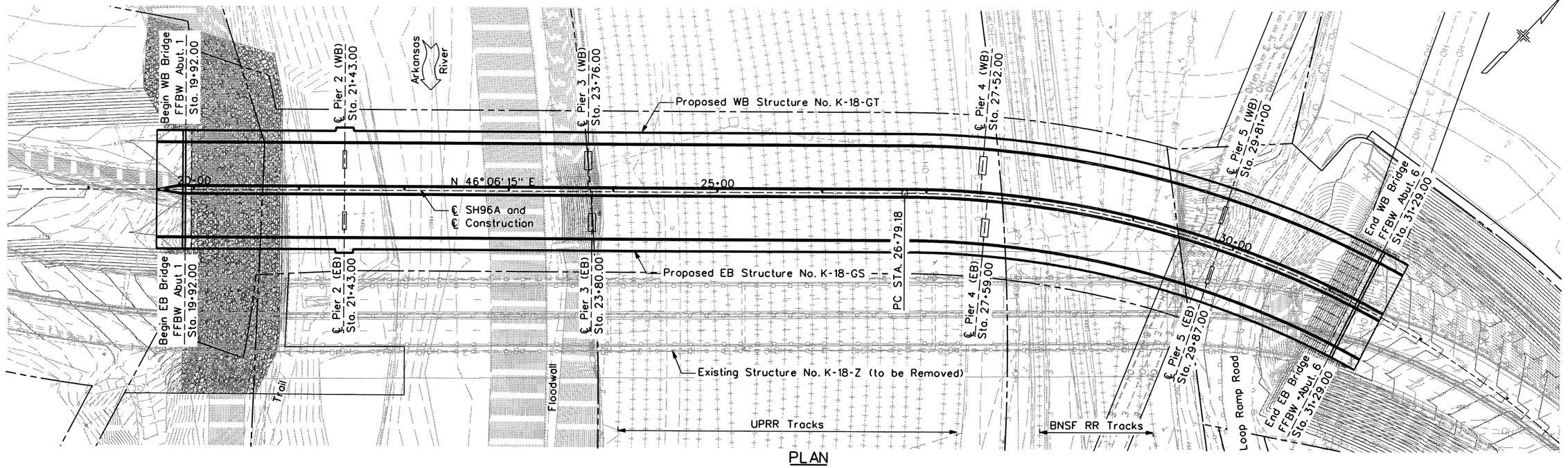
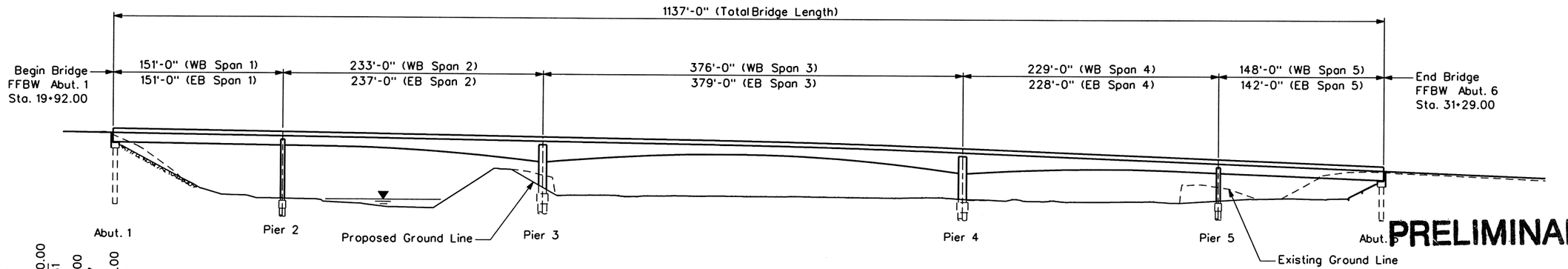
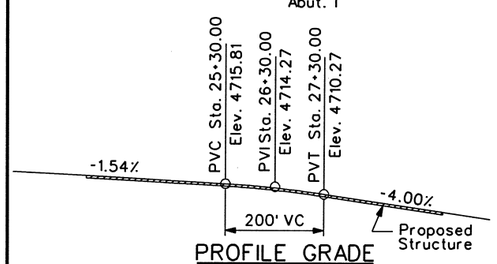


PLAN



ELEVATION



PROFILE GRADE

BRIDGE DESCRIPTION

EB SH96A - 5 Span (151'-0", 237'-0", 379'-0", 228'-0", 142'-0"). Bridge, Continuous Cast-in-Place Post-Tensioned Concrete Box Girder. SH96A Over Arkansas River, UPRR, BNSF RR and Loop Ramp Road 40'-0" Roadway and 10'-0" Sidewalk. 90° Skew. Bridge Rail Type 7 (Special).

WB SH96A - 5 Span (151'-0", 233'-0", 376'-0", 229'-0", 148'-0"). Bridge, Continuous Cast-in-Place Post-Tensioned Concrete Box Girder. SH96A Over Arkansas River, UPRR, BNSF RR and Loop Ramp Road. 40'-0" Roadway and 10'-0" Sidewalk. 90° Skew. Bridge Rail Type 7 (Special).

NOTES:

1. EB denotes eastbound. WB denotes westbound.
2. Span lengths measured along ℄ SH96A and ℄ Construction.
3. See Right-of-Way Plans for ownership map.

PRELIMINARY

NOT FOR CONSTRUCTION

Design	INITIAL	DATE
Designed By	SEF	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	SEF	12/06

Quantities	INITIAL	DATE
Quantities By	SEF	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Key_Plan.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

Figg Bridge Engineers, Inc.
1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400
FIGG

R-X

Sheet Revisions		
Date:	Comments	Init.

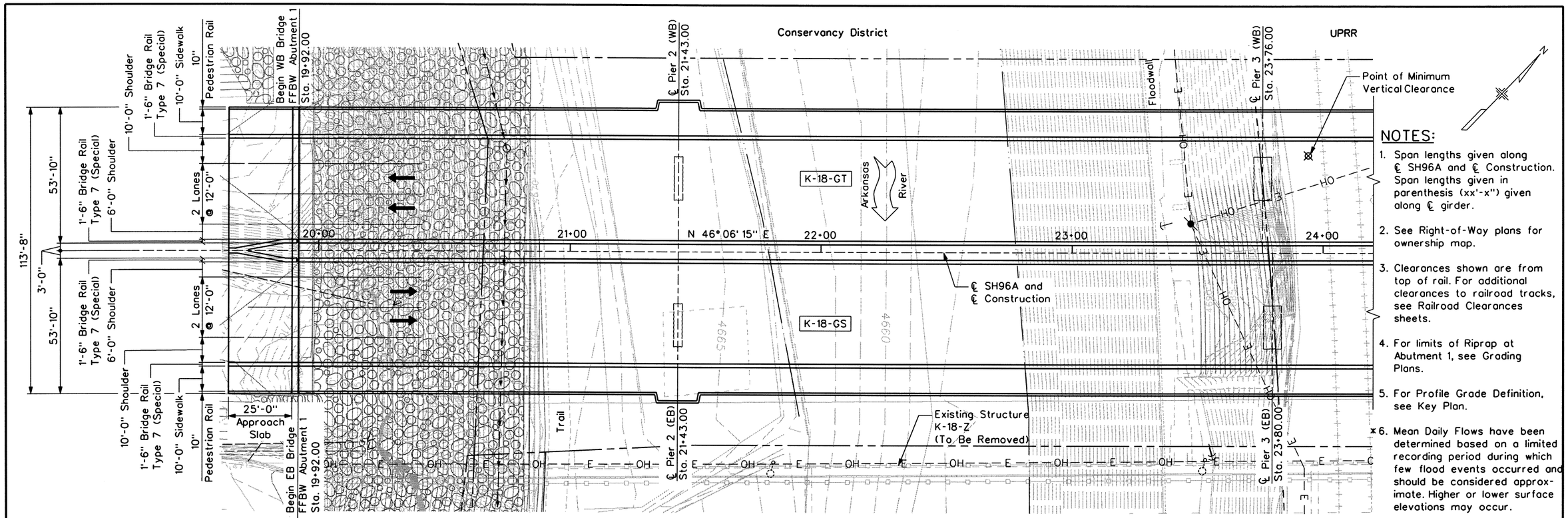
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

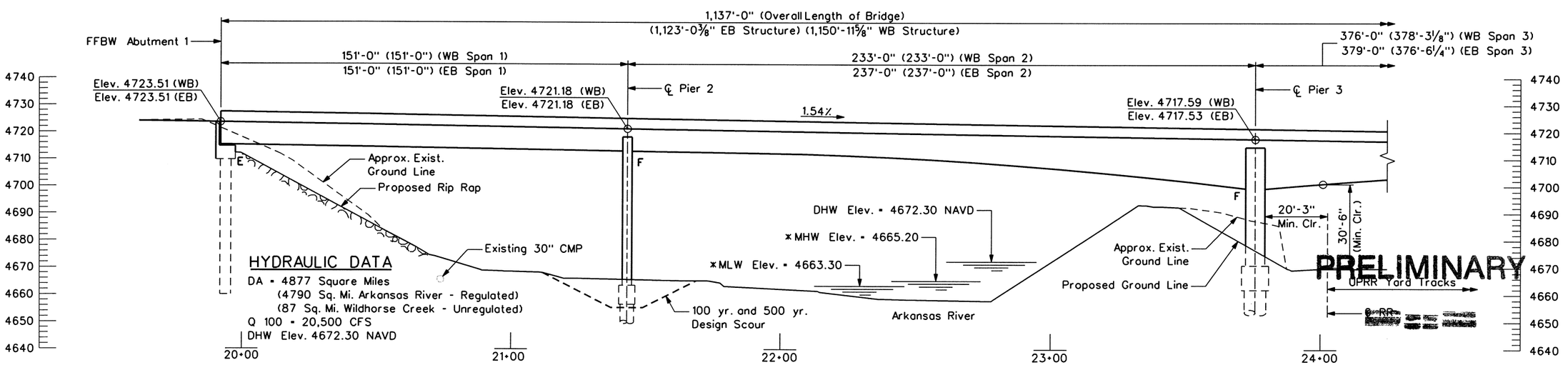
KEY PLAN

Designer:	S. Fultz	Structure Numbers	K-18-GS (EB)
Detailer:	S. Fall		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B3 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 100



PLAN



HYDRAULIC DATA

DA = 4877 Square Miles
(4790 Sq. Mi. Arkansas River - Regulated)
(87 Sq. Mi. Wildhorse Creek - Unregulated)
Q 100 = 20,500 CFS
DHW Elev. 4672.30 NAVD

ELEVATION

(Elevations Given at Finished Grade Along ℄ Girder)

NOTES:

1. Span lengths given along ℄ SH96A and ℄ Construction. Span lengths given in parenthesis (xx'-x") given along ℄ girder.
2. See Right-of-Way plans for ownership map.
3. Clearances shown are from top of rail. For additional clearances to railroad tracks, see Railroad Clearances sheets.
4. For limits of Riprap at Abutment 1, see Grading Plans.
5. For Profile Grade Definition, see Key Plan.
6. Mean Daily Flows have been determined based on a limited recording period during which few flood events occurred and should be considered approximate. Higher or lower surface elevations may occur.

PRELIMINARY

NOT FOR CONSTRUCTION

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	JRD	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	JRD	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_General_Layout_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

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Sheet Revisions

Date:	Comments	Init.

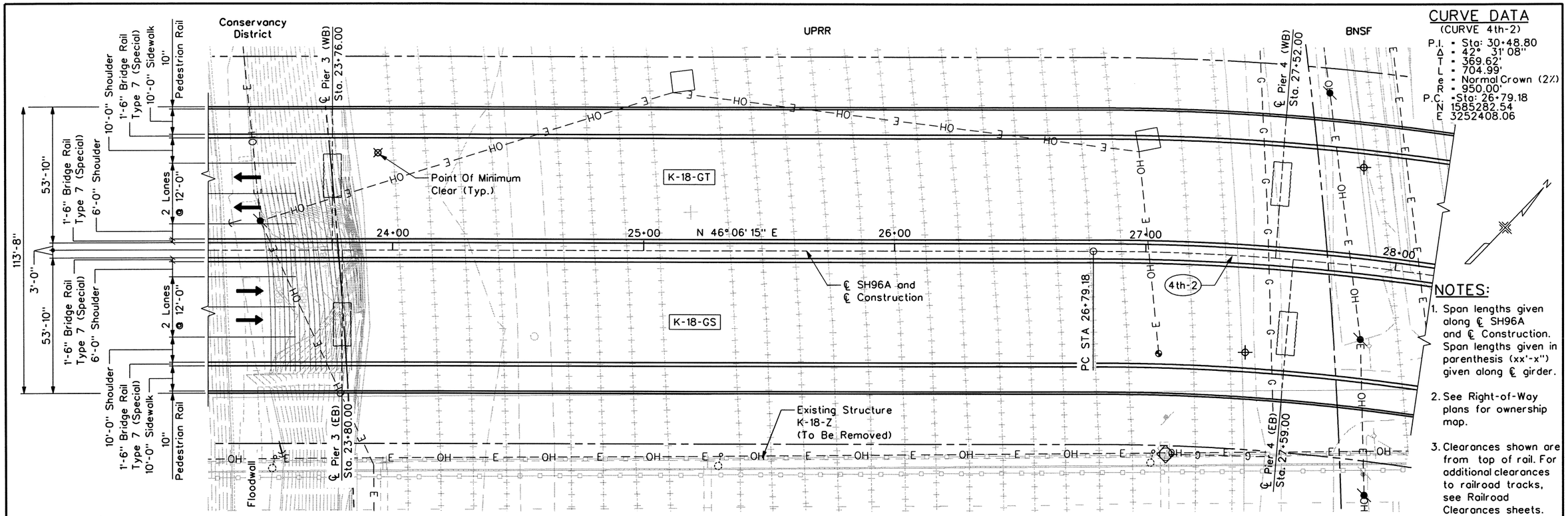
Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

GENERAL LAYOUT 1

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B4 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 101



PLAN

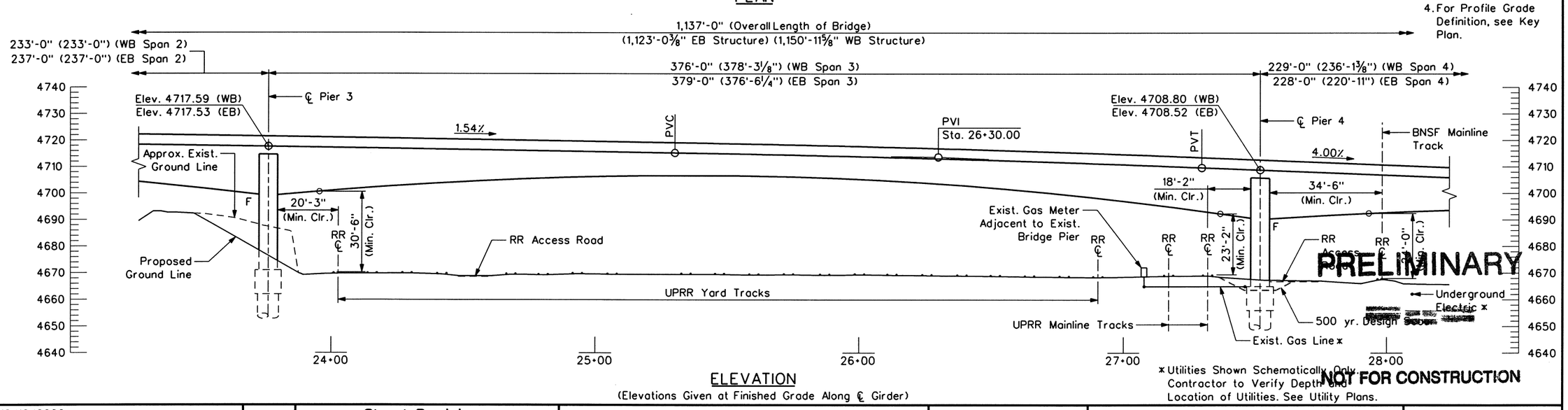
CURVE DATA

(CURVE 4th-2)

P.I. = Sta: 30+48.80
Δ = 42° 31' 08"
T = 369.62'
L = 704.99'
e = Normal Crown (2%)
R = 950.00'
P.C. = Sta: 26+79.18
N 1585282.54
E 3252408.06

NOTES:

1. Span lengths given along ℄ SH96A and ℄ Construction. Span lengths given in parenthesis (xx'-x") given along ℄ girder.
2. See Right-of-Way plans for ownership map.
3. Clearances shown are from top of rail. For additional clearances to railroad tracks, see Railroad Clearances sheets.
4. For Profile Grade Definition, see Key Plan.



ELEVATION

(Elevations Given at Finished Grade Along ℄ Girder)

* Utilities Shown Schematically Only. Contractor to Verify Depth and Location of Utilities. See Utility Plans.

PRELIMINARY

NOT FOR CONSTRUCTION

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	JRD	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_General_Layout_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed

No Revisions:
Revised:
Void:

GENERAL LAYOUT II

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B5 of B169

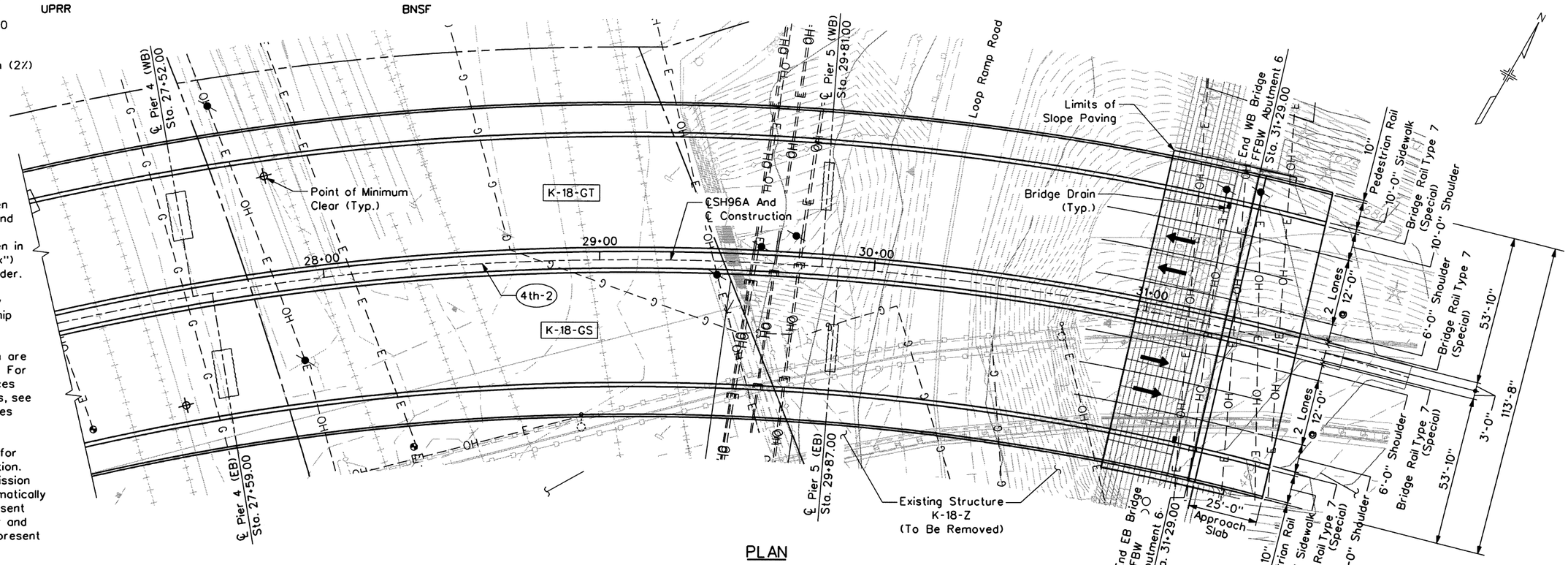
Project No./Code: BR 0961-008
13141
Sheet Number 102

CURVE DATA
(CURVE 4th-2)

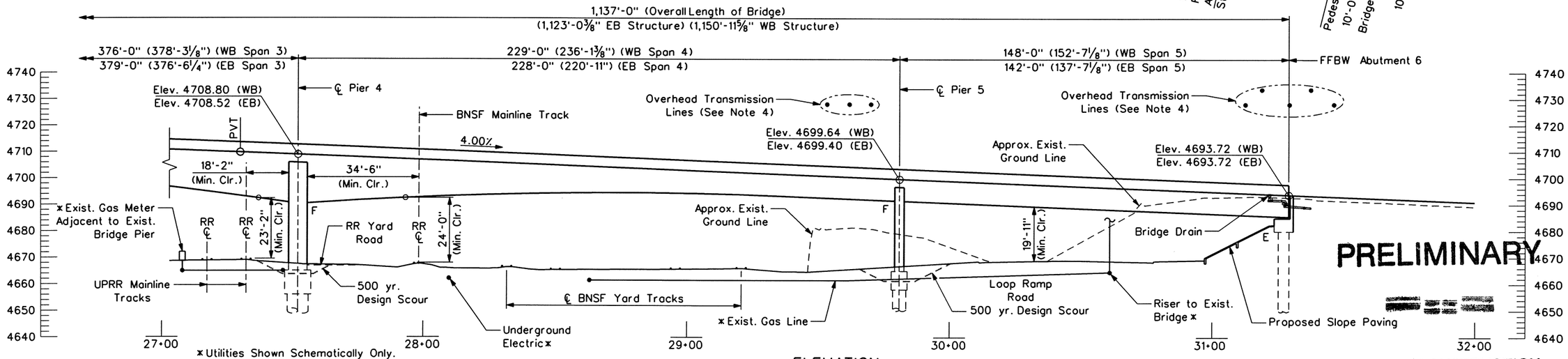
P.I. = Sta: 30+48.80
Δ = 42° 31' 08"
T = 369.62'
L = 704.99'
e = Normal Crown (2%)
R = 950.00'
P.C. = Sta: 26+79.18
N 1585282.54
E 3252408.06

NOTES:

1. Span lengths given along ℄ SH96A and ℄ Construction. Span lengths given in parenthesis (xx'-x") given along ℄ girder.
2. See Right-of-Way plans for ownership map.
3. Clearances shown are from top of rail. For additional clearances to railroad tracks, see Railroad Clearances sheets.
4. See Utility plans for additional information. Overhead transmission lines shown schematically and do not represent the actual number and location of lines present on the poles.



PLAN



* Utilities Shown Schematically Only. Contractor to Verify Depth and Location of Utilities. See Utility Plans.

ELEVATION
(Elevations Given at Finished Grade Along ℄ Girder)

PRELIMINARY

NOT FOR CONSTRUCTION

Quantities	INITIAL	DATE
	RKM	12/06
Quantities By	DAT	12/06
Checked By		

Detail	INITIAL	DATE
	DRA	12/06
Detailed By	RKM	12/06
Checked By		

Design	INITIAL	DATE
	RKM	12/06
Designed By	JRD	12/06
Checked By		

Print Date: 12/12/2006
Drawing File Name: 13141_General_Layout_III.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

R-X

Sheet Revisions

Date:	Comments	Init.

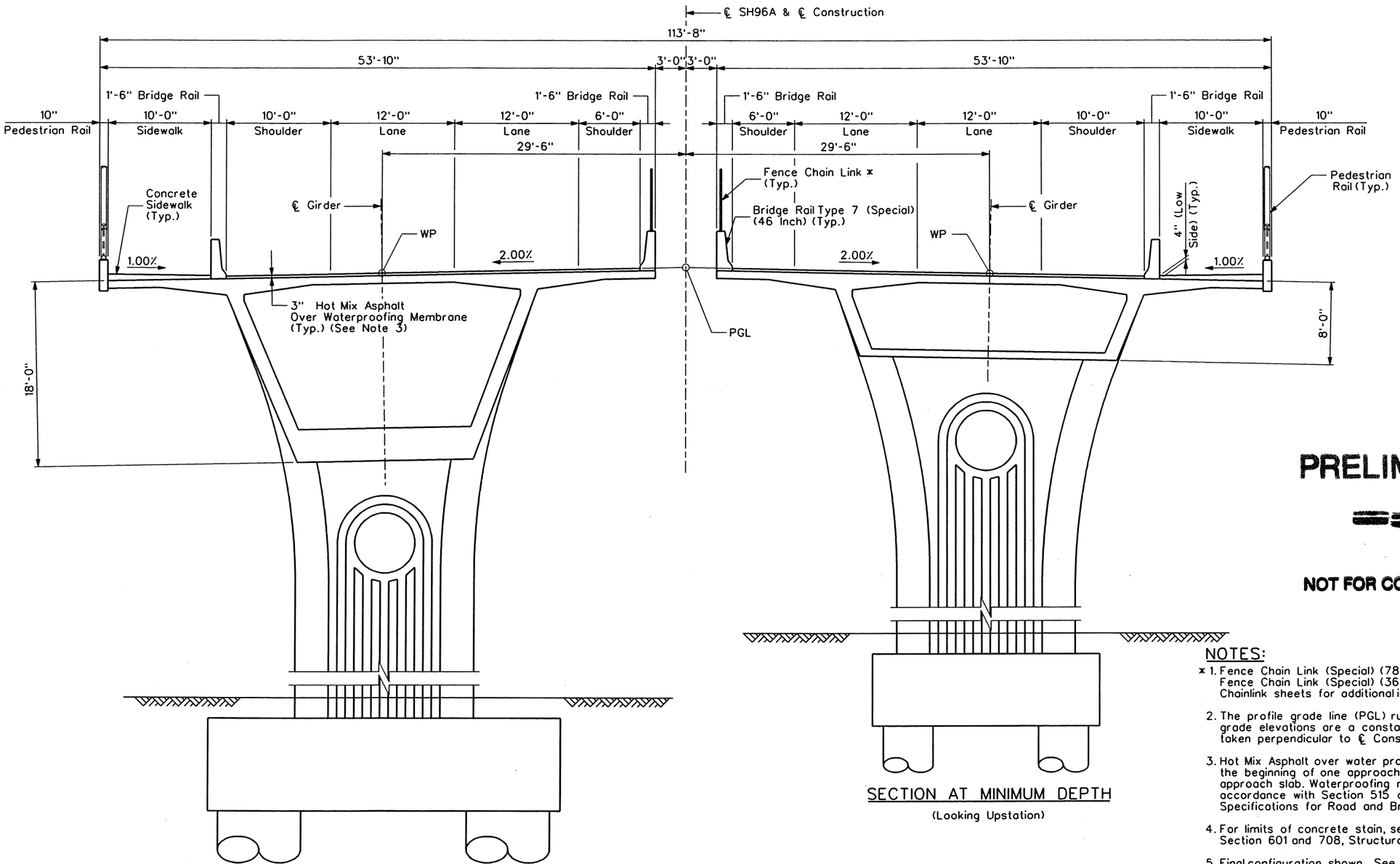
Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

GENERAL LAYOUT III

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B6 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 103



SECTION AT MAXIMUM DEPTH

(Looking Upstation)

SECTION AT MINIMUM DEPTH

(Looking Upstation)

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

* 1. Fence Chain Link (Special) (78 Inch) used over railroad tracks. Fence Chain Link (Special) (36 Inch) used elsewhere. See Fence Chainlink sheets for additional information

2. The profile grade line (PGL) runs along ℄ Construction. Finished grade elevations are a constant 2% superelevation from the PGL, taken perpendicular to ℄ Construction.

3. Hot Mix Asphalt over water proofing membrane extends from the beginning of one approach slab to the end of the other approach slab. Waterproofing membrane shall be applied in accordance with Section 515 of the CDOT Standard Specifications for Road and Bridge Construction.

4. For limits of concrete stain, see Special Provision Revision of Section 601 and 708, Structural Concrete Stain.

5. Final configuration shown. See Bridge Rail Type 7 (Special) Details I and Traffic Control Plans for traffic phasing during construction.

ESTIMATED QUANTITIES - EB			
Item No.	Item Description	Unit	Quantity
403-34871	HOT MIX ASPHALT (GRADING SX) (100) (PG 76-28)	TON	850
515-00120	WATERPROOFING (MEMBRANE)	SY	5,246
601-40401	STRUCTURAL CONCRETE STAIN	SF	108,429

ESTIMATED QUANTITIES - WB			
Item No.	Item Description	Unit	Quantity
403-34871	HOT MIX ASPHALT (GRADING SX) (100) (PG 76-28)	TON	867
515-00120	WATERPROOFING (MEMBRANE)	SY	5,349
601-40401	STRUCTURAL CONCRETE STAIN	SF	110,926

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	RKM	12/06	Detailed By	SJF	12/06	Quantities By	RKM	12/06
Checked By	JRD	12/06	Checked By	RKM	12/06	Checked By	DAT	12/06

Print Date: 12/7/2006
Drawing File Name: 13141_Typical_Section.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

Figg Bridge Engineers, Inc.
1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

R-X

Sheet Revisions		
Date:	Comments	Init.

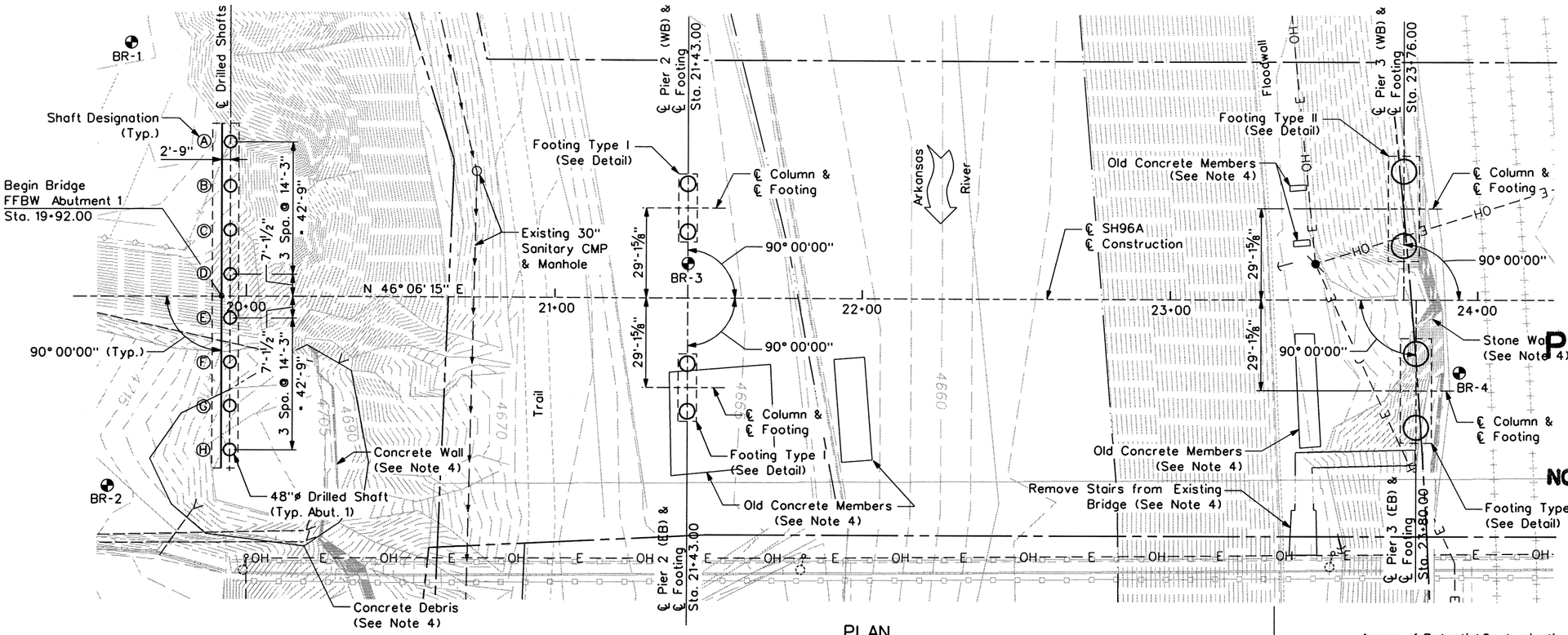
Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

TYPICAL CROSS-SECTION

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B7 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 104

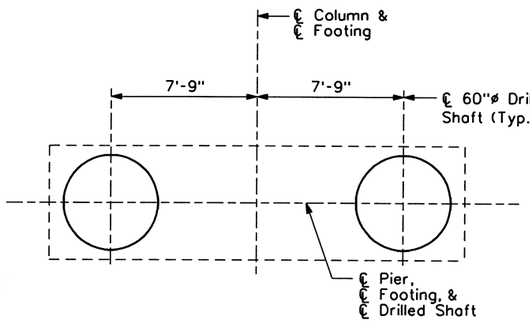


PLAN

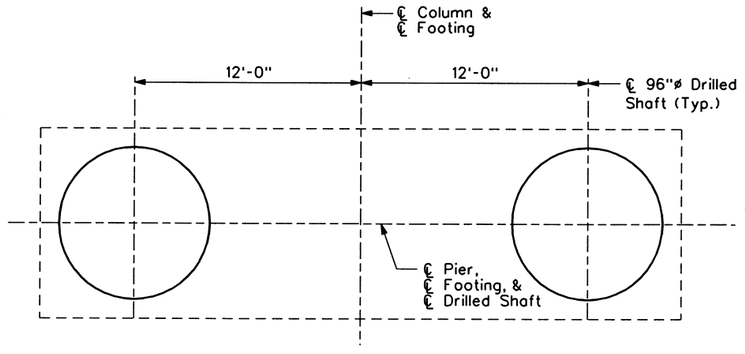
Areas of Potential Contamination
(See Enviromental Health and Safety Management Sections in the Project Specifications for More Information)

PRELIMINARY

NOT FOR CONSTRUCTION



DETAIL - FOOTING TYPE I



DETAIL - FOOTING TYPE II

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
METRO DENVER AREA
UTILITY NOTIFICATION CENTER OF COLORADO

NOTE: UTILITY LOCATIONS SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 105.10 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987 FOR LOCATION OF MEMBER UTILITIES AT LEAST TWO BUSINESS DAYS PRIOR TO ANY EXCAVATION OR OTHER EARTH WORK (NOT INCLUDING THE ACTUAL DAY OF NOTIFICATION). LOCATION AND NOTIFICATION OF BOTH UNCC MEMBER AND NON-MEMBER UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY.

NOTES:

1. See Footing Type I and Type II sheets for footing dimensions.
2. See General Layout sheets for horizontal control data.
3. See Drilled Shaft Details sheet for drilled shaft details and elevations.
4. Attention is called to existing concrete members, walls, and other debris from previous construction. Complete or partial removal of these items may be necessary to construct the new bridge and should be factored into the Contractor's bid. Note that removal of these items are included under Pay Item 202-00003, Removal of Structure (Special). See Miscellaneous Removals sheet for additional information.
5. See Engineering Geology sheets for boring data.
6. Utilities shown are approximate. See Utility Plans for additional information.

	INITIAL	DATE
Design		
Designed By	RKM	12/06
Checked By	JRD	12/06
Detail		
Detailed By	DRA	12/06
Checked By	RKM	12/06
Quantities		
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Foundation_Layout_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

Figg Bridge Engineers, Inc.
1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

R-X 0000

Sheet Revisions

Date:	Comments	Init.

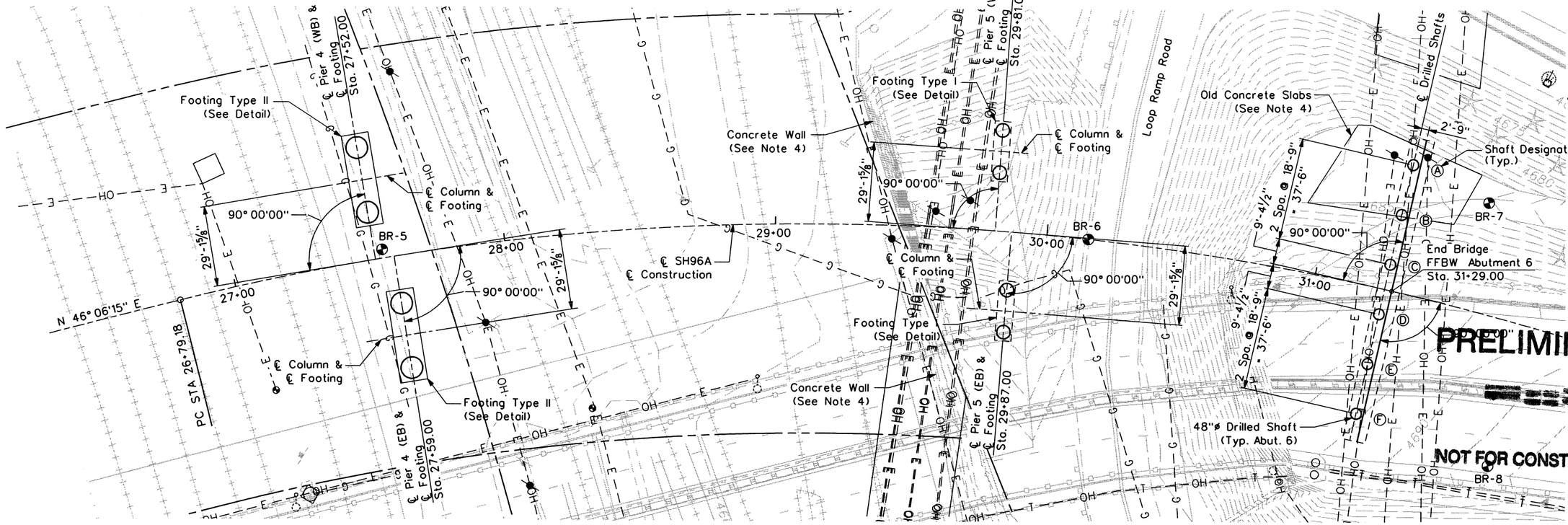
Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

FOUNDATION LAYOUT 1

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B12 of B169

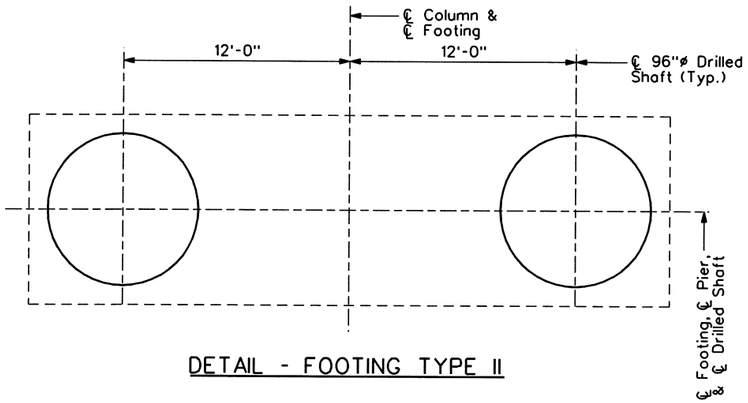
Project No./Code
BR 0961-008
13141
Sheet Number 109



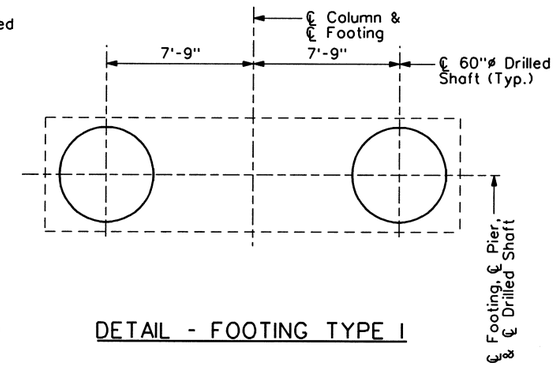
Areas of Potential Contamination
(See Enviromental Health and Safety Management Sections
in the Project Specifications for More Information)

To Project Limits

PLAN



DETAIL - FOOTING TYPE II



DETAIL - FOOTING TYPE I

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
METRO DENVER AREA
UTILITY NOTIFICATION CENTER OF COLORADO

NOTE: UTILITY LOCATIONS SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 105.10 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987 FOR LOCATION OF MEMBER UTILITIES AT LEAST TWO BUSINESS DAYS PRIOR TO ANY EXCAVATION OR OTHER EARTH WORK (NOT INCLUDING THE ACTUAL DAY OF NOTIFICATION). LOCATION AND NOTIFICATION OF BOTH UNCC MEMBER AND NON-MEMBER UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY.

NOTES:

1. See Footing Type I and Type II sheets for footing dimensions.
2. See General Layout sheets for horizontal control data.
3. See Drilled Shaft Details sheet for drilled shaft details and elevations.
4. Attention is called to existing concrete members, walls, and other debris from previous construction. Complete or partial removal of these items may be necessary to construct the new bridge and should be factored into the Contractor's bid. Note that removal of these items are included under Pay Item 202-00003, Removal of Structure (Special). See Miscellaneous Removals sheet for additional information.
5. See Engineering Geology sheets for boring data.
6. Utilities shown are approximate. See Utility Plans for additional information.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	JRD	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Foundation_Layout_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

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Sheet Revisions		
Date:	Comments	Init.

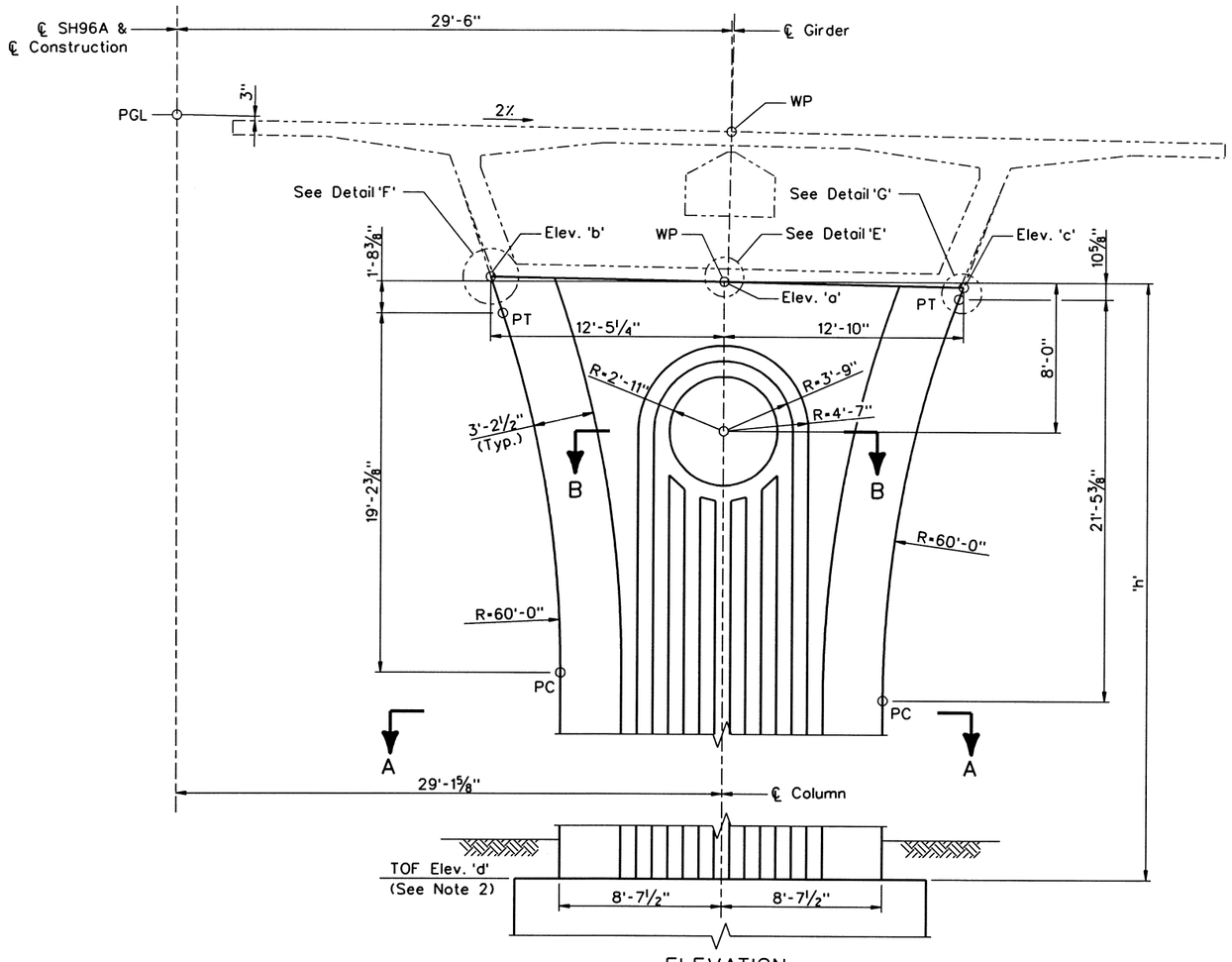
Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

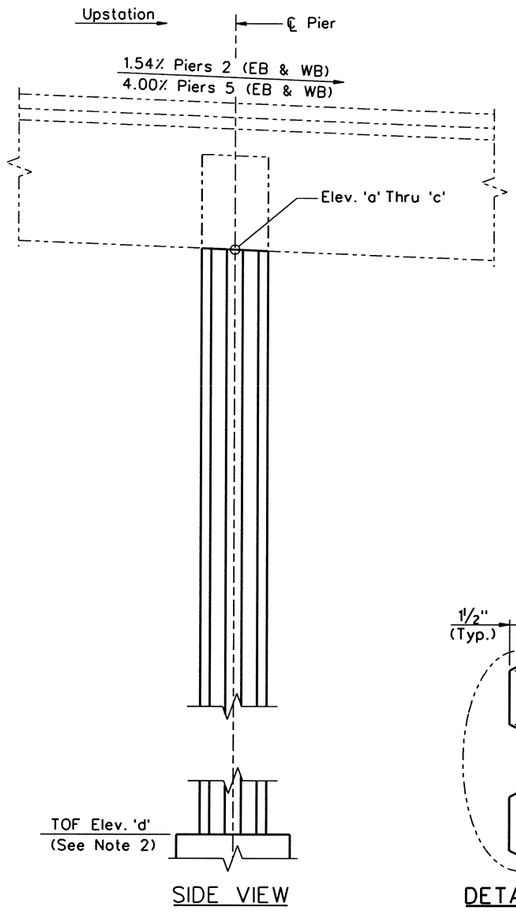
FOUNDATION LAYOUT II

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B13 of B169

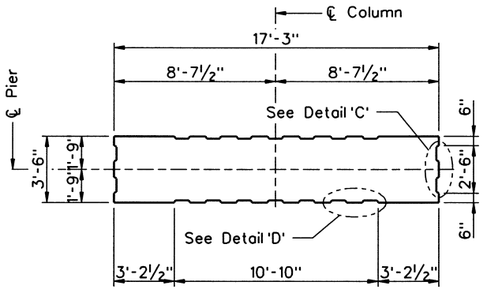
Project No./Code
BR 0961-008
13141
Sheet Number 110



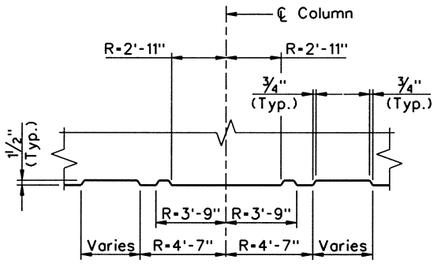
ELEVATION
(Looking Upstation)
(EB Pier Shown, WB Piers Opposite Hand)



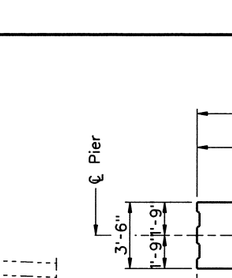
SIDE VIEW



SECTION A-A

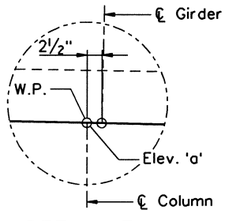


PARTIAL SECTION B-B



DETAIL 'C'

DETAIL 'D'



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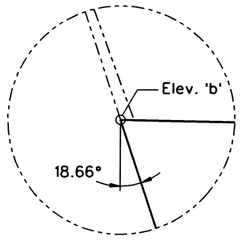
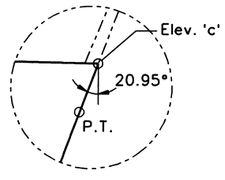


DETAIL 'F'



DETAIL 'G'

VARIABLE ELEVATIONS & DIMENSIONS					
Pier	'a'	'b'	'c'	'd'	'h'
2 (EB)	4712.94	4713.18	4712.68	4664.0	48'-11 1/4"
2 (WB)	4712.94	4713.18	4712.68	4664.0	48'-11 1/4"
5 (EB)	4691.16	4691.40	4690.90	4665.0	26'-1 7/8"
5 (WB)	4691.40	4691.64	4691.14	4665.0	26'-4 3/4"

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. See Foundation Layout sheets for pier dimensions and locations.
2. See Footing Type I Dimensions and Reinforcing sheets for footing details.
3. See Pier 2 & 5 Diaphragm sheets for pier diaphragm details.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	MSK	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	PJH	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Piers_2_&_5_Dims.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

Figg Bridge Engineers, Inc.
1873 South Bellaire St., Suite 1500
Denver, Colorado 80222
(303)757-7400

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Sheet Revisions		
Date:	Comments	Init.

