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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	280	407

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 SPECIFICATIONS DATED JANUARY 1, 2003, THE CONTRACT DOCUMENTS, AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

DESIGN METHOD

ALL RETAINING WALLS HAVE BEEN AND/OR SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, SECOND EDITION, 1998, INCLUDING 1999, 2000, 2001, AND 2002 INTERIM SPECIFICATIONS.

THE MSE RETAINING WALLS SHALL BE DESIGNED, FABRICATED, AND CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 626.

SUBSURFACE INVESTIGATION

A REPORT OF GEOTECHNICAL STUDY FOR THIS PROJECT HAS BEEN PERFORMED BY THE H.C. NUTTING COMPANY.

MATERIALS

CONCRETE-

- LEVELING PADS - CLASS B (f'c = 3,000 PSI)
- PEDESTRIAN RAILING PILASTER - CLASS K (f'c = 4,000 PSI)
- COPING - CLASS K (f'c = 4,000 PSI)
- MSE FASCIA PANELS - (f'c = 4,000 PSI)
- GRADE BEAM - CLASS B (f'c = 3000 PSI)

REINFORCING STEEL - AASHTO M31, GRADE 60, Fy = 60 KSI

STEEL PILES - AASHTO M270 GRADE 50, Fy = 50 KSI

GEOMETRY

ALL RETAINING WALL LAYOUTS ARE SCHEMATIC AND DO NOT INDICATE THAT ONE APPROVED MSE WALL SYSTEM IS PREFERRED OVER ANY OTHER APPROVED MSE WALL SYSTEM.

ALL STATIONS AND OFFSETS SHOWN FOR WALL WORK POINTS ARE TAKEN AT THE FRONT FACE OF THE WALL UNLESS STATED OTHERWISE. OFFSETS ARE MEASURED RADIAL AND ELEVATIONS ARE GIVEN TO THE TOP OF COPING, UNLESS NOTED OTHERWISE.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE FINAL DESIGN FOR THE MSE RETAINING WALL ALTERNATIVE BID FOR REVIEW AS SHOP DRAWINGS. THE CONTRACTOR SHALL SUBMIT COMPLETE DETAILED DESIGN CALCULATIONS, EXPLANATORY NOTES, QUANTITIES AND DETAIL PLANS FOR THE PROPOSED WALL SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 626.

WALL CONSTRUCTION

CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS, THE STANDARD SPECIFICATIONS, AND THE SPECIAL PROVISIONS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEVISE AND EXECUTE A SPECIFIC WALL ERECTION SEQUENCE FOR EACH WALL.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFE ERECTION OF THE WALLS, AND SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL WORKER PROTECTION SAFETY LAWS AND REGULATIONS.

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. DIRECT SURFACE RUNOFF AWAY FROM THE EXCAVATION. EXCAVATIONS SHOULD BE SLOPED AND SHORED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS, INCLUDING OSHA REQUIREMENTS.

IF UNSATISFACTORY FOUNDATION MATERIAL IS ENCOUNTERED AT THE ELEVATION NOTED FOR RETAINING WALL FOOTINGS ON THE PLANS, THE ELEVATION MAY BE CHANGED AS DIRECTED BY THE ENGINEER. ANY INCREASES IN QUANTITIES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THOSE PAY ITEMS REQUIRED.

TEMPORARY SHORINGS

WALL CONSTRUCTION SHALL PROCEED IN CONFORMANCE WITH THE MAINTENANCE OF TRAFFIC PLANS.

SUBSURFACE DRAINAGE

PLACE 6" PERFORATED PIPE (SUBSURFACE DRAIN) TO THE ELEVATIONS AS SHOWN IN THE PLANS.

WALL REINFORCING ELEMENTS

REINFORCING ELEMENTS, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 626.

REINFORCING STEEL

PROVIDE MINIMUM LAP AND EMBEDMENT LENGTH IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

PROVIDE CONCRETE COVER FOR REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

CONCRETE COPING

ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. ALL REINFORCING STEEL IN THE CONCRETE COPING SHALL BE EPOXY COATED IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 602.

EXCAVATION FOR WALLS A AND J

PAYMENT FOR ALL EXCAVATION, WITHIN THE LIMITS SHOWN ON THE DRAWINGS, SHALL BE AS STRUCTURE EXCAVATION. EXCAVATE ROCK AND SHALE UNDER THESE CLASSIFICATIONS TO THE NEAT LINES OF THE FOOTINGS ONLY. NO EXCAVATION SHALL BE CLASSIFIED AS ROCK EXCAVATION.

SELECT GRANULAR BACKFILL

SELECT GRANULAR BACKFILL SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 626.

PRECAST CONCRETE PANELS

THE EXTERIOR (EXPOSED) CONCRETE SURFACE TEXTURE OF THE MSE WALL PANELS AND PILE LAGGING WALL FACIA PANELS SHALL HAVE A RUSTIC ASHLAR STONE #12007 ARCHITECTURAL SURFACE TREATMENT AS MANUFACTURED BY "CUSTOM ROCK" OR APPROVED EQUALS.

FOR INFORMATION, SOME POTENTIAL SUPPLIERS OF FORMLINERS MANUFACTURERS THE CONTRACTOR MAY WISH TO CONTACT INCLUDE BUT NOT LIMITED TO ARE

- DAYTON/RICHMOND CORPORATION
- SCOTT SYSTEM, INC.
- FITZGERALD FORMLINERS
- GREENSTREAK, INC.

THE CONTRACTOR SHALL SUBMIT A SAMPLE PANEL OF SQUARE OR RECTANGULAR SHAPE WITH THE PROPOSED ARCHITECTURAL SURFACE TREATMENT (TEXTURE AND COLOR) TO THE ENGINEER FOR APPROVAL IN ACCORDANCE WITH STANDARD SPECIFICATION 601.8.10 AND 626.4.1. THE CONTRACTOR SHALL NOT BEGIN WORK WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECTURAL SURFACE TREATMENT FROM THE ENGINEER. PRODUCTION PANELS TO BE SQUARE OR RECTANGULAR SHAPED ONLY.

FORM LINER SHALL BE USED FOR ALL. CARE SHALL BE TAKEN TO ENSURE THAT JOINTS IN THE RANDOM STONE PATTERN COINCIDE WITH THE JOINTS BETWEEN THE PRECAST CONCRETE WALL PANELS.

THE PRECAST CONCRETE FACING ELEMENT (PRECAST CONCRETE PANELS) SHALL MEET THE REQUIREMENTS OF SECTION 601 AND 626 OF THE STANDARD SPECIFICATIONS. ONE PRECASTER SHALL FABRICATE FASCIA PANELS FOR ALL WALLS.

PROVIDE CONCRETE COVER FOR REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

STEEL PILES

STEEL PILES, PLACEMENT OF PILES, DRILLING AND BACKFILLINGS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 614. PREDRILLED HOLES SHALL BE FILLED WITH CLASS B CONCRETE ONLY (GROUT SHALL NOT BE PERMITTED). PILES NEED NOT BE PAINTED. ALL PILES SHALL BE PLACED AT LEAST 10 FEET INTO COMPETENT ROCK.

SOLDIER PILE WALL WITH FACIA PANELS

THIS SECTION OF THE GENERAL NOTES APPLIES ONLY TO WALLS A, D AND L.

THE MANUFACTURER OF THE RETAINING WALL PANELS SHALL BE RESPONSIBLE FOR DESIGNING ATTACHMENT DEVICES AND CONNECTIONS BETWEEN THE FACIA PANELS AND STEEL PILES. THE DESIGN SHALL CONFORM THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, SECOND EDITION, 1998, INCLUDING 1999, 2000, 2001, AND 2002 INTERIM SPECIFICATIONS.

THE WALL PANELS SHALL BE FABRICATED, AND CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 626.5.1.1.1.

THE ATTACHMENT DEVICES AND CONNECTIONS SHALL MEET THE REQUIREMENTS OF SECTION 626.5.1.2.

THE COSTS FOR ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, REINFORCING ELEMENTS, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE, 6" DIA PERFORATED PIPE, NO 57 STONE AND FILTER FABRIC SHALL BE INCLUDED IN ITEM 626002, MSE RETAINING WALL.

THE COST OF STRUCTURAL EXCAVATION FOR WALL A IS INCLUDED IN ITEM 212001-000, STRUCTURE EXCAVATION. COSTS OF EXCAVATION FOR WALLS D AND L ARE INCLUDED IN ITEM 626002, MSE RETAINING WALL.

TIERBACK WALL

THIS SECTION OF THE GENERAL NOTES APPLIES ONLY TO WALL I.

STEEL PILES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 614. PILES NEED NOT BE PAINTED. PREDRILLED HOLES SHALL BE FILLED ONLY WITH CLASS B CONCRETE TO THE LEVEL OF THE BOTTOM OF LAGGING. USING GROUT SHALL NOT BE PERMITTED.

ROCK ANCHORS SHALL BE DESIGNED, INSTALLED AND TESTED ACCORDING TO THE SPECIAL PROVISION 613, ROCK ANCHOR.

PEDESTRIAN RAILING

THE CONTRACTOR SHALL PROVIDE PEDESTRIAN RAILING AS DETAILED IN THE PLANS. THE CONCRETE SURFACE TEXTURE OF THE RAILING PILASTER SHALL HAVE A RUSTIC ASHLAR STONE #12007 ARCHITECTURAL SURFACE TREATMENT AS MANUFACTURED BY "CUSTOM ROCK" OR APPROVED EQUALS.

SPECIAL NOTE

THE CONTRACTOR SHALL LOCATE AND EXCAVATE TO EXPOSE THE TOP OF THE EXISTING 42" DIAMETER RCP ON THE SOUTH SIDE OF ABUTMENT 1 PRIOR TO STARTING WORK. ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN A MANNER WHICH ENSURES THAT THE EXISTING 42" DIAMETER RCP WILL NOT BE DAMAGED. THE COST OF EXCAVATION IS INCLUDED IN ITEM 212001-000, STRUCTURE EXCAVATION FOR WALL A.

SHOP DRAWINGS

ALL SHOP DRAWINGS WILL BE SUBJECT TO THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 105.2. SUBMIT SHOP DRAWINGS TO:

MICHAEL BAKER JR., INC
5088 WEST WASHINGTON STREET
CHARLESTON, WV 25313

Δ	NOTE CHANGES	2/11/03	JDD
NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
GENERAL NOTES

DESIGNED	DATE
<i>LLW</i>	09/02
DRAWN	
<i>ARS</i>	09/02
CHECKED	
<i>LLW</i>	09/02
CHECKED	
<i>JDD</i>	09/02

Baker Michael Baker Jr., Inc.	Charleston, W.Va.	SHEET	W1 of W58
		BRIDGE NO.	4919

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	281	407

INDEX OF SHEETS	
SHEET	DESCRIPTION
W1	GENERAL NOTES
W2	INDEX OF SHEETS & ABBREVIATIONS
W3	WEST VIRGINIA ESTIMATE OF QUANTITIES - I
W4	MARYLAND ESTIMATE OF QUANTITIES - II
W5	WEST VIRGINIA WALL D PLAN
W6	WEST VIRGINIA WALL D ELEVATION & SECTION
W7	WEST VIRGINIA WALLS A, B, AND C PLAN
W8	WEST VIRGINIA WALL A ELEVATION & SECTION
W9	WEST VIRGINIA WALL A GRADE BEAM & PILE PLAN
W10	WEST VIRGINIA WALL A GRADE BEAM REINFORCING
W11	WEST VIRGINIA WALL B ELEVATION & SECTION
W12	WEST VIRGINIA WALL C ELEVATION & SECTION
W13	MARYLAND WALLS E, F, G, H, I, J & K PLAN
W14	MARYLAND WALL E ELEVATION - I
W15	MARYLAND WALL E ELEVATION - II
W16	MARYLAND WALL F ELEVATION & SECTION
W17	MARYLAND WALL G ELEVATION & SECTION
W18	MARYLAND WALL H ELEVATION & SECTION
W19	MARYLAND WALL I ELEVATION - I
W20	MARYLAND WALL I ELEVATION - II & SECTION
W21	MARYLAND WALL I TIEBACK DETAILS
W22	MARYLAND WALL J ELEVATION - I
W23	MARYLAND WALL J ELEVATION - II
W24	MARYLAND WALL K ELEVATION - I
W25	MARYLAND WALL K ELEVATION - II
W26	MARYLAND WALLS K AND L PLAN
W27	MARYLAND WALL L PLAN
W28	MARYLAND WALL L ELEVATION - I
W29	MARYLAND WALL L ELEVATION - II
W30	BARRIER DETAILS
W31	PEDESTRIAN RAILING DETAILS - I
W32	PEDESTRIAN RAILING DETAILS - II
W33	SITUATION PLAN WEST VIRGINIA WALLS
W34	SITUATION PLAN MARYLAND WALLS - I
W35	SITUATION PLAN MARYLAND WALLS - II
W36	WEST VIRGINIA WALLS - CONSTRUCTION SEQUENCE & SHORING PLANS - I
W37	WEST VIRGINIA WALLS - CONSTRUCTION SEQUENCE & SHORING PLANS - II
W38	MARYLAND WALLS - CONSTRUCTION SEQUENCE & SHORING PLANS - I
W39	MARYLAND WALLS - CONSTRUCTION SEQUENCE & SHORING PLANS - II
W40	CORE BORING - I
W41	CORE BORING - II
W42	CORE BORING - III
W43	CORE BORING - IV
W44	CORE BORING - V
W45	CORE BORING - VI
W46	CORE BORING - VII
W47	CORE BORING - VIII
W48	CORE BORING - IX
W49	CORE BORING - X
W50	CORE BORING - XI
W51	CORE BORING - XII
W52	CORE BORING - XIII
W53	CORE BORING - XIV
W54	CORE BORING - XV
W55	CORE BORING - XVI
W56	CORE BORING - XVII
W57	CORE BORING - XVIII
W58	CORE BORING - XIX

ABBREVIATIONS

ABREV	ABBREVIATION DEFINITION
ABUT	ABUTMENT
BOT	BOTTOM
CL	CENTERLINE
CIP	CAST-IN-PLACE
CLR	CLEAR
CS	CHANNEL SECTION
D	DEGREE OF CURVE
DIA	DIAMETER
EL	ELEVATION
FTG	FOOTING
GALV	GALVANIZED
HC	HORIZONTAL CURVE
INV	INVERT
L	LENGTH OF CURVE
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
MAX	MAXIMUM
MD	MARYLAND
MIN	MINIMUM
MSE	MECHANICALLY STABILIZED EARTH
NO	NUMBER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
PC	POINT OF CURVE
PI	POINT OF INTERSECT
PL	PLATE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
STA	STATION
T	TANGENT
TYP	TYPICAL
VC	VERTICAL CURVE
WV	WEST VIRGINIA

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
INDEX OF SHEETS
& ABBREVIATIONS

DESIGNED <i>LLW</i>	DATE 09/02
DRAWN <i>MAD</i>	09/02
CHECKED <i>JSD</i>	09/02
CHECKED <i>RRJ</i>	09/02

Baker Michael Baker Jr., Inc.	Charleston, W.Va.	SHEET W2 OF W58
		BRIDGE NO. 4919

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	282	407

SUMMARY OF ESTIMATED WALL A QUANTITIES

ITEM NO	DESCRIPTION	ALT	UNIT	QUANTITY
212001-000	STRUCTURE EXCAVATION		CY	575
212010-001	SHORING, WALL A		SF	790
601002-001	CLASS B CONCRETE		CY	100
602002-001	EPOXY COATED REINFORCING STEEL BAR		LB	34866
614001-159	W14x176 STEEL PILE		LF	750
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	GG1	SF	1680
626002-002	MSE RETAINING WALL, REINFORCED EARTH	GG2	SF	1680
626002-003	MSE RETAINING WALL, ISOGRID	GG3	SF	1680
626002-004	MSE RETAINING WALL, MSE PLUS	GG4	SF	1680
626002-005	MSE RETAINING WALL, ARES	GG5	SF	1680
639001-001	CONSTRUCTION LAYOUT STAKE, WALL A		LS	1

SUMMARY OF ESTIMATED WALL C QUANTITIES

ITEM NO	DESCRIPTION	ALT	UNIT	QUANTITY
601003-001	CLASS K CONCRETE		CY	1
602002-001	EPOXY COATED REINFORCING STEEL BAR		LB	340
617003-001	ALUMINUM RAILING, 2 RAIL		LF	15
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	II1	SF	147
626002-002	MSE RETAINING WALL, REINFORCED EARTH	II2	SF	147
626002-003	MSE RETAINING WALL, ISOGRID	II3	SF	147
626002-004	MSE RETAINING WALL, MSE PLUS	II4	SF	147
626002-005	MSE RETAINING WALL, ARES	II5	SF	147
639001-001	CONSTRUCTION LAYOUT STAKE, WALL C		LS	1

SUMMARY OF ESTIMATED WALL B QUANTITIES

ITEM NO	DESCRIPTION	ALT	UNIT	QUANTITY
212010-001	SHORING, WALL B		SF	231
617003-001	ALUMINUM RAILING, PEDESTRIAN		LF	61
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	HH1	SF	865
626002-002	MSE RETAINING WALL, REINFORCED EARTH	HH2	SF	865
626002-003	MSE RETAINING WALL, ISOGRID	HH3	SF	865
626002-004	MSE RETAINING WALL, MSE PLUS	HH4	SF	865
626002-005	MSE RETAINING WALL, ARES	HH5	SF	865
639001-001	CONSTRUCTION LAYOUT STAKE, WALL B		LS	1

SUMMARY OF ESTIMATED WALL D QUANTITIES

ITEM NO	DESCRIPTION	ALT	UNIT	QUANTITY
614001-006	HP12x53 STEEL PILE		LF	350
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	JJ1	SF	798
626002-002	MSE RETAINING WALL, REINFORCED EARTH	JJ2	SF	798
626002-003	MSE RETAINING WALL, ISOGRID	JJ3	SF	798
626002-004	MSE RETAINING WALL, MSE PLUS	JJ4	SF	798
626002-005	MSE RETAINING WALL, ARES	JJ5	SF	798
639001-001	CONSTRUCTION LAYOUT STAKE, WALL D		LS	1

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
WEST VIRGINIA
ESTIMATE OF QUANTITIES - I

DESIGNED	DATE
<i>JLE</i>	09/02
DRAWN	
<i>MAD</i>	09/02
CHECKED	
<i>JLW</i>	09/02
CHECKED	
<i>JLD</i>	09/02

Baker Michael Baker Jr., Inc.	Charleston, W.Va.	SHEET	W3 OF W58
		BRIDGE NO.	4919

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	283	407

SUMMARY OF ESTIMATED WALL E QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
212010-001	SHORING, WALL E		SF	765
617003-001	ALUMINUM RAILING, PEDESTRIAN		LF	241
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	KK1	SF	4364
626002-002	MSE RETAINING WALL, REINFORCED EARTH	KK2	SF	4364
626002-003	MSE RETAINING WALL, ISOGRID	KK3	SF	4364
626002-004	MSE RETAINING WALL, MSE PLUS	KK4	SF	4364
626002-005	MSE RETAINING WALL, ARES	KK5	SF	4364
639001-001	CONSTRUCTION LAYOUT STAKE, WALL E		LS	1

SUMMARY OF ESTIMATED WALL F QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	LL1	SF	895
626002-002	MSE RETAINING WALL, REINFORCED EARTH	LL2	SF	895
626002-003	MSE RETAINING WALL, ISOGRID	LL3	SF	895
626002-004	MSE RETAINING WALL, MSE PLUS	LL4	SF	895
626002-005	MSE RETAINING WALL, ARES	LL5	SF	895
639001-001	CONSTRUCTION LAYOUT STAKE, WALL F		LS	1

SUMMARY OF ESTIMATED WALL G QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	MM1	SF	1601
626002-002	MSE RETAINING WALL, REINFORCED EARTH	MM2	SF	1601
626002-003	MSE RETAINING WALL, ISOGRID	MM3	SF	1601
626002-004	MSE RETAINING WALL, MSE PLUS	MM4	SF	1601
626002-005	MSE RETAINING WALL, ARES	MM5	SF	1601
639001-001	CONSTRUCTION LAYOUT STAKE, WALL G		LS	1

SUMMARY OF ESTIMATED WALL H QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
617003-001	ALUMINUM RAILING, PEDESTRIAN		LF	136
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	NN1	SF	828
626002-002	MSE RETAINING WALL, REINFORCED EARTH	NN2	SF	828
626002-003	MSE RETAINING WALL, ISOGRID	NN3	SF	828
626002-004	MSE RETAINING WALL, MSE PLUS	NN4	SF	828
626002-005	MSE RETAINING WALL, ARES	NN5	SF	828
639001-001	CONSTRUCTION LAYOUT STAKE, WALL H		LS	1

SUMMARY OF ESTIMATED WALL I QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
212001-000	STRUCTURE EXCAVATION	-	CY	1537
614001-248	W21x101 STEEL PILE	-	LF	1203
614001-251	W21x132 STEEL PILE	-	LF	1823
614003-001	CONCRETE LAGGING, THICKNESS 9"	-	SF	2585
614003-001	CONCRETE LAGGING, THICKNESS 12"	-	SF	1640
615005-001	ROCK ANCHOR, INSTALLED	-	EA	57
615005-002	ROCK ANCHORS PERFORMANCE TEST	-	EA	5
615005-003	ADDITIONAL ANCHOR LENGTH	-	LF	150
628001-001	DRILLED HOLE	-	LF	115
628002-001	PRESSURE INJECTED GROUT	-	CF	75
639001-001	CONSTRUCTION LAYOUT STAKE, WALL I	-	LS	1

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4
4

SUMMARY OF ESTIMATED WALL J QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
212010-001	SHORING, WALL J		SF	395
617003-001	ALUMINUM RAILING, PEDESTRIAN		LF	259
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	PP1	SF	3893
626002-002	MSE RETAINING WALL, REINFORCED EARTH	PP2	SF	3893
626002-003	MSE RETAINING WALL, ISOGRID	PP3	SF	3893
626002-004	MSE RETAINING WALL, MSE PLUS	PP4	SF	3893
626002-005	MSE RETAINING WALL, ARES	PP5	SF	3893
639001-001	CONSTRUCTION LAYOUT STAKE, WALL J		LS	1

SUMMARY OF ESTIMATED WALL K QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
601003-001	CLASS K CONCRETE		CY	19
602002-001	EPOXY COATED REINFORCING STEEL BAR		LB	5480
617003-001	ALUMINUM RAILING, 2 RAIL		LF	239
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	QQ1	SF	5240
626002-002	MSE RETAINING WALL, REINFORCED EARTH	QQ2	SF	5240
626002-003	MSE RETAINING WALL, ISOGRID	QQ3	SF	5240
626002-004	MSE RETAINING WALL, MSE PLUS	QQ4	SF	5240
626002-005	MSE RETAINING WALL, ARES	QQ5	SF	5240
639001-001	CONSTRUCTION LAYOUT STAKE, WALL K		LS	1

SUMMARY OF ESTIMATED WALL L QUANTITIES				
ITEM	DESCRIPTION	ALT	UNIT	QUANTITY
614001-161	W14x211 STEEL PILE		LF	2250
626002-001	MSE RETAINING WALL, VSL RETAINED EARTH	RR1	SF	3684
626002-002	MSE RETAINING WALL, REINFORCED EARTH	RR2	SF	3684
626002-003	MSE RETAINING WALL, ISOGRID	RR3	SF	3684
626002-004	MSE RETAINING WALL, MSE PLUS	RR4	SF	3684
626002-005	MSE RETAINING WALL, ARES	RR5	SF	3684
639001-001	CONSTRUCTION LAYOUT STAKE, WALL L		LS	1

NEW ITEMS ADDED	3/24/03	JDD
NO.	REVISION	DATE: BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND
ESTIMATE OF QUANTITIES - II

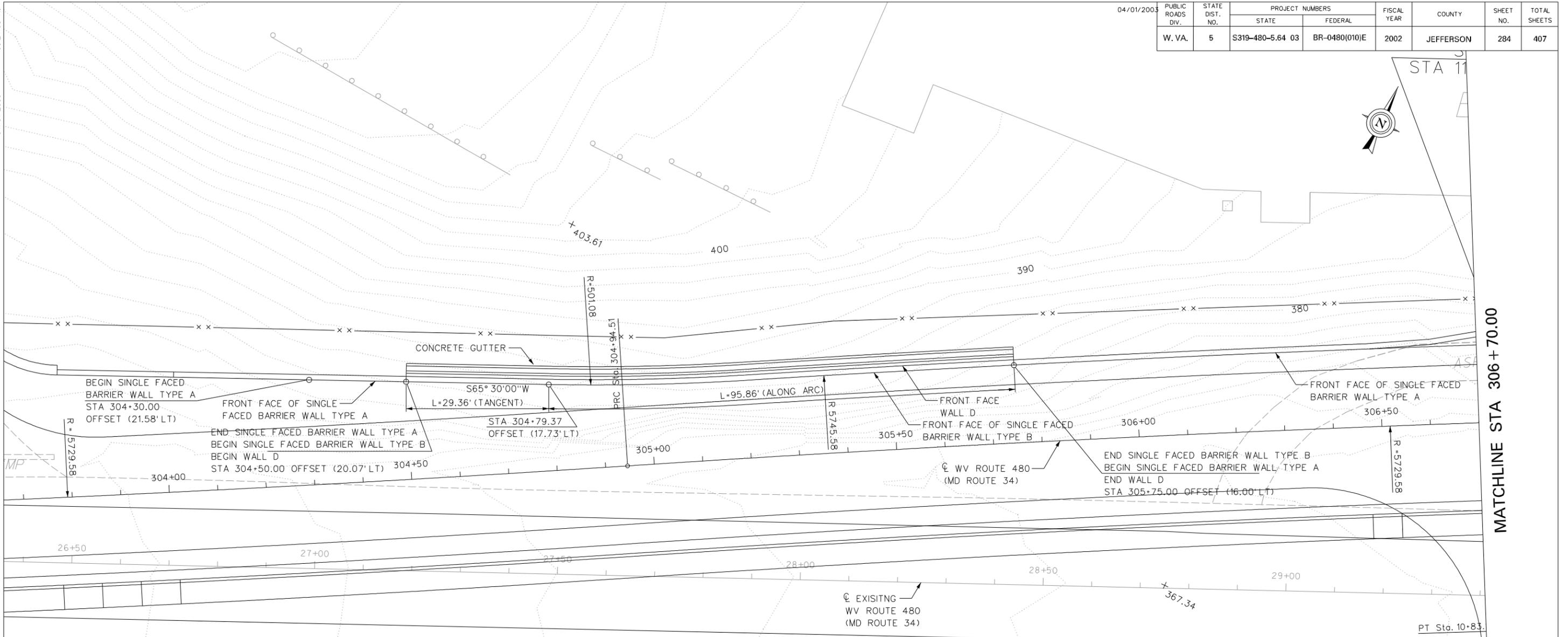
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DRAWN	
<i>MAD</i>	09/02
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<i>RBF</i>	09/02
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<i>JTW</i>	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W4** OF **W58**
BRIDGE NO. **4919**

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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	284	407



WALL D PLAN

HORIZONTAL CURVE DATA

CURVE SH3B-1

PC=301+00.00
PI=302+97.33
PT=304+94.51
 $\Delta=3^{\circ}56'42''$ (LT)
D=1^{\circ}00'00''
R=5,729.58
L=394.51
T=197.33

CURVE SH3B-2

PC=304+94.51
PI=307+48.88
PT=310+02.92
 $\Delta=5^{\circ}05'03''$ (RT)
D=1^{\circ}00'00''
R=5,729.58
L=508.41
T=254.37

VERTICAL CURVE DATA



PVC=304+70.00
PVI=307+20.00
PVT=309+70.00
LVC=500.00

NOTES:

- FOR WALL GENERAL NOTES, SEE SHEET W1.
- SINGLE FACED BARRIER WALLS, TYPE A AND B, ARE ROADWAY ITEMS. SEE ROADWAY PLANS FOR MORE INFORMATION.
- STATIONS AND OFFSETS SHOWN ARE MEASURED TO THE FRONT FACE OF SINGLE FACED BARRIER.
- FOR DIMENSIONS OF BARRIER WALLS, TYPE A & B, SEE ROADWAY DRAWINGS.
- FOR WALL D ELEVATION AND SECTION, SEE SHEET W6.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
WEST VIRGINIA WALL D PLAN

DESIGNED: JLE DATE: 09/02
DRAWN: JME DATE: 09/02
CHECKED: LLW DATE: 09/02
CHECKED: JLD DATE: 09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W5** OF **W58**
BRIDGE NO. **4919**



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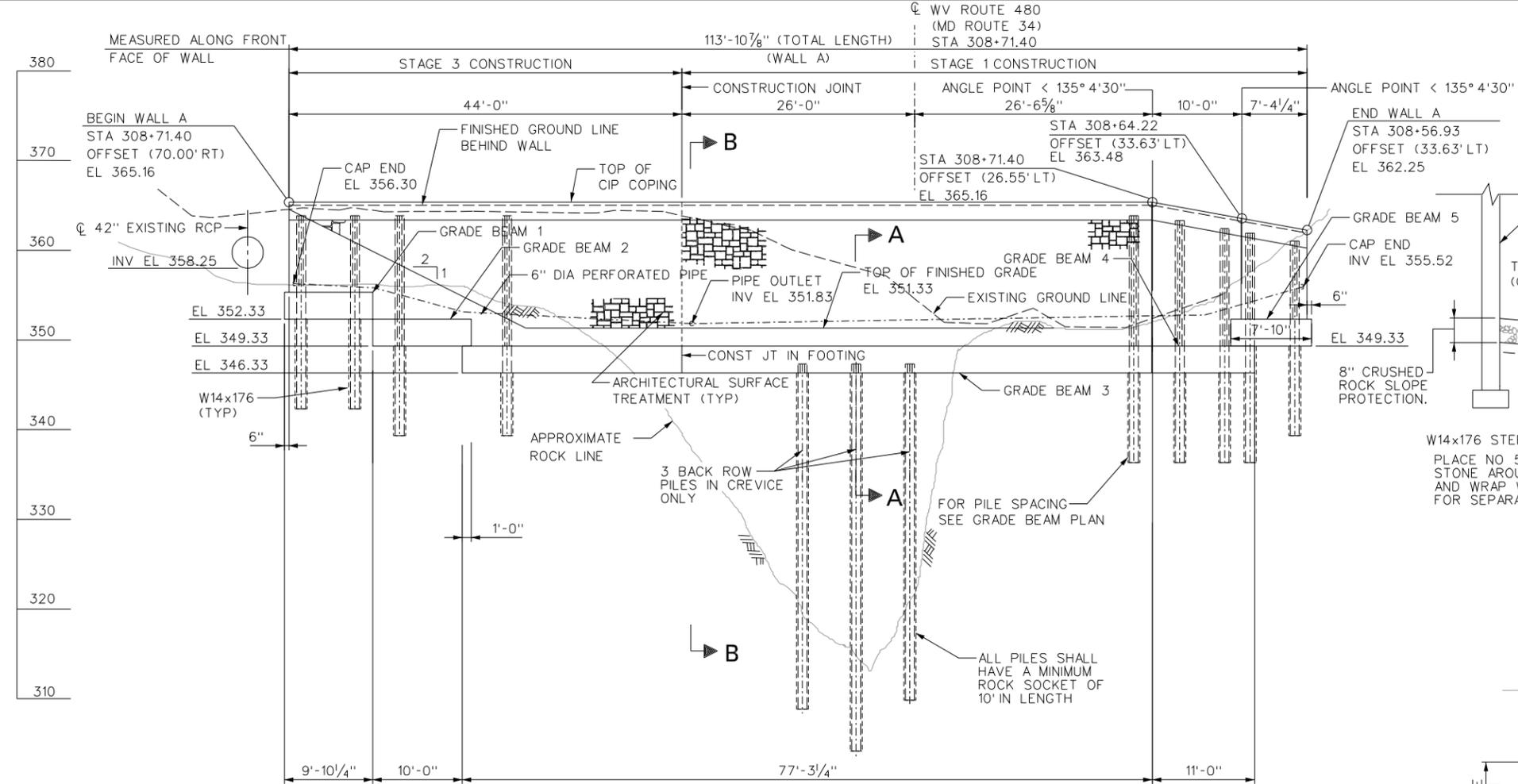
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J062908 - BRIDGE b

