

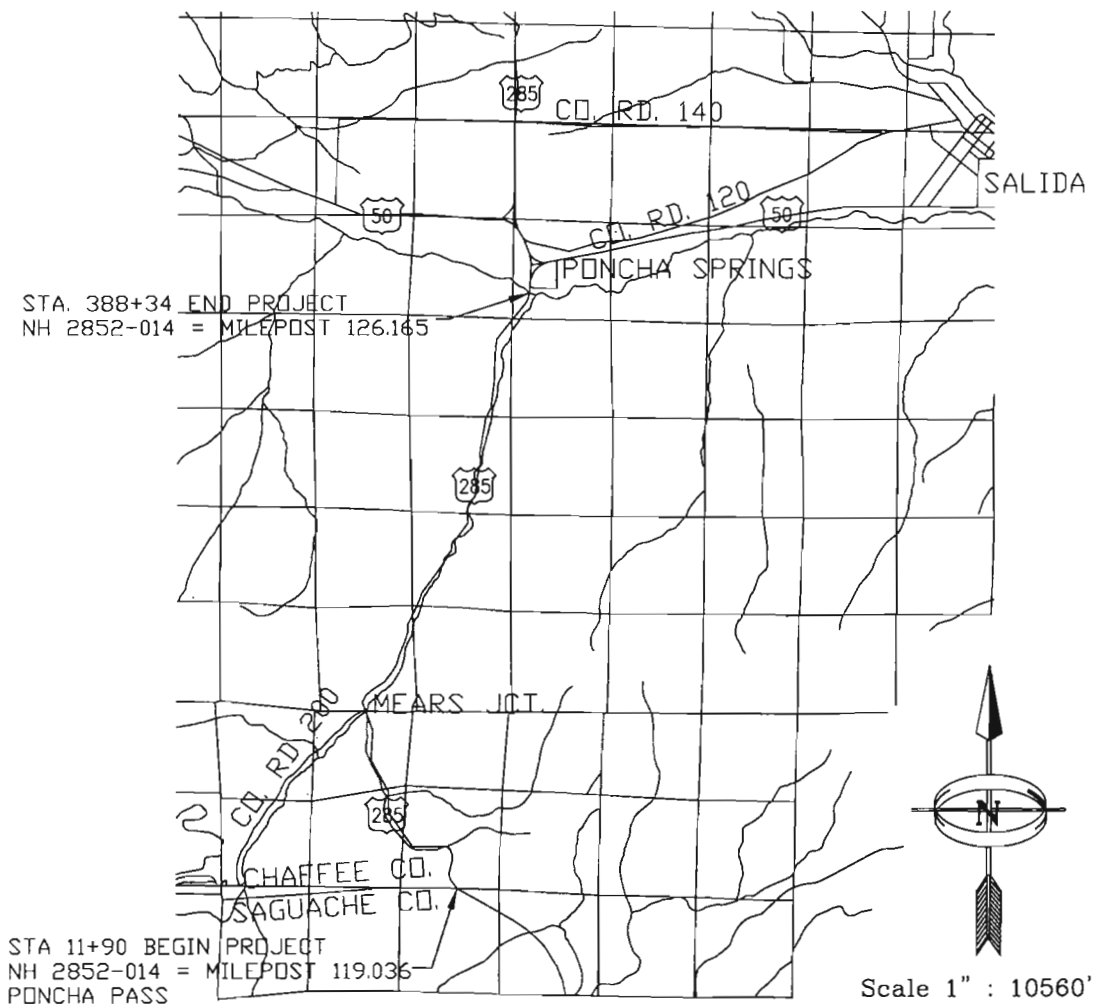
COLORADO DEPARTMENT OF TRANSPORTATION

FHWA REGION VIII OVERSIGHT NO ☒ YES ☐  
NATIONAL HIGHWAY SYSTEM NO ☐ YES ☒

*AS Constructed*  
~~HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED~~  
FEDERAL AID PROJECT NO. NH 2852-014  
U.S. HIGHWAY 285  
CHAFFEE COUNTY  
CONSTRUCTION PROJECT CODE NO. 13998

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Sand Barrel Attenuator Detail.....	34
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TABULATION OF LENGTH AND DESIGN DATA	
LOCATION	ROADWAY
	LIN. FT.
STA. 10+00 TO STA. 11+90 = 190 FT. APPROACH TO PROJECT (M.P. 119.000 TO M.P. 119.036) HWY 285	37,644
STA. 11+90 BEGIN PROJECT NH 2852-014 = M.P. 119.036 HWY 285	
STA. 388+34 END PROJECT NH 2852-014 = M.P. 126.165 HWY 285	
STA. 388+34 TO STA. 390+10 = 176 FT. APPROACH TO PROJECT M.P. 126.165 TO M.P. 126.198 HWY 285	
TOTAL	37,644
PROJECT GROSS AND NET LENGTH	7.13 MILE (37,644 LIN. FT.)
DESIGN DATA	
MAX DEGREE OF CURVE --- EXIST	2003 TRAFFIC VOLUME
MAX GRADE ----- EXIST	FOR INFORMATION ONLY
MAX S.S.D. HOR. ----- EXIST	ADT = 2850
MAX S.S.H. VER. ----- EXIST	DHV = 318
MAX DESIGN SPEED ----- EXIST	% TRUCKS = 12



AS CONSTRUCTED INFORMATION  
CONTRACTOR D.G. HUSKINS  
Project ENGINEER LARRY CISNEROS  
(Project or Resident)  
PROJECT STARTED April 21, 2003  
PROJECT COMPLETED July 17, 2003  
AS CONSTRUCTED PLANS  
APPROVED Billy Beal  
FINAL ENGINEER 9/3/03  
TITLE DATE  
J.J.S./REGION 5

NEW AND REVISED STANDARD PLANS  
M-606-14 PRECAST CONCRETE BARRIER 3 SHEETS

Computer File Information				Sheet Revisions				As Constructed				Title Sheet				Project No./Code	
Creation Date:	16 OCT 02	Initials:	KEM	(R-1)	2/18/03	Revised Sheets 1,2,5,6,36	KEM	No Revisions:								NH 2852-014	13998
Last Modification Date:	18 FEB 03	Initials:	KEM	(R-1)	2/18/03	Deleted Sheet 30	KEM	Revised:	July 17, 2003	Designer:	WILCOXON	Structure Numbers					
Full Path:	C:\13998\			(R-X)				Void:		Detailer:	MAGOWAN	Sheet Subset:		Subset Sheets:		Sheet Number	1
Drawing File Name:	title sheet.DWG			(R-X)													
Acad Ver.	R2002	Scale:	AS SHOWN	Units:	FEET	(R-X)											

Colorado Department of Transportation  
1205 West Ave. Box C  
Alamosa, CO. 81101  
Phone: 719-589-4251 FAX: 719-589-3149  
REGION 5 J.J.S.

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-100-1	STANDARD SYMBOLS . . . . .	1	<input type="checkbox"/> M-607-1	WIRE FENCES AND GATES . . . . . (3 SHEETS)	78-80	<input checked="" type="checkbox"/> S-612-1	TYPICAL DELINEATOR INSTALLATIONS . . . . . (5 SHEETS)	109-113
<input type="checkbox"/> M-203-1	APPROACH ROADS . . . . .	2	<input type="checkbox"/> M-607-2	CHAIN LINK FENCE . . . . . (3 SHEETS)	81-83	<input checked="" type="checkbox"/> S-614-1	TYPICAL GROUND SIGN PLACEMENT . . . . .	114
<input type="checkbox"/> M-203-2	DITCH TYPES . . . . .	3	<input type="checkbox"/> M-607-3	BARRIER FENCE . . . . .	84	<input type="checkbox"/> S-614-2	CLASS I GROUND SIGN INSTALLATIONS . . . . .	115
<input type="checkbox"/> M-203-10	SUPERELEVATION CROWNED HIGHWAYS . . . . .	4	<input type="checkbox"/> M-607-4	DEER FENCE AND GATES . . . . . (2 SHEETS)	85-86	<input type="checkbox"/> S-614-3	CLASS II GROUND SIGN INSTALLATIONS . . . . .	116
<input type="checkbox"/> M-203-11	SUPERELEVATION DIVIDED HIGHWAYS SHOULDER PIVOT . . . . .	5	<input type="checkbox"/> M-607-10	PICKET SNOW FENCE . . . . .	87	<input type="checkbox"/> S-614-4	CLASS III SIGNS, SHEET ALUMINUM PANELS . (3 SHEETS)	117-119
<input type="checkbox"/> M-203-12	SUPERELEVATION STREETS . . . . .	6	<input type="checkbox"/> M-608-1	CURB RAMPS . . . . .	88	<input checked="" type="checkbox"/> S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS . . . . . (2 SHEETS)	120-121
<input type="checkbox"/> M-203-13	SUPERELEVATION DIVIDED HIGHWAYS CENTER PIVOT . . . . .	7	<input type="checkbox"/> M-609-1	CURBS, GUTTERS, AND SIDEWALKS . . . . . (2 SHEETS)	89-90	<input type="checkbox"/> S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS . . . . . (2 SHEETS)	122-123
<input checked="" type="checkbox"/> M-206-1	EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	8-9	<input type="checkbox"/> M-611-1	CATTLE GUARD . . . . . (2 SHEETS)	91-92	<input type="checkbox"/> S-614-10	TYPICAL MARKER ASSEMBLY INSTALLATIONS . . . . .	124
<input type="checkbox"/> M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES . . (2 SHEETS)	10-11	<input type="checkbox"/> M-613-1	CONVENTIONAL HIGHWAY LIGHTING . . . . . (3 SHEETS)	93-95	<input type="checkbox"/> S-614-11	MILEPOST SIGN AND INSTALLATION . . . . .	125
<input checked="" type="checkbox"/> M-208-1	TEMPORARY EROSION CONTROL . . . . . (7 SHEETS)	12-18	<input type="checkbox"/> M-613-2	HIGH MAST LIGHTING . . . . . (2 SHEETS)	96-97	<input type="checkbox"/> S-614-12	STRUCTURE NUMBER INSTALLATION . . . . . (BRIDGE INFORMATION SHEET)	126
<input type="checkbox"/> M-210-1	MAILBOX SUPPORTS . . . . . (2 SHEETS)	19-20	<input type="checkbox"/> M-614-1	RUMBLE STRIPS . . . . . (2 SHEETS)	98-99	<input type="checkbox"/> S-614-14	FLASHING BEACON AND SIGN INSTALLATION . (2 SHEETS)	127-128
<input type="checkbox"/> M-214-1	PLANTING DETAILS . . . . .	21	<input type="checkbox"/> M-615-1	EMBANKMENT PROTECTOR, TYPE 3 . . . . .	100	<input type="checkbox"/> S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATION . . . . .	129
<input type="checkbox"/> M-412-1	CONCRETE PAVEMENT JOINTS . . . . . (3 SHEETS)	22-24	<input type="checkbox"/> M-615-2	EMBANKMENT PROTECTOR, TYPE 5 . . . . .	101	<input type="checkbox"/> S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS . . . . .	130
<input type="checkbox"/> M-506-1	GABIONS AND SLOPE MATTRESS . . . . .	25	<input type="checkbox"/> M-616-1	INVERTED SIPHON . . . . .	102	<input type="checkbox"/> S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS . . . . .	131
<input type="checkbox"/> M-510-1	STRUCTURAL PLATE CULVERT PIPE H-20 LOADING . . . . .	26	<input type="checkbox"/> M-620-1	FIELD LABORATORY, CLASS 1 . . . . .	103	<input type="checkbox"/> S-614-40	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS)	132-136
<input checked="" type="checkbox"/> M-601-1	SINGLE CONCRETE BOX CULVERT . . . . . (2 SHEETS)	27-28	<input checked="" type="checkbox"/> M-620-2	FIELD LABORATORY, CLASS 2 . . . . .	104	<input type="checkbox"/> S-614-50	OVERHEAD SIGNS MONOTUBE . . . . . (12 SHEETS)	137-148
<input type="checkbox"/> M-601-2	DOUBLE CONCRETE BOX CULVERT . . . . . (2 SHEETS)	29-30	<input checked="" type="checkbox"/> M-620-11	FIELD OFFICE, CLASS 1 . . . . .	105	<input checked="" type="checkbox"/> S-627-1	TYPICAL PAVEMENT MARKINGS . . . . . (5 SHEETS)	149-153
<input type="checkbox"/> M-601-3	TRIPLE CONCRETE BOX CULVERT . . . . . (2 SHEETS)	31-32	<input checked="" type="checkbox"/> M-620-12	FIELD OFFICE, CLASS 2 . . . . .	106	<input checked="" type="checkbox"/> S-630-1	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION . . . . . (10 SHEETS)	154-163
<input checked="" type="checkbox"/> M-601-10	HEADWALL FOR PIPE CULVERTS . . . . .	33	<input type="checkbox"/> M-629-1	SURVEY MONUMENTS . . . . . (2 SHEETS)	107-108	<input checked="" type="checkbox"/> S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) & VERTICAL PANELS . . . . .	164
<input type="checkbox"/> M-601-11	TYPE "S" SADDLE HEADWALL FOR PIPE CULVERTS . . . . .	34				<input type="checkbox"/> S-630-3	FLASHING BEACON (PORTABLE) DETAILS . . . . .	165
<input checked="" type="checkbox"/> M-601-12	HEADWALLS AND CULVERT OUTLET PAVING . . . . .	35						
<input checked="" type="checkbox"/> M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS . . . . .	36						
<input checked="" type="checkbox"/> M-603-1	METAL AND PLASTIC CULVERT PIPE . . . . . (2 SHEETS)	37-38						
<input type="checkbox"/> M-603-2	REINFORCED CONCRETE PIPE . . . . .	39						
<input type="checkbox"/> M-603-3	PRECAST CONCRETE BOX CULVERT . . . . .	40						
<input checked="" type="checkbox"/> M-603-10	CONCRETE AND METAL END SECTIONS . . . . (2 SHEETS)	41-42						
<input checked="" type="checkbox"/> M-604-10	INLET, TYPE C . . . . .	43						
<input checked="" type="checkbox"/> M-604-11	INLET, TYPE D . . . . .	44						
<input type="checkbox"/> M-604-12	CURB INLET, TYPE R . . . . . (2 SHEETS)	45-46						
<input type="checkbox"/> M-604-13	CONCRETE INLET, TYPE 13 . . . . .	47						
<input type="checkbox"/> M-604-20	MANHOLES . . . . . (3 SHEETS)	48-50						
<input type="checkbox"/> M-604-25	VANE GRATE INLET WITH FRAME . . . . . (5 SHEETS)	51-55						
	AND CONCRETE APRON							
<input type="checkbox"/> M-605-1	SUBSURFACE DRAINS . . . . .	56						
<input checked="" type="checkbox"/> M-606-1	GUARDRAIL, TYPE 3, W-BEAM . . . . . (15 SHEETS)	57-71						
<input type="checkbox"/> M-606-12	GUARDRAIL, TYPE 4, CONCRETE BARRIER . . . (2 SHEETS)	72-73						
<input type="checkbox"/> M-606-13	GUARDRAIL, TYPE 7, F-SHAPE BARRIER . . . (4 SHEETS)	74-77						

THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

COLORADO  
DEPARTMENT OF TRANSPORTATION

STANDARD PLANS LIST  
M & S STANDARDS  
OCTOBER 1, 2000

Computer File Information				Sheet Revisions				Colorado Department of Transportation				As Constructed		Standard Plans List				Project No./Code	
Creation Date:	16 OCT 02	Initials:	KEM	<input checked="" type="checkbox"/> (R-1)	2/18/03	Field Office	KEM	 <div> 1205 West Ave. Box C  Alamosa, CO. 81101  Phone: 719-589-4251 FAX: 719-589-3149 </div> <div>REGION 5</div> <div>J.J.S.</div>				No Revisions: July 17, 2003		Designer: WILCOXON		Structure Numbers		NH 2852-014	
Last Modification Date:	18 FEB 03	Initials:	KEM	<input checked="" type="checkbox"/> (R-X)								Revised:		Detailer: MAGOWAN		13998			
Full Path:	C:\13998\			<input checked="" type="checkbox"/> (R-X)								Void:		Sheet Subset:		Subset Sheets:		Sheet Number	
Drawing File Name:	Standard Plans List			<input checked="" type="checkbox"/> (R-X)														2	
Acad Ver.	R2002	Scale:	AS SHOWN	Units:	FEET														

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT ~~HAS~~ PROVIDED THE FOLLOWING INFORMATION:

☐ Horizontal Control  
☐ Vertical Control  
☐ Roadway Alignment  
☐ Original Terrain Data  
☐ Other: \_\_\_\_\_

Format\*  
Plans \_\_\_\_\_  
Plans \_\_\_\_\_  
Plans \_\_\_\_\_  
Computer Data \_\_\_\_\_

\*Specify the information format, ie., plan sheet, computer disk, computer printout, or other.  
The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- ☐ Landscaping  
☐ Signalization  
☐ Safety Improvement  
☒ Asphalt Overlay  
☐ Concrete Overlay  
☐ Minor Widening  
☐ Major Reconstruction  
☐ New Roadway Construction  
☐ Bridge Replacement  
☐ Bridge Widening  
☐ New Bridge  
☐ Other: \_\_\_\_\_

SURVEY WORK TO BE PERFORMED BY OTHERS: \_\_\_\_\_

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 625:

- ☐ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)  
☐ Verification and Maintenance of Horizontal and Vertical Control  
☐ Verify or Determine existing grades and alignments  
☐ Verify or Determine existing topography  
☐ Clearing and Grubbing Limits  
☐ Removal Limits  
☒ Excavation and Embankment  

☐ Excavation  

☐ Unclassified  
☐ Stripping  
☐ Muck  
☐ Rock  
☐ Borrow  
☐ Other: \_\_\_\_\_

☒ Embankment  

☐ Site Grading  
☐ Erosion Control (Perm)  
☐ Other: \_\_\_\_\_

☐ As Staked Earthwork Quantities

☐ Landscaping  

☐ Top Soil  
☐ Seeding  
☐ Mulching  
☐ Planting  
☐ Other: \_\_\_\_\_

☐ Erosion Control  

☐ Seeding (Temp)  
☐ Silt Fences  
☐ Straw Boles  
☐ Temporary Berm  
☐ Riprap (Temp)  
☐ Other (Temp Diversion, Temp Slope Drain, Bush Barrier, Check Dam, Other: \_\_\_\_\_)

SLOPE STAKING	GRID	GRADE STAKES	SPECIAL INTERVAL
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

- ☐ Roadway Bases  

☐ Untreated Subgrade  
☐ Treated Subgrade  
☐ Aggregate Base Course  
☐ Other: \_\_\_\_\_

- ☐ Pavements  

☐ PMBB - Plant Mix Bituminous Base  
☐ HBP - Hot Bituminous Pavement  
☐ Concrete  
☐ Other: \_\_\_\_\_

- ☒ Roadway Elements  

☐ Curb and Gutter  
☐ Drop inlets - alignment and grades  
☐ Retaining Walls  
☒ Guard Rail  
☐ Sidewalk  
☐ Other: \_\_\_\_\_

- ☒ Riprap (Perm)

- ☒ Slope and Ditch Paving

- ☒ Minor Structures  

☐ Structure Excavation limits  
☒ Culverts  
☐ Culverts w/ Headwalls and Wingwalls  
☒ Concrete Box Culverts w/ Headwalls and Wingwalls  
☐ Pipes  

☐ Sanitary Sewer  
☐ Storm Sewer  
☐ Water  
☐ Irrigation  
☐ Miscellaneous

- ☐ Manholes  
☒ Inlets  
☒ Other: Under Drain

- ☐ Major Structures - Overhead Signs, Concrete Box Culverts, Bridges - and all other structures assigned a structure number  

☐ Structure Excavation limits  
☐ Concrete Box Culverts w/ Headwalls and Wingwalls  
☐ Piling locations and cut off elevations  
☐ Caisson locations and elevations  
☐ Footing locations, alignment, and elevations  
☐ Abutment/Pier locations, alignment, and elevations  
☐ Wingwall skew angles/offsets  
☐ Structural concrete form locations  
☐ Substructure survey (See Revision of Subsection 601.12(m))  
☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)  
☐ Deck grades at Girder 10th or "n" th point locations and elevations  
☐ Slope and Ditch Paving  
☐ Other: \_\_\_\_\_

- ☐ Fencing  

☐ Temporary  
☐ Permanent  
☐ Sound Barriers  
☐ Other: \_\_\_\_\_

- ☐ Delineators  

☐ Temporary  
☐ Permanent

- ☐ Lighting and Traffic Control Devices (Perm)  

☐ Signal pole locations and elevations  
☐ Light pole locations and elevations  
☐ Signs  
☐ Field verify sign post locations, elevations, and lengths before fabrication.  
☐ Other: \_\_\_\_\_

- ☒ Pavement Marking  

☒ Striping (Temp)  
☒ Striping (Perm)  
☐ Symbols  
☐ Other: Words

GRADE STAKES	GRID	SPECIAL INTERVAL	SPECIAL OFFSET
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

- ☒ Temporary Lighting and Construction Traffic Control Devices  

☐ Signal pole locations and elevations (Temp)  
☐ Light pole locations and elevations (Temp)  
☒ Signs (Temp)  
☒ Other: Temporary Barrier

- ☐ Easement (Temp)(Staking)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 629:

- ☐ Monumentation  

☐ Control  
☐ Right of Way (Temp) (Staking)  
☐ Right of Way  
☐ Land corners, Aliquot corners  
☐ Easement (Temp)(Staking)  
☐ Easement (Perm)  
☐ Reference the specified existing monuments: \*\* \_\_\_\_\_  
☐ Relocate the specified existing monuments: \*\* \_\_\_\_\_  
☐ Locate monuments. It is estimated \_\_\_\_\_ hours are required.

\*\* A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

All work shall be done in accordance with the latest edition of the entire CDOT Survey Manual including all revisions to date:  
- Chapter 5 - Construction Surveying, revised 02/07/96.

Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.

The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 3 days prior to the Presurvey Conference.

The following surveying notebooks are required:

- ☐ Alignment Notebook  
☐ Benchmark Notebook  
☐ Control Survey/Monumentation Notebook  
☒ Minor Structure Notebook  
☐ Major Structure Notebook  
☐ Slope Staking Notebook  
☐ Grade Notebook  
☒ Other Notebook(s): Under Drain

Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.

The Contractor shall furnish an As Staked earthwork quantity to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual.

A printed copy of the As Staked earthwork data and a computer disk in the specified format shall be submitted to the Engineer.  
The Contractor shall field verify original ground cross sections at maximum 160 m (500 ft) intervals.

Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within the specified tolerance.


The Contractor shall perform all field surveying and calculations necessary to tie plan grades into field grades.

The Contractor shall coordinate construction staking on the project with any utility work.

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Last Modification Date:	27 JAN 03	Initials:	KEM
Full Path:	C:\13998\ACAD\		
Drawing File Name:	SURVTAB.DWG		
Acad Ver./R	2000	Scale:	NTS Units: FEET

Sheet Revisions			
<input type="checkbox"/>			
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Colorado Department of Transportation



1205 West Ave. Box C  
Alamosa, CO 81101  
Phone: (719) 589-4251 FAX: (719) 589-3149  
Region 5J.J.S

As Constructed	
No Revisions:	<u>July 17, 2003</u>
Revised:	
Void:	

SURVEY TABULATION			
Designer:	kem	Project No./Code	
Detailer:	kem	NH 2852-014	
Sheet Subset:	Survey	Subset Sheets:	1 of 1

Sheet Number		3
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### DESCRIPTION OF PROJECT

This project is located on US Highway 285 in Chaffee County. It begins at Milepost 119.036 on Hwy 285 @ Poncha Pass and extends north to Poncha Springs at Milepost 126.165.

This project consists of:

A one inch (1") leveling course (HBP)(S-Fines) followed by a two inch (2") overlay (HBP)(Gr.SX)(75) the full width of the existing pavement.

HBP patching as directed by the engineer.

~~The extension of drainage structures.~~

Paving<sup>ed</sup> county road, commercial, residential and field approaches as directed.

Existing Type 3 guardrail is to be adjusted, reset, and some is to be removed and replaced. New Type 3 guardrail will be installed as directed by the Engineer. The Contractor will take all salvageable material to the Poncha Springs CDOT Maintenance facility.

~~Reset 5 chevron alignment signs.~~

Mailboxes <sup>was</sup> ~~are to be~~ reset in accordance with details.

Shouldering<sup>ed</sup>, final striping<sup>ed</sup>, and clean-up<sup>ed</sup> of the entire length of the project.

### GENERAL NOTES

For preliminary plan quantities of pavement structure materials, the following rates of application were used:

Hot Bituminous Pavement .....	@ 110 Lbs./Sq. Yd./Inch
Tack Coat Emulsified Asphalt (Slow-Setting) .....	@ .10 Gals./Sq. Yd. (Diluted)
Prime coat (Emulsified Asphalt (Slow-Setting)).....	@ .30 Gals./Sq. Yd. (Diluted)
Asphalt Cement PG 58-34.....	@ 7.0 % weight of HBP

Aggregate Base Course (Special) .....@ 133 Lbs./ Cu. Ft.  
Aggregate Base Course (Class 6) .....@ 133 Lbs./ Cu. Ft.

Rates of application shall be determined by the Engineer at the time of application.

Diluted Emulsified Asphalt for Tack Coat shall consist of 1 part Emulsified Asphalt and 1 part water.

Prime Coat ~~shall be~~ applied at areas that are to be paved between existing edge of asphalt and face of guardrail type 3 and 6, and approaches as directed by the Engineer. Before placement of the Prime Coat, the contractor ~~shall removed~~ deleterious material and vegetation. Cleaning and removal of deleterious material and vegetation ~~will not be paid for~~ separately, but ~~shall be~~ included in the cost of the project.

Before placement of the Tack Coat, the Contractor shall clean the present roadway at no cost. This work will not be paid for separately, but shall be included in the cost of the project.

GENERAL NOTES (CONTINUED)

It is estimated that <sup>250</sup>~~133~~ sq.yds of Hot Bituminous Pavement (Patching) (Asphalt) will be required for this project at locations designated by the Engineer. The paving <sup>will</sup>~~is~~ to a 4" depth at guardrail end anchorage, approaches, and the area to the face of the guardrail type 3 and 6 shall be paid for as HBP (GR SX) (75).

It is estimated that ~~285~~<sup>286</sup> gallons of white and ~~223~~<sup>227</sup> gallons of yellow Epoxy Pavement Marking will be required for final striping for the project. It is estimated that ~~64~~ gallons of white and ~~446~~ gallons of yellow temporary marking paint (for information only) will be required for this project. The cost for temporary marking paint will not be paid separately but shall be included in the work. Intersection Stop Bars shall be paid as Item 627, Pre-formed Thermo-Plastic Pavement Marking, estimated at ~~90~~<sup>128</sup> sq.ft.

It is estimated that <sup>20</sup>50 hours of blading and <sup>19</sup>30 hours of rolling will be required for shaping approaches and for preparing the sub-grade at guardrail locations, as directed by the Engineer.

The pavement smoothness category for this project shall be type II, inches per mile criteria.

Approximately 4 county roads and commercial approaches will be paved 50 ft. out from the shoulder or to the R.O.W. line or as directed by the Engineer.

Approximately 19 residential approaches and other road approaches will be paved 25 ft. out from the shoulder or as directed by the Engineer.

~~Approximately 8 field approaches will be paved 10 ft. out from the shoulder or as~~ directed by the Engineer.

It is estimated that <sup>16</sup>40 hours of Combination Loader will be required at locations as directed by the engineer.

It is estimated that 60 hours of potholing will be required for utility relocations on this project, as directed by the Engineer. The Contractor shall coordinate with the appropriate utility representative to be on site during potholing.

Field facilities shall be provided with an all-weather compacted gravel surface graded and drained as approved by the engineer. The cost for this requirement will be included in the Field Office, Laboratory and Sanitary facilities. The Poncha Springs CDOT Maintenance facility may be used to locate the Field Office, Laboratory, and Sanitary Facilities as directed by the Engineer.

It is estimated that 2,301 hours of Flagging, 56 days Traffic Control Management, 32 days of Traffic Control Inspection, 1 Mobile Pavement Marking Zone, and 1 Mobile Profilograph Zone will be required for traffic control.

It is estimated that 1 mailbox structure (Type 1) will be required to be reset as directed by the engineer.

Delineators, milepost markers, and signs reset to facilitate the work will not be paid separately but shall be included in the cost of the work.


The Contractor shall shoulder up daily after the paving operation, or as directed by the Engineer.

It is estimated that 1.3 Acres of seeding and mulching will be required.

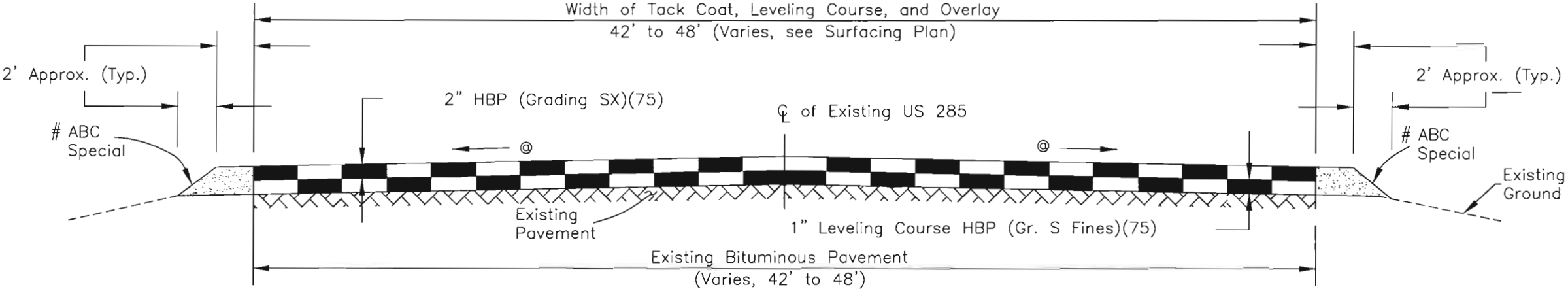
It is estimated that <sup>47.5</sup> 79 cu yds of Muck Excavation will be required for the project.

