WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

PLANS FOR CONSTRUCTION
OF

STATE HIGHWAY

STATE PROJECT NO. X326-SP2-0.00, C-4
OHIO PROJECT NO. BEL-872-0.00
FEDERAL PROJECT NO. RS 1251 (6), C-2

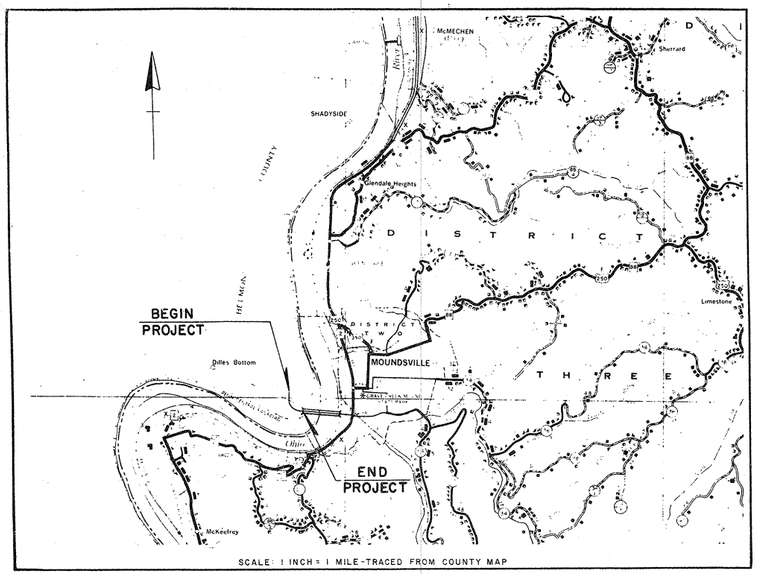
BELMONT COUNTY, OHIO

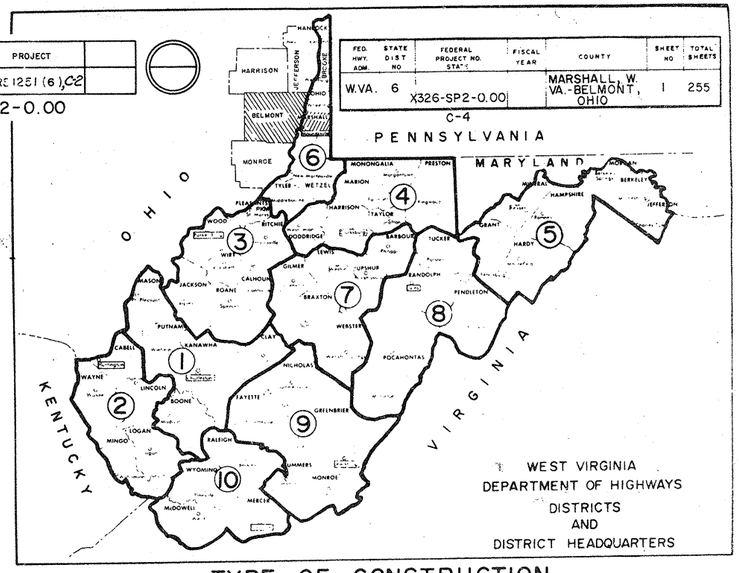
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	RS 1251 (6), C2	

BEL-872-0.00

FED. HWY. ADM.	STATE DIST NO	FEDERAL PROJECT NO. STA.*	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00		MARSHALL, W. VA.-BELMONT, OHIO	1	255

C-4





THIS PROJECT IS A FULLY CONTROLLED ACCESS FACILITY WITH NO ACCESS EXCEPT AT DESIGNATED POINTS OF PUBLIC ACCESS AS SET FORTH IN THESE PLANS.

PROJECT NO.	STA. TO STA.	LENGTH	LENGTH
ROADWAY	5+85.23 - 9+41.93	356.70 FT.	.067 MI. RDY.
BRIDGE BEL-872-0008	9+41.93 - 11+08.52	166.59 FT.	.032 MI. BR.
ROADWAY	11+08.52 - 22+00.00	1091.48 FT.	.207 MI. RDY.
TOTAL ROADWAY		1448.18 FT.	.274 MI.
TOTAL BRIDGE		166.59 FT.	.032 MI.
TOTAL PROJECT		1614.77 FT.	.306 MI.

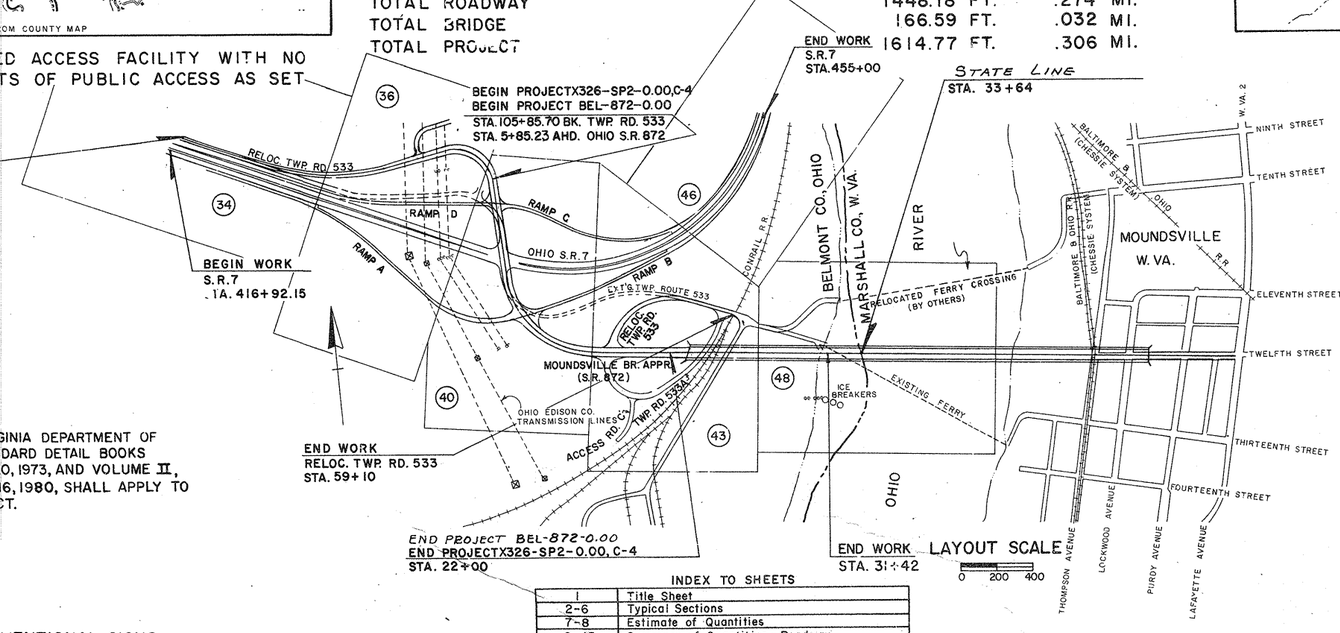
TYPE OF CONSTRUCTION
GRADING, DRAINAGE, PAVING, SIGNING, LIGHTING, PAVEMENT MARKINGS AND BRIDGE

NOTE: IN THESE PLANS WHERE THE PROJECT NUMBER APPEARS AS M-5251(002), IT SHALL BE READ AS RS-1251(6), C-2.

PROJECT #X326-SP2-0.00, C-4 IS FOR ADMINISTRATION PURPOSES BY W.V. DOH ONLY.

UTILITIES

OHIO POWER CO.
OHIO EDISON CO.
OHIO BELL TELEPHONE CO.



THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD DETAIL BOOKS DATED JUNE 20, 1973, AND VOLUME II, DATED JUNE 16, 1980, SHALL APPLY TO THIS PROJECT.

SCALES
PLAN HOR. 0 25 50
PROFILE VERT. 10 5 0
HOR. 0 25 50

DESIGN DESIGNATION

A.D.T. (1981)	3700
A.D.T. (2001)	9100
K.	10%
D.	65/35
T.	5%
V.	40 M.P.H.

CONVENTIONAL SIGNS
State Line
County Line
Corporation Line
Proposed R/W Line
Property Line
Existing Fence
Proposed Fence
Edge of Stream
Proposed Guard Rail
Existing Guard Rail
Railroad
Gas Line
Water Line
Telephone Line
Electric Line
Telephone Pole
Power Pole
Combined Power and Telephone Pole
Tree
Shrub
Right of Way Marker

PLANS PREPARED BY
MICHAEL BAKER, JR., INC.
Consulting Engineers
SIGNED
DATE-JULY 30, 1979
BEAVER, PENNA.

SEAL

INDEX TO SHEETS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	109-114	ADDED SHEETS	5/5/82	C. RUNG

~~SHEETS 109-114 DELETED~~

I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE PLANS OF PROJECT X326-SP2-0.00, C-4
EXECUTIVE SECRETARY
September 6 1979

OHIO APPROVALS

The right of way for the Ohio portion of this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for maintenance and safety of traffic will be as set forth on the plans and estimates.

APPROVED ..... DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION
DATE 8-16-79

APPROVED ..... ENGINEER, BUREAU OF BRIDGES, AND STRUCTURAL DESIGN
DATE 8-20-79

APPROVED ..... CHIEF ENGINEER, PLANNING AND DESIGN
DATE 8-22-79

APPROVED ..... DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE 8-22-79

WEST VIRGINIA APPROVALS

RECOMMENDED ..... DIRECTOR STRUCTURES DIVISION

RECOMMENDED ..... DIRECTOR ROADWAY DESIGN DIVISION

REVIEWED ..... CHIEF ENGINEER - DEVELOPMENT

RECOMMENDED FOR APPROVAL ..... HIGHWAY ENGINEER

APPROVED ..... COMMISSIONER OF HIGHWAYS

APPROVED

DIVISION ADMINISTRATOR DATE

U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

PROJECT NO. X326-SP2-0.00, C-4

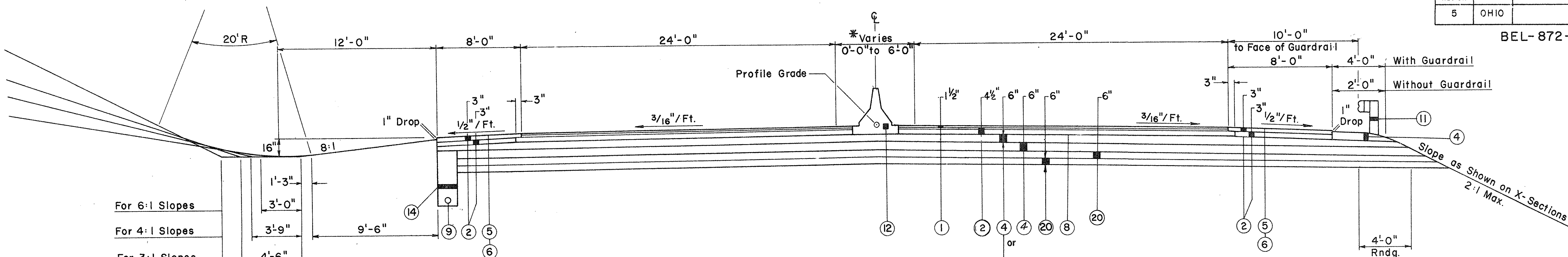
* NOTES : (1) There is no median Sta. 5+85.23 to Sta. 13+60.
(2) Type I Modified Median limits are Sta. 13 + 60 to Sta. 16 + 80 with a 20 ft. Transition.
(3) Type V Modified Median limits are Sta. 17 + 00 to Sta. 22 + 00.

FED. HWY. ADM.	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	2	255

C-4

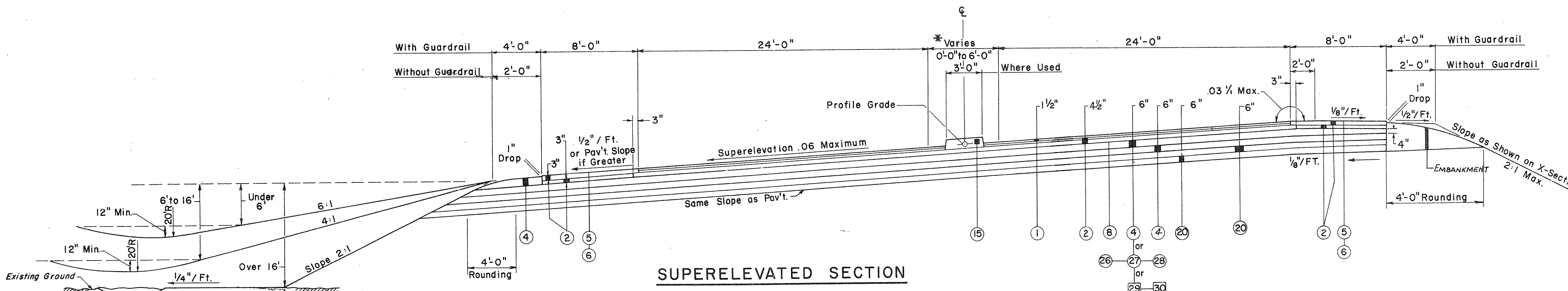
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



NORMAL SECTION

Sta. 8 + 19.23 to Sta. 9 + 11.31
Sta. 20 + 75.89 to Sta. 22 + 00



SUPERELEVATED SECTION

Sta. 5 + 85.23 to Sta. 8 + 19.23
Sta. 9 + 11.31 to Sta. 20 + 75.89

LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel or Slag), Item 401-2 (1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1 (1), Tons

(4) Class I Aggregate Base Course, Item 307-1, C.Y.
(5) Tack Coat Aggregate, Item 408-1, Tons
(6) Bituminous Material, Item 408-2, Gallons
(8) Bituminous Material, Item 409-2, Gallons
(9) Underdrain Pipe, Item 606-25, (6"), L.F.
(11) Type I Guardrail, Item 607-1 (I), L.F. (Ohio Type 5 Guardrail)
(12) Median Item 610-6 (Type V Modified), L.F.
(14) Crushed Stone, Crushed Gravel or Silica Sand for Underdrains, Item 606-22, C.Y.
(15) Median, Item 610-6 (Type I Modified), L.F.

(20) Subgrade, Item 207-2, C.Y.

(26) Cement Treated Base Course Aggregate, Item 301-1, C.Y.
(27) Portland Cement, Item 301-2, C.W.T.
(28) Bituminous Material 301-3, Gallons
[29] Hot Mixed, Hot-Laid Bituminous Treated Base Course Aggregate, Item 302-1, C.Y.
[30] Bituminous Material, Item 302-2, Gallons

S.R. 872
TYPICAL SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

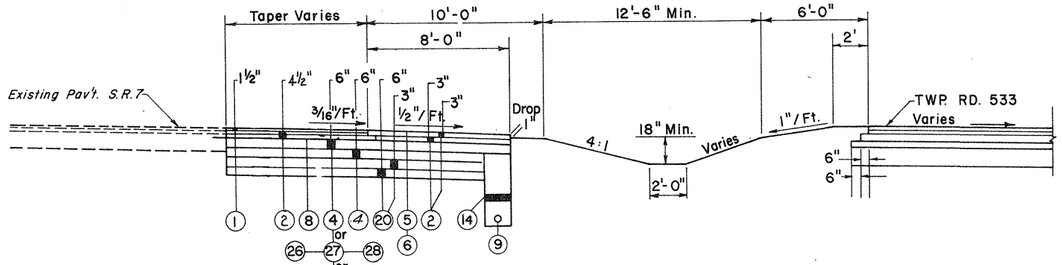
PLAN	
NOTE BOOK NO.	SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED
BY	
DATE	

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL,W.VA BELMONT, OHIO	3	255

C-4

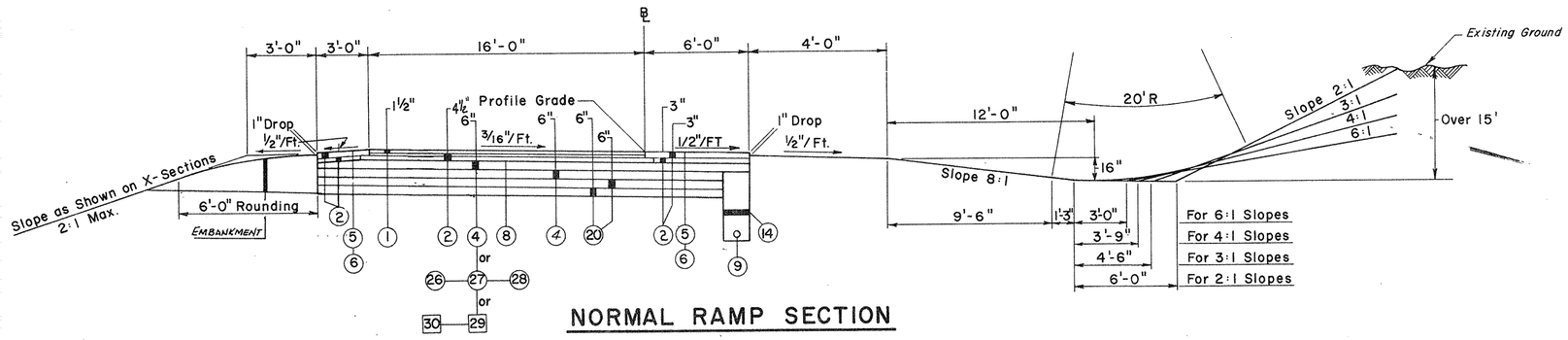
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



RAMP D TAPER TREATMENT

Sta. 417+55 to Sta. 427+55 S.R. 7



NORMAL RAMP SECTION

Sta. 29+97.19 to Sta. 32+55.03 RAMP A
Sta. 37+66.78 to Sta. 41+35.00 RAMP B
Sta. 31+42.63 to Sta. 35+61.93 RAMP D

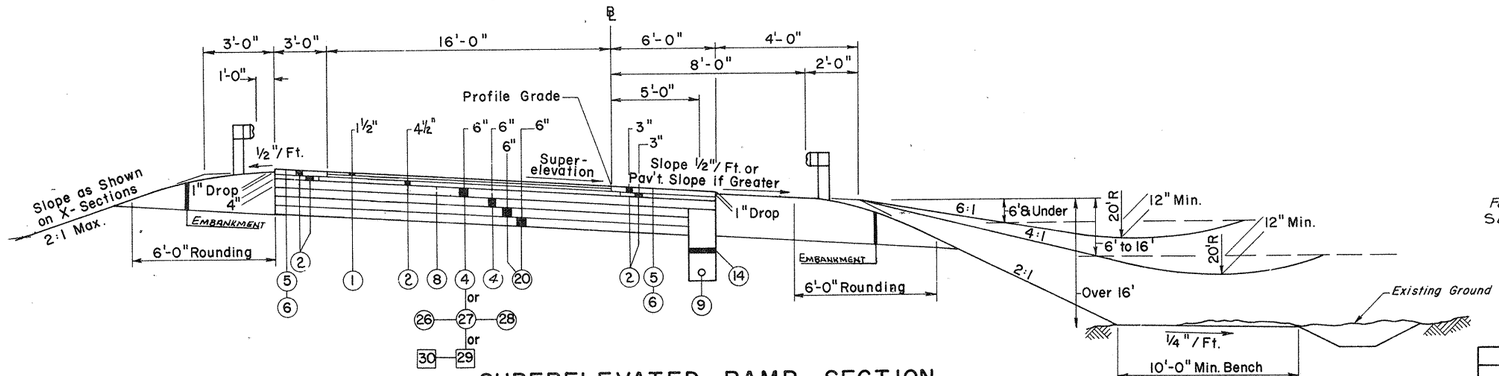
LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel, or Slag), Item 401-2 (1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1 (1), Tons

(4) Class I Aggregate Base Course, Item 307-1, C.Y.
(5) Tack Coat Aggregate, Item 408-1, Tons
(6) Bituminous Material, Item 408-2, Gallons

(8) Bituminous Material, Item 409-2, Gallons
(9) Underdrain Pipe, Item 606-25, (6"), L.F.
(11) Type I Guardrail, Item 607-1(1), L.F., (Ohio Type 5 Guardrail), L.F.
(14) Crushed Stone, Crushed Gravel, or Silica Sand for Underdrains, Item 606-22, C.Y.

(20) Subgrade, Item 207-2, C.Y.
(26) Cement Treated Base Course Aggregate, Item 301-1, C.Y.
(27) Portland Cement, Item 301-2, C.W.T.
(28) Bituminous Material 301-3, Gallons
[29] Hot Mixed, Hot-Laid Bituminous Treated Base Course Aggregate, Item 302-1, C.Y.
[30] Bituminous Material, Item 302-2, Gallons



SUPERELEVATED RAMP SECTION

Sta. 28+40.00 to Sta. 29+97.19 RAMP A
Sta. 32+55.03 to Sta. 39+38.58 RAMP A
Sta. 41+35.00 to Sta. 43+08.47 RAMP B
Sta. 37+02.19 to Sta. 45+50.00 RAMP C
Sta. 27+55.00 to Sta. 31+42.63 RAMP D

FOR RAMP TAPERS AND RAMP TIE-INS SEE SHEETS 76-82.

TYPICAL SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

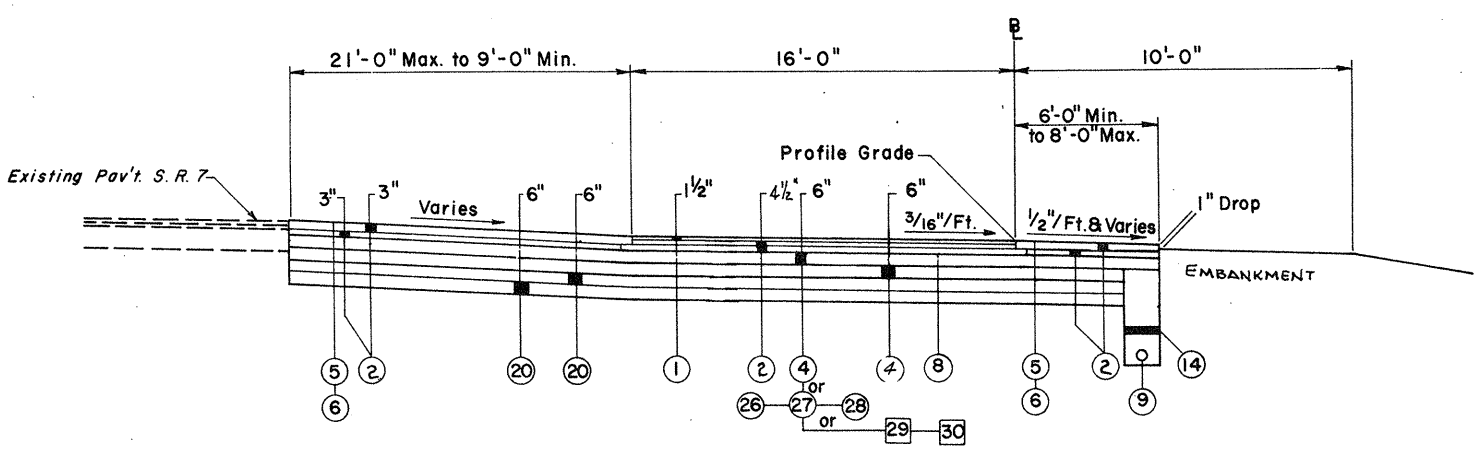
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN — SURVEYED, PLOTTED, ALIGNMENT CHECKED, ETC. OF MAP CHECKED, NOTE BOOK, NO., DATE, BY, REVISED

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	4	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

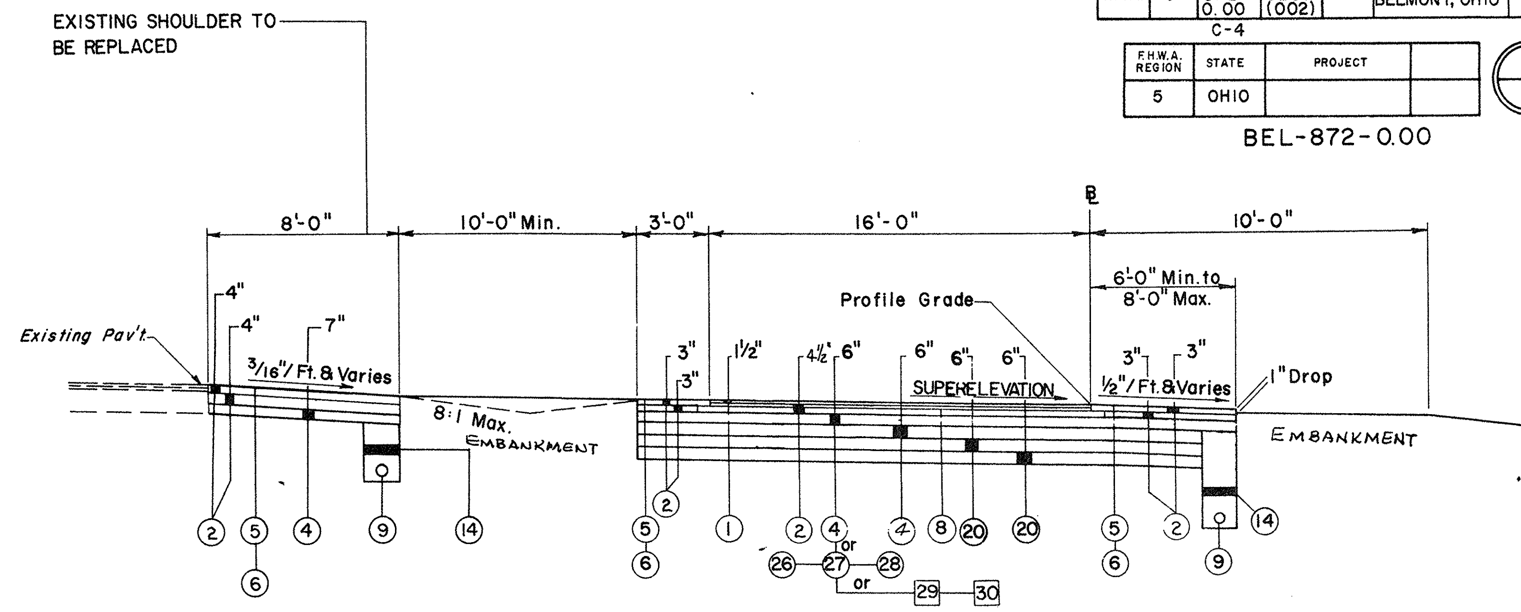
BEL-872-0.00



ENTRANCE RAMP TERMINAL

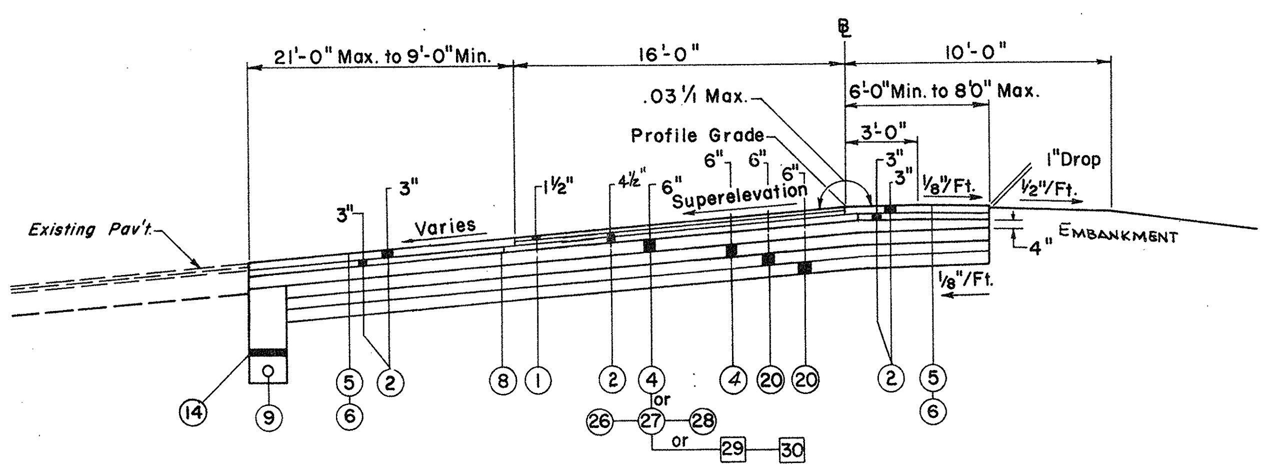
NORMAL SECTION

Sta. 27+55 to Sta. 29+06.93 RAMP D



EXIT RAMP TERMINAL

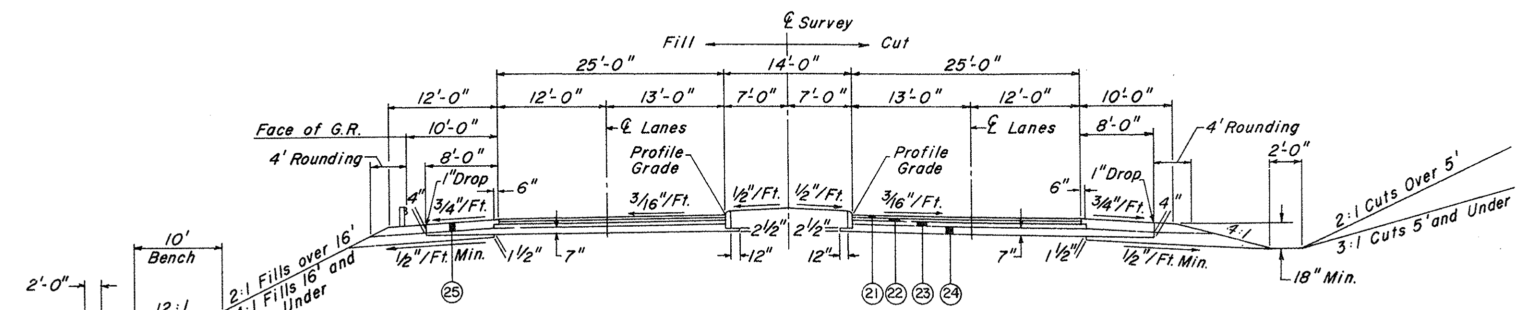
Sta. 26+45.63 to Sta. 28+40 Ramp A
Sta. 45+50 to Sta. 46+80.31 Ramp C



ENTRANCE RAMP TERMINAL

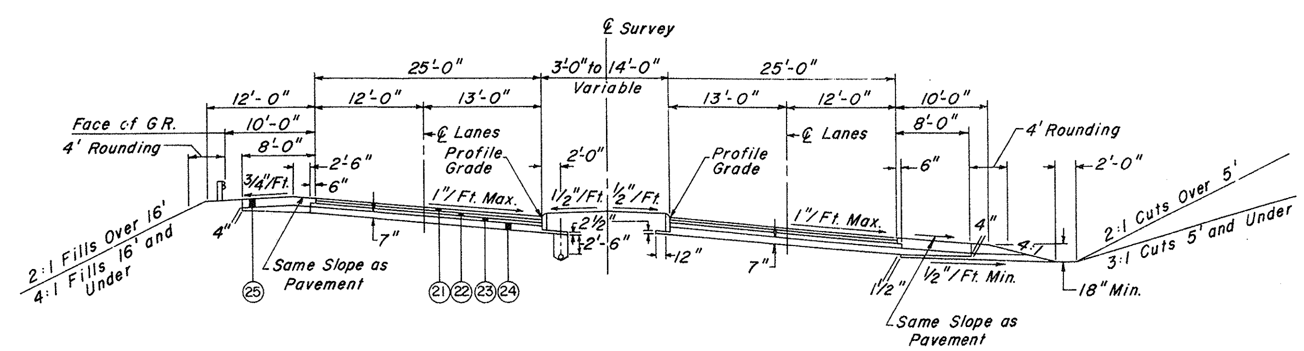
SUPERELEVATED SECTION

Sta. 43+08.47 to Sta. 44+50 RAMP B



NORMAL SECTION - EXISTING S.R. 7

Sta. 417 + 42.79 to Sta. 435 + 22.79
-FOR INFORMATION ONLY-



SUPERELEVATED SECTION - EXISTING S.R. 7

Sta. 435 + 22.79 to Sta. 459 + 94.22
-FOR INFORMATION ONLY-

LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel or Slag), Item 401-2 (1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1 (1), Tons

(4) Class I Aggregate Base Course, Item 307-1, C.Y.
(5) Tack Coat Aggregate, Item 408-1, Tons
(6) Bituminous Material, Item 408-2, Gallons

(8) Bituminous Material, Item 409-2, Gallons
(9) Underdrain Pipe, Item 606-25 (6"), L.F.
(14) Crushed Stone, Crushed Gravel, or Silica Sand for Underdrains, Item 606-22, C.Y.

(20) Subgrade, Item 207-2, C.Y.

FOR INFORMATION ONLY

LEGEND - EXISTING S.R. 7

(21) *1 1/4" Asphalt Concrete*
(22) *1 1/4" Asphalt Concrete*
(23) *5" Bituminous Aggregate Base*
(24) *Special Aggregate Lime - Fly Ash Base*
(25) *8" Aggregate Base*

(26) Cement Treated Base Course Aggregate, Item 301-1, C.Y.
(27) Portland Cement, Item 301-2, C.W.T.
(28) Bituminous Material, 301-3, Gallons
[29] Hot Mixed, Hot-Laid Bituminous Treated Base Course Aggregate, Item 302-1, C.Y.
[30] Bituminous Material, Item 302-2, Gallons

TYPICAL SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

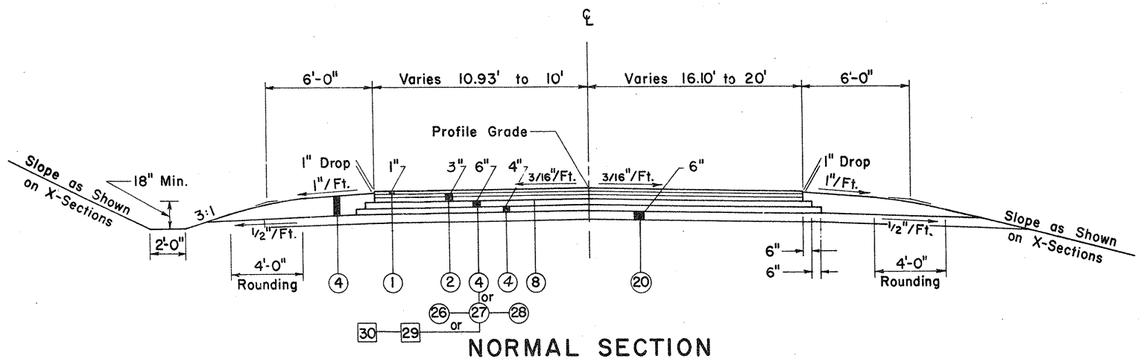
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED HWY. ADM	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	5	255

C-4

F.H.W.A REGION	STATE	PROJECT	
5	OHIO		

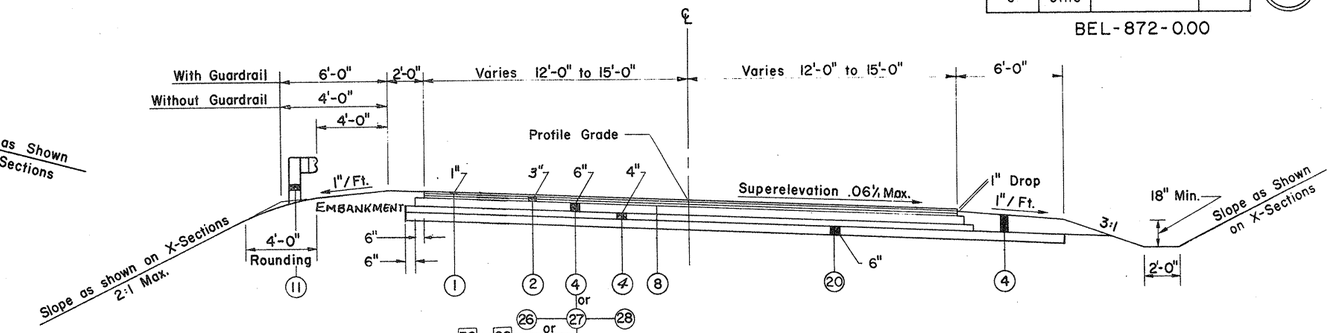
BEL-872-0.00



NORMAL SECTION

RELOC. TWP. RD. 533

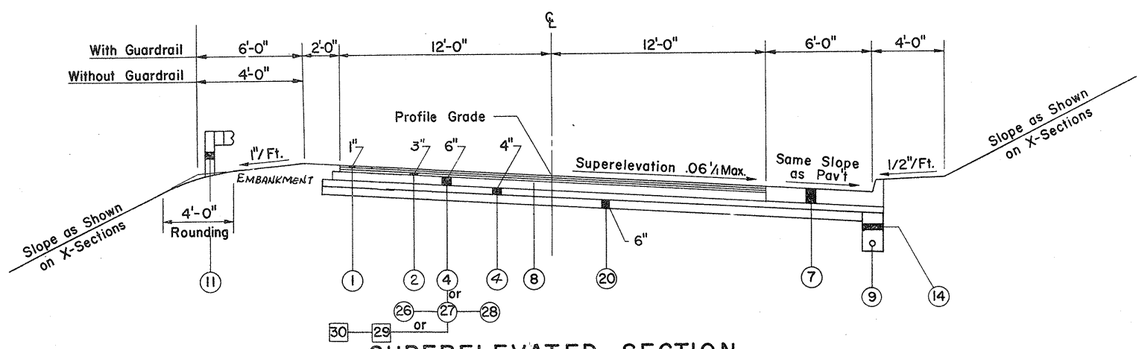
Sta. 57+83.08 to Sta. 59+10



SUPERELEVATED SECTION

TWP. RD. 533-A

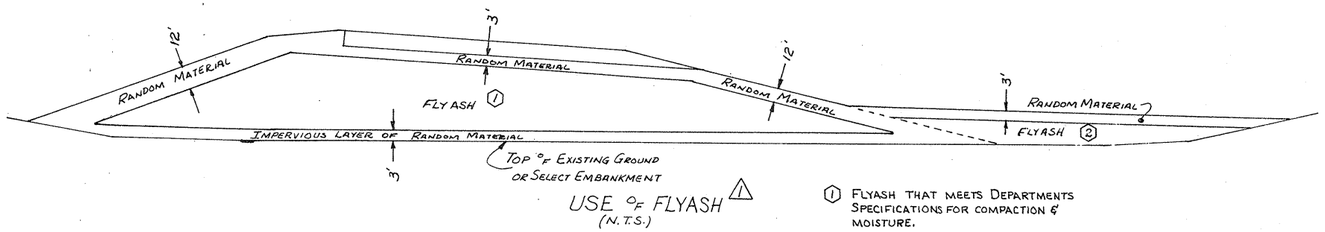
Sta. 39+35.32 to Sta. 41+00
Sta. 43+50 to Sta. 49+73.03



SUPERELEVATED SECTION

TWP. RD. 533-A

Sta. 41+00 to Sta. 43+50



USE OF FLYASH ⚠1
(N.T.S.)

(1) Flyash that meets Departments Specifications for compaction & moisture.

(2) Flyash that does not meet Departments Specifications.

LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel or Slag), Item 401-2 (1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1 (1), Tons
(4) Class I Aggregate Base Course, Item 307-1, C.Y.
(7) Combination Concrete Curb and Gutter, Modified, Item 610-3(I), L.F.
(8) Bituminous Material, Item 409-2, Gallons
(9) Underdrain Pipe, Item 606-25, (6"), L.F.
(11) Type I Guardrail, Item 607-1(I), L.F. (Ohio Type 5 Guardrail)
(14) Crushed Stone, Crushed Gravel, or Silica Sand for Underdrains, Item 606-22, C.Y.

(20) Subgrade, Item 207-2 C.Y.

(26) Cement Treated Base Course Aggregate, Item 301-1, C.Y.
(27) Portland Cement, Item 301-2, C.W.T.
(28) Bituminous Material 301-3, Gallons
(29) Hot Mixed, Hot-Laid Bituminous Treated Base Course Aggregate, Item 302-1, C.Y.
(30) Bituminous Material, Item 302-2, Gallons

TYPICAL SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠1	5	Added Typical Section w/Notes	5/16/82	C.R.Long

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

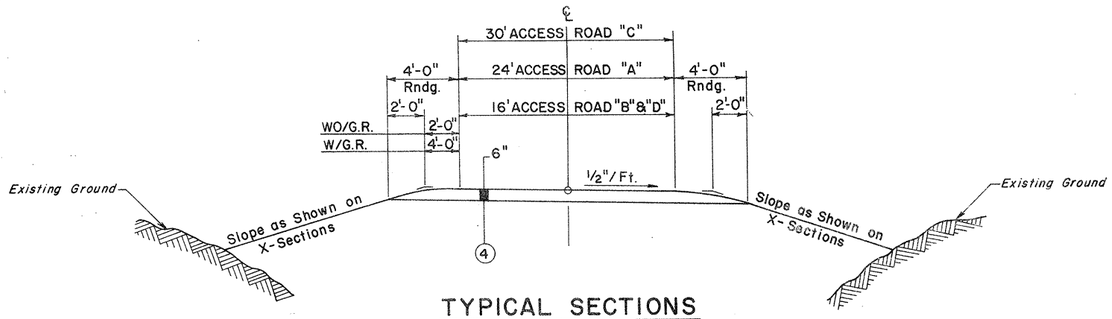
ALIGNMENT CHECKED
ALL OF MAT CHECKED
NO
DATE

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA. BELMONT, OHIO	6	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

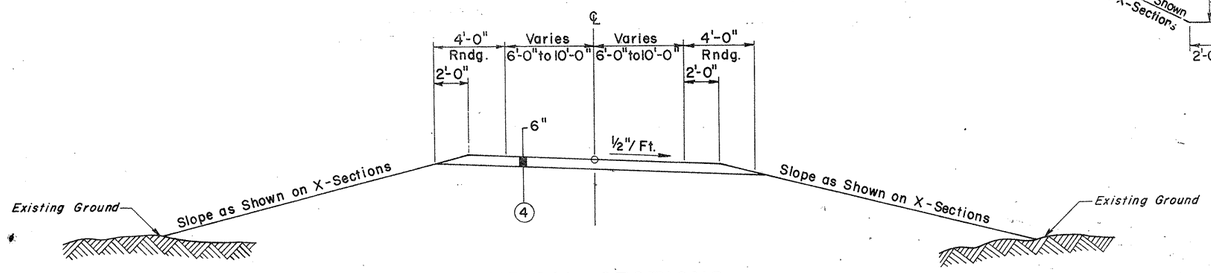
BEL-872-0.00



TYPICAL SECTIONS

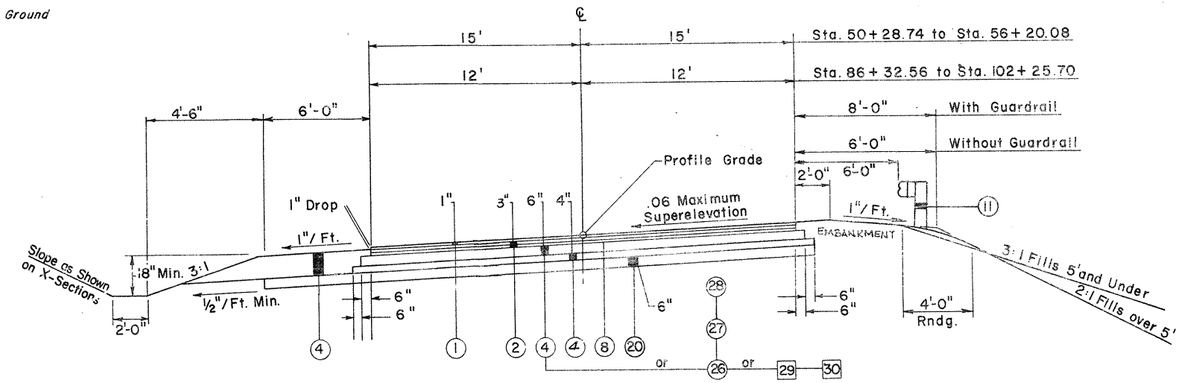
ACCESS ROADS "A, B, C & D"

STA. 197+25 TO STA. 200+00 TEMP. RD. NO. 2



TYPICAL SECTIONS

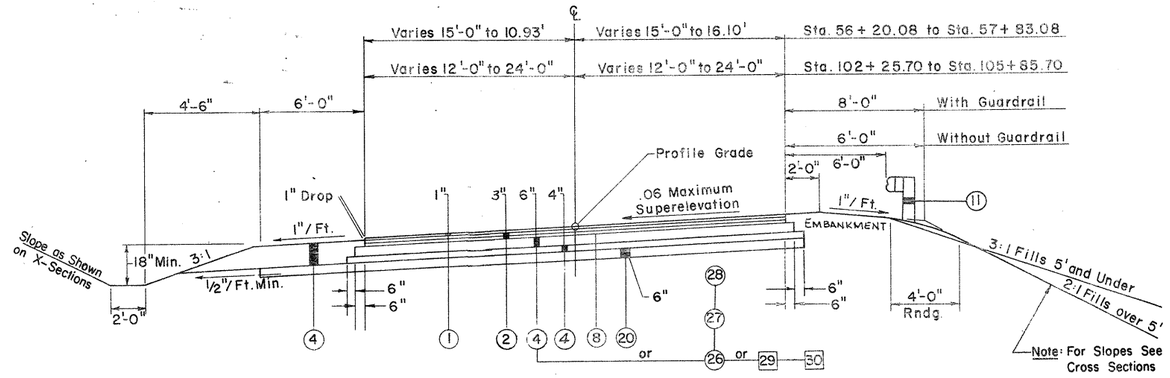
DRIVEWAYS



SUPERELEVATED SECTION

RELOCATED TWP. RD. 533

Sta. 86+32.56 to Sta. 102+25.70
Sta. 50+28.74 to Sta. 56+20.08
Sta. 152+89.73 to Sta. 156+20.08 – Temp. Rd. No. 1
Sta. 195+76.35 to Sta. 197+05.00 – Temp. Rd. No. 2



SUPERELEVATED SECTION

RELOCATED TWP. RD. 533

Sta. 56+20.08 to Sta. 57+83.08
Sta. 102+25.70 to Sta. 105+85.70

LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel or Slag), Item 401-2(1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1 (1), Tons
(4) Class I Aggregate Base Course, Item 307-1, C.Y.

(8) Bituminous Material, Item 409-2, Gallons
(11) Type I Guardrail, Item 607-1 (1), L.F. (Ohio Type 5 Guardrail), L.F.
(20) Subgrade, Item 207-2, C.Y.
(26) Cement Treated Base Course Aggregate, Item 301-1, C.Y.
(27) Portland Cement, Item 301-2, C.W.T.
(28) Bituminous Material, 301-3, Gallons
[29] Hot Mixed, Hot-Laid Bituminous Treated Base Course Aggregate, Item 302-1, C.Y.
[30] Bituminous Material, Item 302-2, Gallons

PLAN — SURVEYED — PLOTTED — NOTE BOOK — ALIGNMENT CHECKED — PT. OF MAY CHECKED — NO. — DATE — BY

TYPICAL SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No	Fiscal Year	County	Sheet No	Total Sheets
W.VA.	6	~~X326-~~ SP2-0.00	M-5251-(002)		Marshall, W.VA. Belmont, Ohio	7	255

C-4

ITEM NO.	ALT.	DESCRIPTION	UNIT	QUANTITY
201-1		CLEARING AND GRUBBING	L.S.	L.S.
202-1 (1)		BUILDING DEMOLITION	L.S.	L.S.
202-1 (2)		BUILDING DEMOLITION	L.S.	L.S.
202-1 (3)		BUILDING DEMOLITION	L.S.	L.S.
204-1		MOBILIZATION	L.S.	L.S.
207-1		UNCLASSIFIED EXCAVATION	C.Y.	⚠ ~~147,298~~ 151,055
207-2		SUBGRADE	C.Y.	12,630
211-1		UNCLASSIFIED BORROW EXCAVATION	C.Y.	⚠ ~~606,992~~ 460,273
211-2		ROCK BORROW EXCAVATION	C.Y.	75,927
228-1		SUBGRADE PREPARATION	S.Y.	254
307-1	P	CLASS I AGGREGATE BASE COURSE	C.Y.	8,428
301-1	A-1	CEMENT TREATED BASE COURSE AGGREGATE	C.Y.	8,581
301-2	A-1	PORTLAND CEMENT	C.W.T.	15,017
301-3	A-1	BITUMINOUS MATERIAL	GAL.	11,324
302-1	A-2	HOT-MIXED, HOT LAID BITUMINOUS TREATED BASE COURSE AGGREGATE	C.Y.	8,581
302-2	A-2	BITUMINOUS MATERIAL	GAL.	188,749
307-1		CLASS I AGGREGATE BASE COURSE	C.Y.	9,551
401-1 (1)	P	HOT-LAID BITUMINOUS CONCRETE BASE COURSE, STONE OR GRAVEL	TON	10,962
401-1 (1)	A	HOT-LAID BITUMINOUS CONCRETE BASE COURSE, SLAG	TON	9,760
401-2 (1)	P	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE, STONE OR GRAVEL	TON	2,619
401-2 (1)	A	HOT-LAID BITUMINOUS CONCRETE WEARING COURSE, SLAG	TON	2,331
401-6		FIELD LABORATORY	L.S.	L.S.
408-1		TACK COAT AGGREGATE	TON	~~87~~ 111 ⚠
408-2		BITUMINOUS MATERIAL	GAL.	~~2,911~~ 3,715 ⚠
409-2		BITUMINOUS MATERIAL	GAL.	21,731
502-1 (12)		PORTLAND CEMENT CONCRETE APPROACH SLAB	S.Y.	446
601-2		CLASS B CONCRETE	C.Y.	47
601-7		FIELD LABORATORY	L.S.	L.S.
604-9 (12)		FULL BITUMINOUS COATED AND PAVED INVERT CORRUGATED IRON OR STEEL PIPE, 0.064" THICKNESS	L.F.	40
604-9 (18)		FULL BITUMINOUS COATED AND PAVED INVERT CORRUGATED IRON OR STEEL PIPE, 0.064" THICKNESS	L.F.	710
604-10 (18) MOD.		FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE 0.064" THICKNESS	L.F.	278
604-62 (18)	P	REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	2,402
604-10 (18) MOD.	A	FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE, 0.064" THICKNESS	L.F.	2,402
604-62 (21)		REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	76
604-10 (24) MOD.		FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE 0.064 THICKNESS	L.F.	458
604-62 (24)	P	REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	768
604-10 (24) MOD.	A	FULL BITUMINOUS COATED AND LINED CORRUGATED IRON AND STEEL PIPE, 0.064 THICKNESS	L.F.	768
604-62 (30)	P	REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	94
604-10 (30) MOD.	A	FULL BITUMINOUS COATED AND LINED CORRUGATED IRON AND STEEL PIPE, 0.064" THICKNESS	L.F.	94
604-62 (36)	P	REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	300
604-10 (36) MOD.	A	FULL BITUMINOUS COATED AND LINED CORRUGATED IRON AND STEEL PIPE, 0.064" THICKNESS	L.F.	300
604-10 (42) MOD.		FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE, 0.079" THICKNESS, ELONGATED	L.F.	712
604-62 (42)	P	REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III	L.F.	684
604-10 (42) MOD.	A	FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE, 0.064" THICKNESS	L.F.	684
604-68 (66)		CLAY LINED REINFORCED CONCRETE PIPE, CLASS III	L.F.	8
604-72 (12)		CLAY PIPE, EXTRA STRENGTH	L.F.	32
604-81 (42)	P	JACKED CONDUIT, REINFORCED CONCRETE CULVERT, STORM DRAIN OR SEWER PIPE, CLASS V	L.F.	88
604-81 (42)	A	JACKED CONDUIT, FULL BITUMINOUS COATED AND LINED CORRUGATED IRON OR STEEL PIPE, 0.168" THICKNESS	L.F.	88
605-4 MOD.		TYPE B INLET MODIFIED	EA.	3
605-7 MOD		TYPE E INLET, MODIFIED	EA.	1
605-9		TYPE G INLET	EA.	23
605-10		TYPE H INLET	EA.	7
606-22		CRUSHED STONE, CRUSHED GRAVEL OR SILICA SAND FOR UNDERDRAINS	C.Y.	2,125
606-25		UNDERDRAIN PIPE	L.F.	10,331
607-1 (I)		TYPE I GUARDRAIL (OHIO TYPE 5 GUARDRAIL)	L.F.	7562.5
607-1 (III)		TYPE I GUARDRAIL	L.F.	25
607-5 (I)		TYPE 5 GUARDRAIL (OHIO TYPE 5 BARRIER RAIL)	L.F.	43.75

ITEM NO.	ALT.	DESCRIPTION	UNIT	QUANTITY
607-7 MOD.		TURNED-DOWN END SECTION MOD. (OHIO ANCHOR ASSEMBLY TYPE A)	EA.	10
607-23 MOD.		GUARD RAIL END ANCHOR MOD. (OHIO ANCHOR ASSEMBLY, TYPE T)	EA.	6
608-2(3'-1")MOD.		RIGHT-OF-WAY FENCE, FARM FIELD TYPE, MODIFIED (OHIO TYPE 47 FENCE)	L.F.	8,050
609-1		CONCRETE SIDEWALK	S.Y.	63
610-1 (1)		PLAIN CONCRETE CURBING	L.F.	60
610-3 (1)		COMBINATION CURB AND GUTTER, MODIFIED	L.F.	250
610-6 (1) MOD.		MEDIAN MODIFIED	L.F.	320
610-6 (X) MOD.		MEDIAN, MODIFIED (OHIO TYPE A CONCRETE BARRIER)	L.F.	520
610-6 (XI) MOD.		MEDIAN, MODIFIED (OHIO TYPE B CONCRETE BARRIER)	L.F.	380
610-6 (XII) MOD.		MEDIAN, MODIFIED (OHIO TYPE C CONCRETE BARRIER)	L.F.	1,310
636-25(A)		BARRICADE WARNING LIGHTS	DAY	19,180
636-25(B)		BARRICADE WARNING LIGHTS	DAY	⚠ ~~16,385~~ 16,457
636-25(C)		BARRICADE WARNING LIGHTS	DAY	⚠ ~~3,864~~ 9,918
636-2		AGGREGATE FOR MAINTAINING TRAFFIC	TON	50
636-3		LIQUID ASPHALT OIL FOR DUST. PALLIATIVE	GAL.	1,700
636-7		ERADICATION OF PAVEMENT MARKINGS-PAINT	L.F.	8,627
636-9		TEMPORARY PAVEMENT MARKINGS-TAPE	L.F.	⚠ ~~20,377~~ 33,677
636-11		TRAFFIC CONTROL DEVICES	UNIT	15,510
636-11-2		MOVE EXISTING SIGNS	EA.	10
636-12		CLEANING OF PROJECT TRAFFIC CONTROL DEVICES	EA.	5
636-13		CLEANING OF INDIVIDUAL TRAFFIC CONTROL DEVICES	EA.	425
636-14		FLAGGER	HR.	5,000
636-17		TEMPORARY CONCRETE BARRIERS	L.F.	4,120
636-18		REMOVING AND RESETTING TEMPORARY CONCRETE BARRIERS	L.F.	5,430
636-21		ELECTRIC ARROW	DAY	400
637-1		WATER FOR DUST PALLIATIVE	M. GAL.	1,364
638-1		PROJECT MARKERS	EA.	1
638-3		SURVEY MARKERS, MODIFIED	EA.	6
639-1		CONSTRUCTION LAYOUT STAKES	L.S.	L.S.
640-1		STANDARD FIELD OFFICE AND STORAGE BUILDING	L.S.	L.S.
640-3		BUILDING EQUIPMENT	L.S.	L.S.
664-1(III)		IMPACT ATTENUATING DEVICE (TEMPORARY CONSTRUCTION)	EA.	6
664-1(III)		IMPACT ATTENUATING DEVICE	EA.	1
664-1A		REMOVING & RESETTING IMPACT ATTENUATING DEVICE	EA.	8
699		ON THE JOB TRAINING	HRS.	4,000
		EROSION CONTROL		
633-1		CONCRETE GUTTER	S.Y.	305
633-3		DUMPED ROCK GUTTER	C.Y.	928
642-1		TEMPORARY BERMS	L.F.	11,620
642-2		SLOPE DRAINS	L.F.	350
642-3-3		SEDIMENT TRAP OR SEDIMENT POND	C.Y.	3,200
642-3-6		SEDIMENT REMOVAL	C.Y.	5,200
642-4-1		TEMPORARY SEED	LBS.	353
642-4-2		SEED MIXTURE B	LBS.	2,612
642-4-3		SEED MIXTURE D	LBS.	467
642-5-1		STRAW OR HAY MULCH	TON	79
642-6		FERTILIZER	TON	16
642-7		FIBER MATTING	S.Y.	1,400
642-8		TEMPORARY PIPE	L.F.	3,200
642-9		CONTOUR DITCH	L.F.	1,700
642-10		AGRICULTURAL LIMESTONE	TON	39
642-11		HAY BALES	EACH	195

SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
NOTE BOOK
NO.

ESTIMATE OF QUANTITIES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	7	REVISED QUANTITIES	5/6/80	[illegible]

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M 5251 (002)		MARSHALL, W.VA.- BEL-MONT, OHIO	8	255

C-4

ITEM NO.	ALT.	DESCRIPTION	UNIT	QUANTITY
		EROSION CONTROL (CONT.)		
651-2		PLACING STOCKPILED TOPSOIL	C.Y.	~~888~~ 1368 ⚠
652-1		AGRICULTURAL LIMESTONE	TON	39
652-2-1		FERTILIZER 10-20-10	TON	25
652-2-2		UREA FORMALDEHYDE FERTILIZER	TON	6
652-3-1		SEED MIXTURES B, C-1 OR C-2	LBS.	3,074
652-3-2		SEED MIXTURE D	LBS.	549
652-4-1		STRAW OR HAY MULCH	TON	79
655-1		MATTING	S.Y.	1,497
		SIGNING		
657-6 (1)		A-441 SUPPORTS GALVANIZED S4 X 7.7	L.F.	298
657-6 (2)		A-441 SUPPORTS GALVANIZED W10 X 11.5	L.F.	212
657-6 (3)		A-441 SUPPORTS GALVANIZED W10 X 21	L.F.	480
657-8 (2.00 LB.)		CHANNEL POSTS	L.F.	1,272
657-10 (3.00 LB.)		CHANNEL POSTS	L.F.	169
657-11 (4.00 LB.)		CHANNEL POSTS	L.F.	516
657-16		CLASS B CONCRETE FOOTING., PLAIN ROADSIDE	C.Y.	37
661-1 (1)		FLAT SHEET SIGNS (0.080)	S.F.	341
661-1 (2)		FLAT SHEET SIGNS (0.100)	S.F.	145
661-2		EXTRUDED PANEL SIGNS	S.F.	1,280
661-4 (1)		DELINEATORS, REFLEX REFLECTOR, WHITE SINGLE, MODIFIED (O DOT TYPE A)	EACH	92
661-4 (2)		DELINEATORS ENCAPSULATED LENS, WHITE SINGLE, MODIFIED (O DOT TYPE C)	EACH	83
661-5 (1)		DELINEATORS, REFLEX REFLECTOR, AMBER SINGLE, MODIFIED (O DOT TYPE B BIDIRECTIONAL)	EACH	26
661-5 (2)		DELINEATORS, ENCAPSULATED LENS, AMBER SINGLE, MODIFIED (O DOT TYPE D)	EACH	17
661-10 MOD.		DELINEATOR BRACKET, TYPE C MODIFIED	EACH	14
		BRIDGE NO. 2971 (ABUT. NO. 1, PIERS 1A, 1, 2, 3 & 4)		
212-1		STRUCTURE EXCAVATION	C.Y.	833
212-5		SELECT MATERIAL FOR BACKFILLING	C.Y.	11
601-2		CLASS B CONCRETE	C.Y.	1,131
602-1		REINFORCING STEEL BARS	LBS.	180,940
615-3		FABRICATED STRUCTURAL STEEL	L.S.	L.S.
616-4		HP 12 X 53 STEEL BEARING PILES, DRIVEN	L.F.	10,280
639-1		CONSTRUCTION LAYOUT STAKES	L.S.	L.S.
		BRIDGE NO. BEL-872-0008		
212-1		STRUCTURE EXCAVATION	C.Y.	1,325
212-5		SELECT MATERIAL FOR BACKFILLING	C.Y.	286
218-4(12)		CRUSHED ROCK SLOPE PROTECTION	S.Y.	450
601-2		CLASS B CONCRETE	C.Y.	803
601-3		CLASS K CONCRETE	C.Y.	370
602-1		REINFORCING STEEL BARS	LBS.	133,297
602-2		EPOXY COATED REINFORCING STEEL BARS	LBS.	41,049
606-25		UNDERDRAIN PIPE	L.F.	319
615-1		STEEL SUPERSTRUCTURE	L.S.	L.S.
616-3		CONCRETE PILES	L.F.	5,175
639-1		CONSTRUCTION LAYOUT STAKES	L.S.	L.S.

ITEM NO.	ALT.	DESCRIPTION	UNIT	QUANTITY
		LIGHTING		
625-1		LIGHT POLE & ARM, AT15B 41.7, 713.01	EA.	25
625-1		LIGHT POLE & ARM, A6840, 713.01	EA.	1
625-2		LIGHT POLE FOUNDATION, 24"x 8'-0"	EA.	25
625-7		GROUND ROD, 713.16	EA.	25
625-5		LUMINAIRE, STYLE C, IES TYPE II, 310 WATT, HPS, 713.11	EA.	26
625-16		POLE & BRACKET CABLE, 1/C #10, 713.02	L.F.	2,600
625-10		TRENCH, 24" DEPTH	L.F.	9,229
625-17		1 1/2" CABLEDUCT, W/2 - #4 A.W.G., 600 V. CABLE, 713.03	L.F.	10,117
625-11 (3")		3" CONDUIT	L.F.	760
625-18		CONNECTOR KIT, TYPE II	EA.	26
625-18		CONNECTOR KIT, TYPE III	EA.	26
625-18		CABLE SPLICING KIT, ITEM SPECIAL	EA.	26
625-8		PULLBOX, 18" DIA., 713.09	EA.	14
625-8		PULLBOX, 24" DIA., 713.09	EA.	1
625-20		CONTROL CENTER INCL. SERVICE POLE	L.S.	L.S.
839-1(1)		HIGH VOLTAGE TEST	L.S.	L.S.
606-22		CR. STONE, CR. GRAVEL, OR SILICA SAND FOR UNDERDRAIN	CU.YDS.	13
606-25(4)		UNDERDRAIN PIPE	L.F.	100
		PAVEMENT MARKINGS		
663-1-1		(TYPE I) EDGE LINE (WHITE)	L.F.	15,450
663-1-1		(TYPE I) EDGE LINE (YELLOW)	L.F.	13,050
663-2-1		(TYPE I) LANE LINES	L.F.	2,700
663-3-1		(TYPE I) BARRIER LINES	L.F.	2,830
663-4		(TYPE I) CHANNELIZING LINE	L.F.	1,800
663-5		(TYPE I) STOP LINE	L.F.	320
663-7		(TYPE I) STRIPES (WHITE)	L.F.	750
663-7		(TYPE I) STRIPES (YELLOW)	L.F.	1,890
663-10		(TYPE I) LANE ARROWS	EACH	4
663-11		(TYPE I) LANE LETTERS	EACH	8

SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
FIELD NOTE BOOK NO.

ESTIMATE OF QUANTITIES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠ 1	8	REVISED QUANTITY	5/5/82	C. RUNG

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00	M-525(002)		MARSHALL, W. VA. BELMONT, OHIO	9	255

C-4

BUILDING DEMOLITION

ITEM NO.	LOCATION	STATION	OFFSET	DESCRIPTION
202-1(1)	TWP. RD. 533	95+25	37' LT	2 STY. FRAME RESIDENCE
202-1(2)	TWP. RD. 533	97+45	20' LT.	1 STY. FRAME SHED
202-1(3)	TWP. RD. 533	97+25	12' RT.	1 1/2 STY. FRAME RESIDENCE

SEEDING & MULCHING

LOCATION	STATION TO STATION	CLEARING & * GRUBBING		AGRICULTURAL LIMESTONE 652-1		FERTILIZER 10-20-10 652-2		TYPE "B" SEED MIXTURE 652-3-1		TYPE "D" SEED MIXTURE 652-3-2		STRAW OR HAY MULCH 652-4-1		TYPE "C-1" SEED MIXTURE 652-3-1	
		SQ. YD.	ACRE	ACRE	TON	ACRE	TON	ACRE	LBS	ACRE	LBS	ACRE	TON	ACRE	LBS.
S.R. 872	5+85.23 - 31+42	39,511	8.2	4.79	4.8	4.79	3.1	2.25	220.5	2.54	177.8	4.79	9.6		
S.R. 7	416+92.15 - 454+64.80	39,468	8.2	9.33	9.3	9.33	6.1	8.69	851.6	0.64	44.8	9.33	18.7		
TWP. RD. 533 NORTH	86+32.56 - 105+85.70	35,127	7.3	4.36	4.4	4.36	2.8	3.49	342.0	0.38	26.6	4.36	8.7	0.49	49.0
TWP. RD. 533/533A	39+50.00 - 59+10.00	38,383	7.9	5.76	5.8	5.76	3.7	4.35	426.3	1.41	98.7	5.76	11.5		
RAMP A	24+00.00 - 39+00.00	37,228	7.7	6.63	6.6	6.63	4.3	5.79	567.4	0.84	58.8	6.63	13.3		
RAMP B	37+50.00 - 44+50.00	10,311	2.1	1.81	1.8	1.81	1.2	1.48	145.0	0.33	23.1	1.81	3.6		
RAMP C	37+50.00 - 49+90.31	23,077	4.8	4.19	4.2	4.19	2.7	2.49	244.0	1.70	119.0	4.19	8.4		
RAMP D	27+55.00 - 35+00.00	13,246	2.7	2.33	2.3	2.33	1.5	2.33	228.3	0	0	2.33	4.7		
TOTALS		236,351	48.9	39.20	39.2	39.20	25.4	30.87	3025.1	7.84	548.8	39.20	78.5	0.49	49.0

* FOR INFORMATION ONLY

EARTHWORK SUMMARY *

LOCATION	STATION TO STATION	EXCAV.	SWELL %	ADJUSTED EXCAV	EMB.	NEEDED (EMB.)	EXCESS (EXCAV.)	BORROW UNCLASSIFIED	BORROW ROCK
		C.Y.		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.
S.R. 872	5+85.23 - 24+00	23,754	-15%	20,191	237,790	217,599			
S.R. 7	417+50 - 454+64.80	16,699	-15%	14,194	9,976		4,218		
TWP. RD. NORTH	86+50 - 105+85.70	6,304	-15%	5,358	70,446	65,088			
TWP. RD. 533 SOUTH	51+00 - 59+00	12,323	-15%	10,475	37,890	27,415			
TWP. RD. 533 A	39+50 - 49+50	8,901	-15%	7,566	75,343	67,777			
RAMP A	24+00 - 39+00	28,165	-15%	23,940	75,662	51,722			
RAMP B	38+50 - 44+50	2,753	-15%	2,340	12,755	10,415			
2 RAMP C	37+50 - 49+90.31 1	~~47,203~~ 44,820		44820	~~47,378~~ 45,314	~~47,275~~ 554			
RAMP D	27+55 - 35+00	4,286	-15%	3,643	12,122	8,479			
ACCESS RD. A	0+50 - 4+84	574	-15%	488	3,610	3,122			
ACCESS RD. C	0+50 - 4+00	2,040	-15%	1,734	12,920	11,186			
TEMP. RD. 1	152+89.73 - 156+20.08	184	-15%	156	997	841			
TEMP. RD. 2	195+66.35 - 200+00	252	-15%	214	507	293			
ROCK BORROW EXCAVATION					75,927	75,927			75,927
	TOTAL 2	~~147,298~~ 151,055		~~90,295~~ 135,119	~~673,218~~ 671,319			~~506,992~~ 460,273	75,927

** 1 ~~FLY ASH EXCAVATION NOT TO BE USED FOR EMBANKMENT.~~

* FOR INFORMATION ONLY

ROCK BORROW EXCAVATION *

LOCATION	STATION TO STATION	EMBANKMENT REQUIRED	REMARKS
		C.Y.	C.Y.
S.R. 872	7+25 - 22+00	35,104	SANDSTONE OR LIMESTONE
S.R. 872	22+00 - 24+00	5,286	NO SANDSTONE OR LIMESTONE
TWP. RD. 533 SOUTH	51+00 - 52+25	3,594	SANDSTONE OR LIMESTONE
TWP. RD. 533 A	41+25 - 44+75	951	NO SANDSTONE OR LIMESTONE
TWP. RD. 533 A	44+25 - 49+50	11,967	SANDSTONE OR LIMESTONE
RAMP A	34+50 - 39+00	13,761	SANDSTONE OR LIMESTONE
RAMP B	38+50 - 40+25	2,289	SANDSTONE OR LIMESTONE
ACCESS RD. C	0+50 - 2+25	2,975	SANDSTONE OR LIMESTONE
	TOTAL	75,927	

* FOR INFORMATION ONLY

NOTE: THERE ARE NO PROBABLE SOURCES OF SELECT EMBANKMENT AVAILABLE ON THIS PROJECT.

TEMPORARY PROJECT WATER POLLUTION CONTROL

LOCATION	STATION TO STATION	TEMPORARY SEED 642-4-1		TYPE "B" SEED MIXTURE 642-4-2		TYPE "D" SEED MIXTURE 642-4-3		FERTILIZER 642-6		STRAW OR HAY MULCH 642-5-1		AGRICULTURAL LIMESTONE 642-10		* ASPHALT MATERIAL
		ACRE	LBS.	ACRE	LBS.	ACRE	LBS.	ACRE	TON	ACRE	TON	ACRE	TON	GAL.
S.R. 872	5+85.23 - 31+42	4.79	43.1	2.25	187.4	2.54	151.1	4.79	1.9	4.79	9.6	4.79	4.8	479
S.R. 7	416+92.15-454+64.80	9.33	84.0	8.69	723.9	0.64	38.1	9.33	3.7	9.33	18.7	9.33	9.3	933
TWP. RD. 533	86+32.56 - 105+85.70	4.36	39.2	3.98	331.5	0.38	22.6	4.36	1.7	4.36	8.7	4.36	4.4	436
TWP. RD. 533/533 A	39+50.00 - 59+10.00	5.76	51.8	4.35	362.4	1.41	83.9	5.76	2.3	5.76	11.5	5.76	5.8	576
RAMP A	24+00.00 - 39+00.00	6.63	59.7	5.79	482.3	0.84	50.0	6.63	2.7	6.63	13.3	6.63	6.6	663
RAMP B	37+50.00 - 44+50.00	1.81	16.3	1.48	123.3	0.33	19.6	1.81	0.7	1.81	3.6	1.81	1.8	181
RAMP C	37+50.00 - 49+90.31	4.19	37.7	2.49	207.4	1.70	101.2	4.19	1.7	4.19	8.4	4.19	4.2	419
RAMP D	27+55.00 - 35+00.00	2.33	21.0	2.33	194.1	0	0	2.33	0.9	2.33	4.7	2.33	2.3	233
	TOTALS	39.20	352.8	31.36	2612.3	7.84	466.5	39.20	15.6	39.20	78.5	39.20	39.2	3920

* FOR INFORMATION ONLY

NO.	SHEET NUMBER	REVISIONS	DATE	
2	9	REVISED EARTHWORK TABLE	5/6/82	C. Kinney
1	9	DELETED FLYASH NOTE	5/5/82	C. Kinney

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

ALIGNMENT CHECKED
RT OF WAY CHECKED
NO.

PAVING SUMMARY

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED HWY. ADM.	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251 (002)		MARSHALL, W. VA. BELMONT, OHIO	10	255

LOCATION	FROM STATION	TO STATION	ITEM 207-2 C.Y.	ALTERNATE 1 ITEM 301-1 C.Y.	ALTERNATE 1 ITEM 301-2 CWT.	ALTERNATE 1 ITEM 301-3 GAL.	PRINCIPAL ITEM 307-1 C.Y.	ITEM 307-1 C.Y.	ITEM 408-1 TON	ITEM 401-1(1) PRINCIPLE STONE / GRAVEL TON	ITEM 401-1(1) ALTERNATE SLAG TON	ITEM 401-2 (1) PRINCIPLE STONE / GRAVEL TON	ITEM 401-2 (1) ALTERNATE SLAG TON	ITEM 408-2 GAL.	ITEM 409-2 GAL.	ALTERNATE 2 ITEM 302-1 C.Y.	ALTERNATE 2 ITEM 302-2 GAL.	REMARKS
S.R. 872	5+85.23	9+20.87	779	377	660	498	377	375	3	526	468	143	127	87	934	377	8,294	
S.R. 872	11+38.52	22+00	2,788	1,409	2,466	1,860	1,409	1,361	9	1,868	1,663	502	447	317	3,382	1,409	30,998	
TWP. RD. 533 N.	86+32.56	105+85.70	1,372	1,543	2,700	2,036	1,543	680		939	836	313	279		2,657	1,543	33,940	
TWP. RD. 533 S.	50+28.74	59+10	689	885	1,549	1,168	885	382		547	487	182	162		1,491	885	19,470	
S.R. 7 MEDIAN	430+30	445+65						552	15	659	587			499	900			
RAMP A	23+79.11	39+39	1,673	945	1,654	1,247	945	836	14	931	829	309	275	473	2,552	945	20,790	
RAMP B	37+66.76	44+50	1,368	754	1,319	995	754	684	12	1,269	1,129	233	207	392	2,034	754	16,577	
RAMP C	37+10	46+80.31	1,532	816	1,428	1,077	816	766	13	1,352	1,204	277	247	430	2,203	816	17,945	
RAMP D	27+55	35+62	1,465	780	1,364	1,029	780	732	12	1,305	1,162	250	223	411	2,105	780	17,151	
TWP. RD. 533A	39+35.32	49+73	802	919	1,608	1,213	919	451		587	522	196	174		1,601	919	20,218	
ACCESS RD. A	0+00	4+84						252										
ACCESS RD. B	4+20	9+70						214										
ACCESS RD. C	0+15	4+00						260										
ACCESS RD. D	0+00	0+70						125										
TEMP. RD. 1								452		209	186	70	62		569			
TEMP. RD. 2								547		129	115	43	38		353			
S.R. 7 MEDIAN	429+30	431+70						125		15	13	26	23		168			CROSSOVER FOR TEMP. RD.
S.R. 7 MEDIAN	444+10	447+00						163		17	15	31	28		203			CROSSOVER FOR TEMP. RD.
S.R. 7	426+47.05 RT.	428+00 RT.						26	1	60	53			34				SHOULDER REPLACEMENT
S.R. 7	427+55 LT.	430+50 LT.	86					110	3	140	125			96	115			SHOULDER REPLACEMENT
S.R. 7	436+00 LT.	437+75 LT.						30	1	68	61			39				SHOULDER REPLACEMENT
S.R. 7	436+25 RT.	438+00 RT.						30	1	68	61			39				SHOULDER REPLACEMENT
S.R. 7	442+65 RT.	444+50 RT.	76					84	2	94	84			68	102			SHOULDER REPLACEMENT
S.R. 7	445+50 LT.	446+64.80 LT.						20	1	45	40			26				SHOULDER REPLACEMENT
⚠ 1 S.R. 7									24 ⚠ 1					804 ⚠ 1				SHLD. REPLACEMENT @ PIPE LOCATIONS ⚠ 1
TWP. RD. 533	86+75 LT.			11	19	15		18		11	10	4	4		29	11	242	DRIVE & MAILBOX APPROACH
TWP. RD. 533	87+75 LT.			19	33	25		32		19	17	6	5		51	19	418	COMMERCIAL DRIVE
TWP. RD. 533	89+10 LT.			19	33	25		32		19	17	6	5		51	19	418	COMMERCIAL DRIVE
TWP. RD. 533	89+88 LT.			6	11	8		10		6	5	2	2		16	6	132	MAILBOX APPROACH
TWP. RD. 533	91+46 LT.			14	25	18		22		11	10	4	4		31	14	308	DRIVE & MAILBOX APPROACH
TWP. RD. 533	93+48 LT.			29	51	38		48		29	26	10	9		79	29	638	DRIVE & MAILBOX APPROACH
TWP. RD. 533	93+63 LT.			17	30	22		55		17	15	5	4		45	17	374	DRIVE & MAILBOX APPROACH
TWP. RD. 533	99+40 LT.			38	67	50		53		22	20	7	6		60	38	836	DRIVE & MAILBOX APPROACH
		TOTAL	12,630	8,581	15,017	11,324	8,428	9,527	~~87~~ 111 ⚠ 1	10,962	9,760	2,619	2,331	~~2,911~~ 3,715 ⚠ 1	21,731	8,581	188,749	

LOCATION	FROM STATION	TO STATION	ITEM 502-1(12") S.Y.	REMARKS
S.R. 872	9+09.43	9+39.43	223	APPROACH SLAB
S.R. 872	11+08.52	11+38.52	223	APPROACH SLAB
		TOTAL	446	

ALTERNATE PAVEMENT
TWP. RD. 533 & TWP. RD. 533A

ITEM	PRINCIPAL	ALTERNATE 1	ALTERNATE 2
401-2(1)	1"	1"	1"
401-1(2)	3"	3"	3"
307-1	6"		
307-1	4"	4"	4"
301-1,2 & 3		6"	
302-1 & 2			6"
TOTAL DEPTH	14"	14"	14"

ALTERNATE PAVEMENT
S.R. 872 & RAMPS

ITEM	PRINCIPAL	ALTERNATE 1	ALTERNATE 2
401-2(1)	1 1/2"	1 1/2"	1 1/2"
401-1(2)	1 1/2"	1 1/2"	1 1/2"
401-1(1)	3"	3"	3"
307-1	6"		
307-1	6"	6"	6"
301-1, 2 & 3		6"	
302-1 & 2			6"
TOTAL DEPTH.	18'	18"	18"

PAVING SUMMARY

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠ 1	10	ADDED & REVISED QUANTITIES	5/6/82	C.R.W.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NOTE BOOK / NO. / PLOTTED / ALIGNMENT CHK. / RT. OF WAY CHECK

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	4326-SP2-0.00	M 5251 (002)		MARSHALL, W.VA. BELMONT, OHIO	11	255

C-4

CURB, SIDEWALK AND MEDIAN BARRIER

LOCATION	STATION	TO STATION	MEDIAN TYPE I MOD. Item 610-6(1) L.F.	MEDIAN OHIO TYPE A 610-6(X)MOD L.F.	MEDIAN OHIO TYPE B 610-6(XI) MOD. L.F	MEDIAN OHIO TYPE C 610-6(XII)MOD. L.F.	COMB. CURB & GUTTER 610-3(1) L.F.	PLAIN CONC. CURBING 610-1(1) L.F.	CONC. SIDEWALK 609-1 S.Y.	CLASS I AGGREGATE 307-1 C.Y.	IMPACT ATTENUATING DEVICE 664-1(III) EACH	REMARKS
S.R. 7 MEDIAN	446+60	447+00						60	45	19		
S.R. 7 MEDIAN	429+70	433+50			380						1	
S.R. 872 MEDIAN	13+60	16+80	320									
S.R. 872 MEDIAN	16+80	22+00		520								
S.R. 7 MEDIAN	433+50	446+60				1,310						
TWP. RD. 533A	41+00	43+50					250					
S.R. 7 MEDIAN	433+30	433+50							18	5		
TOTAL			320	520	380	1,310	250	60	63	24	1	

GUARD RAIL

LOCATION	STATION TO STATION		Class I 6'-3" Spacing 607-1 L.F.	Class III 12'-6" Spacing 607-1 L.F.	Turned Down End Sec.,Mod. Type I Guardrail 607-7 EACH	BRIDGE * TERMINAL ASSEMBLY EACH	Bridge * Approach End Treatment EACH	End Anchor 607-23 EACH	Class I Type 5 Barrier Rail 607-5 L.F.	REMARKS
TWP. RD. 533 LT.-RAMP C LT.	103+00	39+25	512.5		2					
S.R. 872 RT.	7+56.64	8+83.02	100		1	1				
S.R. 872 LT.	7+90.43	9+15.43	100		1	1				
S.R. 872 LT.-RAMP B LT.	11+63.39	39+50	312.5			1		1		
S.R. 872 RT.-ACCESS RD.B LT.	11+30.00	8+90	100			1		1		
RAMP B RT.-TWP. RD.533 LT.	44+50	55+00	1575		1					CONTINUED FROM S.R.7
RAMP A RT.-ACCESS RD.C RT.	30+75	3+25	1912.5		1			1		
TWP. RD. 533 RT. S.R. 872 LT.	55+00	22+00	612.5		1					
TWP. RD. 533 A RT.-S.R. 872 RT.	48+65	22+00	325		1					
TWP. RD. 533 A LT.-ACCESS RD. C LT.	42+00	3+25	737.5		1			1		
S.R. 7 RT.	444+50	455+00	1025					1		CONTINUED ON RAMP B
S.R. 7 LT.	452+00	455+00	250		1			1		
S.R. 7 ℄	446+60	447+03.75				1			43.75	
TEMPORARY RD. NO. 2				25						BARRICADE
TOTAL			7562.5	25	10	5		6	43.75	

* FOR INFORMATION ONLY

FOR GUARDRAIL DETAILS, SEE SHEET NO. 69 THRU. 75

RIGHT-OF-WAY FENCE

LOCATION	STATION TO STATION	Farm-Field ** Type 608-2(3'-11")	
S.R. 7	416+92 - 433+84 LT.	1,740	
S.R. 7	418+00 - 438+00 RT.	2,120	
S.R. 7	433+90 - 446+50 LT.	1,260	
S.R. 7	440+75 - 450+00 RT.	1,090	
S.R. 872	16+00 - 19+60 LT.	260	
S.R. 872	14+15 - 19+00 RT.	640	
S.R. 872	19+60 - 23+40 RT.	440	
S.R. 872	20+25 - 23+85 LT.	500	
TOTAL		8,050	

** Ohio Type 47 Fence,
For Details See Sheet No. 65 thru 68

SUMMARY

SURFACING, CURB & GUTTER, GUARDRAIL, FENCE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00 C-4	M-5251 (002)		MARSHALL, W.VA. BELMONT, OHIO	12	265

STR. NO.	STATION TO STATION	SKEW	Full Bituminous Coated & Lined Corrugated Iron or Steel Pipe, Modified 604-10 18"	24"	30"	36"	42"	t=.079 42" Elong	Reinforced Concrete Culvert, Storm Drain And Sewer Pipe, Class III 604-62 18"	21"	24"	30"	36"	42"	604-68 66"	Full Bit. Coated & Paved Invert Corr. Iron or Steel Pipe 604-9 12"	18"	Clay Pipe "Extra Strength" 604-72 12"		** Pipe Culvert Wingwall or Headwall	Class "B" Concrete 601-2 CU. YD.	Reinf. Steel LBS.**	Concrete Gutter 633-1 SQ. YD.	Concrete Apron ** EACH	INLETS 605-4 B MOD.	605-7 E MOD.	605-9 G	605-10 H	Jacked Conduit (Full Bit. Coated & Lined Corr. Iron or Steel Pipe, .168" Thickness 604-81 42"		Jacked Conduit (Reinforced Concrete Pipe Class V) 604-81 42"		REMARKS
D-1	11+75																76			1	0.33		16		1								32' LT.-S.R. 872
D-2	39+75	P							152*												2			2			1						93' LT.- RAMP B
		A	152*																		2			2			1						
D-3	15+50																126			1	0.75		24					*** 1					2' RT.-S.R. 872
D-4	17+20	P							198*																			1					2' RT.-S.R. 872
		A	198*																									1					
D-5	18+20																134			1	1.23							*** 1					2' RT.-S.R. 872
D-6	43+00	P							88*												1			1			1						25' LT.-RAMP C
		A	88*																		1			1			1						
D-7	40+85	P							240*												1			1			1						132' RT.- RAMP C
		A	240*																		1			1			1						
D-8	39+75	P							274*												1			1			1						61' RT.-RAMP B
		A	274*																		1			1			1						
D-9	43+00	P									120*										2			2			1						65' RT.-RAMP C
		A		120*																	2			2			1						
D-10	442+50	P									142*										0.30							*** 1					2' LT.-S.R. 7
		A		142*																	0.30							*** 1					
D-11	42+50			458																	1			1			1						69' RT.-RAMP B
D-12	446+00																	32		1	0.21		27					1					2' RT.-S.R. 7
D-13	32+00	P							148*												1			1			1						77' LT.- RAMP D
		A	148*																		1			1			1						
D-14	30+50	P										94*									1.24			1			*** 1						49' LT.-RAMP D
		A			94*																1.24			1			*** 1						
D-15	434+00	P							198*												1			1			1						55' LT.-S.R. 7
		A	198*																		1			1			1						
D-16	432+00	P							132*												1			1			1						56' LT.-S.R. 7
		A	132*																		1			1			1						
D-17	430+67	P											160*								2.46			1			*** 1						58' LT.-S.R. 7
		A				160*															2.46			1			*** 1						
D-18	29+50	P							98*												1			1			1						87' RT.-RAMP A
		A	98*																		1			1			1						
D-19	30+50	P											140*							1	3.78		44	2			*** 1						96' LT.-RAMP A
		A				140*														1	3.78		44	2			*** 1						
D-20	8+72																66			1	0.77		11		*** 1								32' RT.-S.R. 872
D-21	9+04	P							72*												0.15				*** 1								32' LT.-S.R. 872
		A	72*																		0.15				*** 1								
D-22	90+00	P							64*											1	0.31		28										26' LT.-RELOC. TWP. RD. 533
		A	64*																	1	0.31		28										
D-23	420+50	P									132*									1	1.43		22	1			1						60' LT.-S.R. 7
		A		132*																1	1.43		22	1			1						
D-31	427+00									76										1	1.37		19	1			1						78' LT.-S.R. 7
D-34	1+50	P							134*												2			2			1						49' LT.-ACCESS RD. A
		A	134*																		2			2			1						
D-35	101+50	P									374*																1						100' LT.-RELOC. TWP. RD. 533
		A		374*																							1						
D-36	0+90		278																	1	0.33		28										83' RT.-ACCESS RD. C
D-37	18+05							374												1	3.23	225	44										148' RT.-S.R. 872
D-38	21+70							338													0.99						*** 1						125' RT.-S.R. 872
D-39	23+50	P												50*													1						164' LT.-S.R. 872
		A					50*																				1						
	SHEET TOTAL (NO ALTERNATE)		278	458				712		76							402	32		8	33	225	263	20	3		19	5					
	SHEET TOTAL (PRINCIPAL)	P							1,798		768	94	300	50						3													
	SHEET TOTAL (ALTERNATE)	A	1,798	768	94	300	50													3													
	CONTINUED ON SHEET NO. 13																																

* INDICATES ALTERNATE PIPE
** FOR INFORMATION ONLY
*** EXTRA DEPTH INLET

NOTES: (1) IF NOT OTHERWISE SPECIFIED ALL METAL PIPE (CI/SP) ARE 2 2/3" X 1/2" CORRS., 0.064" THICKNESS
(2) CONCRETE APRON SHALL BE PAID FOR AS CLASS B CONCRETE

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PIPE SUMMARY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525I (002)		MARSHALL, W.VA. BELMONT, OHIO	13	255

C-4

STR. NO.	STATION TO STATION	SKEW	Full Bituminous Coated & Lined Corrugated Iron or Steel Pipe, Modified 604-10						Reinforced Concrete Culvert, Storm Drain And Sewer Pipe, Class III 604-62						604-68	Full Bit. Coated & Paved Invert Corr. Iron or Steel Pipe 604-9		Clay Pipe "Extra Strength" 604-72		** Pipe Culvert Wingwall or Headwall	Class "B" Concrete 601-2	Reinf. Steel	Concrete Gutter 633-1	Concrete Apron **	INLETS				Jacked Conduit (Full Bit. Coated & Lined Corr. Iron or Steel Pipe, .168" Thickness 604-81		Jacked Conduit (Reinforced Concrete Pipe Class V 604-81		REMARKS
			18"	24"	30"	36"	42"	I=.079" 42" Elong	18"	21"	24"	30"	36"	42"	66"	12"	18"	12"			CU. YD.	LBS.**	SQ. YD.	EACH	605-4 B MOD.	605-7 E MOD.	605-9 G	605-10 H	42"		42"		
D-40	58+00	P							172*												1			1			1						22' LT.-RELOC. TWP. RD. 533
		A	172*																		1			1			1						
D-41	24+00	P											122*								0.37						*** 1						160' LT.-S.R. 872
		A					122*														0.37						*** 1						
D-42	41+35	P											512*							1	6.61	225				*** 1(8')					88*		20' RT.-RELOC. TWP RD. 533A
		A					512*													1	6.61	225				*** 1(8')			88*				
D-43	19+10	P							88*																			1					2' RT.-S.R. 872
		A	88*																									1					
D-44	439+75	P							74*																			1					2' RT.-S.R. 7
		A	74*																									1					
D-48	91+45																36																RELOC. TWP. RD. 533-DRIVEWAY LT.
D-49	93+40																56																RELOC. TWP. RD. 533-DRIVEWAY LT.
D-50	96+70																50																RELOC. TWP. RD. 533-DRIVEWAY LT.
D-51	453+26														8					1	2.42		42										94' LT.-S.R. 7
D-52	40+25	P							122*												1			1			1						25' LT.-RAMP C
		A	122*																		1			1			1						
D-53	41+50	P							148*												1			1			1						25' LT.-RAMP C
		A	148*																		1			1			1						
	155+15																100																TEMPORARY RD. 1-TEMPORARY PIPE
	195+95																66																TEMPORARY RD. 2-TEMPORARY PIPE
	197+50															40																	TEMPORARY RD. 2-TEMPORARY PIPE
TOTAL THIS SHEET (NO. ALT.)															8	40	308			2	13	225	42	3		1	4	2					
TOTAL THIS SHEET		P							604					634																	88	
TOTAL THIS SHEET		A	604				634																						88				
TOTAL SHEET NO. 12 (NO ALT.)			278	458				712		76							402	32		8	33	225	263	20	3		19	5					
TOTAL SHEET NO. 12		P							1,798		768	94	300	50						3													
TOTAL SHEET NO. 12		A	1,798	768	94	300	50													3													
GRAND TOTAL (NO ALT.)			278	458				712		76					8	40	710	32		10	46	450	305	23	3	1	23	7					
GRAND TOTAL		P							2,402		768	94	300	684						3											88		
GRAND TOTAL		A	2,402	768	94	300	684													3									88				

* INDICATES ALTERNATE PIPE
** FOR INFORMATION ONLY
*** EXTRA DEPTH INLET

NOTES: (1) IF NOT OTHERWISE SPECIFIED ALL METAL PIPE (CI/SP) ARE 2 2/3" X 1/2" CORRS., 0.064" THICKNESS
(2) CONCRETE APRON SHALL BE PAID FOR AS CLASS B CONCRETE

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
ST. OF WAY CHECKED
NOTE BOOK
NO.

PIPE SUMMARY

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

DITCH SUMMARY

DITCH SUMMARY									
STATION TO STATION		LENGTH Lt.	LENGTH Rt.	WIDTH	GUTTER Conc. 633-1	GUTTER D. Rock 633-3	DEPTH	THICKNESS	REMARKS
S.R. 7									
446+00	449+00		300'	2'		238	2'	1.5'	DUMPED ROCK
452+25	453+25	100'		2'		79	2'	1.5'	DUMPED ROCK
453+40	453+65	25'		2'		8	2'	1.0'	DUMPED ROCK
S.R. 872									
30+62	31+42	90'		6'		171	2'	25'	90' DUMPED ROCK
RAMP A									
30+50	18+05 S.R. 872	1205'		4'		432	2'	15'	477' DUMPED ROCK
TOTAL						928			

SUMMARY

DITCH SUMMARY									
STATION TO STATION		LENGTH Lt.	LENGTH Rt.	WIDTH	GUTTER Conc.	GUTTER D. Rock	DEPTH	THICKNESS	REMARKS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M 525I (002)		MARSHALL W.VA. - BEL-MONT, OHIO	14	255

C-4

MATTING ITEM NO. 655-1

LOCATION	STATION to STATION	LENGTH	SQ.YDS			REMARKS
RELOC. TWP. RD. 533	54+50 - 58+00 LT.	350	298			
RAMP C	43+00 - 452+25 LT. S.R. 7	925	1,199			
TOTAL			1,497			

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

SUMMARY
DITCH, MATTING

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

DITCH SUMMARY

STATION TO STATION		LENGTH Lt.	LENGTH Rt.	WIDTH	GUTTER Conc. 633-1	GUTTER D. Rock 633-3	DEPTH	THICKNESS	REMARKS
S.R. 7									
446+00	449+00		300'	2'		238	2'	1.5'	DUMPED ROCK
452+25	453+25	100'		2'		79	2'	1.5'	DUMPED ROCK
453+40	453+65	25'		2'		8	2'	1.0'	DUMPED ROCK
S.R. 872									
30+62	31+42	90'		6'		171	2'	25'	90' DUMPED ROCK
RAMP A									
30+50	18+05 S.R. 872	1205'		4'		432	2'	15'	477' DUMPED ROCK
TOTAL						928			

SUMMARY

DITCH SUMMARY

STATION TO STATION		LENGTH Lt.	LENGTH Rt.	WIDTH	GUTTER Conc.	GUTTER D. Rock	DEPTH	THICKNESS	REMARKS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M 5251 (002)		MARSHALL W.VA. - BEL-MONT, OHIO	14	255

C-4

MATTING ITEM NO. 655-1

LOCATION	STATION to STATION	LENGTH	SQ.YDS			REMARKS
RELOC. TWP. RD. 533	54+50 - 58+00 LT.	350	298			
RAMP C	43+00 - 452+25 LT. S.R. 7	925	1,199			
TOTAL			1,497			

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

SUMMARY
DITCH, MATTING

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST NO	STATE PROJ NO.	FEDERAL PROJ NO	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M 5251 (002)		MARSHALL, W.VA. BELMONT, OHIO	15	255

C-4

PLAN — SURVEYED — PLOTTED — ALIGNMENT CHECKED — R/W OF WAY CHECKED — NOTE BOOK — NO.

ITEM 638-3 SURVEY MARKERS, MOD.

LOCATION	
S.R. 872	
STA. 5+85.23	
STA. 11+50	
STA. 15+00	
STA. 20+00	
STA. 23+00	
STA. 28+00	
TOTAL 6	

	STATION	OFFSET FRAME LEFT (FEET)	OFFSET FRAME RIGHT (FEET)		STATION	OFFSET FRAME LEFT (FEET)	OFFSET FRAME RIGHT (FEET)

LOCATION	STATION TO STATION	U.D. 606-25 (6") L.F.	Crushed Stone Crushed Gravel or Silica Sand 606-22 C.Y.		CLASS B CONCRETE FOR HEADWALL 601-2 C.Y.	REMARKS
RAMP A	23+79.11 RT. - 33+10 RT.	930	191.3			(Continued from S.R.7)
	32+80 LT. - 38+00 LT.	525	108.0		0.1	
	38+00 LT. - 39+20 LT.	170	35.0		0.1	
RAMP B	38+00 RT. - 42+40 RT.	475	97.7		0.1	
	41+75 LT. - 44+50 LT.	275	56.6			GORE AREA (Continued on S.R.7)
RAMP C	37+30 RT. - 40+55 RT.	330	67.9		0.1	
	40+30 LT. - 43+00 LT.	284	58.4			OUTLET IN TO D-6
	43+00 LT. - 49+90.31 LT.	690	141.9			(Continued on S.R.7)
RAMP D	28+95 LT - 35+38 LT.	670	137.8			(Continued on S.R.7)
S.R.7	418+25 RT. - 423+79.11 RT.	554	114.0		0.1	RAMP A DECELL LANE (Continued on Ramp A)
	444+50 RT. - 451+00 RT.	650	133.7			RAMP B ACCEL. LANE (Continued from Ramp B)
	449+90.31 - 454+80 LT.	504	103.7		0.1	RAMP C DECELL LANE (Continued from Ramp C)
	417+00 LT. - 420+49 LT.	349	71.8			RAMP D ACCEL. LANE
	420+51 LT. - 426+99 LT.	648	133.3			RAMP D ACCEL. LANE
	427+01 LT. 430+67 LT.	404	83.1			RAMP D ACCEL. LANE
	436+00 LT. - 437+75 LT.	248	51.0		0.1	
	436+25 RT. - 438+00 RT.	224	46.1		0.1	
	437+00 RT. - 439+75 RT.	275	56.6			MEDIAN
	426+47.05 RT. - 428+00 RT.	190	39.1			RAMP A GORE AREA
	445+50 LT. - 446+62 LT.	142	29.2			RAMP C GORE AREA
TWP. RD. 533	86+32.56 - 90+00 LT.	405	83.3			OUTLET INTO EXISTING INLET
TWP. RD. 533A	41+00 RT. - 43+50 RT.	250	51.4			
ACCESS RD. B	4+20 LT. - 5+50 LT.	200	41.1		0.1	
	TOTAL	9,392	1,932			
10% CONTINGENCY		939	193			
	GRAND TOTAL	10,331	2,125		0.9	

ITEM 638-1 PROJECT MARKERS

STATION	OFFSET FRAME LEFT (FT.)	OFFSET FRAME RIGHT (FT.)
5+85.23		13'
TOTAL		1

FOR DETAILS SURVEY MARKERS MOD.
SEE SHEET NO. 33

SUMMARY

SURVEY & R/W MARKERS, UNDERDRAIN

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY ADM	STATE DIST NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W. VA. BELMONT, OHIO	16	255

C-4

ESTIMATE OF QUANTITIES

EXTRUDED PANEL SIGNS

SIGN NO.	PLAN SHEET NO.	FABRICATION SHEET NO.	STANDARD NUMBER	STATION	OFFSET (E.P.)	VERT. CL.	SIGN SIZE	EXIT PANEL	TOTAL SQ.FT.	BREAKAWAY SUPPORTS S4X7.7 L.F.	W10 X 11.5 L.F.	W10 X 21 L.F.	FOUNDATION CLASS "B" CONCRETE DIAMETER	HEIGHT	CUBIC YARDS
				S.R. 7					661-2	657-6(1)	657-6(2)	657-6(3)			657-16
5	91	92	GB	367+00	14' RT.	7'	20'-0" X 8'-0"		160.00			27'-08"	2.5'	6.75'	1.23
												25'-06"	2.5'	6.75'	1.23
												23'-05"	2.5'	6.75'	1.23
1	91	92	GJ	390+00	30' LT.	7'	16'-0" X 4'-0"		64.00		25'-05"		2.5'	6.00'	1.10
											23'-03"		2.5'	6.00'	1.10
5a	91	92	GE	405+00	30' RT.	7'	20'-0" X 8'-0"		160.00			31'-09"	2.5'	6.75'	1.23
												29'-08"	2.5	6.75'	1.23
												27'-06"	2.5'	6.75'	1.23
6	91	92	GE	418+50	35' RT.	7'	20'-0" X 8'-0"		160.00			28'-03"	2.5'	6.75'	1.23
												25'-05"	2.5'	6.75'	1.23
												23'-05"	2.5'	6.75'	1.23
35	90		GF	427+10	14' RT.	7'	6'-0" X 5'-0"		30.00	17'-00"			1.5'	4.00'	0.27
										16'-09"			1.5'	4.00'	0.27
19	90		GF	446+10	14' LT.	7'	6'-0" X 5'-0"		30.00	17'-01"			1.5'	4.00'	0.27
										16'-10"			1.5'	4.00'	0.27
43	91	92	GE	454+60	38.5' LT.	7'	20'-0" X 8'-0"		160.00			28'-06"	2.5'	6.75'	1.23
												27'-10"	2.5'	6.75'	1.23
												26'-09"	2.5'	6.75'	1.23
43a	91	92	GE	471+50	19' LT.	13.9°	20'-0" X 8'-0"		160.00			30'-00"	2.5'	6.75'	1.23
												29'-00"	2.5'	6.75'	1.23
												21'-08"	2.5'	6.75'	1.23
42	91	93	GJ	480+00	14' RT.	7'	12'-0" X 4'-0"		48.00		24'-02"		2.5'	6.00'	1.10
											17'-09"		2.5'	6.00'	1.10
44	91	92	GB	496+00	30' LT.	19.2°	20'-0" X 8'-0"		160.00			28'-09"	2.5'	6.75'	1.23
												24'-06"	2.5'	6.75'	1.23
												20'-03"			
				RAMP A											
33	90	93	D-4A	37+00	12' RT.	7'	13'-0" X 2'-0"		26.00		21'-04"		2.5'	6.00'	1.10
											17'-01"		2.5'	6.00'	1.10
				RAMP C											
17	90	92	D-4A	40+20	16' LT.	7'	13'-0" X 2'-0"		26.00	14'-08"			1.5'	4.00'	0.27
										13'-11"			1.5'	4.00'	0.27
				SUBTOTAL (A)					1184.0	96'-3"	129'-0"	479'-10"			29.13

SINGLE SHEET SIGNS

SIGN NO.	PLAN SHEET NO.		STANDARD NUMBER	STATION	OFFSET (E.P.)	VERT. CL.	SIGN SIZE	TOTAL AREA (SQ.FT.) THICKNESS 0.080 661-1(1)	0.100 661-1(2)	0.125	U-CHANNELS (L.F.) POUNDS/FOOT 3.00 657-10	4.00 657-11	FOR INFO. ONLY
				S.R. 7									
2	91		R-10-36	406+00	16' LT.	7'	36" X 48"	12.00				17'-03"	
												16'-09"	
3	91		M-38-30	412+30	16' LT.	7'	30" X 15"	3.13			SEE EXTRUDED SIGN PANEL NO. 3 FOR SUPPORTS		
			M-2-30-2				30" X 30"	6.25					
7	90		W-49R-48	430+00	16' LT.	7'	48" X 48"		16.00		SEE EXTRUDED SIGN PANEL NO. 7 FOR SUPPORTS		
20	90		W-49R-48	443+90	16' RT.	7'	48" X 48"		16.00			15'-05"	
												15'-03"	
40	91		M-37-30	461+60	14' RT.	7'	30" X 15"	3.13				15'-07"	
			M-2-30-2				30" X 30"	6.25					
41	91		R-10-36	469+00	14' RT.	7'	36" X 48"	12.00				18'-05"	
												17'-11"	
				RAMP A									
31	90		R-41A-36	37+00	16' LT.	7'	36" X 24"	6.00				15'-10"	
32	90	(B.B.)	R-41A-36	37+00	12' RT.	7'	36" X 24"	6.00					
33	90		M-39-24	37+00	12' RT.	7'	24" X 12"	2.00			ATTACHED TO EXTRUTED SIGN PANEL NO. 33		≠
			M-2-24-3				30" X 24"	5.00					
			M-24-21				21" X 15"	2.19					
			M-8-24				24" X 12"	2.00					
			M-1-6				24" X 24"	4.00					*
			M-24-21				21" X 15"	2.19					
				SUBTOTAL (1)				72.14	32.00			132'-05"	

SINGLE SHEET SIGNS

SIGN NO.	PLAN SHEET NO.		STANDARD NUMBER	STATION	OFFSET (E.P.)	VERT. CL.	SIGN SIZE,	TOTAL AREA (SQ.FT.) 661-1(1) 0.080	661-1(2) 0.100	0.125	U-CHANNELS (L.F.) 657-10 3.00	657-11 4.00"	FOR INFO. ONLY
29	90		R-41B-36	39+20 RAMP A	16' LT.	7'	36" X 36"	9.00				16'-01"	
			R-43L-36				36" X 12"	3.00				16'-09"	▲
		(B.B.)	R-43R-36				36" X 12"	3.00					
30	90		R-41B-36	39+20	12' RT.	7'	36" X 36"	9.00				18'-00"	
			R-1-48				48" X 48"		16.00			17'-00"	
				RAMP C									
12	90		R-41B-36	37+50	16' LT.	7'	36" X 36"	9.00				15'-06"	
			R-1-48				48" X 48"		16.00			15'-03"	
15	90		R-41A-36	40+20	16' RT.	7'	36" X 24"	6.00				15'-06"	
16	90	(B.B.)	R41A-36	40+20	16' LT.	7'	36" X 24"	6.00					
17	90		M-39-24	40+20	16' LT.	7'	24" X 12"	2.00			ATTACHED TO EXTRUTED SIGN PANEL NO. 17		≠
			M-2-24-3				30" X 24"	5.00					
			M-24-21				21" X 15"	2.19					
			M-8-24				24" X 12"	2.00					
			M-1-6				24" X 24"	4.00					*
			M-24-21				21" X 15"	2.19					
				S.R. 872									
46	90		W-2-30	6+00	14' LT.	4'	30" X 30"	6.25				16'-08"	
			W-143-18				18" X 18"	2.25					
11	90		M-50-66	6+50	14' RT.	7'	66" X 24"		11.00			16'-04"	
												14'-07"	
13	90		R-41B-36	7+50	14' LT.	7'	36" X 36"	9.00				16'-04"	▲
			R-43L-36				36" X 12"	3.00				17'-05"	
			R-43R-36				36" X 12"	3.00					
14	90		M-38-24	6+70	14' LT.	7'	24" X 12"	2.00			ATTACHED TO EXTRUTED SIGN PANEL NO. 14		++
			M-2-24-2				24" X 24"	4.00					
			M-24-21				21" X 15"	2.19					
28	90		M-37-24	13+95	14' RT.	7'	24" X 12"	2.00			ATTACHED TO EXTRUTED SIGN PANEL NO. 28		++
			M-2-24-2				24" X 24"	4.00					
			M-24-21				21" X 15"	2.19					
45	90		M-50-66	13+05	14' LT.	7'	66" X 24"		11.00			15'-05"	
												14'-03"	
21	90		R-38R-24	13+80	℄	7'	24" X 30"	5.00				12'-05"	
23	90		M-39-24	15+00	14' RT.	7'	24" X 12"	2.00				16'-07"	
			M-2-24-3				30" X 24"	5.00				15'-05"	
			M-8-24				24" X 12"	2.00					
			M-1-6				24" X 24"	4.00					*
		(B.B.)	R-41A-36				36" X 24"	6.00					
37a	90		M-38-24	16+50	14' LT.	7'	24" X 12"	2.00			ATTACHED TO EXTRUTED SIGN PANEL NO. 37a		≠
			M-2-24-2				24" X 24"	4.00					
			M-26-21				21" X 15"	2.19					
			M-37-24				24" X 12"	2.00					
			M-2-24-2				24" X 24"	4.00					
			M-24-21				21" X 15"	2.19					
37	90		D-7-48	18+00	14' RT.	7'	48" X 8.5"	2.83				15'-06"	
			R-41B-36				36" X 36"	9.00				14'-05"	
39	90		D-7-48	20+00	14' LT.	7'	48" X 8.5"	2.83				SEE EXTRUTED SIGN PANEL NO. 39 FOR SUPPORTS	
			R-41B-36				36" X 36"	9.00					
				SUBTOTAL (2)				166.30	54.00		42'-01"	257'-04"	

NOTES:

1. ALL STANDARD SIGN CODE NUMBERS REFER TO OHIO MUTCD FOR STREETS AND HIGHWAYS 1977, EXCEPT WHERE NOTED.
2. ≠, TWO SIGN BACKING ASSEMBLIES REQUIRED.
3. ++, ONE SIGN BACKING ASSEMBLY REQUIRED.
4. *, REFER TO W. VA. D.O.H. SIGN FABRICATION DETAILS JANUARY, 1973
5. ▲, ONE WAY - DO NOT ENTER SIGN INSTALLATION

ESTIMATE OF QUANTITIES SIGNING

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	17	255

C-4

ESTIMATE OF QUANTITIES

EXTRUDED PANEL SIGNS

SIGN NO.	PLAN SHEET NO.	FABRICATION SHEET NO.	STANDARD NUMBER	LOCATION STATION		OFFSET (E.P.)	SIGN QUANTITIES VERT. CL.	SIZE SIGN	SIZE EXIT PANEL	TOTAL SQ.FT.	BREAKAWAY SUPPORTS S4 X 7.7 L.F.	W10 X 11.5 L.F.	W10 X 21 L.F.	FOUNDATION CLASS "B" CONCRETE DIAMETER	HEIGHT	CUBIC YARDS
				S.R. 872						661-2	657-6(1)	657-6(2)	657-6(3)			657-16
14	90	92	D-4A	6+70		14' LT.	7'	13'-0" X 2'-0"		26.00		21'-09"		2.5'	6.00'	1.10
												17'-06"		2.5'	6.00'	1.10
28	90	93	D-4A	13+95		14' RT.	7'	9'-0" X 2'-0"		18.00	17'-06"			1.5'	4.00'	0.27
											15'-00"			1.5'	4.00'	0.27
37a	90		D-4B	16+50				13'-0" X 4'-0"		52.00		23'-05"		2.5'	6.00'	1.10
												19'-09"		2.5'	6.00	1.10
39	90	93	D-7-48	20+00		14' LT.	7'	(SEE SINGLE SHEET SIGN NO. 39)			16'-11"			1.5'	4.00'	0.27
											14'-02"			1.5'	4.00'	0.27
55	90			21+00		14' RT.	7'	(SEE SINGLE SHEET SIGN NO. 55)			16'-01"			1.5'	4.00'	0.27
											17'-03"			1.5'	4.00'	0.27
54	90			44+00	Twp. Rd. 533 A	12' RT.	7'	(SEE SINGLE SHEET SIGN NO. 54)			19'-01"			1.5'	4.00'	0.27
49	90			56+00	533	12' LT.	7'	(SEE SINGLE SHEET SIGN NO. 49)			16'-01"			1.5'	4.00'	0.27
60	90			105+00	533	10' LT.	7'	(SEE SINGLE SHEET SIGN NO. 60)			17'-03"			1.5'	4.00'	0.27
3	91			412+30	S.R.7	16' LT.	7'	(SEE SINGLE SHEET SIGN NO. 3)			17'-03"			1.5'	4.00'	0.27
7	90			430+00	S.R.7	16' LT.	7'	(SEE SINGLE SHEET SIGN NO. 7)			17'-10"			1.5'	4.00'	0.27
											17'-03"			1.5'	4.00'	0.27
				SUBTOTAL (B)						96.0	201'-08"	82'-05"				7.64
				SUBTOTAL (B)						96.0	201'-08"	82'-05"	0			7.64
				SUBTOTAL (A)						1184.0	96'-03"	129'-00"	479'-10"			29.13
				TOTAL						1280	298'	212'	480'			36.77

SINGLE SHEET SIGNS

SIGN NO.	PLAN SHEET NO.	STANDARD NUMBER	STATION	OFFSET (E.P.)	VERT. CL.	SIGN SIZE	TOTAL AREA THICKNESS 0.080	0.100	0.125	U-CHANNELS POUNDS/FOOT 3.00	4.00	FOR INFO. ONLY
RELOCATED TWP. RD. 533A							661-1(1)	661-1(2)		657-10	657-11	
54	90	W-45-36	44+00	12' RT.	7'	36" X 36"	9.00			SEE EXTRUTED SIGN PANEL NO. 54 FOR SUPPORTS		
57	90	R-1-30	49+40	12' RT.	7'	30" X 30"	6.25			15'-00"		
38	90	R-43R-36	50+00	℄	7'	36" X 12"	3.00			8'-11"		
		R-43R-36				36" X 12"	3.00					
47	90	R-1-30	50+70 - 533	12' LT.	7'	30" X 30"	6.25				16'-00"	
49	90	W-45-36	56+00 - 533			36" X 36"	9.00			SEE EXTRUTED SIGN PANEL NO. 49 FOR SUPPORTS		
53	90	M-39-24	58+90 - 533	12' LT.	7'	24" X 12"	2.00				15'-08"	
		M-2-24-3				30" X 24"	5.00				15'-06"	
		M-24-21				21" X 18"	2.63					
		M-8-24				24" X 12"	2.00					
		M-2-24-2				24" X 24"	4.00					
		M-26-21				21" X 18"	2.63					
8	90	M-17-21	97+00 - 533	12' RT.	7'	21" X 15"	2.19				14'-06"	
		M-2-24-2				24" X 24"	4.00					
9	90	M-50-66	100+00 - 533	12' RT.	7'	66" X 24"		11.00		15'-02"		
										14'-10"		
10	90	D-1-72	103+00 - 533	10' RT.	7'	72" X 24"		6.00			16'-08"	
				10' RT.	7'	72" X 24"		6.00			14'-08"	
60	90	W-51	105+00 - 533	10' LT.	7'	36" X 36"	9.00			SEE EXTRUTED SIGN PANEL NO. 60 FOR SUPPORTS		
51	90	R-1-30	39+70 - 533A	12' LT.	7'	30" X 30"	6.25			14'-10"		
		SUBTOTAL (3)					76.20	23.00		68'-09"	93'-00"	

SINGLE SHEET SIGNS

SIGN NO.	PLAN SHEET NO.	STANDARD NUMBER	STATION	OFFSET (E.P.)	VERT. CL.	SIGN SIZE	TOTAL AREA THICKNESS 0.080	0.100	0.125	U-CHANNELS POUNDS/FOOT 3.00	4.00
			S.R. 872				661-1(1)	661-1(2)		657-10	657-11
55	90	M-39-24	21+00	14' RT.	7'	24" X 12"	2.00			SEE EXTRUDED SIGN PANEL NO. 55 FOR SUPPORTS.	
		M-2-24-3				30" X 24"	5.00				
		M-8-24				24" X 12"	2.00				
		M-1-6				24" X 24"	4.00				*
			ACCESS ROAD A								
59	90	R-1-30	0+40	12' LT.	7'	30" X 30"	6.25				16'-10"
			ACCESS ROAD C								
58	90	R-1-30	0+50	12' LT.	7'	30" X 30"	6.25				15'-09"
61	90	W-60-36	7+40			36" X 36"		9.00		14.5	
62	90	R-31Q-36	8+70			36"X36"		9.00		14.5	
63	90	R-31Q-36	8+80			36"X36"		9.00		14.5	
64	90	W-60-36	11+90			36"X36"		9.00		14.5	
			SUBTOTAL (4)				25.50	36.00		58'-0"	32'-07"
			SUBTOTAL (4)				25.50	36.00	0	58'-0"	32'-07"
			SUBTOTAL (3)				76.20	23.00	0	68'-09"	93'-00"
			SUBTOTAL (2)				166.3	54.00	0	42'-01"	257'-09"
			SUBTOTAL (1)				72.14	32.00	0	0	132'-05"
			TOTAL				341	145		169	516

NOTES:

1. ALL STANDARD SIGN CODE NUMBERS REFER TO OHIO MUTCD FOR STREETS AND HIGHWAYS 1977, EXCEPT WHERE NOTED.
2. * REFER TO W. VA. DOH SIGN FABRICATION DETAILS, JANUARY 1973.

ESTIMATE OF QUANTITIES SIGNING

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

ESTIMATE OF QUANTITIES
DELINEATORS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	K326-SP2-0.00	M 5251 (002)		MARSHALL, W.VA. BELMONT, OHIO	18	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

STATION TO STATION		SIDE OF TRAFFIC	INTERVAL	MODIFIED DELINEATORS * TYPE A EACH	TYPE C EACH	TYPE D EACH	TYPE B BI-DIR EACH	TYPE SUPPORT NO 2 DRIVE POST L.F.	TYPE C BRACKET MODIFIED EACH
S.R. 7 NORTHBOUND				661-4(1)	661-4(2)	661-5(2)	661-5(1)	657-8	661-10
416+50		RT.		1				6.0	
418+47	423+47	RT.	100'		6			36.0	
428+50	444+50	RT.	200'	9				54.0	
445+50	454+50	RT.	100'		10			60.0	
S.R. 7 SOUTHBOUND									
416+50	456+50	LT.	200'				21	84.0	7
417+55	427+55	RT.	100'		11			66.0	
428+58	444+50	RT.	200'	9				54.0	
450+65	454+65	RT.	100'		5			30.0	
456+00		RT.		1				6.0	
RAMP A									
24+47	25+47	RT.	100'		2			12.0	
26+27	27+07	RT.	80'		2			12.0	
27+26	29+26	LT.	100'			3		18.0	
28+07	34+07	RT.	100'		7			42.0	
34+82	36+62	RT.	45'		5			30.0	
37+37	38+37	RT.	100'		2			12.0	
RAMP B									
38+50	44+50	RT.	100'		7			42.0	
RAMP C									
37+80	38+80	RT.	100'		2			12.0	
39+55	42+55	RT.	100'		4			24.0	
41+55	42+55	LT.	100'			2		12.0	
43+35	46+35	LT.	50'			7		42.0	
43+35	48+85	RT.	50'		12			72.0	
49+65		RT.			1			6.0	
RAMP D									
27+60	28+60	LT.	100'			2		12.0	
28+55		RT.			1			6.0	
29+45	30+35	RT.	90'		2			12.0	

*SEE ODOT STANDARD CONSTRUCTION DRAWING TC-61.10, SHEET NO. 96 FOR DELINEATOR DETAILS

STATION TO STATION		SIDE OF TRAFFIC	INTERVAL	MODIFIED DELINEATORS * TYPE A EACH	TYPE C EACH	TYPE D EACH	TYPE B BI-DIR EACH	TYPE SUPPORT NO 2 DRIVE POST L.F.	TYPE C BRACKET MODIFIED EACH
RAMP C CONTINUED				661-4(1)	661-4(2)	661-5(2)	661-5(1)	657-8	661-10
29+50	30+40	LT.	90'			2		12.0	
31+35	34+35	RT.	100'		4			24.0	
31+40		LT.				1		6.0	
RELOCATED TOWNSHIP RD. 533 NORTHBOUND									
51+00	56+00	RT.	50'	11				66.0	
56+90		RT.		1				6.0	
101+30		RT.		1				6.0	
101+80	106+00	RT.	20'	22				132.0	
6+36		RT.		1				6.0	
RELOCATED TOWNSHIP RD. 533 SOUTHBOUND									
106+00		RT.		1				6.0	
RELOCATED TOWNSHIP RD. 533 A SOUTHBOUND									
41+90		RT.		1				6.0	
43+70		RT.		1				6.0	
44+60		RT.		1				6.0	
45+10	46+00	RT.	30'	4				24.0	
47+50	49+00	RT.	30'	6				36.0	
S.R. 872 EASTBOUND									
7+70	12+70	RT.	100'	6				48.0	2
14+00	22+00	LT.	200'				5	12.0	3
14+00	22+00	RT.	200'	5				30.0	
S.R. 872 WESTBOUND									
7+70	12+70	RT.	100'	6				48.0	2
14+00	22+00	RT.	200'	5				30.0	
TOTALS				92		83	17	26	1272.0	14

CALCULATED BY	R.E.D.
CHECKED BY	Y.C.T.

CALCULATIONS-TRAFFIC CONTROL

SUMMARY-MAINTENANCE OF TRAFFIC

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

EEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002		MARSHALL W.VA. BELMONT, OHIO	19	255

C-4

LOCATION	STATION TO STATION	636-2 AGGREGATE FOR M/T * TON	636-3 LIQUID ASPH. OIL FOR DUST PALLIATIVE * GALLON	636-7 ERAD. PAV'T. MARK L.F.	636-9 TEMP. PAV'T MARK TAPE L.F.	636-11 TRAFFIC CONTROL DEVICE UNITS	636-12 CLEAN TRAFFIC CONTROL DEVICE EACH	636-14 FLAG MAN MAN HR.	636-17 TEMP. CONC. BARRIER L.F.	636-18 REMOVE, RESET TEMP. CONC. BARRIER L.F.	636-21 ELECT. ARROW DAY	664-1 IMPACT ATT. DEVICE TYPE III EACH	636-11-2 MOVE EXISTING SIGNS * EACH	664-1A REMOVE & RESET IMPACT ATT. DEVICE EACH	
	PHASE I														
S.R. 7	430+20 - 432+40 LT.								220			1			
	443+80 - 445+80 RT.								200			1			
	430+20 - 437+40 LT.				720										4" WHITE TAPE RIGHT EDGE LINE
	438+90 - 445+70				680										4" WHITE TAPE RIGHT EDGE LINE
	437+40 LT.										50				REUSE IN STAGE D
	438+90 RT.										50				REUSE IN STAGE D
	430+20 - 437+40			285											4" WHITE TAPE LANE LINE SOLID
	438+90 - 445+70			270											4" WHITE TAPE LANE LINE SOLID
	428+70 - 432+30 RT. & LT.								200	420		1		1	SEE SHEET 24 FOR LAYOUT DETAIL
	443+50 - 447+60 RT. & LT.								720			1		1	SEE SHEET 24 FOR LAYOUT DETAIL
	423+20 - 445+85 RT.			865	2265										4" WHITE LANE LINE, 4" Y. LT. EDGE LINE
	429+30 - 453+10 LT.			908	2380										
	429+30 - 430+30 LT. TURN LANE				266										4" Y. 206' 4" W. 60'
	445+65 - 447+00 LT. TURN LANE				371										4" Y. 276' 4" W. 95'
⚠ S.R. 7	PIPE CROSSING LOCATIONS				13,300 ⚠										4" EDGE LINE ⚠
	***					11,140									
	TOTAL FOR PHASE I	25	400	2328	~~6882~~ 19,982 ⚠	11,140		1250 *	1340	420	100	4	5 *	2	
	PHASE 2														
S.R. 7	417+90 - 426+50 RT.									860				1	
	435+70 - 437+90 RT.									220				1	
	445+00 - 454+00 RT.								640	260				1	
	417+80 - 428+40 LT.								1060					1	
	436+20 - 438+40 LT.								220			1			
	446+60 - 455+20 LT.								860			1			
	413+00 RT.										100				
	460+20 LT.										100				
	413+00 - 454+00 RT.				4100										4" WHITE TAPE RIGHT EDGE LINE
	417+80 - 460+20 LT.				4240										4" WHITE TAPE RIGHT EDGE LINE
	413+00 - 454+00			1552											4" WHITE TAPE LANE LINE SOLID
	417+80 - 460+20			1605											4" WHITE TAPE LANE LINE SOLID
	***					1860									
	TOTAL FOR PHASE 2		600	3157	8340	1860	164	1250 *	2780	1340	200	2	5 *	4	

*TO BE UTILIZED AS REQUIRED BY THE ENGINEER

***SEE SHEET NO. 29 & 30 FOR TABULATION OF TRAFFIC CONTROL DEVICES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	19	ADDED & REVISED QUANTITIES	5/6/82	A. Lining

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

ALIGNMENT CHECKED
RT. OF WAY CHECKED
NO

SUMMARY-MAINTENANCE OF TRAFFIC

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

C-4

FED HWY. ADM.	STATE DIST. NO	STATE PROJECT NO	FED PROJECT NO	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	20	255

LOCATION	STATION TO STATION	ITEM NUMBERS 636-2 AGGREGATE FOR M/T * TON	636-3 LIQUID ASPH. OIL FOR DUST PALLIATIVE * GALLON	636-7 ERAD. PAV'T. MARK L.F.	636-9 TEMP. PAV'T. MARK TAPE L.F.	636-11 TRAFFIC CONTROL DEVICE UNITS	636-12 CLEAN TRAFFIC CONTROL DEVICE EACH	636-14 FLAG MAN MAN HR.	636-17 TEMP. CONC. BARRIER L.F.	636-18 REMOVE, RESET TEMP. CONC. BARRIER L.F.	636-21 ELECT. ARROW DAY	664-1 IMPACT ATT. DEVICE TYPE III EACH	636-11-2 MOVE EXISTING SIGNS * EACH	664-1A Remove & Reset Impact Att. Device Each	REMARKS
	PHASE 3														
	***					790									
	TOTAL FOR PHASE 3	25	300			790	116	1250 *							
	PHASE 4														
S.R. 7	435+90 - 437+50 RT.														
	429+00 - 447+60 LT.									1860				1	
	428+90 - 447+00 RT.									1810				1	
	431+00 MEDIAN										50				
	436+50 LT.										50				
	423+20 - 445+85 RT.			865	2265										4" YELLOW TAPE LEFT EDGE LINE
	429+30 - 453+10 LT.			908	2380										4" YELLOW TAPE LEFT EDGE LINE
	430+40 - 437+50 LT.				710										4" WHITE TAPE RIGHT EDGE LINE
	431+00 - 445+80			570											4" WHITE TAPE LANE LINE SOLID
	430+40 - 451+30			799											4" WHITE TAPE LANE LINE SOLID
	***					1720									
	TOTAL FOR PHASE 4		400	3142	5355	1720	220	1250 *		3670	100	0		2	
	GRAND TOTAL	50	1700	8627	~~20377~~ 33,677	15,510	500	5000 *	4120	5430	400	6	10 *	8	

ALIGNMENT CHECKED
RT OF WAY CHECKED
NO

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	20	REVISED QUANTITIES	5/6/81	[illegible]

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

LIGHTING QUANTITIES SUB-SUMMARY

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	20A	255

C-4

SE-1

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REFERENCE NO.	SIDE	STATION	STATION	LIGHT POLE & ARM TYPE 1 625-1	~~LIGHT POLE & ARM TYPE 2 625-1(III)~~	LIGHT POLE & ARM TYPE 3 625-1		LIGHT POLE FOUNDATION 24"x8'-0" 625-2	GROUND ROD 625-7		LUMINAIRE STYLE C IES TYPE II 625-5 310 WATT			POLE AND BRACKET CABLE 1/C #10 625-16		TRENCH 24" DEPTH 625-10	1 1/2" CABLE DUCT W/2-#4 AWG 600 V. CABLE 625-17	3" CONDUIT 625-11(3")		CONNECTOR KIT TYPE II 625-18	CONNECTOR KIT TYPE III 625-18	CABLE SPLICING KIT, ITEM SPECIAL				PULLBOX 18" DIA. 625-8(18)	PULLBOX 24" DIA. 625-8(24)	CONTROL CENTER INCL. SERVICE POLE 625-20	HIGH VOLTAGE TEST 839-1(1)	CR. STONE, CR. GRAVEL, OR SILICA SAND FOR UNDERDRAIN 606-22	UNDERDRAIN PIPE 4" 606-25(4)		
				EA.	EA.	EA.		EA.	EA.		EA.			L.F.		L.F.	L.F.	L.F.		EA.	EA.	EA.				EA.	EA.	L.S.	L.S.	CU. YDS.	L.F.		
1	RT.	S.R. 7 419+81		1				1	1		1			100						1	1												
2	RT.	S.R. 7 419+81	RAMP A 26+09													400	420																
3	RT.	RAMP A 26+09		1				1	1		1			100						1	1												
4	RT.	RAMP A 26+09	RAMP A 27+75													165	175																
5		RAMP A 27+75														60	70	25				2				1							
6	RT.	RAMP A 27+75	RAMP A 28+09													35	45																
7	RT.	RAMP A 28+09		1				1	1		1			100						1	1												
8	LT.	S.R. 7 419+30		1				1	1		1			100						1	1												
9	LT.	S.R. 7 419+30	S.R. 7 422+60													330	340																
10	LT.	S.R. 7 422+60		1				1	1		1			100						1	1												
11	LT.	S.R. 7 422+60	S.R. 7 425+90													330	340																
12	LT.	S.R. 7 425+90		1				1	1		1			100						1	1												
13	LT.	S.R. 7 425+90	S.R. 7 427+70													160	175																
14		S.R. 7 427+70														115	125	115				4				2							
15	RT.	S.R. 7 427+70	S.R. 7 427+83													13	23																
16	RT.	S.R. 7 427+83		1				1	1		1			100						1	1												
17	LT.	S.R. 7 427+70	RAMP D 29+35													160	170																
18	LT.	RAMP D 29+35														145	275	25				4				1							
19	LT.	RAMP D 29+35	S.R. 7 445+24													1550	1575																
20	LT.	S.R. 7 445+24		1				1	1		1			100						1	1												
21	LT.	S.R. 7 445+24	S.R. 7 445+50													26	36																
22		S.R. 7 445+50														100	100	100				4				2							
23	RT.	S.R. 7 445+50	S.R. 7 446+21													71	81																
24	RT.	S.R. 7 446+21		1				1	1		1			100						1	1												
25	RT.	S.R. 7 446+21	S.R. 7 449+70													350	360																
26	RT.	S.R. 7 449+70		1				1	1		1			100						1	1												
27	RT.	S.R. 7 449+70	S.R. 7 453+19													350	360																
28	RT.	S.R. 7 453+19		1				1	1		1			100						1	1												
29	LT.	S.R. 7 445+50	RAMP C 45+70													30	40																
30		RAMP C 45+70														25	35	25								1							
31	LT.	RAMP C 45+70	RAMP C 45+16													55	65																
32	LT.	RAMP C 45+16		1				1	1		1			100						1	1												
33	LT.	RAMP C 45+70	RAMP C 47+15													165	175																
34	LT.	RAMP C 47+15		1				1	1		1			100						1	1												
35	LT.	RAMP C 47+15	S.R. 7 453+70													620	640																
36	LT.	S.R. 7 453+70		1				1	1		1			100						1	1												
			SUB-TOTAL	14				14	14		14			1400		5260	5625	290		14	14	14				6	1						

PLAN
SURVEYED
PLOTTED
NOTE BOOK
QUANTITY CHECKED
RT. OF WAY CHECKED
NO.

DATE
BY

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

LIGHTING QUANTITIES SUB-SUMMARY

FED. HWY. ADM	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	208	255

SE-2

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

REFERENCE NO.	SIDE	STATION	STATION	LIGHT POLE & ARM TYPE I 625-1	~~LIGHT POLE & ARM TYPE 2 625-1(1)~~	LIGHT POLE & ARM TYPE 3 625-1	LIGHT POLE FOUNDATION 24" x 8'-0" 625-2	GROUND ROD 625-7	LUMINAIRE STYLE C IES TYPE II 310 WATT 625-5	POLE AND BRACKET CABLE 1/C #10 625-16	TRENCH 24" DEPTH 625-10	1 1/2" CABLEDUCT W/2-#4 AWG 600 V. CABLE 625-17	3" CONDUIT 625-11(3")	CONNECTOR KIT TYPE II 625-18	CONNECTOR KIT TYPE III 625-18	CABLE SPLICING KIT, ITEM SPECIAL	PULLBOX 18" DIA. 625-8	PULLBOX 24" DIA. 625-8	CONTROL CENTER INCL. SERVICE POLE 625-20	HIGH VOLTAGE TEST 839-1(1)	CR. STONE, CR. GRAVEL, OR SILICA SAND FOR UNDERDRAIN 606-22	UNDERDRAIN PIPE 4" 606-25(4)
				EA.	~~EA.~~	EA.	EA.	EA.	EA.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	L.S.	L.S.	CU. YDS.	L.F.
37	LT.	RAMP C 29+35	RAMP C 35+00								565	575										
38		RAMP C 35+00									25	35	25			2	1					
39	RT.	RAMP C 35+00	S.R. 872 7+79								90	100										
40	RT.	S.R. 872 7+79		1			1	1	1	100				1	1							
41		RAMP C 35+00	S.R. 872 6+30								60	70										
42		S.R. 872 6+30									75	85	75			2	1					
43	RT.	S.R. 872 6+30	T.R. 533 104+30								190	200										
44	RT.	T.R. 533 104+30		1			1	1	1	100				1	1							
45	RT.	T.R. 533 104+30	T.R. 533 102+60								150	160										
46	RT.	T.R. 533 102+60		1			1	1	1	100				1	1							
47	LT.	S.R. 872 6+30	S.R. 872 6+37								7	17										
48	LT.	S.R. 872 6+37		1			1	1	1	100				1	1							
49	LT.	S.R. 872 6+37	S.R. 872 10+22								172	395	40			2	1					
50	LT.	S.R. 872 10+22				1			1	100				1	1							
51	LT.	S.R. 872 10+22	S.R. 872 12+50								78	238				2	1					
52		S.R. 872 12+50									65	75	65			2	1					
53	RT.	S.R. 872 12+50	S.R. 872 12+60								10	20										
54	RT.	S.R. 872 12+60		1			1	1	1	100				1	1							
55	RT.	S.R. 872 12+60	S.R. 872 16+23								420	440	35									
56	RT.	S.R. 872 16+23		1			1	1	1	100				1	1							
57	RT.	S.R. 872 16+23	S.R. 872 19+82								400	410	60									
58	RT.	S.R. 872 19+82		1			1	1	1	100				1	1							
59	LT.	S.R. 872 12+50	S.R. 872 14+41								100	110	50									
60	LT.	S.R. 872 14+41		1			1	1	1	100				1	1							
61	LT.	S.R. 872 14+41	S.R. 872 18+06								320	330										
62	LT.	S.R. 872 18+06		1			1	1	1	100				1	1							
63	LT.	S.R. 872 18+06	T.R. 533 51+00								110	120										
64		T.R. 533 51+00									50	60	50			2	1					
65	LT.	T.R. 533 51+00	T.R. 533 59+22								780	800										
66	LT.	T.R. 533 59+22		1			1	1	1	100				1	1							
67	LT.	T.R. 533 51+00	S.R. 872 21+58								200	210										
68	LT.	S.R. 872 21+58		1			1	1	1	100				1	1							
69	LT.	S.R. 872 21+58	S.R. 872 21+90								32	42										
70		S.R. 872 21+90									70		70				2					
			SUB-TOTAL	11		1	11	11	12	1200	3969	4492	470	12	12	12	8					
			TOTAL	25		1	25	25	26	2600	9229	10,117	760	26	26	26	14	1	L.S.	L.S.	12.6	100

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

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	FEDERAL PROJECT NO. STATE	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	M-5251-(002) X326-SP2-0.00		MARSHALL, W. VA.-BELMONT, OHIO	21	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTE BOOK ALIGNMENT CHECKED AS OF MAY CHECKED NO

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS, ROADS AND BRIDGES, AS CONTAINED IN THE BOOK ENTITLED WEST VIRGINIA DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS, ROADS AND BRIDGES, ADOPTED 1978, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS, JANUARY 1, 1981, THE CONTRACT DOCUMENTS, AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

COORDINATION BETWEEN CONTRACTORS

IT IS ANTICIPATED THAT OTHER CONTRACTORS WILL BE WORKING IN THIS AREA, AND IT IS IMPERATIVE THAT A STRICT COORDINATION BETWEEN CONTRACTORS BE AGREED ON IN REFERENCE TO WORKING PLANS AND STORAGE AREAS.

GUARD RAIL

THE GUARD RAIL LIMITS SHOWN ON THE PLANS ARE SUBJECT TO ADJUSTMENT IN THE FIELD AS DIRECTED BY THE ENGINEER.

TEMPORARY POLLUTION CONTROL

MATERIAL USED FOR DIKES, DAMS, DITCH CHECKS AND SEDIMENT BASINS UNDER SECTION 642, SHALL BE NON-SILTING (WOOD, ROCK, CONCRETE, ETC.), THE PURPOSE BEING TO REDUCE THE VELOCITY OF THE STREAM FLOW AND TO ALLOW DEPOSITION OR FILTERING OF THE SILT BEING CARRIED.

BACKFILLING

WHERE TRENCHING IS REQUIRED FOR PLACING OF SEWERLINES OR OTHER FACILITIES UNDER EXISTING ROADS WHICH ARE TO REMAIN IN SERVICE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPLACE PAVEMENT AND BASE TO CONFORM TO EXISTING THICKNESS, GRADES AND ALIGNMENTS.

EROSION AND POLLUTION CONTROL

IN THE EVENT THAT TEMPORARY EROSION AND POLLUTION CONTROL MEASURES ARE REQUIRED DUE TO THE CONTRACTOR'S NEGLIGENCE, CARELESSNESS, OR FAILURE TO INSTALL PERMANENT CONTROLS AS PART OF THE WORK AS SCHEDULED, AND ARE ORDERED BY THE ENGINEER, SUCH WORK SHALL BE PERFORMED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE CONTRACTOR WILL BE REQUIRED TO INCORPORATE ALL PERMANENT EROSION CONTROL FEATURES INTO THE PROJECT AT THE EARLIEST PRACTICAL TIME AS OUTLINED IN HIS ACCEPTED SCHEDULE.

PAVED SHOULDERS

WHERE PAVED SHOULDERS ARE SPECIFIED ON THE PLANS, ITEM 408-1, TACK COAT AGGEGATE, SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 408 OF THE SPECIFICATIONS WITH THE EXCEPTION THAT THE MATERIALS SHALL BE LIMITED TO CRUSHED LIMESTONE.

STRUCTURE EXCAVATION

THE COST OF STRUCTURE EXCAVATION FOR WINGWALLS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CLASS "B" CONCRETE.

PLUGGING DRILLED WATER WELLS

THE CONTRACTOR SHALL PLUG ALL DRILLED WATER WELLS WITHIN THE RIGHT-OF-WAY LIMITS, UNLESS OTHERWISE NOTED ON PLANS, PRIOR TO STARTING ANY OTHER CONSTRUCTION IN THE VICINITY OF THE WELLS. WELLS SHALL BE FILLED WITH AASHTO NUMBER 7 STONE TO WITHIN TWENTY (20) FEET OF THE SURFACE, AND THE UPPER TWENTY (20) FEET SHALL BE PLUGGED USING CLASS D CONCRETE OR OTHER SUITABLE CONCRETE. CONCRETE MAY BE MIXED IN THE FIELD. THE COST OF THE STONE AND CONCRETE FOR PLUGGING DRILLED WATER WELLS AND THE WORK INVOLVED SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 207-1, UNCLASSIFIED EXCAVATION.

UTILITIES

ALL ABANDONED UTILITY POLES WITHIN THE LIMITS OF THE RIGHT-OF-WAY SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. THE REMOVAL SHALL BE TREATED IN A SIMILAR MANNER AS THE CLEARING AND GRUBBING OF TREES. THE COST OF REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 201-1, CLEARING AND GRUBBING. THE POLES TO BE ABANDONED WILL BE MARKED BY THE PROJECT ENGINEER.

EXISTING PIPE REMOVAL

EXISTING PIPES THAT ARE REMOVED DURING CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST OF THE REMOVAL SHALL BE INCLUDED IN THE VARIOUS PIPE CULVERT BID ITEMS.

SITE GRADING

THE COST OF REMOVING PAVEMENT AND SITE GRADING OF EXISTING TWP. RD. 533 SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 201-1, CLEARING AND GRUBBING. PLACING OF EXCAVATED MATERIALS IN THE EMBANKMENT AREAS SHALL BE DONE IN ACCORDANCE WITH SEC. 201-3-5.

LIMIT OF WORKING HOURS

NO CONSTRUCTION WORK SHALL BE PERFORMED BY THE CONTRACTOR BETWEEN THE HOURS OF 12:00 MIDNIGHT AND 6 A.M.

BITUMINOUS MATERIAL

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ANY OF THE TYPES OF BITUMINOUS MATERIAL LISTED IN SUBSECTION 409.2, WITH THE EXCEPTION OF CATIONIC EMULSIFIED ASPHALT, TYPE CRS-1, MAY BE USED. IN ADDITION, IF ACCEPTABLE TO THE ENGINEER, THE FOLLOWING GRADES OF BITUMINOUS MATERIAL MAY BE USED: SS-1 OR SS-1H MEETING THE REQUIREMENTS OF SUBSECTION 705.4, OR CSS-1 OR CSS-1H MEETING THE REQUIREMENTS OF SUBSECTION 705.11. THESE MATERIALS MAY BE DILUTED WITH WATER IN ORDER TO FACILITATE THEIR USE.

SEWER HOUSE DRAINS AND EXISTING HOUSE CONNECTIONS

ALL EXISTING HOUSE DRAINS, INCLUDING YARD AND ROOF CONNECTIONS NOW IN USE, WHICH ARE DISTURBED BECAUSE OF THE HIGHWAY IMPROVEMENT, SHALL BE REPLACED BY THE CONTRACTOR. PAYMENT FOR CONNECTIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 201-1, CLEARING AND GRUBBING.

MAINTENANCE OF SEWER FLOWS

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES TO REMAIN IN PLACE AND THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL NEW FACILITIES ARE COMPLETED AND PLACED IN USE. PAYMENT FOR ANY ADDITIONAL COSTS INVOLVED IN MAINTAINING THESE FLOWS BY PUMPING OR BY ANY OTHER MEANS APPROVED BY THE ENGINEER SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ITEM 604, STORM DRAINS.

SEPTIC TANKS AND APPURTANCES - DUG WELLS

ALL EXISTING SEPTIC TANK PIPE LINES, WHETHER INFLUENT OR EFFLUENT SHALL BE TERMINATED AT THE RIGHT-OF-WAY LINE AND PLUGGED WITH CONCRETE. PAYMENT SHALL BE MADE UNDER ITEM 201-1, CLEARING AND GRUBBING.

WEEP HOLES IN INLET

WHEN DEEMED NECESSARY WEEP HOLES MAY BE INSTALLED IN THE SIDEWALLS OF INLETS DURING CONSTRUCTION TO PROVIDE BASE COURSE DRAINAGE PRIOR TO PLACEMENT OF PAVEMENT. THESE WEEP HOLES SHALL BE LOCATED AT OR BELOW SUBGRADE ELEVATION AS DIRECTED OR APPROVED BY THE ENGINEER TO PROPERLY DRAIN SUBSURFACE MATERIAL. ONE WEEP HOLE, APPROXIMATELY 4" DIAMETER, NON-RUST MATERIAL, MAY BE INSTALLED IN EACH APPROPRIATE SIDEWALL. LOOSE ROCK SHALL BE PLACED AROUND THE OUTSIDE OF THE STRUCTURE AT THE OPENING OR OTHER SIMILAR PROTECTIVE MEASURES TAKEN TO PREVENT EXCESSIVE BACKFILL MATERIAL FROM PASSING THROUGH THE WEEP HOLES. THE COST OF WEEP HOLE INSTALLATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE INLETS. NO DEDUCTION IN CONCRETE QUANTITIES SHALL BE MADE FOR WEEP HOLES IN THE INLETS.

SELECT ROCK FILL (ROCK BORROW EXCAVATION)

THIS ITEM SHALL CONSIST OF EMBANKMENT FOUNDATION AND LINING FOR DRAINAGE CHANNELS AND IS TO BE PLACED AS SHOWN ON THE PLANS AND/OR CROSS SECTIONS.

MATERIALS SHALL BE OBTAINED FROM A SITE APPROVED BY THE ENGINEER. ROCK BORROW EXCAVATION
⚠ TO BE USED FROM STA. 7 + 25 TO STA. 22 + 40 SR 872 SHALL CONSIST OF SANDSTONE ~~ONLY~~ AND/OR LIMESTONE ONLY.

WHEN USED UNDER EMBANKMENTS, THE SIZE OF MATERIAL WILL BE CONTROLLED BY THE EMBANKMENT SPECIFICATIONS. WHEN USED AS CHANNEL LINING, THE MATERIAL SHOULD BE AS LARGE AS THE THICKNESS OF THE BLANKET WILL PERMIT WITH ENOUGH SMALLER PIECES OF VARIOUS SIZES TO FILL VOIDS.

SELECT ROCK FILL SHALL BE PAID FOR UNDER ITEM 211-2, ROCK BORROW EXCAVATION.

⚠ GRANULAR MATERIAL AS DESCRIBED IN SECTION 207.7.2.2 OF THE SPECIFICATIONS MAY BE USED AS AN ALTERNATE TO ITEM 211-2, ROCK BORROW EXCAVATION.

ROCK BORROW EXCAVATION

THIS ITEM SHALL CONSIST OF CONSTRUCTING EMBANKMENT FOUNDATION IN AREAS WHERE PILES ARE TO BE DRIVEN AND IS TO BE PLACED AS SHOWN ON THE PLANS AND/OR CROSS SECTIONS.

MATERIALS SHALL BE OBTAINED FROM A SITE APPROVED BY THE ENGINEER. SELECT BORROW EXCAVATION IS TO BE USED IN THE EMBANKMENT FOUNDATION AT ABUTMENTS A (STA. 22 + 40 TO STA. 24 + 00) SHALL CONSIST OF APPROVED HIGHLY PERMEABLE GRANULAR MATERIAL THROUGH WHICH PILES CAN BE DRIVEN.

THE SIZE OF MATERIAL SHALL BE CONTROLLED BY THE EMBANKMENT SPECIFICATIONS.

ROCK BORROW EXCAVATION SHALL BE PAID FOR UNDER ITEM 211-2.

SUBGRADE

THE CONTRACTOR MAY USE ITEM 307-1, CLASS 1 AGGREGATE BASE COURSE, PER CUBIC YARD FOR ITEM 207-2, SUBGRADE, PER CUBIC YARD, IF HE SO DESIRES. FLY ASH WILL NOT BE PERMITTED.

TEMPORARY SURCHARGE RAMP C

A TEMPORARY SURCHARGE SHALL BE PROVIDED FROM STATIONS 39+25 TO 41+75 ON RAMP C AS SHOWN ON THE CROSS SECTIONS. THE SURCHARGE SHALL BE ADDED AFTER THE 3' UNDERCUT AND REPLACEMENT OF SUBGRADE AND SHALL REMAIN FOR 30 DAYS. THE MATERIAL SHOULD BE COMPACTED, BUT MOISTURE
⚠ DENSITY IS NOT REQUIRED. REMOVING AND REHANDLING OF THE TEMPORARY SURCHARGE IS CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

MAINTAINING TRAFFIC

MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH SECTION 636 OF THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS ROADS AND BRIDGES, ADOPTED 1978, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 1, 1981, AND THE MANUAL "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS", DATED JULY 1980.

664-1A - REMOVING & RESETTING IMPACT ATTENUATING DEVICE

The quantity of Item 664-1A shall be per each device reused in a different location. Payment shall include temporary storage if necessary, re-erecting, maintaining, dismantling, removal and disposal of the barrier.

⚠ UTILITIES

ANY REFERENCE TO C&P TELEPHONE OF W.VA. AND WHEELING ELECTRIC CO. WITHIN THESE PLANS SHALL BE READ AS OHIO BELL TELEPHONE CO. AND OHIO POWER CO. RESPECTFULLY.

GENERAL NOTES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	21	REVISED & ADDED NOTES.	5/5/82	C. RILING

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED HWY. ADM.	STATE DIST. NO.	FEDERAL PROJECT NO. STATE	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	M-5251-(002) X326-SP2-0.00		MARSHALL, W. VA.-BELMONT, OHIO	22	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

SIGNING

ALL SIGN FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE WEST VIRGINIA DEPT. OF HIGHWAYS STANDARD SPECIFICATIONS, ROADS AND BRIDGES, AS CONTAINED IN THE BOOK ENTITLED WEST VIRGINIA DEPT. OF HIGHWAYS, STANDARD SPECIFICATIONS, ROADS AND BRIDGES, ADOPTED 1978, AS AMENDED BY THE WEST VIRGINIA DEPT. OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS, JANUARY 1, 1981, THE CONTRACT DOCUMENTS, AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

ALL SIGNS AND SUPPORTS AND THE REFLECTIVE AND GALVANIZED COATING THEREON THAT HAVE BEEN DAMAGED IN ANY MANNER SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

CORNERS

CORNERS AND BORDERS OF ALL SHEET ALUMINUM SIGNS SHALL BE ROUNDED AS SHOWN ON PLANS; HOWEVER, CORNERS OF ALUMINUM SIGN PANELS (EXTRUDED) SHALL NOT BE ROUNDED.

FOUNDATIONS

FOOTINGS SHALL IN ALL CASES BE FLUSH WITH THE UPHILL AND DOWNHILL SIDES OF THE SLOPE.

U-CHANNEL SUPPORTS

QUANTITIES FOR U-CHANNELS SHOW LENGTH FOR DRIVEN DEPTH. THE CONTRACTOR MAY ELECT AT NO ADDITIONAL COST TO THE STATE, A CONCRETE EMBEDMENT AS SHOWN IN THE STANDARD DRAWINGS.

BOLT TIGHTENING

A CALIBRATED DEVICE ACCEPTABLE TO THE ENGINEER SHALL BE PROVIDED BY THE CONTRACTOR TO INSURE THE STIPULATED TORQUE AND/OR TENSION THAT ARE SET FORTH BY THE PLANS.

SIGN LOCATION

SIGNS SHALL BE LOCATED IN THE FIELD BY STATION NUMBERS APPEARING ON THE SUMMARY SHEETS OR AS DIRECTED BY THE ENGINEER.

CONSTRUCTION LAYOUT STAKES

COSTS FOR CONSTRUCTION LAYOUT STAKES TO BE INCLUDED IN THE UNIT BID PRICE PER SIGN.

SIGN SUPPORTS GALVANIZATION DAMAGE

GALVANIZED COATING DAMAGED FOR ANY REASON SHALL BE REPAIRED BY THE APPLICATION OF A ZINC RICH PAINT CONFORMING TO MILITARY SPECIFICATION MIL-P-21035 OR FEDERAL SPECIFICATION TTP-641 AND/OR AS APPROVED BY THE ENGINEER.

REFLECTIVE SHEETING

WHERE TYPE II REFLECTIVE SHEETING IS REQUIRED IN THIS PROJECT, TYPE III ENCLOSED LENS REFLECTIVE SHEETING SHALL BE USED.

SIGN SUPPORT SYMBOLS

ASSEMBLY NUMBER

SIGN ON ONE SUPPORT

SIGN ON TWO SUPPORTS

SIGN, BACK TO BACK ON ONE SUPPORT

SIGN, BACK TO BACK ON TWO SUPPORTS

SIGN MOUNTED ON BRIDGE

CONSTRUCTION OF EMBANKMENTS

WHEN EMBANKMENT IS TO BE PLACED AND COMPACTED ON HILLSIDES OR WHERE NEW EMBANKMENT IS TO BE COMPACTED AGAINST EXISTING EMBANKMENTS, OR WHERE EMBANKMENT IS BUILT HALF-WIDTH AT A TIME, SLOPES THAT ARE STEEPER THAN 8:1 WHEN MEASURED AT RIGHT ANGLES TO THE ROADWAY SHALL BE CONTINUOUSLY BENCHED OVER THOSE AREAS WHERE IT IS REQUIRED AS THE WORK IS BROUGHT UP IN LAYERS. BENCHING SHALL BE OF SUFFICIENT WIDTH TO PERMIT OPERATIONS OF PLACING AND COMPACTING EQUIPMENT. EACH HORIZONTAL CUT SHALL BEGIN AT THE INTERSECTION OF THE ORIGINAL GROUND AND THE VERTICAL SIDES OF THE PREVIOUS CUTS. MATERIAL THUS CUT OUT SHALL BE RECOMPACTED ALONG WITH THE NEW EMBANKMENT MATERIAL AT THE CONTRACTOR'S EXPENSE, UNLESS THE WIDTH OF EXCAVATION REQUIRED EXCEEDS 6 FEET, IN WHICH CASE THE EXCAVATED MATERIAL IN EXCESS OF 6 FEET WILL BE MEASURED AND PAID FOR AS UNCLASSIFIED EXCAVATION.

EPOXY COATING OF CONCRETE PIPE (D-51)

(THE BOTTOM ONE-THIRD OF) THE INTERIOR BARREL AND JOINT SURFACE AREAS OF THE CONCRETE PIPE SHALL BE PREPARED SO AS TO REMOVE ALL FORMS OF OIL, LAITANCE AND OTHER DELETERIOUS MATERIALS AND THEN BE LINED WITH A HIGH BUILD, POLYAMIDE-CURED 2 COMPONENT COAL TAR EPOXY COATING, MILITARY SPECIFICATION MIL-P-23236. THE LINING COMPOUND SHALL BE SPRAYED SO AS TO OBTAIN A CONTINUOUS AND RELATIVELY UNIFORM AND SMOOTH LINING WITH A MINIMUM DRY FILM THICKNESS OF 0.03 INCHES. ALL INTERIOR BARREL SURFACE SHALL BE THOROUGHLY INSPECTED FOR HOLIDAYS, UTILIZING AN ELECTRICAL INSTRUMENT SPECIALLY DESIGNED FOR THAT PURPOSE. JUST PRIOR TO INSTALLATION OF EACH JOINT OF PIPE IN THE FIELD, A FIBRATED COAL TAR JOINT COMPOUND SHALL BE APPLIED AROUND THE INSIDE CORNER OF THE BELL OR GROOVE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. COATING OF THE CONDUIT SHALL BE A PLANT OPERATION (AND CARE SHALL BE TAKEN IN THE FIELD TO CENTER THE COATED PORTION ALONG THE FLOWLINE. COST OF LABOR AND MATERIALS FOR COATING THE PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAL FOOT FOR THE ITEM 604-68 CONDUIT.

CONNECTIONS TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 604 CONDUIT ITEMS.

EARTHWORK

THE CONTRACTOR SHALL AT ALL TIMES PROVIDE POSITIVE DRAINAGE FROM ALL EXCAVATION AND EMBANKMENTS EXCEPT WHERE EROSION CONTROL ITEMS ARE IMPLEMENTED. PAYMENT FOR TEMPORARY DITCHES OR CONDUIT SHALL BE INCLUDED IN THE TEMPORARY EROSION CONTROL ITEMS.

APPROACH SLAB BASE COURSE

WITH THE APPROVAL OF THE ENGINEER, NORMAL ROADWAY BASE COURSE MATERIAL MAY BE SUBSTITUTED FOR THE BASE MATERIAL SPECIFIED FOR USE UNDER THE APPROACH SLABS. PAYMENT FOR THE SUBSTITUTED MATERIAL WILL BE AT THE LOWER OF THE UNIT PRICES BID FOR THE SPECIFIED MATERIAL OR FOR THE NORMAL ROADWAY BASE COURSE MATERIAL.

UNDERDRAIN

THE QUANTITIES OF UNDERDRAIN HAVE BEEN INCREASED FOR USE AS DIRECTED BY THE ENGINEER FOR THE CONTROL OF GROUND WATER WHICH WOULD BE DETRIMENTAL TO THE COMPLETED FACILITY. POROUS CEMENT CONCRETE UNDERDRAIN SHALL NOT BE USED ON THIS PROJECT.

GUARDRAIL GALVANIZATION DAMAGE

GALVANIZED COATING DAMAGE FOR ANY REASON SHALL BE REPAIRED BY THE APPLICATION OF A ZINC RICH PAINT CONFORMING TO MILITARY SPECIFICATIONS MIL-P-21035 OR FEDERAL SPECIFICATIONS TJP-641.

SURVEY MARKERS

WHEN LOCATIONS OF SURVEY MARKERS CONFLICTS WITH OTHER CONSTRUCTION, THE SURVEY MARKERS SHALL BE OFFSET AS DIRECTED BY THE ENGINEER.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR ALONG WITH LOCAL REPRESENTATIVES SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION. ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 604 CONDUIT ITEMS OF THE CONTRACT.

ANIMAL GUARD FOR PIPE OUTLETS

ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL PIPE UNDERDRAINS AND FARM DRAINS EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. THE ANIMAL GUARD SHALL COMPLY WITH THE DETAIL SHOWN ON SHEET NO. MC-4.

PAYMENT FOR ALL MATERIAL, LABOR AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 606 UNDERDRAIN ITEM.

COMPACTION OF FLYASH

IN ALL AREAS WHERE FILLS ARE TO BE CONSTRUCTED ON TOP OF EXISTING FLYASH DEPOSITS, THE EMBANKMENT FOUNDATION SHALL BE COMPACTED TO SPECIFIED DENSITY REQUIREMENTS REGARDLESS OF THE DEPTH OF FILL. ALL OTHER REQUIREMENTS OF SECTION 207.7.1 SHALL APPLY AS SPECIFIED.

IN AREAS WHERE CUT SECTIONS ARE TO BE CONSTRUCTED IN FLYASH DEPOSITS, SAID MATERIAL SHALL BE REMOVED TO A DEPTH OF AT LEAST THREE FEET BELOW THE TOP OF SUBGRADE. THE AREA SHALL THEN BE COMPACTED IN ACCORDANCE WITH SECTION 207.7.1 AND BACKFILLED WITH EMBANKMENT MATERIAL TO THE BOTTOM OF THE PAVEMENT SECTION. PAYMENT FOR REMOVAL OF FLYASH SHALL BE AT THE UNIT PRICE BID FOR ITEM 207-1, UNCLASSIFIED EXCAVATION.

GUARDRAIL AND BARRIER RAIL REMOVED

GUARDRAIL AND BARRIER RAIL DESIGNATED FOR REMOVAL ON THIS PROJECT SHALL BE CAREFULLY DISMANTLED AND THE RAIL ELEMENTS STORED AT THE *Project Site To Be Picked up By O.D.O.T.* ALL POSTS, BLOCKS, BOLTS AND MISCELLANEOUS HARDWARE SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL POST HOLES SHALL BE CAREFULLY FILLED AND TAMPED AND THE SITE CLEANED AND RESTORED.

THE RESTORATION WILL INCLUDE GRADING OF THE SHOULDER IN THE AREA OF THE GUARDRAIL, REMOVAL TO PROVIDE PROPER DRAINAGE AND TRAVERSABLE SHOULDER SLOPES WHERE TRAFFIC OR WEATHER MAY HAVE BUILT A RIDGE OF EARTH AND DEBRIS UNDER THE GUARDRAIL. THE GRADED OR DISTURBED AREA SHALL BE RESEEDED, ~~AS INDICATED ON THE SEEDING NOTE.~~ WITH TYPE B SEED. (1)

PAYMENT FOR ALL OF THE ABOVE, INCLUDING THE REMOVAL AND DISPOSAL OF ANCHOR ASSEMBLIES, SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 201-1 CLEARING AND GRUBBING.

(2) USE OF FLYASH

Flyash Placed within Embankments will not be permitted East of a straight line drawn between station 57+00 of Relocated TWP. Road 533, station 21+70 of S.R. 872 and station 47+65 of TWP. Road 533A.

GENERAL NOTES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
(2)	22	Added Note	5-12-82	D.K.
(1)	22	REVISED NOTE.	5/5/82	C.Akins

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

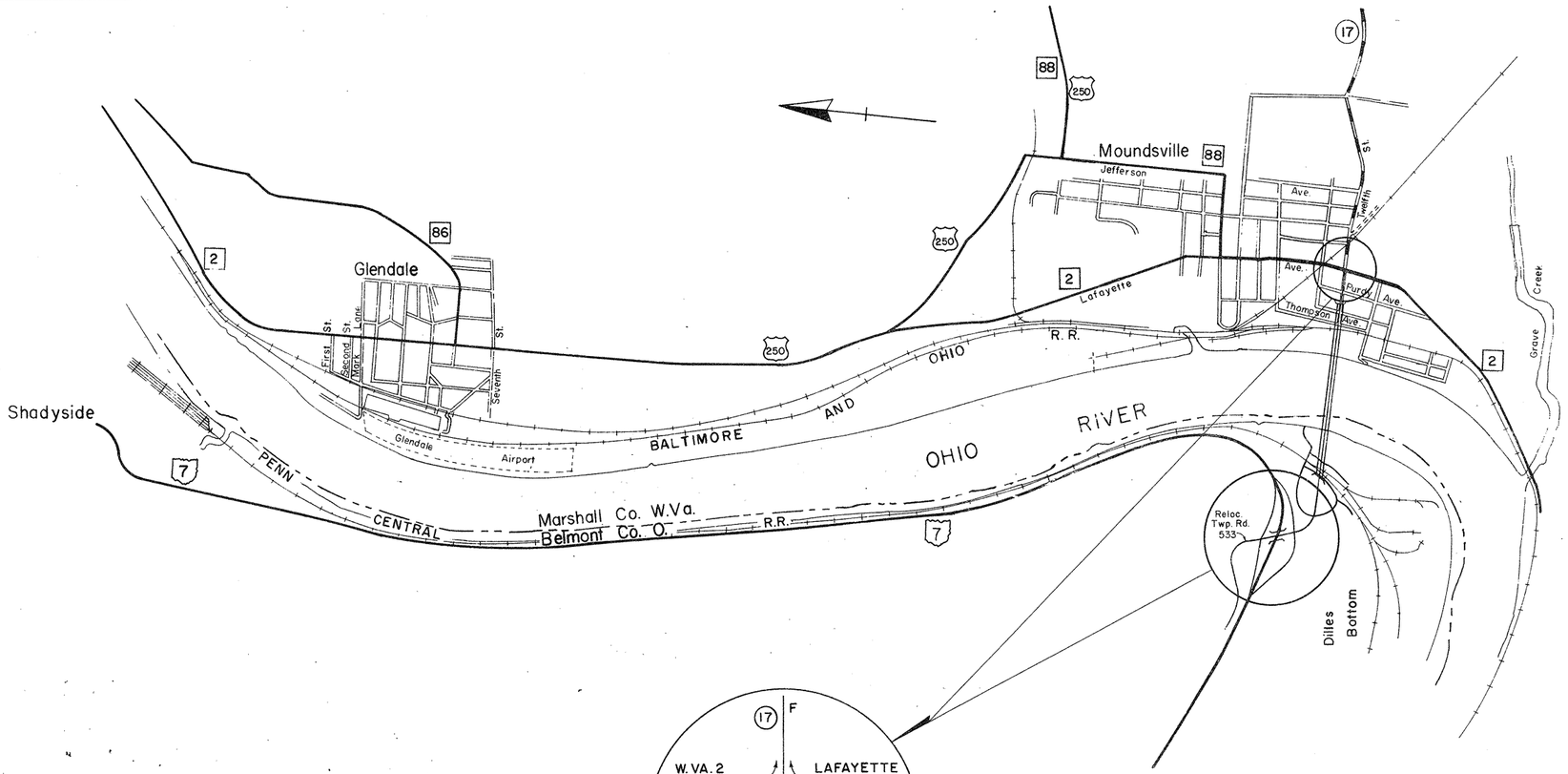
NOTE BOOK FLOYD'S ALIGNMENT CHECKED BY C.P. AND CHECKED NO.

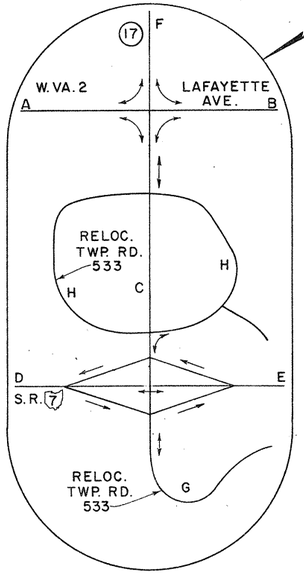
Public Roads Div	State Dist No	State Proj No	Federal Proj No	Fiscal Year	County	Sheet No	Total Sheets
W.VA.	6	X326-SP2-0.00	M 525I-(002)	197	Marshall,W.Va. Belmont,Ohio	23	255

C-4

F.H.W.A REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00





DESIGN DESIGNATION

A.D.T. 1981 = 3700
A.D.T. 2001 = 9100
D.H.V. = 592
D = 65/35
T = 5 %
V = 40 M.P.H.
K = 10%
T.I.

1981

From	To	ADT	DHV
A	B	3700	370
A	C	1475	148
A	F	4000	400
B	A	3700	370
B	C	250	25
B	F	4750	475
C	A	1475	148
C	B	250	25
C	D	1450	145
C	E	400	40
C	F	125	13
C	G	Nom	Nom
C	H	Nom	Nom
D	C	1450	145
D	E	3050	305
D	G	Nom	Nom
D	H	600	60
E	C	400	40
E	D	3050	305
E	G	Nom	Nom
E	H	125	13
F	A	4000	400
F	B	4750	475
F	C	125	13
G	C	Nom	Nom
G	D	Nom	Nom
G	E	Nom	Nom
G	H	Nom	Nom
H	C	Nom	Nom
H	D	600	60
H	E	125	13
H	G	Nom	Nom

2001

From	To	ADT	DHV
A	B	6450	645
A	C	3650	365
A	F	6250	625
B	A	6450	645
B	C	600	60
B	F	7400	740
C	A	3650	365
C	B	600	60
C	D	3550	355
C	E	1000	100
C	F	300	30
C	G	Nom	Nom
C	H	Nom	Nom
D	C	3550	355
D	E	5450	545
D	G	Nom	Nom
D	H	950	95
E	C	1000	100
E	D	5450	545
E	G	Nom	Nom
E	H	200	20
F	A	6250	625
F	B	7400	740
F	C	300	30
G	C	Nom	Nom
G	D	Nom	Nom
G	E	Nom	Nom
G	H	Nom	Nom
H	C	Nom	Nom
H	D	950	95
H	E	200	20
H	G	Nom	Nom

TRAFFIC DATA

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

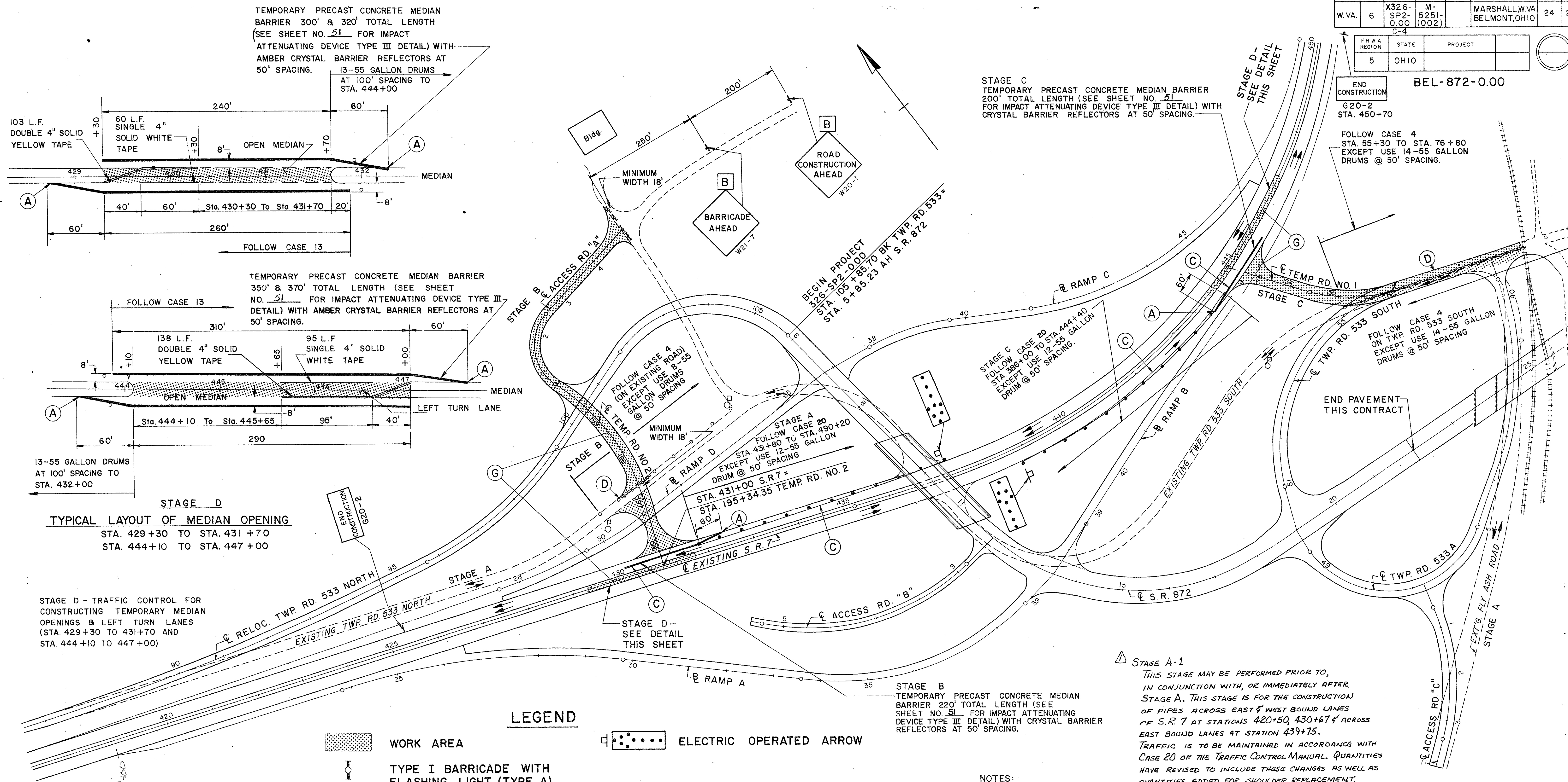
DATE | BY | SURVEYED | PLOTTED | ALIGNMENT CHECKED | PLAN | NOTE BOOK | RT. OF WAY CHECKED | NO.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W. VA. BELMONT, OHIO	24	255

C-4

FHWA REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



Stage A-1

This stage may be performed prior to, in conjunction with, or immediately after Stage A. This stage is for the construction of pipes across east & west bound lanes of S.R. 7 at stations 420+50, 430+67 & across east bound lanes at station 439+75. Traffic is to be maintained in accordance with Case 20 of the Traffic Control Manual. Quantities have revised to include these changes as well as quantities added for shoulder replacement.

LEGEND

- WORK AREA
- TYPE I BARRICADE WITH FLASHING LIGHT (TYPE A)
- SIGN ON PERMANENT SUPPORT
- 55 - GALLON DRUM
- 55 - GALLON DRUM WITH W22-8 SIGN & LIGHT (TYPE C)
- FLAGGER WITH TRAFFIC CONTROL SIGN (TO BE UTILIZED AS REQUIRED BY THE ENGINEER)
- ELECTRIC OPERATED ARROW

NOTES:

ASSUMES SIMULTANEOUS CONSTRUCTION OF TWO TEMPORARY MEDIAN OPENINGS.

(A) INSTALL TEMPORARY IMPACT ATTENUATING DEVICE TYPE III AT END OF TEMPORARY BARRIER, SEE DETAIL SHEET NO. 51

(C) CONTINUOUS 4" WHITE TAPE RIGHT EDGE LINE ADJACENT TO BARRIER AND DRUMS.

(D) TWO CASE 4'S NEEDED. CONSTRUCTION WORK TO BE PERFORMED ON ONE SIDE AT ONE TIME.

FOR DETAILED DESCRIPTON OF STAGE CONSTRUCTION SEE SPECIAL PROVISIONS.

(G) SEE SHEET NO. 32 FOR GEOMETRY.

Scale in Ft.

100 0 100

PHASE I

MAINTENANCE OF TRAFFIC

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE
1	24	Added note for Stage A-1	

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

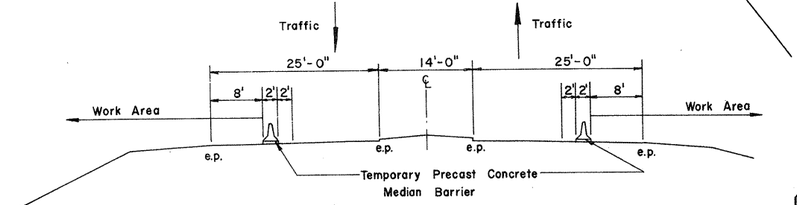
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL, W.VA. BELMONT, OHIO	25	255

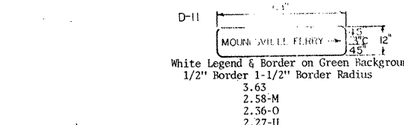
C-4

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

TYPICAL SECTIONS
STA. 420+00 S.R.7
STA. 437+00 S.R.7
STA. 450+00 S.R.7





White Legend & Border on Green Background
1/2" Border 1-1/2" Border Radius

3.63	2.58-M
2.36-O	2.27-U
2.27-N	2.14-D
2.14-S	2.34-V
1.05-I	2.00-L
2.00-L	1.50-E
4.5	2.00-F
2.00-E	2.27-R
2.14-R	1.88-Y
4.5	4.8-ARROW
3.63	54.00"

White Legend & Border on Green Background
1/2" Border 1-1/2" Border Radius

3.63	2.58-M
2.36-O	2.27-U
2.27-N	2.14-D
2.14-S	2.34-V
1.05-I	2.00-L
2.00-L	1.50-E
4.5	2.00-F
2.00-E	2.27-R
2.14-R	1.88-Y
4.5	4.8-ARROW
3.63	54.00"

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, NOTE BOOK, NO.

FOLLOW CASE 20
STA. 427+70 TO STA. 513+00
EXCEPT USE 12-55 GALLON DRUMS @ 50' SPACING
W/W22-8 SIGNS, AND 14-55 GALLON DRUMS @ 100' SPACING, AS SHOWN

TEMPORARY PRECAST CONCRETE MEDIAN BARRIER 860' TOTAL LENGTH (SEE SHEET NO. 51 FOR IMPACT ATTEUNATING DEVICE TYPE III DETAIL) WITH CRYSTAL BARRIER REFLECTORS @ 50' SPACING.

MATCH LINE STA. 450+00

TEMPORARY PRECAST CONCRETE MEDIAN BARRIER 900' TOTAL LENGTH (SEE SHEET NO. 51 FOR IMPACT ATTENUATING DEVICE TYPE III DETAIL) WITH CRYSTAL BARRIER REFLECTORS AT 50' SPACING.

STA. 444+80 S.R.7 =
STA. 152+57.38

BEGIN PROJECT
326-SP2-0.00
STA. 105+85.70 BK TWP. RD. 533
STA. 5+85.23 AH S.R. 872

STAGE D

STAGE B

STAGE A

STAGE C

STAGE E

℄ ACCESS RD. "A"

℄ TEMP. RD. NO. 2

℄ TEMP. RD. NO. 1

℄ RAMP A

℄ RAMP B

℄ RAMP C

℄ RAMP D

℄ RELOC. TWP. RD. 533 NORTH

EXISTING TWP. RD. 533 NORTH

EXISTING TWP. RD. 533 SOUTH

℄ EXISTING S.R.7

℄ ACCESS RD. "B"

℄ S.R. 872

℄ TWP. RD. 533 SOUTH

℄ TWP. RD. 533 A

℄ ACCESS RD. "C"

EXT'G FLY ASH ROAD

MINIMUM WIDTH 18'

FOLLOW CASE 21

FOLLOW CASE 32
STA. 153+00 TO STA. 156+20

FOLLOW CASE 20
STA. 445+60 TO STA. 360+20
EXCEPT USE 12-55 GALLON DRUMS @ 50' SPACING AND 16-55 GALLON DRUMS @ 100' SPACING AS SHOWN.

EXISTING SIGN TO BE RELOCATED

END PAVEMENT THIS CONTRACT

OPEN MEDIAN

TEMPORARY PRECAST CONCRETE MEDIAN BARRIER 1060' & 860' TOTAL LENGTH (SEE SHEET NO. 51 FOR IMPACT ATTEUNATING DEVICE TYPE III DETAIL) WITH CRYSTAL BARRIER REFLECTORS AT 50' SPACING.

TEMPORARY PRECAST CONCRETE MEDIAN BARRIER 220' TOTAL LENGTH (SEE SHEET NO. 31 FOR

STAGE A
BUILD MEDIAN BRIDGE PIER, WORK REQUIRES 220' TOTAL LENGTH TEMPORARY PRECAST CONCRETE MEDIAN BARRIER, EACH SIDE. FOLLOW CASE 20 FOR LEFT LANE CLOSURE, EACH DIRECTION

LEGEND

- WORK AREA
- TYPE I BARRICADE WITH FLASHING LIGHT (TYPE A)
- 55-GALLON DRUM
- 55-GALLON DRUM WITH W22-8 SIGN & LIGHT (TYPE C)
- SIGN ON PERMANENT SUPPORT
- FLAGGER WITH TRAFFIC CONTROL SIGN (TO BE UTILIZED AS REQUIRED BY THE ENGINEER)
- ELECTRIC OPERATED ARROW

NOTES:

(A) INSTALL TEMPORARY IMPACT ATTEUNATING DEVICE TYPE III AT END OF TEMPORARY BARRIER. SEE DETAIL SHEET NO. 51

(C) CONTINUOUS 4" WHITE TAPE RIGHT EDGE LINE ADJACENT TO BARRIER AND DRUMS.

FOR DETAILED DESCRIPTION OF STAGE CONSTRUCTION SEE SPECIAL PROVISIONS.

Scale in Ft.
100 0 100

PHASE 2
MAINTENANCE OF TRAFFIC

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

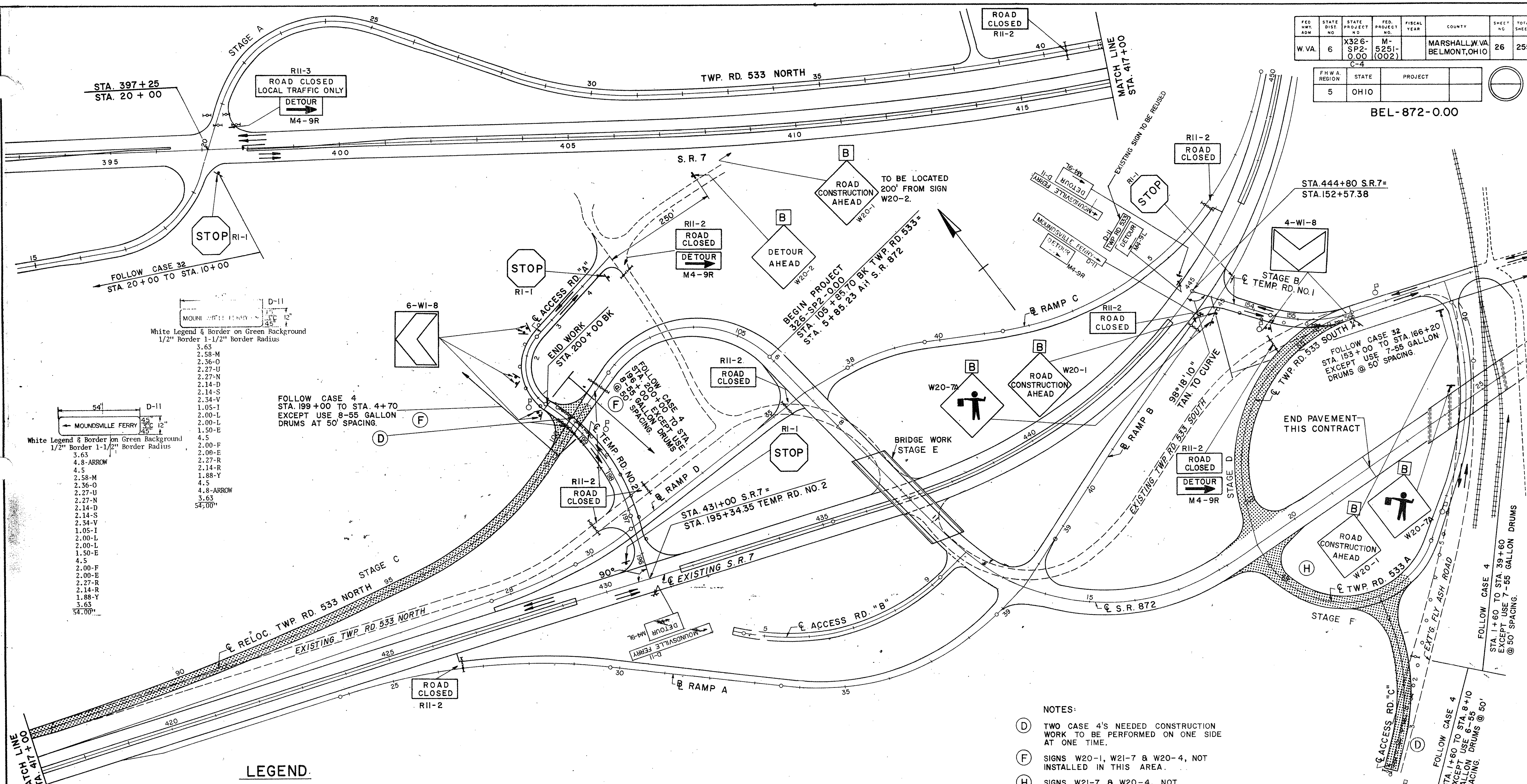
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	26	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



STA. 397+25
STA. 20+00
STAGE A
R11-3
ROAD CLOSED
LOCAL TRAFFIC ONLY
DETOUR
M4-9R
TWP. RD. 533 NORTH
MATCH LINE STA. 417+00
ROAD CLOSED
R11-2
STOP R1-1
FOLLOW CASE 32
STA. 20+00 TO STA. 10+00
S.R. 7
250'
ROAD CONSTRUCTION AHEAD
W20-1
TO BE LOCATED 200' FROM SIGN W20-2.
DETOUR AHEAD
W20-2
BEGIN PROJECT
326-SP2-0.00
STA. 105+65.70 BK TWP. RD. 533=
STA. 5+85.23 AH S.R. 872
MOUNDSVILLE FERRY
D-11
White Legend & Border on Green Background
1/2" Border 1-1/2" Border Radius
6-W1-8
C ACCESS RD. "A"
END WORK
STA. 200+00 BK
FOLLOW CASE 4
STA. 199+00 TO STA. 4+70
EXCEPT USE 8-55 GALLON
DRUMS AT 50' SPACING.
FOLLOW CASE 4
STA. 200+00 TO STA. 196+00 EXCEPT USE 8-55 GALLON DRUMS @ 50' SPACING.
TEMP. RD. NO. 2
RAMP D
STA. 431+00 S.R. 7=
STA. 195+34.35 TEMP. RD. NO. 2
RAMP C
BRIDGE WORK
STAGE E
W20-7A
EXISTING SIGN TO BE REUSED
STA. 444+80 S.R. 7=
STA. 152+57.38
4-W1-8
STAGE B
TEMP. RD. NO. 1
98°18'10" TAN. TO CURVE
RAMP B
EXISTING TWP. RD. 533 SOUTH
STAGE D
TWP. RD. 533 SOUTH
FOLLOW CASE 32
STA. 153+00 TO STA. 166+20
EXCEPT USE 7-55 GALLON
DRUMS @ 50' SPACING.
END PAVEMENT THIS CONTRACT
STAGE C
C RELOC. TWP. RD. 533 NORTH
EXISTING TWP. RD. 533 NORTH
EXISTING S.R. 7
C ACCESS RD. "B"
S.R. 872
TWP. RD. 533 A
STAGE F
EXT'G. FLY ASH ROAD
ACCESS RD. "C"
RAMP A
FOLLOW CASE 4
STA. 1+60 TO STA. 39+60
EXCEPT USE 7-55 GALLON DRUMS @ 50' SPACING.
FOLLOW CASE 4
STA. 1+60 TO STA. 8+10
EXCEPT USE 6-55 GALLON DRUMS @ 50' SPACING.

NOTES:

(D) TWO CASE 4'S NEEDED CONSTRUCTION WORK TO BE PERFORMED ON ONE SIDE AT ONE TIME.

(F) SIGNS W20-1, W21-7 & W20-4, NOT INSTALLED IN THIS AREA.

(H) SIGNS W21-7 & W20-4, NOT INSTALLED IN THIS AREA.

FOR DETAILED DESCRIPTION OF CONSTRUCTION STAGES SEE SPECIAL PROVISIONS.

LEGEND

- WORK AREA
- TYPE I BARRICADE WITH FLASHING LIGHT (TYPE A)
- SIGN ON PERMANENT SUPPORT
- 55-GALLON DRUM
- 55-GALLON DRUM WITH W22-8 SIGN & LIGHT (TYPE C)
- [B] FLASHING LIGHT (TYPE B)
- **FLAGGER** WITH TRAFFIC CONTROL SIGN (TO BE UTILIZED AS REQUIRED BY THE ENGINEER)

Scale in Ft.
100 0 100

PHASE 3
MAINTENANCE OF TRAFFIC

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

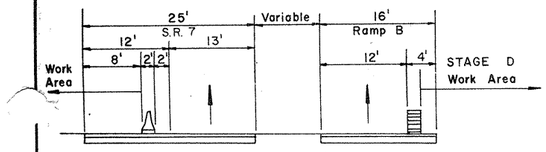
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	27	225

C-4

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

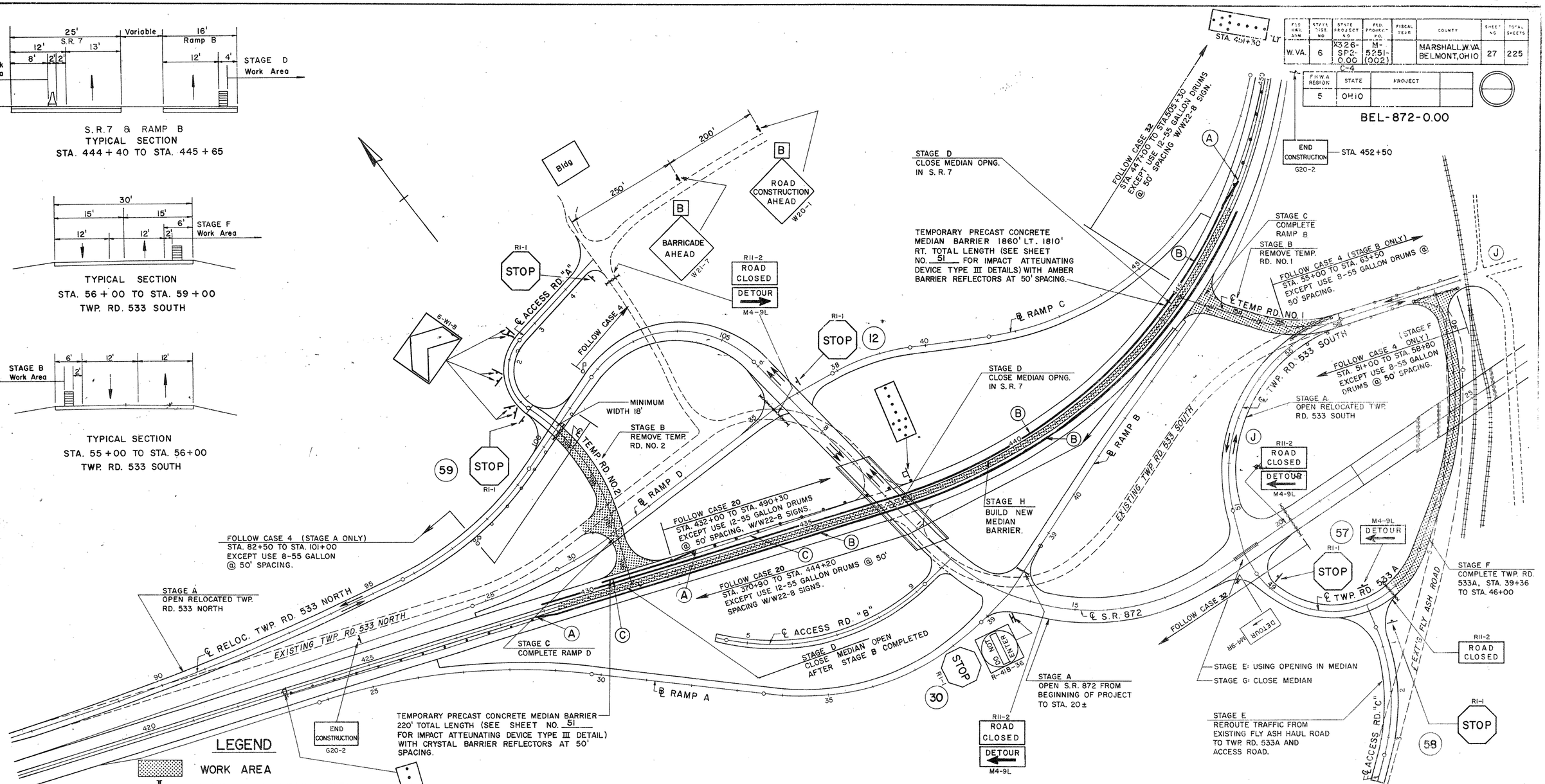


S.R.7 & RAMP B
TYPICAL SECTION
STA. 444+40 TO STA. 445+65

TYPICAL SECTION
STA. 56+00 TO STA. 59+00
TWP. RD. 533 SOUTH

TYPICAL SECTION
STA. 55+00 TO STA. 56+00
TWP. RD. 533 SOUTH

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
PT. OF VAT CHECKED
NOTE BOOK
NO.



LEGEND

- WORK AREA
- TYPE I BARRICADE WITH FLASHING LIGHT (TYPE A)
- SIGN ON PERMANENT SUPPORT
- 55 – GALLON DRUM
- 55 – GALLON DRUM WITH W22-8 SIGN & LIGHT (TYPE C)
- FLAGGER WITH TRAFFIC CONTROL SIGN (TO BE UTILIZED AS REQUIRED BY THE ENGINEER)
- ELECTRIC OPERATED ARROW
- (59) PROPOSED PERMANENT SIGN NUMBER, TO BE INSTALLED IN THIS PHASE

NOTES:

(A) INSTALL TEMPORARY IMPACT ATTENUATING DEVICE TYPE III AT END OF TEMPORARY BARRIER. SEE DETAIL SHEET NO. 51

(B) CONTINUOUS 4" YELLOW TAPE LEFT EDGE LINE ADJACENT TO BARRIER AND DRUMS.

(C) CONTINUOUS 4" WHITE TAPE RIGHT EDGE LINE ADJACENT TO BARRIER AND DRUMS.

FOR DETAILED DESCRIPTION OF CONSTRUCTION STAGES SEE SPECIAL PROVISIONS.

(J) SIGNS W21-7 & W20-7A IN CASE 4, NOT INSTALLED IN THIS AREA.