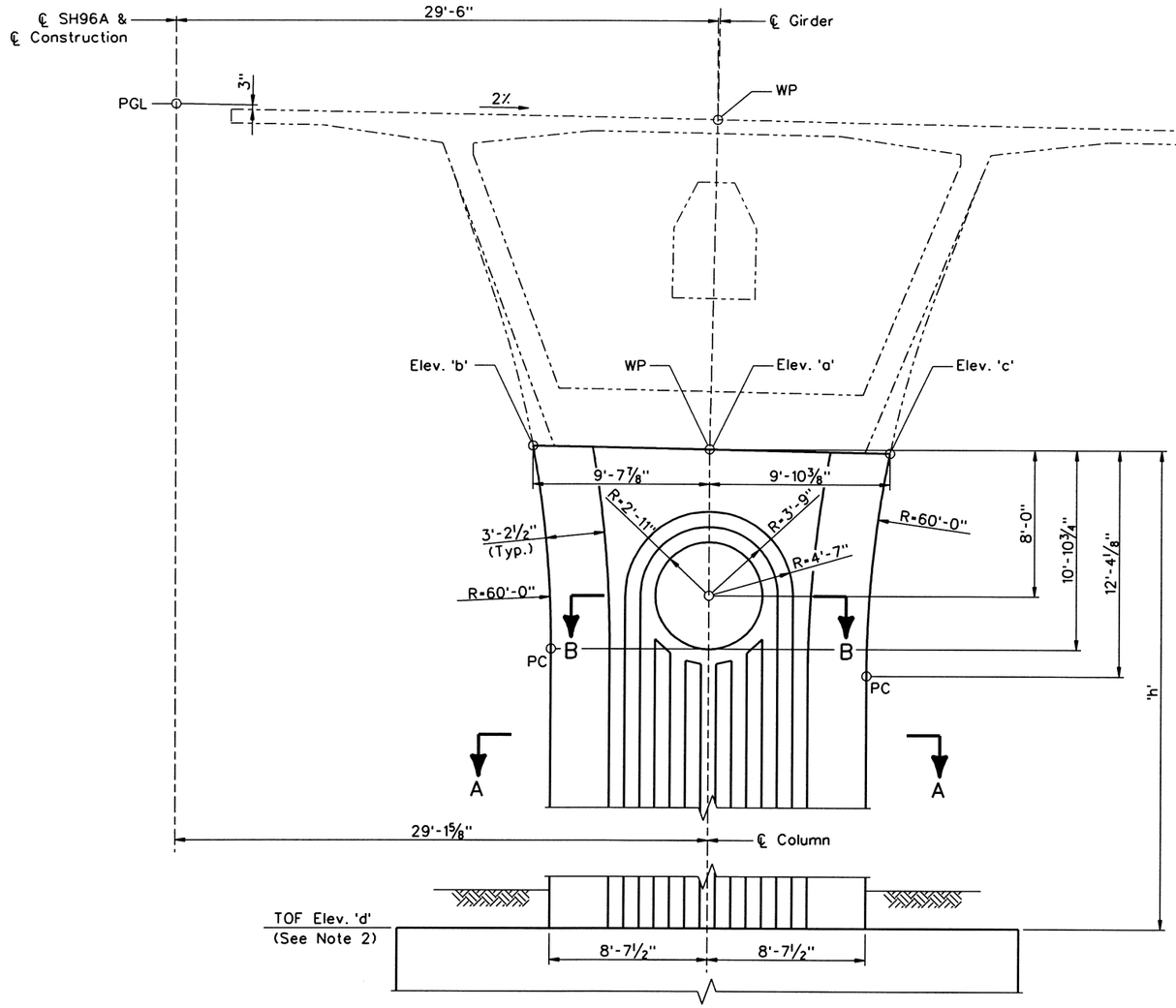
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

PIERS 2 & 5 DIMENSIONS

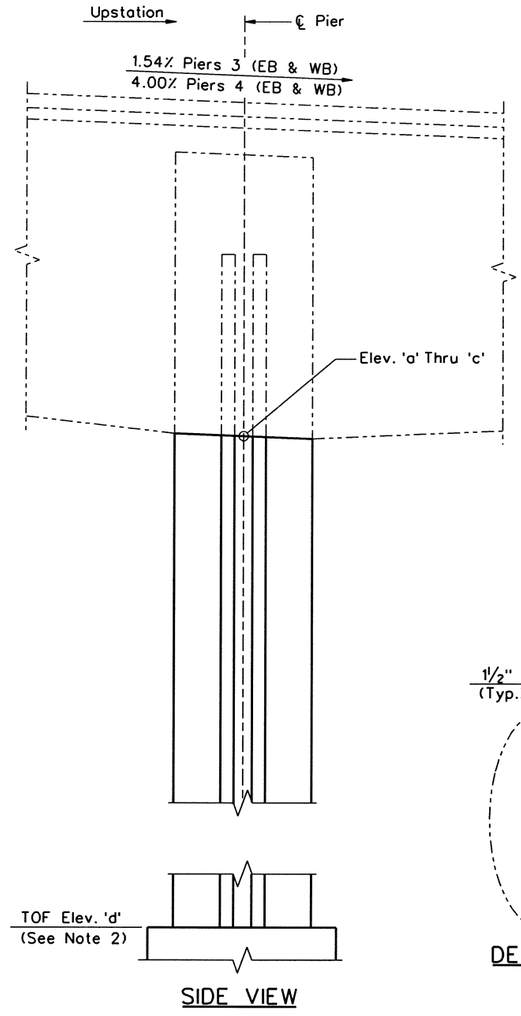
Designer: K. Montgomery
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B18 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 115

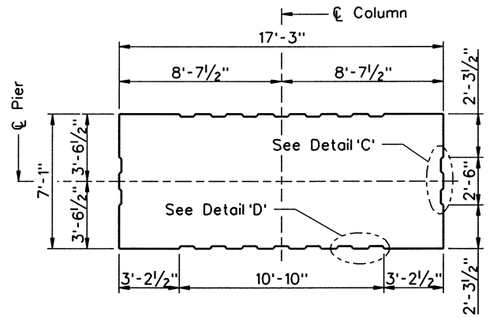


ELEVATION
(Looking Upstation)
(EB Pier Shown, WB Piers Opposite Hand)

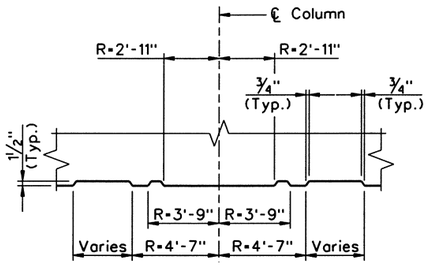
VARIABLE ELEVATIONS & DIMENSIONS					
Pier	'a'	'b'	'c'	'd'	'h'
3 (EB)	4699.28	4699.48	4699.09	4671.00	28'-3⅜"
3 (WB)	4699.34	4699.54	4699.15	4671.00	28'-4⅛"
4 (EB)	4690.27	4690.47	4690.08	4665.50	24'-9¼"
4 (WB)	4690.55	4690.75	4690.36	4665.50	25'-0⅝"



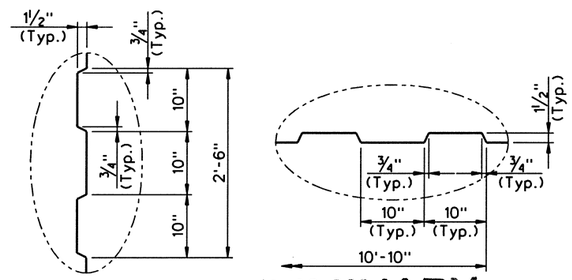
SIDE VIEW



SECTION A-A



PARTIAL SECTION B-B



DETAIL 'C'

PRELIMINARY
NOT FOR CONSTRUCTION

NOTES:

1. See Foundation Layout sheets for Pier locations and pile quantities.
2. See Footing Type II Dimensions and Reinforcing sheets for footing details.
3. See Pier Table sheets for Pier table details.
4. Piers 3 and 4 are considered Mass Concrete. See project specifications.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	MSK	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	PJH	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Piers_3_&_4_Dims.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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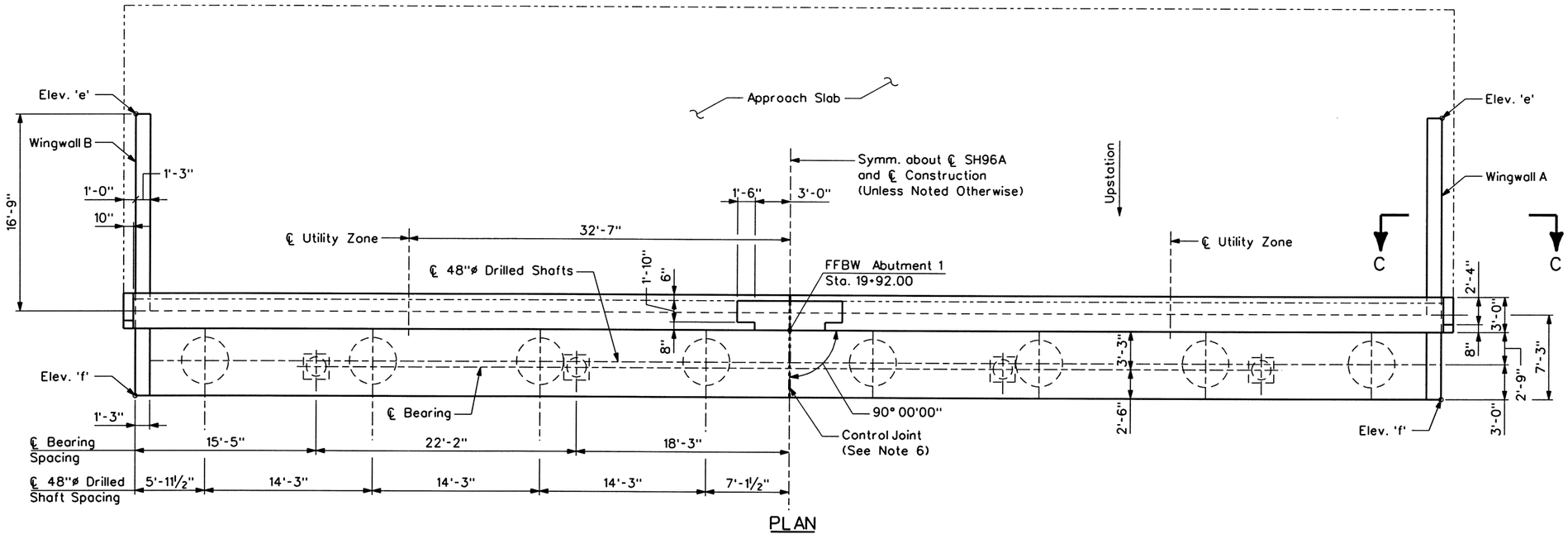
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

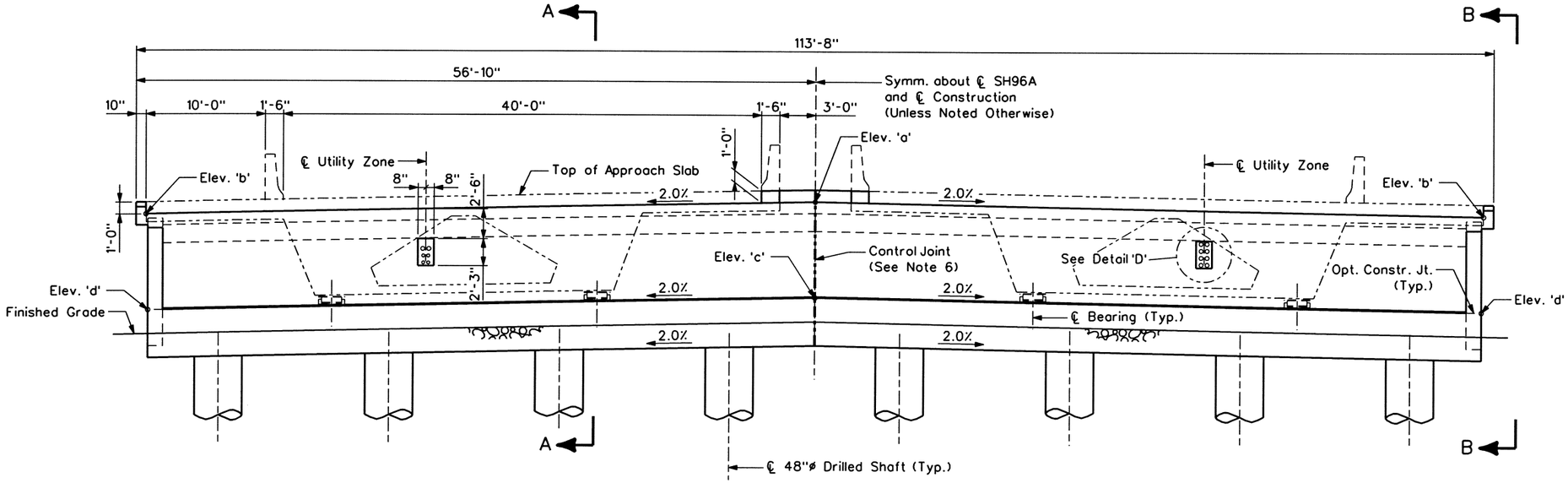
PIERS 3 & 4 DIMENSIONS

Designer: K. Montgomery
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B21 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 118



PLAN



ELEVATION
(Looking Downstation)

PRELIMINARY

NOT FOR CONSTRUCTION

ELEVATIONS	
Elev. 'a'	4722.85
Elev. 'b'	4721.73
Elev. 'c'	4714.84
Elev. 'd'	4713.73
Elev. 'e'	4721.59
Elev. 'f'	4720.56

NOTES:

1. Bearing seat elevations allow for 11" between the bottom of the girder and the bearing seat at ℄ Bearing. Abutment seat elevations shall be adjusted to account for actual bearing thickness, the riser pad thickness, and the dimensions shown on the Bearing Details sheet. Abutment beam vertical height (4'-0" min.) shall be maintained and the backwall, sidewall, and wingwall heights adjusted accordingly.
2. Optional construction joints are allowed as shown. Alternate construction joints may be used as approved by the Engineer.
3. For drilled shaft details and reinforcing, see Drilled Shaft Details sheet.
4. For View B-B and Sections A-A, C-C, and F-F, see Abutment 1 Dimensions II sheet.
5. For abutment excavation and backfill details, see Bridge Excavation and Backfill sheets.
6. For control joint details, see Abutment 1 Reinforcing sheets.

Design	INITIAL	DATE
Designed By	XXX	MM/YY
Checked By	XXX	MM/YY
Detail	INITIAL	DATE
Detailed By	XXX	MM/YY
Checked By	XXX	MM/YY
Quantities	INITIAL	DATE
Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Abut_1_Dims_I.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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(303)757-7400

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Sheet Revisions		
Date:	Comments	Init.

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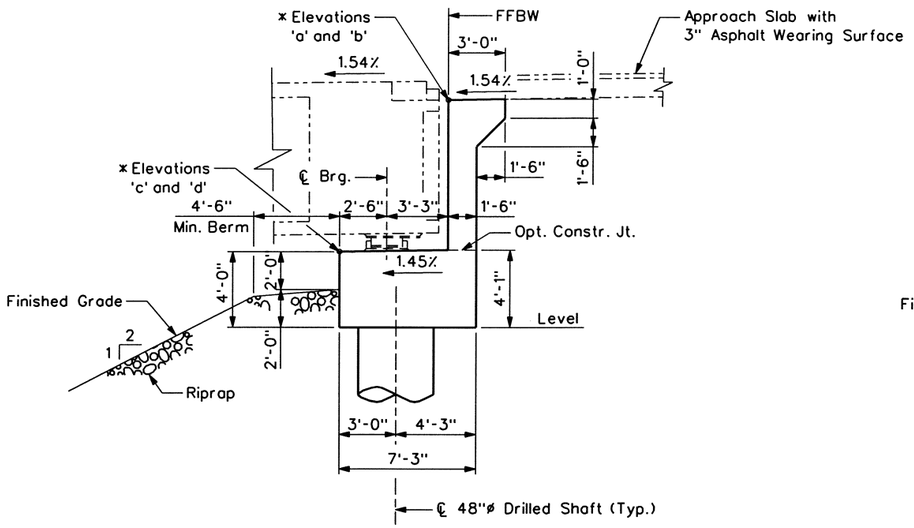
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

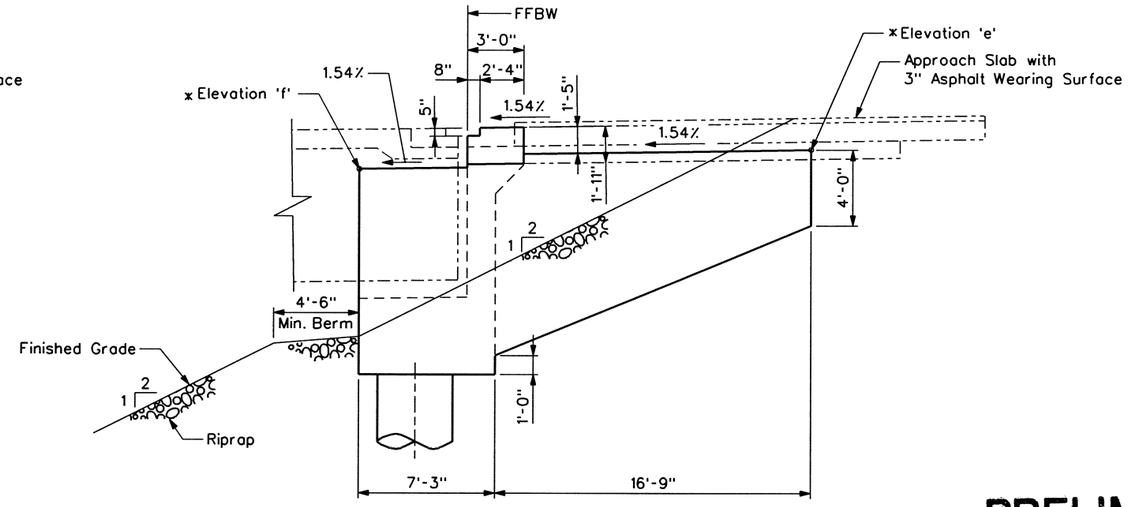
ABUTMENT 1 DIMENSIONS I

Designer: M. Bodemar
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B24 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 121



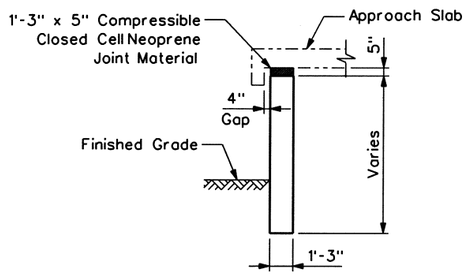
SECTION A-A



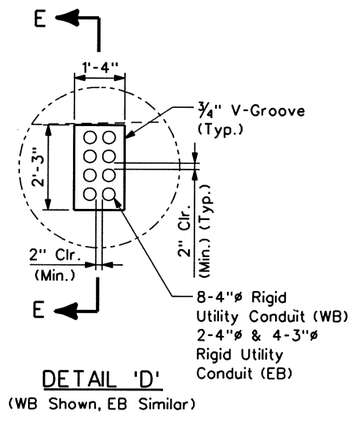
VIEW B-B
(Wingwall A Shown, Wingwall B Similar)

PRELIMINARY

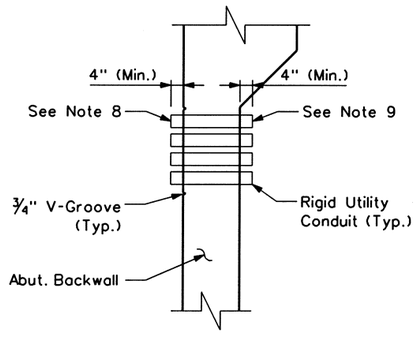
NOT FOR CONSTRUCTION



SECTION C-C



DETAIL 'D'
(WB Shown, EB Similar)



SECTION E-E
(WB Shown, EB Similar)

NOTES:

1. For approach slab details, see Abutment 1 Approach Slab Details sheets.
2. Optional construction joints are allowed as shown. Alternate construction joints may be used as approved by the Engineer. Coordinate backwall construction phasing with post-tensioning operations in Span 1.
3. For bearing details, see Bearing Details sheet.
4. For finished grade elevations, see Grading Plans.
5. For riprap details and limits, see Grading Plans and Bluff Slope Protection sheet.
6. * For Elevations 'a' thru 'f', see Abutment 1 Dimensions I sheet.
7. For additional notes, see Abutment 1 Dimensions I sheet.
8. Couple conduit to the conduit in the bridge. See Conduit and Lighting Details sheets.
9. For extension of conduit to utility vaults, see Utility Plans.

Design	INITIAL	DATE
Designed By	XXX	MM/YY
Checked By	XXX	MM/YY

Detail	INITIAL	DATE
Detailed By	XXX	MM/YY
Checked By	XXX	MM/YY

Quantities	INITIAL	DATE
Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Abut_1_Dims_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

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Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

ABUTMENT 1 DIMENSIONS II

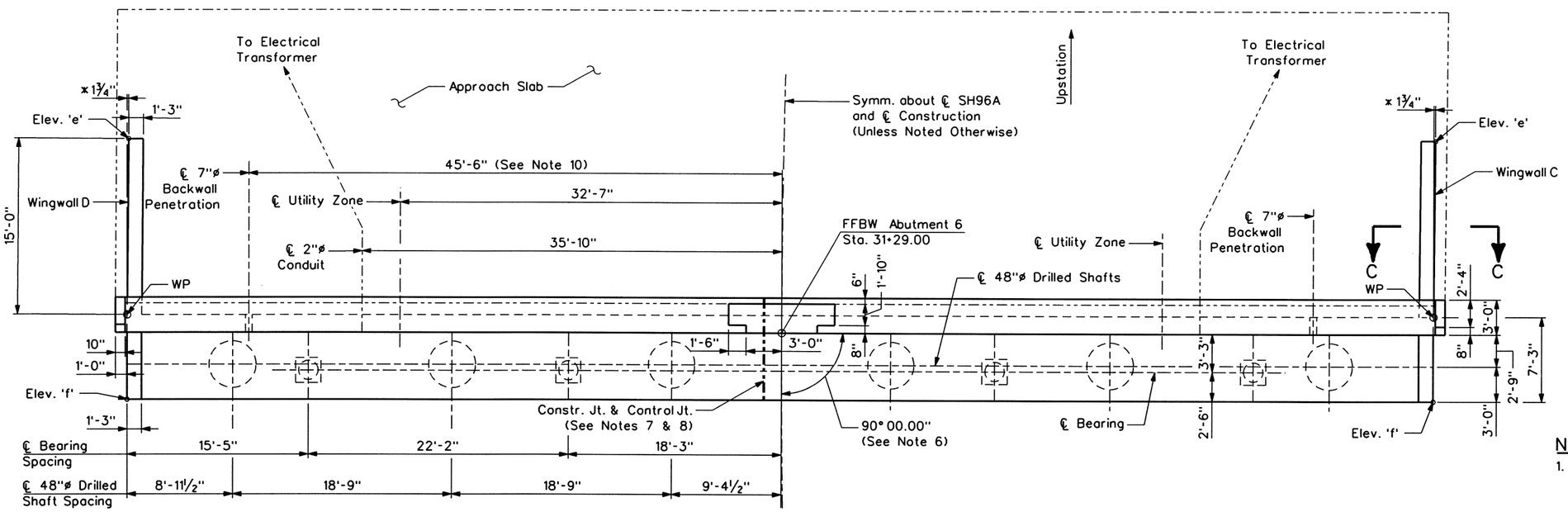
Designer: M. Bodemar
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B25 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 122

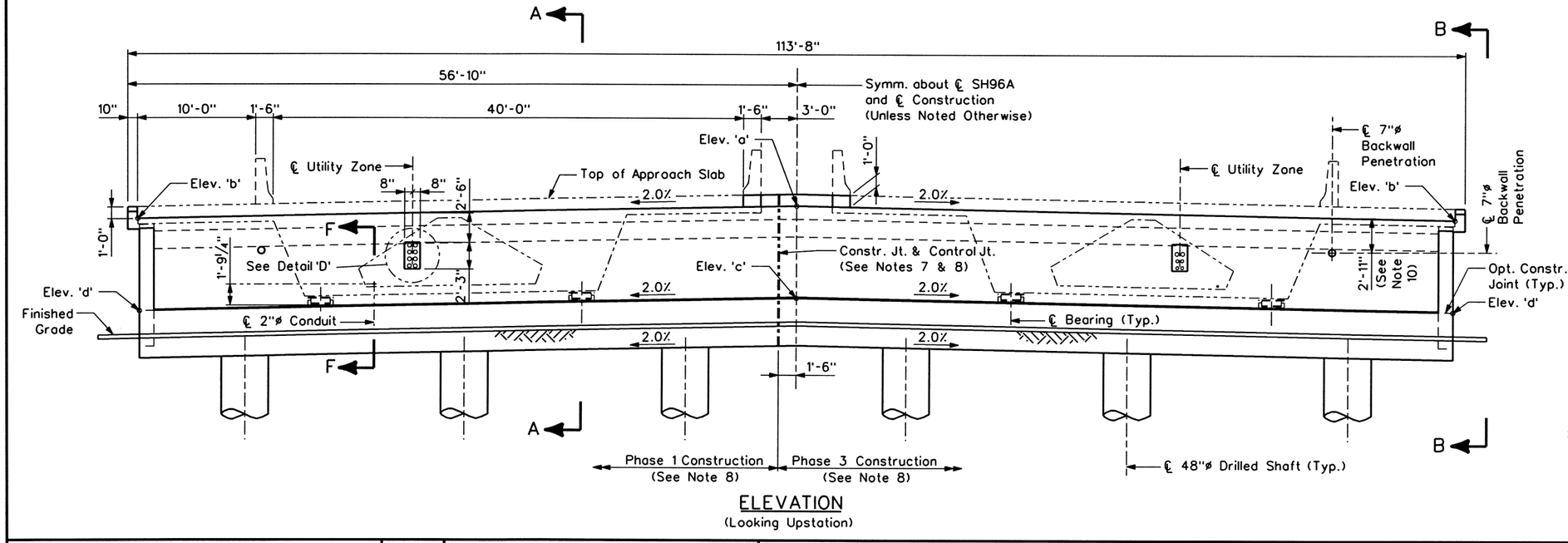
PRELIMINARY

NOT FOR CONSTRUCTION

ELEVATIONS	
Elev. 'a'	4693.06
Elev. 'b'	4691.94
Elev. 'c'	4685.24
Elev. 'd'	4684.12
Elev. 'e'	4690.87
Elev. 'f'	4691.09



PLAN



ELEVATION
(Looking Upstation)

NOTES:

1. Bearing seat elevations allow for 11" between the bottom of the girder and the bearing seat at ℄ Bearing. Abutment seat elevations shall be adjusted to account for actual bearing thickness, the riser pad thickness, and the dimensions shown on the Bearing Details sheet. Abutment beam vertical height (4'-0" min.) shall be maintained and the backwall, sidewall, and wingwall heights adjusted accordingly.
2. Optional construction joints are allowed as shown. Alternate construction joints may be used as approved by the Engineer.
3. For drilled shaft details and reinforcing, see Drilled Shaft Details sheet.
4. For View B-B and Sections A-A and C-C, see Abutment 6 Dimensions II sheet.
5. For abutment excavation and backfill details, see Bridge Excavation and Backfill sheets.
6. The FFBW shall be perpendicular to ℄ SH96A and ℄ Construction at Sta. 31+29.00.
7. For control joint details, see Abutment 6 Reinforcing sheets.
8. For additional details on construction phasing, see Superstructure Construction Schematic IV sheet and Bridge Excavation and Backfill sheets.
9. These dimensions are measured parallel to FFBW from the work points shown.
10. The location of the 7"ø backwall penetration may be adjusted slightly based on the actual bridge drainage system. For additional information, see Bridge Drainage Details I sheet.

Design	INITIAL	DATE
Designed By	XXX	MM/YY
Checked By	XXX	MM/YY

Detail	INITIAL	DATE
Detailed By	XXX	MM/YY
Checked By	XXX	MM/YY

Quantities	INITIAL	DATE
Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Abut_6_Dims_I.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Denver, Colorado 80222
(303)757-7400

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Sheet Revisions		
Date:	Comments	Init.

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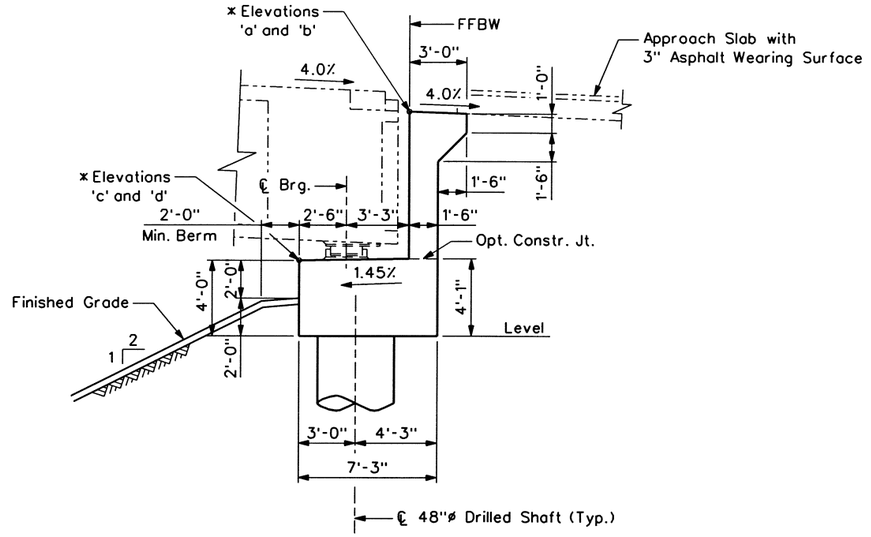
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed	
No Revisions:	
Revised:	
Void:	

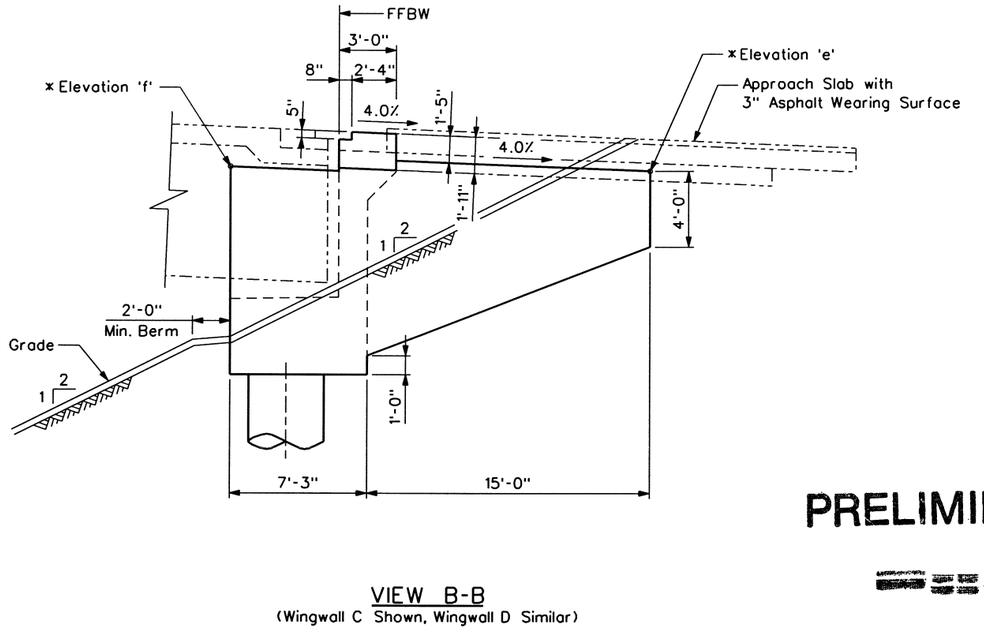
ABUTMENT 6 DIMENSIONS I

Designer:	M. Bodemar	Structure Numbers	K-18-GS (EB)
Detailer:	D. Anderson		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B29 of B169

Project No./Code	
BR 0961-008	
13141	
Sheet Number	126



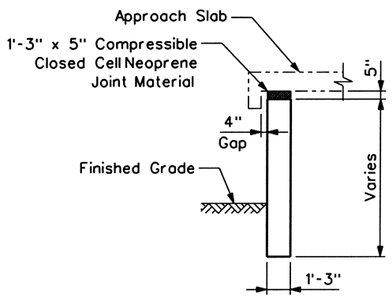
SECTION A-A



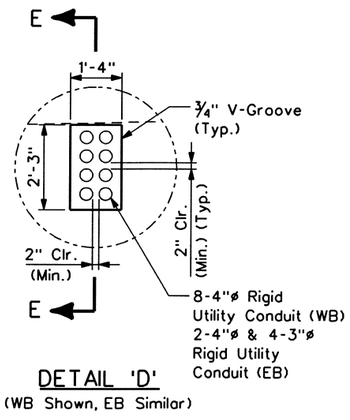
VIEW B-B
(Wingwall C Shown, Wingwall D Similar)

PRELIMINARY

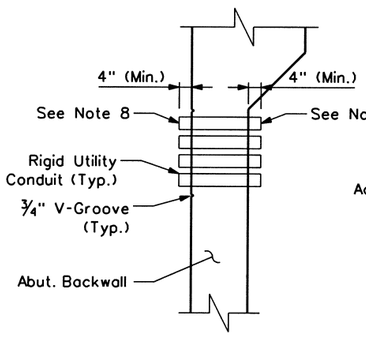
NOT FOR CONSTRUCTION



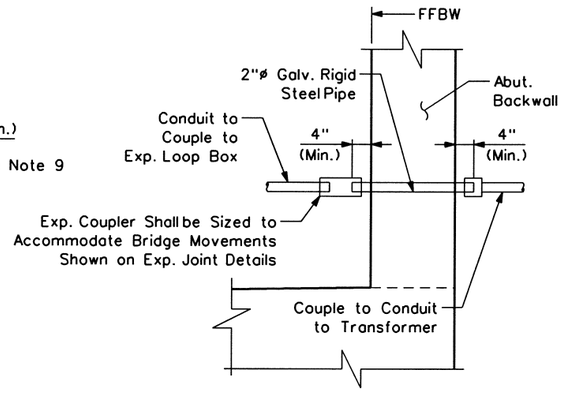
SECTION C-C



DETAIL 'D'
(WB Shown, EB Similar)



SECTION E-E
(WB Shown, EB Similar)



SECTION F-F

NOTES:

1. For approach slab details, see Abutment 6 Approach Slab Details sheets.
2. Optional construction joints are allowed as shown. Alternate construction joints may be used as approved by the Engineer. Coordinate backwall construction phasing with post-tensioning operations in Span 5.
3. For bearing details, see Bearing Details sheet.
4. For finished grade elevations, see Grading Plans.
5. For slope paving limits and details, see Slope Paving Details sheet.
6. * For Elevations 'a' thru 'g', see Abutment 6 Dimensions I sheet.
7. For additional notes, see Abutment 6 Dimensions I sheet.
8. Couple conduit to the conduit in the bridge. See Conduit and Lighting Details sheets.
9. For extension of conduit to utility vaults, see Utility Plans. For extension of conduit to electrical transformer, see Lighting sheets.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	XXX	MM/YY	Detailed By	XXX	MM/YY	Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY	Checked By	XXX	MM/YY	Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Abut_6_Dims_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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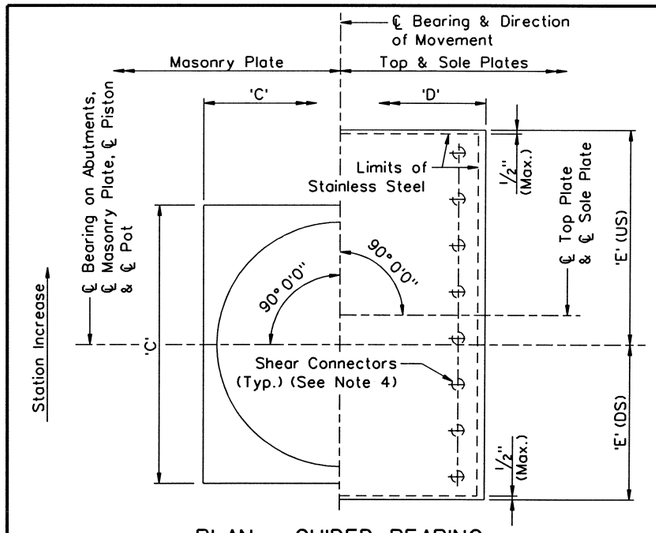
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

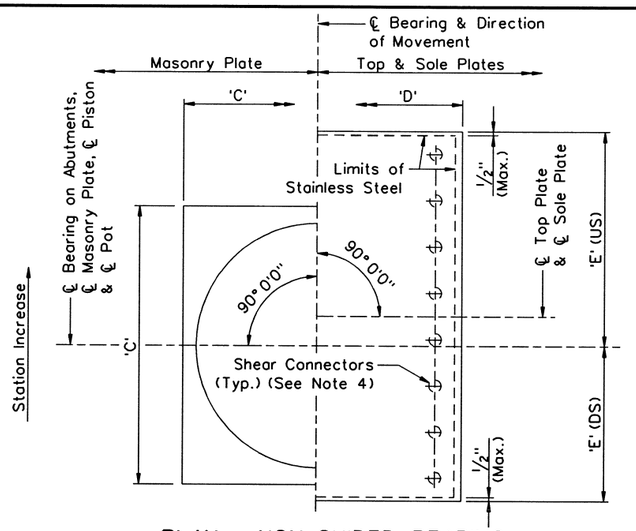
ABUTMENT 6 DIMENSIONS II

Designer: M. Bodemar
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B30 of B169

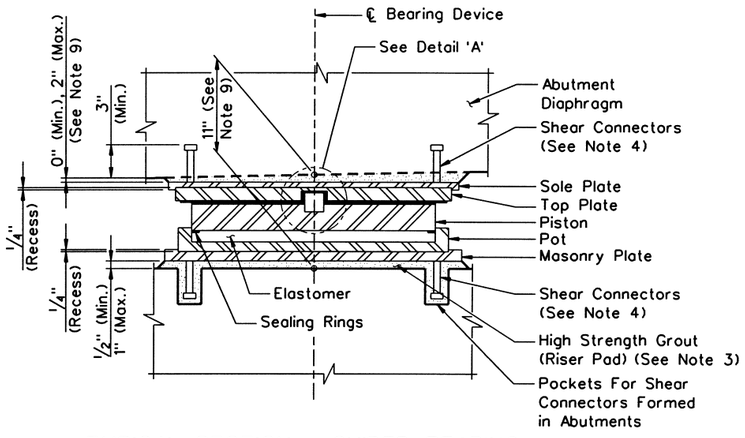
Project No./Code: BR 0961-008
13141
Sheet Number 127



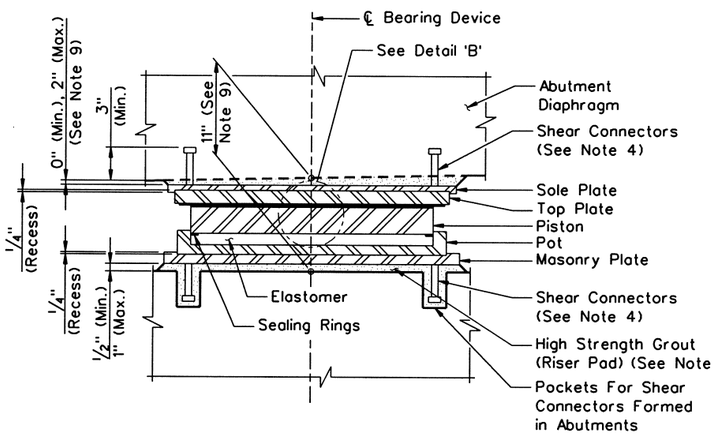
PLAN - GUIDED BEARING



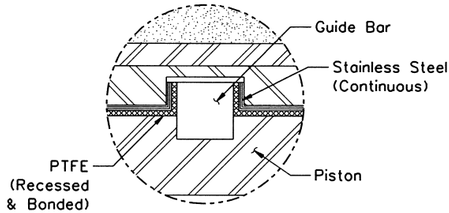
PLAN - NON-GUIDED BEARING



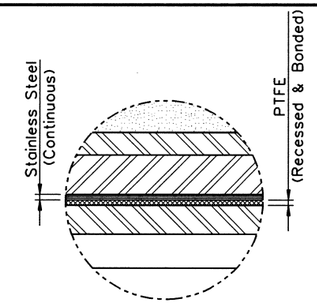
TYPICAL SECTION - GUIDED BEARING



TYPICAL SECTION - NON-GUIDED BEARING



DETAIL 'A'



DETAIL 'B'

NOTES:

1. This drawing is a schematic of required bearing devices. Manufacturer is responsible for the design of the bearing devices. Shop drawings shall be submitted to the Engineer for review.
2. Bearing assemblies shall be constructed to permit removal for repair or replacement by vertically jacking the bridge from the abutments by 1/2" maximum.
3. Grout shall be comprised of portland cement and silica sand. Minimum compressive strength shall be 6,000 psi at 28 days.
4. Number, size, and spacing of shear connectors shall be determined by the bearing manufacturer.
5. PTFE - Denotes Polytetrafluoroethylene
   GD - Denotes Guided Expansion Bearing
   NG - Denotes Non-Guided Expansion Bearing
   DS - Downstation
   US - Upstation
6. Loads are from AASHTO LRFD load combinations.
7. Total contraction and total expansion movements include 1.2 factor per AASHTO LRFD Bridge Design Specifications.
8. The top plate, sole plate, and stainless steel sliding plate shall accommodate the contraction and expansion allowances shown. The shop drawings shall show the proper installed position of these plates with respect to the pot and piston. The allowances shown do not require adjustment for temperature variations at bearing installation.
9. An 11" dimension has been assumed between the top of the abutment seats and the bottom of the abutment diaphragms at ℄ bearing. Top of abutment seat elevations and related details shall be adjusted to account for actual bearing and riser pad thicknesses while maintaining dimensions to limits shown.
10. Plate dimensions given are the maximum permissible to allow the bearings to fit within the concrete dimensions shown in the plans.
11. Bearings are to be set level. Longitudinal grade is given as information to help the forming of the abutment diaphragms. Bottom soffit is superelevated at 2.0%.
12. Bearings shall provide a total rotational capacity of 0.013 radians. This capacity requirement includes the factored bearing rotation plus a fabrication and installation tolerance (0.005 Radians) and an uncertainty tolerance (0.005 radians).
13. Bearings shall conform to the Project Specifications.

PRELIMINARY

NOT FOR CONSTRUCTION

ESTIMATED QUANTITIES

Item No.	Item Description	Unit	Quantity
512-00103	Bearing Device (Type III)	EA	8

ACCEPTABLE MANUFACTURERS

D.S. Brown Company, North Baltimore, Ohio
Cosmec, Inc., Walpole, Massachusetts
Con-Serv, Inc., Georgetown, South Carolina
R.J. Watson, Inc., Georgetown, South Carolina

Location	Bearing Type (Looking Upstation)		Service Load Combinations (See Note 6)			Factored Load Combinations (See Note 6)			Maximum Plate Dimensions (in) (See Note 10)				Longitudinal Range of Structure Movement (in) (+ Denotes Upstation Movement)					Contraction Allowance (in) (+ Denotes Upstation Movement) (See Note 8)	Expansion Allowance (in) (+ Denotes Upstation Movement) (See Note 8)	Longitudinal Grade (See Note 11)
	Left	Right	Minimum Vertical Load Per Bearing (Kips)	Maximum Vertical Load Per Bearing (Kips)	Maximum Lateral Load Per Guided Bearing (Kips) *	Minimum Vertical Load Per Bearing (Kips)	Maximum Vertical Load Per Bearing (Kips)	Maximum Lateral Load Per Guided Bearing (Kips)	'C'	'D'	'E' (DS)	'E' (US)	Creep & Shrinkage	50°F Temp. Drop	Total Contraction (See Note 7)	30°F Temp. Rise	Total Expansion (See Note 7)			
Abut. 1 EB	GD	NG	409	1081	67	177	1471	166	29	29	25	20	+6.21	+2.21	+10.10	-1.33	-1.60	+11.70	-6.15	-1.54%
Abut. 1 WB	GD	NG	418	1079	76	184	1470	175	29	29	25	20	+6.21	+2.21	+10.10	-1.33	-1.60	+11.70	-6.15	-1.54%
Abut. 6 EB	GD	NG	429	1034	52	240	1440	73	29	29	20	25	-5.00	-1.84	-8.21	+1.10	+1.32	-9.53	+4.15	-4.00%
Abut. 6 WB	GD	NG	282	1234	71	122	1680	87	29	29	20	25	-5.00	-1.84	-8.21	+1.10	+1.32	-9.53	+4.15	-4.00%

* Design of guided bearings should accommodate a lateral force of at least 10% of the vertical load (service load) regardless of the loads contained in the above table.

