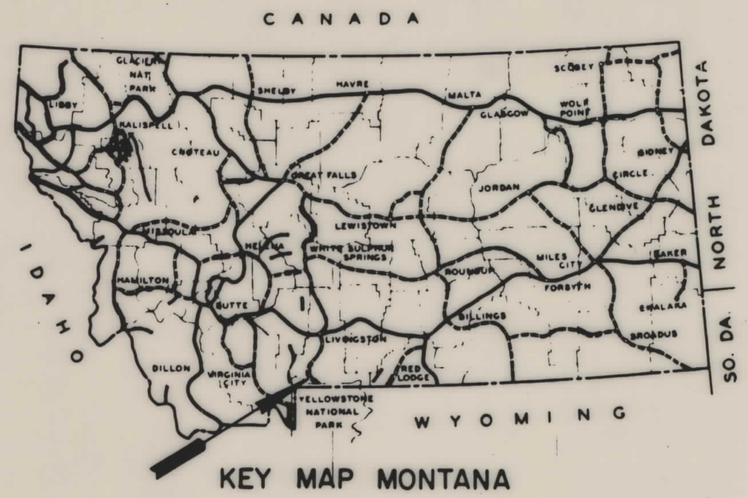
PLANS
NOT
TO
SCALE

REGION 8 STATE MONTANA
PROJECT 43-1(2)
SHEET 1 OF 38 SHEETS



KEY MAP MONTANA

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

PLANS FOR PROPOSED
MONTANA FOREST HIGHWAY PROJECT 43-1(2)
YELLOWSTONE CANYON HIGHWAY

LENGTH 10.984 MILES

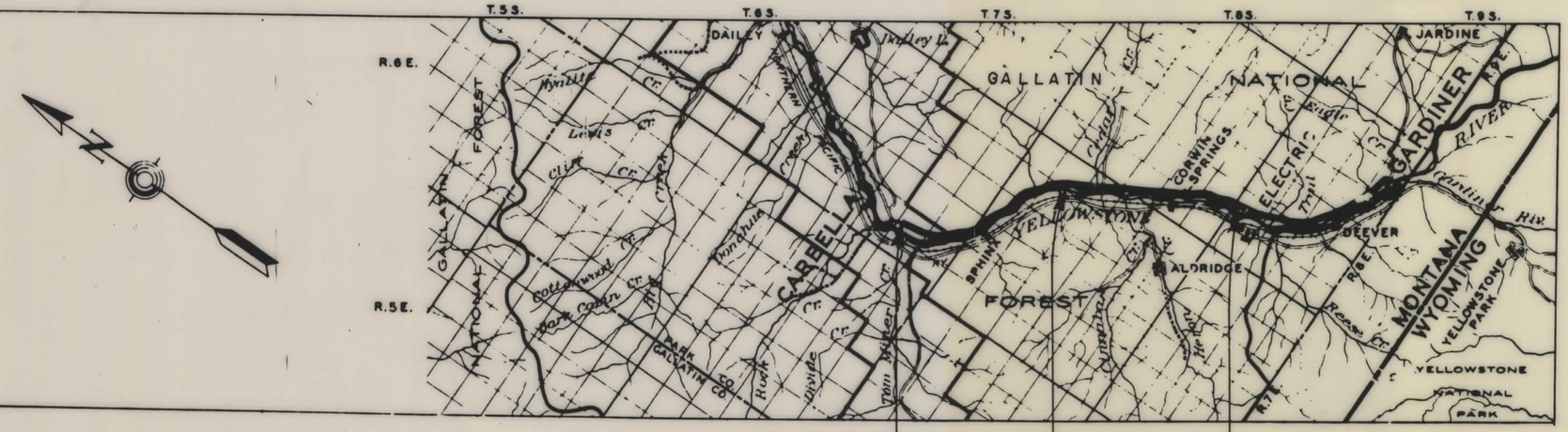
CLASS I

GALLATIN NATIONAL FOREST

PARK COUNTY

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTION & SUMMARY
3	TYPICAL SURFACING SECTIONS STA.0+00 TO 579+28.90
4-6	DRAINAGE SUMMARY
7-16	PLAN-PROFILE SHEETS STA 303+74 TO 579+28.90
17	PLAN PROFILE PARKING AREA RT. STA. 552+00
18	TYPICAL SECTIONS OF PARKING AREA RT. 552+00
19	SKETCH OF MATERIALS SOURCE
20	TABLE OF GUIDE POSTS
21	TABLE OF GUARD RAIL
22	DRWG. NO. 339 AGGREGATE SAMPLING DEVICE
23	STD. DRWG. NO. 15-1.3 GENERAL CULVERT DETAILS
24	" " " 15-2.9 CORRUGATED METAL PIPE
25	" " " 15-3.2 CONCRETE CULVERT PIPE
26	" " " 15-4.3 STRUCTURAL PLATE PIPE AND PIPE ARCH CULVERT
27	" " " 15-8.3 END SECTIONS (TERMINAL)
28	" " " 21-2 SYPHONS (CORR. METAL)
29	" " " 25-2A CATTLE GUARDS
30	" " " 25-2B CATTLE GUARDS
31	" " " 25-8 STRUCTURAL PLATE STOCK PASS
32	" " " 30-8.1 RIGHT OF WAY FENCES
33	" " " 34-2.1 BEAM GUARD RAIL
34	" " " 35-18 BITUMINOUS CURB & SIDEWALK
35	" " " 35-22.3 GUIDE POSTS
36	" " " 60-1.1 CONC. MAINTENANCE POST
37	" " " 60-3.1 RIGHT OF WAY MONUMENTS
38	" " " 60-7.2 ROAD APPROACHES



SCALE OF MILES
0 2 4 6 8 10

LEGEND
APPROX RTE ESTAB RTE GRADED BASE BIT SURF. PAVED

STA. 0+00 BEGIN PROJECT NO 43-1(2)
BEGIN SURFACING

STA 303+74 BEGIN GRADING & SEEDING

STA. 579+28.90 END PROJECT NO. 43-1(2)
END GRADING, SURFACING AND SEEDING

RIGHT OF WAY COPY
DATE: JUL 15 1968

Description of Project

Improvement Grading, Base And Bituminous Paving

Roadbed Width 32' To 36' at Const. Grade

Surface
- **Type** Code 4251
- **Width** 32' to 36'

Bridges None

Design Classification

A.D.T. 1964 - 549
A.D.T. 1984 - 1100
D.H.V. 1982 - 260
D 55 %
T 10 %
V 59 M.P.H.

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
REGION NO. 8

Approved

FOR REGIONAL ENGINEER Date

FHP 43-1(2) SHT 1 OF 12

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont.	Gallatin	43	1(2)	7	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT