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	287	407

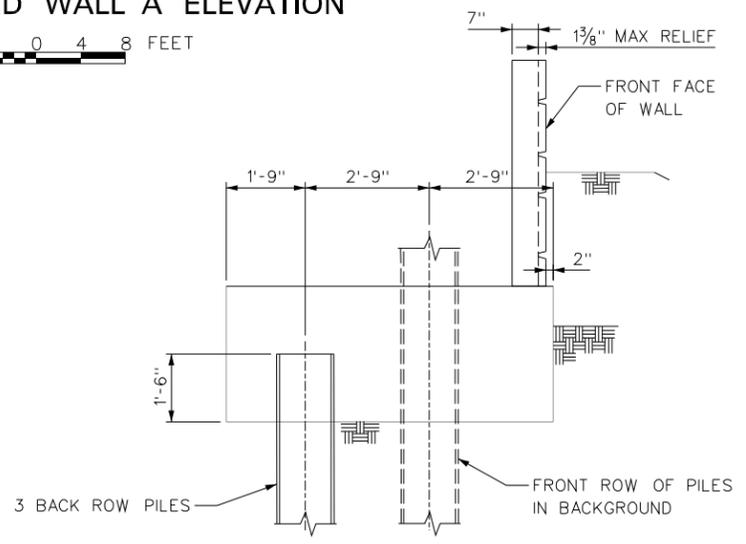


DEVELOPED WALL A ELEVATION

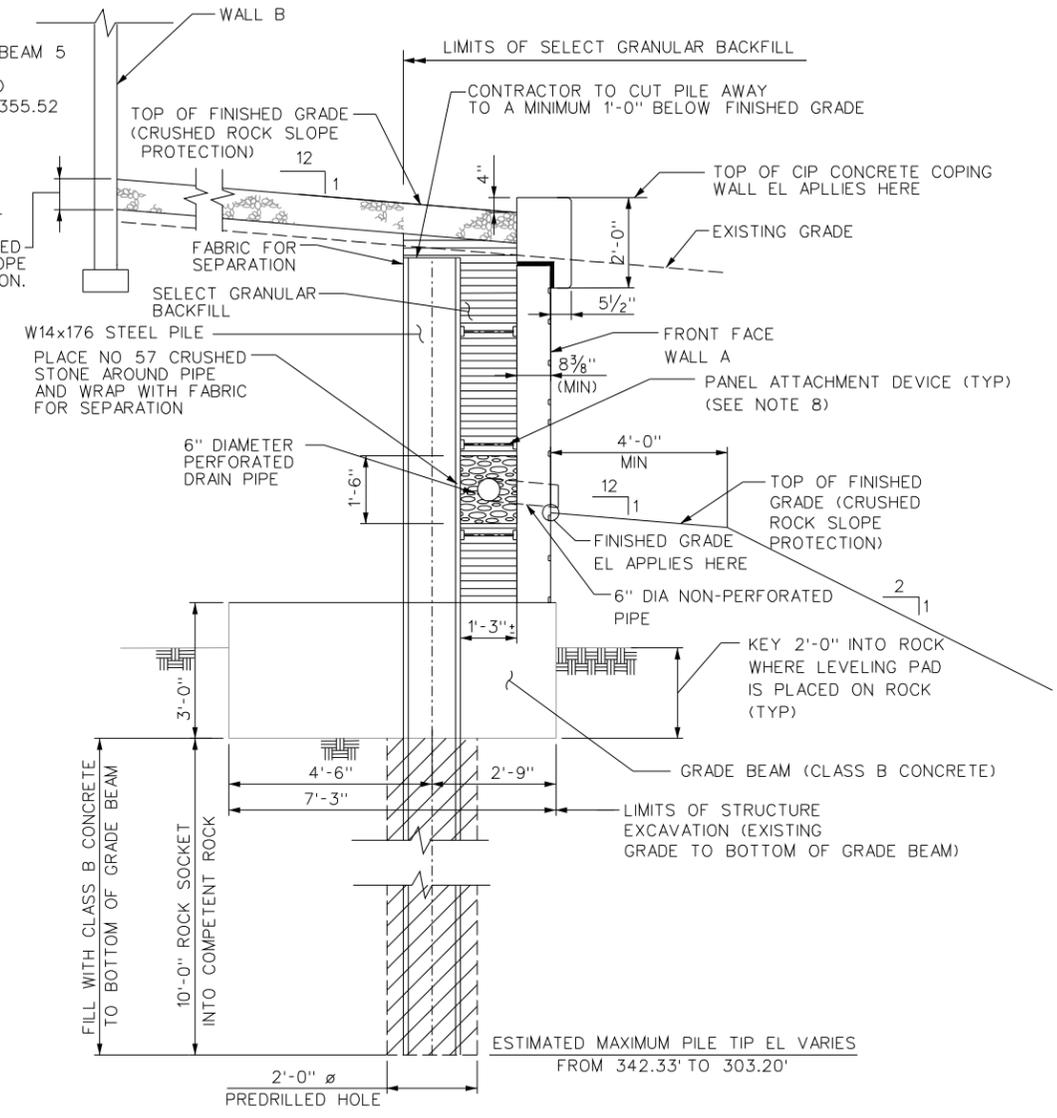


NOTES:

- FOR WALL GENERAL NOTES, SEE SHEET W1.
- ARCHITECTURAL SURFACE TREATMENT, COPING, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, REINFORCING ELEMENTS, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL. SEE WALL DETAILS FOR PATTERN.
- 6" DIA PERFORATED PIPE, NO 57 STONE AND FABRIC FOR SEPARATION SHALL BE INCIDENTAL TO ITEM NO. 626002, RETAINING WALL.
- WHERE THE GRADEBEAM IS PLACED ON ROCK; VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE MSE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
- ALL DIMENSIONS ARE MEASURED ALONG THE FRONT FACE OF THE WALL.
- STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.
- CLASS B CONCRETE SHALL EXTEND FROM THE BOTTOM OF THE ROCK SOCKET TO THE BOTTOM OF THE GRADE BEAM. THE QUANTITY OF CLASS B CONCRETE USED TO BACKFILL AROUND THE PILE SHALL BE INCIDENTAL TO ITEM 614001 W14 X 176 STEEL PILE. PAINTING OF THE PILES IS NOT REQUIRED.
- PANEL ATTACHMENT DEVICE SHALL BE DESIGNED BY THE MSE WALL PANEL MANUFACTURER. BASED ON A MINIMUM FACTORED EQUIVALENT FLUID PRESSURE OF (55 PCF) (D), WHERE D = THE DEPTH BELOW FINISHED GRADE AT THE TOP OF THE WALL. PANEL REINFORCING SHOWN IS BASED ON THE PANELS BEING SIMPLY SUPPORTED BETWEEN PILES. ANY MODIFICATIONS FROM THIS ASSUMPTION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBJECT TO THE APPROVAL OF THE ENGINEER.
- COST OF CIP COPING AND EPOXY COATED REINFORCING STEEL IN THE COPING SHALL BE INCIDENTAL TO ITEM NO 626002.



SECTION A-A



SECTION B-B



NO.	REVISION	DATE	BY

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
WEST VIRGINIA WALL A
ELEVATION & SECTION**

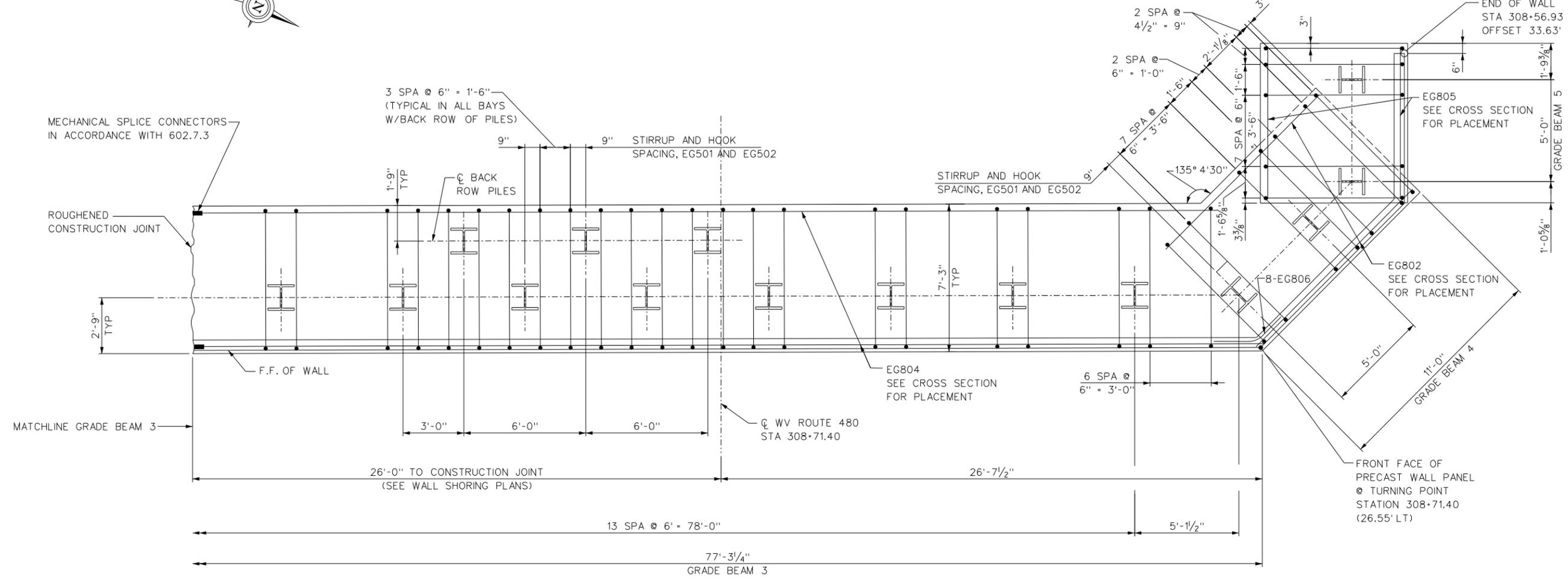
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Baker
Michael Baker Jr., Inc. Charleston, W.Va.

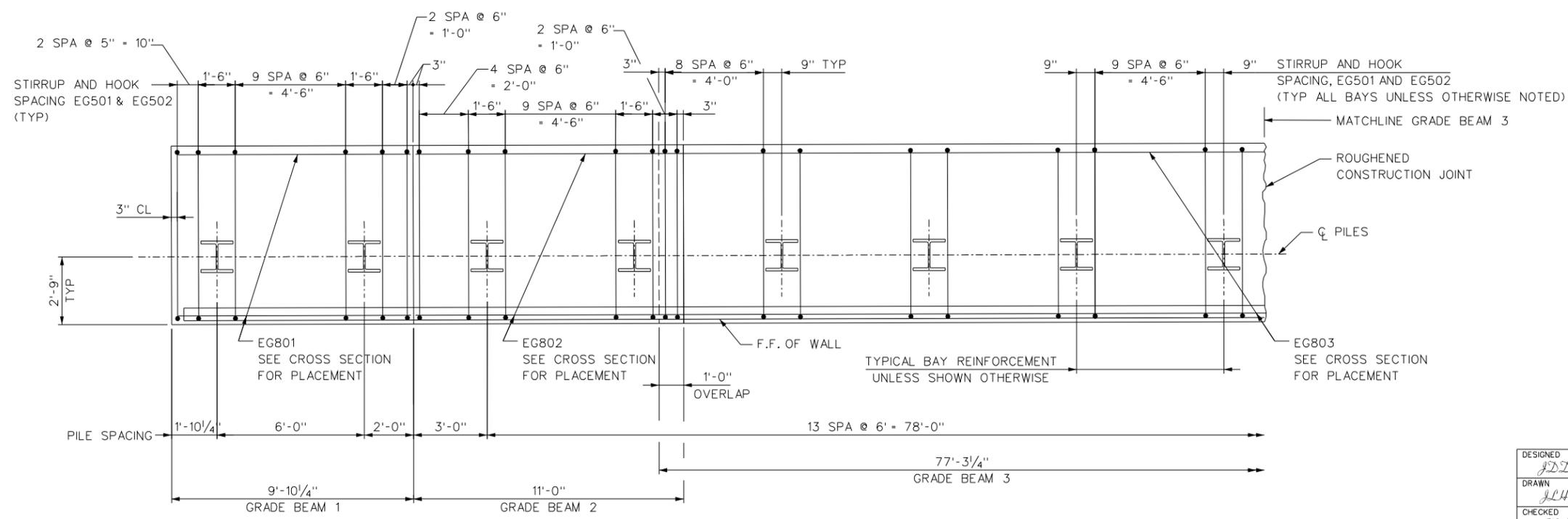
SHEET
W8 OF **W58**
BRIDGE NO.
4919

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04/01/2003

04/01/2003 PUBLIC ROADS DIV.	STATE DIST. NO. W. VA.	PROJECT NUMBERS		FISCAL YEAR 2002	COUNTY JEFFERSON	SHEET NO. 288	TOTAL SHEETS 407
		STATE	FEDERAL				
	5	S319-480-5.64	03 BR-0480(010)E				



GRADE BEAM PLAN



GRADE BEAM PLAN



NO.	REVISION	DATE	BY

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
WEST VIRGINIA WALL A
GRADE BEAM AND PILE PLAN

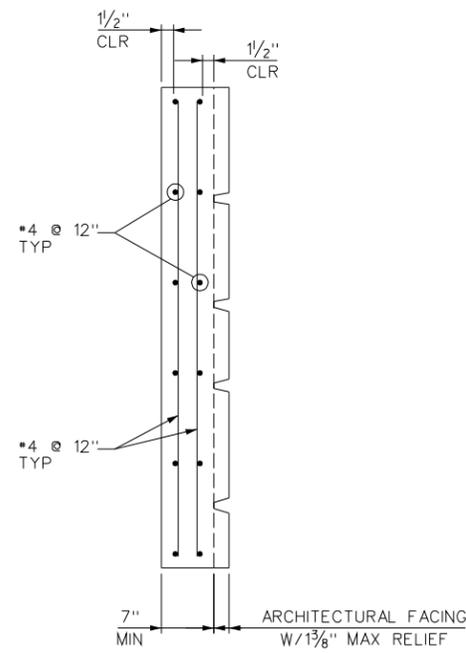
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DRAWN JLH	09/02
CHECKED SRA	09/02
CHECKED JSD	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

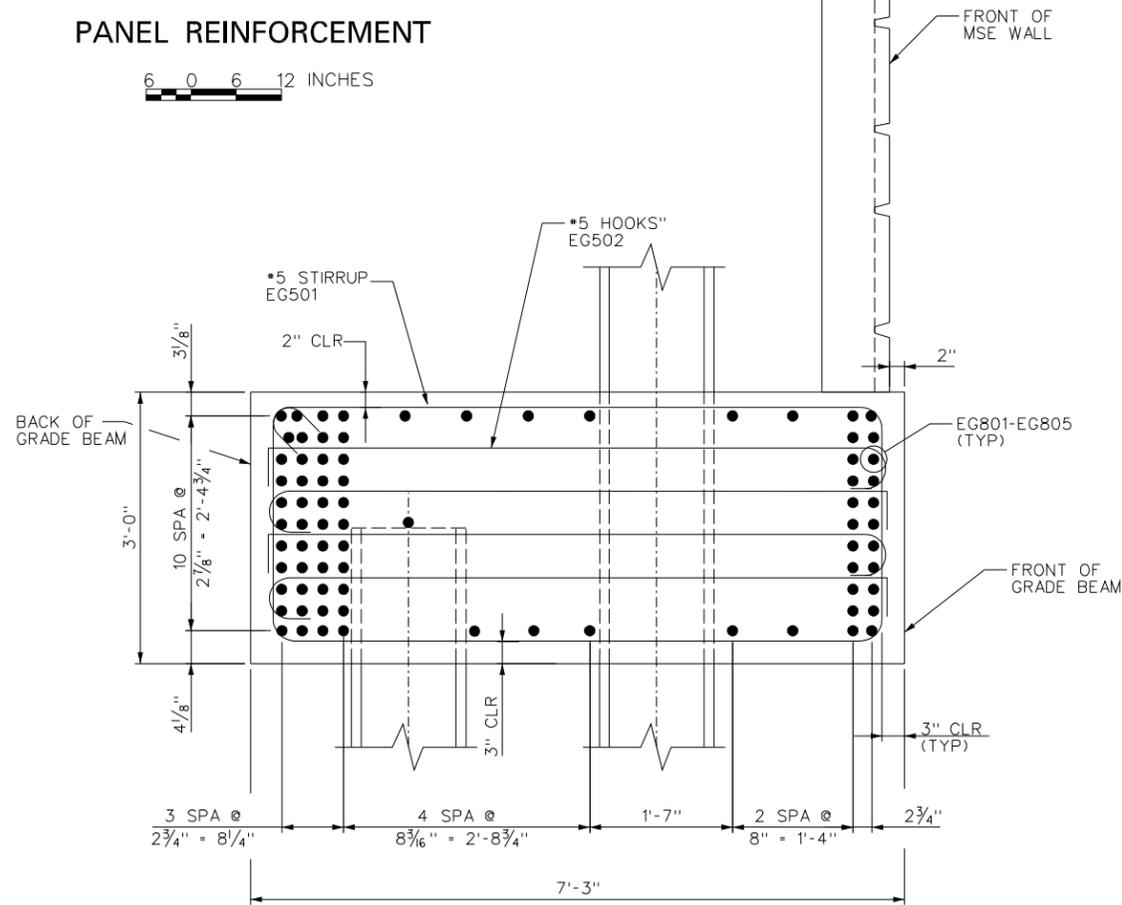
SHEET **W9** OF **W58**
BRIDGE NO. **4919**

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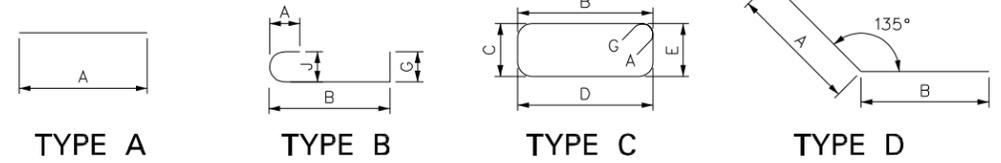
04/01/2003	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
			STATE	FEDERAL				
	W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	289	407



PANEL REINFORCEMENT



TYPICAL GRADE BEAM REINFORCING



REINFORCEMENT BAR SCHEDULE GRADE BEAM 1

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	E	J	G
EG801	A	#8	78	9'-6"	GRADE BEAM 1	9'-6"						
EG501	C	#5	16	20'-0"	GRADE BEAM 1	8"	6'-9"	2'-7"	6'-9"	2'-7"		8"
EG502	B	#5	64	8'-7"	GRADE BEAM 1	7"	6'-9"				5"	10"

REINFORCEMENT BAR SCHEDULE GRADE BEAM 2

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	E	J	G
EG802	A	#8	78	10'-8"	GRADE BEAM 2	10'-8"						
EG501	C	#5	18	20'-0"	GRADE BEAM 2	8"	6'-9"	2'-7"	6'-9"	2'-7"		8"
EG502	B	#5	72	8'-7"	GRADE BEAM 2	7"	6'-9"				5"	10"

REINFORCEMENT BAR SCHEDULE GRADE BEAM 3

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	E	J	G
EG803	A	#8	78	24'-9"	GRADE BEAM 3	24'-9"						
EG804	A	#8	78	52'-4"	GRADE BEAM 3	52'-4"			SPLICE WITH EG803 AT CJ (COUPLERS)			
EG806	D	#8	8	8'-0"	GR BM 2 & 3	4'-0"	4'-0"	8 FRONT FACE, SPLICE AT GR. BM. 3 AND 4				
EG501	C	#5	120	20'-0"	GRADE BEAM 3	8"	6'-9"	2'-7"	6'-9"	2'-7"		8"
EG502	B	#5	480	8'-7"	GRADE BEAM 3	7"	6'-9"				5"	10"

REINFORCEMENT BAR SCHEDULE GRADE BEAM 4

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	E	J	G
EG802	A	#8	78	10'-8"	GRADE BEAM 4	10'-8"						
EG501	C	#5	15	20'-0"	GRADE BEAM 4	8"	6'-9"	2'-7"	6'-9"	2'-7"		8"
EG502	B	#5	60	8'-7"	GRADE BEAM 4	7"	6'-9"				5"	10"

REINFORCEMENT BAR SCHEDULE GRADE BEAM 5

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	E	J	G
EG805	A	#8	78	7'-10"	GRADE BEAM 5	7'-10"						
EG501	C	#5	12	20'-0"	GRADE BEAM 5	8"	6'-9"	2'-7"	6'-9"	2'-7"		8"
EG502	B	#5	48	8'-7"	GRADE BEAM 5	7"	6'-9"				5"	10"

NOTE:
 #67 COARSE AGGREGATE WITH A MAXIMUM AGGREGATE SIZE OF 1" SHALL BE USED IN THE CONCRETE MIX FOR THE GRADE BEAM

NO.	COARSE AGGREGATE NOTE ADDED	2/11/03	JDD
	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
 RETAINING WALLS
 WEST VIRGINIA WALL A
 GRADE BEAM REINFORCING

DESIGNED	JDD	DATE	09/02
DRAWN	JLU	DATE	09/02
CHECKED	SRA	DATE	09/02
CHECKED	JDD	DATE	09/02

Baker
 Michael Baker Jr., Inc. Charleston, W.Va. **4919**

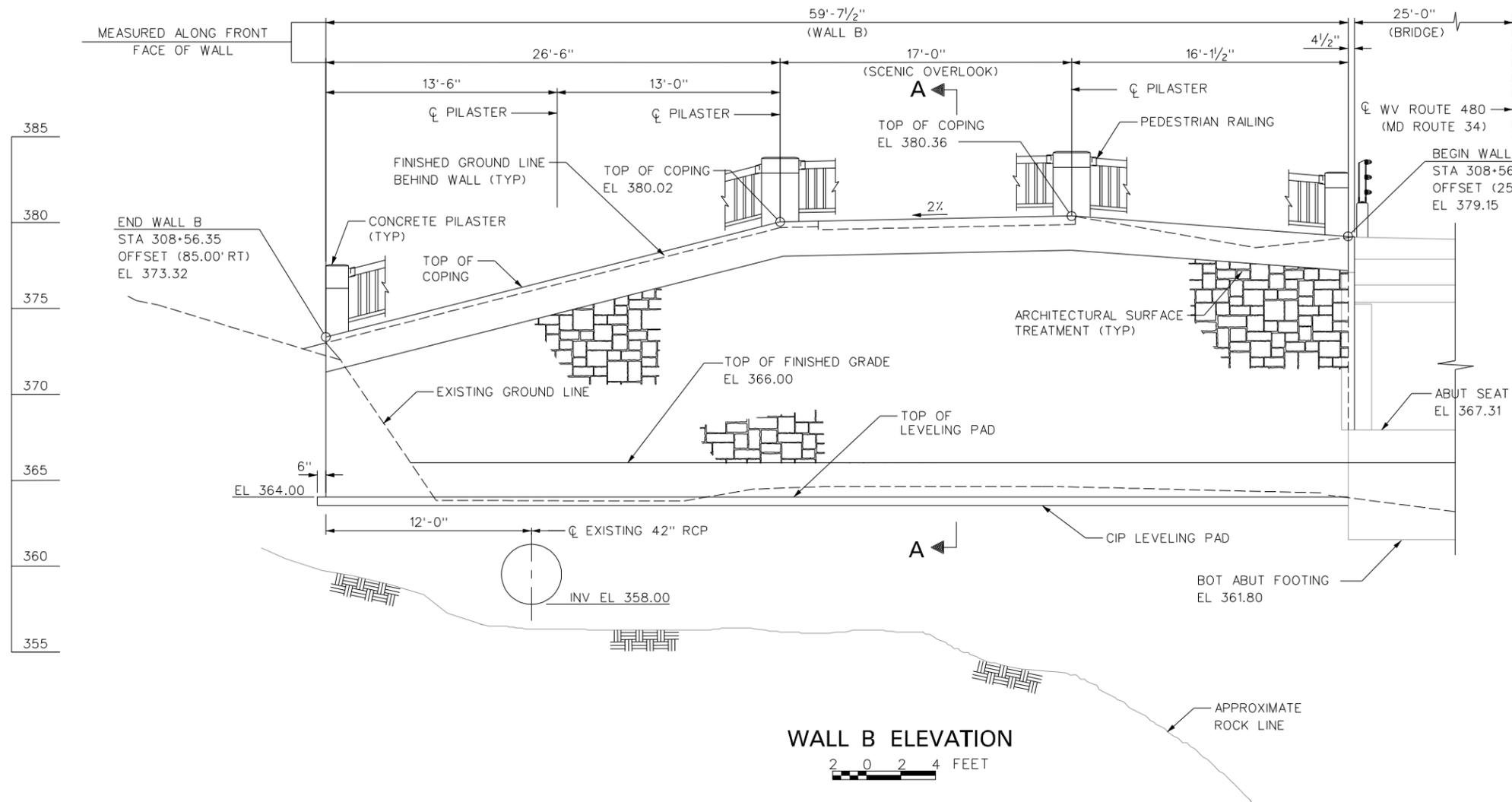
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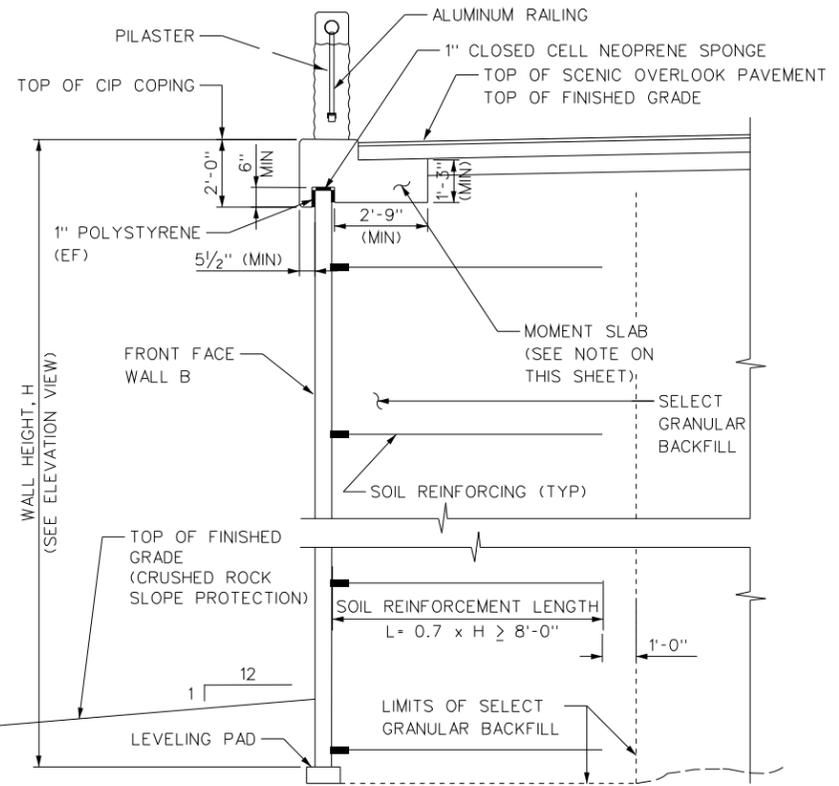
06C29C98 - BRIDGE b

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	290	407



WALL B ELEVATION

2 0 2 4 FEET



SECTION A-A

1 0 1 2 3 FEET

DESIGN CRITERIA:

FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL

- 18,000 POUNDS PER SQUARE FOOT ON ROCK AND
- 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

NOMINAL SLIDING RESISTANCE:

- FRICTION FACTOR = 0.5
- RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM $0.70 \times H$ WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NOTES:

- SEE WALL GENERAL NOTES ON SHEET W1.
- FOR PEDESTRIAN RAILING DETAILS, SEE SHEETS W30 AND W31.
- ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
- WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
- ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.
- STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.
- DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:

