ADO DEPARTMENT OF HIGHWAYS
D. H. 126
RY, 1952

PLATTEVILLE WEST

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	S 0054 (2)	1	

COLORADO
DEPARTMENT OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. S 0054 (2)
STATE HIGHWAY NO. 66

WELD COUNTY

INDEX OF SHEETS

SHEET NO. 1 SKETCH MAP, TITLE PAGE AND TABULATION OF LENGTH AND DESIGN
2 TYPICAL SECTION, DETAILS OF SLOPE PAVING AND MITER FOR C.M.P. CULVERTS
3 SUMMARY OF APPROXIMATE QUANTITIES
4 SUB-BASE MATERIAL AND SURFACING PLANS, FENCING REQUIREMENTS AND TABULATION OF R.O.W. MARKERS AND GUARD POSTS
5-6 LOCATION OF MATERIAL PITS
7 LIST OF STRUCTURES
8-9 DETAILS OF BRIDGE STA. 202+
10 DETAILS OF BRIDGE STA. 425+
11 STANDARD METHODS FOR SUPERELEVATION AND WIDENING OF CURVES M-1-C
12 STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATEMENT AND WIDENING AT BRIDGES AND AT CREST OF GRADES M-2-EM
13 STANDARD MARKER POSTS M-7-C
14 STANDARD LETTERS AND FIGURES FOR YEAR NUMBERS AND STRUCTURE NUMBERS M-10-B
15 STANDARD TIMBER GUARD GUARD POSTS M-19-D
16 STANDARD WIRE FENCE WITH METAL POSTS M-27-C
17 STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS M-29-A
18 & 18a STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS (2 Sheets) M-29-B
19 STANDARD HEADWALLS AND APRONS FOR CMP CULVERTS M-102-H
20 STANDARD TYPES OF DITCHES AND CONSTRUCTION METHODS M-107-C
21 STANDARD SIPHON CORRUGATED GALVANIZED IRON PIPE WITH CONCRETE INLET AND OUTLET BOXES M-123-D
22-27 ALIGNMENT PLAN AND PROFILE
28 SUMMARY OF EARTHWORK QUANTITIES
29-71 CROSS SECTIONS
15a STANDARD METAL PLATE GUARD FENCE-BEAM AND NON-FLOATING TYPES M-21-B

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
GROSS LENGTH OF PROJECT 26,307.9 FT. = 4.982 MILES
NET LENGTH OF PROJECT 11,607.9 FT. = 2.198 MILES

CONVENTIONAL SIGNS

CENTER LINE — Plan Sheet — Title Sheet
RIGHT OF WAY LINE — R.O.W. Marker
COUNTY LINE
TOWNSHIP OR RANGE LINE
LAND LINES — Section Line — 1/4 Section Line — 1/16 Section Line
RAILROAD — Title Sheet — Plan Sheet
BARBED WIRE FENCE
COMBINATION WIRE FENCE
SNOW FENCE
TELEPHONE & TELEGRAPH LINES
POWER LINES
PRESENT ROAD (Plan Sheets)

AS CONSTRUCTED PLANS
RETURN TO DIST. 4 DESIGN

TABULATION OF LENGTH AND DESIGN

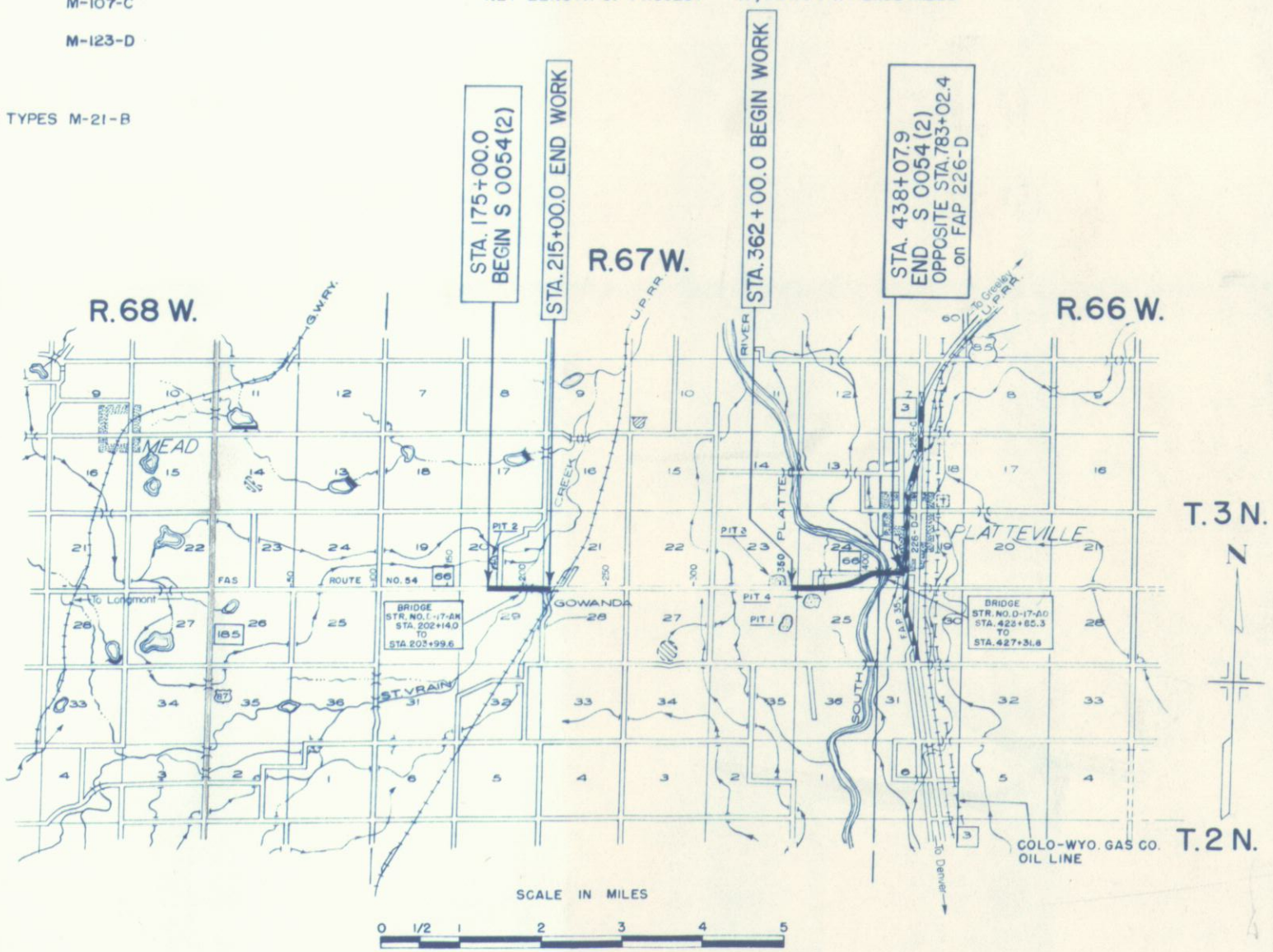
STATION	ROADWAY LIN. FT.	BRIDGES LIN. FT.	BRIDGES LOADING	NO WORK SECTION LIN. FT.
175+00.0 BEGIN S 0054(2)				
	2714.0			
202+14.0 Bridge St Vrain Creek 203+99.6		185.6	H-20-44	
	1100.4			
215+00 NO WORK SECTION 362+00				14,700.0
	6185.3			
423+85.3 Bridge Platte River 427+31.8		346.5	H-20-44	
	1076.1			
438+07.9 END S 0054(2) Opposite 783+02.4 on FAP 226-D				
TOTAL	11,075.8	532.1		14,700.0