4,991.56  
5000 tons of HBP Furnish will be required for the project.

Existing wetlands near culverts and underdrain locations ~~have been~~ flagged with pink tape and <sup>was</sup> are not to be impacted by the project construction activities.

Computer File Information				Sheet Revisions				Colorado Department of Transportation				As Constructed		Description and General Notes				Project No./Code	
Creation Date: 16 OCT 02 Initials: KEM (R-X)								 1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149 REGION 5 J.J.S.				No Revisions:						NH 2852-014	
Last Modification Date: 27 JAN 03 Initials: KEM (R-X)												Revised: July 17, 2003						Designer: WILCOXON	
Full Path: C:\13998\ (R-X)												Void:		Detailer: MACOWAN				13998	
Drawing File Name: title sheet.DWG (R-X)														Sheet Subset:		Subset Sheets:		Sheet Number 4	
Acad Ver: R2002 Scale: AS SHOWN Units: FEET (R-X)																			

TYPICAL SECTION

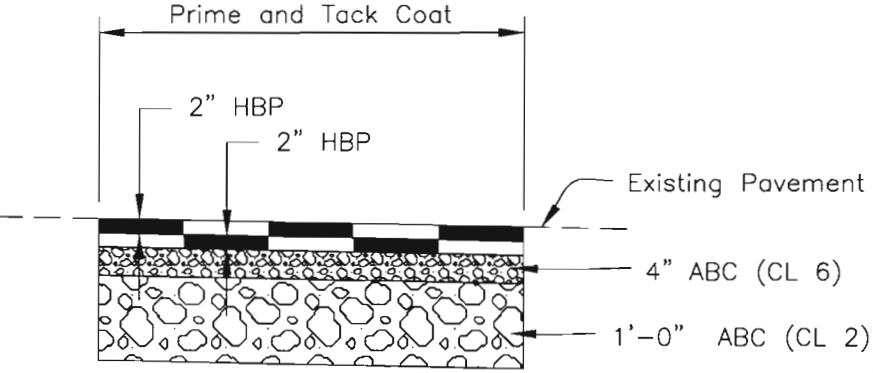


Sta. 11+90 to 388+34

- ⓐ Match Existing Cross Slope
- # Place ABC Special to this line after completion of the paving operation.

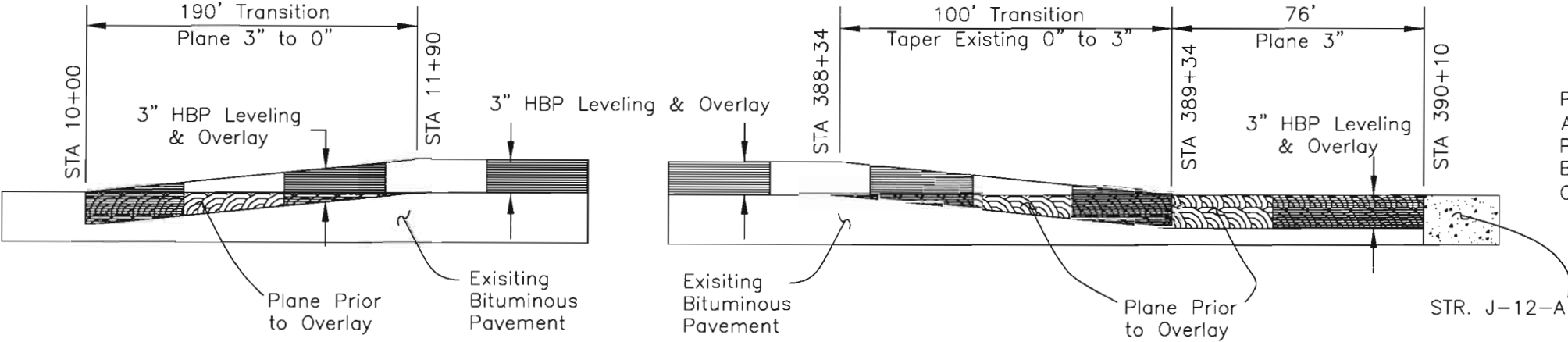
PATCHING DETAIL

LOCATIONS AS DIRECTED BY THE ENGINEER



PRIME COAT, TACK, ABC (CL-6), AND ABC (CL 2) MATERIAL USED FOR PATCHING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF ITEM 403, HBP (PATCHING).

PROJECT TRANSITION DETAIL (PROFILE)




ESTIMATED PLANING		
STATION	WIDTH(FT.)	AREA (SQ.YD.)
10+00	42	
11+90	48	950 930
388+34	42	
390+10	30	704 691
TOTAL		1654 1621

Computer File Information				Sheet Revisions		As Constructed		Typical Section		Project No./Code	
Creation Date:	16 OCT 02	Initials:	KEM	(R-1)	2/18/03	Planning Quantity	KEM	No Revisions:	July 17, 2003	Designer:	WILCOXON
Last Modification Date:	18 FEB 03	Initials:	KEM	(R-X)				Revised:		Detailer:	MAGOWAN
Full Path:	C:\13998\			(R-X)				Void:		Sheet Subset:	Structure Numbers
Drawing File Name:	typical.DWG			(R-X)							
Acad Ver.	R2002	Scale:	AS SHOWN	Units:	FEET	(R-X)					Subset Sheets:
Colorado Department of Transportation						REGION 5		J.J.S.		NH 2852-014	
1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149										13998	
										Sheet Number	
										5	

INDEX FORM 305			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY										Roadway (Non Fed Aid)						PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.									PLAN	AS CONST.					PLAN	AS CONST.
	0005		202-00015	Removal of Headwall	EACH	<del>8</del>	6															<del>8</del>	6
	0010		202-00019	Removal of Inlet	EACH	<del>3</del>	5															<del>3</del>	5
	0015		202-00035	Removal of Pipe	LF	<del>107</del>	106															<del>107</del>	106
	0020		202-00037	Removal of End Section	EACH	<del>2</del>	3															<del>2</del>	3
	0025		202-00150	Removal of Wall Wingwall	EACH	<del>2</del>	2															<del>2</del>	2
	0030		202-00240	Removal of Asphalt Mat (Planing) (R-1)	SY	<del>1654</del>	1621													(R-1)		<del>1654</del>	1621
	0035		202-01130	Removal of Guardrail Type 3	LF	<del>574</del>	856															<del>574</del>	856
	0040		202-01300	Removal of End Anchorage	EACH	<del>28</del>	29															<del>28</del>	29
	0045		202-04002	Clean Culvert	EACH	<del>2</del>	8															<del>2</del>	8
	0050		203-00060	Embankment Material (Complete In Place)	CY	<del>570</del>	647															<del>570</del>	646.8
	0055		203-00100	Muck Excavation	CY	<del>79</del>	48															<del>79</del>	48.0
	0060		203-01140	Rolling	HOURL	<del>30</del>	19															<del>30</del>	19
	0065		203-01500	Blading	HOURL	<del>50</del>	20															<del>50</del>	20
	0070		203-01594	Combination Loader	HOURL	<del>40</del>	16															<del>40</del>	16
	0075		203-01597	Potholing	HOURL	<del>60</del>	41															<del>60</del>	41
	0080		206-00000	Structure Excavation	CY	<del>375</del>	376.0															<del>375</del>	376.4
	0085		206-00065	Structure Backfill (Flow-Fill)	CY	<del>152</del>	176.7															<del>152</del>	176.7
	0090		206-00505	Filter Material (Special)	CY	<del>191</del>	191.0															<del>191</del>	191
	0095		208-00005	Erosion Log	LF	<del>300</del>	322															<del>300</del>	322
	0100		208-00100	Sediment Removal and Disposal	L S	<del>1</del>	1															<del>1</del>	1
	0105		208-00200	Erosion Control Supervisor	L S	<del>1</del>	1															<del>1</del>	1
	0110		210-00011	Reset Mailbox Structure (Type 1)	EACH	<del>1</del>	1															<del>1</del>	1
	0115		210-01130	Reset Guardrail Type 3	LF	<del>206</del>	1,340															<del>206</del>	1,340
	0120		210-04200	Adjust Guardrail	LF	<del>16,339</del>	15,073															<del>16,339</del>	15,073
	0125		212-00006	Seeding (Native)	ACRE	<del>1.3</del>	1.0															<del>1.3</del>	1.0
	0130		213-00000	Mulching	ACRE	<del>1.3</del>	1.0															<del>1.3</del>	1.0
	0135		304-09014	Aggregate Base Course (Special)	TON	<del>7,144</del>	4863.230															<del>7,144</del>	4863.230
	0140		403-00721	Hot Bituminous Pavement (Patching) (Asphalt)	SY	<del>133</del>	250															<del>133</del>	250
	0410		403-09500	Furnish Hot Bituminous Pavement	TON											<del>5,000</del>	4,991.56					<del>5,000</del>	4,991.56
	0145		403-34701	Hot Bituminous Pavement (Grading SX) (75)	TON	<del>25,100</del>	24,869.60															<del>25,100</del>	24,869.60
	0150		403-35701	Hot Bituminous Pavement (Grading S-Fines) (75)	TON	<del>13,075</del>	10,359.35															<del>13,075</del>	10,359.35
	0155		411-03355	Asphalt Cement Performance Grade (PG 58-34)	TON	<del>2,672</del>	3,012.03									<del>350</del>	408.31					<del>3,022</del>	3,420.34
	0160		411-10255	Emulsified Asphalt (Slow-Setting)	GAL	<del>22,332</del>	14,875.00															<del>22,332</del>	14,875.00

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		SUMMARY OF APPROXIMATE QUANTITIES		Project No./Code	
Creation Date: 31-Jan-2003 Initials:		(R-1) 2/18/03 SAQ - Planing Quantity KEM		Room 4201 E. Arkansas Ave. Denver, CO 80222 Phone: Fax:		No Revisions:		Designer:		NH 2852-014	
Last Modification Date: 18-FEB-2003 Initials: KEM						Revised: July 17, 2003		Detailer:		13998	
Full Path: C:\13998\						Void:		Sheet Subset:		Sheet Number: 6	
Drawing File Name: 13998_Sheet6								Subset Sheets:			
AutoCAD by Autodesk											

CDOT FORM INDEX 305's			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY										Roadway (Non Fed Aid)						PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.									PLAN	AS CONST.					PLAN	AS CONST.
	0165		420-00110	Geotextile (Drainage) (Class A)	SY	<del>1,424</del>	1454.00															<del>1,424</del>	1554.00
	0170		420-00130	Geotextile (Separator) (Class A)	SY	<del>62</del>	106															<del>62</del>	106
	0175		506-00030	Grouted Riprap	CY	<del>34</del>	7															<del>34</del>	7
	0180		506-00212	Riprap (12 Inch)	CY	<del>42</del>	30															<del>42</del>	30
	0185		507-00400	Bituminous Slope and Ditch Paving (Asphalt)	TON	<del>32</del>	56.62															<del>32</del>	56.62
	0190		601-03030	Concrete Class D (Box Culvert)	CY	<del>15</del>	15															<del>15</del>	15
	0195		601-03050	Concrete Class D (Wall)	CY	<del>12</del>	12															<del>12</del>	12
	0200		602-00000	Reinforcing Steel	LB	<del>3,143</del>	3,143															<del>3,143</del>	3,143
	0205		603-10240	24 Inch Corrugated Steel Pipe	LF	<del>85</del>	73															<del>85</del>	73.0
	0210		603-10300	30 Inch Corrugated Steel Pipe	LF	<del>94</del>	94															<del>94</del>	94
	0215		603-10360	36 Inch Corrugated Steel Pipe	LF	<del>18</del>	20															<del>18</del>	20.0
	0220		603-30024	24 Inch Steel End Section	EACH	<del>3</del>	2															<del>3</del>	2
	0225		603-30036	36 Inch Steel End Section	EACH	<del>1</del>	1															<del>1</del>	1
	0230		604-00305	Inlet Type C (5 Foot)	EACH	<del>9</del>	8															<del>9</del>	8
	0235		604-00505	Inlet Type D (5 Foot)	EACH	<del>3</del>	4															<del>3</del>	4
	0240		605-00120	12 Inch Perforated Pipe Underdrain	LF	<del>975</del>	975															<del>975</del>	975
	0245		606-00301	Guardrail Type 3 (6-3 Post Spacing)	LF	<del>470</del>	550															<del>470</del>	550
	0250		606-00601	Guardrail Type 6 (6-3 Post Spacing) Ithre Beam	LF	<del>963</del>	963															<del>963</del>	963
	0255		606-01320	End Anchorage Type 3B	EACH	<del>2</del>	2															<del>2</del>	2
	0260		606-01390	End Anchorage Type 3K	EACH	<del>1</del>	1															<del>1</del>	1
	0265		606-02003	End Anchorage (Nonflared)	EACH	<del>2</del>	2															<del>2</del>	2
	0270		606-02005	End Anchorage (Flared)	EACH	<del>29</del>	30															<del>29</del>	30
	0420		620-00001	Field Office (Class 1)	EACH	<del>1</del>	1															<del>1</del>	1
	0425		620-00012	Field Laboratory (Class 2)	EACH	<del>1</del>	1															<del>1</del>	1
	0430		620-00020	Sanitary Facility	EACH	<del>1</del>	1															<del>1</del>	1
	0275		625-00000	Construction Surveying	L S	<del>1</del>	1															<del>1</del>	1
	0280		626-00000	Mobilization	L S	<del>1</del>	1															<del>1</del>	1
	0285		627-00005	Epoxy Pavement Marking	GAL	<del>507</del>	512															<del>507</del>	512
	0290		627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF	<del>96</del>	108															<del>96</del>	108
	0295		630-00000	Flagging	HOUR	<del>7,200</del>	2,301															<del>7,200</del>	2,301
	0300		630-00007	Traffic Control Inspection	DAY	<del>40</del>	32															<del>40</del>	32
			630-00012	Traffic Control Management	DAY	<del>75</del>	56															<del>75</del>	56

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		SUMMARY OF APPROXIMATE QUANTITIES		Project No./Code	
Creation Date: 5-Feb-2003	Initials:			 Room 4201 E. Arkansas Ave. Denver, CO 80222 Phone:                      Fax:		No Revisions:		Designer:                      Structure Numbers: Detailer:                      Subsets Sheets: Sheet Subset:                      Subsets Sheets:		NH 2852-014	
Last Modification Date:	Initials:					Revised: July 17, 2003				13998	
Full Path: C:\13998\						Void:					
Drawing File Name: 13998_Sheet7											
AutoCAD by Autodesk				Region 5 Design						Sheet Number: 7	

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY										Roadway (Non Fed Aid)						PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.									PLAN	AS CONST.					PLAN	AS CONST.
	03	10	630-80341	Construction Traffic Sign (Panel Size A)	EACH	<del>28</del>	26															<del>28</del>	26
	03	15	630-80342	Construction Traffic Sign (Panel Size B)	EACH	<del>65</del>	20															<del>65</del>	<del>60</del> 70
	03	20	630-80343	Construction Traffic Sign (Panel Size C)	EACH	<del>18</del>	10															<del>18</del>	10
	03	25	630-80355	Portable Message Sign Panel	EACH	<del>1</del>	1															<del>1</del>	1
	03	30	630-80358	Advance Warning Flashing or Sequencing Arrow Panel (C Type)	EACH	<del>2</del>	2															<del>2</del>	2
	03	35	630-80360	Drum Channelizing Device	EACH	<del>200</del>	190															<del>200</del>	190
	03	40	630-80363	Drum Channelizing Device (With Light) (Flashing)	EACH	<del>4</del>	5															<del>4</del>	5
	03	45	630-80370	Concrete Barrier (Temporary)	LF	<del>400</del>	150															<del>400</del>	150
	03	50	630-80380	Traffic Cone	EACH	<del>200</del>	300															<del>200</del>	300
	03	55	630-80510	Mobile Pavement Marking Zone	L S	<del>1</del>	1															<del>1</del>	1
	03	60	630-80560	Mobile Profilograph Operation Zone	L S	<del>1</del>	1															<del>1</del>	1
	03	65	630-85006	Impact Attenuator (Sand Filled Plastic Barrel) (Temporary)	EACH	<del>2</del>	1															<del>2</del>	1
	03	70	700-70010	FORCE ACCOUNT =====	F A	1																1	
	03	75	700-70012	F/A Asphalt Pavement Incentive (Smoothness)	F A	<del>1</del>	15,694.78															<del>1</del>	15,694.78
	03	80	700-70022	F/A OUT Colorado Training Program	F A	<del>1</del>	Deleted by 105 Date 6/25/03															<del>1</del>	0
	03	85	700-70023	F/A On-The-Job Trainee	F A	<del>1</del>	1															<del>1</del>	555
	03	90	700-70025	F/A Quality Incentive Payment	F A	<del>1</del>	33,365.31															<del>1</del>	33,365.31
	03	95	700-70028	F/A ESB Program	F A	<del>1</del>	Deleted by 105 Date: 6/25/03															<del>1</del>	0
	04	00	700-70060	F/A Adjust Utilities	F A	<del>1</del>	Deleted by CDOT Form 105 Date: 6/25/03															<del>1</del>	0
	04	05	700-70380	F/A Erosion Control	F A	<del>1</del>	Deleted by CDOT Form 105 Date: 6/25/03															<del>1</del>	0
	04	35	900-00011	ADDED ITEM / Mulch Tackifier MCR LING#2	LB	<del>200</del>	300															<del>200</del>	300


Computer File Information		<div> <div></div> <div></div> <div></div> <div></div> </div>	Sheet Revisions		<div> <div>  <div>           Colorado Department of Transportation            Room 4201 E. Arkansas Ave.            Denver, CO 80222            Phone:                      Fax:         </div> </div> <div>Region 5 Design</div> </div>	As Constructed		SUMMARY OF APPROXIMATE QUANTITIES				Project No./Code	
Creation Date: 31-Jan-2003                      Initials:						No Revisions:						NH 2852-014	
Last Modification Date:                      Initials:						Revised: July 17, 2003		Designer:		Structure Numbers		13998	
Full Path: C:\13998\						Void:		Detailer:				Sheet Number: 8	
Drawing File Name: 13998_Sheet8								Sheet Subset:		Subset Sheets:			
AutoCAD by Autodesk													




LOCATION	WIDTH	AREA	EMULSIFIED ASPHALT (SLOW SETTING)		ASPHALT CEMENT (PG 58-34)		HBP (Gr. S Fines) (LEVELING)		HBP (GR.SX)(75) (TOP LAYER)		ABC (SPECIAL)	
STATION TO STATION	FEET	SY	GALLONS		GALLONS		TONS		TONS		TONS	
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
10+00 TO 12+40	42.00 - 48.00	1200	120		14		66		132		24	
12+40 TO 18+18	48.00 - 48.00	3083	308		36		170		339		58	
18+18 TO 18+50	48.00 - 46.00	167	17		2		9		18		3	
18+50 TO 45+00	46.00 - 45.00	13397	1340		155		737		1474		264	
45+00 TO 133+76	45.00 - 45.00	44380	4438		513		2441		4882		885	
133+76 TO 137+25	45.00 - 48.00	1803	180		21		99		198		35	
137+25 TO 383+88	48.00 - 48.00	131536	13154		1519		7234		14469		2460	
383+88 TO 385+50	48.00 - 45.00	837	84		10		46		92		16	
385+50 TO 388+00	45.00 - 42.00	1208	121		14		66		133		25	
388+00 TO 390+10	42.00 - 32.00	781	86		10		47		95		21	
ESTIMATED FOR: APPROACHES @ 4" DEPTH HBP		4439	666		68				977		100	
ESTIMATED FOR IRREGULARITIES					151		2160				2000	
ESTIMATED FOR: GUARDRAIL @ 4" DEPTH HBP		12122	1818		160				2291			
ESTIMATED FOR: WIDENING AT GUARDRAIL ANCHORAGES											1250	
Final PROJECT TOTAL		215036	<del>22332</del>	14,875.00	<del>2672</del>	3,012.03	<del>13075</del>	10,359.35	<del>25100</del>	24,869.60	<del>7141</del>	

LOCATION	REMOVAL OF END ANCHORAGE		REMOVAL OF GUARDRAIL TYPE 3		* GUARDRAIL TYPE 3 (6'-3" POST SPACING)		* GUARDRAIL TYPE 6 THRIE BEAM \$		*END ANCHORAGE (FLARED)		RESET GUARDRAIL TYPE 3		ADJUST GUARDRAIL TYPE 3		*END ANCHORAGE TYPE 3B		*END ANCHORAGE TYPE 3K		*END ANCHORAGE (NON FLARED)	
STATION TO STATION	EACH		LIN. FT.		LIN. FT.		LIN. FT.		EACH		LIN. FT.		LIN. FT.		EACH		EACH		EACH	
	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
34+32 TO 34+82 RT 34+82 TO 44+45 RT 44+45 TO 44+82 RT							-963	963	-1	1									-1	1
89+12 RT 89+12 TO 91+12 RT 91+12 TO 91+62 RT					200	37.5 175									-1	1			-1	1
127+22 RT 127+22 TO 127+97 RT 127+97 TO 128+35 RT					75	37.5 100			-1	1					-1	1				
133+68 TO 134+05 LT 134+05 TO 135+55 LT 135+55 TO 135+93 LT	+1	1	-31	37.5					-1	1	-32	12.50 25.00	+18	75.00						
134+02 TO 134+27 RT 134+27 TO 140+91 RT 140+91 TO 141+28 RT	+1	1	25	25					-1	1		37.50	-664	665.00						
136+97 TO 137+34 LT 137+34 TO 139+47 LT 139+47 TO 139+80 LT	+1	1	-31	37.5					-1	1		18.75	-213	173.75			-1	1		
150+19 TO 150+32 RT 150+32 TO 160+95 RT 160+95 TO 161+33 RT	+1	1	+3	12.5					-1	1	-18	50.00	+1063	1007.50						
162+79 TO 163+16 RT 163+16 TO 213+41 RT 213+41 TO 213+66 RT	+1	1	-	25.0	+9	25.0			-1	1	-31	50.00	4975	4945.00						
214+42 TO 214+67 RT 214+67 TO 239+17 RT 239+17 TO 239+55 RT	+1	1	+9	25.0					-1	1	-25	50.00	2425	2367.50						
239+85 TO 240+22 RT 240+22 TO 255+10 RT 255+10 TO 255+47 RT	+1	1	+3	37.5					-1	1		37.50 25.00	+488	1270.00						
SHEET TOTAL	+14	14	-306	406	407	487.5	-963	963	-15	15	-106	306.25	+10946	10503.75	-2	2	-1	1	-2	2

\* All new guardrail posts shall be 7 feet in length and corrosion resistant (corten). Restrictive roadside installation will be as directed by the Engineer. All guardrail shall be 10 gage corrosion resistant (corten), except for end anchorages, which shall be 12 gage corrosion resistant (corten). Guardrail hardware shall be galvanized. # 62.5' of Type 3 guardrail (35' radius) and 50' of Type 3 guardrail as directed by the Engineer. \$ 6'3" transition sections between Thrie Beam and end anchorages shall be included in cost of Thrie Beam.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Tabulation of Guardrail		Project No./Code	
Creation Date:	16 OCT 02 Initials: KEM	(R-X)		 1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149		No Revisions:		Designer: WILCOXON Detailer: MAGOWAN Sheet Subset:		NH 2852-014  13998  1 of 2, Sheet Number 10	
Last Modification Date:	28 JAN 03 Initials: KEM	(R-X)				Revised: July 17, 2003					
Full Path:	C:\13998\	(R-X)				Void:					
Drawing File Name:	guardrail type 3.DWG	(R-X)									
Acad Ver. R2002	Scale: AS SHOWN Units: FEET	(R-X)		REGION 5		J.J.S.					

LOCATION	REMOVAL OF END ANCHORAGE		REMOVAL OF GUARDRAIL TYPE 3		* GUARDRAIL TYPE 3 (6'-3" POST SPACING)		* GUARDRAIL TYPE 6 THRIE BEAM \$		*END ANCHORAGE (FLARED)		RESET GUARDRAIL TYPE 3		ADJUST GUARDRAIL TYPE 3		*END ANCHORAGE TYPE 3B		*END ANCHORAGE TYPE 3K		*END ANCHORAGE (NON FLARED)	
STATION TO STATION	EACH		LIN. FT.		LIN. FT.		LIN. FT.		EACH		LIN. FT.		LIN. FT.		EACH		EACH		EACH	
	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
263+00 TO 263+37 RT 263+37 TO 269+00 RT 269+00 TO 269+38 RT	+	1	+	25.0					+	1	—	62.5	563	500.00						
277+82 TO 278+19 RT 278+19 TO 288+19 RT 288+19 TO 288+57 RT	+	1	+	25.0					+	1	—	25.0	1000	932.50						
295+66 TO 296+03 RT 296+03 TO 304+91 RT 304+91 TO 305+28 RT	+	1	—	25.0					+	1	—	75.00	863	798.75						
318+21 TO 318+58 RT 318+58 TO 327+62 RT 327+62 TO 328+00 RT	+	1	—	25.0	+	12.5			+	1	—	62.50	866	797.50						
331+10 TO 331+47 RT 331+47 TO 337+35 RT 337+35 TO 337+73 RT	+	1	—	25.0	—	25.0			+	1	—	50.00	538	423.75						
348+10 TO 348+47 RT 348+47 TO 358+85 RT 358+85 TO 359+23 RT	+	1	—	25.0	—	25.0			+	1	—	75.00	988	928.75						
366+98 TO 367+35 RT 367+35 TO 373+40 RT 373+10 TO 373+48 RT	1	1	+	25.0					+	1	—	87.50	575	381.25						
SHEET TOTAL	14		268		63		0		14		100		5393		0		0		0	
PROJECT TOTAL	28		574		470		963		29		206		16339		2		1		2	
386+78 TO 387+03 385+00 93 ROTTEN POST WERE REPLACED DEDUCT 581.25 FROM ADJUST GUARDRAIL ROTTEN POST PAID RESET 134+05 TO 387+28	—	1	—	25.0					1		—	25.00	—	387.50						
											—	465.00		—						
SHEET TOTAL	14	15	268	450	63	62.5	0	0	14	15	100	1033.75	5393	4568.75	0	0	0	0	0	0
PROJECT TOTAL	28	29	574	856	470	550	963	963	29	30	206	1340.00	16339	15073	2	2	1	1	2	2

Computer File Information				Sheet Revisions				Colorado Department of Transportation				As Constructed		Tabulation of Guardrail				Project No./Code	
Creation Date:		16 OCT 02		Initials:	KEM	(R-X)		 1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149	No Revisions:						NH 2852-014				
Last Modification Date:		28 JAN 03		Initials:	KEM	(R-X)			Revised: July 17, 2003		Designer: WILCOXON		Structure Numbers		13998				
Full Path:		C:\13998\				(R-X)					Detailer: MAGOWAN								
Drawing File Name:		guardrail type 3.DWG				(R-X)			Void:		Sheet Subset:		Subset Sheets:		2 of 2				
Acad Ver.	R2002	Scale:	AS SHOWN	Units:	FEET	(R-X)		REGION 5	J.J.S.						Sheet Number		11		

INDEX			LOCATION	REMOVAL OF PIPE	REMOVAL OF HEADWALL	REMOVAL OF WINGWALL	REMOVAL OF INLET	REMOVAL OF END SECTION	CLEAN CULVERT	UNCLASSIFIED EARTHWORK		STRUCTURE EXCAVATION CULVERT	STRUCTURE EXCAVATION INLET	STRUCTURE EXCAVATION RIPRAP	MUCK EXCAVATION	BACKFILL FLOW FILL CULVERT	BACKFILL FLOW FILL INLET	TYPE C INLET (3 FT)	TYPE C INLET (3.5 FT)	TYPE D INLET (4 FT)	TYPE D INLET (3.5 FT)	STEEL END SECTION		CULVERT PIPE			6 X 7 CBC EXTENSION	12" PERFORATED PIPE UNDERDRAIN	GEOTEXTILE (DRAINAGE) (CLASS A)	FILTER MATERIAL (SPECIAL)	RIPRAP 12"	GROUTED RIPRAP 12"	GEOTEXTILE (SEPARATOR) (CLASS A)	HBP PATCHING	MISCELLANEOUS	
										EXCAVATION	EMBANKMENT (CIP)											24"	36"	24"	30"	36"										
BOOK	PAGE	SHEET		LF.	EACH	EACH	EACH	EACH	EACH	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	EACH	EACH	EACH	EACH	EACH	EACH	LF.	LF.	LF.	LF.	LF.	SQ. YDS	C.Y.	C.Y.	C.Y.	SQ. YDS	SQ. YDS		
		14	25+68	4	1		1			15.4	38.8	3.9	2.9			7.0	4.2	1					1		16											
		15	30+15	2			1		1	4.6	8.4	1.5				2.6							1		6											
		16	46+78	2			1		1	1.2	32.9	1.9	5.3	<del>38</del> 24		<del>3.1</del> 3.2	4.8		1			<del>1</del> 0		7								<del>38</del> 24		<del>57</del> 73		
		17	49+88	2			1		1	3.9	22.6	7.4	4.4	3		<del>5.8</del> 1.1	4.2	1							<del>13.3</del> 2.0							3.11		9.33		
		18	55+02	2			1			1.2	18.8	7.3	4.4			5.8	4.2	1							<del>13.1</del> 13.0											
		19	61+40	2	1				1	8.9	22.6	5.5	3.7			4.4	4.2	1							10											
		20	65+71									24.6	12.4			<del>11.8</del> 13.8												70	101	17				<del>37</del> 57.3	99' Connection, galvanized hardwire cloth, and 1 -12" concrete end section▲	
			68+08												<del>79</del> 48																			<del>27</del> 46		
		21	69+35	2	<del>1</del> 0		1		1	1.5	5.8	2.2	4.7			1.8	4.8		1						<del>1</del> 3											
		22	72+38	79						90	48.9	62.3	9.9			<del>48.8</del> 51.9	<del>5.3</del> 1.0				1				<del>93.8</del> 94									<del>69</del> 146.4		
		23	76+36	<del>2</del> 0	<del>1</del> 0		1			1.2	138.5	5.1				10.9							1			<del>17.3</del> 16.0										
		24	83+86	2	1					0.1	20	1.2	1.8			1.1	<del>4.2</del> 5.2	<del>1</del>		1					2.5											
			91+62 RT																																21 TONS SLOPE AND DITCH PAVING 36.43	
SHEET TOTALS				<del>99</del> 97	<del>84</del> 4	0	<del>24</del>	2	<del>25</del>	128	<del>370</del> 357.3	123	49.5	<del>38</del> 27	<del>79</del> 48	<del>89.1</del> 103.6	<del>35.9</del> 32.6	<del>54</del>	2	<del>81</del>	1	<del>82</del>	1	<del>71.9</del> 59.5	<del>93.8</del> 94	<del>17.3</del> 16.0	0	70	133	17	<del>38</del> 27.11	0	<del>57</del> 82.33	<del>133</del> 250		
				▲ Quantities for these items are given for information only, unless otherwise noted.																																