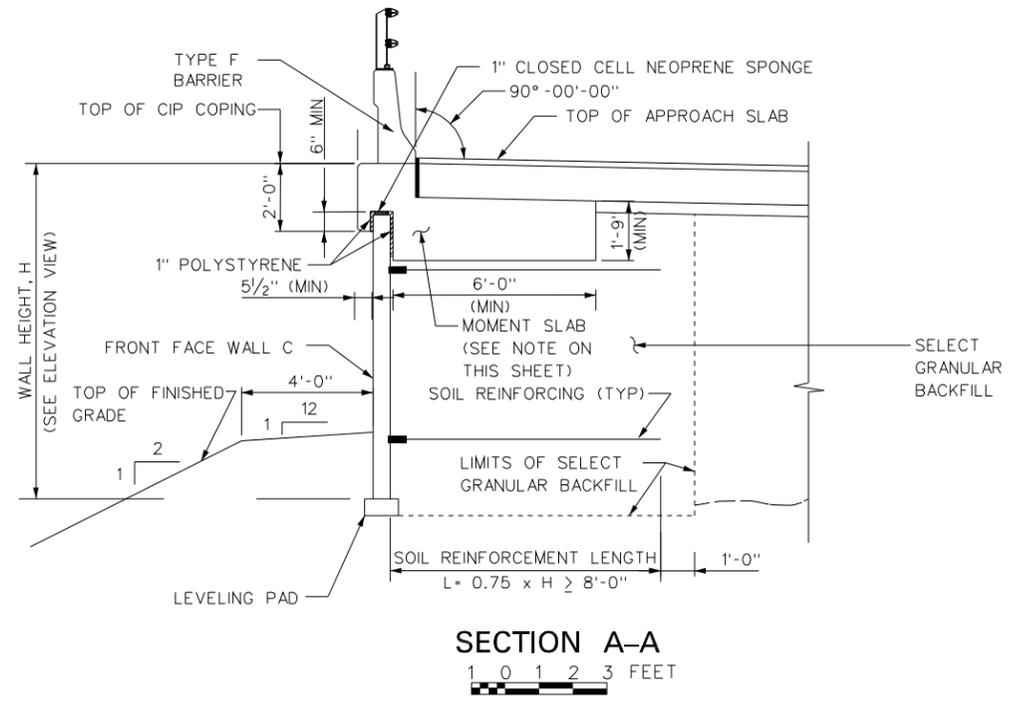
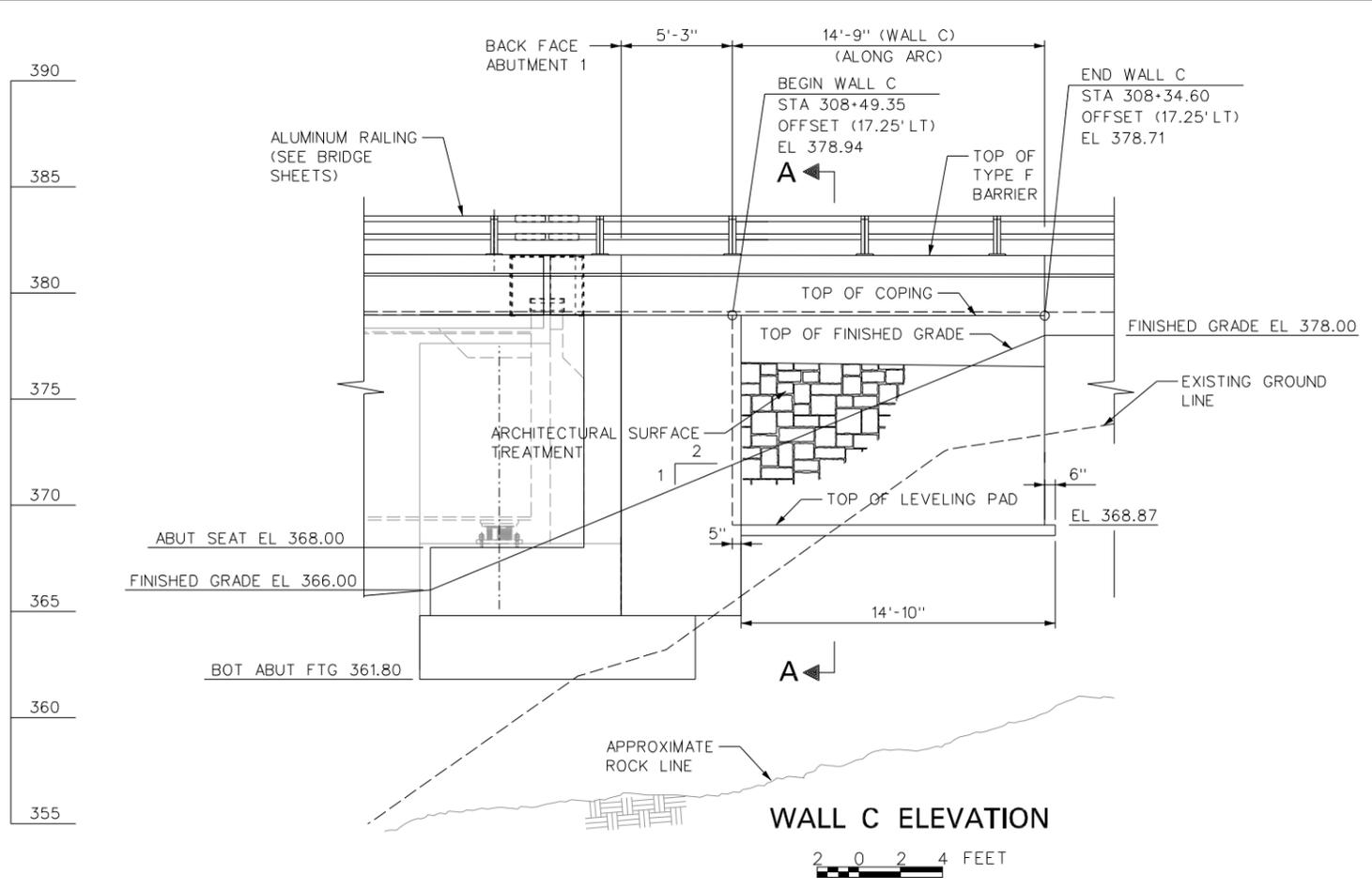
**W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**JAMES RUMSEY BRIDGE
RETAINING WALLS
WEST VIRGINIA WALL B
ELEVATION & SECTION**

DESIGNED	DATE
DRAWN	09/02
CHECKED	09/02
CHECKED	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W11** OF **W58**
BRIDGE NO. **4919**



04/01/2003	PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
			STATE	FEDERAL				
	W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	291	407

DESIGN CRITERIA:
 FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL 18,000 POUNDS PER SQUARE FOOT ON ROCK AND 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.
 NOMINAL SLIDING RESISTANCE:
 FRICTION FACTOR = 0.5
 RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM 0.75xH WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NOTES:
 SEE WALL GENERAL NOTES ON SHEET W1.
 ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
 WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE MSE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
 ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.
 STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL. OFFSETS ARE MEASURED RADIAL.
 DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 JAMES RUMSEY BRIDGE
 RETAINING WALLS
 WEST VIRGINIA WALL C
 ELEVATION & SECTION

DESIGNED	DATE
DRAWN	
CHECKED	
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Baker
 Michael Baker Jr., Inc. Charleston, W.Va.
 SHEET **W12** OF **W58**
 BRIDGE NO. **4919**

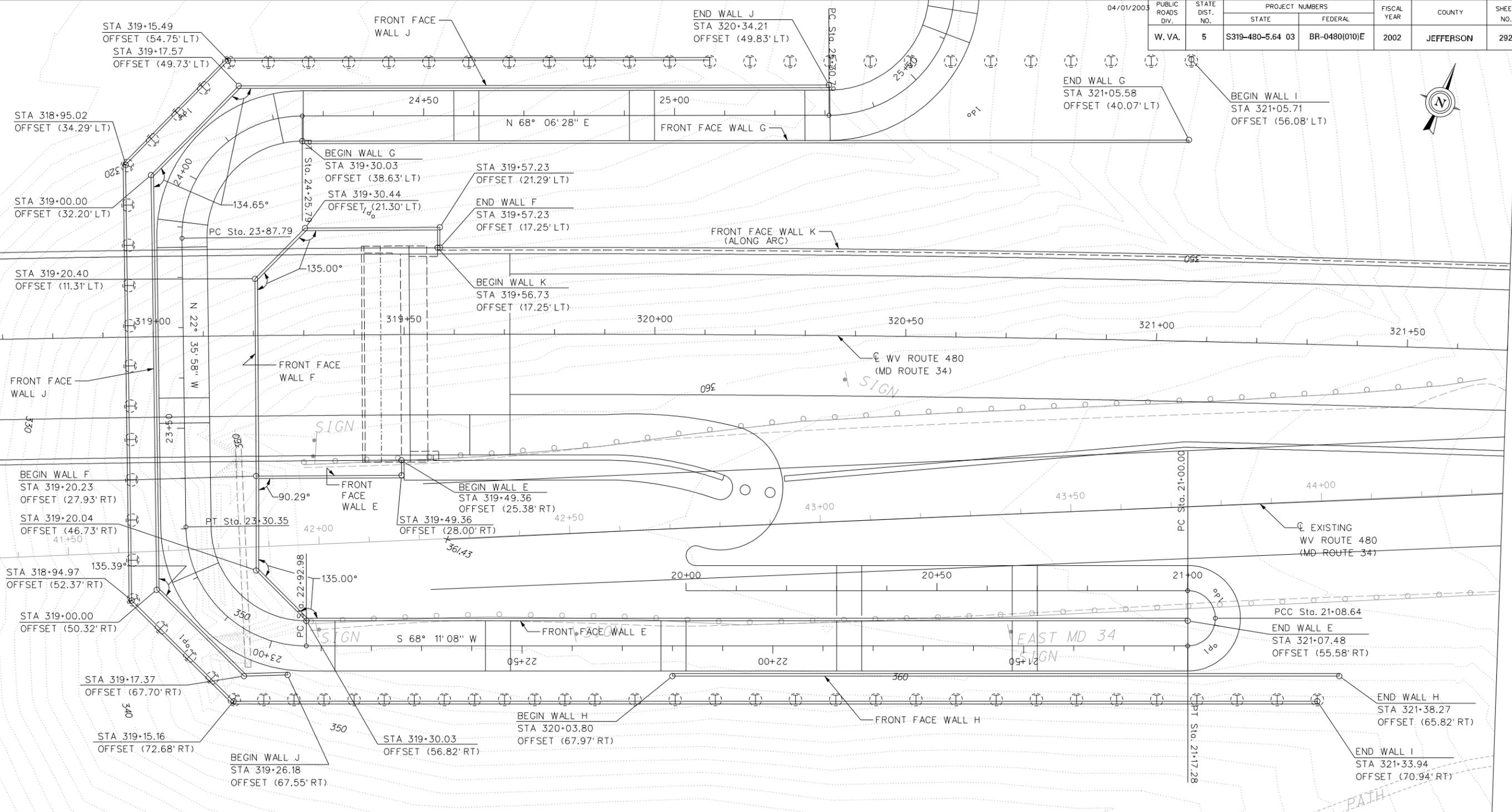
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J06C29C98 - BRIDGE b

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	292	407



MATCHLINE STA 321+70.00
(FOR REMAINING PART OF WALL K, SEE SHEET W26)

NOTE:

STATIONS AND OFFSETS SHOWN FOR WALL I ARE MEASURED TO CENTERS OF PILES.
FOR HORIZONTAL AND VERTICAL CURVE DATA, SEE ROADWAY PLANS.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALLS E, F, G, H, J, K, & L
PLAN

Baker Michael Baker Jr., Inc.	Charleston, W.Va.	SHEET W13 OF W58
		BRIDGE NO. 4919

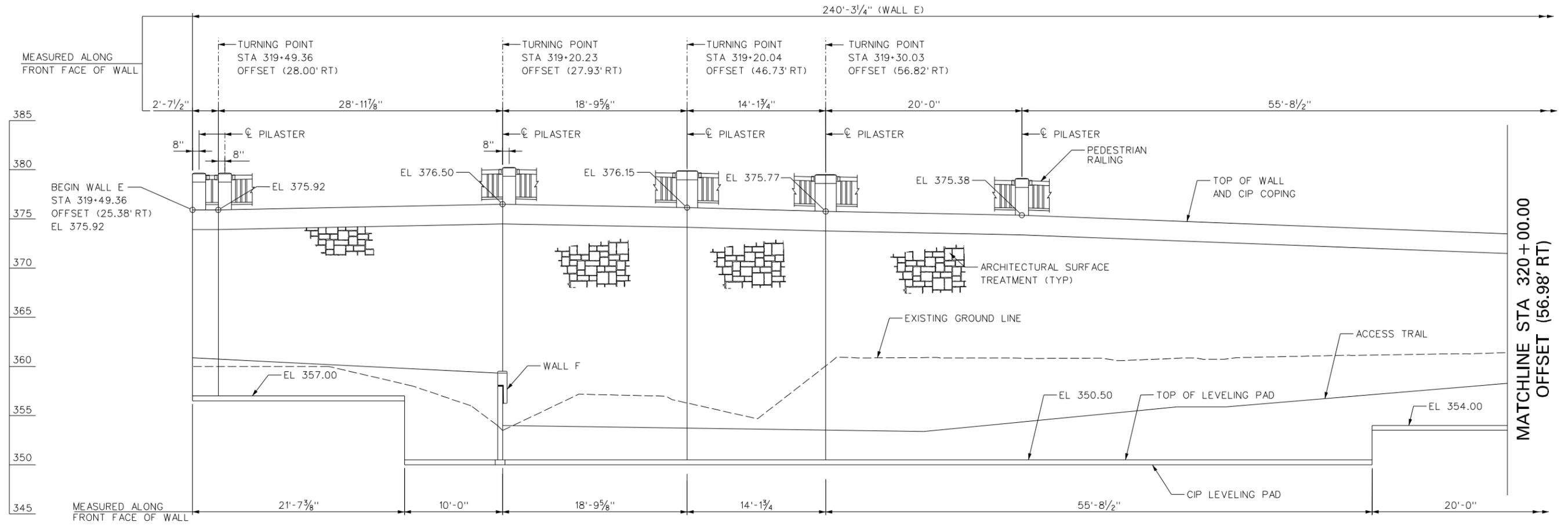
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DRAWN <i>MAS</i>	09/02
CHECKED <i>RBJ</i>	09/02
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	293	407



WALL E – DEVELOPED ELEVATION



DESIGN CRITERIA:

FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL
 18,000 POUNDS PER SQUARE FOOT ON ROCK AND
 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES
 FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

NOMINAL SLIDING RESISTANCE:
 FRICTION FACTOR = 0.5
 RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM $0.70 \times H$ WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NOTES:

FOR WALL GENERAL NOTES, SEE SHEET W1.

FOR PEDESTRIAN RAILING DETAILS, SEE SHEETS W31 AND W32.

ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.

WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.

ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.

STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL E ELEVATION – I

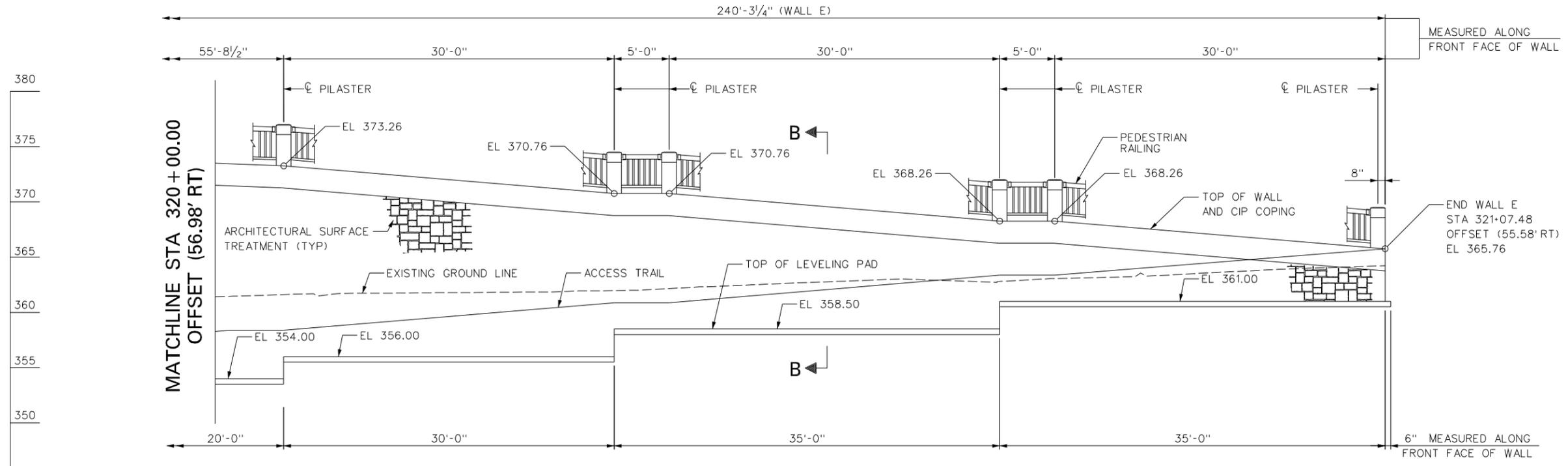
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DRAWN	JME	DATE	09/02
CHECKED	RBT	DATE	09/02
CHECKED	JDD	DATE	09/02

Baker
 Michael Baker Jr., Inc. Charleston, W.Va.

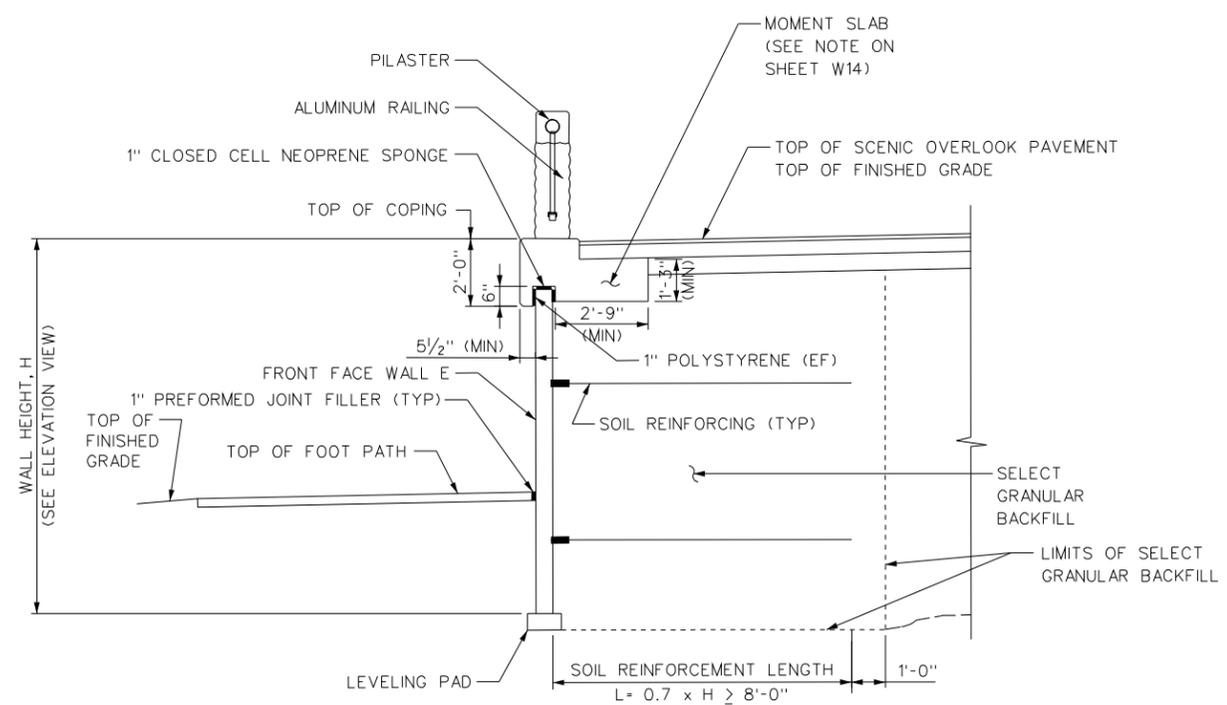
SHEET **W14** OF **W58**
 BRIDGE NO. **4919**

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	294	407



WALL E ELEVATION



SECTION B-B
1 0 1 2 3 FEET



NO.	REVISION	DATE	BY

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

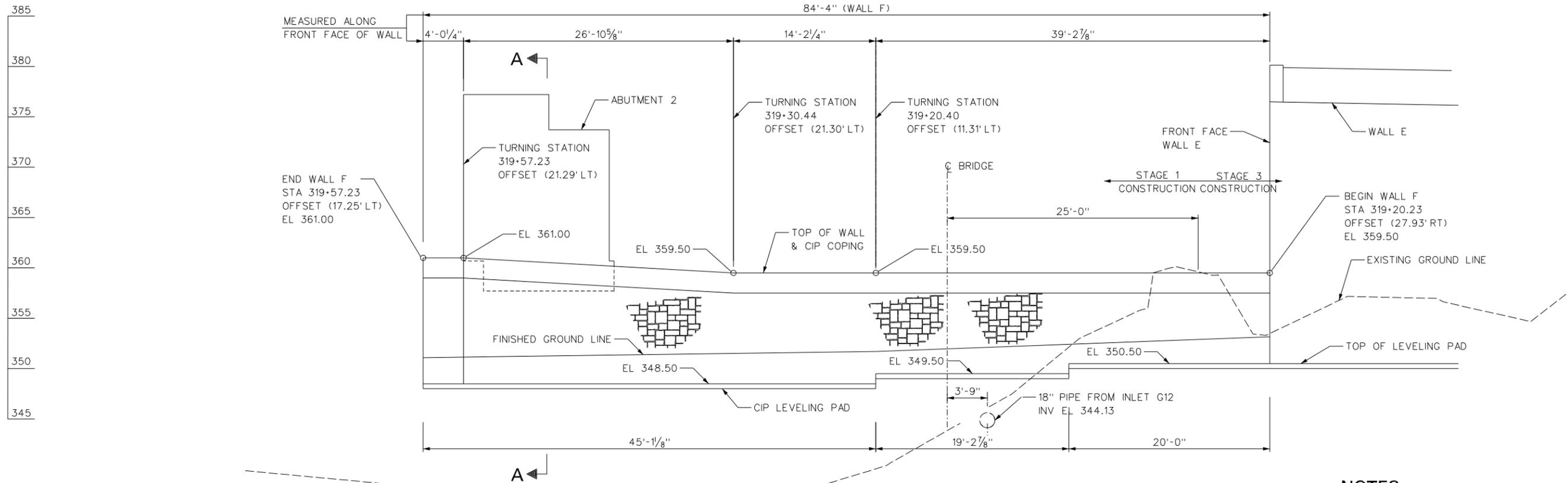
JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL E ELEVATION - II

DESIGNED: JDD DATE: 09/02
DRAWN: JME DATE: 09/02
CHECKED: RRT DATE: 09/02
CHECKED: JDD DATE: 09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W15** OF **W58**
BRIDGE NO. **4919**

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	295	407



WALL F - DEVELOPED ELEVATION

NOTES:

SEE WALL GENERAL NOTES ON SHEET W1.

ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.

WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.

ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.

STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL F
ELEVATION & SECTION

DESIGNED	DATE
DRAWN	09/02
CHECKED	09/02
CHECKED	09/02
CHECKED	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va. SHEET **W16** OF **W58**
BRIDGE NO. **4919**

DESIGN CRITERIA:

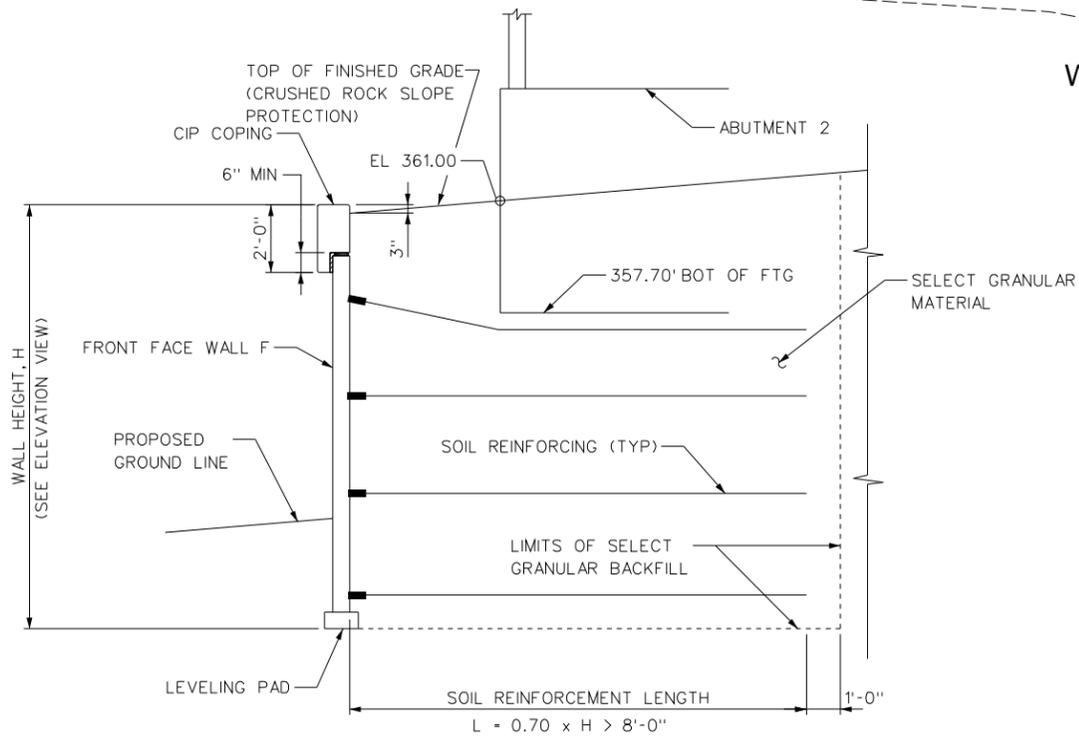
FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL 18,000 POUNDS PER SQUARE FOOT ON ROCK AND 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

NOMINAL SLIDING RESISTANCE:
FRICTION FACTOR = 0.5
RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

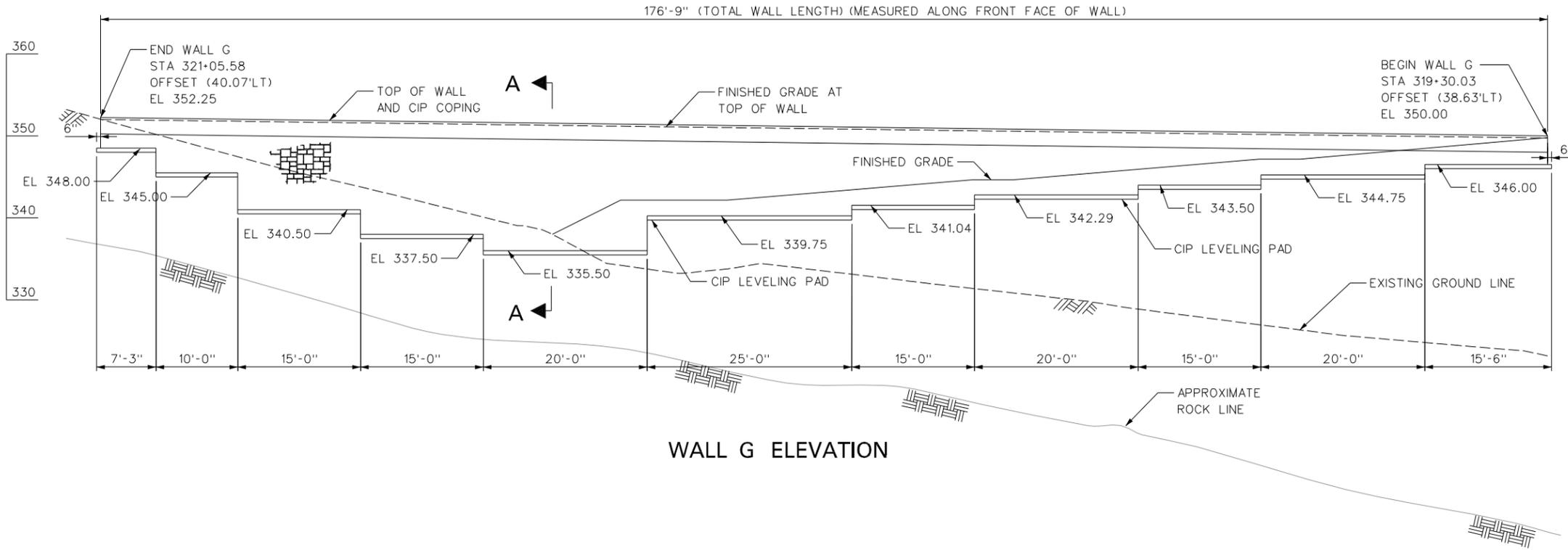
MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM 0.70 x H, WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.



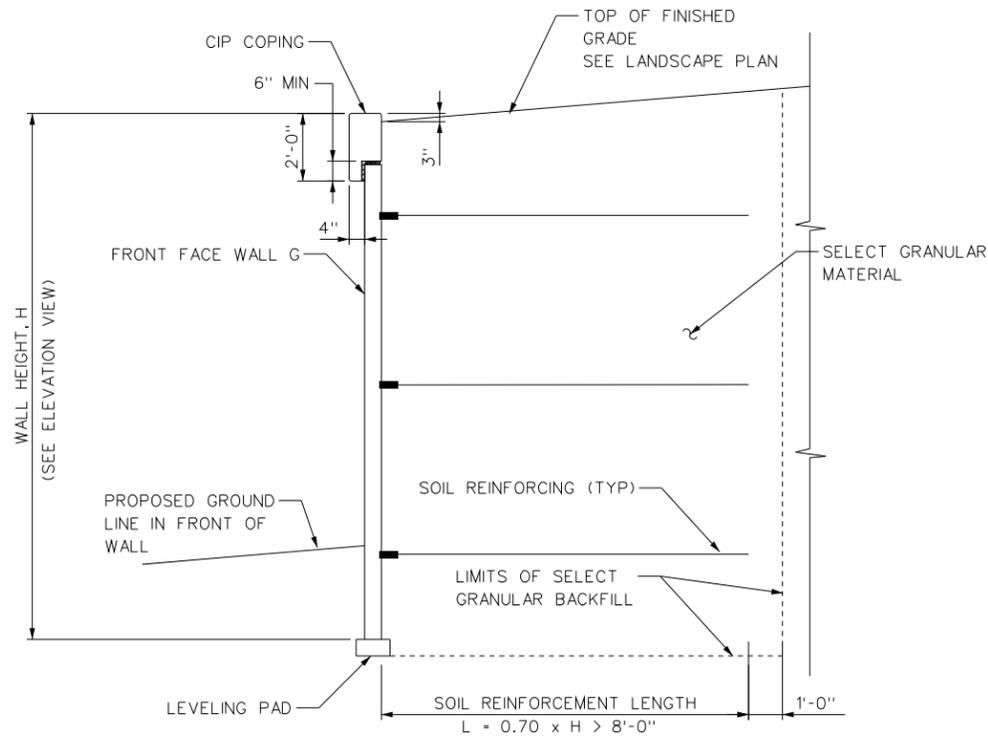
SECTION A-A



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	296	407



WALL G ELEVATION



SECTION A-A



DESIGN CRITERIA:

FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL φ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

NOMINAL SLIDING RESISTANCE:
FRICTION FACTOR = 0.5
RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM 0.70 x H WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NOTES:

SEE WALL GENERAL NOTES ON SHEET W1.

ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM 626002, MSE RETAINING WALL.

ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.

STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL G
ELEVATION & SECTION

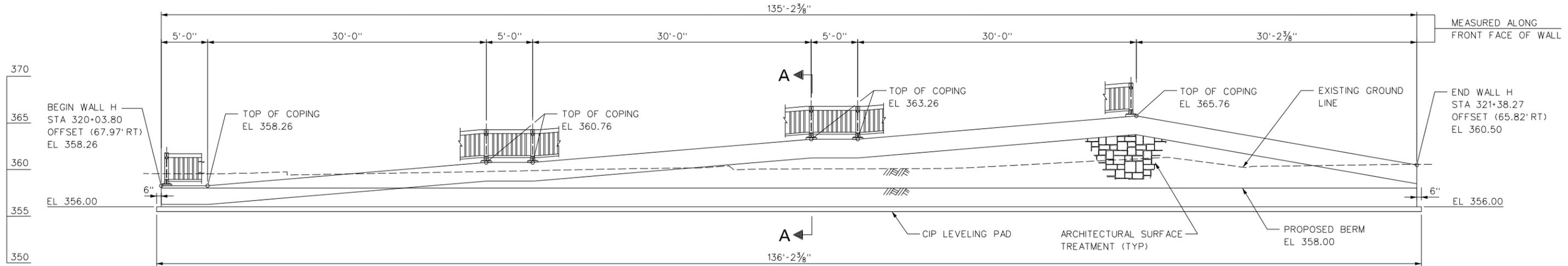
DESIGNED	DATE
<i>JSD</i>	09/02
DRAWN	
<i>RAK</i>	09/02
CHECKED	
<i>RRF</i>	09/02
CHECKED	
<i>JW</i>	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W17** OF **W58**
BRIDGE NO. **4919**



PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	297	407



WALL H ELEVATION



DESIGN CRITERIA:

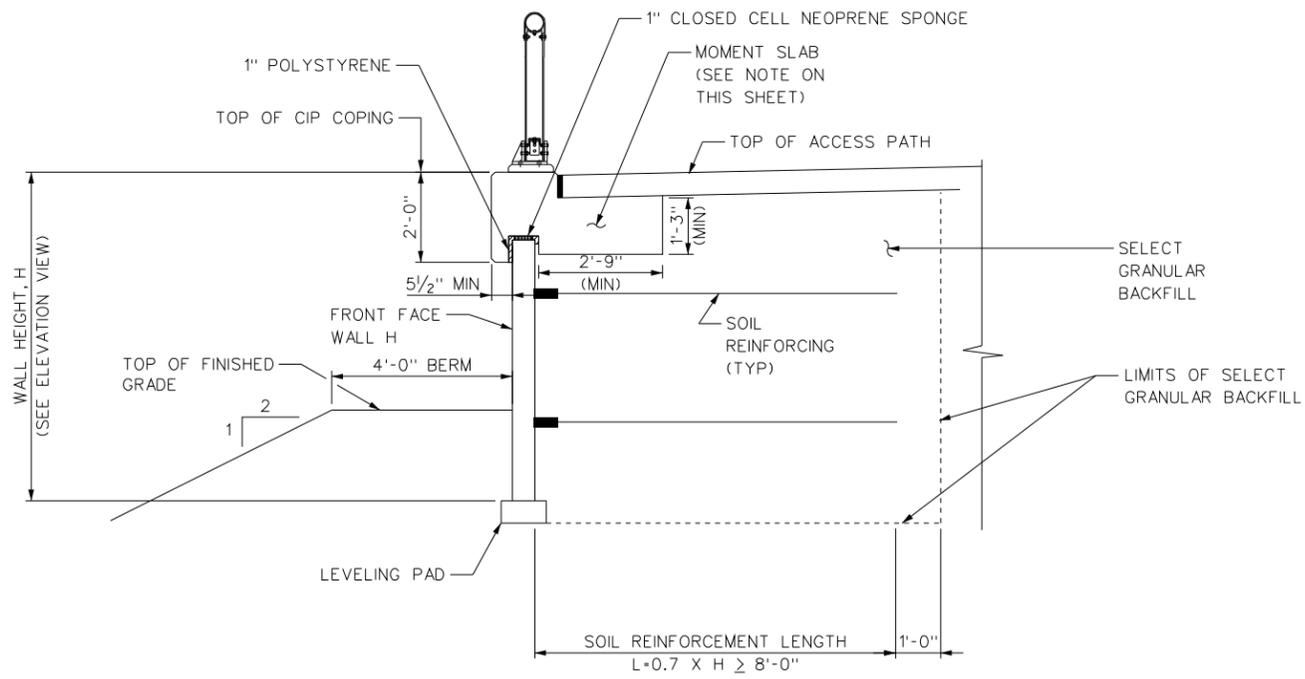
FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL
 18,000 POUNDS PER SQUARE FOOT ON ROCK AND
 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

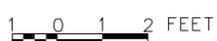
NOMINAL SLIDING RESISTANCE:
 FRICTION FACTOR = 0.5
 RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM $0.70 \times H$ WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.



SECTION A-A



NOTES:

- SEE WALL GENERAL NOTES ON SHEET W1.
- FOR PEDESTRIAN RAILING DETAILS, SEE SHEETS W31 AND W32.
- FOR ACCESS PATH DRAINAGE, SEE ROADWAY PLANS.

ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.

WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.

ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.

STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

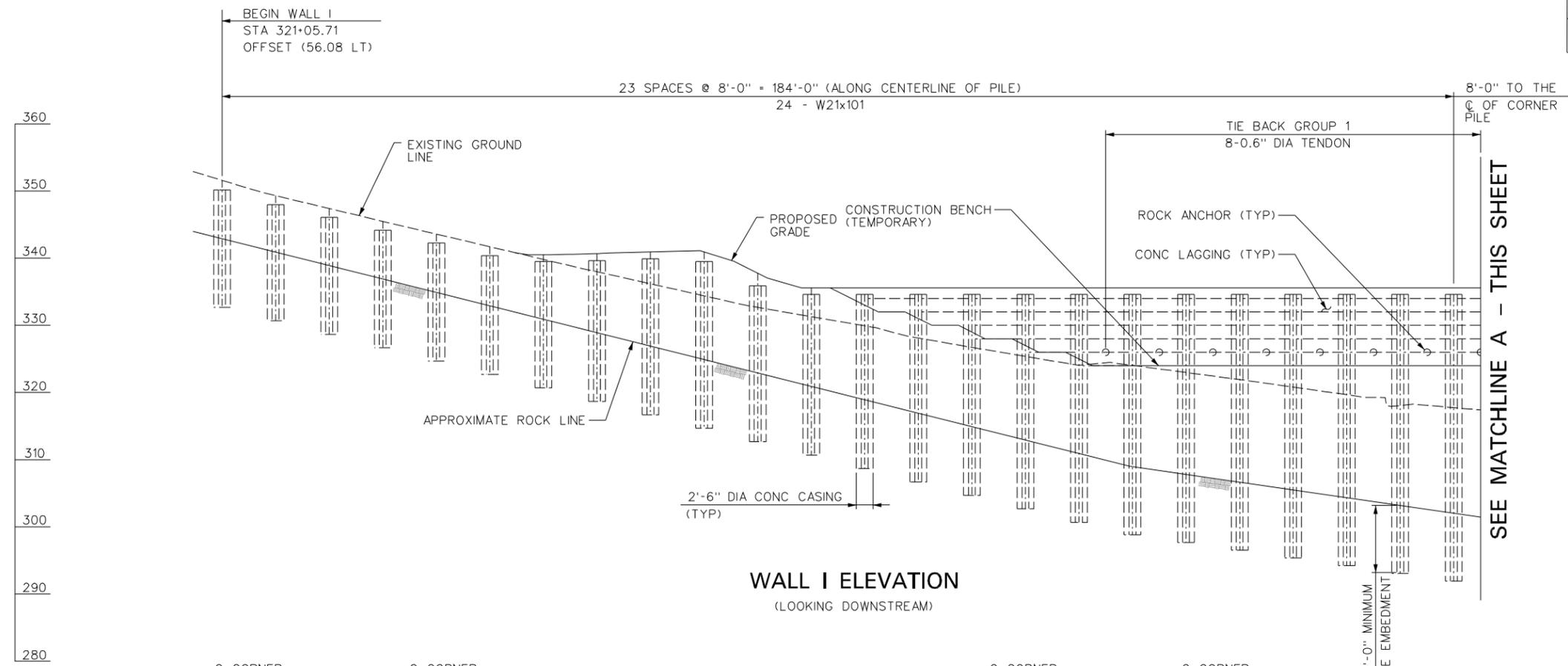
**JAMES RUMSEY BRIDGE
 RETAINING WALLS
 MARYLAND WALL H
 ELEVATION & SECTION**

DESIGNED	DATE
<i>RLT</i>	09/02
DRAWN	
<i>RLK</i>	09/02
CHECKED	
<i>JSD</i>	09/02
CHECKED	
<i>JW</i>	09/02

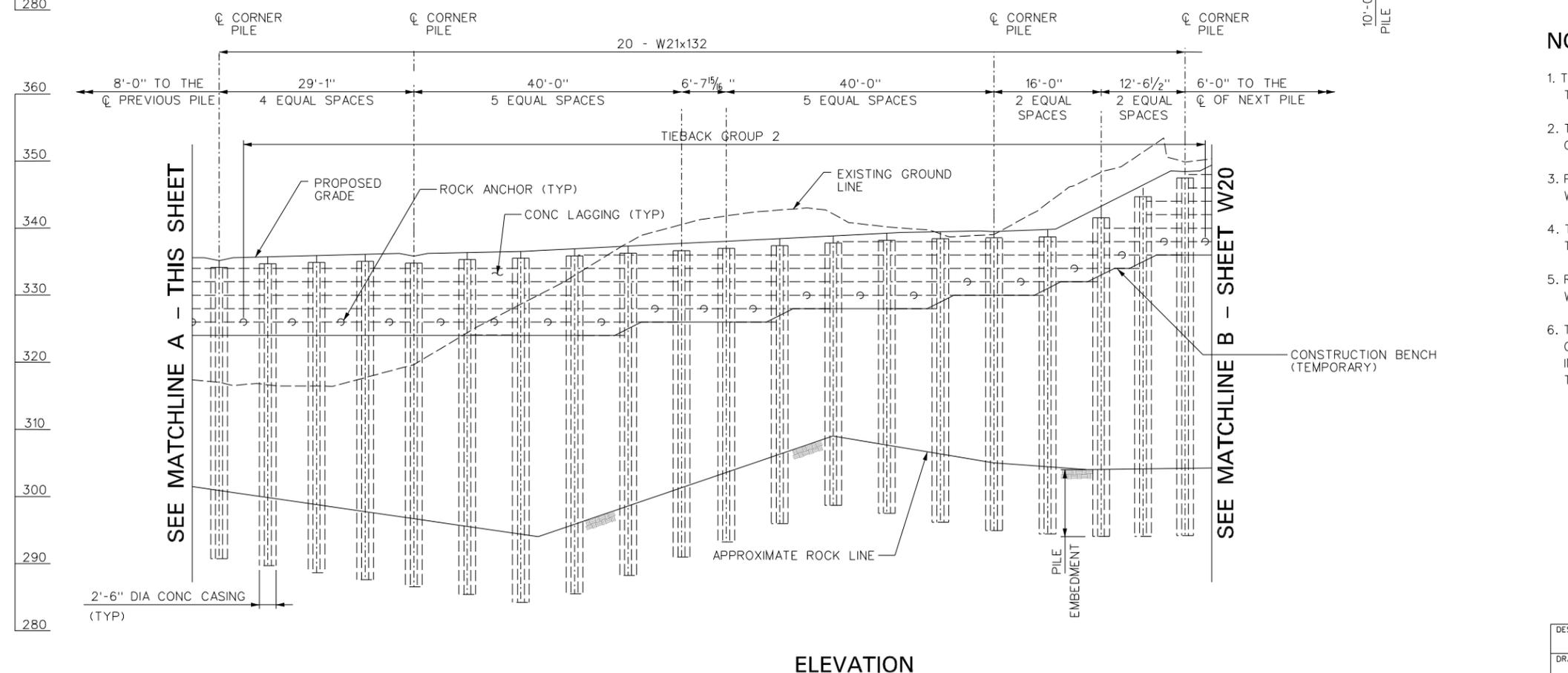
Baker
 Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W18** OF **W58**
 BRIDGE NO. **4919**

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	298	407



WALL I ELEVATION
(LOOKING DOWNSTREAM)



ELEVATION

CONSTRUCTION SEQUENCE

- STAKEOUT PILE LOCATIONS.
- PROVIDE HOLE FOR EACH PILE.
- CLEAN OUT HOLE AND INSTALL STEEL PILE.
- FILL HOLES WITH CLASS B CONCRETE TO BOTTOM OF CONCRETE LAGGING. TEMPORARY CASING SHALL BE USED, WHERE NEEDED, TO MAINTAIN AN OPEN CLEAR HOLE THROUGH THE SOIL OVERBURDEN DURING CONCRETE PLACING.
- EXCAVATE AND INSTALL PRECAST CONCRETE LAGGING. PROVIDE TEMPORARY SUPPORT DURING EXCAVATION. TYPE OF SUPPORT SHALL BE AS APPROVED BY THE ENGINEER.
- EXCAVATE FOR TEMPORARY WORKBENCH.
- CONNECT WALE SEATS AND ERECT WALES.
- PROVIDE HOLE FOR EACH ROCK ANCHOR. USE CASING IN OVERBURDEN SOIL.
- CLEAN OUT HOLE, INSERT TENDONS AND GROUT BOND LENGTH.
- PERFORM ROCK ANCHOR TESTS AFTER THE GROUT HAS ATTAINED THE REQUIRED STRENGTH.
- GROUT UPPER PART OF EACH ROCK ANCHOR.
- INSTALL OR APPLY CORROSION PROTECTION FOR ANCHOR HEAD.
- BACKFILL TO THE PROPOSED GRADE.

NOTES:

1. THE COST OF TEMPORARY CASING FOR STEEL PILES, CLASS B CONCRETE AND TEMPORARY SUPPORT SHALL BE INCIDENTAL TO THE COST OF STEEL PILES.
2. THE COST OF CASING FOR ROCK ANCHOR SHALL BE INCIDENTAL TO THE COST OF ROCK ANCHOR-INSTALLED.
3. PILING AND LAGGING SHALL BE FABRICATED AND CONSTRUCTED IN ACCORDANCE WITH SECTION 614 OF THE SPECIFICATION. PILE SHALL NOT BE PAINTED.
4. THE CONTRACTOR SHALL MEET THE QUALIFICATION REQUIREMENTS STATED IN THE SPECIAL PROVISION.
5. ROCK ANCHOR SHALL BE DESIGNED, FABRICATED AND INSTALLED IN ACCORDANCE WITH THE SPECIAL PROVISION.
6. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE FINAL DESIGN COMPUTATION AND DRAWINGS OF THE ROCK ANCHORS. THE DRAWINGS SHALL INCLUDE ALL DETAILS, DIMENSIONS AND QUANTITIES NECESSARY TO INSTALL AND TEST THE ROCK ANCHORS.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
WALL I ELEVATION - I**

DESIGNED <i>AP</i>	DATE 09/02
DRAWN <i>MAD</i>	09/02
CHECKED <i>AP</i>	09/02
CHECKED <i>JRT</i>	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET
W19 of W58
BRIDGE NO.
4919



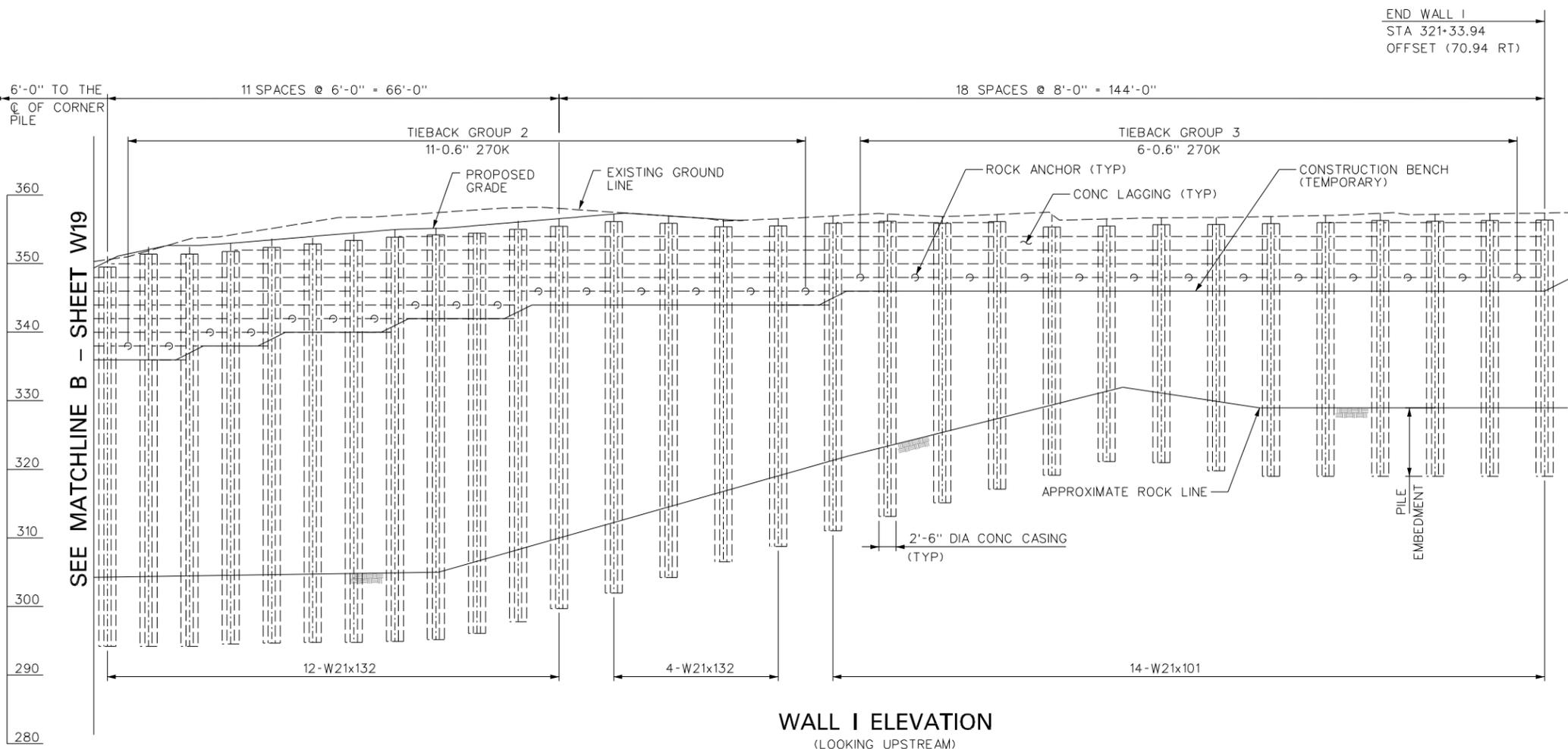
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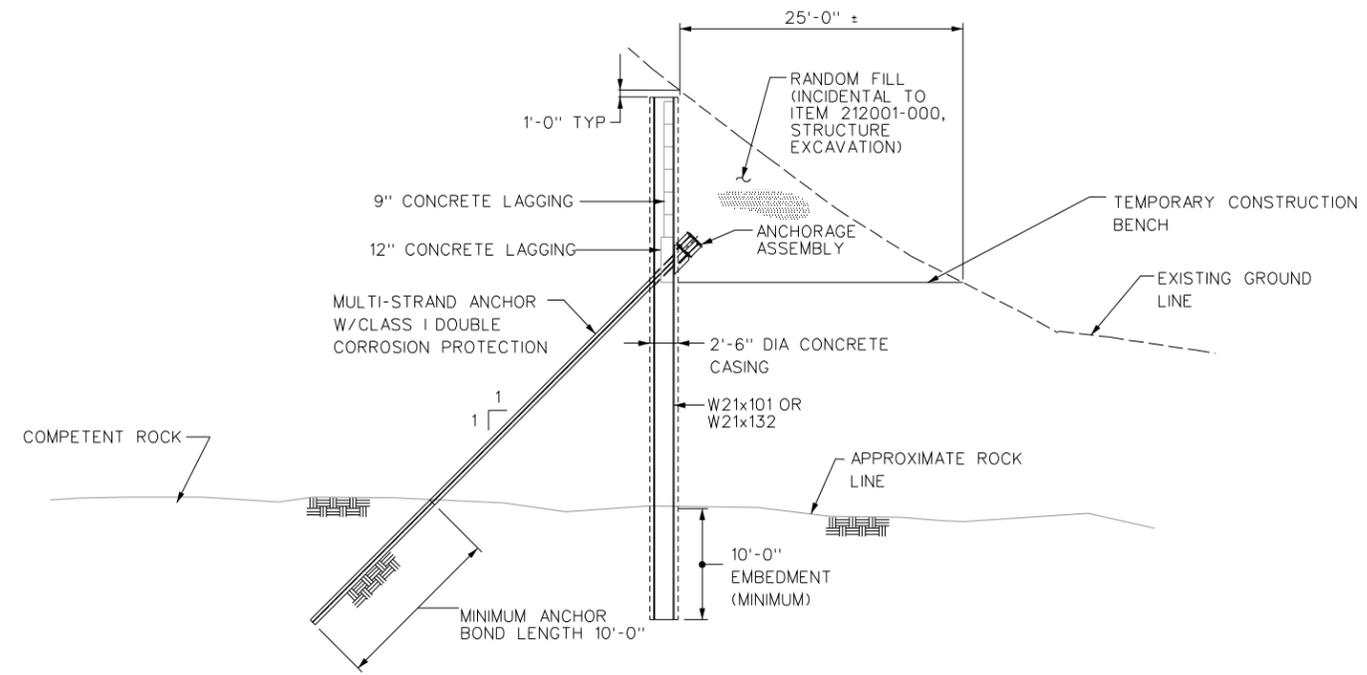
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J06C29C98 - BRIDGE

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	299	407



WALL I ELEVATION
(LOOKING UPSTREAM)
5 0 5 10 FEET



TYPICAL SECTION
2 0 4 8 FEET

TIEBACK SCHEDULE

	TIEBACK GROUP 1	TIEBACK GROUP 2	TIEBACK GROUP 3
DESIGN FORCE (KIP)	282	388	211
LOCK OFF LOAD (KIP)	212	291	158
TENDON CAPACITY (KIP)	469	644	352
TENDON SIZE	8-0.6"	11-0.6"	6-0.6"
	(0.6" IS THE NOMINAL DIAMETER OF STRAND)		
GRADE	270K	270K	270K
GROUTED DIAMETER	9"	9"	9"
ANCHOR BONDED LENGTH	17'-6"	24'-0"	13'-6"
INCLINATION ANGLE (DEGREE)	45	45	45

NOTES:

- SEE NOTES AND CONSTRUCTION SEQUENCE ON SHEET W20.
- ESTIMATED RESISTANCE FACTORED UNIT BOND STRESS (IN BOND LENGTH) IS 0.55 x 0.130 KSI = 0.072 KSI
- FOR ALTERNATIVE DESIGN OF ANCHOR, SEE SPECIAL PROVISION.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
WALL I ELEVATION - II
& TYPICAL SECTION**

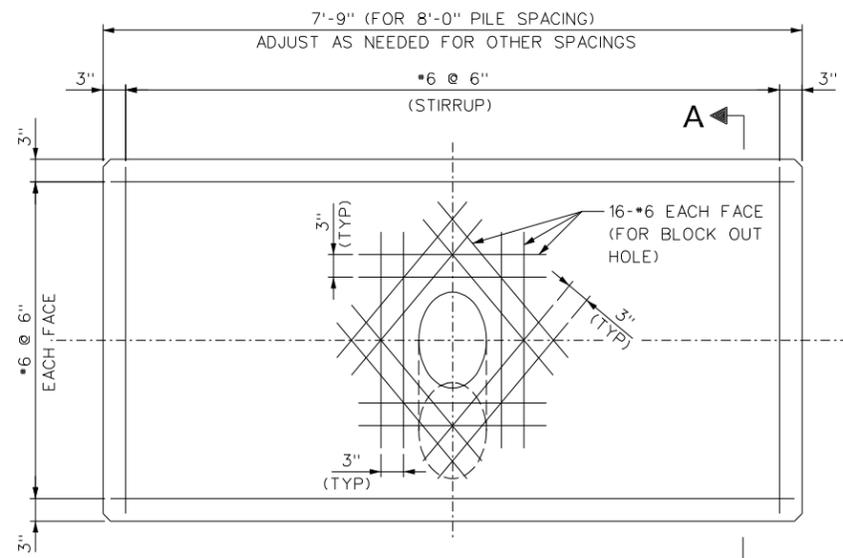
DESIGNED	DATE
<i>AP</i>	09/02
DRAWN	
<i>JRS</i>	09/02
CHECKED	
<i>AP</i>	09/02
CHECKED	
<i>JRT</i>	09/02

Baker
Michael Baker Jr., Inc.

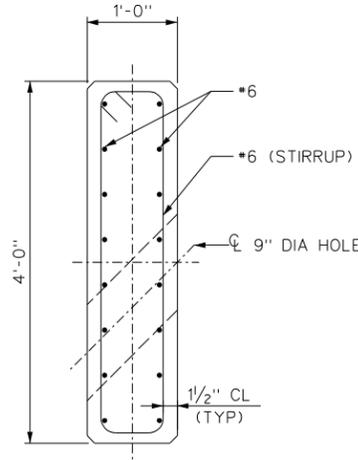
Charleston, W.Va.

SHEET
W20 OF W58
BRIDGE NO.
4919

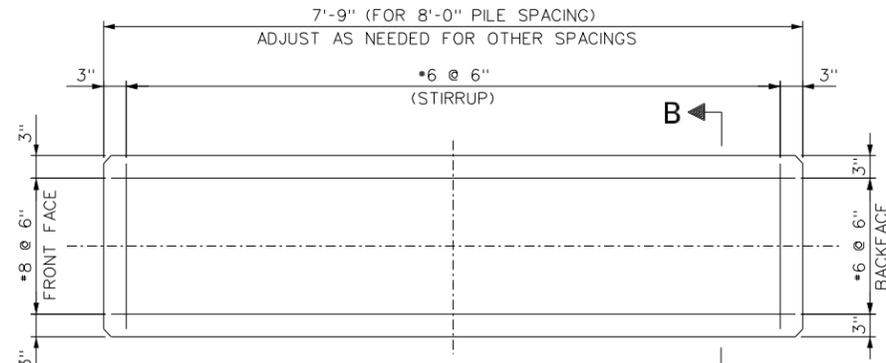
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	300	407



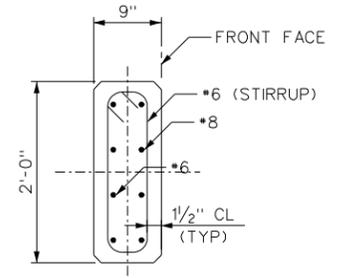
BOTTOM PANEL LAGGING A



SECTION A-A



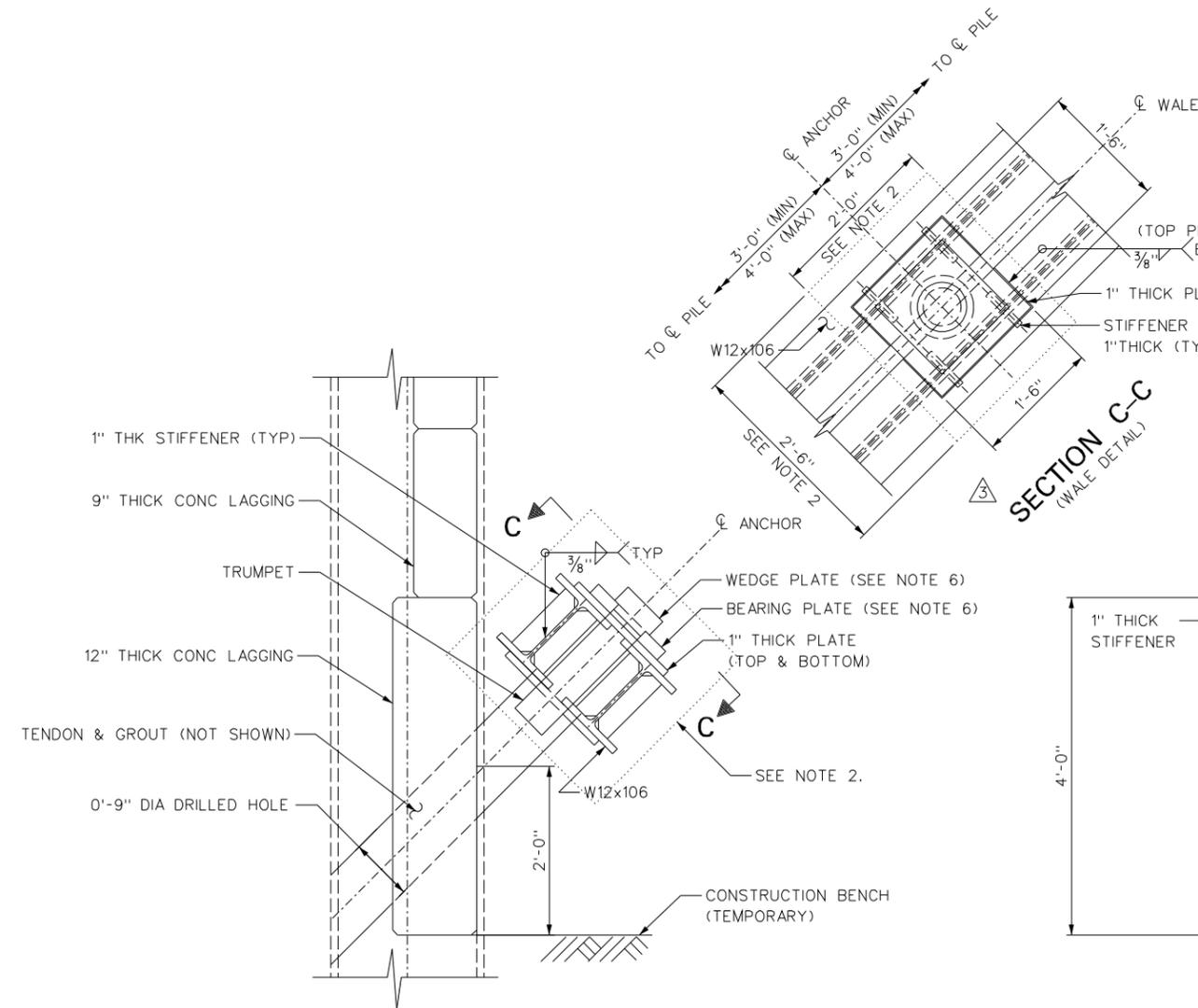
CONCRETE LAGGING B



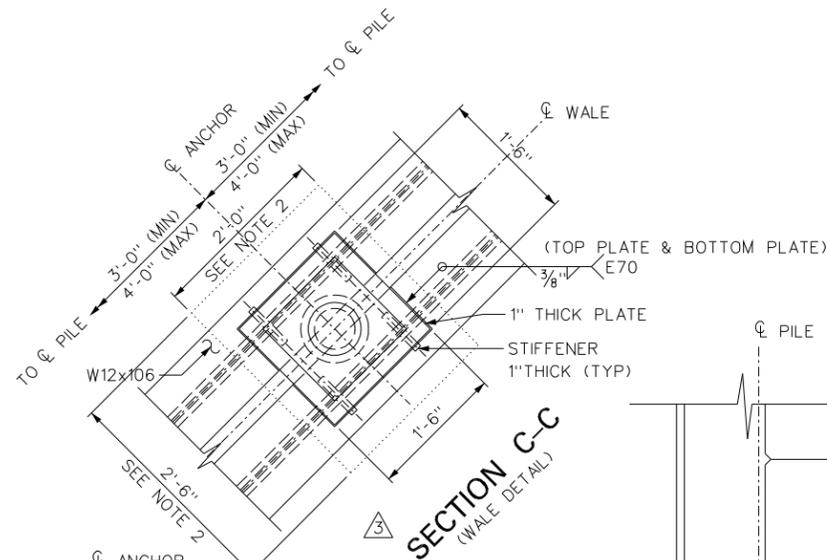
SECTION B-B

NOTES:

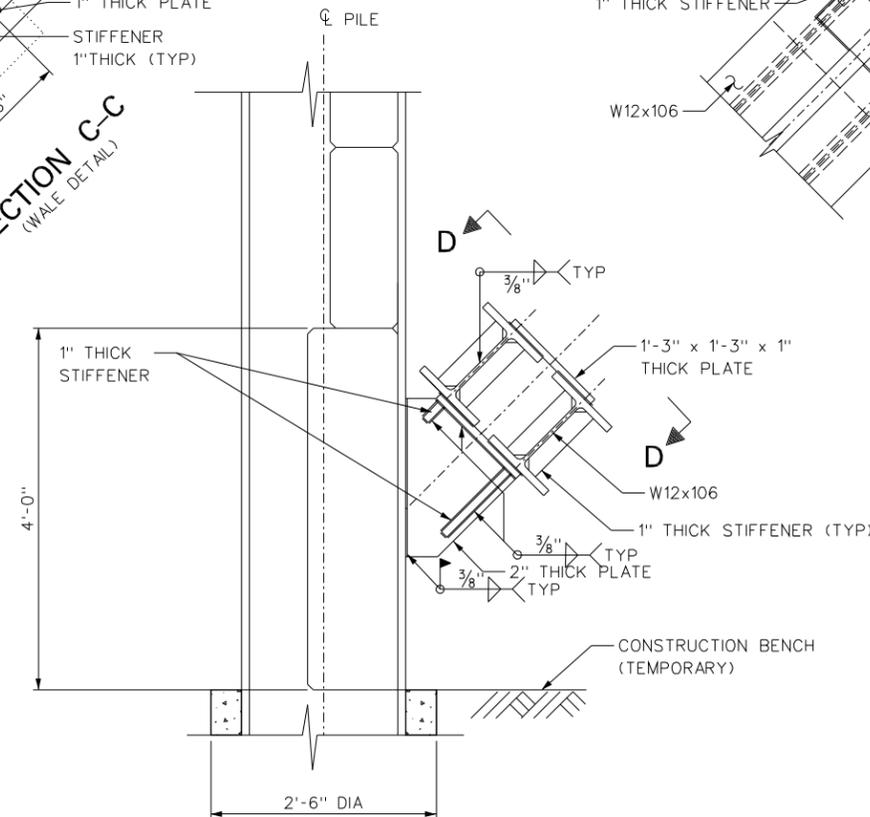
- SEE NOTES ON SHEETS W19 AND W20.
- FOR CORROSION PROTECTION PLACE LEAN CONCRETE AROUND ANCHORAGE BEFORE BACKFILLING. MINIMUM CONCRETE COVER SHALL BE 4". THE COST OF CONCRETE SHALL BE INCIDENTAL TO ITEM 615005-001, ROCK ANCHOR INSTALLED.
- WALES AND STEEL PLATE SHALL CONFORM TO AASHTO M270, GRADE 50. COSTS OF WALES, WALE CONNECTIONS TO STEEL PILES AND ANCHORAGE ASSEMBLIES SHALL BE INCIDENTAL TO ITEM 615001-000, ROCK ANCHOR INSTALLED.
- ALL WELDING SHALL CONFORM TO ANSI/AASHTO/AWS BRIDGE WELDING CODE.
- WALES MAY BE SPLICED USING FULL PENETRATION WELD. THE CONTRACTOR MAY ALSO USE BOLTED SPLICE. WALE SPLICES SHALL BE DESIGN BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WEST VIRGINIA. THE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- DIMENSIONS FOR BEARING PLATES AND WEDGE PLATES ARE TO BE DETERMINED BY THE ANCHORAGE MANUFACTURER.
- MINIMUM CONCRETE STRENGTH FOR LAGGING SHALL BE 4,000 PSI.