INSTALL THE FOLLOWING PROPOSED PERMANENT SIGNS: NOS. 12, 30, 57, 58, & 59. SEE SIGNING PLAN SHEET NO. 90

Scale in Ft.
100 0 100

PHASE 4
MAINTENANCE OF TRAFFIC

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

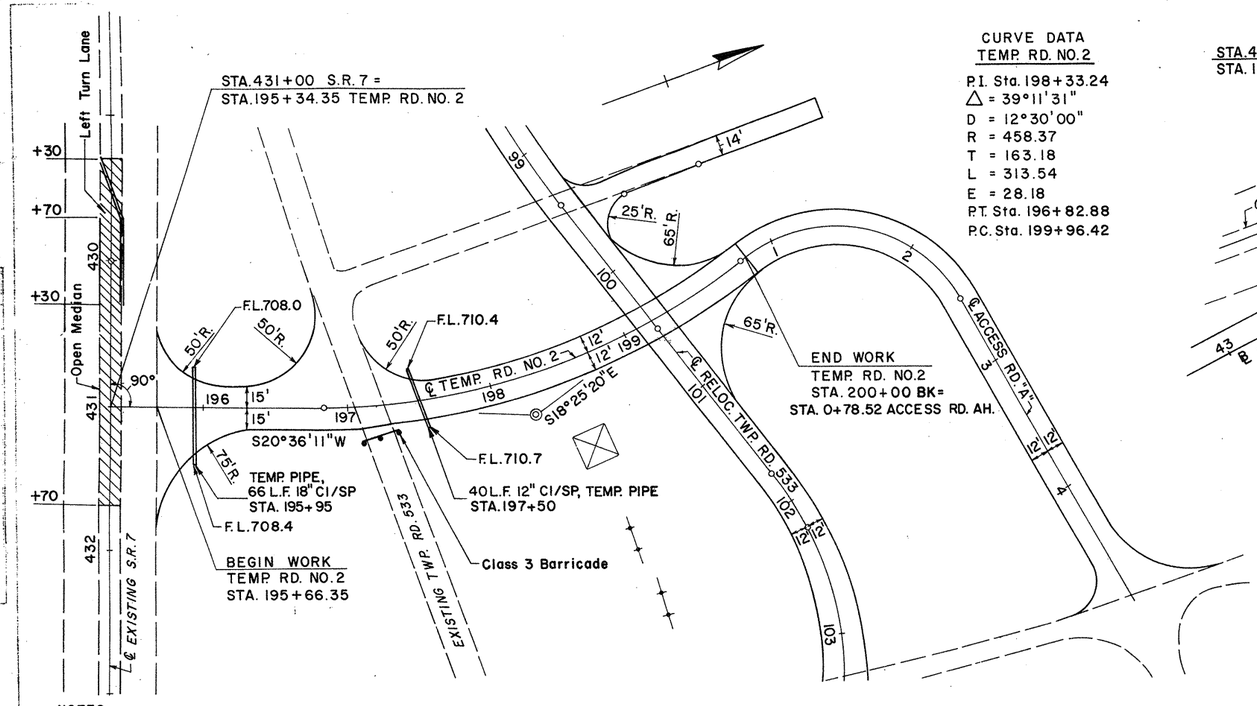
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525;-(002)		MARSHALL, W.VA BELMONT, OHIO	28	255

C-4

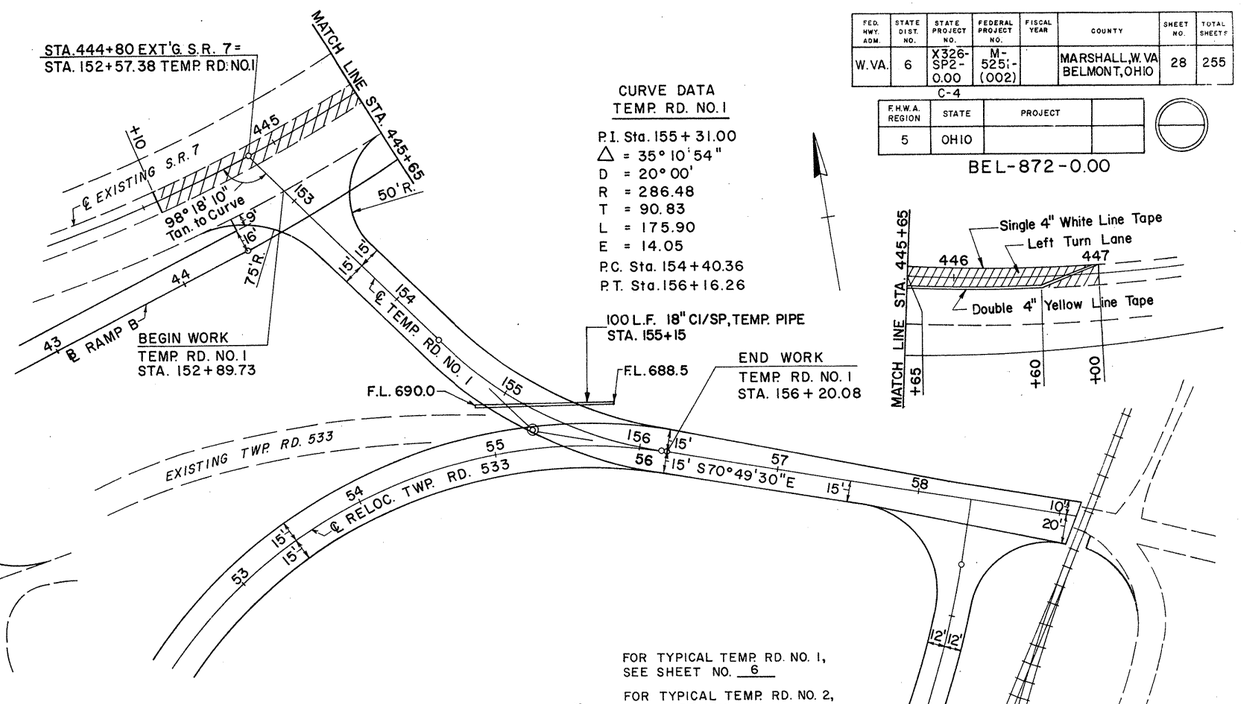
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



CURVE DATA
TEMP. RD. NO. 2

P.I. Sta. 198+33.24
△ = 39°11'31"
D = 12°30'00"
R = 458.37
T = 163.18
L = 313.54
E = 28.18
P.T. Sta. 196+82.88
P.C. Sta. 199+96.42



CURVE DATA
TEMP. RD. NO. 1

P.I. Sta. 155+31.00
△ = 35° 10' 54"
D = 20° 00'
R = 286.48
T = 90.83
L = 175.90
E = 14.05
P.C. Sta. 154+40.36
P.T. Sta. 156+16.26

FOR TYPICAL TEMP. RD. NO. 1, SEE SHEET NO. 6

FOR TYPICAL TEMP. RD. NO. 2, SEE SHEET NO. 6

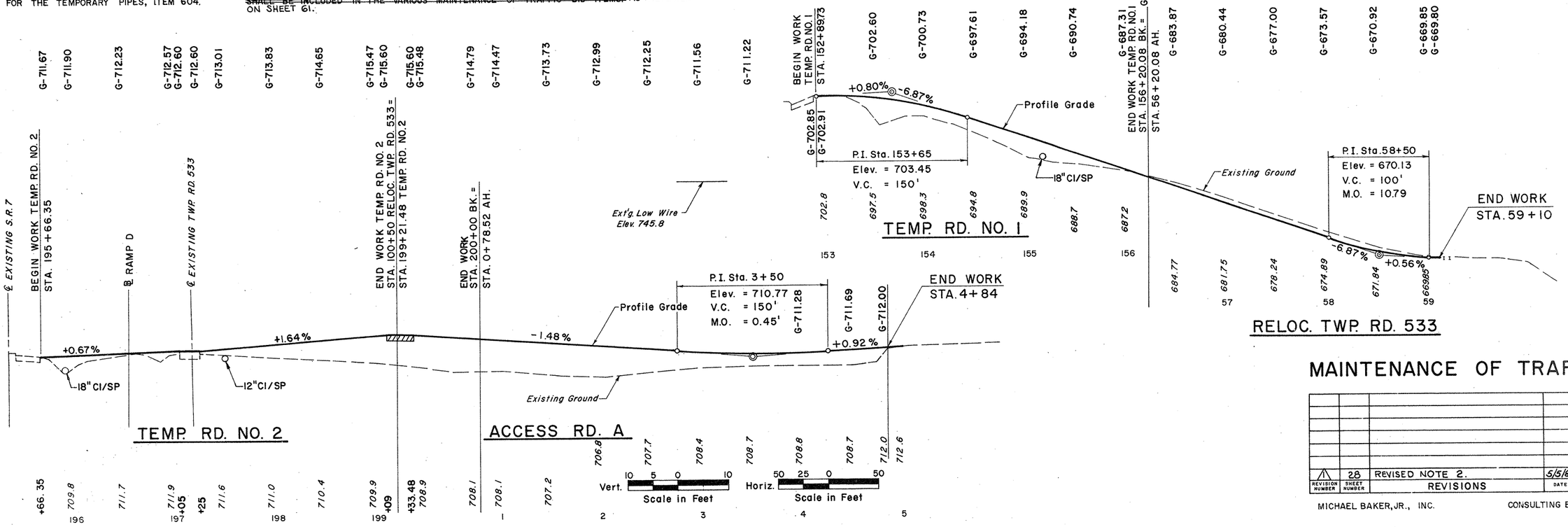
FOR TYPICAL S.R. 7 MEDIAN OPENING, SEE SHEET NO. 60

NOTES:

1. THE COST FOR THE REMOVAL OF TEMPORARY PIPES IS TO BE INCLUDED IN THE UNIT BID PRICE FOR THE TEMPORARY PIPES, ITEM 604.

2. WHERE THE OHIO ROUTE 7 EXISTING MEDIAN IS TO BE REMOVED FOR THE MAINTENANCE OF TRAFFIC IT SHALL BE RESTORED, ~~AND THE COST FOR THIS REPLACEMENT SHALL BE INCLUDED IN THE VARIOUS MAINTENANCE OF TRAFFIC BID ITEMS.~~ AS *INDICATED* ON SHEET 61.

50 25 0 50
Scale in Feet



MAINTENANCE OF TRAFFIC

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
1	28	REVISED NOTE 2.	5/5/82	C.Rung

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-3251-1002		MARSHALL W.VA. BELMONT, OHIO	29	255

C-4

TRAFFIC CONTROL DEVICES

DEVICE	DESCRIPTION (STANDARD NO.)	VALUE IN UNITS	PHASE 1 QUANTITY	PHASE 1 UNITS	PHASE 2 QUANTITY	PHASE 2 UNITS	PHASE 3 QUANTITY	PHASE 3 UNITS	PHASE 4 QUANTITY	PHASE 4 UNITS	REMARKS
2		60									
	W22-8		24	1440	24				24		24 PHASE 1, REUSED IN PHASE 2 & 4
	R11-2 (SINGLE)						7	420	1		
	R11-2				2	120	2		2		
	M4-9R								1	60	
	R11-2								2	120	
	M4-9L										
	M4-9L (SINGLE)								1	60	
3		100									
	W20-1 (AHEAD)		7	700	1		4		9	200	7 PHASE 1, REUSED IN PHASE 2 & 3, PLUS 2 IN PHASE 4
	W20-4 (1000')		6	600					2		
	W20-7 (500')		8	800			2		2		
	W20-1 (1 MILE)		4	400	4				6	200	4 PHASE 1, REUSED IN PHASE 2 & 4 PLUS 2 PHASE 4
	W20-5R (1/2 MILE)		4	400	4				2		
	W20-1 (1500')		4	400	4				6	200	4 PHASE 1, REUSED IN PHASE 2 & 4 PLUS 2 PHASE 4
	W4-2R		4	400	4				2		
	W20-5R (500')		4	400	4				2		
	W21-7 (AHEAD)		4	400					1		
	W20-2 (1500')				2	200	2				
	W20-2 (1000')				2	200	2				
	W20-7 (AHEAD)						3	300			
	W20-5L (1/2) MILE		4	400					4		
	W4-2L		4	400					4		
	W20-4 (ONE LANE)								6	600	
	W20-5L (500')		4	400					4		
	W20-2 (AHEAD)				1	100	1		1		
4		70									
	G20-2				2	140			2		
	R4-8C		4	280	4				2		
	R4-8A		2	140	2				1		
	R4-7C		4	280					4		
	R4-7A								2	280	
	R1-1				4	280	4		4		
	W3-1				1	70					
	R11-3						1	70			
	R11-2				2	140	2				
	M4-9R										
	M4-9L				2	140	2				
	D-11 (⇐ MOUNDSVILLE FERRY)										EXISTING SIGN TO BE REUSED
	M4-9R				1	70	1				
	D-11 (MOUNDSVILLE FERRY⇒)										
	M4-9L				1	70	1				
	D-11 (TWP RD 533)										EXISTING SIGN TO BE REUSED
	M4-9R				1	70					
	D-11 (TWP RD 533)										EXISTING SIGN TO BE REUSED
	W3-1				1	70					

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
MT. OF MAT CHECKED
NOTE BOOK
NO.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL W.VA. BELMONT, OHIO	30	255

C-4

TRAFFIC CONTROL DEVICES

DEVICE	DESCRIPTION (STANDARD NO.)	VALUE IN UNITS	PHASE 1 QUANTITY	PHASE 1 UNITS	PHASE 2 QUANTITY	PHASE 2 UNITS	PHASE 3 QUANTITY	PHASE 3 UNITS	PHASE 4 QUANTITY	PHASE 4 UNITS
5	TYPE I BARRICADE	30	48	1440	25		32		26	
8	55-GALLON DRUMS	30	62	1860	30		16		51	
10	W1-8	10			10	100	10		6	
1	R11-2	90			1	90				
	D-11 (MOUNDSVILLE FERRY→)									
	M4-9R									
636-25(A)	BARRICADE WARNING LIGHTS, TYPE 'A'		48		28		32		32	
636-25(B)	BARRICADE WARNING LIGHTS, TYPE 'B'		48		20		6		51	
636-25(C)	BARRICADE WARNING LIGHTS, TYPE 'C'		⚠ ~~24~~ 27		24				24	
	TOTAL			11,140		1860		790		1720 = 15,510

REMARKS

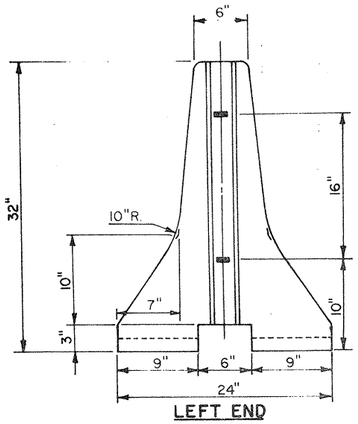
62 PHASE 1, REUSE IN PHASE 2, 3 & 4.

NOTE BOOK NO. ____
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED

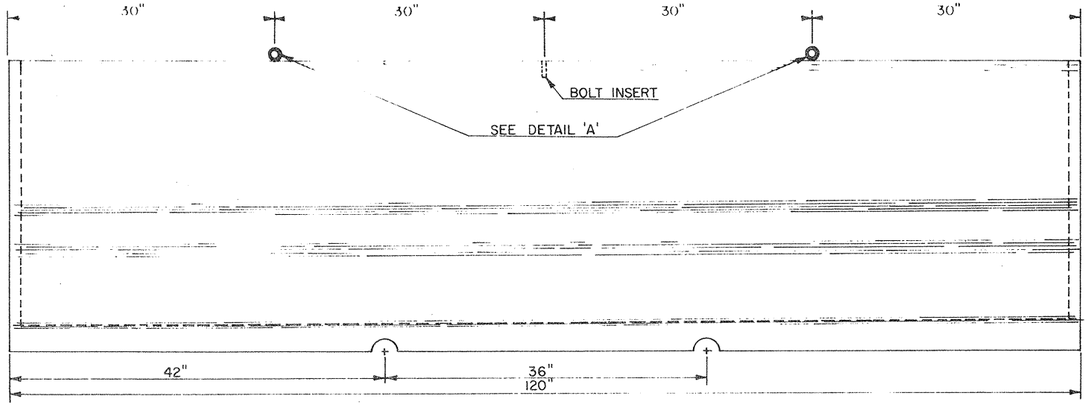
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	30	Revised Quantities	5/6/82	J.L.W.

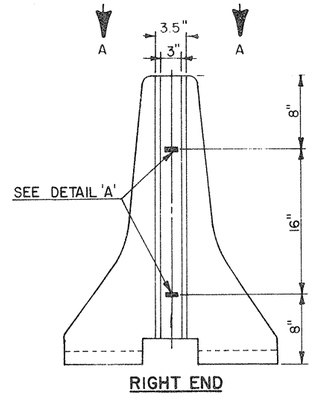
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

W.V.A.	6	X326-SP2-0.00 C-4	M-5251(002)			31	255



LEFT END

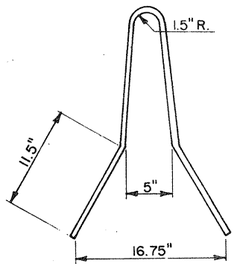




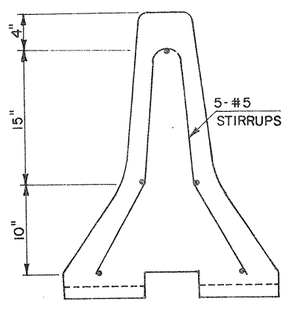
RIGHT END

NOTES

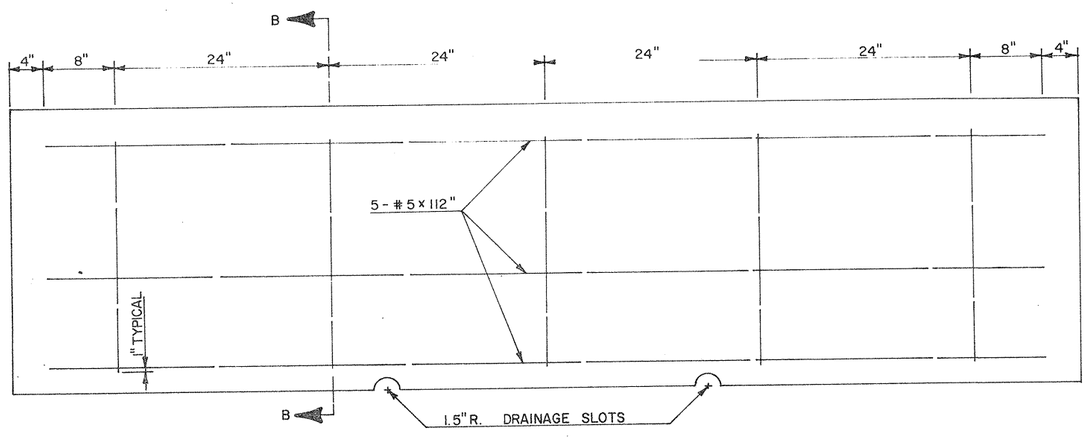
1. THE MATERIALS USED IN MANUFACTURING THE TEMPORARY CONCRETE BARRIERS ARE TO PROVIDE A MINIMUM STRENGTH OF 3000 P.S.I.
2. THE COST OF REINFORCEMENT CONNECTING PINS AND EYES, LIFTING EYES, PROTECTIVE SHIELD AND U-CHANNEL ARE TO BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 636-17, TEMPORARY CONCRETE BARRIER, Per L.F.
3. THE FINISHED SURFACE OF THE BARRIER SHALL BE SMOOTH, DENSE, UNPITTED AND FREE FROM AIR BUBBLE POCKECTS, DEPRESSIONS AND HONEYCOMBS.
4. THE MATERIALS UTILIZED FOR DETAIL 'A' SHALL PROVIDE A MINIMUM SAFE WORKING LOAD OF 4500 LBS.
5. AN APPROVED EQUAL MAY BE SUBSTITUTED FOR THIS DETAIL.
6. THE BOLT INSERT IS A STANDARD $\frac{3}{8}$" INSERT FOR ATTACHMENT OF WARNING LIGHTS, DELINEATORS, ETC.
7. ALL CORNERS TO HAVE 1" RADIUS UNLESS OTHERWISE SPECIFIED.
8. FOR DETAILS OF GUARDRAIL TIE TO BARRIER SEE SHEET 2 OF 2. FOR ADDITIONAL GUARDRAIL DETAILS SEE GUARDRAIL STANDARDS.
9. SEE SHEET 2 OF 2 FOR DETAIL AND USE OF U-CHANNELS



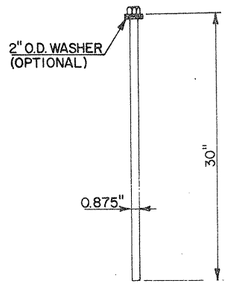
STIRRUP DETAIL



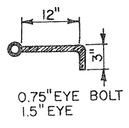
SECTION B-B



REINFORCEMENT DETAILS

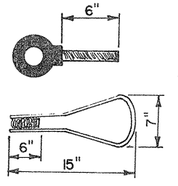


PIN DETAIL

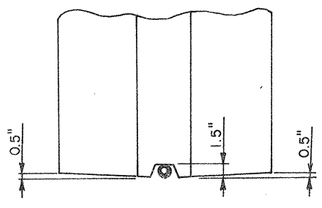


0.75" EYE BOLT
1.5" EYE

DETAIL 'A'



COIL LOOP (OPTIONAL)
0.75" THREADED BOLT
1.5" EYE



SECTION A-A

WEST VIRGINIA DEPARTMENT OF HIGHWAYS

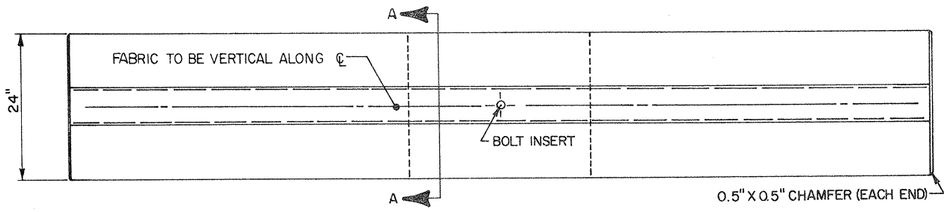
SPECIAL DETAIL

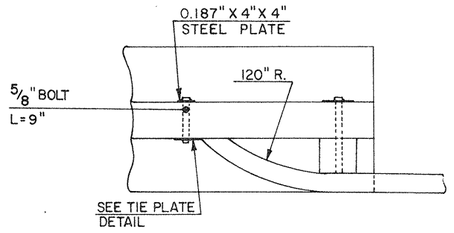
TEMPORARY CONCRETE BARRIER

SHEET 1 OF 2

REVISIONS		PIN & EYE DETAIL	SHEET NO.
3-29-82			

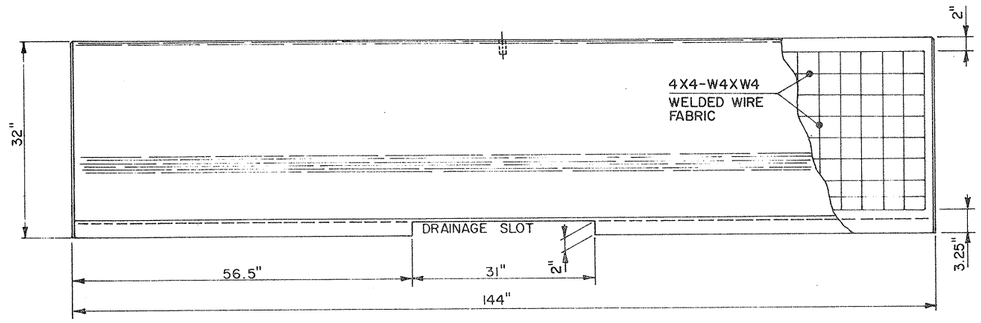
PUBLIC ROADS DIV	STATE DIST NO	STATE PROJ NO	FEDERAL PROJ NO	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00 C-4	M-5251(002)			31-A	255

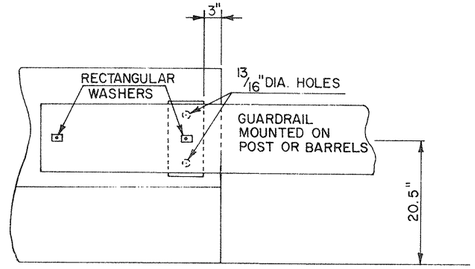


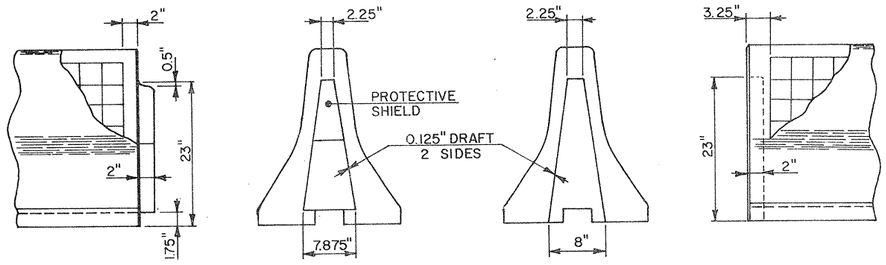


NOTES

1. SEE SHEET 1 OF 2 FOR ADDITIONAL NOTES.
2. BARRIER SECTIONS ARE TO BE CAST EITHER DOUBLE MALE OR FEMALE.
3. TOLERANCES: MALE TONGUE +0"-0.0625"
   FEMALE GROOVE -0"+0.0625"

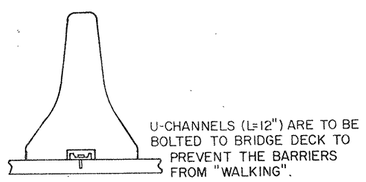




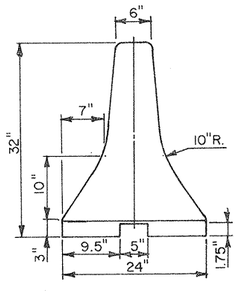


DETAIL OF MALE KEY

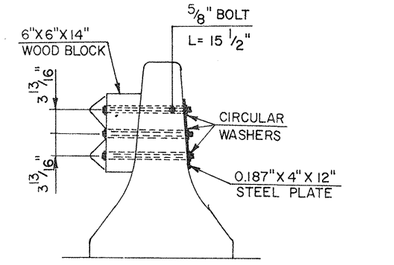
DETAIL OF FEMALE KEYWAY



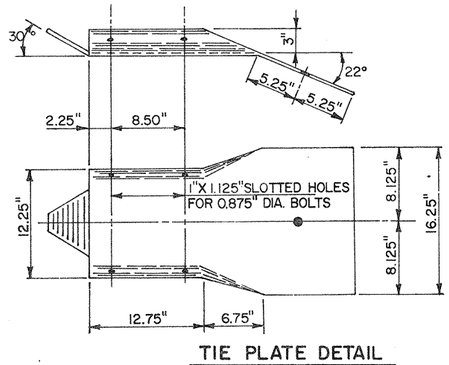
U-CHANNEL DETAIL



SECTION A-A



GUARDRAIL TIE TO TEMPORARY CONCRETE BARRIER



TIE PLATE DETAIL

WEST VIRGINIA DEPARTMENT OF HIGHWAYS

SPECIAL DETAIL

TEMPORARY CONCRETE BARRIER

SHEET 2 OF 2

3-20-82		SHEET NO
	MALE-FEMALE DETAIL	
REVISIONS		

FED HWY. ADM	STATE DIST NO	FEDERAL PROJECT NO. STATE	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	M-5251-(002) X326-SP2-0.00		MARSHALL, W. VA. BELMONT, OHIO	32	255

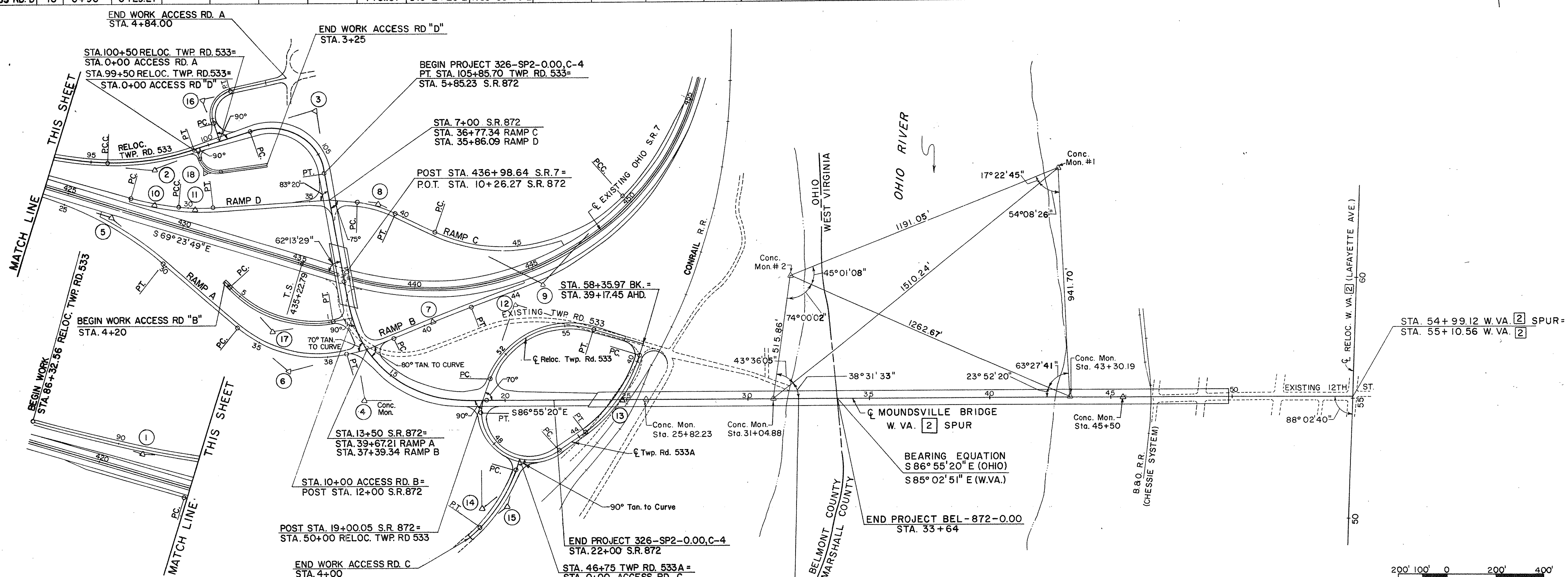
C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

LOCATION	CURVE NO.	P.I. STATION	P.C. STATION	T.S. STATION	S.C or P.C.C. STATION	C.S or P.C.C. STATION	S.T. STATION	P.T. STATION	BEARING BACK	BEARING FORWARD	Δ	Δ_c	D_c	R_c	L_c	L_s	T or Ts
TWP. RD. 533	1	91+03.62	86+32.56		95+72.56				S69°26'44"E	S78°50'44"E	9° 24' 00"		1° 00'	5729.58	940.00		471.06
TWP. RD. 533	2	97+61.52			95+72.56			99+42.06	S78°50'44"E	N71°35'40"E	29°33'36"		8° 00'	716.20	369.50		188.96
TWP. RD. 533	3	104+59.49	101+79.32					105+85.70	N71°35'40"E	S7°10'20"E	101° 14' 00"		24° 54' 40"	230.00	406.38		280.17
S.R.872	4	15+62.94		10+61.31	12+61.31	17+25.89	19+25.80		S7°10'20"E	S86°55'20"E	79°45'00"	55°45'00"	12° 00'	477.46	464.58	200.	501.63
RAMP A	5	26+84.66	23+79.11					29+81.19	S69°23'49"E	S45°18'50"E	24°04'59"		4° 00'	1432.39	602.08		305.55
RAMP A	6	36+53.30	33+85.03					38+80.48	S45°18'50"E	N80°11'10"E	54°30'00"		11° 00' 00"	520.87	495.45		268.27
RAMP B	7	40+40.16	38+65.17					42+15.10	N70°11'10"E	N72°48'38"E	2° 37' 28"		0° 45'	7639.44	349.93		174.99
RAMP C	8	38+77.34	37+86.69					39+65.86	S82°10'20"E	S60°40'20"E	21°30'00"		12° 00'	477.46	179.17		90.65
RAMP C	9	46+32.71	41+42.07		49+90.31				S60°40'20"E	N47°13'39"E	72°06'01"		8° 30'	674.07	848.24		490.64
RAMP D	10	28+56.83	27+55.00		29+58.33			29+58.33	S70°49'45"E	S78°57'44"E	8°07°59"		4° 00'	1432.39	203.33		101.83
RAMP D	11	30+30.72			29+58.33			31+02.63	S78°57'44"E	N89°29'40"E	11° 32' 36"		8° 00'	716.20	144.29		72.39
TWP. RD. 533	12	54+21.04	50+93.63					56+20.08	N23°04'40"E	S70°44'30"E	86° 10' 50"		16° 22' 13"	350.00	526.45		327.41
TWP. RD. 533A	13	41+73.20	39+64.39					43+67.94	S19°15'30"W	S55°34'40"W	36° 19' 10"		9° 00'	636.62	403.55		208.81
TWP. RD. 533A	14	49+08.50	45+02.94					49+48.00	S55°34'40"W	N 3°04'40"E	127°30'00"		28° 38' 52"	200.00	445.06		405.56
ACCESS RD. C	15	2+09.61	0+60.00					3+48.46	S14°42'10"W	S52°12'10"W	37°30'00"		13° 00'	440.74	288.46		149.61
ACCESS RD. B	16	1+94.92	0+78.52					2+50.73	N18°24'20"W	N80°15'40"E	98°40'00"		57° 17' 45"	100.00	172.21		116.40
ACCESS RD. A	17	7+11.31	4+53.57					9+26.25	S40°27'03"E	N82°49'40"E	56°43'17"		12° 00'	477.47	472.68		257.74
ACCESS RD. D	18	0+90	0+29.27					1+31.37	S18°24'20"E	N83°35'40"E	78°00'00"		76° 23' 40"	75.00	102.10		60.73

LOCATION	CURVE NO.	X_c	Y_c	θ_s	ϕ_c	L.T.	S.T.	L.C.	E or E_s	K	P	S.E
TWP. RD. 533	1								19.33			.0156
TWP. RD. 533	2								24.51			.056
TWP. RD. 533	3								132.49			.060
S.R.872	4	199.12	13.92	12° 00'	4° 00'	133.64	66.95	199.61	149.23	99.85	3.49	.060
RAMP A	5								32.23			.041
RAMP A	6								65.02			.050
RAMP B	7								2.00			NC= .0156
RAMP C	8								8.53			.040
RAMP C	9								159.65			.083
RAMP D	10								3.62			VARIABLE
RAMP D	11								3.65			.056
TWP. RD. 533	12								129.27			.058
TWP. RD. 533A	13								33.37			.046
TWP. RD. 533A	14								252.19			.060
ACCESS RD. C	15								24.70			.0417
ACCESS RD. B	16								53.45			.0417
ACCESS RD. A	17								65.12			.0417
ACCESS RD. D	18								21.51			.0417



Bench Mark	Elevation	DESCRIPTION
West Virginia Side		
BM 1	643.40	Railroad Spike in Power Pole on Southeast Corner of Twelfth St. & Thompson Ave.
BM 2	662.27	Railroad Spike in Power Pole on Southeast Corner of Twelfth St. & Lafayette Ave.
BM 3	640.68	Top of Concrete Monument at Centerline Sta. 43+30.19
Ohio Side		
BM "E"	667.81	Railroad Spike in Power Pole on Southeast Corner of Twp. Rd. 533 and Power Plant Access Rd.
BM "F"	695.91	Railroad Spike in Power Pole No. 1903 on Transmission Line from Power Plant

GEOMETRIC LAYOUT

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

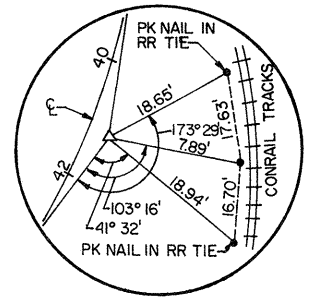
PLAN

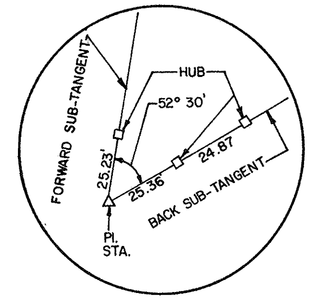
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	33	255

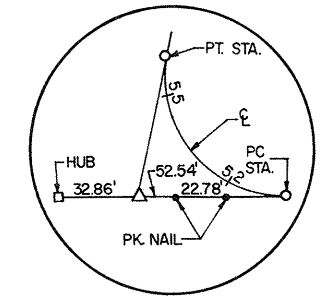
C-4

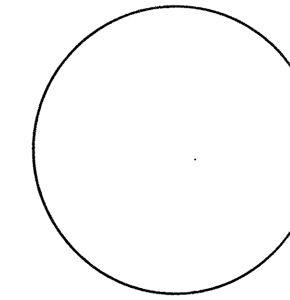
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

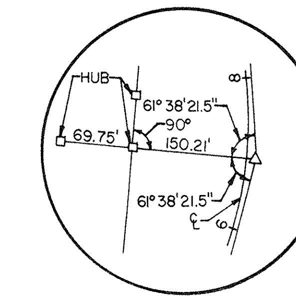
BEL-872-0.00

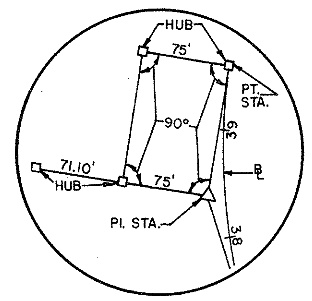

RELOC. TWP. RD. 533A
PI. STA. 41+72.70

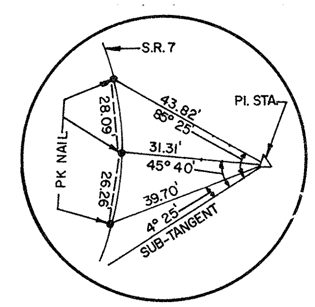

RELOC. TWP. RD. 533A
PI. STA. 49+08.50

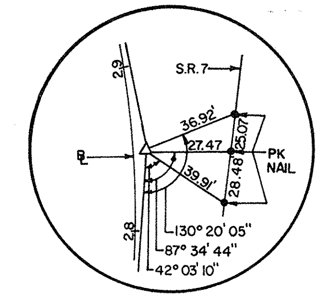

RELOC. TWP. RD. 533A
PI. STA. 54+21.04

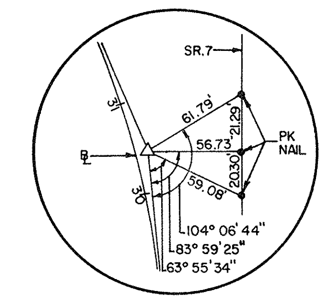


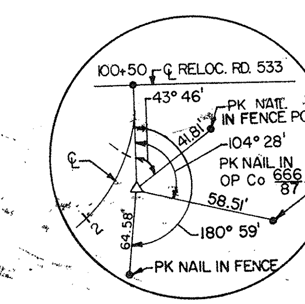

ACCESS ROAD B
PI. STA. 7+11.31

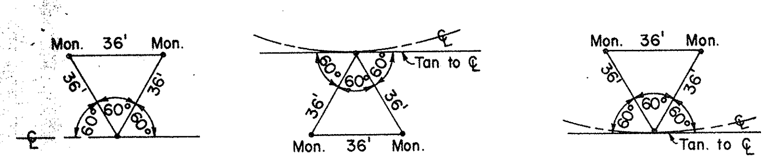

RAMP C
PI. STA. 38+77.34 (Not Set) &
PT. STA. 39+65.58


RAMP C
PI. STA. 46+32.71


RAMP D
PI. STA. 28+56.83


RAMP D
PI. STA. 30+30.72

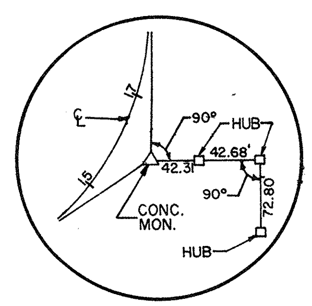

ACCESS ROAD A
PI. STA. 1+94.92

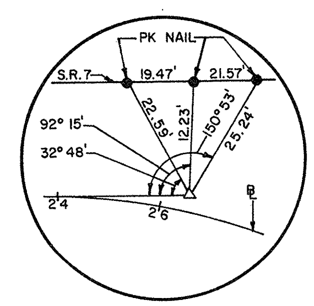

Sta. 5 + 85.23
Sta. 20 + 00.00
Sta. 23 + 00.00
Sta. 28 + 00.00

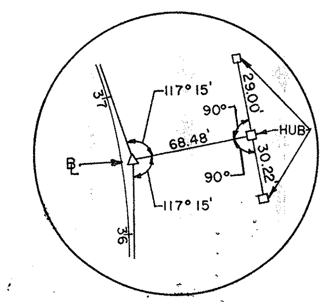
Sta. 11 + 50.00

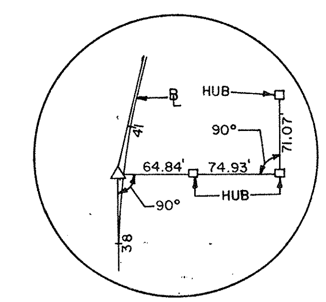
Sta. 15 + 00

S.R. 872


S.R. 872 (BRIDGE APPROACH)
PI. STA. 15+62.94

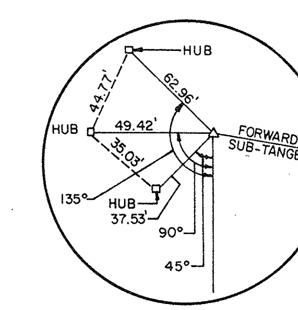

RAMP A
PI. STA. 26+84.66

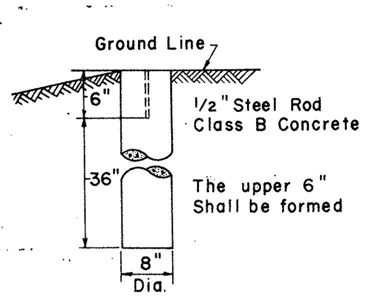

RAMP A
PI. STA. 36+53.30


RAMP B
PI. STA. 40+40.16

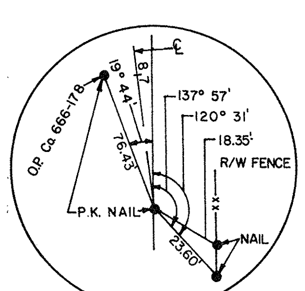
Notes: ℄ Reference Monuments shall be set by the contractor as per sketches above. Accuracy tolerance shall be 0.02 Ft.

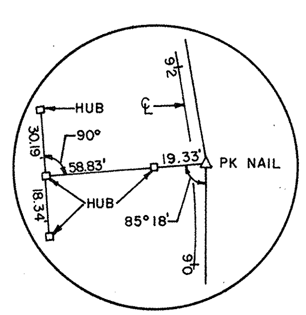
Payment for Ohio ℄ Reference Monuments shall be paid as Survey Markers Modified Item 638-3 Each.

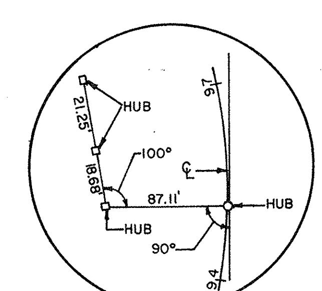

TWP. RD. 533
PI. STA. 104+59.49

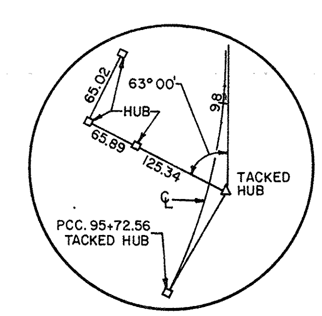


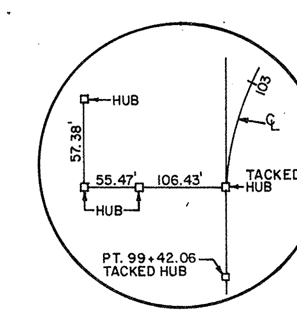
℄ REFERENCE MONUMENT


TWP. RD. 533
PC. STA. 86+32.56


TWP. RD 533
PI. STA. 91+03.62


TWP. RD. 533
PCC. STA. 95+72.56


TWP. RD. 533
PI. STA. 97+61.52


TWP. RD. 533
PC. STA. 101+79.32

REFERENCES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA-BEL-MONT, OHIO	34	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

BEGIN WORK
RELOC. TWP. RD. 533
P.C. STA. 86+32.56

BEGIN WORK S.R.7
STA. 416+92.15

BEGIN TAPER
STA. 417+55

BEGIN TAPER
STA. 418+47.05

Sediment Pond
L=35' W=10' D=2'

CONCRETE GUTTER, TYPE I
L=25' W=10' D=2' T=.5

CONCRETE GUTTER, TYPE I
L=14', W=14', D=3', T=.5

CONC. APRON

Do Not Disturb Residence
Temporary Construction Easement

Remove Slab & Site Grade Under

Temp. Constr. Easement 202-1(1)

Do Not Disturb Mobile Home

Underground Telephone Cable (Ohio Bell Telephone Co.)

Overhead Wires

Underground Telephone Cable (Ohio Bell Telephone Co.)

Type 47 Fence

MATCH MARK STA. 426+00
SEE SHEET NO. 36

FOR PROFILE DRIVE STA. 86+75
SEE SHEET NO. 145

FOR PROFILE DRIVE STA. 89+10
SEE SHEET NO. 146

FOR PROFILE DRIVE STA. 91+46
SEE SHEET NO. 148

FOR PROFILE DRIVE STA. 93+48
SEE SHEET NO. 149

FOR INTERSECTION DETAILS
SEE SHEET NO. 76

FOR EROSION CONTROL DETAILS,
SEE SHEET NO. 58

FOR OUTLET PIPE GUTTER DETAILS
SEE SHEET NO. 51

FOR SPECIAL DITCH DETAILS
SEE SHEET NO. 57

FOR TYPE 47 FENCE DETAILS
SEE SHEET NO. 65 thru 68

FOR MAIL BOX APPROACH DETAILS
SEE SHEET NO. 64

FOR PAVEMENT REPLACEMENT DETAILS
SEE SHEET NO. 60

CURVE DATA

TWP. RD. 533

P.I. STA. 91+03.62
△ = 9°24' LT.
D = 1°00'
R = 5729.58
T = 471.06
L = 940.00
E = 19.33
S.E. = .0156
P.C. STA. 86+32.56
P.C.C. STA. 95+72.56

RAMP A

P.I. STA. 26+84.66
△ = 24°04'59" RT.
D = 4°00'
R = 1432.39
T = 305.55
L = 602.08
E = 32.23
P.C. STA. 23+79.11
P.T. STA. 29+81.19
S.E. = .041 ft

FOR PROFILE RAMP A,
SEE SHEET NO. 38

FOR PROFILE RAMP D,
SEE SHEET NO. 39

FOR PROFILE RELOC.
TWP. RD. 533,
SEE SHEET NO. 35

STA. 423+79.11 S.R.7 =
P.C. STA. 23+79.11 RAMP A

PLAN STA. 416+00 S.R.7 TO STA. 426+00 S.R.7

50 0 50
Scale in Feet

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN — SURVEYED — PLOTTED — NOTE BOOK — NO. OF MAPS CHECKED — NO. OF MAPS CHECKED

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL. MONT. OHIO	35	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

PROFILE	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
NO.	REVISED & CHECKED	
	R.W. NOTED	
	STRUCTURE ROTATING CW/CCW	

750
740
730
720
710
700
690
680
670

703.80 703.89 704.15 704.41 704.67 704.93 705.19 705.45 705.71 705.97 706.23 706.49 706.76 707.02 707.28 707.54 707.80 708.06 708.32 708.58

+32.56

Existing
1 Wire Lighting

BEGIN WORK
STA. 86+32.56

+0.521%

Existing Ground

D-22
18" C.I./S.P.
or R.C.P.

MATCH MARK
(See Sheet No. 37)

703.80 703.92 704.36 704.83 705.01 705.13 705.39 705.46 705.45 705.8 706.0 706.1 705.9 706.1 706.8 707.1 707.12 707.09 707.2 707.5 708.6 709.4

87 88 89 +66 90 91 92 93 +63 94 95

750
740
730
720
710
700
690
680
670

Horiz. 50 25 0 50
Vert. 10 5 0 10

For Plan View
See Sheet No. 34

PROFILE
℄ RELOC. TWP. RD. 533

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

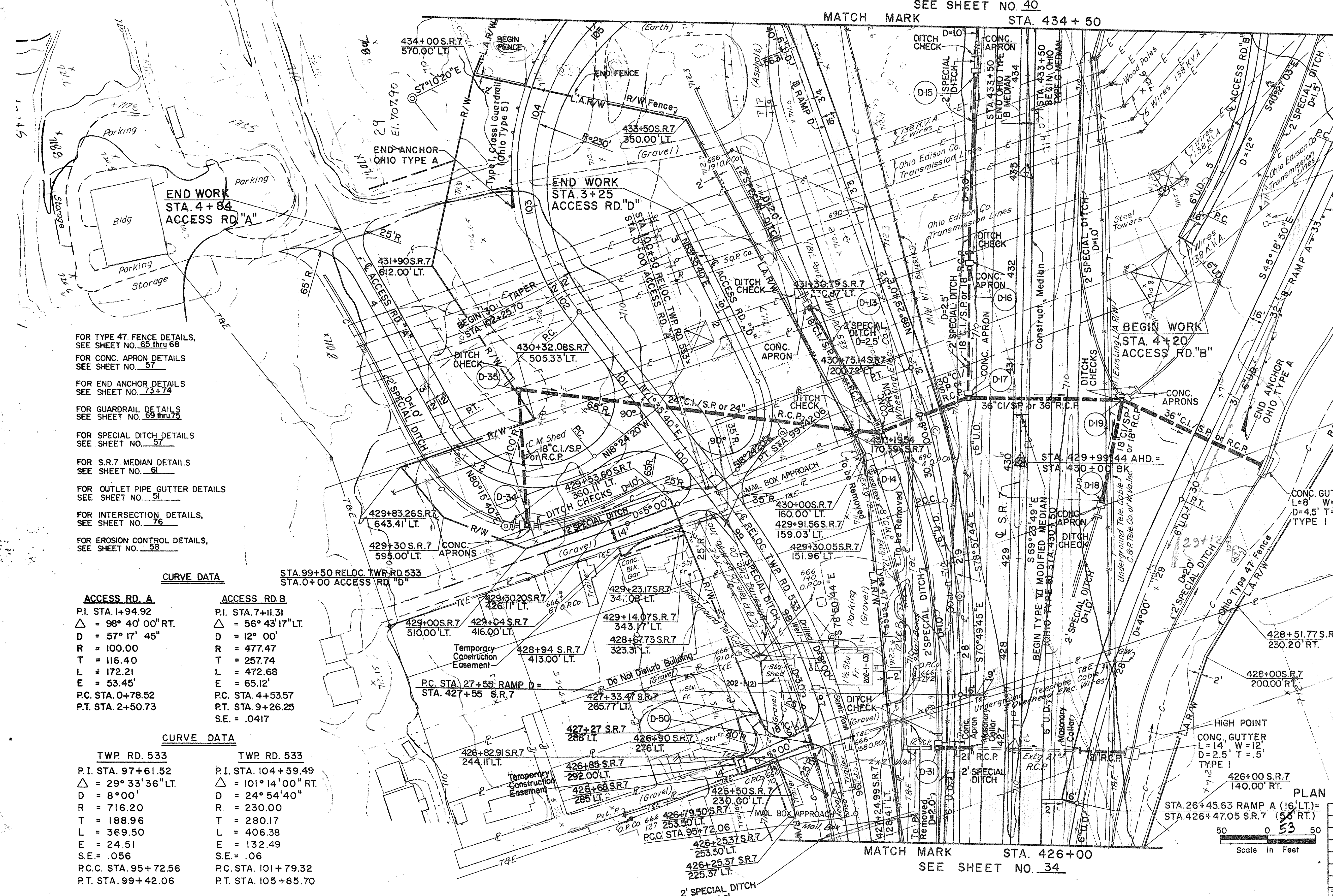
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	36	255

SEE SHEET NO. 40

MATCH MARK STA. 434+50



END WORK STA. 4+84 ACCESS RD. "A"
END WORK STA. 3+25 ACCESS RD. "D"
BEGIN WORK STA. 4+20 ACCESS RD. "B"
434+00 S.R.7 570.00' LT.
433+50 S.R.7 350.00' LT.
431+90 S.R.7 612.00' LT.
431+30.79 S.R.7
430+75.14 S.R.7 200.72' LT.
430+32.08 S.R.7 505.33' LT.
430+19.54 170.59' S.R.7
430+00 S.R.7 160.00' LT.
429+91.56 S.R.7 159.03' LT.
429+83.26 S.R.7 643.41' LT.
429+53.50 S.R.7 360.11' LT.
429+30 S.R.7 595.00' LT.
429+30.05 S.R.7 151.96' LT.
429+23.17 S.R.7
429+30.20 S.R.7 426.11' LT.
429+00 S.R.7 510.00' LT.
429+04 S.R.7 416.00' LT.
429+14.07 S.R.7 343.17' LT.
428+67.73 S.R.7 323.31' LT.
428+94 S.R.7 413.00' LT.
431+00 S.R.7 375.00' RT.
428+51.77 S.R.7 230.20' RT.
428+00 S.R.7 200.00' RT.
427+33.47 S.R.7 265.77' LT.
427+27 S.R.7 288' LT.
426+90 S.R.7 236' LT.
426+82.91 S.R.7 244.11' LT.
426+85 S.R.7 292.00' LT.
426+68 S.R.7 285' LT.
426+50 S.R.7 230.00' LT.
426+79.50 S.R.7 253.50' LT.
426+25.37 S.R.7 253.50' LT.
426+25.37 S.R.7 225.37' LT.
426+00 S.R.7 140.00' RT.
STA. 429+99.44 AHD. = STA. 430+00 BK.
STA. 99+50 RELOC. TWP. RD 533 STA. 0+00 ACCESS RD "D"
P.C. STA. 27+55 RAMP D = STA. 427+55 S.R.7
STA. 26+45.63 RAMP A (16' LT.)= STA. 426+47.05 S.R.7 (56' RT.)
STA. 433+50 BEGIN OHIO TYPE C MEDIAN
STA. 433+50 END OHIO TYPE B MEDIAN
BEGIN TYPE VI MODIFIED MEDIAN
CONC. GUTTER L=8' W=22' D=4.5' T=.5' TYPE I
HIGH POINT
CONC. GUTTER L=14' W=12' D=2.5' T=.5' TYPE I
2' SPECIAL DITCH D=3.0'
END ANCHOR OHIO TYPE A
Type I Class I Guardrail (Ohio Type 5)
Ohio Type 47 Fence
Ohio Edison Co. Transmission Lines
Temporary Construction Easement
Do Not Disturb Building
MAIL BOX APPROACH
DITCH CHECKS
CONC. APRONS
Construct Median
€ S.R.7
RELOC. TWP. RD. 533
ACCESS RD. "A"
ACCESS RD. "B"
ACCESS RD. "D"
RAMP A
RAMP D

FOR TYPE 47 FENCE DETAILS, SEE SHEET NO. 65 thru 68
FOR CONC. APRON DETAILS SEE SHEET NO. 57
FOR END ANCHOR DETAILS SEE SHEET NO. 73+74
FOR GUARDRAIL DETAILS SEE SHEET NO. 69 thru 75
FOR SPECIAL DITCH DETAILS SEE SHEET NO. 57
FOR S.R.7 MEDIAN DETAILS SEE SHEET NO. 61
FOR OUTLET PIPE GUTTER DETAILS SEE SHEET NO. 51
FOR INTERSECTION DETAILS, SEE SHEET NO. 76
FOR EROSION CONTROL DETAILS, SEE SHEET NO. 58

CURVE DATA

ACCESS RD. A	ACCESS RD. B
P.I. STA. 1+94.92	P.I. STA. 7+11.31
△ = 98° 40' 00" RT.	△ = 56° 43' 17" LT.
D = 57° 17' 45"	D = 12° 00'
R = 100.00	R = 477.47
T = 116.40	T = 257.74
L = 172.21	L = 472.68
E = 53.45'	E = 65.12'
P.C. STA. 0+78.52	P.C. STA. 4+53.57
P.T. STA. 2+50.73	P.T. STA. 9+26.25
	S.E. = .0417

CURVE DATA

TWP. RD. 533	TWP. RD. 533
P.I. STA. 97+61.52	P.I. STA. 104+59.49
△ = 29° 33' 36" LT.	△ = 101° 14' 00" RT.
D = 8°00'	D = 24° 54' 40"
R = 716.20	R = 230.00
T = 188.96	T = 280.17
L = 369.50	L = 406.38
E = 24.51	E = 132.49
S.E. = .056	S.E. = .06
P.C.C. STA. 95+72.56	P.C. STA. 101+79.32
P.T. STA. 99+42.06	P.T. STA. 105+85.70

FOR PROFILE ACCESS RD. A SEE SHEET NO. 37
FOR PROFILE ACCESS RD. D, SEE SHEET NO. 37
FOR PROFILE DRIVE, STA. 96+63 SEE SHEET NO. 151
FOR PROFILE RAMP A, SEE SHEET NO. 38
FOR PROFILE RAMP D, SEE SHEET NO. 39
FOR PROFILE DRIVE, STA. 99+40 SEE SHEET NO. 153
FOR PROFILE TWP. RD. 533, SEE SHEET NO. 37

CURVE DATA

RAMP A	RAMP A
P.I. STA. 26+84.66	P.I. STA. 36+53.30
△ = 24°04'59" RT	△ = 54° 30' 00" LT
D = 4°00'	D = 11°00'00"
R = 1432.39	R = 520.87
T = 305.55	T = 268.27
L = 602.08	L = 495.45
E = 32.23	E = 65.02
P.C. STA. 23+79.11	P.C. STA. 33+85.03
P.T. STA. 29+81.19	P.T. STA. 38+80.48
S.E. = .041	S.E. = .05

ACCESS ROAD D
P.I. STA. 0+90.00
△ = 78°00'00" LT
D = 76°23'40"
R = 75.00'
T = 60.73
L = 102.10
E = 21.51
P.C. STA. 0+29.27
P.T. STA. 1+31.37

FOR DETAIL MAIL BOX APPROACH SEE SHEET NO. 64
FOR MASONARY COLLAR DETAILS SEE SHEET NO. 51
FOR PAVEMENT REPLACEMENT DETAIL SEE SHEET NO. 60
FOR TYPE VI MOD. MEDIAN SEE SHEET NO. 63

RAMP D	RAMP D
P.I. STA. 28+56.83	P.I. STA. 30+30.72
△ = 8°07'59" LT	△ = 11° 32' 36" LT
D = 4°00'	D = 8° 00'
R = 1432.39	R = 716.20
T = 101.83	T = 72.39
L = 203.33	L = 144.29
E = 3.62	E = 3.65
P.C. STA. 27+55.00	P.C.C. STA. 29+58.33
P.C.C. STA. 29+58.33	P.T. STA. 31+02.63
S.E. = VARIABLE	S.E. = .056

MATCH MARK STA. 426+00

SEE SHEET NO. 34

PLAN STA. 426+00 S.R.7 TO STA. 434+50 S.R.7

50 0 53 50
Scale in Feet

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R/W CHECKED
BY
DATE

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	37	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

ACCESS ROAD "D"

Sta. 99+50 ℄ Reloc. Twp. Rd. 533 =
Sta. 0+00 Access Rd. D

714.16 713.21 712.64 712.20 711.87 711.67 711.38 711.09 710.80 710.65

V.C.=100'

-2.50%

-0.58%

Existing Ground

END WORK
STA. 3+25

P.I. Sta. 1+00
Elev. = 711.96
VC = 100'

710.0 710.1 710.3 710.8 711.0 711.1 711.2 711.3

0 1 2 3 +25 711.3

For Plan View
See Sheet No. 36

ACCESS ROAD "A"

Sta. 100+50 Reloc. Twp. Rd. 533=
Sta. 0+00 Access Rd. A

715.58 715.21 714.47 713.73 712.99 712.25 711.56 711.22 711.28

Existing 138 K.V.A.

Existing
Low Wire
Elev. 745.8

711.69 712.00

VC = 150'

Profile Grade

-1.48%

+0.92%

END WORK
STA. 4+84

D-34
18" C.I./S.P.
or R.C.P.

Existing Ground

P.I. Sta. 3+50
Elev. = 710.77
VC = 150'
MO = 0.45'

709.5 708.2 708.1 707.2 706.8 707.7 708.4 708.7 708.8 708.7 712.0 712.6

0 1 2 3 4 +84 5

For Plan View
See Sheet No. 36

Existing
138 K.V.A. Overhead Wires

708.58 708.84 709.16 709.62 710.20 710.91 711.64 712.71 713.74 714.77 715.80 716.83 717.86 718.89 719.92 720.95 721.98 723.01 724.04 725.07

Existing
Low Wire
Elev. 755.9

VC = 300'

Existing
3 Wires Primary,
2 Wires Lighting &
Telephone

Existing
2 Wires Lighting

Profile Grade

+2.06%

SEE SHEET NO. 35
STA. 95+50
MATCH MARK

STA. 105+00
SEE SHEET NO. 41
MATCH MARK

P.I. Sta. 97+50
Elev. = 709.62
VC = 300'

Existing Ground

D-35
24" C.I./S.P.
or R.C.P.

709.4 709.7 710.2 711.0 711.7 710.9 710.4 710.5 710.1 709.2 709.5 709.4 702.2 701.2 702.7 704.7 707.6 711.0 710.7 699.5

96 97 98 99 100 101 102 103 104 105

740 730 720 710 700 690 680 670 (left)

750 740 730 720 710 700 690 680 670 (right)

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
N.B. L. NO.
STRUCTURE NOTAT
NOTE BOOK
NO.

Horiz. 50 25 0 50
Vert. 10 5 0 10

For Plan View
See Sheet No. 36

PROFILE
℄ RELOC. TWP. RD. 533

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

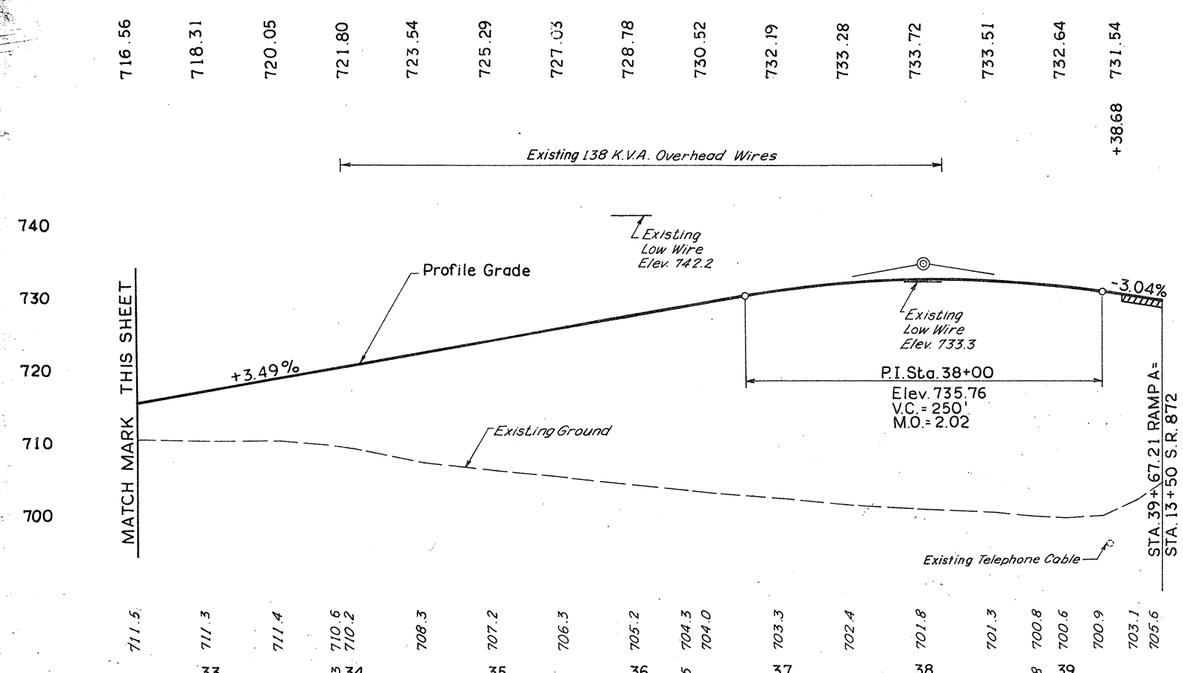
MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OH 10	38	255

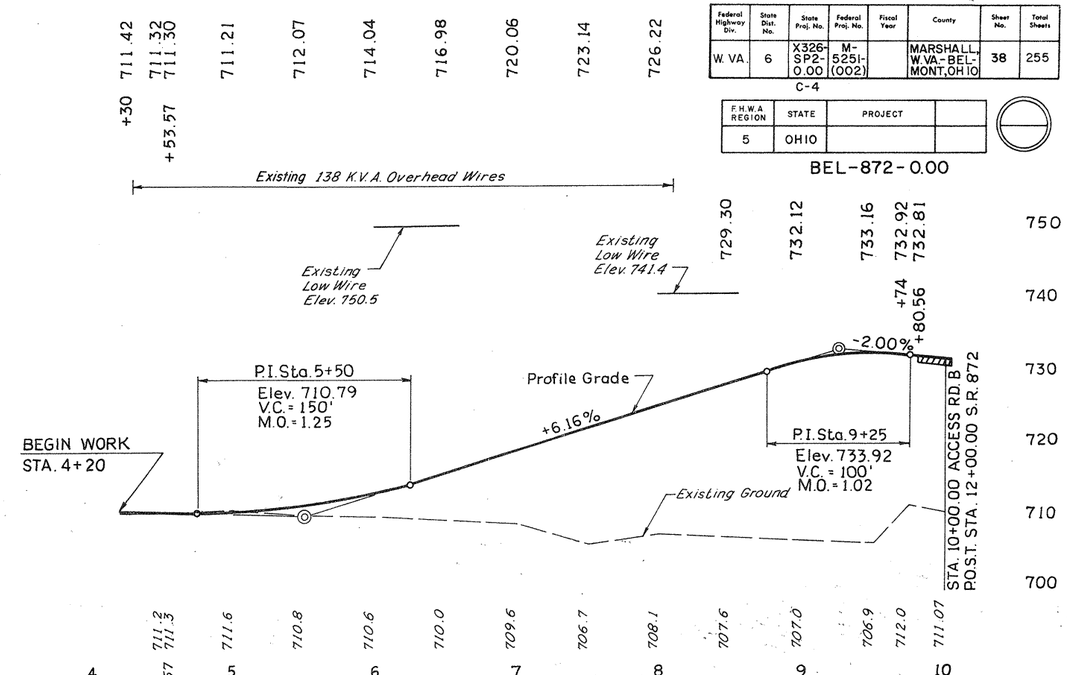
C-4

F.H.W.A REGION	STATE	PROJECT	
5	OH10		

BEL-872-0.00

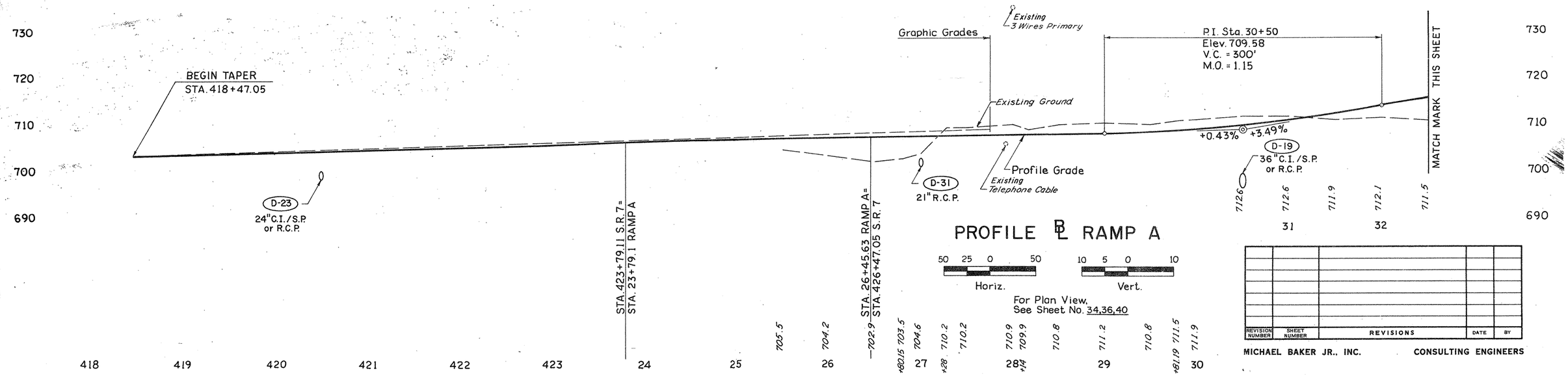


PROFILE ℄ RAMP A



PROFILE ℄ ACCESS RD. "B"

For Plan View, See Sheet No. 36,40



PROFILE ℄ RAMP A

50 25 0 50 Horiz.

10 5 0 10 Vert.

For Plan View, See Sheet No. 34,36,40

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

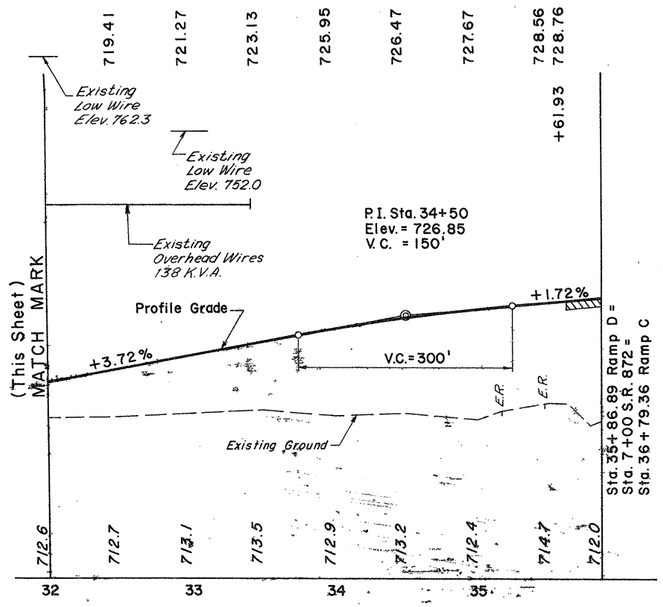
PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, R.R.'s NOTED, STRUCTURE NOTE BOOK, NO.

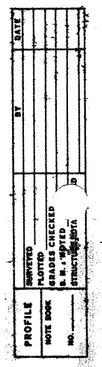
Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	39	255

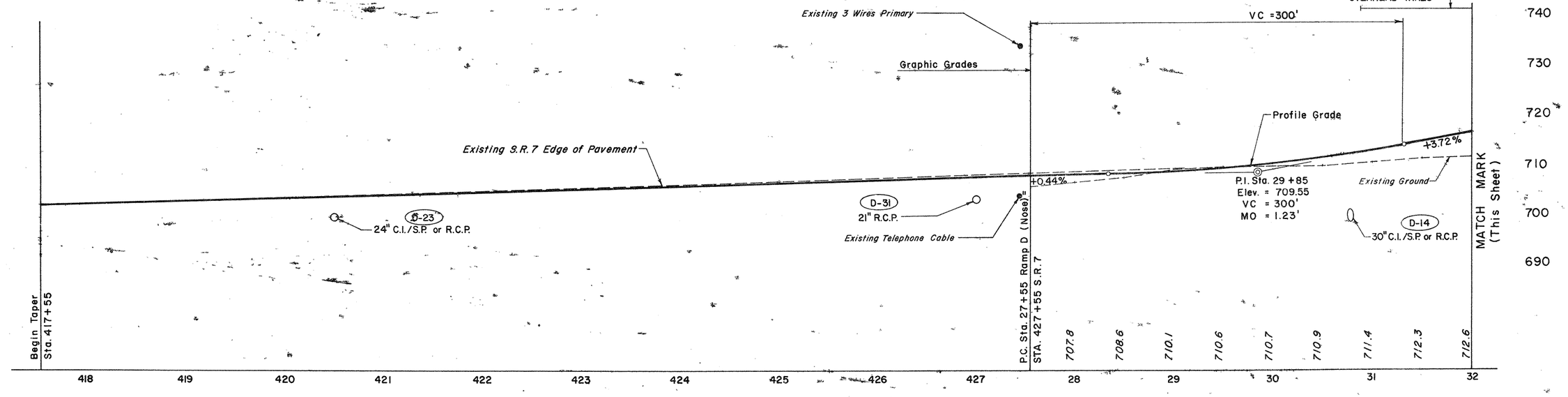
C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00







PROFILE ℄ RAMP D

Horiz. 50 25 0 50 Vert. 10 5 0 10

For Plan View See Sheet No. 34,36,40

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

STATE	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	MARSHALL, W.VA. BELMONT, OHIO	40	255

C-4

FOR PROFILE S.R. 872 SEE SHEET NO. 41
FOR PROFILE RAMP A SEE SHEET NO. 38
FOR PROFILE RAMP B SEE SHEET NO. 42
FOR PROFILE RAMP C SEE SHEET NO. 47
FOR PROFILE RAMP D SEE SHEET NO. 39
FOR PROFILE ACCESS RD. B SEE SHEET NO. 38

SEE SHEET NO. 43 MATCH MARK STA. 18+00

MATCH MARK SEE SHEET NO. 36 STA. 434+50

CURVE DATA S.R. 872

P.I. STA. 15+62.94		Y_c	= 13.92
$\triangle$	= 79°45' LT.	O_s	= 12°00'
$\triangle_c$	= 55°45'	O_c	= 4°00'
D_c	= 12° 00'	L.T.	= 133.64
R	= 477.46'	S.T.	= 66.95
L_c	= 464.58	L.C.	= 199.61
L_s	= 200'	E_s	= 149.23
T_s	= 501.63	K	= 99.85
X_c	= 199.12	P	= 3.49
T.S. STA. 10+61.31		S.E.	= .06%
S.C. STA. 12+61.31			
C.S. STA. 17+25.89			
S.T. STA. 19+25.89			

CURVE DATA

RAMP A		RAMP B	
P.I. STA. 36+53.30		P.I. STA. 40+40.16	
$\triangle$	= 54° 30'00" LT.	$\triangle$	= 2° 37'28" RT.
D	= 11°00' 00"	D	= 0° 45'
R	= 520.87	R	= 7639.44
T	= 268.27	T	= 174.99
L	= 495.45	L	= 349.93
E	= 65.02	E	= 2.00
P.C. STA. 33+85.03		P.C. STA. 38+65.17	
P.T. STA. 38+80.48		P.T. STA. 42+15.10	
S.E.	= .05%	S.E.	= N.C. = .0156

CURVE DATA

RAMP C		RAMP C	
P.I. STA. 38+77.34		P.I. STA. 46+32.71	
$\triangle$	= 21°30'00" RT.	$\triangle$	= 72°06'01" LT.
D	= 12°00'00"	D	= 8°30'00"
R	= 477.46	R	= 674.07
T	= 90.65	T	= 490.64
L	= 179.17	L	= 848.24
E	= 8.53	E	= 159.65
P.C. STA. 37+86.69		P.C. STA. 41+42.07	
P.T. STA. 39+65.86		P.C.C. STA. 49+90.31	
S.E.	= .04%	S.E.	= .083%

CURVE DATA EXISTING S.R. 7

		SPIRAL DATA	
P.I.C. STA. 453+78.25		L_s	= 400'
$\triangle$	= 113°34'17" LT.	O_s	= 10°00'
$\triangle_c$	= 103°34'17" LT.	L.T.	= 267.09'
D_c	= 5°00'	S.T.	= 133.72'
R	= 1145.92'	P	= 5.81
T_c	= 1455.46'	K	= 199.80
L_c	= 2671.43'		
E_s	= 706.51'		
T.S. STA. 435+22.79			
S.C. STA. 439+22.79			
C.S. STA. 459+94.22			

CURVE DATA ACCESS RD. B

P.I. STA. 7+11.31	
$\triangle$	= 56°43'17" LT.
D	= 12°00'
R	= 477.47'
T	= 257.74
L	= 472.68
E	= 65.12
P.C. STA. 4+53.57	
P.T. STA. 9+26.25	
S.E.	= .0417%

STA. 434+50 S.R. 7 TO STA. 18+00 S.R. 872

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

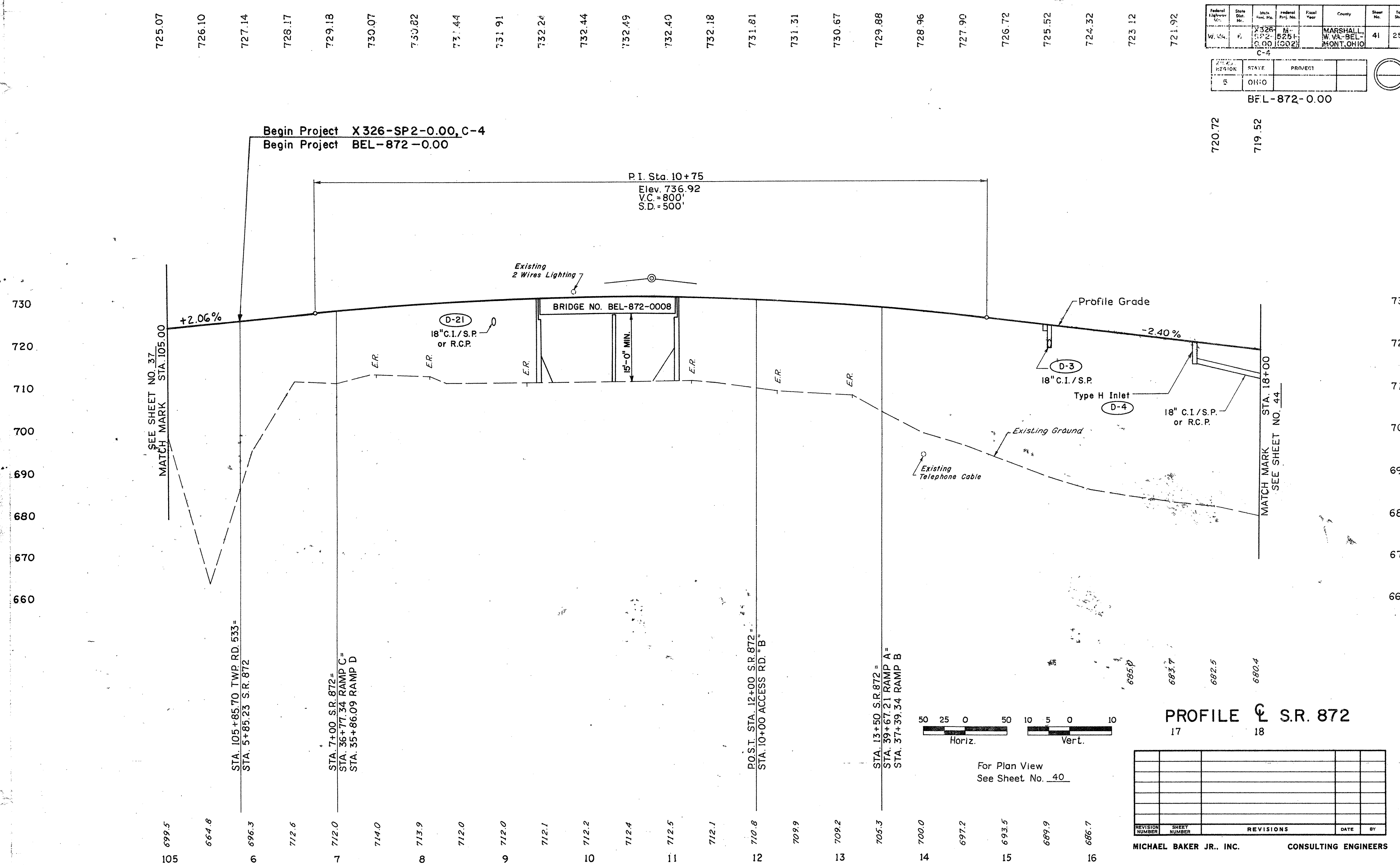
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FOR PAVEMENT REPLACEMENT DETAILS SEE SHEET NO. 60
FOR SPECIAL DITCH DETAILS SEE SHEET NO. 57
FOR OUTLET PIPE GUTTER DETAILS SEE SHEET NO. 51
FOR CONCRETE APRON DETAILS SEE SHEET NO. 57
FOR BRIDGE TERMINAL ASSEMBLY DETAILS SEE SHEET NO. 71,72
FOR ANCHOR ASSEMBLY DETAILS SEE SHEET NO. 73,74
FOR GUARDRAIL DETAILS SEE SHEET NO. 69 thru 75
FOR EROSION CONTROL DETAILS SEE SHEET NO. 58
FOR S.R.7 MEDIAN DETIALS SEE SHEET NO. 61,62
FOR TYPE I MOD. MEDIAN DETAILS SEE SHEET NO. 60
FOR TYPE 47 FENCE DETAILS SEE SHEET NO. 65 thru 68
FOR INTERSECTION DETAILS SEE SHEET NO. 77,78
FOR DUMPED ROCK GUTTER MOD. DETAILS SEE SHEET NO. 57
FOR TYPE V MOD. MEDIAN DETAILS SEE SHEET NO. 63
FOR TYPE VI MOD. MEDIAN DETAILS SEE SHEET NO. 63
FOR SR872 MEDIAN TRANSITION DETAILS SEE SHEET NO. 63

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W. VA.-BELMONT, OHIO	41	255

REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



725.07 726.10 727.14 728.17 729.13 730.07 730.82 731.44 731.91 732.24 732.44 732.49 732.40 732.18 731.81 731.31 730.67 729.88 728.96 727.90 726.72 725.52 724.32 723.12 721.92 720.72 719.52
Begin Project X 326-SP2-0.00, C-4
Begin Project BEL-872-0.00
P.I. Sta. 10+75
Elev. 736.92
V.C. = 800'
S.D. = 500'
Existing 2 Wires Lighting
BRIDGE NO. BEL-872-0008
15'-0" MIN.
+2.06%
-2.40%
Profile Grade
D-21
18" C.I./S.P. or R.C.P.
D-3
18" C.I./S.P.
Type H Inlet
D-4
18" C.I./S.P. or R.C.P.
E.R.
Existing Ground
Existing Telephone Cable
SEE SHEET NO. 37 STA. 105.00
MATCH MARK
STA. 18+00
SEE SHEET NO. 44
MATCH MARK
730 720 710 700 690 680 670 660
STA. 105+85.70 TWP. RD. 533=
STA. 5+85.23 S.R. 872
STA. 7+00 S.R. 872=
STA. 36+77.34 RAMP C=
STA. 35+86.09 RAMP D
P.O.S.T. STA. 12+00 S.R. 872=
STA. 10+00 ACCESS RD. "B"
STA. 13+50 S.R. 872=
STA. 39+67.21 RAMP A=
STA. 37+39.34 RAMP B
699.5 664.8 696.3 712.6 712.0 714.0 713.9 712.0 712.0 712.1 712.2 712.4 712.5 712.1 710.8 709.9 709.2 705.3 700.0 697.2 693.5 689.9 686.7 685.0 683.7 682.5 680.4
105 6 7 8 9 10 11 12 13 14 15 16 17 18
50 25 0 50 Horiz.
10 5 0 10 Vert.

For Plan View See Sheet No. 40

PROFILE ℄ S.R. 872

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

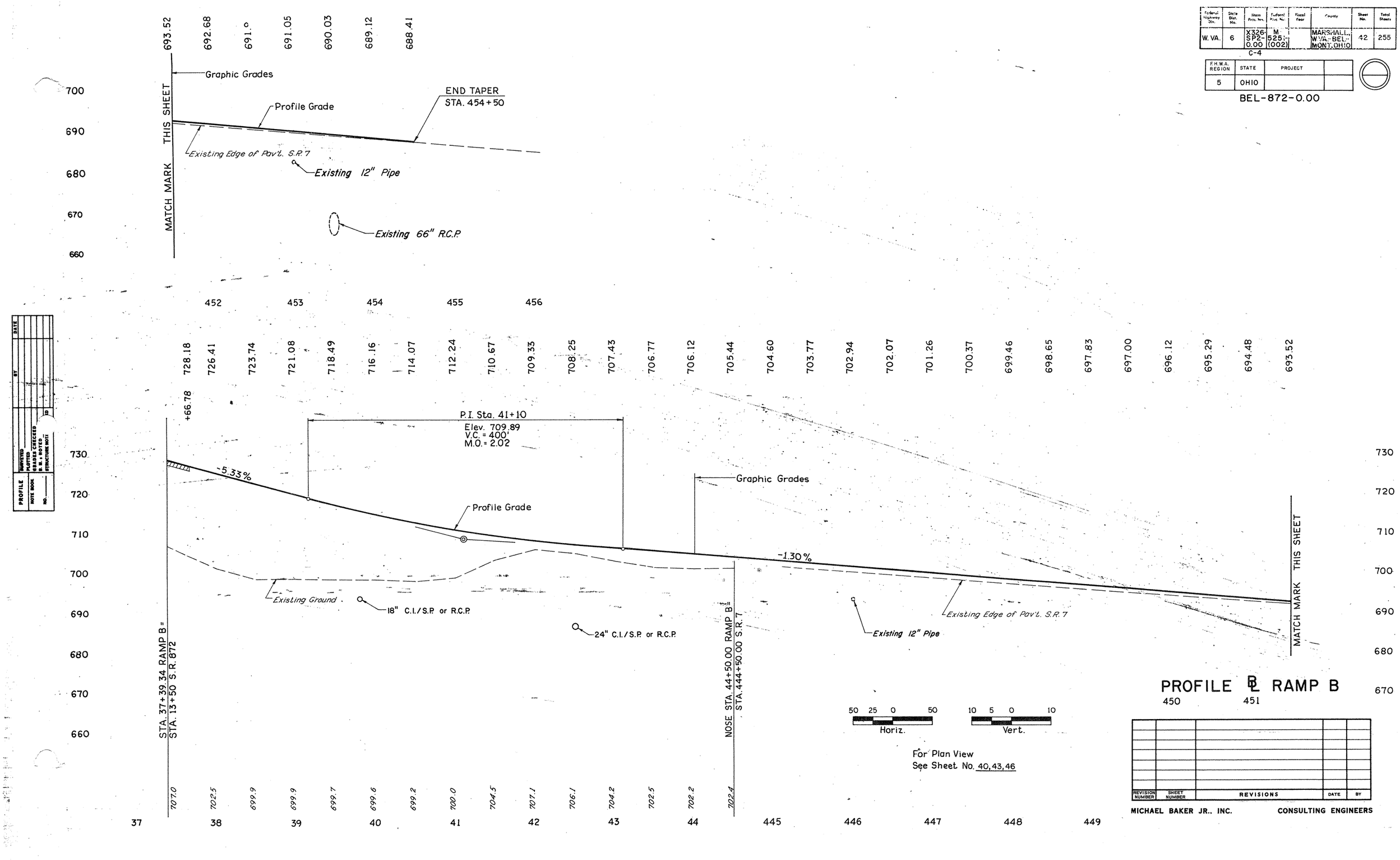
PROFILE	SURVEYED	PLOTTED	GRADES CHECKED	B. M. + NOTED	STRUCTURE NOT	BY	DATE
NOTE BOOK							
NO.							

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-525-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	42	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, B. M.'s NOTED, STRUCTURE NOTE; NOTE BOOK; NO.

50 25 0 50 Horiz.

10 5 0 10 Vert.

For Plan View
See Sheet No. 40,43,46

PROFILE ℄ RAMP B

450 451

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM	STATE DIST NO	STATE PROJECT NO	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	43	255
		C-4					

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

CURVE DATA
RAMP C

P.I. STA. 46+32.71
Δ = 72°06'01" LT
D = 8°30'00"
R = 674.07
T = 490.64
L = 848.24
E = 159.65
P.C. STA. 41+42.07
P.C.C. STA. 49+90.31
S.E. = .083'/'

CURVE DATA
EXISTING S.R. 7

P.I. STA. 453+78.25
Δ = 113°34'17" LT
Δc = 103°34'17" LT
Dc = 5°00'
R = 1145.92'
Tc = 1455.46'
Lc = 2071.43'
Es = 706.51'
T.S. STA. 435+22.79
S.C. STA. 439+22.79
C.S. STA. 459+94.22

SPIRAL DATA
Ls = 400'
θs = 10°00'
L.T. = 267.09'
S.T. = 133.72'
P = 5.81'
K = 199.80'

FOR TYPE 47 FENCE DETAILS SEE SHEET NO. 65 THRU 68
FOR ANCHOR ASSEMBLY DETAILS SEE SHEET NO. 73,74
FOR GUARDRAIL DETAILS SEE SHEET NO. 69 THRU 75
FOR CONCRETE APRON DETAILS SEE SHEET NO. 57
FOR OUTLET PIPE GUTTER DETAILS SEE SHEET NO. 51
FOR DUMPED ROCK GUTTER MOD. DETAILS SEE SHEET NO. 57
FOR INTERSECTION DETAILS SEE SHEET NO. 79,80,82
FOR PAVEMENT REPLACEMENT DETAILS SEE SHEET NO. 60
FOR COMB. CURB & GUTTER MOD. DETAILS SEE SHEET NO. 58
FOR EROSION CONTROL DETAILS SEE SHEET NO. 58
FOR MASONARY COLLAR DETAILS SEE SHEET NO. 51
FOR DETAILS TYPE E INLET MOD. (D-42) SEE SHEET NO. 53

CURVE DATA

TWP. RD. 533A

P.I. STA. 41+73.20
Δ = 36°19'10" RT.
D = 9°00'00"
R = 636.62'
T = 208.81'
L = 403.55'
E = 33.37'
P.C. STA. 39+64.39
P.T. STA. 43+67.94
S.E. = .046 '/'

P.I. STA. 49+08.50
Δ = 127°30'00" RT.
D = 28°38'52"
R = 200.00'
T = 405.56'
L = 445.06'
E = 252.19'
P.C. STA. 45+02.94
P.T. STA. 49+48.00
S.E. = .060 '/'

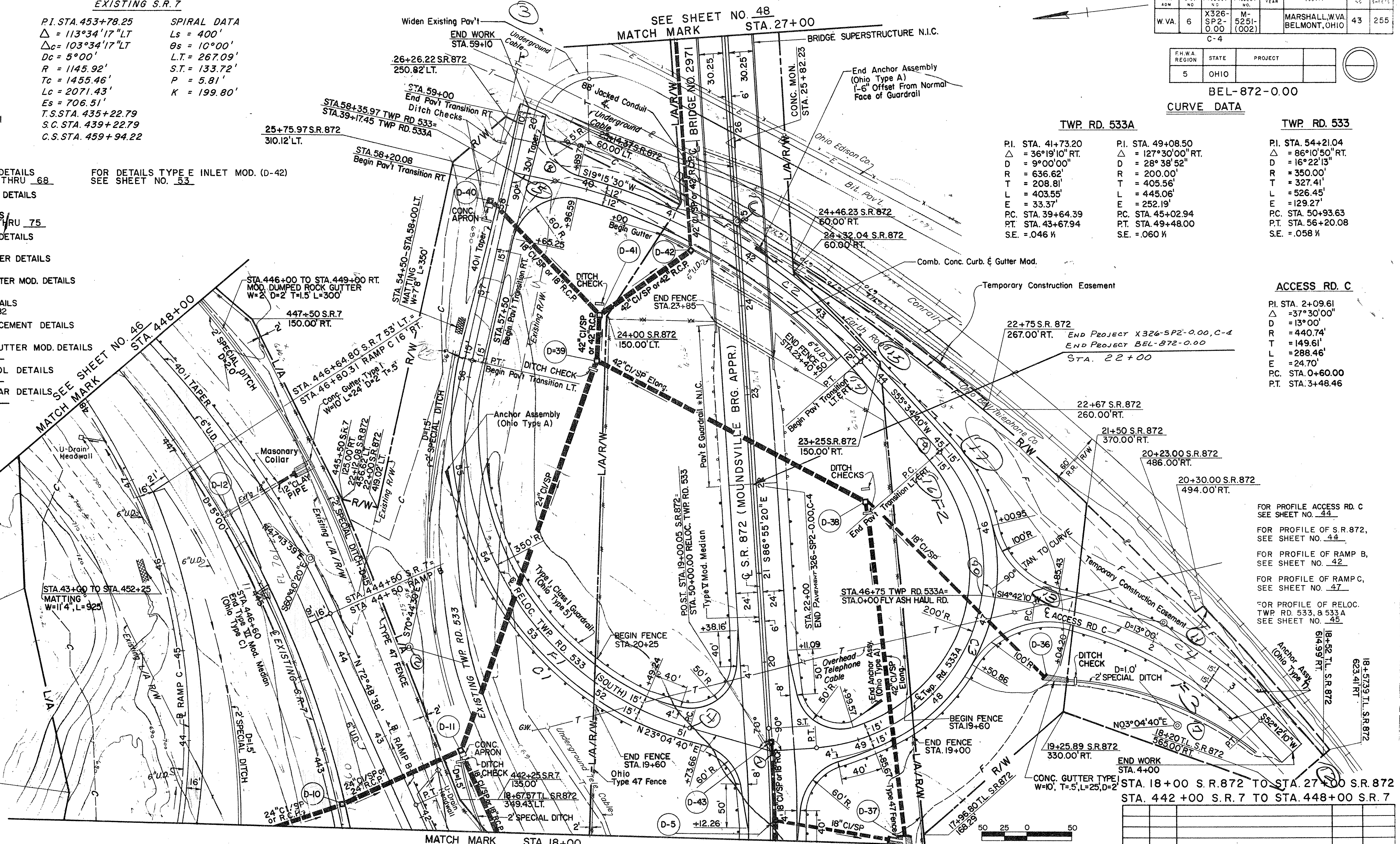
TWP. RD. 533

P.I. STA. 54+21.04
Δ = 86°10'50" RT.
D = 16°22'13"
R = 350.00'
T = 327.41'
L = 526.45'
E = 129.27'
P.C. STA. 50+93.63
P.T. STA. 56+20.08
S.E. = .058 '/'

ACCESS RD. C

P.I. STA. 2+09.61
Δ = 37°30'00"
D = 13°00'
R = 440.74'
T = 149.61'
L = 288.46'
E = 24.70'
P.C. STA. 0+60.00
P.T. STA. 3+48.46

FOR PROFILE ACCESS RD. C SEE SHEET NO. 44
FOR PROFILE OF S.R. 872, SEE SHEET NO. 44
FOR PROFILE OF RAMP B, SEE SHEET NO. 42
FOR PROFILE OF RAMP C, SEE SHEET NO. 47
FOR PROFILE OF RELOC. TWP. RD. 533 & 533 A SEE SHEET NO. 45



SEE SHEET NO. 48
MATCH MARK STA. 27+00
BRIDGE SUPERSTRUCTURE N.I.C.
SEE SHEET NO. 46
MATCH MARK STA. 448+00
MATCH MARK STA. 18+00
SEE SHEET NO. 40
Widen Existing Pav't
END WORK STA. 59+10
Underground Cable
88' Jacked Conduit
BRIDGE NO. 2971
CONC. MON. STA. 25+82.23
End Anchor Assembly (Ohio Type A) 1-6" Offset From Normal Face of Guardrail
Ohio Edison Co.
Bit. Pav't
Comb. Conc. Curb & Gutter Mod.
Temporary Construction Easement
22+75 S.R. 872 267.00' RT.
END PROJECT X326-SP2-0.00, C-4
END PROJECT BEL-872-0.00
STA. 22+00
22+67 S.R. 872 260.00' RT.
21+50 S.R. 872 370.00' RT.
20+23.00 S.R. 872 486.00' RT.
20+30.00 S.R. 872 494.00' RT.
Ohio Bell Telephone Co.
24+46.23 S.R. 872 60.00' RT.
24+32.04 S.R. 872 60.00' RT.
26+26.22 S.R. 872 250.82' LT.
STA. 59+00 End Pav't Transition RT.
Ditch Checks
STA. 58+35.97 TWP. RD. 533= STA. 39+17.45 TWP. RD. 533A
25+75.97 S.R. 872 310.12' LT.
STA. 58+20.08 Begin Pav't Transition RT.
S19°15'30"W
Begin Gutter
DITCH CHECK
END FENCE STA. 23+85
24+00 S.R. 872 150.00' LT.
STA. 446+00 TO STA. 449+00 RT. MOD. DUMPED ROCK GUTTER W=2' D=2' T=1.5' L=300'
447+50 S.R. 7 150.00' RT.
STA. 54+50–STA. 58+00 LT. MATTING W=7'8" L=350'
STA. 446+64.80 S.R. 7 53' LT. = STA. 46+80.31 RAMP C 16' RT.
Conc. Gutter, Type I W=10' L=24' D=2' T=.5'
Begin Pav't Transition LT.
Anchor Assembly (Ohio Type A)
23+25 S.R. 872 150.00' RT.
DITCH CHECKS
End Pav't Transition LT.
S55°34'40"W
Masonary Collar
12" CLAY PIPE
U-Drain Headwall
C S.R. 872 (MOUNDSVILLE BRG. APPR.)
S86°55'20"E
Type I Mod. Median
STA. 22+00 END PAVEMENT 326-SP2-0.00,C-4
P.O.ST. STA. 19+00.05 S.R. 872= STA. 50+00.00 RELOC. TWP. RD. 533
STA. 46+75 TWP. RD. 533A= STA. 0+00 FLY ASH HAUL RD.
S14°42'10"W
TAN. TO CURVE
ACCESS RD. C
Temporary Construction Easement
STA. 43+00 TO STA. 452+25 MATTING W=11'4" L=925'
446+50 S.R. 7 230.00' LT.
N72°48'38"
RAMP B
TYPE 47 FENCE
EXISTING TWP. RD. 533
C RELOC. TWP. RD. 533 (SOUTH)
Type I, Class I Guardrail (Ohio Type 5)
BEGIN FENCE STA. 20+25
N23°04'40"E
Overhead Telephone Cable
End Anchor Assy. (Ohio Type A)
Twp. Rd. 533A
BEGIN FENCE STA. 19+60
END FENCE STA. 19+00
END FENCE STA. 19+60
Ohio Type 47 Fence
DITCH CHECK
D=1.0' 2' SPECIAL DITCH
N03°04'40"E
18+20 T.L. S.R. 872 365.00' RT.
S52°12'10"W
19+25.89 S.R. 872 330.00' RT.
END WORK STA. 4+00
CONC. GUTTER TYPE I W=10' T=.5' L=25' D=2'
17+96.80 T.L. S.R. 872 168.29
18+52 T.L. S.R. 872 614.99' RT.
18+57.39 T.L. S.R. 872 623.41' RT.
443+50 S.R. 7 280.00' LT.
CONC. APRON
DITCH CHECK
442+25 S.R. 7 135.00'
18+67.57 T.L. S.R. 872 349.43' LT.
2' SPECIAL DITCH
RAMP C
2' SPECIAL DITCH
EXISTING S.R. 7
Underground Tele. Cable
D-5 D-10 D-11 D-12 D-36 D-37 D-38 D-39 D-40 D-41 D-42 D-43
50 25 0 50

STA. 18+00 S.R. 872 TO STA. 27+00 S.R. 872
STA. 442+00 S.R. 7 TO STA. 448+00 S.R. 7

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL-W.VA.-BEL-MONT.OHIO	44	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

719.52 718.32 717.12 715.92 714.72 713.52 712.32 711.12 709.92 708.72 707.52 706.32 705.12 703.92 702.92 701.55

700.57 699.78 699.18

END PROJECT
BEL-872-0.00
END PROJECT
X326-SP2-0.00, C-4
END PAVEMENT
STA. 22+00

BRIDGE SUPERSTRUCTURE
(N.I.C.)
BRIDGE NO. 2971

P.I. Sta. 28+55
Elev. 694.20
V.C. = 670'
M.O. = 4.36

Profile Grade

-2.40%

SEE SHEET NO. 41
MATCH MARK
STA. 18+00

D-5
18" C.I./S.P.

D-43
18" C.I./S.P. or R.C.P.

Existing Telephone Cable

Existing Ground

Existing Telephone Cable

Existing 2 Wires Lighting

Sta. 23+63 Abut. 1

Sta. 24+17 Pier 1A

℄ 533A

℄ Rd.

E.R.

Conrail

Sta. 25+61 Pier 1

℄ Ohio Edison Access Rd.

MATCH MARK STA. 27+00
SEE SHEET NO. 49

D-38
42" C.I./S.P.

D-42
42" C.I./S.P. or R.C.P.

88'
Jacked Conduit

740 730 720 710 700 690 680 670 660 650 640

672.3 671.2 669.4 669.0 671.1 670.1 670.1 668.7 668.0 668.0 667.6 667.4 665.7 662.7

+80.8 +90.7 +96 +06.6 +12.5 +40.5 +45.6 +61 +94.2 +06.5 +18.2 +28.8

For Plan View
See Sheet No. 43

50 25 0 50 Horiz.
10 5 0 10 Vert.

PROFILE ℄ S.R. 872
MOUNDSVILLE BRIDGE APPROACH

25 26 27

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

PROFILE SURVEYED PLOTTED GRADES CHECKED R. M. MOYED STRUCTURE NOTE BOOK NO.

DATE BY

702.81 698.95 693.95 688.95 683.95 678.95 674.77 673.10

710 700 690 680 670

BEGIN WORK
Sta. 0+15

+3.00%

P.I. Sta. 0+50
Elev. 703.95
V.C. = 70'
M.O. = 1.14

-10.00%

P.I. Sta. 3+55
Elev. 673.45
V.C. = 90'
M.O. = 1.04

END WORK
Sta. 4+00

-0.78%

Sta. 46+75 Twp. Rd. 533 A =
Sta. 0+00 Access Rd. C

For Plan View
See Sheet No. 43

PROFILE ACCESS ROAD C

672.0 671.5 672.2 672.8 673.1 673.0 672.4 672.8 673.1

1 2 3 4

680.7 678.8 677.9 677.2 676.2 675.5 674.1 673.3 672.4 671.7 671.5 671.8 672.8 673.1 673.1 672.9

+17 +41 +96

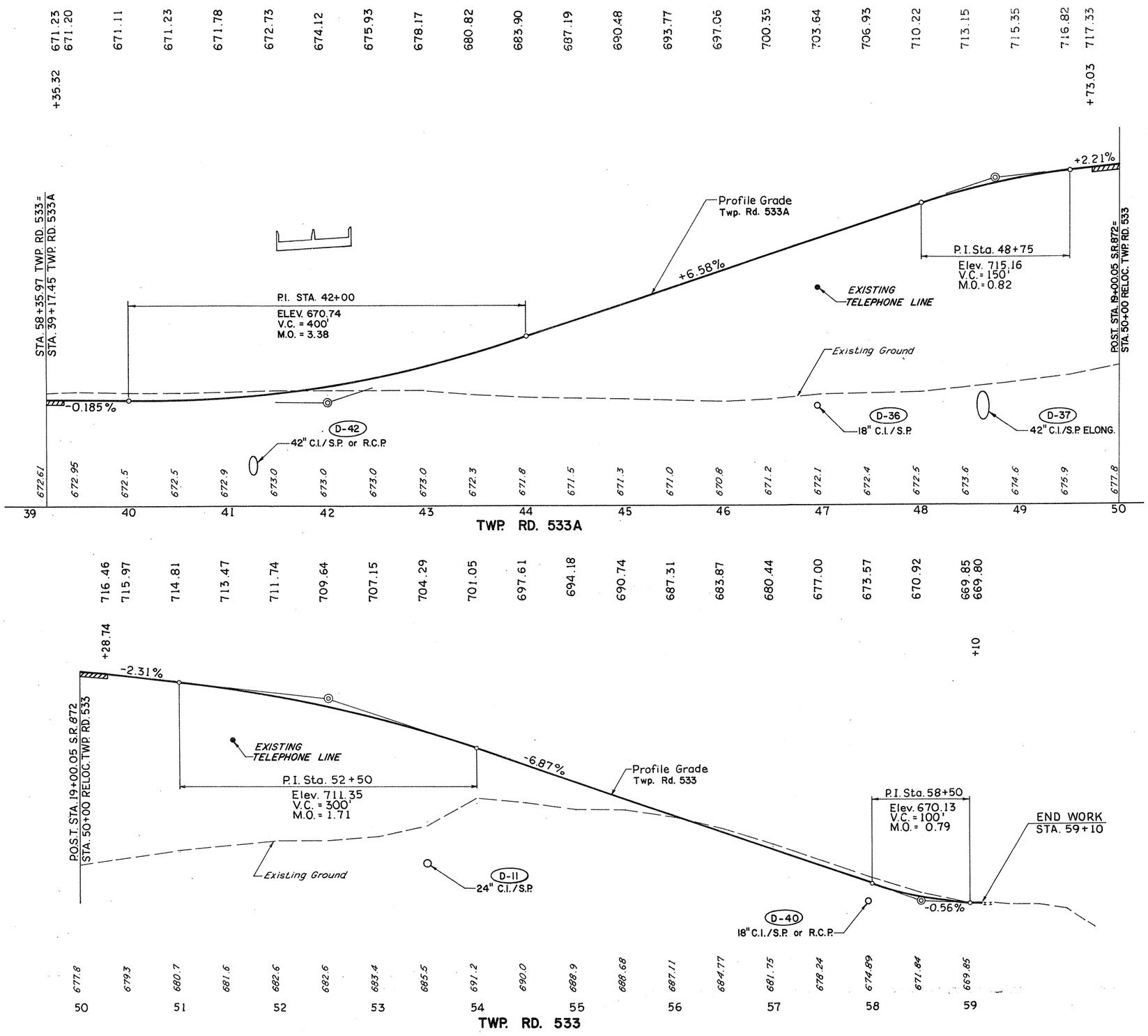
18 19 20 21 22 23 24

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL.-MONT, OHIO	45	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
N. B. & NOTED
STRUCTURE NOTAT
NOTE BOOK
NO.
BY
DATE

For Plan View
See Sheet No. 43

50 25 0 50 Horiz.

10 5 0 10 Vert.

PROFILE
℄ RELOC. TWP. RD. 533
& TWP. RD. 533A

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

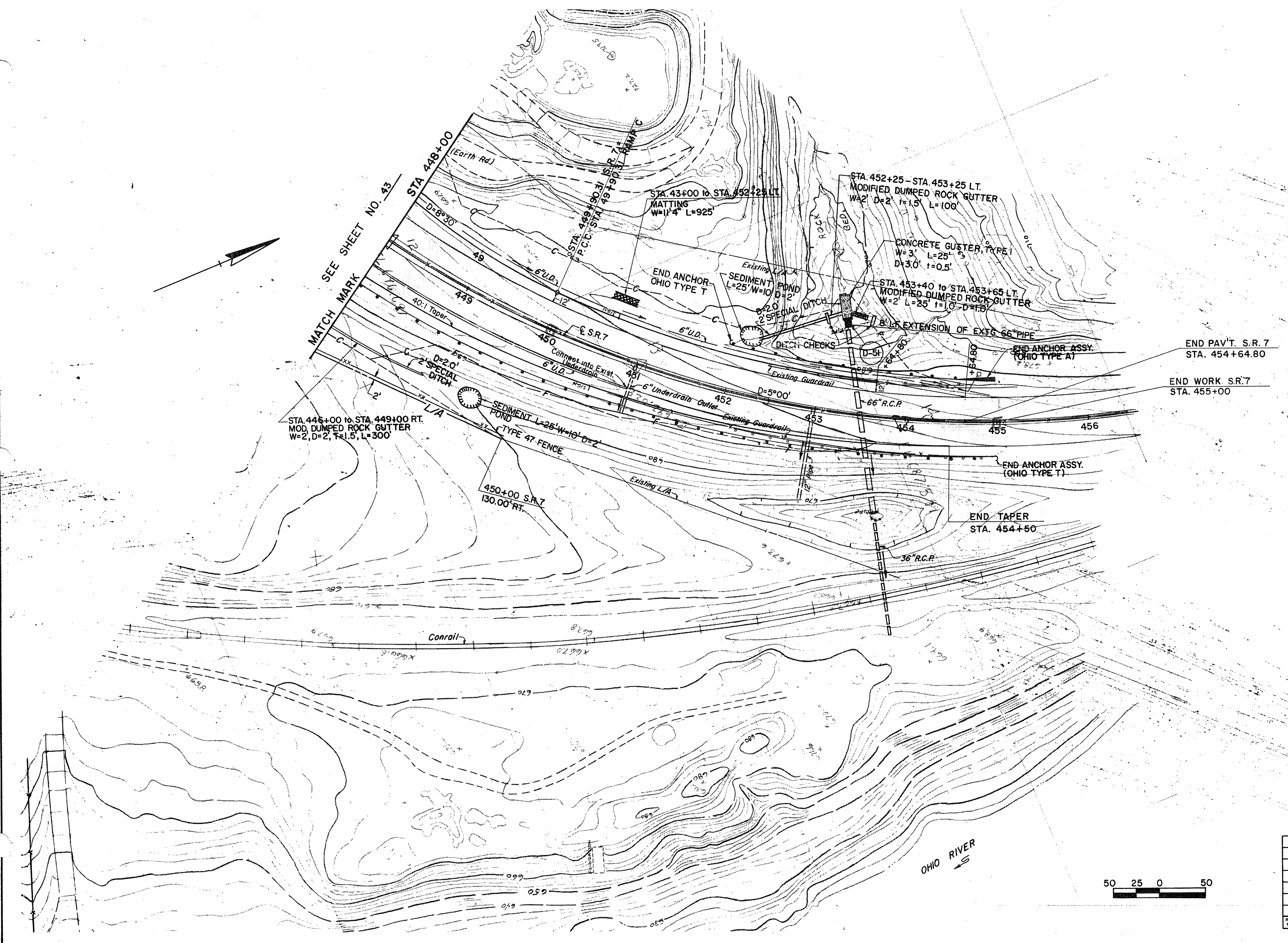
MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.- BELMONT, OHIO	46	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



FOR SPECIAL DITCH DETAILS, SEE SHEET NO. 57

FOR ANCHOR ASSEMBLY DETAILS, SEE SHEET NO. 73,74

FOR DUMPED ROCK GUTTER MOD. DETAILS, SEE SHEET NO. 57

FOR GUARDRAIL DETAILS, SEE SHEET NO. 69 thru 75

FOR INTERSECTION DETAIL, SEE SHEET NO. 80,81

FOR PROFILE OF RAMP B, SEE SHEET NO. 42

FOR PROFILE OF RAMP C, SEE SHEET NO. 47

FOR DETAIL 66" R.C.P., SEE SHEET NO. 52

FOR EROSION CONTROL DETAILS, SEE SHEET NO. 58

CURVE DATA

EXISTING S.R.7

P.I. STA. 453+78.25
Δ = 113°34'17" LT.
Δ = 103°34'17" LT.
Dc = 5°00'
R = 1145.92'
Tc = 1455.46'
Lc = 2071.43'
Es = 706.51'
T.S. STA. 435+22.79
S.C. STA. 439+22.79
C.S. STA. 459+94.22

SPIRAL DATA
Ls = 400'
θs = 10°00'
L.T. = 267.09'
S.T. = 133.72'
P = 5.81'
K = 199.80'

CURVE DATA

RAMP C

P.I. STA. 46+32.71
Δ = 72°06'01" LT.
D = 8°30'00"
R = 674.07
T = 490.64
L = 848.24
E = 159.65'
P.C. STA. 41+42.07
P.C.C. STA. 49+90.31
SE = .083 ¹/₁

STA. 448+00 S.R. 7 TO STA. 456+50 S.R. 7

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

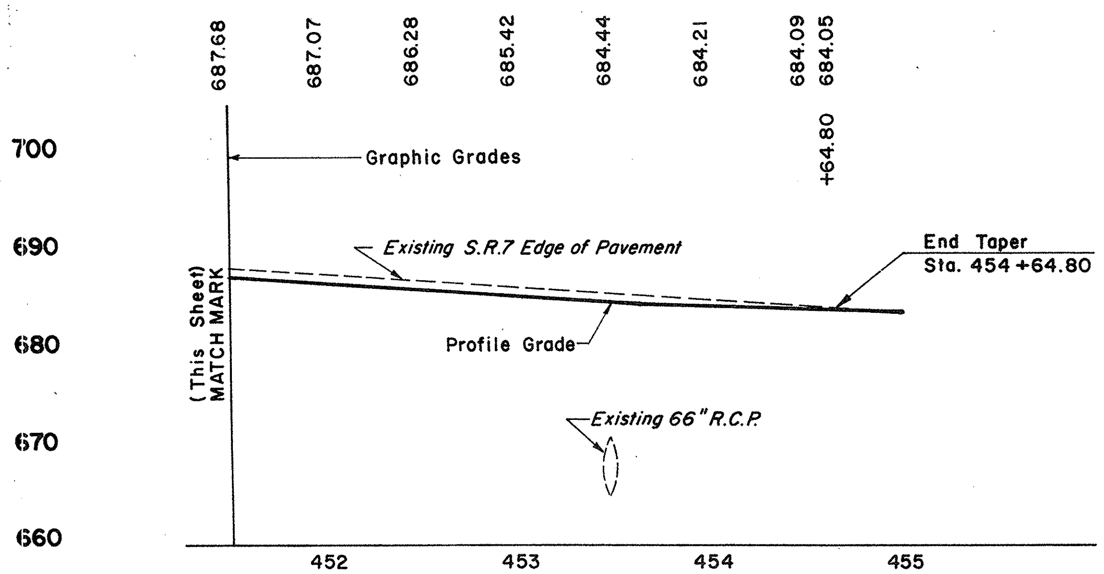
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

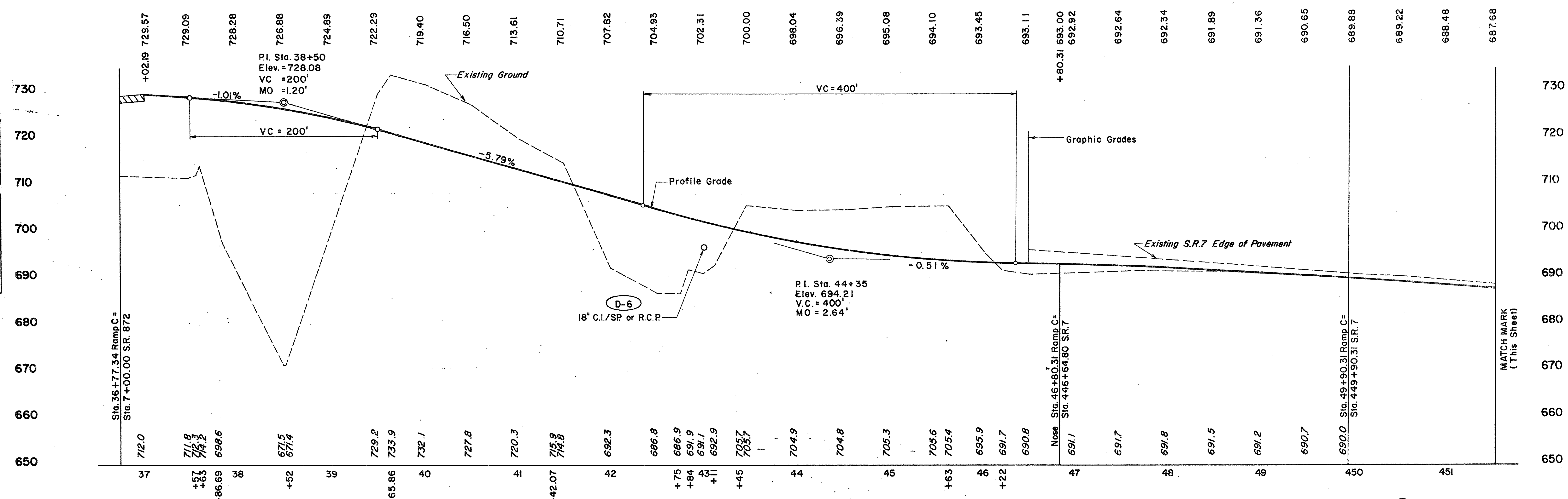
PLAN	
NOTE BOOK	SURVEYED
NO.	PLOTTED
	ALIGNMENT CHECKED
	RT OF WAY CHECKED

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	47	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00





PROFILE ℄ RAMP C

Horiz. 50 25 0 50

Vert. 10 5 0 10

For Plan View
See Sheet No. 40,43,46

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

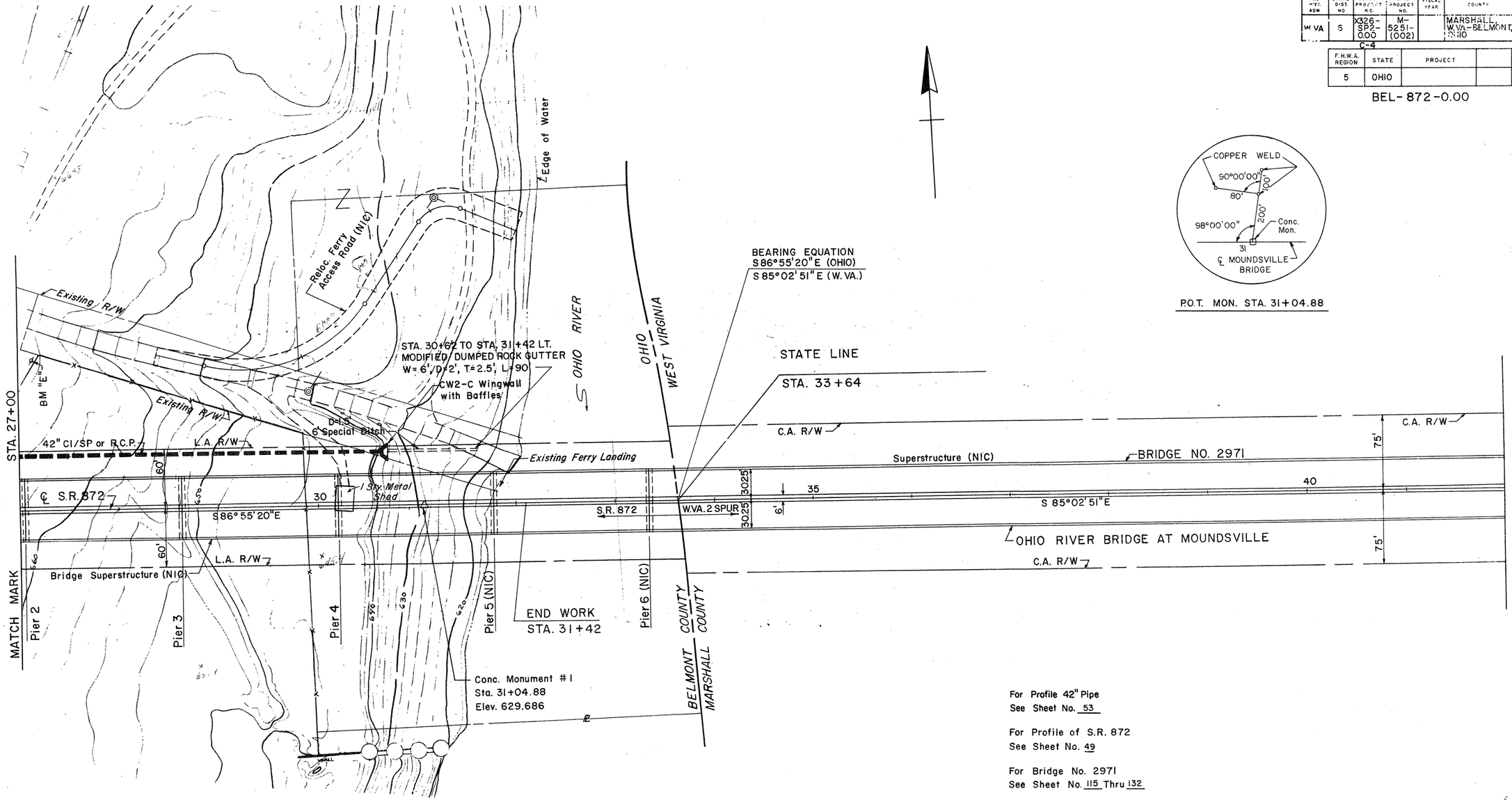
MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W VA	5	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	48	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



P.O.T. MON. STA. 31+04.88

For Profile 42" Pipe
See Sheet No. 53

For Profile of S.R. 872
See Sheet No. 49

For Bridge No. 2971
See Sheet No. 115 Thru 132

For CW2-C Wingwall Details,
See Sheet No. 54

NIC = Not in Contract

50 25 0 50

STA. 27+00 S.R. 872 TO STA. 42+00 W.VA. 2 SPUR

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

DATE BY

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	Sheet No.	Total Sheets
W. VA.	6	X386-SP2-0.00	M-5251-(002)	07	49	255

MARSHALL
W.VA.-BEL.-
MONT. OHIO

C-4

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

699.18 698.77 698.56 698.53 698.55 698.72 699.10 699.66 700.42 701.37 702.52 703.58 703.86 705.14 706.38 707.04 707.26 707.46 708.43 709.28 710.02 710.64 711.14 711.52 711.79 711.94 711.94 711.98 711.90 711.70 711.38 710.95

+90 +30 +40 +90

709.40 709.74 708.96 708.06

730 720 710 700 690 680 670 660 650 640 630 620 610 600

STA. 27+00

670' V.C.

BRIDGE SUPERSTRUCTURE
*N.I.C.

END WORK
STA. 31+42

P.V.I. Sta. 37+90
Elev. 720.38
V.C. = 1200'
M.O. = 8.40'

+2.80 %

-2.80 %

Profile Finish Grade

BRIDGE NO. 2971

-2.40 %

+2.80 %

SEE SHEET NO. 44

MATCH MARK

P.V.I. Sta. 28+55
Elev. 694.20
V.C. = 670'

℄ Pier 6

1200' V.C.

Profile Existing Ground

50 Year Frequency
Elev. 648.5

OHIO RIVER

Hannibal Pool Elev. 623.0

592.0 594.0 596.0 598.0 600.0 602.0 604.0 606.0

+55 40 +12 +27 +63 +95 41 +30 +60 +85 42

℄ Pier 2 ℄ Pier 3 ℄ Pier 4 ℄ Pier 5

662.74 660.92 656.80 655.32 657.32 656.62 650.86 648.81 646.52 645.86 645.97 645.51 640.71 633.44 631.07 626.34 622.64 619.54 613.61 606.0 604.0 602.0 602.0 603.0 603.0 602.0 602.0 603.0 604.0 604.0 602.0 600.0 598.0 596.0 594.0 592.0 590.0 590.0 590.0

+25 27 +20 28 +204 +31.9 +63 +19.3 29 +20 30 +53 +82.7 +86 31 +153 +283 +77 +95 32 +20 +32 +48 +70 +82 +92 33 +88 +30 +47 +86 34 +62 +13 +20 35 36 37 +10 38 +92 39 +14

FOR PLAN VIEW
SEE SHEET NO. 48

*N.I.C. = NOT IN CONTRACT

PROFILE ℄ MOUNDSVILLE BR.

Horiz. 50 25 0 50

Vert. 10 5 0 10

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

PROFILE SURVEYED ____ PLOTTED ____ DRAWN CHECKED ____ NOTE BOOK ____ NO. ____ B. M. = NOTED STRUCTURE NOTATIONS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X325-SP2-0.00	M-525(002)		MARSHALL, WVA BELMONT, OHIO	50	255

C-4

D-1
STA. 11+75-32' LT.-S.R. 872
1-TYPE B INLET, MODIFIED
T.G. 730.92
F.L. 726.00
76' L.F.-18" CI/SP
1-CWI-C HEADWALL MODIFIED (OHIO HW-4)
OUTLET ELEV. 706.00

D-2
STA. 39+75-93' LT.-RAMP B
1-TYPE G INLET
T.G. 701.0
F.L. 699.00-18" CI/SP OR 18" R.C.P. FROM D-44
F.L. 698.50
152 L.F.-18" CI/SP OR 18" R.C.P.
2-CY CI.B. CONC. (CONC. APRON)
STUB INTO D-8

D-3
STA. 15+50-2' RT.-S.R. 872
1-TYPE H INLET
T.C. 726.27
F.L. 720.00
126 L.F.-18" CI/SP
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
OUTLET ELEV. 685.2

D-4
STA. 17+20-2' RT.-S.R. 872
1-TYPE H INLET,
T.G. 721.53
F.L. 716.96
198 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-5

D-5
STA. 18+20-2' RT.-S.R. 872
1-TYPE H INLET
T.G. 719.08
F.L. 711.86-18" CI/SP OR 18" R.C.P. FROM D-43
F.L. 711.86-18" CI/SP OR 18" R.C.P. FROM D-4
F.L. 711.36
134 L.F.-18" CI/SP
1- CWI-C HEADWALL, MODIFIED (OHIO HW-4)
OUTLET ELEV. 675.5

D-6
STA. 43+00-25' LT.RAMP C
1-TYPE G INLET
T.G. 700.3
F.L. 697.60-18" CI/SP OR 18" R.C.P. FROM D-53
F.L. 697.10
88 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-9
1-C.Y. CI. B. CONC. (CONC. APRON)

D-7
STA. 40+85-132' RT. RAMP C
1-TYPE G INLET
T.G. 698.8
F.L. 696.73
240 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-9
1 C.Y. CI.B. CONC. (CONC. APRON)

D-8
STA. 39+75-61' RT.-RAMP B
1-TYPE G INLET
T.G. 695.0
F.L. 692.72-18" CI/SP OR 18" R.L.P. FROM D-2
F.L. 692.22
274 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-11

D-9
STA. 43+00-65' RT.-RAMP C
1-TYPE G INLET
T.G. 692.5
F.L. 690.03-18" CI/SP OR 18" R.C.P. FROM D-6
F.L. 690.03-18" CI/SP OR 18" R.C.P. FROM D-7
F.L. 89.54
120 L.F.-24" CI/SP OR 24" R.C.P.
2 C.Y. CI.B. CONC. (CONC. APRON)
STUB INTO D-10

D-10
STA. 442+50-2' LT.-S.R. 7
1-TYPE H INLET,
T.G. 703.70
F.L. 688.30-24" CI/SP OR 24" R.C.P. FROM D-9
F.L. 687.80
142 L.F.-24" CI/SP OR 24" R.C.P.
STUB INTO D-11

D-11
STA. 42+50-69' RT.-RAMP B
1-TYPE G INLET
T.G. 689.8
F.L. 685.81-18" CI/SP OR 18" R.C.P. FROM D-8
F.L. 685.81-24" CI/SP OR 24" R.C.P. FROM D-10
F.L. 685.31
458 L.F.-24" CI/SP
1 C.Y. CI.B. CONC. (CONC. APRON)
STUB INTO D-39

D-12
STA. 446+00-2' RT.-S.R. 7
1-TYPE H INLET
T.G. 698.98
F.L. 696.00
8 L.F.-12" CLAY PIPE- CONNECT TO EXISTING PIPE
24 L.F.-12" CLAY PIPE- EXTEND EXISTING PIPE
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
OUTLET ELEV. 694.0

D-13
STA. 32+00-77' LT.-RAMP D
1-TYPE G INLET
T.G. 705.8
F.L. 701.44
148 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI.B. CONC. (CONC. APRON)
STUB INTO D-14

D-14
STA. 30+50-49' LT.-RAMP D
1-TYPE G INLET
T.G. 705.2
F.L. 699.96-18" CI/SP OR 18" R.C.P. FROM D-13
F.L. 699.96-24" CI/SP OR 24" R.C.P. FROM D-35
F.L. 699.46
94 L.F.-30" CI/SP OR 30" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INYO D-17

D-15
STA. 434+00-55' LT.-S.R. 7
1-TYPE G INLET
T.G. 709.0
F.L. 707.00
198 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-16

D-16
STA. 432+00-56' LT.-S.R. 7
1-TYPE G INLET
T.G. 708.4
F.L. 705.02-18" CI/SP OR 18" R.C.P. FROM D-15
F.L. 704.52
132 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-17

D-17
STA. 430+67-58' LT.-S.R. 7
1-TYPE G INLET
T.G. 707.9
F.L. 698.99-30" CI/SP OR 30" R.C.P. FROM D-14
F.L. 703.20-18" CI/SP OR 18" R.C.P. FROM D-16
F.L. 698.49
160 L.F.-36" CI/SP OR 36" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-19

D-18
STA. 29+50-87' RT.-RAMP A
1-TYPE G INLET
T.G. 705.7
F.L. 702.70
98 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-19

D-19
STA. 30+50-96' LT.-RAMP A
1-TYPE G INLET
T.G. 705.5
F.L. 697.69-36" CI/SP OR 36" R.C.P. FROM D-17
F.L. 701.72-18" CI/SP OR 18" R.C.P. FROM D-18
F.L. 697.19
140 L.F.-36" R.C.P. OR 36" CI/SP
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
2 C.Y. CI. B. CONC. (CONC. APRON)
OUTLET ELEV. 696.39

D-20
STA. 8+72-32' RT.-S.R. 872
1-TYPE B INLET, MODIFIED
T.G. 731.16
F.L. 725.34-18" CI/SP OR 18" R.C.P. FROM D-21
F.L. 724.84
66 L.F.-18" CI/SP
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
OUTLET ELEV. 709.6

D-21
STA. 9+04-32' LT.-S.R. 872
1-TYPE B INLET, MODIFIED
T.G. 731.44
F.L. 726.00
72 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-20

D-22
STA. 90 00-26' LT.-RELOC. TWP. RD. 533
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
INLET ELEV. 701.78
64 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-23

D-23
STA. 420+50-60' LT.-S.R.7
1-TYPE G INLET
T.G. 702.50
F.L. 700.50-18" CI/SP OR 18" R.C.P. FROM D-22
F.L. 700.00
132 L.F.-24" CI/SP OR 24" R.C.P.
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
1 C.Y. CI. B. CONC. (CONC. APRON)
OUTLET ELEV. 698.68

D-31
STA. 427+00-78' LT.-S.R. 7
1-TYPE G INLET
T.G. 706.2
F.L. 703.75
76-L.F.-21" R.C.P.-CONNECT TO EXISTING PIPE
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
1-C.Y. CI. B. CONC. (CONC. APRON)
OUTLET ELEV. = 702.2

D-34
STA. 1+50-49' LT.-ACCESS RD. A
1-TYPE G INLET
T.G. 705.0
F.L. 703.00
134 L.F.-18" CI/SP OR 18" R.C.P.
2 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-35

D-35
STA. 101+50-100' LT.-RELOC.TWP. RD. 533
1-TYPE G INLET
T.G. 705.0
F.L. 702.33-18" CI/SP OR 18" R.C.P. FROM D-34
F.L. 701.83
374 L.F.-24" CI/SP OR 24" R.C.P.
STUB INTO D-14

D-36
STA. 0+90-83' RT.-ACCESS RD. C
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)
F.L. 670.00
278 L.F.-18" CI/SP
STUB INTO D-38

D-37
STA. 18+05-148' RT.-S.R. 872
1-CW2-C WINGWALL
F.L. 670.50
374 L.F.-42" CI/SP ELONG.
STUB INTO D-38

D-38
STA. 21+70-125' RT.-S.R. 872
1 TYPE G INLET
T.G. 675.0
F.L. 668.39-18" CI/SP FROM D-36
F.L. 667.50-42" CI/SP ELONG. FROM D-37
F.L. 667.00
338 L.F.-42" CI/SP ELONG.
STUB INTO D-39

D-39
STA. 23+50-164' LT.-S.R. 872
1 TYPE G INLET
T.G. 667.8
F.L. 663.79-42" CI/SP ELONG. FROM D-38
F.L. 663.78-24" CI/SP FROM D-11
F.L. 663.28
50 L.F.-42" CI/SP OR 42" R.C.P.
STUB INTO D-41

D-40
STA. 58+00-22' LT.-RELOC. TWP. RD. 533
1-TYPE G INLET
T.G. 671.6
F.L. 669.58
172 L.F.-18" CI/SP OR 18" R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-41

D-41
STA. 24+00-160' LT.-S.R. 872
1-TYPE G INLET
T.G. 667.30
F.L. 661.68-42" CI/SP OR 42" R.C.P. FROM D-39
F.L. 662.68-18" CI/SP OR 18" R.C.P. FROM D-40
F.L. 661.18
122 L.F.-42" CI/SP OR 42" R.C.P.
STUB INTO D-42

D-42
STA. 41+35-20' RT.-RELOC. TWP. RD. 533 A
1-TYPE E INLET MOD., LENGTH=8'
T.G. 672.27
F.L. 657.52-42" CI/SP OR 42" R.C.P. FROM D-41
F.L. 657.02
88 L.F.-JACKED CONDUIT 42" CI/SP OR 42" R.C.P.
512 L.F.-42" CI/SP OR 42" R.C.P.
1-CW2-C WINGWALL WITH BAFFLES
OUTLET ELEV. 638.42

FOR DETAILS TYPE E INLET MOD.
SEE SHEET NO. 53

FOR DETAILS TYPE B INLET MOD.
SEE SHEET NO. 57

D-43
STA. 19+10-2' RT.-S.R. 872
1-TYPE H INLET
T.G. 716.88
F.L. 712.30
88 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-5

D-44
STA. 439+75-2' RT.-S.R. 7
1-TYPE H INLET
T.G. 707.70
F.L. 703.50
74 L.F.-18" CI/SP OR 18" R.C.P.
STUB INTO D-2

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

DRAINAGE STRUCTURE NOTES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL, W.VA BELMONT, OHIO	51	255

C-4

D/47 STA. 417+00-48.5' LT.-S.R. 7
EXISTING INLET
T.G. 700.79
F.L. 698.27

D/48 STA. 91+45-RELOC. TWP. RD. 533-DRIVEWAY LT.
36 L.F.-18" CI/SP
INLET ELEV. 703.12
OUTLET ELEV. 702.85

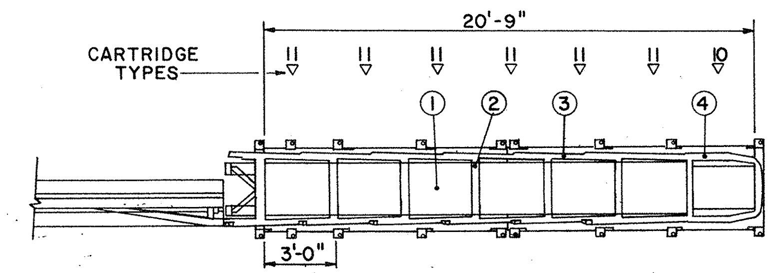
D/49 STA. 93+40-RELOC. TWP. RD. 533-DRIVEWAY LT.
56 L.F.-18" CI/SP
INLET ELEV. 703.86
OUTLET ELEV. 703.64

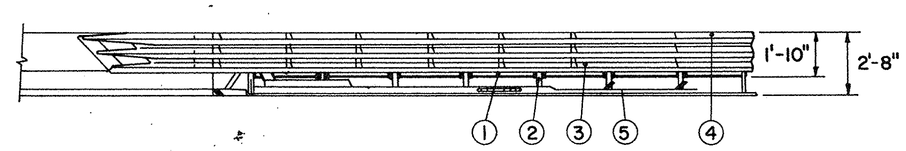
D/50 STA. 96+70-RELOC. TWP. RD. 533-DRIVEWAY LT.
50 L.F.-18" CI/SP
INLET ELEV. 705.20
OUTLET ELEV. 704.98

D/51 STA. 453+26-94' LT.-S.R. 7
EXTENSION EXISTING 66" PIPE
8 L.F.-66" R.C.P.
1-CWI-C HEADWALL, MODIFIED (OHIO HW-4)

D/52 STA. 40+25-25' LF.- RAMP C
1 TYPE G INLET
T.G. 716.2
F.L. 714.20
122 L.F.-18" CI/SP OR R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-53

D/53 STA. 41+50-25' LT.-RAMP C
1-TYPE G INLET
T.G. 709.0
F.L. 707.00-18" CI/SP OR R.C.P. FROM D-52
F.L. 706.50
148 L.F.-18" CI/SP OR R.C.P.
1 C.Y. CI. B. CONC. (CONC. APRON)
STUB INTO D-6



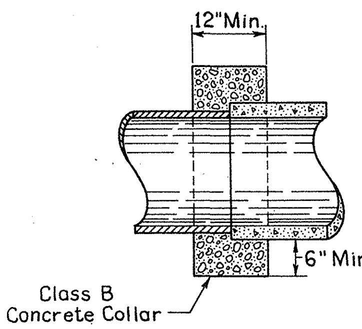


TEMPORARY IMPACT ATTENUATING DEVICE TYPE III - 6 BAY

(1) DRY CARTRIDGE
(2) DIAPHRAGM
(3) THRIE BEAM FENDER PANEL
(4) NOSE COVER
(5) DEFLECTOR PANEL

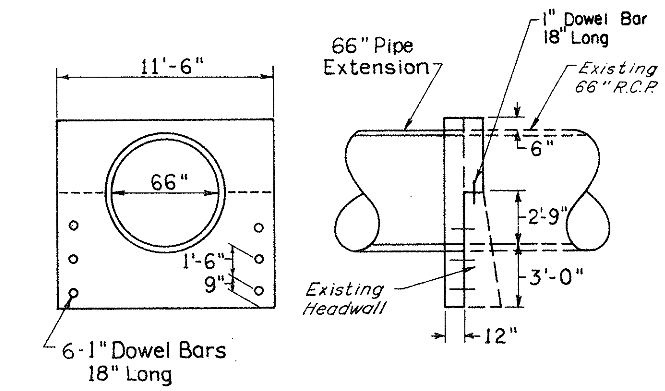
NOTES:

1. Dowel Holes shall be drilled at the location and to the depth shown on the plans and shall be approximately 1/2 inch larger in diameter than the dowel bars. The holes shall be partially filled with cement grout or rich cement mortar and the bars shall be forced into the holes at the specified depth spreading the grout mortar around the bar and solidly filling the hole. The bar and the filler shall be held in place until the filler has taken its initial set.
2. Where required that a pipe extension be joined to the end of an existing pipe with a butt joint, a masonry collar shall be provided and the cost shall be included in the price bid for the new conduit.
3. Payment for this connection of the masonry collar, dowel bars and holes and the grout mortar shall be included in the unit price bid for pertinent conduit item.



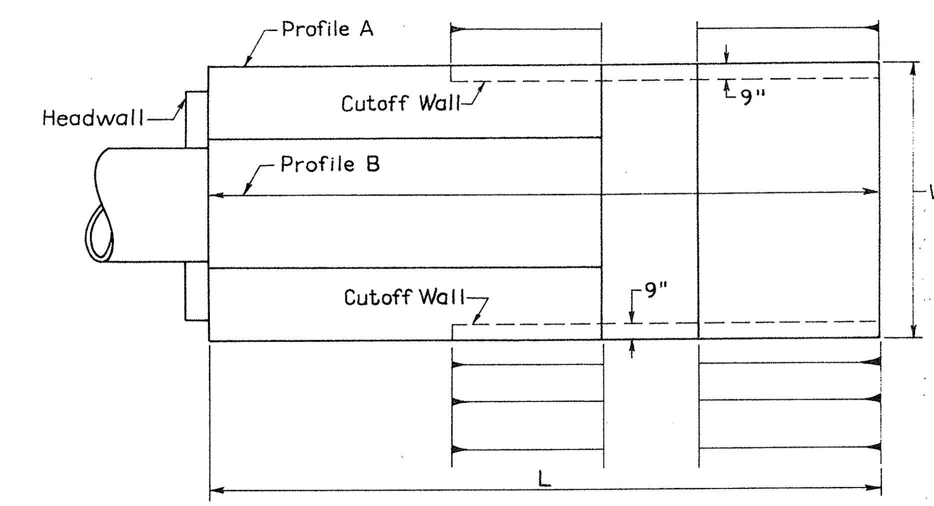
MASONRY COLLAR

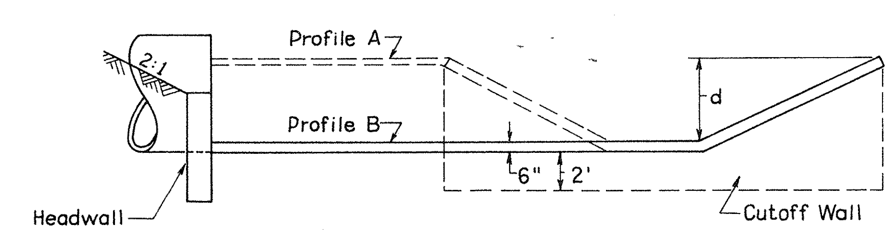
Sta. 427+00-21" R.C.P.
Sta. 446+00-12" Clay Pipe



CONDUIT CONNECTION TO EXISTING HEADWALL

STA. 453+26 - 66" R.C.P.





OUTLET PIPE GUTTER DETAIL

L, W, d and Type of Gutter, as shown on Plans.

GUTTER LOCATION

D/1	Sta. 11+75	S.R. 872
D/3	Sta. 15+50	S.R. 872
D/12	Sta. 446+00	S.R. 7
D/19	Sta. 30+50	S.R. 7
D/20	Sta. 8+72	S.R. 872
D/23	Sta. 420+50	S.R. 7
D/31	Sta. 427+00	S.R. 7

TEMP. IMPACT ATTENUATOR & DRAINAGE STRUCTURE NOTES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

W. VA. 6 X326- M- SP2- 0.00 (002) 5251- MARSHALL, W.VA.- BEL- MONT, OHIO 52 255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Dumped Rock Gutter Mod.
W = 2'
L = 25'
t = 1.0'
D = 1.0'

Concrete Gutter, Type I
W = 3'
L = 25'
t = 0.5'
D = 3.0'

Ohio HW-4 Headwall

Existing Headwall

Concrete Collar

Extension of Existing Pipe 8 L.F. 66" R.C.P. (Ohio Type A Conduit, Class V, with 1/3 Vitrified Liner)

Cutoff Walls

2' Special Ditch

Dumped Rock Gutter Mod.
W = 2'
L = 100'
t = 1.5'
D = 2'

P.I. of Shoulder

Edge of Pav't. Shoulder

Edge of Pav't.

Edge of Existing Pav't.

24'

12'

3'

3'

24'

454

453

New Guard Rail, Type I

RAMP C DECEL LANE

EXISTING S.R. 7 (BIT. PAV'T.)

℄ S.R. 7

RAMP B TAPER 40:1 Taper

New Guard Rail Type I

Edge of Existing Pav't.

Edge of Pav't. Shoulder

P.I. of Shoulder

Existing Headwall

Existing 36" R.C.P.

Existing 66" R.C.P. (Ohio Type A Conduit, Class V, with 1/3 Vitrified Liner)

STA. 453+52 - S.R.7 = STA. 10+00

9

10

11

NOTE: Epoxy Coated Concrete Pipe will be Permitted in Lieu of 1/3 Vitrified Lined Concrete Pipe.
See Note on Sheet No. 22

Scale - Horiz. & Vert.
10 0 10 20

For Detail of Dump Rock Gutter Mod., See Sheet No. 57
For Detail of Concrete Collar, See Sheet No. 51
For Details of HW-4 Headwall see Ohio DOT Standard Drawing HW-4, Dated 1-1-70. Sheet No. 55

DRAINAGE AREA = 108 ACRES
Q (25) = 140 C.F.S.
(Quantities Used are From Previous Calculation for Existing 66" Pipe)

690
680
670
660
650

℄ S.R. 7

8' Extension of Existing Pipe

2:1 on Skew

Existing 66" R.C.P.

Slope 0.70 %

Existing 36" R.C.P.

Concrete Collar

Cut-off Walls

I-Type HW-4 Headwall

9+00 10+00 11+00

PLAN & PROFILE PIPE CULVERT STA. 453+52

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

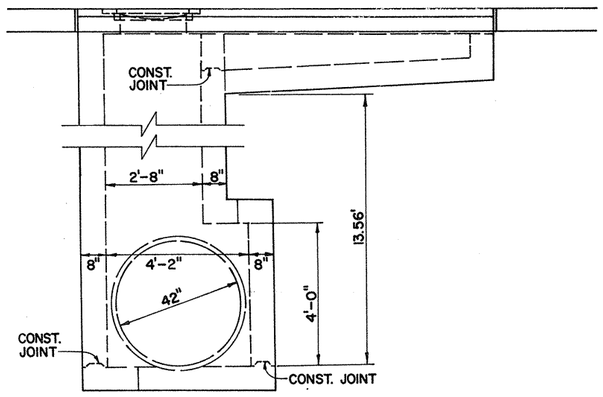
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.- BEL-MONT, OHIO	53	255

C-4

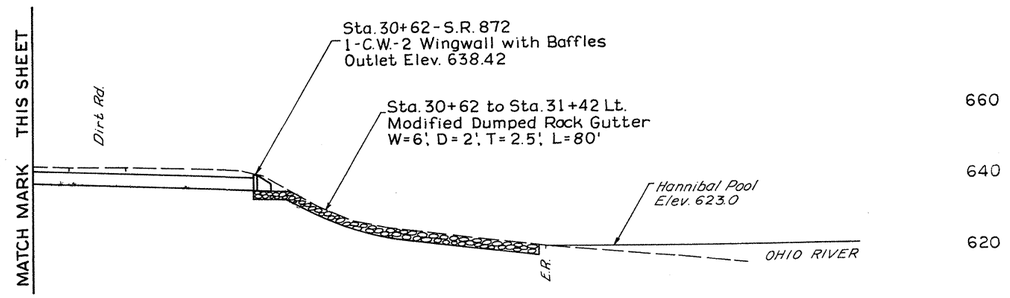
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

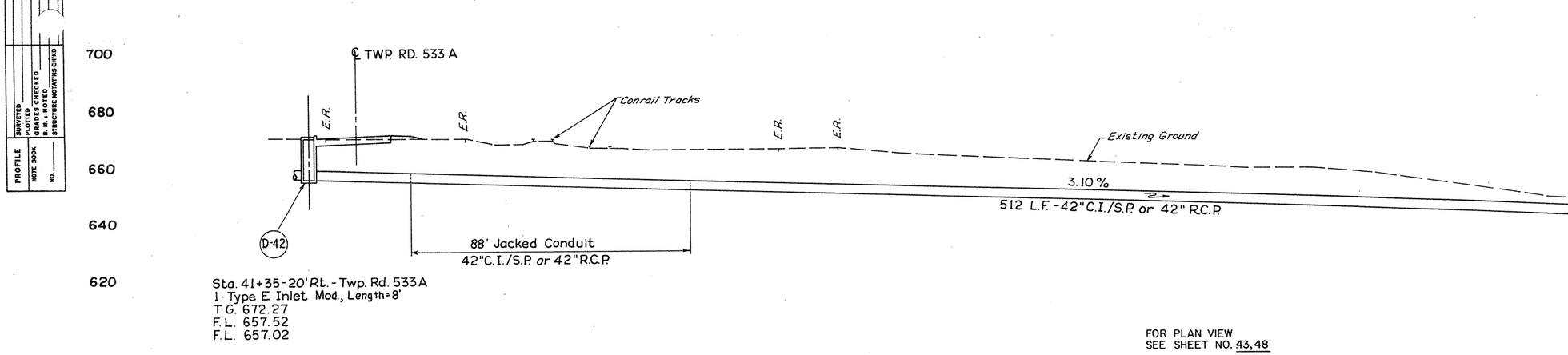
BEL-872-0.00



TYPE E INLET, MODIFIED
D-42 STA. 41+35-20' RT. RELOC. TWP. RD. 533A

FOR ALL OTHER DETAILS AND DIMENSIONS NOT SHOWN
SEE WEST VIRGINIA STANDARD DETAIL BOOK, SHEET M.S.5-B





Sta. 41+35-20' Rt. - Twp. Rd. 533A
1-Type E Inlet Mod., Length=8'
T.G. 672.27
F.L. 657.52
F.L. 657.02

FOR PLAN VIEW
SEE SHEET NO. 43,48

PIPE PROFILE D-42-S.R. 872 LT.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

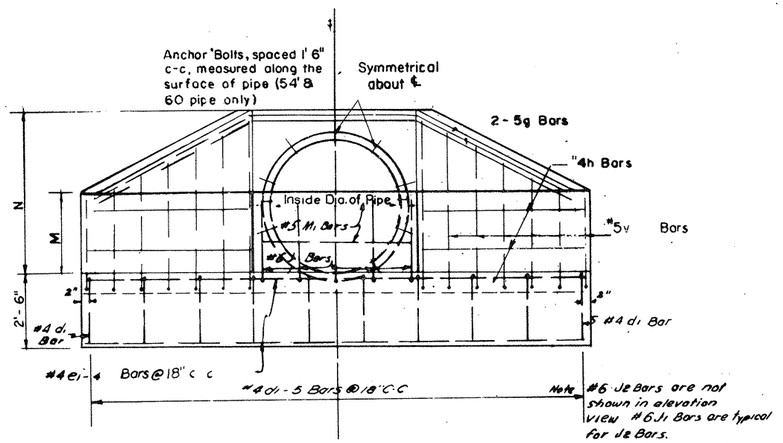
MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

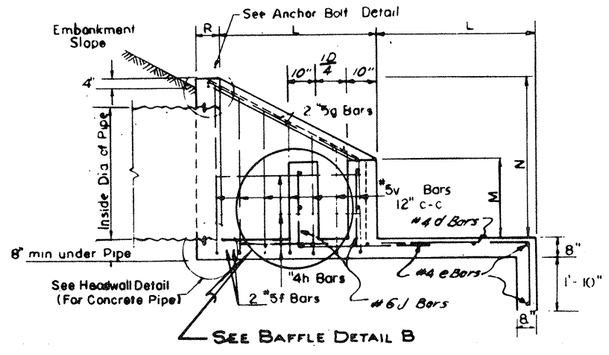
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	54	255

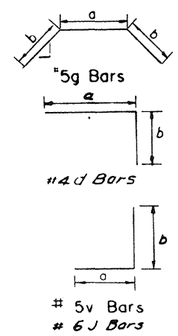
C-4



ELEVATION



SECTION X-X



DETAIL OF BENT BARS

The "Notes" and the "Construction Detail-Skewed Pipe" on Standard C W 2-C (Sheet 1 of 2) shall apply to this sheet.

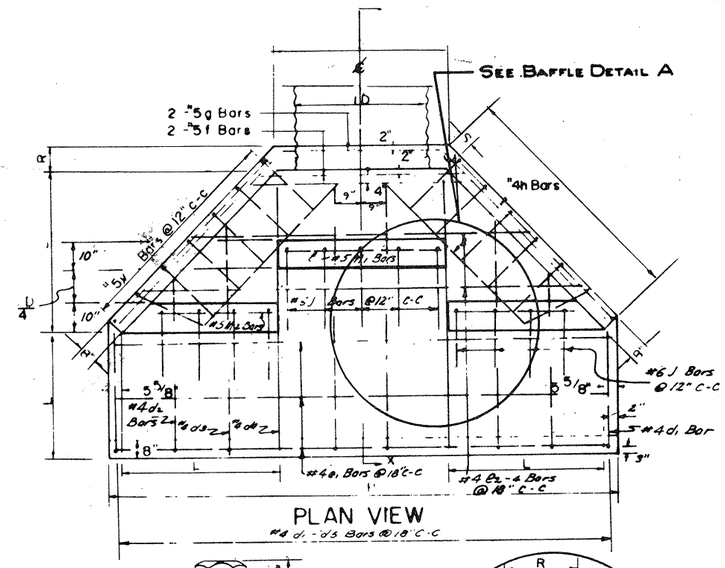
Anchor bolts shall be used on wingwalls for corrugated metal and structural plate pipe greater than 48" in diameter. Anchor bolts are not required for concrete pipe.

Anchor bolts and nuts shall conform to ASTM Specification A-307 and shall be galvanized after fabrication in accordance with ASTM Specification A-153. Anchor bolts and nuts shall be cleaned after galvanizing to provide a free running fit.

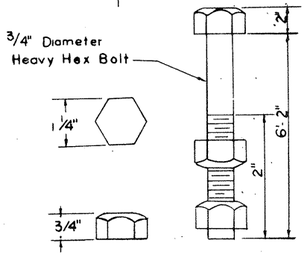
Cost of the anchor bolts and nuts shall be included in the unit price bid for the pipe.

Right-of-way fence hardware inserts shall be installed in the sidewalls during the construction of wingwalls for pipes over 48" in diameter. Dimensions and location of inserts shall conform to the "Drainage Structure Terminal Installation" Detail of the applicable right-of-way fence standard.

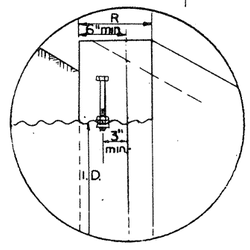
Note: A Minimum Clearance Shall Be Maintained Between Reinforcing Steel Bars. Should The Horizontal Distance Between Overlapping d And J Bars Fall Below 2", d Bars Shall Be Adjusted.



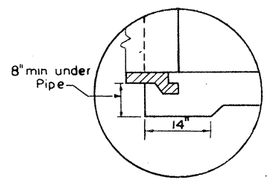
PLAN VIEW



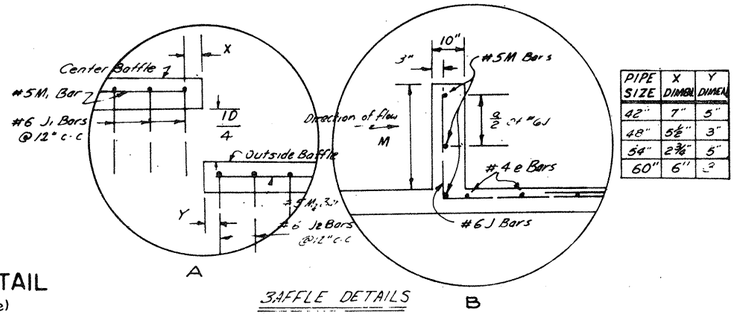
ANCHOR BOLT DIMENSIONS



ANCHOR BOLT DETAIL



BACKWALL DETAIL
(For Concrete Pipe)



BAFFLE DETAILS

PIPE SIZE	X DIMEN.	Y DIMEN.
42"	7"	5"
48"	5 5/8"	3"
54"	2 3/8"	5"
60"	6"	2"

Inside Dia. Of Pipe	Slope Of Fill	DIMENSIONS L	M	N	O	P	Q	R	S	QUANTITIES CONC. C.Y.		STEEL LBS.
42"	2:1	4'-5"	2'-2"	4'-4 8"	4'-10"	18-4"	6'-6 8"	0'-8"	0'-3 8"	6.16		368
48"	2:1	5'-0"	2'-5"	4'-11"	5'-5"	15-9 8"	7'-4 8"	0'-8"	0'-3 8"	7.71		461
54"	2:1	5'-7"	2'-8"	5'-5 8"	6'-0"	17'-6 8"	8'-2"	0'-8"	0'-3 8"	9.27		592
60"	2:1	6'-2"	2'-11"	6'-0"	6'-7"	19'-3 8"	9'-0"	0'-8"	0'-3 8"	10.06		629

BILL OF REINFORCEMENT

42" PIPE MARK	SIZE	NO. OF BARS	LENGTH a	b	Total	TYPE
d1	4	2	6'-8"	2'-1"	6'-8"	Bnt
d2	4	2	6'-6"	2'-1"	7'-7"	Bnt
d3	4	2	6'-0"	2'-1"	8'-1"	Bnt
d4	4	4	8'-6"	2'-1"	10'-7"	Bnt
e1	4	4			13'-9"	Str
e2	4	1			10'-6"	Str
e3	4	1			7'-8"	Str
J1	6	8	2'-9"	2'-0"	8'-8"	Bnt
J2	6	8	2'-0"	2'-0"	8'-0"	Bnt
M1	5	3			3'-9"	Str
M2	5	6			8'-8"	Str
f	5	2			5'-10"	Str
g	5	2	4'-4"	6'-9"	11'-10"	Bnt
h	4	8			6'-0"	Str
V1	5	2	2'-0"	2'-6"	4'-6"	Bnt
V2	5	2	2'-0"	2'-10"	4'-10"	Bnt
V3	5	2	2'-0"	3'-3"	5'-3"	Bnt
V4	5	2	2'-0"	3'-7"	5'-7"	Bnt
V5	5	2	2'-0"	3'-11"	5'-11"	Bnt
V6	5	2	2'-0"	4'-2"	6'-2"	Bnt
V7	5	2	2'-0"	4'-6"	6'-6"	Bnt

48" PIPE MARK	SIZE	NO. OF BARS	LENGTH a	b	Total	TYPE
d1	4	2	7'-8"	2'-1"	7'-8"	Bnt
d2	4	2	6'-2"	2'-1"	8'-2"	Bnt
d3	4	2	7'-8"	2'-1"	9'-8"	Bnt
d4	4	3	9'-3"	2'-1"	11'-4"	Bnt
e1	4	4			13'-9"	Str
e2	4	1			12'-6"	Str
e3	4	1			9'-8"	Str
J1	6	8	2'-8"	2'-6"	8'-8"	Bnt
J2	6	8	2'-0"	2'-6"	8'-0"	Bnt
M1	5	3			3'-9"	Str
M2	5	6			8'-8"	Str
f	5	2			5'-10"	Str
g	5	2	4'-11"	7'-8"	12'-7"	Bnt
h	4	8			6'-9"	Str
V1	5	2	2'-0"	2'-9"	4'-9"	Bnt
V2	5	2	2'-0"	3'-1"	5'-1"	Bnt
V3	5	2	2'-0"	3'-5"	5'-5"	Bnt
V4	5	2	2'-0"	3'-9"	5'-9"	Bnt
V5	5	2	2'-0"	4'-5"	6'-5"	Bnt
V6	5	2	2'-0"	4'-10"	6'-10"	Bnt
V7	5	2	2'-0"	5'-5"	7'-5"	Bnt
V8	5	2	2'-0"	5'-9"	7'-9"	Bnt

54" PIPE MARK	SIZE	NO. OF BARS	LENGTH a	b	Total	TYPE
d1	4	2	8'-3"	2'-1"	8'-3"	Bnt
d2	4	2	6'-9"	2'-1"	8'-9"	Bnt
d3	4	2	8'-3"	2'-1"	10'-4"	Bnt
d4	4	3	9'-9"	2'-1"	11'-10"	Bnt
e1	4	4			13'-9"	Str
e2	4	1			13'-6"	Str
e3	4	1			10'-4"	Str
J1	6	8	2'-8"	2'-6"	8'-8"	Bnt
J2	6	8	2'-0"	2'-6"	8'-0"	Bnt
M1	5	3			3'-9"	Str
M2	5	6			8'-8"	Str
f	5	2			6'-5"	Str
g	5	2	4'-11"	7'-8"	12'-7"	Bnt
h	4	8			6'-9"	Str
V1	5	2	2'-0"	2'-9"	4'-9"	Bnt
V2	5	2	2'-0"	3'-1"	5'-1"	Bnt
V3	5	2	2'-0"	3'-5"	5'-5"	Bnt
V4	5	2	2'-0"	3'-9"	5'-9"	Bnt
V5	5	2	2'-0"	4'-5"	6'-5"	Bnt
V6	5	2	2'-0"	4'-10"	6'-10"	Bnt
V7	5	2	2'-0"	5'-5"	7'-5"	Bnt
V8	5	2	2'-0"	5'-9"	7'-9"	Bnt
V9	5	2	2'-0"	6'-2"	8'-2"	Bnt

60" PIPE MARK	SIZE	NO. OF BARS	LENGTH a	b	Total	TYPE
d1	4	2	9'-3"	2'-1"	11'-4"	Bnt
d2	4	2	7'-3"	2'-1"	9'-4"	Bnt
d3	4	2	9'-0"	2'-1"	11'-1"	Bnt
d4	4	3	11'-9"	2'-1"	13'-10"	Bnt
e1	4	4			13'-9"	Str
e2	4	1			14'-6"	Str
e3	4	1			11'-4"	Str
J1	6	8	3'-0"	2'-11"	9'-11"	Bnt
J2	6	8	2'-3"	2'-11"	8'-2"	Bnt
M1	5	3			3'-9"	Str
M2	5	6			8'-8"	Str
f	5	2			7'-0"	Str
g	5	2	5'-6"	8'-7"	14'-1"	Bnt
h	4	8			7'-8"	Str
V1	5	2	2'-0"	3'-9"	5'-9"	Bnt
V2	5	2	2'-0"	3'-9"	5'-9"	Bnt
V3	5	2	2'-0"	4'-3"	6'-3"	Bnt
V4	5	2	2'-0"	4'-7"	6'-7"	Bnt
V5	5	2	2'-0"	5'-1"	7'-1"	Bnt
V6	5	2	2'-0"	5'-5"	7'-5"	Bnt
V7	5	2	2'-0"	5'-9"	7'-9"	Bnt
V8	5	2	2'-0"	6'-2"	8'-2"	Bnt
V9	5	2	2'-0"	6'-6"	8'-6"	Bnt
V10	5	2	2'-0"	6'-9"	8'-9"	Bnt

WEST VIRGINIA DEPARTMENT OF HIGHWAYS

SPECIAL DETAIL

PIPE CULVERT OUTLET WINGWALL WITH BAFFLES

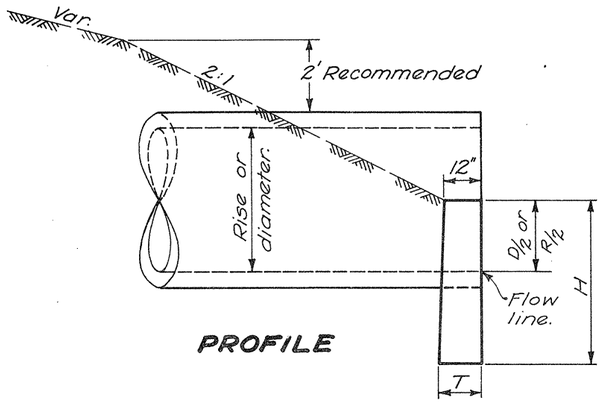
Sta. 30+62 S.R. 872

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	55	255

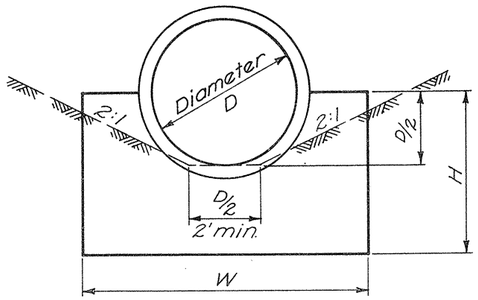
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

C-4

BEL-872-0.00



PROFILE



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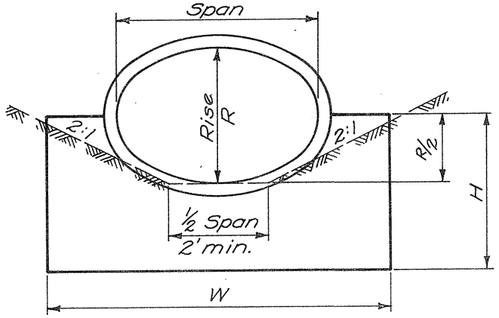


ELLIPTICAL

CONCRETE PIPE

NOTES

CONCRETE for headwalls shall be Class B.

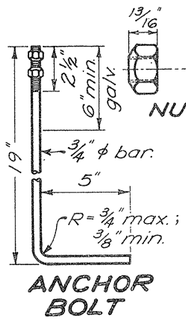
ANCHOR BOLTS (as detailed) for anchoring upstream end of metal pipes shall meet ASTM A307. The top 6" min. of bolt shall be galvanized according to ASTM A153. Nuts (as detailed) shall meet ASTM A325 and A153. Cost of anchors shall be included in the unit price bid per linear foot of 604 Conduit. Unless otherwise specified, anchor bolts shall be used only on pipes with span or rise greater than 24 inches.

HEADWALL FOR CONCRETE PIPE

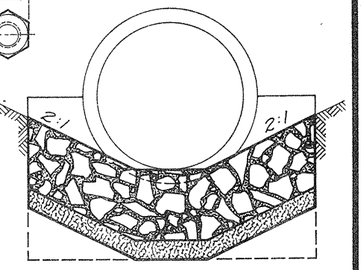
CIRCULAR					ELLIPTICAL					
D	W	H	T	Conc. Cu. Yds.	Span	Rise	W	H	T	Conc. Cu. Yds.
12"	2'-0"	3'-0"	12"	.20						
15"	2'-6"	3'-2"	12"	.25						
18"	3'-0"	3'-3"	12"	.31	23"	14"	3'-5"	3'-2"	12"	.33
21"	3'-6"	3'-4"	12"	.37						
24"	4'-0"	3'-6"	12"	.43	30"	19"	4'-2"	3'-4"	12"	.42
27"	4'-6"	3'-8"	12"	.49	34"	22"	4'-7"	3'-5"	12"	.46
30"	5'-0"	3'-9"	12"	.56	38"	24"	5'-0"	3'-6"	12"	.50
33"	5'-6"	3'-10"	12"	.62	42"	27"	5'-5"	3'-7"	12"	.55
36"	6'-0"	4'-0"	12"	.69	45"	29"	5'-10"	3'-8"	12"	.59
39"	6'-6"	4'-2"	12"	.77	49"	32"	6'-6"	3'-10"	12"	.67
42"	7'-0"	4'-3"	12"	.84	53"	34"	7'-2"	4'-0"	14"	.82
48"	8'-0"	4'-6"	14"	1.09	60"	38"	8'-5"	4'-2"	14"	1.01
54"	9'-3"	4'-9"	14"	1.32	68"	43"	9'-8"	4'-4"	16"	1.32
60"	10'-6"	5'-6"	16"	1.93	76"	48"	11'-0"	5'-0"	16"	1.79
66"	11'-9"	5'-9"	18"	2.42	83"	53"	12'-4"	5'-2"	18"	2.23
72"	13'-0"	6'-0"	18"	2.77	91"	58"	13'-7"	5'-5"	18"	2.53
78"	14'-3"	6'-3"	20"	3.37	98"	63"	14'-10"	5'-7"	20"	3.07
84"	15'-6"	6'-6"	22"	4.05	106"	68"	16'-2"	5'-10"	20"	3.42
90"	16'-9"	6'-9"	22"	4.51	113"	72"	17'-6"	6'-0"	22"	4.05
96"	18'-0"	7'-0"	24"	5.31						
102"	19'-3"	7'-3"	26"	6.20						
108"	20'-6"	7'-6"	26"	6.78						
114"	21'-9"	7'-9"	28"	7.81						
120"	23'-0"	8'-0"	30"	8.93						

HEADWALL FOR CORRUGATED METAL PIPE

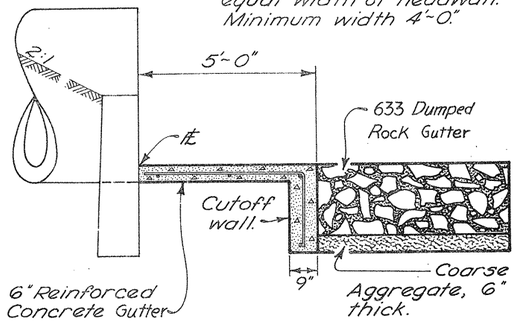
CIRCULAR					PIPE ARCH					
D	W	H	T	Conc. Cu. Yds.	Span	Rise	W	H	T	Conc. Cu. Yds.
12"	2'-0"	3'-0"	12"	.21						
15"	2'-6"	3'-2"	12"	.27	18"	11"	3'-0"	3'-0"	12"	.31
18"	3'-0"	3'-3"	12"	.33	22"	13"	3'-6"	3'-0"	12"	.37
21"	3'-6"	3'-4"	12"	.39	25"	16"	4'-0"	3'-2"	12"	.43
24"	4'-0"	3'-6"	12"	.46	29"	18"	4'-6"	3'-3"	12"	.48
27"	4'-6"	3'-8"	12"	.53						
30"	5'-0"	3'-9"	12"	.60	36"	22"	5'-6"	3'-5"	12"	.61
33"	5'-6"	3'-10"	12"	.68						
36"	6'-0"	4'-0"	12"	.76	43"	27"	6'-6"	3'-7"	12"	.74
39"	6'-6"	4'-2"	12"	.84						
42"	7'-0"	4'-3"	12"	.92	50"	31"	7'-8"	3'-9"	12"	.90
48"	8'-0"	4'-6"	12"	1.10	58"	36"	9'-0"	4'-0"	12"	1.09
54"	9'-3"	4'-9"	12"	1.33	65"	40"	10'-0"	4'-2"	12"	1.25
60"	10'-6"	5'-6"	12"	1.78	72"	44"	11'-0"	4'-4"	12"	1.43
66"	11'-9"	5'-9"	12"	2.06	73"	55"	13'-0"	4'-9"	12"	1.84
72"	13'-0"	6'-0"	12"	2.37	87"	63"	15'-6"	5'-2"	14"	2.56
78"	14'-3"	6'-3"	14"	2.94	103"	71"	18'-6"	5'-6"	16"	3.50
84"	15'-6"	6'-6"	14"	3.30	114"	77"	20'-0"	5'-9"	18"	4.18
90"	16'-9"	6'-9"	16"	4.00						
96"	18'-0"	7'-0"	16"	4.40						
102"	19'-3"	7'-3"	18"	5.28						
108"	20'-6"	7'-6"	20"	6.21						
114"	21'-9"	7'-9"	22"	7.25						
120"	23'-0"	8'-0"	24"	8.38						



ANCHOR BOLT

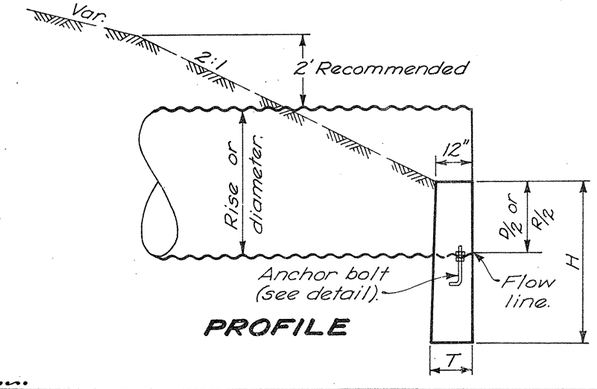


Width of protection shall equal width of headwall. Minimum width 4'-0"

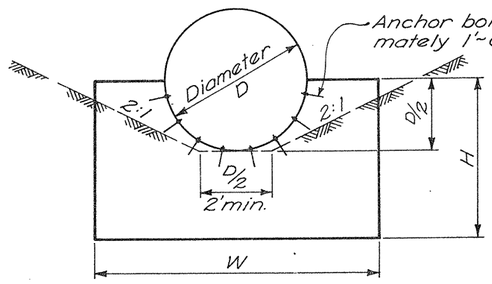


CHANNEL PROTECTION DETAIL

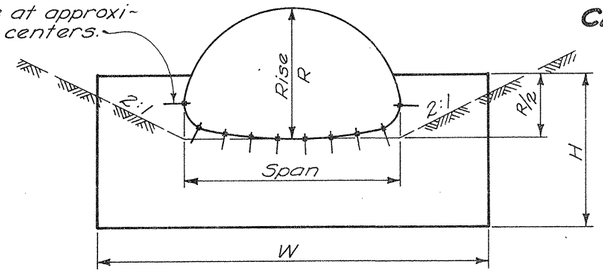
Cutoff wall depth (2'-6" min.) is variable to match required thickness of rock.



PROFILE



CIRCULAR



PIPE ARCH

CORRUGATED METAL PIPE

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

DATE 1-1-'70

HEADWALLS

STANDARD CONSTRUCTION DRAWING HW-4

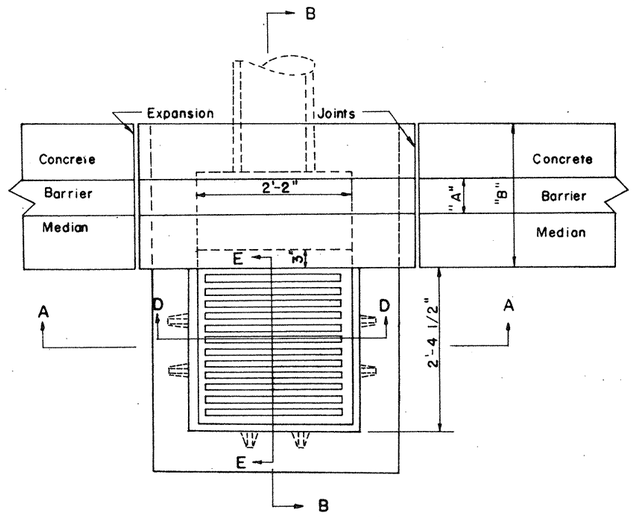
APPROVED R.C. Gatti ENGR, L. & D.

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

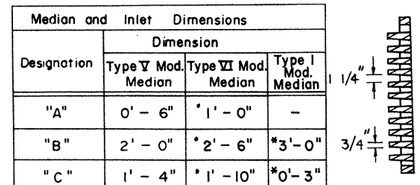
C-4

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL. MONT, OHIO	56	255

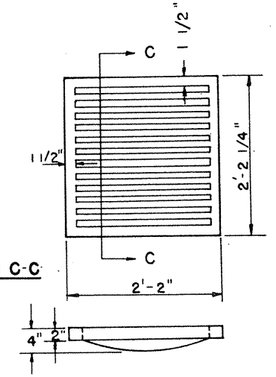


Median and Inlet Dimensions			
Designation	Dimension		
	Type V Mod. Median	Type VI Mod. Median	Type I Mod. Median
"A"	0'-6"	*1'-0"	–
"B"	2'-0"	*2'-6"	*3'-0"
"C"	1'-4"	*1'-10"	*0'-3"
"D"	3'-7"	*4'-1"	*2'-6"

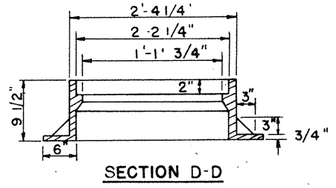
*Unless otherwise specified



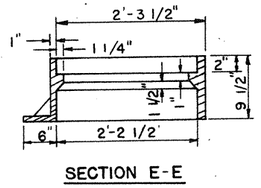
SECTION C-C



GRATING

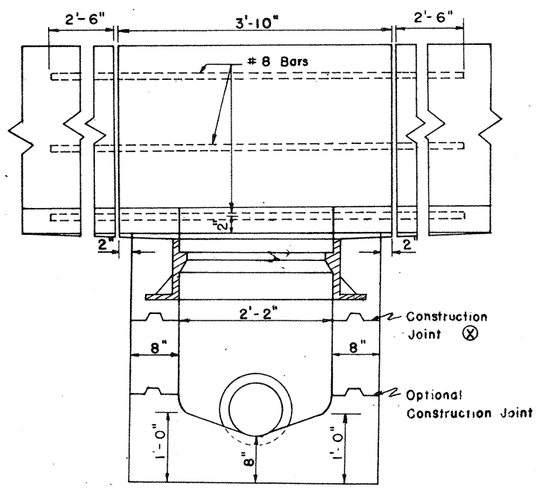


SECTION D-D

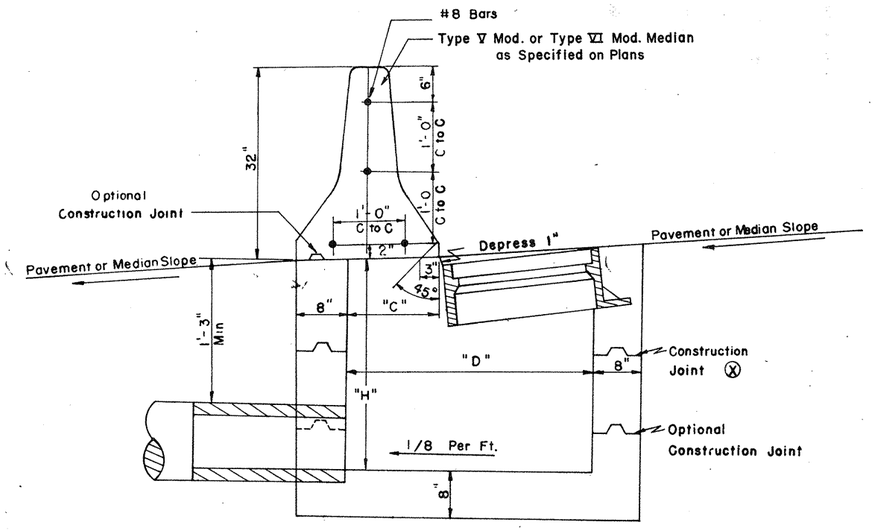


SECTION E-E

DETAIL OF FRAME

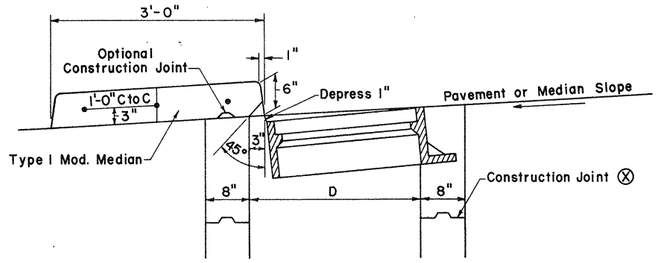


SECTION A-A



SECTION B-B

D-4, D-5, D-10, D-12, D-43, D-44



SECTION B-B

D-3

NOTES:

This inlet is intended for use with Type V and VI Medians (Concrete Barrier Medians) as specified on the Plans.

All inlet concrete shall be Class B Concrete.

The types and sizes of pipes to be used with the inlet shall be as specified on the Plans.

Details show pipe entering one side of the inlet; however, pipes may enter any or all sides as called for on the Plans. Also, slope of the bottom of the inlet is shown in one direction; however, the intent is to slope away from inlet pipe and toward outlet pipe.

When the bell of concrete pipe is placed in the inlet, the inside of the bell shall be filled with concrete up to the flow line.

Reinforcing steel shall be new billet steel of intermediate grade of the size and length shown and shall conform to the requirements of Subsection 709.1 of the Specifications.

Castings are to be of the design shown and are to be of gray iron meeting the applicable requirements of Subsection 709.10 of the Specifications.

All exposed edges at construction joints shall be beveled 3/4".

When the grading contract is let separately from the paving contract, the inlet shall be built up to the Construction Joint ⊗, just under the grating frame, and capped with a cover made of 2" timbers by the grading contractor, with the cost of the cover included in the unit price bid by the grading contractor for the inlet. The remainder of the inlet shall be completed and paid for as part of the paving contract. When grading and paving are let as one contract, the Contractor may build up to Construction Joint ⊗ and cap with the timber cover and then complete the inlet during the paving phase.

The cost of furnishing and placing inlet concrete, grating and frame shall be included in the unit price bid for Type H Inlet. The cost of furnishing and placing median concrete and reinforcing bars shall be included in the unit price bid for Type V or VI Median as the case may be.

Unit price bid for Type H Inlet will be for depths up to and including an "H" of five feet. Inlets of a depth greater than an "H" of five feet will be paid additionally, per cubic yard of Class B Concrete, for the extra amount of concrete in the side walls.

Where changes in Plans during construction require increases in depth, there will be no additional reimbursement up to an "H" of five feet. Increases over five feet will be paid additionally, per cubic yard of Class B Concrete, for the extra amount of concrete in the sidewalls.

TYPE H INLET

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

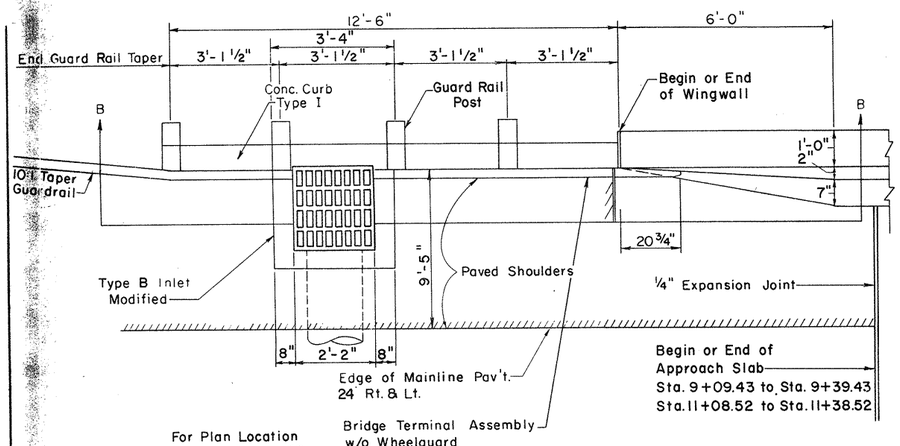
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FEDERAL PROJECT NO.	FISCAL YEAR		SHEET NO.	TOTAL SHEETS
W. VA.	G	X326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA. BELMONT, OHIO	57	255

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

LOCATION

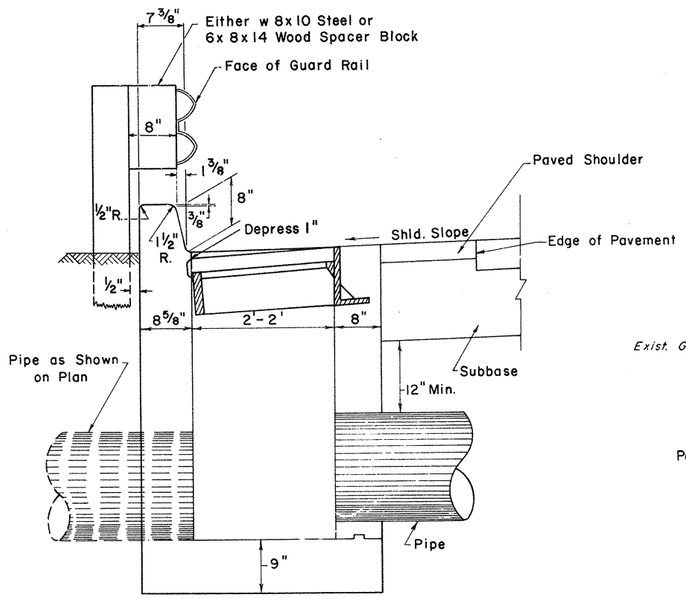


For Plan Location
See Sheet No. 40

For Bridge Terminal Assembly
See Sheet No. 71,72

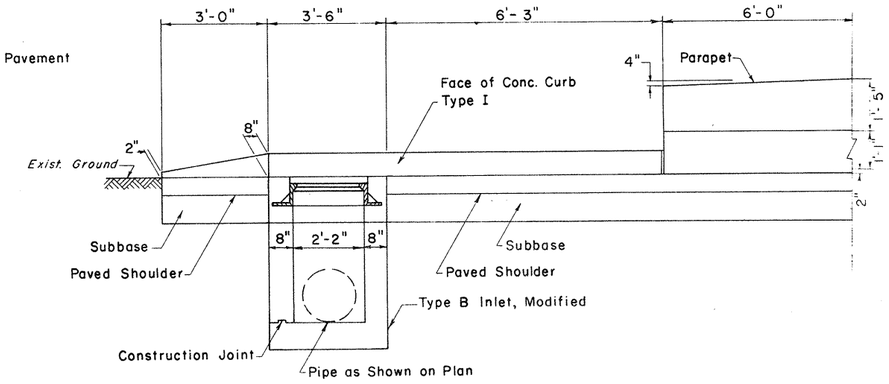
PLAN

No Scale



SECTION A-A

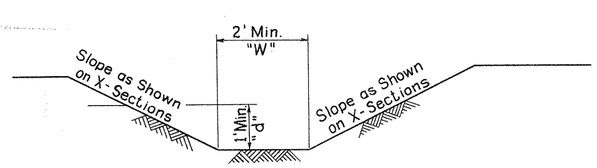
No Scale



SECTION B-B

No Scale

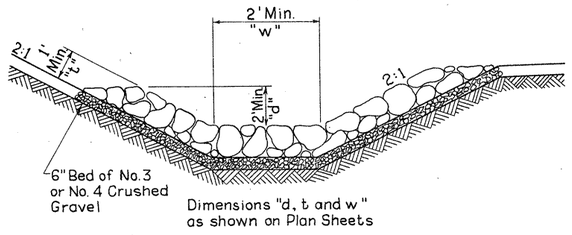
TYPE B INLET - MODIFIED



Dimensions "d" and "w" as shown on Plan Sheets

SPECIAL DITCH DETAIL

No Scale

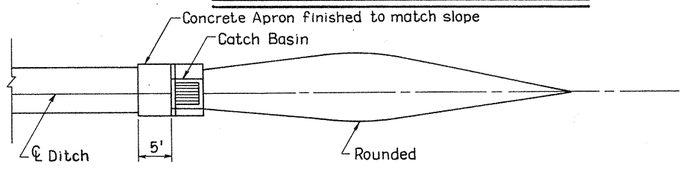


Dimensions "d, t and w" as shown on Plan Sheets

DUMPED ROCK GUTTER, MODIFIED

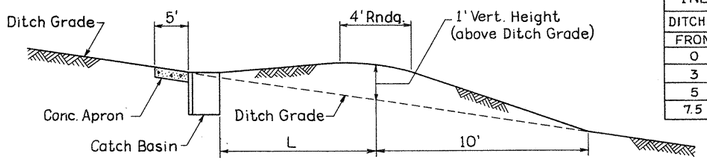
No Scale

NOTE: Payment for the 6" Bed of No. 3 or No. 4 Crushed Gravel shall be included in the unit price for Dumped Rock Gutter, Modified, Item 633-3



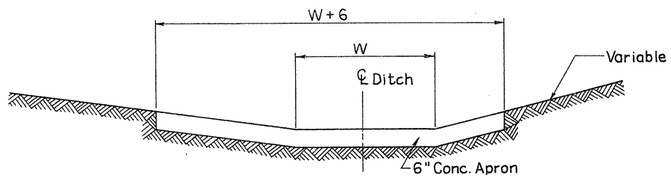
PLAN OF ROADSIDE DITCH GRADING AT CATCH BASIN

No Scale



PROFILE OF ROADSIDE DITCH GRADING AT CATCH BASIN

No Scale



UPSTREAM END VIEW OF CONCRETE APRON

No Scale

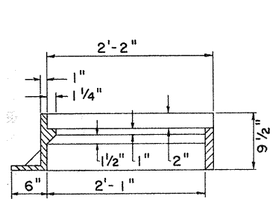
INLET MOUNDING TABLE		
DITCH GRADE (%)		L, HORIZ. LENGTH (FT.)
FROM	TO	
0	3	10
3	5	9
5	7.5	8
7.5	UP	SPECIAL DESIGN

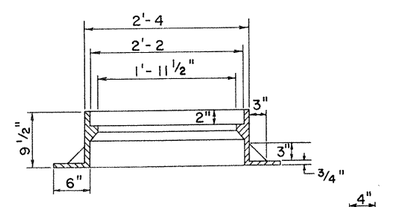
NOTES:

BASINS IN SAG - When catch basin is placed in a sag, omit the earth dike and longitudinal slope of grate, also provide concrete apron on each side of basin.

CONCRETE APRON - to be adjusted in such a manner that the outside edges be at equal elevations.

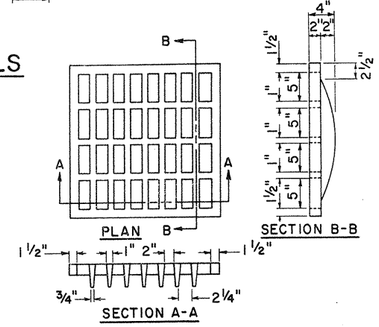
COST - of the concrete apron shall be paid for as Item 601-2, Class B Concrete. The cost of the downstream dike is to be included in the unit price bid for the inlet.





FRAME DETAILS

No Scale



GRATE DETAIL

SPECIAL DETAILS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE

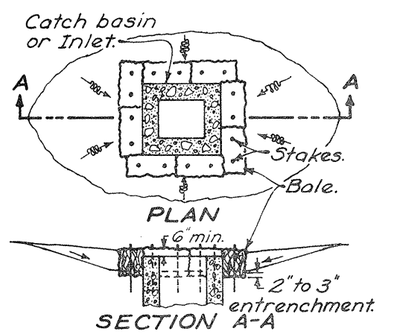
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

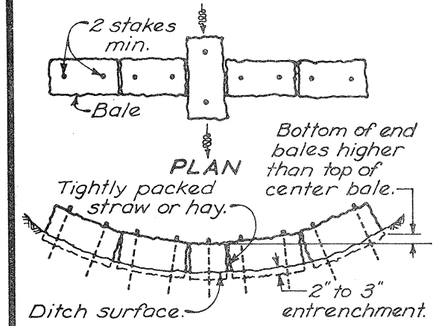
BEL-872-0.00

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-525I (002)		MARSHALL, W.VA., BEL-MONT, OHIO	58	255

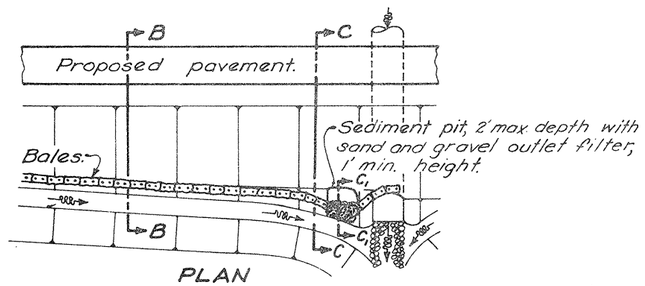
STRAW OR HAY BALES

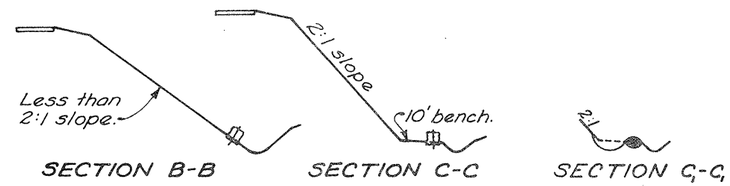


BALE INLET FILTER



BALE DITCH CHECK





BALE FILTER BERM

BALE PLACEMENT: Bales shall be tightly placed, adjacently, and entrenched 2" to 3" before staking; or a small amount of loose soil shall be lightly compacted along the upstream edge of the bales.

