

AS CONSTRUCTED PLANS
RETURN TO DIST. 4 DESIGN

DEPARTMENT OF HIGHWAYS STATE OF COLORADO

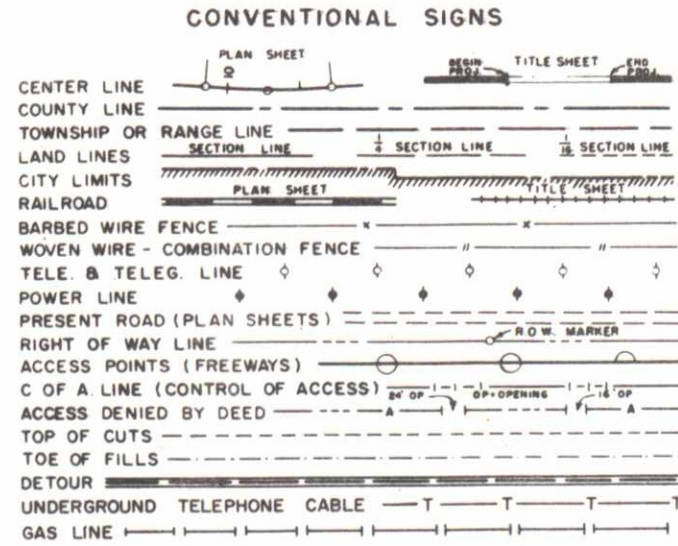
R.O.W. acquired under projects
F-FG 004-1(6) and F 44(8)

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	F 004-1(42)	1

AS CONSTRUCTED
REVISED DATE
OCTOBER 31, 1967

INDEX OF SHEETS

PLAN AND PROFILE AS CONSTRUCTED FEDERAL AID PROJECT NO. F 004-1(42) STATE HIGHWAY NO. 14 LARIMER COUNTY

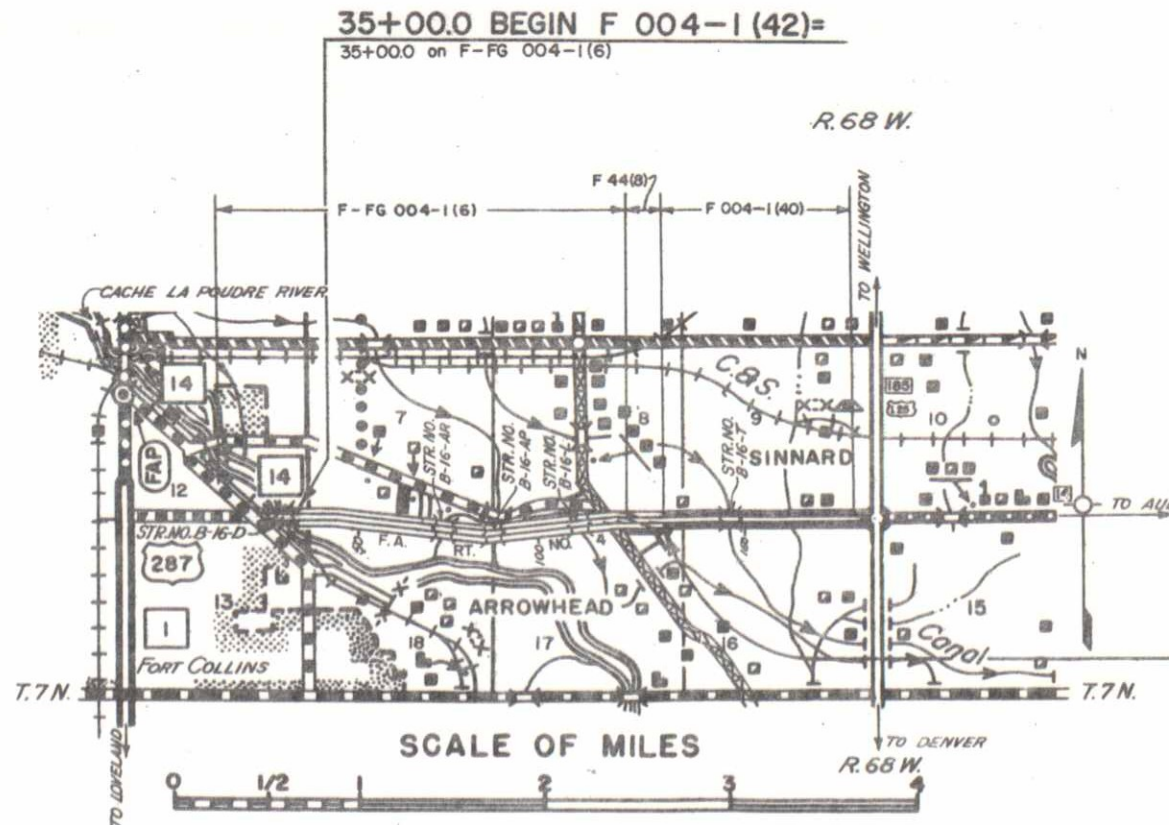


SCALES OF ORIGINAL DRAWINGS
ON PLAN, 1 IN. = 100 FT.
ON PROFILE, 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL
GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

- SHEET NO
1. Sketch Map, Title Page and Tabulation of Length and Design Data.
 2. Typical Sections.
 3. 3A General Notes, Summary of Earthwork Quantities, Tabulation of Left Turn Slots, Delineators, Curb and Gutter and Details of Special Headwall and Concrete Collar.
 4. Summary of Approximate Quantities.
 - 5-6. List of Structures.
 7. Surfacing and Subbase Plan.
 8. Details of Intersection, Sta. 118+ "AS CONSTRUCTED NO REV"
 - 9-11. Details of Concrete Box Culverts, Sta. 73+, 86+ & 116+
 - 12-15. Alignment Plan and Profile. (Details of Accel. & Decel. Lanes, Detail of Curbed Median and Timber Guard Post Placement on Sheet No. 15)
 - 16-18. Cross Sections for Structures.
 - 19-21. Cross Sections.

TABULATION OF LENGTH AND DESIGN DATA

STATION	LENGTH OF ROADWAY ALONG & OF MEDIAN		MAJOR STRUCTURES	
	LIN. FT.	LIN. FT.	LOADING	
35+00.0 BEGIN F004-1(42)= 35+00.0 On F-FG004-1(6)				
73+63.7 C.B.C.	3,863.7		33.2	
73+96.9		4,252.9		
116+49.8 C.B.C.			27.2	
116+77.0		816.2		
124+93.2 BK. EQUA. 124+83.8 AH.		362.3		
128+46.1 END F004-1(42)= 128+46.1 Begin F004-1(40)				
TOTALS	9,295.1		60.4	
SUMMARY	LIN. FT.	MILES		
	Roadway	9,295.1	1.761	
	MAJOR STRUCTURES	60.4	0.011	
NET & GROSS LENGTH	9,355.5	1.772		
DESIGN DATA				
MAXIMUM DEGREE OF CURVE	0° 30'			
MAXIMUM GRADE	0.82%			
MINIMUM N.P.S.D. HORIZONTAL	>1300'			
MINIMUM N.P.S.D. VERTICAL	980'			
MAXIMUM DESIGN SPEED	70 M.P.H.			



- M-203-A-1 Superelevation of Curves-Divided Highways (7-1-65)
- M-203-B Approach Roads, Flaring, Cut Slope Treatment, Bridge & Crest Widening. (7-1-65)
- M-203-C Ditch Types. (7-1-65)
- M-206-A Excavation and Backfill for Structures. (2 Sheets) (4-25-66)
- M-500-A Letters and Figures for Structure Numbers. (7-1-65)
- M-601-C Wingwalls for Concrete Box Culverts-4:1 Side Slopes. (2 Sheets) (7-1-65)
- M-603-A Reinforced Concrete Pipe. (12-7-65)
- M-603-B Concrete End and Angle Sections. (7-1-65)
- M-603-C Headwalls and End Sections for CSP Culverts. (7-1-65)
- M-604-A Concrete Inlets-Types 12 and 13. (3-28-66)
- M-609-A Curbs and Gutters. (2-14-66)
- M-612-B Timber Guard Posts. (2-14-66)
- M-612-C Delineators (2 Sheets) (7-1-65)
- M-614-A Timber Barricades (7-1-65)
- M-614-I A Construction Identification Signs. (7-1-65)
- M-614-T B Traffic Signing for Highway Construction. (3 Sheets) (7-1-65)
- M-617-A Culvert Pipe. (7-1-65)

DATE STARTED: OCTOBER 3, 1966
DATE COMPLETED: OCTOBER 31, 1967
ENGINEER: H.C. ELGIN
CONTRACTOR: PETER KIEWIT SONS' CO.
APPROVED BY: *Charles Elgin* Jan 25, 1968
DIST. CONST. ENGR. DATE

SEE SPECIAL PROVISIONS FOR
NOTICE TO BIDDERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

APPROVED: *Charles Elgin* 8-25-66
CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED: _____ DATE _____
DIVISION ENGINEER

J.R.W.