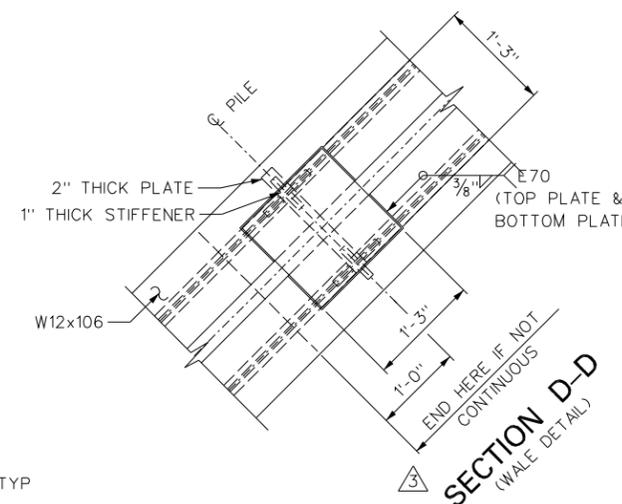
SECTION AT ANCHOR C



SECTION C-C (WALE DETAIL)



SECTION AT PILE D



SECTION D-D (WALE DETAIL)



NO.	REVISION	DATE	BY:
1	ADDED SHEAR REINFORCEMENT & NOTE 7	2/5/03	AP
2	CLARIFIED WELD DETAILS	2/5/03	AP

**W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**JAMES RUMSEY BRIDGE
RETAINING WALLS
WALL I
LAGGING & WALE DETAILS**

DESIGNED <i>AP</i>	DATE 09/02
DRAWN <i>MAD</i>	DATE 09/02
CHECKED <i>AP</i>	DATE 09/02
CHECKED <i>RF</i>	DATE 09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET
W21 OF **W58**
BRIDGE NO.
4919

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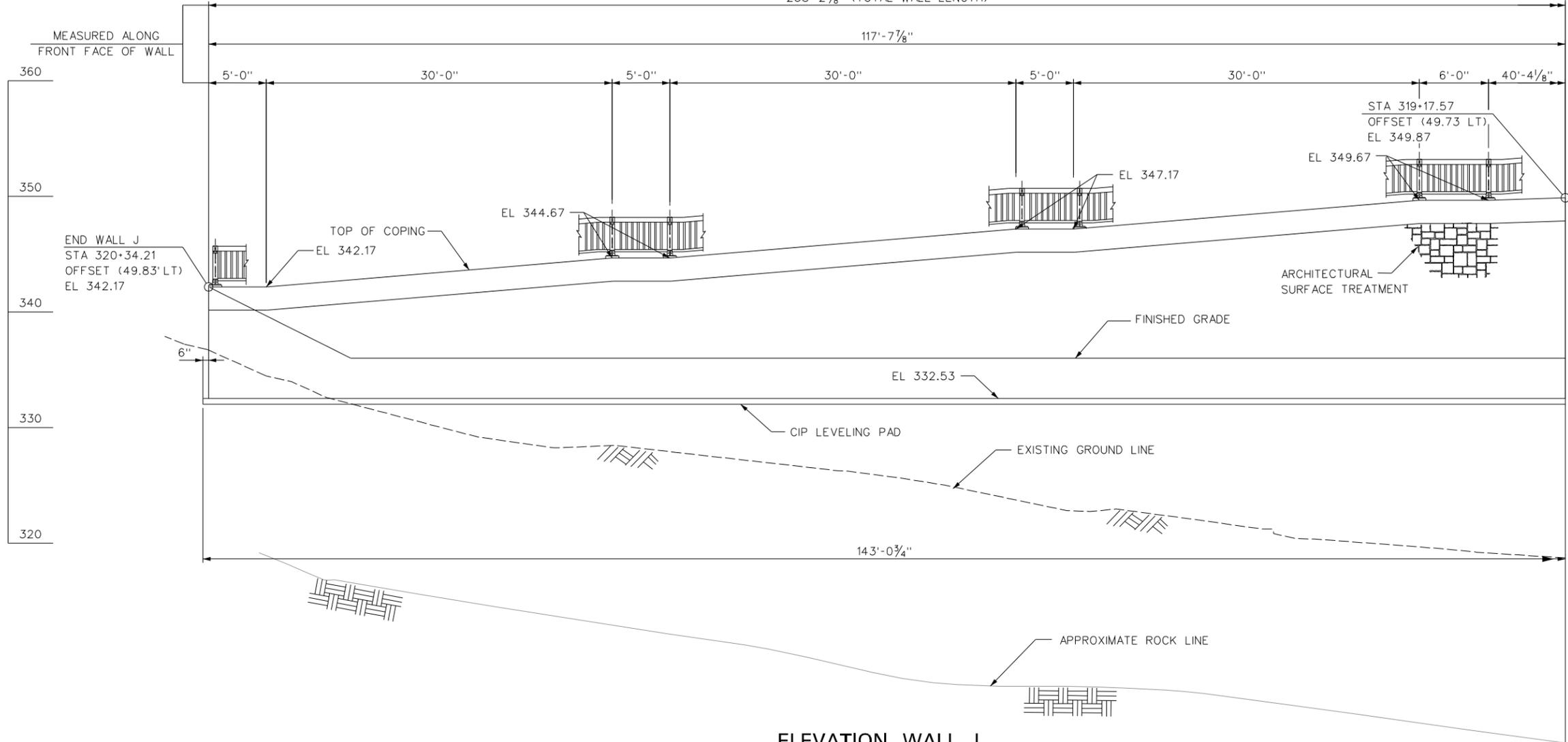
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	301	407

258'-2³/₈" (TOTAL WALL LENGTH)

117'-7⁷/₈"



MATCHLINE STA 319 + 17.57
OFFSET (49.73' LT RADIAL)

DESIGN CRITERIA:

FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL 18,000 POUNDS PER SQUARE FOOT ON ROCK AND 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE: RETAINED SOIL φ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.

NOMINAL SLIDING RESISTANCE:
FRICTION FACTOR = 0.5
RESISTANCE FACTOR = 1.0

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.

MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM 0.70 x H WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NOTES:

SEE WALL GENERAL NOTES ON SHEET W1.

FOR PEDESTRIAN RAILING DETAILS, SEE SHEETS W31 AND W32.

ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.

WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.

ALL DIMENSIONS ARE MEASURED ALONG THE FRONT FACE OF THE WALL.

STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL J ELEVATION - I

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W22** OF **W58**
BRIDGE NO. **4919**

DESIGNED	DATE
JW	09/02
DRAWN	DATE
JMC	09/02
CHECKED	DATE
RBF	09/02
CHECKED	DATE
JW	09/02



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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	302	407

258'-2 3/8" (TOTAL WALL LENGTH)

140'-6 1/2"

MEASURED ALONG
FRONT FACE
OF WALL

24'-10 7/8"

40'-4 1/8"

5'-7 7/8"

30'-0"

82'-6 1/4"

5'-0"

33'-1"

24'-5 3/8"

8'-8"

360

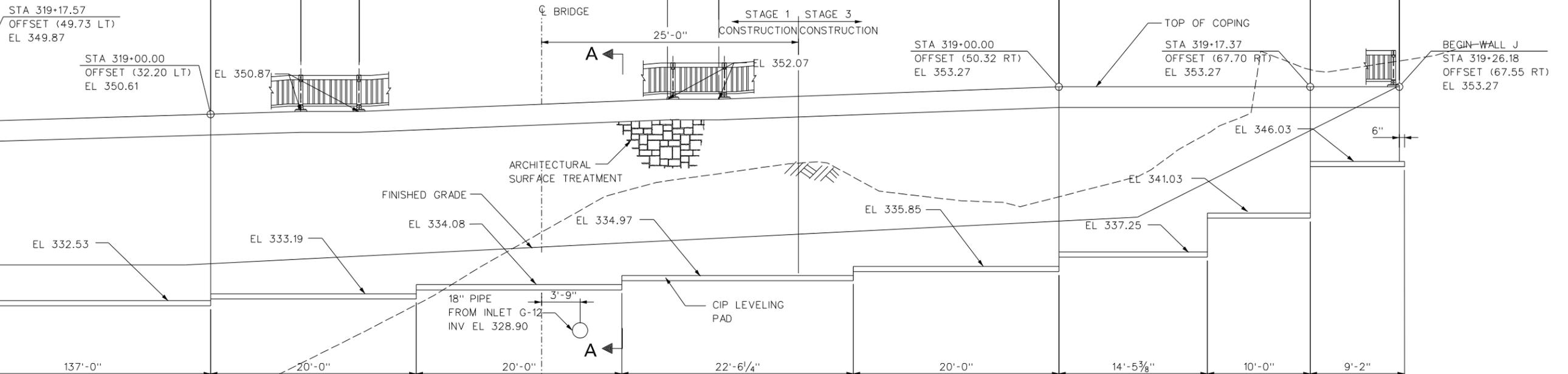
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340

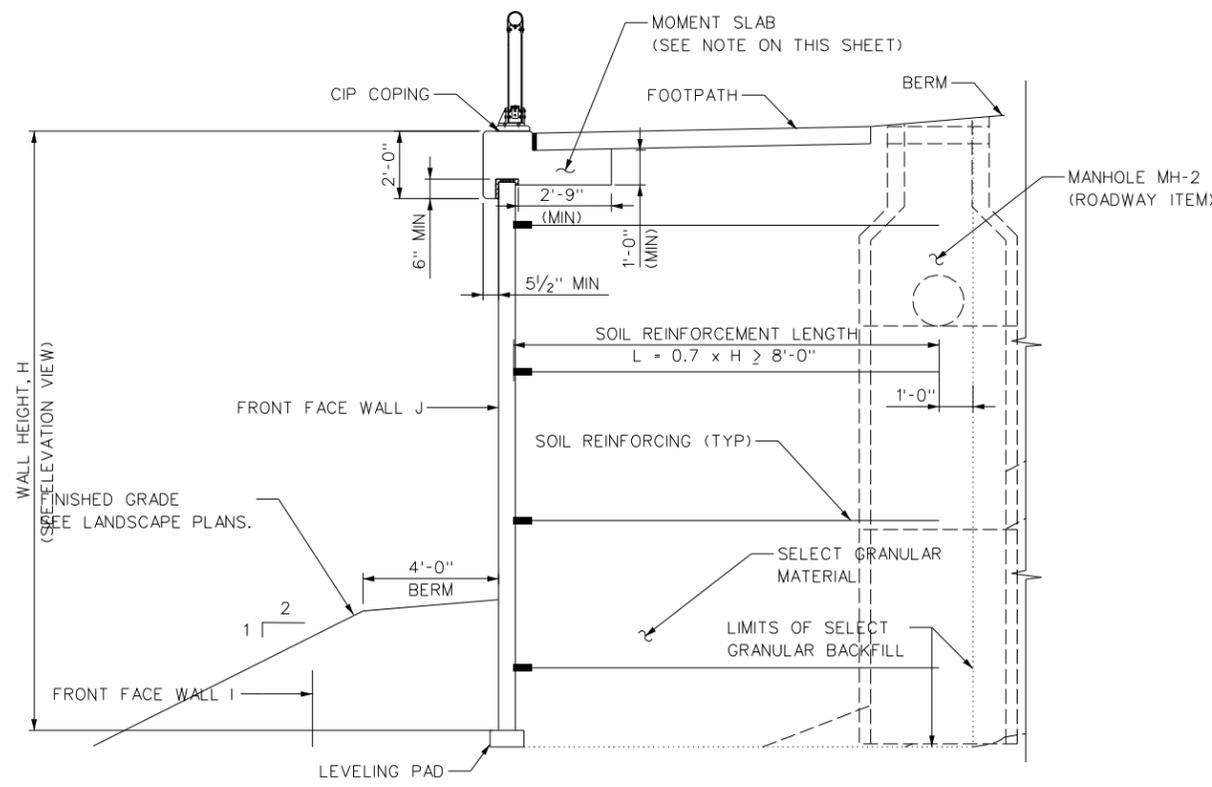
330

320

MATCHLINE STA 319+17.57
OFFSET (49.73' LT RADIAL)



WALL J - DEVELOPED ELEVATION



SECTION A-A

1 0 1 2 3 FEET

2 0 2 4 6 FEET

NOTES:

FOR STAGE CONSTRUCTION AND FOOTPATH DRAINAGE SEE ROADWAY PLANS.

WORK THIS SHEET WITH SHEET W22.

DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL J ELEVATION - II

DESIGNED	JW	DATE	09/02
DRAWN	ME	DATE	09/02
CHECKED	RRJ	DATE	09/02
CHECKED	JW	DATE	09/02

Baker
Michael Baker Jr., Inc.

Charleston, W.Va.

SHEET
W23 OF **W58**
BRIDGE NO.
4919

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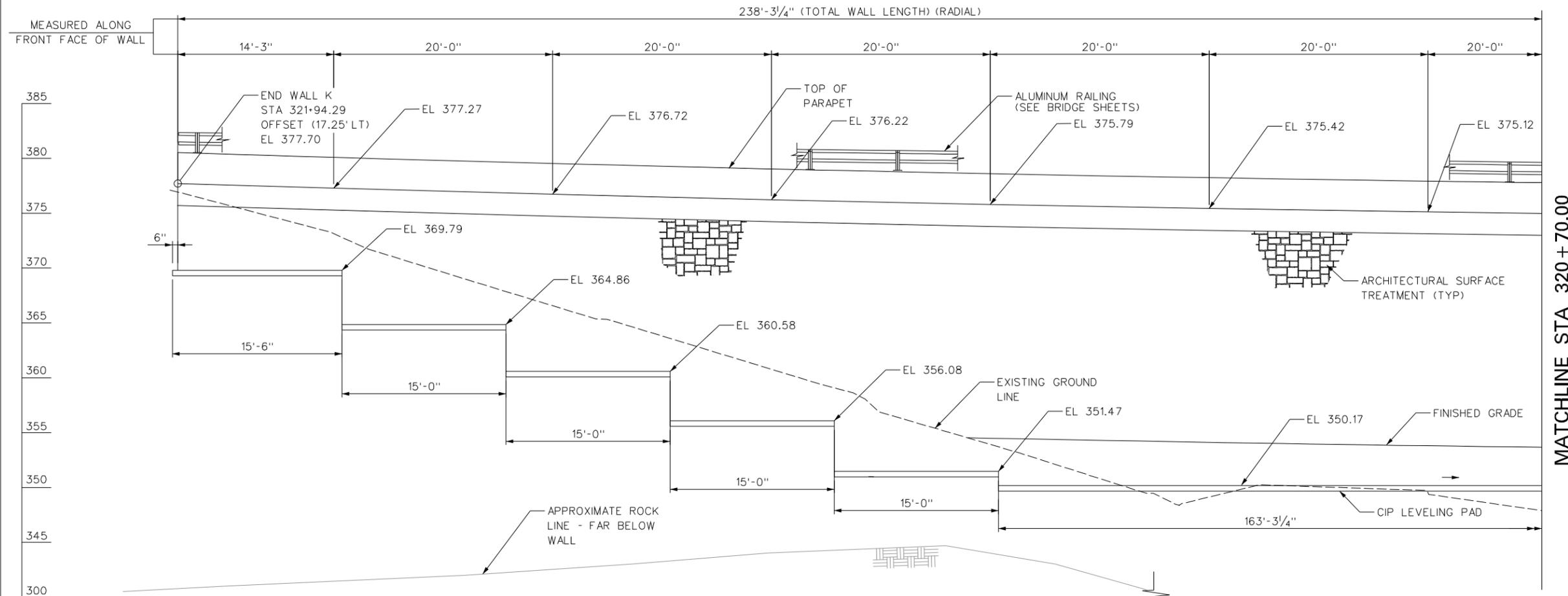
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	303	407



WALL K ELEVATION

MATCHLINE STA 320 + 70.00

NOTES:

- SEE WALL GENERAL NOTES ON SHEET W1.
- ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, MOMENT SLAB, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, SOIL REINFORCING, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
- WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE WALL. THE COST SHALL BE INCIDENTAL TO ITEM NO 626002, RETAINING WALL.
- ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.
- STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL.

DESIGN CRITERIA:

- FACTORED BEARING CAPACITY (RESISTANCE FACTOR INCLUDED) UNDER LEVELING PADS AND UNDER THE STABILIZED MASS OF MECHANICALLY STABILIZED EARTH WALL
 - 18,000 POUNDS PER SQUARE FOOT ON ROCK AND
 - 7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.
- LATERAL EARTH PRESSURE: RETAINED SOIL ϕ VALUE OF 34 DEGREES FOR SELECT GRANULAR BACKFILL. COHESION = 0 PSF.
- NOMINAL SLIDING RESISTANCE:
 - FRICTION FACTOR = 0.5
 - RESISTANCE FACTOR = 1.0
- UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS PER CUBIC FOOT.
- MINIMUM LENGTH OF SOIL REINFORCING SYSTEM AS MEASURED FROM THE BACK FACE OF THE MSE PANEL SHALL BE AS SHOWN ON THE DRAWINGS. MINIMUM $0.7 \times H$ WHERE H IS THE TOTAL HEIGHT OF THE WALL, IN ORDER TO ACHIEVE A LONG TERM MINIMUM GLOBAL STABILITY FACTOR OF SAFETY OF 1.5.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL K ELEVATION - I

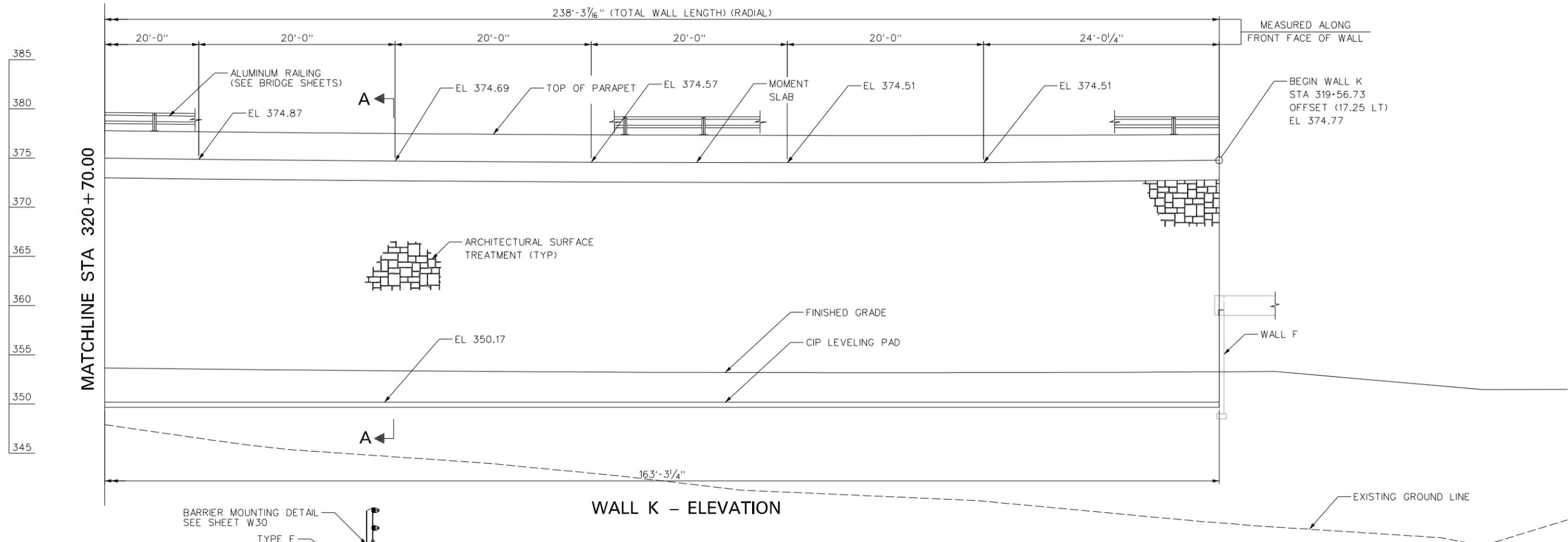
Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W24** OF **W58**
BRIDGE NO. **4919**

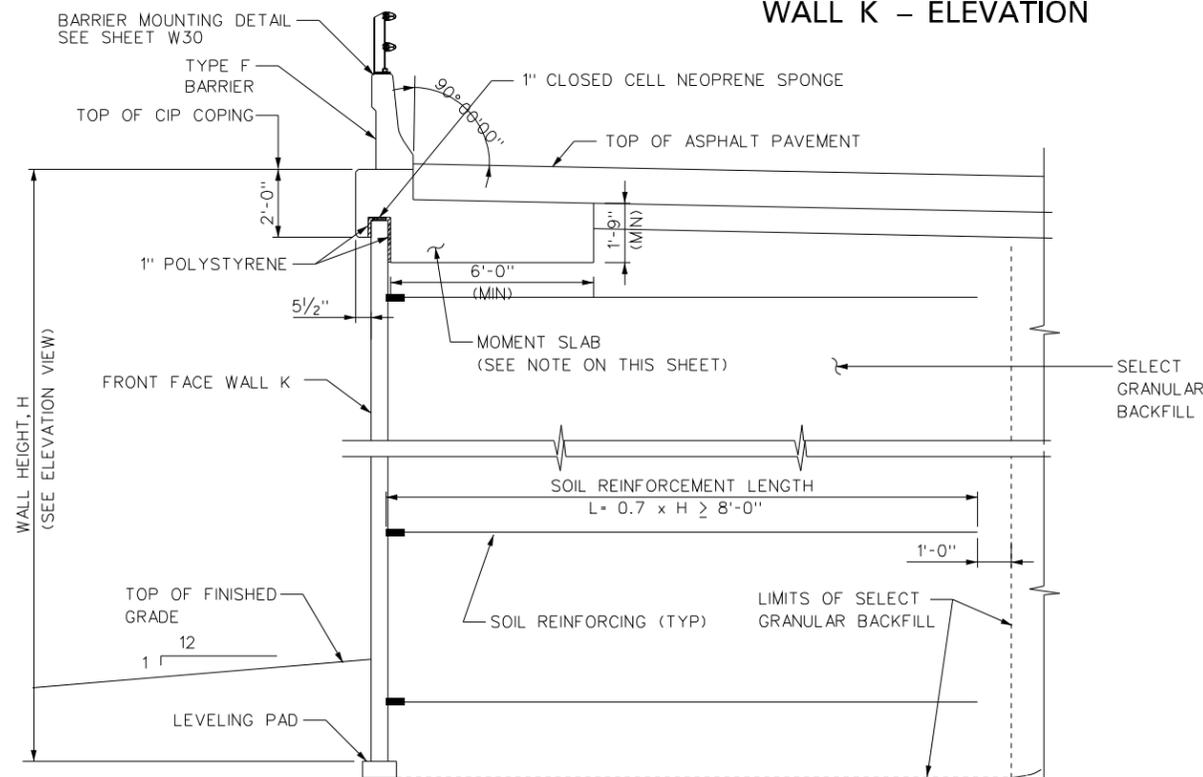
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DRAWN	JME	DATE	09/02
CHECKED	RBT	DATE	09/02
CHECKED	JDD	DATE	09/02



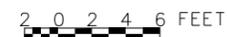
PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	304	407



WALL K - ELEVATION



SECTION A-A
1 0 1 2 3 FEET



NOTE:

WORK THIS SHEET WITH SHEET W24.
DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL K ELEVATION - II

DESIGNED	JSD	DATE	09/02
DRAWN	JME	DATE	09/02
CHECKED	RBT	DATE	09/02
CHECKED	JSD	DATE	09/02

Baker
Michael Baker Jr., Inc.

Charleston, W.Va.

SHEET
W25 OF **W58**
BRIDGE NO.
4919

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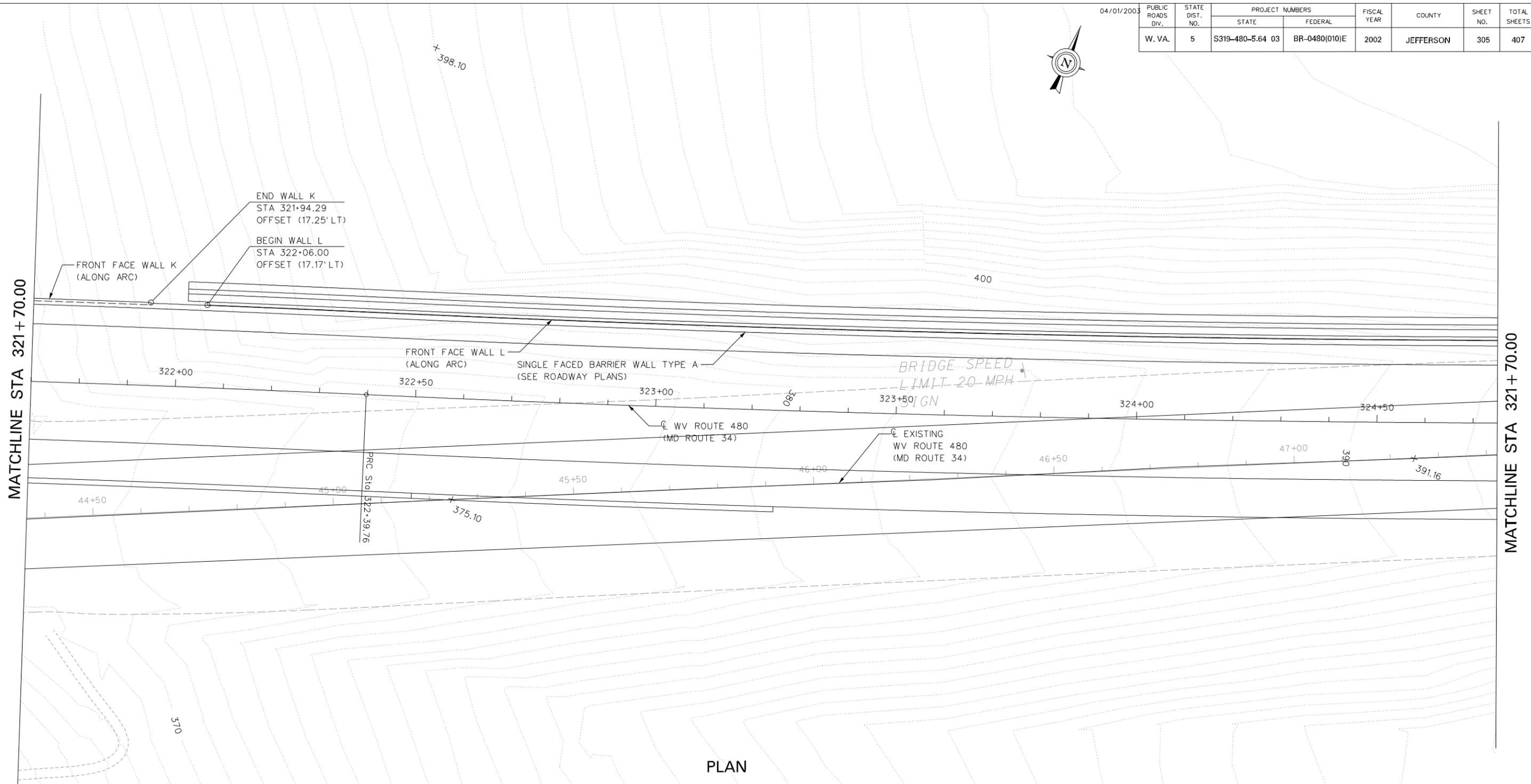
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	305	407



MATCHLINE STA 321+70.00

MATCHLINE STA 321+70.00



PLAN

NOTE:

FOR HORIZONTAL AND VERTICAL CURVE DATA, SEE ROADWAY PLANS.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALLS K & L PLAN**

DESIGNED	DATE
<i>JDS</i>	09/02
DRAWN	
<i>MAJ</i>	09/02
CHECKED	
<i>RBT</i>	09/02
CHECKED	
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Baker Michael Baker Jr., Inc.	SHEET	W26 OF W58
	BRIDGE NO.	4919
Charleston, W.Va.		

