DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	1	111

(2) OVERCUP CREEK -NORTH & SOUTH GRADE IMPVTS. (S)

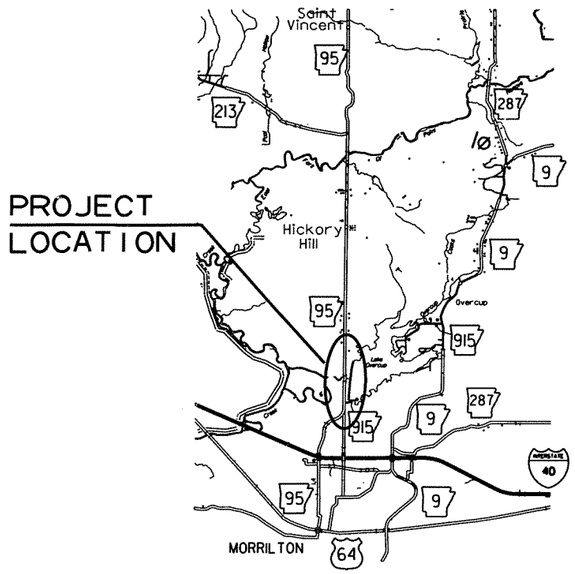
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

OVERCUP CREEK- NORTH & SOUTH GRADE IMPVTS. (S)

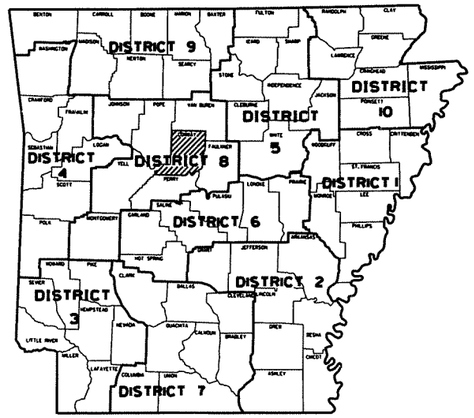
CONWAY COUNTY
ROUTE 95 SECTION 1

JOB 080387

FED. AID PROJ. STP-0018(24)