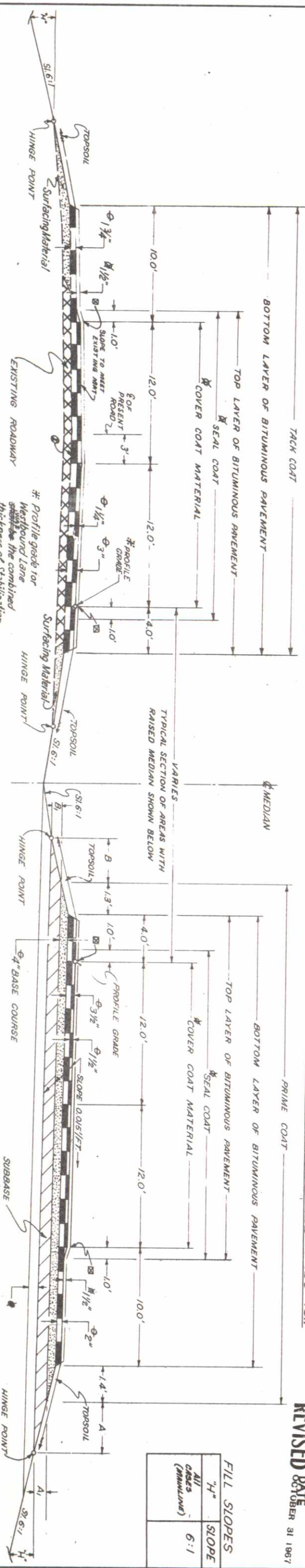
TYPICAL SECTIONS

WESTBOUND ~ 50+492 to 128+461

TRANSITION ~ 43+000 to 43+425 (E.B. & W.B.)
WESTBOUND ~ 43+425 to 50+492
EASTBOUND ~ 43+425 to 128+461

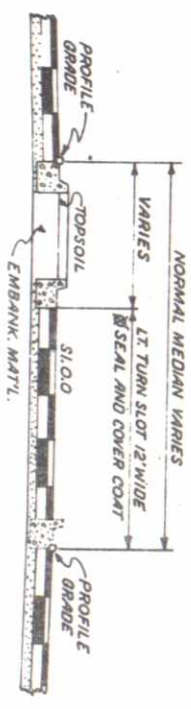
AS CONSTRUCTED
REVISED DATE
OCTOBER 31 1967

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	F 004-1(42)	2	

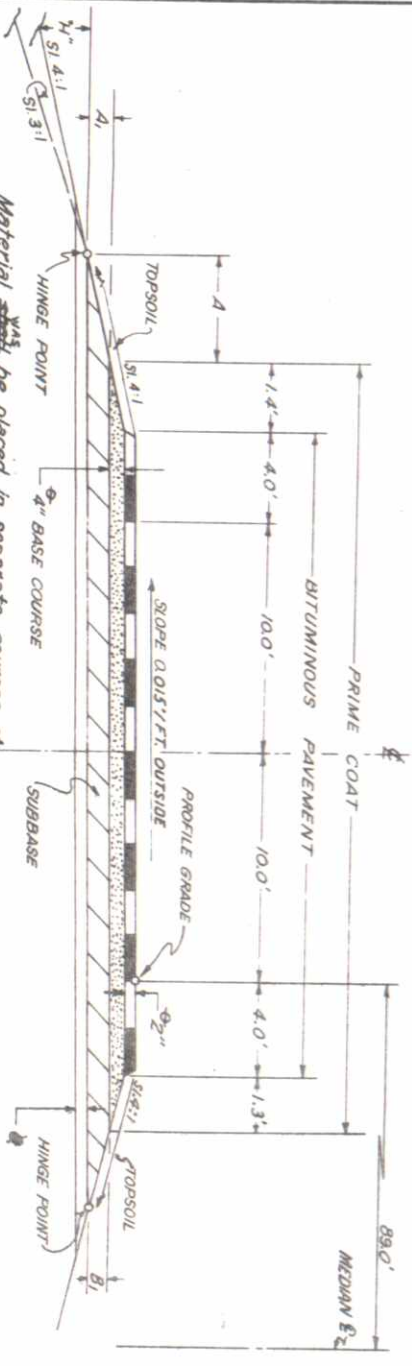


The depth and width of the side ditch shall be varied where necessary in order to provide proper drainage and/or entrance to drainage structures.

RAISED MEDIAN WITH LEFT TURN SLOT



FRONTAGE ROAD



Material shall be placed in separate courses at the following rates per 100 linear feet of roadway:

Bituminous Pavement _____ Tons 35
Base Course _____ Tons 65

VARIES
TYPICAL SECTION OF AREAS WITH RAISED MEDIAN SHOWN BELOW

Quantities for Correcting Irregularities Aggr. Base Course and Hot Bit. Rev'm'l. shown on Surf. Plan for W. B. only.

Approximate thickness. Future construction. Location of solid white paint stripe. Distance below subgrade and locations where construction of embankment and treatment of gull areas with moisture and density control shall be required is shown elsewhere in these plans.

Bottom Layer of Bituminous Pavement shall be completed for full width before Top Layer of Bituminous Pavement is placed.

Material shall be placed in separate courses at the following rates per 100 linear feet of roadway:
Bituminous Pavement { Top Layer ~ 22 Tons
Bottom Layer ~ 41 Tons }
Base Course ~ 88 Tons

SUBBASE DESIGN THICKNESS	HINGE POINT DIMENSIONS				TONS/STA
	A	A ₁	B	B ₁	
13" Mainline	4.6'	1.2'	4.1'	1.0'	325
10" Front Rd	3.6'	0.9'	0.8'	0.8'	192

FILL SLOPES	"H" SLOPE
All cases (minimum)	6:1

FILL SLOPES	"H" SLOPE
3' or less	4:1
Over 3'	3:1

GENERAL NOTES

All work was constructed in accordance with the Standard Specifications applicable to the Project. All quantities on preliminary plans were considered approximate only.

All poles and signs encroaching on construction were moved by the owners. All side approach roads to the project as designated were primed and bituminous surfaced 2" thick to the Right of Way Line.

All guard posts interfering with construction were removed by State Maintenance Forces.

For final quantities of asphaltic road materials the following rate of application was used: PRIME COAT @ 0.35 Gals. per Sq. Yd.

Thickness of aggregate and bituminous pavement as shown is actual. This material was placed on the basis of tonnage shown on plans.

When ordered by the Engineer, a tack coat was applied between pavement courses to improve bond. Tack coat was placed at the approximate rate of 0.07 to 0.10 gallon per square yard if required and paid for as Item #11 Asphalt Cement (85-100 Penetration)

3-Timber Guard Posts were required at the end of Frontage Road which terminates into S. Rio Rd. Sta. 113+74. See Sheet No. 15. Posts were spaced at 5 Centers. Fr. Rd. Lt. requiring 10 Posts plus one post at each C.B.C. on the Frontage Road for a total of 16 Posts.

The entire embankment below subgrade plus one foot was constructed with Moisture and Density control. All cuts were treated in a like manner to a depth of one foot. Any excavation involved in this operation was not paid for separately.

Topsoil was placed 4" thick on all new embankments and cut slopes and in the median.

Emulsified Asphalt Type SS-1 was not used for a dust palliative on this project.

Quantities for Item 617 were computed on the basis of Concrete Culvert Pipe.

This project was seeded and fertilized on all areas not surfaced. For seeding the following rates were used.

COMMON NAME	BOTANICAL NAME	PERCENT PURITY	PERCENT GERMINATION	RATE PLS./ACRE
*Crested Wheat Grass (Fairway/Strain)	Agropyron Cristatum	90	85	10

Seeding was done with power-drawn drills.

*Commercial Fertilizer Regd. Where Type 13 Inlets were required they were connected to the C.B.C's thru the side of the box. The top slab of the box was not disturbed.

It was estimated that 600 hours of flagging would be required for this project.

Where culverts, portions of culverts or culvert extensions were to be placed in embankment areas, the new embankment was built to a sufficient elevation to allow shaping under the culvert.

SUMMARY OF EARTHWORK QUANTITIES Refer Sheet 3A

UNCLASSIFIED EXCAVATION (HAUL)		2,423 Cu. Yds.
From Cross Sections	Estimated for Subsidence	242
List of Structures as Embankment		2,145
List of Structures as Excavation		866
List of Structures as Ditch Excavation		10
Excavation for Topsoil		8,604
Total for pay quantity		14,890 Cu. Yds.
Embankment - From Cross Sections		112,410 Cu. Yds.
Embankment x 1.25		140,513 Cu. Yds.
BORROW (HAUL)		138,090 Cu. Yds.
To Make Embankments		8,604
To Replace Topsoil		14,669
Estimated for Subsidence		161,363 Cu. Yds.
Total for pay quantity		161,363 Cu. Yds.
EMBAKMENT (MODIFIED)		112,410 Cu. Yds.
Embankment (Net)		50,209 Cu. Yds.
Base of Cuts and Fills		2,745
From List of Structures as Embankment		165,434 Cu. Yds.