▲ Quantities for these items are given for information only, unless otherwise noted.

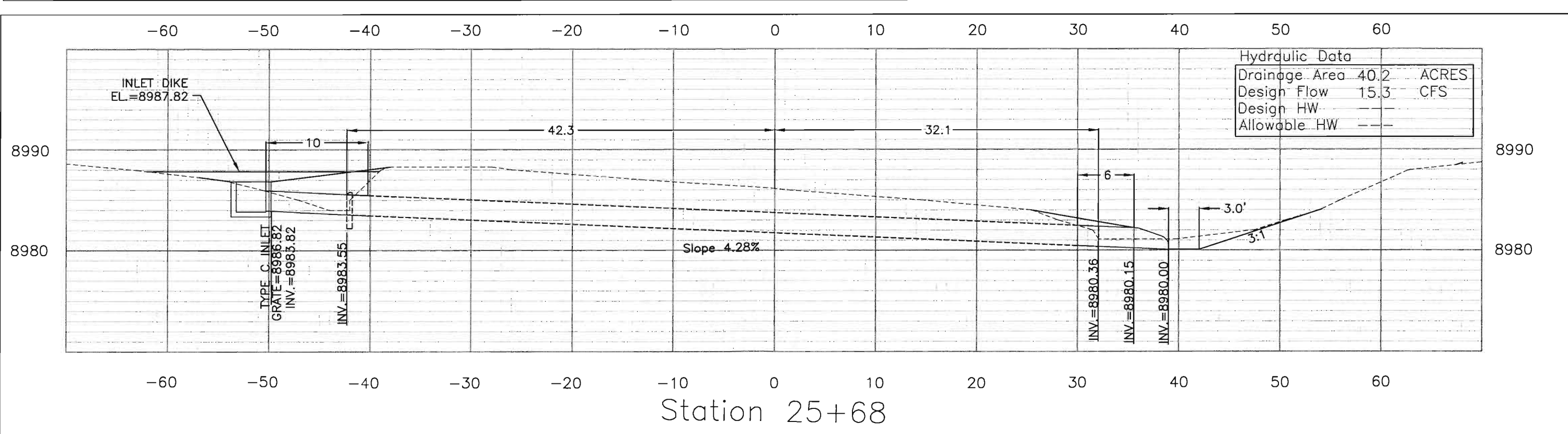
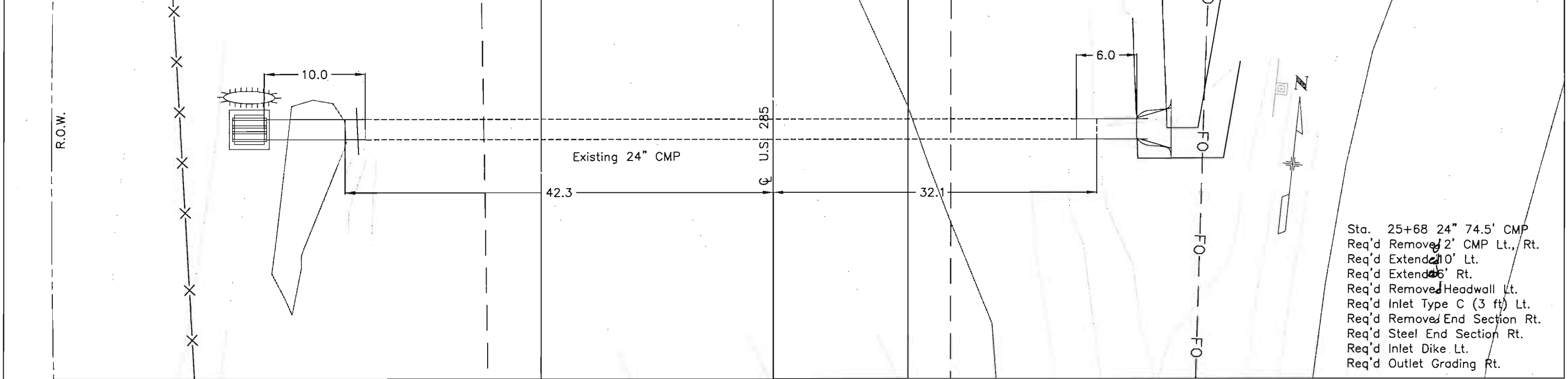
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Last Modification Date:	1/31/03	Initials:	KEM					Revised:	July 17, 2003			Detailer:	MAGOWAN			13998	
Full Path:	c:\13998							Void:				Sheet Subset:	Tabulations	Subset Sheets:	1 of 2	Sheet Number 12	
Drawing File Name:	STR Q.DWG																
Acad Ver.	2000	Scale:	NTS	Units:	English												


Colorado Department of Transportation  
1205 West Ave.  
Box C  
Alamosa, CO 81101  
Phone: (719) 589-4251 FAX: (719) 589-3149  
Region 5 J.J.S.



All quantities from Computer  
 Structure Excavation Culvert:  $21.2 \times 5 / 27 = 3.9$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 2.9 / 27 = 2.91$  C.Y.  
 Uncle. Excavation (FIO): 15.4 C.Y.  
 Embankment\*:  $10.47 \times 200 / 2 / 27 = 38.8$  C.Y.  
 Structure Backfill Culvert:  $16 \times 11.86 / 27 = 7.05$  C.Y.  
 Structure Backfill Inlet: 4.2 C.Y.  
 \* Embankment to be evenly tapered 100' before and after culvert.

UTILITY INFORMATION:  
The information shown on these drawings is not guaranteed to be accurate or all inclusive. The contractor shall be responsible for making all determinations as to the type and location of underground and other utilities as may be necessary to avoid damage thereto.  
Call 1(800) 922-1987 for utility information.



Computer File Information		<div><div></div><div></div><div></div><div></div><div></div></div>		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS		Project No./Code	
Creation Date:11/1/02                      Initials: JLC						<div><div></div><div>3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5</div><div>J.S.</div></div>		No Revisions:		STATION 25+68		NH 2852-014	
Last Modification Date: 1/28/03                      Initials:KEM								Revised: <i>July 17, 2003</i>		Designer: J. CARLSON	Structure	13998	
Full Path: ...\\13998								Void:		Detailer: J. CARLSON	Numbers		
Drawing File Name:jc998pipe x-sec.dwg										Sheet Subset:		Subset Sheets: 1 of 16	Sheet Number 14
Acad Ver. R2002      Scale: 1"=10'      Units: English													

UTILITY INFORMATION:  
The information shown on these drawings is not guaranteed to be accurate or all inclusive. The contractor shall be responsible for making all determinations as to the type and location of underground and other utilities as may be necessary to avoid damage thereto.  
Call 1(800) 922-1987 for utility information.



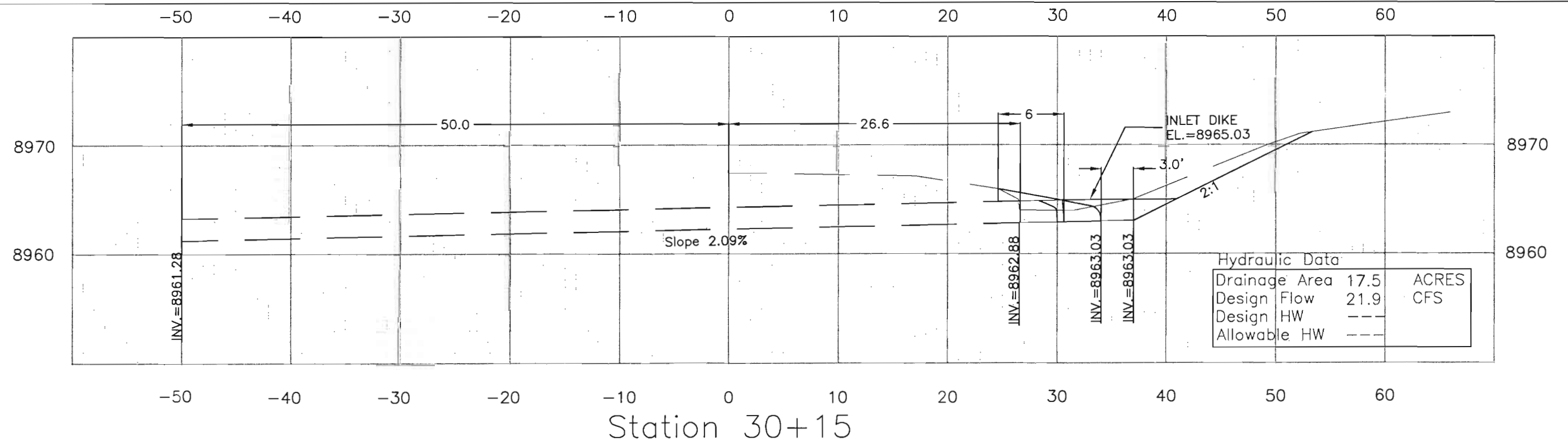
U.S. 285


— 26.63

6.0

cleaned

Sta. 30+15 24" 76.5' CMP  
~~Req'd~~ Remove 2' CMP Rt.  
~~Req'd~~ Removed End Section Rt.  
~~Req'd~~ Extend 6' Rt.  
~~Req'd~~ Steel End Section Rt.  
~~Req'd~~ Dike Rt.  
~~Req'd~~ Inlet Grading Rt.

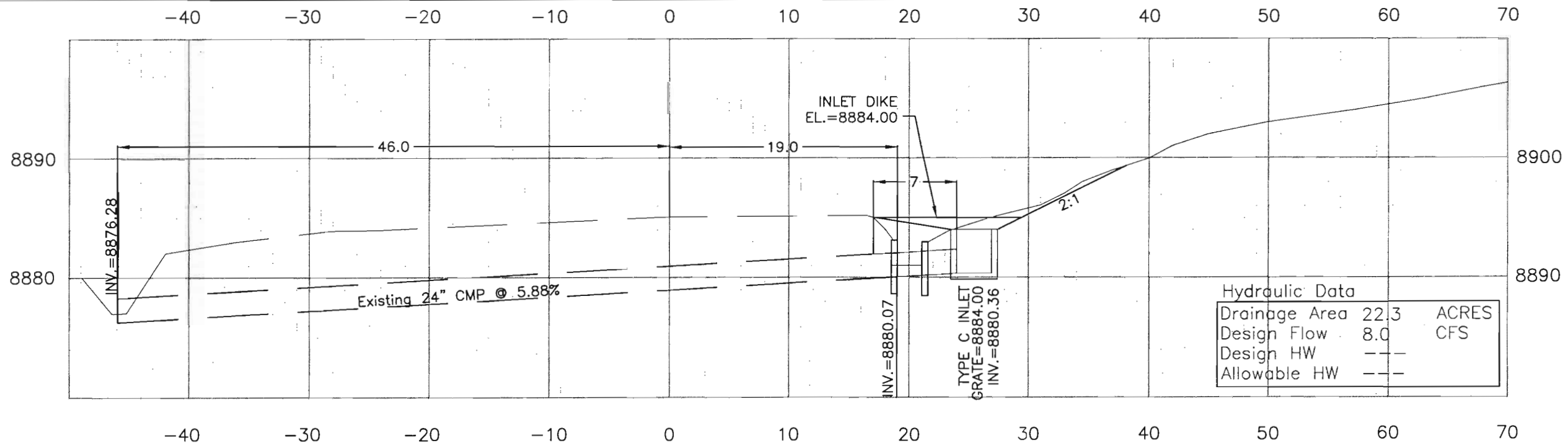


Computer File Information			Sheet Revisions			Colorado Department of Transportation			As Constructed		STRUCTURE X-SECTIONS STATION 30+15			Project No./Code			
Creation Date: 10/5/01 Initials: JLC			<div></div> <div></div> <div></div> <div></div>				 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5			No Revisions:					NH 2852-014		
Last Modification Date: 1/28/03 Initials: KEM										Revised: <u>July 17, 2003</u>		Designer: JLC		Structure Numbers		13998	
Full Path: ...\\13017										Void:		Detailer: JLC					
Drawing File Name:												Sheet Subset:		Subset Sheets: 2 of 16		Sheet Number 15	
Acad Ver. R2000    Scale: as noted    Units: English						J.S.											

All quantities from Computer  
 Structure Excavation Culvert:  $10.38 \times 5/27 = 1.9$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 5.3/27 = 5.3$  C.Y.  
 Structure Excavation Rip Rap: ~~38~~  $6.4 \times 24 \times 5/27 = 3.2$  C.Y.  
 Uncle. Excavation (FIO): 1.2 C.Y.  
 Embankment\*:  $8.87 \times 200/2/27 = 32.9$  C.Y.  
 Structure Backfill Culvert:  $7 \times 11.86/27 = 3.07$  C.Y.  
 Structure Backfill Inlet: 4.8 C.Y.  
 Riprap 12 inch: ~~38~~  $6.4 \times 24 \times 5/27 = 3.2$  C.Y.  
 Geotextile Separator Class A: 57 SQ.YDS  
 \* Embankment to be evenly tapered 100' before and after culvert.

**UTILITY INFORMATION:**  
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 Call 1(800) 922-1987 for utility information.

*Cleaned*  
 Sta. 46+78 24"x65' CMP  
 Req'd Removed Inlet Rt.  
 Req'd Removed 2' CMP Rt.  
 Req'd Extended 27' Rt.  
 Req'd Inlet Type C (3.5ft.) Rt.  
 Req'd Inlet Dike Rt.  
 Req'd 12" Riprap Rundown Rt.  
 See Detail or as directed by the Engineer  
 Req'd Geotextile Separator Class A Rt.  
 Req'd Inlet Grading Rt.



Station 46+78

Computer File Information	
Creation Date: 10/5/01	Initials: JLC
Last Modification Date: 1/28/03	Initials: KEM
Full Path: ...\\13017	
Drawing File Name:	
Acad Ver. R2000	Scale: as noted Units: English

Sheet Revisions	

Colorado Department of Transportation



3803 North Main Ave.  
 Suite 300  
 Durango, Colorado 81301  
 Phone: (970) 385-1400  
 FAX: (970) 385-1410

Region 5

J.S.

As Constructed

No Revisions:

Revised: July 17, 2003

Void:

STRUCTURE X-SECTIONS  
 STATION 46+78

Designer: JLC

Detailer: JLC

Sheet Subset:

Structure Numbers

Subset Sheets: 3 of 16

Project No./Code

NH 2852-014

13998

Sheet Number 16



All quantities from Computer  
 Structure Excavation Culvert:  $40.1 \times 5/27 = 7.4$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 4.37/27 = 4.4$  C.Y.  
 Uncle. Excavation (FIO): 3.9 C.Y.  
 Embankment\*:  $6.1 \times 200/2/27 = 22.6$  C.Y.  
 Structure Backfill Culvert:  $13.3 \times 4.86/27 = 5.8$  C.Y.  
 Structure Backfill Inlet: 4.2 C.Y.  
 \* Embankment to be evenly tapered 100' before and after culvert.

Structure Exc Riprap: 3.0 CY

**UTILITY INFORMATION:**  
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 Call 1(800) 922-1987 for utility information.

R.O.W.

U.S. 285

Sta. 49+88 24"X60.6' CMP

Req'd Removed Inlet Rt.

Req'd Removed 2' CMP Rt.

Req'd Clean Culvert

Req'd Inlet Extended 13.3' Rt. 30'

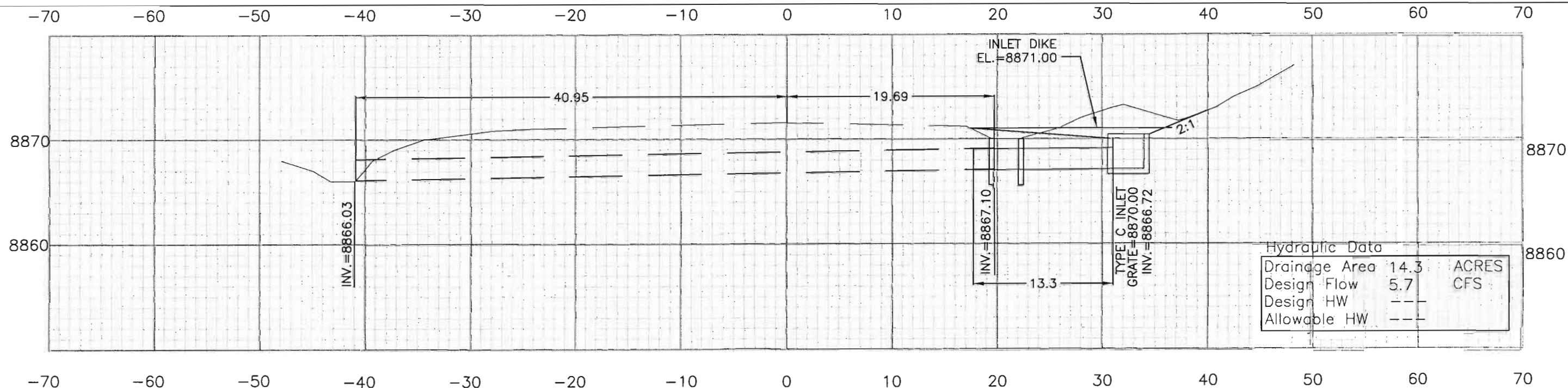
Req'd Inlet Type C (3ft) Rt.

Req'd Inlet Dike Rt.

Req'd Inlet Grading Rt.

Placed  
Placed

Placed Riprap 3.11 CY  
 Placed Geotextile Separator Class A - 9.33 Sq. Yds.



Hydraulic Data	
Drainage Area	14.3 ACRES
Design Flow	5.7 CFS
Design HW	--
Allowable HW	--

Station 49+88

#### Computer File Information

Creation Date: 10/5/01 Initials: JLC  
 Last Modification Date: 1/28/03 Initials: KEM  
 Full Path: ... \13017  
 Drawing File Name:  
 Acad Ver. R2000 Scale: as noted Units: English

#### Sheet Revisions


Colorado Department of Transportation



3803 North Main Ave.  
 Suite 300  
 Durango, Colorado 81301  
 Phone: (970) 385-1400  
 FAX: (970) 385-1410

Region 5

J.S.

As Constructed

No Revisions:

Revised: July 17, 2003

Void:

#### STRUCTURE X-SECTIONS STATION 49+88

Designer: JLC

Detailer: JLC

Sheet Subset:

Structure

Numbers

Subset Sheets: 4 of 16

Project No./Code

NH 2852-014

13998

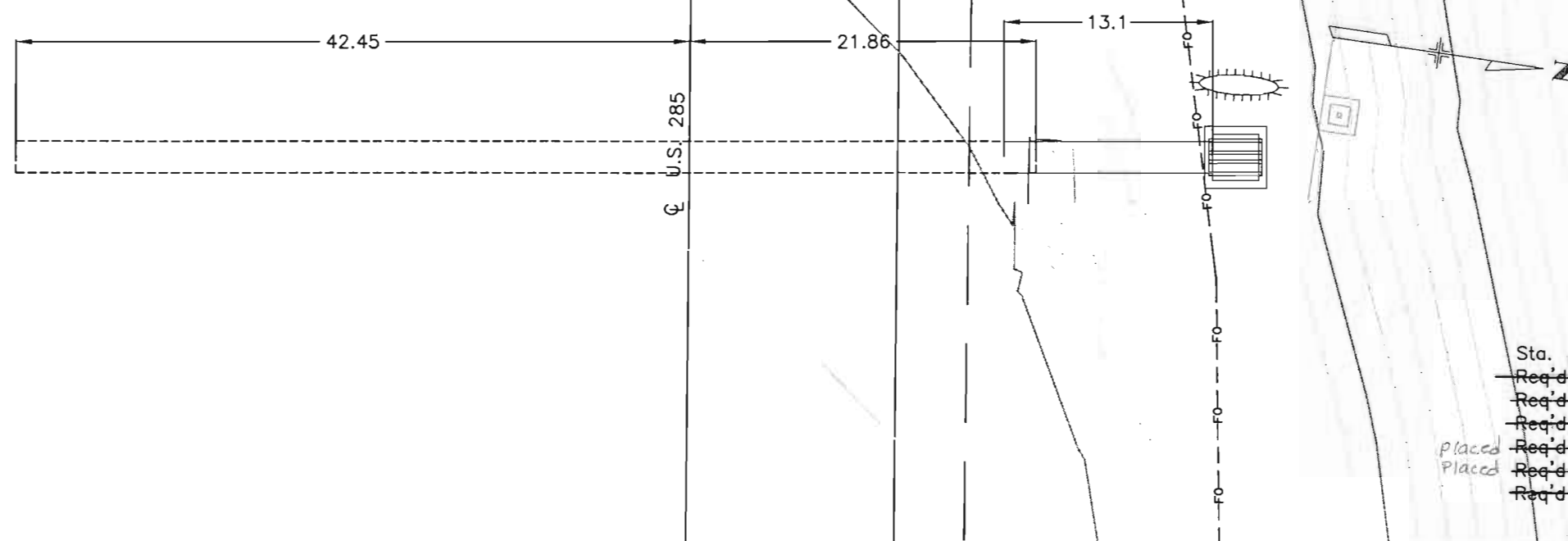
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17

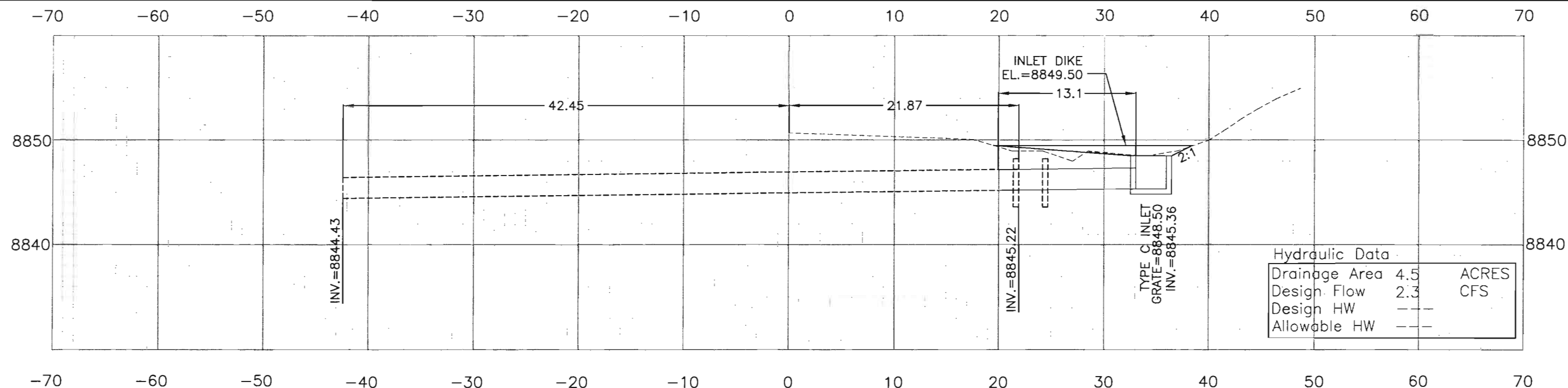
All quantities from Computer  
 Structure Excavation Culvert:  $39.4 \times 5 / 27 = 7.3$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 4.37 / 27 = 4.4$  C.Y.  
 Uncle. Excavation (FIO): 1.2 C.Y.  
 Embankment\*:  $5.08 \times 200 / 2 / 27 = 18.8$  C.Y.  
 Structure Backfill Culvert:  $13.1 \times 11.86 / 27 = 5.75$  C.Y.  
 Structure Backfill Inlet: 4.2 C.Y.  
 \* Embankment to be evenly tapered 100' before and after culvert.

**UTILITY INFORMATION:**  
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R.O.W.




Sta. 55+02 24'X64.3' CMP  
~~Req'd Remove Inlet Rt.~~  
~~Req'd Remove 2' CMP Rt.~~  
~~Req'd Extend 13.1' Rt. 13.0'~~  
 Placed ~~Req'd Inlet Type C (3ft) Rt.~~  
 Placed ~~Req'd Inlet Dike Rt.~~  
~~Req'd Inlet Grading Rt.~~



**Hydraulic Data**  
 Drainage Area 4.5 ACRES  
 Design Flow 2.3 CFS  
 Design HW ---  
 Allowable HW ---

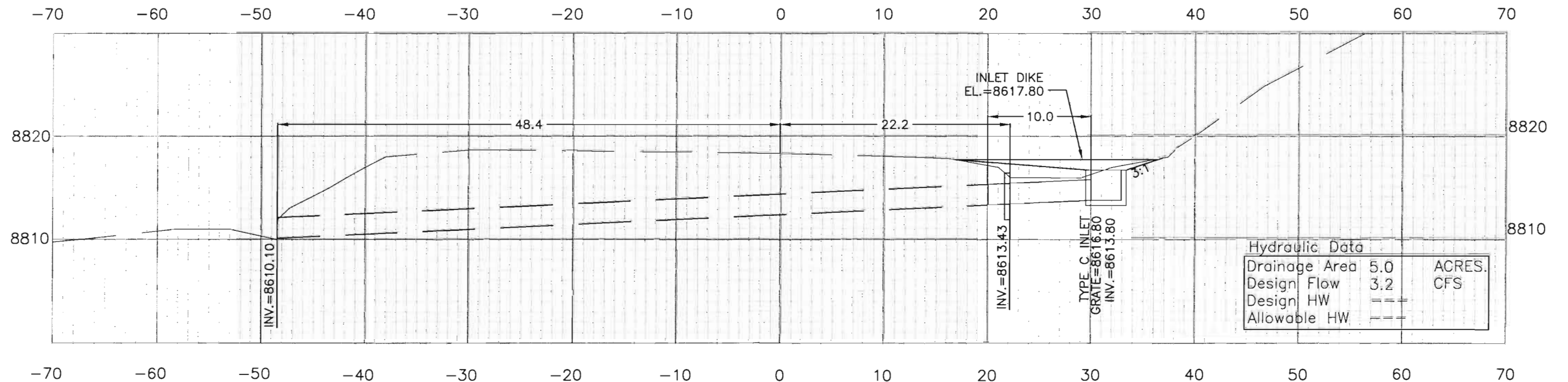
Station 55+02

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS STATION 55+02		Project No./Code	
Creation Date: 10/5/01	Initials: JLC			 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5	J.S.	No Revisions:		Designer: JLC Detailer: JLC Sheet Subset: Subset Sheets: 5 of 16		NH 2852-014	
Last Modification Date: 1/28/03	Initials: KEM					Revised: JULY 17, 2003				13998	
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Acad Ver. R2000	Scale: as noted	Units: English									

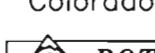
All quantities from Computer  
 Structure Excavation Culvert:  $29.8 \times 5 / 27 = 5.5$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 3.72 / 27 = 3.7$  C.Y.  
 Uncle. Excavation (FIO): 8.9 C.Y.  
 Embankment\*:  $6.1 \times 200 / 2 / 27 = 22.6$  C.Y.  
 Structure Backfill Culvert:  $10 \times 11.86 / 27 = 4.4$  C.Y.  
 Structure Backfill Inlet: 4.2 C.Y.  
 \* Embankment to be evenly tapered 100' before and after culvert.

