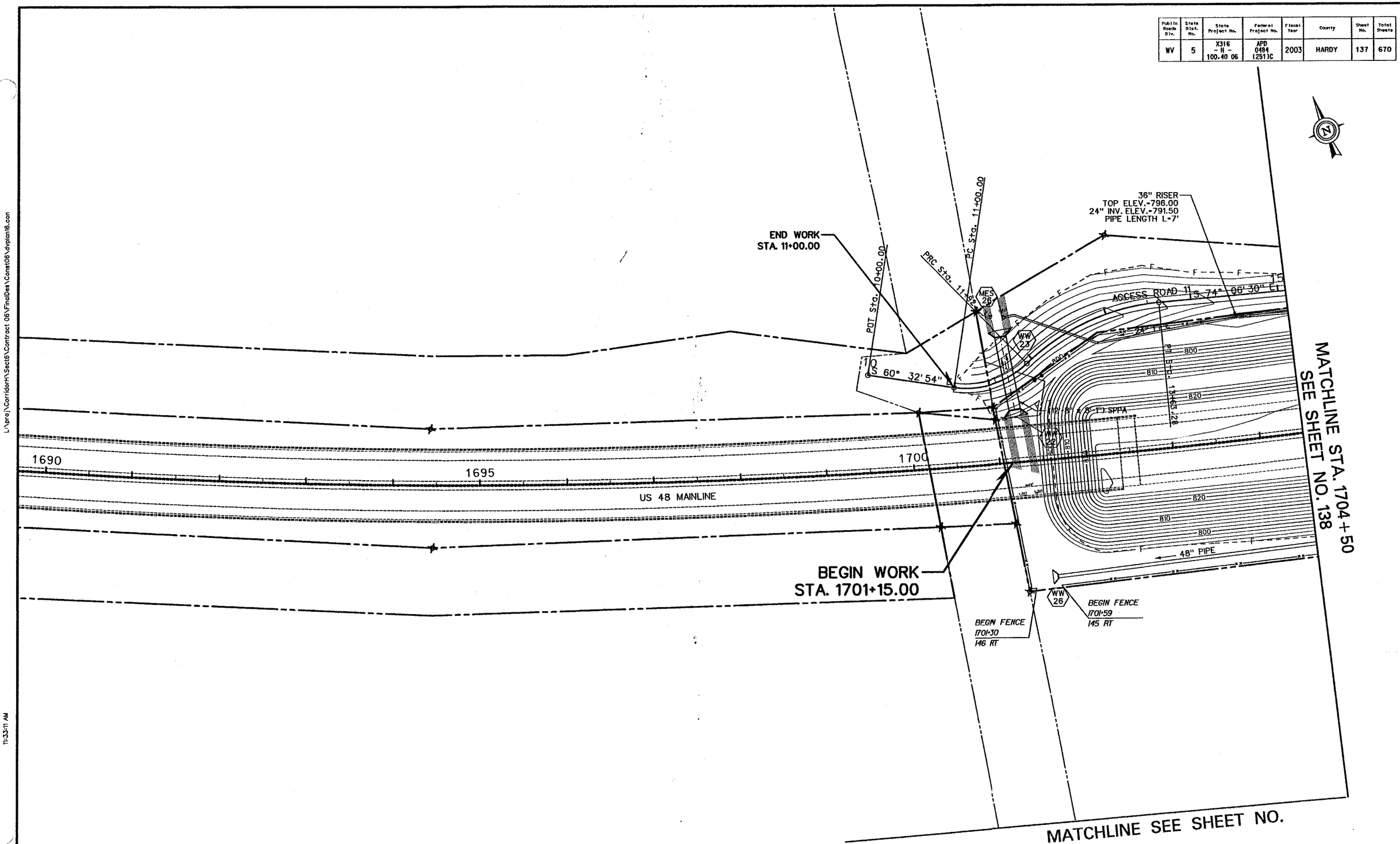
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	137	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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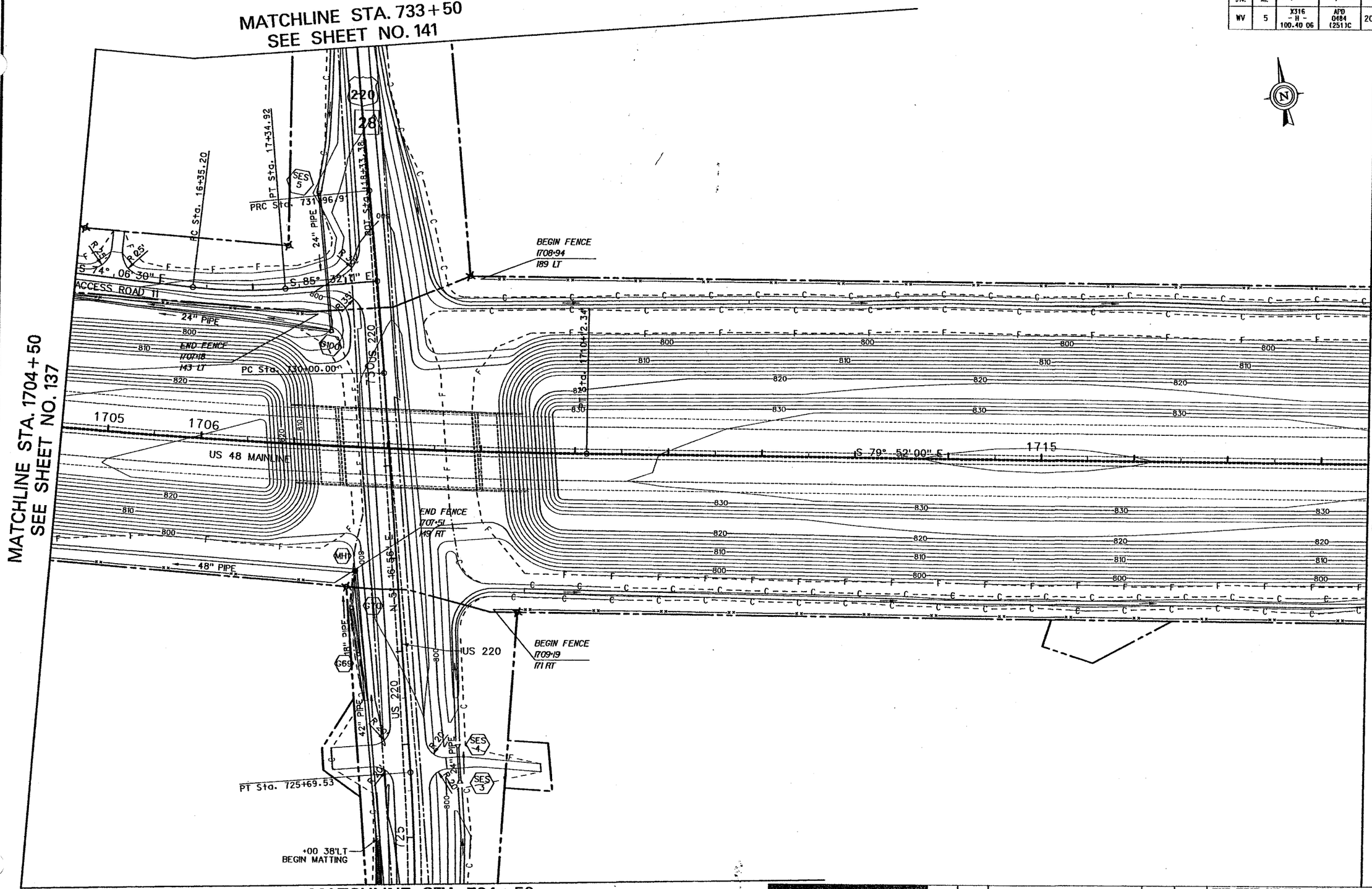
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	138	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

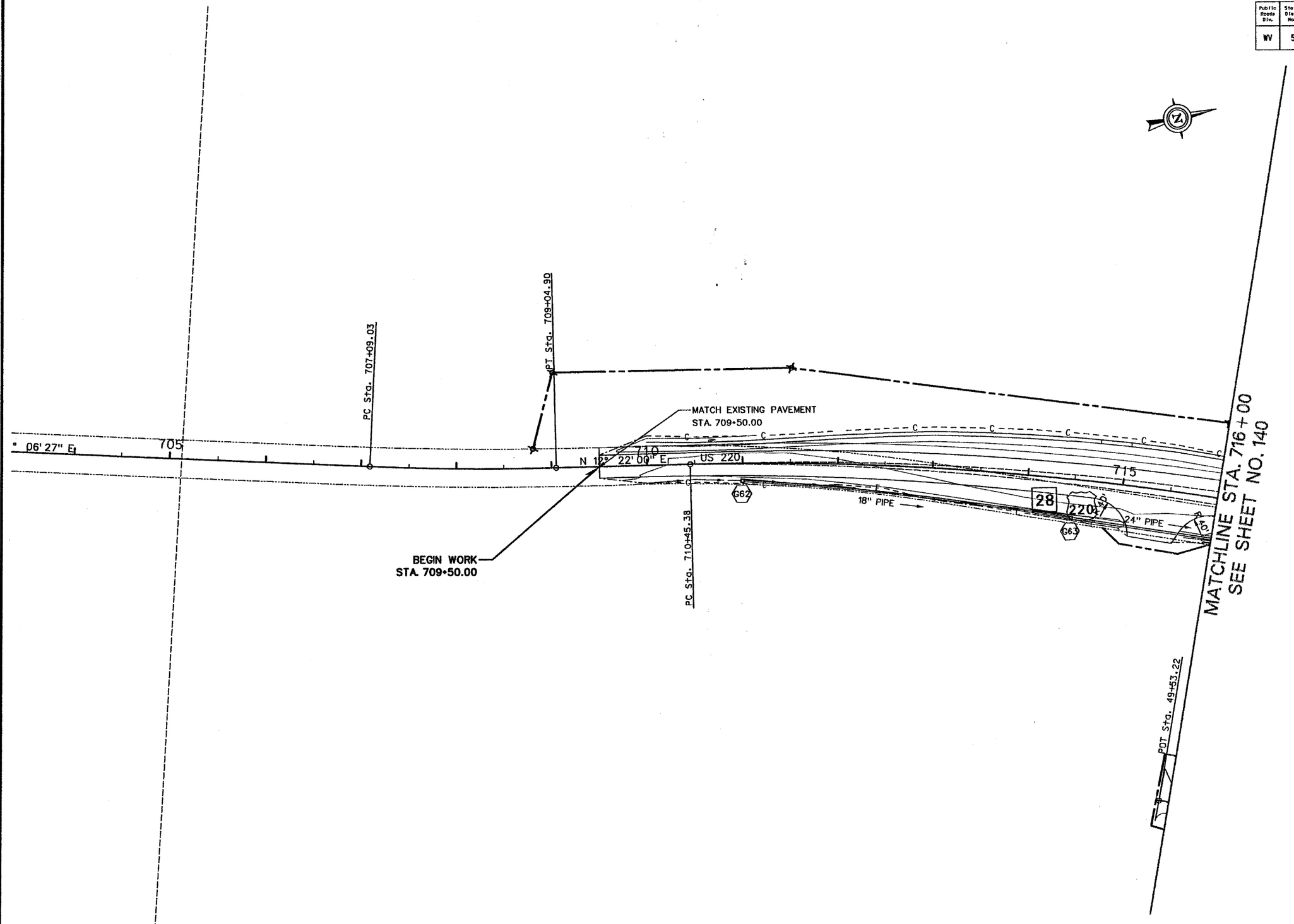
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

08/14/2003 10:47:24 AM

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	139	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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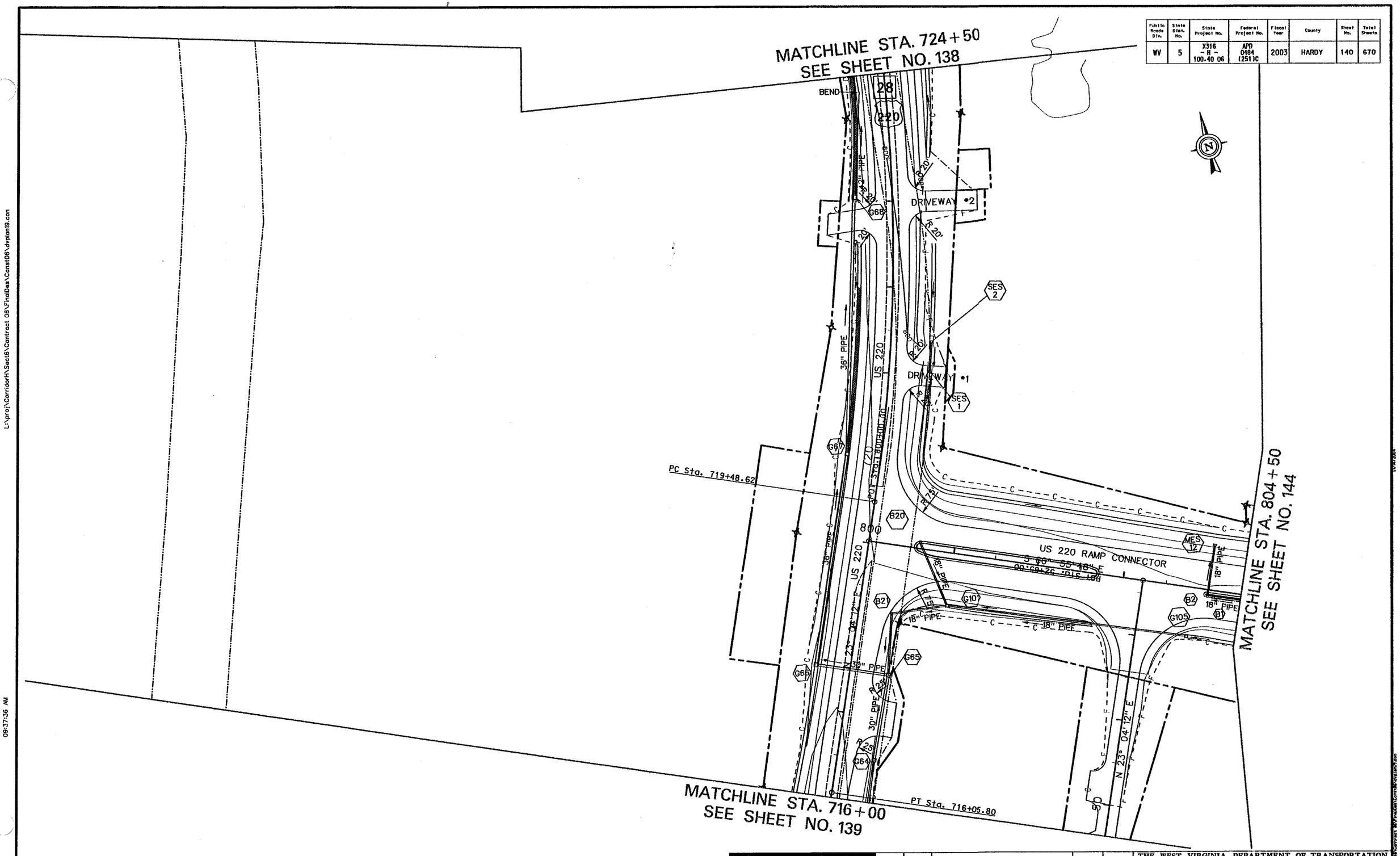
01/14/2004

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	140	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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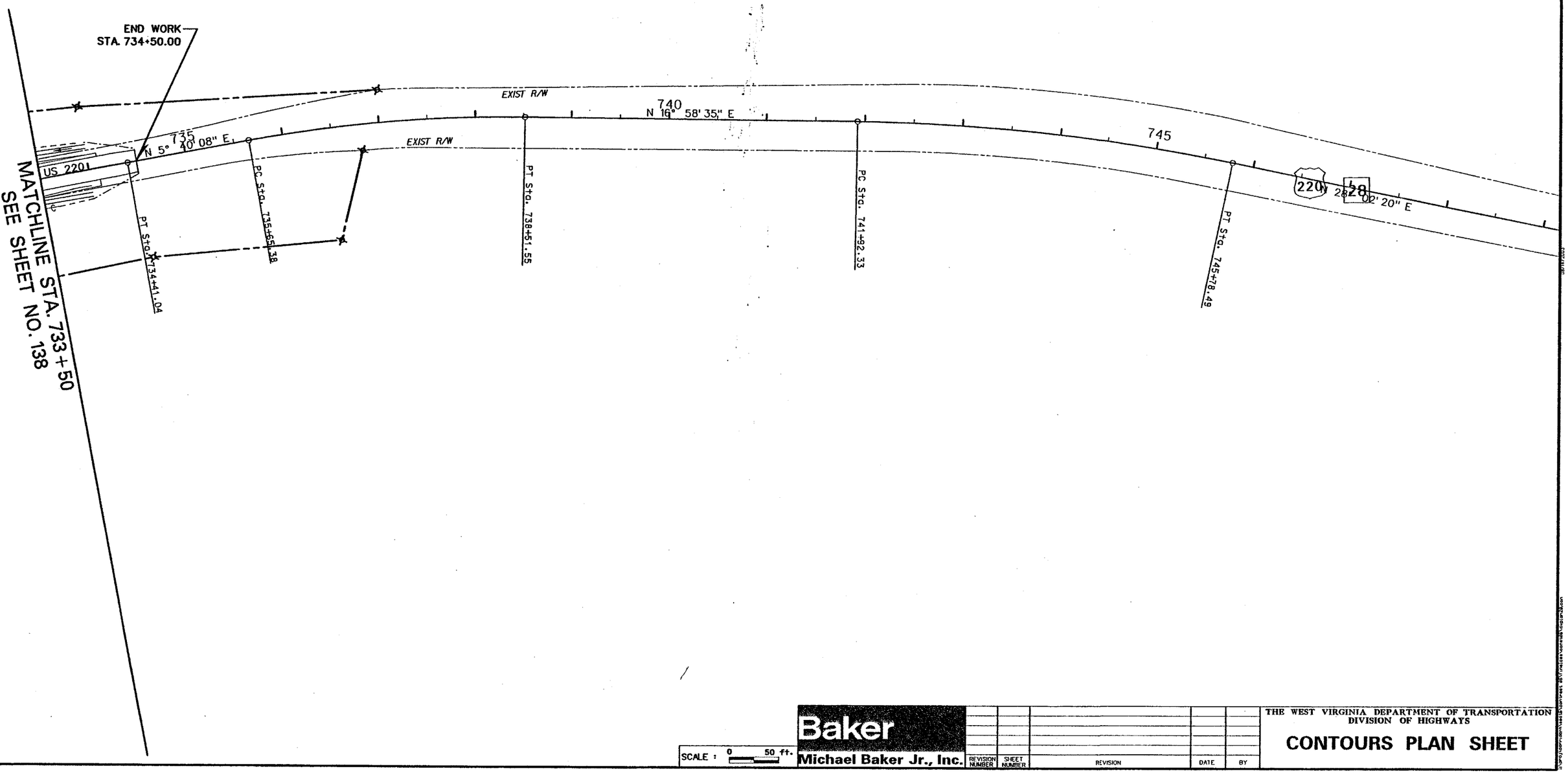
01/14/2004

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	AFD 0484 (251)C	2003	HARDY	141	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

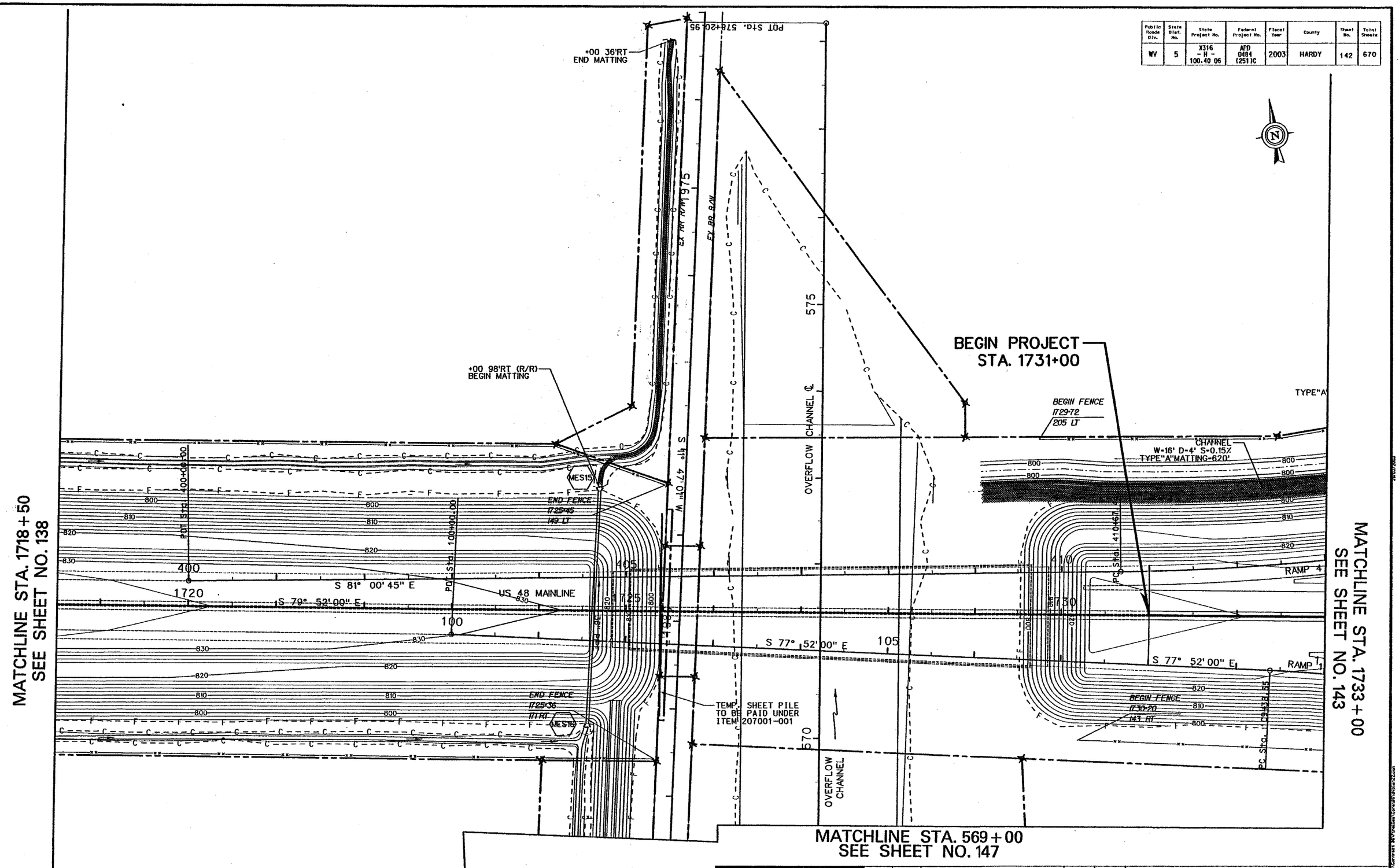
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

08/14/2003 10:49:04 AM

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	142	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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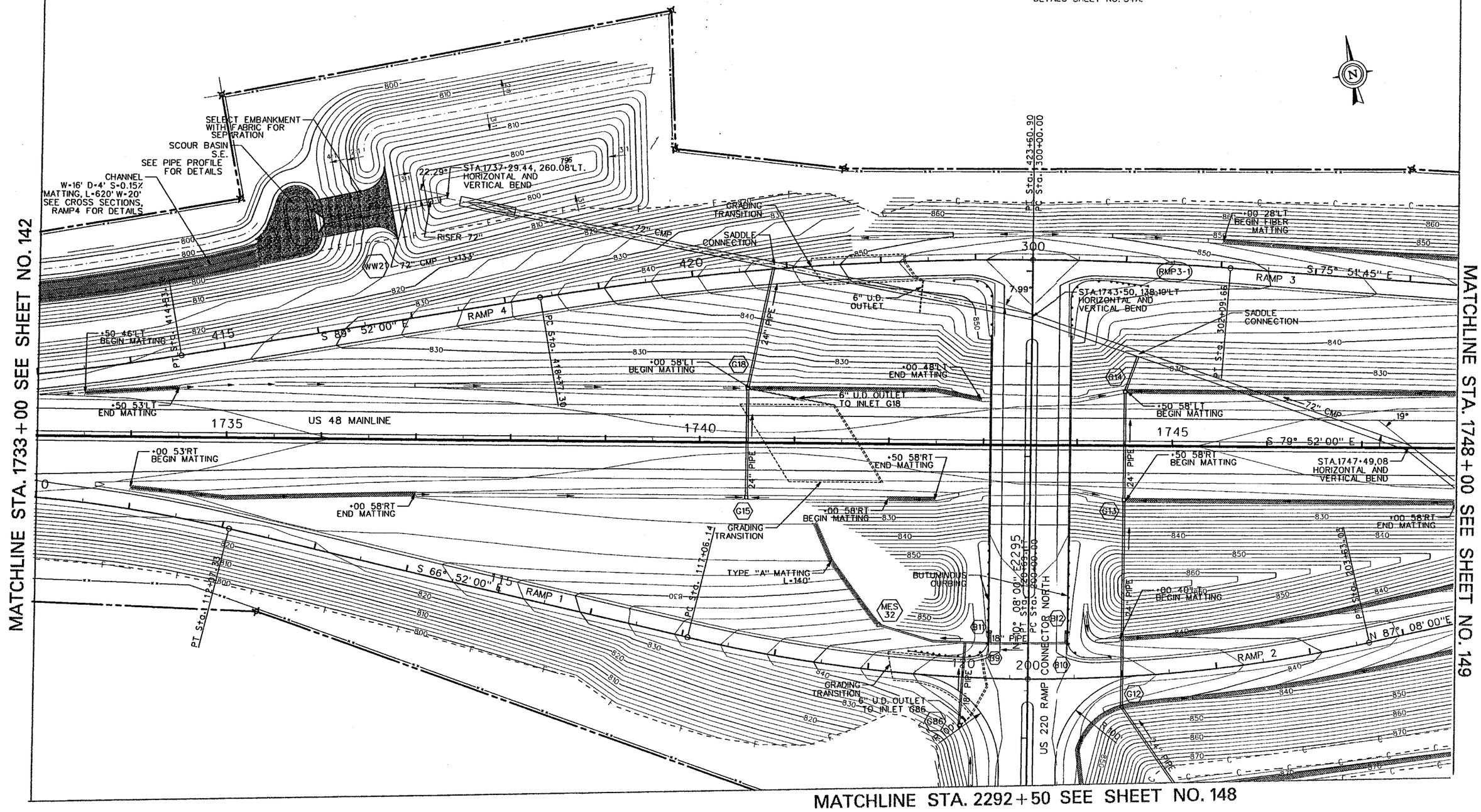
09/03/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	143	670

NOTE:
WORK THIS SHEET WITH EROSION PLAN SHEET NO. 152,
PIPE PROFILE SHEET NO. 132 AND SPECIAL DETAILS SHEET NO. 54A.



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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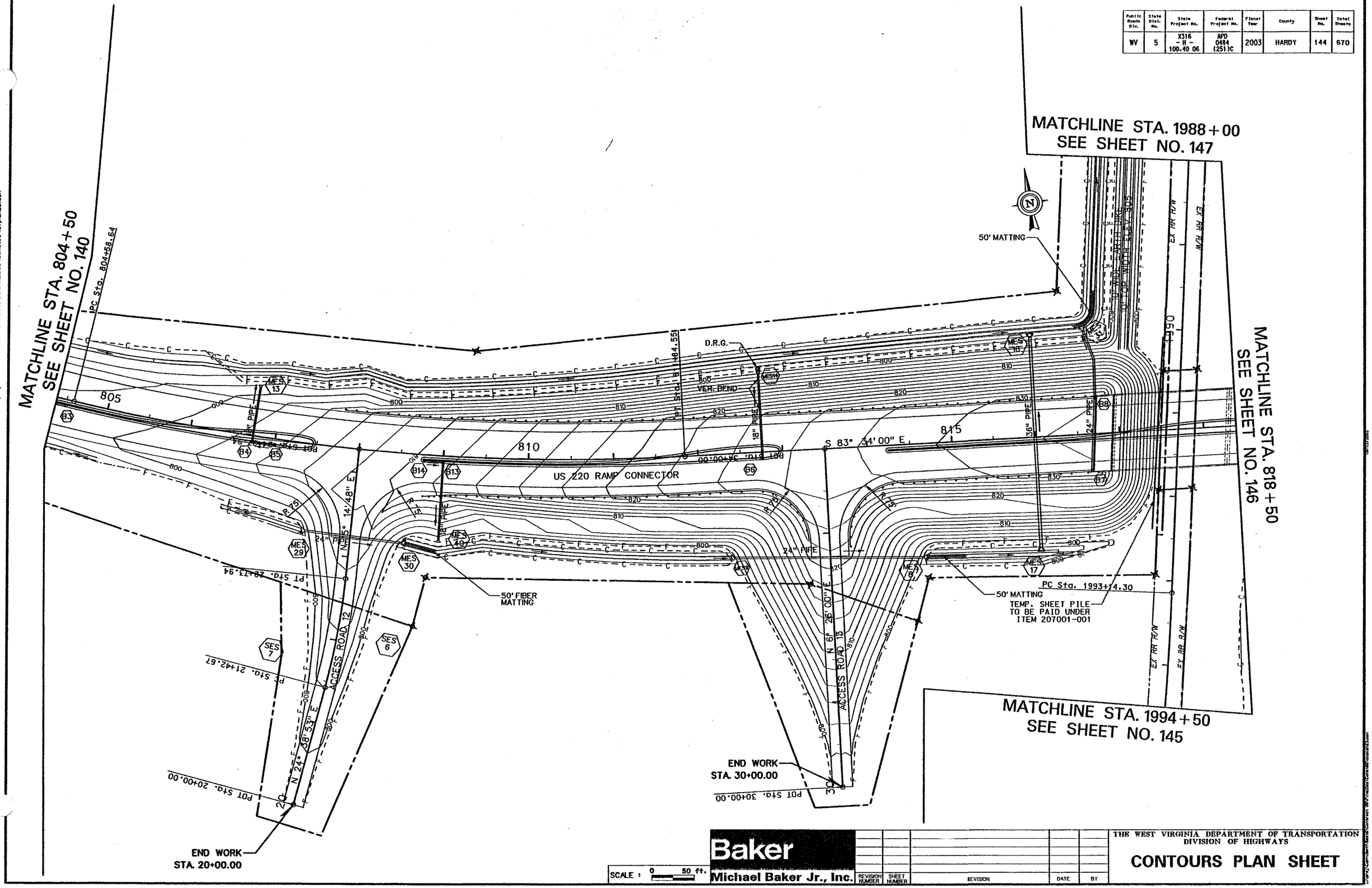
12/04/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	144	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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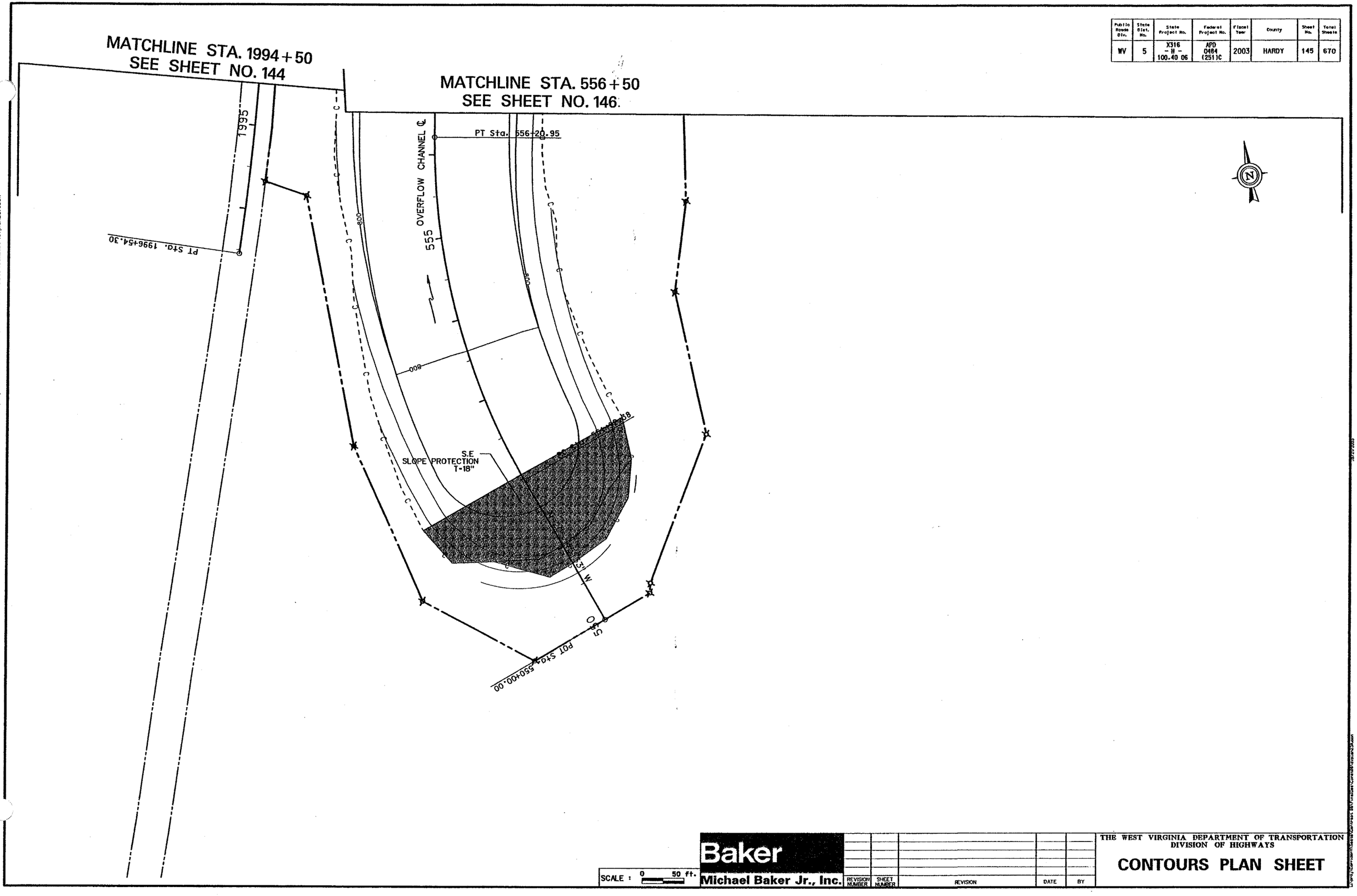
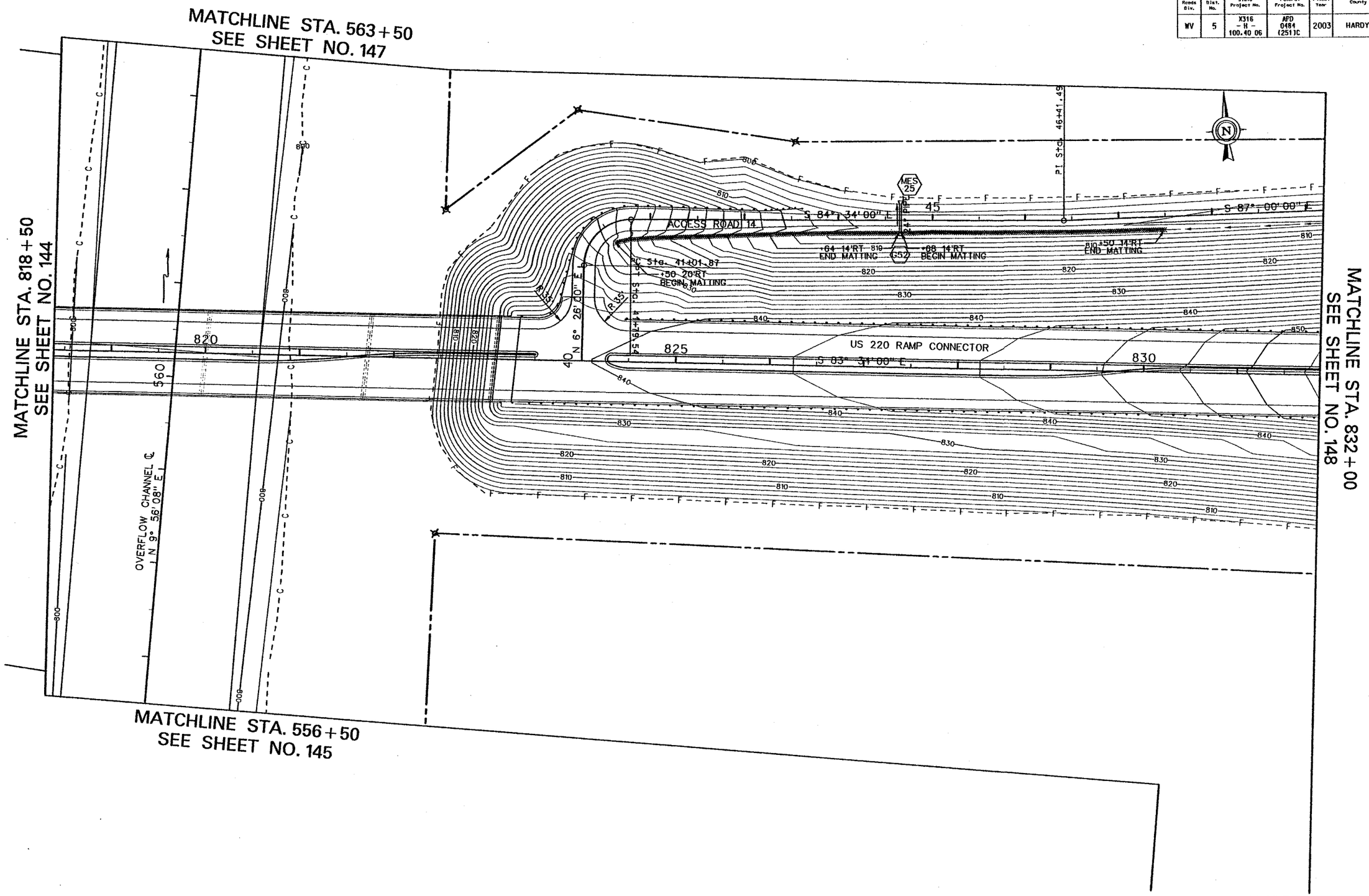
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	145	670



Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	146	670



Baker
Michael Baker Jr., Inc.

