

OVERSIGHT/NHS			
FHWA REGION II OVERSIGHT?	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	
NATIONAL HIGHWAY SYSTEM?	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	

DEPARTMENT OF TRANSPORTATION STATE OF COLORADO

RELATED PROJECTS:
P.E. PROJECT NO. CR: 200-098
P.E. PROJECT CODE 13180

HIGHWAY CONSTRUCTION PLANS OF PROPOSED

FEDERAL AID PROJECT NO. STA 0252-397

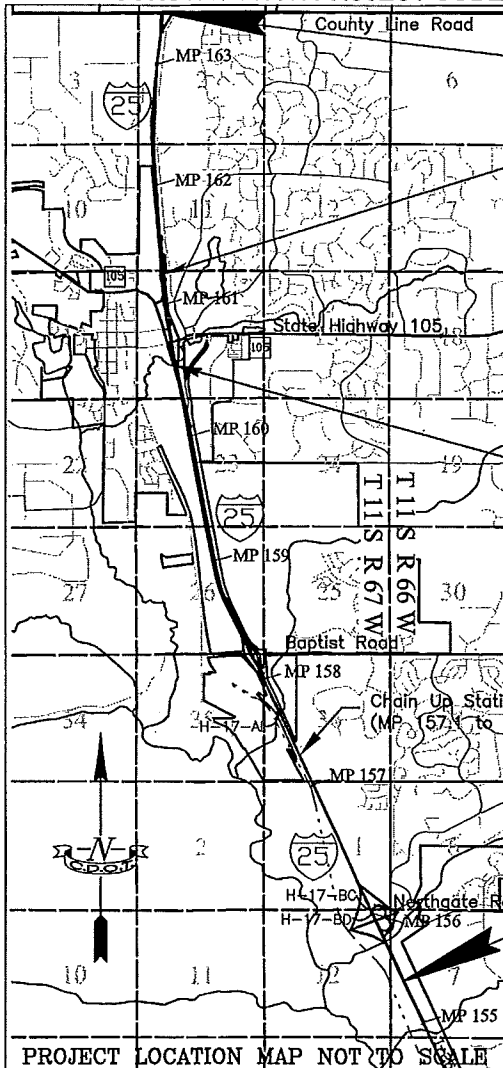
STATE HIGHWAY NO.25

EL PASO COUNTY

CONSTRUCTION PROJECT CODE NO. 16421

TABULATION OF LENGTH & DESIGN DATA

Milepost	I-25 NB Rdwy		I-25 SB Rdwy	
	Linear Feet	MajStr	Linear Feet	MajStr
Approach to Project (MP 155.48)				
Begin Project STA 0252-397 (MP 155.5)	100		100	
	1,848			
Begin Str H-17-BD (MP 155.85) (AFA Road 70)		189		
End Str H-17-BD (MP 155.89)			1,848	
Begin Str H-17-BC (MP 155.85) (AFA Road 70)				191
End Str H-17-BC (MP 155.89)	9,240		9,240	
Begin Str H-17-AI (MP 157.64) (Jackson Creek)		33		33
End Str H-17-AI (MP 157.65)	12,091			
Begin NB No Construction Zone (MP 159.94)				
End NB No Construction Zone (MP 161.11)			12,091	
Begin SB No Construction Zone (MP 159.94)				
End SB No Construction Zone (MP 161.11)				
End Project STA 0252-397 (MP 163.30)	11,616		11,616	
Approach to Project (MP 163.32)	100		100	
TOTALS	34,795	222	34,795	224
	Northbound		Southbound	
Summary of Project Length	Feet	Miles	Feet	Miles
Roadway (Net Length)	34,795	6.590	34,795	6.590
Major Structures	222	0.042	224	0.042
Project Gross Length	35,017	6.632	35,019	6.632
Design Data	I-25			
MAXIMUM RADIUS OF CURVE	N/A			
MAXIMUM GRADE	N/A			
MINIMUM S.S.D. HORIZONTAL	>820'			
MINIMUM S.S.D. VERTICAL	>820'			
MAXIMUM DESIGN SPEED	75 MPH			
2027 DESIGN TRAFFIC				
AADT			108,698	
DHV			9,783	
TRUCK%			12.10%	
2007 DESIGN TRAFFIC				
AADT			68,000	
DHV			6,120	
TRUCK%			12.10%	



**End Project STA 0252-397
MP 163.3**

End No Work Zone
MP 161.11

Begin No Work Zone
MP 159.94

**Begin Project STA 0252-397
MP 155.5**

INDEX OF SHEETS

SHEET NO.

- 1 TITLE SHEET
- 2 STANDARD PLANS LIST
- 3 GENERAL NOTES
- 4-5 TYPICAL SECTIONS
- 6-7 SUMMARY OF APPROXIMATE QUANTITIES
- 8 TABULATION OF SURFACING
- 9 TABULATION OF GUARDRAIL
- 10 TABULATION OF CONST. TRAFFIC DEVICES, EARTHWORK, AND DELINEATORS
- 11 PLAN SHEET CHAIN UP STATION
- 12 STRUCTURE DETAILS AND TABULATION FOR CHAIN UP STATION
- 13-20 BRIDGE PLAN SHEETS
- 21-23 STORMWATER MANAGEMENT PLAN
- 24-39 SWMP SITE MAP AND GUARDRAIL SCHEMATIC
- 40 SURVEY TABULATION SHEET

Computer File Information	
Creation Date:	05/24/07 Initials: AMG
Last Modification Date:	1/18/08 Initials: AMG
Full Path:	C:\Projects\ACAD\I-25 Overlay North\
Drawing File Name:	01_16421 Title Sheet.dwg

Index of Revisions		
DATE	COMMENTS	INITIALS

Colorado Department of Transportation

1480 QUAIL LAKE LOOP, SUITE A
COLORADO SPRINGS, CO 80906
Phone: (719) 634-2323 FAX: (719) 227-3298

Region 2 Design RB/pwp

As Constructed

Contract Information	
Contractor:	
Resident Engineer:	ROBERT BURCH
Project Engineer:	WAYNE PITTMAN
PROJECT STARTED:	ACCEPTED:
Comments:	

Project No./Code
STA 0252-397
16421
Sheet Number 1

GENERAL NOTES

DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM THE "AS CONSTRUCTED" PLANS. THESE DIMENSIONS MAY BE ADJUSTED TO MEET THE EXISTING STRUCTURES. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIALS.