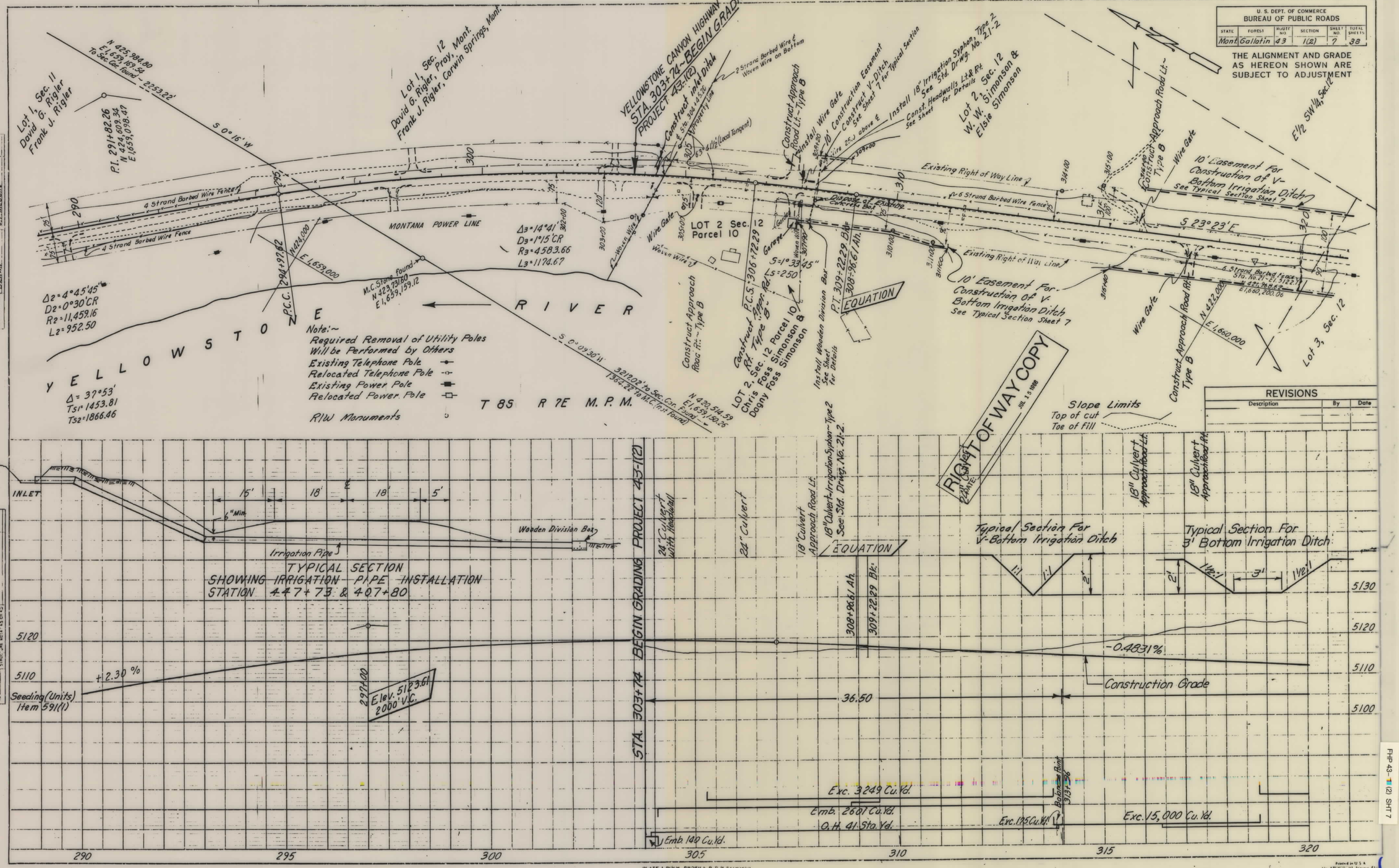
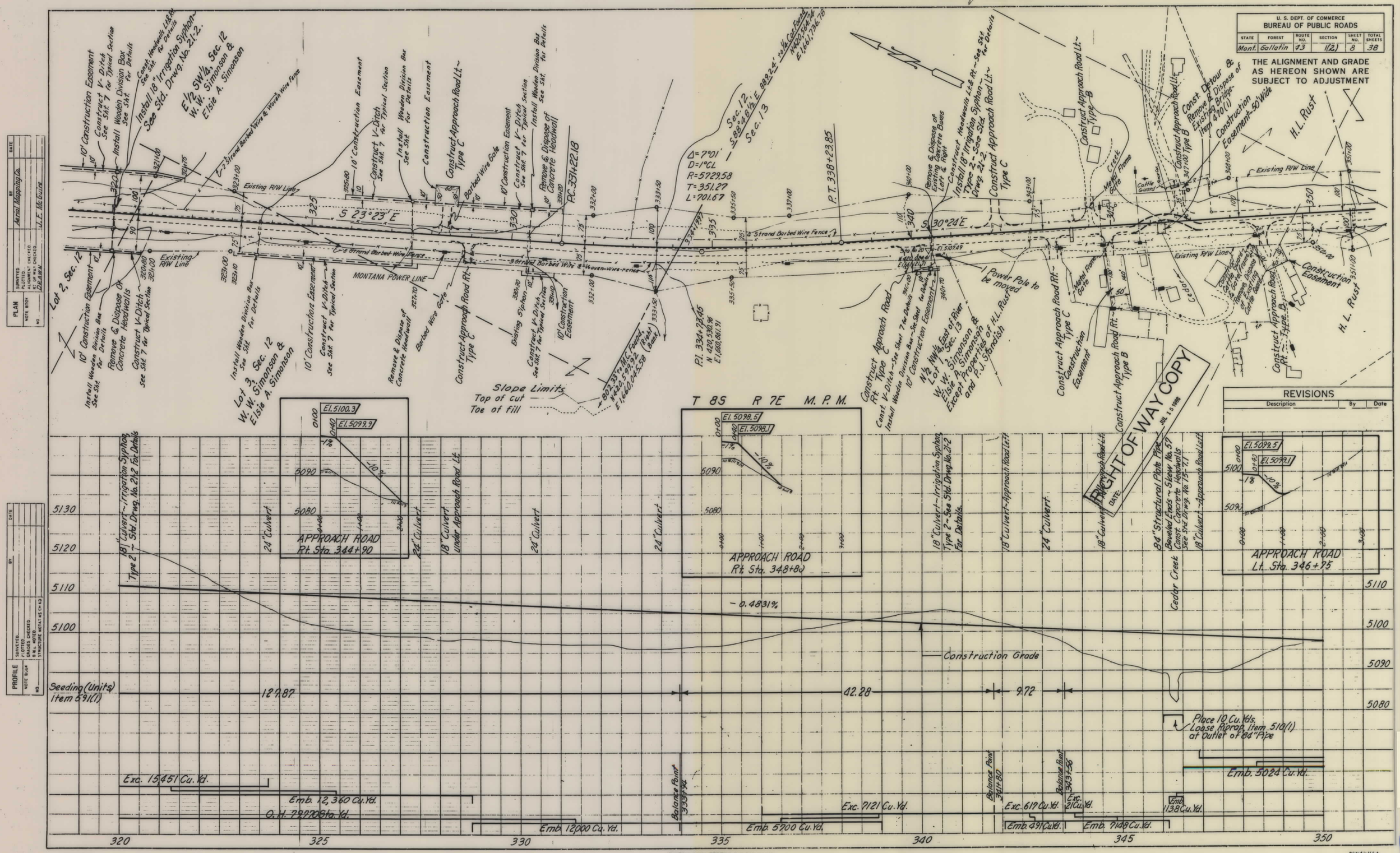