SCALE : 0 50 ft.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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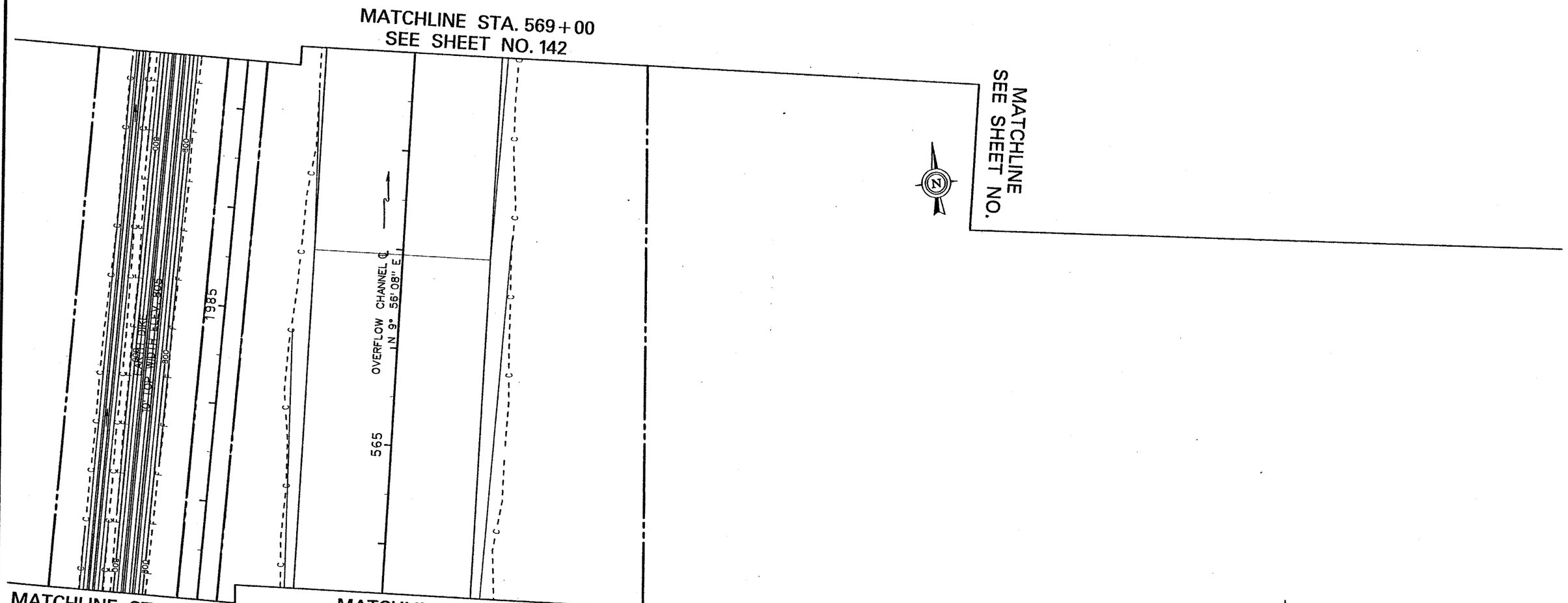
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	147	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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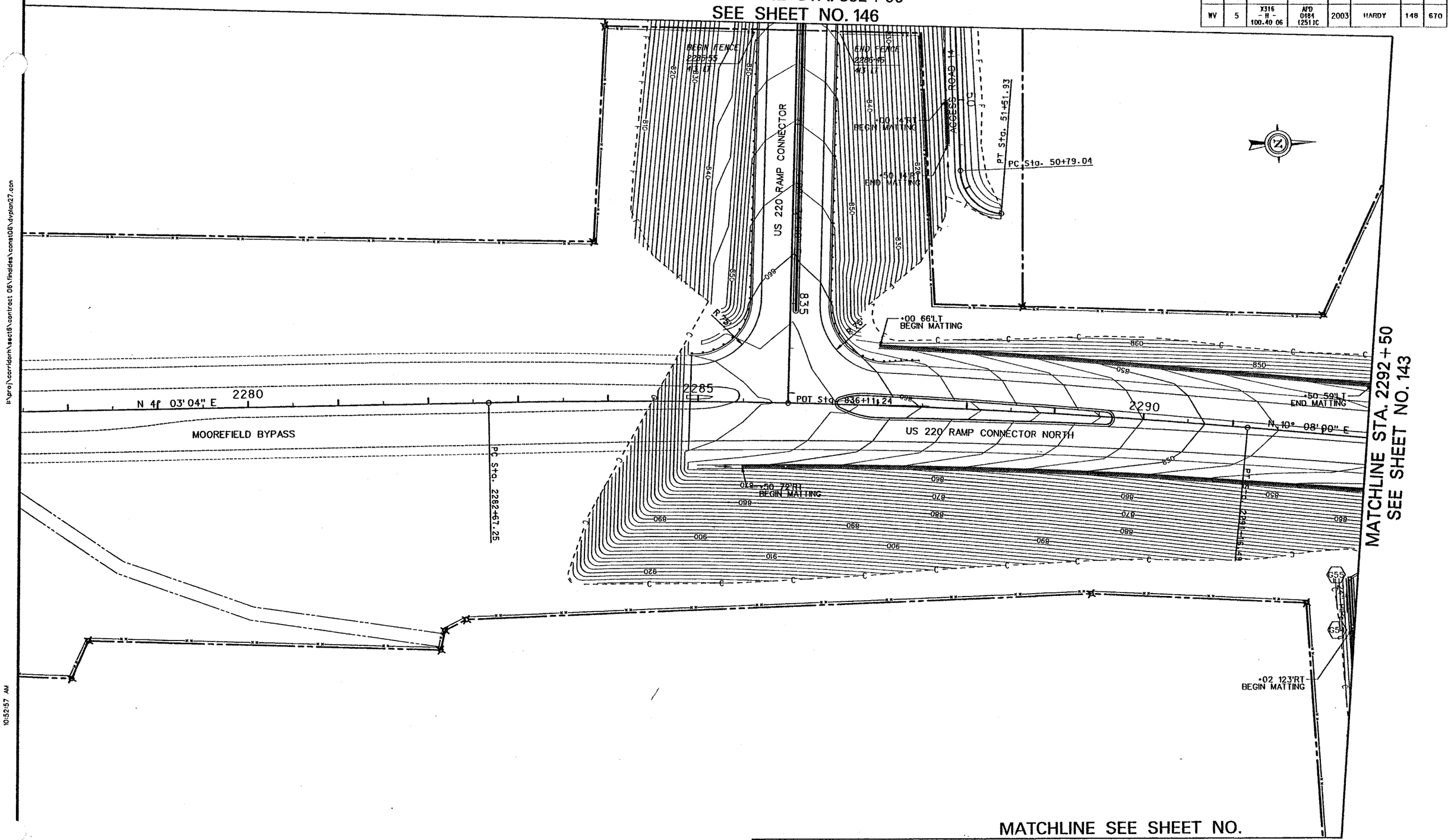
08/14/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	148	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

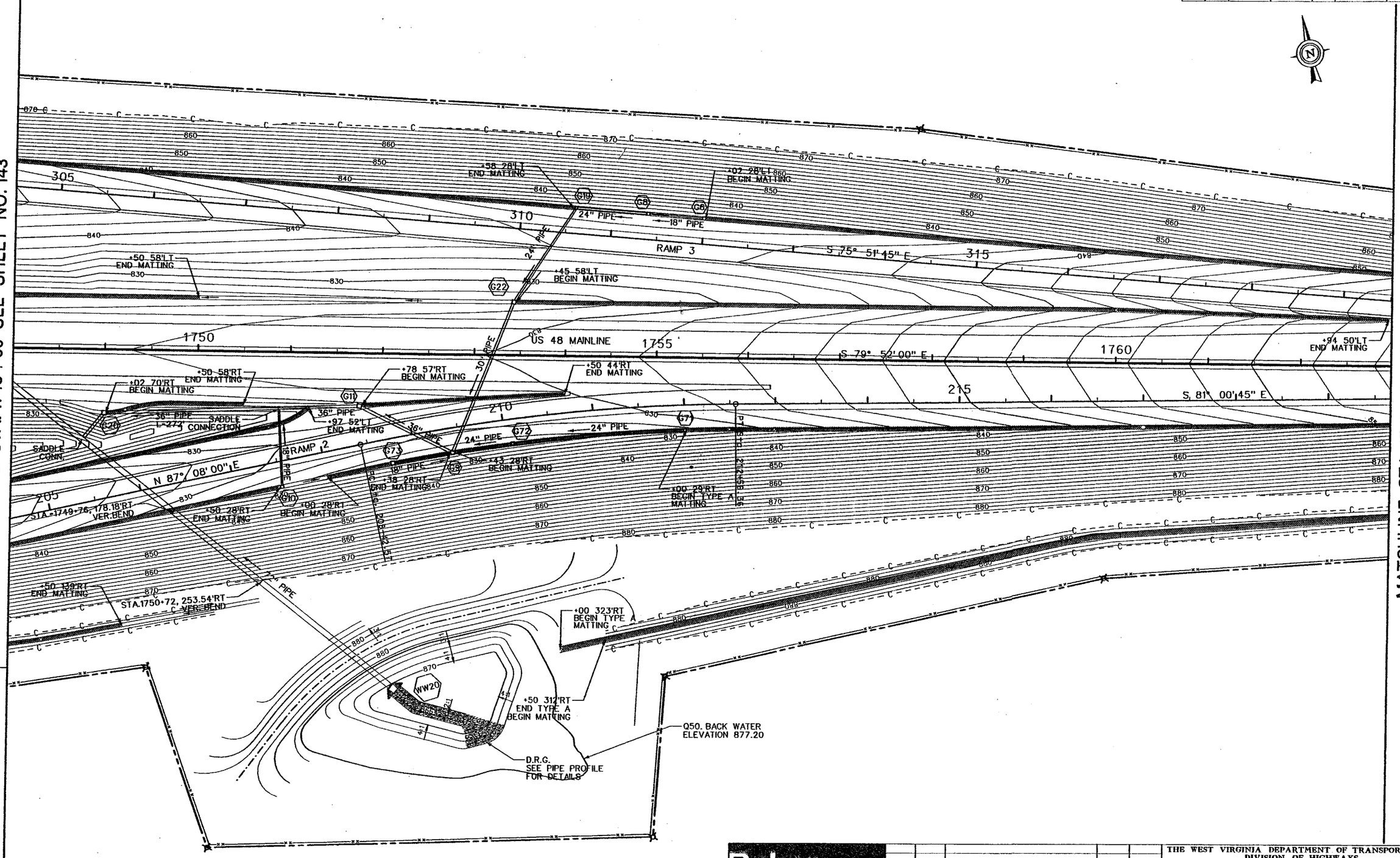
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

08/14/2003 10:52:57 AM

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	149	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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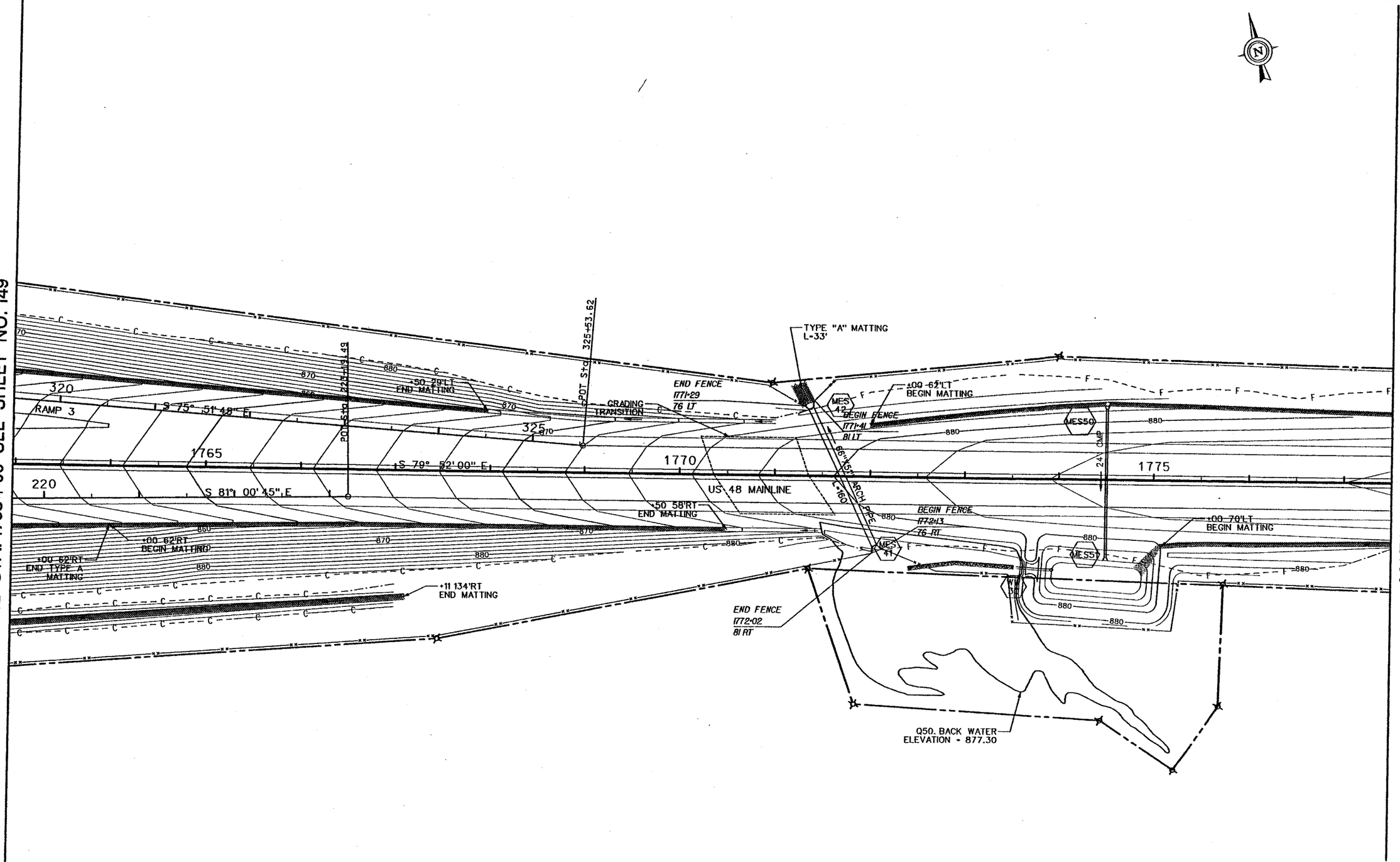
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	150	670



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

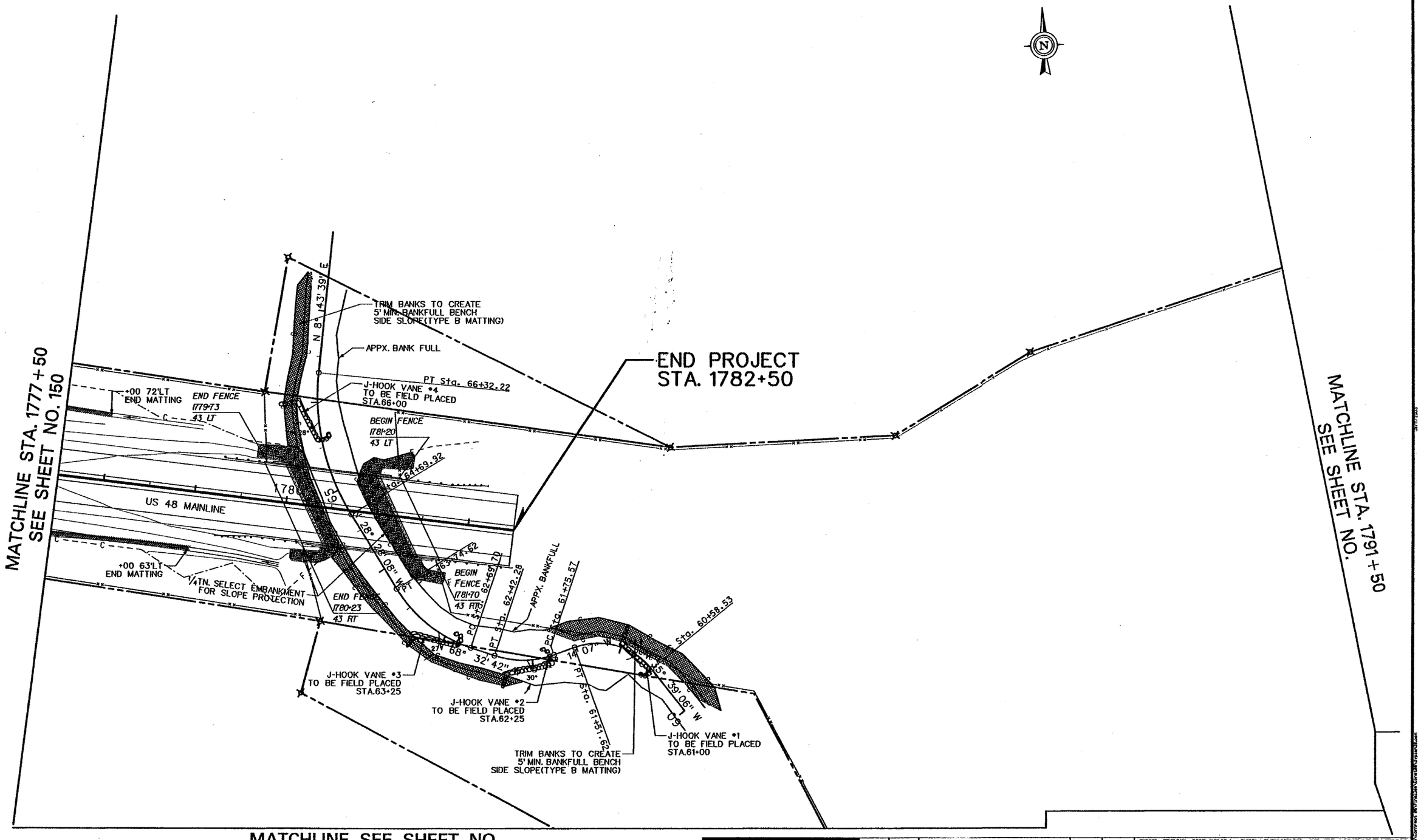
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

08/14/2003 10:54:07 AM

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0481 (251)C	2003	HARDY	151	670



MATCHLINE SEE SHEET NO.

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CONTOURS PLAN SHEET

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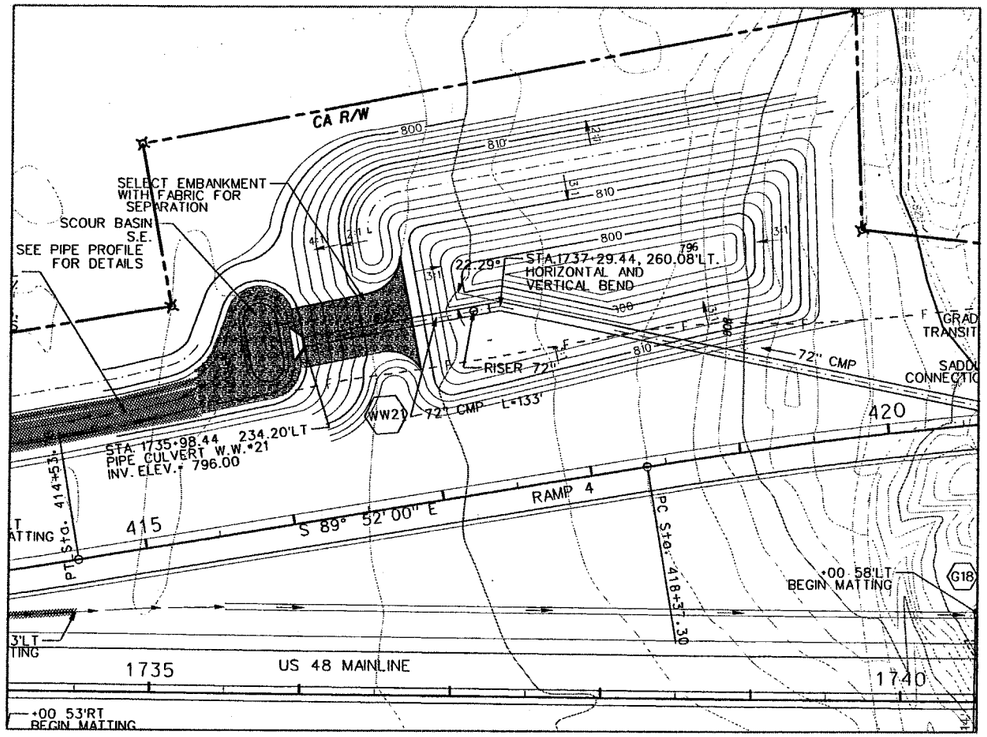
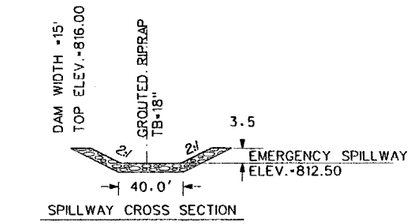
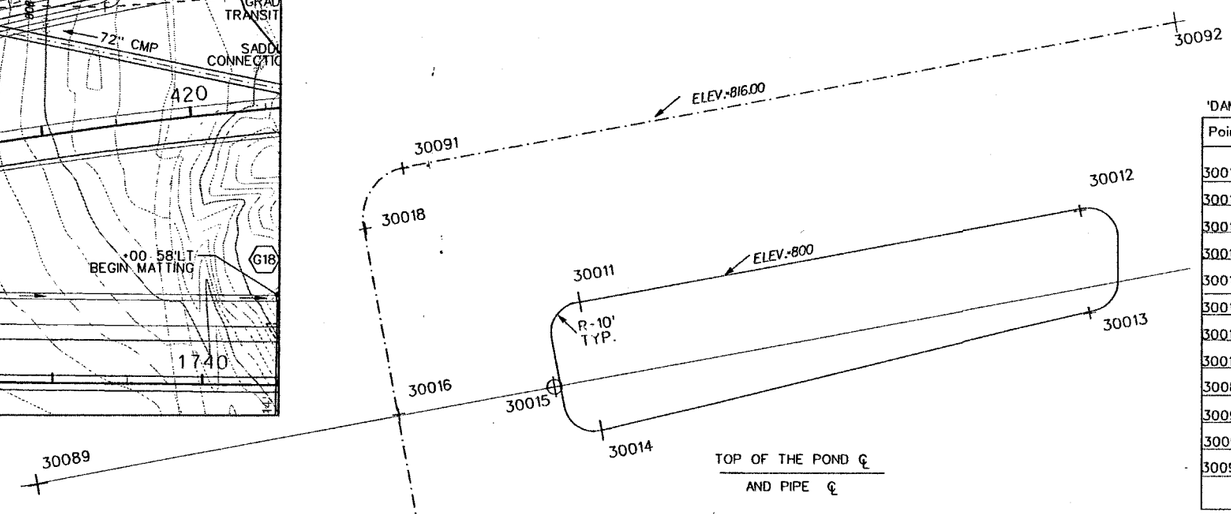
09/11/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 -H- 00.40 06	APD -0484- (251)C	2003	HARDY	152	670

SEDIMENT DAM 4E STA.1736+50 ± LT.		
CONTRIBUTING DRAINAGE AREA=		59.0 ac
STORAGE REQUIRED	=	211000 C.F.
STORAGE PROVIDED	=	215800 C.F.
BOTTOM ELEVATION	=	796.12
LEVEL SECTION ELEVATION	=	810.00

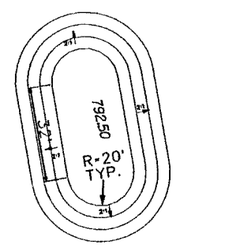




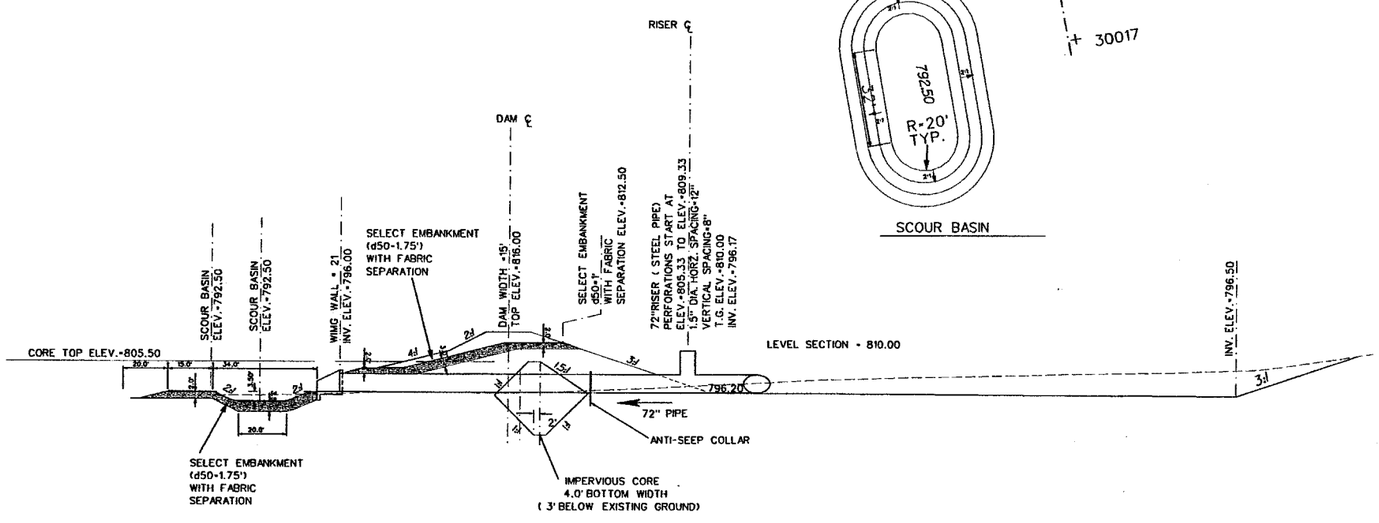


'DAM4e'

Point	North	East
30011	211,522.35	2,123,475.91
30012	211,525.56	2,123,653.77
30013	211,480.79	2,123,651.03
30014	211,468.89	2,123,476.87
30015	211,489.93	2,123,470.49
30016	211,488.84	2,123,411.00
30017	211,425.48	2,123,412.15
30018	211,553.17	2,123,409.85
30089	211,485.96	2,123,251.89
30090	211,495.15	2,123,756.97
30091	211,577.09	2,123,432.92
30092	211,582.37	2,123,726.35



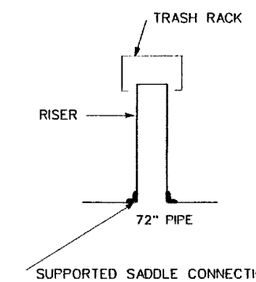
SCOUR BASIN



NOTES:

1. THE COSTS OF CUT OFF DITCHES, ANTISEEP COLLARS, SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM OF THE PIPE.

2. ALL COSTS FOR ANY SADDLE CONNECTION BETWEEN TWO PIPES AND CR ANY SUPPORT TO THIS CONNECTION SHALL BE INCIDENTAL TO THE UNIT BID PRICE OF THE LARGER PIPE.



SUPPORTED SADDLE CONNECTION.

N.T.S

RISER PERFORATION:

VERTICAL HOLES SPACING	8"
HORIZONTAL SPACING	12"
HOLES DIAMETER	1½"

PERMANENT DAM # 4E

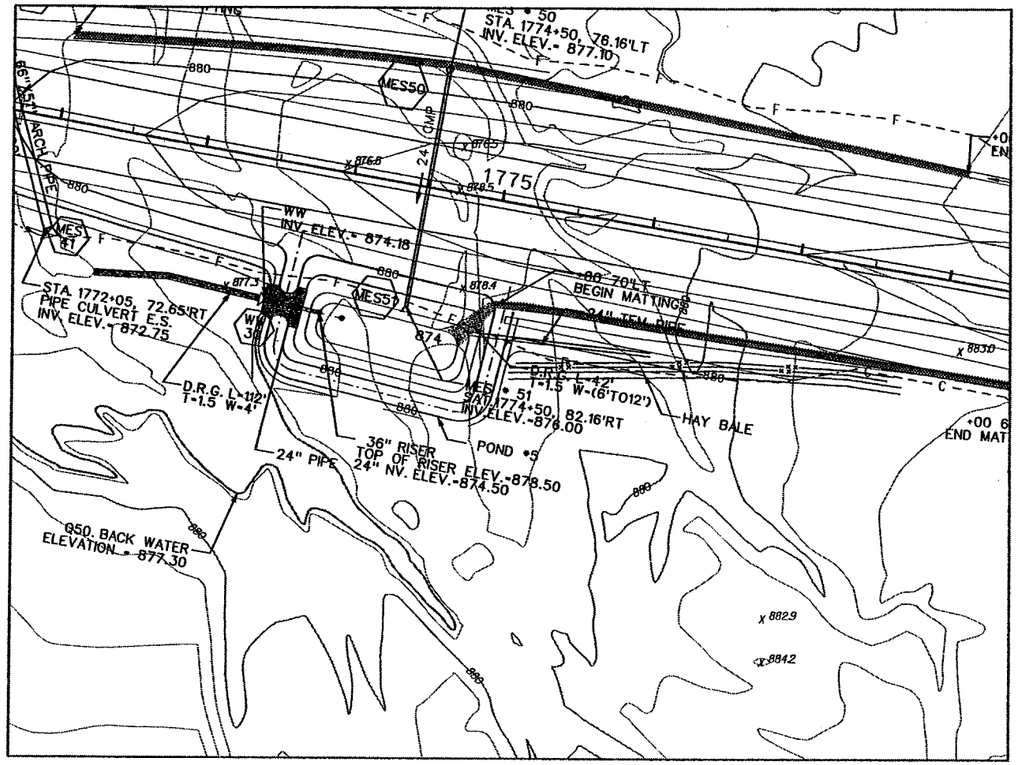
Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

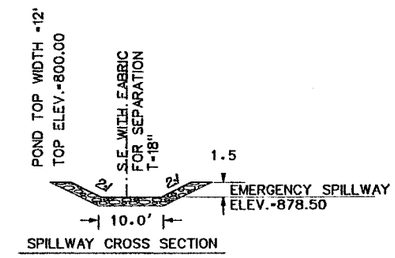
EROSION CONTROL PLAN SHEET

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 -H- 00.40 06	AFD -0484- (251)C	2003	HARDY	153	670



SCALE : 0 50 ft.