For information only

LEFT TURN SLOTS AND ACCEL. AND DECEL. LANES

STATION TO STATION	LT TURN SLOTS NO.	ACCEL. LANE	DECEL. LANE
40+ to 47+ (E.B. & W.B.)	2		
51+56 to 54+36 (E.B.)	1		
55+48 to 58+23 (W.B.)	1		
63+90 to 68+65 (E.B.)	1		
69+88 to 72+63 (W.B.)	1		
99+74 to 102+98 (E.B.)	1		
104+02 to 107+26 (W.B.)	1		
114+63 to 117+38 (E.B.)	1		
119+58 to 122+33 (W.B.)	1		
82+57 to 85+32 (E.B.)	1		
86+47 to 89+22 (W.B.)	1		
38+94 to 47+55 (E.B. & W.B.)	2	2	2
51+46 to 58+38 (E.B. & W.B.)	2	2	2
66+07 to 76+64 (W.B.)	1	1	1
63+43 to 72+46 (E.B.)	1	1	1
100+14 to 107+05 (E.B. & W.B.)	2	2	2
114+16 to 121+32 (W.B.)	1	1	1
113+45 to 122+82 (E.B.)	1	1	1
82+87 to 88+52 (E.B.)	1	1	1

For detail of Accel. and Decel. lanes see Sh. No. 15

AS CONSTRUCTED
 REVISED DATE
 OCTOBER 31 1961

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	FOO4-1422	3	

DELINEATORS

STATION	TYPE I EACH	TYPE II EACH	TYPE III EACH
32+ to 34+ (W.B.)		2	1
34+ to 35+ (W.B.)		1/4	1
37+ to 43+ (E.B. & W.B.)		24	2
44+ to 54+ (E.B. & W.B.)		24	2
55+ to 68+ (E.B. & W.B.)		47	4
69+ to 103+ (E.B. & W.B.)	17	47	4
104+ to 117+ (E.B. & W.B.)		24	2
119+ to 122+ (E.B. & W.B.)		12	1
Intersection Islands:			
117+ Lt. Curbed		1	3
117+ Lt. Striped		3	3
118+ Lt. Curbed		1	2
119+ Rt. Striped		3	2
Totals	17	155	18

For locations of delineators see plans / or Sheet No. 15
 Refer to Book #16, Page 47

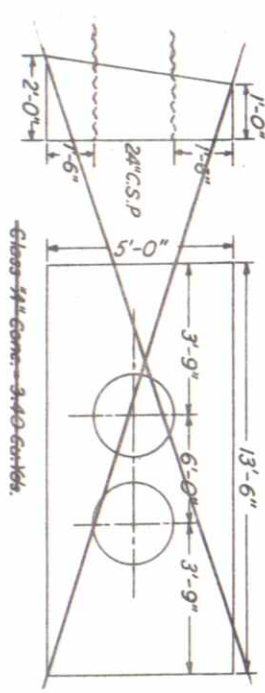
CURB AND GUTTER

STATION TO STATION	TYPE 2 LIN. FT.	TYPE 2 SECTION 1M LIN. FT.	TYPE 2 SECTION 1B LIN. FT.
35+00 to 43+57	732.3		654.5
44+61 to 47+85			657.4
51+16 to 54+92			654.7
55+44 to 59+68			654.7
63+46 to 68+70			656.2
69+82 to 73+06			655.4
99+74 to 102+98			655.4
104+02 to 107+26			722.5
114+15 to 117+10			722.5
119+26 to 122+86			764.1
82+13 to 85+37			653.2
86+41 to 89+65			654.7
Intersection Islands			
117+ Lt.			137.6
118+ Lt.			116.2
22+	2539		
Totals	1332.8		7640.6

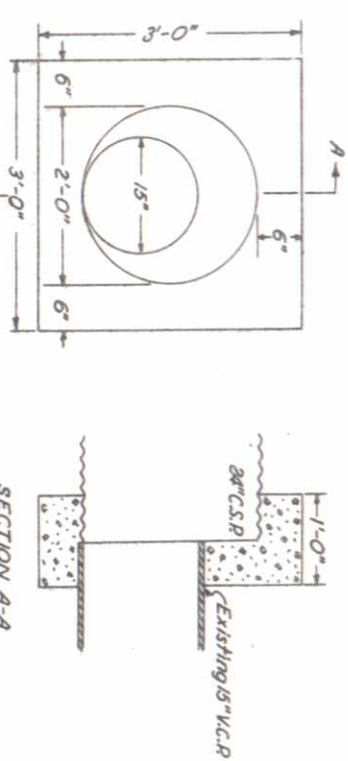
Turn Slots for details of Curb See Sh. No. 15

Includes 50 ft removed & replaced
 For Crossover, removed & replaced
 Refer to Book #16, page 53

DETAIL OF SPECIAL HEADWALL
 LT. STA. 46+10



DETAIL OF CONCRETE CONNECTING COLLAR STA. 115+



Class "B" Conc. = 1.50 Cu. Yds.

SUMMARY OF FINAL QUANTITIES

AS CONSTRUCTED
REVISED DATE 31 MAR 1982

CONTRACT ITEM NO.	ITEM	UNIT	ROADWAY			STR. NO. B-16-AR STA 74+			STR. NO. B-16-L STA 116+			NON-FED AID			PROJECT TOTALS	INDEX		TOTAL SHEETS																				
			Plan	Final	Diff	Plan	Final	Diff	Plan	Final	Diff	Plan	Final	Diff		Book	Page/Book		Page/Book	Page/Sheet																		
202	Removal of Structure	Each	12	15	+ 3										15	10	7	9	9	11	4	6																
202	Removal of Curb	Lin. Ft.	10	333	+ 323										333	10	7	9	9	11	4	6																
202	Removal of Bridge	Each	1	1	0										3	10	7	9	9	11	4	6																
202	Plug Culvert	Each	4	2	- 2										2	10	7	9	9	11	4	6																
203	Unclassified Excavation (Haul)	Cu. Yd.	15,380	22,958	+ 7,578										23,049	10	7	9	9	11	4	214																
203	Borrow (Haul)	Cu. Yd.	162,000	141,585	- 20,415										141,585	8						70																
203	Embankment (Modified)	Cu. Yd.	146,000	147,298	+ 1,298										147,298							21																
206	Structure Excavation (Haul)	Cu. Yd.	1,330	2,040	+ 710										2,809	10	7	9	9	11	4	6																
206	Structure Backfill (Class 3) (Haul)	Cu. Yd.	1,235	1,845	+ 610										3,316	10	7	9	9	11	4	6																
207	Topsoil (Haul)	Cu. Yd.	8,700	13,668	+ 4,968										13,668	16	17					70																
208	Seeding	Acres	16	19.34	+ 3.34										15.34	17	58																					
209	Wetting	M. Gal.	5,680	9,382.15	+ 3,702.15										9,382.15	FORM 7																						
210	Reset Manhole Structure	Each	7	13	+ 6										13	16	9					6																
210	Reset End Section	Each	9	14	+ 5										14	18	9					6																
210	Relay Pipe (18 inch)	Lin. Ft.	858	838	- 20										838	428						6																
210	Relay Pipe (24 inch)	Lin. Ft.	50	428	+ 378										428							6																
304	Aggregate Base Course (Class 1) (Haul)	Ton	60,300	67,281.65	+ 6,981.65										67,281.65							7																
304	Aggregate Base Course (Class 6) (Haul)	Ton	23,200	23,654.75	+ 454.75										23,654.75							7																
403	Hot Bituminous Pavement (Grading E) (Haul and Asphalt)	Ton	18,760	22,540.95	+ 3,780.95										22,680.95	18	17					7																
411	Asphalt Cement (85-100 Penetration)	Ton	23	4.63	- 24.31										4.53	18	18					6																
411	Emulsified Asphalt (SS-1)	Gal.	32,400	0	- 32,400										0	18	18					6																
411	Liquid Asphaltic Material (MC-70)	Gal.	114,800	39,184	- 75,616										39,184	18	16					6																
601	Concrete Class "A"	Cu. Yd.	521	522.42	+ 1.42										2,135.72	10	7	9	9	11	4	6																
602	Reinforcing Steel	Lb.	571.67	571.67	0										248,449	10	7	9	9	11	4	6																
603	18 Inch Corrugated Steel Pipe	Lin. Ft.	18	178	+ 160										178							6																
603	24 Inch Corrugated Steel Pipe	Lin. Ft.	534	521	- 13										521							6																
603	36 Inch Corrugated Steel Pipe	Lin. Ft.	262	158	- 104										158							6																
603	24 Inch Asbestos Bonded Corrugated Steel Pipe	Lin. Ft.	144	144	0										144							6																
603	29 x 18 Inch Corrugated Steel Pipe Arch	Lin. Ft.	172	127	- 45										127							6																
603	29 x 18 Inch Steel End Section	Each	6	4	- 2										4							6																
604	Inlet Type 13 (5 Foot)	Each	3	6	+ 3										6							6																
609	Curb and Gutter Type 2 (Section T-M)	Lin. Ft.	1,810	1,992.8	+ 182.8										1,992.8	16	53					6																
609	Curb and Gutter Type 2 (Section T-B)	Lin. Ft.	6,289	7,640.6	+ 1,351.6										7,640.6	16	53					6																
612	Timber Guard Post	Each	16	16	0										16	16	45					3																
612	Delineator (Type I)	Each	22	17	- 5										17	16	47					3																
612	Delineator (Type II)	Each	121	155	+ 34										155	16	47					3																
612	Delineator (Type III)	Each	16	18	+ 2										18	16	47					3																
614	Flagging	Hour	600	1,331.50	+ 731.50										1,331.50	FORM 7						6																
617	18 Inch Culvert Pipe	Lin. Ft.	766	721	- 45										721							6																
617	24 Inch Culvert Pipe	Lin. Ft.	356	323	- 33										323							6																
620	Field Office	Each	1	1	0										1	16	49					6																
620	Field Laboratory	Each	1	1	0										1	16	50					6																
620	Sanitary Facility	Each	1	1	0										1	16	51					6																
FORCE ACCOUNT																																						
Relocate Power Poles (By City of Ft. Collins Forces)															Lump Sum	2,604.10	1560.49	-1,043.61																				
Furnish and Install Identification signs (State Forces)															Lump Sum	2	2																					
Signing and Striping Entire Project (State Forces)															Lump Sum	2	2																					

LIST OF STRUCTURES

AS CONSTRUCTED
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OCTOBER 31 1967

