N"	DEFLECTED STRANDS PER GIRDER "DS"	FIGURE NO. FOR STRAND PATTERN	REINFORCING BARS			DIAPHRAGM		BACK END (ON STATIONING)				AHEAD END (ON STATIONING)				EST. MIDSPAN DEFLECTION						
														STIRRUP SPACES		"m" (STIRRUP LEG)	"DL" "DR"	END BLOCK	NEGATIVE VALUE INDICATES POINT BEYOND GIRDER END				END BLOCK	NEGATIVE VALUE INDICATES POINT BEYOND GIRDER END				UPWARD AT RELEASE	UPWARD 3 MOS. AFTER RELEASE	DOWN DUE TO DEAD LOAD	DOWN DUE TO CURBS AND A.C.W.S.	EST. SHORTENING 2 WEEKS AFTER RELEASE	
														"a"	"b"				"FL"	"EL"	"ER"	"FR"		"FL"	"EL"	"ER"	"FR"						
BT90	"GR1A"	1	Lt.	1	160'-0"	160'-3"	162	9.0	7.0	43.9	52	20	1	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	3.60"	6.00"	2.40"	0.24"	1.24"
BT90	"GR2A"	1	---	1	160'-0"	160'-3"	162	9.0	7.0	43.9	52	20	1	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	3.60"	6.00"	2.50"	0.24"	1.24"
BT90	"GR3A"	1	---	1	160'-0"	160'-3"	162	9.0	7.0	43.9	52	20	1	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	3.60"	6.00"	2.60"	0.24"	1.24"
BT90	"GR4A"	1	---	1	160'-0"	160'-3"	162	9.0	7.0	43.9	52	20	1	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	3.60"	6.00"	2.60"	0.24"	1.24"
BT90	"GR5A"	1	Rt.	1	160'-0"	160'-3"	162	9.0	7.0	43.9	52	20	1	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	3.60"	6.00"	2.50"	0.24"	1.24"
BT90	"GR1B"	1	Lt.	2	62'-0"	61'-2"	61.8	9.0	7.0	43.9	16	0	2	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	0.21"	0.35"	0.05"	0.01"	0.19"
BT90	"GR2B"	1	---	2	62'-0"	61'-2"	61.8	9.0	7.0	43.9	16	0	2	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	0.21"	0.35"	0.06"	0.01"	0.19"
BT90	"GR3B"	1	---	2	62'-0"	61'-2"	61.8	9.0	7.0	43.9	16	0	2	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	0.21"	0.35"	0.06"	0.01"	0.19"
BT90	"GR4B"	1	Rt.	2	62'-0"	61'-2"	61.8	9.0	7.0	43.9	16	0	2	14	6	95 1/4"	0	0	N	1'-3"	7 1/2"	7 1/2"	1'-3"	N	1'-3"	7 1/2"	7 1/2"	1'-3"	0.21"	0.35"	0.05"	0.01"	0.19"

NOTE:

For temporary diaphragm beam details, see Dwg. BR350

NOTE :

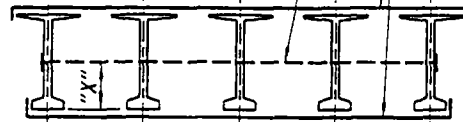
Transport members in accordance with Section 00550.51 of the DB Standard Specifications for Highway Construction except that the member placement shall occur no less than 14 days after casting.

(Alternate A)

One cable restraint at location shown. After restraint is removed, fill hole with concrete and finish flush with surface of beam - exterior beams only.

(Alternate B)

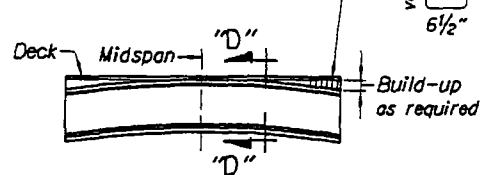
Cable restraints top and bottom at each Beam D.



BEAM RESTRAINT DIAGRAM

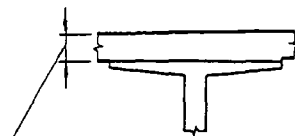
Snug fit prestressed beams against forms prior to diaphragm pour. Restraints to remain in place a min. of two days after completion of diaphragm pour.

Add #4 stirrups @ 12" when the build-up exceeds 3" and/or the girder stirrups extend less than 2" into the deck



Beam soffits shall be on level grade prior to prestressing. Difference between deck elevation and camber in beams shall be compensated for by build-up over beams.

BUILD - UP DECK DETAIL

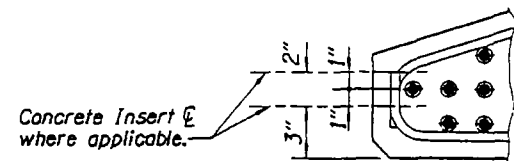


Minimum deck thickness. This dimension assumes that the beam fabrication and erection will meet the required deck elevations. In case of variations, lower beam to meet corrected elevation.

SECTION "D"- "D"

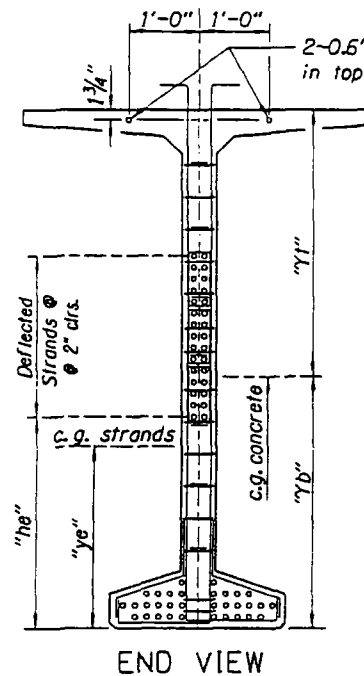
GIRDER PROPERTIES				
Girder	Area, in. <sup>2</sup>	I, in. <sup>4</sup>	Yb, in.	k/ft.
BT90	935	1.062,000	46.00	1.010