Design	INITIAL	DATE
Designed By	JMB	12/06
Checked By	XXX	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	JMB	12/06

Quantities	INITIAL	DATE
Quantities By	JMB	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Bearing_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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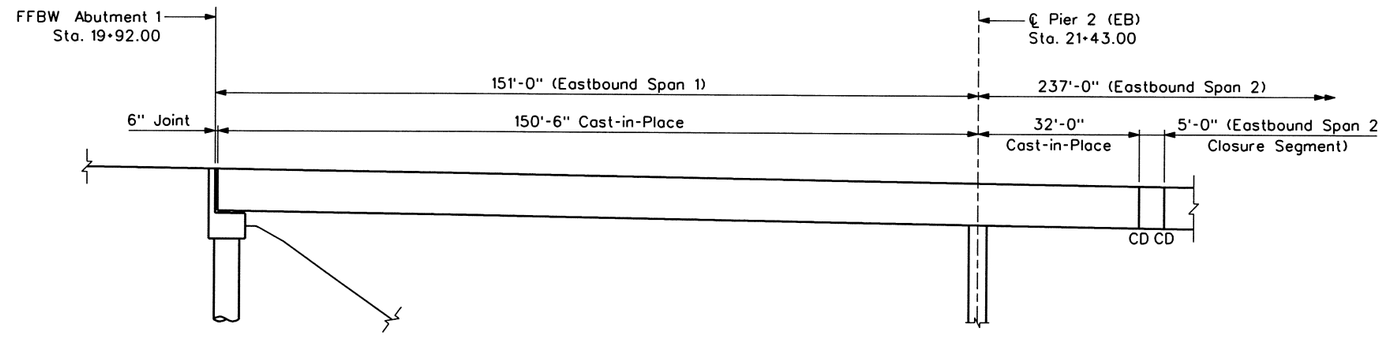
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

BEARING DETAILS

Designer: M. Bodemar
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B36 of B169

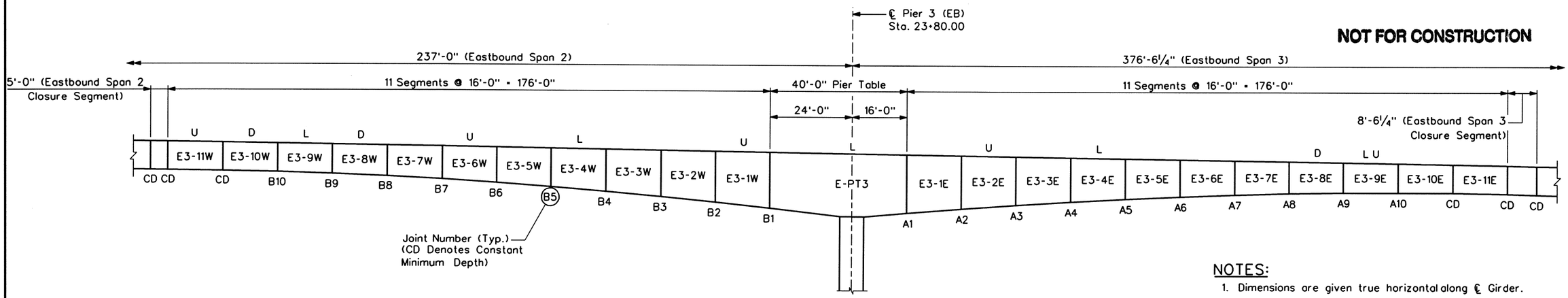
Project No./Code: BR 0961-008
13141
Sheet Number 133



ELEVATION - PIER 2 EASTBOUND

PRELIMINARY

NOT FOR CONSTRUCTION



ELEVATION - PIER 3 EASTBOUND

SEGMENT LEGEND

E 3 - 5 W
- E - East Cantilever, W - West Cantilever
- Segment Number
- Pier and Cantilever Number
- E - Eastbound, W - Westbound

E - PT 3
- Pier and Cantilever Number
- Pier Table
- E - Eastbound, W - Westbound

NOTES:

1. Dimensions are given true horizontal along ℄ Girder.
2. Joints are true vertical.
3. See Variable Depth, Constant Depth, and Closure Segment Dimension sheets for segment dimensions.
4. See Pier Table Dimension and P.T. Details sheet for pier table dimensions.
5. See Spans 1 and 5 C.I.P. Construction Layout sheets for girder dimensions in cast-in-place portions.
6. D - Denotes Deviation Segment
   L - Denotes light pole pilaster located at ℄ Segment. For details, see Miscellaneous Details IV Sheet.
   U - Denotes under viaduct light located at ℄ segment. For details, see Miscellaneous Details V and VI sheets.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Segment_Designation_I.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Region 2 KSR

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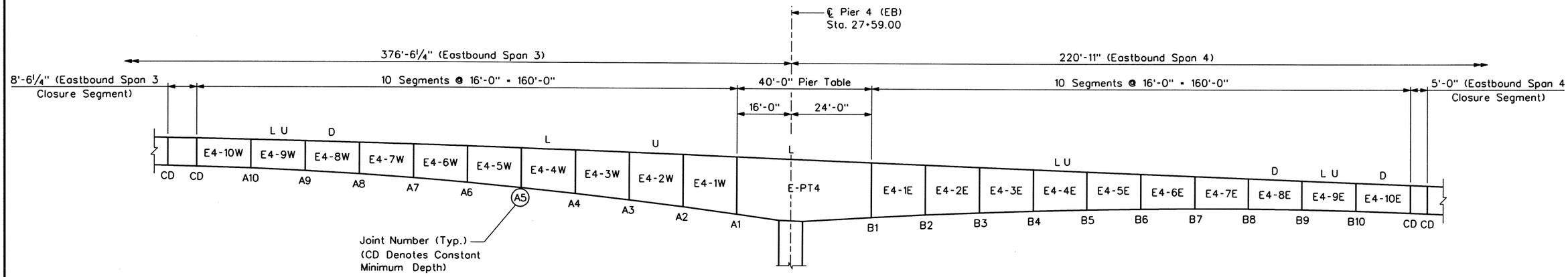
Revised:
Void:

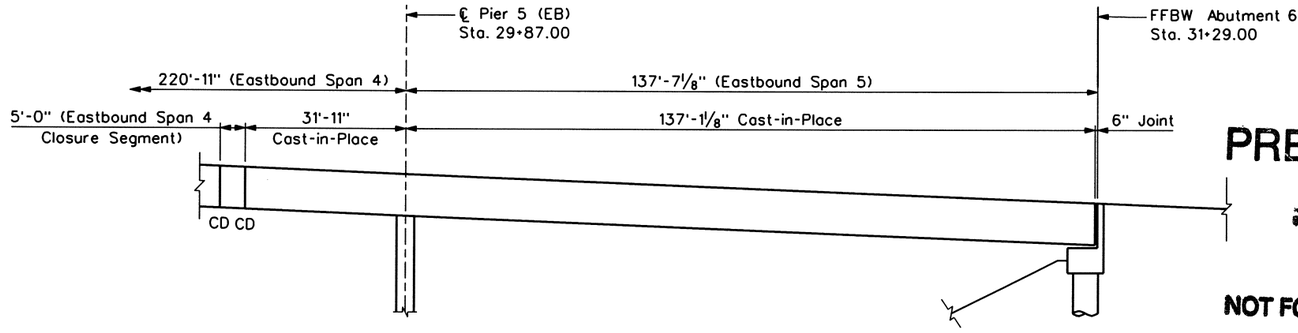
SEGMENT DESIGNATION I
(EASTBOUND)

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B37 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 134



ELEVATION - PIER 4 EASTBOUND



ELEVATION - PIER 5 EASTBOUND

PRELIMINARY

NOT FOR CONSTRUCTION

SEGMENT LEGEND

E 3 - 5 W
- E - Eastbound, W - Westbound
- Pier and Cantilever Number
- Segment Number
- E - East Cantilever, W - West Cantilever

E - PT 3
- E - Eastbound, W - Westbound
- Pier Table
- Pier and Cantilever Number

NOTES:

1. Dimensions are given true horizontal along ℄ Girder.
2. Joints are true vertical.
3. See Variable Depth, Constant Depth, and Closure Segment Dimension sheets for segment dimensions.
4. See Pier Table Dimension and P.T. Details sheet for pier table dimensions.
5. See Spans 1 and 5 C.I.P. Construction Layout sheets for girder dimensions in cast-in-place portions.
6. D - Denotes Deviation Segment
   L - Denotes light pole pilaster located at ℄ Segment. For details, see Miscellaneous Details IV Sheet.
   U - Denotes under viaduct light located at ℄ segment. For details, see Miscellaneous Details V and VI sheets.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Segment_Designation_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Region 2 KSR

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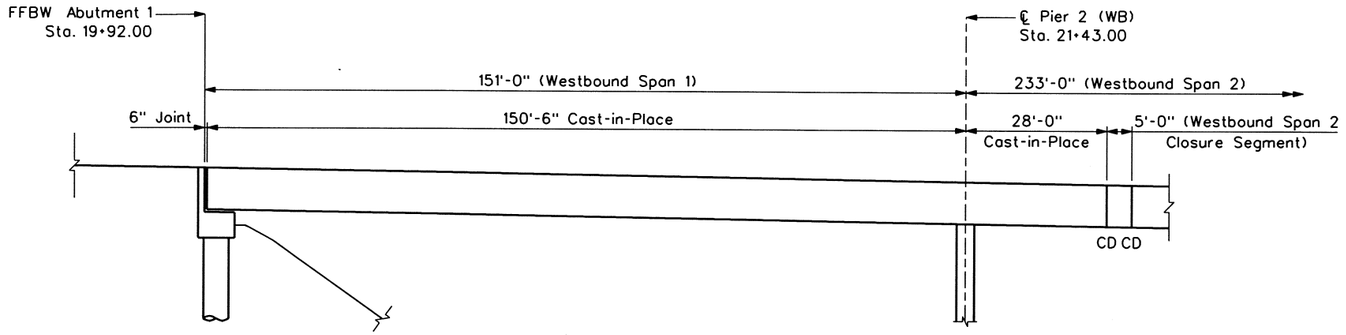
SEGMENT DESIGNATION II
(EASTBOUND)

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B38 of B169

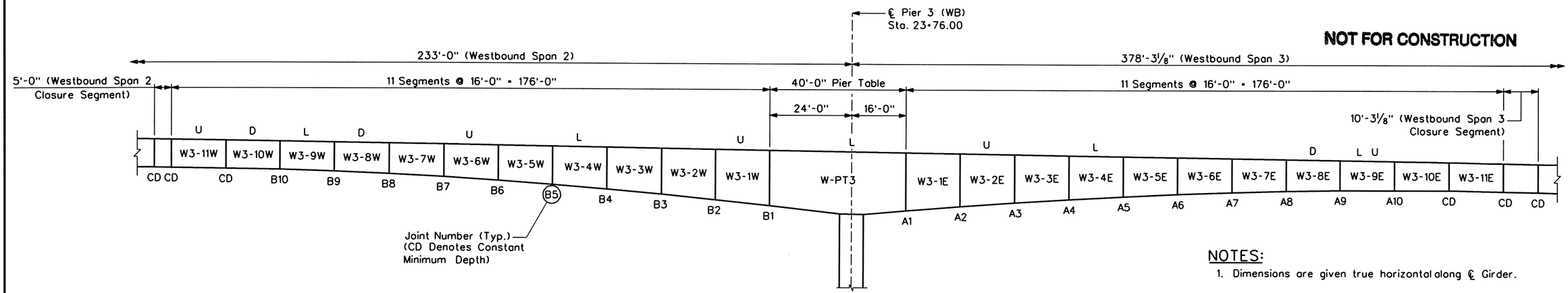
Project No./Code
BR 0961-008
13141
Sheet Number 135



ELEVATION - PIER 2 WESTBOUND

PRELIMINARY

NOT FOR CONSTRUCTION



ELEVATION - PIER 3 WESTBOUND

NOTES:

1. Dimensions are given true horizontal along ℄ Girder.
2. Joints are true vertical.
3. See Variable Depth, Constant Depth, and Closure Segment Dimension sheets for segment dimensions.
4. See Pier Table Dimension and P.T. Details sheet for pier table dimensions.
5. See Spans 1 and 5 C.I.P. Construction Layout sheets for girder dimensions in cast-in-place portions.
6. D - Denotes Deviation Segment
   L - Denotes light pole pilaster located at ℄ Segment. For details, see Miscellaneous Details IV Sheet.
   U - Denotes under viaduct light located at ℄ segment. For details, see Miscellaneous Details V and VI sheets.

SEGMENT LEGEND

E 3 - 5 W
- E - East Cantilever, W - West Cantilever
- Segment Number
- Pier and Cantilever Number
- E - Eastbound, W - Westbound

E - PT 3
- Pier and Cantilever Number
- Pier Table
- E - Eastbound, W - Westbound

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Segment_Designation_III.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Region 2 KSR

As Constructed
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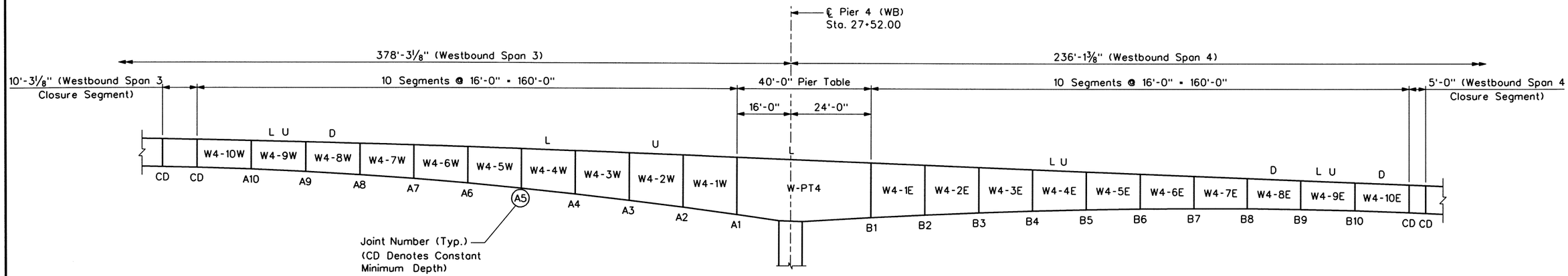
Revised:
Void:

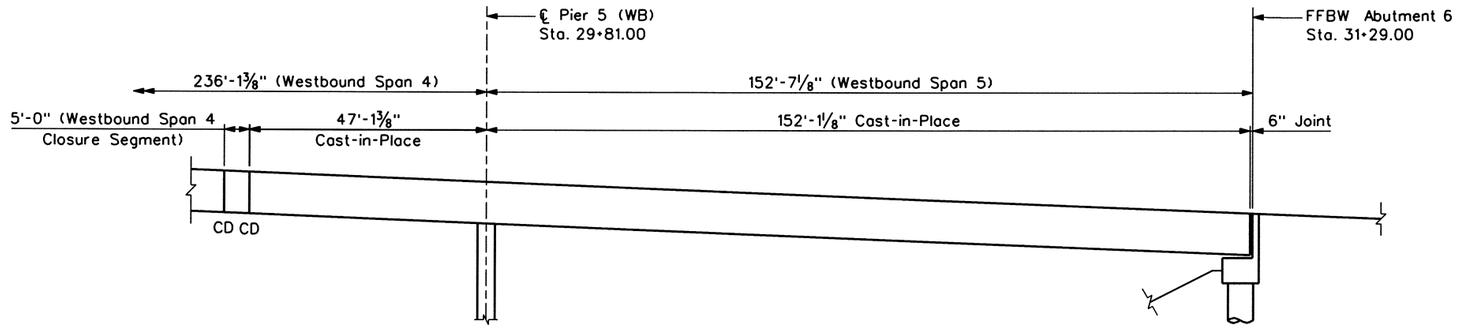
SEGMENT DESIGNATION III
(WESTBOUND)

Designer: K. Montgomery		Structure Numbers	K-18-GS (EB)
Detailer: S. Fall			K-18-GT (WB)
Sheet Subset: BRIDGE		Subset Sheets: B39 of B169	

Project No./Code
BR 0961-008
13141
Sheet Number 136



ELEVATION - PIER 4 WESTBOUND



ELEVATION - PIER 5 WESTBOUND

SEGMENT LEGEND

E 3 - 5 W
- E - East Cantilever, W - West Cantilever
- Segment Number
- Pier and Cantilever Number
- E - Eastbound, W - Westbound

E - PT 3
- Pier and Cantilever Number
- Pier Table
- E - Eastbound, W - Westbound

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. Dimensions are given true horizontal along ℄ Girder.
2. Joints are true vertical.
3. See Variable Depth, Constant Depth, and Closure Segment Dimension sheets for segment dimensions.
4. See Pier Table Dimension and P.T. Details sheet for pier table dimensions.
5. See Spans 1 and 5 C.I.P. Construction Layout sheets for girder dimensions in cast-in-place portions.
6. D - Denotes Deviation Segment
   L - Denotes light pole pilaster located at ℄ Segment. For details, see Miscellaneous Details IV Sheet.
   U - Denotes under viaduct light located at ℄ segment. For details, see Miscellaneous Details V and VI sheets.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Segment_Designation_IV.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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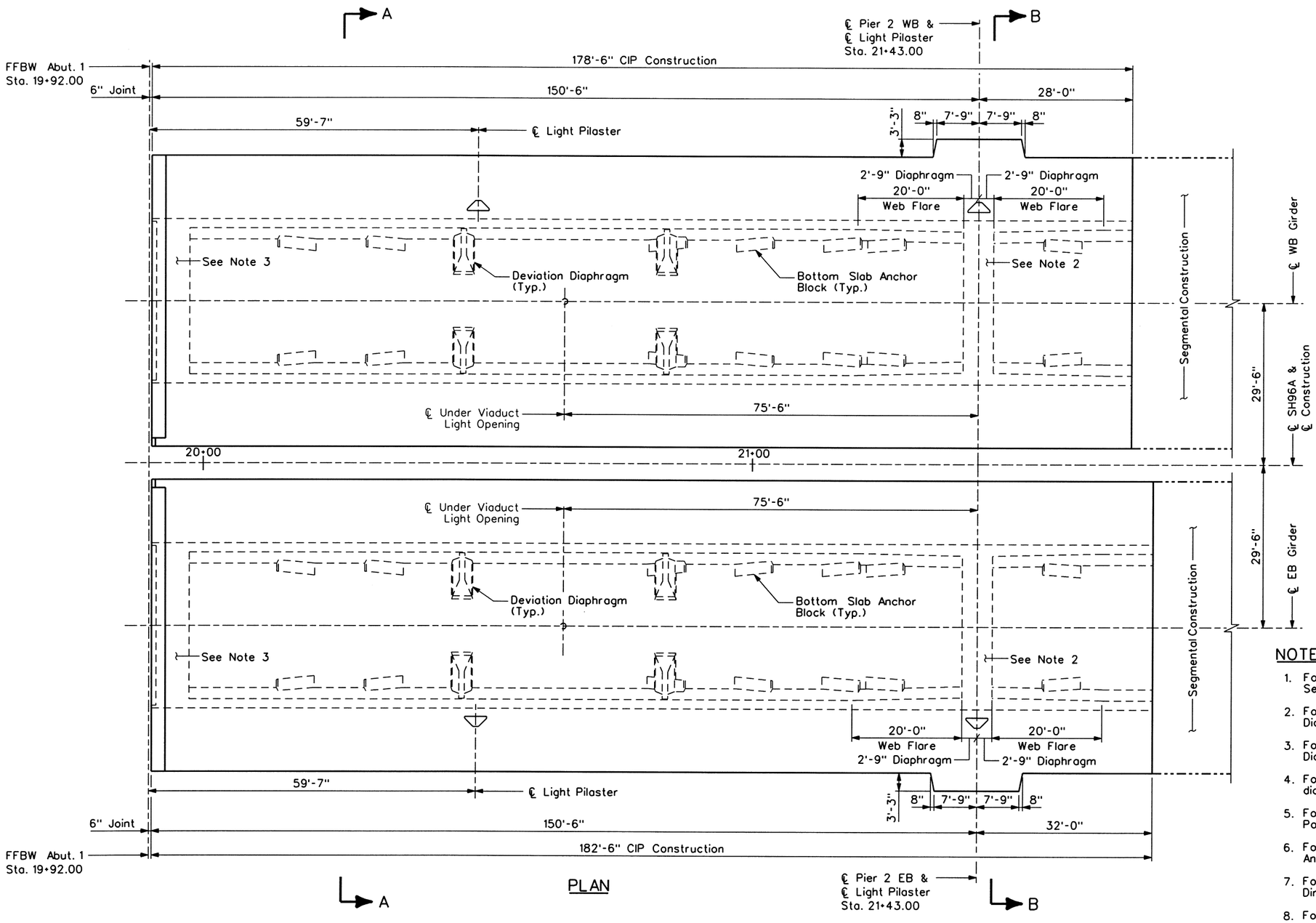
No Revisions:
Revised:
Void:

SEGMENT DESIGNATION IV (WESTBOUND)

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B40 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 137



PRELIMINARY

[redacted]

NOT FOR CONSTRUCTION

NOTES:

1. For Sections A-A and B-B, see C.I.P. Construction Section Dimensions sheet.
2. For diaphragm dimensions at Pier 2, see Piers 2 & 5 Diaphragm Dimensions and P.T. Details sheet.
3. For diaphragm dimensions at abutment, see Abutment Diaphragm Dimensions and P.T. Details sheets.
4. For location of bottom slab anchor blocks and deviation diaphragms, see Longitudinal Post-Tensioning Layout sheets.
5. For location of post-tensioning ducts, see Longitudinal Post-Tensioning Layout sheets and Bulkhead Details sheet.
6. For details of bottom slab anchor blocks, see Bottom Slab Anchor Block Dimensions and Reinforcing sheets.
7. For details of deviation diaphragms, see Deviation Diaphragm Dimensions and P.T. Details and Reinforcing sheets.
8. For details of light pilasters, see Miscellaneous Details IV sheet.
9. For under viaduct light opening details, See Miscellaneous Details V and VI sheets.

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Span_1_CIP_Const_Layout_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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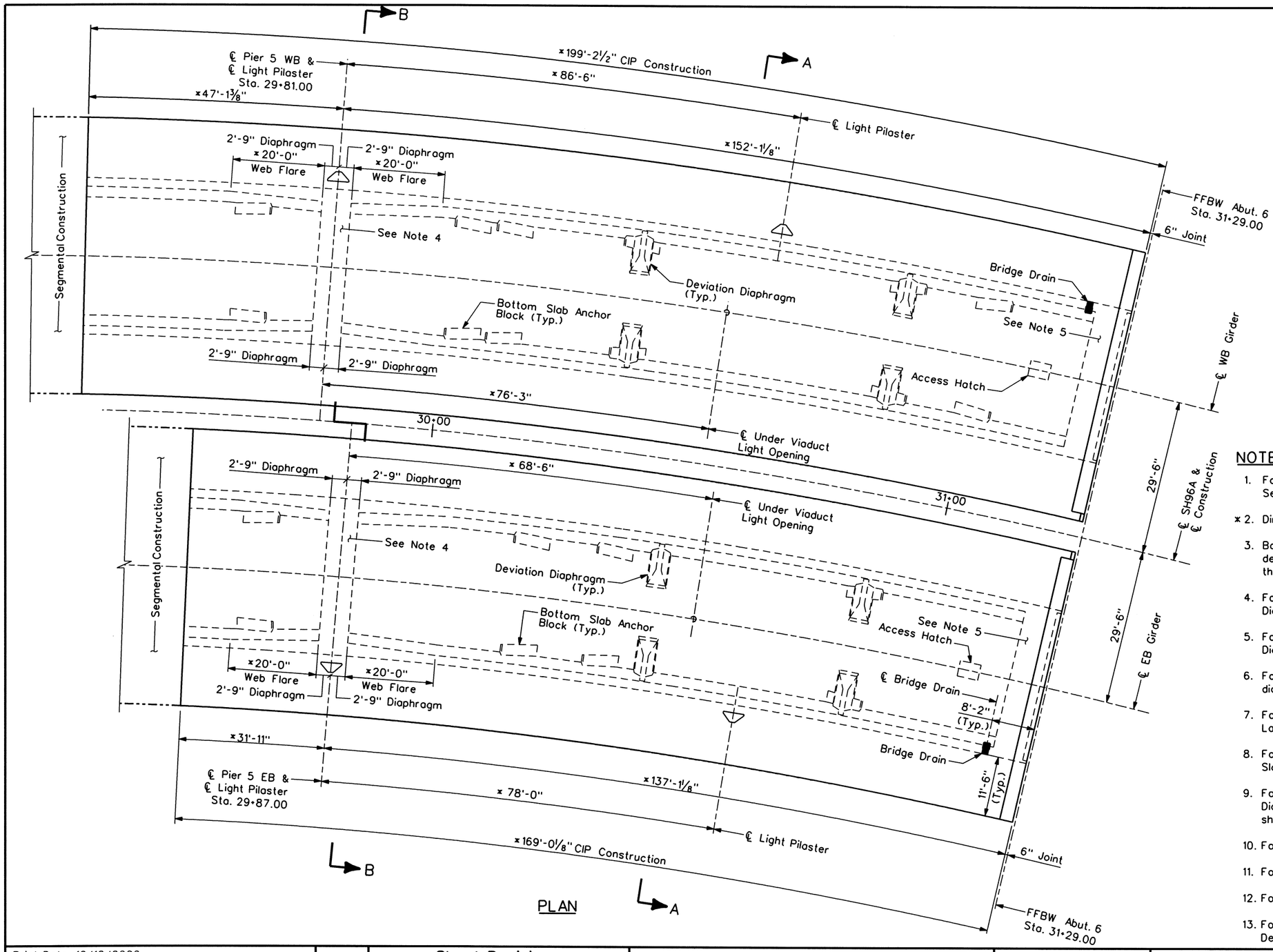
SPANS 1 C.I.P. CONSTRUCTION LAYOUT

Designer: K. McLaughlin
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B41 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 138



PLAN

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. For Sections A-A and B-B, see C.I.P. Construction Section Dimensions sheet.
2. × Dimensions noted are measured along ℄ Girder.
3. Box girder cross-section shall follow the curve defined by ℄ Girder with chords of not greater than 16'-0" along ℄ Girder.
4. For diaphragm dimensions at Pier 5, see Piers 2 & 5 Diaphragm Dimensions and P.T. Details sheet.
5. For diaphragm dimensions at abutment, see Abutment Diaphragm Dimensions and P.T. Details sheets.
6. For location of bottom slab anchor blocks and deviation diaphragms, see Post-Tensioning Layout sheets.
7. For location of post-tensioning ducts, see Post-Tensioning Layout sheets and Bulkhead Details sheets.
8. For details of bottom slab anchor blocks, see Bottom Slab Anchor Block Dimensions and Reinforcing sheets.
9. For details of deviation diaphragms, see Deviation Diaphragm Dimensions and P.T. Details and Reinforcing sheets.
10. For bridge drain details, see Bridge Drainage Details sheets.
11. For access hatch details, see Miscellaneous Details I sheet.
12. For details of light pilasters, see Miscellaneous Details IV sheet.
13. For under viaduct light opening details, see Miscellaneous Details V and VI sheets.

Design	Designed By	KAM	INITIAL
	Checked By	RKM	DAT
Detail	Detailed By	KAM	INITIAL
	Checked By	KAM	DAT
Quantities	Quantities By	KAM	INITIAL
	Checked By	DAT	DAT

Print Date: 12/12/2006
Drawing File Name: 13141_Span_5_CIP_Const_Layout_II.dgn
Horiz. Scale: Vert. Scale:
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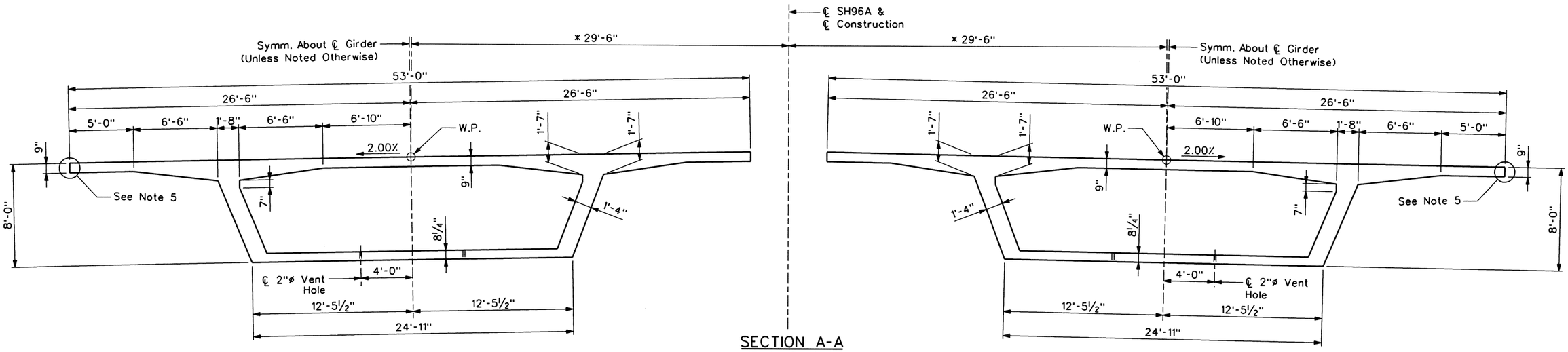
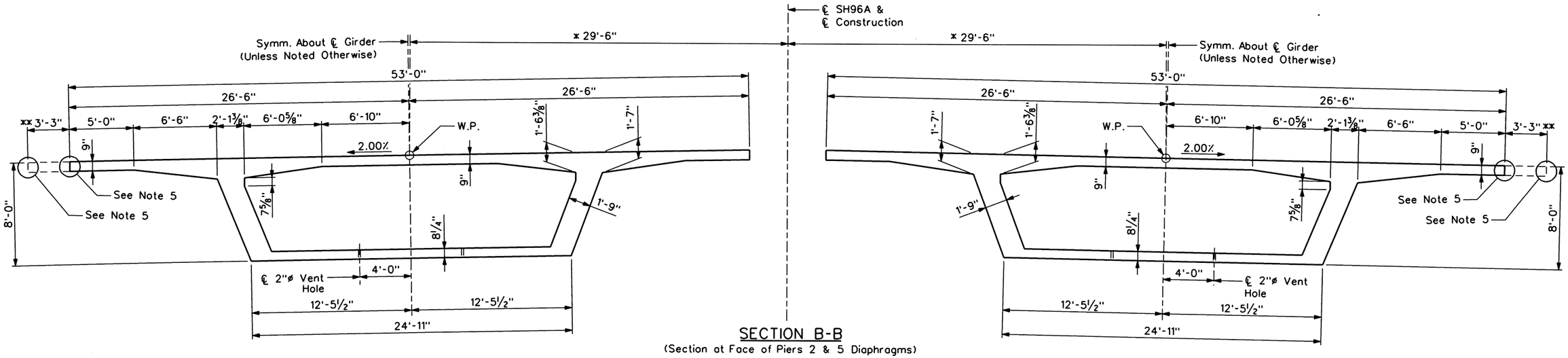
SPANS 5 C.I.P. CONSTRUCTION LAYOUT

Designer: K. McLaughlin
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B42 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 139



SECTION A-A
(Typical Section)



SECTION B-B
(Section at Face of Piers 2 & 5 Diaphragms)

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. Vent holes are located 10'-0" off the face of the diaphragms and at equal spaces after that, not to exceed 16'-0".
2. The transition from Section A-A to Section B-B (Web Flare) occurs over 20'-0" as shown on Spans 1 & 5 C.I.P. Construction Layout sheets.
* 3. Measured along true horizontal.
** 4. For longitudinal extents of 3'-3" overlook wing extension at Piers 2 (EB & WB), see Spans 1 C.I.P. Construction Layout sheet.
5. Roughen vertical face minimum ¼" amplitude on pedestrian curb side only.

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_CIP_Const_Section_Dims.dgn
Horiz. Scale: Vert. Scale:
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Region 2 KSR

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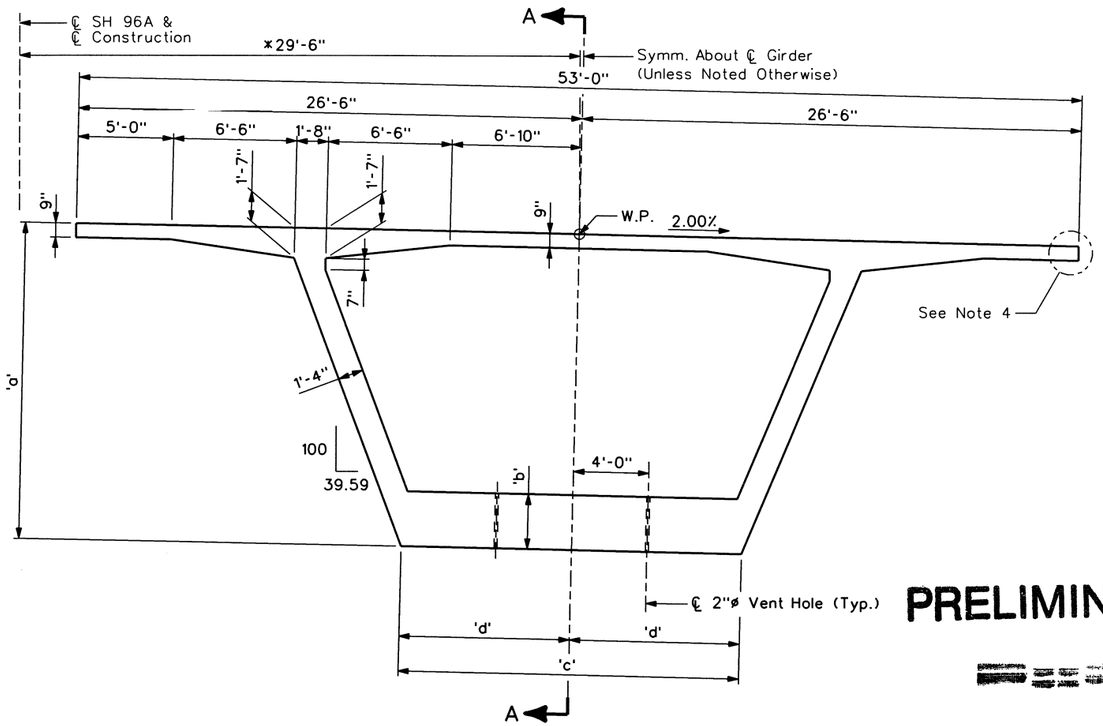
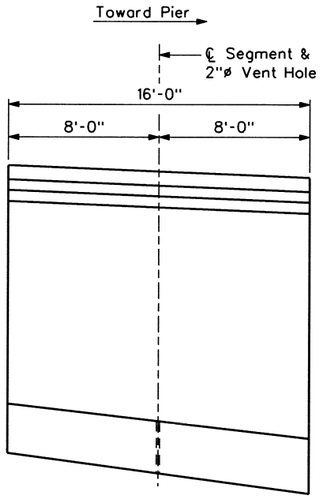
C.I.P. CONSTRUCTION SECTION DIMENSIONS

Designer: K. McLaughlin
Detailer: R. Adams
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B43 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 140



CROSS SECTION
(Looking Upstation - Eastbound Shown)



SECTION A-A

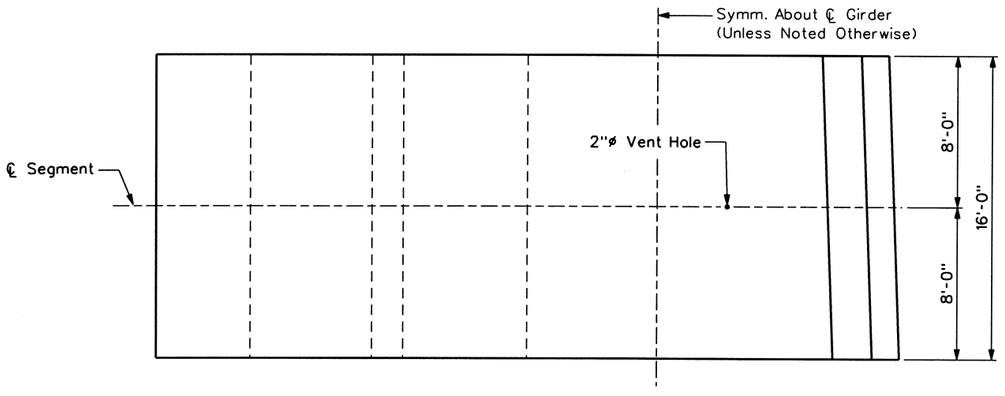
PRELIMINARY

NOT FOR CONSTRUCTION

VARIABLE DIMENSIONS				
Joint Number	'a'	'b'	'c'	'd'
A1	16'-8 3/4"	2'-11"	18'-0"	9'-0"
A2	15'-2 3/4"	2'-7 1/4"	19'-2 3/8"	9'-7 3/16"
A3	13'-10 1/8"	2'-3 3/8"	20'-3 1/2"	10'-1 3/4"
A4	12'-7 1/8"	1'-11 1/2"	21'-3 3/8"	10'-7 11/16"
A5	11'-5 3/4"	1'-7 3/4"	22'-2"	11'-1"
A6	10'-6 1/8"	1'-3 7/8"	22'-11 1/4"	11'-5 5/8"
A7	9'-8 1/8"	1'-0 1/8"	23'-7"	11'-9 1/2"
A8	9'-0"	8 1/4"	24'-1 1/2"	12'-0 3/4"
A9	8'-5 3/4"	8 1/4"	24'-6 1/2"	12'-3 1/4"
A10	8'-1 5/8"	8 1/4"	24'-9 3/4"	12'-4 7/8"
CD	8'-0"	8 1/4"	24'-11"	12'-5 1/2"
B1	15'-11 1/2"	2'-9 1/8"	18'-7 3/8"	9'-3 11/16"
B2	14'-6 1/4"	2'-5 1/4"	19'-9 1/8"	9'-10 9/16"
B3	13'-2 1/2"	2'-1 1/2"	20'-9 5/8"	10'-4 13/16"
B4	12'-0 1/4"	1'-9 5/8"	21'-8 3/4"	10'-10 3/8"
B5	10'-11 3/4"	1'-5 3/4"	22'-6 3/4"	11'-3 3/8"
B6	10'-0 7/8"	1'-2"	23'-3 1/4"	11'-7 5/8"
B7	9'-3 1/8"	10 1/8"	23'-10 1/2"	11'-11 1/4"
B8	8'-8 5/8"	8 1/4"	24'-4 1/8"	12'-2 1/16"
B9	8'-3 1/2"	8 1/4"	24'-8 1/4"	12'-4 1/8"
B10	8'-0 1/2"	8 1/4"	24'-10 5/8"	12'-5 5/16"

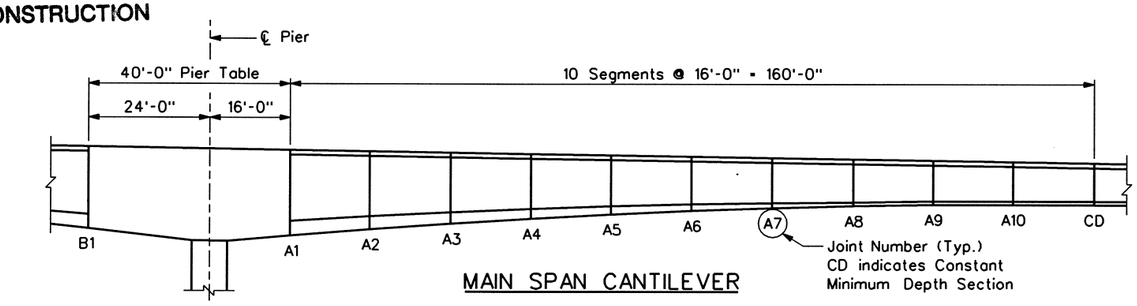
NOTES:

1. Longitudinal dimensions are measured true horizontal along ℄ Girder.
2. See Segment Designation sheets and Constant Depth Segment Dimension sheet for additional information not shown.
*3. Measured along true horizontal.
4. Roughen vertical face minimum 1/4" amplitude on pedestrian curb side only.

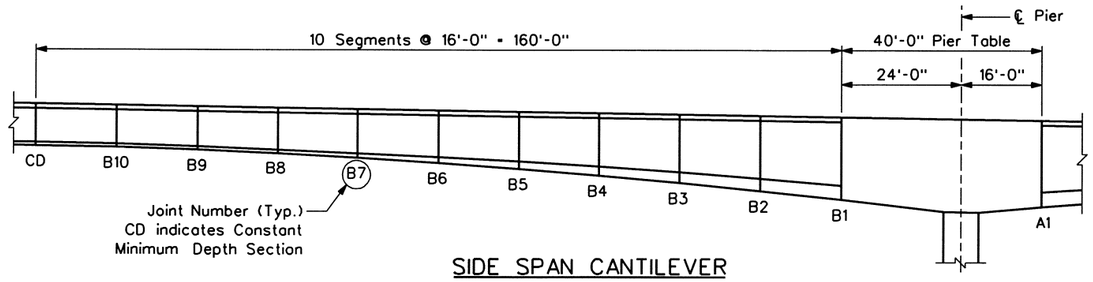


HALF PLAN - TOP SLAB

HALF PLAN - BOTTOM SLAB



MAIN SPAN CANTILEVER



SIDE SPAN CANTILEVER

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Variable_Depth_Seg_Dims.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

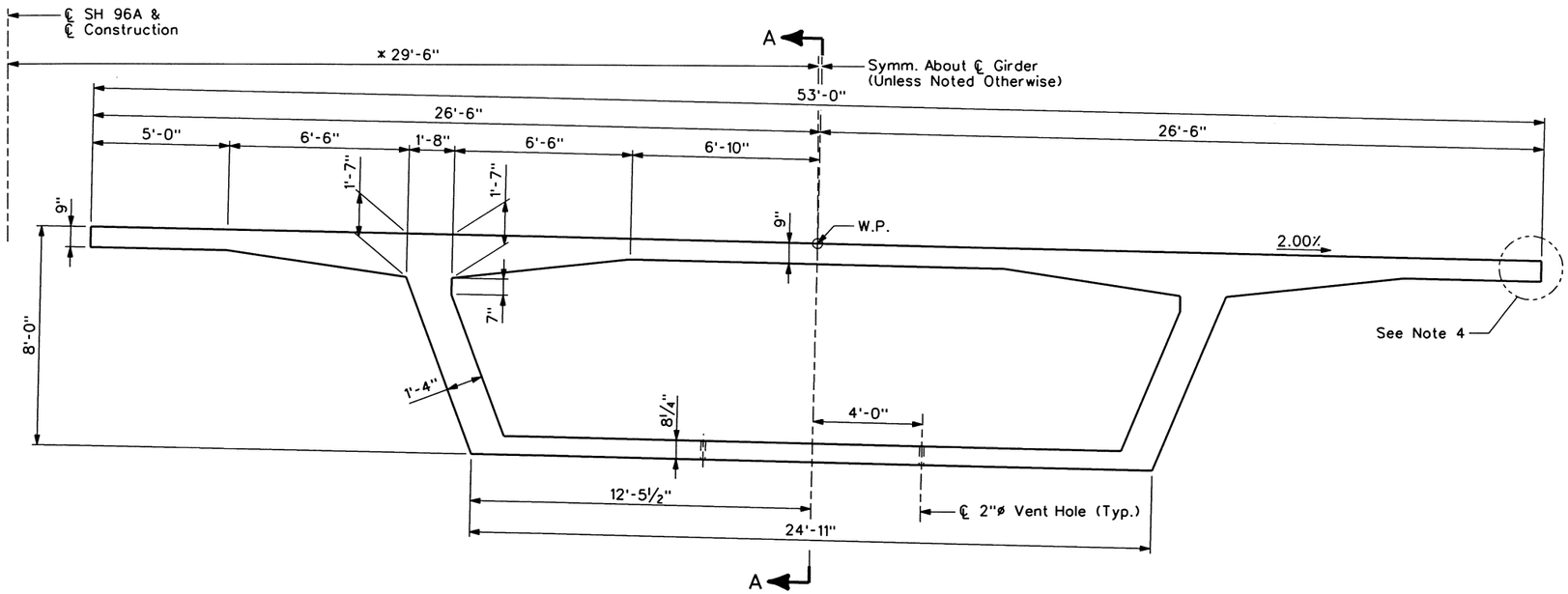
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-546-5438 FAX: 719-546-5702
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

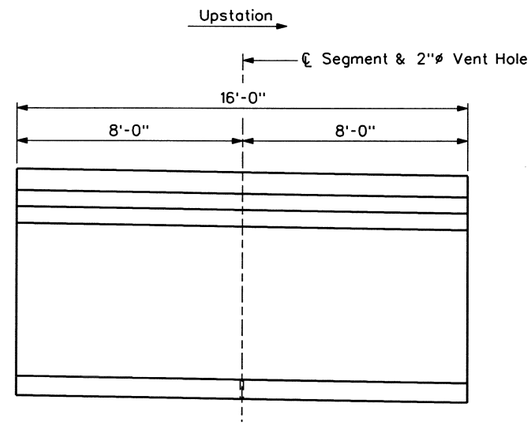
VARIABLE DEPTH SEGMENT DIMENSIONS

Designer: K. McLaughlin
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B51 of B169

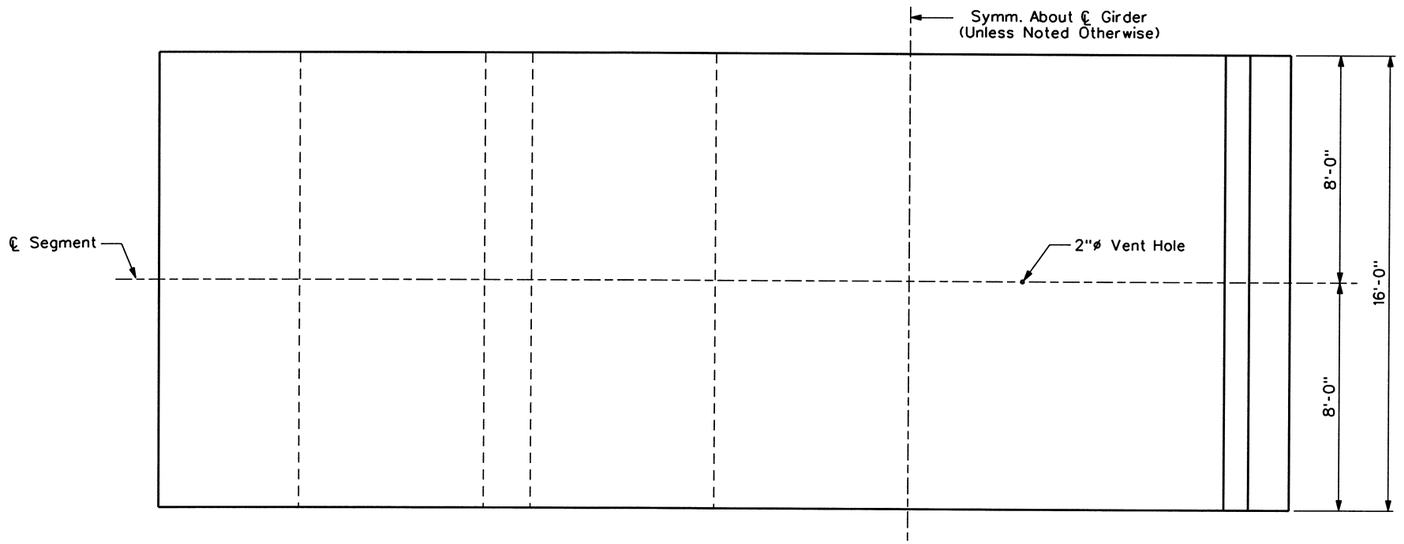
Project No./Code: BR 0961-008
13141
Sheet Number 148



CROSS SECTION
(Looking Upstation - Eastbound Shown)



SECTION A-A



HALF PLAN - TOP SLAB

HALF PLAN - BOTTOM SLAB

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. Longitudinal dimensions are measured true horizontal along ℄ Girder.
2. Drawing applies to Segments W3-11W, W3-11E, E3-11W, and E3-11E.
3. * Measured along true horizontal.
4. Roughen vertical face minimum ¼" amplitude on pedestrian curb side only.

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Constant_Depth_Seg_Dims.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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(303)757-7400

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Date:	Comments	Init.

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Region 2 KSR

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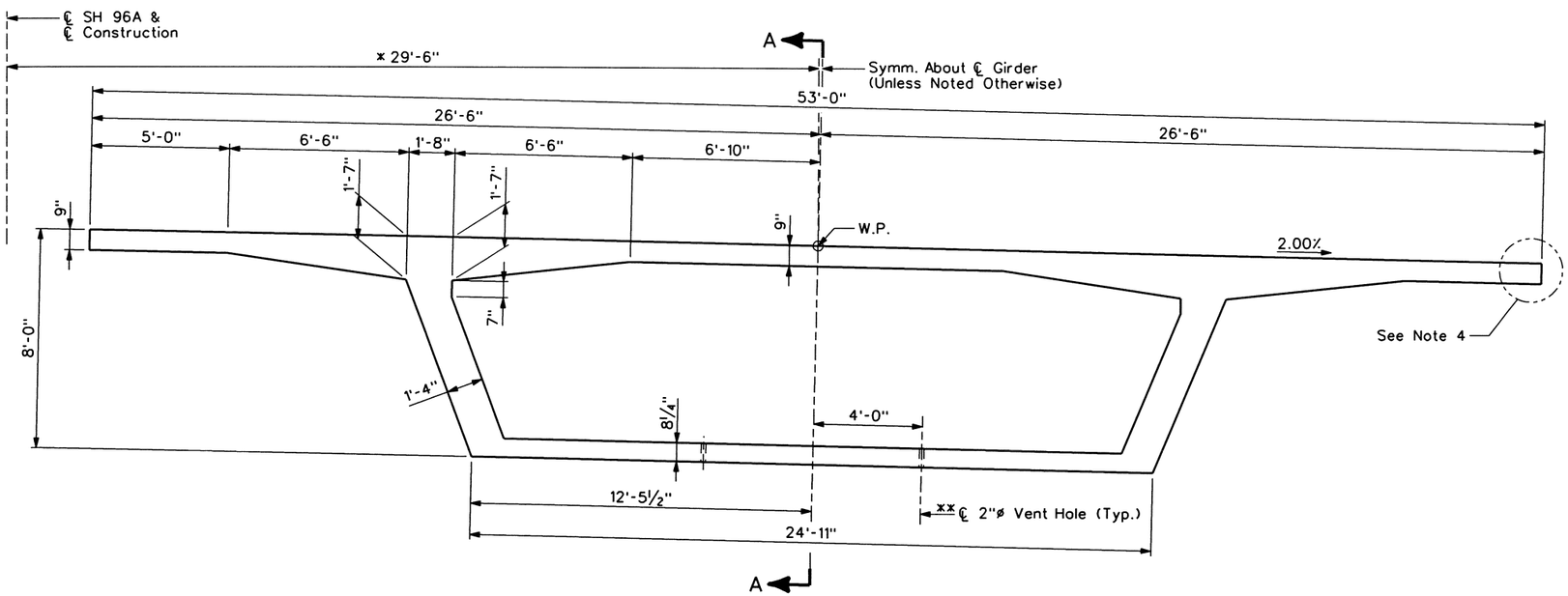
No Revisions:
Revised:
Void:

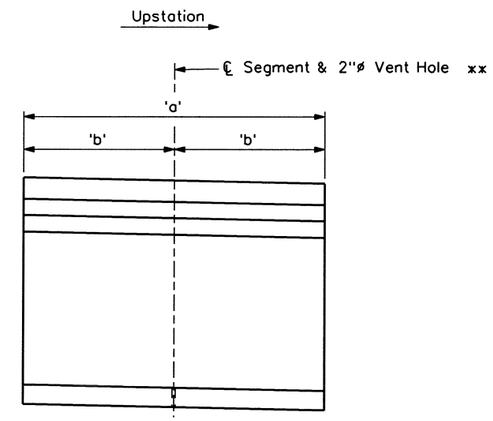
CONSTANT DEPTH SEGMENT DIMENSIONS

Designer: K. McLaughlin
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B56 of B169

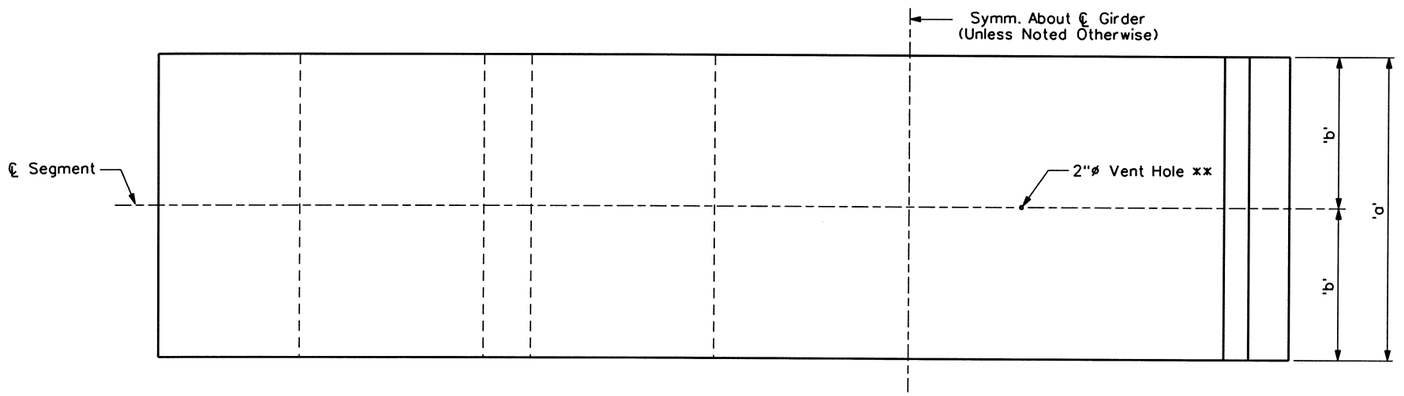
Project No./Code
BR 0961-008
13141
Sheet Number 153



CROSS SECTION
(Looking Upstation - Eastbound Shown)



SECTION A-A



HALF PLAN - TOP SLAB

HALF PLAN - BOTTOM SLAB

VARIABLE DIMENSIONS		
Closure Segment	'a'	'b'
WB Span 2	5'-0"	2'-6"
WB Span 3	10'-3 3/8"	5'-1 9/16"
WB Span 4	5'-0"	2'-6"
EB Span 2	5'-0"	2'-6"
EB Span 3	8'-6 1/4"	4'-3 1/8"
EB Span 4	5'-0"	2'-6"

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. Longitudinal dimensions are measured true horizontal along ℄ Girder.
2. * Measured along true horizontal.
3. ** Vent Hole located only in Closure Segments WB Span 3 and EB Span 3.
4. Roughen vertical face minimum 1/4" amplitude on pedestrian curb side only.