Each bale shall be firmly staked with a minimum of 2 stakes at least 3' in length. Stakes shall be wooden 2"x 2", reinforcing bars or fence posts, as approved by the engineer.

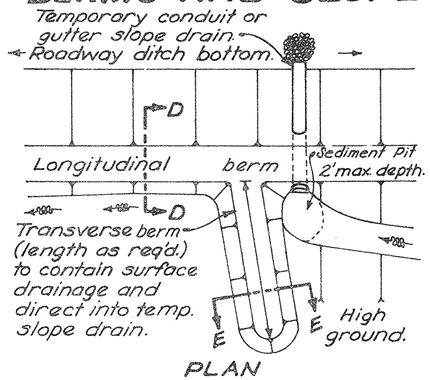
Loose straw or hay shall be scattered for a distance of 10' on the upstream side of each ditch check, and shall be wedged between and under staked bales.

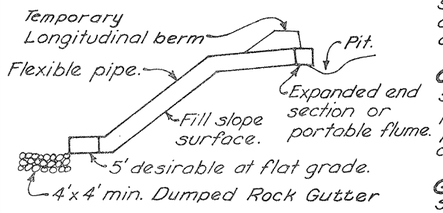
SEDIMENT PITS shall be provided where directed by the Engineer and their cost included in the price bid for adjacent 642 Items.

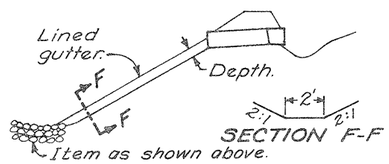
BASIS OF PAYMENT: Straw or hay bale installation shall be paid for under Item 642, Each, Straw or hay bales. Cost will include placing, staking, maintaining and removing.

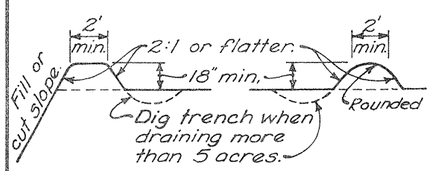
Not to scale.

BERMS AND SLOPE PROTECTION









GENERAL: Berms & drains shown shall be used when earthwork operations are suspended for any appreciable time and/or as directed by the Engineer. Smaller dikes used at the end of a day's operation shall be considered as part of the earthwork.

Temporary slope drains shall be suitably positioned and anchored to prevent movement or undermining, as directed by the Engineer.

LONGITUDINAL BERMS: shall be constructed of suitable 207 material and compacted to 85% maximum density.

CONDUITS for slope drains shall be corrugated steel pipe, corrugated or smooth plastic pipe, rubber conduit, or an approved equal.

GUTTERS for slope drains shall be lined with rock channel protection, crushed aggregate slope protection, portland cement concrete, bituminous concrete, plastic sheeting (on slopes 4:1 max.), partial pipe section or approved equal.

SEDIMENT PITS shall be provided where directed by the Engineer and their cost included in the price bid for adjacent 642 Items.

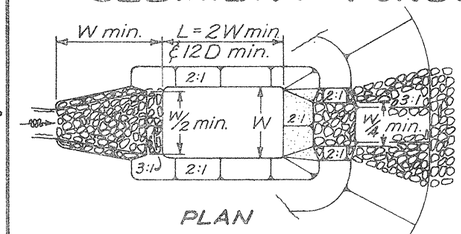
BASIS OF PAYMENT: Temporary slope drains will be measured per linear foot installed with the necessary inlet and outlet preparation and installation as well as removal included in this unit bid price.

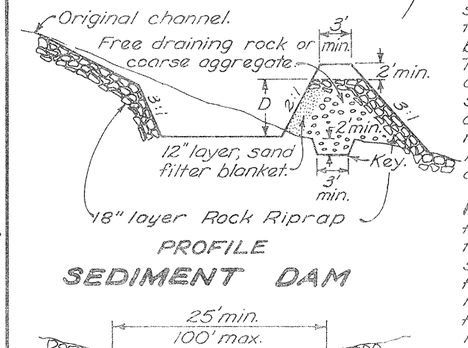
TEMPORARY SLOPE DRAINS RECOMMENDED SIZES

Area in acres	Pipe Sizes			Gutter depth
	Smooth	Corrugated	Half-round	
0-4	6"	6"	18"	8"
4-8	8"	12"	18"	8"
8-12	10"	15"	21"	12"

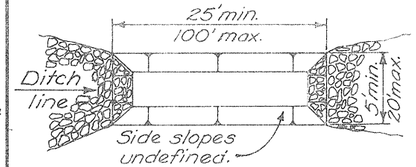
Not to scale.

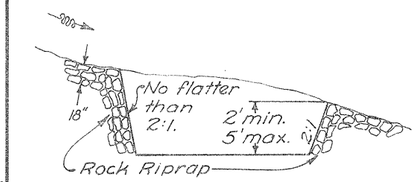
SEDIMENT PONDS & DAMS





SEDIMENT DAM





SEDIMENT POND

PAYMENT CONT: in place which unit price will include site preparation, construction of a key, furnishing the necessary material, construction, removal, and disposition of the dam when no longer required as well as final site restoration.

EMBANKMENT for sediment basin construction shall be as per 207 compacted as directed by the Engineer.

MAINTENANCE: Sediment pits, dams and ponds shall be acceptably maintained. Deposited sediment shall be removed when the initial volume has been reduced one-half. The sand filter blanket on sediment basins shall be replaced when deposited sediment is removed. The cost of maintenance shall be covered by Item 642.

FILTERS: Plastic filter fabric, as approved by the engineer, may be substituted for the sand filter blanket on sediment dams. Such fabrics may be cleaned in lieu of replacement, when approved by the Engineer.

SIZE: A series of smaller basins or dams may be substituted for a larger basin or dam when approved by the Engineer.

BASIS OF PAYMENT: Sediment ponds will be measured per cubic yard excavated which unit price shall include excavation, disposition of excavated material, and removal and restoration when no longer required, along with the furnishing of rock riprap for inlet and outlet control. Excavation of storage areas for sediment basins will be paid at the unit price for sediment ponds.

Sediment dams will be measured per cubic yard

Not to scale.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

DATE 8-1-78

TEMPORARY EROSION CONTROL

STANDARD CONSTRUCTION DRAWING MC-11

APPROVED W. J. Cunningham ENGR., L. & D.

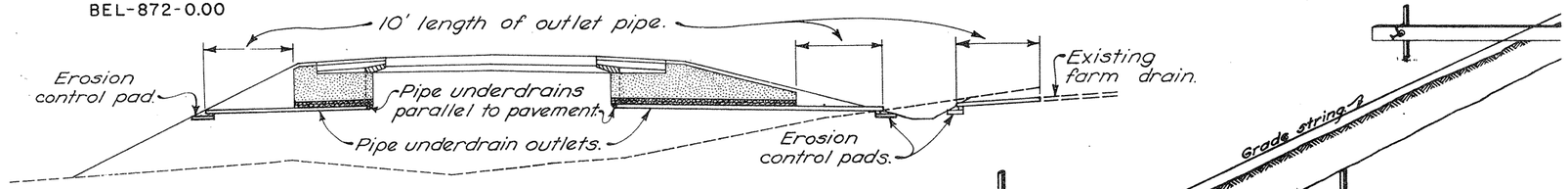
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

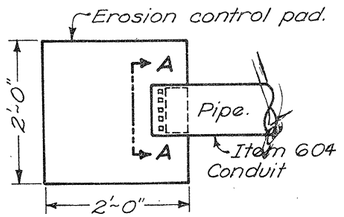
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	59	255

C-4

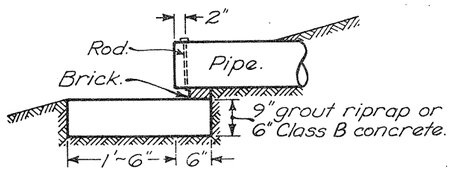
CONSTRUCTION METHODS



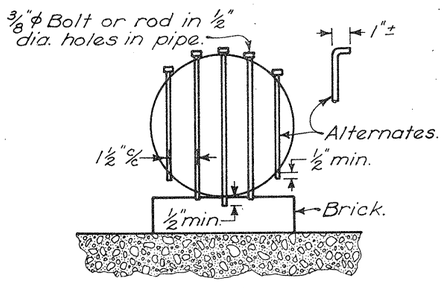
UNDERDRAIN OUTLET SECTION



PLAN



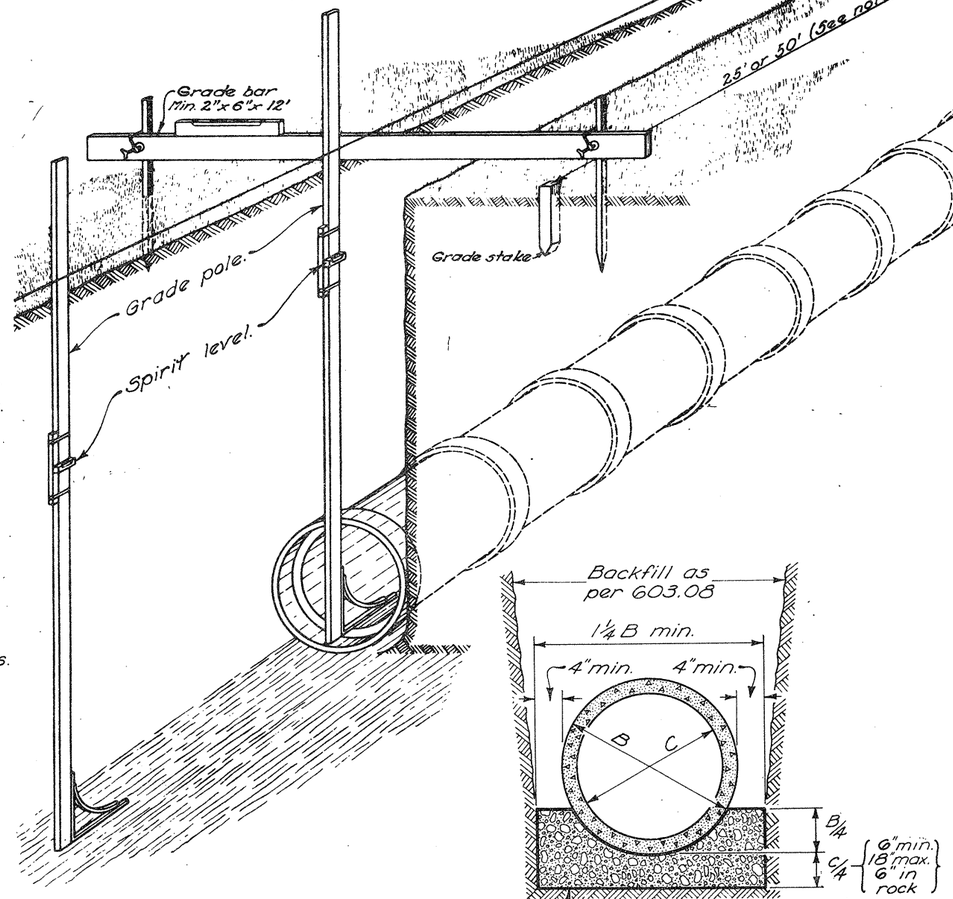
PROFILE



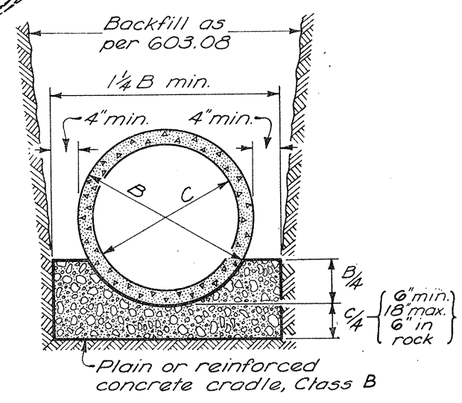
SECTION A-A

Conduit Size	4"	6"	8"	10"	12"	15"	18"
No. of Bolts	2	3	5	6	7	9	11

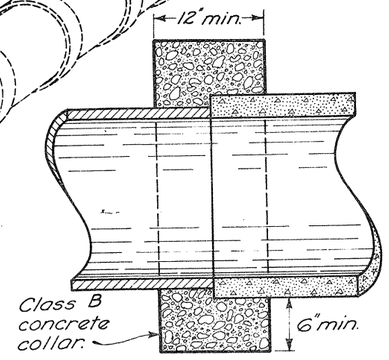
ANIMAL GUARD AND EROSION CONTROL PAD FOR OUTLET PIPE



LAYING PIPE

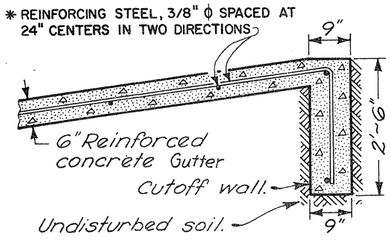


CONCRETE CRADLE CLASS A BEDDING



MASONRY COLLAR

✻ If wire fabric is used in the slab, #3 bars @ 24" centers, overlapping the fabric 12", may be used in the cutoff wall.



RIPRAP CUTOFF WALL

Cutoff wall shall be included in the price bid for Item 633-1 6" Reinforced Concrete Gutter

NOTES:

GRADE STAKES shall be set at the following intervals:
For grades less than 0.70% ~25 ft.
For grades of 0.70% and over ~50 ft.

GRADE POLE shall be a straight pole dressed with corners rounded, size depending on length but approximately 1"x 2". The pole shall be equipped with a metal bracket on the bottom with a projecting length of 12". Notches shall be cut on the pole for the depth of the flowline below the grade string and for the depth of trench. A spirit level shall be used on the pole to determine when the pole is vertical.

ALTERNATE METHODS: The Engineer may approve other methods of determining alignment and gradient of pipe lines if the Contractor can demonstrate that the same degree of accuracy can be obtained as can be obtained by use of the method shown on this drawing.

MASONRY COLLARS: Where plans require that a pipe extension be joined to the end of an existing pipe with a butt joint, a collar shall be provided and the cost shall be included in the price bid for new conduit.

EROSION CONTROL PADS AND ANIMAL GUARDS shall be provided at the outlet end of all pipe underdrains and farm drains except when they outlet into a drainage structure.

The steel bolts or rods for the animal guard shall be galvanized per 710.10. In lieu of drilling or punching the 1/2" diameter holes into the pipe, a metal collar meeting all of the above requirements, may be clamped on the end of the pipe, if approved by the Engineer.

Payment for the erosion control pads and the animal guards shall be included in the price bid for Item 604 __" Conduit,

BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

DRAINS AND SEWERS

STANDARD CONSTRUCTION DRAWING MC-4

APPROVED E. J. Schaefer ENGR., R.D.

DATE
6-1-65
6-13-69
7-26-76

FED. HWY. ADM.	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA BELMONT, OHIO	60	255

C-4

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

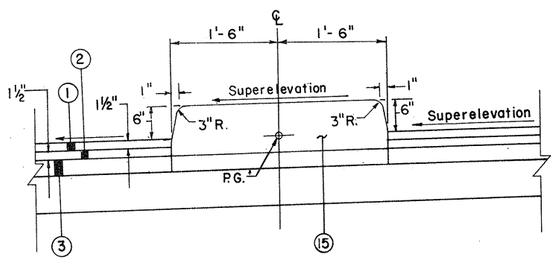
Notes:

1. Median Shall be Constructed in Sections Having a Length of Approximately 10 Feet.
2. Where the Ohio Route 7 Existing Median is to be Removed for the Maintenance of Traffic it Shall be Restored ~~and the Cost for this Replacement Shall be included in the Various Maintenance of Traffic Bid Items.~~ *as indicated on Sheet 61.*

LEGEND

(1) Hot-Laid Bituminous Concrete Wearing Course, (Stone, Gravel or Slag), Item 401-2(1), Tons
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1(1), Tons
(4) Class I Aggregate Base Course, Item 307-1, C.Y.
(8) Bituminous Material, Item 409-2, Gallons

(3) Hot-Laid Bituminous Concrete Base Course (Stone, Gravel or Slag), Item 401-1(1), Tons
(15) Median, Item 610-6 (Type 1 Modified), L.F.

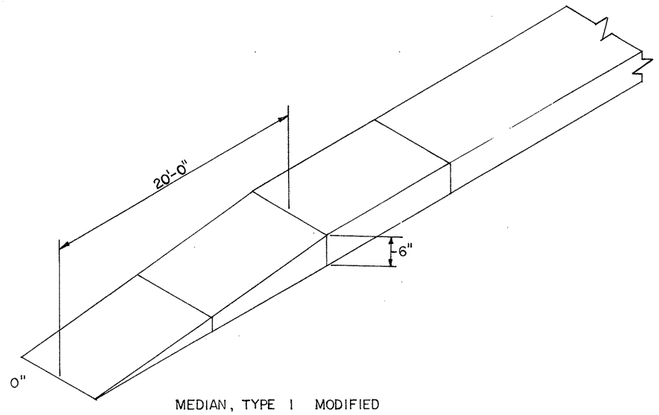


TYPE I MODIFIED MEDIAN

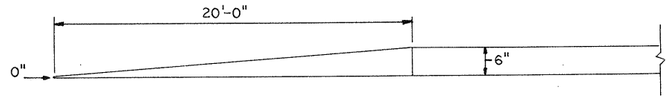
SUPERELEVATION SECTION

Sta. 13+60 to Sta. 16+80 S.R. 872

NO SCALE



MEDIAN, TYPE 1 MODIFIED



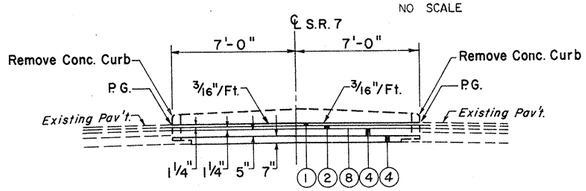
EDGE OF PAVEMENT

ELEVATION

DETAIL MEDIAN TAPER

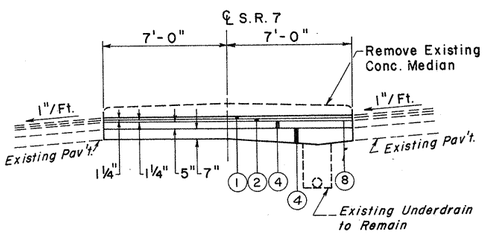
Sta. 13+60 To 13+80 SR 872

NO SCALE



MEDIAN DETAIL

Sta. 429+30 to Sta. 431+70 S.R.7

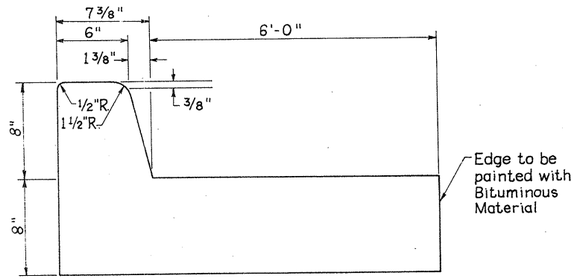


MEDIAN DETAIL

Sta. 444+10 to Sta. 447+00 S.R.7

S.R. 7 MEDIAN OPENING DETAILS

For Temporary Roadways
See Sheet No. 28



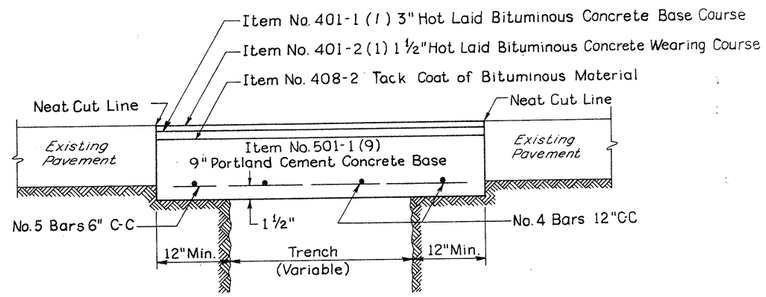
COMBINATION CONCRETE CURB AND GUTTER

TYPE I MODIFIED

Sta. 41+00 to Sta. 43+50 Twp. Rd. 533 A

NO SCALE

Sta. 420+50 S.R. 7
Sta. 430+67 S.R. 7
Sta. 439+75 S.R. 7
Sta. 442+50 S.R. 7
Sta. 26+35 S.R. 872 Lt. (Power Plant Access Road)



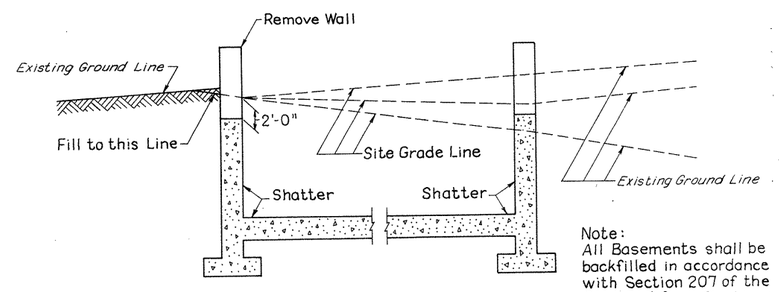
Note:
The pavement restoration shall be accomplished as soon as the back-filling has been completed. ~~If the contractor would elect to postpone the pavement restoration, he will maintain the traveled lanes in a satisfactory manner with either aggregate or asphalt at his own expense.~~

Notes:

1. Bituminous surface shall be placed in accordance with Section 401 Specifications and Special Provisions.
2. Crushed Aggregate shall be placed in accordance with Section 307 of the Specification and Special Provisions.
3. Backfill shall be placed in accordance with Section 207 of the Specifications and Special Provisions.
4. The cost of all pavement shall be included in the unit bid prices bid for respective Item 604 Storm Drains and Item 675, Sanitary Sewers.
5. Cost of Reinforcing Steel will be included ~~in the 9" Portland Cement Concrete Base.~~ *as indicated in Note 4 above.*

PERMANENT PAVEMENT REPLACEMENT DETAIL

NO SCALE



Note:
All Basements shall be backfilled in accordance with Section 207 of the Standard Specifications.

TREATMENT OF BASEMENT WALLS

Sta. 97+20 Twp. Rd. 533
NO SCALE

SPECIAL DETAILS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	
1	60	REVISED NOTES.	5/5/82	C.R.LING

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

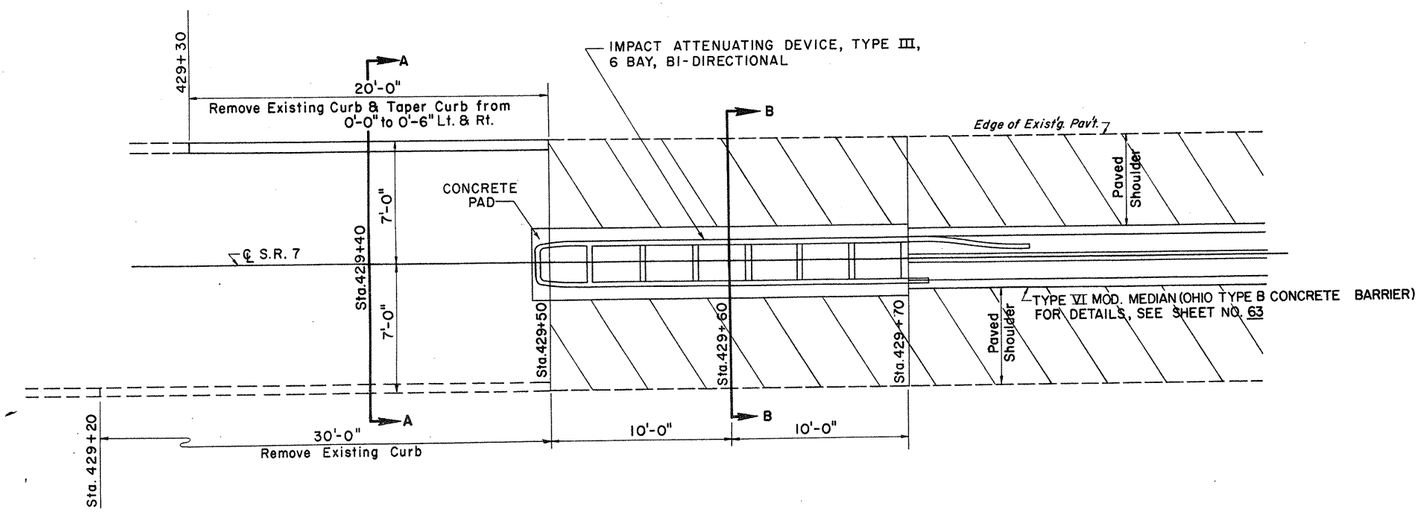
NOTE NUMBER | ALIGNMENT CHECKED | PT. OF WAY CHECKED | NO

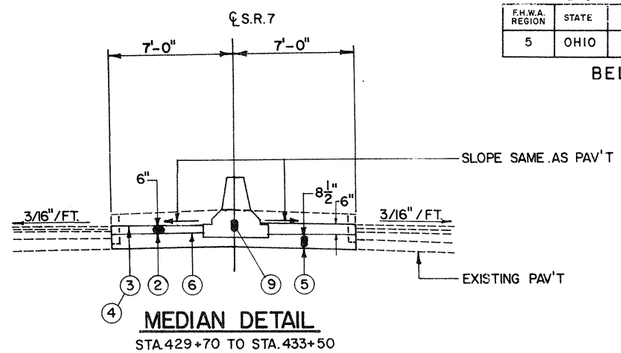
FED. ROAD ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	6326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	61	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

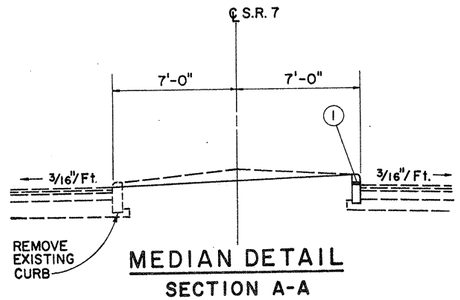
BEL-872-0.00





MEDIAN DETAIL

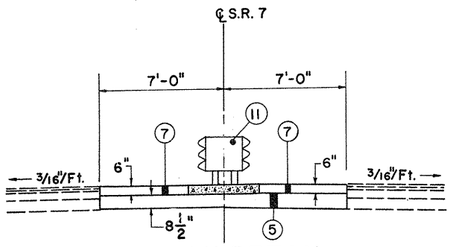
STA. 429+70 TO STA. 433+50



MEDIAN DETAIL

SECTION A-A

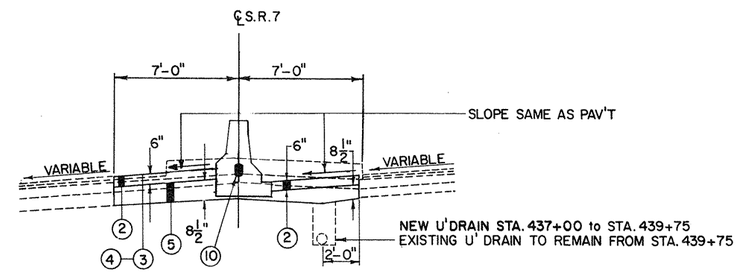
Sta. 429+40



MEDIAN DETAIL

SECTION B-B

Sta. 429+50

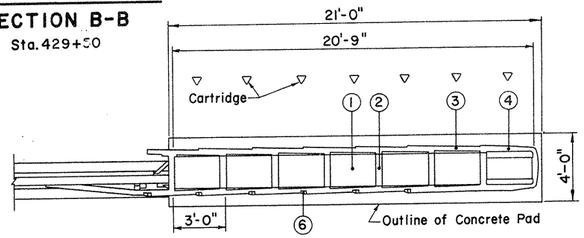


MEDIAN DETAIL

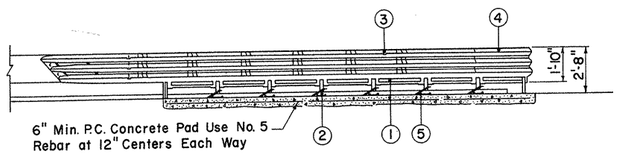
STA. 433+50 TO STA. 444+25

NOTES:
1. TRANSITION CROSS-SLOPE FROM .083'/' AT STA. 444+25 TO .013'/' AT STA. 445+25.
2. WIDTH TRANSITION OF MEDIAN FOR PIER NO. 1 STA. 10+23.93 S.R. 872 SHALL BE IN ACCORDANCE WITH MC-9, SHEET NO. 63

NOTES:
1. Cost of concrete pad to be included in unit price bid for Item 664-1 (III), Impact Attenuating Device.



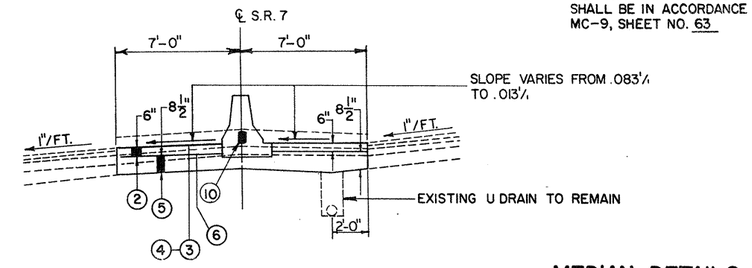
PLAN



ELEVATION

IMPACT ATTENUATING DEVICE
(6 BAY BI-DIRECTIONAL)

LEGEND:
1. Dry Cartridge
2. Diaphragm
3. Thrie Beam Fender Panel
4. Nose Cover
5. Stabilizing Chain
6. Deflector Panel



MEDIAN DETAIL

STA. 444+25 TO STA. 447+00

LEGEND

1. Plain Concrete Curbing Item 610-1 (Type 1)
2. Hot Laid Bituminous Concrete Base Course (Stone, Gravel or Slag), Item 401-1 (1) Tons
3. Tack Coat Aggregate, Item 408-1, Tons
4. Bituminous Material, 408-2, Gallons
5. Class 1 Aggregate Base Course, Item 307-1, C.Y.
6. Bituminous Material, Item 409-2, Gallons
9. MEDIAN TYPE VI MOD. (OHIO TYPE B CONCRETE BARRIER), ITEM 610-6 LF
10. MEDIAN TYPE VI MOD. (OHIO TYPE C CONCRETE BARRIER), ITEM 610-6 LF
11. IMPACT ATTENUATING DEVICE, ITEM 664-1 (III) EACH
7. Concrete Sidewalk, Item 609-1 S.Y.

MEDIAN DETAILS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

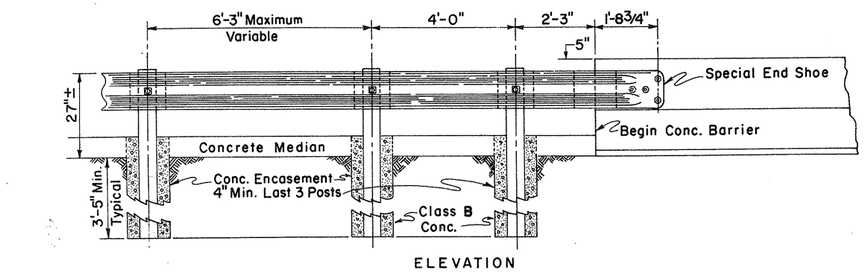
NOTES: (1) Payment for Guardrail Connections to be included in the unit price for Item 607-5
(2) For Type D & Type E connections, See Ohio D.O.T Standard Dwg. GR-3A, See Sheet No. 72

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	62	255

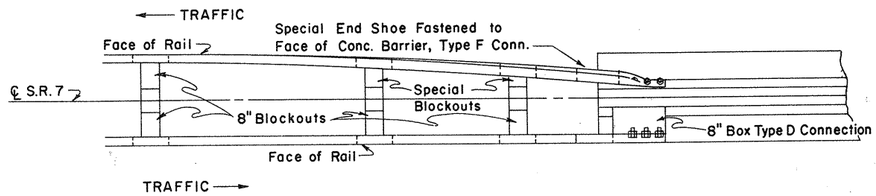
C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



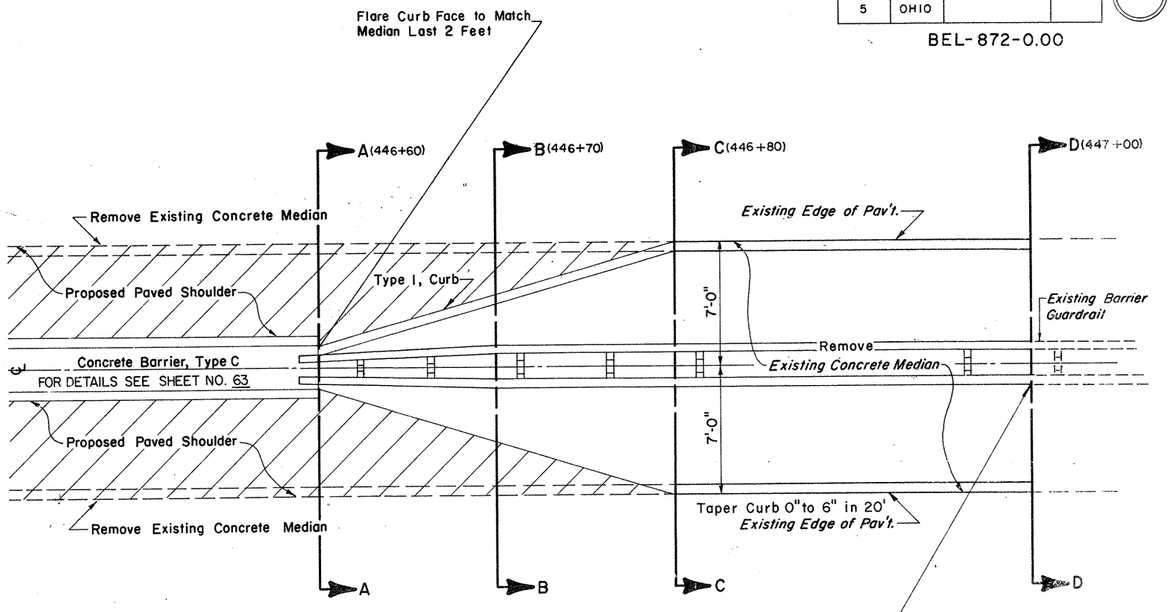
ELEVATION

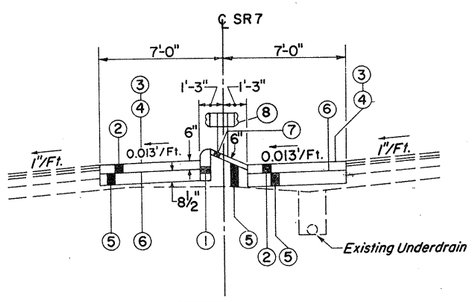


PLAN

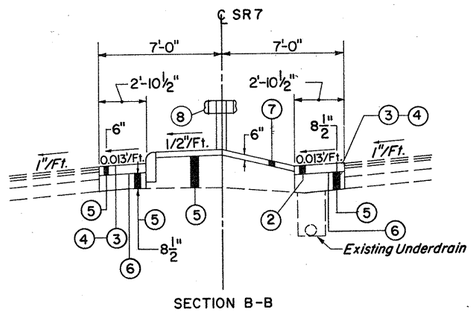
BARRIER GUARD RAIL TO CONC. BARRIER CONNECTION

S.R.7 Sta. 446+60.00 to Sta. 447+00

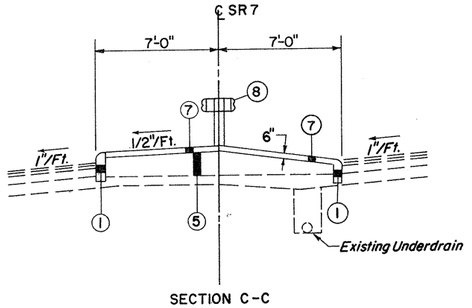




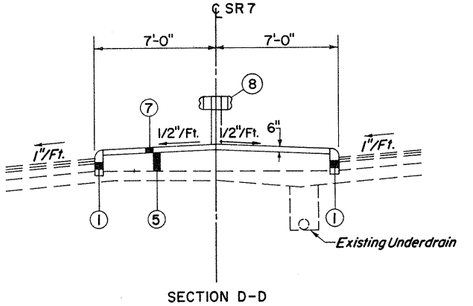
SECTION A-A
MEDIAN DETAIL
STA. 446+60



SECTION B-B
MEDIAN DETAIL
STA. 446+70



SECTION C-C
MEDIAN DETAIL
STA. 446+80



SECTION D-D
MEDIAN DETAIL
STA. 447+00

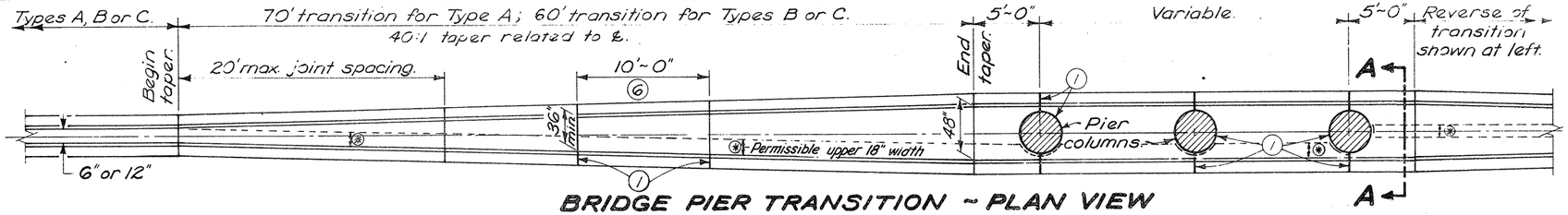
(1) Plain Concrete Curbing, Item 610-1 (Type I) L.F.
(2) Hot-Laid Bituminous Concrete Base Course, (Stone, Gravel or Slag), Item 401-1(1), Tons
(3) Tack Coat Aggregate, Item 408-1, Tons
(4) Bituminous Material, Item 408-1, Gallons
(5) Class I Aggregate Base Course, Item 307-1, C.Y.
(6) Bituminous Material, Item 409-2, Gallons
(7) Concrete Sidewalk, Item 609-1, S.Y.
(8) Type 5 Guardrail, Item 607-5(1), L.F. (Ohio Type 5 Barrier Rail)

MEDIAN DETAILS

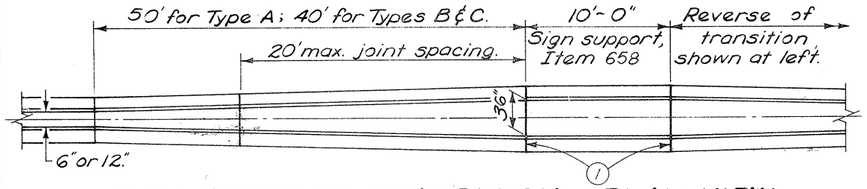
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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



BRIDGE PIER TRANSITION ~ PLAN VIEW



SIGN SUPPORT TRANSITION ~ PLAN VIEW

(For 50" barriers the upper 18" varies from 6" or 12" to 36" width)

LEGEND

① Expansion joint, ¾" min. Preformed Filler 708.1

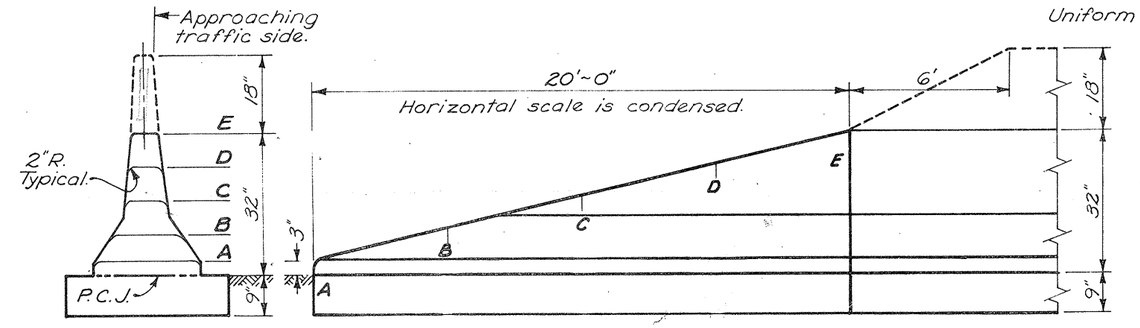
② No. 8 deformed steel bars, 12" long, spaced on staggered (except Type D) 4' centers. The End Terminal will require shorter dowel between points A & B. Omit dowels when top is constructed integral with the base.

③ 1" Radius or ¾" chamfer.

④ 10" Radius

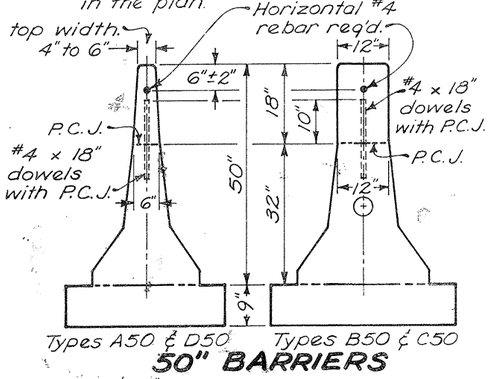
⑤ 1" Radius

⑥ 658 Overhead Sign Support Foundation, if specified in the plan.



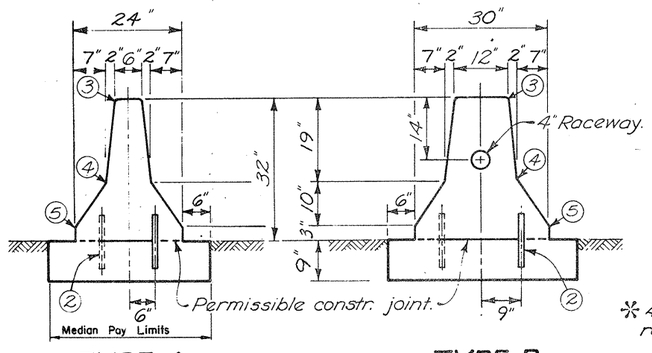
END VIEW PROFILE VIEW

END TERMINAL DETAIL



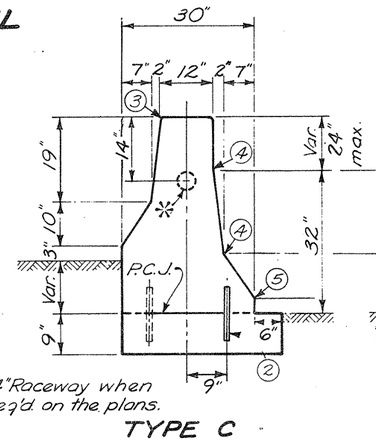
Types A50 & D50 Types B50 & C50

50" BARRIERS



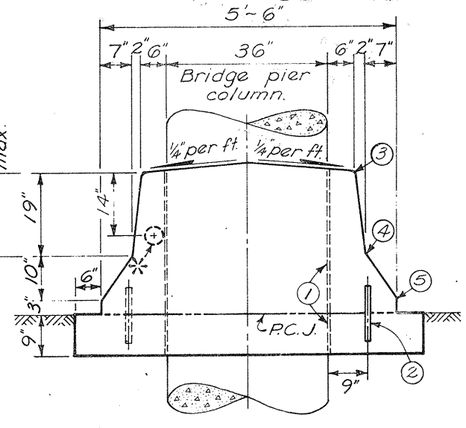
TYPE A (TYPE V MOD. MEDIAN BARRIER)

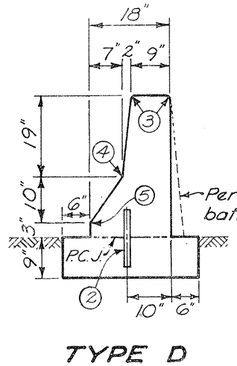
TYPE B (TYPE VI MOD. MEDIAN BARRIER)



TYPE C (TYPE VI MOD. MEDIAN BARRIER)

NORMAL SECTIONS





TYPE D

SECTION A-A

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If inlet top is slip formed the expansion joints adjacent to it may be omitted.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts or tooled or sawed joints shall have a 1½" min. depth. All joints shall be constructed for the full height of the barrier including the base.

LIGHTING: The 4" polyvinyl chloride raceway shall be included in the unit price bid for 610.

MEASUREMENT: 610 Concrete Barrier, including transitions and end terminals and pier sections, is paid for in linear feet as one of the four types (A, B, C or D) or as Type A50, B50, etc. (for 50" high barrier), ~~with appropriate deductions for other items such as:~~

~~534 - 3 Median Inlet — 20 Lin. Ft.~~

~~625 Light pole foundation or pullbox — 25 Lin. Ft.~~

~~644 Overhead sign support foundation — 10 Lin. Ft.~~

50 INCH HIGH BARRIER shall be built where specified on the plan, with the same bottom 32" shape and 9" foundation as the standard Type specified. The upper 18" may be constructed integral with the bottom, or separately with #4 rebar dowels at 4' max. spacing. Start and end dowels 6" from barrier vertical joints.

On variable width (i.e. pier transition) barrier sections not having sign support foundations, the upper 18" may be built with a 6" or 12" top width (per Type specified) on the ℄ or along one face of the barrier. At End Terminals taper the upper 18" to 0" in 6'.

CONCRETE, cast-in-place, to be Class B. All precast concrete shall meet the requirements of 715.19 with 6 ± 2% air void content in the hardened concrete.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BEL.MONT, OHIO	63	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

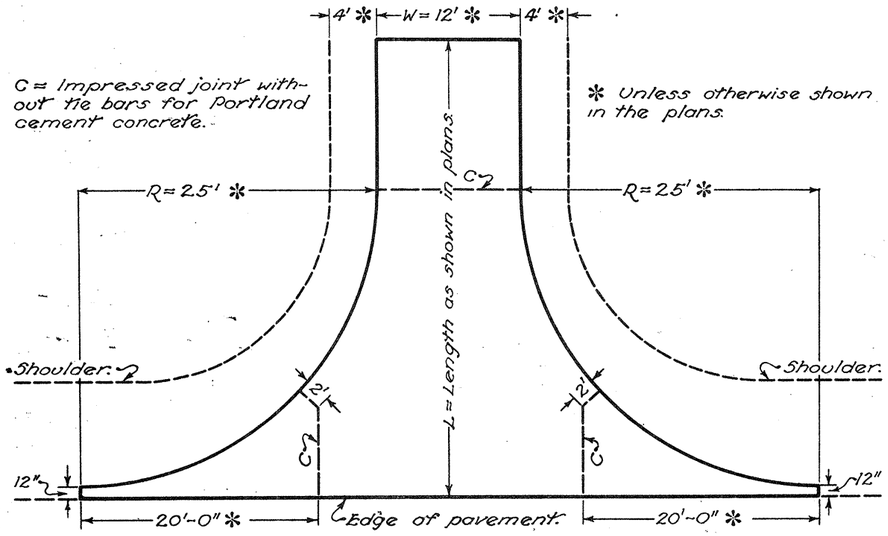
CONCRETE BARRIER

DATE 1-1-74 11-1-77

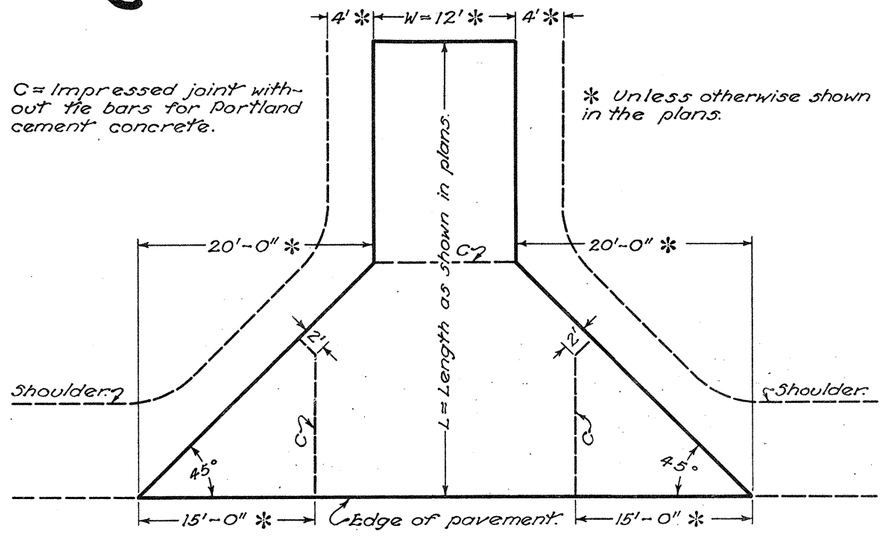
STANDARD CONSTRUCTION DRAWING MC-9

APPROVED [signature] ENGR., L. & D.

DRIVEWAYS



TYPE 1 DRIVEWAY



TYPE 2 DRIVEWAY

NOTES

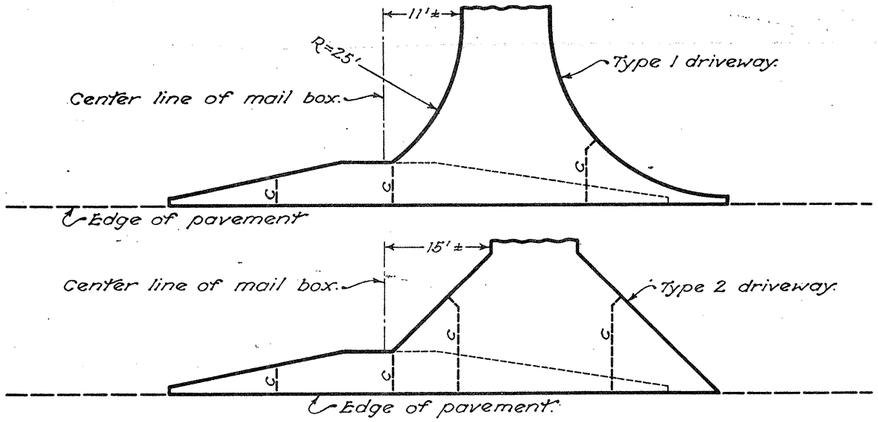
GENERAL:— The design details shown hereon shall govern the construction of driveways unless otherwise shown in the project plans.

The pavement type and thickness shall be the same as Twp. Rd 533

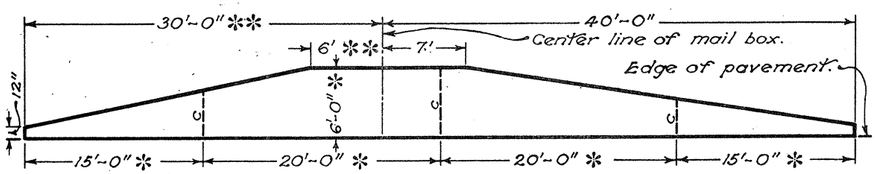
Driveway and mail box approaches shall be combined when feasible.

JOINTS:— Impressed joints for portland cement concrete driveways shall be ¼" minimum width by 3"± depth and shall be sealed with 708.3

In addition to the joints shown hereon, impressed joints without tie bars shall be placed in portland cement concrete driveways at intervals not to exceed seventeen feet in the portion of the driveway back of the flare.



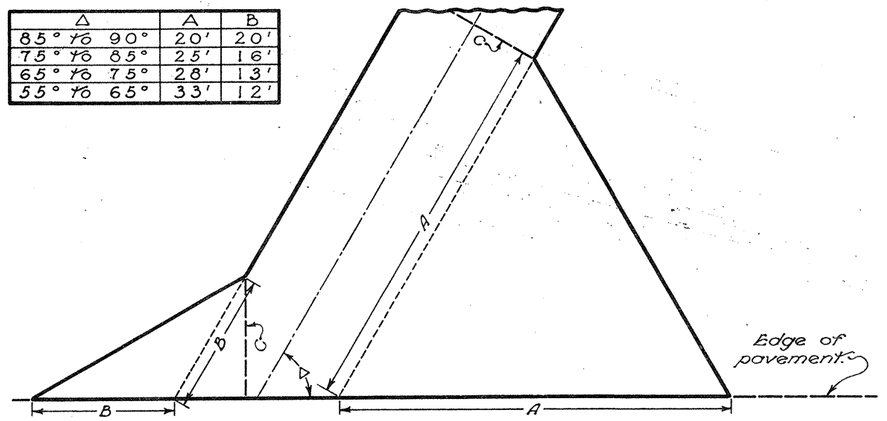
COMBINED DRIVEWAY & MAIL BOX APPROACH



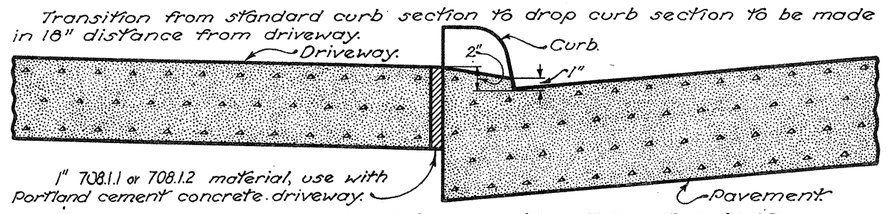
* Unless otherwise shown in plan.
** Add 2 feet for each additional mail box.

TYPICAL MAIL BOX APPROACH

Δ	A	B
85° to 90°	20'	20'
75° to 85°	25'	16'
65° to 75°	28'	13'
55° to 65°	33'	12'



TYPE 2 SKEWED DRIVEWAY



DROP CURB DETAILS AT DRIVEWAYS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	64	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

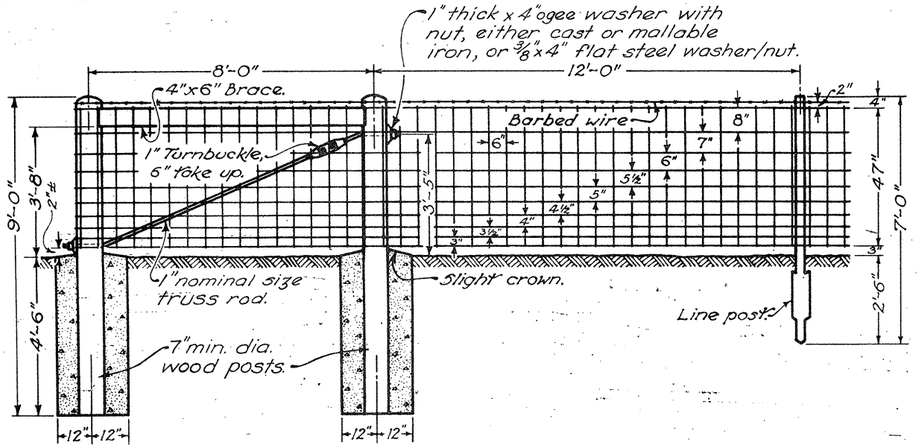
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

DRIVEWAYS

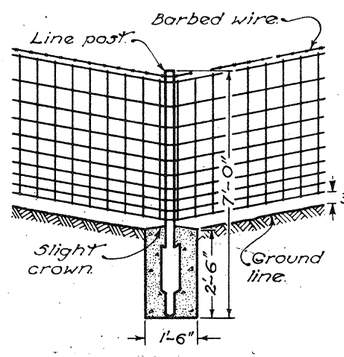
STANDARD CONSTRUCTION DRAWING **BP-6**

APPROVED _____ ENGR. L. & D.

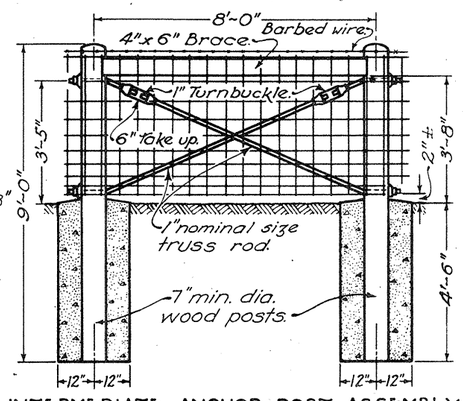
DATE 6-1-65



CORNER OR END POST ASSEMBLY



LINE POST IN DIP SECTION



INTERMEDIATE ANCHOR POST ASSEMBLY

TYPE 47 FENCE

NOTES

BRACES: Wood braces shall be set in notches in the posts and fastened to the posts with 16d nails.

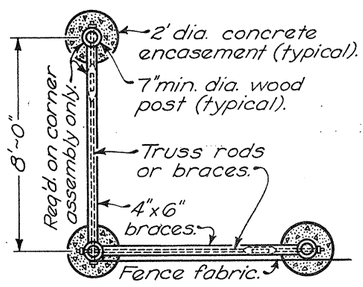
DRIVEN POSTS: Concrete encasement, and tamped earth or aggregate shall be omitted when the wood posts are driven to grade.

CONCRETE: The provisions of 601.9 are modified to the extent that concrete shall be protected during the curing period in a manner such that it will not freeze. Concrete shall be Class B.

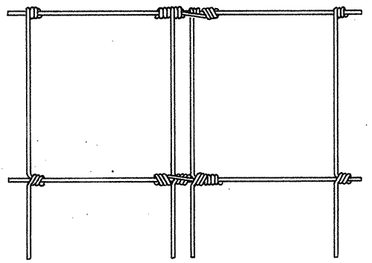
FABRIC: Other methods for splicing wire fence may be used in lieu of the method shown, when approved by the Engineer.

TYPE 47RA FENCE shall be used to fence Rest Areas. Where Types 47 and 47RA intersect at a corner, the corner assembly shall have all wood braces. Fence shall be paid for under Item 607 ~Linear Foot~ Fence, Type 47 RA.

PAYMENT FOR TYPE 47 FENCE shall be paid for as Right-of-Way Fence Modified, Farm Field Type Item 608-2 (3'-11"), L.F.

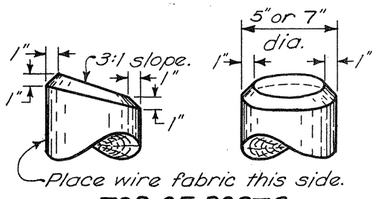


CORNER OR END POST ASSEMBLY

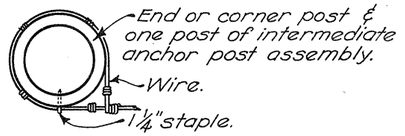


WIRE FENCE SPLICE

Posts set or driven to within 1" of grade need not be trimmed.



TOP OF POSTS

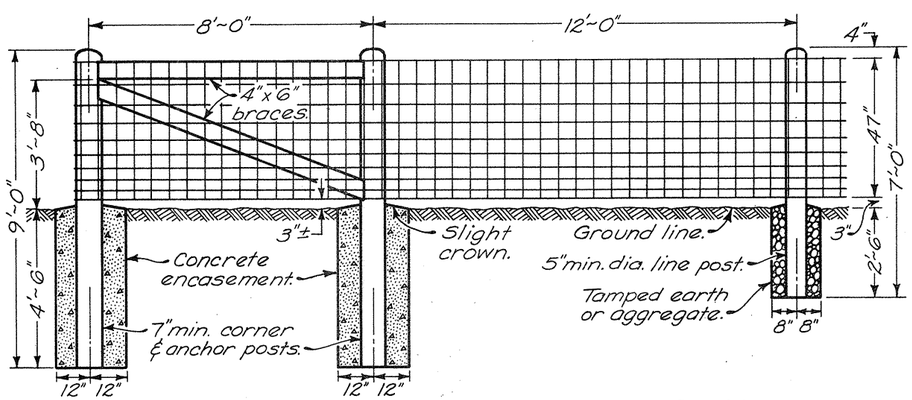


METHOD OF FASTENING FENCE

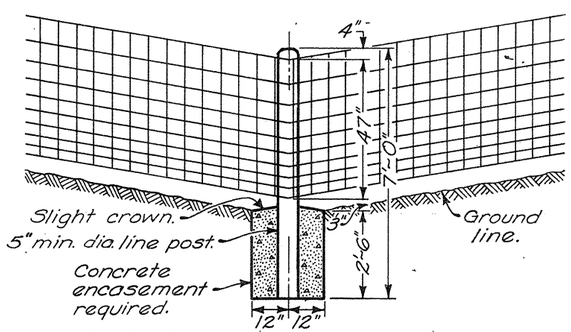
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	65	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



CORNER, END OR ANCHOR POST ASSEMBLY



LINE POST IN DIP SECTION

TYPE 47RA FENCE

BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

WOVEN WIRE FENCE

STANDARD CONSTRUCTION DRAWING F-2

APPROVED E. J. Shafer ENGR., R. D.

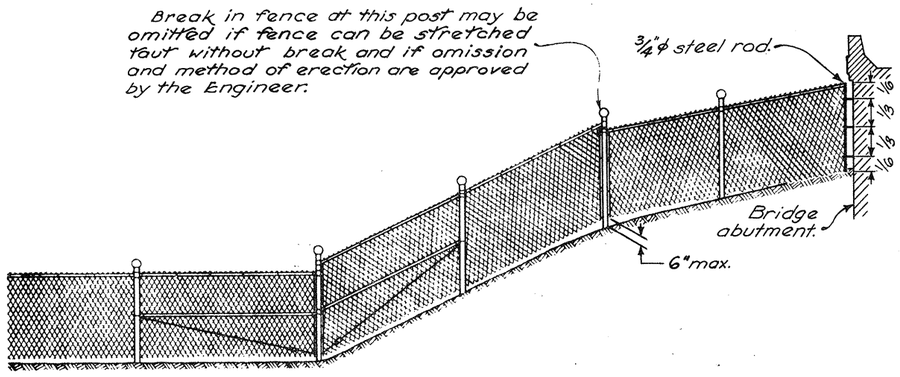
DATE
2-1-63
6-1-65
3-10-69
1-1-71
5-1-76

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

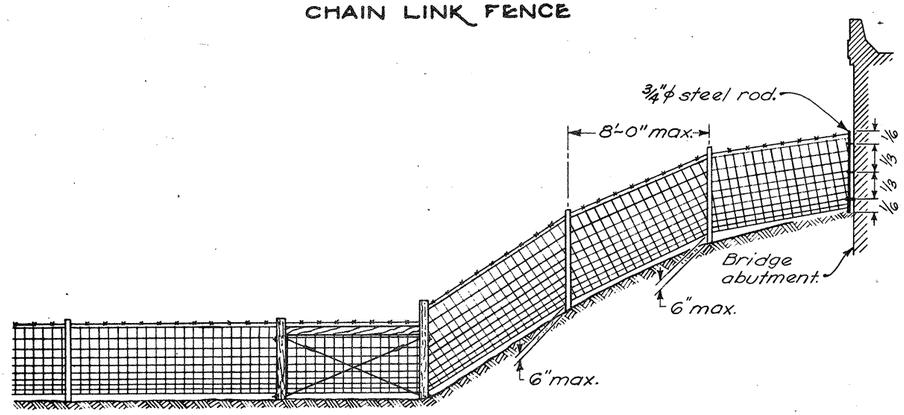
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	66	255

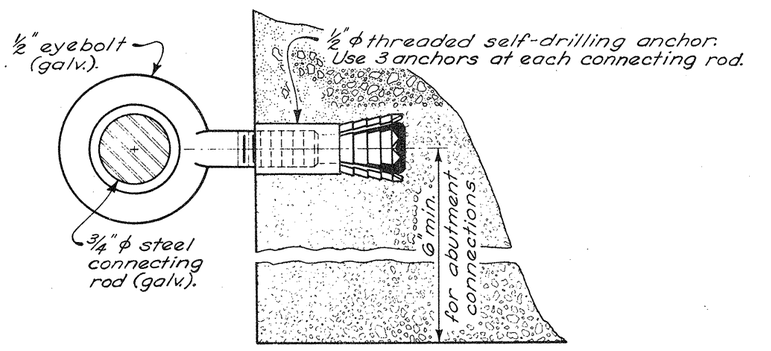
C-4



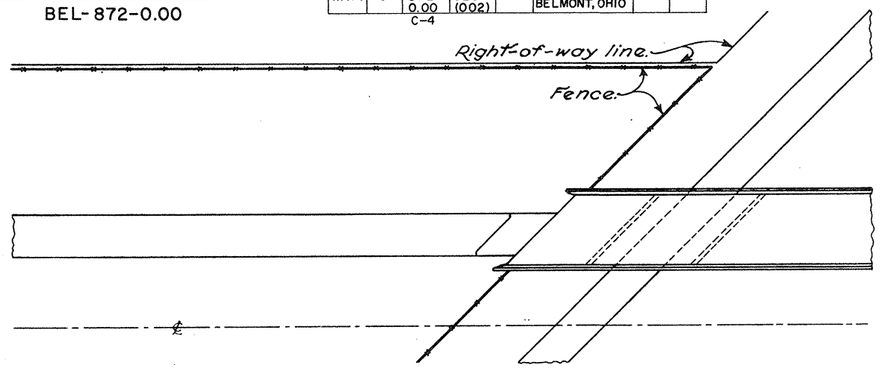
CHAIN LINK FENCE



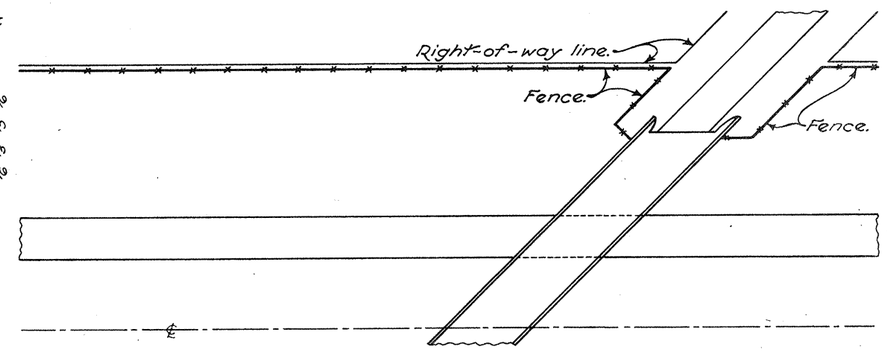
WOVEN WIRE FENCE



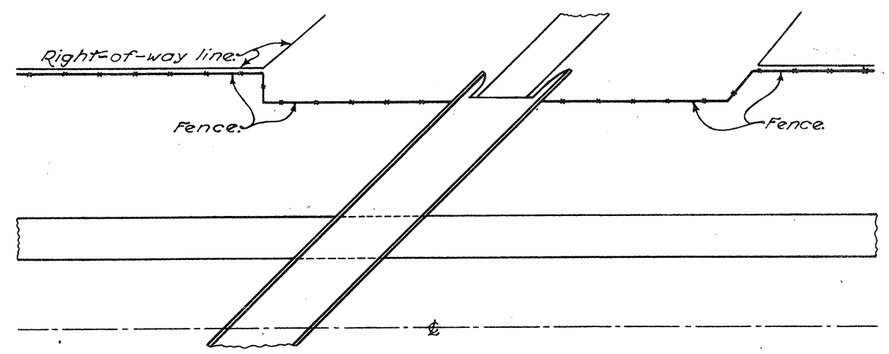
ABUTMENT CONNECTION



FENCE ARRANGEMENT
AT FREEWAY OVERPASS



FENCE ARRANGEMENT
CROSS ROAD ON ORIGINAL PROFILE



FENCE ARRANGEMENT
CROSS ROAD ON HIGH FILL

NOTES

GENERAL: Details shown hereon shall be used in conjunction with standard drawings F-1 and F-2.

ABUTMENT CONNECTION: Cost of furnishing and installing connecting rods, eyebolts and anchors shall be included in the unit price bid per linear foot of fence. Where needed to clear deck projections or other irregularities the shaft length of the eyebolt may vary.

ANCHORS: Self-drilling anchors shall conform to (*). Threaded steel inserts may be placed in the wet concrete when the structure is constructed instead of using self-drilling anchors.

EYEBOLTS shall conform with ASTM A 489, except that the bend test is waived and finish shall be hot dipped galvanized in accordance with ASTM A 153.

CLEARANCE of the lower wires on embankments approaching bridge connections may vary from 0 inches to 6 inches.

(*) Federal Specification
FF-S-325, Group III
Type I (A) or (C)

BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

FENCE DETAILS AT BRIDGES

STANDARD CONSTRUCTION DRAWING F-3

APPROVED C. J. Schaefer ENGR., R. D.

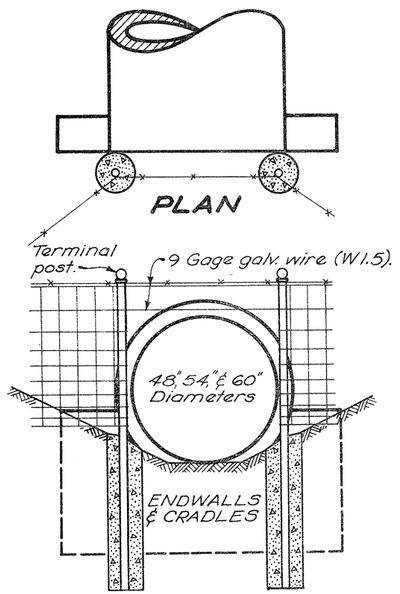
DATE
2-1-63
6-1-66
10-1-66
2-20-68
3-10-69
5-1-76

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

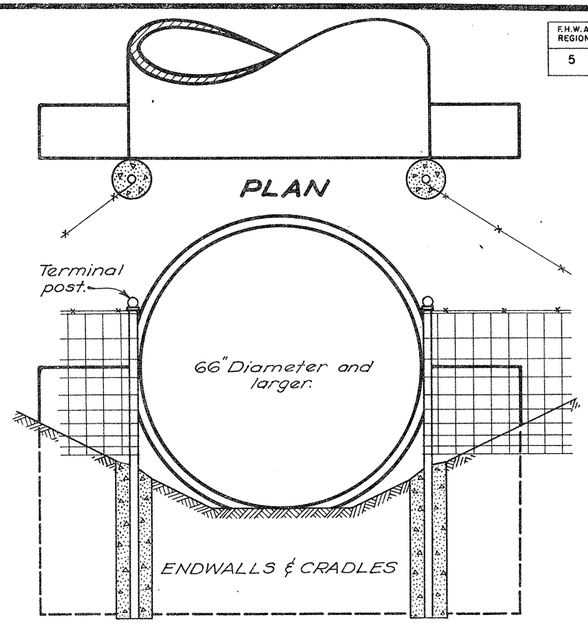
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	67	255

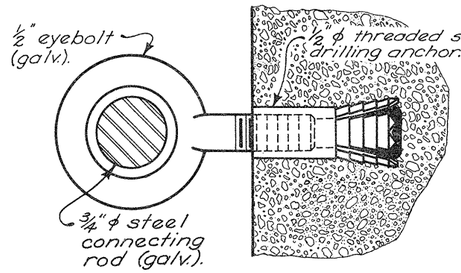
C-4



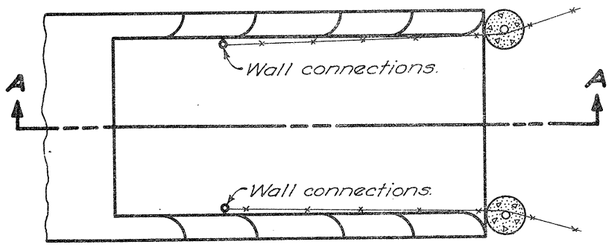
TYPE A



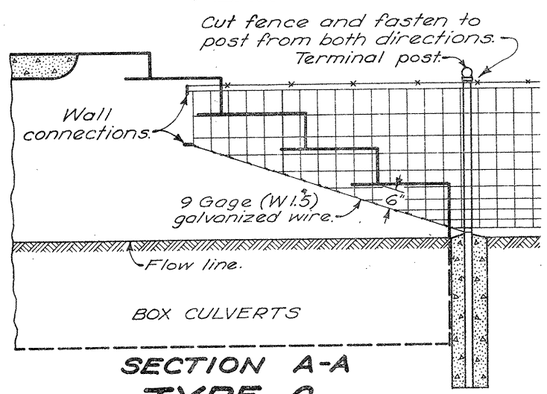
TYPE B



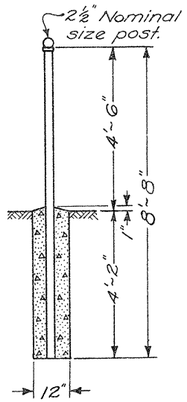
WALL CONNECTION



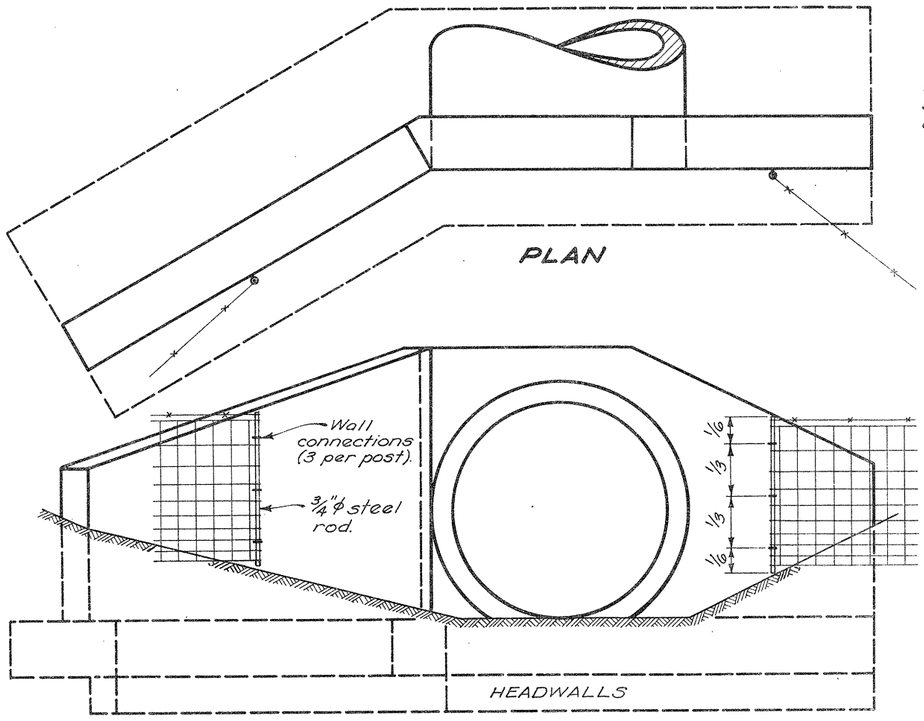
PLAN



SECTION A-A
TYPE C



TERMINAL POST



TYPE D

NOTES

FENCE TYPE: Fence terminals shown on this drawing apply to Type 47 fence as detailed, however, the same designs may be used in the construction of all types of fence if modified because of differences in basic design such as anchor assembly, height of fence, length of panel, or any other variance which would affect the terminal design.

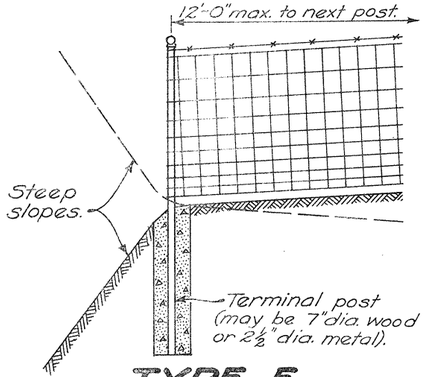
Cost of furnishing and installing connecting rods, eyebolts and anchors for wall connections shall be included in the unit price bid per linear foot of fence.

ANCHORS: Self-drilling anchors shall conform to (*) Threaded steel inserts may be placed in the wet concrete when the structure is constructed, instead of using self-drilling anchors.

(*) Federal Specification
FF-S-325, Group III
Type I (A) or (C)

CONCRETE: The provisions of 601.9 are modified to the extent that Class B concrete shall be protected during the curing period in a manner such that it will not freeze.

EYEBOLT: Eyebolts shall conform with ASTM A 489, except that the bend test is waived, and finish shall be hot dipped galvanized in accordance with ASTM A153.



TYPE E

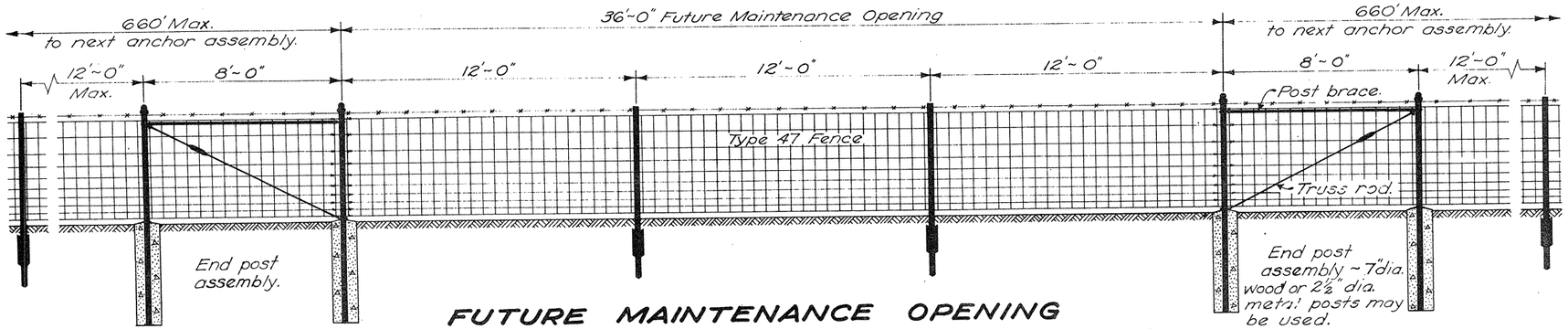
BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

FENCE TERMINALS

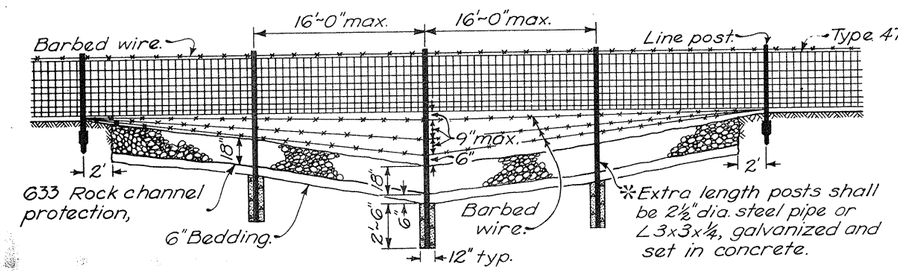
STANDARD CONSTRUCTION DRAWING F-5

APPROVED _____ ENGR., R.D.

DATE
10-1-66
2-20-68
3-10-69
5-1-76

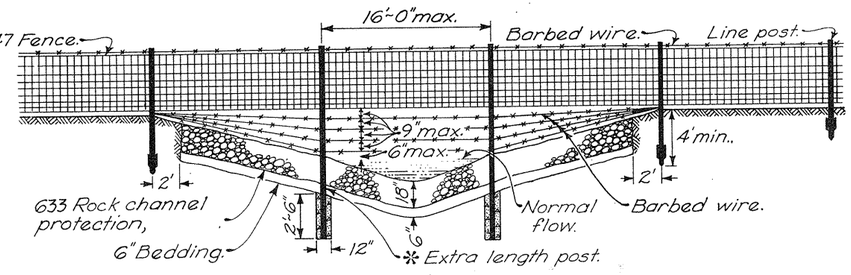


FUTURE MAINTENANCE OPENING

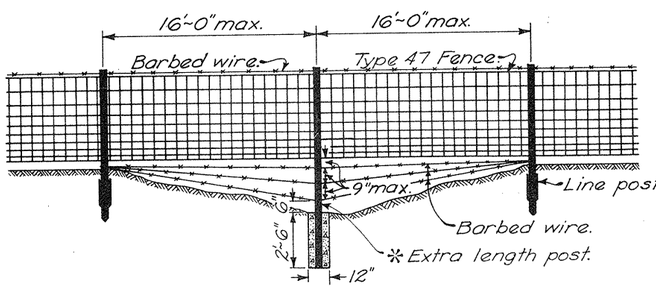


CROSSING TYPE 1

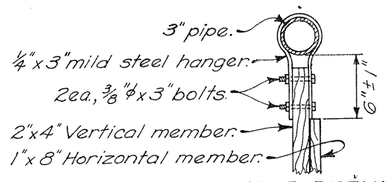
When no rock channel protection is required, the 2'-6" depth of concrete encasement shall be measured from the bottom of the channel.



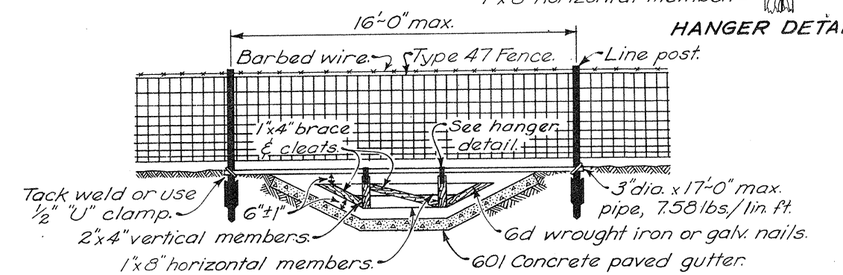
CROSSING TYPE 2



CROSSING TYPE 3



HANGER DETAIL



CROSSING TYPE 4

NOTES

FENCE DETAILS shown on this drawing apply to standard Type 47 fence as detailed, however, the same designs may be used in the construction of all types of fence if modified because of differences in basic design, such as anchor assembly, height of fence, length of panel, or other variances which would affect the design.

CROSSINGS, Types 1 or 2 or 3 shall be provided at earth side ditches and streams served by culverts smaller than 48 inch rise. Type 4 crossing shall be provided where fence crosses a paved channel that is over 18" deep.

TYPE 2 CROSSING is shown crossing a live stream but it may also be used for intermittent flow channels. For a live stream crossing, the barbed wire may be deleted or its spacing varied, when directed by the Engineer, to prevent or reduce the collecting of drift.

ROCK CHANNEL PROTECTION shall be placed only at locations indicated on the plans or as directed by the Engineer. It shall be constructed as shown on Type 1 and 2 crossings and shall be placed 6 feet wide, (2 feet outside the fence and 4 feet inside the fence), and shall be paid for as Item 633-3

MAINTENANCE OPENING: Barbed wire and fence fabric in the 36' opening shall be separate from the approach wire and fabric, and shall be installed after the wire and fabric has been stretched and fastened on both approaches.

CONCRETE: The provisions of 601.9 are modified to the extent that Class B concrete shall be protected during the curing period in a manner such that it will not freeze.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	68	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

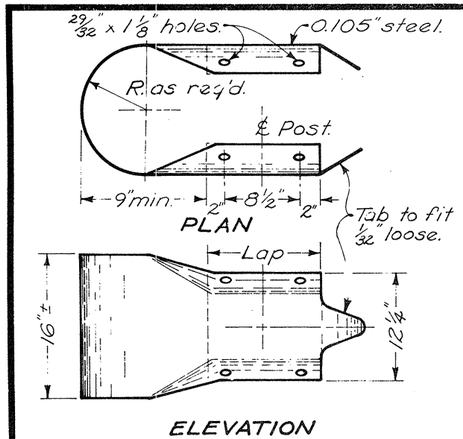
BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

FENCE DETAILS

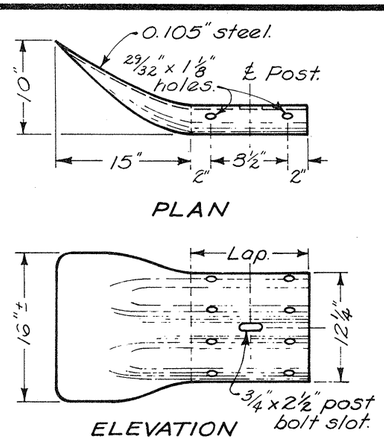
DATE
10-1-'66
6-12-'75
5-1-76

STANDARD CONSTRUCTION DRAWING F-6

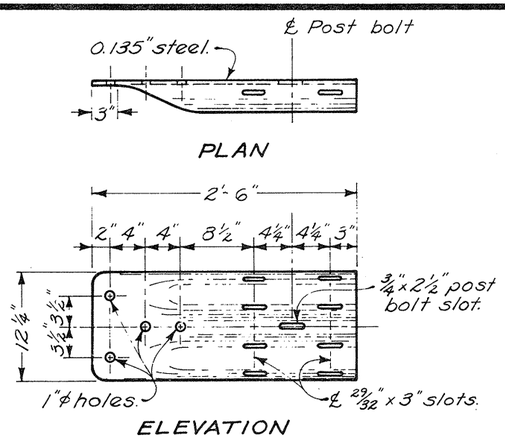
APPROVED _____ ENGR., R.D.



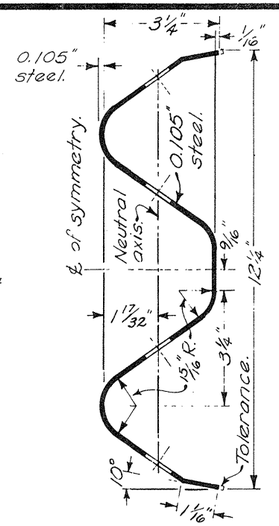
BUFFER END SECTION



FLARED END SECTION



TERMINAL CONNECTOR



NOTES

BEAM RAIL ELEMENTS shall be 12'-6" effective length, unless otherwise specified, with ¾" x 2½" post bolt slots on 6'-3" centers regardless of post spacing. Field punching or drilling of bolt holes or slots for irregularly spaced posts shall be according to 607.4

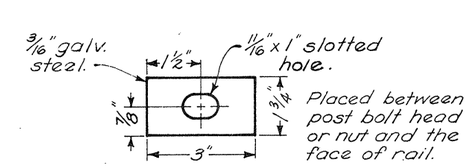
BEAM RAIL SPLICE between two rail elements, or rail and terminal connector shall be lapped in the direction of traffic. The buffer or flared end sections shall lap on the traffic face. A 12" back-up plate shall be provided at intermediate posts not having a rail splice.

SPECIAL POST MOUNTINGS: Inlet mounted posts are required for guardrail posts located on a drainage inlet. Footing anchors are required for guardrail posts located on footers with less than 3'-5" cover except that for footer cover of 2'-6" to 3'-5" the posts may be installed by using a 4" minimum concrete encasement. The inlet mounted post may be used for footing anchors in runs with steel posts.

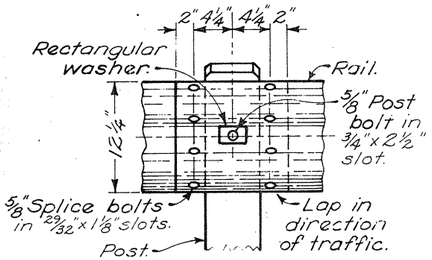
Cost of the inlet mounted posts and footing anchors shall be included in the unit price bid for guardrail of the type required by the plan unless paid for separately.

* Self-drilling anchors conforming to (*) , or anchors per FF-S-325 Group II, Type 4, Class 1 or 2 with proof load certification per (*) . , may be substituted with the same bolt diameter specified.

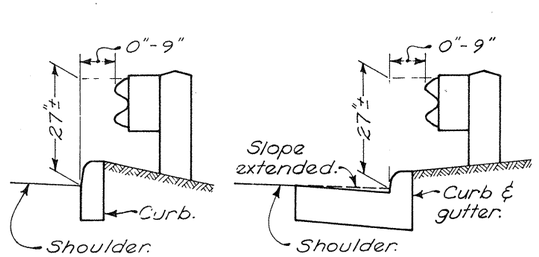
(*) Federal Specification
FF-S-325, Group III
Type I (A) or (C)



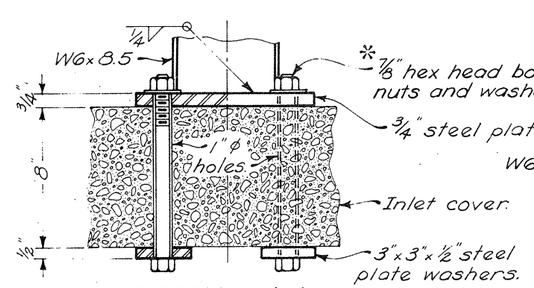
RECTANGULAR PLATE WASHER

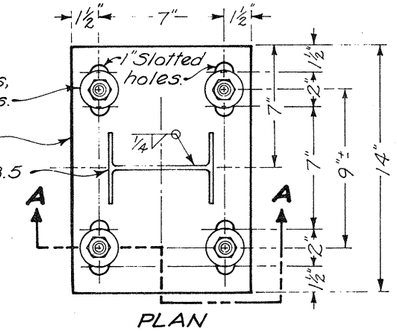


BEAM RAIL SPLICE

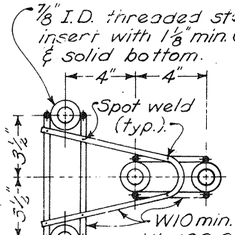


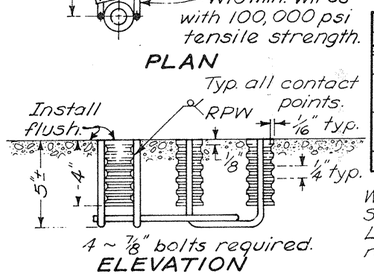
GUARDRAIL HEIGHT AT CURB



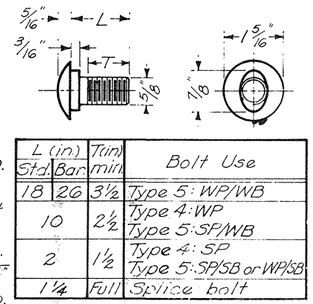


INLET MOUNTED POST

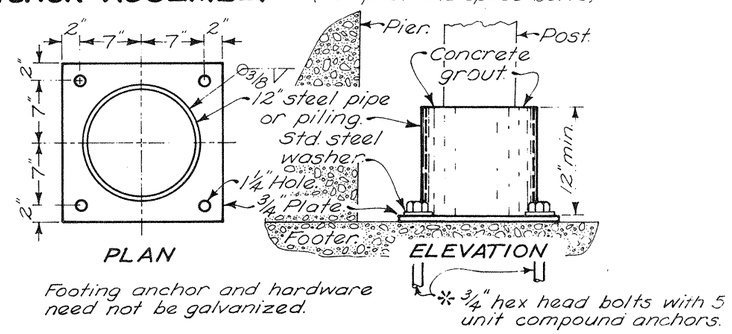




CONCRETE INSERT ANCHOR ASSEMBLY



BUTTON HEAD BOLT
(For post and splice bolts)



Footing anchor and hardware need not be galvanized.

FOOTING ANCHOR

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BEL-MONT, OHIO	69	255

C-4

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

GUARDRAIL DETAILS

DATE 12-6-76

STANDARD CONSTRUCTION DRAWING GR-1

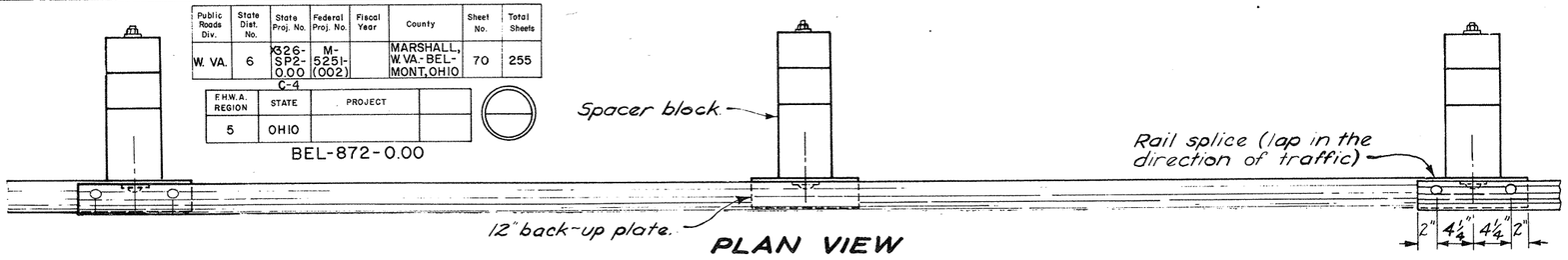
APPROVED _____ ENGR., L. & D.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	70	255

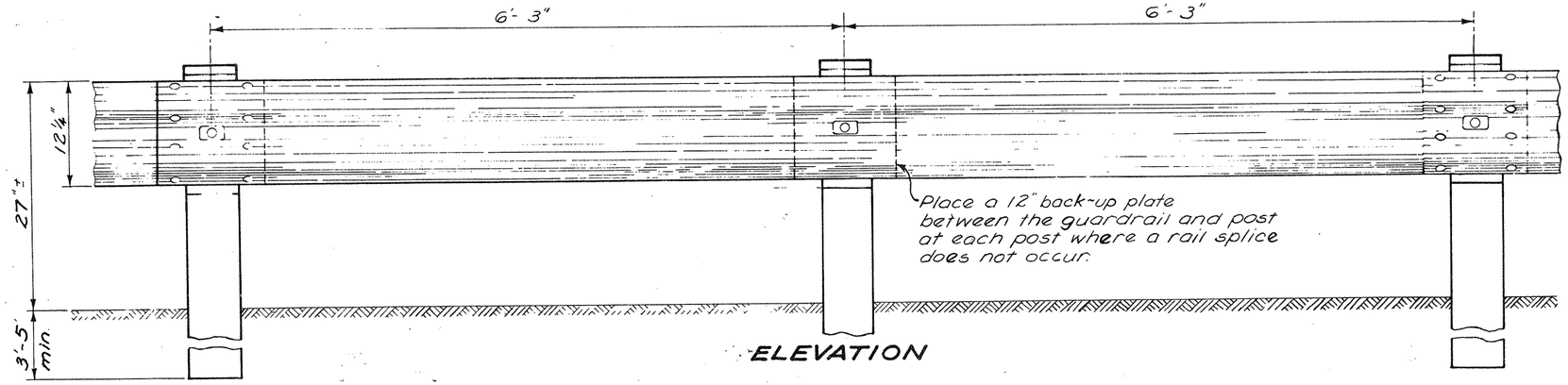
C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

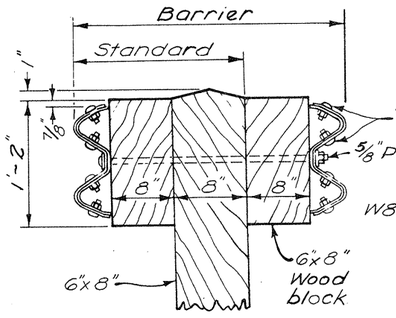
BEL-872-0.00



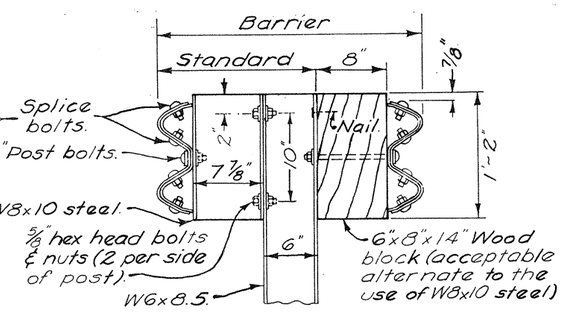
PLAN VIEW



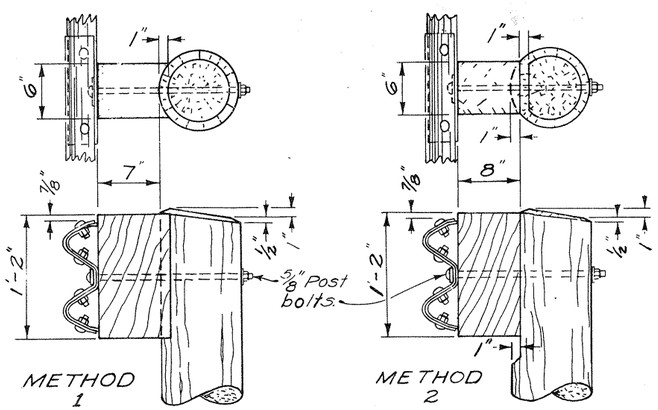
ELEVATION



SQUARE WOOD POST



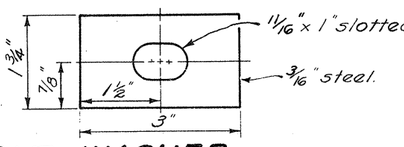
STEEL POST



Alternate methods of placing the spacer blocks on the round posts may be submitted for consideration and approval by the Engineer.

ROUND WOOD POSTS

Place one retangular washer between bolt head or nut and the face of rail. All other washers indicated above are standard.



POST BOLT WASHER

NOTES

POSTS may be round (single rail only) or 6"x8" square-sawed pressure-treated wood or W6x8.5 galvanized steel. The same type post shall be used throughout the length of project unless otherwise required by the plans or permitted by the Engineer. Round posts shall be 8" plus or minus 1" in diameter at the top and not more than 11" at the butt with uniform taper from top to butt.

Posts may be set in drilled holes or may be driven to grade.

Wood posts shall be fabricated with square ends. Posts and spacer blocks shall be pressure-treated as per 7103. Bolt holes shall be bored and tops of posts trimmed after posts are set. Posts set or driven to within ½" of grade need not be trimmed.

SPACER BLOCKS: When wood spacer blocks are used with the steel post, a roofing nail shall be driven through the hole in the adjacent flange to prevent blocks from turning.

WASHERS: Standard galvanized washers of appropriate size are required on post bolts where special washers are not indicated.

BARRICADE GUARDRAIL shall be mounted on Type 5 posts with ⅝" post bolts and washers as specified hereon. Omit spacer blocks and anchor assemblies. Place a flared end section at each end.

FOR DETAILS not shown see GR-1.

PAYMENT for Ohio Guardrail Type 5 shall be paid as Type 1 Guardrail, Item 607-1(I) L.F.
And Ohio Barrier Guardrail Type 5 shall be paid as Type 5 Guardrail, Item 607-5(I) L.F.

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

GUARDRAIL TYPE 5

STANDARD CONSTRUCTION DRAWING GR-2B

APPROVED _____ ENGR., L.&D.

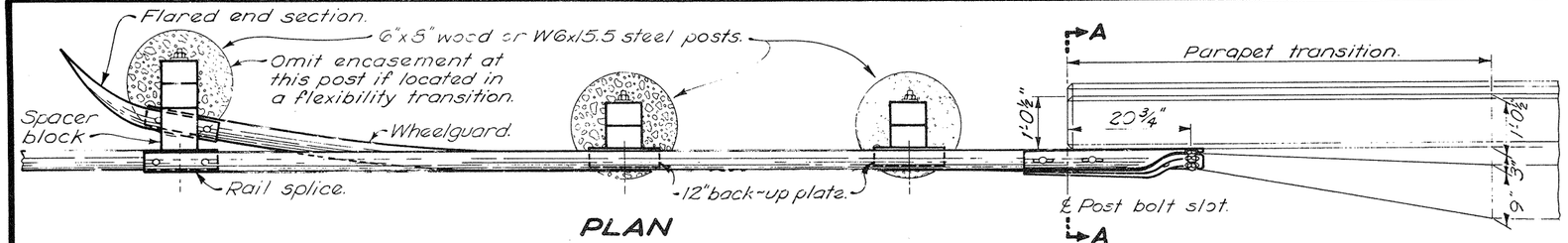
DATE
2-15-68
1-1-71
11-9-71
12-6-76

Public Roads Div.	State Dist. No.	State Proj. No	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	71	255

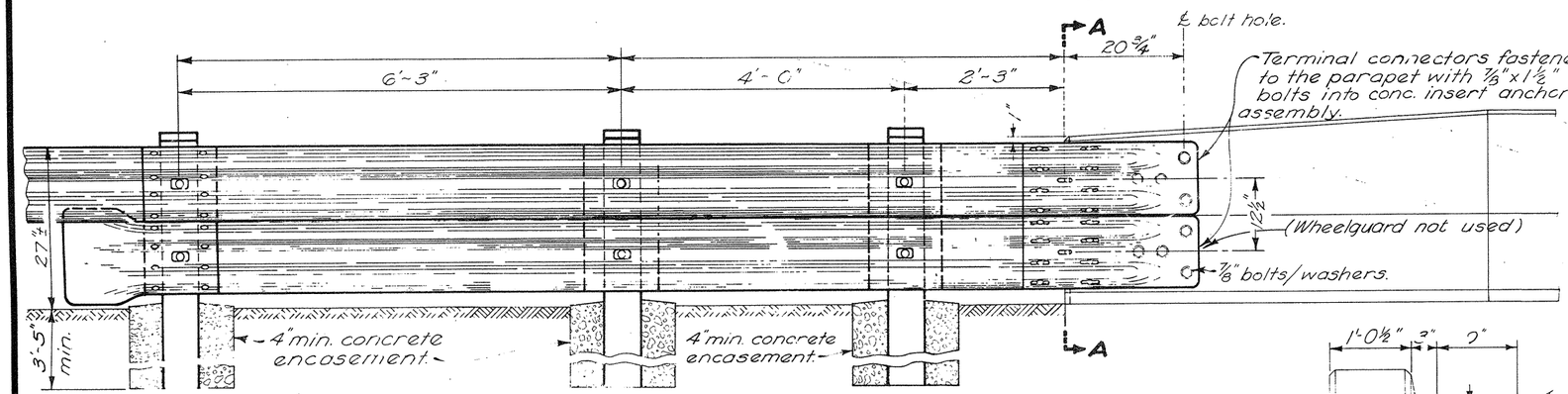
C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

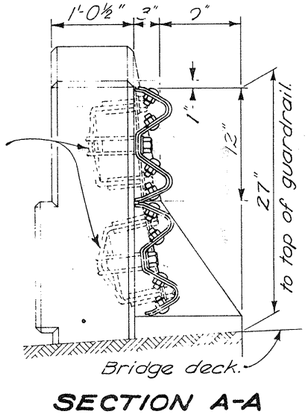


PLAN

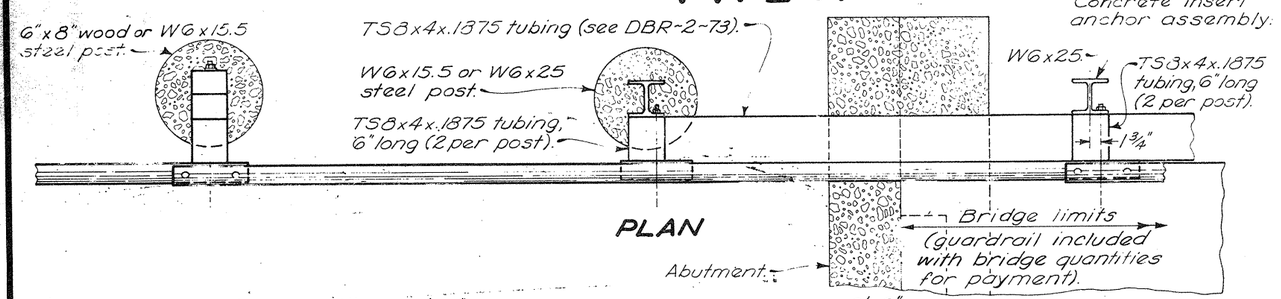


ELEVATION

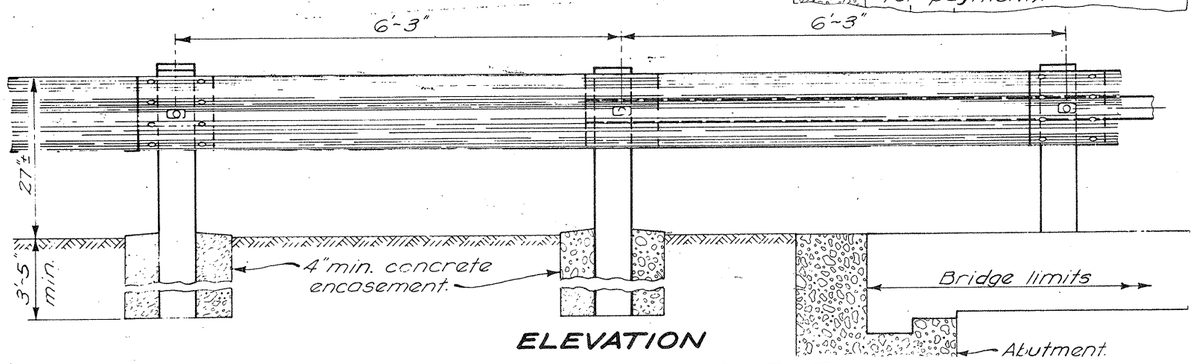
TYPE A



SECTION A-A



PLAN



ELEVATION

TYPE B

NOTES

TYPE A: The wheelguard shall be required on all uncurbed approach connections, and on all uncurbed trailing connections on undivided highways. The wheelguard shall be omitted: on all curbed connections, on uncurbed trailing connections on divided or directional roadways, and all three posts shall have spacer blocks and concrete encasement.

TYPE B: Where guardrail is used as bridge railing the approach length on directional roadways and at both ends on undivided highways shall be not less than 125 feet plus the anchor assembly. The trailing length on directional roadways shall be not less than 25 feet plus anchor assembly.

POST TYPE shall be the same material type as used on approach guardrail for Type A and the second post of Type B.

FOR DETAILS not shown, see GR-1 and other Standard Construction Drawings pertaining to design of specific guardrail Type.

SELF-DRILLING ANCHORS meeting requirements of (*) with ⅞"x1½" bolts with washers shall be used to fasten the terminal connectors to parapets for which an insert anchor assembly is not specified to be placed during the parapet construction.

PAYMENT for Ohio Bridge Terminal Assembly shall be included in the unit price bid for Item 607-1(1) Type 1 Guardrail. (Ohio Type 5 Guardrail)

(*) Federal Specification FF-S-325, Group III Type 1 (A) or (C)

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE TERMINAL ASSEMBLIES

DATE
1-1-71
11-9-71
12-6-76

STANDARD CONSTRUCTION DRAWING GR-3

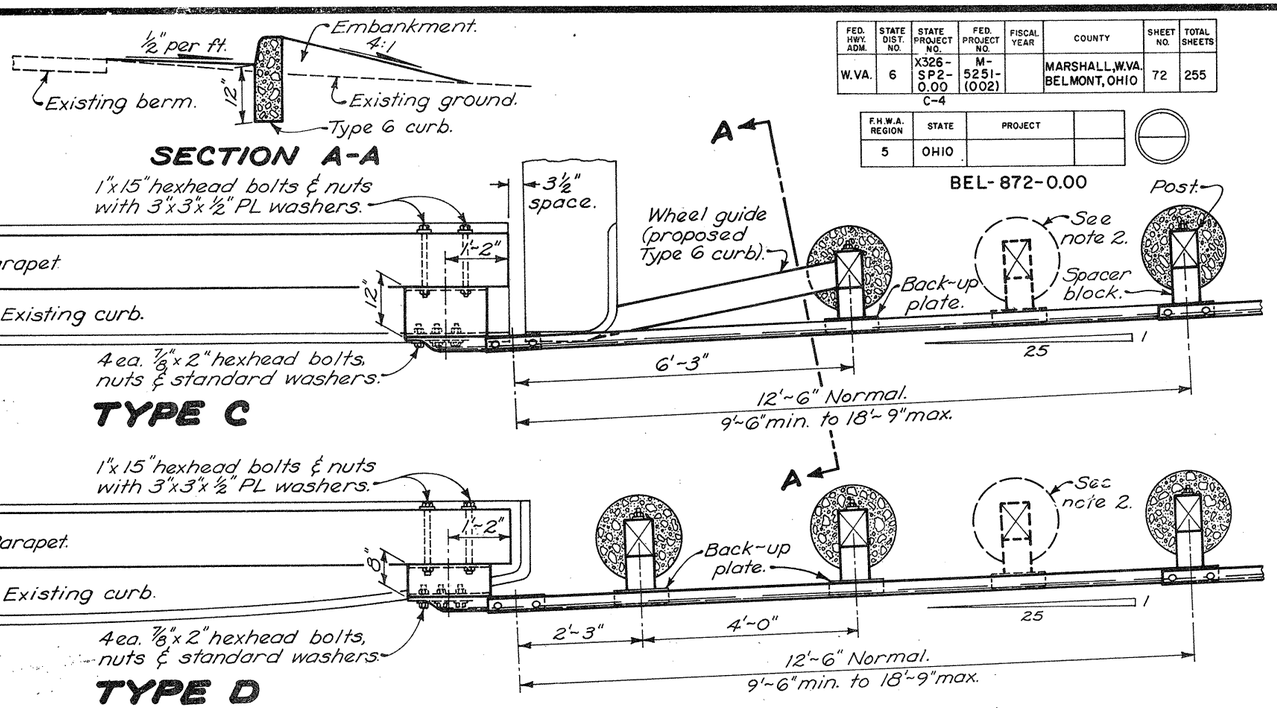
APPROVED M. Cunningham ENGR., L.&D.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	72	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



NOTES

PAYMENT Bridge terminal assembly, Type__, shall include the additional cost in excess of normal guardrail cost, such as: additional or heavier posts, concrete encasement, extra rail, steel box, curb, embankment, terminal connector, anchors and other hardware, etc. and shall be included in the Unit Price Bid for L.F. of Item 607-1 (1) Type 1 Guardrail.

FOR DETAILS not shown, see GR-1 and other Standard Construction Drawings pertaining to design of specific guardrail Type.

GUARDRAIL TERMINATION as directed by the Engineer. The 12'-6" normal rail section may vary as shown to facilitate connection of or reconstruction of existing approach guardrail. The 1'-2" terminal connector location dimension may be increased to avoid existing parapet steel.

STEEL BOX of the appropriate size, galvanized after welding any two opposite corners, shall be mounted on the parapet so the rail top is 27" above the bridge deck.

SPACER BLOCK size may be increased if necessary to locate post beyond wide approach slab.

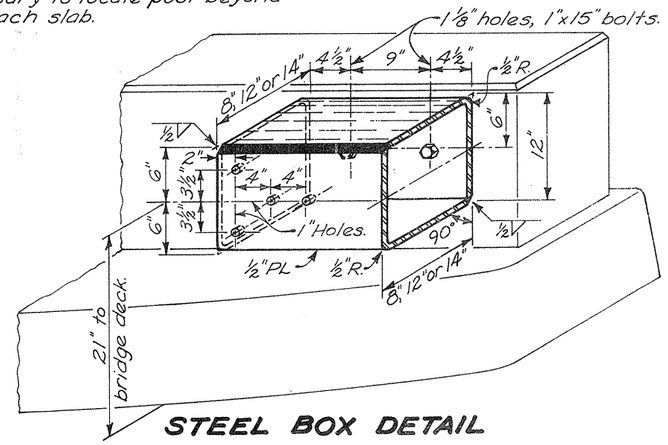
POSTS shall be 6"x8" wood or W6x15.5 steel (except note 1 post) of the same material type as used on approach guardrail, with 4" minimum concrete encasement.

NOTE 1: Use W6x8.5 inlet mounted post as detailed on GR-1 with length to mount rail top 27" above bridge deck.

NOTE 2: Place one additional encased post halfway between adjacent posts when the 12'-6" normal rail section is increased.

SELF-DRILLING ANCHORS meeting requirements of (*) with ⅞"x1½" bolts, or 1" anchors per FF-S-325 Group II, Type 4, Class 1 or 2 with proof load certification per (*) may be substituted (in like diameter) for the ⅞" and 1" bolts shown in the parapets. Anchor installations not satisfactory to the Engineer shall be replaced with bolts as shown extending through the parapet or as directed by the Engineer.

(*) Federal Specification FF-S-325, Group III Type 1 (A) or (C)



STEEL BOX DETAIL

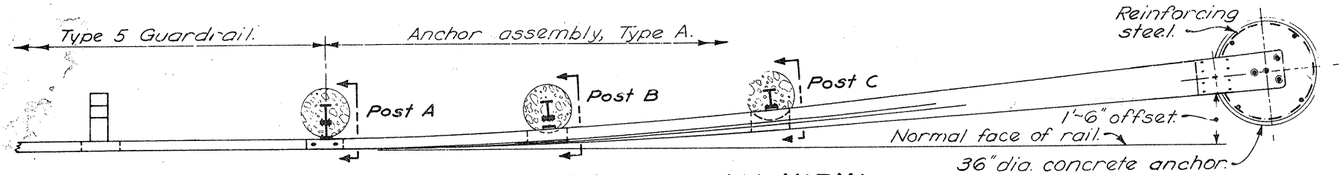
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE TERMINAL ASSEMBLIES

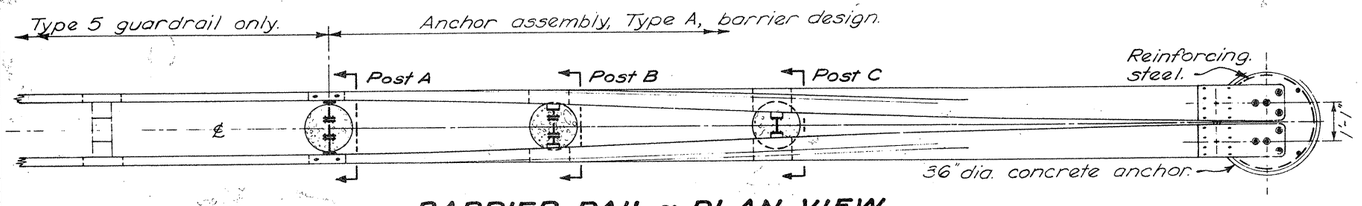
DATE 12-6-76

STANDARD CONSTRUCTION DRAWING GR-3A

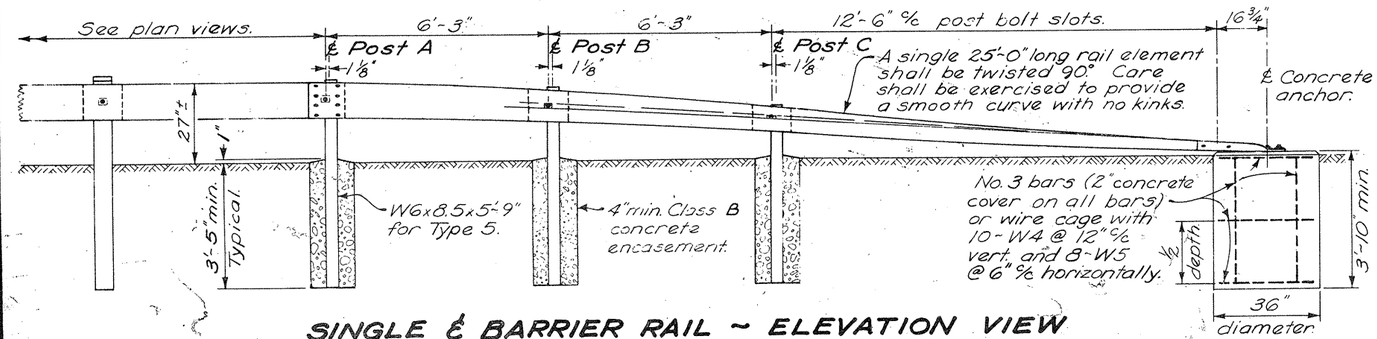
APPROVED M.J. Cunningham ENGR., L. & D.



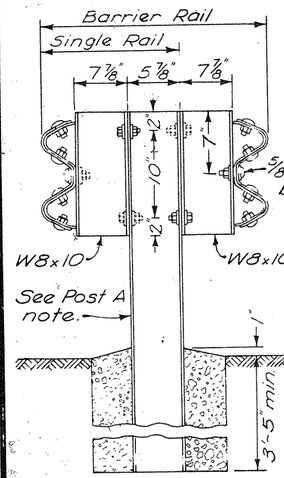
SINGLE RAIL ~ PLAN VIEW



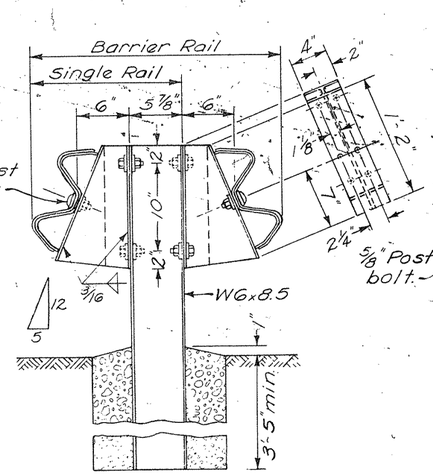
BARRIER RAIL ~ PLAN VIEW



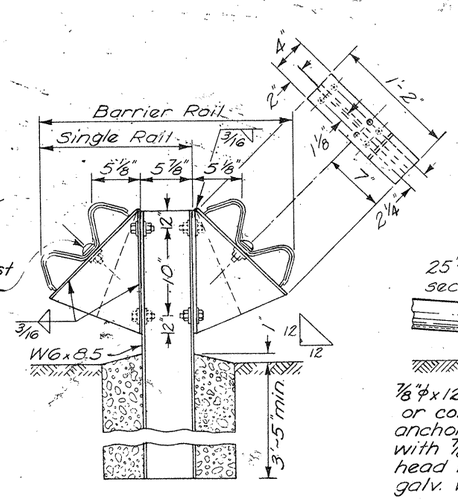
SINGLE & BARRIER RAIL ~ ELEVATION VIEW



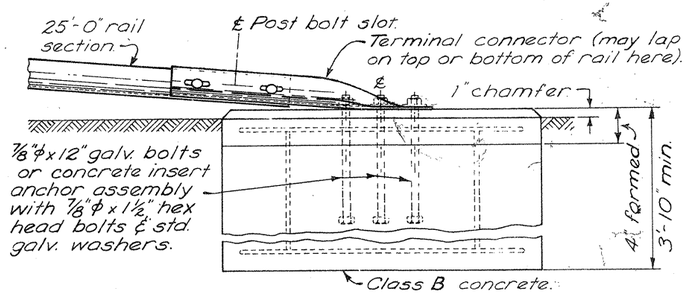
POST A



POST B



POST C



CONCRETE ANCHOR

NOTES

GENERAL: For details not shown, see GR-1 and other Standard Construction Drawings pertaining to specific guardrail type. All steel parts shall be galvanized.

ANCHOR ASSEMBLY TYPE A can be used at each free end of Type 4, 5 or 7 guardrail or barrier rail. It is primarily an approach end.

The 1'-6" flare offset from normal face of rail, shown in the plan view (for single rail installations), will be utilized only where shoulder width is insufficient for providing standard offsets shown on GR-5 and GR-6. Use of the 1'-6" offset will generally be limited to upgrading existing highways for safety or the construction or reconstruction of highways with design traffic less than 1000 ADT or design speeds less than 50 mph.

SPACERS for Posts B and C shall be made of 3/16" steel plate 709.45 , or two sections of W6x8.5 or W8x10 cut in the web (see dashed line) and welded together on both sides.

All steel spacers and posts may be provided with additional bolt holes so that these items will not be required to be made right and left handed.

Spacers shall be fastened to their posts with two 5/8" hexhead bolts and nuts with standard washers on both sides.

POST BOLT WASHERS: Place one rectangular washer (see GR-1 for detail) between post bolt head or nut and the face of rail.

All other washers indicated on this drawing are standard galvanized steel of the appropriate size.

CONCRETE ANCHOR: Form top 4" of anchor and slope the top to conform to slope of the adjacent ground. The 36" diameter anchor may be replaced by a 2'-6" square anchor at the contractor's option.

CONCRETE: All concrete shall be Class B. Minimum post encasement shall be 4".

POST A: Rail details are shown for Type 5 guardrail. Where anchor assembly is attached to Type 4 or 7 guardrail, Post A shall be a standard Type 4 or 7 line post set in concrete, and the spacer block shall be omitted. Post bolt shall be 5/8"ϕ.

PAYMENT for Anchor Assembly shall be paid Turned-Down End Section Modified, Type 1 Guardrail, Item 607-7, each.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X32S-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	73	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

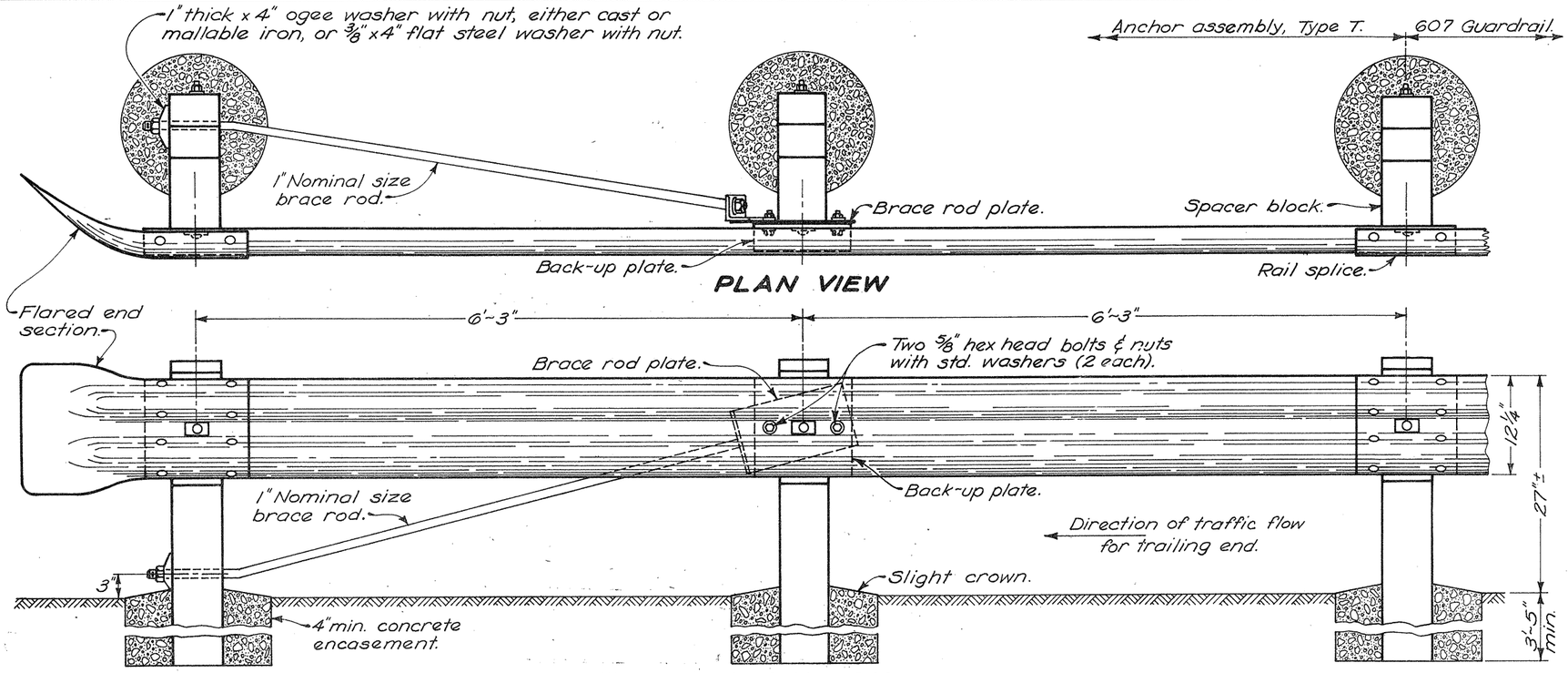
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

ANCHOR ASSEMBLY

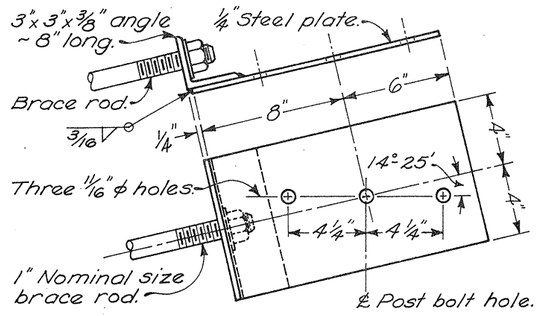
DATE
1-1-71
11-9-71
12-6-76

STANDARD CONSTRUCTION DRAWING GR-4

APPROVED W. G. Cunningham ENGR., L.&D.



TYPE T



BRACE ROD PLATE

NOTES

FOR DETAILS not shown, see GR-1 and other Standard Construction Drawings pertaining to design of specific guardrail types.

ANCHOR ASSEMBLY, Type T, shall normally be used at trailing guardrail ends on mainline directional roadways or ramps where the assembly end is more than 30 feet from a pavement with opposite direction traffic flow, and as elsewhere specified on the plan.

POSTS shall be the same as used on the adjacent guardrail, with 4 inch minimum Class C concrete encasement.

SPACER BLOCKS shall be omitted if the adjacent run of guardrail does not have spacer blocks.

BRACE ROD assembly shall be galvanized and develop a tensile strength of at least 40,000 pounds.

PAYMENT, Anchor Assembly, Type T, shall be paid for as Item 607-23, Guardrail End Anchor Mod., and shall include all material and construction costs.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	74	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

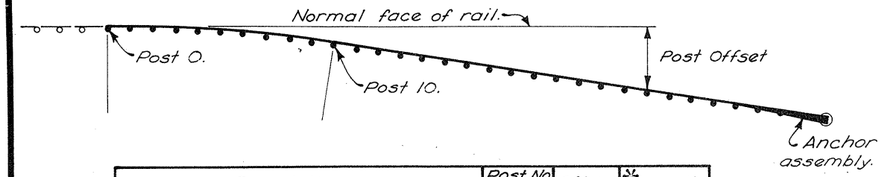
BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

DATE 7-26-76

ANCHOR ASSEMBLY

STANDARD CONSTRUCTION DRAWING GR-4A

APPROVED E. J. Schaefer ENGR., R.D.

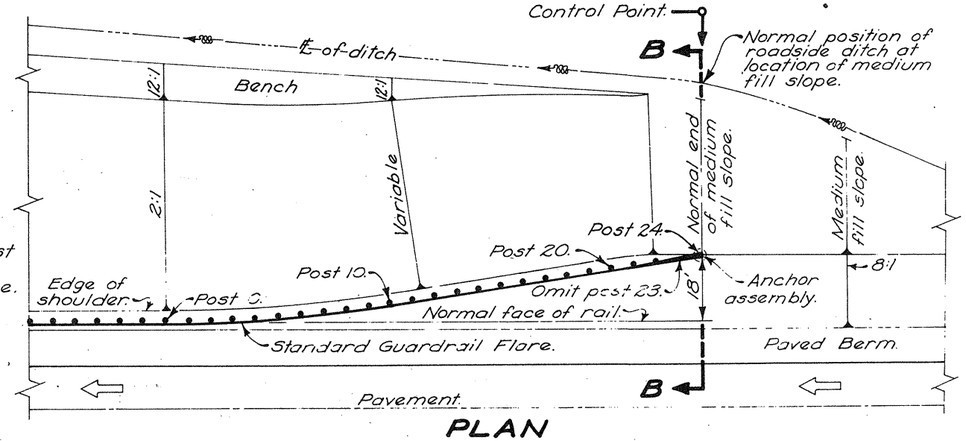


Description	Post No (6'-3" c)	Offset	*Length
Beginning of flare.	0	0.00'	
	1	.05'	
	2	.19'	
	3	.43'	
	4	.76'	
End circular segment (Introduced)	5	1.18'	
	6	1.71'	
	7	2.32	
	8	3.04'	
	9	3.84	
End circular segment (F. to F. & C. to F.).	10	4.74'	
Terminal - Cut to Cut protection only.	20	8.30'	125'
Terminal - Standard roadside flares.	24	18.00'	150'
Terminal - Cut to Fill protection only.	32	25.58'	200'

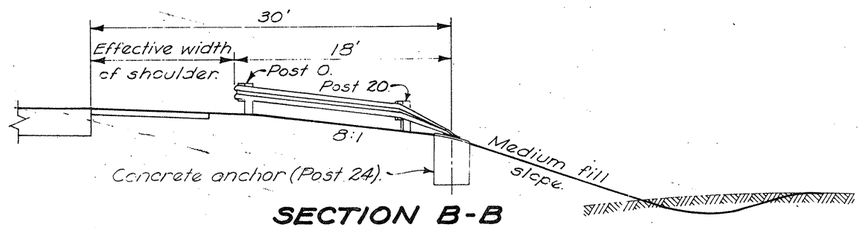
* Measured to post bolt hole in special end shoe.

STANDARD GUARDRAIL FLARE

Post arrangements shown are designed for application to Type 5 installations. For Type 7 guardrail omit odd numbered posts except in end assembly.



PLAN



SECTION B-B

FILL TO FILL

NOTES

Design details shown shall govern the construction of guardrail at hazardous cut to fill, fill to fill and in cut areas unless otherwise shown on the plans.

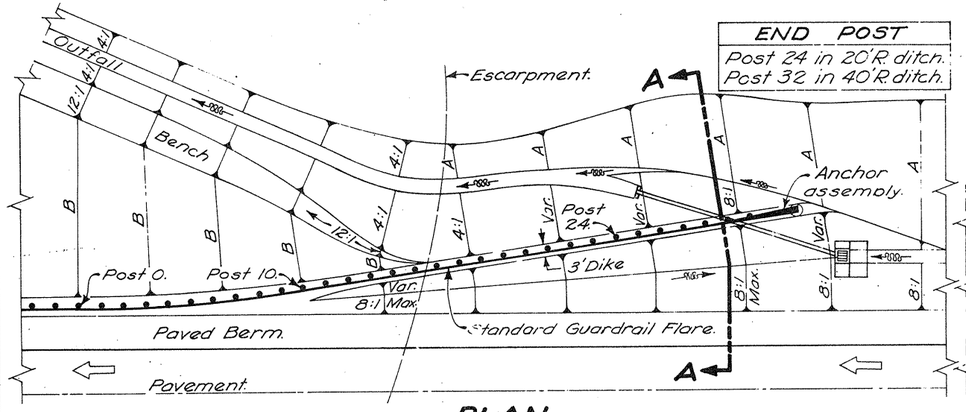
Backslope "A" and fill slope "B" shall be constructed as shown on typical sections.

Storm Sewer and Catch Basin shall be constructed only at locations shown on the plan and profile sheets.

Design shown for guardrail introduced because of an obstruction is applicable to directional roadways. On two-way roadways provide a 125 foot long flare and anchor assembly on both sides of the obstruction.

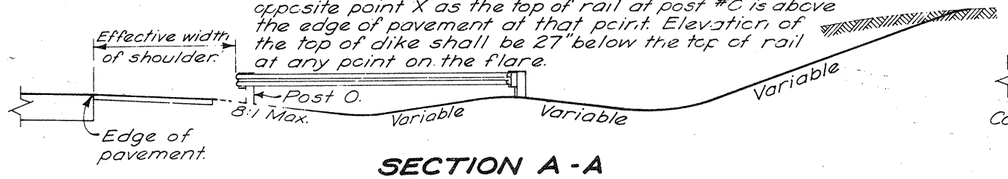
Type 5 guardrail shall be used for all introduced installations.

For anchor assembly detail see Standard Drawing GR-4.



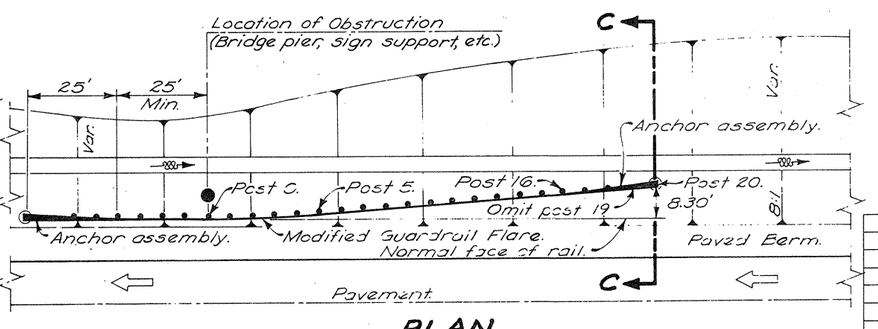
PLAN

Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at post #0 is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

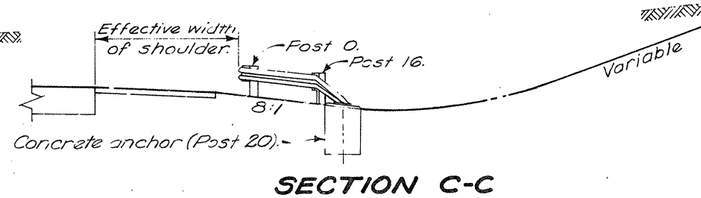


SECTION A-A

CUT TO FILL



PLAN



SECTION C-C

INTRODUCED

because of obstruction.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	75	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

GUARDRAIL FLARES

STANDARD CONSTRUCTION DRAWING GR-5

APPROVED _____ ENGR, L. & D.

DATE 1-15-68 1-1-71

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	76	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

For Impact Attenuating Device Details
See Sheet No. 61

For Median Replacement Details
See Sheet No. 61

For Type VI Mod. Median Details
See Sheet No. 63

BEGIN TAPER STA. 417+55

BEL-872-0.00

THIS SHEET

MATCH MARK

40:1 Taper

Acceleration Lane, Length=1000'

RAMP D

℄ EXISTING S.R.7

S 69° 23' 49" E

RAMP A

Deceleration Lane, Length=800'

BEGIN TAPER STA. 418+47.05

Sta. 27+55.00 Ramp D 16' Rt. =
Sta. 427+55.00 S.R. 7 41' Lt.

Sta. 29+06.93 Ramp D 19' Rt. =
Sta. 429+08.88 S.R. 7 50' Lt.

40:1 Taper, Length=1000'

D= 4° 00'

Sta. 429+20
Begin Median Replacement

Impact Attenuating Device

Sta. 429+70
Begin Type VI Mod. Median Barrier
(Ohio Type B Concrete Barrier)

STA. 423+79.11 S.R. 7 =
P.C. STA. 23+79.11 RAMP A

STA. 26+45.63 RAMP A (16' LT.) =
STA. 426+47.05 S.R. 7 (55' RT.)

INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN SURVEYED PLOTTED NOTE BOOK ALIGNMENT CHECKED PT. OF MAT CHECKED NO.

FED. HWY. ADM.	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	77	255

C-4

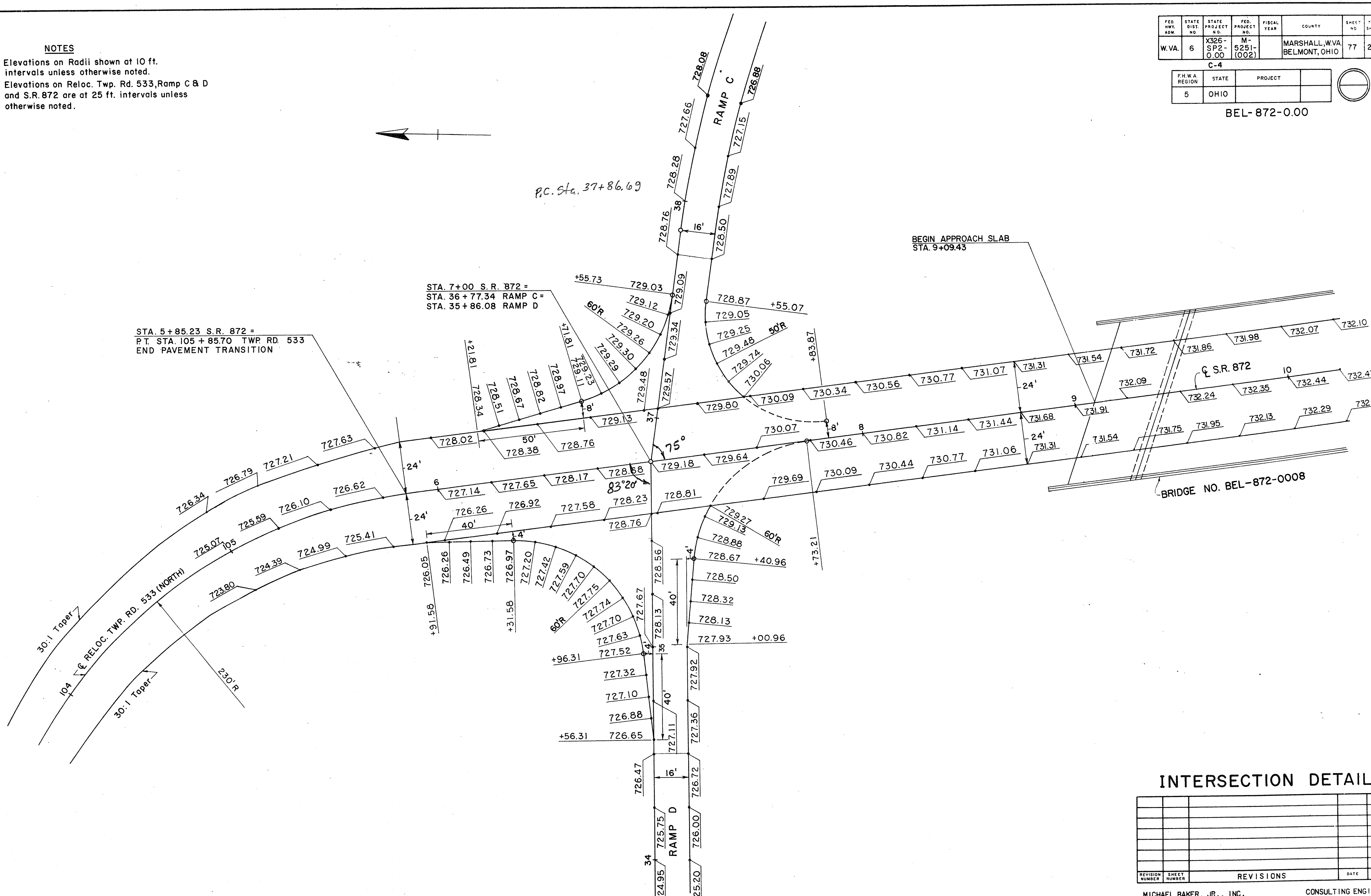
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

NOTES

(1) Elevations on Radii shown at 10 ft. intervals unless otherwise noted.

(2) Elevations on Reloc. Twp. Rd. 533, Ramp C & D and S.R. 872 are at 25 ft. intervals unless otherwise noted.



INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN

SURVEYED	
PLOTTED	
ALIGNMENT CHECKED	
RT. OF WAY CHECKED	
NOTE BOOK	
NO.	

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W. VA. BELMONT, OHIO	78	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTES

(1) Elevations on Radii shown at 10 ft. intervals unless otherwise noted.

(2) Elevations on S.R. 872, Ramp A, and Ramp B, are at 25 ft. intervals unless otherwise noted.

END APPROACH SLAB
STA. 11+38.52

STA. 11+80
Begin Par't Width Transition Lt. & Rt.

P.O.S.T. STA. 12+00 S.R. 872 =
STA. 10+00 ACCESS RD. B

S.C. STA. 12+61+31

+26.12
End Taper

+70.34
Begin 60' Radius

+86.12

STA. 13+50 S.R. 872 =
STA. 39+67.21 RAMP A =
STA. 37+39.34 RAMP B

+72.11

+32.11

+28.89

+68.59

RAMP B

ACCESS ROAD "B" (GRAVEL)

RAMP A

S.R. 872
(MOUNDSVILLE BRIDGE APPROACH)

STA. 12+70
End Part Width Transition Lt. & Rt.

+89.33

+89.50

P.T. STA. 38+80.48

+66.98

+16.98
END TAPER

STA. 13+60
BEGIN TYPE I MOD. MEDIAN

C.S. STA 17+25.89

MATCH SEE SHEET NO. 79 STA. 17+75

Modified Type A

20' MEDIAN TRANSITION

Sta. 16+80
END TYPE I MOD. MEDIUM

Sta. 17+00
BEGIN TYPE I MOD. MEDIAN

TYPE I MOD. MEDIAN

FOR TYPE V MOD. MEDIAN DETAILS
SEE SHEET NO. 63

FOR TYPE I MOD. MEDIAN DETAILS
SEE SHEET NO. 60

FOR MEDIAN TRANSITION DETAILS
SEE SHEET NO. 63

INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN
APPROVED
PLOTTED
ALIGNMENT CHECKED
PT. OF WAY CHECKED
NOTE BOOK
NO.

NOTES

(1) Elevations on Radii shown at 10 ft. unless otherwise noted.

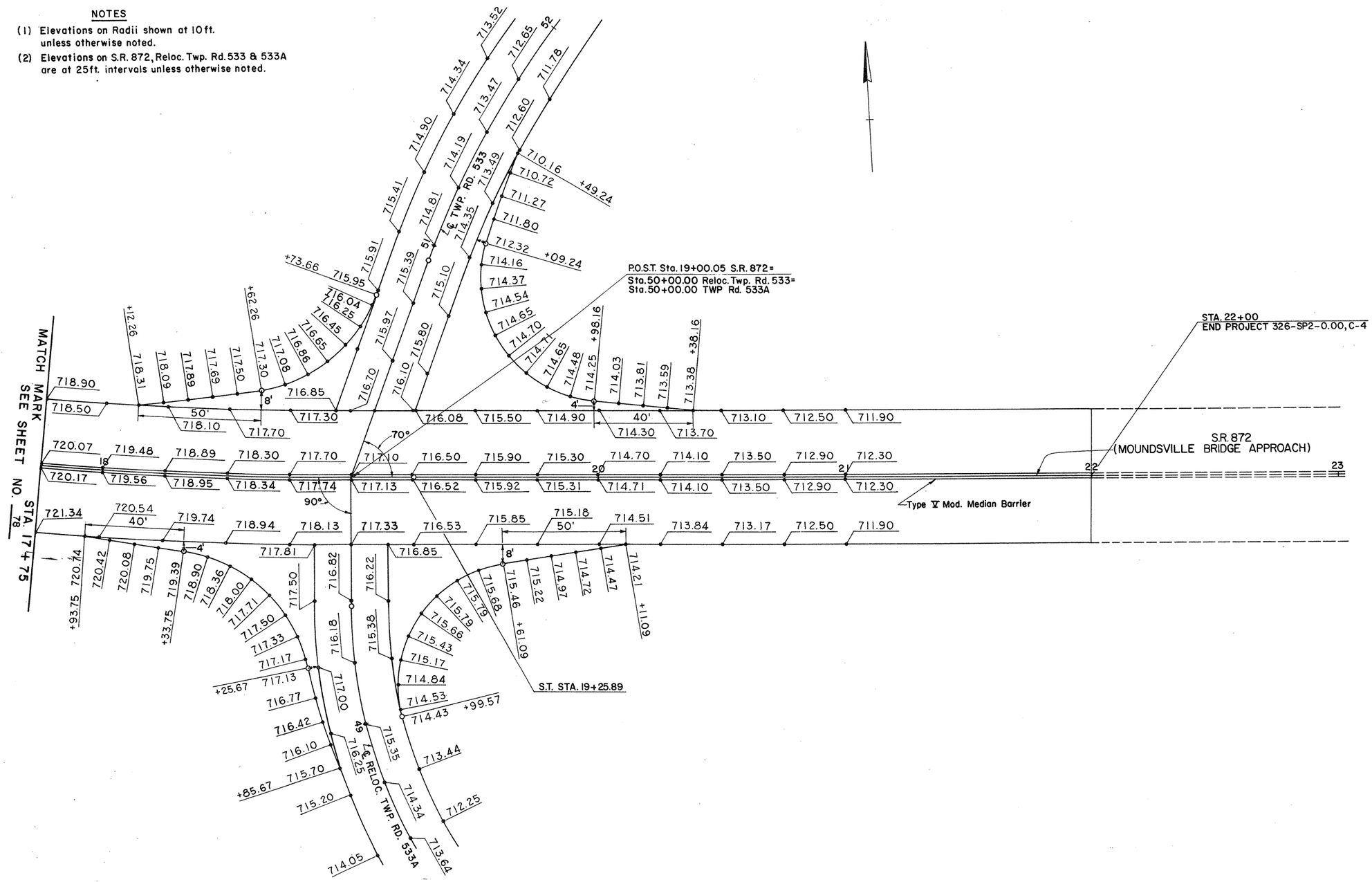
(2) Elevations on S.R. 872, Reloc. Twp. Rd. 533 & 533A are at 25ft. intervals unless otherwise noted.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	79	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



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

INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	80	255

C-4

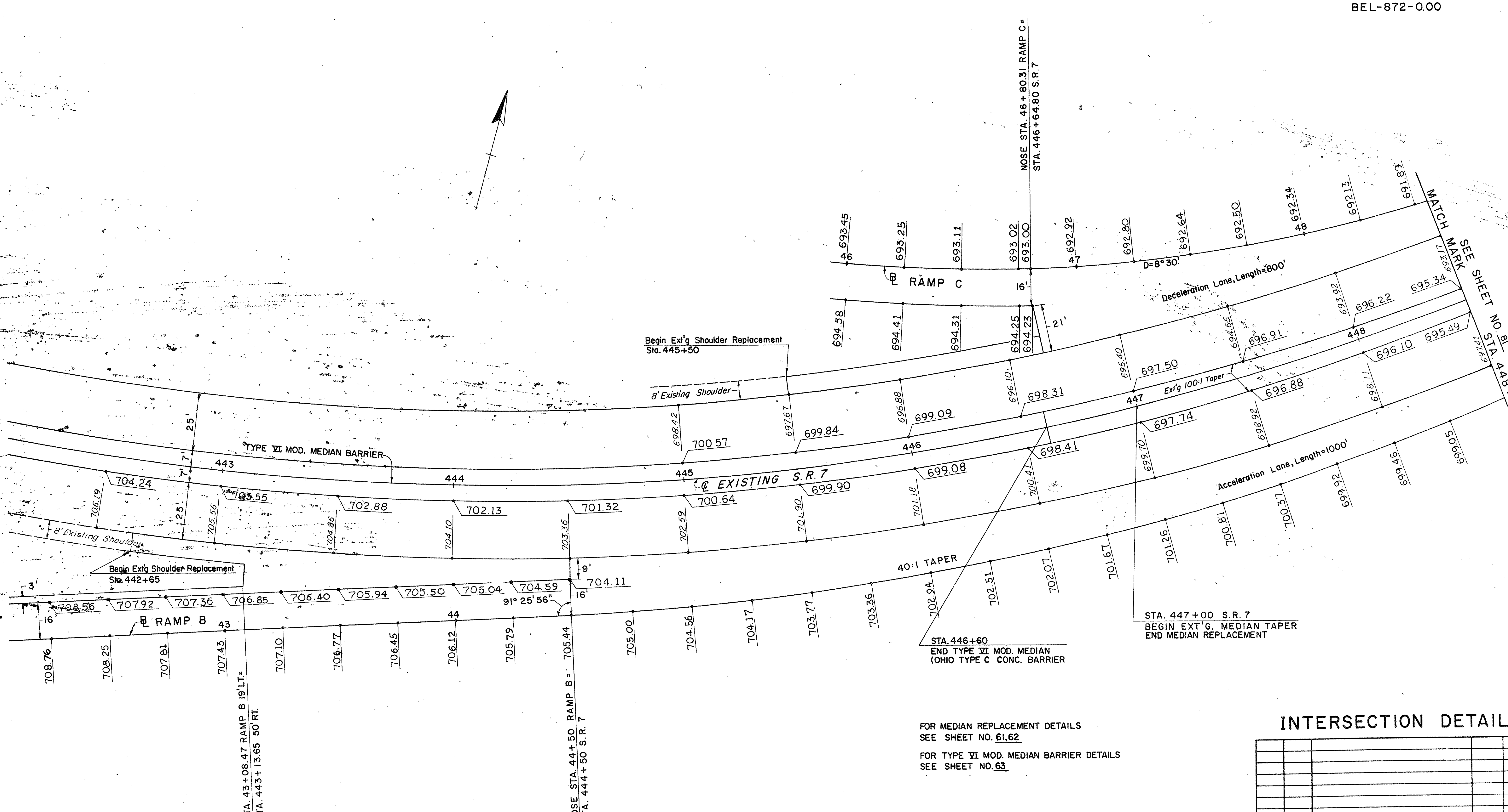
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

NOTES

(1) All Elevations shown on Ramps B and C are at 25' Intervals unless otherwise noted

(2) All Elevations on Existing S.R.7 are shown at 50' Intervals



FOR MEDIAN REPLACEMENT DETAILS SEE SHEET NO. 61,62

FOR TYPE VI MOD. MEDIAN BARRIER DETAILS SEE SHEET NO. 63

INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

FED. HWY. ADM	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL, W. VA. BELMONT, OHIO	81	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

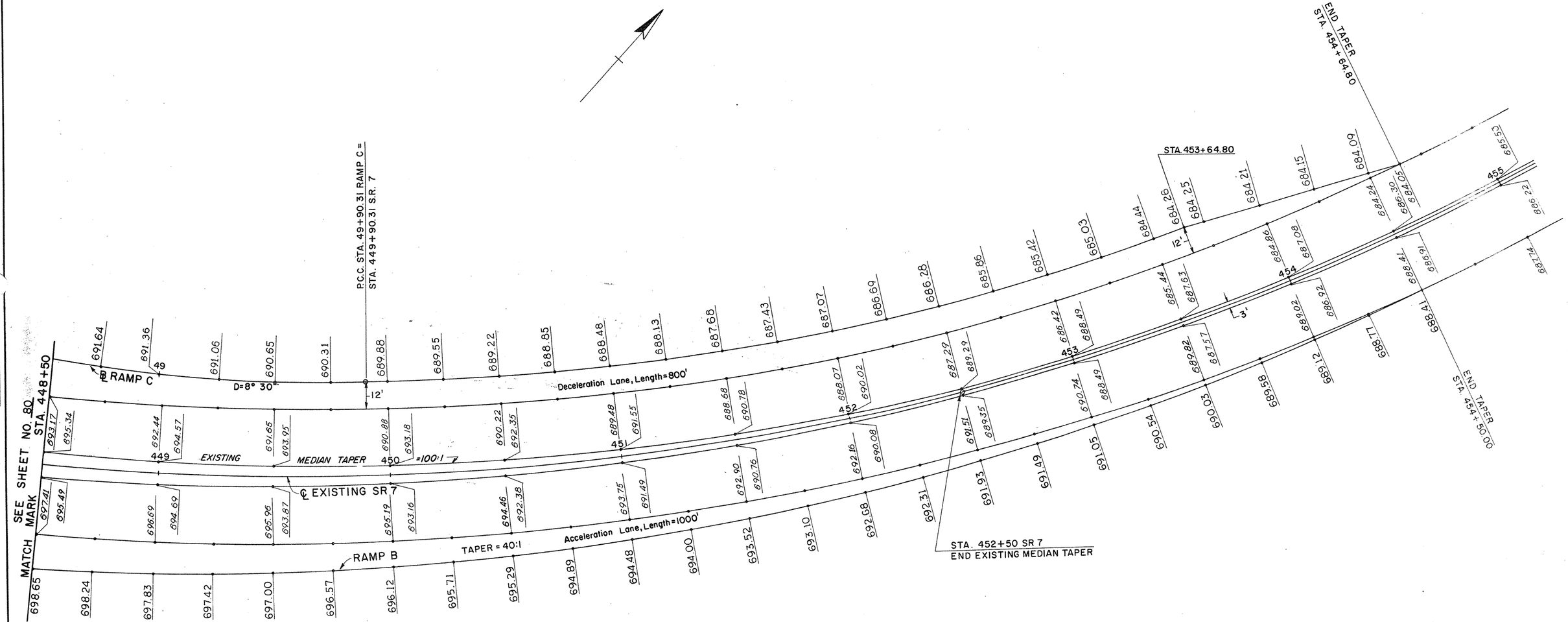
BEL-872-0.00

NOTES

(1) All Elevations shown on Ramps B and C are at 25' intervals unless otherwise noted

(2) All Elevations on Existing S.R.7 are shown at 50' intervals

NOTE BOOK PLOTTED ALIGNMENT CHECKED ST. OF WAY CHECKED NO.



INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL,W.VA. BELMONT, OHIO	82	255

C-4

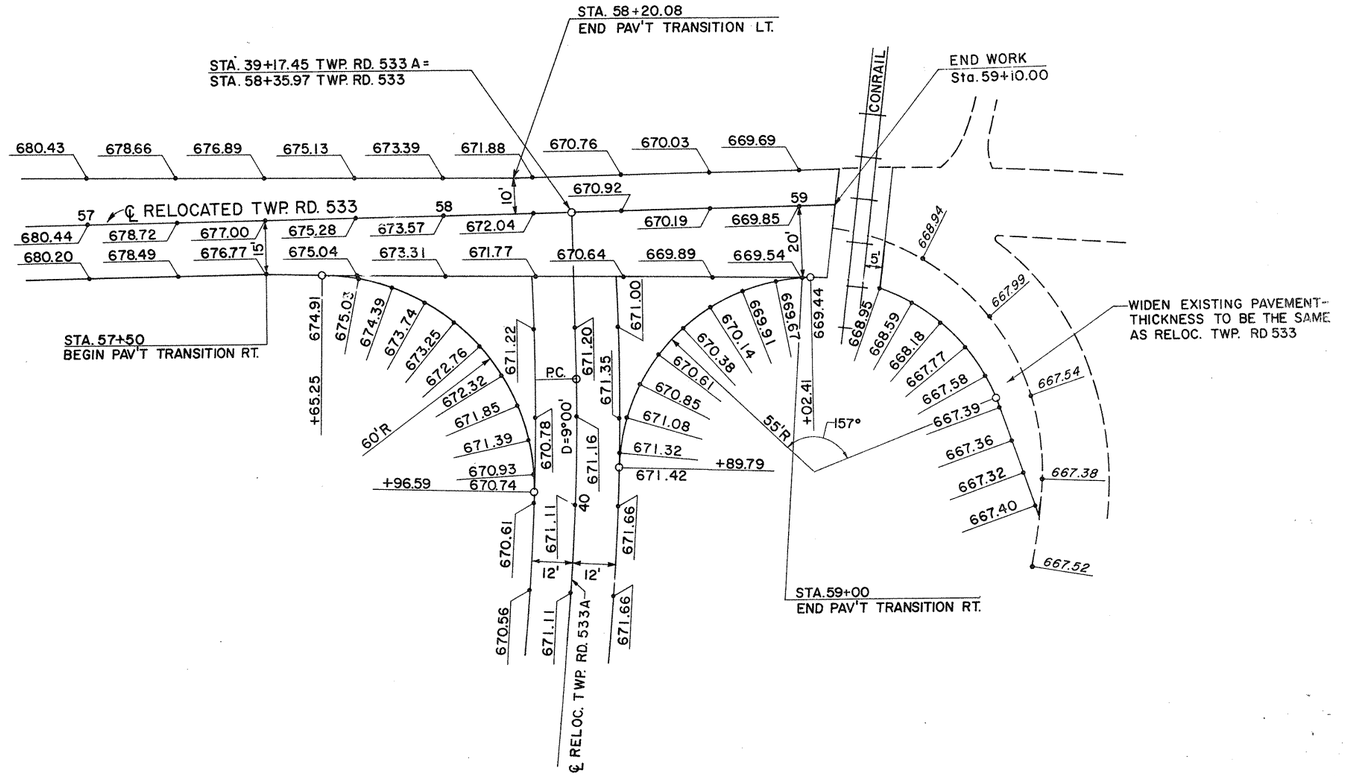
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTES

(1) Elevations on Radii shown at 10' intervals unless otherwise noted.

(2) Elevations on Twp. Rd. 533 and 533A, are at 25' intervals unless otherwise noted.



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

INTERSECTION DETAIL

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	A326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	83	255

C-4

RELOC. TWP. RD. 533 (NORTH)

STATION	12' LT.	P.G.	12' RT.		REMARKS
95+20.56	End Reverse Crown – Begin S.E. Transition				
95+20.56	708.24	708.42	708.61		
+25	708.24	708.45	708.66		
+50	708.25	708.58	708.91		
+75	708.05	708.51	709.08		
96+00	708.26	708.84	709.42		
+17.56	708.27	708.93	709.61		
96+17.56	End S.E. Transition – Begin Full S.E. = .056⅛				
98+85.06	End Full S.E. – Begin S.E. Transition				
98+85.06	711.74	712.41	713.08		
98+00	712.10	712.71	713.32		
+25	712.71	713.23	713.75		
+50	713.32	713.74	714.16		
+75	713.94	714.26	714.58		
100+00	714.55	714.77	714.99		
+25	715.16	715.29	715.42		
+50	715.77	715.80	715.83		
+57.42	715.95	715.95	715.95		Flat
+75	716.39	716.32	716.25		
101+00	717.00	716.83	716.66		
+25	717.61	717.35	717.09		
+50	718.22	717.86	717.50		
+75	718.84	718.38	717.92		
102+00	719.45	718.89	718.33		
+25	720.06	719.41	718.76		
+25.70	720.08	719.42	718.76		Begin Pav't Width Transition
+42.06	720.51	719.76	719.01		Width = 12.55' Lt & Rt.
102+42.06	End S.E. Transition – Begin Full S.E. = .06⅛				

RELOC. TWP. RD. 533 (SOUTH)

STATION	ELEV.	OFFSET LT.	P.G.	OFFSET RT.	ELEV.
55+44.08	End Full SE = .058⅛ – Begin SE Transition				
55+44.08	692.02	15'	691.15	15'	690.28
+50	691.58	15'	690.74	15'	689.90
+75	689.72	15'	689.02	15'	689.33
56+00	687.86	15'	687.31	15'	686.76
+20.08	686.37	15'	685.93	15'	685.49
+25	686.00	14.88'	685.59	15'	685.18
+50	684.14	14.25	683.87	15'	683.61
+75	682.27	13.63	682.15	15'	681.92
57+00	680.43	13.00'	680.44	15'	680.20
+25	678.66	12.38	678.72	15'	678.49
+50	676.89	11.75	677.00	15'	676.77
+75	675.13	11.13	675.28	15.83'	675.04
+83.08	674.56	10.93	674.73	16.10'	674.48
57+83.08	End SE Transition – Begin Normal Crown = .0156 ⅛				

TWP. RD. 533A

STATION	ELEV.	OFFSET LT.	P.G.	OFFSET RT.	ELEV.
44+81.94	End Full SE = .046⅛ – Begin SE Transition				
44+81.94	689.96	14.53	689.29	14.53	688.62
45+00	691.26	14.93	690.48	14.93	689.70
+02.94	691.47	15.00	690.67	15.00	689.87
+23.94	692.96	15.00	692.06	15.00	691.16
45+23.94	End SE Transition – Begin Full SE = .06⅛				

S.R. 872

STATION	24' LT.	P.G.	24' RT.		REMARKS
STA. 9+11.31 – End Normal Crown – Begin SE Transition					
9+11.31	731.54	731.95	731.54		
+25	731.72	732.09	731.75		
+50	731.86	732.24	731.95		
+75	731.98	732.35	732.13		
10+00	732.07	732.44	732.29		
+25	732.10	732.47	732.38		
+50	732.12	732.49	732.46		
+75	732.09	732.46	732.56		
11+00	732.03	732.40	732.68		
+25	731.84	732.30	732.76		
Remainder of Elevations Shown on Sheet No. 78					
12+61.31 End SE Transition – Begin Full SE = .06⅛					

PLAN — SURVEYED — PLOTTED — NOTE BOOK — ALIGNMENT CHECKED — PT OF INT CHECKED — NO. — BY — DATE

SUPERELEVATION TABLES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	0326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	84	255

C-4

RAMP A

STATION	16' LT.	P.G.			REMARKS
S.R.7 423+15.41	End Normal Crown - Begin S.E. Transition				
					Elevations shown on Intersection
27+25.63	End S.E. Transition - Begin Full S.E. = .041 1/1				Detail Sheet 76
29+15.19	End Full S.E. - Begin Transition				
29+15.19	709.68	709.02			
+25	709.69	709.08			
+50	709.76	709.28			
+75	709.91	709.55			
+97.19	710.13	709.88			
29+97.19	End S.E. Transition - Begin Normal Crown = .0156 1/1				
32+55.03	End Normal Crown - Begin S.E. Transition				
32+55.03	716.99	716.76			
+75	717.58	717.43			
33+00	718.34	718.31			
+04.97	718.48	718.48			FLAT
+25	719.08	719.18			
+50	720.05	719.82			
+75	720.92	720.57			
34+00	721.32	721.80			
+25	722.07	722.67			
+50	722.82	723.54			
+65.03	724.07	723.27			
34+65.03	END S.E. Transition - Begin Full S.E. = .05 1/1				

RAMP B

STATION	16'LT.	P.G.			REMARKS
41+35	End Normal Crown - Begin S.E. Transition				
41+50	710.84	710.67			
+75	710.02	709.97			
42+00	709.25	709.33			Remaining
+25	708.56	708.76			Elevations Shown on Intersection Detail Sheet No. 80
44+50	End S.E. Transition - Begin Full S.E. = .083 1/1				

RAMP C

STATION		P.G.	16' RT.		REMARKS
37+02.19					Elevations shown on Intersection
38+50.69	End S.E. Transition - Begin Full S.E. = .04 1/1				Detail Sheet 77
38+92.86	End Full S.E. - Begin S.E. Transition				
38+92.86		725.21	724.57		
39+00		724.89	724.25		
+25		723.67	723.15		
+50		722.29	721.89		
+75		720.84	720.56		
40+00		719.40	719.23		
+25		717.95	717.89		
+38.52		717.16	717.16		FLAT
+50		716.50	716.55		
+75		715.05	715.21		
41+00		713.61	713.88		
+25		712.16	712.54		
+50		710.71	711.21		
+75		709.26	709.88		
42+00		707.82	708.53		
+25		706.37	707.19		
+46.07		705.16	706.07		
42+46.07	End S.E. Transition - Begin Full S.E. = .057 1/1				
44+21.31	End Full S.E. - Begin S.E. Transition				Elevations Shown on Intersection Detail Sheet No. 80, 81
47+58.01	End S.E. Transition - Begin Full S.E. = .083 1/1				

RAMP D

STATION		P.G.	16' RT.		REMARKS
S.R.7 424+37.50	End Normal Crown - Begin S.E. Transition				
					Elevations shown on Intersection
29+42.50	End S.E. Transition - Begin Full S.E. = .056 1/1				Detail Sheet 76
30+12.63	End Full S.E. - Begin S.E. Transition				
30+12.63		711.40	712.30		
+25		711.70	712.54		
+50		712.36	713.07		
+75		713.10	713.69		
31+00		713.90	714.36		
+25		714.77	715.11		
+42.63		715.41	715.66		
31+42.63	End S.E. Transition - Begin Normal Crown = .0156 1/1				

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

SUPERELEVATION TABLES

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

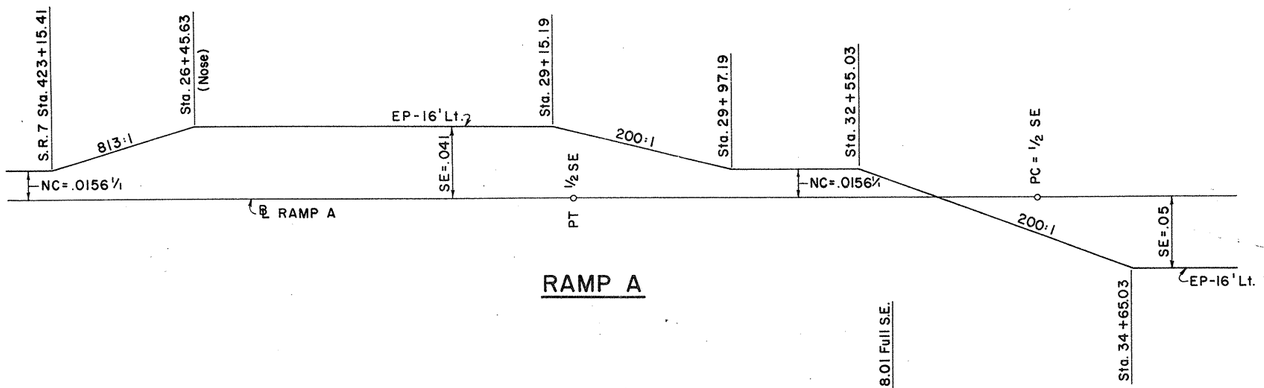
F.H.W.A. REGION	STATE	PROJECT	
5	OH10		

BEL-872-0.00

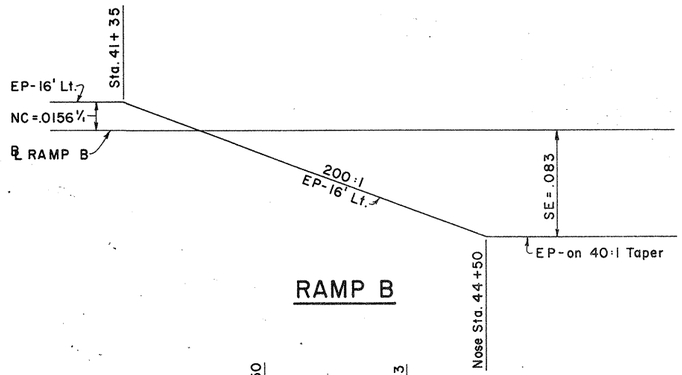
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	85	255

C-4

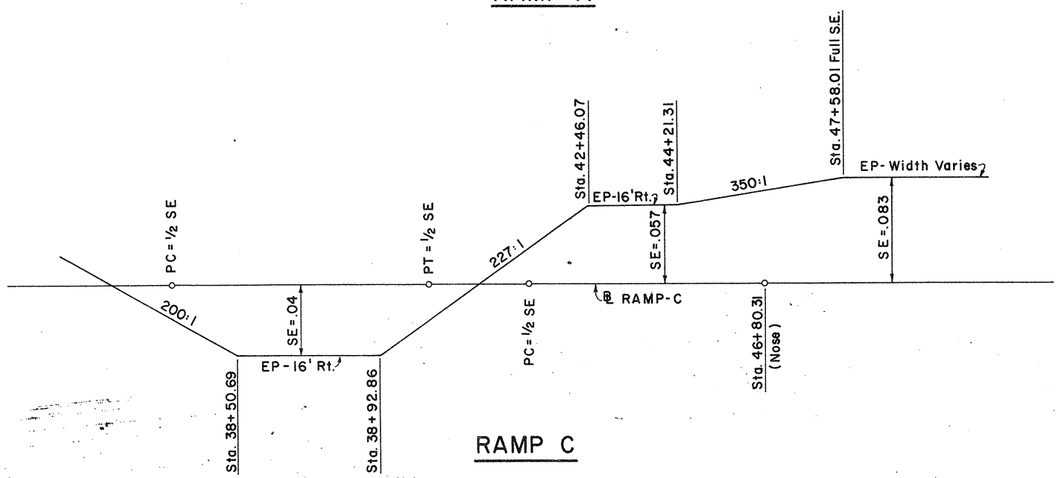
PLAN — SURVEYED — PLOTTED — NOTE BOOK — NO. — RIGHT CHECKED — ALIGNMENT CHECKED — RT. OF WAY CHECKED — DATE — BY



RAMP A



RAMP B



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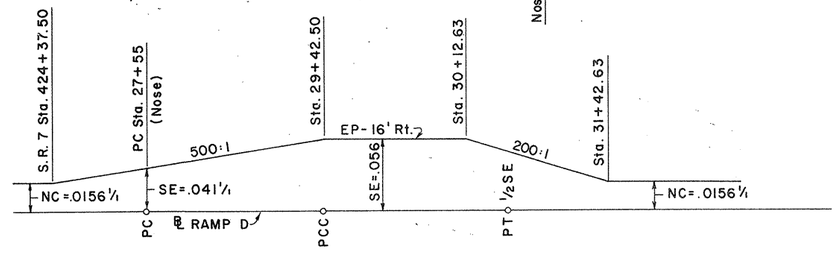
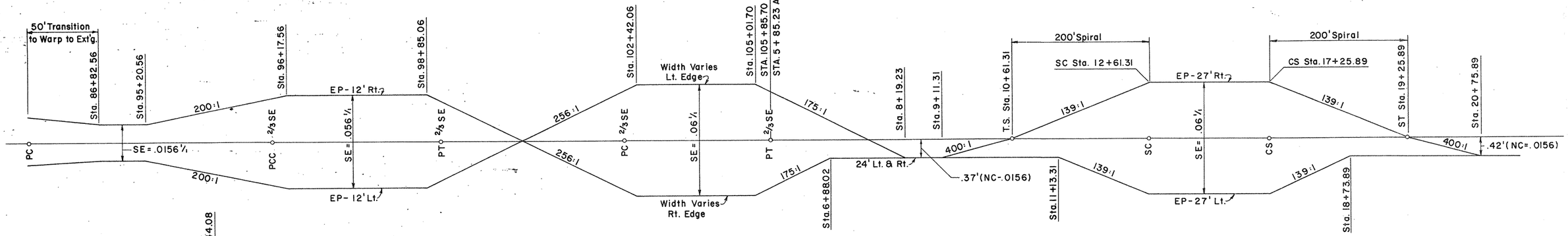
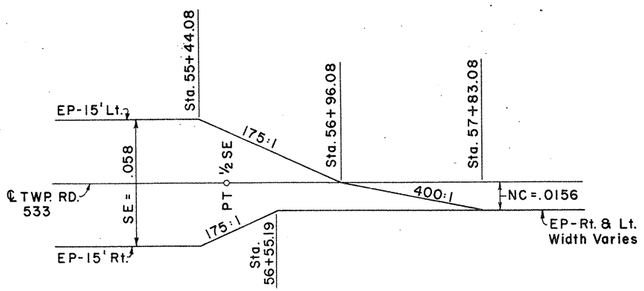


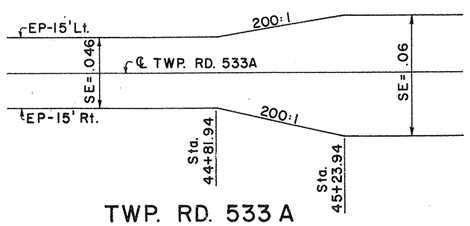
RAMP D



TWP. RD. 533 - S.R. 872 (MOUNDSVILLE BRIDGE APPROACH)



TWP. RD. 533



TWP. RD. 533 A

SUPERELEVATION DIAGRAMS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

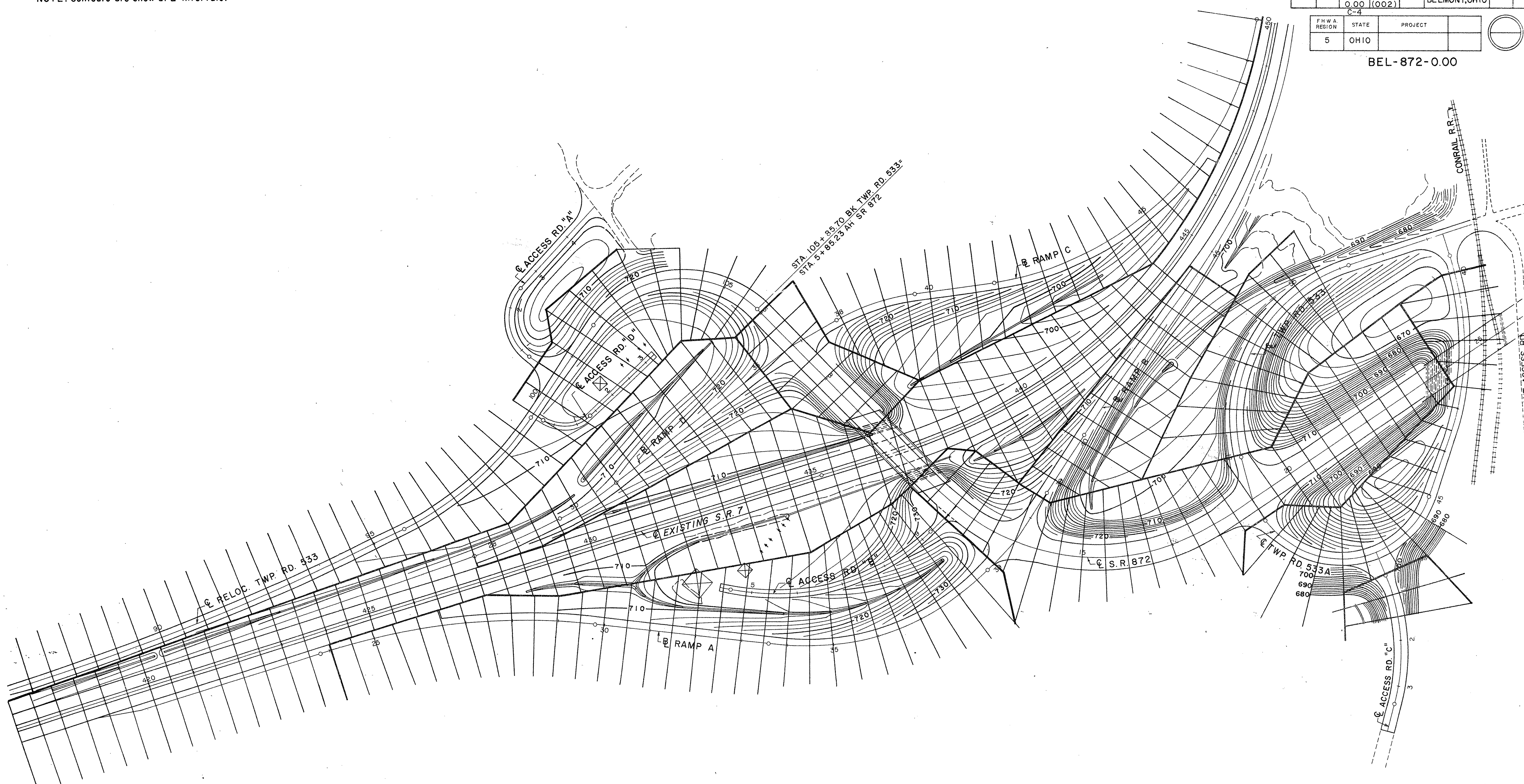
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NOTE: Contours are show at 2' intervals.

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	86	255

FHWA REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



100' 50' 0 100'

SITE GRADING PLAN

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

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

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

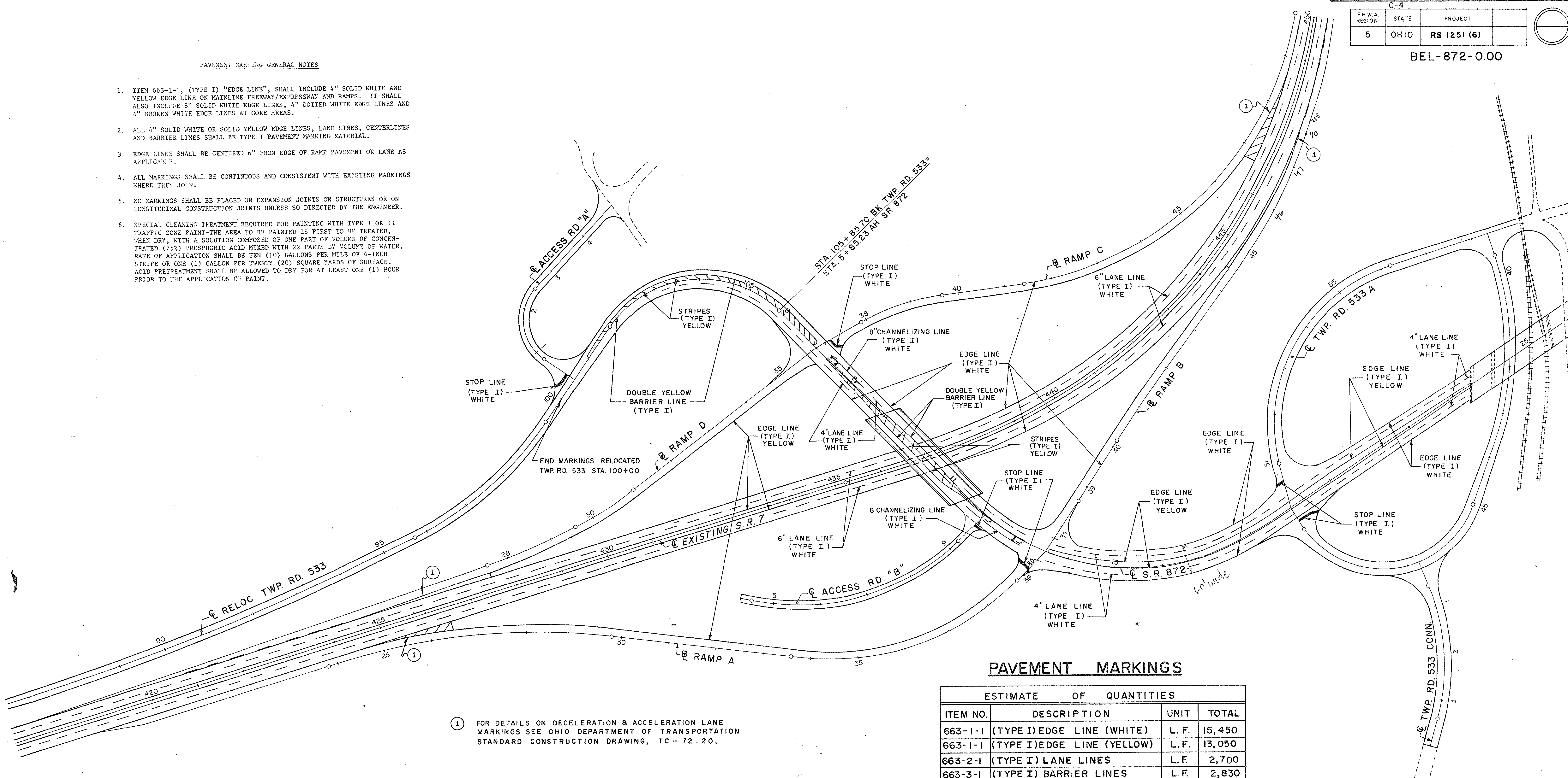
FED HWY. ADM	STATE DIST. NO	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	87	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	RS 1251 (6)	

BEL-872-0.00

PAVEMENT MARKING GENERAL NOTES

1. ITEM 663-1-1, (TYPE I) "EDGE LINE", SHALL INCLUDE 4" SOLID WHITE AND YELLOW EDGE LINE ON MAINLINE FREEWAY/EXPRESSWAY AND RAMPS. IT SHALL ALSO INCLUDE 8" SOLID WHITE EDGE LINES, 4" DOTTED WHITE EDGE LINES AND 4" BROKEN WHITE EDGE LINES AT GORE AREAS.
2. ALL 4" SOLID WHITE OR SOLID YELLOW EDGE LINES, LANE LINES, CENTERLINES AND BARRIER LINES SHALL BE TYPE I PAVEMENT MARKING MATERIAL.
3. EDGE LINES SHALL BE CENTERED 6" FROM EDGE OF RAMP PAVEMENT OR LANE AS APPLICABLE.
4. ALL MARKINGS SHALL BE CONTINUOUS AND CONSISTENT WITH EXISTING MARKINGS WHERE THEY JOIN.
5. NO MARKINGS SHALL BE PLACED ON EXPANSION JOINTS ON STRUCTURES OR ON LONGITUDINAL CONSTRUCTION JOINTS UNLESS SO DIRECTED BY THE ENGINEER.
6. SPECIAL CLEANING TREATMENT REQUIRED FOR PAINTING WITH TYPE I OR II TRAFFIC ZONE PAINT-THE AREA TO BE PAINTED IS FIRST TO BE TREATED, WHEN DRY, WITH A SOLUTION COMPOSED OF ONE PART OF VOLUME OF CONCENTRATED (75%) PHOSPHORIC ACID MIXED WITH 22 PARTS BY VOLUME OF WATER. RATE OF APPLICATION SHALL BE TEN (10) GALLONS PER MILE OF 4-INCH STRIPE OR ONE (1) GALLON PER TWENTY (20) SQUARE YARDS OF SURFACE. ACID PRETREATMENT SHALL BE ALLOWED TO DRY FOR AT LEAST ONE (1) HOUR PRIOR TO THE APPLICATION OF PAINT.



① FOR DETAILS ON DECELERATION & ACCELERATION LANE MARKINGS SEE OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWING, TC-72.20.

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663-1-1	(TYPE I) EDGE LINE (WHITE)	L.F.	15,450
663-1-1	(TYPE I) EDGE LINE (YELLOW)	L.F.	13,050
663-2-1	(TYPE I) LANE LINES	L.F.	2,700
663-3-1	(TYPE I) BARRIER LINES	L.F.	2,830
663-4	(TYPE I) CHANNELIZING LINE	L.F.	1,800
663-5	(TYPE I) STOP LINE	L.F.	320
663-7	(TYPE I) STRIPES (WHITE)	L.F.	750
663-7	(TYPE I) STRIPES (YELLOW)	L.F.	1,890
663-10	(TYPE I) LANE ARROWS	EACH	4
663-11	(TYPE I) LANE LETTERS	EACH	8

FOR DETAILS SEE STANDARDS TEM-1, TEM-2 & TEM-3

PAVEMENT MARKINGS

REVISION NUMBER	SHEET NUMBER	REVISIONS		DATE

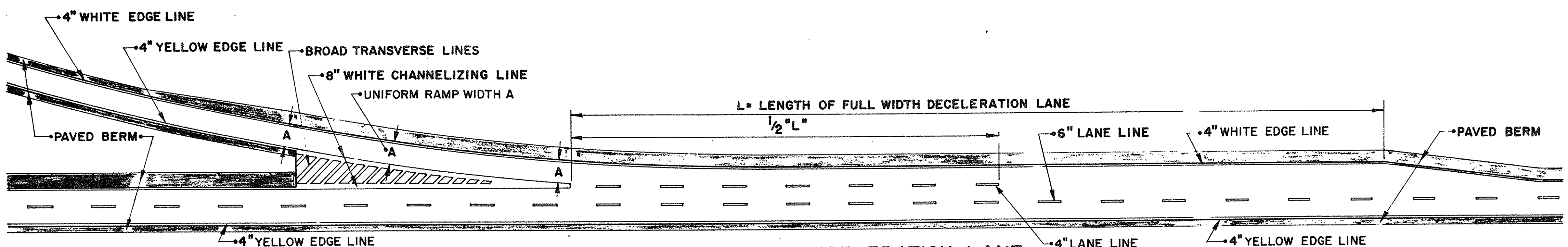
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

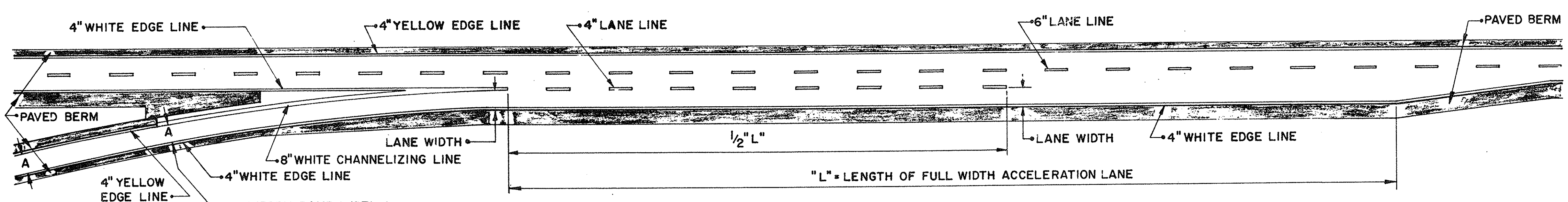
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W. VA. BELMONT, OHIO	87A	[illegible]

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	RS1251 (6)	

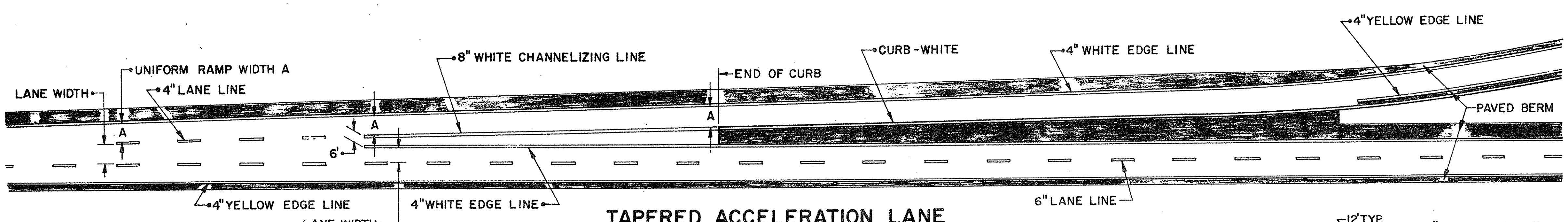
BEL-872-0.00



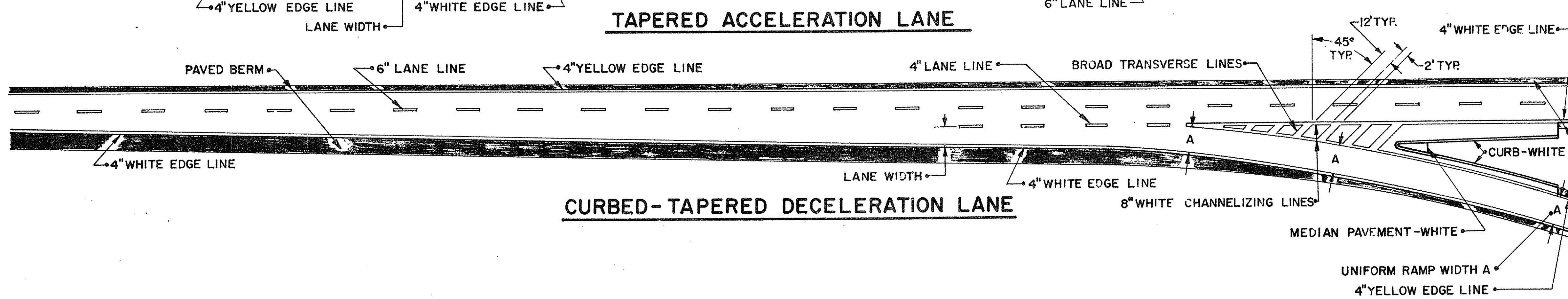
UNCURBED - PARALLEL DECELERATION LANE



PARALLEL ACCELERATION LANE



TAPERED ACCELERATION LANE



CURBED - TAPERED DECELERATION LANE

ALL ITEMS SHALL CONFORM TO ITEM 621 OR SUPPLEMENTAL SPECIFICATION 847, UNLESS OTHERWISE SPECIFIED.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

FREEWAY ENTRANCE AND EXIT MARKINGS

DATE 8-29-77

STANDARD CONSTRUCTION DRAWING **TC-72.20**

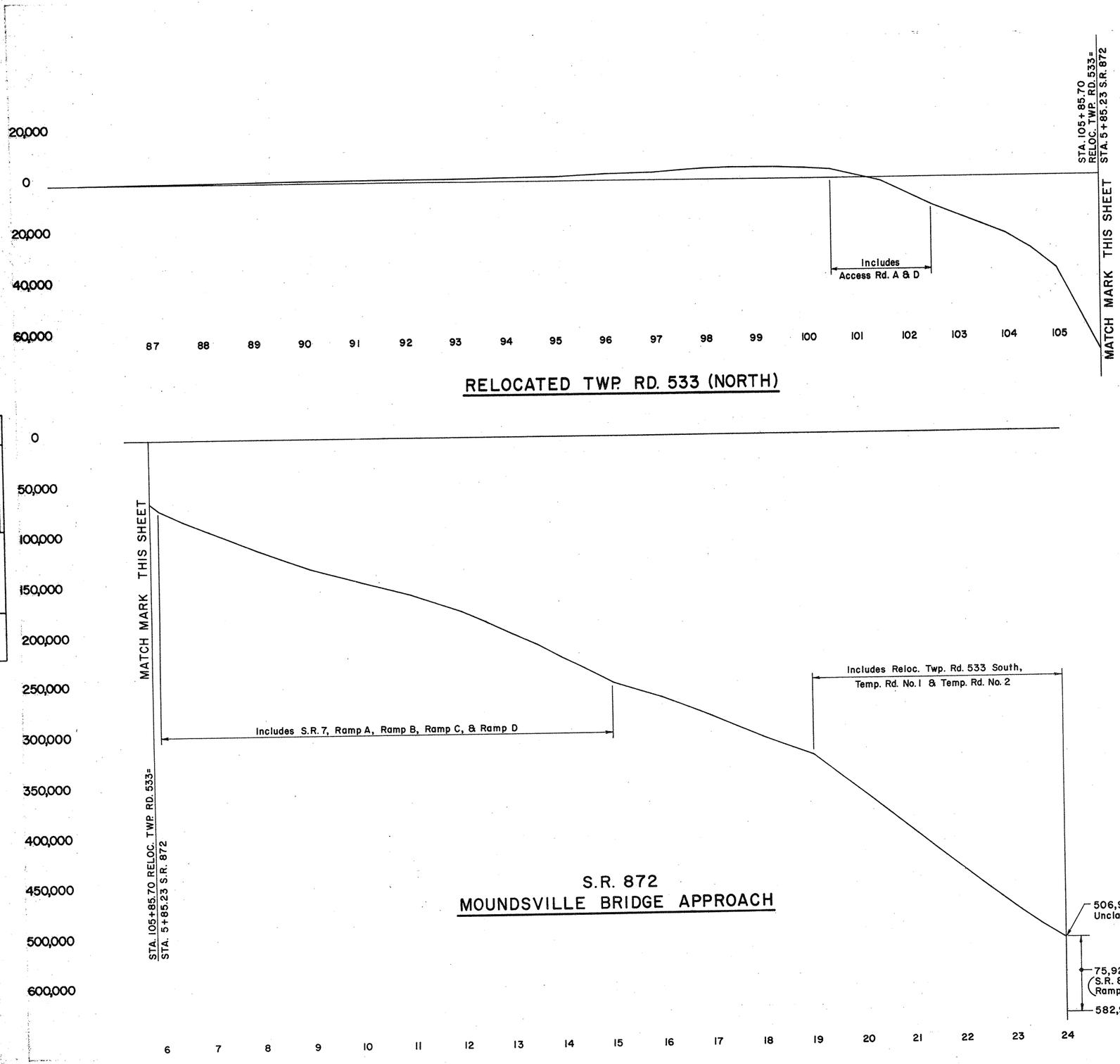
APPROVED: [signature] Engineer of Design Services

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.- BEL-MONT, OHIO	88	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



RELOCATED TWP. RD. 533 (NORTH)

S.R. 872
MOUNDSVILLE BRIDGE APPROACH

NOTE BOOK PLOTTED GRADES CHECKED B.M. & TIES STRUCTURE NOTATIONS COPIED NO.