Weight estimated at 155 lbs. per cubic foot

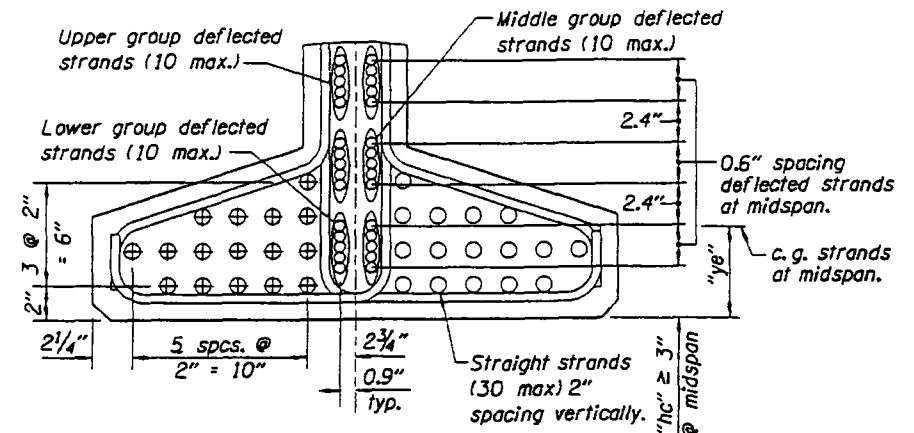


STRAND PATTERN FOR CONCRETE INSERTS

Use a non-standard strand pattern if inserts need to be placed in lower bulb.



END VIEW



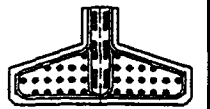
MIDSPAN SECTION

(Between hold downs)

Note: For Bulb-T Girder general details, see dwg. no. 76624.

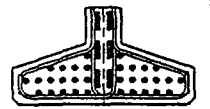
FIGURES

FIGURE 1



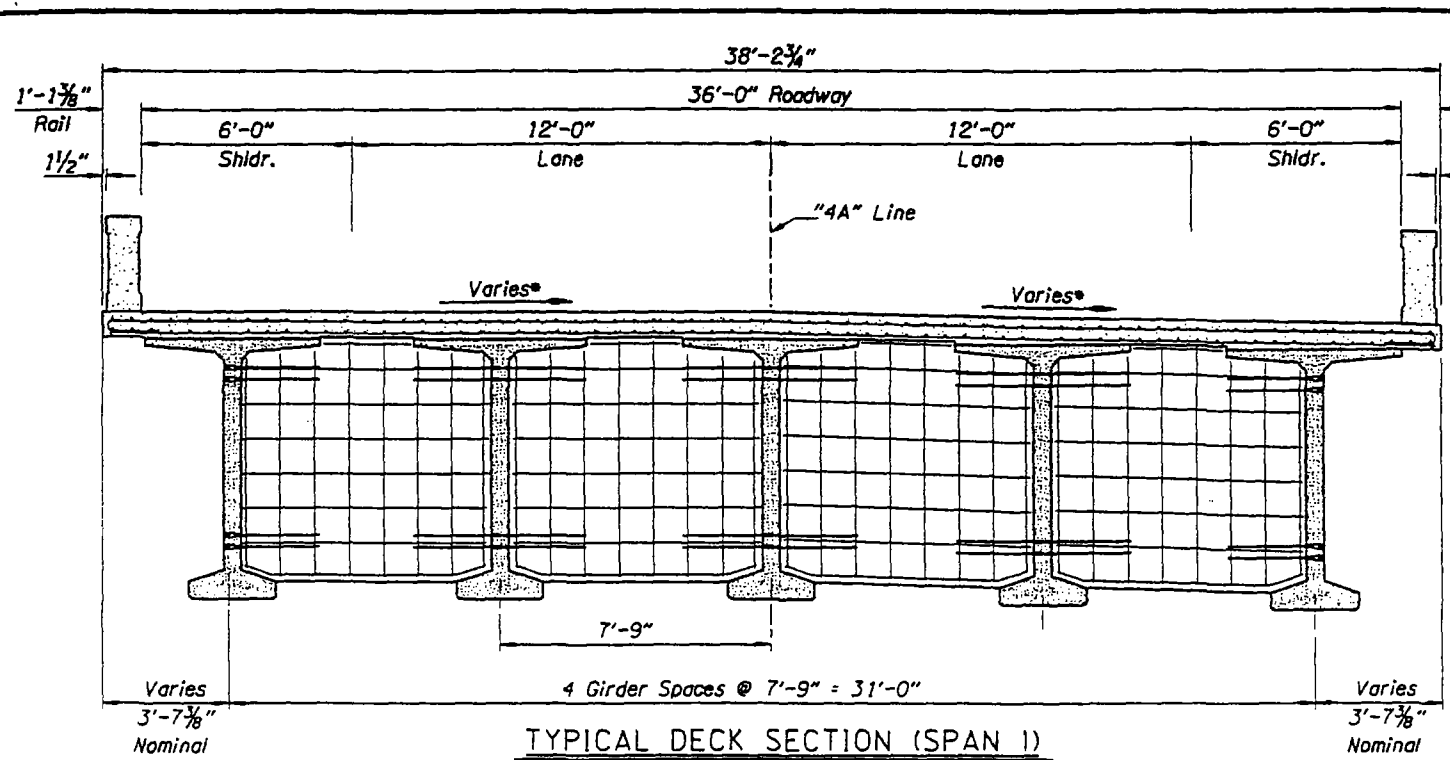
"N"	52	
"D <sub>s</sub> "	20	
"y <sub>c</sub> "	5.30	
"h <sub>c</sub> "	3.0	
	BACK	AHEAD
"y <sub>e</sub> "	22.15	22.15
"h <sub>e</sub> "	42.0	42.0