SUMMARY

	GROSS LENGTH LIN. FT.	GROSS LENGTH MILES	NET LENGTH LIN. FT.	NET LENGTH MILES
Roadway	11,075.8	2.098	11,075.8	2.098
No Work Section	14,700.0	2.784		
Bridges	532.1	0.100	532.1	0.100
TOTAL GROSS LENGTH	26,307.9	4.982		
TOTAL NET LENGTH			11,607.9	2.198

DESIGN DATA

Maximum Degree of Curve	2° 00'
Maximum Grade	4.50 %
Minimum N.P.S.D. Horizontal	>1300'
Minimum N.P.S.D. Vertical	435'
Maximum Design Speed	55 M.P.H.



NOTICE TO BIDDERS

IT IS RECOMMENDED THAT BIDDERS ON THIS PROJECT GO OVER THE PLAN DETAILS WITH ONE OF THE FOLLOWING FIELD REPRESENTATIVES OF THIS DEPARTMENT:

E. W. Oviatt, Construction Engineer, Greeley, Colo.
H. J. Winter, Resident Engineer, Greeley, Colo.
Home Phone, Greeley 1629-J

COLORADO
DEPARTMENT OF HIGHWAYS

APPROVED: 12/1/55
CHIEF ENGINEER DATE

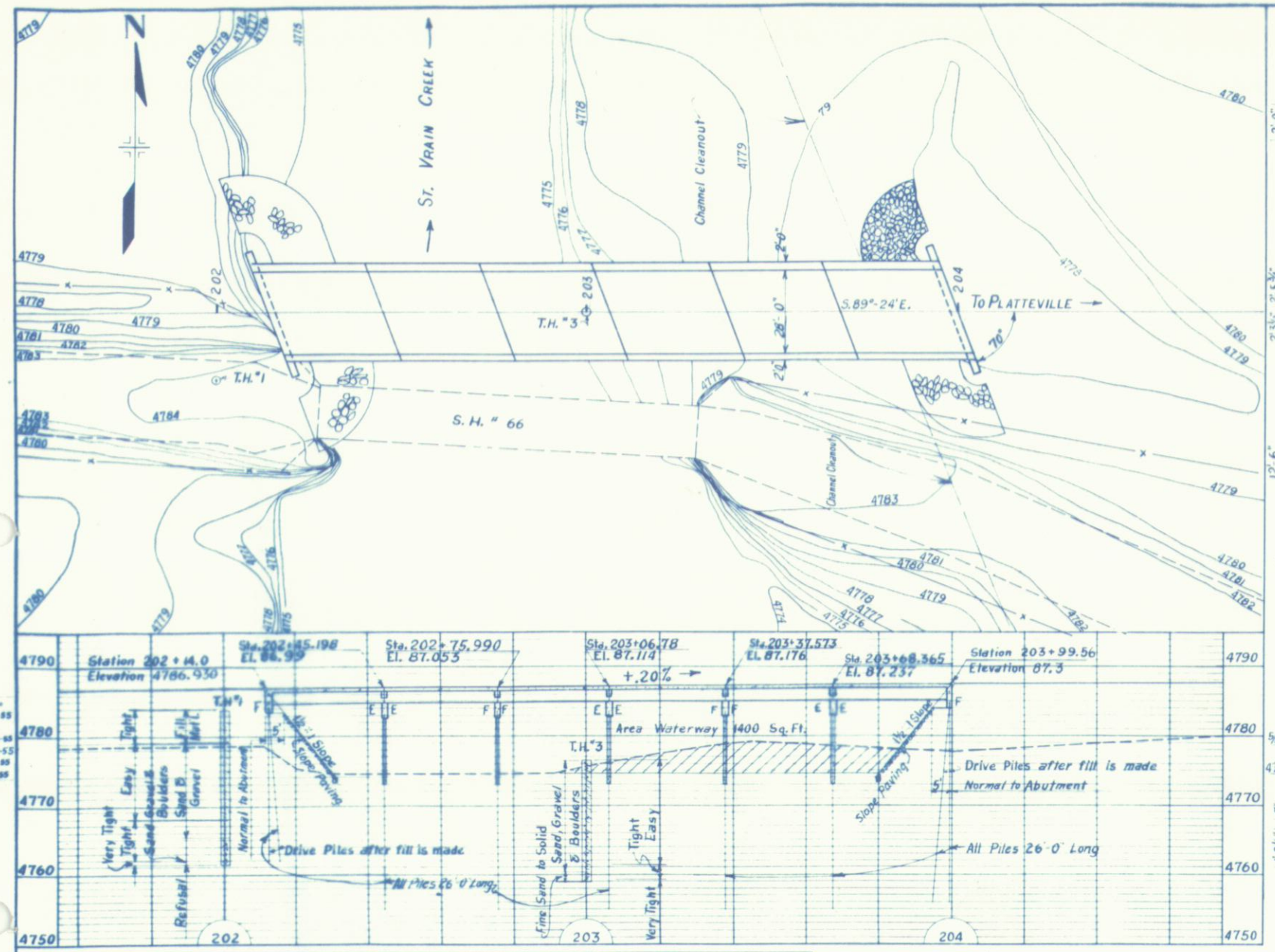
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