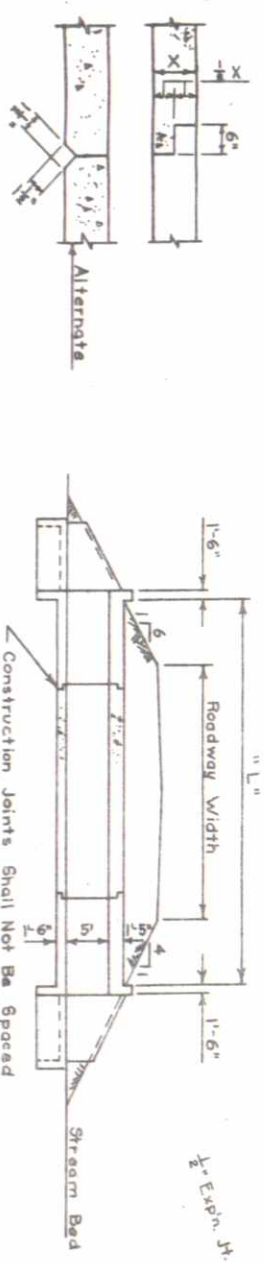
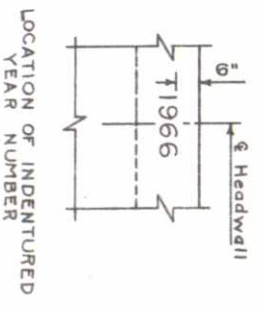
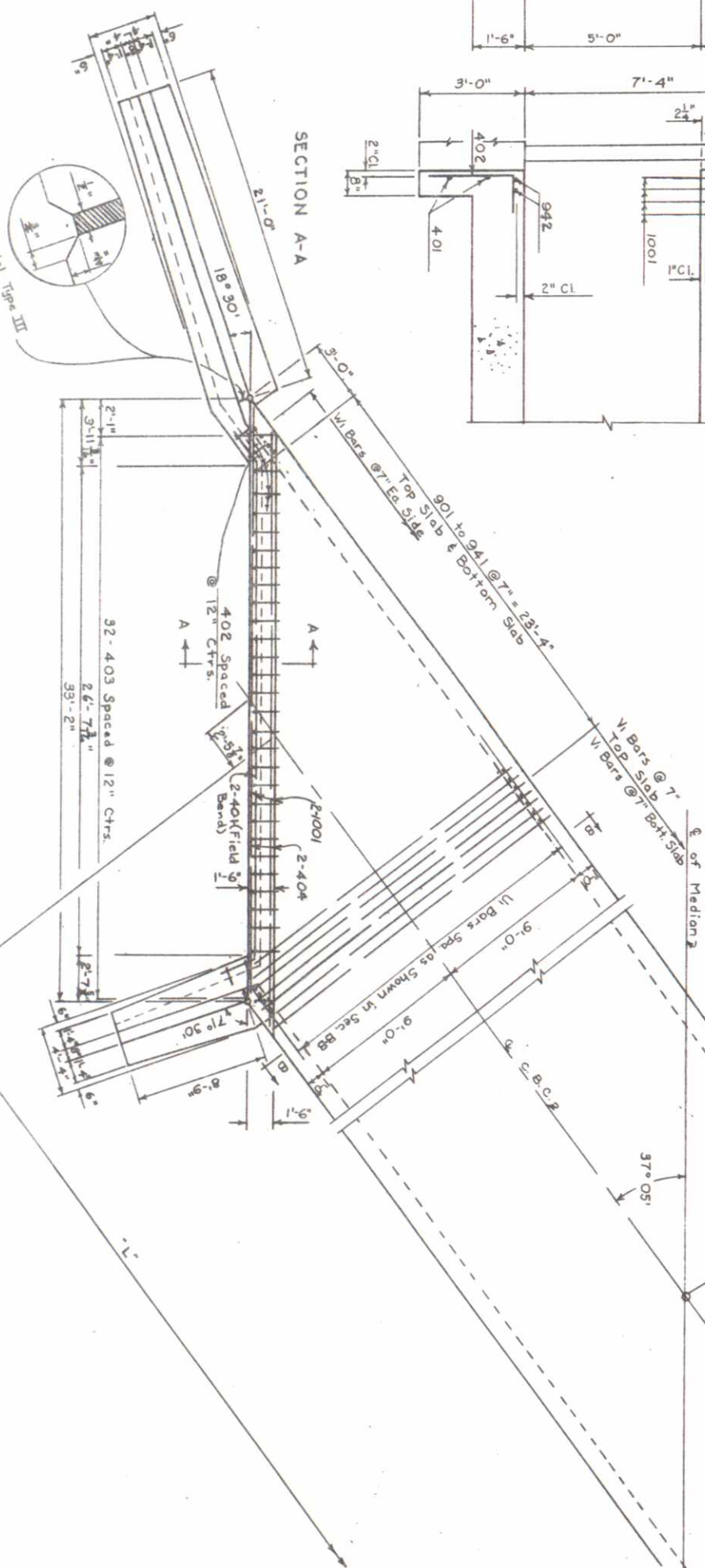
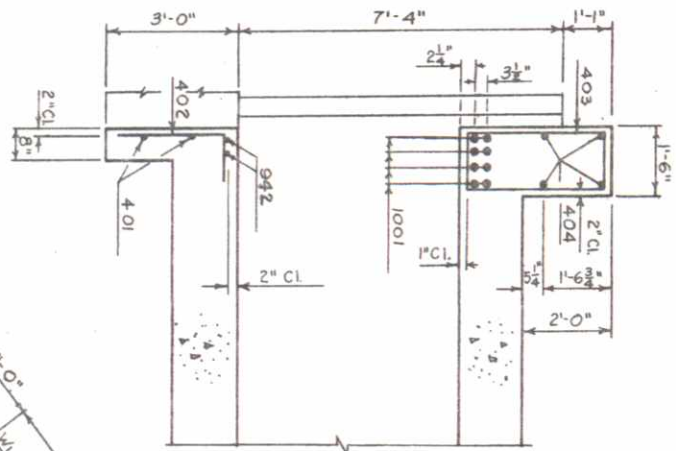
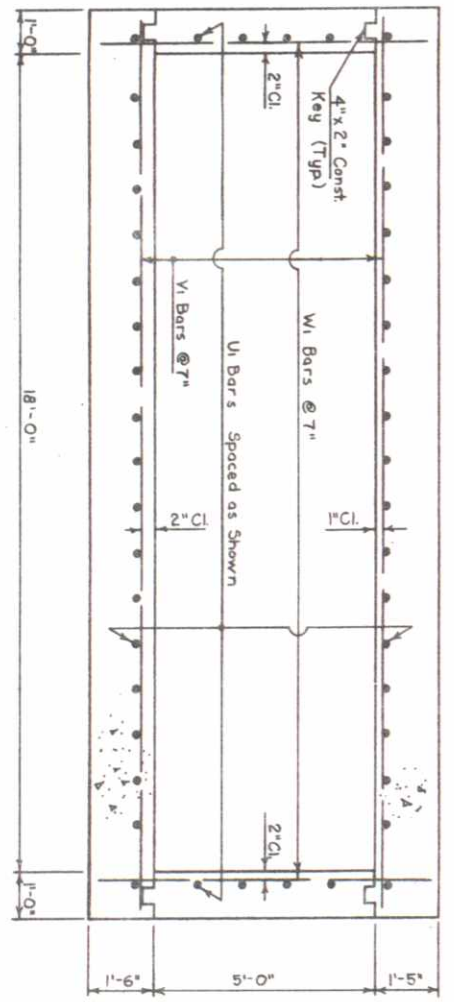
LOCATION	REMOVAL OF STRUCTURES NO.	UNCLASSIFIED EXCAVATION CUBIC YARDS	UNCL. DITCH	STRUCTURE EXCAVATION		STRUCTURE BACKFILL		AGGREGATE BASE COURSE CLASS 6 TONS	HOT BITUMINOUS PAVEMENT GR. E TONS	CONCRETE CUBIC YARDS	REINFORCING STEEL LBS	CULVERT PIPE		CORRUGATED STEEL PIPE LIN. FT.	CORR. STEEL PIPE ARCH LIN. FT.	CORR. STEEL END SECTIONS NO.	RELINING PIPE LIN. FT.	MISCELLANEOUS	REFER BOOK PAGE				
				CL. 3	MISC.	CL. 3	MISC.					18" 24" "H"	18" 24" "H"										
73+24 74+05 86+28		*	113	21 1 70	11 1 18					0.25	57,167	32	69	2	2	6	30	1- Type 13 Inlet (H=4'0") 1- Remove Bridge	14 15 14 14 14 21				
86+47 86+64 88+00 90+00	1 2	828 27		827 2 2	999 9 5					57,442								1- Plug Culvert	14 25 14 28 14 31 14 34				
91+26 95+75 96+25 99+65	1	Deleted	*	17	17								69	2				1- Plug Culvert	14 40 14 45 14 46 14 49				
102+00		*	*																	14 52			
103+50		*		12	15								89	2						14 55			
104+80				10	8								49	2						15 3			
107+50 109+6 112+05 114+60		Deleted	117 167	20 20	20 20					3.25			75	2		130				15 6 15 9 15 12 15 15			
118+50 115+66 123+00 118+48 119+50 119+90	2			18 19 31 17 14	8 33 12 9 9					150			35	2		48				15 22 15 18 15 21 15 24 15 32 15 30			
127+95 123+00 128+		Deleted	*																	15 33 15 36			
TOTALS	15	828	571	324	2040	1784				52742	57,167	721	323	15	10	178,521	158			127	4	838,428	

Ø Included in Surfacing Plan
* Included in Earthwork Quantities

PRO. ROAD NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9		F 004-1(42)	9	

AS CONSTRUCTED
 REVISED DATE 007 3 1 887

Sta. 73+60.3



DETAILS OF CONSTRUCTION JOINTS

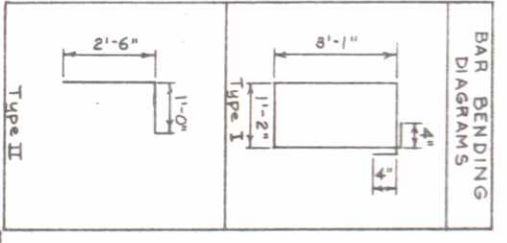
TYPICAL SECTION THROUGH CULVERT (Looking Up Station)

Place 4-501 bars diagonally around 18" C.M.P. as shown

Note:
 Placement of 18" C.M.P. to be determined by the Engineer.
 See Std. M-601-C for General Notes and wing details. (Use wings shown when "H" = 6'0")
 Bar dimensions as to top bar unless they are marked "C" (Clear).
 Quantities for culvert shall be (quantity for one lin. ft. of box times "L") plus (quantity for two headwalls) plus (quantity for four wings).
 This design is for a four foot high fill only.
 1 Inlet placed in Separation Right

DETAIL AT 18" C.M.P.