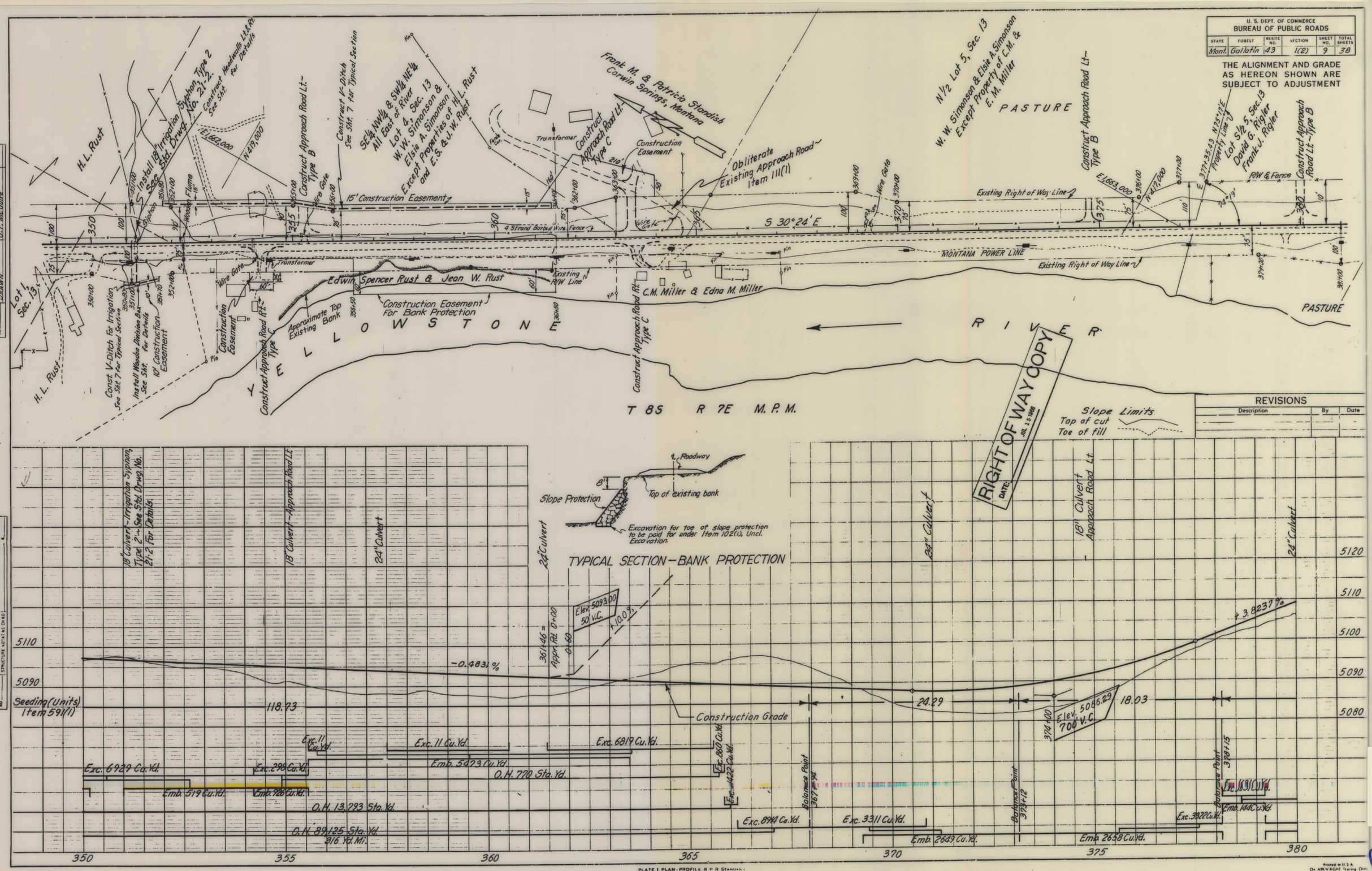
PLATE I PLAN PROFILE B.P.R. STANDARD

FHP 43-1(2) SHT 7


U. S. DEPT. OF COMMERCE
BUREAU OF PUBLIC ROADS
STATE | FOREST | ROUTE NO. | SECTION | SHEET NO. | TOTAL SHEETS
Mont. | Gallatin | 13 | 1(2) | 8 | 38
THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT
REVISIONS
Description | By | Date
PLAN
PROFILE
Aerial Mapping Co.
J.E. McBride
Lot 2, Sec. 12
Lot 3, Sec. 12
W. W. Simonson & Elsie A. Simonson
E½ SW¼, Sec. 12
Install 18" Irrigation Syphon See Std. Drwg. No. 2.1-2.
Construct V-Ditch See Std. 7 for Typical Section
Install Wooden Division Box See Std. 7 for Details
10' Construction Easement
Existing R/W Line
S 23°23' E
S 30°24' E
Δ=7°01'
D=1°CL
R=5729.58
T=351.27
L=701.67
P.C. 334+22.18
P.T. 338+23.85
P.I. 334+22.45
N 420,530.96
E 1,660,081.91
Sec. 12
Sec. 13
S 88°48½' E 882.24'
MONTANA POWER LINE
Remove & Dispose of Concrete Headwall
Construct Approach Road Rt. Type C
Construct Approach Road Lt. Type C
Construct Approach Road Lt. Type B
Construct Approach Road Rt. Type B
Construct Approach Road Rt. Type C
Construct Approach Road Rt. Type B
Construct Approach Road Rt. Type B
Construct Approach Road Rt. Type C
Construct Approach Road Rt. Type C
Construct Approach Road Rt. Type B
Construct Approach Road Lt. Type B
Construction Easement
Barbed Wire Gate
Existing Siphon
Remove & Dispose of Existing Bridge Item 4.701(1)
Construction Easement 50' Wide
Const. Detour & Remove & Dispose of Existing Bridge Item 4.701(1)
Remove & Dispose of Existing Concrete Boxes
Install 18" Irrigation Syphon Type 2 - See Std. Drwg. 2.1-2
Power Pole to be moved
Metal Frame Gate
Cattle Guard
Cedar Creek
H. L. Rust
N½ NW¼ East of River Lot 1 Sec. 13
W. W. Simonson & Elsie A. Simonson Except Properties of H. L. Rust and F. J. Standish
Construction Easement
Slope Limits
Top of cut
Toe of fill
T 8S R 7E M. P. M.
APPROACH ROAD Rt. Sta. 344+90
APPROACH ROAD Rt. Sta. 348+80
APPROACH ROAD Lt. Sta. 346+75
18" Culvert - Irrigation Syphon Type 2 - See Std. Drwg. No. 2.1-2 For Details
24" Culvert
18" Culvert under Approach Road Lt.
18" Culvert - Approach Road Lt.
24" Culvert
18" Culvert - Irrigation Syphon Type 2 - See Std. Drwg. No. 2.1-2 For Details.
18" Culvert - Approach Road Lt.
24" Culvert
18" Culvert - Approach Road Lt.
84" Structural Plate Pipe Beveled Ends - Skew No. 57 Const. Concrete Headwalls See Std. Drwg. No. 7.5-7.1
18" Culvert - Approach Road Lt.
Cedar Creek
- 0.4831%
Construction Grade
Seeding (Units) Item 591(1)
129.87
42.28
9.72
Place 10 Cu. Yds. Loose Riprap Item 510(1) at Outlet of 84" Pipe
Balance Point 333+94
Balance Point 341+80
Balance Point 343+56
Exc. 15451 Cu. Yd.
Emb. 12,360 Cu. Yd.
O.H. 79,720 Cu. Yd.
Emb. 12,000 Cu. Yd.
Exc. 7121 Cu. Yd.
Emb. 5700 Cu. Yd.
Exc. 619 Cu. Yd.
Emb. 491 Cu. Yd.
Exc. 21 Cu. Yd.
Emb. 7148 Cu. Yd.
Emb. 138 Cu. Yd.
Emb. 5024 Cu. Yd.
RIGHT OF WAY COPY
JUL 15 1966
DATE
320
325
330
335
340
345
350
5130
5120
5110
5100
5090
5080
PLATE I PLAN PROFILE & P. R. STANDARD
EUGENE DIETZGEN CO. CHICAGO NEW YORK
Printed in U.S.A.
Ch. ARWRIGHT Tracing Cloth
FHP-43-1(2) SHT 8

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont.	Gallatin	43	1(2)	9	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT



REVISIONS		
Description	By	Date

PLAN — SURVEYED — PLOTTED — DRAWN — CHECKED — ALIGNMENT CHECKED — FT. OF WAY CHECKED — NOTE BOOK — NO. — BY — DATE — Aerial Mapping Co. — U.F. McGuire