VICINITY MAP

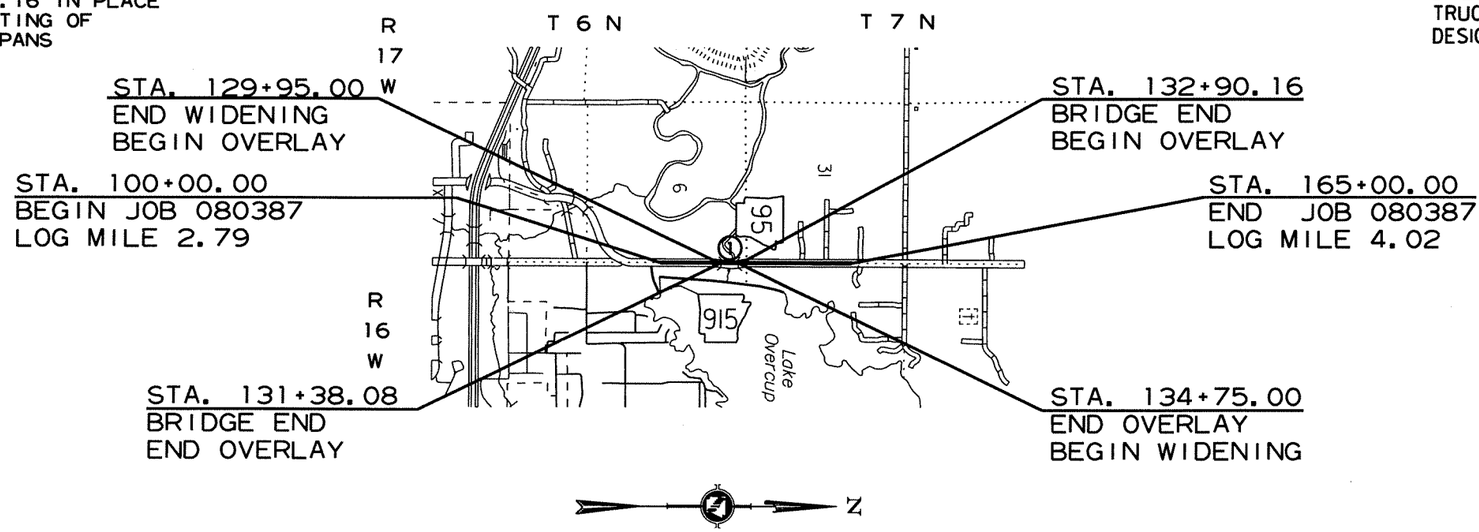


ARK. HWY. DIST. NO. 8

0 1/2 1 2
MILES

BRIDGE DATA

(1) STA. 131+38.08 - STA. 132+90.16 IN PLACE
152.08' X 39' BRIDGE CONSISTING OF
3 - 50' COMPOSITE W-BEAM SPANS
WITH CONC. COLUMN BENTS
BRIDGE NO. 05585
RETAIN



STA. 129+95.00
END WIDENING
BEGIN OVERLAY

STA. 100+00.00
BEGIN JOB 080387
LOG MILE 2.79

STA. 131+38.08
BRIDGE END
END OVERLAY

STA. 132+90.16
BRIDGE END
BEGIN OVERLAY

STA. 165+00.00
END JOB 080387
LOG MILE 4.02

STA. 134+75.00
END OVERLAY
BEGIN WIDENING

N

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2033
2013 ADT	4300
2033 ADT	5000
2033 DHV	550
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	14%
DESIGN SPEED	55 MPH

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VOZEL

9/20/13
DEPUTY DIRECTOR
AND CHIEF ENGINEER

BEGINNING OF PROJECT
LAT. = N 35°11'22"
LONG. = W 92°44'07"

MID-POINT OF PROJECT
LAT. = N 35°11'54"
LONG. = W 92°44'05"

END OF PROJECT
LAT. = N 35°12'26"
LONG. = W 92°44'04"

GROSS LENGTH OF	PROJECT	6500.00	FEET	OR	1.231	MILES
NET	" "	ROADWAY	6347.92	"	"	1.202	"
NET	" "	BRIDGES	152.08	"	"	0.029	"
NET	" "	PROJECT	6500.00	"	"	1.231	"

P.E. JOB 080387
F.A.P. L24R-0018-024

R080387.dgn 9/18/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	2	111

(2) INDEX OF SHEETS, GOV. SPEC., AND GEN. NOTES

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
3 - 4	TYPICAL SECTIONS OF IMPROVEMENT			
5 - 7	SPECIAL DETAILS			
8 - 16	TEMPORARY EROSION CONTROL DETAILS			
17 - 26	MAINTENANCE OF TRAFFIC			
27 - 28	PERMANENT PAVEMENT MARKING DETAILS			
29 - 33	QUANTITIES			
34	SUMMARY OF QUANTITIES AND REVISIONS			
35 - 38	SURVEY CONTROL DETAILS			
39 - 43	PLAN AND PROFILE SHEETS			
44	SCOUR PREVENTION DETAILS	05585	51228	
45	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES		1891F	4-10-03
46	CONCRETE DITCH PAVING		CDP-1	11-17-10
47	MAILBOX DETAILS		MB-1	11-18-04
48	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING		PCC-1	12-15-11
49	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	12-15-11
50	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)		PCP-1	12-15-11
51	PLASTIC PIPE CULVERT (PVC F949)		PCP-2	12-15-11
52	PAVEMENT MARKING DETAILS		PM-1	9-12-13
53	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
54	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12-15-11
55	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	9-12-13
56	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10-15-09
57	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-4	10-15-09
58	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-5	10-15-09
59	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
60	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
61	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
62	TEMPORARY EROSION CONTROL DEVICES		TEC-4	7-26-12
63	WIRE FENCE WATER GAPS		WF-2	4-20-79
64	WIRE FENCE TYPE C AND D		WF-4	8-22-02
65 - 111	CROSS SECTIONS			

NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THIS PROJECT IS COVERED UNDER A SECTION 404 LETTER OF PERMISSION PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
JOB 080387	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080387	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080387	CLEARING AND GRUBBING
JOB 080387	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 080387	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080387	HIGH PERFORMANCE PAVEMENT MARKING
JOB 080387	INTERNET BIDDING
JOB 080387	PARTNERING REQUIREMENTS
JOB 080387	PLASTIC PIPE
JOB 080387	SOIL STABILIZATION
JOB 080387	STORM WATER POLLUTION PREVENTION PLAN
JOB 080387	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080387	TEMPORARY IMPACT ATTENUATION BARRIER
JOB 080387	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 080387	UTILITY ADJUSTMENTS
JOB 080387	VALUE ENGINEERING
JOB 080387	WARM MIX ASPHALT

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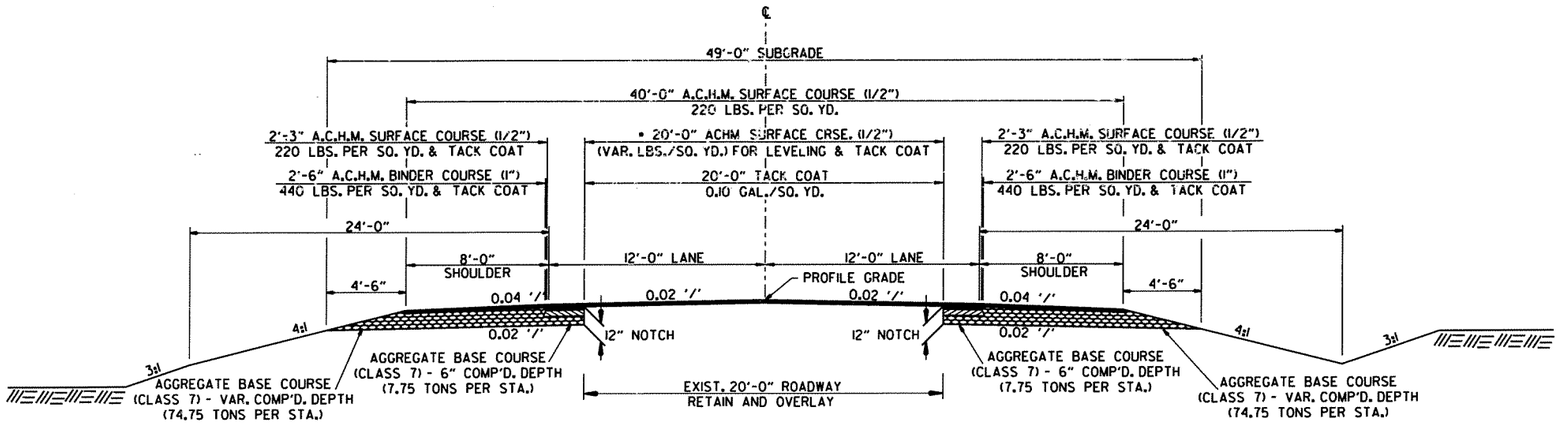
				JOB NO.		080387	3	111

(2) TYPICAL SECTIONS OF IMPROVEMENT

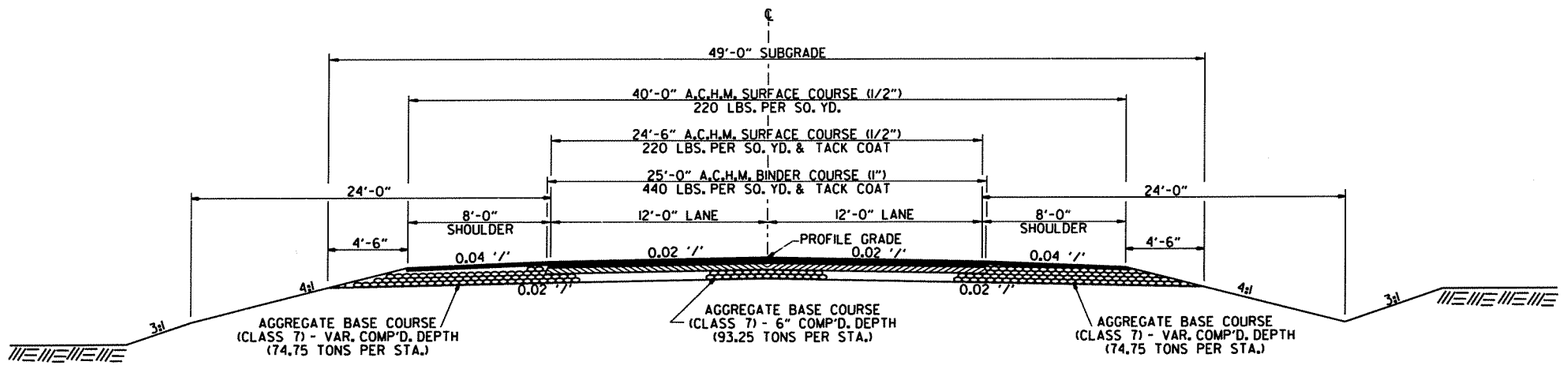
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