FIGURE 2



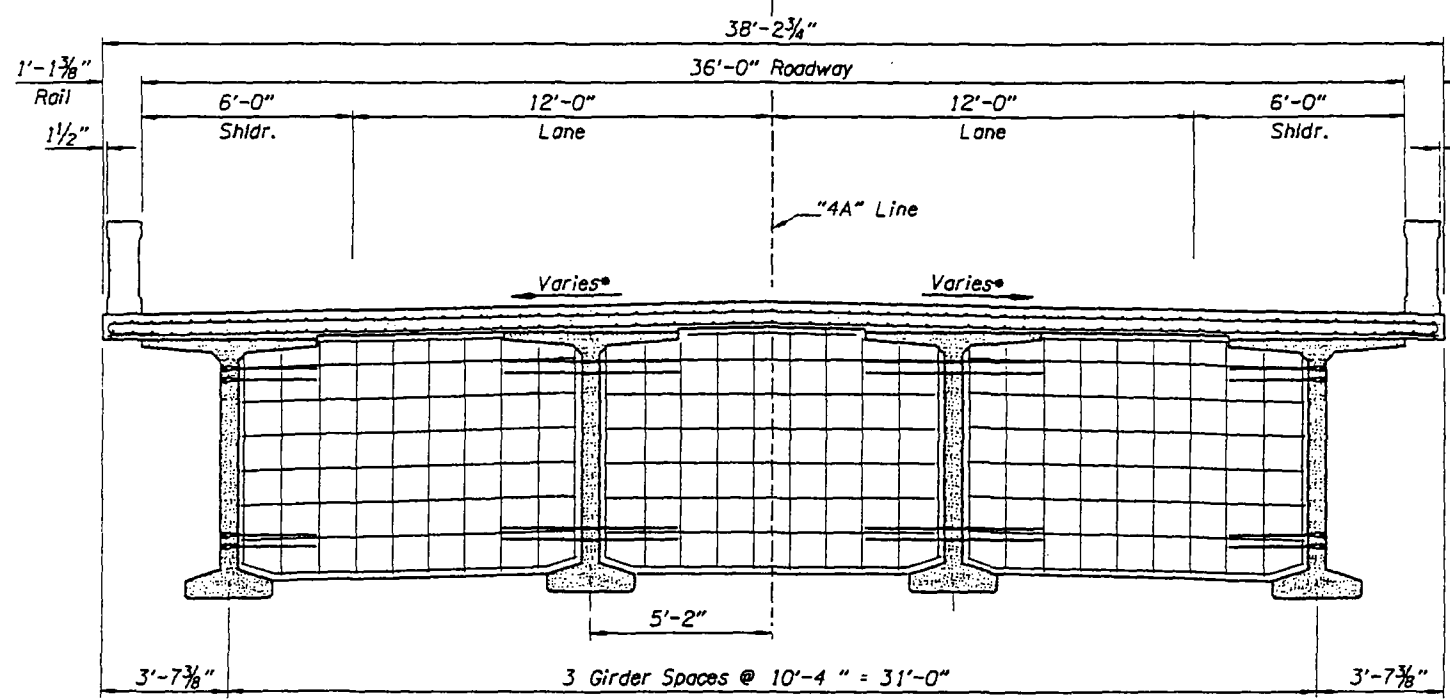
"N"	16	
"D <sub>s</sub> "	0	
"y <sub>c</sub> "	13.28	
"h <sub>c</sub> "	0	
	BACK	AHEAD
"y <sub>e</sub> "	13.28	13.28
"h <sub>e</sub> "	0	0

DATE	REVISION	BY	DRAWN	DESIGNED	CHECKED	REVIEWED	STRUCTURE NO.	DATE	CALC. BOOK	PROJECT	LOCATION	SHEET
			Tom Hernandez	Adrian Kidarsa	Michael M. Wolohan	Scott M. Nettleton	20585	June - 2007	XXXX	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	Douglas County	29 OF 34
ACCOMPANIED BY DWGS. See Sheet 1.							TYLIN INTERNATIONAL		BULB-T BEAM SCHEDULE and MISC. DETAILS (Span 1 and Span 2)		DRAWING NO. 76625	



TYPICAL DECK SECTION (SPAN 1)

Scale: 3/8" = 1'-0"

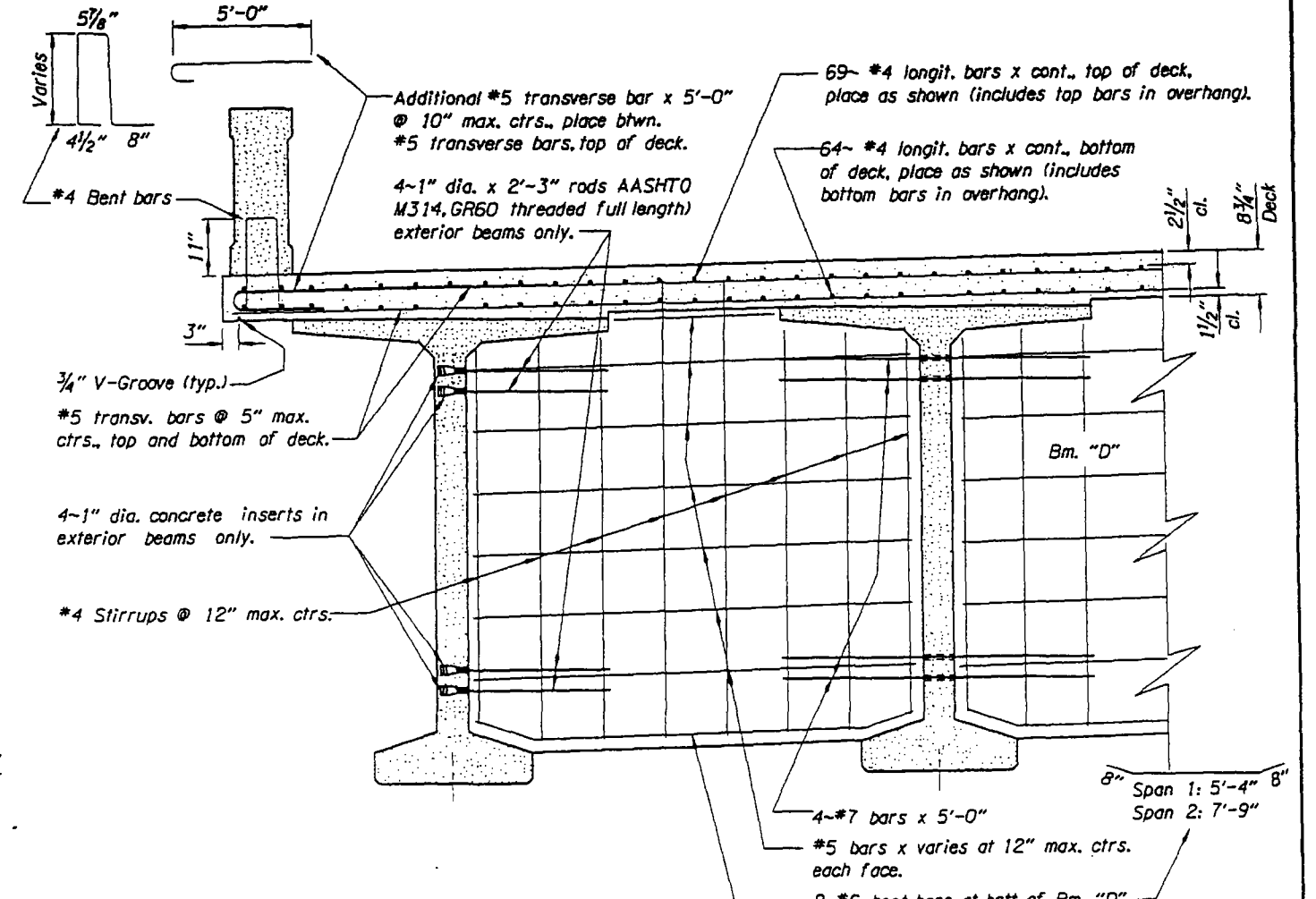


TYPICAL DECK SECTION (SPAN 2)