PROFILE — SURVEYED — PLOTTED — GRADES CHECKED — B.M. NOTED — STRUCTURE NOTES CHKD — NOTE BOOK — NO. — BY — DATE

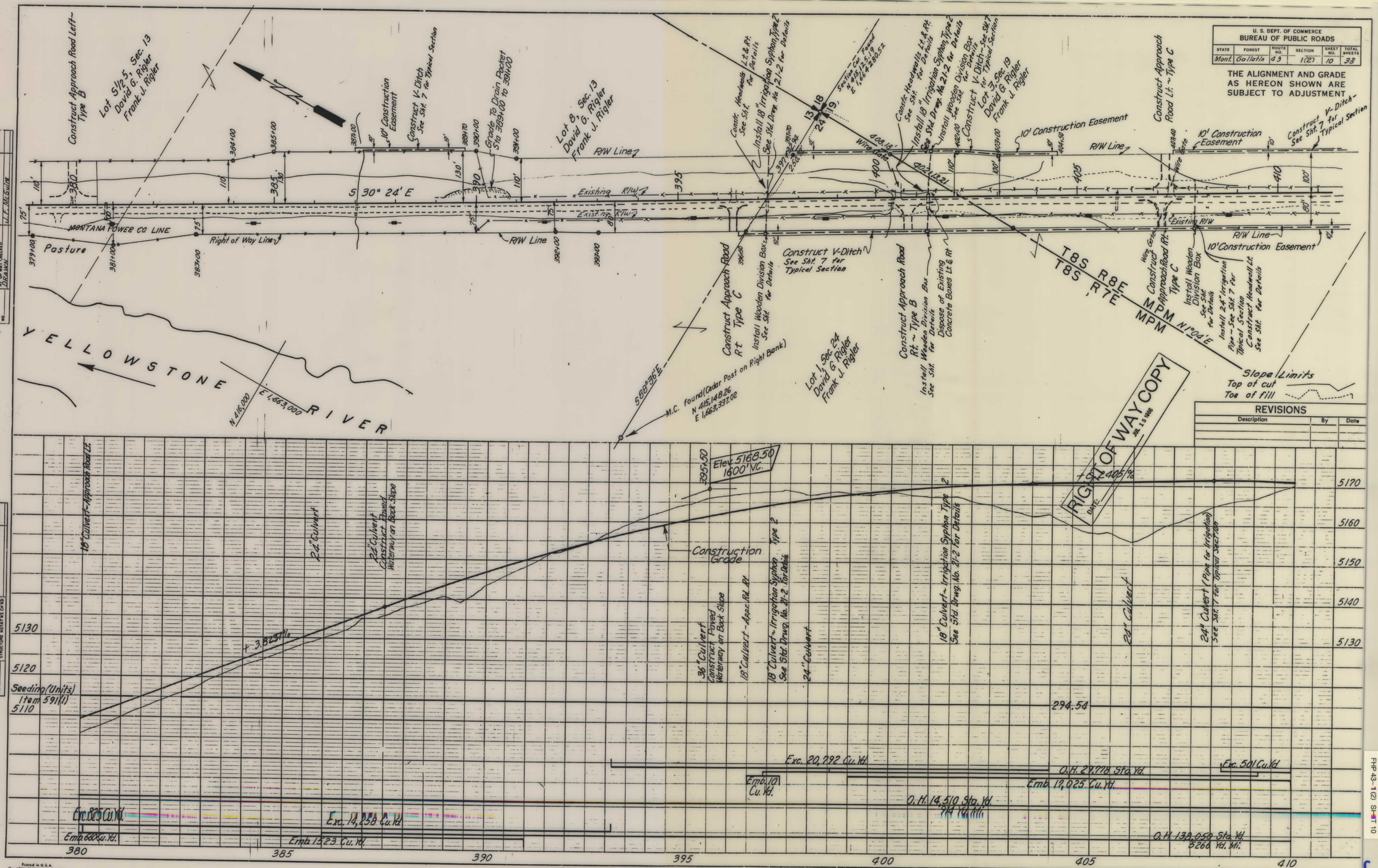
FHP 43-1(2) SHT 9

Printed in U.S.A. On ARKWRIGHT Tracing Cloth

Printed in U.S.A. On ARKWRIGHT Tracing Cloth

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont.	Gallatin	43	1(2)	10	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT



REVISIONS		
Description	By	Date

PLAN	BY	DATE
SURVEYED.		
PLOTTED.	Aerial Mapping Co.	
ALIGNMENT CHECKED.		
F.S. MAY CHECKED.		
NOTE BOOK	D.G.W.	
NO.	J.L.F. McDuffie	

PROFILE	BY	DATE
SURVEYED.		
PLOTTED.		
GRADES CHECKED.		
B.M.'s NOTED.		
STRUCTURE NOTATIONS CHKD.		
NOTE BOOK		
NO.		

FHP 43-1(2) SHT 10

Printed in U.S.A. On ARKWRIGHT Tracing Cloth

PLATE 1 PLAN - PROFILE & P.R. STANDARD

EUGENE DIETZGEN CO. CHICAGO - NEW YORK

Printed in U.S.A.

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont.	Gallatin	43	1(2)	11	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT

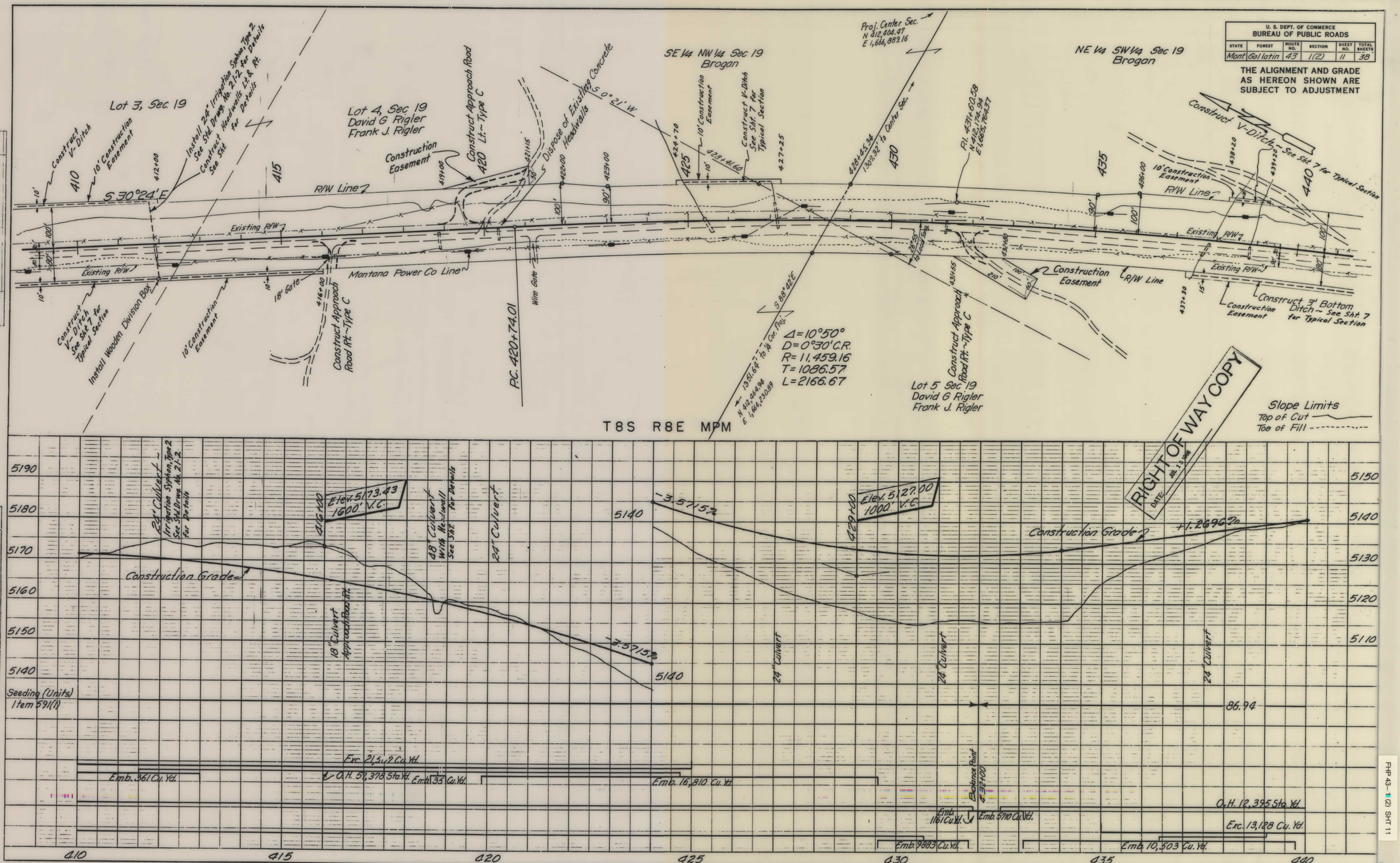
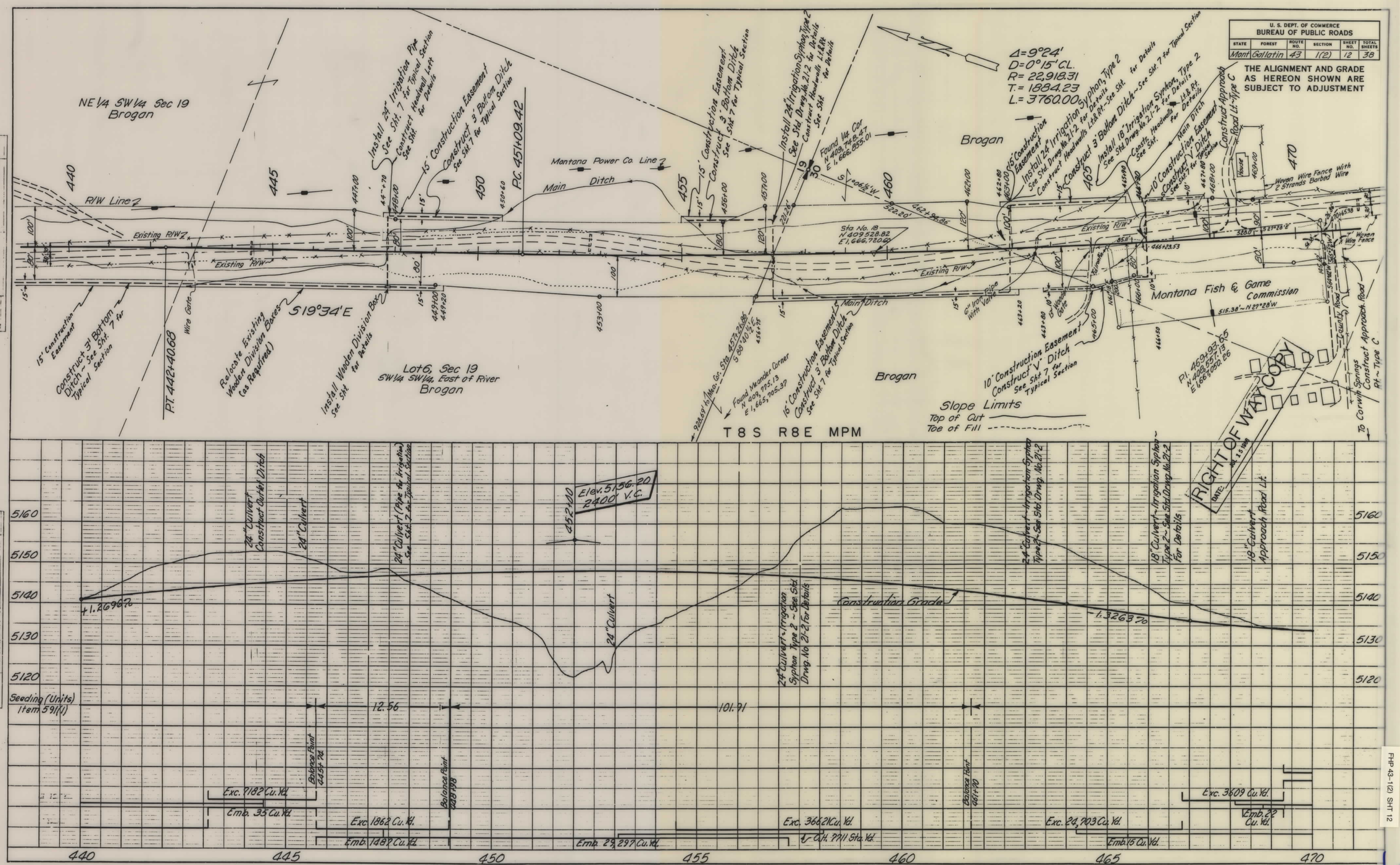


PLATE 1 PLAN PROFILE B of R STANDARD

FHP 43-1(2) SHT 11

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont	Gallatin	43	1(2)	12	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT



PLAN — SURVEYED / PLOTTED / NOTE BOOK / ALIGNMENT CHECKED / RT. OF WAY CHECKED / BY / DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / NOTE BOOK / STRUCTURE NOTES / BY / DATE

FHP 43-1(2) SHT 12

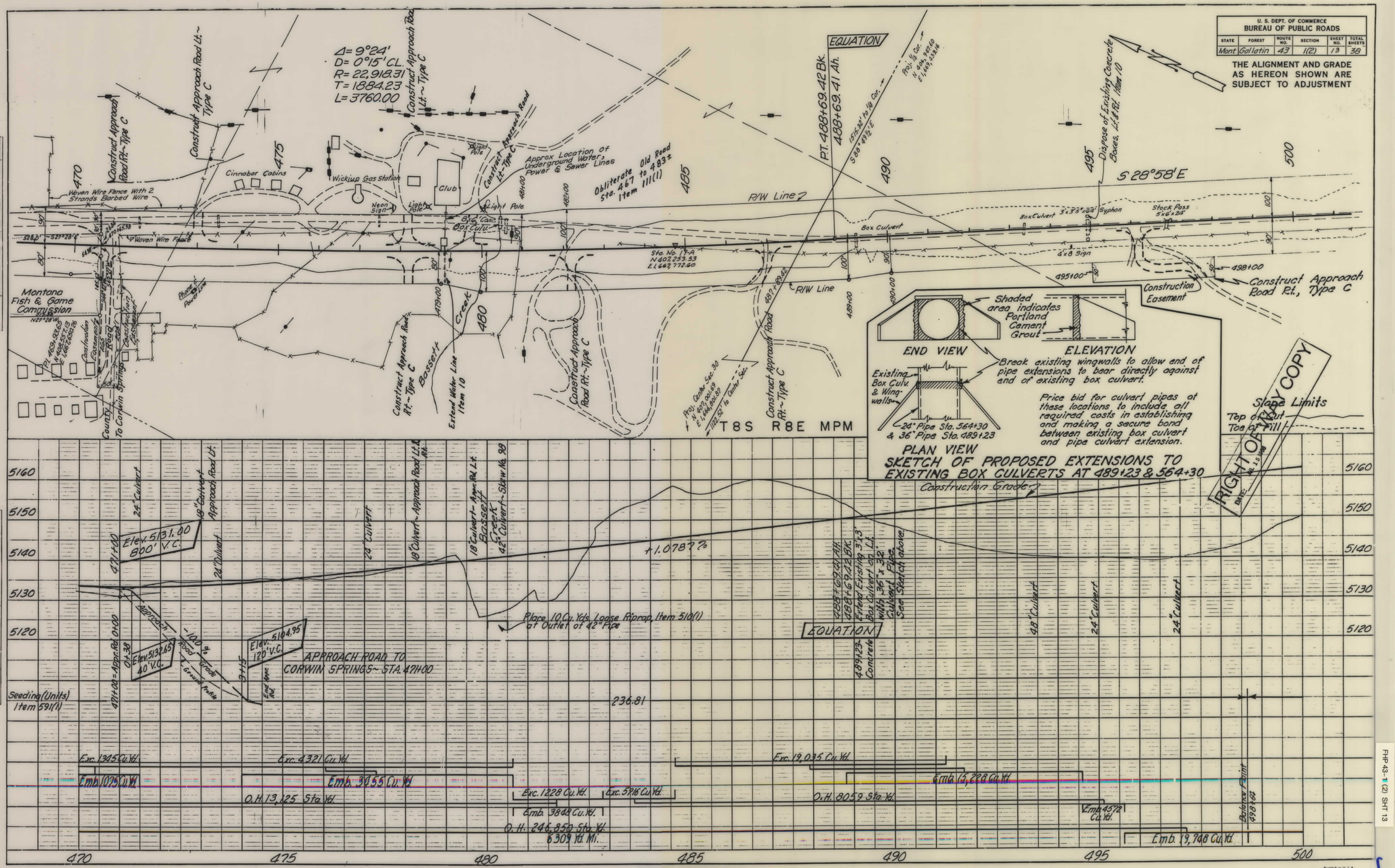
Printed in U.S.A. On ARWINFIL Tracing Cloth