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Closure_Seg_Dims.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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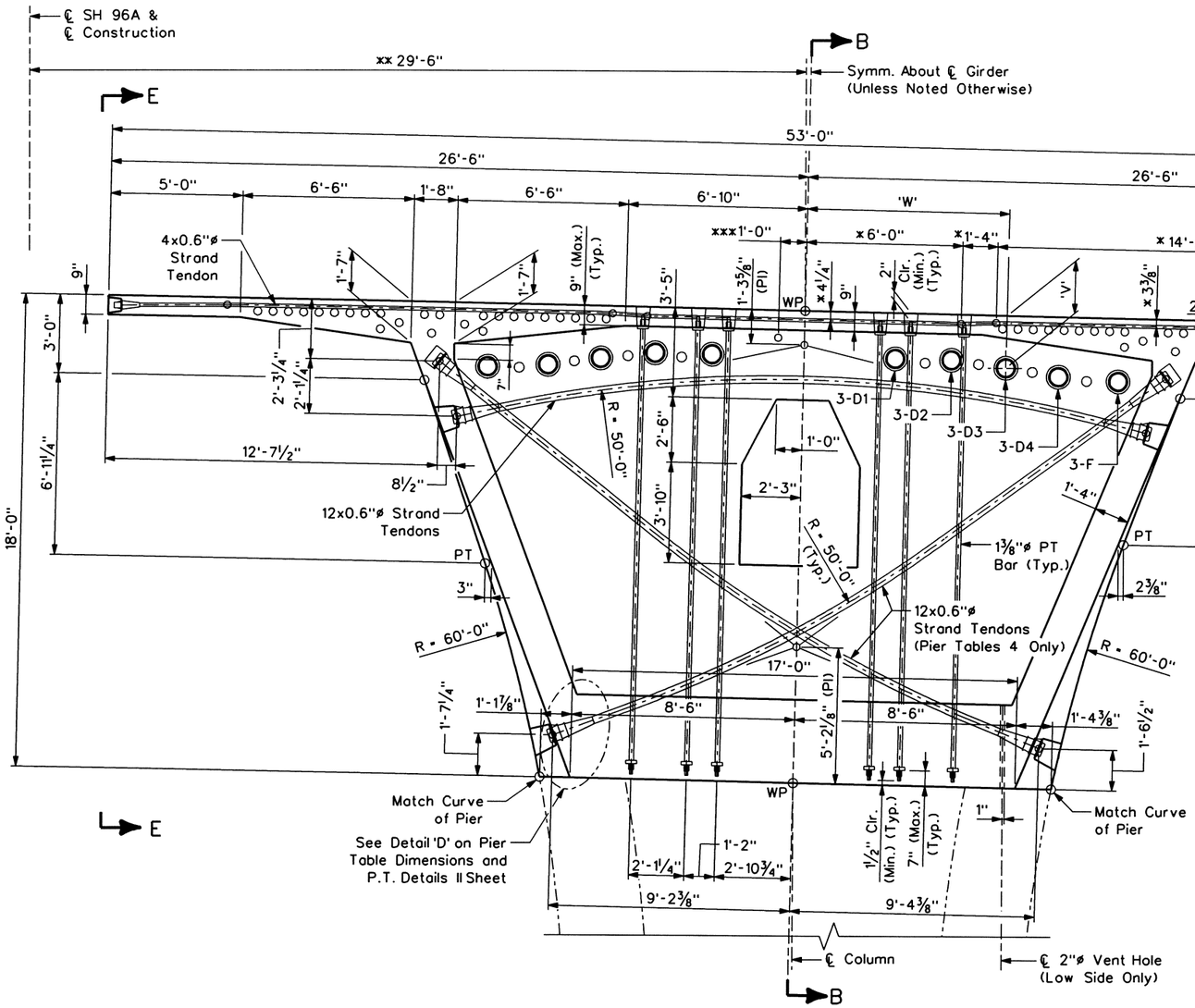
CLOSURE SEGMENT DIMENSIONS

Designer: K. McLaughlin
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B59 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 156

VARIABLE DRAPED POST-TENSIONING DIMENSIONS					
	Anchor and P.I.			Anchor and P.I.	
Tendon	'W'	'V'	Tendon	'W'	'V'
3-D1	3'-6"	1'-9"	2-D1 or 4-D1	4'-7½"	1'-9"
3-D2	5'-8"	1'-9"	2-D2 or 4-D2	6'-8½"	1'-9"
3-D3	7'-9"	2'-0"	2-D3 or 4-D3	8'-9½"	2'-0"
3-D4	9'-9"	2'-3½"	--	--	--
3-F	12'-0½"	2'-5"	2-F or 4-F	10'-11"	2'-3½"

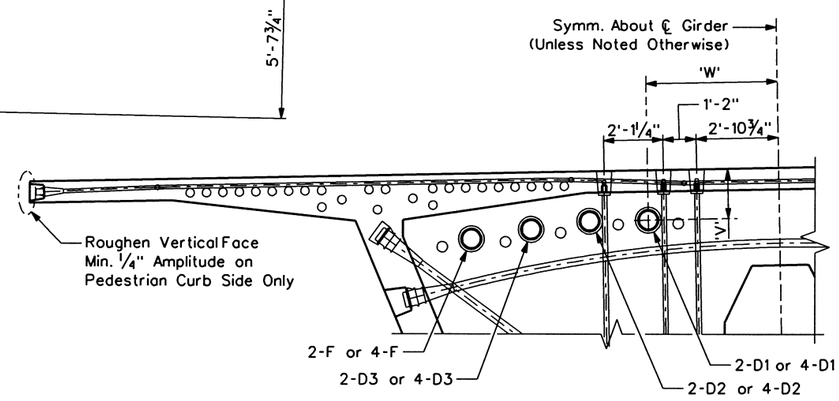


SECTION A-A

xxx ℄ 3"ø Hole for Electrical Conduit

PRELIMINARY

NOT FOR CONSTRUCTION



PARTIAL SECTION C-C

PIER TABLE 3 STRESSING SEQUENCE

1. Transverse 4x0.6" diameter strand tendons in the top slab.
2. Transverse 12x0.6" diameter strand tendons above the diaphragm opening.

PIER TABLE 4 STRESSING SEQUENCE

1. Transverse 4x0.6" diameter strand tendons in the top slab.
2. Diagonal 12x0.6" diameter strand tendons within the diaphragm.
3. Transverse 12x0.6" diameter strand tendons above the diaphragm opening.

NOTES:

1. For notes, see Pier Table Dimensions and P.T. Details II sheet.

Design	INITIAL	DATE
Designed By	EEA	12/06
Checked By	BTL	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	EEA	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Pier_Table_Dims_&_PT_I.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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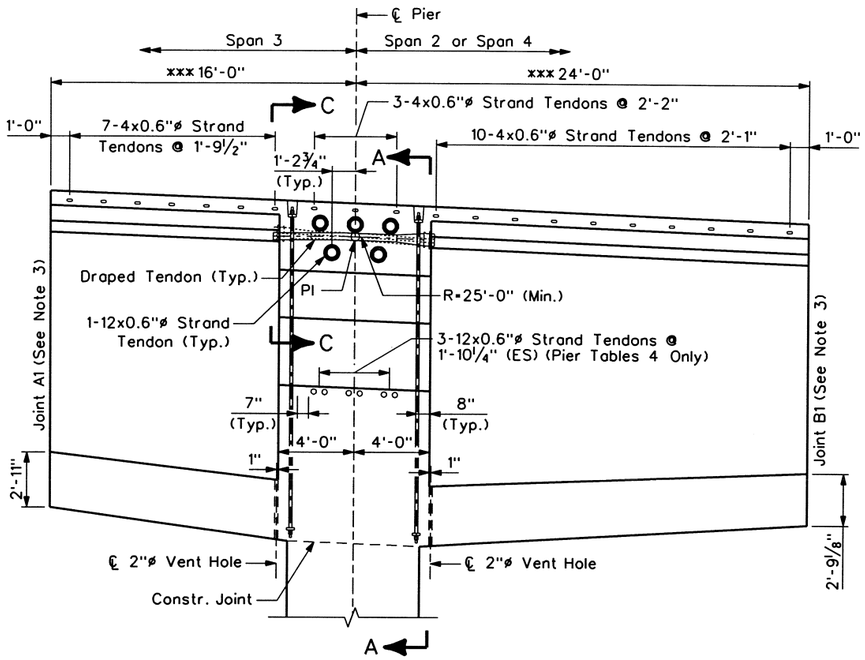
Void:	

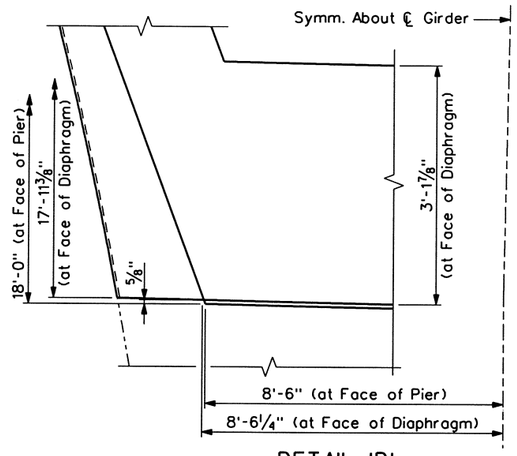
PIER TABLE DIMENSIONS AND P.T. DETAILS I			
Designer: E. Adams	Structure Numbers	K-18-GS (EB)	
Detailer: D. Anderson		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B63 of B169		

Project No./Code	
BR 0961-008	
13141	
Sheet Number	160



SECTION B-B

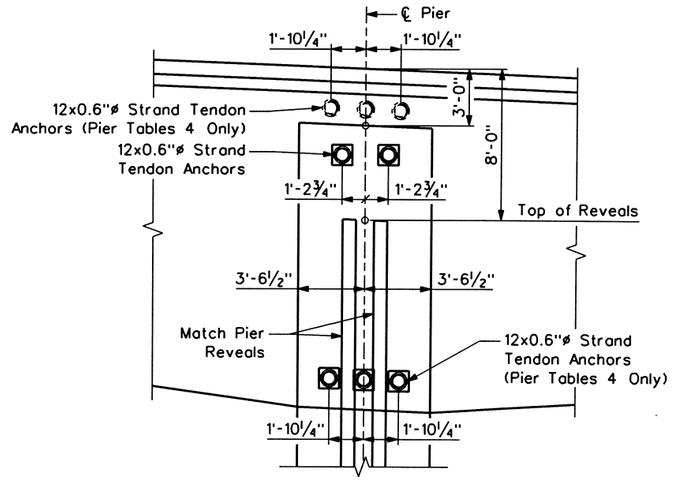
xxx Measure True Horizontal Along ℄ Girder



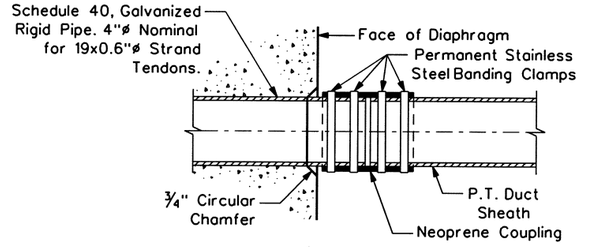
DETAIL 'D'

PRELIMINARY

NOT FOR CONSTRUCTION



VIEW E-E



P.T. DUCT CONNECTION DETAIL

NOTES:

xx1. Measured along true horizontal.

2. Pier table cross-section shall follow the curve defined by ℄ Girder with chords of not greater than 16'-0" along ℄ Girder.

3. See Variable Depth Segment Dimensions sheet for section dimensions at joints A1 and B1.

x4. Dimensions shown are for profile of transverse 4x0.6" diameter strand tendons in pier table diaphragms only. Vertical dimensions are to ℄ duct. For transverse 4x0.6" diameter strand tendon profiles within the pier tables, but outside the diaphragms, see Transverse Post-Tensioning Details sheet.

5. Stress all 4x0.6" diameter strand tendons to a force of 176 kips after the concrete reaches a minimum compressive strength of 4000 psi. Tendons shall be stressed from alternating ends and prior to lowering any formwork.

6. The 4x0.6" diameter strand tendons shall be stressed, grouted, and have blockouts poured back prior to stressing any longitudinal tendons.

7. For transverse post-tensioning local zone anchorage reinforcing, see Transverse Post-Tensioning Details sheet.

8. For transverse post-tensioning quantities, see Pier Table Reinforcing V sheet.

9. All draped tendons, including the future tendons are 19x0.6" diameter strand tendons.

10. For additional longitudinal post-tensioning details and for locations of cantilever tendons, see Longitudinal Post-Tensioning Layout sheets and Bulkhead Details sheet.

11. For longitudinal post-tensioning quantities, cantilever tendon post-tensioning quantities, and local zone anchorage reinforcing, see Longitudinal P.T. Quantities and Stressing Schedule sheets.

12. The anchorage hardware, local zone reinforcing, and rigid pipe duct shall be installed for the future tendons. Future tendons are not installed. For treatment of empty future tendon anchorages, see Post-Tensioning Grouting And Anchorage Protection Details sheet.

13. P.T. bars shall be stressed to obtain a force of 160 kips (min.) after seating. Force shall be verified with a lift-off.

14. All P.T. bars shall be stressed, grouted, and have blockouts poured back prior to stressing any longitudinal tendons.

15. Stress all 12x0.6" diameter strand tendons to a force of 527 kips after concrete reaches a minimum compressive strength of 4000 psi. Tendons shall be single end stressed from alternating sides.

16. Attention is called to the fact that the upper non-stressing anchorages of the diagonal 12x0.6" diameter strand tendons are completely embedded in concrete and no blockouts will be allowed. Keeper plates or some other positive mechanical means shall be used to secure the tendon to non-stressing anchorages completely embedded in concrete without blockouts.

Design	INITIAL	DATE
Designed By	EEA	12/06
Checked By	BTL	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	EEA	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Pier_Table_Dims_&_PT_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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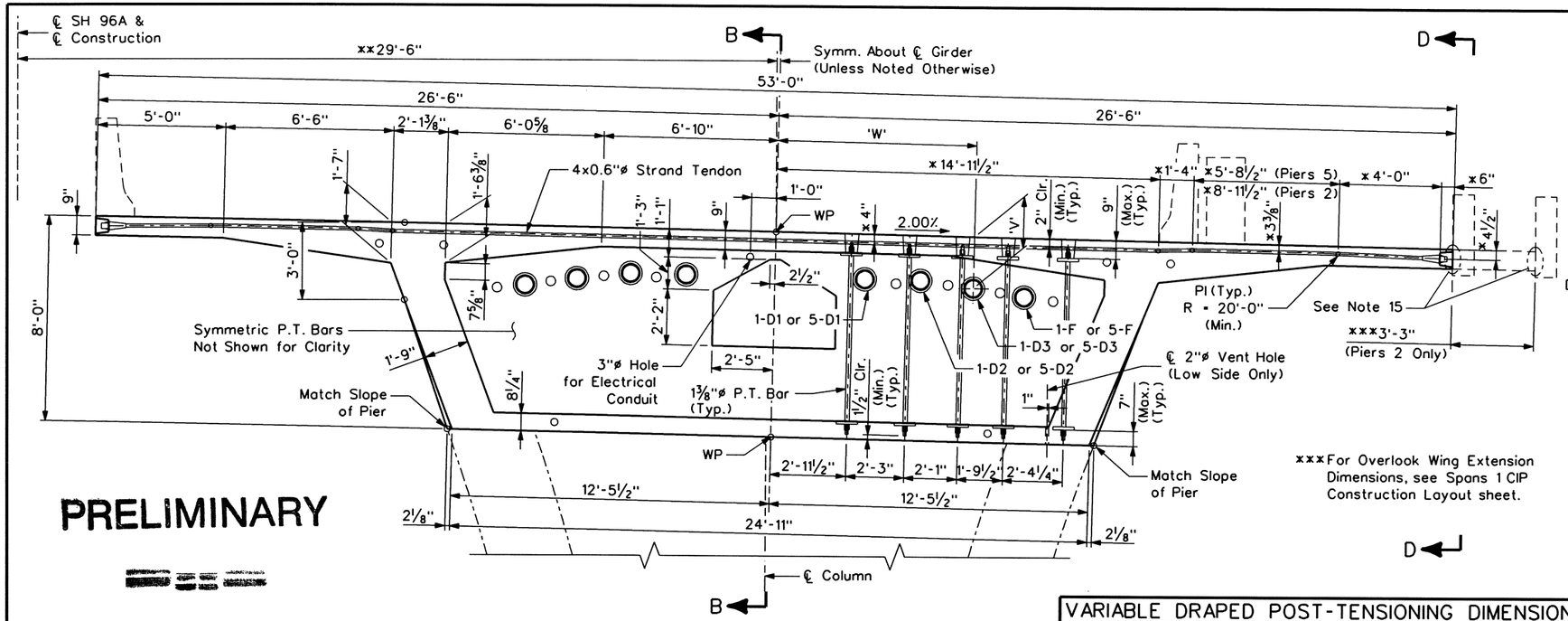
No Revisions:
Revised:
Void:

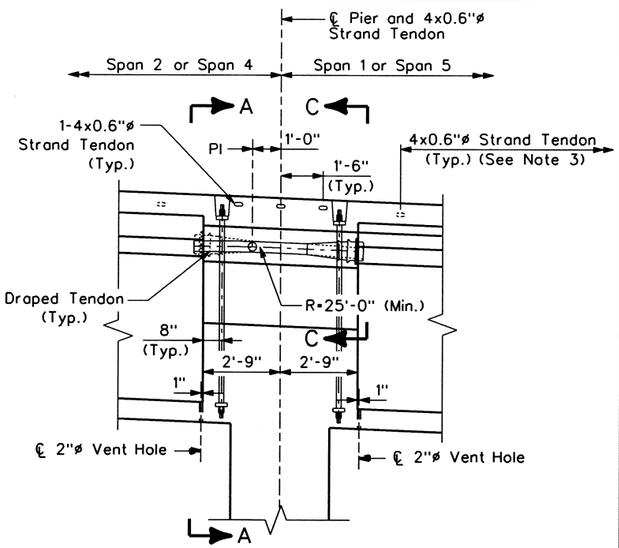
PIER TABLE DIMENSIONS AND P.T. DETAILS II

Designer: E. Adams
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B63 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 160



SECTION A-A

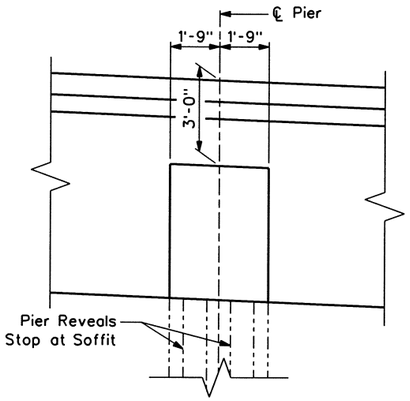


SECTION B-B

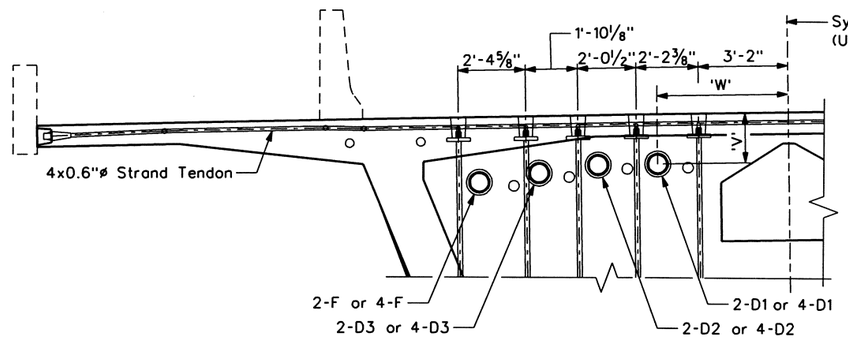
PRELIMINARY

NOT FOR CONSTRUCTION

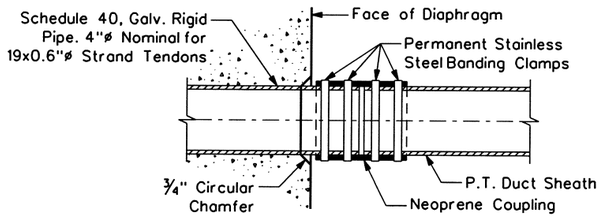
VARIABLE DRAPED POST-TENSIONING DIMENSIONS					
	Anchor and P.I.			Anchor and P.I.	
Tendon	'W'	'V'	Tendon	'W'	'V'
1-D1 or 5-D1	3'-6"	1'-9"	2-D1 or 4-D1	4'-7½"	1'-9"
1-D2 or 5-D2	5'-8"	1'-9"	2-D2 or 4-D2	6'-8½"	1'-9"
1-D3 or 5-D3	7'-9"	2'-0"	2-D3 or 4-D3	8'-9½"	2'-0"
1-F or 5-F	9'-9"	2'-3½"	2-F or 4-F	10'-11"	2'-3½"



VIEW D-D



PARTIAL SECTION C-C



P.T. DUCT CONNECTION DETAIL

NOTES:

××1. Measured along true horizontal.

2. Box girder cross-section shall follow the curve defined by ℄ Girder with chords of not greater than 16'-0" along ℄ Girder.

3. For spacing of transverse 4x0.6" diameter strand tendons in cast-in-place end spans, see Spans 1 C.I.P. Section Reinforcing I sheet and Spans 5 C.I.P. Section Reinforcing I sheet.

×4. Dimensions shown are for profile of transverse 4x0.6" diameter strand tendons in Piers 2 and 5 Diaphragm only. Vertical dimensions are to ℄ duct.

5. Stress all 4x0.6" diameter strand tendons to a force of 176 kips after the concrete reaches a minimum compressive strength of 4000 psi. Tendons shall be stressed from alternating ends and prior to lowering any formwork.

6. The 4x0.6" diameter strand tendons in Piers 2 and 5 Diapragm shall be stressed, grouted, and have blockouts poured back prior to stressing any longitudinal tendons.

7. For transverse post-tensioning local zone anchorage reinforcing, see Transverse Post-Tensioning Details sheet.

8. For transverse post-tensioning quantities, see Piers 2 and 5 Diaphragm Reinforcing III sheet.

9. All draped tendons, including the future tendons are 19x0.6" diameter strand tendons.

10. For additional longitudinal post-tensioning details, see Longitudinal Post-Tensioning Layout sheets and Bulkhead Details sheet.

11. For longitudinal post-tensioning quantities and local zone anchorage reinforcing, see Longitudinal P.T. Quantities and Stressing Schedule sheets.

12. The anchorage hardware, local zone reinforcing, and rigid pipe duct shall be installed for the future tendons. Future tendons are not installed. For treatment of empty future tendon anchorages, see Post-Tensioning Grouting and Anchorage Protection Details sheet.

13. P.T. bars shall be stressed to obtain a force of 160 kips (min.) after seating. Force shall be verified with a lift-off. P.T. bars shall be stressed after the concrete reaches a minimum compressive strength of 4000 psi.

14. All P.T. bars shall be stressed, grouted, and have blockouts poured back prior to stressing any longitudinal tendons.

15. Roughen vertical face minimum ¼" amplitude on pedestrian curb side only.

Design	INITIAL	DATE
Designed By	EEA	12/06
Checked By	BTL	12/06

Detail	INITIAL	DATE
Detailed By	KJM	12/06
Checked By	EEA	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Piers_2_&_5_Diaphragm_Dims_&_PT_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Pueblo, CO 81001
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Region 2 KSR

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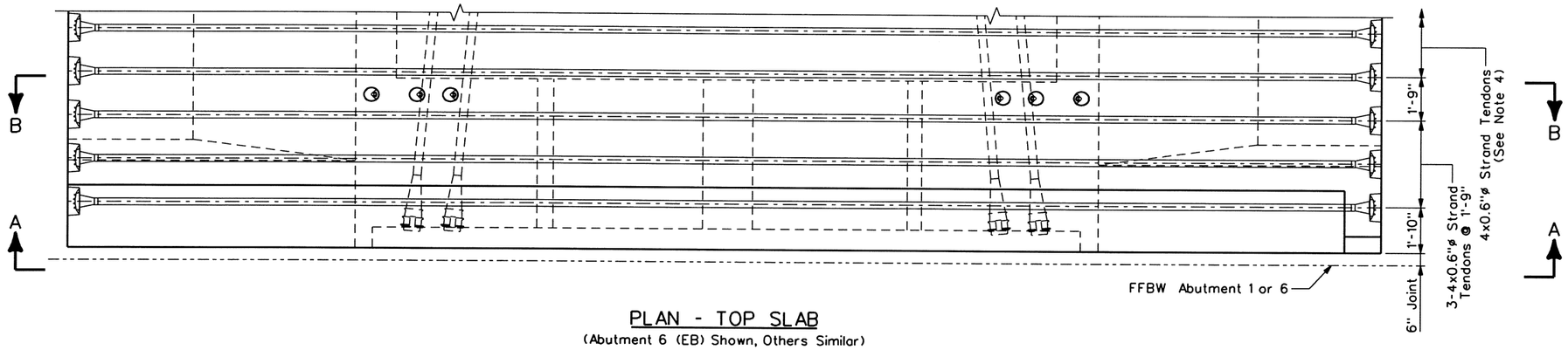
No Revisions:
Revised:
Void:

PIERS 2 AND 5 DIAPHRAGM DIMENSIONS AND P.T. DETAILS

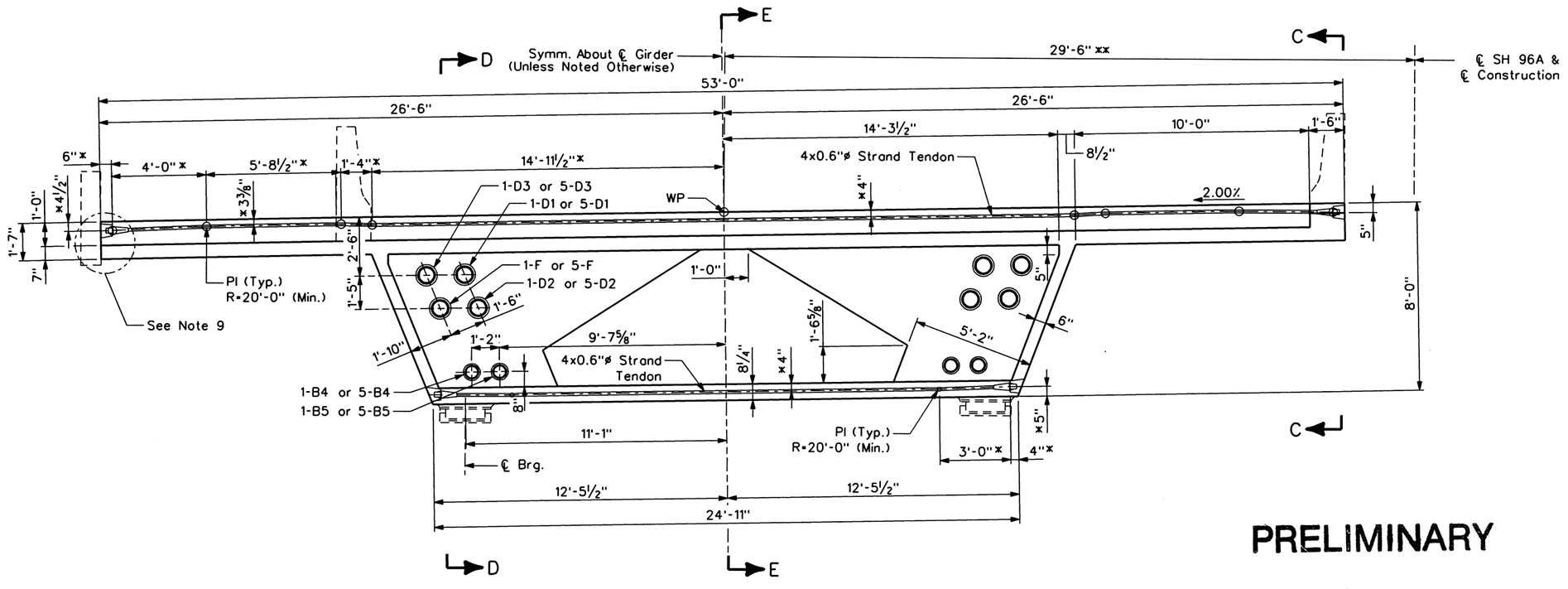
Designer: E. Adams
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B73 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 170



PLAN - TOP SLAB

(Abutment 6 (EB) Shown, Others Similar)



VIEW A-A - EXPANSION JOINT FACE

(Abutment 6 (EB) Shown, Looking Downstation)

NOTES:

1. For View C-C and Sections B-B, D-D, and E-E, see Abutment Diaphragm Dimensions and P.T. Details II sheet.

xx 2. Measured along true horizontal.

3. Box girder cross-section shall follow the curve defined by ℄ Girder with chords of not greater than 16'-0" along ℄ Girder.

4. For spacing of transverse 4x0.6" diameter strand tendons in cast-in-place end spans, see Spans 1 C.I.P. Section Reinforcing I sheet and Spans 5 C.I.P. Section Reinforcing I sheet.

x 5. Dimensions shown are for profile of transverse 4x0.6" diameter strand tendons in abutment diaphragm only. Vertical dimensions are to ℄ duct.

6. Stress all 4x0.6" diameter strand tendons not in the expansion joint blockout to a force of 176 kips after the concrete reaches a minimum compressive strength of 4000 psi. Tendons shall be stressed from alternating ends and prior to lowering any formwork.

7. The 4x0.6" diameter strand tendons not in the expansion joint blockout shall be stressed, grouted, and have blockouts poured back prior to stressing any longitudinal tendons.

8. The 4x0.6" diameter strand tendon in the expansion joint blockout shall be stressed to a force of 176 kips after installation of the modular joint. For additional details, see Expansion Joint Details sheets.

9. Roughen vertical face minimum ¼" amplitude on pestrian curb side only.

10. For transverse post-tensioning quantities, see Abutment Diaphragm Reinforcing IV sheet.

11. All draped tendons, including the future tendons are 19x0.6" diameter strand tendons. All bottom slab tendons are 12x0.6" diameter strand tendons.

12. For additional longitudinal post-tensioning details, see Longitudinal Post-Tensioning Layout sheets and Bulkhead Details sheet.

13. For longitudinal post-tensioning quantities and local zone anchorage reinforcing, see Longitudinal P.T. Quantities and Stressing Schedule sheets.

14. The anchorage hardware, local zone reinforcing, and rigid pipe duct shall be installed for the future tendons. Future tendons are not installed. For treatment of empty future tendon anchorages, see Post-Tensioning Grouting and Anchorage Protection Details sheet.

PRELIMINARY

NOT FOR CONSTRUCTION

Design	INITIAL	DATE
Designed By	KAM	12/06
Checked By	BTL	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	KAM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006

Drawing File Name: 13141_Abut_Diaphragm_Dims_&_PT_Details_I.dgn

Horiz. Scale: Vert. Scale:

Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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No Revisions:

Revised:

Void:

ABUTMENT DIAPHRAGM DIMENSIONS AND P.T. DETAILS I

Designer: K. McLaughlin

Detailer: D. Anderson

Sheet Subset: BRIDGE

Structure Numbers: K-18-GS (EB), K-18-GT (WB)

Subset Sheets: B80 of B169

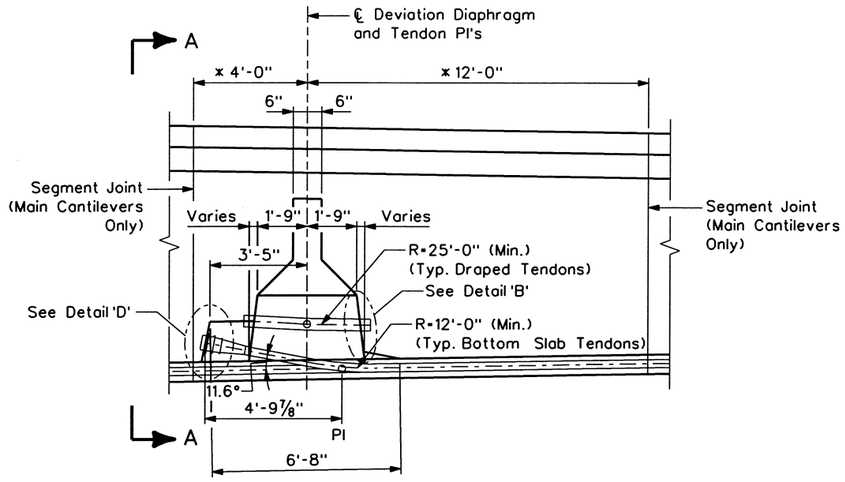
Project No./Code: BR 0961-008

13141

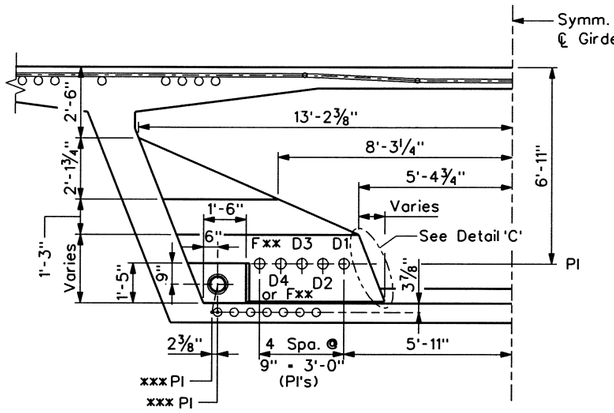
Sheet Number 177

PRELIMINARY

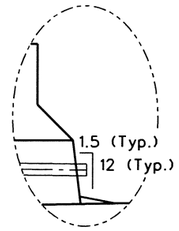
NOT FOR CONSTRUCTION



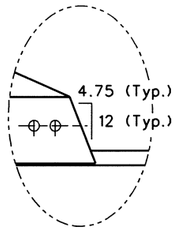
ELEVATION
(Type IB Shown, Type IA Similar)



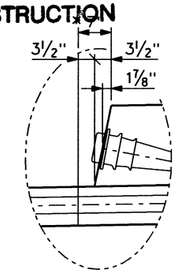
SECTION A-A
(Type IB Shown, Type IA Similar)



DETAIL 'B'



DETAIL 'C'



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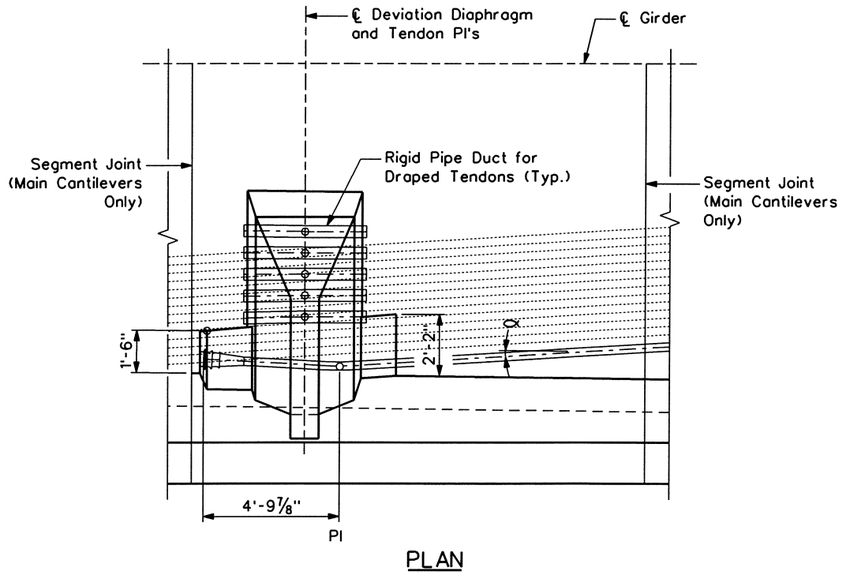
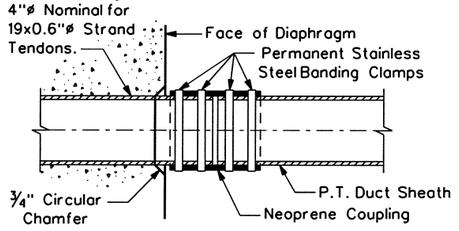


PLAN
(Type IB Shown, Type IA Similar)

Schedule 40,
Galvanized Rigid Pipe.
4"ø Nominal for
19x0.6"ø Strand
Tendons.



P.T. DUCT CONNECTION DETAIL

HORIZONTAL DEVIATION ANGLE	
Tendon	∝ xxxx
1-B1, 2-B1, 4-B1, 5-B1	0°
All Other Tendons	4.17°

xxxx ∝ is measured with respect to outside corner of bottom soffit.

NOTES:

1. Type I Deviation Diaphragm in main span cantilever segment shown. Dimensions shown are valid for deviation diaphragm in the main span cantilever segments and, unless otherwise noted, cast-in-place end spans. See Longitudinal Post-Tensioning Layout Sheets for segments with Type I Deviation Diaphragms.

x 2. Dimensions noted valid only for Type I Deviation Diaphragms in main span cantilever segments. See Post-Tensioning Layout Sheets for the locations of deviation diaphragms in the cast-in-place end spans.

3. All draped tendons, including the future tendons, are 19x0.6" diameter strand tendons. Minimum rigid duct radius shall be 25'-0" in the true 3D plane of the duct curve.

4. All bottom slab tendons are 12x0.6" diameter strand tendons. Minimum duct radius shall be 12'-0" in the true 3D plane of the duct curve.

5. The rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed.

6. See Longitudinal P.T. Quantities and Stressing Schedule Sheet for draped tendon post-tensioning quantities, bottom slab tendon post-tensioning quantities, and local zone anchorage reinforcing.

7. See Bulkhead Details and Post-Tensioning Layout Sheets for draped and bottom slab post-tensioning layouts and additional details for bottom slab tendons.

xxx 8. See Longitudinal Post-Tensioning Layout sheets for tendon PI locations. PI location valid for Tendons 1-B1, 2-B1, 4-B1, and 5-B1 (EB and WB).

xx 9. Tendons in Span 3 are D1, D2, D3, D4 and F from centerline girder outwards. Tendons in Spans 1, 2, 4 and 5 are D1, D2, D3 and F from centerline girder outwards.

Design	INITIAL	DATE
Designed By	JDS	12/06
Checked By	DAT	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	JDS	12/06

Quantities	INITIAL	DATE
Quantities By	JDS	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Deviation_DIA_Type1_Dims_&_PT_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Region 2 KSR

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No Revisions:
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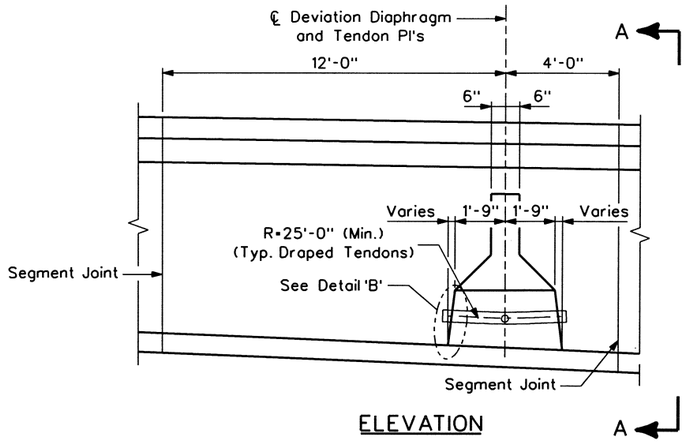
Void:

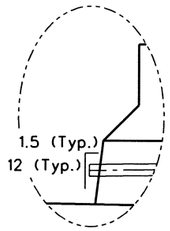
DEVIATION DIAPHRAGM TYPE I DIMENSIONS AND P.T. DETAILS

Designer: J. Stauffer
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B89 of B169

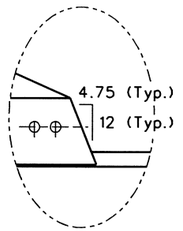
Project No./Code: BR 0961-008
13141
Sheet Number 186



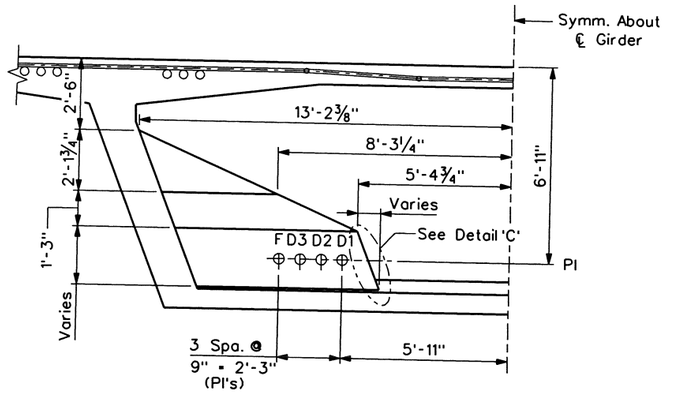
ELEVATION



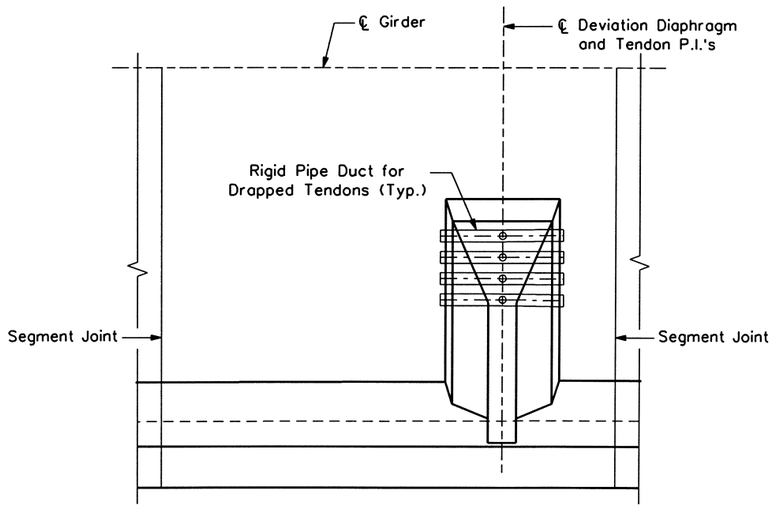
DETAIL 'B'



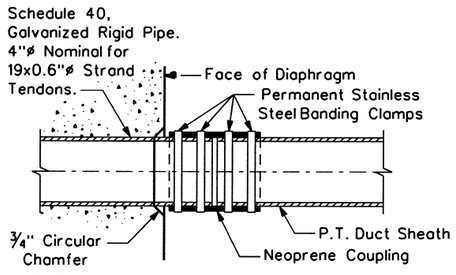
DETAIL 'C'



SECTION A-A



PLAN



P.T. DUCT CONNECTION DETAIL

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. See Post-Tensioning Layout Sheets for segments with Type II Deviation Diaphragms.
2. All draped tendons including the future tendons are 19x0.6" diameter strand tendons. Minimum rigid duct radius shall be 25'-0" in the true 3D plane of the duct curve.
3. The rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed.
4. See Longitudinal P.T. Quantities and Stressing Schedule Sheet for draped tendon post-tensioning quantities.