⚠ NOTE:
THIS SHEET DOES NOT REFLECT CHANGES MADE ON SHEET 9.

FOR INFORMATION ONLY

MASS DIAGRAM
TWP. RD. 533 N & S.R. 872

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	88-89	ADDED NOTE	5/4/82	C.RUM.

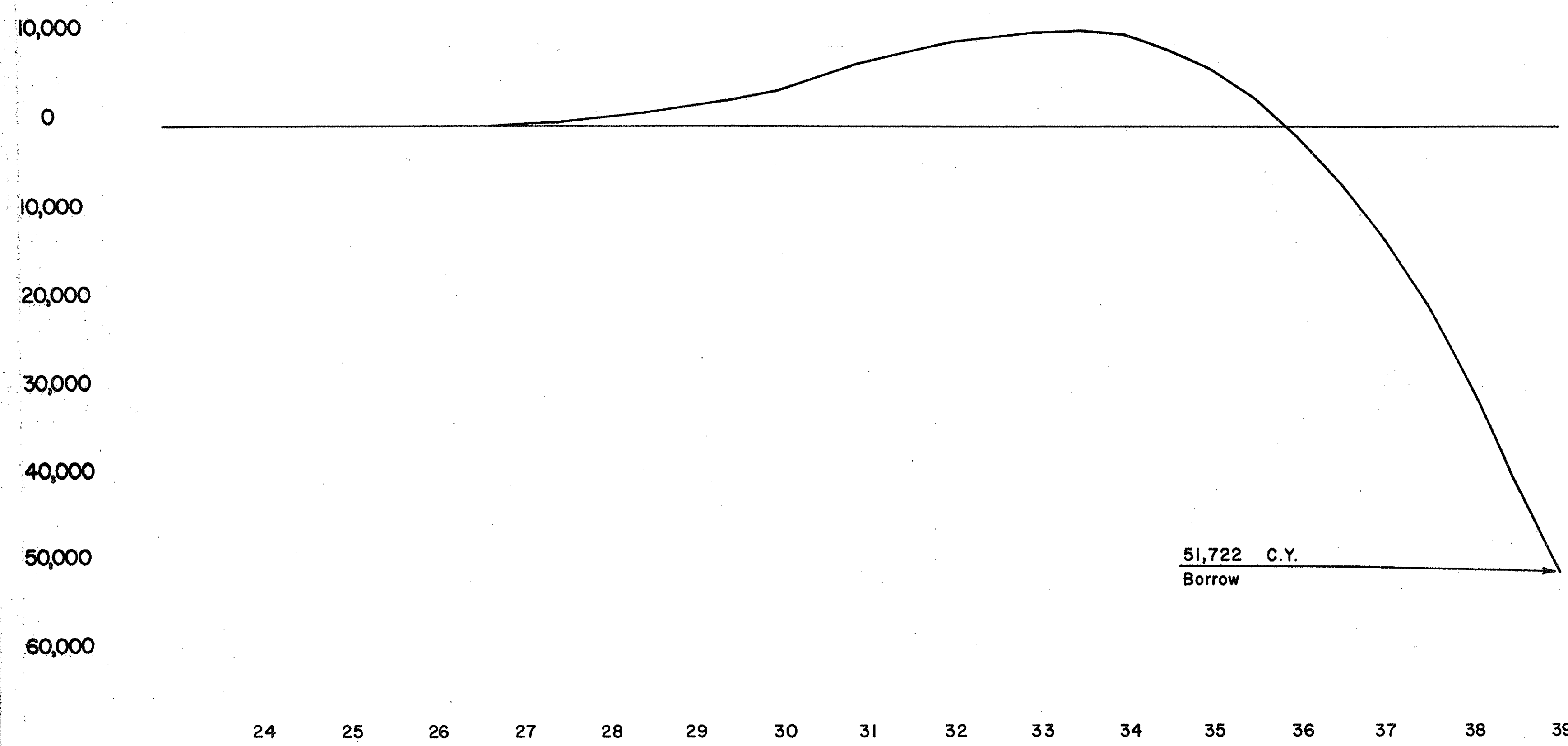
MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

C-4

Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL W.VA.-BEL-MONT, OHIO	88A	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



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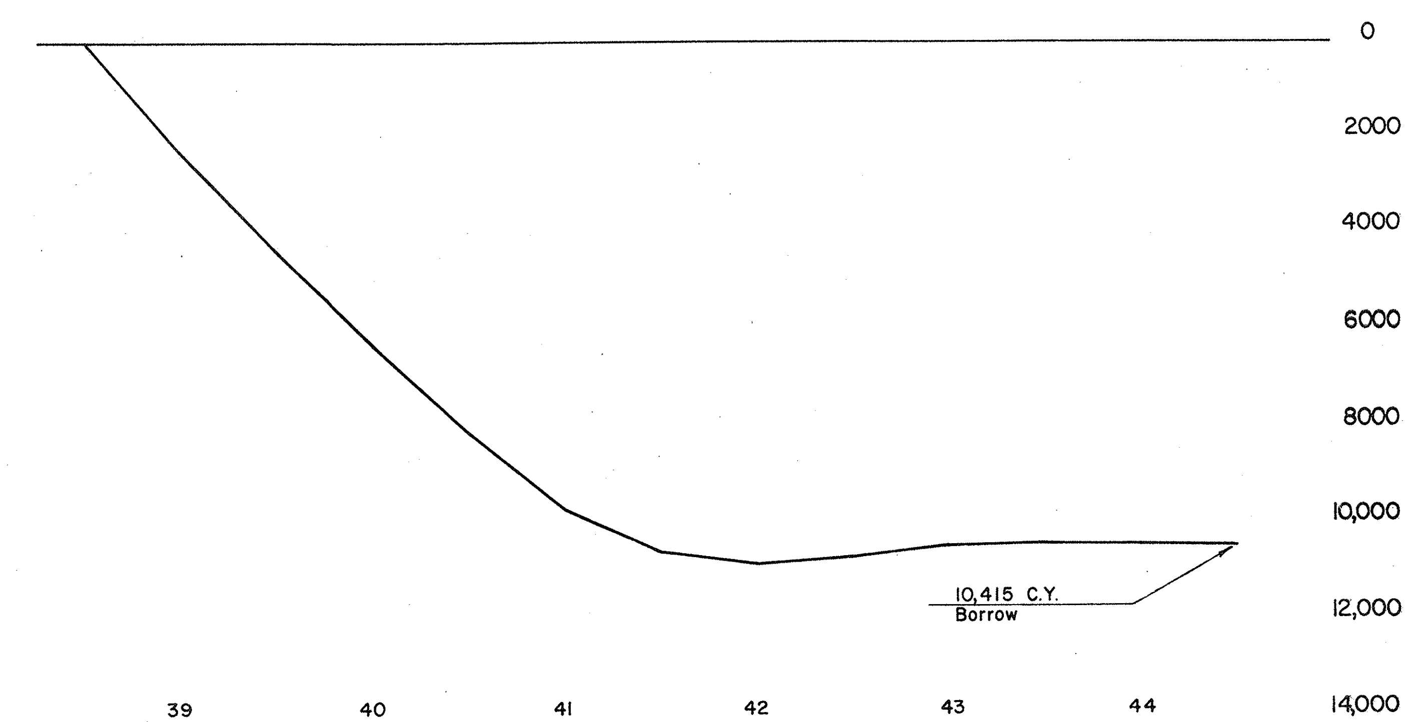

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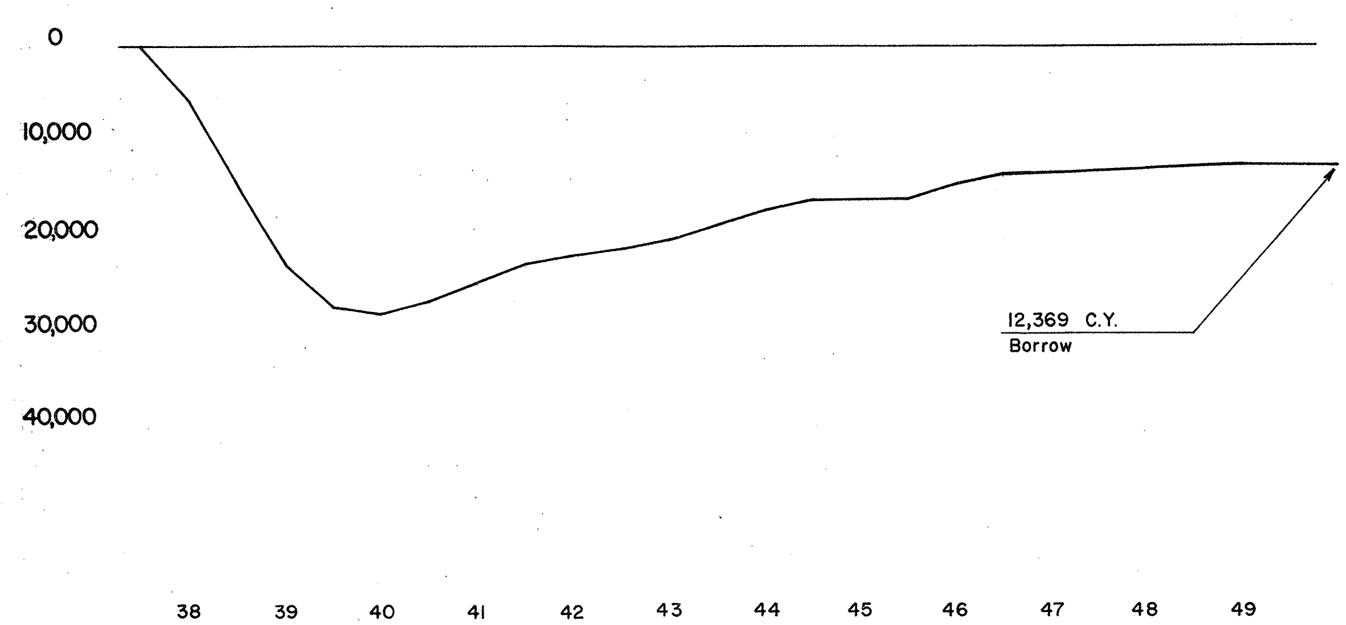
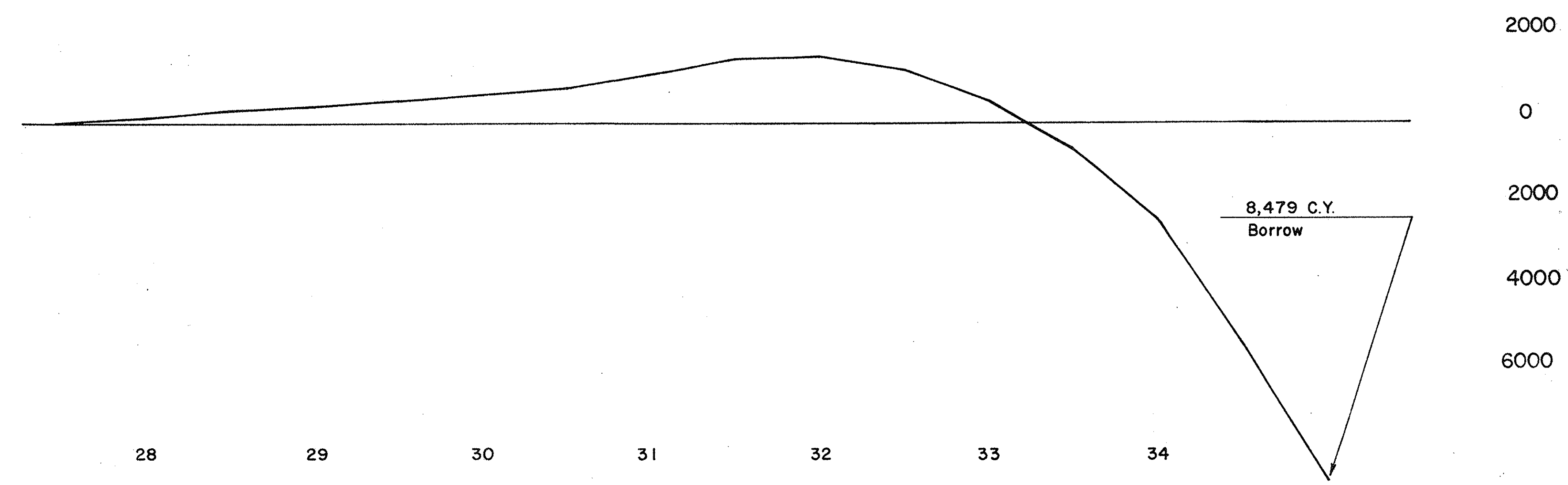


RAMP C



RAMP D

MASS DIAGRAM RAMPS A,B,C,D

⚠ *NOTE:*

THIS SHEET DOES NOT REFLECT CHANGES MADE ON SHEET 9.

FOR INFORMATION ONLY

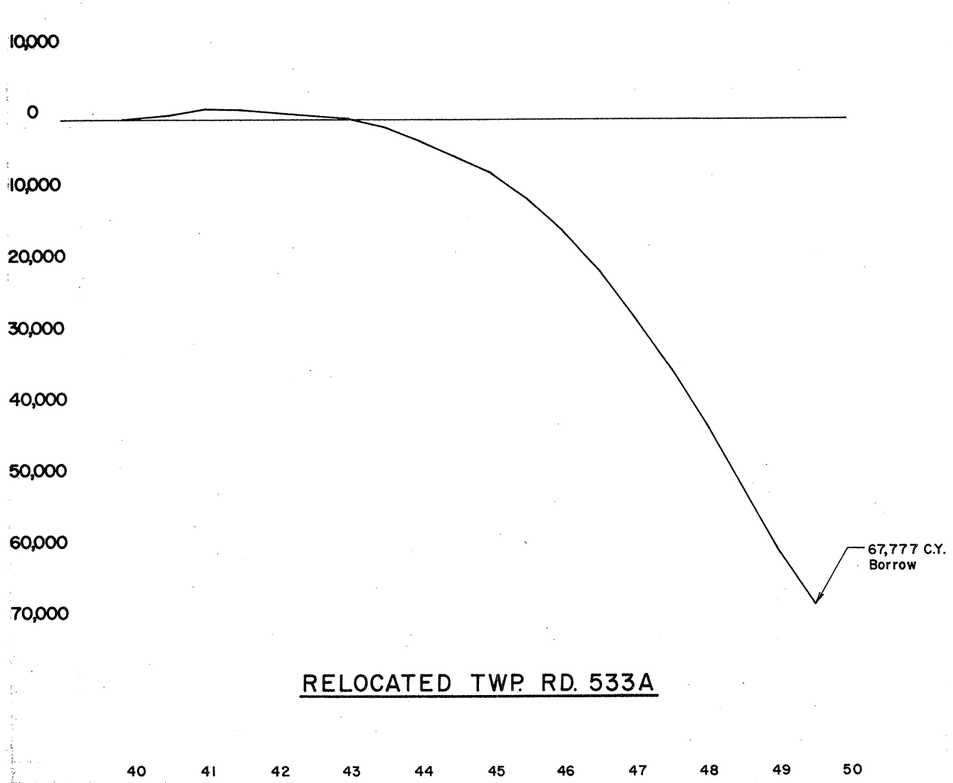
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	88-89	Added Note	5/6/82	C.B.

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

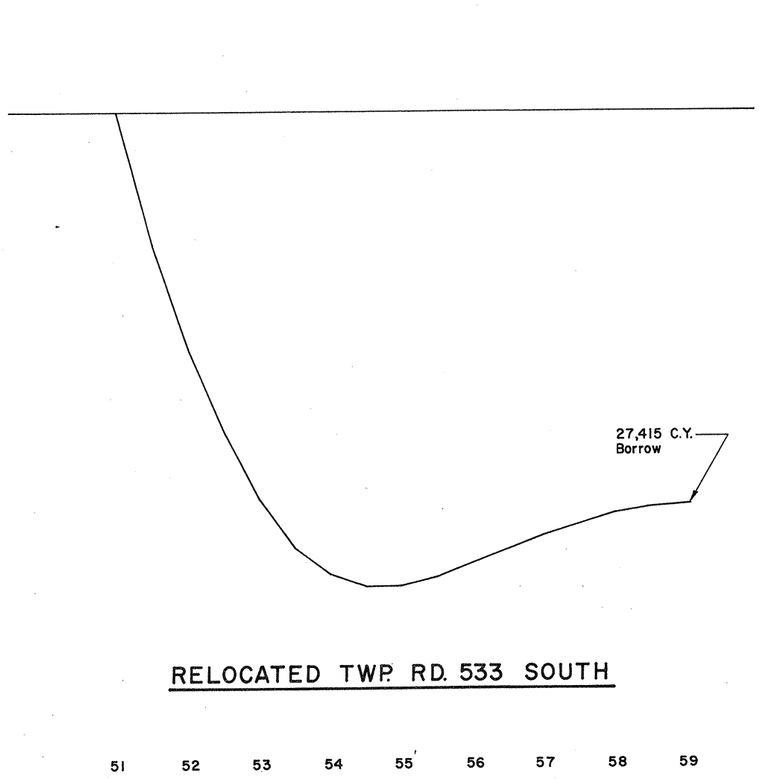
Federal Highway Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	89	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



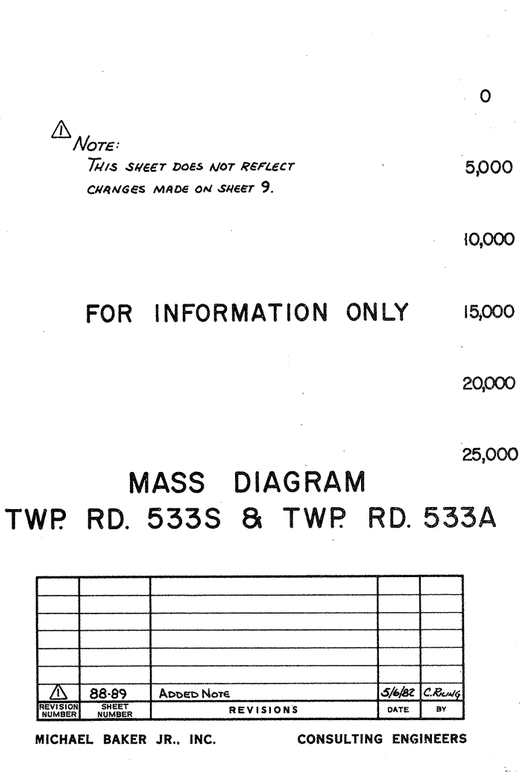
RELOCATED TWP. RD. 533A



RELOCATED TWP. RD. 533 SOUTH

⚠ NOTE:
THIS SHEET DOES NOT REFLECT CHANGES MADE ON SHEET 9.

FOR INFORMATION ONLY



MASS DIAGRAM
TWP. RD. 533S & TWP. RD. 533A

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
⚠	88-89	ADDED NOTE.	5/6/82	C.Rang

MICHAEL BAKER JR., INC. CONSULTING ENGINEERS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OH10	90	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OH10		

BEL-872-0.00

PLAN — SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, NOTE BOOK, NO.

NOTES: (1) FOR LIMITS OF DELINEATORS, SEE SHEET NO. 18.
(2) SIGNS NOT TO SCALE.
(3) PLACEMENT OF ALL SIGNS IS APPROXIMATE.
(4) FINAL LOCATION TO BE DETERMINED IN FIELD BY ENGINEER.
(5) ALL STANDARD SIGN CODE NUMBERS REFER TO OHIO MUTCD FOR STREETS AND HIGHWAY 1977, EXCEPT WHERE NOTED.

SIGN "A" (37a)

M-38-24 SOUTH | NORTH M-37-24
M-2-24-2 | 7 | 7 | M-2-24-2
M-26-21 | M-24-21
Powhatan Point 7
Bellaire 8
STA. 16+50 D-4B 13'-0" x 4'-0"

LEGEND

(7) SIGN NUMBER
POST MOUNTED SIGN (ONE SUPPORT)
POST MOUNTED SIGN (TWO SUPPORTS)
GUARDRAIL
SIGN INSTALLATION INCLUDED IN CONTRACT NO. 5

✳ Refers to W.Va. D.O.T. Fabrication Details.

Scale in feet: 100 0 100 200

SIGNING PLAN LAYOUT

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

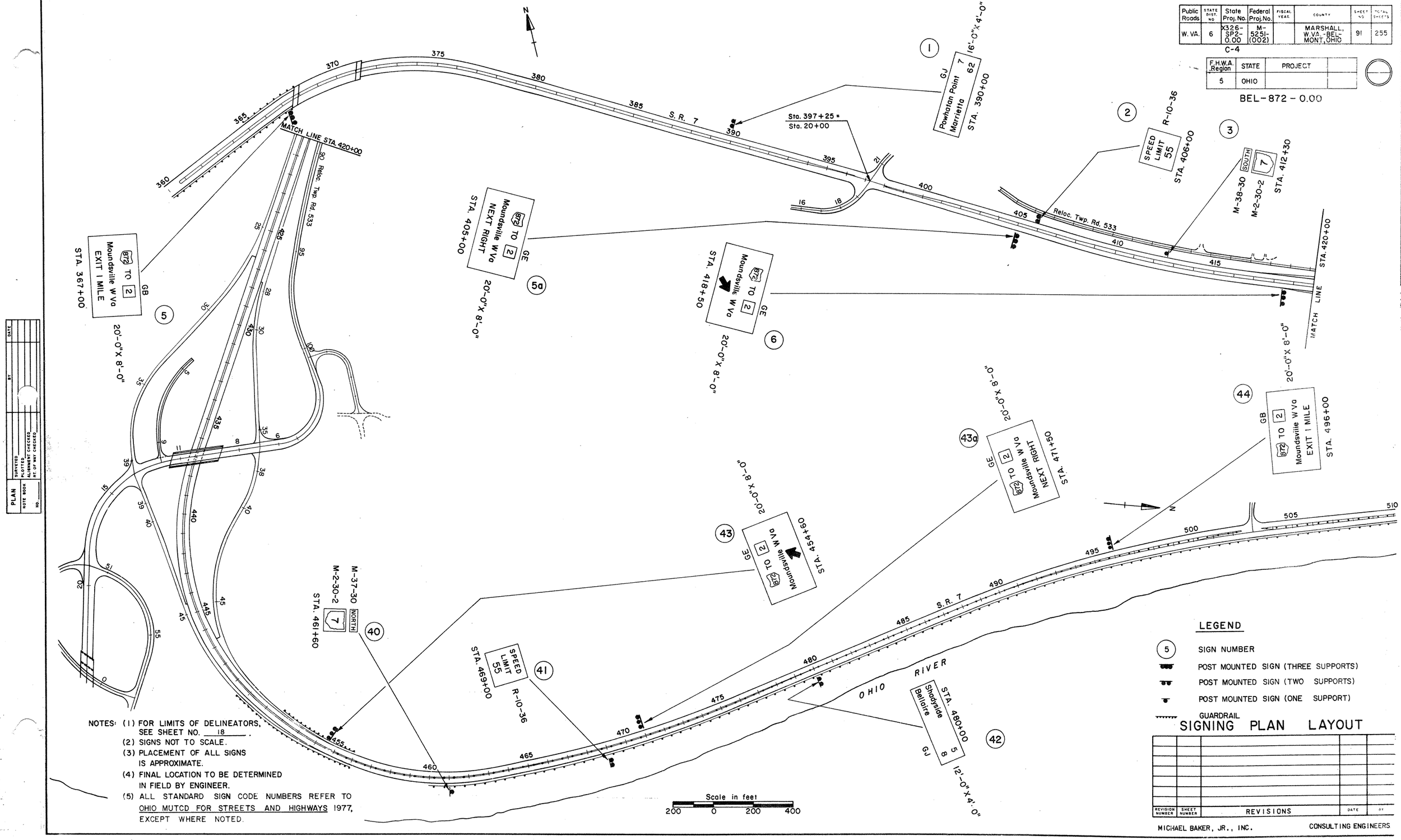
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Public Roads	STATE DIST. NO.	State Proj. No.	Federal Proj. No.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	91	255

C-4

F.H.W.A. Region	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



NOTES: (1) FOR LIMITS OF DELINEATORS, SEE SHEET NO. 18.
(2) SIGNS NOT TO SCALE.
(3) PLACEMENT OF ALL SIGNS IS APPROXIMATE.
(4) FINAL LOCATION TO BE DETERMINED IN FIELD BY ENGINEER.
(5) ALL STANDARD SIGN CODE NUMBERS REFER TO OHIO MUTCD FOR STREETS AND HIGHWAYS 1977, EXCEPT WHERE NOTED.

LEGEND

- (5) SIGN NUMBER
- POST MOUNTED SIGN (THREE SUPPORTS)
- POST MOUNTED SIGN (TWO SUPPORTS)
- POST MOUNTED SIGN (ONE SUPPORT)
- GUARDRAIL

SIGNING PLAN LAYOUT

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN: DRAWN, PLOTTED, ALIGNMENT CHECKED, MT. OF WAY CHECKED
NOTE BOOK ____ NO. ____

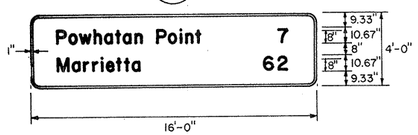
F.H.W.A. Region	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	92	255

C-4

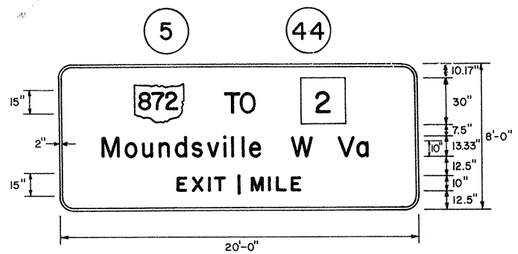
1



17.4"		17.4"	
10.0	P	12.4	M
9.0	o	11.0	a
14.0	w	8.5	r
10.0	h	8.5	r
9.9	a	5.4	i
7.4	t	9.1	e
11.0	a	7.1	t
6.8	n	7.4	t
13.4		6.9	a
10.0	P	61.1	
10.1	o	11.2	6
6.2	i	8.6	2
9.8	n	17.4	
5.0	t	192.0"	
16.0			
8.6	7		
17.4			
192.0"			

1" BORDER WITH 6" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ONGREEN BACKGROUND

5 — 44

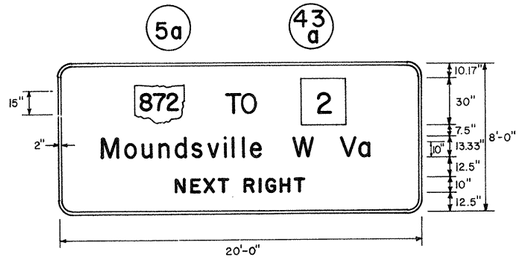


48.8"		14.0"		68.3"	
37.5	872	18.5	M	9.2	E
30.0		12.6	o	11.0	X
30.0	TO	13.6	u	5.4	I
15.0		12.5	n	6.8	T
30.0	2	12.4	d	15.0	
48.7		11.2	s	4.9	I
240.0"		14.4	v	14.9	
		7.8	i	13.0	M
		7.8	l	6.6	I
		6.6	l	9.9	L
		8.6	e	6.8	E
		21.4		68.2	
				240.0"	
		14.4	W		
		21.4			
		15.4	V		
		8.6	a		
		18.8			
		240.0"			

2" BORDER WITH 9" RADIUS ON CORNERS

WHITE LEGEND AND BORDER ON GREEN BACKGROUND

5a — 43a

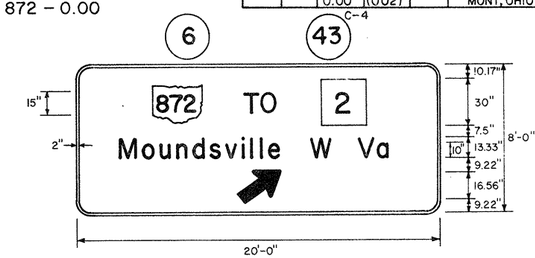


48.8"		14.0"		72.5"	
37.5	872	18.5	M	11.9	N
30.0		12.6	o	9.2	E
30.0	TO	13.6	u	9.8	X
15.0		12.5	n	6.8	T
30.0	2	12.4	d	12.5	
48.7		11.2	s	10.9	R
240.0"		14.4	v	5.6	I
		7.8	i	11.0	G
		7.8	l	10.6	H
		6.6	l	6.8	T
		8.6	e	72.5"	
		21.4		240.0"	
		14.4	W		
		21.4			
		15.4	V		
		8.6	a		
		18.8			
		240.0"			

2" BORDER WITH 9" RADIUS ON CORNERS

WHITE LEGEND AND BORDER ON GREEN BACKGROUND

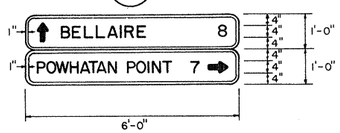
6 — 43



48.8"		14.0"		111.8"	
37.5	872	18.5	M	16.5	
30.0		12.6	o	111.7	
30.0	TO	13.6	u	240.0"	
15.0		12.5	n		
30.0	2	12.4	d		
48.7		11.2	s		
240.0"		14.4	v		
		7.8	i		
		7.8	l		
		6.6	l		
		8.6	e		
		21.4			
		14.4	W		
		21.4			
		15.4	V		
		8.6	a		
		18.8			
		240.0"			

2" BORDER WITH 9" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

10

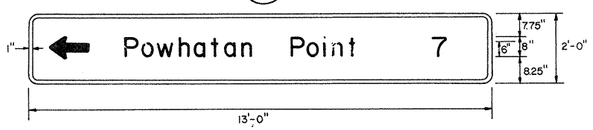


4.00"	⬆	4.00"	
4.00		3.44	P
4.00		3.56	O
3.63	B	4.25	W
3.19	E	3.44	H
3.19	L	3.59	A
2.69	L	2.69	T
4.09	A	4.09	A
1.56	I	2.69	N
3.63	R	4.00	
2.44	E	3.44	P
28.89		3.75	O
2.69	8	1.56	I
4.00		3.44	N
72.00"		2.44	T
		4.93	
		2.69	7
		4.00	
		6.00	➡
		4.00	
		72.00"	

1" BORDER WITH 3" RADIUS ON CORNER

WHITE LEGEND AND BORDER ON GREEN BACKGROUND

14

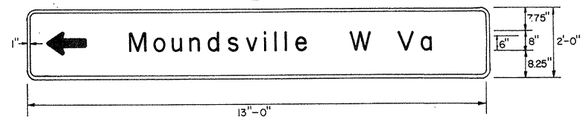


7.0"	⬅	
12.0		
6.0		
7.9	P	
6.8	o	
10.5	w	
7.5	h	
7.4	a	
5.6	t	
8.1	a	
5.1	n	
8.0		
7.9	P	
7.5	o	
4.6	i	
7.4	n	
3.8	t	
19.4		
6.5	7	
7.0		
156.0"		

1" BORDER WITH 3" RADIUS ON CORNERS

WHITE LEGEND AND BORDER ON GREEN BACKGROUND

17



7.0"	⬅	
12.0		
6.0		
11.1	M	
7.5	o	
8.1	u	
7.5	n	
7.4	d	
6.8	s	
8.6	v	
4.6	i	
4.6	l	
4.0	l	
5.1	e	
10.6		
8.6	W	
10.6		
9.2	V	
5.1	a	
9.6		
156.0"		

1" BORDER WITH 3" RADIUS ON CORNERS

WHITE LEGEND AND BORDER ON GREEN BACKGROUND

SIGN FABRICATION DETAILS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

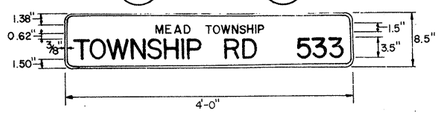
F.H.W.A. Region	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525I-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	93	255

C-4

(37) (39)

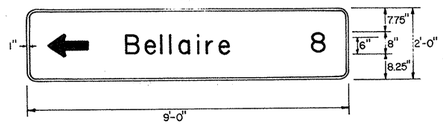


16.04"	
1.44	M
1.07	E
1.48	A
1.01	D
1.50	
1.20	T
1.28	O
1.54	W
1.29	N
1.29	S
1.29	H
0.52	I
1.01	P
16.04	
48.0"	

2.31"	
2.74	T
3.06	O
3.76	W
3.11	N
3.11	S
3.11	H
1.29	I
2.36	P
3.50	
3.11	R
2.36	D
3.50	
3.01	5
3.01	3
2.35	3
2.31	
48.0"	

3/8" BORDER WITH 1 1/2" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

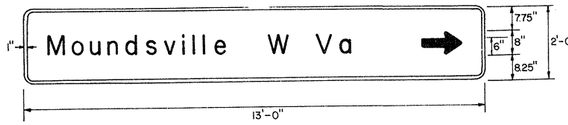
(28)



7.0"	
12.0	←
6.0	
8.6	B
7.6	e
4.6	l
4.0	l
8.1	a
4.6	i
5.8	r
5.1	e
21.1	
6.5	8
7.0	
108.0"	

1" BORDER WITH 3" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

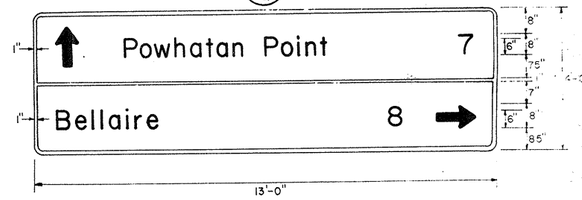
(33)



7.0"	
11.1	M
7.5	o
8.1	u
7.5	n
7.4	d
6.8	s
8.6	v
4.6	i
4.6	l
4.0	l
5.1	e
10.6	
8.6	W
10.6	
9.2	V
5.1	a
10.6	
12.0	➡
7.0	
156.00	

1" BORDER WITH 3" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

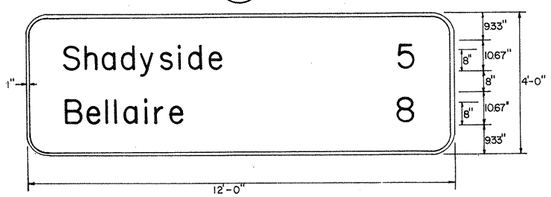
(37a)



7.0"		7.0"	
8.0	↑	8.6	B
6.0		7.6	e
7.9	P	4.6	l
6.8	o	4.0	l
10.5	w	8.1	a
7.5	h	4.6	i
7.4	a	5.8	r
5.6	t	5.1	e
8.1	a	69.1	
5.1	n	6.5	8
8.0		6.0	
7.9	P	12.0	➡
7.5	o	7.0"	
4.6	i	156.0"	
7.4	n		
3.8	t		
23.4			
6.5	7		
7.0"			
156.0"			

1" BORDER WITH 3" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

(42)



12.0		12.0"	
10.8	S	10.2	B
10.0	h	10.2	e
10.1	a	6.2	l
10.0	d	5.4	l
10.4	y	11.0	a
10.1	s	6.2	i
5.4	i	7.5	r
10.1	d	6.9	e
6.9	e	47.8	
27.6		8.6	8
8.6	5	12.0	
12.0		144.0"	
144.0"			

1" BORDER WITH 6" RADIUS ON CORNERS
WHITE LEGEND AND BORDER ON GREEN BACKGROUND

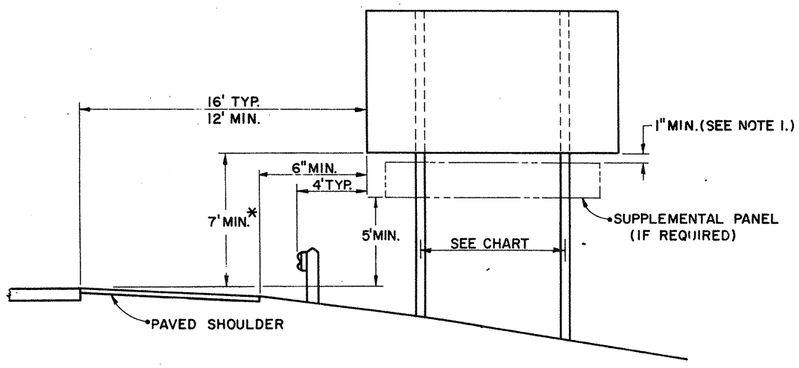
PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
PT. OF MAT CHECKED
NOTE BOOK
NO.
DATE
BY

SIGN FABRICATION DETAILS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

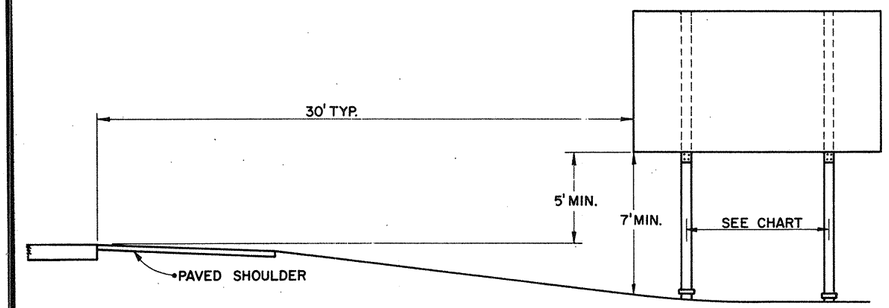
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

FREEWAYS AND EXPRESSWAYS

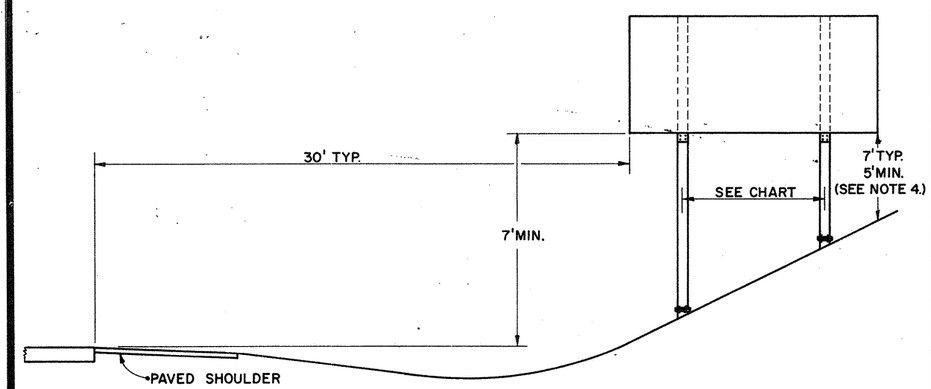


TYPICAL INSTALLATION WITH GUARDRAIL

* 8' MIN. WITH SUPPLEMENTAL PANEL.

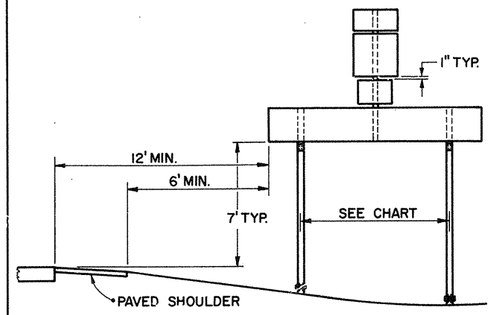


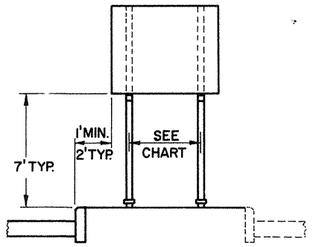
TYPICAL INSTALLATION, FILL SECTION, 30' OFFSET



TYPICAL INSTALLATION, CUT SECTION, 30' OFFSET

STREETS-RAMPS-HIGHWAYS

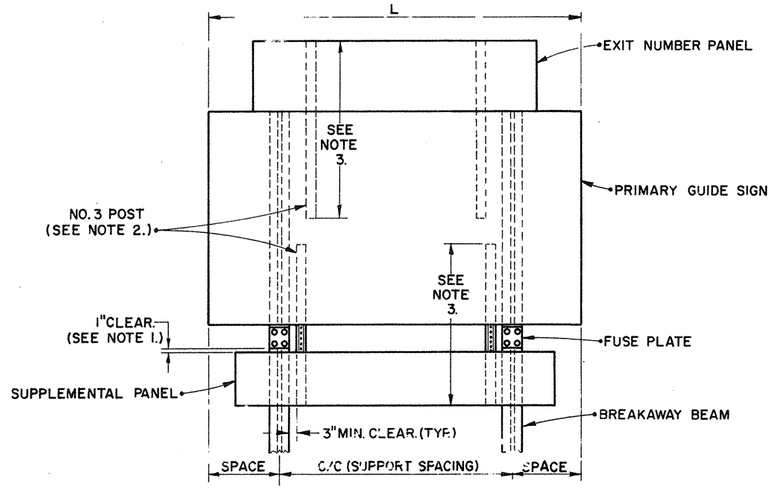




CURB SECTION

NOTES

1. SUPPLEMENTAL PANELS SHALL BE MOUNTED ONE (1) INCH BELOW THE FUSE PLATE ON BREAKAWAY BEAM INSTALLATIONS AND ONE (1) INCH MINIMUM BELOW THE GUIDE SIGN WHEN THE SIGN SUPPORTS ARE RIGID BEAMS.
2. NO. 3 POST SHALL BE ATTACHED TO BOTH THE GUIDE SIGN AND THE EXIT NUMBER OR OTHER SUPPLEMENTAL PANELS BY MOUNTING CLIPS FASTENED ATERNATELY AT EACH HORIZONTAL EXTRUSION AND BOTH SIDES AT THE TOP AND BOTTOM OF THE POSTS. NO CONNECTIONS SHALL BE MADE BETWEEN THE SUPPLEMENTAL PANEL AND BREAKAWAY BEAMS.
3. LENGTH OF POST SHALL BE 2.5 TIMES THE HEIGHT OF THE SUPPLEMENTAL PANEL. THE POST SPACING SHALL BE AS PER THE SUPPORT SPACING CHART.
4. USE 5'-0" MINIMUM IF BACK SLOPES ARE GREATER THAN 3:1.



SUPPLEMENTAL PANEL ATTACHMENT

SUPPORT SPACING CHART

2 SUPPORTS				3 SUPPORTS				
L (feet)	SPACING (feet) SPACE	C/C	SPACE	L (feet)	SPACING (feet) SPACE	C/C	C/C	SPACE
5	1.10	2.80	1.10	20	1.50	8.50	8.50	1.50
6	1.32	3.36	1.32	21	2.00	8.50	8.50	2.00
7	1.54	3.92	1.54	22	2.50	8.50	8.50	2.50
8	1.76	4.48	1.76	23	3.00	8.50	8.50	3.00
9	1.98	5.04	1.98	24	3.36	8.64	8.64	3.36
10	2.20	5.60	2.20	25	3.50	9.00	9.00	3.50
11	2.42	6.16	2.42	26	3.64	9.36	9.36	3.64
12	1.75	8.50	1.75	27	3.78	9.72	9.72	3.78
13	2.25	8.50	2.25	28	3.92	10.08	10.08	3.92
14	2.75	8.50	2.75					
15	3.25	8.50	3.25					
16	3.52	8.96	3.52					
17	3.74	9.52	3.74					
18	3.96	10.08	3.96					
19	4.18	10.64	4.18					

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	94	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

DATE 8/19/77

TYPICAL SIGN PLACEMENT
GUIDE SIGNS

STANDARD CONSTRUCTION DRAWING TC-42.10

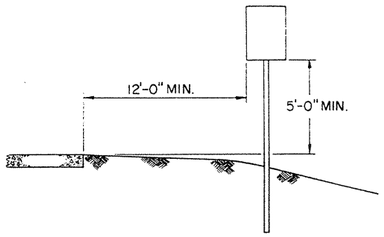
APPROVED: _____ Engineer of Design Services

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

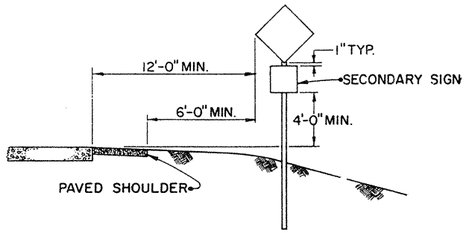
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-SP2-0.00	M-525(002)		MARSHALL, W.VA. BELMONT, OHIO	95	255

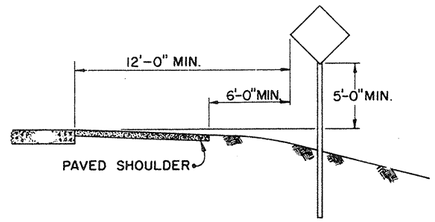
C-4



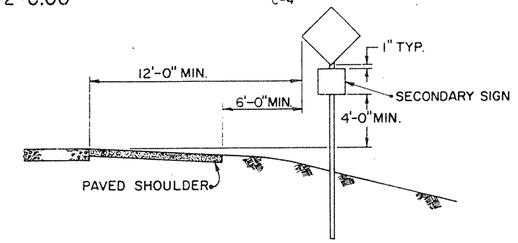
RURAL UNDIVIDED



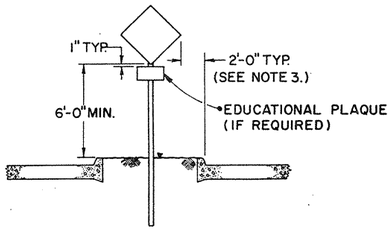
RURAL UNDIVIDED
(W/ SECONDARY SIGN)



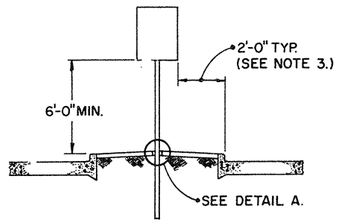
RURAL DIVIDED



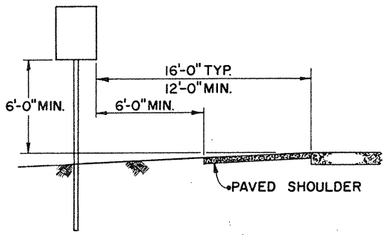
RURAL DIVIDED
(W/ SECONDARY SIGN)



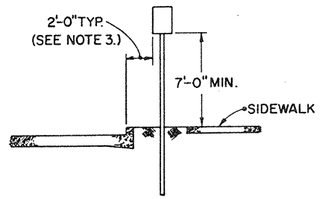
MEDIAN



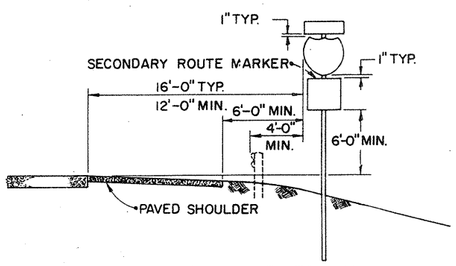
PAVED MEDIAN



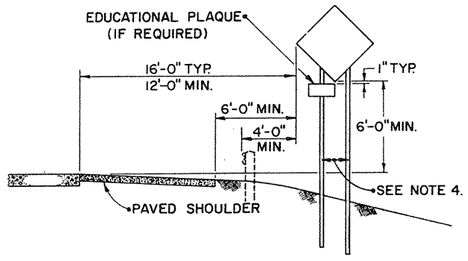
MEDIAN-EXPRESSWAY OR FREEWAY



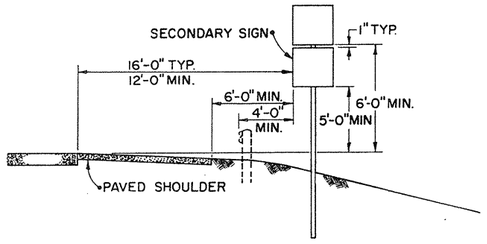
URBAN-RESIDENTAL AND BUSINESS



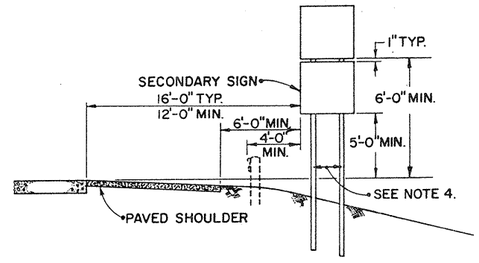
EXPRESSWAY OR FREEWAY
(W/ SECONDARY SIGN)



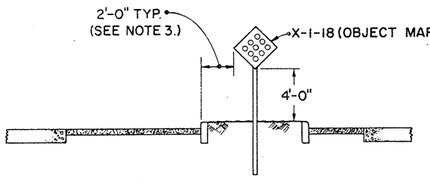
EXPRESSWAY OR FREEWAY



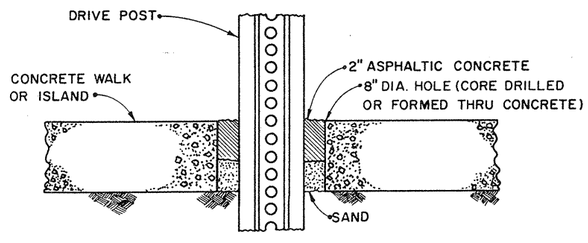
EXPRESSWAY OR FREEWAY
(W/ SECONDARY SIGN)



EXPRESSWAY OR FREEWAY
(W/ SECONDARY SIGN)



EXPRESSWAY OR FREEWAY



DETAIL A.

NOTES

1. SEE STANDARD CONSTRUCTION DRAWING TC-41.20 FOR DETAILS ON YIELDING SUPPORTS.
2. ALL SIGNS SHALL BE PLACED 90° TO THE ROADWAY, EXCEPT PARKING SIGNS WITH ARROW SHALL BE SET AT AN ANGLE OF NOT LESS THAN 30° NOR MORE THAN 45° WITH A LINE PARALLEL TO THE FLOW OF TRAFFIC.
3. A CLEARANCE OF ONE FOOT IS PERMISSIBLE WHERE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB.
4. SEE STANDARD CONSTRUCTION DRAWINGS TC-52.10 AND TC-52.20 FOR DIMENSIONS BETWEEN SUPPORTS.

ALL ITEMS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 857 AND 957, UNLESS OTHERWISE SPECIFIED

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

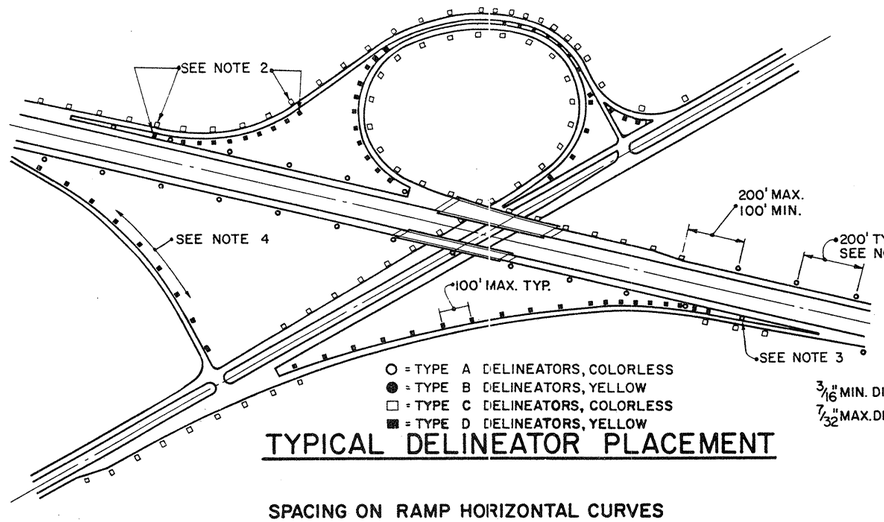
TRAFFIC CONTROL

DATE 4/1/77 3/26/79

TYPICAL SIGN PLACEMENT
REGULATORY, WARNING AND ROUTE MARKER SIGNS

STANDARD CONSTRUCTION DRAWING TC-42.20

APPROVED: _____ Engineer of Design Services

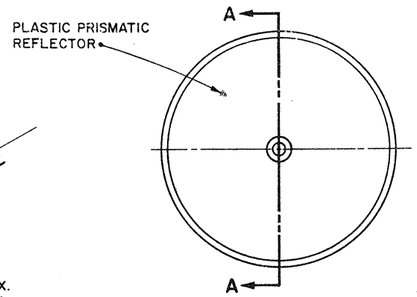


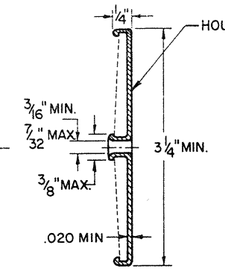
TYPICAL DELINEATOR PLACEMENT

SPACING ON RAMP HORIZONTAL CURVES

RADII (feet) FROM	RADII (feet) TO	DEGREE OF CURVE	SPACING ON CURVE	*TRANSITION SPACING	
TANGENT	1,801	3	100'	100'	100'
1,800	1,401	4	80'	100'	100'
1,400	1,001	5	70'	100'	100'
1,000	751	7	60'	100'	100'
750	551	9	50'	80'	100'
550	326	15	40'	70'	100'
325	—	25	30'	60'	100'

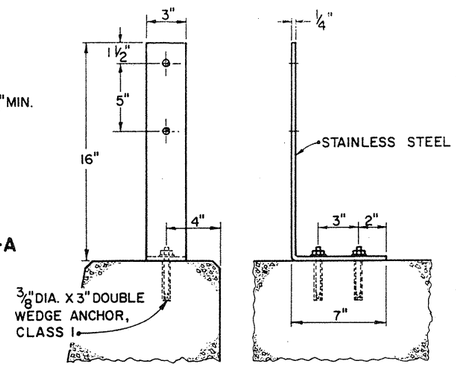
* FROM TANGENT TO 9° CURVE, TRANSITION SPACING = 100' TO 80' TO 50'.
FROM 15° CURVE TO TANGENT, TRANSITION SPACING = 40' TO 70' TO 100'.



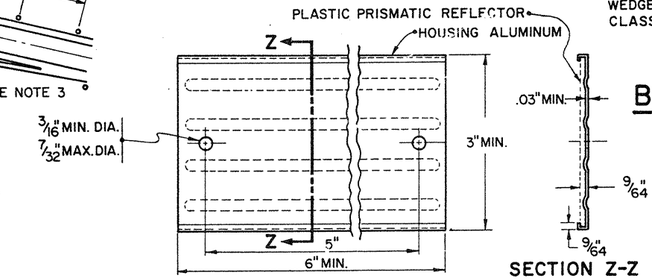


SECTION A-A

TYPE "A" & "B" DELINEATOR

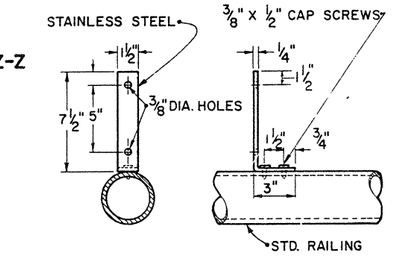


BRIDGE PARAPET BRACKET

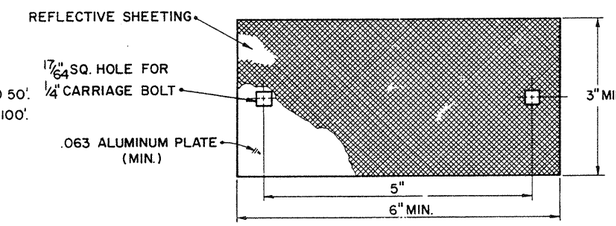


SECTION Z-Z

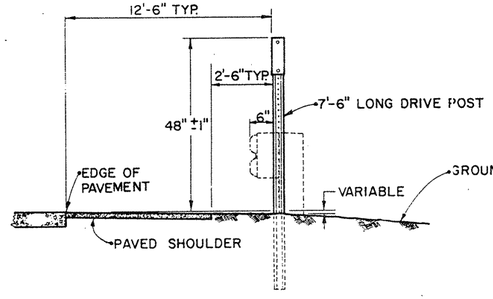
TYPE "C" & "D" DELINEATOR



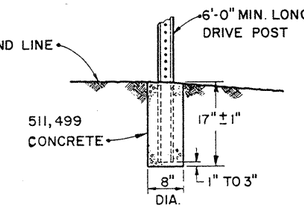
BRIDGE RAIL BRACKET



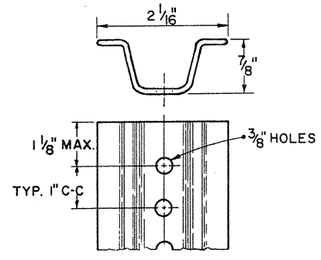
TYPE "C" & "D" DELINEATOR



LATERAL PLACEMENT



ALTERNATE CONCRETE EMBEDMENT



NO TEE DRIVE POST

NOTES:

1. TYPE "A" DELINEATORS SHALL BE SPACED ON THE RIGHT OF THE THROUGH ROADWAY AT 200-FOOT INTERVALS WITHOUT REGARD TO CURVES. TYPE "B" DELINEATORS, IF USED, SHALL BE LOCATED ON THE LEFT OF THE THROUGH ROADWAY.
2. DELINEATORS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF INTERCHANGE RAMPS AND SHALL CONFORM TO THE RESPECTIVE EDGE LINE COLOR.
3. NO DELINEATORS SHALL BE PLACED IN A PAVED BERM.
4. WHEN THE DEGREE OF CURVATURE ON RAMPS REQUIRE LESS THAN 100-FOOT SPACING, THE DELINEATORS SHALL BE PLACED ON THE OUTSIDE OF THE CURVE IN RELATION TO THE FLOW OF TRAFFIC.
5. TAMPER RESISTANT FASTENERS SHALL BE USED TO ATTACH DELINEATORS TO DRIVE POSTS OR BRACKETS.
6. OMIT DELINEATORS IF WITHIN 50 FEET OF A MILE MARKER.

Public Roads Div.	State Dist. No	State Proj. No.	Federal Proj. No	Fiscal Year	County	Sheet No.	Total Sheets
W. VA	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	96	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

DELINEATORS SHALL CONFORM WITH C & M SPECIFICATION 620

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

DATE 10/1/75 9/1/77

DELINEATOR DETAILS

STANDARD CONSTRUCTION DRAWING TC-61.10

APPROVED [signature] Engineer of Design Services

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	96A	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

E1

GENERAL LIGHTING NOTES

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO SPECIAL PROVISIONS, SECTIONS 625, 713 AND 839. REFERENCE SHALL BE MADE TO OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWING HL-1, HL-2, HL-3, HL-5, HL-7, HL-8, HL-9, HL-10, HL-11, HL-12, HL-15 AND HL-16. (SHEETS E4 TO E15)

625.03 - GENERAL

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS: OHIO POWER COMPANY
BOX 40
BELLAIRE, OHIO 43906

THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP PERMISSIBLE ON BRANCH CIRCUITS. THE PROJECT WILL RECEIVE 480 VOLT TWO-WIRE SECONDARY SERVICE, ONE SIDE GROUNDED FROM THE OHIO POWER COMPANY.

THE PROJECT HAS BEEN DESIGNED ON THE BASIS OF 1.2 AVERAGE FOOTCANDLE INITIAL, WITH A MAXIMUM UNIFORMITY RATIO OF 4.0 TO 1.

HIGH VOLTAGE DIRECT CURRENT TEST

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SPECIAL PROVISIONS, SECTION 839, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE AND DUCT CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARD RAIL FENCE, DELINEATOR POSTS, SIGN SUPPORTS, ETC. IN THE IMMEDIATE VICINITY OF THE DISTRIBUTION CABLE RUN BEING TESTED, HAS BEEN COMPLETED.

625.07 - 713.11 HIGH PRESSURE SODIUM LUMINAIRES

STYLE "C" LUMINAIRES SHALL HAVE A SINGLE RATED 480 VOLT, 310 WATT INTEGRAL REGULATOR BALLAST, AND SHALL BE GENERAL ELECTRIC M-1000, WESTINGHOUSE OV-50-TUDOR, ITT AMERICAN 1000, OR EQUAL APPROVED BY THE ENGINEER.

713.14 - LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", WESTINGHOUSE "CERMALUX", SYLVANIA "LUMALUX, OR EQUAL APPROVED BY THE ENGINEER.

ITEM SPECIAL - CABLE SPLICING KIT

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED CABLE SPLICING KIT AS DESCRIBED IN PARAGRAPH 5 OF SECTION 713.15 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH "ITEM SPECIAL - CABLE SPLICING KIT."

ITEM SPECIAL - LIGHT POLE ANCHOR BOLTS FOR BRIDGES

ANCHOR BOLTS FOR MOUNTING LIGHT POLES ON BRIDGES SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS, OR THE APPROVED SHOP DRAWINGS, FOR THE RESPECTIVE POLES TO BE PLACED THEREON. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH SET OF THE SIZE REQUIRED AND NECESSARY TO INSTALL ONE POLE, AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

UNDERGROUND UTILITIES

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UNDERGROUND ELECTRICAL CONDUIT AND/OR LIGHTING CABLE, SEWERS, DRAINS, WATERLINES, OR OTHER UNDERGROUND UTILITIES.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGE INFLICTED ON UNDERGROUND UTILITIES IN THE EXCAVATION AND PLACEMENT OF SIGN SUPPORT FOUNDATIONS, LIGHT POLE FOUNDATIONS, GUARD RAIL FLARES, PROTECTIVE GUARD RAIL, DELINEATORS AND THE LIKE.

ESTIMATED QUANTITIES

(A) AN ESTIMATED QUANTITY OF 100 LIN. FT. OF 606-25(4), 4-INCH UNDERDRAIN PIPE AND 12.6 CUBIC YARDS OF 606-22 CRUSHED STONE, CRUSHED GRAVEL OR SILICA SAND SHALL BE PROVIDED IN THE LIGHTING GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN PROVIDING POSITIVE DRAINAGE FOR PULL BOXES IN FILL AREAS. IT IS INTENDED THAT ALL PULL BOXES IN THESE AREAS BE PROVIDED THE LENGTH OF UNDERDRAIN NECESSARY TO OBTAIN A SATISFACTORY OUTFALL DOES NOT EXCEED 20 FEET APPROXIMATELY. A PERFORATED PVC PIPE OR CONDUIT MATERIAL APPROVED BY THE ENGINEER MAY BE USED IN THE CONSTRUCTION OF THIS ITEM.

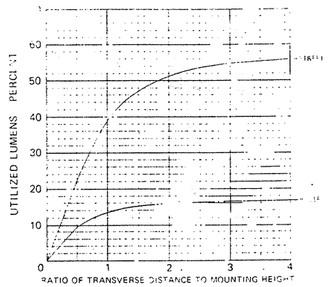
LIGHTING POLES

ALL LIGHTING POLES SHALL BE STYLE II POLES WITH ARM LENGTHS AS INDICATED WITH A 3'-0" UPSWEEP AND 41.7' MOUNTING HEIGHT.

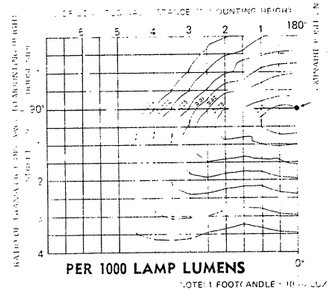
CONDUIT ON STRUCTURES

EXPANSION FITTINGS FOR CONDUIT ON STRUCTURE SHALL BE OZ-GEDNEY TYPE AX, CROUSE-HINDS TYPE XJ-4, APPLETON TYPE XJ-4 OR APPROVED EQUAL.
EACH EXPANSION FITTING SHALL HAVE A COPPER BONDING JUMPER.

TYPICAL
UTILIZATION CURVE



TYPICAL
ISOFOOTCANDLE CURVES



PER 1000 LAMP LUMENS

CONTROL CENTER	CONN. LOAD KVA	ENCLOSURE RATING AMPS	SERVICE ENT. COND. SIZE AWG	CIRCUIT NO.	CIRCUIT COND. SIZE AWG	CIRCUIT LOAD AMPS	CIRCUIT FUSE AMPS	C. T. RATING VA.
RELOC. TWP. RD. 533 STA. 98+50	17.1	60	#4	A, B	#4	38.4	A-20A B-30A	300

LIGHT POLE DATA

REFERENCE NUMBER	DESIGN NUMBER	FOUNDATION ANCHOR BOLTS: SIZE, DIAMETER AND LENGTH	FOUNDATION ANCHOR BOLTS: BOLT CIRCLE DIAMETER MOST LIKELY	BASE STYLE
1	AT-15B-41.7	1"x 40"	15"	AT-A
~~2~~	~~AT-10B-41.7~~	~~1"x 40"~~	~~15"~~	~~AT-A~~
3	A-6B-41.7	*	11 1/2"	ANCHOR BASE

* SEE SHEET 105 OF 255.

LIGHTING NOTES
CONTROL CENTER DATA
LIGHT POLE DATA

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PLAN — DATE — BY — SURVEYED — PLOTTED — ROTE BOOK — ALIGNMENT CHECKED — PT. OF BEG. CHECKED — NO.

FED HWY ADM	STATE DIST NO	STATE PROJECT NO	FED. PROJECT NO.	FISCAL YEAR	COUNTY		
W.VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL,W.VA BELMONT,OH10	96B	255

C-4

FHWA REGION	STATE	PROJECT	
5	OH10		

BEL-872-0.00

E-2

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

STA. 450+00
MATCH LINE - THIS SHEET

STA. 450+00
MATCH LINE-THIS SHEET

STA. 105+85.70 BK. TWP. RD. 533=
STA. 5+85.23 AH. SR 872

98+50-50' RT.
CONTROL CABINET "A"

℄ RELOC. TWP. RD. 533

℄ S.R. 7

℄ RAMP A

℄ RAMP B

℄ RAMP C

℄ RAMP D

See Sheets 105 & 106
For Details

OHIO EDISON CO. TRANSMISSION LINES

LEGEND

- 400 W H.P.S. LUMINAIRE ON BRIDGE STRUCTURE (BY OTHERS)
- 310 W H.P.S. LUMINAIRE
- 310 W H.P.S. LUMINAIRE ON STRUCTURE
- 310 W H.P.S. LUMINAIRE (FUTURE)
- 1 1/2" CABLEDUCT WITH 2-1/C #4 AWG 600V. CABLE
- 3" GALV. RIGID STEEL CONDUIT-UNDERPAVEMENT CROSSING
- 18" DIA. PULLBOX
- 24" DIA. PULLBOX
- SERVICE POLE AND CONTROL CABINET
- GUARDRAIL

STATION NUMBER
00+00
15-1
LIGHT POLE DESIGN (SEE LIGHT POLE DATA)
OFFSET DISTANCE BETWEEN ℄ OF POLE AND EDGE OF PAVEMENT
A2 (2)
POLE NUMBER
CIRCUIT LETTER & POSITION NUMBER

LIGHT POLE IDENTIFICATION

100 50 0 100

LIGHTING PLAN

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE

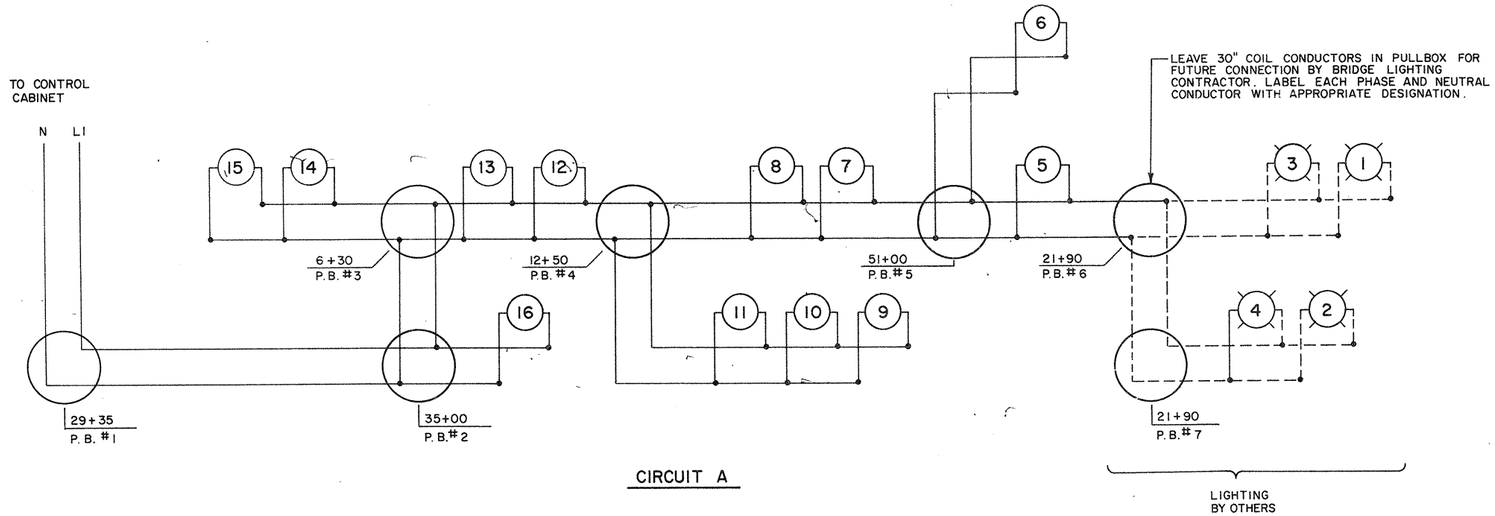
MICHAEL BAKER, JR., INC. CONSULTING ENGINEER

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL,W.VA. BELMONT,OHIO	96C	255

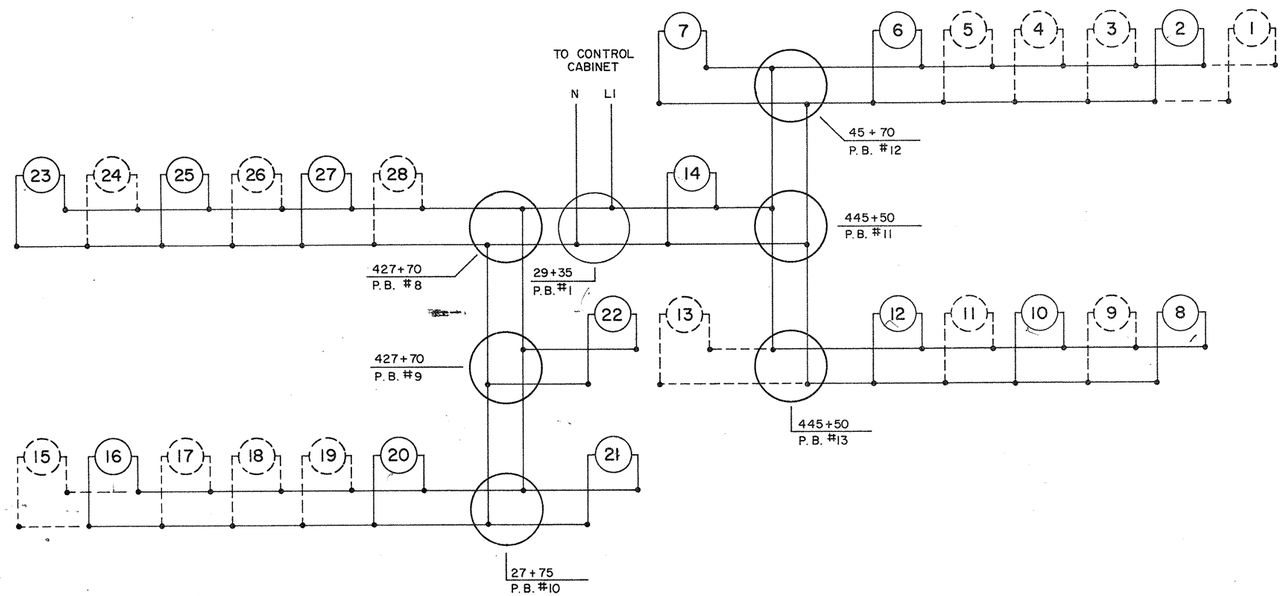
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

E-3



CIRCUIT A



CIRCUIT B

LEGEND

- ○ - 310 WATT H.P.S.
- ⊠ - 400 WATT H.P.S. (BY OTHERS)
- ◌ - 310 WATT H.P.S. (FUTURE)

WIRING DIAGRAMS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

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

DATE BY

FOUNDATION AND TRENCH DETAILS

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
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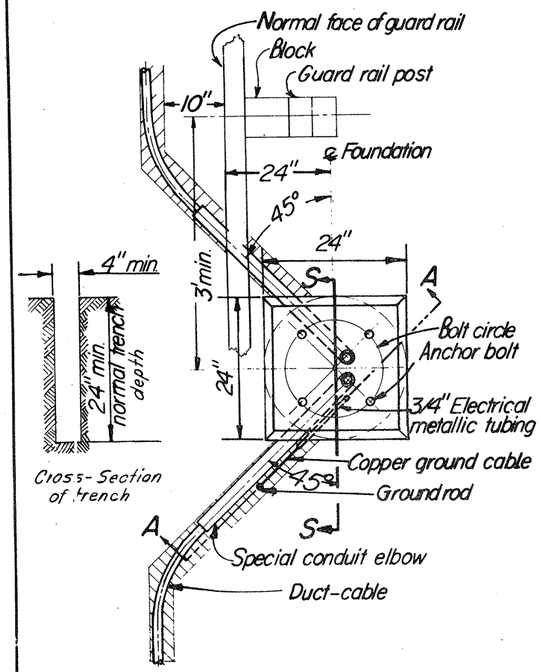
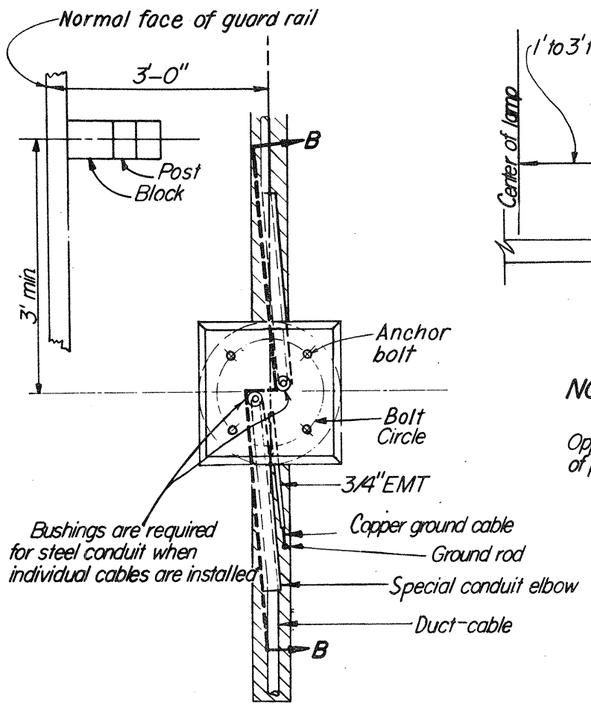
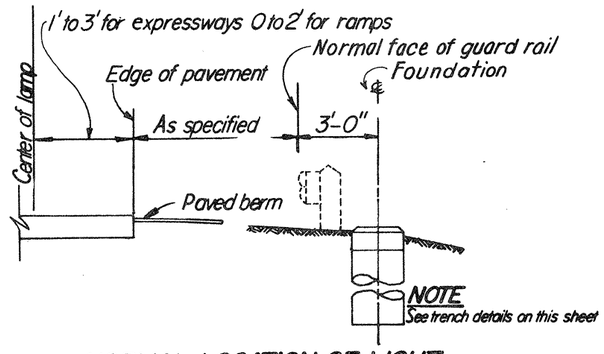
E4



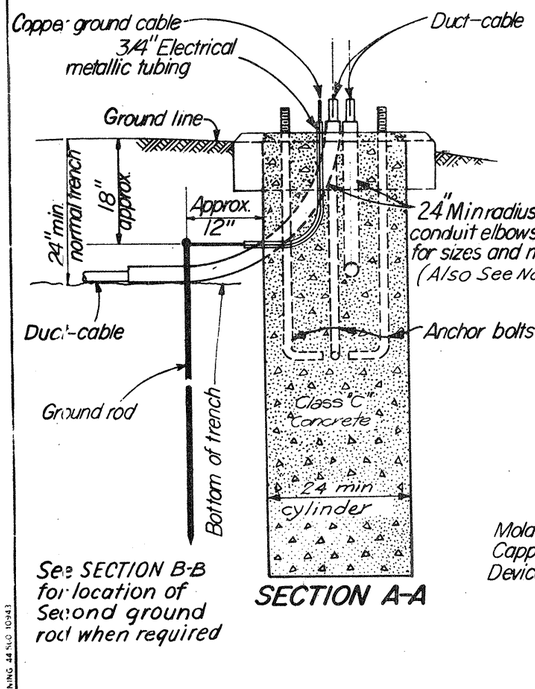
ALTERNATE **TRENCH ALIGNMENT**
(Use when specified or directed by the Engineer)



NORMAL **TRENCH ALIGNMENT**

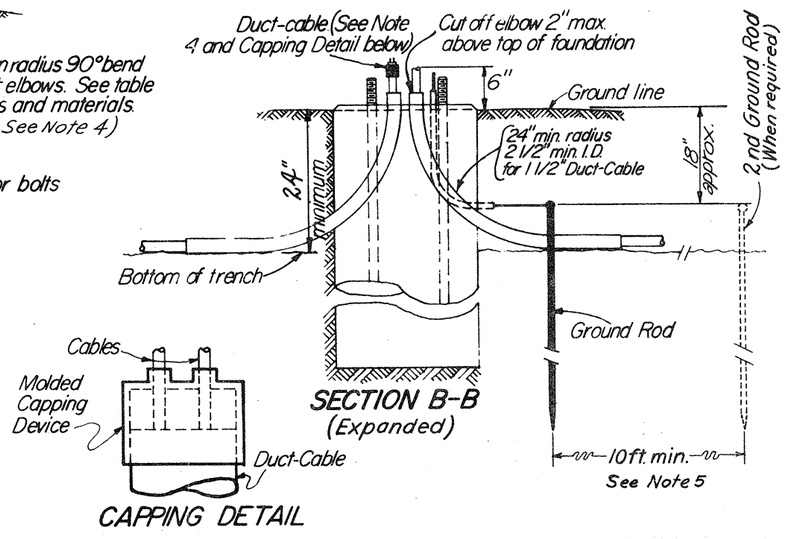


NORMAL LOCATION OF LIGHT POLE FOUNDATION
Opposite hand for poles mounted on left side of pavement.



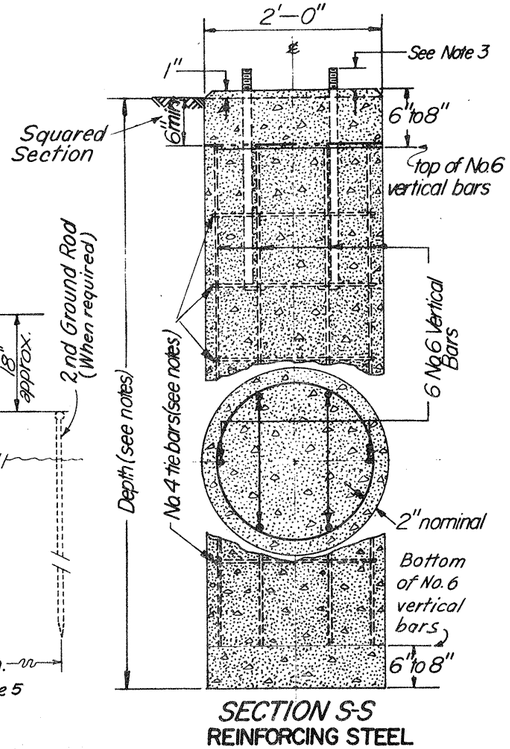
See SECTION B-B for location of Second ground rod when required

SECTION A-A



SECTION B-B
(Expanded)

CAPPING DETAIL



SECTION S-S
REINFORCING STEEL

NOTES

1. FOUNDATION
   Minimum depths to be as follows:
   6 feet for poles having a mounting height less than 40 ft.
   8 feet for poles having a mounting height 40 ft. thru 44 ft.
   9 feet for poles having a mounting height 45 ft. thru 49 ft.
   10 feet for poles having a mounting height of 50 ft. thru 55 ft.
   No. 4 Tie bars required as follows:
   4 No. 4 tie bars for 6 ft. depth
   5 No. 4 tie bars for 8 and 9 ft. depth
   6 No. 4 tie bars for 10 ft. depth
   Rotate bars to clear conduits.

2. COPPER GROUND CABLE:
   No. 4 AWG, stranded insulated copper ground cable shall be used. Exothermically weld cable to ground rod, run free end through 3/4" EMT and connect as shown on HL-9, POLE WIRING.
   Use two coats of insulating varnish over exothermic weld and exposed conductor.

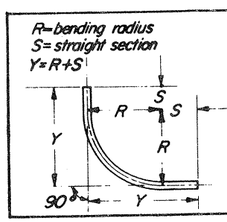
3. ANCHOR BOLT DATA:
   For anchor bolt data see HL-3, POLE BASE DETAILS

4. CONDUIT:
   Where 2" or 3" diameter conduit terminates in a foundation the conduit elbows in the foundation shall be the same size as the conduit. The ends of conduit elbows containing distribution cable shall be closed as described in 625.13
   When the terminating conduit is steel the conduit elbows in the pole foundation shall also be steel.
   At the last light pole on a circuit the vacant conduit elbow in the light pole foundation shall be stubbed out and capped.

5. GROUND RODS:
   When a second ground rod is required it shall be installed in the cable trench as shown in SECTION B-B.

6. REINFORCING STEEL:
   Reinforcing steel may be assembled in cages by approved welding of bars.
   Subject to approval of the Engineer cages may be assembled in a spiral conformation.

R = bending radius
S = straight section
Y = R + S



SPECIAL CONDUIT ELBOWS
90° BENDS

2", 2 1/2" & 3" 713.04			3" 713.05 or 713.06		
R	S	Y	R	S	Y
24"	11"	35"	24"	8"	32"
30"	11"	41"			
36"	11"	47"	36"	2"	38"
42"	12"	54"			
48"	12"	60"			

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

FOUNDATION AND TRENCH DETAILS

DATE 11-1-65, 4-6-73, 9-6-73

STANDARD CONSTRUCTION DRAWING

HL-1

APPROVED: M J Cunningham Engineer of Design Services

BRUNING 44 NO. 10943

LIGHT POLE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

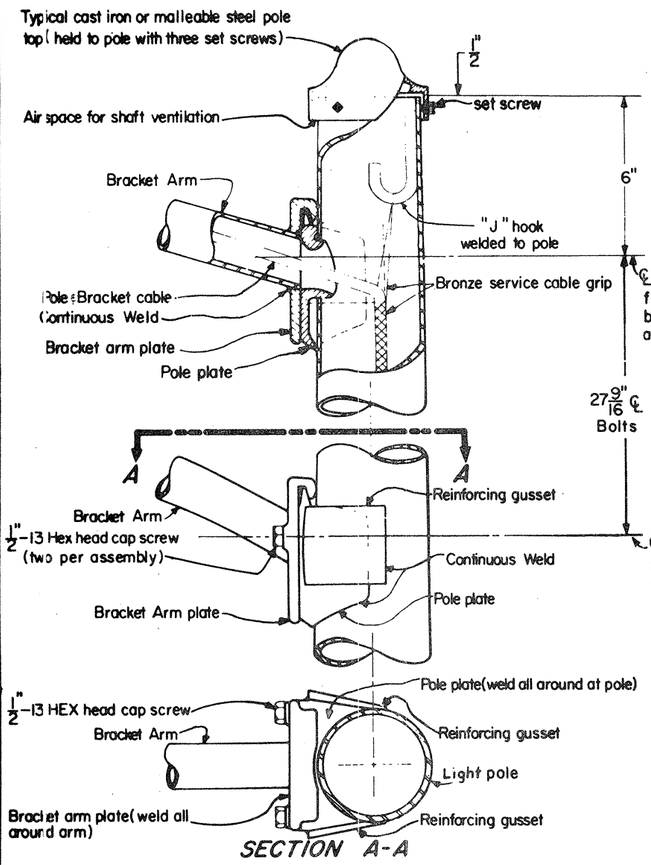
BEL-872-0.00

FED HWY. ADM.	STATE DIST NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	325-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96E	255

E5

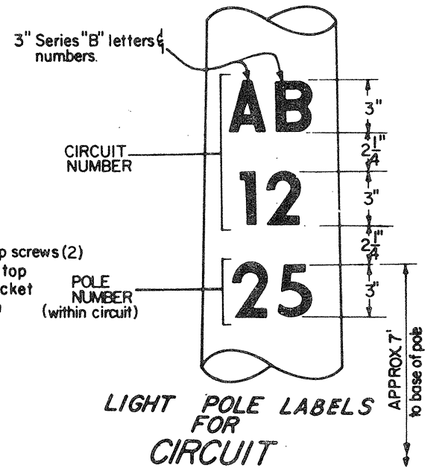
NOTES

1. Hand holes are not required on poles with transformer bases.
2. Hand holes shall be opposite the roadway unless such location renders them inaccessible. (See NOTE 6)
3. Use of Reinforcing gussets is optional.
4. Circuit and light pole numbers shall be as scheduled on light plan sheets. Labels shall meet the requirements of 713.18 and shall contain 3" series "B" letters and numbers as per the "Standard Alphabets for Highway Signs" published by the Federal Highway Adminstration.
5. Hand holes for bridge poles shall be on roadway side and 17" from center of hand hole to bottom of base.
6. All light poles mounted on raised concrete median barriers shall be equipped with handholes. Handholes shall be located beneath the bracket arm extending over the Northbound or Westbound traffic lanes.
7. Details shown hereon are essentially for galvanized steel pole designs meeting 713.01 requirements. For aluminum designs, or other permitted steel material designs, variations from these details will be acceptable, as approved by the Engineer.
8. Circuit identification details are applicable to all pole designs.



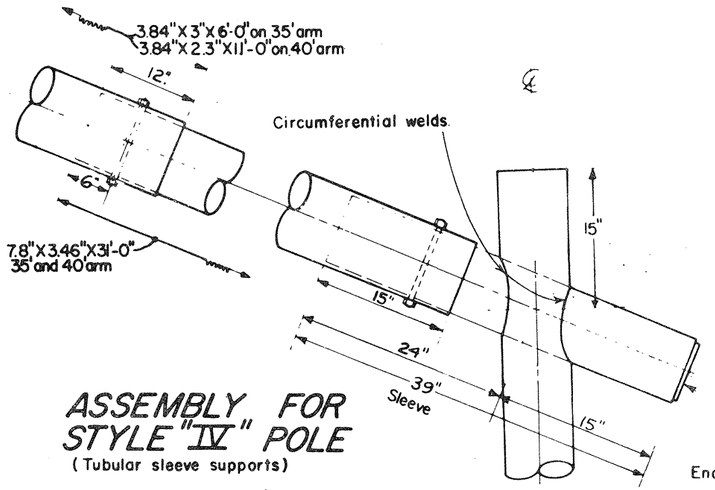
SECTION A-A

POLE TOP and BRACKET ARM ASSEMBLIES



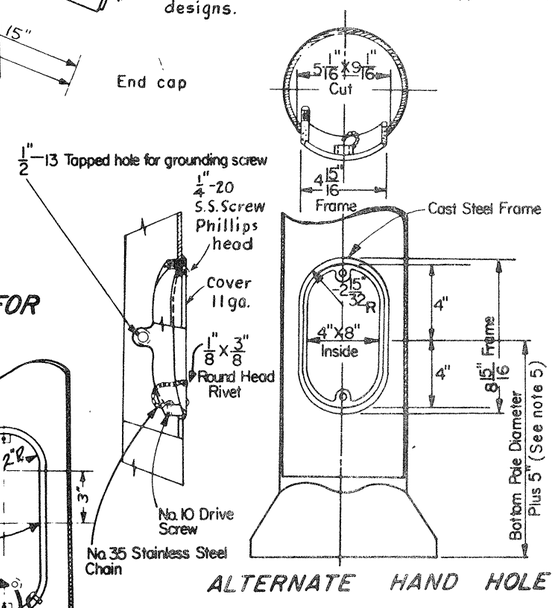
LIGHT POLE LABELS FOR CIRCUIT IDENTIFICATION

(See note 4)

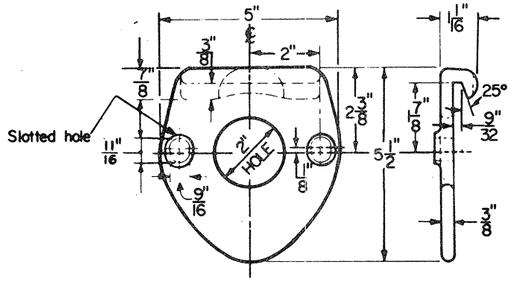


ASSEMBLY FOR STYLE "IV" POLE

(Tubular sleeve supports)

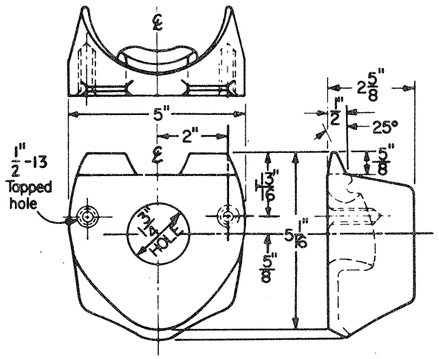


ALTERNATE HAND HOLE



BRACKET ARM PLATE

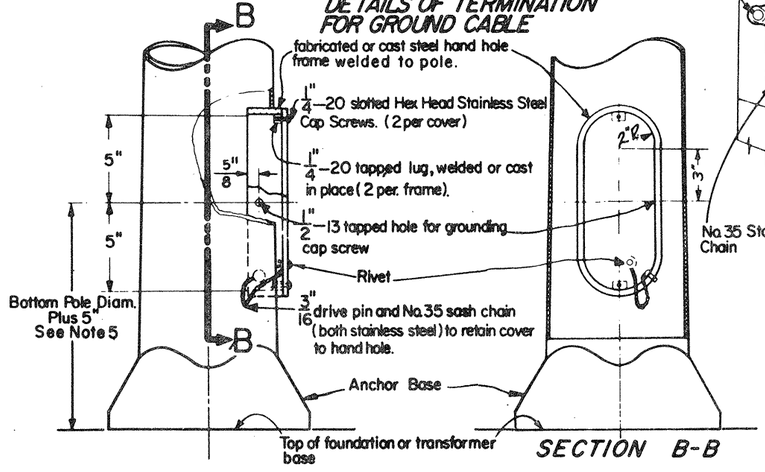
(CAST STEEL)



POLE PLATE

(CAST STEEL)

SEE "POLE WIRING" HL-9 FOR DETAILS OF TERMINATION FOR GROUND CABLE



SECTION B-B

HAND HOLE WITH COVER

See Notes 1 & 2

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

LIGHT POLE DETAILS

DATE

STANDARD CONSTRUCTION DRAWING HL-2

APPROVED: _____ Engineer of Design Services

POLE BASE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	325-SP2-0.00	M-525-(002)		MARSHALL, W.VA. BELMONT, OHIO	96F	255

E6

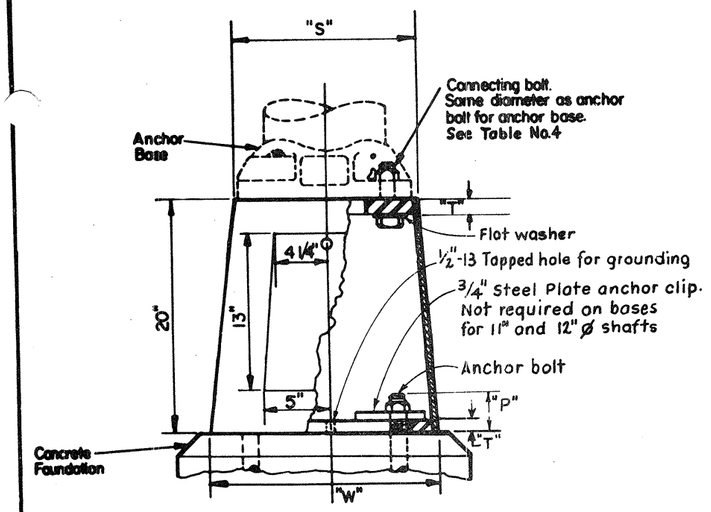


TABLE NO.1
STEEL TRANSFORMER BASES

SHAFT SIZE	"T"	"S"	"W"	BOLT CIRCLE	"P"
6.0" thru 9.2"	3/4" min.	13" sq.	16" sq.	15"	4 1/2"
8.5" thru 10"	1 1/4" min.	15" sq.	18" sq.	17 1/4"	4 1/2"
11" and 12"	1 1/4"	17" sq.	25" sq.	22"	4 1/2"

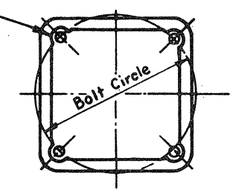
BASE FRAME

STEEL TRANSFORMER BASES

TABLE NO.2
TRANSFORMER BASE ANCHOR BOLTS

SHAFT SIZE	STEEL POLE GUAGE NO. 11	7	3
6.5"	1"ø X 40"	1"ø X 40"	1"ø X 40"
7"			
7.5"			
8"			1 1/4"ø X 48"
8.5"		1 1/4"ø X 48"	
9"			
9.5			
10"			
11"	1 1/4"ø X 48"		1 1/2" ø X 60"
12"			

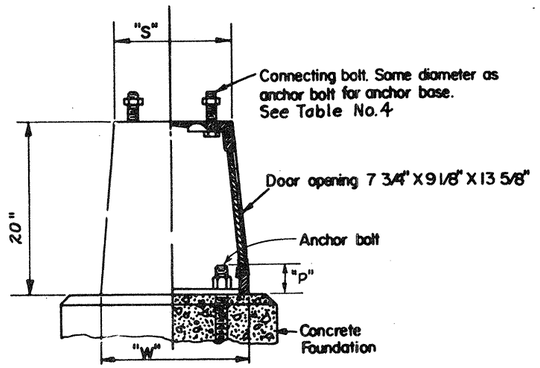
40" bolts include 4" bend
48" and 60" bolts include 6" bend



BASE FRAME

TABLE NO. 3
ALUMINUM TRANSFORMER BASES

TYPE	"P"	"S"	"W"	BOLT CIRCLE	SHAFT SIZE
AT-A	4 1/2"	13"	16 3/8"	15"	SEE NOTE 2
AT-C	4 1/2"	14 5/8"	17 1/4"	17 1/4"	SEE NOTE 3

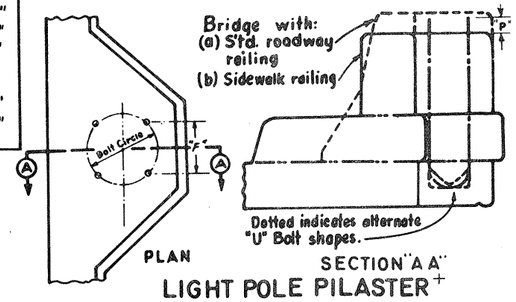


CAST ALUMINUM TRANSFORMER BASES
SHALL NOT BE USED WHERE OVERHEAD WIRING IS REQUIRED

TABLE NO. 5

SHAFT SIZE	"F"	U-BOLT LENGTH ‡ SIDEWALK	U-BOLT LENGTH ‡ STD. RDWY
6.5"	6 3/4"	75"	82"
7.0"	7 1/16"	75"	82"
7.5"	7 7/16"	76 1/2"	83 1/2"
8.0"	7 3/4"	76 1/2"	83 1/2"
8.5"	8 1/8"	76 1/2"	83 1/2"
9.0"	8 7/8"	78"	85"
9.5"	9 3/16"	78"	85"
10.0"	9 9/16"	79 1/2"	86 1/2"
11.0"	10 5/8"	79 1/2"	86 1/2"
12.0"	11 5/16"	81"	88"

‡ See NOTE 4



LIGHT POLE PILASTER+

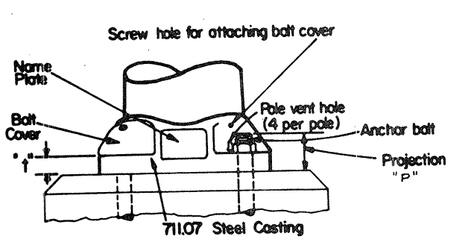
BRIDGE MOUNTED POLES

+ For pilaster dimensional details, See HL-4

NOTES

1. For pole grounding details see "POLE WIRING," HL-9
2. Type AT-A base shall normally be used with anchor base poles having diameters of 6 inches through 9.2, inches inclusive, and mounting heights through 41.7 feet.
3. Type AT-C base must be used for anchor base poles having diameters of 9.5 inches and 10 inches and mounting heights through 51.7 except for exclusions listed below:
   - a. All double-arm poles with mounting heights of 50 feet.
   - b. All single-arm poles with mounting heights of 50 feet and arm lengths of 25 feet and 30 feet.
   - c. All double-arm poles with mounting heights of 45 feet and arm lengths of 25 feet and 30 feet.
   - d. All single-arm poles with mounting heights of 45 feet and arm length of 30 feet.

   On excepted poles above, transformer bases of material other than cast aluminum shall be used.
4. U-bolt lengths shown in TABLE NO.5 are developed lengths and may vary ±1/2". Lengths are for 1", 1 1/4", 1 1/2" and 1 3/4" diam. bolts. Lengths shown are for bridges with sidewalk railing and for bridges having a standard roadway railing.
5. For anchor bolt data when transformer bases are to be mounted on bridge pilasters see TABLE NO.1 and TABLE NO.2.
6. For median-mounted pole base details See HL-17A or HL-17B



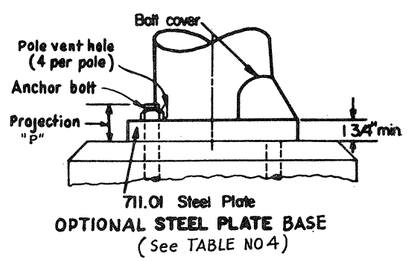
OPTIONAL CAST STEEL BASE
(See TABLE NO.4)

TABLE NO. 4
ANCHOR BOLTS FOR STEEL ANCHOR BASES

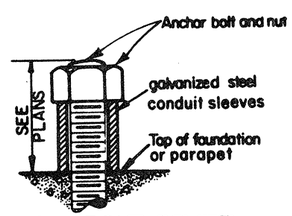
SHAFT SIZE	BOLT CIRCLE	BOLT* PROJ. "P"	"t"	POLE GUAGE NO.11	NO.7	NO.3
6.5"	9 1/2"	2 1/8"	7/8"	1"x 40"	1 1/4"x 48"	1 1/4"x48"
7"	10"	2 1/4"	1"			
7.5"	10 1/2"	2 5/8"	1 1/8"			
8"	11"	2 5/8"	1 3/16"			
8.5"	11 1/2"	2 3/4"	1 1/4"			
9"	12 1/2"	3"	1 5/16"			1 1/2"x60"
9.5	13"	3 1/8"	1 3/8"	1 1/4"x48"		
10"	13 1/2"	3 3/8"	1 7/16"		1 1/2"x 60"	1 3/4"x 90"
11"	15"	3 5/8"	1 5/8"			
12"	16"	4	1 11/16"			

* Based on cast steel anchor bases only. For plate bases the projection shall be increased by the amount the plate thickness exceeds the "t" dimension shown.

STEEL ANCHOR BASES
(See optional base plate details on either side)



OPTIONAL STEEL PLATE BASE
(See TABLE NO.4)



ANCHOR BOLT COVER
Note: To be placed on all light pole anchor bolts provided for future lighting installations.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

POLE BASE DETAILS

DATE 11-1-65, 10-6-73, 7-27-73

STANDARD CONSTRUCTION DRAWING **HL-3**

APPROVED: M. J. Cunningham Engineer of Design Services

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

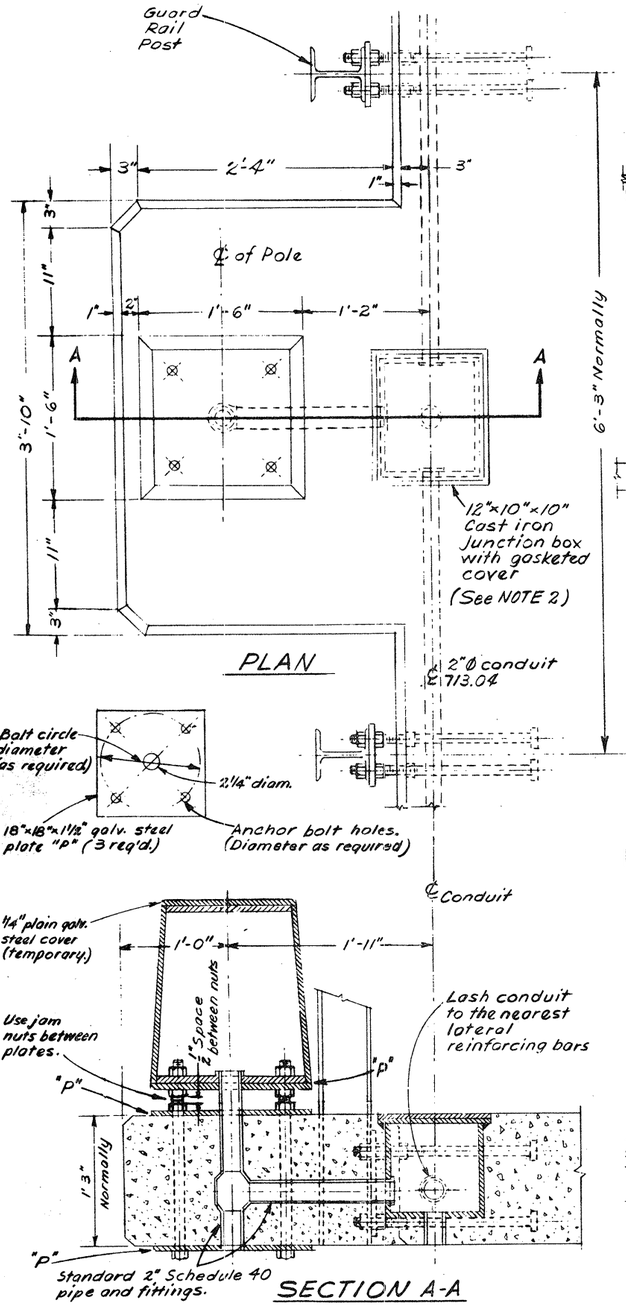
BEL-872-0.00

C-4

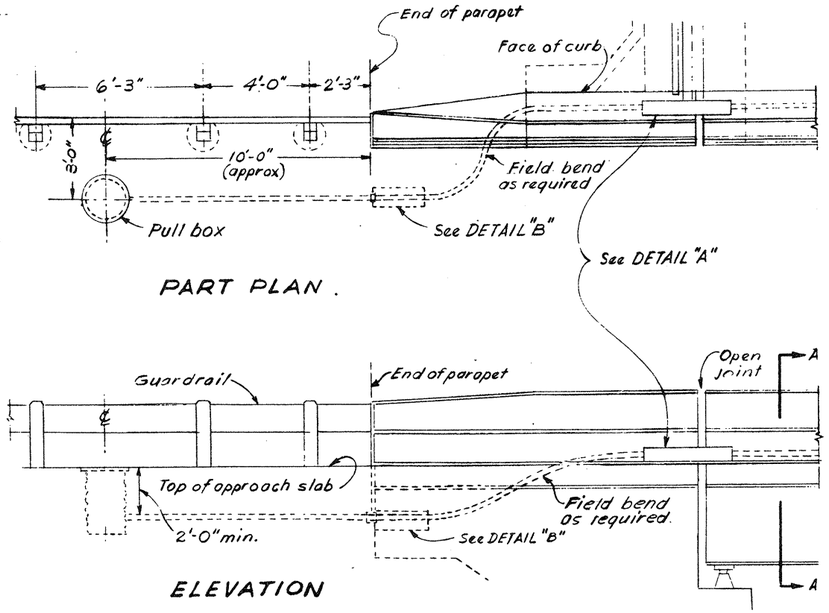
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96G	255

E7

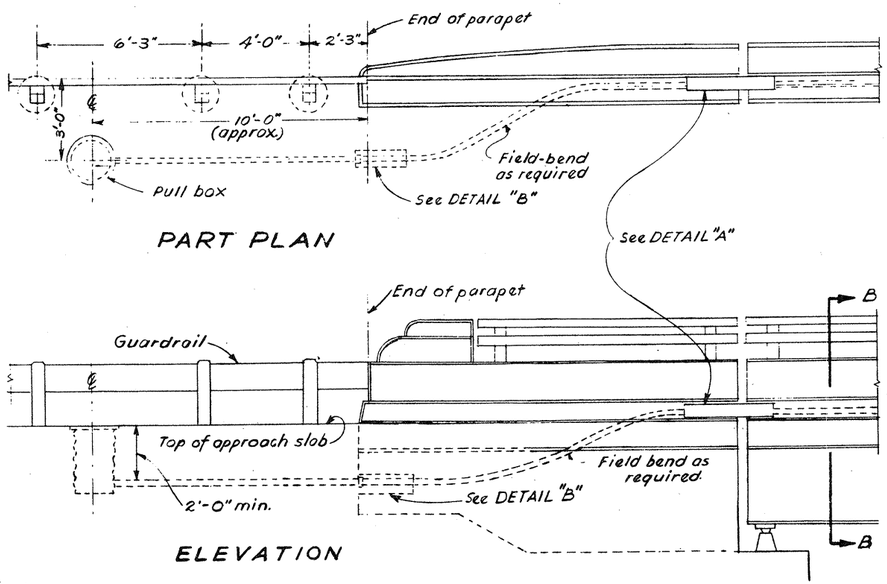
STRUCTURE LIGHTING II

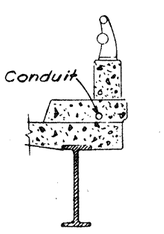


LIGHT POLE PILASTER FOR BRIDGE WITHOUT CURBS AND WITH HIGHWAY GUARD RAIL

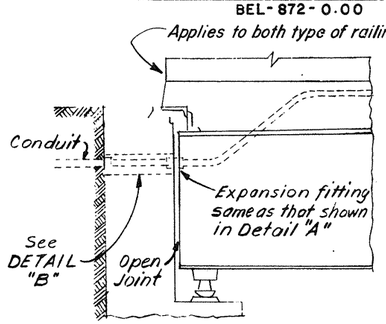


CONDUIT DETAILS FOR BRIDGE WITH STANDARD ROADWAY RAILING





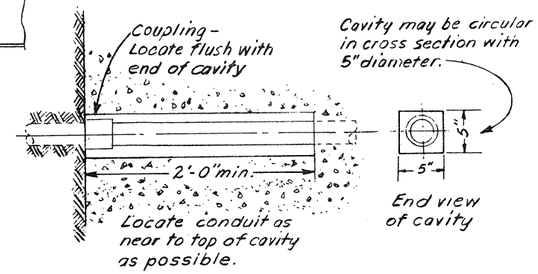
CONDUIT DETAILS FOR BRIDGE WITH SIDEWALK RAILING



STRAIGHT WING WALL

NOTES

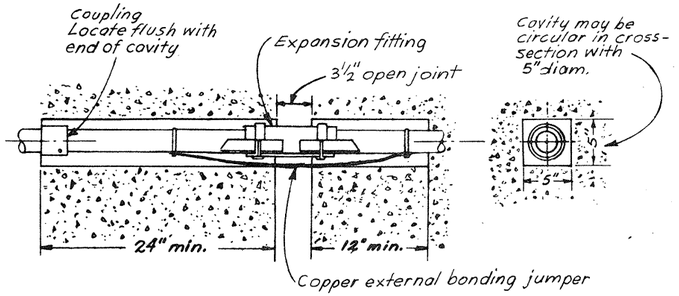
1. Fill space around the conduit and/or fittings within the cavity with a polyurethane foam or other approved cold applied joint sealer.
2. All conduit openings in junction boxes shall be bossed drilled and tapped. Covers shall be 1/4" min. thick cast iron.



DETAIL "B"

CAVITY FOR CONDUIT CONNECTION AT BRIDGE ABUTMENTS

Dimensions may be altered to fit abutment design



DETAIL "A"

CAVITY FOR CONDUIT EXPANSION FITTING

Dimensions may be altered to fit abutment design.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73 9-6-73

STRUCTURE LIGHTING II

STANDARD CONSTRUCTION DRAWING HL-5

APPROVED: M.J. Cunningham Engineer of Design Services

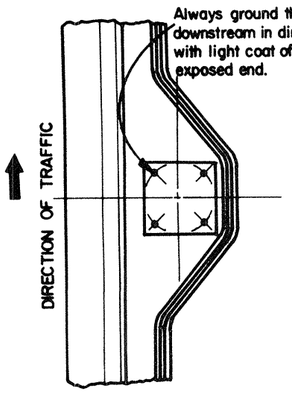
STRUCTURE GROUNDING

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

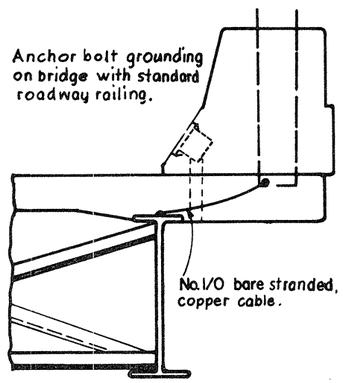
BEL - 872 - 0.00

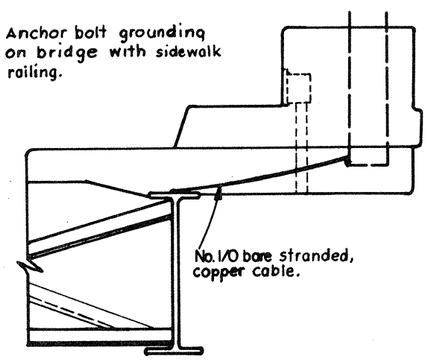
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96H	255

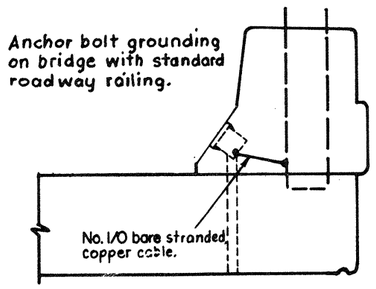
C-4 E8

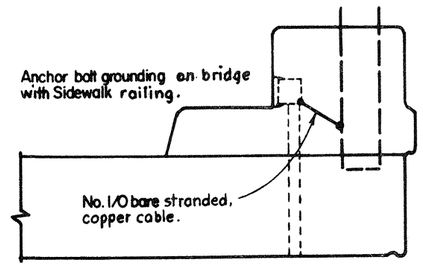


LIGHT POLE PARAPET PLAN





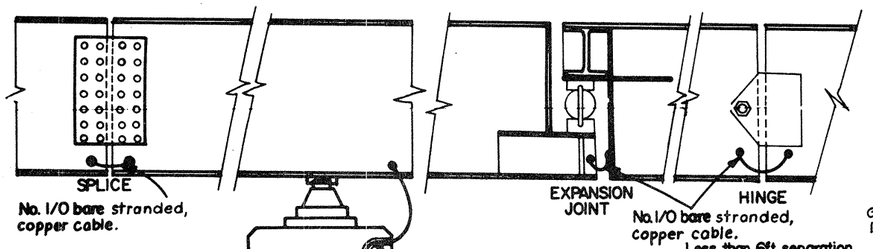


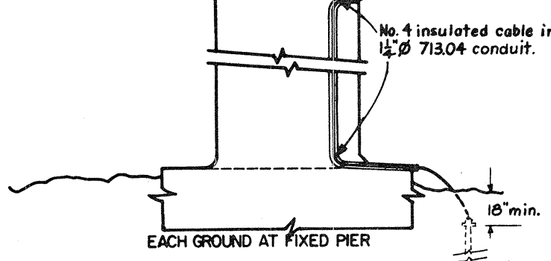


NOTES

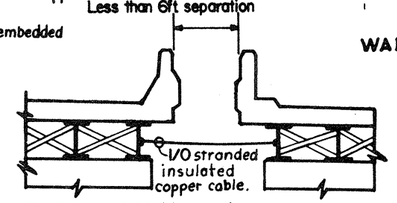
Copper grounding cable shall be connected to structural steel, pile encasement, piling, ground rods and/or light pole anchor bolts by means of exothermic welding. Two coats of insulating varnish shall be applied over the exothermic weld and exposed cable.

STEEL BEAM BRIDGES

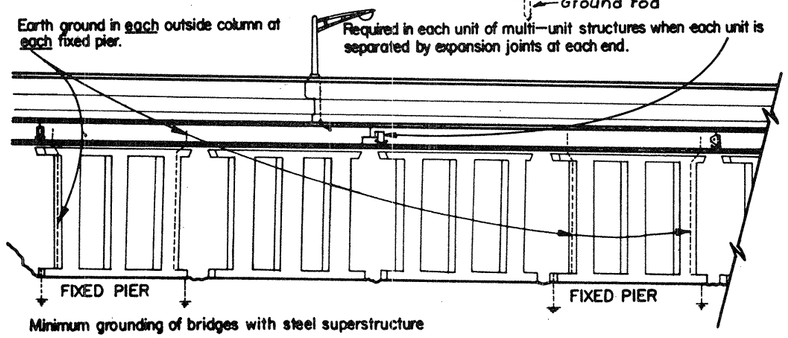




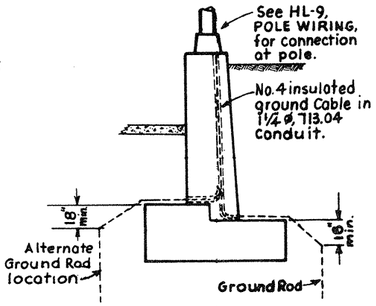
EACH GROUND AT FIXED PIER



Bonding parallel bridge sections

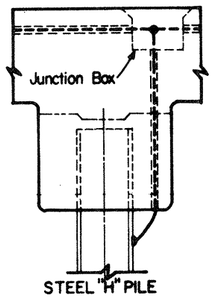


Minimum grounding of bridges with steel superstructure

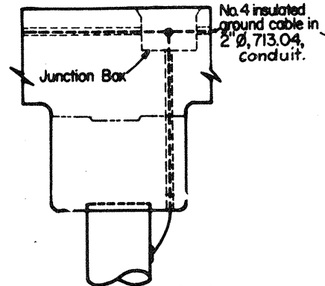


GROUNDING OF WALL-MOUNTED POLES

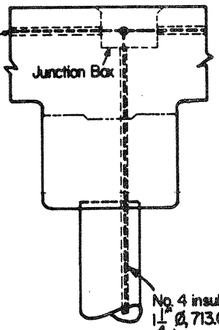
CONCRETE SLAB BRIDGES

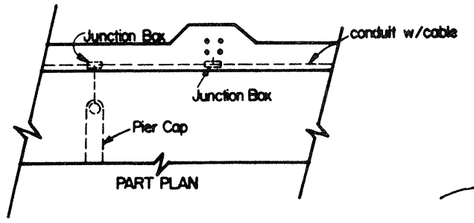


STEEL "H" PILE

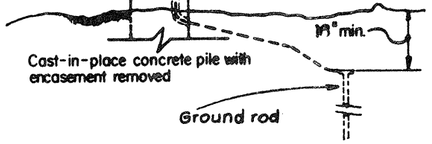


Cast-in-place concrete pile with encasement left in place.



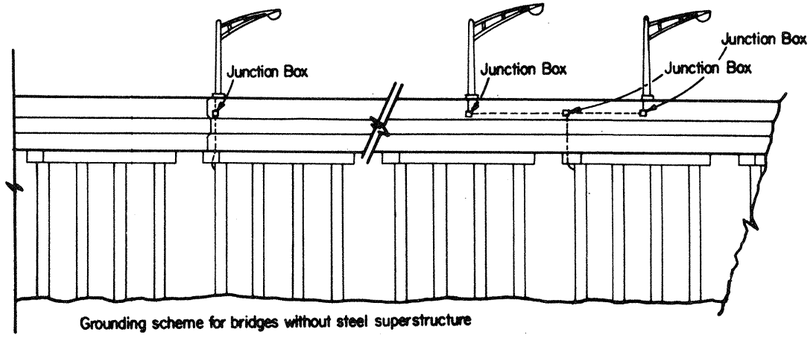


PART PLAN



Cast-in-place concrete pile with encasement removed

Ground rod



Grounding scheme for bridges without steel superstructure

BEUHING 44-560 10943

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

STRUCTURE GROUNDING

DATE 4-6-73 9-6-73

STANDARD CONSTRUCTION DRAWING **HL-7**

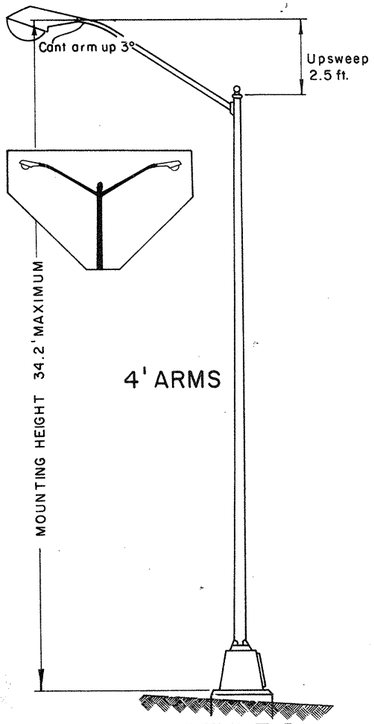
APPROVED: W. J. Cunningham Engineer of Design Services

LIGHT POLE STYLES

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	BEL-872-0.00

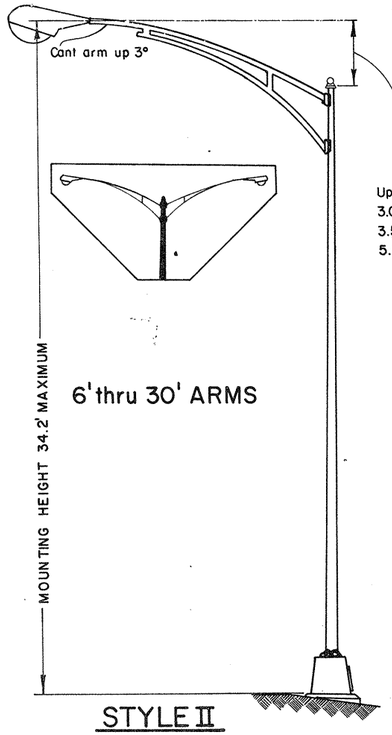
FED HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-5P2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	961	255

C-4 E9



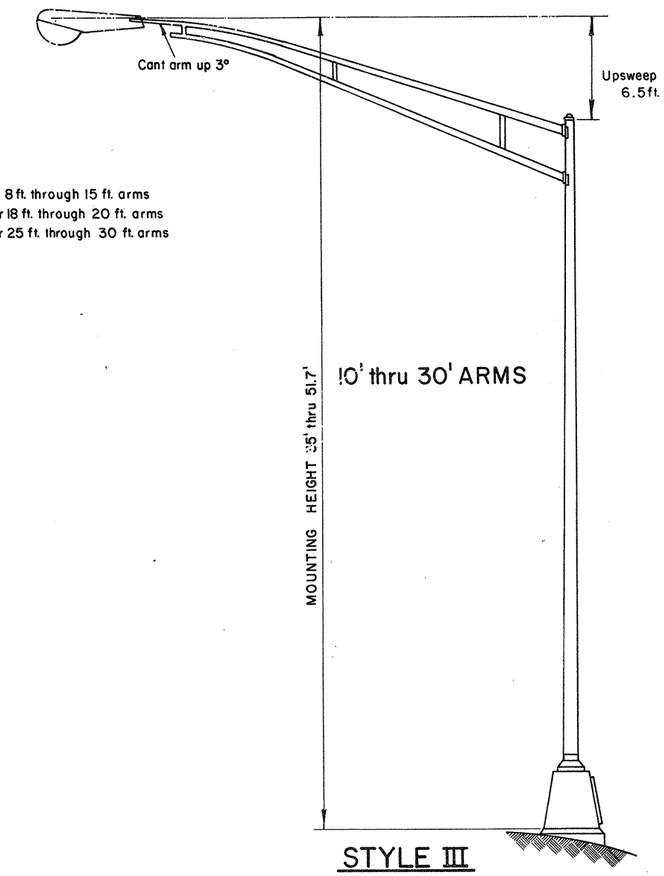
4' ARMS

STYLE I



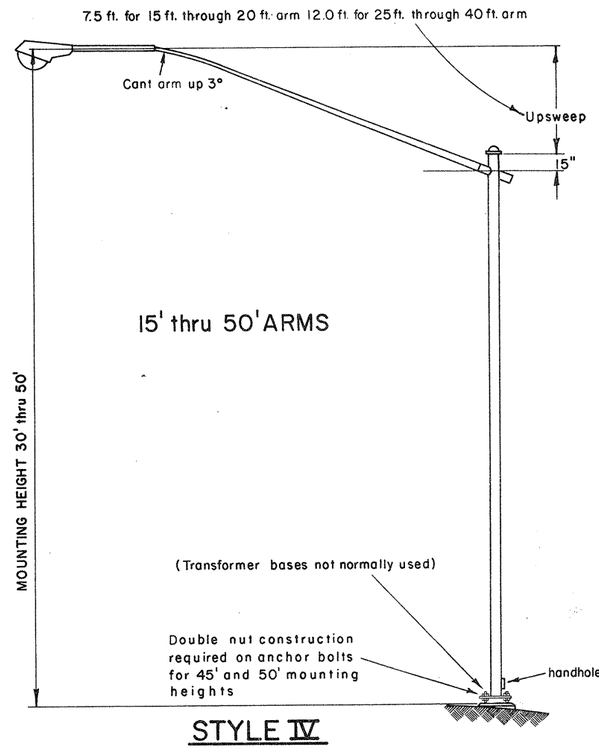
6' thru 30' ARMS

STYLE II



10' thru 30' ARMS

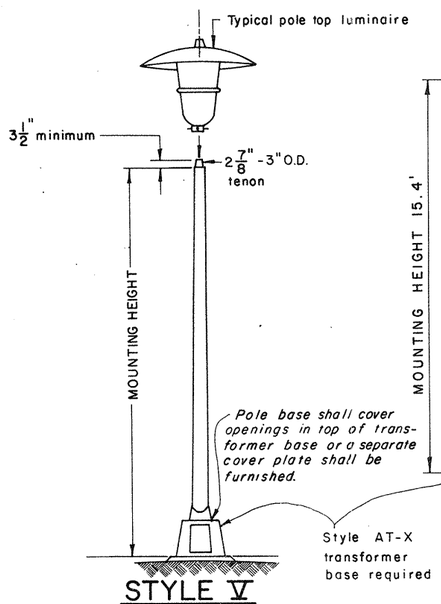
STYLE III



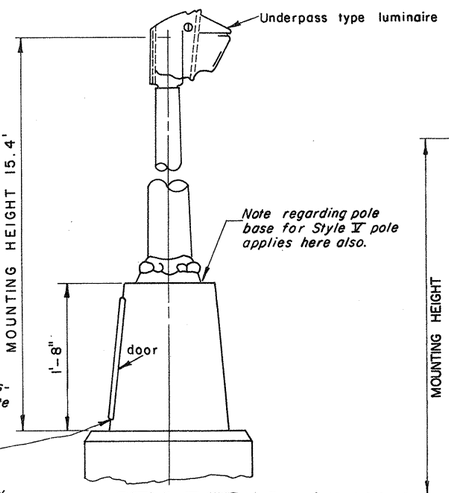
15' thru 50' ARMS

STYLE IV

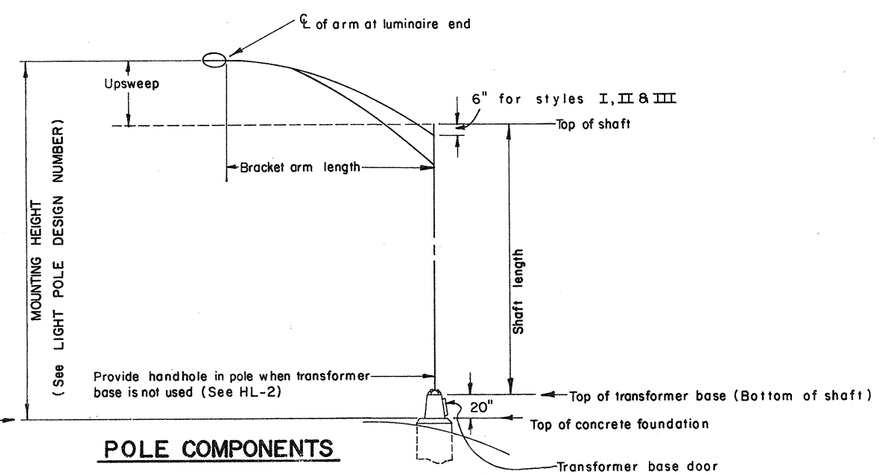
NOTE: *Subject to the approval of the Engineer, modification of the ratio of bracket upsweep to arm length is permissible provided the basic pole proportions are maintained as shown*



STYLE V



STYLE VI



POLE COMPONENTS

Base type A = Anchor
AT = Aluminum Transformer
ST = Steel Transformer
T = Steel or Aluminum Transformer

A 4 B 25 D

- A: Base type
- 4: Arm Length
- B: Bracket arm(s) — "B" = Single arm, "BB" = Double arm (If unequal arms Ex. 10B15B), "ON" = Post top
- 25: Mounting height (The distance from top of foundation retaining wall or bridge parapet to the center of the bracket arm at the luminaire end)
- D: Special features (See details)

LIGHT POLE DESIGN NUMBER

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

LIGHT POLE STYLES

STANDARD CONSTRUCTION DRAWING **HL-8**

APPROVED W.J. Cunningham Engineer of Design Services

DATE 9-6-72 12-10-76 2-1-7

PLAN SURVEYED PLOTTED ALIGNMENT CHECKED PT. OF INST. CHECKED NOTE BOOK NO.

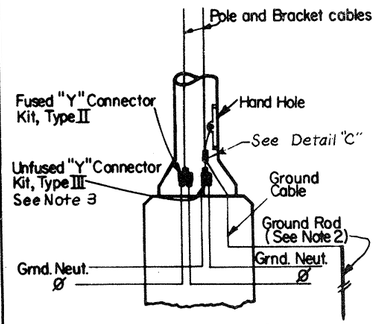
POLE WIRING

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

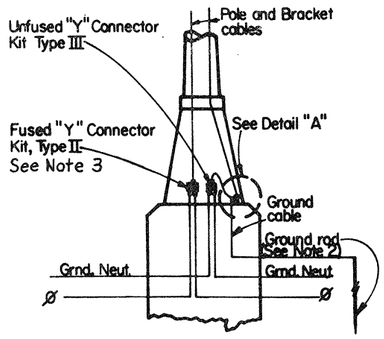
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-525-(002)		MARSHALL, W.VA. BELMONT, OHIO	96J	255

C-4 E10

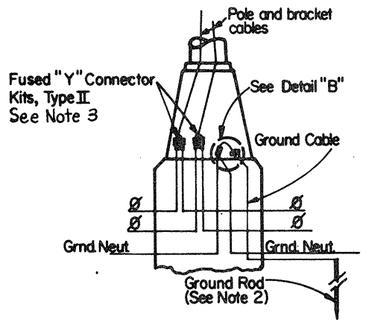


ANCHOR BASE POLE

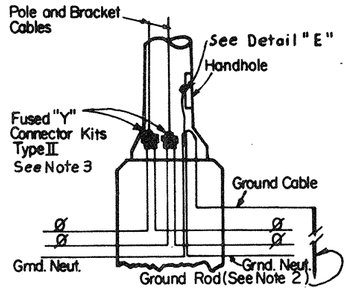


TRANSFORMER BASE POLE

480 VOLT, TWO-WIRE, GROUNDED NEUTRAL

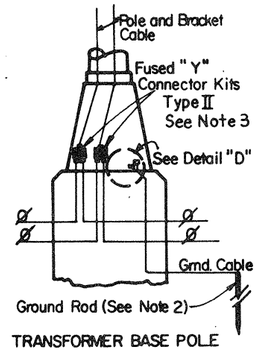


TRANSFORMER BASE POLE



ANCHOR BASE POLE

120/240 VOLTS, THREE WIRE, GROUNDED NEUTRAL

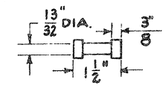


TRANSFORMER BASE POLE

240 or 480 VOLTS, TWO-WIRE, UNGROUNDED

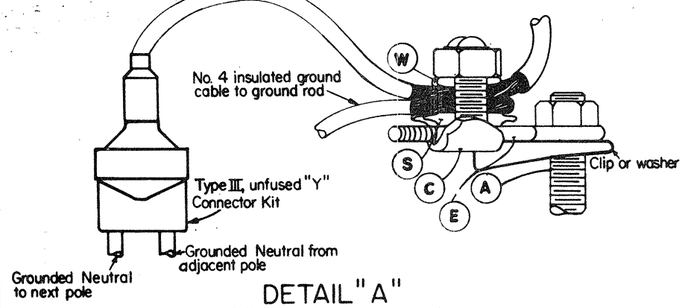
NOTES

1. Provide sufficient slack in all cables to permit bringing Kits outside of pole base through handhole of anchor base poles or door in transformer base poles.
2. For structure-mounted poles substitute " Structure grounding system " for "ground rod."
3. Fuses for connector Kits shall be as follows:

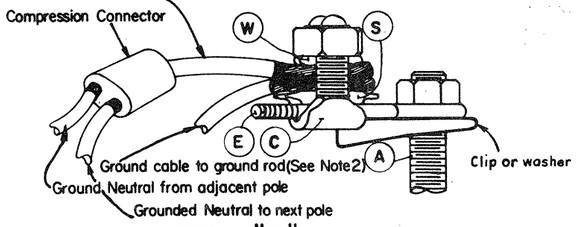


Any standard Midget Ferrule type fuse, (except glass tube) may be used in this connection.

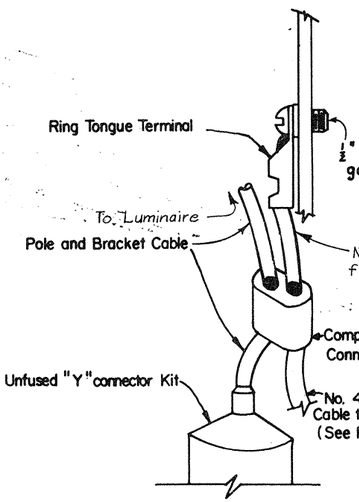
Fuses rated 600 volts and 10 amperes, minimum shall be used unless other wise specified.



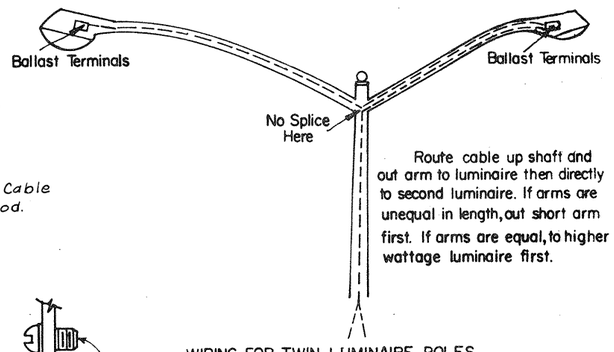
DETAIL "A"
2-Wire Grounded Neutral
Transformer Base Pole



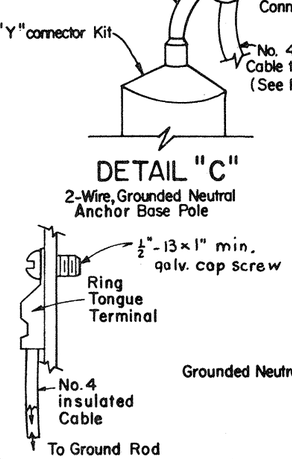
DETAIL "B"
3-WIRE, GROUNDED NEUTRAL
Transformer Base Pole



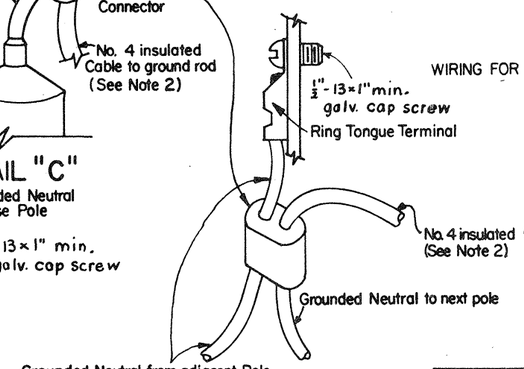
DETAIL "C"
2-Wire, Grounded Neutral
Anchor Base Pole



WIRING FOR TWIN-LUMINAIRE POLES



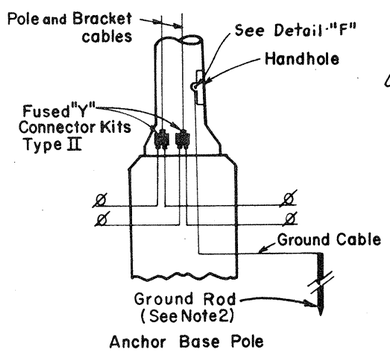
DETAIL "F"
2-WIRE UNGROUNDED



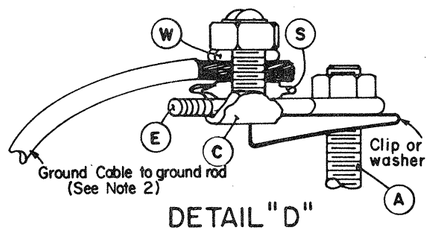
DETAIL "E"
3-Wire, Grounded Neutral
Anchor Base Pole

LEGEND of ITEMS COMMON to DETAILS "A", "B", & "D"

- (A) Anchor Bolt
- (C) Tin Plated Copper Split Bolt Connector with the following components:
  - (S) Spacer (Tin plated)
  - (W) Washer
  - (E) 3/8"X4" Galv. Steel eyebolt



Anchor Base Pole



DETAIL "D"
2-Wire, Ungrounded Circuit
Transformer Base Pole

240 or 480 VOLTS, TWO-WIRE, UNGROUNDED

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

POLE WIRING

STANDARD CONSTRUCTION DRAWING **HL-9**

APPROVED: H. J. Cunningham Engineer of Design Services

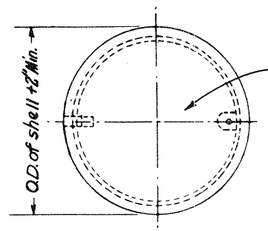
DATE
1-6-[illegible]
9-6-[illegible]
1-21-[illegible]
8-2-[illegible]

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	BEL-872-0.00

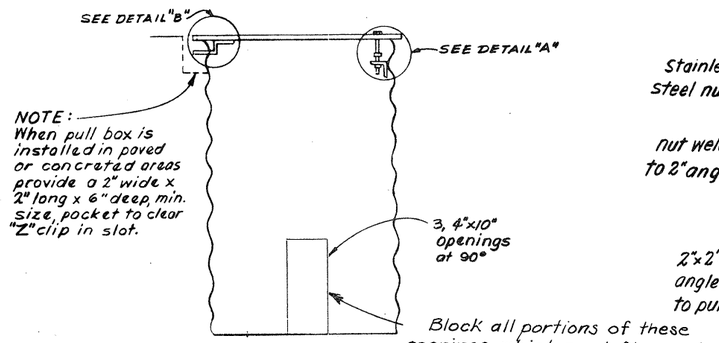
FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	SCAL. YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.A.	G	326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96K	255

E11

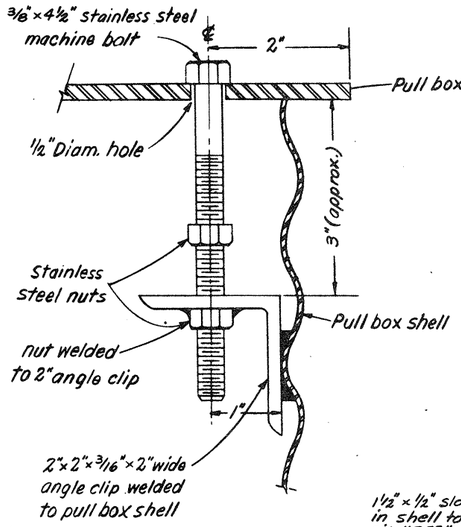
PULL BOX DETAILS



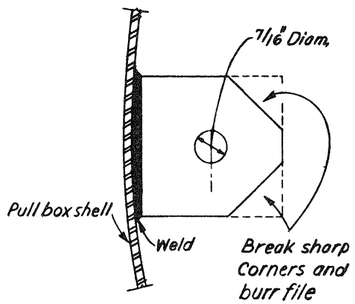
PLAN



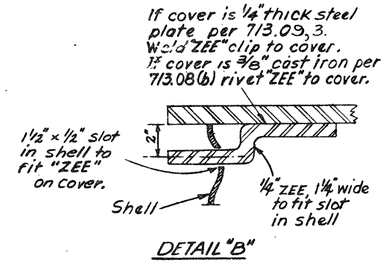
ELEVATION



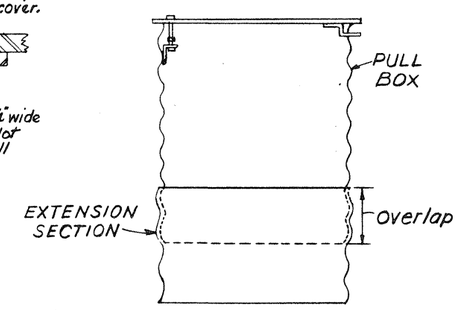
DETAIL "A"



PLAN OF ANGLE CLIP



DETAIL "B"



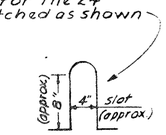
GRADE ADJUSTMENT EXTENSION SECTION

NOTES

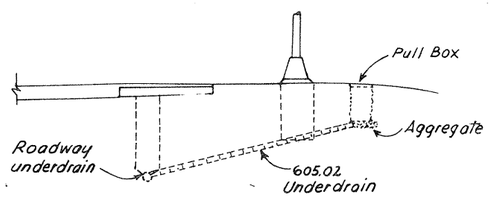
1. An air bell shall be provided only when specifically required by the plans.
2. Approximate Air Bell sizes:

Pullbox Diameter	Air Bell Diameter	Air Bell Height
18"	16¾"	20½"
24"	20½"	28½"

3. When required to provide a clear opening for the duct cable the air bell for the 24" diameter pullbox shall be notched as shown

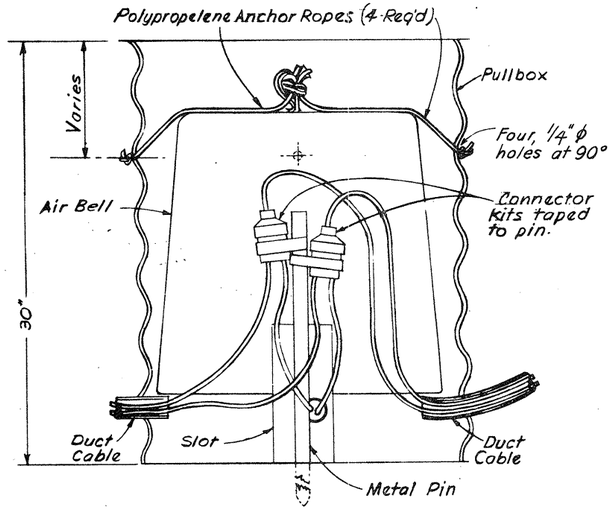


4. Pull Box Drain shall be installed only when specified or directed by the Engineer. The installation and payment shall be in accordance with 605.



PULL BOX DRAIN TO UNDERDRAIN IN CUT AREA

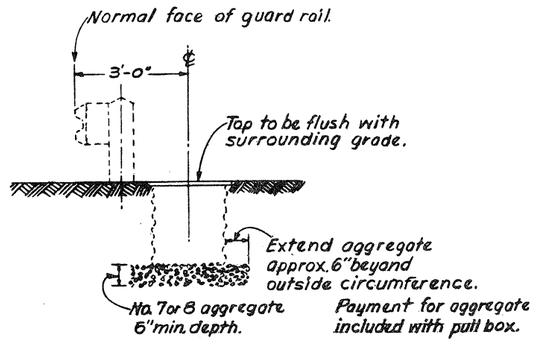
See Note 4.



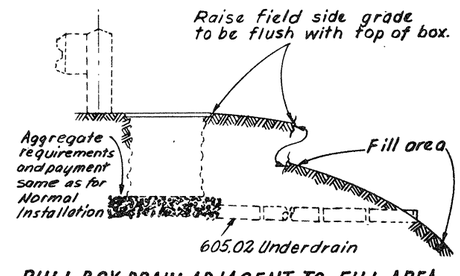
INTERIOR VIEW OF PULLBOX SHOWING ANCHORED AIR BELL AND SUPPORT FOR CONNECTOR KITS.

(See Notes 1 through 3)

CORRUGATED STEEL PULL BOX



NORMAL INSTALLATION



PULL BOX DRAIN ADJACENT TO FILL AREA

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

PULL BOX DETAILS

DATE 4-6-73, 9-6-74, 1-21-76

STANDARD CONSTRUCTION DRAWING HL-10

APPROVED: W. J. Cunningham Engineer of Design Services

MISCELLANEOUS DETAILS I

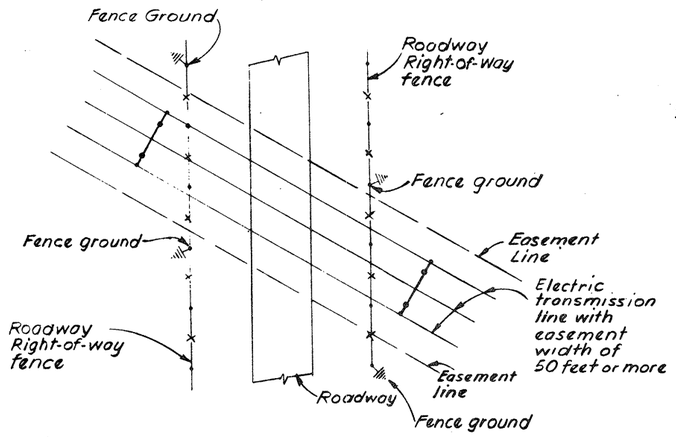
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

C-4

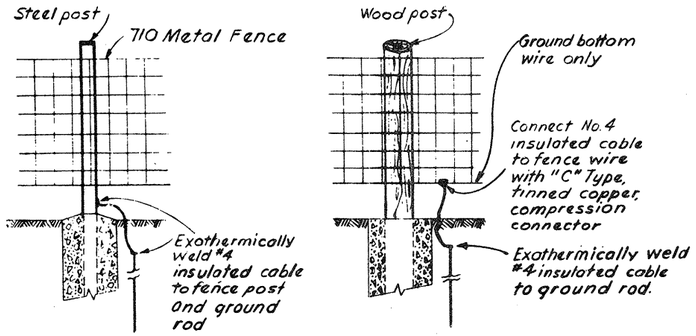
FED HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	32E-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96L	255

E12



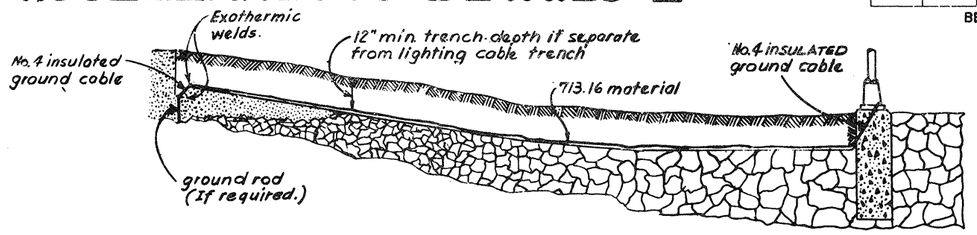
CROSSING OF ROADWAY R/W & TRANSMISSION LINE EASEMENT

(See Note 1)

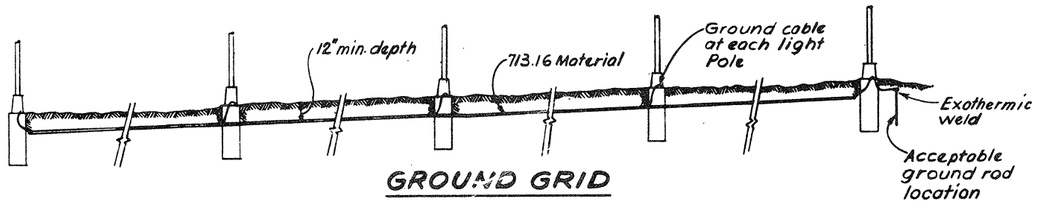


FENCE GROUND DETAILS

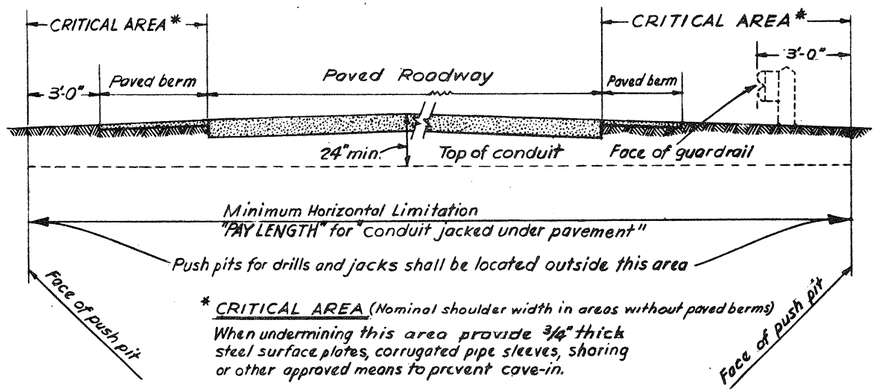
When specified, roadway right-of-way fences shall be grounded as shown hereon. (See also Notes 1, 2, 3, & 4)



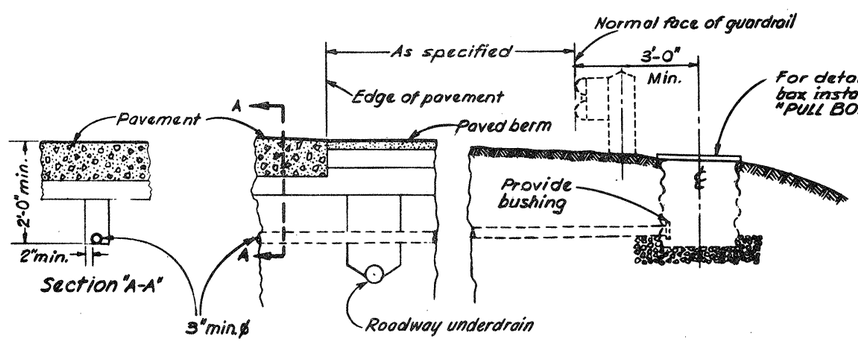
MODIFIED GROUND GRID FOR INDIVIDUAL POLE GROUND



GROUND GRID



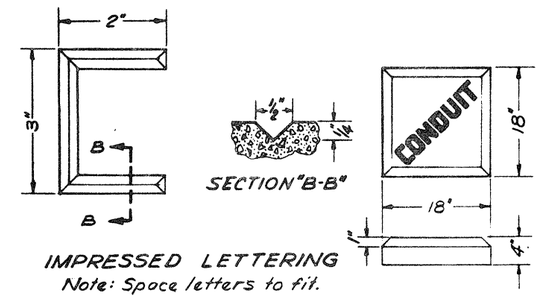
DETAIL FOR CONDUIT JACKED UNDER PAVEMENT



TYPICAL CONDUIT CROSSOVER DETAIL

NOTES

1. Where overhead transmission line easements 50 feet or more in width cross a fenced roadway right-of-way, each fence shall be grounded as shown hereon.
2. Where overhead electric power line easements less than 50 feet in width cross a fenced roadway right-of-way, each fence shall be grounded directly below the centerline of the power line crossing.
3. Where overhead transmission lines rated 110 KV or higher are parallel to roadway fences and the transmission line easement is contiguous to the roadway right-of-way the roadway fences shall be grounded at least every 300 ft.
4. Fence grounds will be paid for at unit price bid for Ground Rods, Item 625.
5. Apply two coats of insulating varnish over all exothermic welds and exposed cable.



IMPRESSED LETTERING

Note: Space letters to fit.

"CONDUIT" - to indicate conduit for future cable or wire.

"CABLE" - to indicate abrupt change in direction of cable

CONCRETE MARKER

(625.16)

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

MISCELLANEOUS DETAILS I

DATE 4-6-73

STANDARD CONSTRUCTION DRAWING **HL-11**

APPROVED: W. J. Cunningham Engineer of Design Services

MISCELLANEOUS DETAILS II

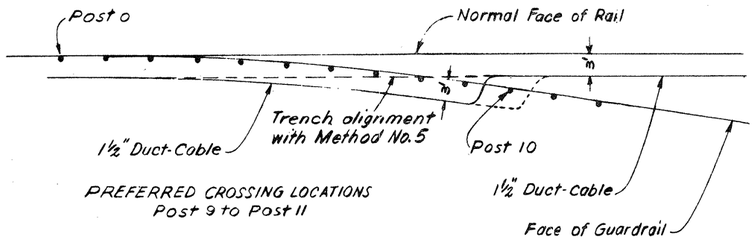
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-525-(002)		MARSHALL, W.VA. BELMONT, OHIO	96M	255

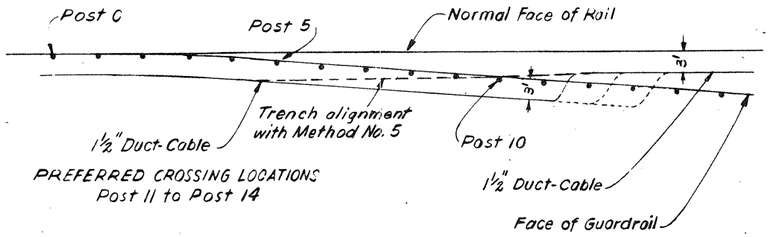
C-4 E13

STANDARD GUARDRAIL FLARE
FOR CUT TO FILL AND FILL TO FILL AREAS
1"=10'

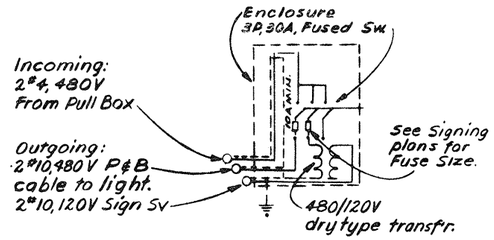


PREFERRED CROSSING LOCATIONS
Post 9 to Post 11

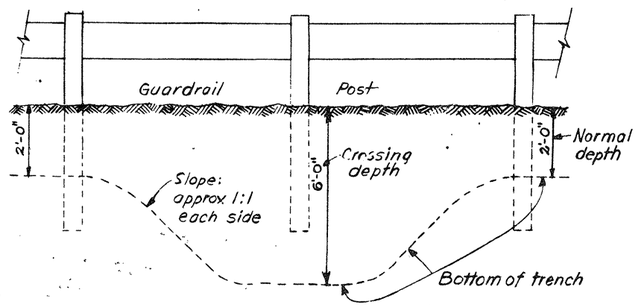
INTRODUCED GUARDRAIL FLARE
BECAUSE OF OBSTRUCTION
1"=10'



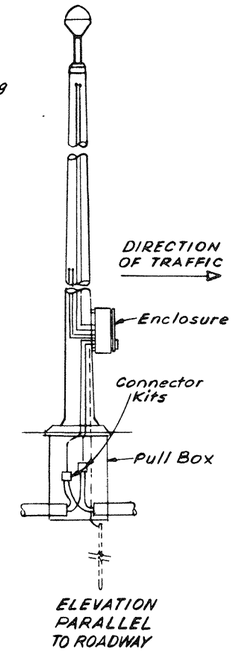
PREFERRED CROSSING LOCATIONS
Post 11 to Post 14



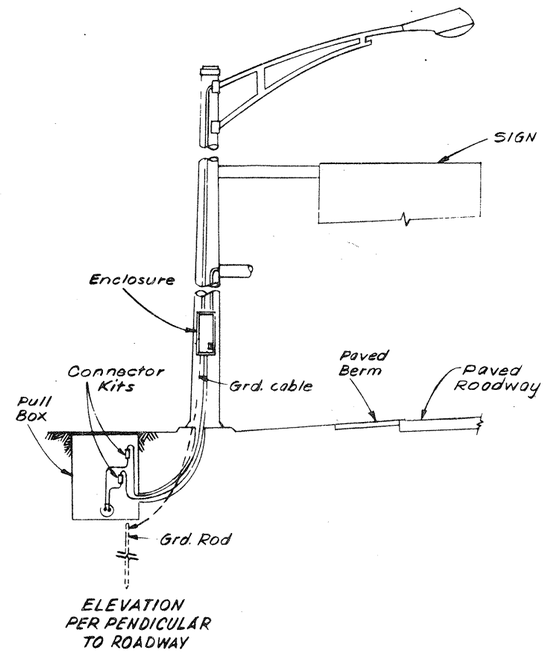
WIRING DIAGRAM
(See Note 2.)



METHOD NO.5 for PROTECTING DUCT-CABLE UNDER GUARD RAIL
Increased depth of cable trench at point of crossing.
To be used whenever trench alignment is within 1'-6" of posts.
(See NOTE No.1)



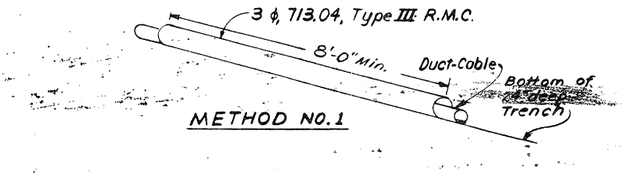
ELEVATION PARALLEL TO ROADWAY



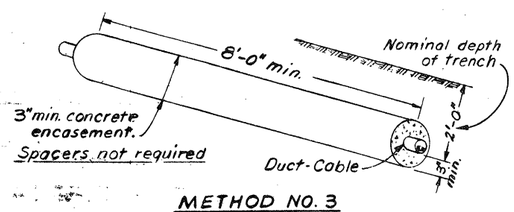
ELEVATION PERPENDICULAR TO ROADWAY

WIRING FOR COMBINATION LIGHT AND SIGN POLE

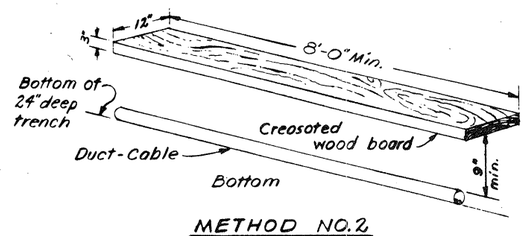
METHODS OF PROTECTING DUCT-CABLE UNDER GUARD RAIL
(See NOTE No.1)



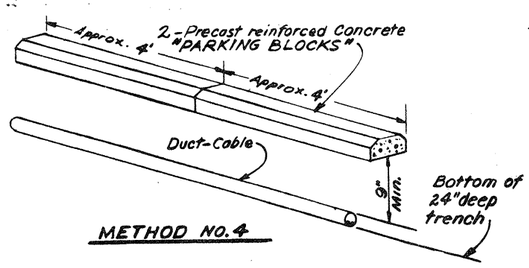
METHOD NO.1



METHOD NO. 3



METHOD NO.2

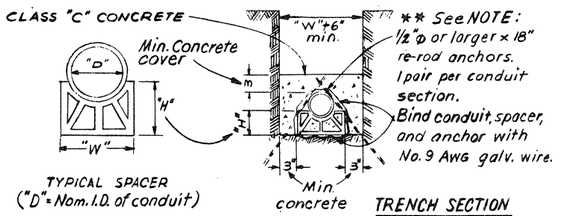


METHOD NO.4

CONCRETE ENCASED CONDUIT

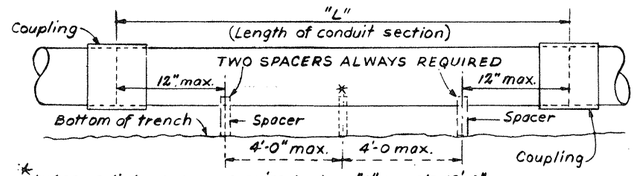
"D"	"H"	"W"
2"	3⅝"	5½"
3"	3⅞"	6⅛"
4"	4⅛"	7⅝"
5"	4½"	8⅞"

Nominal spacer dimensions



TYPICAL SPACER
("D"=Nom. I.D. of conduit)

TRENCH SECTION



*Intermediate spacer required when "L" equals 10'-0"
Additional spacers shall be required when "L" exceeds 10'-0"

SIDE ELEVATION

** NOTE: DELETE ANCHORS AND BINDING WIRE WHEN USING STEEL CONDUIT.

NOTES

1. Payment for protection of duct-cable and distribution cable under guard rail, as detailed in Methods 1 thru 5, shall be included in the unit prices bid for the affected cable and trench items.
2. Wiring diagram shown is required when illuminated signs are flourescent type. For mercury vapor type delete the 480/120 volt dry type transformer and change Sign Service to read "2 #10, 480V"

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

MISCELLANEOUS DETAILS II

DATE 4-6-73

STANDARD CONSTRUCTION DRAWING **HL-12**

APPROVED: M.J. Cunningham Engineer of Design Services

SERVICE POLES AND CONTROL CENTERS

FED RD. DIVISION	STATE	PROJECT	
5	OHIO		

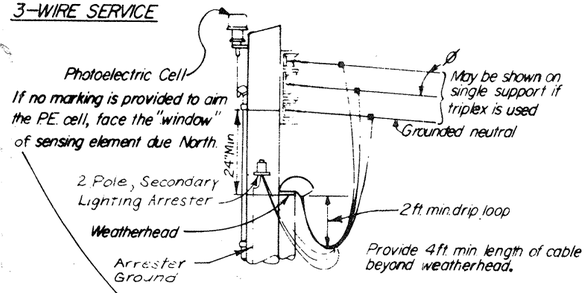
BEL-872-0.00

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA. BELMONT, OHIO	96N	255

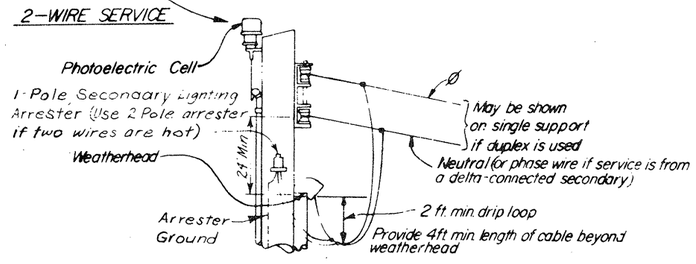
C-4 E14

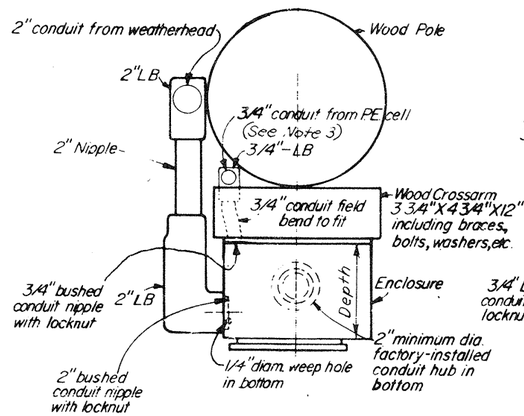
TYPICAL SERVICE POLE HEADS

3-WIRE SERVICE

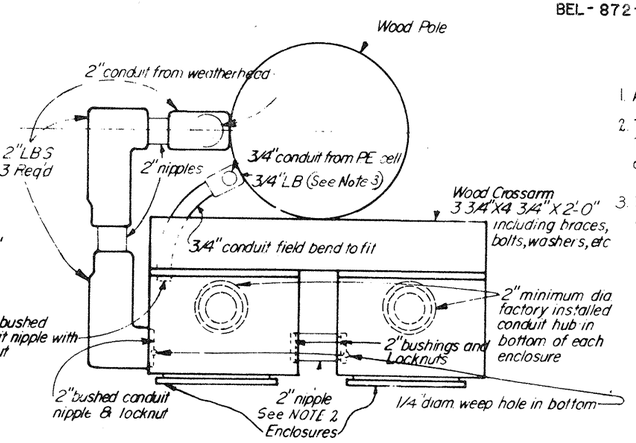


2-WIRE SERVICE





PLAN
SINGLE ENCLOSURE



PLAN
DOUBLE ENCLOSURES

NOTES

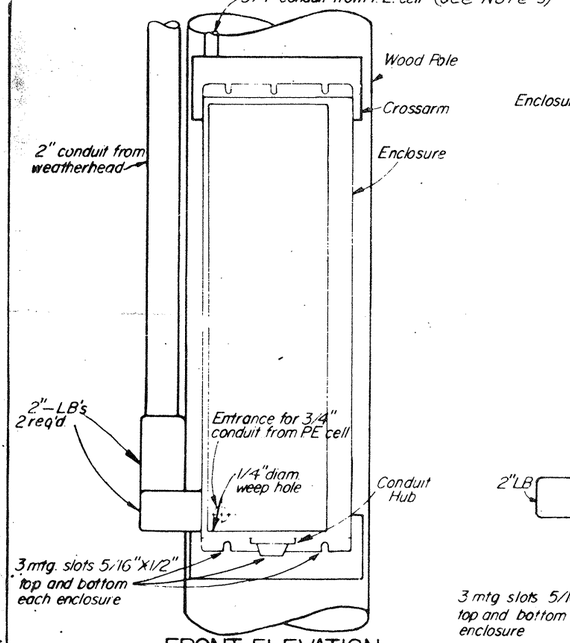
1. All openings in enclosures shall be made by fabricator
2. Two or more enclosures may be mounted with sides abutting. The 2" nipple shown shall then be replaced by the installation of 2" insulated bushings in the openings for cables.
3. The 3/4" conduit for control wiring between P.E. Cell and contactor enters the back of the enclosure at the bottom

ENCLOSURE TYPES

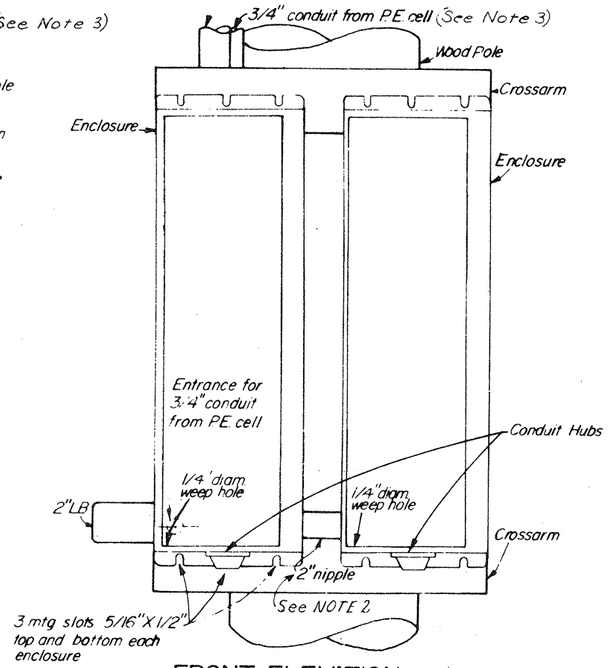
MINIMUM INTERIOR DIMENSIONS

TYPE NO.	PRINCIPLE CONTENTS	WIDTH	HEIGHT	DEPTH *
S-30/60	30 or 60 ampere fused switch.	10 1/2"	18"	6 3/16"
S-100	100 ampere fused switch.	14"	20"	8"
SC-30/60	30 or 60 ampere combination fused switch & contactor.	10 7/16"	32 7/16"	7 5/8"
SC-100	100 ampere combination fused switch & contactor.	14"	41"	8 1/8"

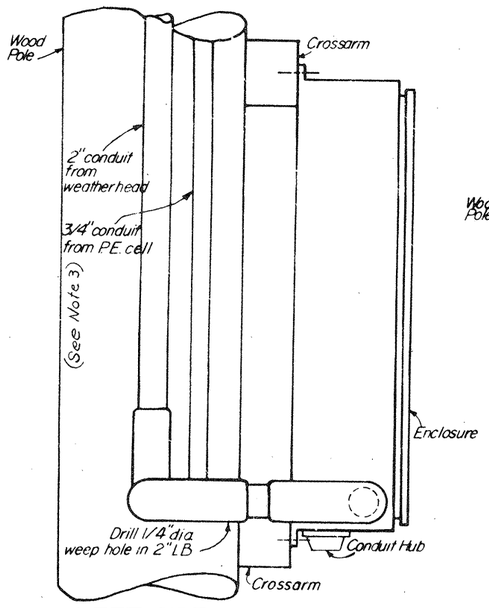
* See "PLAN" view of Single Enclosure The interior depth dimension shall not include any part of the enclosure door which may protrude into the interior of the enclosure.



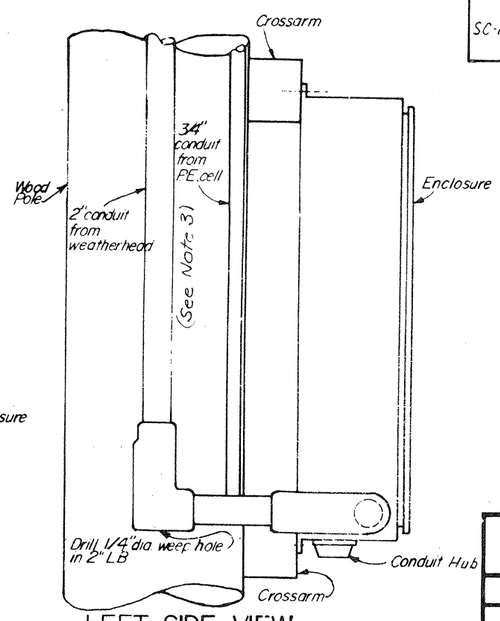
FRONT ELEVATION
SINGLE ENCLOSURE



FRONT ELEVATION
DOUBLE ENCLOSURES



LEFT SIDE VIEW
DOUBLE ENCLOSURES



LEFT SIDE VIEW
SINGLE ENCLOSURE

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73 12-10-75 1-2-76

CONTROL CENTERS

STANDARD CONSTRUCTION DRAWING HL-15

APPROVED ..... Engineer of Design Services

WIRING DIAGRAMS

FED. HWY. ADM.	STATE DIST. NO.	STATE PROJECT NO.	FED. PROJECT NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	326-SP2-0.00	M-5251(002)		MARSHALL, W.VA BELMONT, OHIO	960	255

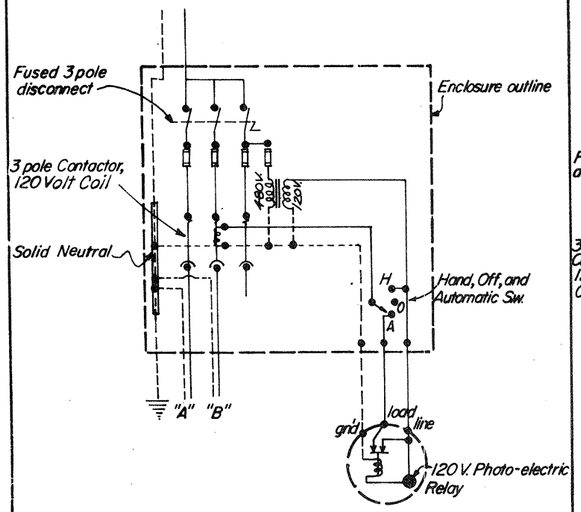
C-4

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

E15

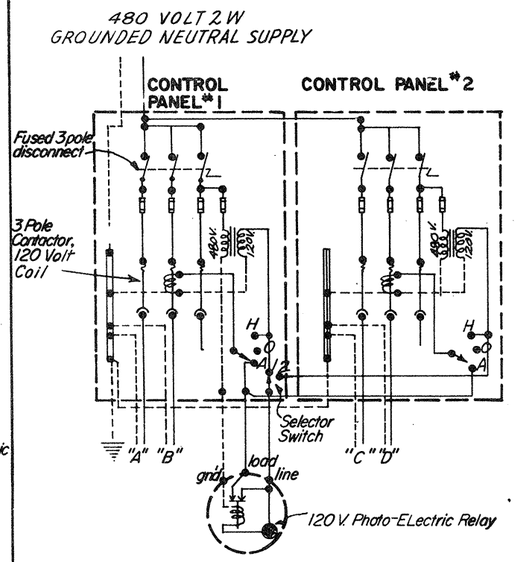
BEL-872-0.00

480 VOLT 2W GROUNDED NEUTRAL SUPPLY



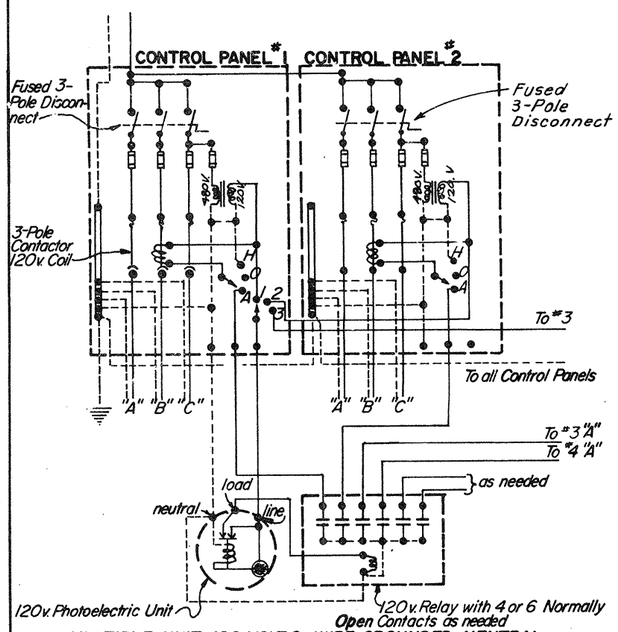
SINGLE UNIT 480 VOLT, 2-WIRE GROUNDED NEUTRAL

480 VOLT 2W GROUNDED NEUTRAL SUPPLY



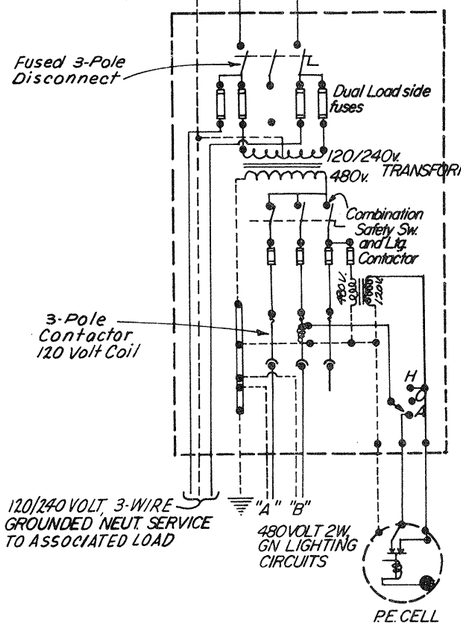
DOUBLE UNIT 480 VOLT, 2-WIRE GROUNDED NEUTRAL

480 VOLT 2W GROUNDED NEUTRAL SUPPLY



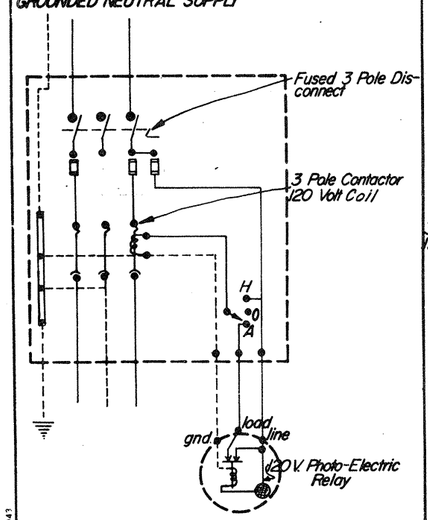
MULTIPLE UNIT 480 VOLT, 2-WIRE GROUNDED NEUTRAL

120/240 VOLT 3W, GROUNDED NEUTRAL SUPPLY



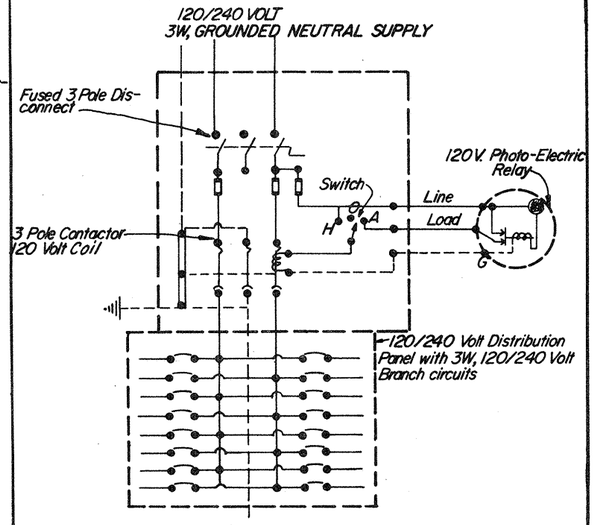
480 VOLT, 2-WIRE, GROUNDED NEUTRAL CONTROL CENTER WITH 120/240 VOLT, 3-WIRE GROUNDED NEUTRAL SUPPLY FOR ASSOCIATED LOAD.

120/240 VOLT 3W, GROUNDED NEUTRAL SUPPLY



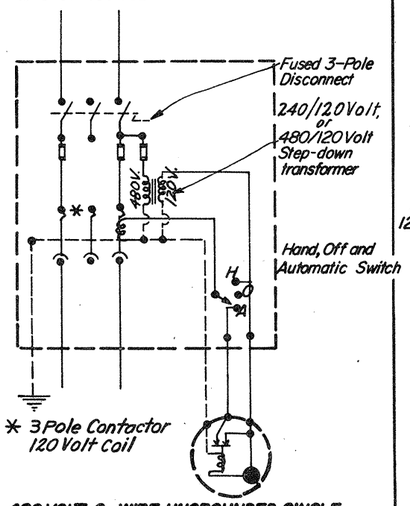
120/240 VOLT, 3-WIRE, GROUNDED NEUTRAL SINGLE CIRCUIT

120/240 VOLT 3W, GROUNDED NEUTRAL SUPPLY



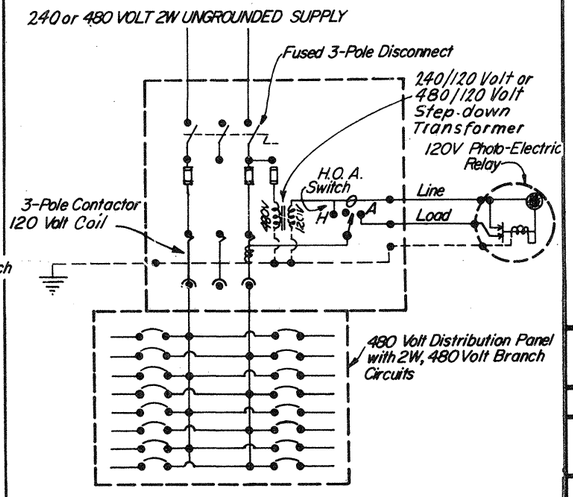
120/240 VOLT, 3-WIRE, GROUNDED NEUTRAL MULTIPLE CIRCUIT

240 or 480 VOLT 2W UNGROUNDED SUPPLY



480 VOLT, 2-WIRE UNGROUNDED SINGLE CIRCUIT

240 or 480 VOLT 2W UNGROUNDED SUPPLY



480 VOLT, 2-WIRE UNGROUNDED MULTIPLE CIRCUIT

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING

DATE 4-6-73

WIRING DIAGRAMS

STANDARD CONSTRUCTION DRAWING **HL-16**

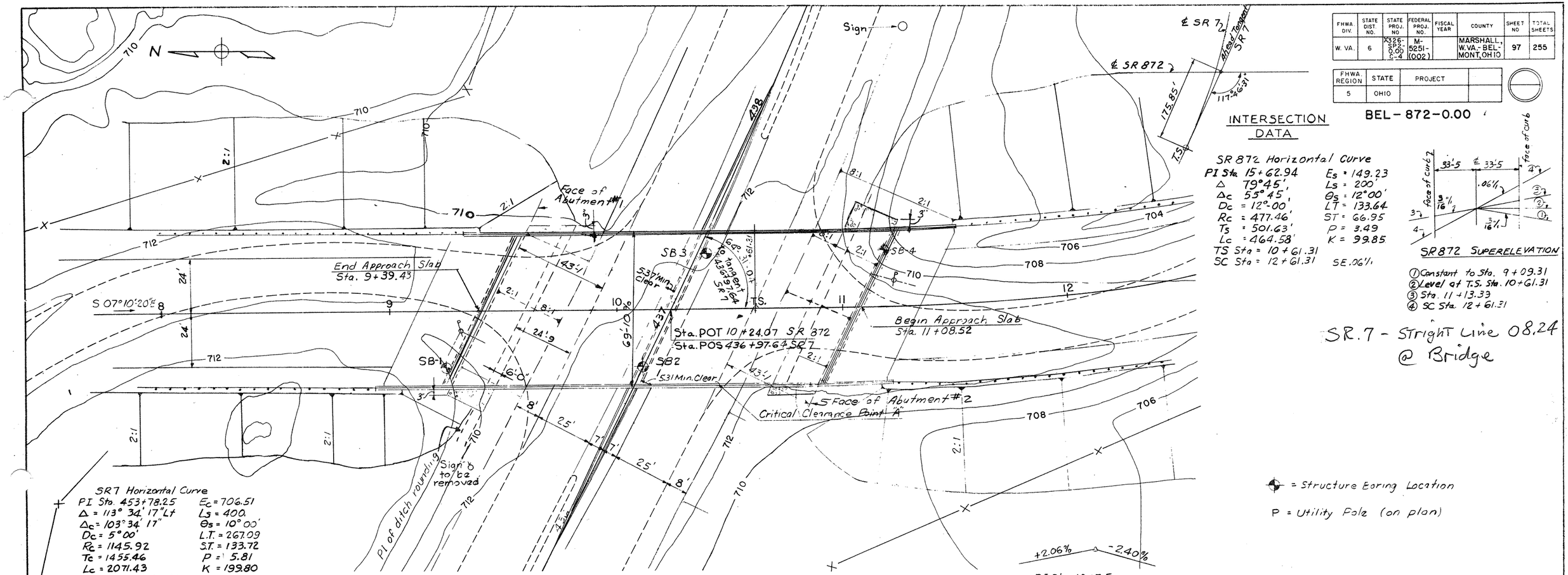
APPROVED: M.J. Cunningham Engineer of Design Services

BRUNING 44-560 10943

FHWA. DIV.	STATE DIST. NO.	STATE PROJ. NO	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	97	255

FHWA. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



INTERSECTION DATA

SR 872 Horizontal Curve

PI Sta 15+62.94	E_s = 149.23
Δ 79°45'	L_s = 200'
Δ_c 55°45'	θ_s = 12°00'
D_c = 12°-00'	LT = 133.64
R_c = 477.46'	ST = 66.95
T_s = 501.63'	P = 3.49
L_c = 464.58'	K = 99.85
TS Sta = 10+61.31	
SC Sta = 12+61.31	SE .06'/'

SR 872 SUPERELEVATION

① Constant to Sta. 9+09.31
② Level at T.S. Sta. 10+61.31
③ Sta. 11+13.33
④ SC Sta. 12+61.31

SR. 7 - Stright Line 08.24 @ Bridge

SR 7 Horizontal Curve

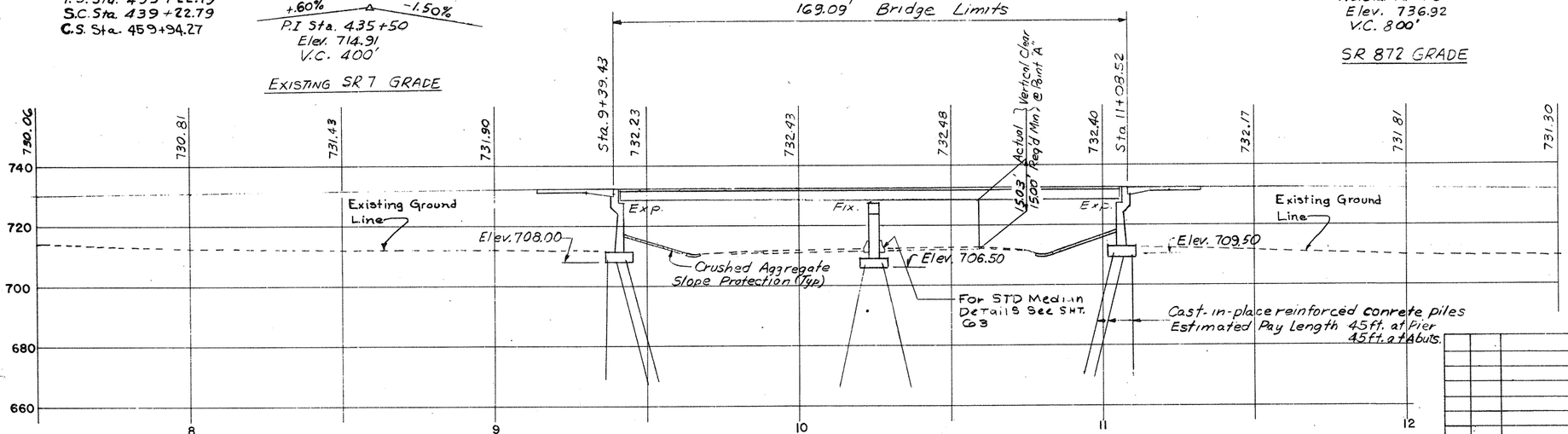
PI Sta. 453+78.25	E_c = 706.51
Δ = 113° 34' 17" Lt	L_s = 400.
Δ_c = 103° 34' 17"	θ_s = 10° 00'
D_c = 5°00'	L.T. = 267.09
R_c = 1145.92	S.T. = 133.72
T_c = 1455.46	P = 5.81
L_c = 2071.43	K = 199.80
T.S. Sta. 435+22.79	
S.C. Sta. 439+22.79	
C.S. Sta. 459+94.27	

+.60% −1.50%
P.I Sta. 435+50
Elev. 714.91
V.C. 400'

EXISTING SR 7 GRADE

+2.06% −2.40%
P.I. Sta. 10+75
Elev. 736.92
V.C. 800'

SR 872 GRADE



= Structure Boring Location

P = Utility Pole (on plan)

1999 ADT 9100
1999 ADT 455 (TRUCKS)

1 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER PENNSYLVANIA

BRIDGE NO. BEL-872-0003
S.R.872 OVER S.R. 7
GENERAL PLAN & ELEVATION

REV. SHEET NO. NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY ____ CHECKED BY ____ DATE ____
TRACED BY ____ CHECKED BY ____ DATE ____

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REV. SHEET
MB Jr	F.S.	DP			

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	98	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	ESTIMATED QUANTITIES AND DRAWING INDEX
3	GENERAL NOTES
4	ABUTMENT NO. 1
5	ABUTMENT NO. 1 DETAILS
6	PIER NO. 1
7	ABUTMENT NO. 2
8	FRAMING PLAN
9	BLOCKING DIAGRAM
10	DECK PLAN
11	BAR SCHEDULE
12	BORING LOGS

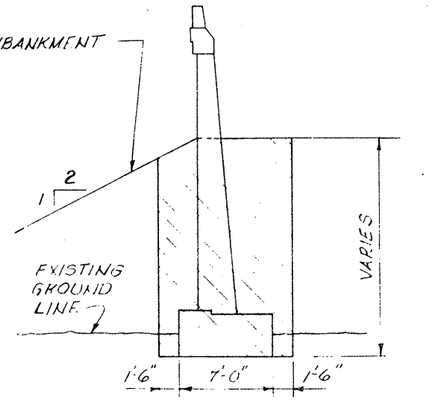
BRIDGE QUANTITIES

PAY ITEMS	DESCRIPTION	UNIT	ABUTMENT 1	ABUTMENT 2	PIER	SUPER-STRUCTURE	TOTAL
212-5	SELECT MATERIAL FOR BACKFILLING	C.Y.	143	143			286
212-1	STRUCTURE EXCAVATION	C.Y.	540	540	245		1325
601-1	CLASS B CONCRETE	C.Y.	343	325	130		803
601-3	CLASS K CONCRETE	C.Y.				370	370
602-1	REINFORCING STEEL BARS	LBS.	28,041	26,094	34,416	44 436	133,297 *
602-2	EPOXY COATED REINFORCING STEEL BARS	LBS.	—	—	—	41 049	41,049 **
639-1	CONSTRUCTION LAYOUT STAKES	L.S.					1 L.S.
606-25	UNDERDRAIN PIPE	L.F.	158	161	0		319
615-1	STEEL SUPERSTRUCTURE	L.S.					1 L.S.
218-4(b)	CRUSHED ROCK SLOPE PROTECTION	S.Y.	225	225			450
616-3	CONCRETE PILES	L.F.	1980	1935	1200		5175

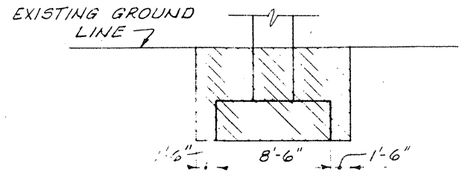
* Includes 308 Lbs. of Replacement Bars (Regular)
** Includes 32 Lbs. of Replacement Bars (Epoxy Coated)

ITEM 615-1 STEEL SUPERSTRUCTURE

MATERIAL	UNIT	TOTAL
ASTM A588	LBS.	400,200
ASTM-A325	LBS.	4,555
ASTM-A242	LBS.	1,480
LEAD	LBS.	428
BRONZE	LBS.	415
EXPANSION DAMS (A-588)	LBS	15200



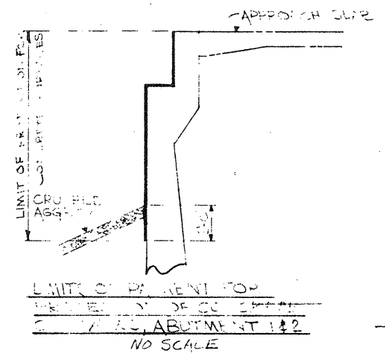
LIMITS OF STRUCTURE EXCEXCAVATION FOR THE WING WALLS
No Scale



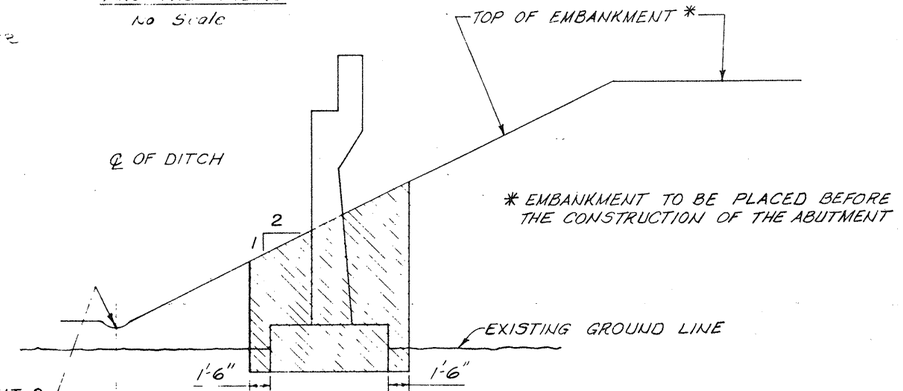
LIMITS OF STRUCTURE EXCAVATION FOR THE PIERS
No Scale

ITEM 602-1 REINFORCING STEEL BARS

SIZE	ABUT. 1	ABUT. 2	PIER	SUPER-STRUCTURE	SUB TOTAL	REPLACEMENT BARS	TOTAL WEIGHT
4	—	—	1,363	—	1,363	5	1,368
5	9,497	9,174	10,697	16,000	45,368	26	45,394
6	4,149	3,865	131	28,438	36,583	27	36,610
7	164	177	—	—	341	20	361
8	11,013	9,899	—	—	20,912	54	20,966
9	—	—	—	—	—	—	—
10	3,218	2,979	—	—	6,197	46	6,243
11	—	—	22,225	—	22,225	130	22,355
				TOTALS	132,989	308	133,297



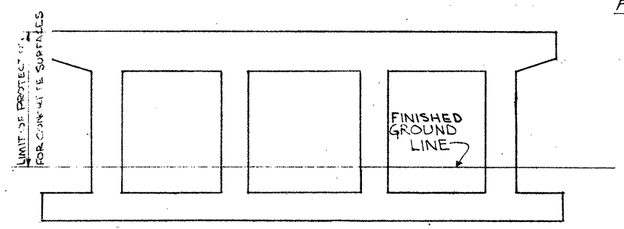
EL. 712.0 ABUT. 2
EL. 710.2 ABUT. 1



LIMITS OF STRUCTURE EXCAVATION FOR THE ABUTMENTS
No Scale

ITEM 602-2 EPOXY COATED REINFORCING STEEL BARS

SIZE	ABUT. 1	ABUT. 2	PIER	SUPER-STRUCTURE	SUB TOTAL	REPLACEMENT BARS	TOTAL WEIGHT
4	—	—	—	12,691	12,691	5	12,696
5	—	—	—	—	—		
6	—	—	—	28,326	28,326	27	28,353
				TOTALS	41,017	32	41,049



LIMITS OF PAYMENT FOR PROTECTION OF CONCRETE SURFACES, PIER
NO SCALE

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY FS CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

2 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0.00
S.R. 872 OVER S.R. 7

ESTIMATED QUANTITIES & DRAWING INDEX

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MG	FS	—			

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No	Total Sheets
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	99	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

GOVERNING SPECIFICATIONS

THE GOVERNING SPECIFICATIONS ARE THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS' "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES" AS ADOPTED IN 1978, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS' "SUPPLEMENTAL SPECIFICATIONS" DATED JANUARY 1, 1981 THE CONTRACT DOCUMENTS AND THE CONTRACT PLAN ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT. ALL MATERIALS, WORKMANSHIP AND INSPECTION FOR THE WELDING OF STEEL STRUCTURES OR PARTS THEREOF SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" AWS D1.1-72 (INCLUDING REVISION 1978 AS SHOWN IN AASHTO "STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, EXCEPT AS FURTHER MODIFIED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS SPECIFICATIONS

DESIGN

THE BRIDGE IS DESIGNED IN ACCORDANCE WITH THE AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" DATED 1977, AND UTILIZING AN HS20-44 LIVE LOADING. THE DESIGN DEAD LOAD OF THE BRIDGE DECK SLAB INCLUDES AN ADDITIONAL 25 POUNDS PER SQUARE FOOT FOR ANY FUTURE WEARING SURFACE.