Mark	Size	No. Reqd.	Length	Type
U1	1/2"	46	L+4'-4"	Str.
401	1/2"	4	32'-0"	Str.
402	1/2"	62	31'-6"	II
403	1/2"	64	31'-2"	I
404	1/2"	8	32'-6"	Str.
W1	1/2"	18+343L	7'-6"	Str.
501	1/2"	4	4'-0"	Str.
V1	1/2"	4+343(L-2B)	19'-6"	Str.
901	1/2"	4	1'-8"	Str.
to 901	1/2"	4 ea.	bu 5 1/4" to 5"	Str.
941	1/2"	4	19'-2"	Str.
942	1/2"	4	32'-6"	Str.
1001	1/2"	16	32'-6"	Str.



Quantity Includes
 quantity of formwork

Item	Description	Unit	Quantity
202	Removal of Bridge	Each	1
203	Unclassified Excavation (haul)	CU Yd.	432
206	Structure Excavation (haul)	CU Yd.	409
206	Structure Backfill (Class 3) (haul)	CU Yd.	104
601	Concrete Class 39"	CU Yd.	839
602	Reinforcing Steel	Lb.	94,351
206	Structural Exc. (Class 3) (haul)	CU Yd.	73

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO

18' x 5' C.B.C.
 FILL=4' SKEW=37° 05' Lt

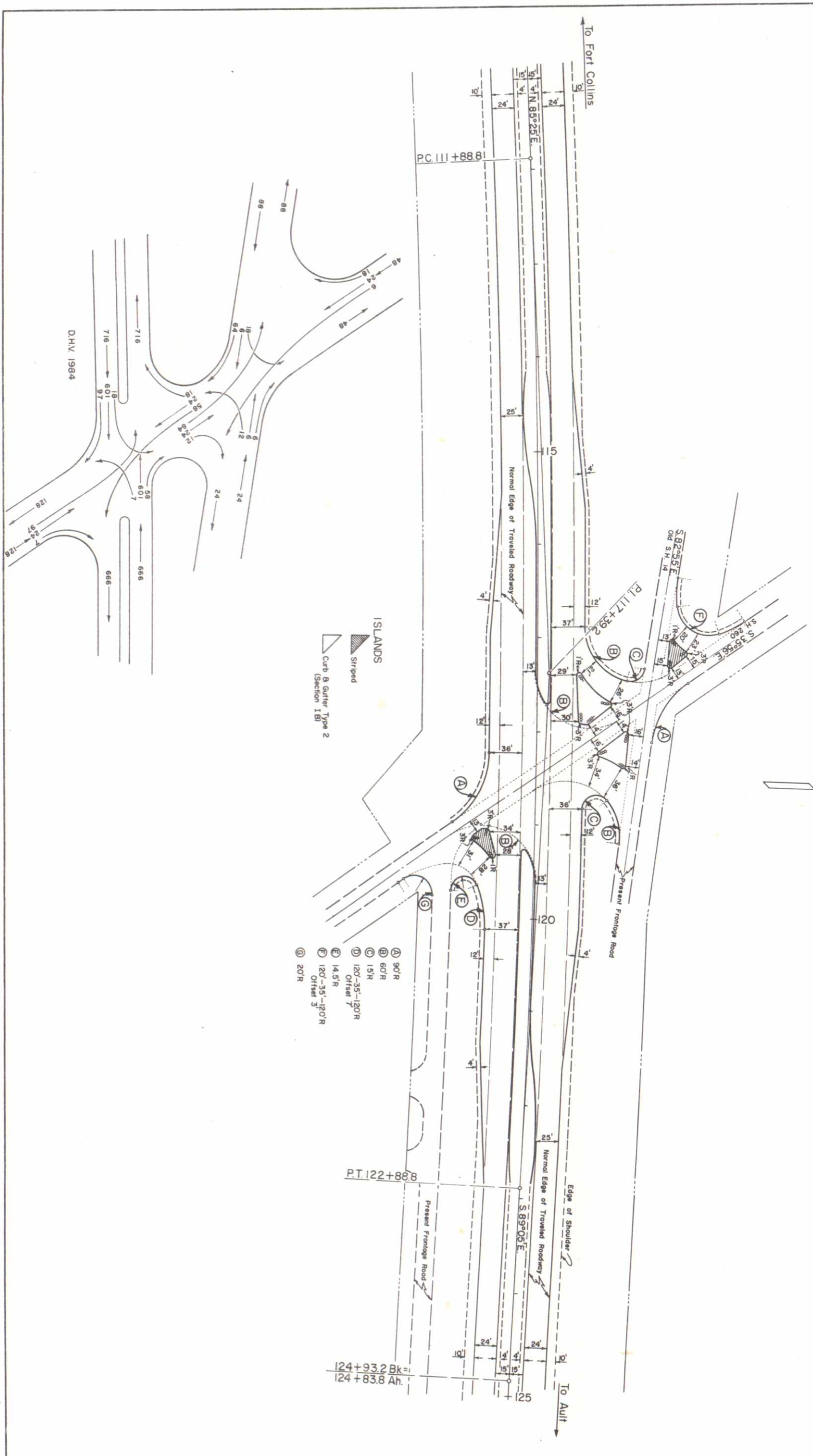
Dimensions are out to out of bars

STRUCTURE NO. B-16-AR

Approved by
 Checked by

FEDERAL ROAD REGION NO.	DISTRICT COLORADO	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9		F 004-1 (42)	8	

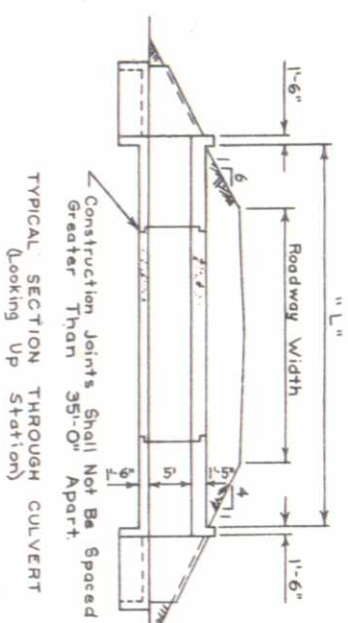
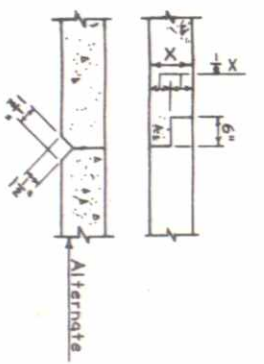
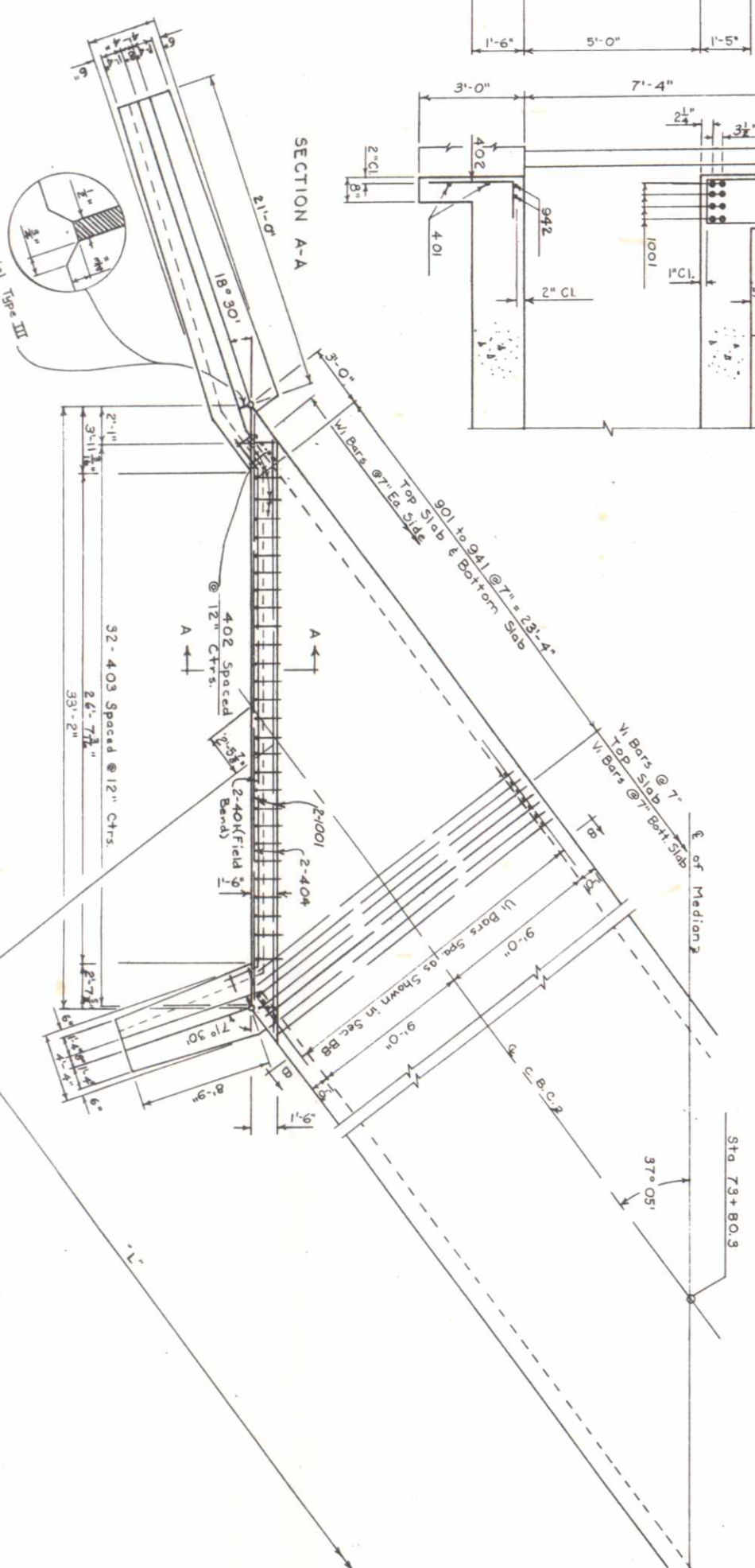
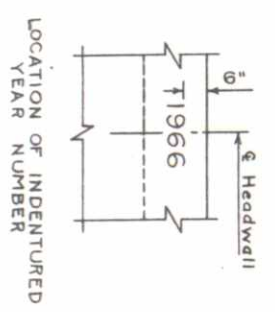
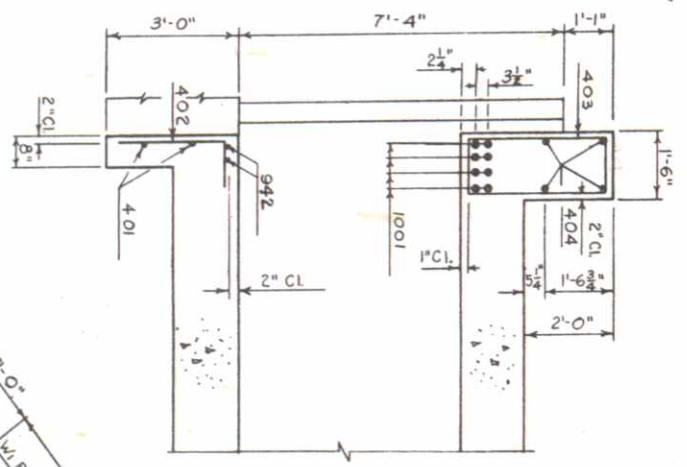
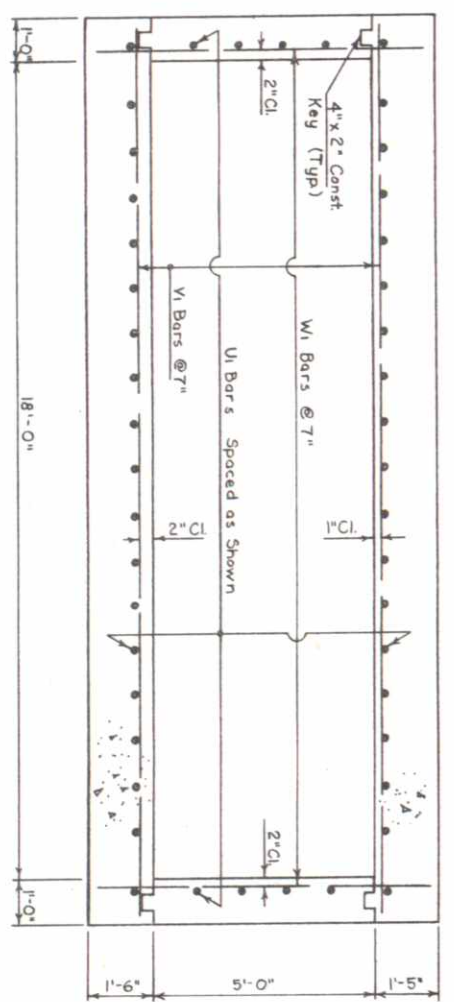
DETAILS OF INTERSECTION STA. 118+



- Ⓐ 90'R
- Ⓑ 60'R
- Ⓒ 15'R
- Ⓓ 120'-35'-120'R
- Ⓔ 14.5'R
- Ⓕ 120'-35'-120'R
- Ⓖ 20'R

DHV 1984

FILE NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FOO-4-(142)	9	



Notes:
 Placement of 18" C.M.P. to be determined by the Engineer. M-601-C for general notes and wing details (Use wings shown when W=6').
 Bar dimensions are to E of bar unless they are marked "C" (Clear).
 Quantities for culvert shall be (quantity for one lin. ft. of box times "L") plus (quantity for two headwalls) plus (quantity for four wings). This design is for a four foot high fill only.

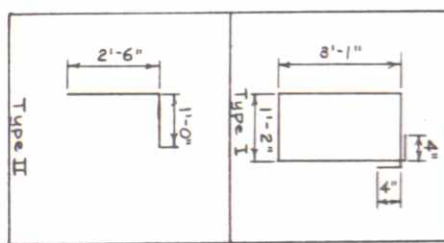
DETAILS OF CONSTRUCTION JOINTS

TYPICAL SECTION THROUGH CULVERT

DETAIL AT 18" C.M.P.

Mark	Size	No. Reqd.	Length	Type
U1	1/2"	46	L+4'-4"	Str.
401	1/2"	4	33'-0"	Str.
402	1/2"	62	31'-6"	II
403	1/2"	64	31'-2"	I
404	1/2"	8	32'-6"	Str.
W1	1/2"	10+343L	7'-6"	Str.
501	1/2"	4	4'-0"	Str.
V1	1/2"	2+343L(22)	19'-6"	Str.
901	1/2"	4	1'-8"	Str.
941	1/2"	4	19'-2"	Str.
942	1/2"	4	32'-6"	Str.
1001	1/2"	16	32'-6"	Str.

BAR BENDING DIAGRAMS



Item	Description	Unit	Quantity
202	Removal of Bridge	Each	1
203	Unclassified Excavation (Haul)	Cu. Yd.	369
206	Structure Excavation (Haul)	Cu. Yd.	394
206	Structure Backfill (Class 3) (Haul)	Cu. Yd.	771
601	Concrete Class 3	Cu. Yd.	839
602	Reinforcing Steel	Lb.	94,331

Conc. Class 3 = 2.531 Cu. Yds. per lin. ft. of box, 2' HxW = 23.2 Cu. Yds.
 Reinf. Steel = 284.56 Lbs. per lin. ft. of box, 2' HxW = 3778.8 Lbs.

Dimensions are out to out of bars

STRUCTURE NO. B-16-AR

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO

18' x 5' C. B. C.
 FILL=4' SKEW=37° 05' Lt

Across Cache La Poudre R.R. Ditch #2
 Near Ft. Collins Sec. 18 T. 7N. R. 68W
 S.W. 1/4 Sec. 18 T. 7N. R. 68W