Design	INITIAL	DATE
Designed By	JDS	12/06
Checked By	DAT	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	JDS	12/06

Quantities	INITIAL	DATE
Quantities By	JDS	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Deviation_DIA_Type2_Dims_&_PT_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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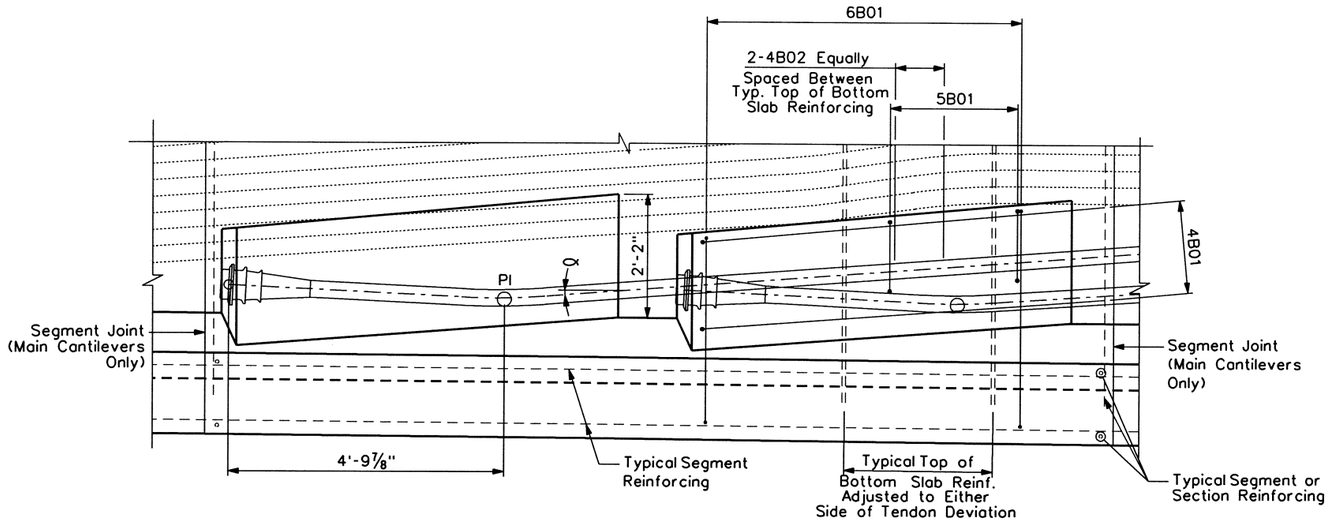
No Revisions:
Revised:
Void:

DEVIATION DIAPHRAGM TYPE II DIMENSIONS AND P.T. DETAILS

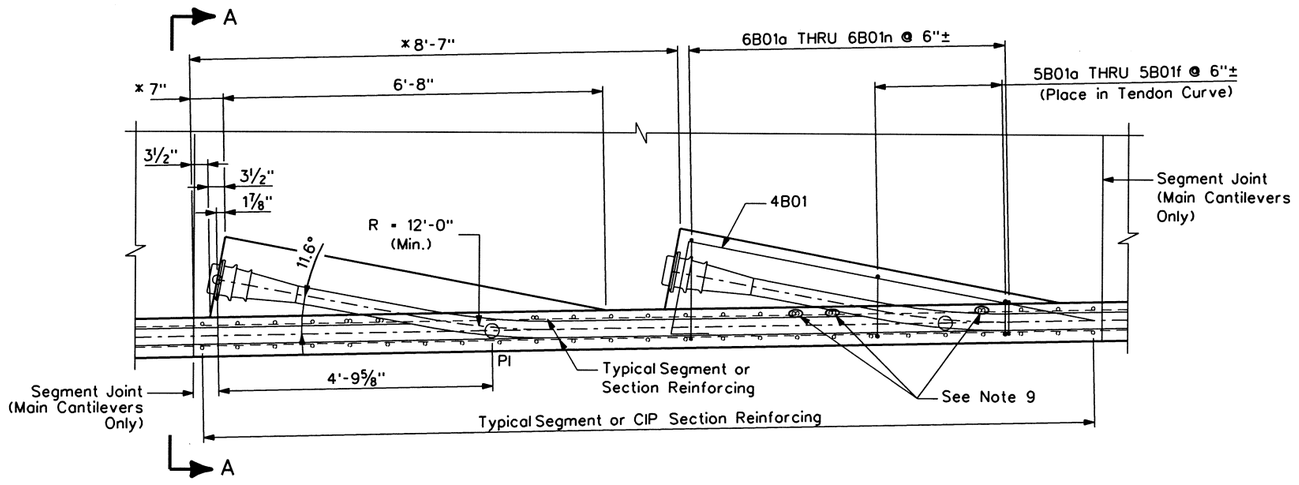
Designer: J. Stauffer
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B93 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 190



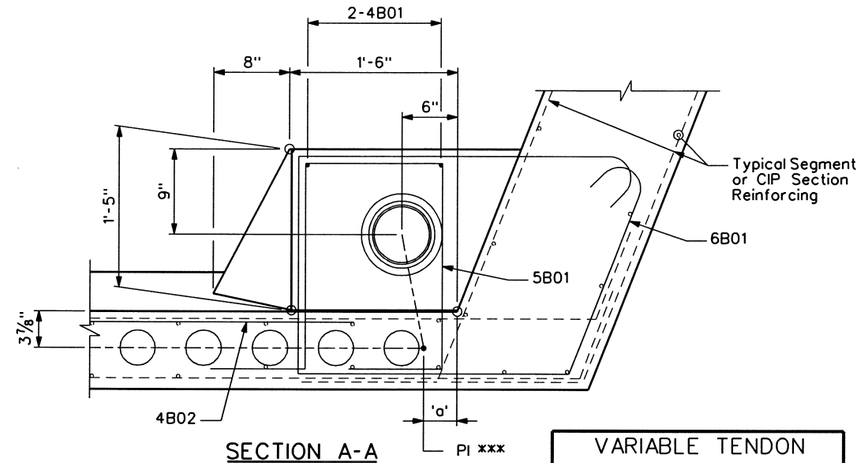
BLOCK DIMENSIONS SHOWN BLOCK REINFORCING SHOWN

PLAN
(Dimensions Measured Along Bottom Slab)



BLOCK DIMENSIONS SHOWN BLOCK REINFORCING SHOWN

ELEVATION
(All Dimensions Measured Along Bottom Slab)



SECTION A-A
(Only Front Anchor Block Shown for Clarity)

VARIABLE TENDON GEOMETRY		
Tendon	'a'	∝ **
1-B3	6"	0°
3-B1	6"	0°
1-B5	3⅝"	4.00°
2-B1	4⅜"	0°
4-B1 (EB)	4⅞"	0°
4-B1 (WB)	4⅛"	0°
All Others	3⅝"	4.17°

** ∝ is Measured With Respect to Outside Corner of Bottom Soffit

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. Anchor block in main cantilever segment shown. Dimensions shown are valid for anchor blocks in the main cantilever segments and, unless noted otherwise, cast-in-place end spans.
2. Segment with two anchor blocks shown. See Post-Tensioning Layout Sheets for which segments have Type I Anchor Blocks, whether one or two anchor blocks are present in a segment and the locations of anchor blocks in the cast-in-place end spans. Segments with thickened webs have anchor block types 1B through 1E. All other anchor blocks are type 1A.
* 3. Dimensions noted valid for anchor blocks in main cantilever segments only. See Post-Tensioning Layout Sheets for the locations of anchor blocks in the cast-in-place end spans.
4. All bottom slab tendons are 12 x 0.6" diameter strand tendons. Minimum duct radius shall be 12'-0" in the true 3D plane of the duct curve.
5. See Bulkhead Details and Post-Tensioning Layout Sheets for bottom slab post-tensioning layout and additional details for bottom slab tendons.
6. See Longitudinal P.T. Quantities and Stressing Schedule Sheet for bottom slab post-tensioning quantities and local zone ancorage reinforcing.
7. Concrete for anchor blocks shall be Class S40, 5,800 psi strength.
8. Concrete cover shall be 1½". Reinforcing for anchor blocks shall be epoxy coated.
9. Move a maximum of 3 top of bottom slab bars to avoid tendon deviation. Bundle with bars to either side. Space remaining reinforcing to avoid tendon deviation.

	INITIAL	DATE
Quantities	JDS	12/06
Quantities By	DAT	12/06
Checked By		
Detail	INITIAL	DATE
	RJA	12/06
Detailed By	JDS	12/06
Checked By		
Design	INITIAL	DATE
	JDS	12/06
Designed By	DAT	12/06
Checked By		

Print Date: 12/12/2006
Drawing File Name: 13141_BTM_SLAB_ANCHOR_TYPE1_Dims_&_Reinf_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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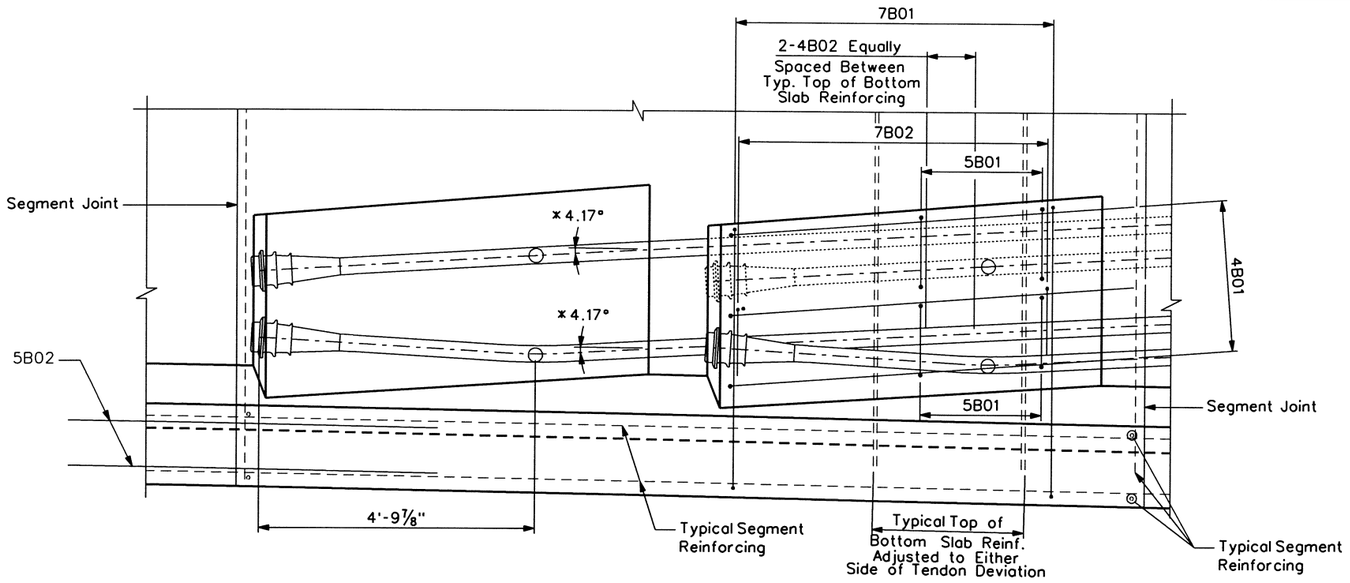
No Revisions:
Revised:
Void:

BOTTOM SLAB ANCHOR BLOCK TYPE I DIMENSIONS AND REINFORCING I

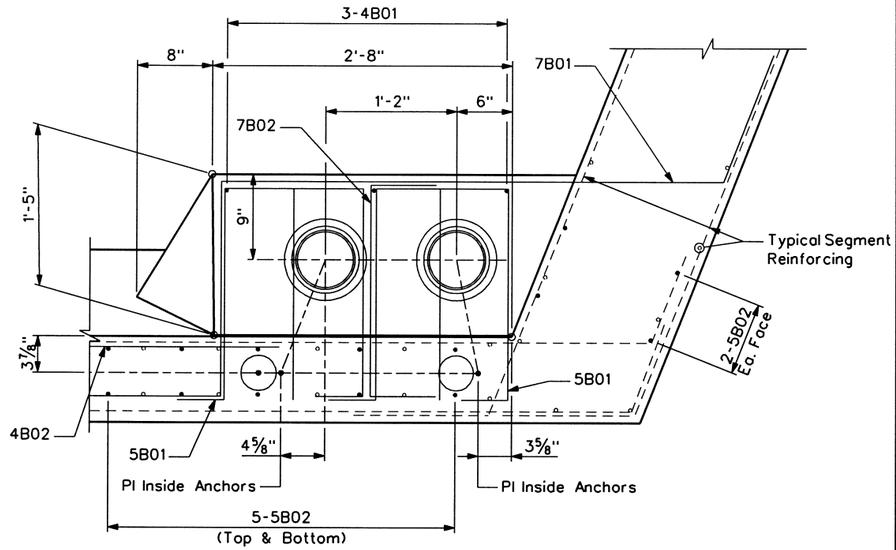
Designer:	J. Stauffer	Structure Numbers	K-18-GS (EB)
Detailer:	R. Adams		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B98 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 195



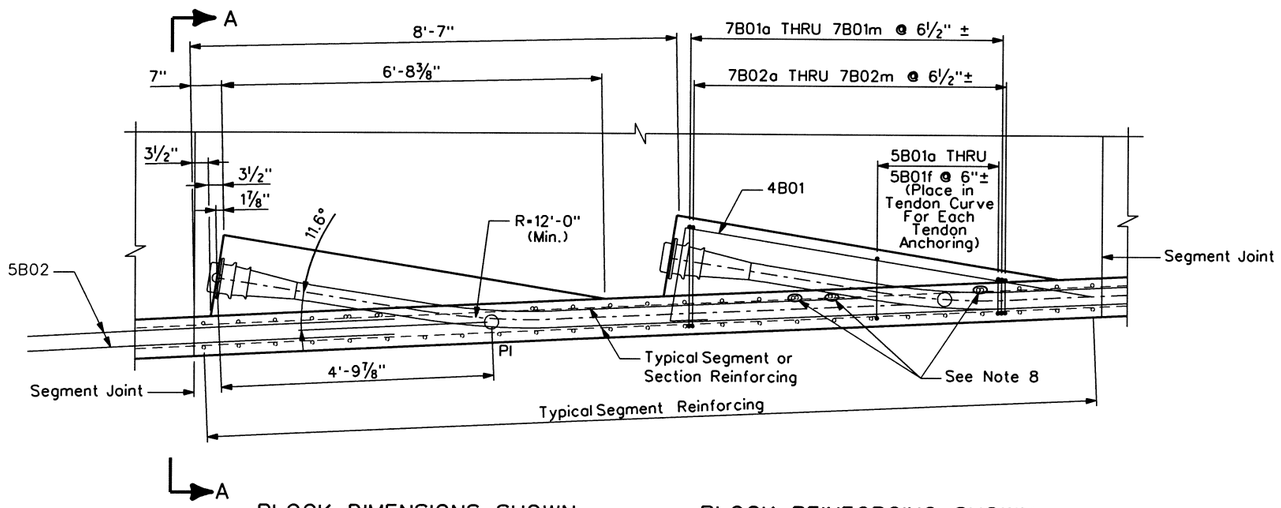
BLOCK DIMENSIONS SHOWN BLOCK REINFORCING SHOWN

PLAN
(Dimensions Measured Along Bottom Slab)



SECTION A-A
(Only Front Anchor Block Shown for Claity)

PRELIMINARY



BLOCK DIMENSIONS SHOWN BLOCK REINFORCING SHOWN

ELEVATION
(All Dimensions Measured Along Bottom Slab)

NOTES:

NOT FOR CONSTRUCTION

1. Segment with two anchor blocks shown. See Longitudinal Post-Tensioning Layout Sheets for which segments have Type II Anchor Blocks and whether one or two anchor blocks are present in a segment.
2. All bottom slab tendons are 12x0.6" diameter strand tendons. Minimum duct radius shall be 12'-0" in the true 3D plane of the duct curve.
3. See Bulkhead Details and Post-Tensioning Layout Sheets for bottom slab post-tensioning layout and additional details for bottom slab tendons.
4. See Longitudinal P.T. Quantities and Stressing Schedule Sheet for bottom slab tendon post-tensioning quantities and local zone anchorage reinforcing.
5. Concrete for anchor blocks shall be Class S40, 5,800 psi strength.
6. Concrete cover shall be 1½". Reinforcing for anchor blocks shall be epoxy coated.

* 7. Measured with respect to outside corner of bottom soffit.

8. Move a maximum of 3 top of bottom slab bars to avoid tendon deviation. Bundle with bars to either side. Space remaining reinforcing to avoid tendon deviation.

Design	INITIAL	DATE
Designed By	JDS	12/06
Checked By	DAT	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	JDS	12/06

Quantities	INITIAL	DATE
Quantities By	JDS	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_BTM_SLAB_ANCHOR_TYPE2_Dims_&_Reinf_I.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

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Region 2 KSR

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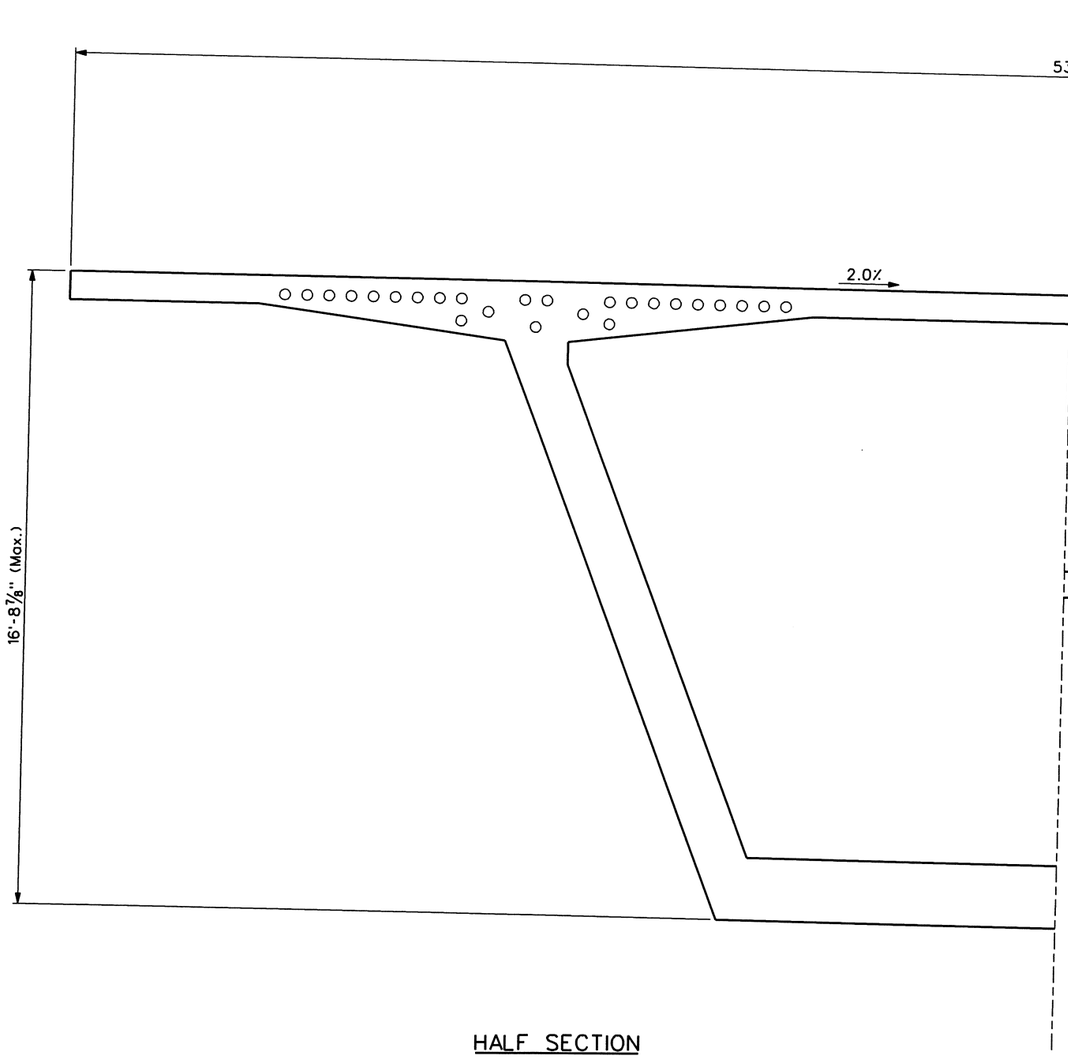
No Revisions:
Revised:
Void:

BOTTOM SLAB ANCHOR BLOCK TYPE II DIMENSIONS AND REINFORCING I

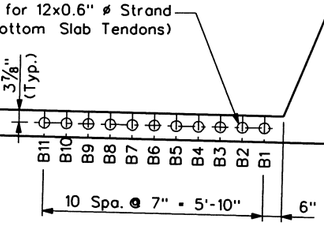
Designer:	J. Stauffer	Structure Numbers	K-18-GS (EB)
Detailer:	R. Adams		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B100 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 197



HALF SECTION

(Looking Upstation, Eastbound Shown
Westbound Opposite Hand)



HALF SECTION

(Looking Upstation, Eastbound Shown
Westbound Opposite Hand)

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. See Variable Depth, Constant Depth, or Closure Joint Segment Dimensions sheets for segment dimensions,
2. See Longitudinal Post-Tensioning Layout and Longitudinal Post-Tensioning Details sheets for P.T. details.

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	RKM	12/06	Detailed By	DRA	12/06	Quantities By	KAM	12/06
Checked By	KAM	12/06	Checked By	KAM	12/06	Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Bulkhead_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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No Revisions:
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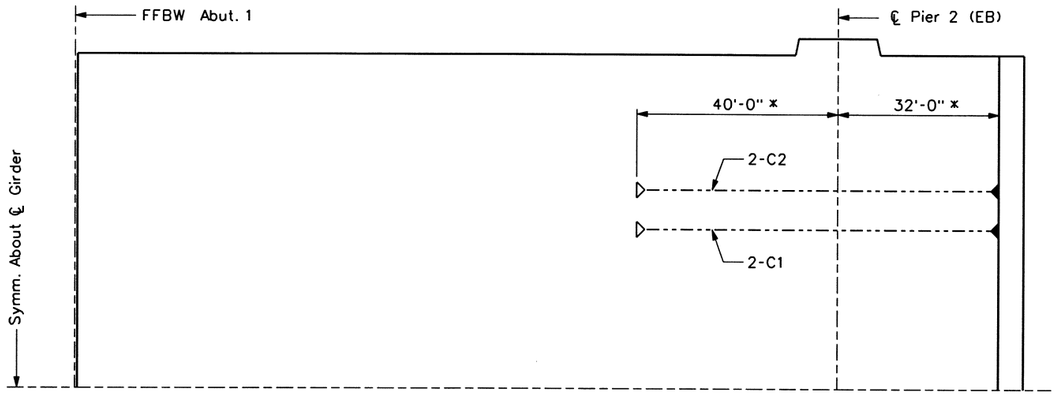
BULKHEAD DETAILS

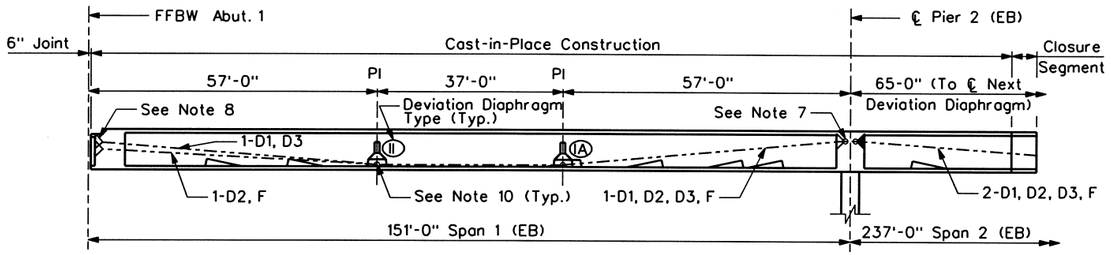
Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE

Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B103 of B169

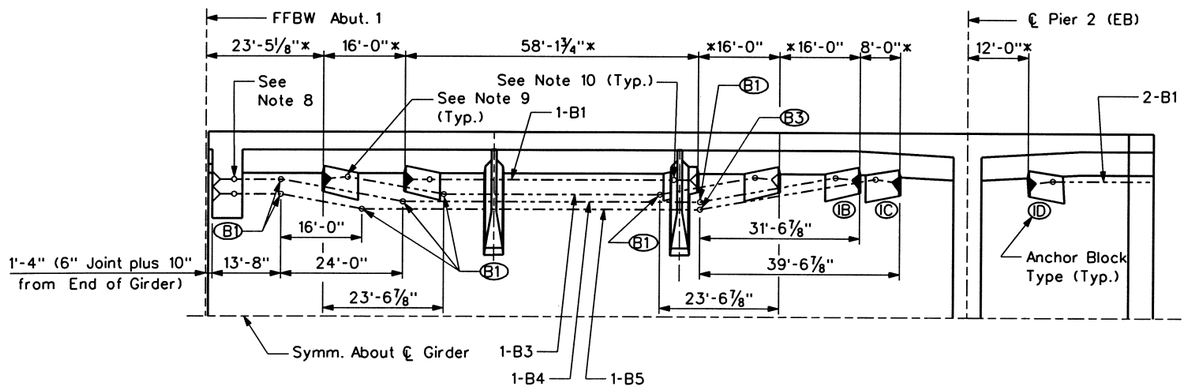
Project No./Code
BR 0961-008
13141
Sheet Number 200



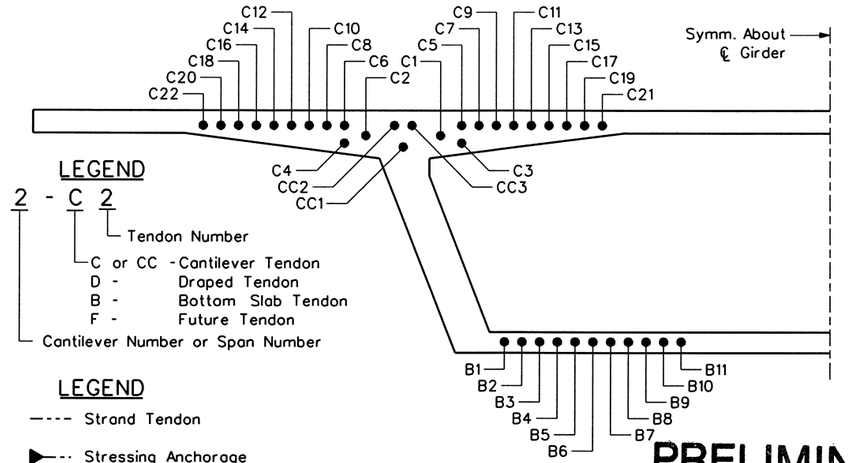
SPAN 1 (EB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS
(Scale Transversely Exaggerated)



SPAN 1 (EB) ELEVATION - DRAPED TENDONS



SPAN 1 (EB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS
(Scale Transversely Exaggerated)



LEGEND

2 - C 2
- 2 — Cantilever Number or Span Number
- C or CC — Cantilever Tendon
- D — Draped Tendon
- B — Bottom Slab Tendon
- F — Future Tendon
- 2 — Tendon Number

LEGEND

- Strand Tendon
- Stressing Anchorage
- Non-Stressing Anchorage
- (C2) Deviation Type

DUCT LOCATIONS

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. All cantilever and bottom slab tendons are 12 x 0.6" diameter strand tendons. All draped and future tendons are 19 x 0.6" diameter strand tendons.
2. The anchorage hardware, local zone reinforcing and rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed. See Post-Tensioning Grouting and Anchorage Protection Details sheet for treatment of empty future tendon anchorages at abutment diaphragms.
3. Tendon numbers reflect the duct location a given tendon runs through in the central non-deviating length of the tendon.
4. Unless noted by deviation type, tendons run straight between bulkhead duct locations.
5. All dimensions are true horizontal measured along Centerline Girder.
6. ± Dimensions noted are to the centerline of the tendon at the face of the anchor.
7. For tendon deviations and anchorage locations in pier table, or Piers 2 and 5, diaphragms, see Pier Table Dimensions and P.T. Details and Piers 2 and 5 Diaphragm Dimensions and P.T. Details sheets.
8. For tendon deviations and anchorage locations in abutment diaphragm, see Abutment Diaphragm Dimensions and P.T. Details sheets.
9. For tendon deviations and anchorage details in bottom slab anchor blocks, see Bottom Slab Anchor Block Type I and II Dimensions and Reinforcing sheets.
10. For tendon deviations and anchorage details in deviation diaphragms, see Deviation Diaphragm Type I and II Dimensions and P.T. Details sheets.
11. For tendon deviations noted by deviation types, see Longitudinal Post-Tensioning Details sheets.
12. For longitudinal post-tensioning quantities and stressing forces, see Longitudinal P.T. Quantities and Stressing Schedule sheets.
13. For stressing sequence during erection, see Superstructure Construction Schematic sheets.

Design	INITIAL	DATE	
Designed By	RKM	12/06	
Checked By	EEA	12/06	
Detail	INITIAL	DATE	
Detailed By	SJF	12/06	
Checked By	EEA	12/06	
Quantities	INITIAL	DATE	
Quantities By	EEA	12/06	
Checked By	DAT	12/06	

Print Date: 12/12/2006		Sheet Revisions	
Drawing File Name: 13141_Long_PT-Layout_1.dgn		Date:	Comments / Init.
Horiz. Scale: Vert. Scale:	R-X		
Unit Information Unit Leader Initials			

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DEPARTMENT OF TRANSPORTATION
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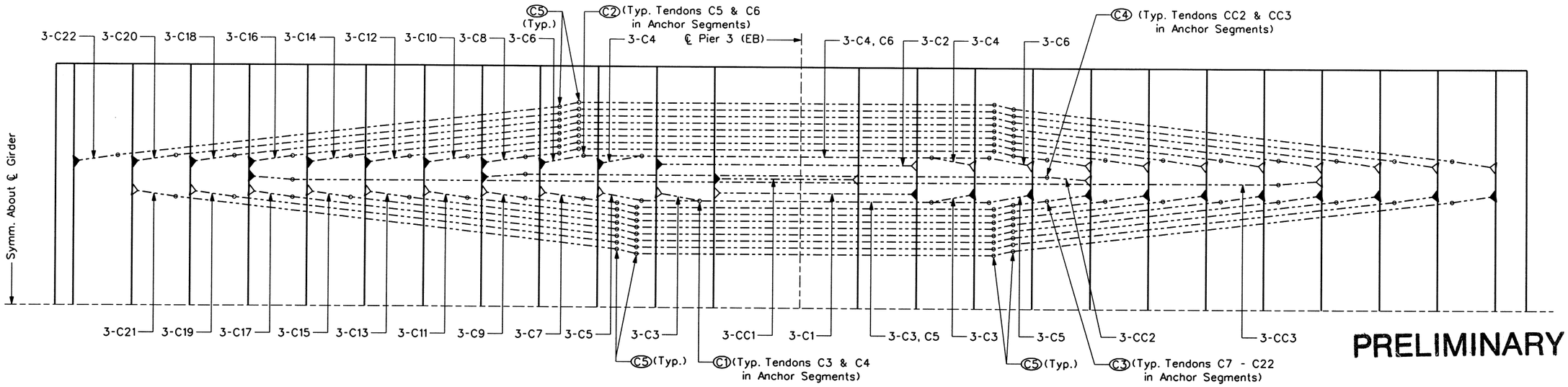
Region 2 KSR

As Constructed	
No Revisions:	
Revised:	
Void:	

LONGITUDINAL POST-TENSIONING LAYOUT 1

Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: S. Fall		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B105 of B169		

Project No./Code	BR 0961-008
	13141
Sheet Number	202

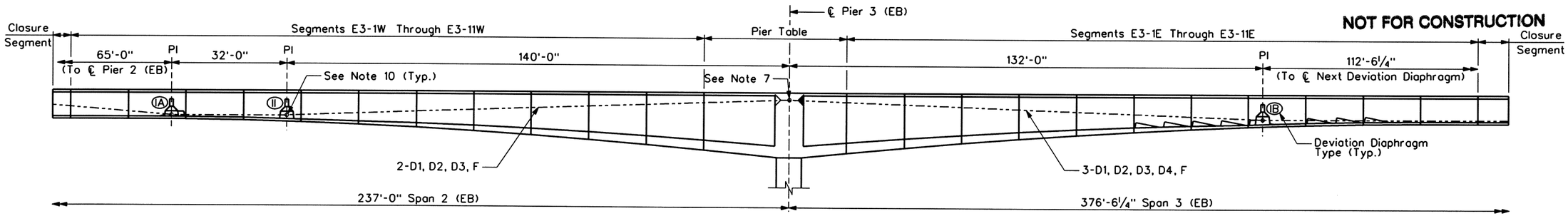


PRELIMINARY

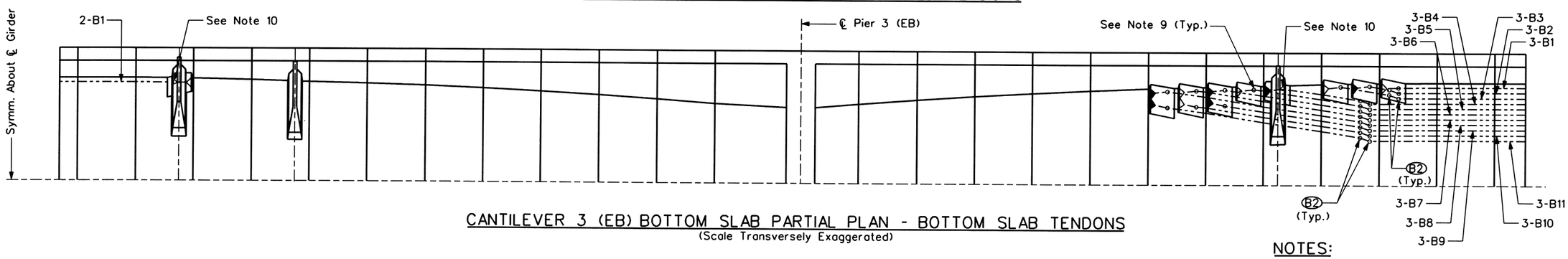
CANTILEVER 3 (EB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS

(Scale Transversely Exaggerated)

NOT FOR CONSTRUCTION



CANTILEVER 3 (EB) ELEVATION - DRAPED TENDONS



CANTILEVER 3 (EB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS

(Scale Transversely Exaggerated)

NOTES:

1. For notes and legends, see Longitudinal Post-Tensioning Layout I and IV sheets.

Quantities	INITIAL	DATE
	EEA	12/06
Quantities By	DAT	
Checked By		

Detail	INITIAL	DATE
	SJF	12/06
Detailed By	EEA	
Checked By		

Design	INITIAL	DATE
	RKM	12/06
Designed By	EEA	
Checked By		

Print Date: 12/12/2006
Drawing File Name: 13141_Long_PT-Layout_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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No Revisions:
Revised:
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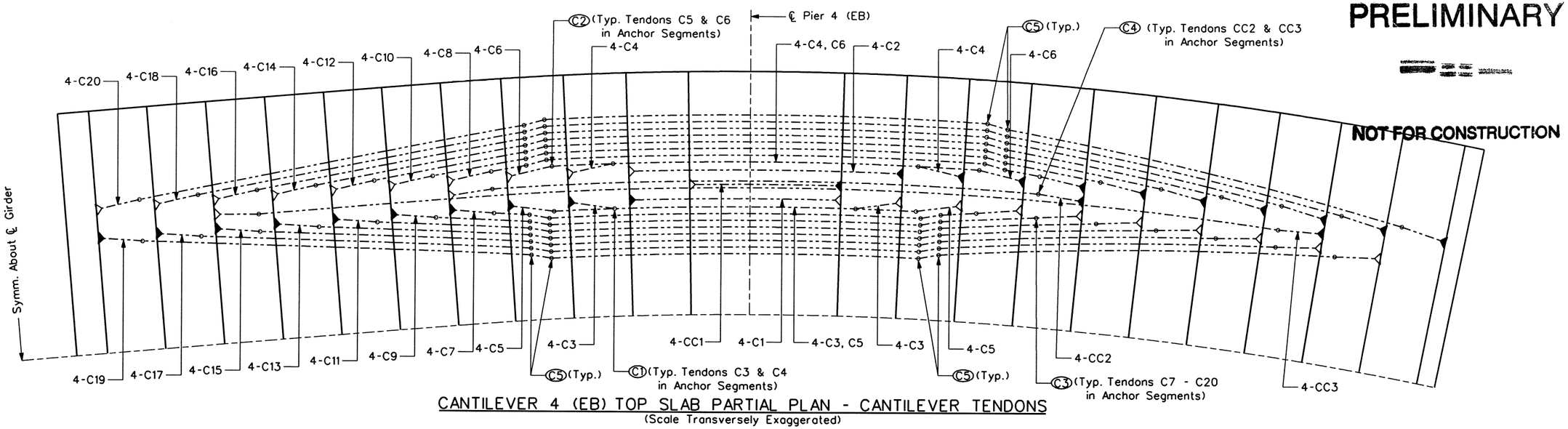
LONGITUDINAL POST-TENSIONING
LAYOUT II

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B106 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 203

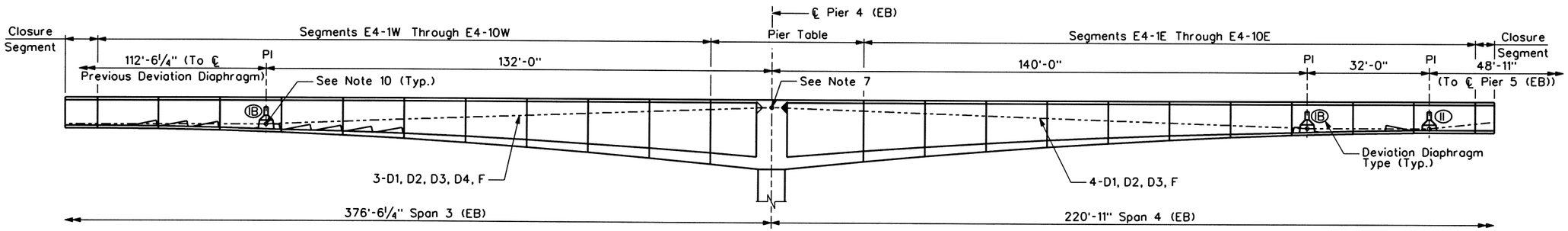
PRELIMINARY

NOT FOR CONSTRUCTION



CANTILEVER 4 (EB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS

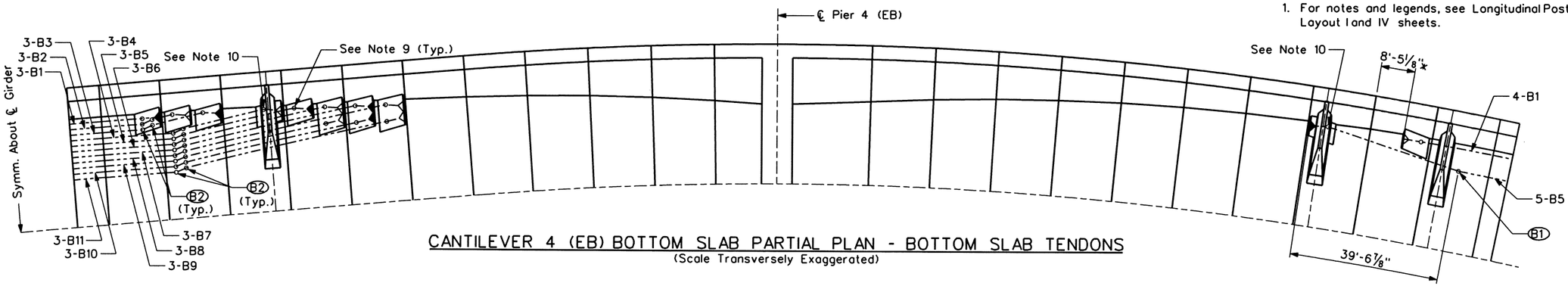
(Scale Transversely Exaggerated)



CANTILEVER 4 (EB) ELEVATION - DRAPED TENDONS

NOTES:

1. For notes and legends, see Longitudinal Post-Tensioning Layout I and IV sheets.



CANTILEVER 4 (EB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS

(Scale Transversely Exaggerated)

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	EEA	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	EEA	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006

Drawing File Name: 13141_Long_PT-Layout_III.dgn

Horiz. Scale: Vert. Scale:

Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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No Revisions:

Revised:

Void:

LONGITUDINAL POST-TENSIONING LAYOUT III

Designer: K. Montgomery

Detailer: S. Fall

Sheet Subset: BRIDGE

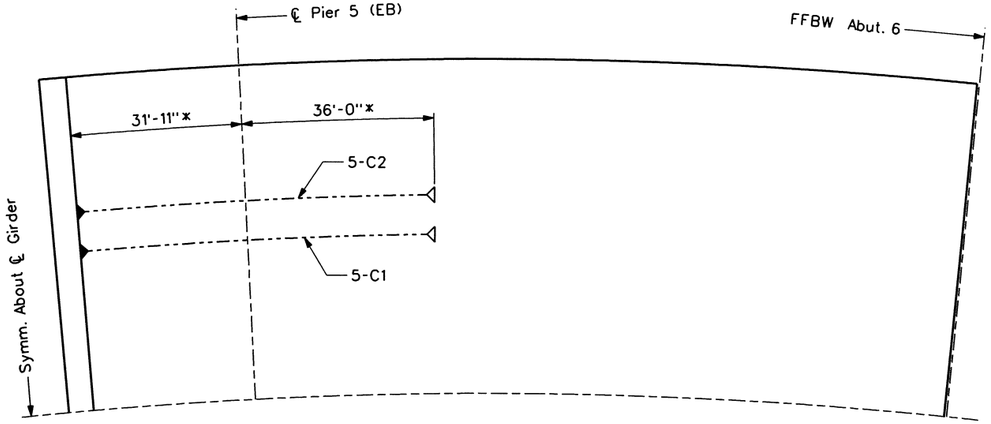
Structure Numbers: K-18-GS (EB), K-18-GT (WB)

Subset Sheets: B107 of B169

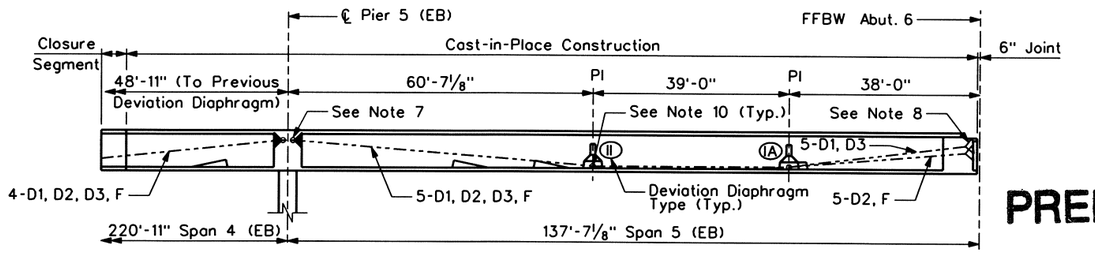
Project No./Code: BR 0961-008

13141

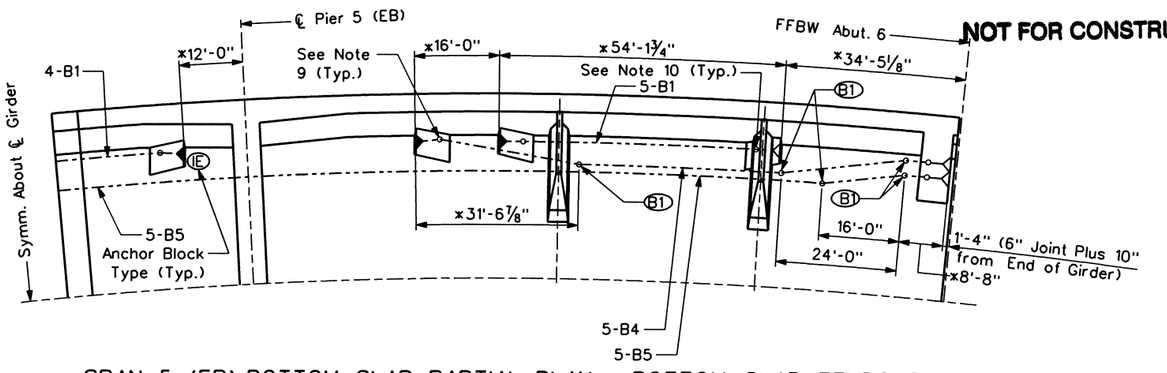
Sheet Number 204



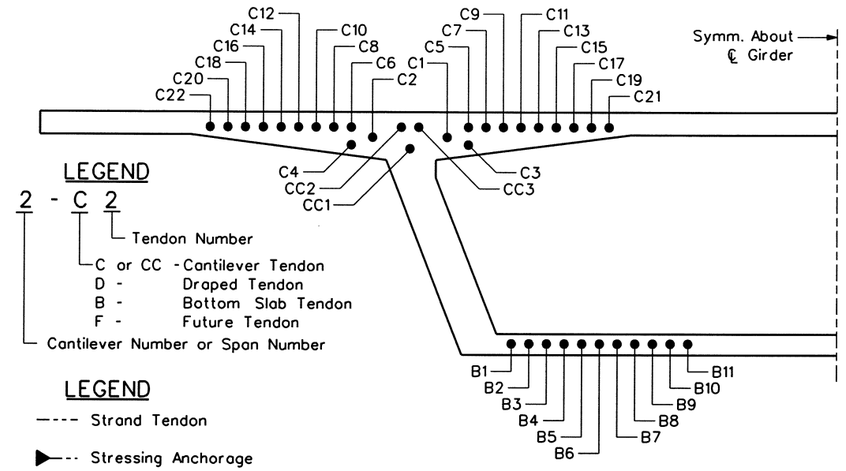
SPAN 5 (EB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS
(Scale Transversely Exaggerated)



SPAN 5 (EB) ELEVATION - DRAPED TENDONS



SPAN 5 (EB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS
(Scale Transversely Exaggerated)



LEGEND

2 - C 2
- 2 — Tendon Number
- C or CC — Cantilever Tendon
- D — Draped Tendon
- B — Bottom Slab Tendon
- F — Future Tendon
- Cantilever Number or Span Number

LEGEND

- ---- Strand Tendon
- ▶--- Stressing Anchorage
- ▷--- Non-Stressing Anchorage
- (C2) Deviation Type

DUCT LOCATIONS

NOTES:

1. All cantilever and bottom slab tendons are 12 x 0.6" diameter strand tendons. All draped and future tendons are 19 x 0.6" diameter strand tendons.
2. The anchorage hardware, local zone reinforcing and rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed. See Post-Tensioning Grouting and Anchorage Protection Details sheet for treatment of empty future tendon anchorages at abutment diaphragms.
3. Tendon numbers reflect the duct location a given tendon runs through in the central non-deviating length of the tendon.
4. Unless noted by deviation type, tendons run straight between bulkhead duct locations.
5. All dimensions are true horizontal measured along Centerline Girder.
6. * Dimensions noted are to the centerline of the tendon at the face of the anchor.
7. For tendon deviations and anchorage locations in pier table, or Piers 2 and 5, diaphragms, see Pier Table Dimensions and P.T. Details and Piers 2 and 5 Diaphragm Dimensions and P.T. Details sheets.
8. For tendon deviations and anchorage locations in abutment diaphragm, see Abutment Diaphragm Dimensions and P.T. Details sheets.
9. For tendon deviations and anchorage details in bottom slab anchor blocks, see Bottom Slab Anchor Block Type I and II Dimensions and Reinforcing sheets.
10. For tendon deviations and anchorage details in deviation diaphragms, see Deviation Diaphragm Type I and II Dimensions and P.T. Details sheets.
11. For tendon deviations noted by deviation types, see Longitudinal Post-Tensioning Details sheets.
12. For longitudinal post-tensioning quantities and stressing forces, see Longitudinal P.T. Quantities and Stressing Schedule sheets.
13. For stressing sequence during erection, see Superstructure Construction Schematic sheets.