Scale: 3/8" = 1'-0"

Note:

Reference Superelevation Transition Diagram. See Dwg. No. 76597



TYPICAL DECK REINFORCEMENT (SPAN 1)

Longitudinal Bars:

69 - #4 longit. bars x cont., top of deck, place as shown.  
64 - #4 longit. bars x cont., bottom of deck, place as shown.

Transverse Bars:

#5 transverse bars @ 5" max. ctrs. w/180° hk. at ends, top of deck.  
Note: Top bar splices permitted between girders (alternate splices)  
#5 transverse bars @ 5" max. ctrs., bottom of deck.  
Note: Bottom bar splices permitted @ ⊥ girders (alternate splices)

TYPICAL DECK REINFORCEMENT (SPAN 2)

Longitudinal Bars:

69 - #5 longit. bars x cont., top of deck, place as shown.  
65 - #5 longit. bars x cont., bottom of deck, place as shown.

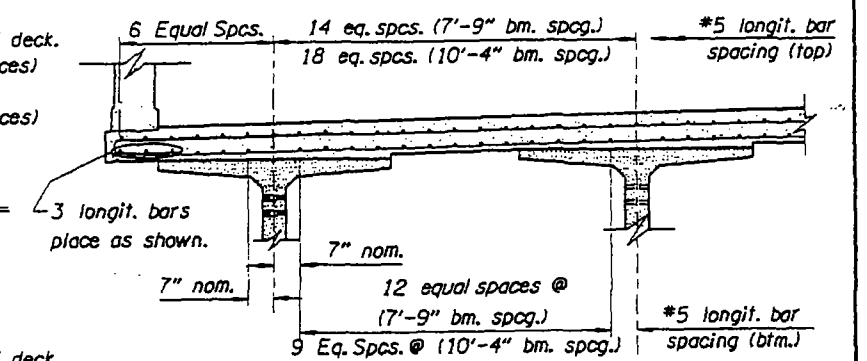
Transverse Bars:

#5 transverse bars @ 5" max. ctrs. w/180° hk. at ends, top of deck.  
Note: Top bar splices permitted between girders (alternate splices).  
#5 transverse bars @ 5" max. ctrs., bottom of deck.  
Note: Bottom bar splices permitted @ ⊥ girders (alternate splices).

PARTIAL DECK SECTION

Span 1 Shown (Span 2 Similar)

Scale: 3/4" = 1'-0"



LONGIT. BAR PLACEMENT DETAIL

Scale: 1/2" = 1'-0"

DATE	REVISION	BY	DRAFTER: D. Axtell	STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION	SHEET 30 OF 34
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Michael M. Woitohon	CALC. BOOK XXXX	TYPICAL DECK SECTION	
			REVIEWER: Scott M. Nettleton			

PROFILE GRADE LINE: SPAN 1

Location	Station	Offset	Final Grade Elevation
☉ Bent 1	1258+31.31	0.00'	184.67
A	1258+47.31	0.00'	184.76
B	1258+63.31	0.00'	184.83
C	1258+79.31	0.00'	184.90
D	1258+95.31	0.00'	184.95
E	1259+11.31	0.00'	184.99
F	1259+27.31	0.00'	185.02
G	1259+43.31	0.00'	185.04
H	1259+59.31	0.00'	185.05
I	1259+75.31	0.00'	185.04
☉ Bent 2	1259+91.31	0.00'	185.03