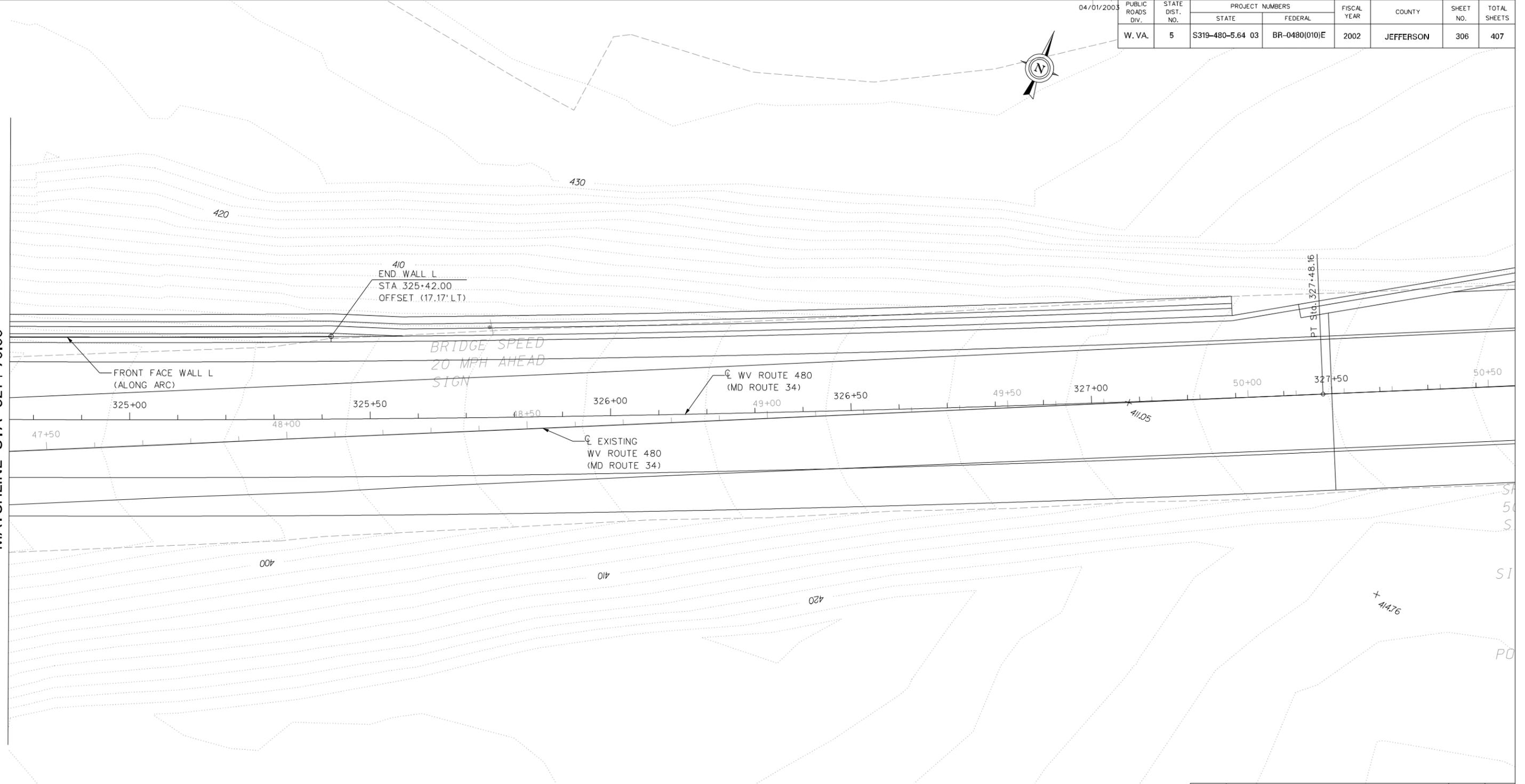
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	306	407



MATCHLINE STA 321+70.00



NOTE:
FOR HORIZONTAL AND VERTICAL CURVE DATA, SEE ROADWAY PLANS.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL L PLAN**

DESIGNED	JSD	DATE	09/02
DRAWN	MAD	DATE	09/02
CHECKED	RBT	DATE	09/02
CHECKED	JSD	DATE	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

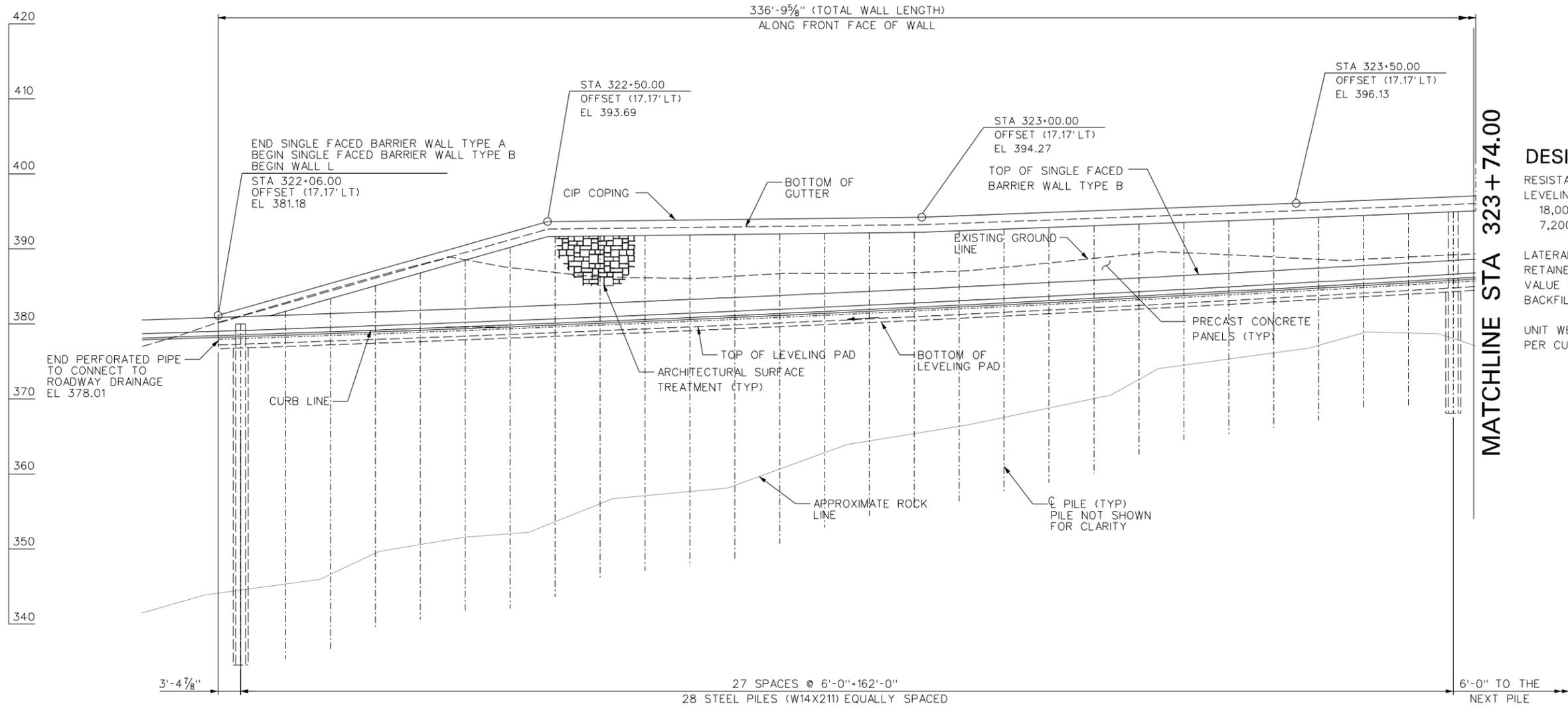
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BRIDGE NO. **4919**

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	307	407



DESIGN CRITERIA:

RESISTANCE FACTORED BEARING CAPACITY UNDER LEVELING PADS ARE
18,000 POUNDS PER SQUARE FOOT ON ROCK AND
7,200 POUNDS PER SQUARE FOOT ON EMBANKMENT SOIL.

LATERAL EARTH PRESSURE:
RETAINED SOIL INTERNAL ANGLE OF FRICTION
VALUE OF 34 DEGREES FOR SELECT GRANULAR
BACKFILL AND COHESION = 0 PSF.

UNIT WEIGHT OF SELECT GRANULAR BACKFILL = 125 POUNDS
PER CUBIC FOOT.

WALL L ELEVATION

NOTES:

- SEE WALL GENERAL NOTES ON SHEET W1. FOR WALL SECTION, SEE SHEET W29.
- ARCHITECTURAL SURFACE TREATMENT, COPING, LEVELING PAD, PRECAST CONCRETE PANELS, SELECT GRANULAR BACKFILL, REINFORCING ELEMENTS, ATTACHMENT DEVICES AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.
- 6" DIA PERFORATED PIPE, NO 57 STONE AND FABRIC FOR SEPARATION SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.
- WHERE THE LEVELING PAD IS PLACED ON ROCK, VOIDS, CREVICES AND OTHER BEDROCK, DISCONTINUITIES SHALL BE CLEANED BY JETTING AND GROUTED TO REESTABLISH THE DESIGN BOTTOM OF THE PAD. THE COST SHALL BE INCIDENTAL TO ITEM 626002, RETAINING WALL.
- TOP OF LEVELING PAD SHALL BE LOCATED IN ACCORDANCE WITH AASHTO-LRFD DESIGN SPECIFICATION.
- ALL DIMENSIONS SHOWN IN THE ELEVATION VIEW ARE MEASURED ALONG THE FRONT FACE OF THE WALL.
- STATIONS AND OFFSETS ARE MEASURED TO THE FRONT FACE OF THE WALL. OFFSETS ARE MEASURED RADIAL.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL L ELEVATION - I**

DESIGNED: *AP* DATE: 09/02
DRAWN: *JRS* DATE: 09/02
CHECKED: *AP* DATE: 09/02
CHECKED: *SRA* DATE: 09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

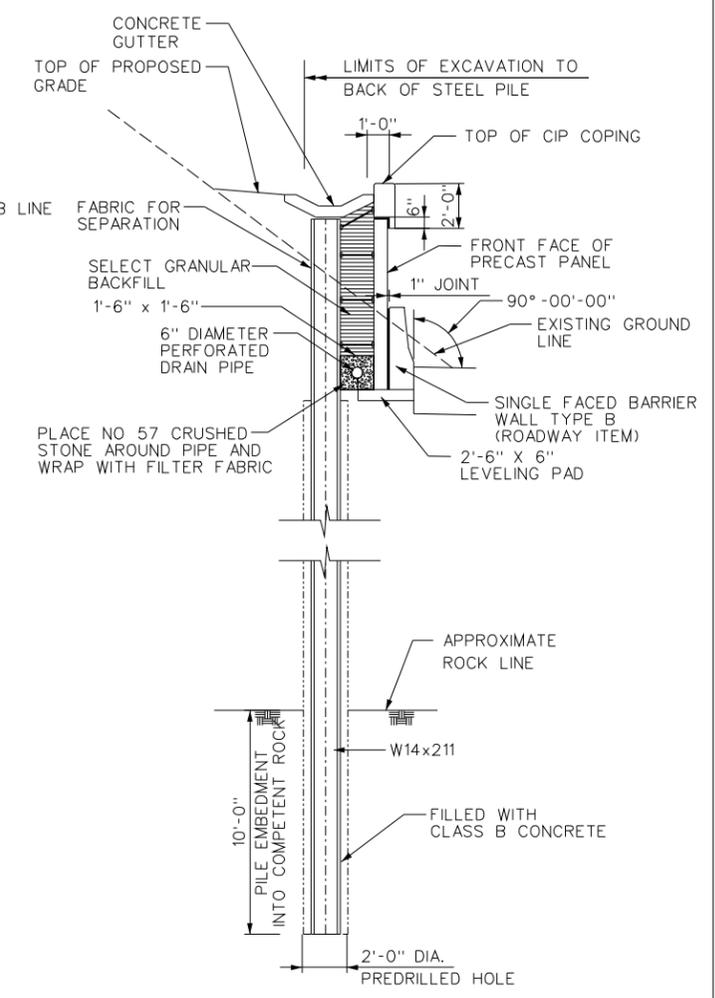
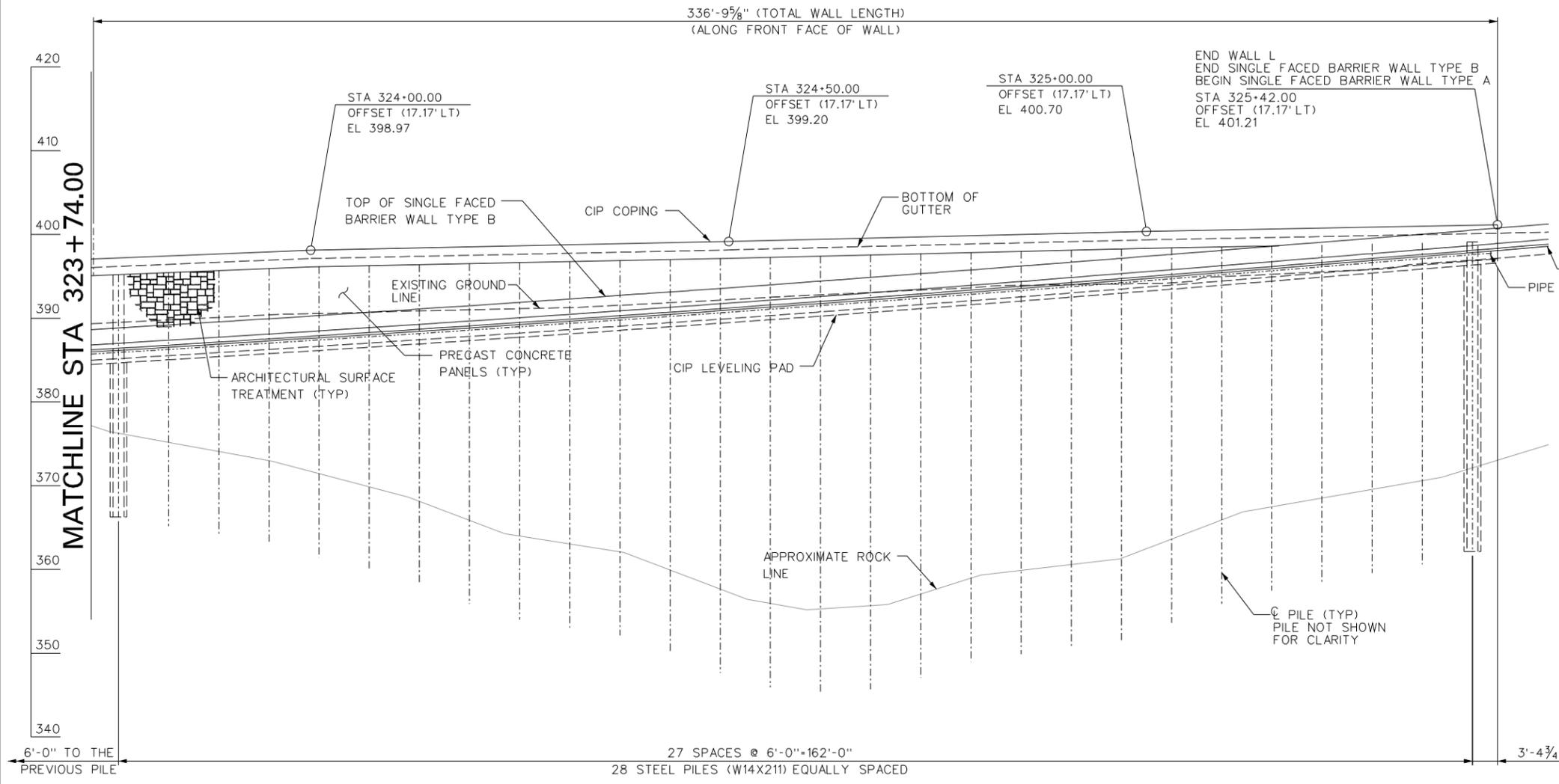
SHEET **W28** OF **W58**
BRIDGE NO. **4919**



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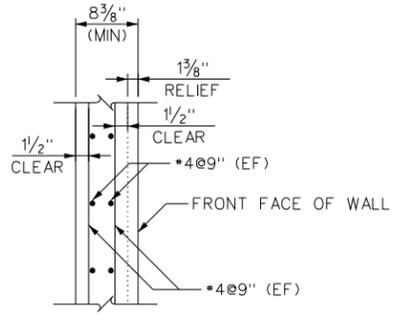
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	308	407



WALL L ELEVATION

TYPICAL SECTION



PANEL REINFORCEMENT

NOTES:

SEE NOTES AND DESIGN CRITERIA ON SHEET W28.

PANEL REINFORCEMENT SHOWN ON THIS DRAWING IS FOR PANEL SIMPLY SUPPORTED BETWEEN PILES. SHOULD THE CONTRACTOR CHOOSE TO SUPPORT THE PANEL BETWEEN EACH PILE DIFFERENTLY, THE CONTRACTOR SHALL SUBMIT HIS DESIGN TO THE ENGINEER FOR APPROVAL.

THE WALL MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN OF CONNECTIONS BETWEEN PILES AND RETAINING WALL PANELS. THE FACTORED PRESSURE TO BE USED IN THE DESIGN UNDER STRENGTH I LIMIT STATE SHALL BE 1.27 KIPS PER SQUARE FOOT.

NO.	REVISION	DATE:	BY:
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W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
MARYLAND WALL L ELEVATION - II

DESIGNED	DATE
AP	09/02
DRAWN	
JLH	09/02
CHECKED	
AP	09/02
CHECKED	
SKA	09/02

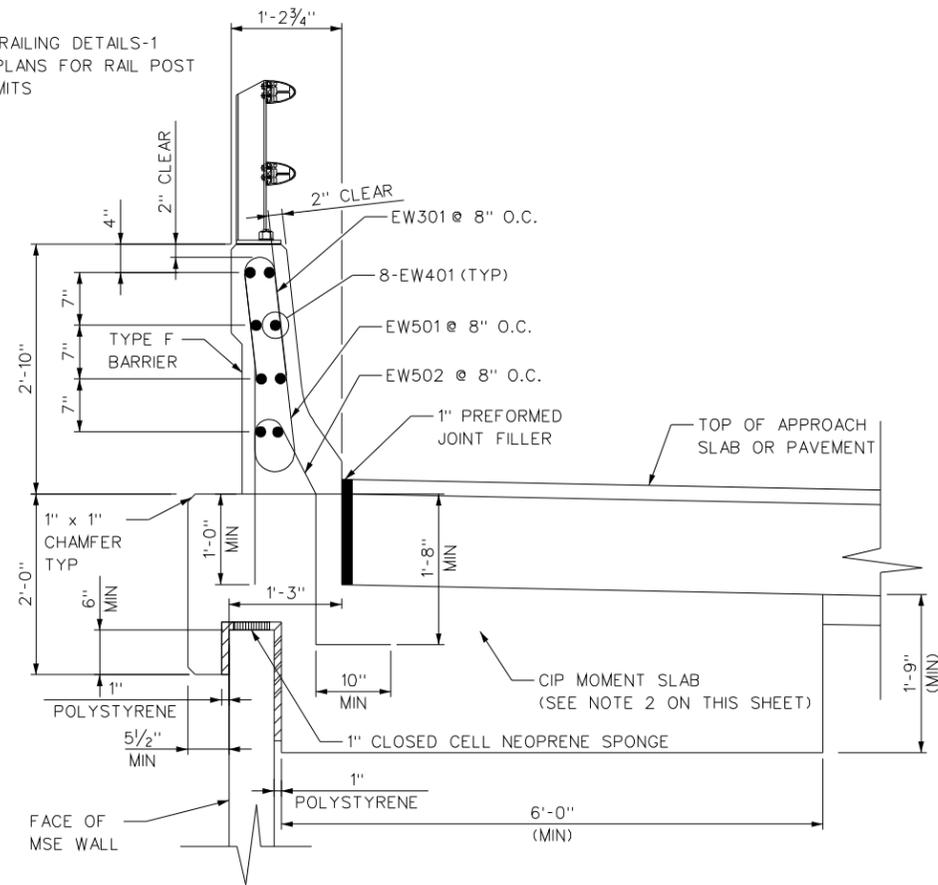
Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET **W29** OF **W58**
BRIDGE NO. **4919**

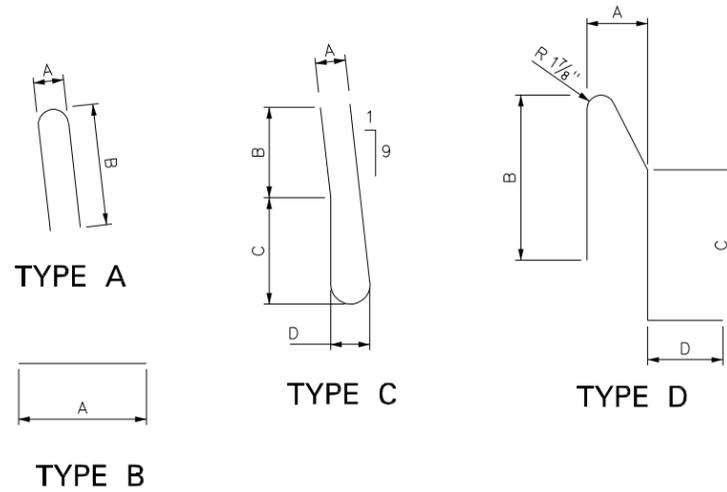


PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	309	407

NOTE:
REFER TO RAILING DETAILS-1
IN BRIDGE PLANS FOR RAIL POST
SPACING LIMITS



WALL C AND K
TYPE "F" BARRIER
MOUNTING DETAIL

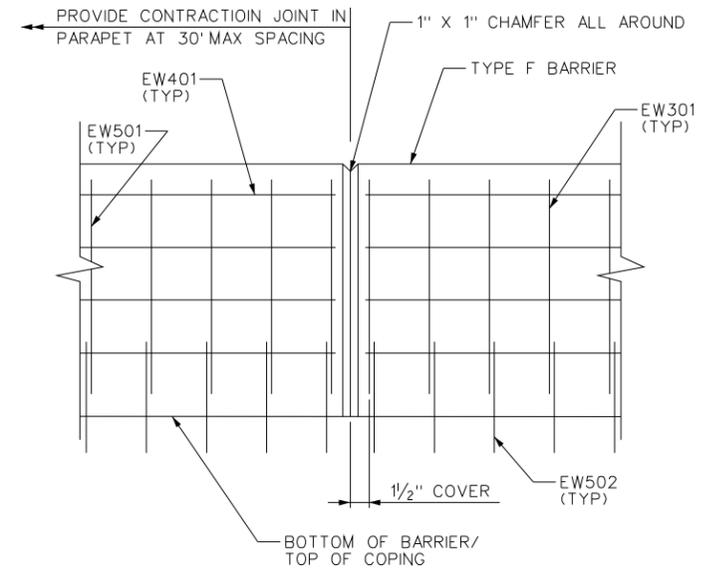


REINFORCEMENT BAR SCHEDULE WALL C

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	REMARK
EW301	A	#3	23	2'-10"	BARRIER	4"	1'-4"			
EW401	B	#4	8	14'-6"	BARRIER	14'-6"				
EW501	C	#5	23	4'-8"	BARRIER	4"	1'-0"	1'-2"	5/4"	
EW502	D	#5	23	5'-1"	BARRIER	8 1/2"	1'-10 1/2"	1'-8"	10"	

REINFORCEMENT BAR SCHEDULE WALL K

MARK	TYPE	SIZE	NO	LENGTH	LOCATION	A	B	C	D	REMARK
EW301	A	#3	358	2'-10"	BARRIER	4"	1'-4"			
EW401	B	#4	64	29'-9"	BARRIER	29'-9"				
EW501	C	#5	358	4'-8"	BARRIER	4"	1'-0"	1'-2"	5/4"	
EW502	D	#5	358	5'-1"	BARRIER	8 1/2"	1'-10 1/2"	1'-8"	10"	



CONTRACTION JOINT DETAIL
IN TYPE "F" BARRIER



NOTES:

- FOR WALL GENERAL NOTES, SEE SHEET W1.
- DIMENSIONS SHOWN FOR THE MOMENT SLAB ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MOMENT SLAB. THE CONTRACTOR SHALL SUBMIT DESIGN AND DETAILS OF MOMENT SLAB TO THE ENGINEER FOR APPROVAL.
- FORM LINERS SHALL BE FROM CUSTOM ROCK INTERNATIONAL OR APPROVED EQUAL FORM LINER. DESIGNATION 12007 IS FROM CUSTOM ROCK INTERNATIONAL

NO.	FORM LINER CHANGE	2/11/03	JDD
	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

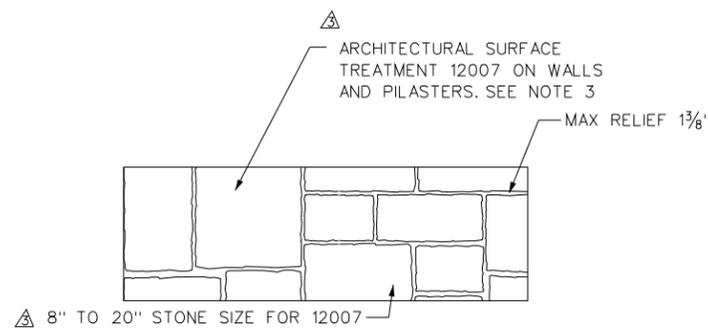
JAMES RUMSEY BRIDGE
RETAINING WALLS
WALL DETAILS

DESIGNED	DATE
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DRAWN	
<i>JLH</i>	09/02
CHECKED	
<i>JLW</i>	09/02
CHECKED	
<i>JDD</i>	09/02

Baker
Michael Baker Jr., Inc.

Charleston, W.Va.

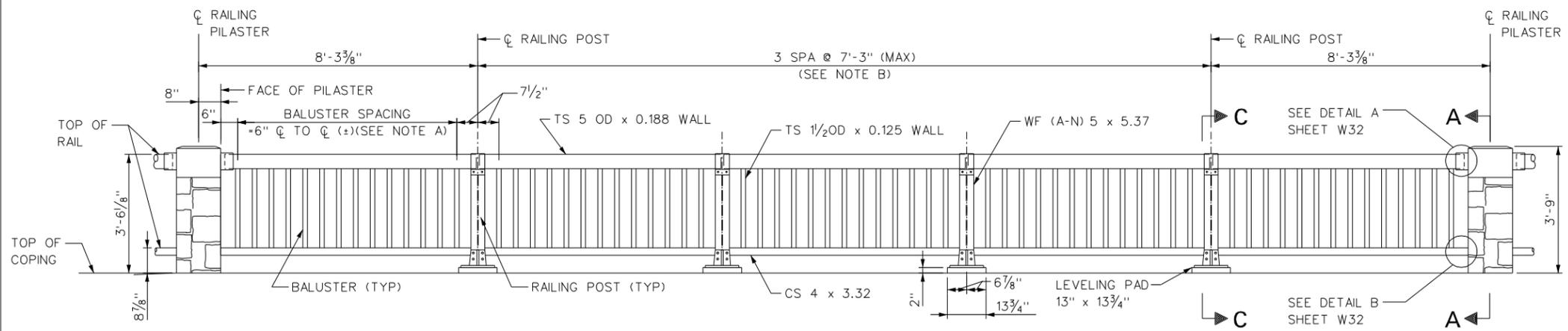
SHEET
W30 OF **W58**
BRIDGE NO.
4919



ARCHITECTURAL TREATMENT
DETAIL

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	310	407



TYPICAL PEDESTRIAN RAILING ELEVATION FOR WALLS B, E

NOTE A:
PROVIDE UNIFORM SPACING OF BALUSTERS IN EACH PANEL. IF POSTS SPACING SHOWN DOES NOT RESULT IN 6" SPACING FOR THE BALUSTERS, ADJUST THE DIFFERENCE BY INCREASING OR DECREASING BALUSTER SPACING AND END DISTANCE BY NOT MORE THAN 3/8".

NOTE B:
RAILING POSTS AND PILASTER SPACINGS VARY, TYPICAL ARRANGEMENT SHOWN. FOR ACTUAL PILASTER SPACING AND LOCATION, SEE WALL ELEVATION VIEWS.

NOTES:
FOR WALL GENERAL NOTES, SEE SHEET W1.

FOR SECTION C-C, SEE SHEET W32.

FOR DETAILS A AND B, SEE SHEET W32.

PLACE POSTS, PILASTERS, BALUSTERS AND ANCHOR BOLTS TRULY VERTICAL. PLACE RAILS PARALLEL TO TOP OF COPING.

ROUGH CUT ENDS AND EDGES OF RAILING COMPONENTS SHALL BE GROUND OR FILLED SMOOTH TO REMOVE ALL SHARP EDGES, NICKS OR BURRS THAT WOULD BE INJURIOUS TO THE HUMAN TOUCH.

EXCEPT AS NOTED, ALL HARDWARE IS ANODIZED ALUMINUM IN ACCORDANCE WITH SECTIONS 709.31 THROUGH 709.41 OF THE STANDARD SPECIFICATIONS. THE ANODIZED COLORING SHALL RESEMBLE COLOR NUMBER 30045 OF FEDERAL STANDARD 595 AS CLOSELY AS POSSIBLE.

THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE MILD STEEL ASTM A307, AND GALVANIZED IN ACCORDANCE WITH AASHTO M111 AND PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL CONFORM TO AASHTO M314-90(2000) GRADE 36. NUTS SHALL CONFORM TO AASHTO M291. WASHERS SHALL CONFORM TO AASHTO M293. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.

PILASTER SHALL BE RUBBED FINISHED IN ACCORDANCE WITH SUBSECTION 601.11.2 OF THE SPECIFICATION. PILASTER REINFORCEMENT SHALL BE EPOXY COATED.

CONCRETE IN THE PILASTERS, REINFORCING STEEL IN THE PILASTERS, POSTS, RAILING AND ASSOCIATED HARDWARE SHALL BE INCIDENTAL TO ITEM NO 617003-003, ALUMINUM RAILING (PEDESTRIAN).