PRELIMINARY

NOT FOR CONSTRUCTION

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	EEA	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	EEA	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Long_PT-Layout_IV.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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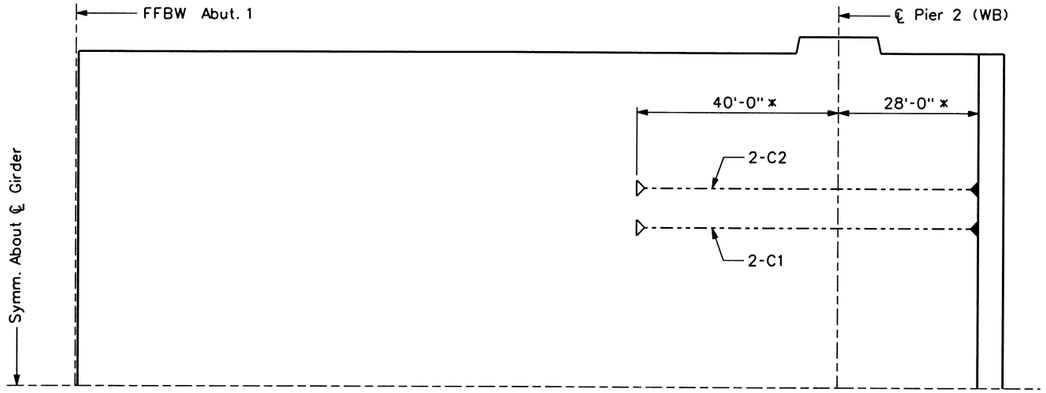
As Constructed
No Revisions:
Revised:
Void:

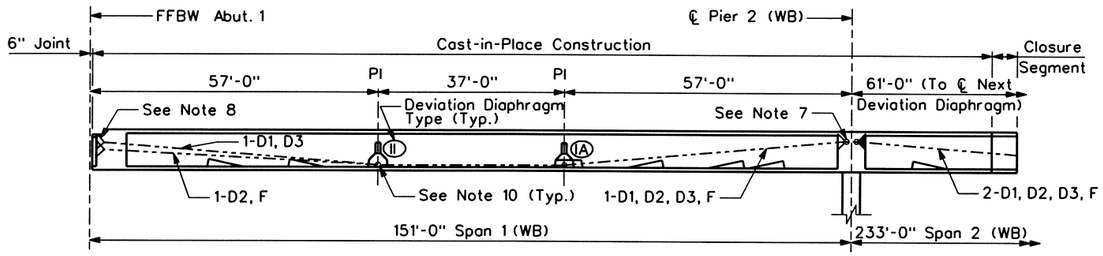
LONGITUDINAL POST-TENSIONING
LAYOUT IV

Designer: K. Montgomery		Structure Numbers	K-18-GS (EB)
Detailer: S. Fall			K-18-GT (WB)
Sheet Subset: BRIDGE		Subset Sheets: B108 of B169	

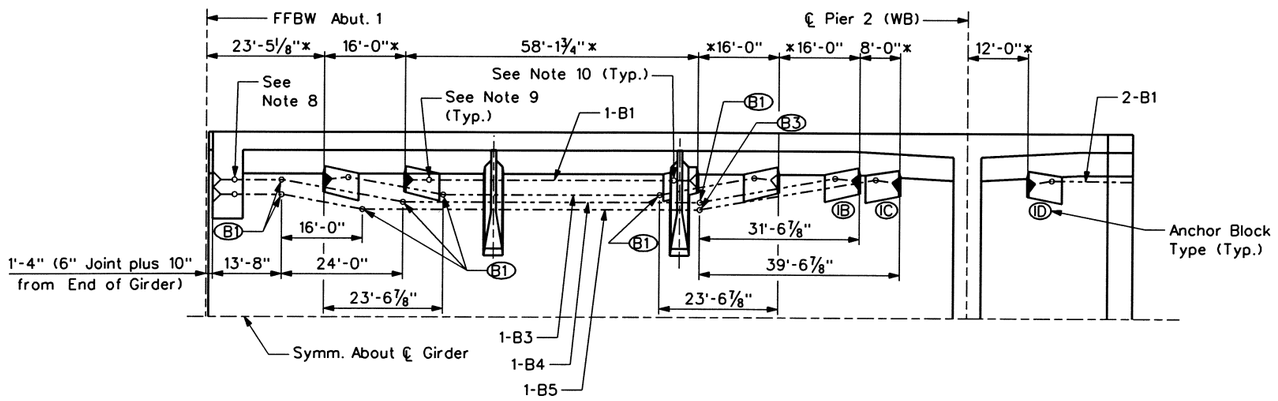
Project No./Code
BR 0961-008
13141
Sheet Number 205



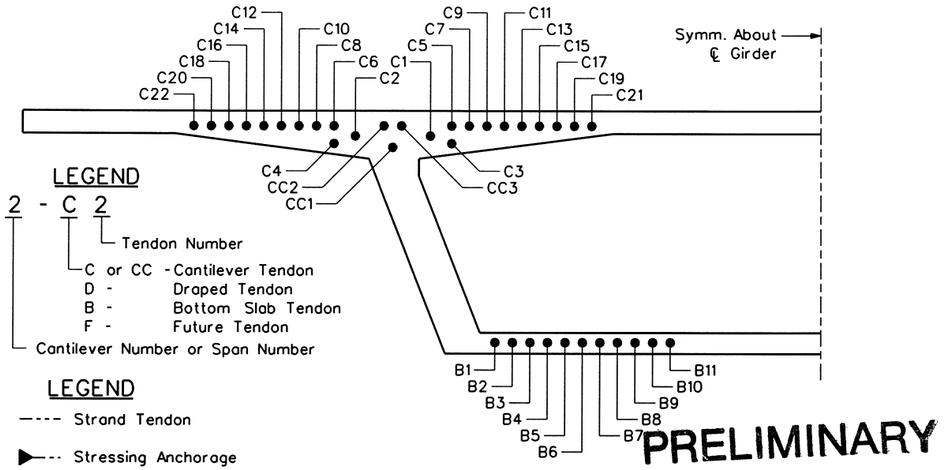
SPAN 1 (WB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS
(Scale Transversely Exaggerated)



SPAN 1 (WB) ELEVATION - DRAPED TENDONS



SPAN 1 (WB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS
(Scale Transversely Exaggerated)



LEGEND

2 - C 2
- 2 — Tendon Number
- C or CC — Cantilever Tendon
- D — Draped Tendon
- B — Bottom Slab Tendon
- F — Future Tendon
- 2 — Cantilever Number or Span Number

LEGEND

- Strand Tendon
- Stressing Anchorage
- Non-Stressing Anchorage
- (C2) Deviation Type

DUCT LOCATIONS

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. All cantilever and bottom slab tendons are 12 x 0.6" diameter strand tendons. All draped and future tendons are 19 x 0.6" diameter strand tendons.
2. The anchorage hardware, local zone reinforcing and rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed. See Post-Tensioning Grouting and Anchorage Protection Details sheet for treatment of empty future tendon anchorages at abutment diaphragms.
3. Tendon numbers reflect the duct location a given tendon runs through in the central non-deviating length of the tendon.
4. Unless noted by deviation type, tendons run straight between bulkhead duct locations.
5. All dimensions are true horizontal measured along Centerline Girder.
6. × Dimensions noted are to the centerline of the tendon at the face of the anchor.
7. For tendon deviations and anchorage locations in pier table, or Piers 2 and 5, diaphragms, see Pier Table Dimensions and P.T. Details and Piers 2 and 5 Diaphragm Dimensions and P.T. Details sheets.
8. For tendon deviations and anchorage locations in abutment diaphragm, see Abutment Diaphragm Dimensions and P.T. Details sheets.
9. For tendon deviations and anchorage details in bottom slab anchor blocks, see Bottom Slab Anchor Block Type I and II Dimensions and Reinforcing sheets.
10. For tendon deviations and anchorage details in deviation diaphragms, see Deviation Diaphragm Type I and II Dimensions and P.T. Details sheets.
11. For tendon deviations noted by deviation types, see Longitudinal Post-Tensioning Details sheets.
12. For longitudinal post-tensioning quantities and stressing forces, see Longitudinal P.T. Quantities and Stressing Schedule sheets.
13. For stressing sequence during erection, see Superstructure Construction Schematic sheets.

Design	Initial	Date	
Designed By	RKM	12/06	
Checked By	KAM	12/06	
Detail	Initial	Date	
Detailed By	SJF	12/06	
Checked By	KAM	12/06	
Quantities	Initial	Date	
Quantities By	EEA	12/06	
Checked By	DAT	12/06	

Print Date: 12/12/2006
Drawing File Name: 13141_Long_PT-Layout_V.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
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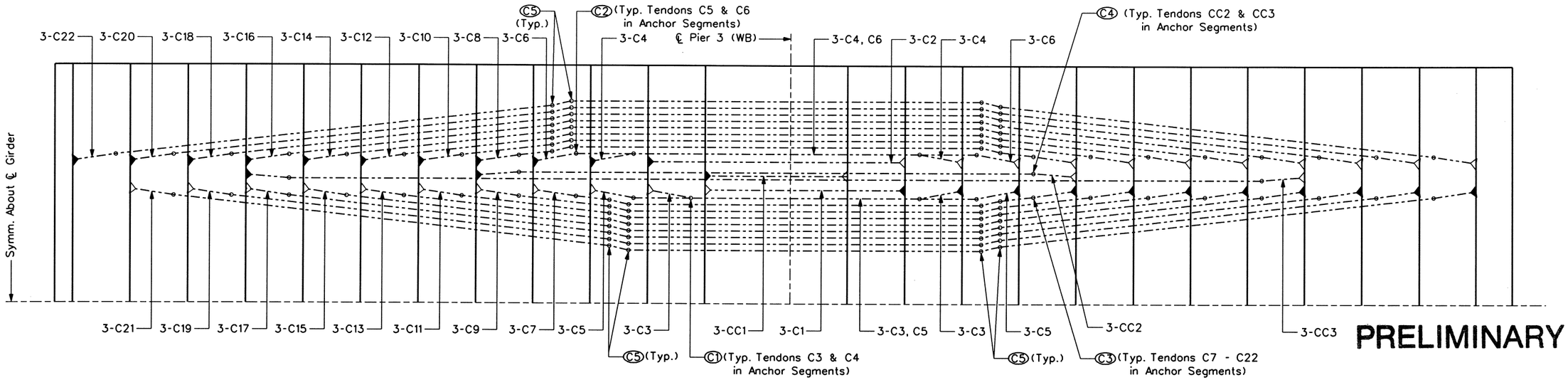
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

LONGITUDINAL POST-TENSIONING LAYOUT V

Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B109 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 206

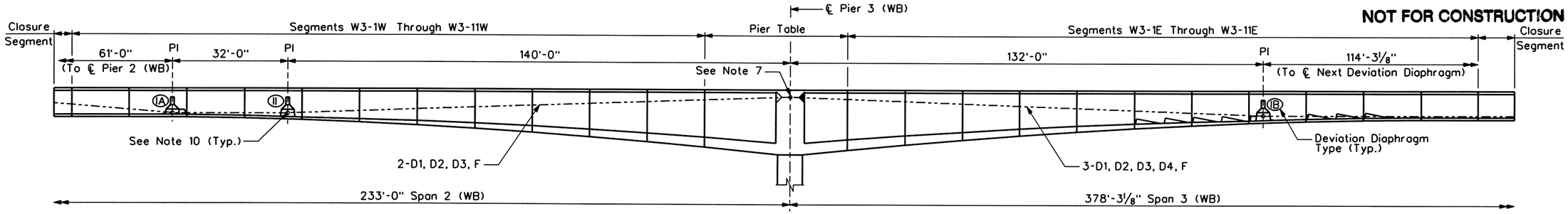


PRELIMINARY

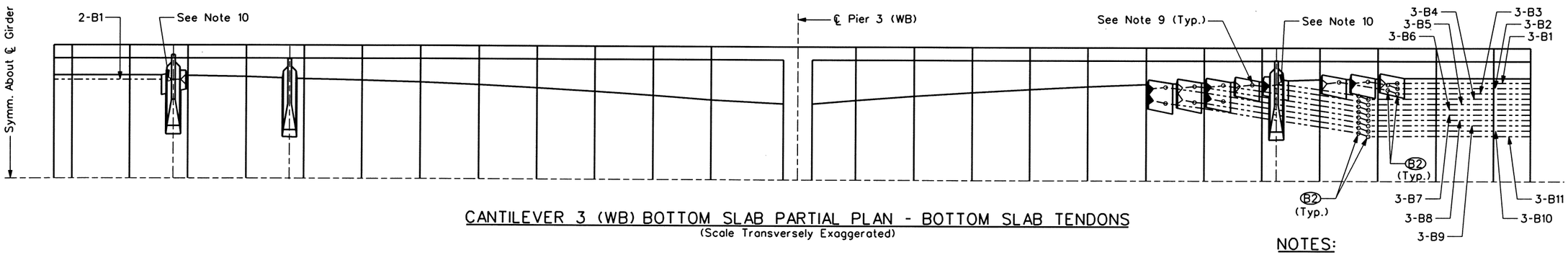
CANTILEVER 3 (WB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS

(Scale Transversely Exaggerated)

NOT FOR CONSTRUCTION



CANTILEVER 3 (WB) ELEVATION - DRAPED TENDONS



CANTILEVER 3 (WB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS

(Scale Transversely Exaggerated)

NOTES:

1. For notes and legends, see Longitudinal Post-Tensioning Layout V and VIII sheets.

Quantities	INITIAL	DATE
	EEA	12/06
Quantities By	DAT	
Checked By		

Detail	INITIAL	DATE
	SJF	12/06
Detailed By	KAM	
Checked By		

Design	INITIAL	DATE
	RKM	12/06
Designed By	KAM	
Checked By		

Print Date: 12/12/2006

Drawing File Name: 13141_Long_PT-Layout_VI.dgn

Horiz. Scale: Vert. Scale:

Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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No Revisions:

Revised:

Void:

LONGITUDINAL POST-TENSIONING LAYOUT VI

Designer: K. Montgomery		Structure Numbers	K-18-GS (EB)
Detailer: S. Fall			K-18-GT (WB)
Sheet Subset: BRIDGE		Subset Sheets: B110 of B169	

Project No./Code

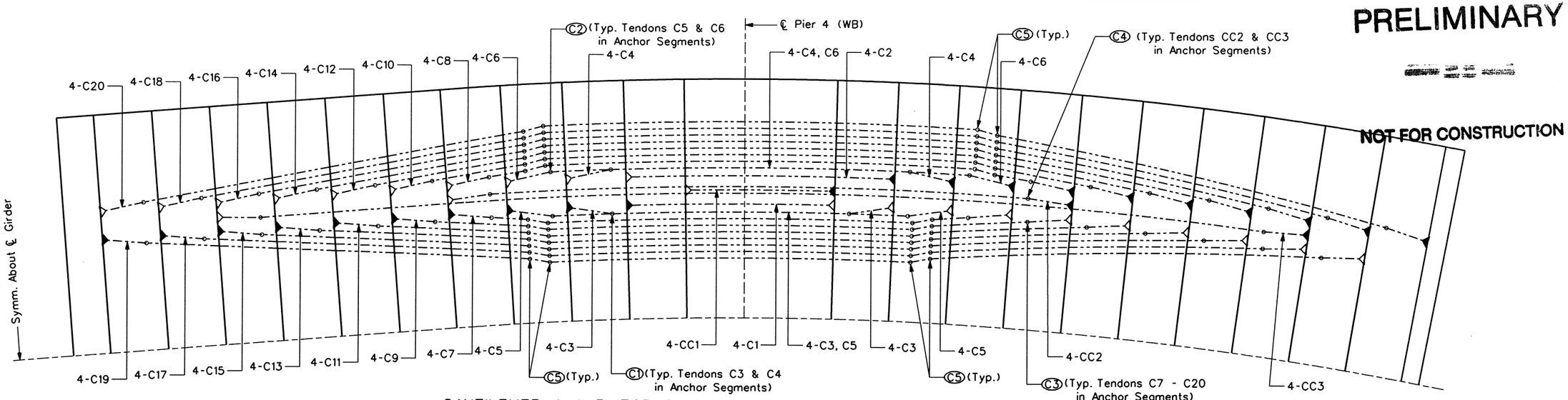
BR 0961-008

13141

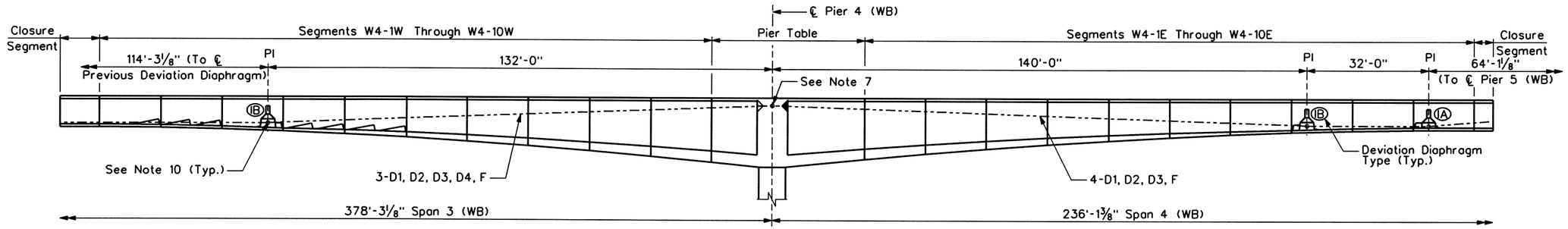
Sheet Number 207

PRELIMINARY

NOT FOR CONSTRUCTION



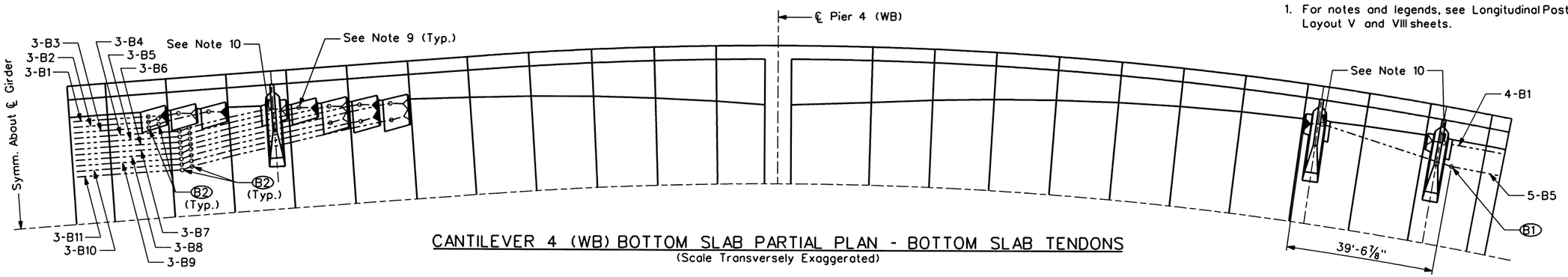
CANTILEVER 4 (WB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS
(Scale Transversely Exaggerated)



CANTILEVER 4 (WB) ELEVATION - DRAPED TENDONS

NOTES:

1. For notes and legends, see Longitudinal Post-Tensioning Layout V and VIII sheets.



CANTILEVER 4 (WB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS
(Scale Transversely Exaggerated)

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Long_PT-Layout_VII.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

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Region 2 KSR

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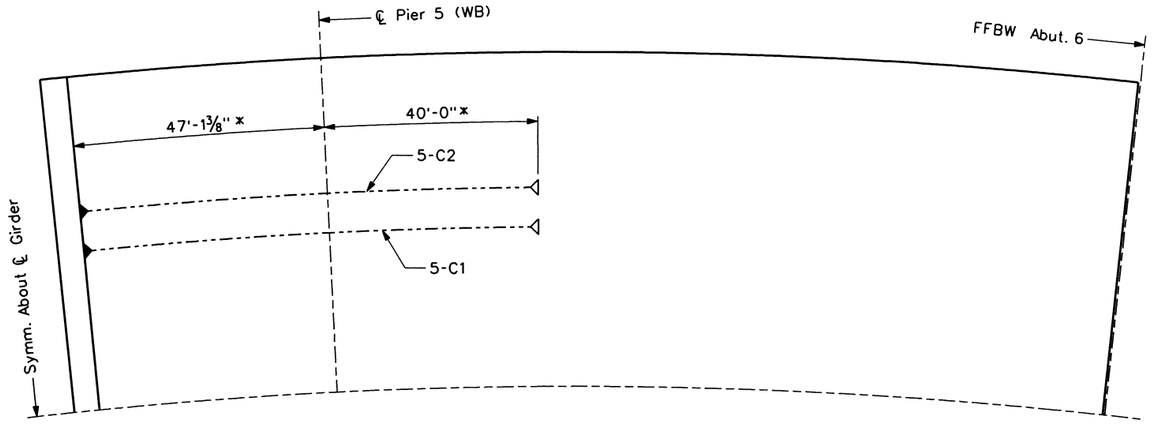
No Revisions:
Revised:
Void:

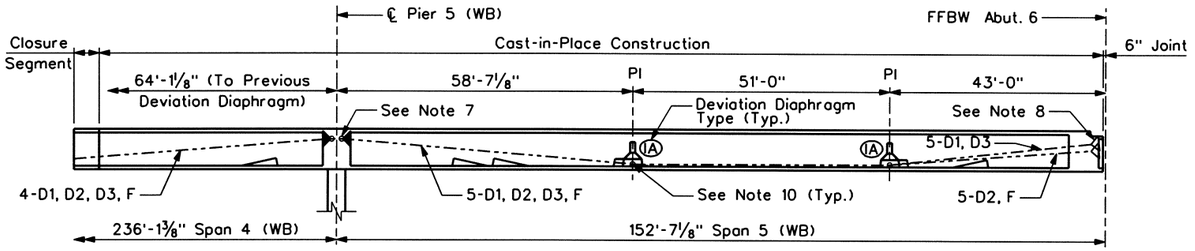
LONGITUDINAL POST-TENSIONING LAYOUT VII

Designer: K. Montgomery		Structure Numbers	K-18-GS (EB)
Detailer: S. Fall			K-18-GT (WB)
Sheet Subset: BRIDGE		Subset Sheets: B111 of B169	

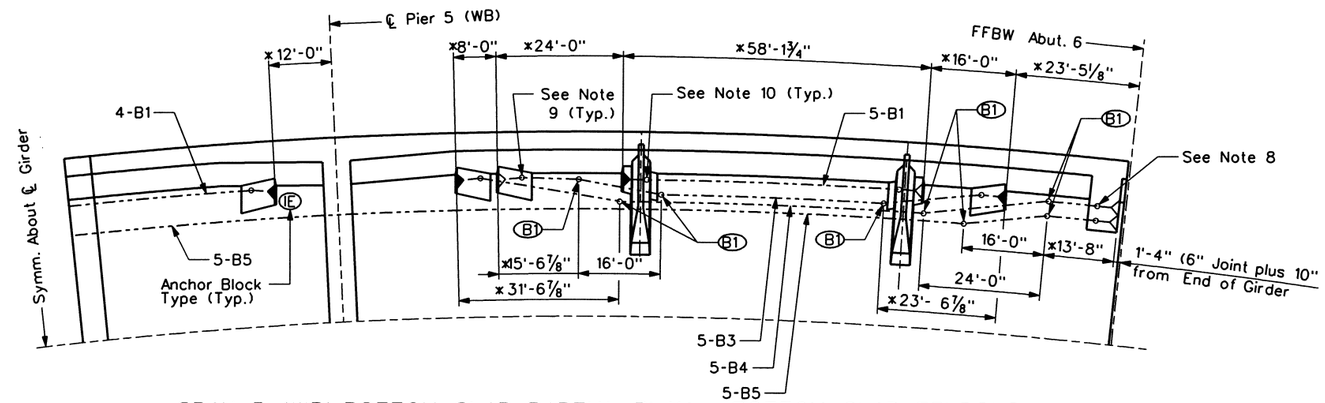
Project No./Code
BR 0961-008
13141
Sheet Number 208



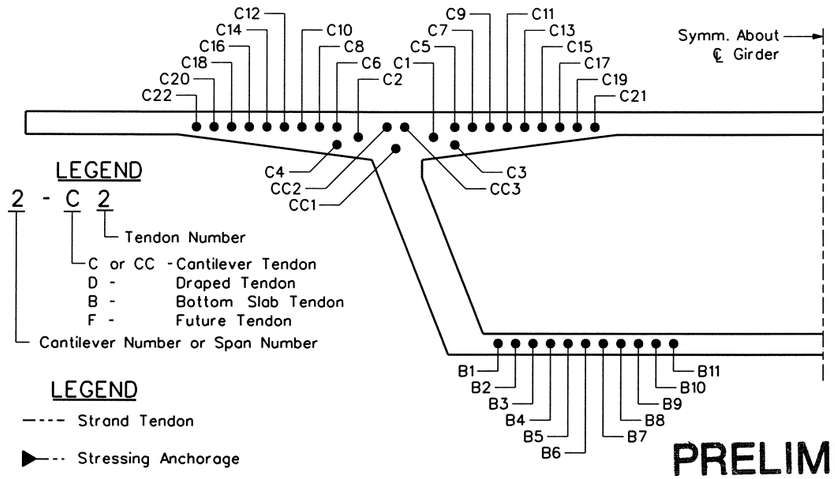
SPAN 5 (WB) TOP SLAB PARTIAL PLAN - CANTILEVER TENDONS
(Scale Transversely Exaggerated)



SPAN 5 (WB) ELEVATION - DRAPED TENDONS



SPAN 5 (WB) BOTTOM SLAB PARTIAL PLAN - BOTTOM SLAB TENDONS
(Scale Transversely Exaggerated)



LEGEND

2 - C 2
- 2 — Cantilever Number or Span Number
- C or CC — Cantilever Tendon
- D — Draped Tendon
- B — Bottom Slab Tendon
- F — Future Tendon
- 2 — Tendon Number

LEGEND

- Strand Tendon
- Stressing Anchorage
- Non-Stressing Anchorage
- (C2) Deviation Type

DUCT LOCATIONS

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. All cantilever and bottom slab tendons are 12 x 0.6" diameter strand tendons. All draped and future tendons are 19 x 0.6" diameter strand tendons.
2. The anchorage hardware, local zone reinforcing and rigid pipe duct shall be installed for the future tendons. Future tendons themselves are not installed. See Post-Tensioning Grouting and Anchorage Protection Details sheet for treatment of empty future tendon anchorages at abutment diaphragms.
3. Tendon numbers reflect the duct location a given tendon runs through in the central non-deviating length of the tendon.
4. Unless noted by deviation type, tendons run straight between bulkhead duct locations.
5. All dimensions are true horizontal measured along Centerline Girder.

*6. Dimensions noted are to the centerline of the tendon at the face of the anchor.

7. For tendon deviations and anchorage locations in pier table, or Piers 2 and 5, diaphragms, see Pier Table Dimensions and P.T. Details and Piers 2 and 5 Diaphragm Dimensions and P.T. Details sheets.
8. For tendon deviations and anchorage locations in abutment diaphragm, see Abutment Diaphragm Dimensions and P.T. Details sheets.
9. For tendon deviations and anchorage details in bottom slab anchor blocks, see Bottom Slab Anchor Block Type I and II Dimensions and Reinforcing sheets.
10. For tendon deviations and anchorage details in deviation diaphragms, see Deviation Diaphragm Type I and II Dimensions and P.T. Details sheets.
11. For tendon deviations noted by deviation types, see Longitudinal Post-Tensioning Details sheets.
12. For longitudinal post-tensioning quantities and stressing forces, see Longitudinal P.T. Quantities and Stressing Schedule sheets.
13. For stressing sequence during erection, see Superstructure Construction Schematic sheets.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	KAM	12/06

Detail	INITIAL	DATE
Detailed By	SJF	12/06
Checked By	KAM	12/06

Quantities	INITIAL	DATE
Quantities By	EEA	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Long_PT-Layout_VIII.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

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Region 2 KSR

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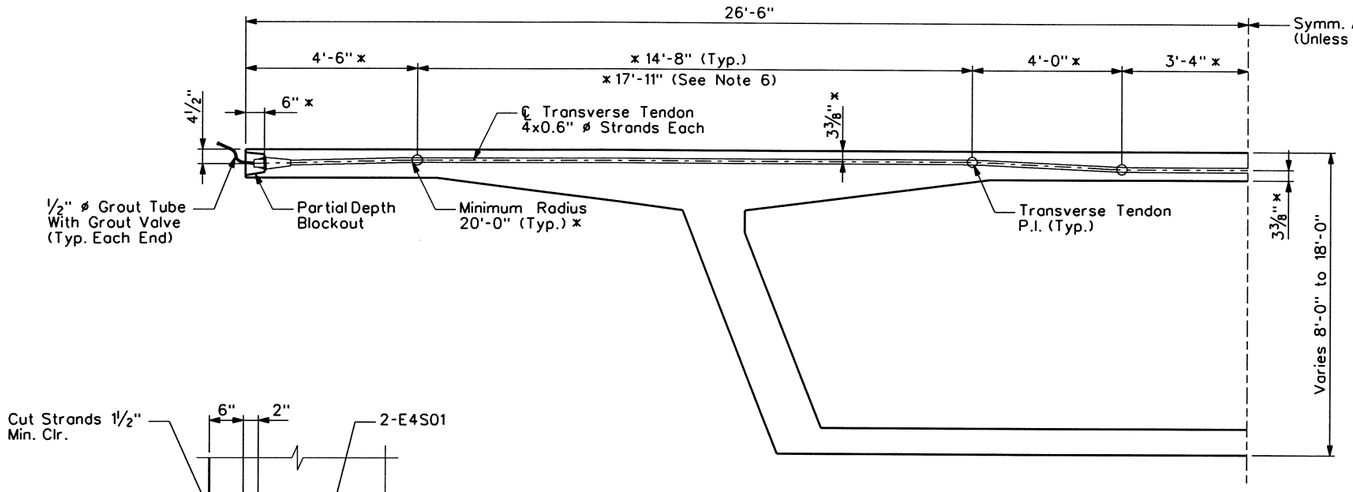
No Revisions:
Revised:
Void:

LONGITUDINAL POST-TENSIONING
LAYOUT VIII

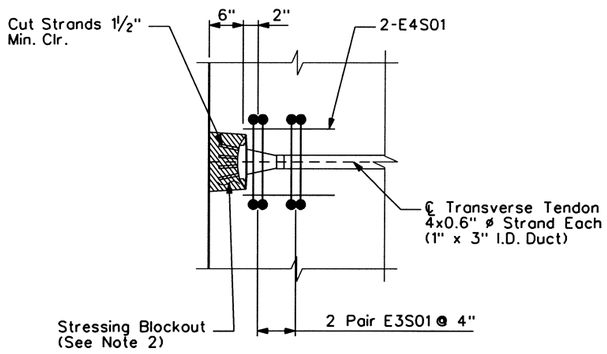
Designer: K. Montgomery
Detailer: S. Fall
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B112 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 209

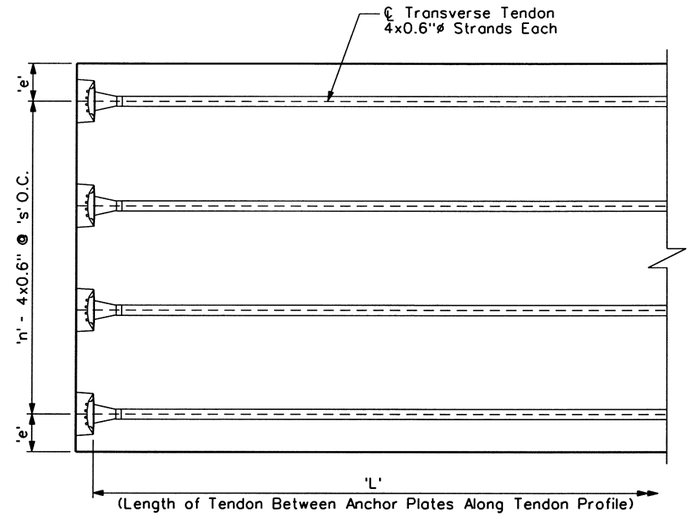


CROSS SECTION

(Typical Segment Shown, Other Segment Types Similar)
* Dimensions are to ℄ Transverse Tendon Duct (For Tendon Profiles in Diaphragms, See Abutment Diaphragm, Piers 2 and 5 Diaphragm, and Pier Table Dimensions and P.T. Details Sheets)



PLAN



PARTIAL PLAN

(See Transverse Post-Tensioning Schedule for Variables 'e', 'n', 'L', and 's')

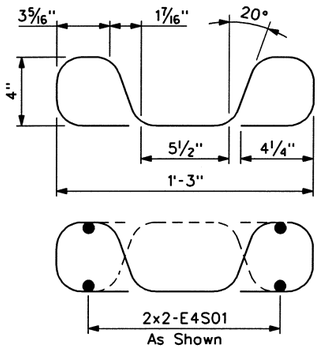
TRANSVERSE POST-TENSIONING SCHEDULE

Segment Type	Tendon Type	Number of Tendons 'n'	Tendon Length 'L'	Edge Distance 'e'	Tendon Spacing 's'	**Tendon Weight (lbs.)	Number of Segments	** Total Weight (lbs)
16'-0" TS/DS	4x0.6" ø	5	52'-0⅛"	1'-6"	3'-3"	154	84	64680
5'-0" CS	4x0.6" ø	2	52'-0⅛"	10½"	3'-3"	154	4	1232
8'-6¼" CS	4x0.6" ø	3	52'-0⅛"	1'-0⅛"	3'-3"	154	1	462
10'-3⅜" CS	4x0.6" ø	4	52'-0⅛"	1'-0"	2'-9"	154	1	616
							Total:	66990

TS Denotes Typical Segment
CS Denotes Closure Segment
DS Denotes Deviator Segment

BENDING DIAGRAMS

(All Dimensions are out to out)



E3S01

BAR LIST/ONE ANCHOR

Bar	No.	Length	Bent	Str.
E3S01	4	2'-10"	•	
E4S01	4	1'-0"		•

Number preceding letter denotes bar size.

Cost of the E3S01 and E4S01 bars are included in Pay Item 618-00002 Prestressing Steel Wire Or Strand (See Note 4).

PRELIMINARY

NOT FOR CONSTRUCTION

ESTIMATED QUANTITIES FOR TYPICAL, DEVIATIOR, AND CLOSURE SEGMENTS TRANSVERSE POST-TENSIONING

Item No.	Item Description	Unit	Quantity
618-00002	Prestressing Steel Wire Or Strand	MKFT	3982

NOTES:

1. After the segment concrete reaches a minimum compressive strength of 4000 psi, and prior to releasing formwork and advancing form traveler, the 0.6"ø strands shall be stressed to 44 kips each for a total tendon force of 176 kips. The tendons shall be single end stressed from alternating ends of the segment.
2. The tendons shall be grouted within 7 days of installation and the anchorages shall be poured back, per the grouting and anchorage details shown on the Post-Tensioning Grouting and Anchorage Protection Details sheet, no more than 14 days after the tendons have been grouted.
3. ** Weights tabulated in the transverse post-tensioning schedule are measured from anchor to anchor along the profile of the tendon. There will be no payment made for additional strand required beyond the anchor plates for jacking. The cost of the anchorage hardware is incidental to Pay Item 618-00002 Prestressing Steel Wire Or Strand.
4. Bars E3S01 and E4S01 are provided as minimum local zone reinforcing steel and may not be an ideal fit for all types of 4x0.6"ø tendon anchorages. The post-tensioning supplier shall verify the adequacy of the local zone reinforcing shown and adjust as necessary to meet the post-tensioning system requirements.
5. For transverse P.T. quantities in pier tables, see Pier Table Reinforcing V sheet. For transverse P.T. quantities in pier diaphragms, see Piers 2 and 5 Diaphragm Reinforcing III sheet. For transverse P.T. quantities in abutment diaphragms, see Abutment Diaphragm Reinforcing IV sheet. For transverse P.T. quantities in C.I.P. end spans, see Spans 1 C.I.P. Section Reinforcing III sheet and Spans 5 C.I.P. Section Reinforcing III sheet.
6. 17'-11" dimension is for tendons in 3'-3" overlook wing extension on overlook side only.

Design		DATE
Designed By	JDS	12/06
Checked By	KLB	12/06

Detail		DATE
Detailed By	RJA	12/06
Checked By	JDS	12/06

Quantities		DATE
Quantities By	JDS	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Transverse_PT_Details.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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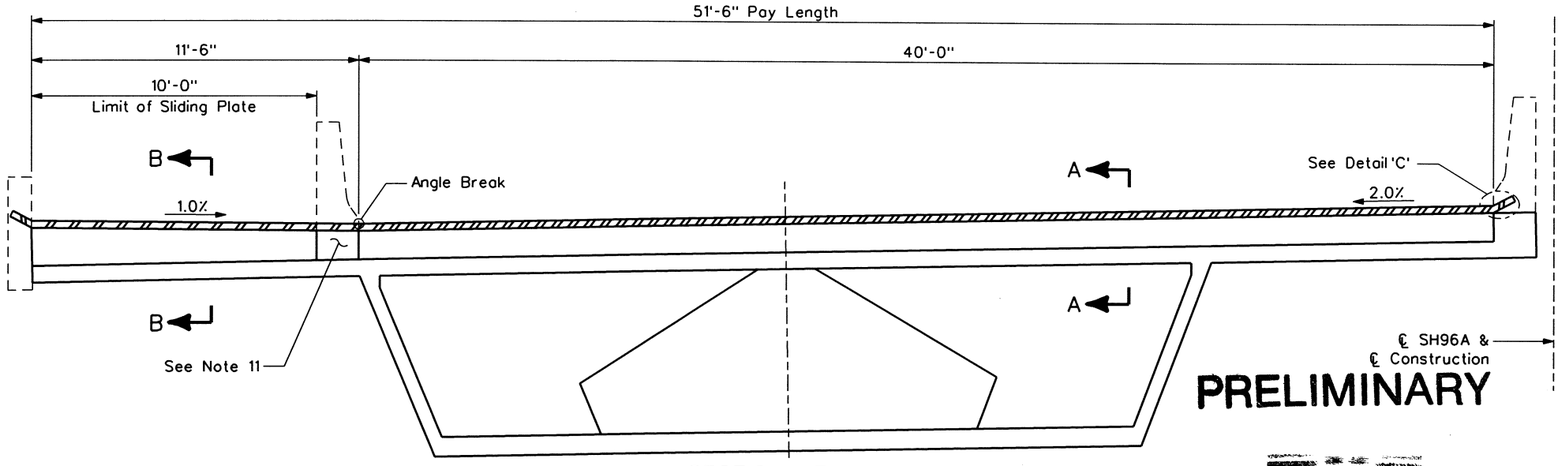
TRANSVERSE POST-TENSIONING DETAILS

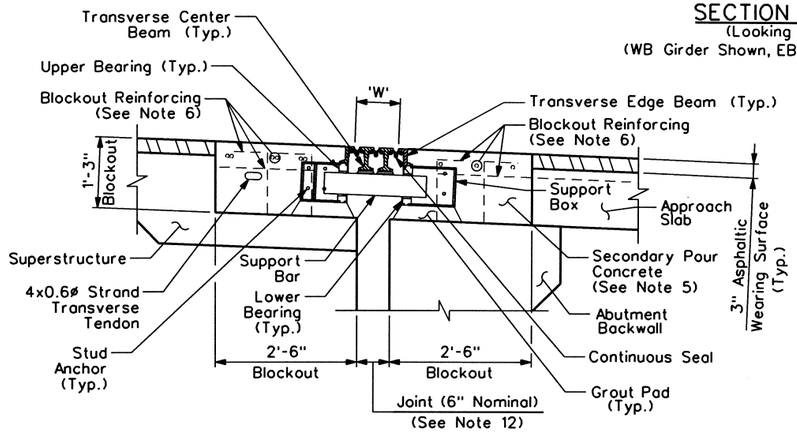
Designer:	J. Stauffer	Structure Numbers	K-18-GS (EB)
Detailer:	R. Adams		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B104 of B169

Project No./Code	
BR 0961-008	
13141	
Sheet Number	201

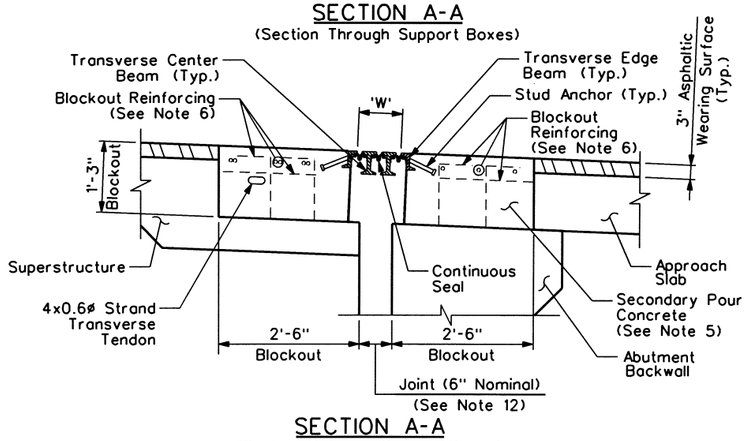


PRELIMINARY

SECTION AT JOINT
(Looking Upstation)
(WB Girder Shown, EB Girder Opposite Hand)



SECTION A-A
(Section Through Support Boxes)



SECTION A-A
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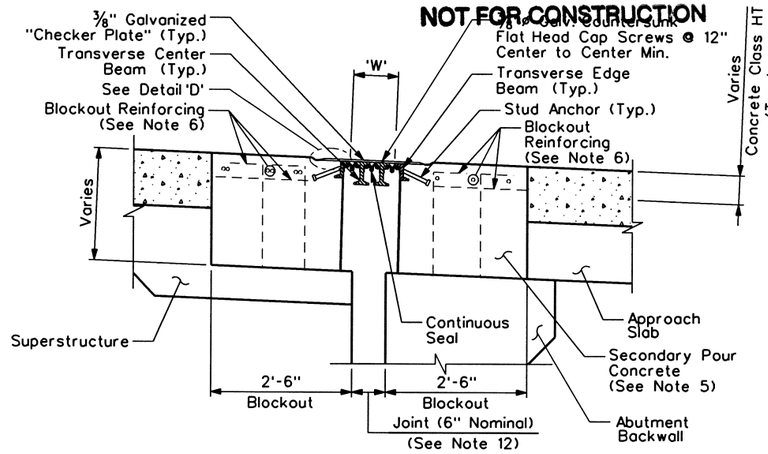
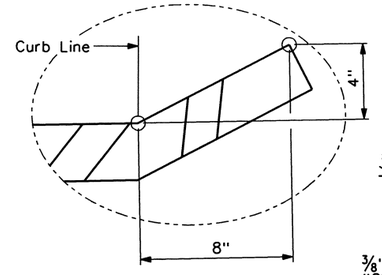
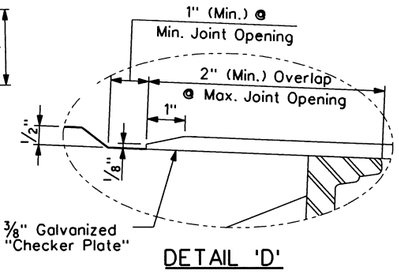


SECTION B-B
(Section Between Support Boxes)



DETAIL 'C'



DETAIL 'D'

TEMPERATURE SETTING TABLE (See Note 10)

Temperature (Deg F)	Abutment 1		Abutment 6	
	Total Contraction (in) 'W' Increasing	Total Expansion (in) 'W' Decreasing	Total Contraction (in) 'W' Increasing	Total Expansion (in) 'W' Decreasing
0	4.5	4.2	3.2	3.5
10	5.0	3.7	3.6	3.1
20	5.5	3.2	4.1	2.6
30	6.0	2.7	4.5	2.2
40	6.6	2.1	5.0	1.7
50	7.1	1.6	5.4	1.3
60	7.6	1.1	5.8	0.9
70	8.2	0.5	6.3	0.4
80	8.7	0.0	6.7	0.0

NOTES:

1. This drawing is a schematic of the required joint devices. Manufacturer is responsible for the design of the joint devices. The joint devices shall be capable of maintaining equal distance between all transverse beams. Acceptable alternates for expansion devices are D.S. Brown Steelflex Expansion Joint System and Watson Bowman ACME WABO Modular Expansion Joint System.
2. Design live load is HL-93 with impact. See Project Special Provisions for additional design and shop drawing submittal requirements. Shop drawings shall include expansion devices, barrier rail cover plates, method of support during installation, as well as the installation procedure.
3. The installed expansion joint device shall conform to the grades and superelevations at the joint locations and provide a smooth surface. Rails shall be installed ¼" below final grade. Edge beams of expansion device and the tops of the forms that establish the grades for the pourbacks of the blockouts shall be surveyed to verify that the final installed joints will conform to the final elevations and provide a smooth riding surface. Survey elevations shall be submitted to the Engineer for review. The blockout concrete shall not be placed until the elevations are accepted by the Engineer.
4. All steel shall meet the requirements of AASHTO M270 Grade 36 or Grade 50. All steel that will be exposed in the permanently installed condition shall be galvanized in accordance with ASTM A 123.
5. Concrete for the secondary pours of the expansion joint blockouts shall be Class S40, 5800 psi. Special care shall be taken to ensure that concrete completely supports support boxes and is well consolidated.
6. See the Abutment Reinforcing drawings and the Abutment Diaphragm Reinforcing drawings for the reinforcing to be placed in the primary element pours that extend into the expansion joint blockouts, as well as reinforcing in the blockouts. Reinforcing bars shall be cut and bent into the approximate configurations shown.
7. The transverse beams shall be turned up past the gutter lines such that a minimum rise above the gutter lines of 4" is achieved. The rails and seals shall be continuous across the width of the joints, including turn ups.
8. Expansion joint devices shall not be installed until the entire structure has been constructed and all longitudinal tendons stressed.
9. See Abutment and Abutment Diaphragm drawings for additional blockout dimensions.
10. Set expansion joint such that it can accommodate the movements shown at the listed temperatures. Temperature is the average concrete substrate temperature at the time of joint installation, measured as the surface temperature at the mid height of the web inside the box girder. Total movements include 1.2 Factor of Safety as per AASHTO, "LRFD Bridge Design Specifications".
11. No support boxes can be located under bridge rail. See Abutment Segment Dimensions & P.T. Details sheet and Abutment Dimensions sheets for further blockout details.
12. Joints shall be formed at 6" when casting superstructure, but will change with time and temperature.
13. The expansion joints shown on this sheet will be paid for under Bridge Expansion Device (0-9 inch). Cost shall include all materials and all labor for installation.
14. Maintain minimum 2½" clear cover from secondary pour reinforcing to top surface of secondary pour.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	JRD	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Exp_Joint_Details_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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Region 2 KSR

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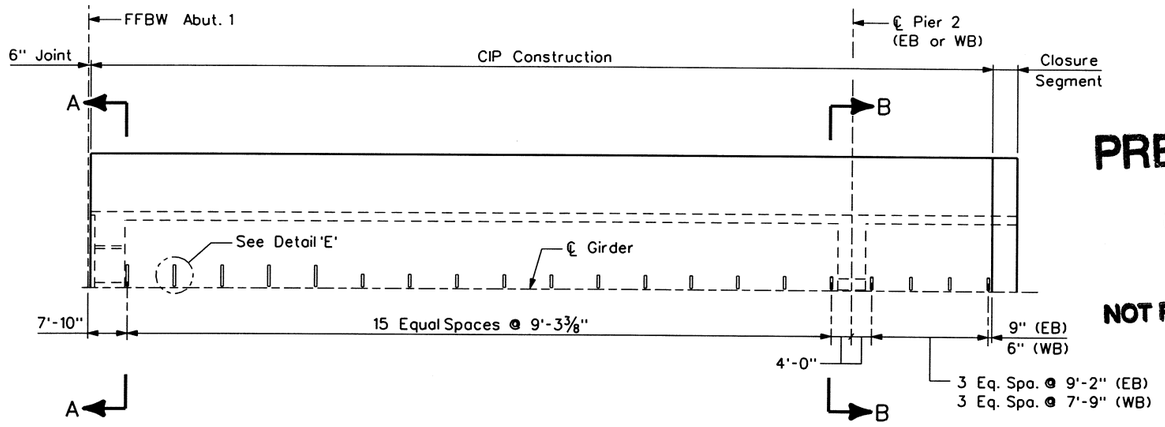
No Revisions:	
Revised:	
Void:	

EXPANSION JOINT DETAILS 1

Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: R. Adams		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B118 of B169		

Project No./Code	
BR 0961-008	
13141	
Sheet Number	215

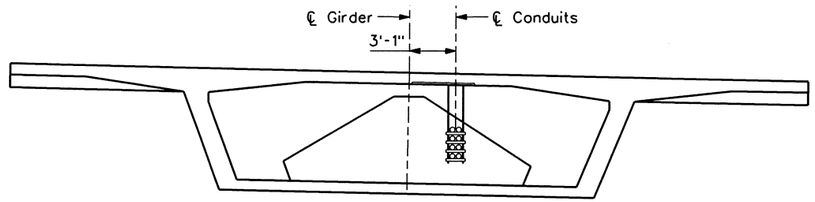


SPAN 1 REFLECTED TOP SLAB PLAN

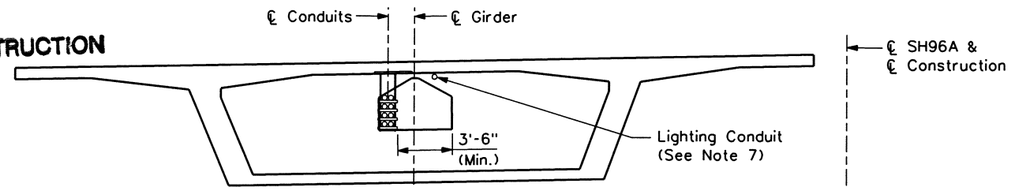
℄ SH96A & ℄ Construction

PRELIMINARY

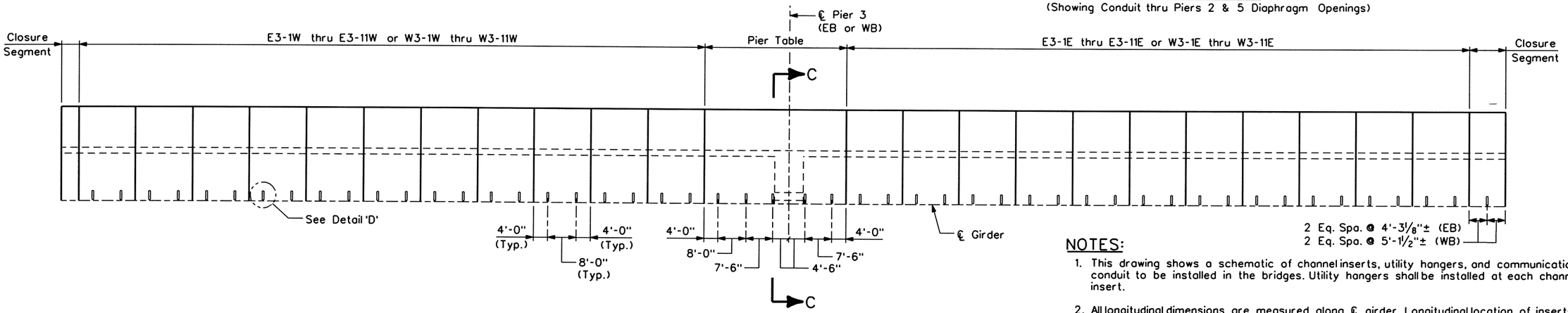
NOT FOR CONSTRUCTION



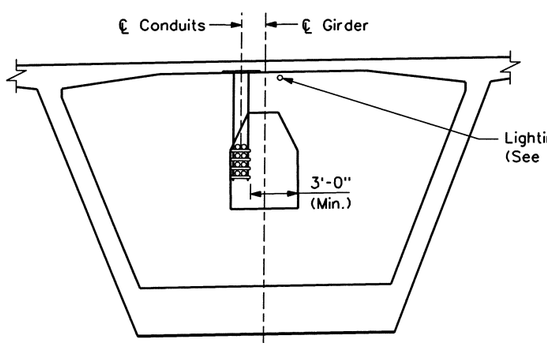
SECTION A-A
(Showing Conduit thru Abutment Diaphragm Openings)



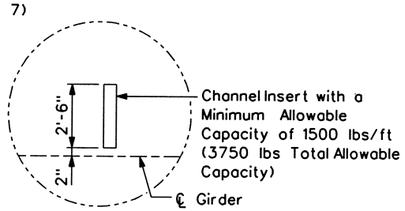
SECTION B-B
(Showing Conduit thru Piers 2 & 5 Diaphragm Openings)



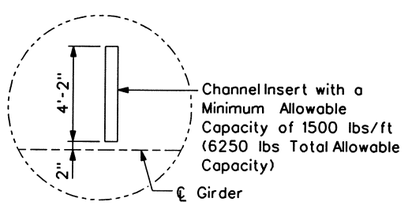
CANTILEVER 3 REFLECTED TOP SLAB PLAN



SECTION C-C
(Showing Conduit thru Piers 3 & 4 Diaphragm Openings)



DETAIL 'D'
(Showing Typical Insert)



DETAIL 'E'
(Showing Typical Insert)

NOTES:

1. This drawing shows a schematic of channel inserts, utility hangers, and communications conduit to be installed in the bridges. Utility hangers shall be installed at each channel insert.
2. All longitudinal dimensions are measured along ℄ girder. Longitudinal location of inserts may be adjusted ± 6" to avoid transverse tendon locations. Maximum distance between inserts shall not exceed 10'-0" ctc.
3. Channel inserts and all components of utility hangers to be galvanized or stainless steel. For conduit details, see utility drawings elsewhere in the plans.
4. The channel inserts and utility hangers are paid under Item 613-04020, Hanger System. The conduits are paid under the individual items listed on a LF basis. See the Conduit and Lighting Details III sheet for quantities.
5. See utility drawings elswhere in the plans for details and quantities for conduit in approach roadways. Conduit quantities listed on these sheets are for conduit on the bridge only (BFBW to BFBW).
6. See the Abutment Dimensions and Reinforcing sheets for conduit penetrations through the abutment backwalls. Conduit expansion couplers capable of accommodating the anticipated movements shall be provided for each conduit at each abutment. See the Expansion Joint Details sheets for movements. In addition, couplers for Qwest conduits shall be sized in accordance with Qwest requirements. Cost of expansion couplers are incidental to the cost of the conduit.
7. See Conduit and Lighting Details III sheet for lighting on and in the bridges, maintenance power outlets, and associated conduits.
8. See the Bridge Rail Type 7 (Special) Details sheets for conduit in the bridge rail.