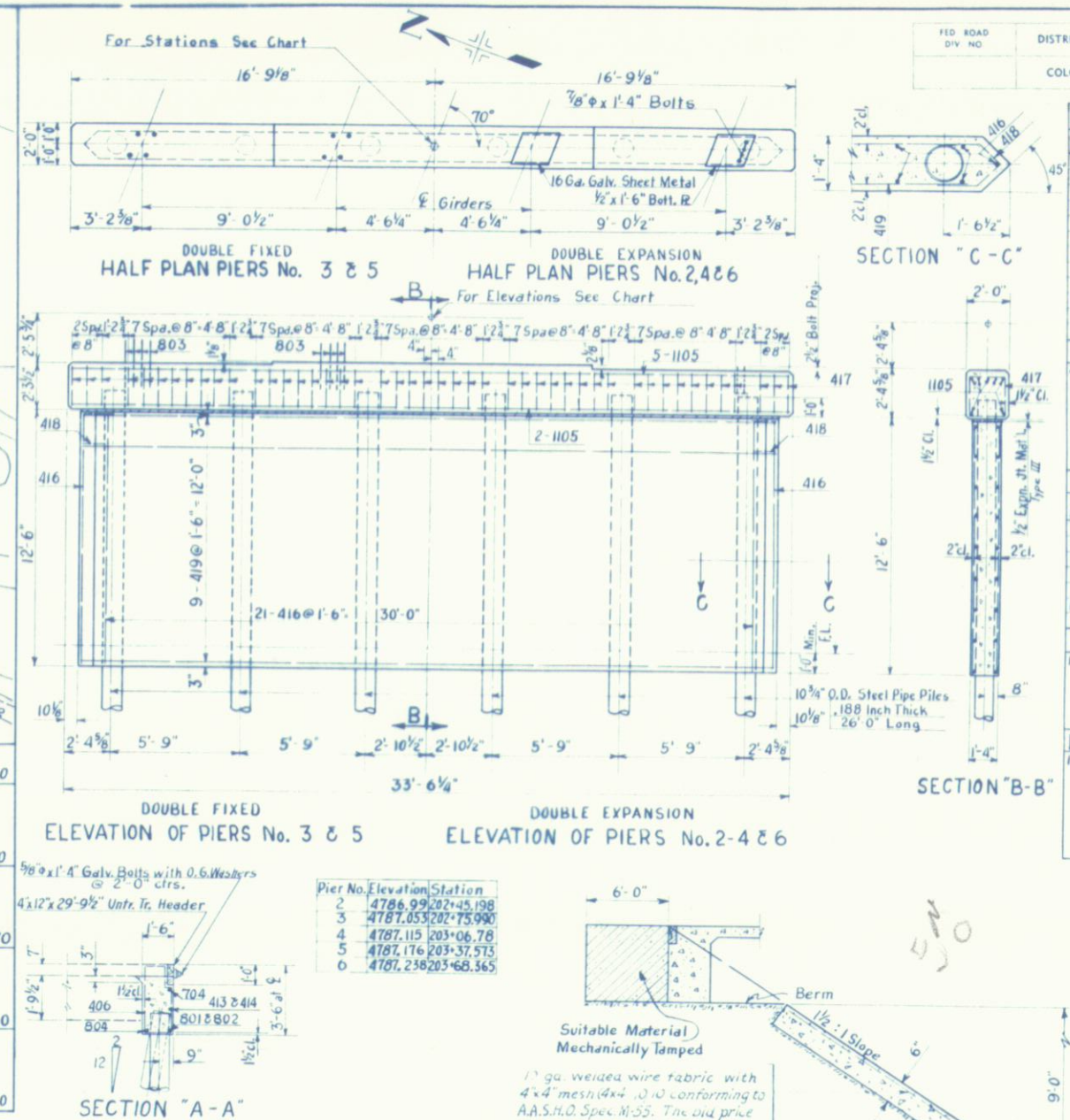
APPROVED: DATE
DISTRICT ENGINEER

OF HIGHWAYS
138
00
ACING
OADING DATA
RAL NOTES

REVISIONS

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLO.	S 0054 (2)	8	





BAR LIST - ONE ABUTMENT

Mark	Size	No. Reqd.	Lenght	Type	ℓ	m
406	1/2"Φ	30	10'-2"	II		
407			8'-3"			3'-0 1/2"
to	"	2 ea.	by 1'-0" to	I	0'-9"	to 6" to
411			4'-3"			1'-0 1/2"
412	"	4	11'-0"	I	1'-3"	3'-11"
413	"	1	30'-0"	Str.		
414	"	1	14'-3"	Str.		
704	7/8"Φ	1	39'-0"	Str.		
801	1"Φ	1	20'-0"	Str.		
802		1	24'-5"	Str.		
804		1	34'-3"	Str.		

BAR SUMMARY FOR ONE ABUT.

456 Lin. Ft. 1/2"Φ @ 0.668"/Lin. Ft.	=	305"
39 " " 7/8"Φ @ 2.044"/ " "	=	80"
79 " " 1"Φ @ 2.670"/ " "	=	211"
+ 1% ± Overrun	=	4"
Total	=	600"

Total for Abut. No. 1 = 600"
Total for Abut. No. 7 = 600"

BAR LIST - PIERS

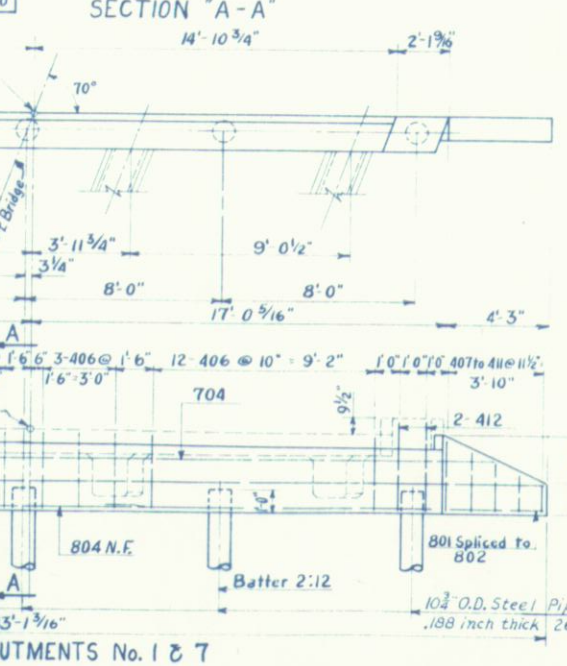