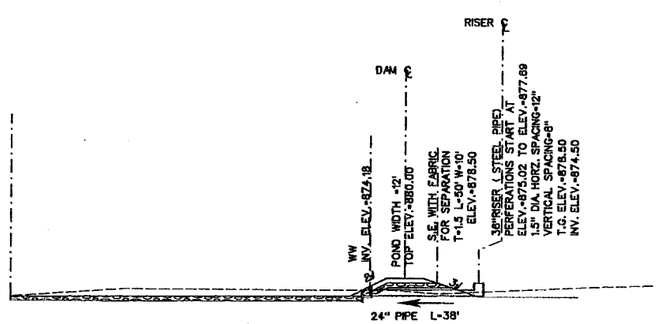
POND 5E STA.1774+00 ± RT.		
DISTURBED DRAINAGE AREA	=	3.80 ac
STORAGE REQUIRED	=	13680 C.F.
STORAGE PROVIDED	=	16940 C.F.
BOTTOM ELEVATION	=	874.00
LEVEL SECTION ELEVATION	=	878.50



SPILLWAY CROSS SECTION

'WPN5'

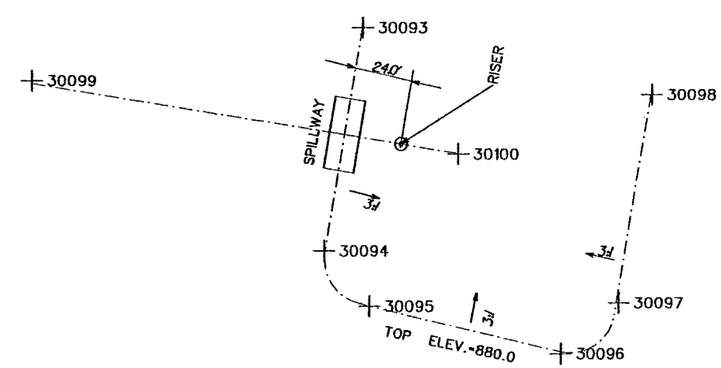
Point	North	East
30093	210,549.79	2,127,021.86
30094	210,475.76	2,127,003.53
30095	210,455.94	2,127,015.09
30096	210,429.03	2,127,122.56
30097	210,440.72	2,127,141.95
30098	210,515.65	2,127,160.50
30099	210,518.83	2,126,934.20
30100	210,490.97	2,127,047.83



CONCRETE BASE FOR THE RISER:

24" THICK WITH THE RISER IMBEDDED 8" INTO THE BASE. THE BASE SHALL BE SQUARE WITH EACH DIMENSION 1' GREATER THAN RISER DIAMETER.

ALL COSTS OF THE CONCRETE BASE FOR THE RISER, SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM NO. 642035-001 RISER



TOP OF THE POND ℄

PERMANENT POND #5

EC 2

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

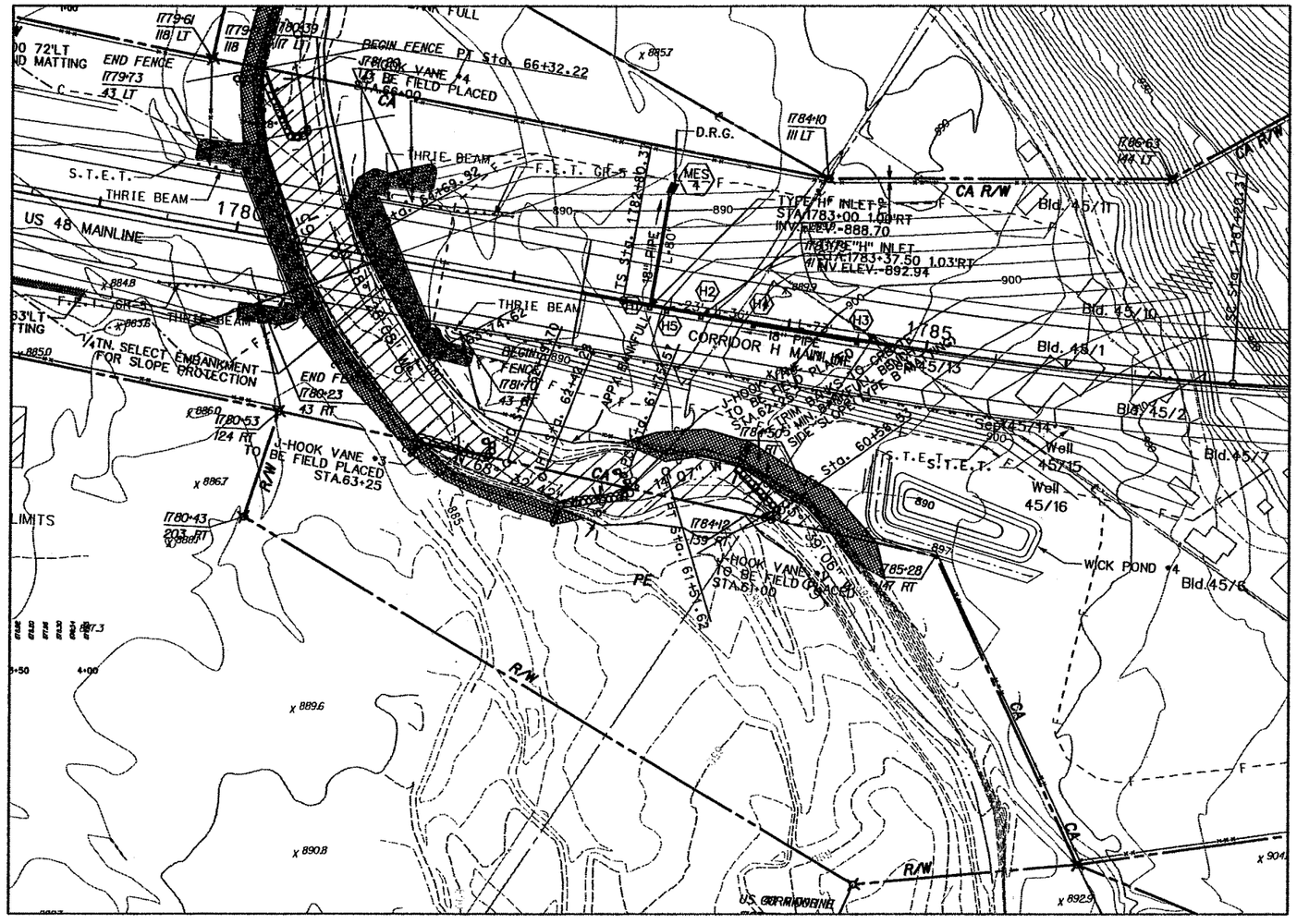
EROSION CONTROL PLAN SHEET

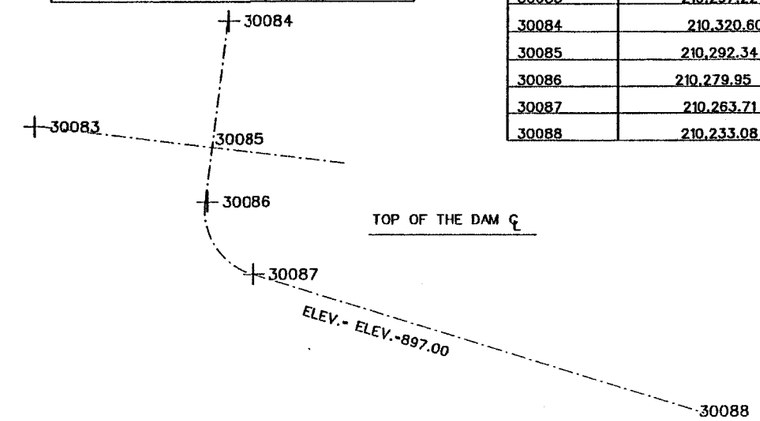
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 -H- 100.40 06	APD -0484- (251)C	2003	HARDY	154	670

WICK POND	4E	STA. 1785+00 + RT.
CONTRIBUTING DRAINAGE AREA=		2.70 ac
STORAGE REQUIRED	=	9720 C.F.
STORAGE PROVIDED	=	12042 C.F.
BOTTOM ELEVATION	=	890.00
LEVEL SECTION ELEVATION	=	896.00

'WP4E'

Point	North	East
30082	210,288.69	2,128,134.17
30083	210,297.22	2,128,065.48
30084	210,320.60	2,128,108.32
30085	210,292.34	2,128,104.81
30086	210,279.95	2,128,103.28
30087	210,263.71	2,128,113.95
30088	210,233.08	2,128,213.01





SCALE : 0 50 ft.

POND #4

SPILLWAY	HIGHT FT.	WIDTH FT.	LENGTH FT.
WICK POND # 4	3	10	12

EC 3

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION CONTROL PLAN SHEET

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	155	670

SHEET VOIDED

EC 4

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

POND DAMS
SPECIFICATIONS AND DETAILS

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08/04/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	156	670

GENERAL NOTES – SEWER

1. WHERE THE CONTRACTOR IS REQUIRED TO CONNECT TO EXISTING SANITARY SEWER FACILITIES, BY-PASS PUMPING SHALL BE PROVIDED SO THE WORK CAN BE PERFORMED. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT REQUIRED TO COMPLETE THIS WORK.

2. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS, GRADE AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION. PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.

3. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING SEWER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED SEWER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING SEWER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

4. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIAL SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL PIPE MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

5. ALL THRUST PROTECTION INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED. INSTALLATION OF APPROVED RETAINER GLANDS, TIE RODS, AND OTHER THRUST RESTRAINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

6. THE CONTRACTOR SHALL COMPLY WITH "MISS UTILITY" REQUIREMENTS PRIOR TO PERFORMING ANY EXCAVATION (TEL. (800) 245-4848).

7. SYSTEM SHUTDOWN OPERATION:

A. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF UTILITY CONSTRUCTION A MINIMUM OF 30 DAYS PRIOR TO UTILITY ADJUSTMENT FIELD EFFORTS. THE SEQUENCE OF UTILITY CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR UTILITY TIE-INS, CONNECTIONS AND SHUTDOWNS. THE CONTRACTOR SHALL ALSO PROVIDE AT THIS TIME THE ANTICIPATED SHUTDOWN TIME REQUIRED, AS WELL AS ANTICIPATED TIME OF DAY SCHEDULE FOR THE TIE-INS, CONNECTIONS AND SHUTDOWNS.

B. CONTRACTOR SHALL GIVE A TWO (2) WEEK NOTICE IN WRITING TO THE ENGINEER AND THE CALEDONIA HIGHTS SUBDIVISION AUTHORITY FOR EACH CONNECTION AND/OR ADJUSTMENT TO THE EXISTING FACILITIES.

C. THE EXISTING FACILITIES SHALL BE DEACTIVATED FOR A MAXIMUM PERIOD OF SIX (6) HOURS FOR EACH SCHEDULED SHUTDOWN. THE CONTRACTOR SHALL MAKE AS MANY CONNECTIONS AS PRACTICAL DURING EACH SHUTDOWN PERIOD.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEWAGE OVERFLOWS OR SPILLAGE DURING SANITARY SEWER SYSTEM SHUTDOWN OR CONNECTIONS. ONCE GRAVITY SANITARY SEWER FACILITIES HAVE BEEN SHUTDOWN OR PUMP STATIONS PUMPED DOWN, THE CONTRACTOR SHALL PROVIDE STANDBY SEWAGE PUMPING AND HAULING OR BY-PASS PUMPING TECHNIQUES FOR THE DISPOSAL OF ALL OVERFLOWS WHICH MAY OCCUR IN THE SHUTDOWN OF THE SANITARY SEWER SYSTEM FACILITIES. THE METHOD FOR MAINTAINING SEWAGE CONVEYANCE SHALL BE APPROVED BY THE ENGINEER PRIOR TO SYSTEM SHUTDOWN.

9. SANITARY SEWER PIPE THAT IS TO BE SET AT A GRADE GREATER THAN 17.6% SHALL BE RESTRAINED WITH CONCRETE ANCHOR BLOCKS AS SHOWN ON DETAIL SHEET (SS6).

10. CONTRACTOR SHALL FURNISH SIX (6) COPIES OF ALL SHOP DRAWINGS TO THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF THE FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

11. SUBMITTALS:

1. SUBMIT SHOP DRAWINGS (SIX (6) COMPLETE SETS) OF THE FOLLOWING, IN ADDITION TO SUBMITTALS REQUIRED BY OTHER SECTIONS OF THE CONTRACT DOCUMENTS:

PIPE
SOLID SLEEVES
FITTINGS
GASKETS
RESTRAINED JOINTS
RETAINER GLANDS
MORTAR CONNECTION OF PIPE AND MANHOLE
DISSIMILAR MATERIAL PIPE JOINTS
METHOD OF JOINT RESTRAINT
MANHOLES
MANHOLE FRAMES AND COVERS
MANHOLE STEPS
CLEANOUTS
SEQUENCE OF CONSTRUCTION
FLOWABLE BACKFILL METHOD
CONCRETE
REINFORCING STEEL

12. NOTES ON PLAN SHEETS WITHOUT AN ITEM CODE ARE TO CLARIFY CONSTRUCTION REQUIRED AND SHALL BE INCLUDED IN THE UNIT PRICE FOR THE ASSOCIATED PAY ITEM.

13. ALL ITEMS OF MATERIAL, LABOR, SUPPLIES OR EQUIPMENT THAT ARE NOT SPECIFICALLY ENUMERATED FOR PAYMENT AS SEPARATE ITEMS, BUT WHICH ARE REASONABLY REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS, ARE CONSIDERED SUBSIDIARY OBLIGATIONS OF THE CONTRACTOR. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR THEM.

SUMMARY OF SEWER FACILITIES

ITEM NUMBER	DESCRIPTION	UNIT	TOTAL
639001-001	CONSTRUCTION LAYOUT STAKES	LS	1
675007-022	8 INCH (PVC) PLASTIC SEWER PIPE	LF	985
67514-001	MANHOLE COMPLETE, INCLUDING CASTINGS	EA	7
67515-001	DROP MANHOLE COMPLETE, INCLUDING CASTINGS	EA	3
675021-320	18 INCH STEEL CASING PIPE,THICKNESS 0.375 WALL	LF	129

MATERIAL NOTES – SEWER

1. THE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION (675.2) OF THE WVDOT STANDARD SPECIFICATIONS.

2. BEDDING AND BACKFILL: IN ACCORDANCE WITH WVDOT SPECIFICATIONS SECTIONS 675.5 AND 675.10.

3. SANITARY SEWER MANHOLES AND FRAME AND COVERS SHALL BE IN ACCORDANCE WITH STANDARD PRECAST MANHOLE DETAIL ON SHEET (SS6).

SEQUENCE OF CONSTRUCTION

NOTE: THIS UTILITY LINE SHALL BE RELOCATED PRIOR TO THE EXCAVATION OF THE ROADWAY.

SS1

SCALE : 0 50 ft.

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GENERAL NOTES

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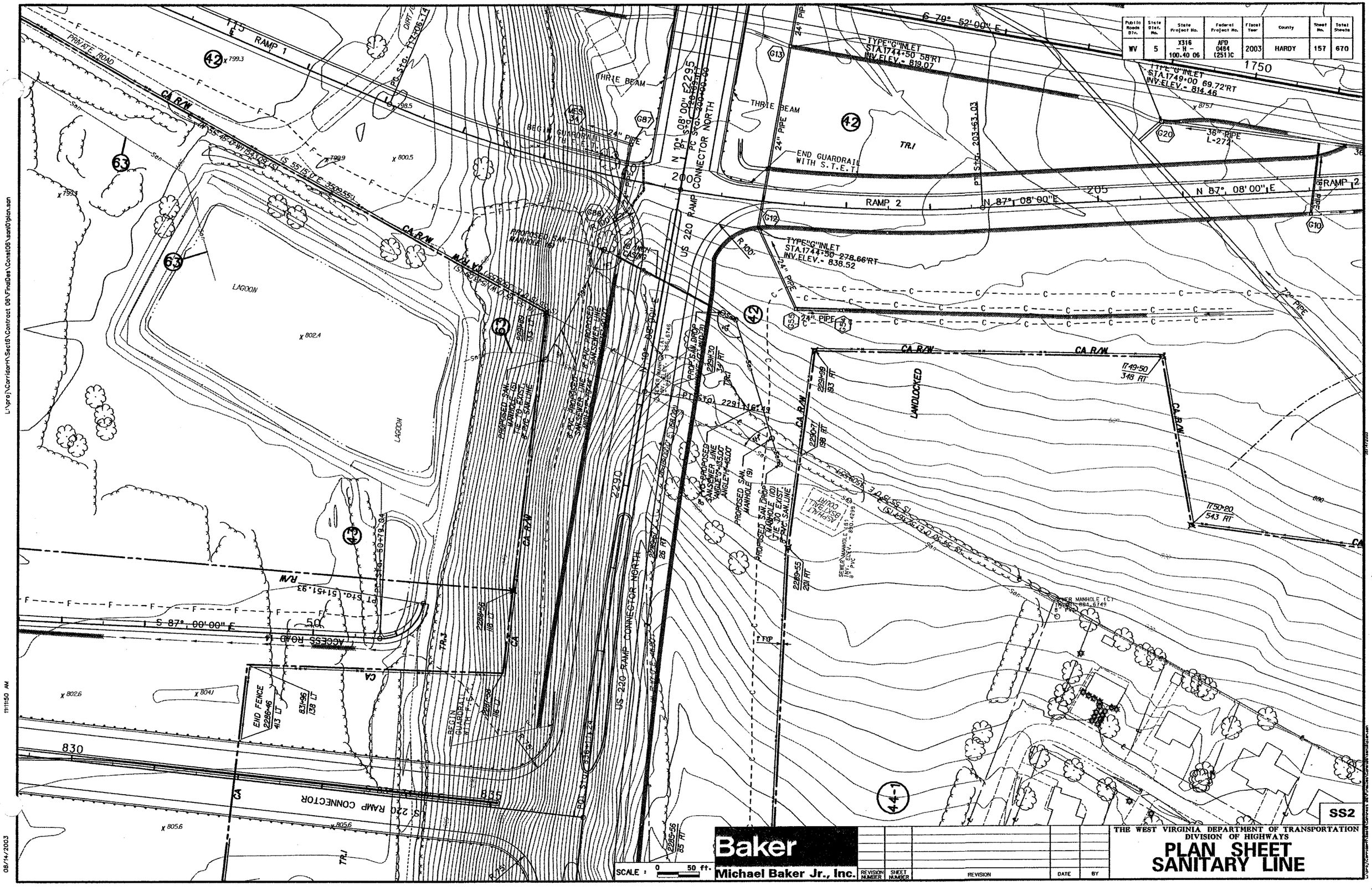
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	157	670



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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET SANITARY LINE

SS2

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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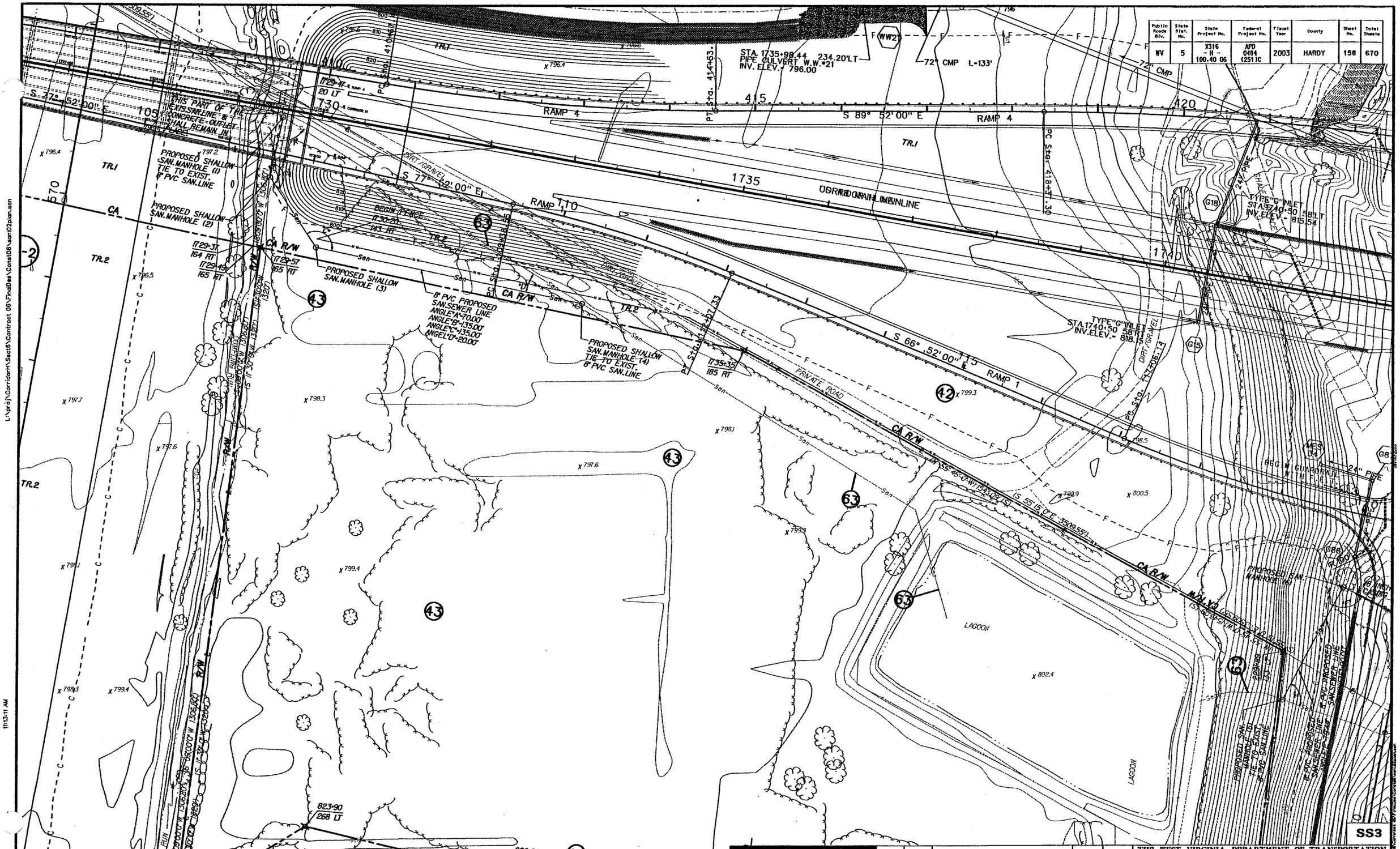

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET SANITARY LINE

SS3

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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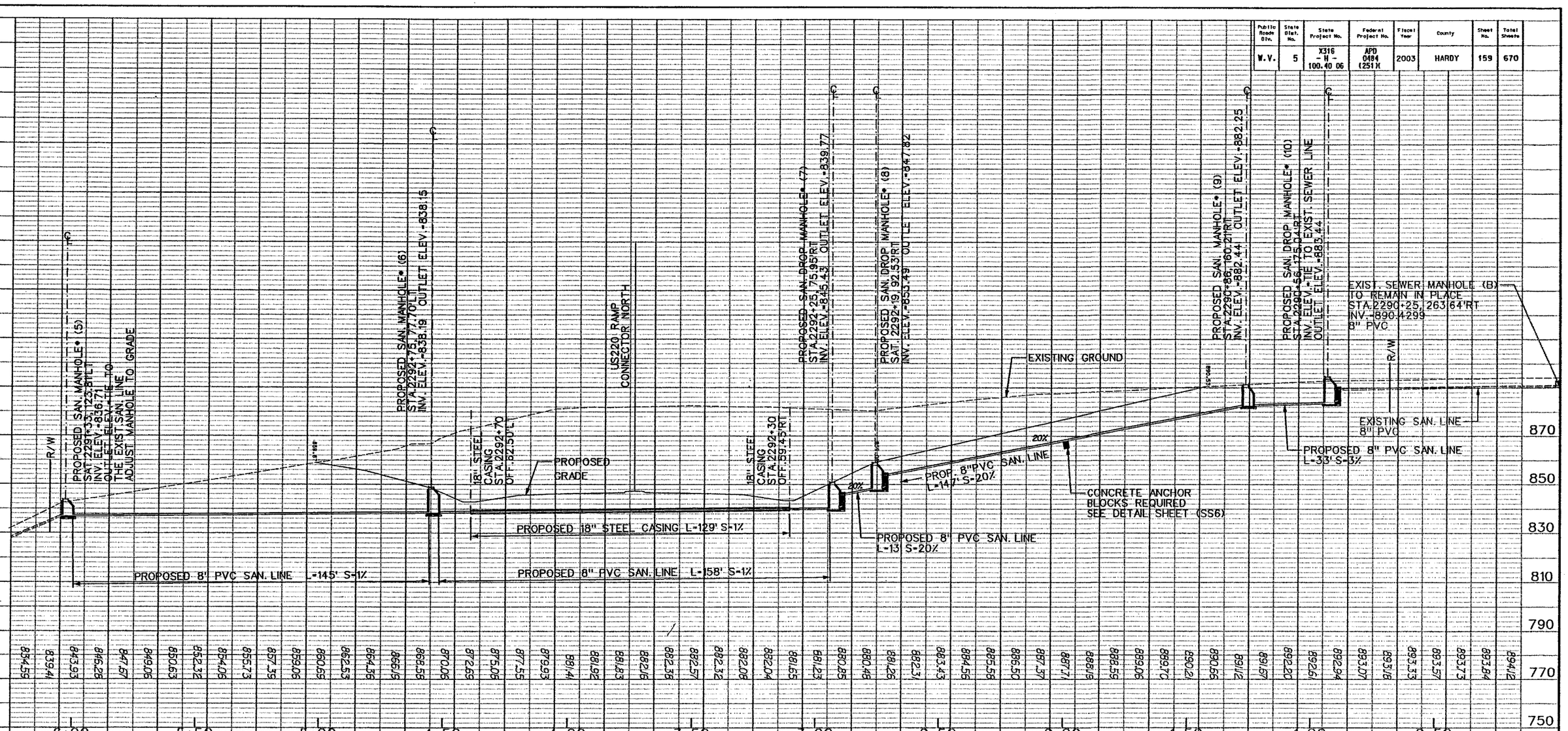

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Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

SS4

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PIPE PROFILE
SANITARY LINE

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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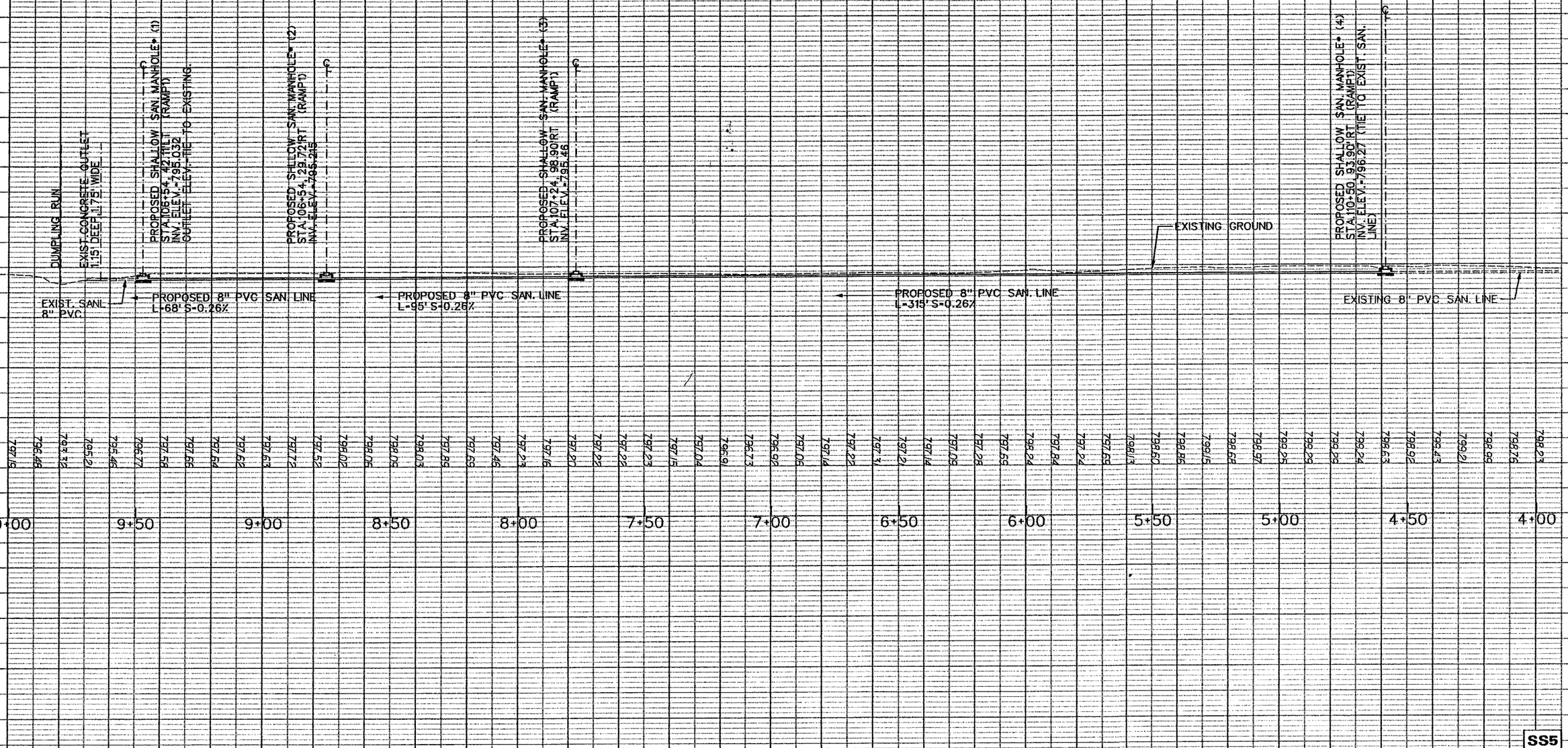

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Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PIPE PROFILE SANITARY LINE

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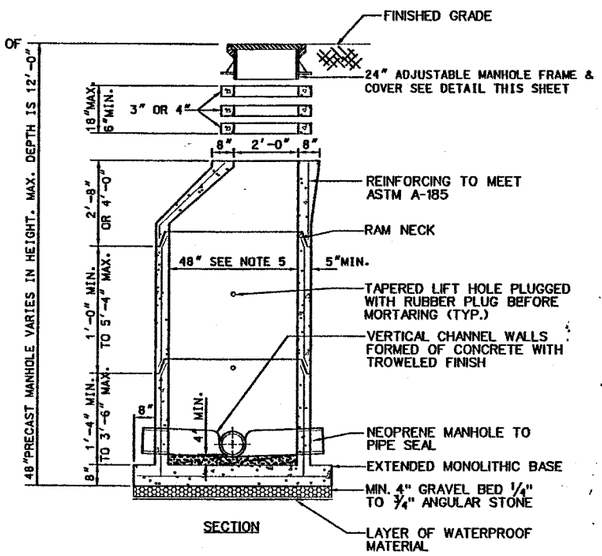
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	161	670

REQUIREMENTS:

1. MANHOLE SHALL MEET ALL REQUIREMENTS OF ASTM C-478-72.
2. USE CLASS "B" CONCRETE IN ACCORDANCE WITH SEC. 601 OF THE SPECIFICASION.
3. ALL REINFORCING BARS SHALL MEET THE REQUIREMENTS OF AASHTO M31 AND THE REQUIREMENTS OF SEC. 709.1 OF THE SPECIFICATIONS.
4. BASES SHALL BE EXTENDED MONOLITHIC TYPE.
5. MAX. HEIGHT FOR 48" MANHOLE WITH 5" MIN. THICK WALL SHALL NOT EXCEED 12'.
6. ALL MANHOLES SHALL RECEIVE INSIDE APPLICATION OF SIK-A-CARD HI-BILT APPLIED IN ACCORDANCE WITH MANUFACTURERS SPEC.
7. STANDARD INVERT ELEVATION OF NO GREATER THAN 1' DIFFERENCE SHALL BE DESIGN CRITERIA. IF GREATER THAN 2', MANHOLE MUST BE INSIDE DROP CONNECTION.
8. CONTRACTOR MUST USE NEOPRENE SEAL MFG. TO ASTM C-443, (AS MFG. BY N.P.S.C. NASHUA, N.H.)
9. MANHOLE STEPS TO BE INSTALLED IN ACCORDANCE WITH MANHOLE STEP DETAIL.
10. MANHOLE HEIGHT SHALL ALLOW FOR AT LEAST ONE ADJUSTMENT RING BELOW CASTING.
11. MANHOLE COVER TO HAVE CAST ON THE COVER THE WORD "SEWER"
12. BASE, RISER, CONE, OR FLAT TOP LENGTHS TO BE DETERMINED FROM SPECIFIC ELEVATIONS REQUIREMENT AT EACH LOCATION.