PLATE 1 PLAN - PROFILE B P R STANDARD
EUGENE DIETZGEN CO. CHICAGO NEW YORK

Printed in U.S.A. On ARWINFIL Tracing Cloth

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont	Gallatin	43	1(2)	13	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT



PLAN — SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, GRADES CHECKED, AT OF WAY CHECKED, NO, BY, DATE

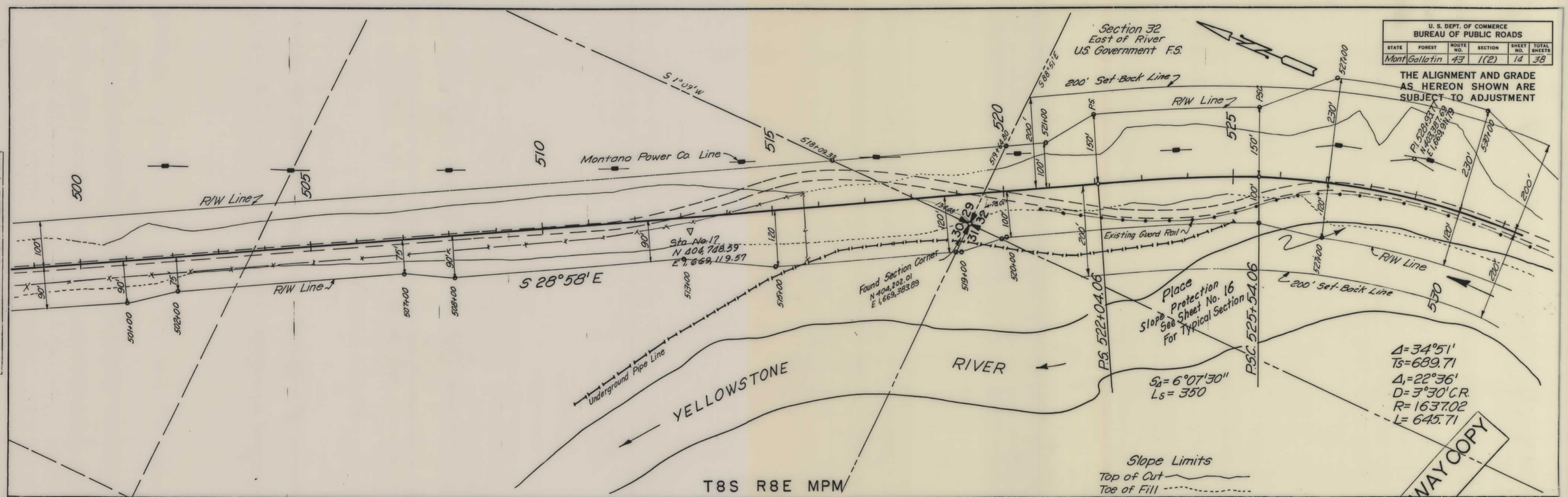
PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, STRUCTURE NOTATIONS CHECKED, NO, BY, DATE

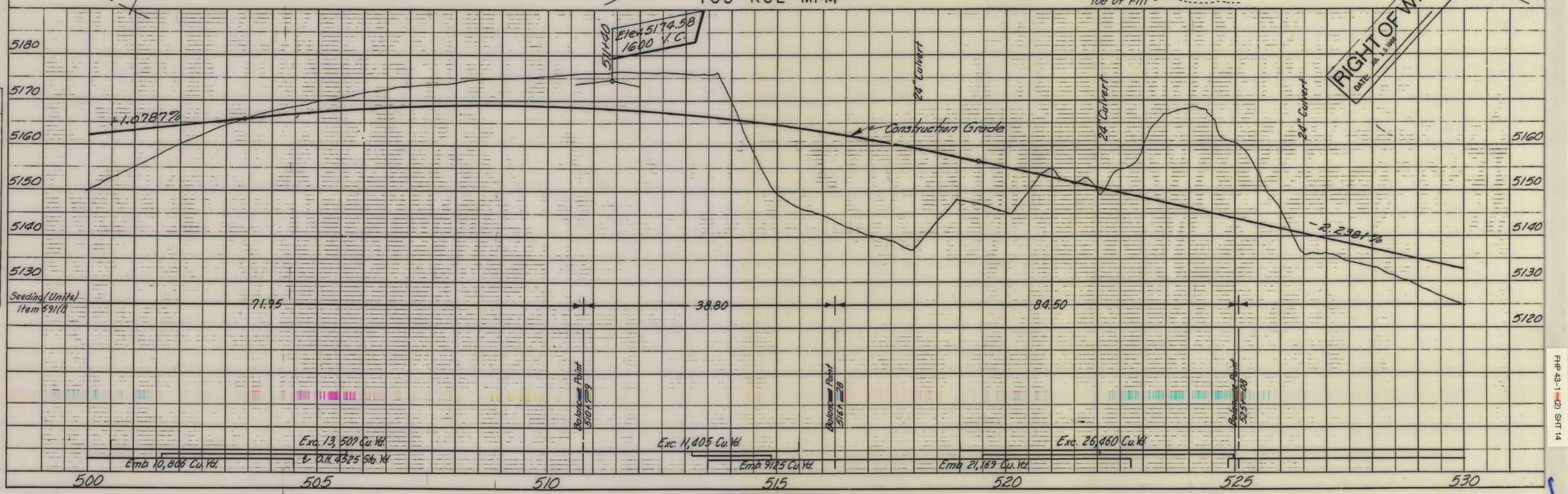
PLATE 1 PLAN PROFILE B.P.R. STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

FHP 43-1 (2) SHT 13

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont	Gallatin	43	1(2)	14	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT





PLAN — SURVEYED, PLOTTED, NOTE BOOK, CHARTS CHECKED, BY, DATE, NO.

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, B.M.s NOTED, STRUCTURE NOTATIONS CHECKED, BY, DATE, NO.

FHP 43-1 (2) SHT 14

Printed in U.S.A. On ARKWRIGHT Tracing Cloth
PLATE 1 PLAN-PROFILE B.P.R. STANDARD EUGENE DIETZGEN CO. CHICAGO NEW YORK
Printed in U.S.A. On ARKWRIGHT Tracing Cloth

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont	Gallatin	43	1(2)	15	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT

GALLATIN NATIONAL FOREST

Section 32
East of River
U.S. Government F.S.