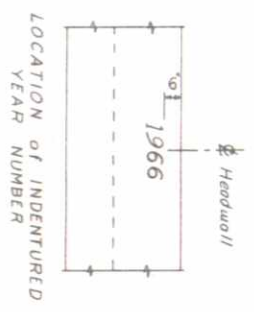
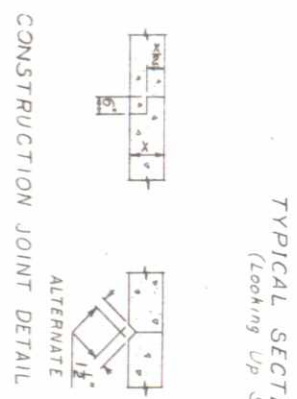
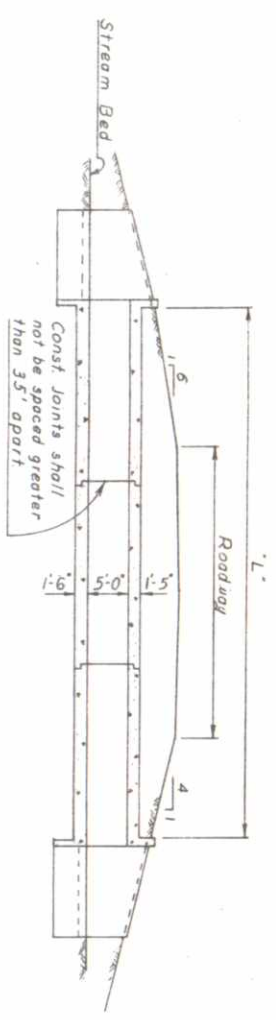
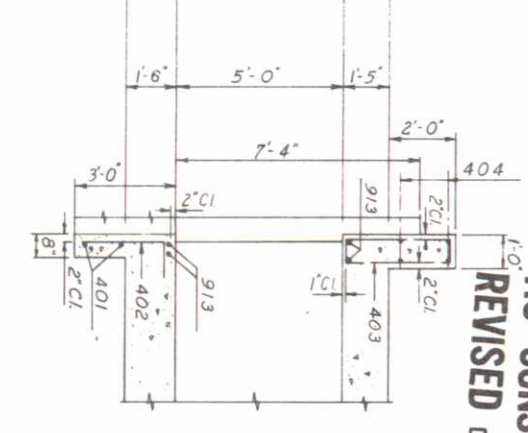
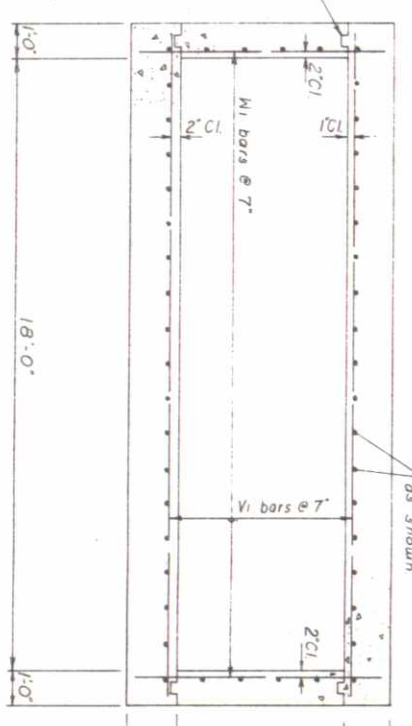
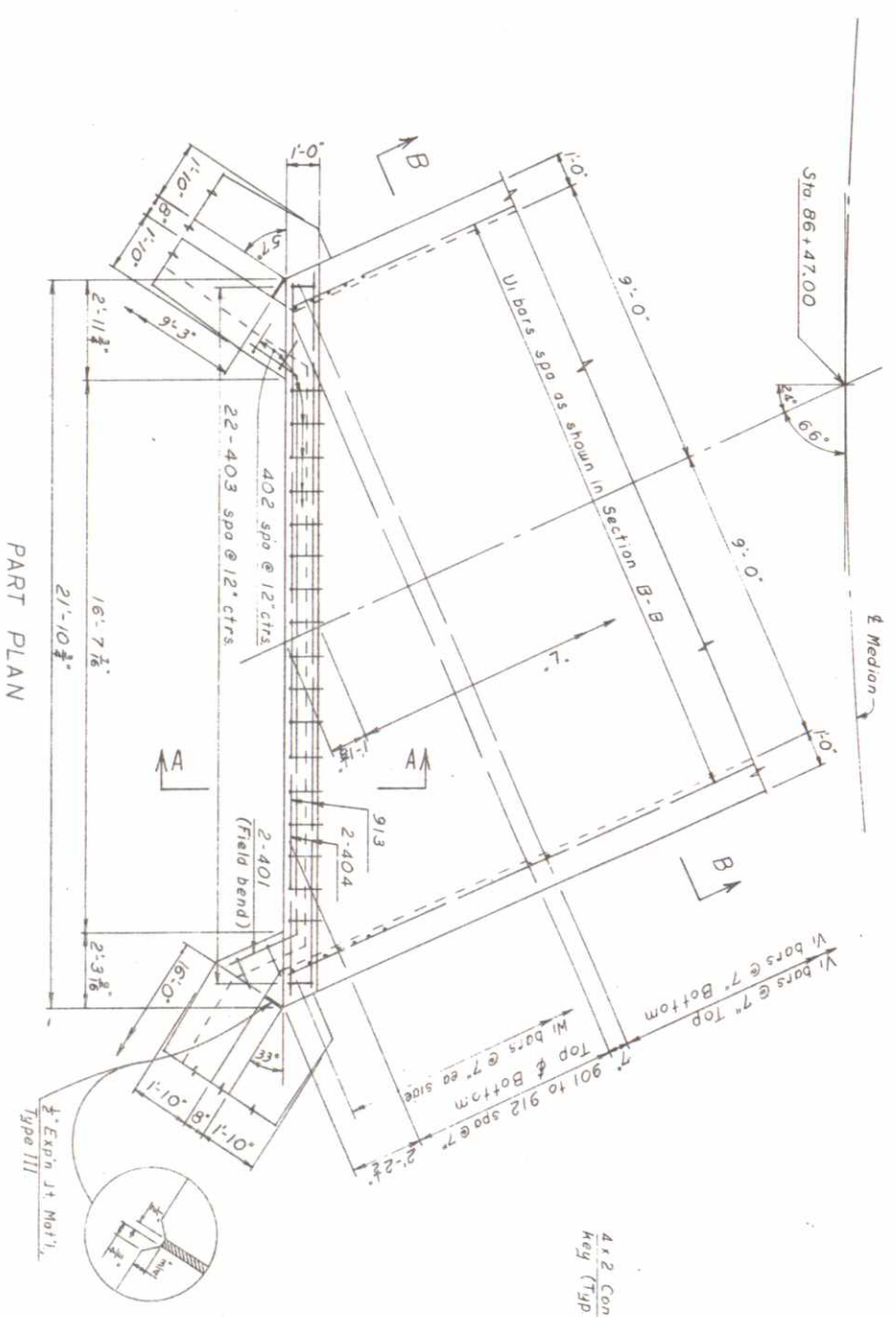
Designed by F.L.B.
 Made by D.H.B.
 Checked by _____
 Approved by _____
 Bridge Engineer
 Date: _____

DESIGN	DATE
BY	
BY	
BY	
BY	
BY	

REVISIONS

REV. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F004-1(42)	10	

AS CONSTRUCTED
REVISED DATE OCT 31 1967



TYPICAL SECTION THRU BOX
(Looking Up Station)

CONSTRUCTION JOINT DETAIL

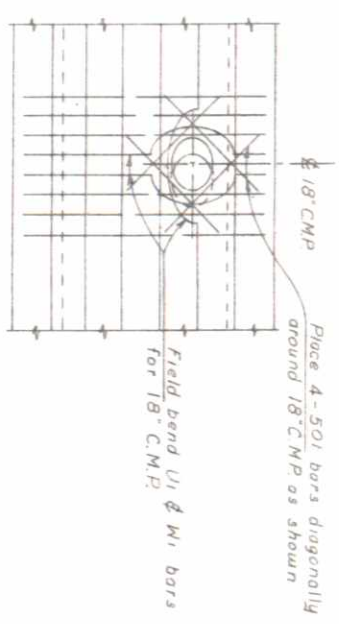
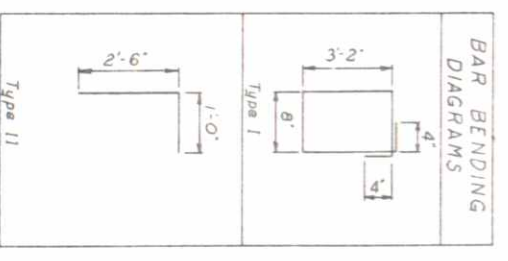
LOCATION OF INDENTURED YEAR NUMBER

Ref Book #10 Page 7
SUMMARY OF QUANTITIES

Item	Description	Unit	One Lin. ft.	Two Headwalls
601	Concrete, Class A	Cu Yd	2,531	11.4
602	Reinforcing Steel	Lb	234.56	1206.6

BAR LIST FOR 18' x 5' C.B.C. and 2 HEADWALLS

Mark	Size	No. Req'd	Length	Type
U1	1/2" Ø	46	L+1'-8"	Str.
401	1/2" Ø	4	21'-0"	Str.
402	1/2" Ø	42	3'-6"	II
403	1/2" Ø	44	8'-4"	I
404	1/2" Ø	8	21'-4"	Str.
W1	3/8" Ø	10+343 L	7'-5"	Str.
501	3/8" Ø	8	4'-0"	Str.
V1	1/8" Ø	2+343(-7)	19'-6"	Str.
901	1/8" Ø	4 ea.	18'-6"	Str.
912	1/8" Ø	8	4'-0 1/2"	Str.
913	1/8" Ø	8	21'-4"	Str.



NOTE:
Placement of 18' CMP to be determined by the Engineer.
See Std. M-601-C for General Notes and wing details. (Use wings shown when H=6')
Bar dimensions are to E of bar unless otherwise marked "Cl." (Clear).
Quantities for culvert shall be (quantity for one lin ft of box times L) plus (quantity for two headwalls) plus (quantities for four wings).
This design is for a 4' high fill only.
Inlet placed in separation right.