STANDARD PRECAST SANITARY SEWER MANHOLE

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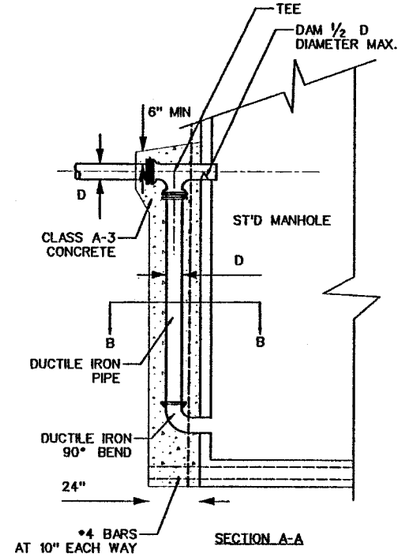

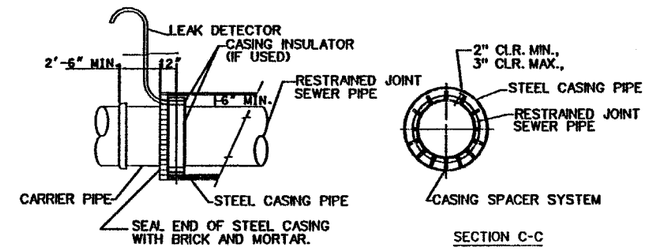

END DIMENSIONS AND SEAL DETAIL

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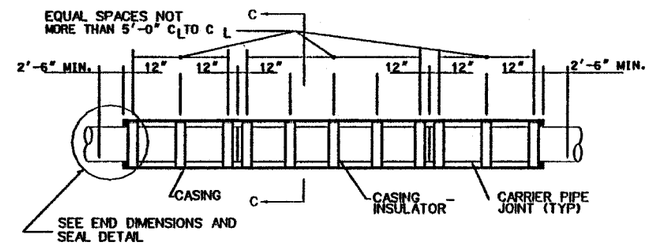

STEEL CASING PIPE DETAIL

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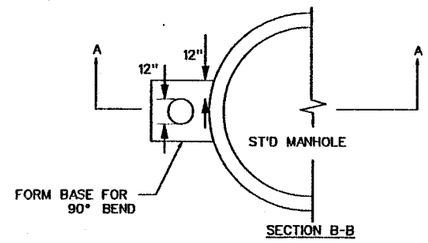

SANITARY DROP CONNECTION

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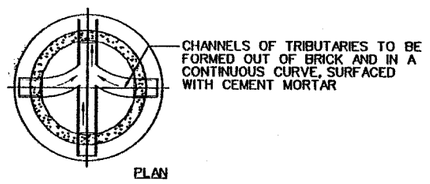

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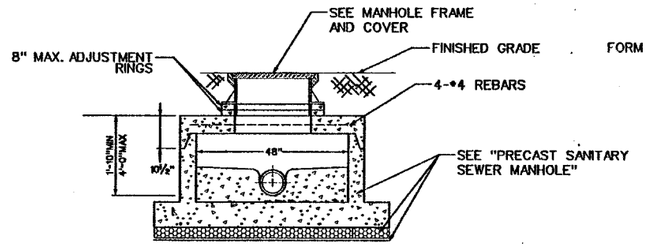

SHALLOW PRECAST SANITARY MANHOLE

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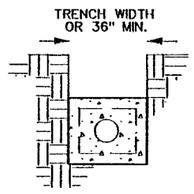

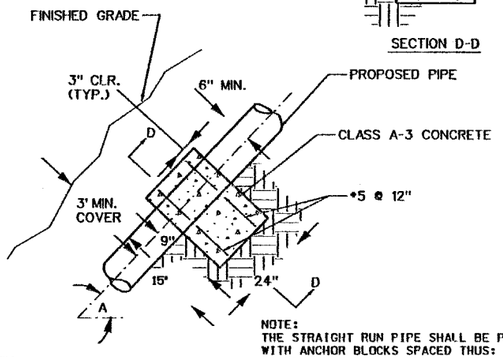

STRAIGHT PIPE CONCRETE ANCHOR BLOCK

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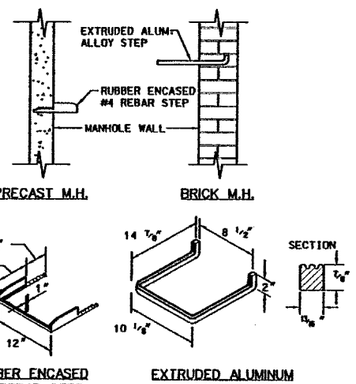

MANHOLE STEP DETAIL

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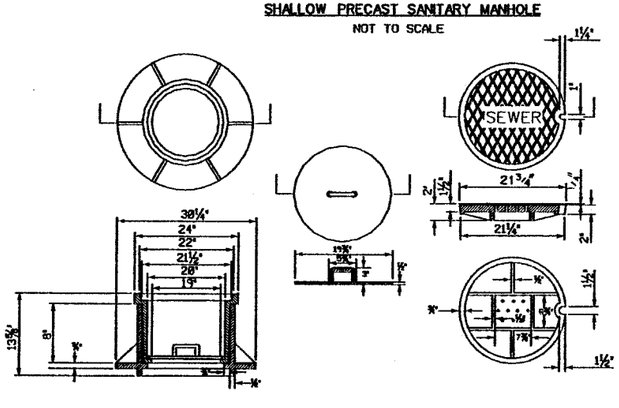

24" ADJUSTABLE MANHOLE FRAME & COVER

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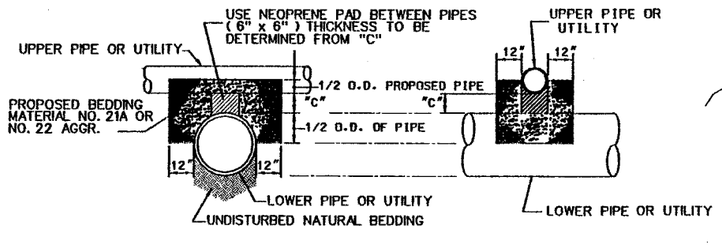

SPECIAL PROTECTIVE BEDDING DETAIL

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SS6

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
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SANITARY SEWER RELOCATION MISC. DETAILS

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GENERAL NOTES - FORCEMAIN

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	AFD 0484 (251)C	2003	HARDY	162	670

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL HEALTH DEPARTMENT REGULATIONS. ALL WORK REQUIRED SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. (675007-018).

2. THE CONTRACTOR SHALL FIELD VERIFY ALL SIZES, DEPTHS, AND POSITIONS OF EXISTING UTILITY STRUCTURES AND PIPES. ANY DISCREPANCIES WITH THESE PLANS SHALL BE REPORTED TO THE ENGINEER FOR REVIEW.

3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF OF THE EXISTING 4" FORCEMAIN.

4. WHERE THE CONTRACTOR IS REQUIRED TO CONNECT TO EXISTING SANITARY SEWER FACILITIES. BY-PASS PUMPING SHALL BE PROVIDED SO THE WORK CAN BE PERFORMED. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT REQUIRED TO COMPLETE THIS WORK.

5. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS, GRADE AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION. PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.

6. THE CONTRACTOR SHALL NOTE THAT THE FORCE MAIN RELOCATION PLANS ARE ONLY FOR TASKS RELATED TO SEWER WORK. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN. ALL MATERIALS OF CONSTRUCTION COMMON TO THE ROADWAY WORK, INCLUDING BUT NOT LIMITED TO: AGGREGATES, CONCRETE, BITUMINOUS PAVEMENT, SEEDING AND MULCHING, EROSION CONTROLS, ETC. SHALL BE PROVIDED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.

6. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING SEWER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED SEWER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING SEWER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

7. CONTRACTOR TO SCHEDULE FORCEMAIN CONSTRUCTION WORK WITH THE TOWN OF MOOREFIELD, WASTE WATER DEPARTMENT.

8. ALL EXISTING SANITARY SEWER MANHOLES AND CLEANOUTS SHALL BE RELOCATED AND/OR ADJUSTED TO FINISH GRADE AS REQUIRED, REGARDLESS IF THEY ARE SHOWN OR NOT SHOWN ON THE PLANS.

9. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIAL SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL PIPE MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

10. ALL THRUST PROTECTION INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED. INSTALLATION OF APPROVED RETAINER GLANDS, TIE RODS, AND OTHER THRUST RESTRAINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

11. CONTRACTOR SHALL RESTRAIN EXISTING PIPE AT CONNECTIONS TO PROPOSED PIPE AND AT THE PLUGS IN ACCORDANCE WITH THE RESTRAINED LENGTH OF PIPE SCHEDULE SHOWN IN THE DRAWINGS.

12. THE CONTRACTOR SHALL COMPLY WITH "MISS UTILITY" REQUIREMENTS PRIOR TO PERFORMING ANY EXCAVATION (TEL. (800) 552-7001).

13. SYSTEM SHUTDOWN OPERATION:

A. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF UTILITY CONSTRUCTION A MINIMUM OF 30 DAYS PRIOR TO UTILITY ADJUSTMENT FIELD EFFORTS. THE SEQUENCE OF UTILITY CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR UTILITY TIE-INS, CONNECTIONS AND SHUTDOWNS. THE CONTRACTOR SHALL ALSO PROVIDE AT THIS TIME THE ANTICIPATED SHUTDOWN TIME REQUIRED, AS WELL AS ANTICIPATED TIME OF DAY SCHEDULE FOR THE TIE-INS, CONNECTIONS AND SHUTDOWNS.

B. CONTRACTOR SHALL GIVE A TWO (2) WEEK NOTICE IN WRITING TO THE ENGINEER AND TO THE TOWN OF MOOREFIELD, WASTE WATER DEPARTMENT PRIOR TO BEGINNING MODIFICATIONS TO THE EXISTING FACILITIES.

C. THE EXISTING FACILITIES SHALL BE DEACTIVATED FOR A MAXIMUM PERIOD OF SIX (6) HOURS FOR EACH SCHEDULED SHUTDOWN. THE CONTRACTOR SHALL MAKE AS MANY CONNECTIONS AS PRACTICAL DURING EACH SHUTDOWN PERIOD.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEWAGE OVERFLOWS OR SPILLAGE DURING SANITARY SEWER SYSTEM SHUTDOWN OR CONNECTIONS. ONCE GRAVITY SANITARY SEWER FACILITIES HAVE BEEN SHUTDOWN OR PUMP STATIONS PUMPED DOWN, THE CONTRACTOR SHALL PROVIDE STANDBY SEWAGE PUMPING AND HAULING OR BY-PASS PUMPING TECHNIQUES FOR THE DISPOSAL OF ALL OVERFLOWS WHICH MAY OCCUR IN THE SHUTDOWN OF THE SANITARY SEWER SYSTEM FACILITIES. THE METHOD FOR MAINTAINING SEWAGE CONVEYANCE SHALL BE APPROVED BY THE ENGINEER PRIOR TO SYSTEM SHUTDOWN.

15. ALL SHOP DRAWINGS AND MATERIAL CERTIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF THE FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

16. SUBMITTALS:

1. SUBMIT SHOP DRAWINGS (SIX (6) COMPLETE SETS) OF THE FOLLOWING, IN ADDITION TO SUBMITTALS REQUIRED BY OTHER SECTIONS OF THE CONTRACT DOCUMENTS:

- PLASTIC SEWER PIPE SDR21, 200(psi) RATING, PUSH-ON JOINT, FORCEMAIN PIPE AND FITTINGS.
- VALVES
- FITTINGS
- GASKETS
- RESTRAINED JOINTS
- RETAINER GLANDS
- DETECTABLE UTILITY MARKING TAPE
- DISSIMILAR MATERIAL PIPE JOINTS
- METHOD OF JOINT RESTRAINT
- SEQUENCE OF CONSTRUCTION
- CONCRETE
- AGGREGATES

17. NOTES ON PLAN SHEETS WITH AN ITEM CODE NUMBER ARE REFERRED TO PAY ITEMS INDICATED ON THIS SHEET. NOTES ON PLAN AND DETAIL SHEETS WITHOUT AN ITEM CODE NUMBER ARE TO CLARIFY CONSTRUCTION REQUIRED AND SHALL BE INCLUDED IN THE UNIT PRICE FOR THE ASSOCIATED PAY ITEM.

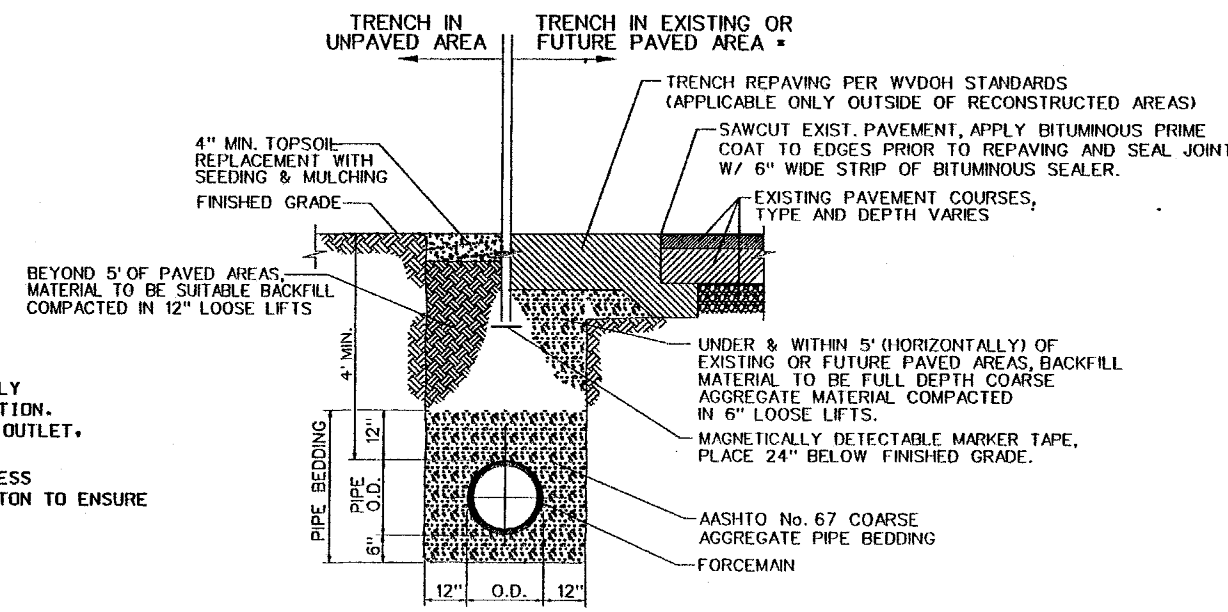
ALL ITEMS OF MATERIAL, LABOR, SUPPLIES OR EQUIPMENT THAT ARE NOT SPECIFICALLY ENUMERATED FOR PAYMENT AS SEPARATE ITEMS, BUT WHICH ARE REASONABLY REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS, ARE CONSIDERED SUBSIDIARY OBLIGATIONS OF THE CONTRACTOR. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR THEM.

18. AIR RELEASE VALVE ASSEMBLY (SEE SHEET 164 FOR DETAILS)

1. AIR RELEASE VALVE
   - A. SEWAGE AIR RELEASE VALVE SHALL BE OF THE TYPE THAT AUTOMATICALLY RELEASES AIR, GAS, OR VAPOR UNDER PRESSURE DURING SYSTEM OPERATION. THE VALVE SHALL HAVE A 2-INCH N.P.T. INLET WITH A $1/2$ INCH N.P.T. OUTLET, AND A $5/16$ INCH ORIFICE FOR A MAXIMUM WORKING PRESSURE OF 75 psi.
   - B. VALVE SHALL BE CONSTRUCTED OF CAST IRON BODY AND COVER, STAINLESS STEEL TRIM AND FLOAT, WITH AN ADJUSTABLE RESILIANT ORIFICE BUTTON TO ENSURE POSITIVE SEATING.
   - C. OVERALL HEIGHT OF THE VALVE SHALL BE APPROXIMATELY 12 INCHES.
   - D. VALVE SHALL BE VAL-MATIC MODEL 48S, OR EQUAL.
2. VALVE BOX AND COVER
   - A. THE AIR RELEASE VALVE SHALL BE HOUSED IN A 20 INCH DIAMETER CYLINDRICAL METER BOX, MANUFACTURED FROM INJECTION MOLDED, HIGH DENSITY POLYETHYLENE. THE BOX SHALL HAVE A WHITE INTERIOR TO REFLECT LIGHT.
   - B. BOX SHALL BE INSTALLED ON FOUR (4) BRICKS TO PREVENT SETTLING OR TILTING.
   - C. THE METER BOX SHALL BE FITTED WITH A STANDARD WEIGHT CAST IRON FRAME AND COVER WITH 11$1/2$ INCH LID OPENING AND 4 INCH FRAME DEPTH. COVER SHALL BE EQUAL TO FORD METER BOX CO. TYPE C, MODEL NO. C3 FOR 20 INCH BOXES. CAST IRON FRAME SHALL BE SECURELY FASTENED TO THE METER BOX TO RESTRICT MOVEMENT.
3. BALL VALVE
   - A. THE AIR RELEASE VALVE SHALL BE ISOLATED WITH A 2 INCH SHUTOFF VALVE.
   - B. SHUTOFF VALVE SHALL BE A 2 INCH PVC TRUE UNION BALL VALVE WITH TEE HANDLE. VALVE SHALL BE RATED FOR 150 psi OPERATING PRESSURE.
4. FORCE MAIN TRAP
   - A. THE FORCE MAIN SHALL BE TRAPPED WITH A BRASS SADDLE AND 2 INCH BRASS CORPORATION STOP. SADDLE SHALL BE FORD STYLE S70 FOR PVC PIPE AND FOR STYLE 202B FOR DUCTILE IRON PIPE.
   - B. FURNISH 2 INCH MINIMUM CLASS 200 POLYETHYLENE TUBING FOR THE CONNECTION BETWEEN THE FORCE MAIN TAP AND THE AIR VALVE.
5. UTILITY MARKER
   - A. THE AIR RELEASE VALVES SHALL BE IDENTIFIED BY AN ABOVE-GROUND UTILITY MARKER.
   - B. MARKER POST SHALL BE TRIANGULAR SHAPE, COMPOSITE MATERIAL, SUITABLE FOR INSTALLATION BY A DRIVING TOOL. POST SHALL BE DRIVEN AT LEAST 18 INCHES INTO THE GROUND AND SHALL PROJECT A MINIMUM OF 42 INCHES ABOVE FINISH GRADE.
   - C. POST SHALL BE FURNISHED WITH AN IDENTIFYING DECAL MARKED "AIR RELEASE".
   - D. UTILITY MARKER SHALL BE MANUFACTURED BY CARSONITE INTERNATIONAL, OR EQUAL.

SUMMARY OF SEWER FACILITIES

ITEM NUMBER	DESCRIPTION	UNIT	TOTAL
639001-001	CONSTRUCTION LAYOUT STAKES	LS	1
675025-001	SPECIAL STRUCTURE, AIR RELEASE VALVE	EA	1
675007-018	4 INCH (PVC) PLASTIC SEWER PIPE, SDR21,200(psi) RATING,PUSH-ON JOINT	LF	1885



NOTE:

1. MEASUREMENT AND PAYMENT FOR FORCEMAIN IS UNDER ITEM NO. 6755007-018 ITEMS CONSIDERED AS INCIDENTAL TO FORCEMAIN CONSTRUCTION INCLUDE, BUT ARE NOT LIMITED TO; LAYOUT WORK, EXCAVATION, BEDDING, PIPE MATERIALS, AGGREGATE BACKFILL, MARKER TAPE.

NOTES (WITHIN EXISTING PAVED AREAS):

1. ALL PAVING, BEDDING AND BACKFILL MATERIALS SHALL CONFORM TO APPLICABLE SECTIONS OF WVDOH REQUIREMENTS, LATEST EDITION.
2. PAVING AND SUBBASE DEPTHS SHALL BE AS SHOWN OR ADJUSTED TO MATCH EXISTING DEPTHS, WHICHEVER IS GREATER.

* NOTE (WITHIN FUTURE PAVED AREAS):

1. FULL DEPTH COARSE AGGREGATE BACKFILL SHALL BE PLACED SUCH THAT TOP SURFACE IS EVEN WITH THE EXISTING ROUGH GRADE.

FORCEMAIN TRENCH DETAIL

NOT TO SCALE

FM1

Baker

Michael Baker Jr., Inc.

SCALE : 0 50 ft.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GENERAL NOTES

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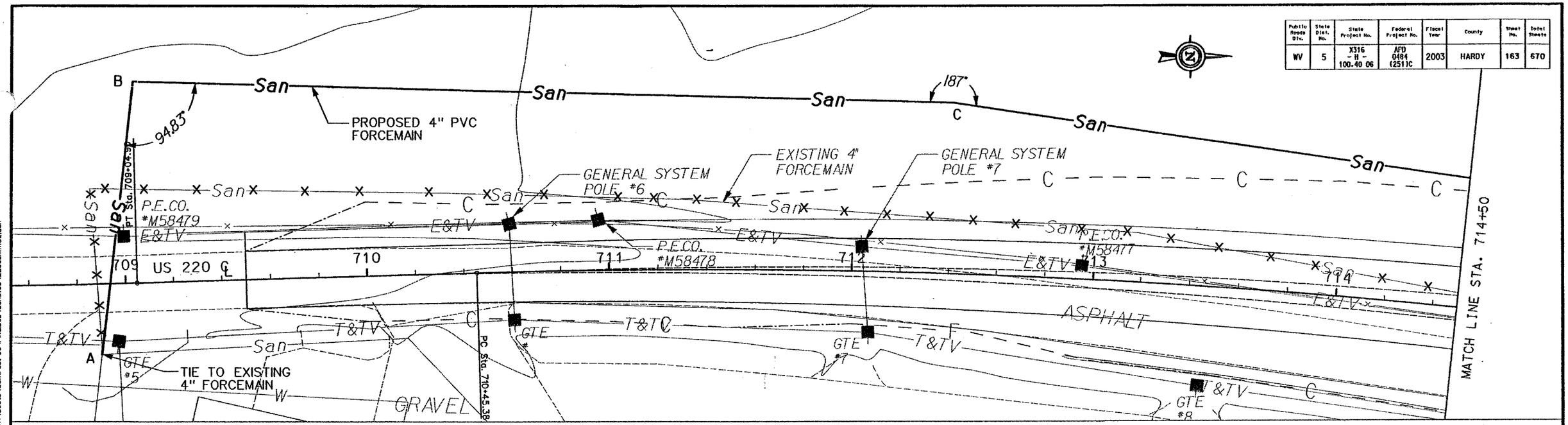
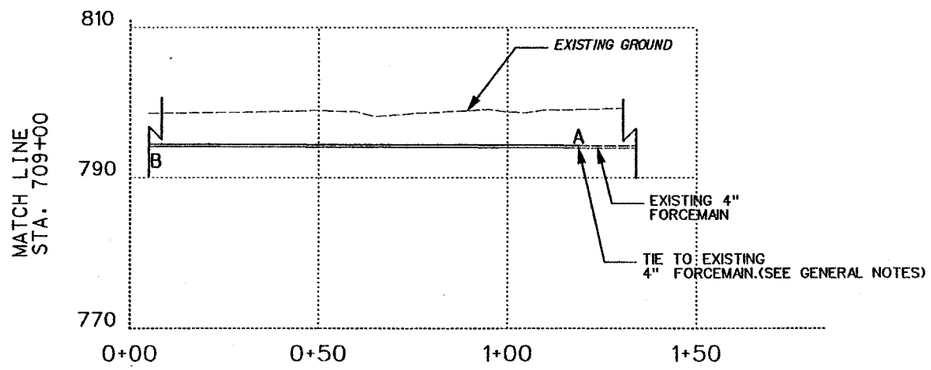
08/14/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	AFD 0484 (251)C	2003	HARDY	163	670





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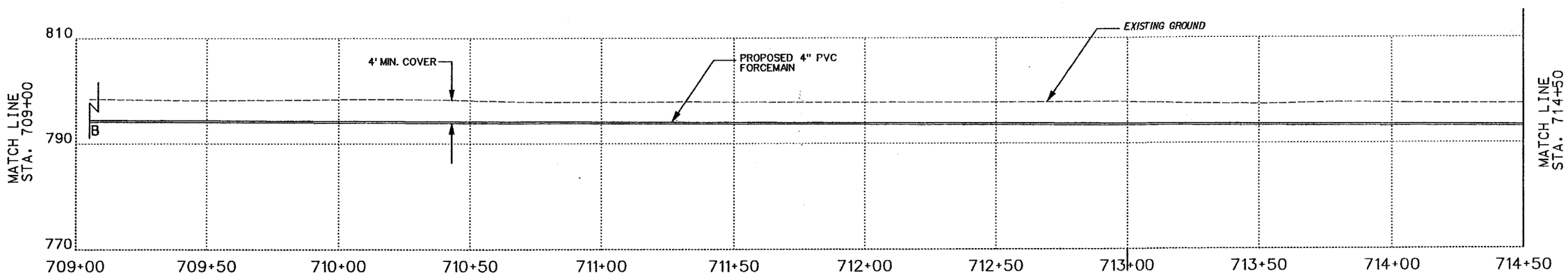
B	709+05.28	83.16 LT.
C	712+39.78	70.88 LT.



FM2

SCALE : 0 20ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORCEMAIN PLAN & PROFILE

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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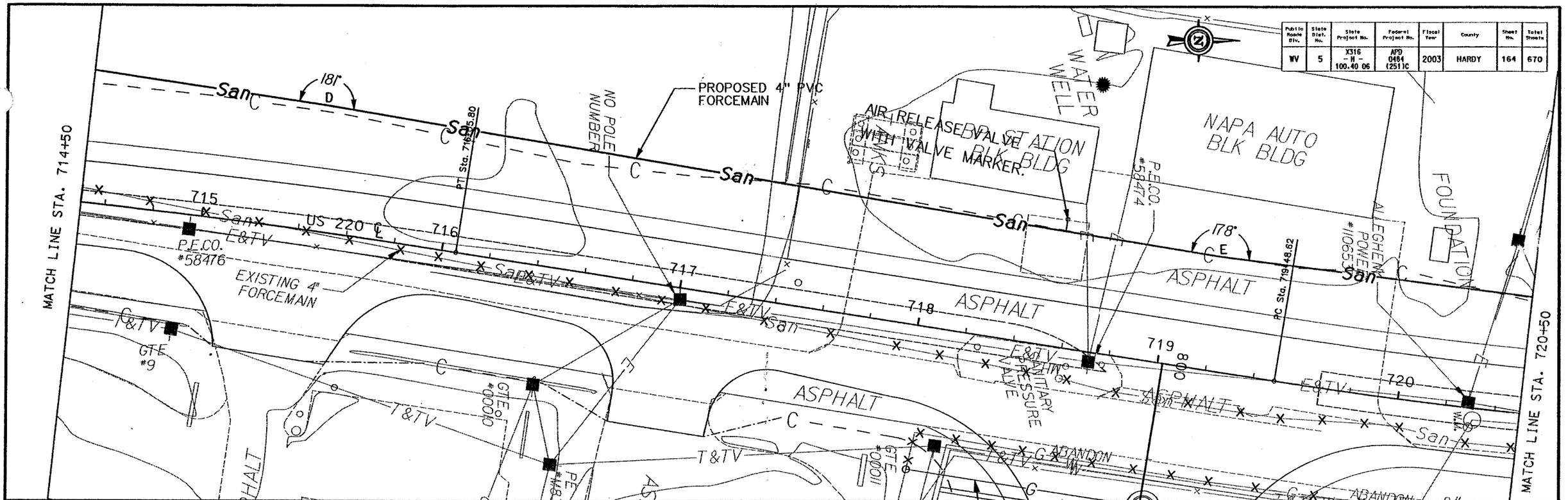

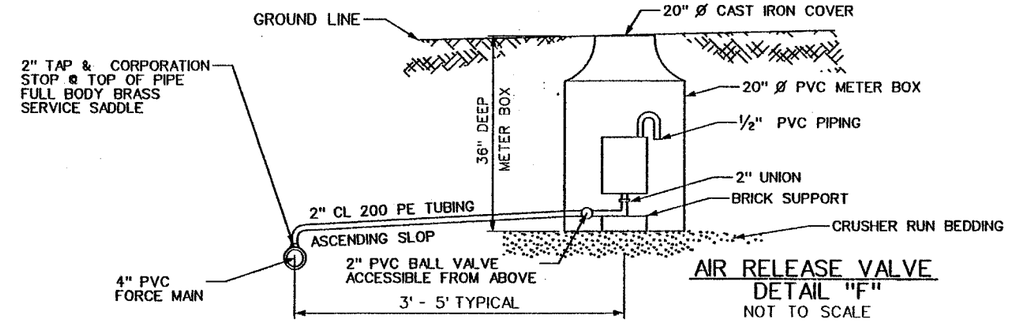

AIR RELEASE VALVE
DETAIL "F"
NOT TO SCALE

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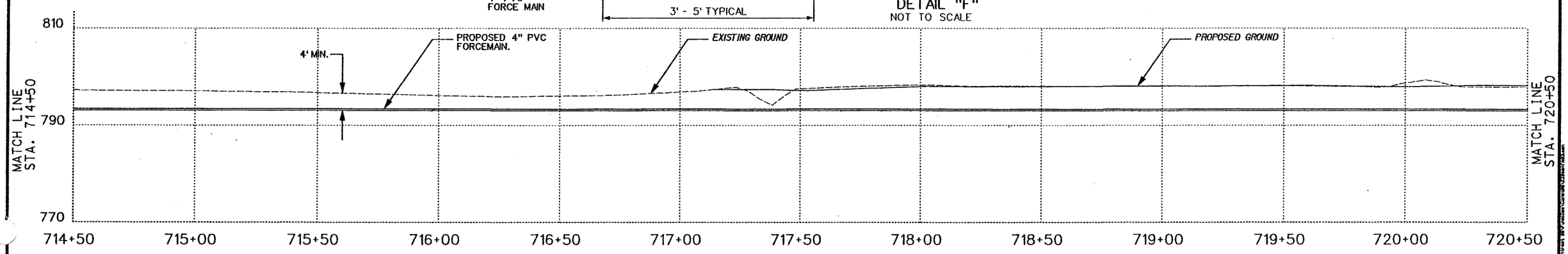
E	719+18.49	48.00' LT.



FM3

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Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORCEMAIN PLAN & PROFILE

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
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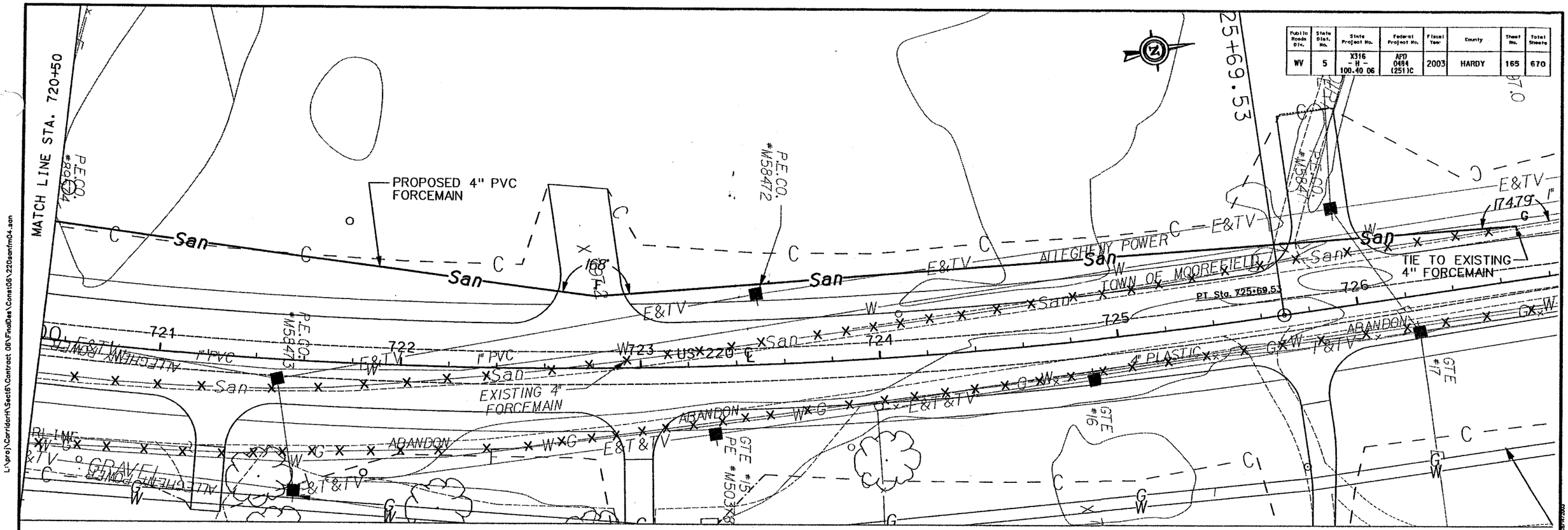

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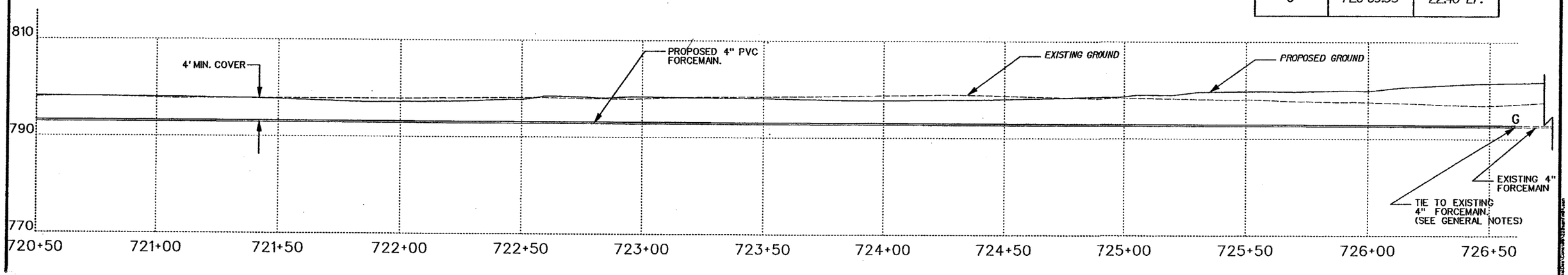

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Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORCEMAIN PLAN & PROFILE

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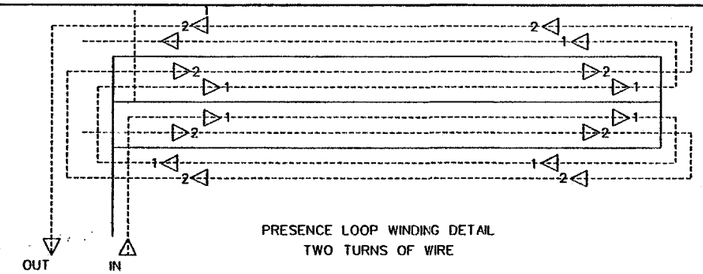
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - II - 100.40	APD 0484 (177)C	2003	HARDY	166	670

SG-1

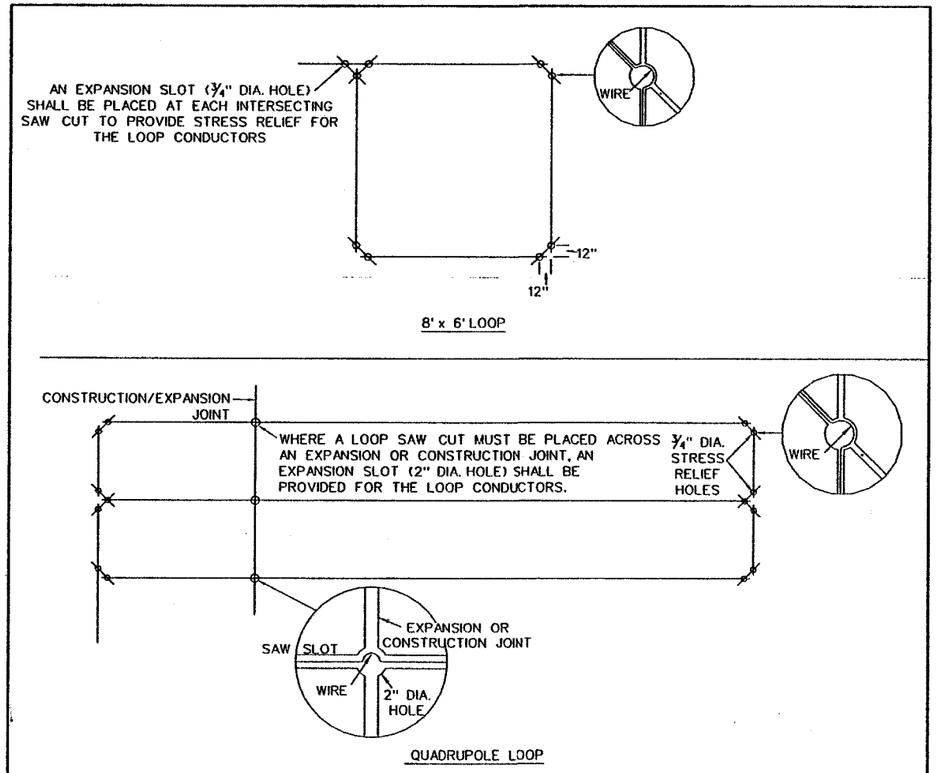
SIGNAL SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY		
		ALT.	UNIT	TOTAL
660001-001	SIGNAL CONTROLLER (01)		LS	1
660002-005	TRAFFIC DETECTOR, LPS-C		EA	6
660003-006	SIGNAL SECTION, V-12		EA	22
660003-008	SIGNAL SECTION, V-8		EA	6
660004-040	SIGNAL SUPPORT, C1		EA	2
660004-042	SIGNAL SUPPORT, C1L		EA	2
660005-010	JUNCTION BOX, TYPE H		EA	4
660007-001	MISCELLANEOUS SIGNAL 01		LS	1



PRESENCE LOOP WINDING DETAIL
TWO TURNS OF WIRE

DETAIL 'A'
QUADRUPOLE CONFIGURATION



DETAIL 'B'
LOOP INSTALLATION DETAIL

SPECIAL SIGNAL CONTROLLER REQUIREMENTS

1. IN ADDITION TO REQUIREMENTS IN THE STANDARD SPECIFICATION THE CONTROLLER UNIT MUST FEATURE A "MENU DRIVEN FORMAT" AND FULLY WIRED "D" CONNECTORS. ALL CONTROLLERS SHALL BE SYSTEM READY COMPLETE WITH MODEM.