T 8 S R 8 E MPM

$\Delta = 53°33'$
$T_s = 1114.65$
$\Delta_1 = 44°33'$
$D = 3°$ C.L.
$R = 1909.86$
$L = 1485.00$

$S_\Delta = 4°30'$
$L_s = 300'$

P.S. 536+83.33

P.S.C. 541+83.33

Construct Appr. Rd. Rt. Class "B"

Set-Back Line

P.C.S. 556+68.33

P.T. 559+68.33

$S_\Delta = 4°30'$
$L_s = 300'$

S 47°40'E

P.S. 559+86.58

YELLOWSTONE RIVER

$\Delta = 34°51'$
$T_s = 689.71$
$\Delta_1 = 22°36'$
$D = 3°30'$ C.R.
$R = 1637.02$
$L = 645.71$

P.C.S. 531+99.77

$S_\Delta = 6°07'30''$
$L_s = 350'$

Place Protection Slope Sheet No. 16 for Typical Section

S 5°53' W

Set-Back Line

P.T. 535+49.77 BK. = 535+76.74 Ah

EQUATION

Underground Water Pipe Line

GRAVEL PILE

P.I. 549+97.98
N 401,297.86
E 1,669,695.40

Construct Parking Area
See Sheet Nos. 17 & 18 for Details.

Slope Limits
Top of Cut
Toe of Fill

RIGHT OF WAY COPY
DATE JUL 13 1966

PLAN
SURVEYED
PLOTTED
NOTE BOOK
ALIGNMENT CHECKED
RT OF WAY CHECKED
NO.
DATE
BY

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
GRADES CHECKED
B.M.'s NOTED
STRUCTURE NOTATIONS CHECKED
NO.
DATE
BY

24" Culvert

535+49.77 BK.

535+76.74 Ah

Elev. 5122.88
800' V.C.

Elev. 5146.80
1000' V.C.

-2.2381%

$+1.9558\%$

-1.0158%

Construction Grade

EQUATION

Seeding (Units)
Item 591(1)

98.30

101.97

6.87

39.69

Balance Point 536+23

Balance Point 549+80

Balance Point 555+05

Exc. 26,039 Cu. Yd.
Emb. 20,830 Cu. Yd.

Exc. 36 Cu. Yd.
Emb. 3023 Cu. Yd.

O.H. 6850 Sta. Yd.

Exc. 12,843 Cu. Yd.

Emb. 10,265 Cu. Yd.

Emb. 100 Cu. Yd.

Exc. 3625 Cu. Yd.
Emb. 164 Cu. Yd.

Exc. 1607 Cu. Yd.
Emb. 1286 Cu. Yd.

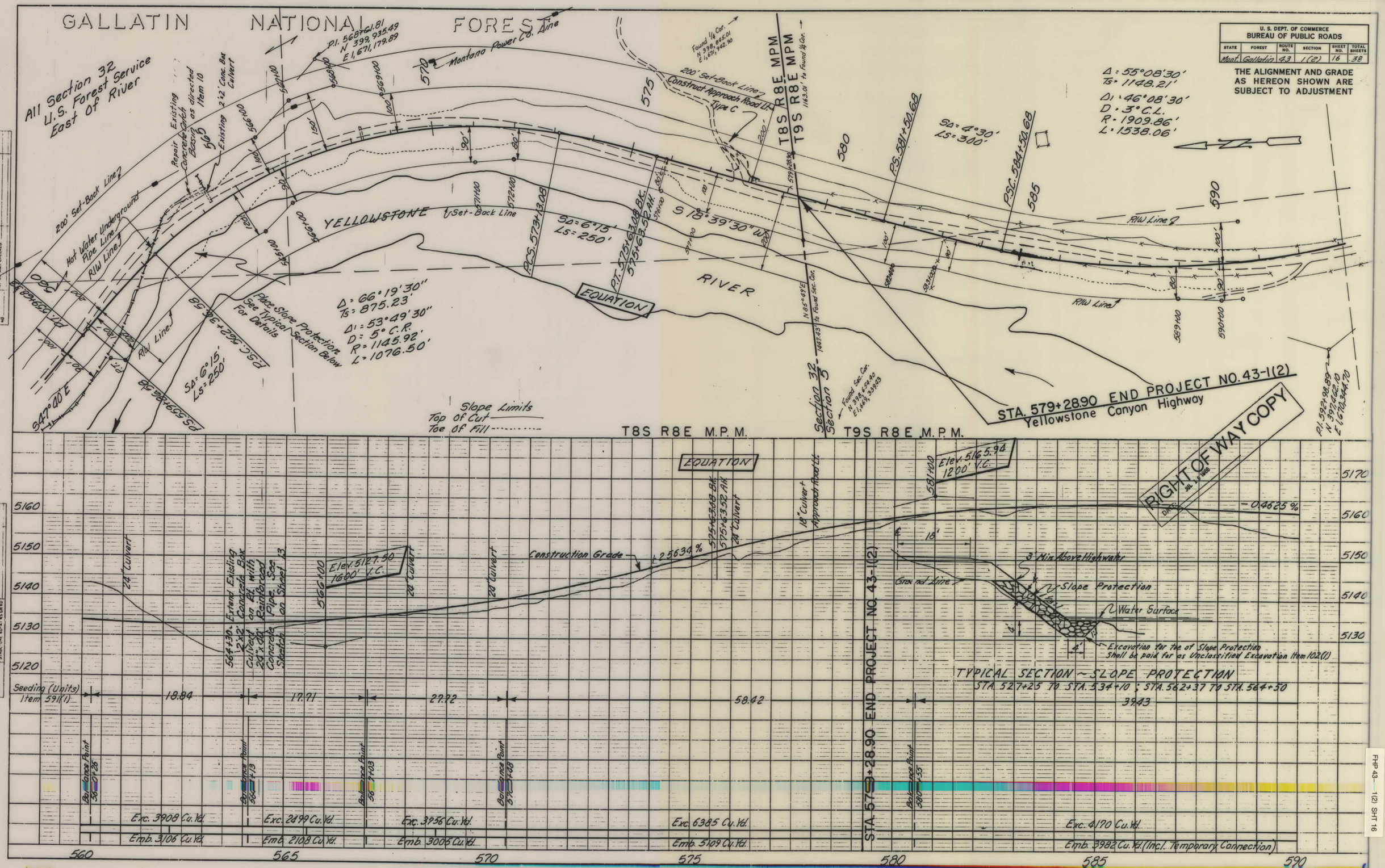
Exc. 210 Cu. Yd.

Exc. 6924 Cu. Yd.
Emb. 5907 Cu. Yd.