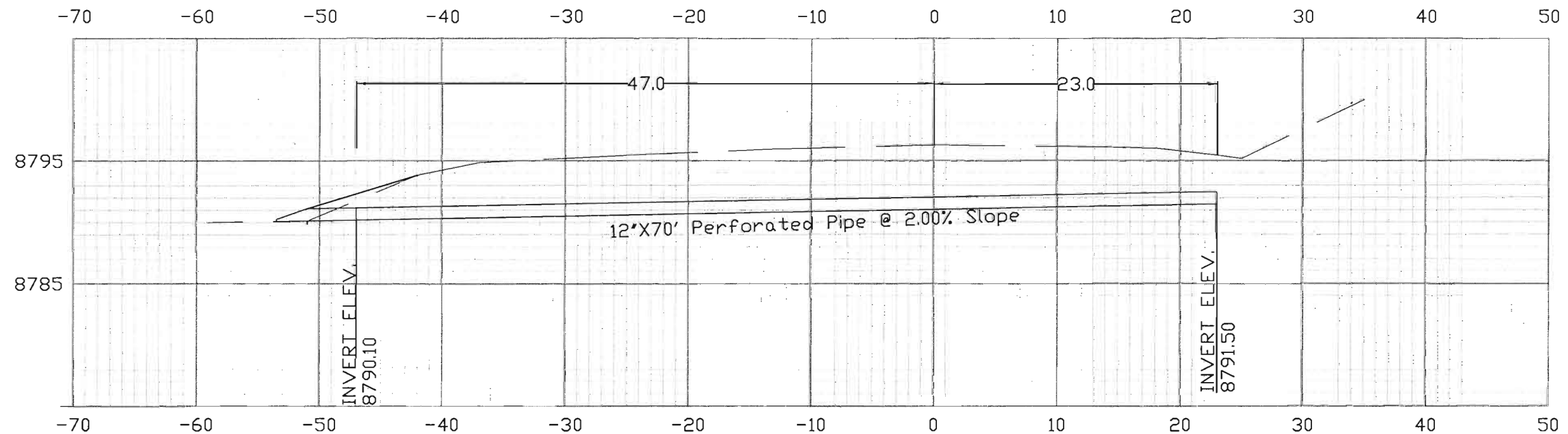
**UTILITY INFORMATION:**  
 The information shown on these drawings is not guaranteed to be accurate or all inclusive. The contractor shall be responsible for making all determinations as to the type and location of underground and other utilities as may be necessary to avoid damage thereto.  
 Call 1(800) 922-1987 for utility information.

Sta. 61+40 24"X70.6' CMP  
 Req'd Remove 2' CMP  
 Req'd Remove Headwall Rt.  
 Req'd Clear Culvert  
 Req'd Extend 40' Rt.  
 Req'd Inlet Type C (3ft) Rt.  
 Req'd Inlet Dike Rt.  
 Req'd Inlet Grading Rt.



Station 61+40

Computer File Information			Sheet Revisions			Colorado Department of Transportation			As Constructed		STRUCTURE X-SECTIONS STATION 61+40			Project No./Code	
Creation Date: 10/5/01      Initials: JLC			<div>○</div> <div>○</div> <div>○</div> <div>○</div> <div>○</div>			<div> 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5</div>	No Revisions:			Designer: JLC Detailer: JLC			NH 2852-014		
Last Modification Date: 1/28/03      Initials: KEM							Revised: July 17, 2003						13998		
Full Path: ... \13017							Void:			Sheet Number 19					
Drawing File Name:															
Acad Ver. R2000      Scale: as noted      Units: English							J.S.			Sheet Subset:      Subset Sheets: 6 of 16					




Station 65+71

All quantities from Computer  
 Structure Excavation Culvert:  $(7 \times 70) + (2.5 \times 70) / 27 = 24.6$  C.Y.  
 Embankment:  $3.35 \times 200 / 2 / 27 = 12.4$  C.Y.  
 Filter Material Special:  $6.7 \times 70 / 27 = 17.8$  C.Y.  
 Geotextile (Drainage) (Class A):  $13 \times 70 / 9 = 101$  SQ. YDS.  
 HBP Patching: 37 SQ. YDS. 57.3  
 \* Embankment to be evenly tapered 100' before and after culvert.  
 Structure Excavation It. 12.4 C.Y.  
 Structure Backfill Culvert (flow fill) - 13.8 CY

Sta. 65+71  
 Placed Req'd 12' X 70' Perforated Pipe, Skew 81° Rt.  
 Placed Req'd 1/2" X 1/2" Galvanized Hardwire Cloth Lt.  
 Placed Req'd 12' Concrete End Section Lt.  
 Placed Req'd 99° Elbow Connection Rt.  
 See Underdrain Detail  
 Placed Backfill (Flow Fill) 13.8 C.Y.

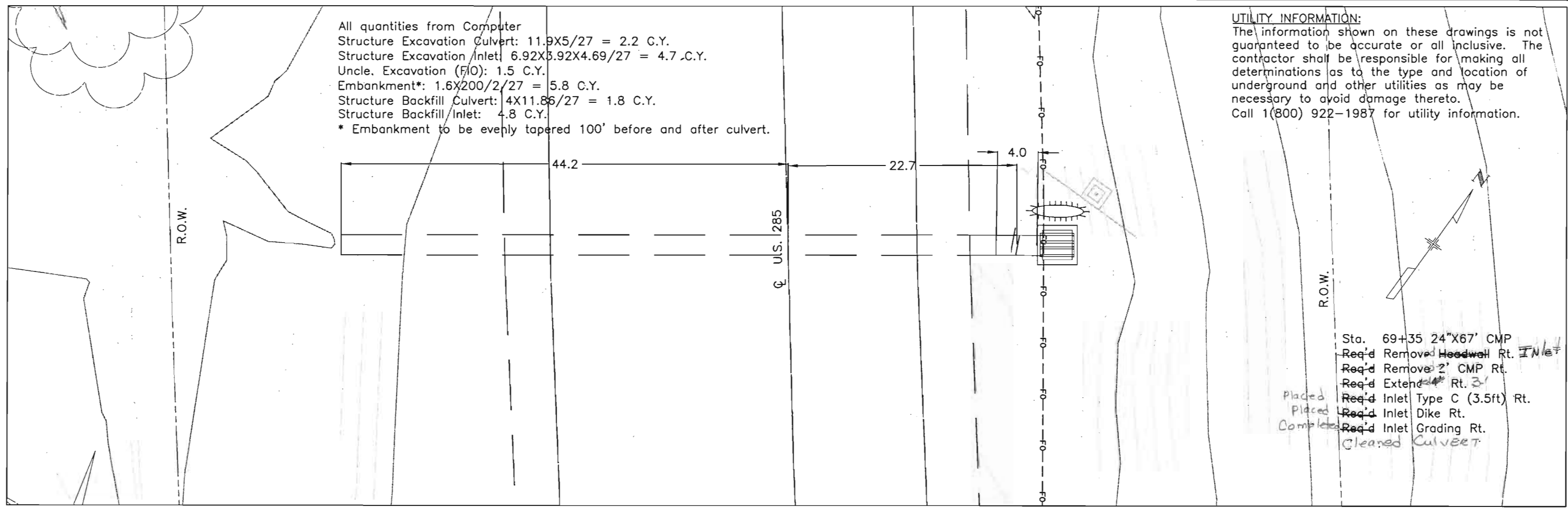
#### UTILITY INFORMATION:

The information shown on these drawings is not guaranteed to be accurate or all inclusive. The contractor shall be responsible for making all determinations as to the type and location of underground and other utilities as may be necessary to avoid damage thereto. Call 1(800) 922-1987 for utility information.

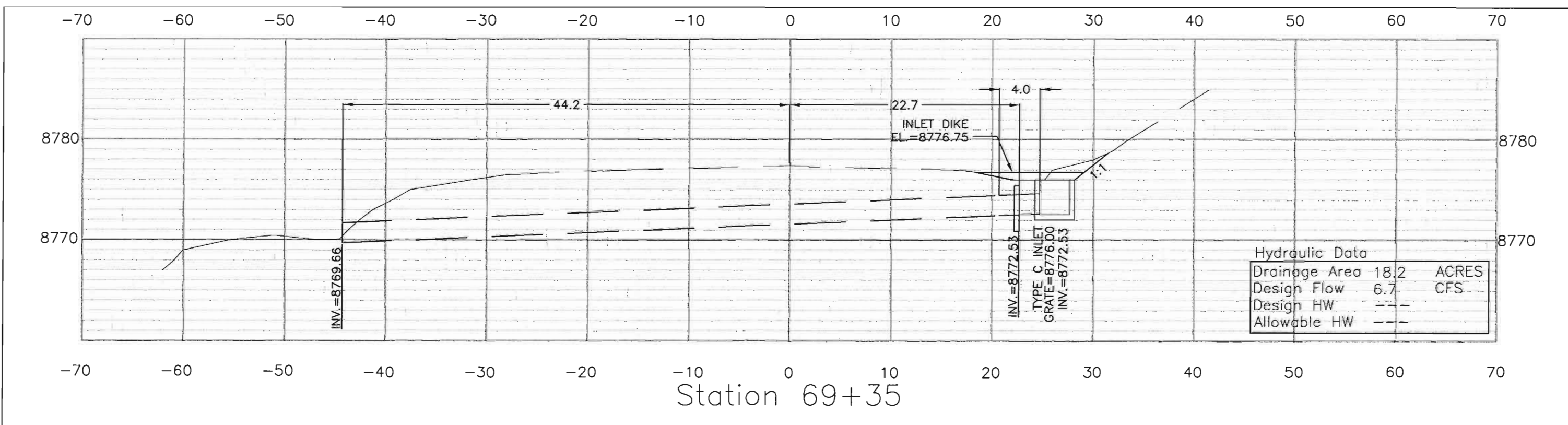
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Last Modification Date: 1/31/03	Initials: KEM	<input type="checkbox"/>							Revised: July 17, 2003	Designer: MAGOWAN	Structure Numbers		13998	
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Drawing File Name:		<input type="checkbox"/>							Void:	Sheet Subset:	Subset Sheets: 7 of 16		Sheet Number 20	
Acad Ver. R2000	Scale: as noted	Units: English	<input type="checkbox"/>											

All quantities from Computer  
 Structure Excavation Culvert:  $11.9 \times 5 / 27 = 2.2$  C.Y.  
 Structure Excavation Inlet:  $6.92 \times 3.92 \times 4.69 / 27 = 4.7$  C.Y.  
 Uncle. Excavation (FIO): 1.5 C.Y.  
 Embankment\*:  $1.6 \times 200 / 2 / 27 = 5.8$  C.Y.  
 Structure Backfill Culvert:  $4 \times 11.86 / 27 = 1.8$  C.Y.  
 Structure Backfill Inlet: 4.8 C.Y.  
 \* Embankment to be evenly tapered 100' before and after culvert.

**UTILITY INFORMATION:**  
 The information shown on these drawings is not guaranteed to be accurate or all inclusive. The contractor shall be responsible for making all determinations as to the type and location of underground and other utilities as may be necessary to avoid damage thereto.  
 Call 1(800) 922-1987 for utility information.



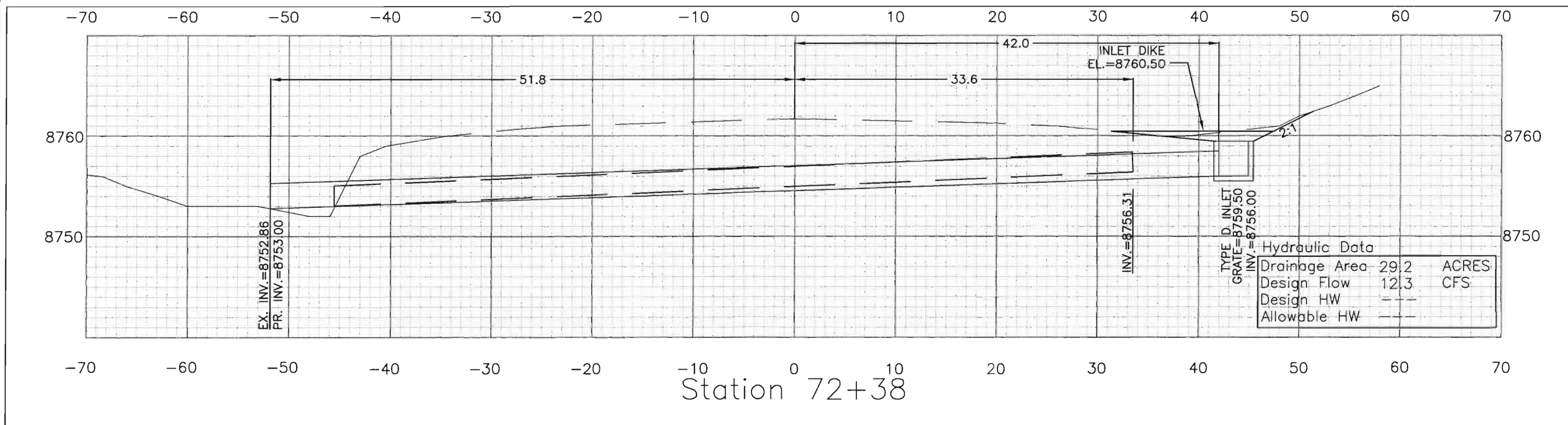
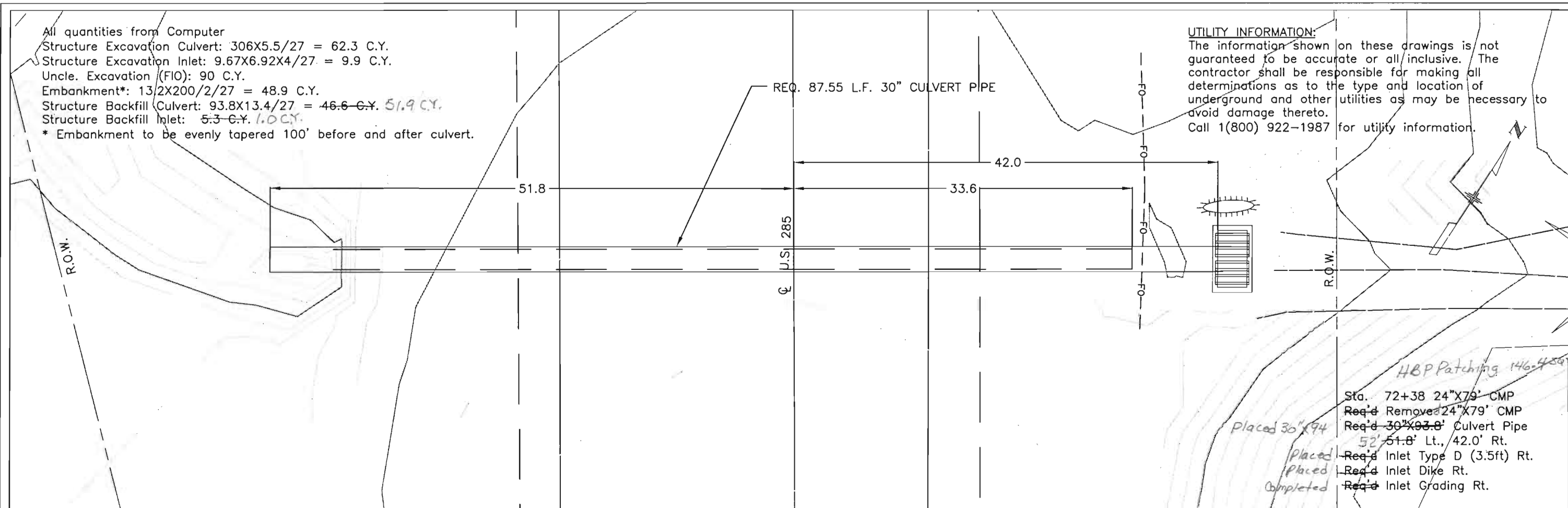
Sta. 69+35 24"X67' CMP  
 Req'd Remove Headwall Rt. Inlet  
 Req'd Remove 2' CMP Rt.  
 Req'd Extend 4' Rt. 3'  
 Placed Req'd Inlet Type C (3.5ft) Rt.  
 Placed Req'd Inlet Dike Rt.  
 Completed Req'd Inlet Grading Rt.  
 Cleaned Culvert

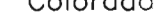


Station 69+35

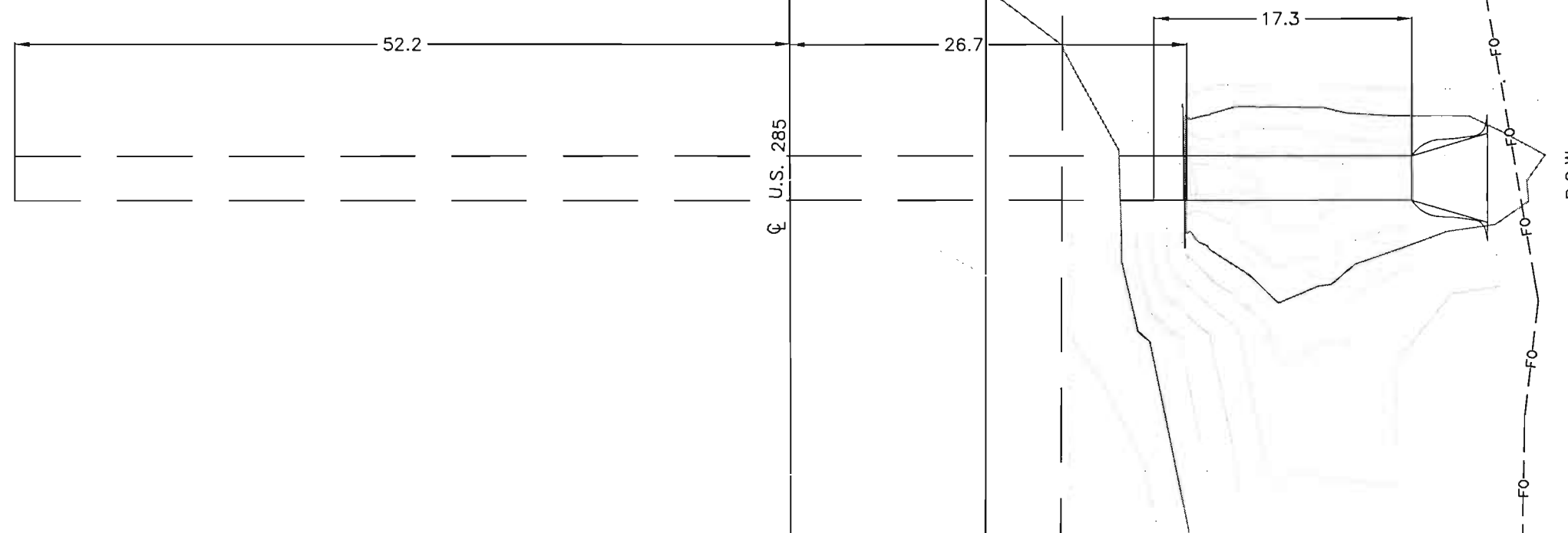
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Creation Date: 10/5/01 Initials: JLC							<div><div><div><div></div><div></div></div><div>DOT</div><div>Department of Transportation</div></div><div>3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410</div></div>			No Revisions:		Designer: JLC Detailer: JLC			Structure Numbers		NH 2852-014	
Last Modification Date: 1/28/03 Initials: KEM							Revised: July 17, 2003		Sheet Number		13998							
Full Path: ... \13017							Region 5		Void:		Sheet Subset:			Subset Sheets: 8 of 16			Sheet Number 21	
Drawing File Name:							J.S.											
Acad Ver. R2000 Scale: as noted Units: English																		



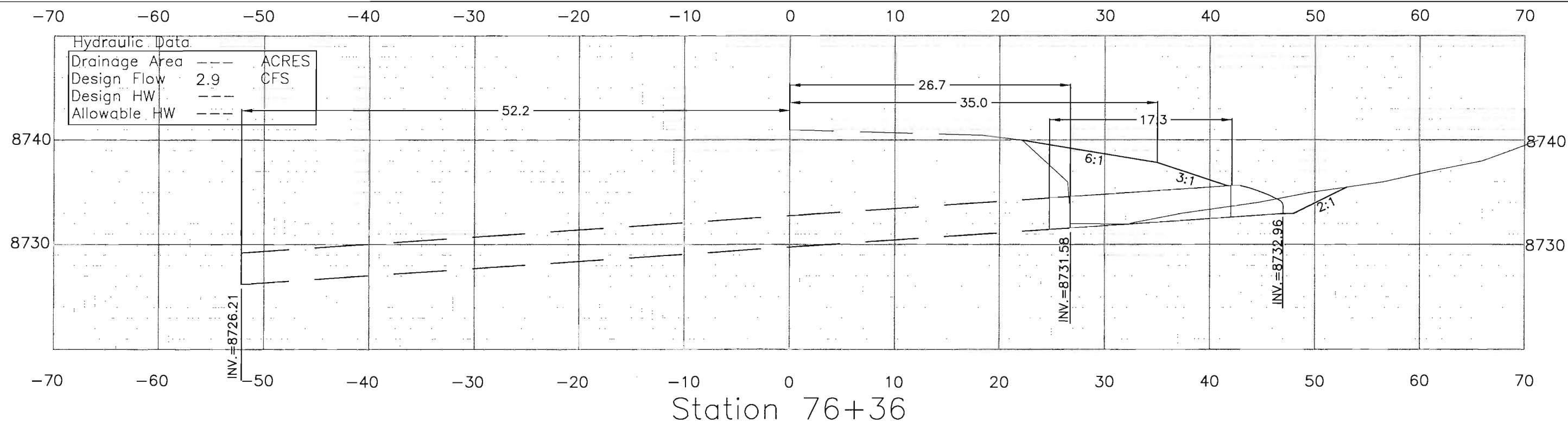



Computer File Information			Sheet Revisions			Colorado Department of Transportation			As Constructed		STRUCTURE X-SECTIONS STATION 72+38			Project No./Code	
Creation Date: 10/5/01		Initials: JLC	<div><div>3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5</div></div>				No Revisions:		Designer: JLC Detailer: JLC			NH 2852-014			
Last Modification Date: 1/28/03		Initials: KEM					Revised: <u>July 17, 2003</u>								
Full Path: ... \13017							Void:		Sheet Subset:			Subset Sheets: 9 of 16			
Drawing File Name:												Sheet Number			
Acad Ver. R2000	Scale: as noted	Units: English										22			

UTILITY INFORMATION:  
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Call 1(800) 922-1987 for utility information.

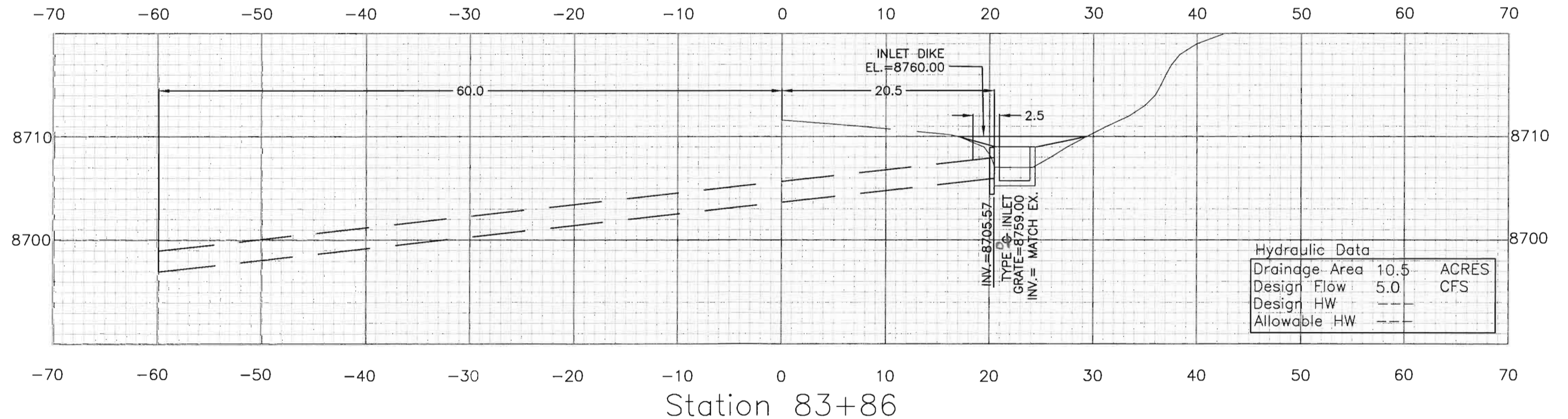
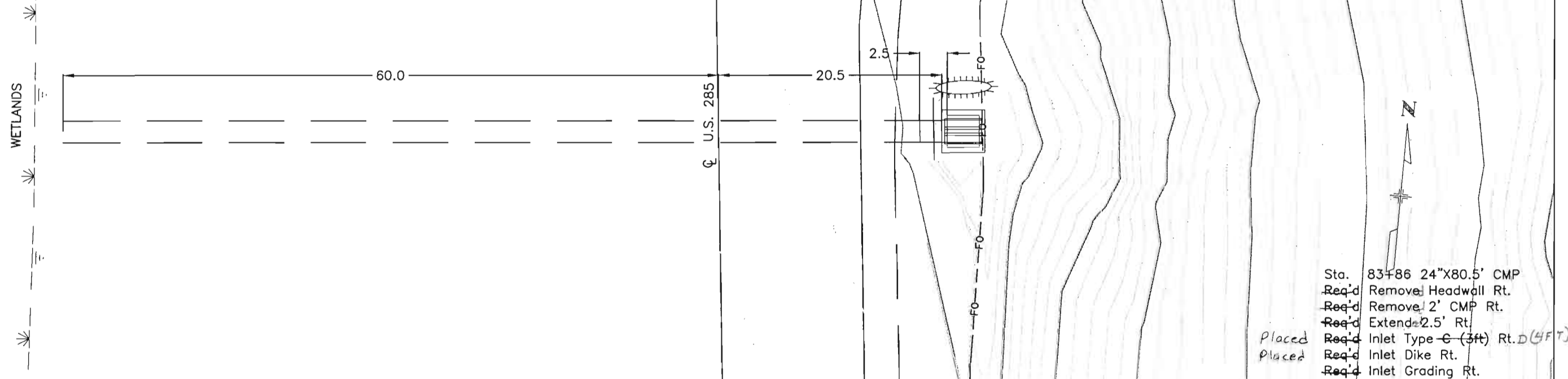



Sta. 76+36 36"x78.9' CMP  
Req'd Remove Headwall Rt. *Inlet*  
~~Req'd Remove 2' CMP Rt.~~  
Req'd Extend 17.3' Rt *16'*  
Req'd Steel End Section Rt.



Computer File Information			Sheet Revisions			Colorado Department of Transportation			As Constructed		STRUCTURE X-SECTIONS			Project No./Code	
Creation Date: 10/5/01 Initials: JLC			<div></div> <div></div> <div></div> <div></div>			<div></div> <div>3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5</div> <div>J.S.</div>	No Revisions:		STATION 76+36			NH 2852-014			
Last Modification Date: 1/28/03 Initials: KEM							Revised: <u>July 17, 2003</u>		Designer: JLC		Structure Numbers		13998		
Full Path: ...\\13017							Void:		Detailer: JLC						
Drawing File Name:									Sheet Subset:		Subset Sheets: 10 of 16		Sheet Number 23		
Acad Ver. R2000    Scale: as noted    Units: English															

UTILITY INFORMATION:  
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Call 1(800) 922-1987 for utility information.