Mark	Size	No. Req'd. Fixed	No. Req'd. Exp.	Lenght	Type	ℓ	m
416	1/2"Φ	44	44	12'-2"	Str.		
417	"	46	46	7'-11"	I	1'-9"	1'-11 1/2"
418	"	18	18	3'-6"	III		
419	"	18	18	30'-0"	Str.		
803	1"Φ	16	-	2'-6"	Str.		
1105	1 3/8"Φ	7	7	33'-2"	Str.		

BAR SUMMARY FOR ONE PIER (Double Expansion)

1502 Lin. Ft. 1/2"Φ @ 0.668"/Lin. Ft.	=	1003"
232 " " 1 3/8"Φ @ 5.313" " "	=	1233"
+ 1% ± Overrun	=	24"
Total	=	2260"

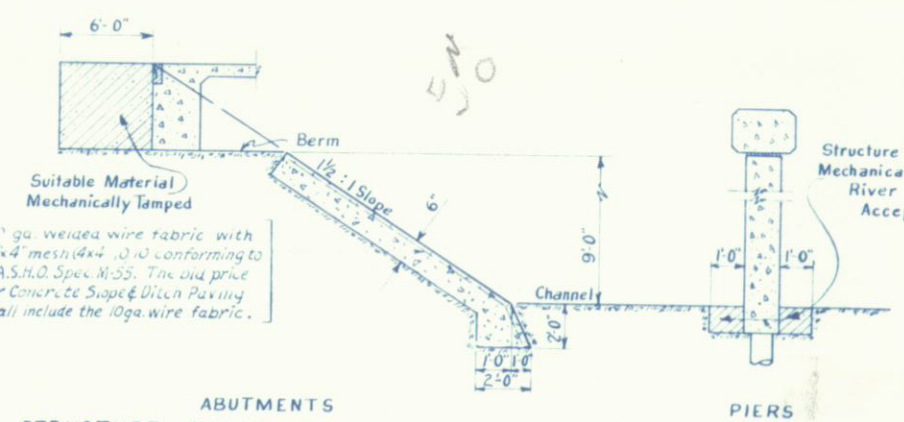
BAR SUMMARY FOR ONE PIER (Double Fixed)

1502 Lin. Ft. 1/2"Φ @ 0.668"/Lin. Ft.	=	1003"
40 " " 1"Φ @ 2.670" " "	=	107"
232 " " 1 3/8"Φ @ 5.313" " "	=	1233"
+ 1% ± Overrun	=	27"
Total	=	2370"



DETAILS OF ABUTMENTS No. 1 & 7

Pier No.	Elevation	Station
2	4786.99	202+45.198
3	4787.053	202+75.990
4	4787.115	203+06.78
5	4787.176	203+37.573
6	4787.238	203+68.365