DESIGN UNIT STRESSES

CLASS B CONCRETE	CLASS K CONCRETE
F'C=3,000 PSI	F'C=3,600 PSI
FC = 1,200 PSI	FC = 1,200 PSI
N = 9	N = 9

REINFORCEMENT STEEL
FS=20,000 PSI

STRUCTURAL STEEL
UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS; ALL STRUCTURAL STEEL SHALL BE WEATHERING GRADE OF HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL WITH 50,000 PSI MINIMUM YIELD CONFORMING TO THE CURRENT ASTM SPECIFICATION DESIGNATION A-588, UNCOATED.

ANCHOR BOLTS

ALL ANCHOR BOLTS AND WASHERS FOR BRIDGE BEARING SHALL BE ASTM A-588. ALL WASHERS, NUTS AND BOLTS AS NOTED ON THE CONTRACT DRAWING SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153.

CONCRETE

CLASS K CONCRETE SHALL BE USED IN ALL BRIDGE DECKS AND BRIDGE PARAPETS.

CLASS B CONCRETE SHALL BE USED IN ABUTMENTS AND PIER.

A WATER-REDUCING, SET-RETARDING ADMIXTURE SHALL BE USED IN THE DECK SLAB. THE COST OF THE ADMIXTURE SHALL BE INCORPORATED IN THE UNIT PRICE BID FOR THE CONCRETE IN WHICH IT IS USED.

FOR THE PLACEMENT OF THE DECK SLAB CONCRETE, THE USE OF MECHANICAL PLACEMENT AND FINISHING EQUIPMENT IS REQUIRED.

ALL DECK SLAB AND PARAPET CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" UNLESS OTHERWISE NOTED. ALL EXPOSED EDGES OF SUBSTRUCTURE CONCRETE SHALL BE CHAMFERED 1" X 1" UNLESS OTHERWISE NOTED.

REINFORCING STEEL BARS

ALL REINFORCING STEEL BARS SHALL BE INTERMEDIATE GRADE BILLET STEEL IN ACCORDANCE WITH ASTM A615, GRADE 40 OR GRADE 60.

ASTM A616 GRADE 50 BARS MAY BE USED IN THE SUBSTRUCTURE AND, IF USED, THEY SHALL MEET THE BEND TEST REQUIREMENTS OF A615 GRADE 60.

THE REQUIRED LAP AND EMBEDMENT LENGTH SHALL BE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS.

THE CLEAR DISTANCE BETWEEN REINFORCING STEEL AND THE FACE OF CONCRETE SHALL BE AS FOLLOWS UNLESS OTHERWISE SHOWN ON THE DRAWINGS:

TOP OF BRIDGE DECK 2 1/2" — ALL OTHER LOCATIONS 2"
BOTTOM OF BRIDGE DECK 1"

BEARING AREAS

ALL CONCRETE BEARING AREAS INCLUDED IN THE DRAWINGS SHALL BE POURED MONOLITHICALLY WITH THE CAP AND SHALL BE FINISHED TO A TRULY LEVEL PLANE AND EXACT ELEVATION SHOWN.

REPLACEMENT BARS

THE INSPECTOR SHALL PICK RANDOM BARS FROM THE REINFORCING BAR LIST FOR TEST BARS. HE SHALL CUT 5'-0" FROM THE BARS CHOSEN; RE-BARS IN THE LIST SHALL BE SPLICED TO THE BARS SO LISTED. THE RE-BARS HAVE BEEN DETAILED TO ALLOW EQUAL SPLICE LENGTH AT EACH END AS PER AASHTO STANDARD SPECIFICATIONS. ONE RE-BAR FOR EACH 10 TONS OR FRACTION THEREOF, OF EACH SIZE. THE RE-BARS HAVE BEEN INCLUDED IN THE BILL OF STEEL AND WILL BE PAID FOR UNDER ITEMS 602-1 AND 602-2. IN THE EVENT ALL BARS OF ANY ONE SIZE ARE NOT SENT IN ONE SHIPMENT, THE SUPPLIER SHALL FURNISH AT HIS EXPENSE, ONE FOR EACH 10 TONS OR FRACTION THEREOF FOR EACH EXTRA SHIPMENT. IN THE EVENT THAT ANY SHIPMENT OF MATERIAL HAS BEEN PRE-TESTED AND HAS BEEN IDENTIFIED IN ACCORDANCE WITH MATERIAL CONTROL, SOIL AND TESTING DIVISION'S "INFORMATIONAL MEMORANDUM NO. 17," THE SHIPMENT MAY ACCEPTED WITHOUT FURTHER TESTING SUBJECT TO RECORD SAMPLING PROCEDURES.

STEEL SUPERSTRUCTURE - GENERAL

THE LUMP SUM BID FOR ITEM 615-1 "STEEL SUPERSTRUCTURE," SHALL COMPRISE ALL METAL WORK IN THE GIRDERS, INCLUDING THE SHOES, ROCKERS, ROLLERS, CASTINGS, BEARING AND SLAB PLATES, ANCHOR BOLTS AND NUTS, SCUPPERS, PIPE DOWNSPOUTS WITH COUPLINGS, AND BLAST CLEANING.

STEEL SUPERSTRUCTURE - MATERIALS

ALL STRUCTURAL STEEL USED IN THE MAIN LOAD CARRYING MEMBERS WHICH ARE SUBJECT TO TENSION STRESS SHALL MEET CHARPY V-NOTCH TESTING REQUIREMENTS.

CASTING SHALL BE OF THOSE GRADES AS SPECIFIED ON THE DRAWINGS.

1" DIAMETER FASTENERS SHALL BE USED IN THE CONNECTIONS AND SPLICES EXCEPT AS NOTED ON THE PLANS.

STEEL SUPERSTRUCTURE - FABRICATION AND ERECTION

THE CONTINUOUS GIRDER SPANS SHALL RECEIVE A PROGRESSIVE GIRDER ASSEMBLY.

THE DIMENSIONAL TOLERANCES OF ALL WELDED FABRICATED STRUCTURAL STEEL MEMBERS SHALL BE IN ACCORDANCE WITH THE BEFOREMENTIONED A.W.S. SPECIFICATION.
NO FIELD WELDING WILL BE PERMITTED UNLESS SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER. ELECTROSLAG OR ELECTROGAS WELDING PROCESS WILL NOT BE PERMITTED.

ALL FABRICATED STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED FOR A TEMPERATURE OF 68°F.

Delete ⚠1

THE CONTRACTOR SHALL COMPUTE THE STRESSES IN ALL AFFECTED WORK RESULTING FROM HIS METHOD OF ERECTION. HE SHALL FURNISH THE ENGINEER, FOR HIS EXAMINATION, SUFFICIENT COPIES OF (A) THE DESIGN CALCULATIONS, (B) WORKING DRAWINGS SHOWING THE PROPOSED ERECTION SEQUENCE AND PROCEDURE, AND (C) DRAWINGS SHOWING ALL PROPOSED CHANGES OR MODIFICATION IN THE WORK. THE ENGINEER'S EXAMINATIONS SHALL NOT RELIEVE THE CONTRACTOR OF THE SAFE ERECTION OF THE WORK.

UPON COMPLETION OF THE STEEL ERECTION AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL FALSEWORK AND TEMPORARY MEMBERS, LUGS, JACKS, OR THE LIKE, FROM THE STRUCTURE.

REFERENCE SHALL BE MADE TO THE STANDARD DRAWING.

FSB - 1 - 62
B-R - 1 - 67
SD - 1 - 69 1 OF 4
SD - 1 - 69 3 OF 4
AS - 1 - 72 1 OF 2
AS - 1 - 72 2 OF 2

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DEVISION OF HIGHWAYS
BUREAU OF ROADWAY DESIGN
STANDARD CONSTRUCTION DRAWINGS

PILING

⚠1 UNIFORM SECTION OR STEP TAPERED

ALL PILES SHALL BE CAST IN-PLACE REINFORCED CONCRETE TAPERED PILES IN ACCORDANCE WITH STANDARDS, AS INDICATED ON THE DRAWING. BEFORE PILE DRIVING IS STARTED, THE CONTRACTOR SHALL PROVIDE A WRITTEN CERTIFICATE TO THE ENGINEER THAT THE PILE HAMMERS, AIR COMPRESSORS AND AIR VALVES HAVE BEEN INSPECTED AND FOUND TO BE IN FOOD WORKING CONDITION.

THE PILES FOR THE ABUTMENTS SHALL NOT BE DRIVEN UNTIL THE EMBANKMENT HAS BEEN PLACED AND COMPACTED TO THE ELEVATIONS OF THE FINISH GRADE.

THE CONTRACTOR SHALL DRIVE TEST PIPE LOADING PILES, AT THE LOCATIONS DESIGNATED BY THE ENGINEER, IN ORDER TO DETERMINE PILE LENGTHS TO BE ORDERED. TEST PILES SHALL BE OF THE TYPE CALLED FOR ON THE PLANS. TEST PILE LENGTHS SHALL BE GREATER THAN THE LENGTH ASSUMED IN THE DESIGN IN ORDER TO PROVIDE FOR ANY VARIATIONS IN SOIL CONDITIONS. ORDERED LENGTHS SHALL BE GREATER THAN TEST PILE LENGTH RESULTS DUE TO THE POSSIBILITY OF DAMAGE IN DRIVING AND TO ALLOW FOR CUT-OFFS. SPLICING REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY, IF HE SO ELECTS, WAIVE THE DRIVING OF TEST PILES AND SHALL ASSUME FULL RESPONSIBILITY FOR THE LENGTH OF PILES ORDERED AS WELL AS FOR SPLICING IF NECESSARY.

JETTING WILL NOT BE USED FOR INSTALLATION OF THE PILES.

EXCAVATION

EXCAVATION FOR ABT 1, PIER, AND ABT 2 SHALL BE CLASSIFIED AS STRUCTURAL EXCAVATION.

SPECIAL PROVISION
1 - CONCRETE PILE
2 - PROTECTION FOR CONCRETE SURFACES

⚠1 CLEANING OF ASTM A588 STEEL

Exposed surfaces of ASTM A588 steel shall be free from all grease, oil, chalk marks, paint, concrete splatters or other soilage. The use of acid for cleaning will not be permitted.

The outside surfaces and the bottom surface of the bottom flange of the fascia girders shall be blast cleaned to grade Sa1 after the superstructure concrete has been placed.

⚠2 2" Φ CONDUIT

THE 2" Φ CONDUIT WITHIN THE BRIDGE PARAPET AS SHOWN ON SHEET 105 IS 220 L.F. THE COST OF THE CONDUIT AND TYPE II JUNCTION BOX (OHIO TYPE II) IS TO BE INCLUDED IN THE UNIT BID PRICE FOR CLASS K CONCRETE.

3 OF 12

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY
2	99	ADDED CONDUIT NOTE	5/12/82	CL
1	99	Add Cleaning of Chg. Stl. Superstr. Note	5/7/82	[illegible]

DESIGNED BY MG — CHECKED BY GHJ — DATE 12-78
DETAILED BY JH — CHECKED BY MG — DATE 12-78
TRACED BY — — CHECKED BY — — DATE —

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

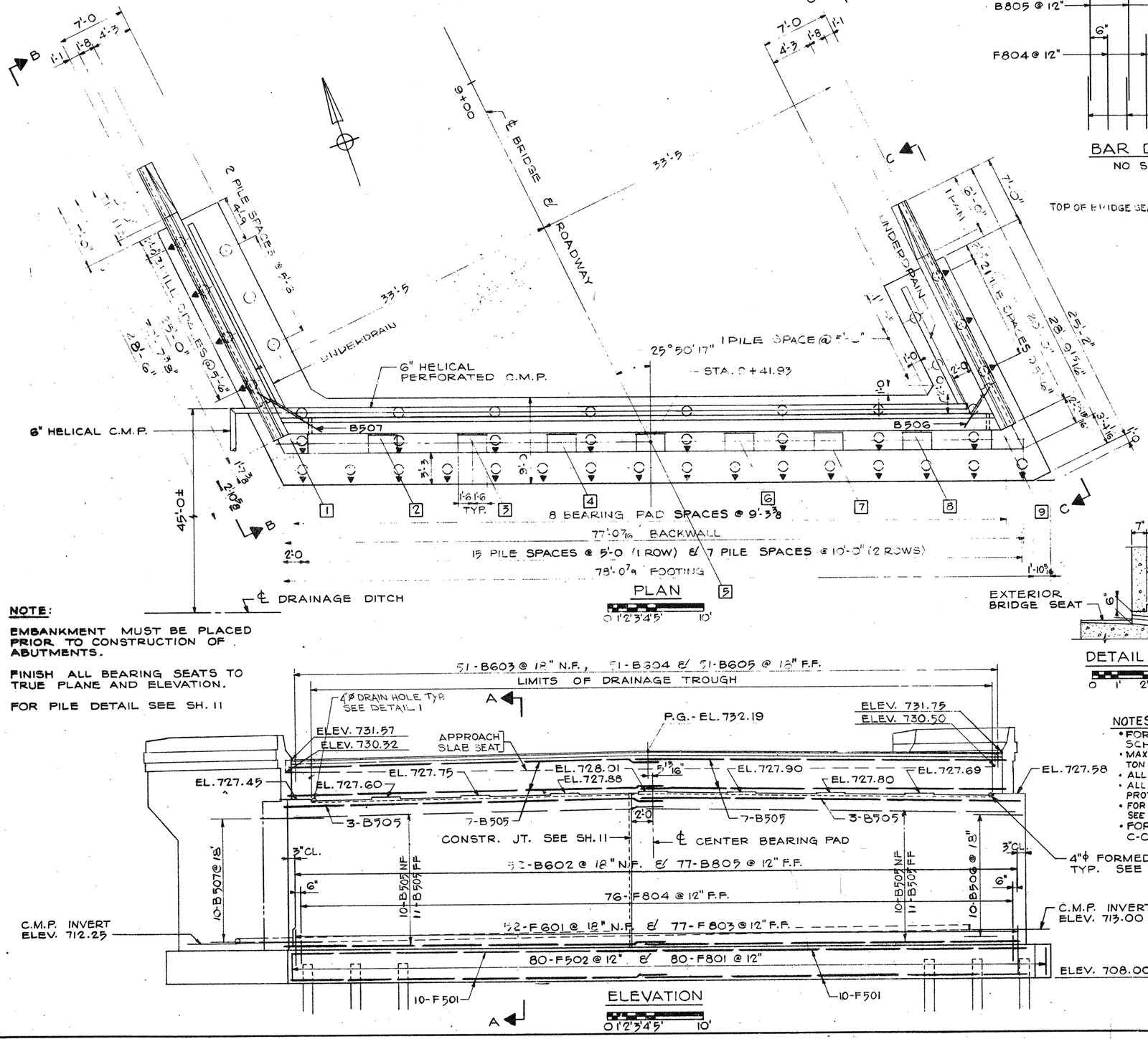
BRIDGE NO. BEL-872-00
S.R. 872 OVER S.R. 7
GENERAL NOTES

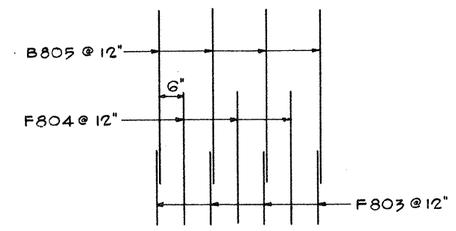
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MG	JH	—	MG		

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No	Total Sheets
W VA.	6	326-52-3.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	100	255

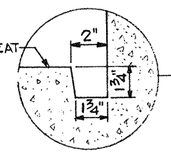
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



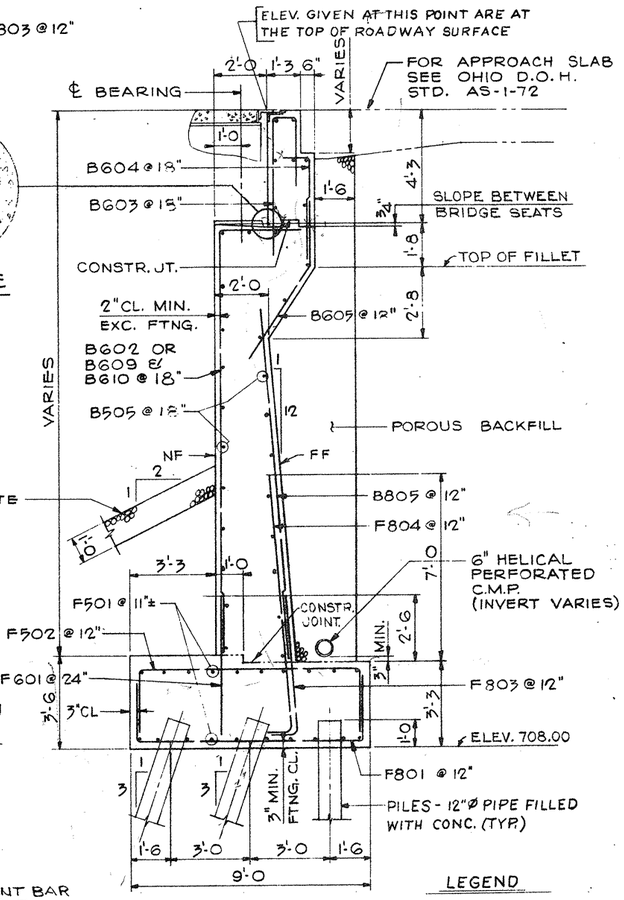


BAR DETAIL
NO SCALE



DRAINAGE TROUGH
NO SCALE

DETAIL #1
0 1' 2' 3'



SECTION A-A
0 1' 2' 3' 4' 5'

NOTES:
- FOR REINFORCEMNT BAR SCHEDULE SEE SHT. 11
- MAXIMUM DESIGN PILE LOAD IS 45 TON PER PILE
- ALL PILES ARE CONCRETE PILES
- ALL REINFORCING STEEL SHALL BE PROTECTED AS PER SECTION 602-4
- FOR ANCHOR BOLT LAYOUT AND DETAIL SEE DRAWING NO. 6 OF 12
- FOR ELEVATIONS B-B & C-C SEE SH. 5

LEGEND
- ○ INDICATES VERTICAL PILE
- ◌▼ INDICATES 1:3 BATTERED PILE AND ARROW INDECATES DIRECTION OF BATTER
- NF NEAR FACE
- FF FAR FACE

NOTE:

EMBANKMENT MUST BE PLACED PRIOR TO CONSTRUCTION OF ABUTMENTS.

FINISH ALL BEARING SEATS TO TRUE PLANE AND ELEVATION.

FOR PILE DETAIL SEE SH. 11

ELEVATION
0 1' 2' 3' 4' 5' 10'

REV. NO.	SHEET NUMBER	REVISION	DATE	BY

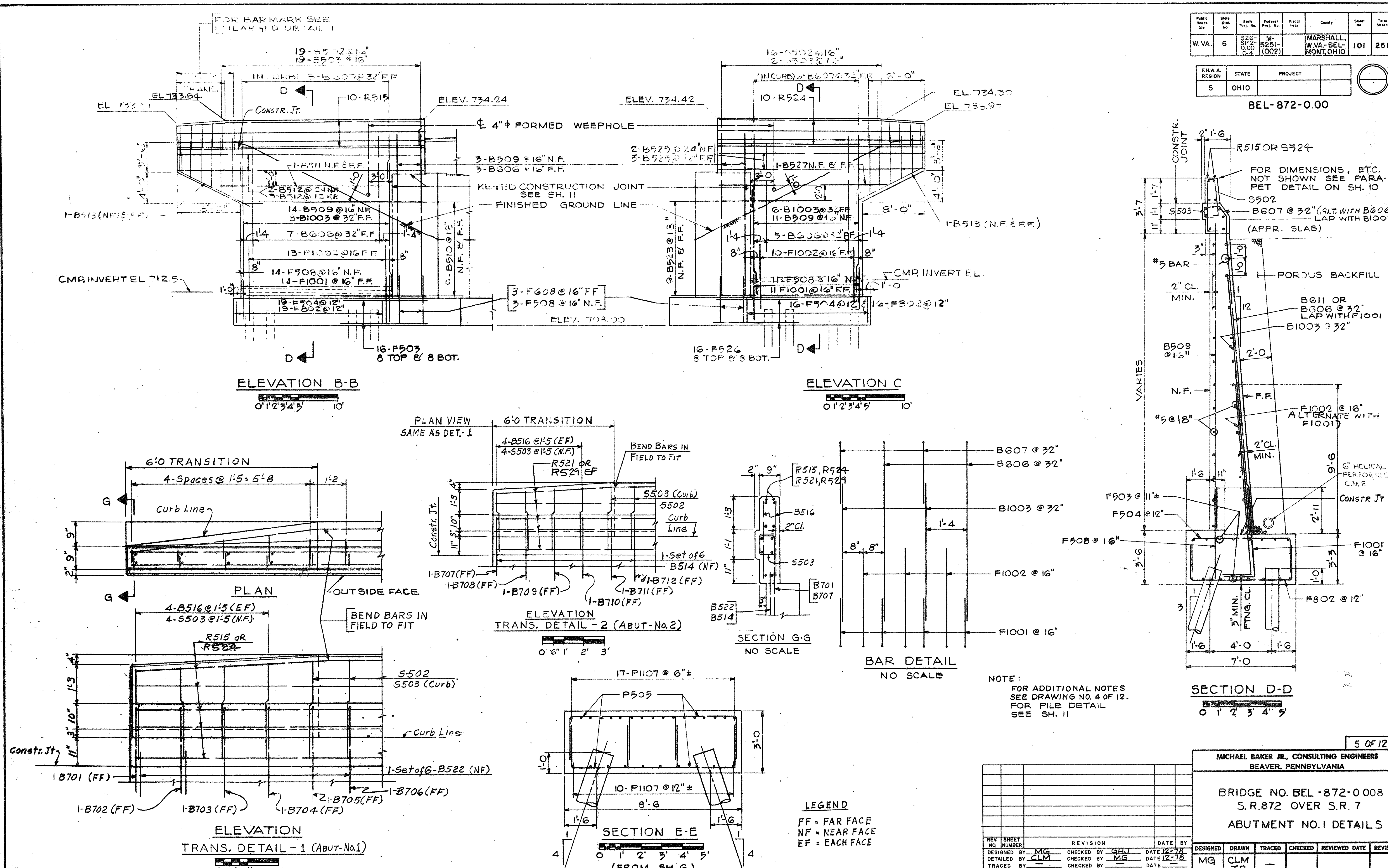
DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

4 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0.008
S.R.872 OVER S.R.7
ABUTMENT NO. 1

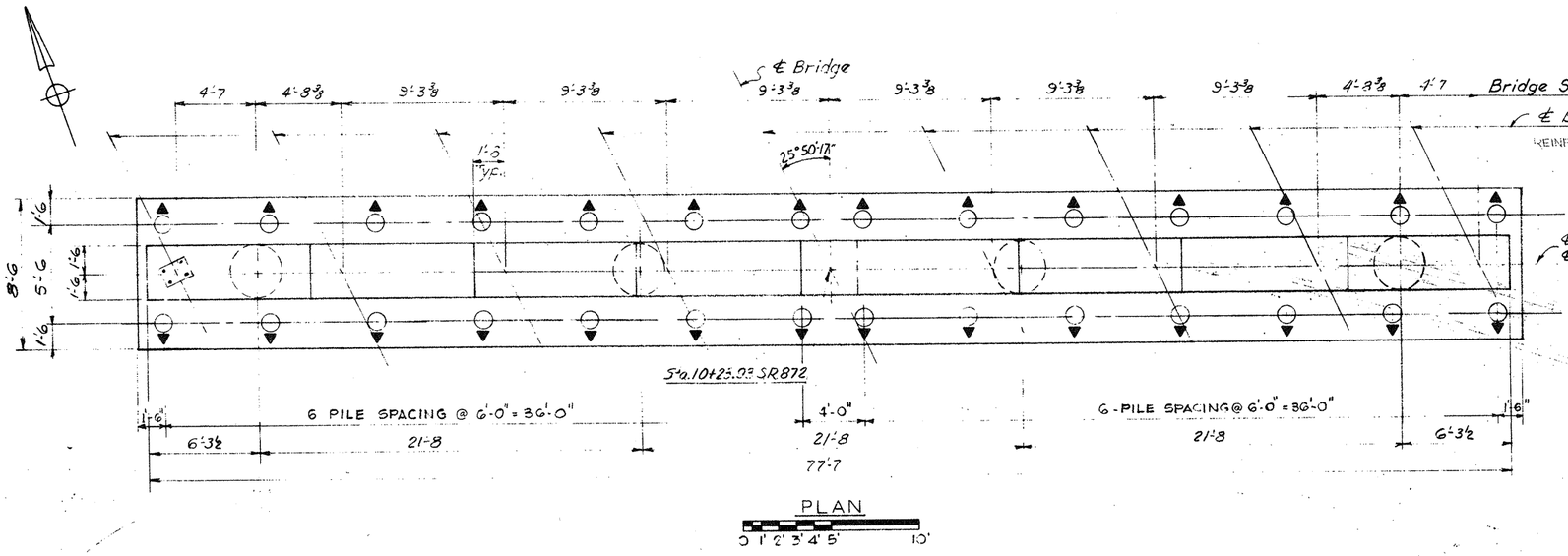
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MG	CLM TP	—			


W. VA. | 6 | M-5251-(002) | MARSHALL, W.VA.-BELMONT, OHIO | 101 | 255
F.H.W.A. REGION 5 | STATE OHIO | PROJECT
BEL-872-0.00
FOR BARMARK SEE ENLARGED DETAIL
ELEVATION B-B
ELEVATION C
€ 4"φ FORMED WEEPHOLE
3-B509 @ 16" N.F.
3-B606 @ 16" F.F.
KEYED CONSTRUCTION JOINT SEE SH. 11
FINISHED GROUND LINE
CMP INVERT EL 712.5
ELEV. 734.24
ELEV. 734.42
3-F608 @ 16" FF
3-F508 @ 16" N.F.
16-F503 8 TOP & 8 BOT.
16-F526 8 TOP & 8 BOT.
PLAN
6'-0 TRANSITION
4-Spaces @ 1'-5 = 5'-8
Curb Line
OUTSIDE FACE
BEND BARS IN FIELD TO FIT
ELEVATION
TRANS. DETAIL - 1 (ABUT-No.1)
PLAN VIEW SAME AS DET.-1
ELEVATION
TRANS. DETAIL - 2 (ABUT-No.2)
SECTION G-G
NO SCALE
BAR DETAIL
NO SCALE
B607 @ 32"
B606 @ 32"
B1003 @ 32"
F1002 @ 16"
F1001 @ 16"
SECTION E-E
(FROM SH. 6)
17-P1107 @ 6"±
10-P1107 @ 12"±
P505
NOTE:
FOR ADDITIONAL NOTES SEE DRAWING NO. 4 OF 12.
FOR PILE DETAIL SEE SH. 11
LEGEND
FF = FAR FACE
NF = NEAR FACE
EF = EACH FACE
SECTION D-D
R515 OR S524
FOR DIMENSIONS, ETC. NOT SHOWN SEE PARAPET DETAIL ON SH. 10
POROUS BACKFILL
6" HELICAL PERFORATED C.M.P.
F802 @ 12"
5 OF 12
MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA
BRIDGE NO. BEL-872-0.008
S.R.872 OVER S.R. 7
ABUTMENT NO.1 DETAILS
DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
DESIGNED MG | DRAWN CLM TP

FHWA DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00 C-4	M-525L-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	102	255

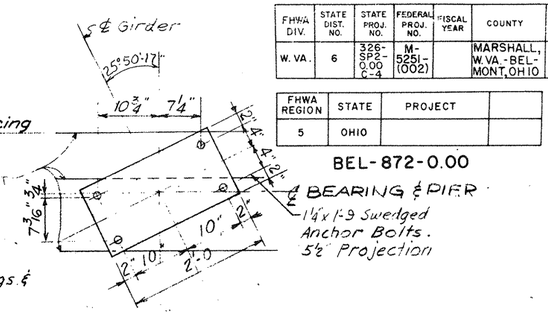
FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



PLAN

0 1' 2' 3' 4' 5' 10'

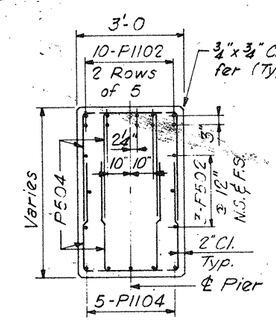


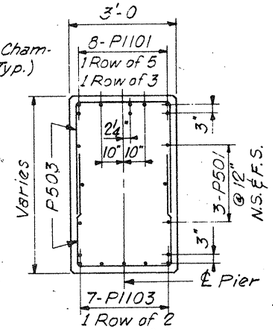
℄ BEARING & PIER

1 1/4" x 1'-9 Swedged Anchor Bolts. 5 1/2" Projection

ANCHOR BOLT LAYOUT

0 8" 1' 2' 3'



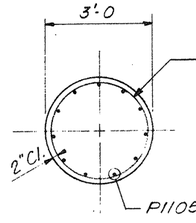


SECTION A-A

0 1' 2' 3' 4'

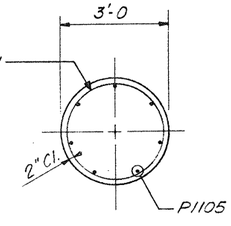
SECTION B-B

0 1' 2' 3' 4'



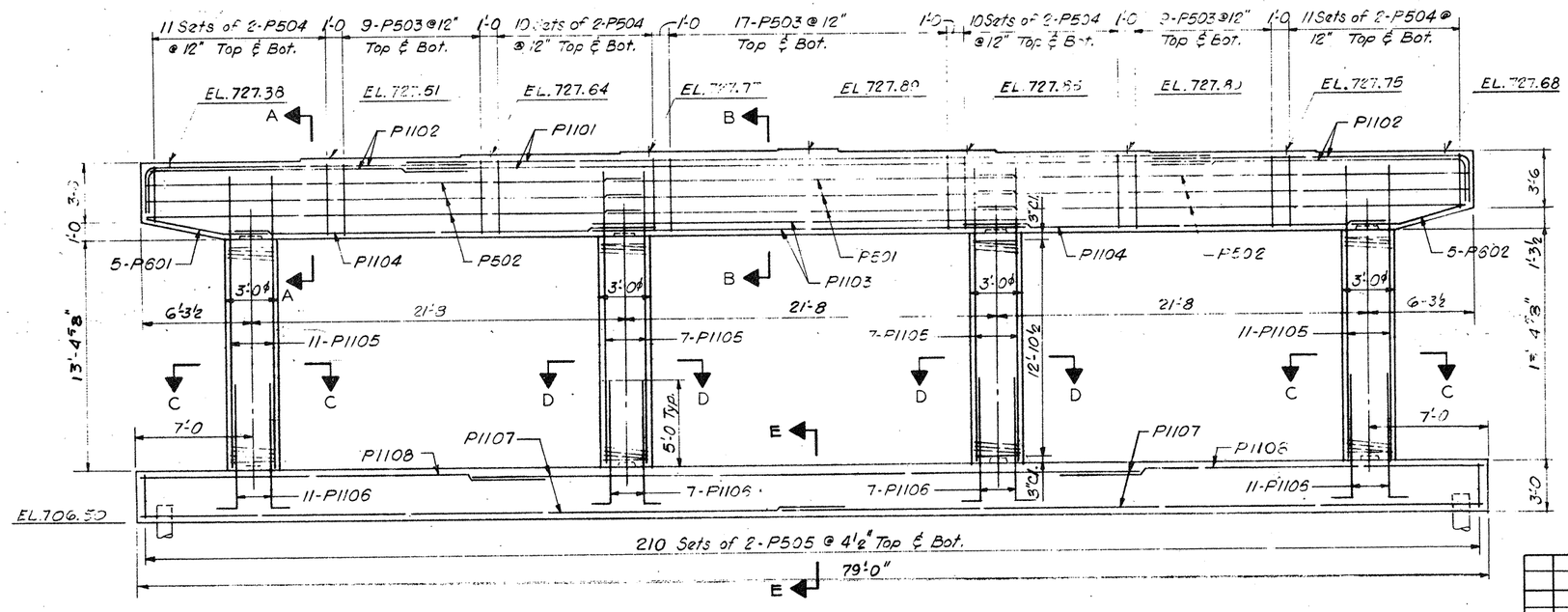
SECTION C-C

0 1' 2' 3' 4'



SECTION D-D

0 1' 2' 3' 4'



ELEVATION

0 1' 2' 3' 4' 5' 10'

NOTE:
FOR ADDITIONAL NOTES SEE DRAWING NO. 4 OF 12

FOR PILE DETAIL SEE SH. 11

See Section E-E on Sh. 5

6 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0008
S. R. 872 OVER S.R. 7
PIER NO. 1

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

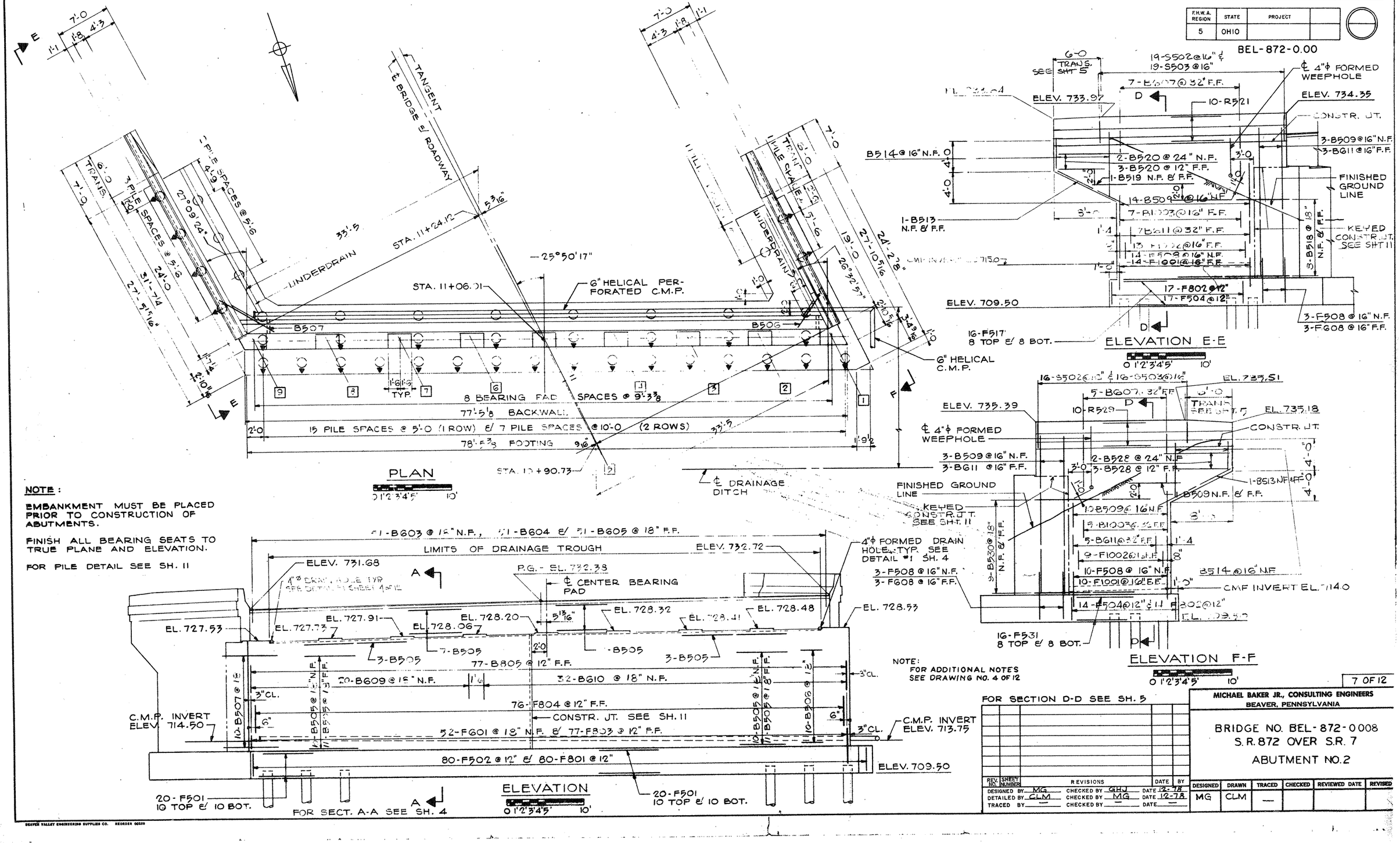
DESIGNED BY	MG	CHECKED BY	GHJ	DATE 12-78
DETAILED BY	CLM	CHECKED BY	MG	DATE 12-78
TRACED BY	—	CHECKED BY	—	DATE —

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
DWP MG	COW CLM	—			

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No	Total Sheets
W.VA.	6	326-SR2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	103	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



NOTE:

EMBANKMENT MUST BE PLACED PRIOR TO CONSTRUCTION OF ABUTMENTS.

FINISH ALL BEARING SEATS TO TRUE PLANE AND ELEVATION.

FOR PILE DETAIL SEE SH. 11

REV. SHEET NO. NUMBER	REVISIONS	DATE	BY

DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MG	CLM	—			

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

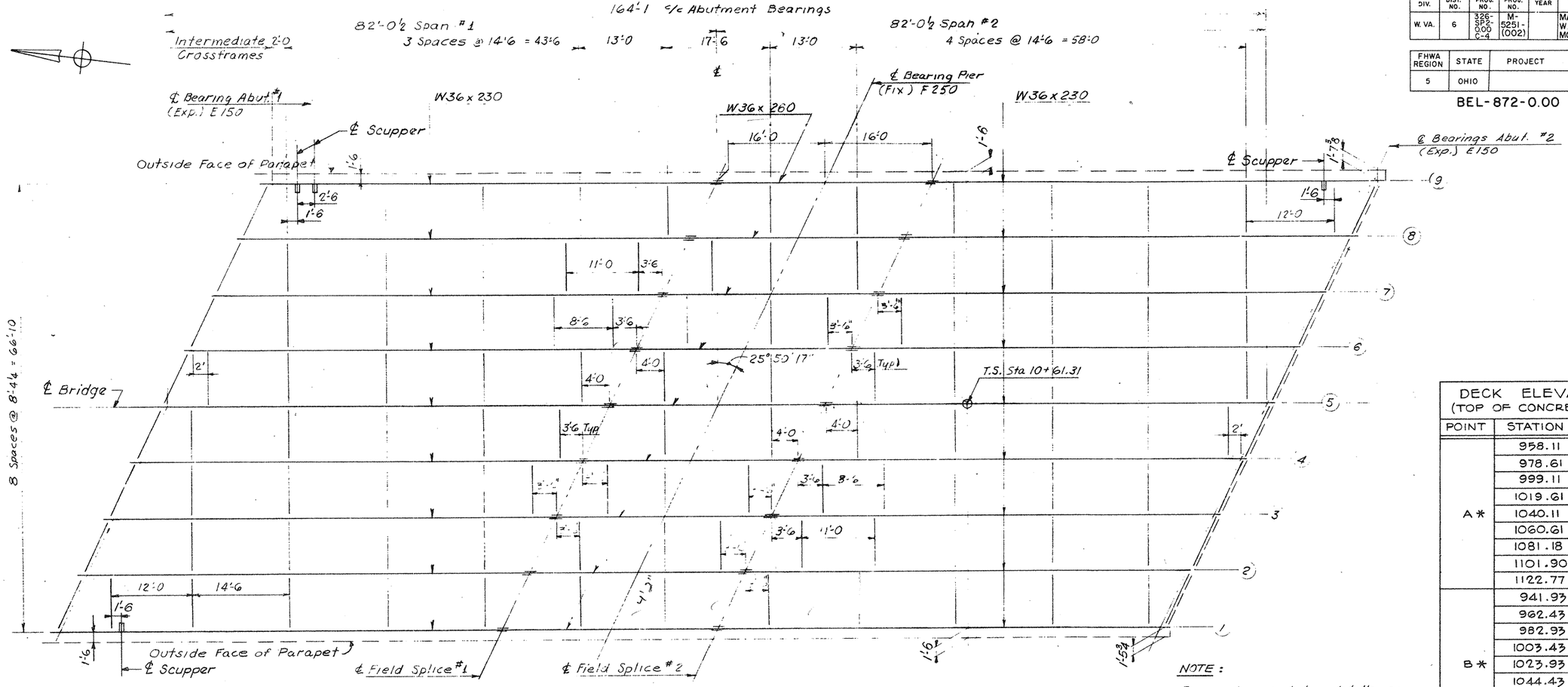
BRIDGE NO. BEL-872-0.008
S.R. 872 OVER S.R. 7
ABUTMENT NO. 2

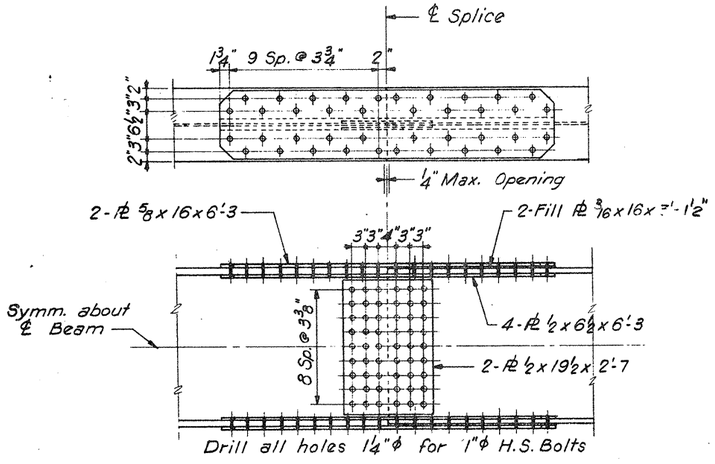
7 OF 12

FHWA DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	104	255

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00





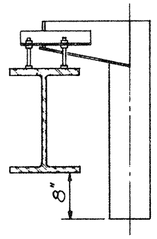
FIELD SPLICE

0 1' 2' 3' 4'

FRAMING PLAN

0 5' 10' 20'

Fill plates are dimensioned to the nearest 1/16 inch in thickness, but not less than ⅛ inch thick, based on the dimensions for detailing and intended relative position of the abutting flanges and webs to be spliced. However, in the final shop assembly, fills shall be furnished with thicknesses sufficient to compensate for any misalignment of abutting flanges and webs due to standard rolling mill tolerances. The actual fills used in the splice shall be such as to compensate for differences in total thickness or relative positions of 1/16 inch or more.
Vertical clearance for grade separation structures is an allowance of ¾ inch plus the thickness of the outside flange splice plate (shall be used in computing the actual vertical clearance under a beam splice).

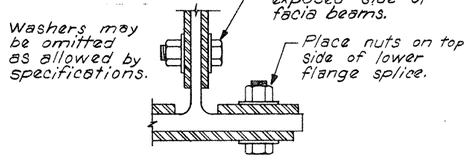


SCUPPER DETAIL

NO SCALE

NOTE:

- For roadway and dam details, see Ohio DOH Std. Dwg. SD-1-69.
- For crossframe details, see Ohio DOH Std. Dwg. SD-1-69.
- For scupper details, see Ohio DOH Std. Dwg. SD-1-69.



SPLICE DETAIL

NO SCALE

DECK ELEVATIONS
(TOP OF CONCRETE SLAB)

POINT	STATION	ELEVATION
A*	958.11	731.75
	978.61	731.84
	999.11	731.91
	1019.61	731.95
	1040.11	731.96
	1060.61	731.96
	1081.18	731.93
	1101.90	731.87
	1122.77	731.71
B*	941.93	732.19
	962.43	732.30
	982.93	732.38
	1003.43	732.44
	1023.93	732.47
	1044.43	732.49
	1064.93	732.47
	1085.43	732.44
	1105.92	732.38
C*	925.75	731.63
	946.25	731.82
	966.75	732.00
	987.25	732.14
	1007.75	732.26
	1028.25	732.36
	1048.75	732.44
	1069.24	732.55
	1089.61	732.71

* FOR POINT LOCATIONS SEE SH. 10

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

8 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0.008
S.R.872 OVER S.R. 7

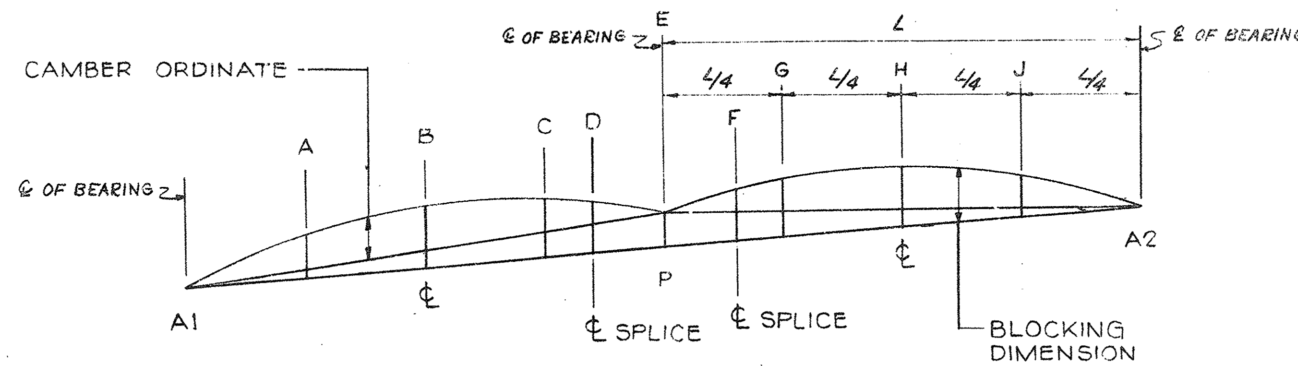
FRAMING PLAN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
DWP MG	COW CLM	—			

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6		M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	105	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

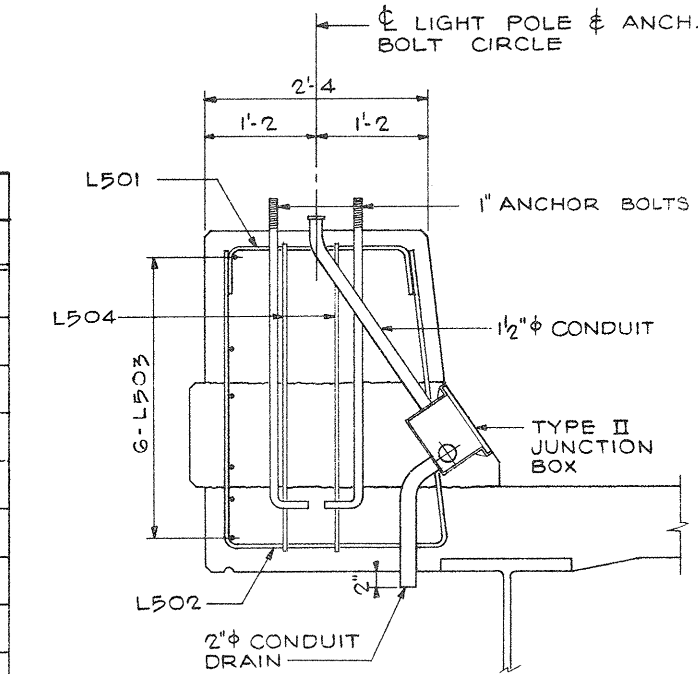
BEL-872-0.00



BLOCKING DIAGRAM

DEFLECTION, CAMBER AND BLOCKING DIMENSIONS

Beam	Item	A	B	C	D	E	F	G	H	J
BEAM NO. 1	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.70	0.83	0.38	0.26	0	0.26	0.38	0.83	0.70
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	-0.09	-0.14	-0.56	-0.64
	TOTAL CAMBER	1.31	1.61	0.90	0.68	0	0.24	0.34	0.49	0.25
	BLOCKING DISTANCE	1.59	2.18	1.75	1.59	1.13	1.15	1.19	1.06	0.53
BEAM NO. 2	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	-0.02	-0.06	-0.40	-0.31
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.41	0.57	0.97	0.86
	BLOCKING DISTANCE	1.92	2.58	2.03	1.83	1.30	1.46	1.55	1.62	1.19
BEAM NO. 3	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSMENT FOR VERT. CURVE AND/OR S.E.	0.40	0.56	0.42	0.35	0	0.07	0.06	-0.16	-0.04
	TOTAL CAMBER	1.57	1.93	1.05	0.78	0	0.50	0.69	1.21	1.13
	BLOCKING DISTANCE	1.95	2.69	2.19	2.01	1.52	1.73	1.83	1.97	1.51
BEAM NO. 4	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.19	0.22	0.16	0.20
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.62	0.85	1.53	1.37
	BLOCKING DISTANCE	2.05	2.85	2.43	2.26	1.84	2.10	2.23	2.44	1.83
BEAM NO. 5	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.35	0.42	0.55	0.41
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.78	1.05	1.92	1.58
	BLOCKING DISTANCE	2.15	3.05	2.73	2.58	2.24	2.58	2.73	3.04	2.14
BEAM NO. 6	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.35	0.41	0.55	0.40
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.78	1.04	1.92	1.57
	BLOCKING DISTANCE	2.15	3.05	2.72	2.58	2.23	2.58	2.71	3.04	2.13
BEAM NO. 7	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.36	0.42	0.57	0.43
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.79	1.05	1.94	1.60
	BLOCKING DISTANCE	2.15	3.16	2.74	2.60	2.26	2.61	2.74	3.17	2.16
BEAM NO. 8	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.98	1.15	0.53	0.36	0	0.36	0.53	1.15	0.98
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.43	0.53	0.77	0.74
	TOTAL CAMBER	1.59	1.93	1.05	0.78	0	0.86	1.16	2.14	1.91
	BLOCKING DISTANCE	2.20	3.16	2.89	2.76	2.46	2.84	3.00	3.37	2.52
BEAM NO. 9	DEFLECTION DUE TO WEIGHT OF STEEL	0.19	0.22	0.10	0.07	0	0.07	0.10	0.22	0.19
	DEFLECTION DUE TO REMAINING DEAD LOAD	0.70	0.83	0.38	0.26	0	0.26	0.38	0.83	0.70
	ADJUSTMENT FOR VERT. CURVE AND/OR S.E.	0.42	0.56	0.42	0.35	0	0.56	0.69	1.10	1.84
	TOTAL CAMBER	1.31	1.61	0.90	0.68	0	0.89	1.17	2.15	2.73
	BLOCKING DISTANCE	2.01	3.00	2.99	2.92	2.79	3.13	3.26	3.54	3.43

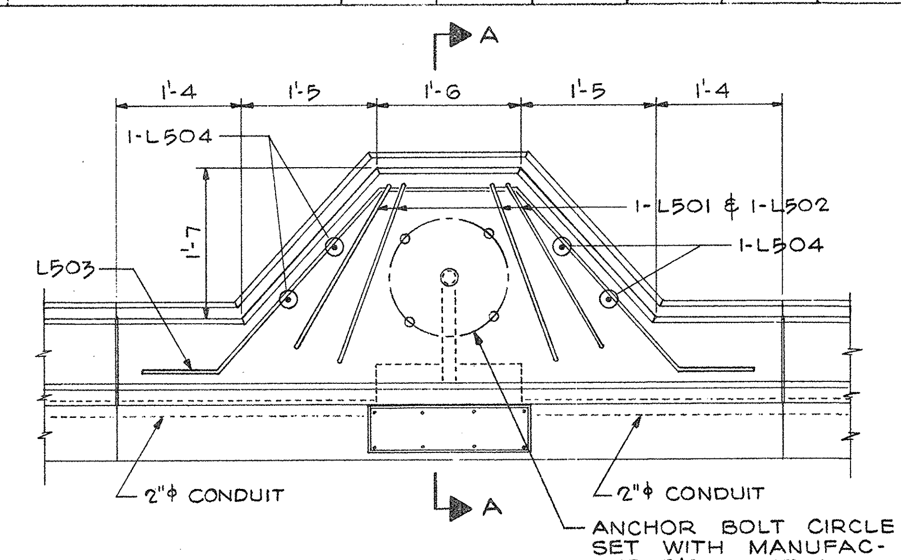


SECTION A-A

0 6" 1' 2'

NOTE:

DIMENSIONS NOT GIVEN ARE TYPICAL OF PARAPET DETAIL ON SH. 10.



LIGHT POLE PILASTER DETAIL

0 6" 1' 2'

9 OF 12

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0008
S.R. 872 OVER S.R. 7

BLOCKING DIAGRAM

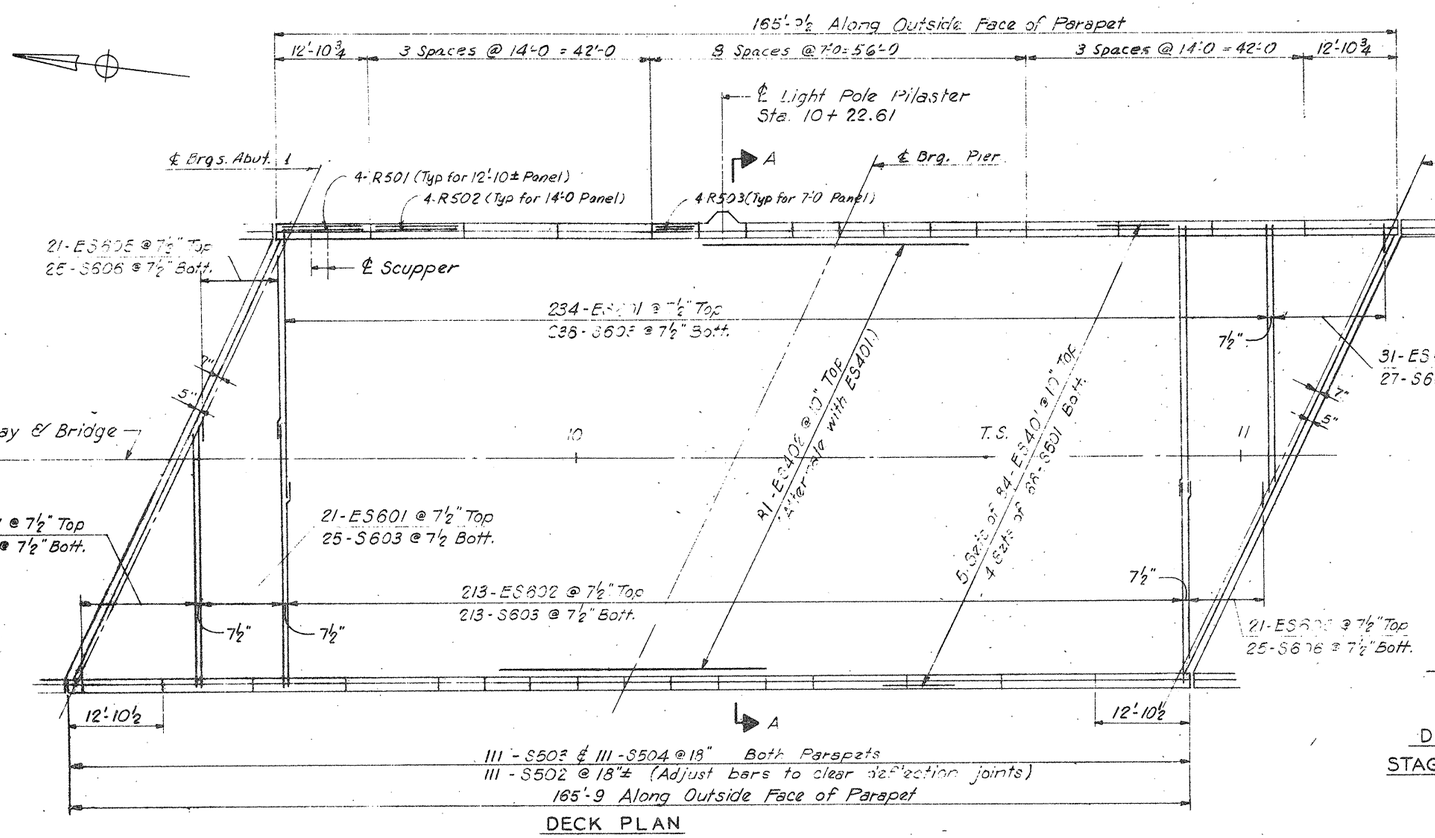
REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
MG	CLM	—			

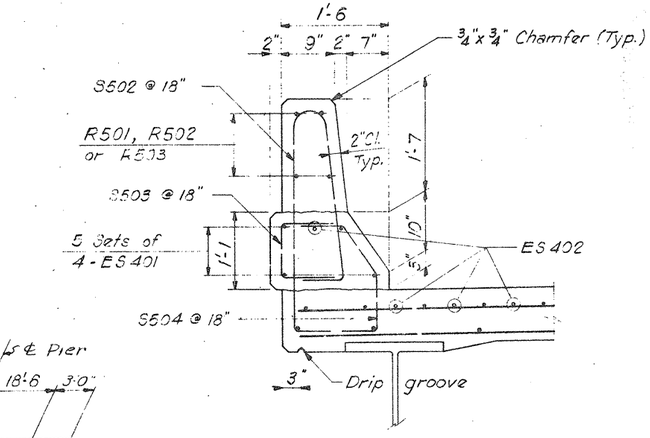
FHWA DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	326-872-0008 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL MONT, OHIO	106	255

FHWA REGION	STATE	PROJECT	
5	OHIO		



DECK PLAN

0 5' 10' 20'



PARAPET DETAIL

0 6" 1' 2'

NOTE:
E PREFIX DENOTES EPOXY COATED BARS

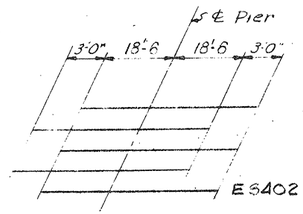
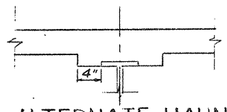
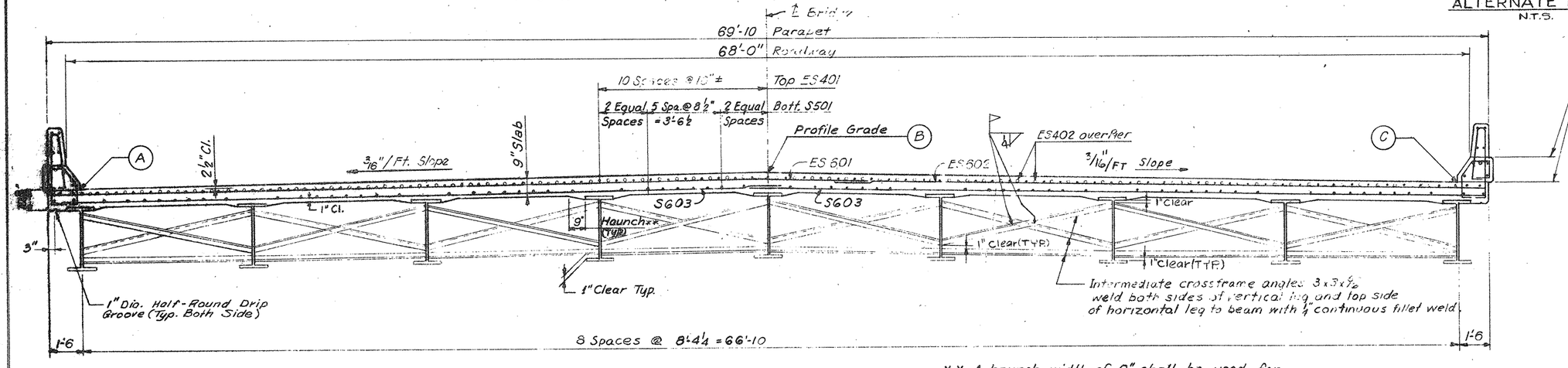


DIAGRAM SHOWING STAGGERED BAR ES402



ALTERNATE HAUNCH

N.T.S.



SECTION A-A

0 1' 2' 3' 4' 5'

** A haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" (provided the slope is not more than 1:4 for a haunch less than 9").

10 OF 12

REV NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY MG CHECKED BY GHJ DATE 12-78
DETAILED BY CLM CHECKED BY MG DATE 12-78
TRACED BY — CHECKED BY — DATE —

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

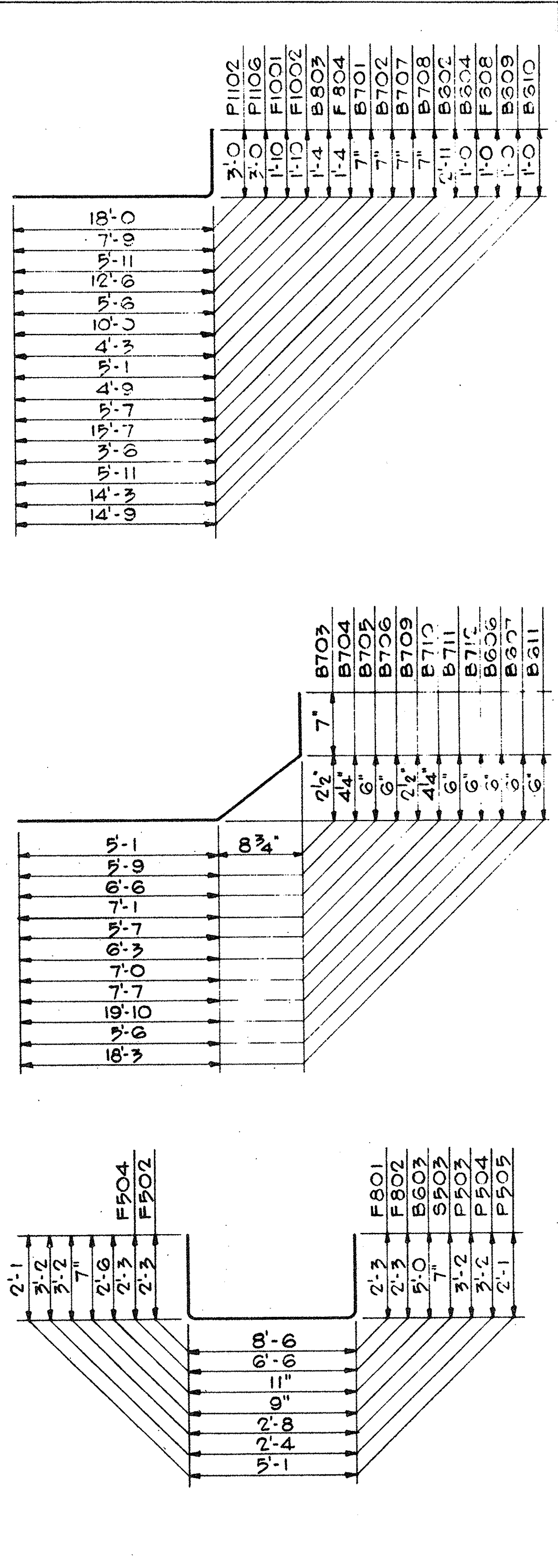
BRIDGE NO. BEL-872-0008
S.R.872 OVER S.R. 7
DECK PLAN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
DWP MG	COW CLM	—			

MARK	NO.	LENGTH	WEIGHT	SH'P.
ABUTMENT NO. 1				
F1001	25	7'-7	[illegible]	B
F1002	23	14'-2	[illegible]	B
B1003	14	16'-7	[illegible]	S
F801	80	12'-8	2706	B
F802	3[illegible]	10'-8	[illegible]	B
F803	77	6'-8	1371	B
F804	76	11'-2	2266	B
B805	77	13'-0	2673	S
B701	2	4'-8	19	B
B702	2	5'-6	22	B
B703	2	6'-5	26	B
B704	2	7'-2	29	B
B705	2	8'-0	33	B
B706	2	8'-7	35	B
F601	52	5'-6	430	S
B602	52	18'-4	1434	B
B603	51	8'-3	632	B
B604	51	4'-4	[illegible]	B
B605	51	7'-0	537	B
B606	18	21'-4	578	B
B607	14	6'-11	145	B
F608	6	6'-9	61	B
S502	35	6'-9	246	B
S503	43	1'-9	79	B
F501	40	40'-9	1700	S
F502	80	12'-10	1071	B
F503	16	23'-0	384	S
F504	35	10'-10	395	B
B505	62	39'-3	2456	S
B506	10	5'-0	52	S
B507	10	8'-0	83	S
F508	31	5'-11	191	S
B509	31	19'-6	630	S
B510	18	23'-0	432	S
B511	2	26'-0	55	S
B512	5	30'-6	159	S
B513	4	10'-0	42	S
R515	10	30'-8	320	S
B516	16	2'-10	47	S
B522 a	*12	4'-3 TO 7'-7	74	S
B523	18	18'-0	338	S
R524	10	25'-8	268	S
B525	5	25'-6	131	S
F526	16	18'-0	300	S
B527	2	21'-0	44	S
ABUTMENT NO. 2				
F1001	24	7'-7	783	B
F1002	22	14'-2	1340	B
B1003	12	16'-7	856	S
F801	80	12'-8	2706	B
F802	31	10'-8	883	B
F803	77	6'-8	1371	B
F804	76	11'-2	2266	B
B805	77	13'-0	2673	S
B707	2	5'-2	21	B
B708	2	6'-0	25	B
B709	2	6'-11	28	B
B710	2	7'-8	31	B
B711	2	8'-6	35	B
B712	2	9'-1	37	B
F601	52	5'-6	429	S
B603	51	8'-3	632	B
B604	51	4'-5	338	B
B605	51	7'-0	537	B
B607	12	6'-11	125	B
F608	6	6'-9	61	B

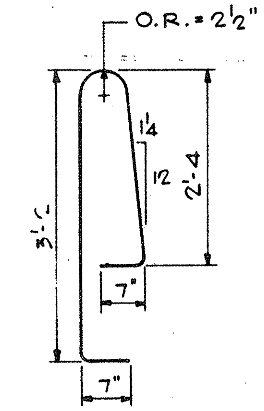
BEAVER VALLEY ENGINEERING SUPPLIES CO.

BENDING DIAGRAMS



a - VARY EACH BY 8".
b - " " " 1'-3½±.
E - PREFIX DENOTES EPOXY COATED BAR.
* - 2 SETS OF ONE-HALF THE NUMBER SHOWN.

MARK	NO.	LENGTH	WEIGHT	SH'P.
ABUTMENT NO. 2 (CONT.)				
B609	[illegible]	15'-2	456	B
B610	32	15'-8	754	B
B611	18	19'-8	533	B
B516	1	2'-10	47	B
[illegible]	[illegible]5	[illegible]-9	247	B
[illegible]	43	1'-9	78	B
F501	40	40'-9	1700	S
F502	80	12'-10	1071	B
F504	[illegible]	10'-10	[illegible]	B
B505	[illegible]	39'-3	[illegible]	S
B506	1[illegible]	5'-0	[illegible]	S
B507	1[illegible]	8'-0	[illegible]	S
F508	30	5'-11	195	S
B509	32	19'-6	6[illegible]1	S
B514	*12	4'-[illegible] TO [illegible]'-1	80	S
F517	1[illegible]	[illegible]'-0	[illegible]	S
B518	1	[illegible]'-0	[illegible]	S
B519	[illegible]	[illegible]'-6	[illegible]	S
B520	[illegible]	[illegible]'-8	[illegible]	S
R521	[illegible]	[illegible]'-8	[illegible]	S
B513	4	10'-0	42	S
[illegible]	3	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	1[illegible]	1[illegible]	[illegible]	S
F5[illegible]	16	1[illegible]	[illegible]	S
[illegible]				
P1101	8	47'-0	1998	S
P1102	[illegible]	18'-0	1913	B
P1103	7	25'-[illegible]	93[illegible]	[illegible]
P1104	1[illegible]	[illegible]	130[illegible]	S
P1105	[illegible]	1[illegible]'-0	325[illegible]	S
P1106	[illegible]	10'-6	20[illegible]	B
P1107	[illegible]	41'-3	81[illegible]	S
P1108	[illegible]	[illegible]'-3	23[illegible]4	S
P601	5	[illegible]	[illegible]5	B
P602	[illegible]	[illegible]	[illegible]	B
P501	6	23'-3	145	S
P502	1[illegible]	[illegible]8'-6	357	[illegible]
P503	70	3'-10	645	B
P504	168	3'-6	1489	B
F505	340	9'-3	8104	B
P401	3[illegible]	60'-0	1339	B
SUPERSTRUCTURE				
ES601	255	40'-0	15,320	S
ES602	213	31'-6	10,078	S
S603	476	35'-9	25,560	S
S604 b	*54	36'-0 TO 1'-2	1507	S
ES605 b	*42	29'-0 TO 3'-2	1015	S
ES606 b	*50	33'-3 TO 3'-3	1371	S
ES607 b	*62	39'-11 TO 1'-2	1913	S
S501	272	40'-6	12,057	S
S502	222	6'-9	1563	B
S503	222	1'-9	405	B
S504	222	2'-9	637	B
R501	15	12'-6	209	S
R502	48	13'-8	684	S
R503	64	6'-8	445	S
ES401	460	34'-1	10,473	S
ES402	83	40'-0	2218	S
L501	4	3'-0		B
L502	4	8'-6		B
L503	6	8'-0		B
L504	4	3'-2		S



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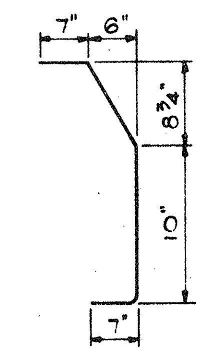

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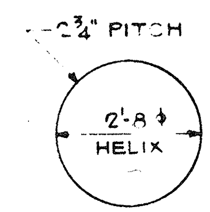
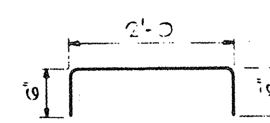
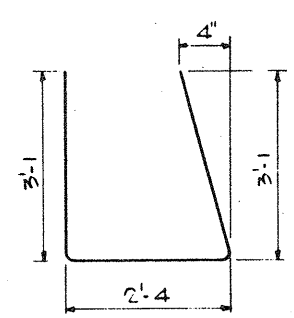


P401



L501



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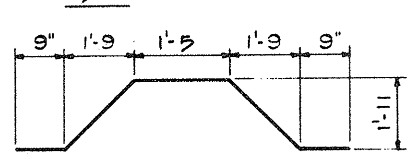
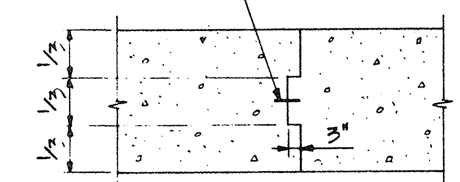


L503

REPLACEMENT BARS ITEM 602-1			
SIZE	NO.	LENGTH	WEIGHT
4	1	7'-6	5
5	3	8'-2	26
6	2	8'-9	27
7	1	9'-6	20
8	2	10'-0	54
9	–	–	–
10	1	11'-6	46
11	2	12'-2	130

REPLACEMENT BARS ITEM 602-2			
SIZE	NO.	LENGTH	WEIGHT
4	1	7'-6	5
5	–	–	–
6	2	8'-9	27

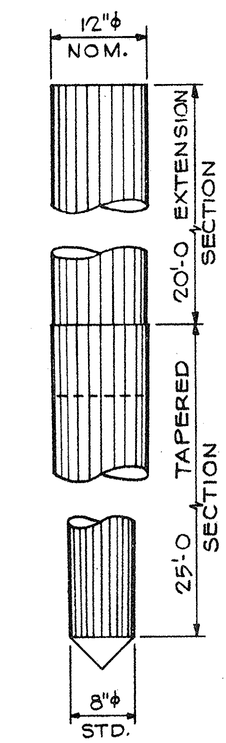


CONSTRUCTION JOINT DETAIL
NO SCALE

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	107	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



PILE DETAIL*
NO SCALE

NOTE:
FOR THE DESIGN OF THE PILE SEE SPECIFICATIONS.
CONCRETE FOR CAST-IN-PLACE CEMENT PILES SHALL BE CLASS B.

△1* THE CONTRACTOR HAS THE OPTION TO USE TAPERED, UNIFORM SECTION OR STEP TAPERED CAST-IN-PLACE CONCRETE PILES. THE PILE DETAIL SHOWN IS FOR TAPERED PILES.

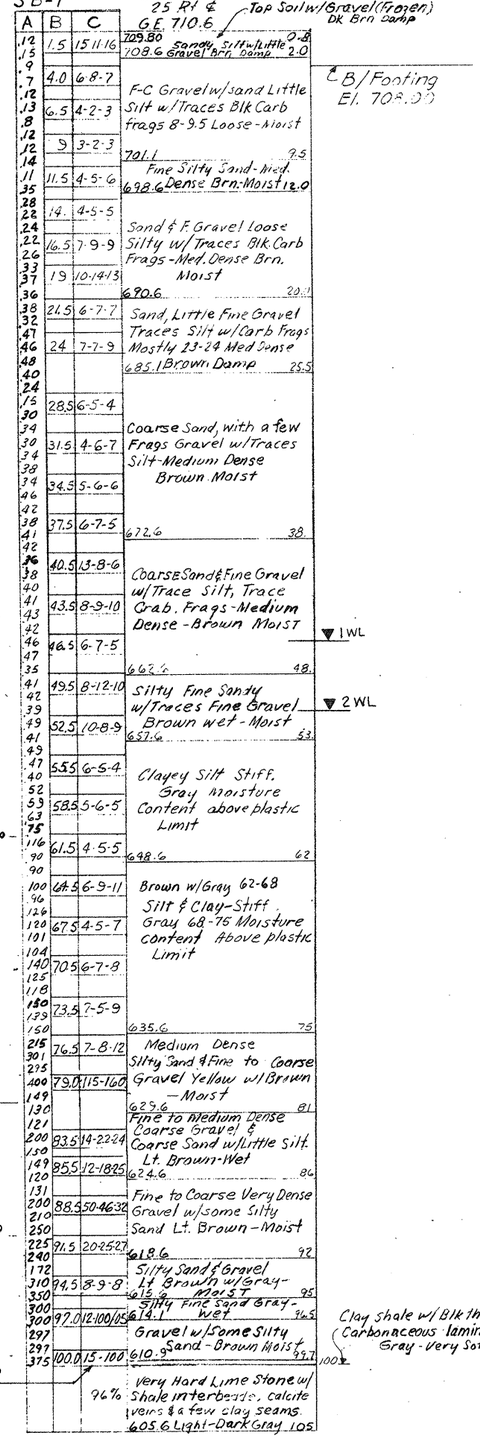
MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0008
S.R. 872 OVER S.R. 7
BAR SCHEDULE

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY
1	107	Added Note to Pile Detail	7/11/83	XT

DESIGNED BY GHJ — CHECKED BY MG — DATE 12-78
DETAILED BY CLM — CHECKED BY MG — DATE 12-78
TRACED BY — — CHECKED BY — — DATE —

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
GHJ	CLM FS	—			



GENERAL NOTES

Column "A" • Denotes Blows Per Foot on Casing.

Column "B" • Denotes Depth of Lower Limit of Spoon Sample or Bottom of Core Run.

Column "C" • Denotes Blows for Each 6 Inches on Spoon Sampler or Percent of Core Recovery.

- Size of Casing - 3¼ Inches I.D. 4 Inches O.D. Flush Joint.
- Weight of Hammer on Casing - 300 Pounds.
- Drop of Hammer on Casing - 24 Inches.
- Size of Sampling Spoon - 1⅜ Inches I.D. Std. Split Spoon.
- Weight of Hammer on Spoon - 140 Pounds.
- Drop of Hammer on Spoon - 30 Inches.
- Size of Core - 2⅛ Inches Diameter.
- G.E.: Indicates Ground Elevation.
- 1. W.L. - Indicates Ground Water Elevation at 0 hrs.
- 2. W.L. - Indicate Ground Water Elevation at 24 hrs.

Public Road Div.	State Div No.	State Proj No.	Federal Proj No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X 326-582-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	108	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

12 OF 12

REV. NO.	SHEET NUMBERS	REVISIONS	DATE	BY

DESIGNED BY DWP CHECKED BY MG DATE 12-73
DETAILED BY COW CHECKED BY DWP DATE 12-73
TRACED BY — CHECKED BY — DATE —

MICHAEL BAKER JR., CONSULTING ENGINEERS
BEAVER, PENNSYLVANIA

BRIDGE NO. BEL-872-0.008
S.R. 872 OVER S.R. 7

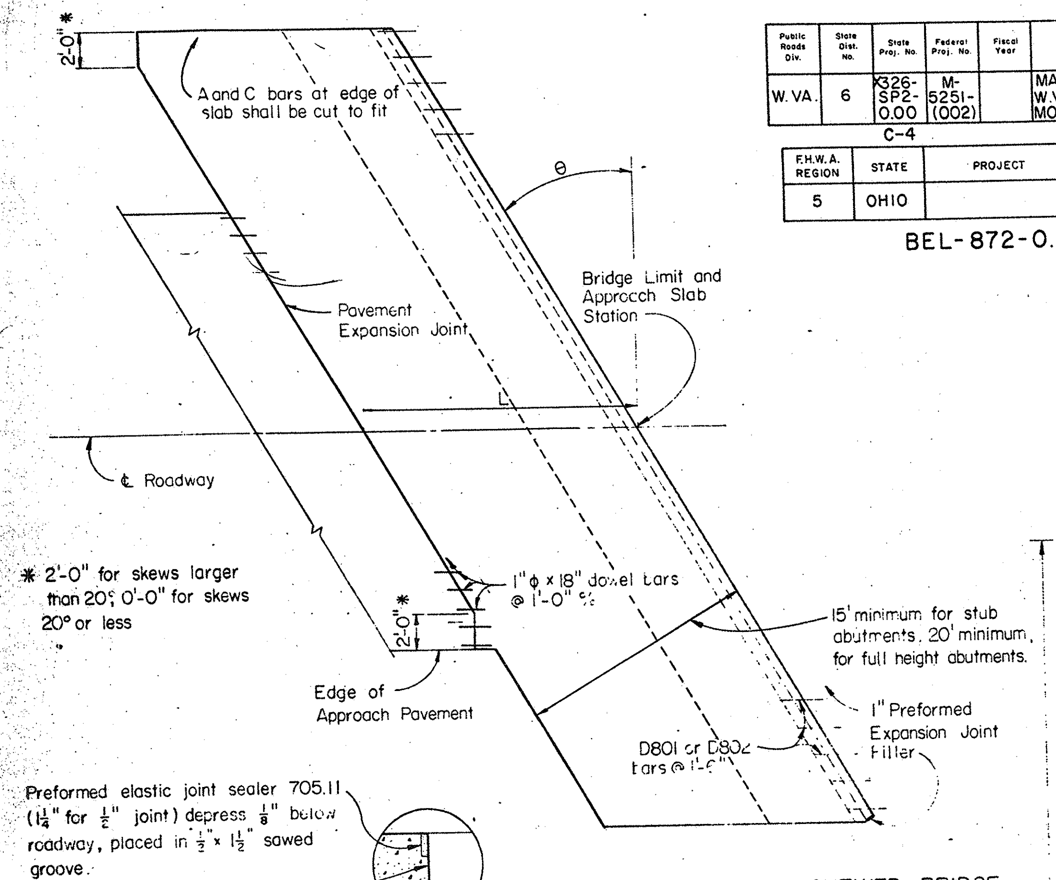
BORING LOGS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
DWP	O.W.	—	DWP		

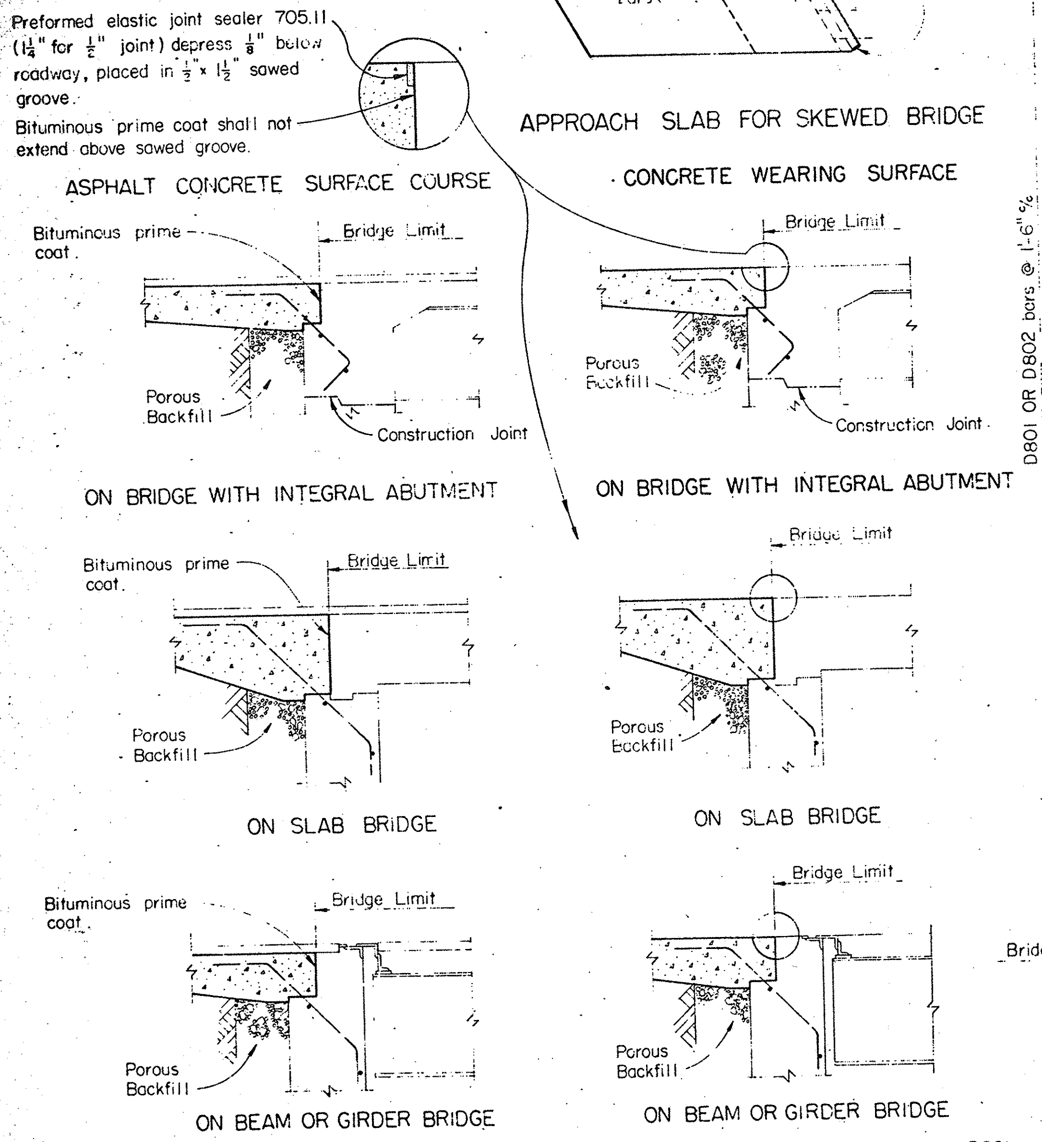
Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BELMONT, OHIO	109 ⚠1	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



APPROACH SLAB FOR SKEWED BRIDGE



TYPICAL SECTIONS SHOWING JUNCTION OF APPROACH SLAB WITH BRIDGE

REINFORCING STEEL (FOR ONE APPROACH SLAB)															D801 OR D802
Length L	Thickness T	A BARS					B501 (Bottom)		B501 (Top)		C BARS				
		Sp'c'g M	Mark	Length	Dimension A	No. req'd	Length	No. req'd	Length	No. req'd	Mark	Length	No. req'd		No. req'd
15'-0"	12"	10"	A901	15'-9"	14'-6"	* [(W-0.5)/M] +1 ÷ 12	* ⬡ (W-0.5)(sec θ)	14	* ⬡ (W-0.5)(sec θ)	11	C501	14'-6"	* [(W-0.5)/18] +1 ÷ 12		* [(W-0.5)/18] +1 ÷ 12
20'-0"	14"	8"	A902	20'-9"	19'-6"			17		14	C502	19'-6"			
25'-0"	15"	6½"	A903	25'-9"	24'-6"			20		18	C503	24'-6"			
30'-0"	17"	6"	A904	30'-9"	29'-6"			23		21	C504	29'-6"			

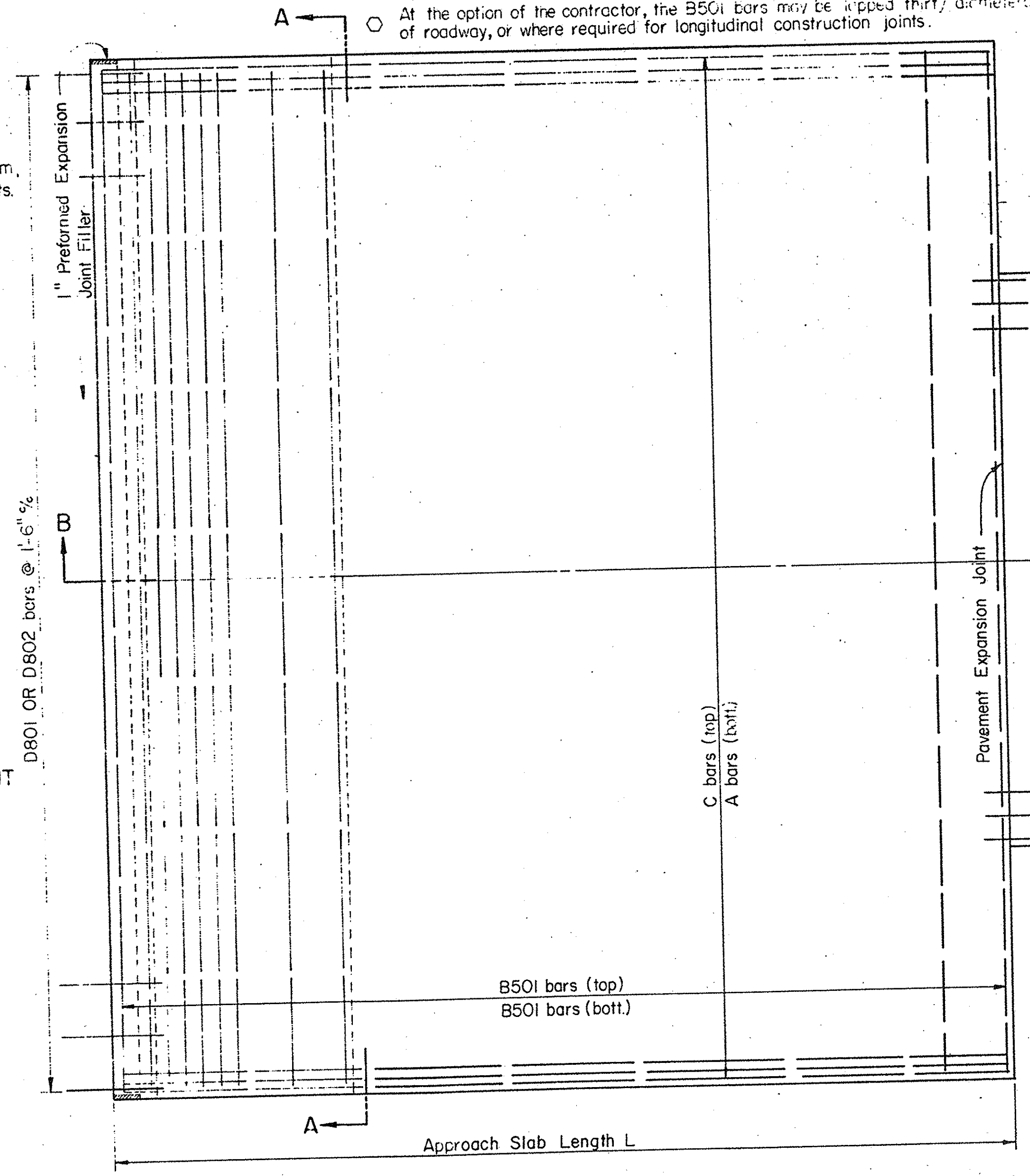
* W = Approach Slab Width, out-to-out, in feet
θ = Angle of skew
S = A bar spacing in inches

A bar — A ℅

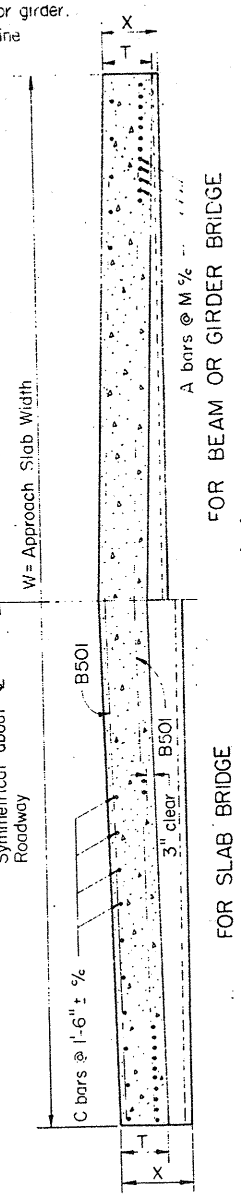
D801 — 1'-1" — △ — 6"

D802 — 1'-1" — △

△ Dimension dependent upon thickness of approach slab, width of backwall and depth of beam or girder.
⬡ At the option of the contractor, the B501 bars may be lapped thirty diameters at the centerline of roadway, or where required for longitudinal construction joints.

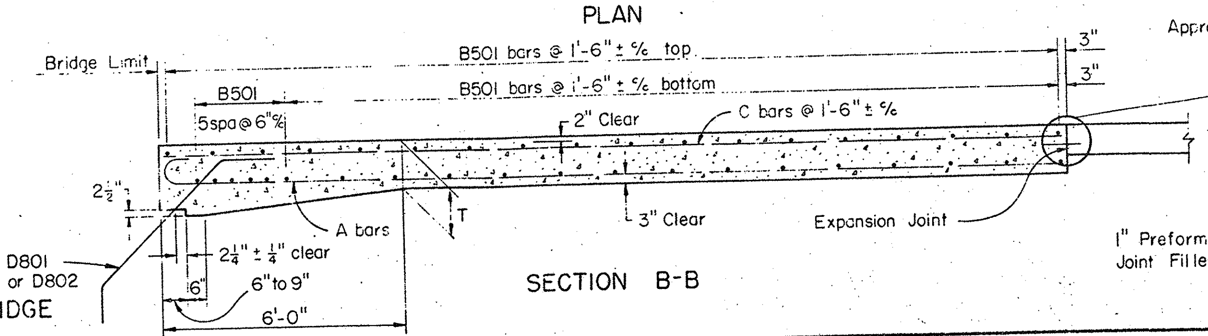


PLAN

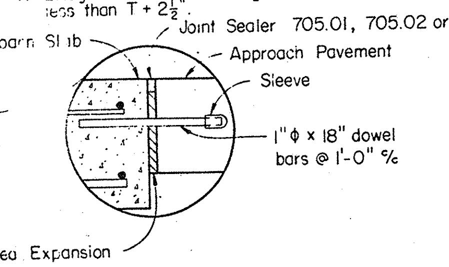


SECTION A-A

X = Bridge Slab thickness + 2½" but never less than T + 2½"



SECTION B-B



GENERAL NOTES

DESIGN SPECIFICATIONS:
See sheet 3 of 12.

DESIGN DATA
Design Loading: HS20-44 and the Interstate Alternate Loading
Concrete Class K: Unit stress 1,200 p.s.i.
Reinforcing Steel: ASTM A615, Grade 40 or 60

REINFORCING STEEL: For skewed bridges the A and C bars shall be placed parallel to the center line of roadway and the B bars shall be placed parallel to the abutments.

PREFORMED EXPANSION JOINT FILLER AND SEALER at the corners and sides of the approach slab shall be included in the price bid per sq. yd. for the approach slab.

PREFORMED ELASTIC JOINT SEALER shown at the bridge limit end of the approach slab shall be included in the price bid per sq. yd. for the approach slab.

BRIDGE WITH SIDEWALKS: The curbs on the approach slabs shall transition from the bridge curb height to the approach curb height on the approach slab, unless the abutment have turnback wings, in which case the transition shall occur beyond the wings. This transition shall occur, on the approach pavement if necessary, in a minimum of 10 feet.

EXPANSION JOINT details at the approach pavement end of the approach slab are used only in conjunction with concrete pavement or concrete base course. Payment for the expansion joint, including dowel bars, preformed expansion joint filler and joint sealer, is included in the price bid per sq. yd. for the approach slab.

DESIGN NOTES

GENERAL: This drawing provides design and general construction details. The project plans will show length, skew, curbs (if any), estimated quantity (sq. yds.), and special notes and details where necessary. For conditions other than those indicated hereon, the approach slab shall be adapted to fit the ends of the bridge and the approach pavement.

APPROACH SLAB WIDTH (W): Generally approach slabs shall be the same width as the bridge roadway. For bridges constructed with raised sidewalks, bridge roadway railing or other types of construction which retain roadway surface drainage, the approach slabs shall either include curbs or be constructed in conjunction with curbs.

LENGTH of approach slabs shall be shown on project plans.

CROWN shall conform to that of the approach pavement and bridge deck. If the rate of crown of the bridge deck differs from that of the approach pavement, a smooth transition shall be provided within the limits of the approach slab.

WEARING SURFACE: If an asphalt concrete surface course is specified for the bridge it shall also be used on the approach slab. Membrane waterproofing should not be used on the approach slab.

ANCHOR BARS D801 or D802 shall be detailed for the specific bridge and shall be included with 509 under abutments or superstructure for payment.

⚠1 109-114 ADDED SHEETS 5/5/82 C. RILING

REVISIONS	
5-22-79 Special for S.R. 872 over S.R. 7 M. B. Jr.	STANDARD REINFORCED CONCRETE APPROACH SLABS LENGTHS - 15'-0", 20'-0" 25'-0" AND 30'-0"

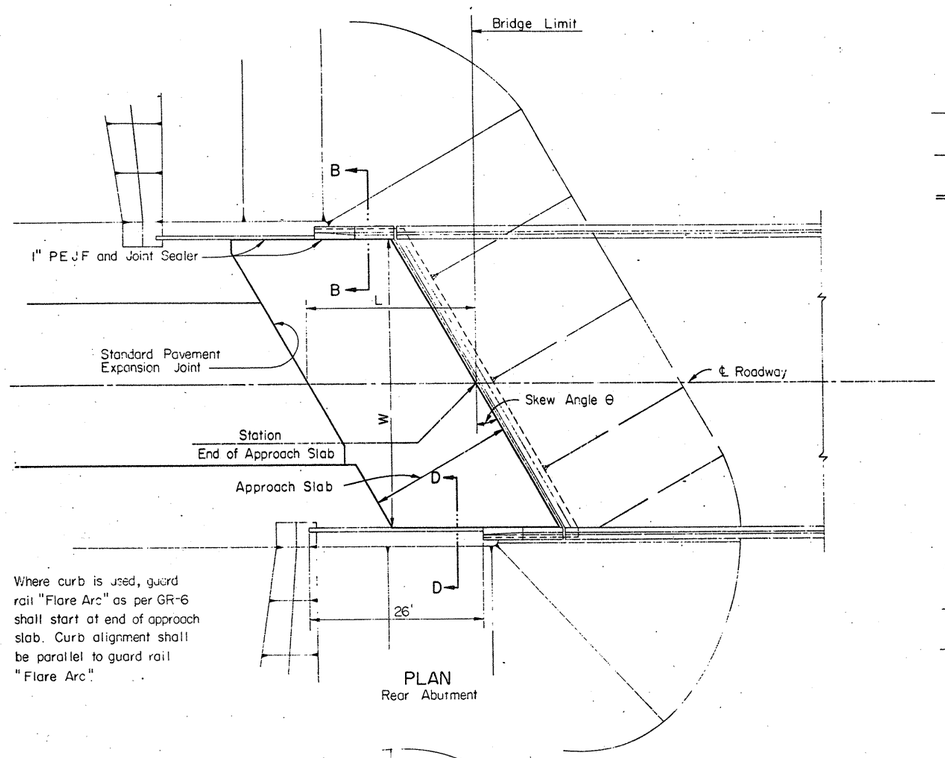
APPROVED:				DRAWING NO.
DATE: 6-30-72 ENGINEER OF BRIDGES				AS-1-72
PREPARED	TRACED	CHECKED	REVIEWED	SHEET NO. 1 OF 2 SHEETS
DLM	TGC	CPD	BFG	

Public Roads Div.	State Dist. No	State Proj. No.	Federal Proj. No	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	110	255

C-4

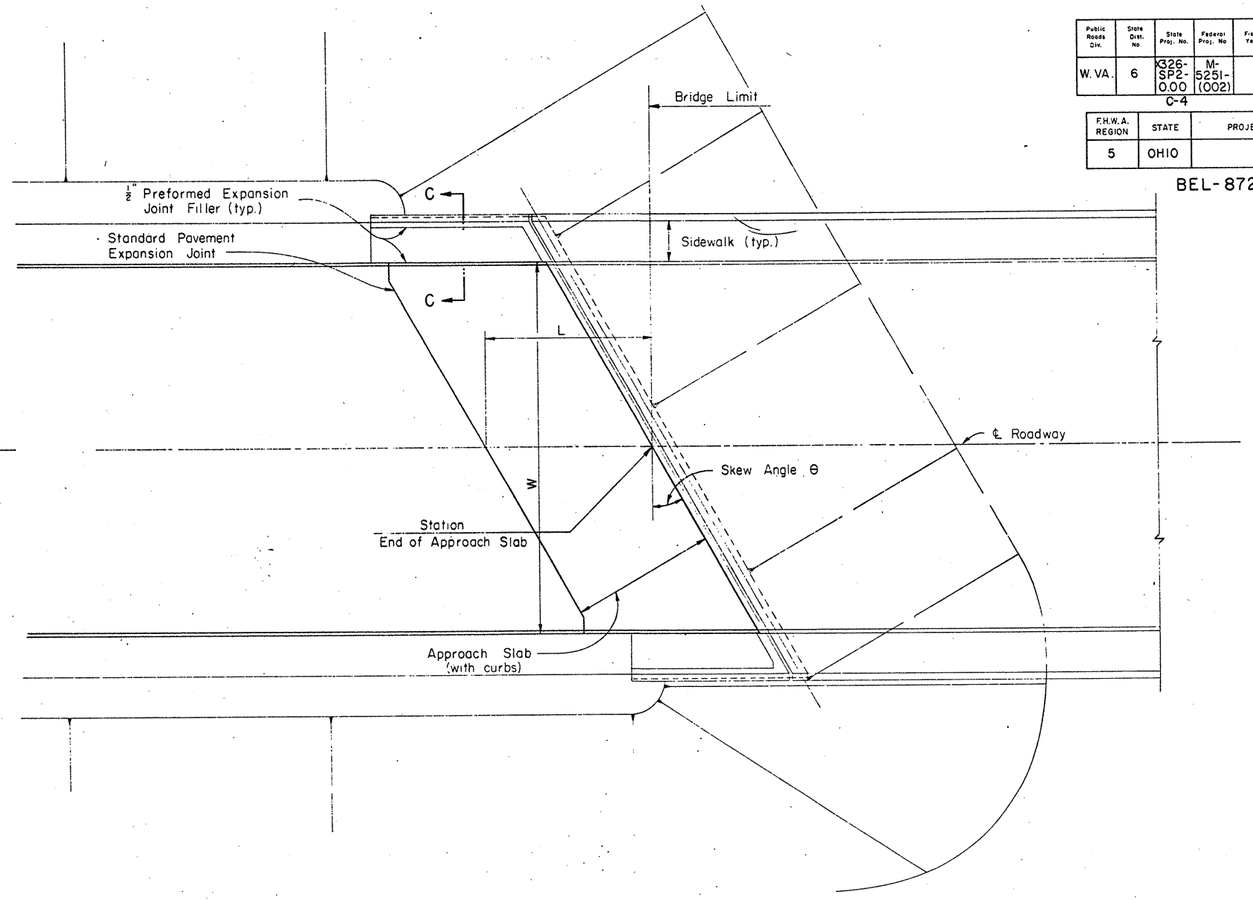
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

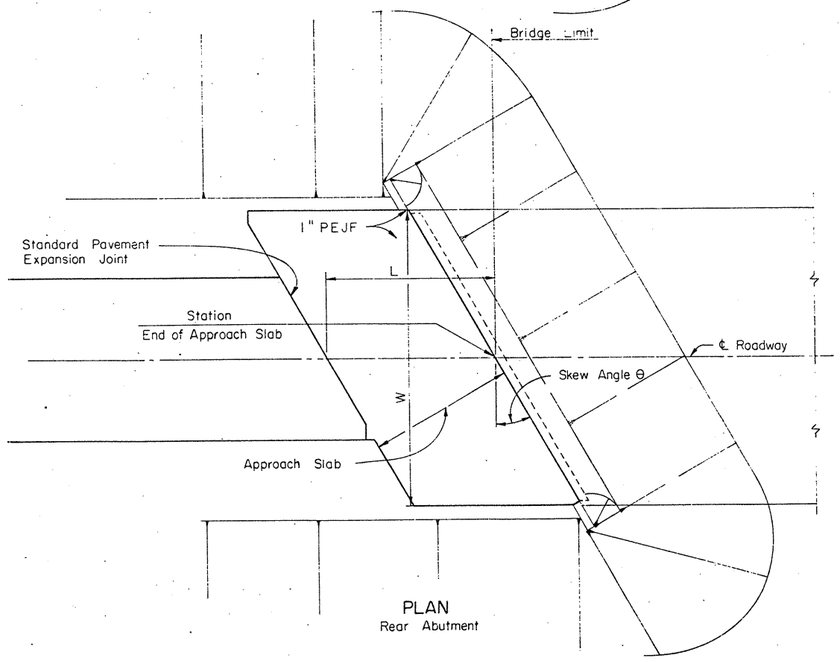


Where curb is used, guard rail "Flare Arc" as per GR-6 shall start at end of approach slab. Curb alignment shall be parallel to guard rail "Flare Arc."

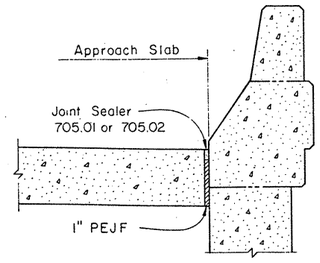
PLAN
Rear Abutment



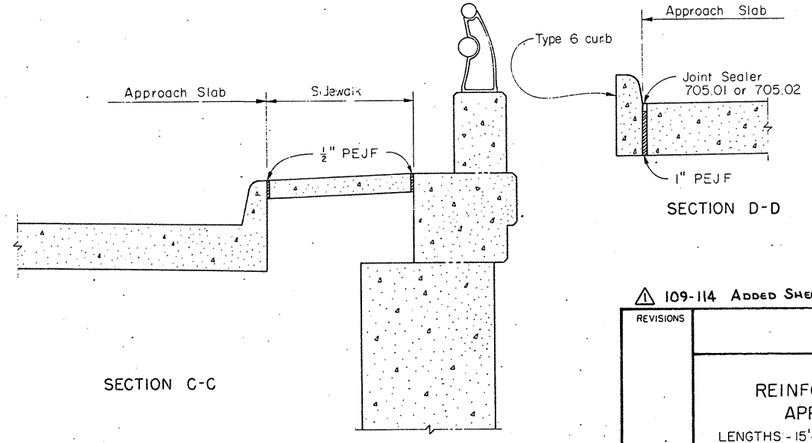
PLAN
Rear Abutment



PLAN
Rear Abutment



SECTION B-B



SECTION C-C

SECTION D-D

⚠ 109-114 ADDED SHEETS 5/5/82 C.RILING

REVISIONS

STANDARD

REINFORCED CONCRETE APPROACH SLABS

LENGTHS - 15'-0", 20'-0", 25'-0" AND 30'-0"

APPROVED: DATE: 6-30-72 ENGINEER OF BRIDGES

DRAWING NO AS-1-72

PREPARED	TRACED	CHECKED	REVIEWED	SHEET NO. 2 OF 2 SHEETS
DLM	TGC	CPD	BFG	

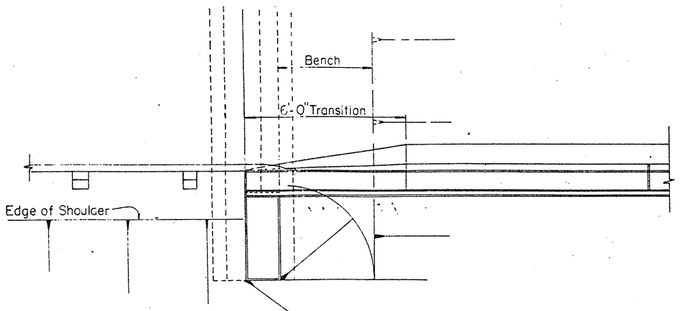
Public Roads Div	State Dist. No	State Proj. No	Federal Proj. No	Fiscal Year	County	Sheet No	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	111	255

C-4

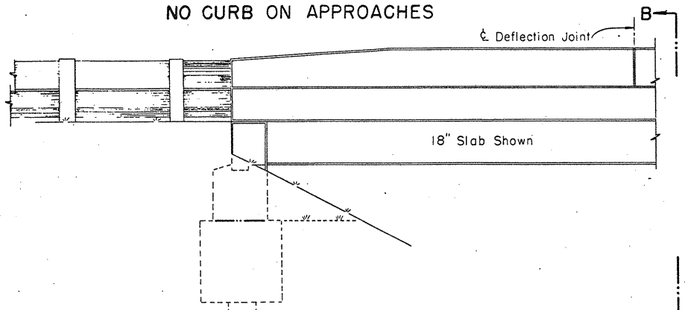
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

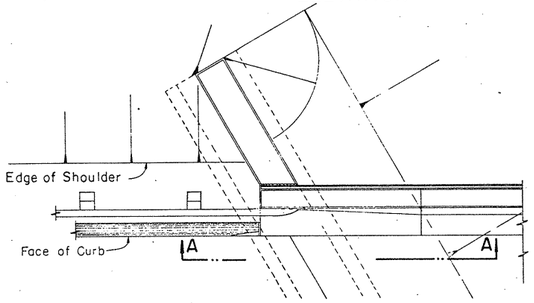
△1 109-114 ADDED SHEETS 5/5/82 C. RILING

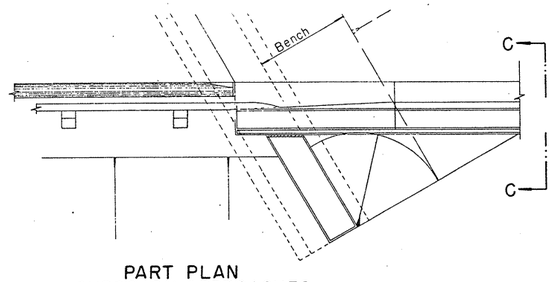


PART PLAN
NO CURB ON APPROACHES

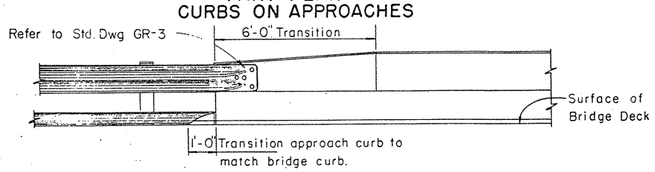


ELEVATION

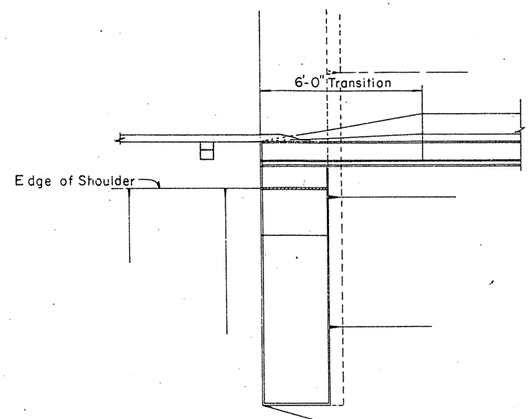




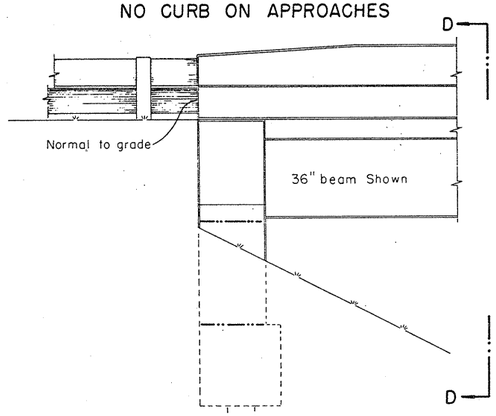
PART PLAN
CURBS ON APPROACHES



VIEW A-A
SLAB BRIDGE DETAILS



PART PLAN
NO CURB ON APPROACHES



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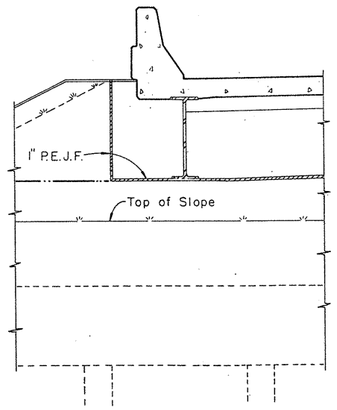
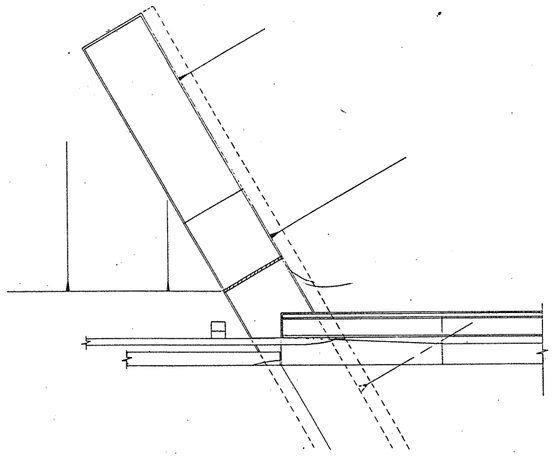
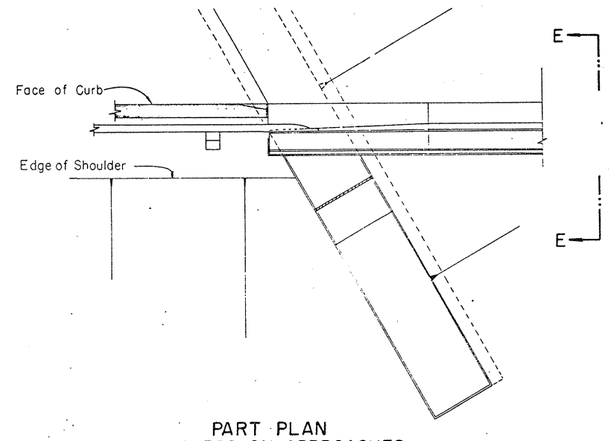


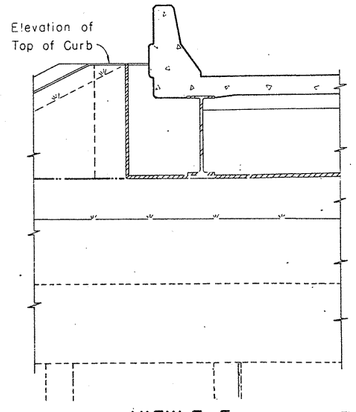
VIEW D-D



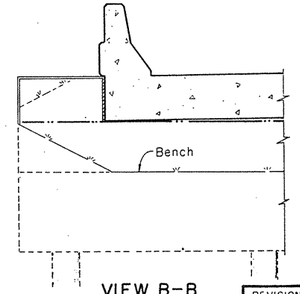


PART PLAN
CURBS ON APPROACHES

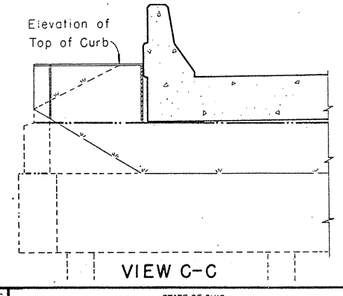
STEEL BEAM BRIDGE DETAILS



VIEW E-E



VIEW B-B



VIEW C-C

This drawing furnishes information to aid the designer in adapting the railing details to bridges with abutments which do not provide for expansion. It is not intended for use as a construction drawing.

REVISIONS
1-1-71
10-15-71

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

TYPICAL BRIDGE ROADWAY RAILING DETAILS FOR STEEL BEAM OR CONCRETE SLAB BRIDGES WITH NO EXPANSION PROVISION AT ABUTMENTS

APPROVED: R. H. Strahler
DATE: 2-1-67

DRAWING NUMBER BR-1-67

PREPARED	TRACED	CHECKED	REVIEWED	SHEET NO 3
C.P.D.	N.R.B.	J.D.R.	BFG HHH	OF 3 SHEETS

SPECIFICATION FOR SELF-LUBRICATING BRONZE BEARING PLATES

A) MATERIAL; BRONZE PLATES SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF ASTM B 22 ALLOY B, OR ASTM B 100.

B) FINISHES AND TOLERANCES; THE SURFACES OF THE BRONZE AND STEEL PLATES THAT ARE TO SLIDE UPON EACH OTHER, SHALL HAVE A SURFACE ROUGHNESS NOT EXCEEDING 125 MICRO INCHES AS MEASURED IN ACCORDANCE WITH ANSI STANDARDS.

THE FLAT SURFACES OF THE BRONZE AND STEEL PLATES THAT BEAR UPON EACH OTHER SHALL BE TRUE WITHIN 0.0005 INCH PER INCH OF LENGTH AND WIDTH.

BEARING PLATES HAVING RADIAL CONVEX SURFACES SHALL HAVE A NEGATIVE TOLERANCE OF 0.010 INCHES MAXIMUM AND A POSITIVE TOLERANCE OF 0.000 INCHES ON THE SPECIFIED RADIUS. CONCAVE RADIAL SURFACES OF BEARING PLATES SHALL HAVE A POSITIVE TOLERANCE OF 0.010 INCHES MAXIMUM AND A NEGATIVE TOLERANCE OF 0.000 INCHES ON THE SPECIFIED RADIUS.

C) LUBRICATING RECESSES; THE RECESSES FOR THE LUBRICANT SHALL CONSIST EITHER (1) OF CONCENTRIC RINGS, WITH OR WITHOUT A CENTRAL CIRCULAR RECESS, WITH A DEPTH AT LEAST EQUAL TO THE WIDTH OF THE RING OR DIAMETER OF THE HOLE OR (2) OF CIRCULAR RECESSES APPROXIMATELY 5/16 INCH IN DIAMETER AND 3/16 INCH TO 1/4 INCH DEEP. THE RECESSES SHALL BE ARRANGED IN A GEOMETRIC PATTERN SUCH THAT ADJACENT ROWS SHALL OVERLAP IN THE DIRECTION OF MOTION. THE ENTIRE AREA OF ALL BEARING SURFACES, WHICH HAVE PROVISIONS FOR MOTION, SHALL BE LUBRICATED BY MEANS OF THESE LUBRICANT-FILLED RECESSES. THE TOTAL AREA OF THESE RECESSES SHALL COMPRISE NOT LESS THAN 25 PERCENT NOR MORE THAN 35 PERCENT OF THE TOTAL BEARING AREA OF THE PLATE.

D) LUBRICANT; THE LUBRICANT FOR FILLING THE RECESSES SHALL BE OF THE SOLID TYPE AND SHALL CONSIST OF GRAPHITE AND METALLIC LUBRICANTS WITH A LUBRICATING BINDER. THE LUBRICANT SHALL BE COMPRESSED INTO THE LUBRICATING RECESSES BY AN HYDRAULIC PRESSURE OF 12500 PSI. TO FORM DENSE NON-PLASTIC INSERTS, WHICH SHALL PROJECT NOT LESS THAN 0.010 INCH ABOVE THE SURFACE OF THE BRONZE PLATE.

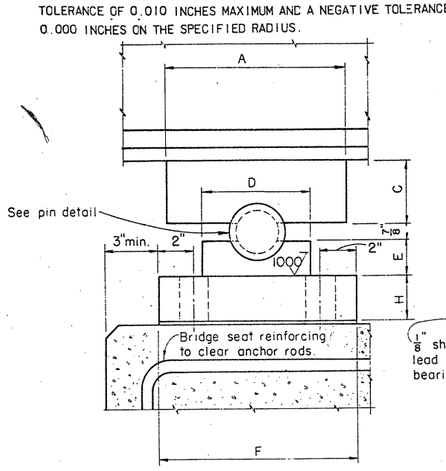
E) TESTING; A SELF-LUBRICATING BRONZE TEST PLATE MEASURING NOT LESS THAN 5 INCHES LONG BY 5 INCHES WIDE SHALL BE PREPARED TO CONFORM TO ONE OF THE ABOVE MATERIALS AND ALL OTHER REQUIREMENTS OF THIS SPECIFICATION.

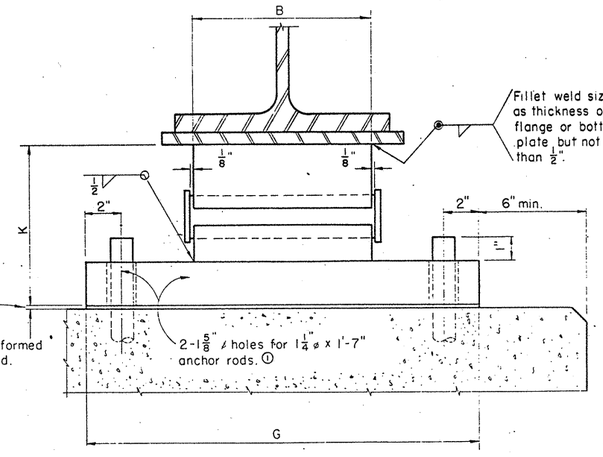
AN ASSEMBLY CONSISTING OF THE FIXED SELF-LUBRICATING TEST PLATE AND A MOVABLE STEEL PLATE SHALL BE SUBJECTED TO A VERTICAL UNIT LOADING OF 2500 PSI. THE STEEL PLATE SHALL THEN BE SUBJECTED TO NOT LESS THAN 100 CYCLES OF HORIZONTAL MOVEMENT AT A SPEED NOT TO EXCEED 30 CYCLES PER MINUTE. EACH CYCLE SHALL CONSIST OF A FORWARD AND RETURN MOVEMENT OF APPROXIMATELY 1/2 INCH IN EACH DIRECTION. THE RECORDED HORIZONTAL FORCE DIVIDED BY THE RECORDED VERTICAL FORCE SHALL BE CONSIDERED THE COEFFICIENT OF FRICTION BETWEEN THE SLIDING SURFACES.

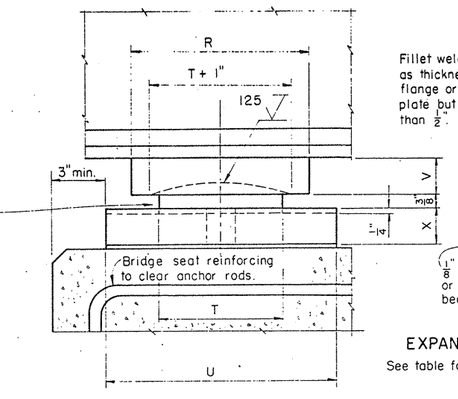
THE COEFFICIENT OF FRICTION DETERMINED BY THE FOREGOING METHOD SHALL NOT EXCEED 0.10.

F) ASSEMBLY; BEFORE ASSEMBLY OF BRONZE PLATES WITH MATING STEEL PLATES TO FORM A COMPLETE BEARING ASSEMBLY, THE SLIDING SURFACES OF THE MATING STEEL PLATES SHALL BE COATED WITH LUBRICANT SIMILAR TO THAT USED IN THE RECESSES. THE COMPLETE BEARING ASSEMBLY SHALL THEN BE BANDED TOGETHER FOR SHIPMENT.

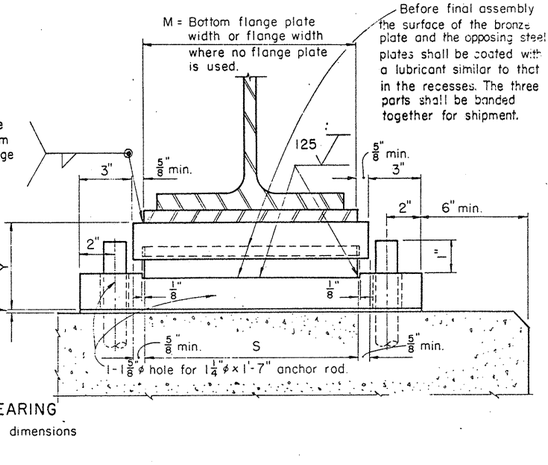
G) CERTIFICATION; CERTIFIED COPIES OF THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF THE BRONZE USED IN THE MANUFACTURE OF THE BEARING PLATES SHALL BE FURNISHED FOR EACH PROJECT. THE BEARING MANUFACTURE SHALL ALSO CERTIFY THAT THE BRONZE BEARING MATERIAL WITH LUBRICANT, WHEN TESTED AS HEREINBEFORE DESCRIBED, HAS A COEFFICIENT OF FRICTION NOT GREATER THAN 0.10







Fillet weld size same as thickness of bottom flange or bottom flange plate but not greater than 1/2".



EXPANSION BEARING
See table for additional dimensions

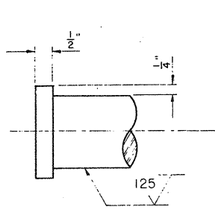
FIXED BEARING
See table for additional dimensions.

Fixed Bearing No.	Expansion Bearing No.	Fixed Bearings Dimensions (inches) A	B	C	D	E	F	G	H	K	d	Weight ea. (lb.)	Expansion Bearings Dimensions (inches) R	S	T	U	V	W	X	Y	Weight ea. (lb.)	Maximum Load (lb.)
① F-50	E-50	6	6	1 1/2	3	1 1/4	8	16	1 1/2	5 5/8	2	100	10	6	6	12	2	1 1/8	2	4 3/8	152 + 13.10 (M-S)	50,000
① F-100	E-100	7	9	1 3/4	4	1 1/2	9	18	1 1/2	5 5/8	2	143	10	8	6	12	2	1 1/8	2	4 3/8	180 + 13.10 (M-S)	100,000
F-150	E-150	9	9	2 1/2	5	1 1/2	11	20	2	6 7/8	2 1/2	244	10	9	7	13	2	1 5/16	2	4 3/8	205 + 13.72 (M-S)	150,000
F-200	E-200	10	10	3	6	2	11	22	2	7 7/8	2 1/2	300	10	12	7	13	2	1 5/16	2	4 3/8	250 + 13.72 (M-S)	200,000
F-250	E-250	11	10	3 1/2	7	2	12	24	2 1/2	8 5/8	3	400	12	13	8	14	2 1/2	1 1/2	2 1/4	5 1/8	337 + 18.16 (M-S)	250,000
F-300	E-300	12	11	3 3/4	8	2 1/2	14	25	2 1/2	9 3/8	3	502	12	15	8	15	2 1/2	1 1/2	2 1/4	5 1/8	389 + 18.85 (M-S)	300,000
② F-350	② E-350	12	11	3 3/4	8	2 1/2	16	25	2 1/2	9 3/8	3	540	12	16	9	17	2 1/2	1 3/4	2 1/4	5 1/8	443 + 20.23 (M-S)	350,000
② F-400	② E-400	12	12	3 3/4	8	2 1/2	18	26	2 1/2	9 3/8	3	610	12	17	10	18	2 1/2	1 15/16	2 1/4	5 1/8	484 + 20.92 (M-S)	400,000

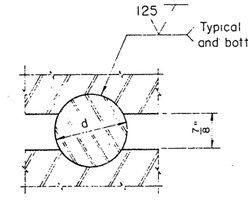
① Only 2 anchor rods required, placed in diagonally opposite corners.

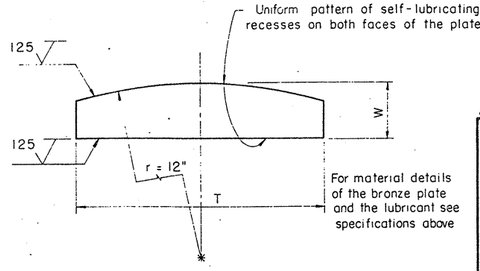
② Bearing stiffeners are required.

Weights given are for one complete bearing (including sheet lead, anchor rods and self-lubricating bronze plate for the expansion bearing).



BEARING PIN DETAIL





For material details of the bronze plate and the lubricant see specifications above

SELF-LUBRICATING BRONZE PLATE DETAIL

STEEL: Plates and rods shall conform to ASTM Designation A 36 and pins to ASTM A-108.

LIMITATIONS: The expansion bearings shall not be used where the anticipated total movement (expansion plus contraction) exceeds 3 inches. When the roadway gradient at a bearing is over 4.0 %, the top of the upper steel plate shall be beveled to match the roadway gradient.

COEFFICIENT OF FRICTION: For design purposes a value of 0.10 shall be used.

LATERAL EXPANSION: All bearings must be accurately placed in order that proper clearance will be provided at all bearings for lateral expansion of the superstructure.

Public Roads Div	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OH 10	112	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OH 10		

BEL-872-0.00

△ 109-114 ADDED SHEETS 5/5/82 C. RILING

REVISIONS
1-15-63
5-22-79
Special for S.R. 872 over S.R. 7
M. B. Jr.

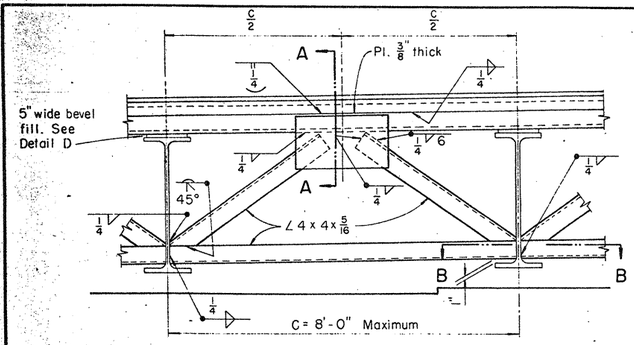
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

STANDARD
FIXED AND SLIDING BEARINGS
FOR STEEL BEAM AND GIRDER BRIDGES
REACTIONS 50,000 lb. TO 400,000 lb.

APPROVED: D. H. Berman ENGINEER OF BRIDGES
DATE: 4-19-62

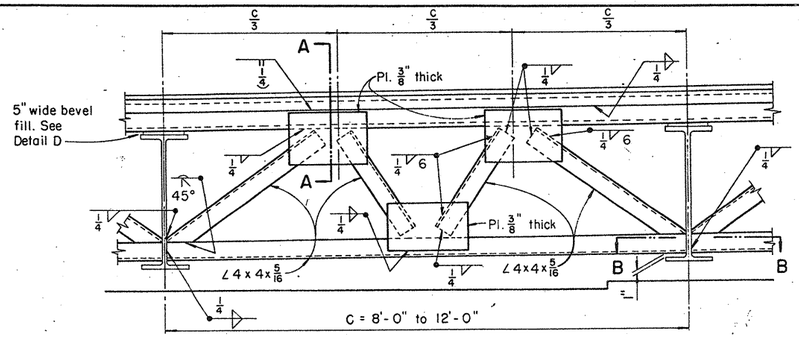
DRAWING NO. FSB-1-62

PREPARED	TRACED	CHECKED	REVIEWED
JM	MKH	WCK	HHH



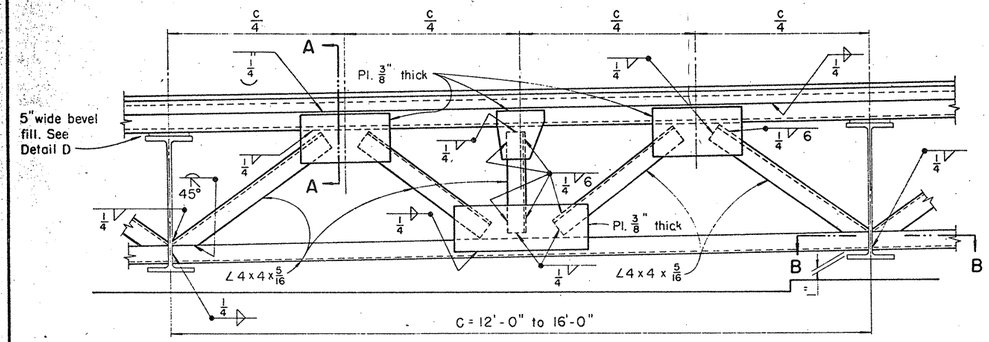
END CROSSFRAME

For beam spacing of 8'-0" or less measured parallel to end dam.



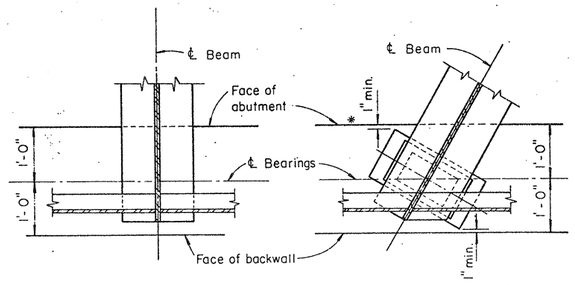
END CROSSFRAME

For beam spacing of 8'-0" to 12'-0" measured parallel to end dam.



END CROSSFRAME

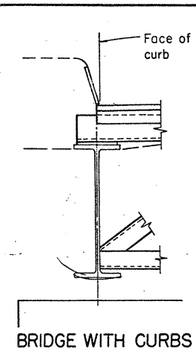
For beam spacing of 12'-0" to 16'-0" measured parallel to end dam.



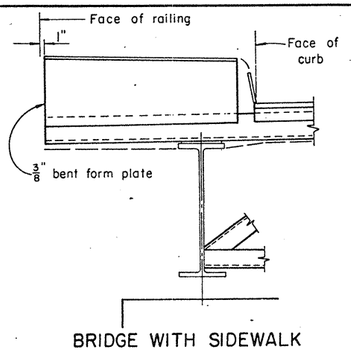
FOR SQUARE BRIDGES FOR SKEWED BRIDGES

SECTION B - B

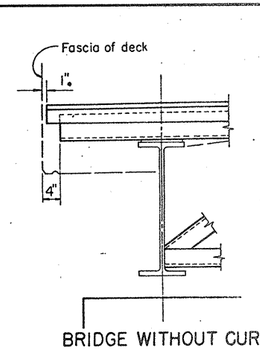
* Where necessary, cope corner of masonry plate in order to maintain 1" clearance.



BRIDGE WITH CURBS



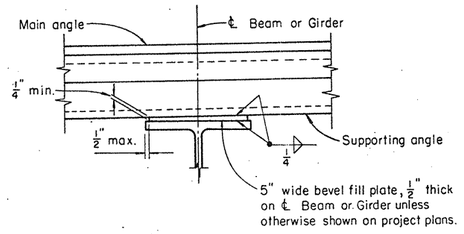
BRIDGE WITH SIDEWALK



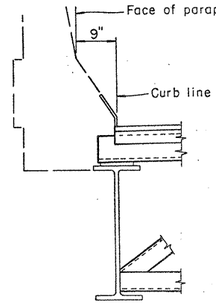
BRIDGE WITHOUT CURBS

END DAM DETAILS AT FASCIA BEAM

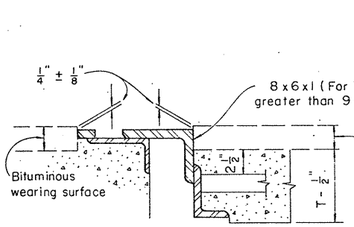
(For additional details see Sheet No. 2)



DETAIL D



BRIDGE WITH ROADWAY PARAPET RAILING



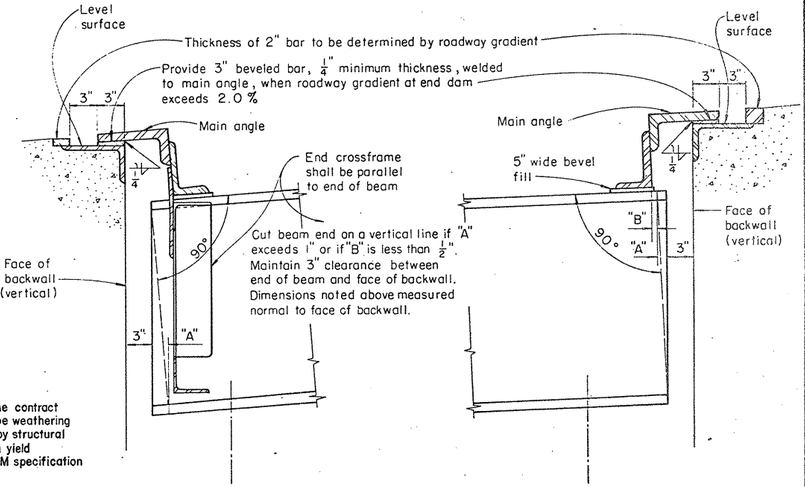
SECTION A - A

SHOWING ROADWAY END DAM FOR BITUMINOUS WEARING SURFACE

Same as SECTION A-A for monolithic wearing surface except as shown.

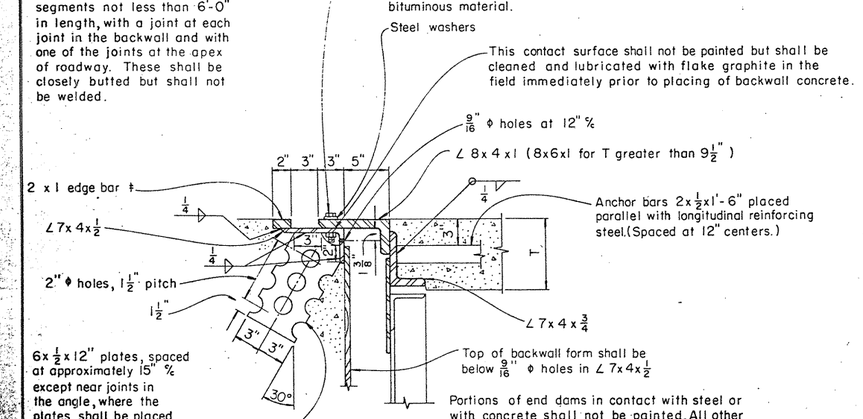
NOTE:

▲ Unless otherwise noted on the contract dwgs., all structural steel shall be weathering grade of high-strength low-alloy structural steel with 50,000 psi minimum yield conforming to the current ASTM specification designation A-588.



LONGITUDINAL SECTION BRIDGE ON GRADE

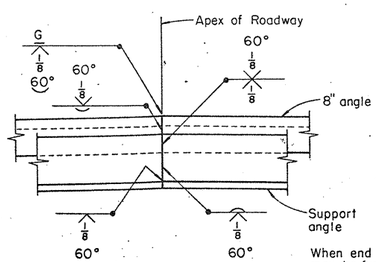
A welded butt joint in the end dam, at the apex of roadway, will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with a joint at each joint in the backwall and with one of the joints at the apex of roadway. These shall be closely butted but shall not be welded.



SECTION A - A

SHOWING ROADWAY END DAM FOR MONOLITHIC WEARING SURFACE

† Furnish different thickness if required to compensate for grades in excess of 2%.



WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM

When end dam contains no apex, a butt joint may be furnished near the centerline of the deck, if necessary to facilitate handling and shipping.

Public Roads Dist.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	113	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

⚠ 109-114 Added Sheets 5/5/82 C. Riling

REVISIONS
7-24-79
Special for SR 872 over SR 7. MBJr

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

STANDARD

SUPERSTRUCTURE DETAILS

FOR STEEL BEAM AND GIRDER BRIDGES

APPROVED: C. H. Abbott
DATE: 6-12-69 ENGINEER OF BRIDGES

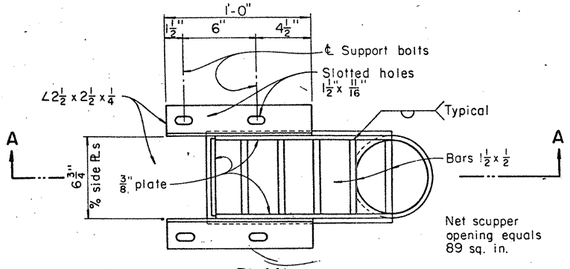
DRAWING NUMBER SD-1-69

PREPARED	TRACED	CHECKED	REVIEWED	SHEET NO. 1 OF 4 SHEETS
FFE	NRB	WJJ FFE	CDS RVH BFG	

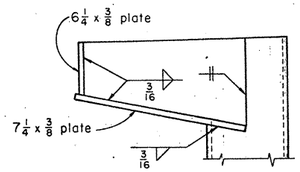
Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	326-SP2-0.00 C-4	M-5251-(002)		MARSHALL, W.VA.-BEL-MONT, OHIO	114	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

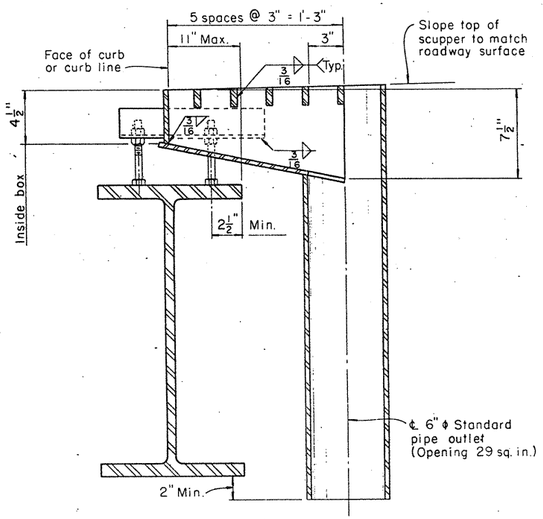
BEL-872-0.00



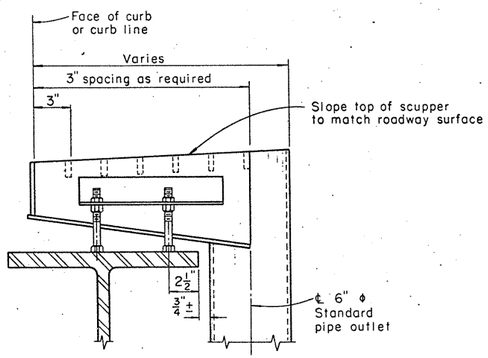
PLAN
STANDARD SCUPPER



SCUPPER ELEVATION

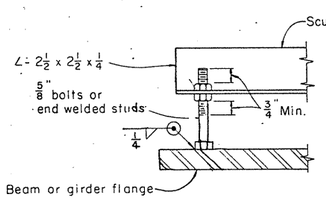


SECTION A-A

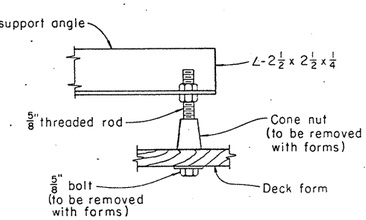


DETAIL A

Scupper elevation showing method for lengthening scupper where necessary to clear the flanges.



DETAIL B



DETAIL C

For scuppers that are not located adjacent to a beam or girder flange.

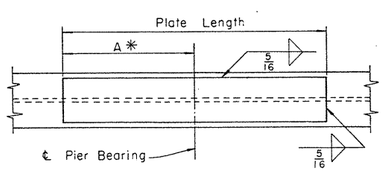
SCUPPER SUPPORT BOLTS

Scuppers shall be furnished in sufficient number to provide one square inch of net scupper opening for each 12 to 15 square feet of deck area to be drained. The downspout shall have at least one square inch of opening for each five square inch of net scupper opening, with a minimum nominal diameter of 6 inches.

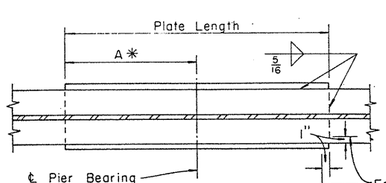
Scupper should clear crossframes by at least 6" and abutments by 2'-6". They shall be no nearer to ℄ of pier bearings than 0.10 of span length.

The support angles and support bolts are included with scupper for payment.

Scuppers, including support angles, shall be galvanized in accordance with 711.



TOP FLANGE



BOTTOM FLANGE

MOMENT PLATES

* See Standard Drawings or project plans for dimension "A". Dimension "A" equals ½ plate length unless otherwise shown, in which case the plans shall indicate the span to which dimension "A" applies.

⚠ 109-114 ADDED SHEETS 5/5/82 C. RILING

REVISIONS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

STANDARD
SUPERSTRUCTURE DETAILS
FOR STEEL BEAM AND GIRDER BRIDGES

APPROVED: C. H. Abbate
DATE: 6-12-69 ENGINEER OF BRIDGES

DRAWING NUMBER SD-1-69

PREPARED	TRACED	CHECKED	REVIEWED	SHEET NO 3
MPB	NRB	WJJ	CCB RVH BFG	OF 4 SHEETS

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA	6	K326-SP2-0.00	M-5251-(002)	197	Marshall, W Va Belmont, Ohio	115	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Sta. 25+09.80 Moundsville Bridge
Sta. 399+70.00 Penn Central R.R.
Penn Central Milepost No. YC 51.34

Begin Bridge
Sta. 23+60.35

Slope Protection

Railroad

Edison Road

Fence

℄ Ferry Access Road (Relocated) NIC

55°00'

55°00'

55°26' Tan. to Curve

64°30'

59°

Sta 26+06.4±

90°-00' (Typ)

℄ Bridge and P.G. Line

S. 85°-02'-51" E.

30'0" Exist. Haul Rd.

Penn. Central

Spur Track

14'0" Min Cl.

Ohio

30'0" Min.

Edge of Water
Normal Pool Elev. 623.0

Access Ladder to Navigation Light

Navigation Light

Access Ladder to Pier Cap

OHIO RIVER FLOW

Access Ladder to Navigation Light

Navigation Light

PLAN

64'-7"
℄ Bridge
32'-3½" 32'-3½"
3'0" 3'0"
2@12'0"=24'0" 2@12'0"=24'0"
1'-9" 29'-6½" 29'-6½" 1'-9"
P.G. Elev. 2'0"
Slope 3/16"/ft. Slope 3/16"/ft.

670' V.C.

1200' V.C.

-2.40 %

+2.80 %

P.V.I. Sta. 28+55.00
Elev. 694.20
M.O. = +4.355'

These Substructure Units Are Included in Contract 4

54'0" along ℄ Span 1A	144'-0" along ℄ Span 1	144'-0" along ℄ Span 2	158'-0" Span 3	157'-0" Span 4	157'-0" Span 5	157'-0" Span 6
℄ Bearings Abutment A Sta. 23+63.00 ℄ Bridge P.G. Elev. 706.00	℄ Pier 1A Sta. 24+17.00 P.G. Elev. 704.71	℄ Pier No. 1 Sta. 25+61.00 P.G. Elev. 701.32	℄ Pier No. 2 Sta. 27+05.00 P.G. Elev. 699.13	℄ Pier No. 3 Sta. 28+63.00 P.G. Elev. 698.57	℄ Pier No. 4 Sta 30+20.00 P.G. Elev. 699.94	NIC ℄ Pier No. 5 Sta. 31+77.00 P.G. Elev. 703.22

NIC ℄ Pier No. 6 Sta 33+34.00 P.G. Elev. 707.13

SECTION B-B
0 15' 30'

Berm Elev. 699.3

Elev. 695.50

230'± Actual Clearance

230'± Actual Clearance

Lighting Standard (Typical)

Access Ladder to Pier Cap

SUPERSTRUCTURE NIC

Elev. 697.30

Exp. Fix.

Exp. Elev. 691.42

Exp. Exp. Elev. 689.92

Elev. 688.67

Exp. Elev. 690.92

Fix Exp. Elev. 693.58

Exp. Fix Elev. 687.63

Access Ladder to Navigation Light

Navigation Lights (180° Red)

Normal Pool Elev. 623.0

Concrete Slope Protection By others. Provide Temporary Seeding on Slope, to be paid For under Item. 642-4-1, Temporary Seed.

Elev. 675.25
Elev. 672.25
℄R Elev. 671.07 ℄ of Bridge
℄R Elev. 670.2 ℄ of Bridge

Elev. 666.00

Original Ground Line at ℄ Bridge

Elev. 660.00

Elev. 651.00

Piles HP 12x53 (Typ.)

Elev. 644.00

Approx. Top of Rock (Typ.)

Elev. 611.00

Tremie Seal Bott. Elev. 600.50

Elev. 587.0

DATUM ELEV. 550

DATUM ELEV. 500

672 671 670 668 666 664 662 661 658 656 652 650 648 646 644

634 630 620 610 606 602 600

22 23 24 25 26 27 28 29 30 31 32 33 34

ELEVATION
0 40 80

NIC = Not in Contract

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
GENERAL PLAN AND ELEVATION

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY A.M.L. CHECKED BY DWS DATE
DETAILED BY CHECKED BY DATE
TRACED BY T.M.K./RM CHECKED BY DWS DATE

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	1 of 18

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall,W.Va. Belmont,Ohio	116	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

GOVERNING SPECIFICATIONS

THE GOVERNING SPECIFICATIONS ARE THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES AS ADOPTED IN 1978, TOGETHER WITH THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS' SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 1, 1981

ALL MATERIALS, WORKMANSHIP, AND INSPECTION FOR THE WELDING OF STEEL STRUCTURES OR PARTS THEREOF SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" AWS D1.1-72 (INCLUDING REVISION 1-73) AS SHOWN IN AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, EXCEPT AS FURTHER MODIFIED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS SPECIFICATIONS.

ALL WELDING OF REINFORCING STEEL BARS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY SPECIFICATION D12.1 - "REINFORCING STEEL WELDING CODE"

DESIGN

THE BRIDGE IS DESIGNED IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1977 INCLUDING THE 1980 INTERIM SPECIFICATIONS, AND UTILIZING AN HS 20-44 LIVE LOADING. THE DESIGN PROVIDES 25 POUNDS PER SQUARE FOOT FOR ANY FUTURE WEARING SURFACE.

DESIGN UNIT STRESSES

CLASS B CONCRETE
F'C = 3000 PSI
FC = 1200 PSI
N = 9

REINFORCEMENT STEEL
FS = 20000 PSI

STRUCTURAL STEEL
ASTM A-36 STEEL - FS = 20000 PSI FY = 36000 PSI MIN

CONCRETE

ALL CONCRETE SHALL BE CLASS B.

CHAMFER ALL EXPOSED EDGES OF CONCRETE 1" x 1" UNLESS OTHERWISE NOTED.

REINFORCING STEEL BARS

ALL REINFORCING STEEL BARS SHALL BE INTERMEDIATE GRADE BILLET STEEL IN ACCORDANCE WITH ASTM A 615, GRADE 40 OR GRADE 60. EXCEPT FOR NO. 14 BARS WHICH SHALL BE ASTM A-706, ASTM 616 GRADE 50 BARS MAY BE USED IN THE SUBSTRUCTURE AND, IF USED, THEY SHALL MEET THE BEND TEST REQUIREMENTS OF A 615, GRADE 60.

MINIMUM LAP AND EMBEDMENT WILL BE 30 DIAMETERS UNLESS OTHERWISE NOTED.

THE CONTRACTOR WILL BE PERMITTED TO WELD-SPLICE THE SIZE 14 REINFORCING BARS OVER 30 FEET IN LENGTH. NO LAP SPLICES WILL BE PERMITTED. THE SPLICES SHALL BE STAGGERED AS MUCH AS PRACTICABLE AND THEIR NUMBER AND LOCATIONS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CLEAR DISTANCE BETWEEN THE REINFORCING STEEL AND FACE OF CONCRETE SHALL BE TWO INCHES EXCEPT WHERE OTHERWISE NOTED.

ANCHOR BOLTS

SWEDGED ANCHOR BOLTS INCLUDING WASHERS AND NUTS SHALL BE FURNISHED AND INSTALLED TO THE CORRECT SPAN LENGTHS AND CENTERLINE OFFSETS AS INDICATED ON THE DRAWINGS. BEFORE INSTALLATION, THE PROTRUDING PORTIONS PLUS 6" OF THE BOLTS AND HARDWARE SHALL BE PAINTED WITH A ZINC RICH SYSTEM IN ACCORDANCE WITH SECTION 711.20 (4 MILS). THE BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CAP CONCRETE IS POURED.

BEARING AREAS

ALL CONCRETE BEARING AREAS INDICATED ON THE DRAWINGS SHALL BE POURED MONOLITHICALLY WITH THE CAP AND SHALL BE FINISHED TO A TRULY LEVEL PLANE AND THE EXACT ELEVATION SHOWN.

EXCAVATION AND BACKFILL

EXCAVATION FOR SUBSTRUCTURE UNITS SHALL BE CLASSIFIED AS STRUCTURE EXCAVATION.

REPLACEMENT BARS

THE INSPECTOR SHALL PICK RANDOM BARS FROM THE REINFORCING BAR LIST FOR TEST BARS, EXCEPTING NO. 14 BARS. HE SHALL CUT 5' FROM THE BAR CHOSEN; RE-BARS IN THE LIST SHALL BE SPLICED TO THE BAR SO LISTED, AND THE RE-BARS HAVE BEEN DETAILED TO ALLOW A 30 DIAMETER SPLICE AT EACH END. THE CONTRACTOR SHALL DELIVER TO THE INSPECTOR, FOR TESTING PURPOSES, FOUR NO. 14 x 5'-0" LONG REINFORCING BARS FROM EACH HEAT LOT SUPPLYING NO. 14 BARS. EACH TEST SPECIMEN SHALL BE IDENTIFIED WITH ITS HEAT NUMBER.

ONE RE-BAR FOR EACH 10 TONS OR FRACTION THEREOF, OF EACH SIZE, HAVE BEEN INCLUDED IN THE BILL OF STEEL AND WILL BE PAID FOR UNDER ITEM 602-1. IN THE EVENT ALL BARS OF ANY ONE SIZE ARE NOT SENT IN ONE SHIPMENT, THE SUPPLIER SHALL FURNISH AT HIS EXPENSE ONE FOR EACH 10 TONS OR FRACTION THEREOF FOR EACH EXTRA SHIPMENT.

IN THE EVENT THAT ANY SHIPMENT OF MATERIAL HAS BEEN PRETESTED AND HAS BEEN IDENTIFIED IN ACCORDANCE WITH MATERIAL CONTROL, SOIL AND TESTING DIVISION'S INFORMATIONAL MEMORANDUM NO. 17, THE SHIPMENT MAY BE ACCEPTED WITHOUT FURTHER TESTING SUBJECT TO RECORD SAMPLING PROCEDURE.

PILING

ALL PILES SHALL BE HP 12 x 53 STEEL PILES AND SHALL HAVE TIPS AS INDICATED BY THE DRAWINGS. ALL PILES SHALL BE DRIVEN TO REFUSAL. REFUSAL IS DEFINED AS THE EQUIVALENT OF 20 BLOWS FOR ONE INCH OR LESS OF PENETRATION WITH A POWER HAMMER DEVELOPING A MINIMUM CAPACITY OF 15,000 FOOT POUNDS PER BLOW. IF A LARGER HAMMER IS USED, THE NUMBER OF BLOWS IN THE LAST INCH OF PENETRATION MAY BE REDUCED IN DIRECT PROPORTION TO THE ENERGY RATING OF THE HAMMER, BUT TO NO LESS THAN 12.

BEFORE PILE DRIVING IS STARTED, THE CONTRACTOR SHALL PROVIDE A WRITTEN CERTIFICATE TO THE ENGINEER THAT THE PILE HAMMERS, AIR COMPRESSORS AND AIR VALVES HAVE BEEN INSPECTED AND FOUND TO BE IN GOOD WORKING CONDITION.

PILING SHALL BE ASTM A-36

NEW STOCK MATERIAL MAY BE USED FOR STEEL BEARING PILES PROVIDED THAT CERTIFIED MILL REPORTS ARE FURNISHED TO THE STATE'S SHOP INSPECTOR FOR EACH HEAT REPRESENTED, INDICATING THAT THE MATERIAL CONFORMS TO THE SPECIFICATIONS.

THE PILES FOR THE ABUTMENT SHALL NOT BE DRIVEN UNTIL THE EMBANKMENT HAS BEEN PLACED AND COMPACTED TO THE ELEVATION OF BOTTOM OF FOOTING.

AS-BUILT SURVEY INFORMATION

AT THE COMPLETION OF THE SUBSTRUCTURE, THE SUBSTRUCTURE CONTRACTOR SHALL MAKE AN AS-BUILT SURVEY TO ACCURATELY SHOW THE AS-BUILT VERSUS THE PLAN LOCATION OF ALL SUBSTRUCTURE CENTERLINES, GIRDER CENTERLINES, TRUSS CENTERLINES, CENTERLINE OF ANCHOR BOLT GROUPS, ANCHOR BOLTS BEARING ELEVATIONS AND ANY OTHER ELEMENTS OR ITEMS THAT MAY AFFECT THE LAYOUT OR PLACEMENT OF THE WORK TO BE FURNISHED BY THE SUPERSTRUCTURE CONTRACTOR. ALL OF THE PERTINENT AS-BUILT SURVEY INFORMATION, INCLUDING DIMENSIONS, ELEVATIONS, AND ANGLES SHALL BE SHOWN ON SUITABLE DRAWINGS, AS SPECIFIED FOR SHOP DRAWINGS, TOGETHER WITH THE CORRESPONDING DESIGN DRAWING INFORMATION FOR DIRECT COMPARISON. THE ORIGINAL DRAWINGS, OR APPROVED EQUAL, SHALL BE SUBMITTED TO THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS AS SOON AS PRACTICABLE AFTER COMPLETION OF THE SURVEY. PAYMENT FOR THIS WORK SHALL BE INCLUDED AS PART OF ITEM 639-1, CONSTRUCTION LAYOUT STAKES.

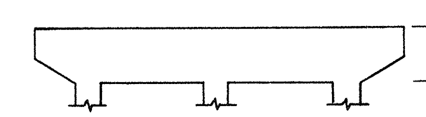
SHORING ADJACENT TO RAILROADS

THERE SHALL BE NO SEPARATE PAYMENT FOR THE SHORING WHICH MAY BE REQUIRED AROUND THE PIER AT THE RAILROADS, BUT THE COST SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE VARIOUS PIER BID ITEMS.

SPECIAL PROVISIONS

ELECTRICAL GROUND WIRES
SPECIAL PROVISIONS FOR MAINTENANCE OF RAILROAD TRAFFIC
PHOTOGRAPHS

SURFACE COATING



WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
GENERAL NOTES

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY JLB CHECKED BY [illegible] DATE [illegible]
DETAILED BY ______ CHECKED BY ______ DATE ______
TRACED BY ______ CHECKED BY ______ DATE ______

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	NONE	2971	2 of 18

Public Roads Adm.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-525-(002)	197	Marshall, W.Va. Belmont, Ohio	117	235

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

ESTIMATE OF BRIDGE QUANTITIES

ITEM	DESCRIPTION	UNIT	PIER IA	PIER 1	PIER 2	PIER 3	PIER 4	ABUT.A	TOTAL
212-1	Structure Excavation	CY	54	160	175	235	209		833
601-2	Class B Concrete	CY	169	235	164	191	240	132	1,131
602-1	Reinforcing Steel Bars	LBS	21,421	27,165	23,340	47,817	54,399	6,109	180,940 *
615-3	Fabricated Structural Steel	L S	L S	L S	L S	L S	L S	L S	LUMP SUM
616-4	HP12x53 Steel Bearing Piles, Driven	L F	1,541	1,206	1,511	2,219	2,202	1,601	10,280
212-5	Select Material For Backfilling	C.Y.						11	11
639-1	Construction Layout Stakes	L.S.							L.S.

* Includes 689 lbs. of Replacement Bars

FABRICATED STRUCTURAL STEEL - POUNDS

TYPE OF STEEL	PIER IA	PIER 1	PIER 2	PIER 3	PIER 4	ABUT.A	TOTAL
A36	650	300	600	300	600	120	2570

ITEM 602-1 REINFORCING STEEL BARS

SIZE	PIER IA	PIER 1	PIER 2	PIER 3	PIER 4	ABUT. A	SUBTOTAL	REPLACE BARS	TOTAL WEIGHT
Plain	1,577	947	2,447	3,232	4,845		13,048		13,048
4	301	1,194					1,495	5	1,500
5	2,046	3,377	1,595	3,155	2,110	4,716	16,999	9	17,008
6	933	5,543	933	1,045	1,217	1,393	11,064	13	11,077
7	-								
8	379	354	335	334	335		1,737	27	1,764
9	5,712						5,712	36	5,748
10	2,393		8,754	7,582	8,856		27,585	99	27,684
11	8,080	10,451	9,276	3,124	16,954		47,885	194	48,079
14		5,299		29,345	20,082		54,726	306	55,032
TOTAL	21,421	27,165	23,340	47,817	54,399	6,109	180,251	689	180,940

REPLACEMENT BARS

SIZE	NO.	LENGTH	WEIGHT
4	1	7'-6"	5
5	1	8'-2"	9
6	1	8'-9"	13
7	—	9'-6"	—
8	1	10'-0"	27
9	1	10'-8"	36
10	2	11'-6"	99
11	3	12'-2"	194
14	8*	5'-0"	306

* Assumed 2 Different Heat Lots

TABLE OF ESTIMATED PILE TIP ELEVATIONS

SUBSTR. UNIT	ESTIMATED PILE TIP ELEVATION
PIER IA	ELEV. 608 ±
PIER 1	ELEV. 609 ±
PIER 2	ELEV. 595 ±
PIER 3	ELEV. 581 ±
PIER 4	ELEV. 568 ±
ABUT. A	ELEV. 608 ±

LIST OF BRIDGE DRAWING

REV. NO.	CHECK (INITIALS)	REVISIONS	DATE	BY

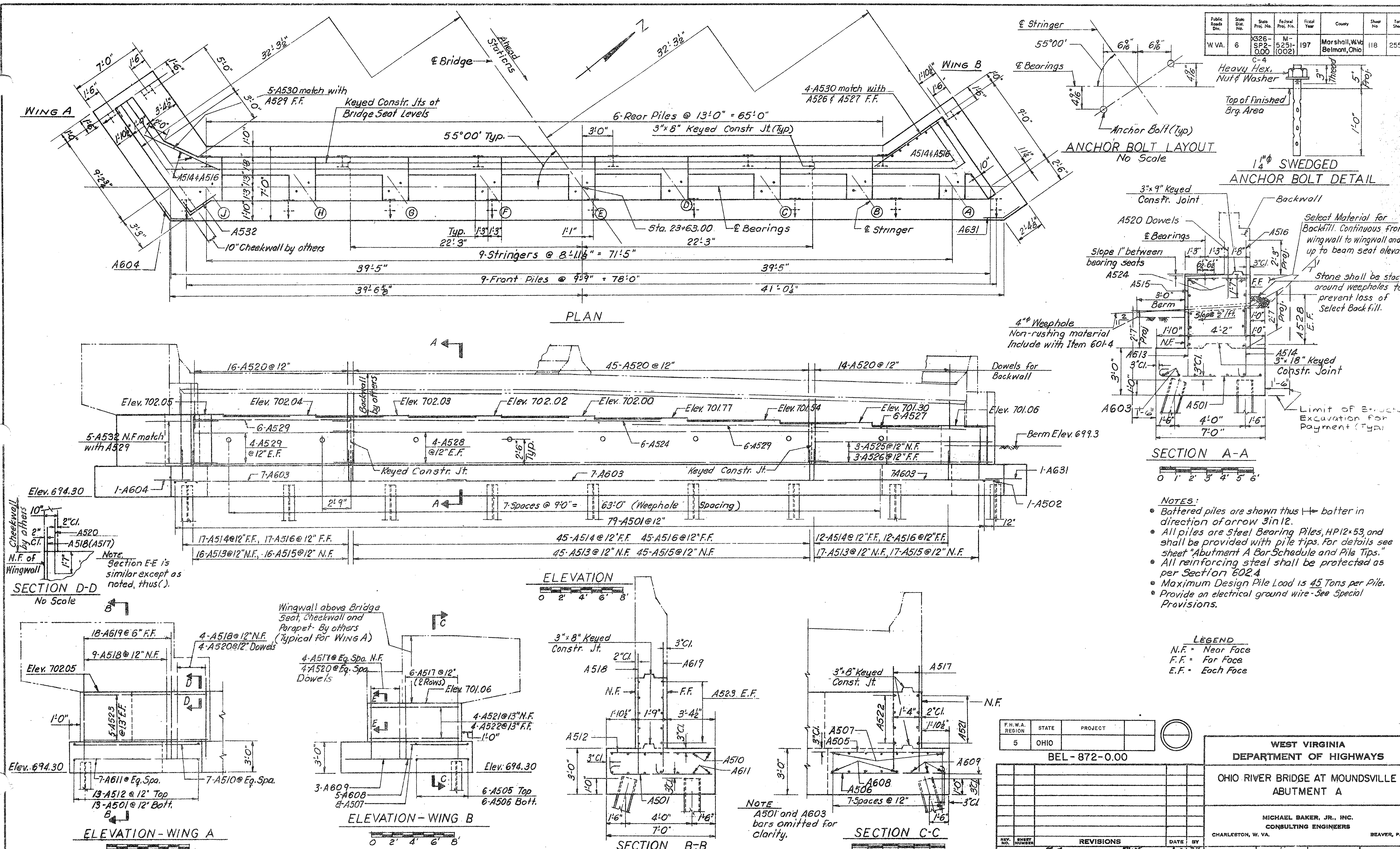
DESIGNED BY GTB CHECKED BY DWS DATE 2-21-78
DETAILED BY ____ CHECKED BY ____ DATE ____
TRACED BY ____ CHECKED BY ____ DATE ____

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
QUANTITIES AND LIST OF DRAWINGS

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV. 1978	NONE	2971	3 of 18



NOTES:
- Battered piles are shown thus ⊢ batter in direction of arrow 3 in 12.
- All piles are Steel Bearing Piles, HP12×53, and shall be provided with pile tips. For details see sheet "Abutment A Bar Schedule and Pile Tips."
- All reinforcing steel shall be protected as per Section 602.4
- Maximum Design Pile Load is 45 Tons per Pile.
- Provide an electrical ground wire - See Special Provisions.

LEGEND
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	118	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

WEST VIRGINIA DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
ABUTMENT A

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV, 1978	AS SHOWN	2971	4 of 18

DESIGNED BY — CHECKED BY DWS
DETAILED BY RTM CHECKED BY
TRACED BY RTM CHECKED BY

Public Roads Proj.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	BRZ-SP2-000	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	119	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

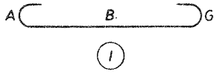
BEL-872-0.00

ABUTMENT BAR SCHEDULE

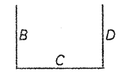
MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H		K	O	REMARKS
A501	92	5	7'-1"	①	7"	6'-6"			0"					
A502	1	5	5'-2"	Str.										
A603	21	6	28'-9"	Str.										
A604	1	6	4'-0"	(19g)		2'-0"	2'-0"			1'-7 5/8"		1'-1 3/4"	3'-1 3/4"	
A505	6	5	7'-3"	Str.										
A506	6	5	7'-10"	①	7"	7'-3"			0"					
A507	8	5	5'-6"	Str.										
A608	5	6	5'-6"	Str.										
A609	3	6	12'-0"	Str.										
A510	7	5	12'-6"	Str.										
A611	7	6	12'-6"	Str.										
A512	13	5	6'-6"	Str.										
A513	78	5	4'-4"	Str.										
A514	74	5	4'-11"	①	7"	4'-4"			0"					
A515	78	5	7'-0"	(17)		3'-6"	3'-6"	0"						
A516	74	5	6'-0"	Str.										
A517	16	5	7'-3"	Str.										
A518	13	5	8'-3"	Str.										
A619	18	6	9'-2"	①	6"	8'-6"			0"					
A520	83	5	3'-6"	Str.										
A521	4	5	8'-6"	Str.										
A522	4	5	7'-9"	Str.										
A523	10	5	12'-0"	Str.										
A524	6	5	31'-9"	Str.										
A525	3	5	16'-6"	Str.										
A526	3	5	13'-6"	Str.										
A527	6	5	14'-6"	Str.										
A528	8	5	48'-0"	Str.										
A529	20	5	16'-0"	Str.										
A530	9	5	8'-0"	Str.										
A631	1	6	4'-0"	(9g)		2'-0"	2'-0"			1'-1 3/4"		1'-7 5/8"	3'-7 5/8"	
A532	5	5	4'-9"	(17)		10"	3'-11"	0"						

All bar dimensions are out to out.

BAR BEND TYPES

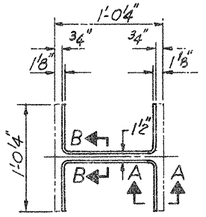


(1)



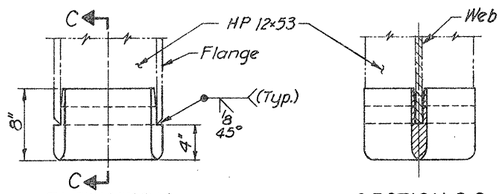
(17)

(19a)

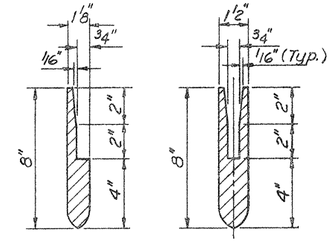


PLAN

NOTE:
Pile Tip Material (*) –
Cast Steel, ASTM A 27, Grade 65-35



ELEVATION SECTION C-C

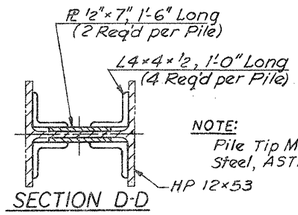


SECTION A-A

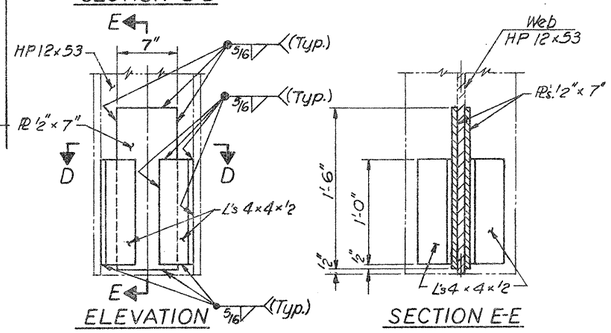
SECTION B-B

SCALE
0 6" 1'

PREFABRICATED PILE TIP



SECTION D-D



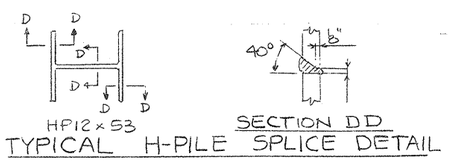
ELEVATION SECTION E-E

ALTERNATE WELDED STRUCTURAL PILE TIP

SCALE
0 6" 1' 2'

(*) Cost of Pile Tips shall be included in the price paid for "Steel Bearing Piles, Driven", Item 616-4.

PILE TIPS



TYPICAL H-PILE SPLICE DETAIL

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY A.T.B. CHECKED BY DWS DATE 9-18-78
DETAILED BY M.G. CHECKED BY DWS DATE 9-18-78
TRACED BY M.G. CHECKED BY DWS DATE 9-18-78

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

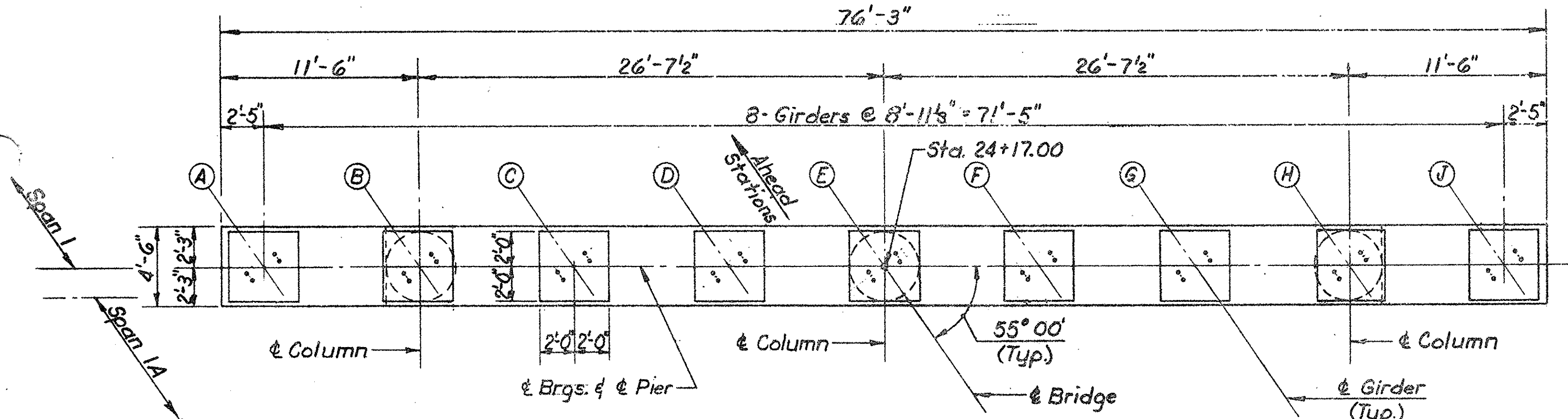
OHIO RIVER BRIDGE AT MOUNDSVILLE
ABUTMENT A BAR SCHEDULE
AND PILE TIPS

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	5 of 18

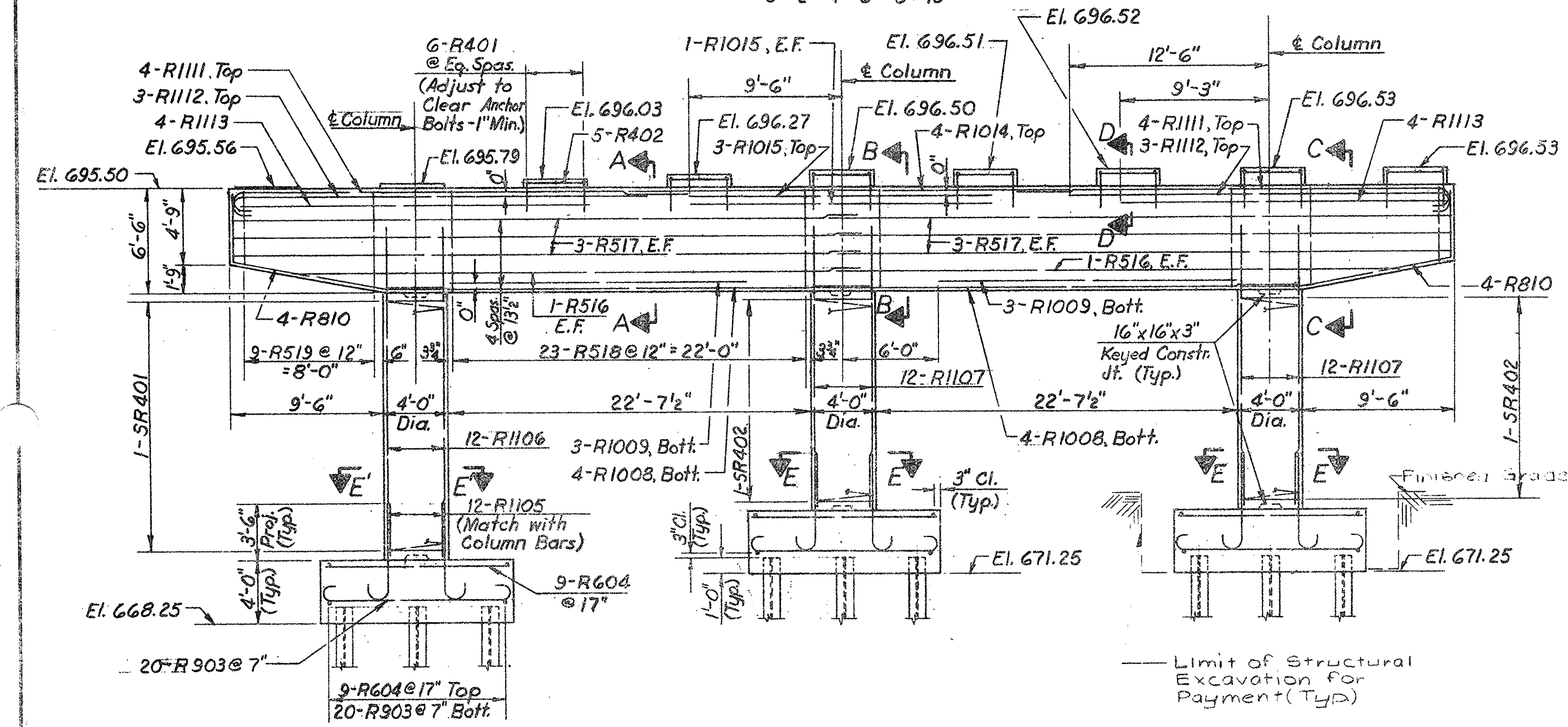
C-4

Pa./St. Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326 SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	120	255



PLAN

0 2' 4' 6' 8' 10'

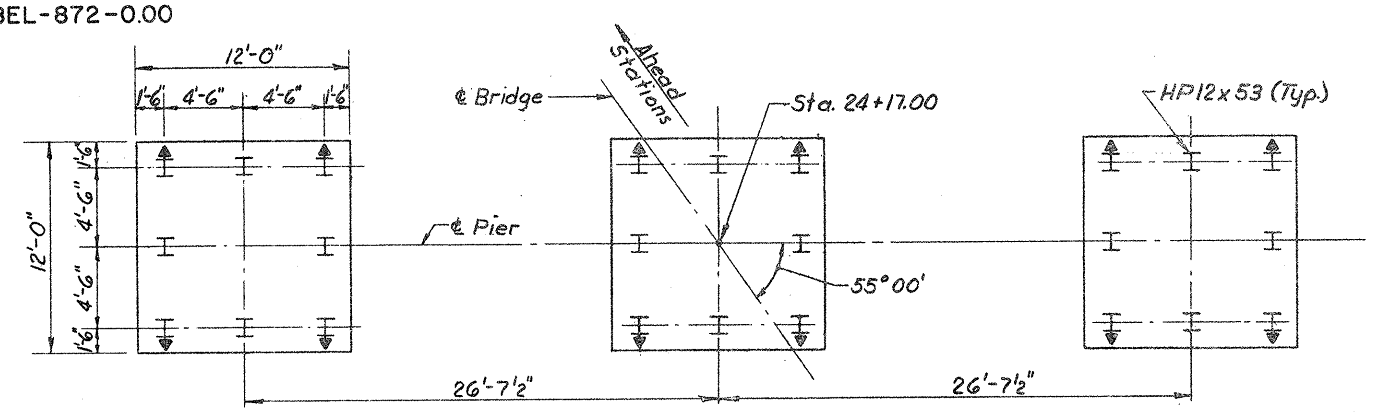


ELEVATION

0 2' 4' 6' 8' 10'

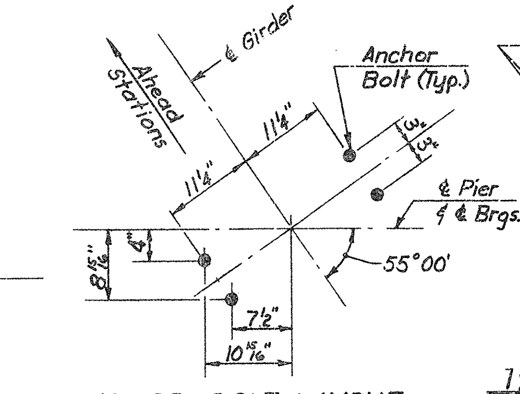
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

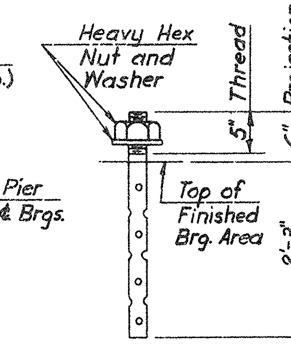


FOOTING PLAN

0 2' 4' 6' 8' 10'

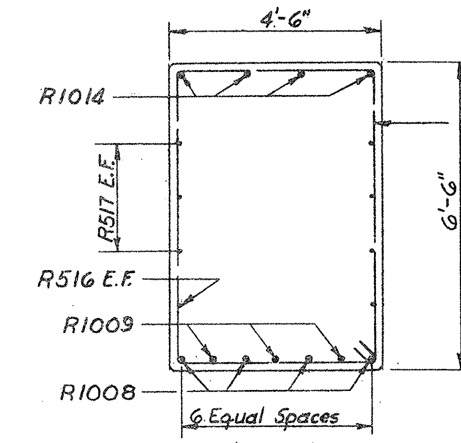


ANCHOR BOLT LAYOUT



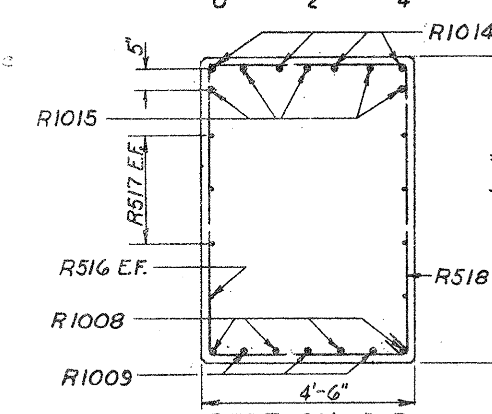
1½"ϕ SWEDGED ANCHOR BOLT DETAIL

NO SCALE



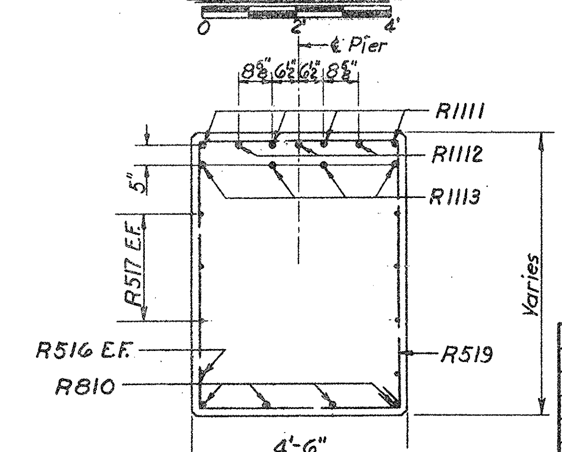
SECTION A A

0 2' 4'



SECTION B-B

0 2' 4'



SECTION C-C

0 2' 4'

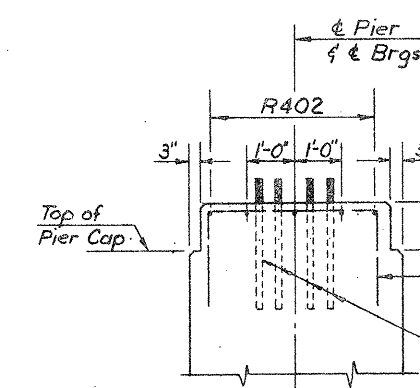
BAR SCHEDULE

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H	REMARKS
R401	42	4	7'-8"	(17)		2'-0"	3'-8"	2'-0"			For Girders C, D,
R402	35	4	3'-8"	Str.							E, F, G, H, J.
R903	120	9	14'-0"	(1)	1'-3"	11'-6"			1'-3"		
R604	54	6	11'-6"	Str.							
R1105	36	11	7'-10"	(1)	1'-7"	6'-3"			0"		
R1106	12	11	21'-3"	Str.							
R1107	24	11	18'-3"	Str.							
R1008	8	10	29'-10"	Str.							
R1009	6	10	18'-3"	Str.							
R810	8	8	17'-9"	(14a)	4'-3"	9'-5"	4'-1"			1'-9"	O = 13'-4"
R1111	8	11	28'-11"	(1)	1'-7"	27'-4"			0"		
R1112	6	11	25'-5"	(1)	1'-7"	23'-10"			0"		
R1113	8	11	20'-3"	Str.							
R1014	4	10	28'-3"	Str.							
R1015	5	10	19'-0"	Str.							
R516	4	5	36'-3"	Str.							
R517	12	5	38'-9"	Str.							
R518	46	5	21'-7"	(T1)	5'-2"	4'-2"	6'-2"				
R519	18	5	18'-5" to 21'-5	(T1)	5'-2"	4'-2"	4'-7" to 6'-1"				2 Each Vary C by 2¼"

For Bar Bend Types, See Sheet "Pier 3."

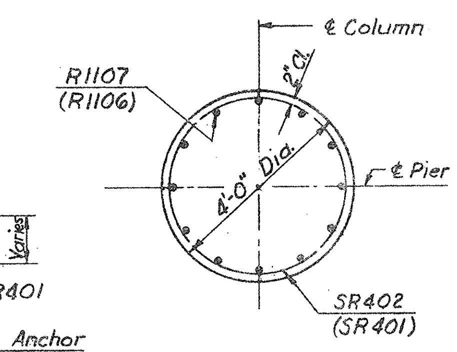
SPIRAL BARS

MARK	NO.	SIZE	LENGTH	PITCH	CORE ϕ	TURNS	REMARKS
SR401	1	4	16'-11½"	2¾"	44"	77	
SR402	2	4	13'-11¾"	2¾"	44"	64	



SECTION D-D

0 2' 4'



SECTION E-E

SECTION E'-E'

0 2' 4'

Section E'-E' is similar to Section E-E except as noted thus ( ).

NOTES:

- For Spiral Notes and Legend, see Sheet "Pier 1."
- Maximum Design Pile Load Equal 63 Tons.
- All Piles shall be provided with Pile Tips. For Details see Sheet No. 119

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY J.J.B. CHECKED BY DWS DATE 7-1-77
DETAILED BY J.J.B. CHECKED BY DWS DATE
TRACED BY T.M.K. CHECKED BY DWS DATE

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

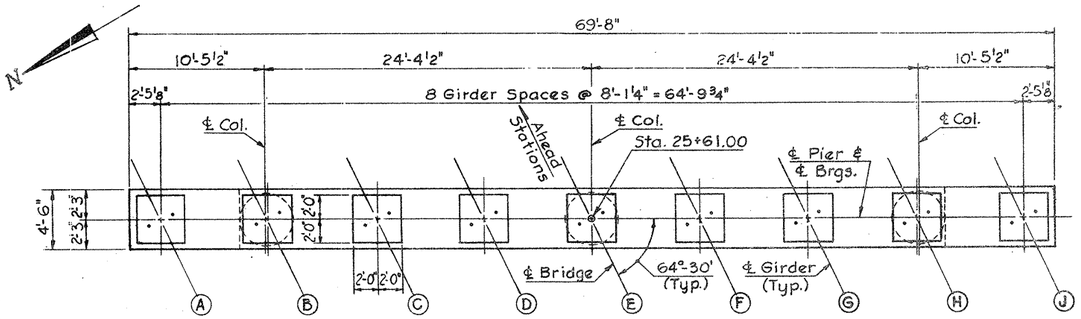
OHIO RIVER BRIDGE AT MOUNDSVILLE
PIER 1A

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

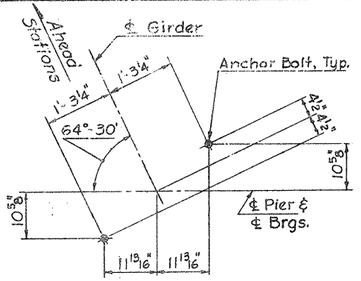
DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	6 of 18

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	5	X326-SP2-0.00	M-525I-(002)	197	Marshall, W.Va. Belmont, Ohio	121	255

C-4

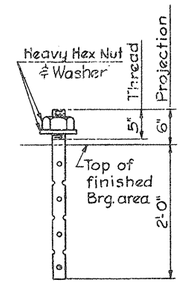


PLAN



ANCHOR BOLT LAYOUT

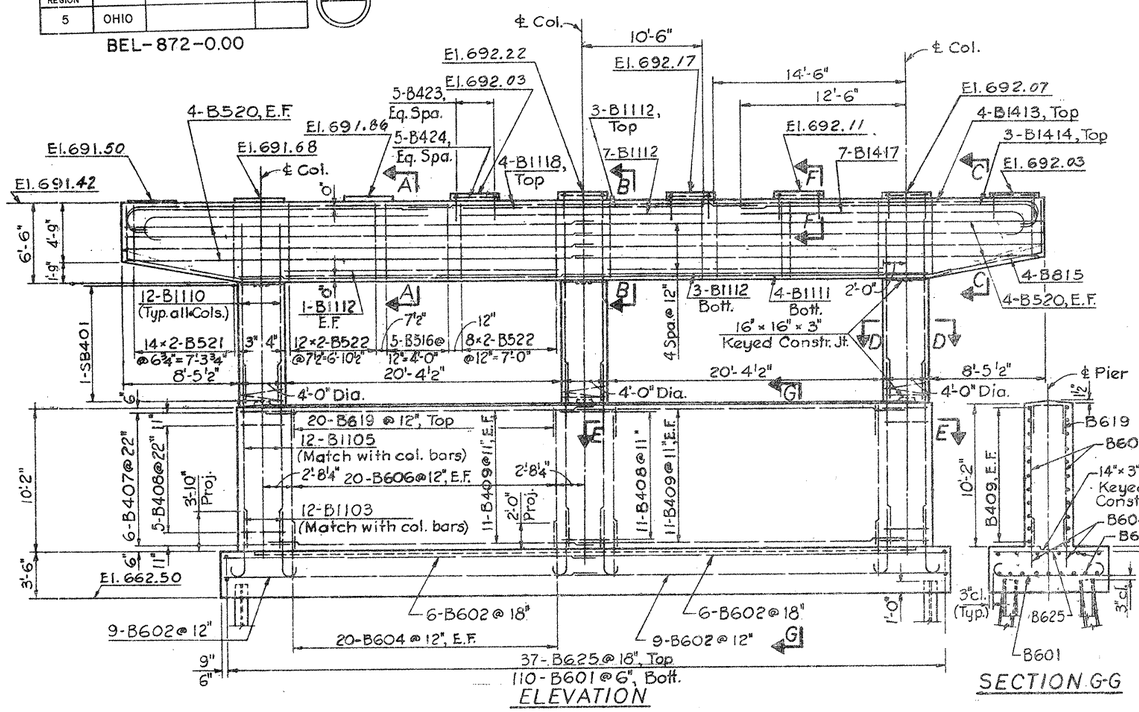
NO SCALE



1 1/2"ϕ SWEDGED ANCHOR BOLT DETAIL

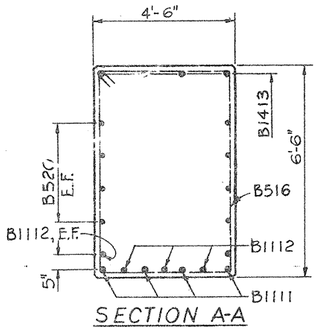
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

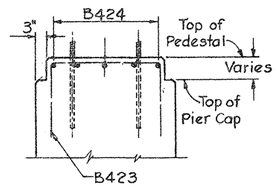


ELEVATION

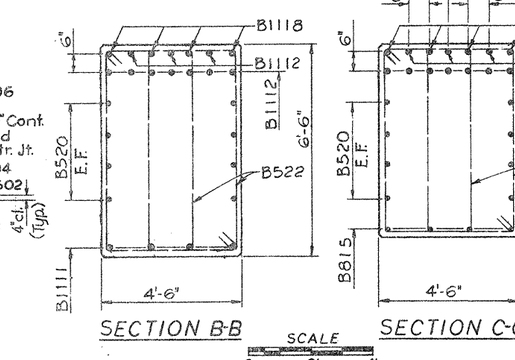
SECTION G-G



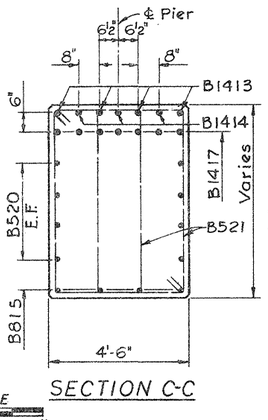
SECTION A-A



SECTION F-F

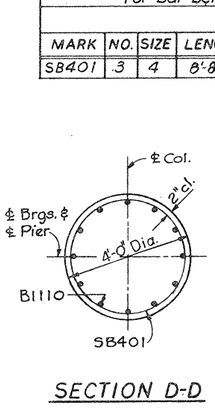


SECTION B-B



SECTION C-C

SCALE
0 2' 4'



SECTION D-D

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H	REMARKS
B601	110	6	9'-10"	(1)	8"	8'-6"			8"		
B602	30	6	28'-6"	Str.							
B1103	36	11	7'-8"	(1)	1'-7"	6'-1"			0"		
B604	80	6	4'-3"	Str.							
B1105	36	11	13'-9"	Str.							
B606	80	6	10'-0"	Str.							
B407	12	4	9'-9"	(10)	2'-0"	5'-9"					O=3'-8" R=1'-10"
B408	21	4	12'-5"	(13)							O=3'-8" Lap=10" min.
B409	44	4	24'-3"	Str.							
B1110	36	11	12'-5"	Str.							
B1111	8	11	27'-9"	Str.							
B1112	20	11	21'-0"	Str.							
B1413	8	14	26'-11"	(1)	2'-2"	24'-9"			0"		
B1414	6	14	24'-11"	(1)	2'-2"	22'-9"			0"		
B815	8	8	16'-7"	(14)a	4'-0"	8'-4"	4'-3"			1'-8"	O=12'-3"
B516	10	5	21'-7"	(11)	5'2"	4'-2"	6'-2"				
B1417	14	14	23'-5"	(1)	2'-2"	21'-3"			0"		
B1118	4	11	26'-9"	Str.							
B619	40	6	7'-6"	(17)		2'-0"	3'-6"	2'-0"			
B520	16	5	35'-6"	Str.							
B521	56	5	15'-5" to 18'-8"	(11)	5'2"	2'-9"	4'-6" to 6'-1 1/2"				4ea., vary C by 1'2"
B522	80	5	18'-9"	(11)	5'2"	2'-9"	6'-2"				
B423	30	4	7'-8"	(17)		2'-0"	3'-8"	2'-0"			For Girders D Thru J
B424	30	4	3'-8"	Str.							For Girders D Thru J
B625	37	6	8'-6"	Str.							