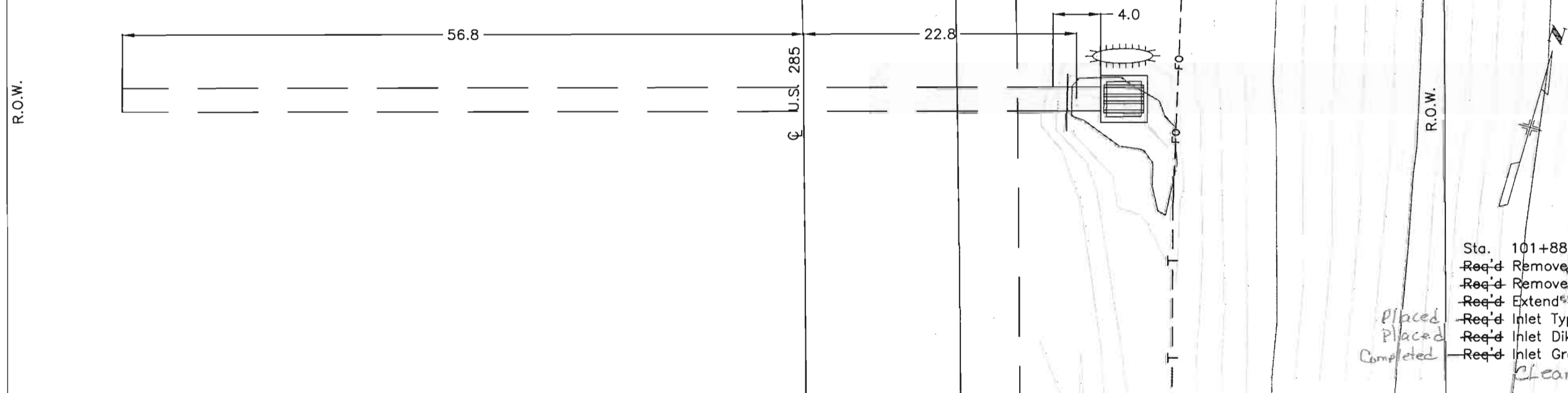


Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS		Project No./Code	
Creation Date: 10/5/01				 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5		No Revisions:		STATION 83+86		NH 2852-014	
Last Modification Date: 1/28/03						Revised: <u>July 17, 2003</u>		Designer: JLC		13998	
Full Path: ...\\13017						Void:		Detailer: JLC			
Drawing File Name:								Sheet Subset:		Subset Sheets: 11 of 16	
Acad Ver. R2000 Scale: as noted Units: English				J.S.						Sheet Number 24	



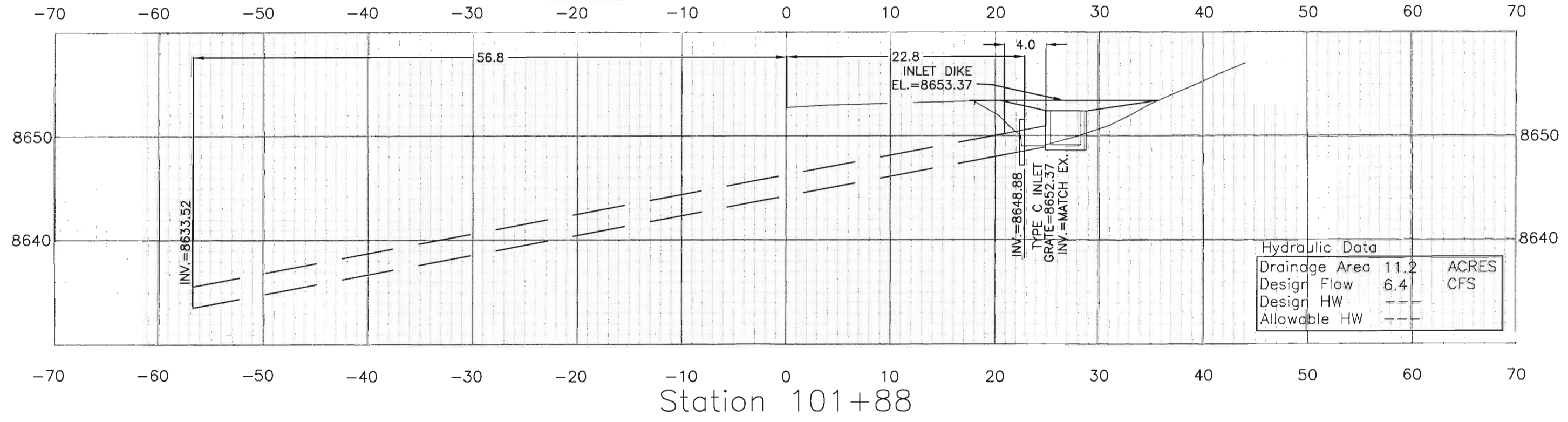
All quantities from Computer  
Structure Excavation Culvert:  $4.5 \times 5 / 27 = 0.8$  C.Y.  
Structure Excavation Inlet:  $6.92 \times 3.92 \times 1.2 / 27 = 1.2$  C.Y.  
Uncle. Excavation (FIO): 0 C.Y. 51.4  
Embankment\*:  $14.6 \times 200 / 2 / 27 = 54.1$  C.Y.  
Structure Backfill Culvert:  $4 \times 11.86 / 27 = 1.8$  C.Y.  
Structure Backfill Inlet: 4.2 C.Y.  
\* Embankment to be evenly tapered 100' before and after culvert.

UTILITY INFORMATION:  
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Call 1(800) 922-1987 for utility information.




- Sta. 101+88 24"X79.6' CMP
- Req'd Remove Headwall Rt.
- Req'd Remove 2' Rt.
- Req'd Extend 4' Rt. 2.5 RT
- Req'd Inlet Type C (3ft) Rt.
- Req'd Inlet Dike Rt.
- Req'd Inlet Grading Rt.
- Cleaned Culvert

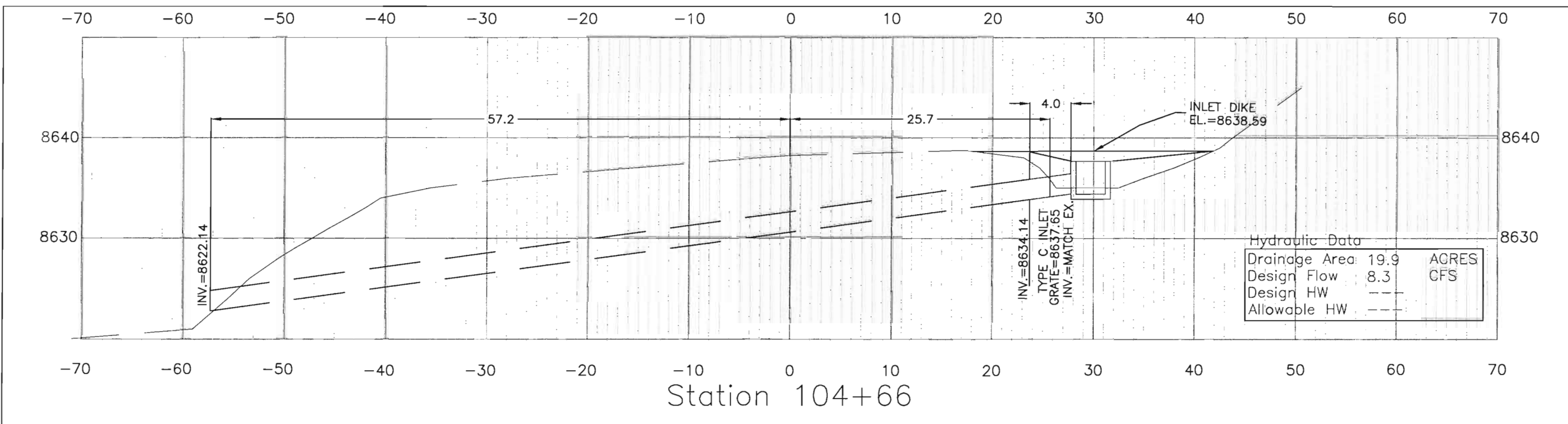
Placed  
Placed  
Completed



Hydraulic Data	
Drainage Area	11.2 ACRES
Design Flow	6.4 CFS
Design HW	--
Allowable HW	--

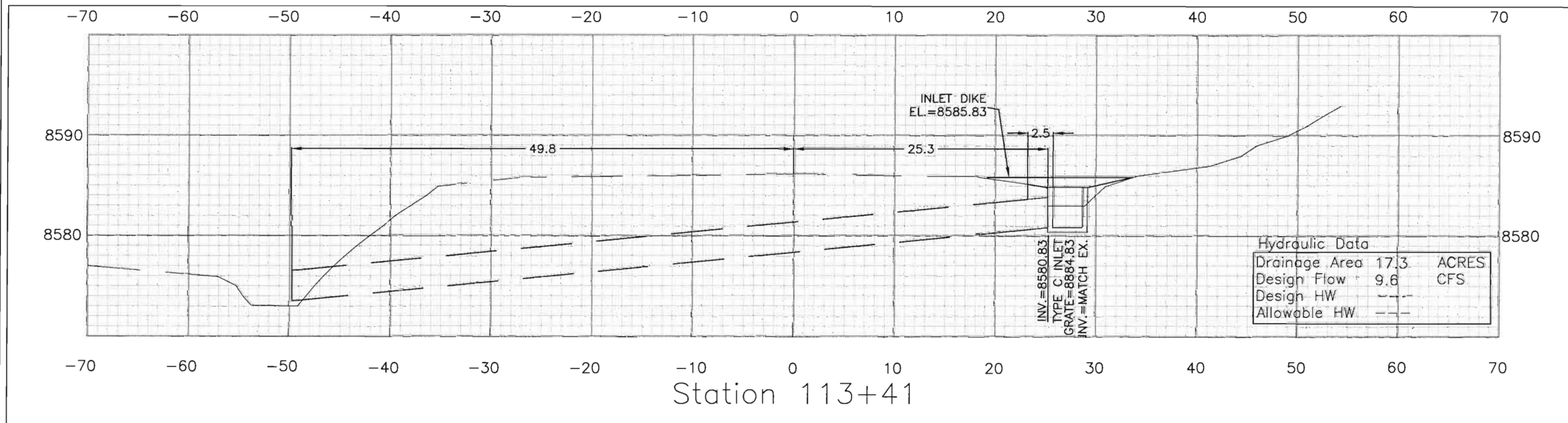
Station 101+88


Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS STATION 101+88		Project No./Code	
Creation Date: 10/5/01	Initials: JLC			 Region 5	3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410	No Revisions:		Designer: JLC	Structure Numbers	NH 2852-014	
Last Modification Date: 1/28/03	Initials: KEM					Revised: JULY 12, 2003		Detailer: JLC		13998	
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Acad Ver. R2000	Scale: as noted	Units: English			J.S.						



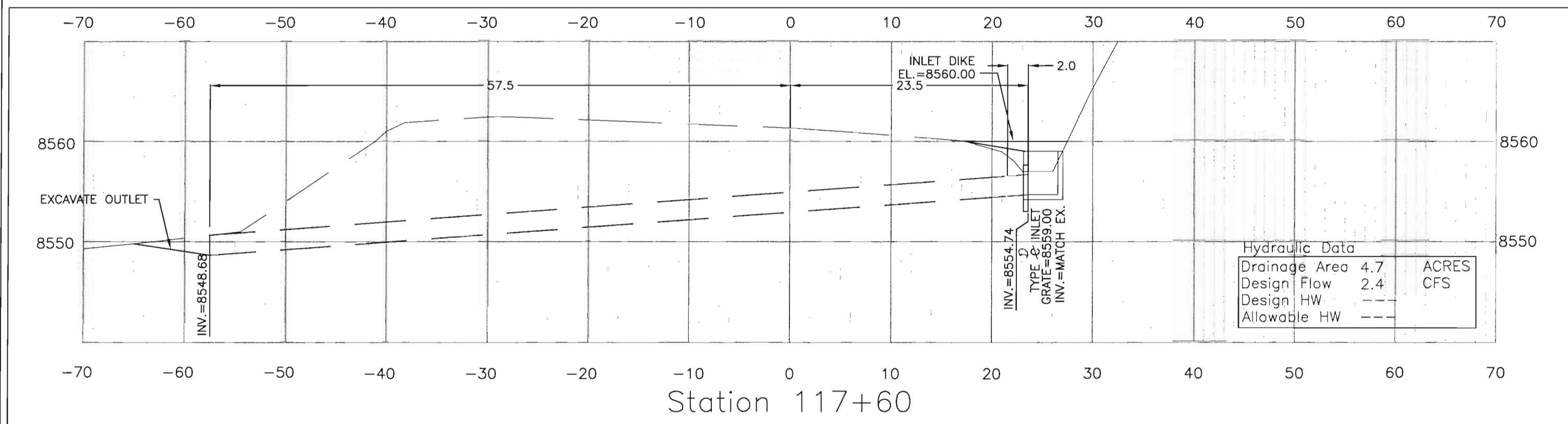
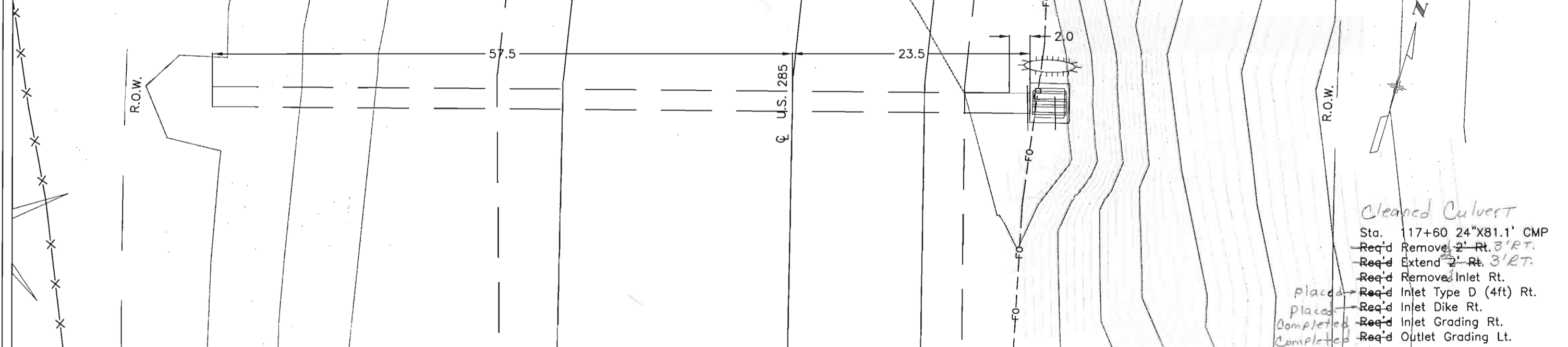
Computer File Information			<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions		<div><div><div><div></div><div></div></div><div>DOT</div><div>Department of Transportation</div></div><div>Region 5</div></div> <div>3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410</div> <div>J.S.</div>	As Constructed		STRUCTURE X-SECTIONS STATION 104+66			Project No./Code		
Creation Date: 10/5/01      Initials: JLC							No Revisions:					NH 2852-014		
Last Modification Date: 1/2803      Initials: KEM							Revised: <u>July 17, 2003</u>		Designer: JLC		Structure Numbers		13998	
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Drawing File Name:									Sheet Subset:		Subset Sheets: 13 of 16		Sheet Number 26	
Acad Ver. R2000      Scale: as noted      Units: English														


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Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS		Project No./Code	
Creation Date: 10/5/01 Initials: JLC				 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5 J.S.		No Revisions:		STATION 113+41		NH 2852-014	
Last Modification Date: 1/28/03 Initials: KEM						Revised: <u>July 17, 2003</u>		Designer: JLC		13998	
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Drawing File Name:								Sheet Subset:		Subset Sheets: 14 of 16	
Acad Ver. R2000 Scale: as noted Units: English										Sheet Number 27	

UTILITY INFORMATION:  
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Call 1(800) 922-1987 for utility information.



Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		STRUCTURE X-SECTIONS		Project No./Code	
Creation Date: 10/5/01	Initials: JLC			 3803 North Main Ave. Suite 300 Durango, Colorado 81301 Phone: (970) 385-1400 FAX: (970) 385-1410 Region 5	No Revisions:		STATION 117+60		NH 2852-014		
Last Modification Date: 1/28/03	Initials: KEM				Revised: <u>July 17, 2003</u>		Designer: JLC	Structure	13998		
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Drawing File Name:							Sheet Subset:	Subset Sheets: 15 of 16	Sheet Number 28		
Acad Ver. R2000	Scale: as noted	Units: English			J.S.						





STORMWATER MANAGEMENT PLAN - ADDITIONAL INFORMATION

Estimated runoff coefficient  
Pre-construction: 0.45                      Post-construction: 0.45

Existing data describing soil or quality of discharge:                      Soils are moderate deep to shallow. They are formed in erosive sandy material and contain high percentages of rock

Existing vegetation:                      Woodlands of the intermountains mixed with grasses, shrubs and forbs.

Proposed sequence for major activities, location of any other potential pollution source, areas used for storage of building materials, soils or wastes, and location of any dedicated asphalt or concrete batch plants: see water quality and erosion control specifications, and documents submitted by the contractor at the preconstruction conference.

100-year Flood plain boundaries: see bridge hydraulic information sheet (if existent).

Description of the construction activity, estimate of the total site area and of the area expected to undergo excavation, and name of the receiving water: see CDPS stormwater permit application.

Contract Document location of erosion control and stormwater quality management measures not referenced above nor included on the Stormwater Management Plan Sheet(s): ROADWAY AND DRAINAGE PLANS.

Site map and construction site boundaries: see title sheet

Areas of cuts and fills and areas of soil disturbance: see plan and profile sheets and roadway cross sections.

Surface waters: see title sheet and bridge hydraulic information sheet (if existent)

Materials handling and spill prevention: see water quality specification (107.25).

Inspection and maintenance: see erosion control specifications (107.25 or 208).

SEEDING PLAN

NATIVE SEEDING

Soil preparation, seeding, mulch tackifier and mulching will be required for an estimated 1.9 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	POUNDS PLS/ACRE
Western Wheatgrass	Pascopyrum smithii var. rosanna	6.0
Arizona fescue	Festuca arizonica v redondo	3.0
Blue Grama	Bouteloua gracilis var. hachita	2.0
Sandberg bluegrass	Poa sandbergii	2.0
Slender wheatgrass	Elymus trachycaulus v. primar	5.0
Green needlegrass	Stipa viridula v. lodorm	4.0
Yarrow	Achillea millefolium	0.1
Rocky Mountain Penstemon	Penstemon strictus var. bandera	0.5
Blackeyed Susan	Rudbeckia hirta	0.5
TOTAL		23.1 LBS/ACRE

SEEDING APPLICATION: DRILL SEED TO A DEPTH OF 0.25 TO 0.5 INCHES INTO SOIL WHERE POSSIBLE. BROADCAST SEEDING OR HYDRAULIC SEEDING FOLLOWED BY RAKING TO COVER SEED WILL BE REQUIRED WHERE ACCESS IS LIMITED OR UNSAFE FOR EQUIPMENT AND AS APPROVED BY THE ENGINEER. INCREASED SEEDING TO 2X THE LBS./ACRE RATE WHEN HYDRAULIC SEEDING OR BROADCAST SEEDING.

MULCHING APPLICATION: 2 TONS/ACRE MULCHING (WEED FREE STRAW) MECHINICALLY CRIMPED INTO SOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER PER SPECIAL PROVISION 213-MULCH TACKIFIER.


CONCRETE WASHOUT WILL BE PERFORMED AT A LOCATION PRE-APPROVED BY THE ENGINEER.

DISTURBED SURFACES SHALL BE LEFT IN A ROUGHENED CONDITION AT ALL TIMES. ROUGHEN VERTICAL DEPTH SHALL BE 2 TO 4 INCHES.

TOPSOIL, SEED AND MULCH ERODABLE SURFACES IN ACCORDANCE WITH DISTURBANCE LIMITS REFERENCED IN THE STANDARD SPECIFICATION -208. IT IS ESTIMATED THAT A MINIMUM OF 1 MOBILIZATIONS FOR SEEDING, MULCHING AND MULCH TACKIFIER WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PRICE OF THE WORK.

ROADWAY PROJECT TOTALS			
DESCRIPTION	UNIT	QUANT	SPECIAL PROVISION
208 EROSION LOG	LF	300 322	208
208 SEDIMENT REM AND DISPOSAL	LS	1	208
208 EROSION CONTROL SUPERVISER	LS	1	208
			212
212 SEEDING (NATIVE)	ACRES	1.3 1.0	
213 MULCHING (WEED FREE STRAW)	ACRE	1.3 1.0	
213 MULCH TACKIFIER	LBS.	260 300	213
deleted by 105 Date 6/25/03			
F/A EROSION CONTROL	F.A.	1 0	

Computer File Information		Sheet Revisions		As Constructed		STORMWATER MANAGEMENT PLAN		Project No./Code	
Creation Date:	12-02 Initials: MRB	(R-)		No Revisions:	mm/dd/yy			NH 2852-014	
Last Modification Date:	01/28/03 Initials: KEM	(R-)		Revised:	7 mm/dd/yy <sup>03</sup>	Designer:	MRB	13998	
Full Path:	C:\13998	(R-)		Void:	mm/dd/yy	Detailer:	MRB		
Drawing File Name:	ponchaswmp.DWG	(R-)				Sheet Subset:		Sheet Number	30
Acad Ver.	2000 Scale: n.t.s. Units: English	(R-)				Subset Sheets:			

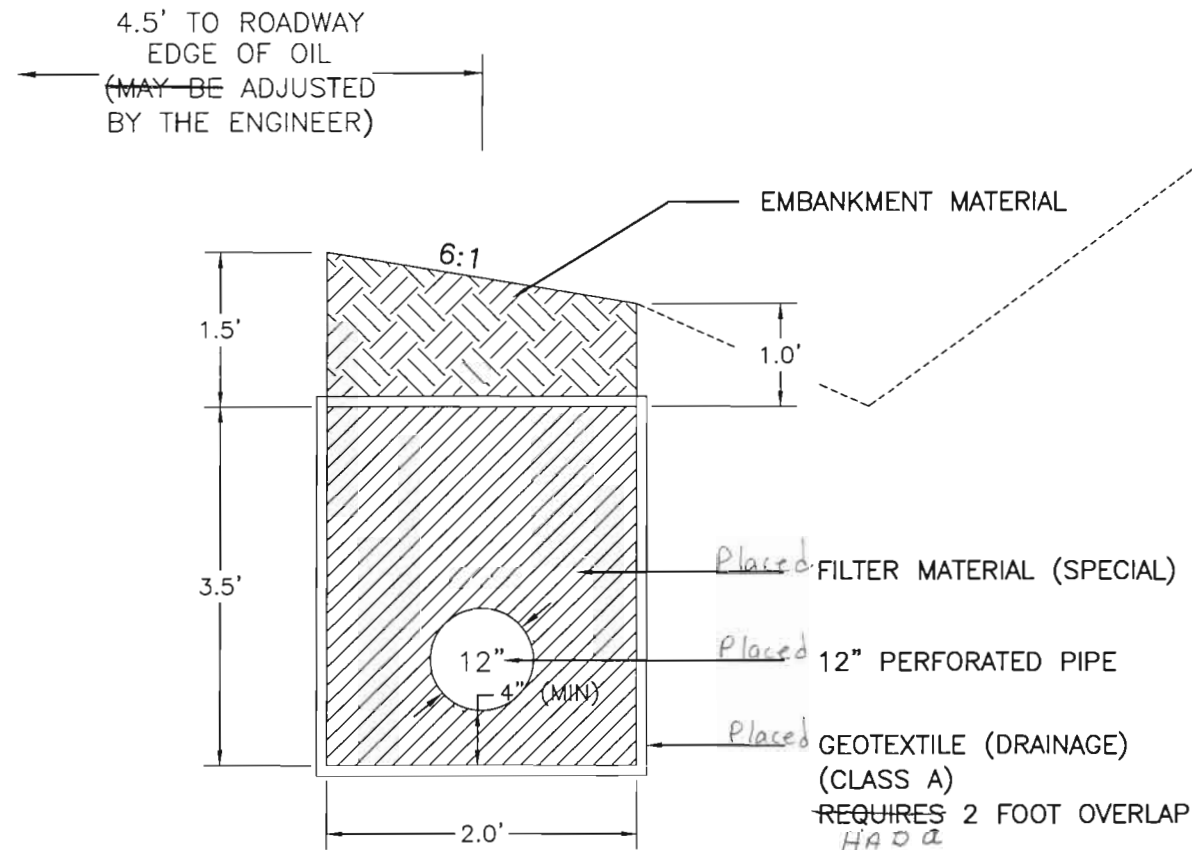


1205 West Ave. Box C  
Alamosa, CO 81101  
Phone: 719-589-4251 Fax: 719-589-3149

REGION 5

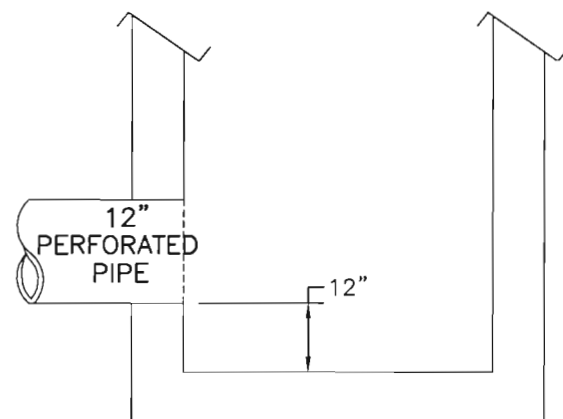
JJS

## UNDERDRAIN DETAIL



## UNDERDRAIN CONNECTION TO TYPE C INLET DETAIL

(Not Paid for Separately, but Included in Item 605,  
12" Perforated Pipe Underdrain)



## UNDERDRAIN LOCATIONS

STA. 60+20 to 61+40 RT  
REQ'D 12"X120' PERFORATED PIPE  
INVERT ELEV. 8819.48 to 8814.30, -4.32% GRADE  
~~REQ'D CONNECT TO TYPE C INLET~~  
(SEE DETAIL)

placed STA 61+45 to 65+65 RT  
placed REQ'D 12"X420' PERFORATED PIPE  
INVERT ELEV. 8814.00 to 8791.50, -5.53% GRADE  
placed REQ'D 99° ELBOW CONNECTION\* AT STA 65+65 RT.

placed STA 65+71  
placed REQ'D 12"X74' PERFORATED PIPE, SKEW 81°RT  
RIGHT INVERT ELEV= 8791.50  
LEFT INVERT ELEV= 8790.10  
GRADE = -1.89%  
placed REQ'D 1/2" X 1/2" GALVANIZED HARDWARE CLOTH AT OUTLET.\*  
placed REQ'D 12" CONCRETE END SECTION LEFT\*

placed STA 65+70 to 69+35 RT  
placed REQ'D 12"X365' PERFORATED PIPE  
ELEV 8791.30 to 8773.53, -5.53% GRADE  
REQ'D CONNECT TO TYPE C INLET  
(SEE DETAIL)


\* 99° CONNECTION, GALVANIZED HARDWARE CLOTH, AND  
CONCRETE END SECTION TO BE INCLUDED IN COST OF UNDERDRAIN.  
A METAL HOSE TYPE CLAMP SHALL BE USED TO SECURELY ATTACH THE  
GALVANIZED HARDWARE CLOTH TO THE OULET AND SHALL BE INCLUDED IN  
THE COST OF THE UNDERDRAIN.

(FOR QUANTITIES, SEE STRUCTURE QUANTITIES)

### NOTES

ROCK EXCAVATION ~~MAY BE~~ REQUIRED. THIS WORK <sup>was</sup> ~~WILL~~ NOT BE PAID FOR  
SEPARATELY, ~~BUT SHALL BE~~ INCLUDED IN THE COST OF THE PROJECT.

EXCAVATION BEYOND STATED DIMENSIONS <sup>was</sup> ~~WILL~~ NOT BE PAID FOR SEPARATELY, <sup>IT WAS</sup> ~~BUT~~  
~~SHALL BE~~ INCLUDED IN THE COST OF THE PROJECT..

Computer File Information				Sheet Revisions				Colorado Department of Transportation				As Constructed		Underdrain				Project No./Code	
Creation Date:		3 JAN 03		Initials:		KEM		(R-X)		 1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149  REGION 5  J.J.S.		No Revisions:		Underdrain				NH 2852-014	
Last Modification Date:		29 JAN 03		Initials:		KEM		(R-X)				Revised: <u>July 17, 2003</u>						Designer: WILCOXON	
Full Path:		C:\13998\		Initials:		KEM		(R-X)				Void:		Detailer: MAGOWAN		Subset Sheets:			
Drawing File Name:		mailbox.DWG		Initials:		KEM		(R-X)										13998	
Acad Ver. R2002		Scale: AS SHOWN		Units: FEET		(R-X)										Sheet Number 31			

TABULATION OF TRAFFIC CONTROL DEVICES

SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE AND QUANTITY			
			A	B	C	OTHER
G 20-1	ROAD/WORK/NEXT 7 MILES	60" X 24"		<del>22</del>		
G 20-10	THANK YOU/CONTRACTOR NAME/PHONE	48" X 48"		<del>22</del>		
W 20-1	ROAD/WORK/(DIST)	48" X 48"		<del>33</del>		
W 20-1	ROAD/WORK/AHEAD	48" X 48"		<del>66</del>		
W 1-6	ARROW	48" X 24"		<del>41</del>		
W 20-4	ONE/LANE/ROAD/(DIST)	48" X 48"		<del>44</del>		
W 20-7A	FLAGGER SYMBOL	48" X 48"		<del>66</del>		
R 2-1(25)	SPEED/LIMIT/25	36" X 48"		<del>66</del>		
R 2-1(40)	SPEED/LIMIT/40	36" X 48"		<del>65</del>		
R 2-1(50)	Speed/Limit/50	36" X 48"		<del>3</del>		
R 2-1(55)	SPEED/LIMIT/55	36" X 48"		<del>3</del>		
R 2-1(60)	Speed/Limit/60	36" X 48"		<del>1</del>		
R 4-1	DO/NOT/PASS	24" X 30"	<del>66</del>			
R 4-2	PASS/WITH/CARE	24" X 30"	<del>3</del>			
R 52-4	BEGIN/FINES/DOUBLED/FOR/SPEEDING	60" X 48"			<del>5</del>	
R 52-5	END/FINES/DOUBLED/FOR/SPEEDING	60" X 48"			<del>5</del>	
W 8-1	BUMP	30" X 30"	<del>46</del>			
W 8-9A	SHOULDER/DROP OFF	48" X 48"		<del>12121</del>		
W 20-64	FINES DOUBLED	36" X 18"	<del>1211</del>			
W 21-5B	RIGHT/SHOULDER/CLOSED/(DIST)	48" X 48"		<del>21</del>		
W 20-52	GROOVED PAVEMENT AHEAD	48" X 48"		<del>23</del>		
W 8-11	UNEVEN/LANE SYMBOL	48" X 48"		<del>63</del>		
W 9-2	LANE ENDS MERGE LEFT	48" X 48"		<del>24</del>		
W 9-2	LANE ENDS MERGE RIGHT	48" X 48"		<del>23</del>		
W 1-4	Reverse Curve Left	48" X 48"		<del>2</del>		
ADVANCE WARNING FLASHING OR SEQUENCING						
ARROW PANEL (C TYPE)						<del>2</del> 2
PORTABLE MESSAGE SIGN PANEL						<del>1</del> 1
CONCRETE BARRER (TEMP)						400 150
IMPACT ATTENUATOR						<del>2</del> 1
PORTABLE MESSAGE SIGN PANEL						<del>2</del> 1
DRUMS CHANNELIZING (LIGHT) (FLASHING)						<del>4</del> 5
DRUMS CHANNELIZING						190 <del>200</del>
TRAFFIC CONES		36"				<del>200</del> 300
PROJECT TOTALS			<del>28</del>	<del>71</del>	<del>10</del>	

FOR PLACEMENT OF TRAFFIC CONTROL DEVICES, SEE STD. S-630-1.