ABUTMENTS

PIERS

STRUCTURE BACKFILL, MECHANICAL TAMPING & SLOPE PAVING DIAGRAMS

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.
ALL CONCRETE SHALL BE CLASS "A" AND AIR ENTRAINED AS SPECIFIED.
ALL CONCRETE SURFACES EXPOSED TO VIEW SHALL RECEIVE CLASS "1" SURFACE FINISH, EXCEPT THE UNDERSIDE OF FLOOR SLABS AND ABUTMENT FACES BETWEEN OUTSIDE STRINGERS.
CONCRETE GIRDERS, FLOOR SLABS, AND CURBS SHALL BE POURED MONOLITHICALLY.
FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S 1 S UNLESS FACED WITH PANEL BOARD.
FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.
SOUNDINGS AND DEPTH OF FOOTING SHOWN ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.
ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305 SST OR THE LATEST REVISION THEREOF AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. PRIMARY BARS SHALL NOT BE SPLICED AND SECONDARY BARS WHEN SPLICED SHALL LAP 20 DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.
ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM UNLESS OTHERWISE NOTED EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.
HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE 7/8" DIA. AND SHALL BE POWER DRIVEN.
WHEN TREATED TIMBER OR PILING IS SHOWN ON THE DRAWING THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.
WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.

LOADING DATA

LIVE LOAD: A.A.S.H.O. H-20-44
DEAD LOAD ASSUMES 75 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA

A.A.S.H.O. 1953 UNIT STRESSES EXCEPT AS NOTED

Reinforcing Steel	f_s	20000 lbs. per sq. in.
Structural Steel	f_s	18000 lbs. per sq. in.
	f_c	1200 lbs. per sq. in.
	n	10

SUMMARY OF QUANTITIES

Item	Description	Unit	Superstructure	Abut. 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Abut. 7	Total
11	Remove Present Bridge	Lump Sum									
13c	Unclassified Excavation	Cu. Yds.									2550 ◆
14a	Dry Rock Excavation (Str.)	Cu. Yds.									
14b	Dry Common Excavation (Str.)	Cu. Yds.									
14c	Wet Rock Excavation (Str.)	Cu. Yds.									
14d	Wet Common Excavation (Str.)	Cu. Yds.		26	7	7	7	7	7	26	87
16a	Structural Backfill (Class I)	Cu. Yds.			4	4	4	4	4		20
16c	Mechanical Tamping	Hour		3	1	1	1	1	1	3	11
18a	Sta. Yard Overhaul	Sta. Yd.									220
18b	Yard Mile Overhaul	Yd. Mi.									64
42a	Untreated Bridge Timber	Mft. bm.		.119						.119	.238
42b	Treated Bridge Timber	Mft. bm.	.228								.228
46a	Class "A" Concrete	Cu. Yds.	222.0	9.0	26.6	26.6	26.6	26.6	26.6	9.0	373
47	Reinforcing Steel (Including 1% for Overrun)	Lb.	59360	600	2260	2370	2260	2370	2260	600	72080
48	Structural Steel (Including ½% for Paint)	Lb.	4365		155		155		155		4820
61ax	Steel Pipe Piling (10 3/4" O.D.-.188" thick)	Lin. Ft.		130	156	156	156	156	156	130	1040
65	Concrete Slope & Ditch Paving	Cu. Yd.		33						33	66
+75cx	Metal Plate Guard Fence (Beam Type)	Lin. Ft.	415								415
80c	Sheet Copper	Lb.	22								22
89a	Drain Pipe 4" Φ x 1'-6" (Concrete Floor)	Each	12								12
*	½" Expansion Joint Mat'l. (Type III)	Sq. Ft.			42	42	42	42	42		210
*	¾" Expansion Joint Mat'l. (Type III)	Sq. Ft.	125								125
*	1" Expansion Joint Mat'l. (Type I)	Sq. Ft.	190								190
△	16 Gage Galvanized Sheet Metal	Sq. Ft.	16								16