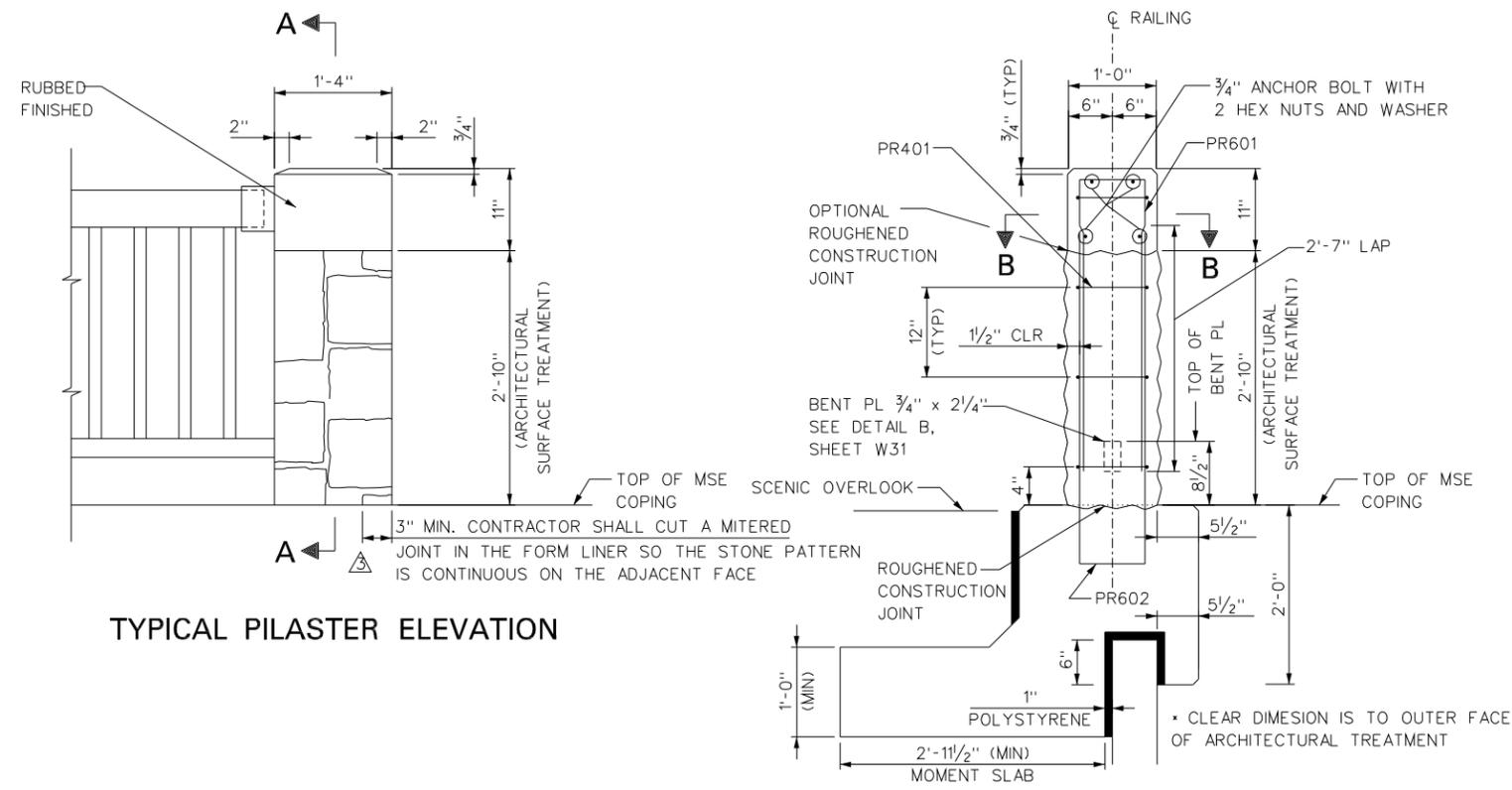
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	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
PEDESTRIAN RAILING DETAILS - I

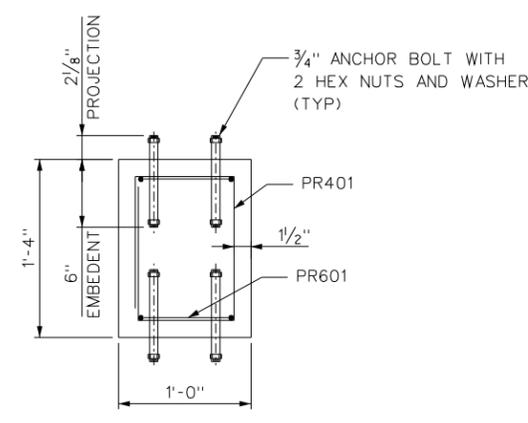
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JB	09/02
DRAWN	
JLH	09/02
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JDD	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va. SHEET W31 OF W58 BRIDGE NO. 4919

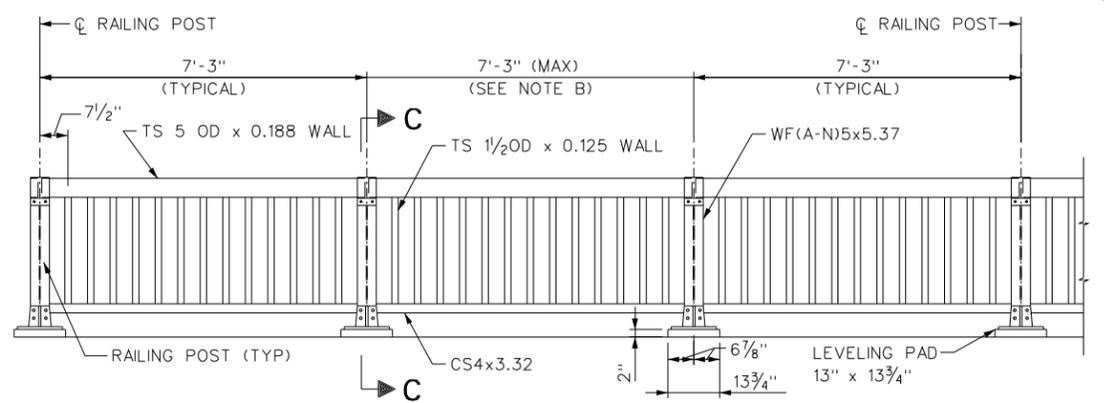


TYPICAL PILASTER ELEVATION

SECTION A-A



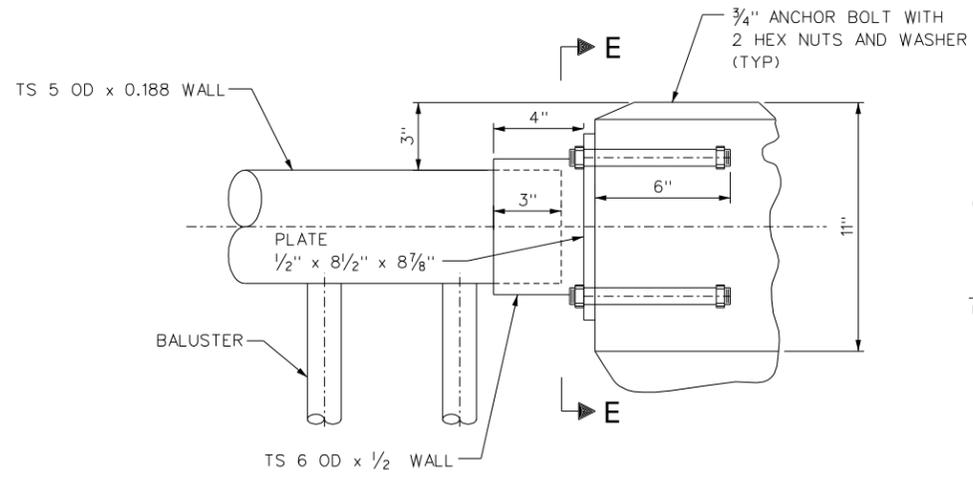
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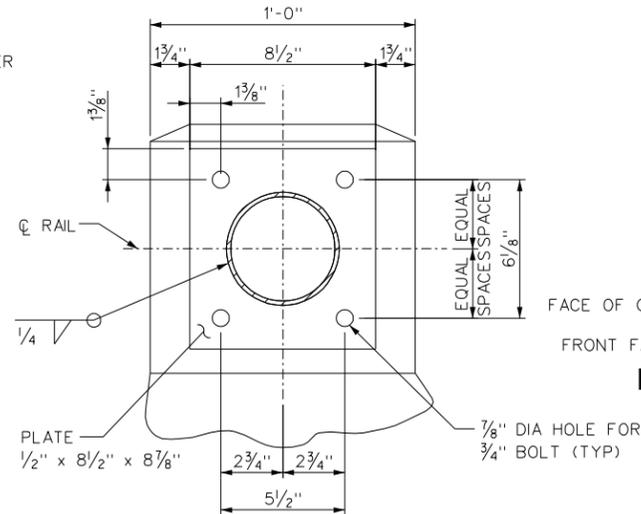
TYPICAL PEDESTRIAN RAILING ELEVATION FOR WALLS H, J

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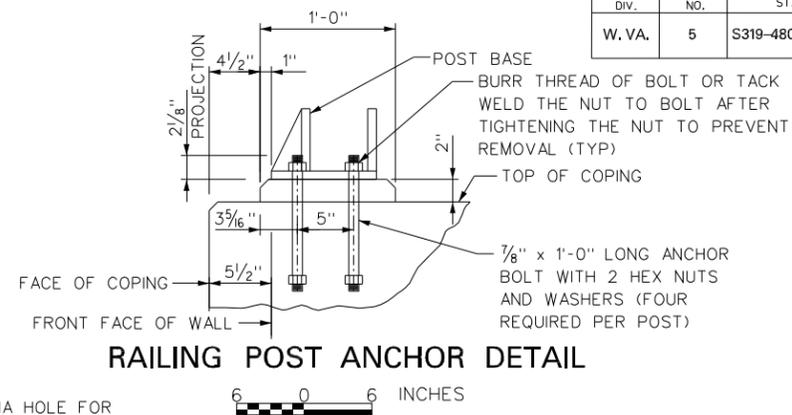
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		STATE	FEDERAL				
W. VA.	5	S319-480-5.64 03	BR-0480(010)E	2002	JEFFERSON	311	407



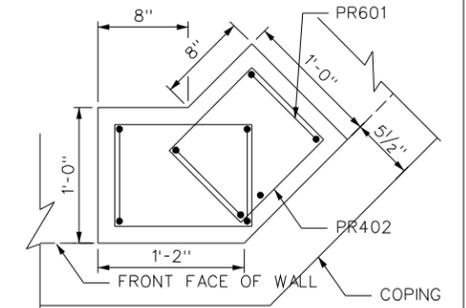
DETAIL A



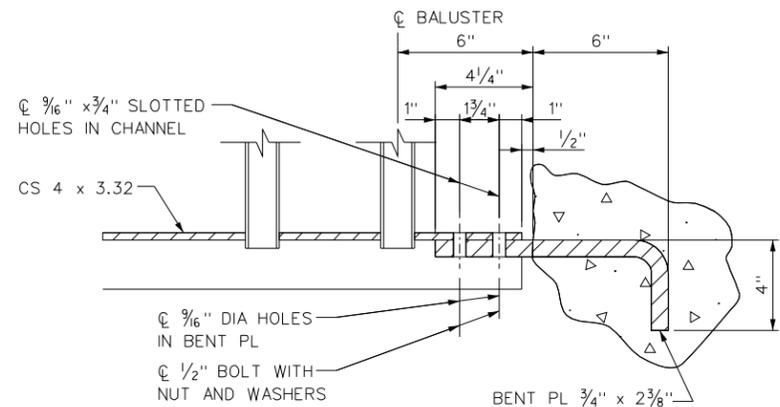
DETAIL E-E



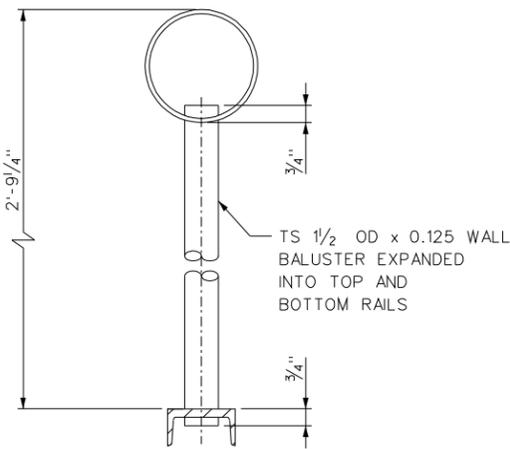
RAILING POST ANCHOR DETAIL



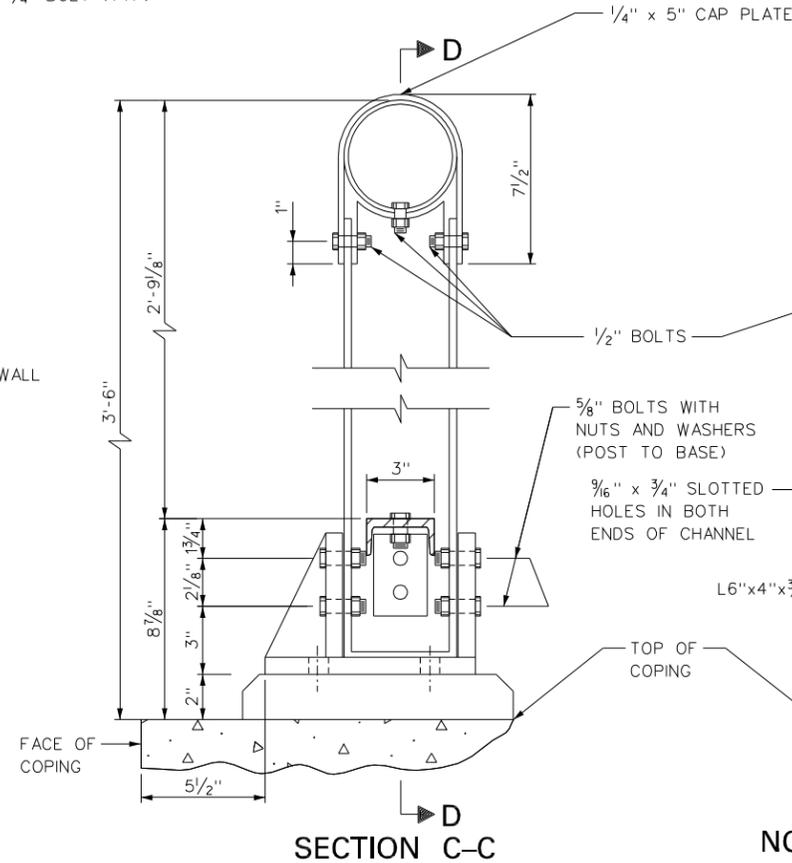
PILASTER SECTION AT TURNING POINT IN WALL



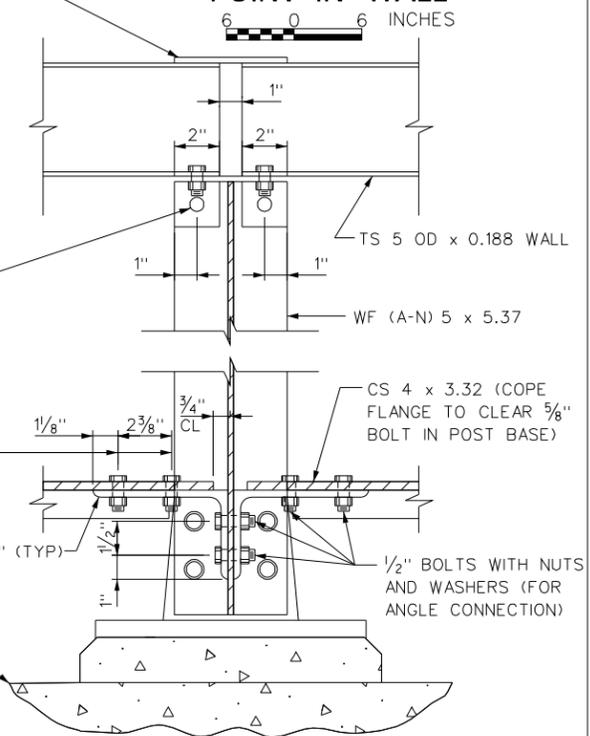
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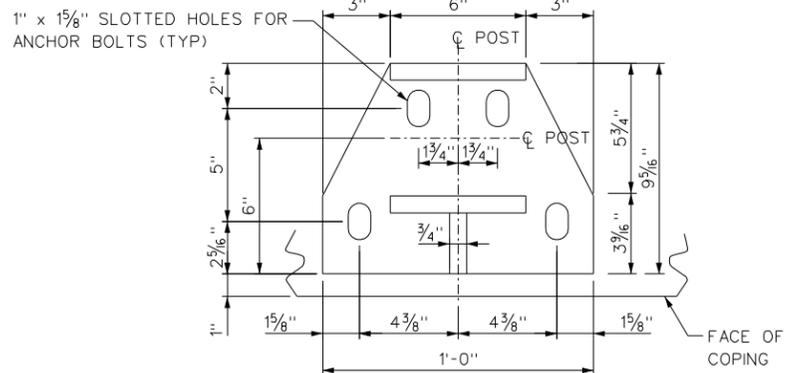
BALUSTER DETAIL



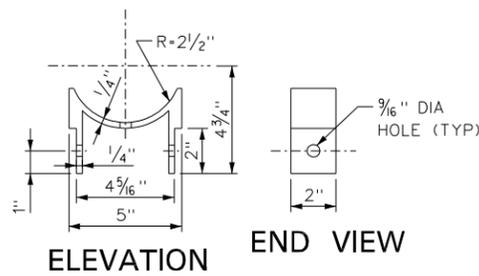
SECTION D-D



SECTION D-D



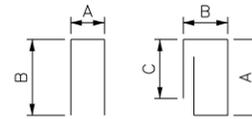
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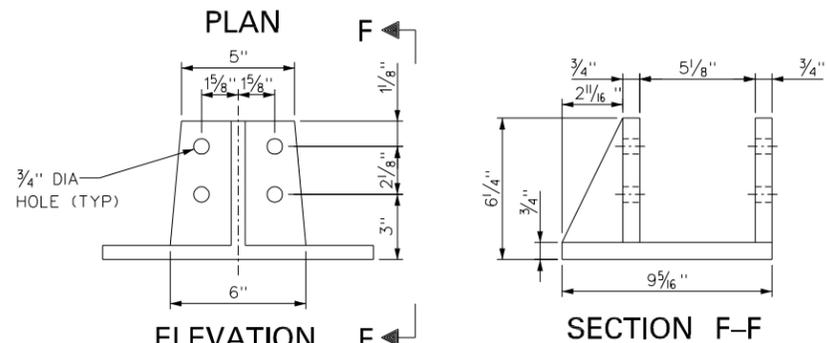
ELEVATION

END VIEW

RAIL SEAT DETAIL



MARK	SIZE	NUMBER	TYPE	LENGTH	A	B	C
PR401	4	40	2	4'-7"	13"	9"	12"
PR402	4	16	2	4'-10"	14"	9"	13"
PR601	6	28	1	6'-5 1/2"	7 1/2"	2'-11"	
PR602	6	28	1	8'-5 1/2"	7 1/2"	3'-11"	



ELEVATION F-F

SECTION F-F

POST BASE DETAIL

NOTES:

- FOR WALL GENERAL NOTES, SEE SHEET W1.
- FOR DETAIL A AND B LOCATIONS, SEE SHEET W31.
- FOR ADDITIONAL PEDESTRIAN RAILING INFORMATION, SEE SHEET W31.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
PEDESTRIAN RAILING DETAILS - II

DESIGNED	DATE
DRAWN	DATE
CHECKED	DATE
CHECKED	DATE

Baker
Michael Baker Jr., Inc.

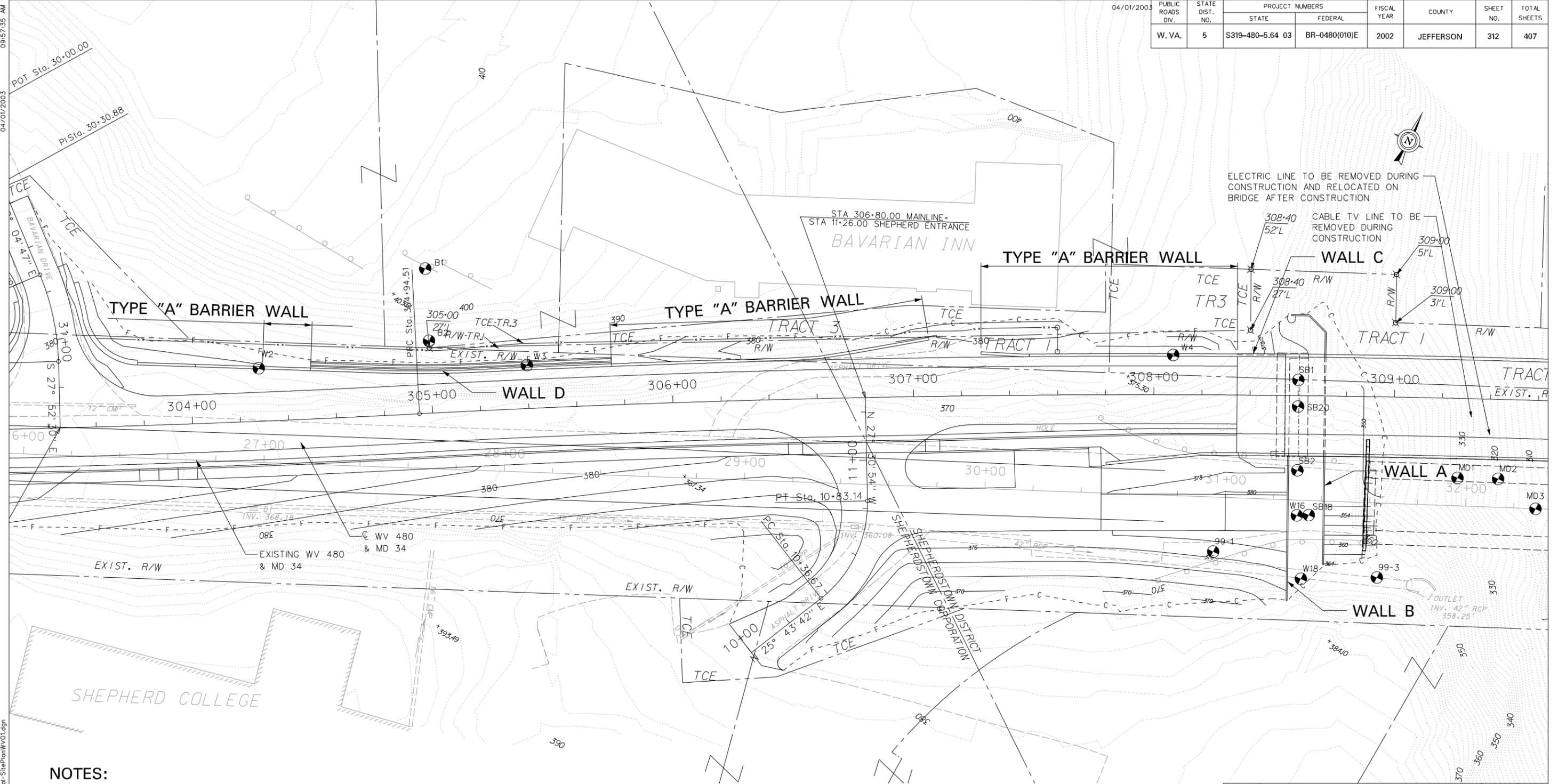
Charleston, W.Va.

SHEET
W32 OF **W58**
BRIDGE NO.
4919



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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	312	407



NOTES:

- FOR WALL GENERAL NOTES, SEE SHEET W1.
- BARRIER WALLS, TYPE A AND B, ARE ROADWAY ITEMS. SEE ROADWAY PLANS FOR MORE INFORMATION.
- FOR GENERAL WALL PLAN - WALL D, SEE SHEET W5.
- FOR GENERAL WALL PLAN - WALLS A, B AND C, SEE SHEET W7.
- FOR WALL A ELEVATION AND SECTION, SEE SHEET W8.
- FOR WALL B ELEVATION AND SECTION, SEE SHEET W11.
- FOR WALL C ELEVATION AND SECTION, SEE SHEET W12.
- FOR WALL D ELEVATION AND SECTION, SEE SHEET W6.

CORE BORING DRAWINGS FOR 99-19, 99-21, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD13, W2, W3, AND W10 ARE NOT INCLUDED WITH THIS SET OF RETAINING WALL DRAWINGS.

SEE SET OF THE JAMES RUMSEY BRIDGE DRAWINGS FOR W4, 99-1, SB1, SB20, SB2, W16, SB18, W18, 99-3, MD1, MD2, W19, B3, SB15, SB16, SB19, W5, W11, W6, 99-23, AND W12.

CORE BORING DRAWINGS FOR W24, W25, MD11, MD12, W23, MD14, MD15, MD16, MD17, W10, W8, W9, W7, W13, W20, W14, B4, W21, W15, B5, W22, AND W17.

LEGEND:

- DENOTES BORING LOCATION
- 99-XX DENOTES TEST BORINGS DRILLED BY AWK CONSULTING ENGINEERS, INC. IN 1999 (FOR TEMPORARY BRIDGE STUDY).
- MD DENOTES TEST BORINGS DRILLED IN 1937 FOR THE EXISTING JAMES RUMSEY BRIDGE.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
RETAINING WALLS
SITUATION PLAN
WEST VIRGINIA WALLS

 Michael Baker Jr., Inc.	CHARLESTON, W.VA.	SHEET W33 OF W58
		BRIDGE NO. 4919

DESIGNED	JDD	DATE	09/02
DRAWN	MAD	DATE	09/02
CHECKED	RRF	DATE	09/02
CHECKED	JLW	DATE	09/02

SCALE : 0 20 ft.

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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	313	407

CABLE TV LINE TO BE
REMOVED DURING
CONSTRUCTION

ELECTRIC LINE TO BE REMOVED DURING
CONSTRUCTION AND RELOCATED ON
BRIDGE AFTER CONSTRUCTION

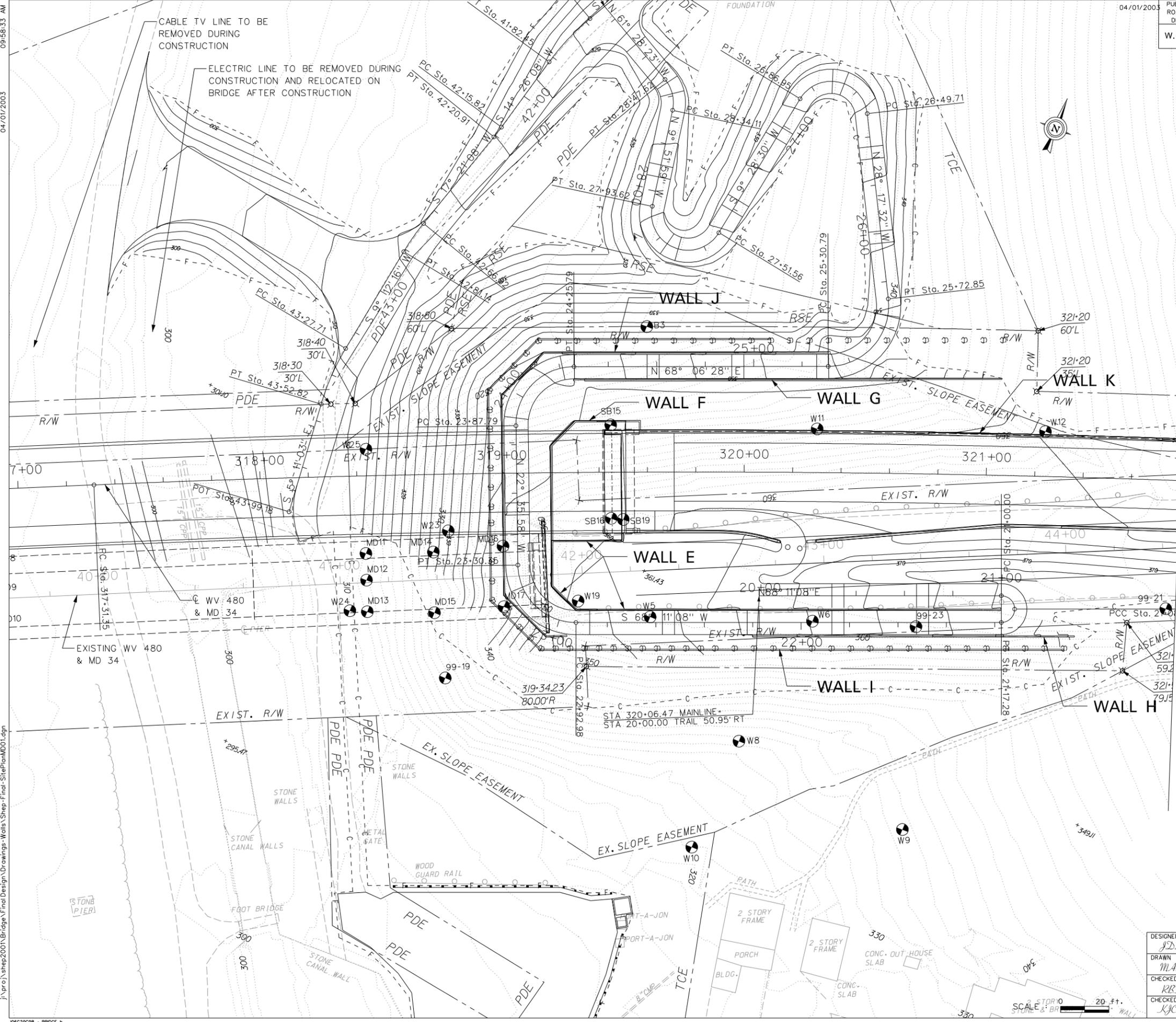
LEGEND:

- DENOTES BORING LOCATION
- 99-XX DENOTES TEST BORINGS DRILLED BY AWK CONSULTING ENGINEERS, INC. IN 1999 (FOR TEMPORARY BRIDGE STUDY).
- MD DENOTES TEST BORINGS DRILLED IN 1937 FOR THE EXISTING JAMES RUMSEY BRIDGE.

NOTES:

- FOR WALL "E" DETAILS SEE PLAN AND ELEVATION SHEET NOS W13, W14 & W15.
- FOR WALL "F" DETAILS SEE PLAN AND ELEVATION SHEET NO W13 & W16.
- FOR WALL "G" DETAILS SEE PLAN AND ELEVATION SHEET NO W13 & W17.
- FOR WALL "H" DETAILS SEE PLAN AND ELEVATION SHEET NO W13 & W18.
- FOR WALL "I" DETAILS SEE PLAN AND ELEVATION SHEET NO W13 & W19-W21
- FOR WALL "J" DETAILS SEE PLAN AND ELEVATION SHEET NOS W13, W22 & W23.
- FOR CORE BORING LOCATION, SEE GEOTECHNICAL REPORT DATED JULY 2002 SUBMITTED BY HC NUTTING COMPANY FOR THE JAMES RUMSEY BRIDGE PROJECT.
- CORE BORING DRAWINGS FOR 99-19, 99-21, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD13, W2, W3, AND W10 ARE NOT INCLUDED WITH THIS SET OF RETAINING WALL DRAWINGS.
- SEE SET OF THE JAMES RUMSEY BRIDGE DRAWINGS FOR W4, 99-1, SB1, SB20, SB2, W16, SB18, W18, 99-3, MD1, MD2, W19, B3, SB15, SB16, SB19, W5, W11, W6, 99-23, AND W12.
- CORE BORING DRAWINGS FOR W24, W25, MD11, MD12, W23, MD14, MD15, MD16, MD17, W10, W8, W9, W7, W13, W20, W14, B4, W21, W15, B5, W22, AND W17.