LEFT AND RIGHT EDGE OF DECK: SPAN 1

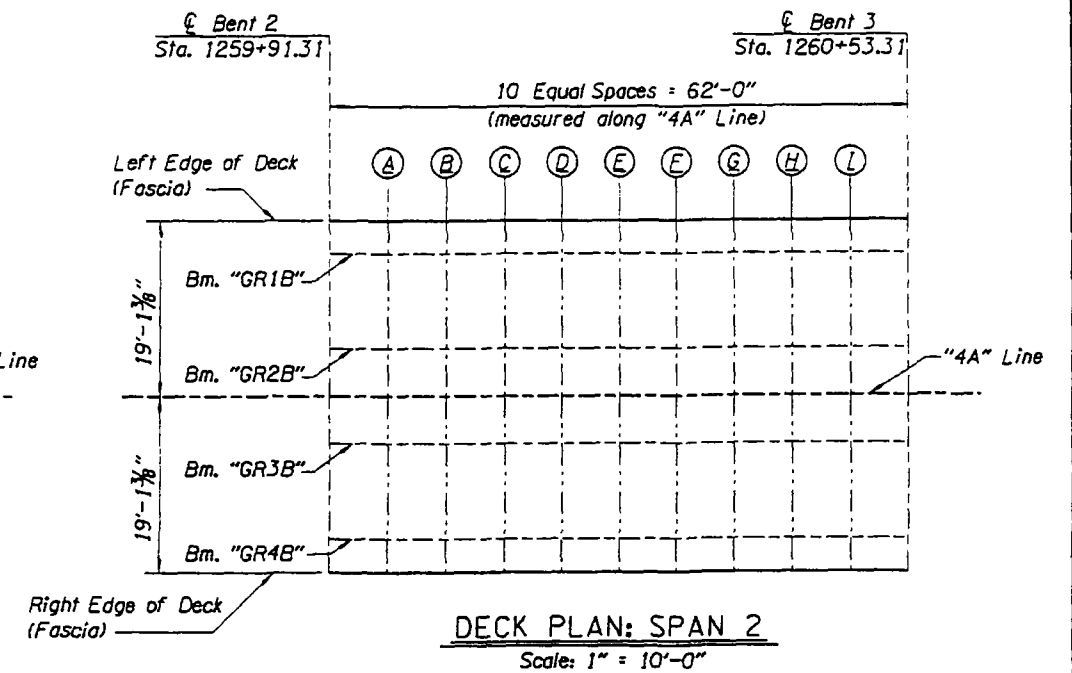
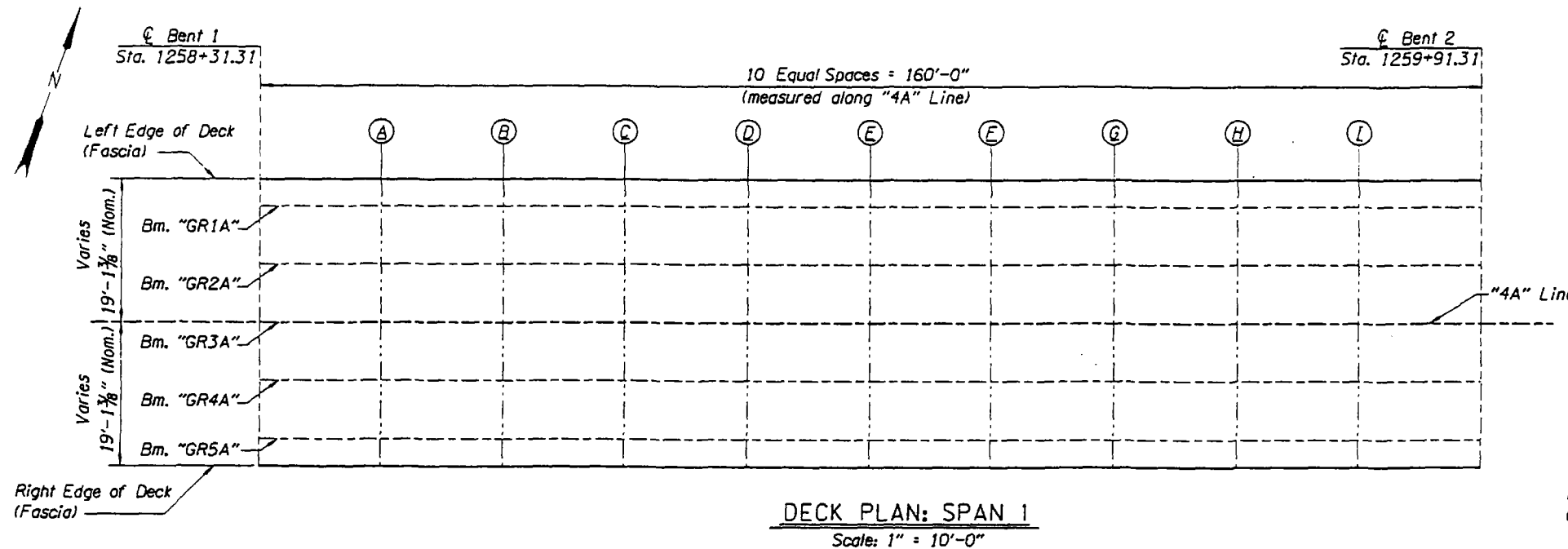
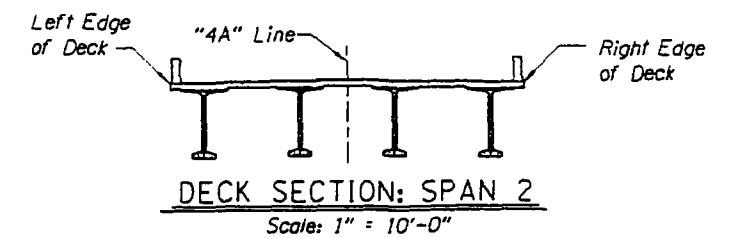
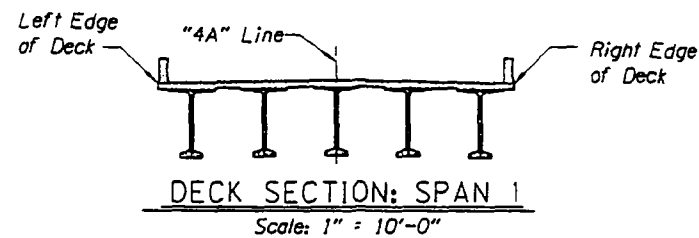
Location	Station	Offset	Final Grade Elevation	Offset	Final Grade Elevation
☉ Bent 1	1258+31.31	-19.27'	185.17	18.96'	184.12
A	1258+47.31	-19.14'	185.18	19.09'	184.22
B	1258+63.31	-19.11'	185.18	19.11'	184.31
C	1258+79.31	-19.11'	185.14	19.11'	184.39
D	1258+95.31	-19.11'	185.08	19.11'	184.46
E	1259+11.31	-19.11'	185.00	19.11'	184.53
F	1259+27.31	-19.11'	184.92	19.11'	184.58
G	1259+43.31	-19.11'	184.85	19.11'	184.62
H	1259+59.31	-19.11'	184.78	19.11'	184.64
I	1259+75.31	-19.11'	184.72	19.11'	184.65
☉ Bent 2	1259+91.31	-19.11'	184.67	19.11'	184.64

PROFILE GRADE LINE: SPAN 2

Location	Station	Offset	Final Grade Elevation
☉ Bent 2	1259+91.31	0.00'	185.03
A	1259+97.51	0.00'	185.02
B	1260+03.71	0.00'	185.01
C	1260+09.91	0.00'	185.00
D	1260+16.11	0.00'	184.99
E	1260+22.31	0.00'	184.97
F	1260+28.511	0.00'	184.96
G	1260+34.71	0.00'	184.94
H	1260+40.91	0.00'	184.92
I	1260+47.11	0.00'	184.90
☉ Bent 3	1260+53.31	0.00'	184.88