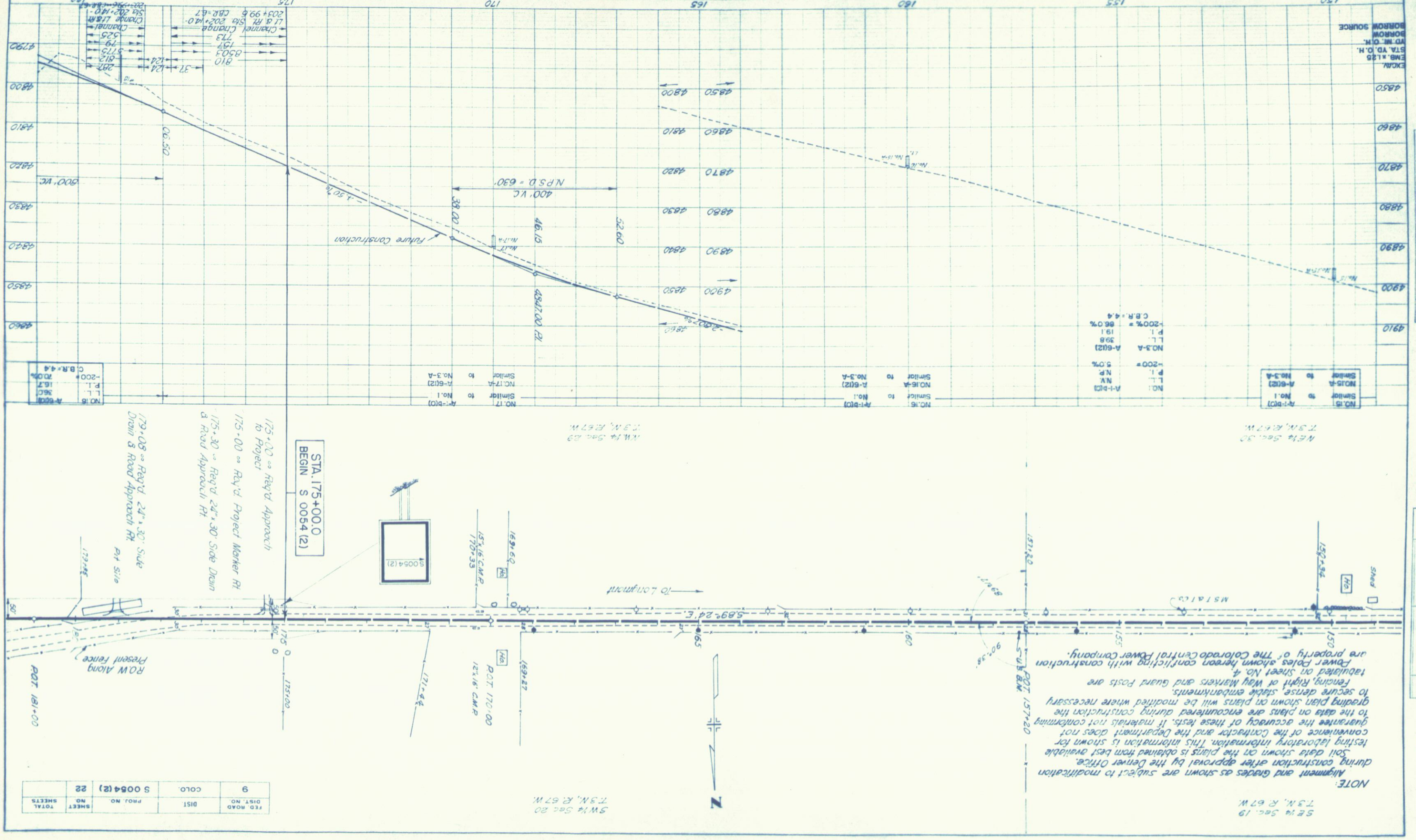
△ To be included in the bid price of Class "A" Concrete
◆ All treated Guardfence Posts shall be painted two field coats of aluminum after guardfence is in place
* Expansion Joint Material is to be included in the bid Price of Class "A" Concrete and shall conform to A.A.S.H.O. Specification M-153-54 of the Type shown
◆ to be used as Roadway Borrow

COLORADO
DEPARTMENT OF HIGHWAYS
REINFORCED CONCRETE SLAB & GIRDER BRIDGE
6 SPANS @ 30'-0" 2'-0" CURBS 70° SKEW
DETAILS OF ABUTMENTS & PIERS AND THE GENERAL LAYOUT

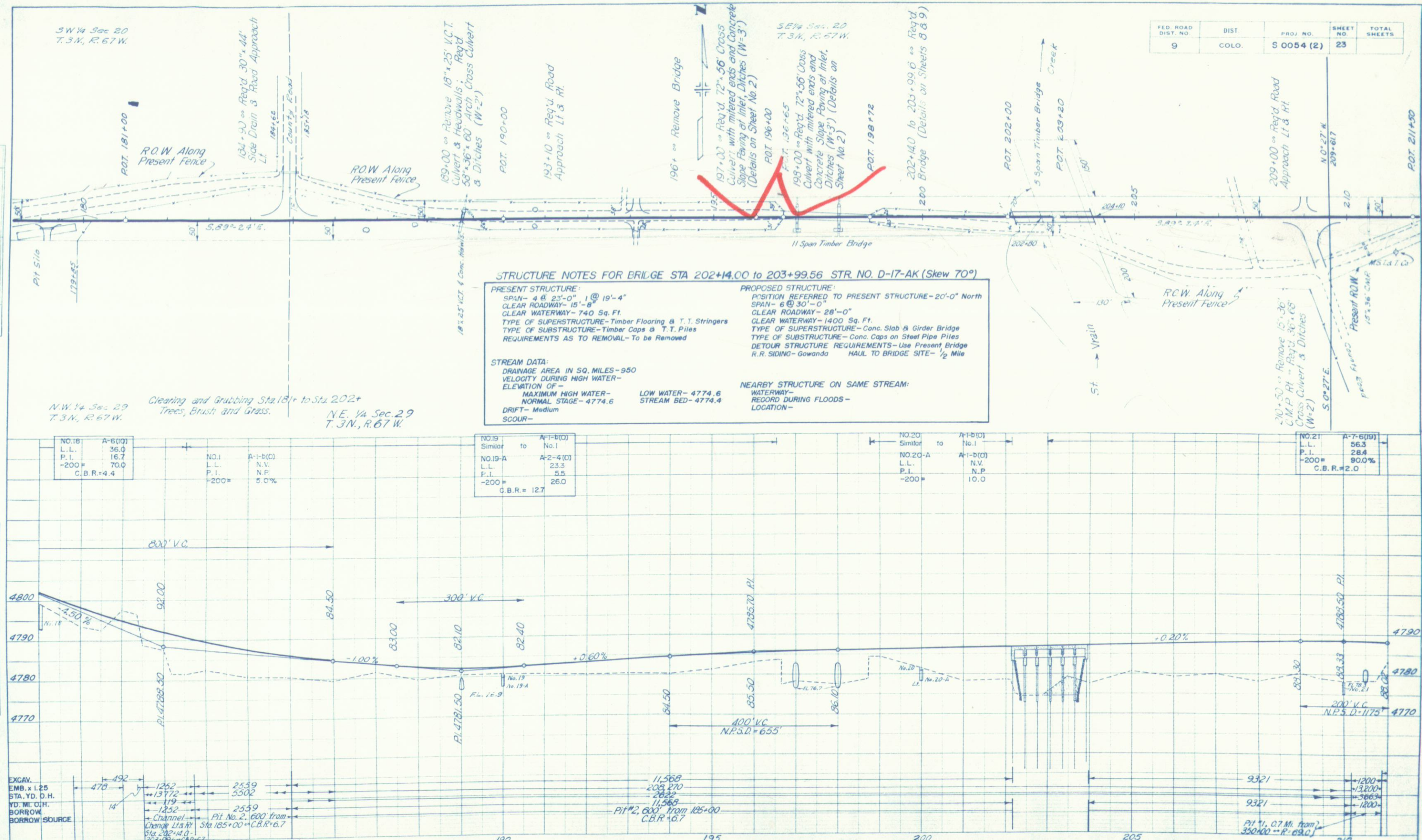
Across St. Vrain Creek
Sta. 202+14.0 to 203+99.56
Near Gowanda Sec. 29 T. 3N R. 67W