GRADE 60 REINFORCING STEEL IS REQUIRED.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTH SHALL BE INCREASED BY 25% FOR BARS SPACED LESS THAN 6" ON CENTER.

BAR SIZE #4 #5 #6 #7 #8 #9 #10 #11

SPLICE LENGTH FOR CLASS D CONCRETE 1'-0" 1'-4" 1'-7" 1'-10" 2'-5" 3'-1" 3'-11" 4'-10"

THE ABOVE SPLICE LENGTH MAY BE REDUCED BY 20% WHEN 3" OF CLEAR COVER EXISTS AND BAR SPACING IS 6" OR GREATER ON CENTER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURES DURING CONSTRUCTION.

REMOVAL OF BRIDGE RAIL SHALL BE IN ACCORDANCE WITH SECTION 250 AND PAID FOR UNDER ITEM NO. 202, REMOVAL OF BRIDGE RAIL.

TEMPORARY BARRIER OR NEW BRIDGE RAIL SHALL BE PLACED PRIOR TO REMOVAL OF EXISTING BRIDGE RAIL. THE EXISTING RAIL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	H-17-AI	H-17-BC	H-17-BD	TOTAL
* 202	Removal of Asphalt Mat (Planing)	SY	308.9	1345.5	1345.5	2999.9
202	Removal of Bridge Railing	LF	66.2	425.0	437.5	928.7
202	Removal of Expansion Device	LF		54	54	108
210	Rebuild Portion of Present structure	LS		0.5	0.5	1.0
* 403	Hot Mix Asphalt	TON	50.7	221.0	221.0	492.7
515	Waterproofing Membrane	SY	308.9	1345.5	1345.5	2999.9
518	Polymer Mortar End Dam	CF	0	20.5	20.5	41.0
518	Rapid Cure Silicone Joint Sealant	LF	0	54	54	108
518	Sawing and Sealing Bridge Joint	LF	173.9	108.0	108.0	389.9
606	Bridge Rail Type 10R	LF	66.2			66.2
606	Bridge Rail Type 10R (SPECIAL)	LF		425.0	437.5	862.5

INDEX OF DRAWINGS

- DWG. NO. B01 GENERAL INFORMATION SUMMARY OF QUANTITIES
- DWG. NO. B02 GENERAL LAYOUT PLAN AND SECTION STR. H-17-AI
- DWG. NO. B03 GENERAL LAYOUT PLAN AND SECTION STR. H-17-BC
- DWG. NO. B04 GENERAL LAYOUT PLAN AND SECTION STR. H-17-BD
- DWG. NO. B05 EXPANSION JOINT DETAILS
- DWG. NO. B06 BRIDGE RAIL TYPE 10R (SPECIAL)
- DWG. NO. B07 BRIDGE RAIL TYPE 10R STR. H-17-AI
- DWG. NO. B08 BRIDGE RAIL TYPE 10R

* See Roadway Quantities.

WORK DESCRIPTION

REMOVE EXISTING ASPHALT OVERLAY ALL STRUCTURES AS SHOWN ON THE PLANS.

OVERLAY WITH 3" HOT MIX ASPHALT PAVING UNLESS OTHERWISE INDICATED ON THE PLANS. TAPER ASPHALT FROM STRUCTURE TO PROVIDE SMOOTH TRANSITION TO EXISTING ROADWAY.

REPLACE EXISTING RAILING WITH TYPE 10R AS INDICATED ON THE PLANS.

REMOVE AND REPLACE BRIDGE EXPANSION DEVICE AS INDICATED ON THE PLANS.

SAWCUT AND SEAL LOCATIONS INDICATED ON THE PLANS.

DESIGN DATA:

AASHTO, THIRD EDITION LRFD WITH CURRENT INTERIMS

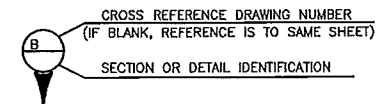
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

LIVE LOAD: HL-93 (DESIGN TRUCK OR TANDEM, AND DESIGN LANE LOAD)

REINFORCING CONCRETE:

CLASS D CONCRETE: f' = 4,500 psi

REINFORCING STEEL: f = 60,000 psi

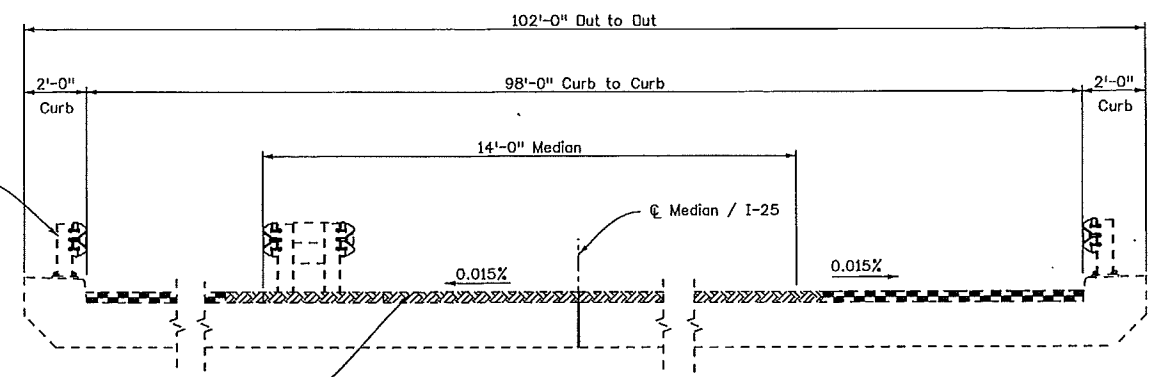
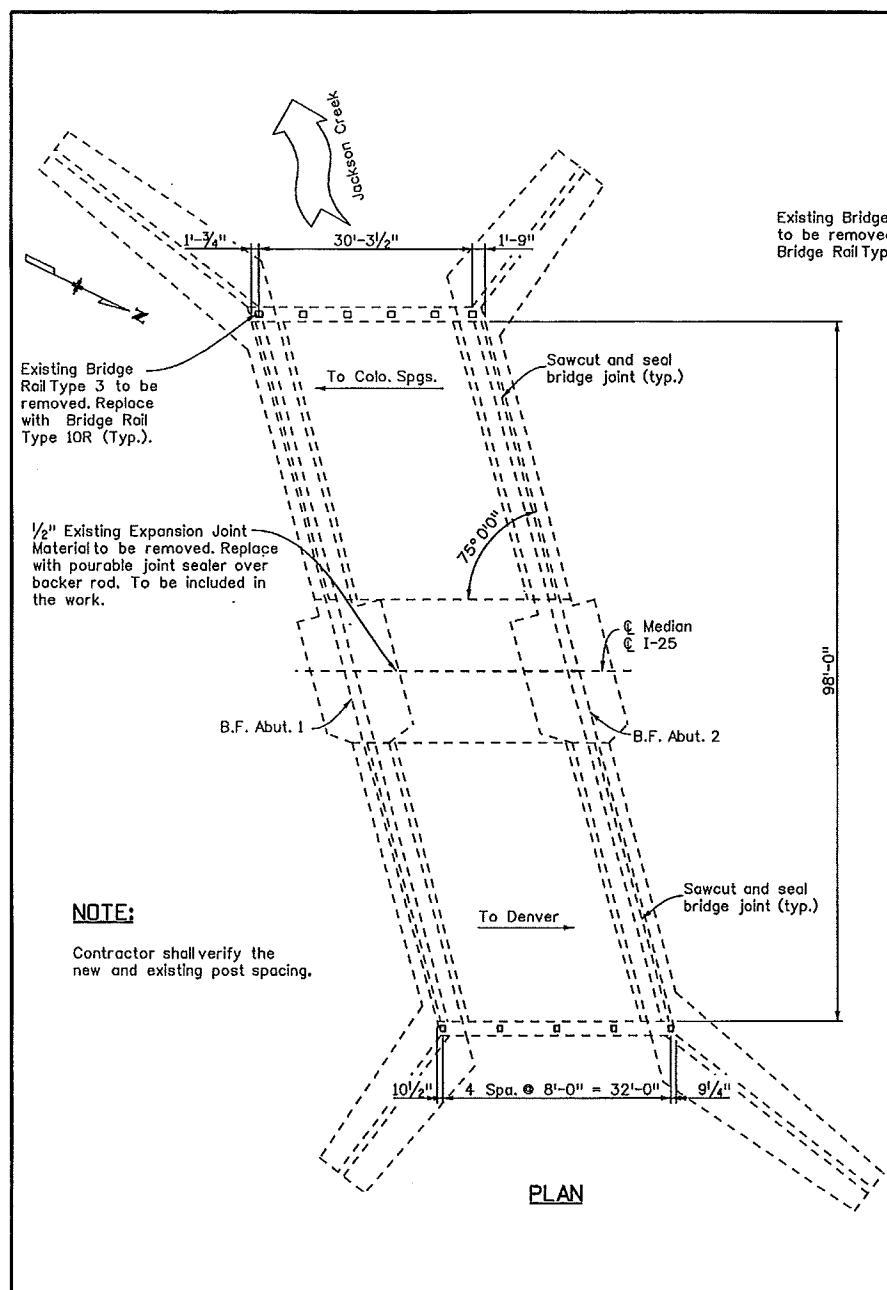


Revision	Date	Description

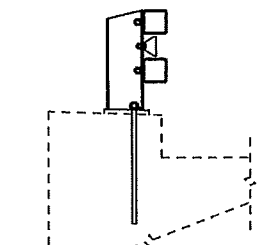
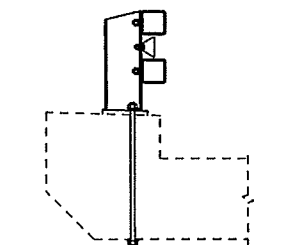
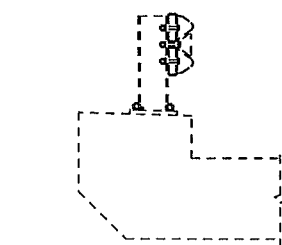
Design	DATE	INITIAL	DATE	QUANTITIES
Checked By	02/07	MD	02/07	Checked By
Checked By				Checked By

Print Date: 1/23/2008	<p>Colorado Department of Transportation 1480 Quail Lake Loop, Suite A Colorado Springs, CO 80906 Phone: 719-634-2323 FAX: 719-227-3298</p> <p>Region 2 RWB</p>	<p>As Constructed</p> <p>No Revisions:</p> <p>Revised:</p> <p>Void:</p>	<p>GENERAL INFORMATION</p> <p>SUMMARY OF QUANTITIES</p>		Project No./Code	
File Name: I:\Summary of Quantities H-17-AI (2).dgn			<p>Designer: T. Kozojed</p> <p>Detailer: R. Olmos</p> <p>Sheet Subset: Bridge</p>		Structure Numbers	STA 0252-397
<p>Horiz. Scale: 1:1</p> <p>Unit 0226</p>			<p>Comments</p> <p>Init.</p>	<p>Structure H-17-AI, H-17-BC</p> <p>Numbers H-17-BD</p> <p>Subset Sheets: B01 of B08</p>	16421	Sheet Number 13