2. THE TRAFFIC SIGNAL CONTROLLER/CABINET AND SYSTEM COMPONENTS SHALL CONFORM TO THE WVDOH "APPROVED PRODUCTS LIST" (APL) AS PER MANUFACTURER

SIGNAL SYSTEM COMPLETION NOTE

INSTALLATION OF THIS SIGNAL SYSTEM SHALL ONLY BE CONSIDERED SUBSTANTIALLY COMPLETE WHEN ALL PRESCRIBED SIGNAL SYSTEM FUNCTIONS AND ROADWAY DETECTION SYSTEMS ARE OPERATIONAL.

US 220 – MOOREFIELD CONNECTOR
SIGNAL SUMMARY OF QUANTITIES AND DETAILS

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNAL PLAN

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40	APD 0484 (177)C	2003	HARDY	167	670

SG-2

GOVERNING SPECIFICATIONS

1. THE WEST VIRGINIA DIVISION OF HIGHWAYS SPECIFICATIONS FOR ROADS AND BRIDGES ADOPTED 2000 AS AMENDED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2003, THE CONTRACT DOCUMENTS AND THE CONTRACT PLANS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

2. THE NATIONAL ELECTRICAL CODE, STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS FOR ELECTRICAL WIRING AND APPARATUS.

GENERAL NOTES

3. REPLACEMENT OF ALL CONCRETE AND ASPHALT SHALL BE DONE IN ACCORDANCE TO ORIGINAL DESIGN THICKNESS WHERE IT HAS BEEN DISTURBED OR REMOVED TO INSTALL POLES OR CONDUIT AT THE CONTRACTOR'S EXPENSE.

4. ALL AREAS ON THIS PROJECT WHICH HAVE BEEN SEEDED BY OTHERS AND WHICH ARE DISTURBED BY THE CONTRACTOR IN PERFORMING THE REQUIREMENTS OF THIS CONTRACT SHALL BE REPLACED TO THEIR ORIGINAL CONDITION BY APPROVED SEEDING AND MULCHING METHODS AND MATERIALS AS DIRECTED BY THE ENGINEER. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THIS WORK.

5. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. ANY DAMAGE INCURRED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

6. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE FOLLOWING AGENCIES IN THE MOOREFIELD AREA:
   POWER -- ALLEGHENY POWER SYSTEMS
   GAS -- ALLEGHENY POWER SYSTEMS
   SEWER -- TOWN OF MOOREFIELD WASTEWATER DEPARTMENT
   FRONTIER COMMUNICATION OF WV
   HARDY TELECOMMUNICATION INC.
   WV STATE RAIL AUTHORITY
   HARDY COUNTY P.S.D.

7. COLOR CODING OF ELECTRICAL CONDUCTORS BY USE OF PHASE TAPE OR FIELD PAINT IS NOT ACCEPTABLE ON THIS PROJECT. CONDUCTORS MUST BE MANUFACTURER-COLORED, STRIPED OR RIGID-MARKED AS SPECIFIED.

8. ALL NEW METALLIC SIGNAL EQUIPMENT AT THE NEW POLE INSTALLATION INTERSECTIONS SUCH AS POLES, CONDUIT AND CABINETS MUST BE DIRECTLY BONDED TOGETHER BY A SPECIAL RUN SINGLE-CONDUCTOR #8 AWG STRANDED COPPER WIRE. THE WIRE MUST BE INSULATED, COLORED CODED GREEN AND CONNECTED AT EACH BONDING POINT BY USE OF SCREW-TYPE COPPER OR BRONZE LUGS. IN ADDTION TO THIS BONDING, CONDUCTOR MUST BE CONNECTED TO ALL GROUND RODS IN THE SIGNAL SYSTEM AND TO THE EQUIPMENT GROUND BAR BUSS IN THE CONTROLLER CABINET.

9. TRAFFIC SIGNAL GROUND ROD CONNECTORS MUST BE ATTACHED AND SECURELY FASTENED BOTH AT FOUNDATION AND INSIDE POLE PRIOR TO ERECTION OF POLE. ENOUGH SLACK IN THE GROUNDING WIRE MUST BE ALLOWED FOR ERECTION OF POLE. BOTH CONNECTIONS MUST AGAIN BE CHECKED AFTER POLE IS INSTALLED.

10. EXCAVATIONS FOR TRAFFIC SIGNAL CONDUIT NOT UNDER ROADWAY OR SHOULDER AREAS, UNDER 12" IN WIDTH AND 30" IN DEPTH, MAY BE BACKFILLED IN LAYERS NOT EXCEEDING 4" AFTER COMPACTION. SPECIFIC DENSITY TESTS WILL NOT BE REQUIRED WHEN ACCEPTED COMPACTION TECHNIQUES ARE USED AND THE BACKFILLED EXCAVATION DENSITY IS COMPARABLE TO THAT OF THE SURROUNDING GROUND.

11. AC - (COMMON), LOGIC GROUND AND CHASSIS GROUND MUST BE ISOLATED IN THE CONTROLLER AND DETECTOR CIRCUITRY AS REQUIRED IN THE NEMA STANDARDS.

12. ALL NEW POLE BASES SHALL BE PROVIDED WITH VARMINT SCREENS.

13. CONDUIT INSTALLATION NOTE

    CONDUIT SHALL BE INSTALLED BY APPROVED JACKING OR DRILLING METHODS. PAVEMENT, BRICK OR EXISTING SIDEWALK SHALL NOT BE DISTURBED UNLESS APPROVED BY THE ENGINEER. IN THE EVENT THAT THE SIDEWALK HAS TO OPENED THE ENTIRE SECTION OF SIDEWALK MUST BE REPLACED, JOINT TO JOINT. UNLESS OTHERWISE DIRECTED BY PROJECT ENGINEER. BID THIS WORK AS PART OF ITEM 660007-001( ) FOR INTERSECTION WORK.

14. ISOLATION RELAY NOTE

    EACH VEHICLE DETECTOR THAT ARE NOT LOCATED IN THE CONTROLLER OR MASTER CABINET, MUST BE PROVIDED WITH ISOLATION RELAYS. IN ADDITION, ALL PEDESTRIAN PUSH BUTTONS (WHEN APPLICABLE) MUST BE PROVIDED WITH ISOLATION RELAYS. THE RELAYS ARE TO PROTECT THE CONTROL EQUIPMENT FROM INDUCED VOLTAGES AND OTHER EXTERNAL INTERFERENCE. THE ISOLATION RELAYS MUST BE LOCATED IN THE CONTROLLER (OR MASTER) CABINET. THE 24 VOLT CONTROLLER DETECTION AND LOGIC COMMON CIRCUITS ARE NOT TO RUN EXTERANL TO THE CONTROLLER OR MASTER CABINETS. THE 24 VOLT POWER SUPPLY FOR THE EXTERNAL ISOLATION SYSTEM MUST BE PROVIDED. THE 24 VOLT INTERNAL POWER SUPPLY FROM THE CONTROLLER UNIT CAN NOT BE USED IN THE EXTERNAL ISOLATION SYSTEM.

15. THREADED COUPLINGS TO BE USED TO CONNECT METAL CONDUITS. SET SCREW COUPLINGS, SLIP JOINTS AND CONTINUOUS RUNNING THREADS ARE NOT ACCEPTABLE.

16. ALL PEDESTRIAN PUSH BUTTONS SHALL BE TEMPER/FREEZE PROOF TYPE WITH RUBBER MEMBRANE SEAL. (MUSHROOM TYPE)

17. ALL R10-3 SHALL BE 9" X 12". THEY SHALL BE THE CONFORMABLE TYPE AND BE 3M SERIES 3870 WITH PRESSURE SENSITIVE ADHESIVE OR AN APPROVED EQUAL. THESE SHALL BE INSTALLED AS SHOWN ON THE INDIVIDUAL INTERSECTION SHEETS. BID WORK AS PART OF ITEM 660007-001( ) PER INTERSECTION.

COORDINATION NOTE - USE CAUTION

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SIGNAL WORK WITH THE ROADWAY WORK IN THE AREA OF SIGNAL INSTALLATION.

2. ALL LOOPS ARE TO BE INSTALLED INTO THE FINAL PAVEMENT AND ALL POLE FOUNDATIONS TO BE BUILT AT THE FINAL GRADE.

TRAFFIC CONTROLLERS/DETECTORS

1. POWER SERVICE - AS DETAILED BELOW FOR EACH INTERSECTION SHALL BE INSTALLED AS SHOWN IN THESE PLANS. THERE SHALL BE NO MORE THAN 5% VOLTAGE DROP ON ANY OF POWER SERVICE INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL FEES ASSESSED BY THE UTILITY COMPANY.

A. I/S NO. 1 (US 220 @ US 220 CONNECTOR)

   CONTRACTOR SHALL INSTALL A POWER SERVICE (METER, MAIN DISCONNECT) ON SIGNAL POLE P1 AS SHOWN IN THESE PLANS AND THEN POWER SERVICE CABLE TO BE INSTALLED TO THE CONTROLLER. CONTRACTOR SHALL CONTACT ALLEGHENY POWER AT LEAST THREE WEEKS PRIOR TO NEED FOR "APPLICATION FOR SERVICE" (1-800-255-3443).

2. ALL NEW CONTROLLERS MUST PROVIDE A TRUE MENU FORMAT FOR DATA ENTRY AND OPERATIONAL MONITORING. ALL CONTROLLER PARAMETERS INCLUDING OVERLAPS MUST BE KEYBOARD PROGRAMMABLE. AS A MINIMUM, A LIGHTED FORTY (40) COLUMN BY FOUR (4) LINE LIQUID CRYSTAL DATA DISPLAY SCREEN MUST BE PROVIDED ON THE FRONT OF THE CONTROLLER. THE DISPLAY MUST BE EASILY VISIBLE IN BOTH FULL DAYLIGHT AND AT NIGHT. BACK LIGHTING THE DISPLAY IS REQUIRED.

3. NEW POLE MOUNTED CONTROLLER CABINETS SHALL BE MOUNTED AT A HEIGHT OF 3' ABOVE THE GROUND WITH NEW MOUNTING HARDWARE AND CONDULETS. ALL CONDULETS FROM POLE TO CONTROLLER SHALL BE 3".

4. THE CONTRACTOR MAY USE "BONDO 575" OR "CHEMQUE Q-SEAL 290S" AS AN ALTERNATIVE TO WEATHERBAN 101 SEALER AS STATED IN SECTION 660.9.

5. THE CONTRACTOR SHALL AVOID PLACING LOOPS THROUGH JOINTS OR CRACKED AREAS AS MUCH AS POSSIBLE. THE LOOP PLACEMENT AS SHOWN ON THE PLAN SHEET MAY BE ADJUSTED UP TO 5' EITHER WAY TO AVOID THESE AREAS.

6. LOOP TRAFFIC DETECTORS (TYPE LPS-C)

   LOOP TRAFFIC DETECTOR SHALL BE CARD-RACK-MOUNTED TYPE (MEET REG. SECTION 715.42.5.2). RACKS FOR THESE UNITS ARE TO BE INSIDE THE CONTROLLER CABINET AND SECURELY ATTACHED TO THE MOUNTING SHELF. THE RACKS MUST HAVE A MINIMUM OF 8 (EIGHT) POSITIONS AND BE WIRED FOR 2 CHANNEL DETECTOR CARD, WITH POSITIONS 7 AND 8 WIRED FOR PRIORITY VEHICLE PRE-EMPT CONTROL SYSTEMS. POSITIONS 1 thru 6 MUST BE FURNISHED COMPLETE WITH 2 CHANNEL STANDARD TS-2, SECTION 6. RACK MOUNTED POWER SUPPLY MUST ALSO BE FURNISHED WITH THESE UNITS AS WELL AS ALL ISOLATION COMPONENTS AS RECOMMENDED OR FURNISHED AS A STANDARD BY THE EQUIPMENT MANUFACTURER. BID AS ITEM 660002-005.

   FOUR MANUFACTURER'S MODELS HAVE BEEN APPROVED FOR THIS PROJECT

   (1) SARASOTA SERIES 222 (NEMA STANDARDS)
   MFG. BY SARASOTA-PEEK TRAFFIC, INC.
   SARASOTA, FLORIDA

   (2) DETECTOR SYSTEMS MODELS 222 (NEMA STANDARDS)
   MFG. BY DETECTOR SYSTEMS, INC.
   STANTON, CALIFORNIA

   (3) CANOGA MODELS P422 (NEMA STANDARDS)
   MFG. BY 3M TRAFFIC CONTROL DEVICES
   ST. PAUL, MINNESOTA

   (4) EDI MODEL LM 622 (NEMA STANDARDS)
   MANUFACTURED BY EBERLE DESIGN, INC.
   PHOENIX, ARIZONIA.

7. I/S NO. 1
   AS A MINIMUM TWO (2) HEAVY-DUTY, TWELVE (12) CIRCUIT (IN and OUT) TERMINAL BLOCKS SHALL BE ADDED TO THE CONTROLLER CABINET. THESE TERMINAL BLOCKS MUST BE PLACED IN AN ACCESIBLE POSITION, AHEAD OF THE DETECTOR PANEL TO INTERCEPT THE IN-COMING DETECTOR FEEDER CABLES. DETECTOR CALLS ARE THEN TO BE ROUTED TO THE DETECTOR PANEL FROM THE TERMINAL BLOCKS VIA TWISTED PAIR, NOTE: FOR RACK MOUNTED DETECTOR SYSTEMS MORE THAN ONE (1) PAIR FEEDER CABLE MAY BE USED, WITH THE APPROVAL OF THE ENGINEER. ALL DETECTOR FEEDER CABLE ENTERING THE CONTROLLER CABINET MUST BE CLEARLY AND PERMANENTLY MARKED AS TO FUNCTION. EXAMPLE: DET 1 CH 2 (MEANING RACK DETECTOR 1 CHANNEL 2). DETECTOR FEEDER CABLE SHIELDS ARE NOT TO BE GROUNDED, UNLESS REQUIRED BY THE ENGINEER.

8. LOOP NOTE

   ALL NEW LOOPS TO HAVE THREE (3) TURNS OF #14 WIRE EXCEPT AS NOTED. TRAFFIC LOOP CABLE FROM 3/4" FLEXIBLE CONDUIT ENTRANCE IN PAVEMENT TO THE LOOP WIRE TERMINALS IN JUNCTION BOX/CONDULET SHALL BE TWISTED TOGETHER WITH APPROXIMATELY FIVE (5) TURNS PER FOOT. THE LOOP LEAD-IN CABLE FROM THE LOOP WIRE TERMINAL IN JUNCTION BOX/CONDULET TO THE DETECTOR TERMINALS SHALL HAVE TWO (2) TURNS PER FOOT.

9. DETECTOR FEEDER CABLE

   LOOP LEAD-IN WIRE FROM THE LOOP CONDUCTOR TO THE DETECTOR TERMINAL STRIP SHALL BE STRANDED TWO (2) CONDUCTOR, SHEILDED, 14 AWG MEETING IMSA SPECIFICATIONS 50-2.

10. METAL OXIDE VARISTORS (MOV'S)

    MOV SURGE PROTECTORS OF APPROVED DESIGN MUST BE INSTALLED AT ALL LINE TO NEUTRAL, LINE TO EQUIPMENT GROUND AND NEUTRAL TO EQUIPMENT GROUND LOCATIONS. IN ADDITION, MOV's ARE REQUIRED ON THE LOAD TERMINAL OF LOAD SWITCHES AND EACH TERMINAL OF THE OUTPUT TERMINAL STRIP. BID AS PART OF ITEM 660001-001(*) - PER INTERSECTION.

11. SIGNAL HEAD CONDUCTOR CABLE

    ALL SIGNAL HEAD CONDUCTOR CABLE SHALL BE IMSA BLACK PE, 20-1, 7-CONDUCTOR 14 AWG STRANDED COPPER CABLES RATED AT 600V. THIS CONDUCTOR SHALL BE RED, ORANGE, GREEN, BLACK, WHITE, AND TWO (2) DIFFERING COLORS. IN ACCORDANCE WITH IMSA SPEC COLOR CODE.

12. LOOP WIRE

    ALL NEW LOOP WIRE (IN PAVEMENT) SHALL BE STRANDED #14AWG THHN SINGLE CONDUCTOR.

SIGNAL POLES

1. POLE LOCATIONS ON THE PLAN SHEETS MAY BE ALTERED ONLY WITH THE APPROVAL OF THE WEST VIRGINIA DIVISION OF HIGHWAYS, TRAFFIC ENGINEERING DIVISION.

2. ALL NEW POLE LOCATION DIMENSIONS ARE TO THE CENTER OF POLE FOUNDATION.

3. FOUNDATION SIZES FOR NEW POLES SHALL BE IN ACCORDANCE WITH WEST VIRGINIA DIVISION OF HIGHWAYS STANDARD TES-40.

SIGNAL HEADS

1. ALL NEW SIGNAL HEADS FOR THIS PROJECT SHALL HAVE CUTAWAY VISORS.

   THE FOLLOWING SIGNAL HEADS SHALL HAVE ALUMINUM BACKPLATES, BODIES, DOORS AND VISORS.

I/S NO.	HEAD NO.
1	5 THRU 6

   ALL OTHER SIGNAL HEADS IN THIS PROJECT SHALL BE NON-METALLIC. BACK PLATES SHALL BE LOUVERED AND BLACK.

2a. ALL NEW SIGNAL SECTIONS (VEHICULAR AND PEDESTRIAN) SHALL UTILIZE LIGHT EMITTING DIODE (L.E.D.) SIGNAL MODULES AT 120 VAC. ALL UNITS SHALL NOT UTILIZE MORE THAN 22 WATTS POWER CONSUMPTION.

b. THESE L.E.D. MODULES SHALL BE CAPABLE OF RETROFITTING CURRENT NEMA TS-1 SIGNAL HEAD HOUSINGS.

c. ALL L.E.D. TRAFFIC SIGNAL MODULES SHALL BE BID INCIDENTAL TO ITEM 660003-006(V-12) OR 660003-001 (V-8) AS APPLICABLE.

d. ALL TRAFFIC SIGNAL MODULES SHALL CONFORM TO THE WVDOH SPECIFICATION (SEE PROPOSAL) CONCERNING L.E.D. SIGNAL MODULES.

e. SEE THE WVDOH "APPROVED PRODUCTS LIST" (APL) FOR APPROVED MANUFACTURERS.

LUMINARE WORK ON SIGNAL POLES

1. NEW LUMINAIRES (2) TO BE SUPPLIED BY CONTRACTOR AND INSTALLED ON SIGNAL POLES P1 AND P3. THIS LUMINAIRE SHALL HAVE AN INTEGRAL PHOTOCELL. THE 240-VOLT LUMINAIRE CIRCUIT SHALL BE PROTECTED BY A SEPARATE BREAKER PROVIDED IN THE SIGNAL POWER SERVICE ENCLOSURE. LUMINAIRE WIRING SHALL BE SUNLIGHT-RESISTANT, THREE CONDUCTOR #12 IMSA CABLE AND SHALL RUN CONTINUOUSLY WITH NO SPLICING OR IN-LINE FUSING. LUMINAIRE WIRING SHALL BE TAGGED AT ALL ACCESS POINTS.

2. NEW LUMINAIRE ARM TO BE TRUSS, CLAMP-ON AND BID AS ITEM 660007-001(01).

3. LUMINAIRE SHALL BE BID AS ITEM 662007-001(250). ALL ROADWAY LUMINAIRE WORK AND MATERIAL SHALL BE BID AS ITEM 662014-001

4. ROADWAY LUMINAIRES NOT MOUNTED ON SIGNAL POLES SHALL BE INSTALLED IN ACCORDANCE WITH THE ROADWAY LIGHTING PLAN.

UTILITY NOTE

THE CONTRACTOR MUST NOTIFY ALL APPLICABLE UTILITIES PRIOR TO ANY EXCAVATION FOR EXACT LOCATION OF THEIR UNDERGROUND FACILITIES. EXTREME CAUTION SHALL BE USED IN THESE AREAS ESPECIALLY IN EXCAVATING FOR FOUNDATIONS AND THE JACKING OF CONDUIT. IF NECESSARY THE CONTRACTOR SHALL HAND DIG TO LOCATE LINES OR SHALL OPEN CUT IN AREAS OF POSSIBLE CONFLICT. THESE AREAS TO BE DETERMINED BY THE PROJECT ENGINEER. CONTACT 'MISS UTILITY' PRIOR TO ANY EXCAVATING.

SIGNAL GENERAL NOTES NO. 1

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNAL PLAN

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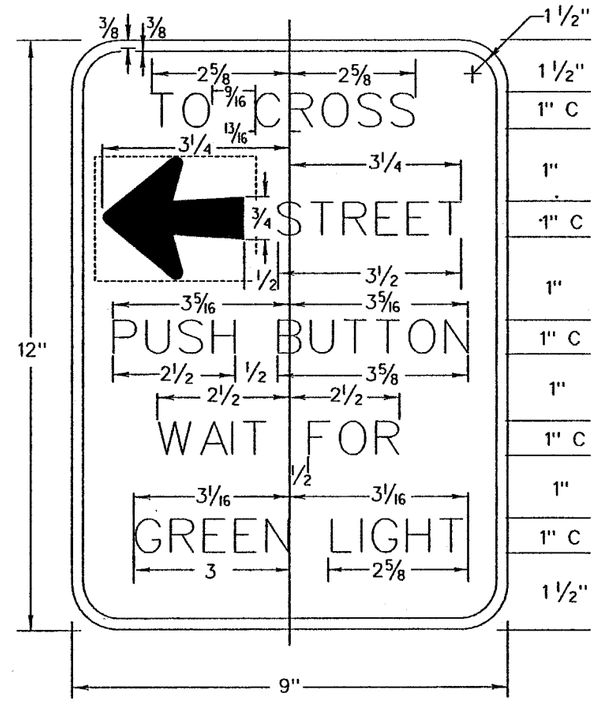
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40	APD 0484 (177)C	2003	HARDY	168	670

SG-3

US 220 AT US 220 CONNECTOR - I/S NO. 1		
ESTIMATE OF QUANTITIES		
LIST	**QUANTITY**	**DESCRIPTION**
1	1	CONTROLLER - 660001-001 TYPE C (01)
2	1	SIGNAL MONITORING DEVICE
3	1	CONTROLLER & DETECTOR CABINET (UNIT) (POLE MOUNT)
4	6	DETECTOR (TYPE LPS-C)
5	2	STEEL STRAIN POLE (TYPE C1)
6	1	POWER SERVICE (SEE PLAN NOTES)
7	2	STEEL STRAIN POLE (TYPE C1)
8	16	ANCHOR BOLTS (2"x 90")
9	4	JUNCTION BOXES (TYPE H)
10	4	FOUNDATIONS
11	AS NEEDED	ISOLATION RELAYS (PEDS)
12	AS NEEDED	MISCELLANEOUS HARDWARE & ITEMS
13	AS NEEDED	CONDUIT, CONDUCTOR CABLE & MESSENGER CABLE
14	AS NEEDED	SAWSLOT, FILLER & LOOP WIRE
15	4	ONE-WAY 3-SECTION 12" R.Y.G.; SW
16	1	ONE-WAY 5-SECTION 12" R,Y,G,Y→,G→; SW
17	1	ONE-WAY 5-SECTION 12" R,Y,G,←Y,←G; SW
18	2	ONE-WAY 3-SECTION 8" R,Y,G; PM
19	6	PEDESTRIAN PUSH BUTTON AND SIGN (2-R10-3aL; 2-R10-3aR)
20	2	LUMINAIRE, 250W; 120/208/240/277 MULTI-TAP (LU-250/BD/S) TYPE III MEDIUM SEMI CUTOFF, HPS

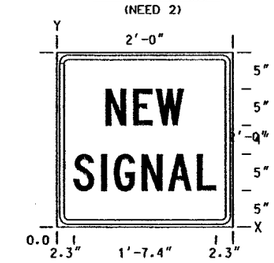


R10-3a (L or R)

PEDESTRIAN SIGN NOTE:

ALL R10-3a (L OR R), R10-4, AND R10-4a (L OR R) SIGNS SHALL BE 9"x12". THEY SHALL BE THE CONFORMABLE TYPE AND BE 3M SERIES 3870 W/PRESSURE SENSITIVE ADHESIVE OR AN APPROVED EQUAL. UNLESS THEY ARE MOUNTED ON WOOD POLES THEN THEY ARE TO BE 0.080 INCH FLAT SHEET ALUMINUM. THESE SHALL BE INSTALLED AS SHOWN ON THE INDIVIDUAL INTERSECTION SHEETS. SEE BELOW FOR DETAILS. BID THIS WORK AND MATERIAL AS PART OF ITEM 660007-001 *. SEE TES-30 FOR PPB AND SIGN MOUNTING POSITION.
* - PER INTERSECTION

SIGN DETAIL
(NEED 2)



SIGN NUMBER	DB
WIDTH x HEIGHT	24" x 24"
BORDER WIDTH	.62" MARGIN-.38"
CORNER RADIUS	1.12"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: YELLOW
LEGEND/BORDER	TYPE: NON-REF
	COLOR: BLACK

DIMENSIONS IN INCHES

Y FONT	LETTER SPACINGS									HT LEN
14.0	X	N	E	W	X					5.0
C	6.7	3.8	3.1	3.7	6.7					10.6
5.0	X	S	I	G	N	A	L	X		5.0
C	2.3	3.8	1.7	3.8	3.6	4.0	2.5	2.3		19.4

SPACINGS ARE TO START OF NEXT LETTER

SIDE ROAD APPROACHES - NEW SIGNAL WARNING

A W3-3 SIGN (SIGNAL AHEAD - 48"x48") WITH "NEW SIGNAL" PLAQUE w/TYPE 'B' LIGHTS(2) & FLAGS (2) (SEE SIGN DETAIL) SHALL BE INSTALLED IN ADVANCE OF EACH APPROACH (3). LOCATIONS TO BE APPROVED BY PROJECT ENGINEER. THESE SIGNS TO BE INSTALLED PRIOR TO TURNING ON NEW SIGNAL AND TO REMAIN IN PLACE FOR THIRTY (30) DAYS AFTER TURNED ON, THEN REMOVED. THIS WORK TO BID INCIDENTAL TO ITEM 636011-001.

ESTIMATE OF QUANTITIES

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNAL PLAN

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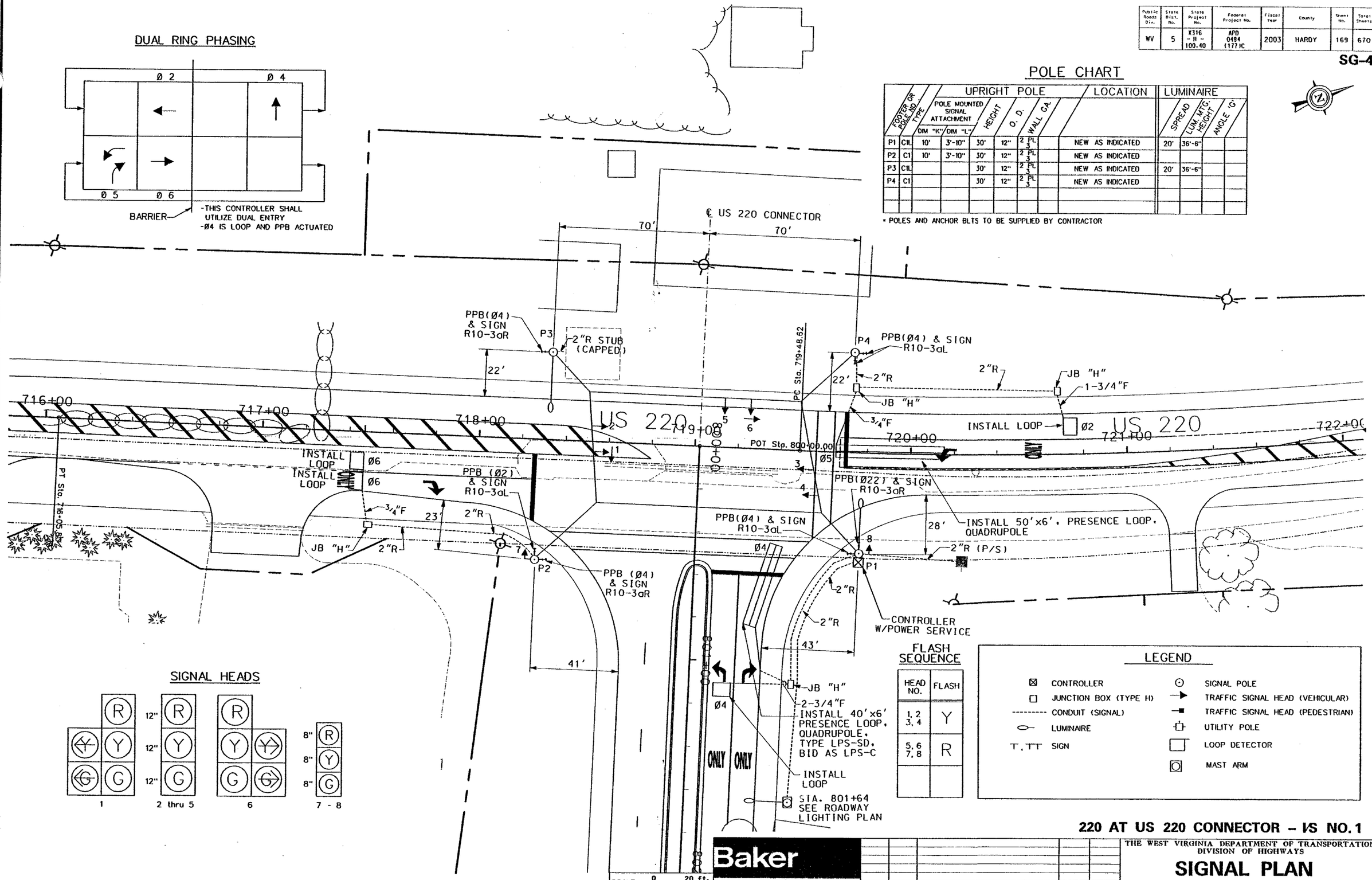
SG-4

DUAL RING PHASING

POLE CHART

	FOOTER POLE NO. OR TYPE		UPRIGHT POLE: POLE MOUNTED SIGNAL ATTACHMENT DIM "K"	DIM "L"	HEIGHT	O. D.	WALL GA.		LOCATION	LUMINAIRE: SPREAD	LUM. MTG. HEIGHT	ANGLE 'G'	
P1	C1L		10'	3'-10"	30'	12"	2 PL 3		NEW AS INDICATED	20'	36'-6"		
P2	C1		10'	3'-10"	30'	12"	2 PL 3		NEW AS INDICATED				
P3	C1L				30'	12"	2 PL 3		NEW AS INDICATED	20'	36'-6"		
P4	C1				30'	12"	2 PL 3		NEW AS INDICATED				

* POLES AND ANCHOR BLTS TO BE SUPPLIED BY CONTRACTOR



SIGNAL HEADS

FLASH SEQUENCE

HEAD NO.	FLASH
1, 2 3, 4	Y
5, 6 7, 8	R

LEGEND

- CONTROLLER
- JUNCTION BOX (TYPE H)
- CONDUIT (SIGNAL)
- LUMINAIRE
- SIGN
- SIGNAL POLE
- TRAFFIC SIGNAL HEAD (VEHICULAR)
- TRAFFIC SIGNAL HEAD (PEDESTRIAN)
- UTILITY POLE
- LOOP DETECTOR
- MAST ARM

220 AT US 220 CONNECTOR - VS NO. 1

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNAL PLAN

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DRAWINGS FOR THE ERECTION OF SIGNS & PAVEMENT MARKINGS

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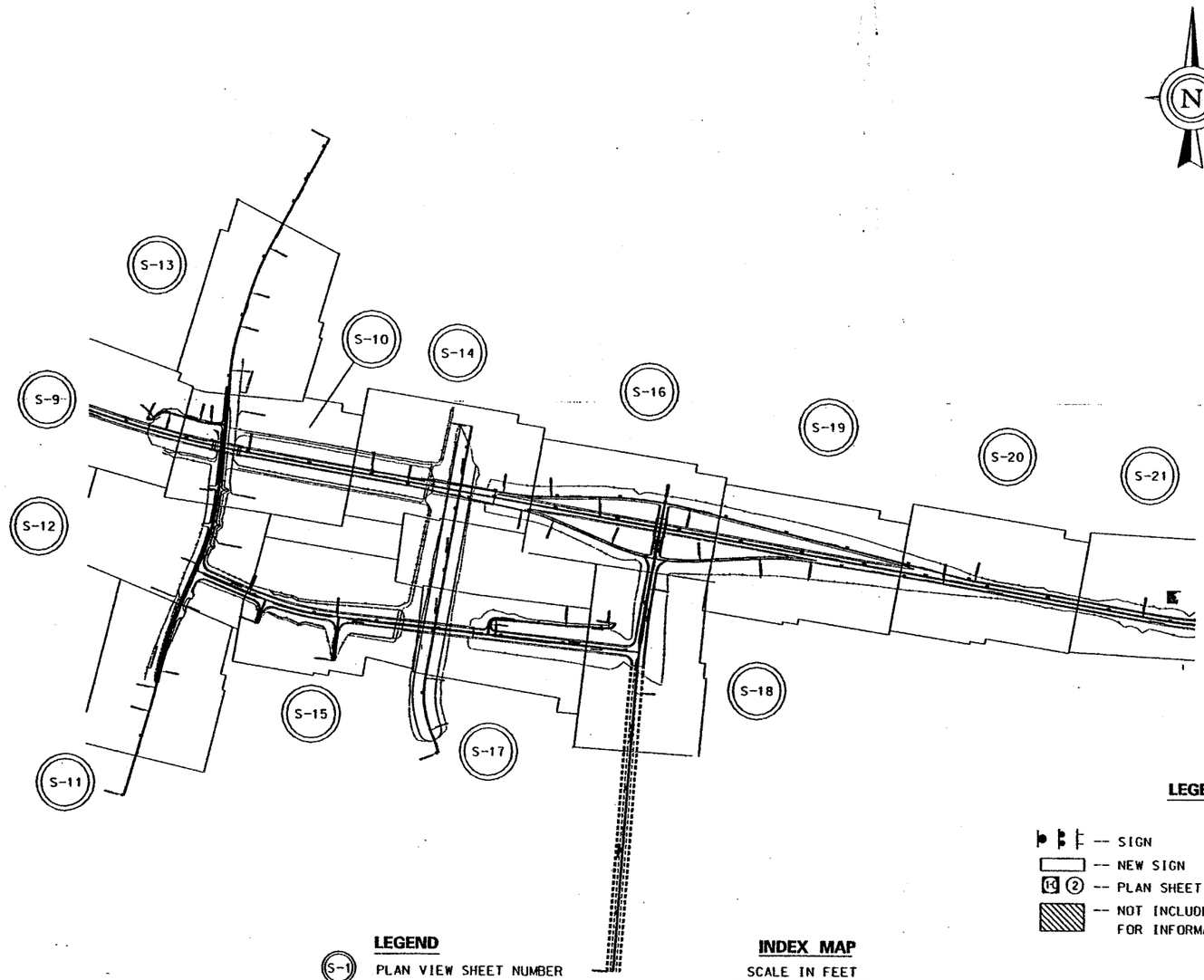

LEGEND

(S-1) PLAN VIEW SHEET NUMBER

SHEET LIMITS

INDEX MAP

SCALE IN FEET

0 1500 3000

LEGEND

-- SIGN

-- NEW SIGN

(2) -- PLAN SHEET / SIGN NUMBER

-- NOT INCLUDED IN CONTRACT FOR INFORMATION ONLY

INDEX OF SHEETS - FOR THIS SUBMISSION

S-1	INDEX SHEET
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S-22	SIGN FABRICATION DETAILS
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S-25	SPECIAL DETAIL SHEET

Baker

Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

INDEX SHEET

S-1

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SIGNING GENERAL NOTES

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS ROADS AND BRIDGES, ADOPTED 2000, AS AMENDED BY THE 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.