Designed by E.F.S.	Approved by R. A. Kronholm
Made by M.E.P.	Bridge Engineer
Checked by	Date: Oct. 31, 1955

STRUCTURE NO. D-17-AK


NOTE:
Alignment and grades as shown are subject to modification during construction after approval by the Denver Office.
Soil data shown on the plans is obtained from best available testing laboratory information. This information is shown for convenience of the Contractor and the Department does not guarantee the accuracy of these tests. If materials not conforming to the data on plans are encountered during construction the grading plan shown on plans will be modified where necessary to secure dense, stable embankments.
Fencing, right of way markers and guard posts are tabulated on Sheet No. 4.
Power poles shown hereon conflicting with construction are property of The Colorado Central Power Company.
S.E.¼ Sec. 19 T.3N., R.67W.
S.W.¼ Sec. 20 T.3N., R.67W.
N.W.¼ Sec. 29 T.3N., R.67W.
N.E.¼ Sec. 30 T.3N., R.67W.
N
S.89°-24'-E.
P.O.T. 157+20
P.O.T. 170+00
12"x16' C.M.P.
15"x16' C.M.P.
170+33
169+27
171+44
175+00
175+20
165
160
155
150
To Longmont
M.S.T.A.C.S.
Shed
150+34
151+20
169+60
R.O.W. Along Present Fence
P.O.T. 181+00
179+86
Pit Site
179+08 ∞ Req'd. 24"x30' Side Drain & Road Approach Rt.
175+30 ∞ Req'd. 24"x30' Side Drain & Road Approach Rt.
175+00 ∞ Req'd. Project Marker Rt.
175+00 ∞ Req'd. Approach to Project
STA. 175+00.0
BEGIN S 0054 (2)
S 0054 (2)
Future Construction
-3.50%
-2.00%
400' V.C.
N.P.S.D. = 630'
38.00
46.15
52.60
4847.00 P.I.
4860
4850
4840
4830
4820
4810
4800
4790
4910
4900
4890
4880
4870
4860
4850
4850
4900
4920
4930
4940
4950
4960
600' V.C.
60.50
60.90
NO.15 Similar to NO.1
A-1-b(0)
NO.15-A Similar to NO.3-A
A-6(12)
NO.3-A
L.L. 39.8
P.I. 19.1
-200% = 86.0%
C.B.R. = 4.4
NO.16 Similar to NO.1
A-1-b(0)
NO.16-A Similar to NO.3-A
A-6(12)
NO.17 Similar to NO.1
A-1-b(0)
NO.17-A Similar to NO.3-A
A-6(12)
NO.18
A-6(0)
L.L. 36.0
P.I. 16.7
-200= 70.0%
C.B.R. = 4.4
EXCAV. EMB. x1.25
STA. YD. O.H.
YD. TM. O.H.
BORROW
BORROW SOURCE
PROFILE
PLAN
COLORADO DEPARTMENT OF HIGHWAYS
Form C.D.H. 104
April 1955
FED. ROAD DIST. NO. 9
DIST.
PROJ. NO.
S 0054 (2)
SHEET NO.
TOTAL SHEETS
22

FED. ROAD DIST. NO.	DIST	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0054 (2)	23	



COLORADO DEPARTMENT OF HIGHWAYS
Form CDH 134
April 1952

PLAN
SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
R. W. & R. NOTED
STRUCTURE NOTES CHECKED
NOTE BOOK NO. 7234
DATE
BY

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
R. W. & R. NOTED
STRUCTURE NOTES CHECKED
NOTE BOOK NO. 7237
DATE
BY

