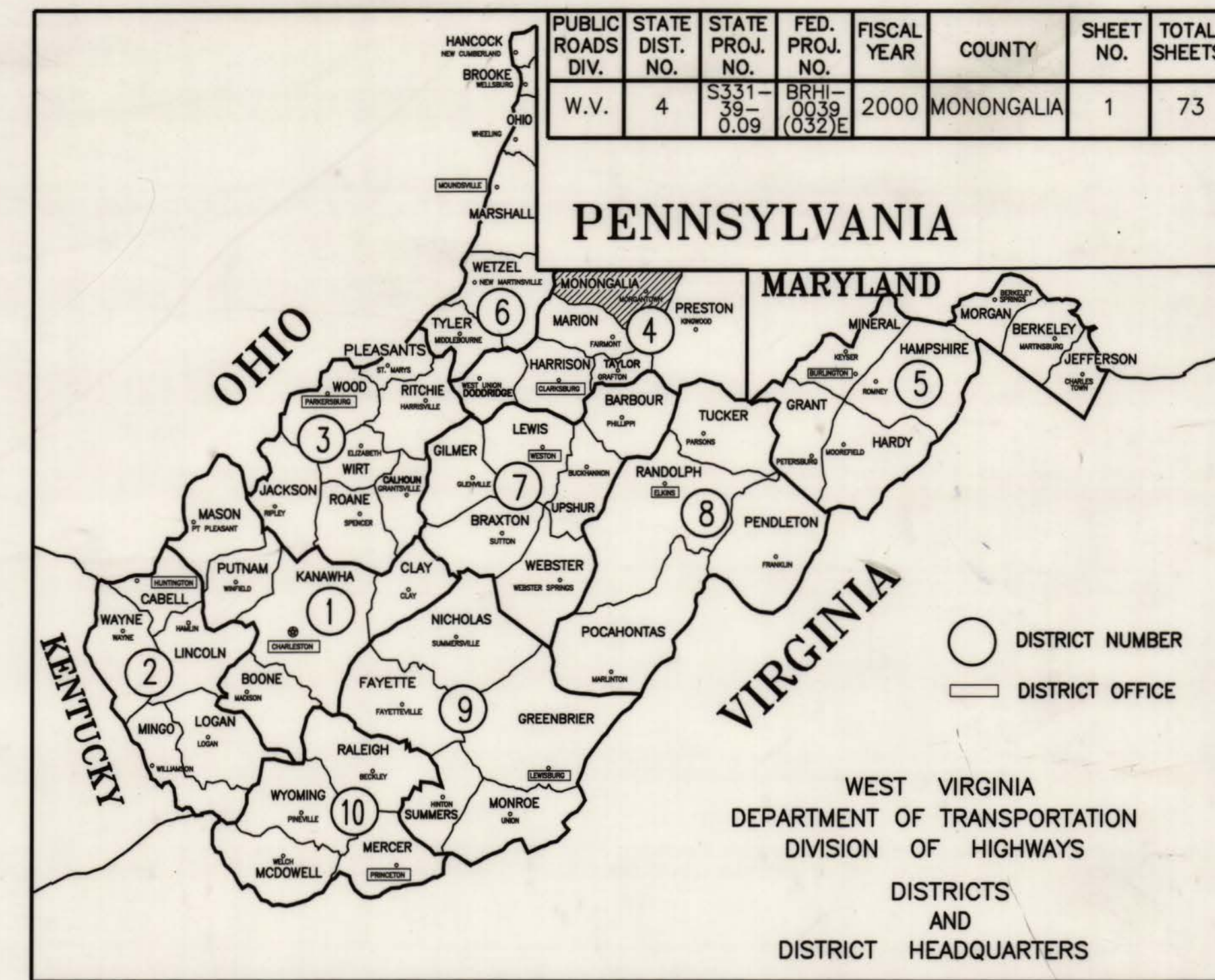


WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

PLANS FOR CONSTRUCTION OF STATE HIGHWAY

FEDERAL PROJECT NO. BRHI-0039(032)E
STATE PROJECT NO. S331-39-0.09
MONONGALIA COUNTY ROUTE 39
CLAY DISTRICT
MONONGALIA COUNTY
WEST BUCKEYE BRIDGE

CR 39 = STA 1+018.000 TO 1+119.750 = 101.750 m (333.83 ft) = 0.102 km (0.06 miles)
BRIDGE = STA 1+119.750 TO 1+162.475 = 42.725 m (140.17 ft) = 0.043 km (0.03 miles)
CR 39 = STA 1+162.475 TO 1+278.226 = 115.751 m (379.76 ft) = 0.116 km (0.07 miles)
TOTAL LENGTH = 260.226 m (853.77 ft) = 0.261 km (0.16 miles)

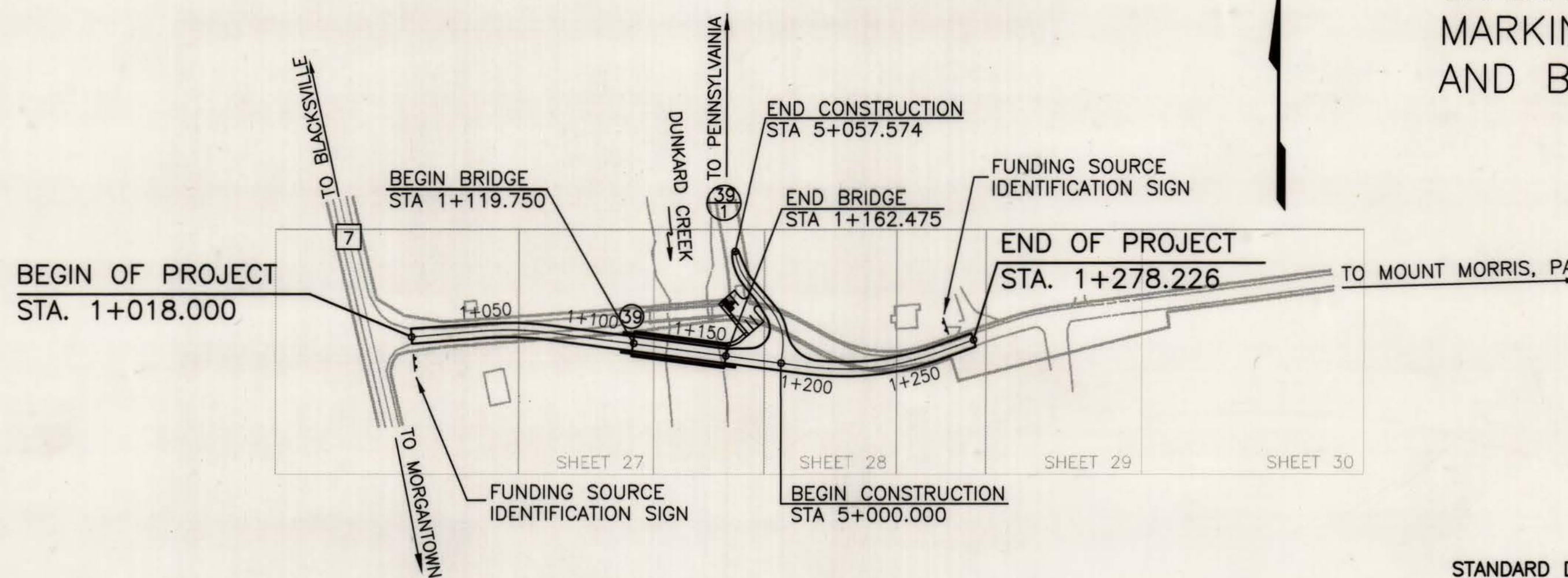


UTILITIES

ALLEGHENY POWER COMPANY
LUMBERPORT-SHINNSTON GAS COMPANY
WEST SIDE TELEPHONE COMPANY
CLAY BATTELLE PUBLIC SERVICE DISTRICT (WATER)

TYPE OF CONSTRUCTION:

GRADING, DRAINAGE, PAVING, SIGNING, PAVEMENT MARKING, LANDSCAPING, WATERLINE RELOCATION, AND BRIDGE NO. 4415

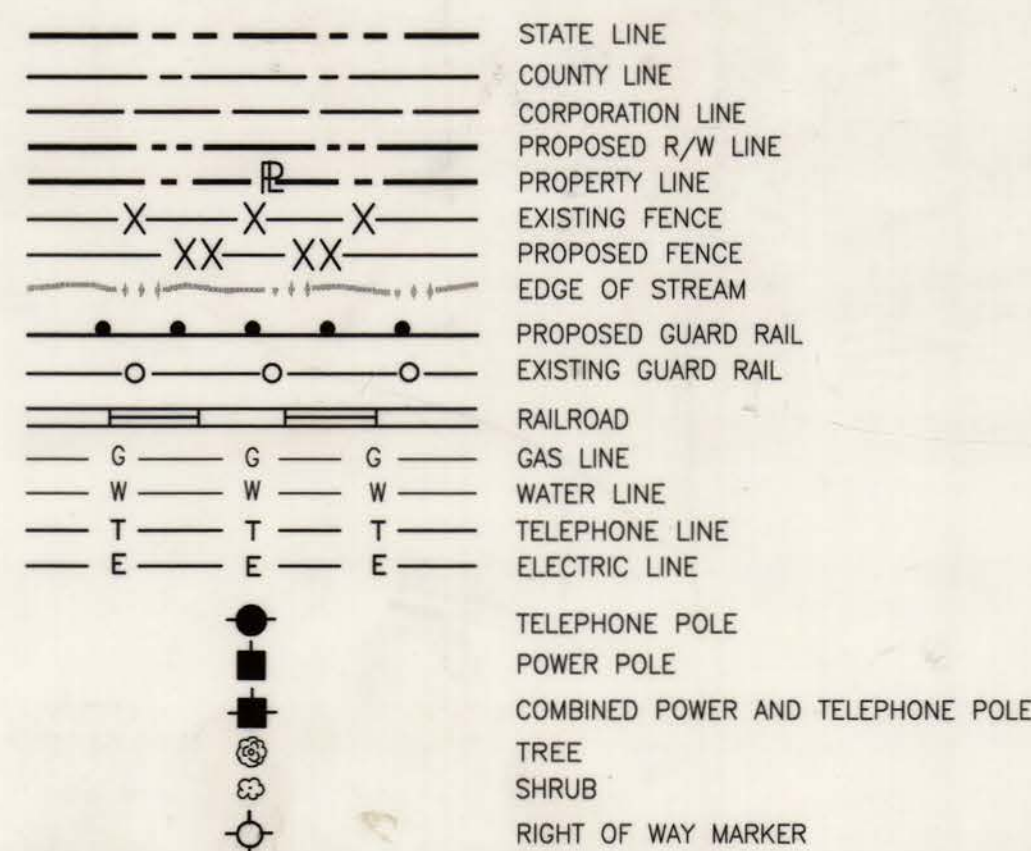


ALPHA ASSOCIATES, INC.
ARCHITECTS ENGINEERS DESIGNERS
209 Prairie Ave., Suite 209
Morgantown, WV 26501 (304) 296-8216

SCALES



CONVENTIONAL SIGNS



LAYOUT SCALE: 1:2000

INDEX TO SHEETS

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1	TITLE SHEET
2-3	TYPICAL SECTIONS
4	GENERAL NOTES AND TRAFFIC SKETCH
5	SUMMARY OF QUANTITIES
6	QUANTITY TABLES
7	GEOMETRIC LAYOUT
8	REFERENCE POINTS
9	SUPERELEVATION TRANSITION DIAGRAM
10	SPECIAL DETAILS
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37	PAVEMENT MARKING PLAN
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39	LANDSCAPING PLAN
40-46	WATERLINE RELOCATION
47-65	BRIDGE PLANS
66-73	CROSS SECTIONS

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

Sept. 6, 2000
I HEREBY CERTIFY THAT THIS IS A CORRECT COPY OF THE
PLANS OF PROJECT S331-39-0.09; BRHI-0039(032)E
Charlotte E. Boyd
EXECUTIVE SECRETARY

STANDARD DETAIL BOOK VOLUME 1 DATED APRIL 1, 1995 AND VOLUME II DATED MARCH 1, 1996 SHALL APPLY TO THIS PROJECT.

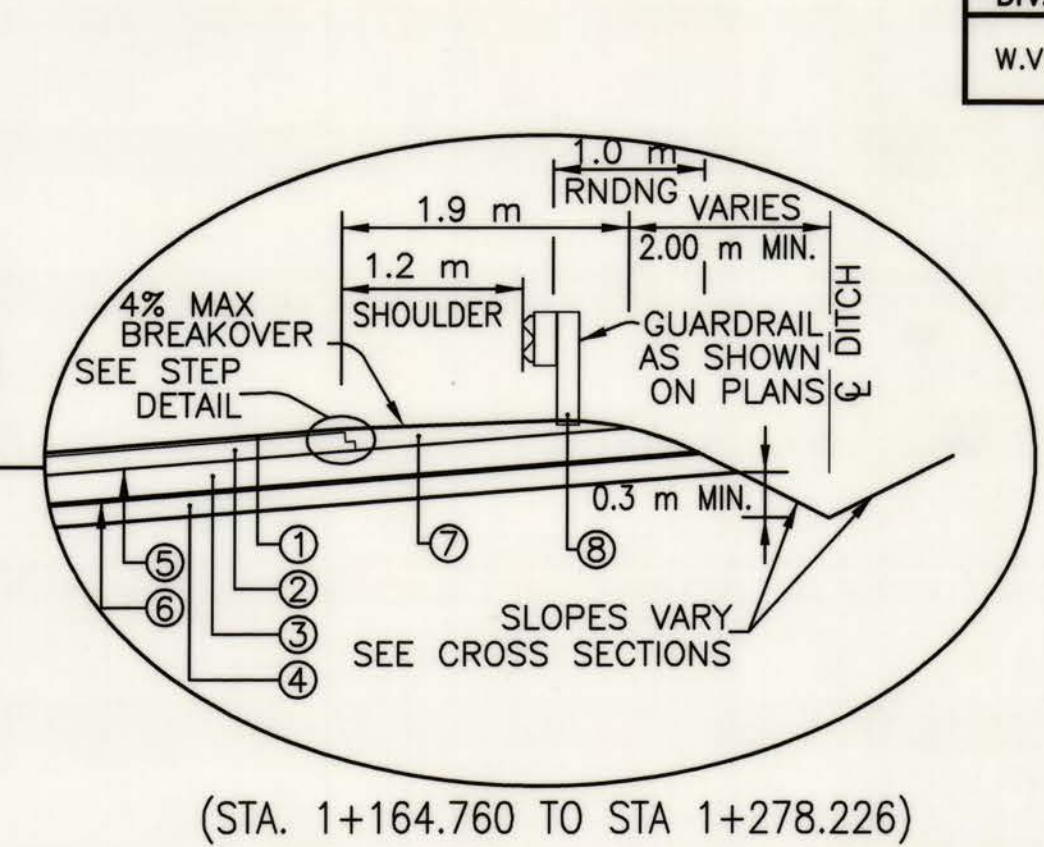
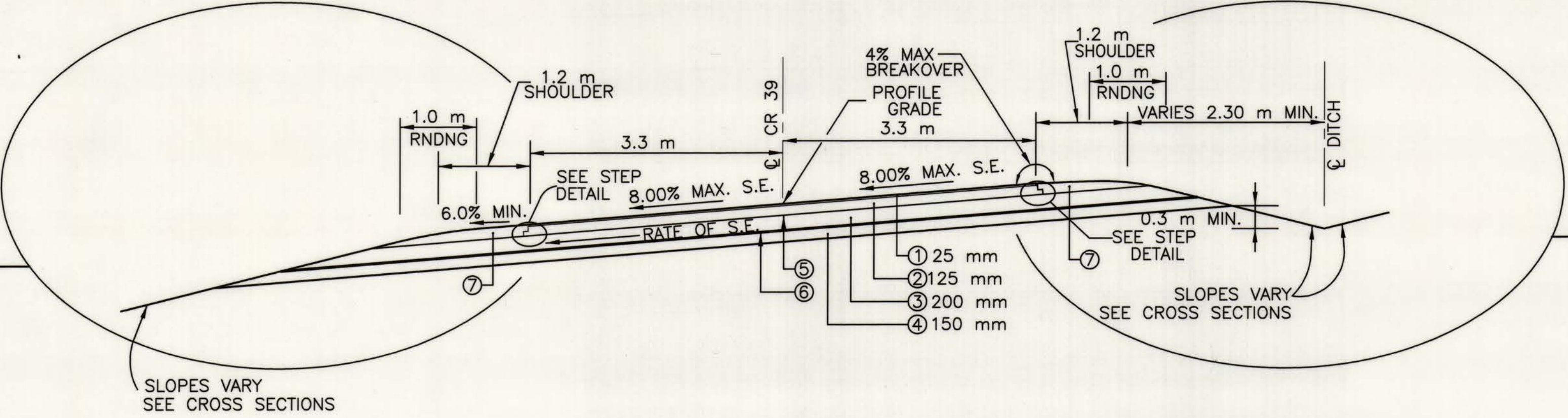
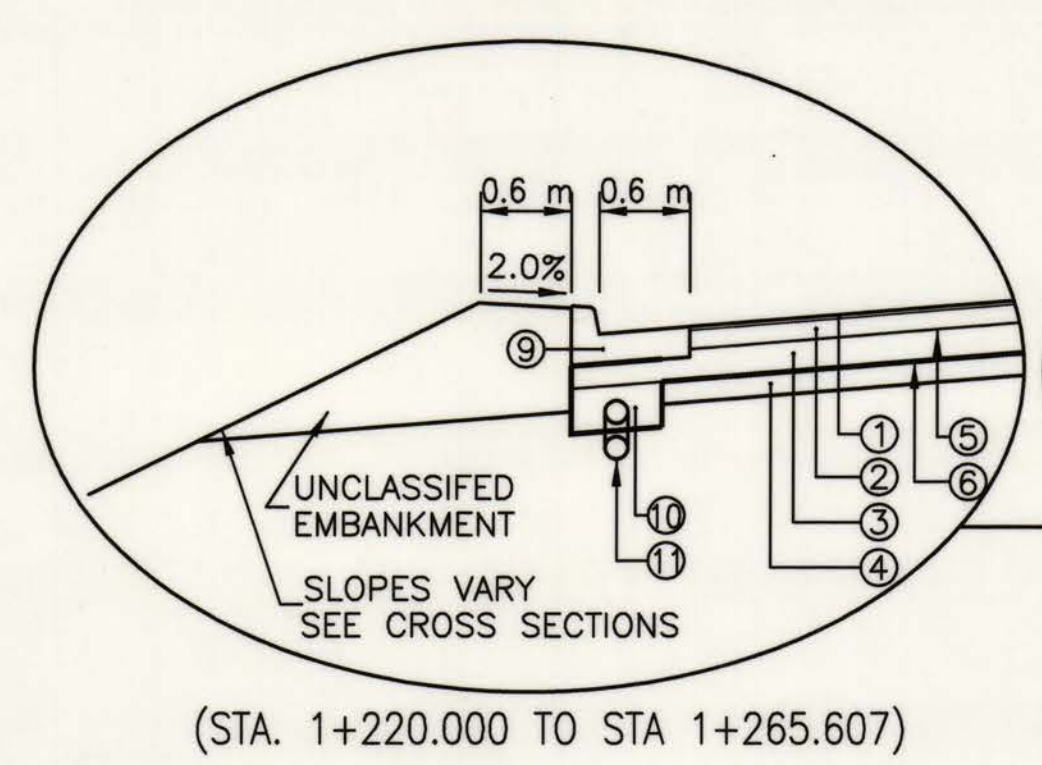


PROJECT NO. S331-39-0.09; BRHI-0039(032)E

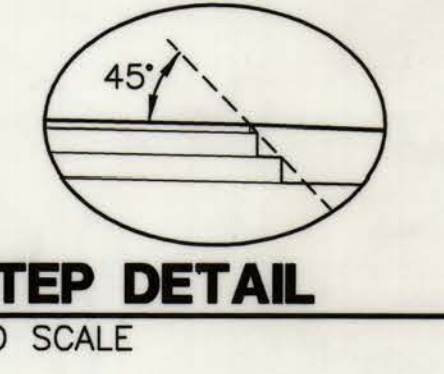
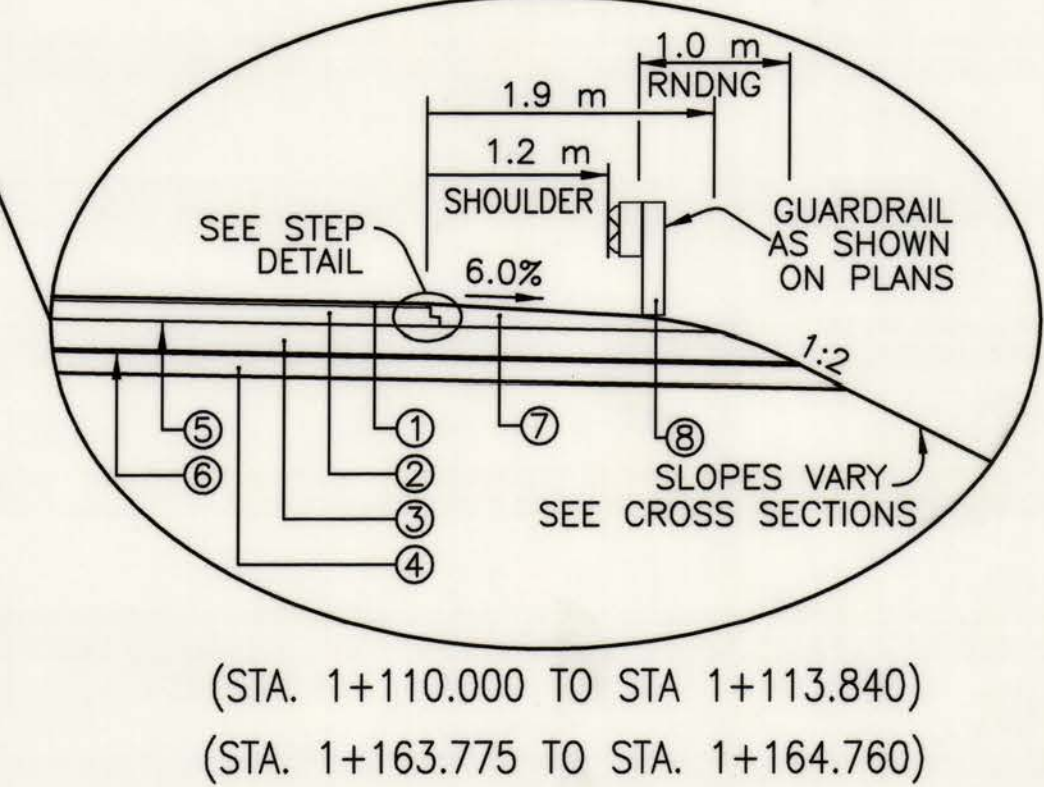
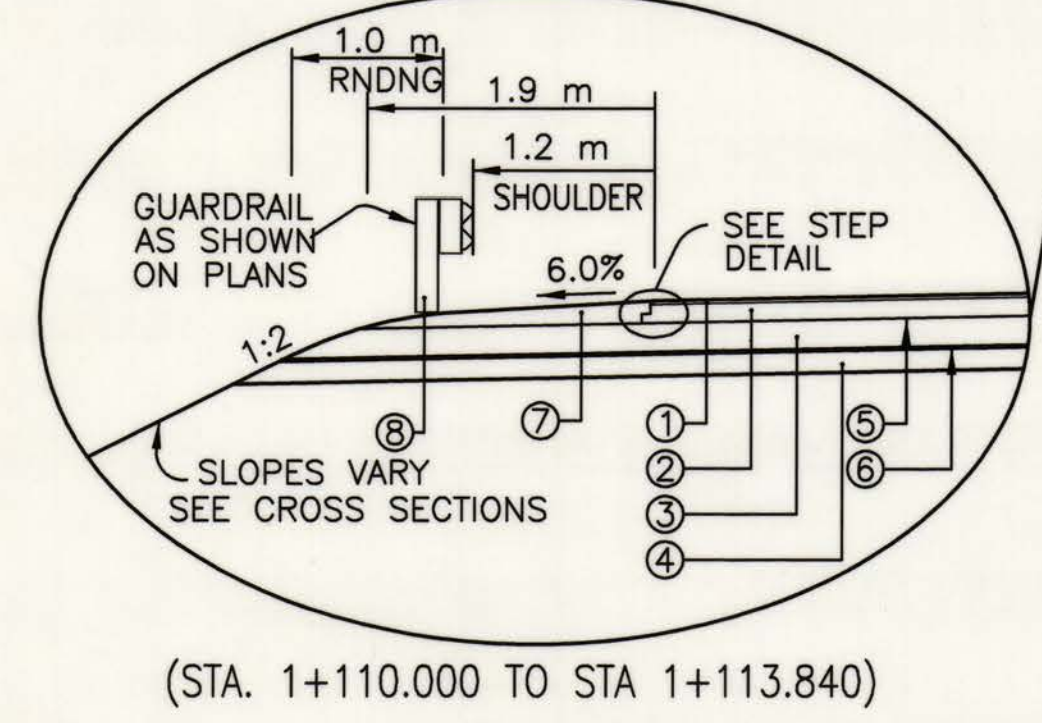
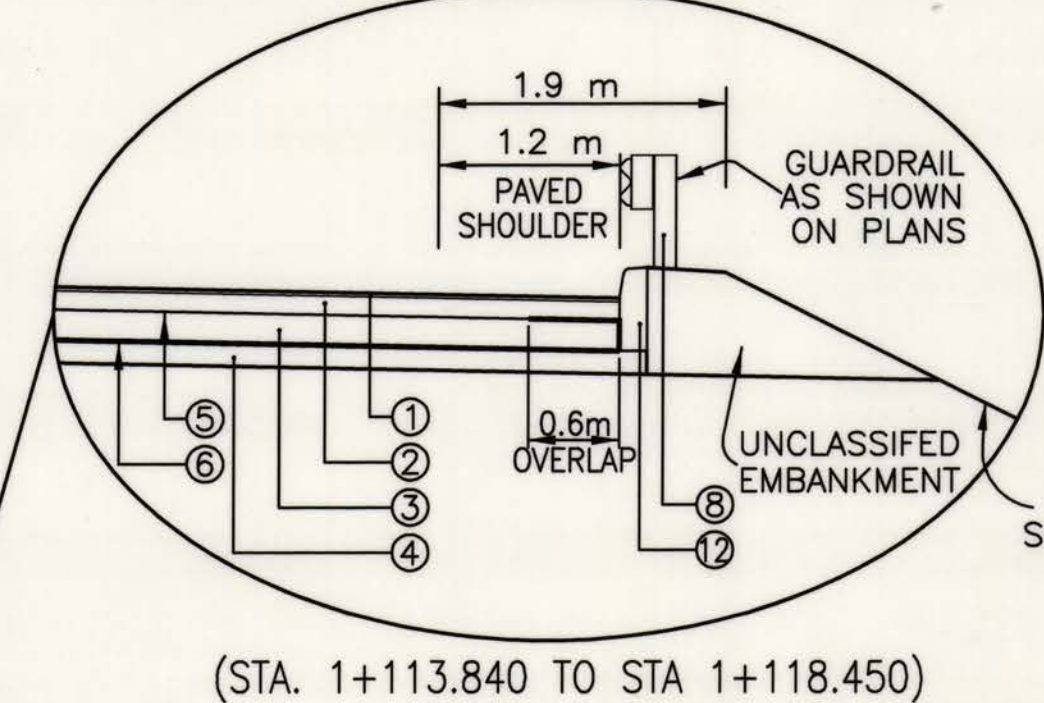
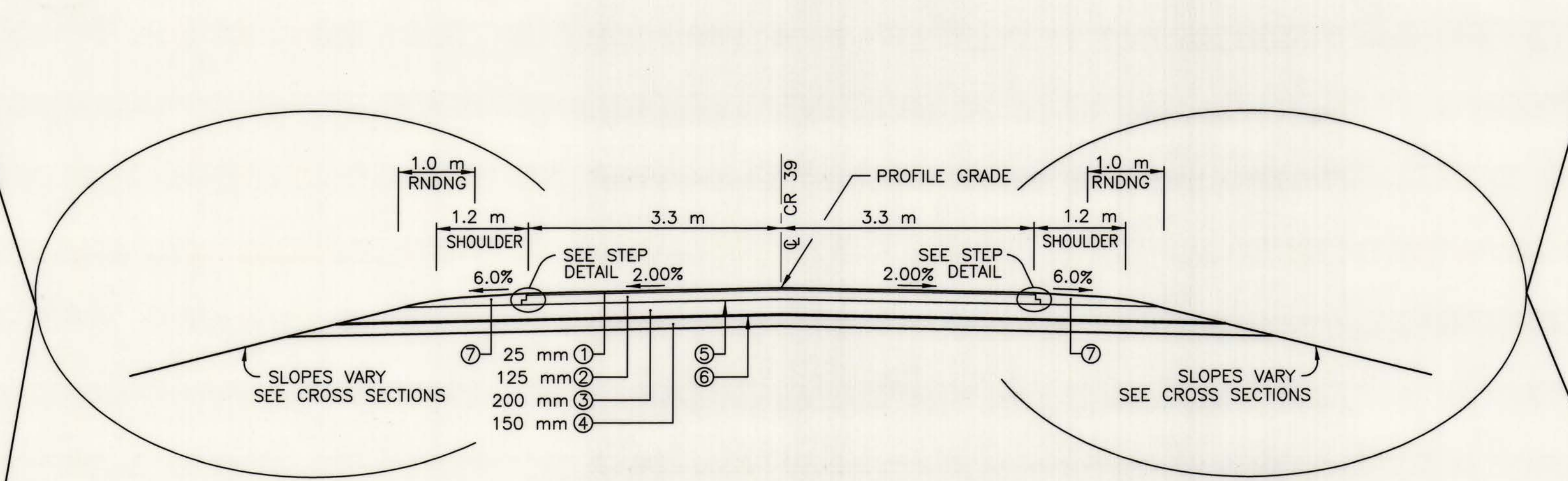
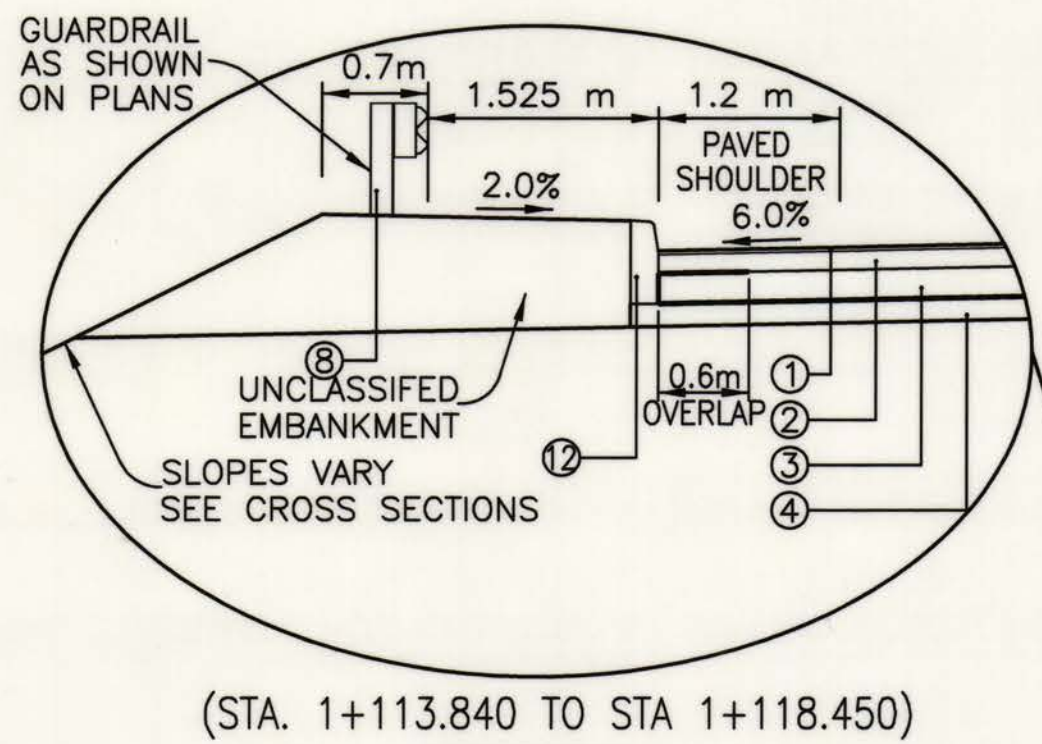
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RECOMMENDED *David E. Chapp* DESIGNER
RECOMMENDED FOR APPROVAL *Samuel N. Beverley* STATE HIGHWAY ENGINEER
APPROVED *Samuel N. Beverley* COMMISSIONER OF HIGHWAYS

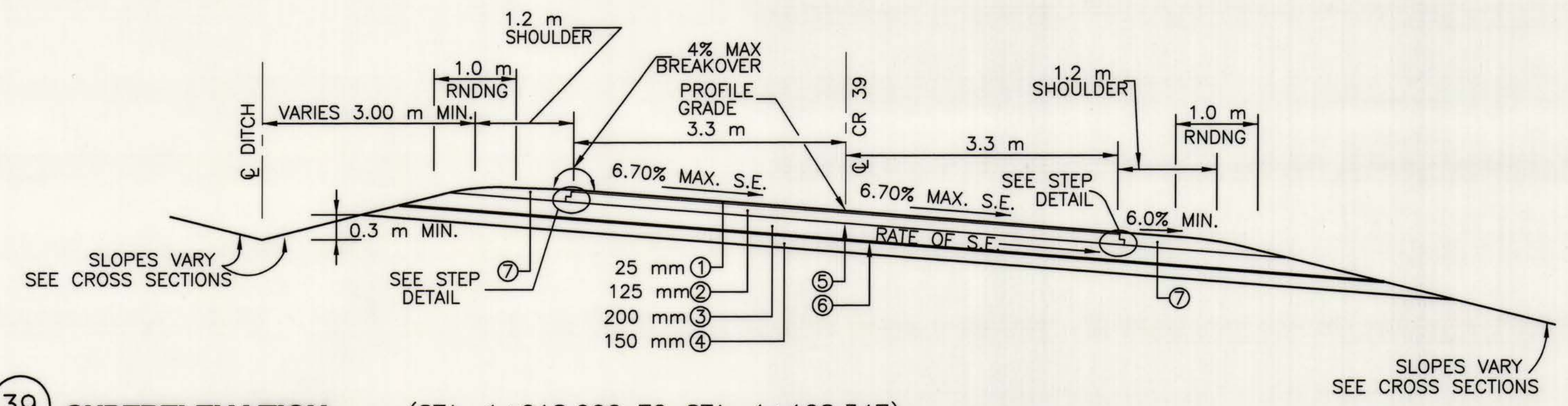
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W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	2	73



TYPICAL SECTION CR 39 SUPERELEVATION (STA. 1+164.760 TO STA. 1+278.226)
SCALE 1:50



TYPICAL SECTION CR 39 NORMAL SECTION (STA. 1+108.347 TO STA. 1+118.450) (STA. 1+163.775 TO STA. 1+164.760)
SCALE 1:50



TYPICAL SECTION CR 39 SUPERELEVATION (STA. 1+018.000 TO STA. 1+108.347)
SCALE 1:50

- LEGEND**
- ① ITEM 401002-001 HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
 - ② ITEM 401001-001 HOT-MIX ASPHALT BASE COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
 - ③ ITEM 307001-000 AGGREGATE BASE COURSE, CLASS I, PER CUBIC METER
 - ④ ITEM 207002-000 SUBGRADE, PER CUBIC METER
 - ⑤ ITEM 409002-001 BITUMINOUS MATERIAL, PER LITER
 - ⑥ ITEM 207034-000 FABRIC FOR SEPARATION, PER SQUARE METER
 - ⑦ ITEM 308001-000** AGGREGATE BASE COURSE, CLASS I, PER MEGAGRAM
 - ⑧ ITEM 607001-001 TYPE I GUARDRAIL, CLASS I, PER METER
 - ⑨ ITEM 610003-001 COMBINATION CURB AND GUTTER, TYPE I, PER METER
 - ⑩ ITEM 606029-001 FREE DRAINING BASE TRENCH, PER METER
 - ⑪ ITEM 606030-001 OUTLET PIPE, PER METER
 - ⑫ ITEM 610001-001 PLAIN CONCRETE CURBING, TYPE I, PER METER

**NOTE: THE GRADATION REQUIREMENTS SHALL BE MODIFIED AS FOLLOWS:
4 TO 12 PERCENT PASSING THE NUMBER 75 MICROMETER SEIVE.

A.A.I. JOB NO. 971281.00

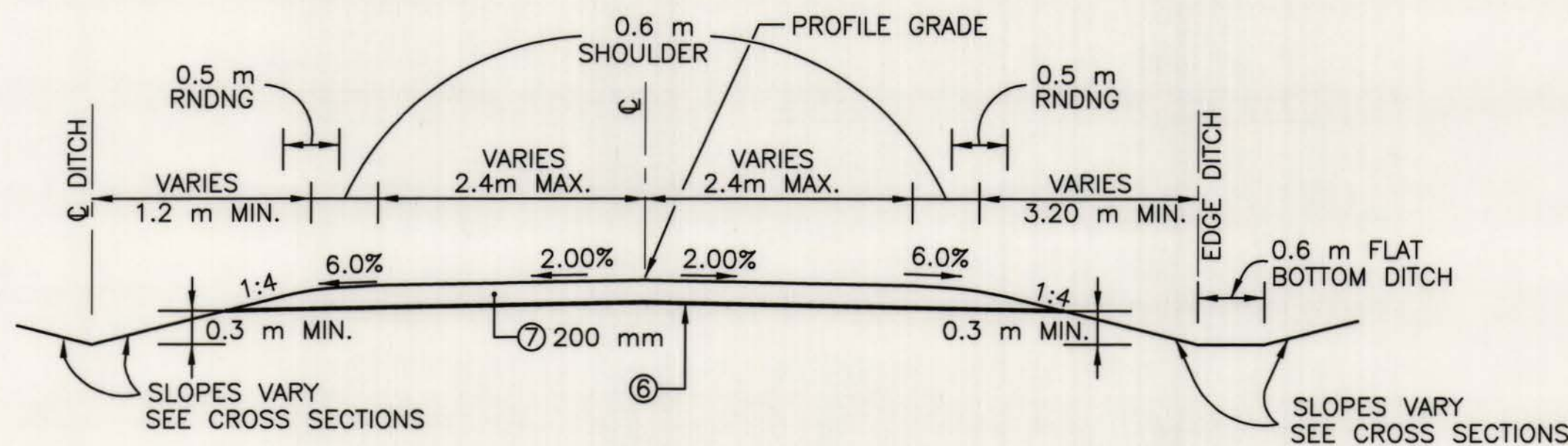
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
TYPICAL SECTIONS

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 2
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:50	

ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
BRIDGE NO. 4415

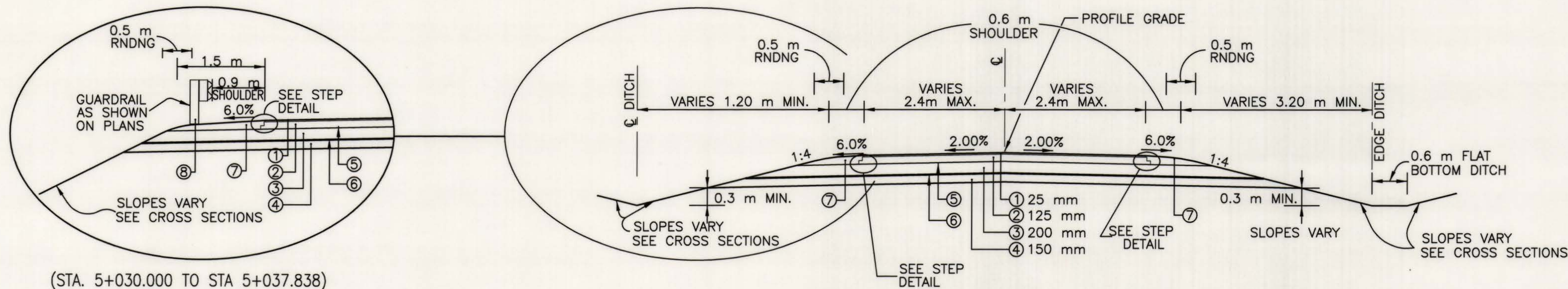
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PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	3	73



TYPICAL SECTION CR 1 (STA. 5+050.000 TO STA. 5+057.574)

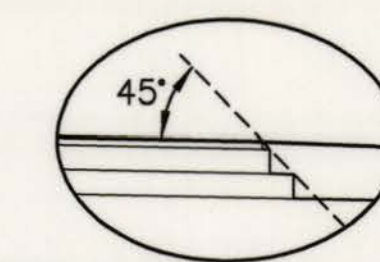
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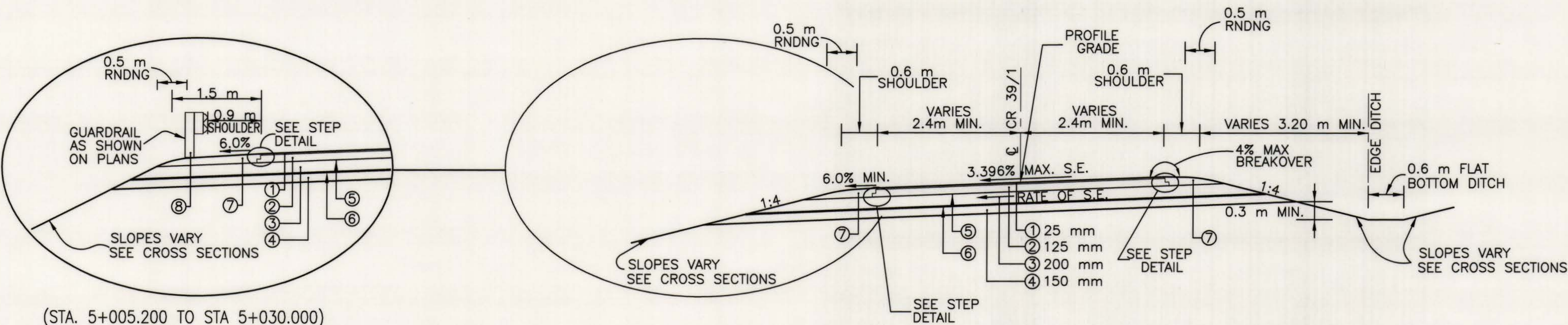
(STA. 5+030.000 TO STA. 5+037.838)

TYPICAL SECTION CR 1 (STA. 5+030.000 TO STA. 5+050.000)

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STEP DETAIL
NO SCALE



(STA. 5+005.200 TO STA. 5+030.000)

TYPICAL SECTION CR 1 SUPERELEVATION (STA. 5+003.300 TO STA. 5+030.000)

SCALE 1:50

- LEGEND**
- ① ITEM 401002-001 HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
 - ② ITEM 401001-001 HOT-MIX ASPHALT BASE COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
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 - ⑫ ITEM 610001-001 PLAIN CONCRETE CURBING, TYPE I, PER METER

**NOTE: THE GRADATION REQUIREMENTS SHALL BE MODIFIED AS FOLLOWS:
4 TO 12 PERCENT PASSING THE NUMBER 75 MICROMETER SEIVE.

A.A.I. JOB NO. 971281.00

**THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
TYPICAL SECTIONS**

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 3
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:50	

ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
BRIDGE NO. 4415

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	4	73

GENERAL NOTES

GOVERNING SPECIFICATIONS
 THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS ROADS AND BRIDGES, ADOPTED 2000 AND THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS SUPPLEMENTAL SPECIFICATION DATED JULY 1, 2000. THE CONTRACT DOCUMENTS AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

UTILITIES
 THE LOCATIONS OF ALL KNOWN UTILITIES ARE SHOWN ON THE CONTRACT PLANS BASED ON THE BEST AVAILABLE INFORMATION FROM EXISTING PLANS AND FIELD INFORMATION. IT IS THE CONTRACTORS RESPONSIBILITY TO ASCERTAIN THE STATUS AND LOCATION OF EACH UTILITY WHEN PERFORMING WORK WHICH MAY AFFECT THESE FACILITIES, INCLUDING PROBING, EXCAVATION OR ANY OTHER PRECAUTION REQUIRED TO CONFIRM LOCATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR DISRUPTION TO UTILITY LINES WHICH ARE KNOWN ACTIVE AND ARE TO REMAIN IN OPERATION.

WORKING HOURS
 NO WORK SHALL BE PERMITTED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM, LOCAL PREVAILING TIME.

REMOVAL OF PAVEMENT AS INDICATED IN THE CROSS SECTIONS
 REMOVAL OF PAVEMENT IS INCLUDED IN ITEM 207001-001 "UNCLASSIFIED EXCAVATION" AS UNSUITABLE EXCAVATION. PAVEMENT IS TO BE REMOVED TO A DEPTH OF 0.3 METERS BELOW THE EXISTING GRADE.

GEOTECHNICAL INFORMATION
 ADDITIONAL GEOTECHNICAL INFORMATION MAY BE AVAILABLE IN THE FORM OF REPORTS OF GEOLOGICAL AND SUBSURFACE INVESTIGATIONS. ANY INQUIRIES SHOULD BE DIRECTED TO:

JAMES E. SOTHEN, P.E., DIRECTOR
 ENGINEERING DIVISION
 WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 BUILDING 5, ROOM 317
 1900 KANAWHA BOULEVARD EAST
 CHARLESTON, WV 25305-0430

TEMPORARY BENCH MARKS
 THE CONTRACTOR SHALL HOLD BENCH MARK LOCATIONS THROUGHOUT THE LIFE OF THE PROJECT. IN THE EVENT THAT A BENCH MARK IS DISTURBED, THE CONTRACTOR, AS DIRECTED BY THE PROJECT ENGINEER, WILL RELOCATE OR REESTABLISH THE BENCH MARK. NO ADDITIONAL PAYMENT OR COMPENSATION WILL BE MADE FOR THIS WORK.

REMOVAL OF DRAINAGE STRUCTURES
 ANY EXISTING DRAINAGE STRUCTURES, HEADWALLS, AND PIPES TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST OF REMOVAL OF EXISTING PIPES, INLETS, AND HEADWALLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 201001-000 "CLEARING AND GRUBBING," AND SHALL INCLUDE REMOVAL, DISPOSAL, AND BACKFILL WITH SUITABLE MATERIAL. NO ADDITIONAL PAYMENT OR MEASUREMENT WILL BE MADE FOR THIS WORK.

ACCESS
 ACCESS TO ALL RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.

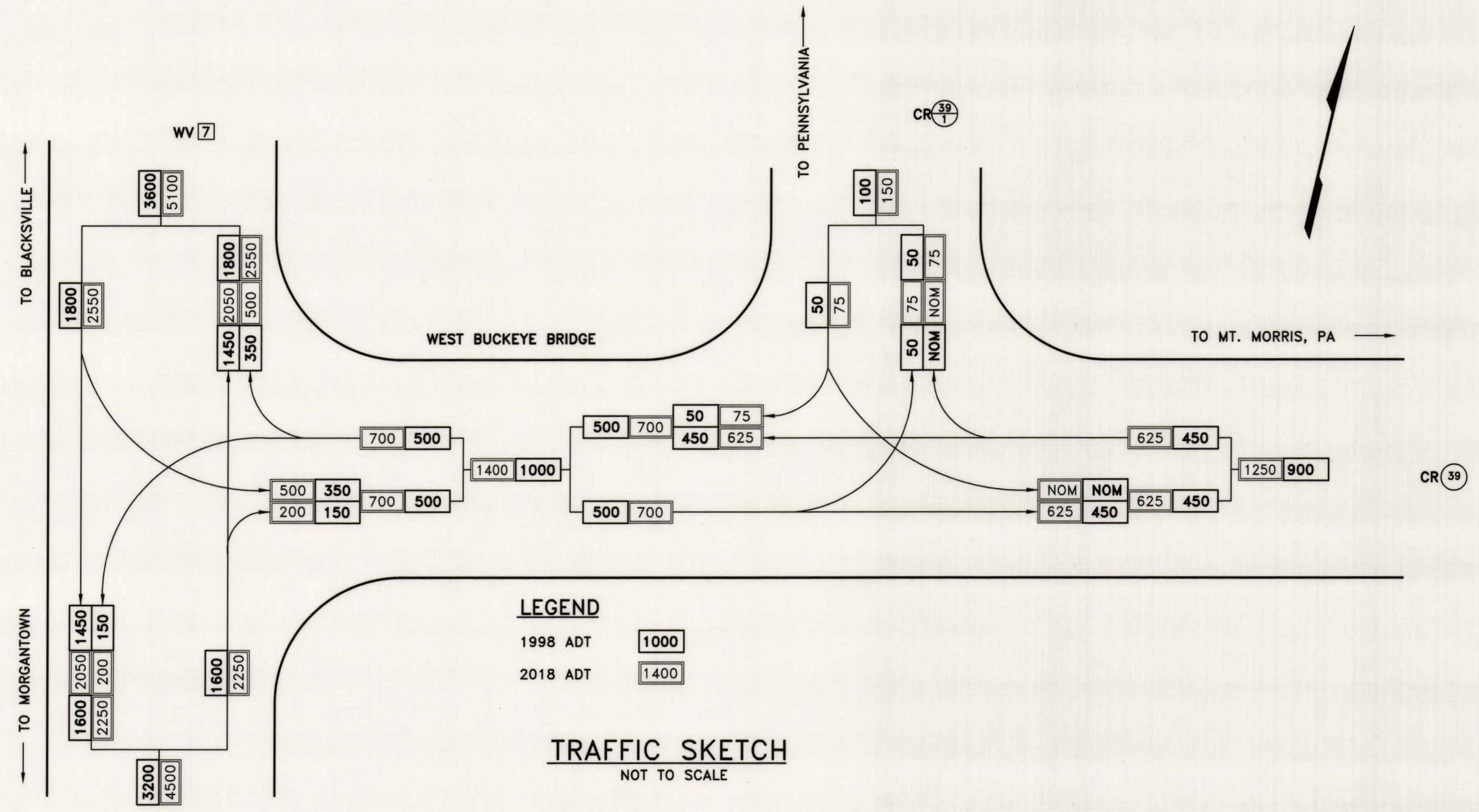
VERIFICATION OF DIMENSIONS
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL PLAN AND ELEVATION DIMENSIONS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION OF THE VARIOUS BID ITEMS ON THIS PROJECT.

SCARIFYING EXISTING PAVEMENT
 WHERE SCARIFYING OF EXISTING PAVEMENT IS NOTED, THE PAVEMENT SHALL BE SCARIFIED AND REMOVED. THE AREA SO WORKED SHALL BE SEEDED AND MULCHED.

PARKING LOT PAVEMENT THICKNESS
 THE PAVEMENT THICKNESS FOR THE PARKING LOT SHALL BE THE SAME AS THE ROADWAY PAVEMENT THICKNESS.

TYPE I CURB
 THE CURB HEIGHT FOR THE TYPE I CURB ASSOCIATED WITH THE PARKING LOT SHALL BE MODIFIED ACCORDING TO THE ELEVATIONS GIVEN ON THE PARKING LOT GRADING PLAN.

NOTICE TO CONTRACTORS
 THIS IS AN INNOVATIVE PROJECT. THEREFORE A MONTHLY MEETING ON SITE WILL BE HELD IN ORDER FOR THE PROJECT TO STAY ON TRACK AND TO ENSURE THAT ALL PROBLEMS ARE ADDRESSED AS THEY ARISE. THE PARTIES THAT WILL BE REPRESENTED ARE: ENGINEERING DIVISION, CONTRACT ADMINISTRATION, FHWA, DISTRICT 4 CONSTRUCTION, CONTRACTOR, SUBCONTRACTORS, WEST VIRGINIA UNIVERSITY/DEPARTMENT OF CIVIL ENGINEERING, AND ALPHA ASSOCIATES, INC. THE MEETINGS WILL BE SCHEDULED AT LEAST TWO WEEKS IN ADVANCE AND COULD BE CANCELLED FOR PARTICULAR MONTHS AT THE DESCRETION OF THE PROJECT ENGINEER OR ENGINEERING DIVISION/CONTRACT ADMINISTRATION.



A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
GENERAL NOTES AND TRAFFIC SKETCH

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 4
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: AS NOTED	

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

SUMMARY OF ESTIMATED QUANTITIES				
ITEM NO.	PRINCIPAL OR ALT.	ITEM DESCRIPTION	UNIT	QUANTITY
ROADWAY ITEMS				
201001-000		CLEARING AND GRUBBING	L.S.	1
204001-000		MOBILIZATION	L.S.	1
207001-001		UNCLASSIFIED EXCAVATION	M3	2424
207002-000		SUBGRADE	M3	478
207034-000		FABRIC FOR SEPARATION	M2	3186
211001-000		UNCLASSIFIED BORROW EXCAVATION	M3	2723
211002-000		ROCK BORROW EXCAVATION	M3	2452
240001-000		CLEAN CULVERT	M	18
307001-000		AGGREGATE BASE COURSE, CLASS I	M3	1240
308001-000		AGGREGATE BASE COURSE, CLASS I	MGR	238
408002-001		BITUMINOUS MATERIAL	L	357
409002-001		BITUMINOUS MATERIAL	L	8654
502001-012		300 MM PORTLAND CEMENT CONCRETE APPROACH SLAB	M2	108
601002-001		CLASS B CONCRETE	M3	1
605004-001		TYPE B INLET	EA	2
605009-001		TYPE G INLET	EA	1
606029-001		FREE DRAINING BASE TRENCH	M	14
606030-004		OUTLET PIPE	M	13
607001-001		TYPE 1 GUARDRAIL, CLASS I	M	100
607006-001		THREE BEAM GUARDRAIL BRIDGE TRANSITION	EA	3
607010-020		GUARDRAIL REMOVAL	M	57
607065-001		FLARED END TERMINAL	EA	3
609001-001		CONCRETE SIDEWALK	M2	75
609002-001		BED COURSE MATERIAL	M3	8
610001-001		PLAIN CONCRETE CURBING, TYPE I	M	62
610003-001		COMBINATION CONCRETE CURB AND GUTTER, TYPE I	M	46
617003-001		ALUMINUM RAILING	M	58
633003-001		DUMPED ROCK GUTTER	M3	89
636009-001		TEMPORARY PAVEMENT MARKING-PAINT 4 IN SOLID LINE	M	800
636011-001		TRAFFIC CONTROL DEVICE	UN	9190
636012-010		PROJECT TRAFFIC CONTROL DEVICE CLEANING	EA	3
636013-001		INDIVIDUAL TRAFFIC CONTROL DEVICE CLEANING	EA	150
636014-001		FLAGGER	HR	400
636017-001		TEMPORARY CONCRETE BARRIER	M	50
636023-001		TEMPORARY TRAFFIC SIGNAL	LS	1
636025-001		WARNING LIGHTS, TYPE B	DA	1060
638002-001		RIGHT OF WAY MARKER	EA	19
639001-001		CONSTRUCTION LAYOUT STAKE	L.S.	1
640003-001		BUILDING EQUIPMENT	L.S.	1
640006-001		SMALL FIELD OFFICE AND STORAGE BUILDING	MO	10

SUMMARY OF ESTIMATED QUANTITIES				
ITEM NO.	PRINCIPAL OR ALT.	ITEM DESCRIPTION	UNIT	QUANTITY
642014-001		TEMPORARY POLLUTION CONTROL BRIDGE PROJECT	L.S.	1
642033-001		SEDIMENT TRAP	M3	10
652001-001		AGRICULTURAL LIMESTONE	MGR	1
652002-001		FERTILIZER, 10-20-10	MGR	0.2
652002-002		FERTILIZER, UREA FORMALDEHYDE	MGR	0.1
652003-001		SEED MIXTURES, B, C-1, OR C-2	KG	16
652003-002		SEED MIXTURE, D	KG	11
652004-001		STRAW OR HAY MULCH	MGR	1
655002-001		PERMANENT EROSION MATTING, TYPE B	M2	139
664001-008		IMPACT ATTENUATING DEVICE, TYPE IV	EA	2
401001-001	AA1	HOT-MIX ASPHALT BASE COURSE, STONE OR GRAVEL, TYPE I	MGR	570
401001-002	AA2	HOT-MIX ASPHALT BASE COURSE, SLAG, TYPE I	MGR	542
401002-001	BB1	HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE I	MGR	201
401002-002	BB2	HOT-MIX ASPHALT WEARING COURSE, SLAG, TYPE I	MGR	191
604076-016	CC1	450 MM ALUMINUM COATED CORRUGATED STEEL PIPE, A2	M	34
604025-016	CC2	450 MM CORRUGATED ALUMINUM ALLOY PIPE, A2	M	34
604037-016	CC3	450 MM REINFORCED CONCRETE PIPE, CLASS III	M	34
636002-001	DD1	AGGREGATE FOR MAINTAINING TRAFFIC, STONE OR GRAVEL	MGR	80
636002-002	DD2	AGGREGATE FOR MAINTAINING TRAFFIC, SLAG	MGR	73
SIGNING ITEMS				
657008-001		2.98 KG CHANNEL POST	M	12
661001-001		2 MM FLAT SHEET SIGN	M2	1
PAVEMENT MARKING ITEMS				
663001-004		EDGE LINE, TYPE II, WHITE	M	774
663003-005		BARRIER LINE, TYPE II	M	574
663005-010		STOP LINE, TYPE V (600 MM)	M	12
LANDSCAPING ITEMS				
654001-001		TREE, DECIDUOUS, ACER SACCHARUM	EA	4
654005-001		TREE, EVERGREEN, TSUGA CANADENSIS	EA	7
ON THE JOB TRAINING				
699000-001		ON JOB TRAINING	HR	1000

SUMMARY OF ESTIMATED QUANTITIES				
ITEM NO.	PRINCIPAL OR ALT.	ITEM DESCRIPTION	UNIT	QUANTITY
BRIDGE NO. 4415				
203001-000		DISMANTLING STRUCTURE	L.S.	1
212001-000		STRUCTURE EXCAVATION	M3	611
212005-000		SELECT MATERIAL FOR BACKFILLING	M3	28
601002-001		CLASS B CONCRETE	M3	592
602001-001		REINFORCING STEEL BARS	KG	47 753
602002-001		EPOXY COATED REINFORCING STEEL BAR	KG	8838
615001-001		STEEL SUPERSTRUCTURE	L.S.	1
616004-006		HP310X79 STEEL BEARING PILE, DRIVEN	M	222
613001-001		FRP COMPOSITE DECK, KANSAS STR. COMP., INC.	M2	498
622032-000		STRUCTURAL GLUE LAMINATED TIMBER, ARCH	L.S.	1
622002-001		TREATED LUMBER AND TIMBER	M3	15
639001-001		CONSTRUCTION LAYOUT STAKE	L.S.	1
643001-001		PROGRESS PHOTOGRAPHS	EA	60
643002-001		ADDITIONAL PHOTOGRAPHS, PER PHOTOGRAPHIC FIELD TRIP	EA	10

SUMMARY OF ESTIMATED QUANTITIES				
ITEM NO.	PRINCIPAL OR ALT.	ITEM DESCRIPTION	UNIT	QUANTITY
WATER LINE RELOCATION ITEMS				
639001-001		CONSTRUCTION LAYOUT STAKE	L.S.	1
670004-242		250 MM DUCTILE IRON PIPE, TYPE II, CLASS 50	M	24
670004-245		250 MM DUCTILE IRON PIPE, TYPE V, CLASS 54	M	28
670007-024		250 MM PLASTIC PIPE, CLASS 200	M	245
670009-240		250 MM GATE VALVE AND VALVE BOX	EA	4
670010-120		50 MM STEEL CASING PIPE, 4.76 MM	M	14
670021-060		25 MM HOUSE CONNECTION	M	20
COMPUTER SYSTEM				
640004-001		COMPUTER SYSTEM FOR FIELD OFFICE	L.S.	1

A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
SUMMARY OF QUANTITIES

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO.
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	5R
ALPHA ASSOCIATES, INCORPORATED					BRIDGE NO.
CONSULTING ENGINEERS					4415

GRADING SUMMARY										
LOCATION	(1) TOTAL UNCLASS. EXCAVATION ITEM 207001-001	(2) UNSUITABLE EXCAVATION	(3) USABLE EXCAVATION	(4) SHRINK OR SWELL FACTOR	(5) ADJUSTED EXCAVATION	(6) UNCLASSIFIED EMBANKMENT	(7) SELECT EMBANKMENT	(8) TOTAL EMBANKMENT	(9) EXCESS (+) OR BORROW (-)	REMARKS
STATION TO STATION	M3	M3	M3		M3	M3	M3	M3	M3	
CR 39										
1+012.668 1+118.450	1512.821	173.384	1339.437	0.85	1138.521	228.932	1044.357	1273.289	-134.768	
BRIDGE										
1+118.450 1+163.775	---	---	---	---	---	---	347.000	347.000	-347.000	SLOPE PROTECTION
1+163.775 1+302.188	536.885	175.432	361.453	0.85	307.235	2421.004	1048.586	3469.590	-3162.355	
CR 39/1										
5+003.300 5+054.574	374.791	84.108	290.683	0.85	247.081	1493.826	379.483	1873.309	-1626.228	
TOTALS	2424	432.924	1991.573	---	1692.837	4143.762	2819.426	6963.188	-5270.351	

PAVING QUANTITIES													
STATION	STATION	ITEM 401002-001 PRIN. HMA WEARING CRSE, ST/GR, TYPE I MGR	ITEM 401002-002 ALT. HMA WEARING CRSE, SLAG, TYPE I MGR	ITEM 401001-001 PRIN. HMA BASE CRSE, ST/GR, TYPE I MGR	ITEM 401001-002 ALT. HMA BASE CRSE, SLAG, TYPE I MGR	ITEM 408002-001 BIT MATL L	ITEM 409002-001 BIT MATL L	ITEM 307001-000 AGG BASE COURSE, CLASS I M3	ITEM 308001-000 AGG BASE COURSE, CLASS I MGR	ITEM 207002-000 SUBGRADE M3	ITEM 207034-000 FABRIC FOR SEPARATION M2	ITEM 502001-012 500MM PORTLAND CEMENT CONCRETE APPROACH SLAB M2	REMARKS
CR 39													
1+018.000 1+114.750		37.100	35.245	186.904	177.559	0	3354.495	486.555	100.814	185.263	1235.087	54.0	
BRIDGE													
1+118.450 1+163.775		76.474	72.650	---	---	---	---	---	---	---	---	---	BRIDGE OVERLAY
1+167.475 1+278.226		42.459	40.336	213.903	203.208	90.000	2898.552	428.675	69.226	160.082	1067.213	54.0	
1+278.226 1+302.188		11.383	10.814	---	---	266.545	---	---	---	---	---	---	
CR 39/1													
5+003.300 5+057.574		33.937	32.240	169.688	161.204	0	2401.288	324.739	67.730	132.619	884.127	---	
TOTALS		201	191	570	542	357	8654	1240	238	478	3186	108	

* INCLUDES BRIDGE OVERLAY

BORROW COMPUTATIONS	
SELECT EMBANKMENT REQUIRED =	2819.426
SELECT EMBANKMENT NEEDED =	2819.426
ROCK BORROW EXCAVATION REQUIRED TO MEET SELECT EMBANKMENT REQUIREMENTS WITH 15% SWELL FACTOR: ITEM 211002-000, ROCK BORROW EXCAVATION =	2452
1.15	
UNCLASSIFIED EMBANKMENT REQUIRED =	4143.762
ADJUSTED EXCAVATION =	1692.837
EMBANKMENT NEEDED =	2450.925
EXCAVATION REQUIRED TO MEET EMBANKMENT REQUIREMENTS WITH 10% SHRINK FACTOR: ITEM 211001-000, UNCLASSIFIED BORROW EXCAVATION =	2723
0.90	

WALKWAY RAILING				
LOCATION	ALUMINUM RAILING ITEM 617003-001	REMARKS		
STATION	STATION			
		LENGTH		
		LEFT		
		RIGHT		
CR 39				
5+004.600 5+022.908	9.1			
5+005.941 5+019.779	11.3			
5+019.779 5+041.744	19.5			
5+022.908 5+042.318	17.9			
SUB-TOTAL	57.8			
TOTAL	58			

DUMPED ROCK GUTTER							
LOCATION		DUMPED ROCK GUTTER ITEM, 633003-001					
STA.	STA.	LENGTH	DEPTH	BOTTOM WIDTH	THICKNESS	VOLUME	REMARKS
BEGIN	END	LEFT	RIGHT	M	M	M3	
CR 39							
1+110.455 1+112.455		2.0	0.5	0.6	0.3	1.2	
1+160.548 1+278.226		125.0	0.5	0.0	0.3	85.3	
CR 39/1							
5+053.176 5+054.318		5.5	0.5	0.6	0.3	2.5	
SUB-TOTAL		5.5	127.0			89.0	
TOTAL		133.5				89	

* FOR INFORMATION ONLY

PIPE CULVERTS																
LOCATION		SKEW OR OFFSET	450 MM ALUMINUM COATED CORRUGATED STEEL PIPE, A2 ITEM 604076-016			ALTERNATE - 450 MM CORRUGATED ALUMINUM ALLOY PIPE, A2 ITEM 604025-016			ALTERNATE - 450 MM REINFORCED CONCRETE PIPE, CLASS III ITEM 604037-016			TYPE B INLET ITEM 605004-001	TYPE G INLET ITEM 605009-001	PIPE CULVERT WINGWALL * EA	CLASS B CONCRETE ITEM 601002-001 M3	STEEL REINFORCING * KG
STA.	STA.		DIA. (mm)	THICK. (mm)	LENGTH (m)	DIA. (mm)	THICK.	LENGTH (m)	DIA. (mm)	THICK.	LENGTH (m)	EA	EA	EA	M3	KG
CR 39																
1+111.455 1+111.455		90'	450	1.626	16	450	1.626	16	450	76.2	16	2	---	1	0.52	19.0
CR 39/1																
5+050.000 5+047.687		100'	450	1.626	18	450	1.626	18	450	76.2	18	---	1	1	0.52	19.0
TOTALS					34			34			34	2	1	2	1	38

PERMANENT POLLUTION CONTROL									
LOCATION		SEDIMENT TRAP ITEM 642003-001 MGR	AGRICULTURAL LIMESTONE ITEM 652001-001 MGR	FERTILIZER, 10-20-10 ITEM 652002-001 MGR	FERTILIZER, UREA FORMALDEHYDE ITEM 652002-002 MGR	SEED MIXTURES, B, C-1, OR C-2 ITEM 652003-001 KG	SEED MIXTURE, D ITEM 652003-002 KG	STRAW OR HAY MULCH ITEM 652004-001 MGR	REMARKS
CR 39									
1+018.000 1+302.188		10	1.0	0.2	0.1	16.1	11.3	1.4	
TOTALS		10	1	0.2	0.1	16	11	1	

PERMANENT EROSION MATTING						
LOCATION		PERMANENT EROSION MATTING TYPE B, ITEM 655002-001				
STA.	STA.	LENGTH	TOP WIDTH	BOTTOM WIDTH	AREA	REMARKS
BEGIN	END	LEFT	RIGHT	M	M	M2
CR 39						
1+278.226 1+302.188		23.0	1.05	0.0	24.2	
CR 39/1						
5+012.509 5+049.233		41.2	2.4	0.6	100.0	
5+040.517 5+050.794		15.0	1.0	0.0	15.0	
SUB-TOTAL		15.0	64.2		139.2	
TOTAL		79.2			139	

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

CLEARING + GRUBBING AND SEEDING + MULCHING *				
LOCATION		SEEDING AND MULCHING ha	CLEARING AND GRUBBING ha	REMARKS
STATION	STATION			
CR 39				
1+018.000 1+130.719		0.185	0.298	
1+154.181 1+302.188		0.098	0.238	
CR 39/1				
5+003.300 5+057.574		0.057	0.158	
TOTAL		0.340	0.694	

* FOR INFORMATION ONLY

GUARDRAIL						
LOCATION		TYPE I GUARDRAIL, CLASS I ITEM 607001-001 M	THREE BEAM GUARDRAIL BRIDGE TRANSITION ITEM 607006-001 EA	FLARED END TERMINAL ITEM 607065-001 EA	GUARDRAIL REMOVAL ITEM 607010-020 M	REMARKS
STA.	STA.	LEFT	RIGHT			
CR 39						
1+100.000 1+118.450		1.30	1.30	2	2	PARABOLIC LAYOUT
1+163.775 1+278.226		97.31		1	1	PARABOLIC LAYOUT
1+101.414 1+123.978					23.1	
1+103.059 1+124.553					22.3	
CR 39/1						
5+032.485 5+041.648					11.9	
SUB-TOTAL		1.3	98.61			
TOTAL		100	3	3	57	

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	6	73

RIGHT-OF-WAY MARKERS		
STATION	OFFSET	
	LEFT	RIGHT
1+003.161	20.816	
1+009.645		24.404
1+040.520		13.842
1+064.554		15.496
1+164.937		31.575
1+194.464	20.904	
1+218.592	11.564	
1+240.228		16.364
1+244.746	9.296	
1+258.074	9.127	
1+267.836	4.603	
1+302.188		8.795
1+302.188		4.572
5+038.985	18.410	
5+053.456	11.889	
5+053.290	4.662	
5+053.286		4.478
5+053.114		11.959
5+031.539		25.272
SUBTOTAL	9	10
TOTAL	19	

CONCRETE SIDEWALK				
LOCATION		CONCRETE SIDEWALK ITEM 609001-001	BED COURSE MATERIAL ITEM 609002-001	REMARKS
STATION	STATION	AREA, M2	VOLUME, M3	
		LEFT	RIGHT	
CR 39				
1+111.000 1+118.450		11.4	1.1	
1+163.775 1+170.686		13.0	1.3	
CR 39/1				
5+019.680 5+042.348		29.7	3.0	
5+037.147 5+045.326		20.8	2.1	SLOPE PROTECTION
TOTAL		75	8	

UNDERDRAINS					
LOCATION		FREE DRAINING BASE TRENCH ITEM 606029-001	OUTLET PIPE ITEM 606030-001	UNDERDRAIN SLOPEWALLS * EA	REMARKS
STATION	STATION	M	M		
CR 39					
1+220.000 1+265.607		14.1	13.0		OUTLET TO EXISTING DITCH AT STA 1+210.000
TOTAL		14	13		

* FOR INFORMATION ONLY, COST TO BE INCLUDED IN ITEM 606030-001, OUTLET PIPE

CONCRETE CURB AND GUTTER				
LOCATION		COMB. CONCRETE CURB AND GUTTER, TYPE I ITEM 610003-001	PLAIN CONCRETE CURBING, TYPE I ITEM 610001-001	REMARKS
STATION	STATION	LENGTH, M	LENGTH, M	
		LEFT	RIGHT	
CR 39				
1+111.000 1+118.450			7.5	7.5
1+163.775 1+171.718			10.5	
1+220.000 1+265.607		45.6		
CR 39/1-PARK LOT				
5+019.779 5+042.318			36.5	
SUB-TOTAL		45.6	54.5	7.5
TOTAL		46	62	

A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
QUANTITY TABLES

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 6
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	
ALPHA ASSOCIATES, INCORPORATED					BRIDGE NO. 4415
CONSULTING ENGINEERS					MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	7	73

CR 39 CURVE C1	
PI STA	1+065.569
Δ	12°29'56"
T	16.426 m
R	150.000 m
L	32.722 m
E	0.897 m
S.E.	0.067 m/m

CR39/1 CURVE C2	
PI STA	5+016.707
Δ	48°00'00"
T	11.131 m
R	25.000 m
L	20.944 m
E	2.366 m
S.E.	0.03396 m/m

CR39/1 CURVE C3	
PI STA	5+048.649
Δ	30°20'05"
T	8.132 m
R	30.000 m
L	15.883 m
E	1.083 m
S.E.	N/A

CR39 CURVE C4	
PI STA	1+230.728
Δ	26°57'48"
T	29.968 m
R	125.000 m
L	58.825 m
E	3.542 m
S.E.	0.080 m/m

R/W ACQUISITION @ CR39/1 CURVE C5	
PI STA	5+012.296
Δ	17°39'55"
T	7.770 m
R	50.000 m
L	15.416 m
E	0.600 m
S.E.	0.0xx m/m

BENCHMARK No. 1 ELEV 282.1145
RAILROAD SPIKE IN 600 mm MAPLE 3 m NORTH OF PAVEMENT ON CR 39 AND 25 m WEST OF WEST END OF BRIDGE OVER DUNKARD CREEK. N 6014.0551 E 3095.4936

BENCHMARK No. 2 ELEV 290.1415
SQUARE CUT IN CONCRETE SLAB ON NORTH SIDE OF CR 39, ONE METER SOUTH-EAST OF THE SOUTH-EAST CORNER OF THE RED BARN LOCATED AT THE MASON DIXON PARK, ACROSS CR 39 FROM ENTRANCE TO TRAILER PARK. N 6017.5199 E 3307.1319

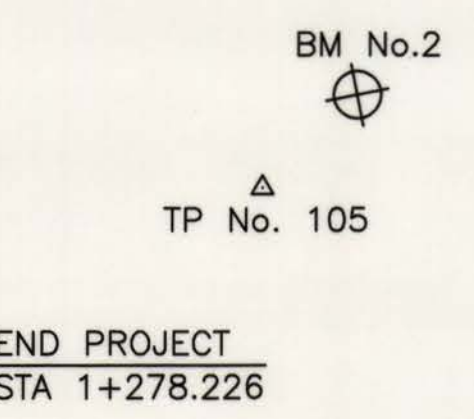
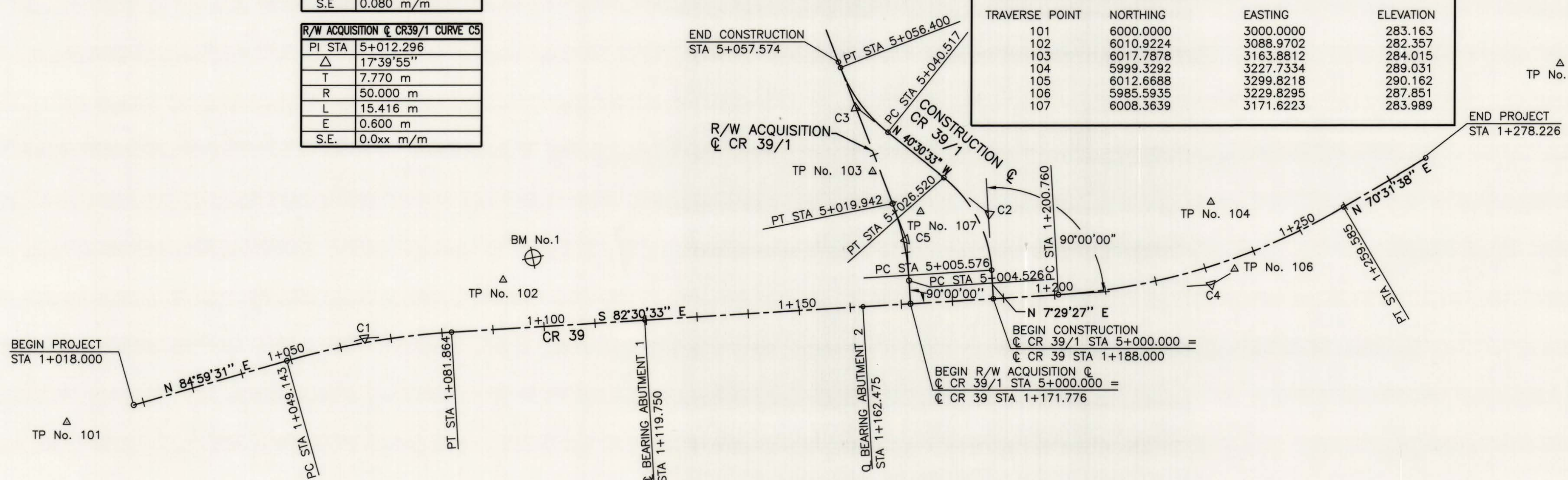
91 RHP ELEV 282.6650
STANDARD TABLET SET IN CONCRETE POST 7 m SOUTH-WEST OF WV 7 AND 75 m SOUTH-EAST OF INTERSECTION OF CR 39 AND WV 7
STAMPED "91 RHP 1957 927"
N 5925.8471 E 3005.8920

CR 39		
STATION	NORTHING	EASTING
BEGIN PROJECT STA 1+018.000	6000.7972	3013.4843
PC STA 1+049.143	6003.5158	3044.5081
PI STA 1+065.569	6004.9498	3060.8715
PT STA 1+081.864	6002.8083	3077.1574
Q BEARING ABUTMENT 1 STA 1+119.750	5997.8694	3114.7196
Q BEARING ABUTMENT 2 STA 1+162.475	5992.2995	3157.0800
PC STA 1+200.760	5987.3084	3195.0384
PI STA 1+230.728	5983.4016	3224.7503
PT STA 1+259.585	5993.3916	3253.0038
END PROJECT STA 1+278.226	5999.6057	3270.5785

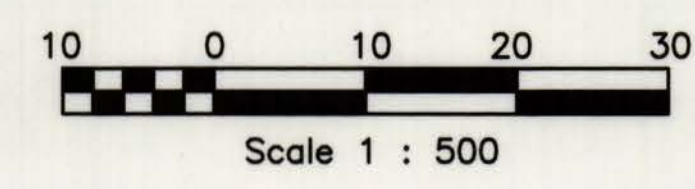
CR 39/1		
STATION	NORTHING	EASTING
BEGIN CONSTR. STA 5+000.000	5988.9719	3182.3868
PC STA 5+005.579	5994.5008	3183.1138
PI STA 5+016.707	6005.5365	3184.5649
PT STA 5+026.520	6013.9992	3177.3347
PC STA 5+040.517	6024.6405	3168.2432
PI STA 5+048.649	6030.8236	3162.9606
PT STA 5+056.400	6038.8281	3161.5240
END CONSTR. STA 5+057.574	6039.9844	3161.3165

R/W ACQUISITION @ CR 39/1		
STATION	NORTHING	EASTING
BEGIN CONSTR. STA 5+000.000	5991.0870	3166.3013
PC STA 5+005.579	5995.5745	3166.8914
PI STA 5+016.707	6003.2778	3167.9043
PT STA 5+026.520	6010.9252	3166.5318

HORIZONTAL CONTROL: TRAVERSE POINTS			
TRAVERSE POINT	NORTHING	EASTING	ELEVATION
101	6000.0000	3000.0000	283.163
102	6010.9224	3088.9702	282.357
103	6017.7878	3163.8812	284.015
104	5999.3292	3227.7334	289.031
105	6012.6688	3299.8218	290.162
106	5985.5935	3229.8295	287.851
107	6008.3639	3171.6223	283.989



"91 RHP"

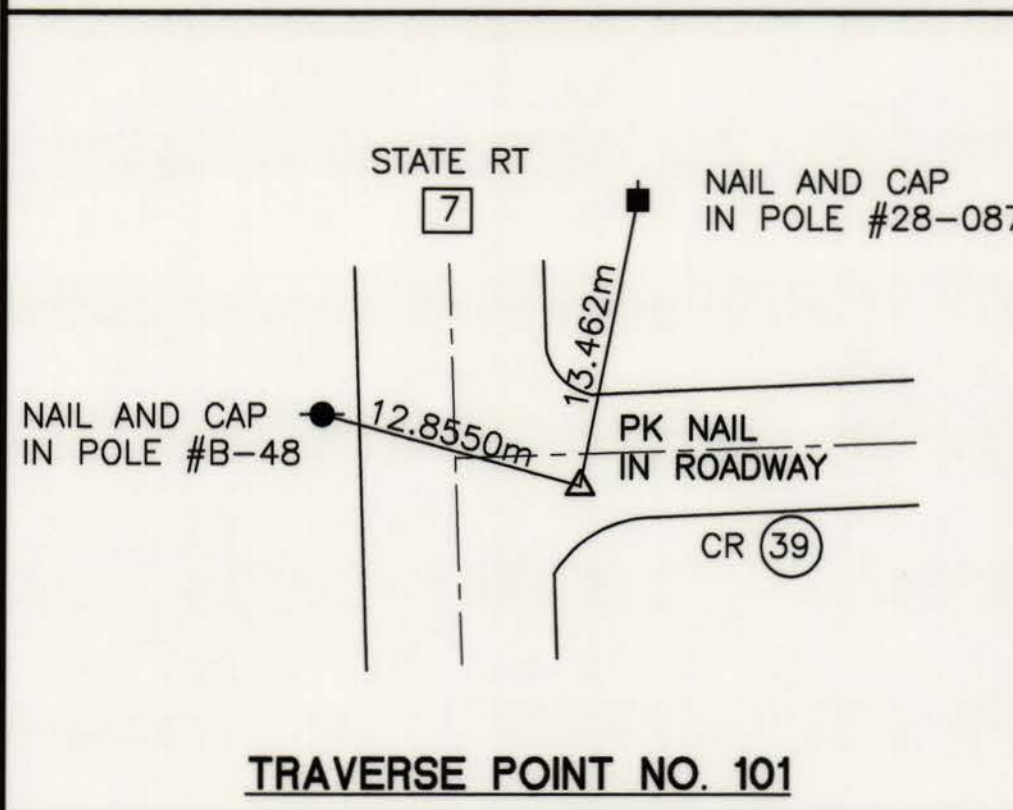


THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
GEOMETRIC LAYOUT

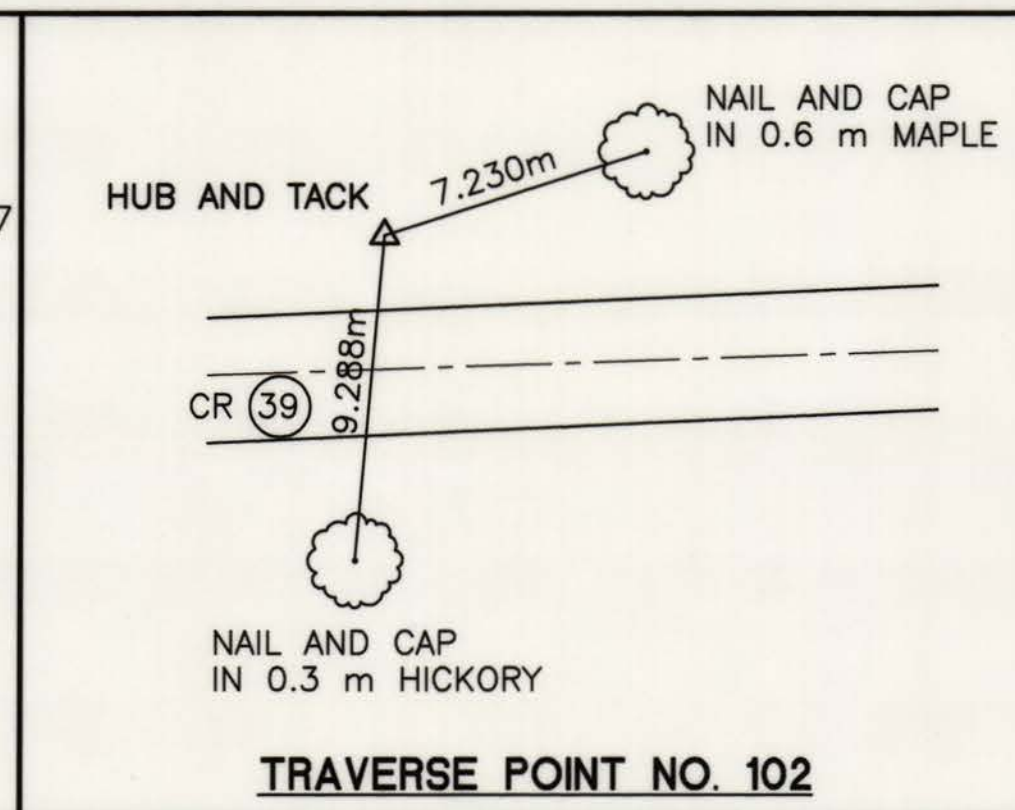
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 7
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:500	BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

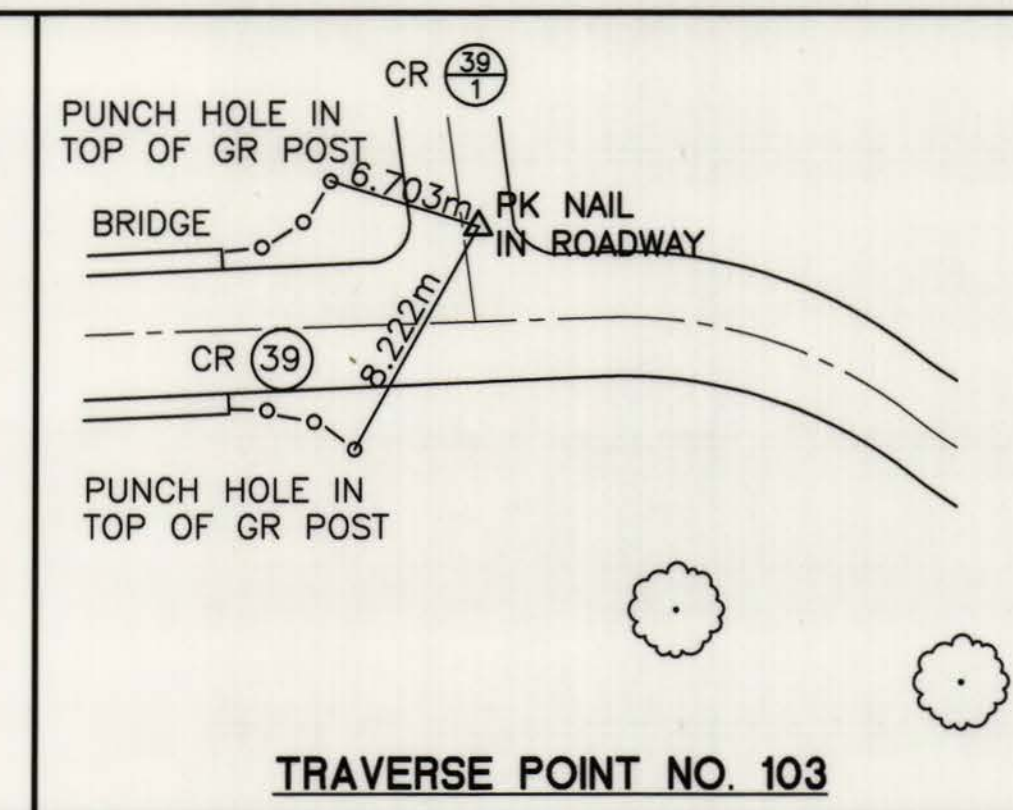
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	8	73



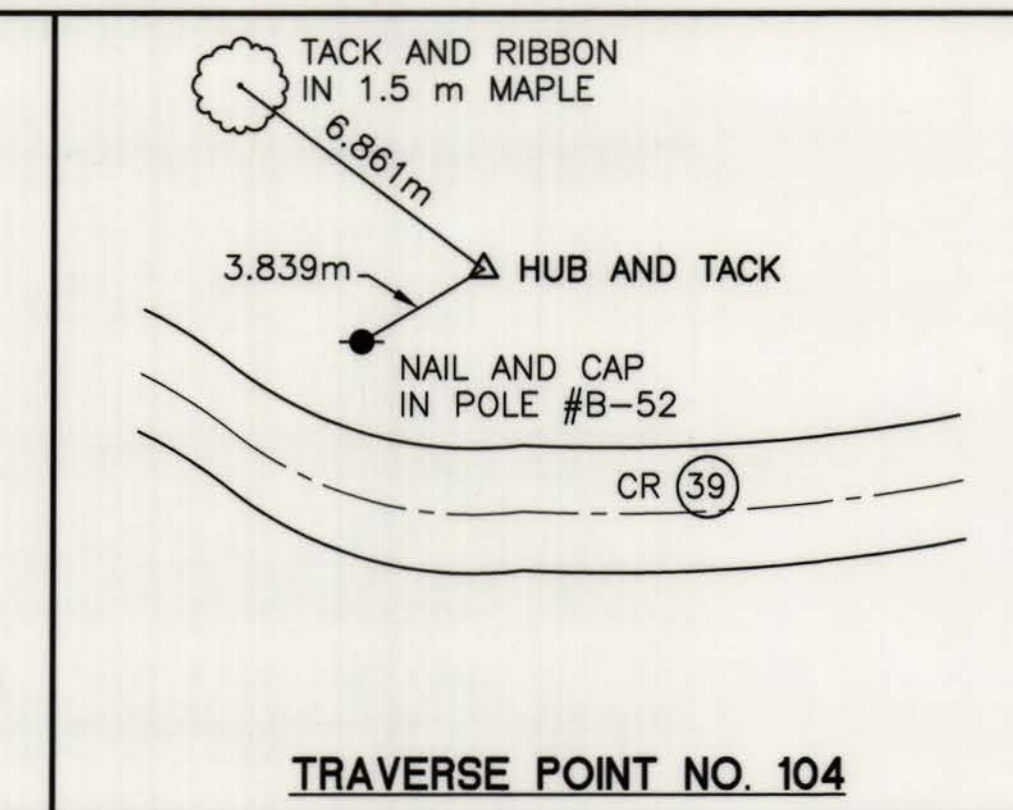
TRAVERSE POINT NO. 101



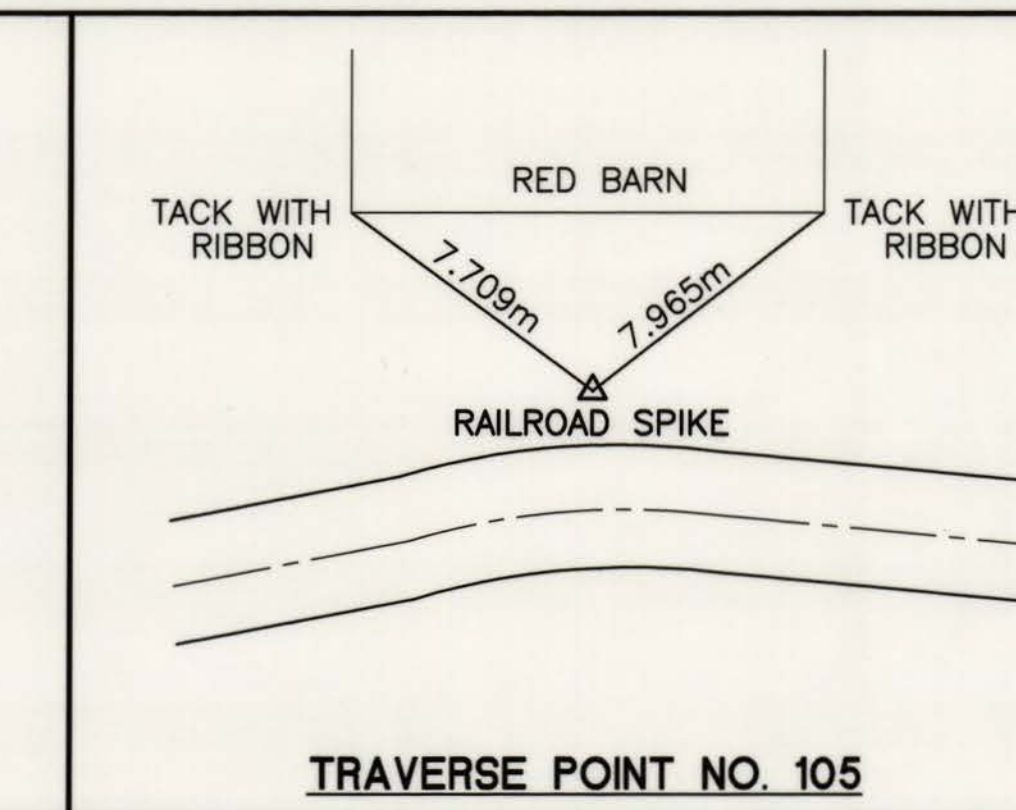
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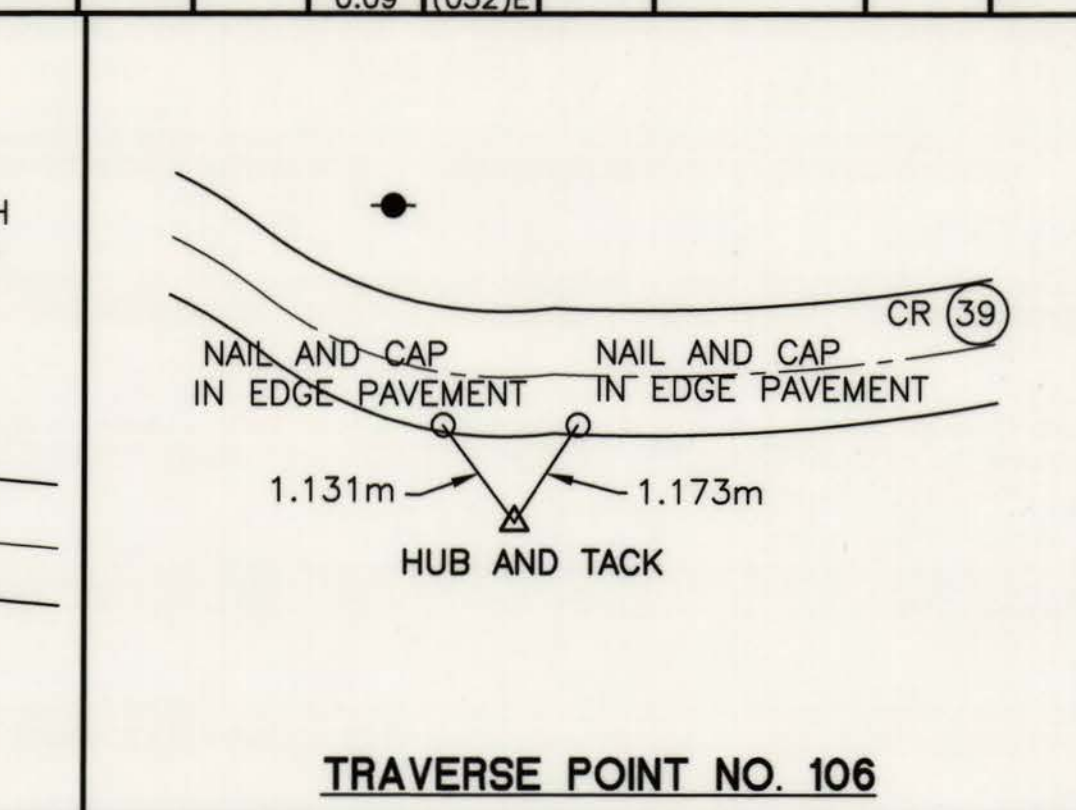
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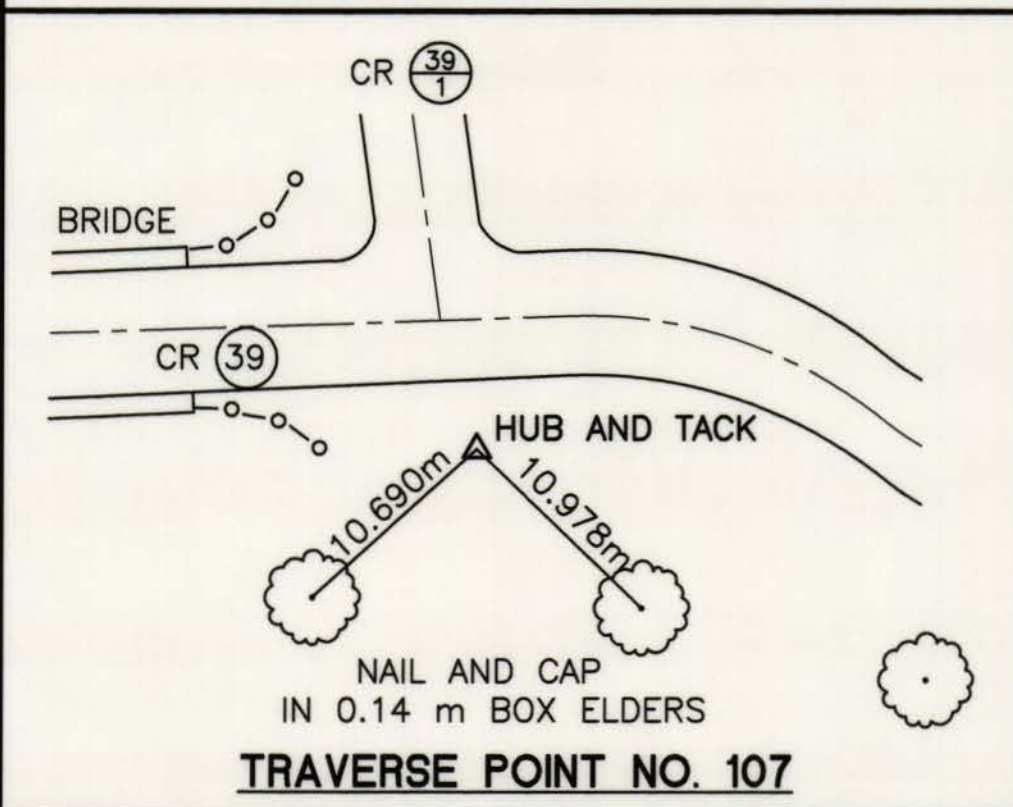
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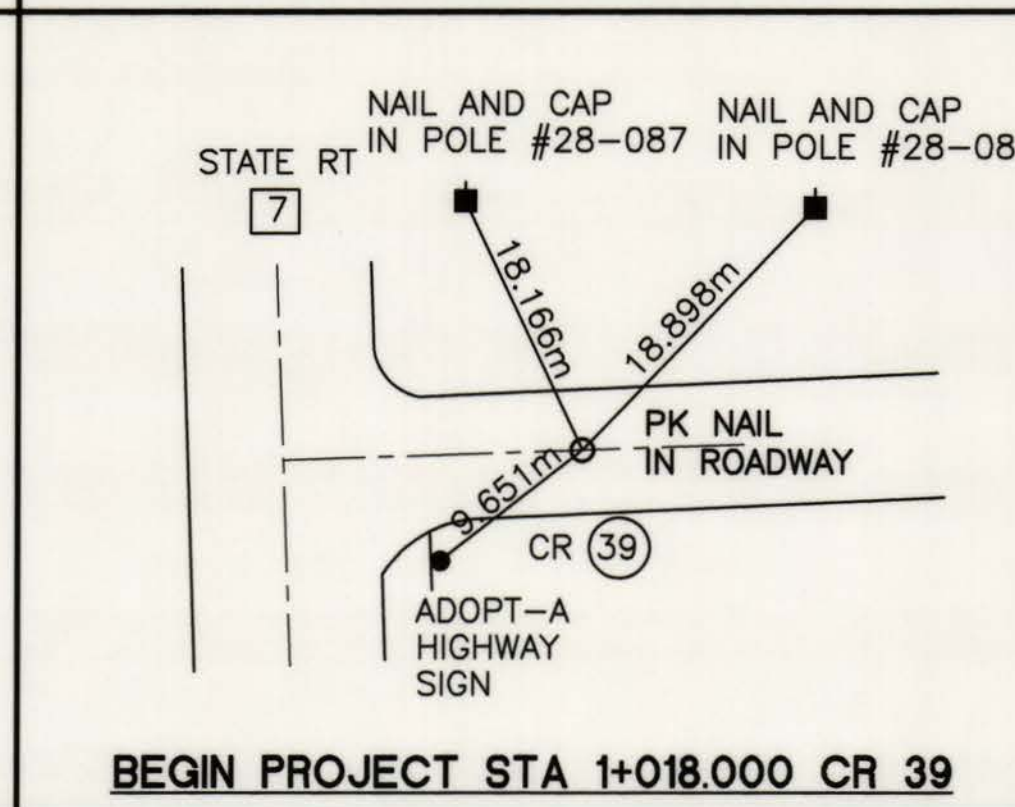
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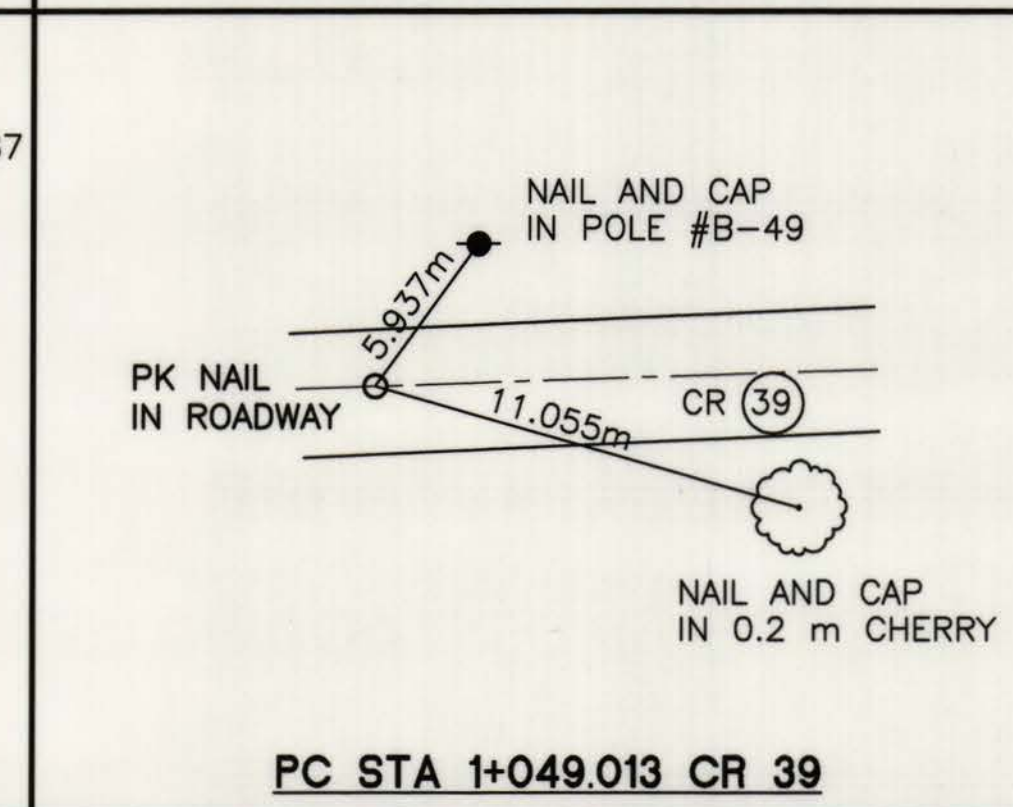
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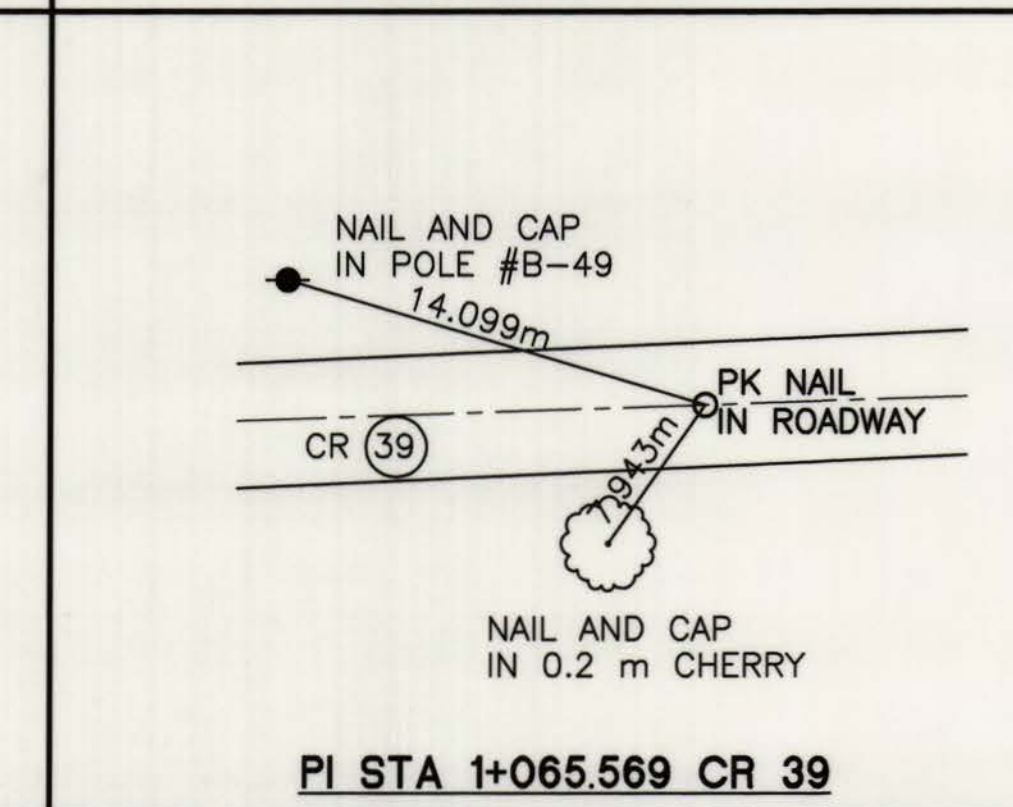
TRAVERSE POINT NO. 107