STRUCTURE NO. B-16-2

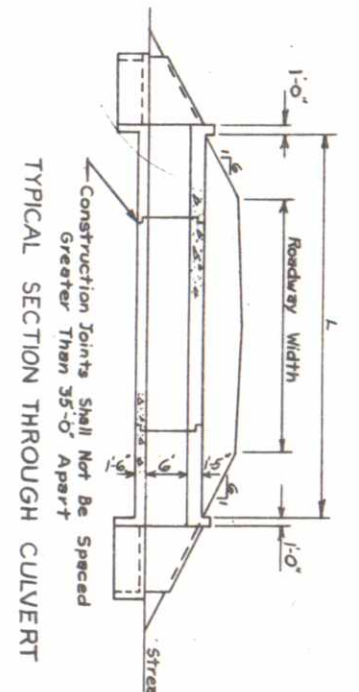
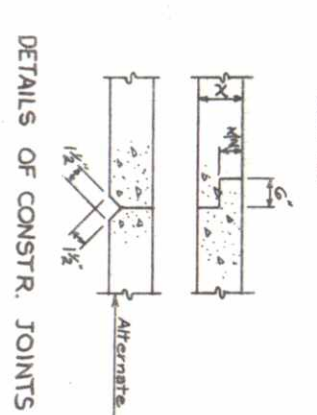
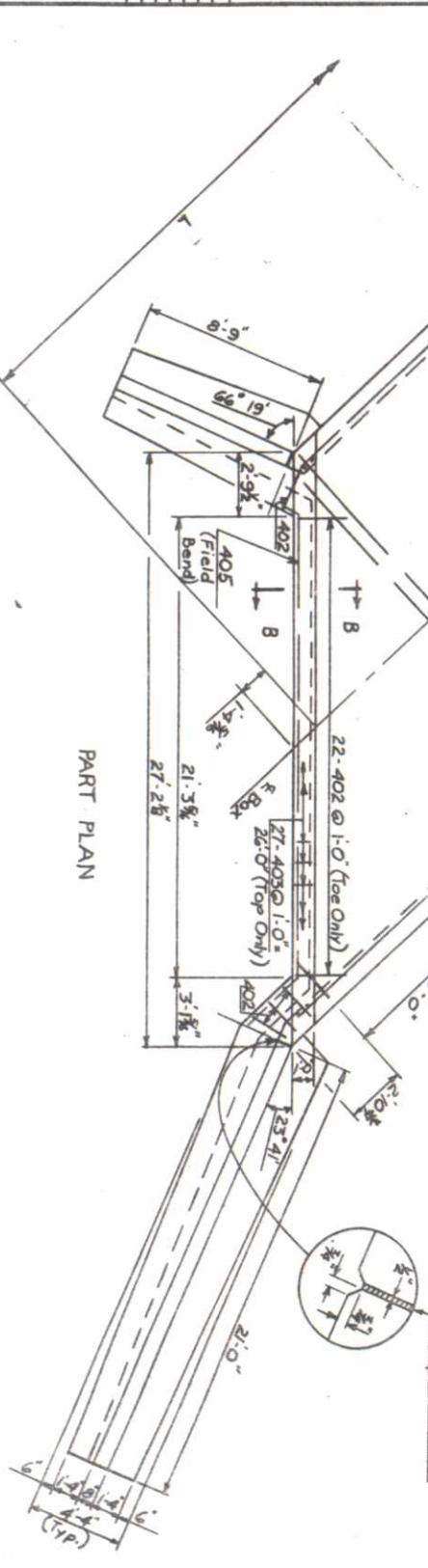
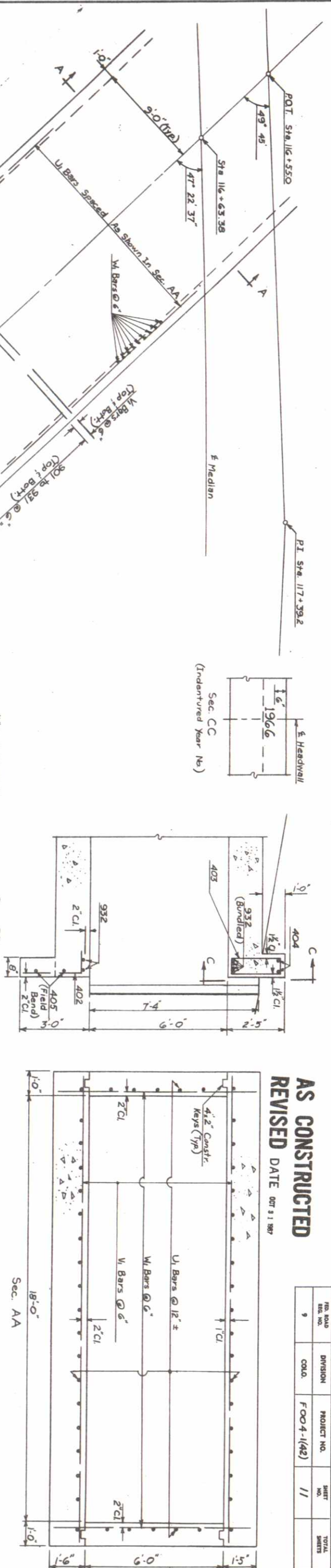
DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
18' x 5' C.B.C.
FILL=4' SKEW=66°RH

Across Cache la Poudre No. 2 Res. Canal
Sta. 86+47.00
Near Fort Collins See 17-T-21U-R68H

Designed by FL
Checked by JMH
Approved by JMH
Date: _____
Bridge Engineer
19

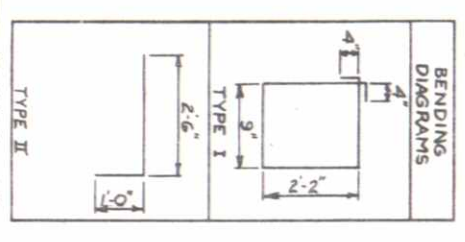
AS CONSTRUCTED
 REVISED DATE 007 31 897

TRA. ROAD REL. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FOO 4-1(42)	11	



BAR LIST FOR 18' x 6' C.B.C. AND 2 HEADWALLS

Mark	Size	No. Reqd	Length	Type
U1	1/2" #4	48	L+2'-2"	Str
402	1/2" #5	52	3'-6"	II
403	1/2" #5	54	3'-6"	I
404	1/2" #4	4	26'-8"	Str
405	1/2" #4	4	25'-6"	Str



Dimensions are O to O of Bars

SUMMARY OF QUANTITIES

Item	Description	Unit	Quantity
202	Removal of Bridge	Each	1
203	Unclassified Excavation (Hour)	CU/HR	222
206	Structure Excavation (Hour)	CU/HR	333
206	Structure Backfill (Class 3) (Hour)	CU/HR	333
601	Concrete Class 1/4"	CU/HR	222
602	Reinforcing Steel	Lb.	222

* C.B.C. Extended 90' Rt. from Original Plans
 See W.O. No. 8964

NOTE:
 See Std. M-601-C for General Notes and wing details (Use wings shown when H:G).
 Bar dimensions are to E of bar unless they are marked 'C' (Clear).
 Quantities for Culvert shall be (quan. for one Lin Ft of Box Times L) plus (quan. for 2 Headwalls) plus (quan. for 4 wings).
 This Design for 6' high Fill Only

STRUCTURE NO. B-16-L

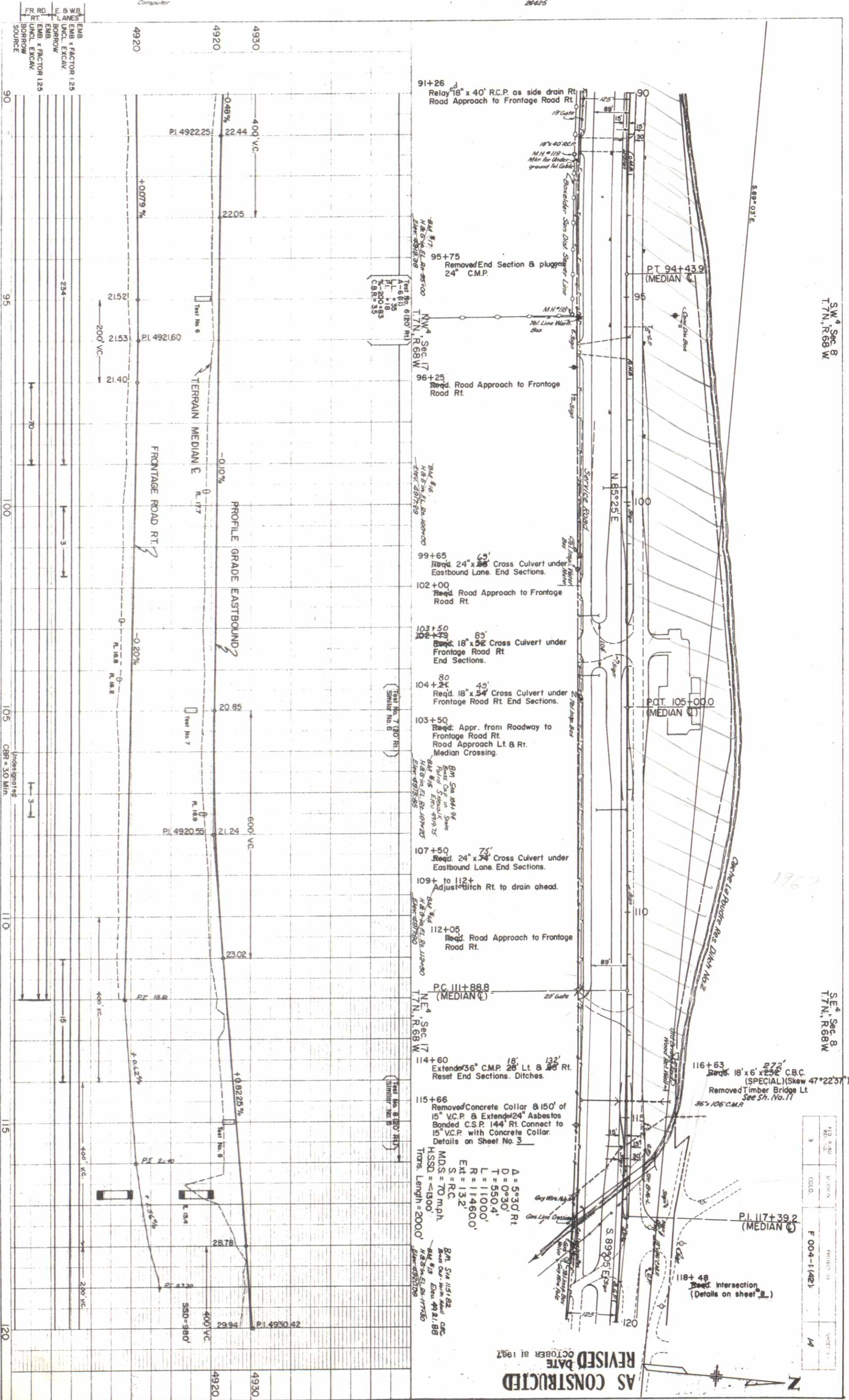
DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO
 18' x 6' C.B.C.
 47° 22' 37" Skew Rt
 Allowed 6' Fill

Acres Cache La Poudre 2 Res. Ditch
 Sta. 116 ± 63.38
 Near Ft. Collins, Sec. B-17-T. 7N. R. 29W

Designed by F.L.
 Made by EPA
 Checked by

Approved by
 Bridge Engineer
 Date: 19

Computer



SW 4 Sec 8
T.7N., R.68W

SE 4 Sec 8
T.7N., R.68W

1967

AS CONSTRUCTED
REVISED DATE
OCTOBER 31 1987

FIELD ROAD	SECTION	PROJECT NO.	SHEET NO.
9	COLO.	F 004-1421	14

UNDERSIGNED

CBR = 30 Min.

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