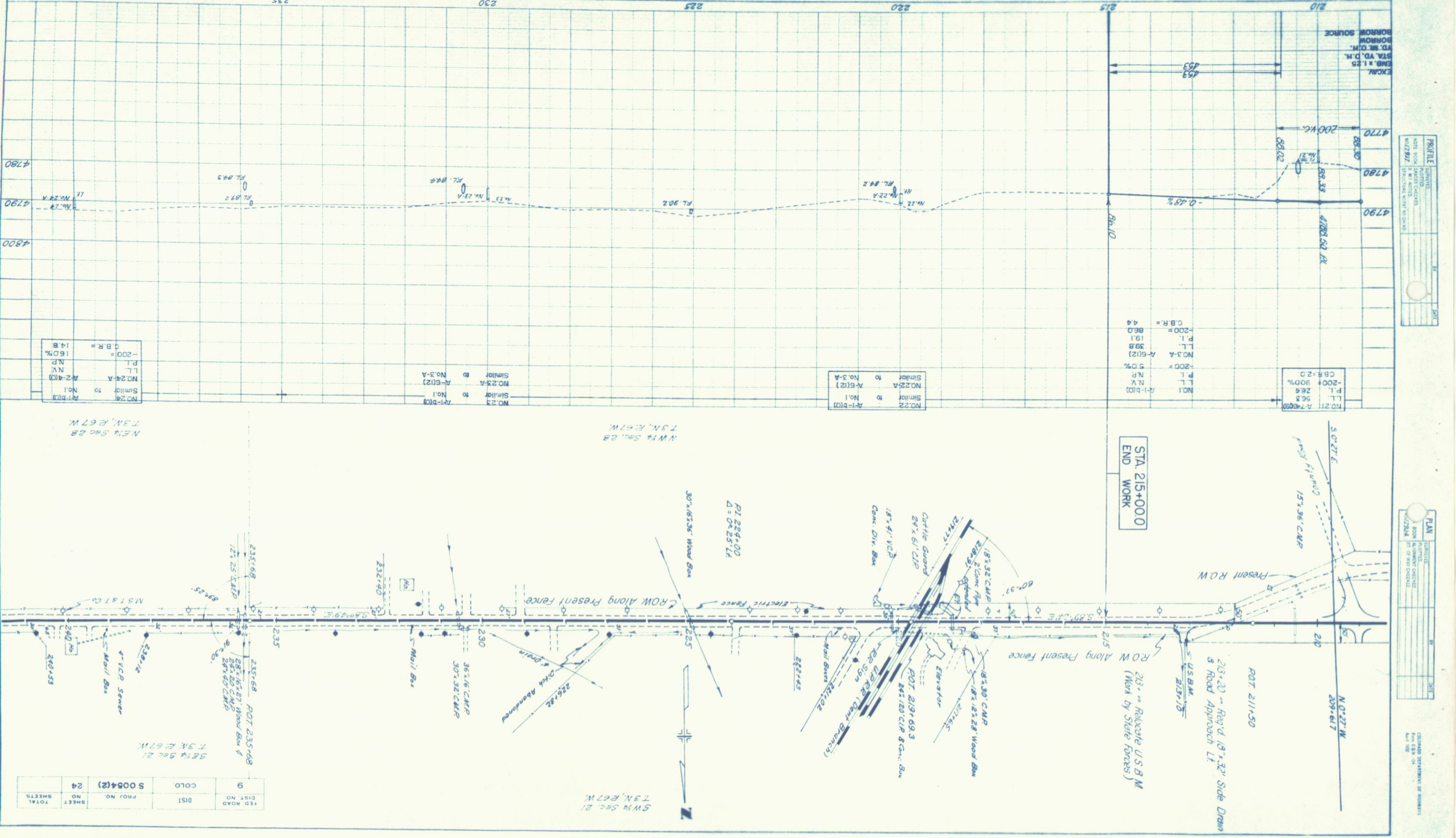
STRUCTURE NOTES FOR BRIDGE STA 202+14.00 to 203+99.56 STR. NO. D-17-AK (Skew 70°)

PRESENT STRUCTURE:
SPAN- 4 @ 23'-0" 1 @ 19'-4"
CLEAR ROADWAY- 15'-8"
CLEAR WATERWAY- 740 Sq. Ft.
TYPE OF SUPERSTRUCTURE- Timber Flooring & T.T. Stringers
TYPE OF SUBSTRUCTURE- Timber Caps & T.T. Piles
REQUIREMENTS AS TO REMOVAL- To be Removed

STREAM DATA:
DRAINAGE AREA IN SQ. MILES- 950
VELOCITY DURING HIGH WATER-
ELEVATION OF-
MAXIMUM HIGH WATER-
NORMAL STAGE- 4774.6
LOW WATER- 4774.6
STREAM BED- 4774.4
DRIFT- Medium
SCOUR-

PROPOSED STRUCTURE:
POSITION REFERRED TO PRESENT STRUCTURE- 20'-0" North
SPAN- 6 @ 30'-0"
CLEAR ROADWAY- 28'-0"
CLEAR WATERWAY- 1400 Sq. Ft.
TYPE OF SUPERSTRUCTURE- Conc. Slab & Girder Bridge
TYPE OF SUBSTRUCTURE- Conc. Caps on Steel Pipe Piles
DETOUR STRUCTURE REQUIREMENTS- Use Present Bridge
R.R. SIDING- Gowanda HAUL TO BRIDGE SITE- ½ Mile

NEARBY STRUCTURE ON SAME STREAM:
WATERWAY-
RECORD DURING FLOODS-
LOCATION-


PLAN
PROFILE
STA. 215+00.0
END WORK
R.O.W Along Present Fence
Present R.O.W.
Electric Fence
CROW Along Present Fence
Cattle Guard
Elevator
Mail Box
Ditch Abandoned
POT. 211+50
POT. 213+69.3
POT. 235+68
N 0°27' W
209+61.7
S 0°27' E
S 89°34' E
S 89°49' E
M.S.T.A.T.Co.
N.W.¼ Sec. 28 T.3N. R.67W.
S.W.¼ Sec. 21 T.3N. R.67W.
S.E.¼ Sec. 21 T.3N. R.67W.
N.E.¼ Sec. 28 T.3N. R.67W.
EXCAV.
END = 1.25
STA. YD. D.H.
YD. MI. O.H.
BORROW SOURCE
FED ROAD DIST. NO 9
DIST
PROJ. NO S 0064(2)
SHEET NO 24
TOTAL SHEETS