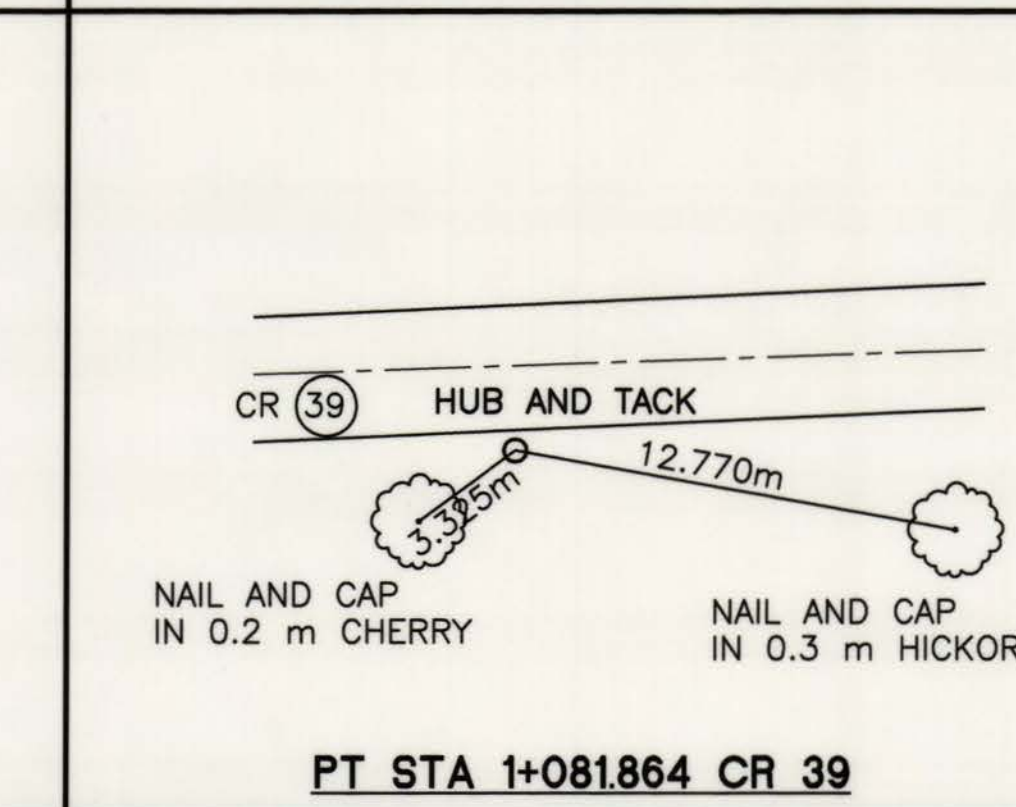
BEGIN PROJECT STA 1+018.000 CR 39



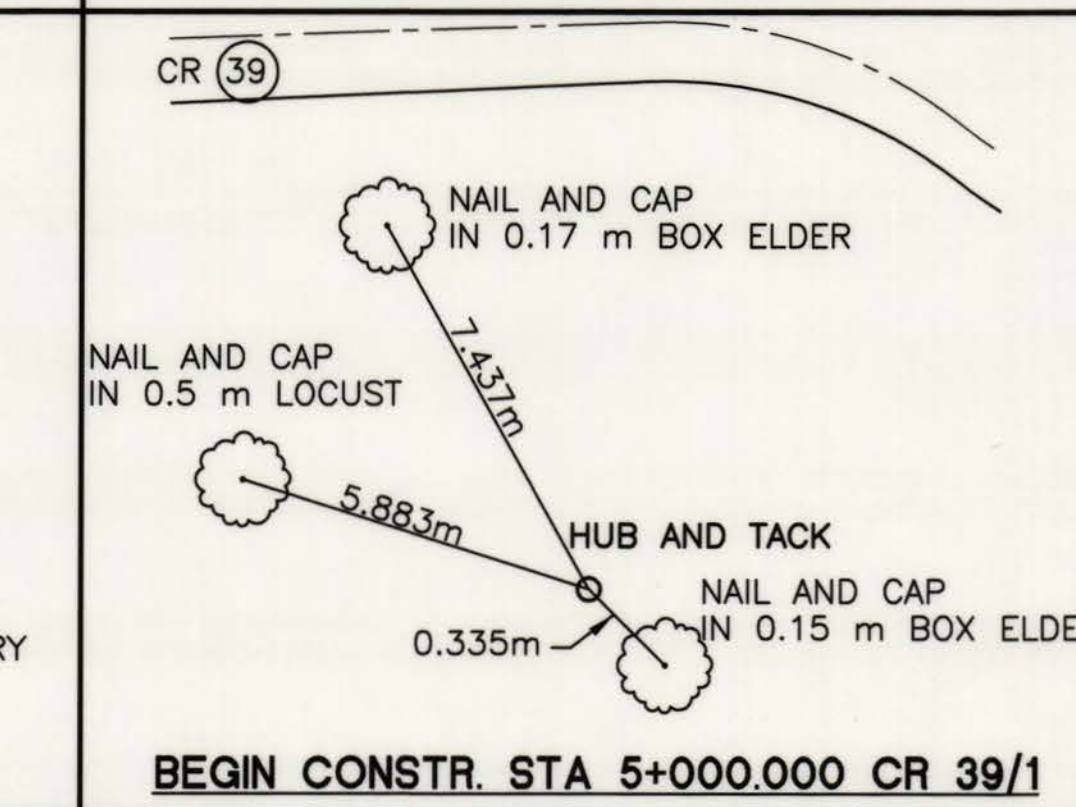
PC STA 1+049.013 CR 39



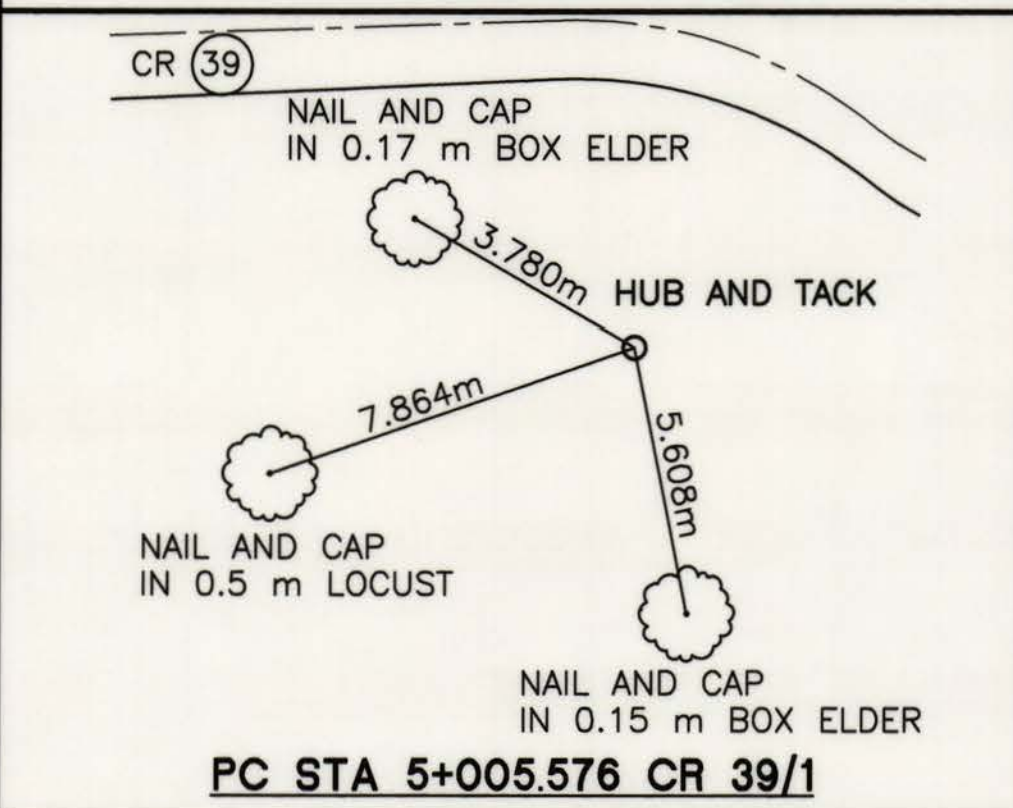
PI STA 1+065.569 CR 39



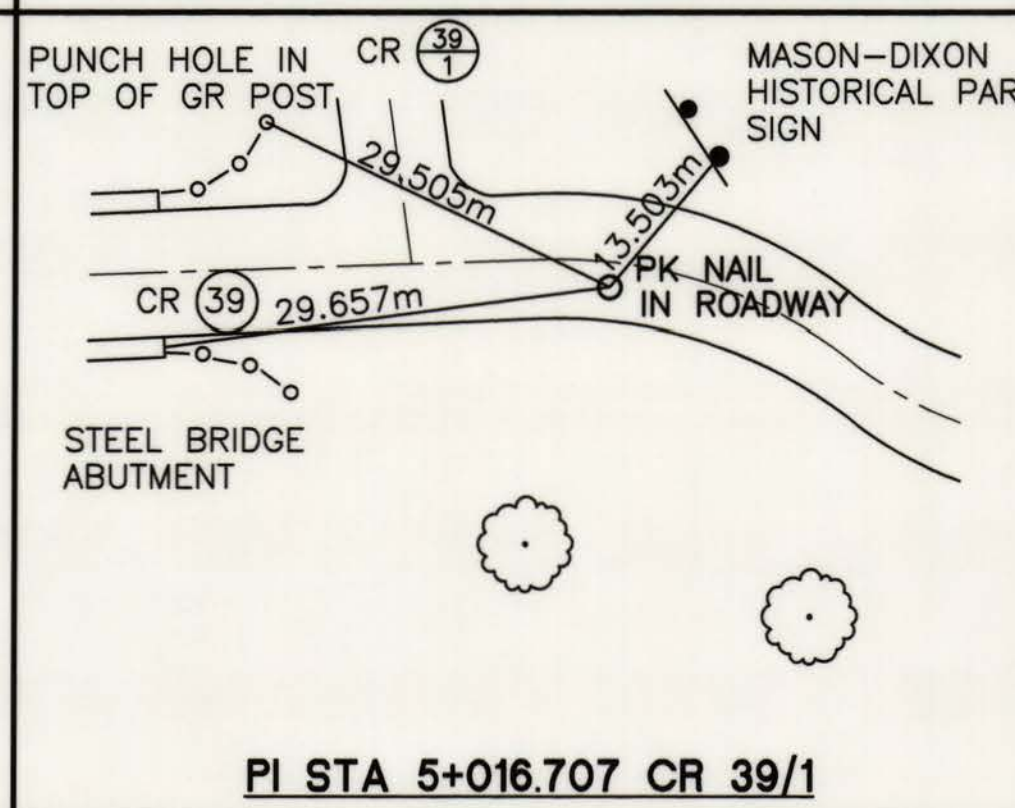
PT STA 1+081.864 CR 39



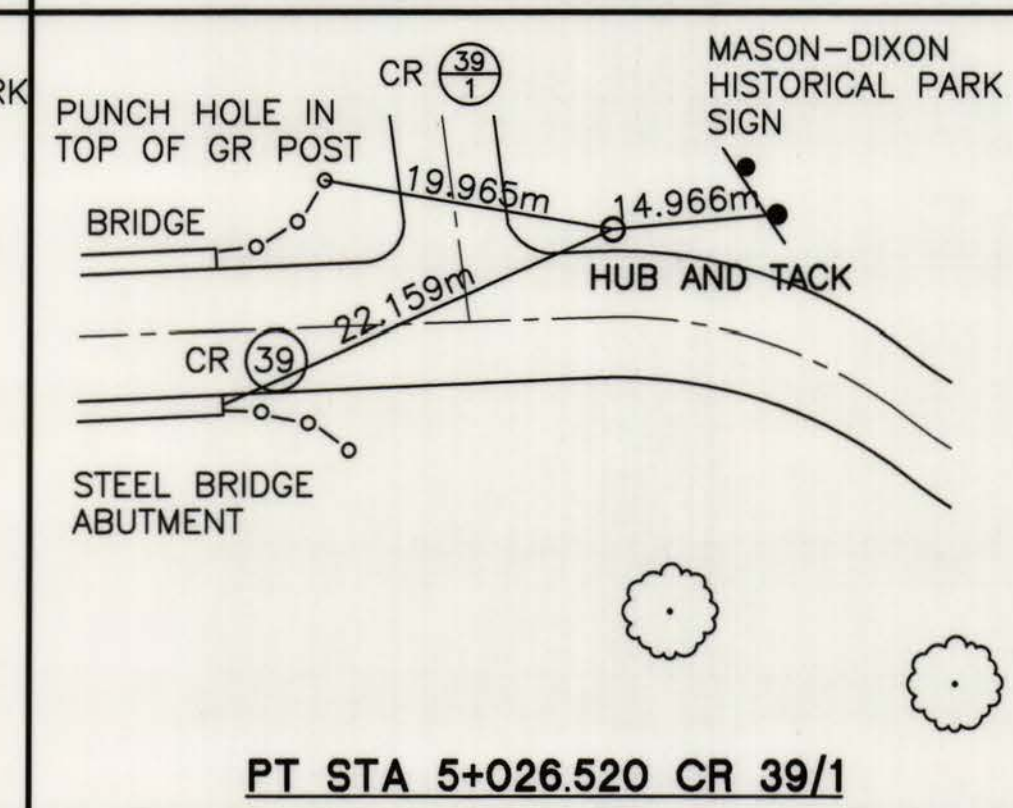
BEGIN CONSTR. STA 5+000.000 CR 39/1



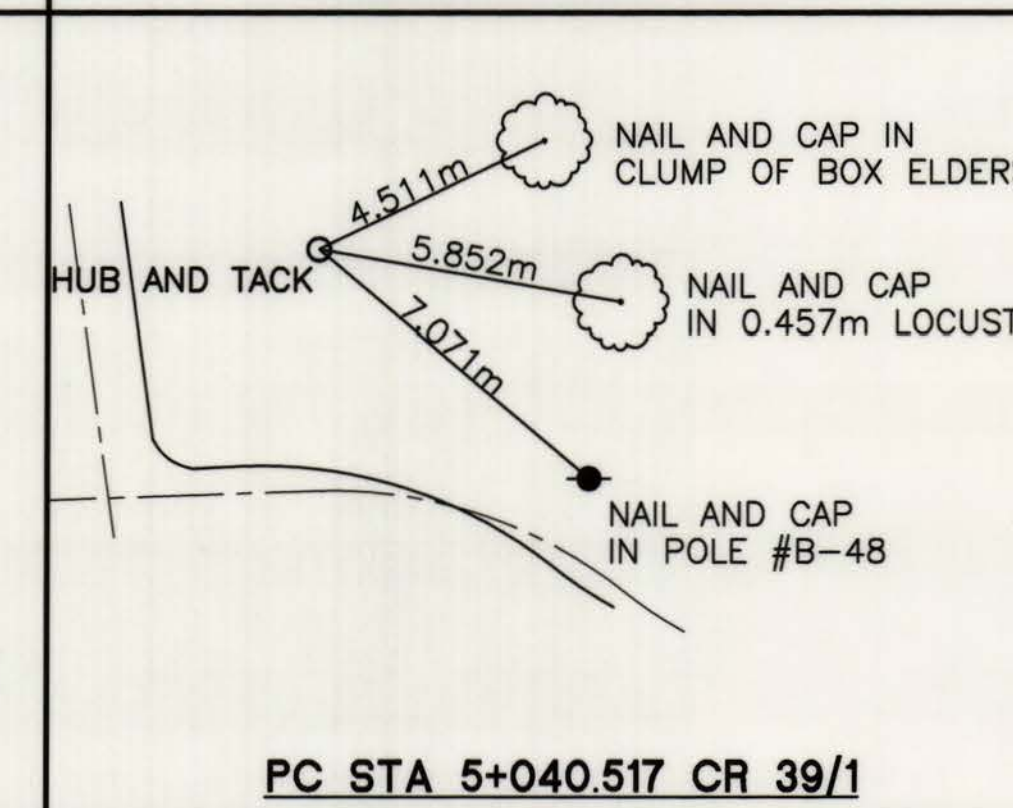
PC STA 5+005.576 CR 39/1



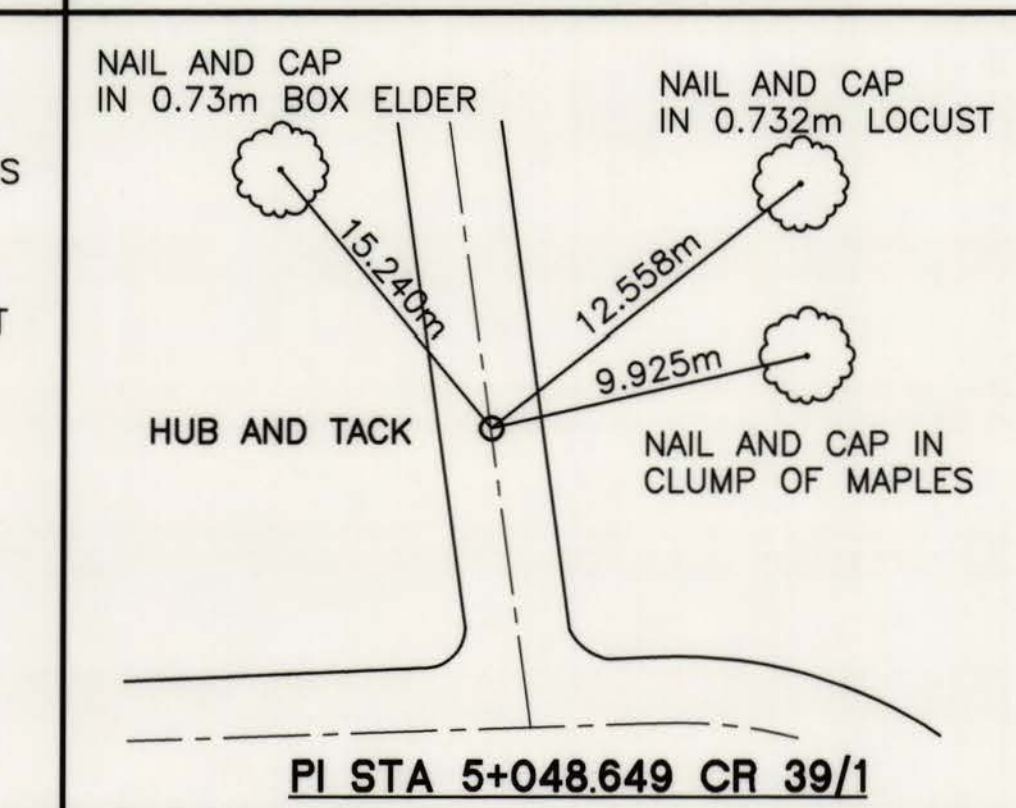
PI STA 5+016.707 CR 39/1



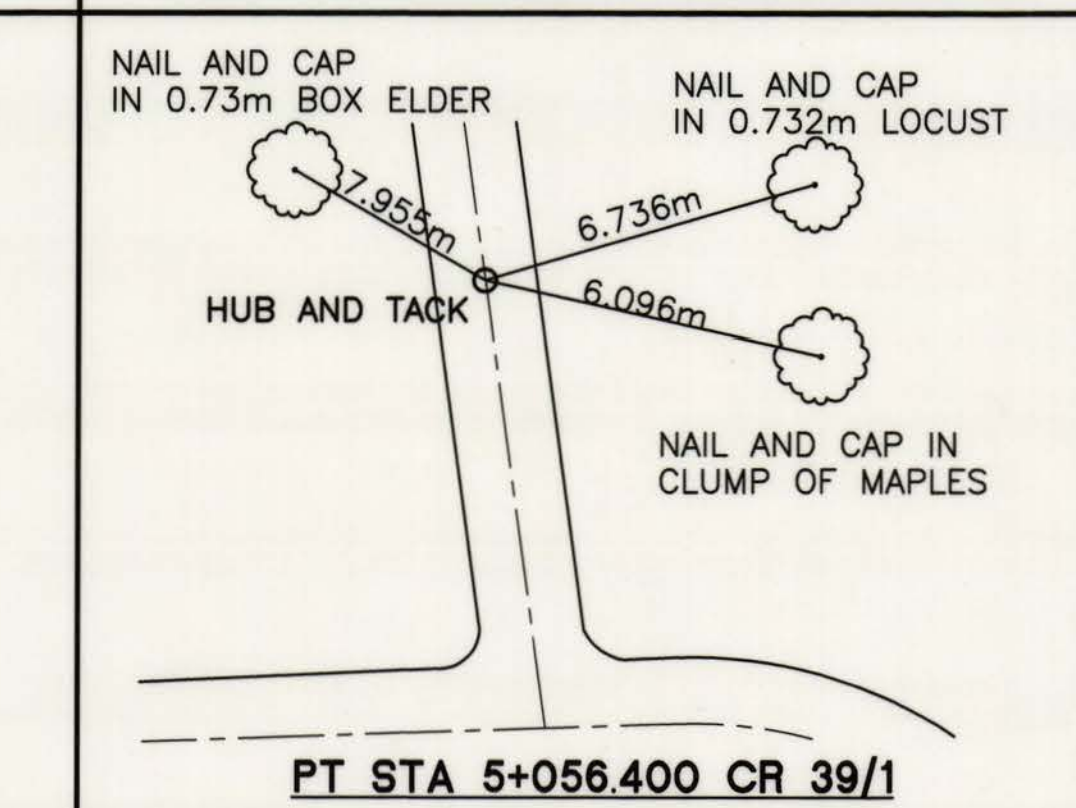
PT STA 5+026.520 CR 39/1



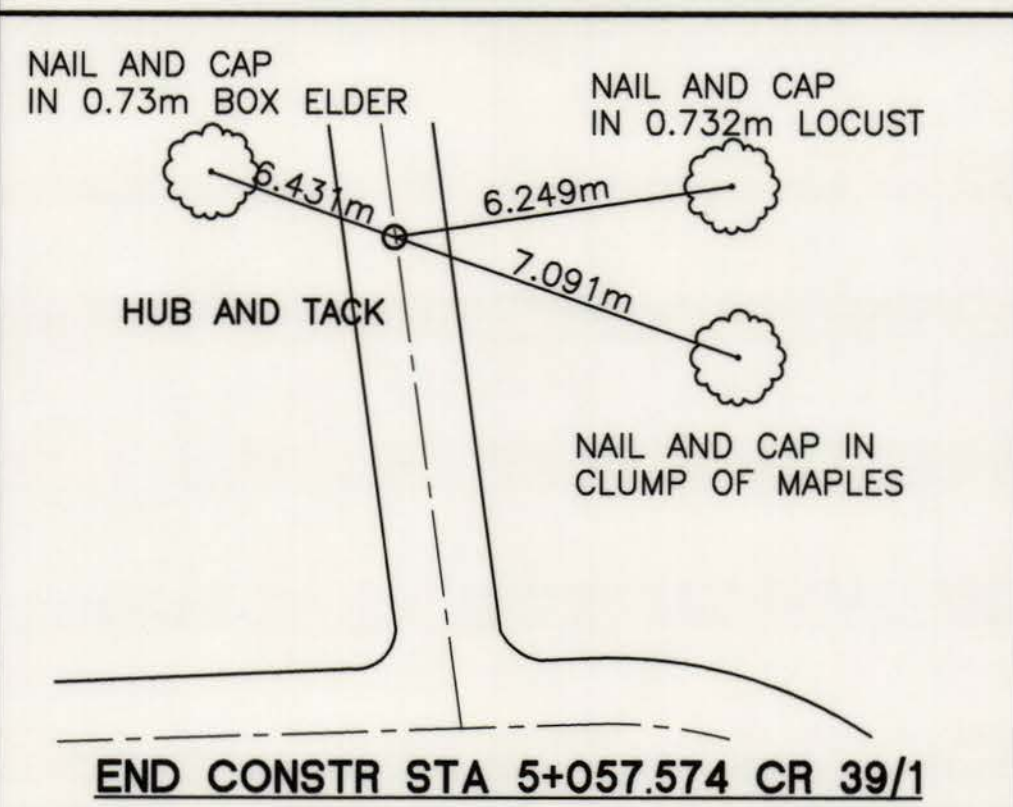
PC STA 5+040.517 CR 39/1



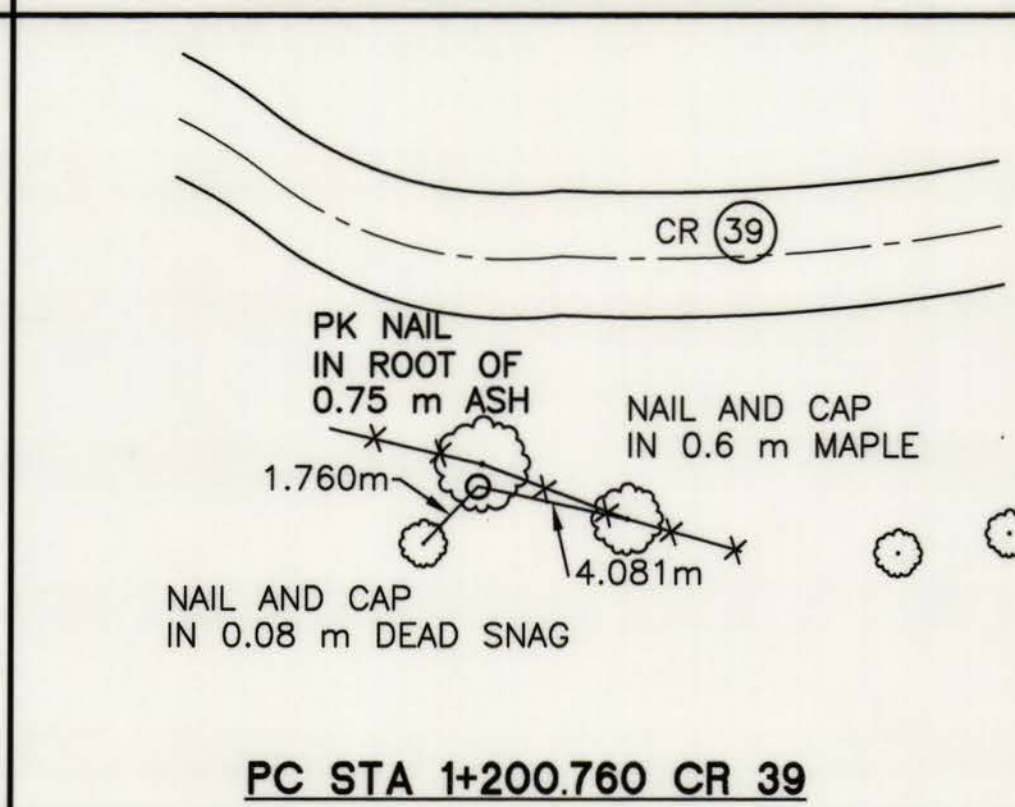
PI STA 5+048.649 CR 39/1



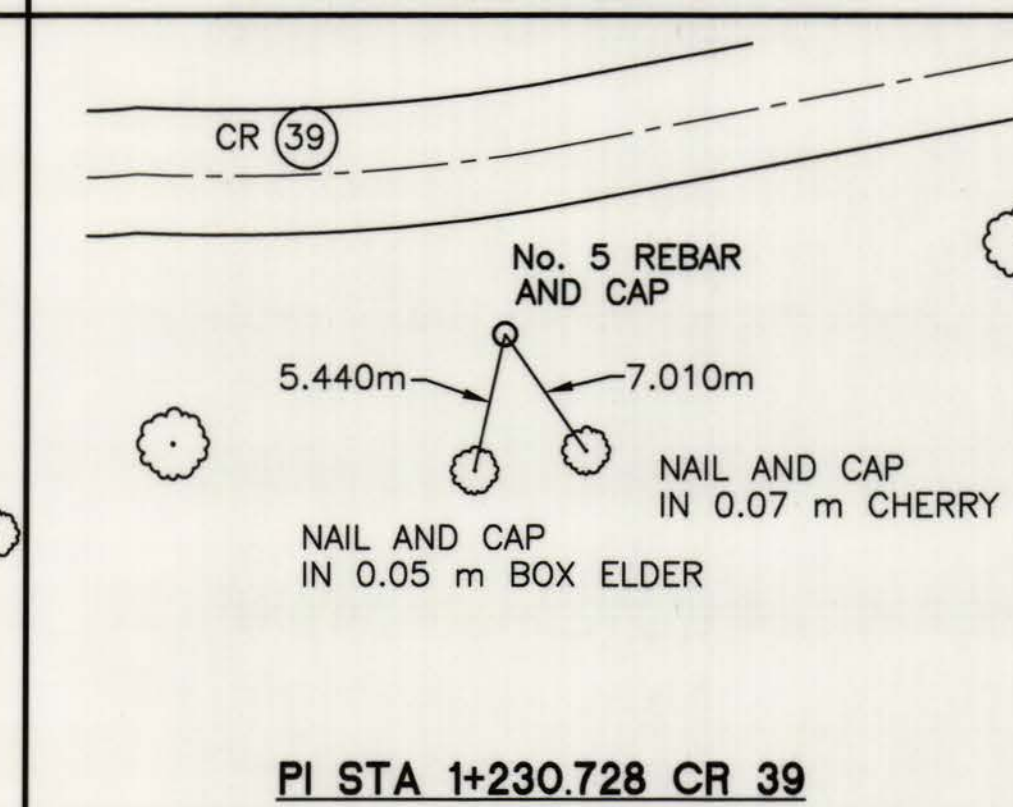
PT STA 5+056.400 CR 39/1



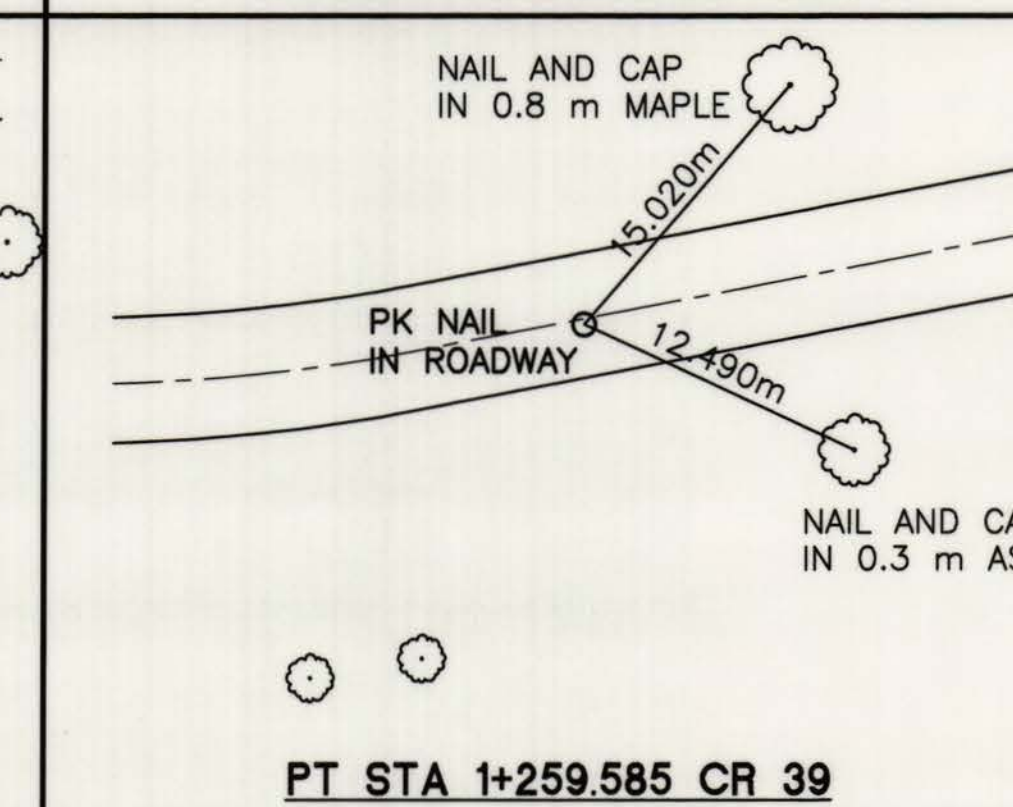
END CONSTR STA 5+057.574 CR 39/1



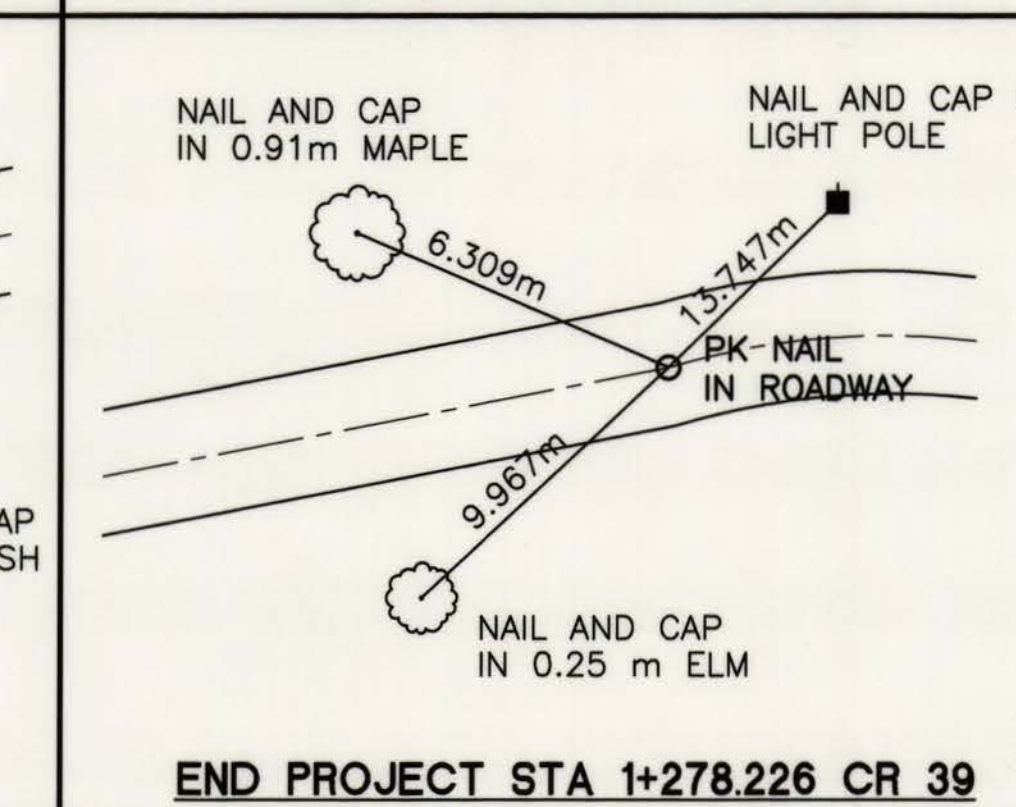
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PI STA 1+230.728 CR 39



PT STA 1+259.585 CR 39



END PROJECT STA 1+278.226 CR 39

A.A.I. JOB NO. 971281.00

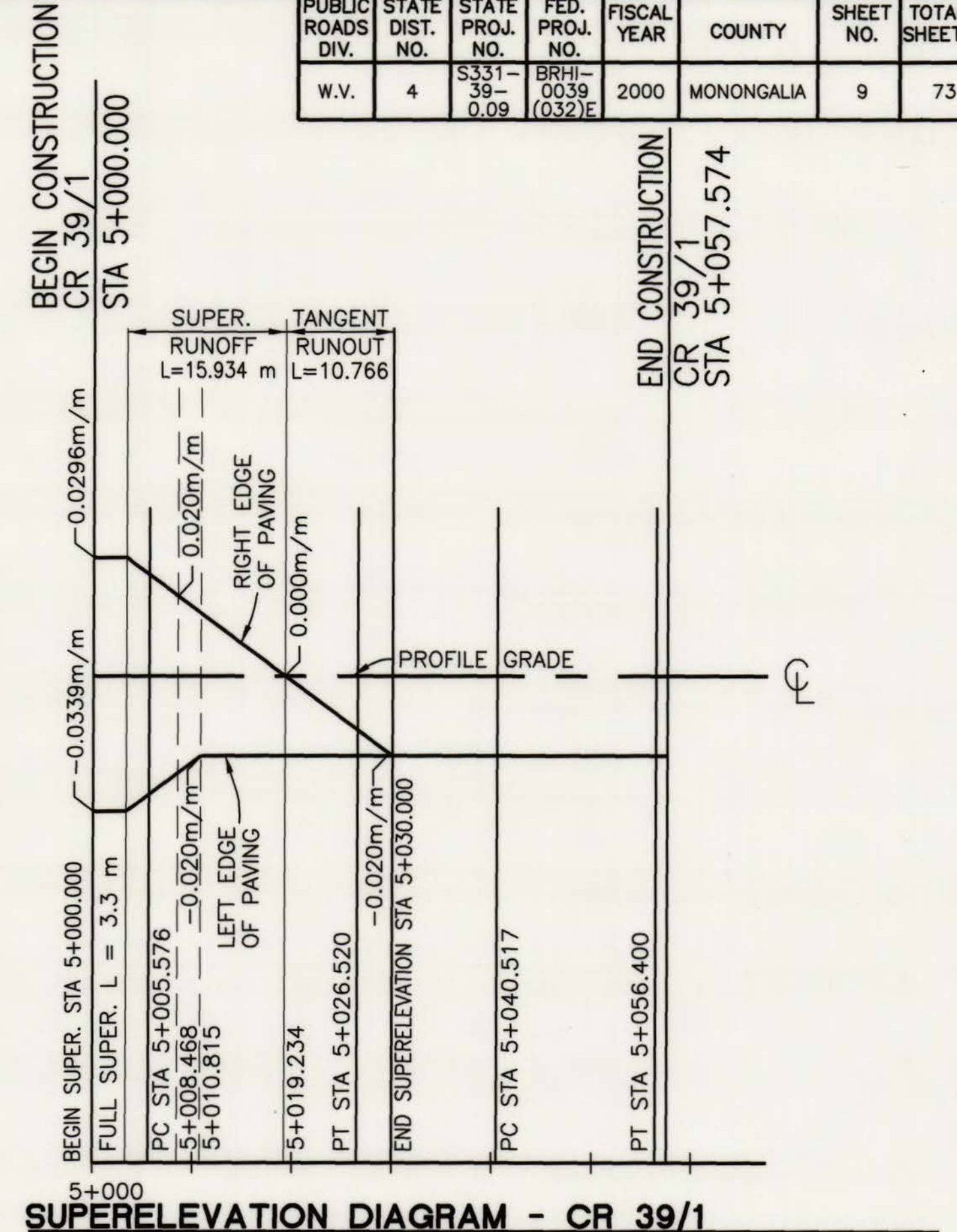
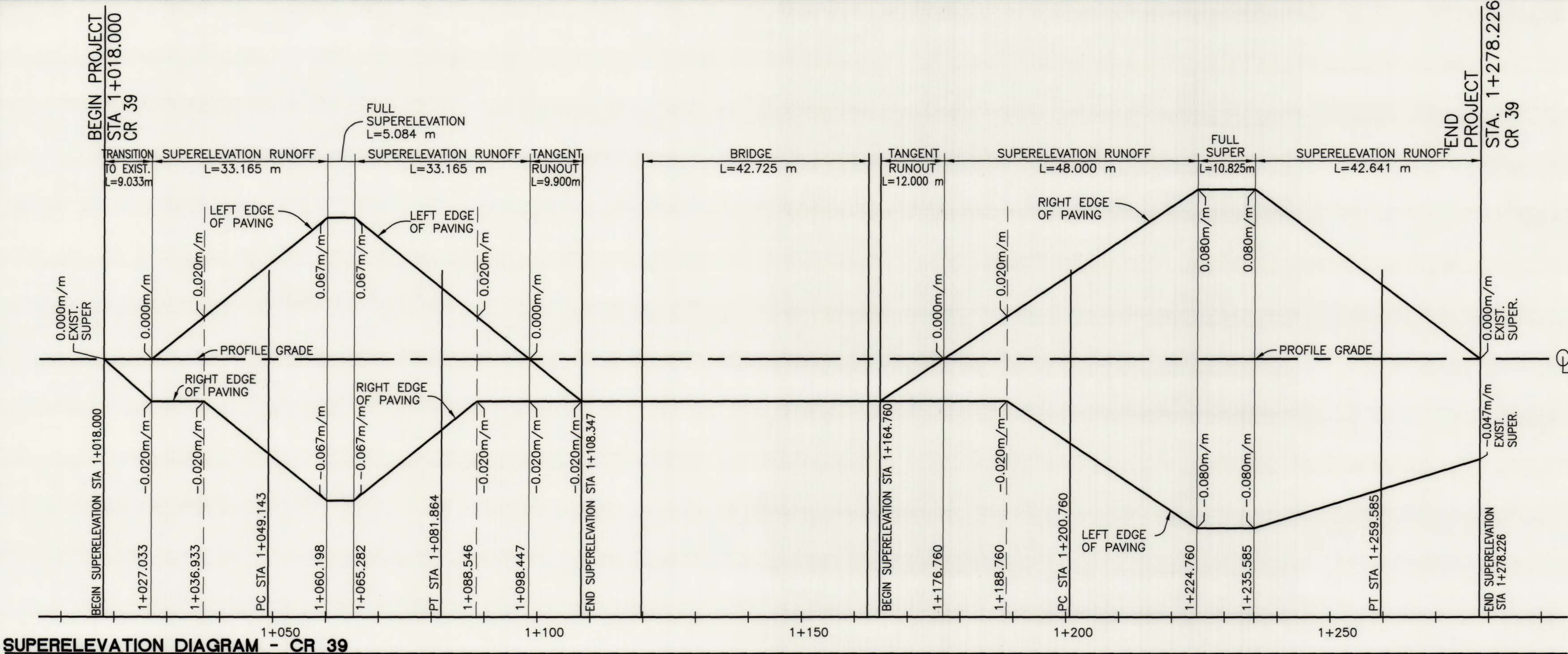
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
REFERENCE POINTS

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 8
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(0.02)E	2000	MONONGALIA	9	73



SUPERELEVATION CHART										
STATION	LEFT E.P. ELEV.	LEFT WIDTH	LEFT CORRECT.	PROFILE GRADE	RIGHT CORRECT.	RIGHT WIDTH	RIGHT E.P. ELEV.	RATE OF SUPERELEVATION m/m		REMARKS
								LEFT	RIGHT	
COUNTY ROUTE 39 - CURVE C1										
1+018.000	282.750	3.838	0.000	282.750	0.000	3.132	282.750	0.000	0.000	BEGIN SUPER
1+020.000	282.706	3.795	0.000	282.706	-0.047	3.145	282.659	0.000	-0.015	
1+027.033	282.560	3.325	0.000	282.560	-0.066	3.284	282.494	0.000	-0.020	
1+036.933	282.479	3.300	+0.066	282.413	-0.066	3.300	282.347	+0.020	-0.020	
1+040.000	282.467	3.300	+0.086	282.381	-0.086	3.300	282.295	+0.026	-0.026	
1+049.143	282.473	3.300	+0.148	282.325	-0.148	3.300	282.177	+0.045	-0.045	PC STA
1+060.000	282.556	3.300	+0.221	282.335	-0.221	3.300	282.114	+0.067	-0.067	MAX SUPER
1+060.198	282.557	3.300	+0.221	282.336	-0.221	3.300	282.115	+0.067	-0.067	MAX SUPER
1+065.282	282.591	3.300	+0.221	282.370	-0.221	3.300	282.149	+0.067	-0.067	MAX SUPER
1+080.000	282.692	3.300	+0.122	282.570	-0.122	3.300	282.448	+0.037	-0.037	
1+081.864	282.718	3.300	+0.112	282.606	-0.112	3.300	282.494	+0.034	-0.034	PT STA
1+088.547	282.821	3.300	+0.066	282.755	-0.066	3.300	282.689	+0.020	-0.020	
1+098.447	283.035	3.300	0.000	283.035	-0.066	3.300	282.969	0.000	-0.020	
1+100.000	283.075	3.300	-0.010	283.085	-0.066	3.300	283.019	-0.003	-0.020	
1+108.347	283.301	3.300	-0.066	283.367	-0.066	3.300	283.301	-0.020	-0.020	END SUPER
COUNTY ROUTE 39 - NORMAL CROWN										
1+119.750	283.668	3.300	-0.066	283.754	-0.066	3.300	283.668	-0.020	-0.020	
1+120.000	283.696	3.300	-0.066	283.762	-0.066	3.300	283.696	-0.020	-0.020	
1+140.000	284.375	3.300	-0.066	284.441	-0.066	3.300	284.375	-0.020	-0.020	
1+160.000	285.055	3.300	-0.066	285.121	-0.066	3.300	285.055	-0.020	-0.020	
1+162.475	285.139	3.300	-0.066	285.205	-0.066	3.300	285.139	-0.020	-0.020	

SUPERELEVATION CHART										
STATION	LEFT E.P. ELEV.	LEFT WIDTH	LEFT CORRECT.	PROFILE GRADE	RIGHT CORRECT.	RIGHT WIDTH	RIGHT E.P. ELEV.	RATE OF SUPERELEVATION m/m		REMARKS
								LEFT	RIGHT	
COUNTY ROUTE 39 - CURVE C3										
1+164.760	285.216	3.300	-0.066	285.282	-0.066	3.300	285.216	-0.020	-0.020	BEGIN SUPER
1+176.760	285.623	3.300	-0.066	285.689	0.000	3.300	285.689	-0.020	0.000	
1+180.000	285.733	3.300	-0.066	285.799	+0.016	3.300	285.815	-0.020	+0.005	
1+188.760	286.031	3.300	-0.066	286.097	+0.066	3.300	286.163	-0.020	+0.020	
1+200.000	286.353	3.300	-0.129	286.482	+0.129	3.300	286.611	-0.039	+0.039	
1+200.760	286.377	3.300	-0.132	286.509	+0.132	3.300	286.641	-0.040	+0.040	PC STA
1+220.000	286.979	3.300	-0.238	287.217	+0.238	3.300	287.455	-0.072	+0.072	
1+224.760	287.129	3.300	-0.264	287.393	+0.264	3.300	287.657	-0.080	+0.080	MAX SUPER
1+235.585	287.515	3.300	-0.264	287.779	+0.264	3.300	288.043	-0.080	+0.080	MAX SUPER
1+240.000	287.677	3.300	-0.254	287.931	+0.238	3.300	288.169	-0.077	+0.072	
1+259.585	288.402	3.300	-0.205	288.607	+0.114	3.268	288.721	-0.062	+0.035	PT STA
1+260.000	288.420	3.300	-0.201	288.621	+0.110	3.246	288.731	-0.061	+0.034	
1+278.226	289.118	2.804	-0.132	289.250	0.000	2.775	289.250	-0.047	0.000	END SUPER/EOP STA
COUNTY ROUTE 39/1										
5+003.300	285.140	25.500	-0.866	286.006	+0.494	16.669	286.500	-0.034	+0.030	BEGIN SUPER
5+005.576	285.497	12.497	-0.372	285.869	+0.201	8.021	286.070	-0.030	+0.025	PC STA

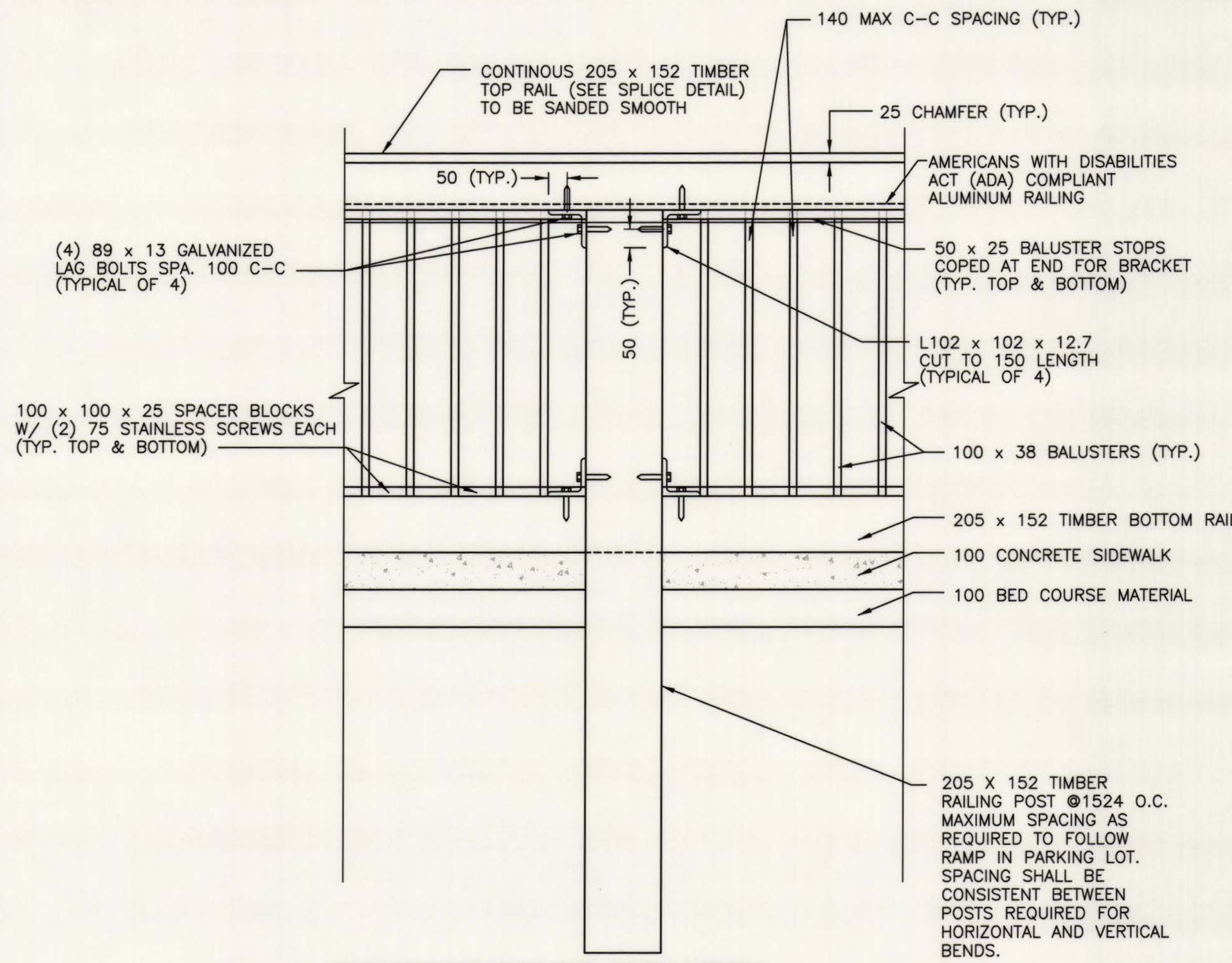
SUPERELEVATION CHART										
STATION	LEFT E.P. ELEV.	LEFT WIDTH	LEFT CORRECT.	PROFILE GRADE	RIGHT CORRECT.	RIGHT WIDTH	RIGHT E.P. ELEV.	RATE OF SUPERELEVATION m/m		REMARKS
								LEFT	RIGHT	
COUNTY ROUTE 39/1										
5+008.468	285.464	9.676	-0.232	285.696	+0.084	4.198	285.780	-0.024	+0.020	
5+010.815	285.394	7.994	-0.160	285.554	+0.046	2.894	285.600	-0.020	+0.016	
5+019.234	284.830	4.400	-0.088	284.918	0.000	2.400	284.918	-0.020	0.000	
5+020.000	284.764	4.241	-0.085	284.849	-0.002	2.400	284.847	-0.020	-0.001	
5+022.718	284.513	3.893	-0.078	284.591	-0.014	2.400	284.577	-0.020	-0.006	
5+026.520	284.143	2.400	-0.048	284.191	-0.034	2.400	284.157	-0.020	-0.014	PT STA
5+030.000	283.737	2.400	-0.048	283.785	-0.048	2.400	283.737	-0.020	-0.0200	END SUPER
COUNTY ROUTE 39/1 - NORMAL CROWN										
5+040.000	282.534	2.400	-0.048	282.582	-0.048	2.400	282.534	-0.020	-0.020	
5+040.517	282.474	2.400	-0.048	282.522	-0.048	2.400	282.474	-0.020	-0.020	
5+042.348	282.266	2.400	-0.048	282.314	-0.048	2.400	282.266	-0.020	-0.020	PC STA
5+042.803	282.215	2.400	-0.048	282.263	-0.048	2.400	282.215	-0.020	-0.020	
5+044.730	282.001	2.400	-0.048	282.049	-0.048	2.400	282.001	-0.020	-0.020	
5+056.400	280.821	1.653	-0.033	280.854	-0.033	1.651	280.821	-0.020	-0.020	PT STA
5+057.574	280.711	1.432	-0.029	280.740	-0.029	1.447	280.711	-0.020	-0.020	END CONSTR.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
SUPERELEVATION TRANSITION DIAGRAM CR 39, CR 39/1

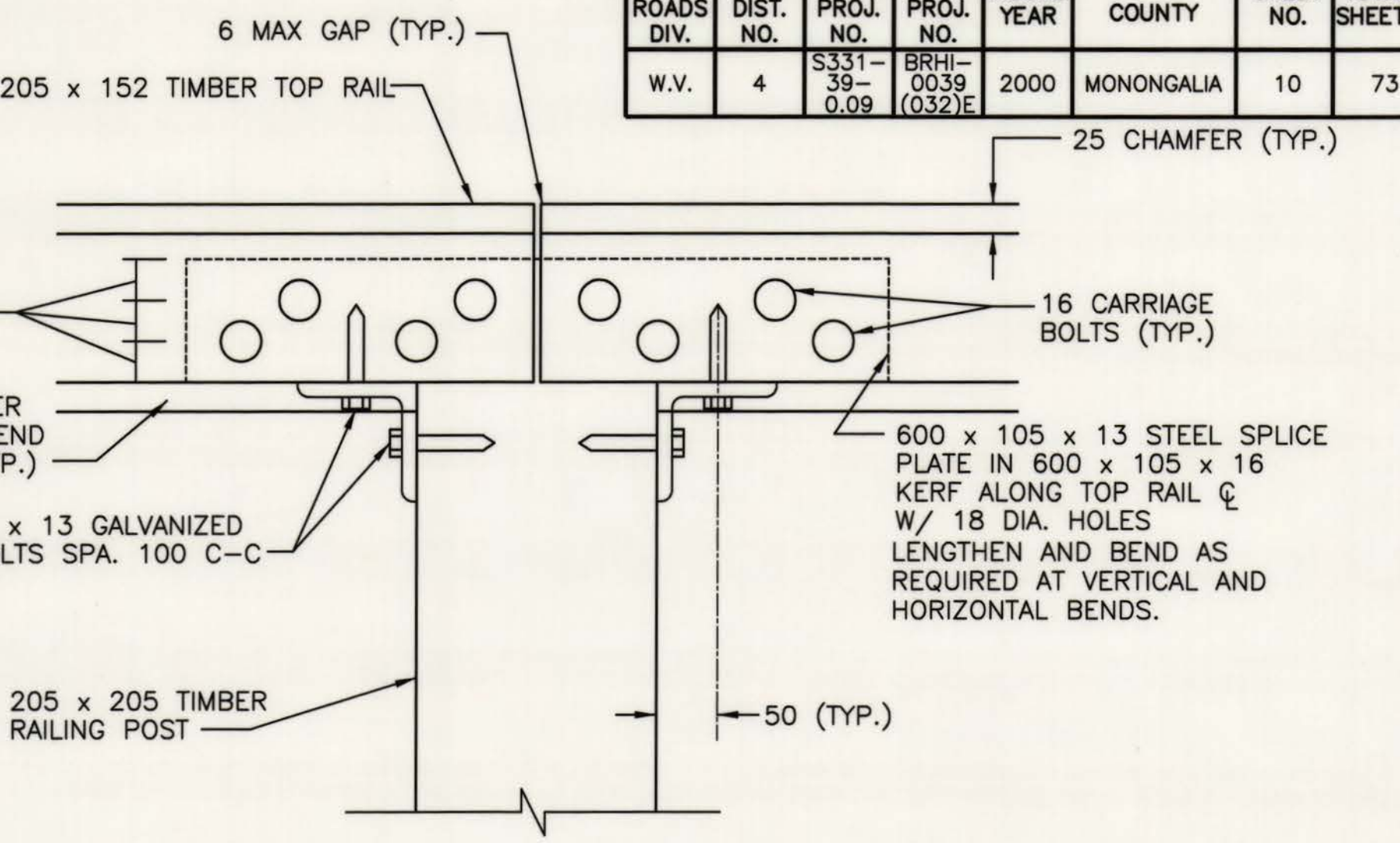
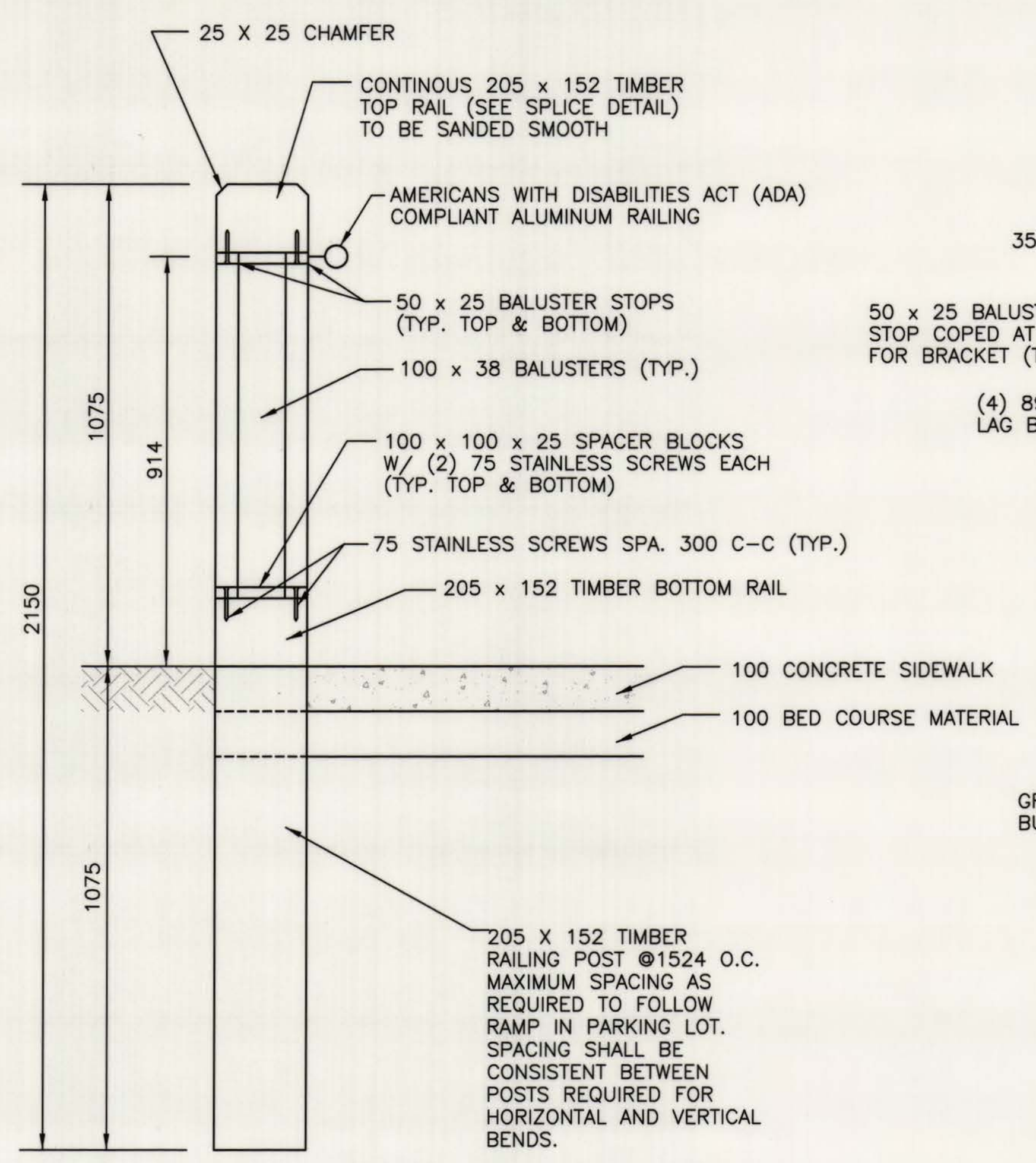
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 9
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:500	
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

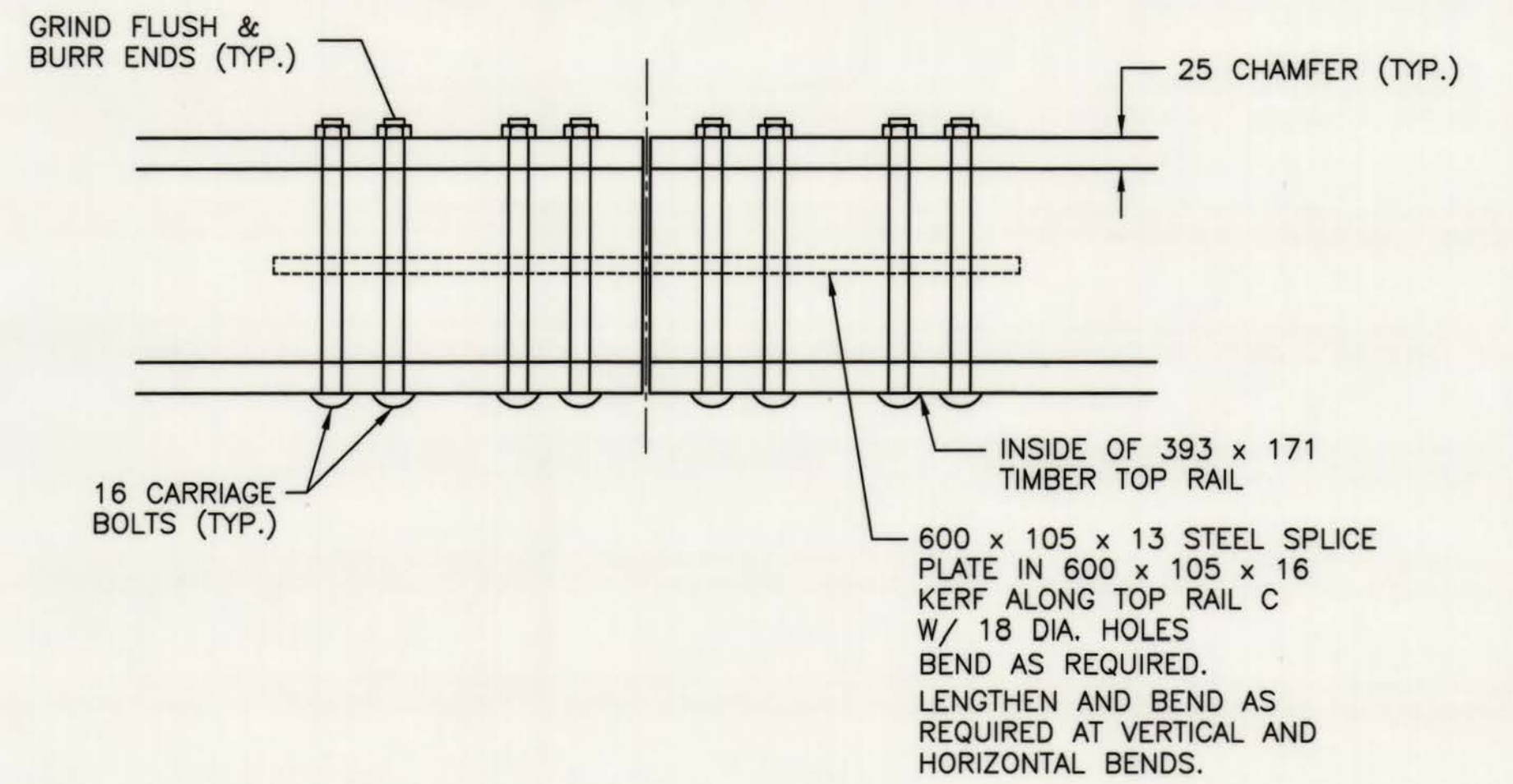
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	10	73



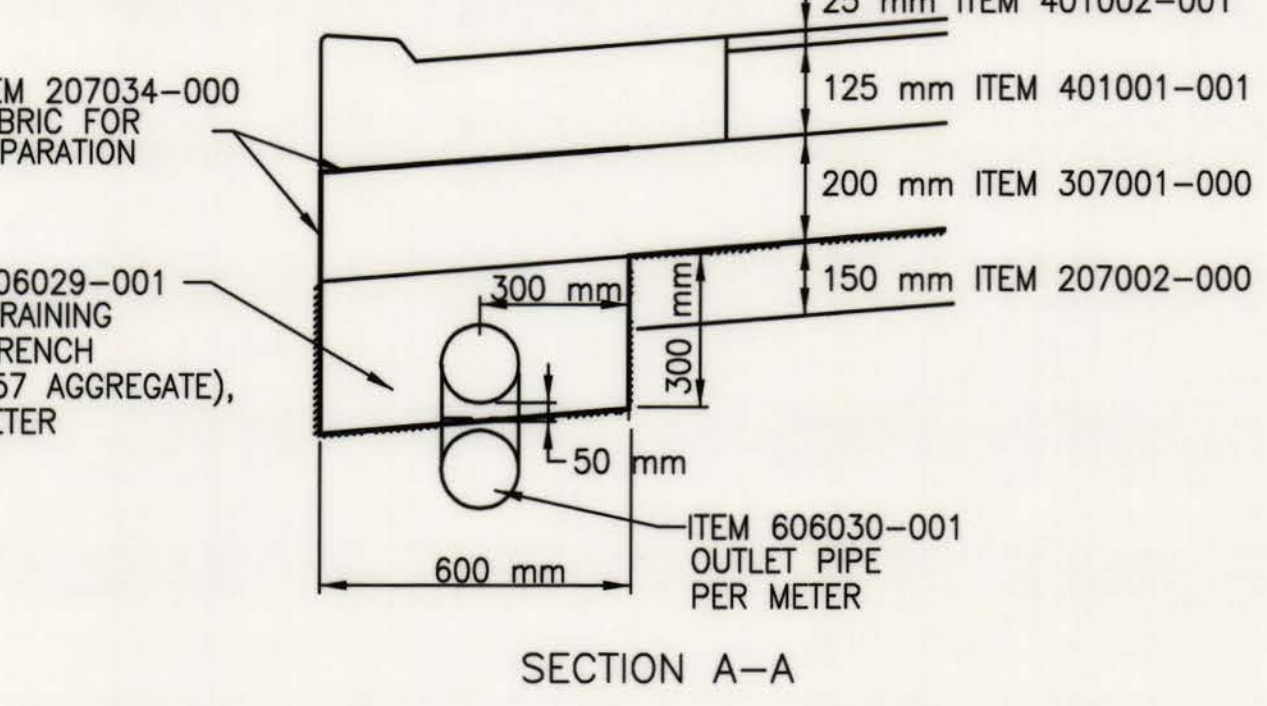
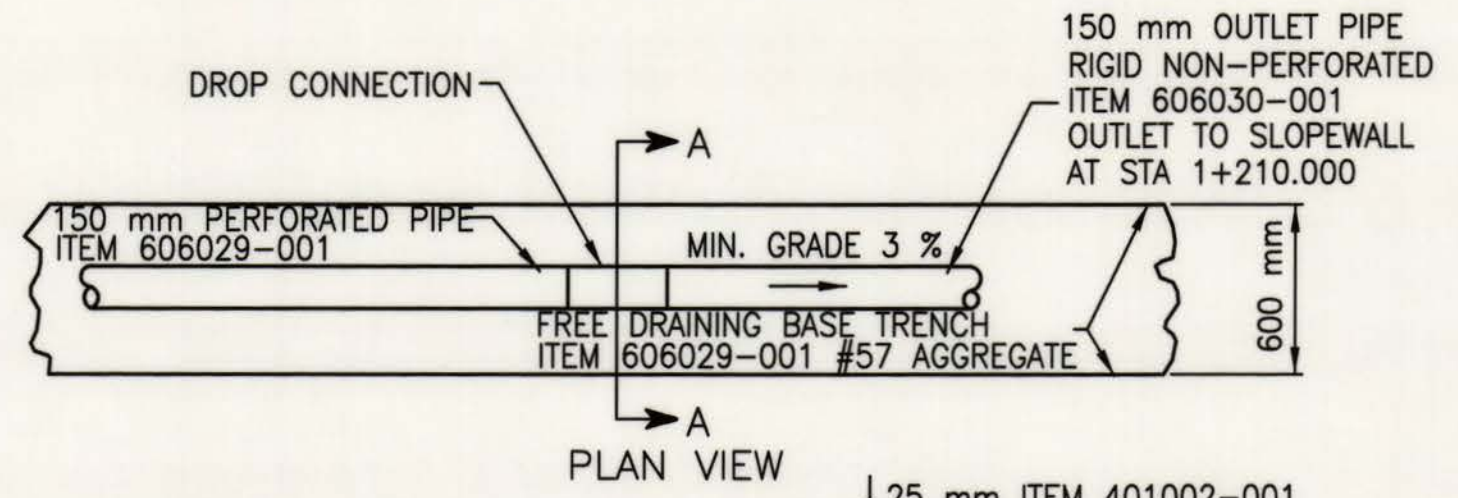
WALKWAY RAILING ELEVATION
SCALE: 1:100



WALKWAY INTERIOR ELEVATION
NO SCALE



WALKWAY RAILING TOP RAIL SPICE
NO SCALE



NOTE: PAYMENT FOR THE OUTLET PIPE INCLUDES DROP CONNECTIONS IN THE FREE DRAINING BASE TRENCH AND SLOPEWALLS OR CONNECTIONS TO DRAINAGE STRUCTURES AS REQUIRED. MAXIMUM OUTLET SPACING IS TO BE 75 m IN EMBANKMENTS. OUTLETS IN CUT SECTIONS WILL BE MADE TO THE NEAREST DRAINAGE STRUCTURE. SLOPEWALL DETAILS WILL BE IN ACCORDANCE WITH STANDARD DR8M (SHEET 3 OF 4).

FREE DRAINING BASE TRENCH AND OUTLET PIPE DETAIL
NO SCALE

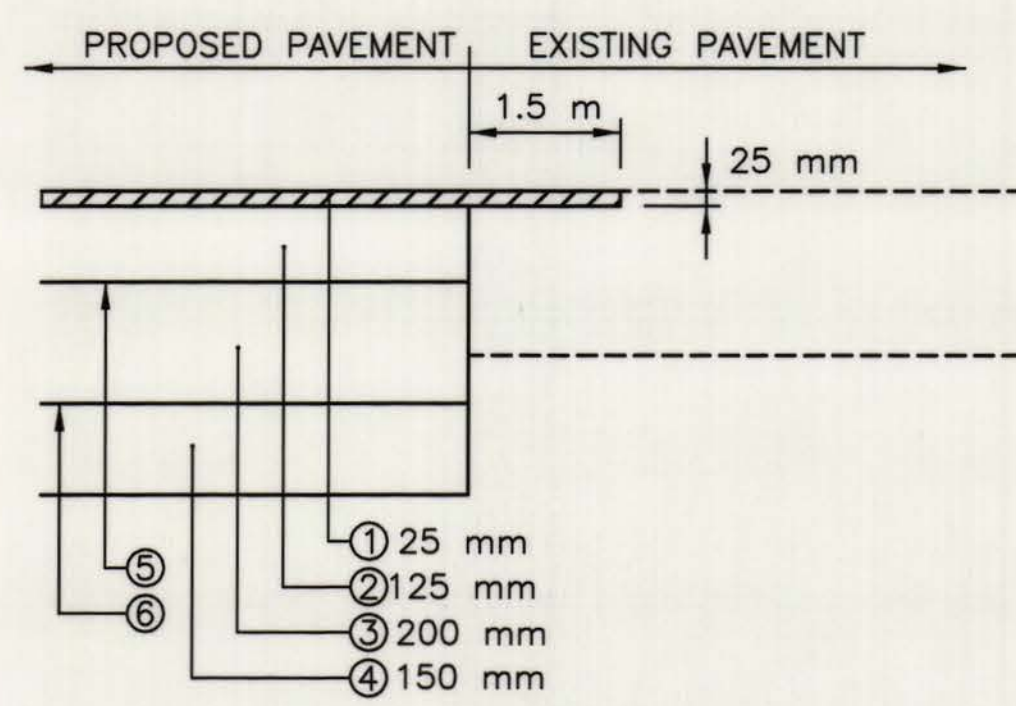
THE WALKWAY RAILING IS LOCATED AS SHOWN ON THE PARKING LOT GRADING PLAN (SHEET 36 OF 73.)

WALKWAY RAILING, INCLUDING WOOD RAILS, BALUSTERS, BALUSTER STOPS, TIMBER POSTS, CARRIAGE BOLTS, SPLICE PLATES, LAG BOLTS, ANGLES, MISCELLANEOUS HARDWARE, AND ADA APPROVED ALUMINUM RAIL IS TO BE PAID FOR UNDER ITEM 617003-001, ALUMINUM RAILING, PER METER.

TIMBER POSTS, RAILS, AND BALUSTERS SHALL MEET THE REQUIREMENTS OF SECTION 622.2.1. TIMBER COMPONENTS SHALL BE PRESSURE TREATED WITH WATERBORNE PRESERVATIVES IN ACCORDANCE WITH SECTION 710.3.4.2.

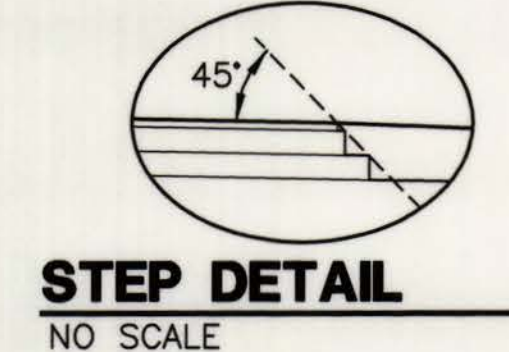
SPLICE PLATES AND CONNECTION ANGLES SHALL MEET THE REQUIREMENTS OF SECTION 622.2.3.1. ALL ATTACHMENT HARDWARE IS TO BE HOT-DIP GALVANIZED TO AASHTO M111, EXCEPT THAT SCREWS IN THE SPACER BLOCKS ARE TO BE STAINLESS SCREWS.

WALKWAY RAILING DETAIL
SCALE: 1:100



COST OF THE HEEL-INS ARE TO BE INCLUDED IN THE UNIT BID PRICE OF H.M.A. WEARING COURSE.

HEEL IN DETAIL
NO SCALE



STEP DETAIL
NO SCALE

- LEGEND**
- ① ITEM 401002-001 HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
 - ② ITEM 401001-001 HOT-MIX ASPHALT BASE COURSE, STONE OR GRAVEL, TYPE I, PER MEGAGRAM
 - ③ ITEM 307001-000 AGGREGATE BASE COURSE, CLASS I, PER CUBIC METER
 - ④ ITEM 207002-000 SUBGRADE, PER CUBIC METER
 - ⑤ ITEM 409002-001 BITUMINOUS MATERIAL, PER LITER
 - ⑥ ITEM 207034-000 FABRIC FOR SEPARATION, PER SQUARE METER
 - ⑦ ITEM 308001-000** AGGREGATE BASE COURSE, CLASS I, PER MEGAGRAM
 - ⑧ ITEM 607001-001 TYPE I GUARDRAIL, CLASS I, PER METER
 - ⑨ ITEM 610003-001 COMBINATION CURB AND GUTTER, TYPE I, PER METER
 - ⑩ ITEM 606029-001 FREE DRAINING BASE TRENCH, PER METER
 - ⑪ ITEM 606030-001 OUTLET PIPE, PER METER
 - ⑫ ITEM 610001-001 PLAIN CONCRETE CURBING, TYPE I, PER METER

**NOTE: THE GRADATION REQUIREMENTS SHALL BE MODIFIED AS FOLLOWS: 4 TO 12 PERCENT PASSING THE NUMBER 75 MICROMETER SEIVE.

A.A.I. JOB NO. 971281.00

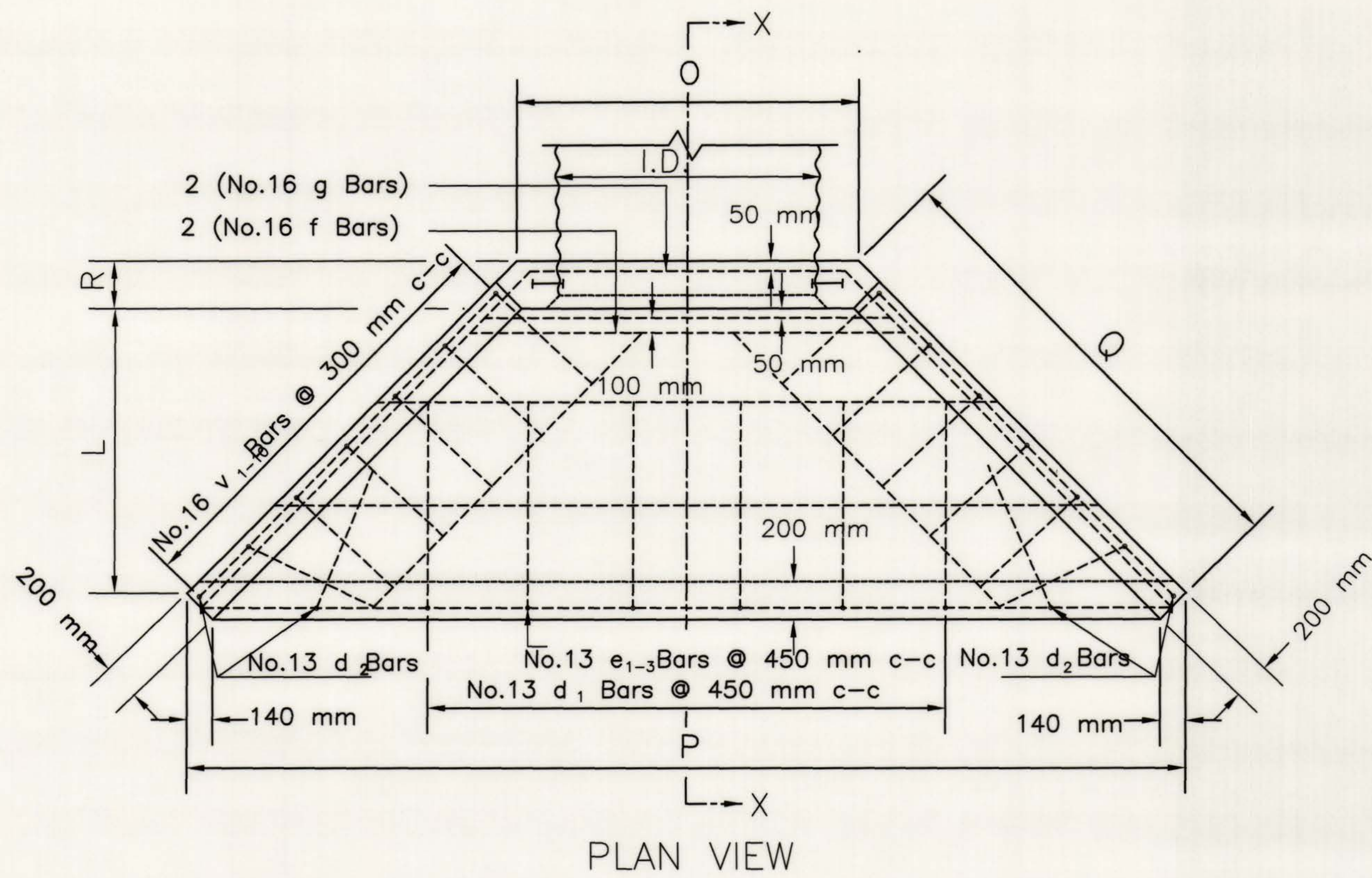
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
SPECIAL DETAILS

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 10
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: AS NOTED	

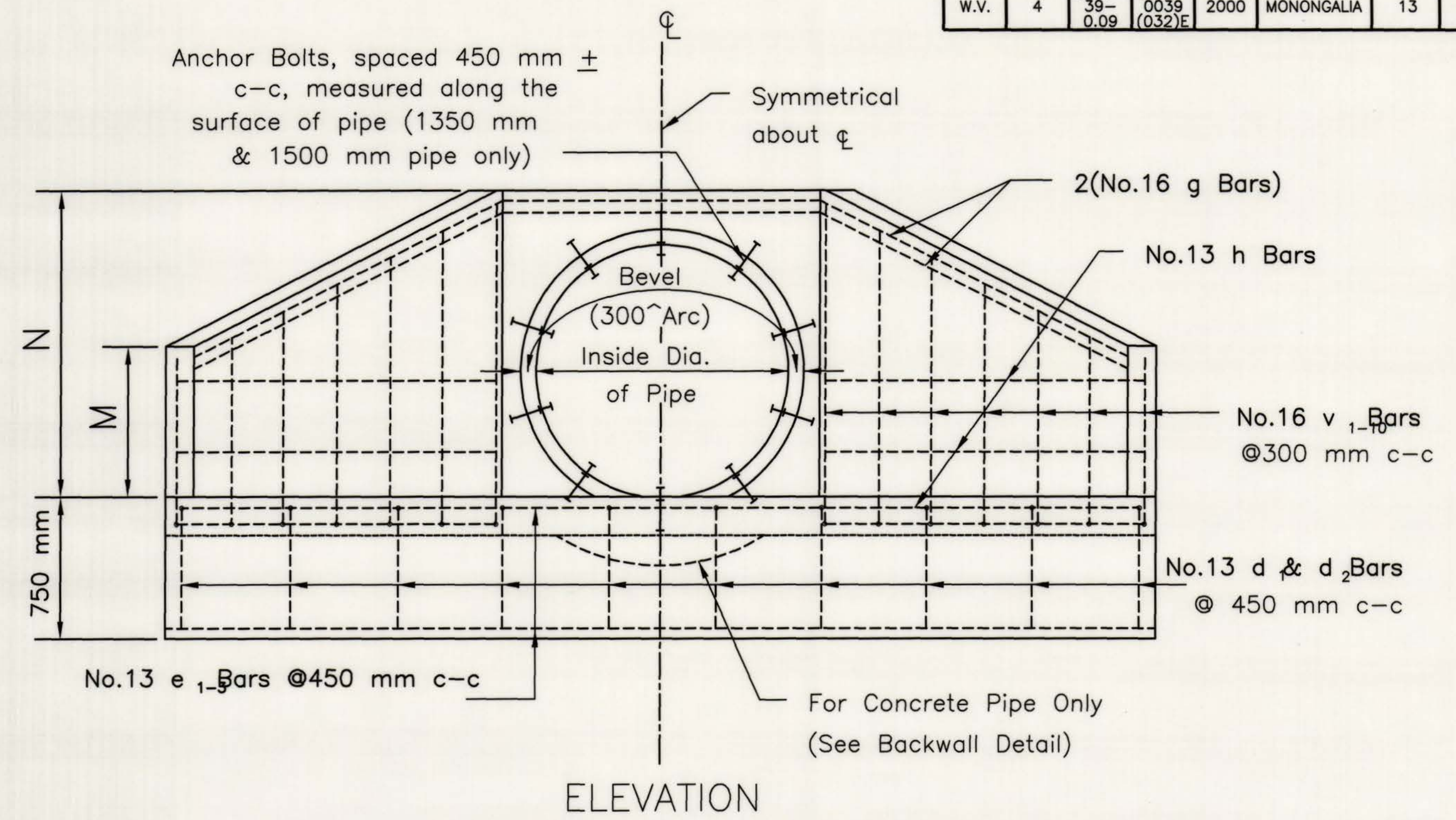
ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

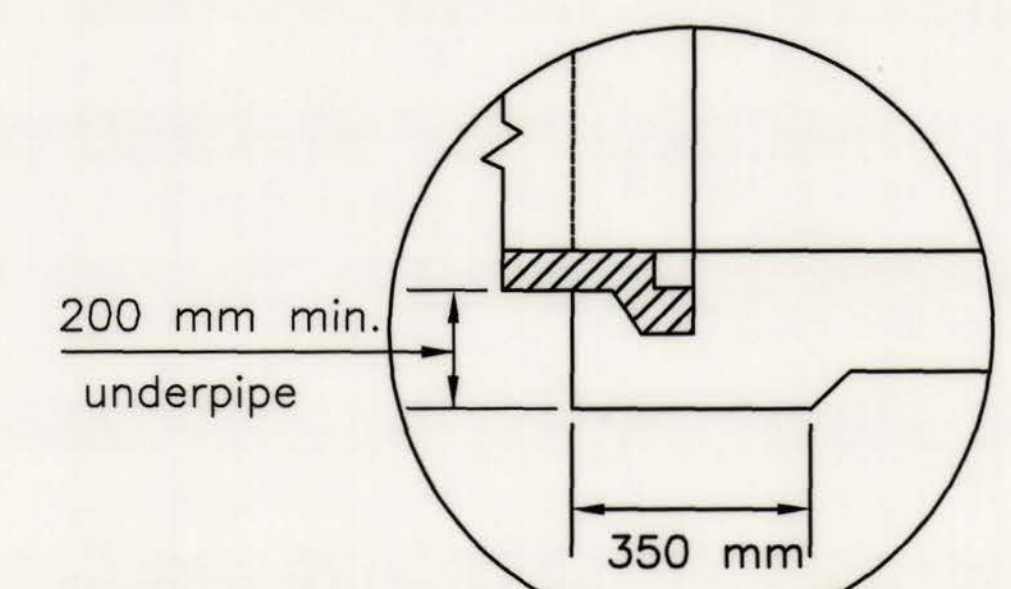
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	13	73



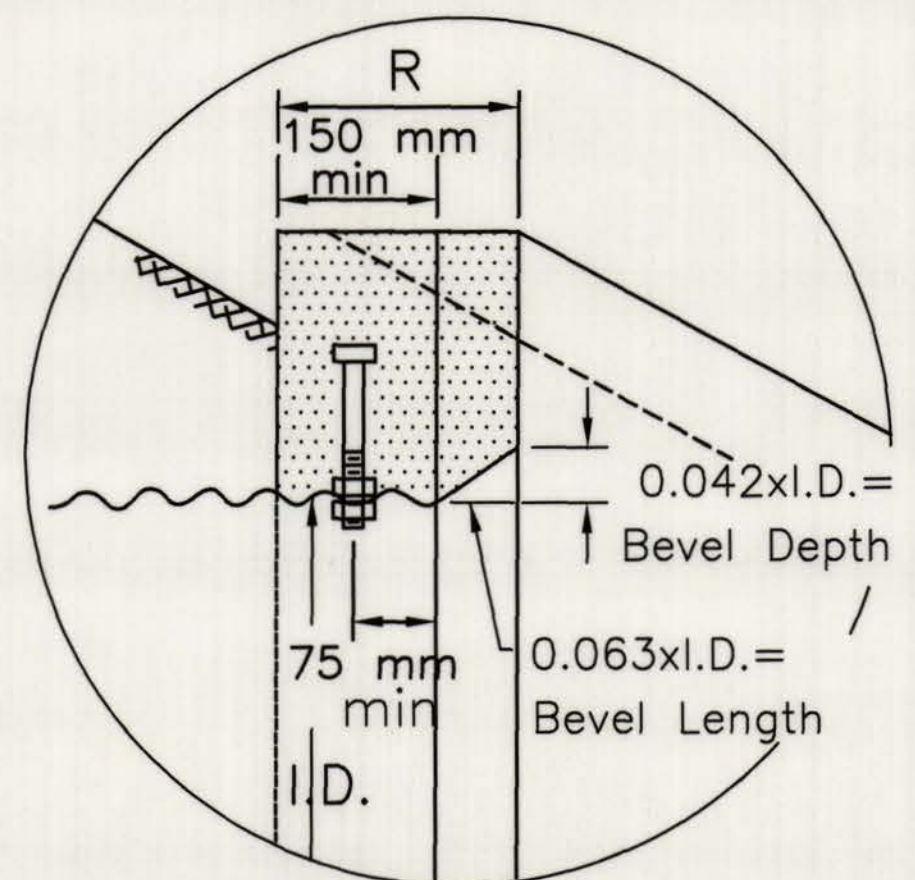
PLAN VIEW



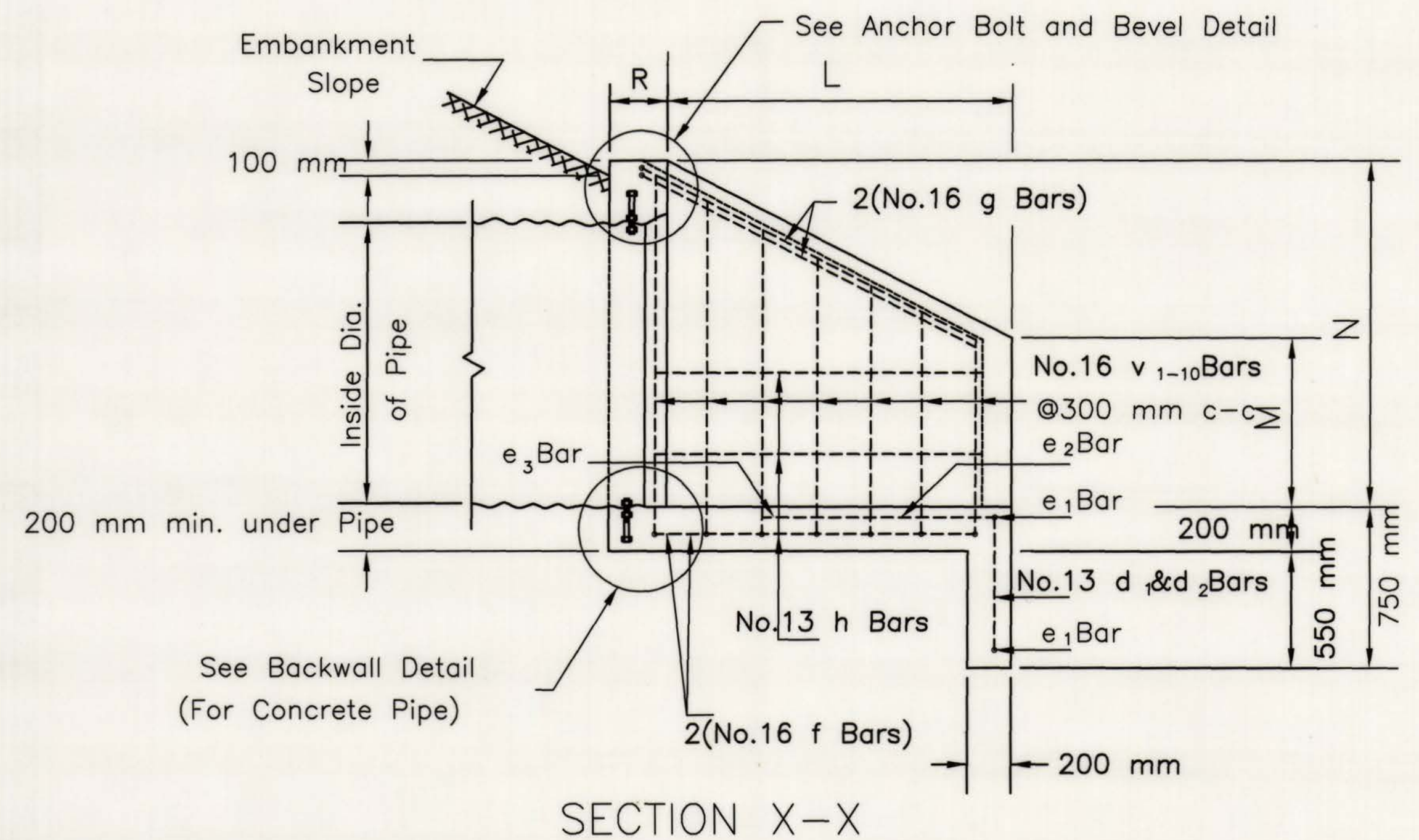
ELEVATION



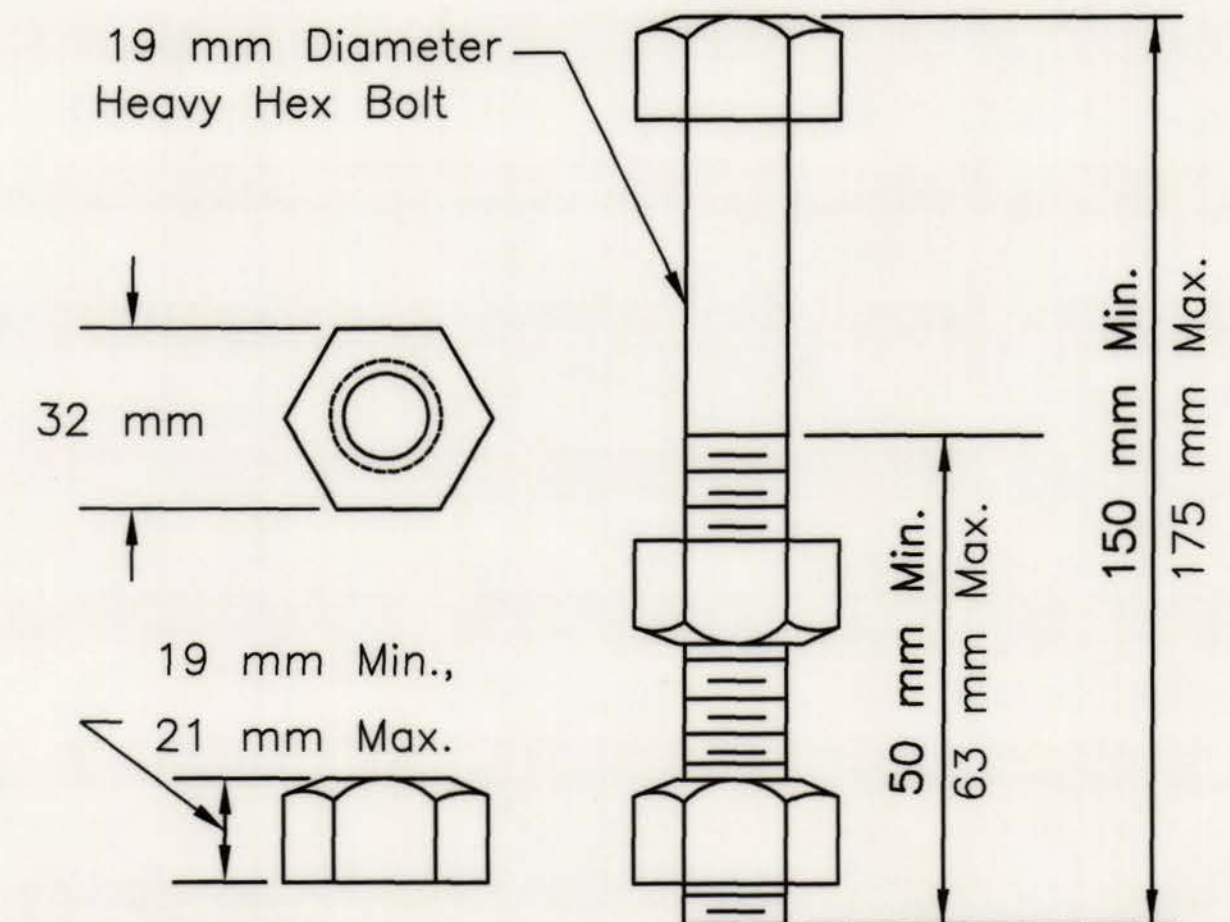
BACKWALL DETAIL (for concrete pipe)



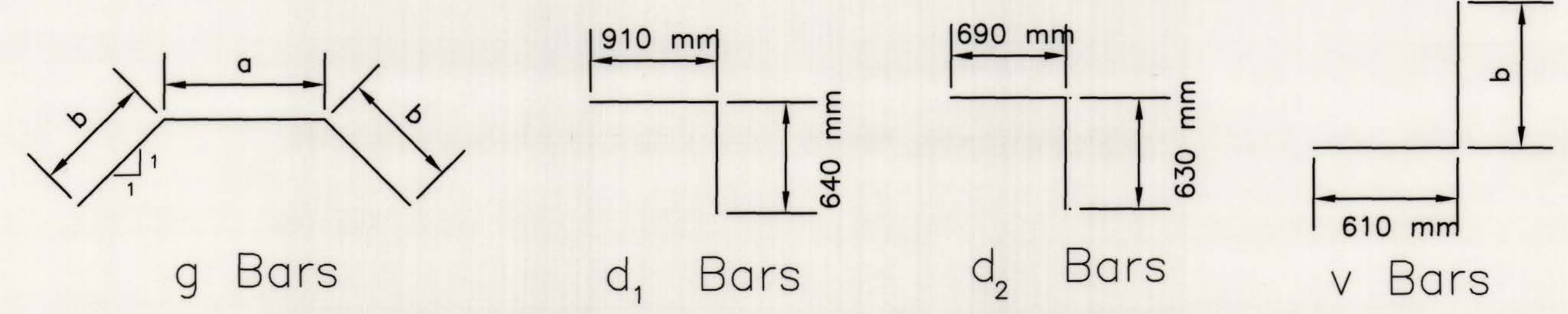
ANCHOR BOLT AND BEVEL DETAIL



SECTION X-X



ANCHOR BOLT DIMENSIONS



DETAIL OF BENT BARS

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED	REVISION DATE
11-1-1999	

PIPE CULVERT
WINGWALLS
(SHEET 3 OF 4)

STANDARD SHEET DR2M

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	14	73

Inside Dia. of Pipe (mm)	Slope of Fill	DIMENSIONS								REINFORCEMENT						QUANTITIES			
		L	M	N	O	P	Q	R	S	M a r k	S i z e	No. of	LENGTH (m)			T y p e	Conc. (R.C.P.) (m ³)	Conc. (C.M.P. or S.P.P.) (m ³)	Steel (kg)
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)				a	b	T o t a l				
1050	1:2	*1295	660	1334	1473	4281	1988	*254	*156	d ₁	No.13	6			1.55	Bent	2.43	2.46	102.1
		+1325						+200	+83	d ₂	No.13	4			1.32	Bent			
										e ₁	No.13	2			4.20	St.			
										e ₂	No.13	1			3.35	St.			
		Bevel: Depth = 44 mm								e ₃	No.13	1			2.44	St.			
		Length = 69 mm								f	No.16	2			1.78	St.			
										g	No.16	2	1.30	2.07	5.44	Bent			
										h	No.16	8			1.83	St.			
										v ₁	No.16	2		0.76	1.37	Bent			
										Thru	No.16			Varies					
										v ₇	No.16	2		1.37	1.98	Bent			
1200	1:2	*1473	747	1499	1651	4813	2242	*254	*156	d ₁	No.13	7			1.55	Bent	2.97	3.05	118.8
		+1500						+200	+83	d ₂	No.13	4			1.32	Bent			
										e ₁	No.13	2			4.65	St.			
										e ₂	No.13	1			3.89	St.			
		Bevel: Depth = 50 mm								e ₃	No.13	1			2.98	St.			
		Length = 75 mm								f	No.16	2			1.96	St.			
										g	No.16	2	1.47	2.35	6.17	Bent			
										h	No.13	8			2.06	St.			
										v ₁	No.16	2		0.84	1.45	Bent			
										Thru	No.16			Varies					
										v ₈	No.16	2		1.57	2.18	Bent			
1350	1:2	*1625	800	1664	1829	5347	2489	*254	*156	d ₁	No.13	8			1.55	Bent	3.54	3.62	136.1
		+1675						+200	+83	d ₂	No.13	4			1.32	Bent			
										e ₁	No.13	2			5.18	St.			
										e ₂	No.13	1			4.42	St.			
		Bevel: Depth = 56mm								e ₃	No.13	1			3.50	St.			
		Length = 88mm								f	No.16	2			2.13	St.			
										g	No.16	2	1.67	2.62	6.91	Bent			
										h	No.13	8				St.			
										v ₁	No.16	2		0.91	1.52	Bent			
										Thru	No.16	2		Varies					
										v ₉	No.16	2		1.73	2.34	Bent			
1500	1:2	*1829	875	1800	1975	5788	2700	*254	*156	d ₁	No.13	9			1.55	Bent	4.23	4.33	154.1
		+1950						+200	+83	d ₂	No.13	4			1.32	Bent			
										e ₁	No.13	2			5.72	St.			
										e ₂	No.13	1			4.94	St.			
		Bevel: Depth = 63 mm								e ₃	No.13	1			4.04	St.			
		Length = 94 mm								f	No.16	2			2.31	St.			
										g	No.16	2	1.86	2.87	7.60	Bent			
										h	No.13	8			2.59	St.			
										v ₁	No.16	2		99	1.60	Bent			
										Thru	No.16	2		Varies					
										v ₁₀	No.16	2		1.90	2.51	Bent			

NOTES

The "Notes" and the "Construction Detail-Skewed Pipe" on Standard Sheet DR2M (sheets 1&2 of 4) shall apply to this sheet.