26  
70

Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		Tabulation of Traffic Control Devices		Project No./Code	
Creation Date:	16 OCT 02	Initials: KEM	(R-X)			1205 West Ave. Box C Alamosa, CO. 81101 Phone: 719-589-4251 FAX: 719-589-3149	No Revisions:		Designer: WILCOXON		Structure Numbers	
Last Modification Date:	28 JAN 02	Initials: KEM	(R-X)				Revised: July 17, 2003		Detailer: MAGOWAN		13998	
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Acad Ver.	R2002	Scale:	AS SHOWN	Units:	FEET	(R-X)					32	



## STORMWATER MANAGEMENT PLAN - ADDITIONAL INFORMATION

Estimated runoff coefficient

Pre-construction: 0.45

Post-construction: 0.45

Existing data describing soil  
or quality of discharge:

Soils are moderate deep to shallow. They are formed in erosive sandy material and contain high percentages of rock

Existing vegetation: Woodlands of the intermountains mixed with grasses, shrubs and forbs.

Proposed sequence for major activities, location of any other potential pollution source, areas used for storage of building materials, soils or wastes, and location of any dedicated asphalt or concrete batch plants; see water quality and erosion control specifications, and documents submitted by the contractor at the preconstruction conference.

Site map and construction site boundaries: see title sheet

Areas of cuts and fills and areas of soil disturbance: see plan and profile sheets and roadway cross sections.

Surface waters: see title sheet  
and bridge hydraulic information sheet  
(if existent)

Materials handling and spill prevention:  
see water quality specification (107.25).

Inspection and maintenance: see erosion control specifications (107.25 or 208).

100-year Flood plain boundaries:  
see bridge hydraulic information  
sheet (if existent).

Description of the construction activity, estimate of the total site area and of the area expected to undergo excavation, and name of the receiving water: see CDPS stormwater permit application.

Contract Document location of erosion control and stormwater quality management measures not referenced above nor included on the Stormwater Management Plan Sheet(s): ROADWAY AND DRAINAGE PLANS.

CONCRETE WASHOUT WILL BE PERFORMED AT A LOCATION PRE-APPROVED BY THE ENGINEER.

DISTURBED SURFACES SHALL BE LEFT IN A ROUGHENED CONDITION AT ALL TIMES. ROUGHEN VERTICAL DEPTH SHALL BE 2 TO 4 INCHES.

TOPSOIL, SEED AND MULCH ERODABLE SURFACES IN ACCORDANCE WITH DISTURBANCE LIMITS REFERENCED IN THE STANDARD SPECIFICATION -208. IT IS ESTIMATED THAT A MINIMUM OF 3 MOBILIZATIONS FOR SEEDING, MULCHING AND MULCH TACKIFIER WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PRICE OF THE WORK.

## SEEDING PLAN

## NATIVE SEEDING


Soil preparation, seeding, mulch tackifier and mulching will be required for an estimated 1.3 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	POUNDS PLS/ACRE
Western Wheatgrass	Pascopyrum smithii var. rosanna	6.0
Arizona fescue	Festuca arizonica v. redondo	3.0
Blue Grama	Bouteloua gracilis var. hachita	2.0
Sandberg bluegrass	Poa sandbergii	2.0
Slender wheatgrass	Elymus trachycaulus v. primar	5.0
Green needlegrass	Stipa viridula v. lodorm	4.0
Yarrow	Achillea millefolium	0.1
Rocky Mountain Penstemon	Penstemon strictus var. bandera	0.5
Blackeyed Susan	Rudbeckia hirta	0.5
TOTAL		23.1 LBS/ACRE

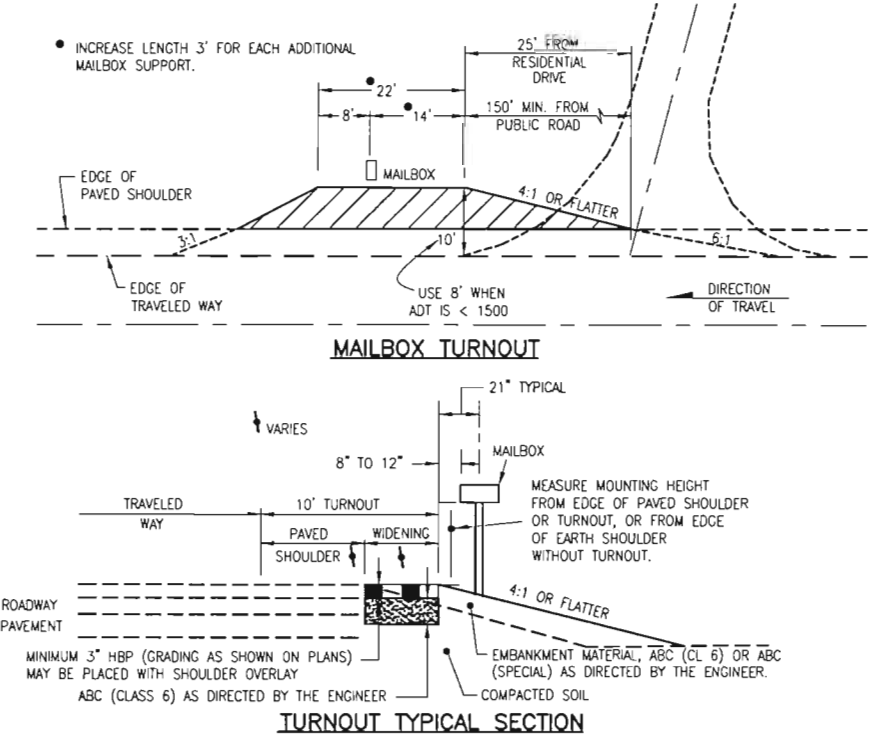
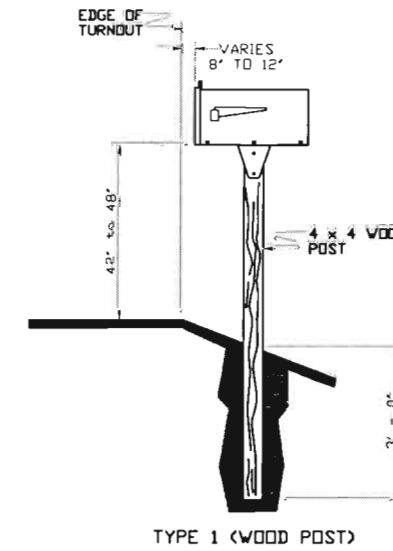
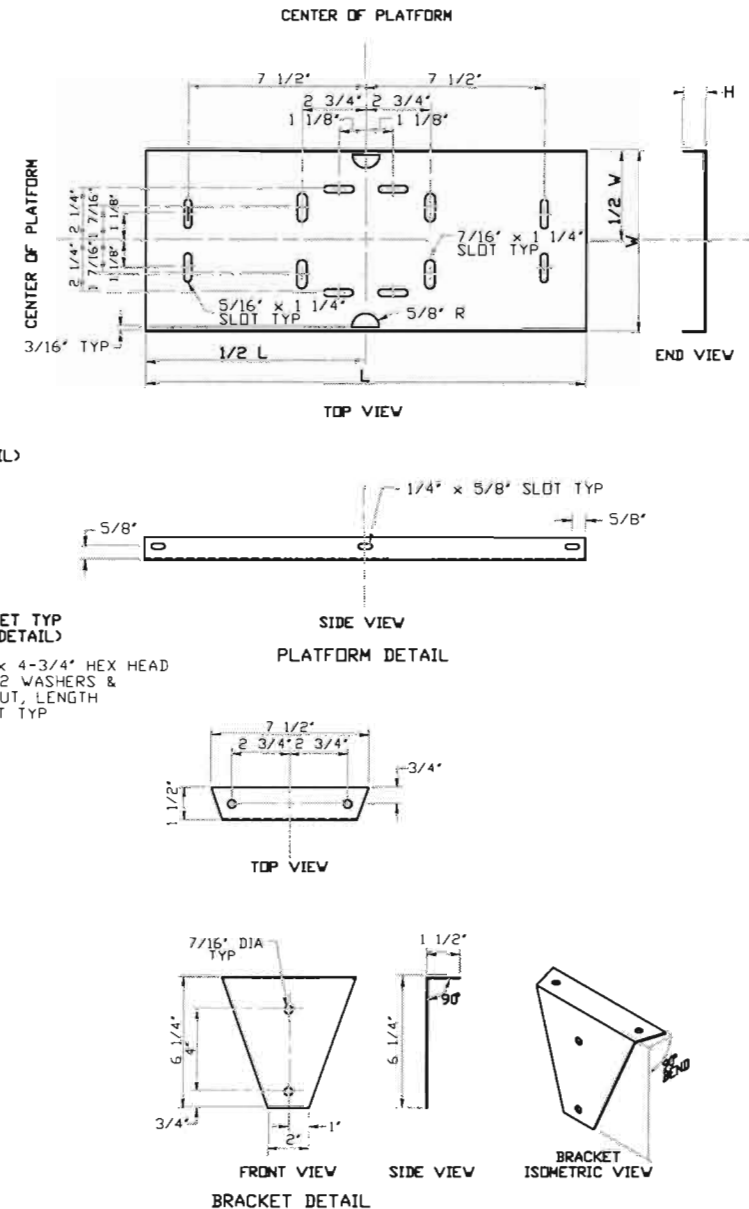
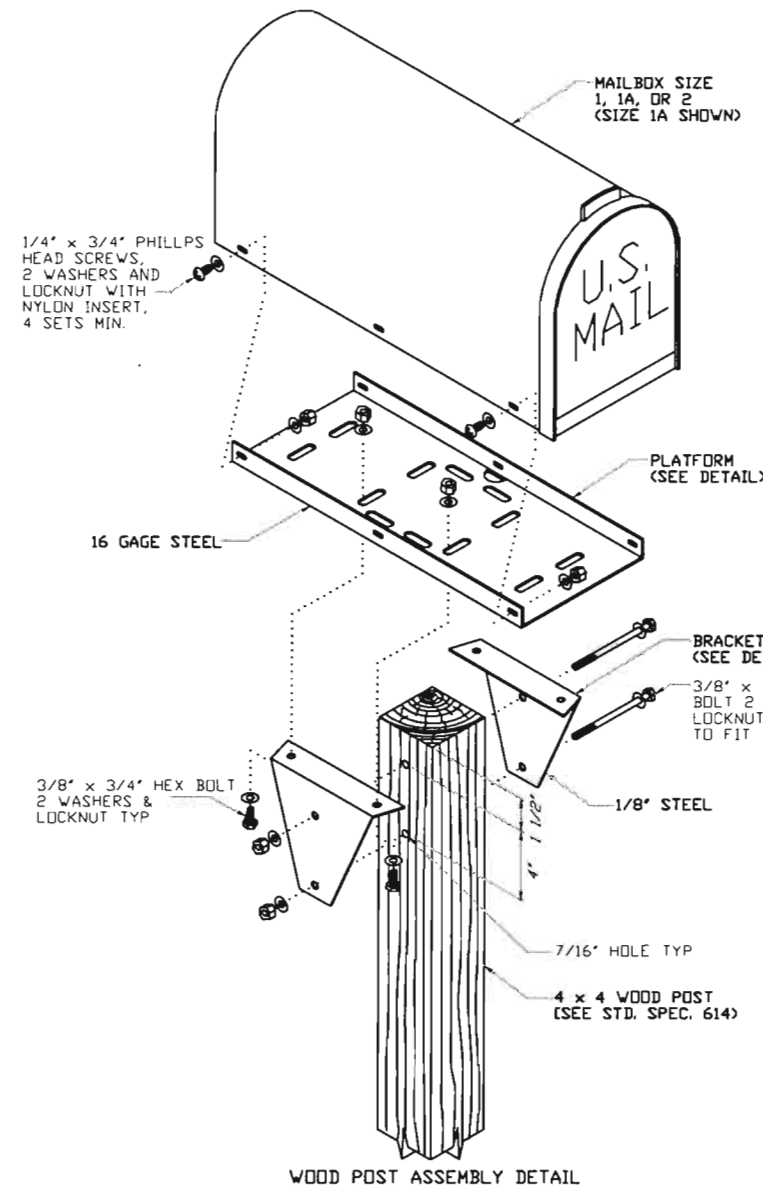
SEEDING APPLICATION: DRILL SEED TO A DEPTH OF 0.25 TO 0.5 INCHES INTO SOIL WHERE POSSIBLE. BROADCAST SEEDING OR HYDRAULIC SEEDING FOLLOWED BY RAKING TO COVER SEED WILL BE REQUIRED WHERE ACCESS IS LIMITED OR UNSAFE FOR EQUIPMENT AND AS APPROVED BY THE ENGINEER. INCREASE SEEDING TO 2X THE LBS./ACRE RATE WHEN HYDRAULIC SEEDING OR BROADCAST SEEDING.

MULCHING APPLICATION: 2 TONS/ACRE MULCHING (WEED FREE STRAW) MECHANICALLY CRIMPED INTO SOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER PER SPECIAL PROVISION 213-MULCH TACKIFIER.

ROADWAY PROJECT TOTALS			
DESCRIPTION	UNIT	QUANT	SPECIAL PROVISION
208 EROSION LOG	LF	300	208
208 SEDIMENT REM AND DISPOSAL	LS	1	208
208 EROSION CONTROL SUPERVISER	LS	1	208
212 SEEDING (NATIVE)	ACRES	1.3	212
213 MULCHING (WEED FREE STRAW)	ACRE	1.3	
213 MULCH TACKIFIER	LBS.	260	213
F/A EROSION CONTROL	F.A.	1	

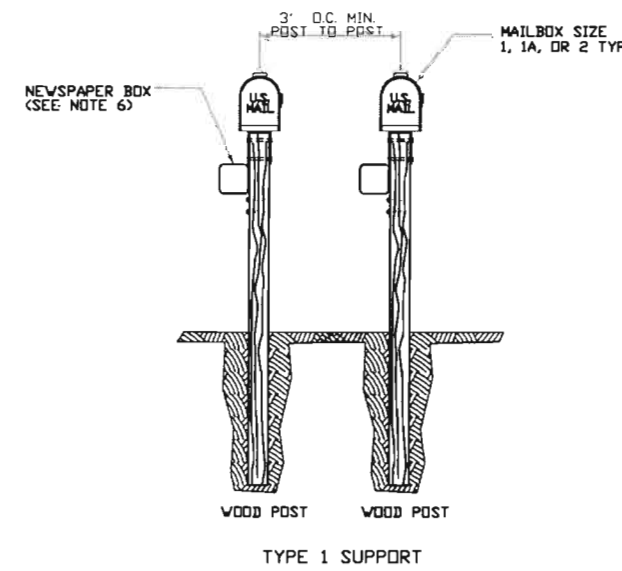
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#### GENERAL NOTES

- WHEN A MAILBOX TURNOUT IS REQUIRED, THE NECESSARY PAY QUANTITIES WILL BE SHOWN ON THE PLANS.
- A SINGLE MAILBOX SHALL BE RESET AT THE FINAL DESIGNATED LOCATION ON A NEW TYPE 1 SUPPORT. MULTIPLE MAILBOXES RESET AT THE SAME LOCATION SHALL BE RESET ON MULTIPLE SINGLE (TYPE 1) SUPPORTS. THIS WORK SHALL BE PAID FOR AS "RESET MAILBOX STRUCTURE (TYPE 1)".
- WHEN THE ENGINEER DETERMINES THAT THE EXISTING MAILBOX CAN NOT BE REUSED, A NEW METAL MAILBOX OF SIMILAR SIZE SHALL BE SUPPLIED AND ERECTED BY THE CONTRACTOR. ANY EXISTING MAILBOX LARGER THAN A SIZE NO. 2 SHALL BE REPLACED WITH A NEW SIZE NO. 2 MAILBOX. THE COST OF SUPPLYING THE NEW MAILBOX SHALL BE INCLUDED IN THE COST OF THE RESET ITEM. EXCEPTION: A CUSTOM BUILT, RURAL-TYPE MAILBOX MAY BE RESET IF THE MAILBOX OWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE POSTMASTER AND IS APPROVED BY THE ENGINEER.
- BRACKETS, AND ALL MOUNTING HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 AND M 111.
- EXACT DIMENSIONS OF ANGLES, PLATFORM AND SHELF BRACKETS, BOLT HOLES, SLOTS AND MAILBOX SUPPORT COMPONENTS MAY VARY FROM THOSE SHOWN OR IMPLIED HEREIN SO THAT ALL COMPONENTS WILL FIT TOGETHER PROPERLY.
- PLASTIC NEWSPAPER RECEPTACLES SHALL BE REMOUNTED BELOW THE MAILBOX ON THE SUPPORT. USE 2 1/2" x 1/4" LAG BOLTS TO ATTACH NEWSPAPER BOXES TO THE WOOD POSTS. NEWSPAPER BOXES MUST NOT EXTEND BEYOND THE FRONT OF THE MAILBOX WHEN THE MAILBOX DOOR IS OPEN.
- ON ROADS WITH CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND SO THE FRONT OF THE MAILBOX WILL BE 8" TO 12" BACK FROM THE CURB FACE. THE HEIGHT SHALL BE 42" TO 48" MEASURED FROM THE GUTTER FLOW LINE TO THE BOTTOM OF THE MAILBOX.
- ON ROADS WITH SIDEWALK ATTACHED TO CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND BEHIND THE SIDEWALK. THE FRONT OF THE MAILBOX SHALL BE IN LINE WITH OR SLIGHTLY BEHIND THE EDGE OF THE SIDEWALK. THE MOUNTING HEIGHT SHALL BE 42" TO 48" ABOVE THE SIDEWALK.
- THE GROUND SURROUNDING THE MAILBOX SUPPORTS SHALL BE FIRM, UNDISTURBED GROUND, OR WELL COMPACTED REGRADED SOIL. THE SUPPORTS SHALL BE PLACED IN A DRILLED OR DUG HOLE WITH WELL COMPACTED BACKFILL AND PLUMB.
- TIMBER POSTS SHALL BE IN ACCORDANCE WITH SECTION 614 OF THE STANDARD SPECIFICATIONS AS TO SIZE, GRADE, SPECIES AND TREATMENT.



MAILBOX & PLATFORM DIMENSIONS						
SIZE	MAILBOX DIMENSIONS			PLATFORM DIMENSIONS		
	L	W	H	L	W	H
1	19"	6 1/2"	8 1/2"	17"	6 3/8"	1"
1A	21"	8"	10 1/2"	19"	7 7/8"	1"
2	24"	11 1/2"	13 1/2"	21"	11 3/8"	1"

WOOD POST FASTENERS				
BOLT SIZE	QUANTITY	WASHERS	LOCKNUTS	
3/8" DIA x 4-3/4"	2	4	2	
3/8" DIA x 3/4"	4	8	4	
1/4" DIA x 3/4"	4	8	4	

#### NOTES:

- SPACING OF MAILBOX MOUNTING HOLES VARIES AMONG MANUFACTURES. ATTACHMENT OF THE MAILBOX TO THE PLATFORM MAY REQUIRE DRILLING ADDITIONAL HOLES THROUGH THE MAILBOX TO FIT THE PLATFORM.
- CENTER THE MAILBOX ON THE PLATFORM TO ENSURE SPACE FOR THE MAILBOX DOOR TO OPEN AND TO ALLOW SPACE FOR INSTALLING THE FASTENERS.

Computer File Information				Sheet Revisions		As Constructed		Mailbox Detail		Project No./Code	
Creation Date:	3 JAN 03	Initials:	KEM	(R-X)		No Revisions:	JULY 17, 2003	Designer:	WILCOXON	Structure	NH 2852-014
Last Modification Date:	9 JAN 03	Initials:	KEM	(R-X)		Revised:		Detailer:	MAGOWAN	Numbers	13998
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Colorado Department of Transportation

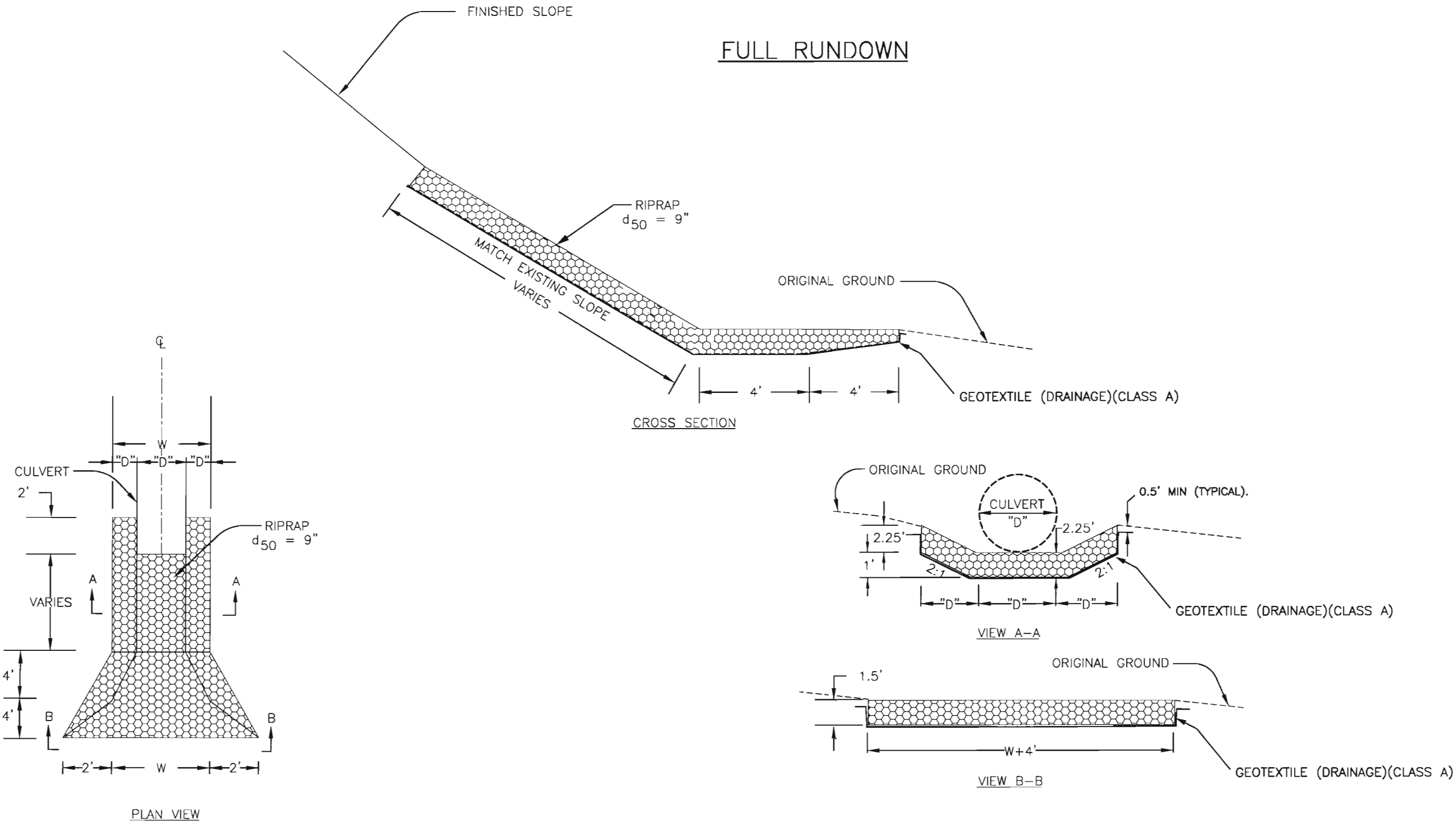
1205 West Ave, Box C  
Alamosa, CO. 81101  
Phone: 719-589-4251 FAX: 719-589-3149

REGION 5

J.J.S.


# RIPRAP SLOPE TREATMENT DETAILS

(RIPRAP SLOPE TREATMENT MAY BE OMITTED WHEN SLOPE IS IN ROCK.)



(R-1) STRUCTURE EXCAVATION REQUIRED FOR RIPRAP SHALL BE INCLUDED IN THE PRICE OF RIPRAP AND NOT PAID FOR SEPARATELY.

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Creation Date:	1/28/03	Initials:	KEM	(R-1)	2/19/03	Structure Excavation	KEM	No Revisions:	July 17, 2003	BS	NH 2852-014
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Colorado Department of Transportation  
1205 West Ave. Box C  
Alamosa, CO 81101  
Phone: (719) 589-4251 FAX: (719) 589-3149  
Alamosa Residency: JJS

As Constructed

No Revisions: July 17, 2003

Revised:

Void:

BS

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Sheet Subset: Hydrolics

Subset Sheets: 1 of 1

Project No./Code

NH 2852-014

13998

Sheet Number

36

7/17/03

NH 2852-014 13998

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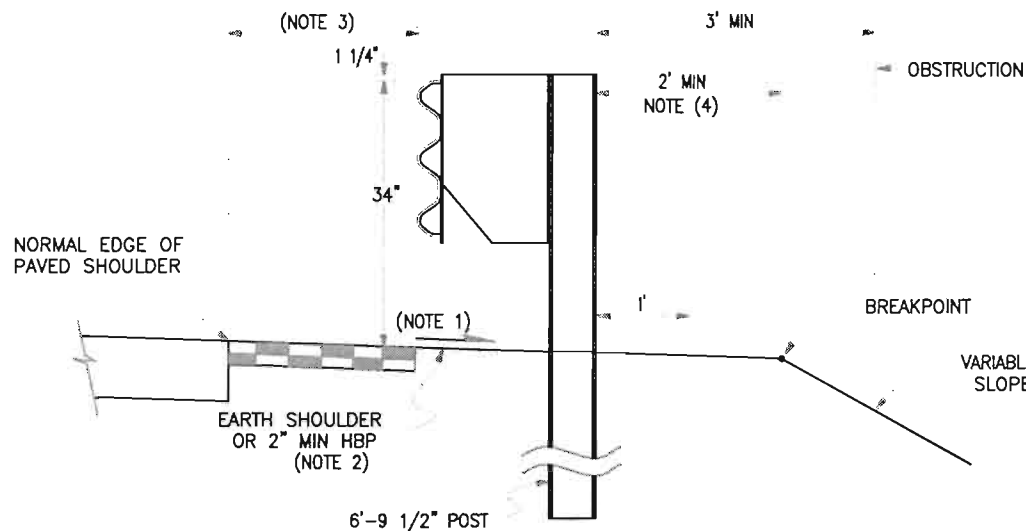
## GENERAL NOTES

- (1) RATE OF SLOPE DEPENDS ON GUARDRAIL LOCATION:
  - FOR GUARDRAIL FACE 2 FT. OR LESS FROM THE NORMAL EDGE OF PAVED SHOULDER, CONTINUE THE RATE OF SLOPE OF THE NORMAL PAVED SHOULDER TO THE BREAKPOINT.
  - FOR GUARDRAIL FACE MORE THAN 2 FT. FROM THE NORMAL EDGE OF THE PAVED SHOULDER, THE SLOPE ~~SHALL BE~~ 8:1 OR FLATTER.
- (2) WHEN SPECIFIED ON THE PLANS, EXTEND A 2 IN. MINIMUM THICKNESS PAVED SURFACE TO 1 FT. BEHIND THE GUARDRAIL POSTS OR TO THE POSTS, WITH EROSION CONTROL CURB. PAYMENT FOR THIS PAVED SURFACE WILL BE MADE UNDER A PAVEMENT PAY ITEM WITH QUANTITIES SHOWN ON THE PLANS.
- (3) THE MINIMUM GUARDRAIL OFFSET FROM PAVED SHOULDER EDGE SHALL BE:
  - 0' FOR SHOULDERS 8' OR WIDER
  - 2' FOR SHOULDERS 6' OR LESS

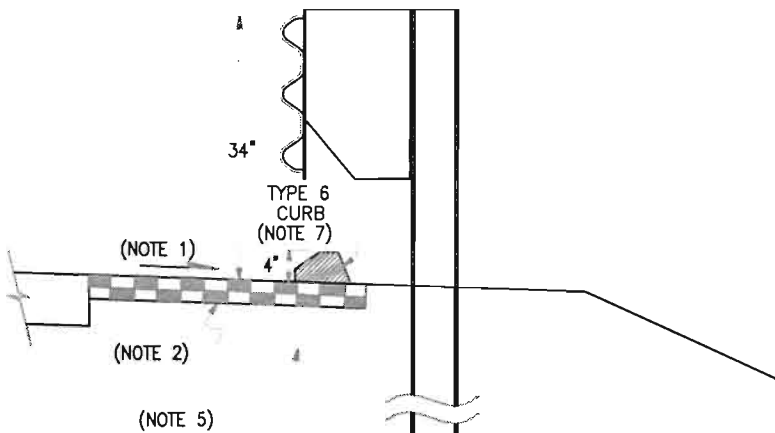
THE ABOVE 2' GUARDRAIL TO SHOULDER OFFSET IS DESIRABLE BUT NOT REQUIRED FOR:

  1. EXISTING HIGHWAY WITH DESIGN SPEED OF LESS THAN 50 MPH. MINIMUM OFFSET OF RAIL IS 0' FROM ANY WIDTH PAVED SHOULDER OR 1' FROM TRAVELED WAY.
  2. A ONE-WAY ONE-LANE RAMP AND:
    - THE NON-OFFSET GUARDRAIL BEGINS AT LEAST 100' BEYOND RAMP NOSE.
    - THE NON-OFFSET GUARDRAIL IS NOT LOCATED ON THE RAMP EXIT OR ENTRANCE CURVE CONNECTION TO THE MAJOR HIGHWAY.
    - THE RAMP SHOULDERS ARE 4' OR WIDER.
  3. HIGHWAY INSIDE SHOULDERS 4' OR WIDER.