Design	INITIAL	DATE
Designed By	XXX	MM/YY
Checked By	XXX	MM/YY

Detail	INITIAL	DATE
Detailed By	XXX	MM/YY
Checked By	XXX	MM/YY

Quantities	INITIAL	DATE
Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Conduit_Lighting_Det_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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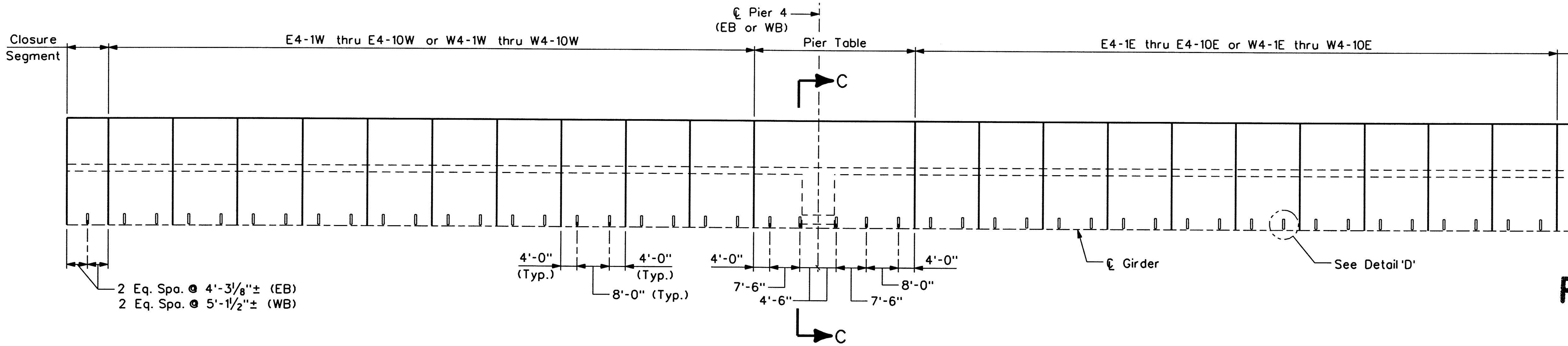
Revised:
Void:

CONDUIT AND LIGHTING DETAILS I

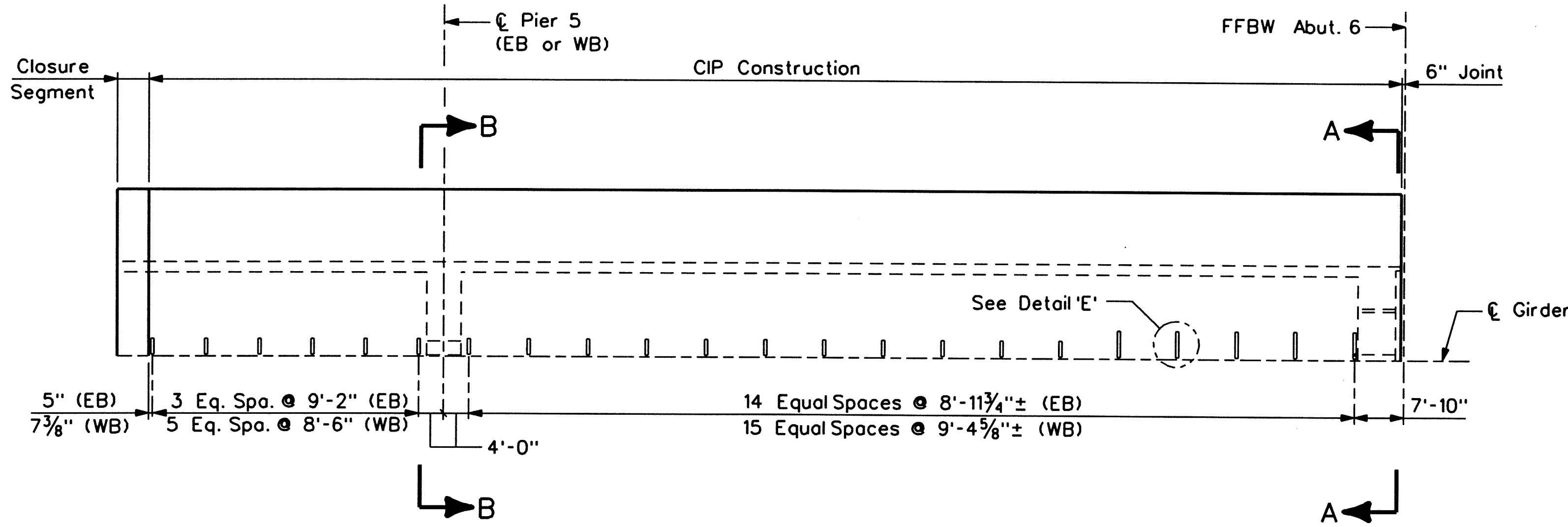
Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: 134 of 169

Project No./Code: BR 0961-008
13141
Sheet Number 231

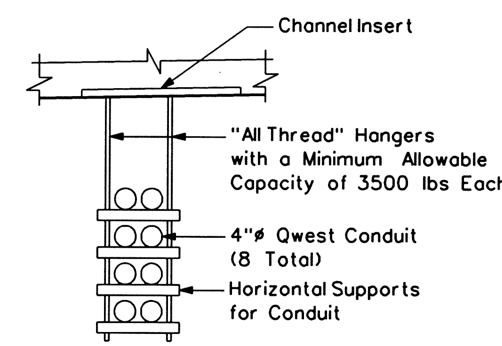


CANTILEVER 4 REFLECTED TOP SLAB PLAN

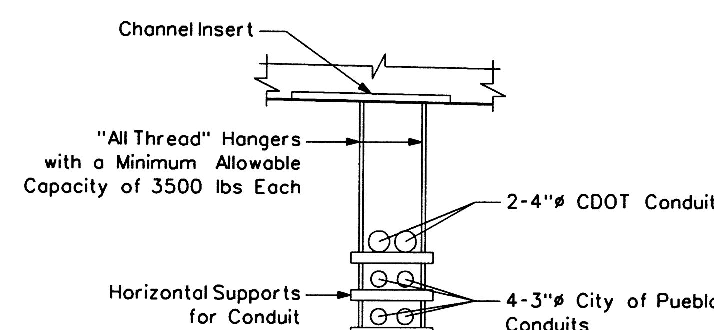
PRELIMINARY



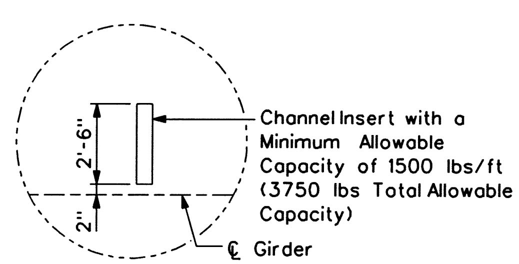
SPAN 5 REFLECTED TOP SLAB PLAN



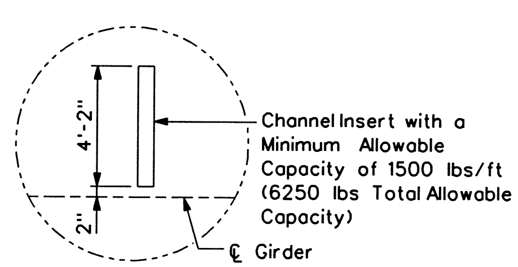
UTILITY HANGER DETAIL
(WB Bridge)



UTILITY HANGER DETAIL
(EB Bridge)



DETAIL 'D'
(Showing Typical Insert)



DETAIL 'E'
(Showing Typical Insert)

NOTES:

NOT FOR CONSTRUCTION

1. This drawing shows a schematic of channel inserts, utility hangers, and communications conduit to be installed in the bridges. Utility hangers shall be installed at each channel insert.
2. All longitudinal dimensions are measured along ℄ girder. Horizontal curvature is not shown for simplicity. Longitudinal location of inserts may be adjusted ± 6" to avoid transverse tendon locations. Maximum distance between inserts shall not exceed 10'-0" ctc.
3. Channel inserts and all components of utility hangers to be galvanized or stainless steel. For conduit details, see utility drawings elsewhere in the plans.
4. The channel inserts and utility hangers are paid under Item 613-04020, Hanger System. The conduits are paid under the individual items listed on a LF basis. See the Conduit and Lighting Details III sheet for quantities.
5. See utility drawings elswhere in the plans for details and quantities for conduit in approach roadways. Conduit quantities listed on these sheets are for conduit on the bridge only (BFBW to BFBW).
6. See the Abutment Dimensions and Reinforcing sheets for conduit penetrations through the abutment backwalls. Conduit expansion couplers capable of accommodating the anticipated movements shall be provided for each conduit at each abutment. See the Expansion Joint Details sheets for movements. In addition, couplers for Qwest conduits shall be sized in accordance with Qwest requirements. Cost of expansion couplers are incidental to the cost of the conduit.
7. See Conduit and Lighting Details III sheet for lighting on and in the bridges, maintenance power outlets, and associated conduits.
8. See the Bridge Rail Type 7 (Special) Details sheets for conduit in the bridge rail.

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	XXX	MM/YY	Detailed By	XXX	MM/YY	Quantities By	XXX	MM/YY
Checked By	XXX	MM/YY	Checked By	XXX	MM/YY	Checked By	XXX	MM/YY

Print Date: 12/12/2006
Drawing File Name: 13141_Conduit_Lighting_Det_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information — Unit Leader Initials

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Date:	Comments	Init.

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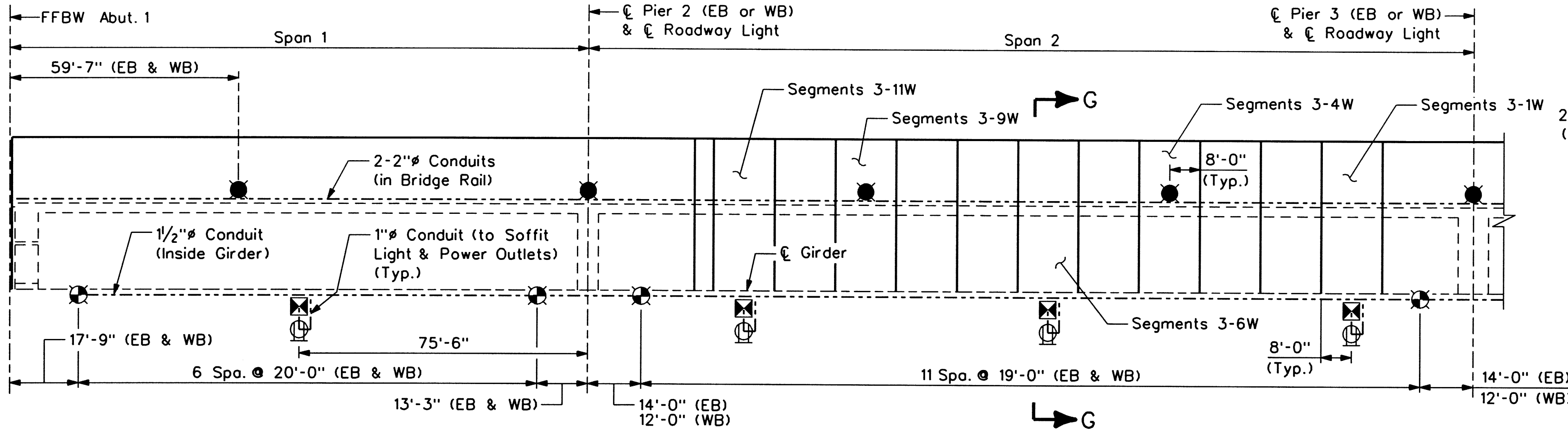
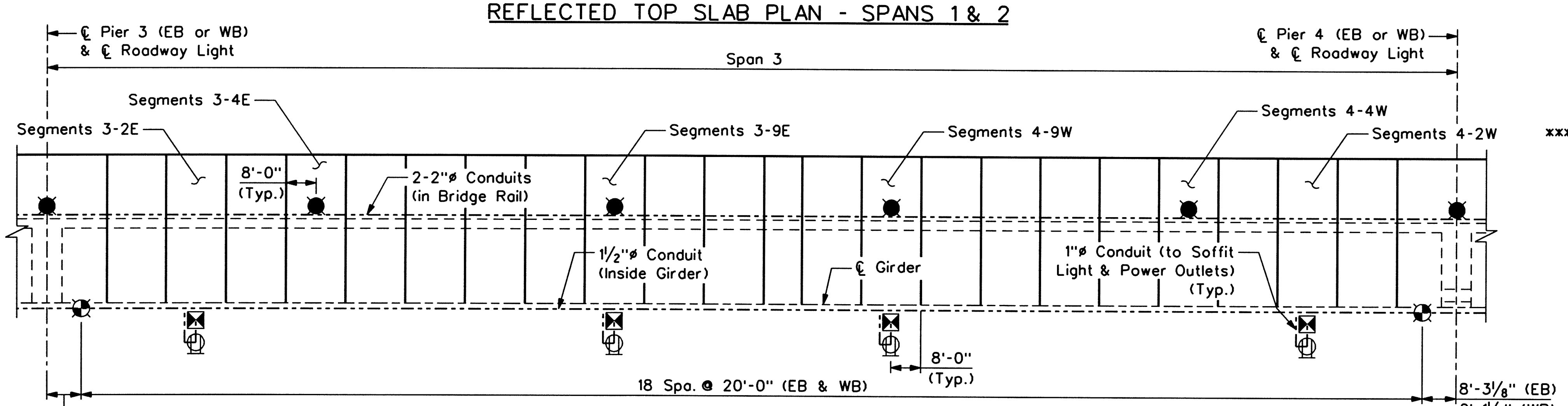
CONDUIT AND LIGHTING DETAILS II

Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: D. Anderson		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B135 of B169		

Project No./Code
BR 0961-008
13141
Sheet Number 232

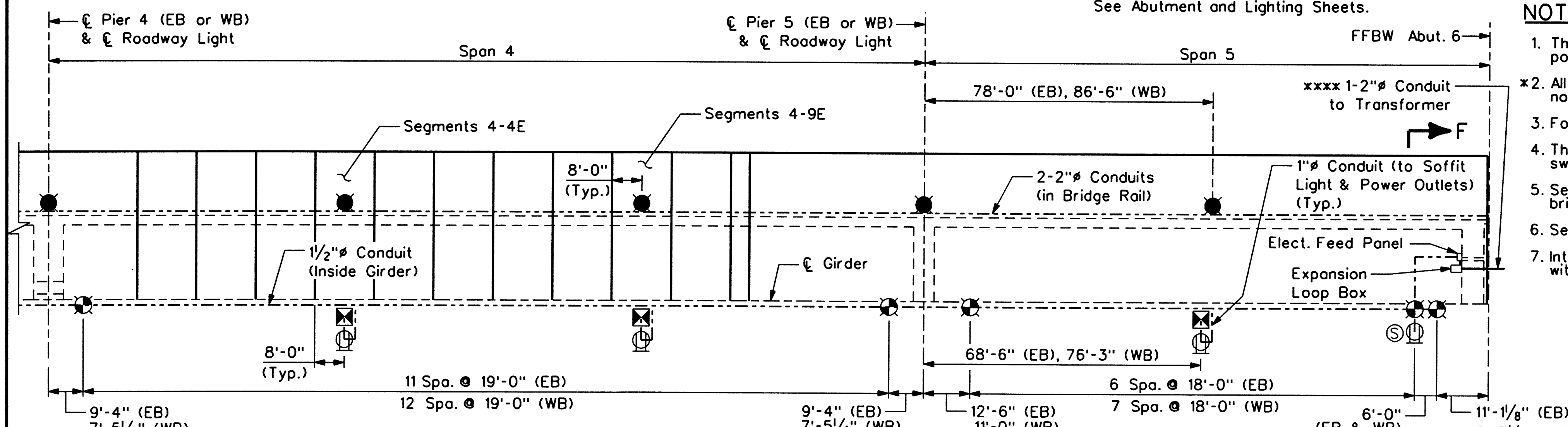


REFLECTED TOP SLAB PLAN - SPANS 1 & 2

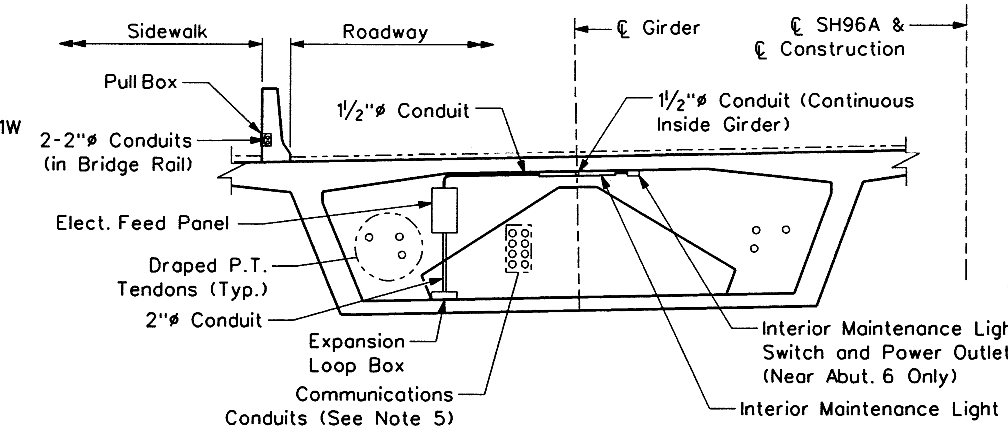


* REFLECTED TOP SLAB PLAN - SPAN 3

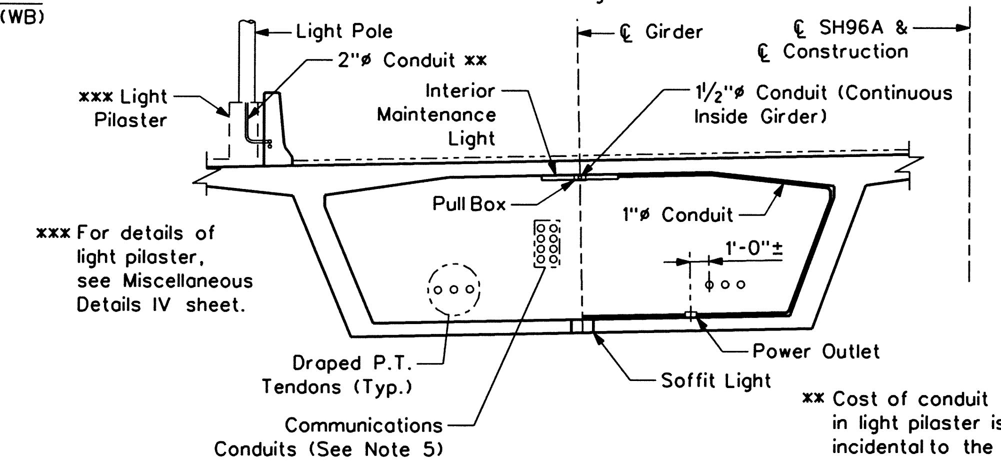
xxxx For 2"ø Conduit to Transformer, See Abutment and Lighting Sheets.



* REFLECTED TOP SLAB PLAN - SPANS 4 & 5



SECTION F-F
(Power Feed Through Abutment 6)



xxx For details of light pilaster, see Miscellaneous Details IV sheet.

SECTION G-G
(Typical at Soffit Light and Power Outlet)

xx Cost of conduit in light pilaster is incidental to the cost of barrier conduits.

LEGEND

- Interior Maintenance Light
- Roadway Light
- Soffit Light
- Power Outlet
- [illegible] Maintenance Light Switch

PRELIMINARY

NOTES:

1. This drawing shows a schematic of lighting on and in the EB and WB bridges, maintenance power outlets, and associated conduits.
*2. All longitudinal dimensions are measured along centerline girder. Horizontal curvature is not shown for simplicity.
3. For conduit, light, outlet, and switch details, see lig[illegible]ns.
NOT FOR CONSTRUCTION
4. The conduits are paid under the items listed on a linear foot basis. Quantities for the lights, switches, and other items are shown on the lighting drawings.
5. See the Conduit and Lighting Details I and II sheets for communications conduit on the bridges and associated hanger supports.
6. See the Bridge Rail Type 7 Special Details sheets for conduit in the bridge rails.
7. Interior maintenance lights, power outlets, and switches may be mounted with drilled inserts with a depth not to exceed 1".

ESTIMATED QUANTITIES

Item No.	Item Description	Unit	Quantity
613-00100	1" Inch Electrical Conduit	LF	696
613-00150	1½" Inch Electrical Conduit	LF	2,242
613-00200	2" Inch Electrical Conduit	LF	9,536
613-00300	3" Inch Electrical Conduit	LF	4,500
613-00400	4" Inch Electrical Conduit	LF	11,490
613-04020	Hanger System	LS	1

Print Date: 12/12/2006
Drawing File Name: 13141_Conduit_Lighting_Det_III.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date: | Comments | Init.

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Region 2 KSR

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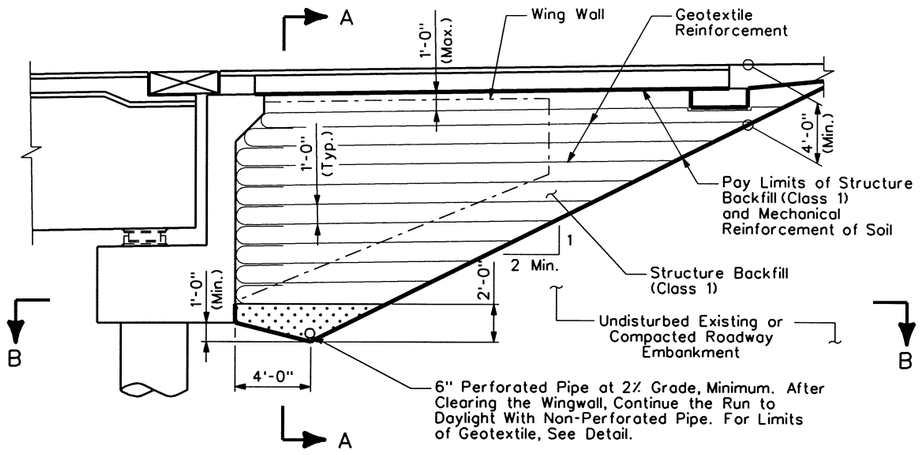
No Revisions:
Revised:
Void:

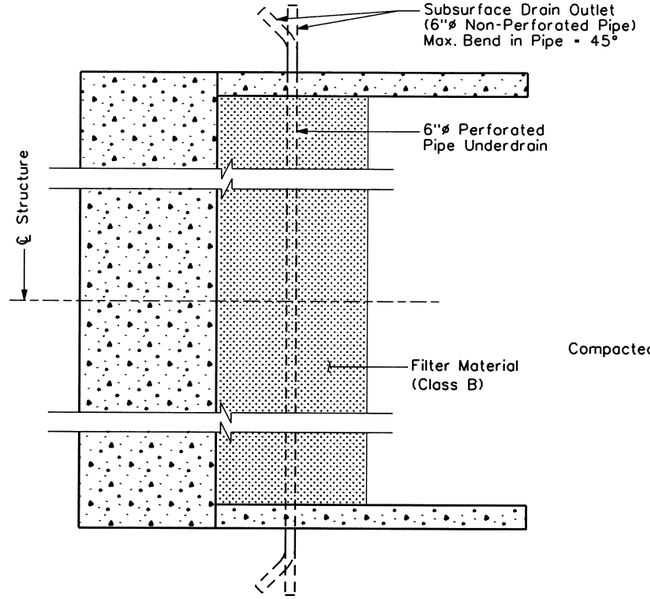
CONDUIT AND LIGHTING DETAILS III

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B136 of B169

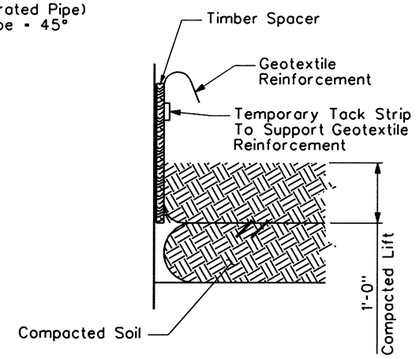
Project No./Code
BR 0961-008
13141
Sheet Number 233



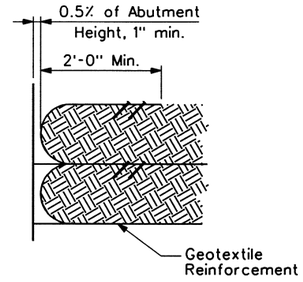
SECTION PERPENDICULAR TO ABUTMENT



SECTION B-B

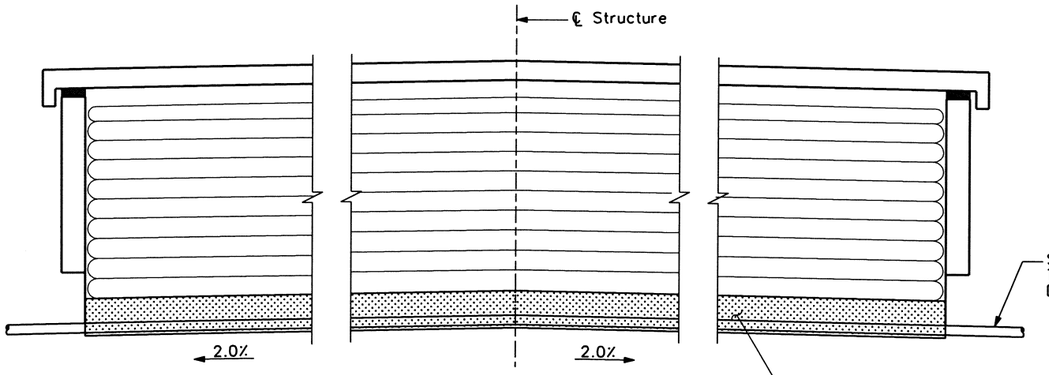


GAP DETAIL STEP 1



GAP DETAIL STEP 2

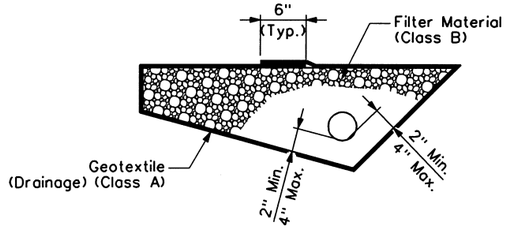
When required, the Geotextile Reinforcement wrap at Back Face of Abutment shall be temporarily hung with a spacer board and tack strip. After reaching a total of 1'-0" compacted lift, the tack strip shall be removed and Geotextile Reinforcement shall be pulled back slack free with its end anchored to soil underneath with staples or pins before the spacer board is pulled. Any alternate method to maintain the minimum gap between Abutment Concrete and Reinforced Soil may be proposed to the Engineer for approval.



SECTION A-A
(Bridge Rails Not Shown)

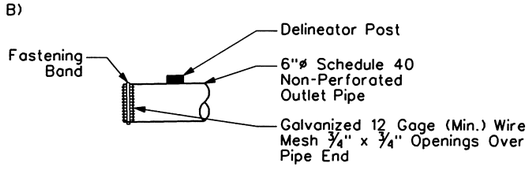
PRELIMINARY

NOT FOR CONSTRUCTION

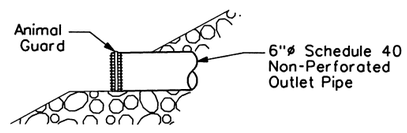


6 INCH PERFORTED PIPE UNDERDRAIN

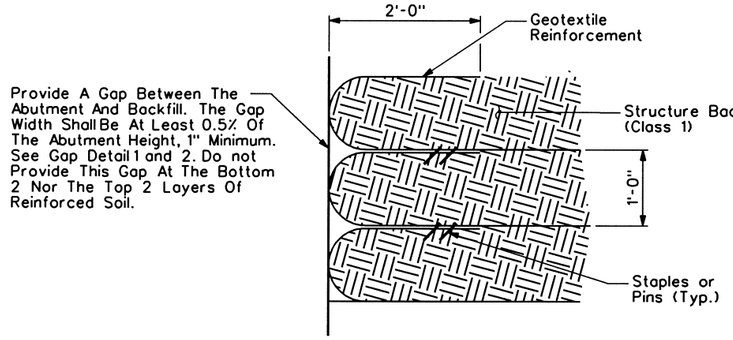
6 Inch Perforated Pipe Underdrain includes all Filter Material (Class B) and Geotextile (Drainage) (Class A) surrounding the Filter Material (Class B).



OUTLET PIPE TREATMENT - PLAN



OUTLET PIPE TREATMENT - ELEVATION



WRAP DETAIL

NOTES:

1. Geotextile Reinforcement shall be woven fabric with a Minimum Average Roll Value of 4800 lb/ft for installations with a gap and 2400 lb/ft for installations without a gap based on ASTM D4595.
2. Geotextile Reinforcement shall be placed by alternating Machine Direction (MD) with Cross Machine Direction (XD) from layer to layer.
3. The Geotextile Reinforcement wrap at Back Face of Abutment shall be pulled back slack free with its end anchored to soil underneath with staples or pins.
4. Minimum splice of all Geofabric shall consist of 6" of overlap.
5. Payment will be made under Item 206 Mechanical Reinforcement of Soil (CY) and Item 206 Structure Backfill (Class 1) (CY) and shall include the cost for 6 Inch Perforated Pipe Underdrain and Subsurface Drain Outlet (6" Non-Perforated Pipe).
6. Installation of Pipe Underdrain and Subsurface Drain Outlet shall conform to the Construction requirements of Section 605.03 and 605.06, respectively.

Design	INITIAL	DATE
Designed By	JRD	12/06
Checked By	RKM	12/06

Detail	INITIAL	DATE
Detailed By	RJA	12/06
Checked By	JRD	12/06

Quantities	INITIAL	DATE
Quantities By	JRD	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Bridge_Excavation_Backfill_IV.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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BRIDGE EXCAVATION AND BACKFILL IV

Designer:	J. Dvorak	Structure Numbers	K-18-GS (EB)
Detailer:	R. Adams		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B140of B169

Project No./Code: BR 0961-008
13141
Sheet Number 237

NOTES:

1. The notes on this drawing are applicable to the Superstructure Construction Schematic I, Superstructure Construction Schematic II, and Superstructure Construction Schematic III drawings that follow.

2. The information shown on the Superstructure Construction Schematic (I, II, & III) drawings illustrate the assumptions made by the Engineer of Record during design of the structure. Information shown is for information only. The Contractor is responsible for selecting the means and methods of construction, and shall submit details of these means and methods to the Engineer for review. This shall include details of the construction sequence as well as supporting calculations showing the influence of the selected sequence, loads, and details on the structure, in accordance with the contract plans and Project Specifications.

3. The Contractor shall be responsible for stability of the structure during construction with due consideration of the construction sequence assumed in design and his selected means and methods.

4. The Contractor shall be responsible for the design of falsework, formwork, and other temporary works in conformance with AASHTO and the requirements of the Project Specifications. Where applicable, falsework design and details shall also be in accordance with railroad requirements and shall provide at least the minimum temporary railroad clearances required during construction, as specified by the railroads. All other temporary clearances shall be met, and the Contractor is responsible for providing all specified clearances of the affected railroads, OSHA, CDOT, City of Pueblo, and other governing agencies during construction. Erection over the Railroad's right-of-way shall be designed to not interrupt railroad operations and shall be developed to enable track(s) to remain open for Railroad traffic per Railroad requirements. The quantity and characteristics of drainage flow in the in the yard shall be maintained in such a way as to avoid detrimental drainage impacts to the yard. The Contractor shall include the cost of meeting all requirements in the contract bid price.

5. The bridge piers have NOT been designed to resist the out-of-balance loads during cantilever construction. Therefore, a stability prop(s) and counterweights are required to maintain stability of the cantilevers during cantilever construction. The Contractor is responsible for determining the location and loads acting on the prop(s) based on his selected means and methods, and for the design of the prop(s) and their foundations, for additional reinforcing needed in the superstructure at the prop(s) location(s) and all other details associated with use of the prop(s) in construction. In addition, the Contractor is responsible for determination of counter-weight needs based on his selected means and methods, and for determination of the size and locations of the counterweights on the structure at all stages and phases of construction.

6. The Contractor is responsible for checking the adequacy of the structure and providing any additional reinforcing and/or other modifications needed to resist construction loads. No additional payment will be made for this additional reinforcing and/or other modifications to the structure. The cost of any additional reinforcing and/or other modifications to the structure to accommodate the Contractor's selected means and methods shall be included in the contract bid price.

7. The trail running along the Arkansas River and the Loop Ramp road adjacent to Abutment 6 shall remain open during construction in accordance with the contract plans and Project Specifications.

   The trail shall be maintained with a minimum width of 10'-0", a minimum vertical clearance of 8'-6", and shall be enclosed in a CDOT approved safety enclosure. Temporary barricades shall be provided to guide pedestrians through the work area in a manner most convenient to the Contractor. It is understood that temporary pedestrian access closures will be needed for some construction activities occurring in this region. Any closures shall be coordinated with the Engineer.

   Falsework shall span the Loop Ramp road to maintain the road in its current two-lane configuration with a minimum vertical clearance of 14'-6", as per the planned construction phasing, and in accordance with the contract plans and Project Specifications. Falsework shall be protected from vehicle impact through the use of temporary barriers in accordance with AASHTO requirements.

8. Cantilever construction and construction of the end span regions on falsework may occur simultaneously or in sequence as determined by the Contractor. However, closure pour segments in both spans 2 and 4 must be placed prior to pouring the main span closure in Span 3 in accordance with the superstructure construction schematic drawings.

9. Post-tensioning tendons shall be stressed in the sequence and construction step shown in the Superstructure Construction Schematic drawings.

   The Contractor shall stress each pair of tendons to either side of the centerline girder prior to moving to the next pair of tendons. For example, tendons 3-B11 (right) and 3-B11 (left) shall be stressed prior to stressing tendons 3-B10, where left and right denote the tendons to either side of the centerline girder.

10. Utilities shown on the superstructure construction schematic drawings are not intended to be all inclusive of utilities within the project limits. See Utilities plans for additional utility information.

11. For existing clearances to railroad tracks, see Railroad Clearances drawing.

12. For additional information related to construction near railroad tracks, see Construction Over Railroad drawing.

PRELIMINARY

[redacted]

NOT FOR CONSTRUCTION

OVERHEAD POWERLINES EXIST IN THE VICINITY OF PIER 5 AND ABUTMENT 6. TEMPORARY SHUTDOWN OF THESE LINES IS REQUIRED FOR CONSTRUCTION IN THIS REGION. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY (AQUILA NETWORKS) FOR NECESSARY SHUTDOWNS TO ENSURE A SAFE WORKING ENVIRONMENT. SEE PROJECT SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, THE UTILITIES PROJECT SPECIAL PROVISION AND STANDARD SPECIAL PROVISION REVISION OF SECTION 107 PROJECT SAFETY.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	SEF	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Constr_Schem_Notes.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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No Revisions:
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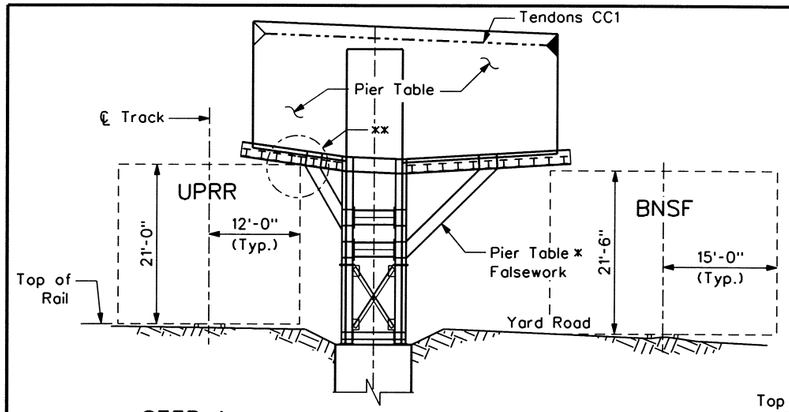
Void:

SUPERSTRUCTURE CONSTRUCTION NOTES

Designer: K. Montgomery
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B149 of B169

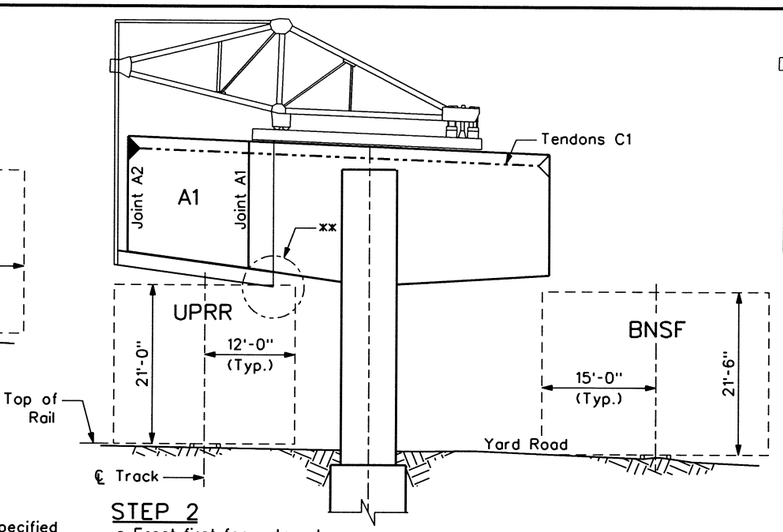
Project No./Code: BR 0961-008
13141
Sheet Number 246



STEP 1

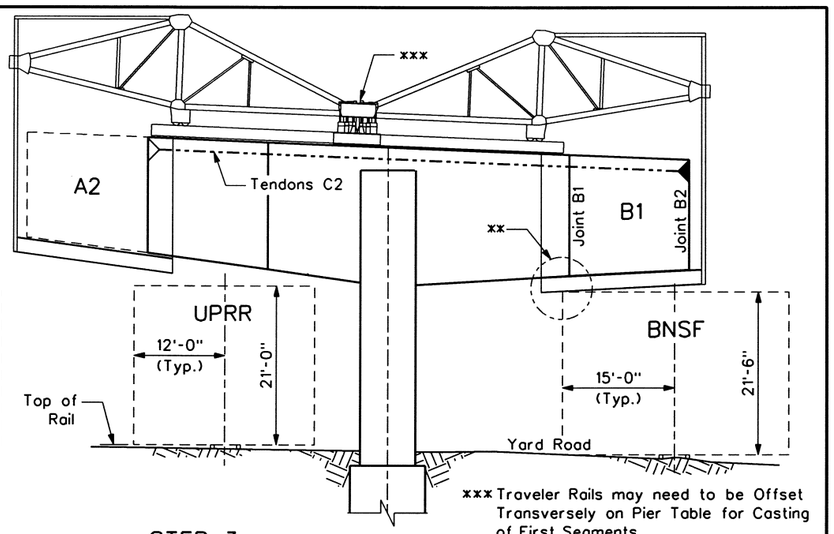
a. Construct the pier table on falsework after column is constructed.
b. Stress transverse tendons in pier table followed by Tendons CC1 (See Note 2).
c. Remove pier table falsework.

** Possible encroachment into specified railroad clearance zone. Contractor to be aware when selecting erection equipment.



STEP 2

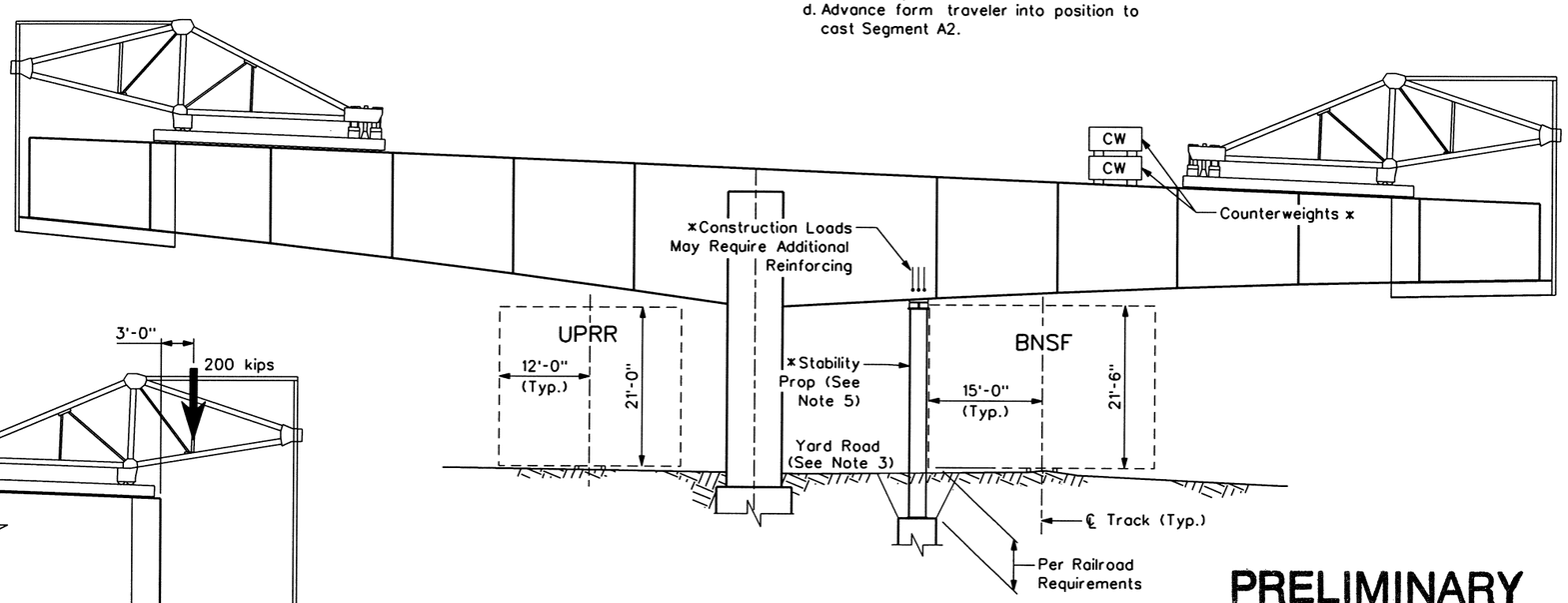
a. Erect first form traveler.
b. Cast Segment A1.
c. Stress transverse tendons in Segment A1 followed by Tendons C1 (See Note 2).
d. Advance form traveler into position to cast Segment A2.

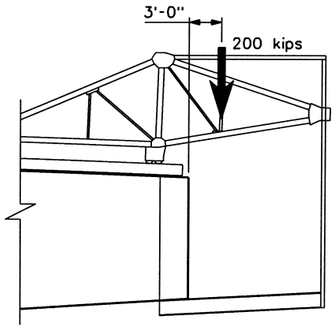


*** Traveler Rails may need to be Offset Transversely on Pier Table for Casting of First Segments

STEP 3

a. Erect second form traveler.
b. Cast Segment B1.
c. Stress transverse tendons in Segment B1 followed by Tendons C2 (See Note 2).
d. Advance form traveler into position to cast Segment B2.





FORM TRAVELER
WEIGHT ASSUMED
FOR DESIGN

STEP 4

a. Continue casting segment pairs, always casting segment Type A first. Cantilever tendons are stressed in sequence as casting proceeds outwards.

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. This drawing is a schematic for cast-in-place segmental construction of the cantilevers (Cantilever 4 shown). See Superstructure Construction Schematic II and III sheets for additional information on the overall construction sequence.
2. Concrete shall achieve a minimum compressive strength of 4000 psi prior to stressing any post-tensioning anchoring in that element or segment. The transverse tendons in a segment shall be stressed first, followed by the cantilever tendons. All tendons anchoring in a segment shall be stressed prior to lowering the forms and advancing the form traveler.
3. The following minimum railroad clearances shall be maintained at all times and for all tracks, measured from centerline track and top of rail:

Vertical Clearance	21'-0" (UPRR)	21'-6" (BNSF)
Horizontal Clearance	12'-0" (UPRR)	15'-0" (BNSF)

Work within these limits would require temporary track closure or a variance from the affected railroad. Granting of such a variance is dependent on submittal of details and is at the sole discretion of the railroad.

The Yard Road shall be maintained as directed by the Railroad Yard Masters.

4. See Pier Table Dimensions and P.T. Details Sheet for stressing sequence for pier table diaphragm post-tensioning.

*5. For additional information, see Superstructure Construction Notes sheet.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	SEF	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Constr_Schem01.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Date:	Comments	Init.