Anchor bolts shall be used on wingwalls for corrugated metal and structural plate pipe greater than 1200 mm in diameter. Anchor bolts are not required for concrete pipe.

Anchor bolts and nuts shall conform to the requirements for "Headwall Anchorage" hardware as stipulated in AASHTO Specification M-167. 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 1200 mm in diameter.

Dimensions and location of inserts shall conform to the "Drainage Structure Terminal Installation" Detail of the applicable right-of-way fence standard.

Bar designation number (no.) approximates the number of millimeters in the nominal diameter of the bar.

Waterstop meeting the requirements of 708.10 shall be placed as shown when concrete gutter is to abut the wingwall.

* Dimensions for inlet wingwalls on corrugated metal or structural plate pipe (to accommodate bevel).

+ Dimensions for inlet wingwalls on concrete pipe and all outlet wingwalls.

**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL**

PREPARED 11-1-1999
REVISION DATE

**PIPE CULVERT
WINGWALLS
(SHEET 4 OF 4)**

STANDARD SHEET DR2M

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	15	73

SQUARE STYLE

CIRCULAR STYLE 1

CIRCULAR STYLE 2

NOTES

UNLESS OTHERWISE SPECIFIED ON THE PLANS, TYPE B INLETS MAY BE CONSTRUCTED IN ANY OF THE SHAPES SHOWN HEREIN FOR OUTLET PIPE DIAMETERS OF 525 mm OR LESS AND THE ADJACENT PAVEMENT IS CONCRETE. IF THE OUTLET PIPE DIAMETER IS 600 mm OR THE ADJACENT PAVEMENT IS HOT MIX ASPHALT, ONLY THE SQUARE STYLE WITH THE DEEP FRAME WILL BE USED. THE INSIDE OPENING OF THE INLET WILL BE ADJUSTED TO ACCOMMODATE THE 600 mm PIPE.

CONSTRUCTION MAY BE CAST-IN-PLACE, PRECAST IN ONE OR MULTIPLE SECTIONS, OR ANY COMBINATION OF CAST-IN-PLACE AND PRECAST.

OPTIONAL CONSTRUCTION JOINTS LABELED "CJ" MAY BE ROUGHENED CONCRETE, KEYED OR DOWELED AS PER THE TYPICAL DETAILS SHOWN HEREIN, OR AS APPROVED BY THE ENGINEER. NON SHRINK GROUT MEETING THE REQUIREMENTS OF SUBSECTION 715.5 OF THE SPECIFICATIONS MAY BE USED TO A DEPTH OF 13 mm FOR LEVELING BETWEEN PRECAST SECTIONS. THICKER DEPTHS WILL BE ALLOWED IF AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE FINAL INSTALLED TOP SURFACE OF INLET AND GRATE SHALL BE FLUSH WITH ADJACENT FINISHED SURFACES SUCH AS PAVEMENT, GUTTERS, CURBS, AND SIDEWALKS. TOP OF GRATE ELEVATION, IF SHOWN ON THE PLANS, IS FOR INFORMATION ONLY.

REBARS ARE TO BE INSTALLED AT THE QUARTER POINTS TO CONNECT CURB TO INLET. REBARS ARE NOT REQUIRED IF CURB IS POURED MONOLITHICALLY WITH THE INLET OR IF TYPE V OR VI MEDIAN IS SPECIFIED ON THE PLANS.

FOR DETAILS OF GRATES AND FRAMES, SEE INLET CASTING STANDARD SHEET DR6M-X.

THE CONTRACTOR MAY, AT HIS OPTION, OMIT USE OF THE SHALLOW FRAME BY FORMING A LEDGE IN THE CONCRETE. SPECIAL CARE SHALL BE EXERCISED IN FORMING THE 50 mm WIDE CONCRETE LEDGE TO PROVIDE A SMOOTH, EVEN SURFACE FOR SUPPORTING THE GRATE IF A FRAME IS NOT USED. NO PROJECTIONS SHALL EXIST ON THE GRATE AND THE GRATE SHALL SEAT ON THE LEDGE WITHOUT ROCKING.

FIBRE FORM SHALL BE REMOVED PRIOR TO COMPLETION OF THE PROJECT.

PC(MINIMUM PIPE COVER) SHALL BE 300 mm BELOW INLET TOP FOR PIPES PLACED UNDER SIDEWALK OR GRASSED AREA OR 600 mm BELOW INLET TOP FOR PIPES PLACED UNDER PAVEMENT OR SHOULDER.

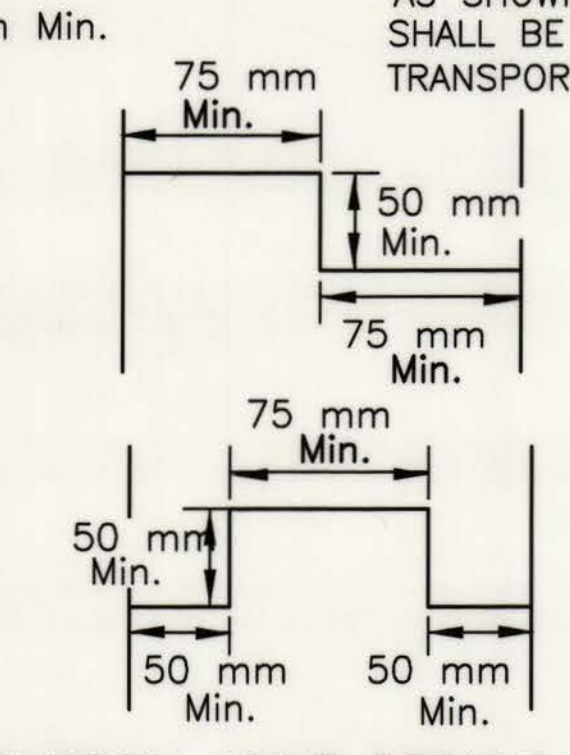
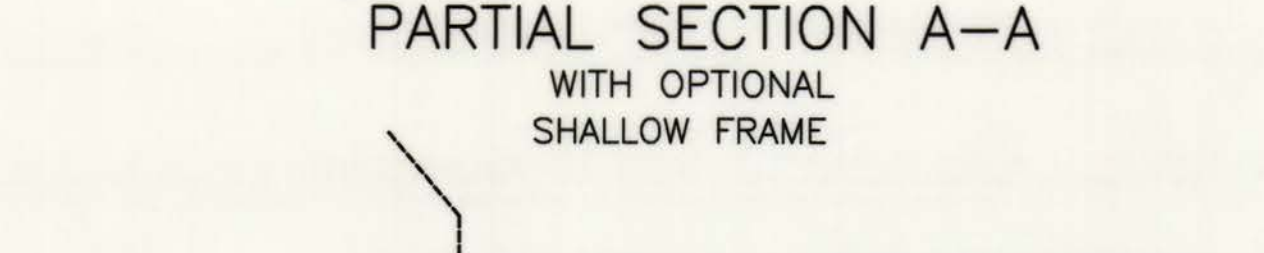
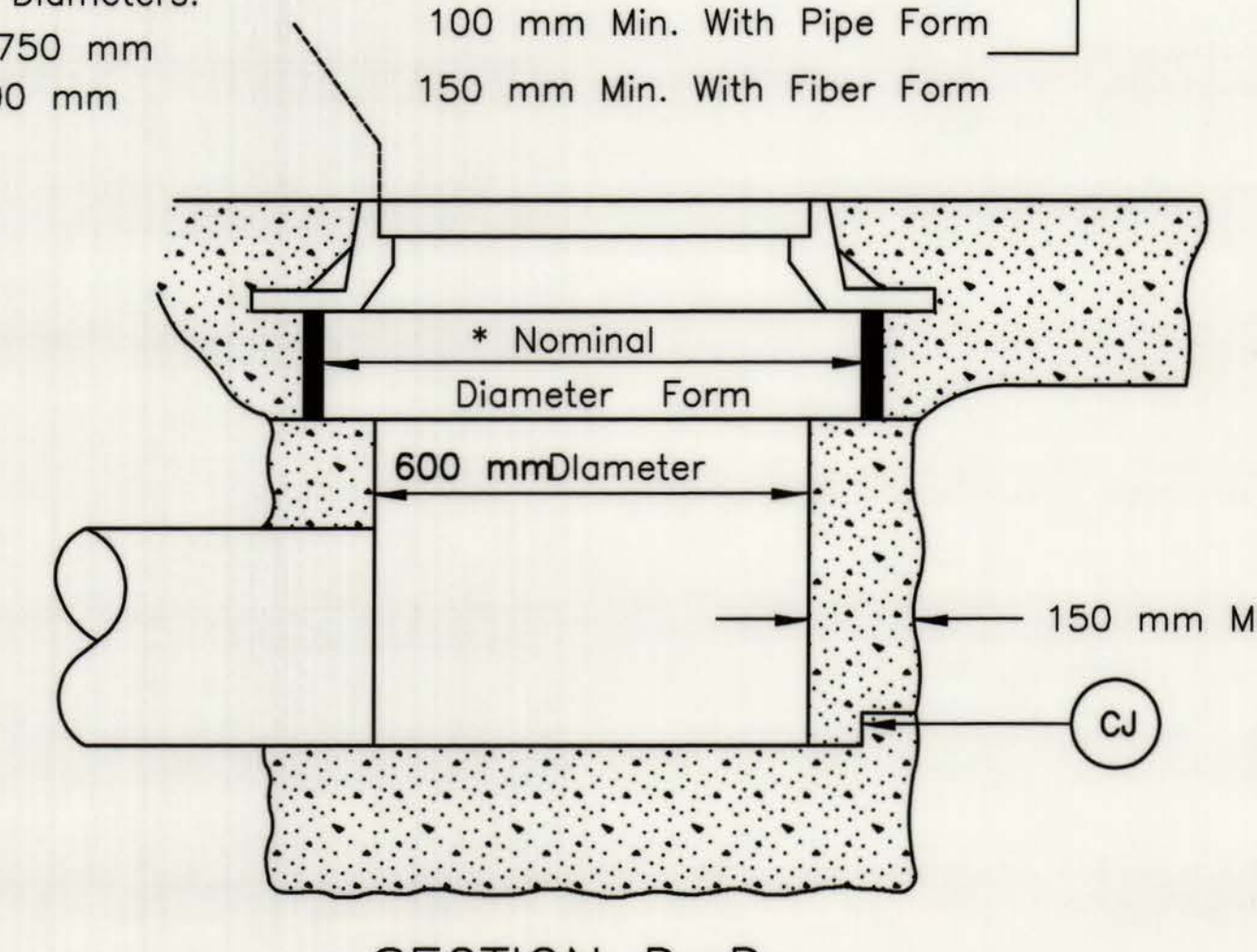
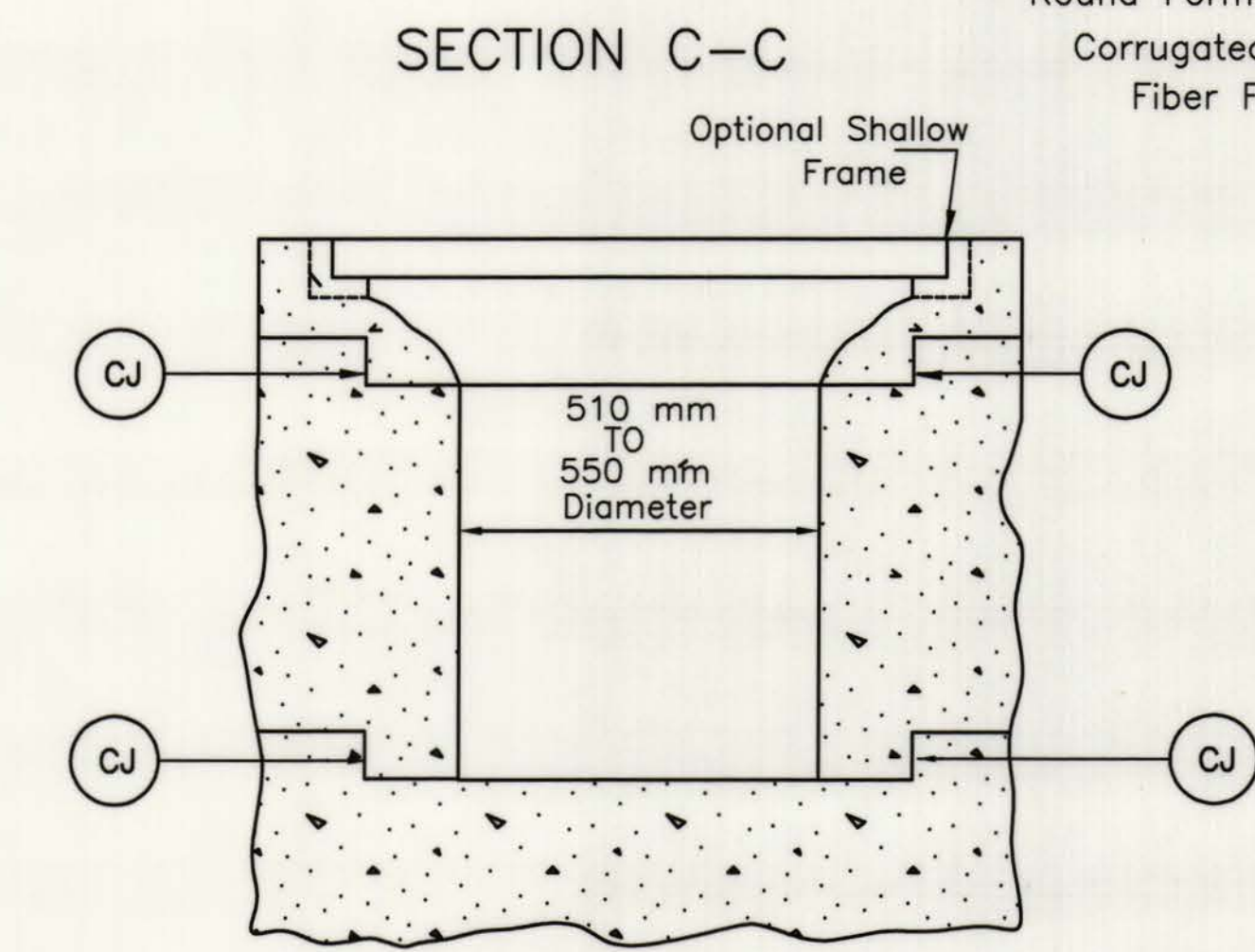
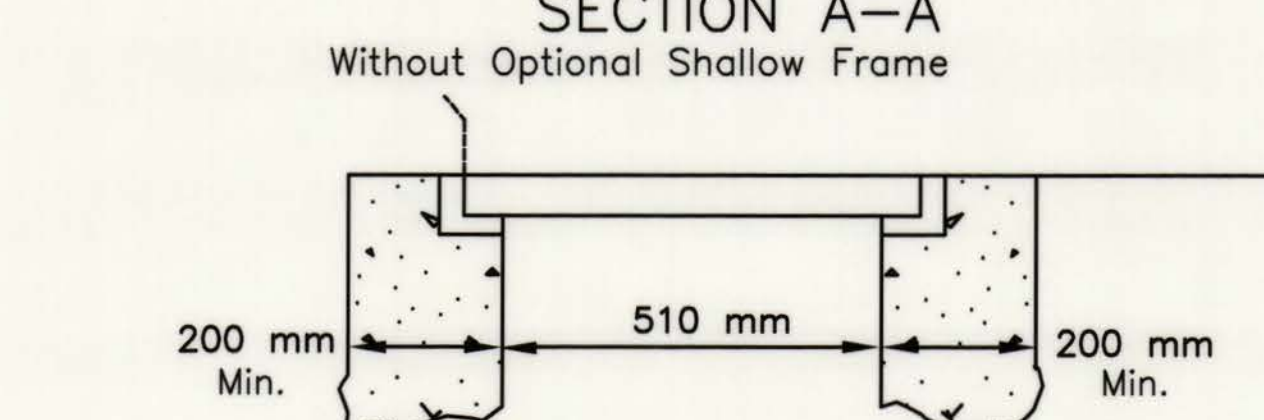
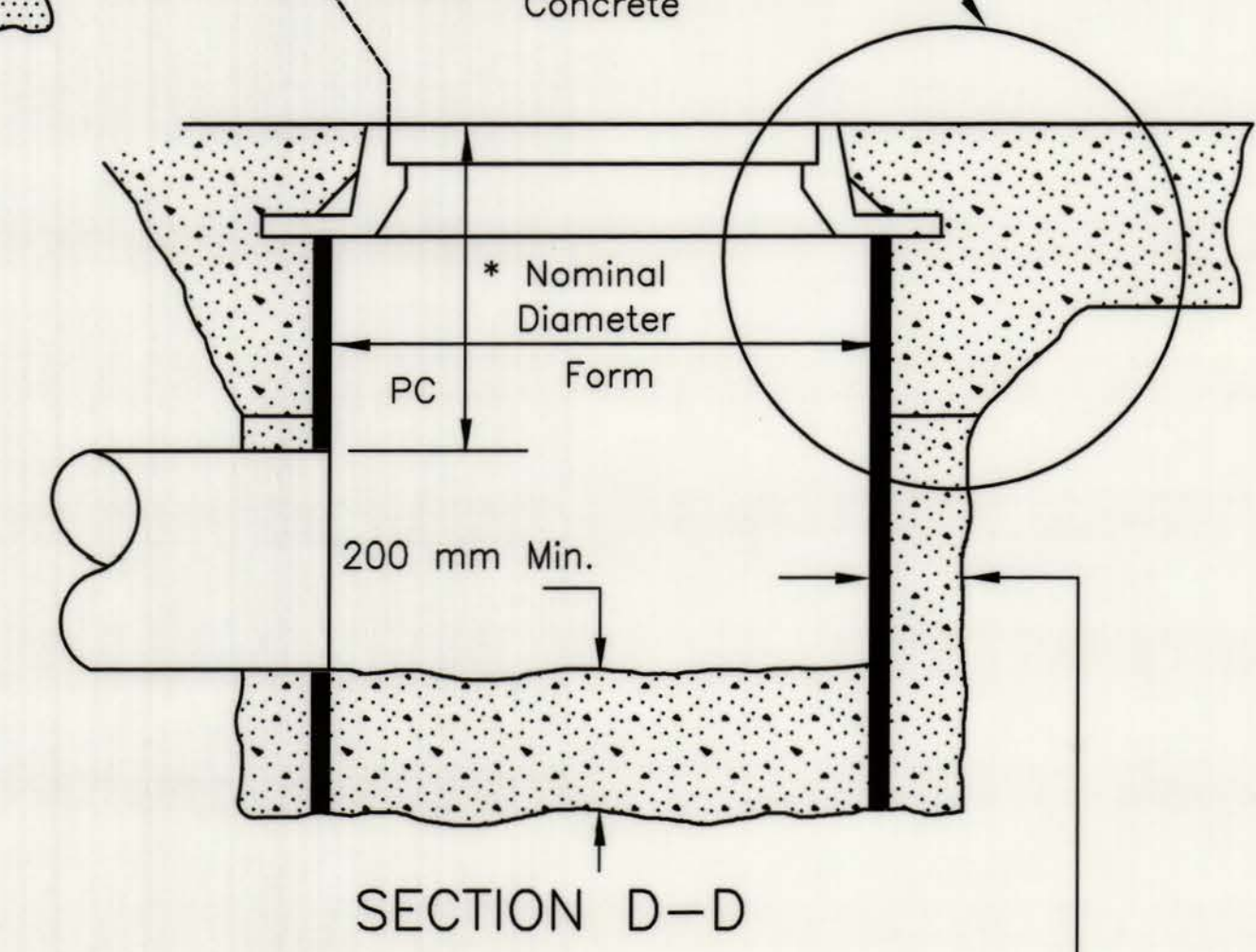
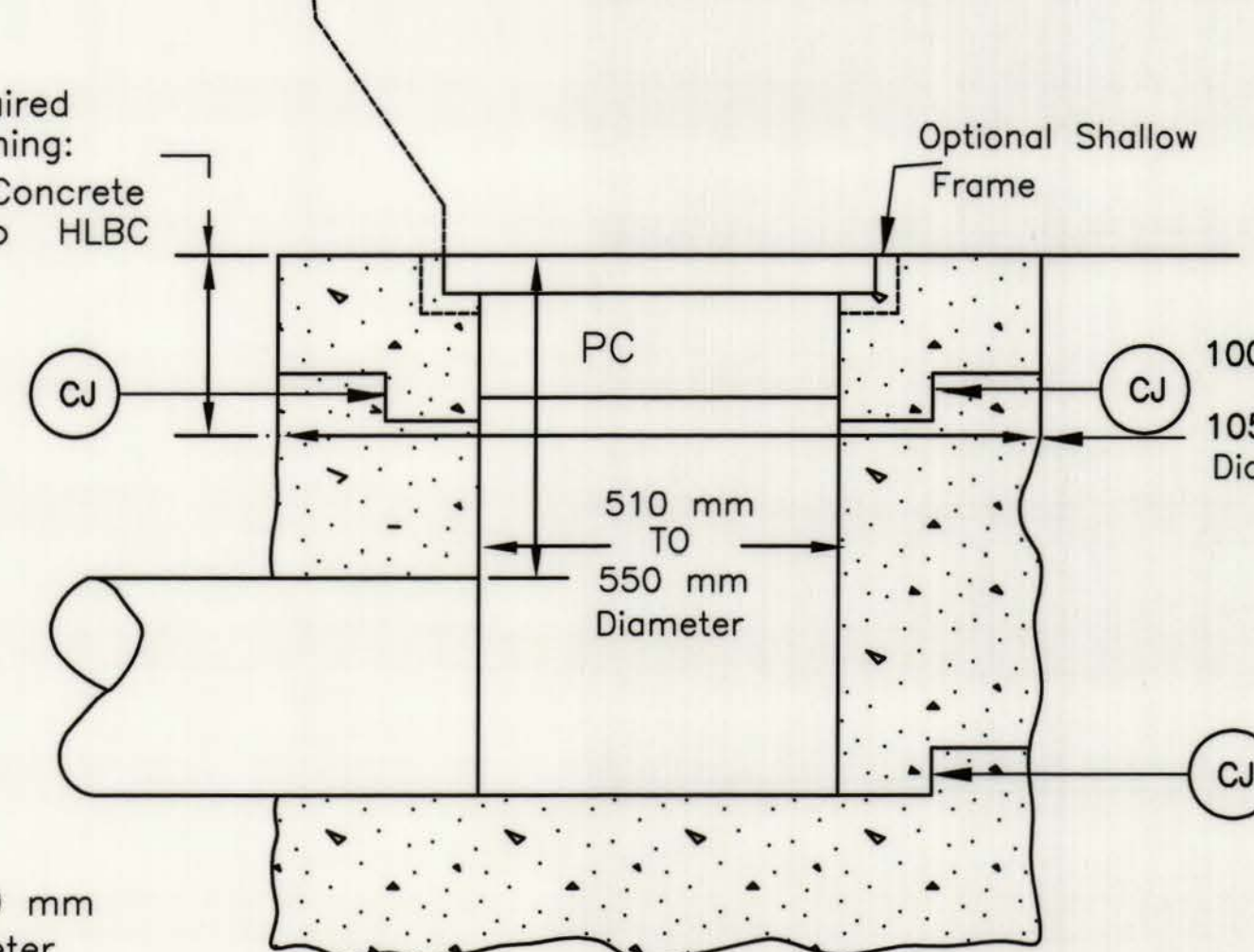
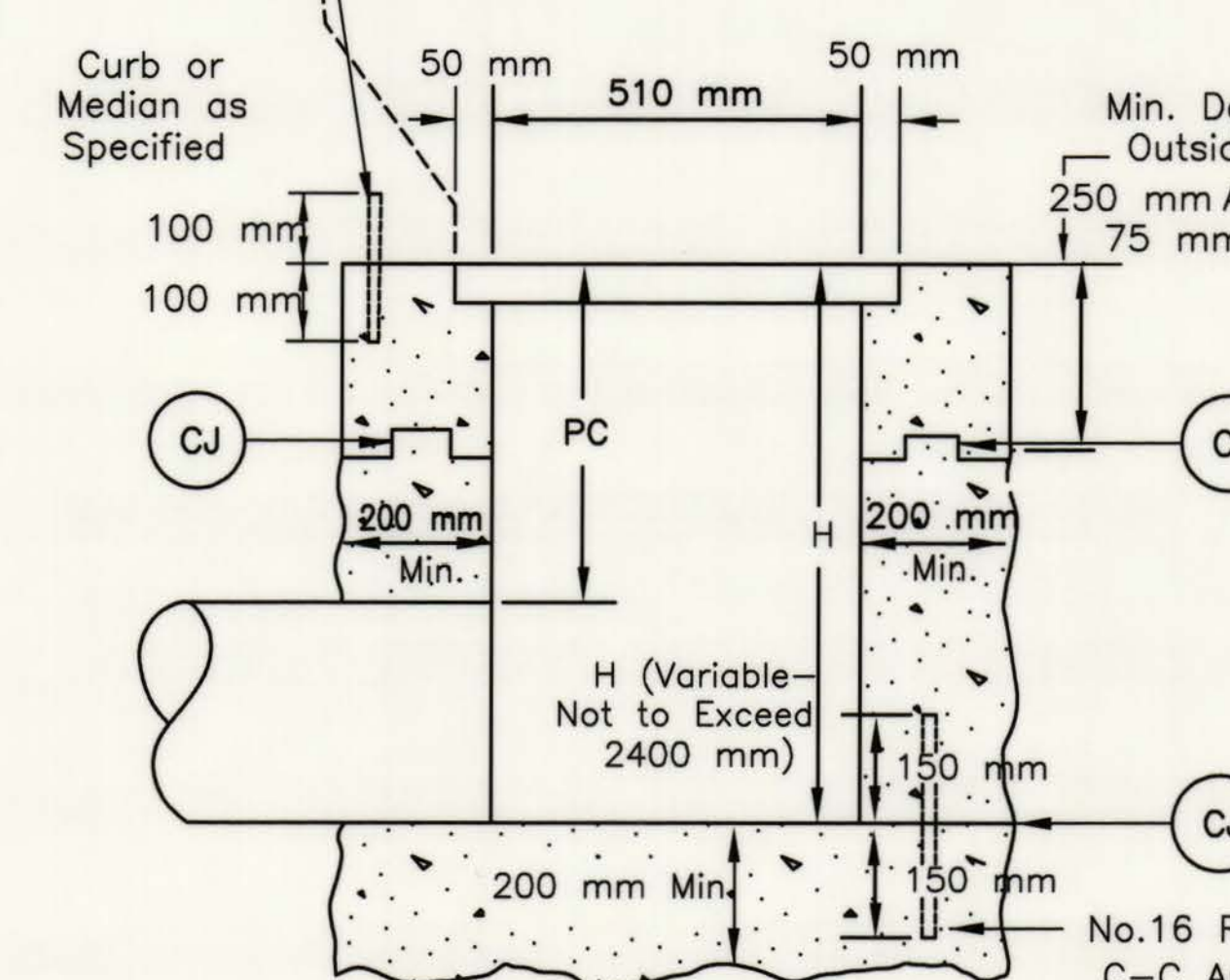
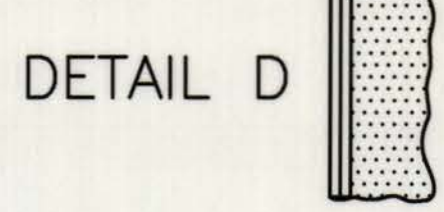
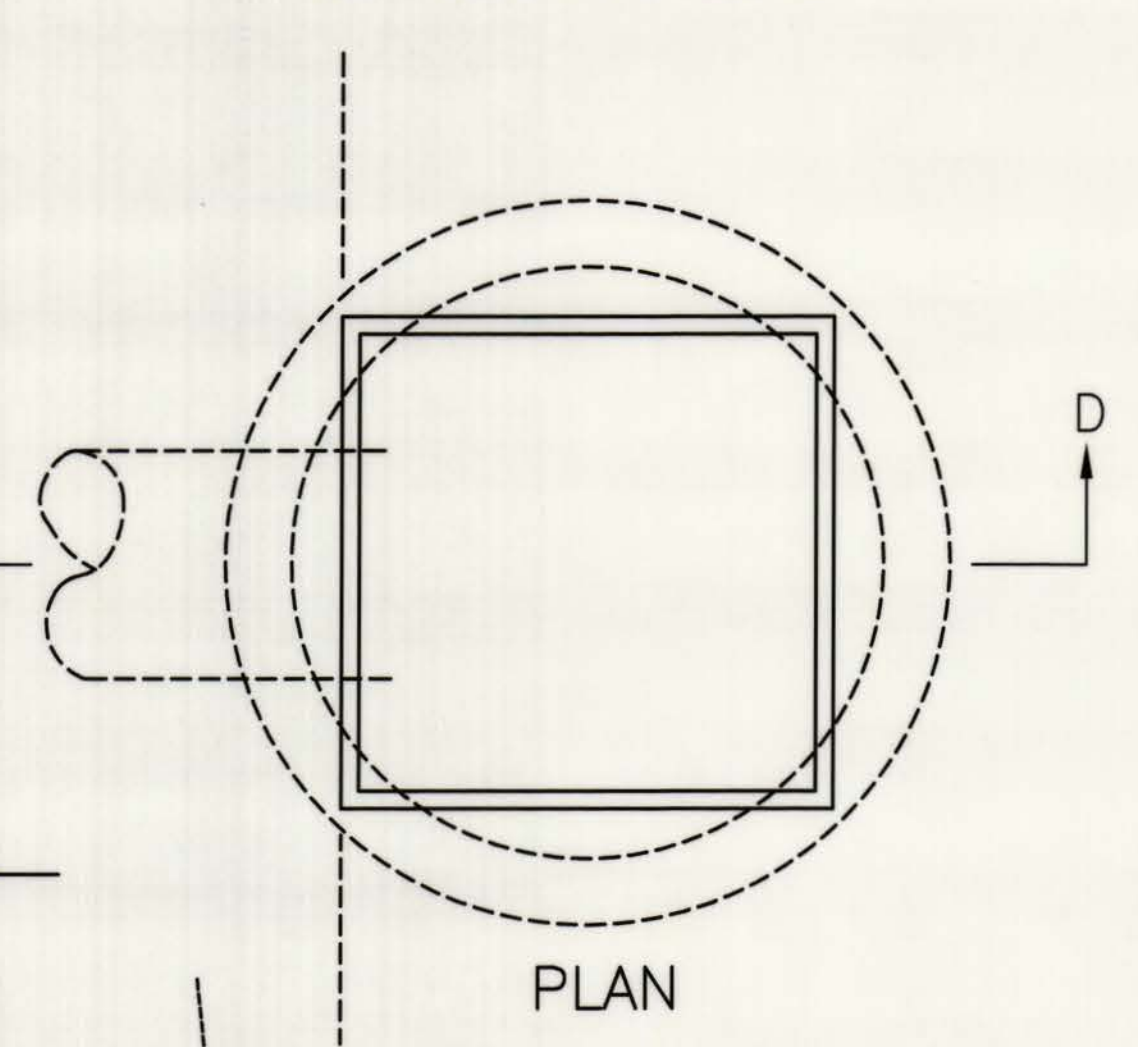
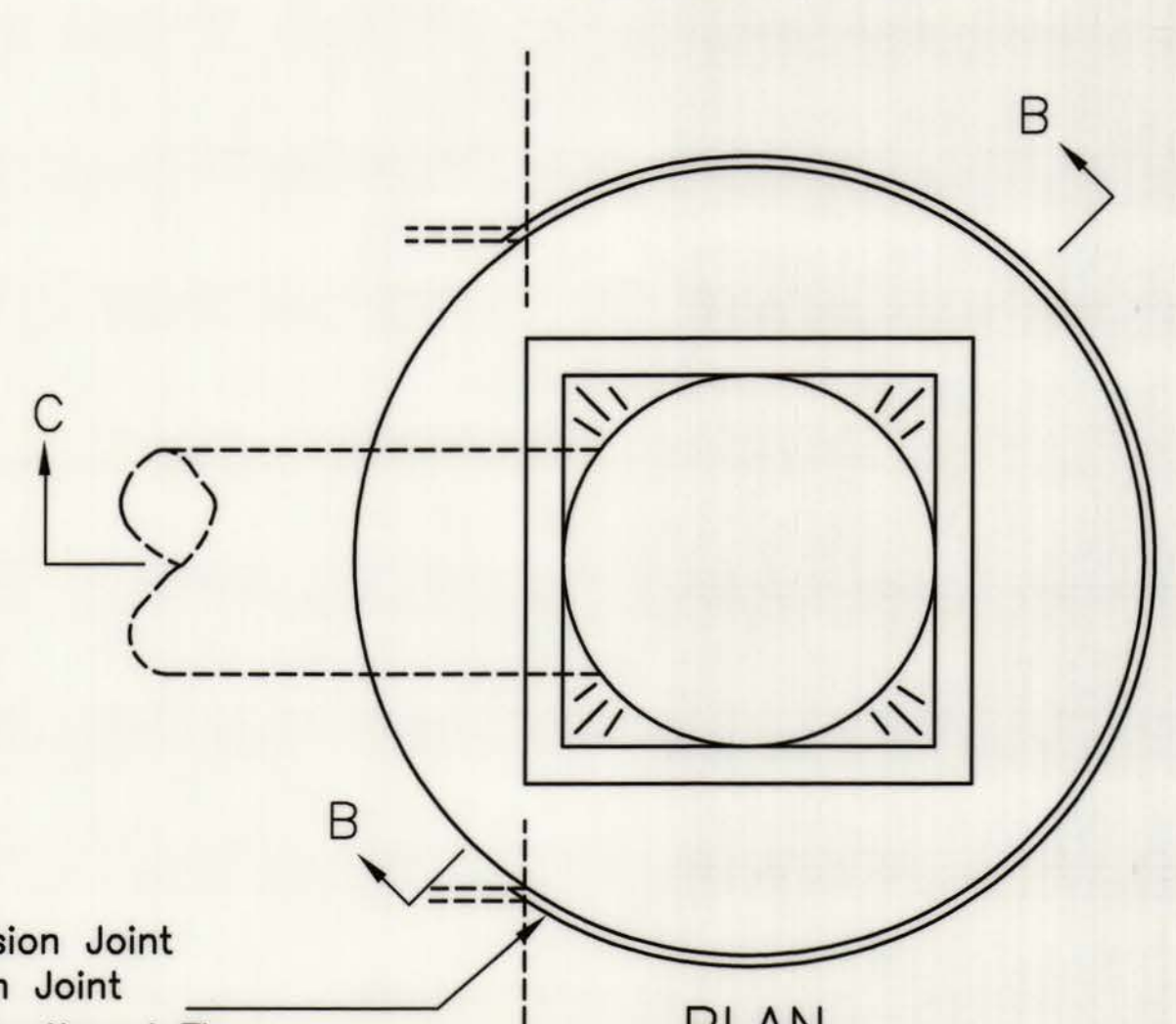
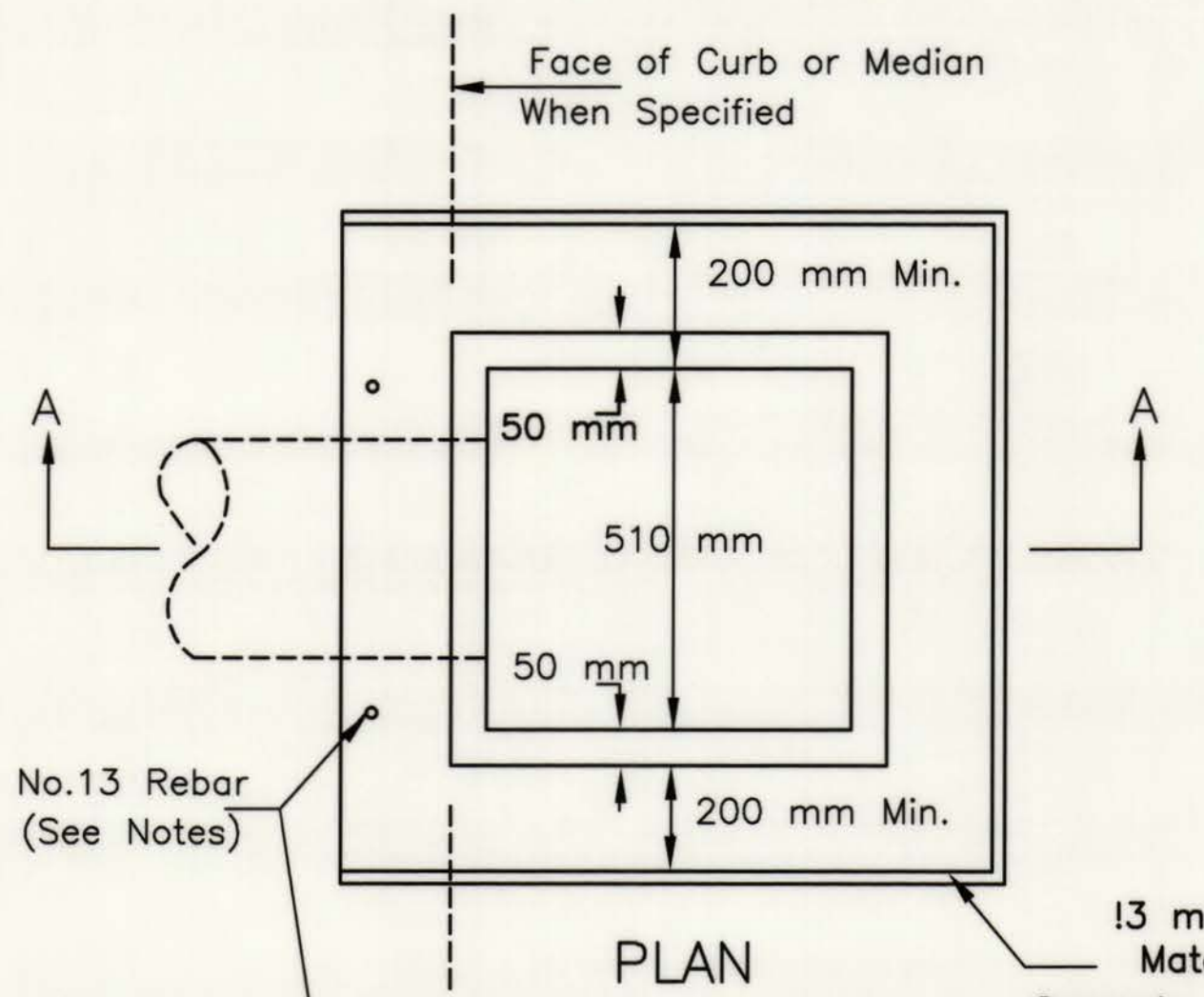
CURB, IF SPECIFIED, MAY BE EITHER CONCRETE PLACED ON THE INLET BACKWALL AS DETAILED HEREIN OR AN APPROVED CURB BOX AS MANUFACTURED WITH THE GRATE AND FRAME. DIMENSIONS OF THE CURB BOX SHOULD REASONABLY CONFORM TO THE STANDARD CURB AS SPECIFIED ON THE PLANS. THE CURB WILL BE PAID FOR AS ITEM 610, PER METER, IN EITHER CASE.

THIS INLET SHALL NOT BE PLACED IN A PEDESTRIAN CROSS WALK.

BAR DESIGNATION NUMBER (NO.) APPROXIMATES THE NUMBER OF MILLIMETERS IN THE NOMINAL DIAMETER OF THE BAR.

THE MINIMUM DISTANCE FROM THE TOP OF ANY PIPE OPENING TO ANY CONSTRUCTION JOINT ABOVE THE OPENING SHALL BE 100 mm.

THE NUMBER AND LOCATION OF PIPE OPENINGS SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR AT NO ADDITIONAL COST, SHALL BE RESPONSIBLE FOR ANY TEMPORARY BRACING REQUIRED TO TRANSPORT PRECAST INLET SECTIONS DUE TO MULTIPLE OPENINGS.



**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL**

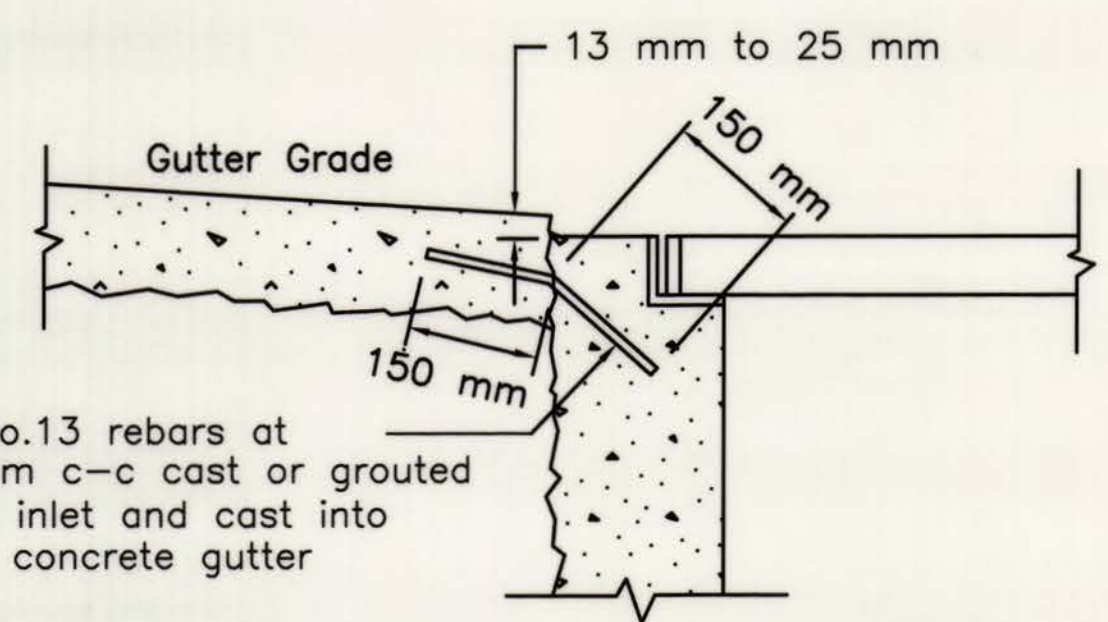
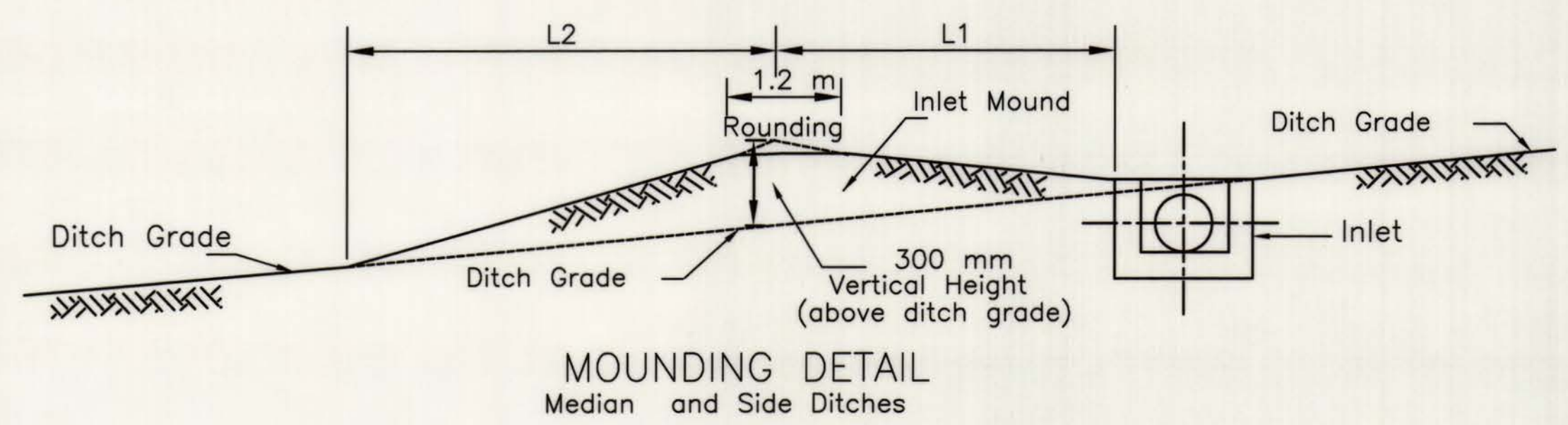
PREPARED 11-1-99
REVISION DATE

TYPE B INLET

STANDARD SHEET DR6M-B

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	16	73

DITCH GRADE (%)		L1, HORIZONTAL LENGTH (m)	L2, HORIZONTAL LENGTH (m)
FROM	TO		
0	3	3.0	4.5
3	5	2.7	6.0
5	7.5	2.4	12.0
7.5	UP	SPECIAL DESIGN	SPECIAL DESIGN



NOTES

The final installed top surface of inlet and grate shall be flush with adjacent finish surfaces such as pavement, gutters, curbs, and sidewalks. Top of grate elevation, if shown on the plans, is for information only.

Construction may be cast-in place, precast in one or multiple sections, or any combination of cast-in-place and precast.

Type 2 Grate, a rural and expressway Type grate shall be used at all locations unless otherwise specified on the Plans. Type 1 Grate, an urban type grate, shall be used only at specially designated locations.

The Contractor, at his option, may omit use of the frame by forming a ledge in the concrete.

Special care shall be excised in forming the 50 mm wide concrete ledge to provide a smooth, even surface for supporting the grates if the shallow frame is not used. No projections shall exist on the bearing surfaces of the ledge or the grates, and the grates shall seat on the ledge without rocking.

The Mounding Detail as shown is not required when an inlet is placed in a sag.

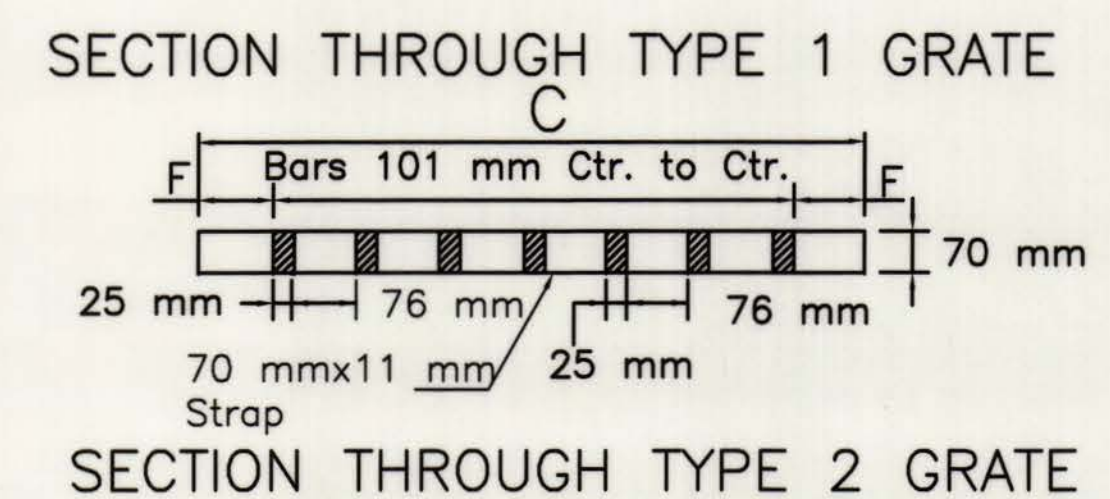
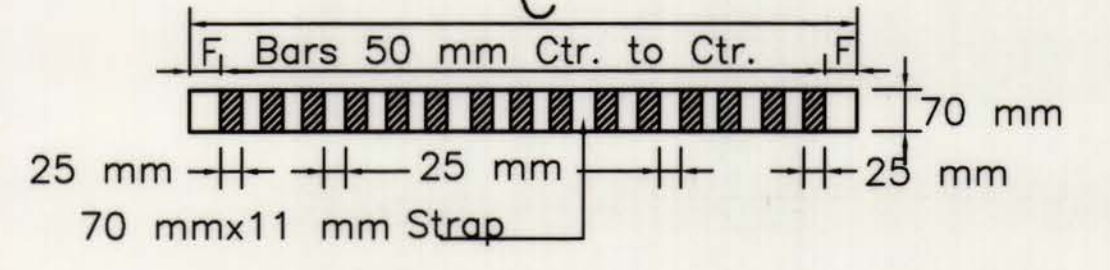
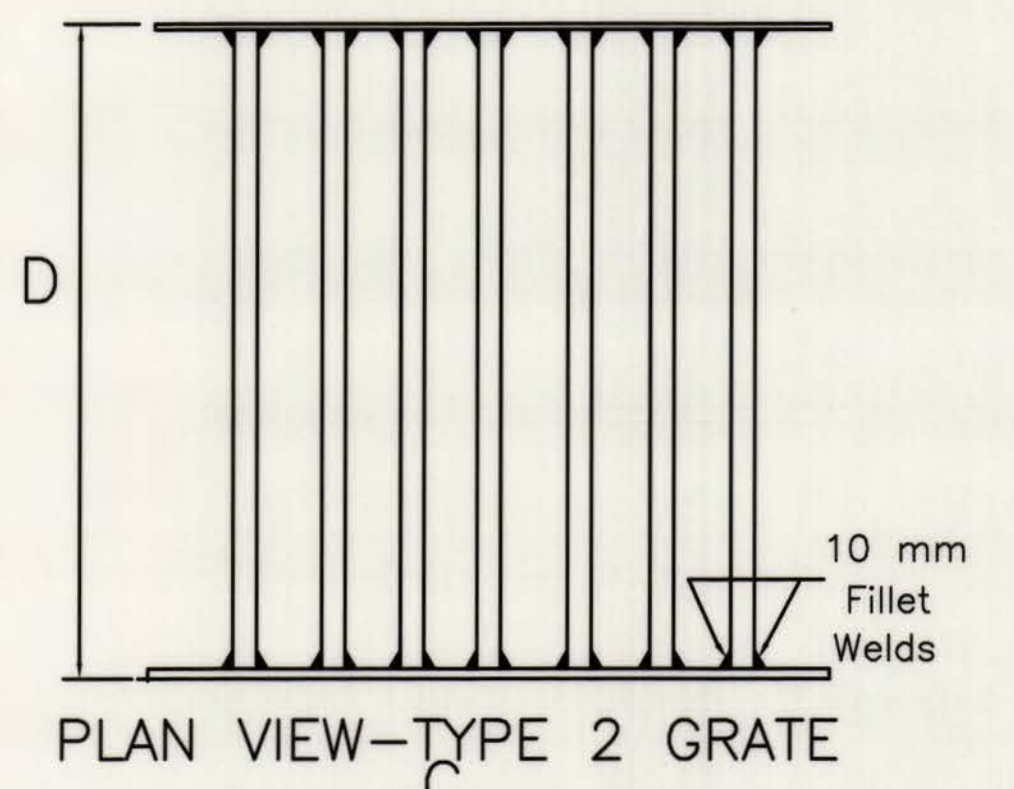
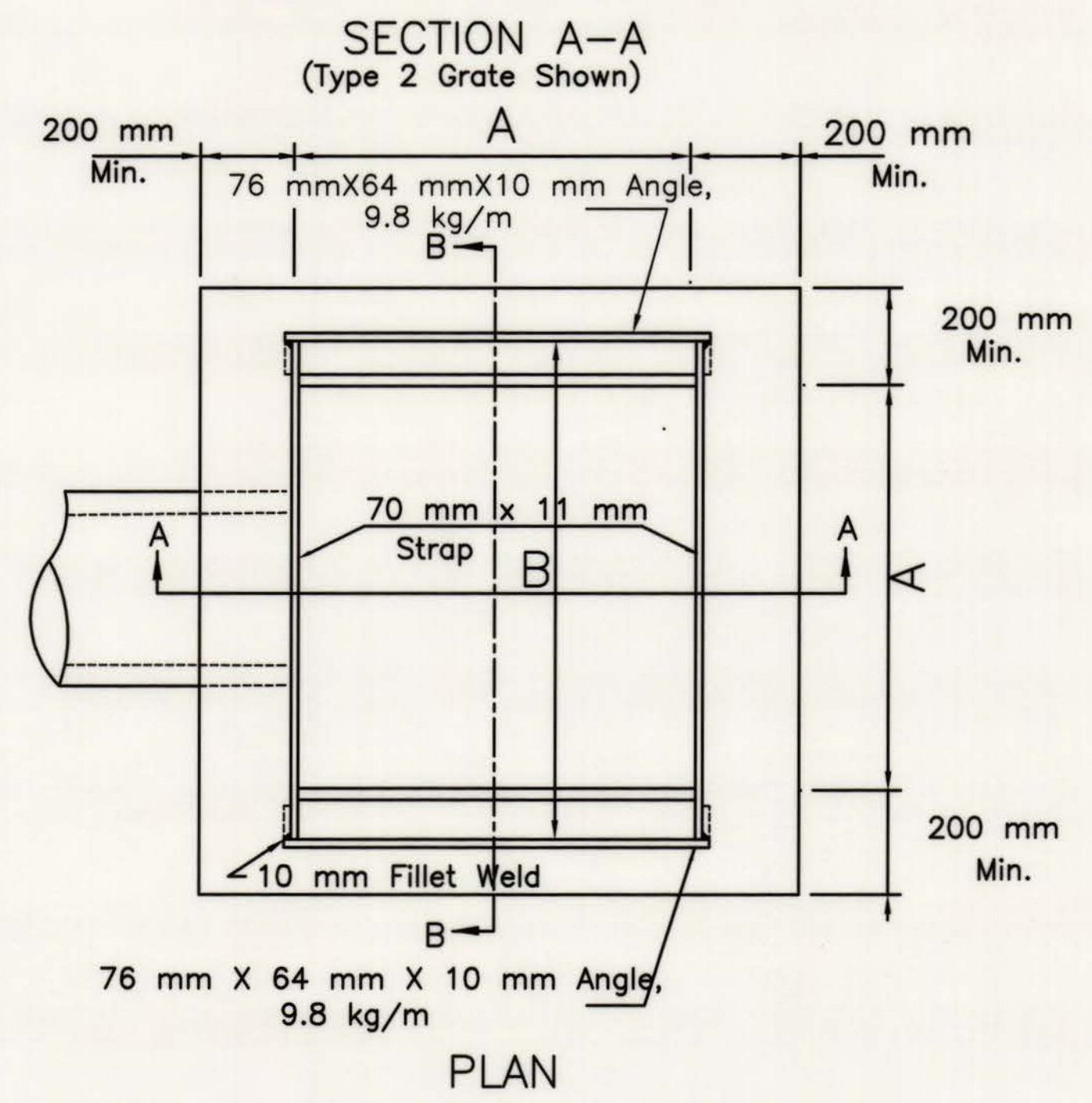
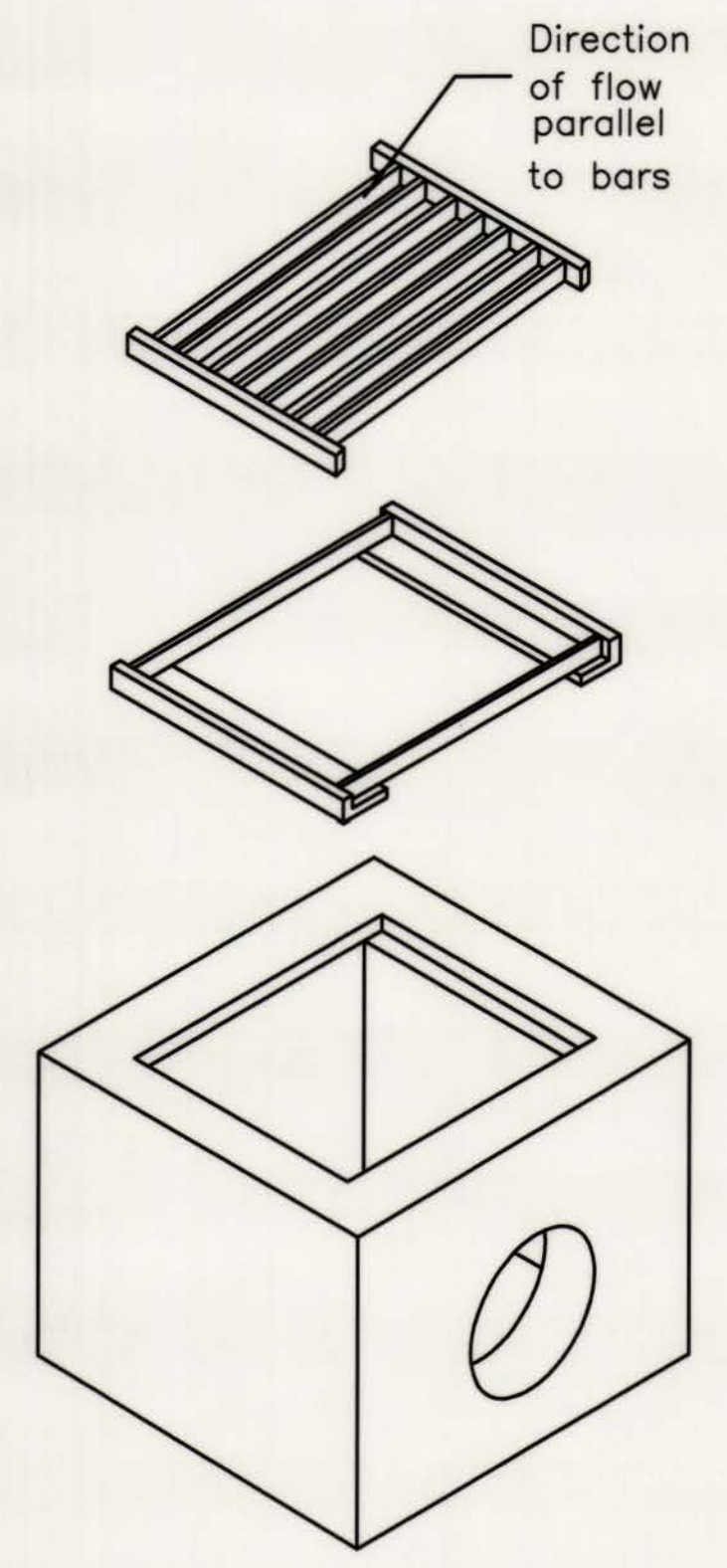
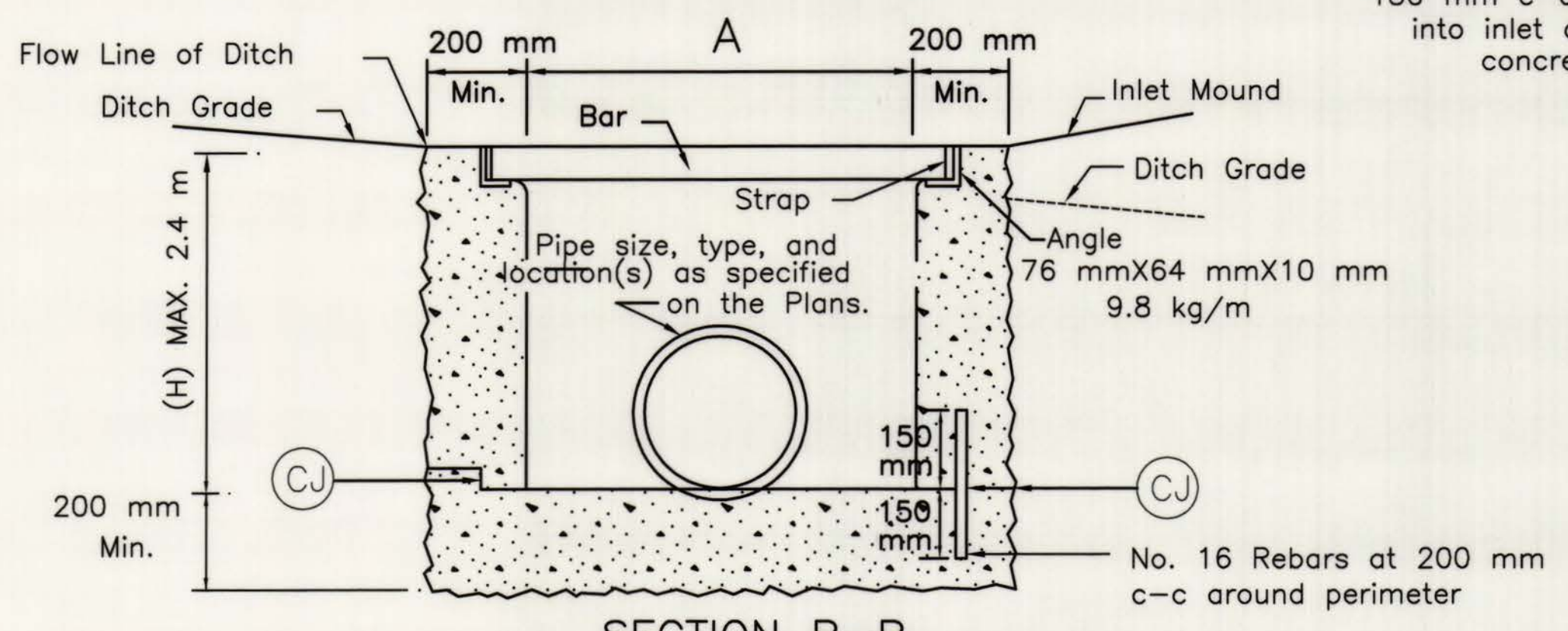
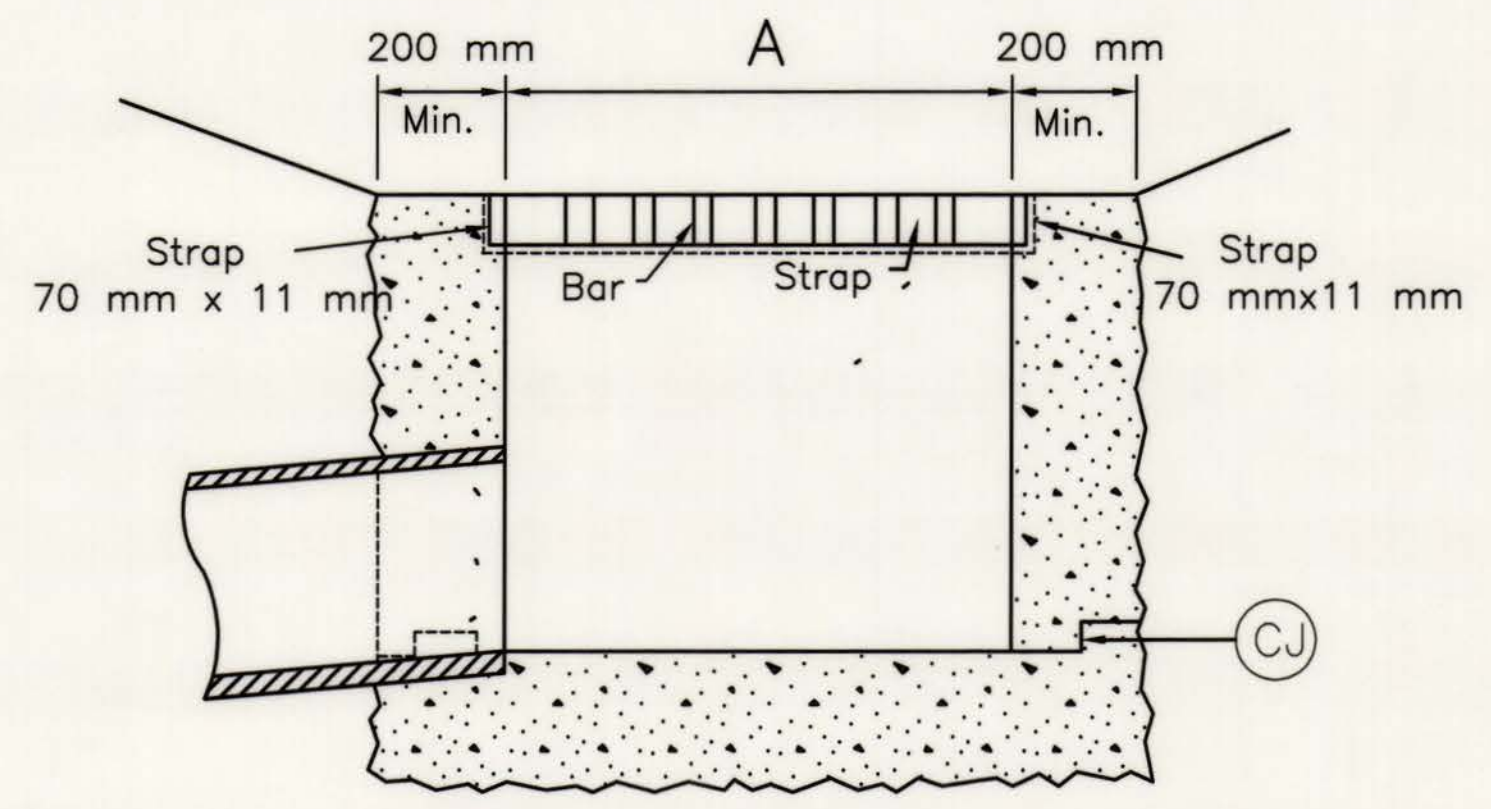
Optional construction joints labeled "CJ" may be roughened concrete, keyed or doweled as per the typical details shown herein or as approved by the Engineer. Non shrink grout meeting the requirements of subsection 715.5 of the specifications may be used to a depth of 13 mm for leveling between precast sections. Thicker depths will be allowed if as per the manufacturer's recommendations.

Bar designation number (No.) approximates the number of millimeters in the nominal diameter of the bar.

This inlet is to be installed in roadside or median ditches only. It is not to be placed adjacent to pavement or in the gutter pan of combination curb and gutter.

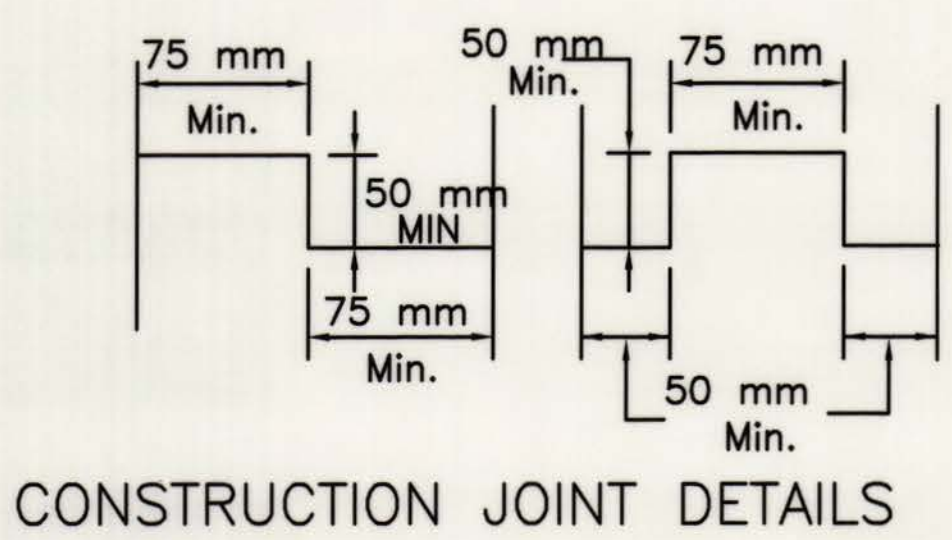
The minimum distance from the top of any pipe opening to any construction joint above the opening shall be 100 mm.

The number and location of pipe openings shall be as shown in the plans. The contractor at no additional cost, shall be responsible for any temporary bracing required to transport precast inlet sections due to multiple openings.



Pipe Size	DIMENSIONS (mm)					TYPE 2 GRATE		TYPE 1 GRATE	
	A (mm)	B (mm)	C (mm)	D (mm)	H (mm Min)	F (mm)	Bars	F (mm)	Bars
450	813	965	806	959	610	86	7	40	15
600	813	965	806	959	762	86	7	40	15
750	1067	1219	1060	1213	914	66	10	46	20
900	1219	1372	1213	1365	1067	89	11	44	23
1050	1372	1524	1365	1518	1219	64	13	45	26
1200	1524	1676	1518	1670	1372	39	15	46	29

The following substitutions in dimensions are acceptable for fabricating the grate and frame:
 Strap Thickness: 13 mm Strap Depth: 75 mm Bar Depth: 75 mm



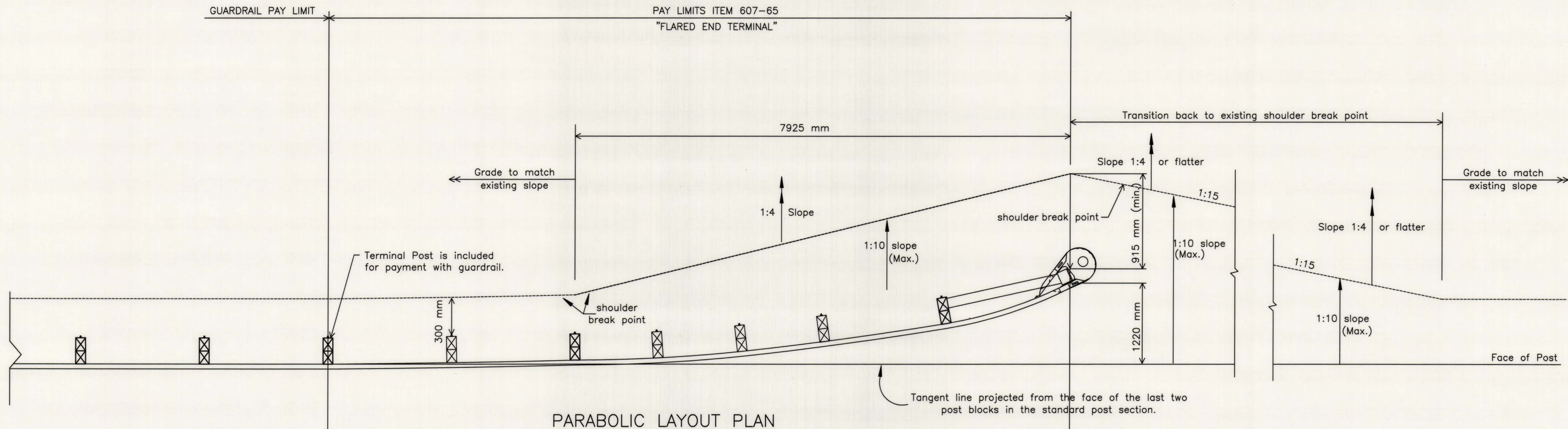
**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STANDARD DETAIL**

PREPARED 11-1-99
REVISION DATE

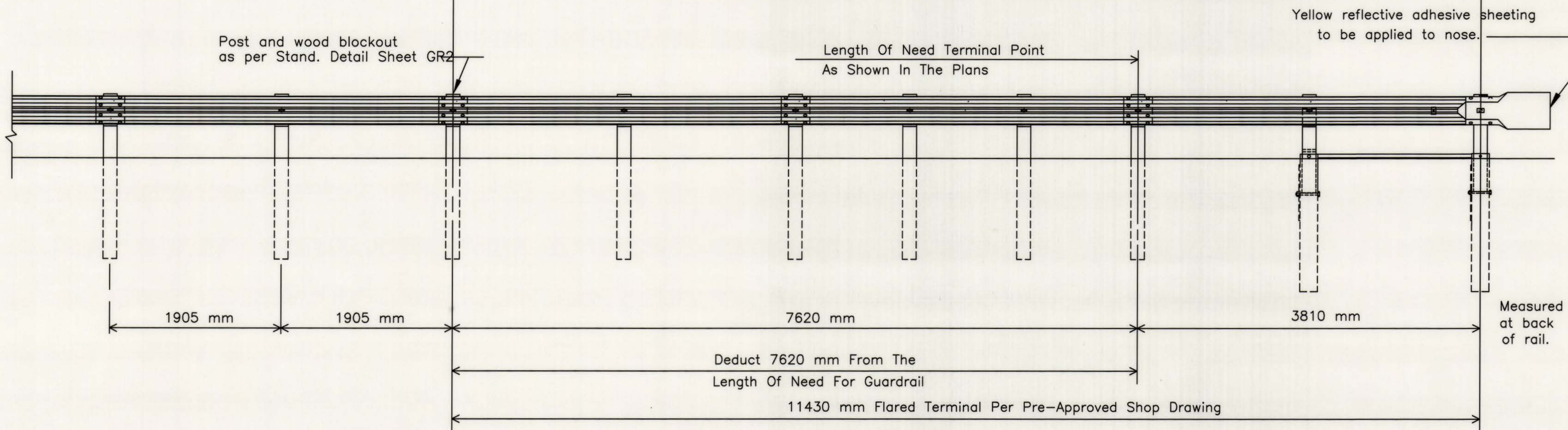
TYPE G INLET

STANDARD SHEET DR6M-G

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039 (032)E	2000	MONONGALIA	18	73



PARABOLIC LAYOUT PLAN



ELEVATION

NOTES

- For details of Flared End Terminal see pre approved shop drawings.
- All materials used shall meet the applicable requirements of Section 607 of the Standard Specifications Road and Bridges.
- The post offset dimensions are given to the center of the traffic face of the blockouts; except at the first post, where the dimension is to the center of the traffic face of the post. Offset points are to be located by measurements at the back of rail equal to the nominal post spacings shown on pre-approved shop drawings. Posts are to be set approximately radial to the railing at each location.
- When a wood block is used adjacent to a wood post, the block shall be nailed to the post with a galvanized steel common nail (75 mm X 4 mm X 8 mm). The nails to be driven into the center of the top or bottom of the block.
- The cost of furnishing and installing the Flared End Terminal, complete with all miscellaneous hardware and parts as detailed on the pre-approved shop drawings, is to be included in the unit price bid for "Flared End Terminal".
- Yellow reflective sheeting shall cover the entire nose of those terminals with a flat impact head. Those terminals with a rounded impact head shall be covered with a 300 mm X 900 mm yellow reflective sheet.

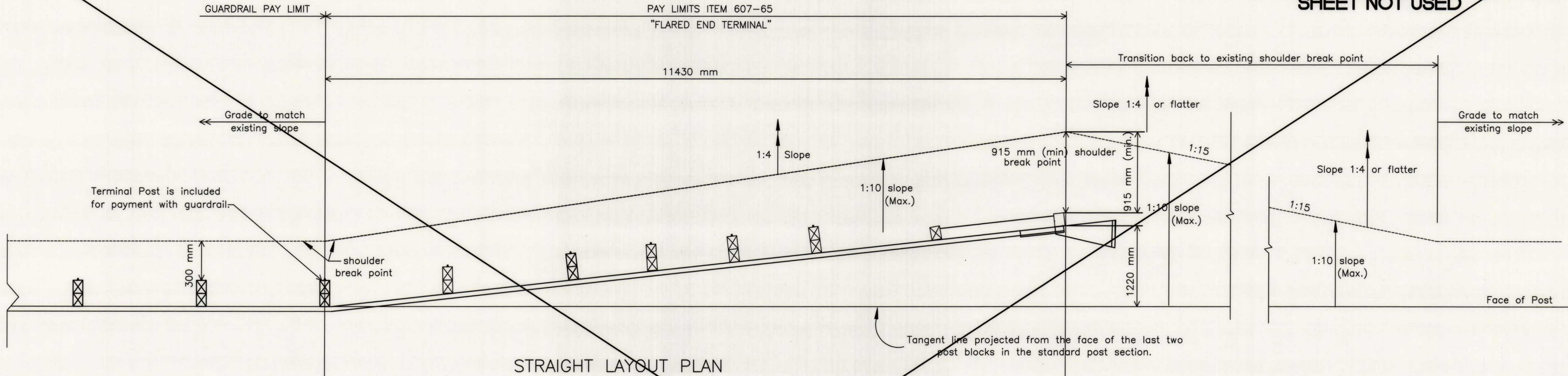
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 11-1-99
REVISION DATE

FLARED END TERMINAL
PARABOLIC LAYOUT
(SHEET 1 OF 2)
STANDARD SHEET GR5M

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	19	73

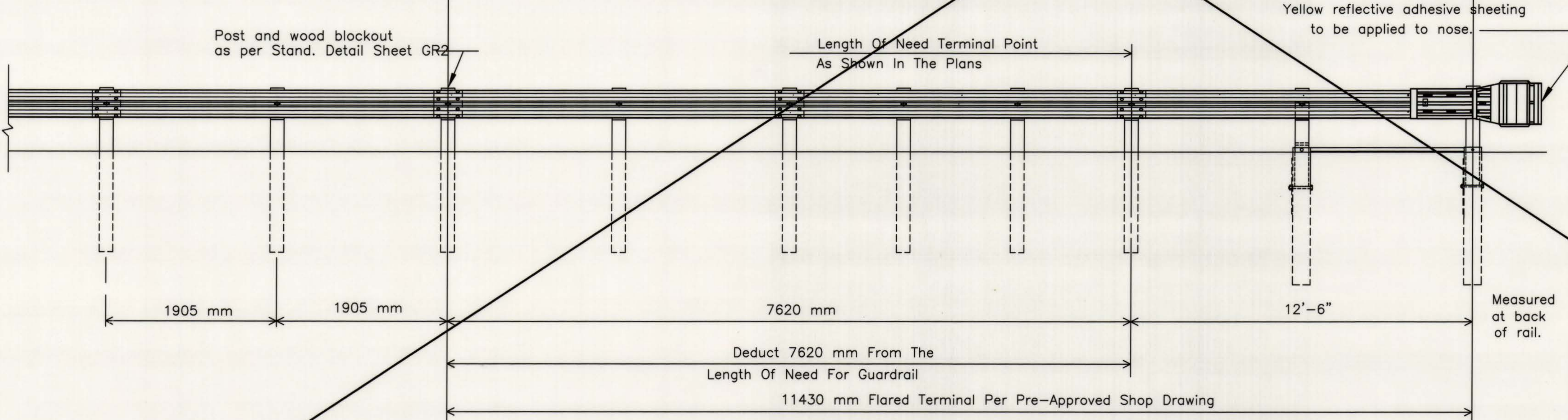
SHEET NOT USED



STRAIGHT LAYOUT PLAN

NOTES

- For details of Flared End Terminal see pre approved shop drawings.
- All materials used shall meet the applicable requirements of Section 607 of the Standard Specifications Road and Bridges.
- The post offset dimensions are given to the center of the traffic face of the blockouts; except at the first post, where the dimension is to the center of the traffic face of the post. Offset points are to be located by measurements at the back of rail equal to the nominal post spacings shown on pre-approved shop drawings. Posts are to be set approximately radial to the railing at each location.
- When a wood block is used adjacent to a wood post, the block shall be nailed to the post with a galvanized steel common nail (75 mm X 4 mm X 8 mm). The nails to be driven into the center of the top or bottom of the block.
- The cost of furnishing and installing the Flared End Terminal, complete with all miscellaneous hardware and parts as detailed on the pre-approved shop drawings, is to be included in the unit price bid for "Flared End Terminal".
- Yellow reflective sheeting shall cover the entire nose of those terminals with a flat impact head. Those terminals with a rounded impact head shall be covered with a 300 mm X 900 mm yellow reflective sheet.