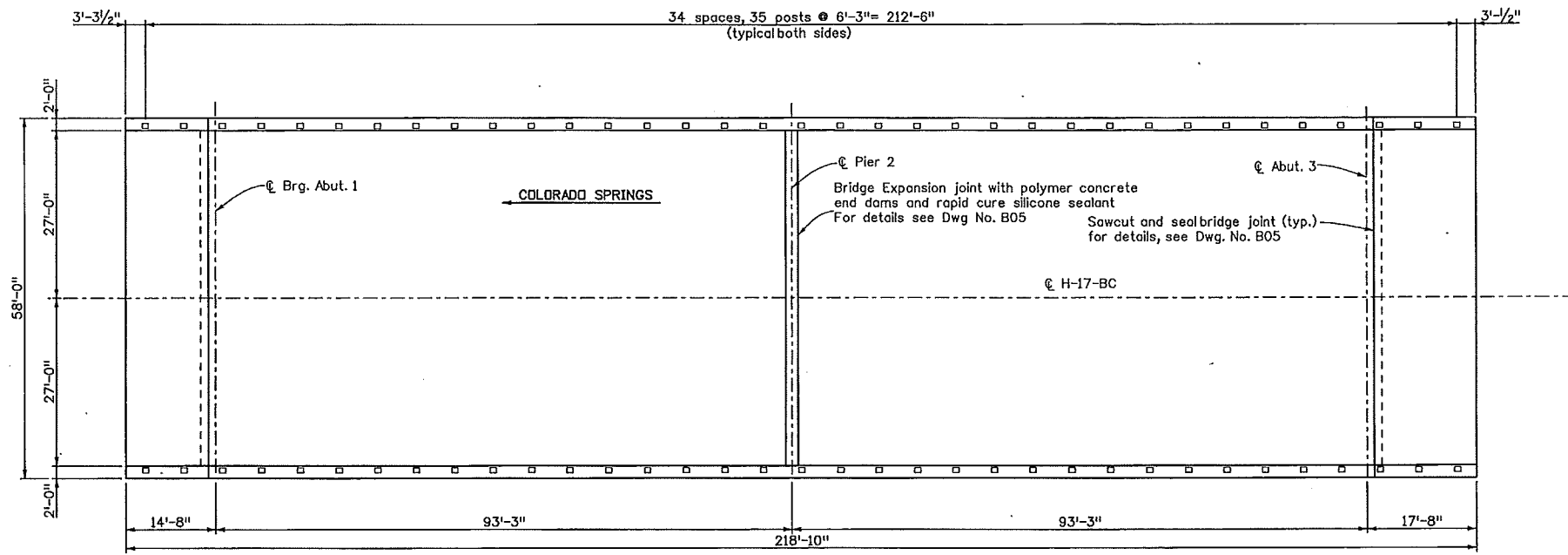
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Designed By	Checked By	INITIAL	DATE	INITIAL	DATE
XXX	XXX	XXX	MM/YY	XXX	MM/YY
Checked By	Checked By	Checked By	Checked By	Checked By	Checked By
XXX	XXX	XXX	MM/YY	XXX	MM/YY
Revision Dates		Preliminary Stage Only			
MM/YY	MM/YY	MM/YY	MM/YY	MM/YY	MM/YY



4" Existing asphalt to be removed and replaced with 3" asphalt. Install Water-Proofing Membrane on bare concrete deck. Except at dirt covered median.

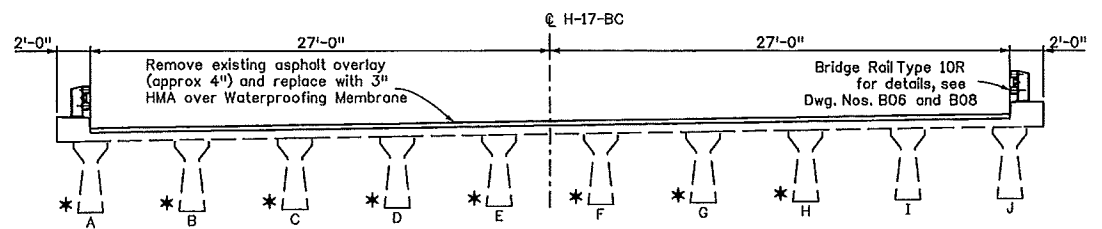


Print Date: 1/9/2008	Sheet Revisions			Colorado Department of Transportation 1480 Quail Lake Loop, Suite A Colorado Springs, CO 80906 Phone: 719-634-2323 FAX: 719-227-3298 Region 2	As Constructed No Revisions: Revised: Void:	GENERAL LAYOUT PLAN AND SECTION STR. H-17-AI			Project No./Code
File Name: 2GeneralLayout H-17-AI.dgn	Date:	Comments:	Init.			Designer: T. Kozjed	Structure Numbers: H-17-AI	STA 0252-397	
Horiz. Scale: 1:1 Vert. Scale: As Noted						Detailer: R. Olmos		16421	
Unit 0226 Unit Leader JMD						Sheet Subset: Bridge	Subset Sheets: B02 of B08	Sheet Number 14	



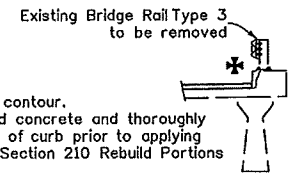
PLAN

Contractor shall verify existing post spacing before ordering or fabricating bridge rail.



SECTION

* Restore damaged girders in span 1 to original contour. Remove loose and spalled concrete and cut off and straighten bend reinforcing which lies outside the girder contour. Thoroughly sandblast damaged areas prior to applying mortar. See Revision of Section 210 Rebuild Portions of Present structure.