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Region 2 KSR

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No Revisions:	
Revised:	
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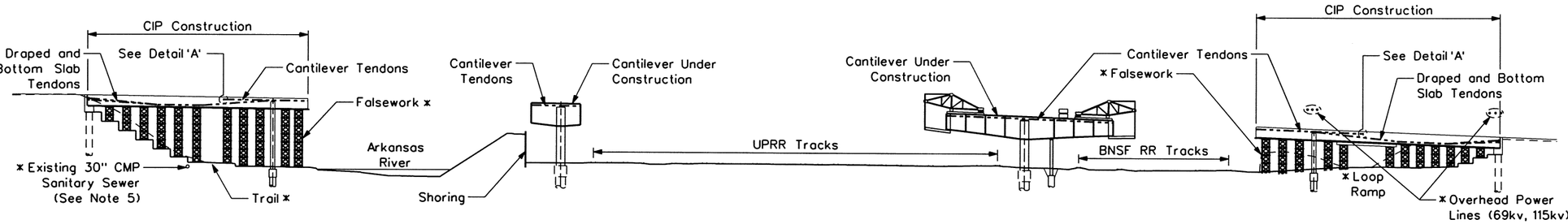
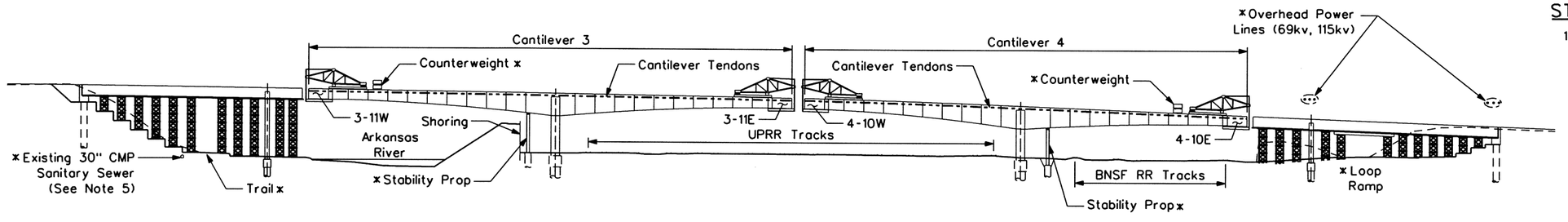
SUPERSTRUCTURE CONSTRUCTION
SCHEMATIC I

Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: D. Anderson		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets:	B150 of B169	

Project No./Code	
BR 0961-008	
13141	
Sheet Number	247

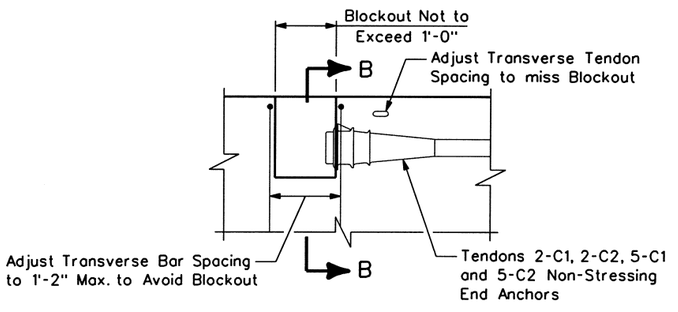


STAGE I

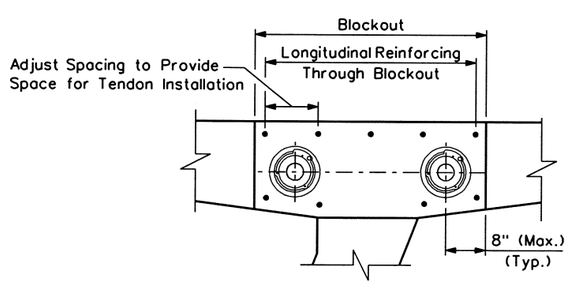


STAGE II

PRELIMINARY



DETAIL A



SECTION B-B

NOT FOR CONSTRUCTION

OVERHEAD POWERLINES EXIST IN THE VICINITY OF PIER 5 AND ABUTMENT 6. TEMPORARY SHUTDOWN OF THESE LINES IS REQUIRED FOR CONSTRUCTION IN THIS REGION. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY (AQUILA NETWORKS) FOR NECESSARY SHUTDOWNS TO ENSURE A SAFE WORKING ENVIRONMENT. SEE PROJECT SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, THE UTILITIES PROJECT SPECIAL PROVISION AND STANDARD SPECIAL PROVISION REVISION OF SECTION 107 PROJECT SAFETY.

STAGE I:

1. Construct CIP construction regions on falsework after abutments and Piers 2 and 5 are constructed.
2. Stress transverse tendons in CIP construction regions.
3. Stress Cantilever Tendons 2-C1, 2-C2, 5-C1, and 5-C2.
4. Pour back dead end blockout for Cantilever Tendons. (See Detail 'A')
5. Stress Draped Tendons 1-D1, 1-D2, 1-D3, 5-D1, 5-D2, and 5-D3.
6. Stress Bottom Slab Tendons 1-B1 through 1-B5 and 5-B1 through 5-B4.
7. Leave falsework in place. (Forms may be stripped, but falsework supports girder soffit.)

Note: Tendons shall be stressed in pairs per requirements listed on the Superstructure Construction Notes sheet.

STAGE II:

1. Construct cantilevers per sequence given on Superstructure Construction Schematic I Sheet. Cantilever Tendons 3-C1 through 3-C22, 3-CC1 through 3-CC3, 4-C1 through 4-C20 and 4-CC1 through 4-CC3 are stressed in sequence during cantilever construction.

   The pier tables and the first three segments to either side of a cantilever shall achieve a concrete compressive strength of 5800 psi prior to pouring the tenth segments to either side of a cantilever. The fourth through seventh segments to either side of a cantilever shall achieve 5000 psi prior to casting the tenth segments to either side of a cantilever.

   Note: Tendons shall be stressed in pairs per requirements listed on the Superstructure Construction Notes sheet.

NOTES:

1. This drawing shows the overall construction sequence for both the EB and WB structures. See Superstructure Construction Schematic IV sheet for traffic phasing on the bridge structures.
2. The CIP construction region concrete shall achieve a minimum compressive strength of 4000 psi prior to stressing any post-tensioning anchoring in that region. The transverse tendons in the CIP construction regions shall be stressed first, followed by the cantilever, draped and bottom slab tendons. All transverse tendons shall be stressed prior to removing any formwork.
3. See Pier Table Dimensions and P.T. Details, Piers 2 & 5 Dimensions and P.T. Details, and Abutment Diaphragm Dimensions & P.T. Details sheets for stressing sequence for diaphragm post-tensioning.
4. ⁎ For additional information, see Superstructure Construction Notes sheet.
5. Protect existing 30" CMP Sanitary Sewer from displacement and damage during construction. Falsework towers shall not be located directly over sewer line or in conflict with existing manholes.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	SEF	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Constr_Schem02.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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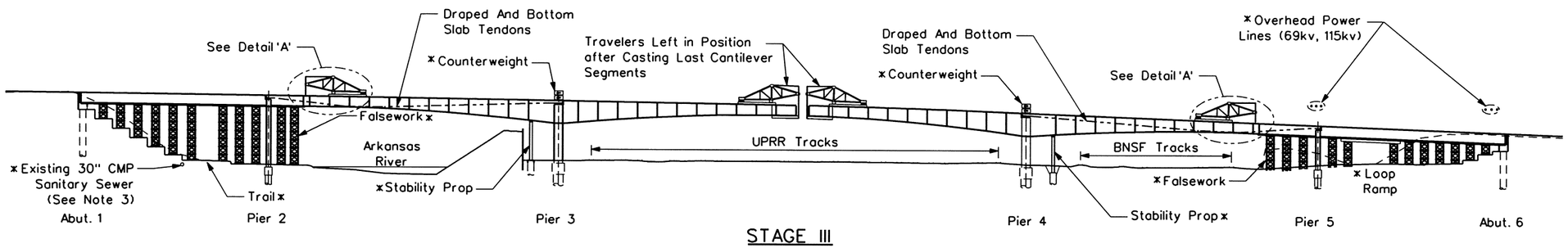
Region 2 KSR

As Constructed
No Revisions:
Revised:
Void:

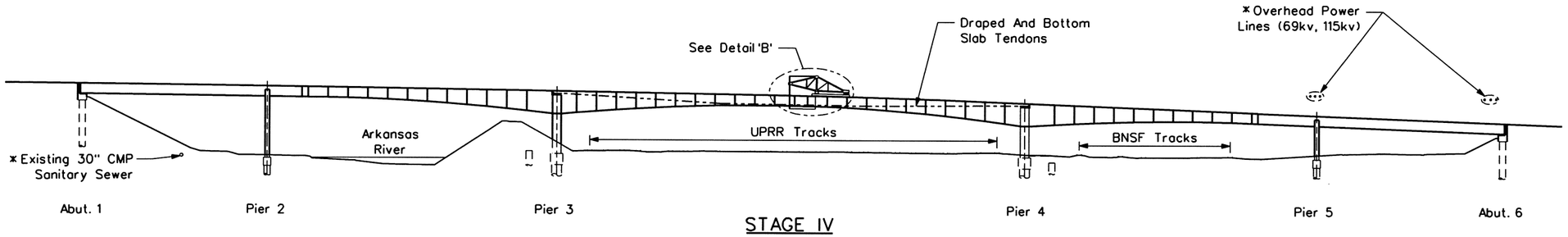
SUPERSTRUCTURE CONSTRUCTION SCHEMATIC II

Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: D. Anderson		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B151 of B169		

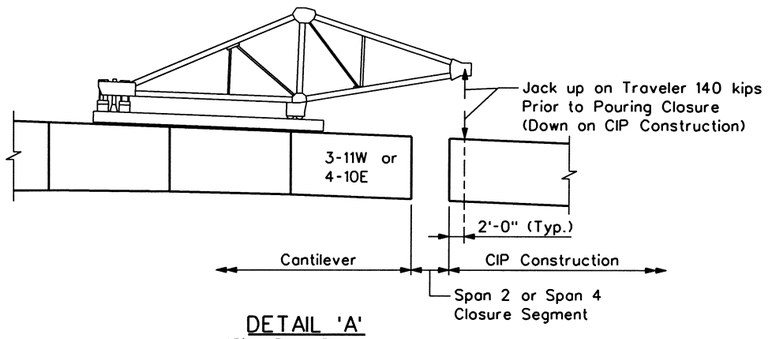
Project No./Code
BR 0961-008
13141
Sheet Number 248



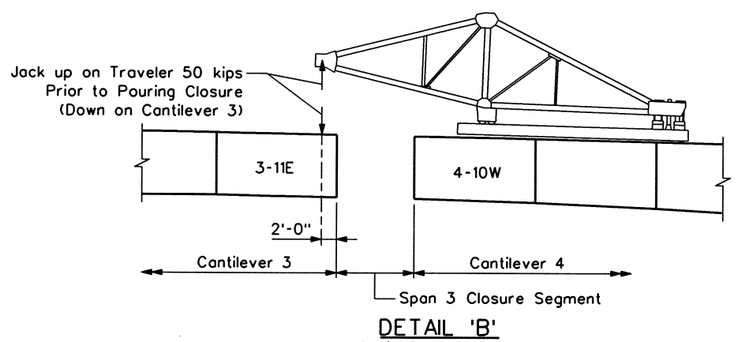
STAGE III



STAGE IV



DETAIL 'A'
(Side Span Closure)



DETAIL 'B'
(Main Span Closure)

NOTES:

1. This drawing shows the overall construction sequence for both the EB and WB structures. See Superstructure Construction Schematic IV sheet for traffic phasing on the bridge structures.
2. * For additional information, see Superstructure Construction Notes sheet.
3. Protect existing 30" CMP Sanitary Sewer from displacement and damage during construction. Falsework towers shall not be located directly over sewer line or in conflict with existing manholes.

OVERHEAD POWERLINES EXIST IN THE VICINITY OF PIER 5 AND ABUTMENT 6. TEMPORARY SHUTDOWN OF THESE LINES IS REQUIRED FOR CONSTRUCTION IN THIS REGION. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY (AQUILA NETWORKS) FOR NECESSARY SHUTDOWNS TO ENSURE A SAFE WORKING ENVIRONMENT. SEE PROJECT SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, THE UTILITIES PROJECT SPECIAL PROVISION AND STANDARD SPECIAL PROVISION REVISION OF SECTION 107 PROJECT SAFETY.

STAGE III:

1. After cantilevers are complete, advance travelers into position to cast Span 2 and Span 4 closure segments. (See Detail 'A') Main Span travelers remain in position.
2. Jack up on travelers (down on CIP Construction) 140 kips total (70 kips per web to balance cantilevers).
3. Remove counterweights or place over Piers 3 and 4.
4. Pour Span 2 and Span 4 closure segments.
5. After closure segments achieve a minimum compressive strength of 1500 psi and not more than 8 hours after pouring closure segments, stress Tendons 2-D3 and 4-D3.
6. After closure segments achieve a minimum compressive strength of 2500 psi, stress Tendons 2-D1, 2-D2, 4-D1, and 4-D2. Jacking force between traveler and CIP construction may now be removed.
7. After closure segments achieve a minimum compressive strength of 4000 psi, stress transverse tendons in closure segment, followed by Tendons 2-B1, 4-B1, and 5-B5. Travelers in Spans 2 and 4, stability props, and falsework may now be removed.

STAGE IV:

1. Remove traveler from Cantilever 3E. Move traveler on Cantilever 4W into position to cast Span 3 closure segment (See Detail 'B').
2. Jack up on traveler (down on Cantilever 3) 50 kips total (25 kips per web).
3. Pour Span 3 closure segment.
4. After closure segment achieves a minimum compressive strength of 1500 psi and not more than 8 hours after pouring closure segment, stress Tendons 3-D4.
5. After closure segment achieves a minimum compressive strength of 2500 psi, stress Tendons 3-D3, 3-D2, and 3-D1.
6. After closure segment achieves a minimum compressive strength of 4000 psi, stress transverse tendons in closure segment, followed by Tendons 3-B11, 3-B10, 3-B9, 3-B8, and 3-B7. Traveler may now be removed.
7. After closure segment achieves a minimum compressive strength of 5000 psi, stress Tendons 3-B6, 3-B5, and 3-B4.
8. After closure segment achieves a minimum compressive strength of 5800 psi and no sooner than 60 days after pouring closure segment, stress Tendons 3-B3, 3-B2, and 3-B1.

PRELIMINARY

NOT FOR CONSTRUCTION

STAGE V:

1. WB (Phase I): Cast Pedestrian curb & South Bridge rail, place expansion joints and associated temporary asphalt, install temporary lighting, and complete other finishing operations. These operations may take place any time after Stage IV, Step 6, is complete.
2. EB (Phases I & II): Cast all railings, place the sidewalk, expansion joints, and wearing surface, and complete other finishing operations. These operations may take place any time after Stage IV, Step 6, is complete.
3. WB (Phase III): Cast North Bridge rail, remove temporary lighting and install pedestrian railing, remove temporary asphalt, place wearing surface and sidewalk, and complete other finishing operations.
4. For Phase designation, See Traffic Control Plans.

Quantities	INITIAL	DATE
	RKM	12/06
Quantities By	DAT	
Checked By		

Detail	INITIAL	DATE
	DRA	12/06
Detailed By	RKM	
Checked By		

Design	INITIAL	DATE
	RKM	12/06
Designed By	SEF	12/06
Checked By		

Print Date: 12/12/2006
Drawing File Name: 13141_Constr_Schem03.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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(303)757-7400

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Sheet Revisions		
Date:	Comments	Init.

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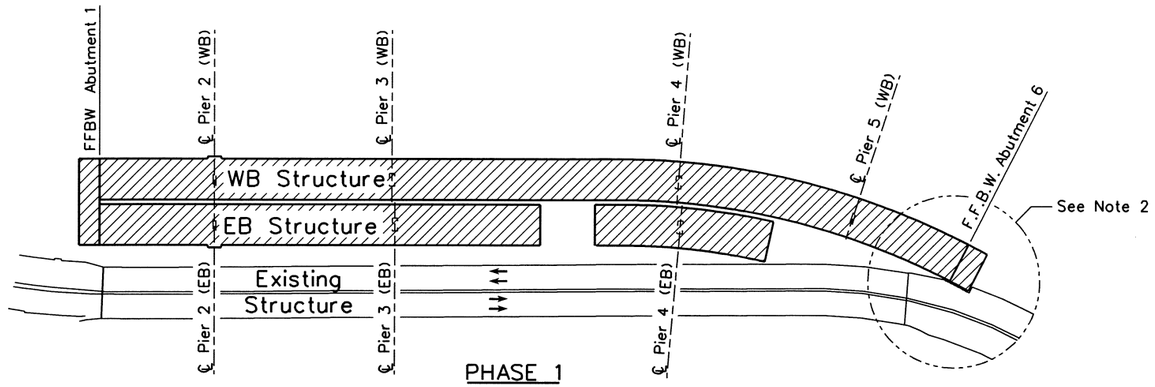
Region 2 KSR

As Constructed	
No Revisions:	
Revised:	
Void:	

SUPERSTRUCTURE CONSTRUCTION SCHEMATIC III

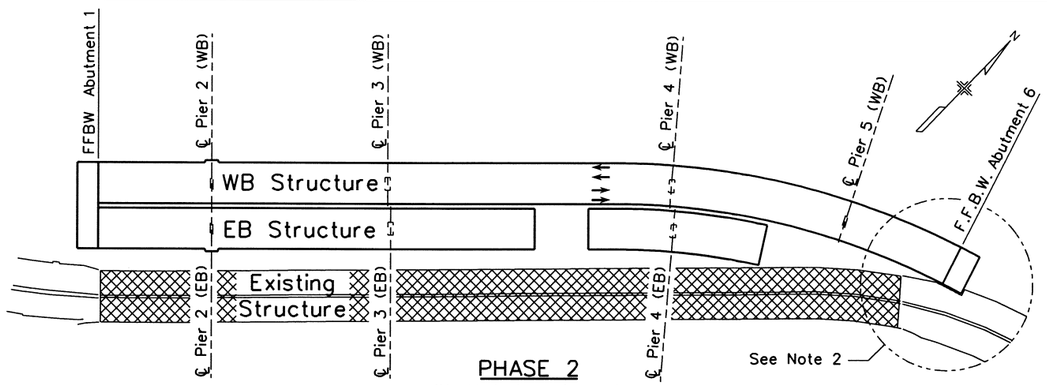
Designer: K. Montgomery	Structure Numbers	K-18-GS (EB)	
Detailer: D. Anderson		K-18-GT (WB)	
Sheet Subset: BRIDGE	Subset Sheets: B152 of B169		

Project No./Code	
BR 0961-008	
13141	
Sheet Number	249



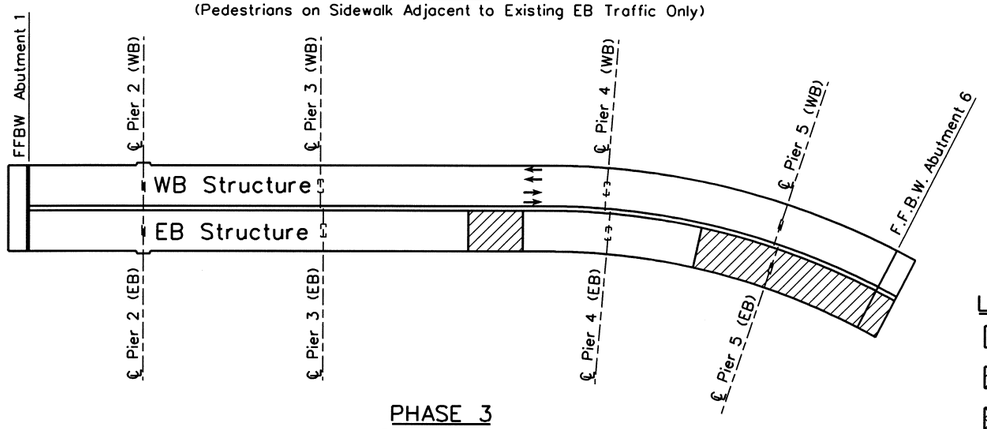
PHASE 1

(Pedestrians on Sidewalk Adjacent to Existing EB Traffic Only)



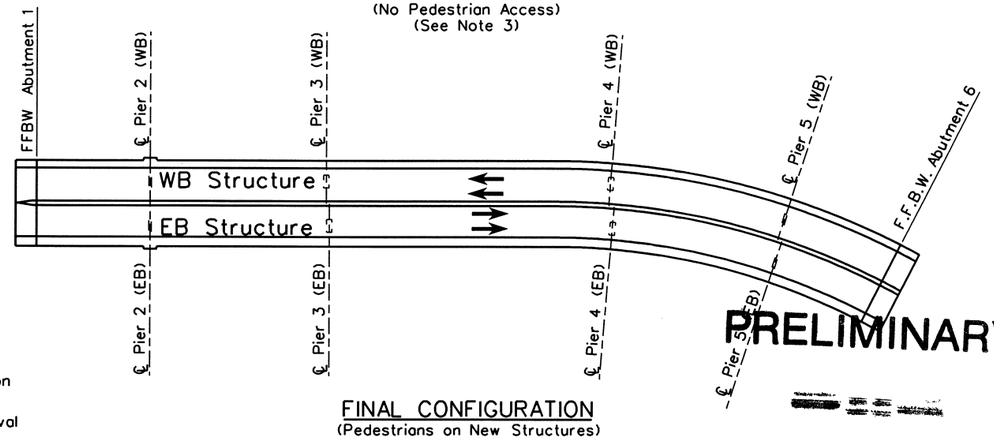
PHASE 2

(No Pedestrian Access)
(See Note 3)



PHASE 3

(No Pedestrian Access)



FINAL CONFIGURATION

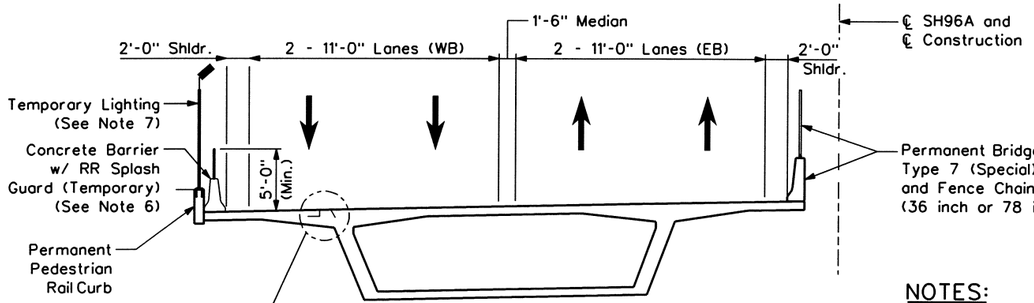
(Pedestrians on New Structures)

PRELIMINARY

NOT FOR CONSTRUCTION

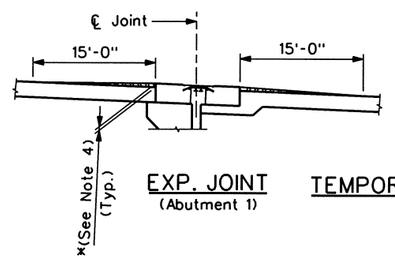
LEGEND

- Completed Construction
- New Construction
- Structure Removal



TEMPORARY WB SECTION

(Phases 2 and 3)
(Looking Upstation)
(No Asphalt or Waterproofing Membrane yet Placed)



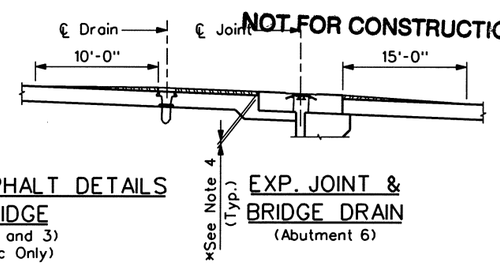
EXP. JOINT

(Abutment 1)

TEMPORARY ASPHALT DETAILS

WB BRIDGE

(Phases 2 and 3)
(Schematic Only)



EXP. JOINT & BRIDGE DRAIN

(Abutment 6)

NOTES:

1. This drawing shows bridge construction phasing to accommdate traffic phasing on the bridge structures in accordance with the overall traffic control plan. See Superstructure Construction Schematic I - III sheets for superstructure construction sequence.
2. Shoring and sidewalk closure will be neccesary for construction of the WB portion of Abutment 6 and associated approach slab. See Abutment 6 and Bridge Excavation and Backfill sheets for more information.
3. Contractor shall coordinate with Qwest for installation of Qwest communications cables on new WB structure. Qwest shall have service transfered to new WB structure prior to Contractor beginning removal of existing structure.
- ×4. Temporary asphalt is paid for under Item Hot Mix Asphalt (Patching) (Asphalt). Temporary asphalt thickness shall accomodate permanent pedestrian sidewalk thickness. Contractor shall (4. Cont.) make smooth transitions across the expansion joints as directed by the Engineer. Consideration should be given to drainage to avoid ponding on the roadway. Asphalt shall be completely removed prior to placing waterproofing membrane for final deck asphalt overlay.
5. See Construction Phasing and Traffic Control Plans.
6. Splash guard is required on temporary concrete barrier from Sta. 23+55 to Sta. 29+85.
7. For temporary lighting, see lighting plans.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	SEF	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006	
Drawing File Name: 13141_Constr_Schem04.dgn	
Horiz. Scale:	Vert. Scale:
Unit Information	Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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DEPARTMENT OF TRANSPORTATION
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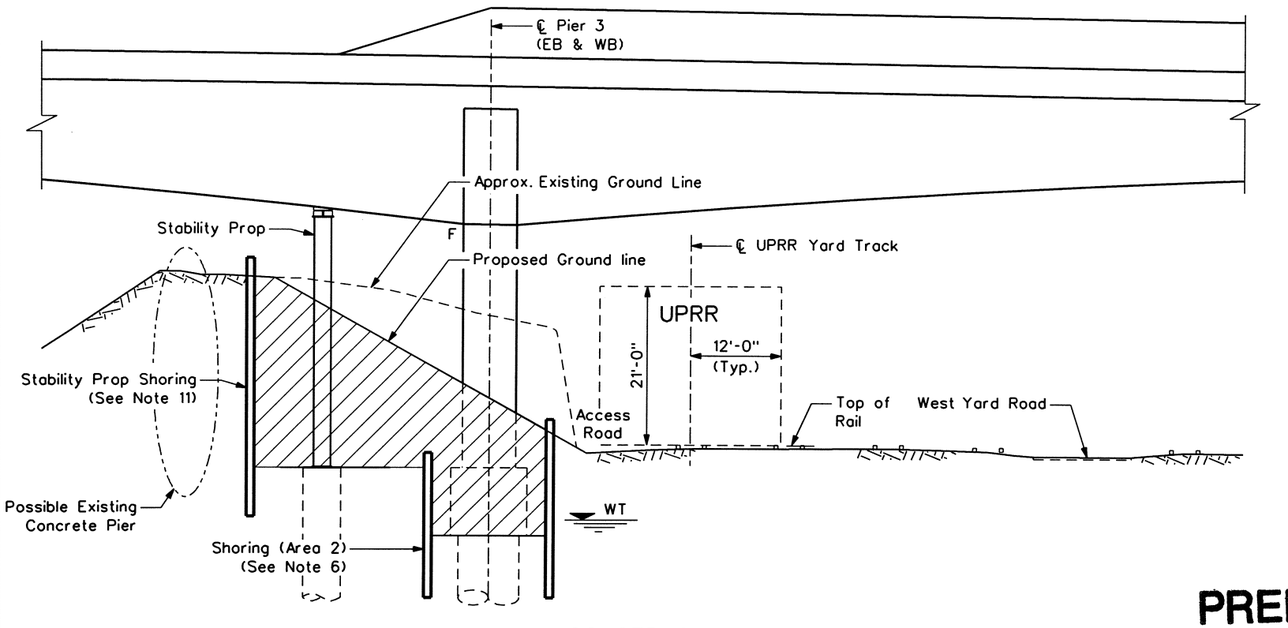
Region 2 KSR

As Constructed	
No Revisions:	
Revised:	
Void:	

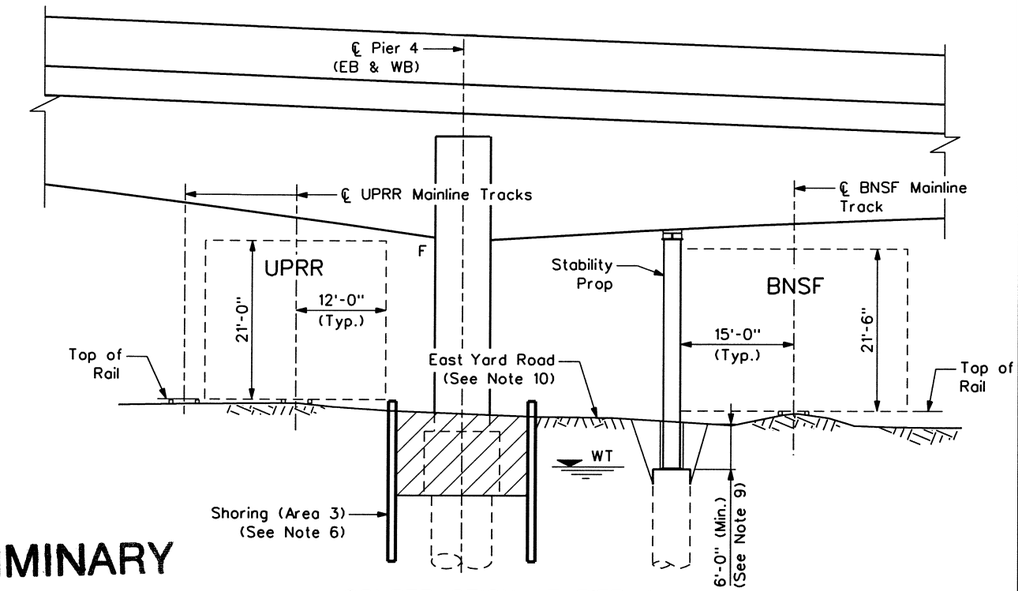
SUPERSTRUCTURE CONSTRUCTION SCHEMATIC IV

Designer: K. Montgomery		Structure Numbers	K-18-GS (EB)
Detailer: D. Anderson			K-18-GT (WB)
Sheet Subset: BRIDGE		Subset Sheets:	B153 of B169

Project No./Code	
BR 0961-008	
13141	
Sheet Number	250



CONSTRUCTION AT PIER 3
(WT Denotes Water Table at Time of Exploration)



CONSTRUCTION AT PIER 4
(WT Denotes Water Table at Time of Exploration)

PRELIMINARY

NOT FOR CONSTRUCTION

NOTES:

1. This drawing is a schematic depicting some of the requirements of the railroads (UPRR, BNSF) for construction within the railroad yard. See Superstructure Construction Schematic sheets and the Project Specifications for additional requirements.
2. The Contractor shall follow all requirements for constructing within the railroad yard on railroad property, as shown on the contract drawings, contained in the Project Specifications, and in all manner communicated to the Contractor by the Railroads.
3. Top of rail elevations shall be verified by survey PRIOR TO BEGINNING CONSTRUCTION OF ANY PORTION OF THE STRUCTURE. This survey information shall be supplied to the Engineer and any discrepancies between the top-of-rail profile shown in the Contract Plans and as determined from the Contractor's survey resolved prior to beginning construction. The Contractor shall allow for a 30-day review period of the Contractor's top-of-rail survey information before beginning any bridge construction.
4. Clear zones shall be maintained at all times. See Superstructure Construction Schematic I sheet.
5. Flaggers supplied by the Railroads shall be present at any time construction personnel or equipment are scheduled to be within 25'-0" of the centerline of a track. Under no circumstances shall construction personnel or equipment approach closer than 25'-0" to the centerline of a track without flaggers present.
6. Shoring required to construct footings near tracks shall be in accordance with Railroad requirements and shall be submitted to the Railroads for review and approval prior to installation. See Bridge Excavation and Backfill Sheets for additional shoring information.
7. Falsework required to construct the superstructure adjacent to and above tracks shall be in accordance with Railroad requirements and shall be submitted to the Railroads for review and approval prior to installation of falsework.
8. Additional information for construction within the railroad yard is included in the Project Specifications and can be obtained from:
   UPRR - "Guidelines for Design and Construction of Falsework for Structures over Union Pacific Railroad"
   "Guidelines for Design and Construction of Shoring Adjacent to Active Union Pacific Railroad Tracks"
   BNSF - "Guidelines for Design and Construction of Grade Separation Structures"
9. Top of stability prop foundation shall be constructed to an elevation a minimum of 6'-0" below final grade in accordance with railroad requirements.
10. Contractor shall coordinate construction of Pier 4 and superstructure stability prop(s) with the railroads, including phasing of the east railroad yard road. The yard road shall be maintained per the direction of the Yard Masters.
11. Any additional excavation and shoring required at Pier 3 to facilitate stability prop shall be considered incidental to Structure Excavation, Structure Backfill, and Shoring. Upon removal of prop, shoring shall be removed and excavation shall be backfilled properly with material matching that removed.
12. The Contractor shall provide a minimum of one foot-candle (or better) for temporary lighting to any yard area shaded by the construction. Temporary lighting shall remain in place as required until such time as permanent lighting is installed.

THE REQUIREMENTS SHOWN ON THIS DRAWING DEPICT SOME OF THE REQUIREMENTS OF THE AFFECTED RAILROADS (UPRR, BNSF) FOR CONSTRUCTION ON, NEAR, AND OVER RAILROAD PROPERTY, TRACKS, AND FACILITIES. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL RAILROAD REQUIREMENTS AS WELL AS CONFORMING TO ANY AND ALL SAFETY OR OTHER REQUIREMENTS FROM OTHER GOVERNING AGENCIES, INCLUDING, BUT NOT LIMITED TO, OSHA, EPA, AND OTHERS.

CONSTRUCTION IMPACTS RESULTING FROM OPERATIONS ON, NEAR, AND OVER RAILROAD PROPERTY, TRACKS, AND FACILITIES SHALL BE CONSIDERED BY THE CONTRACTOR AND INCLUDED IN THE CONTRACT BID PRICE. CONSIDERATIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO, MEANS AND METHODS OF CONSTRUCTION, SAFETY, RAILROAD COORDINATION, TEMPORARY CLEARANCES, TRACK CLOSURE REQUESTS, FALSEWORK (DESIGN, INSTALLATION, AND REMOVAL), SHORING, ACCESS, STAGING, WORK TIME RESTRICTIONS, MAINTENANCE OF YARD TRAFFIC, FLAGGING, DEMOLITION, AND OTHERS. THE CONTRACTOR SHALL PLAN HIS WORK TO BE IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE GIVEN RAILROAD REQUIREMENTS AND CONSTRUCTION ON, NEAR, AND OVER RAILROAD PROPERTY, TRACKS, AND FACILITIES.

Design	INITIAL	DATE
Designed By	RKM	12/06
Checked By	SEF	12/06

Detail	INITIAL	DATE
Detailed By	DRA	12/06
Checked By	RKM	12/06

Quantities	INITIAL	DATE
Quantities By	RKM	12/06
Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Constr_Over_RR.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

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Region 2 KSR

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No Revisions:
Revised:
Void:

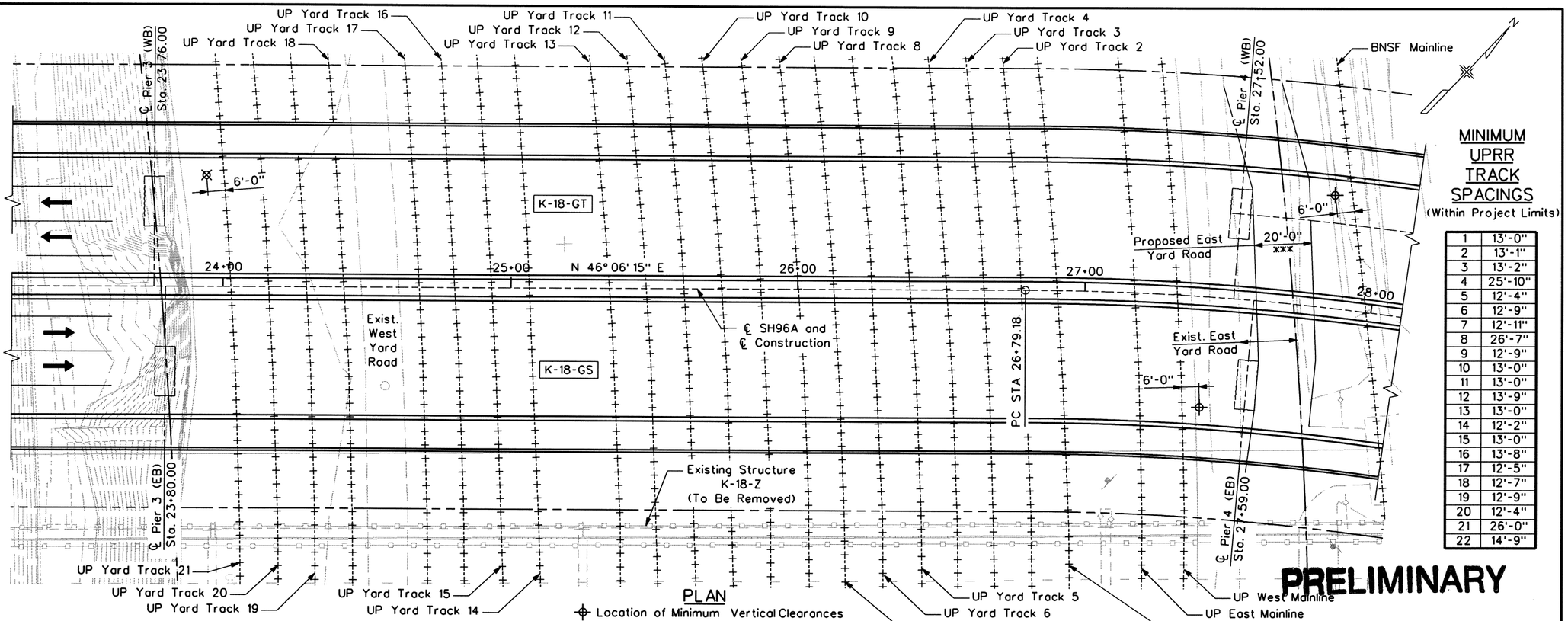
CONSTRUCTION OVER RAILROAD

Designer:	J. Dvorak	Structure Numbers	K-18-GS (EB)
Detailer:	D. Anderson		K-18-GT (WB)
Sheet Subset:	BRIDGE	Subset Sheets:	B154 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 251

NOTES:

1. Span lengths given along ℄ SH96A & ℄ Construction. (xx'-x") denotes span lengths along ℄ Girder.
2. * Horizontal clearance is from ℄ track. For temporary clearances required during construction, see Superstructure Construction Schematic sheets.
3. ** Vertical clearance is from top of rail. For temporary clearances required during construction, see Superstructure Construction Schematic sheets.
4. *** Maintain East Yard Road and maintain 16'-0" width around Pier 4 and temporary Prop during construction.
5. For under-viaduct lighting, see Lighting and Electrical sheets.
6. For Right-of-Way limits, see Right-of-Way Plans.
7. For Railroad milepost and increasing station direction and track elevations, see Railroad Plan and Railroad Track Profiles sheets.
8. Excavation and Shoring shall be per Railroad guidelines. See Bridge Excavation and Backfill I sheet and Project Specifications.
9. See General Layout sheets for additional information.



PLAN

⊕ Location of Minimum Vertical Clearances

1,137'-0" (Overall Length of Bridge)
(1,123'-0⅜" EB Structure) (1,150'-11⅝" WB Structure)

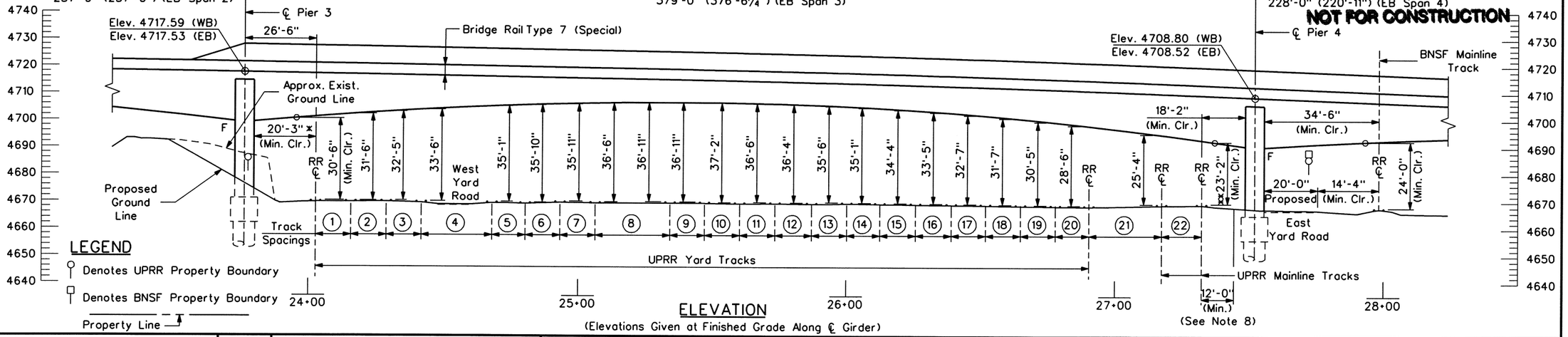
MINIMUM UPRR TRACK SPACINGS
(Within Project Limits)

1	13'-0"
2	13'-1"
3	13'-2"
4	25'-10"
5	12'-4"
6	12'-9"
7	12'-11"
8	26'-7"
9	12'-9"
10	13'-0"
11	13'-0"
12	13'-9"
13	13'-0"
14	12'-2"
15	13'-0"
16	13'-8"
17	12'-5"
18	12'-7"
19	12'-9"
20	12'-4"
21	26'-0"
22	14'-9"

PRELIMINARY

[redacted]

NOT FOR CONSTRUCTION



ELEVATION

(Elevations Given at Finished Grade Along ℄ Girder)

LEGEND

- Denotes UPRR Property Boundary
- Denotes BNSF Property Boundary
- Property Line

Quantities	INITIAL	DATE
	JRD	12/06
Quantities By	DAT	12/06
Checked By		

Detail	INITIAL	DATE
	DRA	12/06
Detailed By	JRD	12/06
Checked By		

Design	INITIAL	DATE
	JRD	12/06
Designed By	RKM	12/06
Checked By		

Print Date: 12/12/2006
Drawing File Name: 13141_Railroad_Clearances_1.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Region 2 KSR

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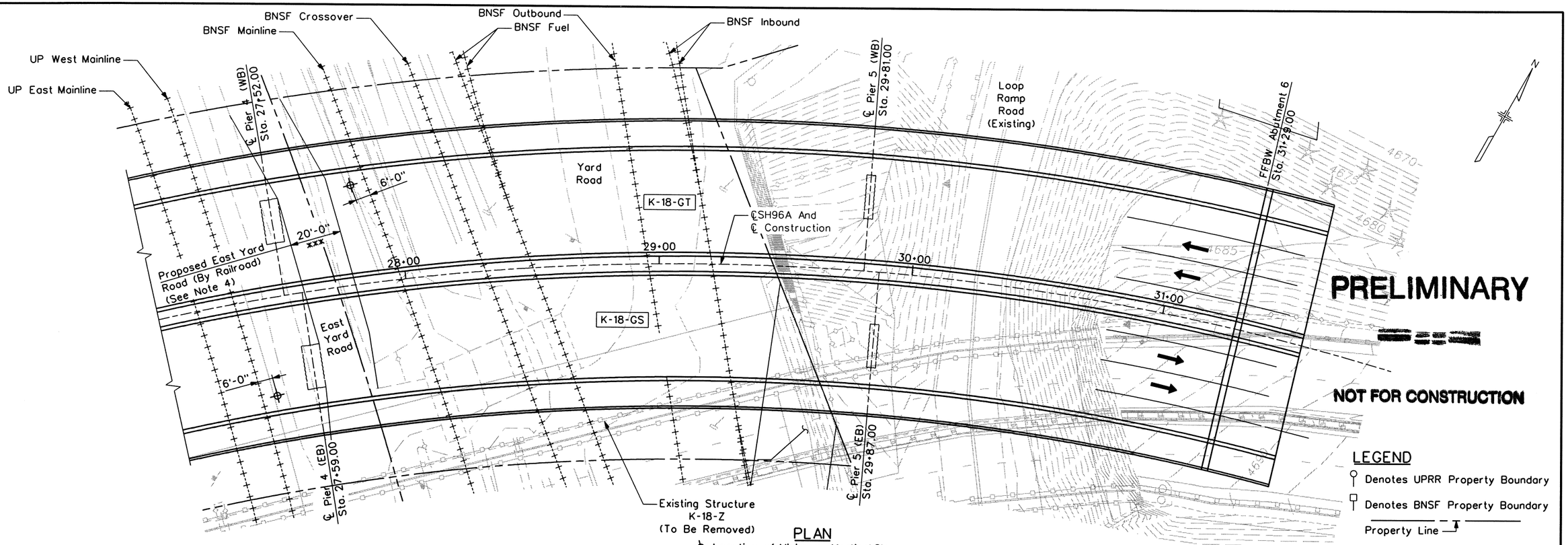
RAILROAD CLEARANCES 1

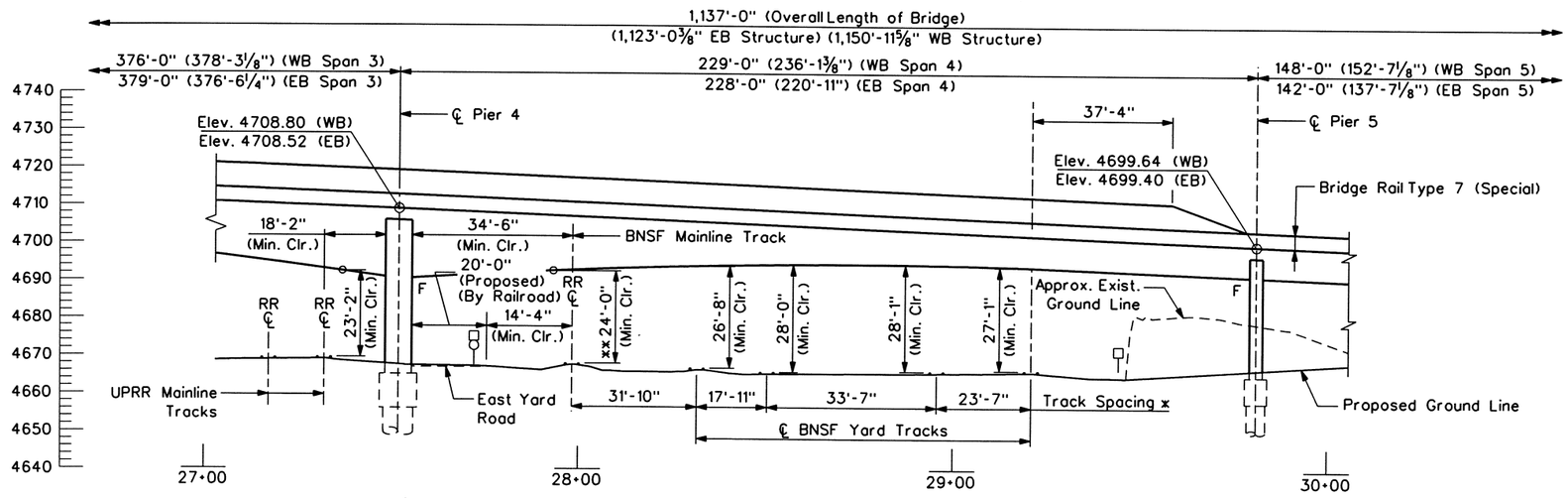
Designer: J. Dvorak
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B161 of B169

Project No./Code
BR 0961-008
13141
Sheet Number 258



PLAN

℄ Location of Minimum Vertical Clearance



ELEVATION

(Elevations Given at Finished Grade Along ℄ Girder)

NOTES:

1. Span lengths given along ℄ SH96A & ℄ Construction. (xx'-x") denotes span lengths along ℄ Girder.
2. * Horizontal clearance is from ℄ track. For temporary clearances required during construction, see Superstructure Construction Schematic sheets.
3. ** Vertical clearance is from top of rail. For temporary clearances required during construction, see Superstructure Construction Schematic sheets.
4. *** Maintain East Yard Road and maintain 16'-0" width around Pier 4 and temporary prop during construction.
5. For under-viaduct lighting, see Lighting and Electrical sheets.
6. For Right-of-Way limits, see Right-of-Way Plans.
7. For Railroad milepost and increasing station direction and track elevations, see Railroad Plan and Railroad Track Profiles sheets.
8. Excavation and Shoring shall be per Railroad guidelines. See Bridge Excavation and Backfill I sheet and Project Specifications.
9. See General Layout sheets for additional information.
10. Track spacing shown for BNSF is the minimum within project limits.

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	JRD	12/06	Detailed By	DRA	12/06	Quantities By	JRD	12/06
Checked By	RKM	12/06	Checked By	JRD	12/06	Checked By	DAT	12/06

Print Date: 12/12/2006
Drawing File Name: 13141_Railroad_Clearances_II.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

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Sheet Revisions

Date:	Comments	Init.

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Region 2 KSR

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RAILROAD CLEARANCES II

Designer: J. Dvorak
Detailer: D. Anderson
Sheet Subset: BRIDGE
Structure Numbers: K-18-GS (EB), K-18-GT (WB)
Subset Sheets: B162 of B169

Project No./Code: BR 0961-008
13141
Sheet Number 259