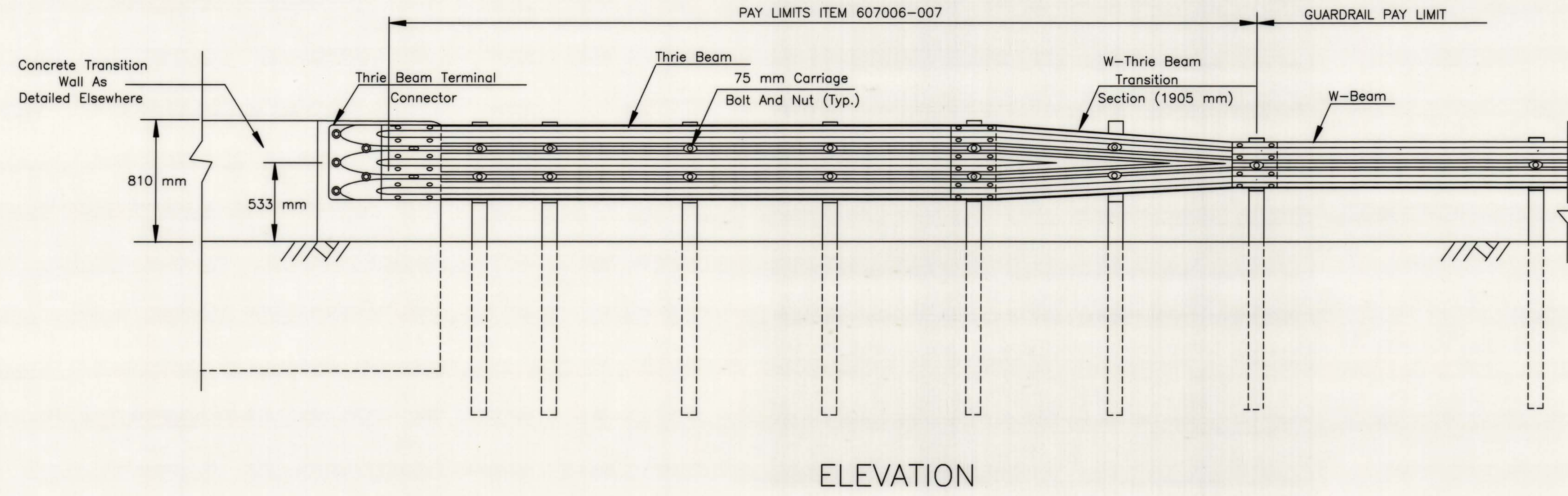
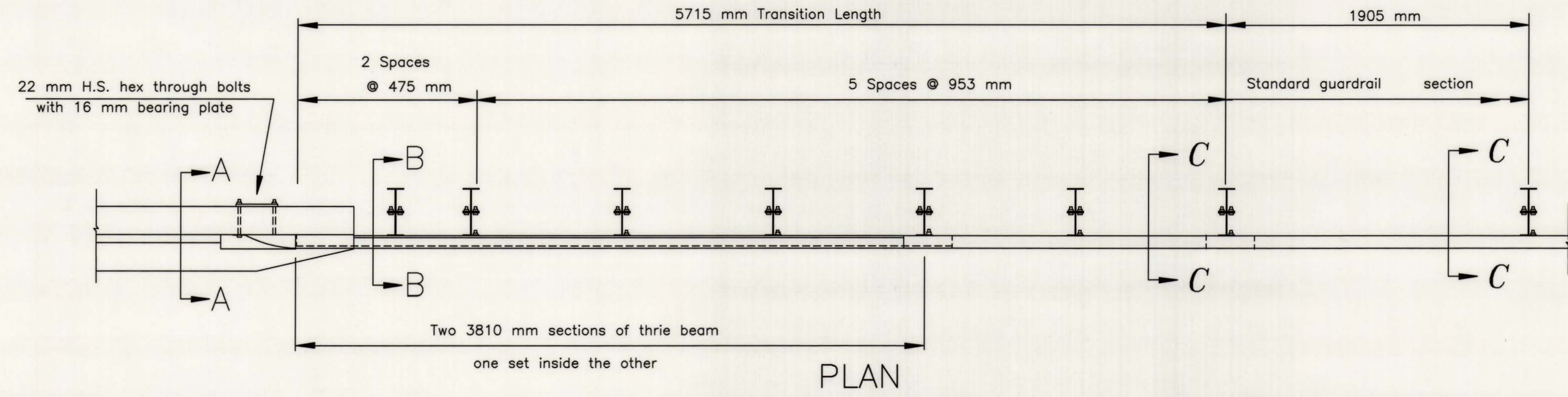
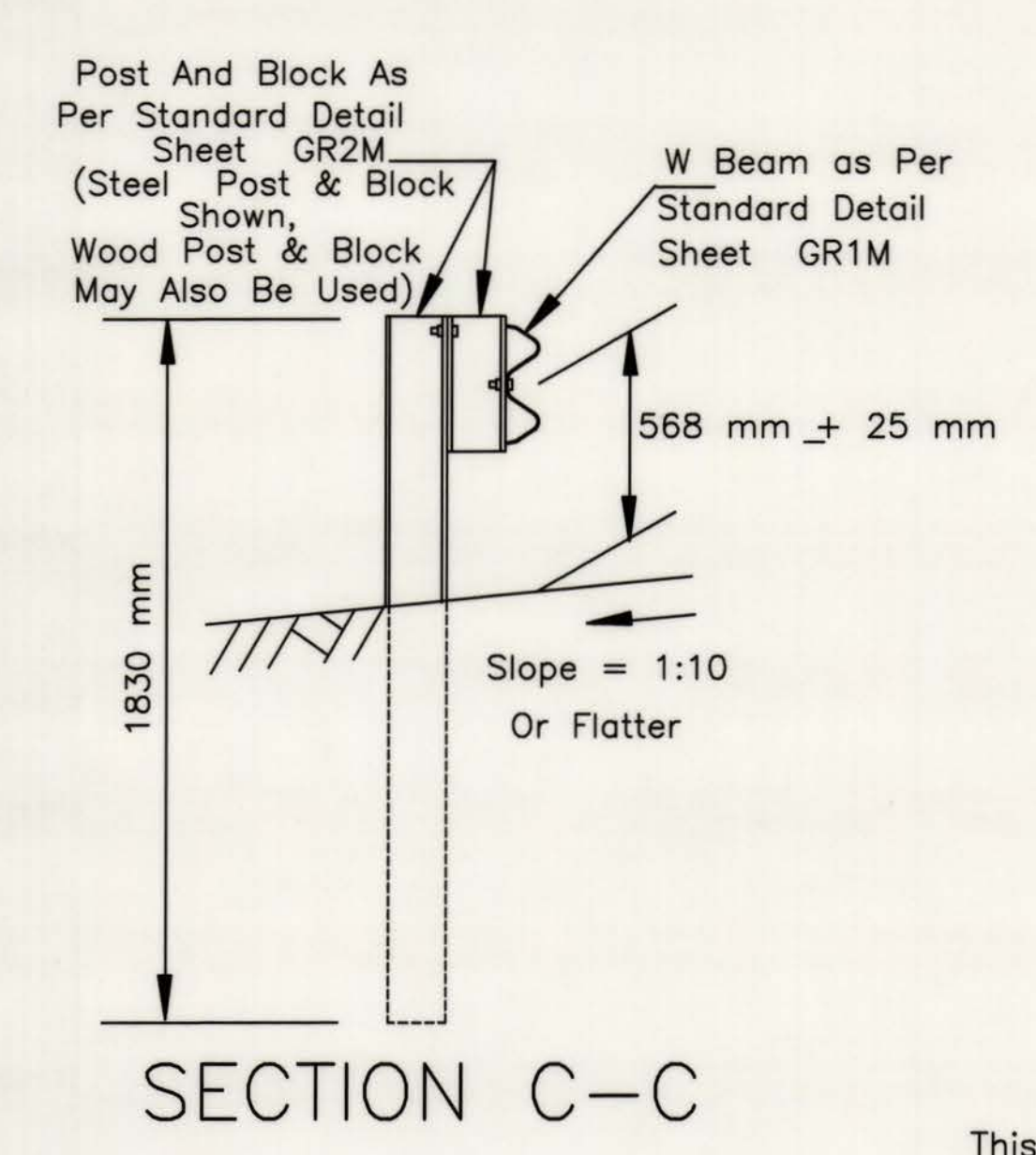
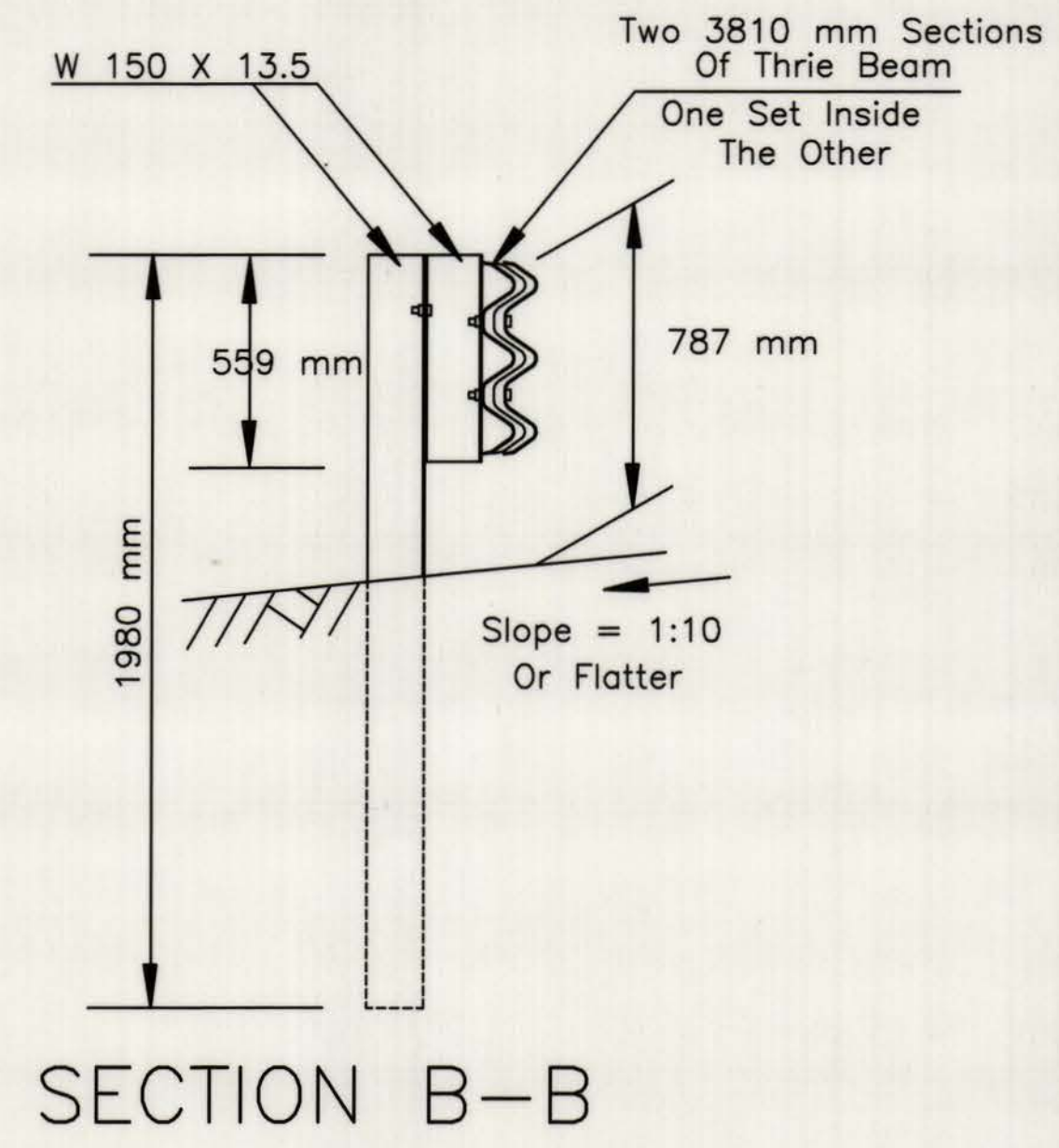
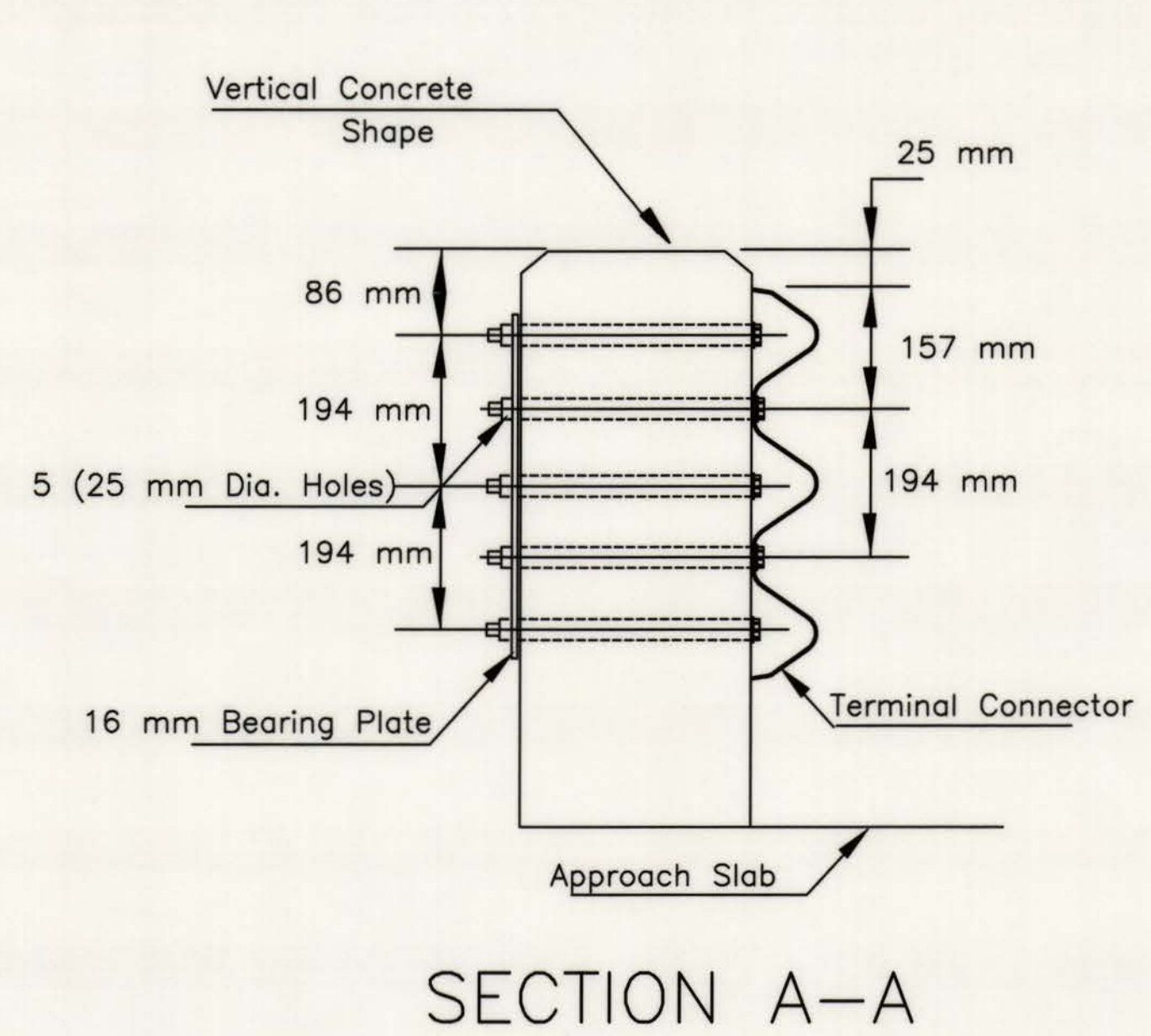
ELEVATION

**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL**

PREPARED 11-1-99
REVISION DATE

**FLARED END TERMINAL
STRAIGHT LAYOUT
(SHEET 2 OF 2)
STANDARD SHEET GR5M**

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	20	73



NOTES

This guardrail transition is appropriate for connection to a vertical concrete shape and should not be connected directly to a concrete safety shape. Concrete safety shape bridge rails or barriers shall be transitioned to a vertical shape at the guardrail connection in a manner detailed elsewhere in the Project Plans.

The two sections of 3810 mm thrie beam require additional holes in order to mount the beam to the post nearest to the concrete wall.

See sheet 2 of 2 for details not shown on this sheet.

Guardrail bridge transition details are shown on sheet 59 of 73.

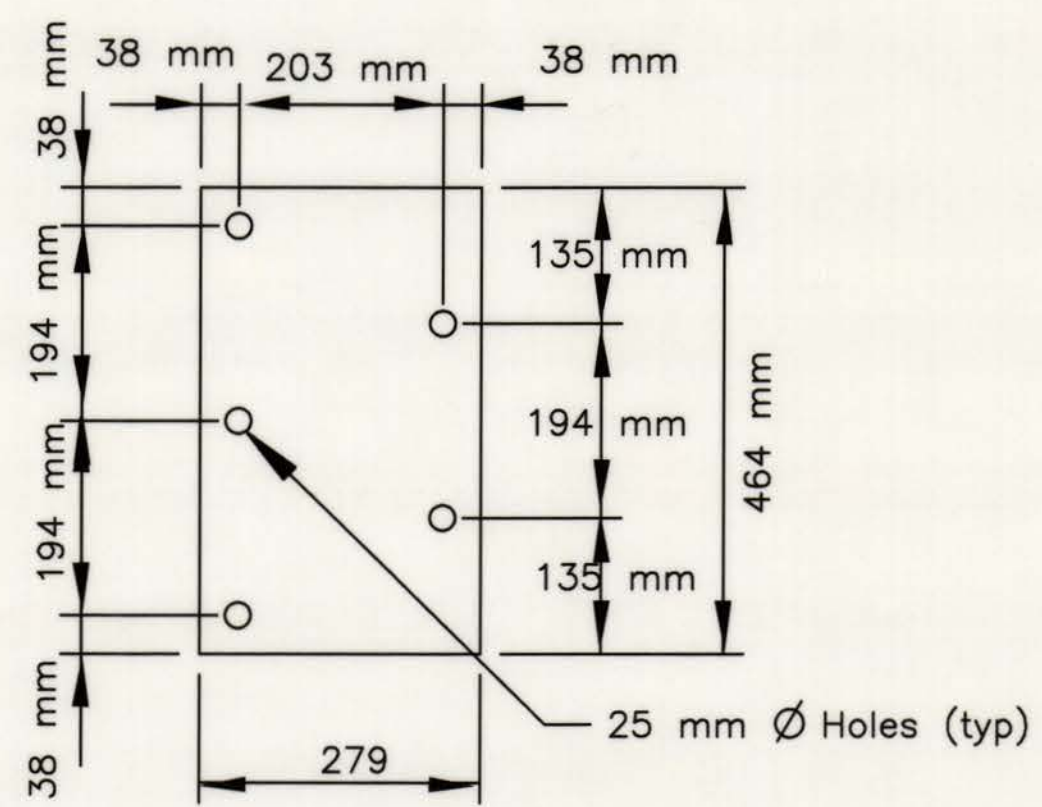
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAILS

PREPARED 11-1-99
REVISION DATE

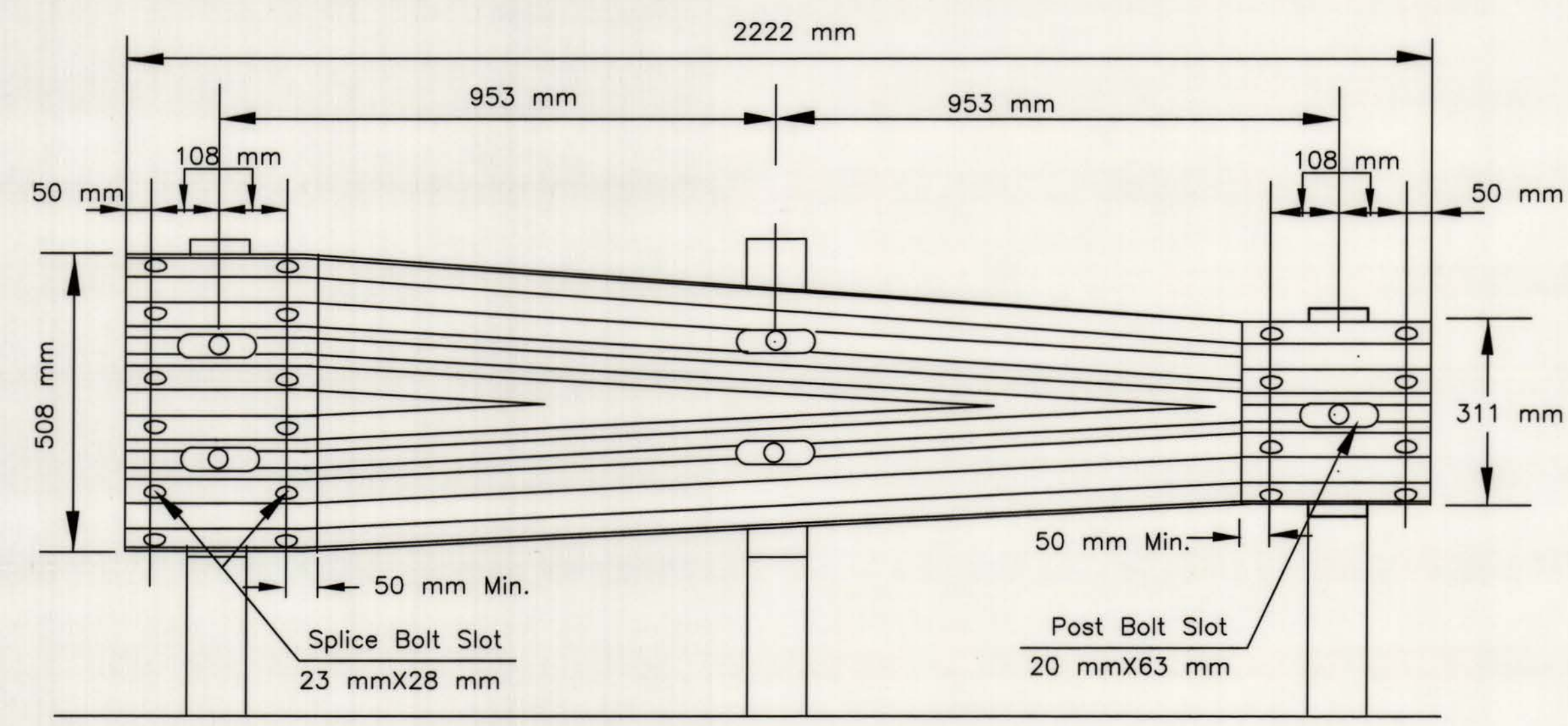
THRIE BEAM
GUARDRAIL BRIDGE
TRANSITION AND
CONNECTION
(SHEET 1 OF 2)

STANDARD SHEET GR11M

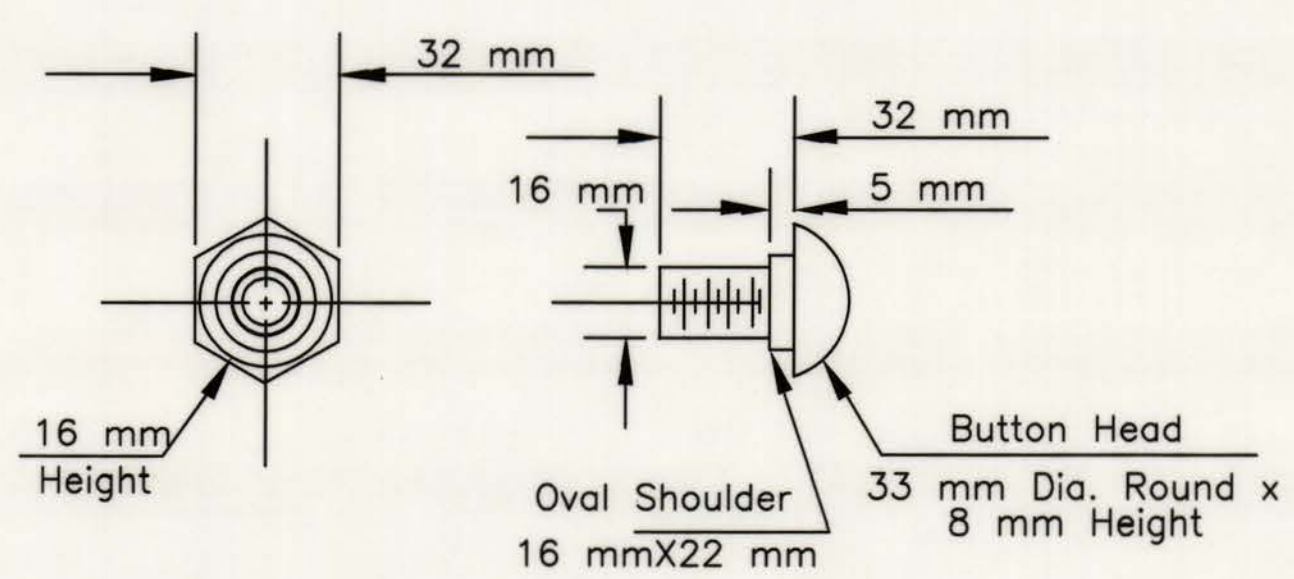
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	21	73



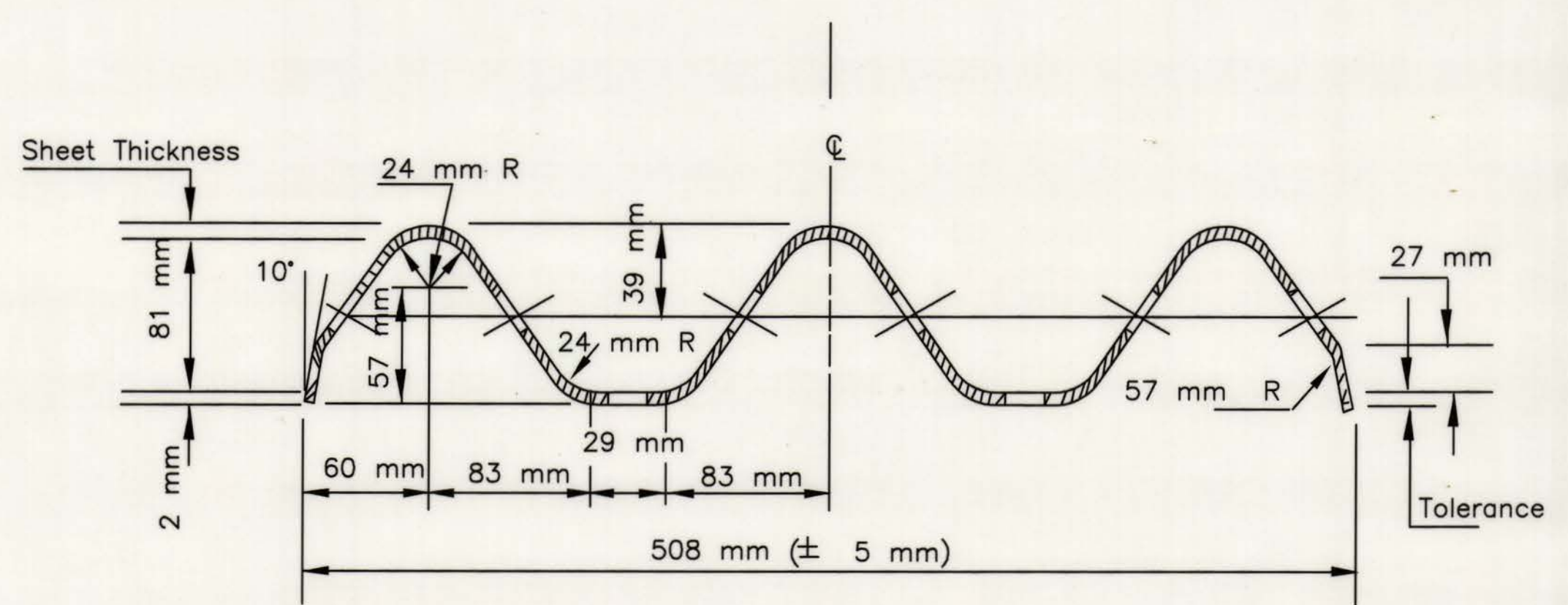
16 mm BEARING PLATE DETAIL



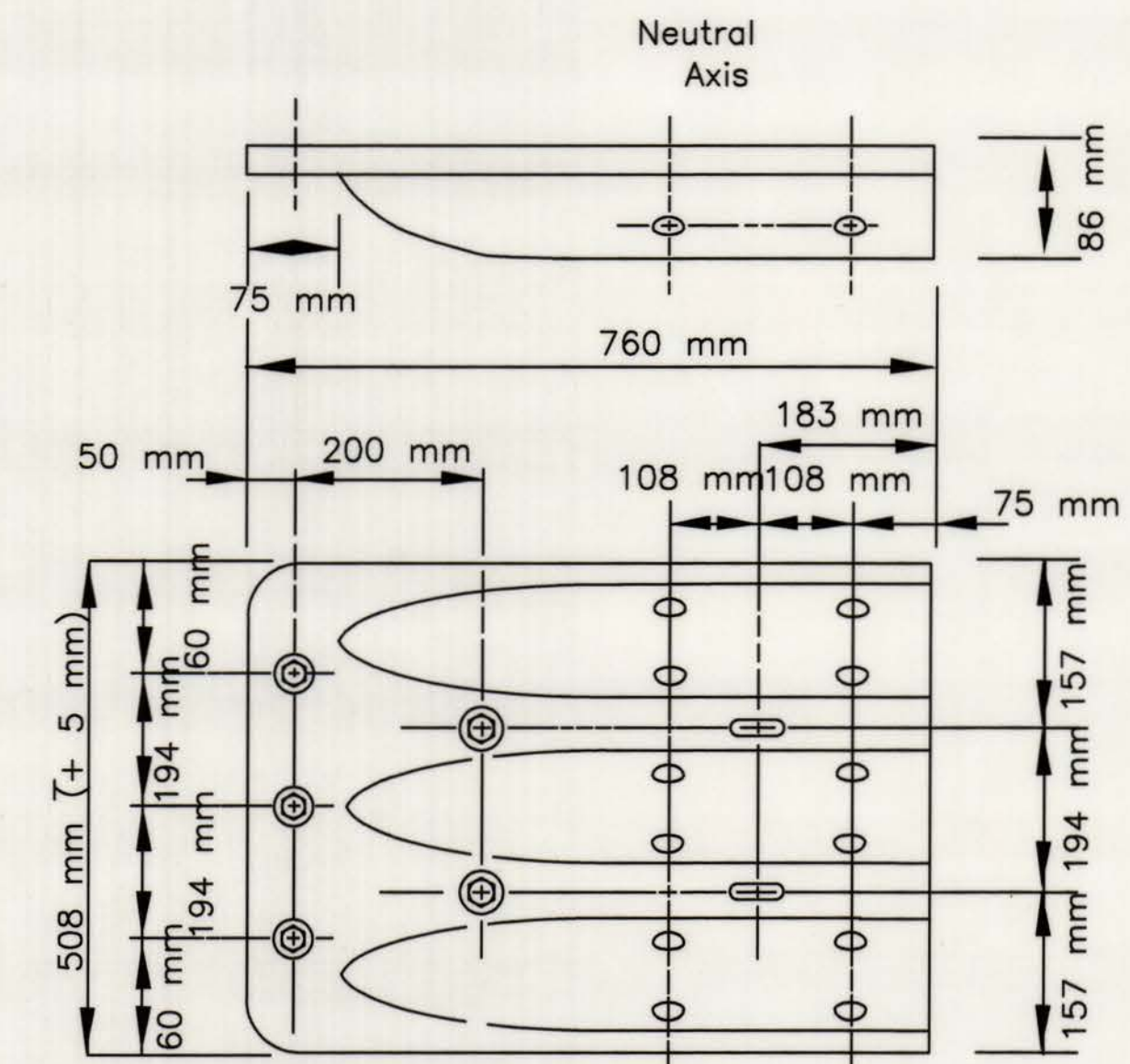
TRANSITION SECTION DETAIL
(W-THRIE BEAM)



NUT SPLICE BOLT
NUT AND SPLICE BOLT DETAIL
(POST BOLT: Similar Except Length)



SECTION THRU THRIE BEAM RAIL ELEMENT



THRIE BEAM TERMINAL
CONNECTOR DETAIL

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 11-1-99
REVISION DATE

THRIE BEAM
GUARDRAIL BRIDGE
TRANSITION AND
CONNECTION
(SHEET 2 OF 2)
STANDARD SHEET GR11M

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0059(032)E	2000	MONONGALIA	22	73

SHEET NOT USED
NOTES

Rumble strip placement will be continuous on hot mix asphalt shoulders and intermittent on portland cement concrete shoulders, except as noted below. Spacing on portland cement shoulders will be 9 m centers except for ramps where spacing will be 4.5 m centers.

Rumble strips shall not be placed at the following areas for non-freeway projects only: on shoulders of narrow climbing lanes that are 1.5 m or less in width, right of traffic flow; in the shoulder transition area, right of traffic flow, between a full paved shoulder width of 3 m and narrow bridge width of 1.2 m.

Rumble strip width is to be 600 mm.

Rumble strips may be formed or sawed unless otherwise indicated. The top of the rumble strips will be no higher than the top surface of the pavement. Any faulty or incorrectly installed rumble strips will be corrected by the contractor at his expense. Payment for rumble strip placement is to be incidental to the applicable paved shoulder bid item.

Other alternate rumble strip details may be approved by the Engineer.

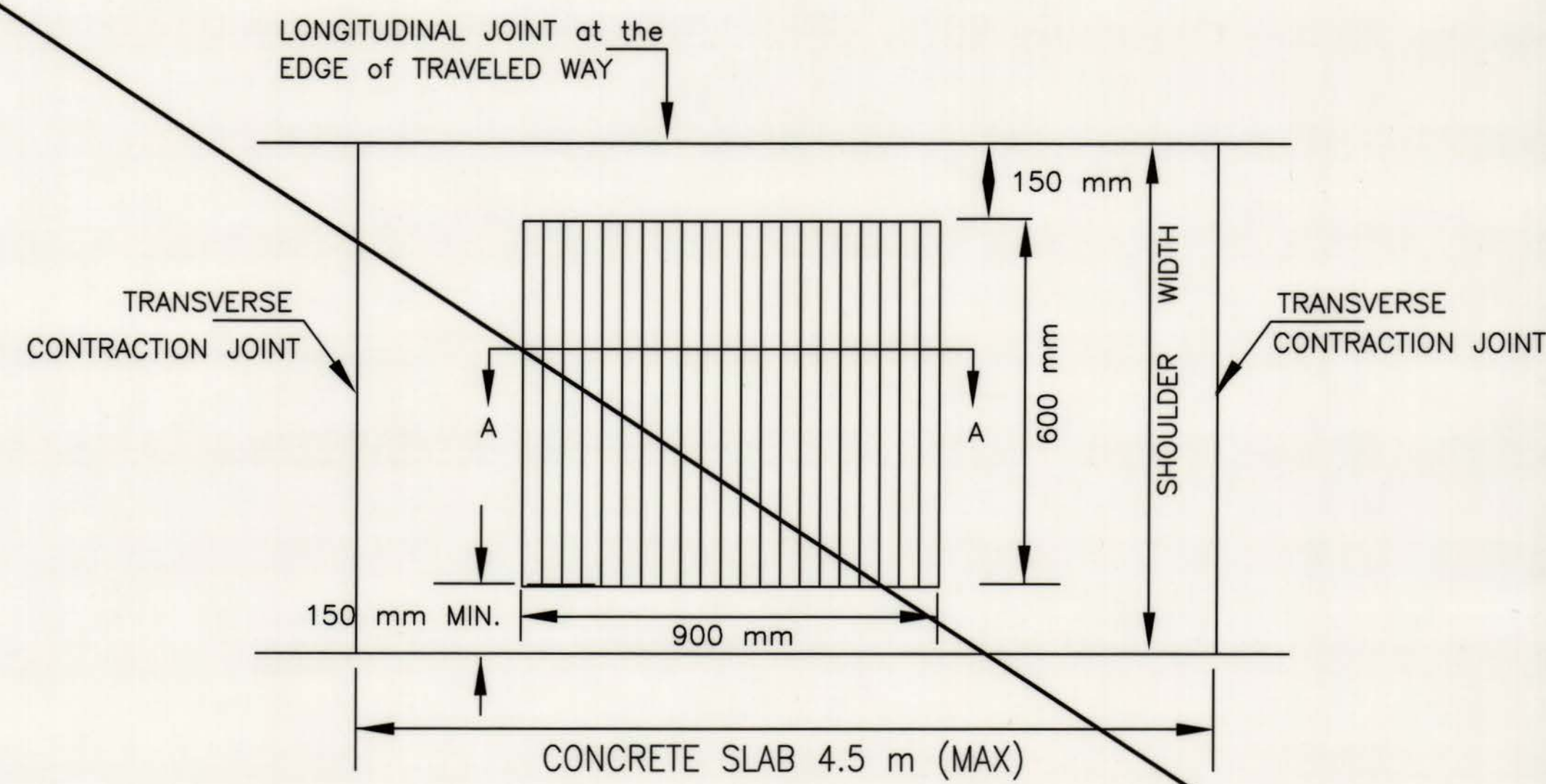
The longitudinal joint as shown on the plan view of the Rumble Strip detail is to be Type E on new construction, unless otherwise indicated. It is to be sawed and sealed as per Standard Sheet PVT1M. The transverse contraction joint, as shown in the Rumble Strip detail, is to line up with the Transverse Joint in the traveled way pavement. This joint is to be sawed and sealed as per the Transverse Contraction Joint detail on Standard Sheet PVT1M. Dowel basket assemblies will not be required for the shoulder transverse contraction joint unless otherwise specified.

The Modified Type E Joint as detailed is not to be used in lieu of the Longitudinal Joint as detailed on Standard Sheet PVT1M. It is to be used when tying new concrete pavement to existing pavement (pavement placed prior to the project in which new pavement is placed) unless otherwise specified. The expansion anchor and the 16 mm hook bolt are to meet the requirements of Section 709.7 of the Specifications. The joint is to be sealed as per the longitudinal joint sealant details on Standard Sheet PVT1M.

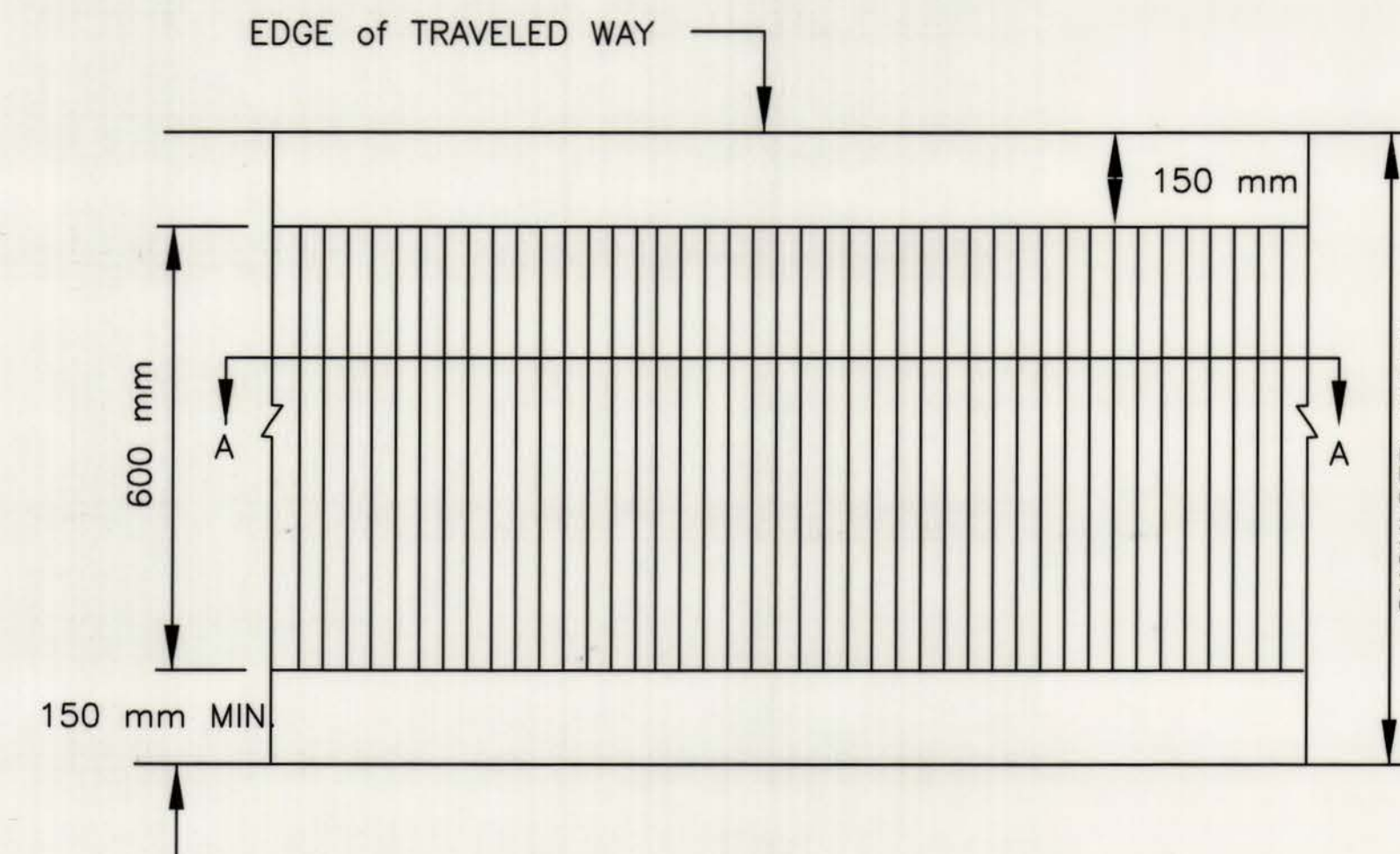
Expansion Anchor / Hook Bolt assemblies are to be placed on 750 mm centers unless otherwise specified. All costs involved in the Modified Type E joint is to be included in the unit price bid for the new concrete.

The Type H Joint is to be used for connecting portland cement concrete pavement to hot mix asphalt pavement. The standard coated dowel bars are to meet the applicable requirements of Standard Sheet PVT4M.

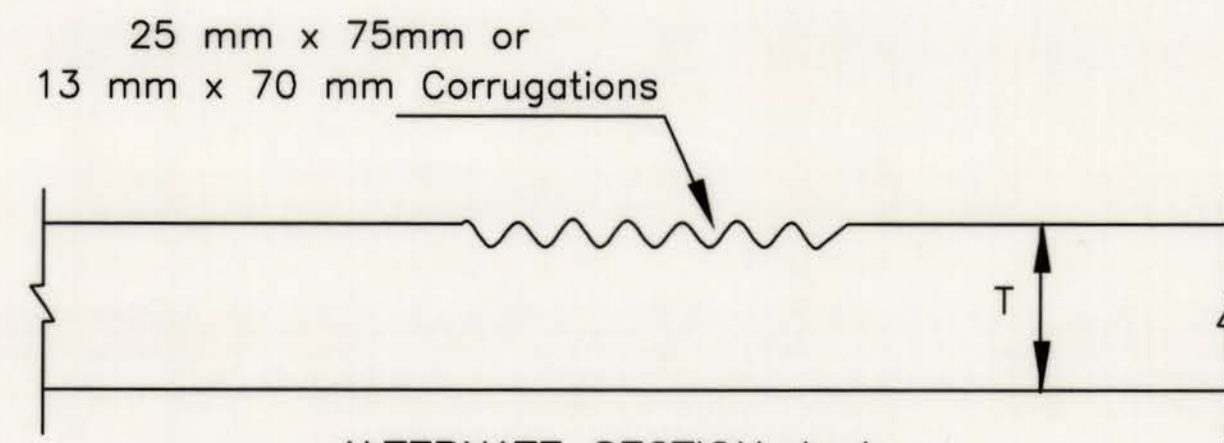
All tie bars and J or Hook Bolt assemblies shall be epoxy coated in accordance with section 709.1 of the Standard Specifications.



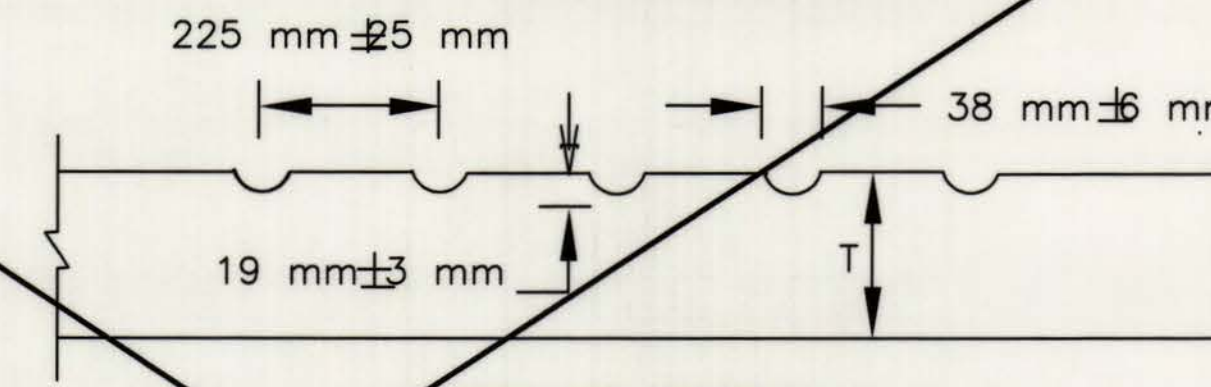
RUMBLE STRIPS FOR PORTLAND CEMENT CONCRETE SHOULDERS



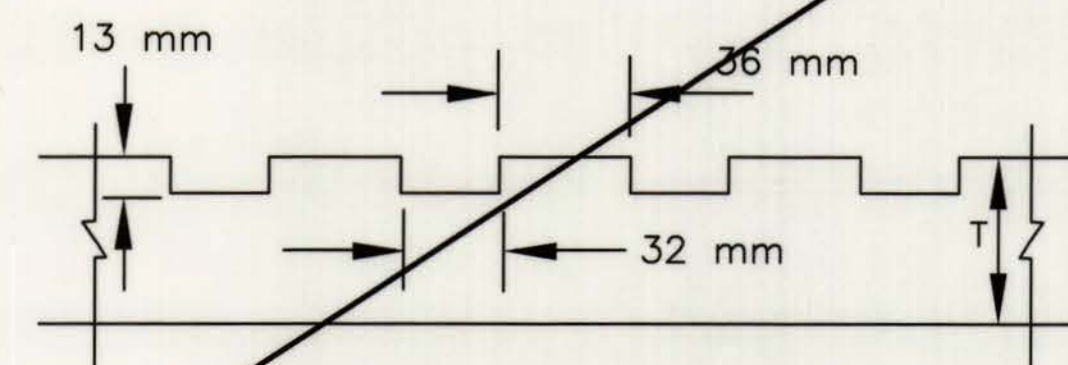
RUMBLE STRIPS FOR HOT MIX ASPHALT SHOULDERS



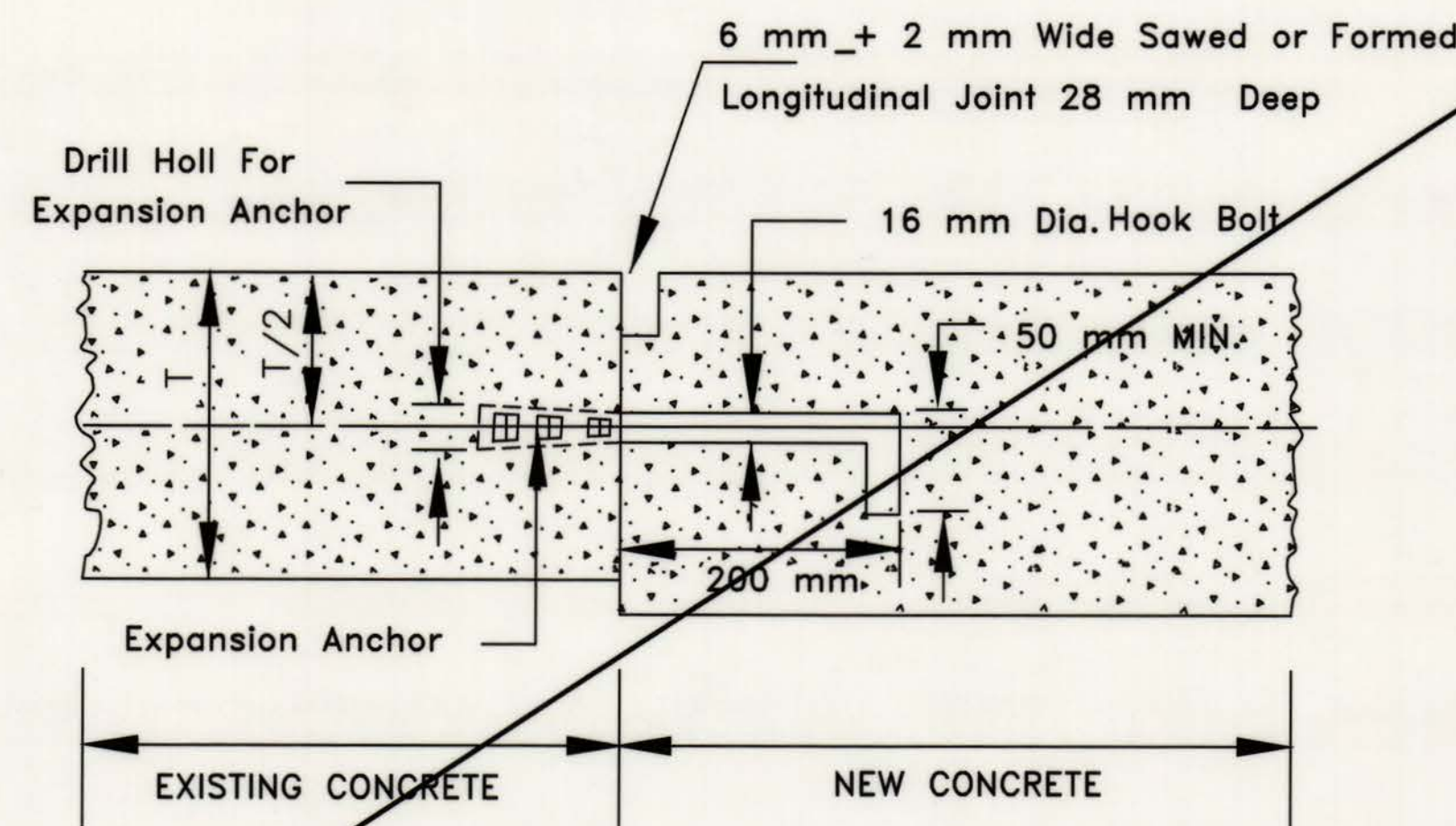
ALTERNATE SECTION A-A
RUMBLE STRIPS FOR PAVED SHOULDERS
(FORMED OR ROLLED IN)



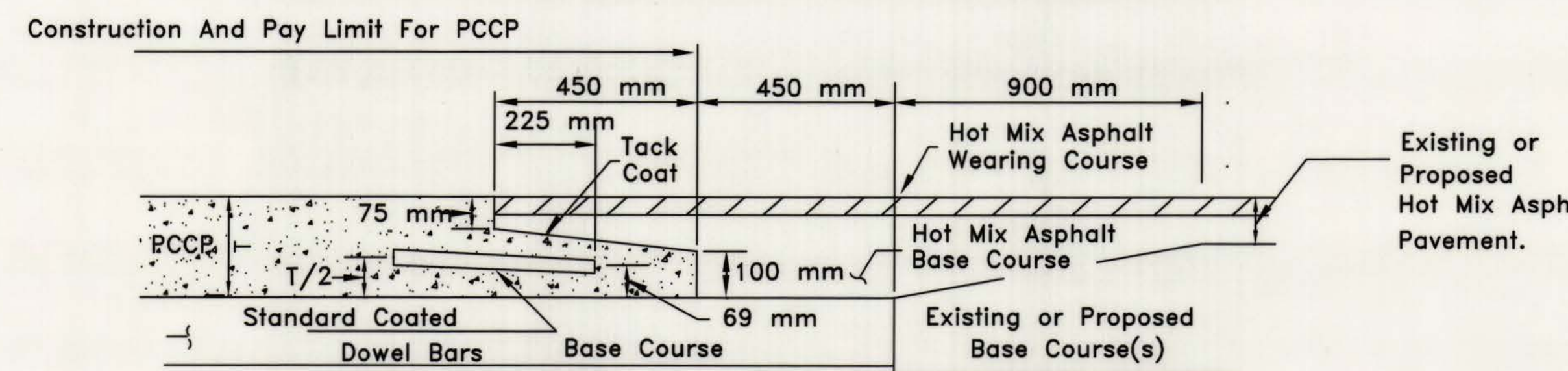
ALTERNATE SECTION A-A
RUMBLE STRIPS FOR PAVED SHOULDERS
(FORMED OR ROLLED IN)



ALTERNATE SECTION A-A
OPTIONAL OR SPECIFIED SAWED RUMBLE STRIP



MODIFIED TYPE E JOINT



TYPE H JOINT

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 11-1-99
REVISION DATE

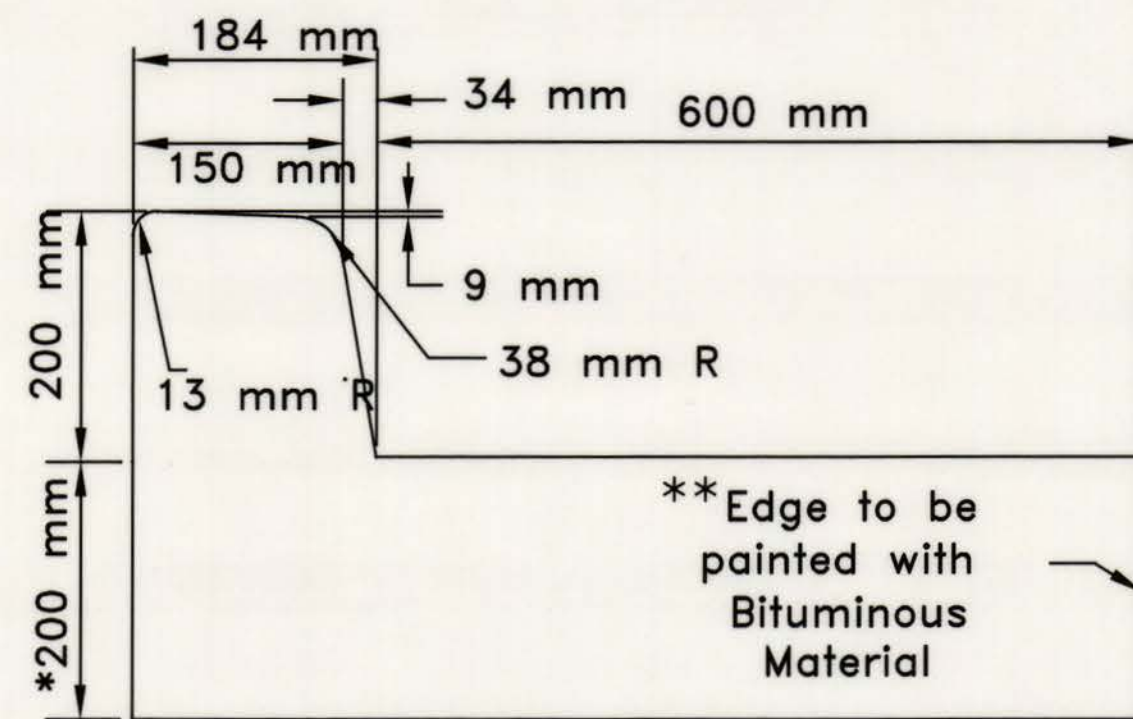
SHOULDER RUMBLE STRIPS,
TYPE H JOINT,
MODIFIED E JOINT

STANDARD SHEET PVT2M

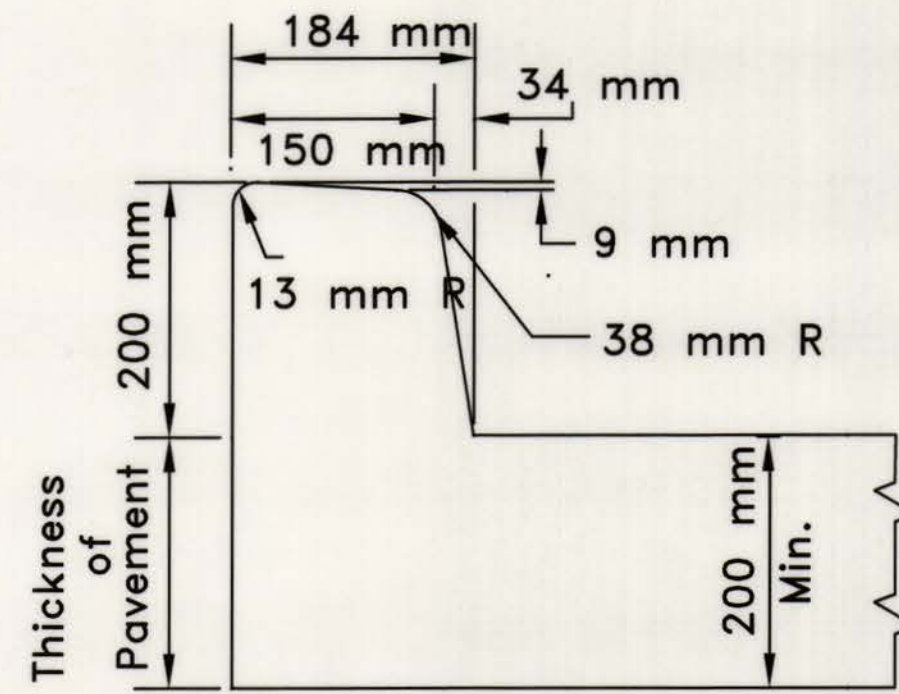
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	23	73

* or thickness of pavement, when abutting concrete pavement.

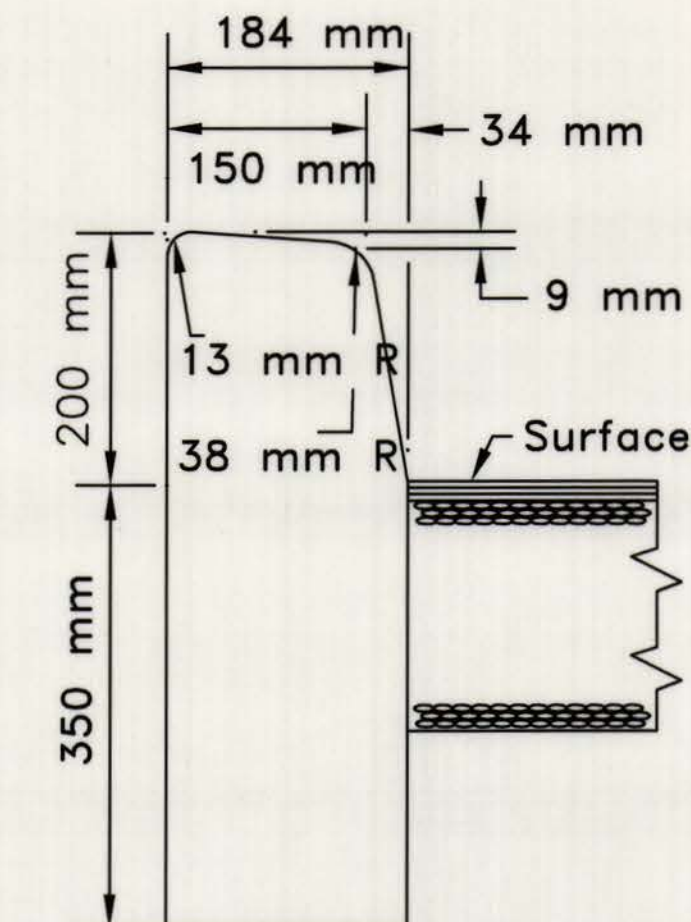
** Does not apply, when abutting concrete pavement. Instead a longitudinal joint with tie bars or tie bolt assemblies shall be constructed at this location.



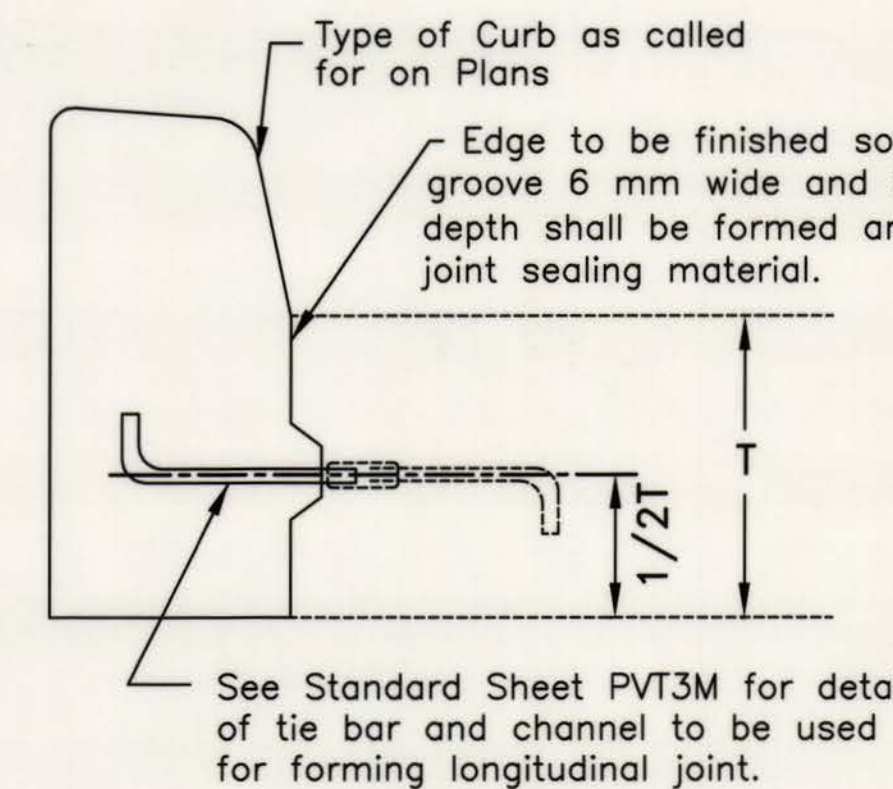
COMBINATION CONCRETE CURB AND GUTTER TYPE I



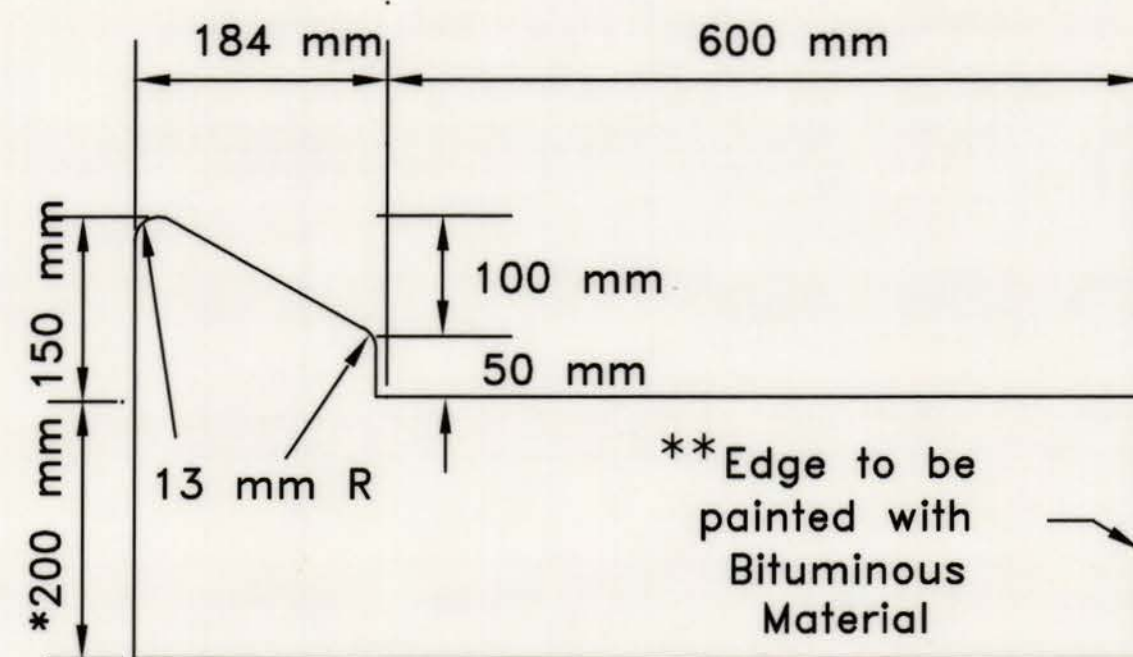
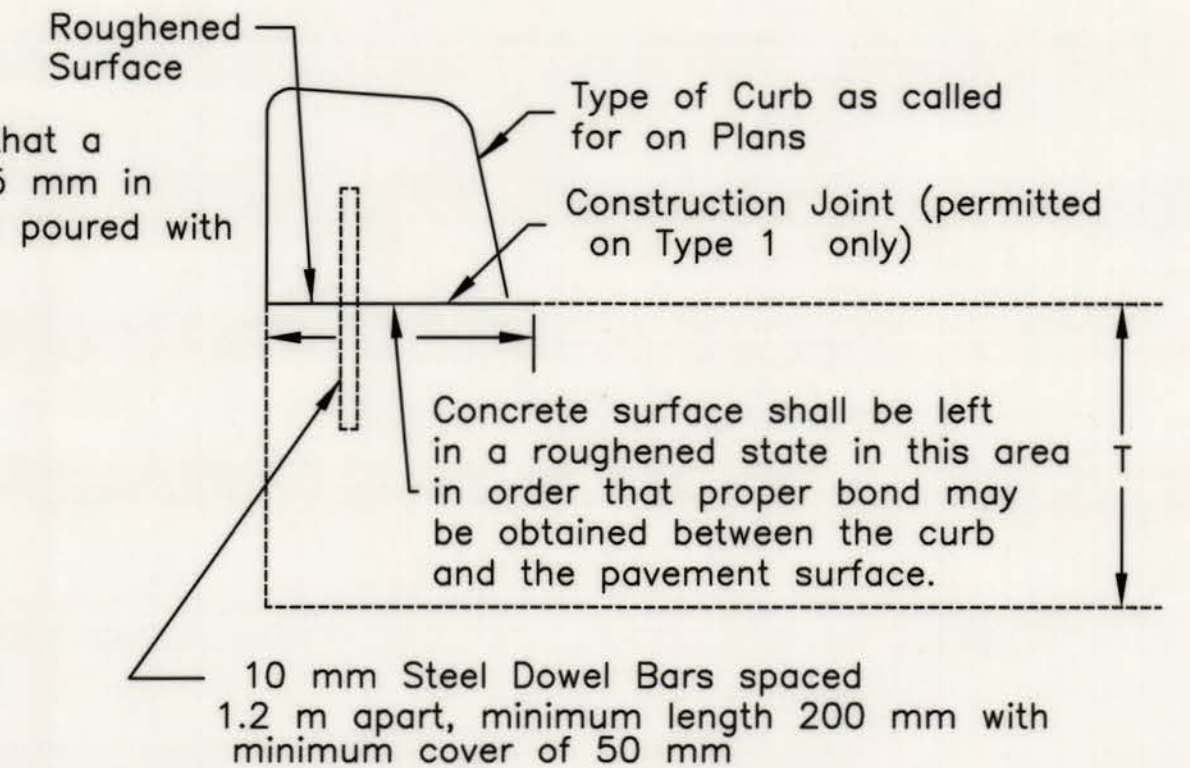
INTEGRAL CONCRETE CURBING TYPE I



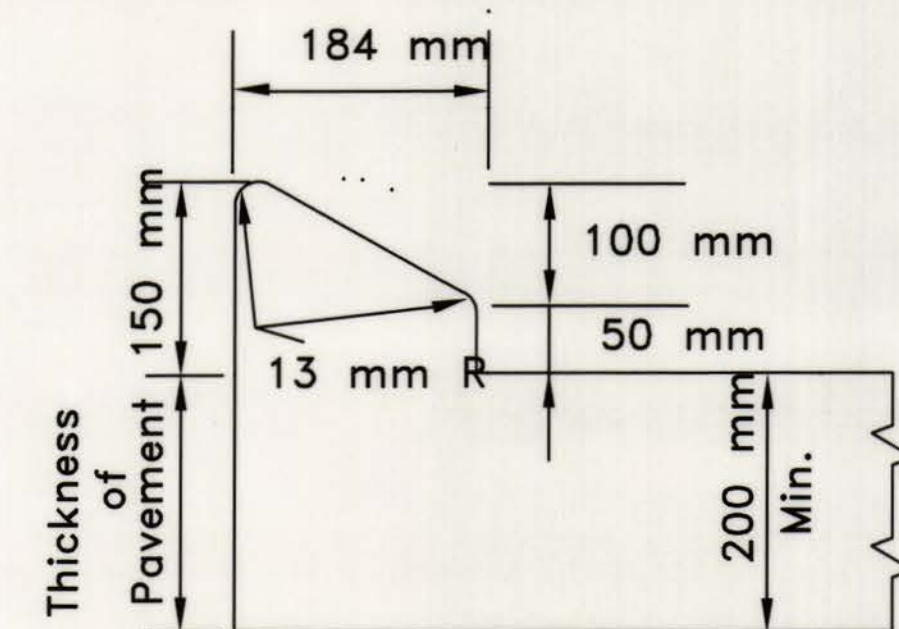
PLAIN CONCRETE CURBING TYPE I



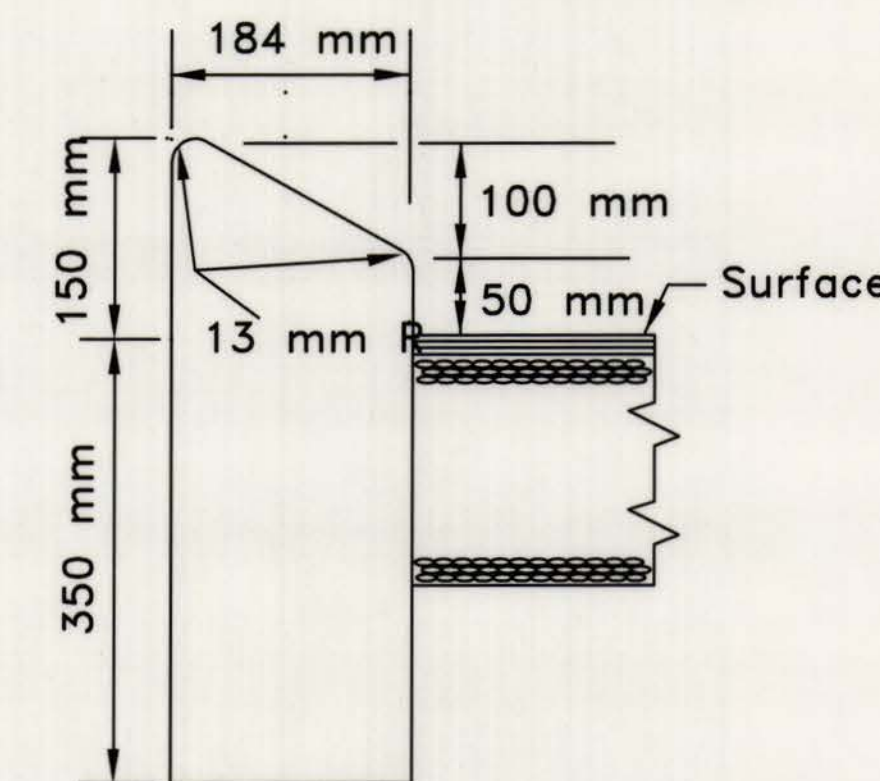
DETAILS SHOWING PLACING OF CONCRETE CURB BY SEPARATE METHODS



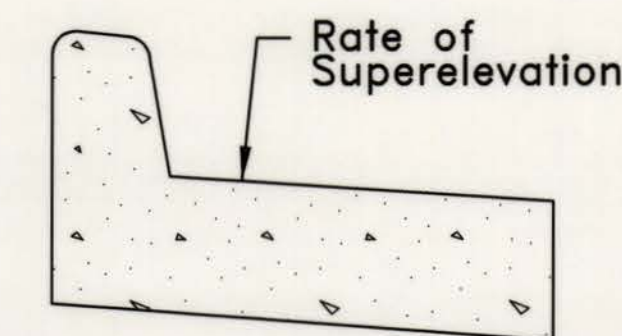
COMBINATION CONCRETE CURB AND GUTTER TYPE II



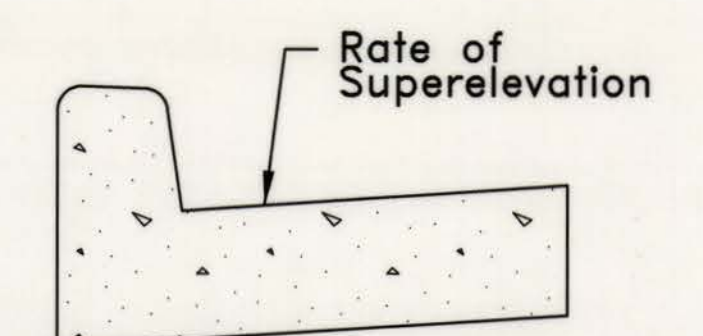
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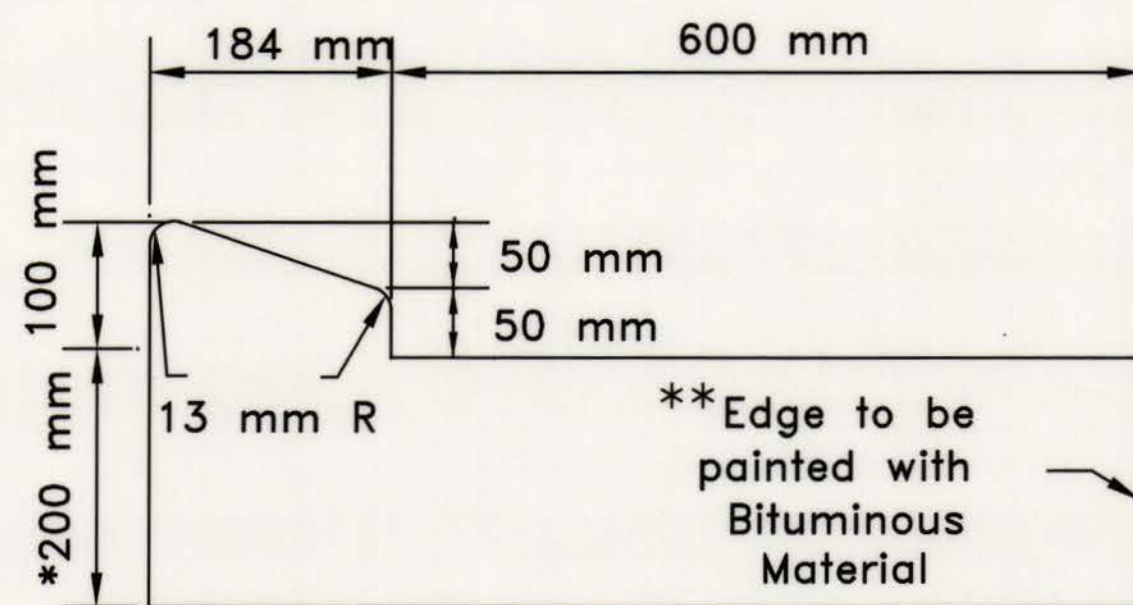
PLAIN CONCRETE CURBING TYPE II



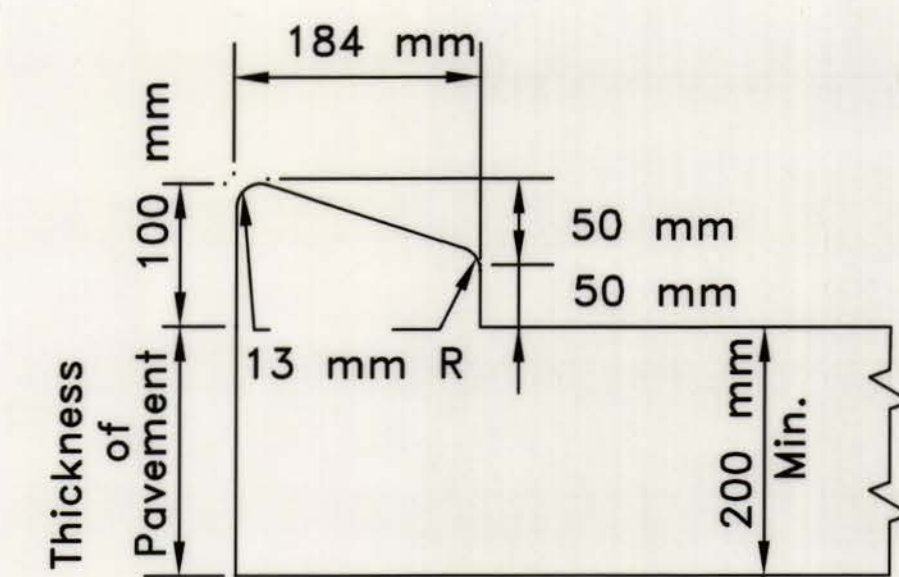
SKETCH SHOWING METHOD OF PLACING CURB ON HIGH SIDE OF SUPERELEVATED SECTION



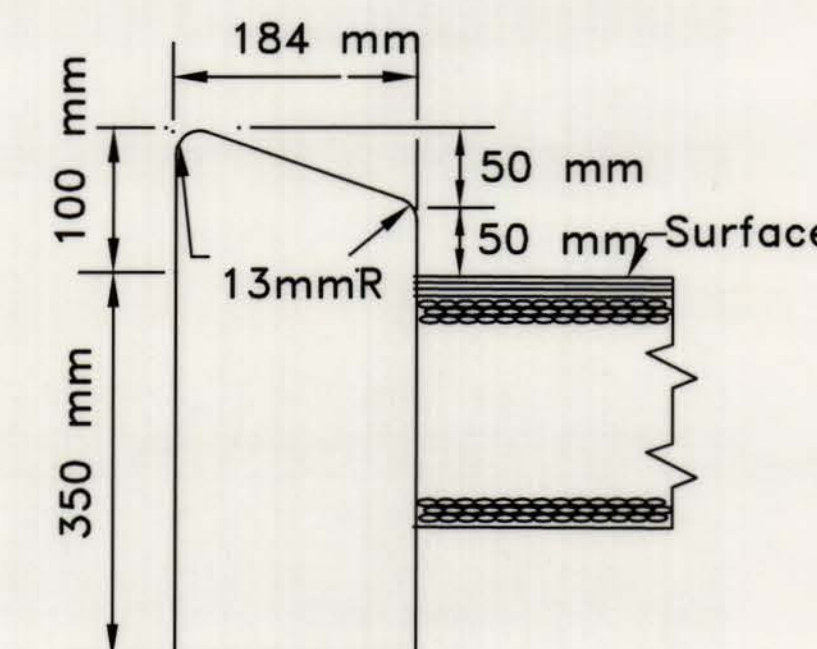
SKETCH SHOWING METHOD OF PLACING CURB ON LOW SIDE OF SUPERELEVATED SECTION



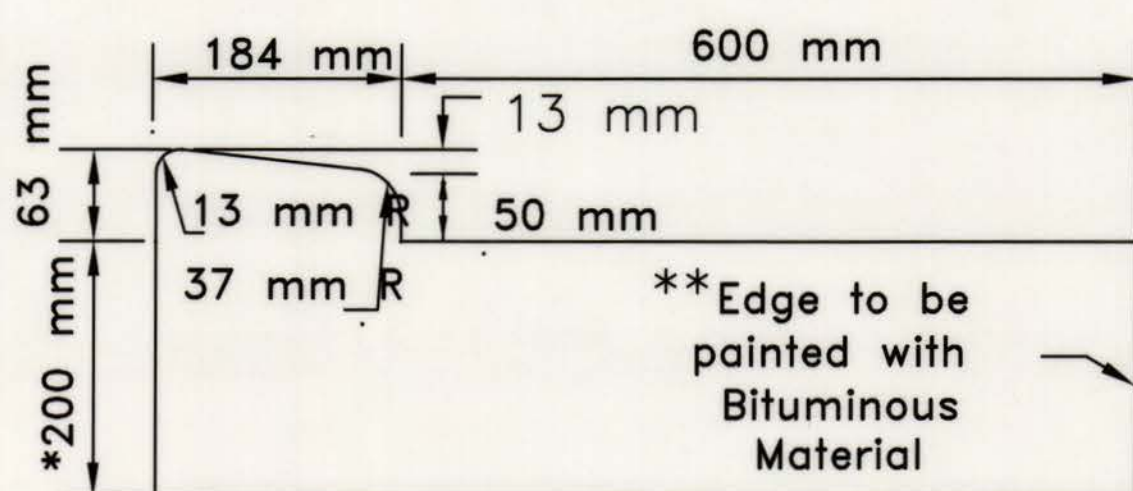
COMBINATION CONCRETE CURB AND GUTTER TYPE III



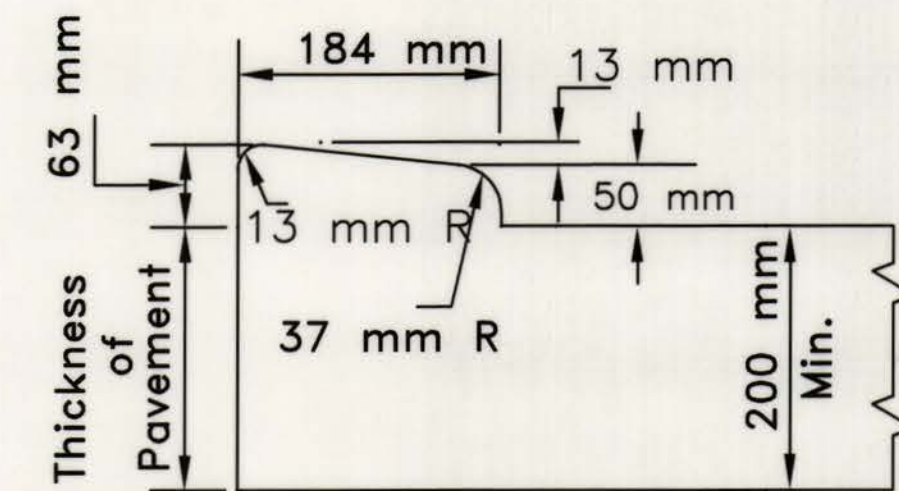
INTEGRAL CONCRETE CURBING TYPE III



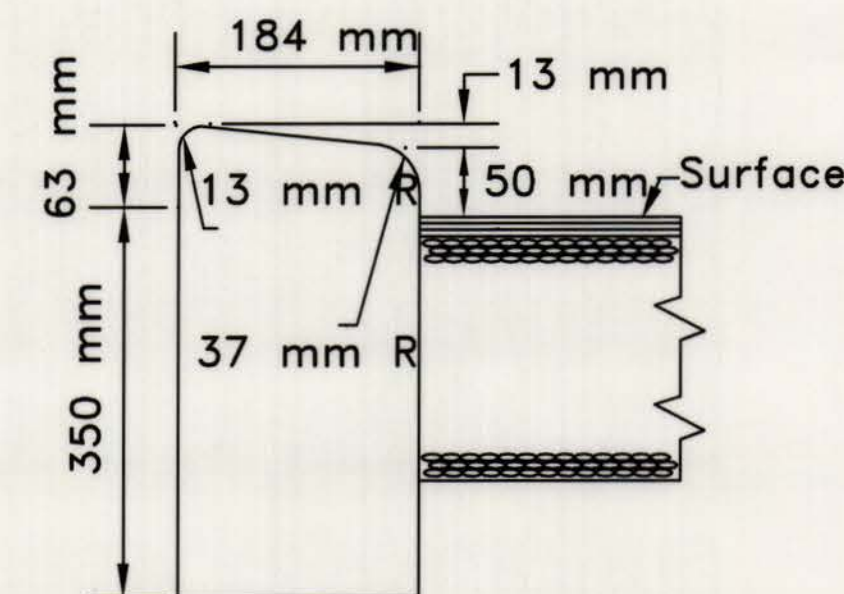
PLAIN CONCRETE CURBING TYPE III



COMBINATION CONCRETE CURB AND GUTTER TYPE IV



INTEGRAL CONCRETE CURBING TYPE IV



PLAIN CONCRETE CURBING TYPE IV

NOTES

For all Concrete Curbing, the face of the curbing shall be offset a minimum of 600 mm from the edge of traffic lane, unless otherwise shown on the Plans.

Construction of Concrete Curbing shall be by the "Separate Method" when sawed joints are constructed in the pavement.

All curb joints shall be made by acceptable forming methods.

For Combination Concrete Curbs And Gutters, the slope of the 600 mm wide concrete gutter shall conform to the pavement slope or as otherwise specified on the Plans. For Integral and Plain Concrete Curbing, the slope of the concrete or bituminous surface abutting the raised portion of the curb shall be as specified on the plans.

All tie bars and J or Hook Bolt Assemblies shall be epoxy coated in accordance with section 709.1 of the Standard Specifications.

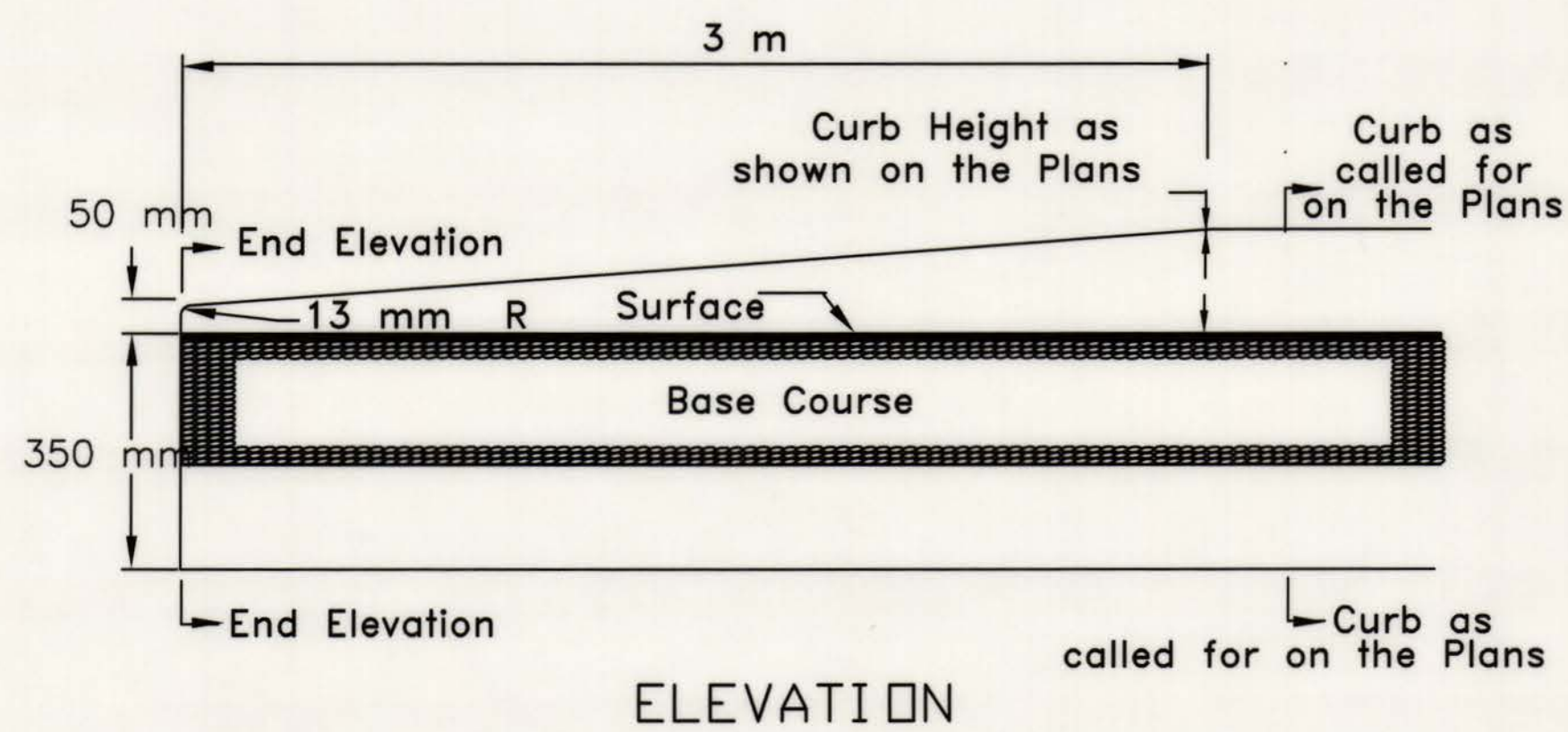
WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 11-1-99
REVISION DATE

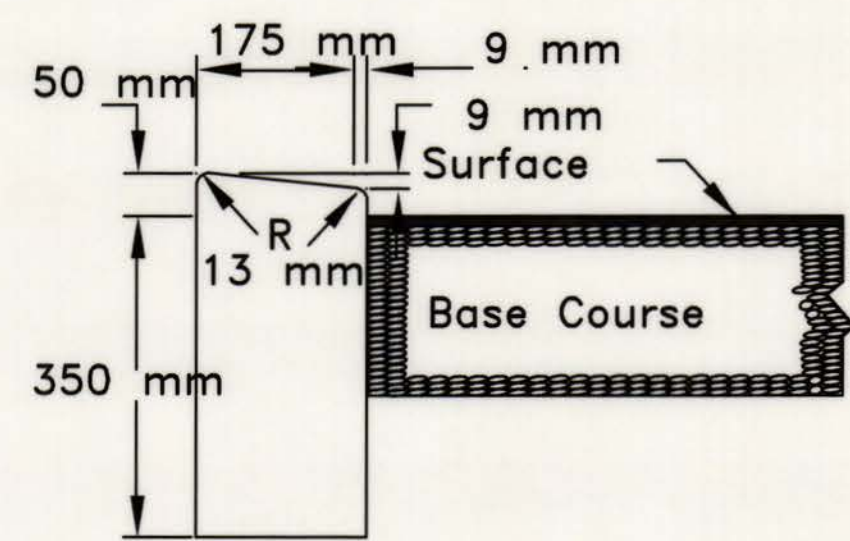
CONCRETE CURBING
AND
SIDEWALK
(SHEET 1 of 2)

STANDARD SHEET PVT6M

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	24	73

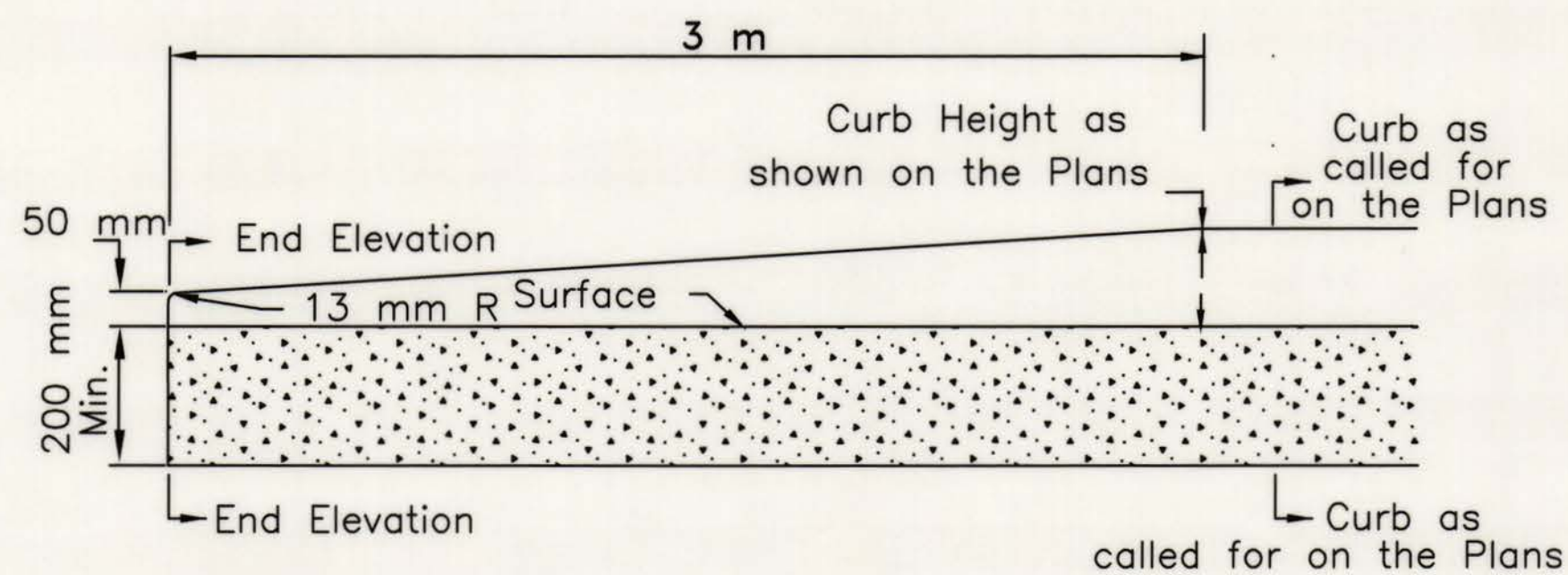


ELEVATION

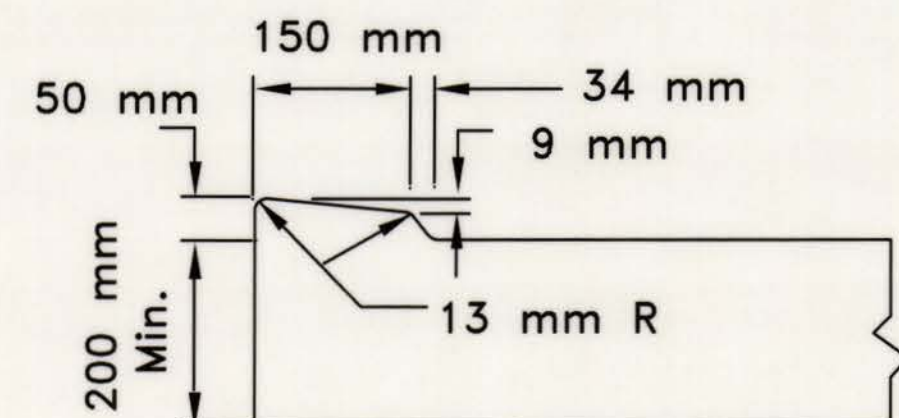


END ELEVATION

STANDARD CURB TAPER CLASS I

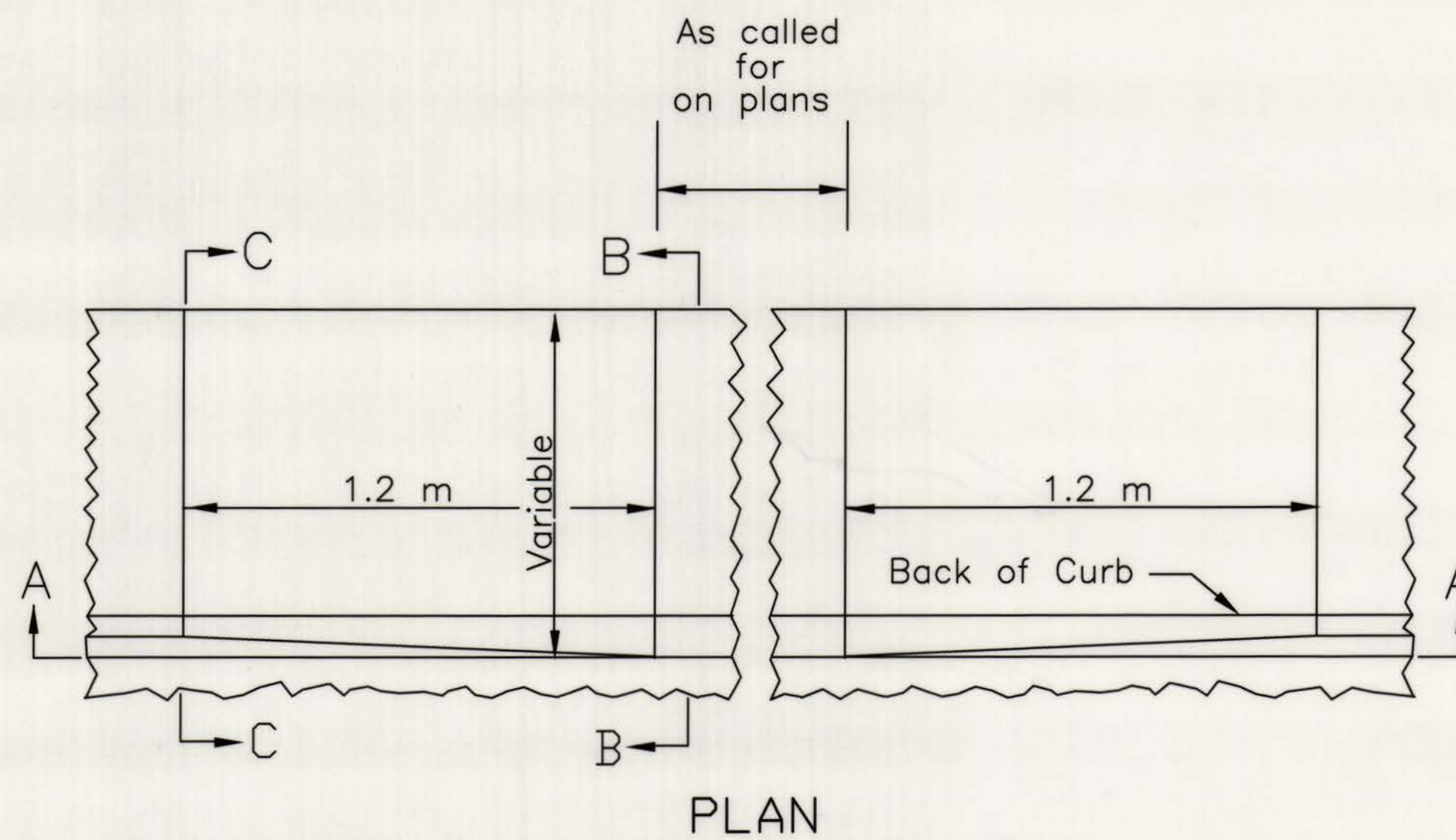


ELEVATION

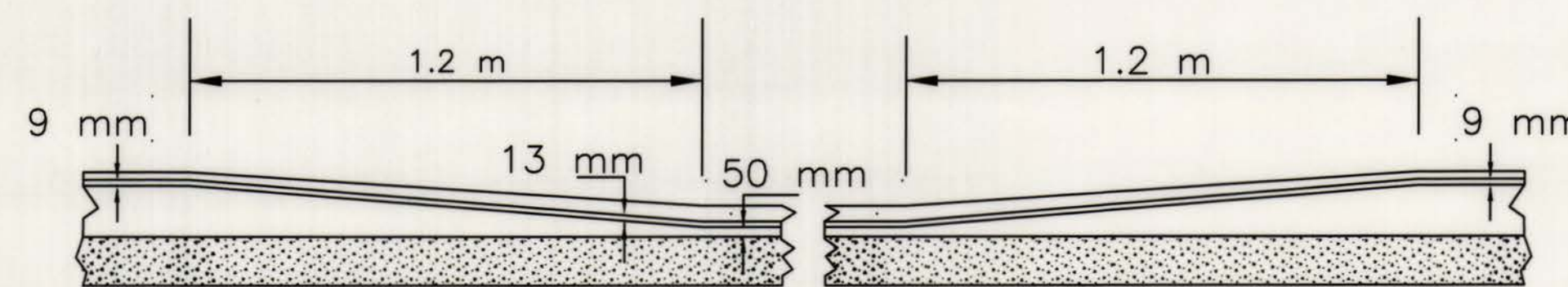


END ELEVATION

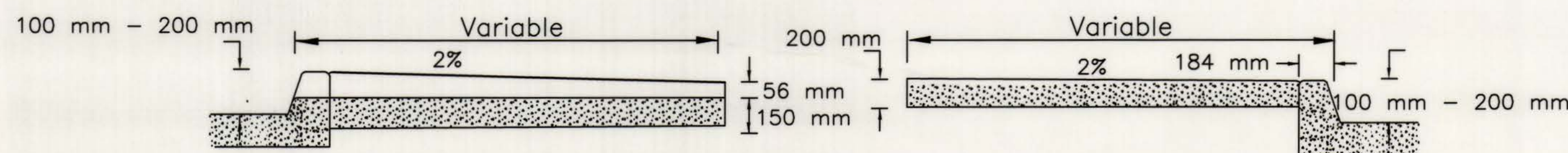
STANDARD CURB TAPER CLASS II



PLAN



SECTION A-A



SECTION B-B

SECTION C-C

SIDEWALK AND CURB TREATMENT AT DRIVEWAYS

NOTES

The Standard Curb Taper, Class I, shall be used at the ends of all Plain Concrete Curbing, unless otherwise called for on the Plans.
The Standard Curb Taper, Class II, shall be used at the ends of all Combination Curb and Gutter, and all Integral Concrete Curbing, unless otherwise called for on the Plans.

The details as shown for Sidewalk and Curb Treatment at Driveways are to be utilized unless otherwise called for on the Plans.

Section A-A details a 1.2 m transition length in the height of the curb where driveways and Type IV curbing are encountered.

Section B-B details additional depth of sidewalk at driveways and section C-C details standard depth sidewalk. Payment for the extra depth of the sidewalk in section B-B will be 1.5 times the standard depth price.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 11-1-99
REVISION DATE

CONCRETE CURBING
AND
SIDEWALK
(sheet 2 of 2)

STANDARD SHEET PVT6M

MAINTENANCE OF TRAFFIC NOTES

1. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH SECTION 636 OF THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2000. THE CONTRACT DOCUMENTS AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT, AND THE MANUAL "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS," DATED SEPTEMBER 1996, WHICH IS MADE A PART OF THIS CONTRACT AND THE TRAFFIC PLAN FOR THE INDIVIDUAL SEGMENTS AS DESCRIBED BELOW.

2. THE QUANTITIES OF TRAFFIC CONTROL DEVICES HAVE BEEN INCREASED BY 15 PERCENT FOR USE AS DIRECTED BY THE ENGINEER WHEN UNANTICIPATED CHANGES IN THE TRAFFIC CONTROL PLANS OCCUR.

3. REFLECTIVE SHEETING ON TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE IN NEW CONDITION AT THE BEGINNING OF THE PROJECT. NIGHT VISIBILITY AND LEGIBILITY SHALL BE MAINTAINED.

4. ACCESS TO ALL HOUSES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. NOTE A: MUST MAINTAIN TWO-WAY, TWO LANE TRAFFIC OVERNIGHT, ON WEEKENDS, AND ON HOLIDAYS WITH NO MORE THAN ONE LIFT DIFFERENCE IN ELEVATION (50 mm + OR -) BETWEEN ADJACENT LANES.

5. FLAGGER: WHEN WORK IS PERFORMED AT NIGHT WITH A FLAGGER, THE FLAGGER STATION SHALL BE ADEQUATELY ILLUMINATED. THIS COST SHALL BE PAID FOR AS PART OF ITEM 636014-001.

6. TEMPORARY TAPE: ALL TEMPORARY TAPE SHALL BE MECHANICALLY APPLIED. SOLID LINES SHALL HAVE A 50 mm GAP EVERY 15 METERS.

7. ANY TEMPORARY CONCRETE BARRIERS SHALL HAVE TYPE B-1 DELINEATORS (WHITE OR YELLOW AS APPROPRIATE) FACING TRAFFIC AT 6.1 METER INTERVALS.