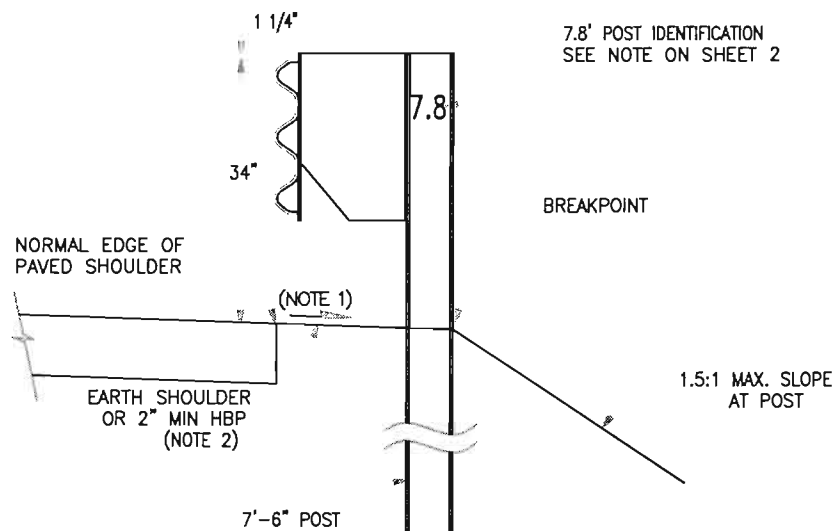
USE OF GREATER THAN MINIMUM OFFSET DIMENSIONS IS ENCOURAGED TO MEET THE DESIRABLE GOAL OF PLACING THE GUARDRAIL AS FAR AS POSSIBLE FROM THE TRAVELED WAY, EVEN FOR SHORT DISTANCES, WHILE PROVIDING A SMOOTH CHANGE IN GUARDRAIL ALIGNMENT.
- (4) IF 2 FT. CANNOT BE PROVIDED BETWEEN THE BACK OF THE GUARDRAIL POST AND THE BREAKPOINT, USE 7' - 9 1/4" GUARDRAIL POSTS. REFER TO THE "RESTRICTIVE ROADSIDE INSTALLATION" DETAIL.
- (5) WHEN SPECIFIED ON THE PLANS, INSTALL 4" HIGH TYPE 6 CURB WITH ITS FACE AT OR BEHIND THE RAIL FACE. PAY FOR AS ITEM 609.
- (6) WHERE A POST MUST BE OMITTED IN A GUARDRAIL RUN, SUCH AS AT A PIPE CULVERT WITH MINIMUM COVER, THE W-BEAM RAIL SPANNING THE OMITTED-POST GAP SHALL BE DOUBLED (ONE RAIL NESTED IN THE OTHER). IF NECESSARY, TWO CONSECUTIVE POSTS MAY BE OMITTED IN GUARDRAIL WITH 6'-3" SPACED POSTS. EXTEND THE NESTED RAIL IN BOTH DIRECTIONS AT LEAST 6'-3" BEYOND THE OMITTED-POST GAP TO A RAIL SPLICE. DEPENDING ON RAIL SPLICE LOCATION, ONE OMITTED POST REQUIRES EITHER 25' OR 37'-6" OF NESTED RAIL, AND TWO OMITTED POSTS REQUIRE 37'-6" OF NESTED RAIL USING 12'-6" LONG RAIL SECTIONS.
- (7) WHEN GUARDRAIL IS FLARED AWAY FROM NORMAL GUARDRAIL AND CURB ALIGNMENT, THE CURB MUST EITHER FLARE WITH THE GUARDRAIL OR BE ELIMINATED.
- (8) 7'-9 1/4" POSTS WILL BE REQUIRED ON ALL MEDIAN GUARDRAILS BETWEEN STATIONS 300+00 TO 527+00.



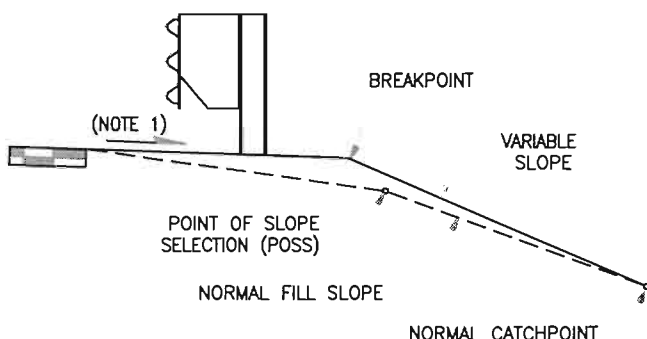
NORMAL ROADSIDE INSTALLATION  
WHEN FILL REQUIRES GUARDRAIL



ROADSIDE INSTALLATION  
WITH EROSION CONTROL CURB



RESTRICTIVE ROADSIDE INSTALLATION  
WITH 7'-9 1/4" GUARDRAIL POSTS  
(SEE NOTE 4)

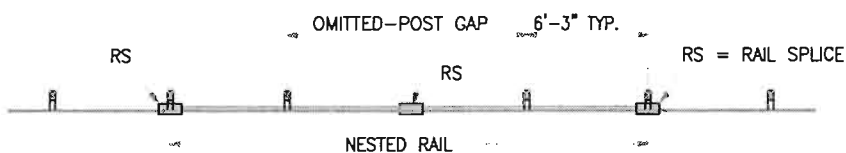


EMBANKMENT WITH GUARDRAIL

(NOTE THAT THE CATCHPOINT REMAINS THE SAME AS THAT FOR "NORMAL" FILL SLOPE. FOR THE WIDER "Z" DISTANCES, THE VARIABLE SLOPE MAY "CATCH" AT THE POSS.)

## NORMAL CENTER-TO-CENTER POST SPACING

LOCATION	DESIGN SPEED
	50 MPH & OVER
TANGENTS (EXCEPT BRIDGE OR STRUCTURE APPROACH)	6'-3"
CURVES WITH RADIUS OVER 200'	6'-3"
CURVES WITH RADIUS 200' OR LESS	6'-3"
BRIDGE OR STRUCTURE APPROACH	SEE SHEETS 4 & 8
FLARES	6'-3"



NESTED RAIL AT OMITTED POST  
(SEE NOTE 6)

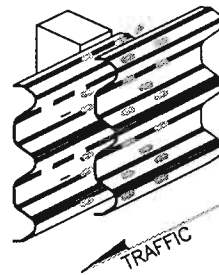
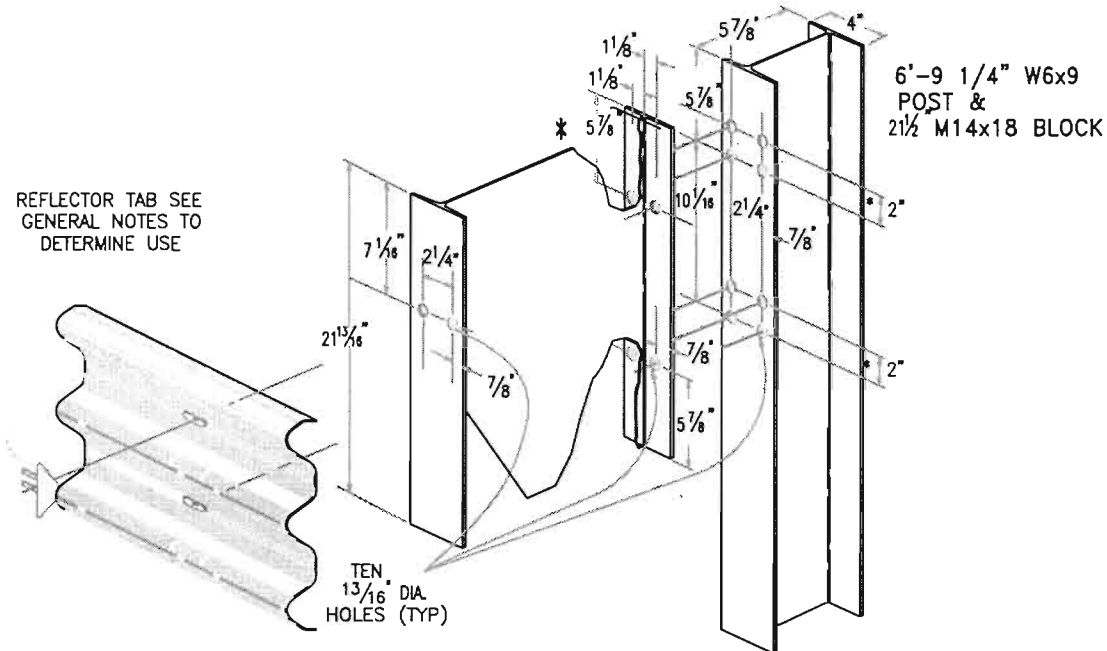
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SCALE: N.T.S.	DESIGNED BY: R. G. HEIDERSTADT	DRAWN BY: R.G.H.
DATE: 04/17/95	REVISOR:	
GUARDRAIL TYPE 6		
DRAWING NUMBER SHEET 1 OF 4		

SPLICE LAP

7/17/93

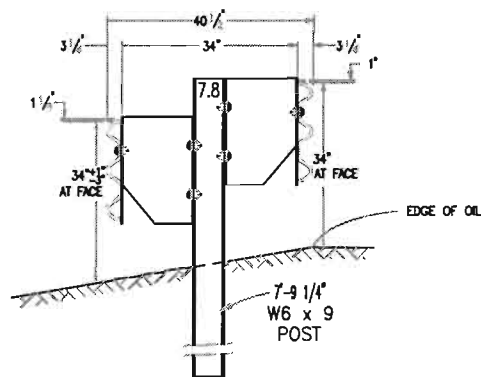
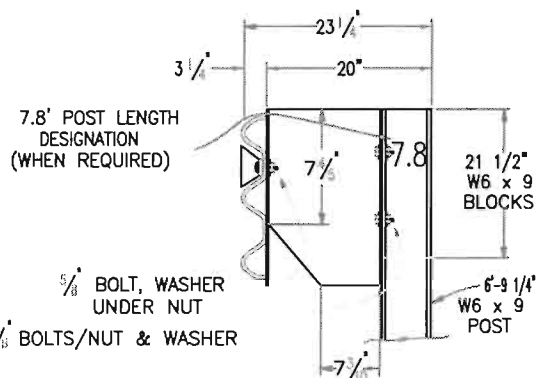
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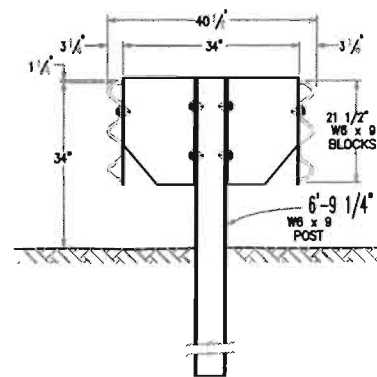


STEEL POST & BLOCK  
P-10-79

\* NOTE: ADDITIONAL HOLES SHALL BE PROVIDED IN POSTS TO FACILITATE FUTURE RAISING OF THE RAIL FOR OVERLAYS, ETC..



GUARDRAIL TYPE 6 (DOUBLE) OFFSET FACES



DOUBLE BLOCK AND RAIL MEDIAN BARRIER  
GUARDRAIL TYPE 6 (DOUBLE)

## GENERAL NOTES

ALL THREE BEAM SPLICES, AND SPLICES OF TERMINAL CONNECTORS TO THREE BEAM ~~SHALL BE~~ LAPPED IN THE DIRECTION OF TRAFFIC UNLESS OTHERWISE NOTED.

MATERIAL TYPE AND SHAPE OF POSTS AND BLOCKS ~~SHALL BE~~ THE SAME THROUGHOUT THE PROJECT EXCEPT WHEN SPECIFIC POSTS AND BLOCKS ARE SPECIFIED SUCH AS AT END ANCHORAGES AND BOX CULVERTS.

CONCRETE MAY BE READY-MIXED OR FIELD-MIXED ~~AND SHALL~~ CONSIST OF A MINIMUM OF 1 PART CEMENT TO 6 PARTS AGGREGATE BY VOLUME.

ACCEPTABLE ALTERNATIVES TO W6x9 POSTS ARE W6x8.5 ROLLED OR WELDED BEAM. ACCEPTABLE ALTERNATES TO M14x18 SPACERS ARE M14x17.2 ROLLED OR WELDED BEAM. THE WELDED BEAM ~~SHALL BE~~ IN ACCORDANCE WITH ASTM A 769 WITH THE SAME SHAPE AND WEIGHT PER FOOT AS A W6x8.5 OR W6x9 AND M14x17.2 OR M14x18.

7'-9 1/4" POSTS, WHEN SPECIFIED IN THE CONTRACT ~~SHALL BE~~ INSTALLED INSTEAD OF THE STANDARD 6'-9 1/4" POSTS. 7'-9 1/4" POSTS SHALL BE MARKED WITH THE NUMBER 7'-9 1/4" TO ENSURE PERMANENT IDENTIFICATION. THE NUMBER 7.8 SHALL BE A MINIMUM 2" HEIGHT AND LOCATED AS SHOWN IN THE ELEVATION VIEWS.

THE STANDARD 3" x 1 3/4" x 3/16" RECTANGULAR WASHER USED UNDER POST BOLT HEADS IN THE PAST MAY REMAIN IN EXISTING INSTALLATIONS BUT SHALL NOT BE USED IN NEW CONSTRUCTION OR REPAIRS. THERE ARE EXCEPTIONS WHERE RECTANGULAR WASHER LOCATIONS ARE SPECIFICALLY IDENTIFIED ON THIS STANDARD PLAN.

REFLECTOR TABS ~~SHALL BE~~ <sup>were</sup> INSTALLED AT 25' INTERVALS (EXCEPTION BELOW). REFLECTOR TABS ~~WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE GUARDRAIL. THE TABS SHALL BE~~ <sup>were</sup> MOUNTED SO THAT THE BOLT SLOT FACES AWAY FROM TRAFFIC AND THE REFLECTORIZED SURFACE FACES THE APPROACHING TRAFFIC FOR ONE-WAY ROADS. FOR TWO-WAY ROADS, BOTH SIDES OF THE TABS SHALL BE REFLECTORIZED SO THAT DELINEATION IS PROVIDED FOR BOTH DIRECTIONS OF TRAVEL. REFLECTORIZATION COLOR SHALL MATCH THE COLOR OF THE ADJACENT TRAVELED WAY EDGE LINE. SEE TAB DETAIL ON SHEET 3.

REFERENCES SUCH AS "P-10-79", "F-3(2)-76", AND "RE-3-73" IN THIS STANDARD SPECIFY HARDWARE DETAILS FROM "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" PREPARED BY THE AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.

REFLECTOR TABS ~~SHALL NOT BE~~ <sup>were</sup> INSTALLED AT THE FOLLOWING LOCATIONS:

- THE END 7 POSTS IN THE APPROVED BREAKAWAY TERMINAL (ABT) END ANCHORAGE.
- THE NINE POSTS IN THE TYPE 3F END ANCHORAGE.
- GUARDRAIL IN AREAS OF CONTINUOUS HIGHWAY LIGHTING.

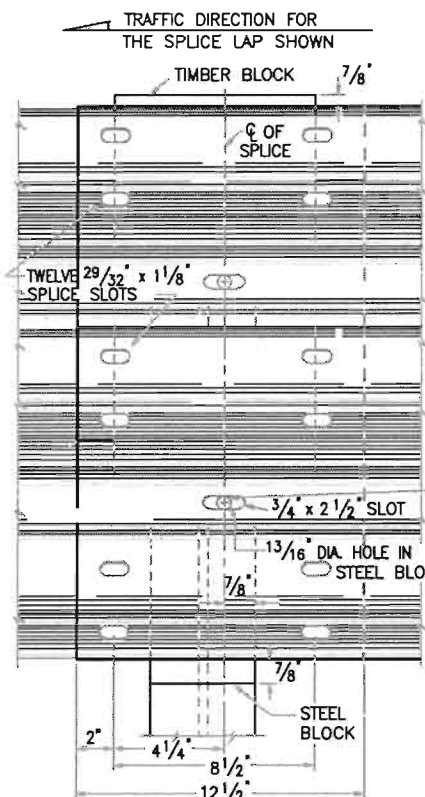
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DATE: 04/17/95	REVISION:	GUARDRAIL TYPE 6	
		DRAWING NUMBER SHEET 2 OF 4	

PLAN  
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BY  
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PLOTTER  
DESIGNED  
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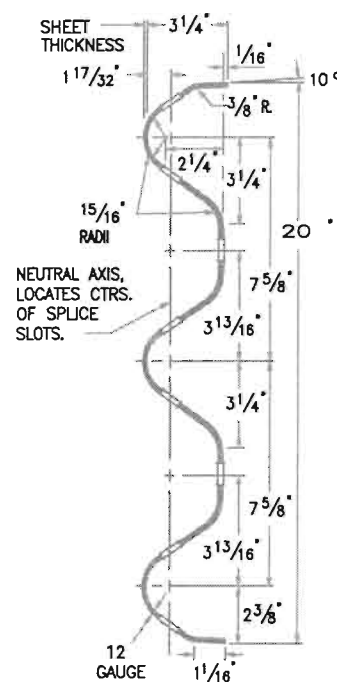
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NH 2852-014 13998 39

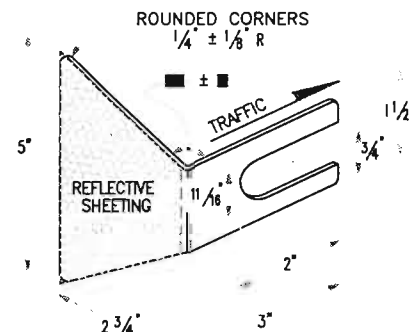


RAIL SPLICE



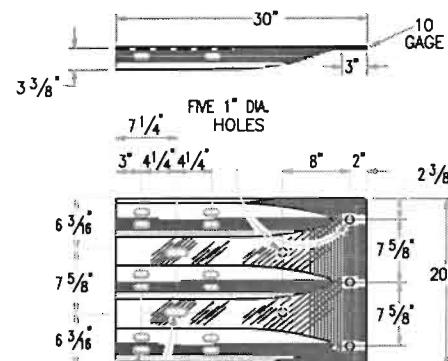
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RE-63 (CLASS A, TYPE 4)-73 (CORR. RESIST.)

THRIE BEAM RAIL SECTION



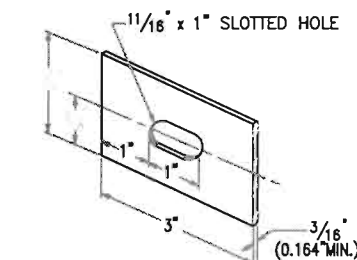
REFLECTOR TAB

REFLECTOR TABS SHALL BE MANUFACTURED FROM 12 TO 14 GAUGE STEEL. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956 TYPE III. SEE NOTES ON SHEET 2.

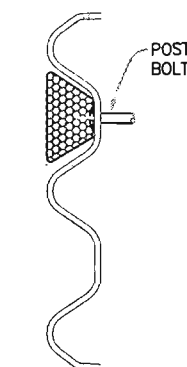


3/4" x 2 1/2" POST BOLT SLOT (OPTIONAL)  
TWELVE 29/32" x 1 1/8" SLOTS. MUST MATCH RAIL SPLICE SLOTS.  
RE-67 (CLASS B, TYPE 2)-76 (GALV.)  
RE-67 (CLASS B, TYPE 4)-76 (CORR. RESIST.)

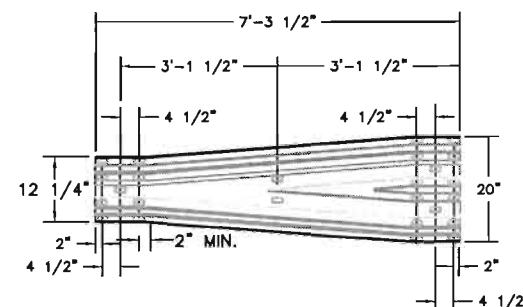
THRIE BEAM TERMINAL SECTION (CONNECTOR)



F-12-73  
RECTANGULAR WASHER  
(TO BE USED ONLY WHERE SPECIFIED.)

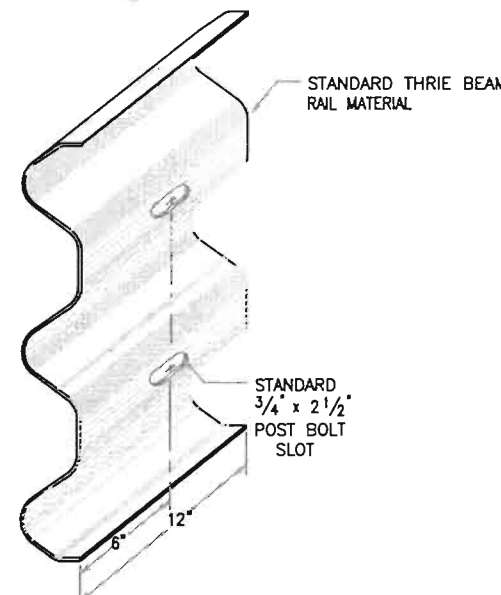


MOUNTING POSITION



RE-69 (CLASS A, TYPE 2)-76 (GALV.)  
RE-69 (CLASS A, TYPE 4)-76 (CORR. RESIST.)

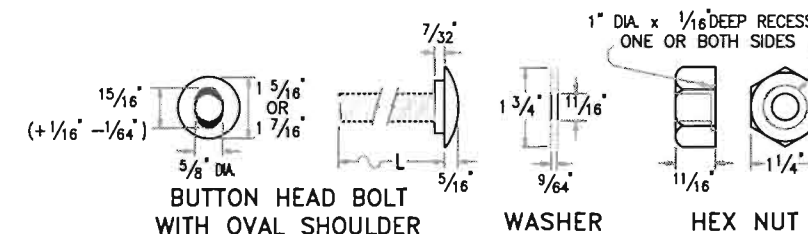
W - THRIE BEAM TRANSITION SECTION



RE-64 (CLASS A, TYPE 2)-76 (GALV.)  
RE-64 (CLASS A, TYPE 4)-76 (CORR. RESIST.)

BACKUP PLATE

(REQUIRED BEHIND RAIL AT EACH NON-SPLICE STEEL POST & BLOCK SYSTEM)



DIAMETER & TYPE	LENGTH L	THREAD LENGTH	INTENDED USE	AASHTO-AGC-ARTBA STANDARD NUMBER	NO. BOLTS, NUTS & WASHERS
5/8" BUTTON HEAD, OVAL SHLDR.	1 1/4" 2"	FULL (1 1/32") MIN. 1 1/2"	ALL RAIL SPLICES FASTEN RAIL TO STEEL BLOCK	F-3 (1 1/4")-76 F-3 (2")-76	12 PER SPLICE 1 PER BLOCK
5/8" HEX HEAD	1 1/2"	FULL	FASTEN STEEL BLOCK TO POST	F-8-76	1 PER BLOCK

PART	MATERIAL SPEC.	GALVANIZING SPEC.	CORROSION-RESISTANT SPEC.
THRIE BEAM RAIL BACK-UP PLATE & TERMINAL SECTIONS	AASHTO M 180, CLASS A OR B	AASHTO M 180, TYPE 2	AASHTO M 180, TYPE 4
WELDED BEAM OR STRUCTURAL SHAPE STEEL POST BLOCK & BASE PLATE	ASTM A 36	AASHTO M 111	AASHTO M 222 (ASTM A 588)
BENT PLATE ("C") POST & BLOCK	ASTM A 570, GRADE 36 ASTM A 36	AASHTO M 111	AASHTO M 222 (ASTM A 588)
NUTS, BOLTS & STUDS FOR GENERAL USE	ASTM A 307		
HIGH STRENGTH BOLTS & NUTS	ASTM A 325		AASHTO M 232, CLASS C
HIGH STRENGTH STUDS & NUTS	ASTM A 449		OR
ROUND STEEL WASHERS	ASTM F 436		ASTM B 695 CLASS 50
RECTANGULAR WASHERS	AASHTO M 180		
OTHER FITTINGS	ASTM A 36	AASHTO M 111	

THE TABULATION OF GUARDRAIL WILL SPECIFY THE TYPE OF CORROSION PROTECTION: GALVANIZED OR CORROSION - RESISTANT STEEL.

STEEL POSTS AND BLOCKS SHALL HAVE THE SAME CORROSION PROTECTION AS SPECIFIED FOR THE METAL BEAM RAIL. PUNCHING, DRILLING, OR CUTTING WILL NOT BE PERMITTED AFTER GALVANIZING.

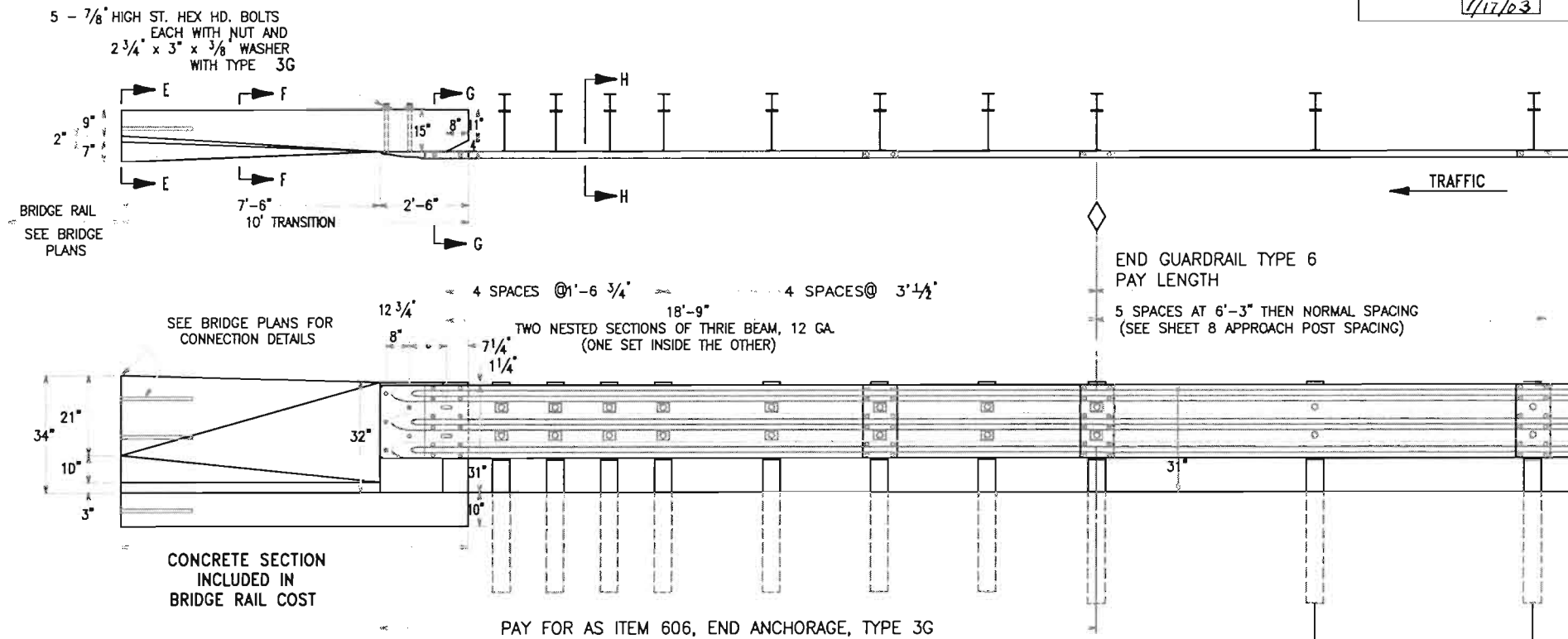
## HARDWARE DETAILS AND SPECIFICATIONS

COLORADO DEPARTMENT OF TRANSPORTATION			
SCALE: N.T.S.	DESIGNED BY: R. G. HEIDERSTADT	DRAWN BY: R.G.H.	REVIEWED:
DATE: 04/17/95			
GUARDRAIL TYPE 6			
DRAWING NUMBER SHEET 3 OF 4			

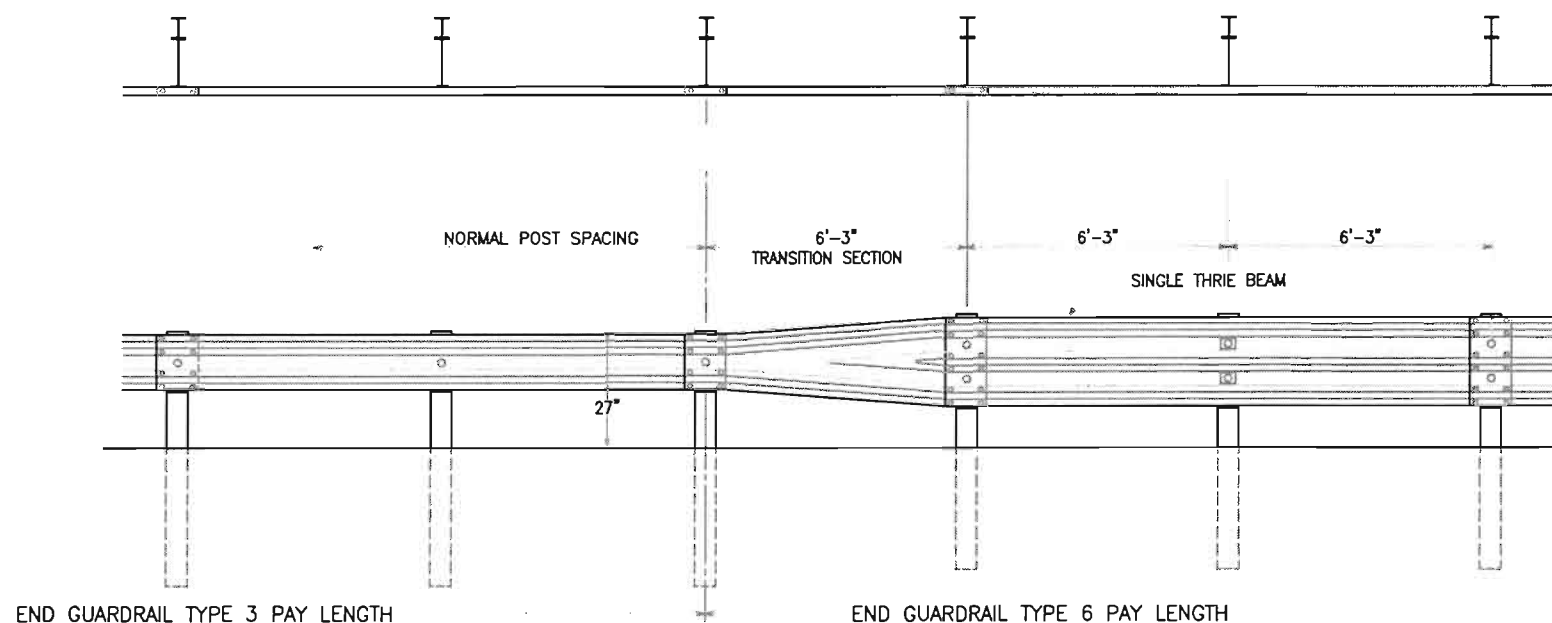


7/17/93

NH 2852-014 13998 40



TYPE 3G END ANCHORAGE



TYPE 3 TO TYPE 6 TRANSITION

# NOTES FOR TYPES 3G

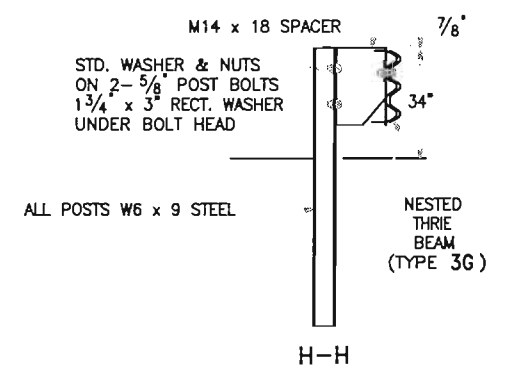
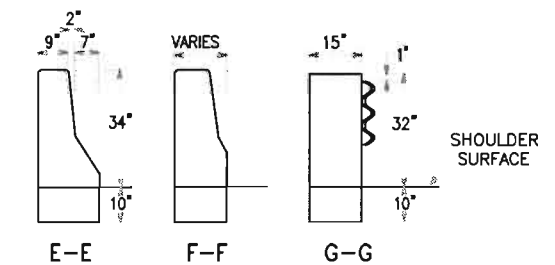
TYPE 3G END ANCHORAGE IS FOR USE AT BOTH ENDS OF BRIDGES ON TWO-WAY ROADS AND AT THE APPROACH END OF BRIDGES ON ONE-WAY ROADS.