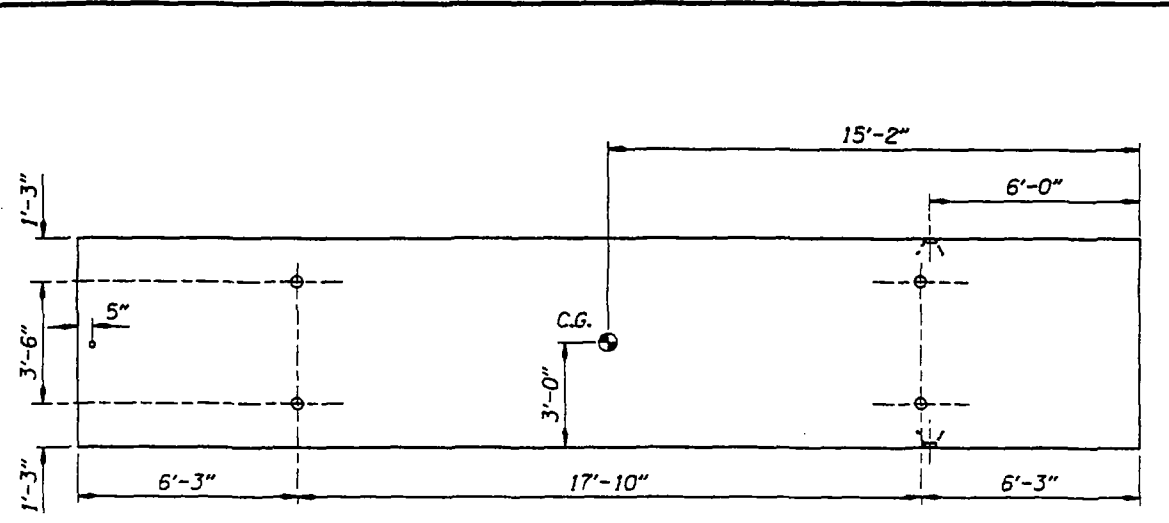
LEFT AND RIGHT EDGE OF DECK: SPAN 2

Location	Station	Offset	Final Grade Elevation	Offset	Final Grade Elevation
☉ Bent 2	1259+91.31	-19.11'	184.67	19.11'	184.64
A	1259+97.51	-19.11'	184.65	19.11'	184.64
B	1260+03.71	-19.11'	184.64	19.11'	184.63
C	1260+09.91	-19.11'	184.62	19.11'	184.62
D	1260+16.11	-19.11'	184.61	19.11'	184.61
E	1260+22.31	-19.11'	184.59	19.11'	184.59
F	1260+28.511	-19.11'	184.58	19.11'	184.58
G	1260+34.71	-19.11'	184.56	19.11'	184.56
H	1260+40.91	-19.11'	184.54	19.11'	184.54
I	1260+47.11	-19.11'	184.52	19.11'	184.52
☉ Bent 3	1260+53.31	-19.11'	184.49	19.11'	184.49



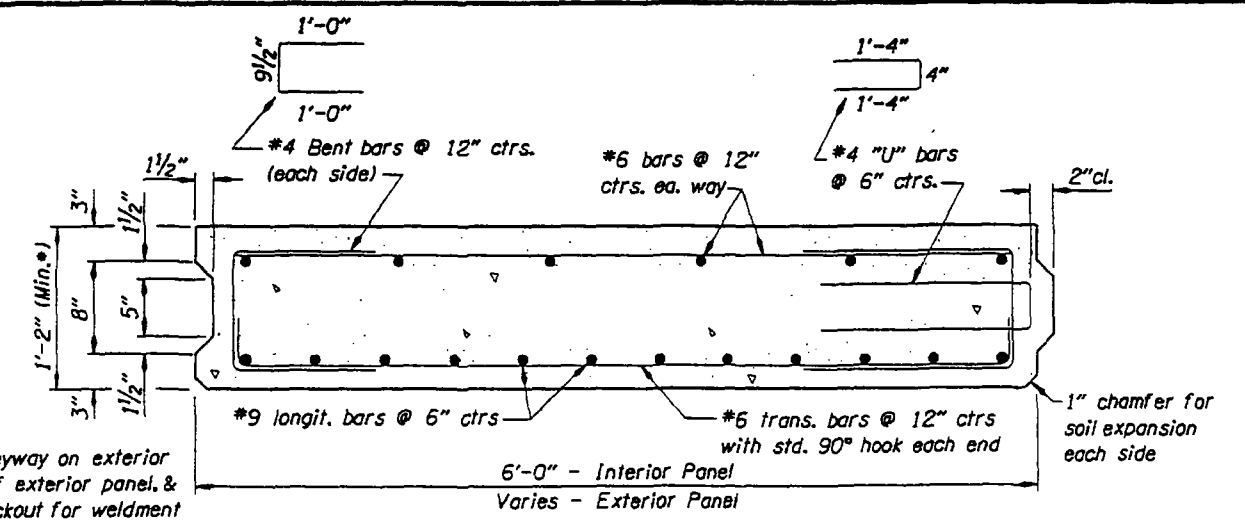
DATE	REVISION	BY	DRAFTER: Tom. Hernandez		<p>OREGON DEPARTMENT OF TRANSPORTATION REGION 3 TECHNICAL SERVICES</p>	STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 31 OF 34
			DESIGNER: Adrian Kidarsa			DATE June - 2007		DRAWING NO.
			CHECKER: Michael M. Wolohan			CALC. BOOK XXXX		76627
			REVIEWER: Scott M. Nettleton					
ACCOMPANIED BY DWGS. See Sheet 1.			RENEWAL DATE: 12-31-08	TYLIN INTERNATIONAL		DECK ELEVATIONS: SPAN 1 AND SPAN 2		





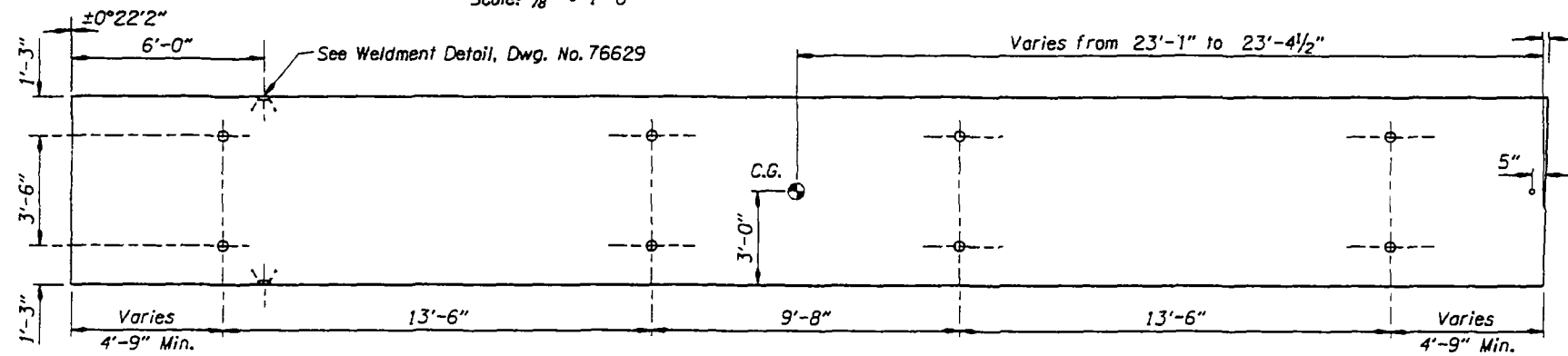
(2 POINT PICK OPTION FOR PANELS @ BENT 3) Estimated Wt. = 32 kips  
**END PANEL PICK-UP LOCATION (BENT 3)**  
 Scale: 3/8" = 1'-0"