8. ANY TEMPORARY IMPACT ATTENUATORS SHALL BE TYPE IV, 610 mm WIDE, 6-BAY, AND BI-DIRECTIONAL WITH APPROPRIATE BACKUP AS PER THE MANUFACTURER'S RECOMMENDATIONS. ANY TEMPORARY IMPACT ATTENUATOR SUFFERING DAMAGE SHALL BE REPAIRED AS APPROPRIATE WITHIN 24 HRS. SUCH OPERATIONS, TO INCLUDE ALL REPAIR PARTS NECESSARY AND COSTS, SHALL BE BID INCIDENTAL TO ITEM 664001-008. NOTE: CONTRACTOR MAY SUBSTITUTE QUAD GUARD CZ, TYPE VIII, 610 mm WIDE, 6 BAY, BI-DIRECTIONAL WITH APPROPRIATE BACKUP PER THE MANUFACTURER'S RECOMMENDATIONS FOR THE ABOVE MENTIONED TYPE IV DEVICE. ALSO NOTE: ANY NEW DEVICE PURCHASED SHALL BE TYPE VIII.

9. NOTICE TO CONTRACTORS: IT IS ANTICIPATED THAT OTHER CONTRACTORS WILL BE WORKING IN THIS AREA, AND IT IS IMPERATIVE THAT STRICT COORDINATION BETWEEN CONTRACTORS BE AGREED ON IN REFERENCE TO LANE CLOSURES, WORKING PLANS, AND STORAGE AREAS. THIS PLAN SHALL BE PRESENTED TO THE ENGINEER FOR APPROVAL.

10. EXISTING SIGNS AND DELINEATORS: ANY SUCH EXISTING FACILITIES RELOCATED, REMOVED, OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT HIS EXPENSE AS PART OF ITEM 636011-001, UNLESS REPLACED BY FINAL SIGNING.

11. FURNISH AND INSTALL THREE (3) "STOP HERE ON RED" SIGNS (R10-6) AS INDICATED AND TEMPORARY PAVEMENT MARKINGS - PAINT 100 mm SOLID LINE (YELLOW AND WHITE) AS PER CASE D5B. USE IN PHASE I.

12. WINTER SHUTDOWN: THE PROJECT AREA AND ATTENDANT ROADWAY (TRAVEL LANES AND SHOULDERS, ETC.) SHALL BE LEFT IN A "SQUARED OFF"/EASILY TRAVERSABLE, SAFE CONDITION THAT IS PREAGREED TO BY THE ENGINEER. SUCH WILL INCLUDE, BUT NOT BE LIMITED TO, PAVEMENT MARKINGS (TEMPORARY PAVEMENT MARKINGS), SIGNING, RIDEABLE PAVEMENT, AND NECESSARY GUARDRAIL-BARRIER, ETC., AS NOTED ON THE PLANS AND AS APPROPRIATE. TRAFFIC CONTROL DEVICES THAT ARE NOT NEEDED OR DESIRED SHALL BE EITHER REMOVED OR COVERED AND ALL SUCH BE BID INCIDENTAL TO ITEM 636011-001.

TEMPORARY TRAFFIC SIGNALS

1. ALL TEMPORARY TRAFFIC SIGNALS SHALL COMPLY WITH THE APPLICABLE DOH STANDARD SPECIFICATIONS (SECTION 660 AND SUBSECTION 715.42) AND THE APPLICABLE DOH STANDARD DRAWINGS (TES SERIES).

2. INSTALLATION, MAINTENANCE, AND SUBSEQUENT REMOVAL OF ALL TEMPORARY TRAFFIC SIGNALS, TO INCLUDE TOOLS, EQUIPMENT, SUPPLIES, LABOR AND INCIDENTALS TO COMPLETE THE WORK, SHALL BE BID AS PART OF ITEM 636023-001, "TEMPORARY TRAFFIC SIGNAL" PER LUMP SUM.

3. ELECTRICAL POWER COSTS SHALL BE PAID FOR BY THE CONTRACTOR DURING THE LIFE OF THE PROJECT AS PART OF ITEM 636023-001.

4. CONTRACTOR SHALL BE ON 24-HOUR CALL IN CASE OF SIGNAL MALFUNCTION IN WHICH CASE THE CONTRACTOR SHALL CONTROL TRAFFIC BY USE OF FLAGGERS UNTIL THE TRAFFIC SIGNAL IS OPERATING CORRECTLY.

PHASE I CONSTRUCTION

- 1.) INSTALL THE MAINTENANCE OF TRAFFIC DEVICES EXCEPT FOR THOSE DESIGNATED AS "PHASE II ONLY."
- 2.) CONSTRUCT NEW BRIDGE AND APPROACHES WITHIN THE LIMITS DESIGNATED AS "PHASE I CONSTRUCTION AREA."

PHASE II CONSTRUCTION

- 1.) INSTALL THE MAINTENANCE OF TRAFFIC DEVICES DESIGNATED AS "PHASE II ONLY." ADJUST THE GRADE OF EXISTING CR 39 NEAR THE LIMITS OF CONSTRUCTION OF THE "PHASE I CONSTRUCTION AREA" ONE LANE AT A TIME USING FLAGGED CONTROL.
- 2.) RELOCATE THE TYPE III BARRICADES AND DRUMS FROM THE NEW ALIGNMENT TO THE OLD ALIGNMENT. TRANSFER TRAFFIC TO THE NEW ALIGNMENT.
- 3.) USING FLAGGED CONTROL, COMPLETE THE TIE IN OF THE APPROACHES ONE LANE AT A TIME.
- 4.) COMPLETE THE TIE IN OF CR 39/1.
- 5.) REMOVE THE EXISTING BRIDGE AND ABUTMENTS.
- 6.) SCARIFY, SEED, AND MULCH THE AREA OF OLD CR 39 TO BE REMOVED.
- 7.) REMOVE ALL MAINTENANCE OF TRAFFIC DEVICES AS DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC SUMMARY

ITEM NO.	DESCRIPTION	QUANTITY	
		UNIT	TOTAL
636002-001	AGGREGATE FOR MAINTAINING TRAFFIC, STONE OR GRAVEL	Mq	80
636002-002	AGGREGATE FOR MAINTAINING TRAFFIC, SLAG	Mq	73
636003-001	BITUMINOUS MATERIAL FOR DUST PALLIATIVE	LITERS	0
636004-001	CALCIUM CHLORIDE FOR DUST PALLIATIVE	Mg	0
636005-001	TEMPORARY STRUCTURE FOR MAINTAINING TRAFFIC	LS	0
636006-001	PILOT TRUCK AND DRIVER	DAY	0
636007-001	ERADICATION OF PAVEMENT MARKING	M	0
636009-001	TEMPORARY PAVEMENT MARKINGS-PAINT 4 IN SOLID LINE	M	800
636009-001	TEMPORARY PAVEMENT MARKINGS-TAPE 4 IN SOLID LINE	M	0
636010-003	TEMPORARY RAISED PAVEMENT MARKER, TYPE TCZ	EACH	0
636011-001	TRAFFIC CONTROL DEVICE	UNIT	9190
636012-010	PROJECT TRAFFIC CONTROL DEVICE CLEANING	EACH	3
636013-001	INDIVIDUAL TRAFFIC CONTROL DEVICE CLEANING	EACH	150
636014-001	FLAGGER	HOUR	400
636014-002	TRAFFIC DIRECTOR	HOUR	0
636015-001	TEMPORARY GUARDRAIL CHANNELIZATION DEVICE	M	0
636017-001	TEMPORARY CONCRETE BARRIER	M	50
636017-002	DOH FURNISHED TEMPORARY CONCRETE BARRIER	M	0
636018-001	REMOVE AND RESET TEMPORARY CONCRETE BARRIER	M	0
636018-002	REMOVE AND RESET DOH FURNISHED TEMPORARY CONCRETE BARRIER	M	0
636019-001	TEMPORARY GUARDRAIL BARRIER	M	0
636020-001	REMOVE AND RESET TEMPORARY GUARDRAIL BARRIER	M	0
636021-001	ELECTRIC ARROW	DAY	0
636022-001	CHANGABLE MESSAGE SIGN	DAY	0
636023-001	TEMPORARY TRAFFIC SIGNAL	LS	1
636024-001	TEMPORARY PIPE FOR MAINTAINING TRAFFIC	M	0
636025-001	WARNING LIGHTS, TYPE A	DAY	0
636025-001	WARNING LIGHTS, TYPE B	DAY	1060
636025-001	WARNING LIGHTS, TYPE C	DAY	0
636026-001	TEMPORARY LIGHTING	LS	0
636028-001	SHADOW VEHICLE	DAY	0
664001-008	IMPACT ATTENUATING DEVICE, TYPE IV	EA	2

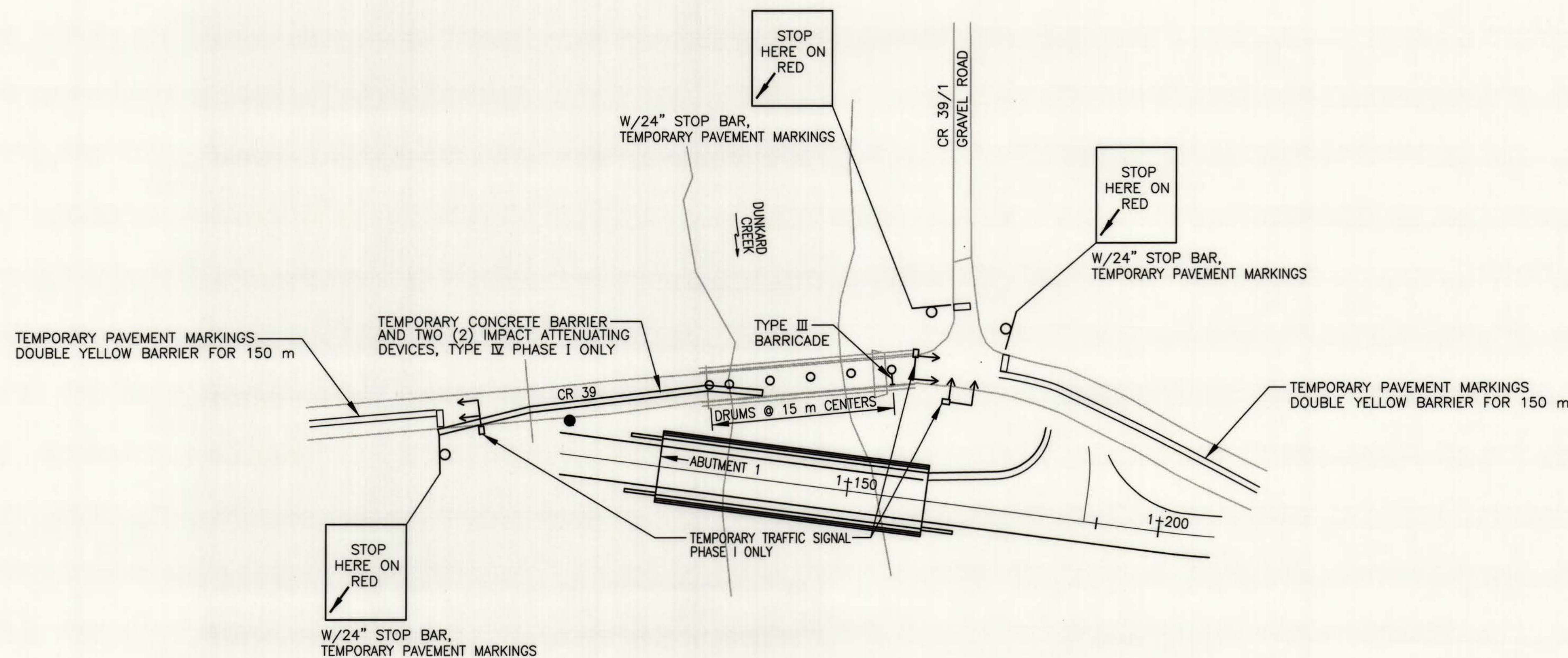
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRII-0039 (032)E	2000	MONONGALIA	25	73

TRAFFIC CONTROL DEVICE QUANTITIES
(ITEM NO. 636011-001)

DEVICE	DESCRIPTION	VALUE IN UNITS	QUANTITIES	TOTAL UNITS
* 1	SIGNS ON PORTABLE MOUNTS AND BARRICADES (TOTAL SIGN AREA 1.49 SQ. METER OR GREATER)	170	0	0
* 2	SIGNS ON PORTABLE MOUNTS AND BARRICADES (TOTAL SIGN AREA LESS THAN 1.49 SQ.METER)	80	0	0
* 3	SIGNS ON PERMANENT POSTS (TOTAL SIGN AREA 1.49 SQ.METER OR GREATER)	180	20	3600
* 4	SIGNS ON PERMANENT POSTS (TOTAL SIGN AREA LESS THAN 1.49 SQ.METER)	90	17	1530
** 5	BARRICADES - TYPE I	35	0	0
** 6	BARRICADES - TYPE II	60	0	0
** 7	BARRICADES - TYPE III	90	16	1440
*** 8	DRUMS	60	22	1320
9	CONES	5	20	100
10	VERTICAL PANELS OR GROUND MOUNTED DELINEATORS	10	0	0
11	BARRIER OR GUARDRAIL MOUNTED DELINEATORS (TO BE BID INCIDENTAL TO THE COST OF THE BARRIER OR GUARDRAIL)	0	0	0
12	TEMPORARY OVERLAYS AND TEMPORARY OVERSIZE SIGNS	300	0	0

* - ORANGE SIGN SHEETING SHALL BE REFLECTIVE FLUORESCENT ORANGE, TYPE V
 ** - BARRICADE SHEETING SHALL BE HIGH INTENSITY, TYPE IV
 *** - DRUM SHEETING SHALL BE 150 mm FLEXIBLE HIGH INTENSITY, TYPE IV

SUBTOTAL	7990
15% OF SUBTOTAL (TO BE USED AT THE DIRECTION OF THE ENGINEER)	1200
TOTAL	9190



DETAIL - TEMPORARY TRAFFIC SIGNAL PHASE I ONLY DURING CONSTRUCTION OF ABUTMENT 1
SCALE 1:500

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
MAINTENANCE OF TRAFFIC

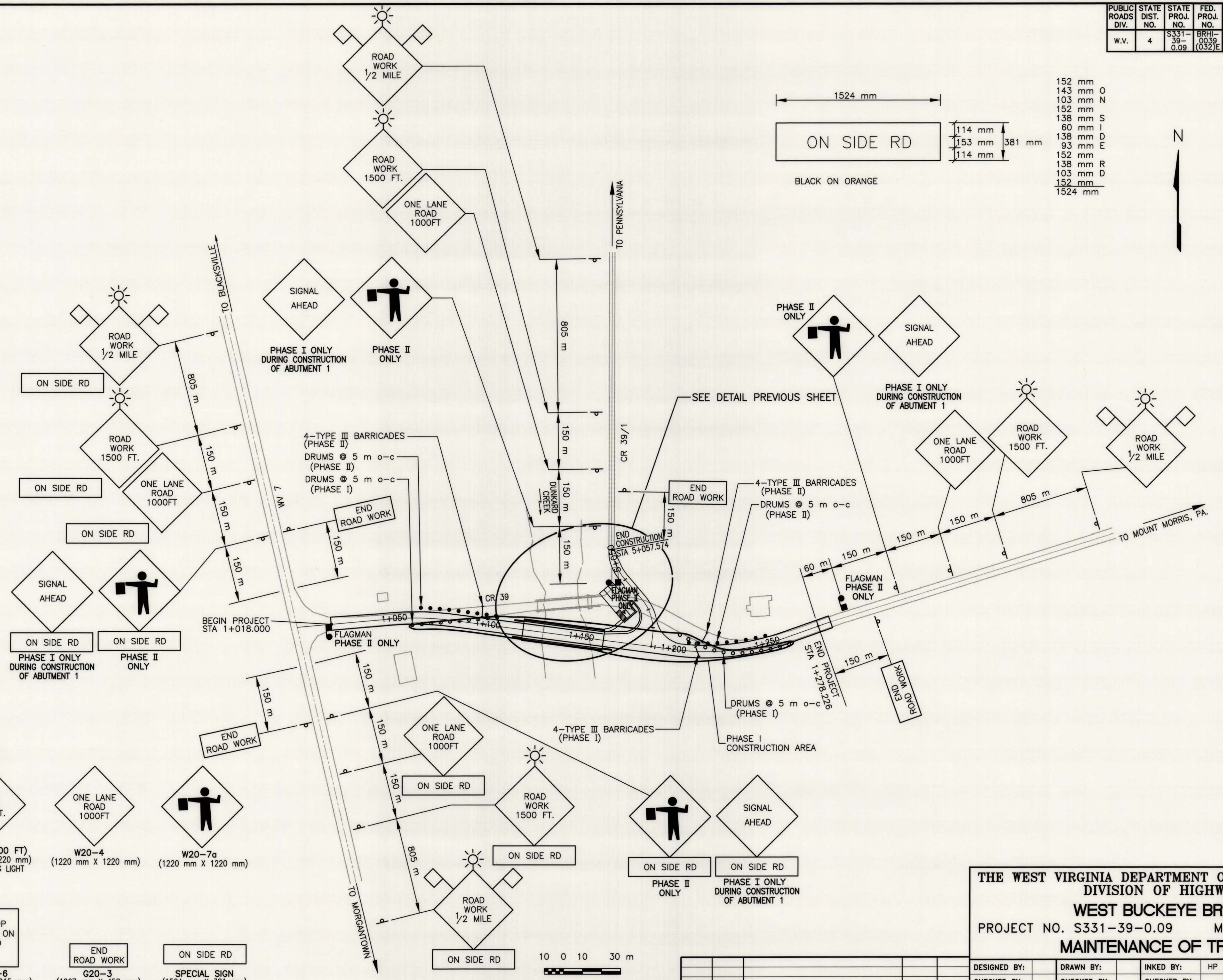
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET 25
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:500	

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	26	73

- 152 mm O
- 143 mm N
- 103 mm N
- 152 mm S
- 138 mm S
- 60 mm I
- 138 mm D
- 93 mm E
- 152 mm E
- 138 mm R
- 103 mm D
- 152 mm
- 1524 mm



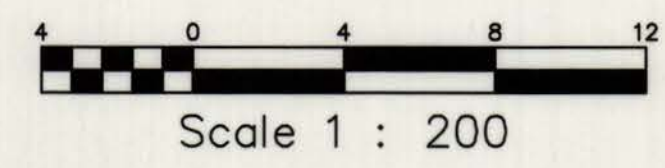
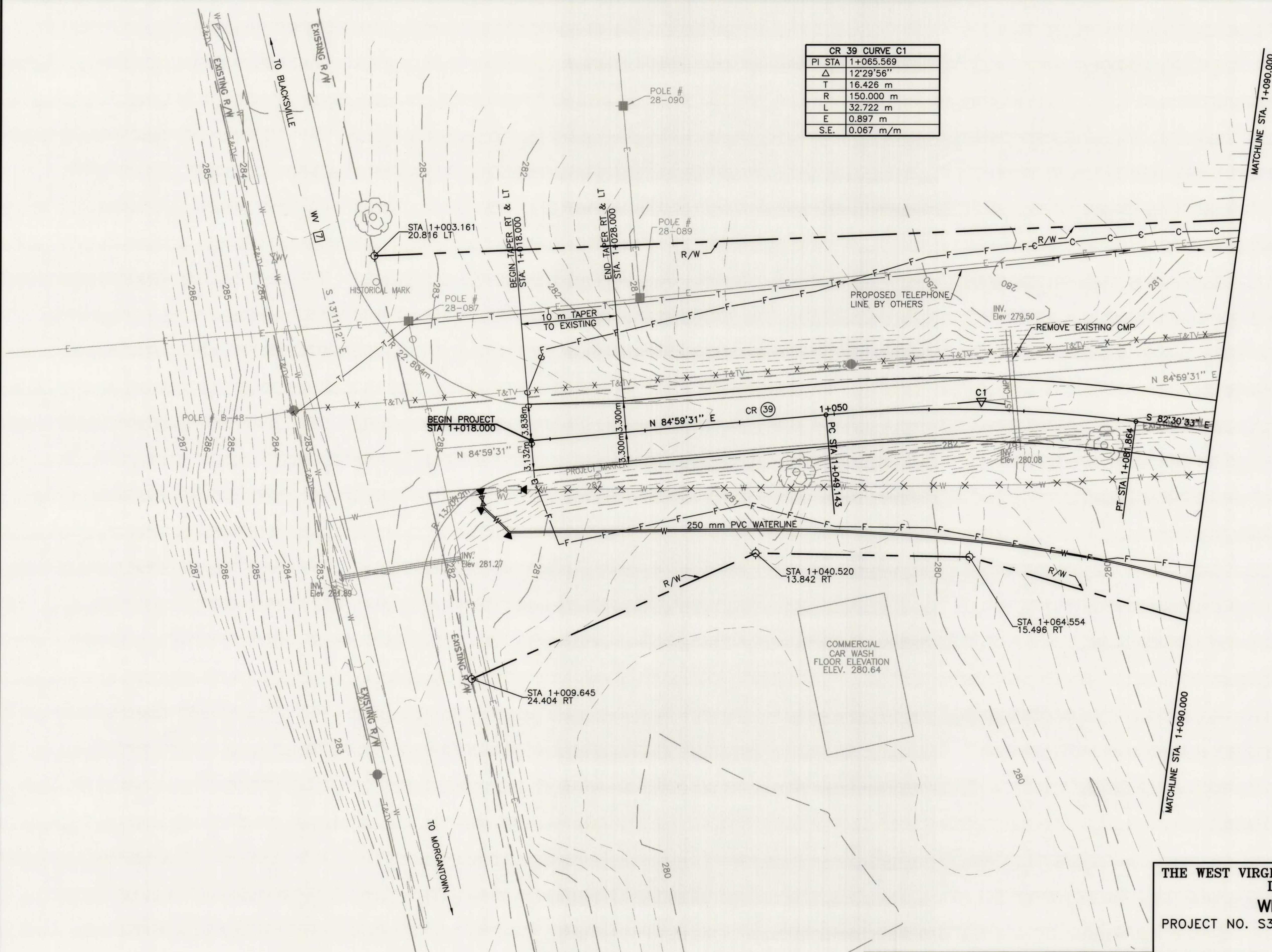
 W21-4 (1/2" MILE) (1220 mm X 1220 mm) FLAGS TYPE B WARNING LIGHT	 W21-4 (1500 FT) (1220 mm X 1220 mm) TYPE B WARNING LIGHT	 W20-4 (1220 mm X 1220 mm)	 W20-7a (1220 mm X 1220 mm)
 W3-3aM (1220 mm X 1220 mm)	 R10-6 (610 mm X 915 mm)	 G20-3 (1067 mm X 458 mm)	 SPECIAL SIGN (1524 mm X 381 mm) (SEE ABOVE)

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
MAINTENANCE OF TRAFFIC

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	26
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					BRIDGE NO.
					4415

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	27	73

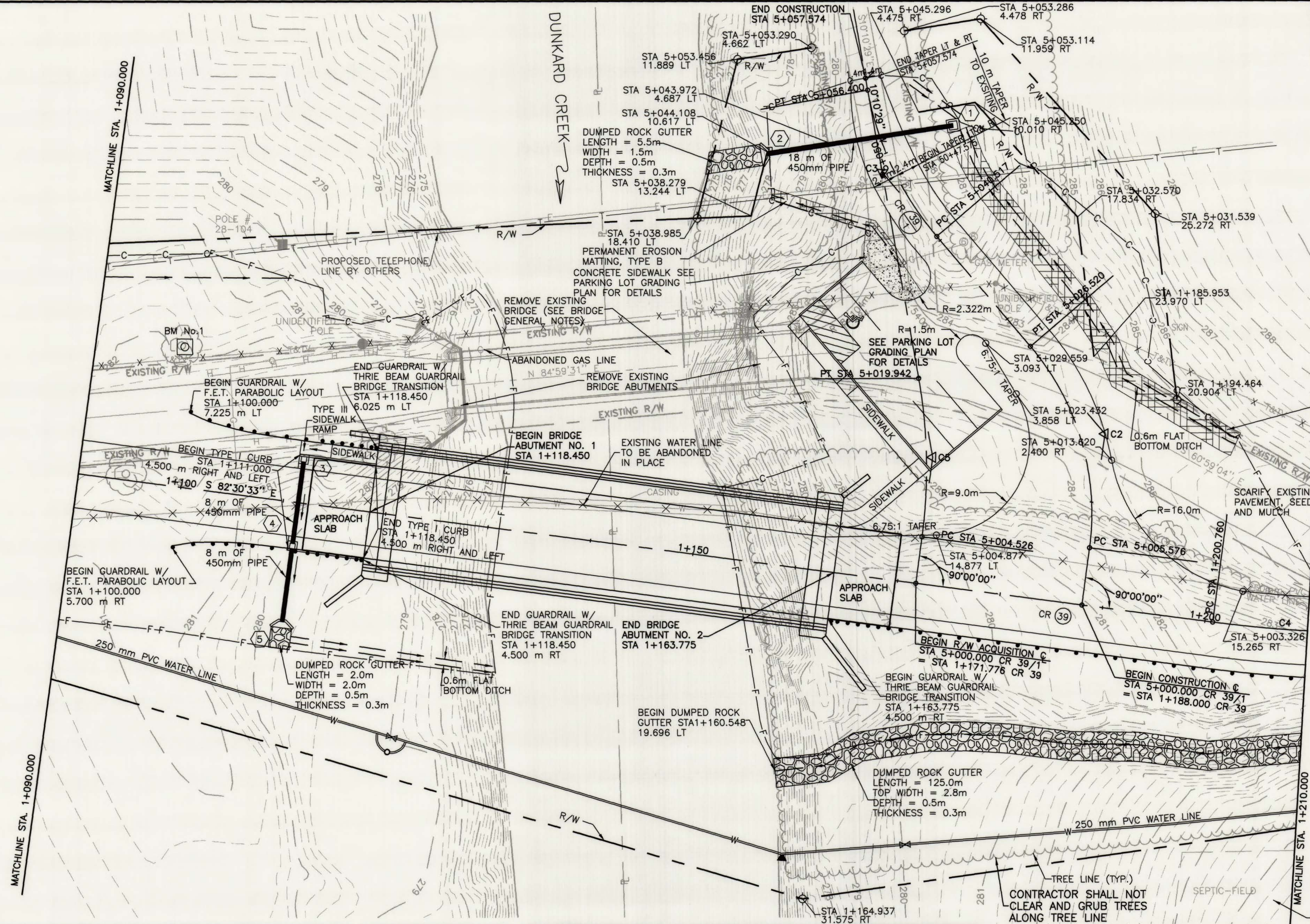
CR 39 CURVE C1	
PI STA	1+065.569
Δ	12°29'56"
T	16.426 m
R	150.000 m
L	32.722 m
E	0.897 m
S.E.	0.067 m/m



THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PLAN

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 27
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	BRIDGE NO. 4415
ALPHA ASSOCIATES, INCORPORATED					
CONSULTING ENGINEERS					MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	28	73



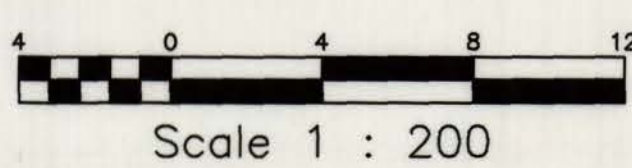
STRUCT. No.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT
1	TYPE G INLET	CR 39/1 STA 5+050.000 7.025 m RIGHT	280.200	279.438	N/A
2	WINGWALL	CR 39/1 STA 5+053.176 10.878 m LEFT	N/A	N/A	278.000
3	TYPE B INLET	CR 39 STA 1+111.455 4.500 m LEFT	283.472	N/A	282.342
4	TYPE B INLET	CR 39 STA 1+111.455 4.500 m LEFT	283.472	281.087	281.007
5	WINGWALL	CR 39 STA 1+111.455 11.773 m RIGHT	N/A	N/A	279.832

CR39/1 CURVE C2	
PI STA	5+016.707
Δ	48°00'00"
T	11.131 m
R	25.000 m
L	20.944 m
E	2.366 m
S.E.	0.03396 m/m

CR39/1 CURVE C3	
PI STA	5+048.649
Δ	30°20'05"
T	8.132 m
R	30.000 m
L	15.883 m
E	1.083 m
S.E.	N/A

CR39 CURVE C4	
PI STA	1+230.728
Δ	26°57'48"
T	29.968 m
R	125.000 m
L	58.825 m
E	3.542 m
S.E.	0.080 m/m

R/W ACQUISITION @ CR39/1 CURVE C5	
PI STA	5+012.296
Δ	17°39'55"
T	7.770 m
R	50.000 m
L	15.416 m
E	0.600 m
S.E.	0.0xx m/m



A.A.I. JOB NO. 971281.00

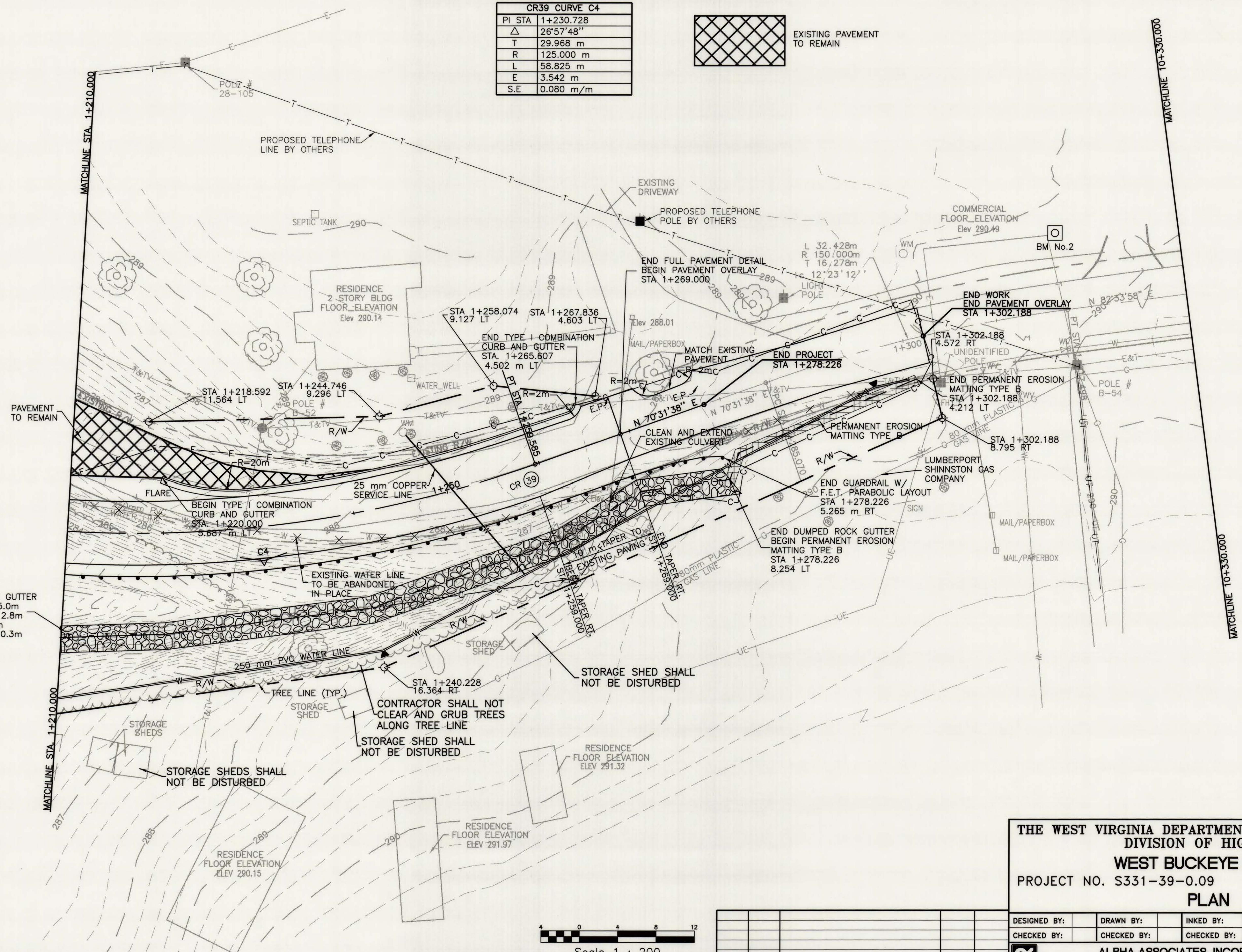
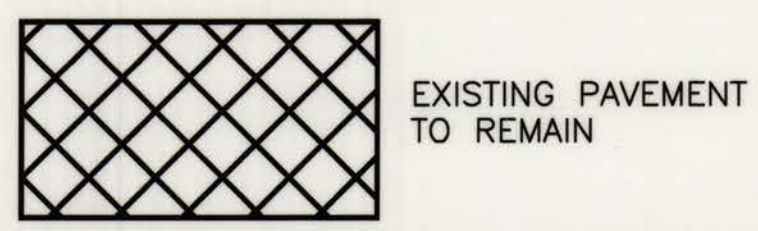
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PLAN

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 28
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	BRIDGE NO. 4415

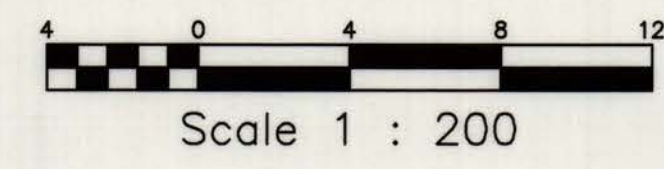
ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	29	73

CR39 CURVE C4	
PI STA	1+230.728
Δ	26°57'48"
T	29.968 m
R	125.000 m
L	58.825 m
E	3.542 m
S.E	0.080 m/m



DUMPED ROCK GUTTER
 LENGTH = 125.0m
 TOP WIDTH = 2.8m
 DEPTH = 0.5m
 THICKNESS = 0.3m



A.A.I. JOB NO. 971281.00

**THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS**

WEST BUCKEYE BRIDGE

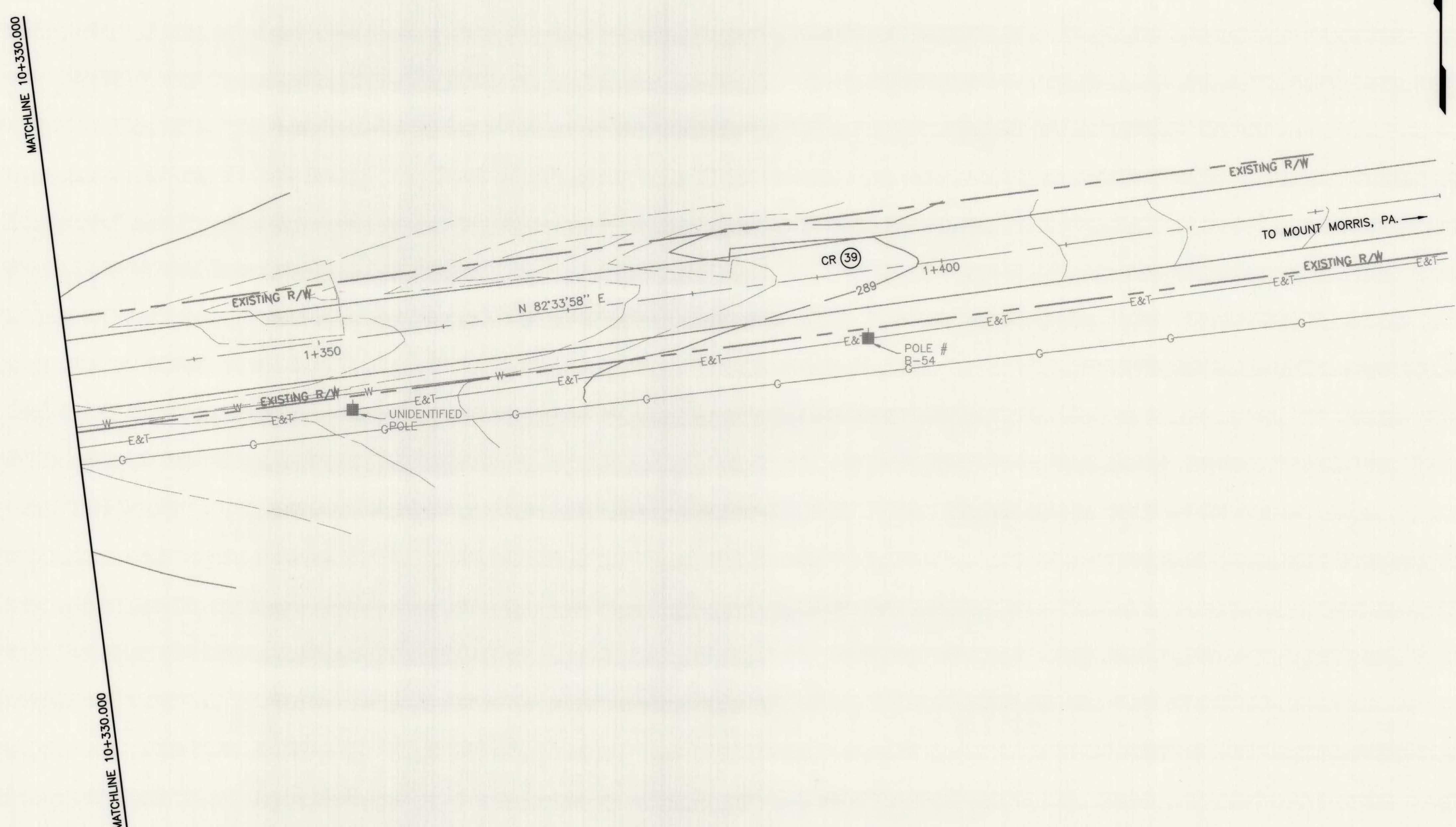
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY

PLAN

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 29
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	BRIDGE NO. 4415

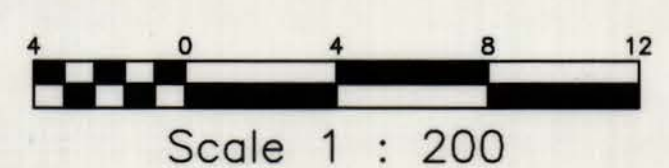
ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	30	73




A.A.I. JOB NO. 971281.00

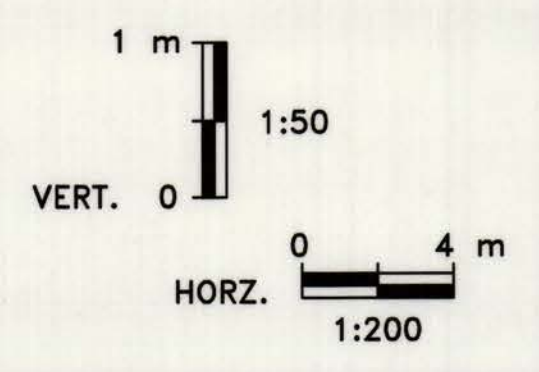
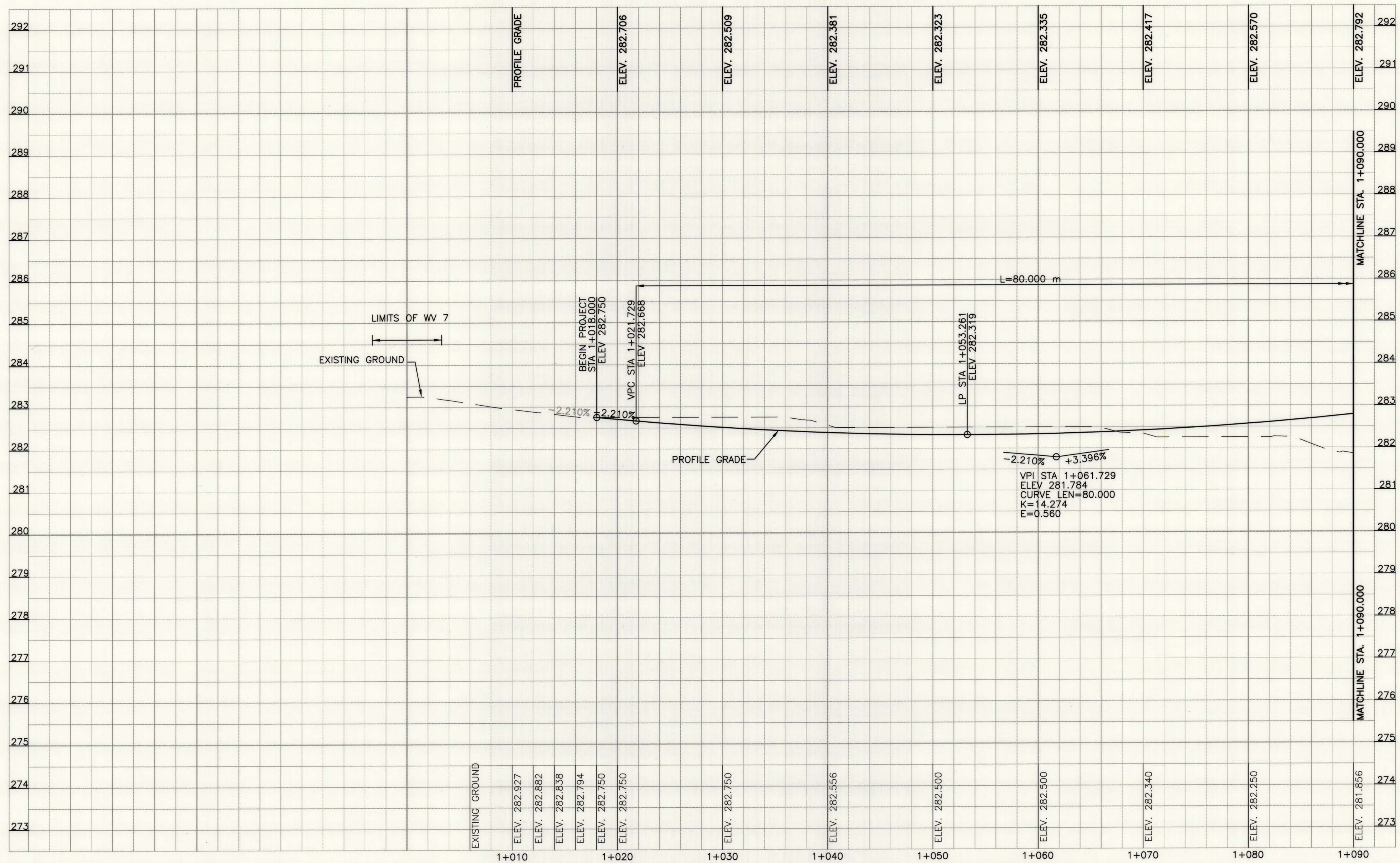
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PLAN



DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 30
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	BRIDGE NO. 4415
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY	


ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	31	73



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

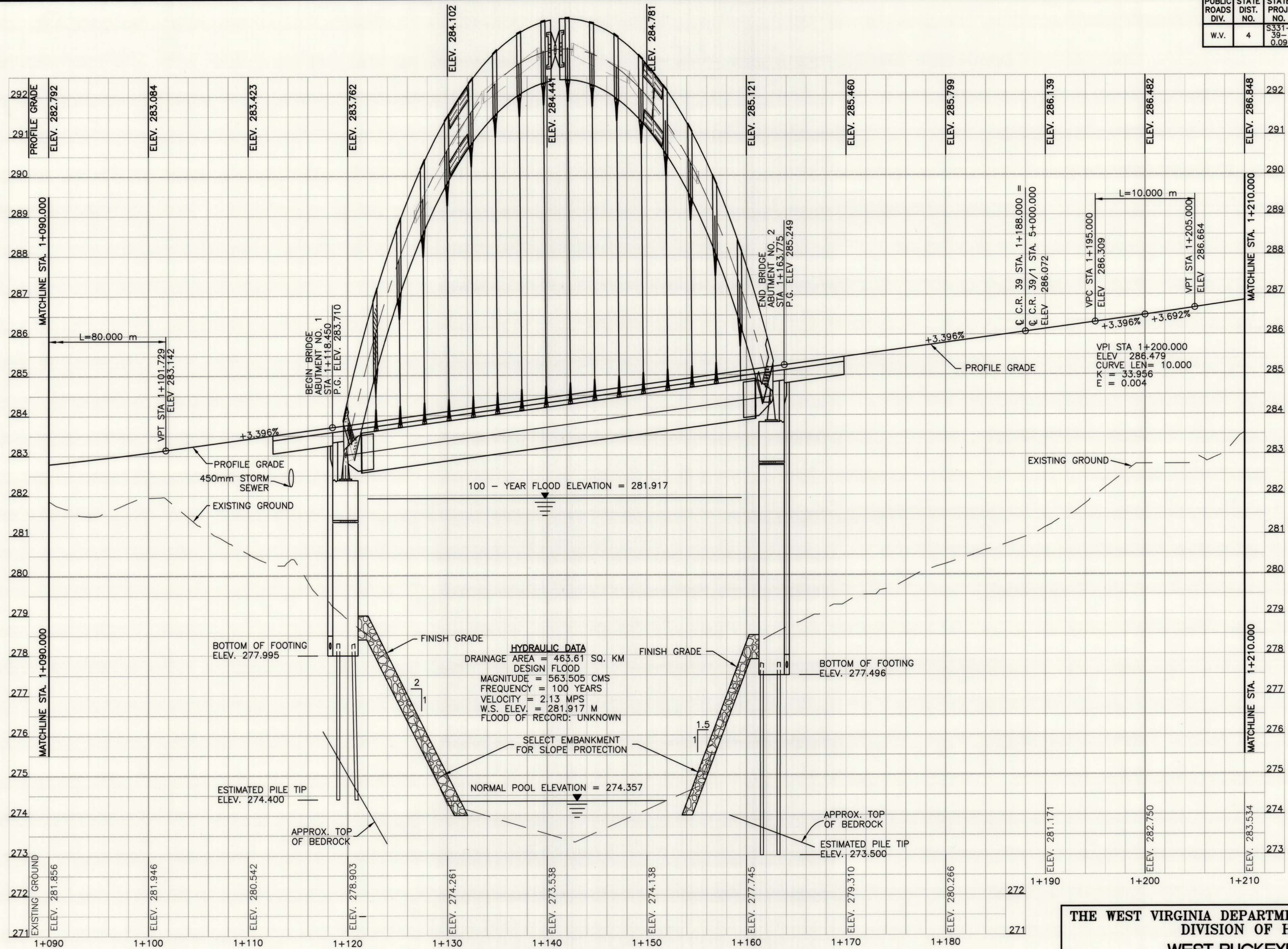
A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PROFILE CR 39

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 31
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: HORIZ. 1:200 VERT. 1:50	BRIDGE NO. 4415

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	32	73



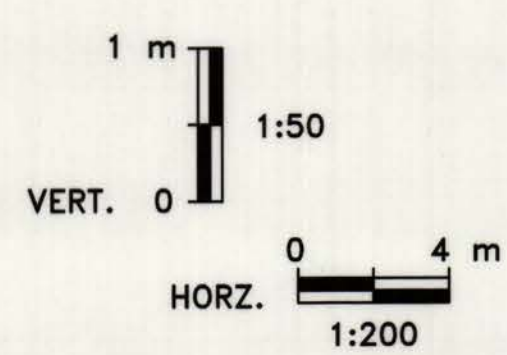
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 DESIGN FLOOD
 MAGNITUDE = 563.505 CMS
 FREQUENCY = 100 YEARS
 VELOCITY = 2.13 MPS
 W.S. ELEV. = 281.917 M
 FLOOD OF RECORD: UNKNOWN

A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PROFILE CR 39

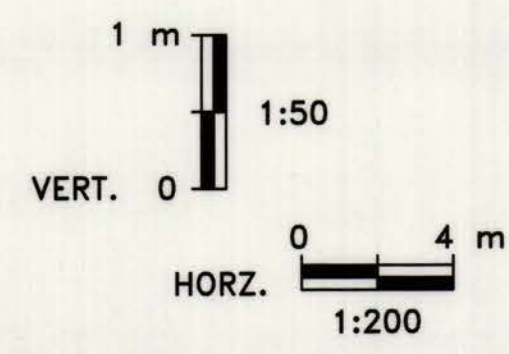
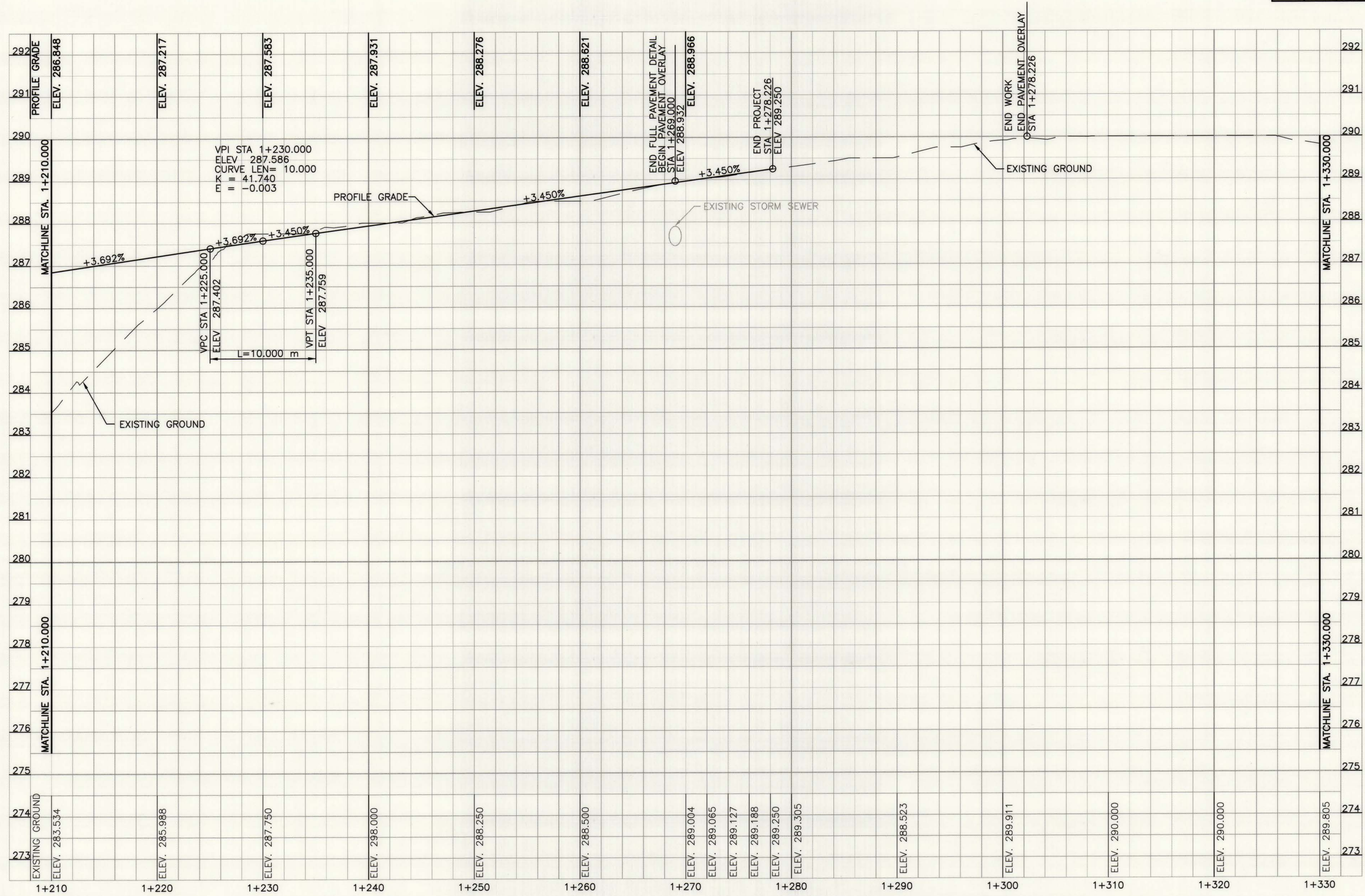
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CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: HORIZ. 1:200 VERT. 1:50	BRIDGE NO. 4415

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	33	73



A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PROFILE CR 39

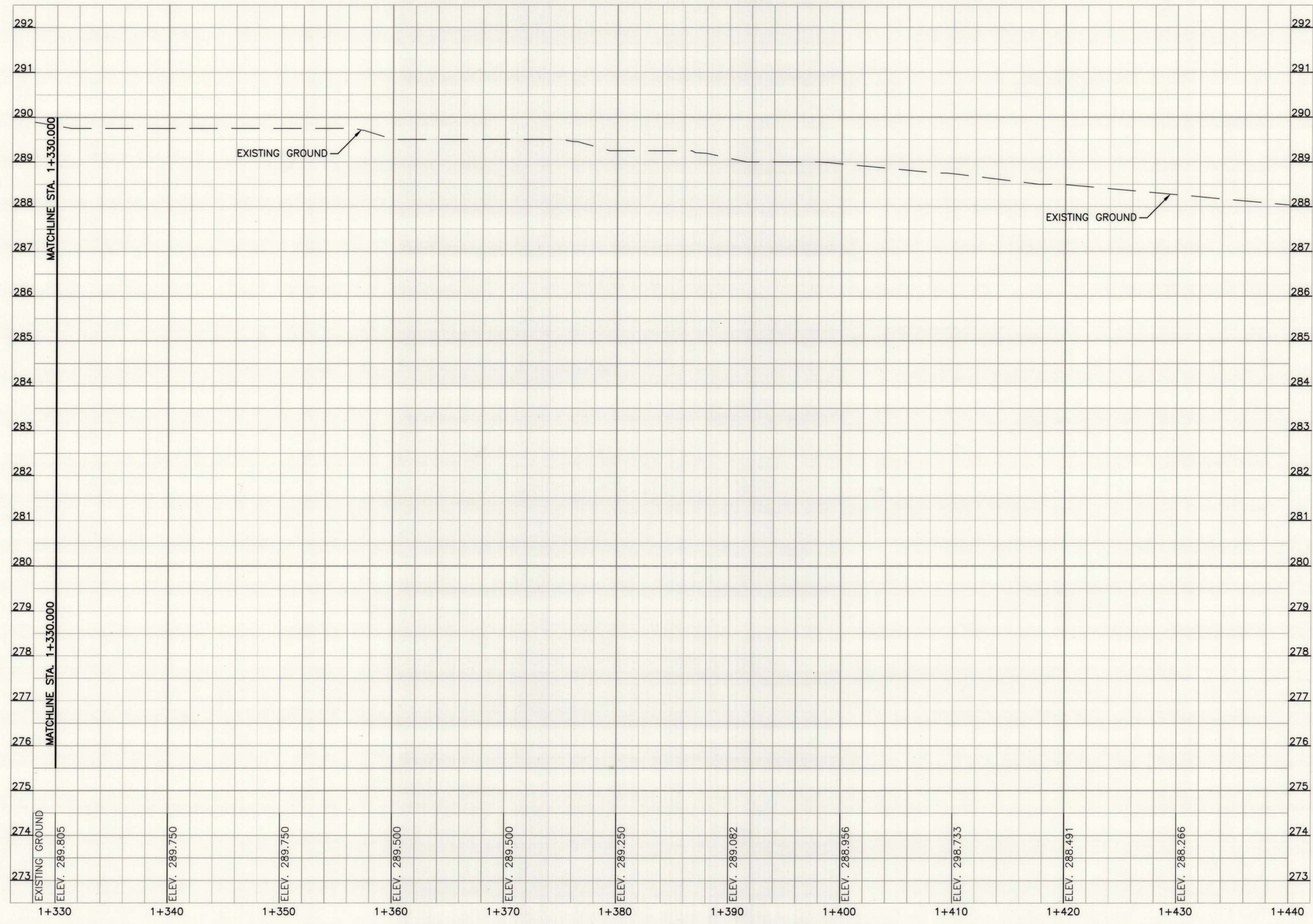
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CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: HORIZ. 1:200 VERT. 1:50	33

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

BRIDGE NO. **4415**

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

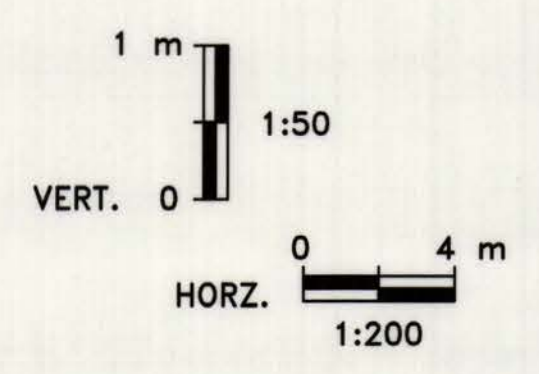
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	34	73



EXISTING GROUND ELEV. 289.805	ELEV. 289.750	ELEV. 289.750	ELEV. 289.500	ELEV. 289.500	ELEV. 289.250	ELEV. 289.082	ELEV. 288.956	ELEV. 288.733	ELEV. 288.491	ELEV. 288.266	
1+330	1+340	1+350	1+360	1+370	1+380	1+390	1+400	1+410	1+420	1+430	1+440

A.A.I. JOB NO. 971281.00

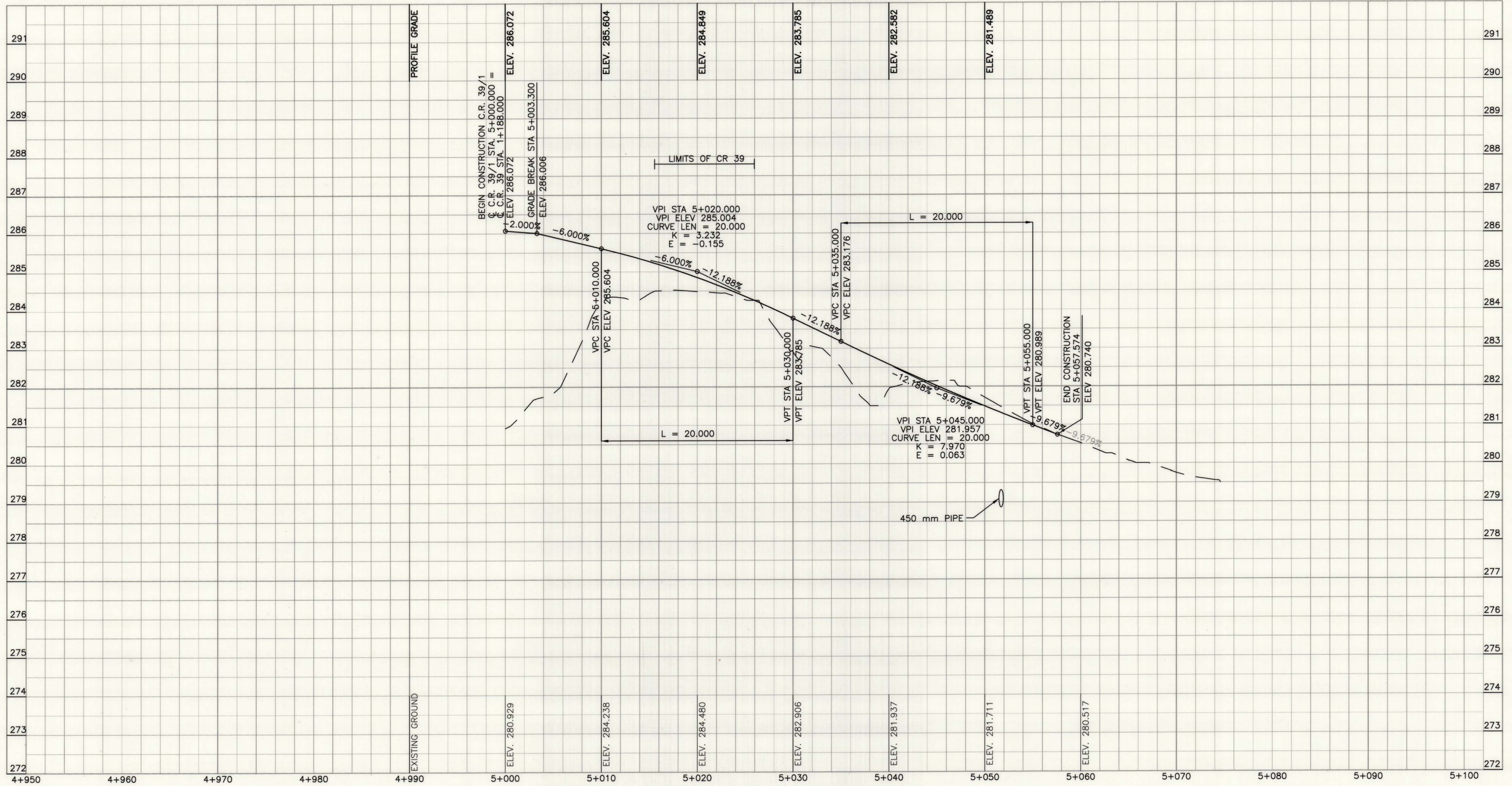
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PROFILE CR 39



REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

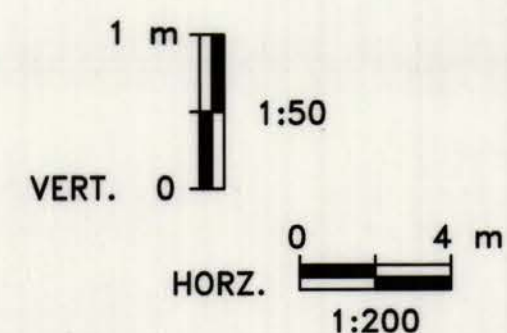
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CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: HORIZ. 1:200 VERT. 1:50	BRIDGE NO. 4415
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	35	73



A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PROFILE CR 39/1

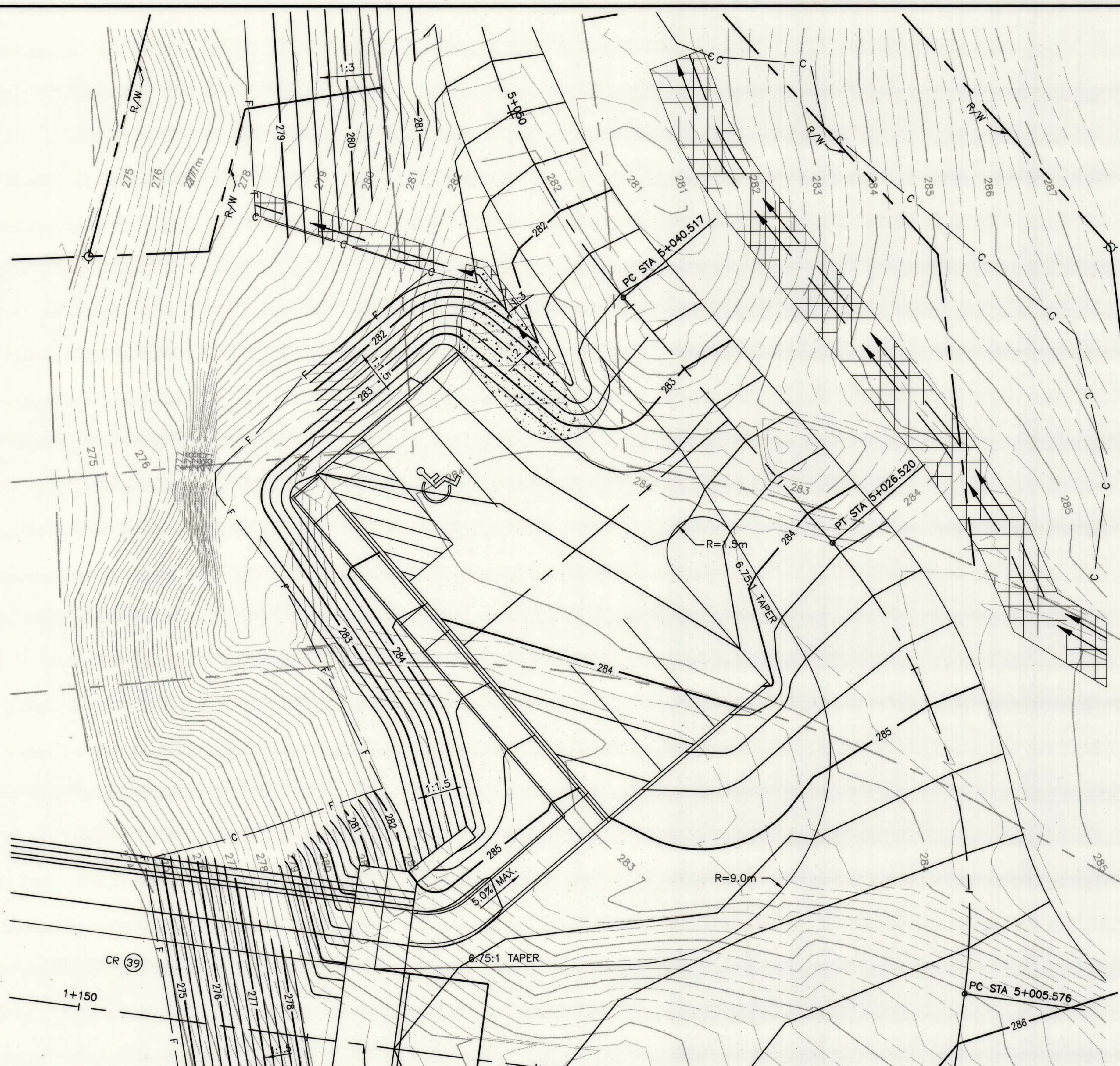


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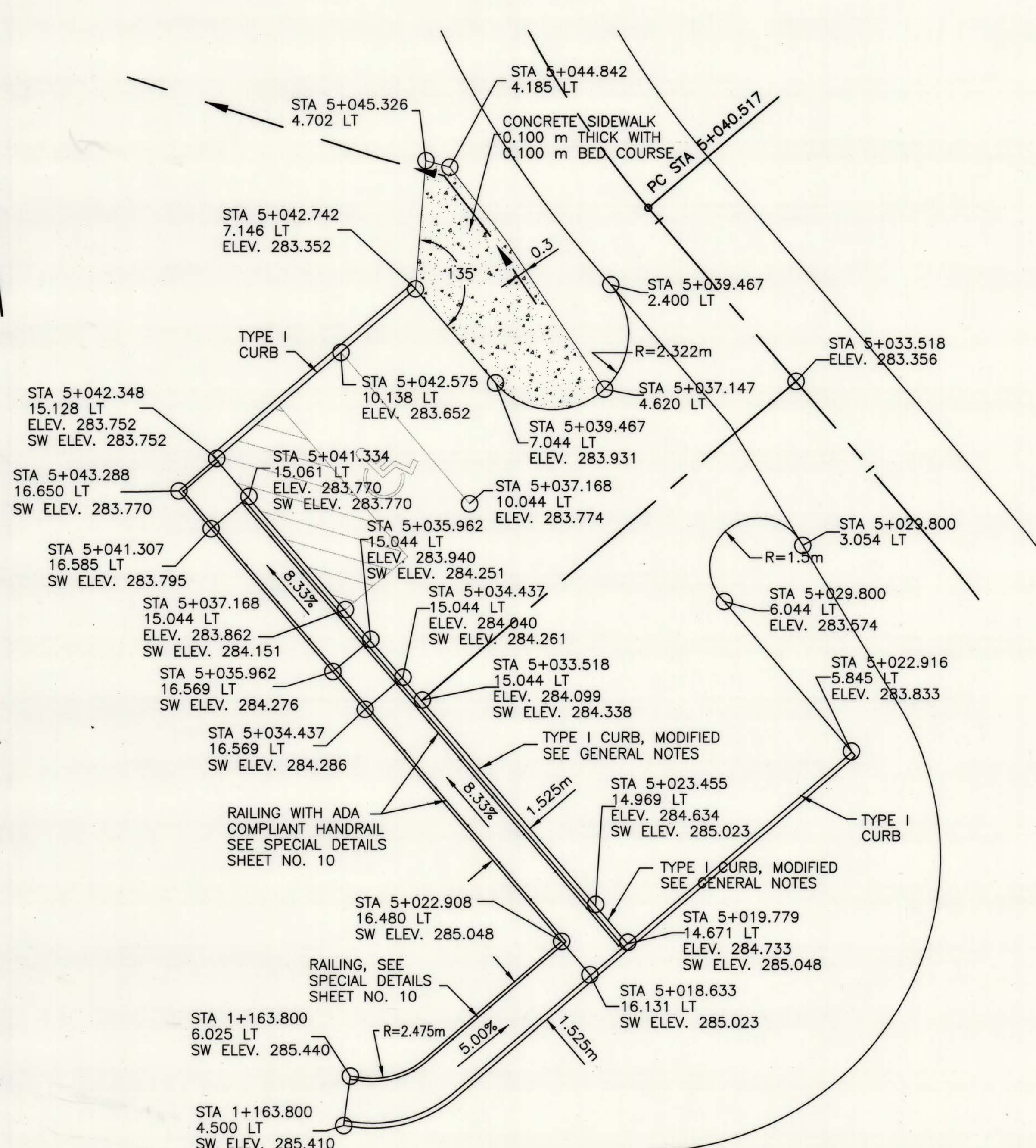
ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	36	73



PARKING LOT GRADING
1:100



PARKING LOT LAYOUT
1:100

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PARKING LOT GRADING PLAN

DESIGNED BY:	DRAWN BY:	INKED BY: HP	DATE: 11-03-00	SHEET NO. 36
CHECKED BY:	CHECKED BY:	CHECKED BY:	SCALE: AS NOTED	BRIDGE NO. 4415

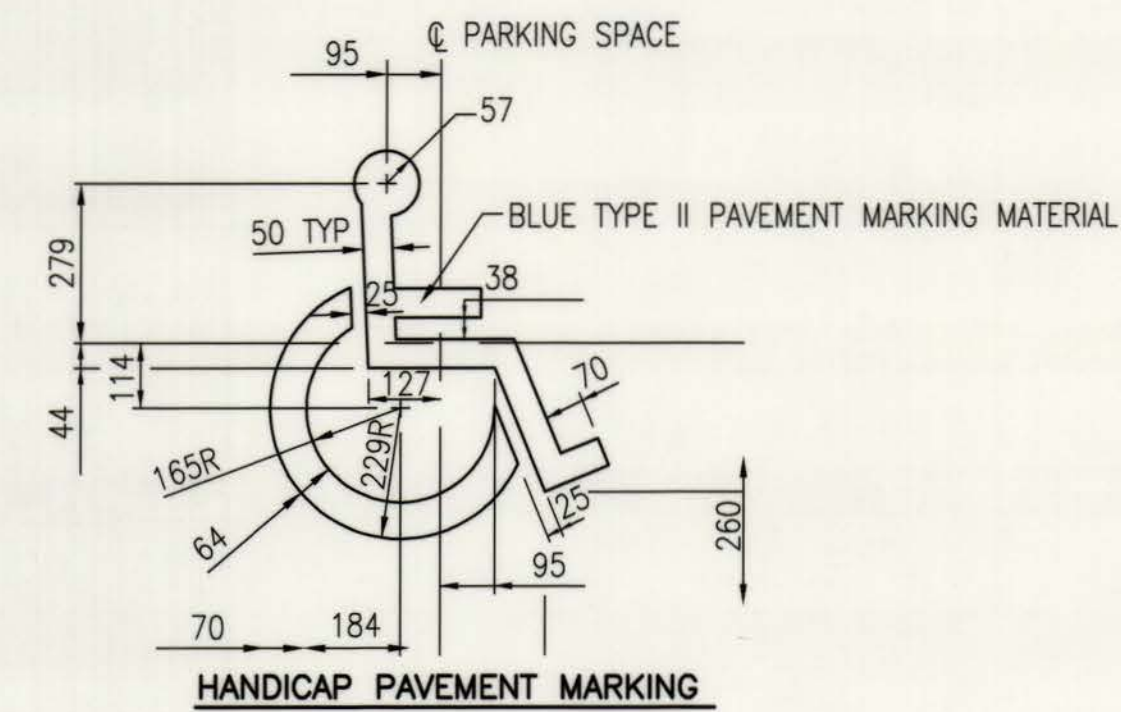
ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

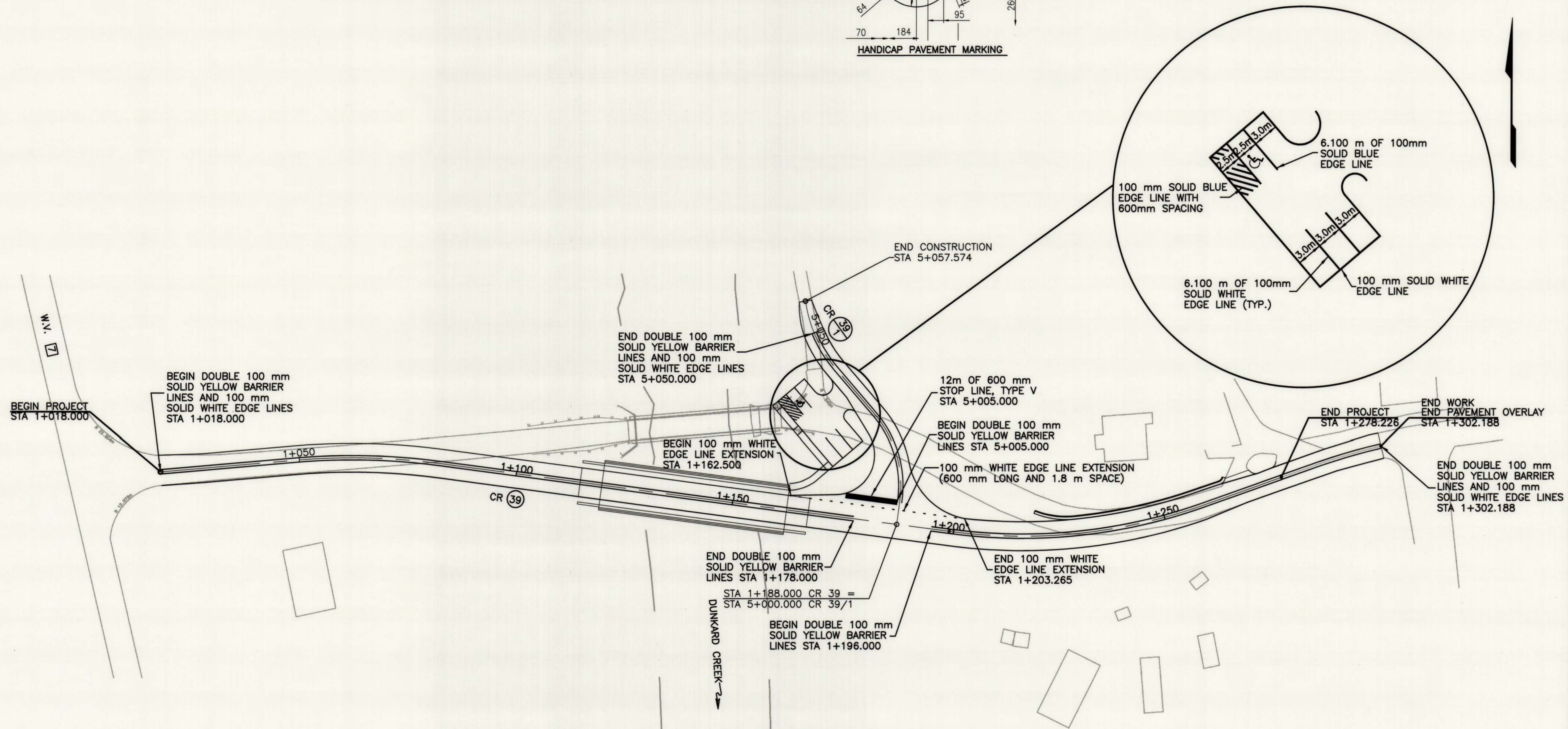
PAVEMENT MARKING QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	m	774
663003-005	BARRIER LINE, TYPE II	m	574
663005-010	STOP LINE, TYPE V (600 mm)	m	12

PAVEMENT MARKING GENERAL NOTES

1. THE QUANTITIES FOR 100 mm SOLID WHITE EDGE LINE, 100 mm WHITE EDGE LINE EXTENSION (600 mm LONG AND 1.8 m SPACE), AND 100 mm SOLID BLUE EDGE LINE SHALL BE INCLUDED WITH ITEM 663001-004 "EDGE LINE, TYPE II, WHITE."
2. EDGE LINES SHALL BE CENTERED 150 mm FROM EDGE OF LANE.
3. ALL MARKINGS SHALL BE CONTINUOUS AND CONSISTENT WITH EXISTING MARKINGS WHERE THEY JOIN.
4. NO MARKINGS SHALL BE PLACED ON EXPANSION JOINTS ON STRUCTURES OR ON LONGITUDINAL CONSTRUCTION JOINTS UNLESS SO DIRECTED BY THE ENGINEER.
5. THE COST OF THE PAINTED HANDICAP SYMBOL SHALL BE INCIDENTAL TO ALL OTHER PAVEMENT MARKINGS.

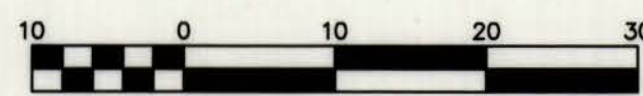


PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	37	73



A.A.I. JOB NO. 971281.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
PAVEMENT MARKING PLAN



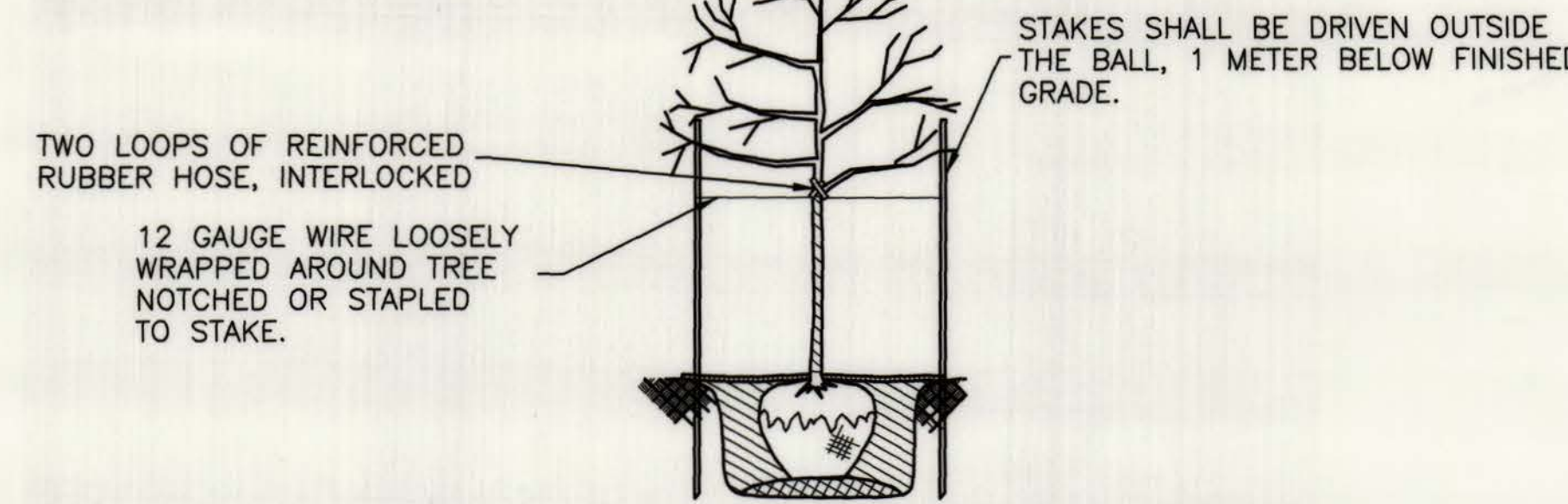
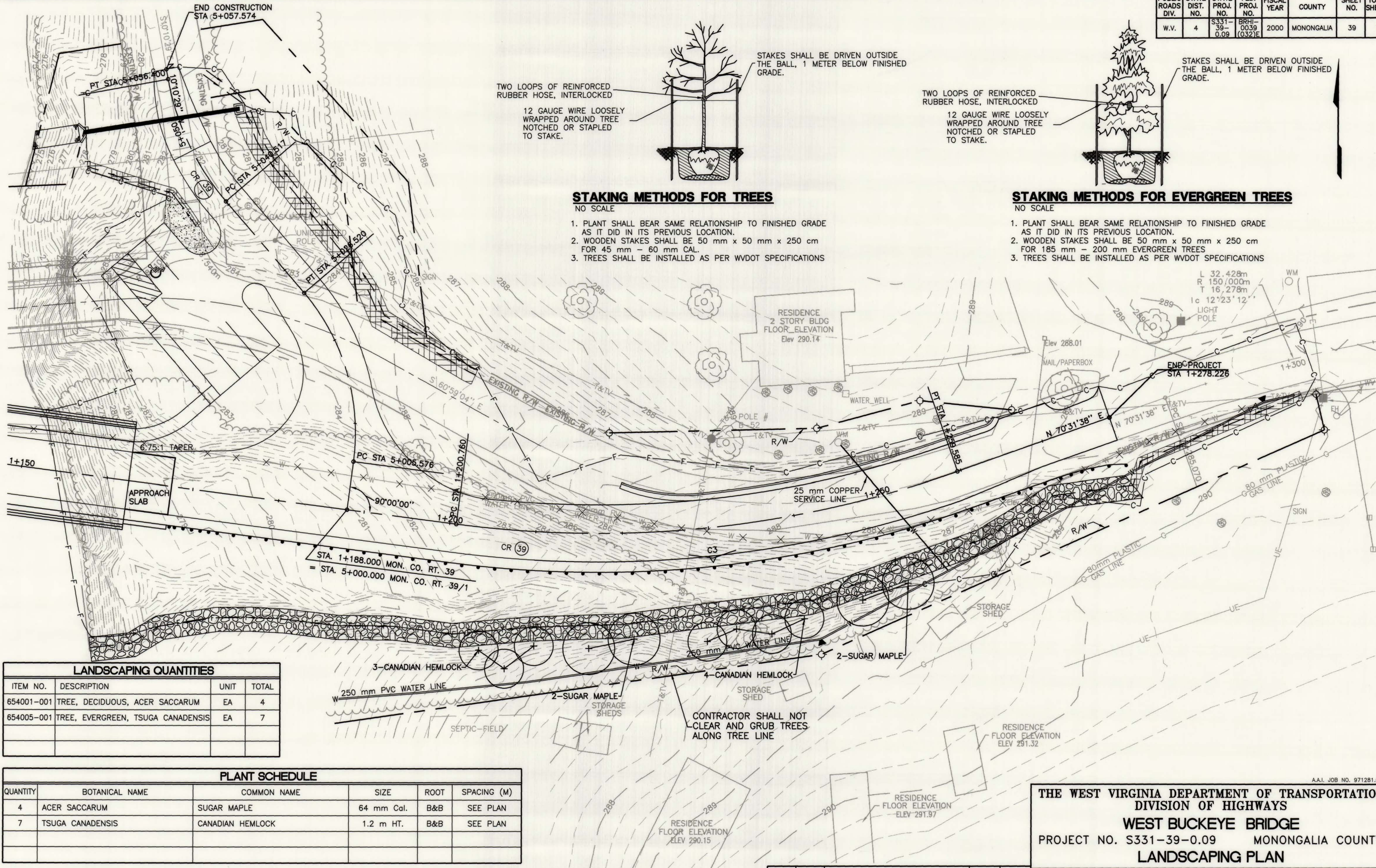
Scale 1 : 500

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 37
CHECKED BY:	CHECKED BY:	CHECKED BY:	SCALE: 1:500	BRIDGE NO. 4415	

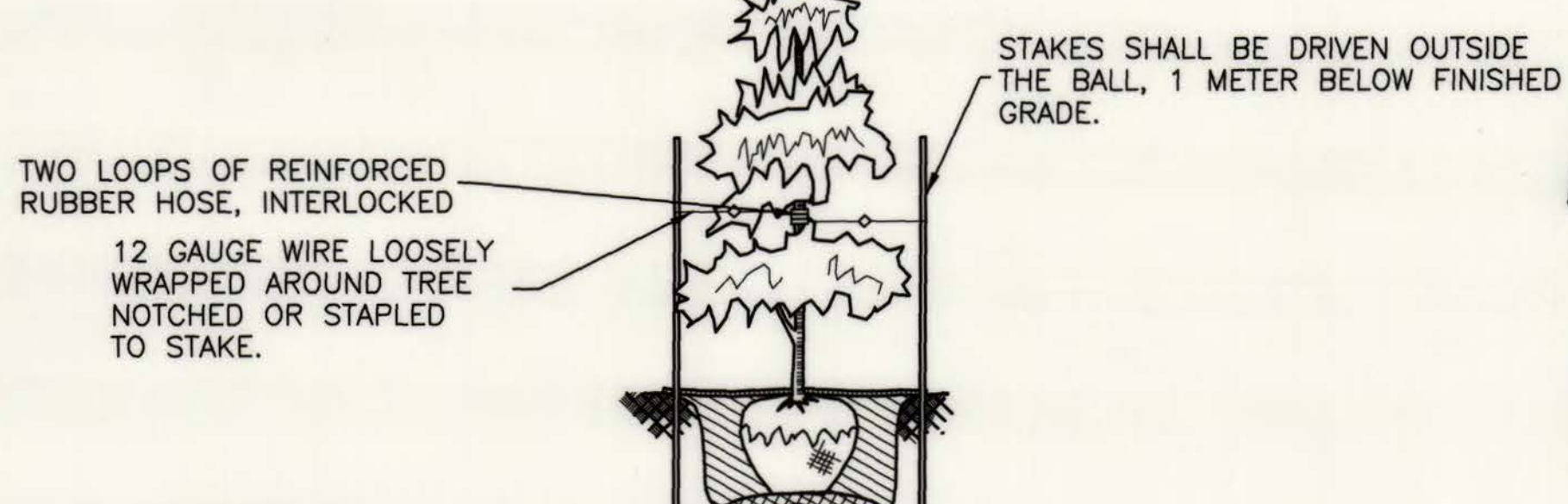
ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	39	73



STAKING METHODS FOR TREES

- NO SCALE
1. PLANT SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT DID IN ITS PREVIOUS LOCATION.
 2. WOODEN STAKES SHALL BE 50 mm x 50 mm x 250 cm FOR 45 mm - 60 mm CAL.
 3. TREES SHALL BE INSTALLED AS PER WVDOT SPECIFICATIONS

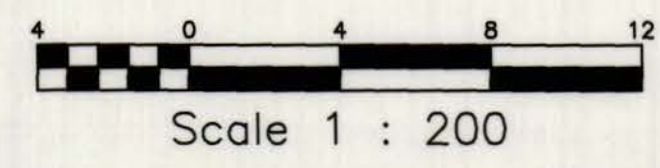


STAKING METHODS FOR EVERGREEN TREES

- NO SCALE
1. PLANT SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT DID IN ITS PREVIOUS LOCATION.
 2. WOODEN STAKES SHALL BE 50 mm x 50 mm x 250 cm FOR 185 mm - 200 mm EVERGREEN TREES
 3. TREES SHALL BE INSTALLED AS PER WVDOT SPECIFICATIONS

LANDSCAPING QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
654001-001	TREE, DECIDUOUS, ACER SACCHARUM	EA	4
654005-001	TREE, EVERGREEN, TSUGA CANADENSIS	EA	7

PLANT SCHEDULE					
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING (M)
4	ACER SACCHARUM	SUGAR MAPLE	64 mm Cal.	B&B	SEE PLAN
7	TSUGA CANADENSIS	CANADIAN HEMLOCK	1.2 m HT.	B&B	SEE PLAN

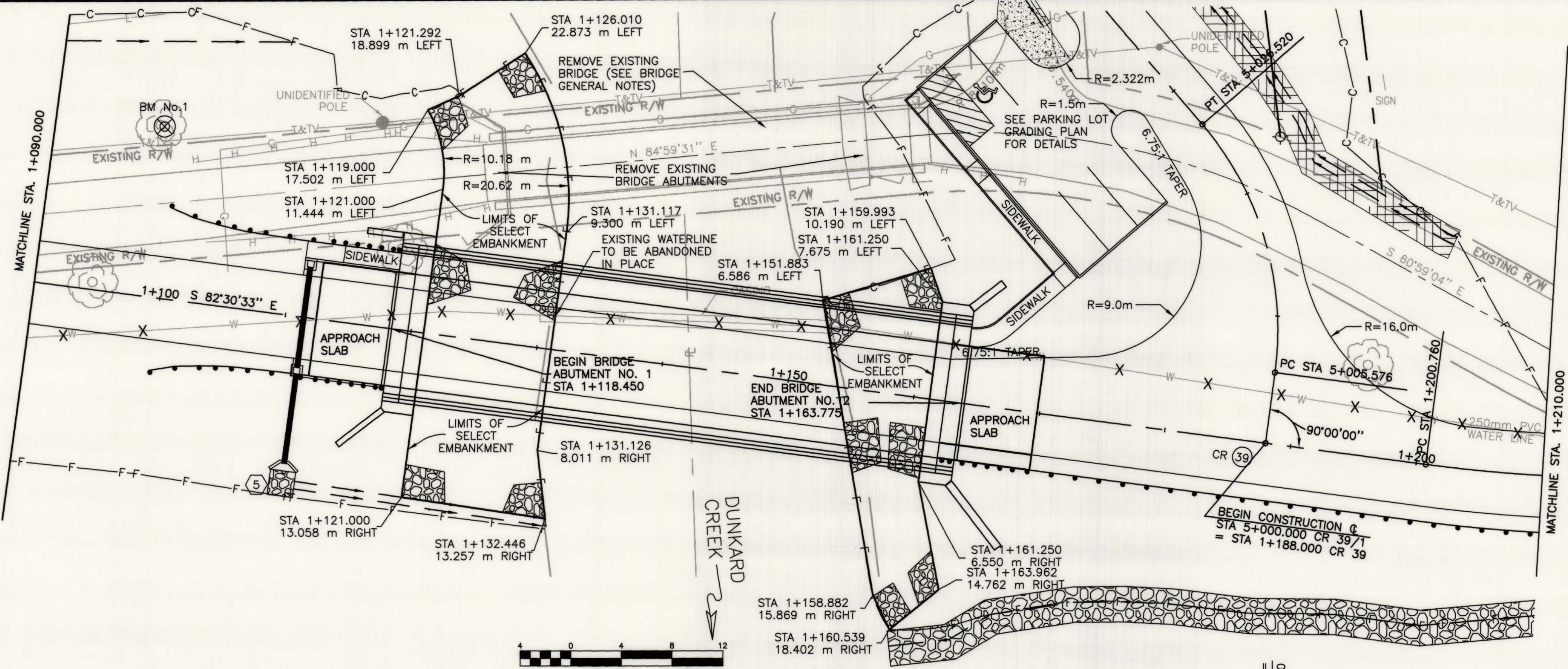


THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
LANDSCAPING PLAN

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET NO. 39
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: 1:200	BRIDGE NO. 4415

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS
 MORGANTOWN, WEST VIRGINIA

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	47	73

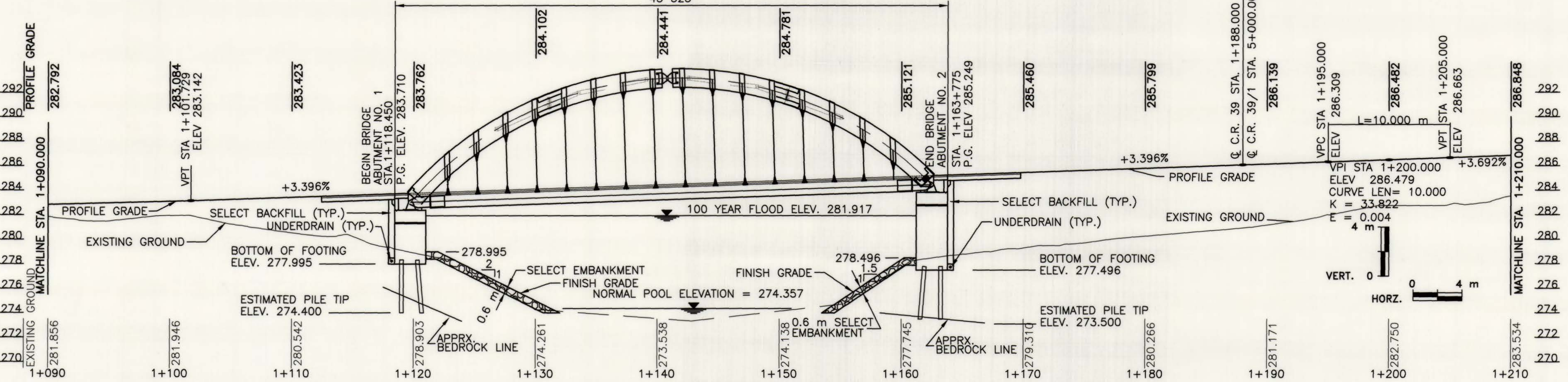


CR39/1 CURVE C2	
PI STA	5+016.707
Δ	48°00'00"
T m	11.131
R m	25.000
L m	20.944
E m	2.366
S.E. m/m	0.03396

CR39 CURVE C4	
PI STA	1+230.728
Δ	26°57'48"
T m	29.968
R m	125.000
L m	58.825
E m	3.542
S.E. m/m	0.03396

DESIGN DESIGNATION	
A. D. T. (1999)	= 1000
A. D. T. (2019)	= 1400
D. H. V. (k=12%)	= 168
D	= 50/50
T	= 6% (DHV)
V	= 60 km/hr

HYDRAULIC DATA	
DRAINAGE AREA	= 463.61 SQ. KM
DESIGN FLOOD	MAGNITUDE = 563.505 CMS
	FREQUENCY = 100 YEARS
	VELOCITY = 2.13 MPS
	W.S. ELEV. = 281.917 M
	FLOOD OF RECORD: UNKNOWN



INDEX OF BRIDGE DRAWINGS			
SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION	11	ARCH CONNECTION AND BEARING DETAILS
2	GENERAL NOTES	12	DECK PLAN AND DETAILS
3	ESTIMATED QUANTITIES	13	TYPICAL DECK ELEVATION AND DETAILS
4	ABUTMENT ONE-PLAN AND ELEVATION	14	RAILING DETAILS
5	ABUTMENT ONE-WINGWALLS AND DETAILS	15	REBAR SCHEDULE AND BENDING DIAGRAMS
6	ABUTMENT TWO-PLAN AND ELEVATION	16	APPROACH SLAB PLAN AND DETAILS
7	ABUTMENT TWO-WINGWALLS AND DETAILS	17	SITUATION PLAN
8	FRAMING PLAN	18	BORING LOGS 1
9	ARCH ELEVATION AND DETAILS	19	BORING LOGS 2
10	TIE BEAM DETAILS		

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
GENERAL PLAN AND ELEVATION

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET	1
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	1:200		

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS
 MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

GENERAL NOTES

GOVERNING SPECIFICATIONS

The West Virginia Department of Transportation, Division of Highways, Standard Specifications, Roads and Bridges, adopted 2000 and the West Virginia Department of Transportation, Division of Highways Supplemental Specification dated July 1, 2000. The contract documents and plans are the governing provisions applicable to this project.

DESIGN

The structure has been designed for a live load capacity of MS22.5 by the Load Factor Method, and provides for an additional future wearing surface of 1.2 kN/m². The 2 future wearing surface is not included in this contract.

The design is in accordance with the AASHTO Standard Specifications for Highway Bridges, Sixteenth Edition - 1996, as amended by the 1998 AASHTO Interim Specifications.

DESIGN UNIT STRESSES

Concrete: Class B f'c = 21 MPa fc = 8.4 MPa n = 9

Reinforcing Steel: AASHTO M31M Grade 420, fy = 420 MPa

Structural Steel: Transverse Deck Beams: AASHTO M270 Grade 345W, fy = 345 MPa All Arch Hardware, Including Bearings, and Deck Connectors: AASHTO M270 Grade 345, fy = 345 MPa Arch Tie Beams: ASTM A709 HPS Grade 485W, fy = 485 MPa

FIBER REINFORCED POLYMER DECK

Deck panels shall be constructed of HFRP Deck as manufactured by Kansas Structural Composites, Inc. There are no acceptable alternates. Representatives from Kansas Structural Composites, Inc., shall be present during the entire deck placement procedure. All HFRP Deck modules are to be handled only with "soft" slings. No cable slings or mesh slings are to be used. Item 613001-001, HFRP Composite Deck, Kansas Str. Comp, Inc., shall include all HFRP deck, FRP tubes, FRP spacers, HFRP core spacers, FRP channels, deck connection hardware, foam expansion seals, polymer concrete, and neoprene padding. The HFRP panels are to be manufactured without a factory applied wearing surface. The roadway deck and the sidewalk surface shall have a field applied polymer concrete surface installed after all deck and sidewalk panels have been installed. This surface is to be applied to the specifications provided by Kansas Structural Composites, Inc. Placement method of the individual deck and sidewalk panels shall be as approved by the engineer or representatives of Kansas Structural Composites, Inc.