CONSTRUCTION LAYOUT STAKES

CONSTRUCTION LAYOUT STAKES FOR SIGNING WILL BE INCIDENTAL TO THE CONTRACT AMOUNT BID AND INCLUDED IN THE VARIOUS SIGNING ITEMS.

CORNERS

CORNERS OF ALL SHEET ALUMINUM SIGNS SHALL BE ROUNDED: HOWEVER, CORNERS OF ALUMINUM SIGN FACES (EXTRUDED OR OVERLAYS) SHALL NOT BE ROUNDED. FABRICATED SIGNS WITH DIRECT APPLIED COPY (BLUE, GREEN OR BROWN BACKGROUND) SHALL HAVE A ½ INCH CORNER RADIUS ON THE ALUMINUM BLANK.

BOLT TIGHTENING

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

SIGN FABRICATION

ALL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST EDITION OF THE UNITED STATES DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION "STANDARD HIGHWAY SIGNS". ANY SIGN FABRICATION DETAIL NOT REPRESENTED IN THAT PUBLICATION SHALL BE FABRICATED IN ACCORDANCE WITH THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS "SIGN FABRICATION MANUAL", "DESIGN GUIDE FOR SIGNING", "STANDARD SPECIFICATIONS ROADS AND BRIDGES", LATEST EDITIONS.

SIGN PUNCHING

SIGNS 60" OR MORE IN HEIGHT SHALL HAVE THREE RIBS. THE THIRD RIB SHALL BE MOUNTED ALONG THE HORIZONTAL CENTERLINE OF THE SIGN. THE THIRD SET OF HOLES SHALL BE PUNCHED IN LINE WITH THE OTHER SETS OF HOLES.

WHERE NOTED IN THE CONTRACT PLANS, SIGNS SHALL BE PUNCHED IN ACCORDANCE WITH THE DETAILS INCLUDED THEREIN.

REFLECTIVE SHEETING

ALL BACKGROUND MATERIAL FOR SIGNS IN THIS PROJECT SHALL BE REFLECTIVE SHEETING TYPE II. TYPE IIREFLECTIVE SHEETING SHALL BE REQUIRED IN THIS PROJECT ON SHIELDS FOR GUIDE SIGNS, SEE STANDARD DETAIL TE12-1. ALL SHEETING USED IN THIS PROJECT MUST HAVE SUCCESSFULLY COMPLETED 3 YEARS IN THE AASHTO/NTPEP OUTDOOR REFLECTIVE SHEETING PERFORMANCE TESTING PROGRAM.

DEMOUNTABLE COPY AND BORDER

DEMOUNTABLE COPY AND BORDERS SHALL NOT BE POSITIONED ON ANY SIGN FACE BY MEANS OF TAPE OR GLUE. ALL DEMOUNTABLE COPY AND BORDERS SHALL BE ATTACHED TO THE SIGN FACE USING APPROVED RIVETS ONLY. THE FOLLOWING TYPE OF DEMOUNTABLE COPY SHALL BE USED IN THIS PROJECT: COPY FABRICATED FROM 0.080 INCH THICK ALUMINUM SHEETS CONFORMING TO ASTM B 209 ALLOY 6061-T6 OR 5052-H38 MEETING THE REQUIREMENTS OF SECTION 661 AND COVERED WITH TYPE IIREFLECTIVE SHEETING CONFORMING TO SECTION 715.9.2.3 OF THE SPECIFICATIONS, LATEST EDITION.

POST REMOVAL ITEM 657018-001

POST REMOVAL FOR GROUND MOUNTED SIGNS ON EXISTING BREAKAWAY SUPPORTS SHALL INCLUDE THE CUTTING OFF OF THE EXISTING STUB(S) TO A MINIMUM OF 6 INCHES BELOW GROUND AND THE RESTORATION OF THE GROUND TO ITS ORIGINAL CONDITION.

RAMPSIDE SIGN SUPPORTS

ALL BREAKAWAYS AND U-CHANNELS ON THIS PROJECT SHALL BE GALVANIZED THEN PAINTED BLACK IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

IDENTIFICATION CODES AND DECALS

AN IDENTIFICATION CODE SHALL BE PLACED ON ALL SIGNS WITH SCREENED MESSAGES THAT ARE MANUFACTURED FOR THE DIVISION OF HIGHWAYS. THE CODE SHALL CONSIST OF THE LETTERS "WVDH" WITH AN ABBREVIATED FORM OF MONTH AND YEAR OF FABRICATION DIRECTLY BELOW. IT SHALL ALSO INCLUDE AN ABBREVIATED NAME OF THE SHEETING MANUFACTURER AND THE INK MANUFACTURER.

EXAMPLE: WVDH 3M
8/97 A

EACH LINE OF LETTERS OR NUMERALS SHALL BE ¼ INCH HIGH, NO GREATER THAN 1 INCH IN LENGTH AND OF THE SAME COLOR AS THAT BEING SCREENED. THE CODE SHALL BE PLACED ON THE LOWER RIGHT HAND EDGE OF THE SIGN. IF THE SIGN HAS BOTH BORDER AND MARGIN, THE CODE SHALL BE WITHIN THE BORDER, BUT MAY EXTEND INTO THE MARGIN AND/OR SIGN AREA. IF THE SIGN HAS BORDER ONLY, THE CODE SHALL BE WITHIN THE BORDER, BUT MAY EXTEND INTO THE SIGN AREA. A SIGN IDENTIFICATION DECAL SHALL BE APPLIED TO THE LOWER RIGHT HAND CORNER (FACING BACK OF SIGN) OF ALL FLAT SHEET SIGNS STATING THE MONTH AND YEAR OF INSTALLATION. EXTRUDED PANEL SIGNS AND FABRICATED FLAT SHEET SIGNS WITH DIRECT APPLIED COPY SHALL HAVE TWO SEPARATE DECALS APPLIED TO THE LOWER RIGHT HAND CORNER (FACING BACK OF SIGN), ONE STATING THE MONTH AND YEAR OF INSTALLATION AND THE OTHER STATING THE MANUFACTURER OF THE SHEETING. SEE CONTRACT PLANS FOR DECAL DETAILS.

HARDWARE

ON ALL FLAT SHEET SIGNS THE MOUNTING HARDWARE SHALL BE OF A VANDAL-RESISTANT DESIGN. THE FABRICATOR SHALL SUPPLY FIVE (5) PIECES OF MATERIAL TO THE DIVISION OF HIGHWAYS FOR TESTING PRIOR TO THE MANUFACTURE OF SIGNS. THE DIVISION OF HIGHWAYS ALSO RESERVES THE RIGHT TO RANDOM TEST THIS MATERIAL AFTER SHIPMENT TO THE PROJECT.

BOLT: 5/16" X 3" X 18. BOLT HEAD TO BE ROUND, DOME WITH ONE-WAY SLOT. BOLT SHALL HAVE A 2 INCH MINIMUM THREAD AND BE MANUFACTURED OF STEEL IN ACCORDANCE WITH ASTM A-307.

NUT: CONE SHAPED WITH HEX SHAPED DRIVE HEAD DESIGNED TO SHEAR OFF AT A PREDETERMINED TORQUE OF NO LESS THAN 4 FT/LBS AND NO GREATER THAN 8 FT/LBS WHEN USING MATERIALS, CONTROL, SOILS AND TESTING MP NO. 661.20.00 NUT SHALL BE MANUFACTURED OF STEEL IN ACCORDANCE WITH ASTM A-563, GRADE A.

COATING ON BOTH NUT AND BOLT SHALL BE IN ACCORDANCE WITH ASTM B-766, CLASS 8, TYPE 2 (CADMIUM DICHROMATE). THREAD FIT ON NUT AND BOLT SHALL ALLOW WORKERS TO ASSEMBLE HARDWARE WITH THEIR FINGERS BEFORE TIGHTENING.

BREAKAWAY SUPPORTS S4X7.7

DELETE DETAIL "A" ON STANDARD DETAIL TE1-3B. ON ALL S-SHAPES THE SAW-CUT SHALL BE CUT THE FULL LENGTH OF THE COLUMN. HINGE PLATES SHALL BE FABRICATED AS SHOWN ON THE "HINGE PLATE DETAIL FOR W-SHAPES" SHOWN ON STANDARD DETAILS TE1-3A AND TE1-3B.

EXTRUDED RIBS

EACH FLAT SHEET SIGN ATTACHED TO BREAKAWAY SUPPORTS SHALL HAVE TWO EXTRUDED RIBS PER STANDARD DETAIL TP-A REGARDLESS OF SIGN SIZE, SHAPE, OR NUMBER OF SIGNS IN THE SIGN ASSEMBLY.

POST CLIPS

ALL POST CLIPS SHALL BE PROVIDED WITH A STAINLESS STEEL BOLT WHICH SHALL CONFORM TO STAINLESS STEEL ALLOY 304, ASTM A 193, GRADE B8, OR ASTM A 194, GRADE 8. POST CLIP BOLTS SHALL CONFORM TO THE DIMENSIONS SHOWN ON STANDARD DETAIL TE7-1. HEX LOCK NUTS SHALL CONFORM TO STAINLESS STEEL ALLOY 303, ASTM A 193, GRADE B 8F, OR ASTM A 194, GRADE 8F. POST CLIP WASHERS SHALL CONFORM TO STAINLESS STEEL ALLOY 302, ASTM A276. WASHER DIMENSIONS ARE ¾" DIA. X .062" WITH .406" DIA. HOLE.

ITEM 661013-001 "PLASTIC DELINEATOR POST" (PER EACH)

"SOIL ANCHORED FLEXIBLE DELINEATOR POST" EACH

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER INSTALLATION FOR SOIL ANCHORED FLEXIBLE DELINEATOR POST, HARDWARE AND LABOR. THE CONSTRUCTION DETAILS, MATERIAL AND LABOR WILL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF STANDARD SPECIFICATIONS SECTION 657 AND 661 AND THE STANDARD DETAILS BOOK, VOLUME II-SIGNS, SIGNALS, LIGHTING, AND MARKING.

THE SOIL ANCHORED FLEXIBLE DELINEATOR POST SHALL BE A MODEL POST FROM THE LATEST APPROVED PRODUCTS LIGHTING (APL) FOR SUCH. THE SOIL ANCHORED FLEXIBLE DELINEATOR POST SHALL ESSENTIALLY HAVE FLAT FRONT AND BACK FACES AT THE REFLECTIVE PORTION OF THE POST. BOTH THE FRONT AND BACK SHALL ACCOMMODATE A 3" x 9" PIECE OF REBOUNDABLE TYPE VI, HIGH PERFORMANCE GRADE SHEETING. SOIL ANCHORED FLEXIBLE DELINEATOR POST SHALL BE 54" IN LENGTH. COLOR OF POST AND SHEETING SHALL BE WHITE WITH WHITE SHEETING OR YELLOW WITH FLUORESCENT YELLOW SHEETING AS NOTED OR SPECIFIED.

PAVEMENT MARKING GENERAL NOTES

ITEM 663001-004 "EDGE LINE", SHALL INCLUDE 4" SOLID WHITE AND YELLOW EDGE LINE ON MAINLINE FREEWAY/EXPRESSWAY AND RAMPS. IT SHALL ALSO INCLUDE 8" SOLID WHITE EDGE LINES, 4" DOTTED WHITE EDGE LINES AND 4" BROKEN WHITE EDGE LINES AT GORE AREAS.

ALL 4" SOLID WHITE OR SOLID YELLOW EDGE LINES, LANE LINES, CENTERLINES AND BARRIER LINES SHALL BE TYPE IIPAVEMENT MARKING MATERIAL.

EDGE LINES SHALL BE CENTERED 6" FROM EDGE OF RAMP PAVEMENT OR LANE AS APPLICABLE.

ALL MARKINGS SHALL BE CONTINUOUS AND CONSISTENT WITH EXISTING MARKINGS WHERE THEY JOIN.

NO MARKINGS SHALL BE PLACED ON EXPANSION JOINTS ON STRUCTURES OR ON LONGITUDINAL CONSTRUCTION JOINTS UNLESS SO DIRECTED BY THE ENGINEER.

ALSO INSTALL RAISED PAVEMENT MARKERS, TYPE P-2 AT GORE AREAS PER BOTTOM LEFT DETAIL OF TEM-1 AND AT 80 FEET CENTERS ALONG MAINLINE US 48 LANE LINES AND AT 40 FOOT CENTERS ALONG CHANNELIZING LINES.

REFLECTIVE U-CHANNEL POST INSERTS

MATERIAL SPECIFICATION

ULTRAVIOLET RESISTANT PVC (POLYVINYL CHLORIDE) WITH A MINIMUM OF 25% CARBON BLACK COMPOUND ADDED FOR UV RESISTANCE: MATERIAL SHALL BE RECYCLABLE. REFLECTIVITY TO BE ACHIEVED THROUGH THE APPLICATION OF TYPE VI RETROREFLECTIVE SHEETING.

U-CHANNEL POST INSERT COLOR SHALL MIRROR THE BACKGROUND COLOR OF THE TRAFFIC CONTROL SIGN IT IS MOUNTED DIRECTLY UNDER.

NORMAL INSERT SIZE SHALL BE 3" x 72", ALTHOUGH SHORTER LENGTHS MAY BE CONSIDERED FOR USE WITH DELINEATION.

MOUNTING SPECIFICATION

PAN HEAD, SELF-TAPPING, SQUARE DRIVE SCREWS, NUMBER 10 x 1" SHALL BE USED TO ATTACH THE INSERT TO U-CHANNEL POST.

SCREWS SHALL BE ELECTRODEPOSIT COATED FOR RUST RESISTANCE AND SHALL BE INSTALLED AT THE RATE OF ONE SCREW PER FOOT OF INSERT AS A MINIMUM.

INSTALL WHITE INSERT FOR POSTS FOR R4-7'S AND RED INSERTS FOR POSTS FOR R5-1'S AND R5-1a'S. BID SUCH INCIDENTAL TO THE APPROPRIATE U-CHANNEL POST BID ITEM.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SIGNING AND MARKING GENERAL NOTES

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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	
		UNIT	TOTAL
657006-001	S4x7.7, A-441 SUPPORT, GALVANIZED	LF	308
657006-005	W6x12, A-441 SUPPORT, GALVANIZED	LF	149
657006-010	W8x18, A-441 SUPPORT, GALVANIZED	LF	81
657006-015	W10x22, A-441 SUPPORT, GALVANIZED	LF	-----
657008-001	2.00 LB CHANNEL POST	LF	137
657010-001	3.00 LB CHANNEL POST	LF	1,916
657012-001	4.00 LB BACK TO BACK CHANNEL POST	LF	76
657014-001	6.00 LB BACK TO BACK CHANNEL POST	LF	-----
657017-001	CLASS B CONCRETE FOOTING, REINFORCED, ROADSIDE	CY	16.5
657018-001	POST REMOVAL	EA	-----

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	
		UNIT	TOTAL
661001-001	0.080 IN FLAT SHEET SIGN	SF	1331
661002-001	EXTRUDED PANEL SIGN	SF	770
661004-001	DELINEATOR, RELFEX REFLECTOR, SINGLE, WHITE	EA	7
661004-001	DELINEATOR, RELFEX REFLECTOR, SINGLE, AMBER	EA	
661006-001	DELINEATOR, NINE PER UNIT, AMBER	UN	16
661007-001	DELINEATOR, THREE PER UNIT, AMBER	UN	8
661008-001	DELINEATOR BRACKET, TYPE A	EA	2
661011-001	INSTALLATION OF REUSABLE SIGN	EA	
661013-001	PLASTIC DELINEATOR POST, WHITE	EA	133
661013-001	PLASTIC DELINEATOR POST, YELLOW	EA	
663001-004	EDGE LINE, TYPE II, WHITE	LF	33,230
663001-004	EDGE LINE, TYPE II, YELLOW	LF	23,150
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	4,785
663003-005	BARRIER LINE, TYPE II	LF	6,710
663004-004	CHANNELIZING LINE, TYPE II	LF	2,100
663005-010	STOP LINE, TYPE V (24")	LF	293
663006-010	CROSSWALK LINE, TYPE V (6")	LF	336
663007-010	STRIPE, TYPE V, WHITE (24")	LF	735
663007-010	STRIPE, TYPE V, WHITE (12")	LF	220
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	3,137
663010-010	LANE ARROW, TYPE V	EA	27
663011-010	LANE LETTER, TYPE V	EA	36
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	226

(69) - DENOTES DOUBLE DELINEATOR

S-3

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNING AND MARKING SUMMARY OF QUANTITIES

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WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	173	670

SIGNS / SUPPORTS & FOUNDATIONS

Assembly Number	Sign Number	Proposed Location	Existing Location	Layout Sht. No.	Fabrication Detail Sht. No.	Sign Disposition	Signs: Length	Signs: Height	Flat Sheet 0.080 SF.	Flat Sheet 0.080 O/Ver/W SF.	Extruded Panel SF.	Install Relocated Sign	U-Channel 2.00 #/FT	U-Channel 3.00 #/FT	U-Channel 4.00 BB #/FT	U-Channel 6.00 BB #/FT	Post Removal	Reuse Ex. Posts	A-572, Grade 50 S4x7.7 LF.	A-572, Grade 50 W6x12 LF.	A-572, Grade 50 W8x18 LF.	A-572, Grade 50 W10x22 LF.	Footer Dia FT	Footer Depth FT	Class B Conc. Reinf. CY.
1	AE3-2	1703+00		S-9	S-22	NEW	13.0'	10.0'			130.0'										3.5		2.5	5.5	1.0
																					16.5		2.5	5.5	1.0
2	AE3-2	1702+50		S-9	S-22	NEW	9.5'	3.5'			33.25'									11.5			2.5	4.0	0.7
																				14.0			2.5	4.0	0.7
3	D11-1	1706+00		S-10		NEW	30"	24"	5.0					14.5											
	D11-1a			S-10	S-24	NEW	30"	15"	3.125					16.0											
4	AE3-2	1710+00		S-10	S-22	NEW	8.0'	5.0'			40.0									15.5			2.5	4.0	0.7
																				13.5			2.5	4.0	0.7
5	R2-1	1713+50		S-10		NEW	48"	60"	20.0					15.5											
														16.0											
6	M3-4	1718+00		S-10		NEW	30"	15"	3.125					15.5											
	M1-4			S-10		NEW	36"	36"	9.0					16.0											
7	D11-1	1720+00		S-14		NEW	30"	24"	5.0					14.5											
	D11-1b			S-14	S-23	NEW	30"	15"	3.125					16.0											
8	AE3-2	1723+00		S-14	S-23	NEW	16.5'	9.5'			156.75										13.0		2.5	5.5	1.0
																					16.0		2.5	5.5	1.0
9	E5-1A	1733+88		S-16		NEW	72"	60"			30.0								15.0				1.5	4.0	0.3
																			14.5				1.5	4.0	0.3
10	W4-1R	1735+00		S-16		NEW	48"	48"	16.0					15.5											
														16.0											
11	W4-1R	1751+00		S-19		NEW	48"	48"	16.0					15.5											
														16.0											
12	AE3-2	1760+80		S-19	S-24	NEW	19.0'	10.0'			190.0										20.0		2.5	5.5	1.0
																					29.0		2.5	5.5	1.0
13	E5-1A	1762+50		S-19		NEW	72"	60"			30.0								15.0				1.5	4.0	0.3
																			14.5				1.5	4.0	0.3
14	M3-2	1770+00		S-20		NEW	30"	15"	3.125					14.5											
	M1-6			S-20		NEW	36"	36"	9.0					16.0											
15	D11-1	1772+50		S-20		NEW	30"	24"	5.0					14.5											
	D11-1a			S-20	S-24	NEW	30"	15"	3.125																
16	R2-1	1776+00		S-20		NEW	48"	60"	20.0					14.5											
														16.0											
17	D11-1	1772+50		S-20		NEW	30"	24"	5.0					14.5											
	D11-1b			S-20	S-23	NEW	30"	15"	3.125																
18	AE3-2	1769+00		S-20	S-23	NEW	16.5'	9.5'			156.75										17.0		2.5	5.5	1.0
																					20.0		2.5	5.5	1.0
19	AE3-2	1779+00		S-21	S-24	NEW	11.0'	5.0'			55.0									15.5			2.5	4.0	0.7
																				17.5			2.5	4.0	0.7
20	W2-2	1782+00		S-21		NEW	48"	48"	16.0					14.5											
														15.0											
21	R2-1	1785+00		S-21		NEW	48"	60"	20.0					14.5											
														16.0											
				SUB-TOTAL					116.375		461.75			213.0					59.0	33.0	81.0				6.6

Assembly Number	Sign Number	Proposed Location	Existing Location	Layout Sht. No.	Fabrication Detail Sht. No.	Sign Disposition	Signs: Length	Signs: Height	Flat Sheet 0.080 SF.	Flat Sheet 0.080 O/Ver/W SF.	Extruded Panel SF.	Install Relocated Sign	U-Channel 2.00 #/FT	U-Channel 3.00 #/FT	U-Channel 4.00 BB #/FT	U-Channel 6.00 BB #/FT	Post Removal	Reuse Ex. Posts	A-572, Grade 50 S4x7.7 LF.	A-572, Grade 50 W6x12 LF.	A-572, Grade 50 W8x18 LF.	A-572, Grade 50 W10x22 LF.	Footer Dia FT	Footer Depth FT	Class B Conc. Reinf. CY.
22	W13-2	102+00		S-14		NEW	48"	60"	20.0					15.5											
														16.0											
23	W13-3	107+50		S-14		NEW	48"	60"	20.0					15.5											
														16.0											
24	AE3-2	116+00		S-16	S-23	NEW	8.5	2.0			17.0								11.0				1.5	4.0	0.3
	R5-1a			S-16		NEW	36"	24"	6.0										13.0				1.5	4.0	0.3
25	M4-5	119+00		S-16		NEW	24"	12"	2.00					16.0											
	M1-4G			S-16		NEW	30"	24"	5.00					16.5											
	M1-6			S-16		NEW	24"	24"	4.00																
	M6-1R			S-16		NEW	21"	15"	2.19																
26	R1-1	120+00		S-16		NEW	36"	36"	9.0					15.5											
	R6-1L			S-16		NEW	36"	12"	3.0					16.0											
	R5-1			S-16		NEW	36"	36"	9.0																
	R6-1R			S-16		NEW	36"	12"	3.0																
27	R1-1	120+00		S-16		NEW	36"	36"	9.0					15.5											
	R6-1L			S-16		NEW	36"	12"	3.0					16.0											
	R5-1			S-16		NEW	36"	36"	9.0																
	R6-1R			S-16		NEW	36"	12"	3.0																
28	R5-1a	116+00		S-16		NEW	36"	24"	6.0					14.5											
29	D11-1	201+00		S-16		NEW	30"	24"	5.0					14.5											
	M6-3			S-16		NEW	28"	21"	4.083																
30	W13-2	324+00		S-20		NEW	48"	60"	20.0					14.5											
														16.0											
31	M4-5	305+00		S-19		NEW	24"	12"	2.00					16.0											
	M1-4G			S-19		NEW	30"	24"	5.00					16.5											
	M1-6			S-19		NEW	24"	24"	4.00																
	M6-1R			S-19		NEW	21"	15"	2.19																
32	AE3-2	302+50		S-16	S-23	NEW	8.5'	2.0'			17.0								11.0				1.5	4.0	0.3
	R5-1a			S-16		NEW	36"	24"	6.0										13.0				1.5	4.0	0.3
33	R5-1a	302+50		S-16		NEW	36"	24"	6.0					14.5											
				SUB-TOTAL					121.463		34.0			202.0					48.0						1.2
				SUB-TOTAL COLUMN 1					116.375		461.75			213.0					59.0	33.0	81.0				6.6
				SUB-TOTAL THIS SHEET					237.838		495.75			415.0					107.0	33.0	81.0				7.8

SIGN DISPOSITION

STR - SIGN TO REMAIN IN PLACE
R&D - REMOVE AND DISCARD
R&S - REMOVE AND SAVE (REUSE)
NEW - NEW SIGN; NO EXISTING

- NOT IN CONTRACT

S-4

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNING ESTIMATE OF QUANTITIES

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	174	670

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT.NO.	FABRICATION DETAIL SHT.NO.	SIGN DISPOSITION	SIGNS LENGTH	SIGNS HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REUSED SIGN	U-CHANNEL 2.00 #/FT	U-CHANNEL 3.00 #/FT	U-CHANNEL 4.00 BB #/FT	U-CHANNEL 6.00 BB #/FT	POST REMOVAL	REUSE EX.SPOTS	A-572,GRADE 50 S4x7.7 LF.	A-572,GRADE 50 W6x12 LF.	A-572,GRADE 50 W8x18 LF.	A-572,GRADE 50 W10x22 LF.	FOOTER DIA FT	FOOTER DEPTH FT	CLASS B CONC. REINF. CY.
34	R1-1	300+50		S-16		NEW	36"	36"	9.0					15.5											
	R6-1L			S-16		NEW	36"	12"	3.0					16.0											
	R5-1			S-16		NEW	36"	36"	9.0																
	R6-1R			S-16		NEW	36"	12"	3.0																
35	R1-1	300+50		S-16		NEW	36"	36"	9.0					15.5											
	R6-1L			S-16		NEW	36"	12"	3.0					16.0											
	R5-1			S-16		NEW	36"	36"	9.0																
	R6-1R			S-16		NEW	36"	12"	3.0																
36	M3-4	423+25		S-16		NEW	30"	15"	3.125					15.5											
	M1-4			S-16		NEW	36"	36"	9.0					16.0											
	M6-1			S-16		NEW	28"	21"	4.083																
37	D11-1	422+65		S-16		NEW	30"	24"	5.0					14.5											
	M6-3			S-16		NEW	28"	21"	4.083																
38	R2-1	711+00		S-11		NEW	36"	48"	12.0					15.5											
														16.0											
39	M4-5	713+00		S-11		NEW	30"	15"	3.125					15.5											
	M1-6			S-11		NEW	36"	36"	9.0					16.0											
	M5-1R			S-11		NEW	28"	36"	4.083																
40	AE3-2	715+90		S-11		NEW	11.5'	5.0'			57.5								15.5				1.5	4.0	0.3
																			16.0				1.5	4.0	0.3
41	R2-1	713+00		S-11		NEW	36"	48"	12.0					15.5											
														16.0											
42	M3-3	717+50		S-12		NEW	30"	15"	3.125										15.0				1.5	4.0	0.3
	M1-4G			S-12		NEW	45"	36"	11.25																
	M1-6			S-12		NEW	36"	36"	9.0																
43	M4-5	718+00		S-12		NEW	30"	15"	3.125					15.5											
	M1-6			S-12		NEW	36"	36"	9.0					16.0											
	M6-1R			S-12		NEW	28"	21"	4.083																
44	M4-5	721+00		S-12		NEW	30"	15"	3.125					15.5											
	M1-6			S-12		NEW	36"	36"	9.0					16.0											
	M6-1L			S-12		NEW	28"	21"	4.083																
45	M3-1	721+50		S-12		NEW	30"	15"	3.125										15.0				1.5	4.0	0.3
	M1-4			S-12		NEW	45"	36"	11.25																
	M1-6			S-12		NEW	36"	36"	9.0																
46	AE3-2	722+50		S-12	S-22	NEW	10'	5'			50.0								15.5				1.5	4.0	0.3
																			16.0				1.5	4.0	0.3
47	M4-5	724+00		S-12		NEW	30"	15"	3.125					15.5											
	M1-6			S-12		NEW	36"	36"	9.0					16.0											
	M5-1L			S-12		NEW	28"	21"	4.083																
						SUB-TOTAL			208.873		107.5			298.0					92.0						1.8

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT.NO.	FABRICATION DETAIL SHT.NO.	SIGN DISPOSITION	SIGNS LENGTH	SIGNS HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REUSED SIGN	U-CHANNEL 2.00 #/FT	U-CHANNEL 3.00 #/FT	U-CHANNEL 4.00 BB #/FT	U-CHANNEL 6.00 BB #/FT	POST REMOVAL	REUSE EX.SPOTS	A-572,GRADE 50 S4x7.7 LF.	A-572,GRADE 50 W6x12 LF.	A-572,GRADE 50 W8x18 LF.	A-572,GRADE 50 W10x22 LF.	FOOTER DIA FT	FOOTER DEPTH FT	CLASS B CONC. REINF. CY.
48	R2-1	724+00		S-12		NEW	36"	48"	12.0					14.5											
														16.0											
49	W3-3	730+00		S-10		NEW	36"	36"	9.0					15.5											
50	R4-7	800+65		S-12		NEW	36"	48"	12.0					15.0											
	XR-9			S-12		NEW	18"	18"						15.5											
51	R5-1	801+00		S-12		NEW	36"	36"	9.0											19.0			2.5	4.0	0.7
	M3-3			S-12		NEW	30"	15"	3.125											20.0			2.5	4.0	0.7
	M1-4G			S-12		NEW	45"	36"	11.25																
	M1-6			S-12		NEW	36"	36"	9.0																
	M6-1L			S-12		NEW	28"	21"	4.083																
	M3-1			S-12		NEW	30"	15"	3.125																
	M1-4G			S-12		NEW	45"	36"	11.25																
	M1-6			S-12		NEW	36"	36"	9.0																
	M6-1R			S-12		NEW	28"	21"	4.083																
52	M4-5	802+50		S-12		NEW	30"	15"	3.125					15.5											
	M1-6			S-12		NEW	36"	36"	9.0					16.0											
	M6-3			S-12		NEW	28"	21"	4.083																
	R5-1			S-12		NEW	36"	36"	9.0																
53	AE3-2	803+00		S-12	S-22	NEW	10.5'	5.0'			52.5								15.0				1.5	4.0	0.3
	R5-1a			S-12		NEW	3.0'	2.0'	6.0'										16.0				1.5	4.0	0.3
54	R2-1	805+50		S-15		NEW	36"	48"	12.0					15.5											
	R5-1a			S-15		NEW	36"	24"	6.0					16.0											
55	R5-1	807+00		S-15		NEW	36"	36"	6.0					14.5											
56	R6-1L	807+40		S-15		NEW	48"	18"	4.0				12.5												
													13.0												
57	M3-3	807+50		S-15		NEW	30"	15"	3.125											19.0			2.5	4.0	0.7
	M1-4G			S-15		NEW	45"	36"	11.25											20.0			2.5	4.0	0.7
	M1-6			S-15		NEW	36"	36"	9.0																
	M5-1L			S-15		NEW	28"	21"	4.083																
	M3-1			S-15		NEW	30"	15"	3.125																
	M1-4G			S-15		NEW	45"	36"	11.25																
	M1-6			S-15		NEW	36"	36"	9.0																
	M5-1R			S-15		NEW	28"	21"	4.083																
						SUB-TOTAL			216.04		52.5		25.5	154.0					31.0	78					3.4
						SUB-TOTAL COLUMN 1			208.873		107.5		0	298.0					92.0	0					1.8
						SUB-TOTAL THIS SHEET			414.913		160.0		25.5	452.0					123.0	78					5.2