**Note:**  
 End panel locations are determined assuming a minimum concrete strength of 2000 psi at stripping and 4350 psi during erection. Min. Factor of Safety = 1.5



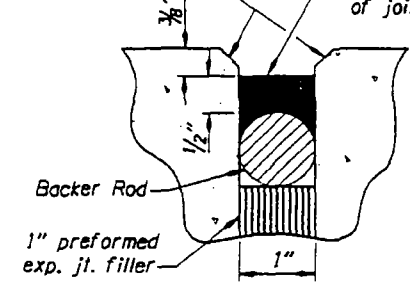
**Note:**  
 Omit keyway on exterior face of exterior panel, & on blockout for weldment  
 \*Adjust height of end panel seat

**END PANEL SECTION**  
 Scale: 1 1/2" = 1'-0"



(4 POINT PICK OPTION FOR PANELS @ BENT 1) Estimated Wt. = ±49 kips  
**END PANEL PICK-UP LOCATION (BENT 1)**  
 Scale: 3/8" = 1'-0"

Grind 1/4" x 45° chamfer from curb to curb after placing nosing.

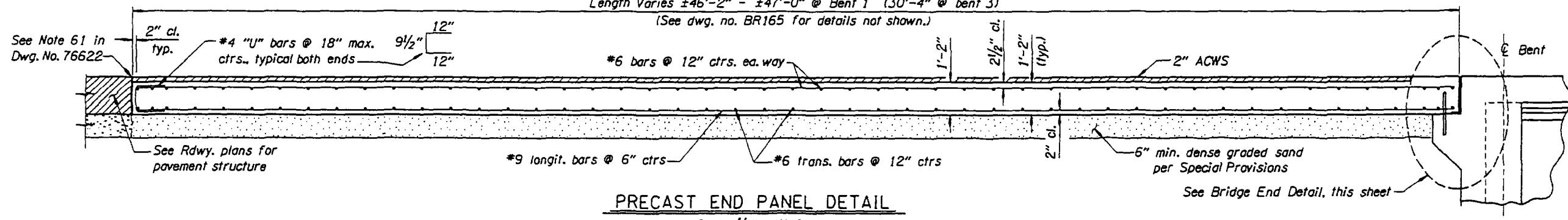


**DETAIL "A"**  
 No Scale

Poured sealant from ODOT Qualified Products List. Blockout upper portion of joint with polystyrene foam.

2" dia. hole for smooth dowels. Fill remainder of hole with non-shrink grout. 2" expanded polystyrene plug on top of dowel. 1 1/4" dia. x 2'-0" smooth Dowels @ 6' ctrs. Centered at middle of each end panel segment. Drill 2" dia. hole x 9" into corbel. Use low impact rotary drill. 1" Joint. See Detail "A" this sheet.

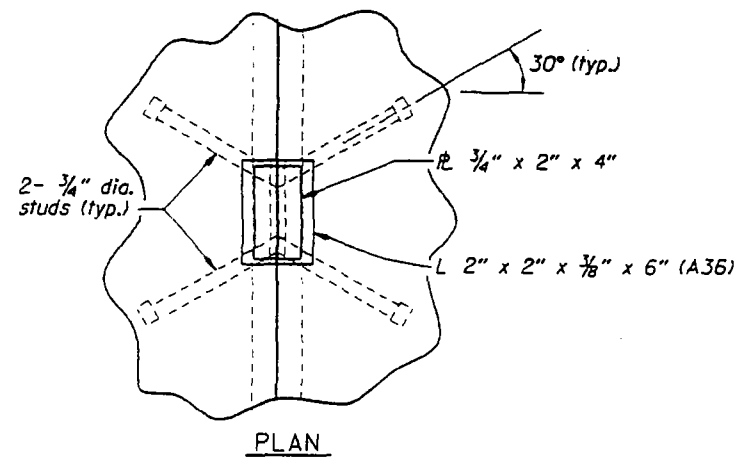
Length Varies ±46'-2" - ±47'-0" @ Bent 1 (30'-4" @ bent 3)  
 (See dwg. no. BR165 for details not shown.)



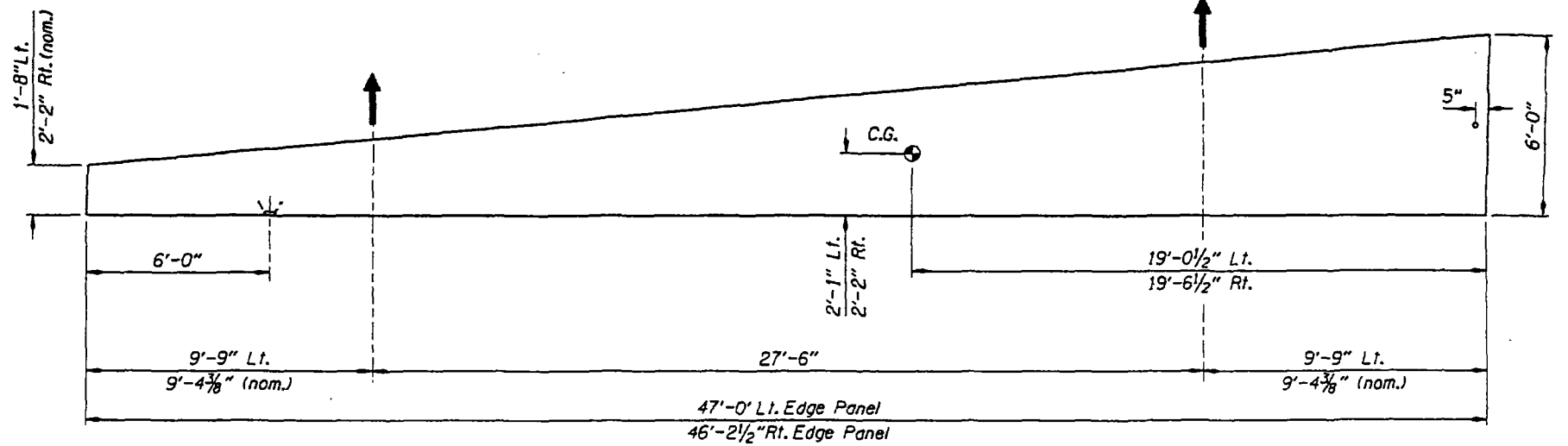
**PRECAST END PANEL DETAIL**  
 Scale: 1/2" = 1'-0"