FIBER REINFORCED GLUE LAMINATED ARCHES

Timber arches shall be constructed of fiber reinforced glued laminate as manufactured by Western Wood Structures, Inc. There are no acceptable alternates. Representatives from Western Wood Structures, Inc., shall be present during the entire arch placement procedure. All arch sections are to be handled only with "soft" slings. No cable or mesh slings are to be used. Item 622032-000, Structural Glue Laminated Timber, Arch, shall include all glue laminated arch sections, struts and diagonals. It shall also include all arch hardware, including the bearings, splices, hanger rods and connections that are required to place the arches in their final position. All of the arch hardware, including the bearings, are to be hot-dipped galvanized after fabrication. The arches are to be erected in a sequence that has been approved by the engineer or by representatives of Western Wood Structures, Inc.

CONCRETE

The substructure concrete shall be Class B Concrete, Water reducing retarding admixture in accordance with Section 601.2 of the Standard Specifications may be used for the substructure concrete at the contractor's option. Cost of any retarder used is to be included in the cost of Class B Concrete. The contractor's attention is called to the test requirements for the retarder mixture. The concrete shall be placed in the sequence shown on the plans. The exposed surfaces of the concrete shall be finished in accordance with Section 601.11, Finishing Concrete Surfaces.

Chamfer all exposed edges 25 by 25 on substructure unless otherwise noted. Bearing seats of abutments shall be finished to true elevations as shown on plans. Back walls of abutments shall be finished to match true line and grade of bottom surface of HFRP deck.

FRACTURE CRITICAL COMPONENTS

The following components are fracture critical: the tie beams, the floor beam hanger rods, the tie beam hangers, the floor beam hanger brackets, the arch base hinges, the arch base connectors, the arch crown connectors, one and two, and the arch splice plates.

REINFORCING STEEL

Bars shall conform to AASHTO M31M Grade 420. All bars in the approach slabs and back walls shall be epoxy coated. Payment will be made under item 602001-001, Reinforcing Steel Bar, and item 602002-001, Epoxy Coated Reinforcing Steel Bar.

All reinforcement shall be lapped as shown on the plans. Embedment dimensions for reinforcing are the clear dimensions unless otherwise shown or noted. Bar spacing is given from centerline to centerline of the bars.

The clear distance between reinforcing steel and the face of concrete shall be as follows, unless otherwise shown on the drawings.

Top of Approach Slabs:	75 (Includes Overlay)
Bottom of Approach Slabs:	50
Footings:	75
Abutments:	75
All other Locations:	50 U.O.N.

Reinforcement under bearing pads shall be placed so as to avoid interference with drilling of anchor bolt holes.

STRUCTURAL STEEL

The lump sum bid for Item 615001-001, Steel Super-structure, shall include the complete tie beams, the transverse deck beams, cross frames, connection plates, rail support channels, guardrail posts connection angles, high strength structural steel bolts, elastomeric bearing pads and reinforced elastomeric bearings.

Structure steel for all steel components listed above, except tie beams, shall meet AASHTO M270, Grade 345W. The structure steel for the arch tie beams shall meet AASHTO HPS, Grade 485W.

Anchor bolts, nuts and washers may be manufactured from ordinary mild steel and shall be hot-dip galvanized according to AASHTO M 111 after fabrication. The fabricator's shop drawings shall identify the material specification and grade for each item and are subject to approval of the Engineer.

High strength fasteners shall meet Section 709.24 and shall be black (undercoated) Type 3 (weathering steel).

Before assembling the high strength bolted connections, remove all loose and non-adherent rust that may have formed on the connection areas by hand or power wire brushing.

No field welding is permitted unless shown on the plans or approved by the Engineer. All welding, fabrication, and non-destructive testing shall conform to the ANSI/AASHTO/AWS Bridge Welding Code D1.5 and to the specifications of the appropriate special provision.

PREFORMED JOINT FILLER

Preformed joint filler for vertical joints between the abutments and wingwalls shall be sponge rubber, Type I, according to Section 708.1.1 of the Standard Specifications. The cost shall be included in the unit price bid for item 601002-001, Class B Concrete.

ANCHOR BOLTS

The anchor bolt holes shall be filled with non-shrink grout after setting of the anchor bolts. Non-shrink grout shall conform to Section 715.05 of the Standard Specifications. Cost of drilling and grouting shall be included in the price bid for Item 601002-02, Class B Concrete.

EXCAVATION

All excavation shall be classified as Item 212001-000, Structure Excavation. No excavation shall be classified as Wet Excavation or Rock Excavation.

BOLTS

All structural steel fasteners shall be High Strength Bolts. The threaded ends of bolts are to be placed on the inside where practicable to protect same from the weather. Diameter of all bolt holes in structural steel shall be 2 mm larger than the nominal diameter of the fasteners.

All bolts for the arch hardware shall conform to the specifications of ASTM A307 unless otherwise noted.

ELASTOMERIC BEARINGS

The elastomeric bearings shall be installed at an ambient temperature between 4°C and 27°C. Bridge seats on the end bents under bearing pads shall be finished to true planes and elevations.

EMBANKMENT

Embankments at bridge abutments shall be free of rock fill in the area where piles are to be driven.

SELECT EMBANKMENT

Select embankment placed in front of abutments shall be rock backfill material and shall have an average size (D50) of 380mm. The rock for select embankment shall be uniformly graded as follows:

Stone Size	Percent of Gradation smaller than
760mm	100%
665mm	85%
380mm	50%
305mm	15%

Payment for select embankment shall be included in the cost of Item 211002-000, Rock Borrow Excavation.

PIPE UNDERDRAIN

Pipe underdrain and filter material, shown at abutments 1 and 2 on the contract plans, shall conform to Section 606 of the Standard Specifications. Cost of underdrain and filter material shall be included in the cost of Item 601002-001, Class B Concrete.

DISMANTLING STRUCTURE

The Contractor shall dismantle and remove the existing structure, in accordance with Section 203 of the Standard Specifications. The entire superstructure is to be removed. Both existing abutments are to be removed. All of deck beams, decking and end posts from the existing bridge are to remain property of the Division of Highways. The deck beams and decking are to be delivered to the Clow Yard in Buckhannon, WV, and unloaded as directed by Division of Highways personnel. The Contractor shall notify Al Hammonds of the Operations Division at (304) 558-2901 two weeks prior to delivery of the materials so that storage space may be found in the yard. All other material that is removed from the bridge will become the property of the Contractor and must be removed from the right-of-way. Payment for removal and disposal shall be included in the unit bid cost for Item 203001-000, Dismantling Structure.

The existing bridge that is to be removed may contain lead based paint. The Contractor is cautioned that OSHA's May 4, 1993 Interim Final Rule (29 CFR Part 1926) may apply to this project.

PILING

All piling for the abutments and wingwalls shall be driven to refusal. Estimated pile tip bearing elevations are shown on the contract plans. Refusal shall be defined as the equivalent of 20 blows for 25 mm or less penetration with a power hammer developing a minimum capacity of 16.27 kJ per blow for the HP 310x79 piles. If a larger hammer is used, the number of blows in the last 25 mm of penetration may be reduced in direct proportion to the energy rating of the hammer; but no less than 12. Before pile driving is started, the Contractor shall provide a written certificate to the Engineer that pile hammers, air compressors, and air valves are found to be in good working condition.

DESIGN PILE CAPACITY

HP310x79 Steel Bearing Piles - 622.75kN per pile

BLAST CLEANING

Upon completion of all fabrication operations in the shop, and before shipment to the project site, all weathering steel bridge components shall be blast cleaned to a Near White surface condition according to SSPC-SP 10. Prior to the start of any blast cleaning, all oil, grease, cutting fluids, or other foreign matter shall be removed from the surfaces of the steel by solvent cleaning according to SSPC-SP 1.

Blast cleaning is to be included in the unit bid cost of Item 615001-001, Steel Superstructure.

IDENTIFICATION MARKING STEEL MEMBERS

All steel mill and fabricator identification markings for steel plates, shapes, or fabricated members shall be by metal tags, soapstone, or some other readily removable material. Marking methods and locations are subject to approval of the Engineer.

Do not use paint or wax-based crayons for marking.

BACKFILL

The contractor shall backfill around the substructure as soon as possible after removal of forms and falsework and slope surfaces to drain in accordance with Section 212.10 of the Standard Specifications.

HANDLING AND STORING STEEL MEMBERS

Steel members must not be gouged, scratched, dented, or allowed to rub against other members that would result in damage to the blast cleaned profile of the steel. Members shall be handled using softeners and slings instead of chokers and chains.

Store members in the fabrication shop and on the project site in such a manner as to keep free and clean of all foreign substances such as grease, oil, mortar and concrete, splatter, chalk and crayon marks, paint, and dirt. All storage must be above ground and sloped to allow free drainage of melted snow, rainwater, and dew. If stored for periods longer than 3 months, the members must be placed on metal supports. For periods of storage up to 3 months, members may be placed on clean, untreated, wood timbers. Store box beams and rolled beams with the webs in the upright position. The members may be stacked, providing that metal or wood supports, as noted above, separate individual members. Under no circumstances shall members be nested together.

Do not allow treated lumber or treated timber to contact steel members. Contact with clean, untreated lumber or timber will not damage the steel members. or bundled.

CLEANING AND PAINTING

The members of portions of members listed below shall be cleaned and painted as follows:

All blast cleaning painting shall be performed in accordance with Section 688. Coatings utilized shall be the Inorganic Zinc Rich Low VOC System, Section 711.20

All steel surfaces contained within the assembled box girder interior shall be blast cleaned to a SSPC-SP10 (near white) condition and shop painted with primer only. The minimum dry film thickness shall be 100um, except for the interior faying surfaces which shall be painted as per section 688.

In addition to the above painting, all steel components (both interior and exterior) within 4.5 m of both abutment ends of the box girders shall be blast cleaned to a SSPC-SP10 (near white) condition and shop painted with the full Section 711.20 paint system in accordance with Section 688. The color of the final topcoat shall be 30045 according to Federal Standard 595 and the gloss at an angle of 60 degrees shall not exceed 25. Within the 4.5 m area, the faying surfaces of field high strength bolted connections shall be shop painted with primer only and the exterior surfaces of those connections, including fasteners, shall be field painted high strength bolted connections which are completely tightened in the shop shall be shop painted with the full paint system.

Mechanical galvanized fasteners wholly inside the box girders and not within the 4.5 m area described above, do not require solvent cleaning or further painting. The bolt head or nut ends of weathering steel (Type 3) high strength fasteners which protrude into the painted interior of the box girders do not require further cleaning or touchup painting.

Components specified to be hot-dip galvanized do not require painting.

Include all cleaning and painting costs in Item 615001-001, Steel Superstructure.

FINAL CLEANUP OF STRUCTURAL STEEL SURFACES

Upon completion of all concrete curing operations, the contractor shall clean all steel surfaces to remove all grease, oil, concrete residue, dirt, and other foreign substances to the satisfaction of the Engineer.

Cleaning may be by high pressure water, power or hand wire brushing, or by Brush-off Blast Cleaning according to SSPC-SP 7. Cleaning shall be followed by a clean water rinse to remove all residues of detergents and cleaners if they were used. All grease and oil shall be removed prior to the clean water rinse by Solvent Cleaning.

Do not use acids to remove stains.

Include costs for final cleanup of steel surfaces in Item 615001-001, Steel Superstructure.

PROTECTION OF CONCRETE SUBSTRUCTURE

Before placing any steel superstructure members on the concrete substructure units, the Contractor shall coat all exposed areas of the abutment to the ground or water line elevation with an approved silane based concrete sealer. Preparation of surfaces, application rates, and methods shall be as recommended by the silane manufacturer.

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	48	73

Upon completion of all superstructure erection operations, the Contractor shall remove all rust stains from both the substructure units using proprietary chemical stain removers or mild acid etching. Abrasive blast cleaning may be used to supplement the other cleaning methods if the stained areas are severe or extensive. All cleaning methods shall be subject to approval of the Engineer.

Re-coat substructure concrete at all areas where rust stains were removed, regardless of the cleaning method used, with an approval silane based concrete sealer as specified above.

Include the cost of silane coating, protecting, cleaning, and re-coating substructure units in Item 601002-001, Class B Concrete.

RAILING

From approximate Station 1+118.45 to Station 1+163.77 the timber guardrail and timber sidewalk systems shall be paid for as follows:

Wood spacer blocks, glue laminated guardrail, glue laminated railing, carriage bolts and miscellaneous hardware, splice hardware, and tapered transition blocks shall be paid included in Item 622032-000, Structural Glued Laminated Lumber, Arch.

W200 guardrail posts, M22 High Strength Bolts in the system, transition plates, and anchorage systems at the abutments shall be included in Item 615001-001, Steel Superstructure, per lump sum.

FRP tube wheel guard shall be included in Item 613001-001, HFRP Composite Deck, Kansas Str. Comp., Inc., per square meter.

NEOPRENE SHEETING

Install a 1150 mm wide strip, 3 mm thick, general purpose, heavy duty neoprene sheet with nylon fabric reinforcement at locations shown in the plans. Secure the 1150 mm wide neoprene 3 mm sheeting to the concrete with 32 mm x 3 mm (Length x Shank Diameter) galvanized button head spikes through a 25 mm outside diameter 3 mm washer. Maximum fastener spacing is 230 mm. Other similar galvanized devices which will not damage either the neoprene or the concrete may be used subject to the approval of the Engineer.

Center the neoprene strips on all joints. For horizontal joints, secure the horizontal neoprene strip by using a single line of fasteners, starting at 150 mm (+/-) from the top of the neoprene strip. For the vertical joints secure the vertical neoprene strip by using a single vertical line of fasteners, starting 150 mm (+/-) from the vertical edge of the neoprene strip nearest to the centerline of roadway. For vertical joints, install 2 additional fasteners at 150 mm center to center across the top half of the neoprene strip on the side of the neoprene strip as the single vertical row of fasteners is located.

The vertical neoprene strips should completely overlap the horizontal strips. Laps in the length of the horizontal strips. Laps in the length of the horizontal strips due to material malfunctioning shall be at least 300 mm in length, if not vulcanized or adhesive, or 150 mm in length if the lap is vulcanized or adhesive bonded. No laps are acceptable in vertically installed neoprene strips.

The neoprene sheeting shall be 3 mm thick general purpose, heavy duty neoprene sheet with nylon fabric reinforcement. The neoprene sheeting shall conform to the following:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
Thickness		2.5 mm +/- 0.25 mm
Breaking Strength, Grab WxH, N. Min.	D 751	3114 x 3114
Adhesive 25 mm Strip, 50 mm Min, N. Min.	D 751	27
Burst Strength (Mullion) KPa Min.	D 751	9657
Heat Aging 70 Hours, T 100°C 180° Bend Without Cracking	D 751	No Cracking of Coating
Low Temp. Brittleness 1 Hour at -4°C, Bend around 6 mm Mandrel	D 2136	No Cracking of Coating

Payment for labor, materials and installation of these items shall be included in the Item 601002-001, Class B Concrete.

A.A.I. JOB NO. 971281.01

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS WEST BUCKEYE BRIDGE PROJECT NO. S331-39-0.09 MONONGALIA COUNTY GENERAL NOTES					
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET 2R
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	
ALPHA ASSOCIATES, INCORPORATED					BRIDGE NO. 4415
CONSULTING ENGINEERS					

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
203001-000	DISMANTLING STRUCTURE	L.S.	1
*	SELECT EMBANKMENT	M3	347
212001-000	STRUCTURE EXCAVATION	M3	611
212005-000	SELECT MATERIAL FOR BACKFILLING	M3	28
601002-001	CLASS B CONCRETE	M3	592
602001-001	REINFORCING STEEL BARS	KG	47 753
602002-001	EPOXY COATED REIN. STEEL BARS	KG	8 838
615001-001	STEEL SUPERSTRUCTURE	L.S.	1
616004-006	HP310X79 STEEL BEARING PILE, DRIVEN	M	222
613001-001	HFRP COMPOSITE DECK, KANSAS STR. COMP., INC.	M2	498
622002-001	TREATED LUMBER AND TIMBER	M3	15
622032-000	STRUCTURAL GLUE LAMINATED TIMBER, ARCH	L.S.	1
639001-001	CONSTRUCTION LAYOUT STAKE	L.S.	1
643001-001	PROGRESS PHOTOGRAPHS	EA	60
643002-001	ADDITIONAL PHOTOGRAPHS, PER PHOTOGRAPHIC FIELD TRIP	EA	10

ITEM 615001-001 INCLUDES *

DESCRIPTION	UNIT	QUANTITY
M270 GRADE 345W STEEL	KG	50 280
HPS GRADE 485W STEEL	KG	35 520
M164 TYPE 3 HIGH STRENGTH BOLTS	KG	600
W200 X 46 GUARDRAIL POSTS	KG	2 440
TRANSITION PLATES/ANCHORAGE SYSTEM	KG	47
M22 HIGH STRENGTH BOLTS	KG	92
TOTAL	KG	88 979
3 mm ELASTOMERIC PAD	M2	4
47 mm STEEL REINFORCED ELASTOMERIC PAD	M2	8

* NOTE: THIS TABLE IS PROVIDED FOR INFORMATION ONLY - ACTUAL QUANTITIES MAY VARY.

ITEM 613001-001 INCLUDES *

DESCRIPTION	UNIT	QUANTITY
HONEYCOMB FRP DECK BY KSI, INC.	M2	498
10 x 32 STEEL SPACER BAR, M270 GRADE 250	KG	198
STEEL CLAMP BAR, M270 GRADE 250	KG	410
BOLT, 19-NC x 254, ASTM A325	KG	119
152 X 102 X 6 FRP TUBE	M	227
204 X 204 X 6 FRP TUBE	M	45
102 X 13 FRP SPACER	M	227
102 X 44 HFRP CORE SPACER	M	227
229 X 51 X 6 FRP CHANNEL	M	453
FOAM EXPANSION SEAL	M	227
POLYMER CONCRETE	M3	3.29
6 mm NEOPRENE PAD W/ FRP SKIRT	M2	60

* NOTE: THIS TABLE IS PROVIDED FOR INFORMATION ONLY - ACTUAL QUANTITIES MAY VARY.

ABUTMENT No. 1 QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
*	SELECT EMBANKMENT	M3	204
212001-000	STRUCTURE EXCAVATION	M3	237
212005-000	SELECT MATERIAL FOR BACKFILLING	M3	14
601002-001	CLASS B CONCRETE	M3	215
602001-001	REINFORCING STEEL BARS	KG	20 025
602002-001	EPOXY COATED REINFORCING BARS	KG	4 419
616004-006	HP310X79 STEEL BEARING PILE, DRIVEN	M	102

ABUTMENT No. 2 QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
*	SELECT EMBANKMENT	M3	143
212001-000	STRUCTURE EXCAVATION	M3	374
212005-000	SELECT MATERIAL FOR BACKFILLING	M3	14
601002-001	CLASS B CONCRETE	M3	377
602001-001	REINFORCING STEEL BARS	KG	27 728
602002-001	EPOXY COATED REINFORCING BARS	KG	4 419
616004-006	HP310X79 STEEL BEARING PILE, DRIVEN	M	120

* NOTE: SELECT EMBANKMENT QUANTITIES FOR INFORMATION PURPOSES ONLY, QUANTITY IS INCLUDED IN THE ROADWAY QUANTITIES UNDER ITEM NO. 211002-000, ROCK BORROW EXCAVATION.

ITEM 622032-000 INCLUDES *

DESCRIPTION	UNIT	QUANTITY
FRP REINFORCED GLUE LAMINATED ARCH	M3	45
GLUED LAMINATED STRUTS	M3	5
GLUED LAMINATED DIAGONALS	M3	5
TOTAL	M3	55
ARCH HARDWARE	KG	21 815
WOOD SPACER BLOCKS	M3	<1
GLUED LAMINATED GUARDRAIL	M3	10
TAPERED TRANSITION BLOCKS	M3	<1
TIMBER POST	M3	3
TIMBER RAIL	M3	2
TOTAL	M3	15
MISC. RAILING HARDWARE	KG	1 420

* NOTE: THIS TABLE IS PROVIDED FOR INFORMATION ONLY - ACTUAL QUANTITIES MAY VARY.

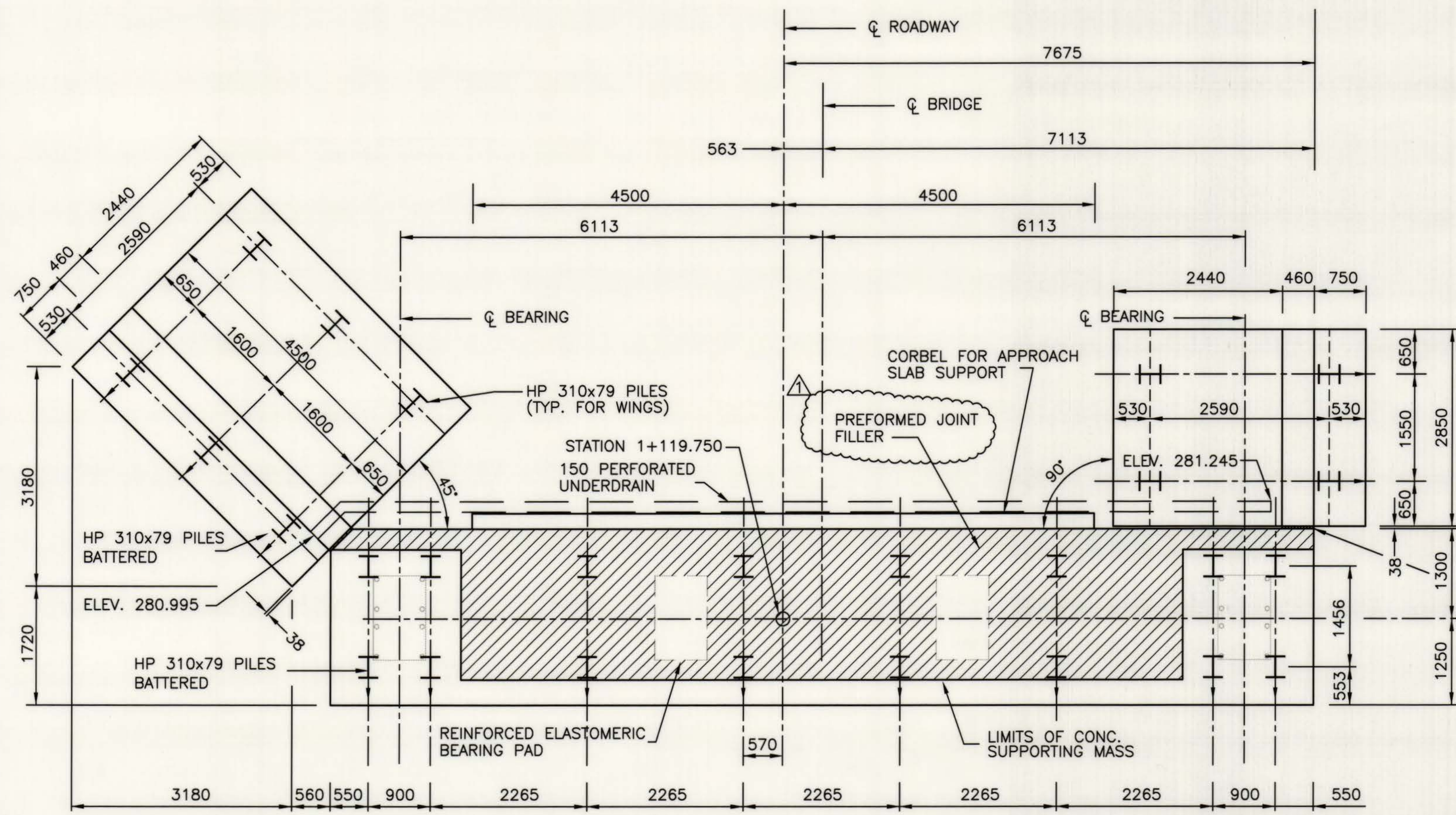
LEGEND

- A.B. = ANCHOR BOLT
- ABUT. = ABUTMENT
- ANCH. = ANCHOR
- B.F. = BACK FACE
- BOT. = BOTTOM
- BRG. = BEARING
- CL. = CLEAR
- C.M.P. = CORRUGATED METAL PIPE
- COL. = COLUMN
- Constr. = CONSTRUCTION
- CONT. = CONTINUOUS
- E.E. = EACH END
- E.F. = EACH FACE
- E.T.B. = ELEVATION TOP OF BEAM
- E.T.F. = ELEVATION TOP OF FOOTING
- E.T.S. = ELEVATION TOP OF SHAFT
- E.T.W. = ELEVATION TOP OF WALL
- E.W. = EACH WAY
- EL. = ELEVATION (HEIGHT)
- ELEV. = ELEVATION (VIEW)
- EST. = ESTIMATED
- EXIST. = EXISTING
- EXP. = EXPANSION
- F.F. = FRONT FACE
- F.L. = FULL LENGTH
- FL. = FLOOR
- FTG. = FOOTING
- HT. = HEIGHT
- INT. = INTEGRAL
- JT. = JOINT
- L.S. = LUMP SUM
- LT. = LEFT
- MK = MARK
- N.T.S. = NOT TO SCALE
- O.C. = ON CENTER
- O.F. = OUTSIDE FACE
- P.G. = PROFILE GRADE
- R. = RADIUS
- REM. = REMAINDER
- RT. = RIGHT
- SECT. = SECTION
- STA. = STATION
- T&B = TOP AND BOTTOM
- T/F = TOP OF FOOTING
- T.O.S. = TOP OF SLAB
- T/S = TOP OF STEEL
- TYP. = TYPICAL
- U.O.N. = UNLESS OTHERWISE NOTED
- W.E. = WALL END
- W.P. = WORKING POINT
- W.W.F. = WELDED WIRE FABRIC

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ESTIMATED QUANTITIES

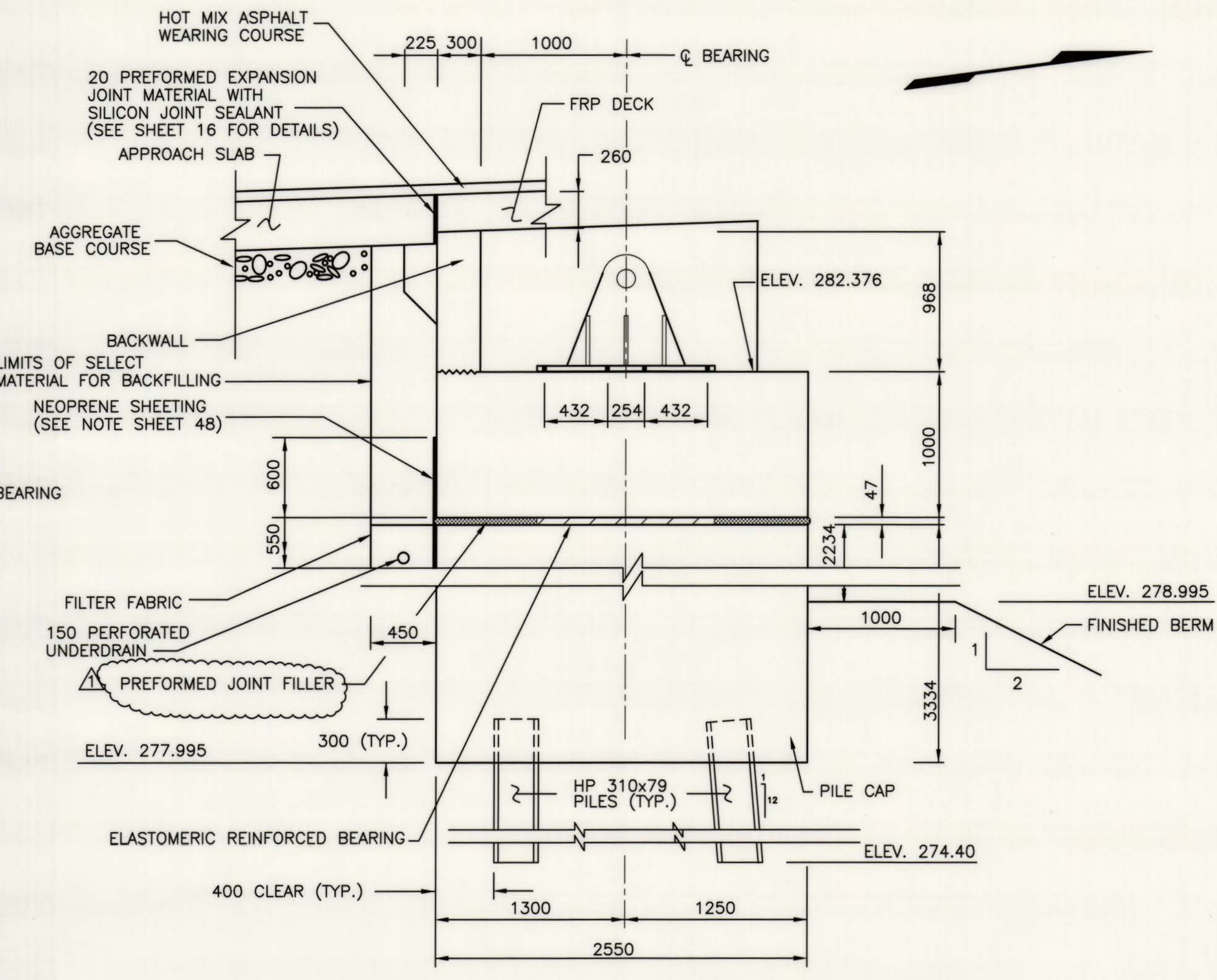
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	3R
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					BRIDGE NO. 4415

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	50	73

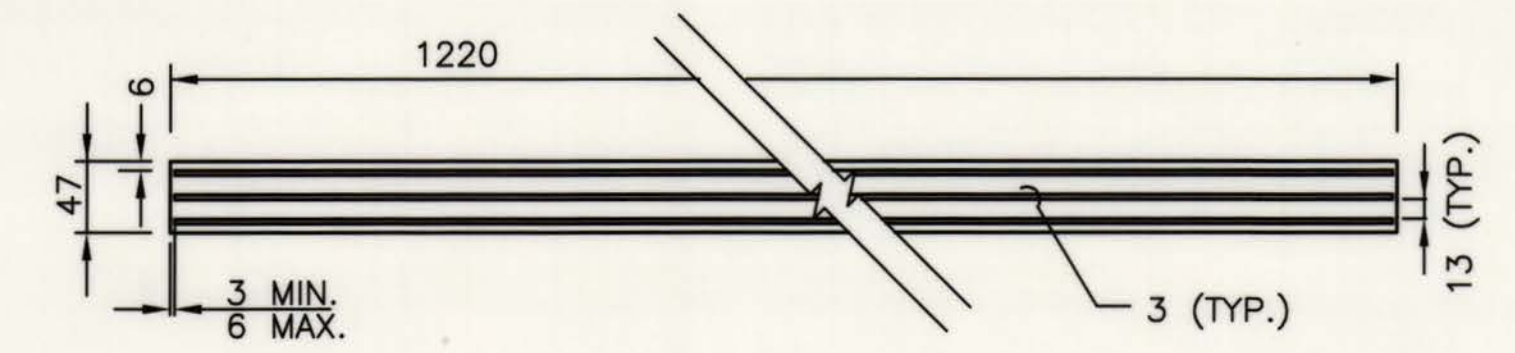


PLAN ABUTMENT ONE
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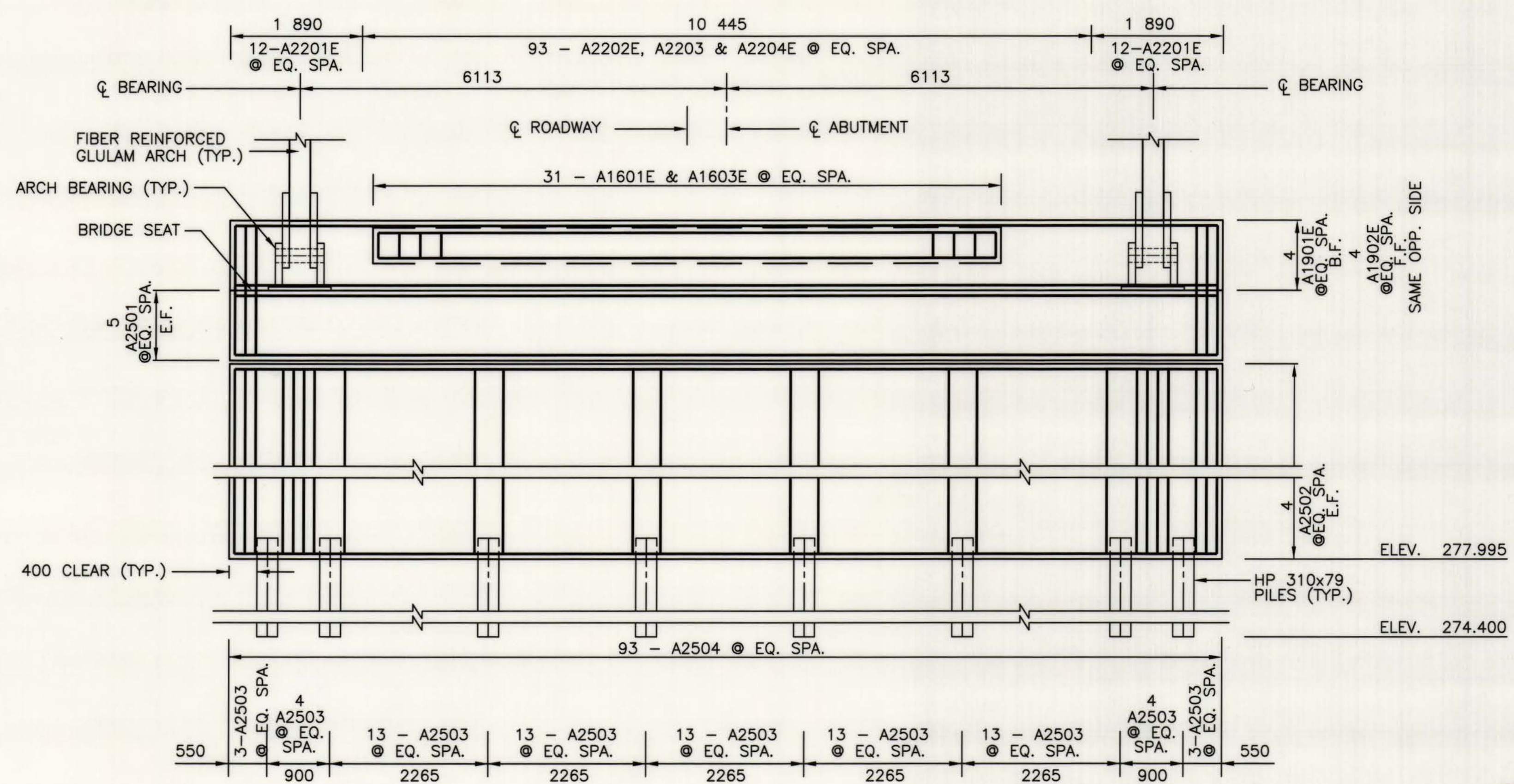
NOTE: COST OF THE UNDER DRAIN TO BE CONSIDERED INCIDENTAL TO ITEM 601002-001 CLASS B CONCRETE.



ABUTMENT SECTION AT ARCH BEARING
SCALE 1:50



ELASTOMERIC BEARING PAD DETAIL
SCALE 1:10

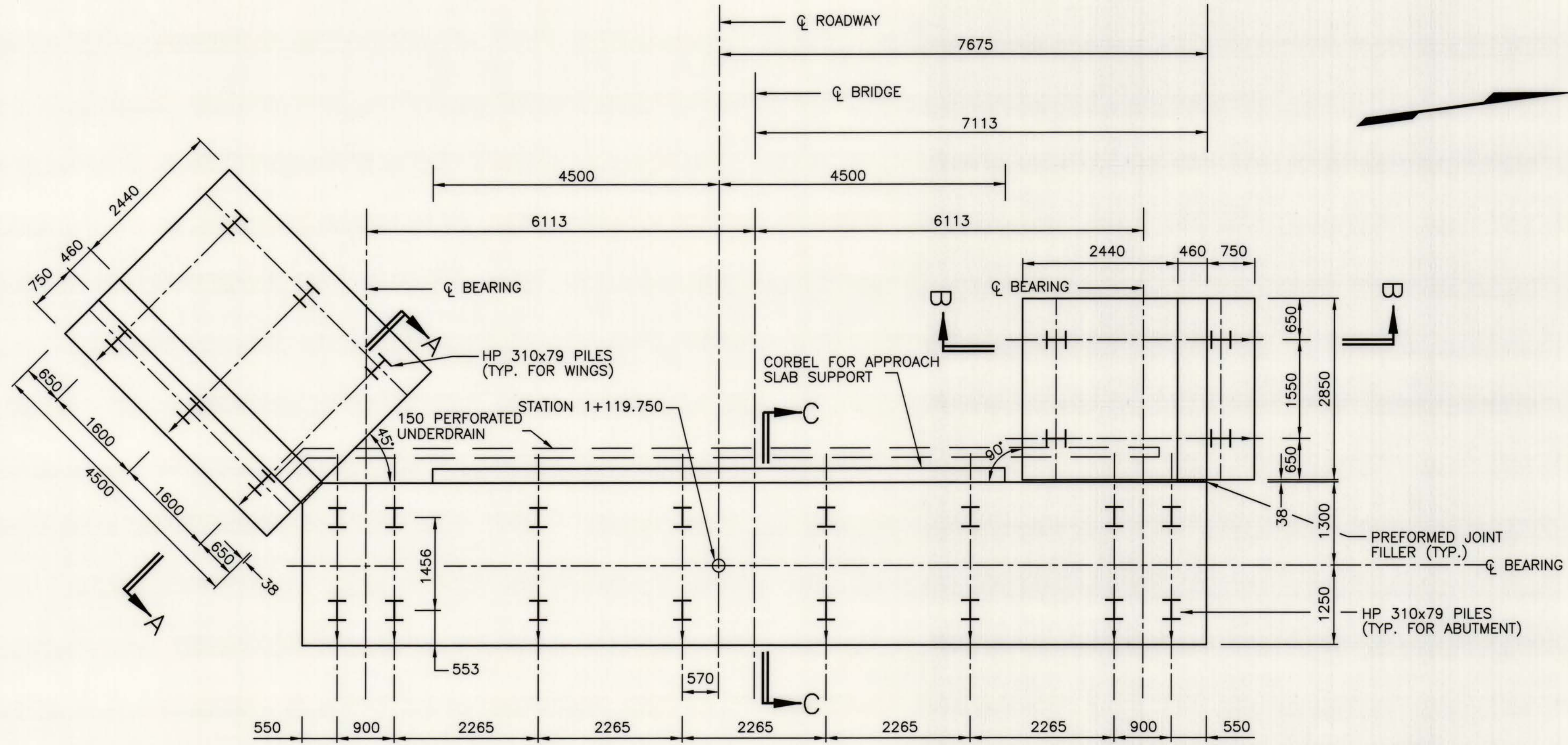


ELEVATION ABUTMENT ONE
SCALE 1:100

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ABUTMENT ONE - PLAN AND ELEVATION

1	4R	PREFORMED JOINT FILLER	11/30/00	CBL	DESIGNED BY:	DRAWN BY: AF	INKED BY: HP	DATE: 11-03-00	SHEET NO. 4R
					CHECKED BY:	CHECKED BY:	CHECKED BY: CL	SCALE: 1:100	BRIDGE NO. 4415
REVISIONS					ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA				

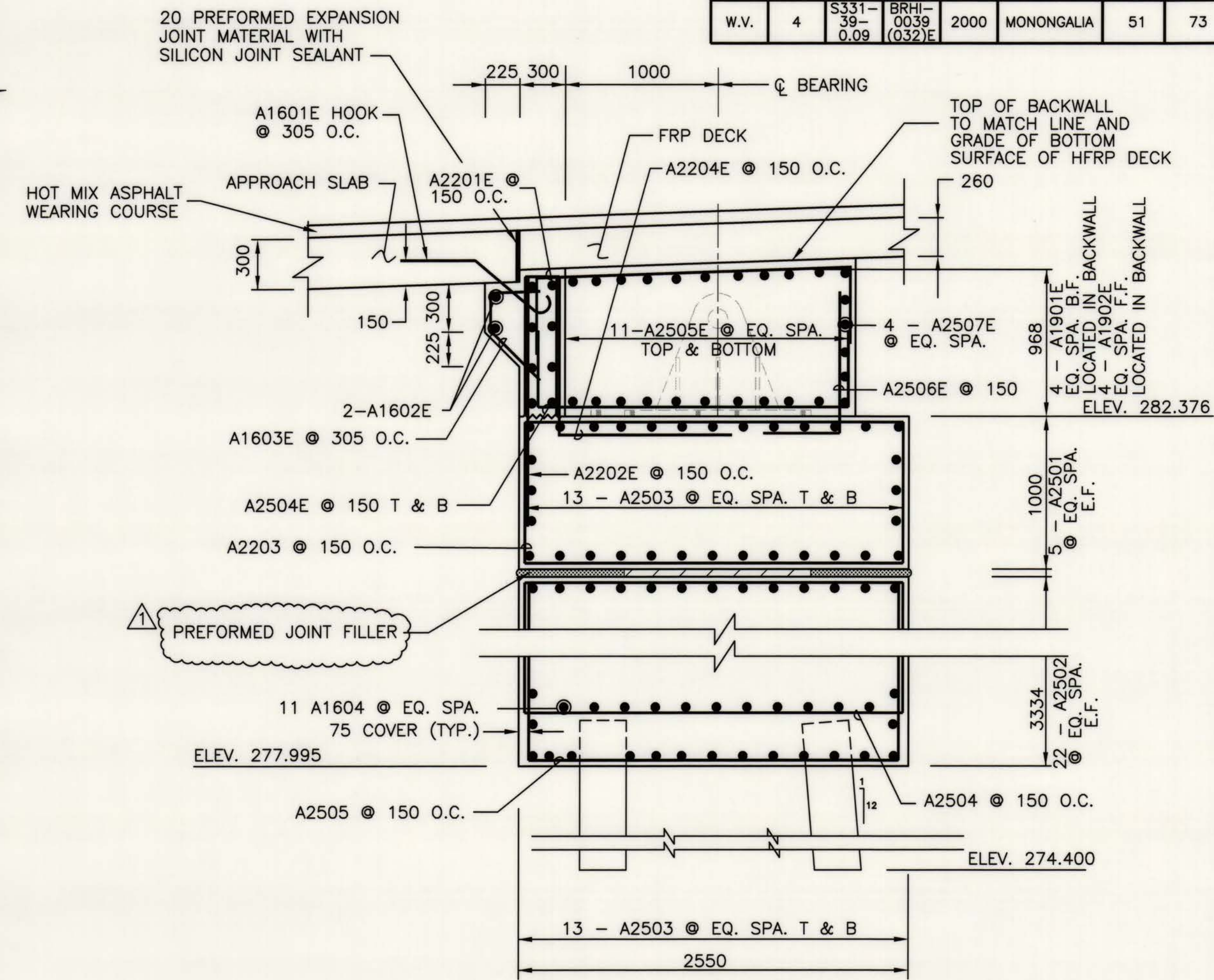
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W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	51	73



PLAN ABUTMENT ONE

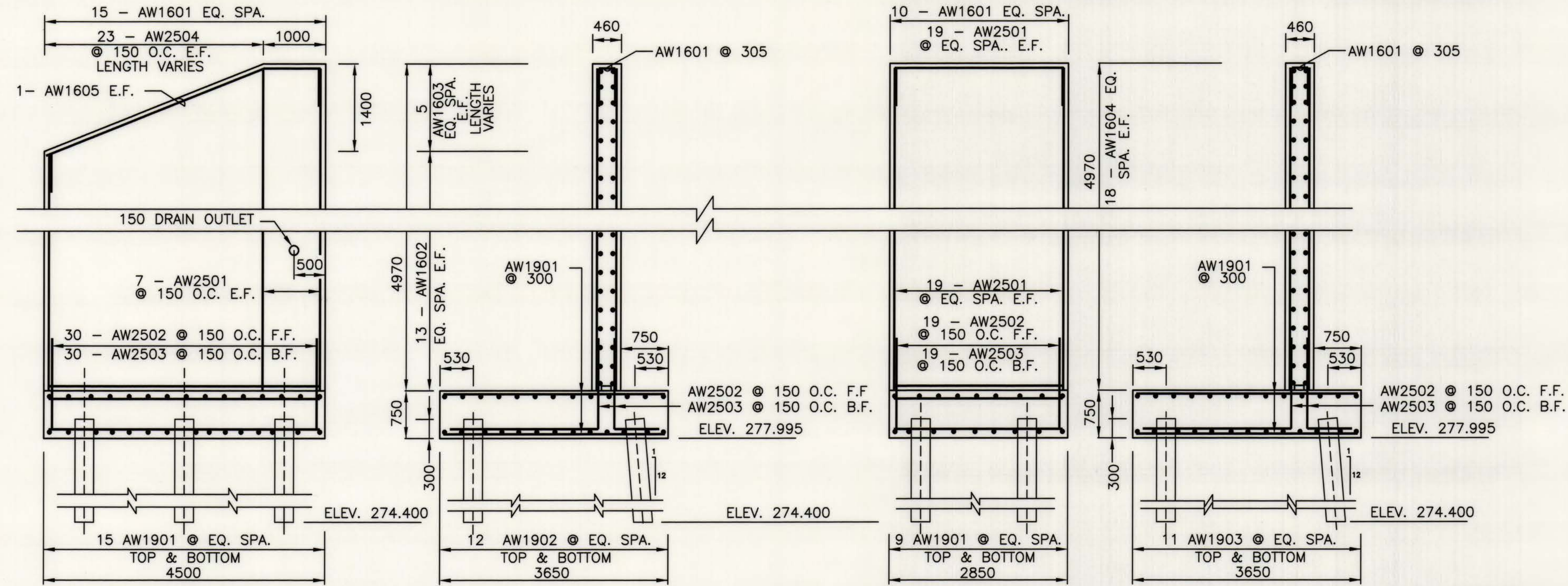
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NOTE: COST OF THE UNDER DRAIN TO BE CONSIDERED INCIDENTAL TO ITEM 601002-001 CLASS B CONCRETE.



ABUTMENT SECTION C-C

SCALE 1:50

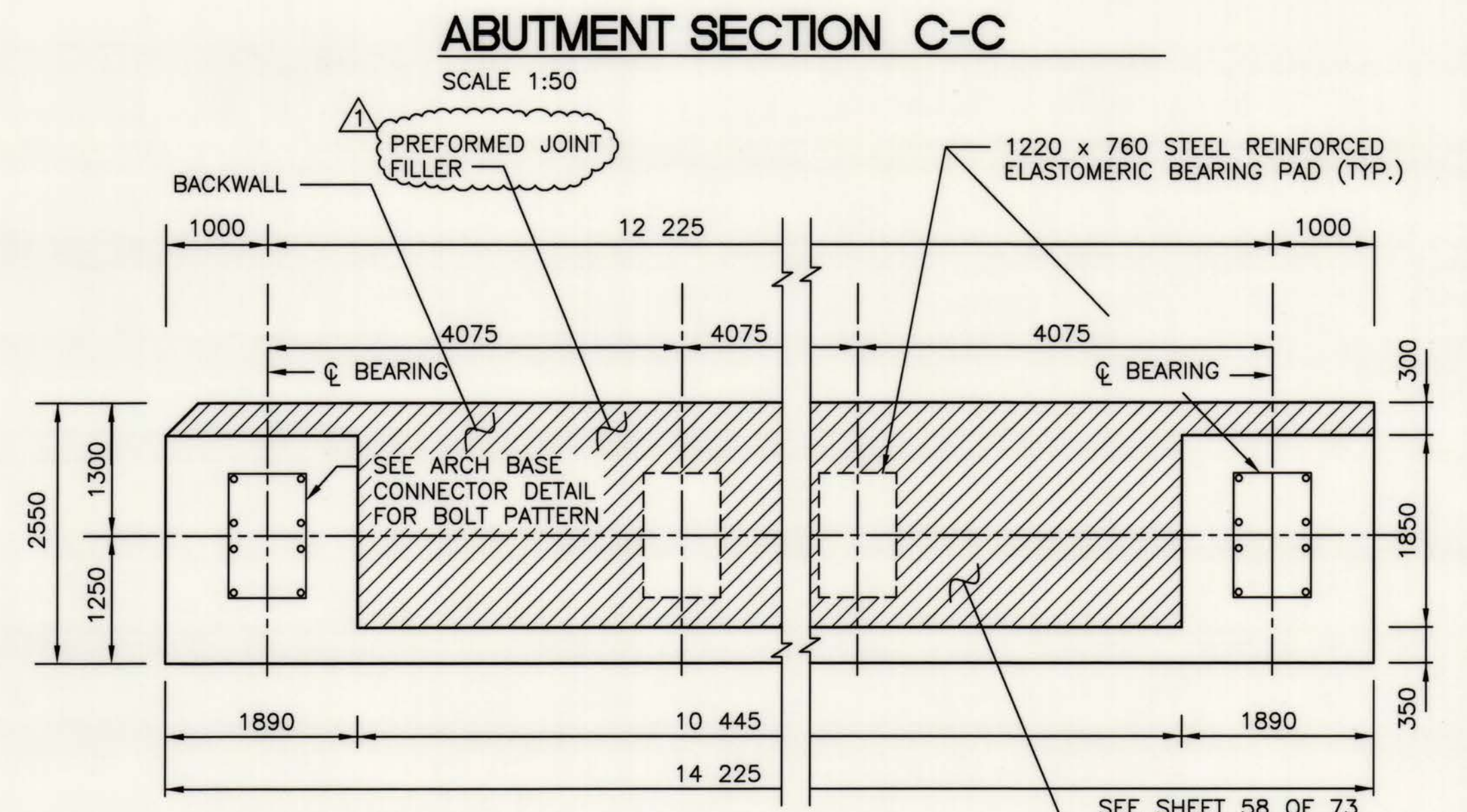


ELEVATION AND SECTION A-A

SCALE 1:100

ELEVATION AND SECTION B-B

SCALE 1:100



ANCHOR BOLT LAYOUT

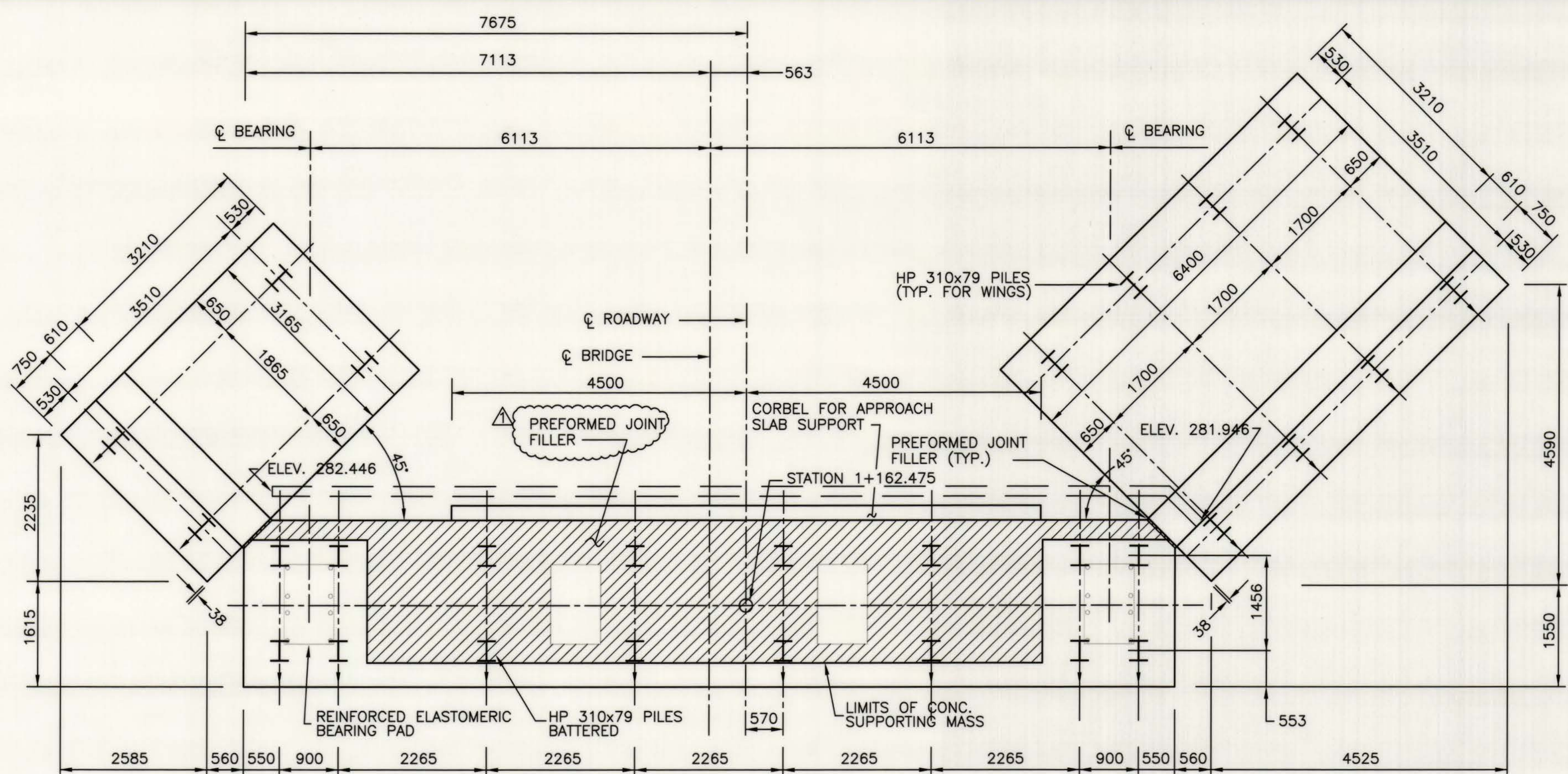
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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ABUTMENT ONE - WINGWALLS AND DETAILS

DESIGNED BY:	DRAWN BY: AF	INKED BY: HP	DATE: 11-03-00	SHEET NO. 5R
CHECKED BY:	CHECKED BY:	CHECKED BY: CL	SCALE: 1:100	BRIDGE NO. 4415
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA				

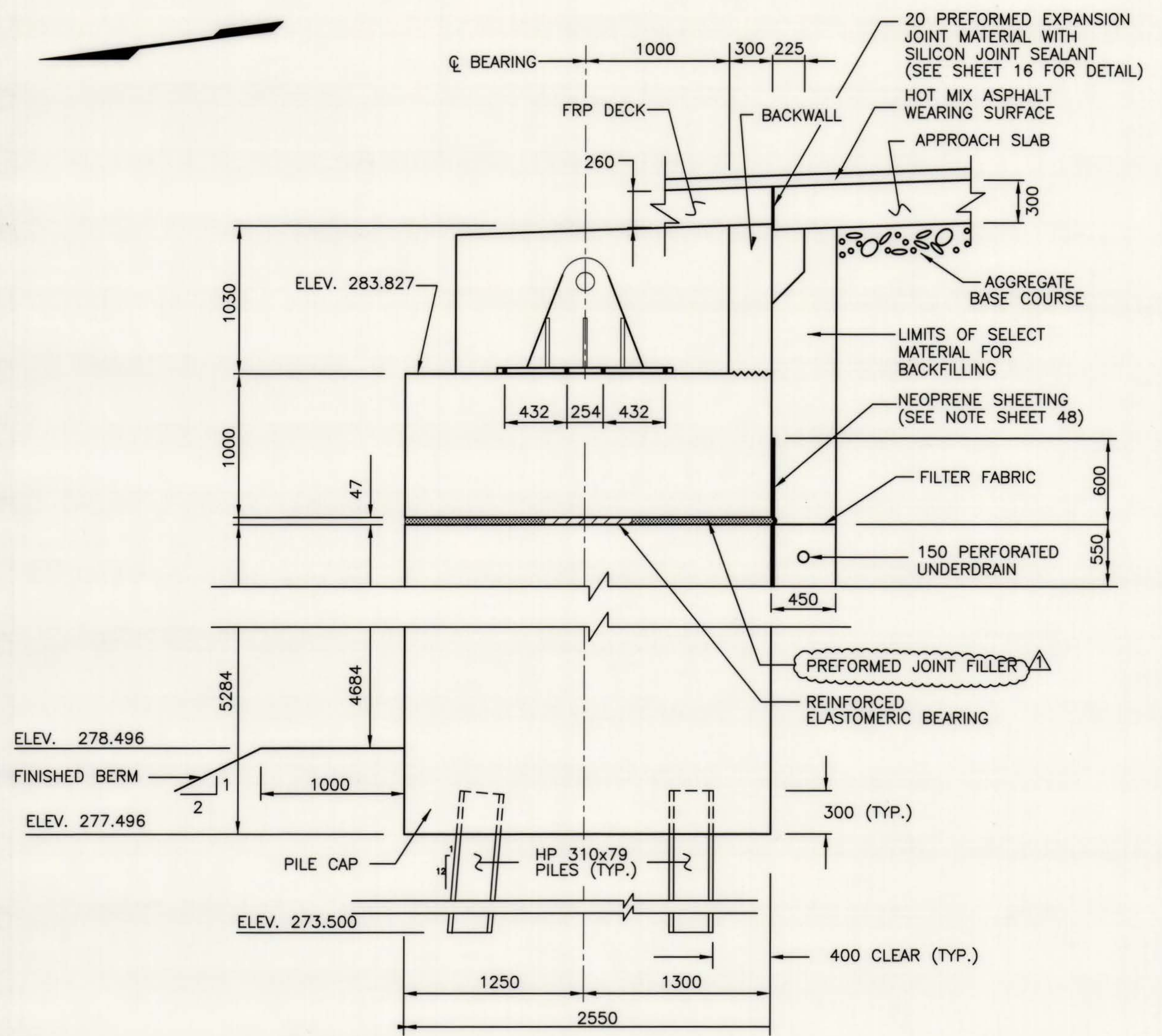
A.A.I. JOB NO. 971281.01

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	52	73

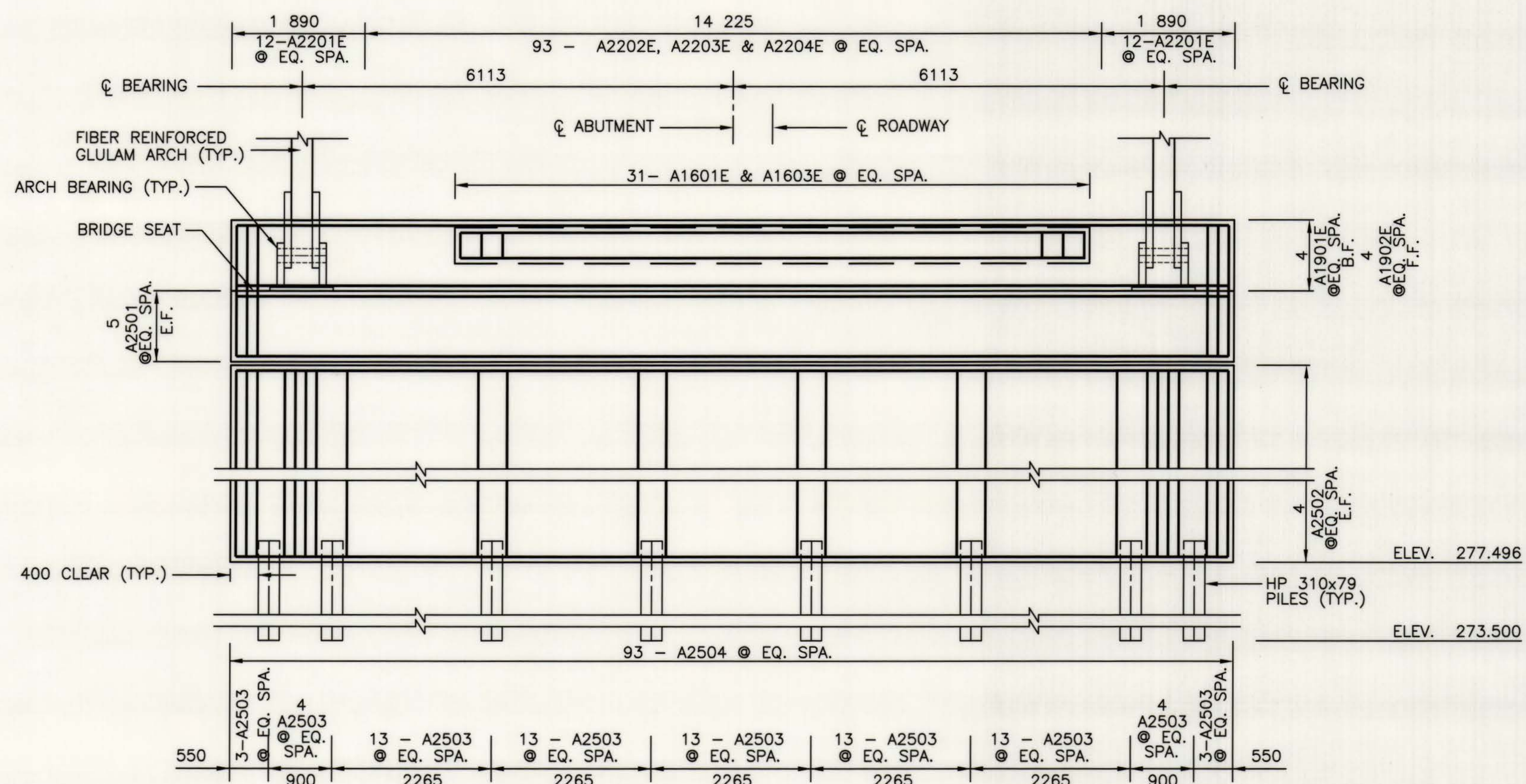


PLAN ABUTMENT TWO
SCALE 1:100

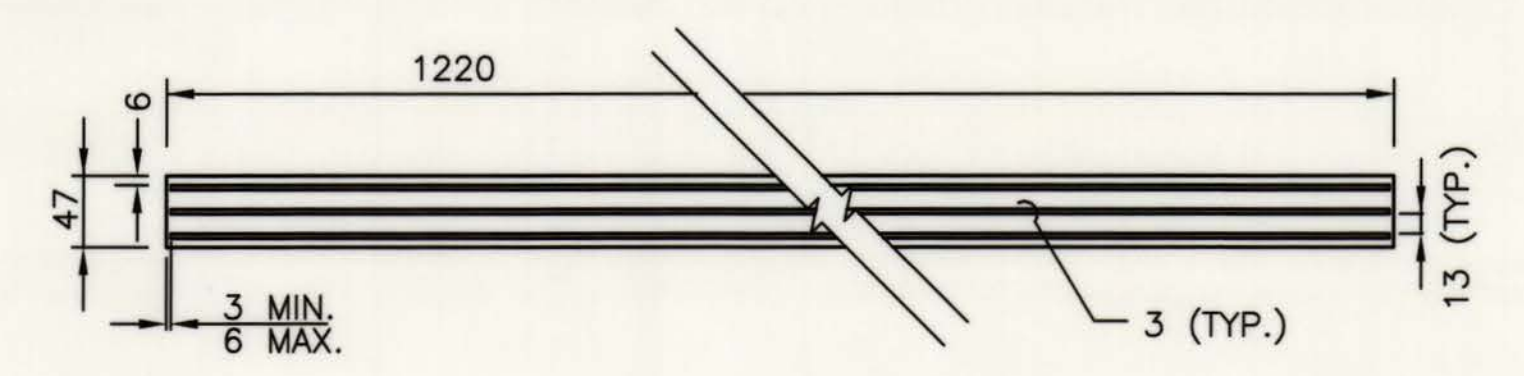
NOTE: COST OF THE UNDER DRAIN TO BE CONSIDERED INCIDENTAL TO ITEM 601002-001 CLASS B CONCRETE.



ABUTMENT SECTION AT ARCH BEARING
SCALE 1:50



ELEVATION ABUTMENT TWO
SCALE 1:100

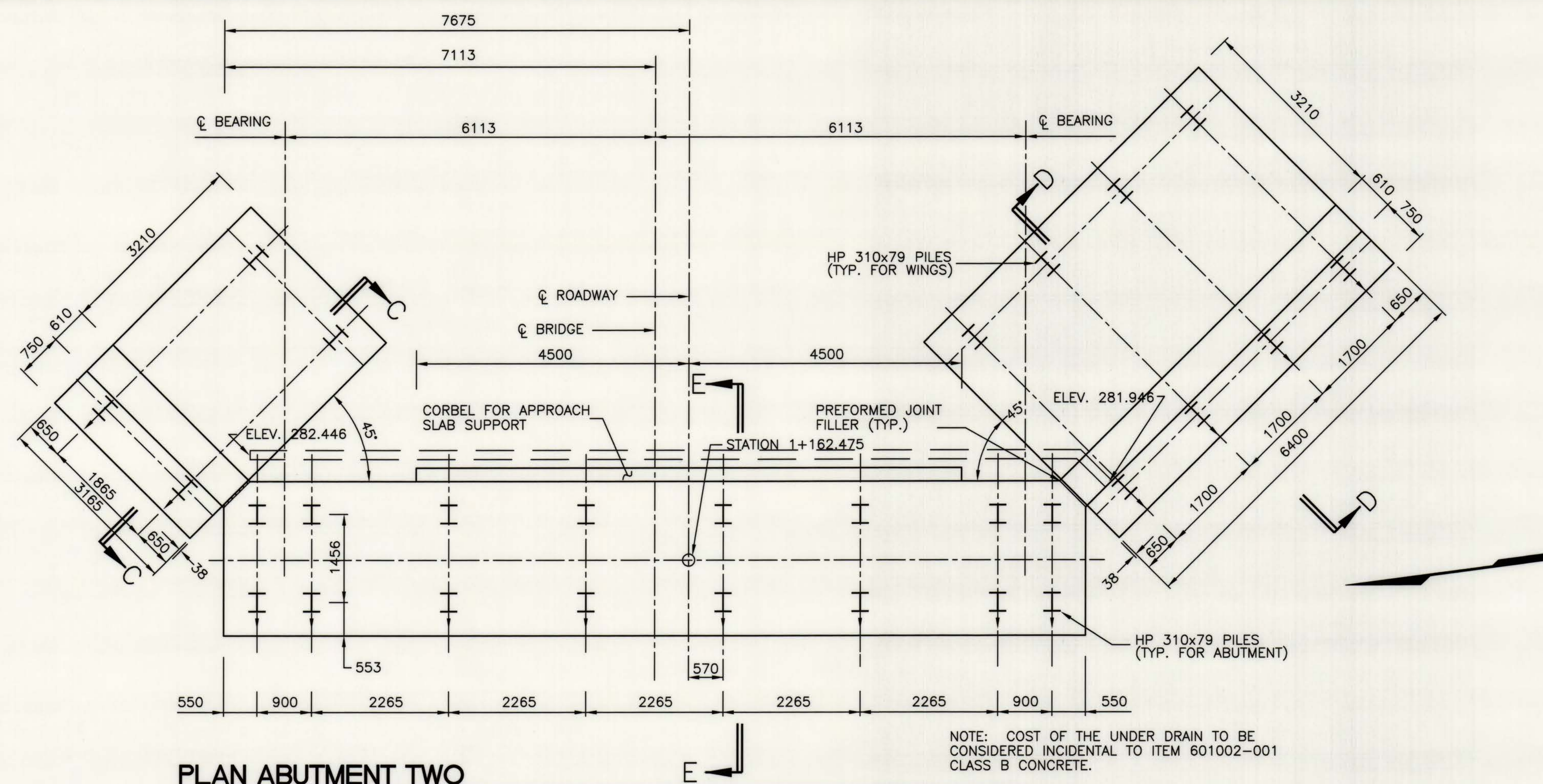


ELASTOMERIC BEARING PAD DETAIL
SCALE 1:10

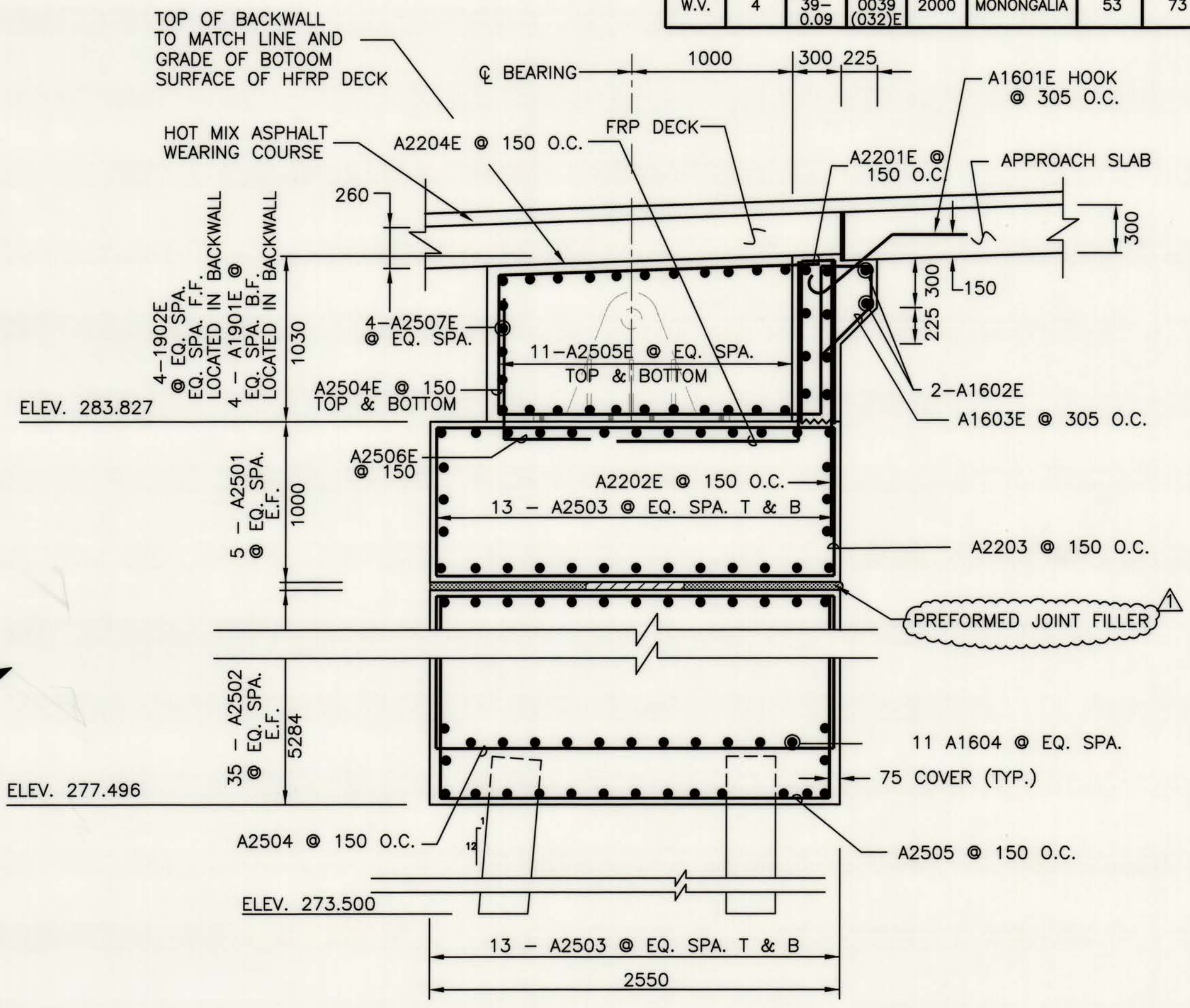
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ABUTMENT TWO - PLAN AND ELEVATION

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET NO.	6R
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	1:100	BRIDGE NO.	4415
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA								

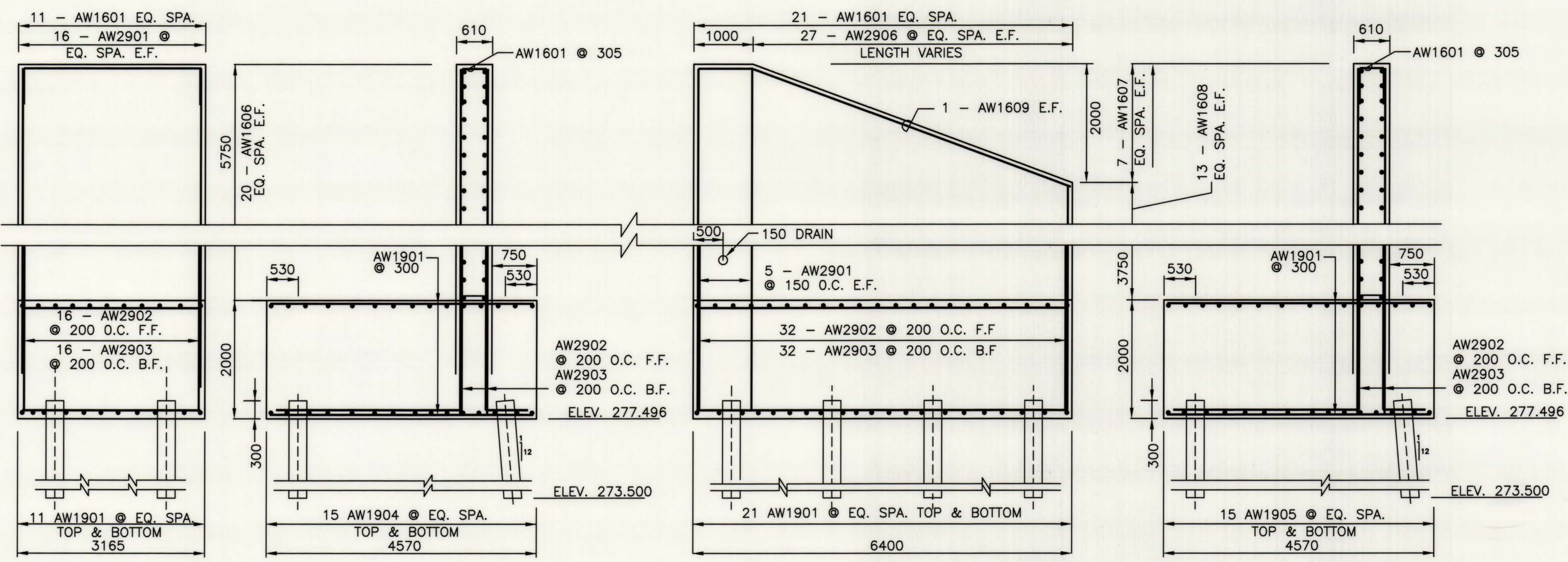
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	53	73



PLAN ABUTMENT TWO
SCALE 1:100

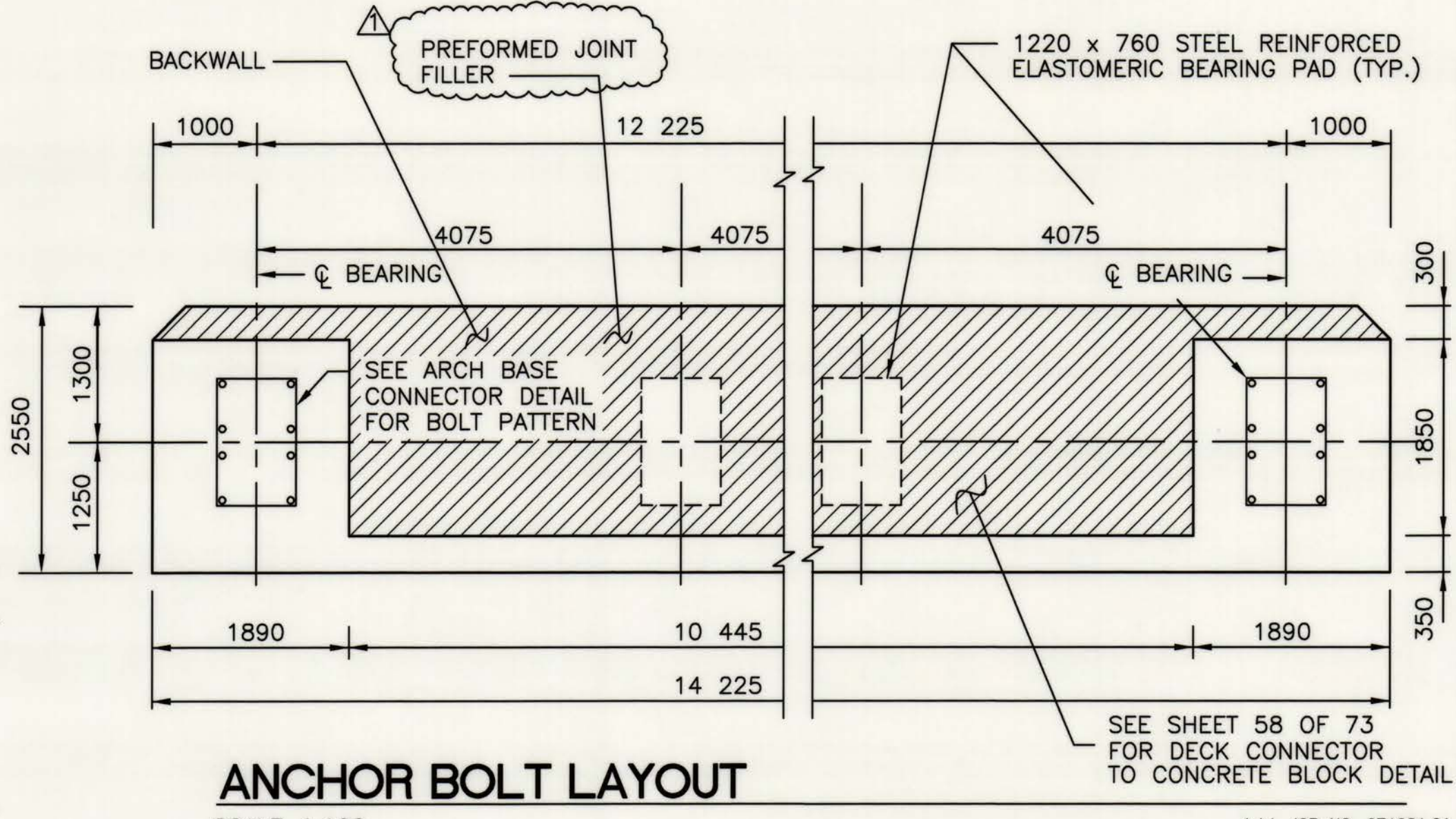


ABUTMENT SECTION E-E
SCALE 1:50



ELEVATION AND SECTION C-C
SCALE 1:100

ELEVATION AND SECTION D-D
SCALE 1:100



ANCHOR BOLT LAYOUT
SCALE 1:100

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ABUTMENT TWO - WINGWALLS AND DETAILS

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET NO.	7R
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	1:100	BRIDGE NO.	4415
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA								

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	54	73

STATION	LEFT EDGE ** ROADWAY ELEV.	ROADWAY @ ELEV.	RIGHT EDGE *** ROADWAY ELEV.
1+118.450	283.588	283.588	283.591
1+120.000	283.639	283.639	283.642
1+130.000	283.979	283.979	283.982
1+140.000	284.319	284.319	284.322
1+150.000	284.658	284.658	284.661
1+160.000	284.998	284.998	285.001
1+163.775	285.127	285.127	285.130

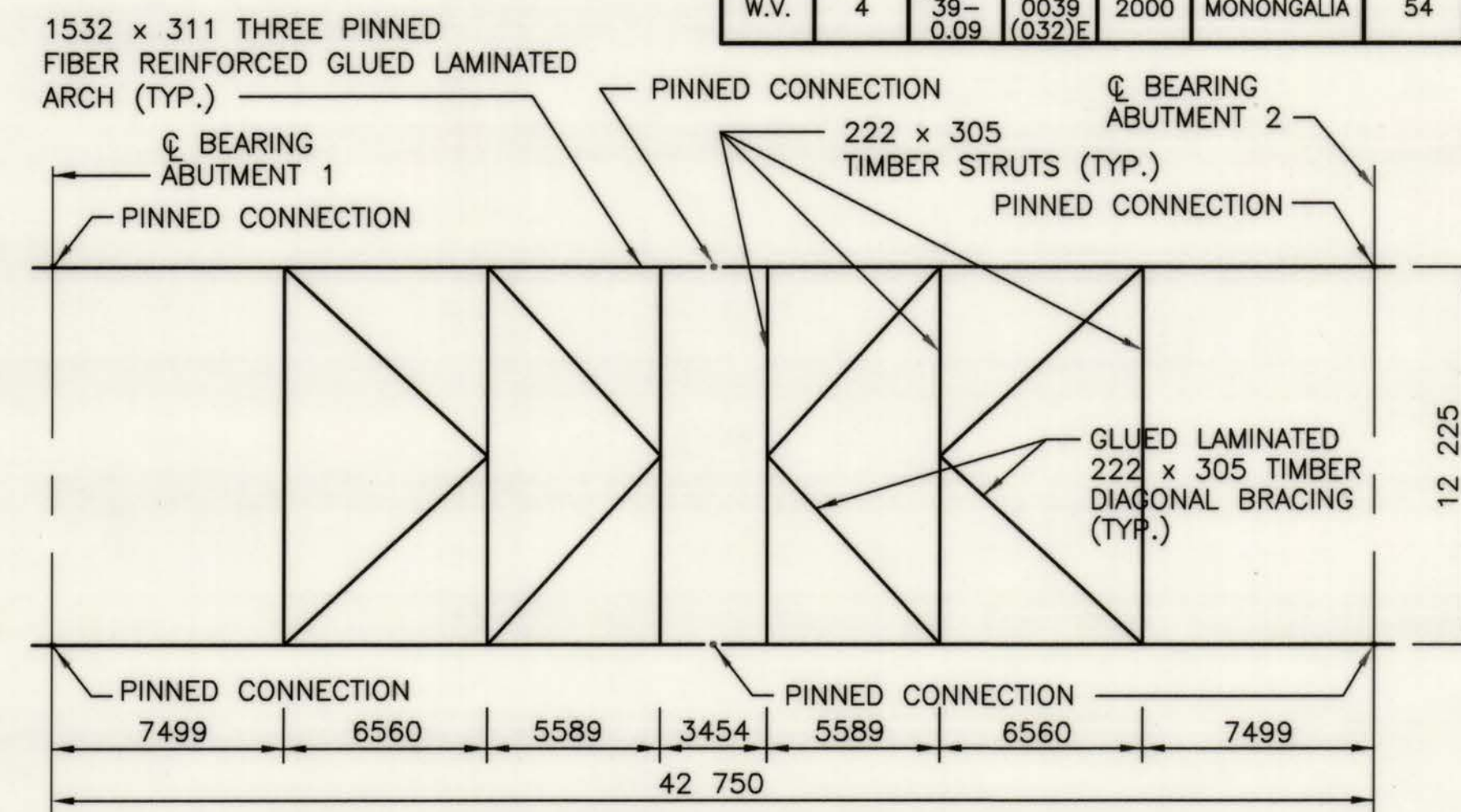
* ELEVATIONS AT TOP OF HFRP DECK ON ROADWAY PORTION PORTION AFTER SIDEWALK AND FRP TUBE ARE INSTALLED BUT BEFORE POLYMER CONCRETE AND ASPHALTIC OVERLAY INSTALLED
 ** LEFT EDGE OF ROADWAY AS MEASURED AT FACE OF SIDEWALK
 *** RIGHT EDGE OF ROADWAY AS MEASURED AT FACE OF FRP TUBE

STATION	LEFT EDGE ** PAVEMENT ELEV.	ROADWAY @ ELEV.	RIGHT EDGE *** PAVEMENT ELEV.
1+118.450	283.620	283.710	283.616
1+120.000	283.671	283.761	283.667
1+130.000	284.011	284.101	284.007
1+140.000	284.351	284.441	284.347
1+150.000	284.690	284.780	284.686
1+160.000	285.030	285.120	285.026
1+163.775	285.159	285.249	285.155

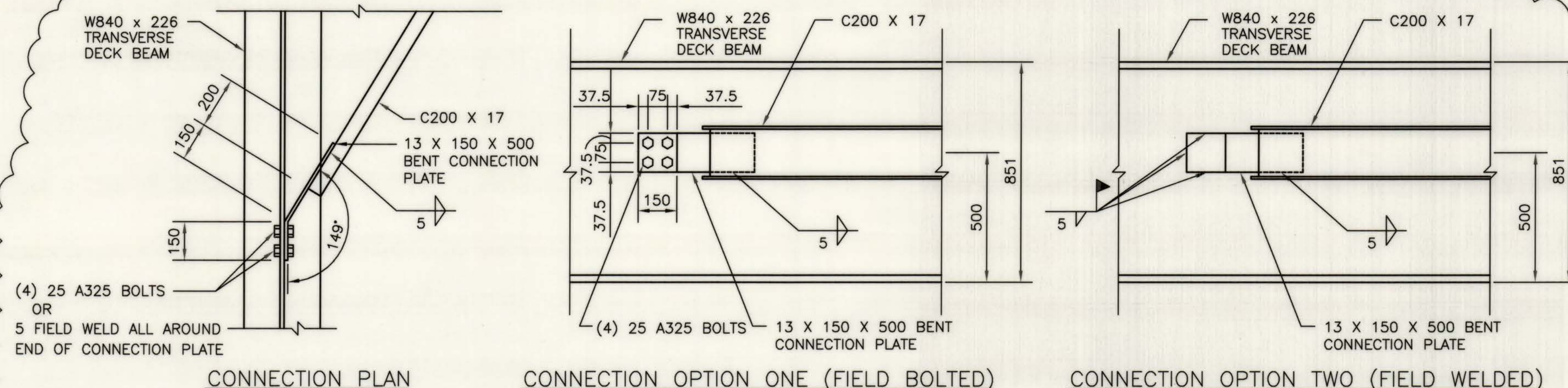
* INCLUDES POLYMER CONCRETE AND ASPHALTIC OVERLAYS
 ** LEFT EDGE OF PAVE. EL. AS MEASURED AT FACE OF SIDEWALK
 *** RIGHT EDGE OF PAVE. EL. AS MEASURED AT FACE OF FRP TUBE
 NOTE: SEE SHEET 10 FOR TIE BEAM ELEVATION ADJUSTMENT NOTES

CAMBER	0.0L	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L
A	0.0	-0.3	-0.5	-0.7	-0.8	-0.9	-0.8	-0.7	-0.5	-0.3	0.0
B	0.0	-0.4	-0.7	-1.0	-1.2	-1.2	-1.0	-0.7	-0.4	0.0	
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
D	0.0	-0.4	-0.8	-1.1	-1.3	-1.4	-1.3	-1.2	-0.8	-0.4	0.0
E	0	-1	-2	-3	-3	-4	-3	-3	-2	-1	0

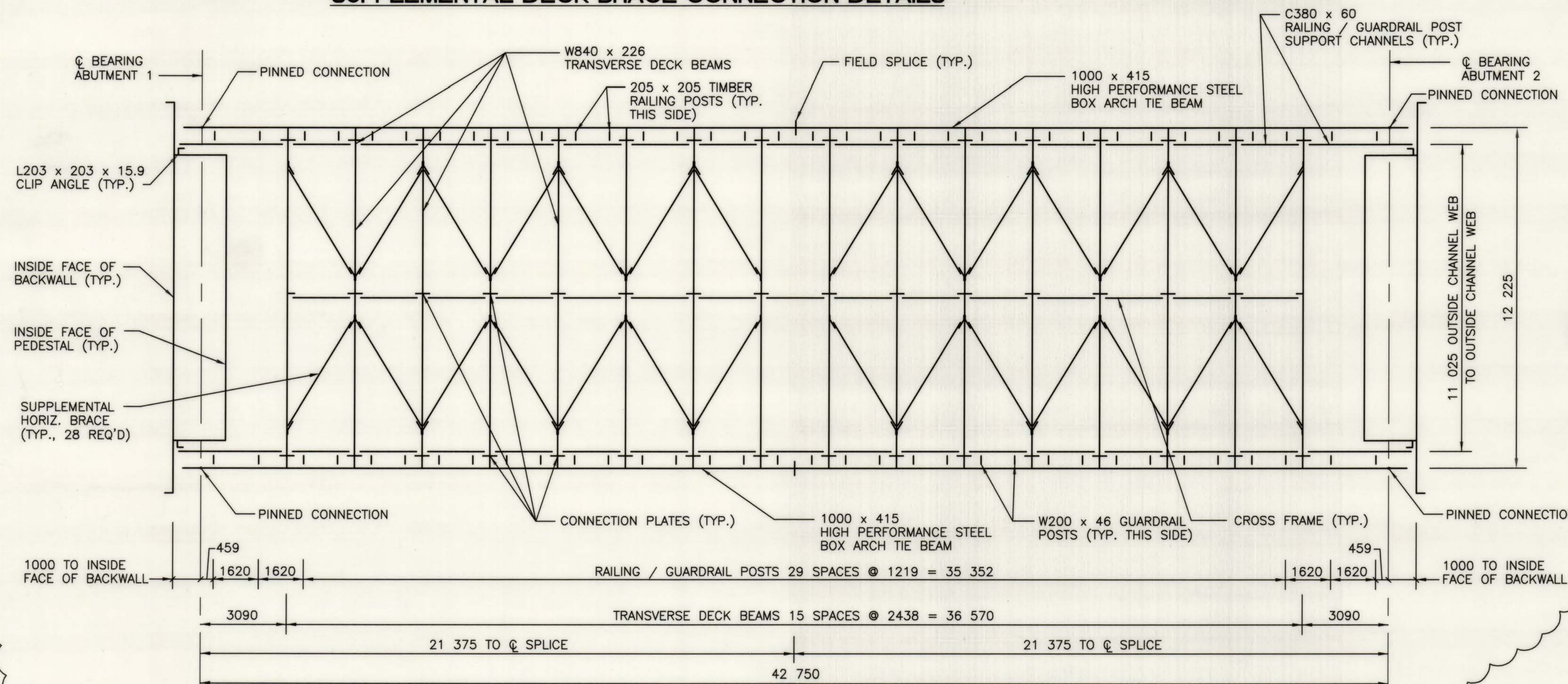
A CAMBER DUE TO DL STEEL
 B CAMBER DUE TO DL DECK (INCLUDING SIDEWALK)
 C CAMBER DUE TO DL RAILING AND GUARDRAIL
 D CAMBER DUE TO DL OVERLAY
 E TOTAL CAMBER FROM DL'S
 UPSTREAM (SIDEWALK) SIDE DOWNSTREAM SIDE



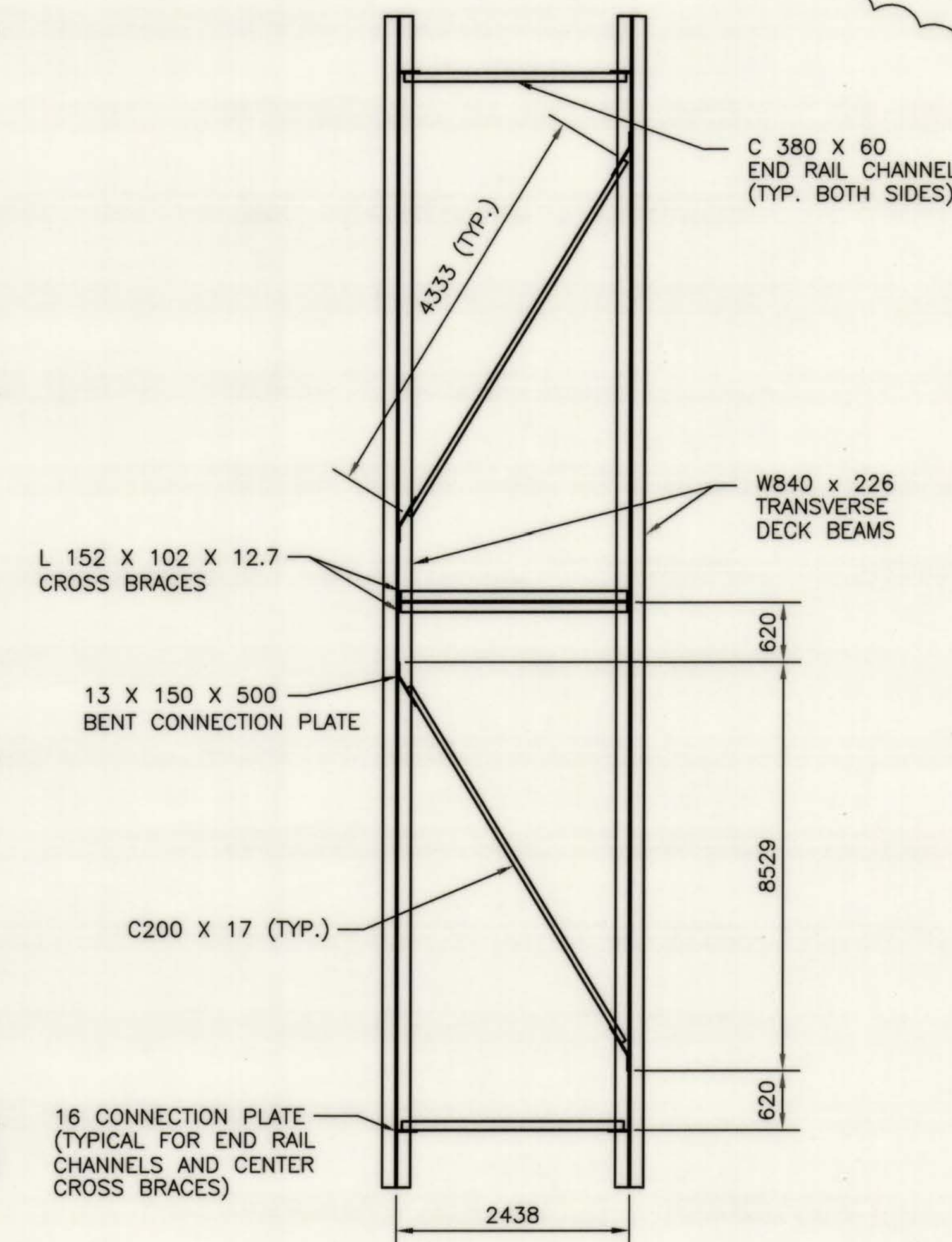
ARCH BRACING PLAN



SUPPLEMENTAL DECK BRACE CONNECTION DETAILS



DECK FRAMING PLAN



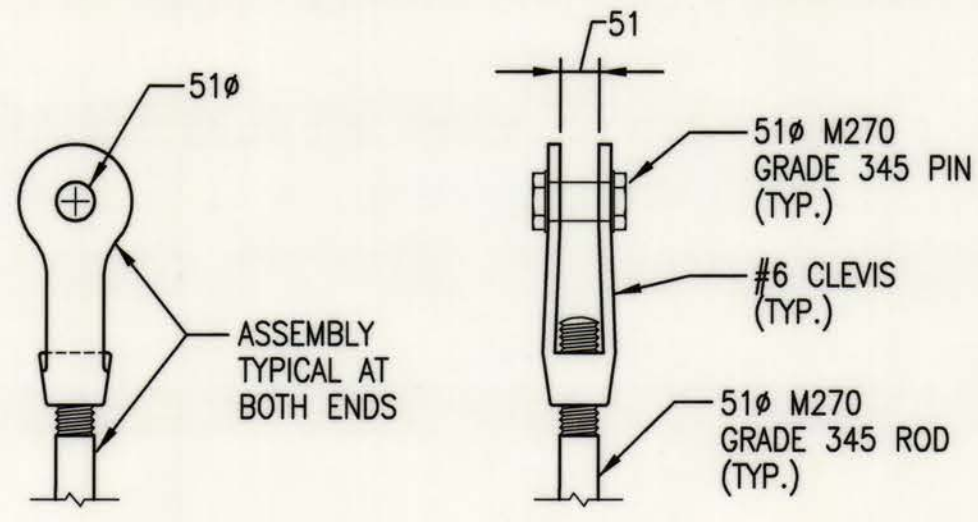
SUPPLEMENTAL DECK BRACE LAYOUT PLAN

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
FRAMING PLAN

DESIGNED BY:	DRAWN BY: KS	INKED BY: HP	DATE: 11-03-00	SHEET 8
CHECKED BY:	CHECKED BY:	CHECKED BY: CL	SCALE: 1:100	
ALPHA ASSOCIATES, INCORPORATED				BRIDGE NO. 4415
CONSULTING ENGINEERS				MORGANTOWN, WEST VIRGINIA