For Bar Bend Types, see Sheet No 123

SPIRAL BARS

MARK	NO.	SIZE	LENGTH	PITCH	CORE ϕ	TURNS	REMARKS
SB401	3	4	8'-8 1/2"	2 3/4"	44	41	

SPIRAL NOTES:

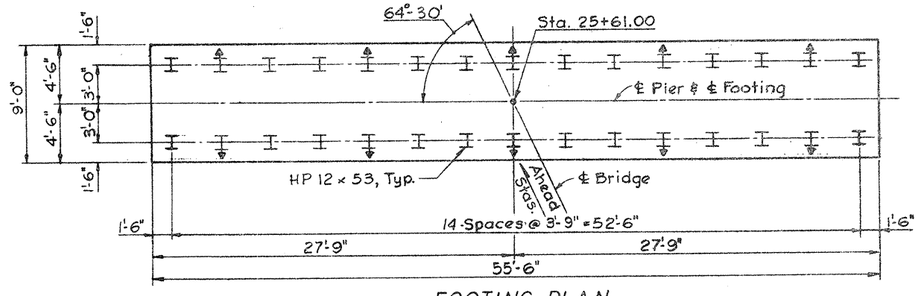
The length shown for spiral bars is from the bottom of column to level of bottom reinforcement in pier cap.

The number of turns shown for spiral bars is the length divided by the pitch plus 1 1/2 closed coils at the top and 1 1/2 closed coils at the bottom. Splices, if used, shall be a lap of 1 1/2 turns. No allowance was made for splices in estimated spiral weights.

Spiral reinforcing bars shall not have deformations, but shall in other respects conform to specifications for reinforcing bars.

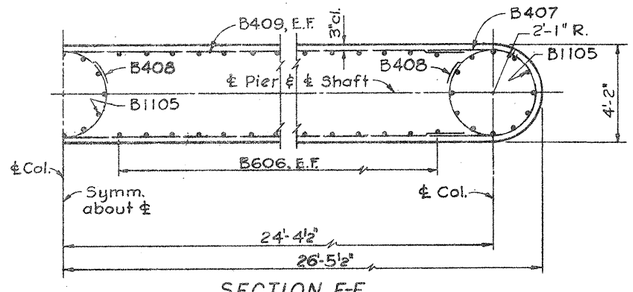
NOTES:

- All piles shall be provided with pile tips. For details see Sheet No. 119
- Maximum Design Pile Load equals 67 tons.
- There shall be no separate payment for shoring required around the pier. The cost shall be included in the Unit Bid Price for the various Pier Bid Items.



FOOTING PLAN

SCALE
0 2' 4' 6'



SECTION E-E

SCALE
0 2' 4' 6'

LEGEND:

- E.F. indicates each face.
- ⊢→ indicates 3:12 battered pile and arrow indicates direction of batter.
- ⊢ indicates vertical pile.

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ARC CHECKED BY DWS DATE 5-18-79
DETAILED BY JCE CHECKED BY DWS DATE 5-18-79
TRACED BY JCE CHECKED BY DWS DATE 5-18-79

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

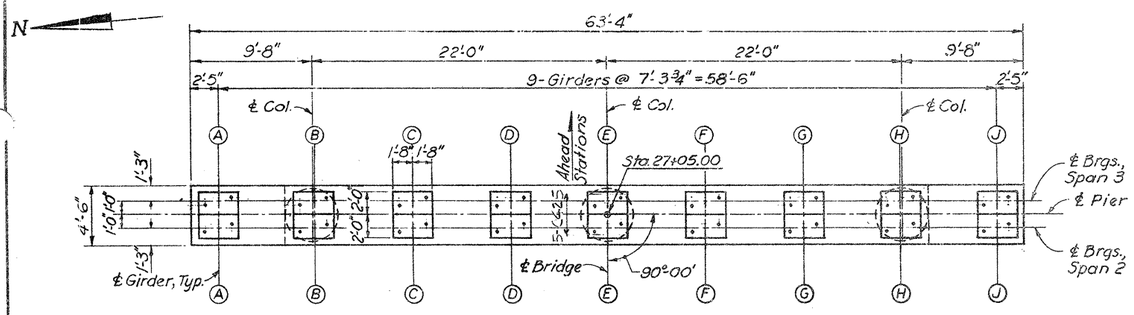
OHIO RIVER BRIDGE AT MOUNDSVILLE
PIER 1.

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

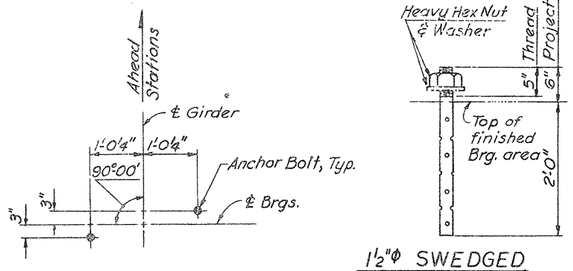
DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	7 of 18

Public Roads Div.	State Dist. No.	Steva Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X336-SF2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	122	255

C-4

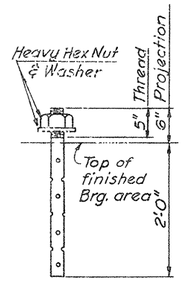


PLAN

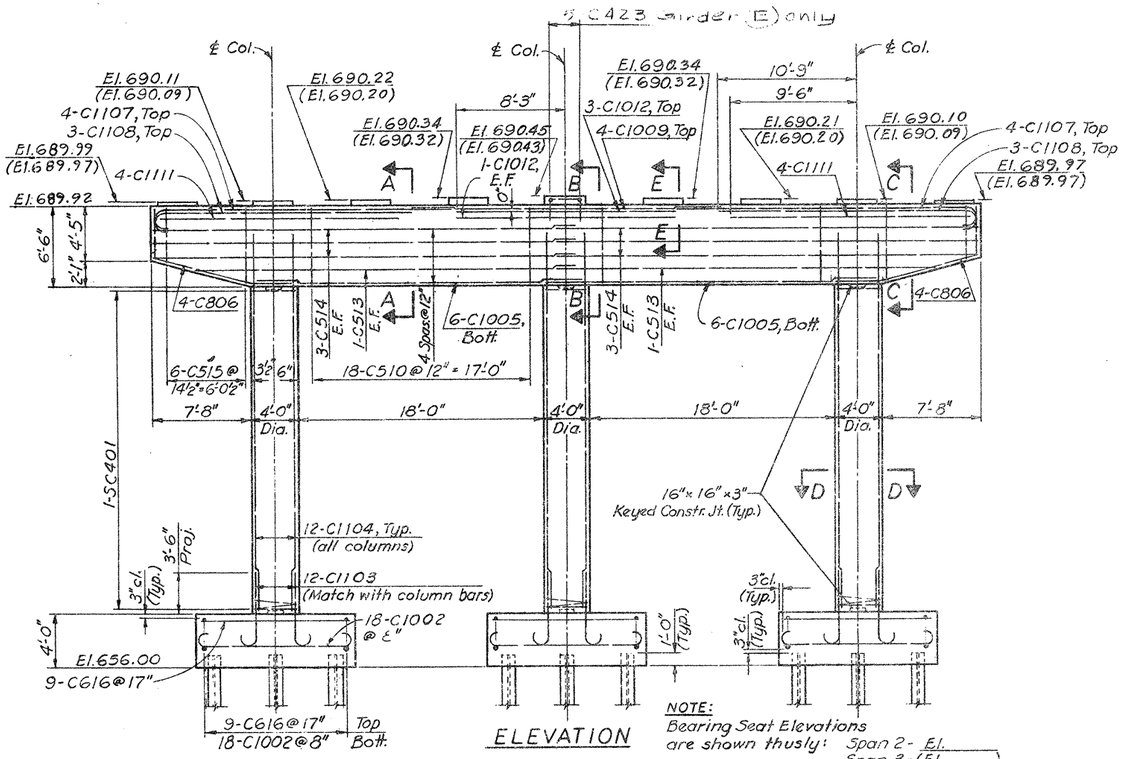


ANCHOR BOLT LAYOUT

NO SCALE

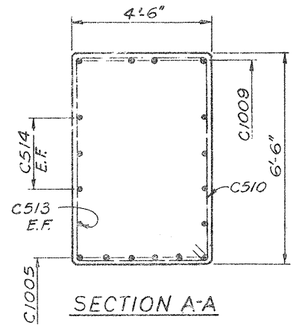


1½"Φ SWEDGED ANCHOR BOLT DETAIL

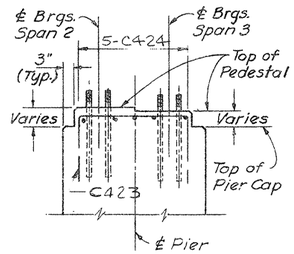


ELEVATION

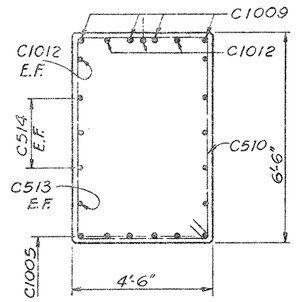
NOTE:
Bearing Seat Elevations are shown thusly: Span 2 - El.
Span 3 - (El.)



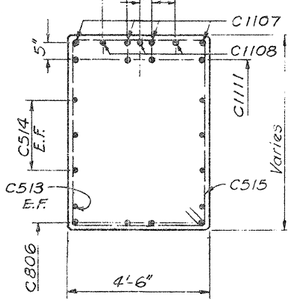
SECTION A-A



SECTION E-E

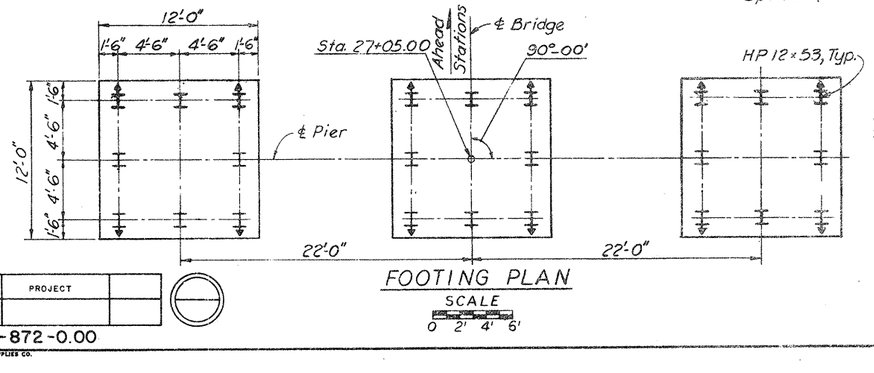


SECTION B-B



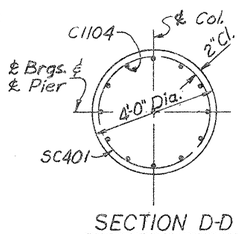
SECTION C-C

SCALE
0 1' 2' 3' 4'



FOOTING PLAN

SCALE
0 2' 4' 6'



SECTION D-D

NOTES:
- Maximum Design Pile Load equal 63 Tons.
- For pile tip Details See sht. 119

- For Spiral Notes and Legend see Sheet 119
- Provide an electrical ground Wire - See Special Provisions

BAR SCHEDULE

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H	REMARKS
C423	5	4	1'-5	17		2'-2	3'-0				For Girder E
C1002	108	10	14'-4"	(1)	1'-5"	11'-6"			1'-5"		
C1103	36	11	7'-10"	(1)	1'-7"	6'-3"			0"		
C1104	36	11	27'-4"	Str.							
C1005	12	10	25'-6"	Str.							
C806	8	8	15'-8"	(4)a	4'-0"	7'-8"	4'-0"			2'-1"	O=11'-5"
C1107	8	11	24'-9"	(1)	1'-7"	23'-2"			0"		
C1108	6	11	22'-0"	(1)	1'-7"	20'-5"			0"		
C1009	4	10	24'-6"	Str.							
C510	36	5	21'-7"	(11)	5½"	4'-2"	6'-2"				
C1111	8	11	18'-9"	Str.							
C1012	5	10	16'-6"	Str.							
C513	4	5	31'-3"	Str.							
C514	12	5	32'-6"	Str.							
C515	12	5	18'-1" to 21'-5"	(11)	5½"	4'-2"	4'-5" to 6'-1"				2 ea., vary C by 4"
C616	54	6	11'-6"	Str.							
C125	5	7	3'-0	Str.							For Girder E

For Bar Bend Types, see Sheet No 123

SPIRAL BARS

MARK	NO.	SIZE	LENGTH	PITCH	CORE Φ	TURNS	REMARKS
SC401	3	4	23'-7¼"	2¾"	44"	106	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY M.B. CHECKED BY DWS DATE 4-18-75
DETAILED BY ICE CHECKED BY DWS DATE 4-18-75
TRACED BY ICE CHECKED BY DWS DATE 4-18-75

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

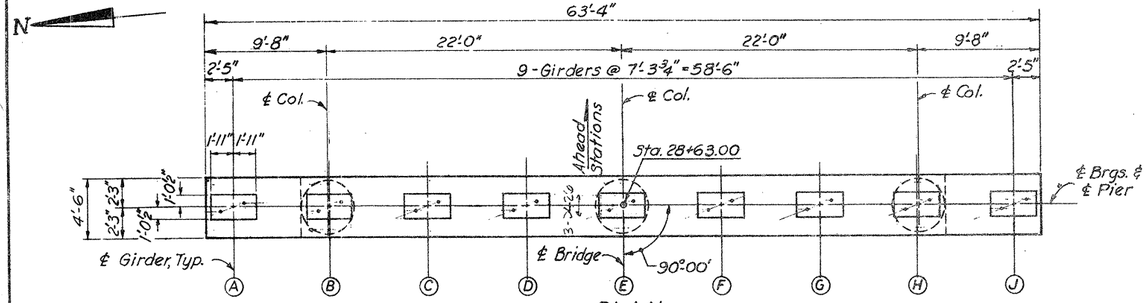
OHIO RIVER BRIDGE AT MOUNDSVILLE
PIER 2

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

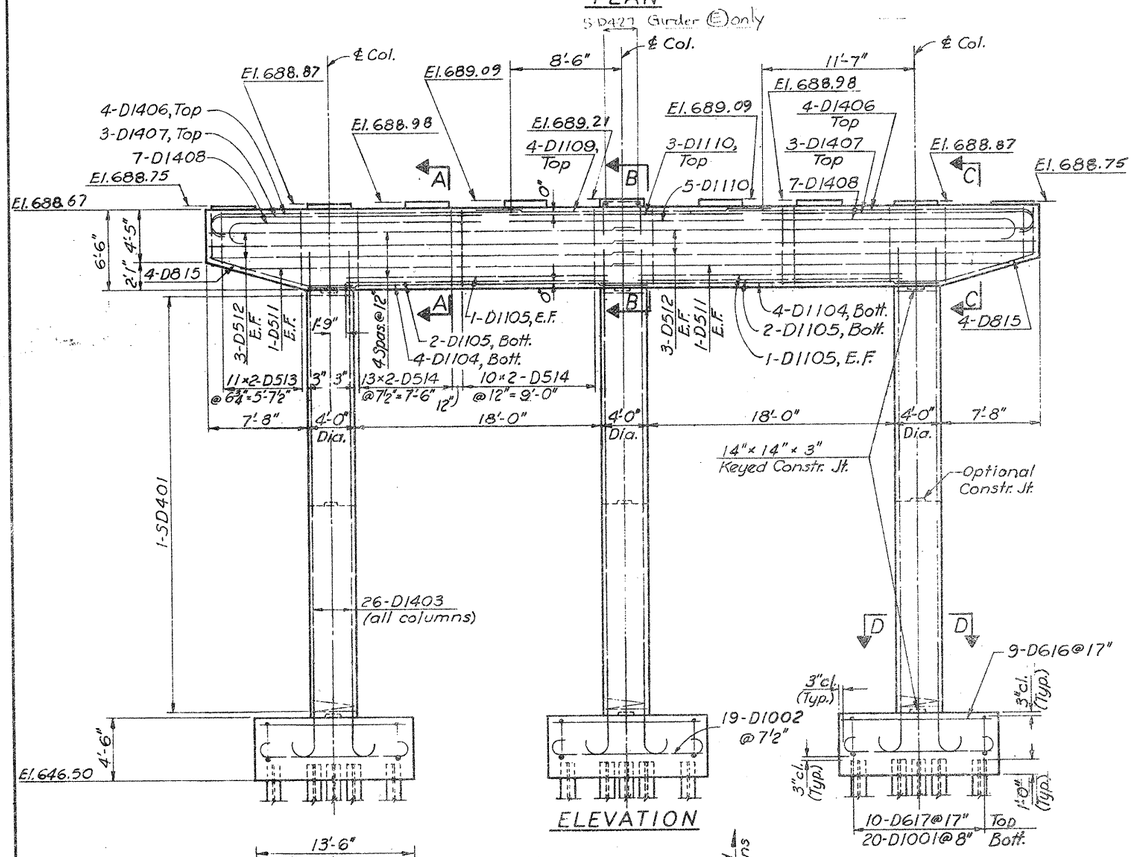
DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	8 of 18

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	123	255

C-4



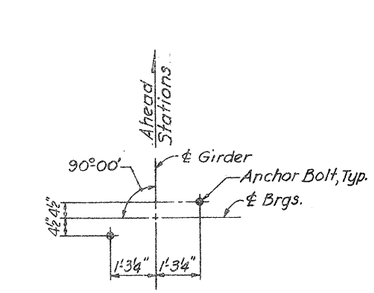
PLAN



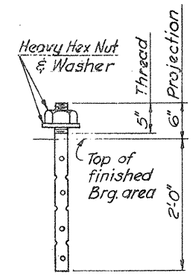
ELEVATION

FOOTING PLAN

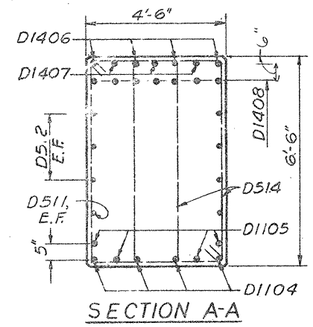
SCALE
0 2' 4' 6'



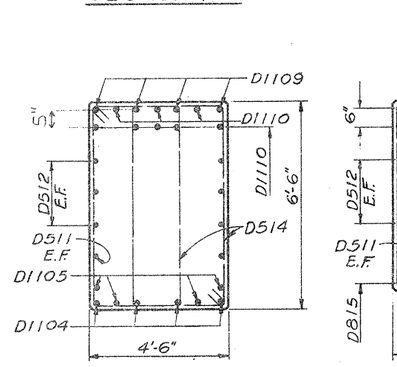
ANCHOR BOLT LAYOUT
NO SCALE



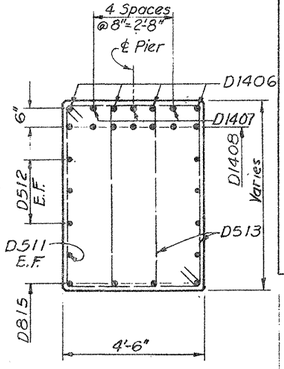
1½"ϕ SWEDGED ANCHOR BOLT DETAIL



SECTION A-A

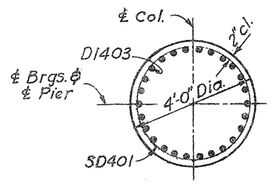


SECTION B-B



SECTION C-C

SCALE
0 2' 4'



SECTION D-D

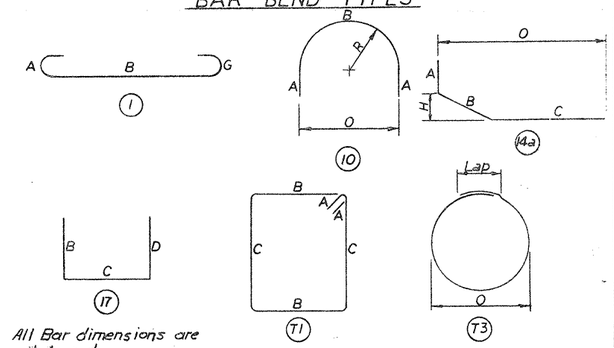
BAR SCHEDULE

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H	REMARKS
D1001	60	10	14'-4"	(1)	1'-5"	11'-6"			1'-5"		
D1002	57	10	15'-10"	(1)	1'-5"	13'-0"			1'-5"		
D1403	78	14	40'-11"	(1)	2'-2"	38'-9"			0"		
D1104	8	11	25'-6"	Str.							
D1105	8	11	18'-6"	Str.							
D1406	8	14	25'-0"	(1)	2'-2"	22'-10"			0"		
D1407	6	14	23'-3"	(1)	2'-2"	21'-1"			0"		
D1408	14	14	21'-9"	(1)	2'-2"	19'-7"			0"		
D1109	4	11	25'-0"	Str.							
D1110	8	11	17'-0"	Str.							
D511	4	5	31'-6"	Str.							
D512	12	5	32'-6"	Str.							
D513	44	5	15'-9" to 18'-10"	(T1)	5'2"	2'-10½"	4'-6" to 6'-1"				4 ea., vary C by 1⅜"
D514	92	5	19'-0"	(T1)	5'2"	2'-10½"	6'-2"				
D815	8	8	15'-8"	(14)a	4'-0"	7'-8"	4'-0"			2'-1"	0=11'-6"
D616	27	6	13'-0"	Str.							
D617	30	6	11'-6"	Str.							
D426	3	4	7'-6"	(17)		2'-0"	3'-6"	2'-0"			Girder E
D427	5	4	1'-9"	tr							Girder E

SPIRAL BARS

MARK	NO.	SIZE	LENGTH	PITCH	CORE ϕ	TURNS	REMARKS
SD401	3	4	31'-4¾"	2¾"	44	140	

BAR BEND TYPES



All Bar dimensions are out to out.

NOTES:
- For Spiral Notes and Legend see Sheet No 121
- All piles shall be provided with pile tips. For details see Sheet No 122.
- Maximum Design Pile Load equals 66 tons.

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY JAA CHECKED BY DWS DATE 4-18-75
DETAILED BY JCE CHECKED BY DWS DATE 4-18-75
TRACED BY JCE CHECKED BY DWS DATE 4-18-75

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
PIER 3

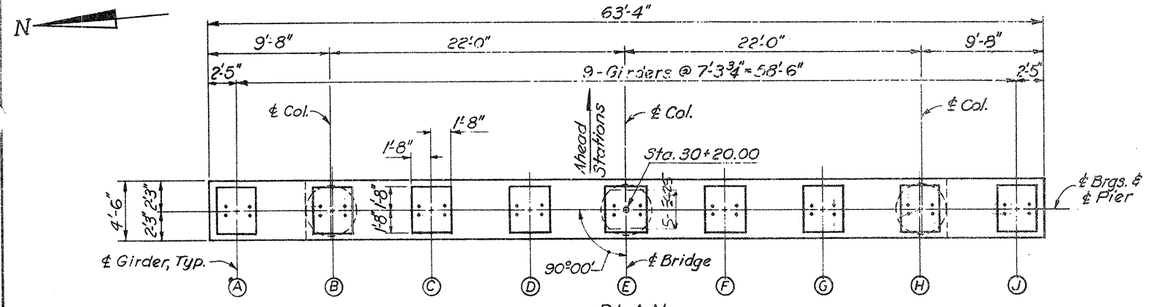
MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	9 of 18

A. A. Co.
22 Nov 78

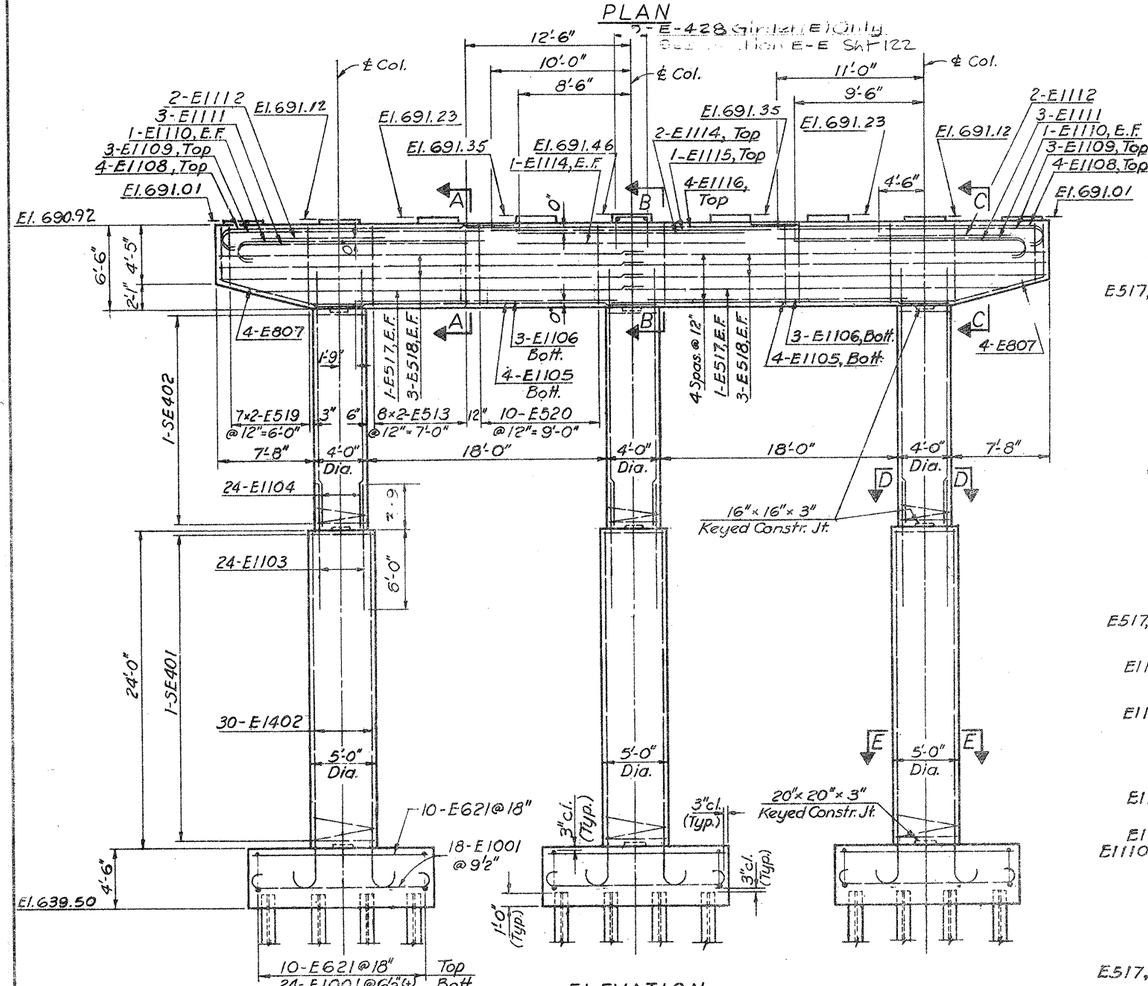
Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	5	0226-SP5-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	124	255

C-4



PLAN

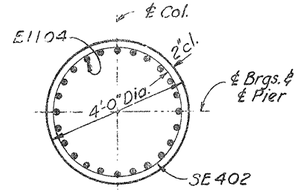
2-E-428 Girder Only. See Section E-E Sht 122



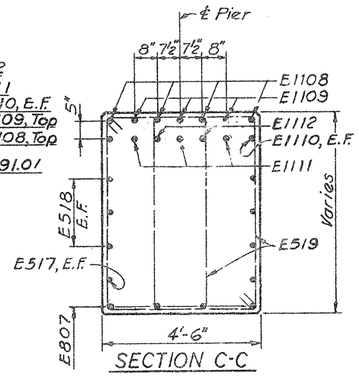
ELEVATION

SCALE

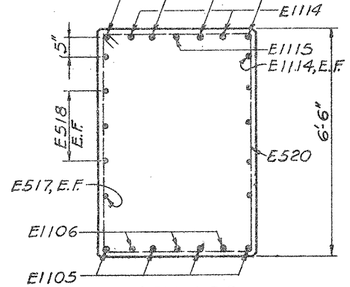
0 2' 4' 6'



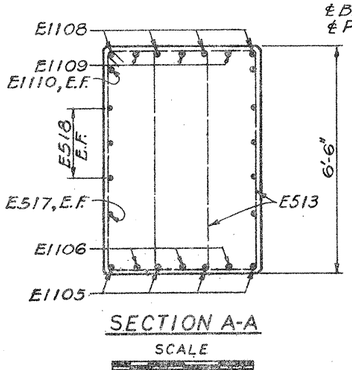
SECTION D-D



SECTION C-C



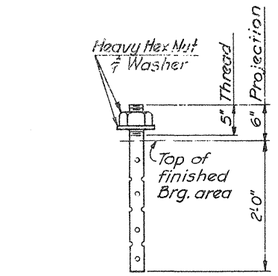
SECTION B-B



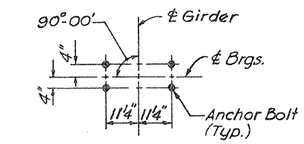
SECTION A-A

SCALE

0 2' 4'

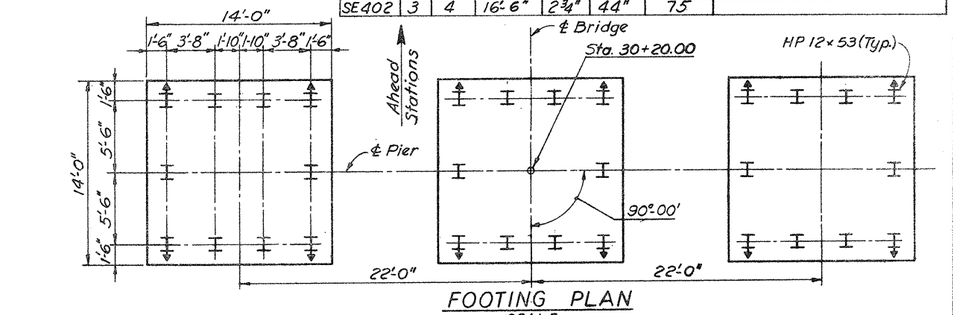


1½"ϕ SWEDGED ANCHOR BOLT DETAIL



ANCHOR BOLT LAYOUT

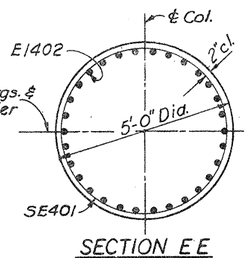
NO SCALE



FOOTING PLAN

SCALE

0 2' 4' 6'



SECTION E E

BAR SCHEDULE

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	G	H	REMARKS
E423	5	1	7'-0"	(17)		2'-0	3'-0	2'-0			For Girder E
E1001	126	10	16'-4"	(1)	1'-5"	13'-6"			1'-5"		
E1402	90	14	29'-2"	(1)	2'-2"	27'-0"			0"		
E1103	72	11	9'-9"	Str.							
E1104	72	11	20'-0"	Str.							
E1105	8	11	25'-6"	Str.							
E1106	6	11	18'-6"	Str.							
E807	8	8	15'-8"	(14)a	4'-0"	7'-8"	4'-0"			2'-1"	0=11'-5"
E1108	8	11	24'-0"	(1)	1'-7"	22'-5"			0"		
E1109	6	11	22'-0"	(1)	1'-7"	20'-5"			0"		
E1110	4	11	20'-6"	(1)	1'-7"	18'-11"			0"		
E1111	6	11	19'-0"	(1)	1'-7"	17'-5"			0"		
E1112	4	11	11'-0"	Str.							
E513	32	5	18'-11"	(11)	5'-2"	2'-10"	6'-2"				
E1114	4	11	17'-0"	Str.							
E1115	1	11	20'-0"	Str.							
E1116	4	11	25'-0"	Str.							
E517	4	5	29'-6"	Str.							
E518	12	5	32'-6"	Str.							
E519	28	5	15'-5" to 18'-9"	(11)	5'-2"	2'-10"	4'-5" to 6'-1"				4 ea., vary C by 3⅜"
E520	20	5	21'-7"	(11)	5'-2"	4'-2"	6'-2"				
E621	60	6	13'-6"	Str.							
E425	5	4	3'-0	Str.							For Girder E

For Bar Bend Types, see Sht No 123

SPIRAL BARS

MARK	NO.	SIZE	LENGTH	PITCH	CORE ϕ	TURNS	REMARKS
SE401	3	4	23'-7¼"	2¾"	56"	106	
SE402	3	4	16'-6"	2¾"	44"	75	

NOTES:

- For Legend, see Sheet No 121
- All piles shall be provided with pile tips. For details see Sheet NO. 113
- Maximum Design Pile Load equals 65 tons.
- Provide an eletrical ground wire - See Special Provisions.

SPIRAL NOTES:

The length shown for SE401 spiral bar is from the top of footing to the construction joint level, less 2¾" at each end.

The length shown for SE402 spiral bar is from the construction joint level to the level of bottom reinforcement in pier cap.

Refer to Sheet No 121 for completion of Spiral Notes.

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY RPB CHECKED BY DWS DATE 4-18-75
DETAILED BY JCE CHECKED BY DWS DATE 4-18-75
TRACED BY JCE CHECKED BY DWS DATE 4-18-75

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
PIER 4

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	10 of 18

A1-1
Sta. 24+00.0
25' Rt. ℄
G.E. 671.2'

A	B	C		ELEVATION	DEPTH
22	1.5	3-5-7	SILT, Brown, Moist, Loose.	669.2	2.0
17			SILT, and Fine SAND, Light Brown, Moist, Loose.	666.7	4.5
33	6.5	1-2-3	SAND Fine and SILT, with Trace of Fine Gravel, Brown, Moist, Loose.	663.2	8.0
22	11.5	4-2-2	SAND, Fine, some Fine Gravel, little Silt, Brown, Moist, Loose to Very Loose.		
19					
16	16.5	4-2-1		653.2	18.0
24			GRAVEL Fine to Medium, and SAND Fine to Coarse, Brown, Wet, Loose.		
96	21.5	6-6-6		648.2	23.0
280			SAND Fine to Coarse, and GRAVEL Fine to Coarse, Brown, Moist, Medium Dense.		
150	26.5	26-30-30		641.2	30.0
136	31.5	20-20-22	(a)	639.4	31.8
				638.3	32.9
80			LIMESTONE BOULDER, Hard, Gray, (Boring Advanced with Roller Bit).		
113	36.5	10-20-20			
90	41.5	20-30-26			
90			GRAVEL Fine to Coarse, and SAND Medium to Coarse, Trace of Clay, Brown, Moist, Dense to Very Dense.		
58	46.5	15-22-32			
54					
2 W.L. ℄ 1 W.L. 96	51.5	30-20-15		616.2	55.0
70	56.5	10-13-17	SILT, Trace of Clay, Trace of Fine Gravel, Brown, Moist, Very Stiff.		
97					
18 %0.3'	61.3	15-17-4%0.3'	Top of Rock @ 61.3'	609.9	61.3
			(b)	608.9	62.3
			LIMESTONE * (c)	607.4	63.8
			LIMESTONE, Medium Crystalline Some Joints, Gray, Medium Hard, Slightly to Moderately Weathered.	607.0	64.2
	68.2	90 %		603.6	67.6
			LIMESTONE, Argillaceous, Jointed, Gray to Dark Gray, Medium Hard, Slightly Weathered.		
			SHALE, Calcareous, Gray, Soft, Weathered.	596.5	74.7
				595.9	75.3
	78.2	100 %	LIMESTONE, Argillaceous, Jointed, Gray, Medium Hard, Slightly Weathered.		
			SILTSTONE, Calcareous, Gray, Soft to Medium Hard, Weathered.	583.3	87.9
	88.2	68 %		582.9	88.3
			SEWICKLEY COAL SEAM, COAL, Shiny, Some Carbonaceous Shale Partings, Broken, Black, Weathered, Soft.	579.5	91.7
			SEWICKLEY COAL SEAM, COAL **	575.9	95.3
			(d)	575.2	96.0

A1-1 (Continued)

A	B	C		ELEVATION	DEPTH
				575.2	96.0
	98.2	100 %	CLAYSTONE, Gray, Soft, Weathered.	573.0	98.2
				571.4	99.8
			SHALE, Silty, Broken, Gray, Weathered, Soft.		
			LIMESTONE, Shaly, Gray, Slightly Weathered, Medium Hard.	565.1	106.1
				563.7	107.5
	108.2	90 %	SHALE, Silty, Broken, Dark Gray to Gray, Weathered, Medium Hard to Soft.		
	113.2	96 %		557.5	113.7
				556.8	114.4
			LIMESTONE, Medium Crystalline, Few Thin Joints, Gray, Fresh, Hard.		
			LIMESTONE, Shaly, Jointed, Broken, Dark Gray, Weathered, Medium Hard.		
	123.2	98 %			
			LIMESTONE, Fine Crystalline, Few Joints, Gray, Fresh, Very Hard.	544.2	127.0
			SILTSTONE, Sandy, Micaceous, Jointed, Gray, Slightly Weathered, Medium Hard.		
	133.2	98 %	SHALE, Silty, Jointed, Broken, Gray, Weathered, Soft to Medium Hard.	535.3	135.9
				534.2	137.0
			LIMESTONE, Fine Crystalline, With Few Thin Clayseams, Gray, Slightly Weathered, Hard.	529.4	141.8
	143.2	100 %		527.4	143.8
			REDSTONE COAL SEAM, COAL, Few Thin Carbonaceous Shale Partings, Black, Fresh, Soft. Base @ Elev. 527.4.		
			LIMESTONE, Fine Crystalline, Few Joints, Gray, Fresh, Very Hard.		
	153.2	100 %		515.9	155.3
			LIMESTONE ***	514.5	156.7
			CLAYSTONE, With Seams of Limestone, Gray, Weathered, Soft.	509.7	161.5
	163.2	85 %	SHALE, Carbonaceous, Black, Weathered, Medium Hard.	507.5	163.7
			(f) (e)	507.1	164.1
			PITTSBURGH COAL SEAM, COAL, Shiny, With some Carbonaceous Shale Partings, Very Badly Broken, Black, Slightly Weathered, Soft. Base of Coal Probably @ Elev. 498.9.	506.4	164.8
	172.3	100 %		498.9	172.3

End of Boring @ 172.3'

(a) GRAVEL Fine to Coarse, and SAND Medium to Coarse, with Trace of Clay, Brown, Moist, Dense.
(b) SHALE and LIMESTONE, INTERBEDDED, Very Broken, Gray, Very Soft, Highly Weathered.
* Medium Crystalline, Jointed, Gray, Medium Hard, Slightly Weathered.
(c) SHALE, Calcareous, Broken, Gray, Soft, Highly Weathered.
** Shiny, Some Carbonaceous Shale Partings, Black, Fresh, Soft. Base of Coal @ Elev. 575.9.
(d) SHALE, Silty, Gray, Medium Hard, Slightly Weathered.
*** Medium Crystalline, Jointed, Gray, Weathered, Medium Hard.
(e) COAL, Shaly, Black, Slightly Weathered, Soft.
(f) CLAYSTONE, Dark Gray, Weathered, Soft.

A1-2
Sta. 24+35.0
25' Lt. ℄
G.E. 671.2'

A	B	C		ELEVATION	DEPTH
49	1.5	3-2-9	(a)	671.1	0.1
41	3.0	7-10-9	(b)	669.2	2.0
40	4.5	7-9-5	(c) (d)	667.7	3.5
38	6.0	6-6-5	SAND, Fine, Some Silt, Light Brown, Moist, Loose.	667.2	4.0
26	7.5	4-3-3		663.7	7.5
30	9.0	3-3-4	SAND, Fine, Trace of Silt, Light Brown, Moist, Loose.	661.0	10.2
14	10.5	5-7-7			
6	12.0	5-4-4	GRAVEL Medium, Some Medium Sand, Brown, Moist, Loose.		
19	13.5	2-2-2			
45	15.0	3-3-2			
20	16.5	5-5-6		654.7	16.5
49	18.0	3-4-6	GRAVEL *	652.7	18.5
49	19.5	6-9-13	GRAVEL, Medium to Fine, Some Sand, Trace of Clay, Brown, Moist, Medium Dense.		
37	21.0	15-13-9			
35	22.5	7-6-14		648.2	23.0
37	24.0	16-16-16	GRAVEL, Fine to Medium, Some Sand, Little Clay, Brown, Moist to Wet, Medium Dense to Dense.		
30	25.5	14-20-21			
40	27.0	19-19-17		644.2	27.0
43	28.5	20-17-14	GRAVEL, Fine to Medium, Some Sand, Trace of Clay, Brown, Moist, Medium Dense to Dense.		
32	30.0	11-12-9			
46	31.5	26-24-19			
44	33.0	24-14-14			
28	34.5	25-20-14			
33	36.0	12-12-15			
35	37.5	31-28-18	GRAVEL Fine, and Coarse SAND, Trace of Clay, Brown, Wet, Medium Dense.		
25	39.0	12-13-15			
35	40.5	17-10-11		630.7	40.5
45	42.0	11-11-10			
43	43.5	13-13-11		627.7	43.5
25	45.0	13-15-12	GRAVEL, Medium to Fine, Some Clay, Brown, Moist, Medium Dense.		
43	46.5	4-7-6			
45	48.0	10-9-9			
47	49.5	6-4-7	(e)	622.0	49.2
73	51.0	6-6-6	GRAVEL, Fine, Some Sand, Little Clay, Brown, Wet, Medium Dense.	621.7	49.5
47 %0.5'	52.5	10-14-8			
	54.0	8-11-12		617.7	53.5
	55.5	11-13-14	SAND, Medium, Trace of Coarse Gravel, Brown, Wet, Medium Dense.		
	57.0	12-11-13			
	58.5	12-13-13		612.7	58.5
	60.0	5-3-6	SAND, Medium, Brown, Wet, Loose. Refusal @ 60.5'.	610.7	60.5
	60.5	100 %0.5'	LIMESTONE **		
	67.0	100 %		604.4	66.8
			SHALE ***	602.2	69.0
	75.5	79 %	LIMESTONE, Argillaceous, Some Thin Horizontal Joints, Gray, Slightly Weathered, Medium Hard.		
			VOID	593.7	77.5
			CLAY	593.2	78.0
				592.9	78.3
	85.5	92 %	LIMESTONE, Fine to Medium Crystalline, Jointed and Broken, Gray, Medium Hard, Moderately Weathered.	585.7	85.5
			LIMESTONE ****	583.6	87.6
			(f)	582.7	88.5
			SEWICKLEY COAL SEAM †	579.5	91.7
	92.0	100 %	(g)	579.2	92.0
			(h)	578.1	93.1
			(i)	577.4	93.8
			SHALE ††	576.1	94.5
				574.4	96.8

A1-2 (Continued)

A	B	C		ELEVATION	DEPTH
				574.4	96.8
			SHALE †††	572.2	99.0
	100.5	98 %	CLAY, Stiff, Gray.	571.6	99.6
			LIMESTONE, Very Fine Crystalline, Gray, Medium Hard, Slightly Weathered.	566.0	105.2
			CLAYSEAM, Stiff, Gray.	564.7	106.5
				564.2	107.0
			LIMESTONE, Shaly, Carbonaceous, Dark Gray to Black, Medium Hard, Slightly Weathered.		
	110.5	100 %			
			LIMESTONE, Very Fine Grained, Gray, Medium Hard, Slightly Weathered.		
	120.5	100 %	SHALE, Silty, Calcareous, Jointed, Gray, Soft, Weathered.	548.2	123.0
				547.7	123.5
			(k)	546.8	124.4
			LIMESTONE, Fine Crystalline, Gray, Hard, Slightly Weathered to Fresh.	544.8	126.4
			SHALE ††††	542.3	128.9
	129.2	100 %	SHALE, Silty, Jointed, Broken, Gray, Medium Hard, Slightly Weathered to Fresh.		
	135.5	98 %		535.4	135.8
			LIMESTONE, Carbonaceous, Dark Gray, Hard, Slightly Weathered to Fresh.	532.1	139.1
			SHALE *	530.4	140.8
				528.0	143.2
	145.5	97 %	REDSTONE COAL SEAM, COAL, Shaly, Broken, Black, Soft, Weathered. Base @ Elev. 528.0'.		
			LIMESTONE, Very Fine Crystalline, Few Joints, Gray, Fresh, Hard.		
	155.5	100 %	SHALE, Calcareous, Gray, Soft, Weathered.	515.5	155.7
				515.2	156.0
	158.0	100 %	(l) (m)	513.7	157.5
				513.2	158.0
			LIMESTONE, Gray, Hard, Fresh.	511.6	159.6
			SHALE, Silty, Broken and Jointed, Gray, Soft, Weathered.	509.0	162.2
	165.5	83 %	COAL, Shaly, Broken, Black, Soft, Slightly Weathered. (n)	505.3	165.9
				504.8	166.4
			PITTSBURGH COAL SEAM, COAL, Shiny, Well Developed Cleavage, Few Shale Partings, Black, Soft, Slightly Weathered. Base of Coal @ Elev. 497.6'.	497.8	173.4
	175.5	100 %	LIMESTONE **	495.7	175.5

End of Boring @ 175.5'

(a) TOPSOIL, Silty, Dark Brown, Moist, Loose.
(b) SILT and Fine SAND, Dark Brown, Moist, Medium Dense.
(c) SILT and Fine SAND, Little Clay, Light Brown, Moist, Stiff.
(d) SILT and Fine SAND, Light Brown, Moist, Medium Dense.
* Medium to Fine, Some Sand, Trace of Clay, Brown, Wet, Loose.
(e) CLAY, With Some Fine Gravel, Light Brown, Wet, Stiff.
** Medium Crystalline, Jointed, Broken, Vertical Joint with Limonite Staining @ 61.8' to 62.8', Gray, Moderately Weathered, Medium Hard to Hard, Soft Shale Seams @ 60.7'-61.0', 62.8-63.2.
*** Calcareous, Fissile, Dark Gray, Slightly Weathered to Fresh, Medium Hard.
**** Fine Crystalline, Jointed, Dark Gray, Medium Hard, Moderately Weathered.
(f) CLAYSTONE, With Slickensides and Clayseams, Dark Gray, Soft, Weathered.
† COAL, Shiny, Moderately Developed Cleavage, With Very Thin Carbonaceous Shale Partings, Black, Soft, Slightly Weathered to Fresh. Base @ Elev. 579.5'.
(g) CLAYSTONE and CLAY, Dark Gray, Very Soft, Weathered.
(h) LIMESTONE, With Some Shale Partings With Slickensides, Dark Gray, Medium Hard, Weathered.
(i) COAL, Shiny, Badly Broken, Black, Soft, Slightly Weathered.
(j) COAL, Shaly, Broken, Black, Soft, Weathered.
†† A Few Well Developed Slickensides @ 40°, Gray, Soft, Weathered.
††† Fissile, Micaceous, Gray to Dark Gray, Medium Hard, Slightly Weathered.
(k) LIMESTONE, Broken, Gray, Medium Hard, Weathered.
†††† Calcareous, Broken and Jointed, Few Thin Clay Seams, Gray, Medium Hard to Soft, Weathered.
* Broken, Jointed, Gray, Soft to Medium Hard, Weathered.
(l) SHALE Calcareous and LIMESTONE Broken and Jointed, Gray, Soft, Weathered.
(m) CLAYSEAM, Stiff, Gray.
(n) LIMESTONE, Fine to Medium Crystalline, Gray, Medium Hard, Weathered.
** Fine Grained, Few Joints, Gray, Hard, Slightly Weathered to Fresh.

NOTE:
For General Notes and Location Plan See Dwg. "Test Borings - Pier 3(2)."

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	125	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 1A

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. — BEAVER, PA.

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY R.D.H. DATE 7-1-74
TRACED BY T.M.K. CHECKED BY R.D.H. DATE 7-1-74

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	11 of 18

A.A.L. 12/6/78

P1-1
Sta. 25+49.0
25' Rt. ℄
G.E. 667.1'

	A	B	C		ELEVATION	DEPTH
	21	1.5	2-3-7	SILT with little Sand, Fine, Brown-Black, Moist, Soft.		
	18				662.1	5.0
	19	6.5	5-5-6	SILT and SAND, Fine, Brown, Moist, Medium Stiff.		
	24					
	26				656.1	11.0
	31	11.5	4-6-8			
	20			SAND, Fine to Coarse and GRAVEL, Fine to Coarse with Trace of Silt, Brown, Very Moist, Loose.		
	18	16.5	4-4-6			
	23				648.6	18.5
1W.L.	18			SAND, Medium to Coarse, and GRAVEL, Fine to Medium, Brown, Wet, Loose.		
	19	21.5	5-4-5		645.1	22.0
	23			SAND, Fine to Coarse, Brown, Wet, Loose.		
	17	26.5	10-6-3			
	26				639.1	28.0
	31			GRAVEL, Fine to Coarse, and SAND, Coarse with little Silt, Brown, Wet, Medium Dense.		
	27	31.5	28-18-7			
	27				632.1	35.0
	32			SAND, Fine to Coarse with little Gravel, Fine, Brown, Wet, Medium Dense.		
	38	36.5	18-15-15			
	43					
	54	41.5	18-14-16			
	55				622.1	45.0
	200	46.5	19-17-19			
	118			SAND, Fine to Coarse and GRAVEL, Fine, with little Silt, Brown, Wet, Medium Dense.		
	110					
2 W.L.	52	51.5	21-20-18			
	165					
	198				612.1	55.0
	118	56.5	15-12-2	(a) (b)	609.9	57.2
200/12		57.5	100/.3		609.6	57.5
		59.4	89%	LIMESTONE, Shaly, Fine to Medium Crystalline, Gray, Slightly Weathered to Weathered, Hard. Soft and Very Shaly @ 62.6' to 63.5', Jointed.		
		69.0	88%		598.1	69.0

End of Boring @ 69.0'

(a) SAND, Fine to Coarse and GRAVEL, Fine to Medium with some Silt, Brown, Wet, Medium Dense.

(b) SILT with some Clay and Trace of Sand, Fine, Gray-Brown, Wet, Very Dense. Hit Rock @ 57.5'.

P1-2
Sta. 25+61.0
℄
G.E. 667.1'

	A	B	C		ELEVATION	DEPTH
	13	1.5	2-6-6	(a) (b)	667.0	0.1
				(c) (d)	666.9	0.2
	27				666.3	0.8
	30	6.5	4-6-7	SILT, Some Sand, Fine to Medium, Brown, Moist, Medium Dense.	665.8	1.3
	34					
	45			(e)	657.1	10.0
	55	11.5	10-5-6		656.6	10.3
				SAND *	655.1	12.0
	32					
	25	16.5	7-2-6	GRAVEL, Fine, Little Sand, Trace of Clay, Brown, Moist, Loose.		
	29					
	25				647.1	20.0
	25	21.5	4-3-4	GRAVEL, Medium to Fine, Little Sand, Trace of Clay, Trace of Coal Fragments, Brown, Moist, Loose.		
	26					
	22	26.5	4-3-4		642.1	25.0
	15			SAND, Coarse, and GRAVEL, Fine, Trace of Clay, Brown, Moist, Loose.		
	33				638.1	29.0
	27	31.5	6-6-8			
	36					
	22	36.5	8-3-4			
	15					
	8	41.5	4-4-4			
	29					
2 W.L.	24			GRAVEL, Fine to Medium, and SAND, Trace of Clay, Brown, Moist,		
1 W.L.	25	46.5	8-6-13			
	33					
	19					
	58	51.5	6-5-14			
	127					
					611.8	55.3
8"/6		55.5	11-70/6.5'	(f)	611.6	55.5
				LIMESTONE **	606.7	60.4
		62.8	96%	LIMESTONE ***	604.3	62.8
				LIMESTONE ****	603.2	63.9
		72.8	89%	LIMESTONE, Argillaceous, Some Thin Horizontal Joints, Gray, Slightly Weathered, Medium Hard.	594.5	72.6
				LIMESTONE, Fine Crystalline, Jointed Horizontally (6" to 8"), Gray, Moderately Weathered, Medium Hard. (g)	587.6	79.3
					587.2	79.9
		82.8	100%	CLAY, Very Stiff, Gray (h) (i)	584.3	82.8
					583.7	83.4
					583.6	83.5
				SEWICKLEY COAL SEAM *	578.8	88.3
				SHALE, Poorly Fissile, Gray, Weathered, Soft.	575.8	91.3
		92.8	100%	SILTSTONE **	574.3	92.8

P1-2 (Continued)

A	B	C		ELEVATION	DEPTH
	92.8	100%		574.3	92.8
			LIMESTONE, Shaly, Gray, Slightly Weathered, Medium Hard.		
			SHALE, Carbonaceous, Dark Gray, Weathered, Soft.	565.3	101.8
	102.8	100%		564.3	102.8
			LIMESTONE, Very Fine Crystalline, Gray, Fresh, Hard to Very Hard, Clay Seam @ 109.3' to 109.4'		
	112.8	100%			
			LIMESTONE, Shaly, Dark Gray, Slightly Weathered, Medium Hard.	549.3	117.8
	117.8	94%		548.4	118.7
			(j)	547.3	119.8
			LIMESTONE, Very Fine Crystalline, Gray, Fresh, Hard to Very Hard.	543.6	123.5
			(k) (l)	542.4	124.7
			(m)	542.3	124.8
			LIMESTONE ***	541.1	126.0
	127.8	100%		539.5	127.6
			SHALE, Sandy, Gray, Fresh, Medium Hard.	537.1	130.0
			SHALE **** (n)	535.1	132.0
			LIMESTONE, Fine Crystalline, Gray, Slightly Weathered to Fresh, Medium Hard to Hard.	534.5	132.6
	137.8	100%		529.6	137.5
			REDSTONE COAL SEAM x	527.5	139.6
			LIMESTONE, Very Fine Crystalline, Gray, Fresh, Hard.	520.1	147.0
	147.8	100%			
			LIMESTONE, Shaly, Fine Grained, Few Joints, Gray, Slightly Weathered to Fresh, Hard.	514.0	153.1
	155.5	100%	SHALE, Calcareous, Gray, Highly Weathered, Soft.	510.5	156.6
			(o)	510.0	157.1
			SHALE xx	507.9	159.2
			COAL, Shaly, Black, Weathered, Soft.	505.3	161.8
	162.8	100%	SHALE xxx	503.5	163.6
			PITTSBURGH COAL SEAM, COAL, Shiny, Well Developed Cleavage, Few Shale Partings, Black, Weathered, Soft.	497.2	169.9
	172.8	100%	LIMESTONE xxxx	494.3	172.8

End of Boring @ 172.8'

(a) SOD.
(b) TOPSOIL, Silty, Brown, Moist, Loose.
(c) SILT, Trace of Sand, Brown, Moist, Loose.
(d) SILT and CINDERS, Dark Brown, Moist, Medium Dense.
(e) COBBLE (Pushed to side of hole).
* Fine to Medium, Some Silt, Brown, Wet, Medium Dense.
(f) CLAY, (a highly weathered claystone), Gray, Damp, Stiff to Hard. Refusal @ 55.5'.

Public Roads Adm.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-525(002)	197	Marshall, W.Va. Belmont, Ohio	126	255

C-2

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

** Medium to Fine Crossline, Jointed and Broken, Gray, Medium Hard, Weathered. Soft Shale Seam 56.4' to 56.6', Clay Seam 58.4' to 58.5'.
*** Shaly, Broken, with a Few Thin Clay Seams (0.1'), Gray, Medium Hard, Moderately Weathered.
**** Fine Crystalline, Dark Gray, Slightly Weathered, Medium Hard.
(g) LIMESTONE, With a Few Very Small Solution Cavities, Gray, Highly Weathered, Medium Hard.
(h) SHALE, Carbonaceous, Fissile, Dark Gray, Highly Weathered, Soft.
(i) COAL, Shaly, Black, Highly Weathered, Soft.
* COAL, Shiny, Moderately Developed Cleavage, Broken, Some Very Fine Carbonaceous Shale Partings, Fine Calcite Fracture Fillings along Cleavage, Black, Fresh, Soft.
** Sandy, Some Thin Horizontal Joints, Grey, Slightly Weathered, Medium Hard.
(j) SHALE, Silty, Gray, Weathered, Soft.
(k) SILTSTONE, Clayey, Gray, Slightly Weathered, Medium Hard.
(l) CLAYSEAM, Stiff, Gray.
(m) SILTSTONE, Gray, Slightly Weathered, Medium Hard to Soft.
*** Very Fine Crystalline, Gray, Fresh, Hard.
**** Sandy, Jointed, Badly Broken, Gray, Weathered, Medium Hard.
(n) SHALE, Calcareous, Gray, Weathered, Medium Hard.
x COAL, Shiny, Shaly, Broken, Black, Weathered, Medium Hard to Soft.
(o) LIMESTONE, Fine Crystalline, Gray, Slightly Weathered, Medium Hard.
xx Silty, Calcareous, Gray, Weathered, Medium Hard.
xxx Silty, Broken, Gray, Weathered, Soft.
xxxx Fine Crystalline, Gray, Slightly Weathered to Fresh, Hard.

NOTE
For General Notes and Location Plan See Dwg. "Test Borings - Pier 3(2)".

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 1

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY B.D.H. DATE 7-29-24
TRACED BY T.M.K. CHECKED BY B.D.H. DATE 7-29-24

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	12 of 18

P2-2
Sta. 27+10.0
25' Lt. ℄
G.E. 662.9'

	A	B	C		ELEVATION	DEPTH
	25	1.5	2-5-7			
	57			SILT, With little Clay and Fine Sand, Brown, Moist, Soft to Medium Stiff.		
	50	6.5	4-5-5			
	54					
	46				652.9	10.0
	50	11.5	3-4-7	SILT and SAND, Fine, Brown, Moist, Medium Stiff.		
C	56					
	60	16.5	4-4-6			
	61				645.4	17.5
	60					
	64	21.5	19-24-23			
	90					
	63	26.5	27-24-25			
	63					
	61					
	59	31.5	15-10-13			
	57					
	42	36.5	8-10-14	SAND Fine to Coarse, and GRAVEL Fine to Coarse, Brown, Wet, Medium Dense.		
	47					
	100					
	48	41.5	23-34-19			
	121					
1W.L.	57	46.5	20-18-15			
	69					
	66					
	55	51.5	8-6-7			
	58					
	45	56.5	9-9-9		606.9	56.0
	75			SAND Fine to Coarse, and GRAVEL Fine, Brown, Wet, Loose.		
	251				602.9	60.0
210	216	61.5	38-46-60	(a)	601.4	61.5
		68.8	61%	LIMESTONE, Badly Broken and Jointed, Gray, Weathered, Hard, Clay Seams, Limy @ 62.9' to 63.0' and 64.5' to 64.6'.		
		78.8	88%	CLAYSTONE and STIFF CLAY, Broken, Gray, Weathered, Soft.	585.1	77.8
					583.0	79.9
				SEWICKLEY COAL SEAM*	578.6	84.3
				(b)	578.4	84.5
				CLAYSTONE **	577.1	85.8
				SANDSTONE ***	576.0	86.9
		88.8	93%	SHALE, Silty, Gray, Weathered, Medium Hard.	572.4	90.5

P2-2 (Continued)

A	B	C		ELEVATION	DEPTH
				572.4	90.5
			LIMESTONE, Fine Crystalline, Jointed, Gray, Slightly Weathered, Hard.		
	98.8	92%		564.0	98.9
				563.3	99.6
			SHALE, Carbonaceous, Gray to Dark Gray, Weathered, Medium Hard.		
	108.8	98%	LIMESTONE, Fine Crystalline, Soft @ 115.8' to 116.0', Gray, Slightly Weathered, Hard.		
	118.8	99%	SHALE, Silty, Broken and Jointed, Gray, Weathered, Medium Hard.	549.3	119.6
				541.7	121.2
			LIMESTONE, Fine Crystalline, Shaly, Gray, Slightly Weathered, Hard.		
				536.1	126.8
	128.8	95%	(c)	534.1	128.8
			LIMESTONE, Fine Crystalline, Few Joints, Gray, Slightly Weathered, Hard.	529.9	133.0
			(d)	529.0	133.9
			(e)	528.3	134.6
			REDSTONE COAL SEAM ****	526.2	136.7
	138.8	100%	LIMESTONE, Fine Crystalline, Few Joints, Gray, Slightly Weathered, Hard to Very Hard, Broken @ 148.3' to 148.4', Shaly @ 146.0' to 146.5'.		
	148.8	100%	CLAYSTONE and STIFF CLAY, Broken, Gray, Weathered, Soft.	512.3	150.6
				510.6	152.3
			(f)	509.4	153.5
			CLAYSTONE and STIFF CLAY, Broken, Shaly, Gray, Weathered, Soft.	506.2	156.7
			(g)	505.1	157.8
	158.8	100%	(h)	503.9	159.0
			(i)	502.9	160.0
			COAL, Main Seam of PITTSBURGH COAL SEAM, Shiny, Few Thin Carbonaceous Shale Partings, Black, Soft.	497.1	165.8
			LIMESTONE, Fine Crystalline Shaly, Jointed, Gray, Slightly Weathered, Hard.	494.1	168.8
	168.8	100%			

End of Boring @ 168.8'

(a) SILT and CLAY with some Sand, Coarse, Light Brown, Wet, Hard. Hit Rock @ 61.5'.

* COAL, Shiny, Few Thin Carbonaceous Shale Partings, Broken, Thin Pyrite Layers Throughout, Black, Weathered, Soft.

(b) SHALE, Carbonaceous, Gray, Weathered, Medium Hard.

** Broken, Gray, Weathered, Soft.

*** Medium Grained, Micaceous, Gray, Weathered, Medium Hard.

(c) CLAYSTONE and STIFF CLAY, Shaly, Broken and Jointed with little Limestone Fragments, Gray, Weathered, Medium Hard to Soft.

(d) CLAY, Stiff, Gray, Weathered, Soft.

(e) CLAYSTONE, Shaly, Broken, Gray, Weathered, Medium Hard.

**** COAL, Shiny, Some Thin Carbonaceous Shale Partings, Black, Soft.

(f) LIMESTONE, Fine to Medium Crystalline, Gray, Weathered, Hard.

(g) SHALE, Gray, Weathered, Medium Hard.

(h) COAL, Roof Coal of PITTSBURGH COAL SEAM, Black, Soft.

(i) SHALE, Carbonaceous, Dark Gray, Weathered, Medium Hard.

P2-3
Sta. 27+10.0
25' Rt. ℄
G.E. 661.5'

	A	B	C		ELEVATION	DEPTH
2W.L.	19	1.5	6-5-7			
	27			SILT and SAND, Fine, Brown, Moist, Loose.		
	38	6.5	6-7-8			
	26				654.5	7.0
	26			SAND, Fine with some Silt, Brown, Moist, Loose.		
	48	11.5	4-4-5			
	62					
	42	16.5	6-5-5	SAND, Fine to Coarse, and GRAVEL, Fine to Medium with little Silt, Brown, Very Moist, Medium Dense.		
	52				642.5	19.0
	90					
	93	21.5	30-28-22			
	43				638.5	23.0
	72					
	39	26.5	25-20-18	SAND, Fine to Medium with some Gravel, Fine, Brown, Very Moist, Loose.		
	54					
	43	31.5	7-7-7			
	70				629.0	32.5
	51			SAND, Fine to Coarse, and GRAVEL, Fine to Coarse, Brown, Wet, Medium Dense.		
	74	36.5	16-12-10			
	130				623.5	38.0
				(a)	621.2	40.3
	144	41.5	100/.3		619.7	41.8
	67			LIMESTONE BOULDER, Gray, Slightly Weathered, Hard.		
	46	46.5	11-16-21			
	61					
	66					
	47	51.5	4-7-9	SAND, Fine to Coarse, and GRAVEL, Fine to Coarse, Brown, Wet, Medium Dense.		
	51					
	54	56.5	5-8-13	Hit Rock @ 60.0'		
	77					
	245				601.5	60.0
				CLAYSTONE, Limey, Gray, Weathered, Medium Hard.		
		67.0	21%		594.5	67.0
1W.L.				LIMESTONE, Fine to Medium Crystalline, Broken and Jointed, Gray, Weathered, Hard.		
		77.0	99%		584.5	77.0

End of Boring @ 77'-0"

(a) SAND, Fine to Medium and GRAVEL, Fine to Medium with Trace of Silt, Brown, Wet, Very Dense.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	127	255

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F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTE:
1. Boring No. P2-1 not taken.
2. For General Notes and Location Plan See Dwg. "Test Borings - Pier 3(2)".

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY R.D.H. DATE 7-31-74
TRACED BY T.M.K. CHECKED BY R.D.H. DATE 7-31-74

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 2

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	13 of 18

P3-1
Sta. 28+55.0
℄
G.E. 655.0'

	A	B	C		ELEVATION	DEPTH
	6	1.5	1-3-4	TOPSOIL - SILT, With Little Fine Sand, Dark Brown, Moist, Soft.	652.0	3.0
	31					
	40	6.5	6-9-11	SILT, With Some Fine Sand and Little Clay, Brown, Moist, Medium Stiff.		
	32				646.0	9.0
	34					
	33	11.5	3-3-4	SAND, Fine, With Little Silt, Brown, Moist, Loose.		
	36					
	57				640.0	15.0
	303	16.5	5-7-7		638.5	16.5
	99			SAND Fine, and GRAVEL Fine to Medium, With Some Silt, Brown, Moist, Loose.		
	50	21.5	25-21-15			
	47					
	31	26.5	6-8-8			
	47					
	55					
	45	31.5	24-14-19	Cobble in Casing @ 25.0'		
I.W.L.	87					
	35	36.5	14-8-11			
	59					
	110			SAND Fine to Coarse, and GRAVEL Fine to Coarse, Brown, Very Moist, Medium Dense.		
	71	41.5	25-19-21			
	65					
	52			Hit Rock @ 70.3'		
	46.5	14-8-10				
	50					
	73					
	82	51.5	14-21-23			
	101					
	56					
	56.5	10-10-11				
	65					
	90					
	146	61.5	26-24-16			
	88					
	120					
	271	66.5	35-31-50	LIMESTONE, With Claystone, Limey, Brown, Weathered, Hard.	584.7	70.3
	356					
125		71.5	220/.3		581.7	73.3
				SEWICKLEY COAL SEAM, COAL (Lost Coal Drilling).		
		79.0	34 %		576.0	79.0
				COAL *	574.6	80.4
				CLAYSTONE **	573.0	82.0
				SHALE, Sandy, Clayey, Jointed, Gray, Weathered, Medium Hard.	569.6	85.4
		89.0	92 %	LIMESTONE, Shaly, Medium Crystalline, Jointed, Gray, Slightly Weathered, Hard.		
				(a)	561.4	93.6
					560.8	94.2

P3-1 (Continued)

A	B	C		ELEVATION	DEPTH
				560.8	94.2
	99.0	95 %	LIMESTONE, Few Joints, Fine Crystalline, Gray, Slightly Weathered, Very Hard, Broken and Jointed @ 100.6' to 101.7'.		
	109.0	100 %		546.0	109.0
			LIMESTONE, Medium Crystalline, Shaly, Many Joints, Gray, Weathered, Hard.		
				540.9	114.1
				539.4	115.6
			SHALE, Clayey, Clayseam @ 115.5' to 115.6', Gray, Weathered, Medium Hard.		
	119.0	92 %			
			SHALE, Sandy, Fine Grained, Limey, Jointed, Gray, Slightly Weathered, Hard.	531.1	123.9
			LIMESTONE ***	528.5	126.5
			SHALE ****	526.0	129.0
	129.0	99%		524.2	130.8
			REDSTONE COAL SEAM, COAL, Broken, Shiny, Few Thin Carbonaceous Shale Partings, Block, Soft.		
	139.0	97%			
			LIMESTONE, Fine Crystalline, Few Joints, Gray, Slightly Weathered to Fresh, Very Hard.	509.0	146.0
			SHALE †		
	149.0	93 %	(e)	506.0	149.0
				505.5	149.5
			SHALE, Silty, Jointed, Gray, Weathered, Medium Hard.	503.0	152.0
			(c)	502.1	152.9
			SHALE ††	500.6	154.4
			COAL, Main Seam of PITTSBURGH COAL SEAM, Shiny, Few Thin Carbonaceous Shale Partings, Black, Soft.		
	159.0	87.%		494.5	160.5
			SHALE †††	493.0	162.0
			LIMESTONE, Medium to Coarse Crystalline, Broken and Jointed Shaly, Gray, Weathered, Hard.	489.5	165.5
	166.5	98 %	(d)	488.5	166.5

End of Boring @ 166.5'

* Bottom of SEWICKLEY COAL SEAM, Black, Weathered, Soft.
** Jointed, Clayseam @ 80.5' to 80.6', Gray, Weathered, Medium Hard.
(a) CLAY, Stiff, Broken, Dark Gray, Weathered, Soft.
*** Fine Crystalline, Jointed, Shaly, Gray, Slightly Weathered, Hard.
**** Clayey, Limey, Broken and Jointed, Gray, Weathered, Medium Hard.
† Clayey, Limey, Broken, Clay Seam @ 148.9' to 149.0', Gray, Weathered, Medium Hard to Soft.
(b) LIMESTONE, Jointed and Broken, Medium Crystalline, Gray, Weathered, Hard.
(c) COAL, Roof Coal of PITTSBURGH COAL SEAM, Shiny, Black, Weathered, Soft.
†† Silty, Dark Gray, Weathered, Medium Hard.
††† Silty, Limey, Broken and Jointed, Gray, Weathered, Medium Hard.
(d) CLAYSTONE, Limey, Broken, Gray, Weathered, Soft.

P3-2
Sta. 28+67.0
25' Lt. ℄
G.E. 653.4'

	A	B	C		ELEVATION	DEPTH
	11	1.5	5-5-4	SILT, With little Sand, Fine, Brown, Moist, Soft.		
	14				648.4	5.0
	24	6.5	3-3-3	SILT and SAND, Fine, Brown, Moist, Loose.		
	29				644.4	9.0
	32					
	48	11.5	3-2-4			
	68			SILT and SAND, Fine with some Gravel Fine to Medium, Brown, Moist, Soft.		
	124	16.5	5-4-4			
	259					
I.W.L.	62				633.4	20.0
	99	21.5	11-13-15			
	113					
	50	26.5	8-14-13	SAND, Fine to Coarse and GRAVEL, Fine to Coarse with Trace of Silt, Brown, Very Moist, Medium Dense.		
	52					
	61					
	30	31.5	15-19-13			
	83					
	81				618.4	35.0
		36.5	15-12-16			
C	127					
	120					
	46	41.5	5-8-10			
	47					
	70	46.5	7-11-13			
	73					
	107					
	60	51.5	11-10-10	SAND, Fine to Coarse with little Gravel, Fine, Brown, Wet, Medium Dense		
	58					
	43	56.5	9-12-13			
	43					
	71					
	98	61.5	14-17-17			
	160					
	142					
	130	66.5	58-30-21		587.1	66.3
	500			(a)	584.4	69.0
				(b)	582.6	70.8
		71.8	82 %	(d) (c) (e)	581.6	71.8
					581.3	72.1
				SEWICKLEY COAL SEAM, COAL, Shiny, Some Thin Carbonaceous Shale Partings, Black, Soft.	581.1	72.3
					576.0	77.4
				CLAYSTONE, (Not Recovered), Very Soft.	573.9	79.5
		79.5	72 %	(g) (f) (h)	572.7	80.7
					572.0	81.4
		81.8	100 %		571.6	81.8

End of Boring @ 81.8'

(a) SAND, Fine to Medium and GRAVEL, Fine to Coarse with little Silt, Brown, Wet, Very Dense. Hit Rock @ 69.0'.
(b) LIMESTONE, Fine Crystalline Jointed, Micaceous, Gray, Weathered, Hard.
(c) CLAYSTONE, Broken, Limey, Gray, Very Weathered, Soft. Clay Seam @ 71.8' to 71.9'.
(d.) LIMESTONE, Gray, Weathered, Hard.
(e) SHALE, Carbonaceous, Dark Gray to Black, Slightly Weathered, Medium Hard.
(f) SHALE, Sandy, Gray, Weathered, Medium Hard.
(g) CLAYSTONE, Shaly, Gray, Weathered, Medium Hard.
(h) SHALE, Sandy, Gray, Weathered, Medium Hard.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	S	X026-SP2-0.00	M-525I-(002)	197	Marshall, W.Va. Belmont, Ohio	128	255

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F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTE:
For General Notes and Location Plan See Dwg. "Test Borings - Pier 3 (2)."

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY R.D.H. DATE 7-31-24
TRACED BY T.M.K. CHECKED BY R.D.H. DATE 7-31-24

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 3 (1)

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	14 of 18

P3-3
Sta. 28+670
25' Rt. ℄
G.E. 653.0'

	A	B	C		ELEVATION	DEPTH
	10	1.5	1-2-3	SILT, With some Sand, Fine, Brown, Moist, Soft.	651.0	2.0
	31			SILT, With some Sand, Fine, and Trace of Clay, Brown, Moist, Soft.		
	15	6.5	2-2-7		647.0	6.0
	41			SAND, Fine with some Silt and Trace of Gravel, Fine to Medium, Brown, Very Moist, Loose.		
	60				643.0	10.0
	34	11.5	7-8-10	SAND, Fine to Coarse and GRAVEL, Fine, Brown, Very Moist, Loose.		
	36					
	20	16.5	7-4-5		638.0	15.0
	39			SAND, Fine with little Silt, Brown, Very Moist, Loose.		
	30					
	16	21.5	8-4-3			
	29					
	30				628.0	25.0
		26.5	11-15-20			
	34			SAND, Fine to Coarse and GRAVEL, Fine to Medium with little Silt, Brown, Wet, Medium Dense.		
	34					
	30	31.5	7-7-6			
	36					
1 W.L.	29				618.0	35.0
		36.5	7-9-7			
	48			SAND, Fine to Coarse, Brown, Wet, Loose.		
	75				613.0	40.0
2 W.L.	35	41.5	17-17-13			
	36			SAND, Fine to Coarse, and GRAVEL, Fine to Medium, Brown, Wet, Medium Dense.		
	52					
	49	46.5	7-9-12		605.0	48.0
	72					
	45	51.5	13-15-17			
	79			SAND, Fine to Coarse, Brown, Wet, Medium Dense.		
	98					
	85	56.5	14-18-15			
	82				593.0	60.0
	47	61.5	8-8-7			
	55					
	90			SAND, Fine to Coarse and GRAVEL, Fine to Coarse, Brown, Wet, Medium Dense.		
	100	66.5	10-12-15			
	350			Hit Rock @ 70.0'	583.0	70.0
				Lost Core Due to Drilling		
		75.0	8%		578.5	74.5
				SEWICKLEY COAL SEAM *	573.5	79.5
					572.5	80.5
				(a) & (b)	572.1	80.9
				(c)	571.3	81.7
				(d)	569.4	83.6
		85.0	84 %	(e)	568.0	85.0

End of Boring @ 85.0'

* COAL, Shiny, Few Thin Carbonaceous Shale Partings, Approximately 1.0' of Coal Lost Due to Drilling, Black, Soft.

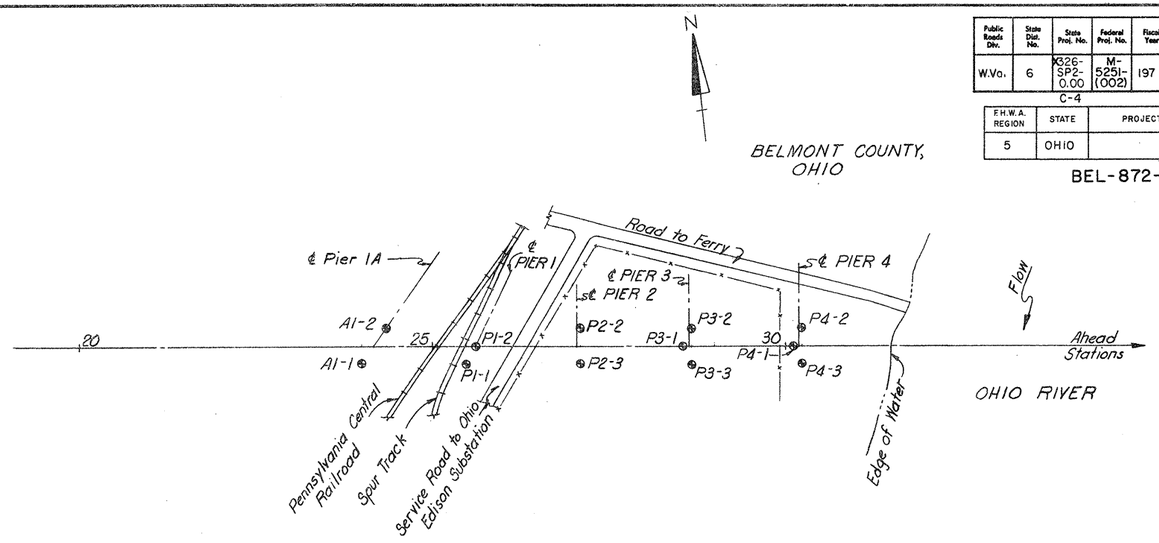
(a) CLAYSTONE, Shaly, Gray, Weathered, Soft.

(b) CLAYSTONE, Very Sandy, Micaceous, Gray, Weathered, Medium Hard.

(c) CLAYSTONE, Shaly, Gray, Weathered, Soft.

(d) SHALE, Very Sandy, Micaceous, Gray, Slightly Weathered, Medium Hard.

(e) LIMESTONE, Fine Crystalline, Gray, Slightly Weathered, Hard.



TEST BORING PLAN FOR PIER 1A AND PIERS 1 THRU 4

100 0 100

⊕ A1-1 - Indicates Location of Test Borings.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.Va.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	129	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

GENERAL NOTES

Column "A" — • Denotes Blows Per Foot on Casing.

Column "B" — • Denotes Depth of Lower Limit of Spoon Sample or Bottom of Core Run.

Column "C" — • Denotes Blows for Each 6 Inches on Spoon Sampler or Percent of Core Recovery.

- Size of Casing - 3⅛ Inches I.D., 4 Inches O.D. Flush Joint.
- Weight of Hammer on Casing - 300 Pounds.
- Size of Sampling Spoon - 1⅜ Inches I.D. Std Split Spoon.
- Weight of Hammer on Spoon - 140 Pounds.
- Drop of Hammer on Spoon - 30 Inches.
- Size of Core - 2⅛ Inches Diameter.
- Drop of Hammer on Casing - 24 Inches.
- G.E. - Indicates Ground Elevation.

1 W.L. - Indicates Ground Water Elevation at 0 hrs.
2 W.L. - Indicates Ground Water Elevation at 24 hrs.
C - Indicates Caved Elevation.

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY A.D.H. DATE 7-31-74
TRACED BY T.M.K. CHECKED BY A.D.H. DATE 7-31-74

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS-PIER 3 (2)

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	15 of 18

P4-1
Sta. 30+11.0
℄
G.E. 645.3'

	A	B	C		ELEVATION	DEPTH
	10	1.5	2-4-3	SILT, With Some Fine Sand, Brown, Moist, Soft.		
	13					
	15	6.5	3-5-5		639.3	6.0
2 W.L.	29			SILT, With Some Clay and little Fine Sand, Brown, Moist, Soft.		
	20					
	21	11.5	2-2-4		633.8	11.5
	25			SILT and SAND, Fine with little Clay, Brown, Very Moist, Soft.		
	15	16.5	2-4-4			
	28					
	30				625.3	20.0
	29	21.5	3-3-4	SILT and CLAY with little Sand, Fine, Brown, Wet, Soft.		
	28					
	23	26.5	0-3-3		620.3	25.0
	33			SILT and SAND, Fine with little Clay, Brown, Wet, Soft.		
1 W.L.	37					
	30	31.5	2-4-5			
	43					
	43	36.5	6-12-13		610.3	35.0
	52			SAND Fine to Coarse, and GRAVEL Fine to Medium, Brown, Wet, Medium Dense.		
	47					
	43	41.5	11-7-10			
	46					
	37	46.5	10-8-8			
	56					
	50					
	43	51.5	4-4-6			
	50					
	53	56.5	12-10-8			
	78					
	85					
	69	61.5	11-8-7			
	75					
	58	66.5	11-8-7			
	83					
	93					
	126	71.5	11-11-12		574.3	71.0
	140			SAND, Fine, Brown, Wet, Medium Dense.		
	250	76.0	40-80/5	(a) (b)	570.3	75.0
					569.3	76.0
					569.1	76.2
				SHALE, Sandy, Gray, Weathered, Medium Hard.	568.2	77.1
				LIMESTONE, Fine Crystalline, Jointed, Gray, Slightly Weathered, Hard.		
		86.0	72 %		559.3	86.0

End of Boring @ 86.0'

(a) SAND, Fine to Coarse with some Silt, Brown, Wet, Dense. Hit Rock @ 76.0'.
(b) CLAY, Stiff, Gray, Weathered, Soft.

P4-2
Sta. 30+23.0
27' Lt. ℄
G.E. 645.6'

A	B	C		ELEVATION	DEPTH
15	1.5	2-4-5	(a)	645.4	0.2
32			SILT and SAND, Dark Brown, Moist, Loose.	644.1	1.5
24	6.5	2-3-6			
34					
41					
50	11.5	3-4-6	SILT, With some Clay, Brown, Moist, Stiff.		
54					
44	16.5	4-6-6			
48					
54					
63	21.5	3-4-5		624.1	21.5
75					
60	26.5	2-2-4	SILT, With some Clay, Trace of Sand, Brown, Moist, Medium Stiff.		
68					
78					
76	31.5	3-4-6		613.6	32.0
85					
77	36.5	3-5-6			
93					
114			SAND, Coarse, With little Coarse Gravel, Brown, Moist to Wet, Medium Dense.		
109	41.5	5-7-10			
122					
122	46.5	12-10-9		599.1	46.5
115			SAND, Medium to Coarse, With little Fine Gravel, Trace of Clay, Brown, Wet, Loose.		
116					
139	51.5	4-3-3		593.6	52.0
126					
161	56.5	12-10-9			
155					
109			SAND Medium to Coarse, and GRAVEL Fine to Medium, Brown, Wet, Medium Dense.		
174	61.5	8-11-12			
203					
112					
149	66.5	9-12-11			
141					
134	71.5	7-6-6		574.6	71.0
142			SAND, Fine to Medium, Brown, Wet, Loose.		
450			(b) (c)	570.1	75.5
	76.5	46-100/5		569.6	76.0
			(d)	569.3	76.3
				568.5	77.1
			CLAYSTONE and Stiff CLAY, Broken, Micaceous, Gray, Weathered, Soft.	568.0	77.6
	79.8	100 %			
			LIMESTONE, Few Joints, Fine to Medium Crystalline, Shaly, Gray, Weathered, Hard.	557.9	87.7
				557.6	88.0
	89.0	91 %	(e) (f)	556.6	89.0

P4-2 (Continued)

A	B	C		ELEVATION	DEPTH
	89.0	91 %		556.6	89.0
			LIMESTONE, Fine Crystalline, Few Joints, Broken and Shaly @ 95.0' to 95.7', Gray, Slightly Weathered to Fresh, Very Hard, Clay Seam @ 95.4' to 95.5', Shale Seam @ 105.4' to 105.5'.		
	99.0	100 %			
			CLAYSTONE, Shaly, Gray, Weathered, Soft.		
	109.0	100 %		536.6	109.0
			SHALE, Clayey, Broken and Jointed, Gray, Weathered, Medium Hard.	536.2	109.4
				530.8	114.8
			CLAYSTONE and Stiff CLAY *	528.3	117.3
	119.0	100 %	LIMESTONE, Shaly, Jointed, Gray, Weathered, Hard.		
				523.8	121.8
			CLAYSTONE and Stiff CLAY**	522.1	123.5
			REDSTONE COAL SEAM, Coal, Shaly, Shiny, Badly Broken, Black, Soft.	519.7	125.9
			(g) LIMESTONE ***	519.4	126.2
	128.2	100 %		517.9	127.7
			CLAYSTONE, Jointed and Broken, Gray, Weathered, Soft.	517.4	128.2
			LIMESTONE, Medium Crystalline, Few Natural Joints, Gray, Slightly Weathered, Hard, Shale Seam @ 134.5' to 134.6'.		
	138.5	98 %	CLAY, Stiff, Gray, Weathered, Soft.	505.6	140.0
				505.0	140.6
			LIMESTONE ****	503.5	142.1
			CLAY, Stiff and CLAYSTONE Broken, Gray, Weathered, Soft.	500.8	144.8
			(b) (i)	500.1	145.5
	147.5	97 %	SHALE +	499.9	145.7
			(j)	498.4	147.2
			(k)	497.6	148.0
			PITTSBURGH COAL SEAM, Coal Shiny, Some Thin Carbonaceous Shale Partings, Broken, Black, Fresh, Soft.	497.0	148.6
				490.6	155.0
	157.5	100 %	LIMESTONE ††	488.1	157.5

End of Boring @ 157.5'

(a) TOPSOIL, Silt, Sandy with little Gravel, Dark Brown, Moist, Loose.
(b) CLAY, With some Silt and little Fine Sand, Gray, Wet, Very Stiff. Hit Rock @ 76.0'.
(c) CLAYSTONE, With Medium Gravel, Gray, Weathered, Medium Hard.
(d) SHALE, Silty, Gray, Weathered, Medium Hard.
(e) CLAYSTONE, Shaly, Green, Weathered, Medium Hard.
(f) CLAYSTONE, Shaly, Gray, Weathered, Medium Hard.
* Shaly, Broken, Gray, Weathered, Soft to Medium Hard.
** Jointed and Broken, Gray, Weathered, Soft.
(g) CLAYSTONE, Broken, Gray, Weathered, Soft to Medium Hard.
*** Medium Crystalline, Jointed, Gray, Weathered, Hard.
**** Broken and Jointed, Medium Crystalline, Gray, Weathered, Hard.
(h) SHALE, Silty, Carbonaceous, Dark Gray, Weathered, Medium Hard.
(i) CLAY, Shaly, Dark Gray, Weathered, Soft.
\+ Silty, Broken and Jointed, Dark Gray, Weathered, Medium Hard.
(j) COAL, Roof Coal of PITTSBURGH COAL SEAM, Black, Slightly Weathered, Soft.
(k) SHALE, Silty, Dark Gray, Weathered, Medium Hard.
†† Broken and Jointed, Medium Crystalline, Gray, Weathered, Hard.

NOTE:
For General Notes and Location Plan See Dwg. "Test Borings - Pier 3 (2)".

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	130	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 4 (1)

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY B.D.H. DATE 7-31-74
TRACED BY T.M.K. CHECKED BY B.D.H. DATE 7-31-74

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	16 of 18

Approved 10 Jan 79

BEAVER VALLEY ENGINEERING SUPPLIES CO.

P4-3
Sta. 30+23.0
25' Rt. ℄
G.E. 645.0'

	A	B	C		ELEVATION	DEPTH
	9	1.5	3-5-4		643.0	2.0
	16			SAND Fine and SILT With some Coal Fragments, Brown-Black, Moist, Very Loose.		
	14	6.5	3-4-4			
	19					
2 W.L.	20			SILT, With some Fine Sand and Trace of Clay, Brown, Moist, Soft.		
	20	11.5	3-4-5			
	22				631.0	14.0
	27	16.5	2-2-4			
	27					
	30					
	24	21.5	2-4-4	SILT and CLAY, With some Fine Sand, Brown, Wet, Soft.		
1 W.L.	35					
	20	26.5	3-3-3			
	24					
	27				615.0	30.0
	21	31.5	2-2-3	SAND, Fine with little Silt and CLAY, Brown, Wet, Very Loose.		
	30				610.0	35.0
	28	36.5	8-5-5	(a)	608.0	37.0
	39					
	42			SAND Fine to Coarse, and GRAVEL Fine to Coarse, With trace of Silt, Brown, Wet, Medium Dense.		
	60	41.5	9-8-15			
	64					
	37				600.0	45.0
	51	46.5	12-8-8			
	63					
	52	51.5	24-10-10			
	56					
	58	56.5	10-9-9			
	62					
	64			SAND, Fine to Coarse and GRAVEL, Fine to Medium, Brown, Wet, Medium Dense.		
	52	61.5	14-11-11			
	42					
	50			Hit Rock @ 75.4'		
	47	66.5	13-7-4			
	55					
	76	71.5	14-14-17			
	96			CLAYSTONE, Shaly, Jointed, Gray, Weathered, Soft.		
	140	75.4	80/1.4		569.6	75.4
100				(b)	568.7	76.3
					567.7	77.3
				LIMESTONE, Fine Crystalline, Jointed, Gray, Slightly Weathered, Hard, Clay Seam @ 80.2' to 80.3'.		
		85.4	92%		559.6	85.4

End of Boring @ 85.4'

(a) SAND, Fine with little Clay and GRAVEL, Medium, Brown, Wet, Loose.

(b) SHALE, Sandy, Gray, Weathered, Medium Hard.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	131	255

C-4

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

NOTE:
For General Notes and Location Plan See Dwg. "Test Borings - Pier 3(2)".

REV. NO.	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY B.D.H. DATE ____
DETAILED BY T.M.K. CHECKED BY B.D.H. DATE 7-31-74
TRACED BY T.M.K. CHECKED BY B.D.H. DATE 7-31-74

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
TEST BORINGS - PIER 4 (2)

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	——	2971	17 of 18

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

C-4

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	S326-SP2-0.00	M-5251-(002)	197	Marshall, W.Va. Belmont, Ohio	132	255

Penn Central Railroad

Twp. Road 533

BM E Elev. 667.814
R.R. Spike in Power Pole
S.E. Corner of Ferry Rd. & Power Plant Rd.

Proposed Ferry Access Road Landing

Existing Ferry Landing

Fence

55'-00'

64'-30'

Haul Road

Ohio-Edison Road

Spur Track

Main Track

Conc. Monument
Sta. 31+04.88
Elev. 629.686

River's Edge at Elev. 623.0

Ice Breakers

OHIO RIVER

N

Flow

BELMONT COUNTY - OHIO
MARSHALL COUNTY - WEST VIRGINIA

℄ OHIO RIVER BRIDGE
S. 85° 02' 51" E.

B & O Railroad (Chessie System)

Rock Slope Protection

Conc. Monument
Sta. 43+30.19
Elev. 640.678

Woods

Existing 18" V.C. Pipe Storm Drain

36" V.C.P. San. Sewer

Little Grave Creek Bar Light

THOMPSON AVE.

TWELFTH STREET

FRONTAGE RD. No. 2

FRONTAGE RD. No. 1

LOCHWOOD AVE.

PURDY AVE.

LAFAYETTE AVE. (W.VA. RTE. 2)

BM H-122 Elev. 674.165
On N.W. Corner of Seventh Street and Lafayette Ave. on porch of Federal Building between building and S.E. column.

PLAN

100 50 0 100

670 V.C.
P.V.I. = Sta. 28+55.00
Elev. 694.20
-2.40%
+2.80%

1200' V.C.
P.V.I. Sta. 37+90.00
Elev. 720.38
-2.80%

320' V.C.
P.V.I. Sta. 45+50.00
Elev. 699.10
-6.00%

400' V.C.
P.V.I. Sta. 52+10.00
Elev. 659.50
+0.528%

54'-0" Along ℄

144'-0" Along ℄	144'-0" Along ℄	158'-0"	157'-0"	157'-0"	157'-0"	912'-0"	123'-0"	123'-0"	124'-0"	124'-0"	123'-0"	123'-0"

℄ Brgs. Abut. A	℄ Pier 1	℄ Pier 2	℄ Pier 3	℄ Pier 4	℄ Pier 5	℄ Pier 6	℄ Pier 7	℄ Pier 8	℄ Pier 9	℄ Pier 10	℄ Pier 11	℄ Pier 12	℄ Brgs. Abut. B
Sta. 23+63.00	Sta. 25+61.00	Sta. 27+05.00	Sta. 28+63.00	Sta. 30+20.00	Sta. 31+77.00	Sta. 33+34.00	Sta. 42+46.00	Sta. 43+69.00	Sta. 44+92.00	Sta. 46+16.00	Sta. 47+40.00	Sta. 48+63.00	Sta. 49+86.00
G.Elev. 706.00	P.G. Elev. 701.32	P.G. Elev. 699.13	P.G. Elev. 698.57	P.G. Elev. 699.94	P.G. Elev. 703.22	P.G. Elev. 707.13	P.G. Elev. 707.13	P.G. Elev. 704.16	P.G. Elev. 700.22	P.G. Elev. 694.70	P.G. Elev. 687.70	P.G. Elev. 680.32	P.G. Elev. 672.94

℄ Pier 1A
Sta. 24+17.00
P.G. Elev. 704.71

Elev. 695.50

Fix. Exp. Fix. Exp. Exp. Exp. Exp. Fix. Exp. Exp. Fix. Exp. Exp. Fix. Fix. Exp. Exp. Exp. Fix. Exp.

Elev. 697.90 | Elev. 691.42 | Elev. 689.92 | Elev. 688.67 | Elev. 690.92 | Elev. 693.58 | Elev. 687.63 | Elev. 684.58 | Elev. 696.54 | Elev. 692.58 | Elev. 687.08 | Elev. 679.71 | Elev. 672.71 | Elev. 662.00

Min. Actual Vertical Clear 69'-3"

Elev. 675.25 | Elev. 672.25 | Elev. 666.00 | Elev. 660.00 | Elev. 651.00 | Elev. 644.00 | Elev. 611.00 | Elev. 587.00 | Elev. 588.00 | Elev. 637.50 | Elev. 638.50 | Elev. 640.00 | Elev. 641.50 | Elev. 642.50

Steel "H" Piles

Steel "H" Piles

Approx. Existing Ground Line Along ℄ Bridge

700
600
500

Datum Elev. 400

672 670 668 665 660 650 646.7 640 635 630 620 610 604 602 604 600 598 596 594 592 590 590 592 594 598 600 602 606 610 620 630 640 641 642 645 650 655 660 661.4

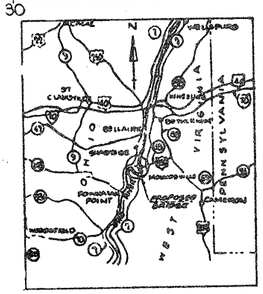
Stations → 25 30 35 40 45 50 55

ELEVATION

100 50 0 100

50 Years Frequency Elev. 648.5
10 Years Frequency Elev. 642.5
2% Flowline Elev. 629.9
Normal Pool Elev. 623.0
(Hannibal Pool)

- The Contours of the River Bottom were obtained from Soundings taken March 1974.



TRACED FROM WEST VIRGINIA STATE MAP

LOCATION SKETCH

5 0 5 10 15 20
Scale of Miles

SEAVER VALLEY EXHIBITION SUPPLIES CO. REGISTER 19661

WEST VIRGINIA
DEPARTMENT OF HIGHWAYS

OHIO RIVER BRIDGE AT MOUNDSVILLE
SITUATION PLAN

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS
CHARLESTON, W. VA. BEAVER, PA.

REV. NO.	SHEET NO. AFFECTED	REVISIONS	DATE	BY

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY T.M.K. CHECKED BY ____ DATE ____
TRACED BY T.M.K. CHECKED BY A.B.L.Co. DATE 2-21-78

DATE	SCALE	BRIDGE NO.	DWG. NO.
NOV., 1978	AS SHOWN	2971	18 of 11

FOR LOCATION MAP

SEE TITLE SHEET

SCALE 1 INCH = 1 MILE TRACED FROM COUNTY MAP

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS

SOIL AND GEOLOGIC DATA

MICHAEL BAKER, JR., INC.
PREPARED BY

PROJECT NO.
ROUTE NO.
DISTRICT **COUNTY**

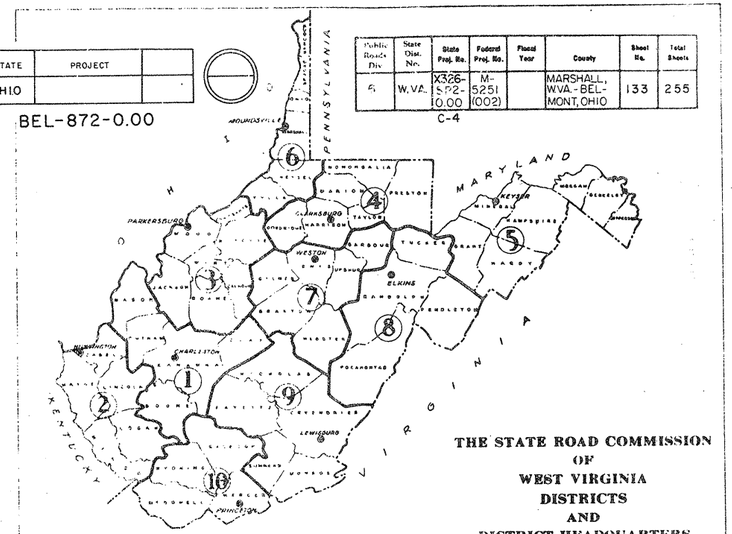
Sta. To Sta.
Length = Mi. Ft.
Plan 1 IN. =
SCALES
PROFILE HOR. 1 IN. = 50' VERT. 1 IN. = 10'

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
5	W.VA.	X326-SP2-10.00	M-5251 (002)		MARSHALL, WVA.-BEL-MONT, OHIO	133	255

C-4



THE STATE ROAD COMMISSION
OF
WEST VIRGINIA
DISTRICTS
AND
DISTRICT HEADQUARTERS

MINERALOGICAL DESCRIPTION OF ROCK AND SHALE

A = Arenaceous (Sandy)
L = Calcareous (Limey)
C = Argillaceous (Clayey)

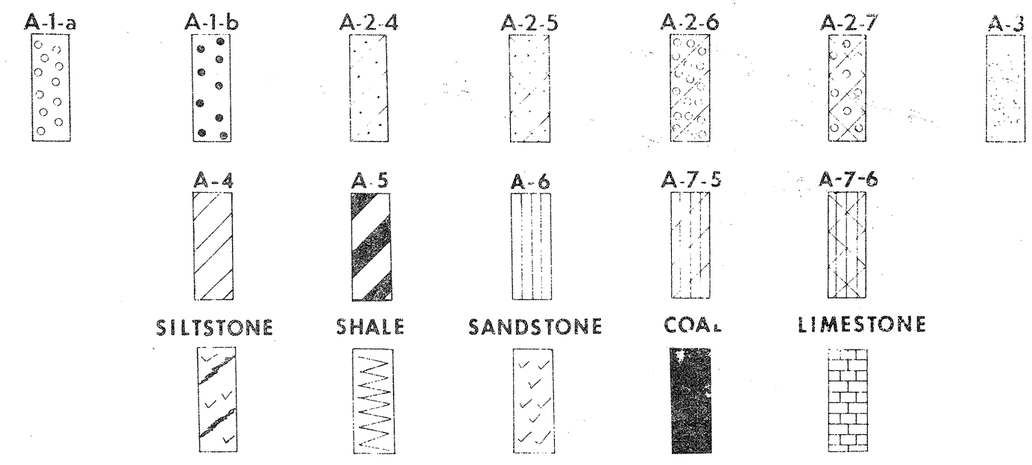
ROCK AND SHALE RESISTANCE TO DRILLING

VS = Very Soft
S = Soft
MH = Medium Hard
H = Hard
VH = Very Hard

SOIL RESISTANCE TO DRILLING

GRANULAR	COHESIVE
VL = Very Loose	VS = Very Soft
L = Loose	S = Soft
MD = Medium Dense	MST = Medium Stiff
D = Dense	ST = Stiff
VD = Very Dense	VST = Very Stiff
	H = Hard

LEGEND OF SYMBOLS USED ON SOIL PROFILE



BATTER 1:2 BORING

AUGER HOLE
MOISTURE CONTENT BELOW PLASTIC LIMIT PL

GROUND WATER LEVEL
MOISTURE CONTENT ABOVE PLASTIC LIMIT PL

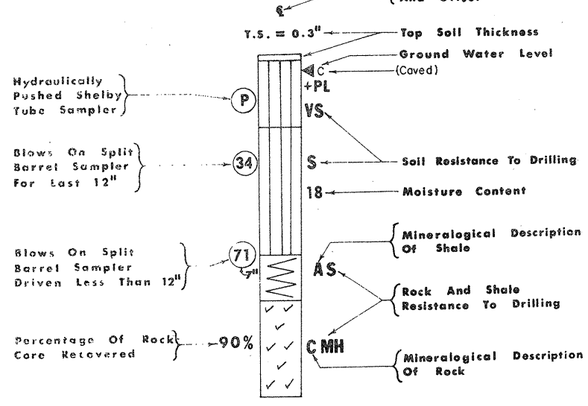
CORE HOLE
MOISTURE CONTENT ABOVE LIQUID LIMIT +LL

TEST PIT

15° STRIKE AND MEASURED DIP IN DEGREES

SPRING OR NOTABLE SEEPAGE

TYPICAL PRESENTATION OF BORING DATA



INDEX TO SHEETS

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL, W.VA.-BEL-MONT, OHIO	134	255

C-4

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

BEGIN WORK Reloc. Twp. Rd. 533
P.C. STA. 86+32.56

BEGIN WORK S.R.7
STA. 416+92.16

℄ TWR RD. 533

℄ S.R. 7

℄ RAMP A

STA. 426+00

MATCH MARK

STA. 423+79.11 - S.R. 7=
P.C. STA. 23+79.11 Ramp A

Parking

Tanks

Drain

Sign

B-1

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

C-4

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251(002)		MARSHALL, W. VA.- BEL-MONT, OHIO	135	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

MATCH LINE

STA. 434 + 50

<1' SOIL COVER

CONTOURS SHOWN ARE NOT CURRENT

NO SOIL COVER

RECENT EXCAVATION

20' HIGH FLYASH PILE

APPROX. TOE OF SLOPE

EL. 707.90

EL. 712.17

℄ Ramp D

℄ Access Rd "A"

℄ Access Rd "D"

℄ Reloc Twp Rd. 533

℄ S.R. 7

℄ Access Road B

℄ Ramp A

STORAGE

PARKING

B-1

B-2

B-3

B-4

B-5

B-6

STA 429 +99.44 AHD.=
STA 430 +00 BK.

P.C. STA. 27+55 RAMP D=
STA. 427+55 S.R. 7

STA. 26+45.63 RAMP A (16'Lt)=
STA. 426+47.05 S.R. 7 (55'Rt.)

MATCH LINE

STA. 426+00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

C-4

Public Lands Div.	State Plat. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL, W.VA.-BEL-MONT, OHIO	136	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00

Approximate Location of Surface Drainage Into Flyash

MATCH LINE

STA. 19 + 00

FLY ASH FILL AREA

B-11

Scattered Small Gravel Piles

1:1 Slope w/ Erosion

West Flyash Slough

B-17A

B-17

Top Elev. (730'-735'±) of Soil Covered Flyash Disposal Area

Contours are Not Current

℄ Ramp C

40

B-18

Approximate Toe of Slope

Gravel Piles

B-10

STA. 7+00, SR 872 =
STA. 36+77.34, Ramp C =
STA. 35+86.09, Ramp D

POST STA. 436+28.64 SR 7
POT STA. 10+26.27 SR 872

℄ S.R. 7

P.O.S.T STA. 12+00, SR 872 =
STA. 0+00, Access Rd. B

Sand

B-16

30'± High Flyash Pile w/ No Soil Cover

Partially eroded slope (1:1 to 1.5:1 ratio)

Approximate Toe of Slope

Loose

SB-4

SB-3

SB-2

SB-1

RB-1

RB-3

℄ Ramp B

RB-4

℄ Moundsville Bridge Approach (Ohio SR 872)

#21 (1) 6.22.72 G

STA. 13+50, SR 872 =
STA. 37+39.34, Ramp B =
STA. 39+67.21, Ramp A

RB-2

Recent Excavation

6' High Pile of Brush, Wood & Topsoil

B-8

BRIDGE NO. BEL-872-0008

℄ Access Road B

℄ Ramp A

B-9

BEGIN PROJECT
STA. 5+85.23, SR 872 =
STA. 105+85.70, Twp. Rd. 533

MATCH LINE

STA. 434+50

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

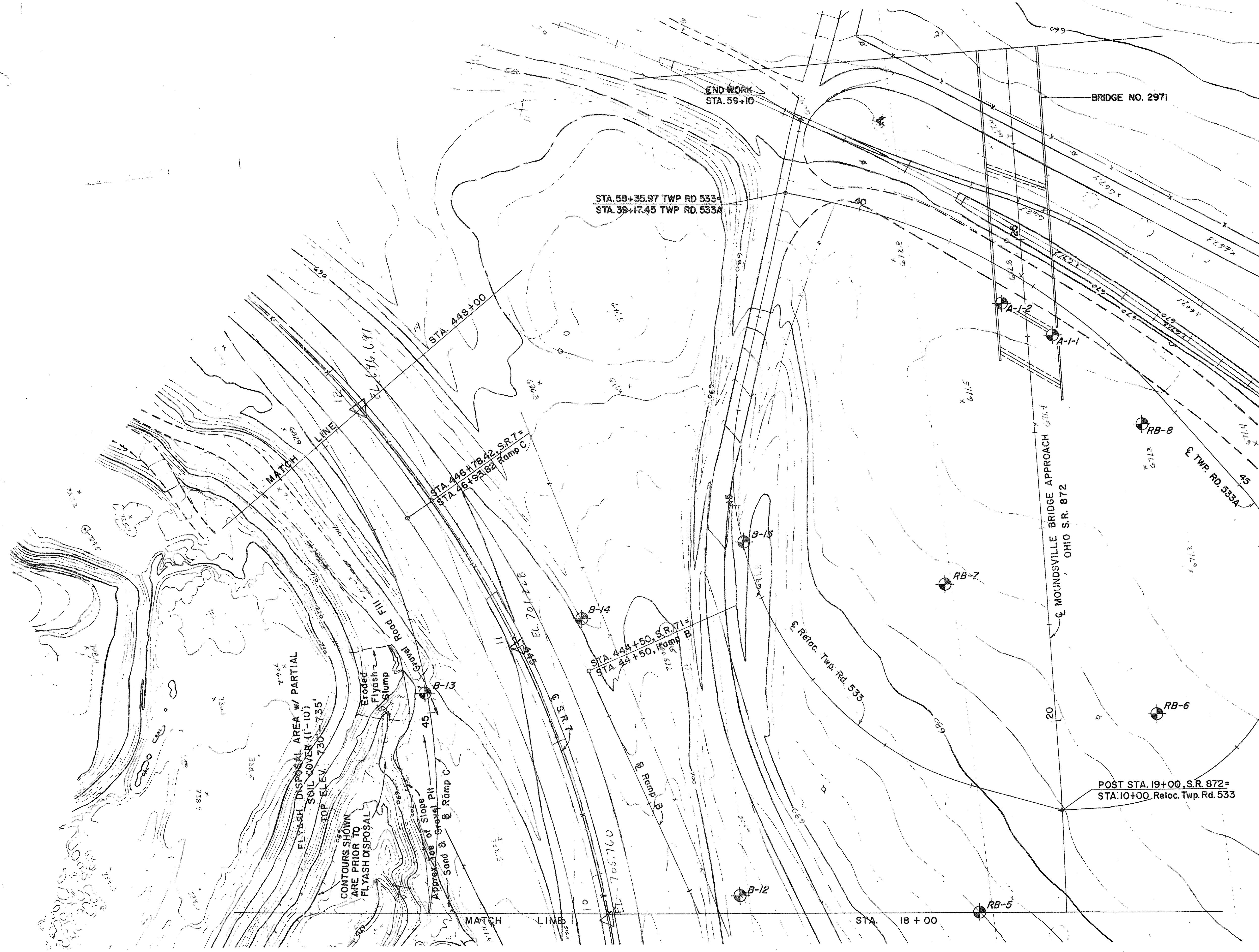
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

C-4

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL, W.VA.-BELMONT, OHIO	137	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00



END WORK
STA. 59+10
BRIDGE NO. 2971
STA. 58+35.97 TWP RD 533=
STA. 39+17.45 TWP RD. 533A
STA. 448+00
MATCH LINE
STA. 446+78.42, S.R. 7=
STA. 46+93.82 Ramp C
A-1-2
A-1-1
RB-8
℄ TWP. RD. 533A
℄ MOUNDSVILLE BRIDGE APPROACH OHIO S.R. 872
B-15
RB-7
B-14
STA. 444+50, S.R. 7=
STA. 44+50, Ramp B
℄ Reloc. Twp. Rd. 533
STA. 46+75 TWP. RD. 533A=
STA. 0+00 FLY ASH HAUL RD.
℄ ACCESS RD. "C"
Gravel Road Fill
Eroded Flyash Slump
B-13
FLYASH DISPOSAL AREA w/ PARTIAL SOIL COVER (1'-10')
TOP ELEV. 730'-735'
℄ S.R. 7
℄ Ramp B
RB-6
CONTOURS SHOWN ARE PRIOR TO FLYASH DISPOSAL
Approx. Toe of Slope
Sand & Gravel Pit
℄ Ramp C
POST STA. 19+00, S.R. 872=
STA. 10+00 Reloc. Twp. Rd. 533
END WORK
STA. 4+00
B-12
RB-5
MATCH LINE
STA. 18+00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

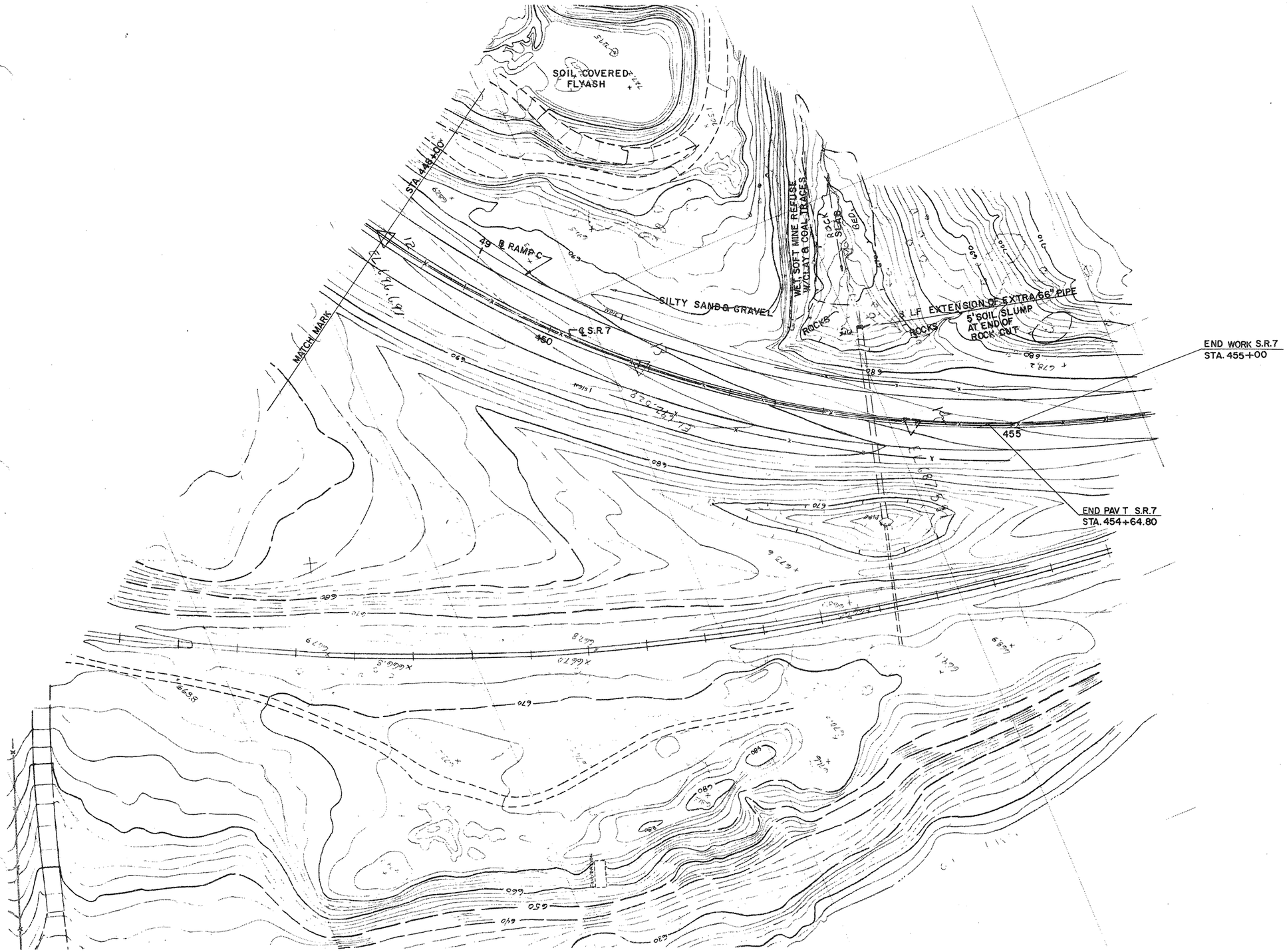
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

C-4

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	0326-SP2-0.00	M-5251(002)		MARSHALL, W. VA.-BEL-MONT, OHIO	138	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00



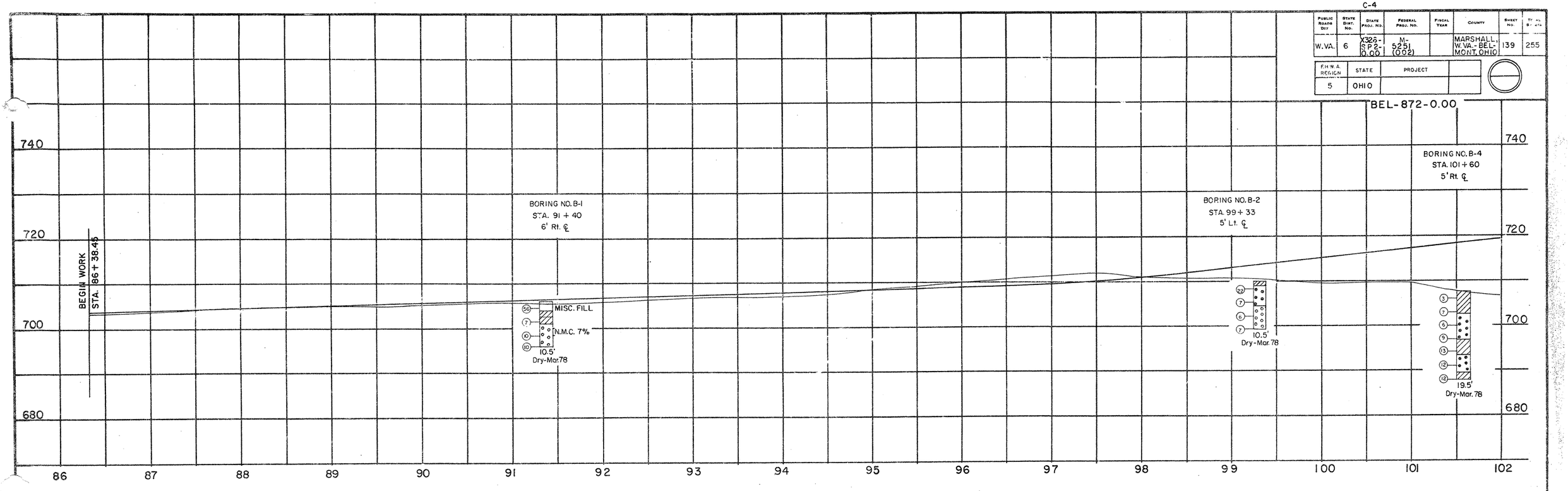
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

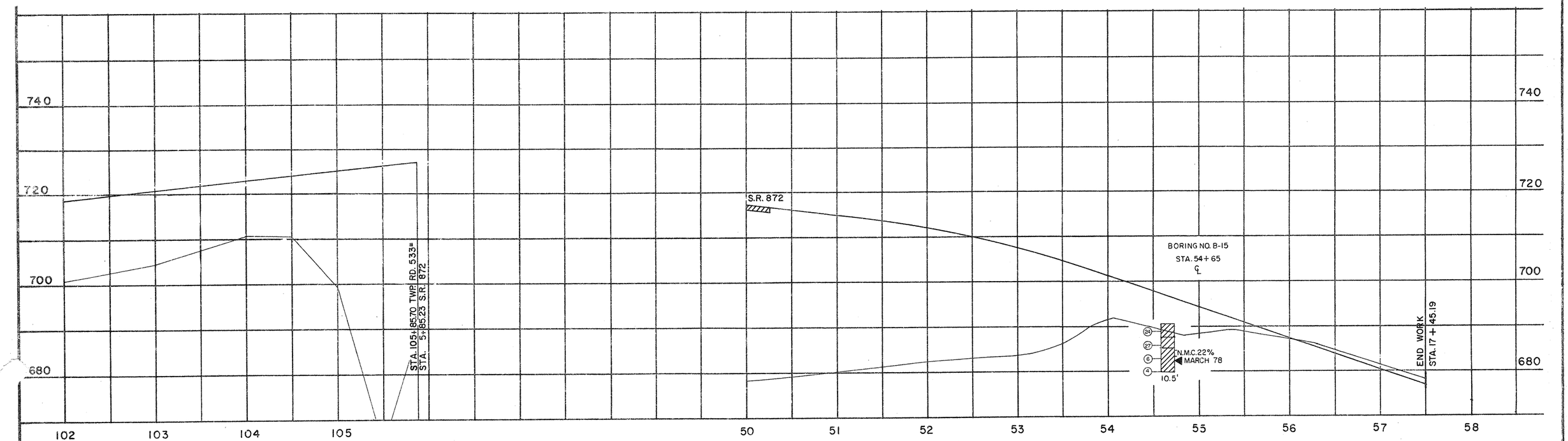
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

PUBLIC ROADS DIV	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.VA.	6	X326-FP2-0.00	M-5251 (002)		MARSHALL, W.VA.-BEL-MONT, OHIO	139	255

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

BEL-872-0.00





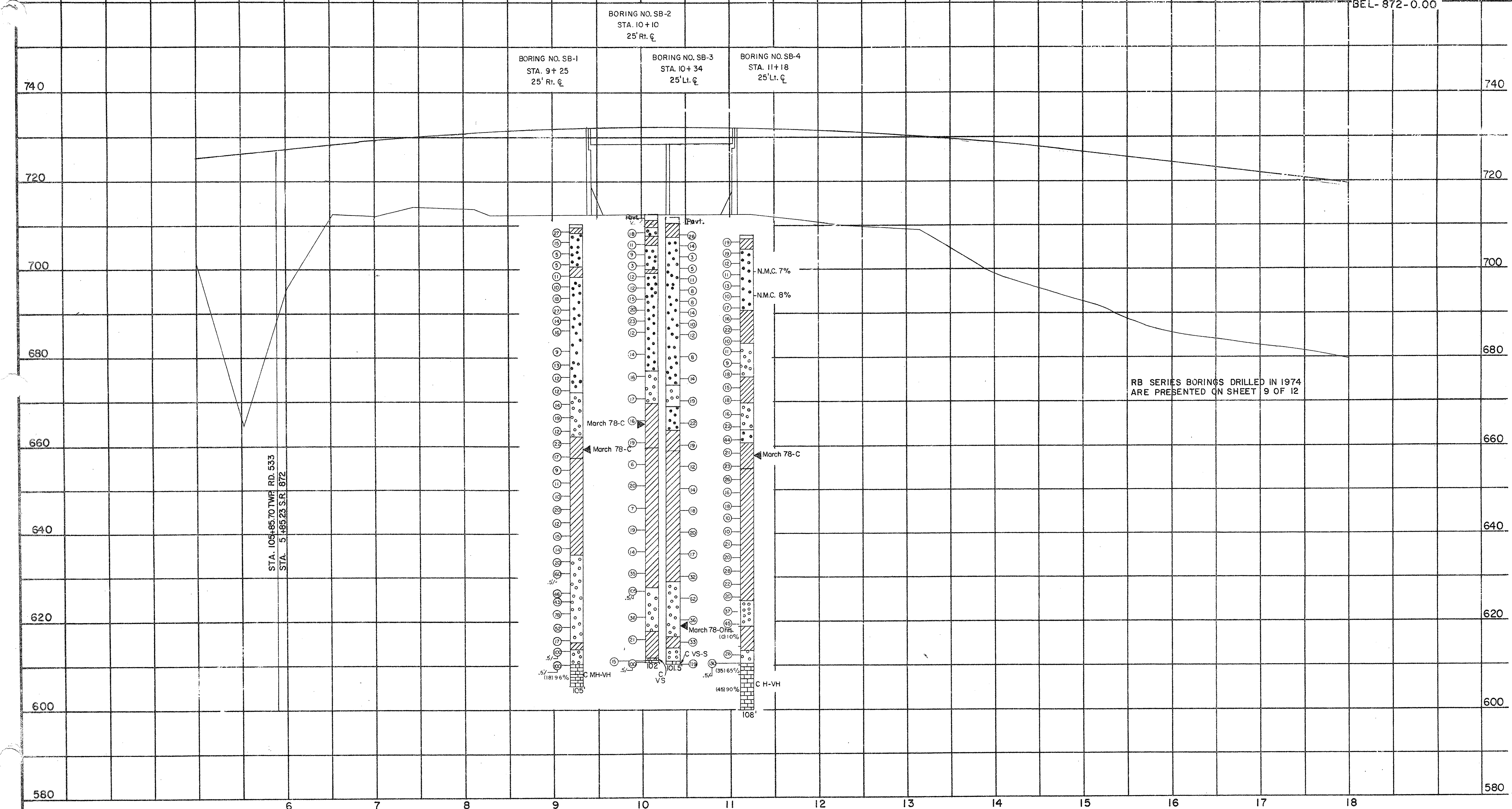
PROFILE RELOCATED TWP. RD. 533

GEOSCIENCES DEPT. – MICHAEL BAKER, JR., INC.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W. VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL, W.VA.-BEL-MONT, OHIO	140	255

F.H.W.A. Region	State	Project	
5	OHIO		

BEL-872-0.00



PROFILE SR 872

GEOSCIENCES DEPT. – MICHAEL BAKER, JR., INC.

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W. VA.	6	X326-SP2-0.00			MARSHALL, W.VA.-BEL-MONT, OHIO	141	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

BORING NO. RB-1
STA. 11+50
65' Rt. ℄

A-4(0)–See 74-436
A-1-a(0)–See 74-438
15.0
Dry – July 74

BORING NO. RB-2
STA. 13+50
65' Rt. ℄

A-4(0)–See 74-436
A-1-a(0)–See 74-438
21.5
Dry – July 74

BORING NO. RB-3
STA. 16+60
126' Lt. ℄
O.G. Elev. 683.7

A-4(0)–See 74-446
A-1-a(0)–See 74-438
25.5
Dry – July 74

BORING NO. RB-4
STA. 16+50
90' Rt. ℄

A-1-a(0)–See 74-438
26.5
Dry – July 74

BORING NO. RB-5
STA. 18+00
90' Lt. ℄

A-4(0)–See 74-430
A-1-a(0)–See 74-438
31.5
Dry – July 74

BORING NO. RB-6
STA. 20+00
105' Rt. ℄

A-4(0)–See 74-436
A-4(1)–See 74-437
A-1-a(0)–See 74-438
66.3
July 74

BORING NO. RB-7
STA. 21+50
105' Lt. ℄

A-4(0)–See 74-436
A-4(1)–See 74-437
A-1-a(0)–See 74-438
36.0
Dry – July 74

BORING NO. RB-8
STA. 23+00
110' Rt. ℄

A-4(0)–See 74-436
A-4(1)–See 74-437
A-1-a(0)–See 74-438
A-1-a(0)–See 74-439
A-4(1)–See 74-437
A-1-a(0)–See 74-534
36.5
Dry – July 74

ABUTMENT 1
STA. 23+63

℄ Rd.
E. Rd.
℄ Telephone Line
Penn R.R.
E. Rd.
℄ Ohio Edison Access Rd.
E. Rd.

NOTE:
For Boring Nos. A1-1 and A1-2 See Cross Section Sta. 24+00

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
713.15	711.16	708.15	698.50	699.60	686.54	683.34	680.65	677.85	676.15	674.06	672.42	671.51	672.81	669.38	668.01

SOIL PROFILE OHIO APPROACH

GEOSCIENCES DEPT. – MICHAEL BAKER, JR., INC.

Public Roads Div.	State Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	County	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00	M-5251 (002)		MARSHALL-W.VA.-BEL-MONT, OHIO	142	255

F.H.W.A. Region	State	Project
3	OHIO	

BEL-872-0.00

PROFILE RAMP A

BORING NO. B-3
STA. 28 + 50
℄

N.M.C. 10%
10.5'
Dry-Mar. 78

BORING NO. B-6
STA. 31 + 65
2' Rt. ℄

N.M.C. 18%
10.5'
Dry-Mar. 78

BORING NO. B-9
STA. 35 + 57
5' Rt. ℄

25.5'
Dry-Mar. 78

S.R. 872

RAMP A = SR. 872
STA. 13 + 50

STA. 39+67.21

STA. 26+45.63 RAMP A =
STA. 426+47.05 SR. 7

740
720
700
680

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39

PROFILE RAMP B

S.R. 872

BORING NO. B-12
STA. 41 + 73
46' Rt. ℄

C-MARCH 78
19.5'

BORING NO. B-14
STA. 445+00
72' Rt. ℄

Rock Fill
10.5'
Dry-Mar. 78

STA. 444+50.00 RAMP B =
STA. 444+50.00 SR. 7

740
720
700
680

37 38 39 40 41 42 43 44 45 46 447 448 449 450 451

GEOSCIENCES DEPT. – MICHAEL BAKER, JR., INC.

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FEDERAL PROJ. NO.	FISCAL YR.	COUNTY	SHEET NO.	SHEETS
W.VA.	5	X326-872-0.00	M-502N (002)		MARSHALL, W.VA.-BEL-MONT, OHIO	143	255

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BEL-872-0.00

FLYASH DISPOSAL PILE

NOTE: PROFILE OF GROUND LINE IS NOT REPRESENTATIVE OF CURRENT TOPOGRAPHY

BORING NO. B-10
STA. 39+00
20' Rt. ℄

BORING NO. B-18
STA. 39+63
23' Lt. ℄

BORING NO. B-11
STA. 41+57
67' Lt. ℄

BORING NO. B-16
STA. 37+62
10' Rt. ℄

BORING NO. B-17A
STA. 41+20
10' Rt. ℄

BORING NO. B-17
STA. 40+90
16' Rt. ℄

BORING NO. B-13
STA. 45+23
2' Lt. ℄

S.R. 872

FLYASH

N.M.C. 22%

C-MARCH 78

N.M.C. 14%

N.M.C. 7%

19.5'
Dry-Mar. 78

22.5'
Dry-Mar. 78

46.5'
Dry-Mar. 78

16.5'
Dry-Mar. 78

2.3'
Dry-Mar. 78

61.5'

25.5'

STA. 36+77.34 RAMP C=
STA. 7+00.00 S.R. 872

STA. 46+30.31 RAMP C=
STA. 44+64.80 S.R. 7

740
720
700
680

37 38 39 40 41 42 43 44 45 46 47 48 49 450 451

PROFILE RAMP C

BORING NO. B-8
STA. 35+10
70' Rt. ℄

SR 872

BORING NO. B-5
STA. 31+38
7' Rt. ℄

N.M.C. 13%

13.5'
Dry-Mar. 78

19.5'
Dry-Mar. 78

STA. 35+86.09 RAMP D=
STA. 7+00 SR 872
STA. 36+77.34 RAMP C

STA. 27+55 RAMP D=
STA. 427+55 S.R. 7

740
720
700
680

29 30 31 32 33 34 35

PROFILE RAMP D

GEOSCIENCES DEPT. – MICHAEL BAKER, JR., INC.

FHWA REGION	STATE	PROJECT	
5	OHIO		

THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS

PROJ NO	DIST	COUNTY	DATE	SHEET NO	TOTAL SHEETS
W.VA. X326-SP2-000 0-6 FED.(M-525)-(002)	6	MARSHALL,WVA. BELMONT,OHIO		144	255

BEL-872-0.00

SUMMARY OF DRILL LOGS AND SOIL TESTS

MATERIALS CONTROL, SOIL AND TESTING DIV.

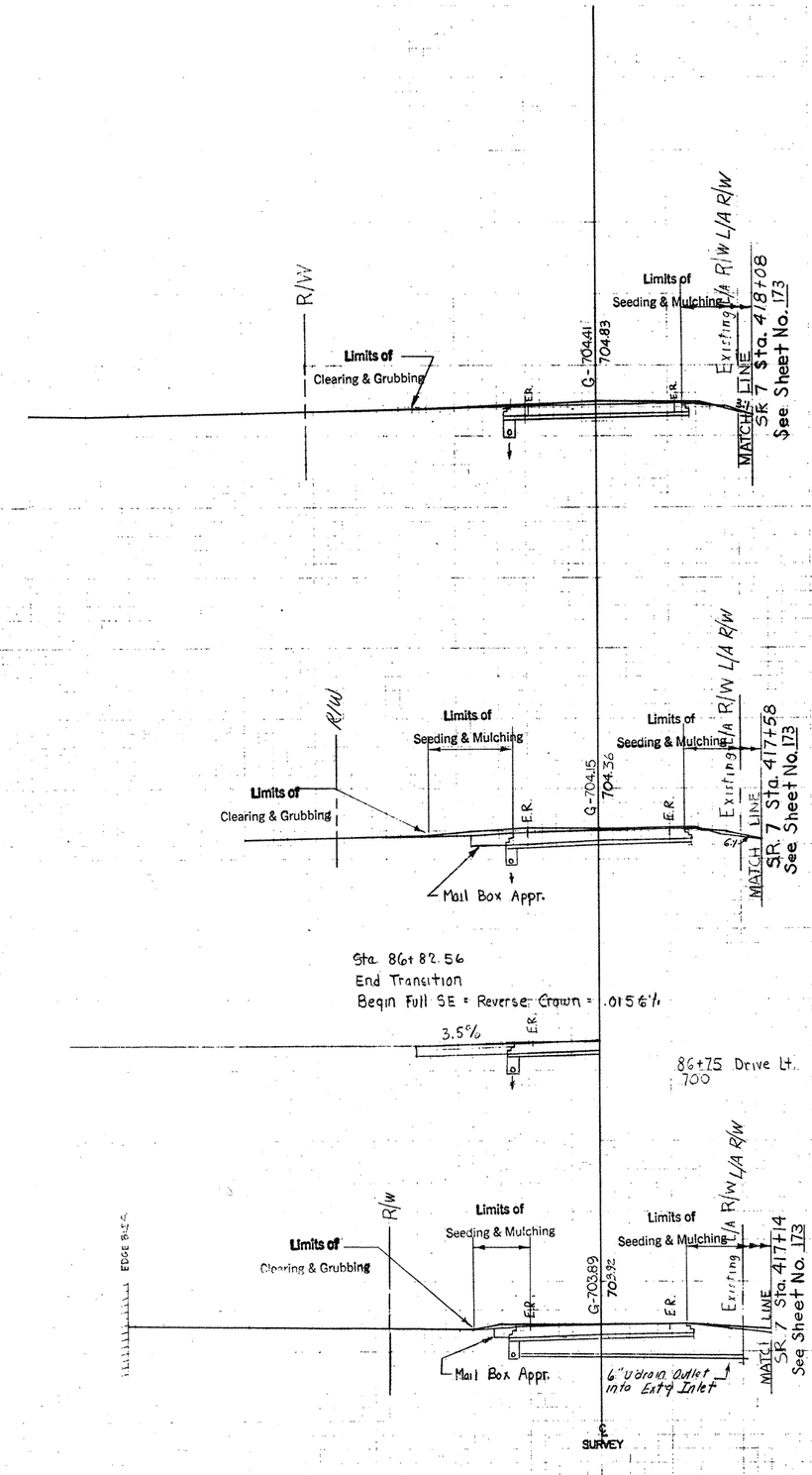
FIELD DATA

LABORATORY DATA

HOLE NO.	STATION NO.	REF-TO ℄	SURFACE ELEV.	DEPTH	GROUND WATER DEPTH	DESCRIPTION OF MATERIAL: HARDNESS OR RESIST.	COLOR	TYPE: PRIMARY	TYPE: SECONDARY	CONDITION	CORE: RUN	CORE: % RECOV.	PENETRATION: "HAMMER ___" "DROP ___" "SR ___" "CAS. ___"	IN SITU VANE SHEAR TEST	AASHO CLASS.	M.B.,JR.,INC. LAB. NO.	SHRINKAGE LIMIT	SHRINKAGE RATIO	LINEAL SHRINKAGE	UNDISTURBED FIELD MOISTURE	UNDISTURBED FIELD DENSITY	LAB. REL. OPT. MOISTURE AASHO T180-70	LAB. MAXIMUM DENSITY AASHO T180-70	SPECIFIC GRAVITY	PERCENT PASSING: #40	#200	#270	.02 MM	ATTERBURG LIMITS: LL	PL	PI	R VALUE	SHEAR RESISTANCE: ANGLE INT. FRICT ϕ	COHESION # PER SQ. FT.	K IN CM/SEC COEF. OF PERMEABILITY	CONSOLIDATION: S	t₉₀	VOID RATIO: e₀	e₉
																									.42 MM	.074 MM	.053 MM												
B-1	91 + 40 TWP. RD. 533	6' RT.	706.7	6.0'-7.5'											A-1-a(0)	78-250				6.8					25.4	9.2		5.1	NP	NP	NP								
B-3	28 + 50 RAMP A	℄	710.9	9.0'-10.5'											A-1-a(0)	78-243				10.1					17.4	8.2		5.1	NP	NP	NP								
B-5	31 + 38 RAMP D	7' RT.	712.0	12.0'-13.5'											A-3(0)	78-244				13.0					69.0	36.3		16.4	NP	NP	NP								
B-6	31 + 65 RAMP A	2' RT.	712.0	6.0'-7.5'											A-3(0)	78-245				18.3					96.3	45.3		12.8	NP	NP	NP								
B-10	39 + 00 RAMP C	20' RT.	709.3	15.0'-16.5'											A-1-b(0)	78-248				14.2					45.2	17.5		10.5	NP	NP	NP								
B-11	41 + 75 RAMP C	67' LT.	730.5	2.0'-10.0'				FLYASH		BAG SAMPLE					A-3(0)	78-251						20.1 21.6	89.9 89.9		94.0	84.1		46.2	NP	NP	NP								
B-11	41 + 75 RAMP C	67' LT.	730.5	2.0'-10.0'				FLYASH		JAR SAMPLE					A-3(0)	78-247				21.8					92.8	82.2		43.8	NP	NP	NP								
B-13	45 + 23 RAMP C	2' LT.	705.1	15.0'-16.5'											A-1-a(0)	78-246				7.1					17.4	9.2		5.6	NP	NP	NP								
B-15	14 + 65 TWP. RD. 533	℄	690.3	6.0'-7.5'											A-3(0)	78-247				22.0					91.7	40.4		26.6	21	19	2								
B-18	39 + 63 RAMP C	23' LT.	733.0	15.0'-17.3'				FLYASH		SHELBY TUBE						78-254				18.9	71.1																		
SB-4	837 + 67 SR-7	75 RT.	708.3	7.5'-9.5'											A-1-b(0)	78-239				7.0					8.1	2.3			NP	NP	NP								
SB-5	837 + 67 SR-7	75 RT.	708.3	12.5'-14.0'											A-1-b(0)	78-250				7.9					16.0	1.2			NP	NP	NP								

			Fiscal Year	Station		
W.VA. 6	X326-SP2.00	M-5251 (002)		86+50 87+50	145	255

RELOC. TWP RD. 533



Sta. 86+82.56
End Transition
Begin Full SE = Reverse Crown = .0156'/'

Sta. 86+32.56 Begin Earthwork & Seeding
Area C=40 Fill=2
Begin 6' Underdrain Pipe Lt

Sta. 86+82.56
End Transition
Begin Full SE = Reverse Crown

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
46	2	89	4

87+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	48	267
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	10	89
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
50	2	83	4

87+00
710

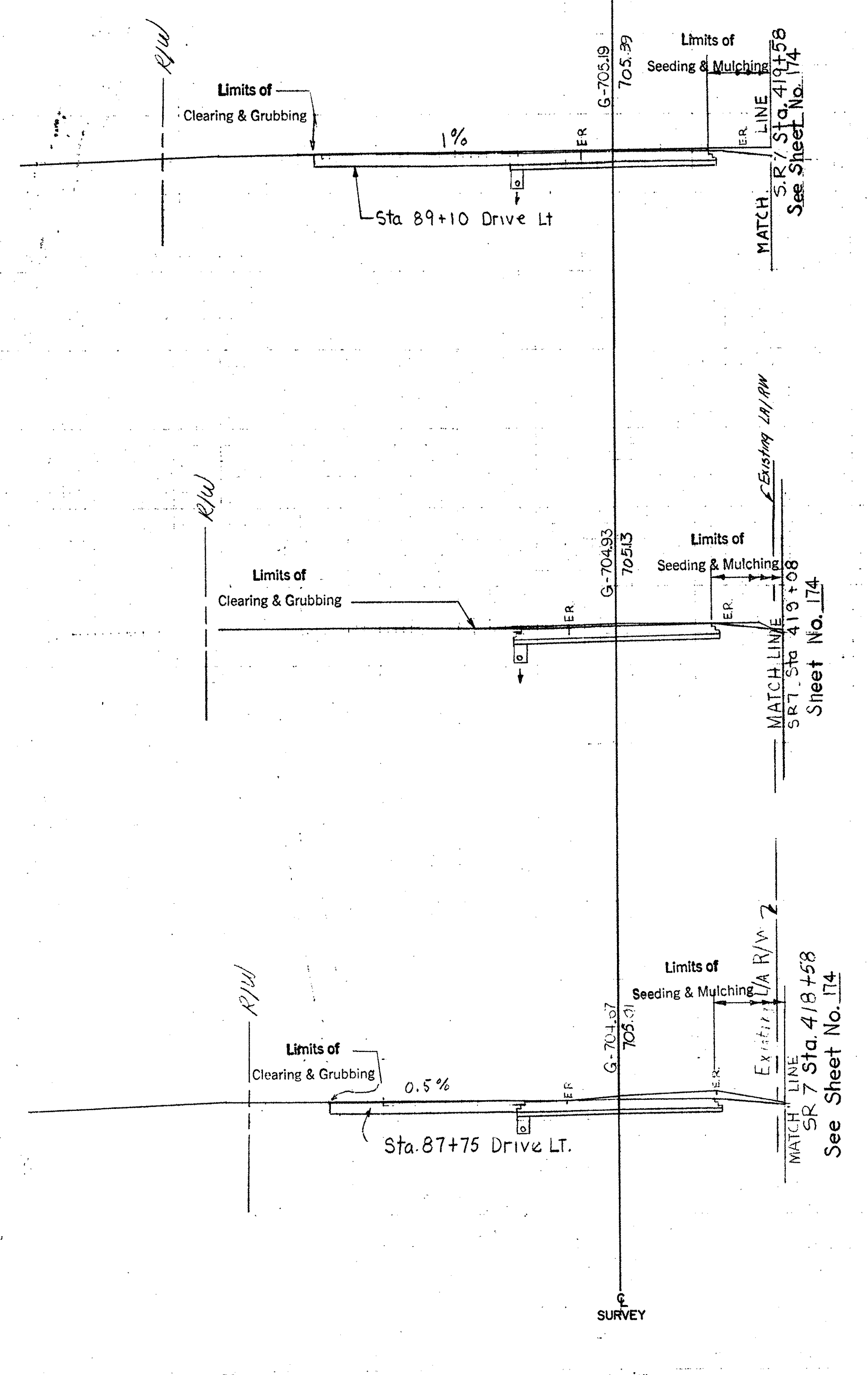
	WIDTH	AREA SY
CLEARING & GRUBBING	48	250
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	22	111
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
40	2	26	1

86+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	42	
SEEDING		
SEED MIX B, C-1, C-2 HAY OR STRAW	18	35
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	0	111	0

89+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	58	269
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	47
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	0	109	0

88+50
710

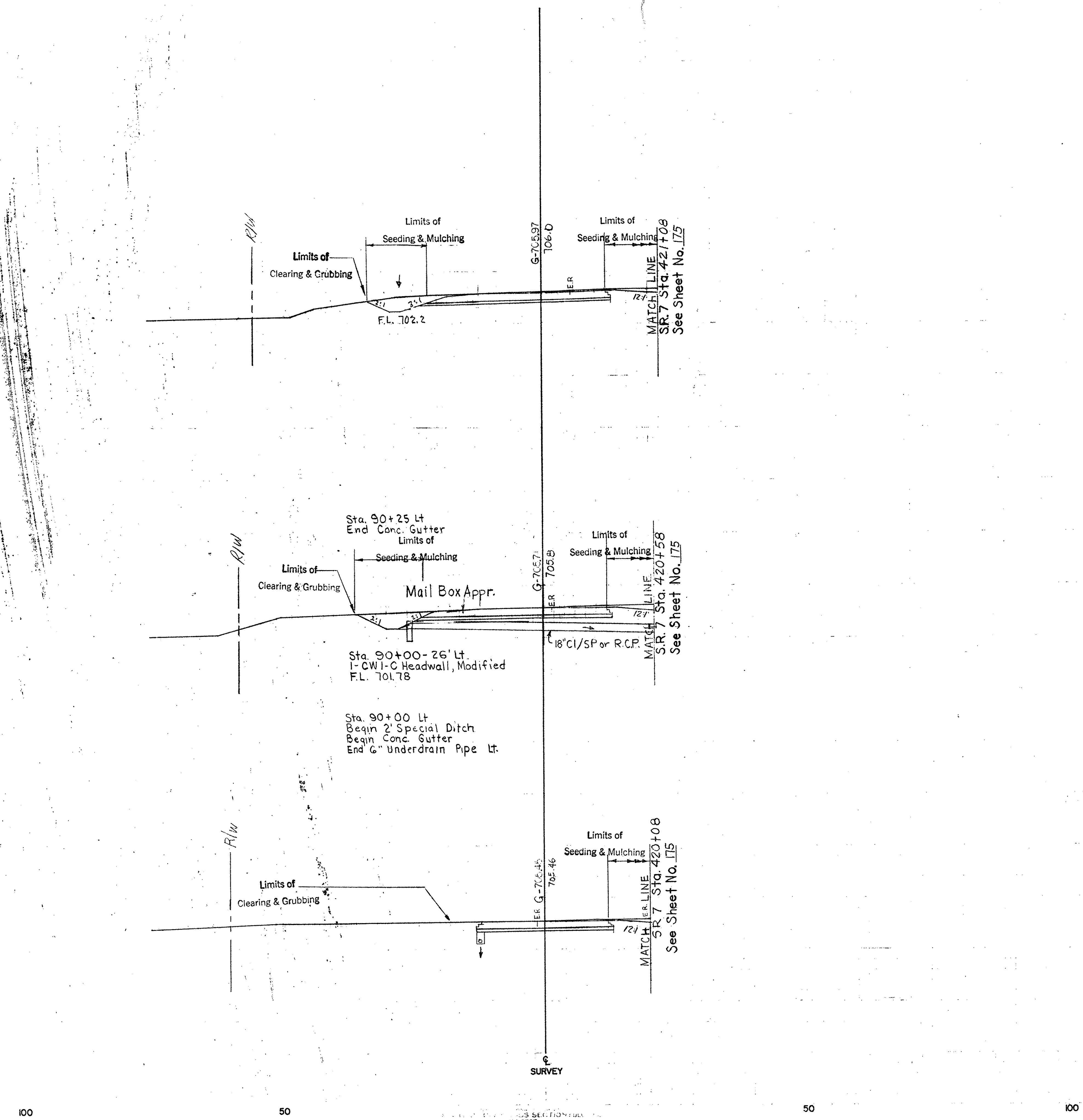
	WIDTH	AREA SY
CLEARING & GRUBBING	39	269
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	9	50
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
58	0	36	[illegible]

88+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	58	294
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	9	5[illegible]
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
66	0	120	0

90+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	56	317
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	175
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
64	0	115	0

90+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	58	267
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	33	114
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

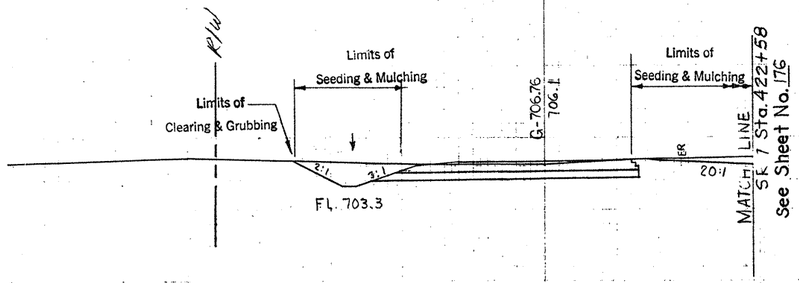
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	0	111	0

89+50
710

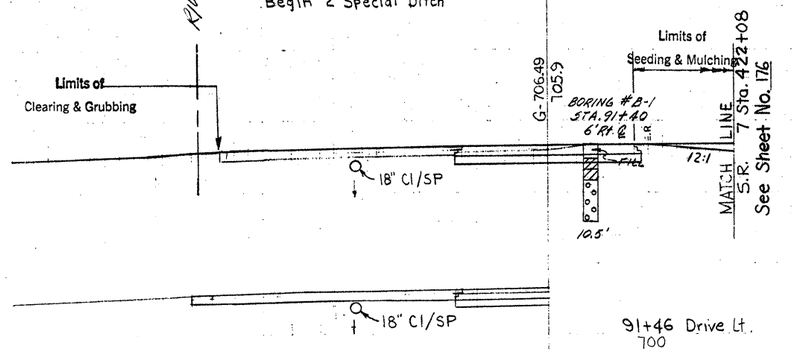
	WIDTH	AREA SY
CLEARING & GRUBBING	38	267
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	14
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326-SP2-0.00 M-5251 (002) 91+00 92+00 148 255

RELOC. TWP. RD. 533

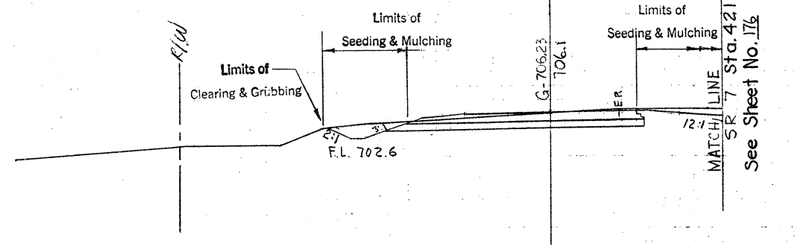


Sta. 91+66 Lt.
Begin 2' Special Ditch



91+46 Drive Lt.
700

Sta. 91+30 Lt.
End 2' Special Ditch



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
80	0	146	0

92+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	64	378
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	41	153
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
78	0	125	4

91+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	72	356
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	14	125
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	4	117	4

91+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	56	311
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	42
SEED MIX D HAY OR STRAW	6	9
SEED MIX D WOOD CELLULOSE		

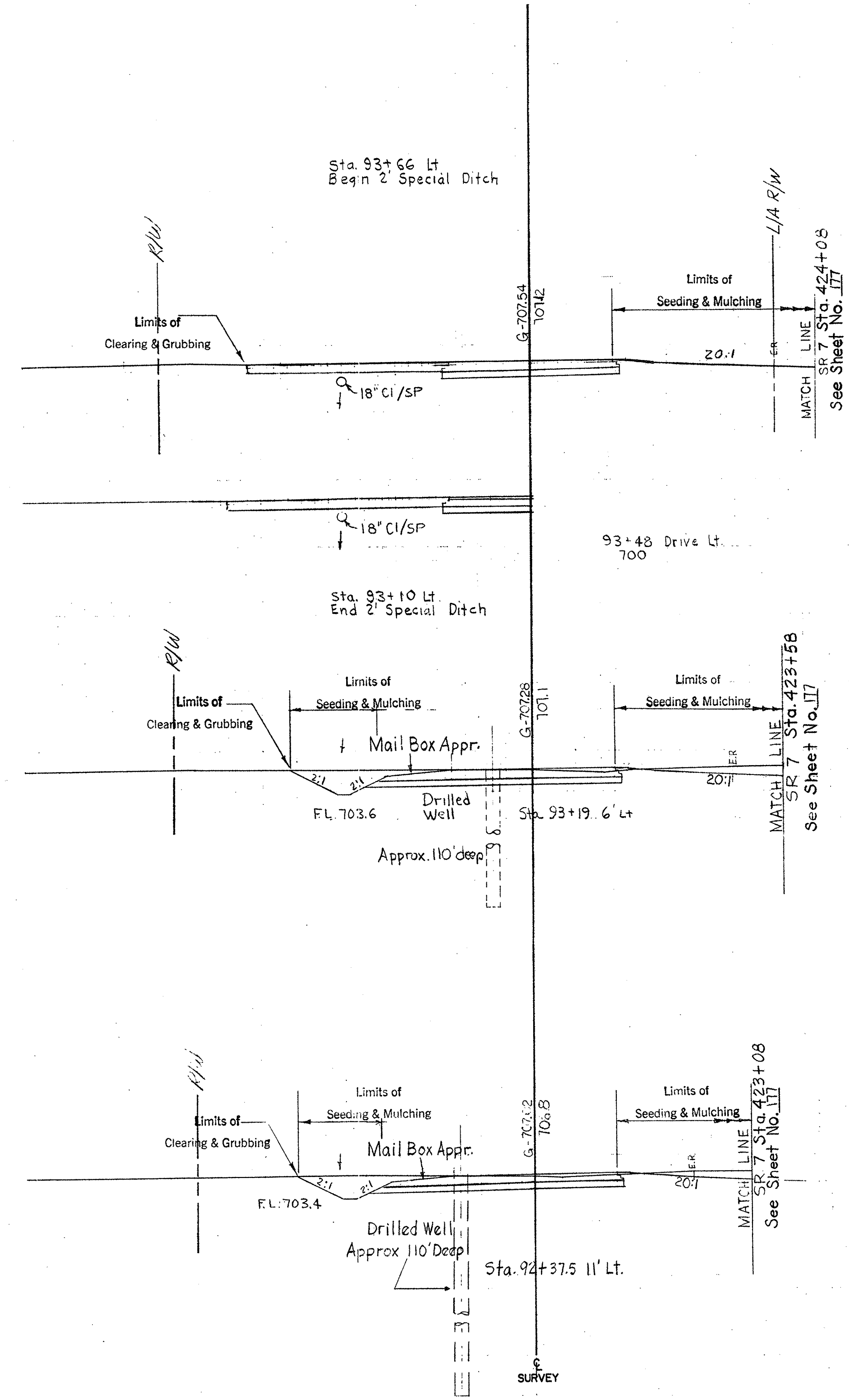
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

ORIGINAL SURVEY — SURVEYED?, PLOTTED?, TEMPLATE, AREAS, NOTE BOOK, NO., BY, DATE

100 50 50 100

PLATE 3 FULL CROSS SECTION

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
68	0	146	0

93+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	84	459
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	222
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
90	0	159	0

93+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	74	394
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	50	264
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

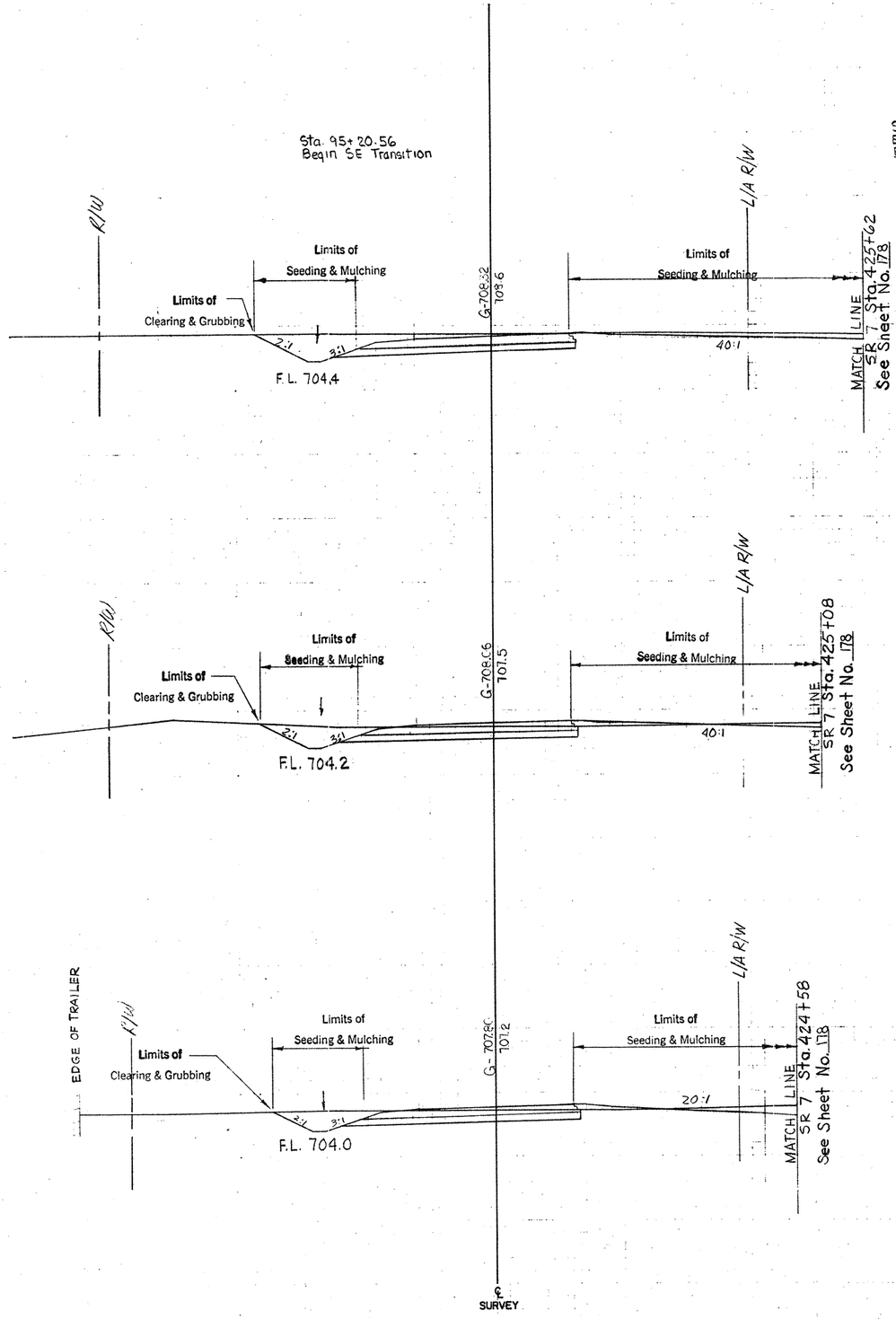
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
82	0	150	[illegible]

92+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	68	[illegible]
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	45	239
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SP2 0.00 M-5251 (002) 94+00 95+00 150 255

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
146	0	215	6

95+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	96	511
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	72	378
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
86	4	143	11

94+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	88	478
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	64	342
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
63	4	126	6

94+00
710

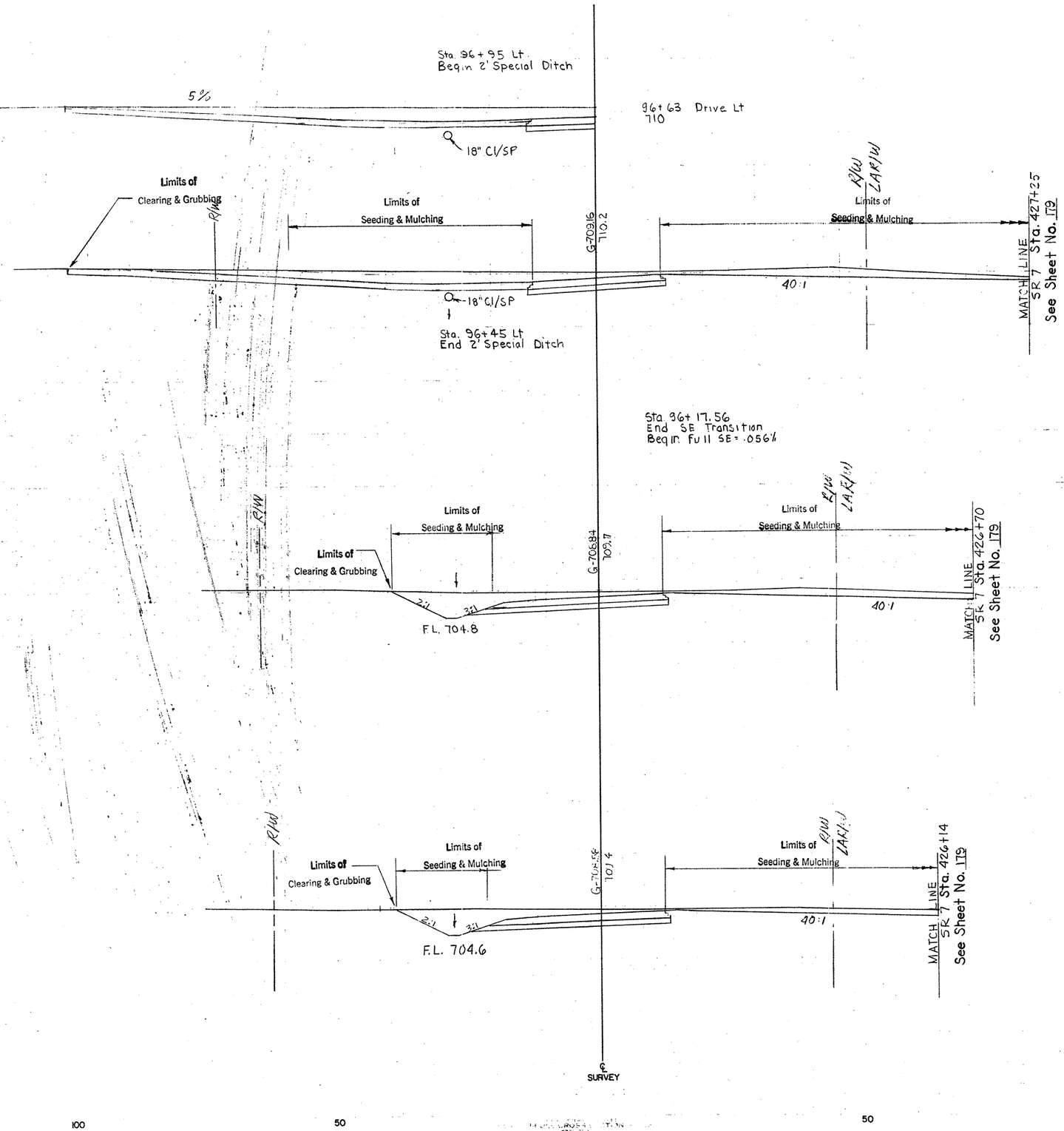
	WIDTH	AREA SY
CLEARING & GRUBBING	84	467
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	59	327
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED, BY, DATE

100 50 50 100

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
252	0	457	0

96+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	182	811
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	116	567
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
220	0	389	0

96+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	110	594
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	88	467
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
200	0	320	0

95+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	104	556
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	80	424
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

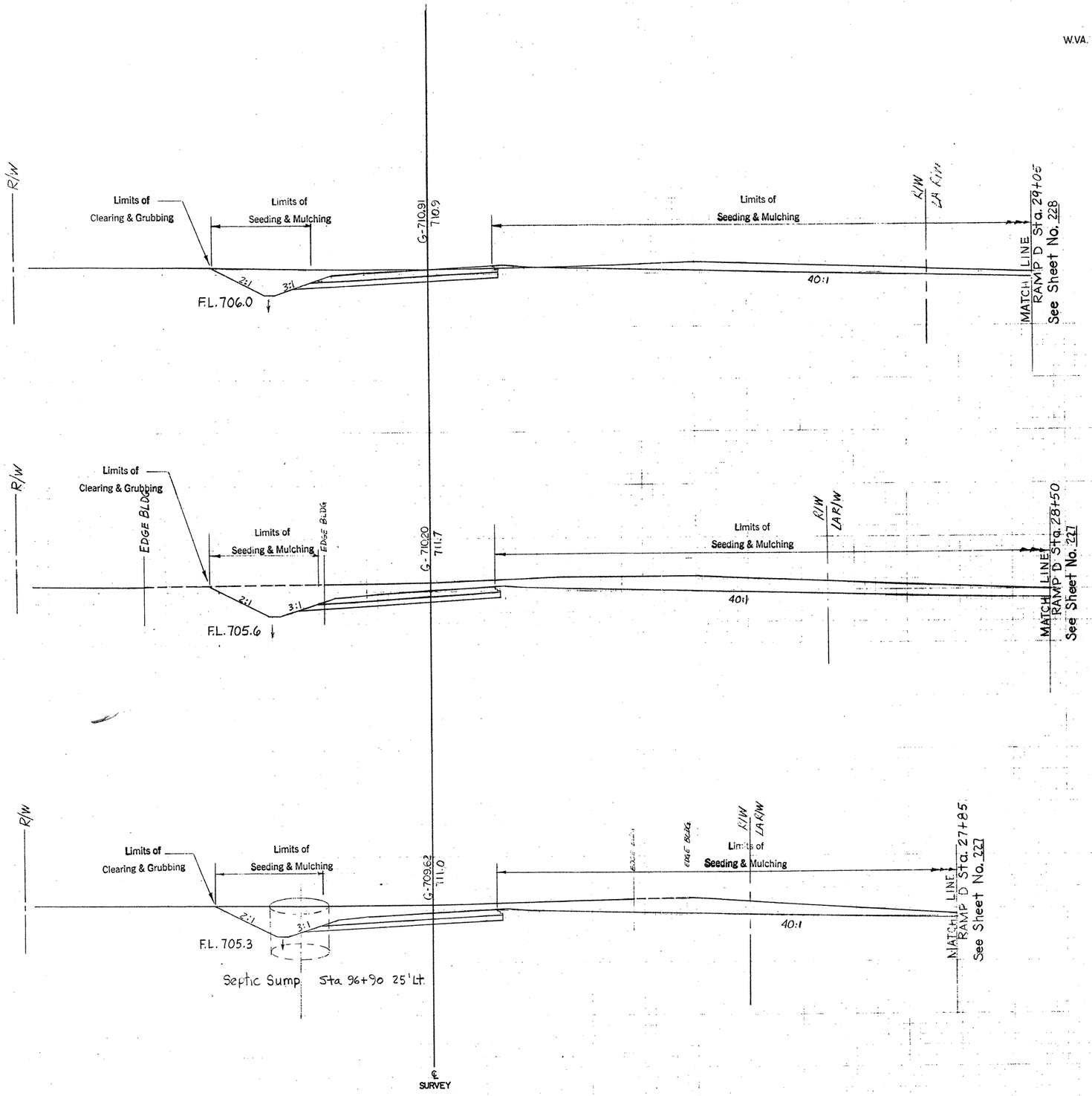
FINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, ITEM & FF, NOTE BOOK, NO, AREAS CHECKED

100 50 50 100

W.VA. 6 X326 SP2 0.00 M-5251 (002) 97+00 98+00 152 255

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
280	2	661	2

98+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	156	872
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	133	741
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
440	0	724	0

97+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	158	828
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	136	706
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
342	0	550	0

97+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	140	894
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	118	755
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

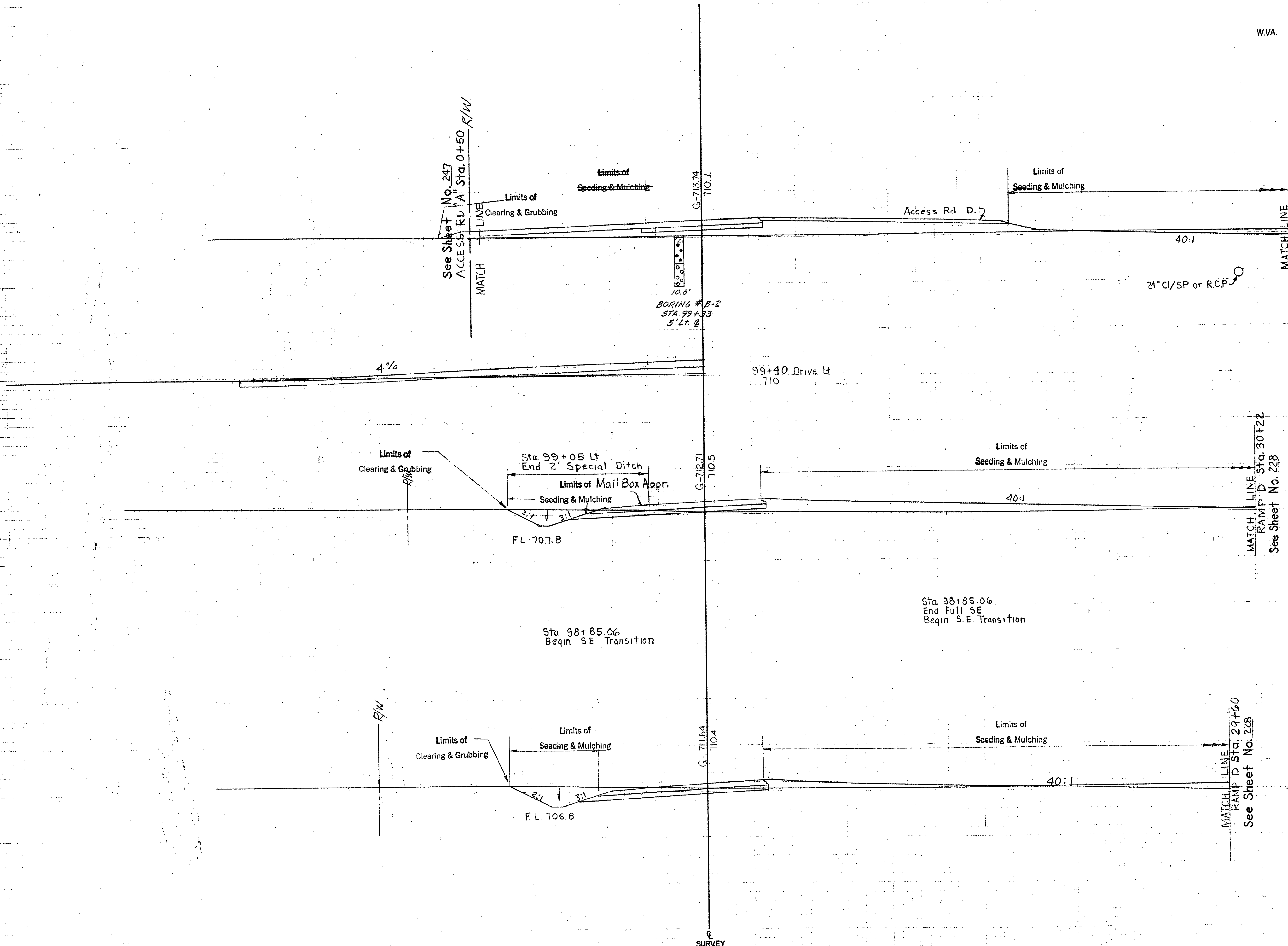
FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO.

100 50 PLANS FOR PROPOSED CONSTRUCTION 50 100

DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

RELOC. TWP. RD. 533


See Sheet No. 247
ACCESS RD "A" Sta. 0+50
MATCH LINE
R/W
Limits of
Clearing & Grubbing
Limits of
Seeding & Mulching
G-713.74
710.1
Limits of
Seeding & Mulching
Access Rd D.
40:1
MATCH LINE
RAMP D Sta. 30+33
See Sheet No. 229
99+50
710
10.5'
BORING # B-2
STA. 99+33
5' Lt. ℄
24" CI/SP or R.C.P.
4%
99+40 Drive Lt
710
Limits of
Clearing & Grubbing
R/W
Sta. 99+05 Lt
End 2' Special Ditch
Limits of Mail Box Appr.
Seeding & Mulching
G-712.71
710.5
Limits of
Seeding & Mulching
40:1
2:1
3:1
F.L. 707.8
MATCH LINE
RAMP D Sta. 30+22
See Sheet No. 228
99+00
710
Sta. 98+85.06
End Full SE
Begin S.E. Transition
Sta 98+85.06
Begin SE Transition
R/W
Limits of
Clearing & Grubbing
Limits of
Seeding & Mulching
G-711.64
710.4
Limits of
Seeding & Mulching
40:1
2:1
3:1
F.L. 706.8
MATCH LINE
RAMP D Sta. 29+60
See Sheet No. 228
98+50
710
℄ SURVEY
100
50
50
100

99+50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
32	224	102	317

	WIDTH	AREA SY
CLEARING & GRUBBING	152	872
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	75	594
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

99+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
78	118	196	146

	WIDTH	AREA SY
CLEARING & GRUBBING	162	883
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	139	756
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

98+50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
134	40	363	39

	WIDTH	AREA SY
CLEARING & GRUBBING	156	661
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	133	739
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS CHECKED / NOTE BOOK NO.

ORIGINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / NOTE BOOK NO.

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 100+00 to 101+00 | 154 | 255

RELOC. TWP. RD. 533

ORIGINAL SURVEY	DATE
SURVEYED	BY
PLOTTED	
TRACED	
NOTE BOOK	
AREAS	
NO.	AREAS CHECKED

See Sheet No. 247 Access Rd. "A" Sta. 0+50

Limits of Seeding & Mulching

Var.

24" CI/SP or R.C.P.

MATCH LINE

G-716.83
709.4

Limits of Seeding & Mulching

4:1

40:1

Access Rd D ℄

40:1

MATCH LINE RAMP D Sta. 32+42 See Sheet No. 230

101+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
50	540	76	954

	WIDTH	AREA SY
CLEARING & GRUBBING	204	1106
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	157	733
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 247 Access Rd. "A" Sta. 0+50

Access Rd. A ℄

G-715.20
709.5

Limits of Seeding & Mulching

5:1

40:1

Access Rd D ℄

40:1

MATCH LINE RAMP D Sta. 31+90 See Sheet No. 230

100+50
710

24" CI/SP or R.C.P.

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
32	490	65	751

	WIDTH	AREA SY
CLEARING & GRUBBING	194	1056
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	107	678
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 247 Access Rd. "A" Sta. 0+50

Limits of Seeding & Mulching

3:1

MATCH LINE

G-714.77
709.2

Limits of Seeding & Mulching

6:1

40:1

℄ Access Rd D

40:1

MATCH LINE RAMP D Sta. 31+40 See Sheet No. 229

100+00
710

24" CI/SP or RCP

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
38	300	65	445

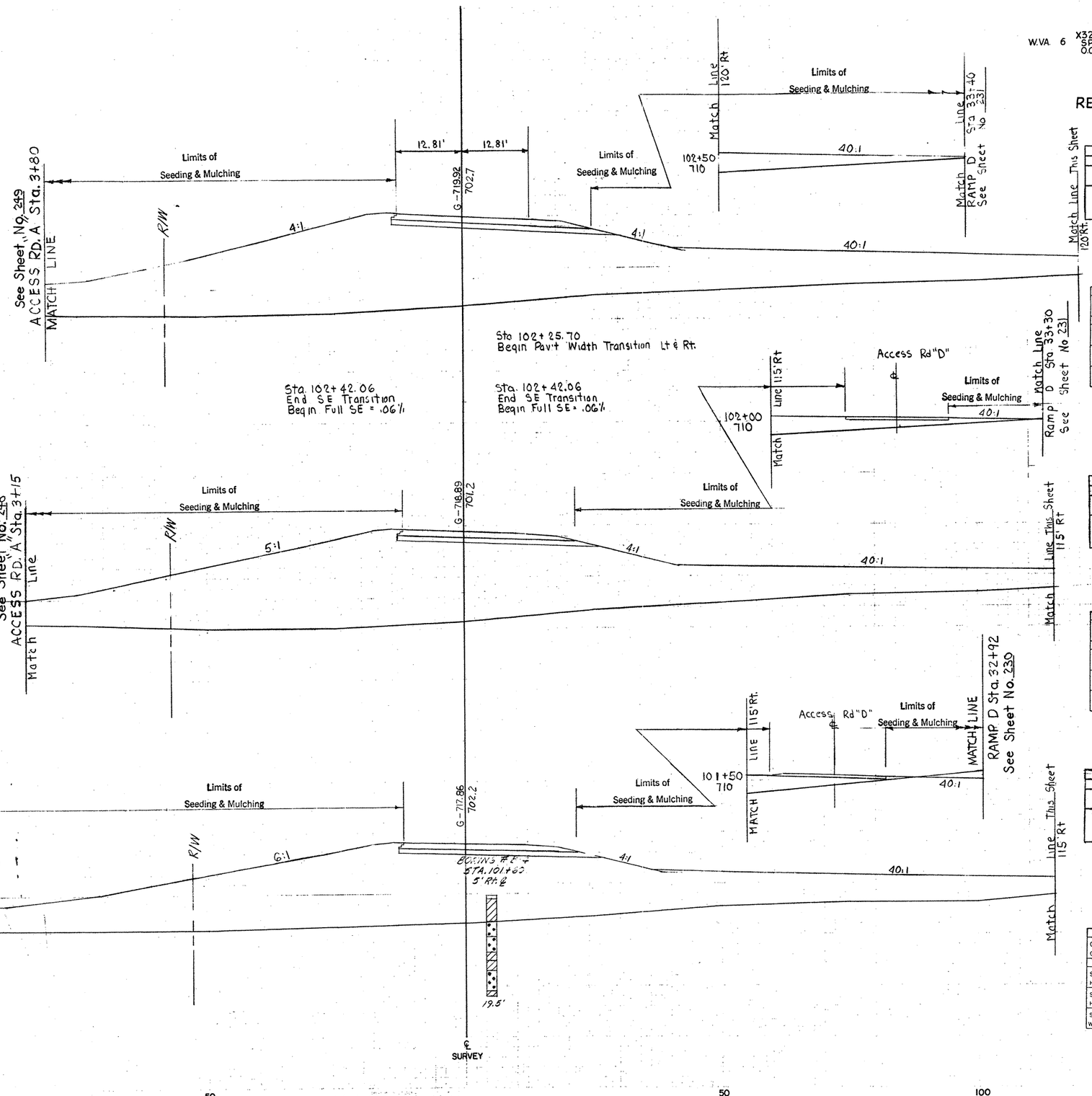
	WIDTH	AREA SY
CLEARING & GRUBBING	196	933
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	137	589
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

SURVEY

100 50 50 100

W.VA. 6 X326 SGP 0.00 M-5251 (002) 101+50 102+50 155 255

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2184	0	4041

102+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	254	1400
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	225	1211
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2180	0	3926

102+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	254	1433
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	211	1186
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2060	46	2407

101+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	262	1204
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	216	1036
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

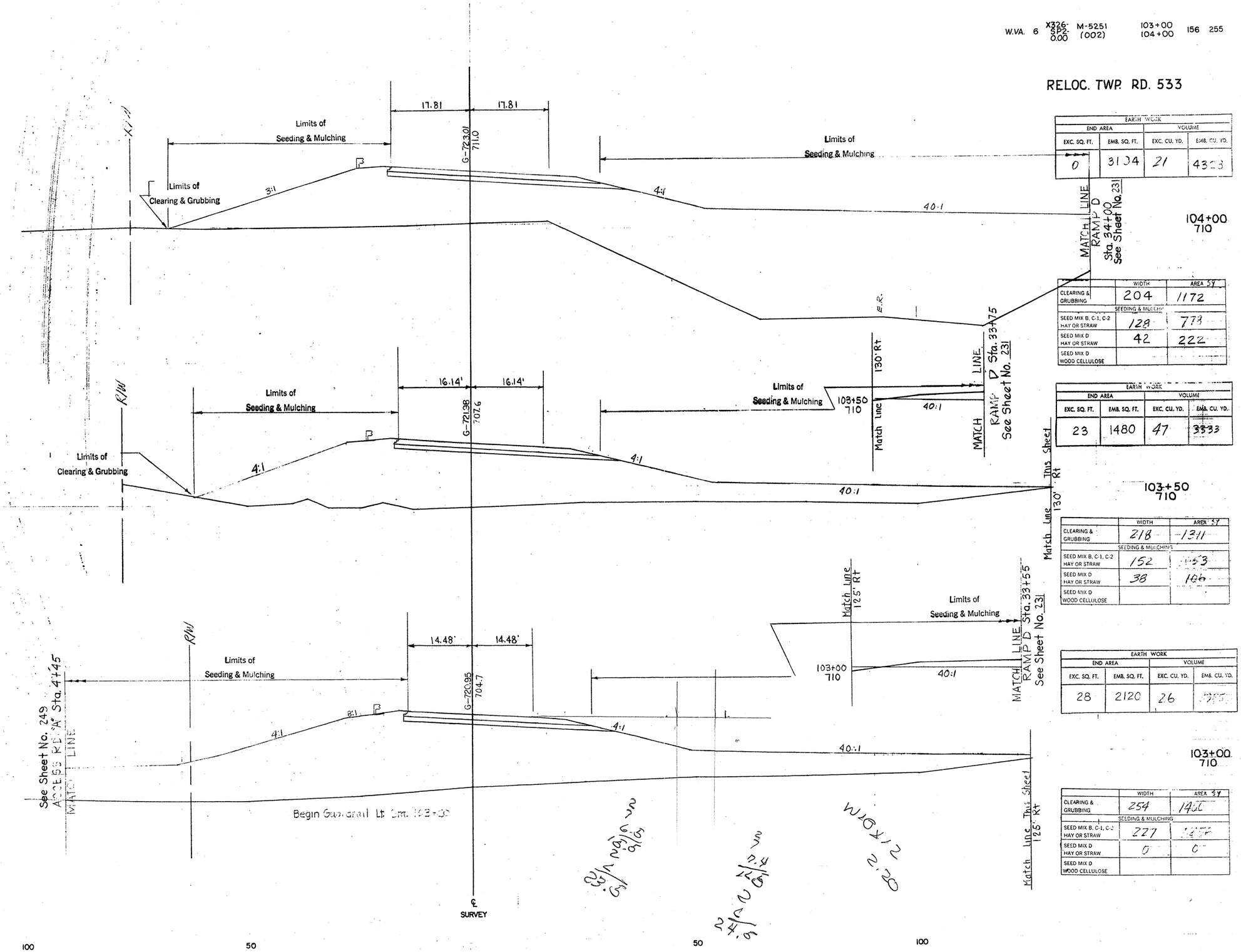
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO.

100 50 50 100

W.VA. 6 X326 SP2 0.00 M-5251 (002) 103+00 104+00 156 255

RELOC. TWP. RD. 533



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	3134	21	4333

	WIDTH	AREA SY
CLEARING & GRUBBING	204	1172
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	128	773
SEED MIX D HAY OR STRAW	42	222
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
23	1480	47	3333

	WIDTH	AREA SY
CLEARING & GRUBBING	218	1311
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	152	953
SEED MIX D HAY OR STRAW	38	166
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
28	2120	26	2785

	WIDTH	AREA SY
CLEARING & GRUBBING	254	1402
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	227	1475
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — NOTE BOOK — AREAS — NO. — AREAS CHECKED

FINAL SURVEY — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — NOTE BOOK — AREAS — NO. — AREAS CHECKED

W.VA. 6 X326 SP2. 0.00 M-5251 (002) 104+50 105+00 157 255

RELOC. TWP. RD. 533

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

	WIDTH	AREA SY
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

Sta. 105+01.70
End Full S.E.
Begin Transition Lt & Rt.

21.14' 21.14'

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

2:1

G-725.07
699.5

4:1

40:1

Limits of Seeding & Mulching

L A R/W

MATCH LINE RAMP D Sta. 34+38 See Sheet No. 231

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	5590	0	8711

105+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	186	1033
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	113	658
SEED MIX D HAY OR STRAW	37	191
SEED MIX D WOOD CELLULOSE		

19.48' 19.48'

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

R/W

G-724.04
710.7

4:1

40:1

Limits of Seeding & Mulching

L A R/W

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	3170	0	5893

MATCH LINE RAMP D Sta. 34+28 See Sheet No. 231

104+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	186	1083
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	124	700
SEED MIX D HAY OR STRAW	28	194
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 50 100

FINAL SURVEY — NOTE BOOK NO. — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED

ORIGINAL SURVEY — NOTE BOOK NO. — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED

W.VA. 6 X326-SP2-0.00 M-5251 (002) 105+50 158 255

RELOC. TWP. RD. 533

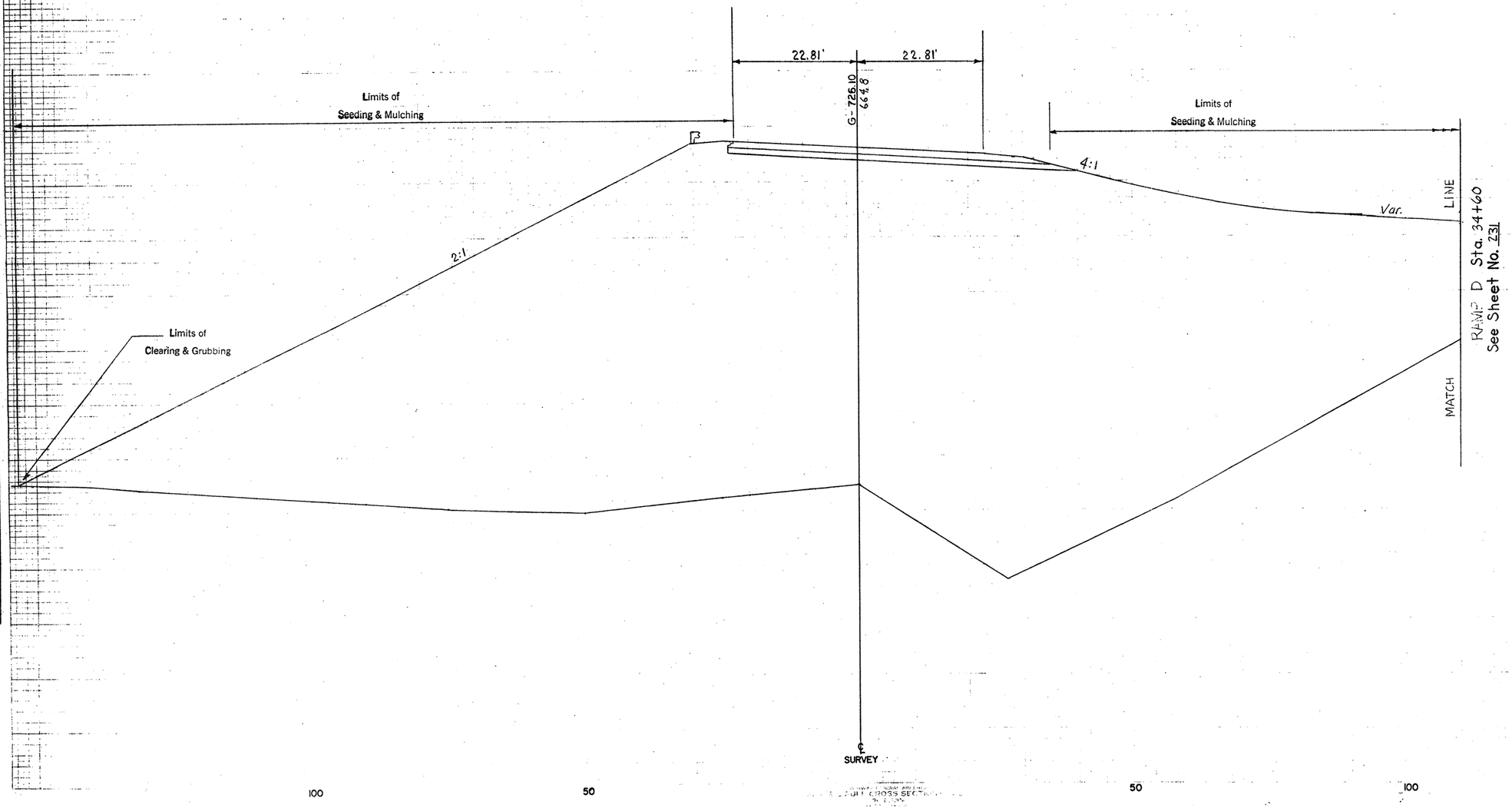
STA 105+85.70 Reloc Twp 533 =
STA 5+85.23 SR 872
End Pavt Width Transition Lt & Rt

Sta. 106+00
Exc. 0 Emb. 4812

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	11,920	0	16,213

105+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	262	1244
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	94	575
SEED MIX D HAY OR STRAW	138	426
SEED MIX D WOOD CELLULOSE		



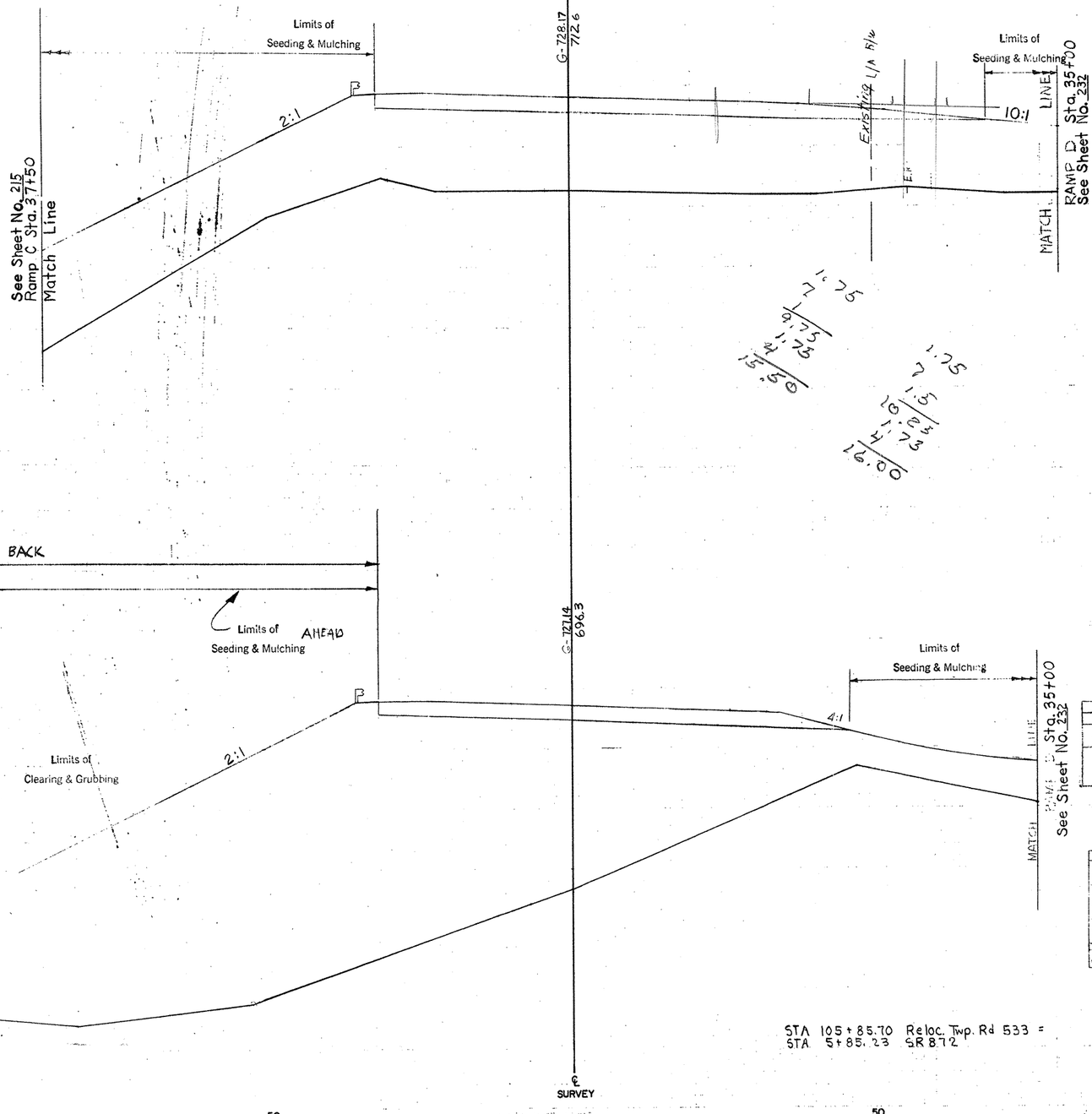
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

W.VA. 6 | X326-SP2-0.00 | M-5251-(002) | 6+00 | 6+50 | 159 | 255

S.R. 872

Sta. 6+88.02
End S.E Transition Rt
Begin Normal Crown Rt



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2236	0	6696

6+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	168	961
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	16	142
SEED MIX D HAY OR STRAW	57	358
SEED MIX D WOOD CELLULOSE		

Sta. 6+00
BACK

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	4812	0	15493

	WIDTH	AREA SY
CLEARING & GRUBBING	214	1322
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	35	256
SEED MIX D HAY OR STRAW	112	496
SEED MIX D WOOD CELLULOSE		

Sta 6+00
AHEAD

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	4456	0	0

6+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	178	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	35	0
SEED MIX D HAY OR STRAW	72	0
SEED MIX D WOOD CELLULOSE		

STA 105+85.70 Reloc. Twp. Rd 533 =
STA 5+85.23 SR 872

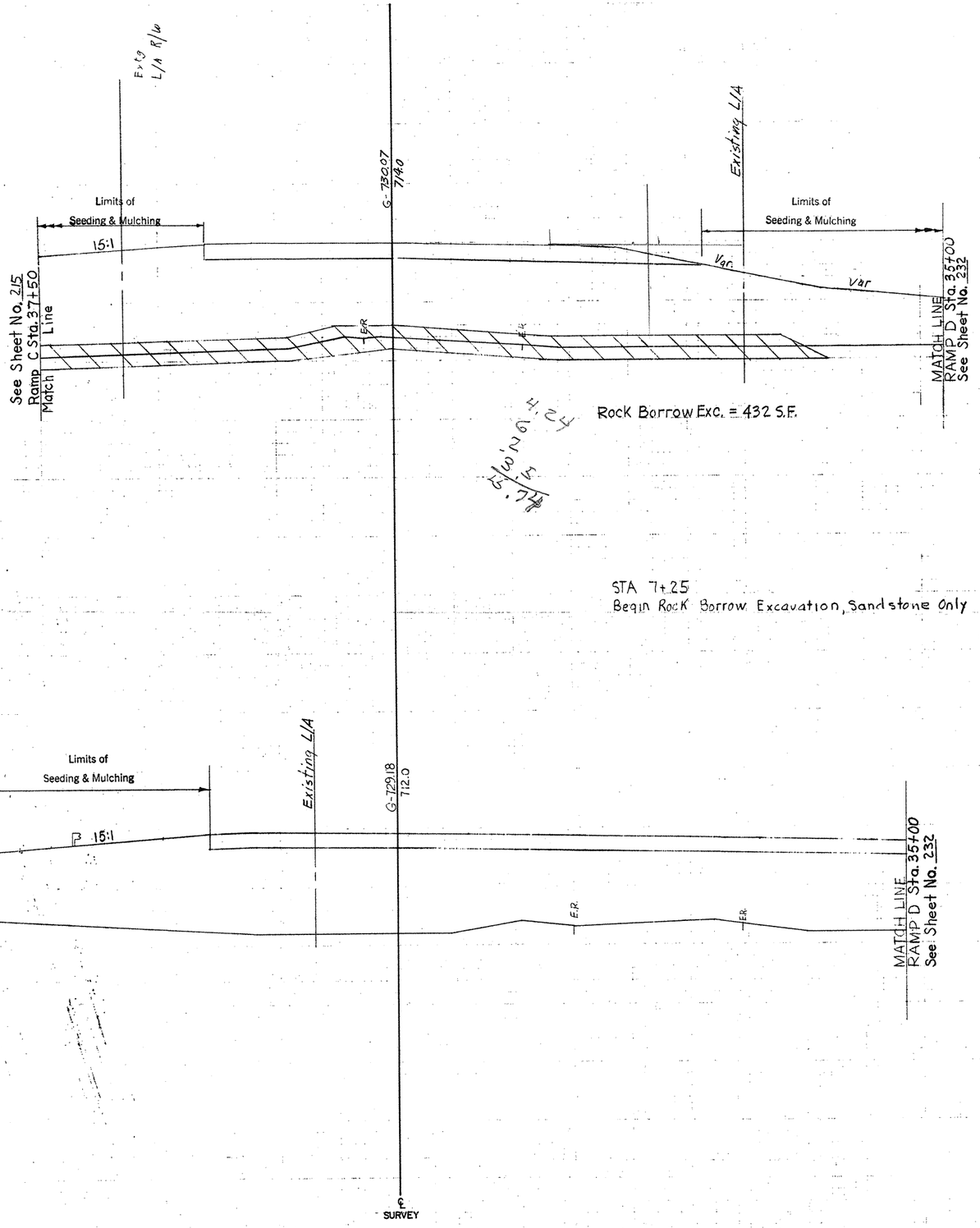
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE AREAS CHECKED, NOTE BOOK, NO.