* Restore curbs to original contour. Remove loose and spalled concrete and thoroughly sandblast damaged areas of curb prior to applying mortar. See Revision of Section 210 Rebuild Portions of Present Structure.


REMOVAL DETAIL

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Checked By	10/07	Checked By	10/07	Checked By	10/07
Checked By	10/07	Checked By	10/07	Checked By	10/07

Print Date: 1/9/2008
File Name: 3GeneralLayout H-17-BC.dgn
Horiz. Scale: 1:1
Unit Information
Vert. Scale: As Noted
Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



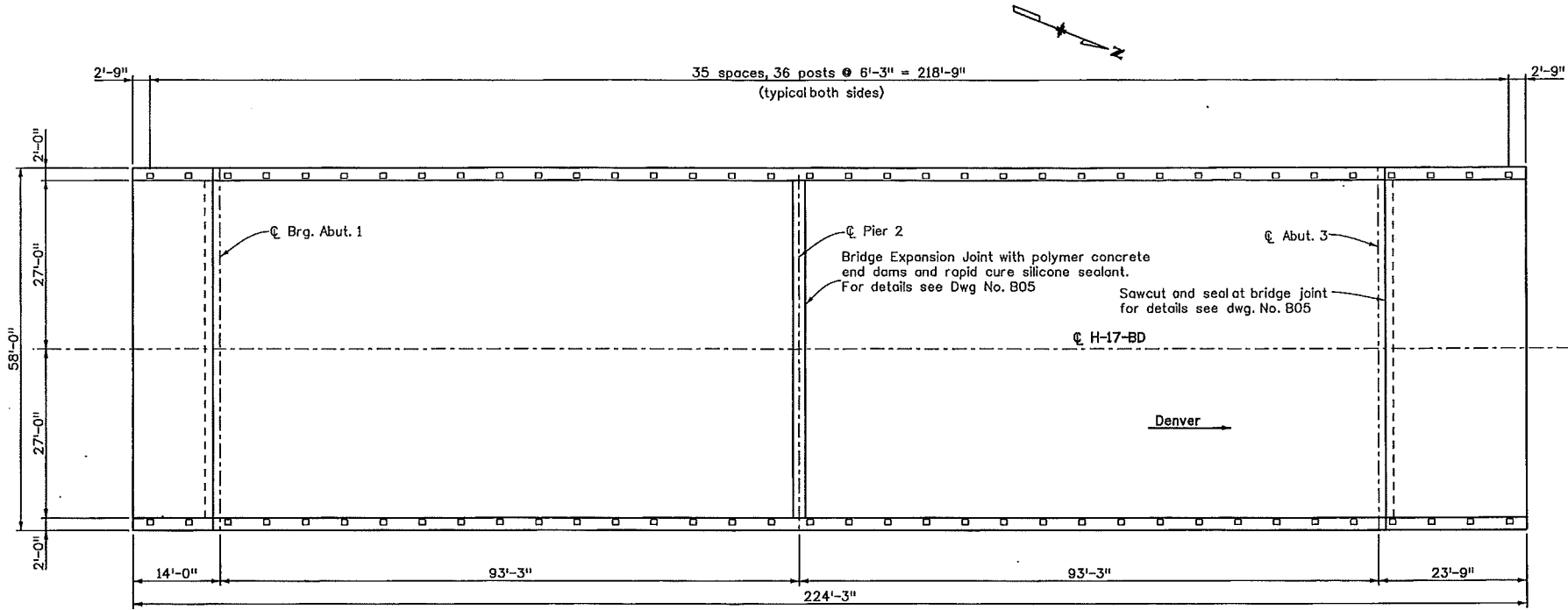
1480 Quail Lake Loop, Suite A
 Colorado Springs, CO 80906
 Phone: 719-634-2323 FAX: 719-227-3298

Region 2 RWB

As Constructed
No Revisions:
Revised:
Void:

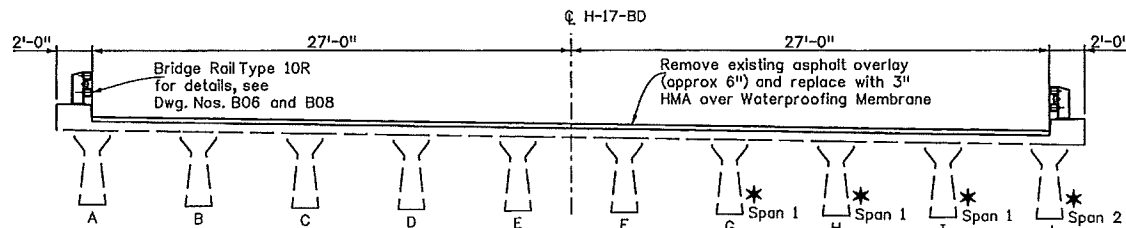
GENERAL LAYOUT PLAN AND SECTION STR. H-17-BC			
Designer:	J. Deland	Structure	H-17-BC
Detailer:	E. H./R.D.	Numbers	
Sheet Subset:	Bridge	Subset Sheets:	B03 of B08

Project No./Code
STA 0252-397
16421
Sheet Number
15



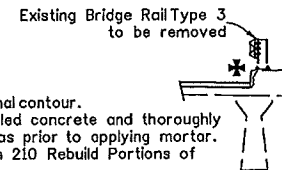
PLAN

Contractor shall verify existing post spacing before ordering or fabricating bridge rail.



* Restore damaged girders to original contour. Remove loose and spalled concrete and cut off and straighten bent reinforcing which lies outside the girder contour. Thoroughly sandblast damaged areas prior to applying mortar. See Revision of Section 210 Rebuild Portions of Present structure.

SECTION



* Restore curbs to original contour. Remove loose and spalled concrete and thoroughly sandblast damaged areas prior to applying mortar. See Revision of Section 210 Rebuild Portions of Present Structure.