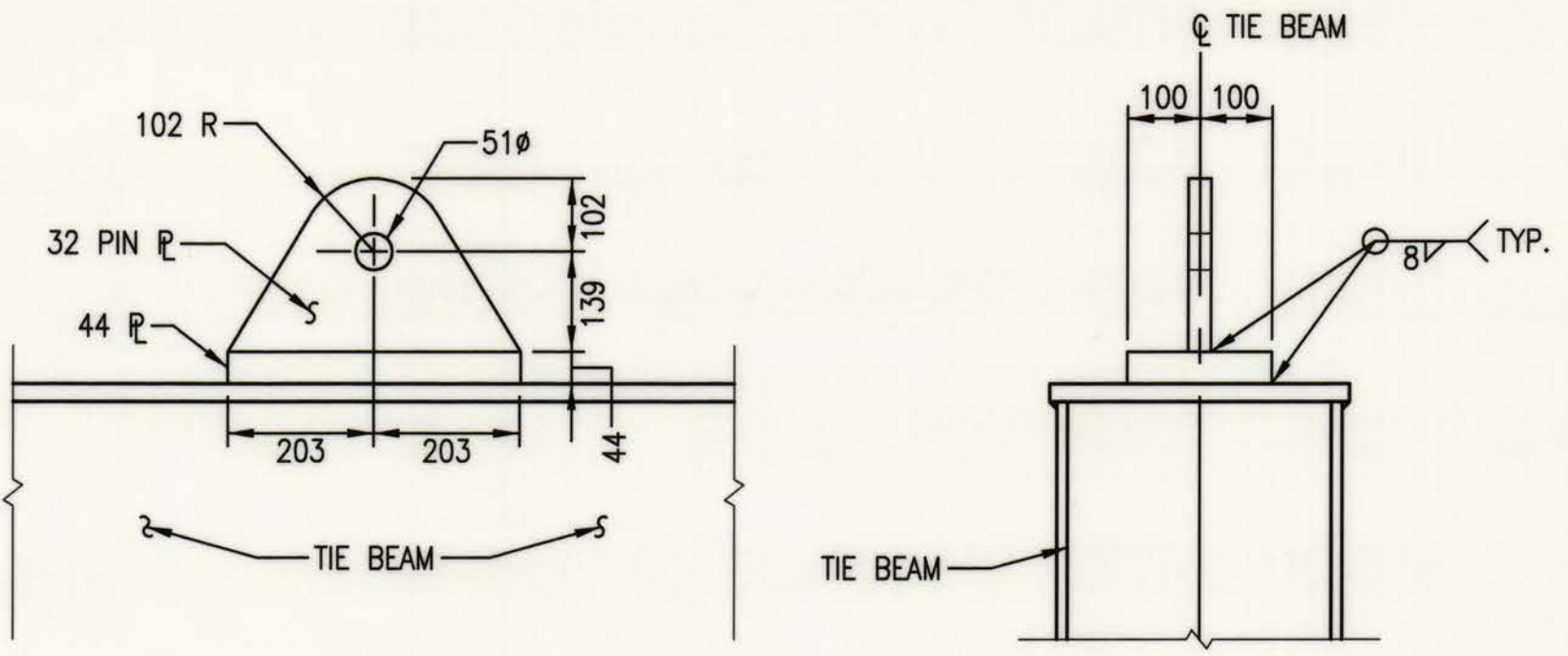
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY
8		DECK BRACING AND DETAILS	1/07/03	CBL

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	55	73



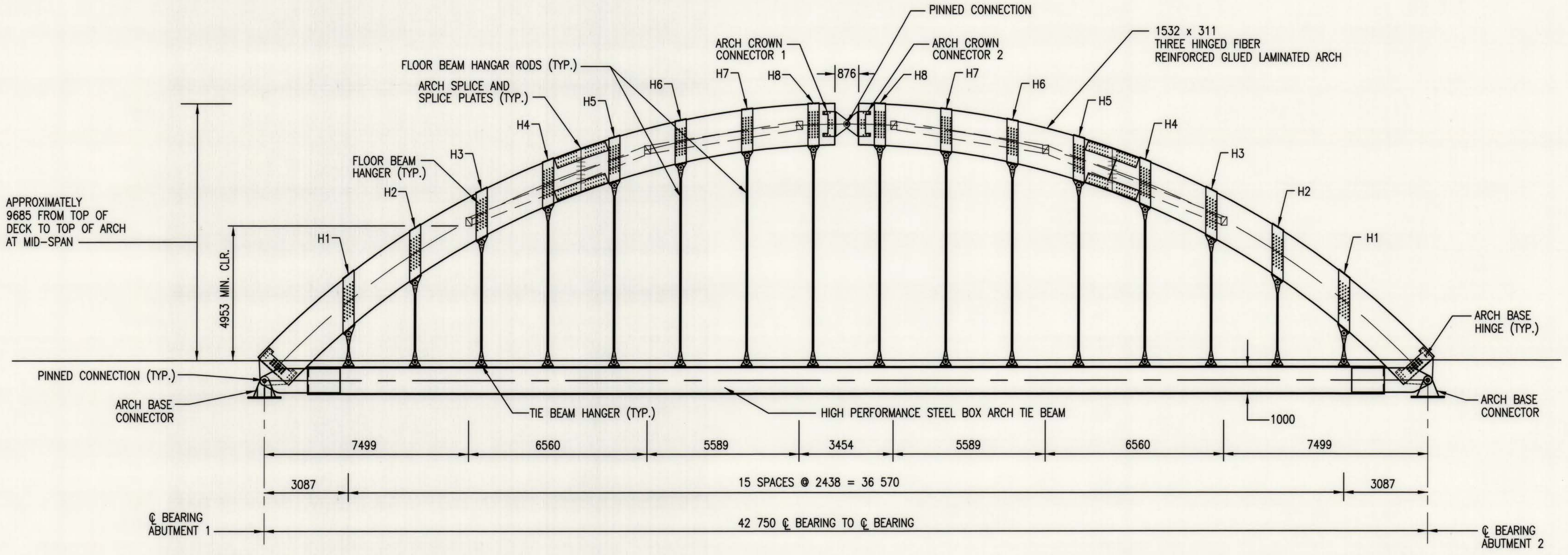
FLOOR BEAM HANGER RODS

SCALE: 1:10
NOTE: SEE SHEET 10 FOR ELEVATION ADJUSTMENT NOTES



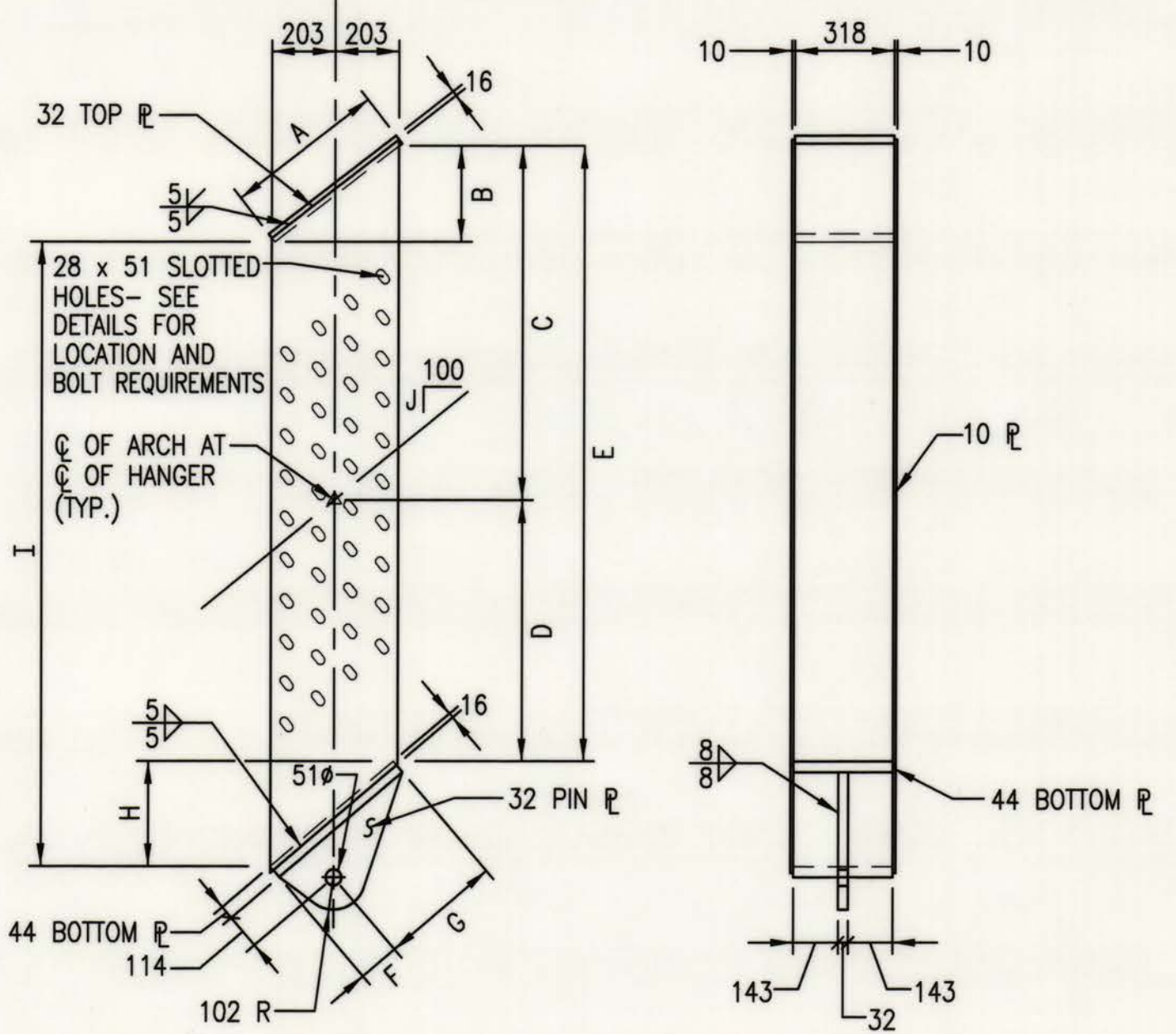
TIE BEAM HANGER

SCALE: 1:10

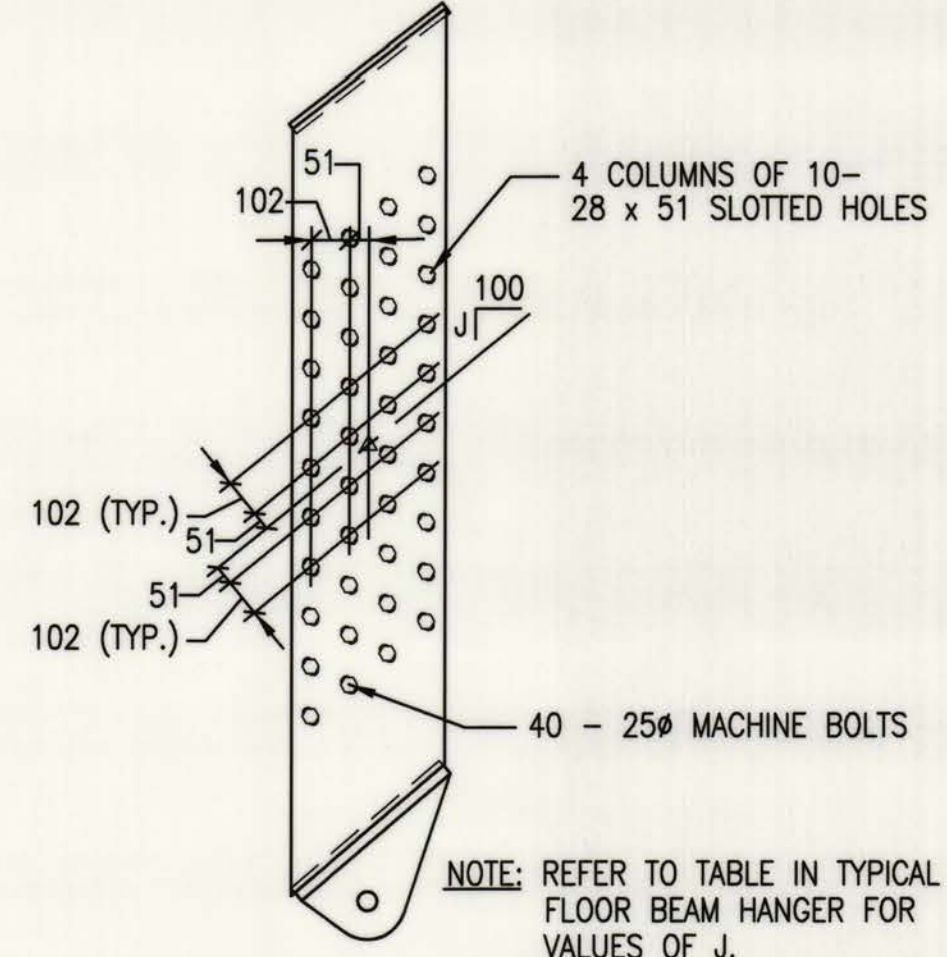


ARCH ELEVATION

SCALE: 1:100

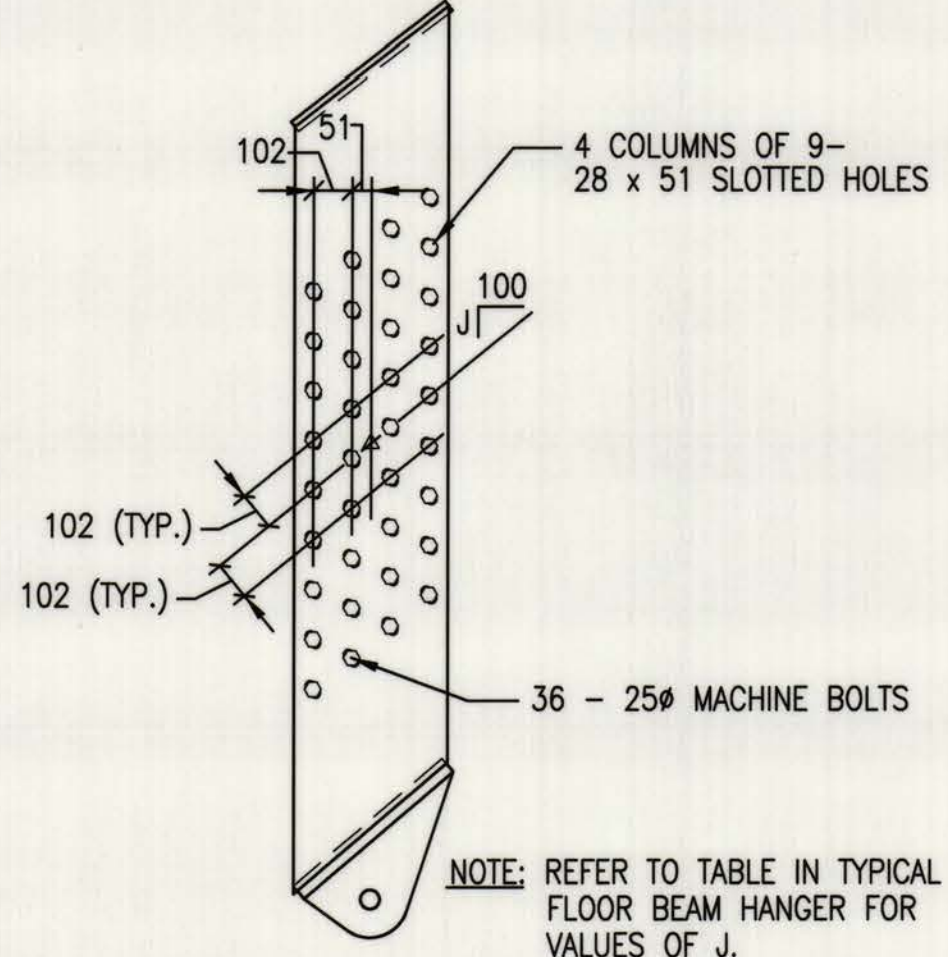


NOTE: SEE BOLT PATTERN DETAILS FOR BOLT CONFIGURATIONS FOR EACH HANGER.



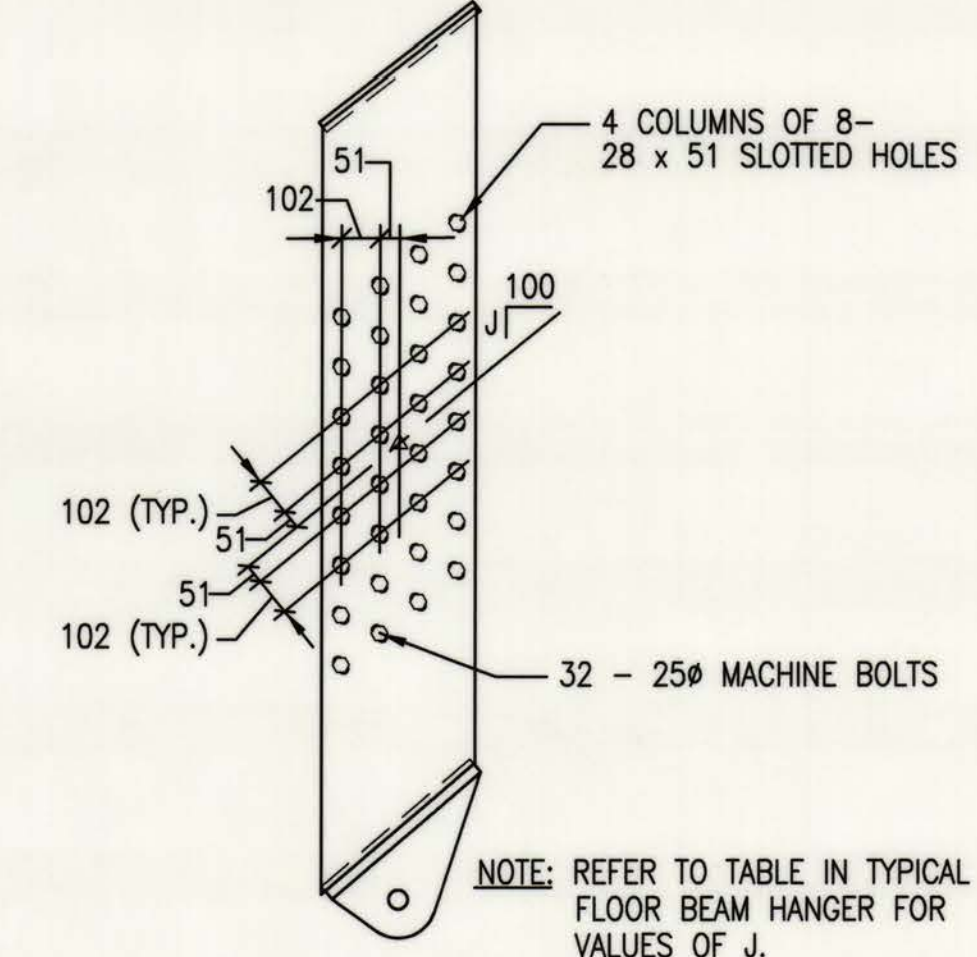
FLOOR BEAM HANGER H1 BOLT PATTERN 1

NOT TO SCALE



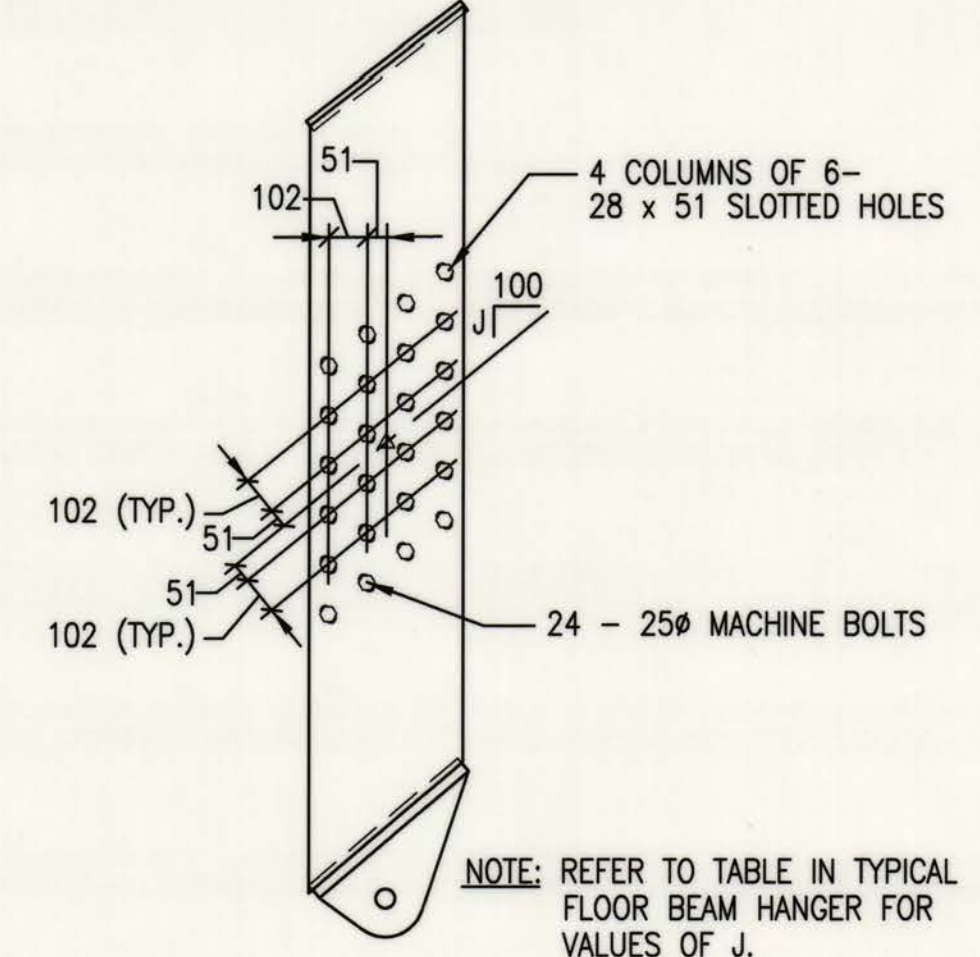
FLOOR BEAM HANGER H2 AND H3 BOLT PATTERN 2

NOT TO SCALE



FLOOR BEAM HANGER H4 AND H5 BOLT PATTERN 3

NOT TO SCALE



FLOOR BEAM HANGER H6, H7, AND H8 BOLT PATTERN 4

NOT TO SCALE

NOTES:
1. ALL HARDWARE DETAILED ON THIS SHEET IS TO BE GALVANIZED.
2. THE FOLLOWING ITEMS DETAILED ON THIS SHEET ARE FRACTURE CRITICAL: THE FLOOR BEAM HANGER RODS, THE TIE BEAM HANGERS AND THE FLOOR BEAM HANGER BRACKETS.

NOTE: THIS SHEET FOR INFORMATION PURPOSES ONLY. DETAILS PROVIDED BY WESTERN WOOD STRUCTURES, INC.

HANGER	BOLT PATTERN	A	B	C	D	E	F	G	H	I	J
H1	PATTERN 1	515	317	1132	821	1953	132	402	346	1635	82
H2	PATTERN 2	480	256	1033	779	1812	138	353	276	1556	66
H3	PATTERN 2	455	205	959	754	1713	145	316	220	1508	52
H4	PATTERN 3	437	161	902	741	1643	154	287	172	1481	41
H5	PATTERN 3	424	122	857	735	1592	163	263	129	1470	31
H6	PATTERN 4	415	85	821	736	1557	177	239	90	1472	22
H7	PATTERN 4	409	50	793	743	1536	184	225	53	1485	13
H8	PATTERN 4	406	17	770	755	1525	196	210	18	1508	4

TYPICAL FLOOR BEAM HANGER

NOT TO SCALE

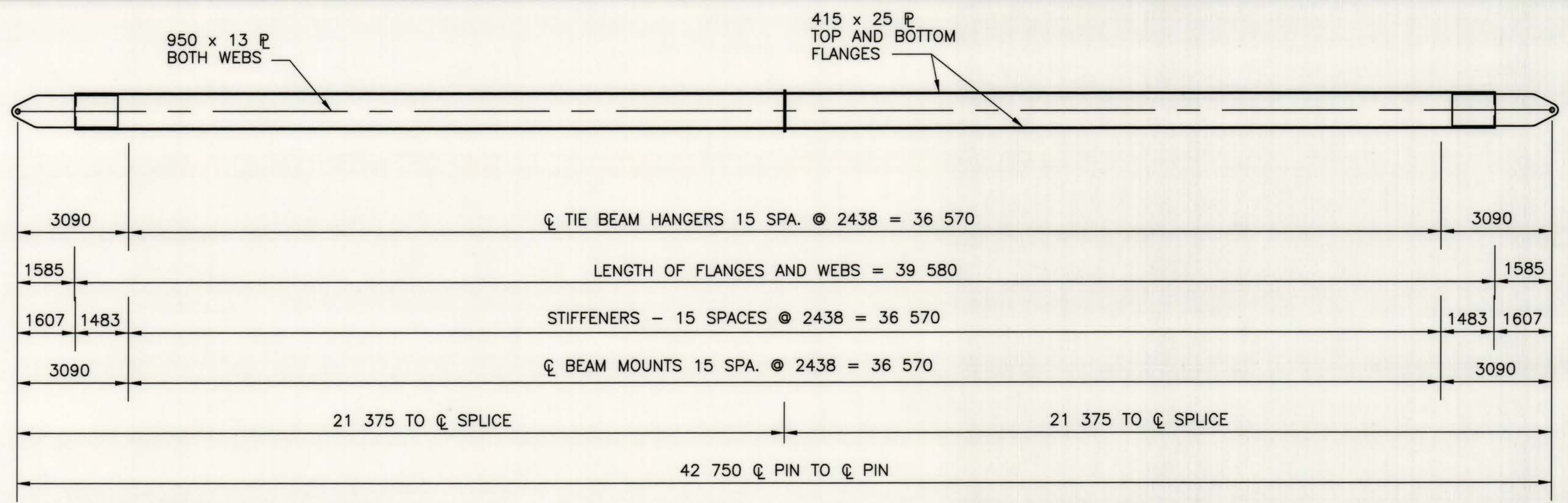
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ARCH ELEVATION AND DETAILS

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET NO.	9
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	AS NOTED	BRIDGE NO.	4415
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS							MORGANTOWN, WEST VIRGINIA	

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

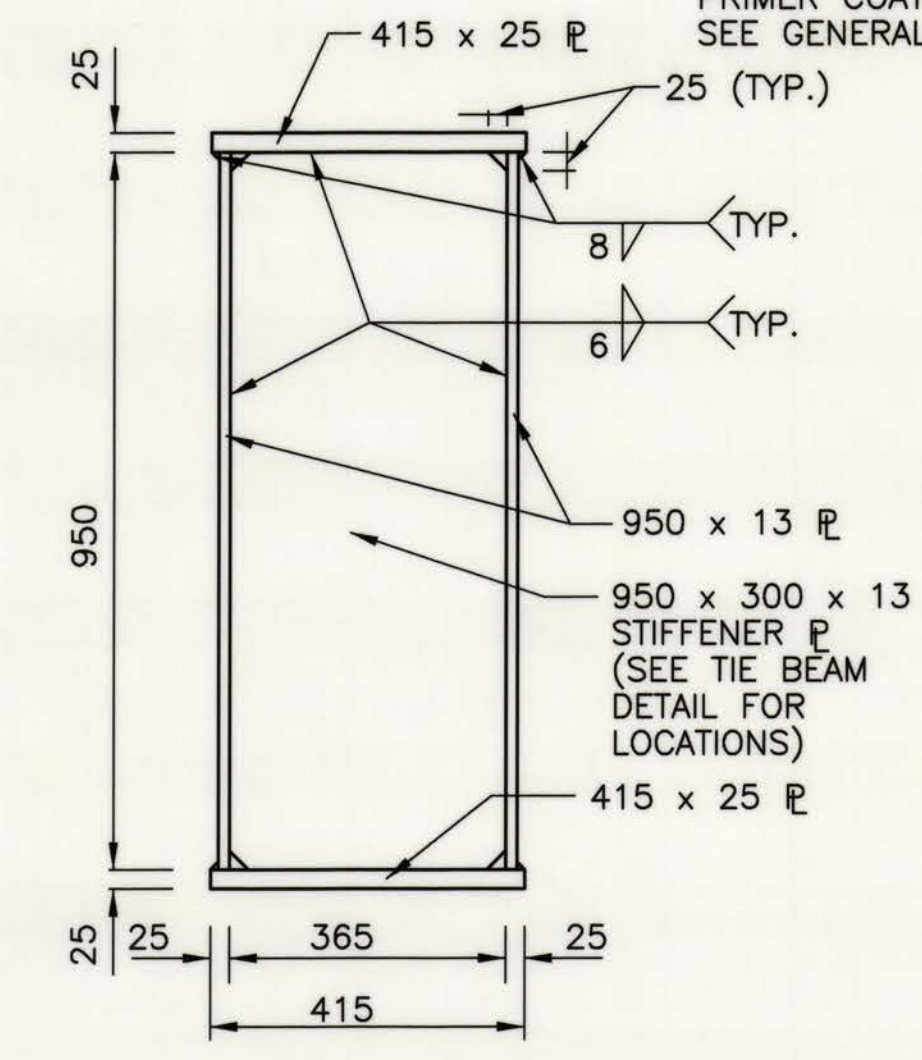
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	56	73

THE INSIDE OF THE BOX IS TO BE GIVEN A PRIMER COAT OF PAINT SEE GENERAL NOTES SHEET

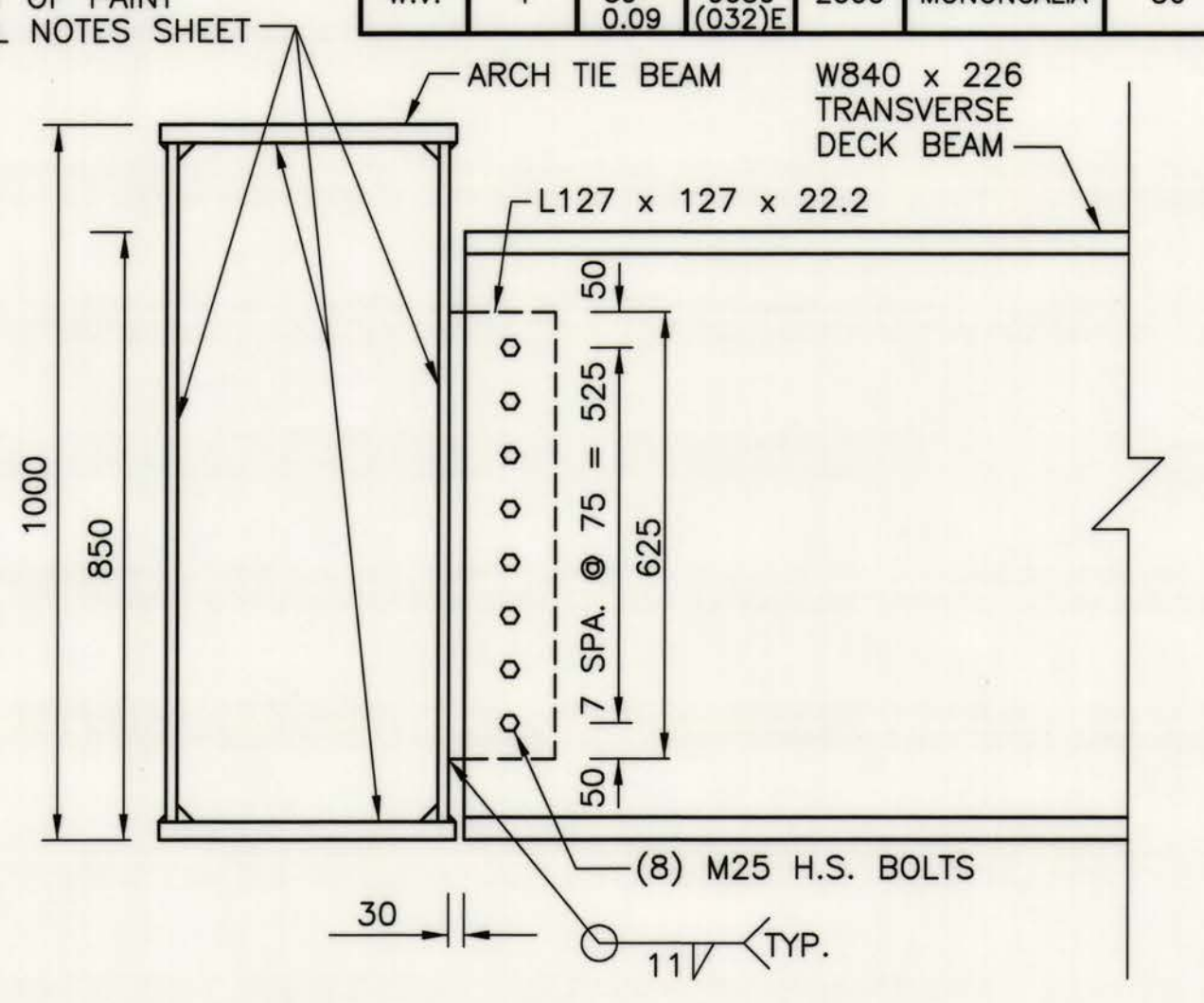


- NOTE:**
1. THE TIE BEAM IS FRACTURE CRITICAL
 2. THE TIE BEAM SHOULD BE ADJUSTED TO WITHIN 1/2" OF PROFILE GRADE USING THE ADJUSTABLE HANGER RODS BEFORE DECK BEAMS ARE INSTALLED
 3. AFTER THE ASPHALTIC OVERLAY HAS BEEN INSTALLED, THE TIE BEAM SHOULD BE ADJUSTED TO MATCH THE PROFILE GRADE USING THE ADJUSTABLE HANGER RODS
 4. SEE SHEET 9 FOR TIE BEAM HANGER DETAIL

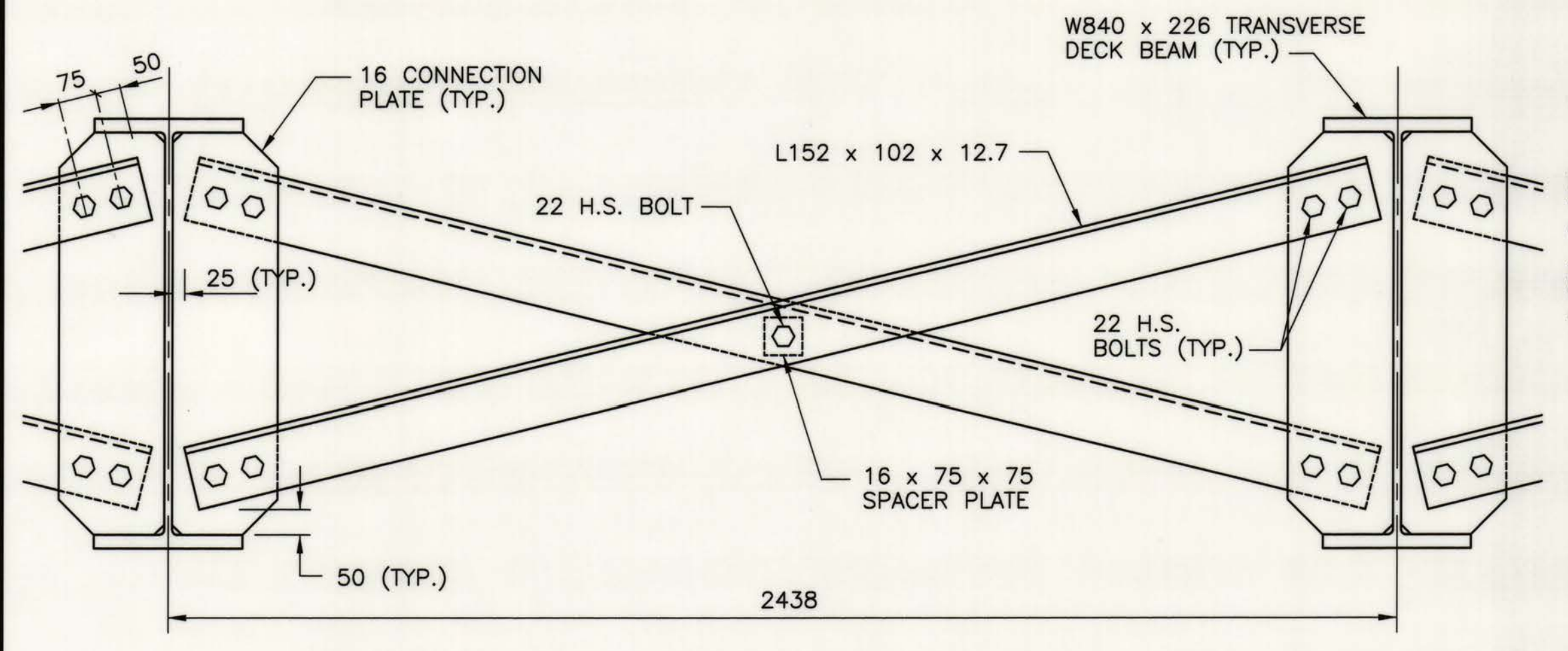
TIE BEAM DETAIL
1:100



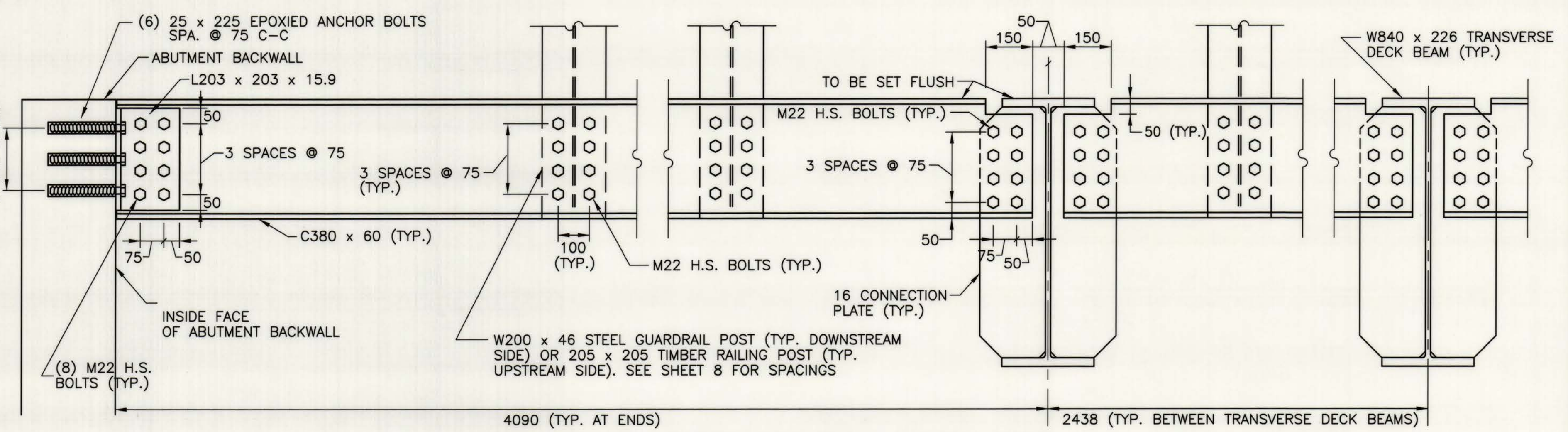
TIE BEAM CROSS SECTION
1:10
NOTE: CORNERS OF END STIFFENERS TO BE SEALED



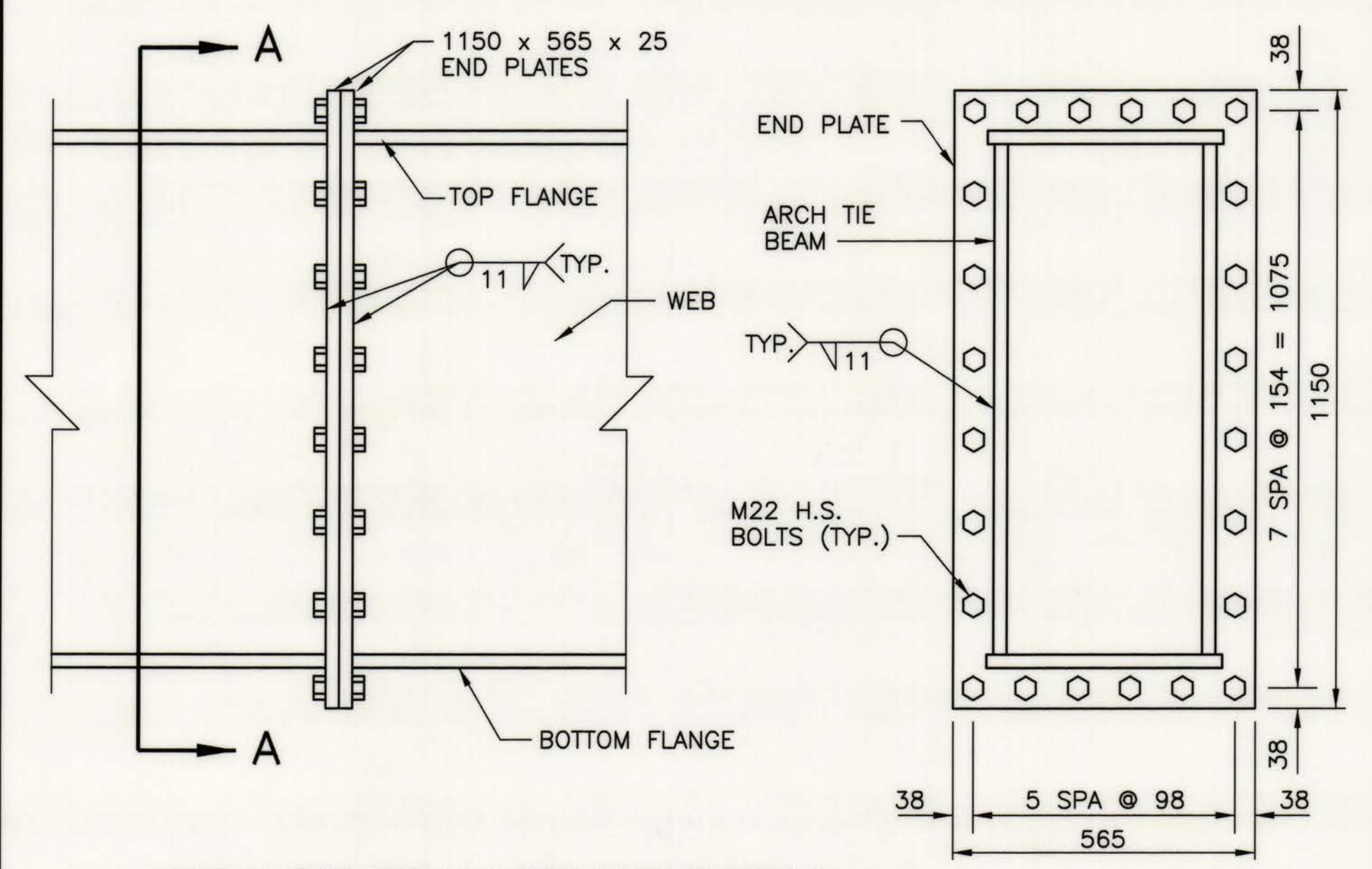
TRANSVERSE DECK BEAM CONNECTION
1:10
NOTE: ONE OF EACH PAIR OF CONNECTION ANGLES SHOULD BE SHOP WELDED TO TIE BEAMS



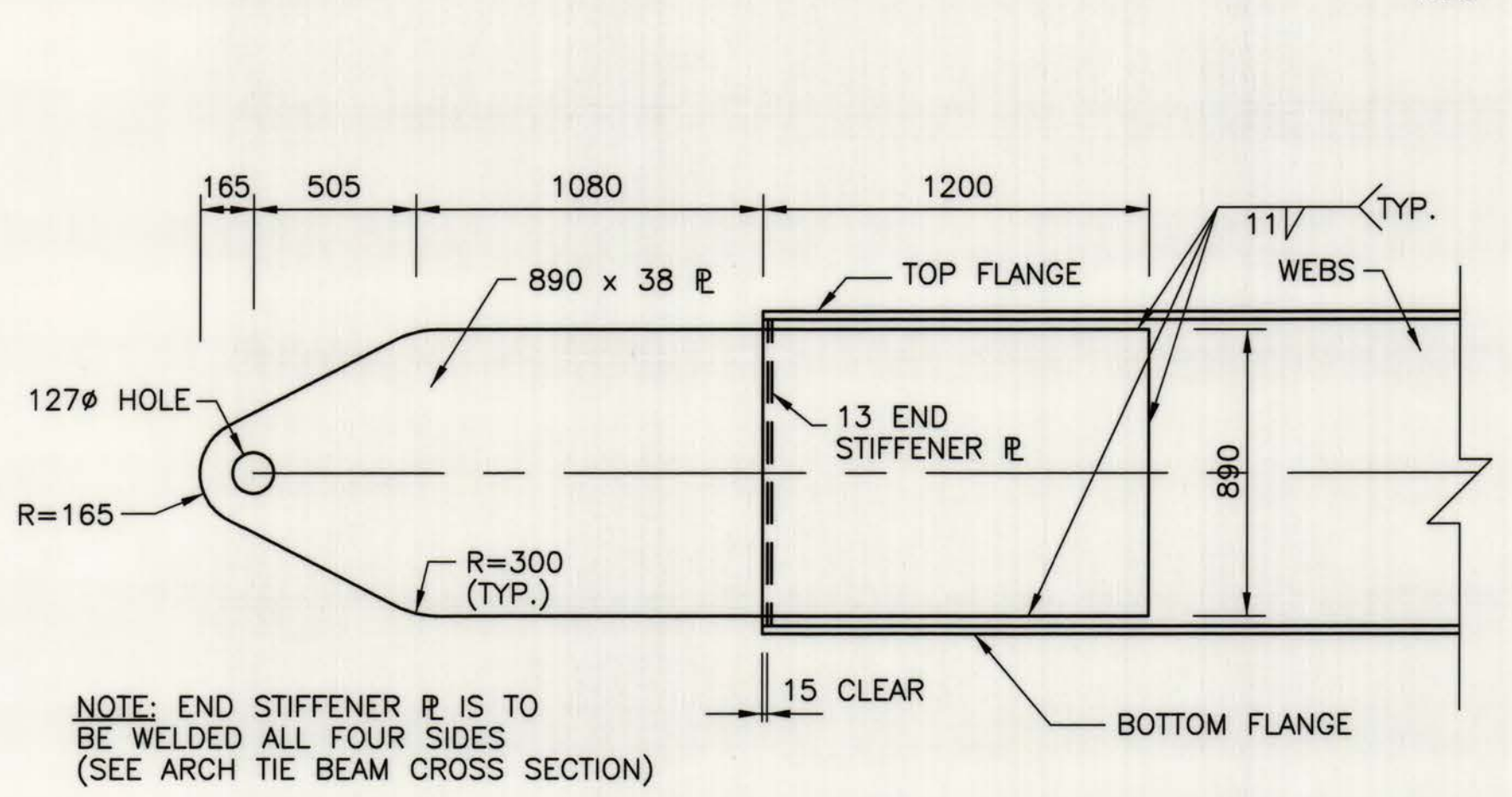
TYPICAL CROSS FRAME DETAIL
1:10



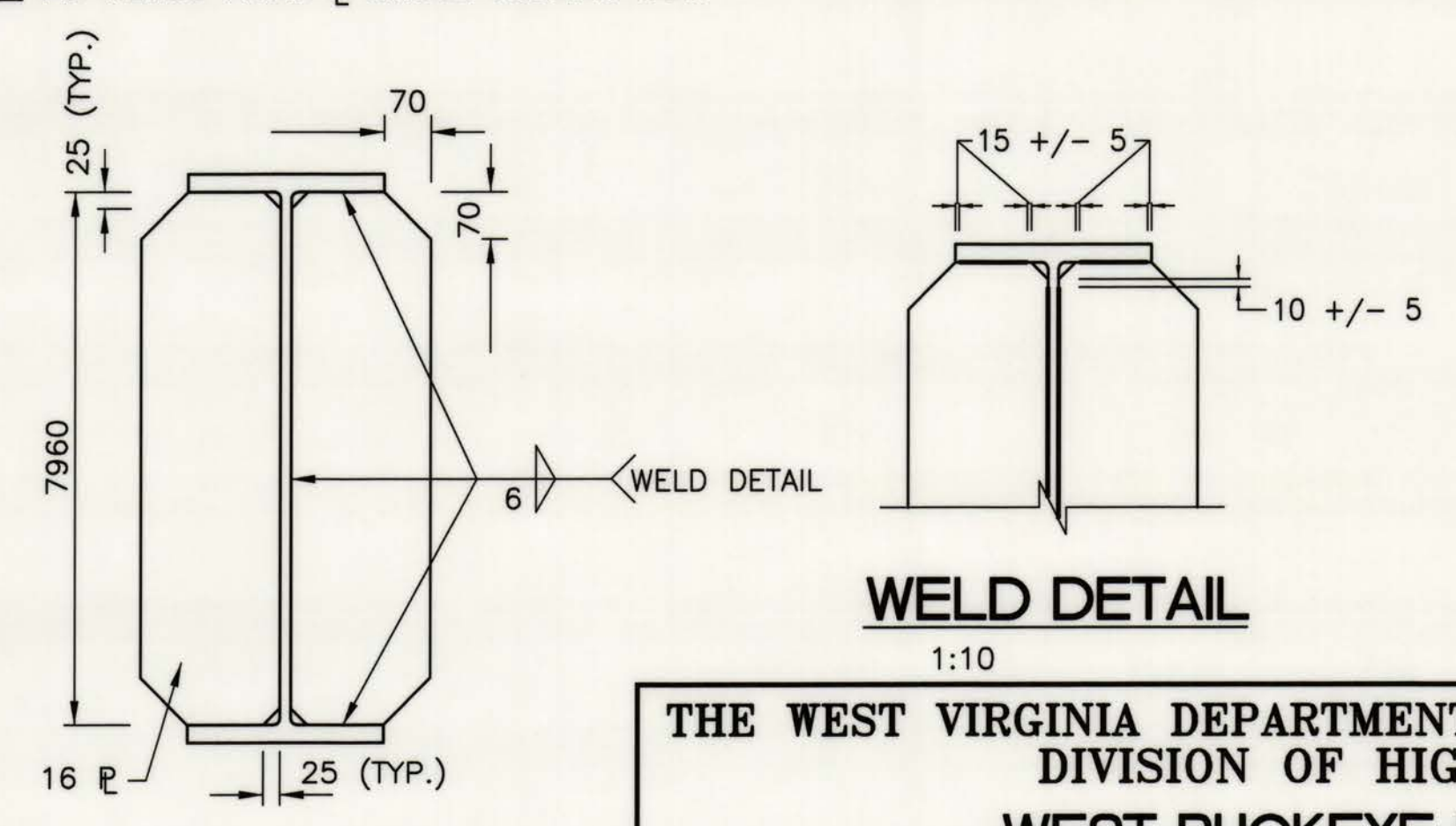
TYPICAL RAIL POST SUPPORT CHANNEL DETAIL
1:10
NOTE: AS VIEWED FROM Q BRIDGE LOOKING OUT.



ARCH TIE BEAM SPLICE DETAIL
1:10



ARCH TIE BEAM END DETAIL
1:20



CONNECTION PLATE DETAIL
1:10

WELD DETAIL
1:10

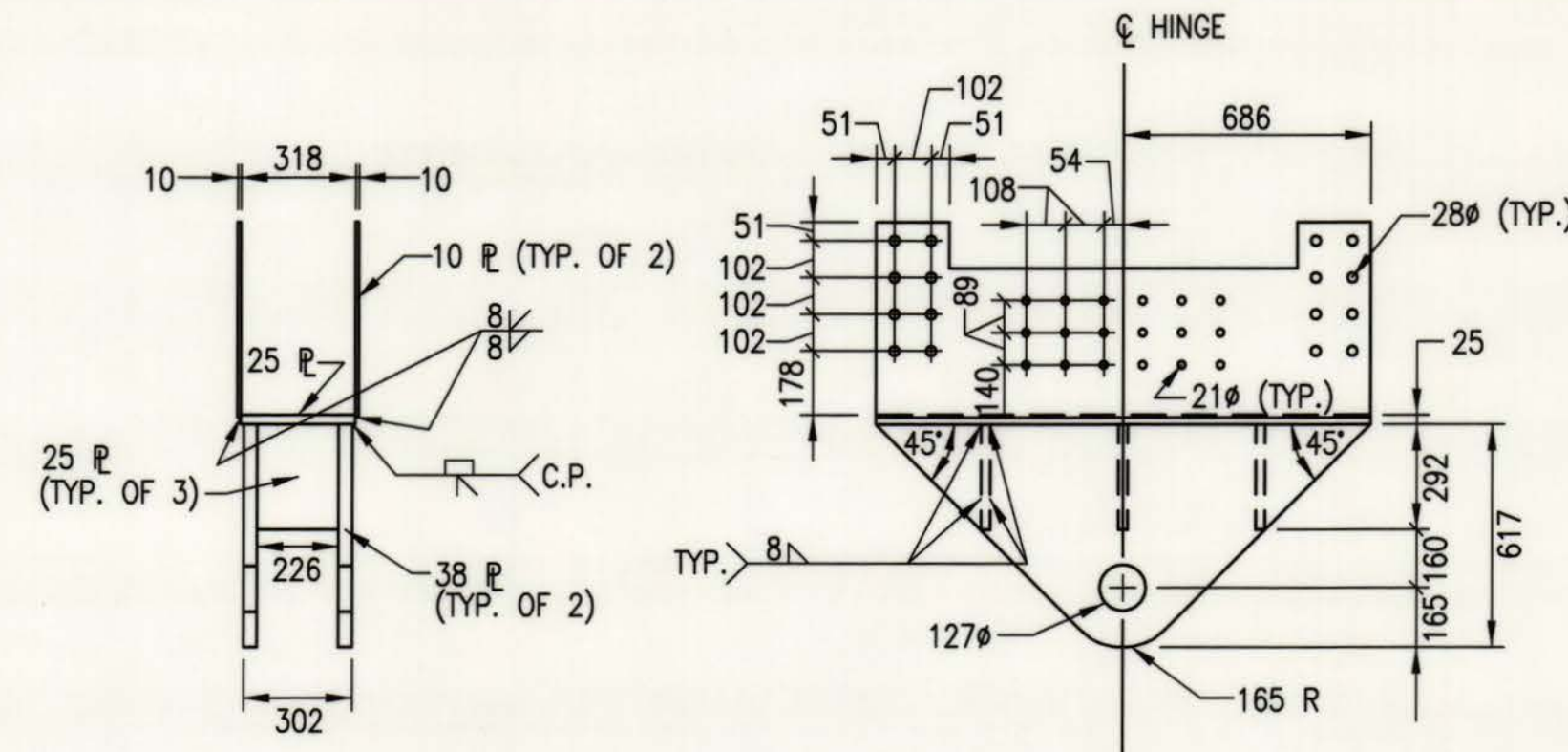
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
TIE BEAM AND DETAILS

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET	10
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	AS NOTED	BRIDGE NO.	4415

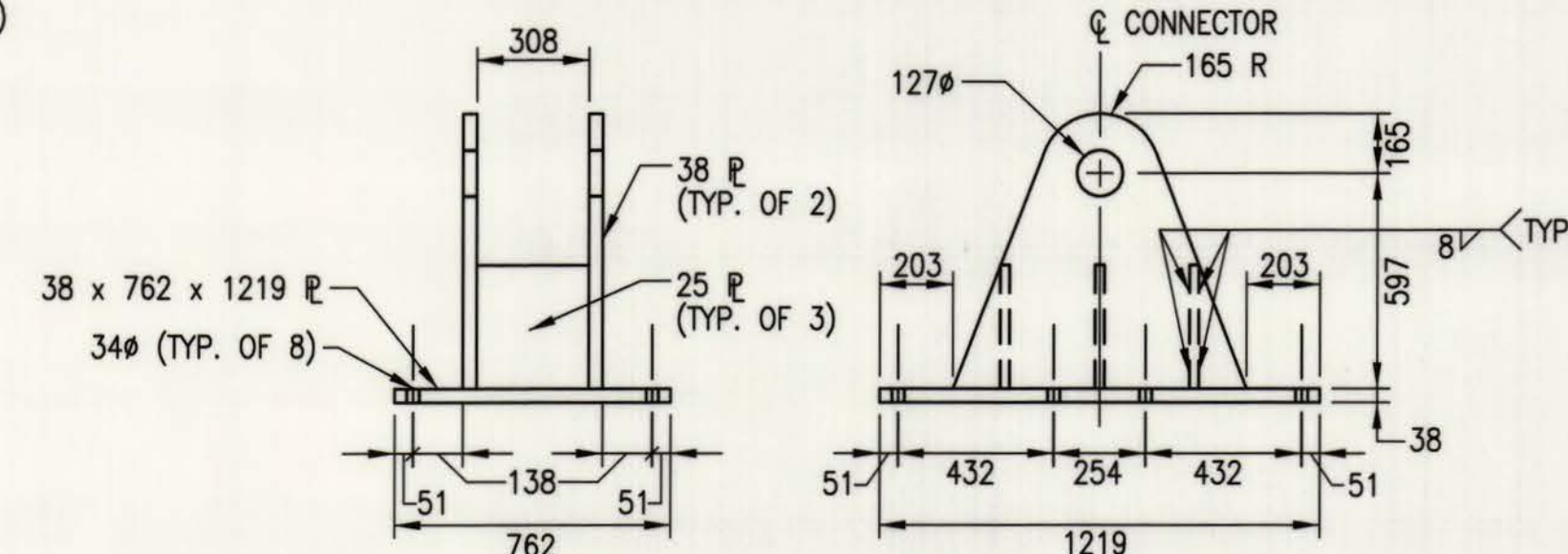
ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

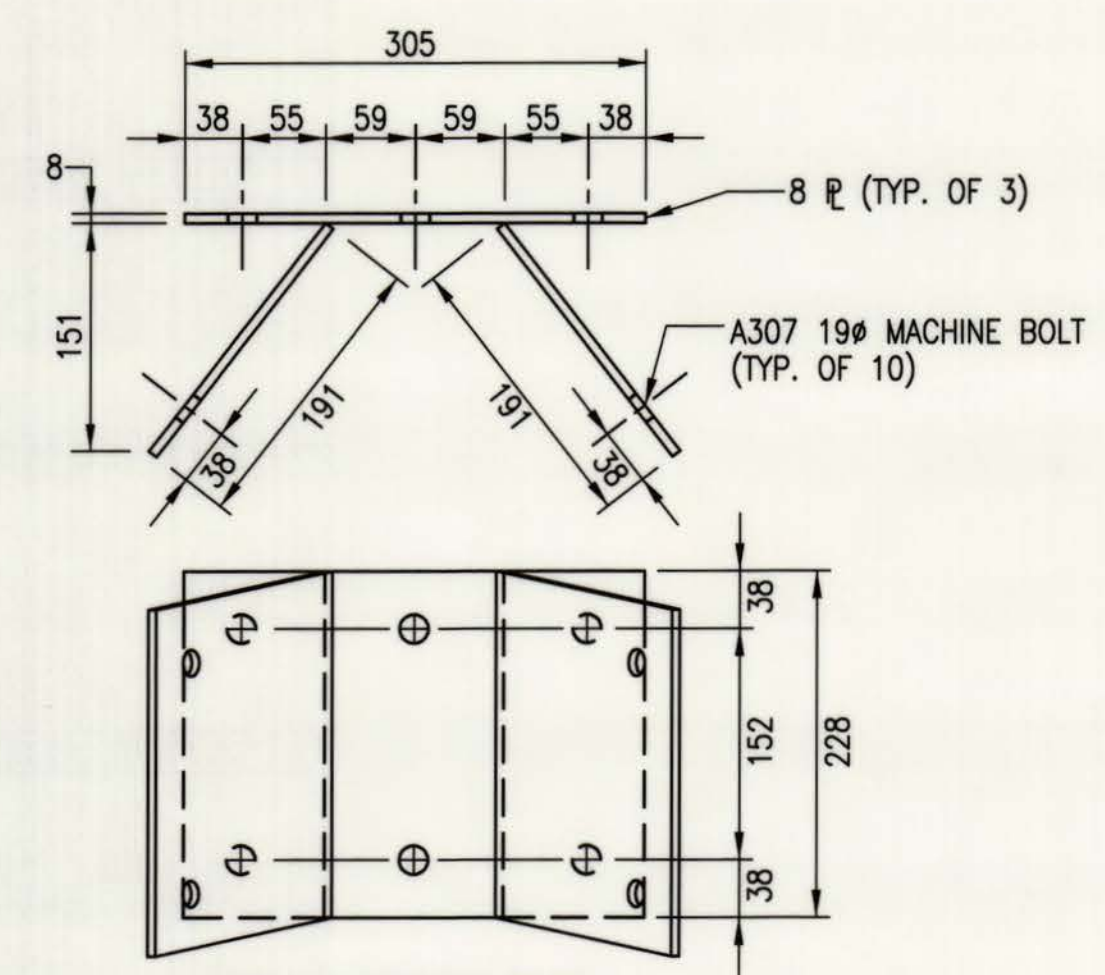
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	57	73



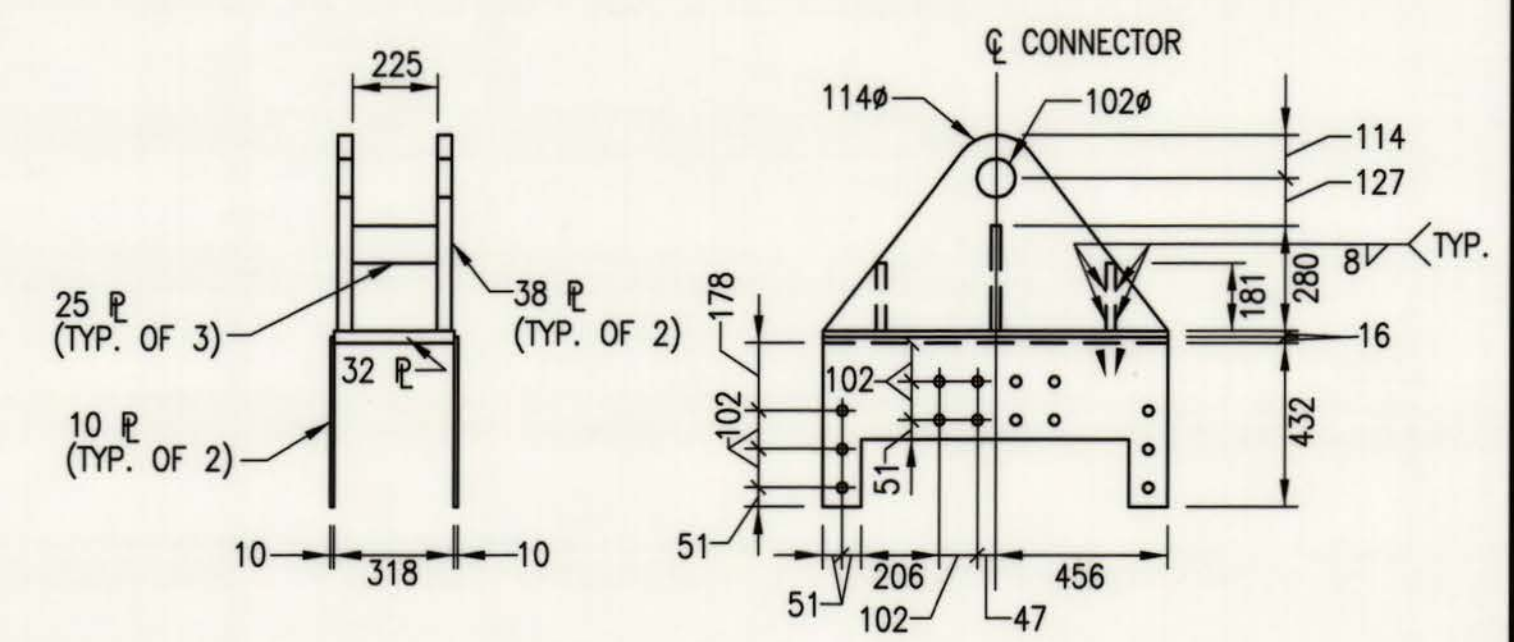
ARCH BASE HINGE
1:20



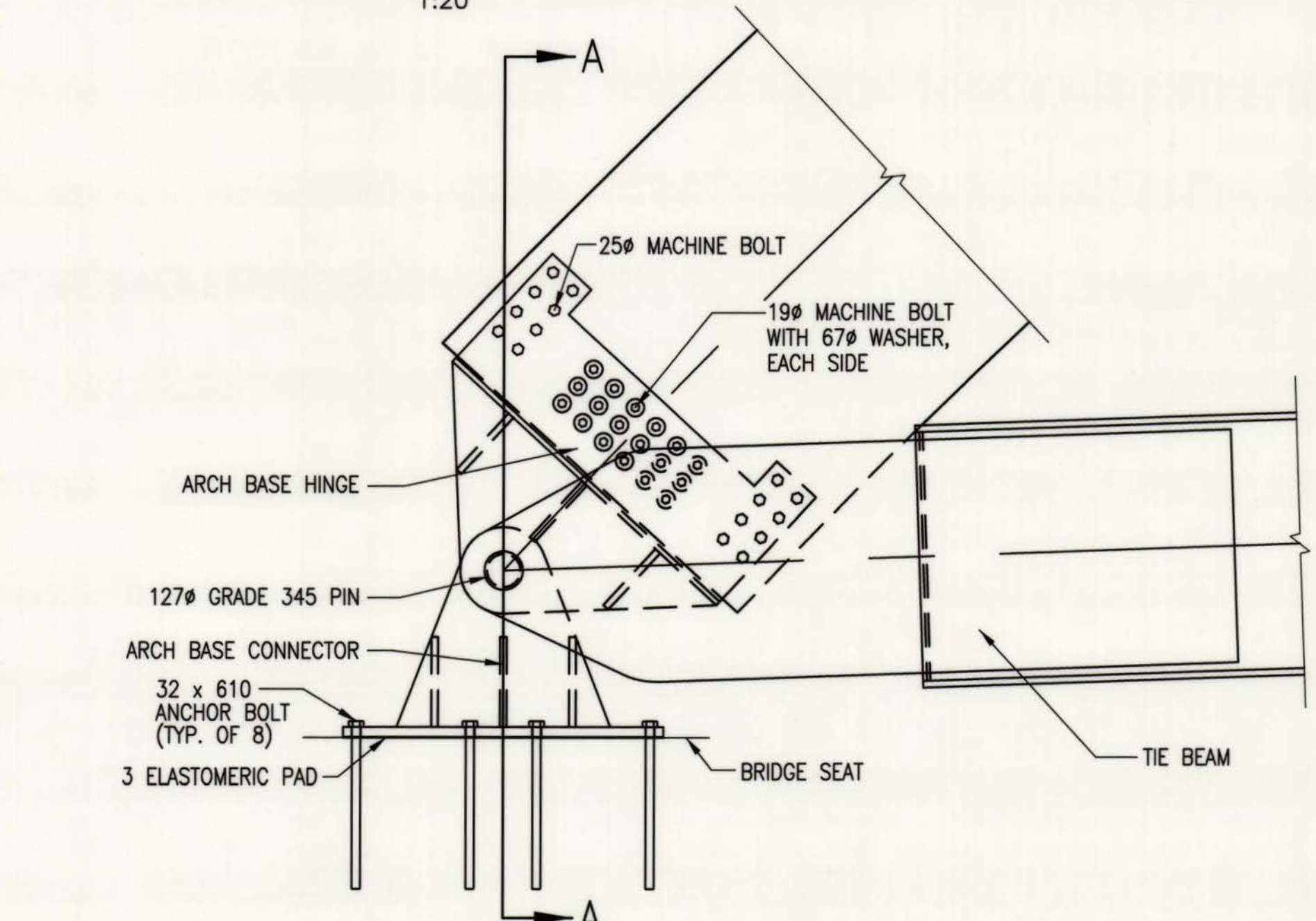
ARCH BASE CONNECTOR
1:20



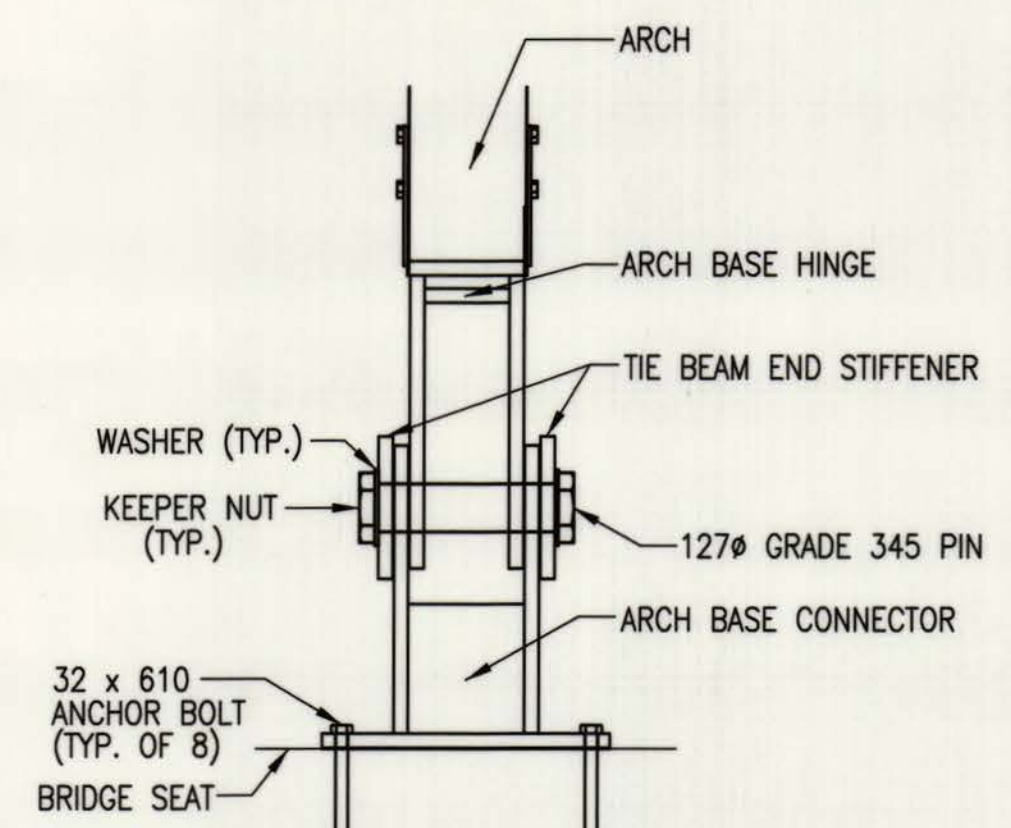
DIAGONAL TO STRUT CONNECTOR
NOTE: ALL WELDS 5 FILLET
NOT TO SCALE



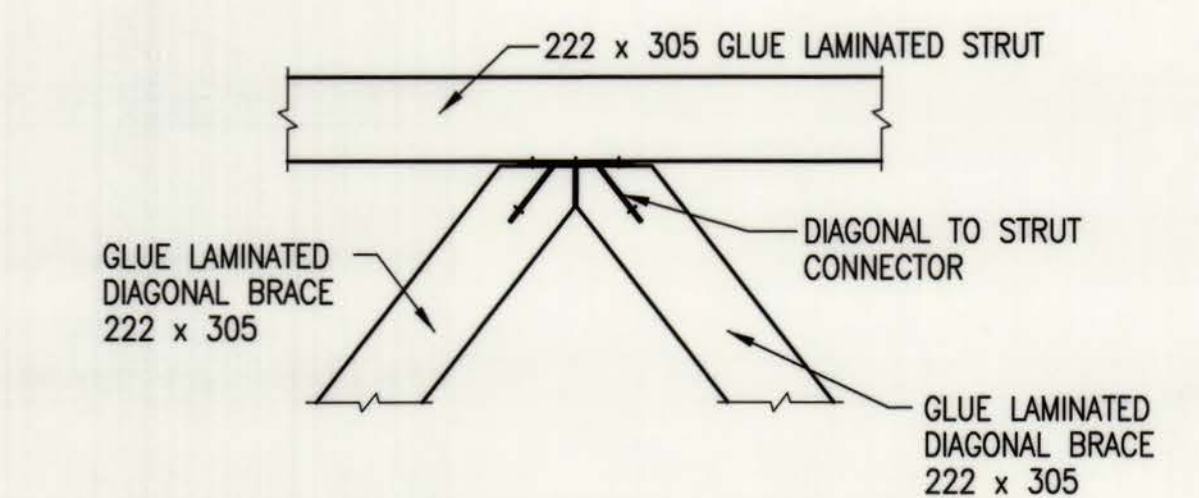
ARCH CROWN CONNECTOR 1
1:20



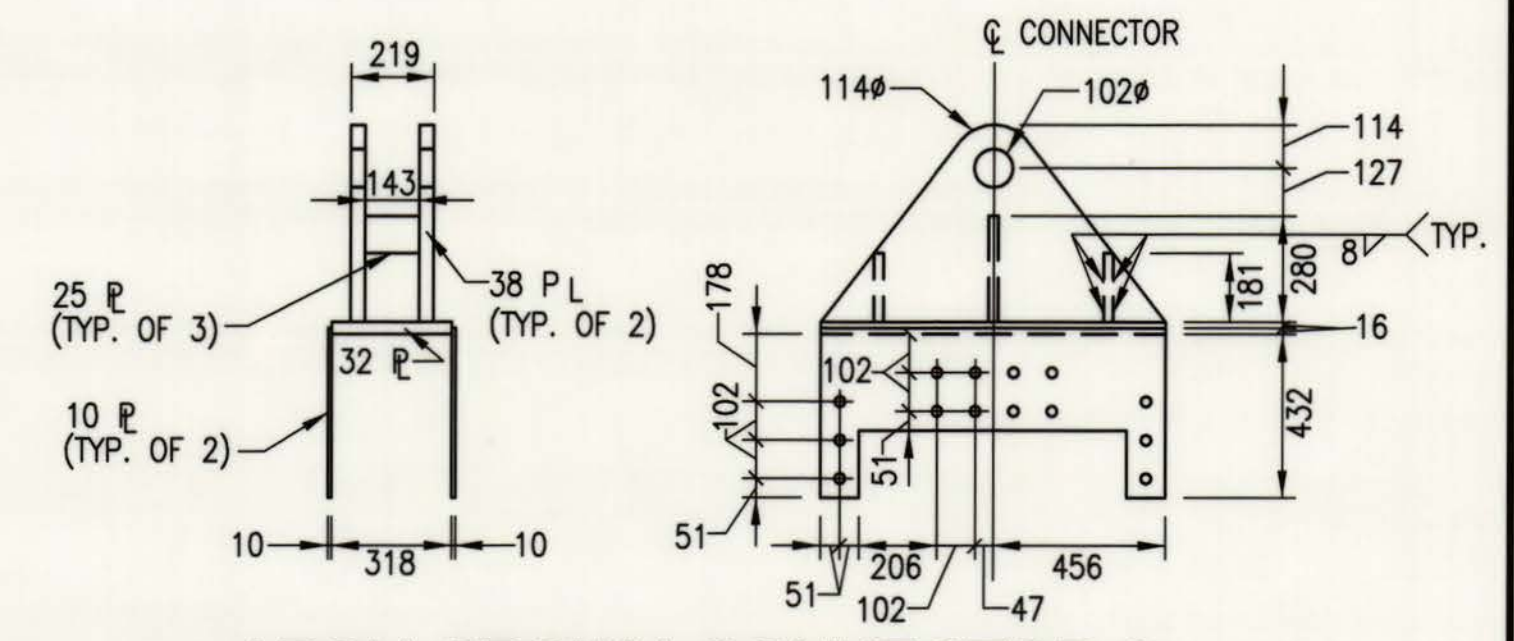
ARCH HEEL ASSEMBLY
1:20



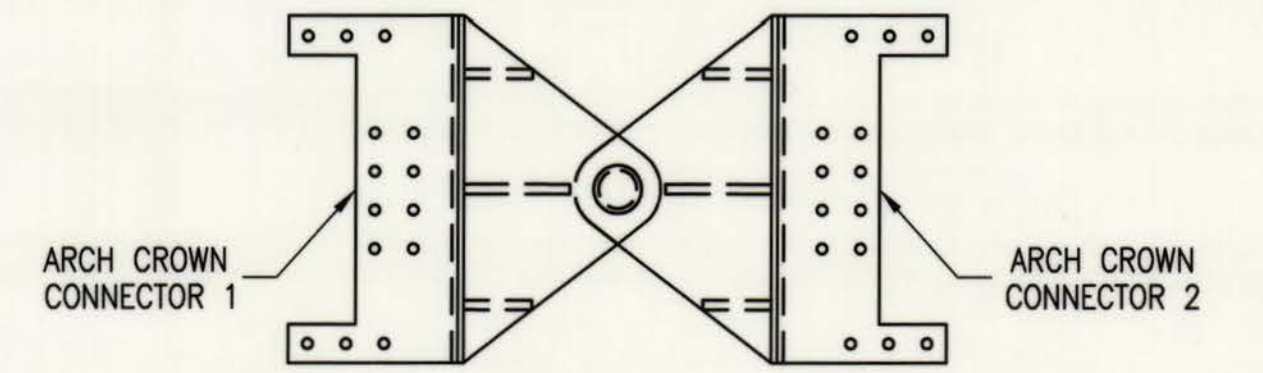
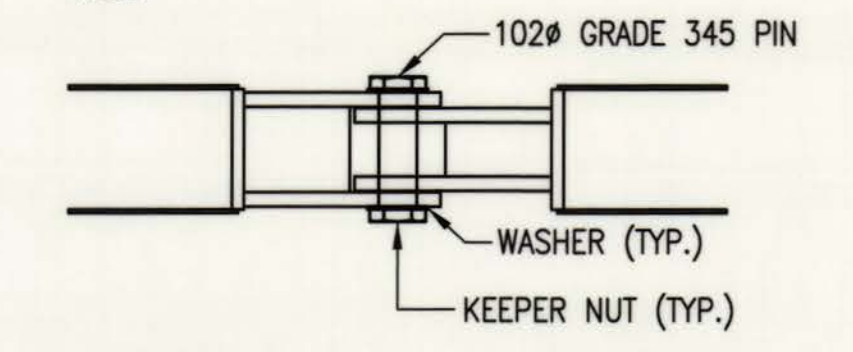
SECTION A-A



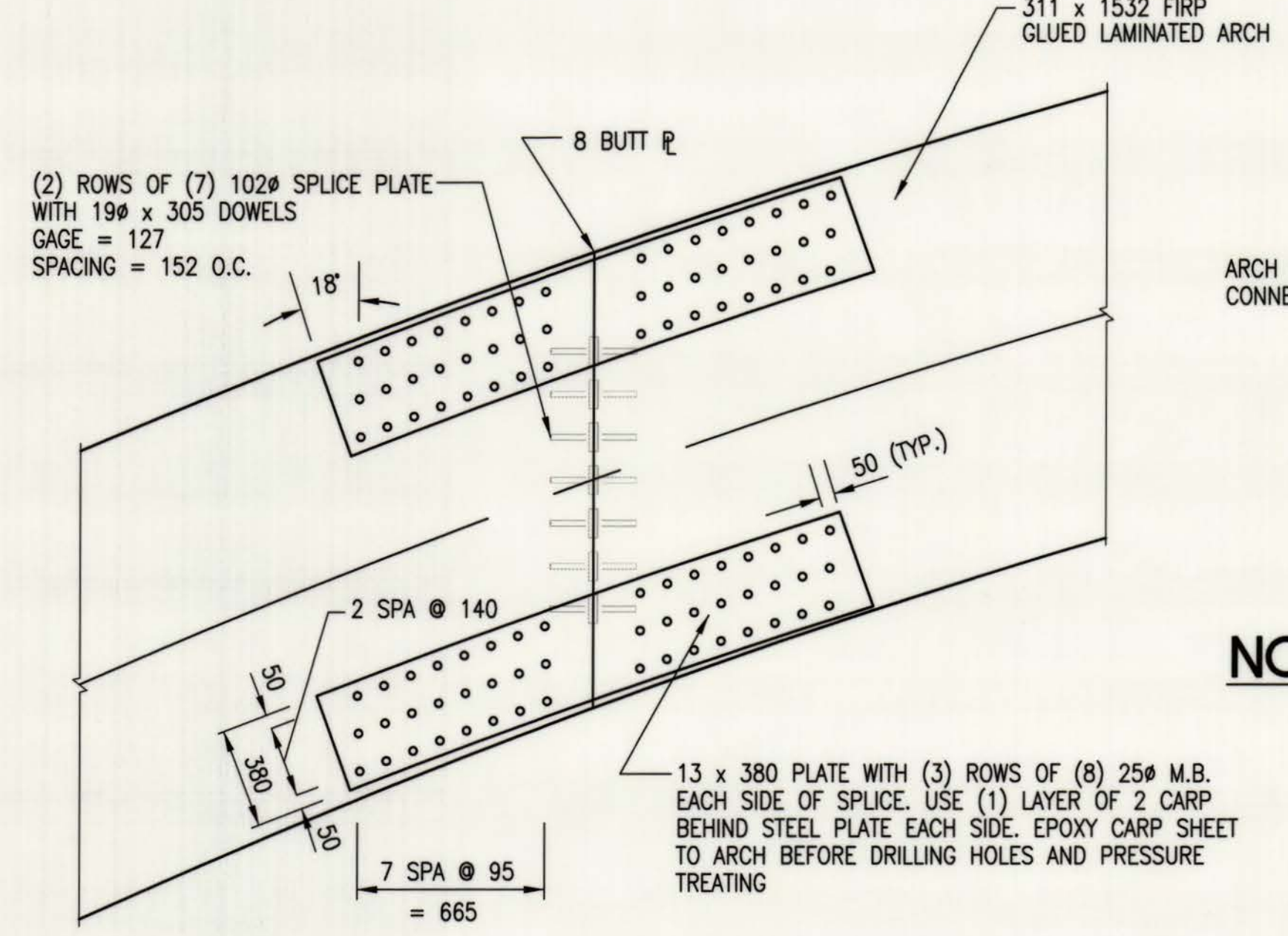
DIAGONAL TO STRUT CONNECTION
1:20



ARCH CROWN CONNECTOR 2
1:20

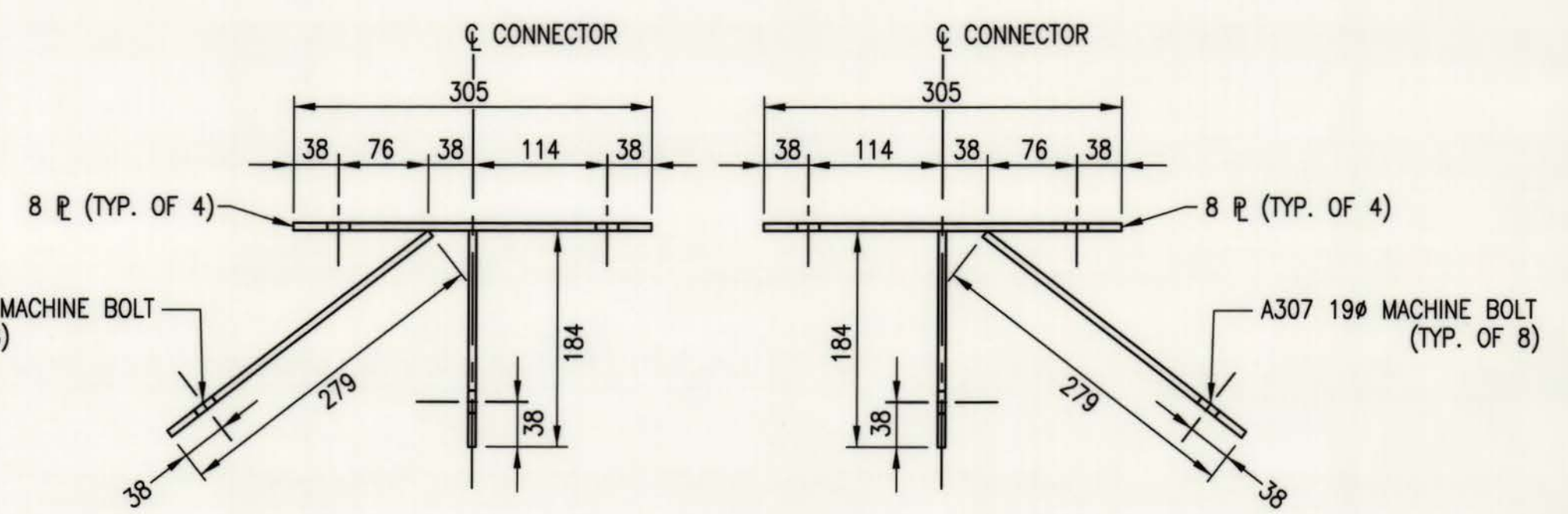


ARCH CROWN CONNECTION
1:20

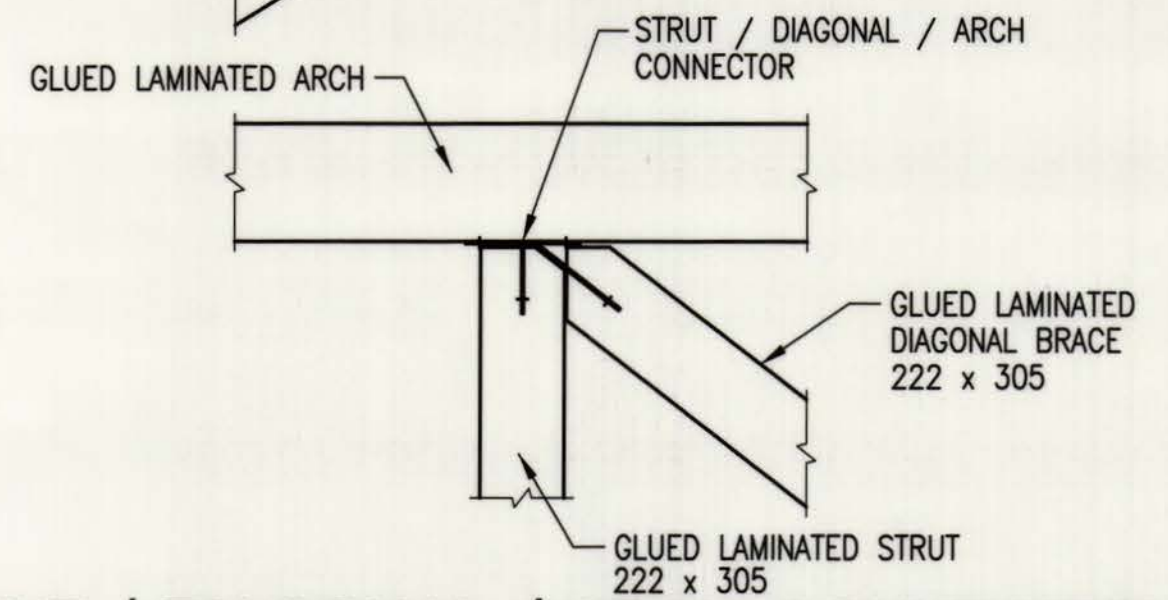


ARCH SPLICE DETAIL
1:20

NOTE: THE FOLLOWING ITEMS DETAILED ON THIS SHEET ARE FRACTURE CRITICAL: THE ARCH BASE HINGE, THE ARCH BASE CONNECTOR, THE ARCH CROWN CONNECTORS, 1 AND 2, AND THE ARCH SPLICE PLATES.