FHP 43—1(2) SHT 15

PLATE 1 PLAN PROFILE B P R STANDARD

Printed in U.S.A.
The ARN WRIGHT Training Class

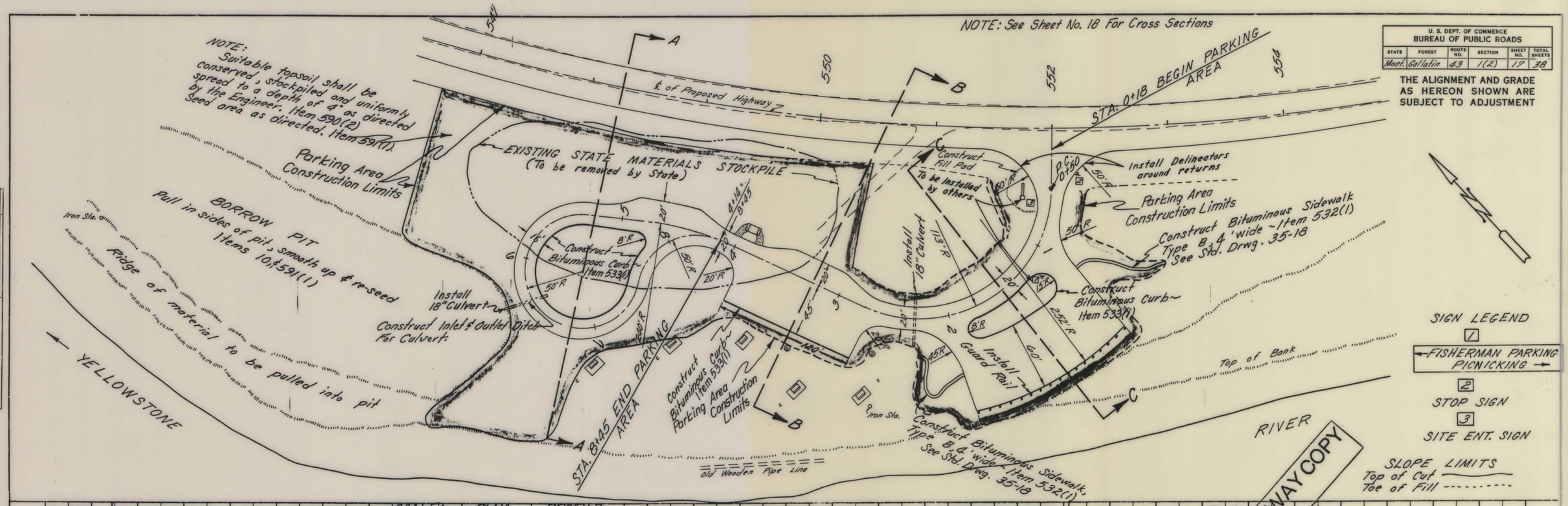

U. S. DEPT. OF COMMERCE
BUREAU OF PUBLIC ROADS
STATE | FOREST | ROUTE NO. | SECTION | SHEET NO. | TOTAL SHEETS
Mont. | Gallatin | 43 | 1(2) | 16 | 38
THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT
GALLATIN NATIONAL FOREST
All Section 32 U.S. Forest Service East Of River
Montana Power Co. Line
200' Set-Back Line
Construct Approach Road Th. Type C
Hot Water Underground Pipe Line
R/W Line
YELLOWSTONE
RIVER
EQUATION
Place Slope Protection See Typical Section Below For Details
Slope Limits
Top Of Cut
Toe Of Fill
T8S R8E M.P.M.
T9S R8E M.P.M.
Section 32
Section 5
Δ = 55°08'30"
Ts = 1148.21'
Δ1 = 46°08'30"
D = 3° C.L.
R = 1909.86'
L = 1538.06'
Δ = 66°19'30"
Ts = 875.23'
Δ1 = 53°49'30"
D = 5° C.R.
R = 1145.92'
L = 1076.50'
S 18°39'30" W
S 47°40' E
STA. 579+28.90 END PROJECT NO. 43-1(2)
Yellowstone Canyon Highway
RIGHT OF WAY COPY
Construction Grade
-0.4625 %
+2.5634 %
Elev. 5127.50 1600' V.C.
Elev. 5165.94 1200' V.C.
24" Culvert
18" Culvert Approach Road Ct.
Extend Existing 12x12 Concrete Box Culvert on Rt. with 24" Dia. Reinforced Concrete Pipe. See Sketch on Sheet 13
3' Min Above Highwater
Ground Line
Slope Protection
Water Surface
Excavation for toe of Slope Protection Shall be paid for as Unclassified Excavation Item 102(1)
TYPICAL SECTION ~ SLOPE PROTECTION
STA. 527+25 TO STA. 534+10 ; STA. 562+37 TO STA. 564+50
Seeding (Units) Item 591(1)
18.84
17.71
27.92
58.42
39.43
Balance Point
Exc. 3908 Cu. Yd.
Emb. 3106 Cu. Yd.
Exc. 2899 Cu. Yd.
Emb. 2108 Cu. Yd.
Exc. 3956 Cu. Yd.
Emb. 3005 Cu. Yd.
Exc. 6385 Cu. Yd.
Emb. 5109 Cu. Yd.
Exc. 4170 Cu. Yd.
Emb. 3982 Cu. Yd. (Incl. Temporary Connection)
560
565
570
575
580
585
590
5160
5150
5140
5130
5120
5170
PLAN
PROFILE
FHP 43-1(2) SHT 16

U. S. DEPT. OF COMMERCE BUREAU OF PUBLIC ROADS					
STATE	FOREST	ROUTE NO.	SECTION	SHEET NO.	TOTAL SHEETS
Mont.	Gallatin	43	1(2)	17	38

THE ALIGNMENT AND GRADE AS HEREON SHOWN ARE SUBJECT TO ADJUSTMENT

NOTE: See Sheet No. 18 For Cross Sections

NOTE: Suitable topsoil shall be conserved, stockpiled and uniformly spread to a depth of 4" as directed by the Engineer. Item 590(2) Seed area as directed. Item 591(1).



SIGN LEGEND

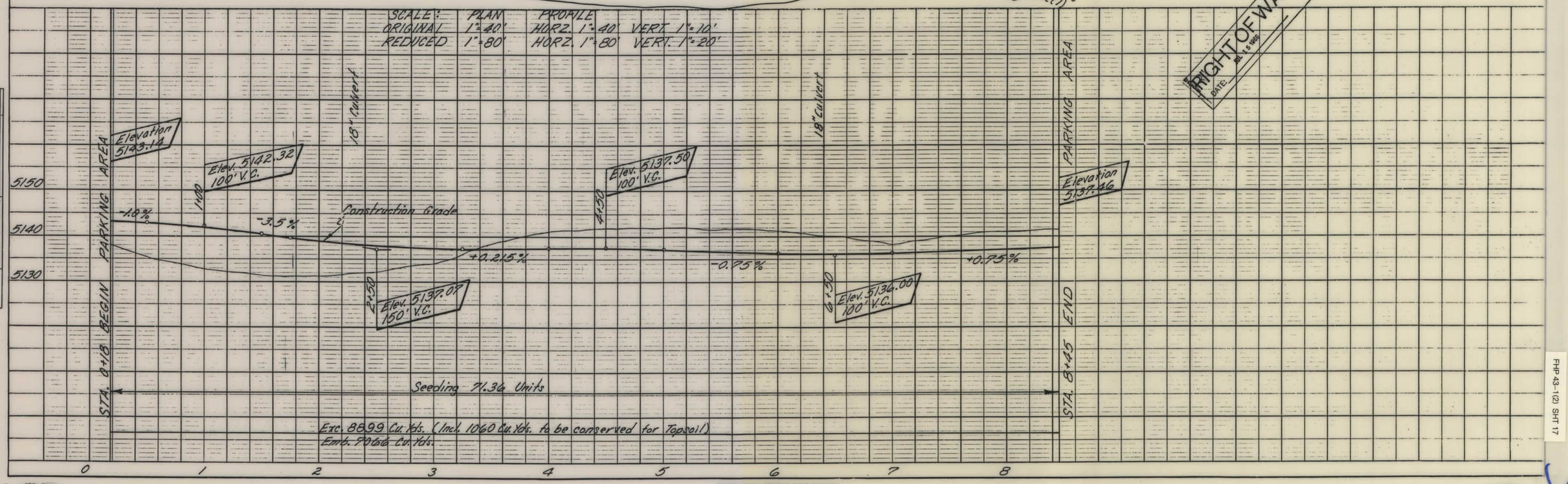
1 ← FISHERMAN PARKING PICNICKING →

2 STOP SIGN

3 SITE ENT. SIGN

SLOPE LIMITS
Top of Cut ——
Toe of Fill - - - - -

SCALE: PLAN PROFILE
ORIGINAL 1"=40' HORZ. 1"=40' VERT. 1"=10'
REDUCED 1"=80' HORZ. 1"=80' VERT. 1"=20'



PLAN — SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, BY, DATE, NO.

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHKD, BY, DATE, NO.

FHP 43-1(2) SHT 17