REMOVAL DETAIL

Design		Detail		Quantity	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
DESIGNED BY	10/07	DRAWN BY	10/07	QUANTITY BY	10/07
CHECKED BY		CHECKED BY		CHECKED BY	

Print Date: 1/9/2008	
File Name: 4GeneralLayout H-17-BD.dgn	
Horiz. Scale: 1:1.00001	Vert. Scale: As Noted
Unit Information	Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



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Region 2 RWB

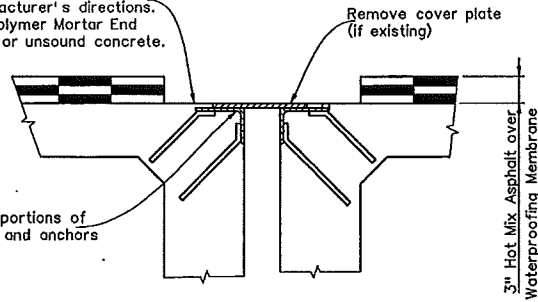
As Constructed
No Revisions:
Revised:
Void:

GENERAL LAYOUT PLAN AND SECTION STR. H-17-BD			
Designer:	J. Deland	Structure	H-17-BD
Detailer:	E. H./R. O.	Numbers	
Sheet Subset:	Bridge	Subset Sheets:	B04 of B08

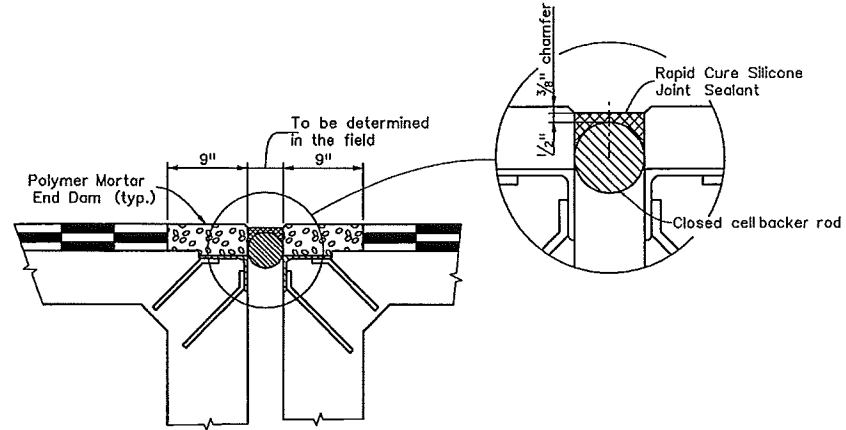
Project No./Code	STA 0252-397
	16421
Sheet Number	16

Remove loose material and sandblast the contact surface in accordance with the manufacturer's directions. Do not bond Polymer Mortar End Dams to weak or unsound concrete.

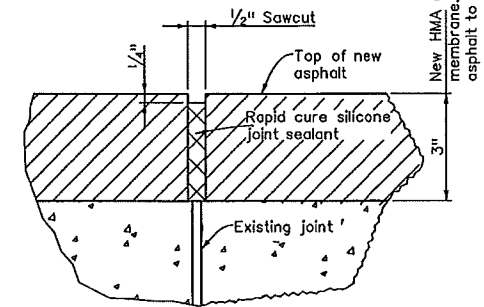
Remove loose portions of existing angles and anchors



PREPERATION DETAIL



EXPANSION JOINT DETAIL



SAWING AND SEALING DETAIL

Notes:

Saw cut shall be aligned directly above existing joint.

Saw cut shall penetrate the full depth of the asphalt.

The cost of the above shall be included in the cost of Item 518 Sawing and Sealing Bridge Joint.

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
SHD	10/07	EM	10/07		10/07
Checked By	PKC	Checked By	JMB	Quantity By	EM
				Checked By	JMB

Print Date: 1/9/2008	
File Name: 5Expansion Joint Details.dgn	
Horiz. Scale: 1:1.00001	Vert. Scale: As Noted
Unit Information	Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

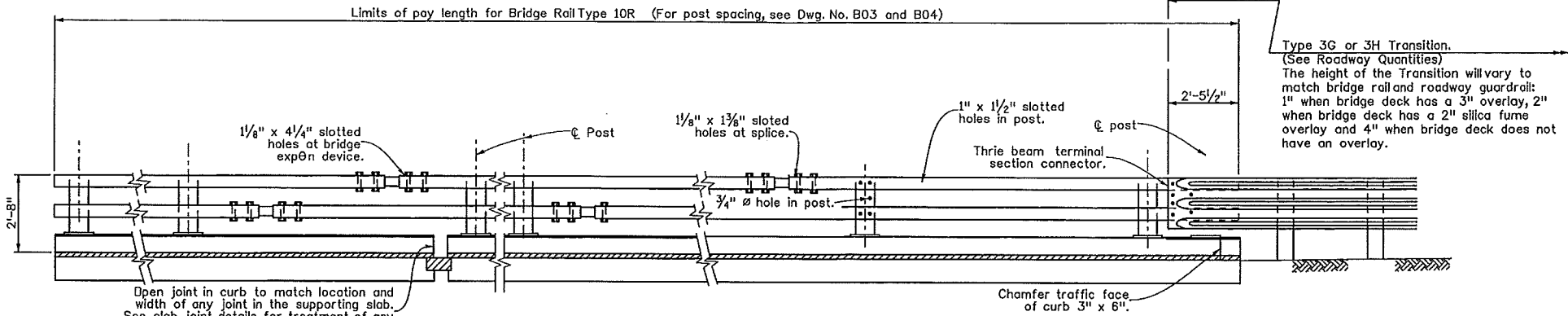
1480 Quail Lake Loop, Suite A
Colorado Springs, CO 80906
Phone: 719-634-2323 FAX: 719-227-3298

Region 2 **RWB**

As Constructed
No Revisions:
Revised:
Void:

EXPANSION JOINT DETAILS			
Designer:	J. Deland	Structure	H-17-BC
Detailer:	E. Hadley	Numbers	H-17-BD
Sheet Subset:	Bridge	Subset Sheets:	B05 of B08

Project No./Code
STA 0252-397
16421
Sheet Number 17



RAIL PANEL AT TERMINAL SECTION
(See Roadway plans for ends not attached to Guard Rail.)