STRUT / DIAGONAL / ARCH CONNECTORS
NOT TO SCALE



STRUT / DIAGONAL / ARCH CONNECTION
1:20

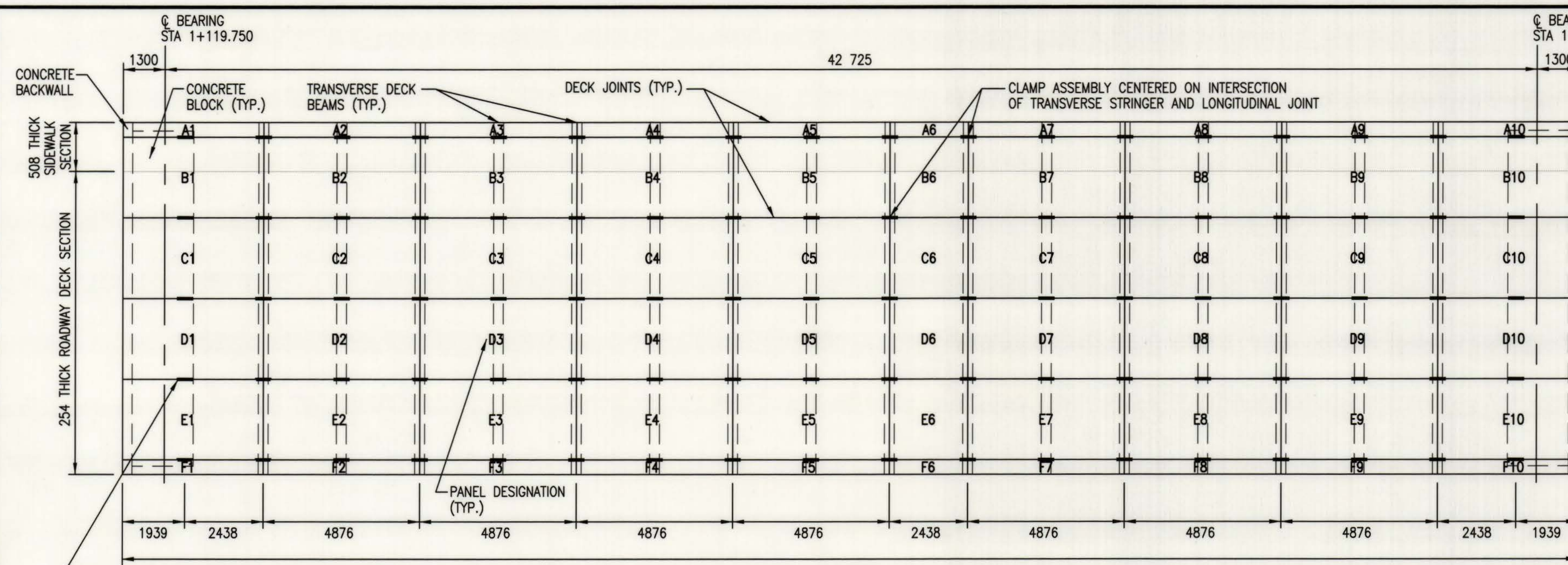
NOTE: THIS SHEET FOR INFORMATION PURPOSES ONLY. DETAILS PROVIDED BY WESTERN WOOD STRUCTURES, INC.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
ARCH CONNECTIONS AND BEARING DETAILS

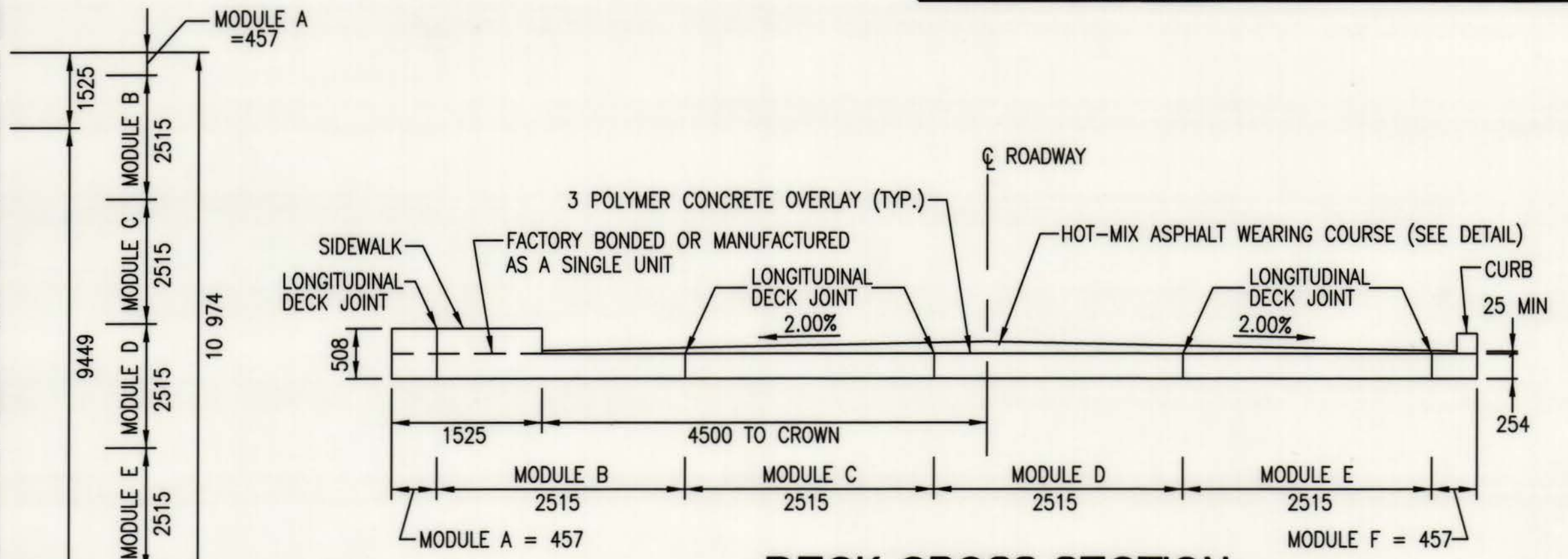
DESIGNED BY:	DRAWN BY: JM	INKED BY: HP	DATE: 09-29-00	SHEET 11
CHECKED BY:	CHECKED BY:	CHECKED BY: CL	SCALE: AS NOTED	
ALPHA ASSOCIATES, INCORPORATED				BRIDGE NO. 4415
CONSULTING ENGINEERS				MORGANTOWN, WEST VIRGINIA

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

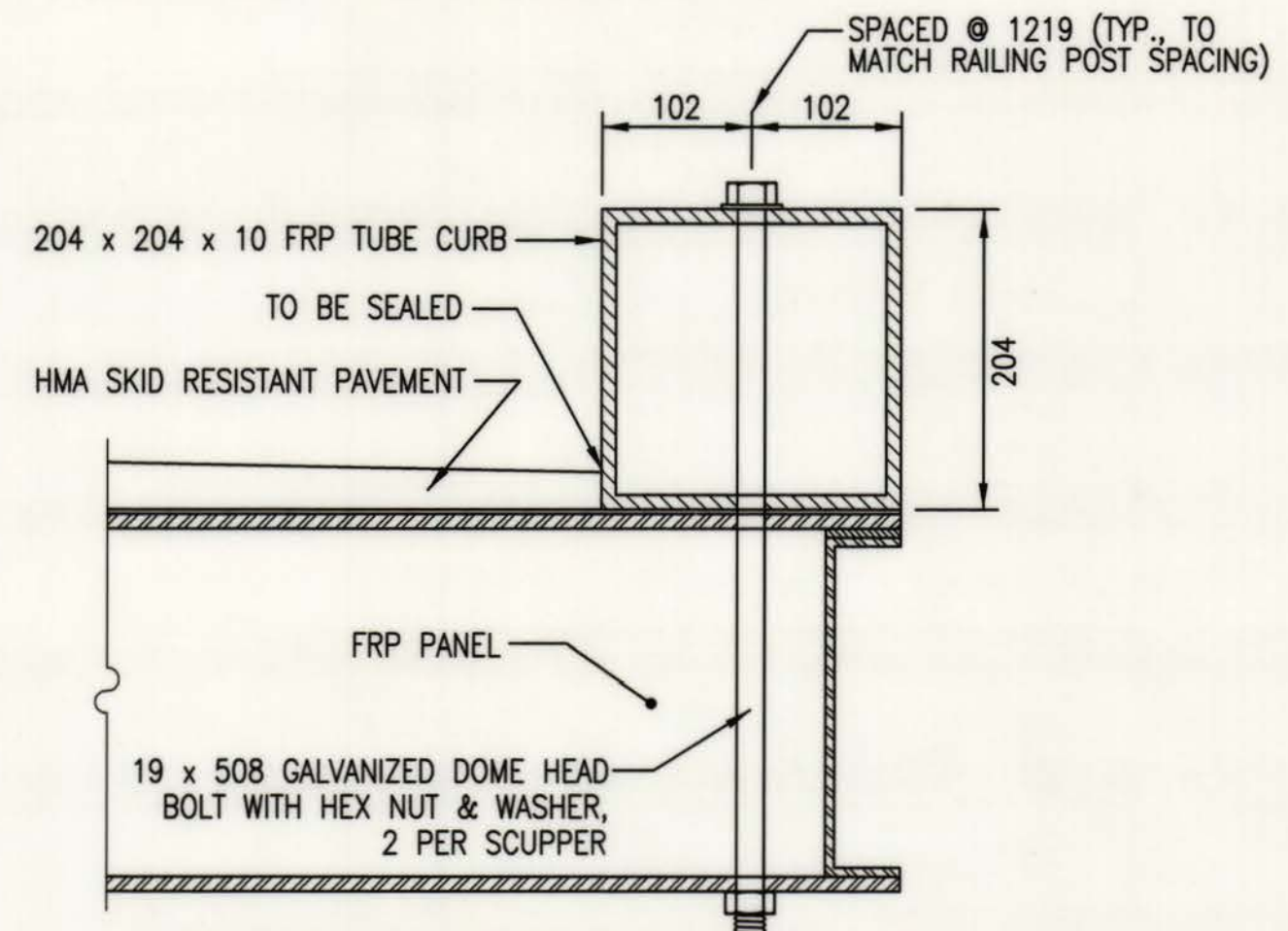
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	58	73



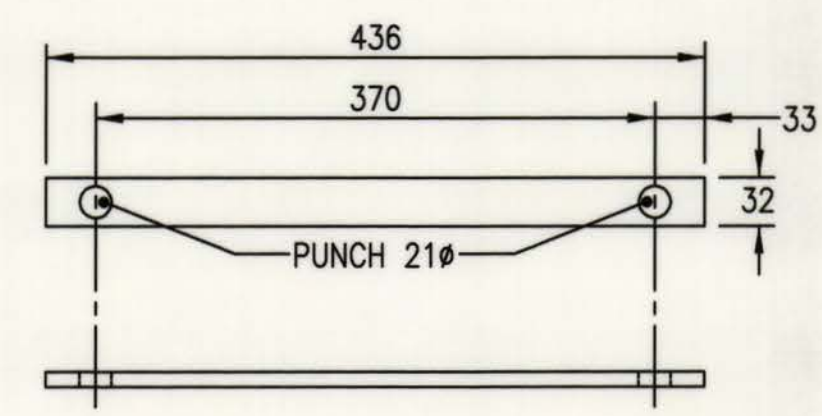
DECK PLAN
SCALE: 1:100



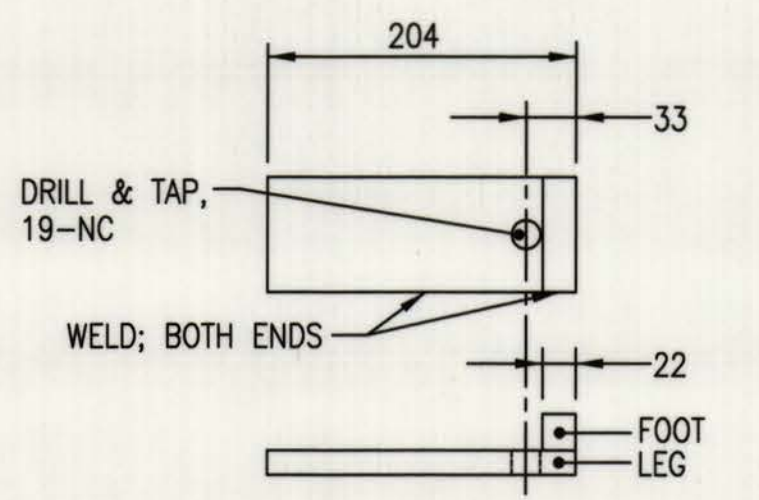
DECK CROSS SECTION
SCALE: 1:50



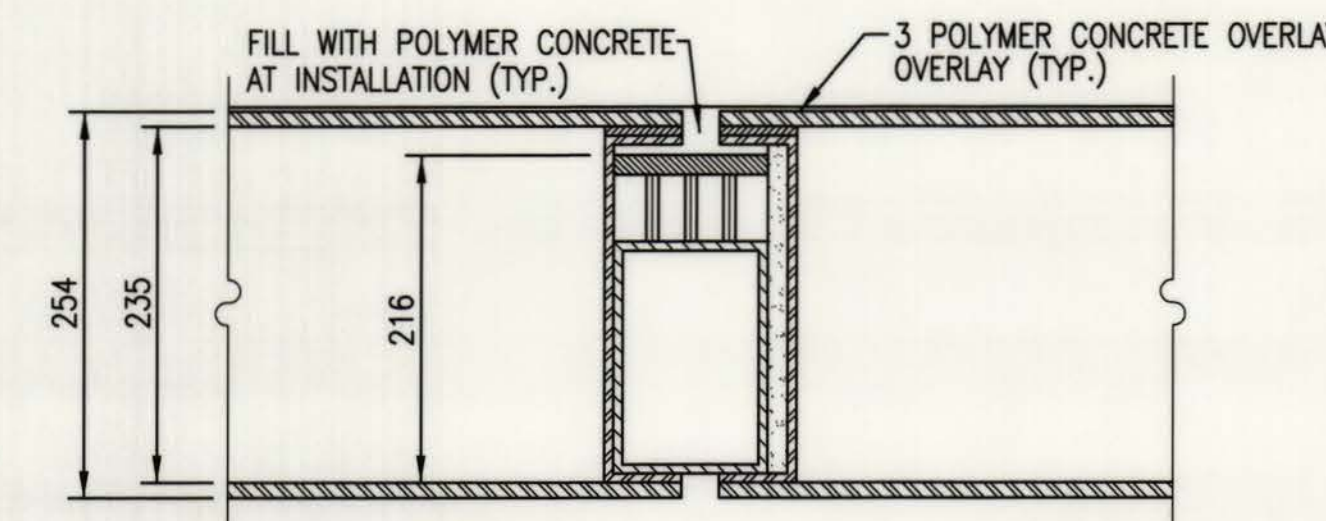
CURB INSTALLATION
NOT TO SCALE



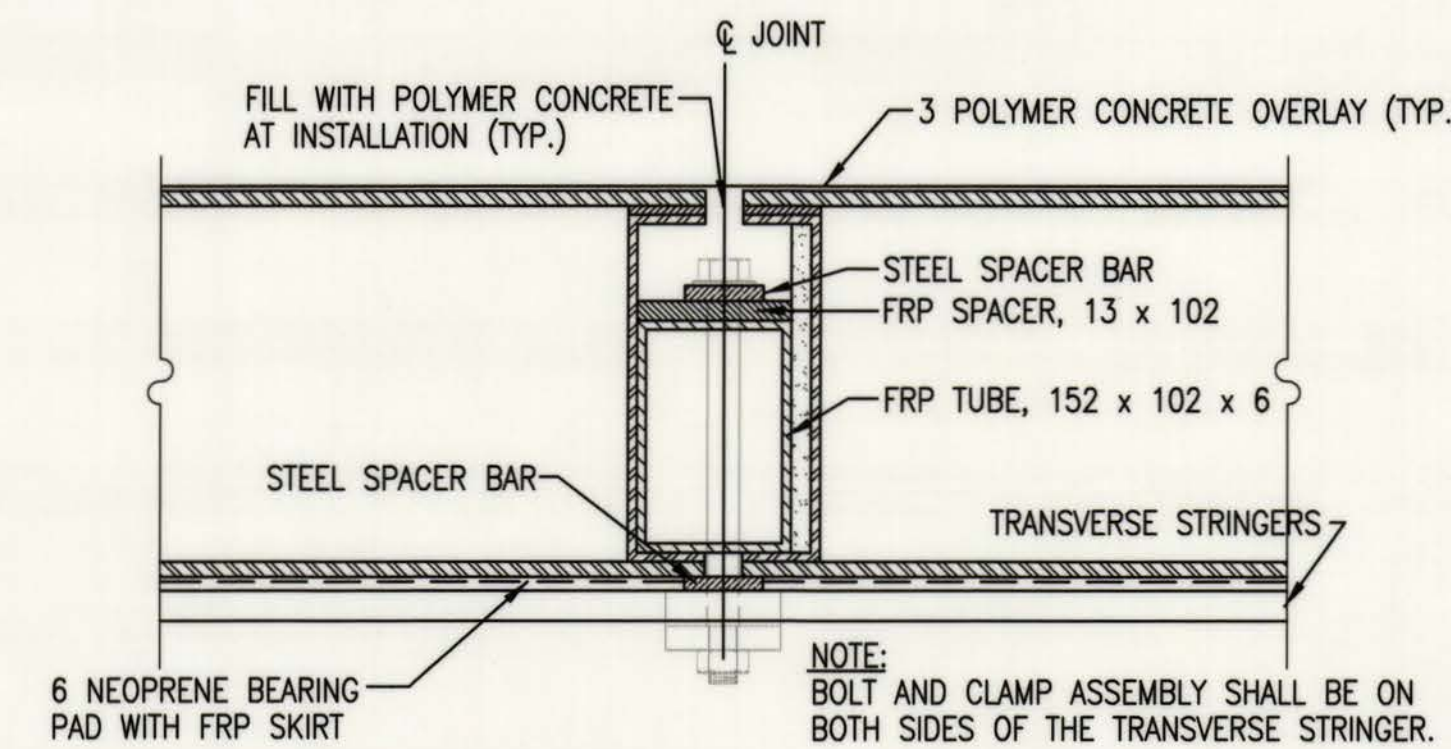
STEEL SPACER BARS
MATERIAL: 10 x 32; M270 GRADE 250



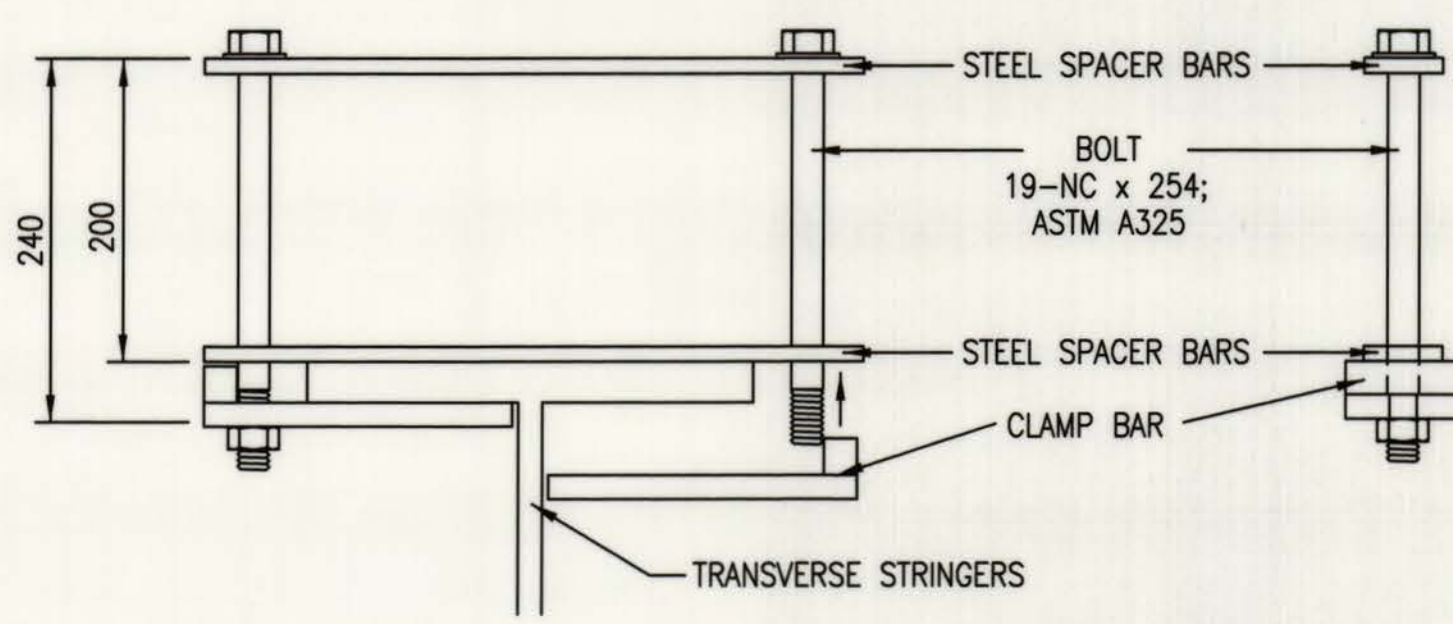
CLAMP BAR
LEG: 16 x 76; M270 GRADE 250
FEET: 24 x 22; M270 GRADE 250



ASSEMBLED LONGITUDINAL JOINT
NOT TO SCALE

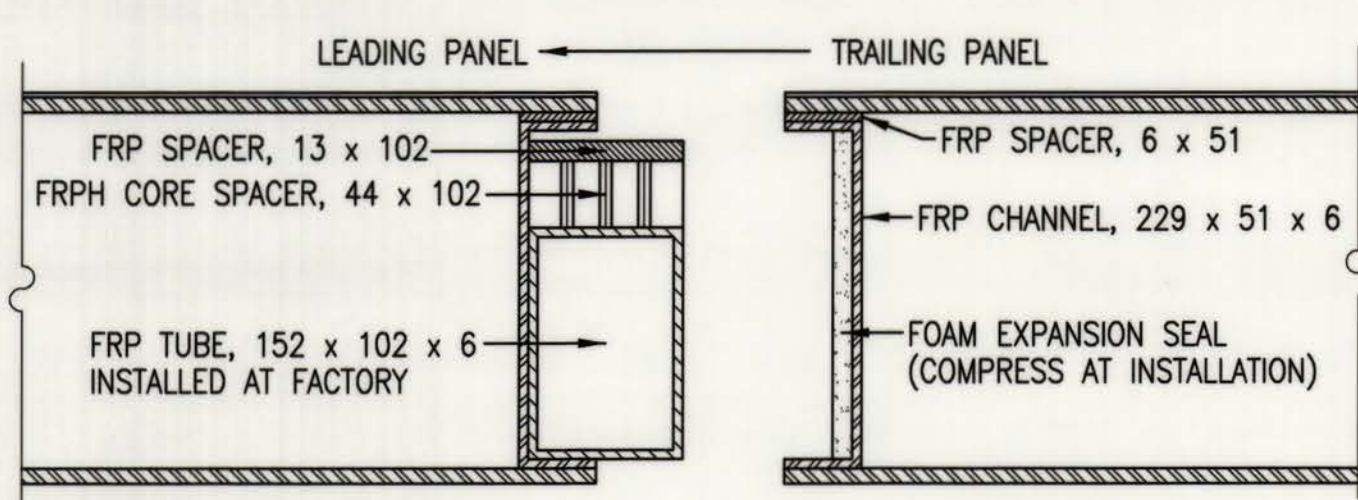


LONGITUDINAL JOINT OVER TRANSVERSE STRINGER
NOT TO SCALE

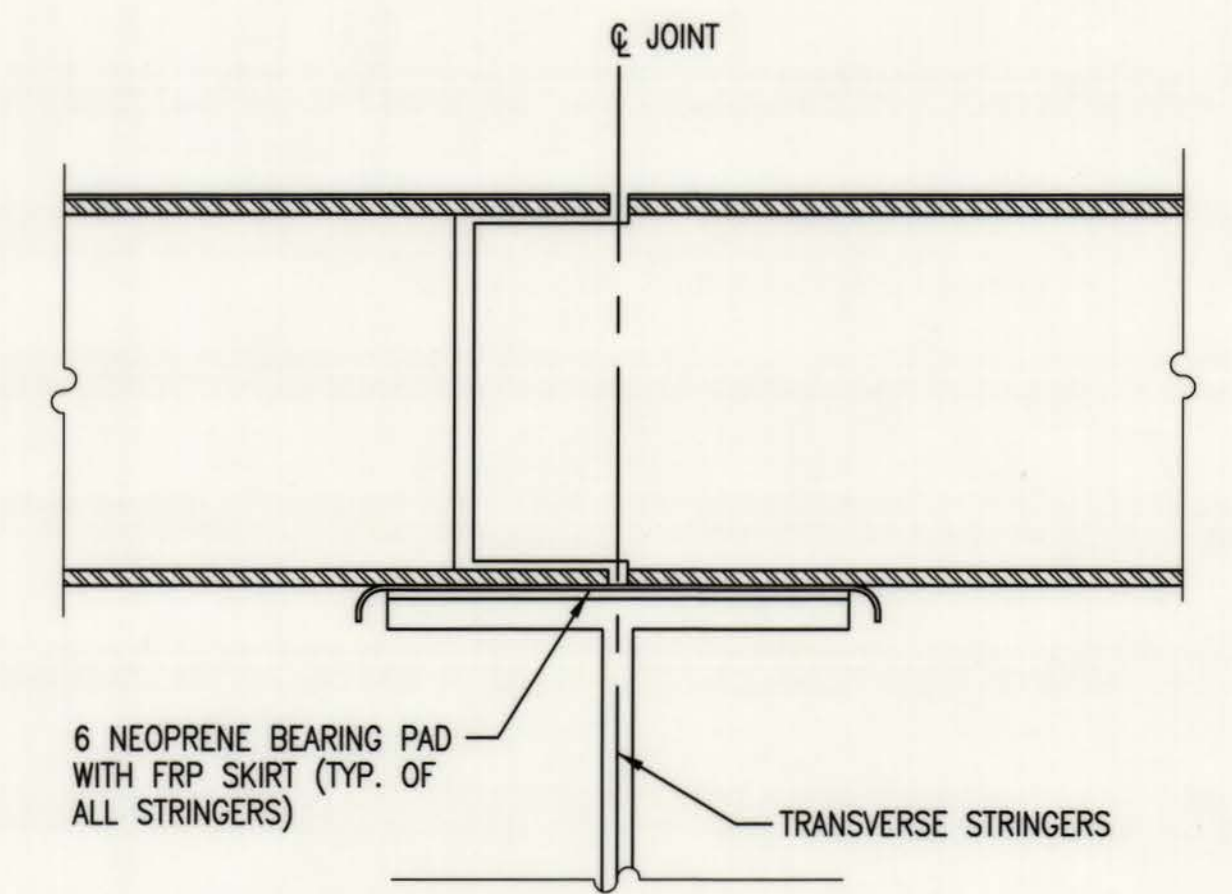


STEEL CLAMP ASSEMBLY
NOT TO SCALE

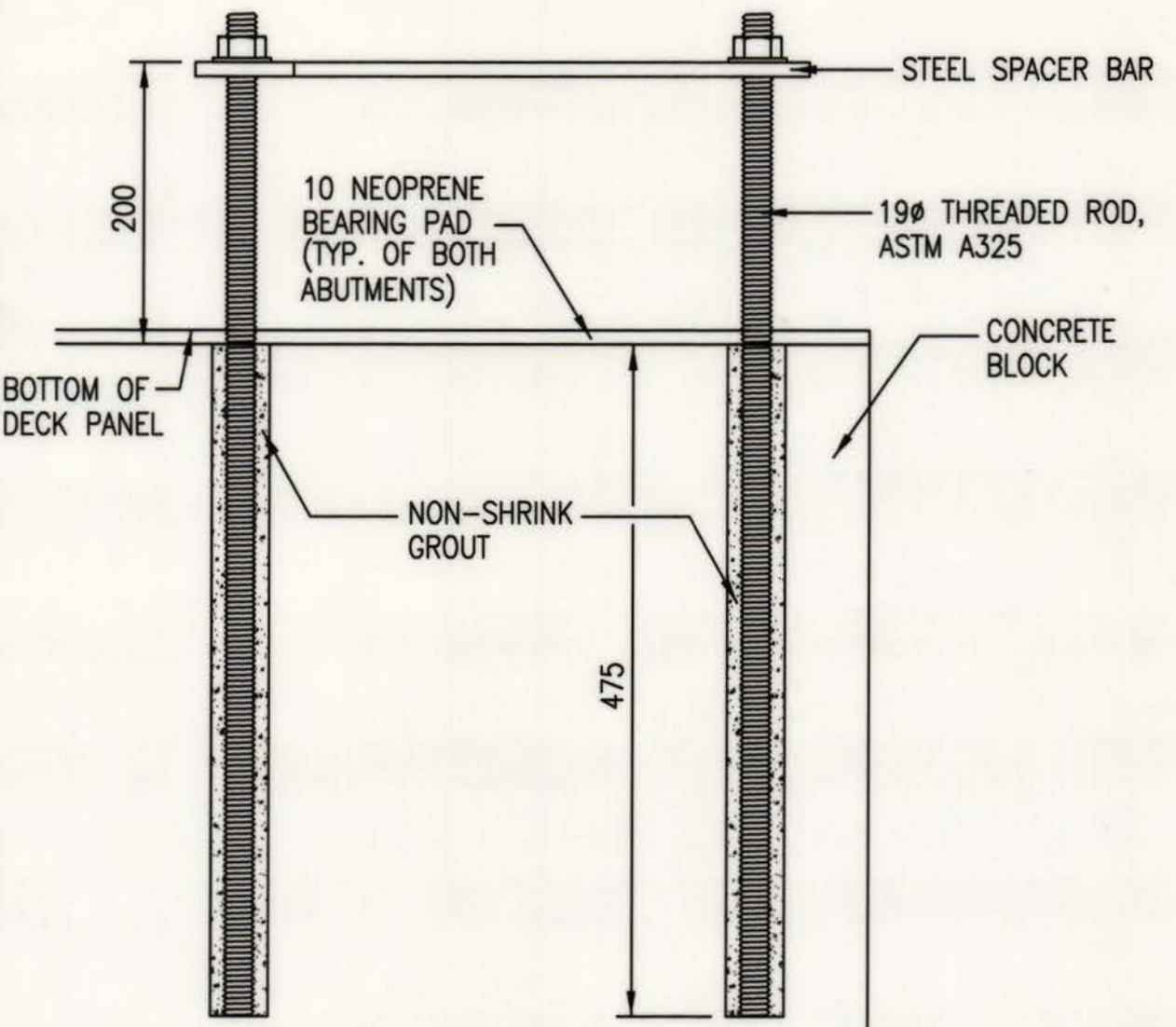
NOTE: ALL STEEL COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR AASHTO M232



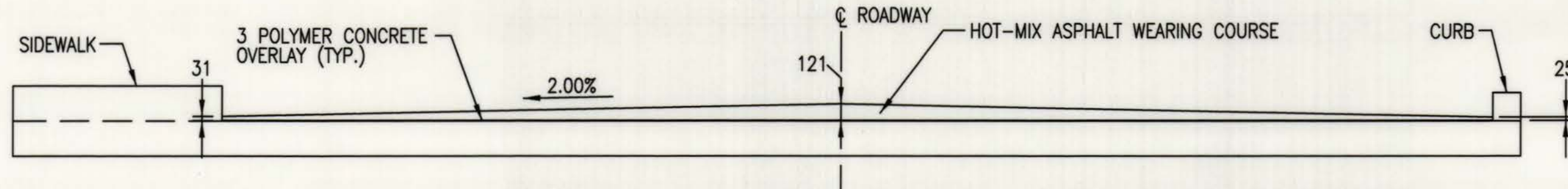
LONGITUDINAL JOINT DETAILS
NOT TO SCALE



TRANSVERSE JOINT
NOT TO SCALE



CONCRETE CLAMP ASSEMBLY
NOT TO SCALE



OVERLAY DETAIL
NOT TO SCALE

NOTE: THIS SHEET FOR INFORMATION PURPOSES ONLY. DETAILS PROVIDED BY KANSAS STRUCTURAL COMPOSITES, INC.

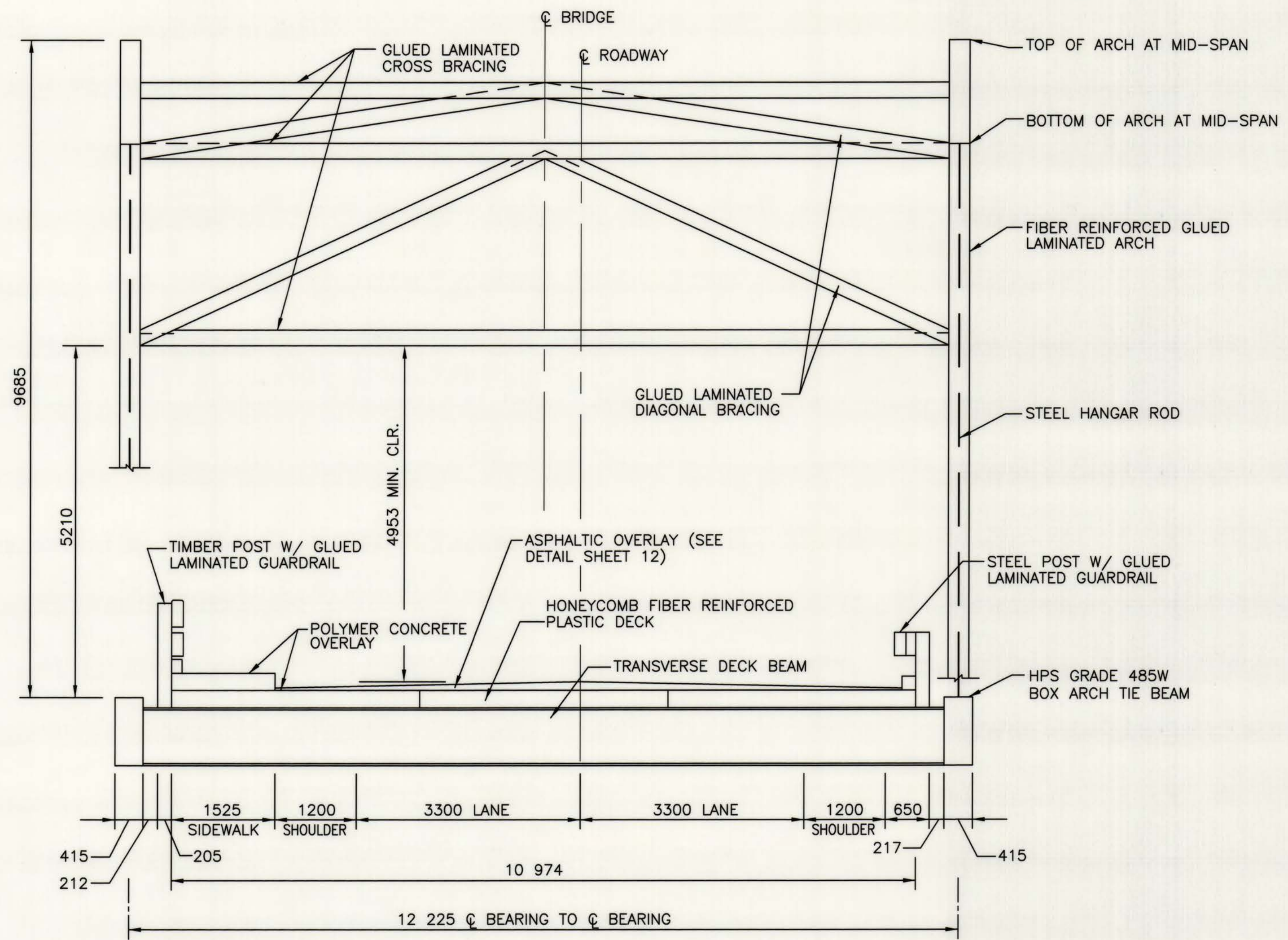
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
DECK PLAN AND DETAILS

DESIGNED BY:	DRAWN BY: JM	INKED BY: HP	DATE: 11-03-00	SHEET 12
CHECKED BY:	CHECKED BY:	CHECKED BY:	SCALE: AS NOTED	BRIDGE NO. 4415

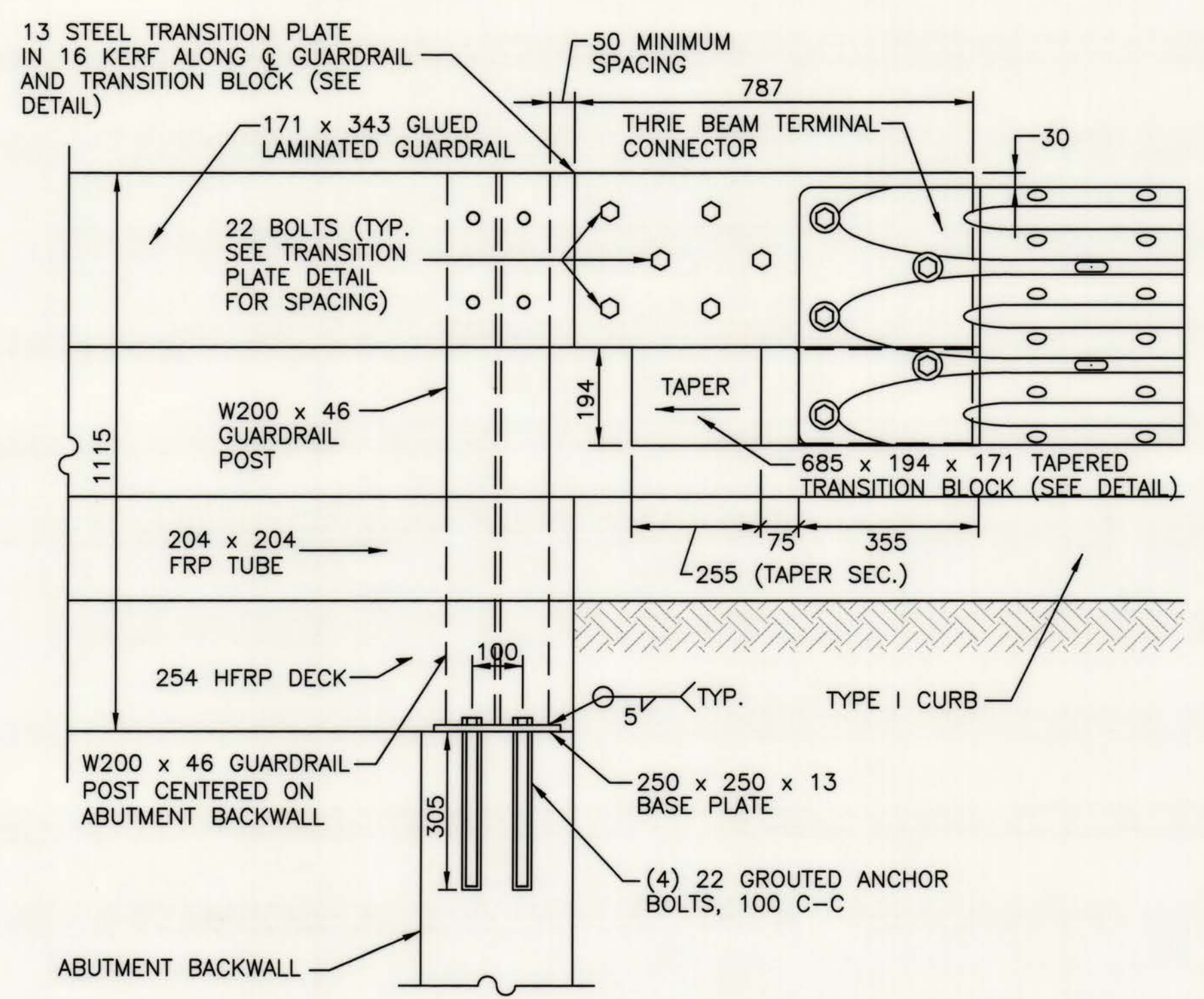
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

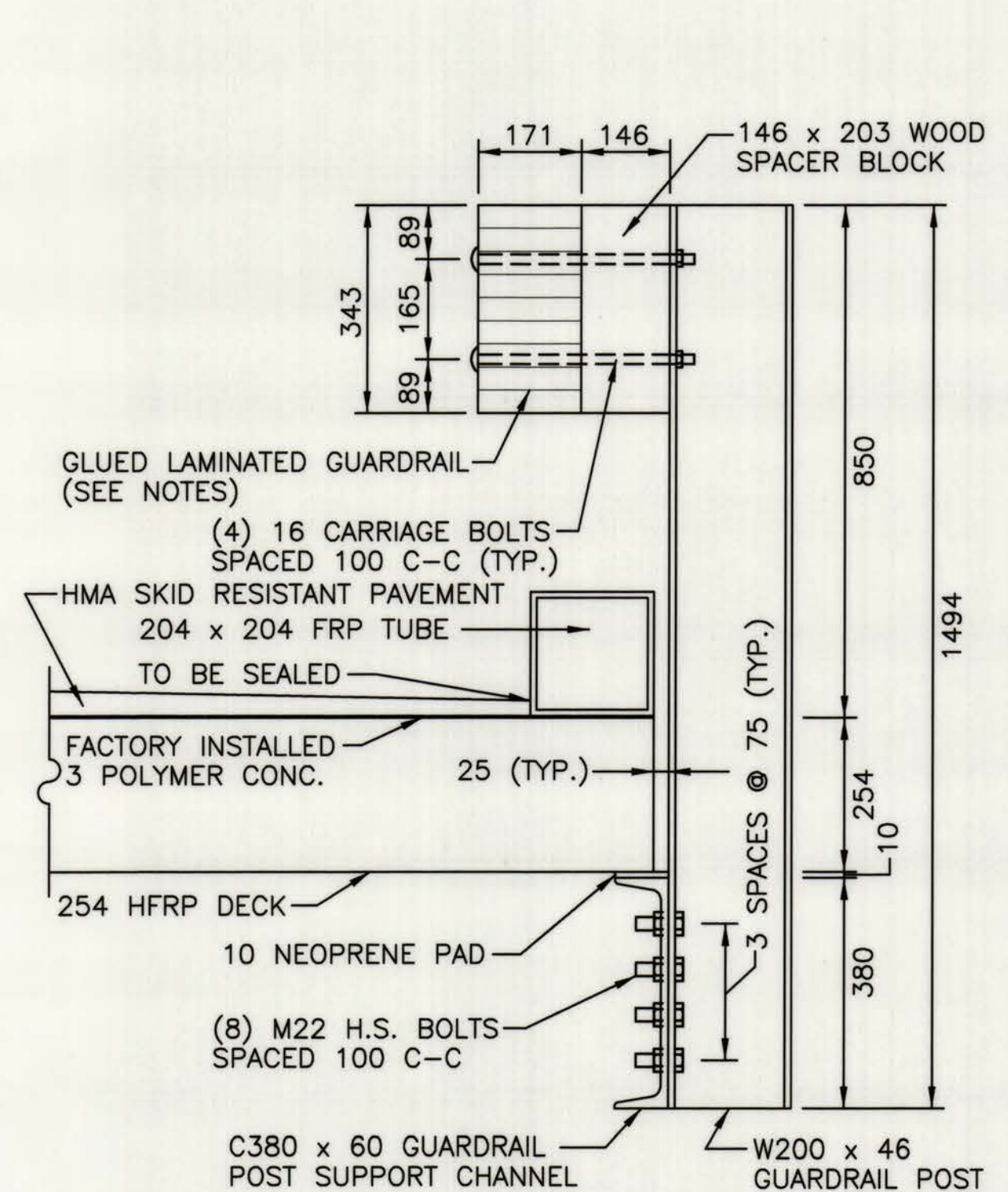
PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039 (032)E	2000	MONONGALIA	59	73



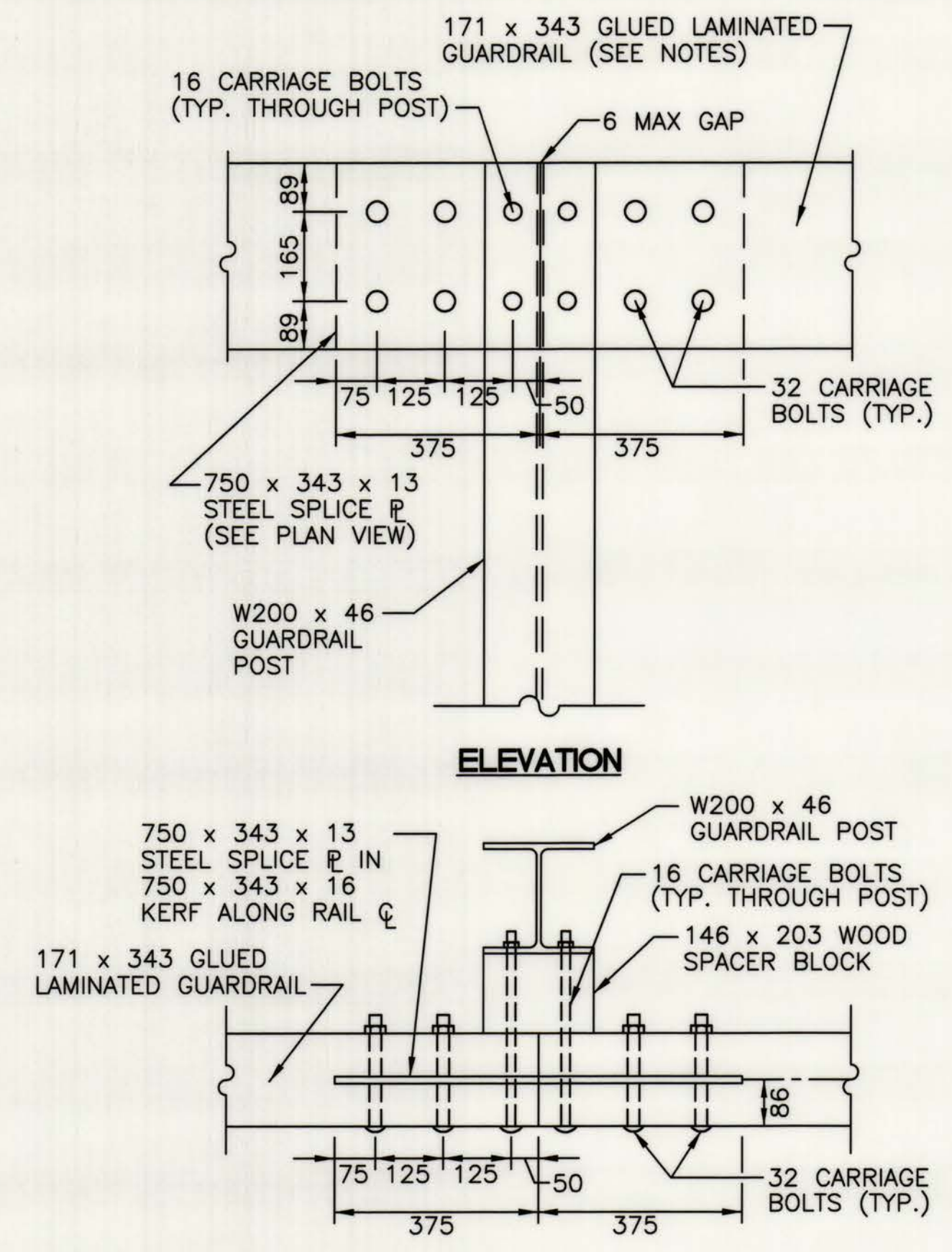
TYPICAL DECK ELEVATION
SCALE: 1:50



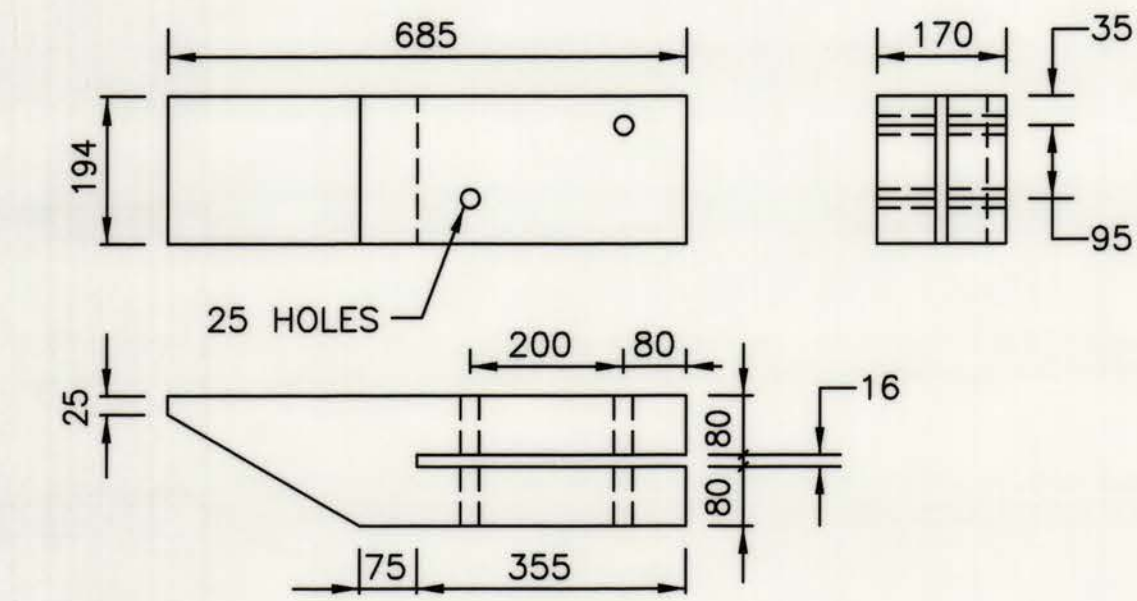
GUARDRAIL TRANSITION DETAIL
SCALE: 1:10



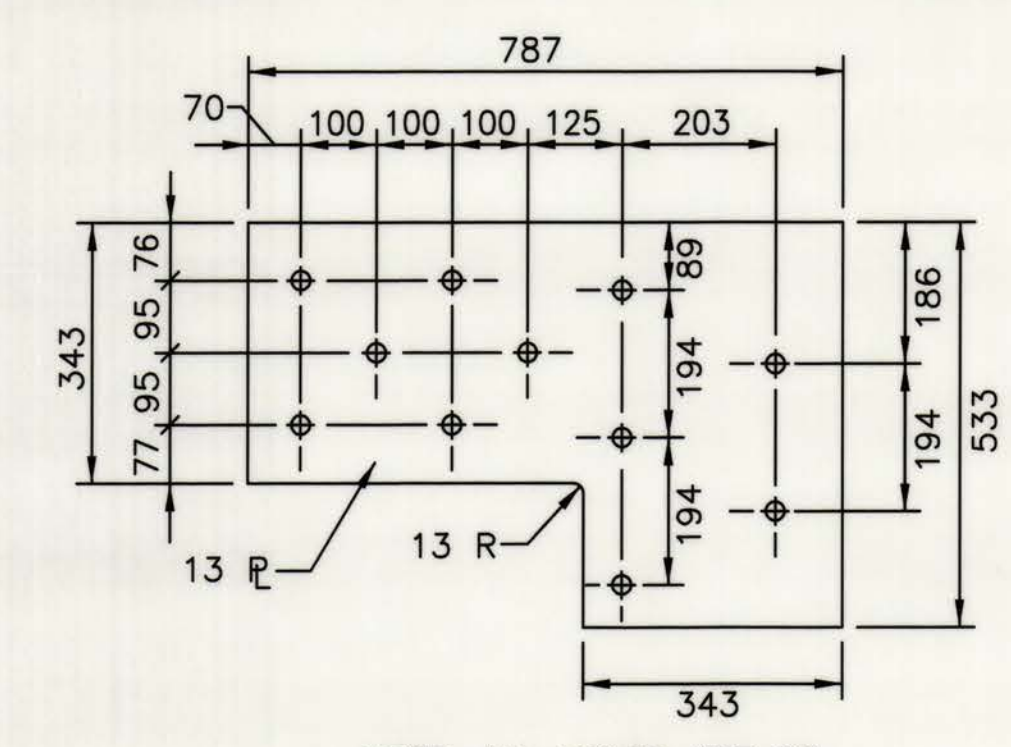
GUARDRAIL DETAIL
SCALE: 1:10



GUARDRAIL SPLICE DETAILS
SCALE: 1:10



TRANSITION BLOCK DETAIL
N.T.S.



NOTE: ALL HOLES ARE 25.
TRANSITION PLATE DETAIL
SCALE: 1:10

GUARDRAIL/RAILING NOTES:

- THIS BRIDGE GUARDRAIL WAS SUCCESSFULLY CRASH TESTED TO THE REQUIREMENTS FOR PERFORMANCE LEVEL 1 (PL-1) AS OUTLINED IN THE 1989 AASHTO GUIDE SPECIFICATIONS FOR BRIDGE RAILINGS.
- GUARDRAIL AND RAILING TOP RAIL SPLICES SHALL BE LOCATED SO THAT MEMBERS ARE CONTINUOUS OVER NOT LESS THAN 4 POSTS. IT IS RECOMMENDED THAT THE MEMBER SECTIONS BE AS LONG AS CAN BE READILY ORDERED AND SHIPPED.
- SAWN LUMBER AND GLUED LAMINATED TIMBER SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M168 AND SHALL BE PRESSURE TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133.
- THE BRIDGE GUARDRAIL SHALL BE HORIZONTALLY LAMINATED GLUED LAMINATED TIMBER: VISUALLY GRADED WESTERN SPECIES COMBINATION NUMBER 2 OR VISUALLY GRADED SOUTHERN PINE COMBINATION NUMBER 48. OTHER SPECIES AND GRADES OF GLUED LAMINATED TIMBER MAY BE USED PROVIDED THAT THE MINIMUM TABULATED VALUES ARE NOT LESS THAN THE FOLLOWING:
 $F_{by} = 12.4 \text{ MPa}$
 $E = 12,410 \text{ MPa}$
- RAILING COMPONENTS AND SPACER BLOCKS MAY BE SAWN LUMBER OR GLUED LAMINATED TIMBER. WHEN SAWN LUMBER IS USED, MATERIAL SHALL BE VISUALLY GRADED NO. 1 SOUTHERN PINE OR VISUALLY GRADED NO. 1 DOUGLAS FIR-LARCH. GLUED LAMINATED TIMBER AND OTHER SPECIES AND GRADES OF SAWN LUMBER MAY BE USED PROVIDED THAT THE TABULATED VALUES ARE NOT LESS THAN THE FOLLOWING:
 $F_b = 9.31 \text{ MPa}$
 $E = 10,340 \text{ MPa}$
- STEEL PLATES AND SHAPES SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M270 GRADE 250.
- BOLTS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A307 GRADE 2 AND SHOULD BE CARRIAGE BOLTS WHERE INDICATED.
- ALL STEEL COMPONENTS AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR AASHTO M232.
- TO THE EXTENT POSSIBLE, ALL WOOD SHALL BE CUT, DRILLED AND COMPLETELY FABRICATED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVES. WHEN FIELD FABRICATION OF WOOD IS REQUIRED OR IF WOOD IS DAMAGED, ALL CUTS, BORE HOLES AND DAMAGE SHALL BE IMMEDIATELY FIELD TREATED WITH WOOD PRESERVATIVE IN ACCORDANCE WITH AASHTO M133
- UNLESS NOTED, MALLEABLE IRON WASHERS SHALL BE PROVIDED UNDER BOLT HEADS AND UNDER NUTS THAT ARE IN CONTACT WITH WOOD. WASHERS MAY BE OMITTED UNDER HEADS OF CARRIAGE BOLTS WHEN THE SIZE AND STRENGTH OF THE HEAD IS SUFFICIENT TO DEVELOP CONNECTION STRENGTH WITHOUT WOOD CRUSHING.
- THE TOP OF THE GUARDRAIL SPLICE PLATE KERF SHALL BE SEALED WITH ROOFING CEMENT OR OTHERWISE PROTECTED FROM DIRECT EXPOSURE TO WEATHER.
- SEE SHEET 48 REGARDING PAY ITEMS FOR GUARDRAIL AND OTHER APPURTENANCES.

A.A.I. JOB NO. 971281.01

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
TYPICAL DECK ELEVATION AND DETAILS

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET NO.
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	1:50	13

ALPHA ASSOCIATES, INCORPORATED
CONSULTING ENGINEERS
MORGANTOWN, WEST VIRGINIA
BRIDGE NO. 4415

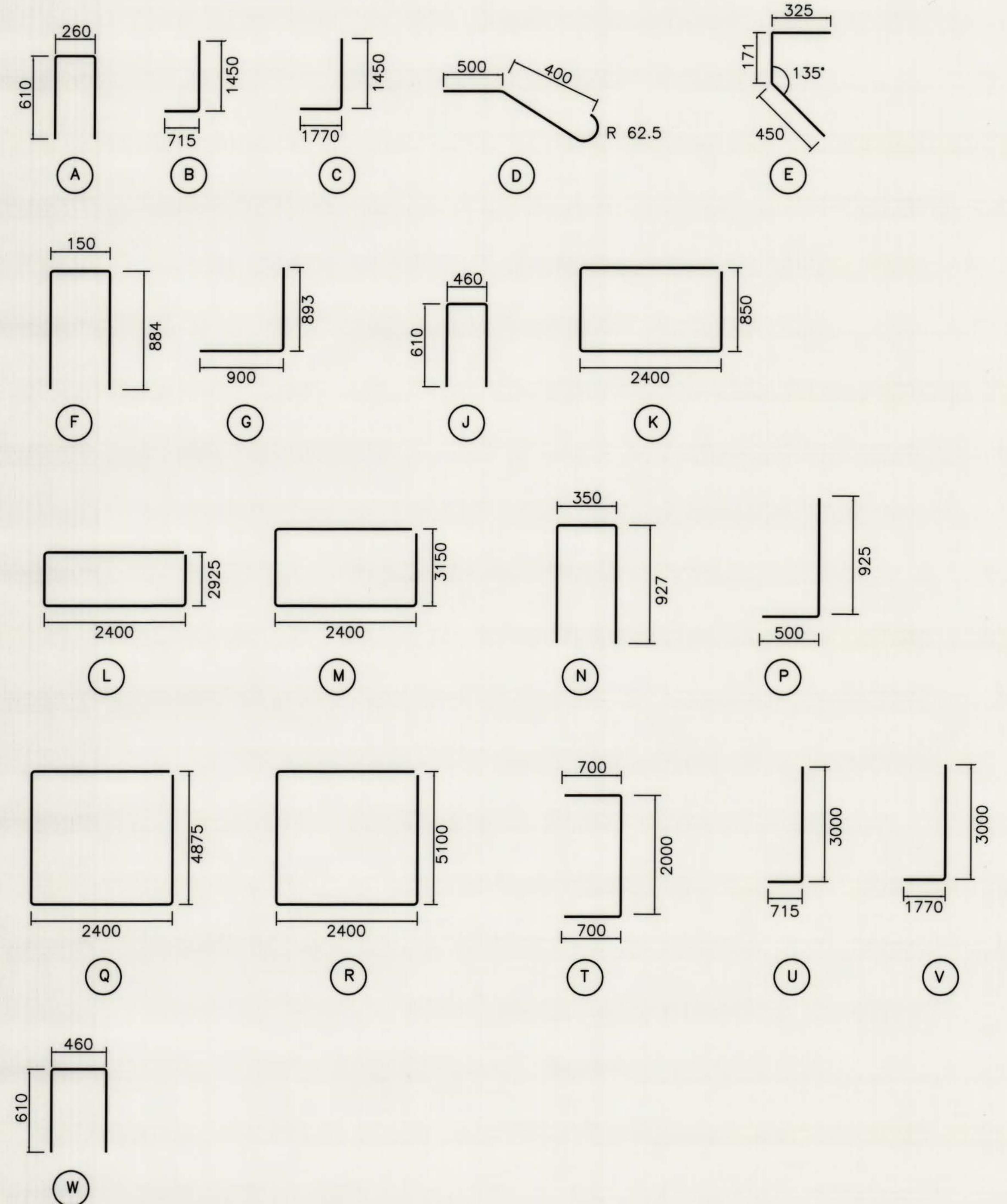
REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

REINFORCING BAR SCHEDULE

MARK	SIZE	TYPE	NO. REQ.'D	LENGTH	WEIGHT (kg)	
					UNCOATED	EPOXY COATED
ABUTMENT #1 (INCLUDING WINGWALLS)						
A1601E	16M	D	31	1 100	-----	53
A1602E	16M	STR.	2	8 850	-----	27
A1603E	16M	E	31	946	-----	46
A1604	16M	STR.	11	14 075	240	-----
A1901E	19M	STR.	4	13 775	-----	123
A1902E	19M	STR.	8	2 000	-----	36
A2201E	22M	F	24	1 918	-----	140
A2202E	22M	STR.	93	1 809	-----	512
A2203	22M	K	93	6 500	1839	-----
A2204E	22M	G	24	1 793	-----	131
A2501	25M	STR.	10	14 075	559	-----
A2502	25M	STR.	44	14 075	2460	-----
A2503	25M	STR.	52	14 075	2980	-----
A2504	25M	L	93	10 650	3935	-----
A2504E	25M	T	140	3 400	-----	1891
A2505	25M	M	93	11 100	4101	-----
A2505E	25M	STR.	22	10 295	-----	900
A2506E	25M	P	70	1 425	-----	396
A2507E	25M	STR.	4	10 295	-----	164
AW1601	16M	A	25	1 480	57	-----
AW1602	16M	STR.	26	4 350	176	-----
AW1603	16M	STR.	10	925 TO 3950	38	-----
AW1604	16M	STR.	36	2 700	151	-----
AW1605	16M	STR.	2	3 620	12	-----
AW1901	19M	STR.	48	3 500	375	-----
AW1902	19M	STR.	24	4 350	233	-----
AW1903	19M	STR.	24	2 700	145	-----
AW2501	25M	STR.	52	4 820	996	-----
AW2502	25M	B	49	2 165	421	-----
AW2503	25M	C	49	3 220	627	-----
AW2504	25M	STR.	46	3420 TO 4820	753	-----
TOTALS					20 025	4419

MARK	SIZE	TYPE	NO. REQ.'D	LENGTH	WEIGHT (kg)	
					UNCOATED	EPOXY COATED
ABUTMENT #2 (INCLUDING WINGWALLS)						
A1601E	16M	D	31	1 100	-----	53
A1602E	16M	STR.	2	8 850	-----	27
A1603E	16M	E	31	946	-----	46
A1604	16M	STR.	11	14 075	240	-----
A1901E	19M	STR.	4	13 775	-----	123
A1902E	19M	STR.	8	2 000	-----	36
A2201E	22M	F	24	1 918	-----	140
A2202E	22M	STR.	93	1 809	-----	512
A2203	22M	K	93	6 500	1839	-----
A2204E	22M	G	24	1 793	-----	131
A2501	25M	STR.	10	14 075	559	-----
A2502	25M	STR.	70	14 075	3914	-----
A2503	25M	STR.	52	14 075	2908	-----
A2504	25M	Q	93	14 550	5376	-----
A2504E	25M	T	140	3 400	-----	1891
A2505	25M	R	93	15 000	5542	-----
A2505E	25M	STR.	22	10 295	-----	900
A2506E	25M	P	70	1 425	-----	396
A2507E	25M	STR.	4	10 295	-----	164
AW1601	16M	W	32	1 680	83	-----
AW1606	16M	STR.	40	3 015	187	-----
AW1607	16M	STR.	14	910 TO 6 250	78	-----
AW1608	16M	STR.	26	6 250	252	-----
AW1609	16M	STR.	2	5 630	18	-----
AW1901	19M	STR.	64	4 420	632	-----
AW1904	19M	STR.	30	3 015	202	-----
AW1905	19M	STR.	30	6 250	419	-----
AW2901	29M	STR.	42	7 600	1615	-----
AW2902	29M	U	48	3 715	902	-----
AW2903	29M	V	48	4 770	1159	-----
AW2906	29M	STR.	54	5 600 TO 7 600	1803	-----
TOTALS					27 728	4419

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BR-0039(039)E	2000	MONONGALIA	61	73



NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT.
2. NO CORRECTION IN LENGTH FOR BENDING IS TO BE MADE.
3. FOR STANDARD HOOK DIMENSIONS SEE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES (A.C.I. COMMITTEE 315).
4. QUANTITIES ARE FOR ESTIMATING ONLY AND MAY NOT REFLECT THE ACTUAL AMOUNT USED FOR CONSTRUCTION.
5. SEE SHEET 3 FOR REINFORCING BAR TOTALS.

A.A.I. JOB NO. 971281.00

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
REBAR SCHEDULE AND BENDING DIAGRAMS

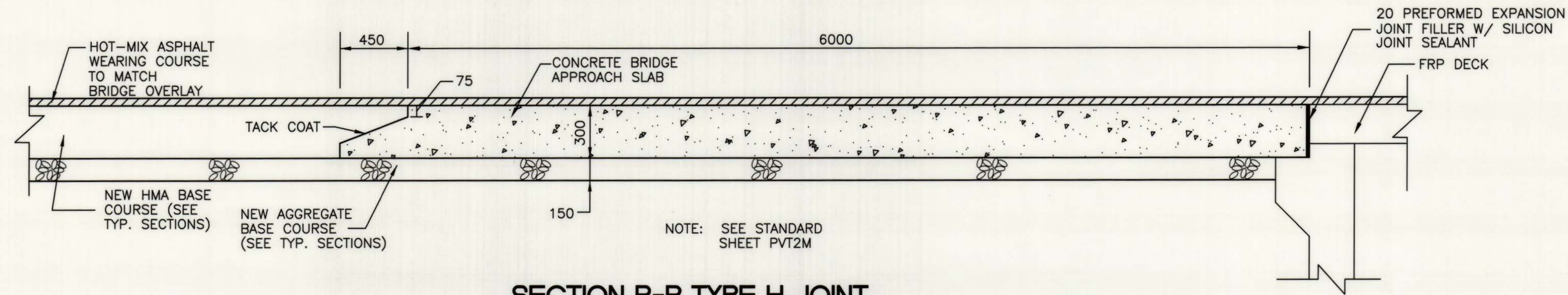
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	15

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA

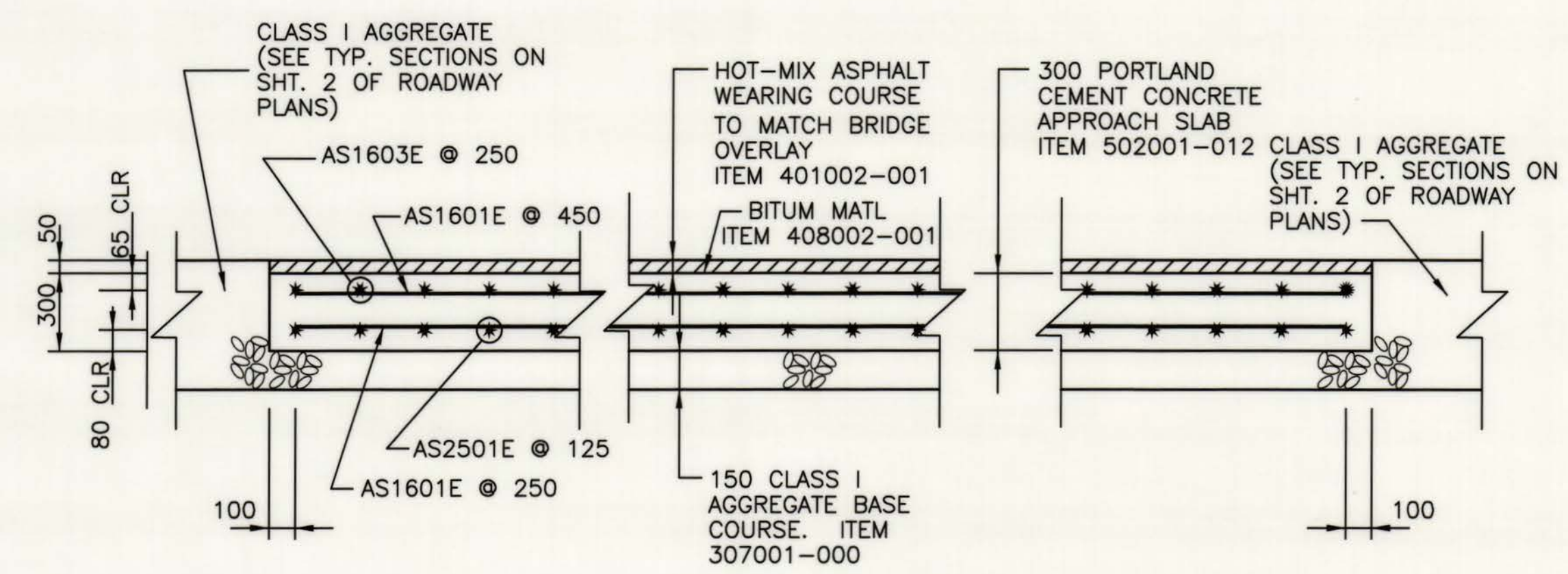
BRIDGE NO. 4415

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRHI-0039(032)E	2000	MONONGALIA	62	73

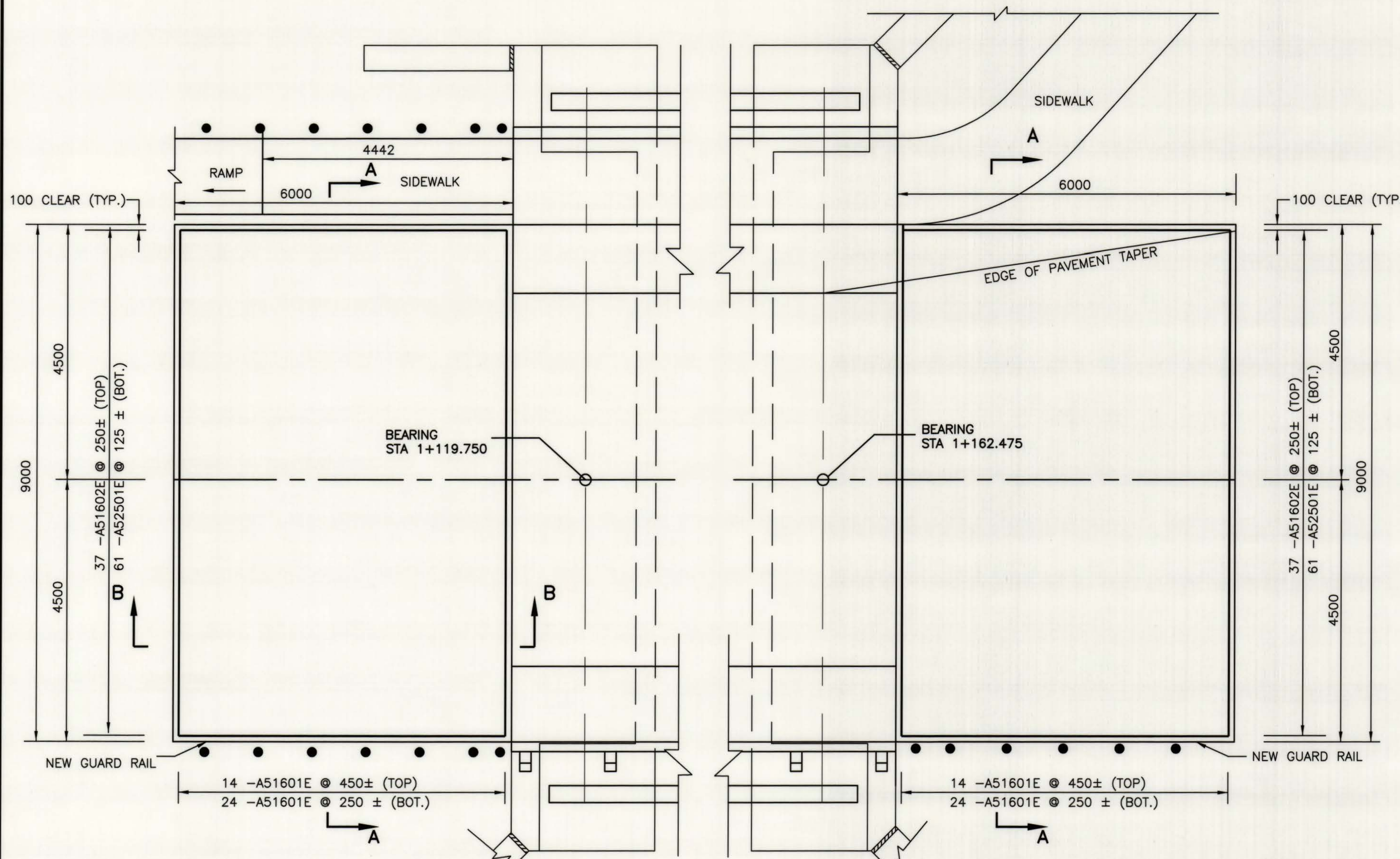
- NOTES:
1. REINFORCING STEEL SHALL CONFORM TO AASHTO M31M GRADE 420. PAYMENT SHALL BE INCLUDED IN ITEM 502001-012.
 2. PREFORMED EXPANSION JOINT FILLER SHALL CONFORM TO ARTICLE 708.1.2 OF THE SPECIFICATIONS FOR VERTICAL JOINTS.
 3. THE STONE BASE COURSE MATERIAL UNDER THE APPROACH SLAB SHALL BE PAID FOR AS ITEM 307001-000 "CLASS 1 AGGREGATE BASE COURSE". THE SAME MATERIAL AS USED FOR BASE ON THE ADJACENT PAVEMENT MAY BE USED UNDER THE APPROACH SLAB AT UNIT PRICE BID FOR THE ROADWAY ITEM.
 4. ALL CONCRETE IN THE APPROACH SLAB SHALL BE CLASS B CONCRETE. CURING OF THE APPROACH SLAB SHALL BE BY BURLAP AND WATER IN ACCORDANCE WITH THE SPECIFICATIONS. THE USE OF VAPOR BARRIER BURLAP SHALL BE PERMITTED.
 5. ALL WORK SHOWN IN THIS DRAWING TO BE INCLUDED IN THE ROADWAY QUANTITIES.
 6. HOT POURED ELASTOMETRIC JOINT SEALER SHALL CONFORM TO SECTION 708.3 OF THE SPECIFICATIONS.



SECTION B-B TYPE H JOINT
SCALE: 1:20



SECTION A-A
SCALE: 1:20



PLAN - WEST APPROACH SLAB
SCALE: 1:50

PLAN - EAST APPROACH SLAB
SCALE: 1:50

ESTIMATE OF QUANTITIES					
ITEM NO.	PRINCIPLE OR ALTERNATE	DESCRIPTION	UNIT	QUANTITY	
				SLAB 1	SLAB 2
502001-012		300 MM PORTLAND CEMENT CONCRETE APPROACH SLAB	M ²	54	54
		EPOXY COATED REINFORCING STEEL BARS	kg	1401	1401
		20 PREFORMED EXPANSION JOINT FILLER	M ²	3	3
307001-000		AGGREGATE BASE COURSE, CLASS 1	MGR	16	16
408002-001		BITUMINOUS MATERIAL	L	61	61
401002-001	BB1	HOT-MIX ASPHALT WEARING COURSE, STONE OR GRAVEL, TYPE I	MGR	7	7
401002-002	BB2	HOT-MIX ASPHALT WEARING COURSE, SLAG, TYPE I	MGR	7	7

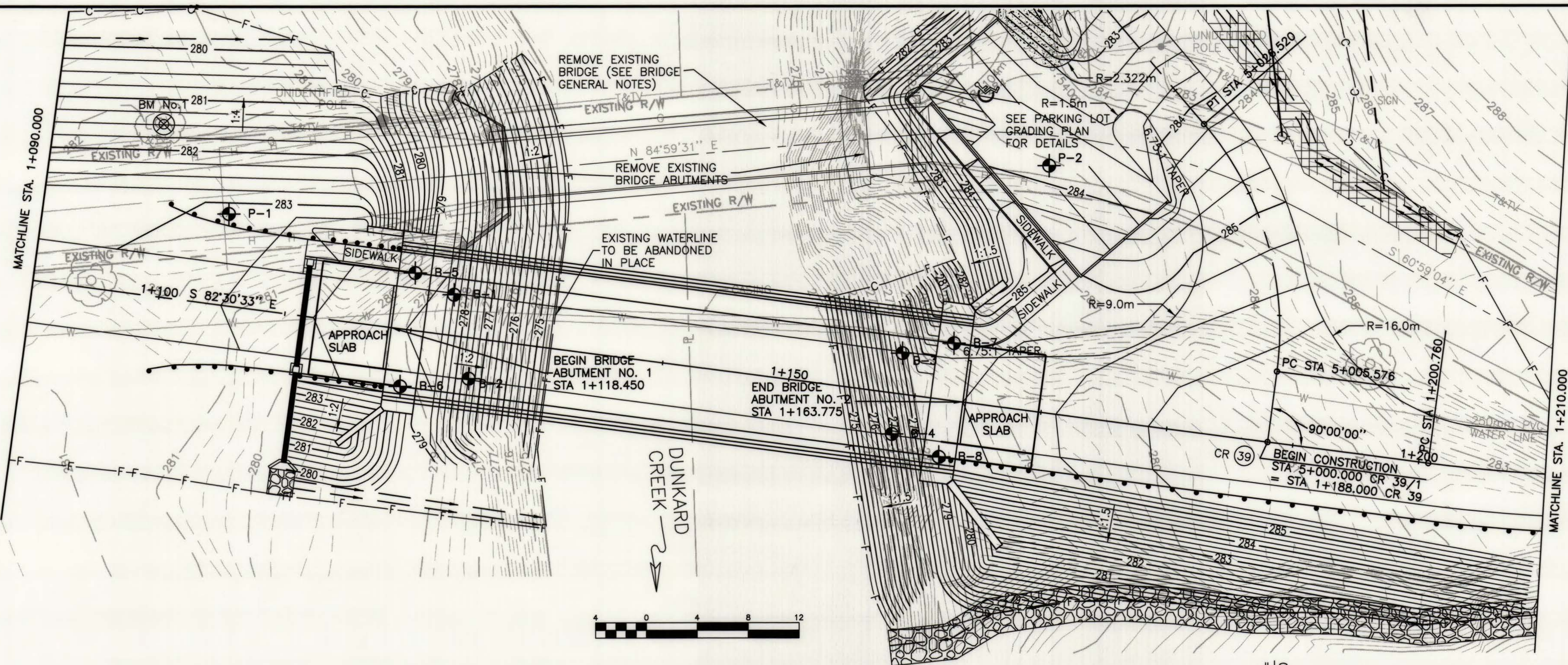
APPROACH SLAB REBAR (INCLUDED FOR INFORMATION ONLY)						
MARK	SIZE	TYPE	NO. REQ.'D	LENGTH	WEIGHT (kg)	
					UNCOATED	EPOXY COATED
AS1601E	16M	STR.	76	8800	—	1038
AS1602E	16M	STR.	74	5800	—	666
AS2501E	16M	STR.	122	5800	—	1098
TOTAL APPROACH SLAB						2802

A.A.I. JOB NO. 971281.01
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
APPROACH SLAB PLAN AND DETAILS

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET 16
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: AS NOTED	
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	63	73

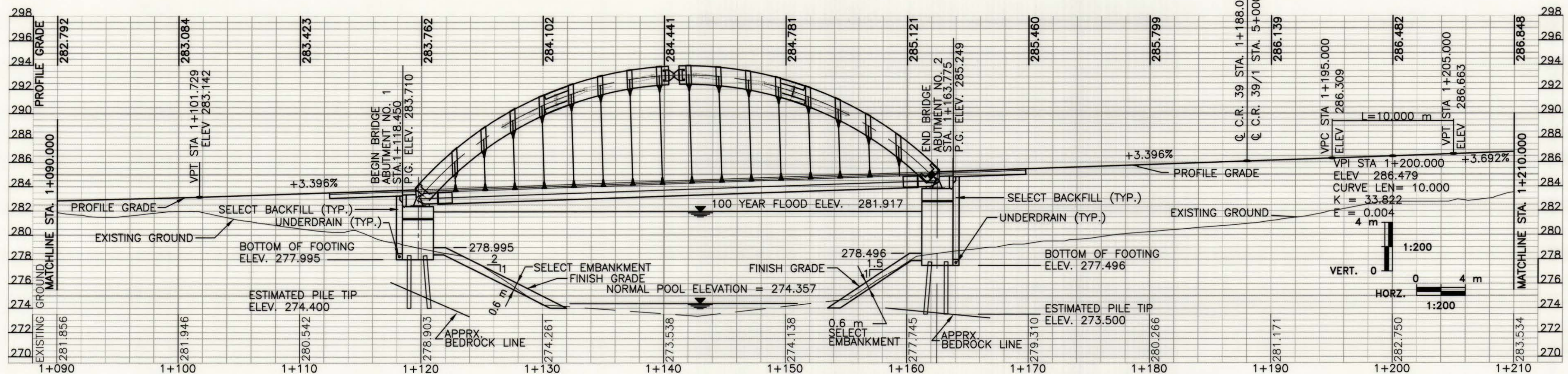


CR39/1 CURVE C2	
PI STA	5+016.707
Δ	48°00'00"
T m	11.131
R m	25.000
L m	20.944
E m	2.366
S.E. m/m	0.03396

CR39 CURVE C4	
PI STA	1+230.728
Δ	26°57'48"
T m	29.968
R m	125.000
L m	58.825
E m	3.542
S.E. m/m	0.03396

DESIGN DESIGNATION	
A . D . T . (1999)	= 1000
A . D . T . (2019)	= 1400
D . H . V . (k=12%)	= 168
D	= 50/50
T	= 6% (DHV)
V	= 60 km/hr

HYDRAULIC DATA	
DRAINAGE AREA	= 463.61 SQ. KM
DESIGN FLOOD MAGNITUDE	= 563.505 CMS
FREQUENCY	= 100 YEARS
VELOCITY	= 2.13 MPS
W.S. ELEV.	= 281.917 M
FLOOD OF RECORD	= UNKNOWN



BORING TABULATION			
BORING NO.	STATION	OFFSET	ELEVATION
B-1	1+123.045	3.2m LT.	278.25
B-2	1+125.005	3.2m RT.	277.50
B-3	1+158.595	3.2m LT.	277.50
B-4	1+160.805	3.2m RT.	276.50
B-5	1+119.750	4.5m LT.	280.12
B-6	1+119.750	4.5m RT.	279.19
B-7	1+162.500	4.5m LT.	279.52
B-8	1+162.500	4.5m RT.	278.42
P-1	1+104.590	7.2m LT.	282.50
P-2	1+168.046	19.3m LT.	283.00

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WEST BUCKEYE ACROW BRIDGE
PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
SITUATION PLAN AND PROFILE

DESIGNED BY:	DRAWN BY:	KS	INKED BY:	HP	DATE:	11-03-00	SHEET NO.	17
CHECKED BY:	CHECKED BY:		CHECKED BY:	CL	SCALE:	1:200	BRIDGE NO.	4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	64	73

TEST BORING LOG B-1

PROJECT: WEST BUCKEYE BRIDGE PROJECT NO.: 98413
 STATION: SEE PLAN OFFSET: SEE PLAN SURFACE ELEVATION: 278.25
 DATE: START: 11-17-98 FINISH: 11-17-98 INSPECTOR: JTL
 WATER LEVELS (DEPTH/DATE): FIRST NOTED AT 4.5m

DEPTH (m)	SAMP. NO. LENGTH TYPE	BLOW COUNTS RECOV. (%)	STRATA DEPTH (m)	STRATA IDENTIFICATION	RQD	Ft.
0				-TOPSOIL-		
0.50			0.50	-ALLUVIUM- Brown, very loose to loose, silty sand, trace rock fragments and organics, slightly moist to wet		
1.50						5
1.50	S-1	2				
1.95		3				
1.95		3				
2.00						
2.50						
3.00						10
3.00	S-2	2				
3.45		2		← Gray at 3.35m		
3.45		2				
4.50			4.50	-BEDROCK- Gray, very weathered claystone		15
4.64	S-3	50/0.14	4.64	-BEDROCK- Gray, medium hard shale with gray, soft claystone interbeds, very broken to blocky		
4.64						
5.00						
5.00	C-1	97%				
5.50						
6.00				-BEDROCK (cont.)- Gray shale with claystone interbeds, very broken to blocky		
6.50						
7.00						
7.18			7.18	-BEDROCK- Gray, hard, fine-grained sandstone, very broken to broken		
7.64			7.64			25
7.64				Boring Terminated at 7.64m		
8.00						
8.50						
9.00						30
9.50						
10.00						
10.50						35
11.00						
11.50						
12.00						

GENERAL REMARKS:

TEST BORING LOG B-2

PROJECT: WEST BUCKEYE BRIDGE PROJECT NO.: 98413
 STATION: SEE PLAN OFFSET: SEE PLAN SURFACE ELEVATION: 277.50
 DATE: START: 11-17-98 FINISH: 11-17-98 INSPECTOR: JTL
 WATER LEVELS (DEPTH/DATE): FIRST NOTED AT 4.0m

DEPTH (m)	SAMP. NO. LENGTH TYPE	BLOW COUNTS RECOV. (%)	STRATA DEPTH (m)	STRATA IDENTIFICATION	RQD	Ft.
0				-TOPSOIL-		
0.50			0.50	-ALLUVIUM- Brown, loose, silty sand, trace organics, slightly moist to wet		
1.50						5
1.50	S-1	3				
1.95		5				
1.95		4				
2.00						
2.50						
3.00						10
3.00	S-2	4				
3.45		4				
3.45		4				
4.50			4.50	-BEDROCK- Gray, very weathered claystone		15
4.50	S-3	7	4.73	-BEDROCK- Gray, very weathered claystone		
4.73		50/0.08	4.73			
5.00				-BEDROCK- Gray, medium hard shale with gray, soft claystone interbeds, very broken to broken		
5.00	C-1	93%				
5.50						
6.00				-BEDROCK (cont.)- Gray shale with claystone interbeds, very broken to broken		
6.50						
7.00						
7.50			7.50	-BEDROCK- Gray, hard, fine-grained sandstone		25
7.73			7.73			25
7.73				Boring Terminated at 7.73m		
8.00						
8.50						
9.00						30
9.50						
10.00						
10.50						35
11.00						
11.50						
12.00						

GENERAL REMARKS:

TEST BORING LOG B-3

PROJECT: WEST BUCKEYE BRIDGE PROJECT NO.: 98413
 STATION: SEE PLAN OFFSET: SEE PLAN SURFACE ELEVATION: 277.50
 DATE: START: 11-16-98 FINISH: 11-16-98 INSPECTOR: JTL
 WATER LEVELS (DEPTH/DATE): NONE NOTED

DEPTH (m)	SAMP. NO. LENGTH TYPE	BLOW COUNTS RECOV. (%)	STRATA DEPTH (m)	STRATA IDENTIFICATION	RQD	Ft.
0				-TOPSOIL-		
0.50			0.50	-ALLUVIUM- Brown, very loose to loose, silty sand, trace organics, slightly moist to moist		
1.50						5
1.50	S-1	3				
1.95		3				
1.95		4				
2.00						
2.50						
3.00						10
3.00	S-2	3				
3.45		2				
3.45		2				
4.50			4.50	-BEDROCK- Gray, very weathered claystone		15
4.32	S-3	4.42	4.42	-BEDROCK- Gray, very weathered claystone		
4.42		50/0.1	4.42			
5.00				-BEDROCK- Gray, medium hard shale with gray, soft claystone interbeds, very broken to blocky		
5.00	C-1	89%				
5.50						
6.00				-BEDROCK (cont.)- Gray shale with claystone interbeds, very broken to blocky		
6.50						
7.00						
7.42			7.42			25
7.42				Boring Terminated at 7.42m		
8.00						
8.50						
9.00						30
9.50						
10.00						
10.50						35
11.00						
11.50						
12.00						

GENERAL REMARKS:

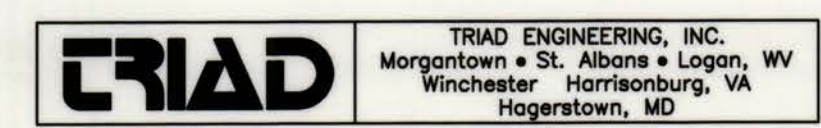
TEST BORING LOG B-4

PROJECT: WEST BUCKEYE BRIDGE PROJECT NO.: 98413
 STATION: SEE PLAN OFFSET: SEE PLAN SURFACE ELEVATION: 276.50
 DATE: START: 11-10-98 FINISH: 11-10-98 INSPECTOR: JTL
 WATER LEVELS (DEPTH/DATE): NONE NOTED

DEPTH (m)	SAMP. NO. LENGTH TYPE	BLOW COUNTS RECOV. (%)	STRATA DEPTH (m)	STRATA IDENTIFICATION	RQD	Ft.
0				-TOPSOIL-		
0.50			0.50	-ALLUVIUM- Brown, loose, silty sand, trace organics, slightly moist to moist		
1.50						5
1.50	S-1	3				
1.95		5				
1.95		5				
2.00						
2.50						
3.00						10
3.00	S-2	3				
3.45		3				
3.45		4				
3.69	S-3	3.68	3.69	-BEDROCK- Gray, hard, fine-grained sandstone, very broken to broken		
3.69		50/0.01	3.69			
4.00			4.16	-BEDROCK- Gray, medium hard shale with gray, soft claystone interbeds, very broken to blocky		
4.00						26%
4.50						
4.50	C-1	86%				
5.00						
5.50						
6.00				-BEDROCK (cont.)- Gray shale with claystone interbeds, very broken to blocky		
6.50						
6.69			6.69			43%
6.69				Boring Terminated at 6.69m		
7.00						
7.50						25
8.00						
8.50						
9.00						30
9.50						
10.00						
10.50						35
11.00						
11.50						
12.00						

GENERAL REMARKS:

NOTE: SEE SHEET 19 FOR PILE TIP BEARING AND BOTTOM OF FOOTING ELEVATIONS



THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
 BORING LOGS 1

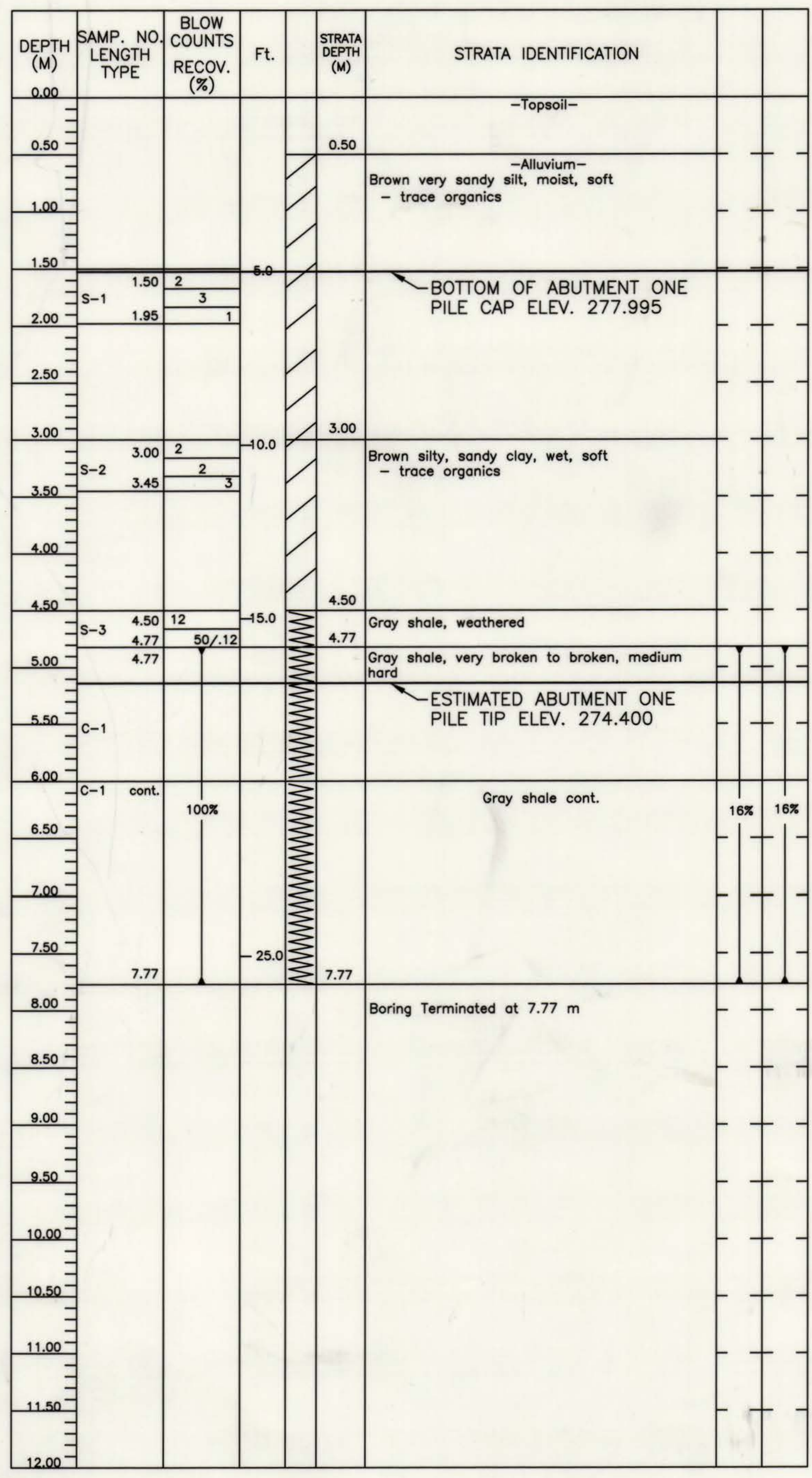
DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET 18
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	
ALPHA ASSOCIATES, INCORPORATED CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA					BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY

PUBLIC ROADS DIV.	STATE DIST. NO.	STATE PROJ. NO.	FED. PROJ. NO.	FISCAL YEAR	COUNTY	SHEET	TOTAL SHEETS
W.V.	4	S331-39-0.09	BRH-0039(032)E	2000	MONONGALIA	65	73

TEST BORING LOG B-5

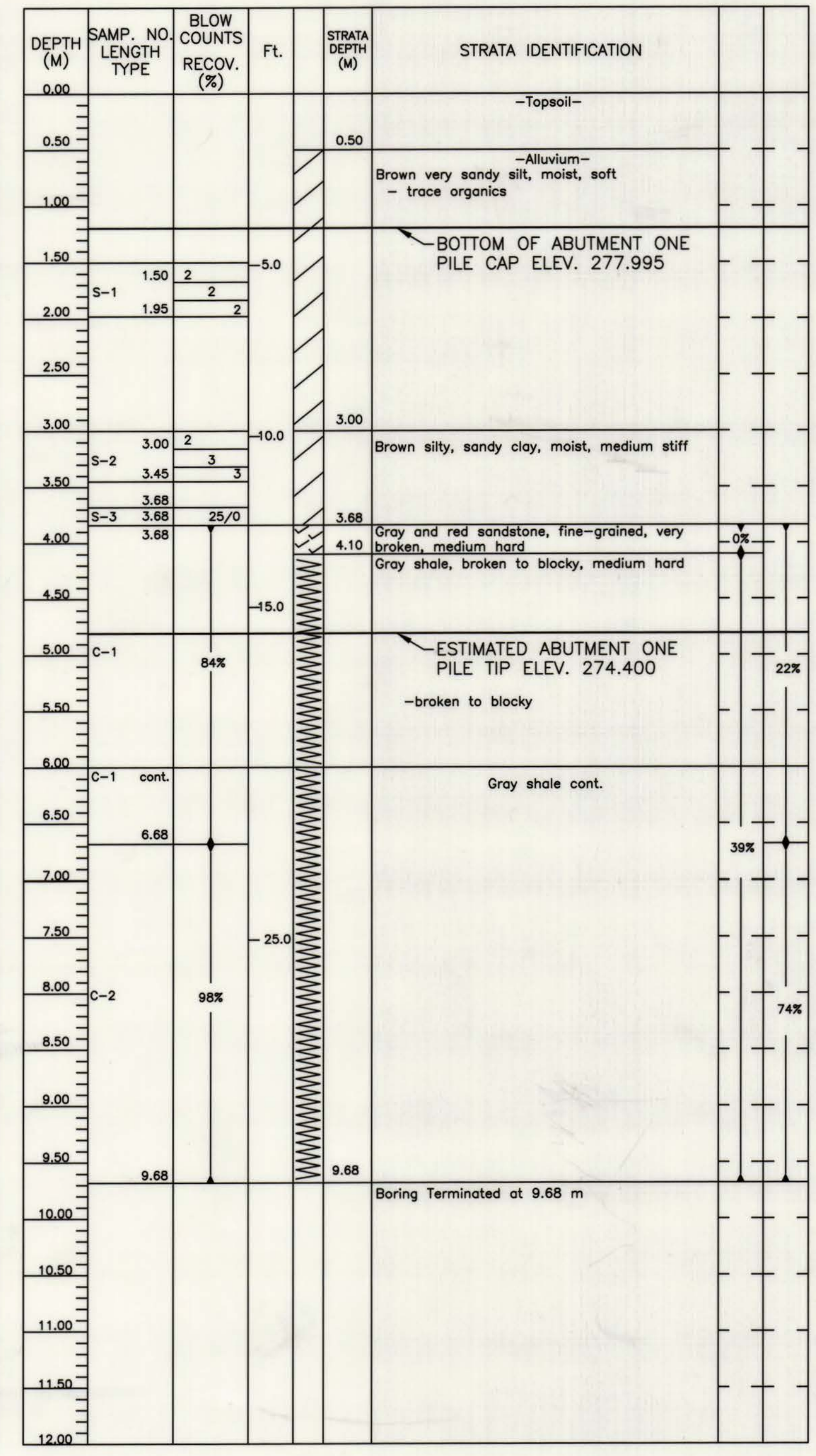
PROJECT: West Buckeye Bridge PROJECT NO.: 98413
 STATION: 1+119.750 OFFSET: 3.55m Lt. SURFACE ELEVATION: 279.52 m
 DATE: START: 06/07/00 FINISH: 06/07/00 INSPECTOR: JEW
 WATER LEVELS (DEPTH/DATE): 4.5 m



GENERAL REMARKS:

TEST BORING LOG B-6

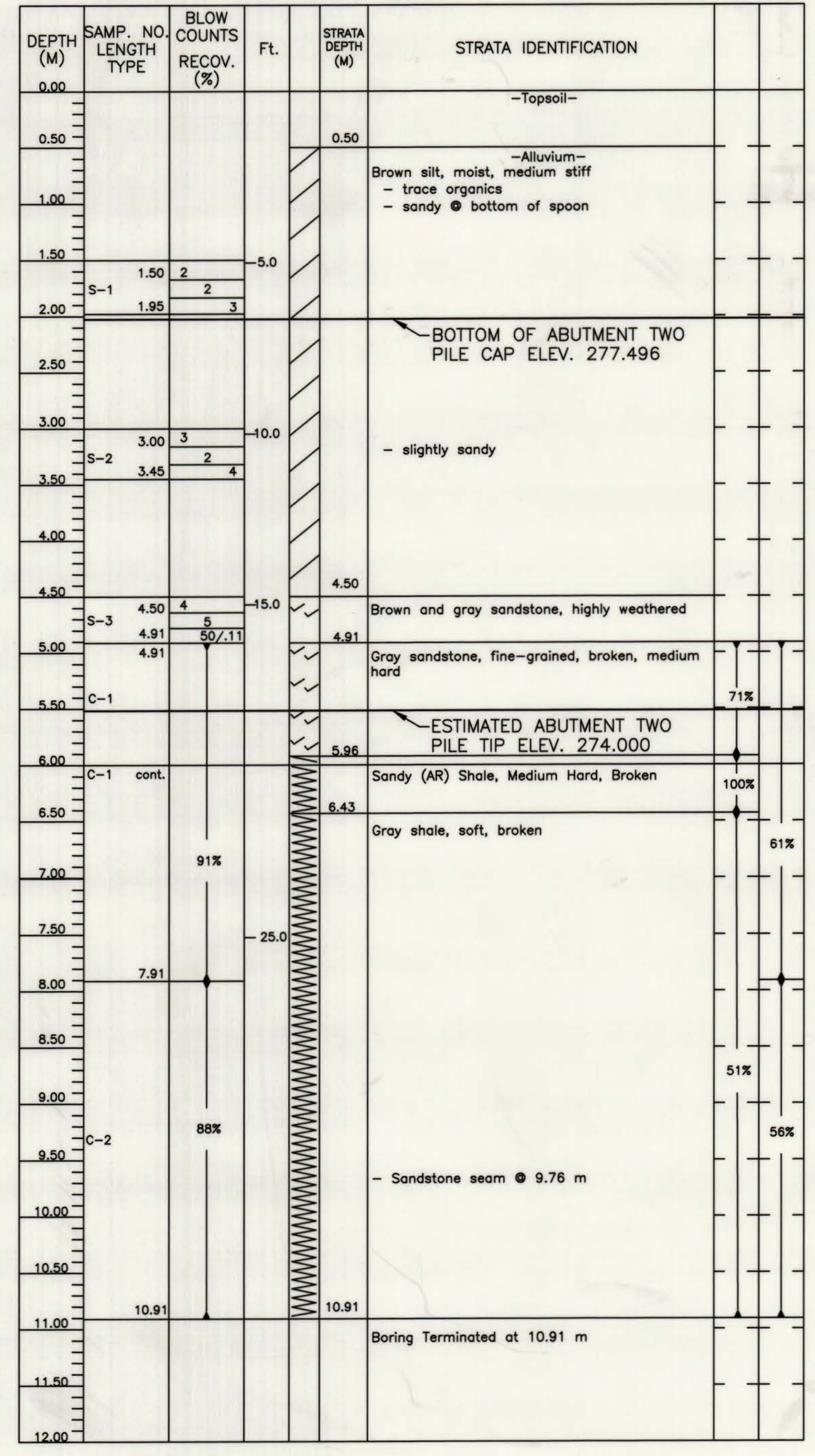
PROJECT: West Buckeye Bridge PROJECT NO.: 98413
 STATION: 1+119.750 OFFSET: 4.5 Rt. SURFACE ELEVATION: 279.19
 DATE: START: 06/06/00 FINISH: 06/06/00 INSPECTOR: JEW
 WATER LEVELS (DEPTH/DATE): 2.8 m, 06/07/00 a.m.



GENERAL REMARKS: Spoon Refusal @ 3.68 m, No recovery @ 3.68 m

TEST BORING LOG B-7

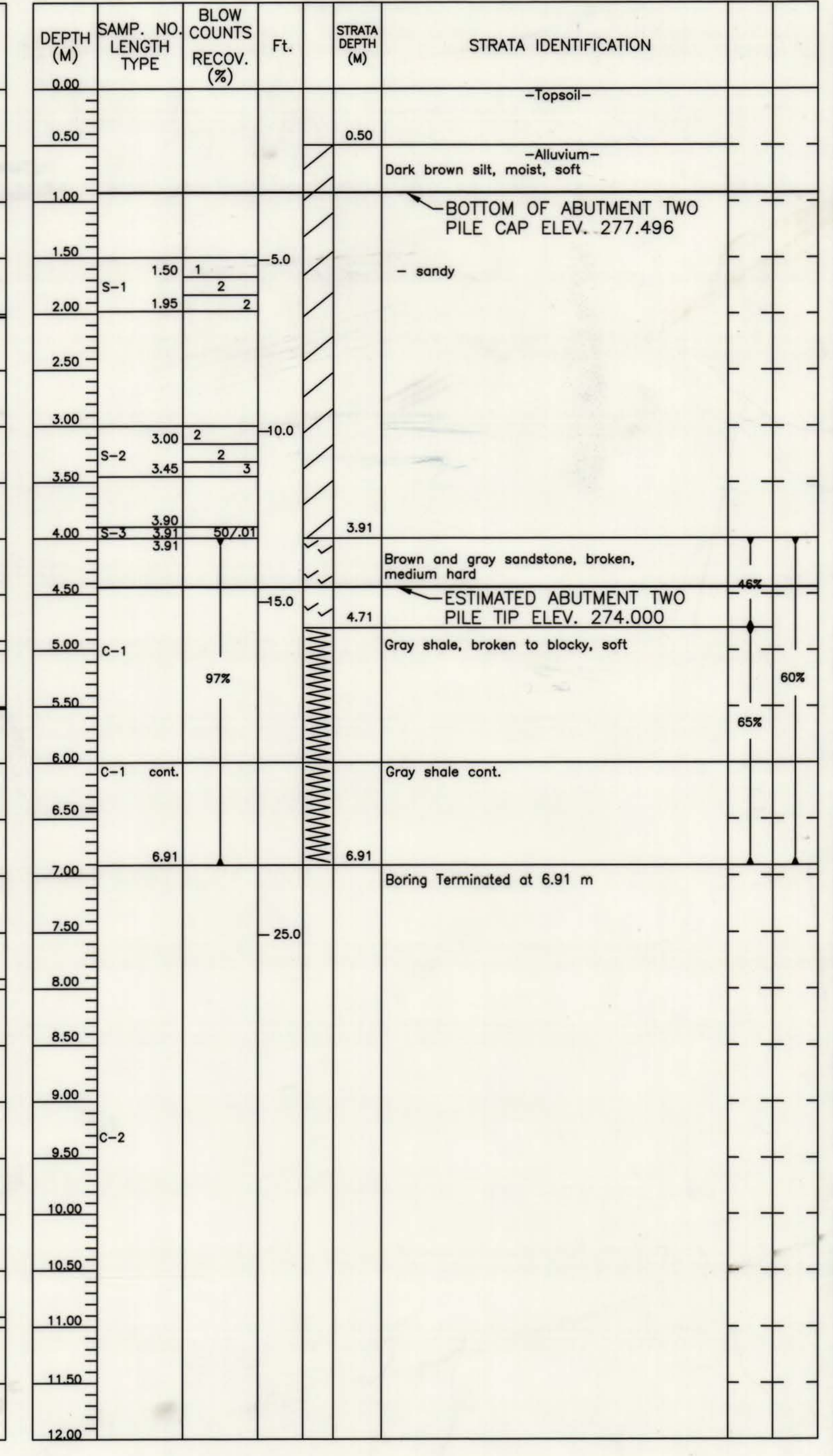
PROJECT: West Buckeye Bridge PROJECT NO.: 98413
 STATION: 1+162.50 OFFSET: 4.5 m Lt. SURFACE ELEVATION: 279.52
 DATE: START: 6/08/00 FINISH: 06/08/00 INSPECTOR: JEW
 WATER LEVELS (DEPTH/DATE): None noted



GENERAL REMARKS: Spoon Refusal @ 3.68 m, No recovery @ 3.68 m

TEST BORING LOG B-8

PROJECT: West Buckeye Bridge PROJECT NO.: 98413
 STATION: 1+162.50 OFFSET: 4.5 m Rt. SURFACE ELEVATION: 278.42
 DATE: START: 06/09/00 FINISH: 06/09/00 INSPECTOR: JEW
 WATER LEVELS (DEPTH/DATE): None noted



GENERAL REMARKS: No Recovery @ S-3

A.A.I. JOB NO. 971281.00



THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WEST BUCKEYE BRIDGE
 PROJECT NO. S331-39-0.09 MONONGALIA COUNTY
 BORING LOGS 2

DESIGNED BY:	DRAWN BY:	INKED BY:	HP	DATE: 11-03-00	SHEET
CHECKED BY:	CHECKED BY:	CHECKED BY:		SCALE: NONE	19

ALPHA ASSOCIATES, INCORPORATED
 CONSULTING ENGINEERS MORGANTOWN, WEST VIRGINIA
 BRIDGE NO. 4415

REVISION NUMBER	SHEET NUMBER	REVISIONS	DATE	BY