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA. 6 X326 SP2 0.00 M-5251 (002) 7+00 7+50 160 255

S.R. 872



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
284	1898	263	3726

7+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	154	818
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	72	222
SEED MIX D HAY OR STRAW	0	92
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2126	0	4039

7+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	162	917
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	67
SEED MIX D HAY OR STRAW	33	250
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

100 50 50 100

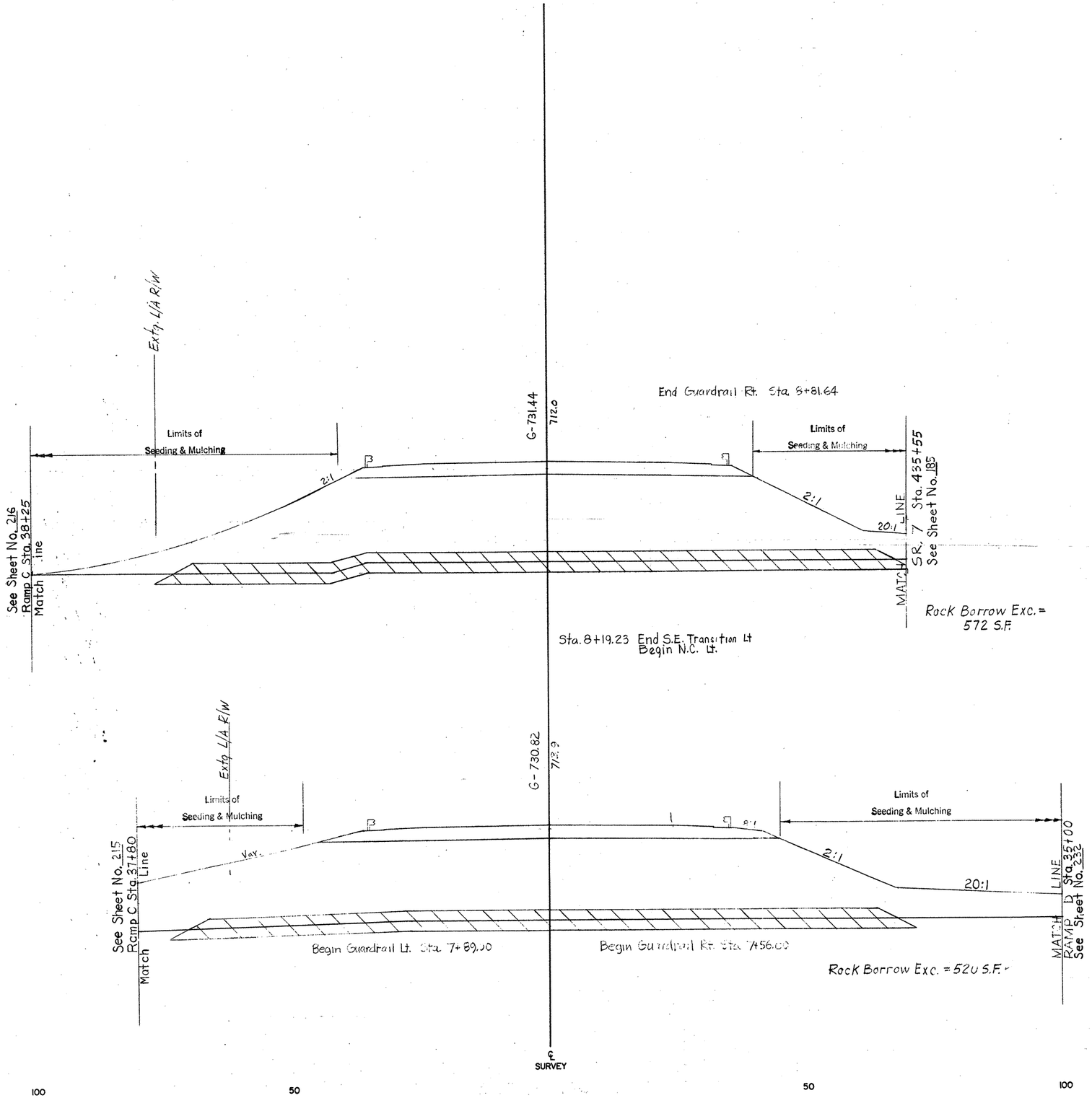
PLATE 3 FULL CROSS SECTIONS

W.VA.	6	X326-SP2-0.00	M-5251-(002)	8 + 00 8 + 50	161	255

S.R. 872

FINAL SURVEY
NOTE BOOK
NO.
BY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY
NOTE BOOK
NO.
BY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
DATE



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
290	1760	543	3514

8+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	170	972
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	41	294
SEED MIX D HAY OR STRAW	54	219
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
296	2035	537	3642

8+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	180	928
SEEDING & MULCHING		
SEED MIX B C-1, C-2 HAY OR STRAW	65	381
SEED MIX D HAY OR STRAW	25	69
SEED MIX D WOOD CELLULOSE		

W.VA. 6 | X326-SP2-0.00 | M-5251-(002) | 9+00 10+00 | 162 | 255

S.R. 872

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

10+00
710

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

STA. 9+70
End Rock Borrow Excavation Sandstone Only
End Area = 0

Sta. 9+50 Stop Earthwork & Seeding

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
500	422	811	1822

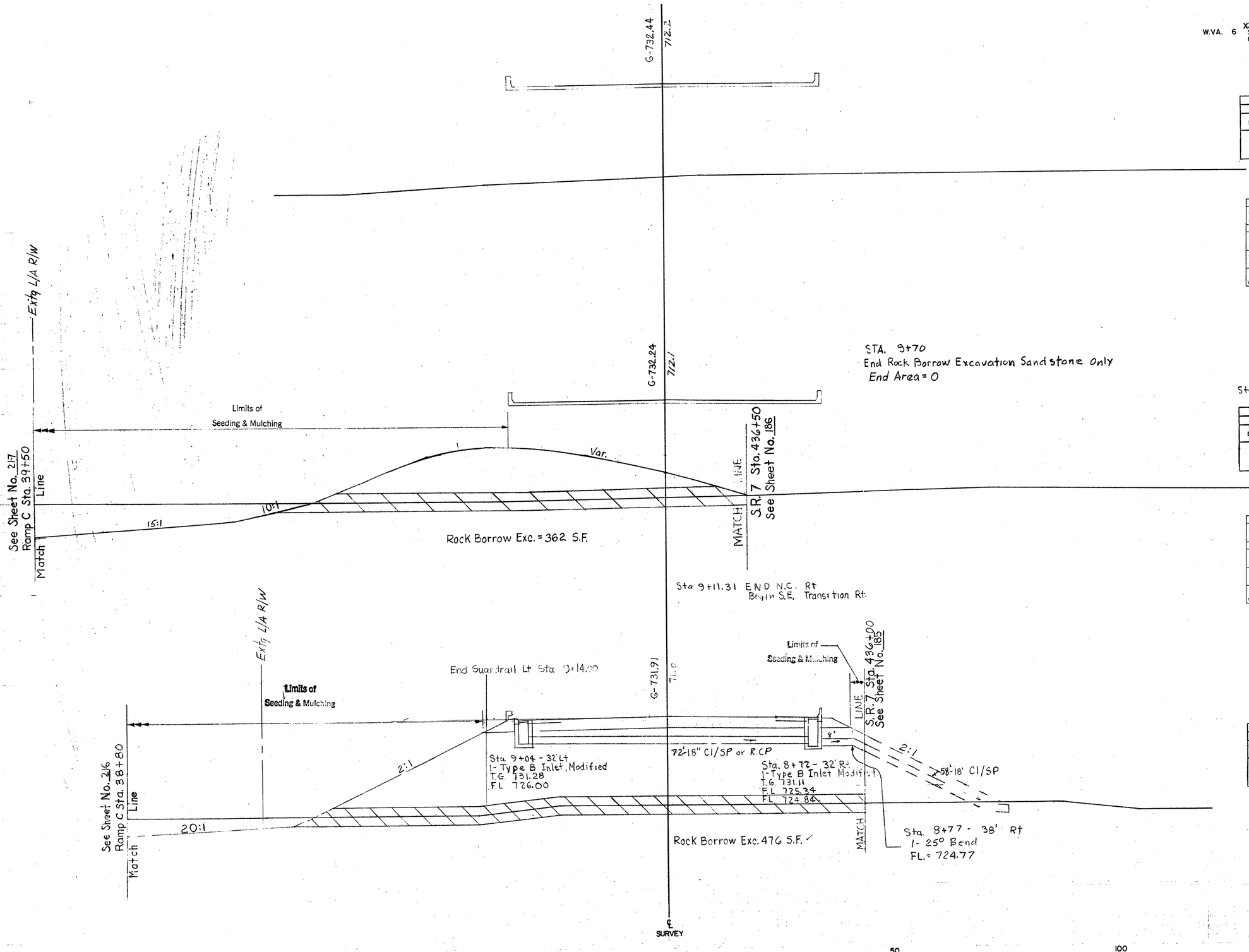
9+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	158	894
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	61	272
SEED MIX D HAY OR STRAW	46	269
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
376	1546	617	3061

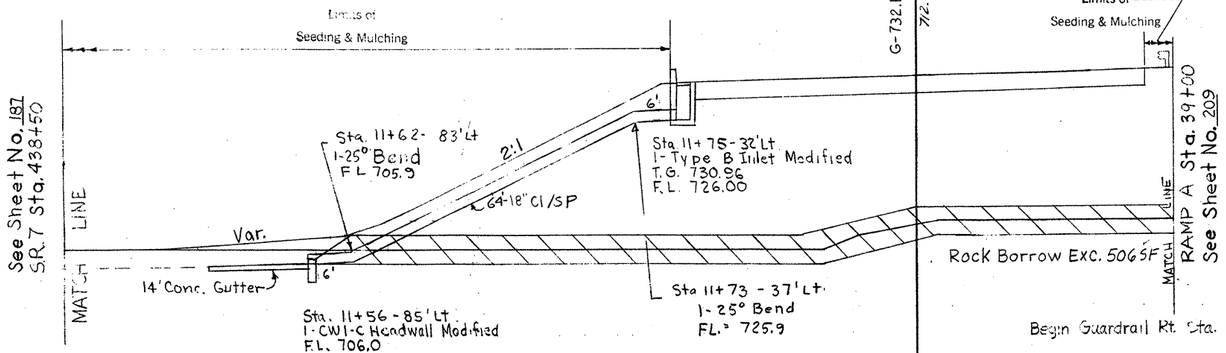
9+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	164	923
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	37	217
SEED MIX D HAY OR STRAW	51	332
SEED MIX D WOOD CELLULOSE		



W.VA. 6 X326-SP2-0.00 M-5251-(002) 10+50 11+50 163 255

S.R. 872



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
242	1620	367	1470

11+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	156	756
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	200
SEED MIX D HAY OR STRAW	49	136
SEED MIX D WOOD CELLULOSE		

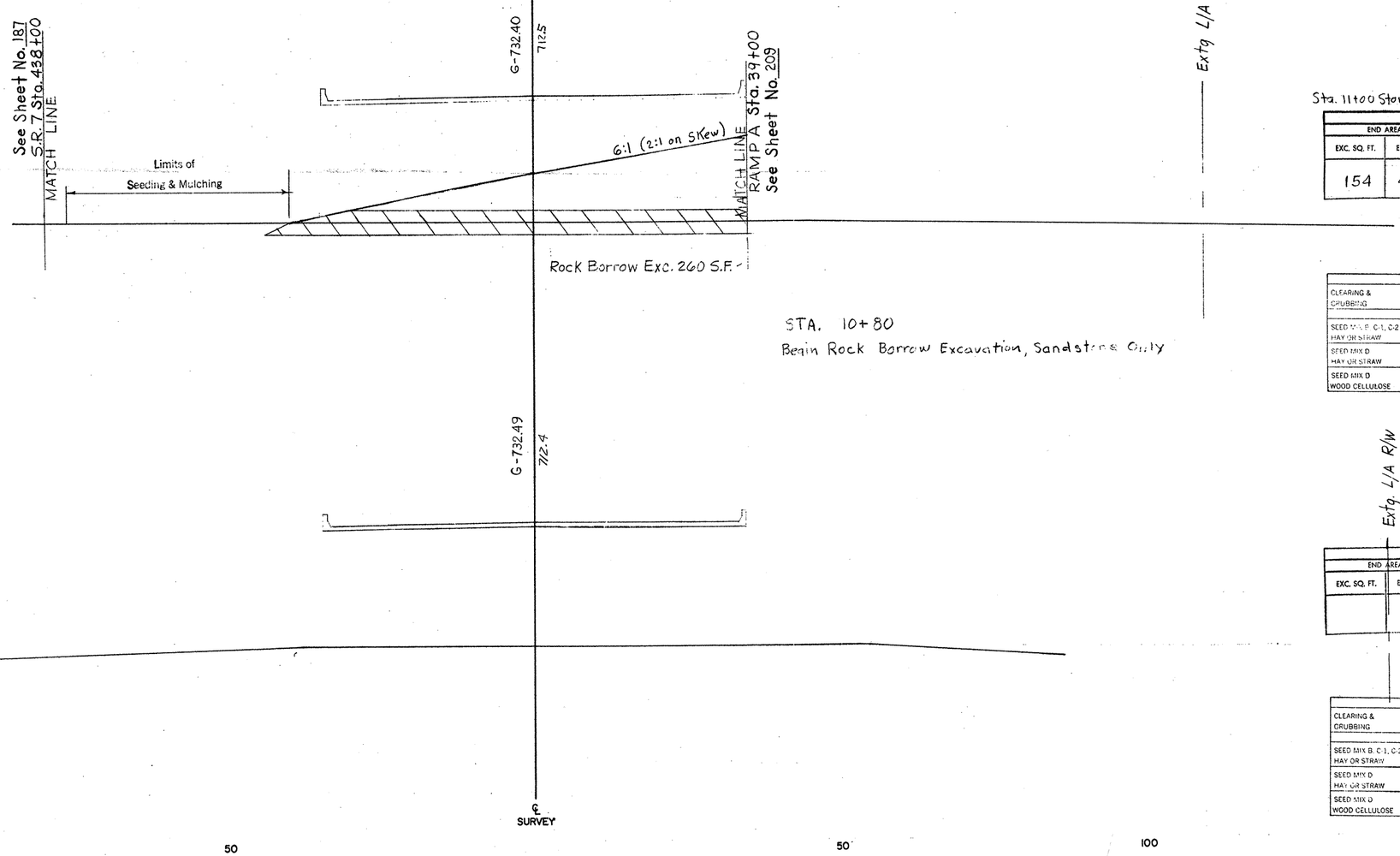
Exist. L/A R/W

Exist. L/A R/W

Sta. 11+00 Start Earthwork & ~~Seeding~~

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
154	400	0	0

11+00
710



	WIDTH	AREA SY
CLEARING & GRUBBING	116	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	41	0
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Exist. L/A R/W

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

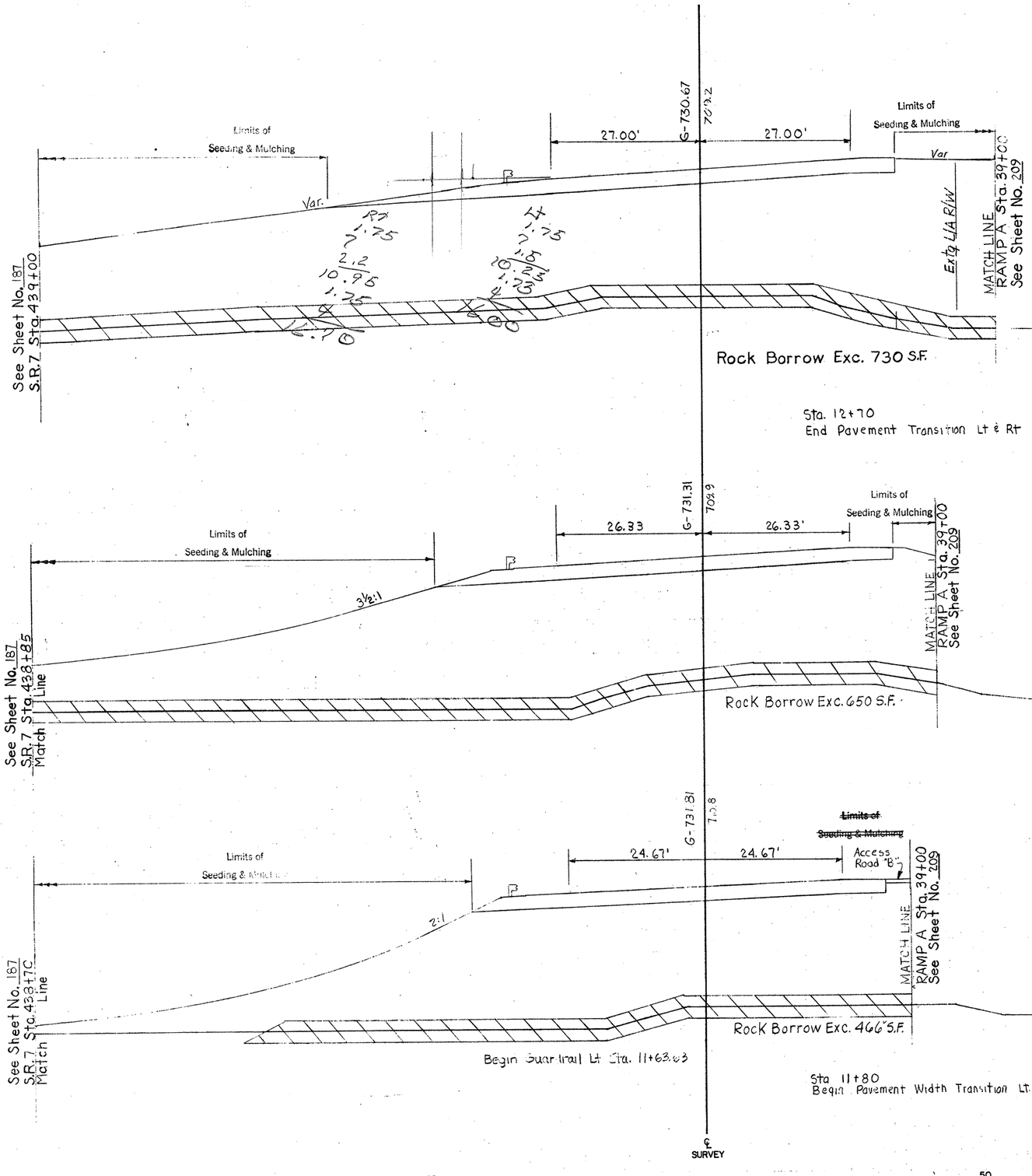
10+50
710

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

100 50 50 100

W.VA. 6 | X326-SP2-0.00 | M-5251-(002) | 12+00 13+00 | 164 | 255

S.R. 872



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
356	3160	652	5361

13+00
700

Sta. 12+70
End Pavement Transition Lt & Rt

SC Sta. 12+61.31
End S.E Transition Lt & Rt
Begin Full SE = .06'/'

	WIDTH	AREA SY
CLEARING & GRUBBING	172	933
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	101	528
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
348	2630	561	4407

12+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	164	894
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	89	439
SEED MIX D HAY OR STRAW	0	50
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
258	2130	463	3472

	WIDTH	AREA SY
CLEARING & GRUBBING	158	812
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	69	272
SEED MIX D HAY OR STRAW	18	156
SEED MIX D WOOD CELLULOSE		

12+00
700

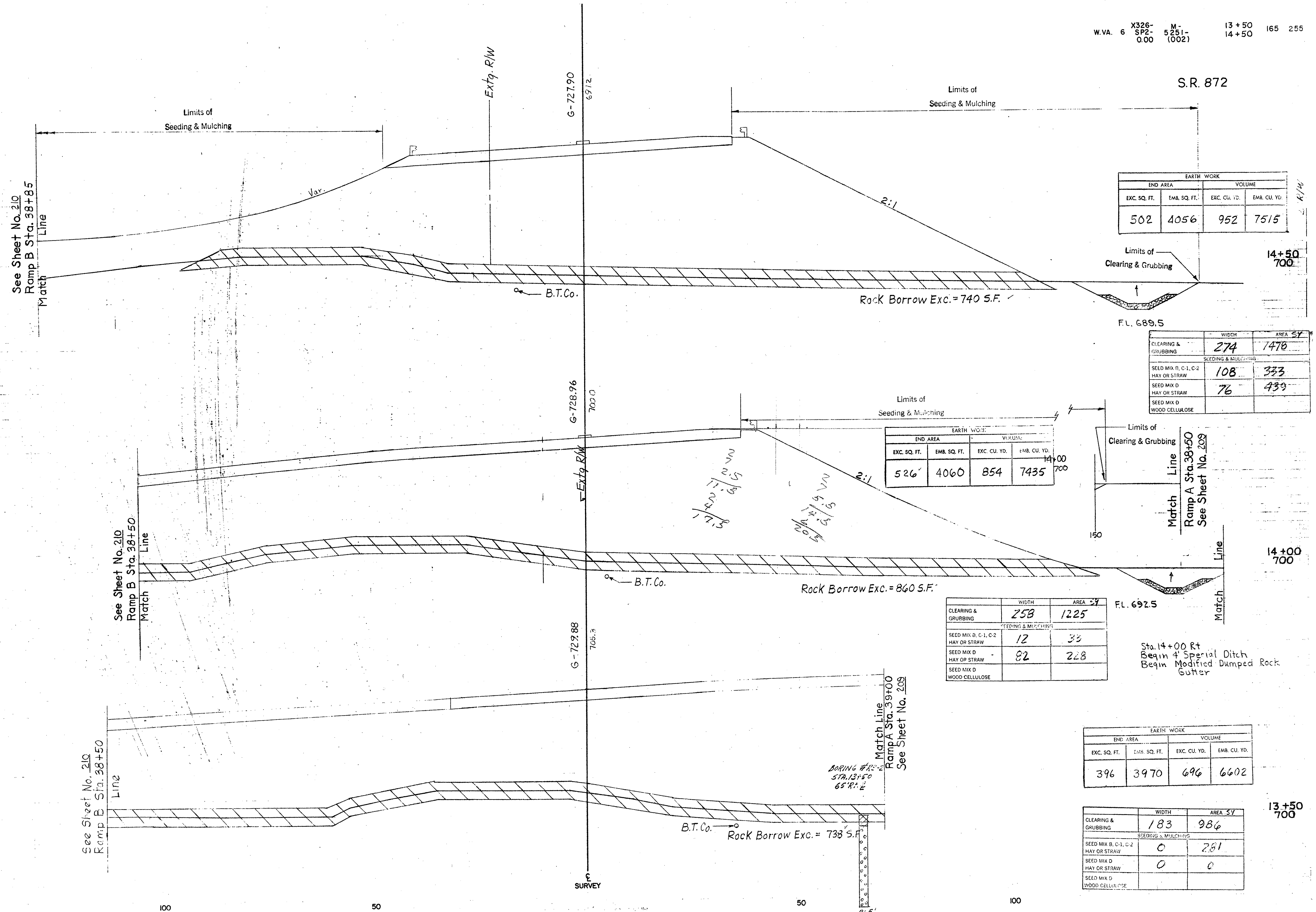
Sta. 11+80
Begin Pavement Width Transition Lt. & Rt

FINAL SURVEY — DRAWING PLOTTED — TEMPLATE — AREAS — NOTE BOOK — NO. — AREAS CHECKED — DATE

ORIGINAL SURVEY — SURVEYED — PLOTTED — TEMPLATE — AREAS — NOTE BOOK — NO. — AREAS CHECKED — DATE — BY

100 50 50 100

S.R. 872



Sta. 14+50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
502	4056	952	7515

	WIDTH	AREA SY
CLEARING & GRUBBING	274	1478
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	108	333
SEED MIX D HAY OR STRAW	76	439
SEED MIX D WOOD CELLULOSE		

Sta. 14+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
526	4060	854	7435

	WIDTH	AREA SY
CLEARING & GRUBBING	258	1225
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	12	33
SEED MIX D HAY OR STRAW	82	228
SEED MIX D WOOD CELLULOSE		

Sta. 13+50

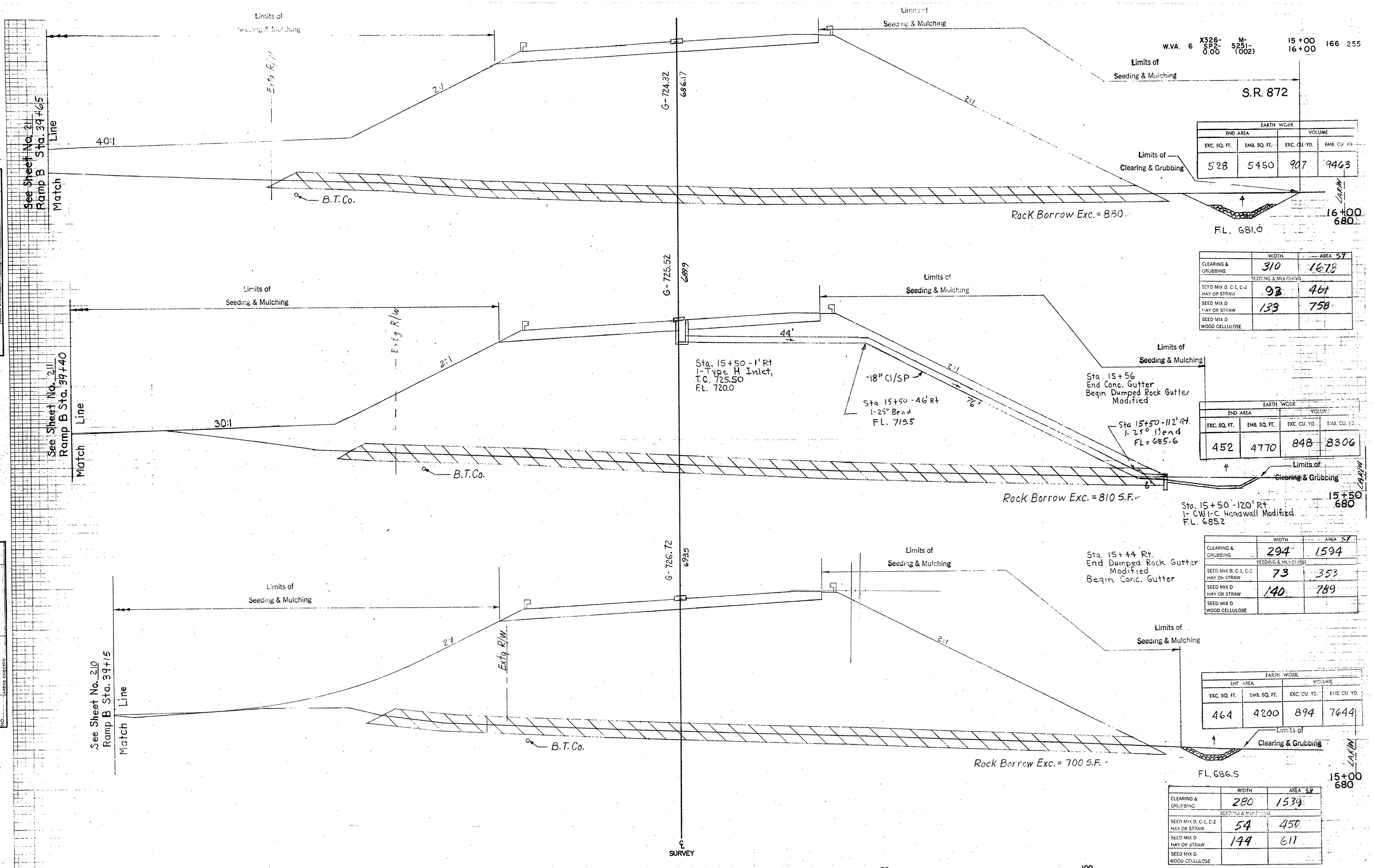
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
396	3970	696	6602

	WIDTH	AREA SY
CLEARING & GRUBBING	183	986
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	281
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY		
NOTE BOOK		
NO.		

ORIGINAL SURVEY		
NOTE BOOK		
NO.		

S.R. 872



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
528	5450	907	9463

	WIDTH	AREA SY
CLEARING & GRUBBING	310	1675
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	93	461
SEED MIX D HAY OR STRAW	133	758
SEED MIX D WOOD CELLULOSE		

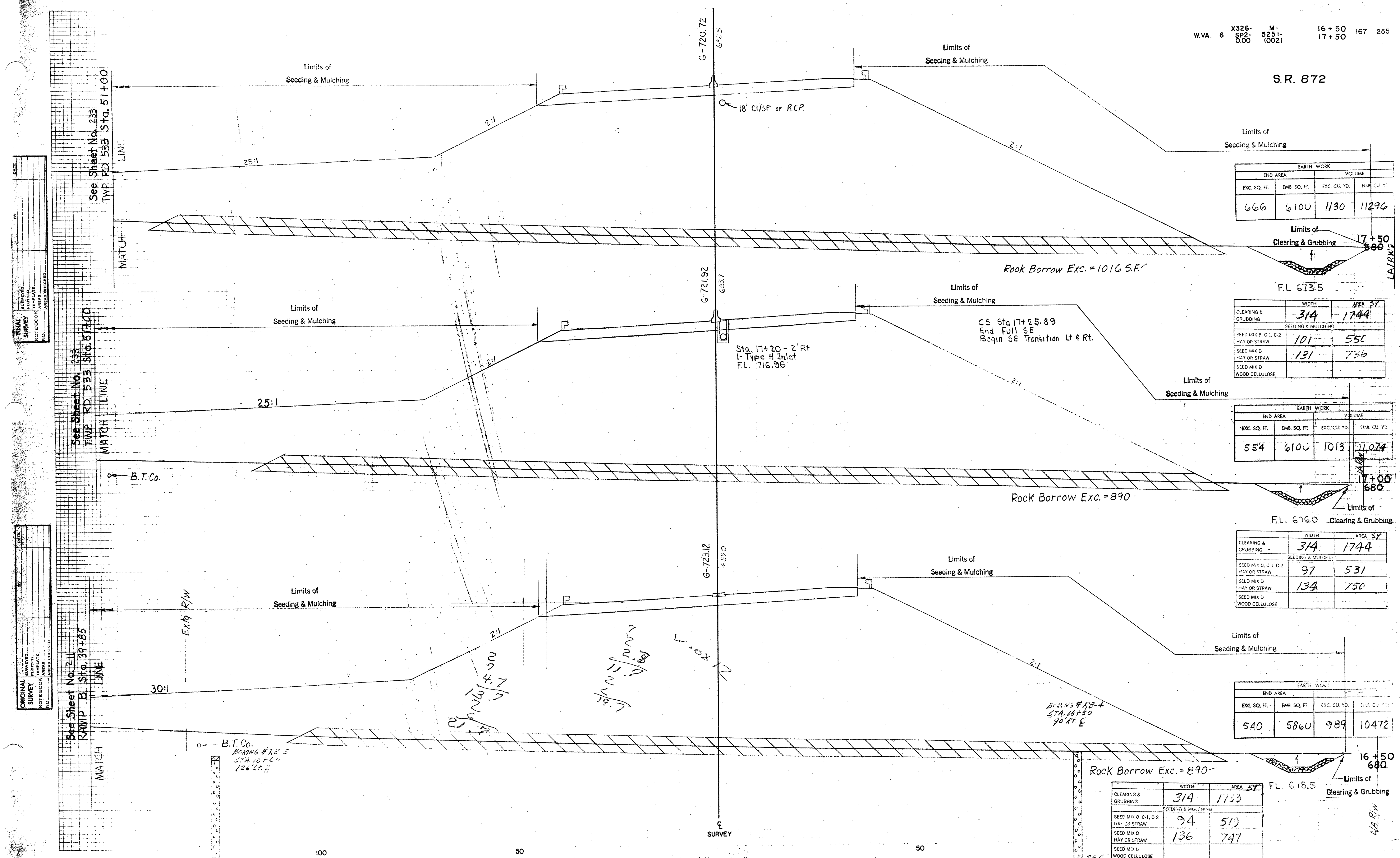
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
452	4770	848	8306

	WIDTH	AREA SY
CLEARING & GRUBBING	294	1594
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	73	353
SEED MIX D HAY OR STRAW	140	789
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
464	4200	894	7644

	WIDTH	AREA SY
CLEARING & GRUBBING	280	1539
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	54	450
SEED MIX D HAY OR STRAW	144	611
SEED MIX D WOOD CELLULOSE		

S.R. 872



See Sheet No. 233 TWP RD 533 Sta. 51+00 LINE
MATCH
Limits of Seeding & Mulching
G-720.72
18" CI/SP or R.C.P.
2:1
25:1
Limits of Clearing & Grubbing
17+50 680
Rock Borrow Exc. = 1016 S.F.
F.L. 673.5
G-721.92
Sta. 17+20 - 2' Rt
1- Type H Inlet
F.L. 716.96
CS Sta 17+25.89
End Full SE
Begin SE Transition Lt & Rt.
B.T. Co.
17+00 680
Rock Borrow Exc. = 890
F.L. 676.0
See Sheet No. 241 RAMP B Sta. 39+85 LINE
G-723.12
Extg R/W
30:1
BORING # KB-4 STA. 16+50 90' Rt. ℄
BORING # KB-3 STA. 16+50 126' Lt. ℄
16+50 680
Rock Borrow Exc. = 890
F.L. 618.5
LA R/W
℄ SURVEY
100
50
50
FINAL SURVEY
ORIGINAL SURVEY

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
666	6100	1130	11296

	WIDTH	AREA SY
CLEARING & GRUBBING	314	1744
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	101	550
SEED MIX D HAY OR STRAW	131	736
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
554	6100	1013	11,074

	WIDTH	AREA SY
CLEARING & GRUBBING	314	1744
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	97	531
SEED MIX D HAY OR STRAW	134	750
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
540	5860	989	10472

	WIDTH	AREA SY
CLEARING & GRUBBING	314	1733
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	94	519
SEED MIX D HAY OR STRAW	136	747
SEED MIX D WOOD CELLULOSE		

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S.R. 872

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
342	5174	654	9463

19+00
680

Limits of Seeding & Mulching

See Sheet No. 233
Twp Rd. 533 Sta. 51+00
Match Line

G-717.12
617.9

Sta. 19+10-2' Rt
1-Type H Inlet
T.G. 716.88
F.L. 712.30

MATCH LINE
Twp. Rd. 533A Sta. 49+50
See Sheet No. 246

Rock Borrow Exc. = 634 ~

Sta. 18+73.89
End S.E Transition Lt
Begin Normal Crown Lt.

	WIDTH	AREA SY
CLEARING & GRUBBING	156	917
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	37	336
SEED MIX D HAY OR STRAW	0	28
SEED MIX D WOOD CELLULOSE		

End Guardrail Lt. Sta. 18+62.26

Limits of Seeding & Mulching

2½:1

20:1

See Sheet No. 233
Twp Rd. 533 Sta. 51+00
Match Line

G-718.32
618.8

18" CI/SP or R.C.P.

Limits of Seeding & Mulching

MATCH LINE
Twp. Rd. 533A Sta. 49+50
See Sheet No. 246

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
364	5046	967	10,450

18+50
680

Rock Borrow Exc. = 676 ~

18" CI/SP or R.C.P.

End Guardrail Rt. Sta. 18+33.75

	WIDTH	AREA SY
CLEARING & GRUBBING	174	1311
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	84	464
SEED MIX D HAY OR STRAW	10	351
SEED MIX D WOOD CELLULOSE		

Limits of Seeding & Mulching

20:1

3:1

See Sheet No. 233
TWP. RD. 533 Sta. 51+00
LINE
MATCH

FOR RING # R.S.-5
STA. 18+00
72' Lt. ℄

℄ SURVEY

G-719.52
619.4

Sta. 18+20-2' Rt
1-Type H Inlet
T.G. 718.96
F.L. 711.86
F.L. 711.86
F.L. 711.36

48 LF

Sta. 18+10
1-25° Bend
FL = 710.78

Limits of Seeding & Mulching

18" CI/SP

2:1

83 LF

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD	EMB. CU. YD
680	6240	1246	11426

Sta. 18+05 Rt.
End 4' Special Ditch
End Conc. Gutter

Limits of Seeding & Mulching

Sta. 17+90 Rt.
End Dumped Rock Gutter
Modified
Begin Conc. Gutter

Sta. 18+02
1-25° Bend
FL = 675.8

LA/RW

Limits of Clearing & Grubbing

18+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	298	1700
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	83	511
SEED MIX D HAY OR STRAW	127	717
SEED MIX D WOOD CELLULOSE		

Rock Borrow Exc. = 1060 S.Y.
Sta. 18+06-126' Rt
1-CW1-C Headwall, Modified
F.L. 675.5

Sta. 18+05-148' Rt
1-CW2-C Windwall
F.L. 670.50

100 50 50 100

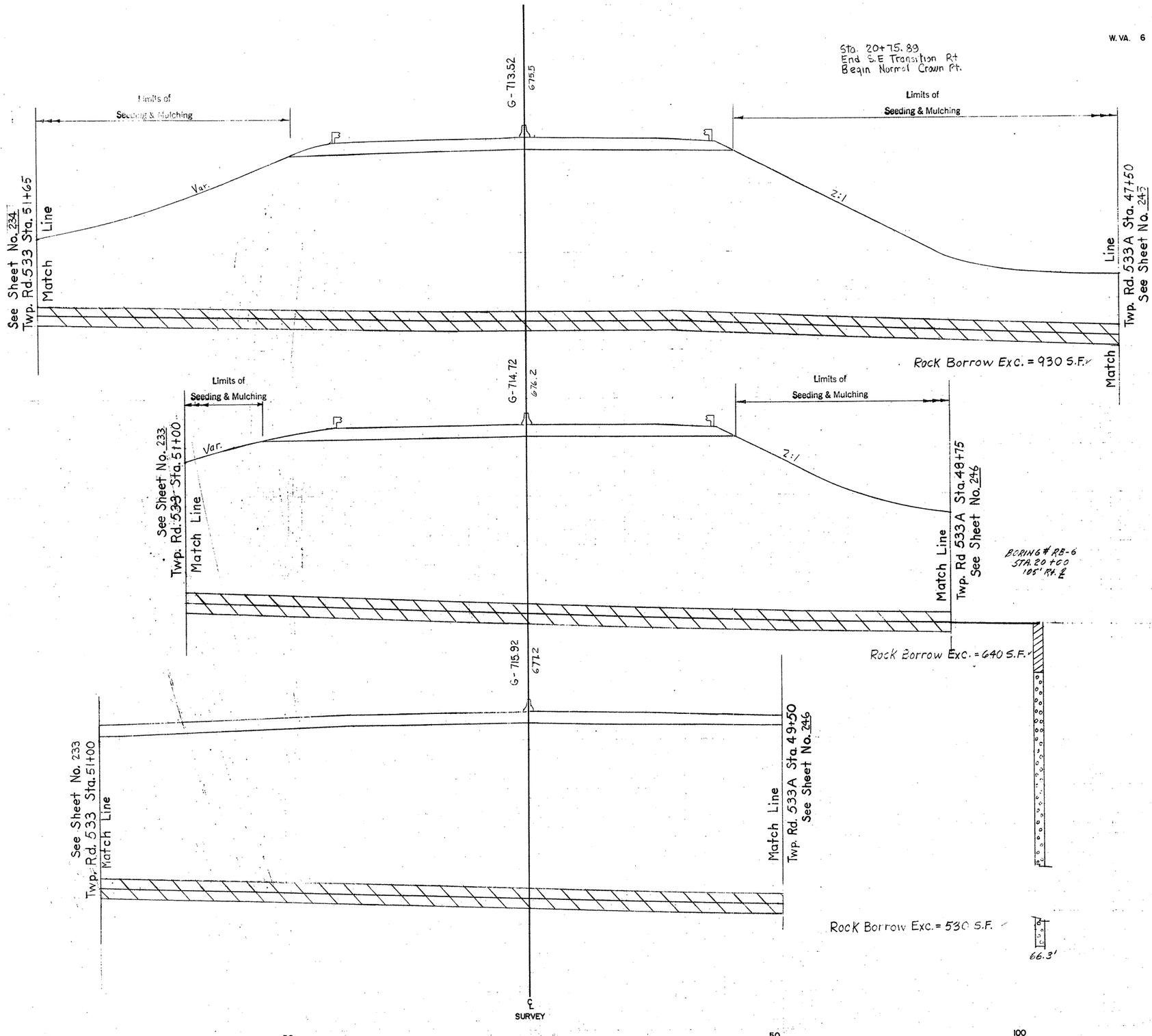
ORIGINAL SURVEY
NOTE BOOK NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

FINAL SURVEY
NOTE BOOK NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

W. VA. 6 | X326-SP2-0.00 | M-5251-(002) | 19+50 20+50 | 169 | 255

S.R. 872

Sta. 20+75.89
End S.E Transition Rt
Begin Normal Crown Pt.



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
484	5426	769	9561

20+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	222	1056
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	63	263
SEED MIX D HAY OR STRAW	77	289
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
346	4900	598	8815

20+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	158	328
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	39	108
SEED MIX D HAY OR STRAW	27	75
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
300	4620	594	9069

19+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	140	822
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	103
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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S.R. 872

END PROJECT [illegible], C-4 (End Point)
STA. 22+00

End Guardrail Left Sta. 22+00

End Guardrail Right Sta. 22+00

STA 22+40
End Rock Borrow Excavation, Sandstone or Lime Stone
Begin Rock Borrow Excavation, No Sandstone or Limestone

G-709.92
672.4

Limits of Seeding & Mulching

2:1

See Sheet No. 236
Twp. Rd. 533 Sta. 54+30
Match Line

Rock Borrow Exc. = 860 S.F.

42" CI/SP or RCP

See Sheet No. 243
Twp. Rd. 533A Sta. 44+50
Match Line

22+00
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
488	5296	915	9709

	WIDTH	AREA SY
CLEARING & GRUBBING	250	1417
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	65	408
SEED MIX D HAY OR STRAW	111	594
SEED MIX D WOOD CELLULOSE		

G-711.12
673.3

Limits of Seeding & Mulching

2:1

See Sheet No. 235
Twp. Rd. 533 Sta. 53+40
Match Line

BORING # RE-7
STA. 21+50
105' Lt. ℄

Rock Borrow Exc. = 864 S.F.

See Sheet No. 243
Twp. Rd. 533A Sta. 44+90
Match Line

21+50
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
500	5190	954	9685

	WIDTH	AREA SY
CLEARING & GRUBBING	260	1389
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	82	378
SEED MIX D HAY OR STRAW	103	592
SEED MIX D WOOD CELLULOSE		

G-712.32
674.1

Limits of Seeding & Mulching

See Sheet No. 234
Twp. Rd. 533 Sta. 52+40
Match Line

36.0'

Rock Borrow Exc. = 990 S.F.

See Sheet 244
Twp. Rd. 533A Sta. 46+30
Match Line

21+00
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
530	5270	939	9904

	WIDTH	AREA SY
CLEARING & GRUBBING	240	1283
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	54	325
SEED MIX D HAY OR STRAW	110	519
SEED MIX D WOOD CELLULOSE		

Sta 20+75.89 End SE.
Begin NC.

℄ SURVEY

FINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED

ORIGINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., AREAS, AREAS CHECKED

100 50 50 100

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S.R. 872

Limits of Seeding & Mulching

G - 706.32 671.8

2:1

Limits of Seeding & Mulching

2:1

TWP. RD. 533 A STA. 43+00 SEE SHEET NO. 242 LINE

MATCH

Rock Borrow Exc.= 666 S.F.

ER — RW — ER

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
348	3420	670	7086

	WIDTH	AREA SY
CLEARING & GRUBBING	220	1250
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	59	322
SEED MIX D HAY OR STRAW	93	528
SEED MIX D WOOD CELLULOSE		

23+50
660

See Sheet No. 237 Twp. Rd. 533 Sta. 56+50

Match Line

LAHW

Limits of Seeding & Mulching

2:1

42" CI./SP or R.C.P

Sta. 23+50 -164' Lt
1- Type G Inlet
T.G. 667.8
F.L. 663.78
F.L. 663.78
F.L. 663.28

G - 707.52 671.5

Limits of Seeding & Mulching

2:1

TWP. RD. 533 A STA. 43+52 SEE SHEET NO. 242 LINE

MATCH

See Sheet No. 237 Twp. Rd. 533 Sta. 55+95

Match Line

LAHW

Limits of Seeding & Mulching

2:1

42" CI/SP or R.C.P

Rock Borrow Exc.= 714 S.F.

BORING #RB-8
STA. 23+00
110' Rt. ℄

RW

36.5'

23+00
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
376	4233	731	8203

	WIDTH	AREA SY
CLEARING & GRUBBING	230	1311
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	57	353
SEED MIX D HAY OR STRAW	97	536
SEED MIX D WOOD CELLULOSE		

G - 708.72 671.7

Limits of Seeding & Mulching

2:1

Limits of Seeding & Mulching

2:1

TWP. Rd. 533 A STA. 43+95 SEE SHEET NO. 243 LINE

MATCH

See Sheet No. 236 Twp. Rd. 533 Sta. 55+95

Match Line

LAHW

42" CI/SP or R.C.P

Rock Borrow Exc. = 774 S.F.

RW

22+50
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
414	4626	835	9187

	WIDTH	AREA SY
CLEARING & GRUBBING	242	1361
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	70	375
SEED MIX D HAY OR STRAW	96	575
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

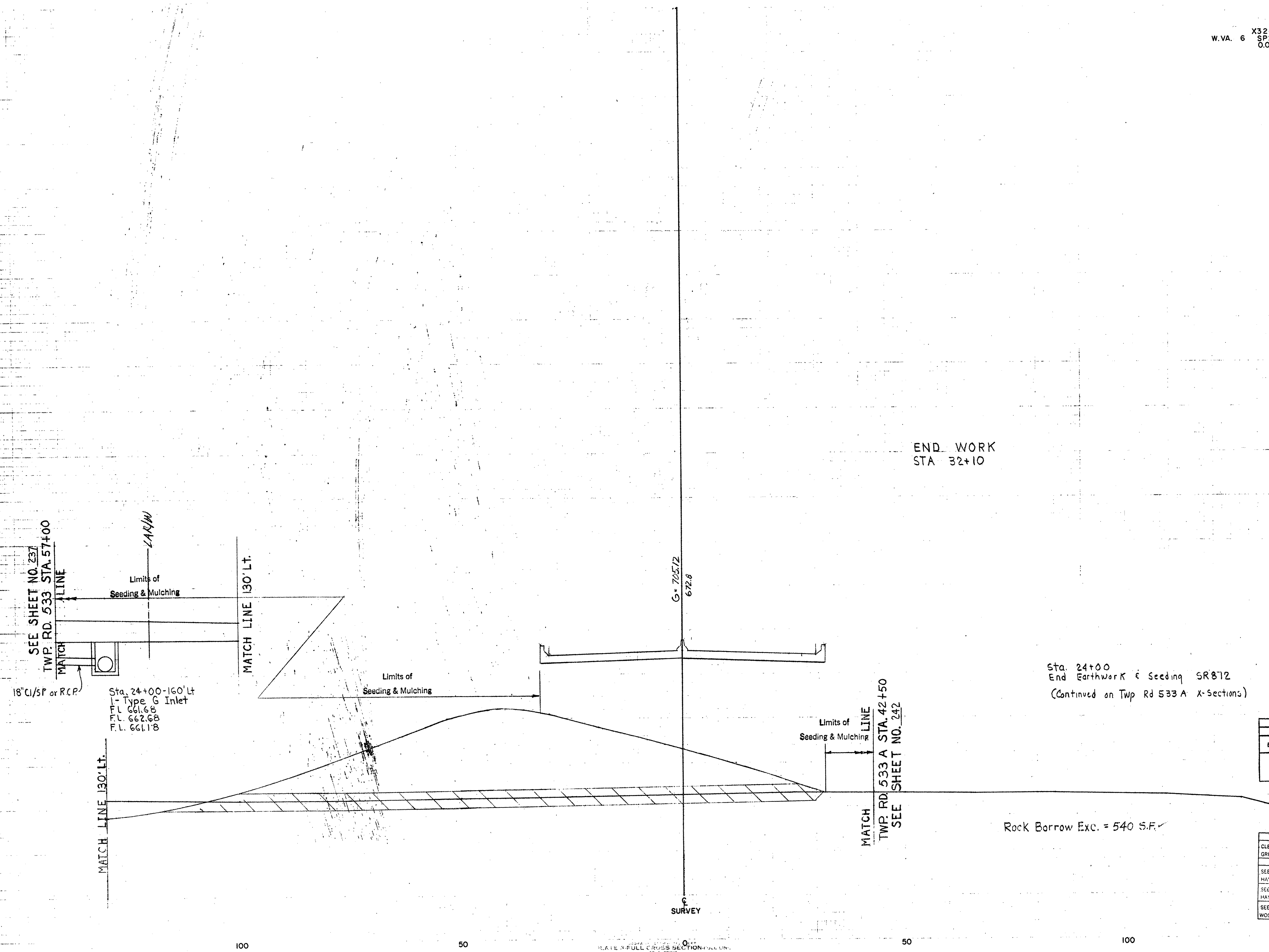
100 50 50 100

FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS CHECKED — DATE — BY

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS CHECKED — DATE — BY

W.VA. 6 X326-SP2-0.00 M-5251 (002) 24+00 172 255

S.R. 872



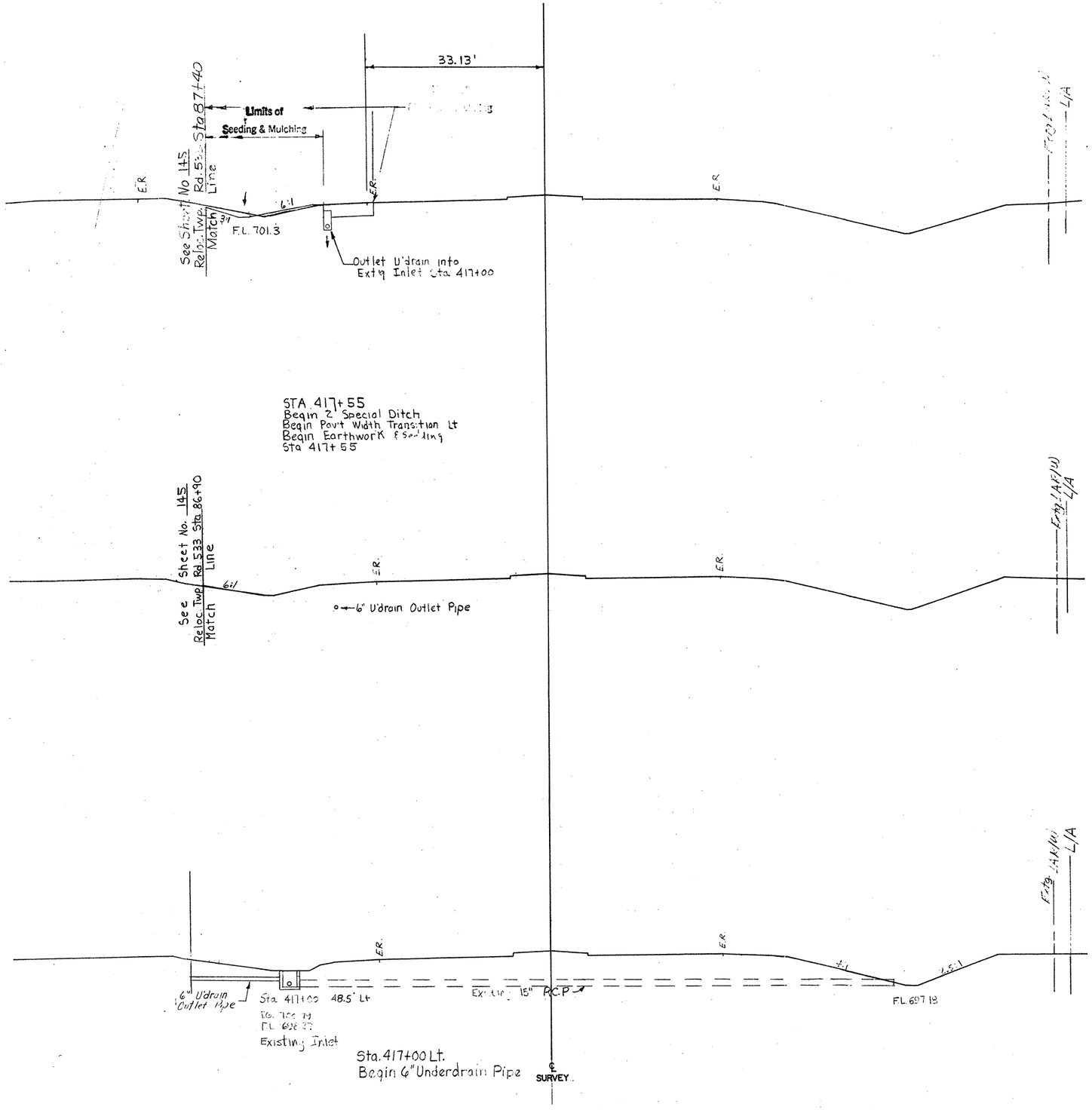
END WORK
STA 32+10
SEE SHEET NO. 237
TWP. RD. 533 STA. 57+00
MATCH LINE
Limits of
Seeding & Mulching
MATCH LINE 130' Lt.
18" CI/SP or R.C.P.
Sta. 24+00-160' Lt
1-Type G Inlet
F.L. 661.68
F.L. 662.68
F.L. 661.18
Limits of
Seeding & Mulching
G=705.12
672.8
Limits of
Seeding & Mulching
MATCH LINE
TWP. RD. 533 A STA. 42+50
SEE SHEET NO. 242
Sta. 24+00
End Earthwork & Seeding SR872
(Continued on Twp Rd 533 A X-Sections)
Rock Borrow Exc. = 540 S.F.
MATCH LINE 130' Lt.
SURVEY
100
50
0
50
100

24+00
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
500	1240	785	4315

	WIDTH	AREA SY
CLEARING & GRUBBING	214	1206
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	74	367
SEED MIX D HAY OR STRAW	80	481
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326-SP2-0.00 M-5251 (002) 417+00 418+00 173 255



ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
NOTE BOOK
NO.
BY
DATE

S.R. 7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
30	4	25	3

418+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	32	80
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	22	61
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	0	0	0

417+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	6	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	0
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

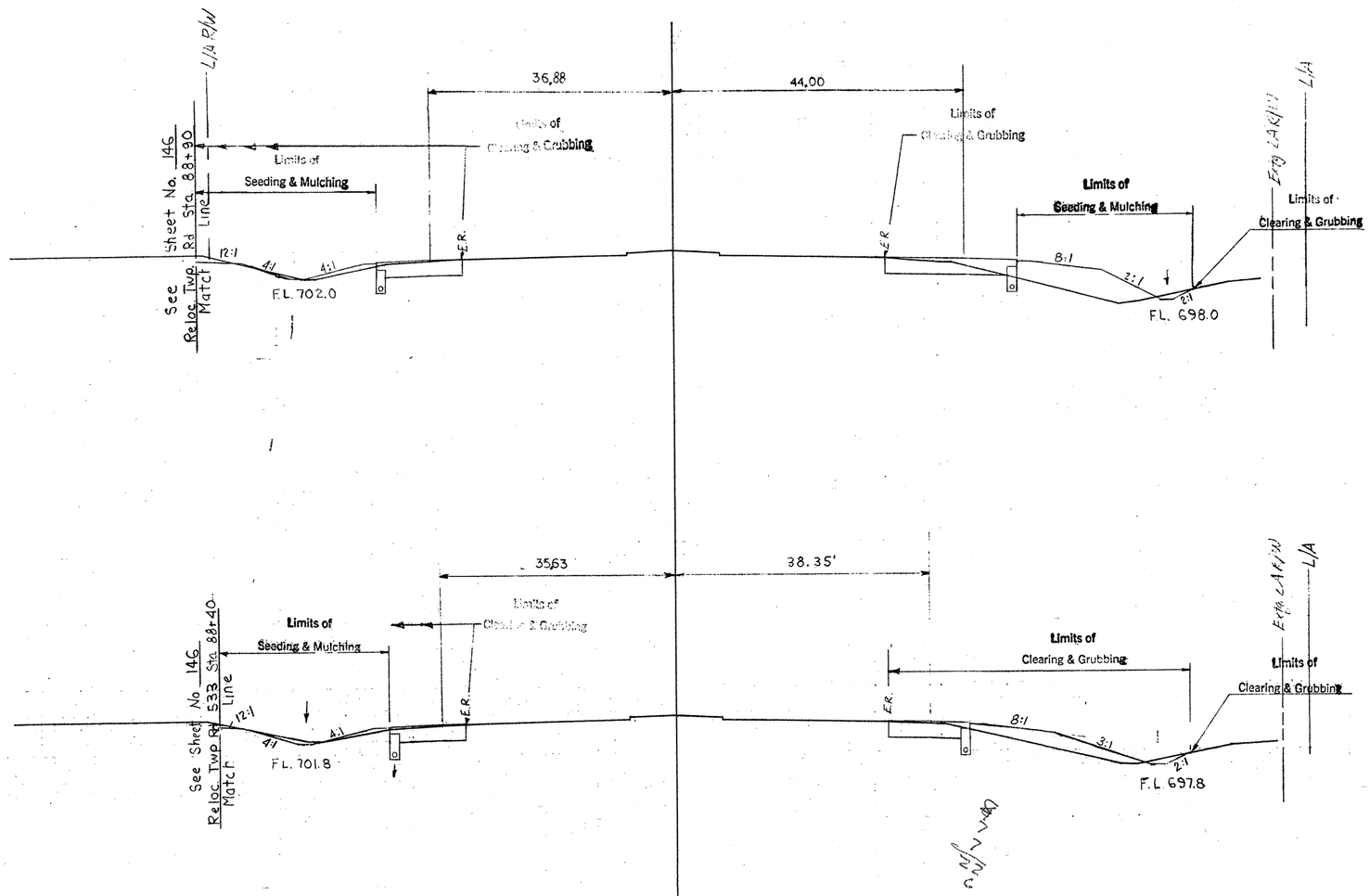
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	0	0	0

417+00
700

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326-SP2-0.00 M-5251 (002) 418+50 419+50 174 255

S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
62	74	113	111

419+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	83	456
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	53	314
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	46	100	46

419+06
700

	WIDTH	AREA SY
CLEARING & GRUBBING	81	347
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	60	236
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
48	4	72	7

418+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	44	211
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	25	131
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

100 50 0 50 100

W.VA. 6 | X326-SP2.00 | M-5251 (002) | 420+00 421+00 | 175 | 255

S. R. 7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
94	72	161	131

421+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	89	486
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	53	286
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
80	70	152	129

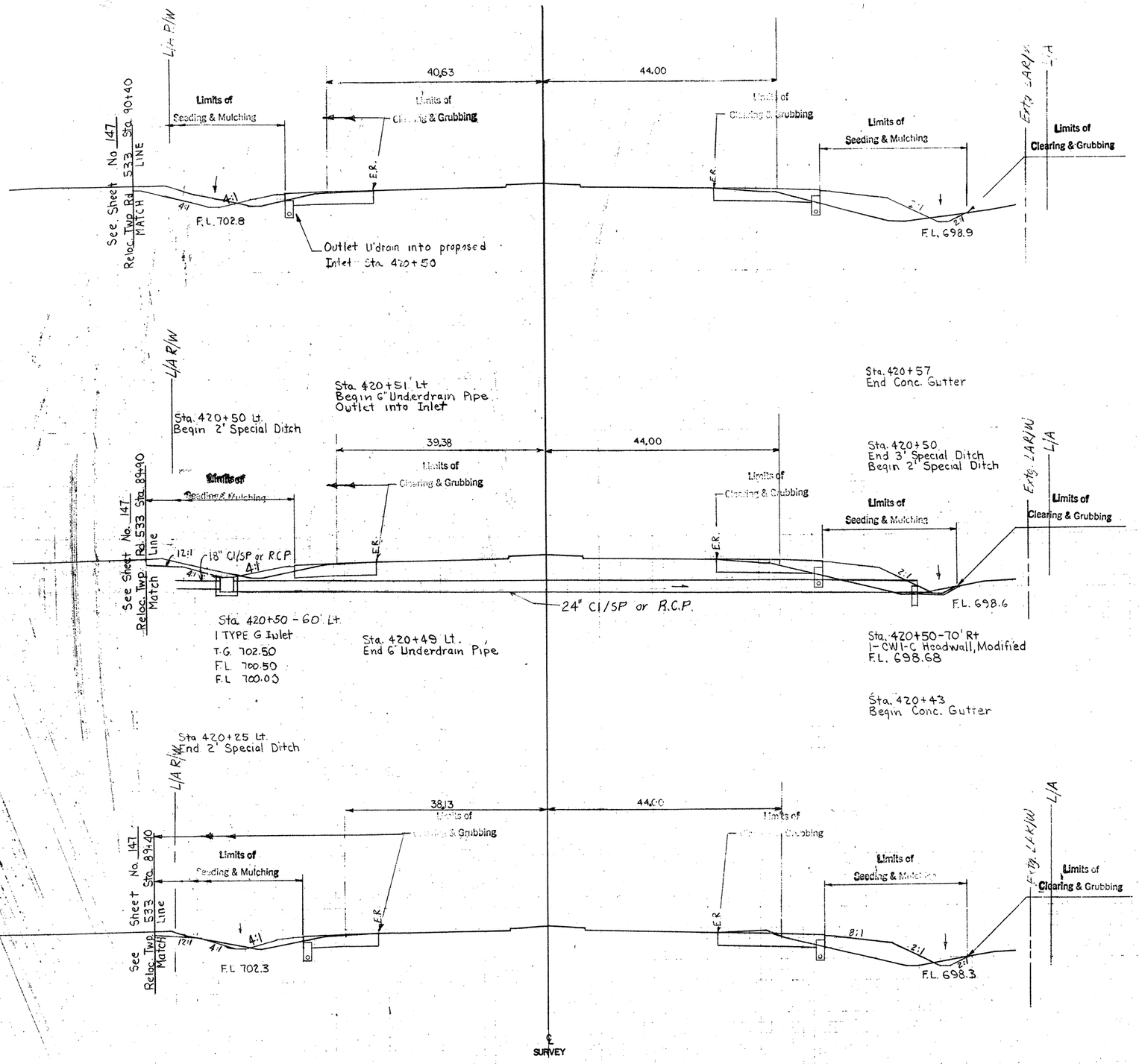
420+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	86	475
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	50	283
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
84	64	135	123

420+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	85	467
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	52	292
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



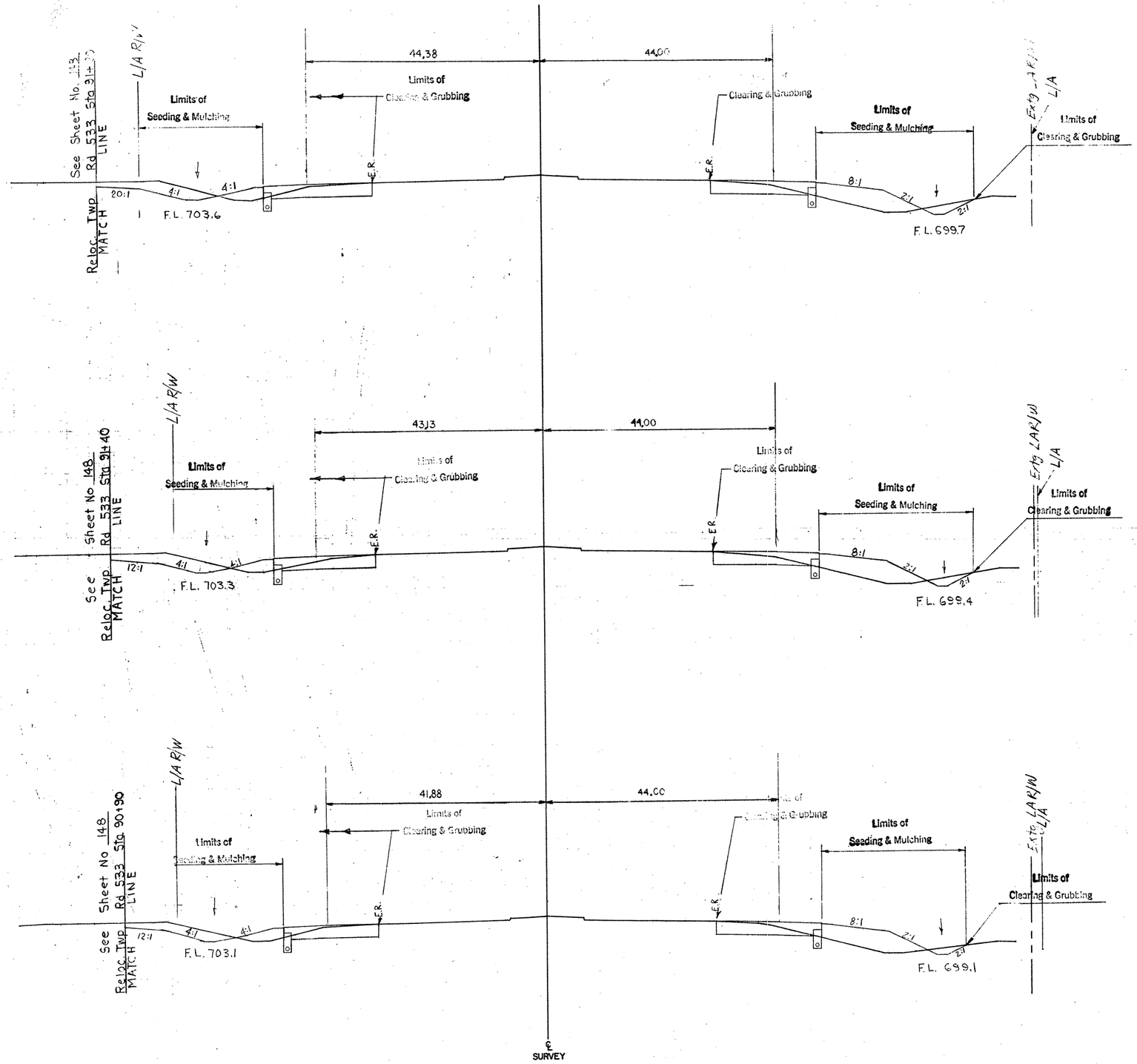
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

100 50 50 100

W.VA. 6 X326-SPS-000 M-5251 (002) 421+50 422+50 176 255

S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
110	72	194	141

422+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	98	533
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	60	325
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
100	80	185	141

422+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	94	517
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	57	314
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
100	72	180	133

421+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	92	563
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	56	303
SEED MIX D HAY OR STRAW	1	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

ORIGINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
AREAS
AREAS CHECKED
DATE

W.VA. 6 X326 SEC. 000 M-5251 (002) 423+00 424+00 177 255

S. R. 7

	EARTH WORK			
	END AREA		VOLUME	
	EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
Bk.	147	67	275	131
Ahd.	72	10	0	0

424+00
700

		WIDTH	AREA SY
CLEARING & GRUBBING	Bk.	118	617
	Ahd.	53	0
SEEDING & MULCHING			
SEED MIX B, C-1, C-2 HAY OR STRAW		78 Bk 30 Ahd	397 0
SEED MIX D HAY OR STRAW		0	0
SEED MIX D WOOD CELLULOSE			

Sta. 423+79.11 Rt.
6" Underdrain Pipe Continued on Ramp A

	EARTH WORK			
	END AREA		VOLUME	
	EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
	150	75	254	131

423+50
700

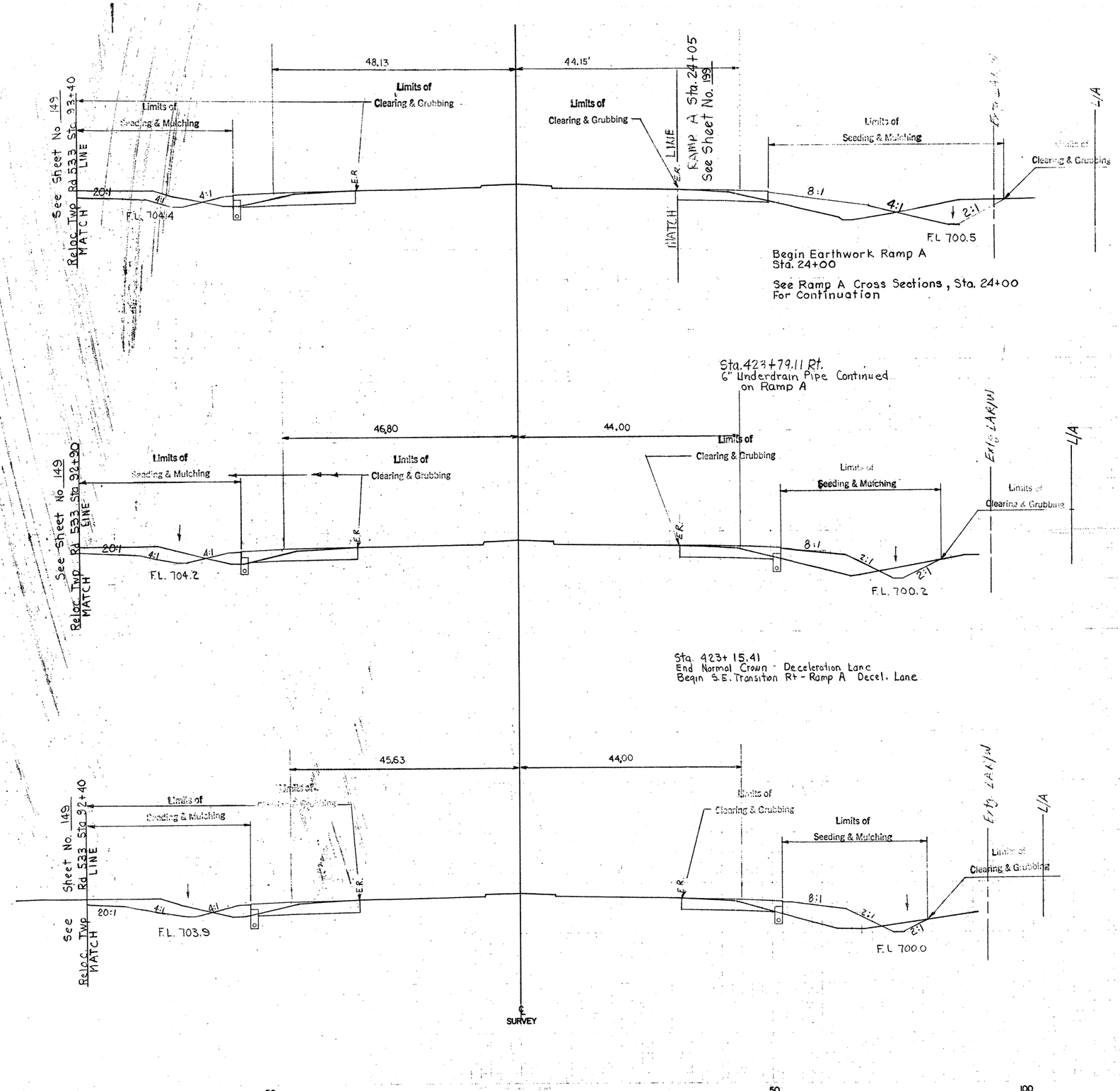
	WIDTH	AREA SY
CLEARING & GRUBBING	104	558
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	65	342
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Sta. 423+15.41
End Normal Crown - Deceleration Lane
Begin S.E. Transition Rt - Ramp A Decel. Lane

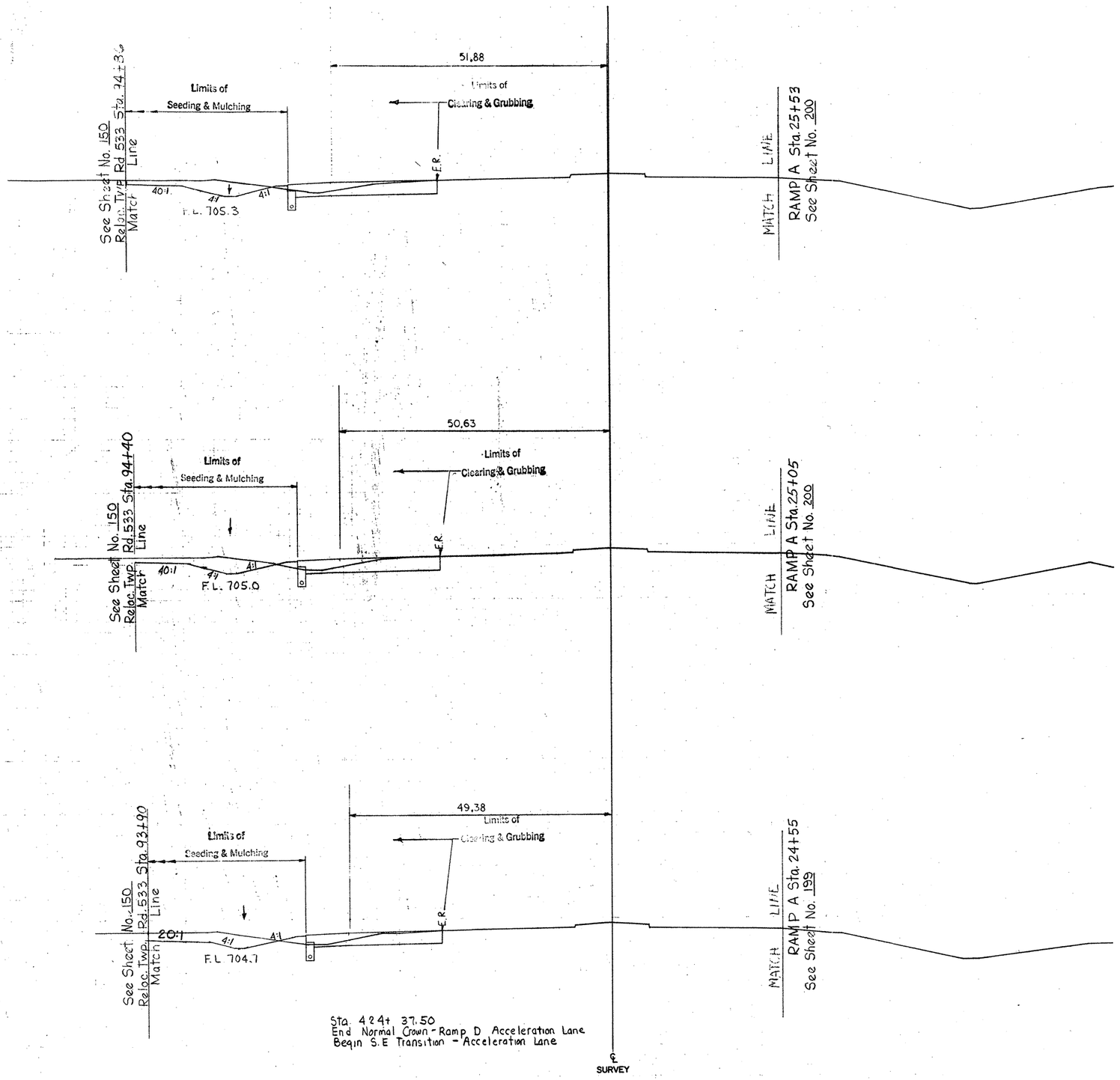
	EARTH WORK			
	END AREA		VOLUME	
	EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
	124	66	217	128

423+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	97	542
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	58	328
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



W.VA. 6 X326-SP2-0.00 M-5251 (002) 424+50 425+50 178 255



S.R. 7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
102	2	176	6

425+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	58	319
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	167
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
88	4	156	7

425+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	57	311
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	161
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

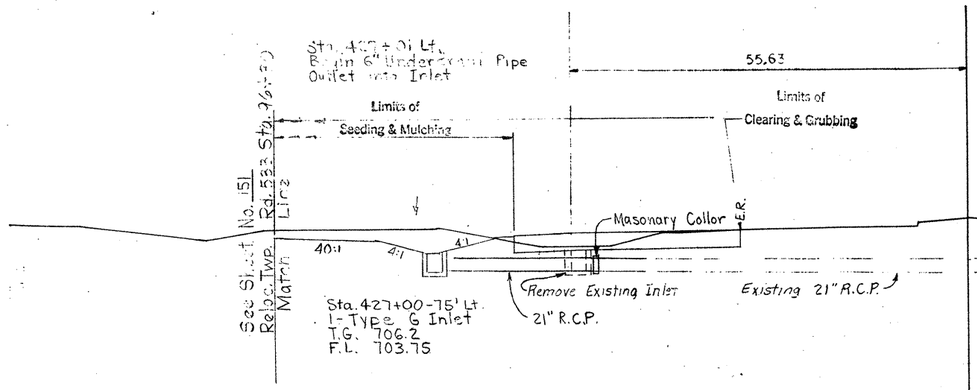
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
80	4	141	13

424+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	55	300
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	167
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SP2 000 M-5251 (002) 426+00 427+00 179 255

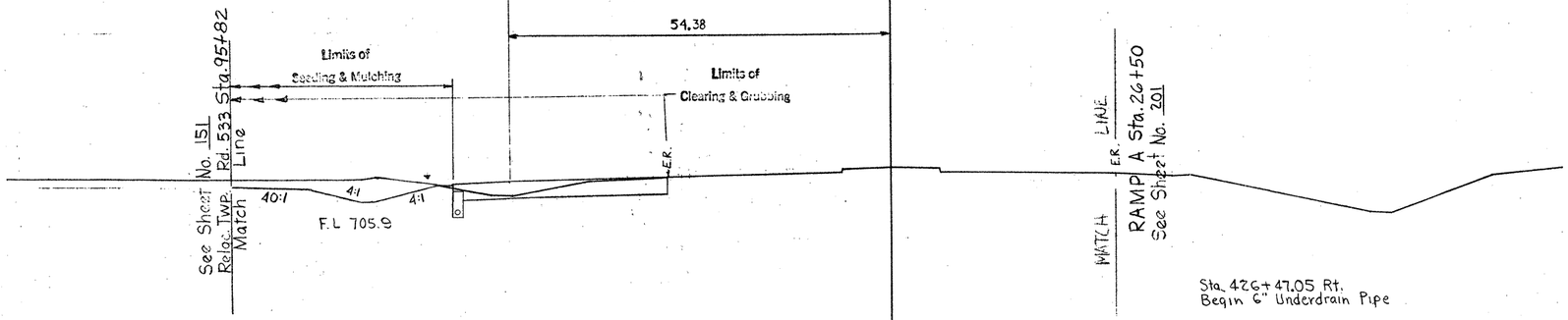
S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
98	2	191	2

427+00
700

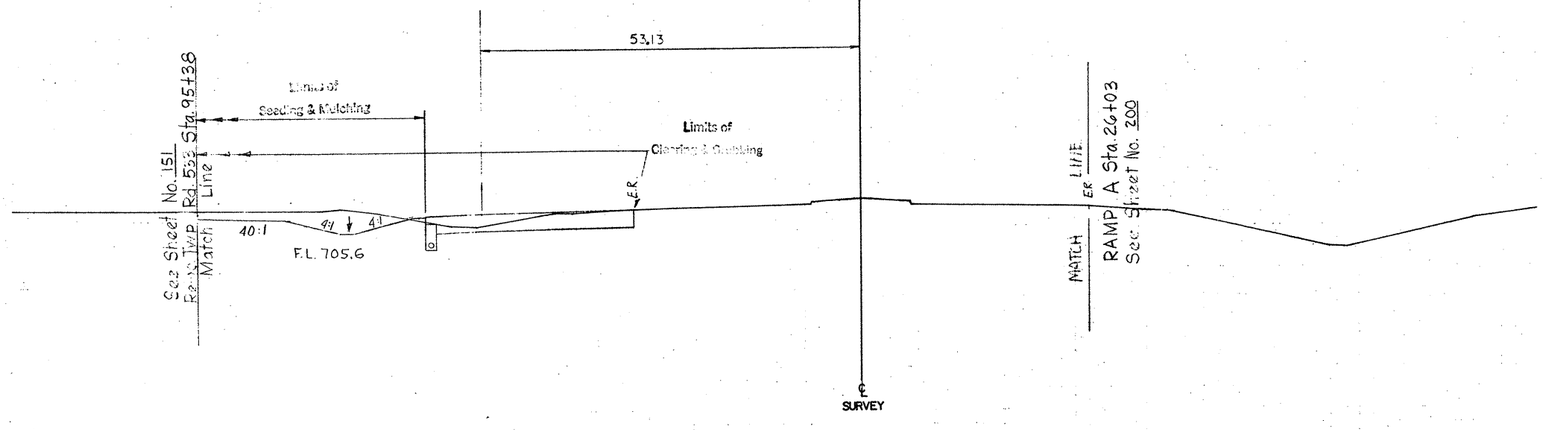
	WIDTH	AREA SY
CLEARING & GRUBBING	65	353
SEEDING & MULCHING		
SEED MIX B C-1, C-2 HAY OR STRAW	32	175
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
108	0	204	2

426+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	62	342
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	172
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
112	2	198	1

426+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	64	331
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	169
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

FINAL SURVEY: SURVEYED, PLOTTED, NOTE BOOK, NO., DATE, BY, AREAS, TEMPLATE, AREAS CHECKED

ORIGINAL SURVEY: SURVEYED, PLOTTED, NOTE BOOK, NO., DATE, BY, AREAS, TEMPLATE, AREAS CHECKED

W.VA. 6 | X326 SP2 0.00 | M-5251 (002) | 427+50 428+50 | 180 | 255

S. R. 7

FINAL SURVEY — DATE | BY | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NOTE BOOK | NO.

ORIGINAL SURVEY — DATE | BY | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NOTE BOOK | NO.

See Sheet No. 221
RAMP D Sta. 28+50
MATCH LINE
E.R.

Limits of Clearing & Grubbing & Limits of Seeding & Mulching

4:1 4:1
FL 708.0

MATCH LINE
RAMP A Sta. 28+45
See Sheet No. 202

Sta 28+60 - Ramp A Lt
Begin 2' Special Ditch

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	0	15	0

428+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	25	92
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	26	94
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 221
RAMP D Sta. 28+00
MATCH LINE
E.R.

Limits of Clearing & Grubbing & Limits of Seeding & Mulching

MATCH LINE
RAMP A Sta. 27+95
See Sheet No. 202

Sta. 428+00 Rt.
End 6" Underdrain Pipe

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
16	0	106	0

428+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	8	208
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	117
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Limits of Clearing & Grubbing

56.88

Limits of Seeding & Mulching

See Sheet No. 151
Rejoc. Twp Rd. 533 Sta. 96+75
Match Line

40:1 4:1 4:1
FL 706.4

B.T.Co.
Existg Underground Cable

E.R.

MATCH LINE
RAMP A Sta. 27+45
See Sheet No. 201

℄ SURVEY

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
98	0	191	2

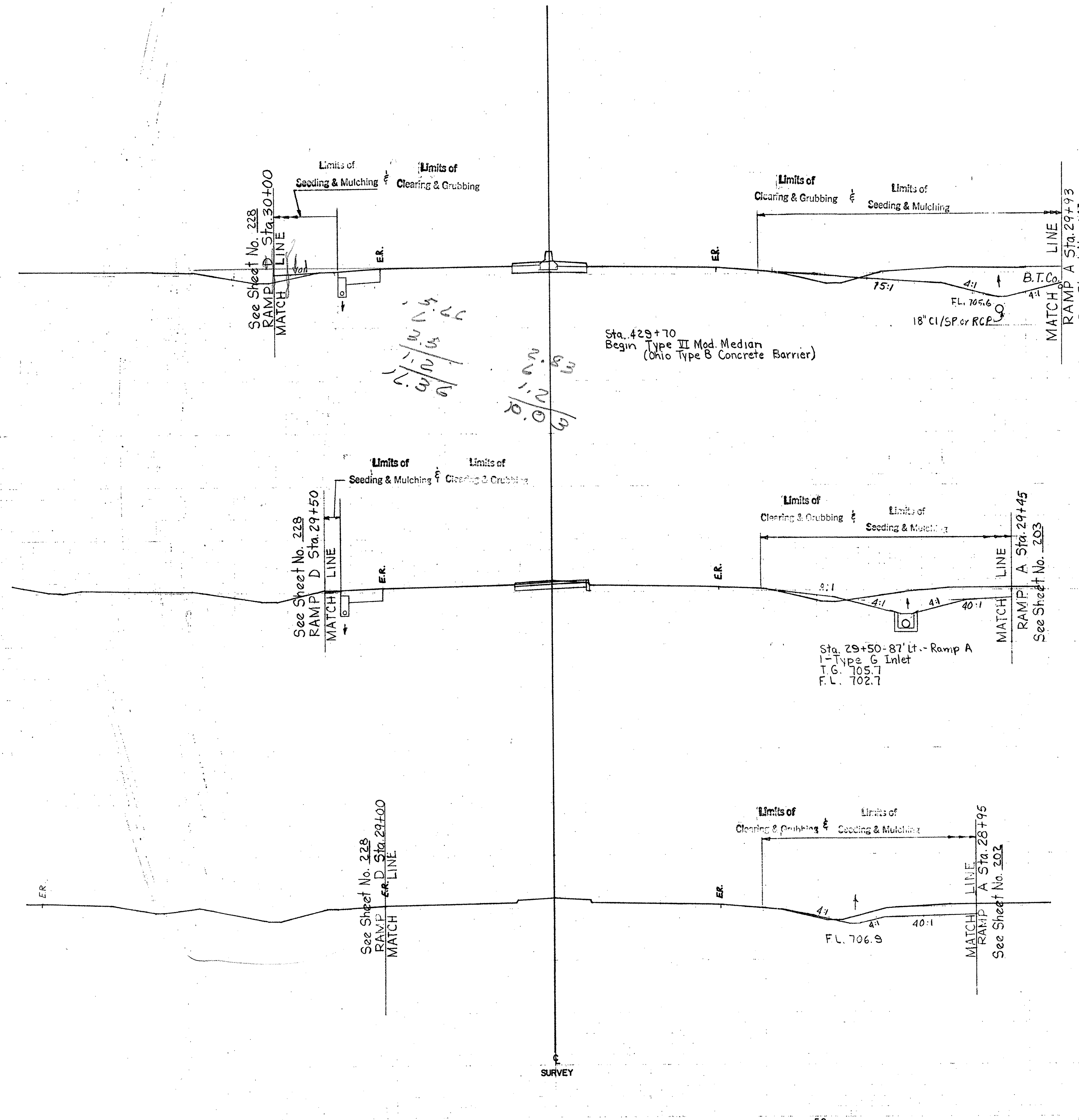
427+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	67	367
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	34	183
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 PLAT 50 100

W. VA. 6 X326-SP2-0.00 M 5251 (002) 429+00 430+00 181 255

S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
140	22	224	30

429+99.44 BK=
430+00 AHD
710

	WIDTH	AREA SY
CLEARING & GRUBBING	70	336
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	70	336
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
102	10	133	13

429+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	51	253
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	51	253
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

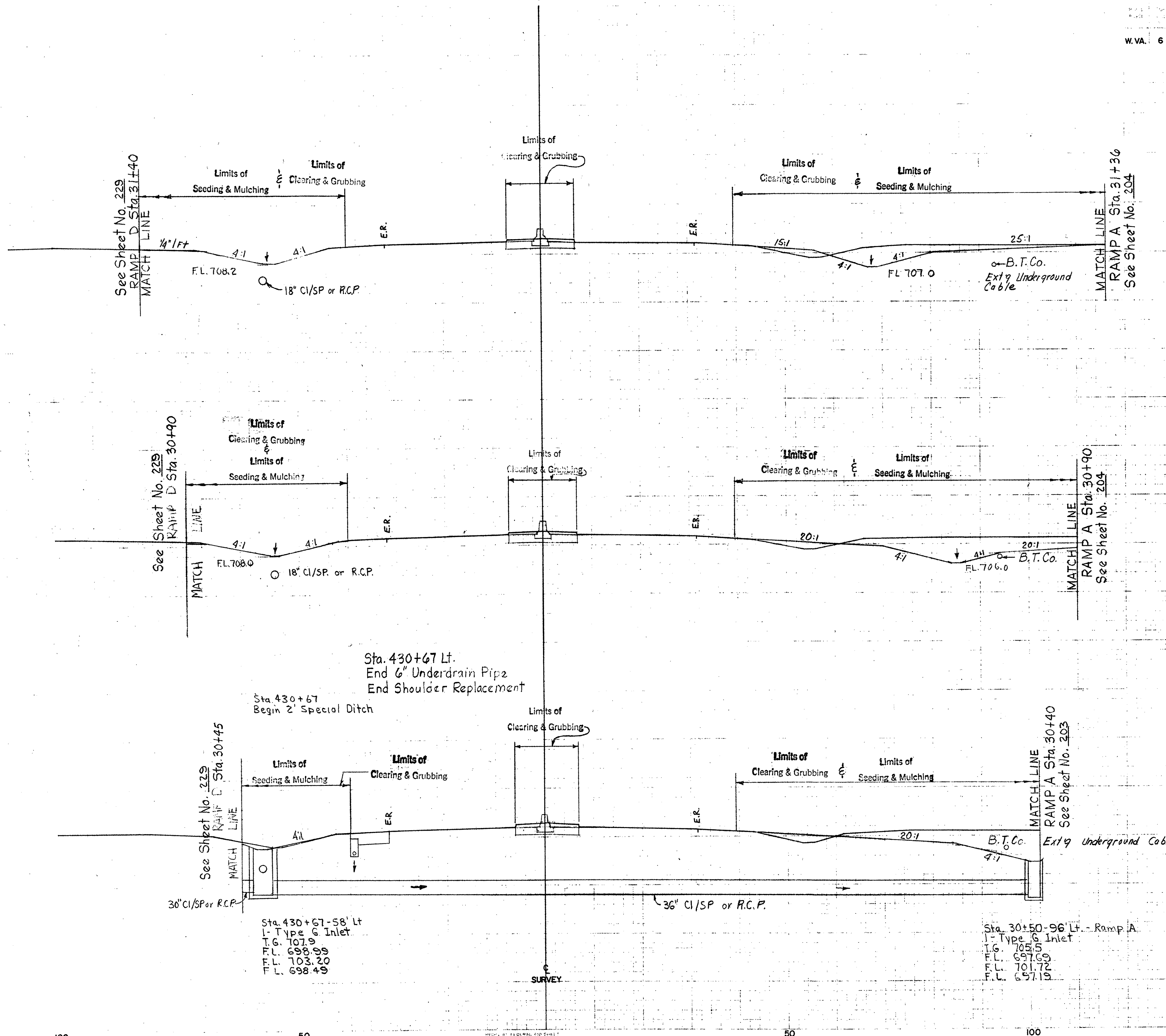
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
42	4	39	4

429+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	40	131
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	40	183
SEED MIX D HAY OR STRAW	0	[illegible]
SEED MIX D WOOD CELLULOSE		

W.VA.	6	X326 SP2 0.00	M-5251 (002)	431+50 430+50	182	255

S.R.7



431+50
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
115	20	260	43

	WIDTH	AREA SY
CLEARING & GRUBBING	132	694
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	120	625
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

431+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
166	26	301	46

	WIDTH	AREA SY
CLEARING & GRUBBING	118	600
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	105	556
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

430+50
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
159	24	277	43

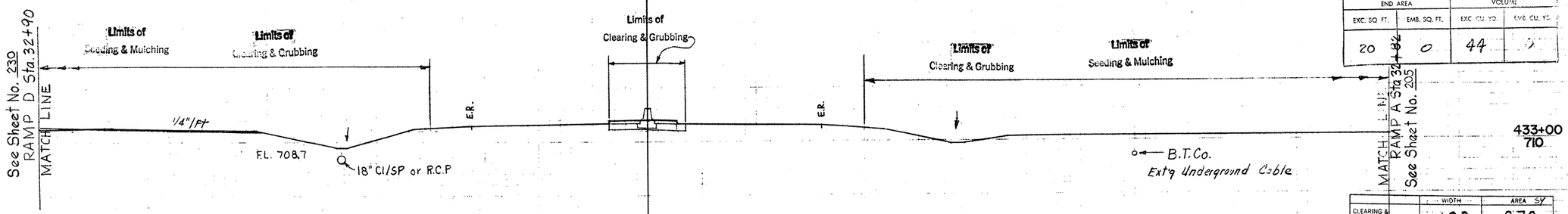
	WIDTH	AREA SY
CLEARING & GRUBBING	98	467
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	95	458
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

W. VA. 6 | X326 SP2 0.00 | M-5251 (002) | 433+00 432+00 | 183 | 255

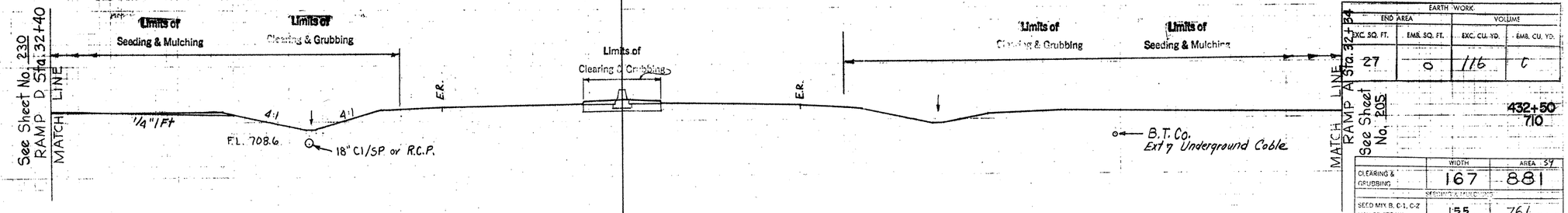
S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
20	0	44	0

433+00
710

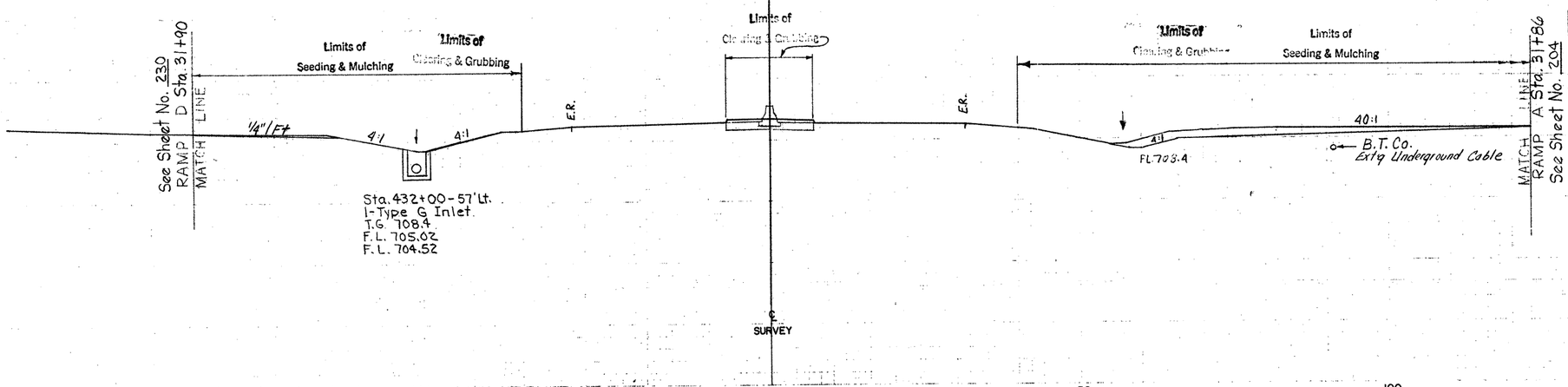
	WIDTH	AREA SY
CLEARING & GRUBBING	183	972
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	170	903
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
27	0	116	0

432+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	167	881
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	155	761
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
98	0	197	13

432+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	150	783
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	119	664
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 PLATE 1 FULL CROSS SECTION-FULL LINE 50 100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

ORIGINAL SURVEY — NOTE BOOK NO. — DATE — BY — SURVEYED — PLOTTED — AREAS — AREAS CHECKED

FINAL SURVEY — NOTE BOOK NO. — DATE — BY — SURVEYED — PLOTTED — AREAS — AREAS CHECKED

W.VA.	6	X326 SP2 0.00	M-5251 (002)	434+50 433+50	184	255

S.R. 7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
44	4	109	9

	WIDTH	AREA SY
CLEARING & GRUBBING	232	1244
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	219	1169
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
74	6	146	6

	WIDTH	AREA SY
CLEARING & GRUBBING	216	1150
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	202	1075
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
84		96	0

	WIDTH	AREA SY
CLEARING & GRUBBING	198	1058
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	185	986
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 231 RAMP D Sta. 34+45 MATCH LINE

Limits of Seeding & Mulching

1/4" / Ft

E.R.

Limits of Clearing & Grubbing

E.R.

Limits of Clearing & Grubbing — Limits of Seeding & Mulching

30:1

4'

F.L. 710.3

B.T.Co. Exist'g Underground Cable

MATCH LINE RAMP A Sta. 34+55 See Sheet No. 206

434+50
710

Sta. 434+25
Begin 2' Special Ditch

See Sheet No. 231 RAMP D Sta. 33+90 MATCH LINE

Limits of Clearing & Grubbing — Limits of Seeding & Mulching

1/4" / Ft

E.R.

Limits of Clearing & Grubbing

E.R.

Limits of Clearing & Grubbing — Limits of Seeding & Mulching

B.T.Co. Exist'g Underground Cable

MATCH LINE RAMP A Sta. 33+88 See Sheet No. 206

434+00
710

Sta. 434+00 - 55' Lt
1- Type G Inlet
T.G. 709.0
F.L. 707.0

See Sheet No. 231 RAMP D Sta. 33+40 MATCH LINE

Limits of Clearing & Grubbing — Limits of Seeding & Mulching

1/4" / Ft

E.R.

Limits of Clearing & Grubbing

E.R.

Limits of Clearing & Grubbing — Limits of Seeding & Mulching

B.T.Co. Exist'g Underground Cable

MATCH LINE RAMP A Sta. 33+30.0 See Sheet No. 205

433+50
710

F.L. 708.9

18" CI/SP or R.C.P

Sta. 433+50
End Type VI Modified Median (Ohio Type B Conc. Barrier)
Begin Type VI Modified Median (Ohio Type C Conc. Barrier)

℄ SURVEY

100 50 50 100

PLATE 3 FULL CROSS SECTIONS

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, NO., AREAS CHECKED

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, NO., AREAS CHECKED

W.VA. 6 X326 SP2 0.00 M-5251 (002) 436+00 435+00 185 255

S.R.7

Sta. 436+00 Lt.
Begin 6" Underdrain Pipe

Sta. 436+25 Rt.
Begin 6" Underdrain Pipe

See Sheet No. 162 S.R.872 Sta.9+00

MATCH LINE

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

Sta. 435+70 - 65' Lt
1-25° Bend
FL= 709.5

18" CI / SP

4'

4:1

E.R.

Sta. 435+75 - 56.5 Lt
1-CWI-C Headwall, Modified
F.L. 709.60

Begin Paved Shoulder
Sta. 436+00 Lt.

Limits of Clearing & Grubbing

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

50:1

F.L. 711.3

B.T.Co.
Ext'g Underground Cable

MATCH LINE RAMP A Sta. 37+05
See Sheet No. 208

436+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
26	400	50	619

	WIDTH	AREA SY
CLEARING & GRUBBING	144	931
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	135	872
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 161 Sta. 8+45

MATCH LINE

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

1/4"/Ft

4:1

4:1

E.R.

F.L. 709.5

Limits of Clearing & Grubbing

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

50:1

F.L. 710.8

B.T.Co.
Ext'g Underground Cable

MATCH LINE RAMP A Sta. 34+20
See Sheet No. 207

435+50
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
28	268	55	444

	WIDTH	AREA SY
CLEARING & GRUBBING	191	1169
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	179	1094
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

See Sheet No. 232 RAMP D Sta. 35+00

MATCH LINE

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

1/4"/Ft

E.R.

F.L. 709.4

Limits of Clearing & Grubbing

Limits of Clearing & Grubbing ℄ Limits of Seeding & Mulching

50:1

F.L. 710.5

B.T.Co. Ext'g Underground Cable

MATCH LINE RAMP A Sta. 35+50
See Sheet No. 207

435+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
31	212	69	208

	WIDTH	AREA SY
CLEARING & GRUBBING	230	1283
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	219	1206
SEED MIX D HAY OR STRAW	0	7
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

ORIGINAL SURVEY
SURVEYED
PLOTTED
PLOTTER
NOTE BOOK
AREAS CHECKED
NO.

100 50 50 100

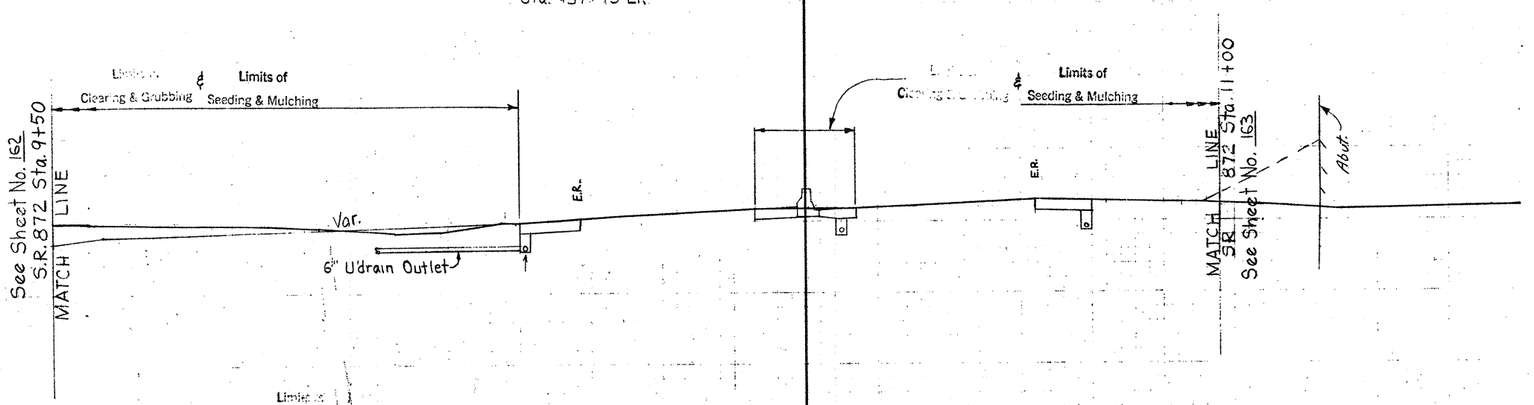
PLATE 3 FULL CROSS SECTION FULL LINE
36" TELEDYNE
PRINTED IN U.S.A.

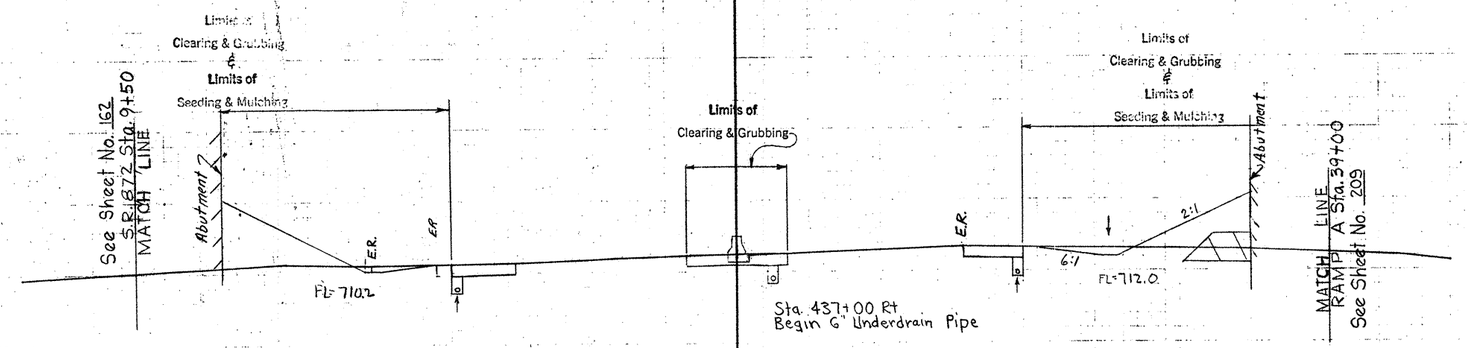
WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

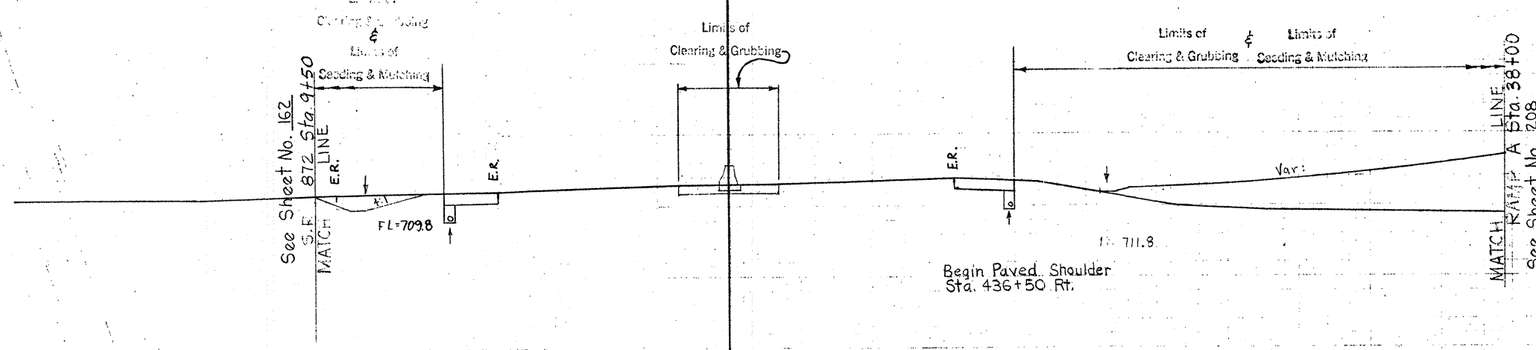
W. VA.	6	X326 SP2 0.00	M-525I (002)	437+50 436+50	186	255

S.R. 7

End Paved Shoulder Replacement
Sta. 437+75 Lt.







SURVEY

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
78	20	137	93

437+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	106	525
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	76	272
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
70	80	95	311

437+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	84	514
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	22	306
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
33	256	55	607

436+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	101	681
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	88	619
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

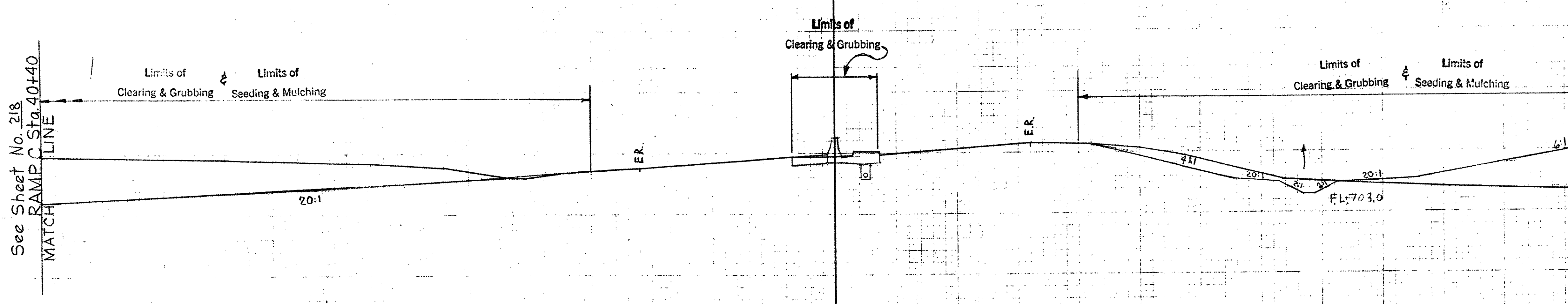
ORIGINAL SURVEY — SURVEYED — PLOTTED — TEMPLATE — NOTE BOOK — AREAS — NO. — AREAS CHECKED — BY — DATE

100 50 0 50 100

PLATE 3-FULL CROSS SECTION SHEET

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

S.R.7



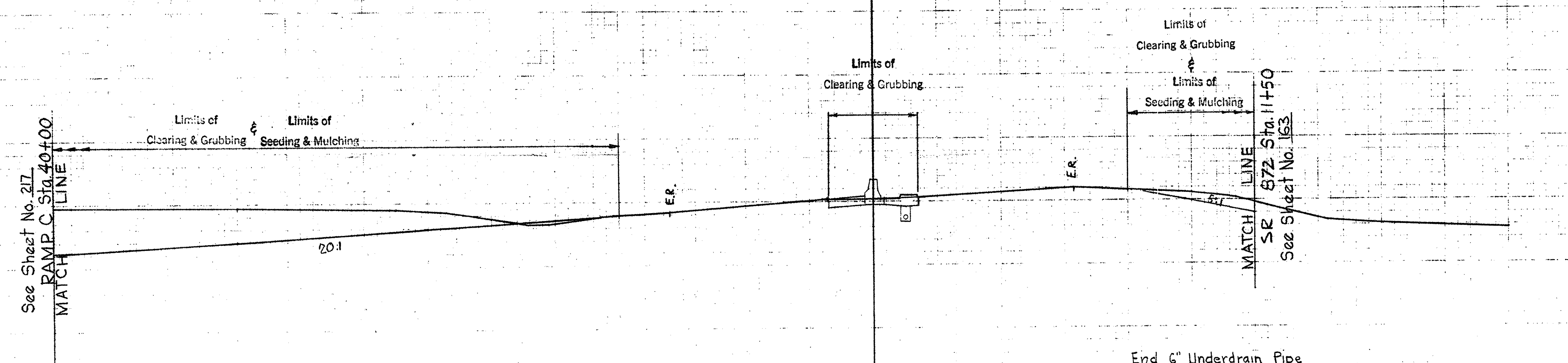
RAMP B Sta. 33+50 LINE

MATCH See Sheet No. 210

439+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
416	622	739	581

	WIDTH	AREA SY
CLEARING & GRUBBING	231	983
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	220	917
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

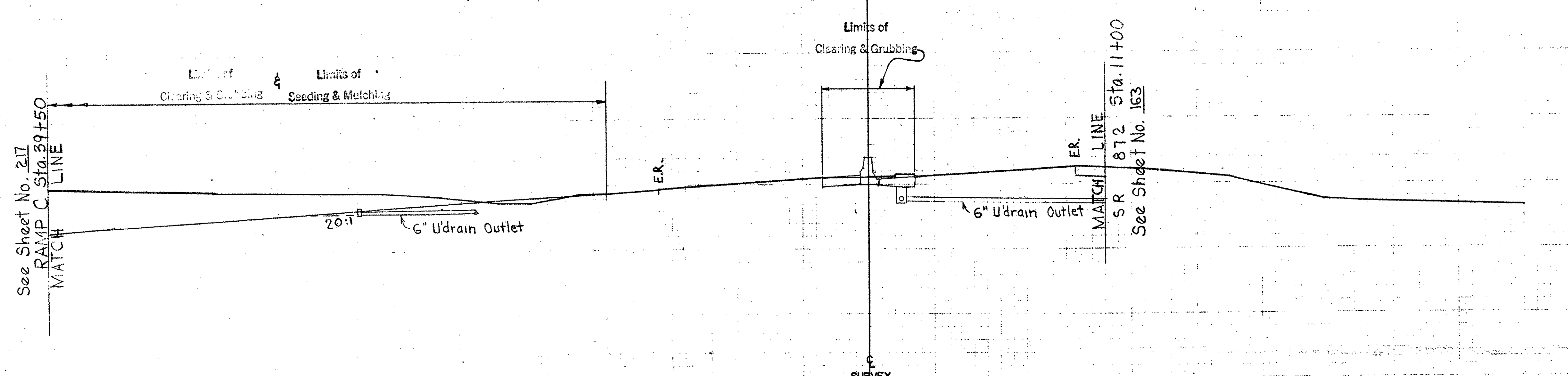


EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
382	4	595	11

438+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	123	617
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	110	542
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

End 6" Underdrain Pipe
End Paved Shoulder Replacement
Sta. 438+00 Rt.



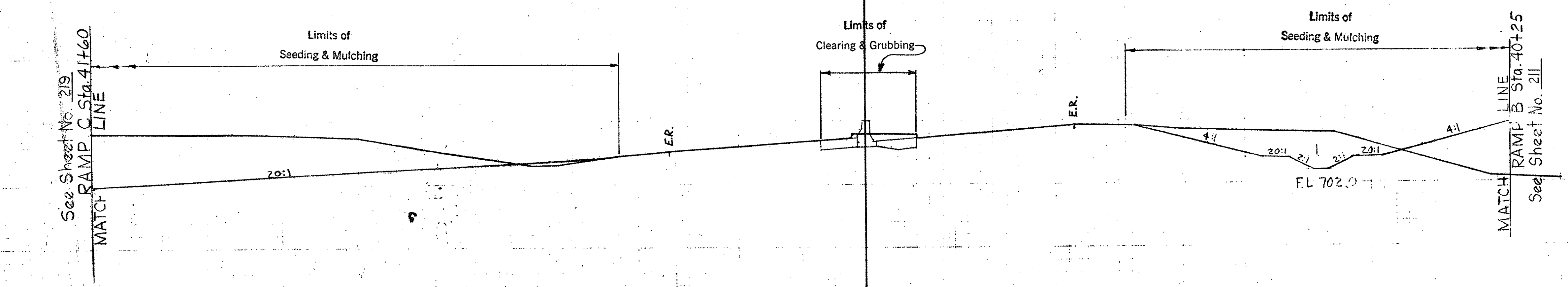
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
261	6	314	24

438+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	99	567
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	85	447
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

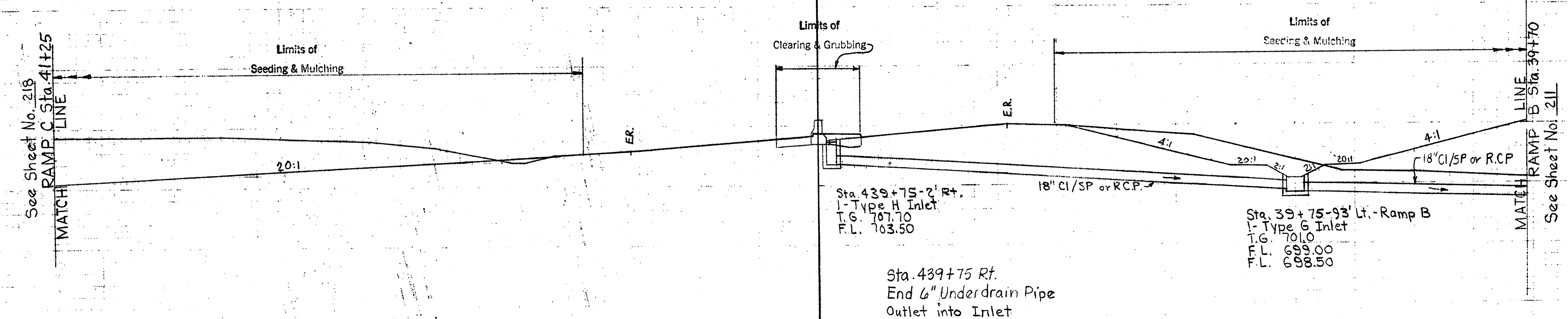
S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
520	82	985	220

440+50
700

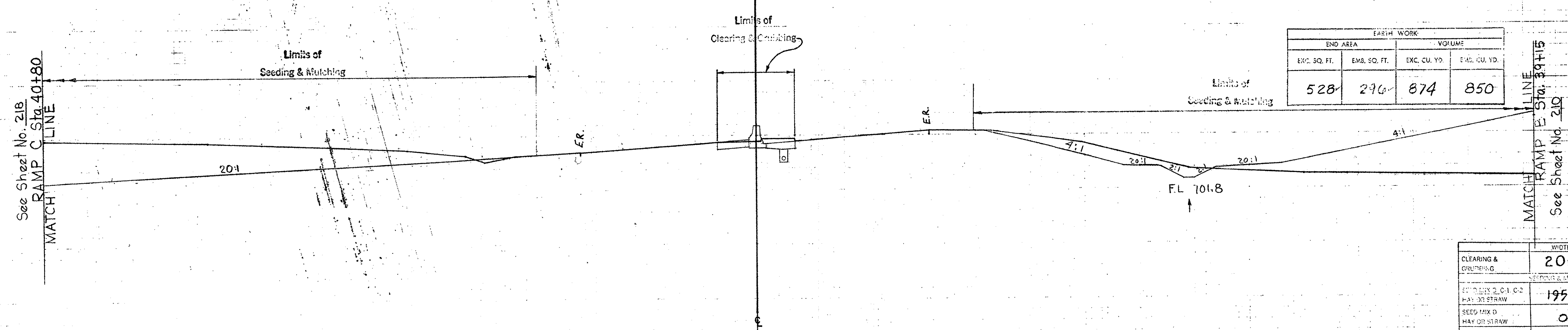
	WIDTH	AREA SY
CLEARING & GRUBBING	158	944
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	146	878
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE	-	-



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
544	156	993	419

440+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	182	1078
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	170	1014
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
528	296	874	850

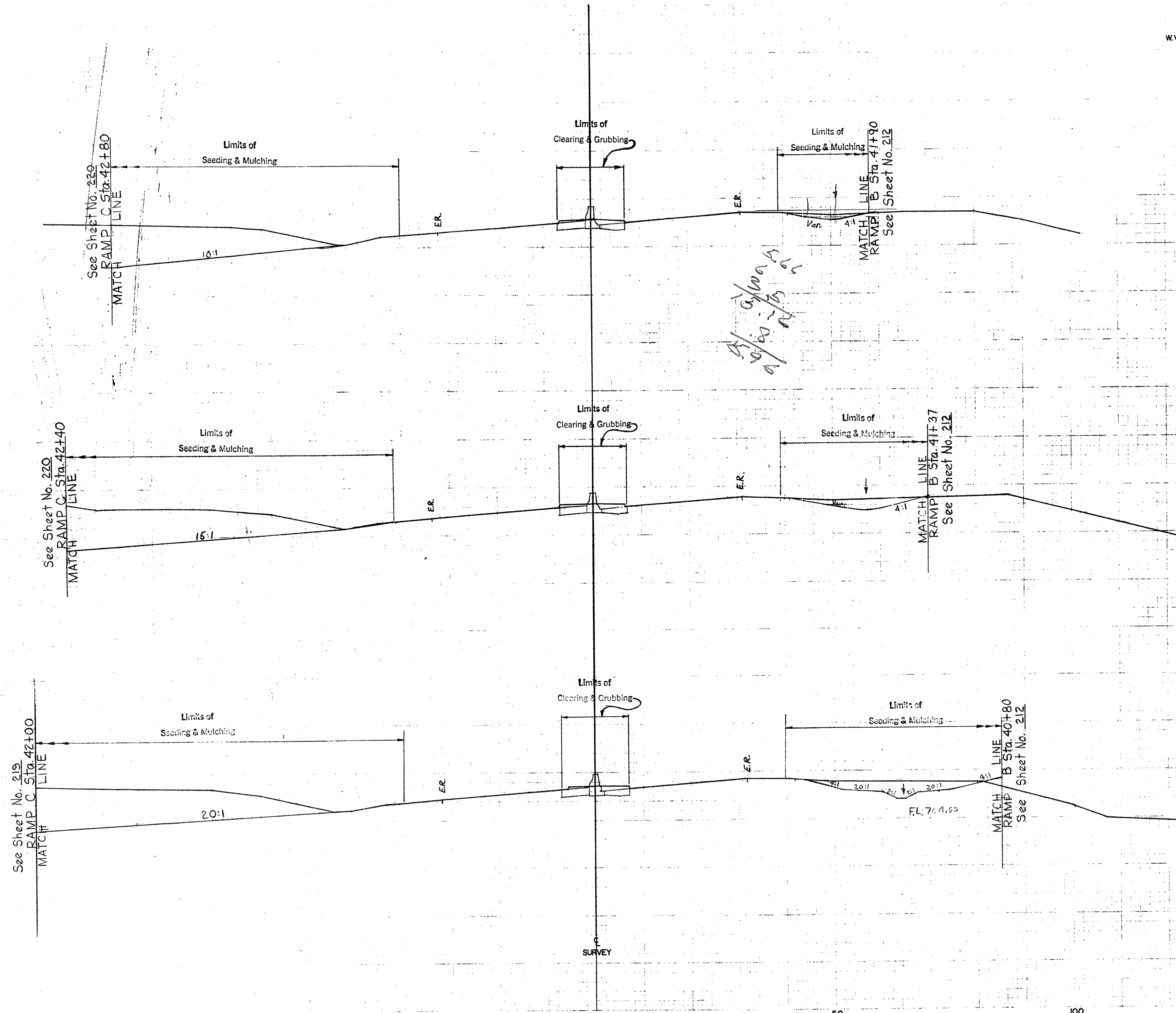
439+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	206	1214
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	195	1153
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

W.VA.	6	X326 SP2 0.00	M-5251 (002)	442+00 441+00	189	255

S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
279	0	604	0

442+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	93	600
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	110	583
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
373	0	760	4

441+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	123	719
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	100	622
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

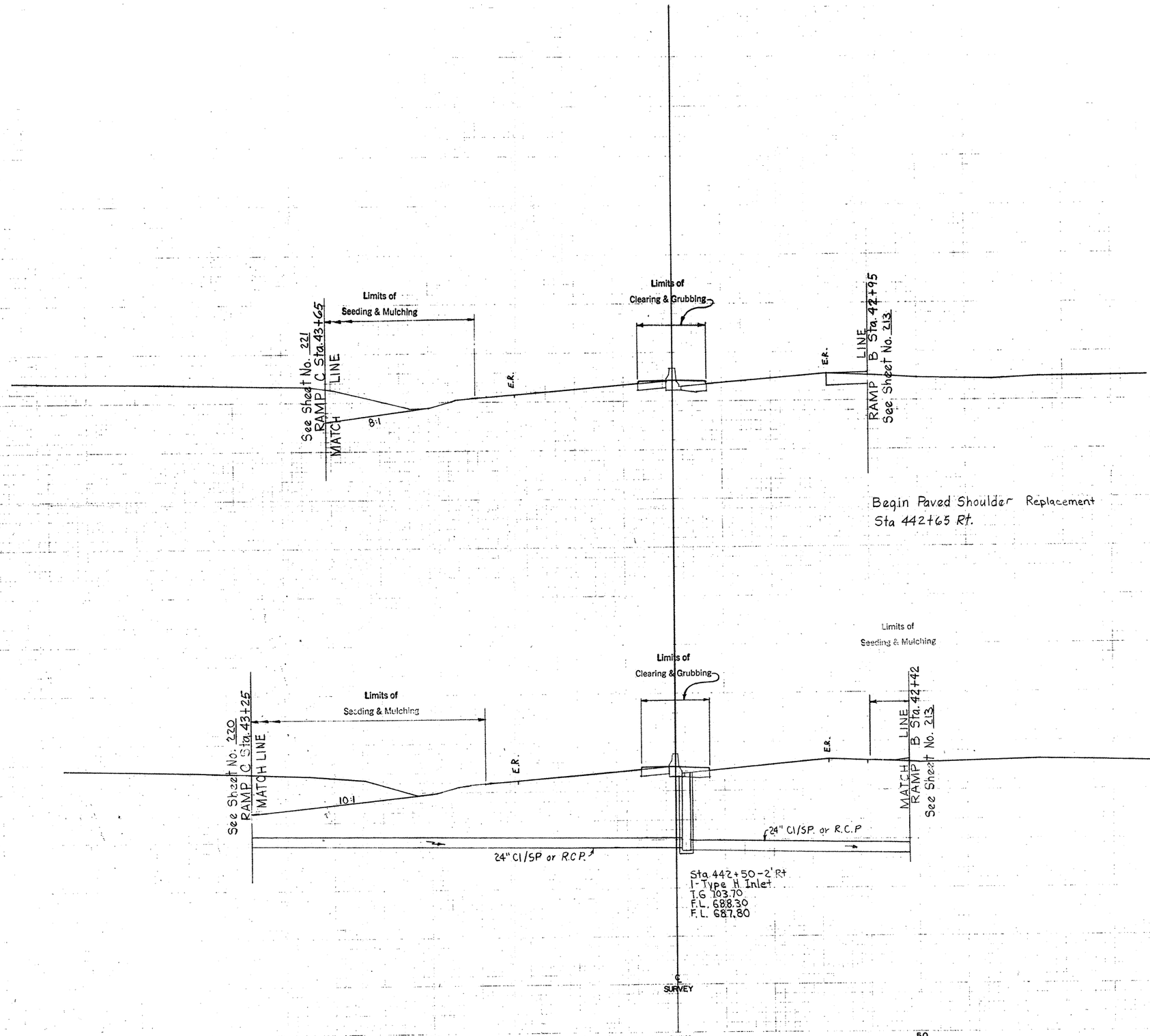
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
448	4	896	80

441+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	136	817
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	124	750
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SP2 0.00 M-525I (002) 443+00 442+50 190 255

S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
76	0	241	0

443+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	45	319
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	242
SEED MIX D ~~HAY OR STRAW~~	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
184	0	429	0

442+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	70	453
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	57	464
SEED MIX D ~~HAY OR STRAW~~	0	0
SEED MIX D WOOD CELLULOSE		

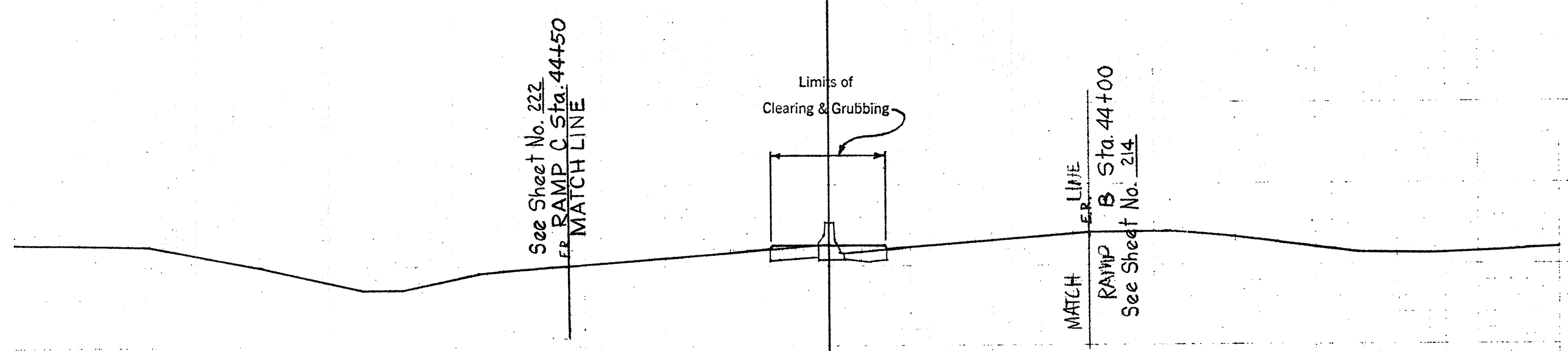
ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS CHECKED
BY
DATE

100 50 0 50 100

PLATE 2-FULL CROSS SECTION-FULL IN.
WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION
PRINTED IN U.S.A.

W.VA.	6	X326 SP2 0.00	M-5251 (002)		444+00 443+50	191	255

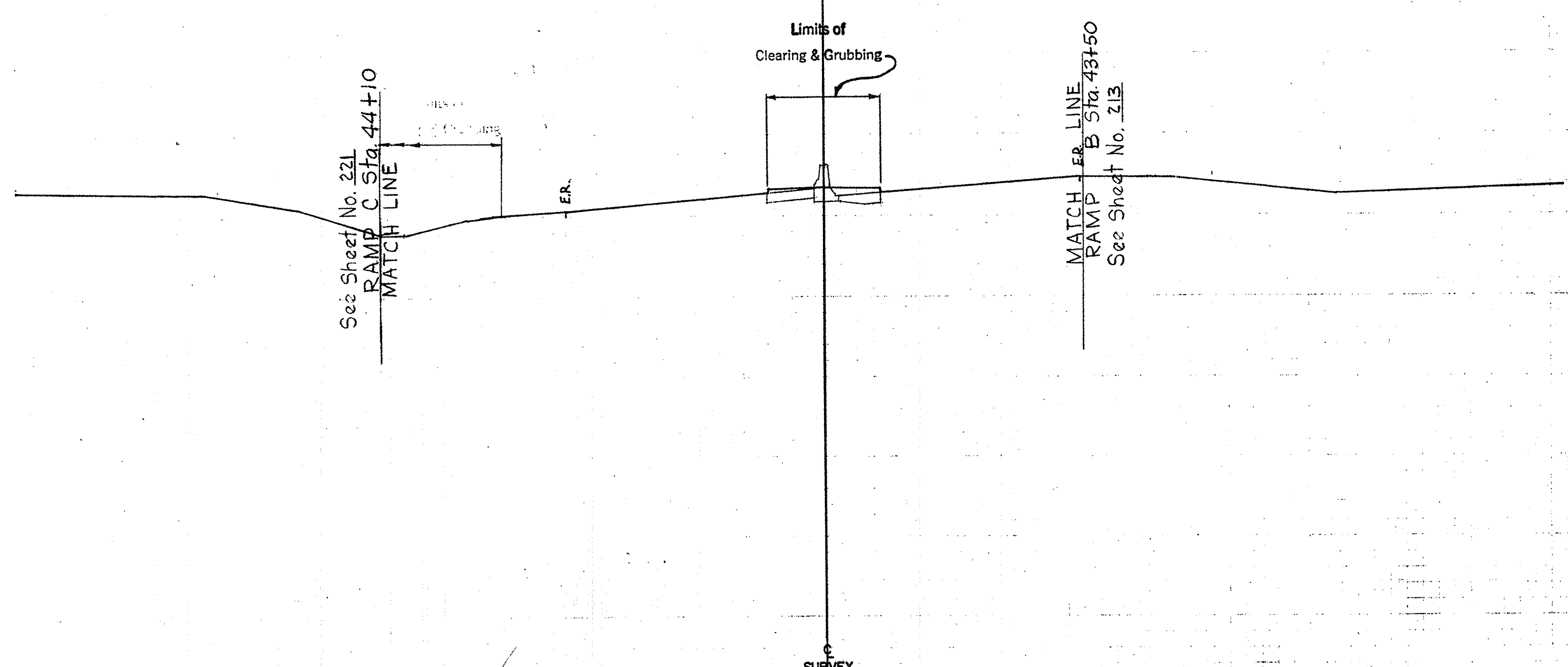
S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
26	0	48	0

444+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	14	119
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	0
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
26	0	94	0

443+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	29	206
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	83
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

FINAL SURVEY — NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED

W.VA. 6 X326 SP2 0.00 M-5251 (002) 444+50 445+50 192 255

S.R. 7

End Guardrail ℄ Sta. 445+75

E.R. Ramp B Taper

See Sheet No. 223 RAMP C Sta. 45+78 MATCH LINE

54.50'

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

3:1

¼"/Ft

2:1

2:1

F.L. 694.5

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
58	98	142	144

CAHW

K/W

445+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	80	589
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	18	200
SEED MIX D HAY OR STRAW	32	191
SEED MIX D WOOD CELLULOSE		

Begin Guardrail ℄ Sta 445+25

E.R. Ramp B Taper

See Sheet No. 223 RAMP C Sta. 45+35 MATCH LINE

Limits of Clearing & Grubbing

55.75'

Limits of Seeding & Mulching

BORING #B-14 STA. 445+00 72' Rt. ℄

3:1

20:1

2:1

2:1

ROCK FILL

10.5'

F.L. 697.0

CAHW

MATCH LINE TWP RD 533 Sta. 54+55 See Sheet No. 236

445+00
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
95	58	356	140

	WIDTH	AREA SY
CLEARING & GRUBBING	132	753
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	54	364
SEED MIX D HAY OR STRAW	33	139
SEED MIX D WOOD CELLULOSE		

Sta. 444+80 Rt.
Begin 2' Special Ditch

AHEAD

Limits of Clearing & Grubbing

57.00'

℄ Ramp B

Limits of Seeding & Mulching

CAHW

3:1

10:1

MATCH LINE TWP RD 533 Sta. 54+05 See Sheet No. 235

444+50
690

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
AHD 290	93	0	0
BK 14	0	37	0

		WIDTH	AREA SY
CLEARING & GRUBBING	AHD	139	0
	BK	14	78
SEEDING & MULCHING			
SEED MIX B, C-1, C-2 HAY OR STRAW	AHD	77	0
	BK	0	
SEED MIX D HAY OR STRAW	AHD	17	0
	BK	0	
SEED MIX D WOOD CELLULOSE			

Sta. 444+50 Rt.
Begin 6" Underdrain Pipe
Continued from Ramp B

℄ SURVEY

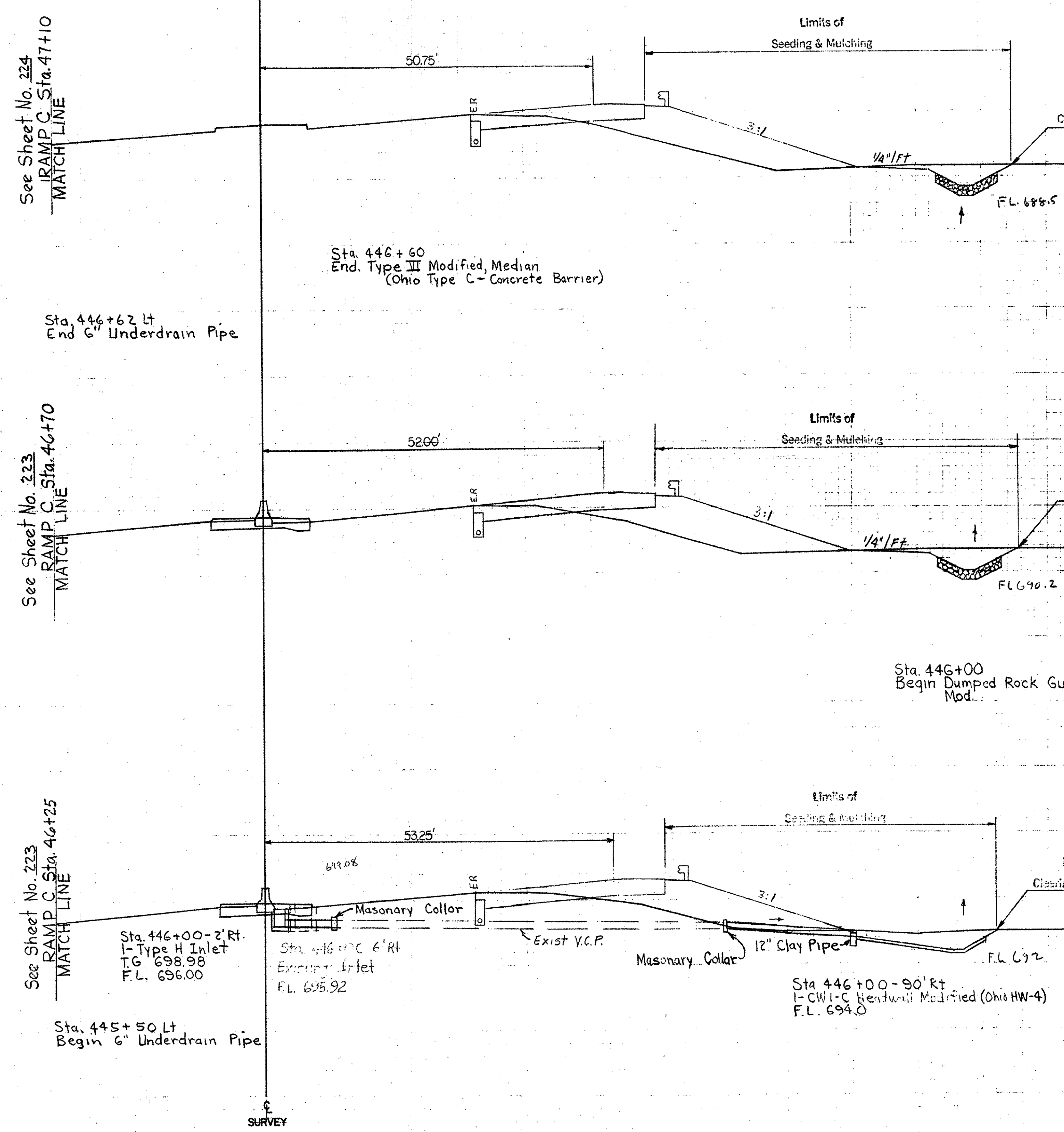
SURVEY: SURVEYED, PLOTTED, NOTE BOOK, TEMPLATE, AREAS CHECKED, NO.

ORIGINAL SURVEY: SURVEYED, PLOTTED, NOTE BOOK, AREAS CHECKED, NO.

100 50 PLATE 3 FULL CROSS SECTIONS FOR ℄ LINE 50 100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

S.R. 7


See Sheet No. 224 RAMP C Sta. 47+10 MATCH LINE
50.75'
Limits of Seeding & Mulching
E.R.
3:1
1/4"/Ft
F.L. 688.5
Limits of Clearing & Grubbing
LAR/W
447+00
700
Sta. 446+60
End. Type III Modified, Median
(Ohio Type C-Concrete Barrier)
Sta. 446+62 Lt
End 6" Underdrain Pipe
See Sheet No. 223 RAMP C Sta. 46+70 MATCH LINE
52.00'
Limits of Seeding & Mulching
3:1
1/4"/Ft
F.L. 690.2
Limits of Clearing & Grubbing
LAR/W
446+50
700
Sta. 446+00
Begin Dumped Rock Gutter Mod.
See Sheet No. 223 RAMP C Sta. 46+25 MATCH LINE
53.25'
Limits of Seeding & Mulching
3:1
Masonary Collar
Exist V.C.P.
Masonary Collar
12" Clay Pipe
F.L. 692
Limits of Clearing & Grubbing
LAR/W
446+00
700
Sta. 446+00-2' Rt.
1-Type H Inlet
T.G. 698.98
F.L. 696.00
Sta. 446+00 6' Rt
Existing Inlet
F.L. 695.92
Sta 446+00-90' Rt
1-CW1-C Headwall Modified (Ohio HW-4)
F.L. 694.0
Sta. 445+50 Lt
Begin 6" Underdrain Pipe
℄ SURVEY
100
50
50
100

Sta. 447+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
48	160	83	259

	WIDTH	AREA SY
CLEARING & GRUBBING	83	764
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	44
SEED MIX D HAY OR STRAW	41	222
SEED MIX D WOOD CELLULOSE		

Sta. 446+50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
42	120	69	241

	WIDTH	AREA SY
CLEARING & GRUBBING	84	456
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	42
SEED MIX D HAY OR STRAW	39	211
SEED MIX D WOOD CELLULOSE		

Sta. 446+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
32	140	83	220

	WIDTH	AREA SY
CLEARING & GRUBBING	80	444
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	7	39
SEED MIX D HAY OR STRAW	37	192
SEED MIX D WOOD CELLULOSE		

W.VA.	6	X326-SP2-0.00	M-5251 (002)	447+50 448+50	194	255

S.R. 7

FINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
NO.
AREAS
AREAS CHECKED

ORIGINAL SURVEY
DATE
BY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
NO.
AREAS
AREAS CHECKED

Existing L/A R/W

Existing L/A R/W

See Sheet No. 225
RAMP C Sta. 48+50
MATCH LINE

45.50'

Limits of
Seeding & Mulching

Limits of
Clearing & Grubbing

3:1

3:1

2b:1

Sta. 449+00 Rt.
End Dumped Rock Gutter
Mod.

Exist. L/A R/W

L/A R/W

448+50
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
40	160	72	333

	WIDTH	AREA SY
CLEARING & GRUBBING	74	425
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	4	22
SEED MIX D HAY OR STRAW	52	286
SEED MIX D WOOD CELLULOSE		

See Sheet No. 224
RAMP C Sta. 48+05
MATCH LINE

47.25'

Limits of
Seeding & Mulching

Limits of
Clearing & Grubbing

3:1

3:1

2b:1

L/A R/W

448+00
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
38	200	78	343

	WIDTH	AREA SY
CLEARING & GRUBBING	77	461
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	4	33
SEED MIX D HAY OR STRAW	51	275
SEED MIX D WOOD CELLULOSE		

See Sheet No. 224
RAMP C Sta. 47+55
MATCH LINE

49.00'

Limits of
Seeding & Mulching

Limits of
Clearing & Grubbing

3:1

1/4"/Ft.

L/A R/W

447+50
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
46	170	87	306

	WIDTH	AREA SY
CLEARING & GRUBBING	89	478
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	44
SEED MIX D HAY OR STRAW	48	247
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

PLATE 3-FULL CROSS SECTIONS ON ℄ LINE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 449+00 450+00 | 195 : 255

S.R. 7

Existing L/A R/W

AHEAD
BACK

Limits of Clearing & Grubbing
Limits of Seeding & Mulching
ER
41.00'
40.25'
2:1
2:1
20:1

Sta. 447+90.31 Lt.
6" Underdrain Pipe Continued
from Ramp C

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
AHD 98	70	0	0
Bk 47	70	99	102

450+00
690

	WIDTH	AREA SY
AHD CLEARING & GRUBBING	78	0
Bk CLEARING & GRUBBING	37	203
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 AHD	27	0
HAY OR STRAW BK	4	22
SEED MIX D AHD	14	0
HAY OR STRAW BK	14	72
SEED MIX D WOOD CELLULOSE		

See Sheet No. 226
RAMP C Sta. 49+50
MATCH LINE

Existing L/A R/W

42.00'
ER
Limits of Seeding & Mulching
Limits of Clearing & Grubbing
2:1
2:1
20:1

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	40	111	80

449+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	36	206
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	4	22
SEED MIX D HAY OR STRAW	12	69
SEED MIX D WOOD CELLULOSE		

See Sheet No. 225
RAMP C Sta. 49+00
MATCH LINE

Existing L/A R/W

43.75'
ER
Limits of Seeding & Mulching
Limits of Clearing & Grubbing
2:1
2:1
20:1

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	46	93	191

449+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	38	217
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	4	22
SEED MIX D HAY OR STRAW	13	121
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

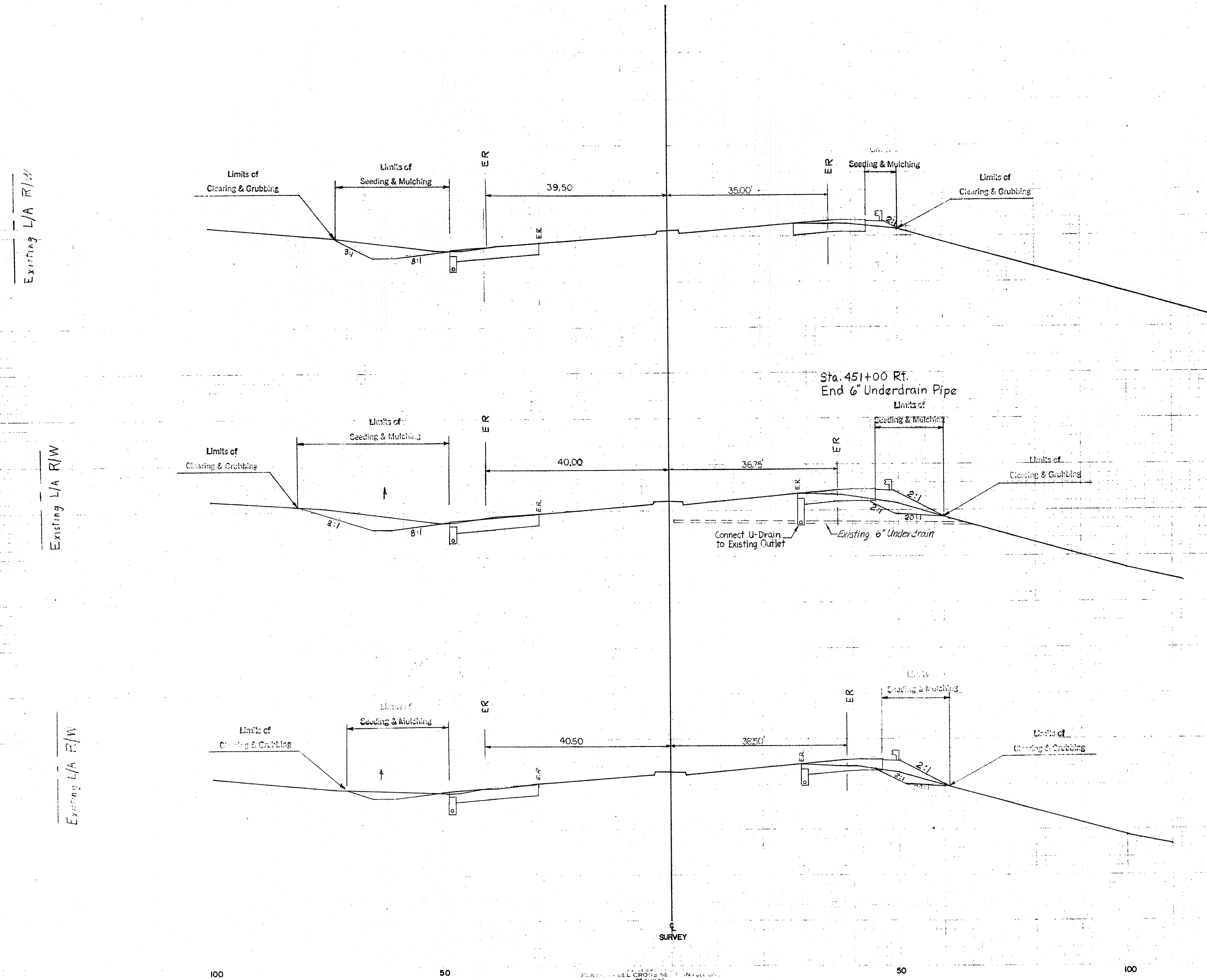
FINAL SURVEY: PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO.

ORIGINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO.

100 50 0 50 100

PLATE 3 FULL CROSS SECTION-FULL [illegible] INTERCHANGE PRINTED IN U.S.A.

S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
104	18	239	52

451+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	67	422
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	194
SEED MIX D HAY OR STRAW	3	42
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
154	38	256	72

451+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	85	453
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	39	192
SEED MIX D HAY OR STRAW	12	67
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
122	40	204	102

450+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	78	433
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	158
SEED MIX D HAY OR STRAW	12	72
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SPR. 0.00 | M-5251 (002) | 452+00 453+00 | 197 | 255

S.R.7

Sta. 453+25 Lt.
End Dumped Rock Gu

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

E.R.

38.50

30.25'

Existing 12" Pipe

Existing Manhole

Existing 12" Pipe

Existing L/A R/W

2:1

2:1

F.L. 662.0

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
172	288	311	346

453+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	102	503
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	11	78
SEED MIX D HAY OR STRAW	48	183
SEED MIX D WOOD CELLULOSE		

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

E.R.

38.50

31.50'

Limits of Clearing & Grubbing

Limits of

Clearing & Grubbing

2:1

20:1

2:1

2:1

F.L. 674.4

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
164	86	237	89

452+50
690

Existing L/A R/W

	WIDTH	AREA SY
CLEARING & GRUBBING	79	397
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	17	131
SEED MIX D HAY OR STRAW	18	56
SEED MIX D WOOD CELLULOSE		

Sta. 452+25 Lt.
Begin Dumped Rock Gutter
Mod.

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

E.R.

39.00

33.25'

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

2½:1

8:1

Begin Guardrail Lt. Sta 452+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
92	10	181	26

452+00
690

Existing L/A R/W

	WIDTH	AREA SY
CLEARING & GRUBBING	64	364
SEEDING & MULCHING		
SEED MIX B C-1, C-2 HAY OR STRAW	30	169
SEED MIX D HAY OR STRAW	2	14
SEED MIX D WOOD CELLULOSE		

Existing L/A R/W

Existing L/A R/W

Existing L/A R/W

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

℄ SURVEY

100 50 0 50 100

PLATE 3 FOR CROSS SECTION FIELD USE
TELEDYNE
PRINTED IN U.S.A.

W.VA. 6 | X326 SP2 0.00 | M-5251 (002) | 453+50 454+50 | 198 | 255

S.R.7

STA 455+00
END WORK
End Guardrail Lt & Rt

Sta. 454+80
End 6" Underdrain Pipe

Sta. 455+64.80
End Earthwork & Seeding
End Pavt Transition Lt.

Sta. 454+50
End Pav't. Transition Rt.

Existing L/A R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

E.R.

28.28

26.50'

6" U'drain Outlet Pipe

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
28	0	87	19

454+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	13	122
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	5	25
SEED MIX D HAY OR STRAW	0	19
SEED MIX D WOOD CELLULOSE		

Limits of Seeding & Mulching

E.R.

34.28'

27.75'

Limits of Clearing & Grubbing

Sta. 453+65 Lt.
End Dumped Rock Gutter Mod.

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
66	20	270	298

454+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	31	461
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	4	33
SEED MIX D HAY OR STRAW	7	214
SEED MIX D WOOD CELLULOSE		

Existing L/A R/W

Limits of Seeding & Mulching

E.R.

38.50'

29.00'

Limits of Clearing & Grubbing

2:1

20:1

Sta. 453+40 Lt
Begin Dumped Rock Gutter Mod.

Sta. 453+26 - 102' Lt.
1-CW1-C Headwall, Mod. (Ohio HW-4)

Limits of Clearing & Grubbing

Concrete Gutter

66" R.C.P.

℄ SURVEY

Existing 66" R.C.P. Sta. 453+53 ℄ SR7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
226	302	349	546

453+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	135	658
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	53
SEED MIX D HAY OR STRAW	70	328
SEED MIX D WOOD CELLULOSE		

Existing L/A R/W

100 50 50 100

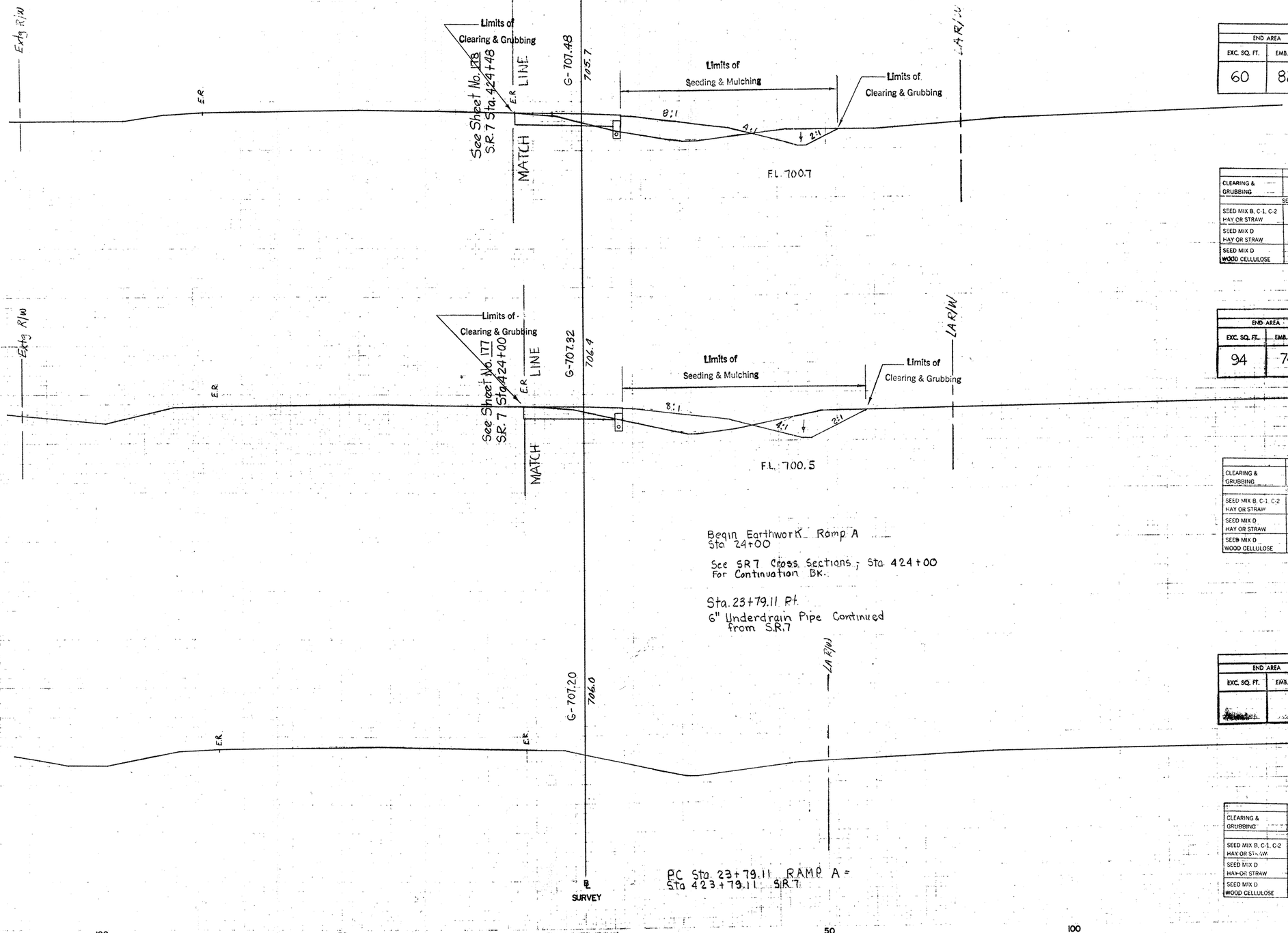
WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

ORIGINAL SURVEY — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — NOTE BOOK — NO.

SURVEY — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — NOTE BOOK — NO.

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 23+78.56 24+50 | 199 | 255

RAMP A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
60	82	143	144

24+50
700

	WIDTH	AREA S.Y.
CLEARING & GRUBBING	68	383
SEEDING &		S.Y.
SEED MIX B, C-1, C-2 HAY OR STRAW	47	275
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
94	74	0	0

24+00
700

	WIDTH	AREA
CLEARING & GRUBBING	70	0
SEEDING & MULCHING		S.Y.
SEED MIX B, C-1, C-2 HAY OR STRAW	52	0
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Begin Earthwork Ramp A
Sta 24+00

See SR 7 Cross Sections; Sta. 424+00 For Continuation Bk.

Sta. 23+79.11 Pt.
6" Underdrain Pipe Continued from S.R.7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

23+79.11
700

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		S.Y.
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

PC Sta. 23+79.11 RAMP A =
Sta 423+79.11 S.R.7

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO.

B SURVEY

100 50 CROSS SECTION 50 100

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 25+00 26+00 | 200 | 255

RAMP A

Sta. 26+45.63 RAMP A (16' Lt.)
Sta. 426+47.05 S.R. 7 (55' Rt.)

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
178	48	259	126

26+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	95	497
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	58	317
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
102	88	156	159

25+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	84	428
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	56	286
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
66	84	117	154

25+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	70	383
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	47	261
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Edg LA R/W

E.R.

See Sheet No. 179 SR 7 Sta. 425+98

E.R. LINE

MATCH

G-707.98

704.2

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

8:1 4:1 2:1

F.L. 701.3

See Sheet No. 178 SR 7 Sta. 425+45

G-727.83

705.5

F.L. 701.2

See Sheet No. 178 S.R. 7 Sta. 424+95

G-707.65

705.2

F.L. 701.0

℄ SURVEY

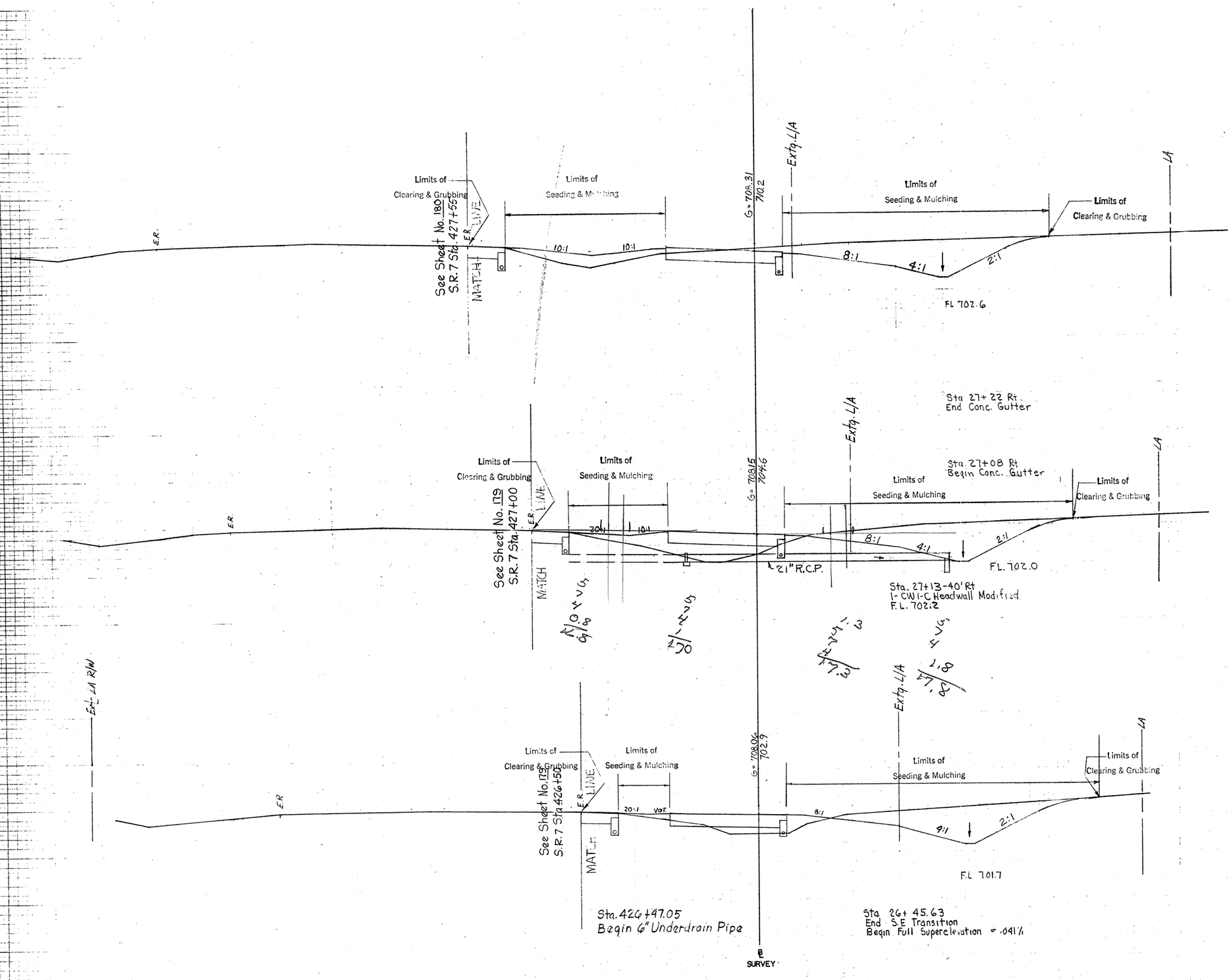
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

ORIGINAL SURVEY — DATE, SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

100 50 50 100

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 26+50 27+50 | 201 | 255

RAMP A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
274	46	454	137

27+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	132	686
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	92	464
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
216	102	393	44

27+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	115	617
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	75	433
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
208	54	357	94

26+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	107	561
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	81	386
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

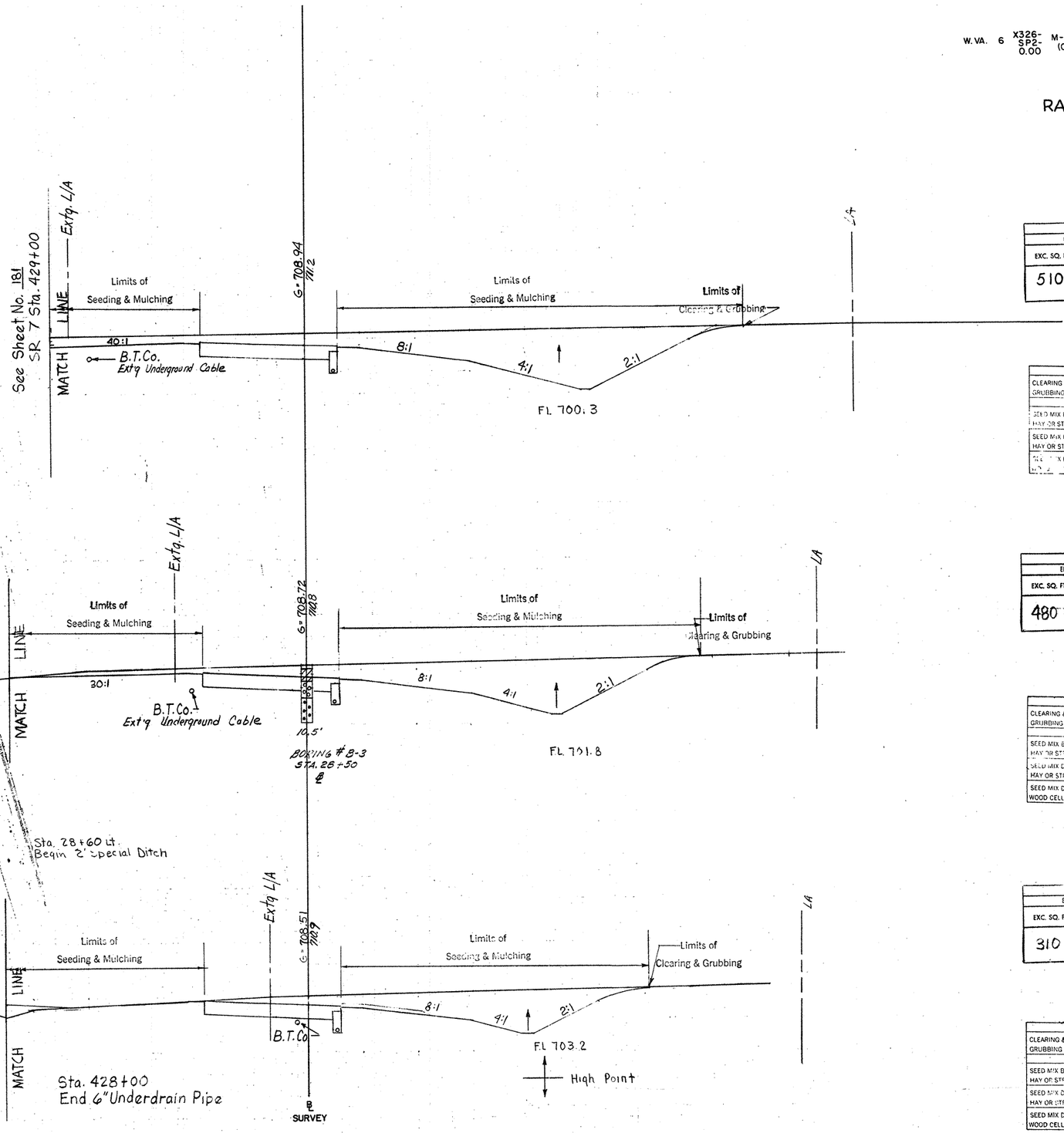
FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO.

E SURVEY

W. VA. 6 X326-SP2-0.00 M-5251 (002) 28+00 29+00 202 255

RAMP A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
510	0	917	0

29+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	126	700
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	104	575
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
480	0	731	0

28+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	126	675
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	103	547
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
310	0	541	43

28+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	117	492
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	94	517
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY
SURVEYED
PLOTTED
TRIPLYTE
AREAS
NOTE BOOK
NO.
AREAS CHECKED
DATE
BY

100 50 50 100

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 29+50 30+50 | 203 | 255

RAMP A

Sta. 30+50 Lt
Begin 2' Special Ditch

See Sheet No. 182
S.R. 7 Sta. 430+60
MATCH LINE

Limits of Seeding & Mulching

4:1

40:1

℄ 710.73
712.6

Sta. 30+59
End Conc. Gutter

Limits of Seeding & Mulching

8:1

3:1

2:1

Limits of Clearing & Grubbing

L/A

36" CI/SP or RCP

FL. 696.3

Sta. 30+50 - 60' Rt
1-CW1-C Headwall, Modified
F.L. 696.39

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1020	0	1715	0

30+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	203	1056
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	178	917
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Sta. 29+97.19
End SE Transition
Begin Normal Crown

Sta. 30+50
End 2' Special Ditch
Begin 4' Special Ditch

Sta. 30+41
Begin Conc. Gutter

See Sheet No. 181
S.R. 7 Sta. 430+06
MATCH LINE

Limits of Seeding & Mulching

40:1

℄ 709.88
711.9

Limits of Seeding & Mulching

8:1

3.5:1

2:1

Limits of Clearing & Grubbing

L/A

FL 697.7

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
832	0	1202	0

30+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	177	917
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	152	786
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Sta 29+50 Lt
End 2' Special Ditch

Sta. 29+15.19
End Full S.E.
Begin Transition

See Sheet No. 181
S.R. 7 Sta. 429+52
MATCH LINE

Limits of Seeding & Mulching

40:1

B.T.Co.
Exist. Underground Cable

℄ 709.28
710.8

Limits of Seeding & Mulching

8:1

4:1

2:1

Limits of Clearing & Grubbing

L/A

FL 699.0

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
466	0	904	0

29+50
710

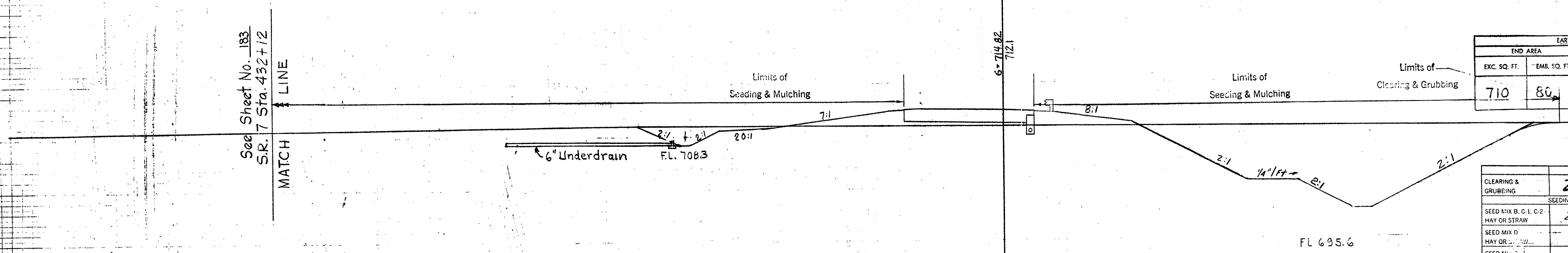
	WIDTH	AREA SY
CLEARING & GRUBBING	153	775
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	131	653
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
AREAS CHECKED
NO.
DATE
BY

℄ SURVEY

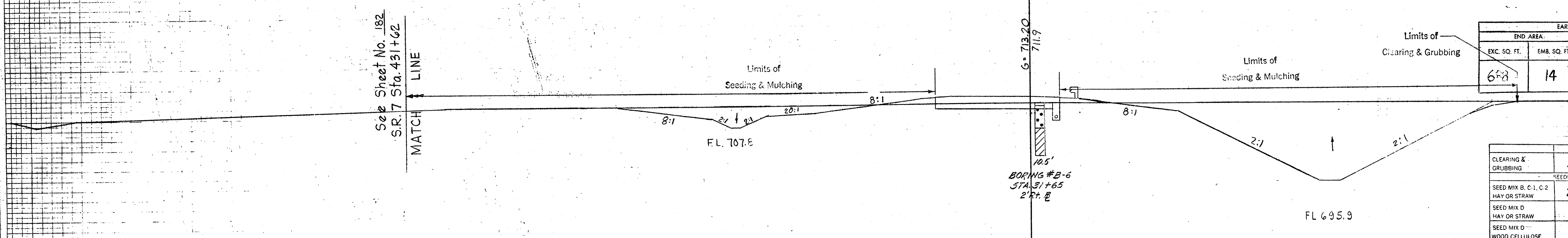
100 50 50 100

RAMP A



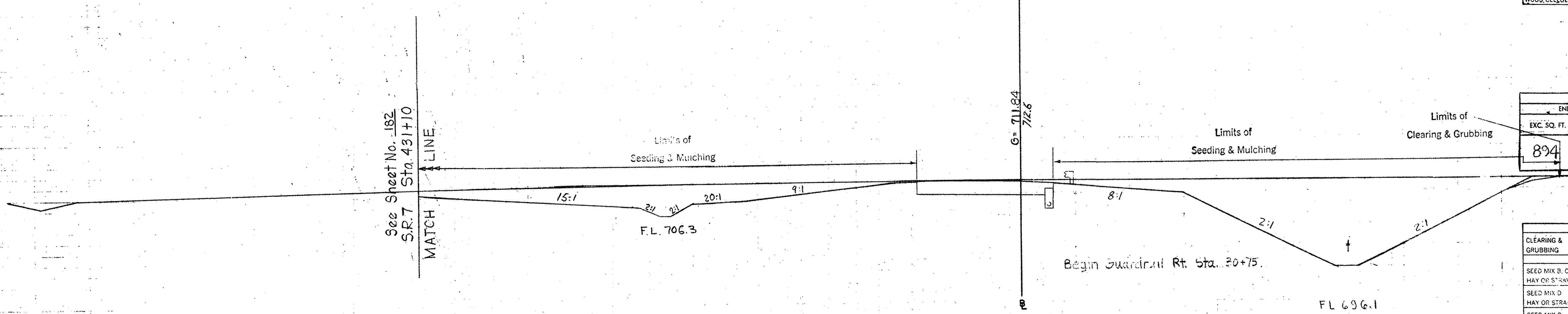
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
710	80	1294	87

	WIDTH	AREA SY
CLEARING & GRUBBING	247	1297
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	205	1136
SEED MIX D HAY OR STRAW	25	69
SEED MIX D WOOD CELLULOSE		



END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
668	14	1465	13

	WIDTH	AREA SY
CLEARING & GRUBBING	220	1178
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	204	1094
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
894	0	1772	0

	WIDTH	AREA SY
CLEARING & GRUBBING	244	1131
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	190	1022
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 50 100

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 32+50 33+50 | 205 | 255

RAMP A

FINAL SURVEY — SURVEYED | PLOTTED | TEMPLATE | NOTE BOOK | AREAS | NO. | AREAS CHECKED | BY | DATE

ORIGINAL SURVEY — SURVEYED | PLOTTED | TEMPLATE | NOTE BOOK | AREAS | NO. | AREAS CHECKED | BY | DATE

Limits of Seeding & Mulching

Sta. 5+50 Lt.- Access Rd. B
End 6" Underdrain Pipe

See Sheet No. 184
S.R. 7 Sta. 433+70
MATCH LINE

℄ Access Rd "B"

Limits of Seeding & Mulching

20:1 — 2:1 — 20:1 — 4:1

F.L. 709.7

℄ = 720.05
711.4

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

2:1 — 1/4"/Ft — 2:1 — 2:1

FL 694.9

Sta. 33+10 Rt.
End 6" Underdrain Pipe

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
604	598	1202	878

33+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	288	1572
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	213	1169
SEED MIX D HAY OR STRAW	39	200
SEED MIX D WOOD CELLULOSE		

See Sheet No. 183
S.R. 7 Sta. 433+18
MATCH LINE

Limits of Seeding & Mulching

℄ Access Rd "B"

Limits of Seeding & Mulching

20:1 — 2:1 — 20:1 — 4:1

F.L. 709.2

6" U'drain Outlet Pipe

Sta. 32+80 Lt.
Begin 6" Underdrain Pipe

℄ = 718.31
711.3

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

2:1 — 1/4" /Ft — 2:1 — 2:1

FL 695.1

Sta. 32+55.03
End Normal Crown
Begin S.E Transition

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
694	350	1263	548

33+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	278	1497
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	208	1119
SEED MIX D HAY OR STRAW	33	178
SEED MIX D WOOD CELLULOSE		

See Sheet No. 183
S.R. 7 Sta. 432+68
MATCH LINE

Limits of Seeding & Mulching

℄ Access Rd B

Limits of Seeding & Mulching

20:1 — 2:1 — 20:1 — 5:1

F.L. 708.6

Sta 4+20 Lt.- Access Rd. B
Begin 6" Underdrain Pipe

℄ = 716.56
711.5

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

8:1 — 2:1 — 1/4"/Ft — 2:1 — 2:1

FL 695.4

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
670	242	1278	298

32+50
710

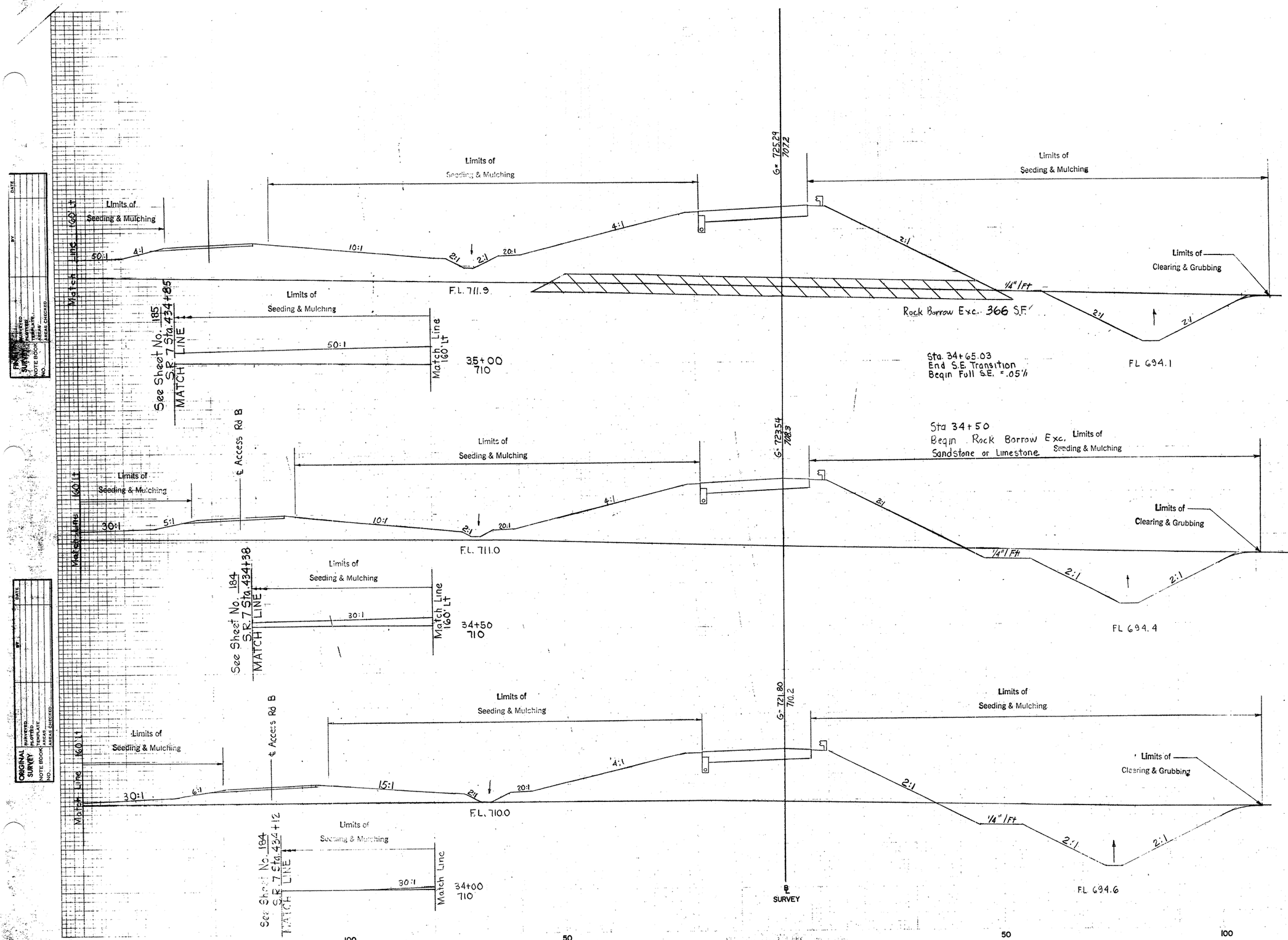
	WIDTH	AREA SY
CLEARING & GRUBBING	261	1411
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	195	1111
SEED MIX D HAY OR STRAW	31	156
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 50 100

W. VA. 6 | X326-SP2-0.00 | M-5251 (002) | 34+00 35+00 | 206 | 255

RAMP A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
520	1864	796	2993

35+00
710

	WIDTH	AREA SF
CLEARING & GRUBBING	331	1783
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	248	1331
SEED MIX D HAY OR STRAW	44	233
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
340	1368	770	2157

34+50
710

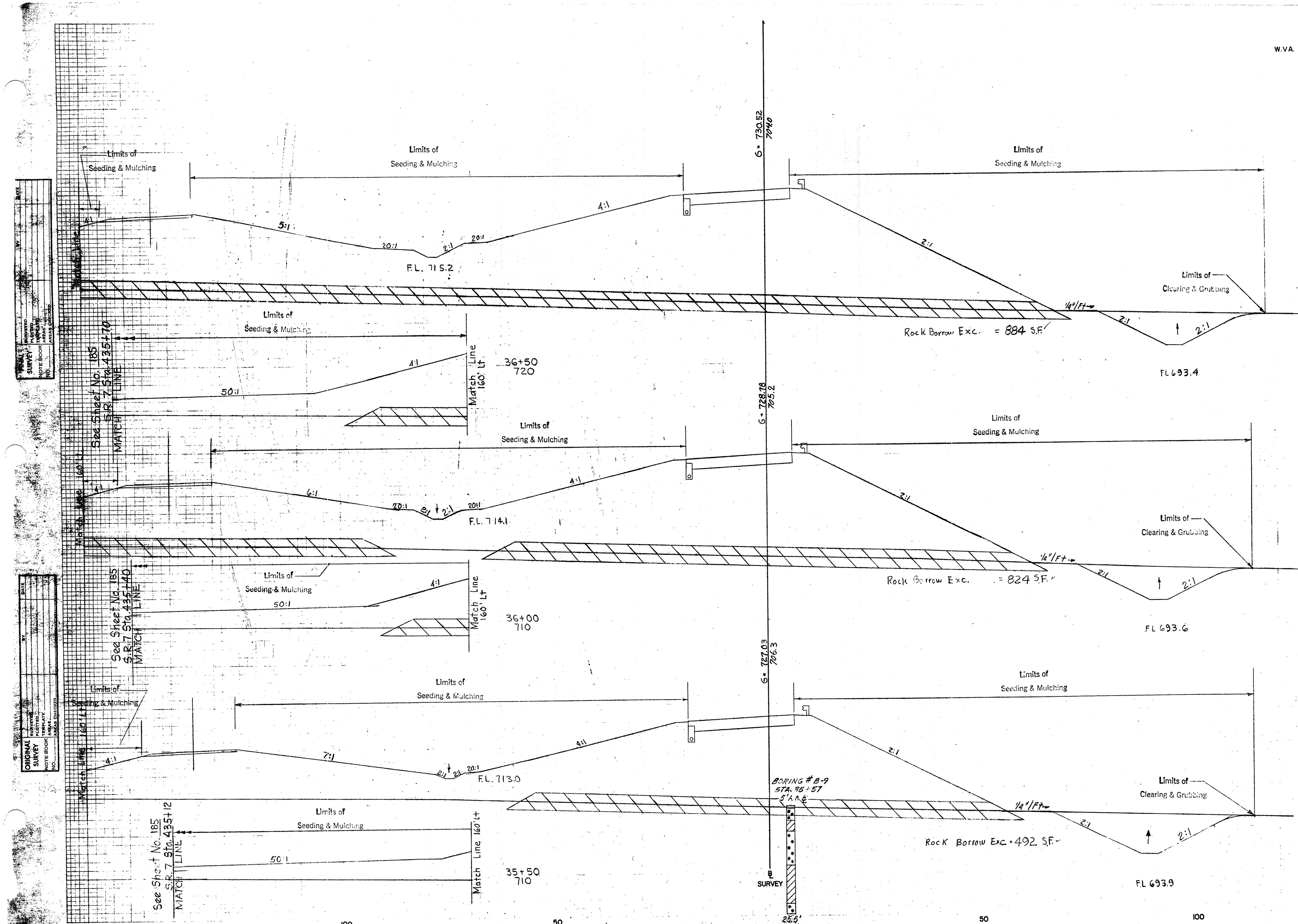
	WIDTH	AREA SY
CLEARING & GRUBBING	311	1708
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	231	1272
SEED MIX D HAY OR STRAW	40	217
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
492	962	1015	1444

34+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	304	1644
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	227	1222
SEED MIX D HAY OR STRAW	38	214
SEED MIX D WOOD CELLULOSE		

RAMP A



36+50
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
694	3846	1241	6328

	WIDTH	AREA SY
CLEARING & GRUBBING	361	1969
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	256	1428
SEED MIX D HAY OR STRAW	65	342
SEED MIX D WOOD CELLULOSE		

36+00
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
646	2988	1030	5148

	WIDTH	AREA SY
CLEARING & GRUBBING	348	1925
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	258	1422
SEED MIX D HAY OR STRAW	58	303
SEED MIX D WOOD CELLULOSE		

35+50
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
466	2572	913	4107

	WIDTH	AREA SY
CLEARING & GRUBBING	345	1878
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	254	1394
SEED MIX D HAY OR STRAW	51	264
SEED MIX D WOOD CELLULOSE		

RAMP A

38+00
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
704	6044	1281	10376

	WIDTH	AREA SY
CLEARING & GRUBBING	365	2033
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	255	1428
SEED MIX D HAY OR STRAW	79	428
SEED MIX D WOOD CELLULOSE		

37+50
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
680	5162	1265	8856

	WIDTH	AREA SY
CLEARING & GRUBBING	367	2039
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	259	1442
SEED MIX D HAY OR STRAW	75	406
SEED MIX D WOOD CELLULOSE		

37+00
700

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
686	4402	1278	7637

	WIDTH	AREA SY
CLEARING & GRUBBING	367	2022
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	260	1433
SEED MIX D HAY OR STRAW	71	378
SEED MIX D WOOD CELLULOSE		

W. VA. 6 | X326-SP2-0.00 | M-5251 (002) | 38+50 39+50 | 209 | 255

RAMP A

Sta 39+67.21 Ramp A
Sta 13+50.00 SR 872
Sta. 37+39.34 Ramp B

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

39+50
700

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

Sta 39+00
End Earthwork & Seeding

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
530	6250	1126	11991

39+00
700

	WIDTH	AREA SF
CLEARING & GRUBBING	272	1756
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	177	1172
SEED MIX D HAY OR STRAW	17	267
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
686	6700	1287	11800

38+50
700

	WIDTH	AREA SF
CLEARING & GRUBBING	360	2014
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	245	1389
SEED MIX D HAY OR STRAW	79	439
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED

Sta. 39+20 Lt.
End 6" Underdrain Pipe

℄ Access Rd. B

Exist. L/A

Limits of Seeding & Mulching

10:1

15:1

6" U'drain

Limits of Seeding & Mulching

2:1

G-732.64

700.6

MATCH LINE

SR 872 Sta 13+50

See Sheet No 165

Match Line

160' Lt.

Limits of Seeding & Mulching

25:1

See Sheet No. 186
S.R. 7 Sta. 437+00
MATCH LINE

B.T.Co.

Rock Borrow Exc. = 998 SF

160' Lt.

39+00
720

MATCH LINE

Limits of Seeding & Mulching

4:1

Var.

Var.

5:1

6" U'drain

℄ Access Rd. B

6' - 733.51

701.3

Limits of Seeding & Mulching

2:1

Exist. L/A

Limits of Clearing & Grubbing

1½"/Ft

2:1

2:1

Limits of Seeding & Mulching

20:1

4:1

See Sheet No. 186
S.R. 7 Sta. 436+78
MATCH LINE

BORING # RB-1
STA. 11+50
65' Rt. ℄
(SR 872)

160' Lt.

38+50
720

MATCH LINE

Ext'g. Underground Cable

B.T. Co.