RAIL PANEL AT EXPANSION DEVICE
ELEVATION - BRIDGE RAIL

RAIL PANEL ON WING TRANSITION SECTION
(See roadway plans for ends requiring attachment to guard rail.)

Type 3G or 3H Transition.
(See Roadway Quantities)
The height of the Transition will vary to match bridge rail and roadway guardrail:
1" when bridge deck has a 3" overlay, 2" when bridge deck has a 2" silica fume overlay and 4" when bridge deck does not have an overlay.

NOTES:

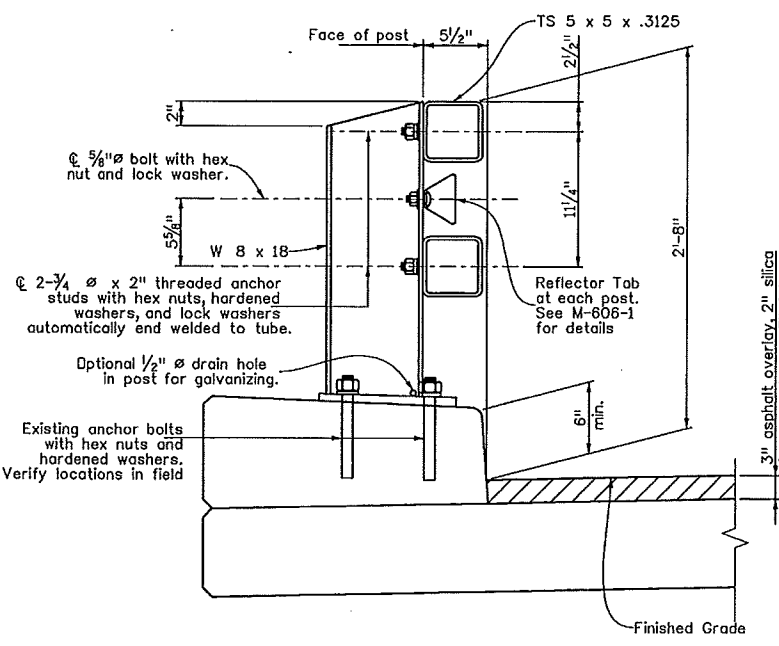
- All tubes shall be ASTM A-500 Grade B.
- All posts and base plates shall be ASTM A-572 Grade 50.
- All other steel shall be ASTM A-36 unless otherwise noted.
- The above material and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized after fabrication in accordance with Section 509. Concrete, reinforcing steel, and structural steel elements shall conform to the requirements of Sections 601, 602 and 509, respectively.
- The tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 1,500 feet.
- Tubes shall be continuous over not less than two posts.
- The centerline of the tube splice shall be 1'-8" minimum and 2'-6" maximum from the centerline of the posts.
- All bolts that have lock washers shall be tightened to snug only.
- Posts shall be perpendicular to the longitudinal roadway grade.
- One or more 10'-0" post spacings may be reduced (6'-8" min.) in order to maintain dimensions from the end of the rail and expansion joints.
- Payment will be made under Item 606, Bridge Rail Type 10R for all posts, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, cored holes, grout, and reflector tobs.
- Prior to fabrication of this item, three sets of working drawings which comply with the requirements of Section 105, shall be submitted to the Engineer for information only.

Structural Steel:
AASHTO M-183 (ASTM A-36) $f_y = 36,000$ psi
AASHTO M-223 (ASTM A-572) Grade 50 $f_y = 50,000$ psi
Cold formed ASTM A-500 Grade B $f_y = 46,000$ psi

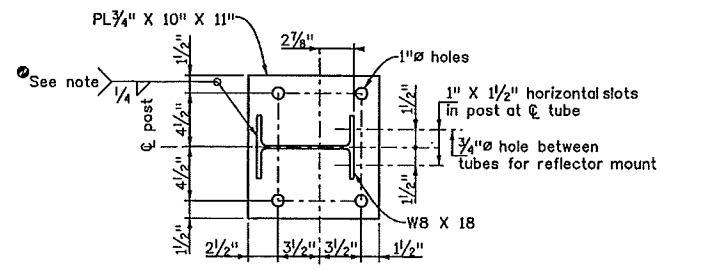
For additional details see next rail sheets.

INFORMATION ONLY

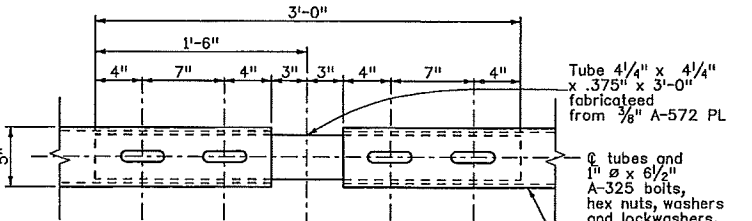
Description	Unit	Per Lin. Ft.
Structural Steel (Galvanized)	Lb.	45.8



SECTION



PLAN - POST DETAIL



PLAN - TUBE SPLICE

Revision Dates	Quantity	Initial	Date
1/87	10/98	7/89	11/99
5/01	5/00	4/02	3/07

Design	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	10/07	EHH	10/10	EHH	10/10
Checked By	10/07	TPK	10/07	JMD	10/07