**BRIDGE END DETAIL**  
 Scale: 1" = 1'-0"

DATE	REVISION	BY	DRAFTER: D. Axtell			STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 32 OF 34
			DESIGNER: Adrian Kidarsa			DATE June - 2007		DRAWING NO. 76628
ACCOMPANIED BY DWGS. See Sheet 1.			CHECKER: Anthony Calcano			CALC. BOOK XXXX	<b>PRECAST END PANEL DETAILS</b>	
			REVIEWER: Scott M. Nettleton	RENEWAL DATE: 12-31-08				



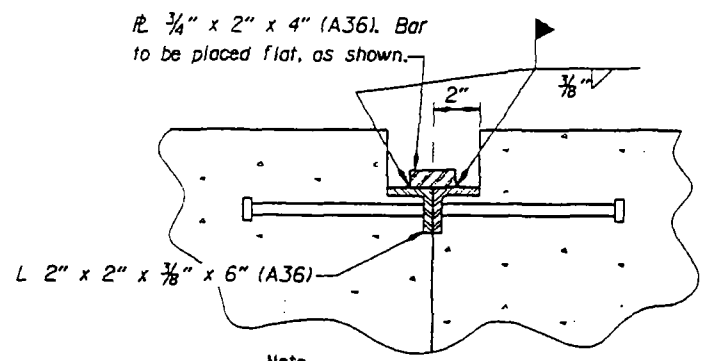
PLAN



Estimated Wt. = 31.5 kips (Lt.)  
Estimated Wt. = 33.0 kips (Rt.)

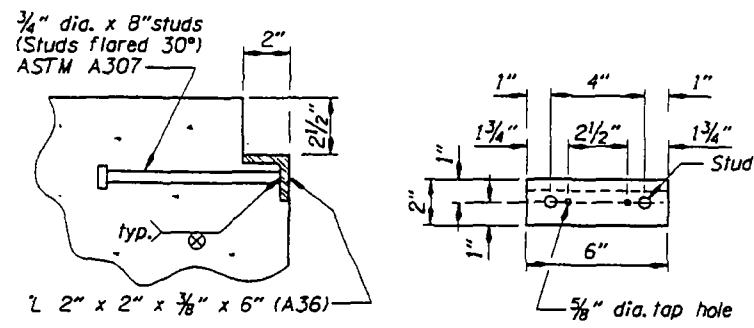
(2 Point Pick Option For Exterior Panels @ Bent 1)  
**EDGE END PANEL PICK-UP LOCATION (BENT 1)**

Scale: 3/8" = 1'-0"



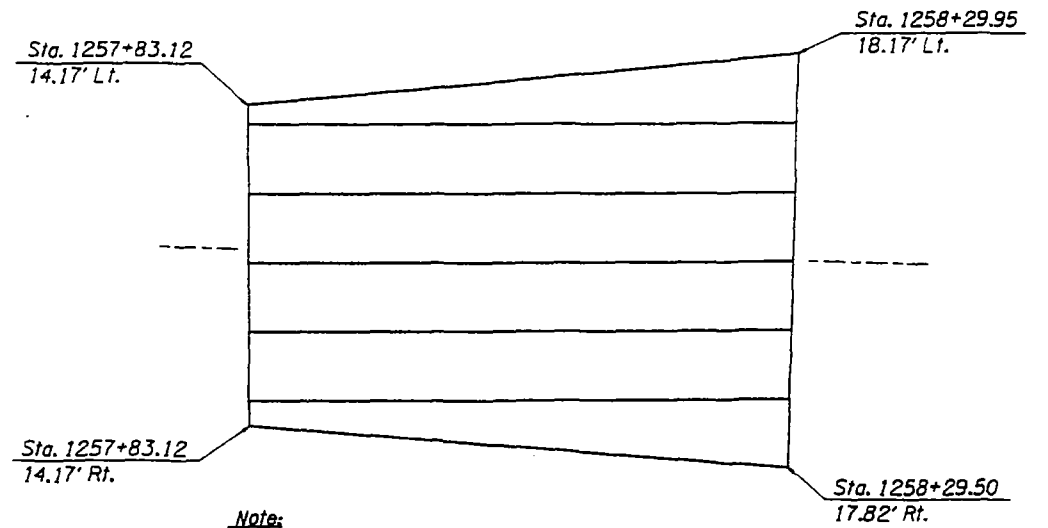
Note:  
Fill Block-out with non-shrink grout after welding is complete

WELDED CONNECTION



WELDMET. PLATE DETAIL

**WELDMET DETAILS**  
Scale: 3" = 1'-0"



Note:  
Field verify End Panel geometry and position based on construction survey data prior to fabrication

**END PANEL LAYOUT (BENT 1)**  
Scale: 1/4" = 1'-0"

ACCOMPANIED BY DWGS. See Sheet 1.	DATE REVISION BY	DRAFTER: D. Axtell DESIGNER: Adrian Kidarsa CHECKER: Michael M. Wolohan REVIEWER: Scott M. Nettleton		STRUCTURE NO. 20585	ELK CREEK BRIDGE (CROSSING NO. 4) ELK CREEK TO HARDCRABBLE CREEK SECTION Umpqua Hwy. No. 45 (M.P. 39.97) Douglas County	SHEET 33 OF 34
	DATE June - 2007	CHECKED BY: Scott M. Nettleton RENEWAL DATE: 12-31-08		TYLIN INTERNATIONAL		CALC. BOOK XXXX