Rock Borrow Exc. = 1108 SF

FL 692.4

℄ SURVEY

100 50 50 100

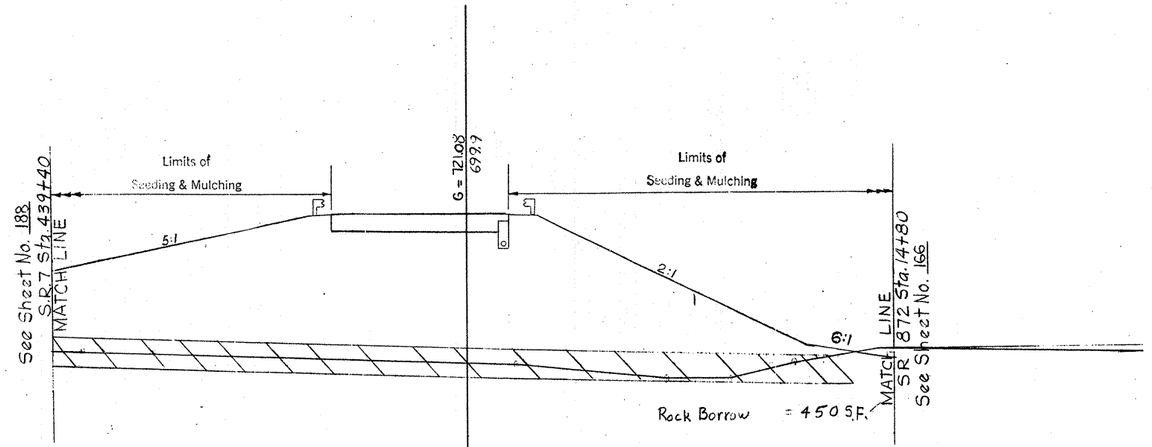
W.VA. 6 X326-0.00 M-5251 (002) 38+50 39+00 210 255

RAMP B

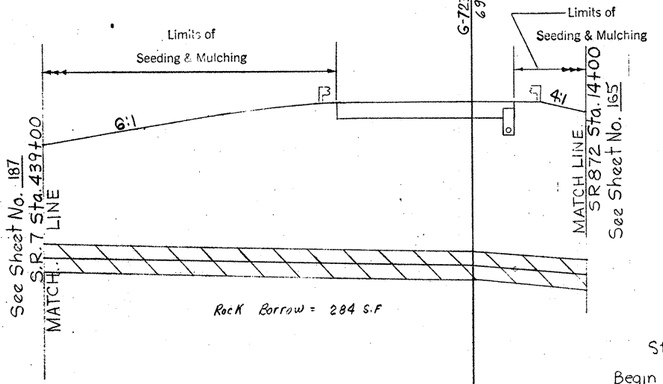
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
218	1440	354	2630

39+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	118	539
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	57	286
SEED MIX D HAY OR STRAW	42	135
SEED MIX D WOOD CELLULOSE		



Sta. 38+85 Rt
Begin 2' Special Ditch



Sta 38+50 Begin Rock Narrow Excavation, Sandstone or Limestone
Begin Guardrail Rt. Sta 38+37.50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
164	1400	0	0

38+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	76	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	46	0
SEED MIX D HAY OR STRAW	6	0
SEED MIX D WOOD CELLULOSE		

Sta. 38+50
Begin Earthwork & Seeding

Sta. 38+00 Rt.
Begin 6" Underdrain Pipe

Sta. 37+39.34 Ramp B
Sta. 33+67.21 Ramp A
Sta 13+ 50.00 SR 872

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE AREAS, AREAS CHECKED, NOTE BOOK, NO.

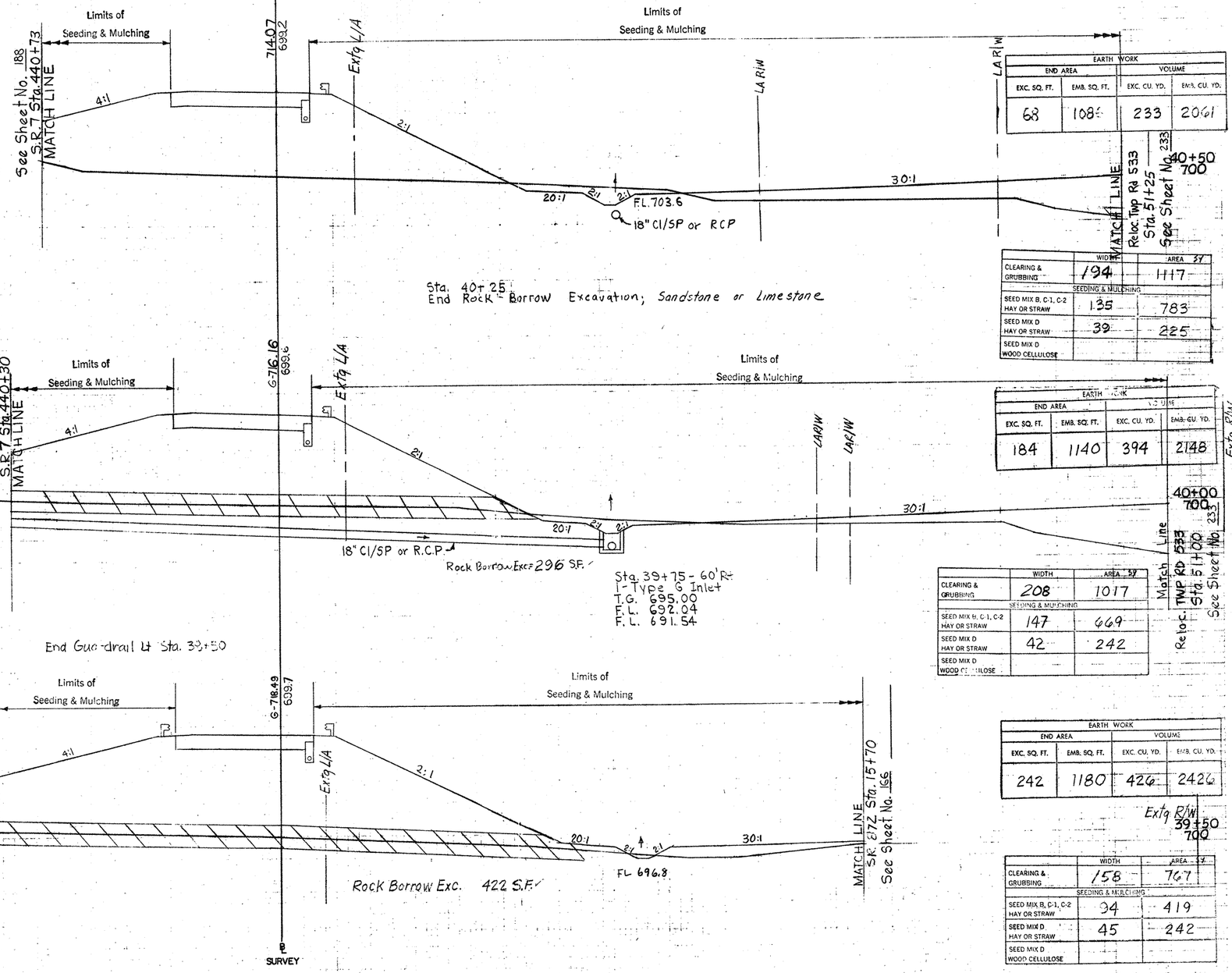
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE AREAS, AREAS CHECKED, NOTE BOOK, NO.

℄ SURVEY

100 50 50 100

W.VA. 6 X326-SP2-0.00 M-5251 (002) 39+50 40+50 211 255

RAMP B



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
68	108	233	2061

	WIDTH	AREA SY
CLEARING & GRUBBING	194	1117
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	135	783
SEED MIX D HAY OR STRAW	39	225
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
184	1140	394	2148

	WIDTH	AREA SY
CLEARING & GRUBBING	208	1017
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	147	669
SEED MIX D HAY OR STRAW	42	242
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
242	1180	426	2426

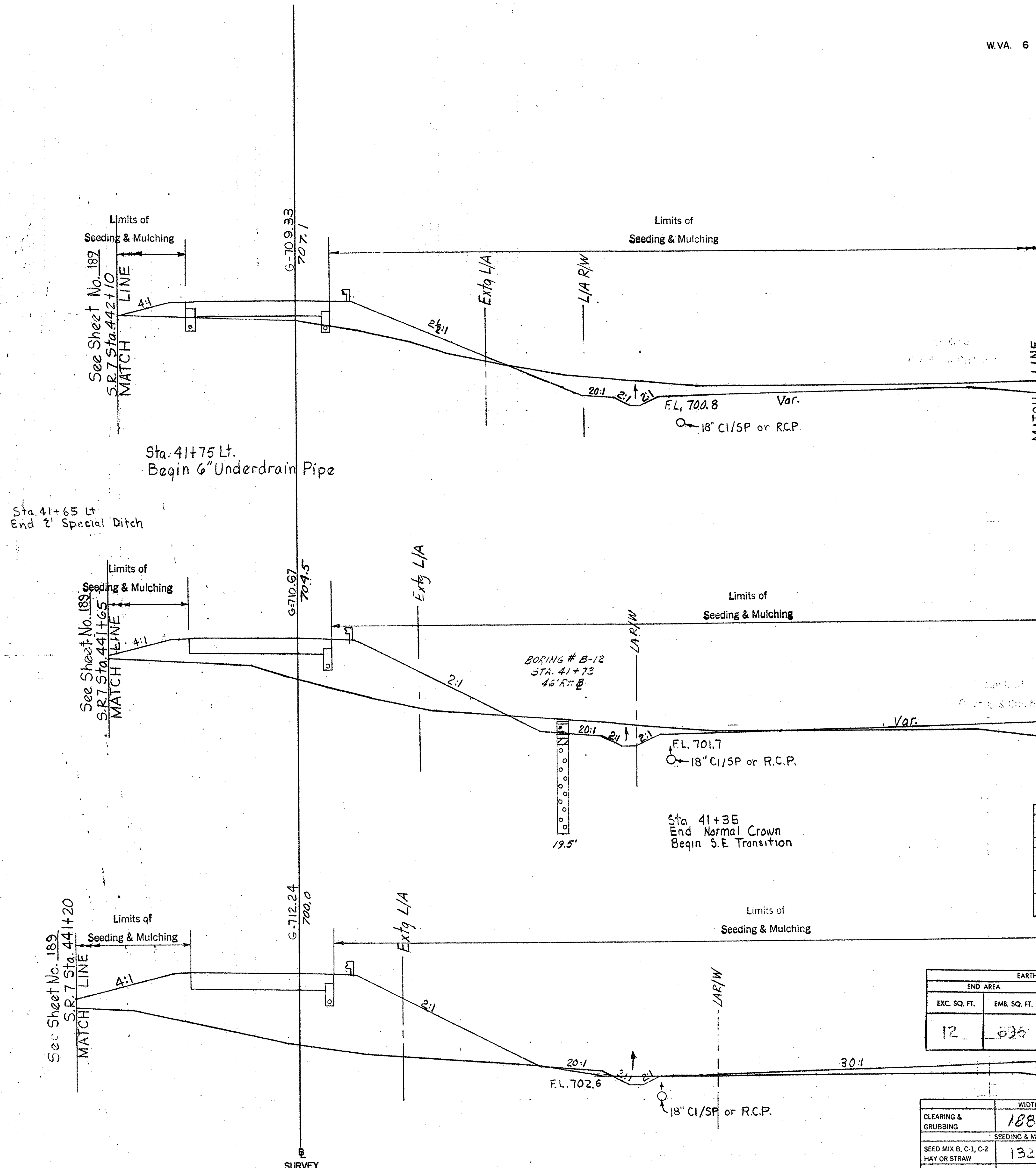
	WIDTH	AREA SY
CLEARING & GRUBBING	158	767
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	94	419
SEED MIX D HAY OR STRAW	45	242
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

100 50 50 100

RAMP B



Sta. 42+00 — Earth Work

End Area Exc. Sq. Ft.	End Area Emb. Sq. Ft.	Volume Exc. Cu. Yd.	Volume Emb. Cu. Yd.
140	100	191	413

	Width	Area SY
Clearing & Grubbing	162	933
Seeding & Mulching		
Seed Mix B, C-1, C-2 Hay or Straw	100	589
Seed Mix D Hay or Straw	39	217
Seed Mix D Wood Cellulose		

Sta. 41+50 — Earth Work

End Area Exc. Sq. Ft.	End Area Emb. Sq. Ft.	Volume Exc. Cu. Yd.	Volume Emb. Cu. Yd.
66	346	72	965

	Width	Area SY
Clearing & Grubbing	174	1006
Seeding & Mulching		
Seed Mix B, C-1, C-2 Hay or Straw	112	678
Seed Mix D Hay or Straw	39	208
Seed Mix D Wood Cellulose		

Sta. 41+00 — Earth Work

End Area Exc. Sq. Ft.	End Area Emb. Sq. Ft.	Volume Exc. Cu. Yd.	Volume Emb. Cu. Yd.
12	696	74	1650

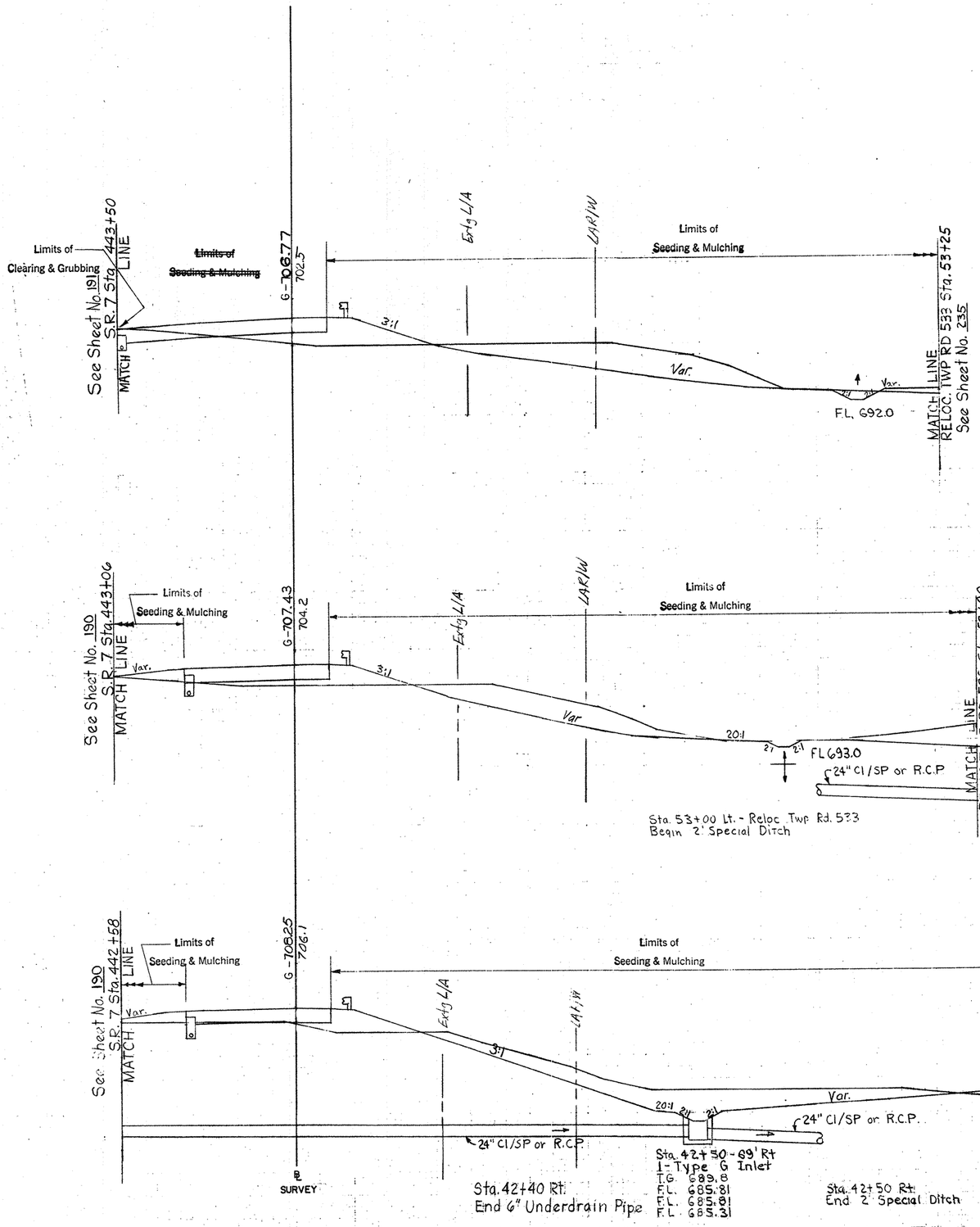
	Width	Area SY
Clearing & Grubbing	188	1061
Seeding & Mulching		
Seed Mix B, C-1, C-2 Hay or Straw	132	742
Seed Mix D Hay or Straw	36	206
Seed Mix D Wood Cellulose		

Final Survey: Surveyed / Plotted / Template / Areas / Note Book No. / Areas Checked

Original Survey: Surveyed / Plotted / Template / Areas / Note Book No. / Areas Checked

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 42+50 43+50 | 213 | 255

RAMP B



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
44	58	143	80

43+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	142	806
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	109	647
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
110	28	331	67

43+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	145	833
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	124	706
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
248	44	359	133

42+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	152	872
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	130	639
SEED MIX D HAY OR STRAW	0	108
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

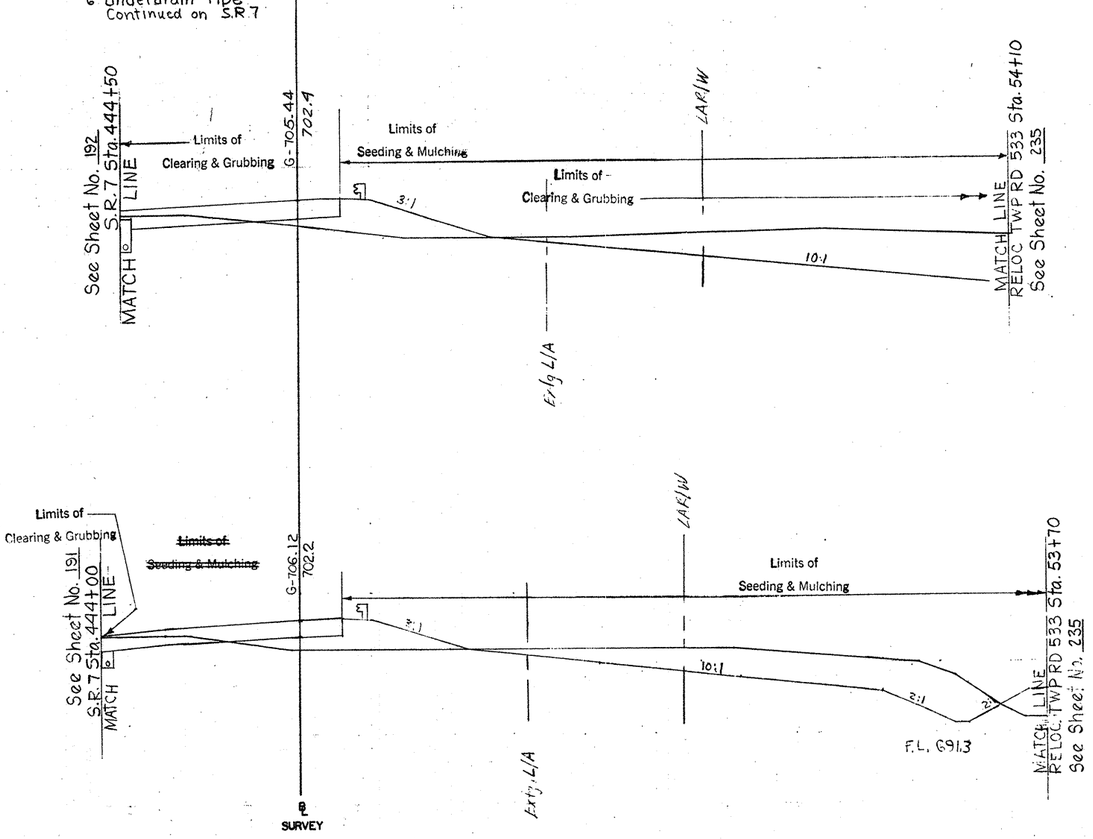
100 50 50 100

RAMP B

Sta 44+50 RAMP B
Sta 444+50 ER7
End Earthwork & Seeding

End S.E. Transition
Begin Full S.E. = .083 %

Sta. 44+50 Lt.
6" Underdrain Pipe
Continued on S.R.7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
290	62	315	93

44+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	80	594
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	39	392
SEED MIX D HAY OR STRAW	12	33
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
50	38	87	89

44+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	134	767
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	102	586
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
NOTE BOOK
NO.
DATE
BY

100 50 50 100

W.VA.						
6	X326-SP2-0.00	M-5251 (002)		37+00 38+00	215	255

RAMP C

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

2:1

1:1

20:1

G-728.28 690.3

6½:1

SR 872 Sta. 3+15 See Sheet No. 151

MATCH LINE

Limits of Seeding & Mulching

G-729.09 711.8

SR 872 Sta. 7+50 See Sheet No. 160

MATCH LINE

Limits of Seeding & Mulching

2:1

20:1

Limits of Clearing & Grubbing

See Sheet No. 159 S.R. 872 Sta. 6+00

Boring # B-16 Sta. 37+62 10' Rt ℄

19.5'

Sta. 37+30 Rt. Begin 6" Underdrain Pipe

Sta. 38+00 Rt Begin 2' Special Ditch

Sta 37+50 Begin Earthwork & Seeding

E.R.

E.R.

Sta. 36+77.34 Ramp C = Sta 7+00, S.R. 872

℄ SURVEY

100 50 0 50 100

PLAN VIEW & CROSS SECTIONS

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
138	4084	128	5939

38+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	174	917
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	84	431
SEED MIX D HAY OR STRAW	74	392
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	2330	0	0

37+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	156	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	71	0
SEED MIX D HAY OR STRAW	67	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

37+00
680

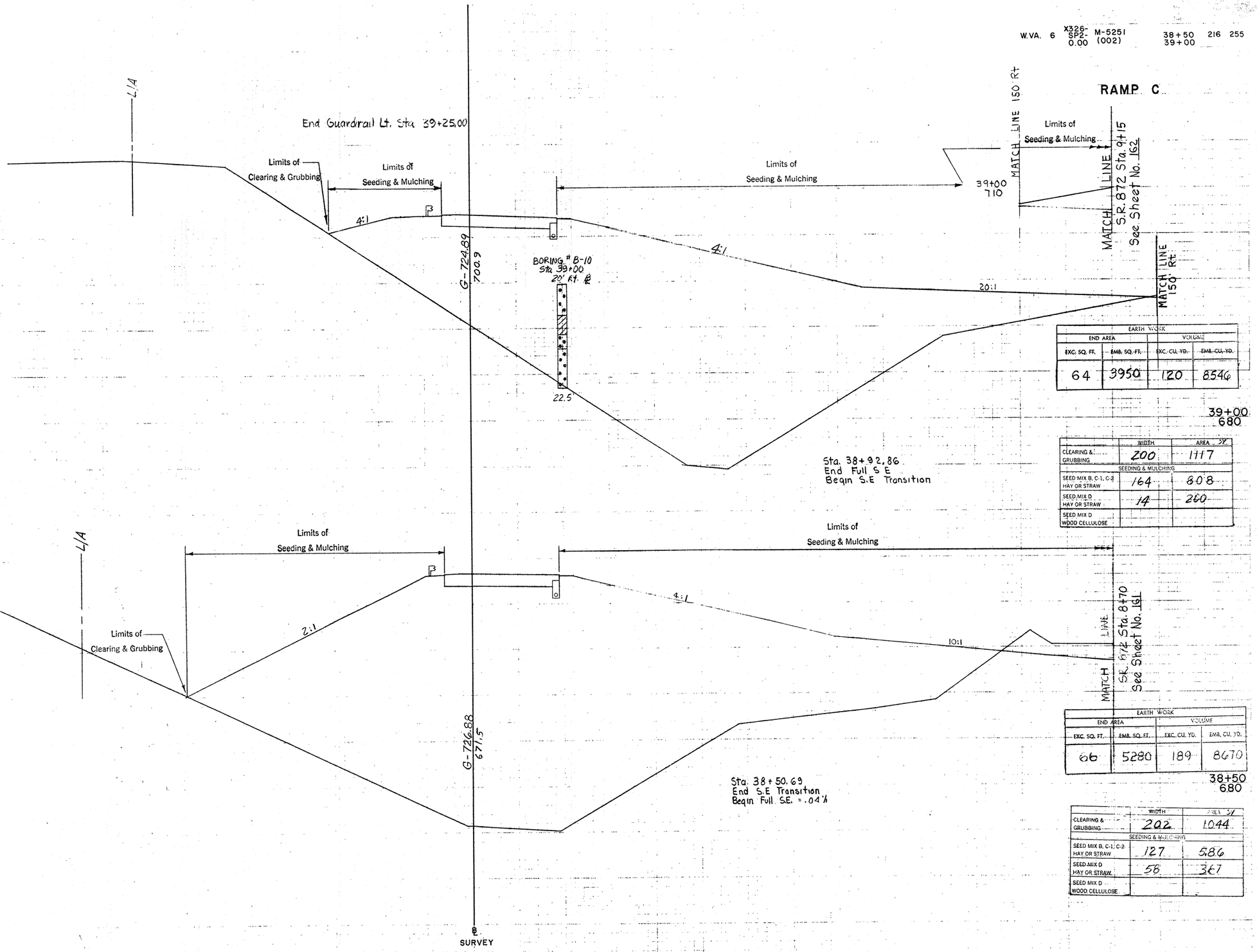
	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

FINAL SURVEY — SURVEYED / PLOTTED / NOTE BOOK / NO. / TEMPLATE / AREAS / AREAS CHECKED

ORIGINAL SURVEY — SURVEYED / PLOTTED / NOTE BOOK / NO. / TEMPLATE / AREAS / AREAS CHECKED / BY / DATE

W.VA. 6 X326-SP2-0.00 M-5251 (002) 38+50 39+00 216 255



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
64	3950	120	8546

39+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	200	1117
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	164	808
SEED MIX D HAY OR STRAW	14	260
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
66	5280	189	8670

38+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	202	1044
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	127	586
SEED MIX D HAY OR STRAW	56	367
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO., BY

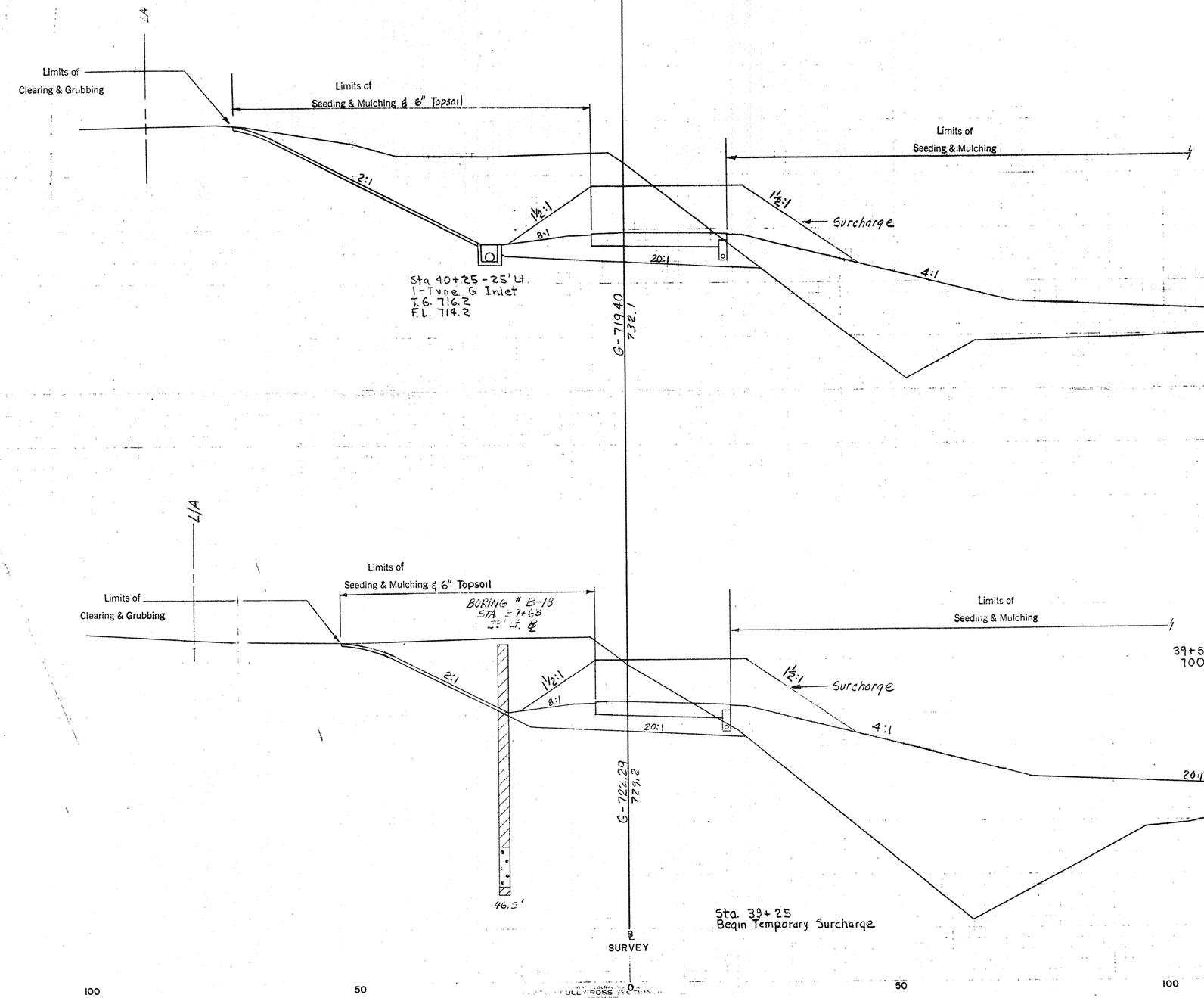
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED, DATE, BY

SITE 3-FULL CROSS SECTION-FULL LIN.

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA. 6	X326 SP2 0.00 C-4	M-5251 (002)	39+50 40+00	217	255

RAMP C



MATCH LINE 160' Rt
Exist ℄A
MATCH LINE
S.R. 7 Sta. 438+50
See Sheet No. 187
Limits of Seeding & Mulching
20:1
2:1
2:1
40+00
700
F.L. 700.5

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1789	1425	2926	3169

Match Line 160' Rt
40+00
700

	WIDTH	AREA S.Y.
CLEARING & GRUBBING	246	1350
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	175	1017
SEED MIX D HAY OR STRAW	48	214
SEED MIX D WOOD CELLULOSE		

MATCH LINE 160' Rt
MATCH LINE
S.R. 7 Sta. 438+00
See Sheet No. 187
Limits of Seeding & Mulching
20:1
2:1
2:1
39+50
700
F.L. 701.0

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1371	1997	1329	5506

Match Line 160' Rt
39+50
700

	WIDTH	AREA S.Y.
CLEARING & GRUBBING	240	1232
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	191	986
SEED MIX D HAY OR STRAW	29	119
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO.

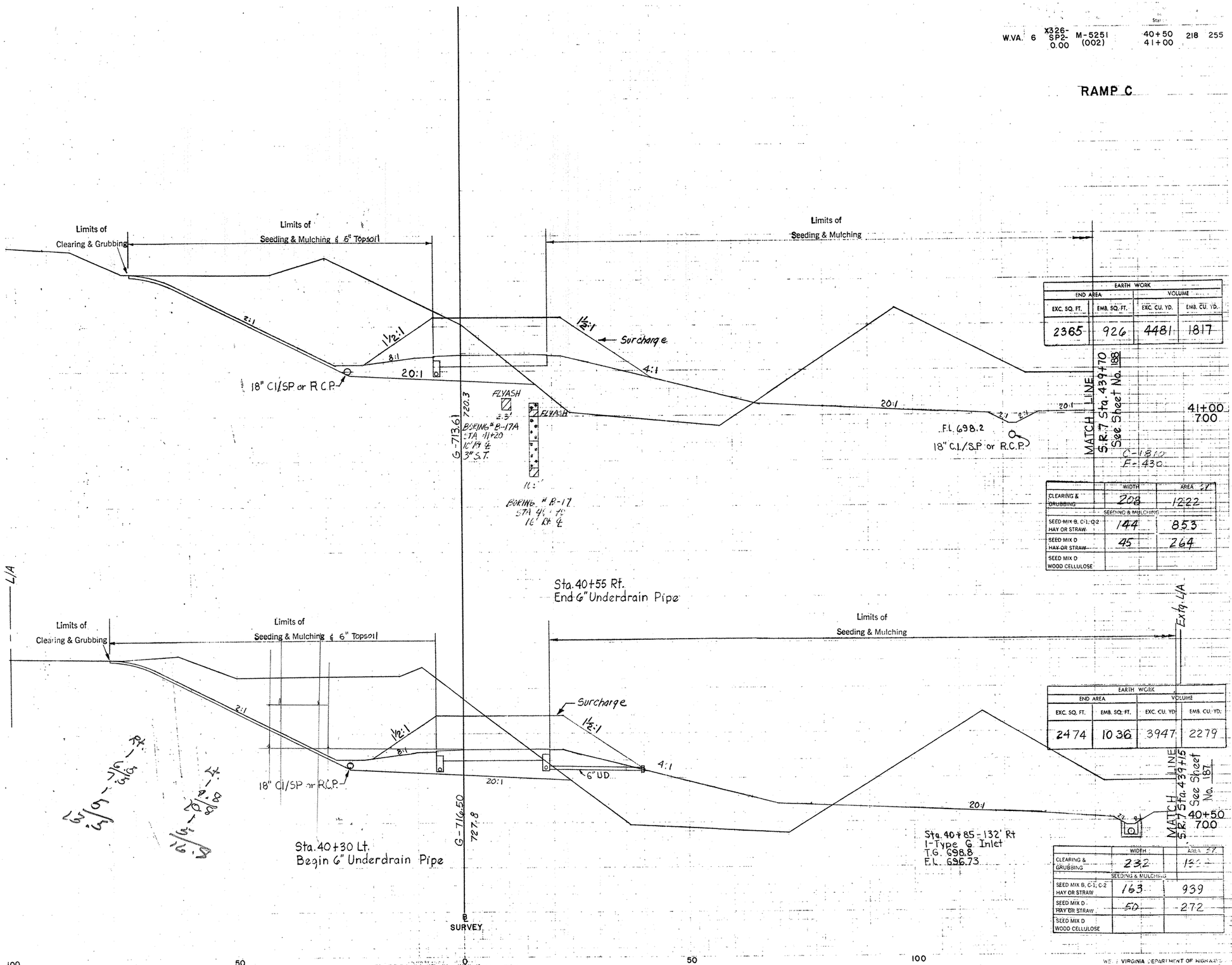
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

100 50 0 50 100

FULL CROSS SECTION

W.VA.			Stat		
6	X326-SP2-0.00	M-5251 (002)	40+50 41+00	218	255

RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
2365	926	4481	1817

	WIDTH	AREA SY
CLEARING & GRUBBING	208	1222
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	144	853
SEED MIX D HAY OR STRAW	45	264
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
2474	1036	3947	2279

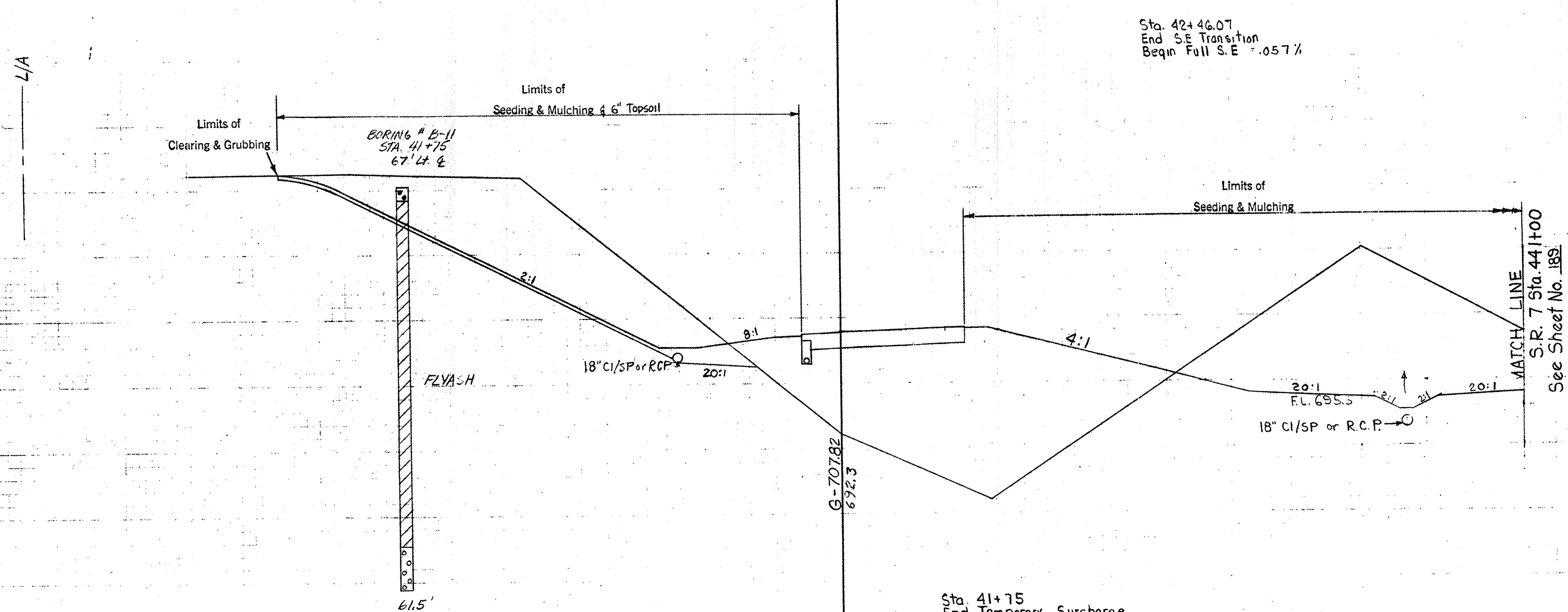
	WIDTH	AREA SY
CLEARING & GRUBBING	232	1[illegible]
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	163	939
SEED MIX D HAY OR STRAW	50	272
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, NO., DATE, BY

PLATE 31 FILE CROSS SECTIONS

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

RAMP C

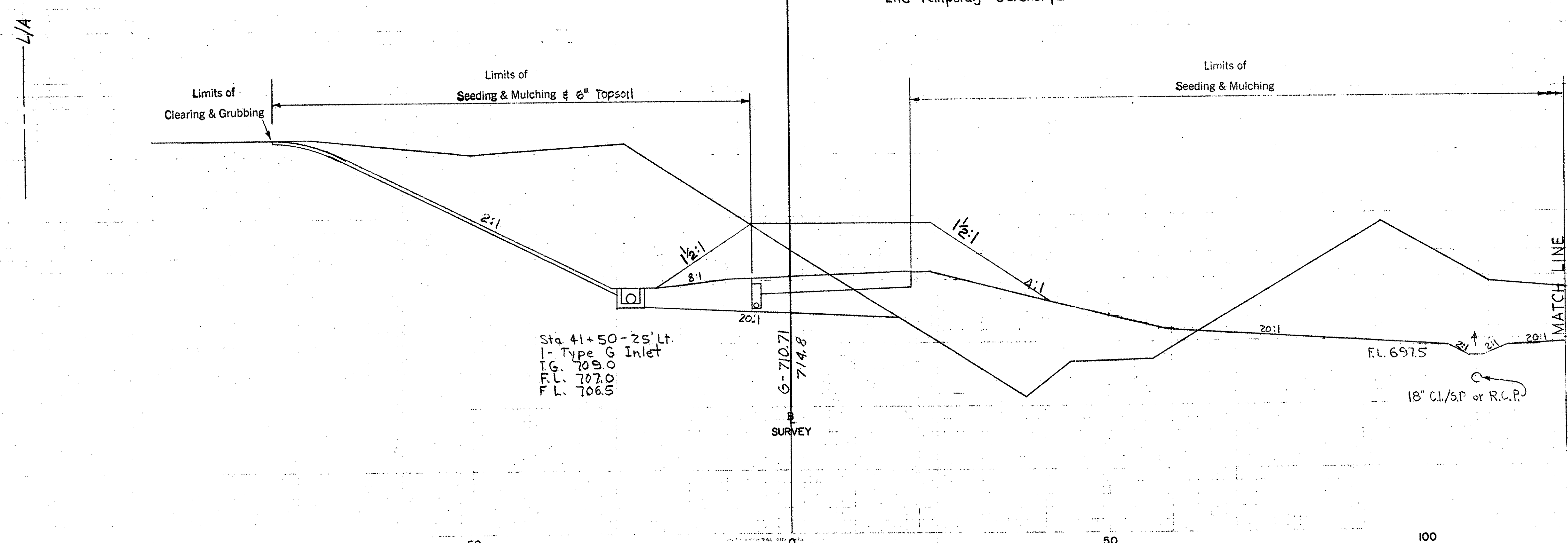


EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1420	1050	3296	1852

42+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	188	1078
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	110	656
SEED MIX D HAY OR STRAW	60	319
SEED MIX D WOOD CELLULOSE		

Sta. 41+75
End Temporary Surcharge



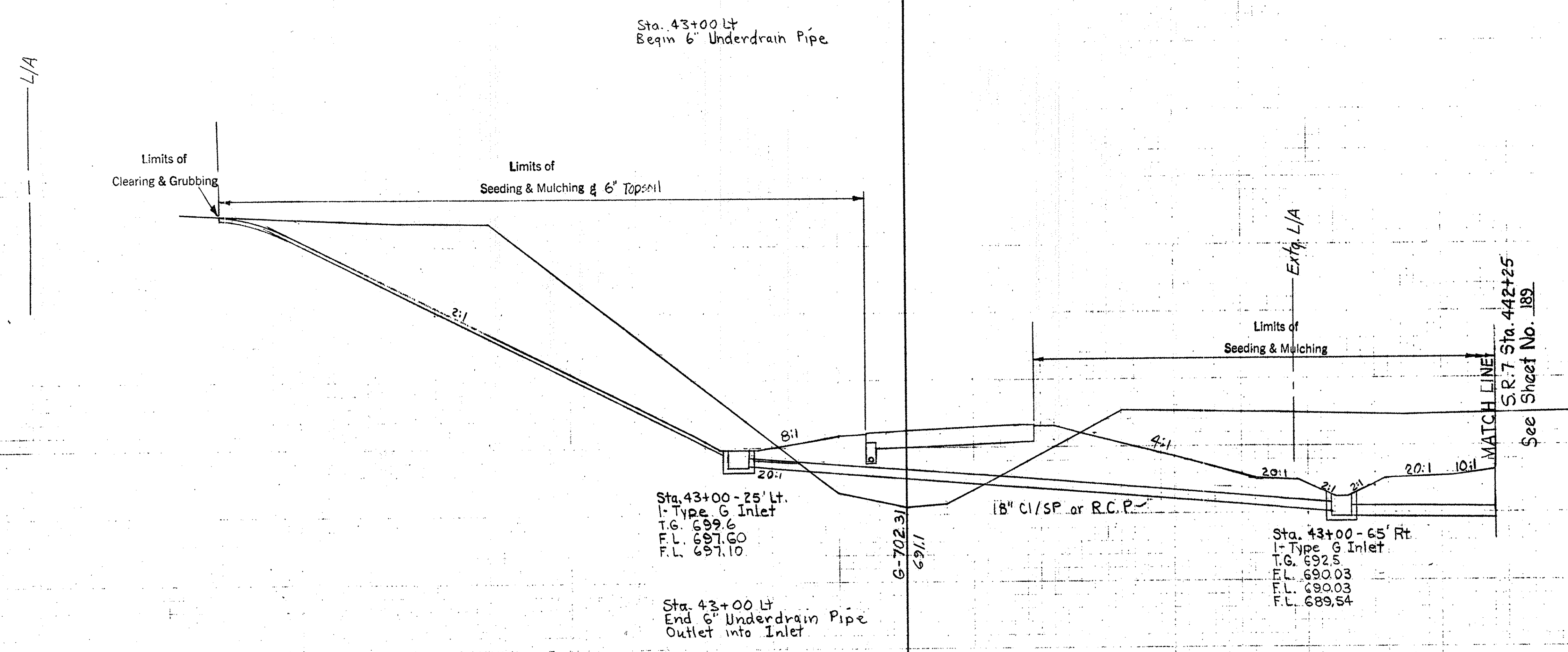
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
2140	950	4171	1737

41+50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	200	1133
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	126	750
SEED MIX D HAY OR STRAW	55	275
SEED MIX D WOOD CELLULOSE		

W. VA.	6	X326-SP2-000 C-4	M-5251-(002)	42+50 to 43+00	220	255

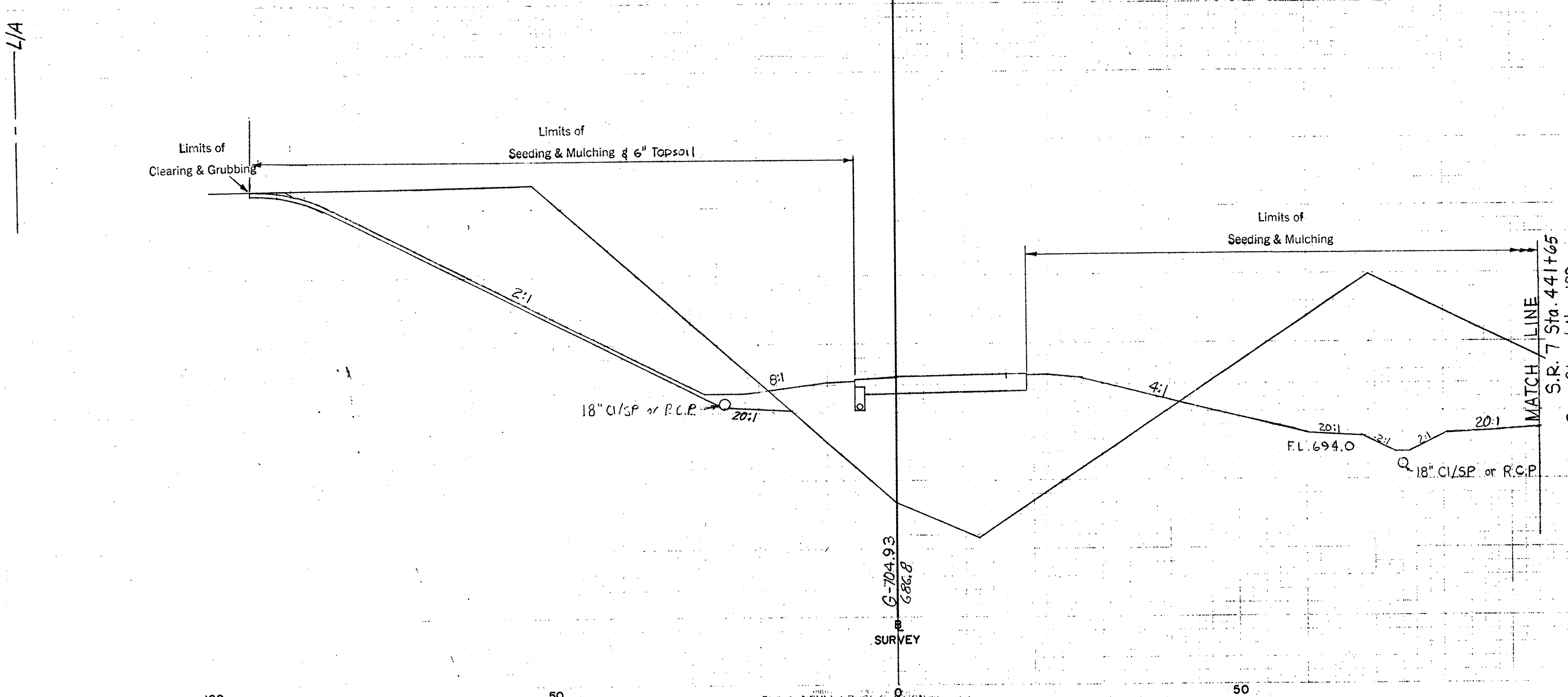
RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1276	346	2685	1148

43+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	186	1022
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	92	531
SEED MIX D HAY OR STRAW	78	403
SEED MIX D WOOD CELLULOSE		



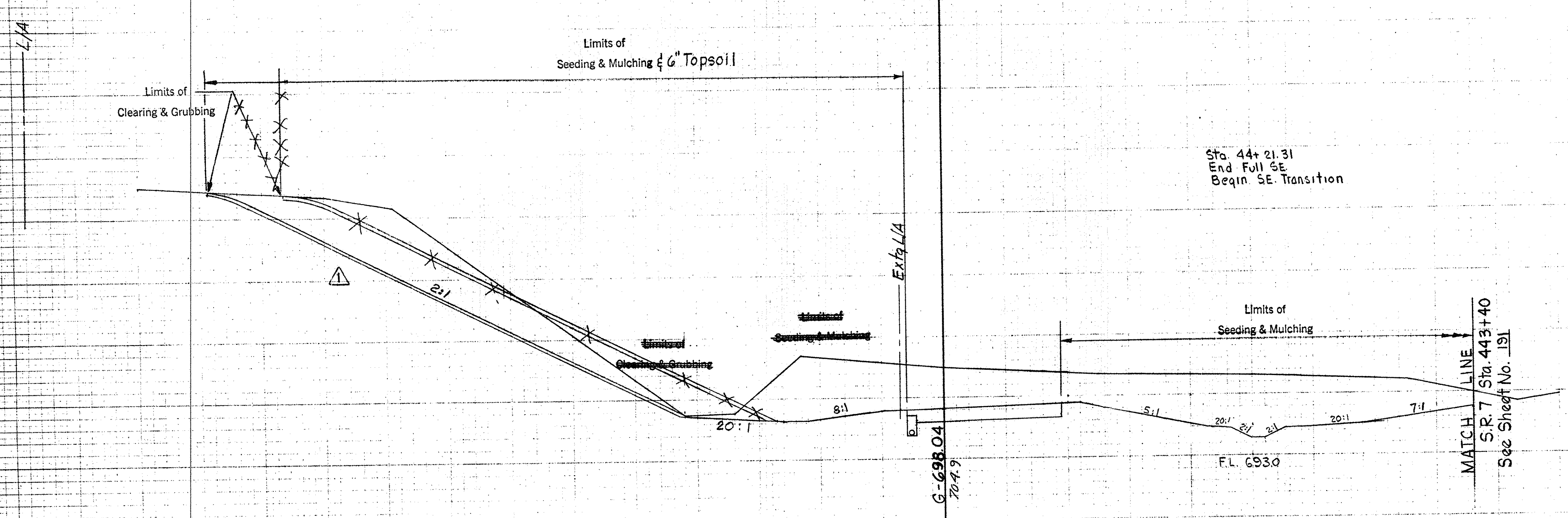
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1624	894	2819	1800

42+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	182	1028
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	99	581
SEED MIX D HAY OR STRAW	67	353
SEED MIX D WOOD CELLULOSE		

State	Proj. No.	Fed. Aid Proj. No.	Fiscal Year	Station to Station	Sheet No.	Total Sheets
W. VA. 6	X326-SP2-000 C-4	M-5251-(002)		43+50 to 44+00	221	255

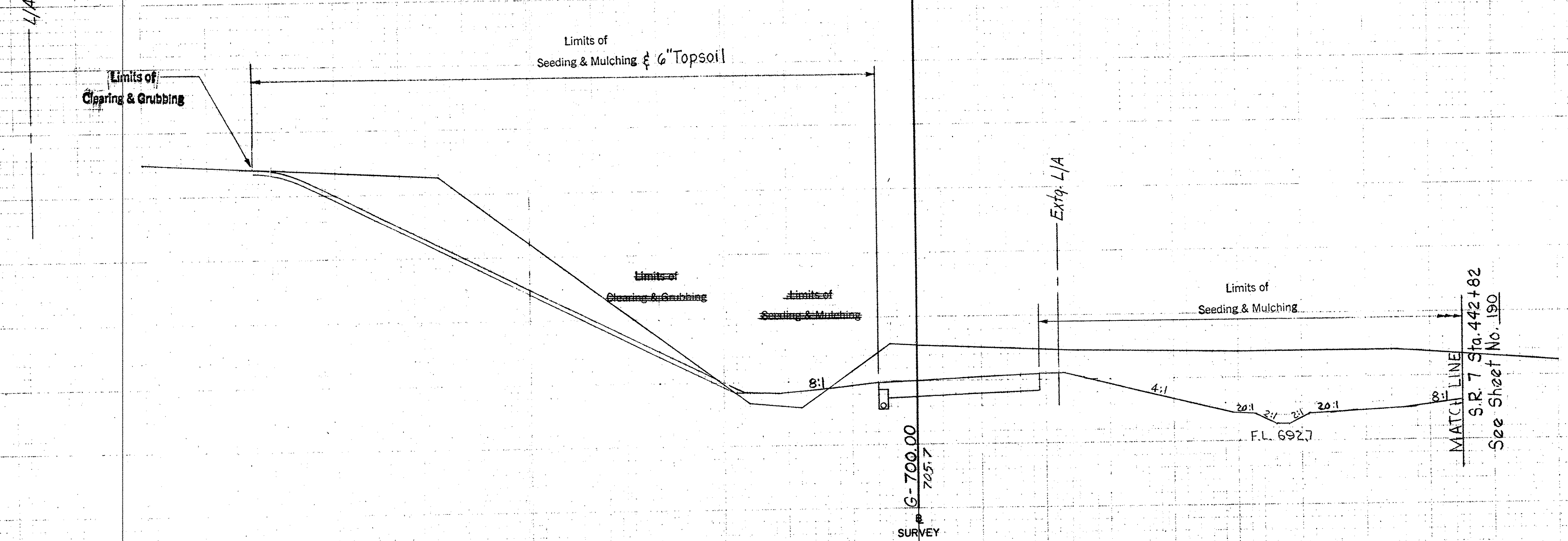
RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
~~918~~ 1303	~~120~~ 8	~~1859~~ 2216	~~137~~ 33

44+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	193	1058
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	89	492
SEED MIX D HAY OR STRAW	87	472
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
1090	28	2191	346

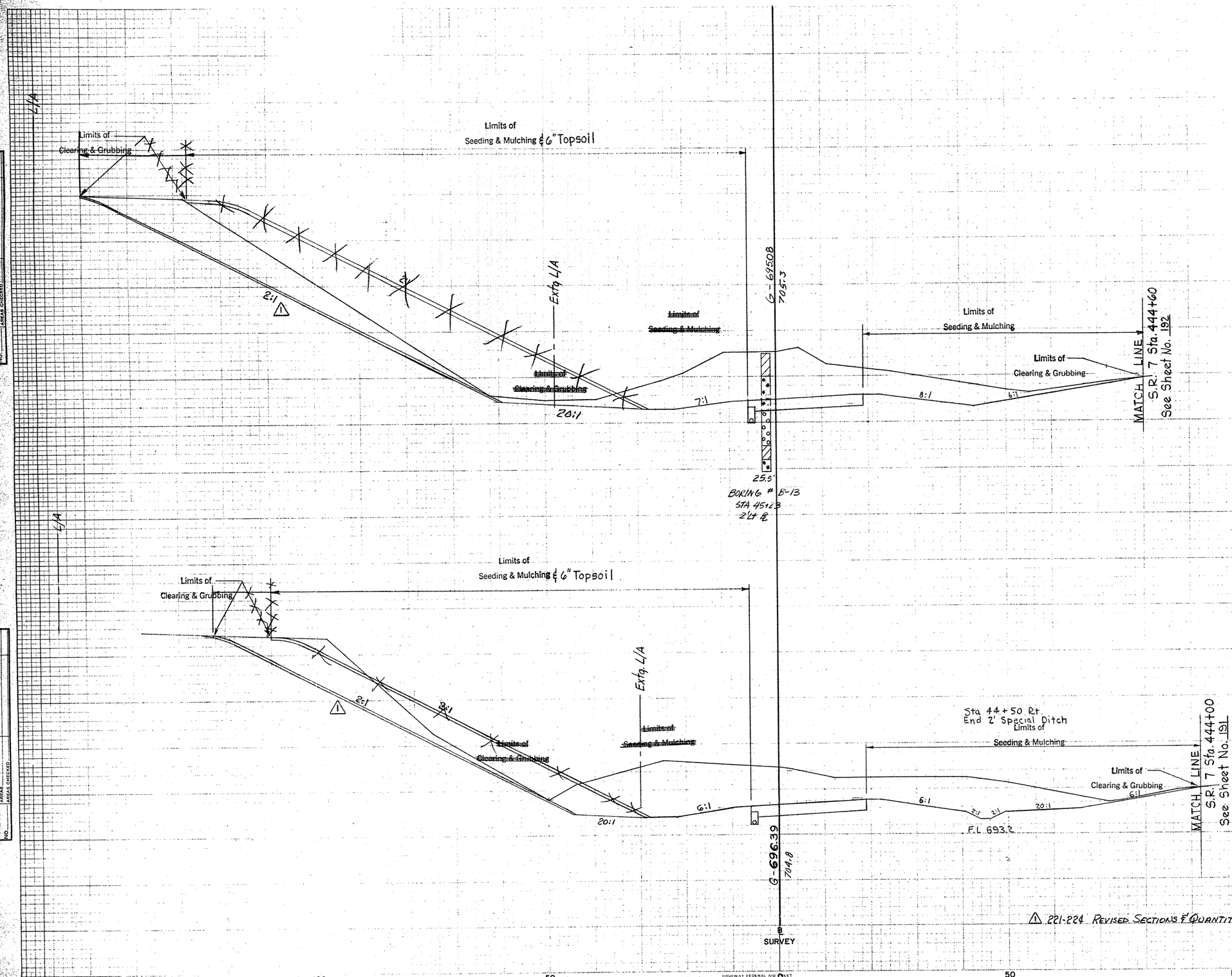
43+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	188	1039
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	88	500
SEED MIX D HAY OR STRAW	83	447
SEED MIX D WOOD CELLULOSE		

△1 221-224 REVISED SECTIONS & QUANTITIES 5/5/82 C. RILING

		Proj. No.	Fiscal Year	Station to Station	Sheet No.	Total Sheets
W. VA. 6	K326-SP2-000 C-4	M-5251-(002)		44+50 to 45+00	222	255

RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
580/1093	856/14	1541/2177	1074/63

45+00
690

	WIDTH	AREA SF
CLEARING & GRUBBING	208	1139
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	83	497
SEED MIX D HAY OR STRAW	110	558
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
868/1258	394/54	1654/2371	393/57

44+50
690

	WIDTH	AREA SF
CLEARING & GRUBBING	202	1097
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	96	514
SEED MIX D HAY OR STRAW	91	494
SEED MIX D WOOD CELLULOSE		

⚠ 221-224 REVISED SECTIONS & QUANTITIES 5/5/82 C.RUNG

ORIGINAL SURVEY — SURVEYED, PLOTTED, CHECKED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO., DATE

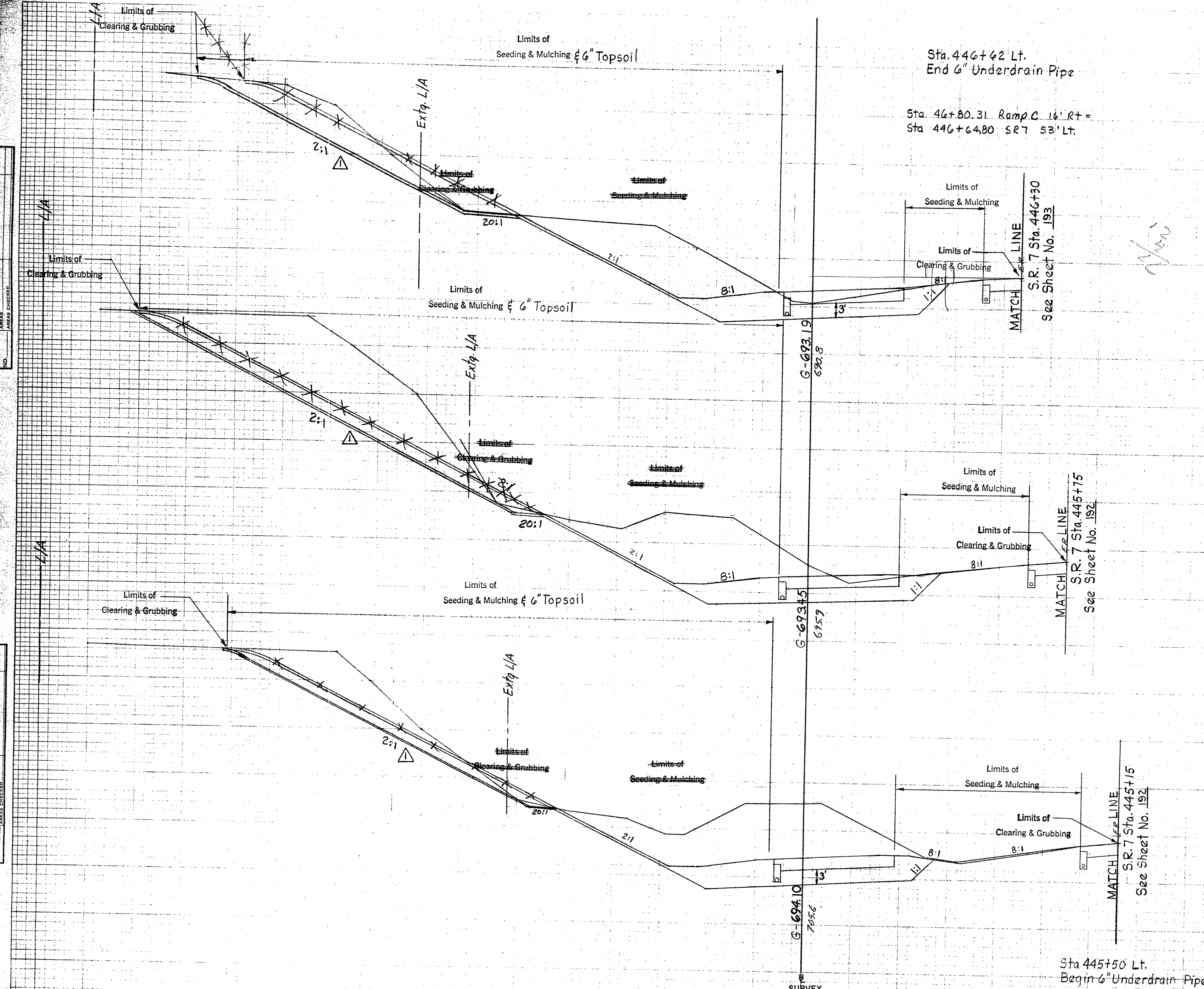
100 50 0 50 100

PLATE 3-FULL CROSS SECTION FULL LINE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

	Fed. Road Dist. No.	State Proj. No.	Federal Proj. No.	Fiscal Year	Station to Station	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00 C-4	M-5251 (002)		45+50 46+50	223	255

RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
~~698~~ 918	~~308~~ 226	~~1861~~ 2276	~~539~~ 444

46+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	163	992
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	38	242
SEED MIX D HAY OR STRAW	100	622
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
~~1312~~ 1540	~~274~~ 254	~~2163~~ 2506	~~501~~ 466

46+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	194	1058
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	49	306
SEED MIX D HAY OR STRAW	124	631
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
~~1024~~ 1167	~~274~~ 249	~~1485~~ 2093	~~1046~~ 244

45+50
690

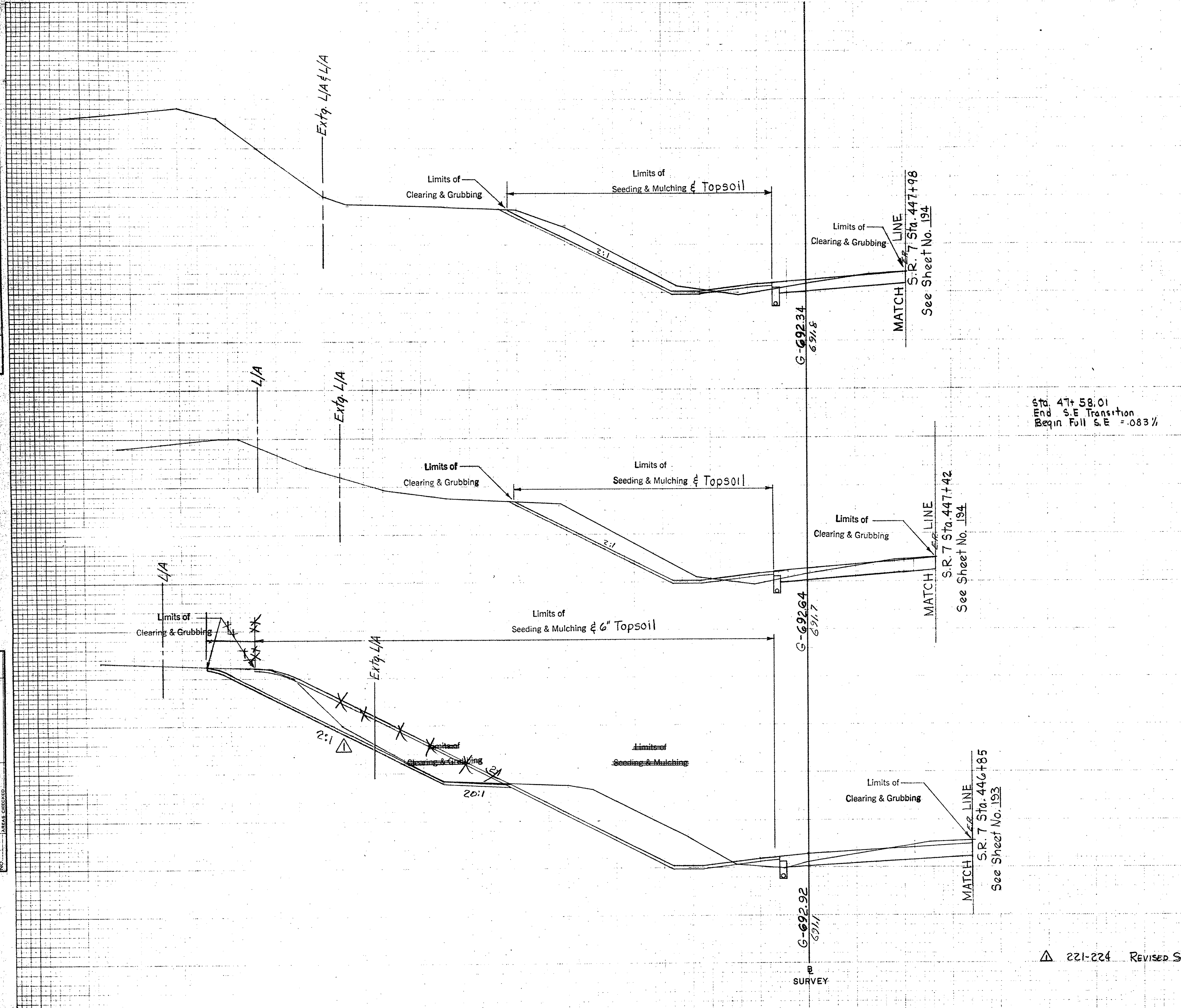
	WIDTH	AREA SY
CLEARING & GRUBBING	187	1097
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	61	400
SEED MIX D HAY OR STRAW	103	592
SEED MIX D WOOD CELLULOSE		

⚠ 221-224 REVISED SECTIONS & QUANTITIES 5/5/82 C. RILING

PLATE 3-FULL CROSS SECTION FULL LINE

State	State Proj. No.	Federal Proj. No.	Fiscal Year	Station to Station	Sheet No.	Total Sheets
W.VA. 6	X326-SP2-0.00 C-4	M-5251 (002)		47+00 48+00	224	255

RAMP C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
158	22	357	43

48+00
690

	WIDTH	AREA SY
CLEARING & GRUBBING	84	478
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	21	117
SEED MIX D HAY OR STRAW	38	208
SEED MIX D WOOD CELLULOSE		

△1

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
228	24	~~532~~ 671	~~221~~ 34

47+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	88	658
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	21	119
SEED MIX D HAY OR STRAW	37	369
SEED MIX D WOOD CELLULOSE		

△1

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
~~347~~ 497	~~215~~ 73	~~968~~ 1310	~~484~~ 221

47+00
690

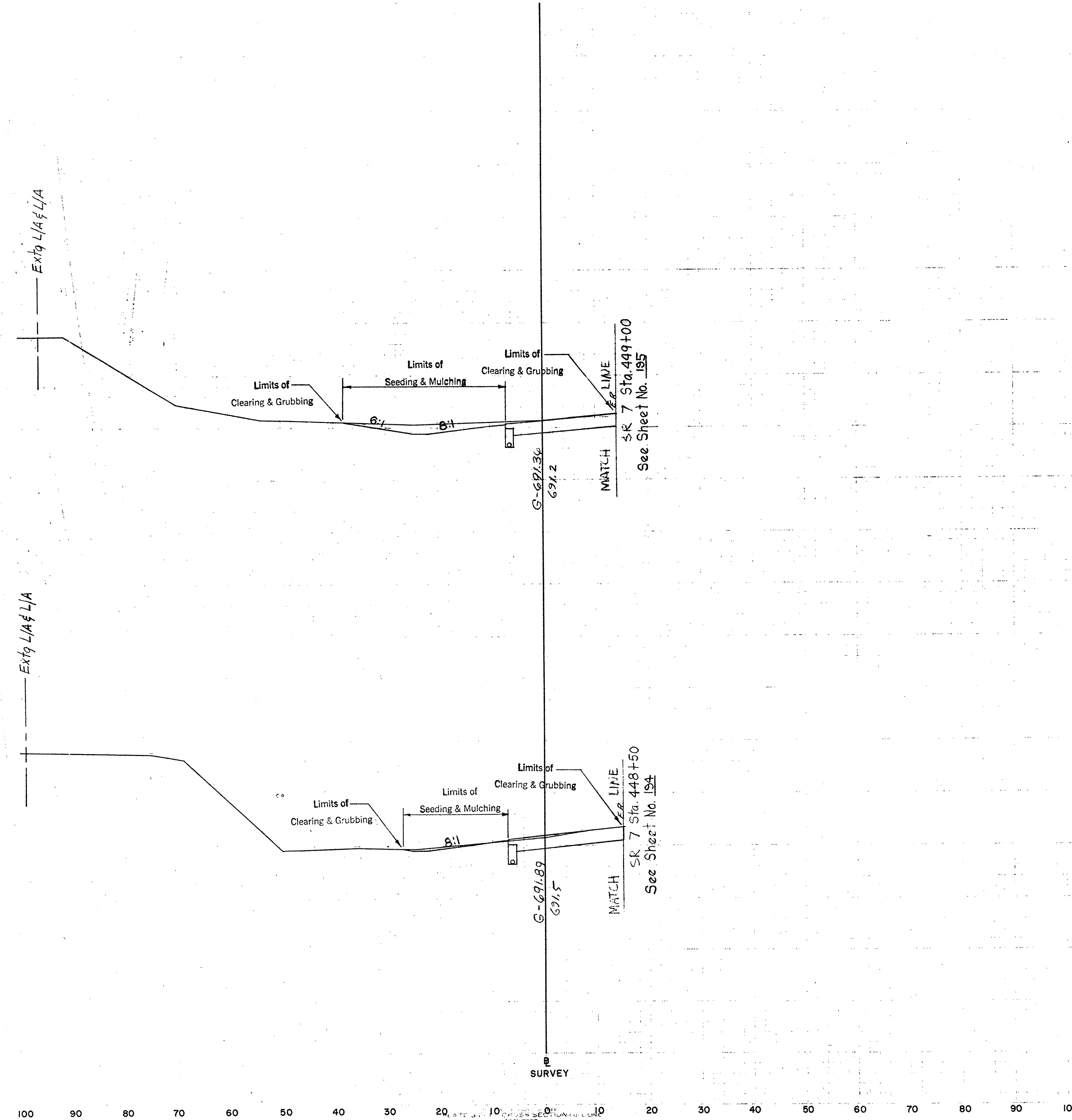
	WIDTH	AREA SY
CLEARING & GRUBBING	149	867
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	22	167
SEED MIX D HAY OR STRAW	96	544
SEED MIX D WOOD CELLULOSE		

△1 221-224 REVISED SECTIONS & QUANTITIES 5/5/87 CRILING

FINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / NOTE BOOK / AREAS / NO. / AREAS CHECKED

ORIGINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / NOTE BOOK / AREAS / NO. / AREAS CHECKED

RAMP C



49+00
690

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
80	0	120	0

	WIDTH	AREA SY
CLEARING & GRUBBING	52	261
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	31	142
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

48+50
690

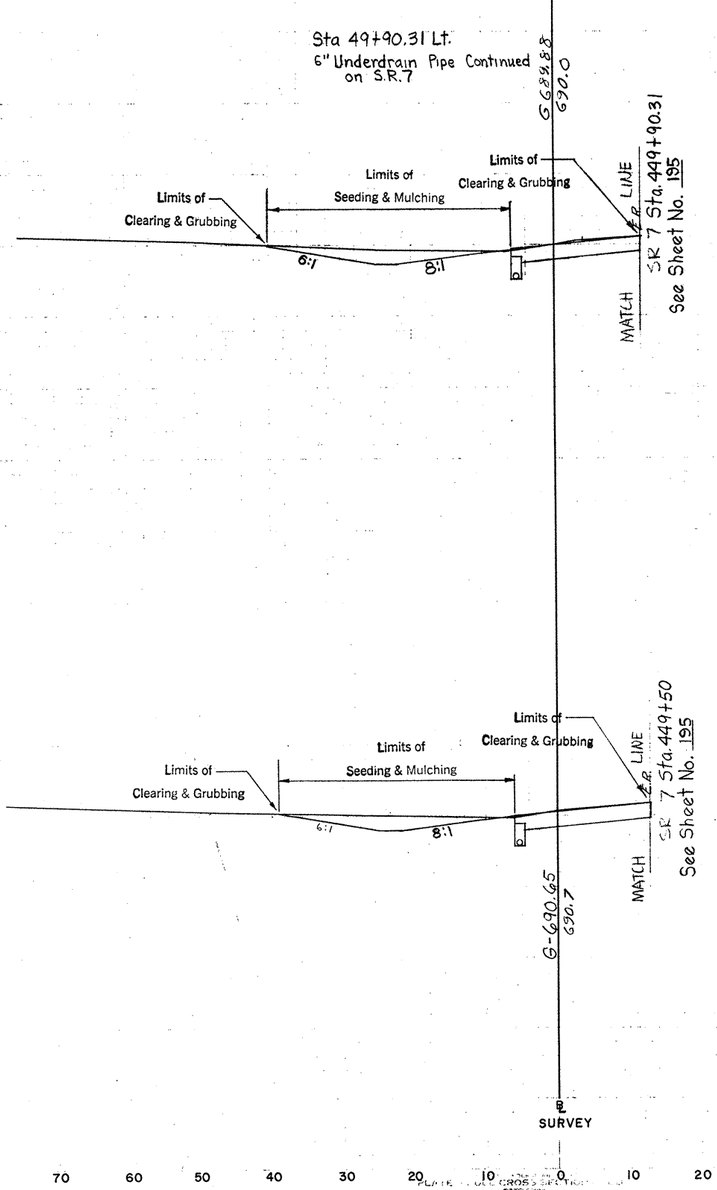
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
50	0	193	20

	WIDTH	AREA SY
CLEARING & GRUBBING	42	350
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	20	114
SEED MIX D HAY OR STRAW	0	106
SEED MIX D WOOD CELLULOSE		

W. VA. 6 | X326-SP2-0.00 C-4 | M-5251 (002) | 49+50 49+90.31 | 226 | 255

RAMP C

P.C.C. Sta 49+90.31 RAMP C = Sta 449+90.31 S.R. 7



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
72	0	107	0

49+90.31
690

	WIDTH	AREA SY
CLEARING & GRUBBING	52	233
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	34	150
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

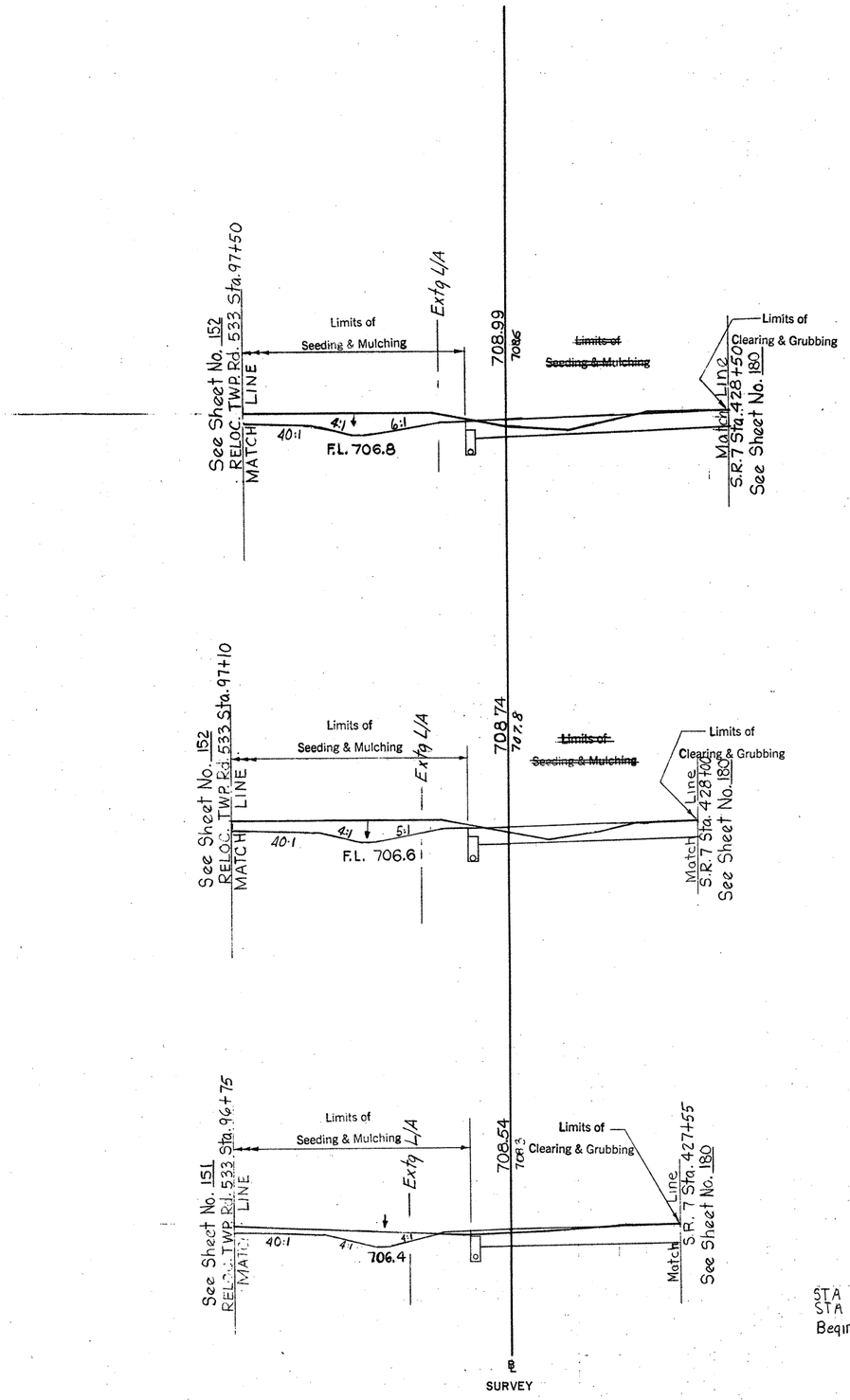
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
72	0	141	0

49+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	52	289
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	33	178
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

DEPARTMENT HIGHWAYS
DESIGN DIVISION

RAMP D



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
82	4	167	6

28+50
710

	WIDTH	AREA SF
CLEARING & GRUBBING	72	394
SEEDING & MULCHING		
SEED MIX-B, C-1, C-2 HAY OR STRAW	38	211
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE	—	—

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
98	2	143	5

28+00
710

	WIDTH	AREA SF
CLEARING & GRUBBING	70	340
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	38	193
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

P.C. Sta 27+55
Sta. 427+55.

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
74	4	0	0

27+55
710

	WIDTH	AREA SF
CLEARING & GRUBBING	66	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	30	0
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

STA 27+55 RAMP D
STA 427+55 SR7
Begin Earthwork & Seeding

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

100 50 0 50 100

W.VA. 6 X326-SP2-0.00 M-5251 (002) 29+00 30+00 228 255

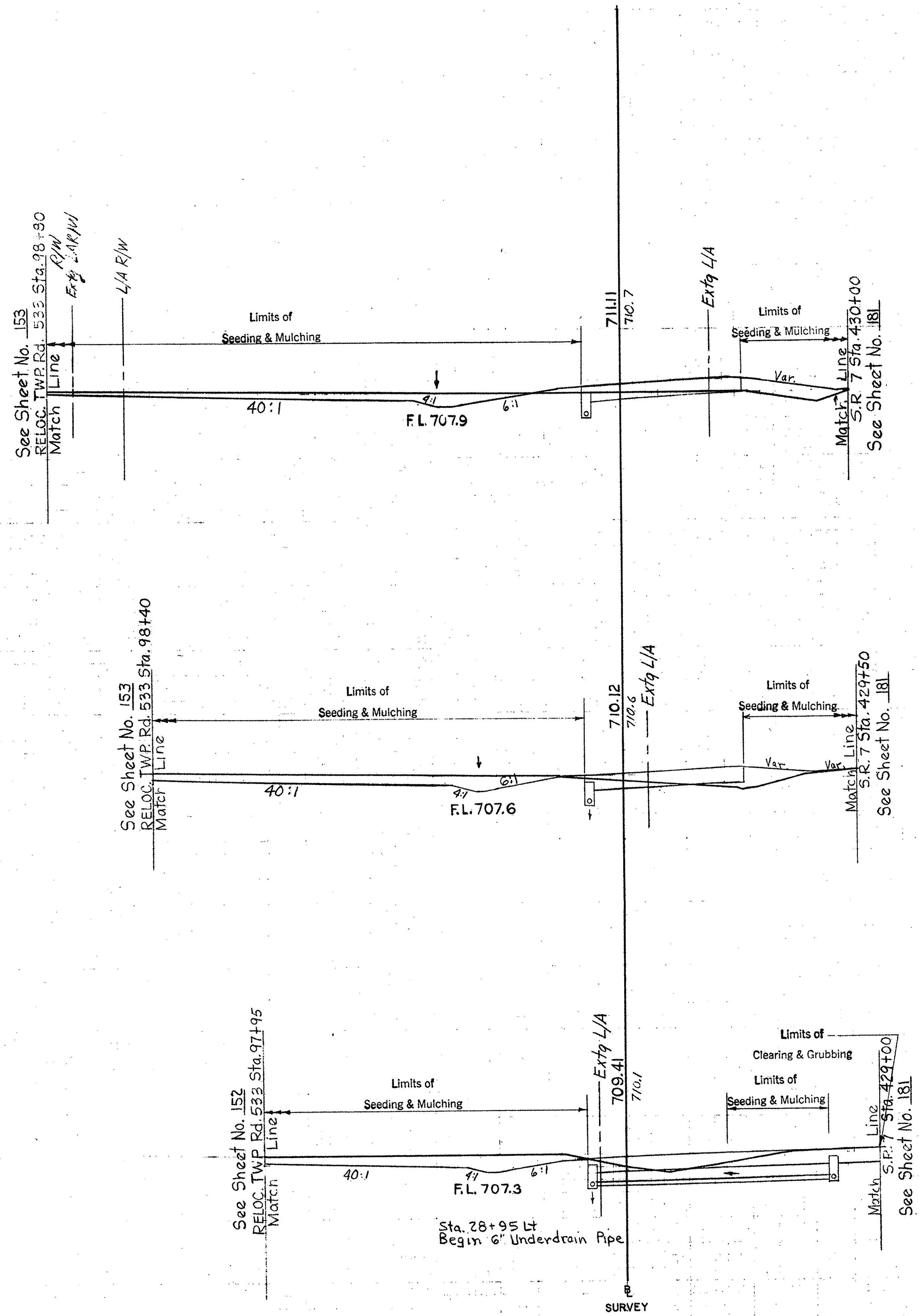
RAMP D

Sta. 30+ 12.63
End Full S.E
Begin S.E Transition

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
118	34	233	61

30+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	126	661
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	104	536
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



Sta. 29+42.50
End S.E Transition
Begin Full S.E -.056'/'

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
134	32	209	43

29+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	112	583
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	89	456
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
92	14	161	17

29+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	98	472
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	75	314
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

100 50 0 50 100

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / NOTE BOOK NO. / AREAS CHECKED / BY / DATE

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 30+50 to 31+50 | 229 | 255

RAMP D

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
326	138	654	185

31+50
7.10

	WIDTH	AREA SY
CLEARING & GRUBBING	168	900
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	147	778
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
350	62	511	98

31+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	156	822
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	133	675
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
172	44	269	72

30+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	140	739
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	110	594
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

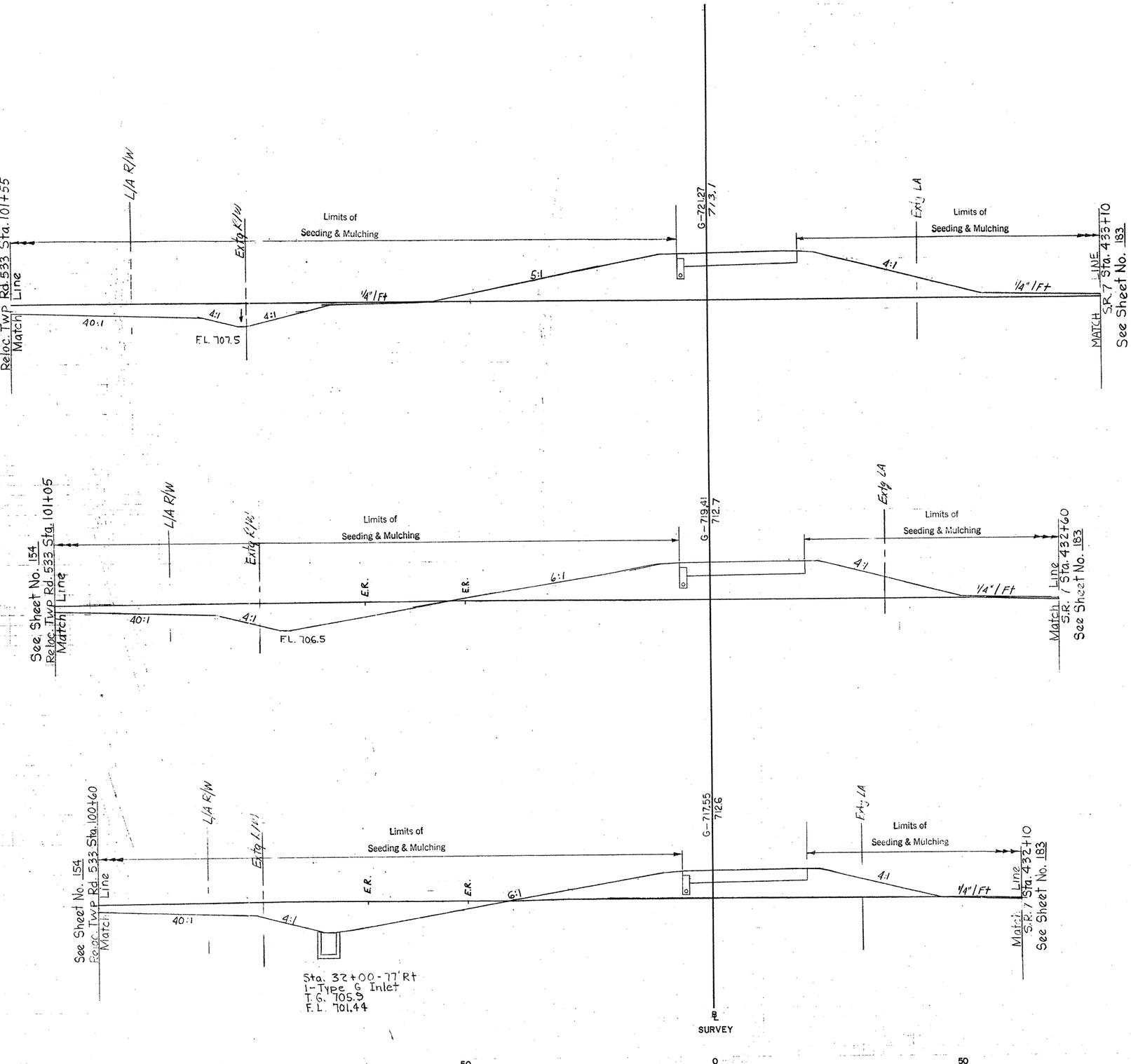
FINAL SURVEY — SURVEYED: PLOTTED: TEMPLATE: AREAS: AREAS CHECKED: NOTE BOOK: NO.:

ORIGINAL SURVEY — SURVEYED: PLOTTED: TEMPLATE: AREAS: AREAS CHECKED: NOTE BOOK: NO.:

DATE | BY

W.VA. 6 X326-SP2-0.00 M-5251 (002) 32+00 33+00 230 255

RAMP D



FINAL SURVEY — DRAWN, TRACED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED, DATE, BY

ORIGINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED, DATE, BY

RP SURVEY

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
144	646	330	1033

33+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	218	1167
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	198	1050
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
212	470	452	709

32+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	202	1078
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	180	956
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

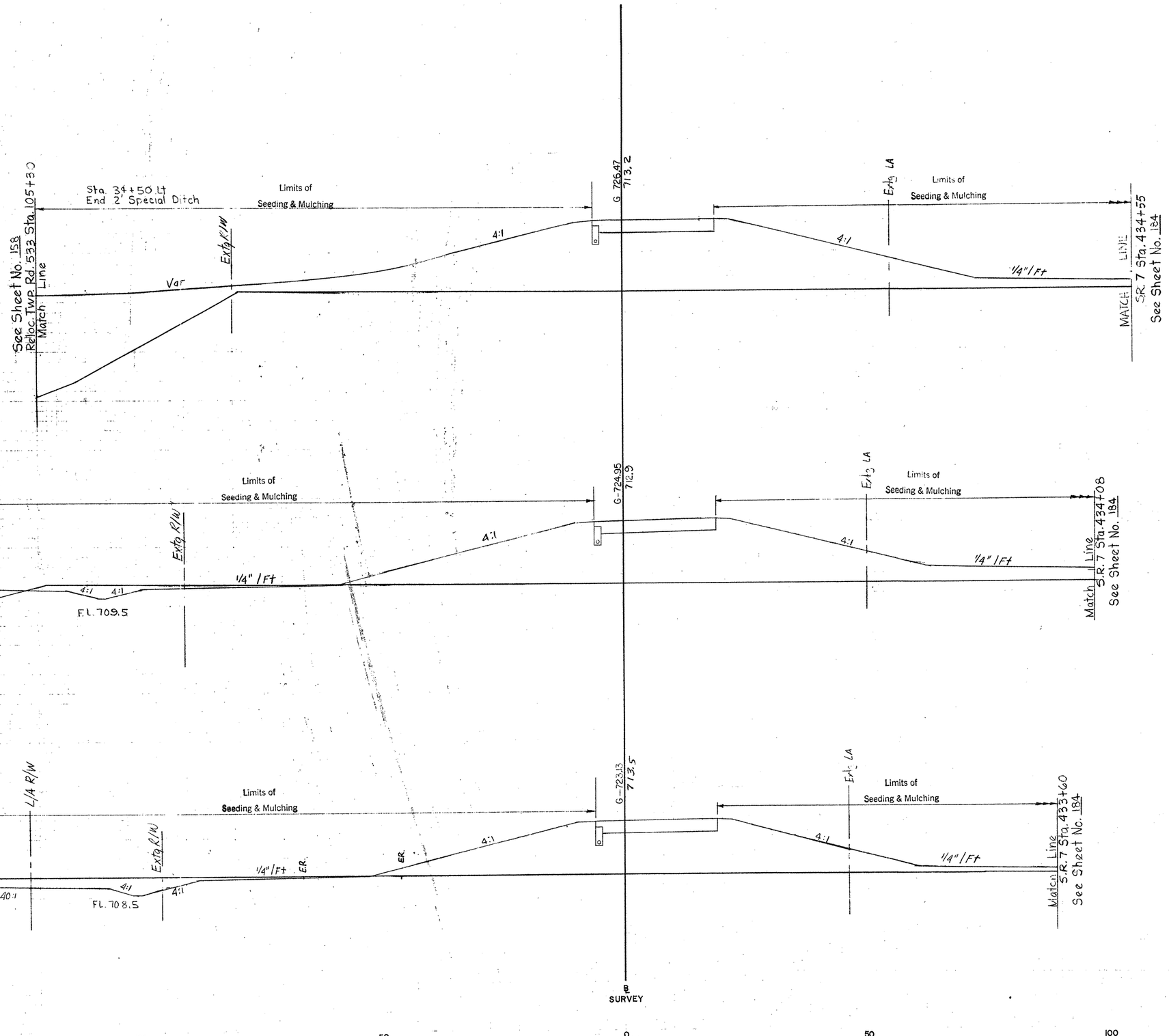
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
276	296	557	402

32+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	196	933
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	164	864
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SP2 0.00 M-5251 (002) 33+50 34+50 231 255

RAMP D



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	1910	93	2922

34+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	226	1332
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	205	1211
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
100	1246	233	1928

34+00
710

	WIDTH	AREA SY
CLEARING & GRUBBING	250	1344
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	231	1236
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
152	836	274	1372

33+50
710

	WIDTH	AREA SY
CLEARING & GRUBBING	234	1256
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	214	1144
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY: SURVEYED, PLOTTED, NOTE BOOK, NO., AREAS, AREAS CHECKED

ORIGINAL SURVEY: BY, DATE, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED

W.VA. 6 X326-SP2-0.00 M-5251 (002) 35+00 35+85.53 232 255

RAMP D

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

	WIDTH	AREA
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

35+85.53
710

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

35+50
710

	WIDTH	AREA
CLEARING & GRUBBING.		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

Sta. 35+38 Lt.
End 6" Underdrain Pipe

Sta. 35+00
End Earthwork & Seeding

See Sheet No. 153
REV. NO. 533 Sta. 1064+00
MATCH LINE

Limits of Seeding & Mulching

Exg R/W

Var.

℄ 727.67

7:2:4

Limits of Seeding & Mulching

Exg L/A

BORING #B-8
STA. 35+10
70' Lt. ℄

4:1

1/4"/Ft

19.5'

MATCH LINE
S.R. 7 Sta. 435+00
See Sheet No. 185

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0.	1620	0	3269

35+00
710

	WIDTH	AREA
CLEARING & GRUBBING	200	1183
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	179	1067
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

W.VA. 6 X326-SP2-0.00 M-5251 (002) 51+00 233 255

RELOC. TWP. RD. 533

FINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
AREAS
NO.
AREAS CHECKED

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
AREAS
NO.
AREAS CHECKED
DATE
BY

Limits of Seeding & Mulching

30:1

See Sheet No. 255 Ramp B Sta. 40+00 LINE

MATCH

Match Line

B.T. Co.

Limits of Seeding & Mulching

8:1

2:1

30:1

Match Line

G-714.81 68°-7

Limits of Seeding & Mulching

MATCH LINE SR 8572 Sta. 20+00 See Sheet No. 165

Rock Borrow Exc = 1124 S.F.

Sta 50+55.00 Begin Guardrail Lt.

Sta 50+85.00 Rt Begin Guardrail

Sta 51+00 Begin Earthwork & Seeding

Sta 51+00 Begin Rock Borrow Exc, Sandstone or Limestone

℄ SURVEY

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
630	6234	0	0

51+00
680

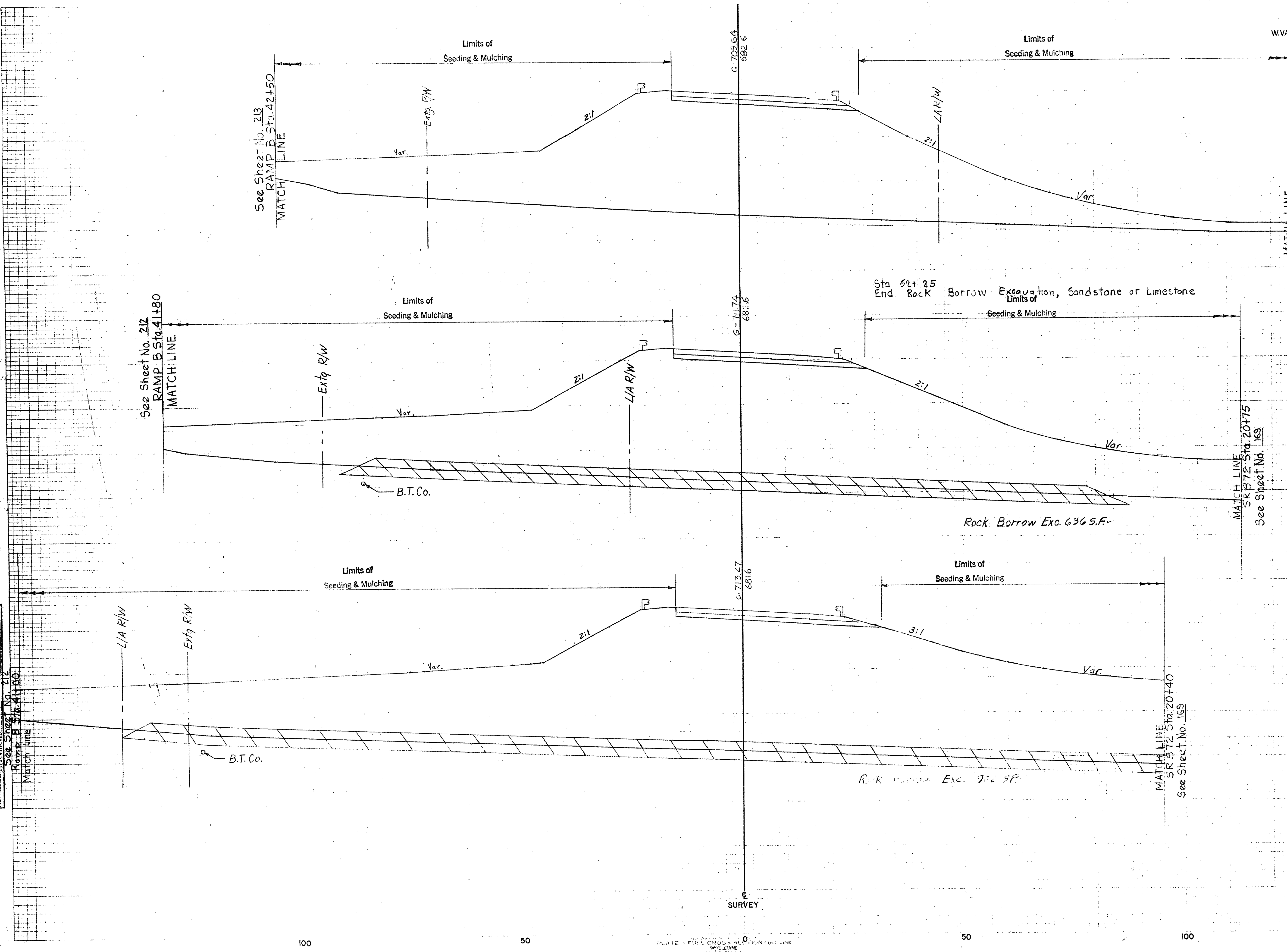
	WIDTH	AREA SY
CLEARING & GRUBBING	292	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	248	0
SEED MIX D HAY OR STRAW	16	0
SEED MIX D WOOD CELLULOSE		

100 50 0 50 100

PLATE ... CROSS SECTION

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

RELOC. TWP. RD. 533



52+50 680

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	3040	338	6245

	WIDTH	AREA SY
CLEARING & GRUBBING	230	1317
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	146	861
SEED MIX D HAY OR STRAW	61	350
SEED MIX D WOOD CELLULOSE		

52+00 680

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
365	3702	801	7798

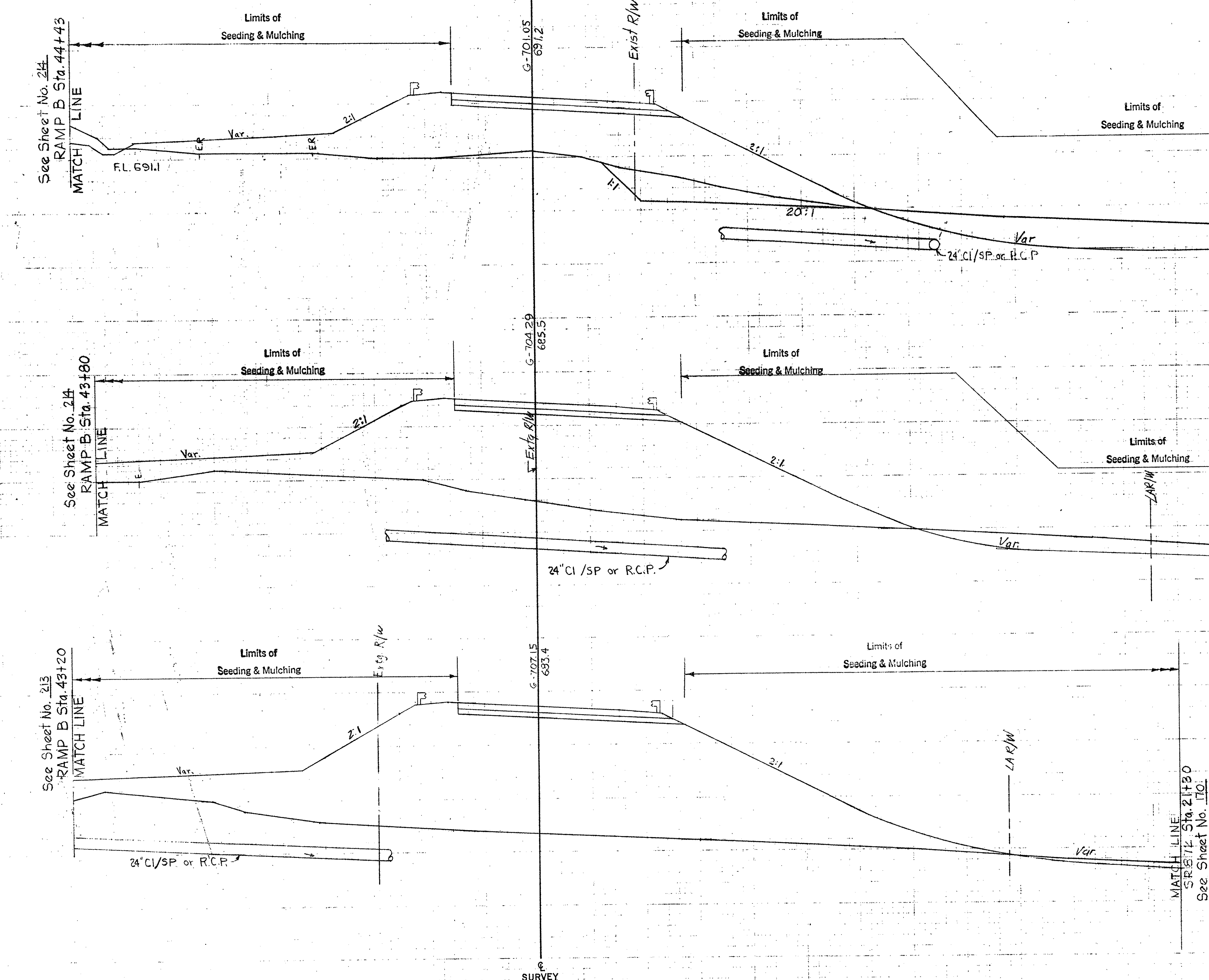
	WIDTH	AREA SY
CLEARING & GRUBBING	244	1394
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	164	1031
SEED MIX D HAY OR STRAW	65	250
SEED MIX D WOOD CELLULOSE		

51+50 680

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
500	4720	1046	10,143

	WIDTH	AREA SY
CLEARING & GRUBBING	258	1523
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	207	1264
SEED MIX D HAY OR STRAW	25	114
SEED MIX D WOOD CELLULOSE		

RELOC. TWP. RD. 533



Sta. 54+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
422	1104	526	2454

	WIDTH	AREA SY
CLEARING & GRUBBING	232	1244
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	152	764
SEED MIX D HAY OR STRAW	56	353
SEED MIX D WOOD CELLULOSE		

Sta. 53+50

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
146	1546	178	3476

	WIDTH	AREA SY
CLEARING & GRUBBING	216	1173
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	123	619
SEED MIX D HAY OR STRAW	71	436
SEED MIX D WOOD CELLULOSE		

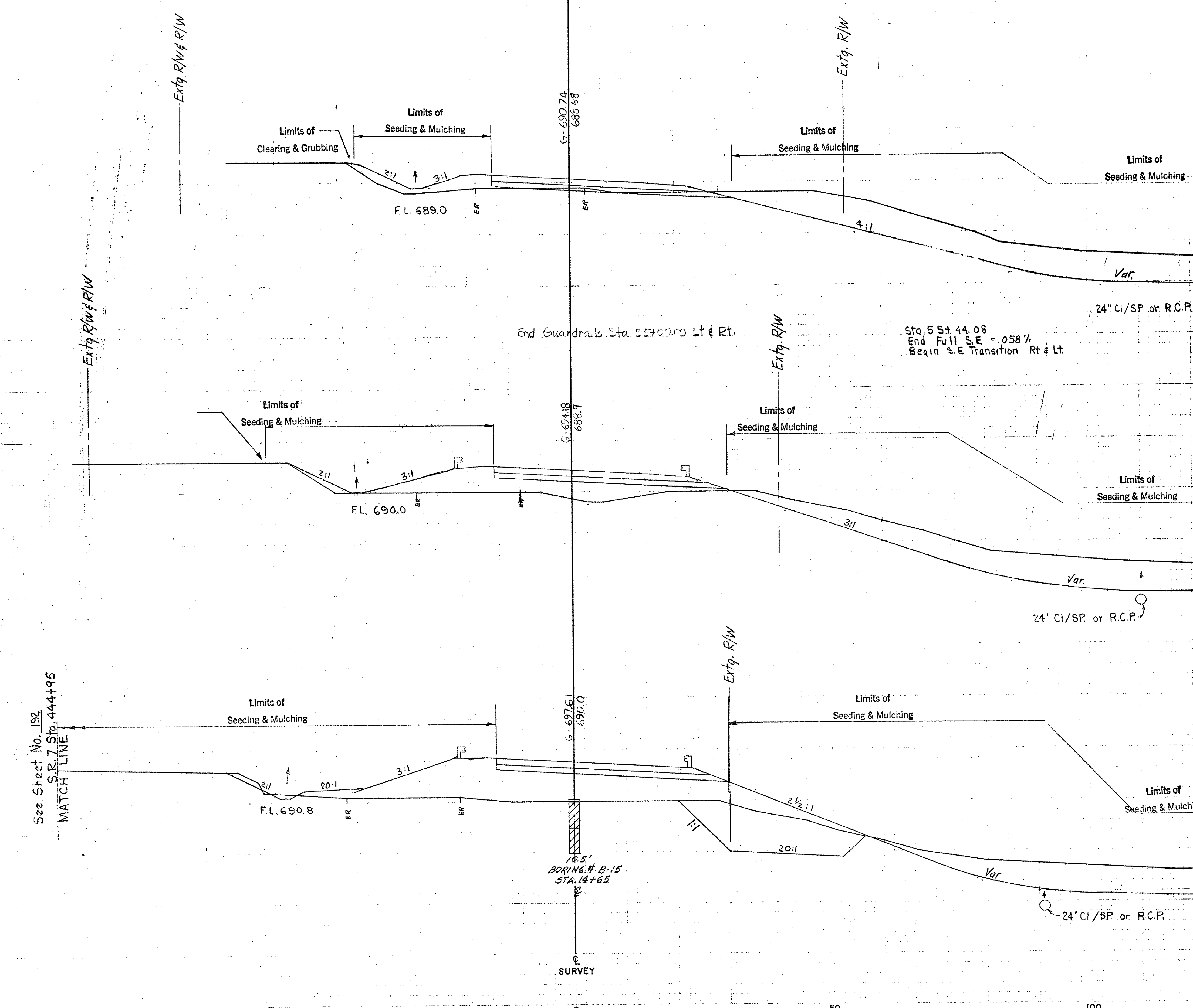
Sta. 53+00

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
46	2205	43	4857

	WIDTH	AREA SY
CLEARING & GRUBBING	205	1217
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	100	683
SEED MIX D HAY OR STRAW	86	[illegible]
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326 SP2 0.00 M-5251 (002) 54+50 55+50 236 255

RELOC. TWP. RD. 533.



Sta. 55+50

	WIDTH	AREA SY
CLEARING & GRUBBING	262	1317
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	157	883
SEED MIX D HAY OR STRAW	0	31
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
622	80	1104	339

Sta. 55+00

	WIDTH	AREA SY
CLEARING & GRUBBING	212	1283
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	161	958
SEED MIX D HAY OR STRAW	11	128
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
570	286	1094	845

Sta. 54+50

	WIDTH	AREA SY
CLEARING & GRUBBING	250	1339
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	184	933
SEED MIX D HAY OR STRAW	35	253
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
612	627	957	1603

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY / DATE

W.VA. 6 | X326 S02 000 | M-5251 (002) | 56+00 57+00 | 237 | 255

RELOC. TWP. RD. 533

FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / NOTE BOOK / NO.

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / NOTE BOOK / NO. — BY / DATE

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

2:1

3:1

13.00'

E.P.

G-680.44
681.75

4:1

Exist. R/W

Limits of Seeding & Mulching

MATCH LINE S.R. 872 Sta. 24+00 See Sheet No. 172

Sta. 56+55.19
End S.E. Transition Rt.
Begin Normal Crown Rt.

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
540	2	1109	9

57+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	166	939
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	116	686
SEED MIX D HAY OR STRAW	26	72
SEED MIX D WOOD CELLULOSE		

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

14.25'

G-683.87
684.77

2:1

3:1

E.P.

E.P.

4:1

Exist. R/W

Limits of Seeding & Mulching

STA 56+20
BEGIN PAVEMENT TRANSITION LEFT

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
658	8	1257	26

56+50
690

	WIDTH	AREA SY
CLEARING & GRUBBING	172	989
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	131	769
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

MATCH LINE S.R. 872 Sta. 23+50 See Sheet No. 171

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

G-681.81
681.11

2:1

3:1

E.P.

E.P.

Limits of Seeding & Mulching

Exist. R/W

4:1

Limits of Seeding & Mulching

Sta. 56+00 Lt
End 2' Special Ditch
Begin Cut Ditch

24" CI/SP or R.C.P.

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
700	20	1224	93

56+00
680

MATCH LINE S.R. 872 Sta. 23+05 See Sheet No. 171

	WIDTH	AREA SY
CLEARING & GRUBBING	184	1239
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	146	842
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

PLATE 3 FINAL CROSS SECTION FULL LINE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W. VA. | 6 | X326-SP2-0.00 C-4 | M-5251 (002) | 57+50 58+50 | 238 | 255

TWP. RD. 533

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

℄ = 670.92
671.84

Exist. R/W

Limits of Seeding & Mulching

MATCH LINE
TWP. RD. 533 A Sta. 40+00
See Sheet No. 240

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
220	0	556	0

58+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	110	711
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	42	317
SEED MIX D HAY OR STRAW	0	106
SEED MIX D WOOD CELLULOSE		

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

2:1

℄ = 673.57
674.89

Exist. R/W

Limits of Seeding & Mulching

MATCH LINE
TWP. RD. 533 A Sta. 40+00
See Sheet No. 240

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
380	0	843	0

58+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	146	844
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	72	478
SEED MIX D HAY OR STRAW	38	206
SEED MIX D WOOD CELLULOSE		

1:1

18" CI/SP or R.C.P.

Sta. 58+00-22' Lt.
1-Type G Inlet
T.G. 701.6
F.L. 669.58

Sta. 57+83.08
End S.E. Transition Lt
Begin Normal Crown Lt.

Exist. R/W & R/W

Limits of Clearing & Grubbing

Limits of Seeding & Mulching

2:1

3:1

℄ = 677.00
678.24

Exist. R/W

Limits of Seeding & Mulching

4:1

MATCH LINE
TWP. RD. 533 A Sta. 40+25
See Sheet No. 240

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
530	0	991	2

57+50
680

	WIDTH	AREA SY
CLEARING & GRUBBING	158	900
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	100	633
SEED MIX D HAY OR STRAW	36	172
SEED MIX D WOOD CELLULOSE		

18" CI/SP or R.C.P.

℄ SURVEY

100 50 PLATE BOOK SECTION NO. 50 100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

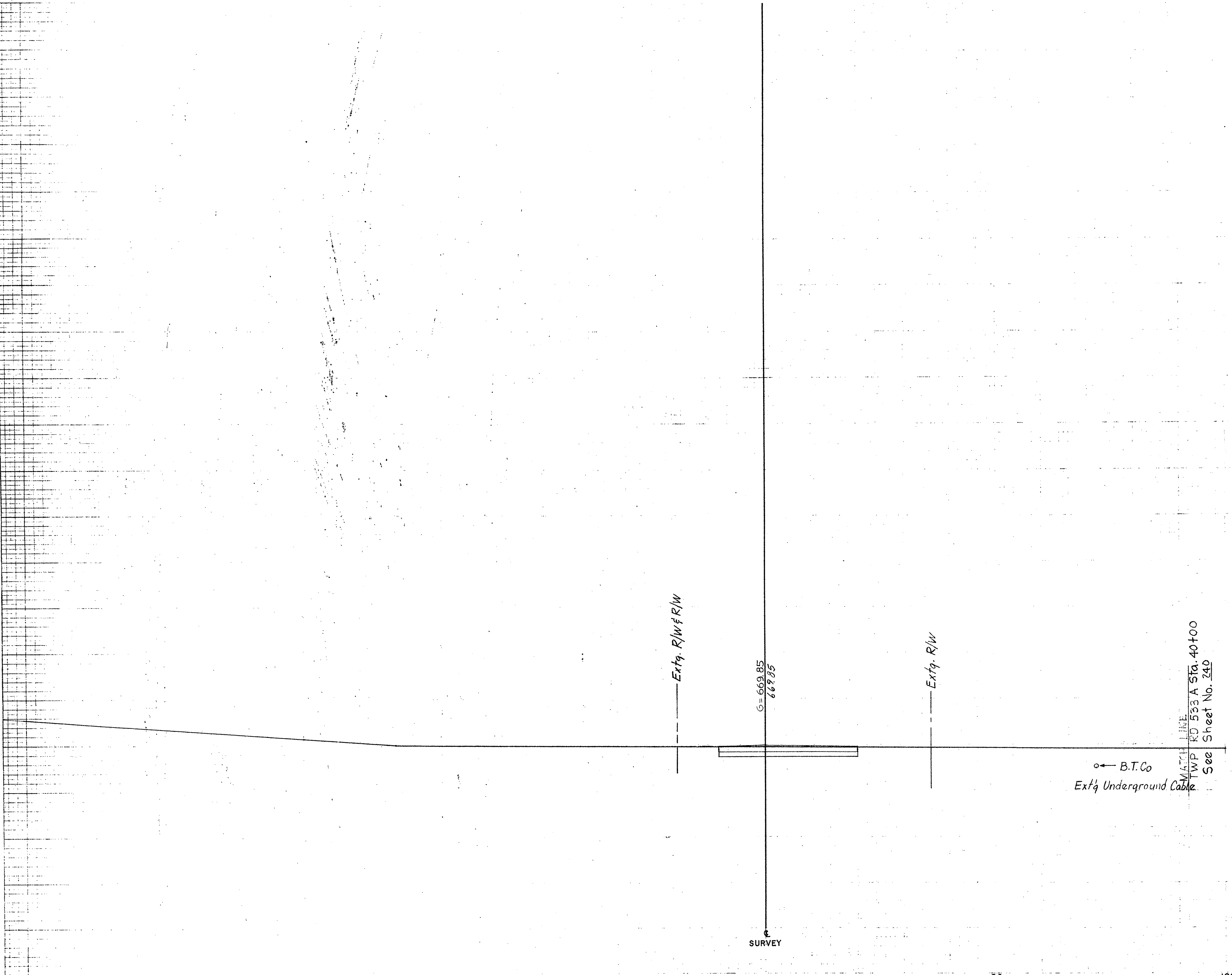
ORIGINAL SURVEY
NOTE BOOK NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

W.VA.	6	X326-SP2-0.00 C-4	M 5251 (002)	59+00	239	255

TWP. RD. 533

FINAL SURVEY	
NOTE BOOK	SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED
NO.	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED	
NO.		



Sta 59+10 End Earthwork & Seeding
Exc. 40 Emb. 0

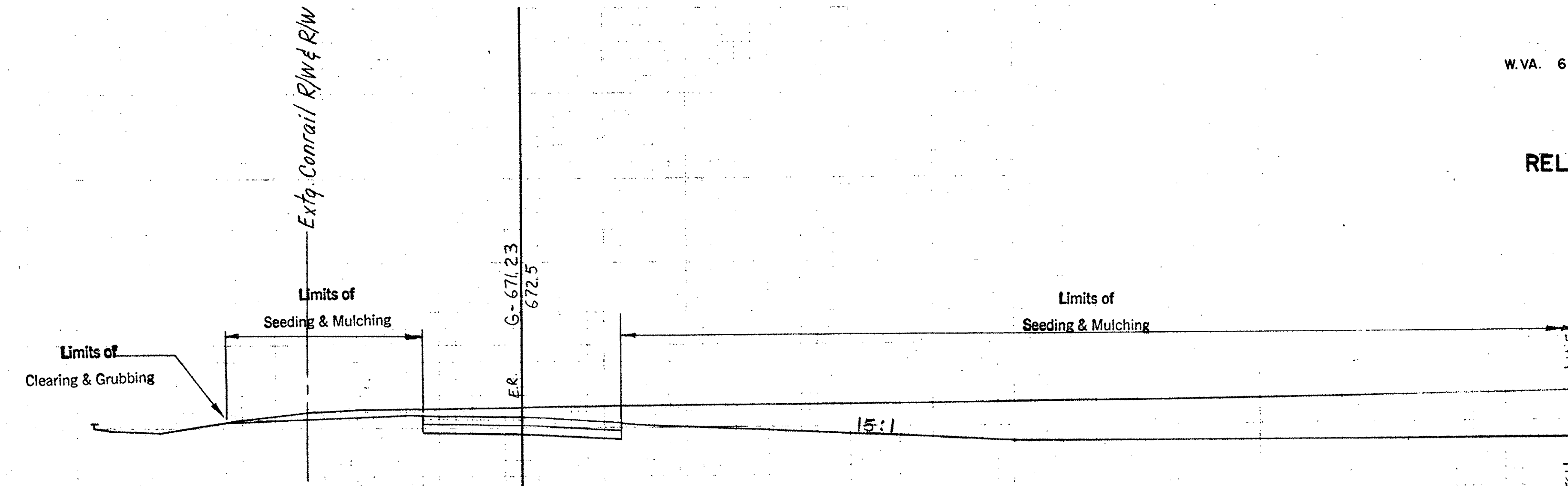
EARTH WORK			
END AREA			
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
40	0	241	0

59+00
680

	WIDTH	AREA SY
CLEARING & GRUBBING	30	389
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	140
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326-SP2-0.00 M-5251 (002) 39+50 40+00 40+50 240 255

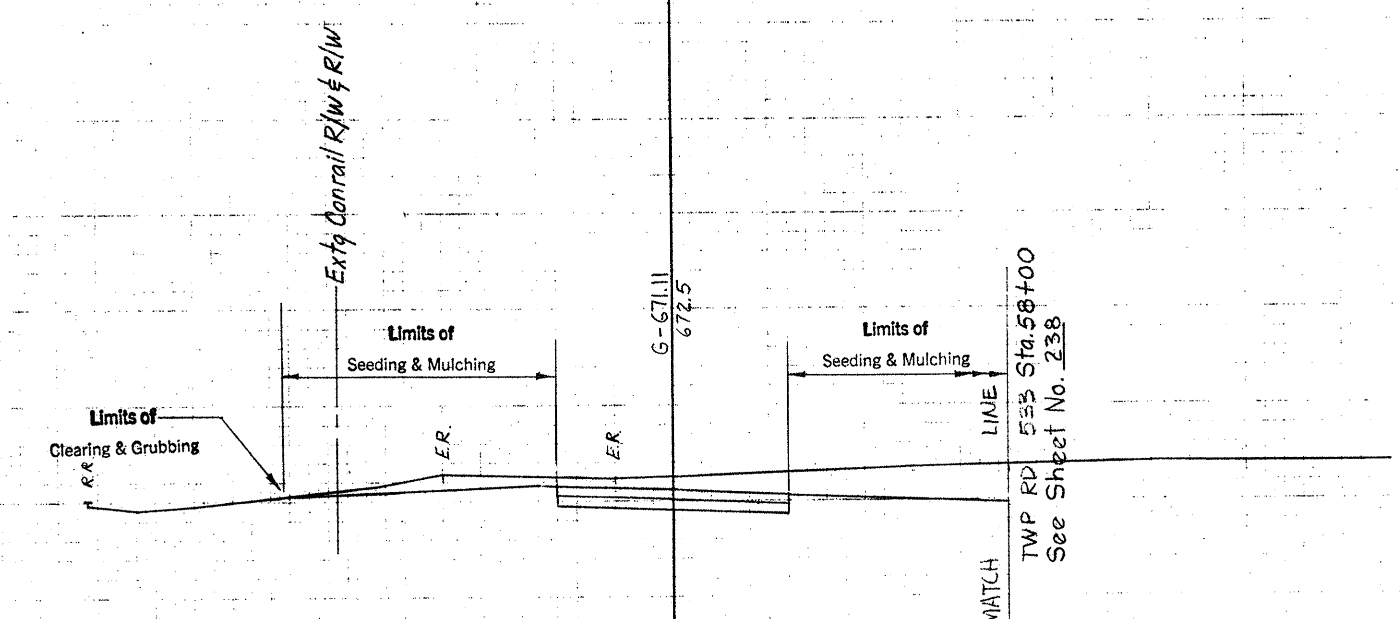
RELOC. TWP. RD. 533 A



40+50
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
600	0	713	0

	WIDTH	AREA SY
CLEARING & GRUBBING	766	672
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	142	536
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		



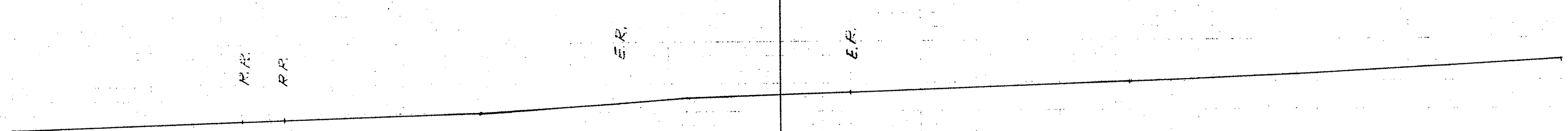
40+00
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
170	0	0	0

	WIDTH	AREA SY
CLEARING & GRUBBING	76	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	51	142
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

Sta 40+00 Begin Earthwork & Seeding

Sta. 39+17.45 Reloc. Twp. Rd 533 A =
Sta 58+35.97 Reloc. Twp. Rd 533



39+50
670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.

	WIDTH	AREA SY
CLEARING & GRUBBING		
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW		
SEED MIX D HAY OR STRAW		
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

PLATE 3-FULL CROSS SECTION

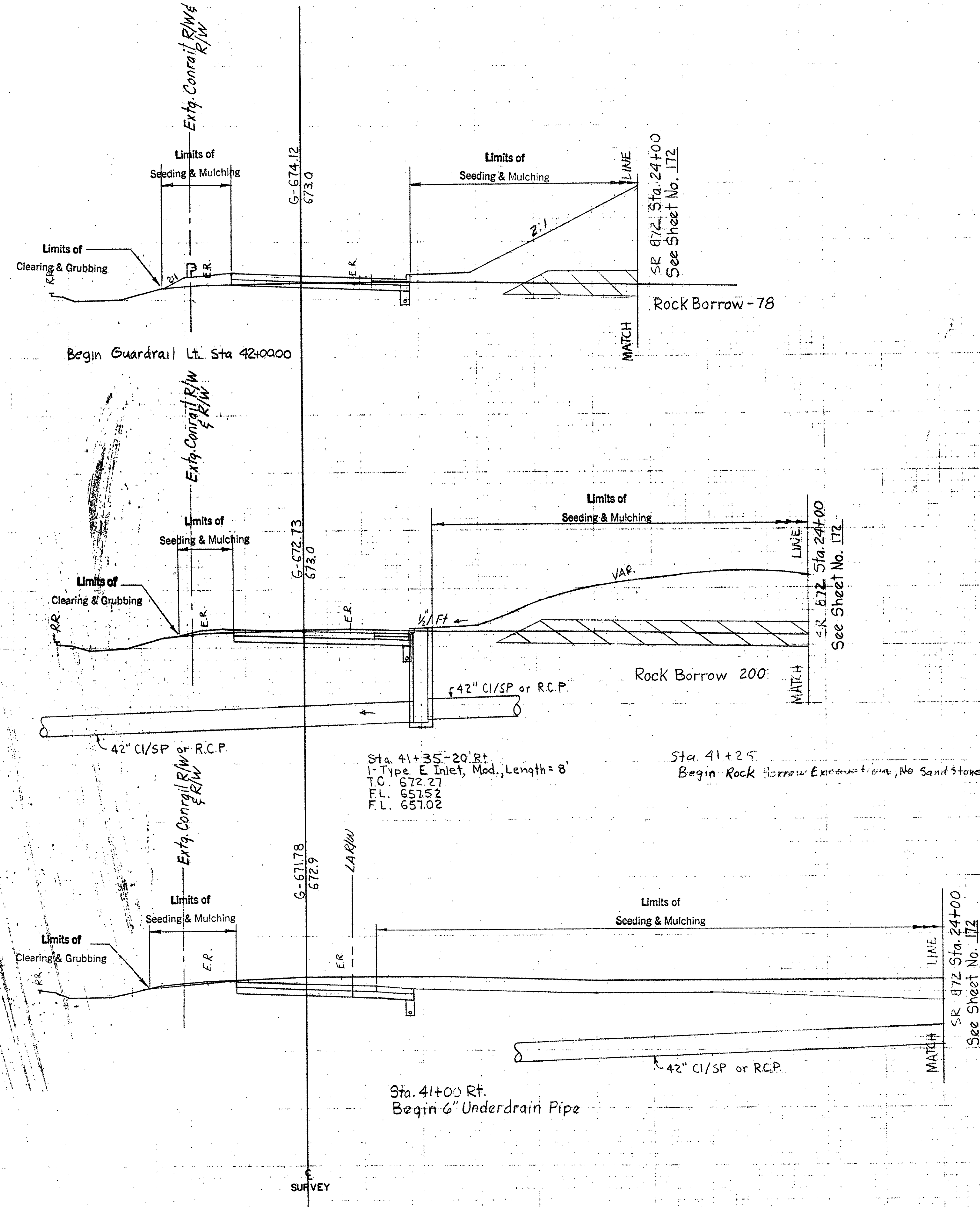
WEST VIRGINIA DEPARTMENT OF HIGHWAYS DESIGN DIVISION

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

FINAL SURVEY	
SURVEYED	
NOTE BOOK NO.	
TEMPLATE	
AREAS	
AREAS CHECKED	

W.VA. 6	X326-SP2-0.00	M-5251 (002)	41+00 41+50 42+00	241 255

RELOC. TWP. RD. 533 A



42+00 670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
50	274	200	600

	WIDTH	AREA SY
CLEARING & GRUBBING	82	528
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	18	272
SEED MIX D HAY OR STRAW	37	103
SEED MIX D WOOD CELLULOSE		

41+50 670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
166	374	431	346

	WIDTH	AREA SY
CLEARING & GRUBBING	108	683
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	80	536
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

41+00 670

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
300	0	833	0

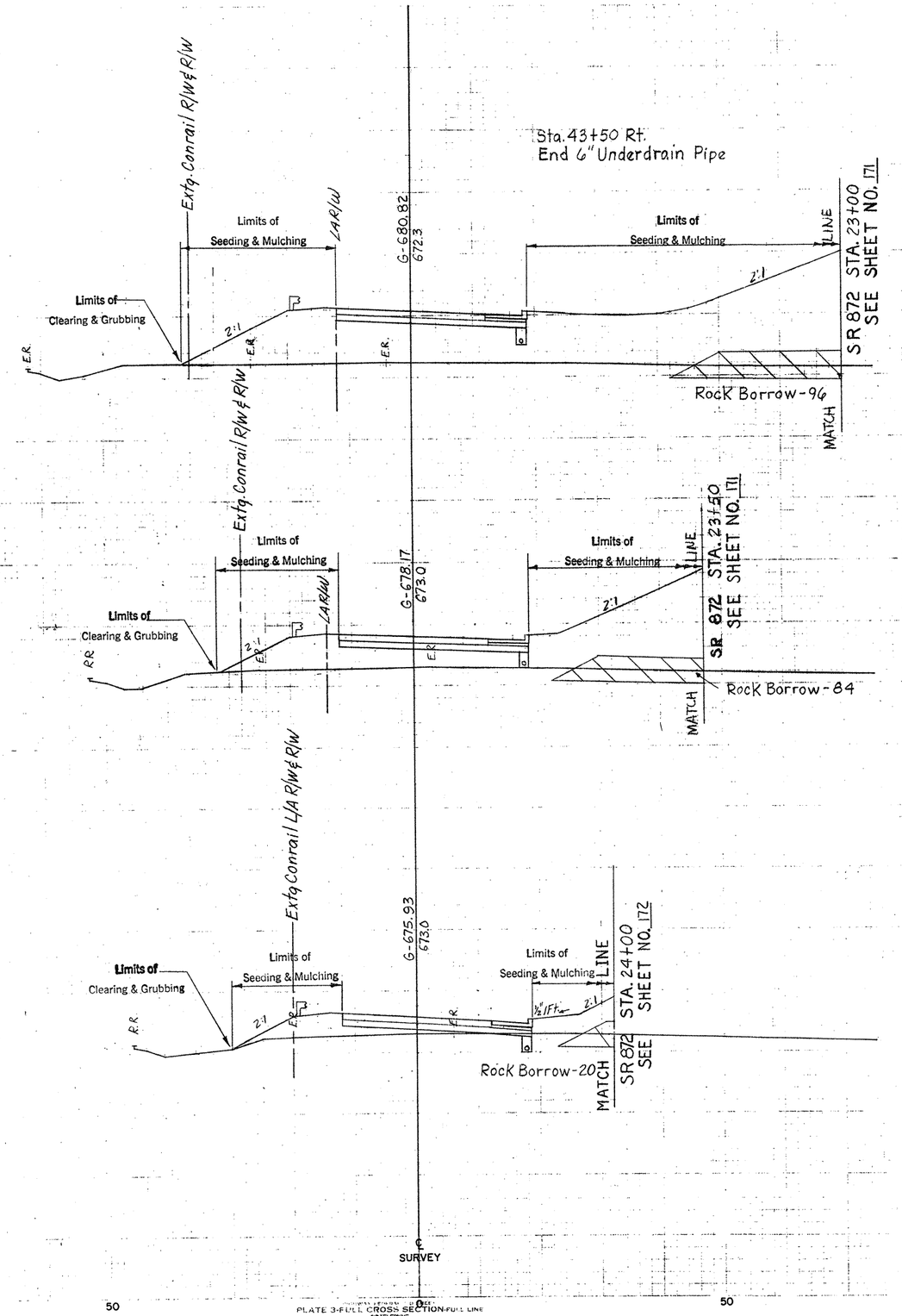
	WIDTH	AREA SY
CLEARING & GRUBBING	138	844
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	113	708
SEED MIX D HAY OR STRAW	0	0
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	
NOTE BOOK	
NO.	

WEST VIRGINIA DEPARTMENT OF HIGHWAYS DESIGN DIVISION

W.VA.					
6	X326-SP2-0.00	M-5251 (002)	42+50	242	255
			43+00		
			43+50		

RELOC. TWP. RD. 533 A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
52	880	89	1230

43+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	108	522
SEEDING & MULCH		
SEED MIX B, C-1, C-2 HAY OR STRAW	34	131
SEED MIX D HAY OR STRAW	46	234
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
44	448	56	541

43+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	80	394
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	13	81
SEED MIX D HAY OR STRAW	39	156
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
16	136	61	350

42+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	62	440
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	16	94
SEED MIX D HAY OR STRAW	17	150
SEED MIX D WOOD CELLULOSE		

100 50 0 50 100

PLATE 3-FULL CROSS SECTION-FULL LINE

W. VA. DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

SURVEY: SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO.

ORIGINAL SURVEY: SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO., DATE, BY

W.VA. 6 | X326-SP2-0.00 M-5251 (002) | 44+00, 44+50, 45+00 | 243 | 255

RELOC. TWP. RD. 533 A

Sta 45+23.94
End S.E Transition Lt & Rt
Begin Full S.E Lt & Rt. = .06%

Exfg. Conrail R/W & R/W

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

R.R.

E.R.

2:1

E.R.

G-690.48
671.3

4:1

℄ AR/W

42" CI/SP or RCP

Rock Borrow Exc.
464 S.F.Y

Sta 21+70-125' Rt.-S.R 872
1-Type G Inlet
T.G. 705.0
F.L. 668.39
F.L. 667.50
F.L. 667.00

MATCH LINE S.R. 872 STA. 21+42 SEE SHEET NO. 170

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
250	1850	435	2935

45+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	196	1006
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	130	653
SEED MIX D HAY OR STRAW	43	233
SEED MIX D WOOD CELLULOSE		

Sta 44+81.94
End Full S.E = .046%
Begin S.E Transition Lt. & Rt

Exfg. Conrail R/W & R/W

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

R.R.

E.R.

2:1

E.R.

G-687.19
671.5

℄ AR/W

4:1

MATCH LINE S.R. 872 STA. 22+00 SEE SHEET NO. 170

Rock Borrow-36

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
220	1320	235	2320

44+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	166	944
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	105	489
SEED MIX D HAY OR STRAW	41	242
SEED MIX D WOOD CELLULOSE		

SP

Sta 44+25 Begin Rock Borrow Excavation, sandstone only
Area. 0

Exfg. Conrail R/W & R/W

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

R.R.

E.R.

2:1

E.R.

G-683.90
671.8

℄ AR/W

5:1

MATCH LINE S.R. 872 STA. 22+50 SEE SHEET NO. 171

Rock Borrow-58

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
34	1186	60	1913

44+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	138	633
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	71	292
SEED MIX D HAY OR STRAW	46	256
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

PLATE 3 FULL CROSS SECTION FULL SCALE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
AREAS
NOTE BOOK
NO.
AREAS CHECKED
DATE
BY

W.VA.	6	X326-SP2-0.00	M-5251 (002)	45+50 46+00 46+50	244	255

RELOC. TWP. RD. 533 A

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

SEE SHEET NO. 251 ACCESS RD."C" STA. 0+50

MATCH LINE

Limits of Seeding & Mulching

G-700.35 671.2

4:1

42" CI/SP. or R.C.P.

LAP/W

Rock Borrow Exc 600 S.F.

18" CI/SP or R.C.P.

MATCH LINE 120' R.T.

MATCH LINE S.R.872 STA. 20+25 SEE SHEET NO. 170

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
310	3574	593	6050

46+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	192	1117
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	119	650
SEED MIX D HAY OR STRAW	0	142
SEED MIX D WOOD CELLULOSE		

Limits of Seeding & Mulching

G-697.06 670.8

2:1

4:1

42" CI/SP or R.C.P.

LAP/W

MATCH LINE S.R.872 STA. 21+10 SEE SHEET NO. 170

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
330	2966	593	4950

46+00
670

SEE SHEET NO. 251 ACCESS RD."C" STA. 0+50

MATCH LINE

E.R.

Ext. Conrail R/W & R/W

Rock Borrow Exc 628 S.F.

18" CI/SP or R.C.P.

	WIDTH	AREA SY
CLEARING & GRUBBING	210	1161
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	115	639
SEED MIX D HAY OR STRAW	51	278
SEED MIX D WOOD CELLULOSE		

Limits of Seeding & Mulching

Limits of Clearing & Grubbing

G-693.77 671.0

2:1

4:1

E.R.

R.R.

LAP/W

MATCH LINE 120' Rt.

MATCH LINE S.R.872 STA. 21+25 SEE SHEET NO. 170

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
310	2380	519	3917

45+50
670

Rock Borrow Exc. 560 S.F.

18" CI/SP or R.C.P.

42" CI/SP or R.C.P.

MATCH LINE 120' Rt.

	WIDTH	AREA SY
CLEARING & GRUBBING	208	1122
SEEDING & MULCHING		
SEED MIX B, C-1, C HAY OR STRAW	115	681
SEED MIX D HAY OR STRAW	49	256
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

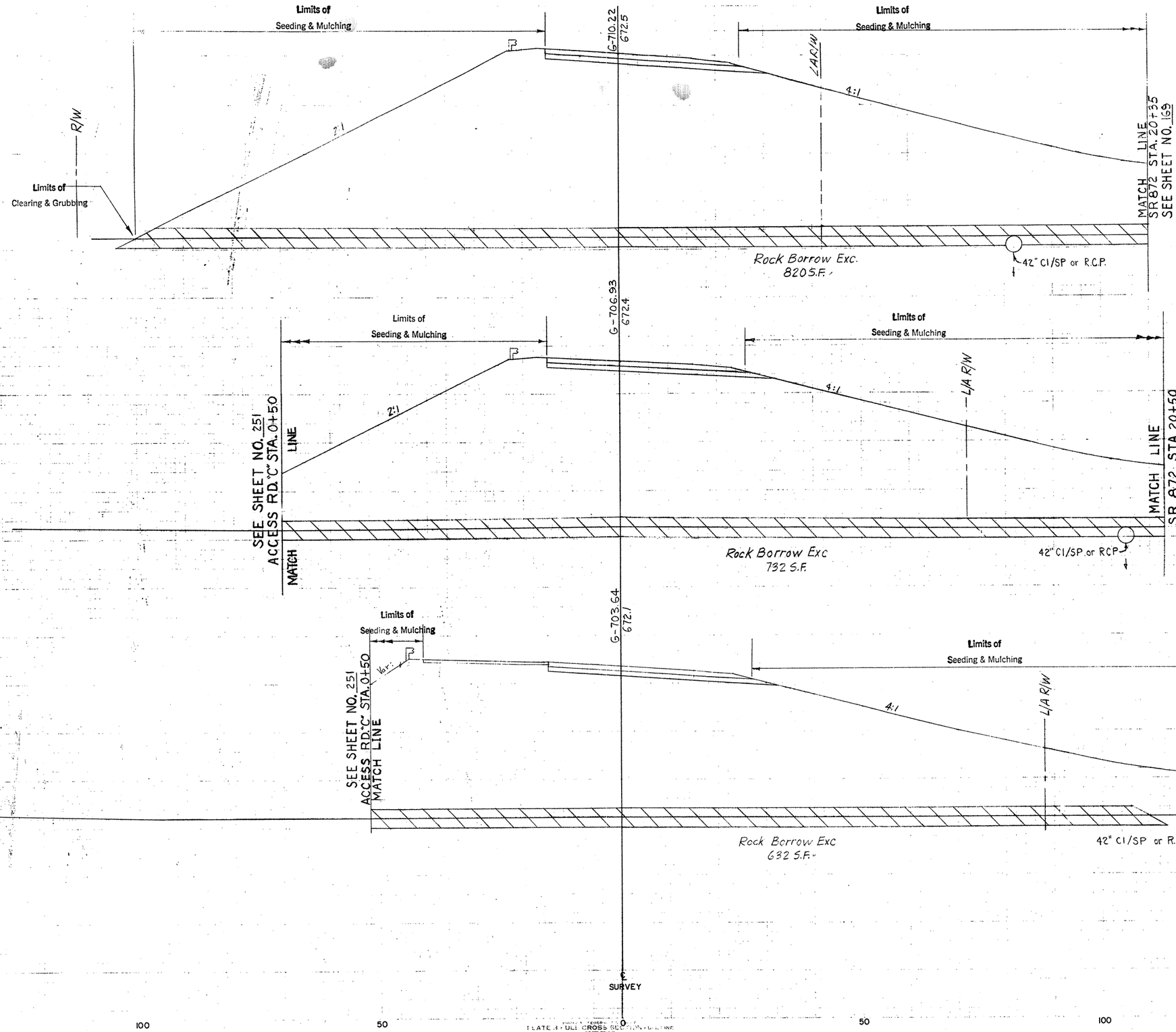
100 50 0 50 100

PLOT TO FULL CROSS SECTION FULL LINE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA. 6 | X326-SP2-0.00 | M-5251 (002) | 47+00, 47+50, 48+00 | 245 | 255

RELOC. TWP. RD. 533 A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
430	4890	737	8602

48+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	206	1983
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	106	597
SEED MIX D HAY OR STRAW	87	389
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
366	4400	644	7676

47+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	184	1022
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	109	642
SEED MIX D HAY OR STRAW	53	175
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
330	3890	593	6911

MATCH LINE SR 872 STA. 20+75 SEE SHEET NO. 170

47+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	184	1044
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	122	669
SEED MIX D HAY OR STRAW	10	28
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY
NOTE BOOK NO.
SURVEYED BY
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

DATE BY

PLATE 3 FULL CROSS SECTIONS OUTLINE

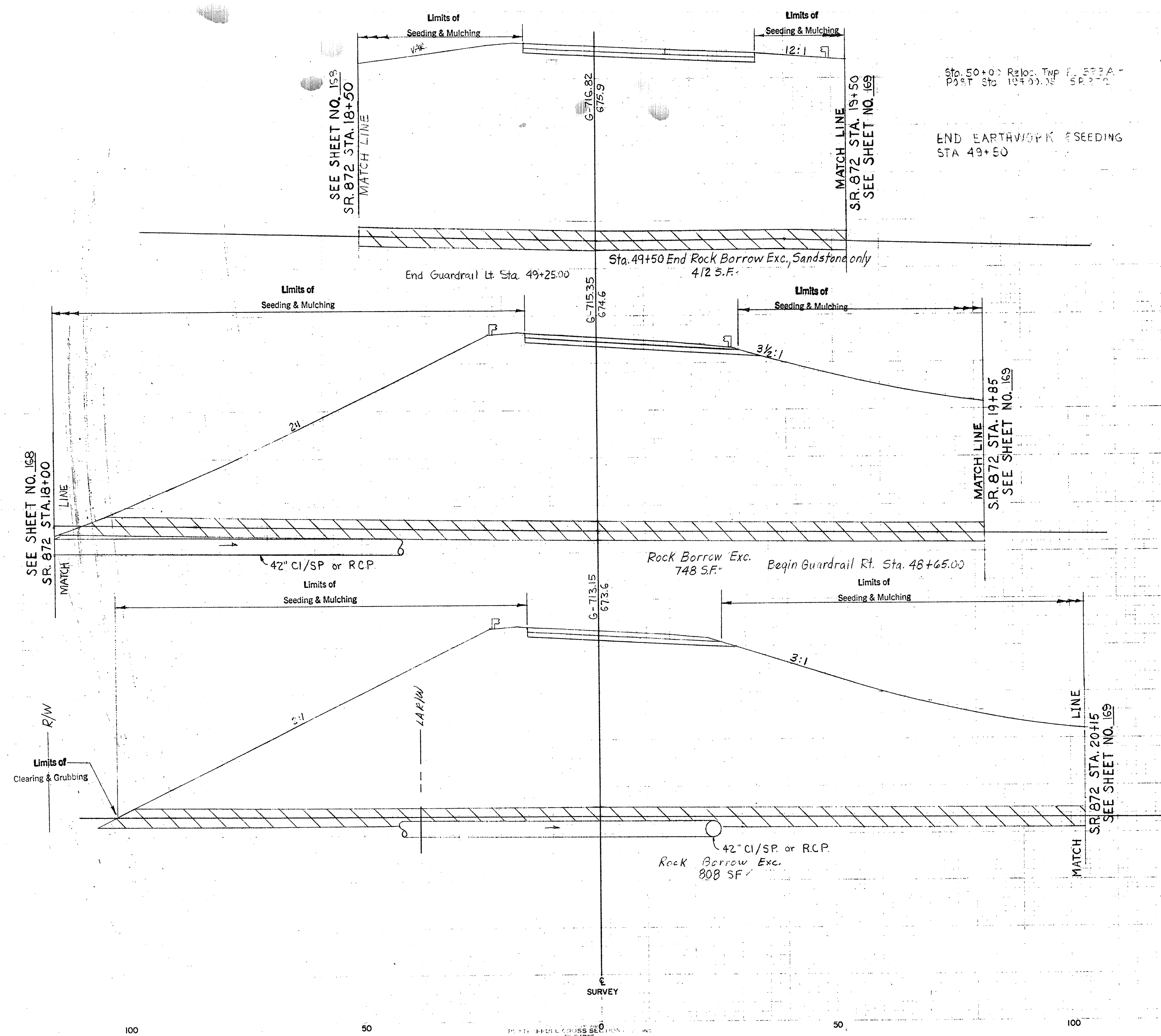
WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA.	6	X326-SP2-0.00	M-5251 (002)	48+50 49+00 49+50	246	255

RELOC. TWP. RD. 533 A

Sta. 50+00 Reloc. Twp R. 533 A - POST Sta. 19+00.35 SR 872

END EARTHWORK & SEEDING STA 49+50



EARTHWORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
206	3854	552	8235

49+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	104	839
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	54	364
SEED MIX D HAY OR STRAW	0	281
SEED MIX D WOOD CELLULOSE		

EARTHWORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
390	5040	750	9435

49+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	198	1122
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	77	489
SEED MIX D HAY OR STRAW	101	528
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
420	5150	787	9296

48+50
670

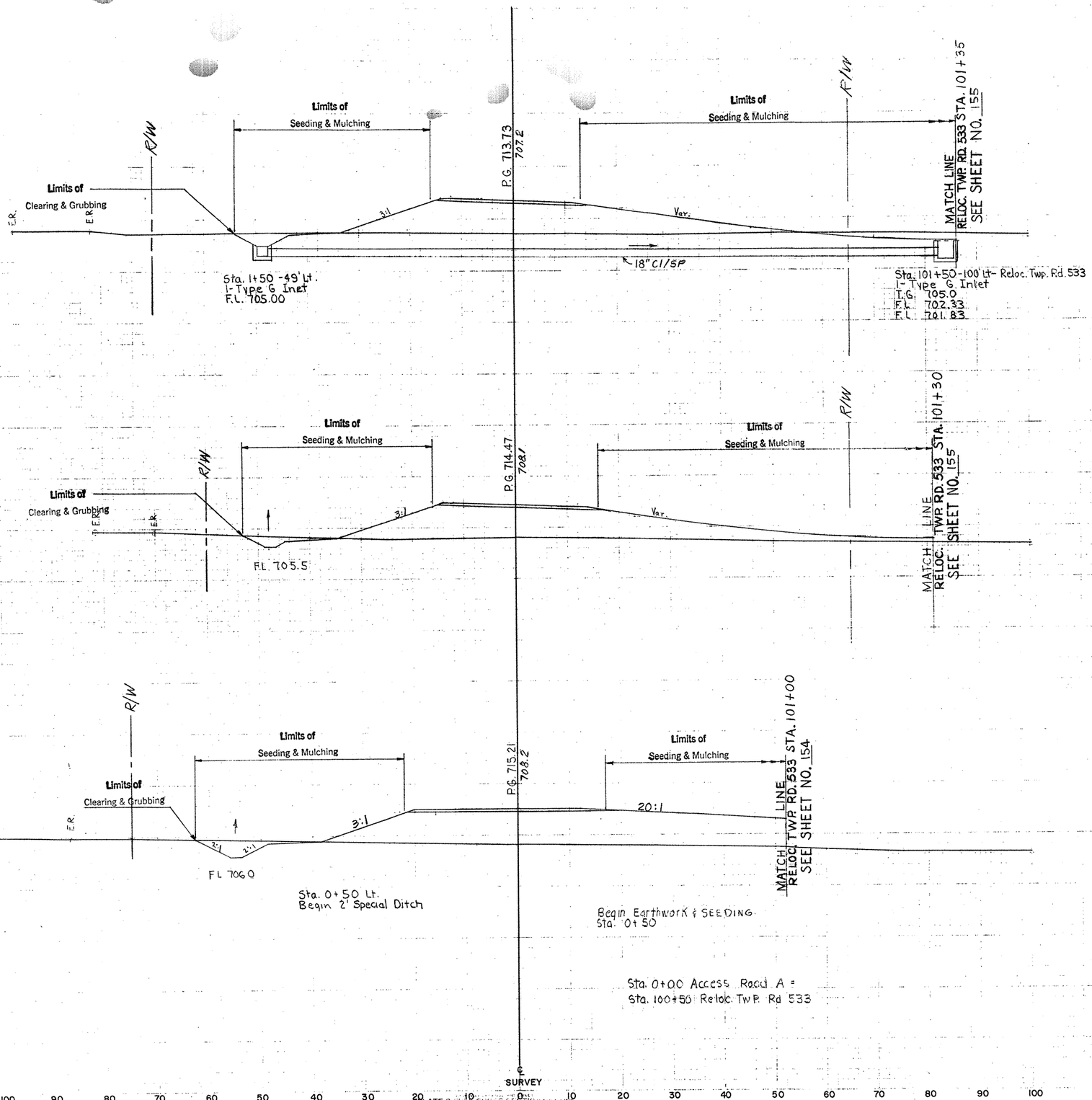
	WIDTH	AREA SY
CLEARING & GRUBBING	206	1144
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	99	569
SEED MIX D HAY OR STRAW	89	489
SEED MIX D WOOD CELLULOSE		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK NO.	AREAS	
	AREAS CHECKED	

FINAL SURVEY	
SURVEYED	
PLOTTED	
NOTE BOOK NO.	AREAS
	AREAS CHECKED

W.VA. 6 | X326-SP2-0.00 | M-5251-(002) | C-4 | 0 + 50 to 1 + 50 | 247 | 255

ACCESS ROAD A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
30	348	41	676

1 + 50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	140	761
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	88	467
SEED MIX D HAY OR STRAW	28	161
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
14	382	26	776

1+00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	134	694
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	80	364
SEED MIX D HAY OR STRAW	30	161
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
14	456	0	0

0 + 50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	116	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	51	0
SEED MIX D HAY OR STRAW	28	0
SEED MIX D WOOD CELLULOSE		

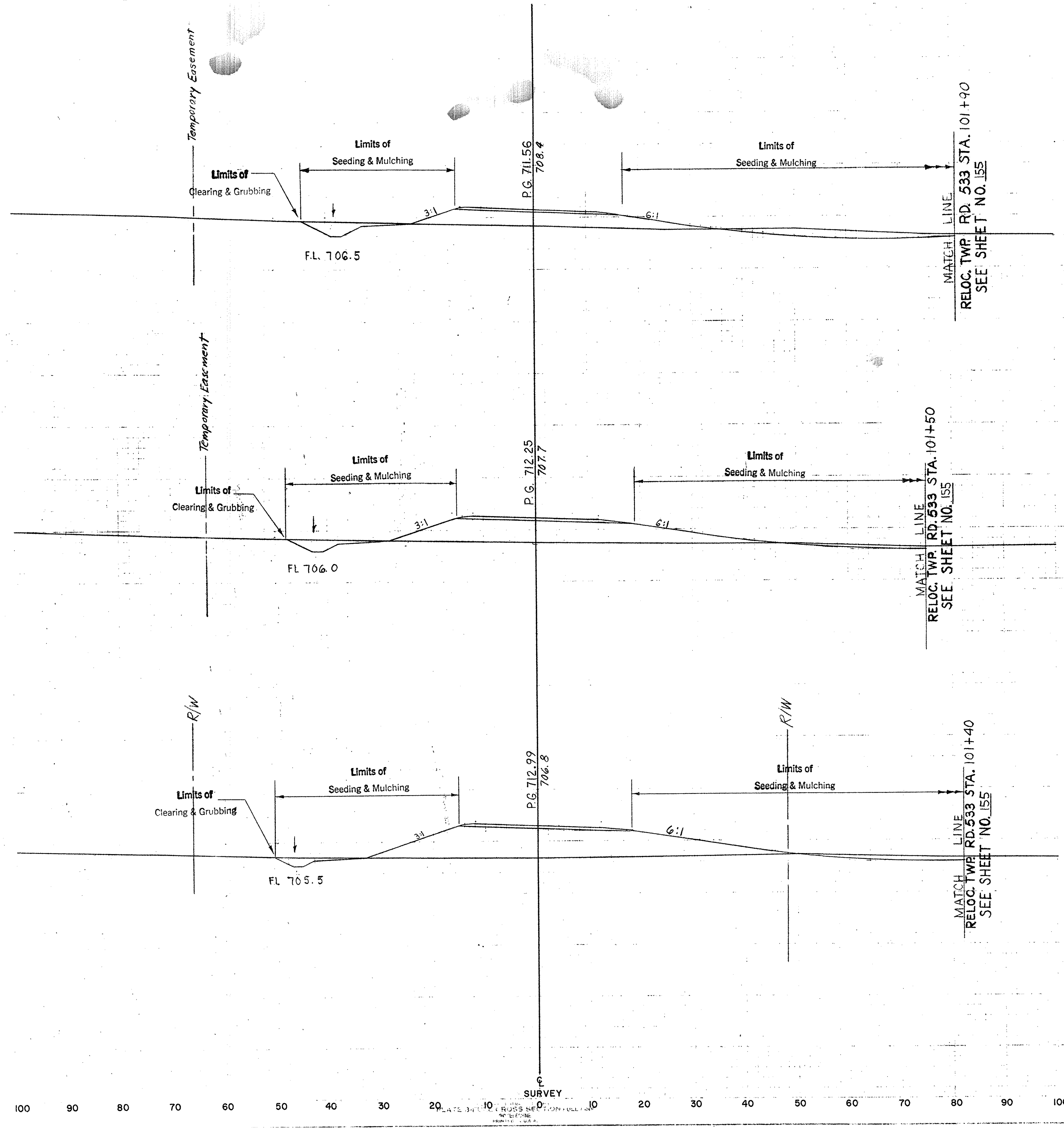
FINAL SURVEY — SURVEYED, PLOTTED, EARTHWORK AREAS, AREAS CHECKED, NOTE BOOK, NO.

ORIGINAL SURVEY — SURVEYED, PLOTTED, EARTHWORK AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)	2 + 00 3 + 00	248	255

ACCESS ROAD A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
62	126	85	322

3 + 00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	126	694
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	77	394
SEED MIX D HAY OR STRAW	18	117
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
30	222	57	494

2 + 50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	124	711
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	66	386
SEED MIX D HAY OR STRAW	24	147
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
32	312	57	611

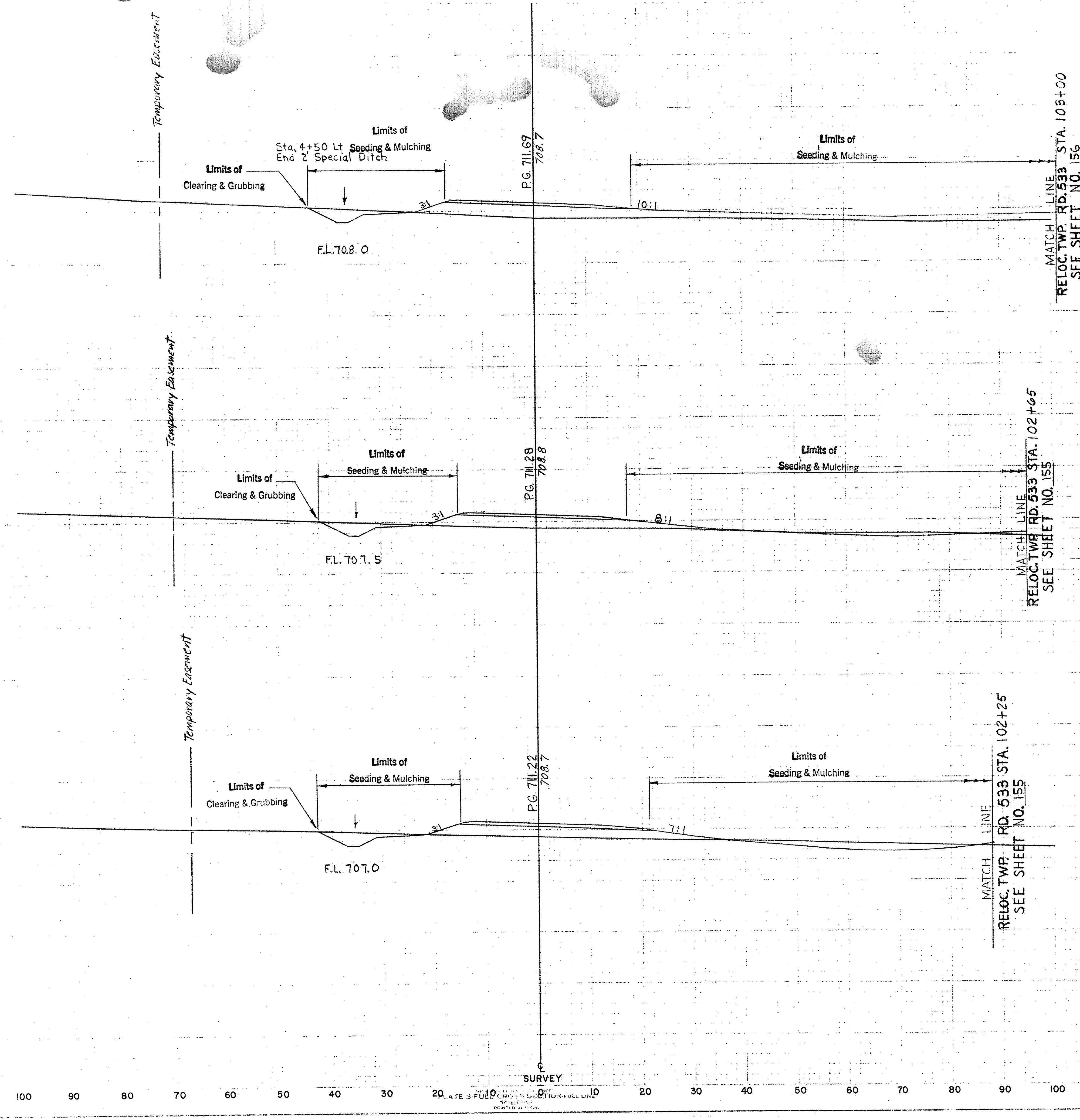
2 + 00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	132	756
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	73	447
SEED MIX D HAY OR STRAW	29	158
SEED MIX D WOOD CELLULOSE		

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA.	6	X326-SP2-0.00 C-4	M-5251 (002)	3 + 50 / 4 + 50	249	255

ACCESS ROAD A



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
20	176	56	248

4 + 50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	144	783
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	93	508
SEED MIX D HAY OR STRAW	16	89
SEED MIX D WOOD CELLULOSE		

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
40	92	106	170

4 + 00
700

	WIDTH	AREA SY
CLEARING & GRUBBING	138	744
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	90	469
SEED MIX D HAY OR STRAW	16	89
SEED MIX D WOOD CELLULOSE		

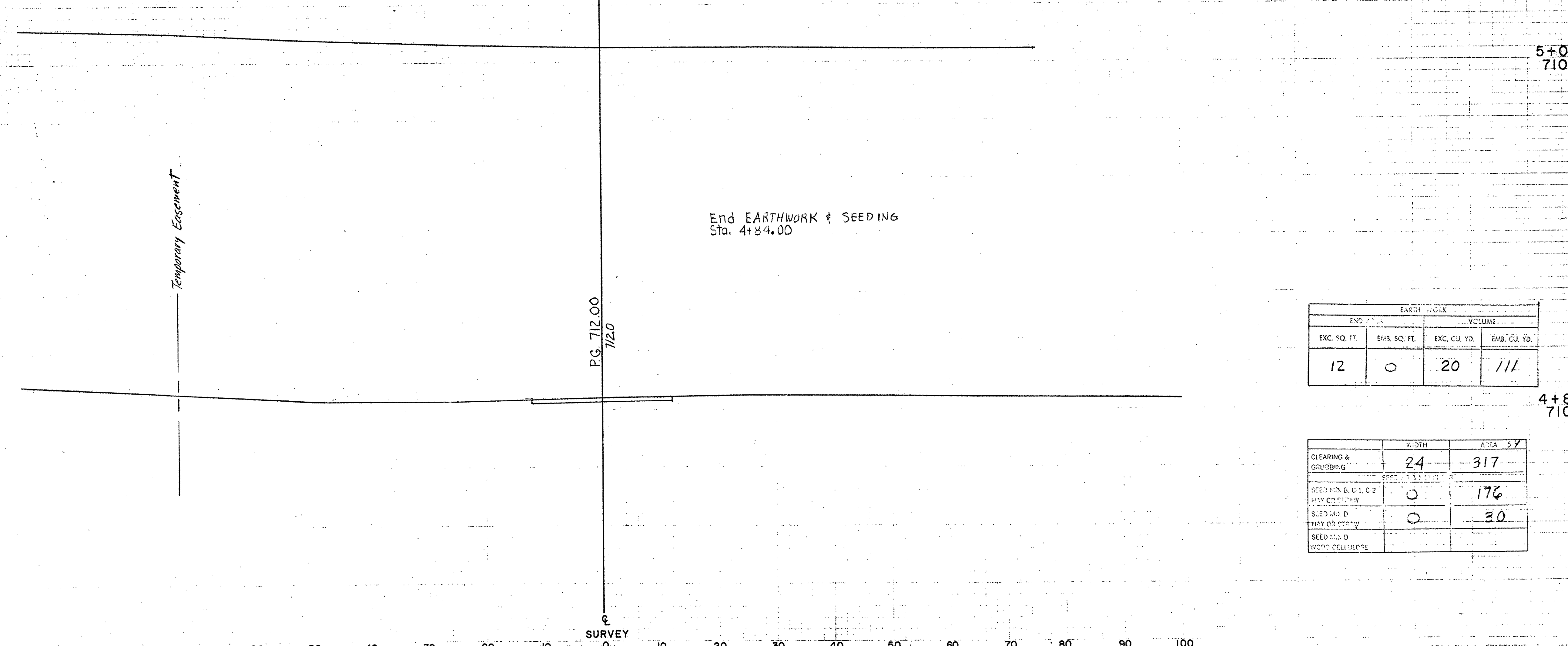
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
74	92	126	202

3 + 50
700

	WIDTH	AREA SY
CLEARING & GRUBBING	130	711
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	79	433
SEED MIX D HAY OR STRAW	16	94
SEED MIX D WOOD CELLULOSE		

W.VA. 6 X326-SP2-0.00 C-4 M-5251-(002) 4+84 5+00 250 255

ACCESS ROAD A

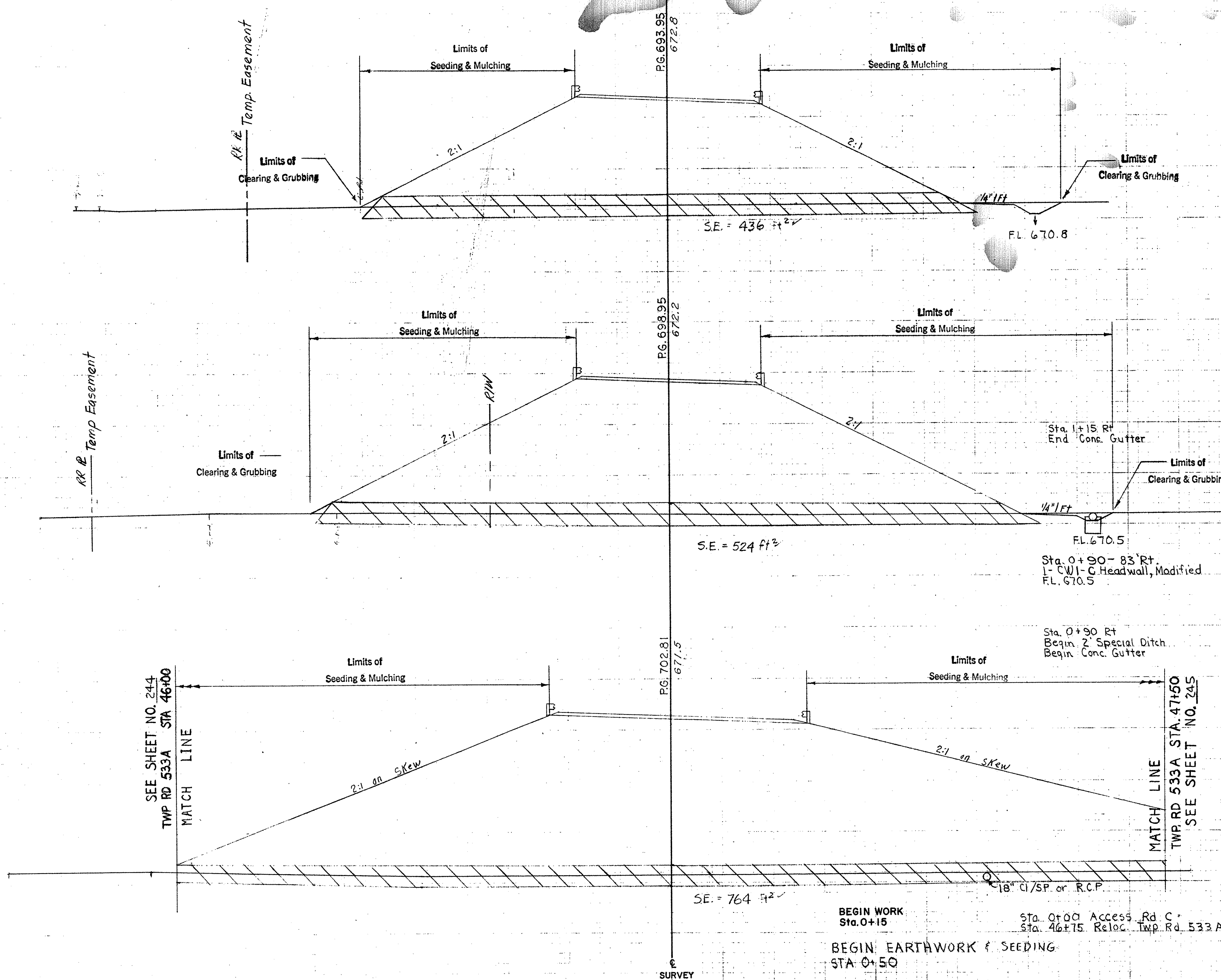


EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
12	0	20	111

	WIDTH	AREA SY
CLEARING & GRUBBING	24	317
SEEDING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	176
SEED MIX D HAY OR STRAW	0	30
SEED MIX D WOOD CELLULOSE		

State		Project No.		Station to Station	Sheet No.	Total Sheets
W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)	0 + 50 1 + 50	251	255

ACCESS ROAD C



1+50
670

END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
274	1332	569	3061

	WIDTH	AREA SY
CLEARING & GRUBBING	138	822
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	10	50
SEED MIX D HAY OR STRAW	101	633
SEED MIX D WOOD CELLULOSE		

1+00
670

END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
340	1974	711	5378

	WIDTH	AREA SY
CLEARING & GRUBBING	156	973
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	8	22
SEED MIX D HAY OR STRAW	127	772
SEED MIX D WOOD CELLULOSE		

0+50
670

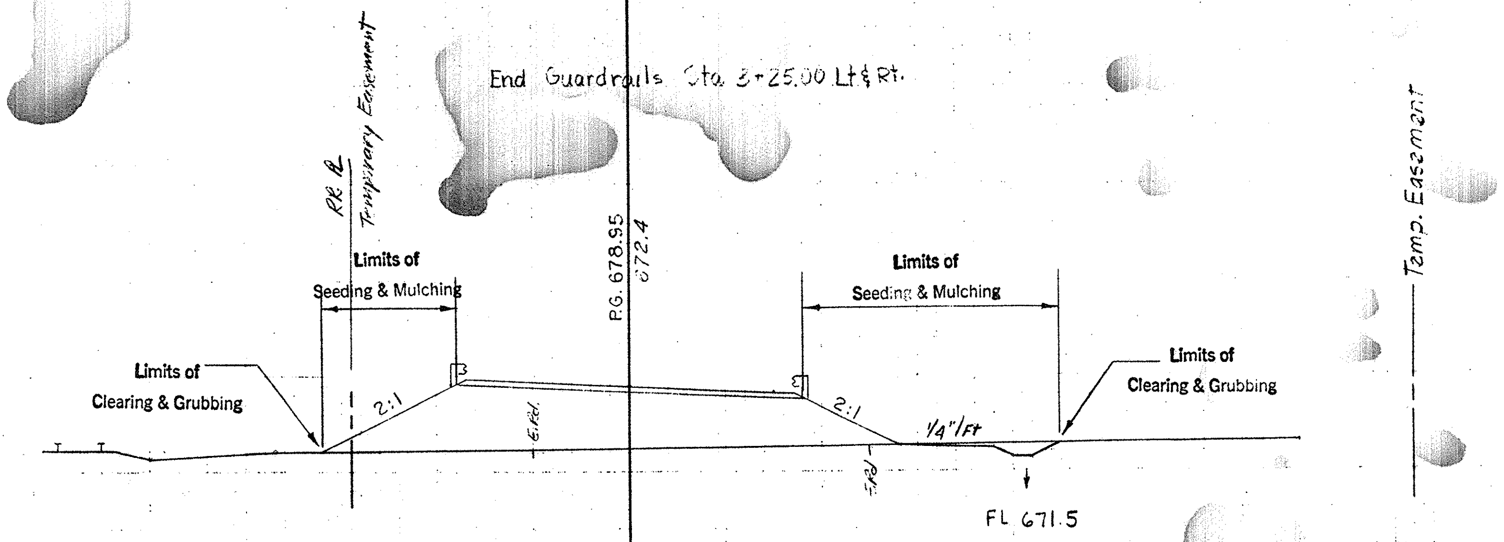
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
428	3834	0	0

	WIDTH	AREA SY
CLEARING & GRUBBING	194	0
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	0	0
SEED MIX D HAY OR STRAW	151	0
SEED MIX D WOOD CELLULOSE		

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
DESIGN DIVISION

W.VA. 6 X326-SP2-0.00 C-4 M-5251-(002) 2 + 00 3 + 00 252 255

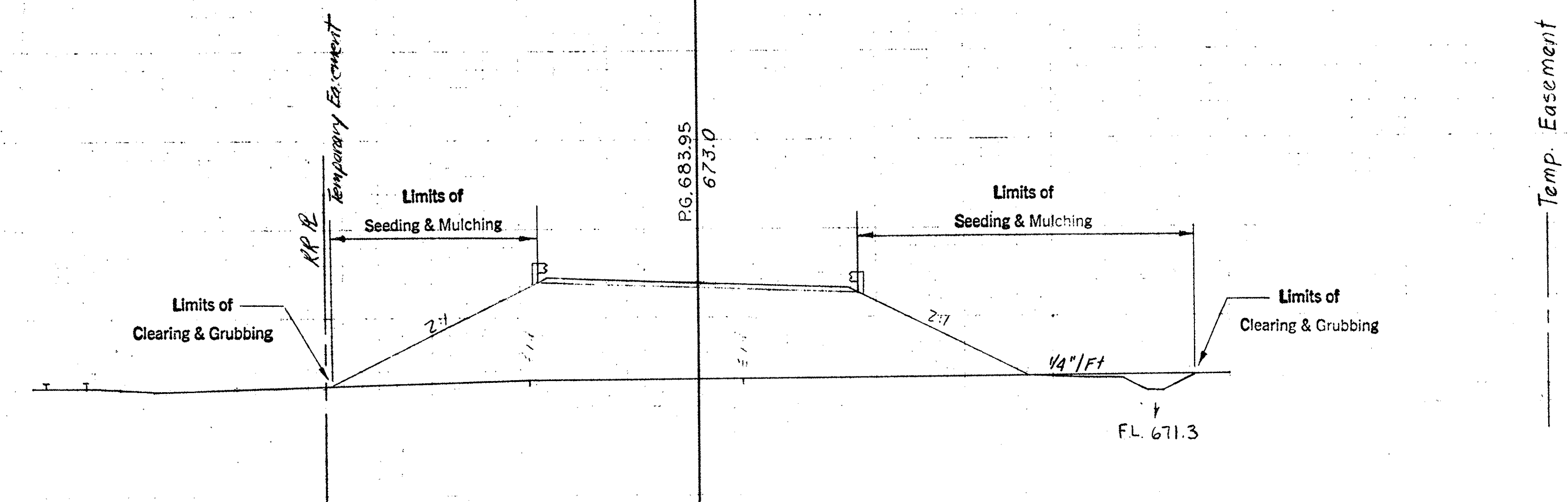
ACCESS ROAD C



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
8	288	19	907

3+00
670

	WIDTH	AREA SY
CLEARING & GRUBBING	86	511
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	7	44
SEED MIX D HAY OR STRAW	37	267
SEED MIX D WOOD CELLULOSE		

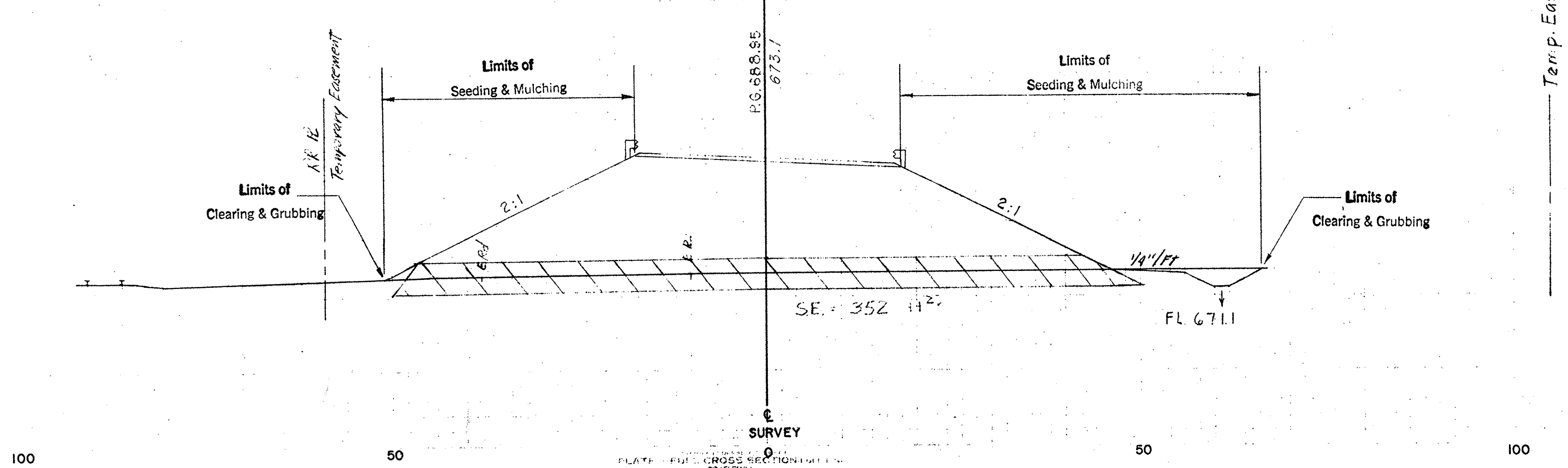


EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
12	584	230	1302

2+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	98	600
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	9	56
SEED MIX D HAY OR STRAW	59	383
SEED MIX D WOOD CELLULOSE		

END SE STATION 2+25



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
236	822	472	1994

2+00
670

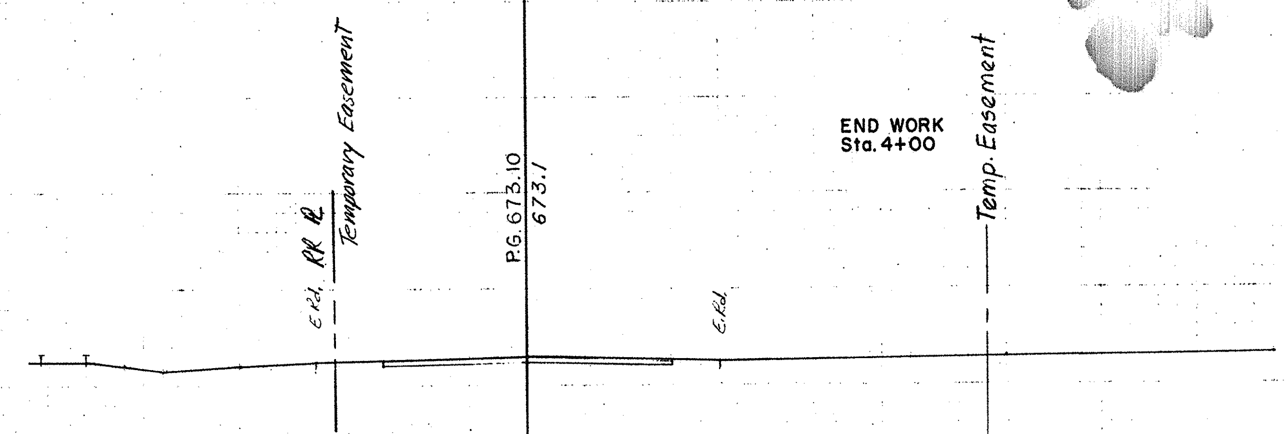
	WIDTH	AREA SY
CLEARING & GRUBBING	118	711
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	11	58
SEED MIX D HAY OR STRAW	79	500
SEED MIX D WOOD CELLULOSE		

FINAL SURVEY	
SURVEYED	
PLOTTED	
NOTE BOOK	
TEMPLATE	
AREAS	
NO.	AREAS CHECKED

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK		
TEMPLATE		
AREAS		
NO.	AREAS CHECKED	

W.VA.	6	X326-SP2-0.00 C-4	M-5251-(002)	3 + 50 4 + 00	253	255

ACCESS ROAD C

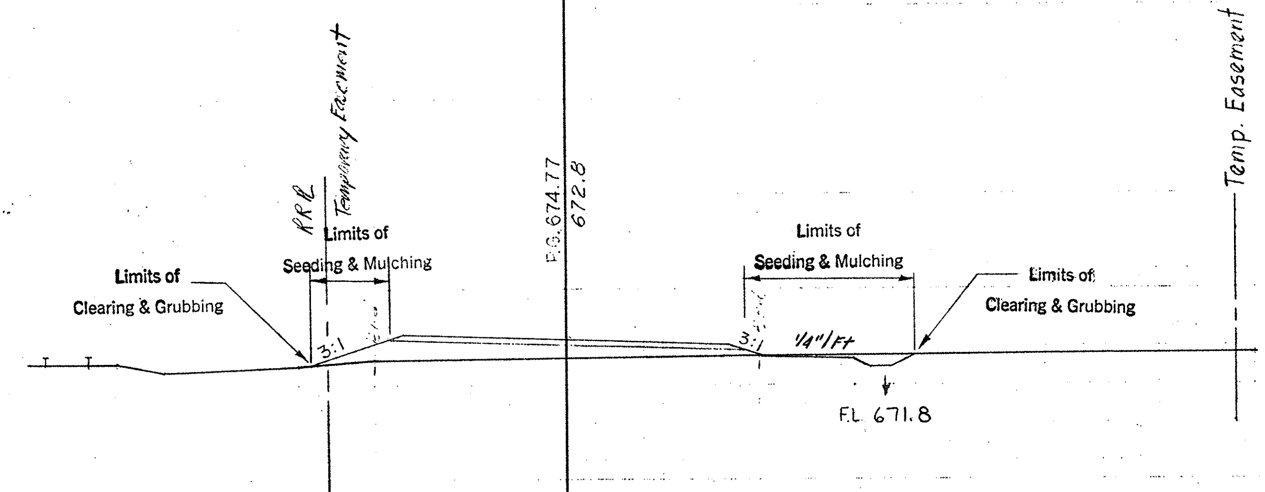


EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
18	0	24	56

4+00
670

Sta. 3+75 Rt.
End 2' Special Ditch

	WIDTH	AREA SY
CLEARING & GRUBBING	30	256
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	3	19
SEED MIX D HAY OR STRAW	0	56
SEED MIX D WOOD CELLULOSE		



EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
8	60	15	322

3+50
670

	WIDTH	AREA SY
CLEARING & GRUBBING	62	411
SEEDING & MULCHING		
SEED MIX B, C-1, C-2 HAY OR STRAW	7	39
SEED MIX D HAY OR STRAW	20	158
SEED MIX D WOOD CELLULOSE		

℄ SURVEY

100 50 0 50 100

W.VA. 6 X326 SP2 0.00 C-4 M-5251 (002) 153+00 155+50 254 255

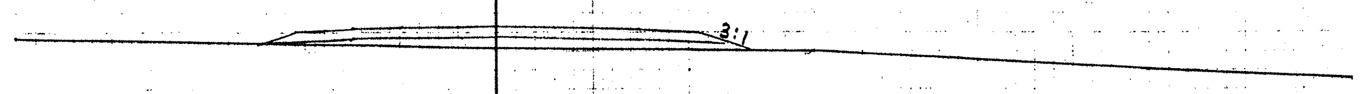
TEMPORARY ROAD NO.1

End Sta 156+20

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	0	57	0

G 700.64

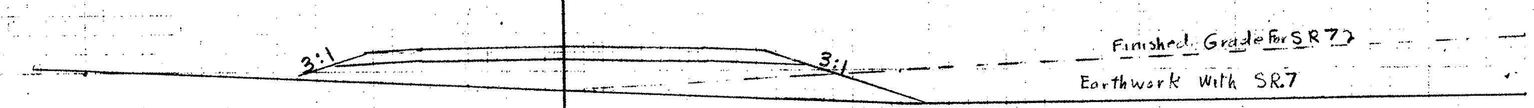
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	44	0	154



154+00
690

G-702.41

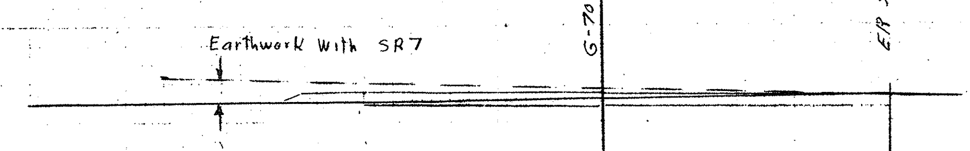
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	122	39	113



153+50
690

G-702.90

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
42	8	32	0

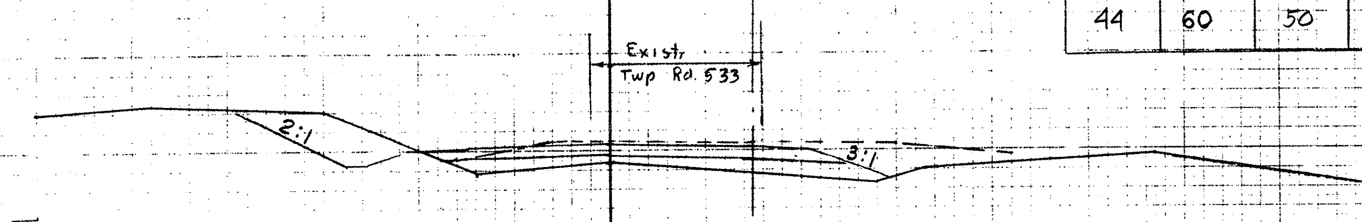


153+00
690

Begin Earthwork
Sta 152+89.73 Area 0

G-690.74

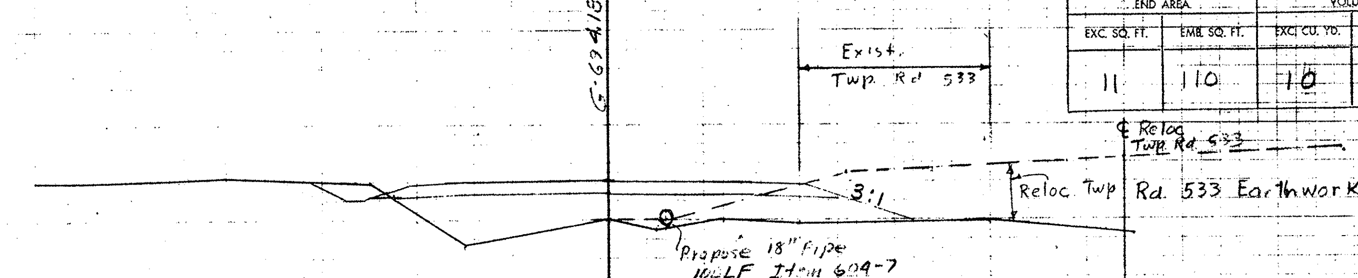
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
44	60	50	102



155+50
690

G-694.15

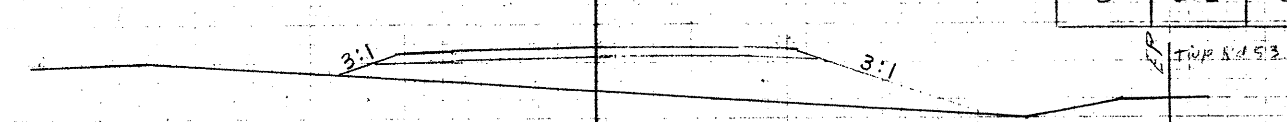
EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
11	110	10	289



155+00
690

G-697.61

EARTH WORK			
END AREA		VOLUME	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	212	0	339



154+50
690

℄ SURVEY

℄ SURVEY

50 0 50 50 0 50

PLATE FULL CROSS SECTION FULL LINE

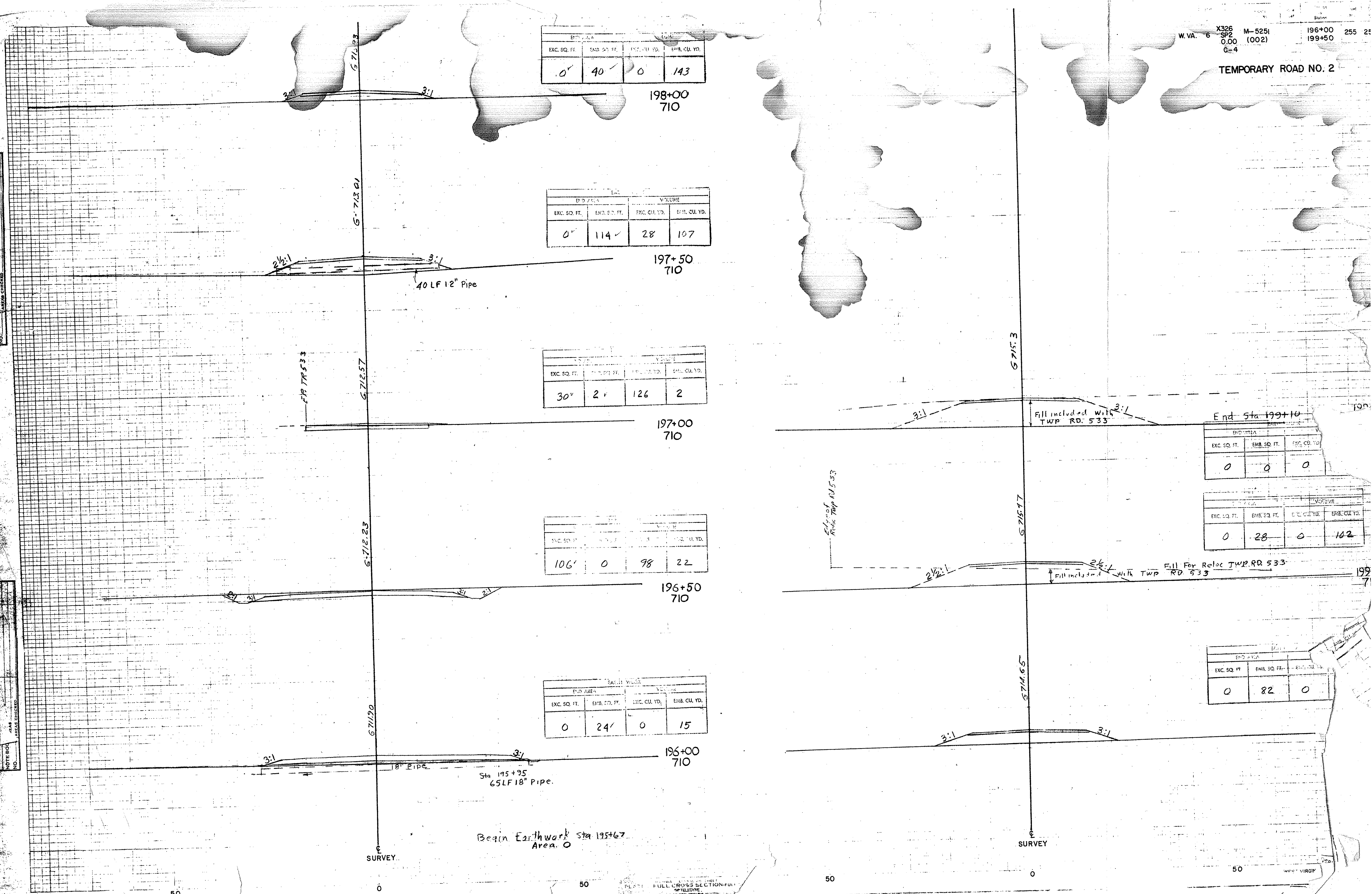
WEST VIRGINIA DEPARTMENT OF HIGHWAYS DESIGN DIVISION

FINAL SURVEY NOTE BOOK NO. SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED

ORIGINAL SURVEY NOTE BOOK NO. SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED

W. VA. 6 X326 SP2 0.00 G-4 M-5251 (002) 196+00 199+50 255 25

TEMPORARY ROAD NO. 2



Station 198+00

End Area		Volume	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	40	0	143

Station 197+50

End Area		Volume	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	114	28	107

Station 197+00

End Area		Volume	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
30	2	126	2

Station 196+50

End Area		Volume	
EXC. SQ. FT.	[illegible]	[illegible]	EMB. CU. YD.
106	0	98	22

Station 196+00

Earthwork			
End Area		Volume	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	24	0	15

Station 199+00 (End Sta 199+10)

End Area		
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.
0	0	0

Station 199

[illegible]		Volume	
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.	EMB. CU. YD.
0	28	0	162

End Area		
EXC. SQ. FT.	EMB. SQ. FT.	EXC. CU. YD.
0	82	0