MATCH LINE STA 321+80.00



NO.	REVISION	DATE:	BY:

**W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**JAMES RUMSEY BRIDGE
RETAINING WALLS
SITUATION PLAN
MARYLAND WALLS - I**

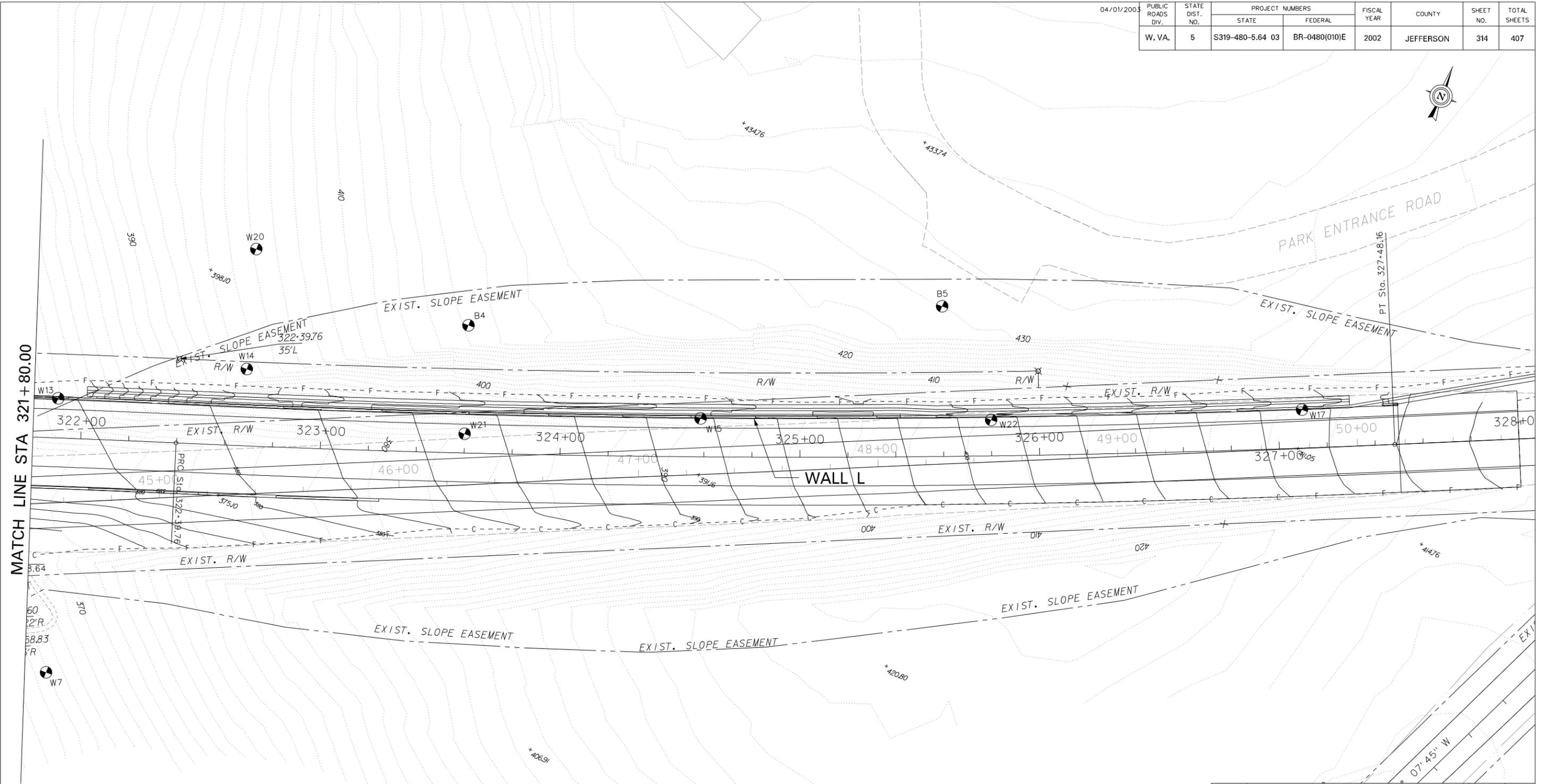
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DRAWN <i>MAD</i>	09/02
CHECKED <i>RRJ</i>	09/02
CHECKED <i>KJC</i>	09/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

SHEET
W34 of W58
BRIDGE NO.
4919

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	314	407



MATCH LINE STA 321+80.00

NOTES:

FOR WALL "K" DETAILS SEE PLAN AND ELEVATION SHEET NOS W13 & W24-W26.

FOR WALL "L" DETAILS SEE PLAN AND ELEVATION SHEET NOS W26 TO W23.

FOR TEST BORING LOCATIONS, SEE GEOTECHNICAL REPORT DATED JULY 2002 SUBMITTED BY HC NUTTING COMPANY FOR THE JAMES RUMSEY BRIDGE PROJECT.

CORE BORING DRAWINGS FOR 99-19, 99-21, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD13, W2, W3, AND W10 ARE NOT INCLUDED WITH THIS SET OF RETAINING WALL DRAWINGS.

SEE SET OF THE JAMES RUMSEY BRIDGE DRAWINGS FOR W4, 99-1, SB1, SB20, SB2, W16, SB18, W18, 99-3, MD1, MD2, W19, B3, SB15, SB16, SB19, W5, W11, W6, 99-23, AND W12.

CORE BORING DRAWINGS FOR W24, W25, MD11, MD12, W23, MD14, MD15, MD16, MD17, W10, W8, W9, W7, W13, W20, W14, B4, W21, W15, B5, W22, AND W17.

LEGEND:

- DENOTES BORING LOCATION
- 99-XX DENOTES TEST BORINGS DRILLED BY AWK CONSULTING ENGINEERS, INC. IN 1999 (FOR TEMPORARY BRIDGE STUDY).
- MD DENOTES TEST BORINGS DRILLED IN 1937 FOR THE EXISTING JAMES RUMSEY BRIDGE.

SCALE : 0 20 ft.

DESIGNED	DATE
JSD	09/02
DRAWN	
MAD	09/02
CHECKED	
JSD	09/02
CHECKED	
KJK	09/02

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

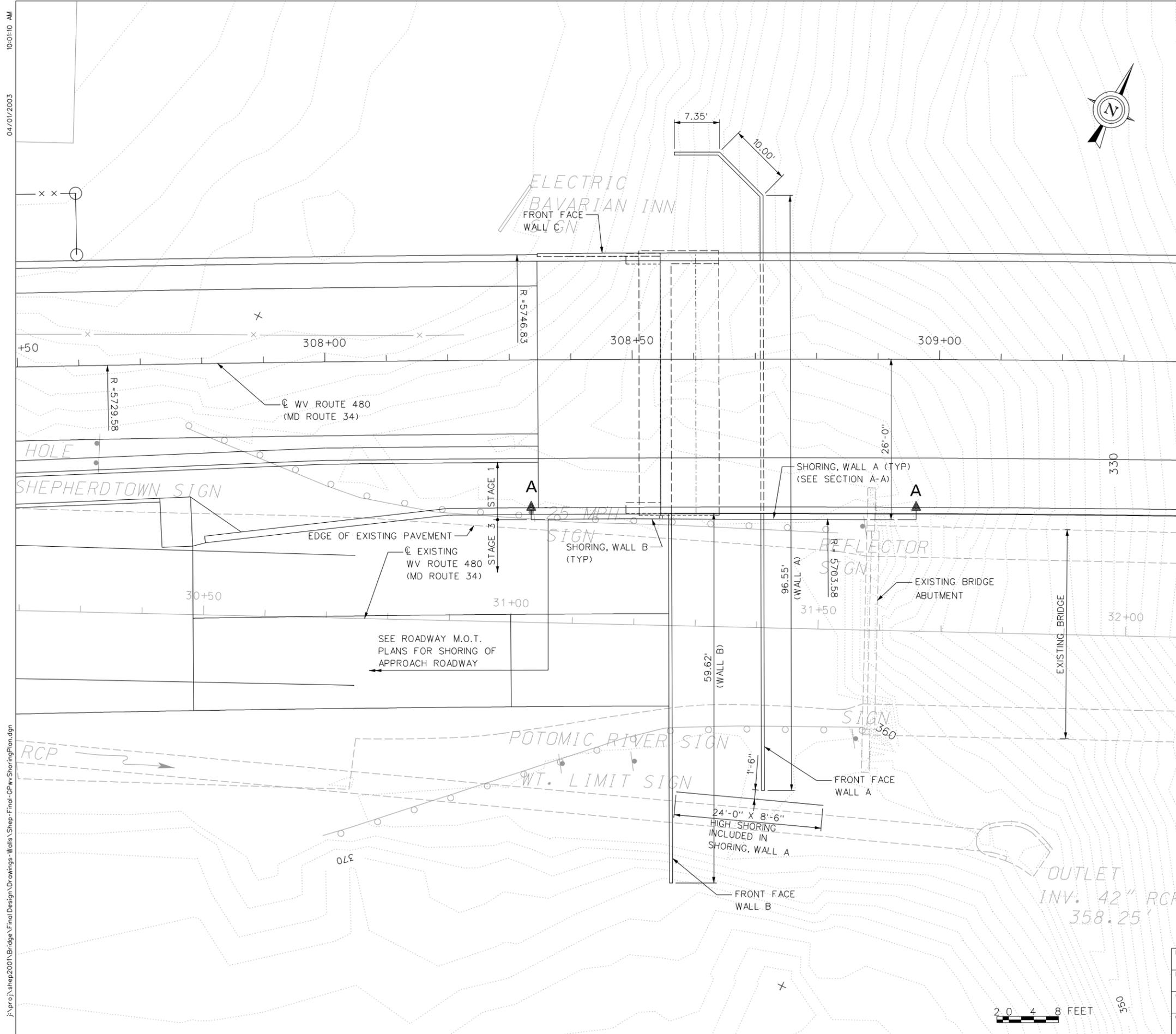
**JAMES RUMSEY BRIDGE
RETAINING WALLS
SITUATION PLAN
MARYLAND WALLS - II**

Baker Michael Baker Jr., Inc.	SHEET W35 OF W58
	BRIDGE NO. 4919

Charleston, W.Va.

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04/01/2003

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	315	407



CONCEPTUAL CONSTRUCTION SEQUENCE

1. INSTALL SHORING FOR STAGE 1 & 3 CONSTRUCTION.
2. EXCAVATE FOR WALL A GRADE BEAMS 5, 4, AND PART OF 3 ON STAGE 1 CONSTRUCTION SIDE.
3. INSTALL PILES AND CONSTRUCT THE GRADE BEAM FOR WALL A, STAGE 1 SIDE. USE MECHANICAL COUPLERS ON REINFORCING STEEL AT CONSTRUCTION JOINT OF THE GRADE BEAM.
4. INSTALL THE WALL PANELS FOR WALL A, STAGE 1 SIDE.
5. CONSTRUCT THE ABUTMENT.
6. CONSTRUCT BRIDGE AND APPROACHES.
7. REROUTE TRAFFIC TO NEWLY BUILT SECTION.
8. REMOVE EXISTING BRIDGE.
9. LOCATE THE 42" RCP AND INSTALL SHORING ADJACENT TO IT.
10. EXCAVATE STAGE 3 SIDE.
11. CUT THROUGH SHORING AT THE EDGE OF THE PREVIOUSLY CONSTRUCTED GRADE BEAM EXPOSING PREVIOUSLY INSTALLED COUPLERS.
12. INSTALL THE PILES AND CONSTRUCT THE REMAINING PORTION OF THE GRADE BEAMS 3, 1, AND 2 FOR WALL A ON THE STAGE 3 SIDE.
13. INSTALL THE REMAINING WALL PANELS FOR WALL A AND BACKFILL. CUT SHORING 2' BELOW FINISHED GRADE BETWEEN WALL A AND WALL B. REMOVE SHORING COMPLETELY AT OTHER LOCATIONS.
14. CONSTRUCT WALL B.
15. LANDSCAPE AREA AND OPEN TO TRAFFIC.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
WEST VIRGINIA RETAINING WALLS
CONSTRUCTION SEQUENCE
AND SHORING PLANS I

DESIGNED <i>JW</i>	DATE 11/02
DRAWN <i>MAD</i>	DATE 11/02
CHECKED <i>JD</i>	DATE 11/02
CHECKED <i>PA</i>	DATE 11/02

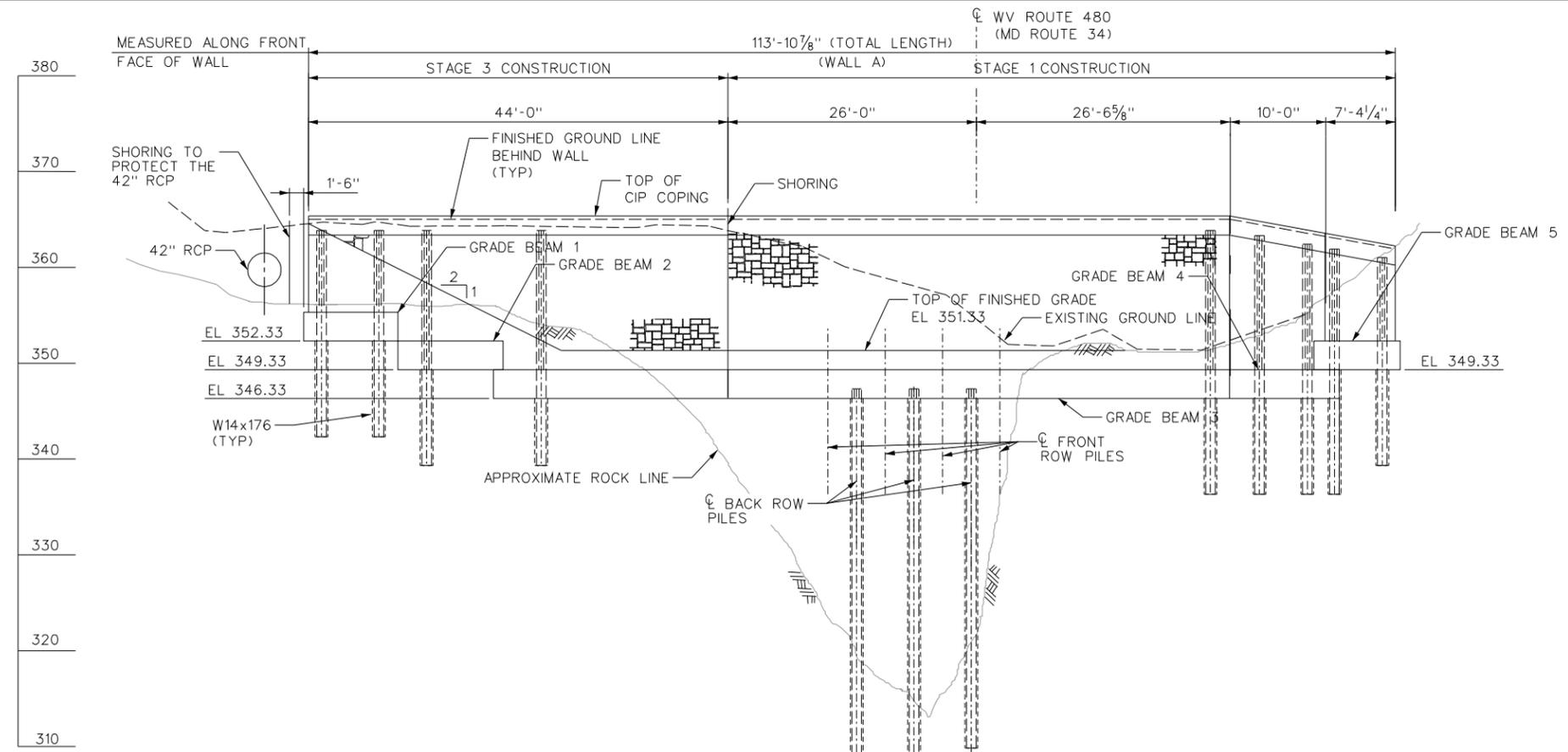
Baker	SHEET W36 OF W58
	BRIDGE NO. 4919
Michael Baker Jr., Inc.	Charleston, W.Va.



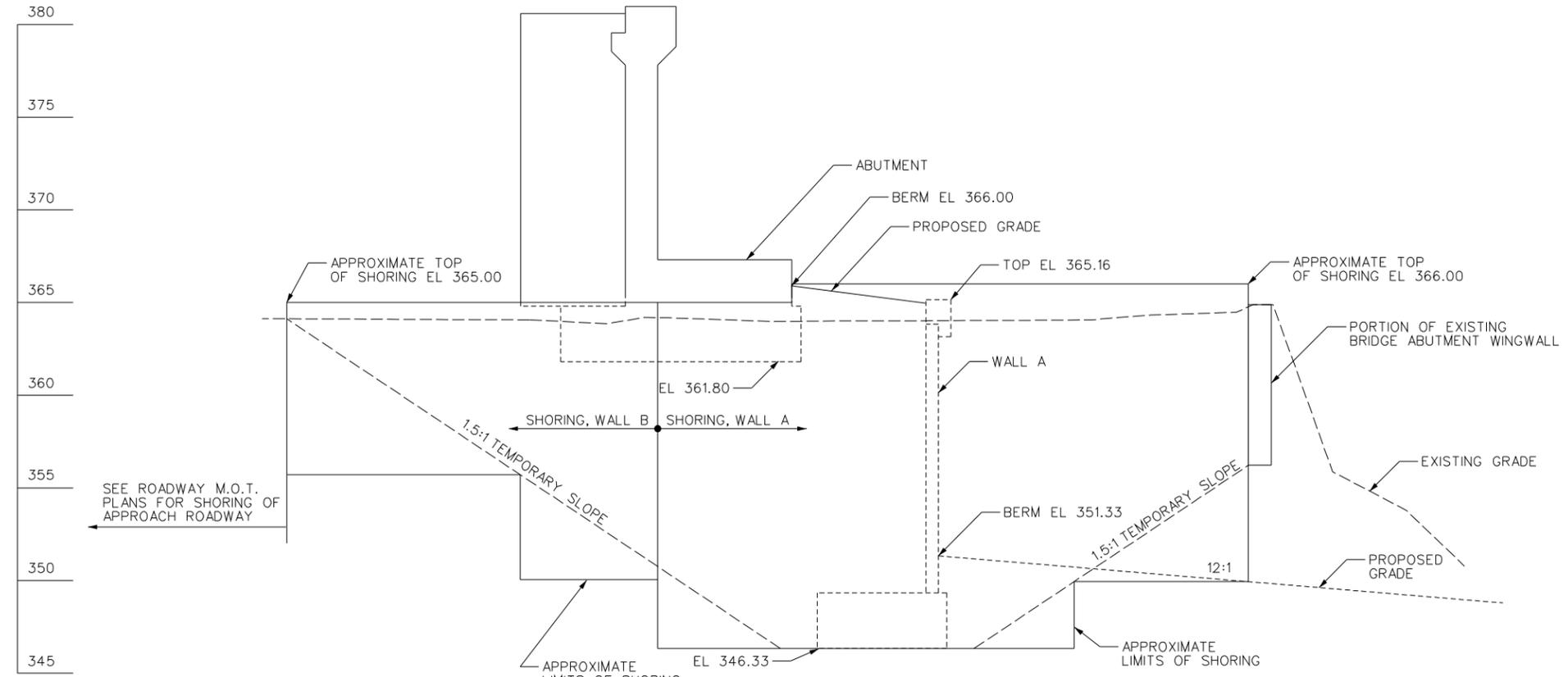
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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	316	407



SHORING AT WALL A - DEVELOPED ELEVATION



SECTION A-A 2 0 2 4 FEET

ITEM NO. 212010-001, SHORING:

DESCRIPTION	UNIT	QUANTITY*
SHORING, WALL A	SF	790
SHORING, WALL B	SF	231

- * THE QUANTITIES SHOWN DO NOT INCLUDE PENETRATION OF THE SHORING BELOW THE LIMIT SHOWN.
- * THE DETERMINATION OF THE TYPE AND LIMITS OF THE SHORING IS THE CONTRACTORS RESPONSIBILITIES.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
WEST VIRGINIA RETAINING WALLS
CONSTRUCTION SEQUENCE AND
SHORING PLANS II

DESIGNED	JW	DATE	11/02
DRAWN	JME	DATE	11/02
CHECKED	JSD	DATE	11/02
CHECKED	RA	DATE	11/02

Baker
Michael Baker Jr., Inc. Charleston, W.Va.

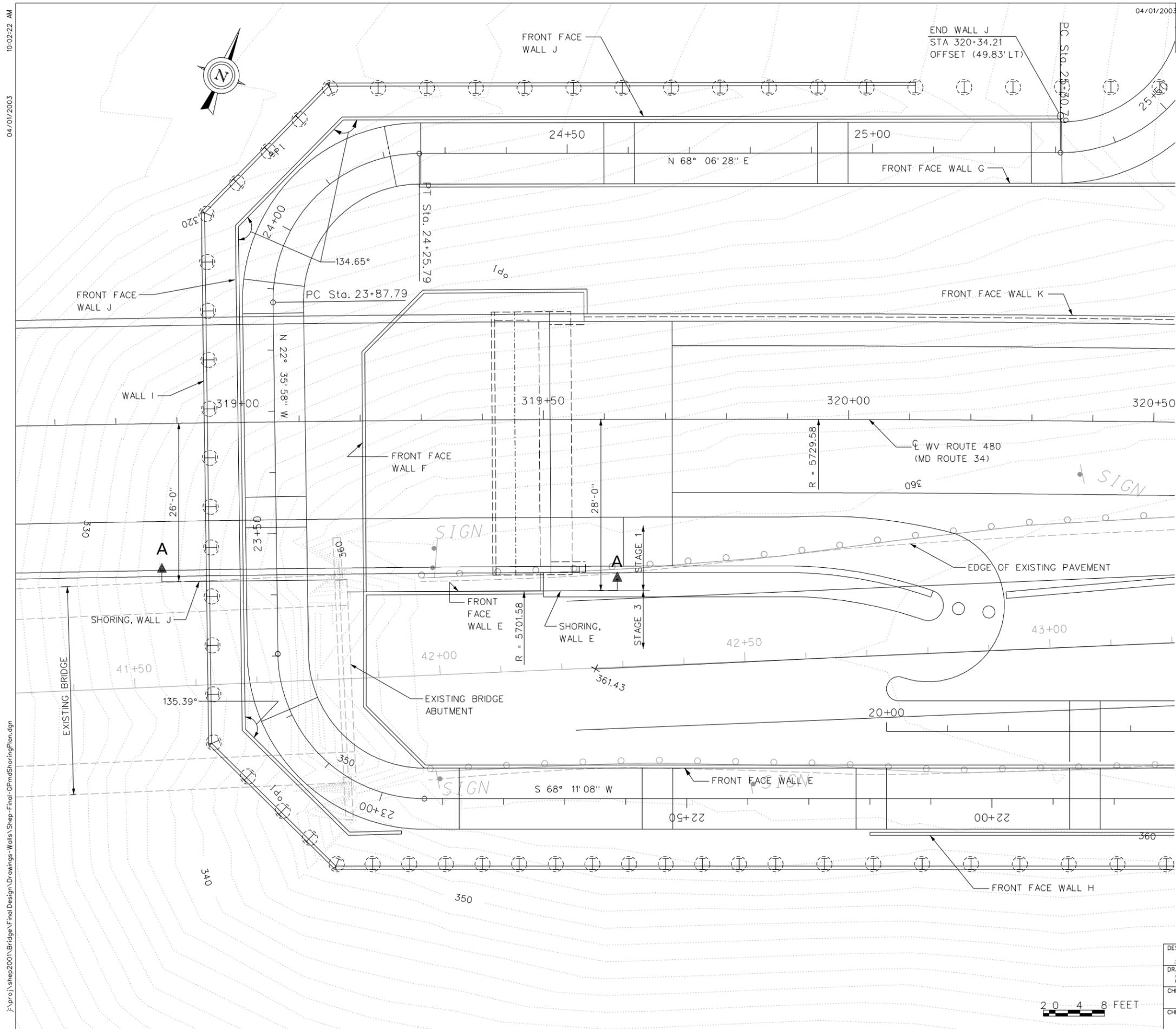
SHEET **W37** OF **W58**
BRIDGE NO. **4919**

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J06C29C98 - BRIDGE b

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	317	407



CONCEPTUAL CONSTRUCTION SEQUENCE

1. INSTALL SHORING
2. CONSTRUCT WALL I IN THE STAGE 1 CONSTRUCTION SIDE.
3. EXCAVATE AND CONSTRUCT WALL J TO THE STAGE 1 CONSTRUCTION LIMIT. CONSTRUCT WALL F IN ITS ENTIRETY.
4. CONSTRUCT ABUTMENT 2, BRIDGE, AND APPROACH ROADWAYS.
5. REROUTE TRAFFIC TO NEWLY BUILT SECTION.
6. REMOVE EXISTING BRIDGE.
7. EXCAVATE ON THE STAGE 3 SIDE OF THE SHORING.
8. CUT THROUGH SHORING AT THE FACE OF THE WALL PANELS IN ORDER TO JOIN PANELS ON THE STAGE 1 AND STAGE 3 SIDE AT WALLS I, J, AND F.
9. COMPLETE WALL I AND J.
10. CUT SHORING 2' BELOW FINISHED GRADE IN BETWEEN WALLS I AND J. REMOVE SHORING ELSEWHERE.
11. CONSTRUCT WALL E IN ITS ENTIRETY.
12. LANDSCAPE AREA AS SHOWN ON THE LANDSCAPING PLANS AND OPEN TO TRAFFIC.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
MARYLAND RETAINING WALLS
CONSTRUCTION SEQUENCE
AND SHORING PLANS I

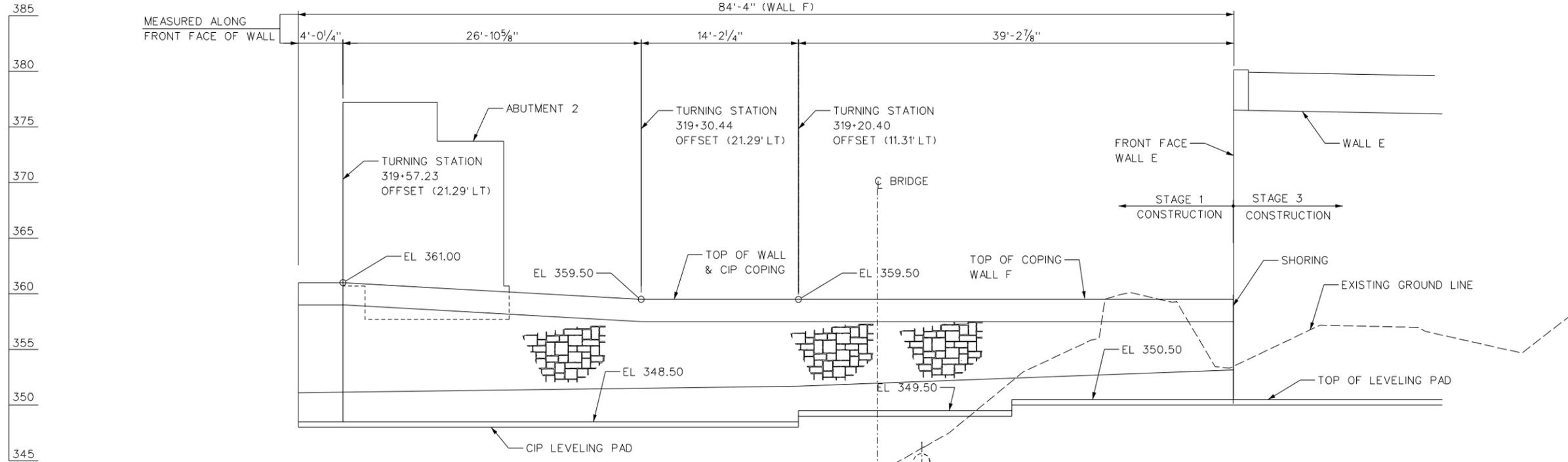
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DRAWN <i>MAD</i>	11/02
CHECKED <i>RB</i>	11/02
CHECKED <i>JW</i>	11/02


Michael Baker Jr., Inc.

 SHEET **W38** OF **W58**
 BRIDGE NO. **4919**

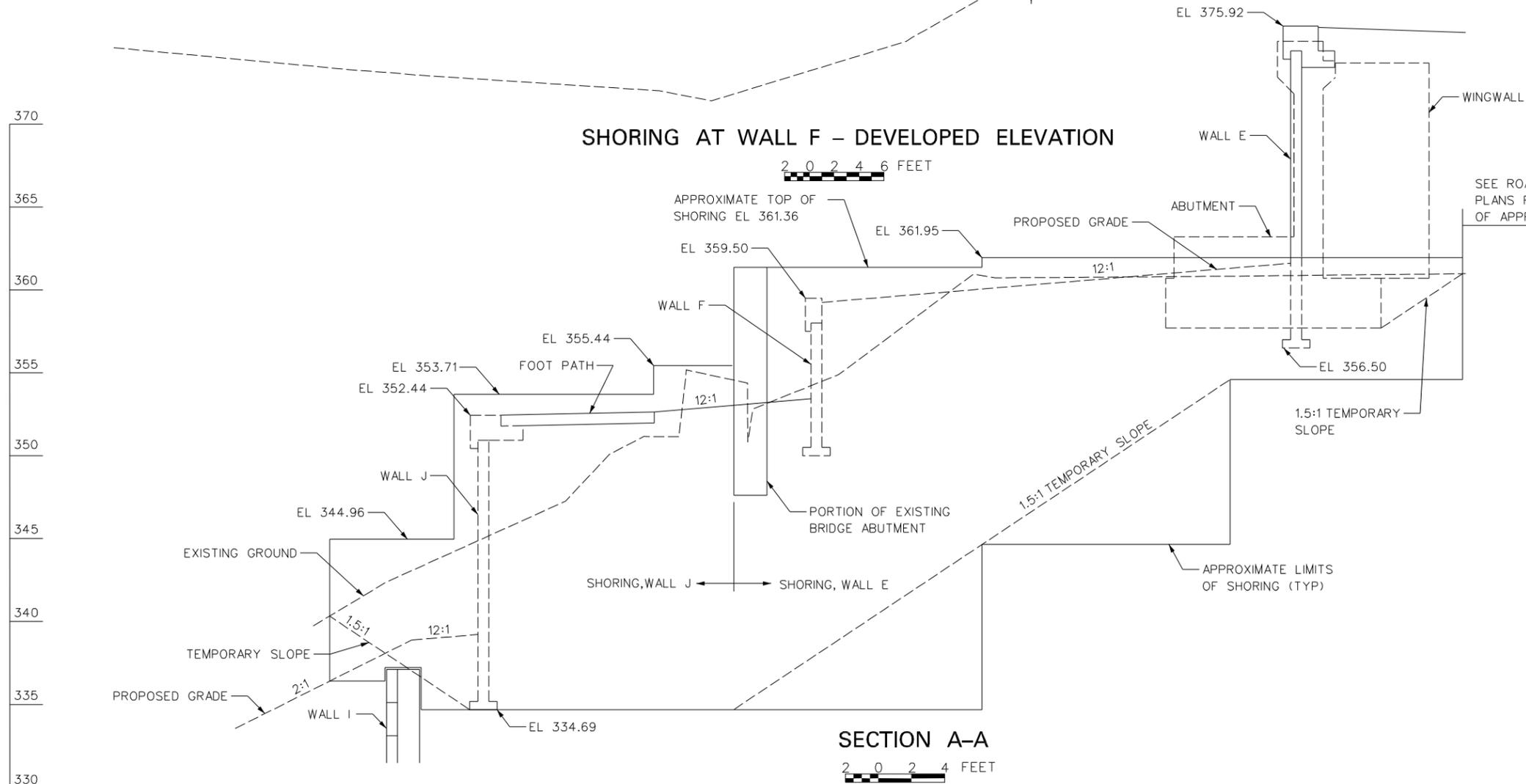
2 0 4 8 FEET

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBERS		FISCAL YEAR	COUNTY	SHEET NO.	TOTAL SHEETS
		STATE	FEDERAL				
W. VA.	5	S319-480-5.64	03 BR-0480(010)E	2002	JEFFERSON	318	407



SHORING AT WALL F - DEVELOPED ELEVATION

2 0 2 4 6 FEET



SECTION A-A

2 0 2 4 FEET

ITEM NO.212010-001, SHORING:		
DESCRIPTION	UNIT	QUANTITY*
SHORING, WALL J	SF	395
SHORING, WALL E	SF	765

- * THE QUANTITIES SHOWN DO NOT INCLUDE PENETRATION OF THE SHORING BELOW THE LIMIT SHOWN.
- * THE DETERMINATION OF THE TYPE AND LIMITS OF THE SHORING IS THE CONTRACTORS RESPONSIBILITIES.

NO.	REVISION	DATE:	BY:

W. VA. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JAMES RUMSEY BRIDGE
MARYLAND RETAINING WALLS
CONSTRUCTION SEQUENCE AND
SHORING PLANS II

DESIGNED	JW	DATE	11/02
DRAWN	JLH	DATE	11/02
CHECKED	JW	DATE	11/02
CHECKED	PA	DATE	11/02

Baker
Michael Baker Jr., Inc.

Charleston, W.Va.

SHEET
W39 OF **W58**
BRIDGE NO.
4919