SIGN DISPOSITION

STR - SIGN TO REMAIN IN PLACE
R&D - REMOVE AND DISCARD
R&S - REMOVE AND SAVE (REUSE)
NEW - NEW SIGN; NO EXISTING

S-5

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNING ESTIMATE OF QUANTITIES

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	175	670

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT. NO.	FABRICATION DETAIL SHT. NO.	SIGN DISPOSITION	SIGNS: LENGTH	HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REMOVED SIGN	SUPPORTS & FOUNDATIONS: U-CHANNEL 2.00 #/FT	U-CHANNEL 3.00 #/FT	U-CHANNEL 4.00 BB #/FT	U-CHANNEL 6.00 BB #/FT	POST REMOVAL	REUSE EX. POSTS	A-572, GRADE 50 S4x7.7 LF.	W6x12 LF.	W8x18 LF.	W10x22 LF.	FOOTER DIA FT	FOOTER DEPTH FT	CLASS B CONC. REINF. CY.
58	R4-7	807+45		S-15		NEW	24"	30"	5.0					14.5											
	XR-3			S-15		NEW	15"	6"																	
59	R1-1	808+50		S-15		NEW	36"	36"	9.0					14.5											
60	R4-7	808+85		S-15		NEW	24"	30"	5.0					14.5											
	XR-3			S-15		NEW	15"	6"	DON'T BID																
61	R5-1	809+00		S-15		NEW	36"	36"	9.0					14.5											
62	R5-1a	810+00		S-15		NEW	36"	24"	6.0					15.5											
	M2-1			S-15		NEW	28"	21"	4.08					16.0											
	M1-4G			S-15		NEW	45"	36"	11.25																
	M1-6			S-15		NEW	36"	36"	9.0																
	M2-1			S-15		NEW	28"	21"	4.08																
63	R5-1a	811+00		S-15		NEW	36"	24"	6.0					14.5											
64	R2-1	812+00		S-15		NEW	36"	48"	12.0					14.5											
														15.0											
65	R5-1	812+50		S-15		NEW	36"	36"	9.0					14.5											
66	R4-7	812+95		S-15		NEW	24"	30"	5.0					14.5											
	XR-3			S-15		NEW	15"	6"	DON'T BID																
67	R6-1L	813+00		S-15		NEW	48"	18"	6.0				12.5												
													13.0												
68	R1-1	814+00		S-15		NEW	36"	36"	9.0					14.5											
69	R4-7	814+25		S-15		NEW	24"	30"	5.0					14.5											
	XR-3			S-15		NEW	15"	6"	DON'T BID																
70	R5-1	814+35		S-15		NEW	36"	36"	9.0					14.5											
71	R5-1a	816+00		S-15		NEW	36"	24"	6.0					14.5											
72	W2-2	816+50		S-15		NEW	36"	36"	9.0					14.5											
73	R5-1a	821+50		S-17		NEW	36"	24"	6.0					14.5											
74	R2-1	823+50		S-17		NEW	36"	48"	12.0					15.0											
														15.5											
75	R5-1	823+50		S-17		NEW	36"	36"	9.0					15.0											
76	R4-7	823+50		S-17		NEW	24"	30"	5.0					15.0											
	XR-3			S-17		NEW	15"	6"	DON'T BID																
				SUB-TOTAL					170.41				25.5	310.0					0						0

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT. NO.	FABRICATION DETAIL SHT. NO.	SIGN DISPOSITION	SIGNS: LENGTH	HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REMOVED SIGN	SUPPORTS & FOUNDATIONS: U-CHANNEL 2.00 #/FT	U-CHANNEL 3.00 #/FT	U-CHANNEL 4.00 BB #/FT	U-CHANNEL 6.00 BB #/FT	POST REMOVAL	REUSE EX. POSTS	A-572, GRADE 50 S4x7.7 LF.	W6x12 LF.	W8x18 LF.	W10x22 LF.	FOOTER DIA FT	FOOTER DEPTH FT	CLASS B CONC. REINF. CY.
77	R1-1	823+75		S-17		NEW	36"	36"	9.0					14.5											
78	R4-7	824+30		S-17		NEW	24"	30"	5.0					15.0											
	XR-3			S-17		NEW	15"	6"	DON'T BID																
79	R6-1L	824+50		S-17		NEW	48"	18"	6.0				12.5												
													13.0												
80	R5-1	824+50		S-17		NEW	36"	36"	9.0					14.0											
81	R2-1	826+00		S-17		NEW	36"	48"	6.0					15.0											
														16.0											
82	R5-1a	826+50		S-17		NEW	36"	24"	6.0					14.5											
83	M4-5	828+00		S-17		NEW	30"	15"	3.125					15.5											
	M1-6			S-17		NEW	36"	36"	9.0					16.0											
	M5-1L			S-17		NEW	28"	21"	4.083																
84	AE3-2	831+00		S-17	S-23	NEW	11.5'	5.0'			57.5								15.0				1.5	4.0	0.3
	R5-1a			S-17		NEW	36"	24"	6.0										17.0				1.5	4.0	0.3
85	W2-2	831+70		S-17		NEW	36"	36"	9.0					14.5											
86	W1-1L	833+00		S-18		NEW	36"	36"	9.0					15.5											
	W13-1			S-18		NEW	24"	24"	4.0					16.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
87	W1-1L	833+00		S-18		NEW	36"	36"	9.0					15.5											
	W13-1			S-18		NEW	24"	24"	4.0					16.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
88	R2-1	833+00		S-18		NEW	36"	48"	12.0					14.5											
														16.0											
89	M4-5	834+50		S-17		NEW	30"	15"	3.125					15.0											
	M1-6			S-17		NEW	36"	36"	9.0					16.0											
	M6-1R			S-17		NEW	28"	21"	4.08																
						SUB-TOTAL			126.413		57.5		25.5	259.5					32.0						0.6
						SUB-TOTAL COLUMN 1			170.41		0		25.5	310.0					0						0
						SUB-TOTAL THIS SHEET			296.823		57.5		51.0	569.5					32.0						0.6

SIGN DISPOSITION

STR - SIGN TO REMAIN IN PLACE
R&D - REMOVE AND DISCARD
R&S - REMOVE AND SAVE (REUSE)
NEW - NEW SIGN; NO EXISTING

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Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNING ESTIMATE OF QUANTITIES

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 D6	APD 0484 (251)C	2003	HARDY	176	670

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT.NO.	FABRICATION DETAIL SHT.NO.	SIGN DISPOSITION	SIGNS: LENGTH	HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REUSED SIGN	SUPPORTS & FOUNDATIONS: U-CHANNEL 2.00 */FT	3.00 */FT	4.00 BB */FT	6.00 BB */FT	POST REMOVAL	REUSE EXISTS	A-572, GRADE 50 S4x7.7 LF.	W6x12 LF.	W8x18 LF.	W10x22 LF.	FOOTER DIA FT	DEPTH FT	CLASS B CONC. REINF. CY.
90	M4-5	834+50		S-18		NEW	30"	15"	3.125						18.0										
	M1-4G			S-18		NEW	45"	36"	11.25						17.0										
	M1-6			S-18		NEW	36"	36"	9.0																
91	R4-7	835+08		S-18		NEW	36"	48"	12.0					15.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID					15.5											
92	R5-1	835+20		S-18		NEW	36"	36"	9.0					14.5											
93	R11-2	2284+80		S-18		NEW	48"	30"	10.0					14.5											
	XR-9			S-18		NEW	18"	18"	DON'T BID					14.5											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
94	R11-2	2284+80		S-18		NEW	48"	30"	10.0					14.5											
	XR-9			S-18		NEW	18"	18"	DON'T BID					14.5											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
95	R4-7	2285+40		S-18		NEW	36"	48"	12.0					15.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID					15.5											
96	W1-6	2285+75		S-18		NEW	36"	72"	18.0					15.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID					15.5											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
97	R4-7	2286+60		S-18		NEW	36"	48"	12.0					15.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID					15.5											
98	R5-1	2286+90		S-18		NEW	36"	36"	9.0						20.0										
	M4-5			S-18		NEW	30"	15"	3.125						21.0										
	M1-4G			S-18		NEW	45"	36"	11.25																
	M1-6			S-18		NEW	36"	36"	9.0																
	M6-1R			S-18		NEW	28"	21"	4.083																
99	R2-1	2288+00		S-18		NEW	36"	48"	12.0					14.5											
														16.0											
100	R5-1a	2288+50		S-18		NEW	36"	24"	6.0					15.5											
	W1-1R			S-18		NEW	36"	36"	9.0					16.0											
	W13-1			S-18		NEW	24"	24"	4.0																
	XR-9			S-18		NEW	18"	18"	DON'T BID																
101	W1-1R	2288+50		S-18		NEW	36"	36"	9.0					15.5											
	W13-1			S-18		NEW	24"	24"	4.0					16.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID																
102	R4-7	2290+55		S-18		NEW	36"	48"	12.0					15.0											
	XR-9			S-18		NEW	18"	18"	DON'T BID					15.5											
103	M3-4	2290+00		S-18		NEW	30"	15"	3.125										15.0				1.5	4.0	0.3
	M1-4			S-18		NEW	36"	36"	9.0										15.0				1.5	4.0	0.3
	M6-3			S-18		NEW	28"	21"	4.083																
	M3-2			S-18		NEW	30"	15"	3.125																
	M1-6			S-18		NEW	36"	36"	9.0																
	M5-1R			S-18		NEW	28"	21"	4.083																
104	M4-5	2291+00		S-18		NEW	30"	15"	3.125										17.0				1.5	4.0	0.3
	M1-4G			S-18		NEW	45"	36"	11.25																
	M1-6			S-18		NEW	36"	36"	9.0																
	M5-1R			S-18		NEW	28"	21"	4.083																
105	M3-4	2293+00		S-18		NEW	30"	15"	3.125										15.0				1.5	4.0	0.3
	M1-4			S-18		NEW	36"	36"	9.0										15.0				1.5	4.0	0.3
	M6-3			S-18		NEW	28"	21"	4.083																
	M3-2			S-18		NEW	30"	15"	3.125																
	M1-6			S-18		NEW	36"	36"	9.0																
	M6-1R			S-18		NEW	28"	21"	4.083																
				SUB-TOTAL					291.123					318.5	76.0				77.0						1.5

ASSEMBLY NUMBER	SIGN NUMBER	PROPOSED LOCATION	EXISTING LOCATION	LAYOUT SHT.NO.	FABRICATION DETAIL SHT.NO.	SIGN DISPOSITION	SIGNS: LENGTH	HEIGHT	FLAT SHEET 0.080 SF.	FLAT SHEET 0.080 OVERLAY SF.	EXTRUDED PANEL SF.	INSTALL REUSED SIGN	SUPPORTS & FOUNDATIONS: U-CHANNEL 2.00 */FT	3.00 */FT	4.00 BB */FT	6.00 BB */FT	POST REMOVAL	REUSE EXISTS	A-572, GRADE 50 S4x7.7 LF.	W6x12 LF.	W8x18 LF.	W10x22 LF.	FOOTER DIA FT	DEPTH FT	CLASS B CONC. REINF. CY.
106	M3-4	2295+00		S-18		NEW	30"	15"	3.125					15.0											
	M1-4			S-18		NEW	36"	36"	9.0					15.5											
	M5-1L			S-18		NEW	28"	21"	4.08																
107	AE3-2	2297+00		S-18	S-24	NEW	7'	8'			56.0									18.0			2.5	4.0	0.7
																				20.0			2.5	4.0	0.7
108	R2-1	2297+00		S-18		NEW	36"	48"	12.0					14.5											
														16.0											
109	R6-1L	802+50		S-12		NEW	48"	18"	6.0				12.5												
													13.0												
110	R4-7	802+60		S-12		NEW	24"	30"	5.0					15.0											
	XR-3			S-12		NEW	15"	6"	DON'T BID																
111	R1-1	803+75		S-12		NEW	36"	36"	9.0					14.5											
112	R4-7	804+00		S-12		NEW	24"	30"	5.0					15.0											
	XR-3			S-12		NEW	15"	6"	DON'T BID																
113	R5-1	804+00		S-12		NEW	36"	36"	9.0					14.5											
114	R5-1a	805+50		S-15		NEW	36"	24"	6.0					14.0											
115	R4-7	2297+20		S-16		NEW	36"	48"	12.0					15.0											
	XR-9					NEW	18"	18"						15.5											
				SUB-TOTAL					80.205		56.0		25.5	164.5						38.0					1.4
				SUB-TOTAL COLUMN 1					291.123		0		0	318.5	76.0				77.0						1.5
				SUB-TOTAL THIS SHEET					371.328		56.0		25.5	483.0	76.0				77.0	38.0					2.9
				SUB-TOTAL SHEET S-4					237.838		495.75		0	415.0					107.0	33.0	81.0				7.8
				SUB-TOTAL SHEET S-5					424.913		160.0		25.5	452.0					92.0	78.0					5.2
				SUB-TOTAL SHEET S-6					296.823		57.5		51.0	565.5					32.0	0					0.6
				TOTALS					1330.902		769.25		102.0	1915.5	76.0				308.0	149.0	81.0				16.5

SIGN DISPOSITION

STR - SIGN TO REMAIN IN PLACE
R&D - REMOVE AND DISCARD
R&S - REMOVE AND SAVE (REUSE)
NEW - NEW SIGN; NO EXISTING

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Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SIGNING ESTIMATE OF QUANTITIES

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.40 06	APD 0484 (251)C	2003	HARDY	177	670

DELINEATORS

LOCATION	DEGREE, RADIUS, TANGENT, OR SPACING	QUANTITY						TYPE OF SUPPORT			
		SINGLE WHITE XR-1	SINGLE AMBER XR-1	PLASTIC WHITE 661013-001	PLASTIC YELLOW 661013-001	9-AMBER (XR-9)	3-AMBER (XR-3)	U-CHANNEL	TYPE "A" BRACKET	TYPE "B" BRACKET	TYPE "C" MODIFIED
MAINLINE US 48											
1731+00 TO 1769+00	IN I/C			76							
1769+00 TO 1782+80	TANGENT	4'		6				2	2		
								3			
1782+80 TO 1787+00	2.85°	3'		3							
RAMP 1											
110+00 TO 120+50				10							
RAMP 4											
413+00 TO 423+00				10							
RAMP 2											
201+00 TO 211+00				9							
RAMP 3											
300+50 TO 320+00				19							
TOTALS		7		133				5	2		

(X) - DENOTES THE NUMBER OF DOUBLE WHITE INSTALLATIONS
5 U-CHANNELS X 7 L.F. (TYP.) - 35 L.F. OF 2.00 LB
CHANNEL POST (ITEM 657008-00)

DELINEATORS

LOCATION	DEGREE, RADIUS, TANGENT, OR SPACING	QUANTITY						TYPE OF SUPPORT			
		SINGLE WHITE XR-1	SINGLE AMBER XR-1	PLASTIC WHITE 661013-001	PLASTIC AMBER 661013-001	9-AMBER (XR-9)	3-AMBER (XR-3)	U-CHANNEL	TYPE "A" BRACKET	TYPE "B" BRACKET	TYPE "C" BRACKET
TOTAL											

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SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DELINEATOR ESTIMATE OF QUANTITIES

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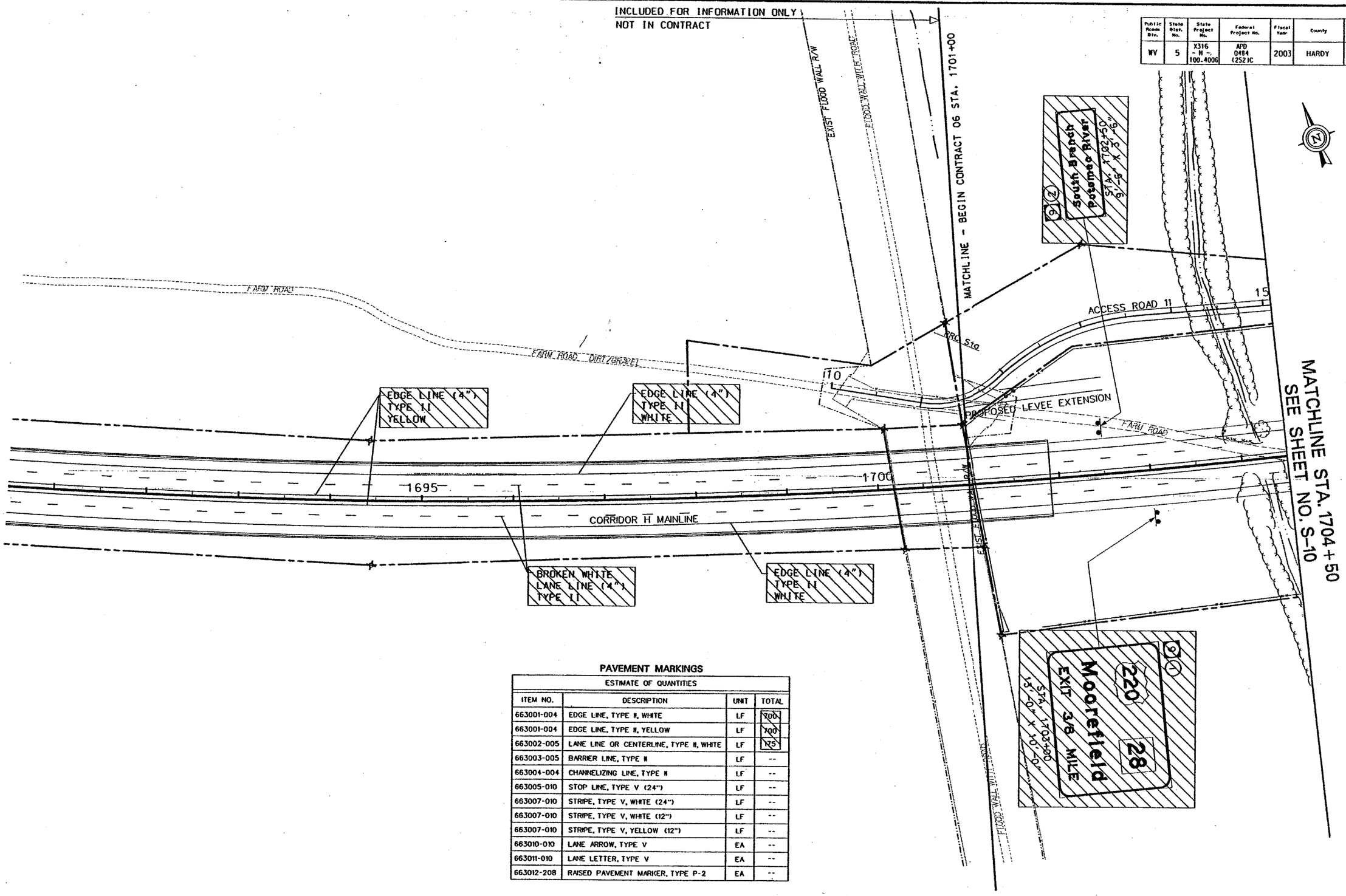
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	178	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	700
663001-004	EDGE LINE, TYPE II, YELLOW	LF	700
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	175
663003-005	BARRIER LINE, TYPE II	LF	--
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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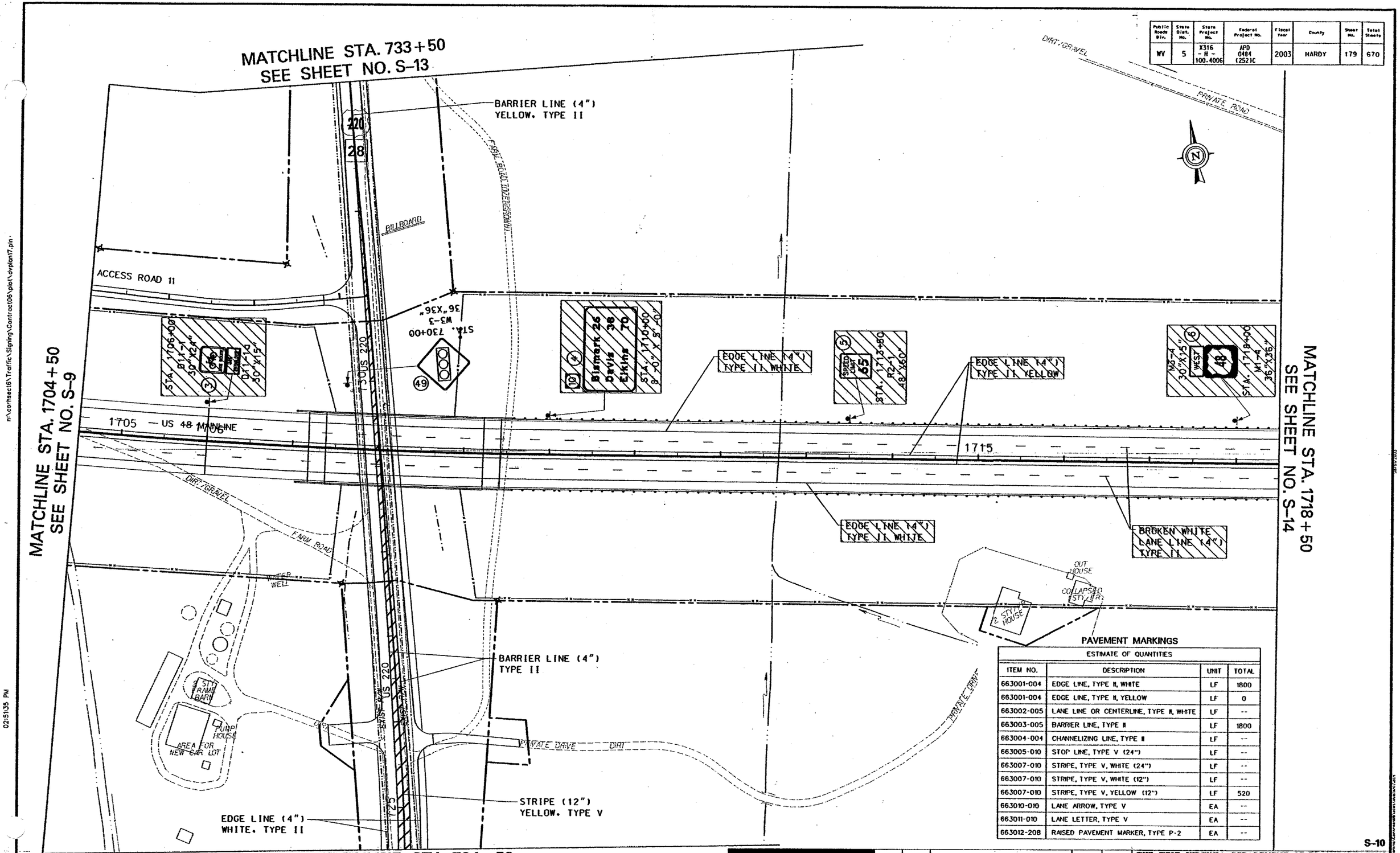
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	179	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	1800
663001-004	EDGE LINE, TYPE II, YELLOW	LF	0
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	--
663003-005	BARRIER LINE, TYPE II	LF	1800
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	520
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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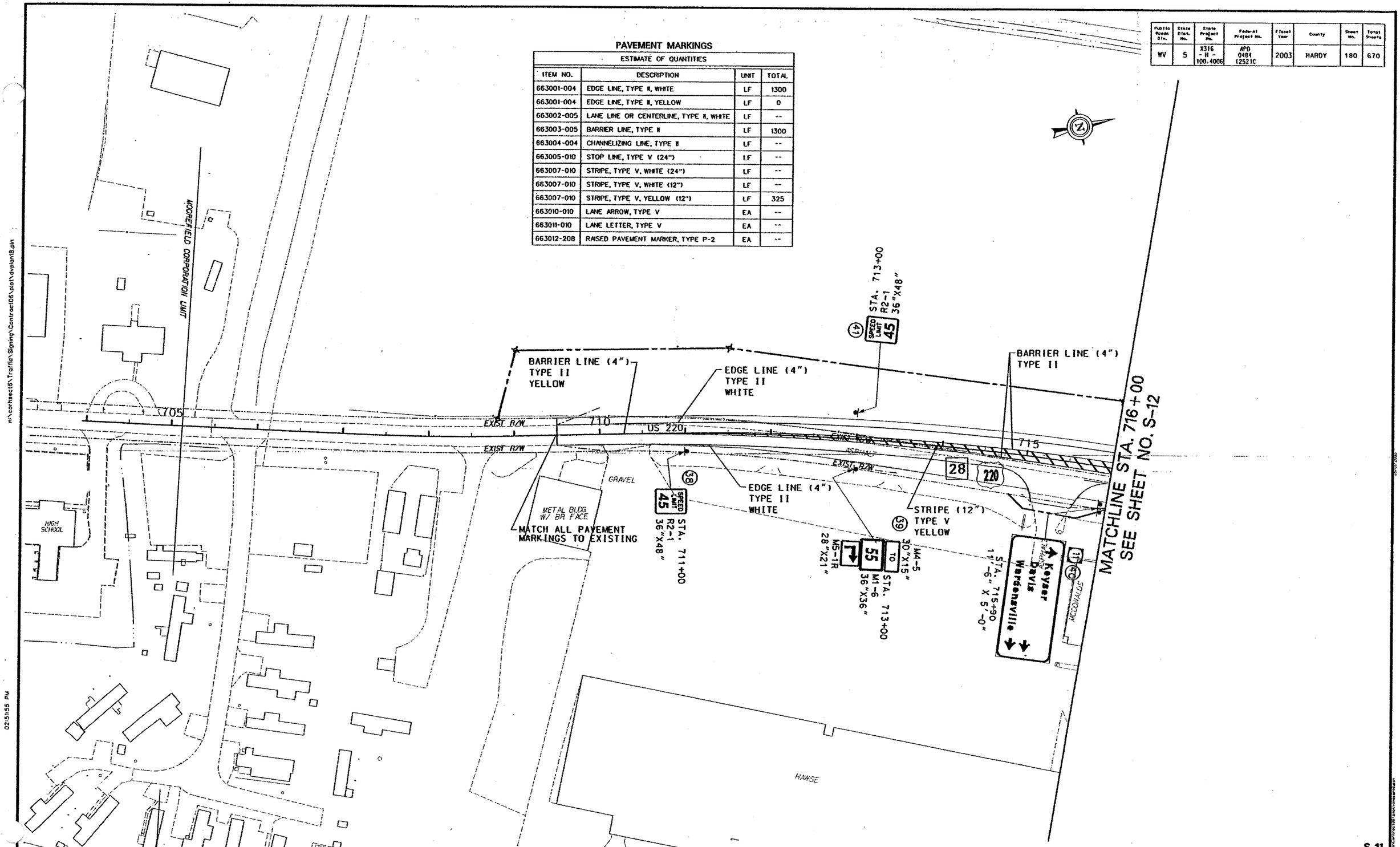
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (2521C	2003	HARDY	180	670

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	1300
663001-004	EDGE LINE, TYPE II, YELLOW	LF	0
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	--
663003-005	BARRIER LINE, TYPE II	LF	1300
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	325
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--



Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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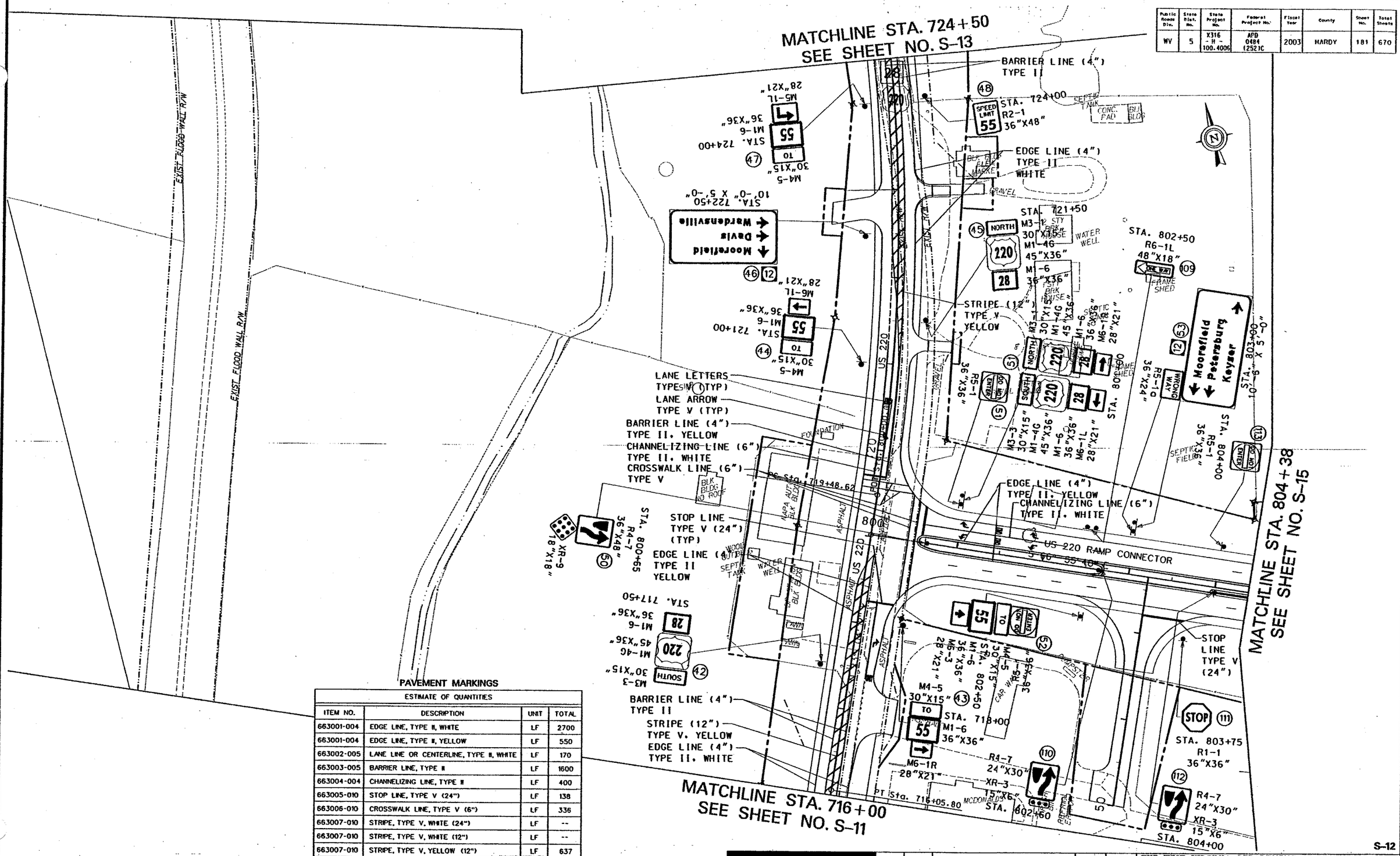
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	181	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	2700
663001-004	EDGE LINE, TYPE II, YELLOW	LF	550
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	170
663003-005	BARRIER LINE, TYPE II	LF	1600
663004-004	CHANNELIZING LINE, TYPE II	LF	400
663005-010	STOP LINE, TYPE V (24")	LF	138
663006-010	CROSSWALK LINE, TYPE V (6")	LF	336
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	637
663010-010	LANE ARROW, TYPE V	EA	6
663011-010	LANE LETTER, TYPE V	EA	16
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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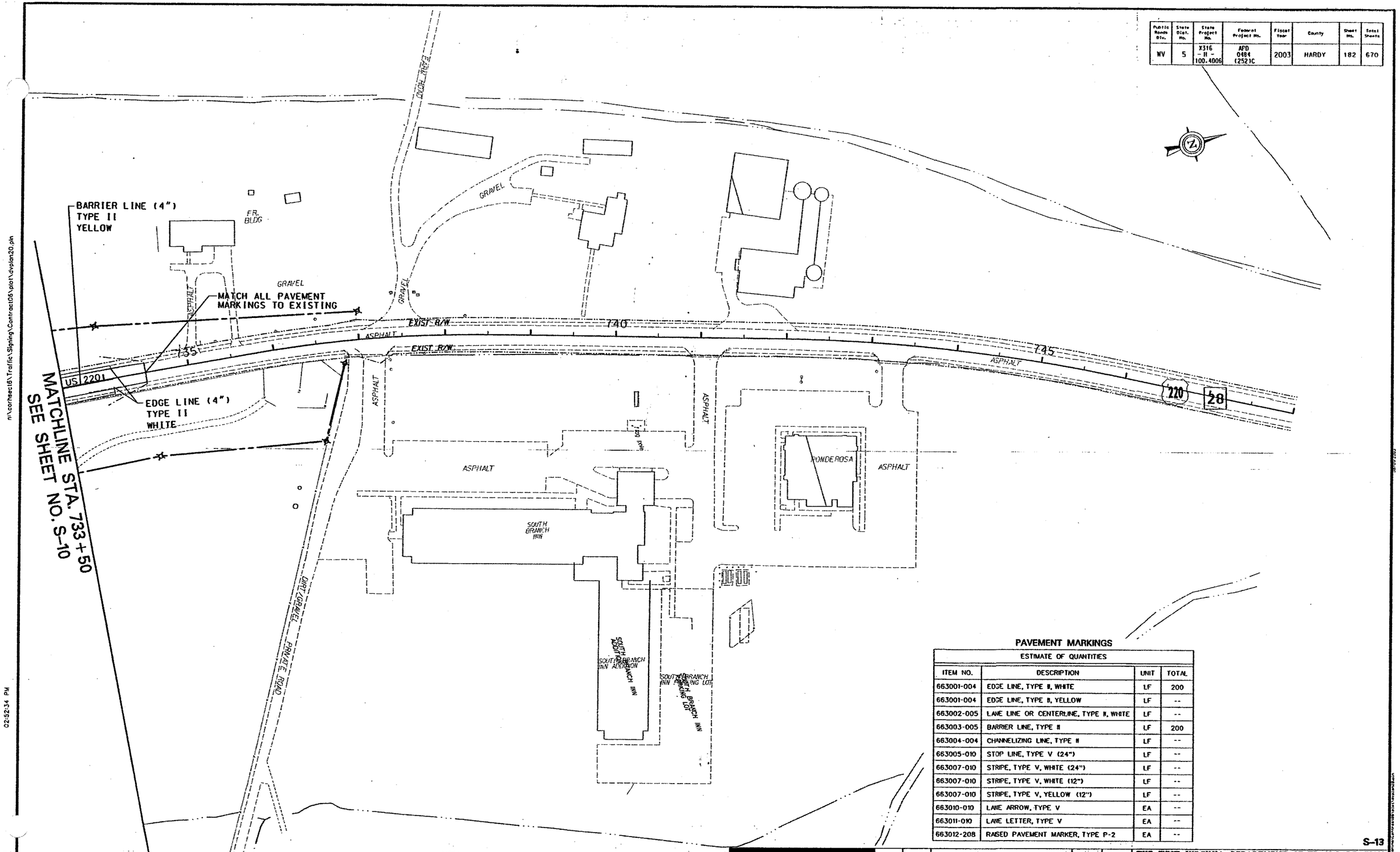
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (2521C	2003	HARDY	182	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	200
663001-004	EDGE LINE, TYPE II, YELLOW	LF	--
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	--
663003-005	BARRIER LINE, TYPE II	LF	200
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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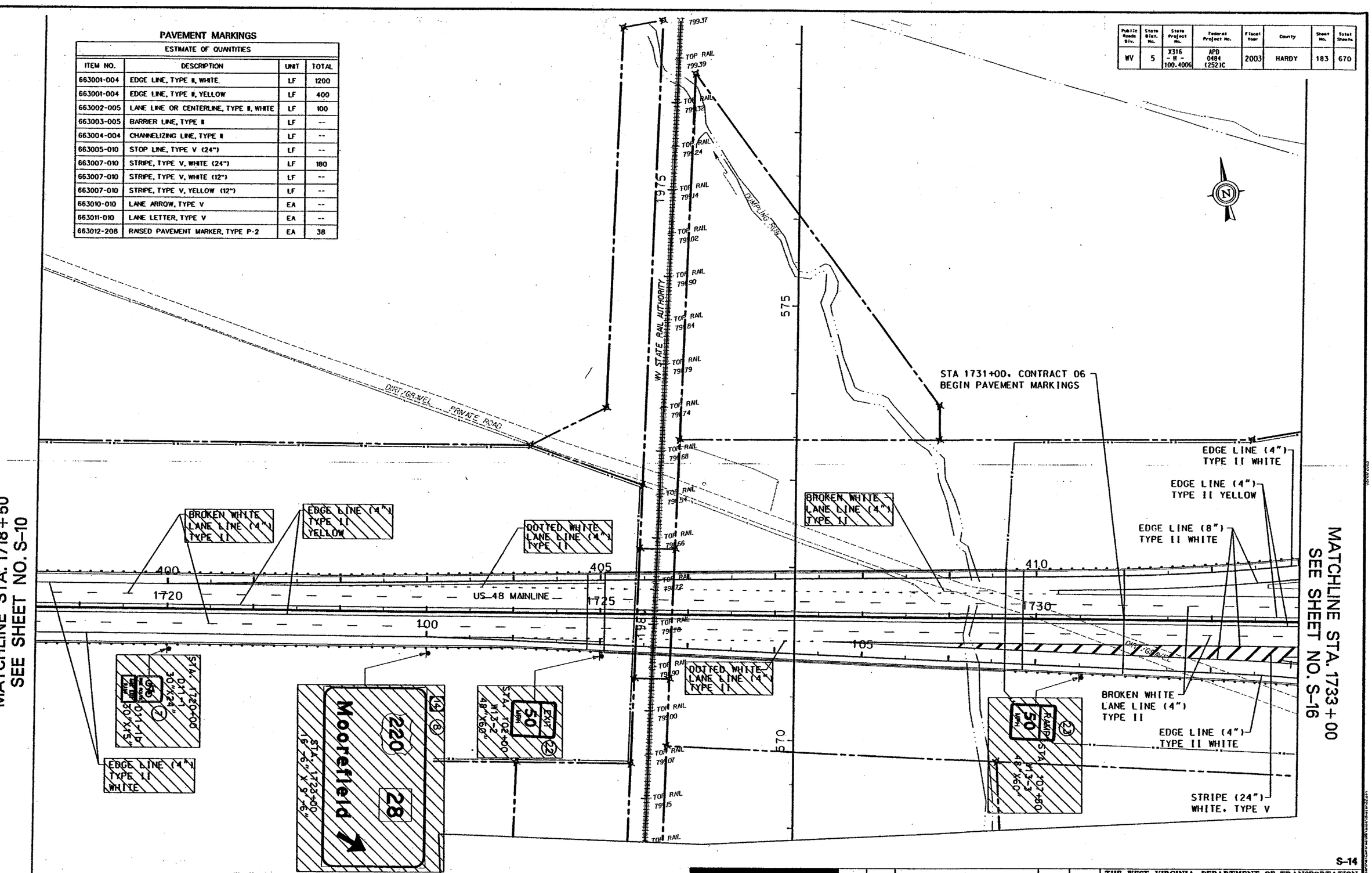
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	183	670