THE 10' CONCRETE TRANSITION IS BETWEEN TYPE 6 GUARDRAIL AND TYPE 4 BRIDGE RAIL.

TYPE 3G END ANCHORAGES IS ALSO USED TO CONNECT TO TYPE 8 AND TYPE 10 BRIDGE RAIL. SEE BRIDGE PLANS FOR CONNECTION DETAILS.

BACKUP PLATE NOT REQUIRED AT POSTS ON TYPE 3G.

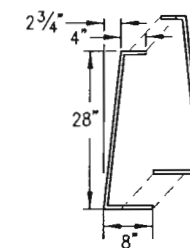
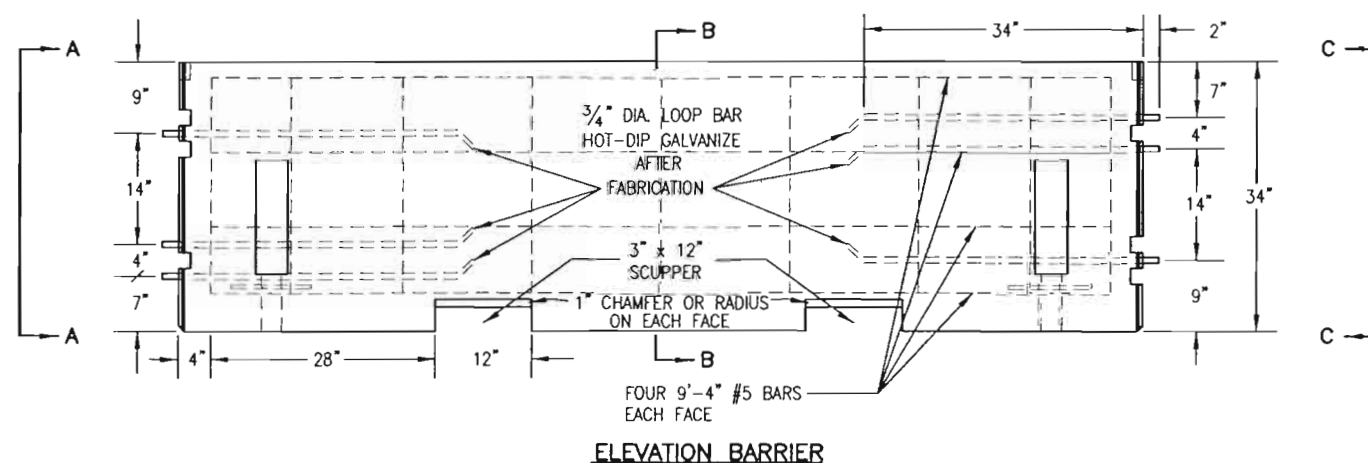
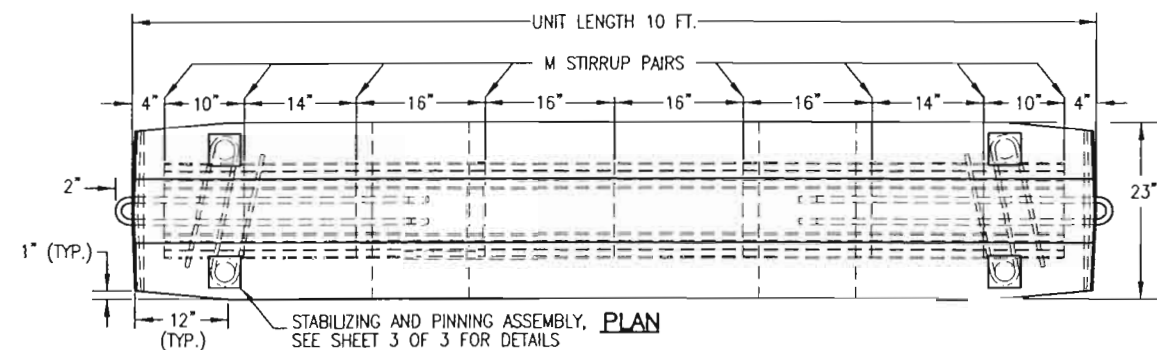
THIS SHOWS RECTANGULAR WASHER IS REQUIRED UNDER POST BOLT HEAD.



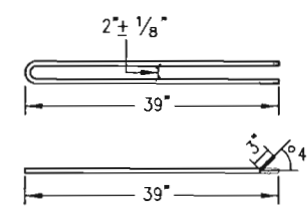
COLORADO DEPARTMENT OF TRANSPORTATION			
SCALE: N.T.S.	DESIGNED BY: R. G. HEIDERSTADT	DRAWN BY: R.G.H.	
DATE: 04/17/95		REVISED	
GUARDRAIL TYPE 6			
		DRAWING NUMBER	
		SHEET 4 OF 4	

06/19/95 15:55:37 REGION 1, DESIGN 3::AUR18P::D:\ACADDATA\SH025\10768\DESIGN\PLANS\THRIE-M\THRIE-04.DWG  
PLAN SURVEYED  
TIMOS FILE NO. PLOTTED  
DESIGNED  
SPL. NOTATIONS CH.

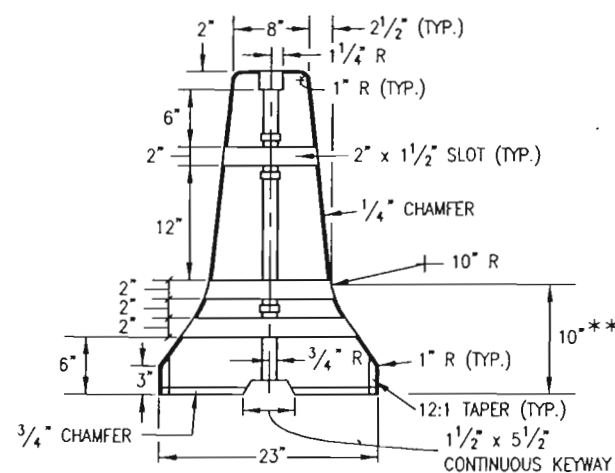




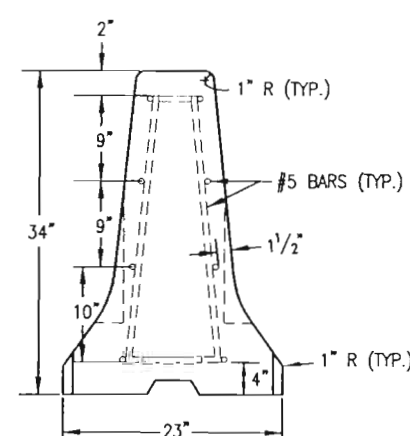
STIRRUP "M" #5 REBAR



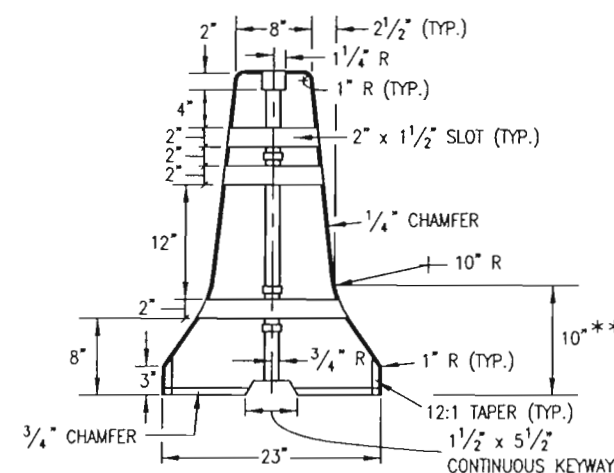
LOOP BENDING DETAIL (ASTM A36)



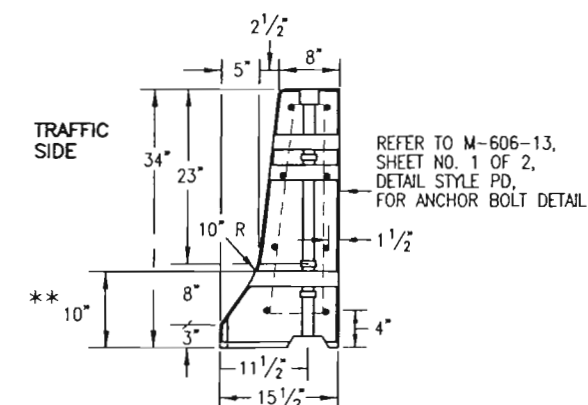
SECTION A-A



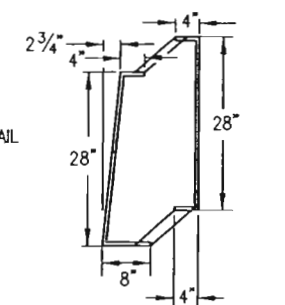
SECTION B-B



SECTION C-C



NARROW BASE SHOULDER BARRIER



NARROW BASE STIRRUP "M" #5 REBAR

\*\* DIMENSIONS MARKED ARE TO THE INTERSECTION POINT OF THE BARRIER SLOPES. CONSTRUCT THE 10 IN. RADIUS TO PROVIDE A SMOOTH TRANSITION BETWEEN THE SLOPES.

- GENERAL NOTES**
- ALL METAL REINFORCEMENT SHALL BE 2 IN. CLEAR OF NEAREST FACE OF CONCRETE UNLESS OTHERWISE SHOWN.
  - CONCRETE SHALL BE CLASS B OR D.
  - FOR TEMPORARY INSTALLATIONS, A MINIMUM 4 FT. DISTANCE SHALL EXIST FROM THE CENTERLINE OF THE CONCRETE BARRIER TO ANY OBSTRUCTIONS BEHIND IT. IN TEMPORARY INSTALLATIONS WITH LESS THAN A 4 FT. MINIMUM DISTANCE, STABILIZATION PINS SHALL BE USED ON EACH BARRIER UNIT ADJACENT TO, AND WITHIN 10 FT. OF BOTH SIDES OF THE OBSTRUCTION. SEE SHEET 3 OF 3 FOR STABILIZATION PINNING DETAILS.
  - CLEAR ZONE DISTANCE REQUIREMENTS SHALL BE CALCULATED AS SPECIFIED IN THE LATEST EDITION OF THE "ROADSIDE DESIGN GUIDE".
  - STABILIZATION PINS SHALL BE USED TO ANCHOR EACH 10 FT. UNIT IN ALL PERMANENT INSTALLATIONS. SEE SHEET 3 OF 3 FOR STABILIZATION PINNING DETAILS.
  - ALL PERMANENT INSTALLATIONS REQUIRE END ANCHORAGES. SEE SHEET M-606-13, 1 OF 4 FOR ANCHORAGE DETAILS.
  - THE MONTH AND YEAR THE PRECAST TYPE 7 CONCRETE BARRIER WAS MANUFACTURED SHALL BE MOLDED INTO ONE END OF EACH 10 FT. BARRIER UNIT.
  - APPROVED NON-SHRINK GROUT SHALL BE USED FOR GROUTING OVER ALL PINS AND GROUTING OF SCUPPERS.
  - WHEN HYDRAULIC ANALYSIS ALLOWS, SCUPPERS MAY NOT BE NEEDED ON:
    - MEDIAN INSTALLATION WITH INLET DRAINAGE.
    - SHOULDER BARRIER ON HIGH EDGE OF A SUPERELEVATED SHOULDER.
    - MEDIAN BARRIER ON A CREST VERTICAL CURVE.
    - PERMANENT BARRIER, IF SPECIFIED ON PLANS.
  - ALL INCIDENTAL WORK AND MATERIALS SUCH AS CONNECTING PINS, ANCHORS BOLTS, GROUT, EXCAVATION FOR END ANCHORAGE, ETC. SHALL BE INCLUDED IN THE COST OF THE BARRIER.

Colorado Department of Transportation

 4201 East Arkansas Avenue  
Denver, Colorado 80222  
Phone: (303) 757-9083 FAX: (303) 757-9820

Project Development Branch SRJ

Computer File Information

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Drawing File Name: 6060140103.dwg

Acad Version: R14 Scale: NA Units: English

Standard Plan Revised

Date:	Comments:
7/17/03	No Revision

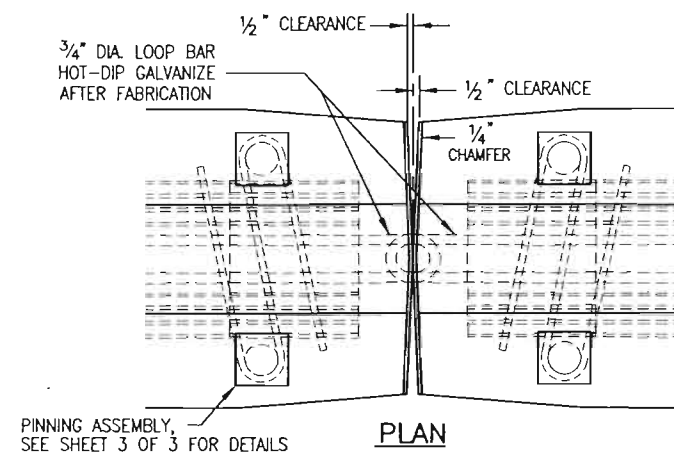
**PRECAST TYPE 7  
CONCRETE BARRIER**

Issued By: Project Development Branch July 02, 2002

**STANDARD PLAN NO.**

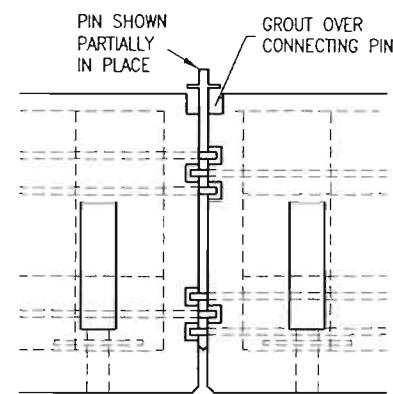
**M-606-14**

Sheet No. 1 of 3



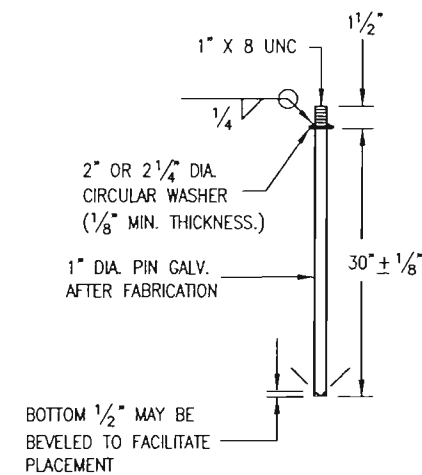
PLAN

FOR DETAILS NOT SHOWN,  
SEE SECTION VIEWS A-A, B-B, AND C-C  
ON SHEET 1 OF 3

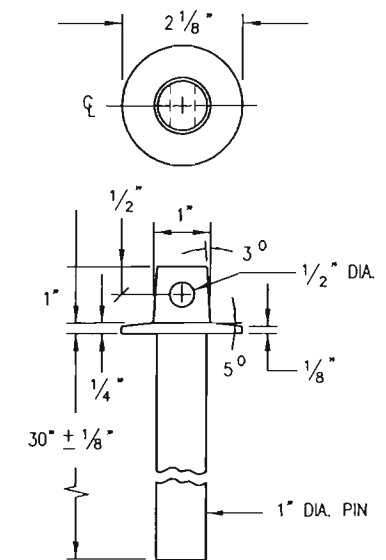


ELEVATION

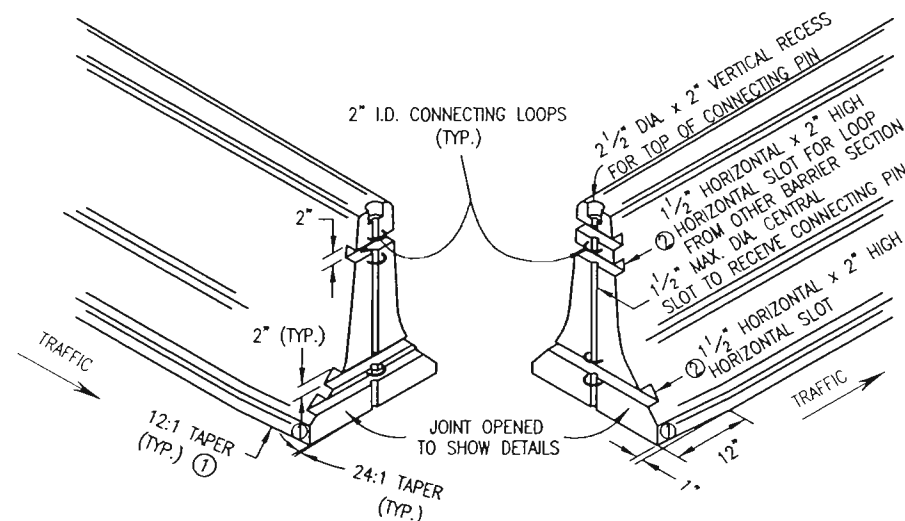
FOR DETAILS NOT SHOWN,  
SEE SECTION VIEWS A-A, B-B, AND C-C  
ON SHEET 1 OF 3



CONNECTING PIN DETAIL



ALTERNATE  
PIN DETAIL



JOINT STYLE

- ① A 1 INCH BY 12 INCH TAPER WILL BE REQUIRED AT THE BOTTOM OF ALL FOUR CORNERS OF BARRIER SECTIONS TO ELIMINATE SNAGGING OF SNOW PLOW BLADES. THE TAPER WILL BE OPTIONAL ON PERMANENT INSTALLATIONS.
- ② THE HORIZONTAL SLOTS SHALL BE 1 1/2 INCH (HORIZONTAL) AT THE CENTER OF THE BARRIER AND MAY DECREASE HORIZONTALLY AT THE EDGE OF THE BARRIER DUE TO THE (24:1) TAPER.

#### PIN NOTES

1. WASHERS SHALL BE FORGED AS AN INTEGRAL PART OF THE PIN, OR SHALL BE WELDED AS SHOWN.
2. PINS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
3. IF AN ALTERNATIVE TOP CONFIGURATION IS USED FOR LIFTING, THE LIFTING PIN SHALL BE PROVIDED. PINS MUST CONFORM TO CRITICAL DIMENSIONS (PIN LENGTH DIAMETER).
4. PINS SHALL CONFORM TO ASTM A449.
5. APPROVED NON-SHRINK GROUT SHALL BE USED FOR GROUTING OVER ALL PINS, AND GROUTING OF SCUPPERS.
6. JOINTS BETWEEN CAST-IN-PLACE GUARDRAIL TYPE 7 AND PERMANENT INSTALLATION PRECAST TYPE 7 CONCRETE BARRIER, SHALL INCLUDE ALL REGRESSES AND LOOPS IN THE CAST-IN-PLACE END, ALONG WITH THE PIN TO COMPLETE THE TYPICAL PRECAST TYPE 7 CONCRETE BARRIER JOINT.

### DETAILS FOR PIN AND LOOP CONNECTION

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Denver, Colorado 80222  
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Computer File Information

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Drawing File Name: 6060140203.dwg

Acad Version: R14 Scale: NA Units: English

Standard Plan Revised

Date: Comments:

7/17/03 No Revisions

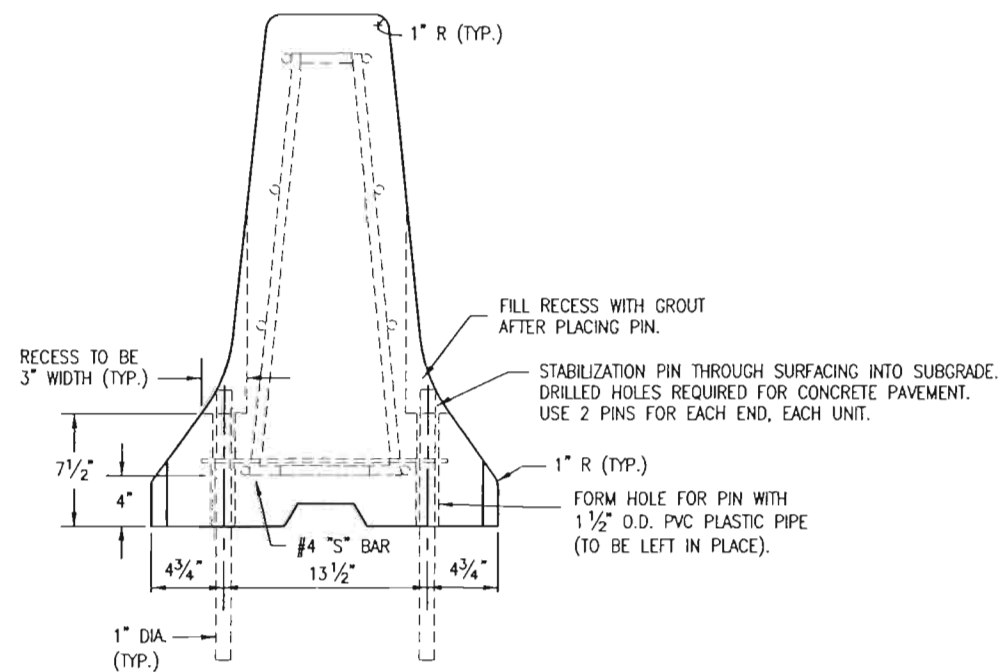
PRECAST TYPE 7  
CONCRETE BARRIER

Issued By: Project Development Branch July 02, 2002

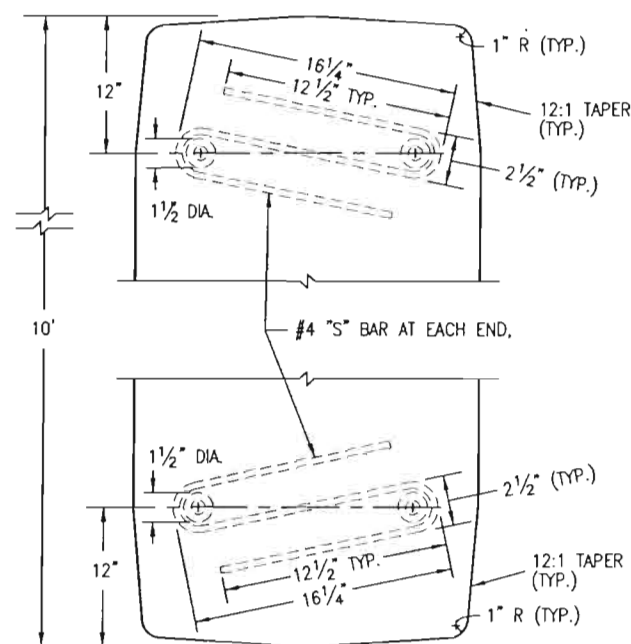
STANDARD PLAN NO.

M-606-14

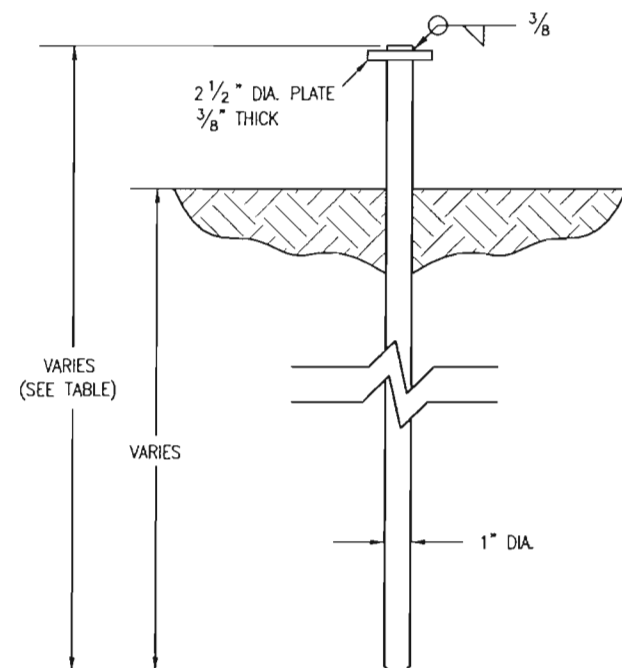
Sheet No. 2 of 3



ELEVATION VIEW WITH PINS



PLAN VIEW OF S BAR ENDS



STABILIZATION PIN  
(ASTM A 36 STEEL)

TABLE OF STABILIZATION PIN LENGTHS

ROAD SURFACE	LENGTH
CONCRETE	2 FT. - 6 IN.
HBP	3 FT.
SOIL	3 FT. - 6 IN.

DETAILS FOR STABILIZATION OF PERMANENT  
OR TEMPORARY PINNED PRECAST TYPE 7 CONCRETE BARRIER

# GENERAL NOTES

- SEE SHEET 1 OF 3 FOR REINFORCEMENT AND OTHER DETAILS NOT SHOWN HERE.
- PERMANENT PRECAST BARRIER USED TO REPLACE OTHER CONCRETE BARRIERS, SHALL BE IN NEW CONDITION, UNDAMAGED, WITH NO REPAIRS.
- FOR TEMPORARY INSTALLATIONS, A MINIMUM 4 FT. CLEAR ZONE MUST EXIST FROM THE CENTERLINE OF THE CONCRETE BARRIER TO ANY OBSTRUCTIONS BEHIND IT. IN TEMPORARY INSTALLATIONS WITH LESS THEN A 4 FT. MINIMUM CLEAR ZONE, STABILIZATION PINS SHALL BE USED ON EACH BARRIER UNIT ADJACENT TO, AND WITHIN 10 FT. OF BOTH SIDES OF THE OBSTRUCTION.
- FOR TERMINAL ANCHORING OF THE PERMANENT INSTALLATION OF PRECAST TYPE 7 CONCRETE BARRIER. SEE THE END ANCHORAGE DETAIL ON SHEET M-606-13, 1 OF 4.
- APPROVED NON-SHRINK GROUT SHALL BE USED FOR GROUTING OVER ALL PINS AND GROUTING OF SCUPPERS.

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Drawing File Name: 6060140303.dwg

Acad Version: R14 Scale: NA Units: English

## Standard Plan Revised

Date: 7/17/03 Comments: No Revisions

# PRECAST TYPE 7 CONCRETE BARRIER

Issued By: Project Development Branch July 02, 2002

## STANDARD PLAN NO.

M-606-14

Sheet No. 3 of 3