Print Date: 1/9/2008

Drawing File Name: 6Bridge Rail Type 10R (Special).dgn

Horiz. Scale: 1:1.00001 Vert. Scale: As Noted

Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

1480 Quail Lake Loop, Suite A
Colorado Springs, CO 80906
Phone: 719-634-2323 FAX: 719-227-3298

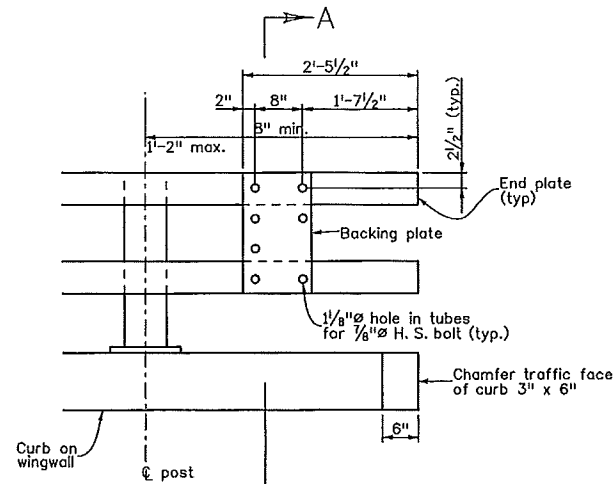
Region 2 RWB

As Constructed
No Revisions:
Revised:
Void:

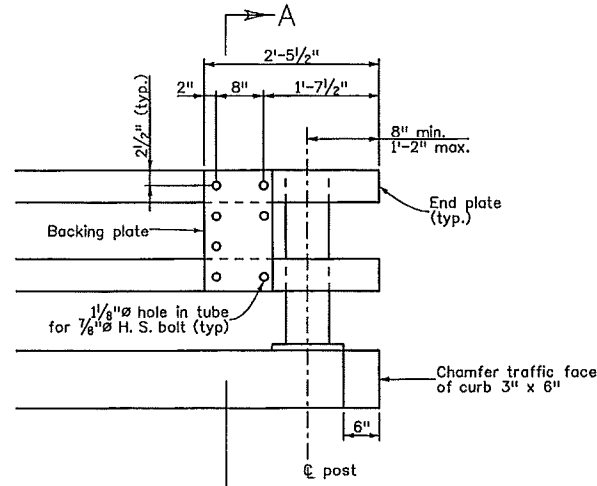
BRIDGE RAIL TYPE 10R (SPECIAL)			
Designer:	T. Kozofed	Structure	H-17-BC
Detailer:	E. Hadley	Numbers	H-17-BD
Sheet Subset:	Bridge	Subset Sheets:	B06 of B08

Project No./Code
STA 0252-397
16421
Sheet Number 18

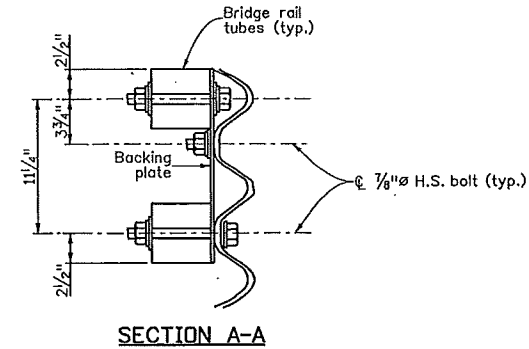
Design	INITIAL	DATE	QUANTITIES
Checked By	TRK	10/07	Checked By
Checked By	JMD	10/07	Checked By



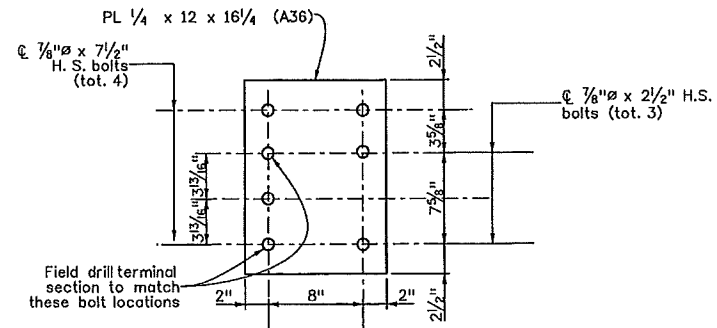
RAIL TUBE DETAILS
(Use with Bridge Rail Type 10R (Special))
Thrie beam not shown.



RAIL TUBE DETAILS
(Use with Bridge Rail Type 10H)
or 10R Thrie beam not shown.

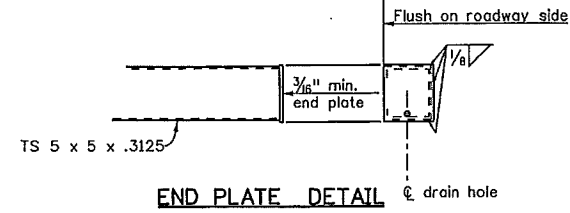


SECTION A-A



BACKING PLATE

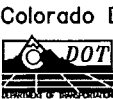
Holes are 1/8"Ø for 7/8" H.S. bolts with hex nuts, 2 PL washers, and 1 lock washer



END PLATE DETAIL

Print Date: 1/9/2008
File Name: 8Bridge Rail Type 10R.dgn
Horiz. Scale: 1:1.00001 Vert. Scale: As Noted
Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation
1480 Quail Lake Loop, Suite A
Colorado Springs, CO 80906
Phone: 719-634-2323 FAX: 719-227-3298

Region 2

RWB

As Constructed
No Revisions:
Revised:
Void:

BRIDGE RAIL TYPE 10R			
Designer:	T. Kozojed	Structure	H-17-BC,BC
Detailer:	E. Hadley	Numbers	H-17-AI
Sheet Subset:	Bridge	Subset Sheets:	B08 of B08

Project No./Code
STA 0252-397
16421
Sheet Number 20