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	1200
663001-004	EDGE LINE, TYPE II, YELLOW	LF	400
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	100
663003-005	BARRIER LINE, TYPE II	LF	--
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	180
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	38



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

S-14

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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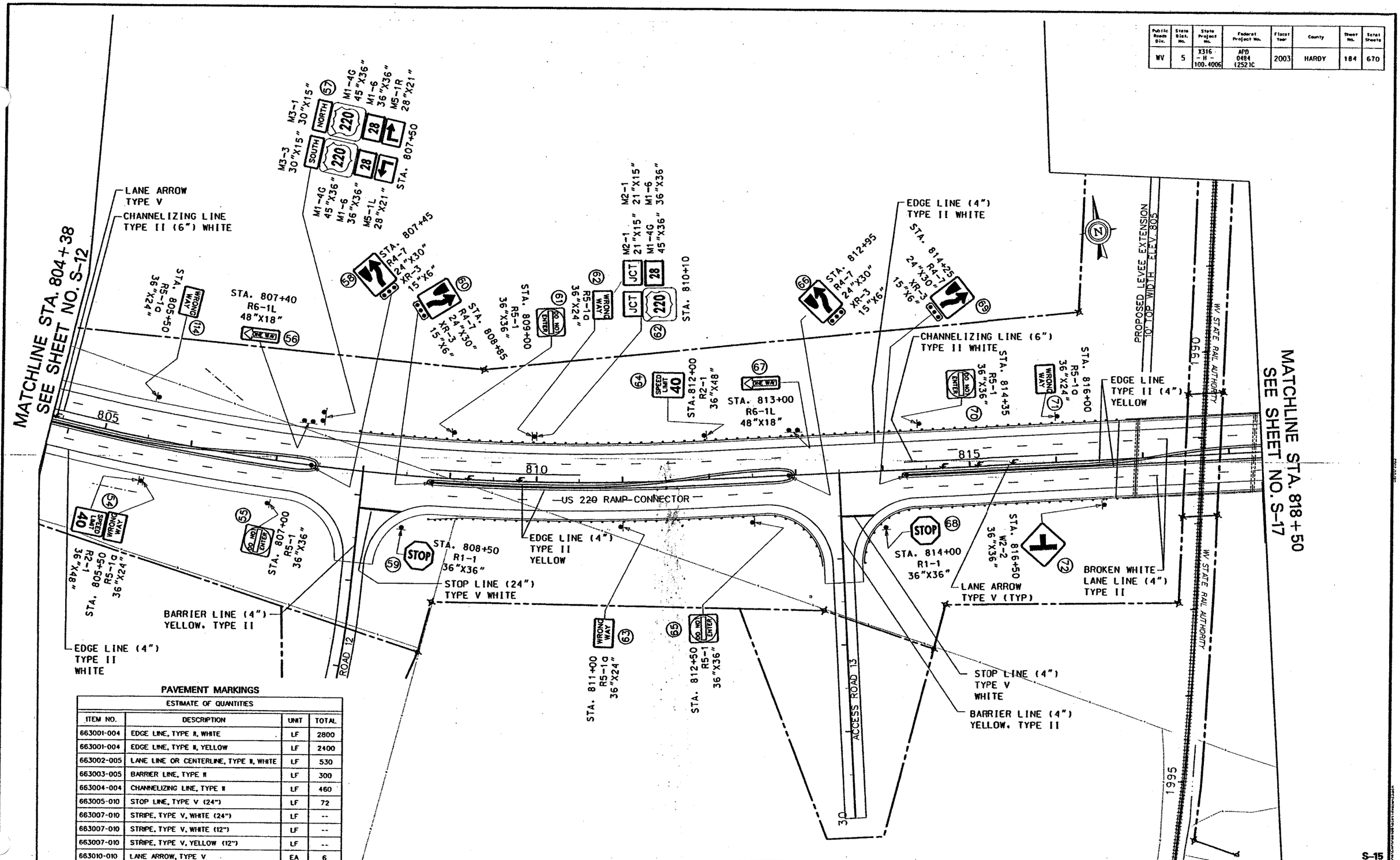
08/01/2003

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	184	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	2800
663001-004	EDGE LINE, TYPE II, YELLOW	LF	2400
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	530
663003-005	BARRIER LINE, TYPE II	LF	300
663004-004	CHANNELIZING LINE, TYPE II	LF	460
663005-010	STOP LINE, TYPE V (24")	LF	72
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	6
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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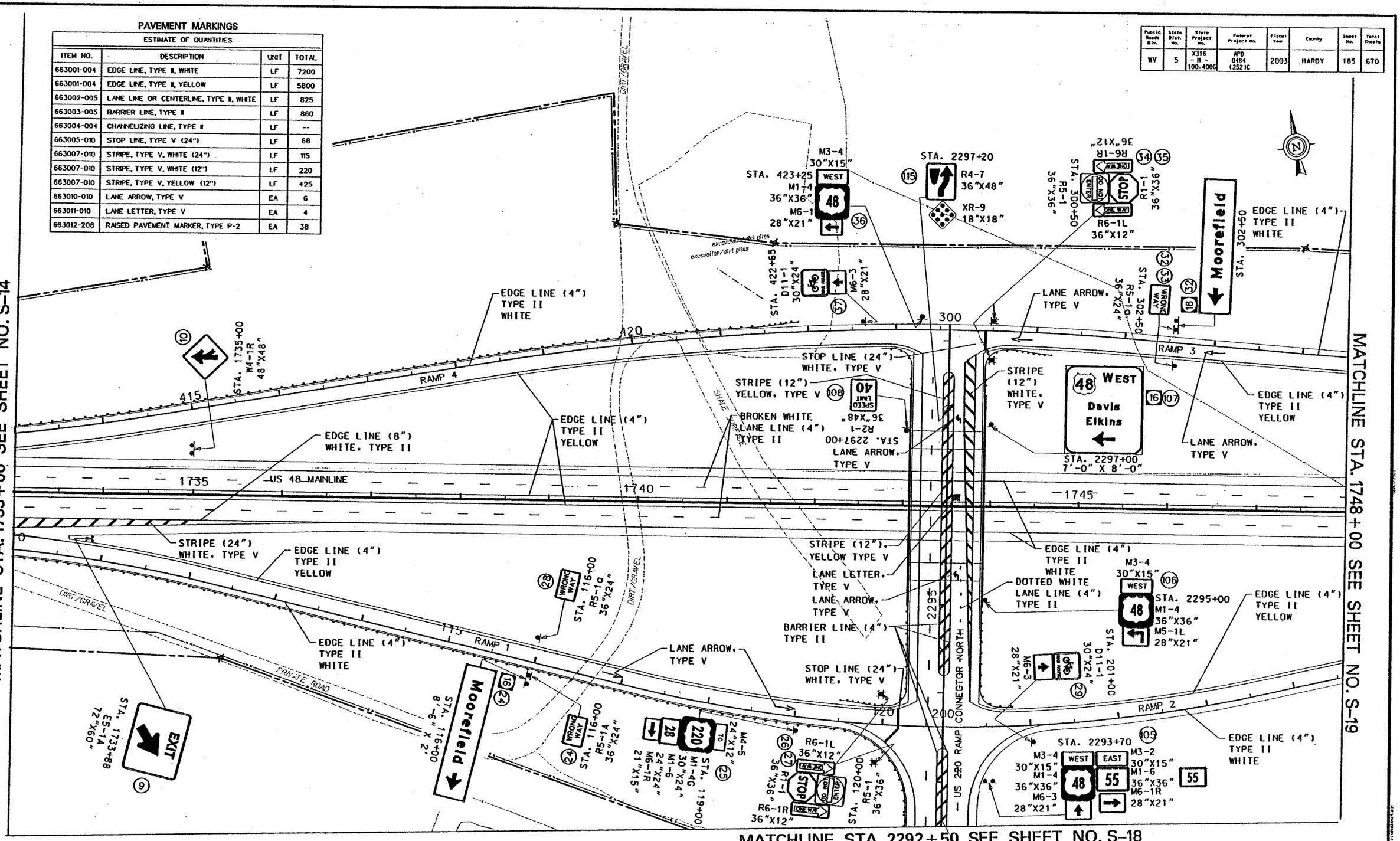
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	185	670

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	7200
663001-004	EDGE LINE, TYPE II, YELLOW	LF	5800
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	825
663003-005	BARRIER LINE, TYPE II	LF	860
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	68
663007-010	STRIPE, TYPE V, WHITE (24")	LF	115
663007-010	STRIPE, TYPE V, WHITE (12")	LF	220
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	425
663010-010	LANE ARROW, TYPE V	EA	6
663011-010	LANE LETTER, TYPE V	EA	4
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	38



Baker
Michael Baker Jr., Inc.

SCALE : 0 50 ft.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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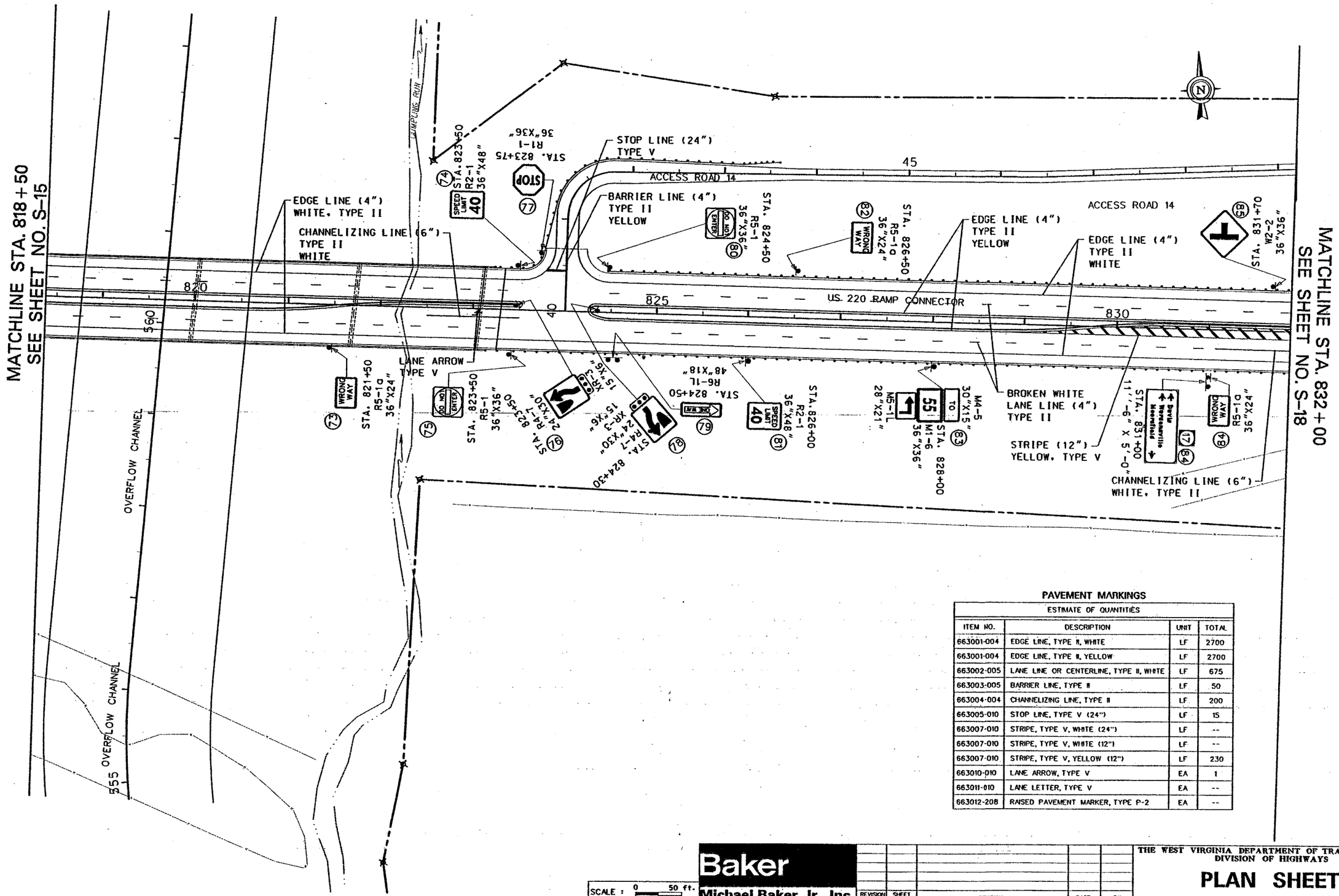
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	186	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	2700
663001-004	EDGE LINE, TYPE II, YELLOW	LF	2700
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	675
663003-005	BARRIER LINE, TYPE II	LF	50
663004-004	CHANNELIZING LINE, TYPE II	LF	200
663005-010	STOP LINE, TYPE V (24")	LF	15
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	230
663010-010	LANE ARROW, TYPE V	EA	1
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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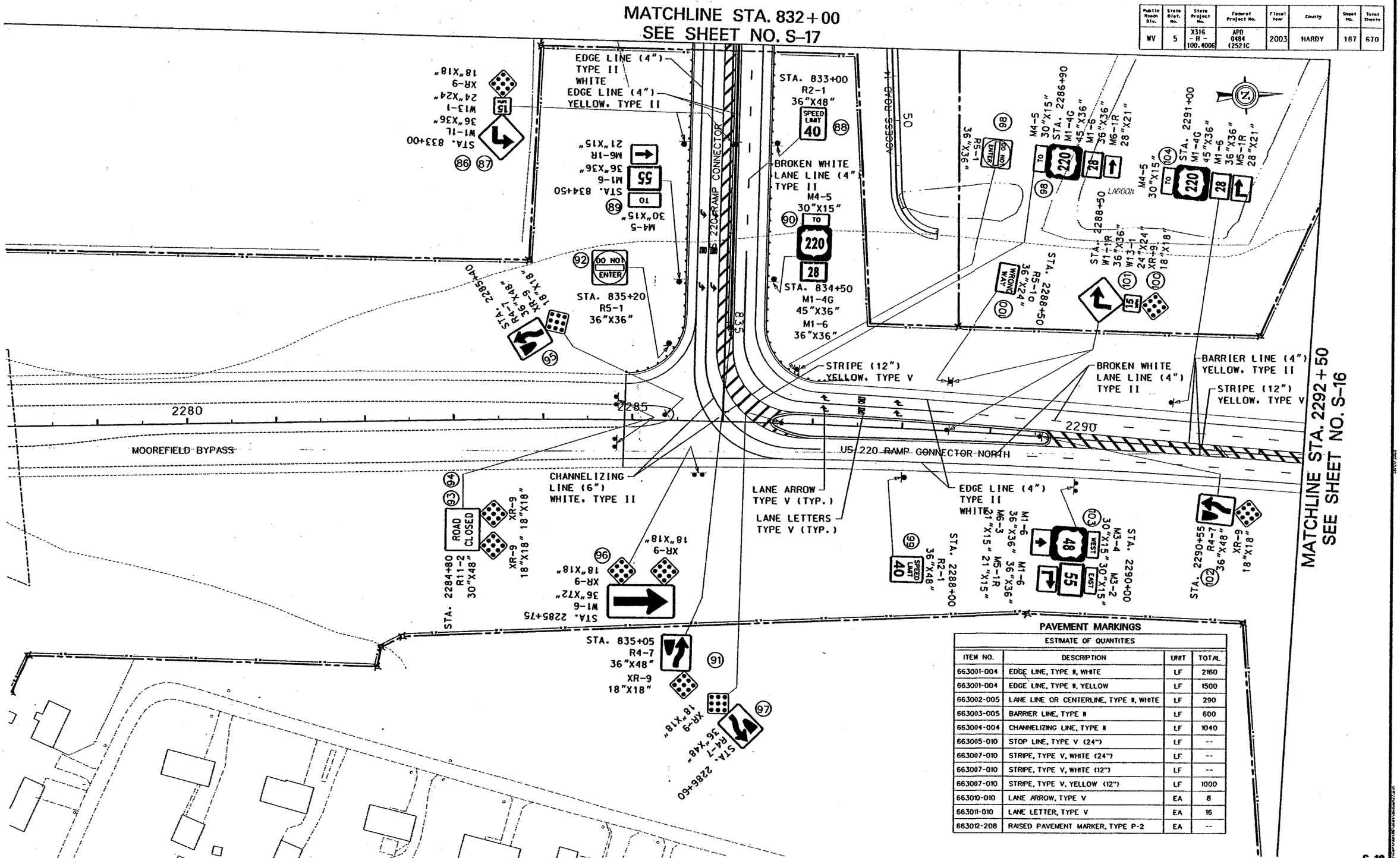
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 -H- 100.4006	APD 0484 (252)C	2003	HARDY	187	670



PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	2160
663001-004	EDGE LINE, TYPE II, YELLOW	LF	1500
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	290
663003-005	BARRIER LINE, TYPE II	LF	600
663004-004	CHANNELIZING LINE, TYPE II	LF	1040
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	1000
663010-010	LANE ARROW, TYPE V	EA	8
663011-010	LANE LETTER, TYPE V	EA	16
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	--

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Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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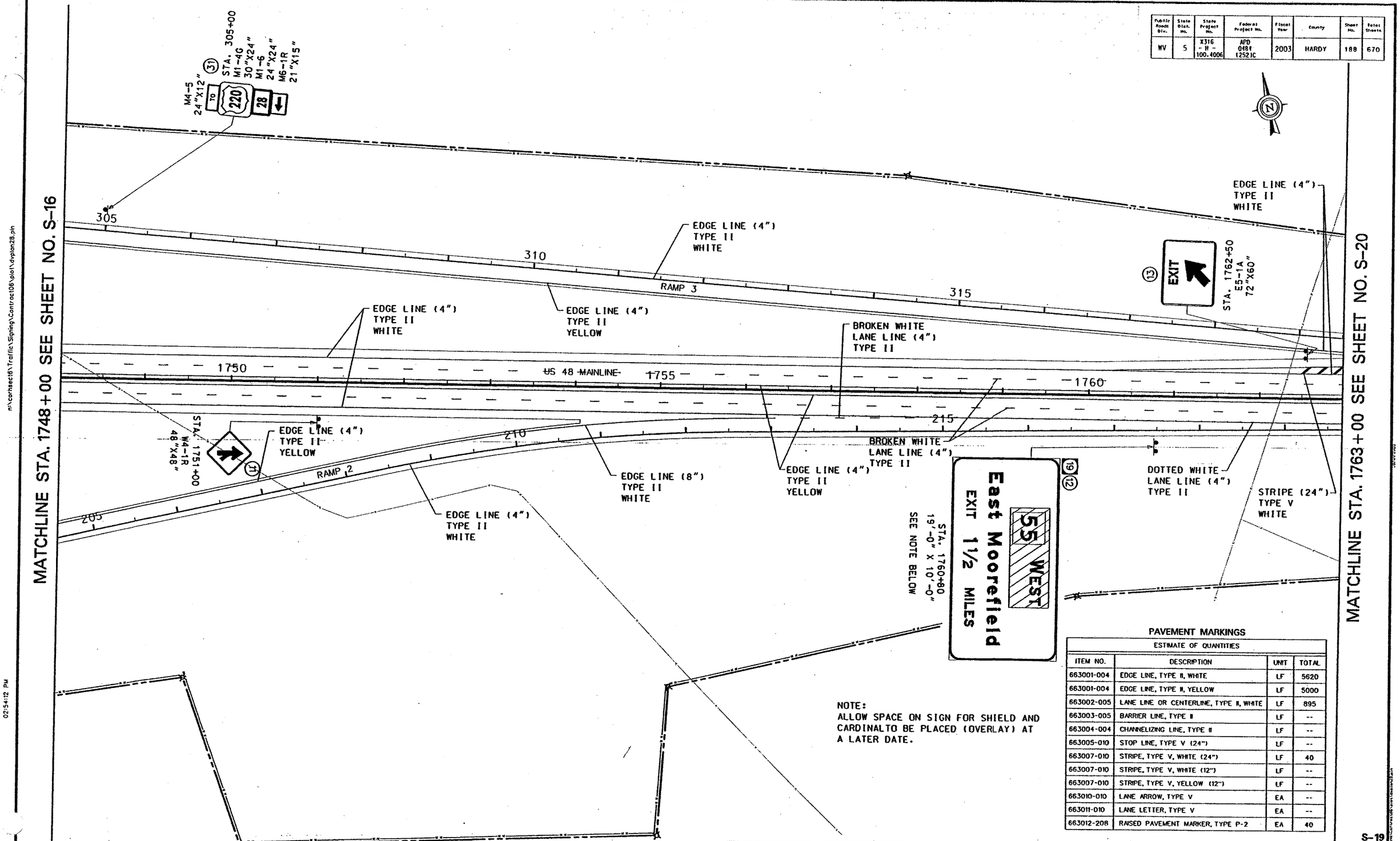
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0481 (252)C	2003	HARDY	188	670



NOTE:
ALLOW SPACE ON SIGN FOR SHIELD AND CARDINALTO BE PLACED (OVERLAY) AT A LATER DATE.

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	5620
663001-004	EDGE LINE, TYPE II, YELLOW	LF	5000
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	895
663003-005	BARRIER LINE, TYPE II	LF	--
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	40
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	40

SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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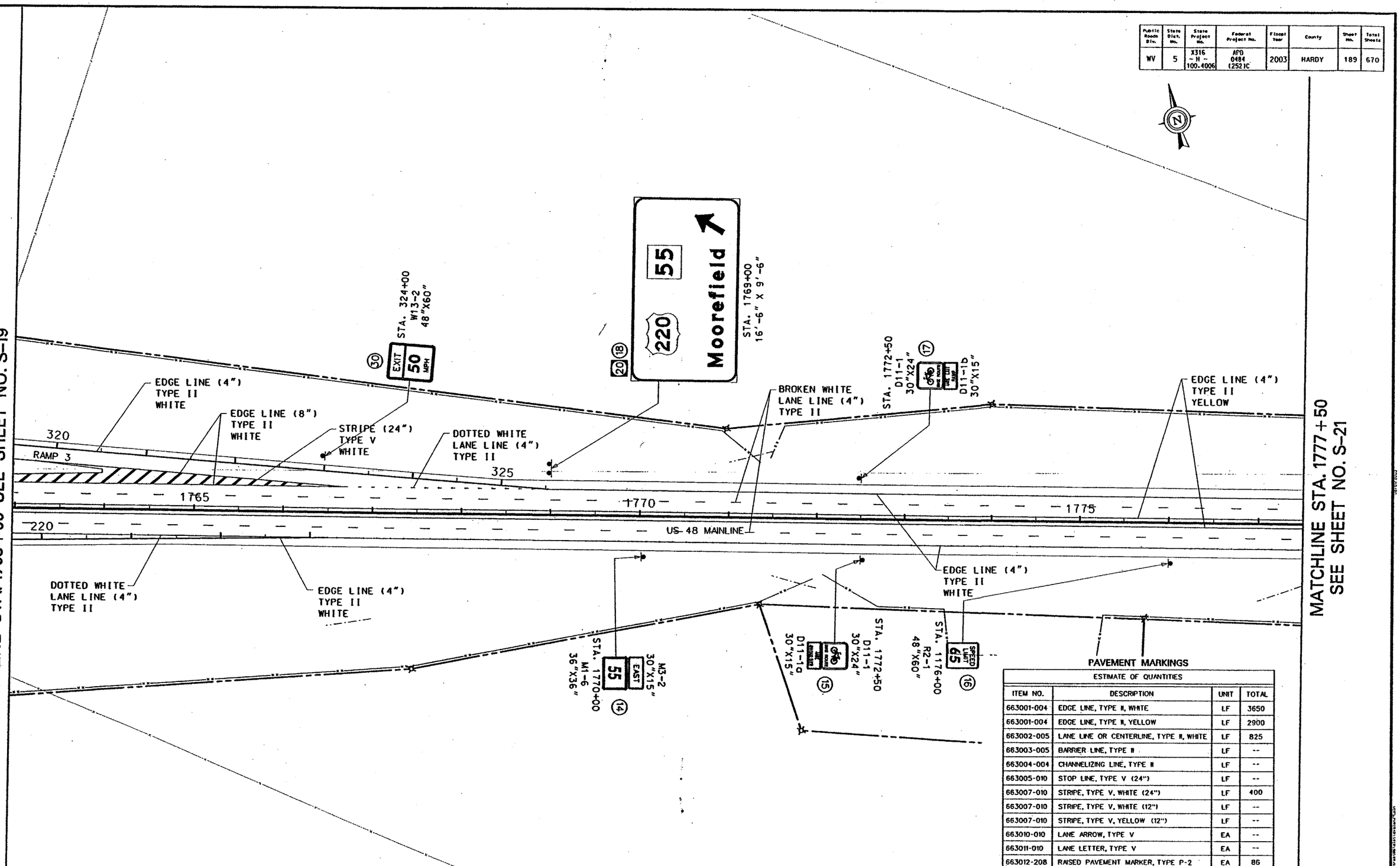
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	189	670



ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	3650
663001-004	EDGE LINE, TYPE II, YELLOW	LF	2900
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	825
663003-005	BARRIER LINE, TYPE II	LF	--
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	400
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	86

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Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	X316 - H - 100.4006	APD 0484 (252)C	2003	HARDY	190	670

END CONTRACT 06 - STA. 1787+00

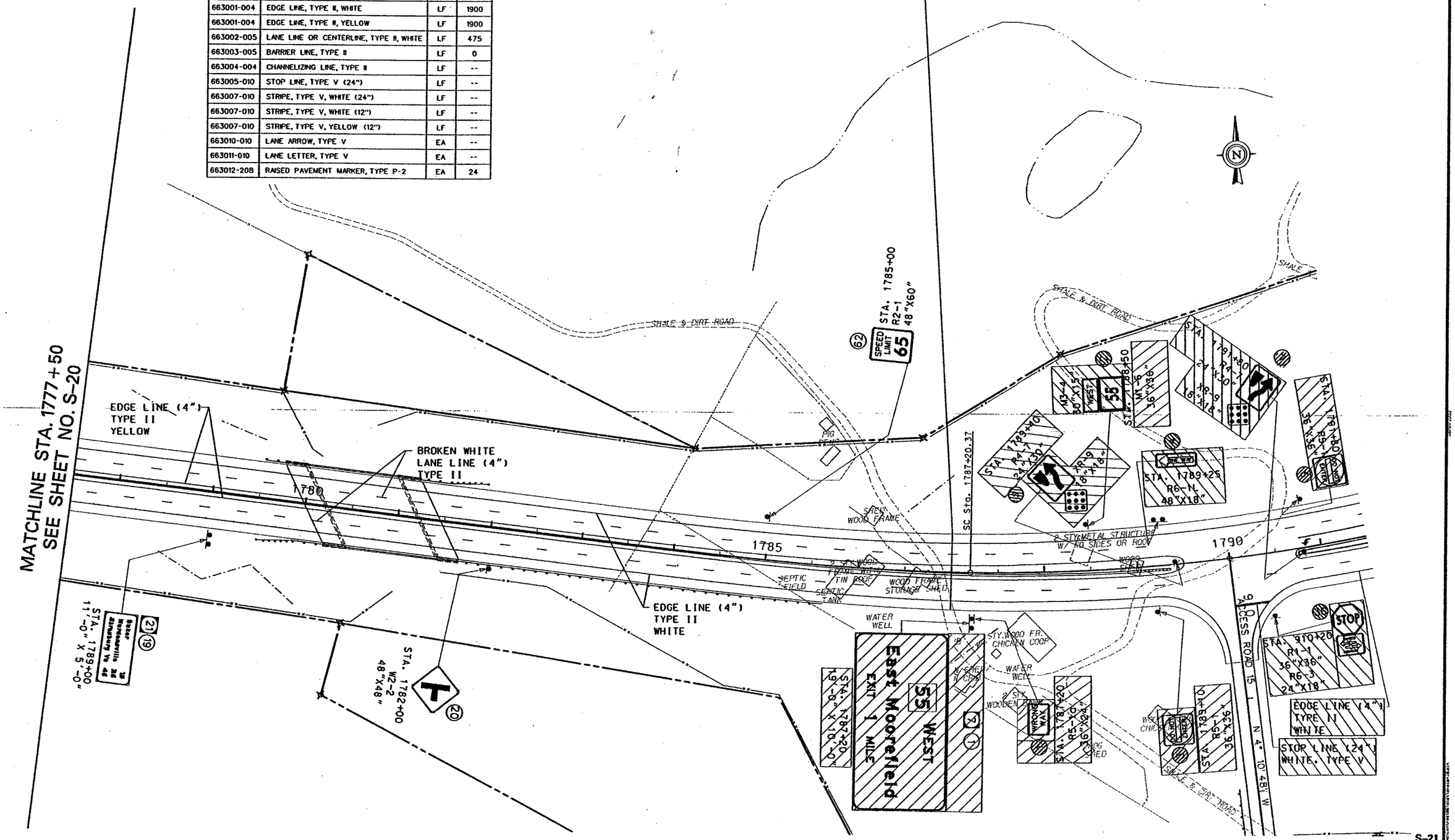
INCLUDED FOR INFORMATION ONLY

BEGIN CONTRACT 07

PAVEMENT MARKINGS

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
663001-004	EDGE LINE, TYPE II, WHITE	LF	1900
663001-004	EDGE LINE, TYPE II, YELLOW	LF	1900
663002-005	LANE LINE OR CENTERLINE, TYPE II, WHITE	LF	475
663003-005	BARRIER LINE, TYPE II	LF	0
663004-004	CHANNELIZING LINE, TYPE II	LF	--
663005-010	STOP LINE, TYPE V (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (24")	LF	--
663007-010	STRIPE, TYPE V, WHITE (12")	LF	--
663007-010	STRIPE, TYPE V, YELLOW (12")	LF	--
663010-010	LANE ARROW, TYPE V	EA	--
663011-010	LANE LETTER, TYPE V	EA	--
663012-208	RAISED PAVEMENT MARKER, TYPE P-2	EA	24



SCALE : 0 50 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLAN SHEET

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