TANGENT SECTION
NOTCH AND WIDEN

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

STA. 100+00 - STA. 101+73
STA. 127+74 - STA. 129+95
STA. 134+75 - STA. 136+54
STA. 160+27 - STA. 165+00



TANGENT SECTION
FULL DEPTH

STA. 101+73 - STA. 127+74
STA. 136+54 - STA. 160+27

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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TYPICAL SECTIONS OF IMPROVEMENT

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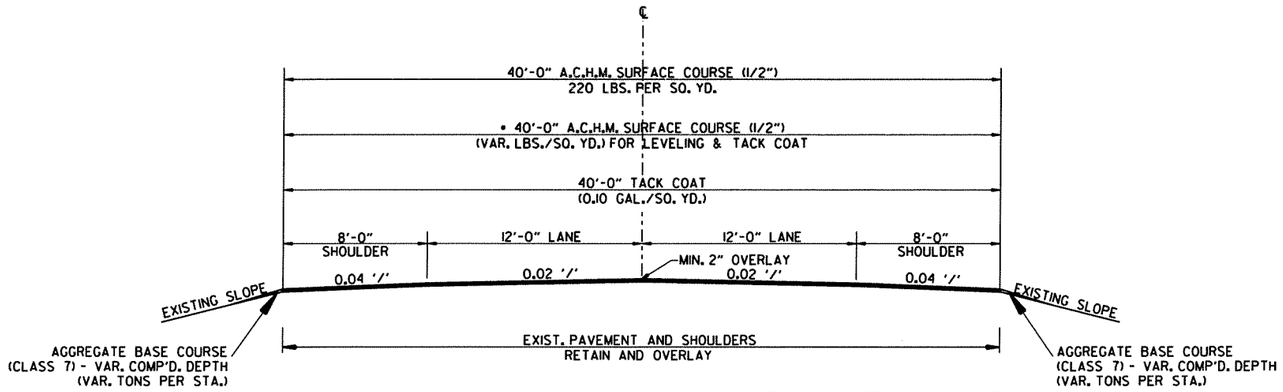
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
OVERLAY

STA. 129+95.00 - STA. 131+38.08
STA. 132+90.16 - STA. 134+75.00

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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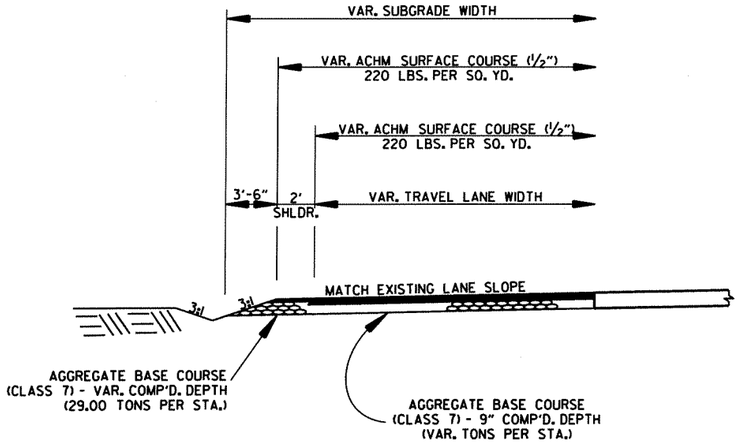
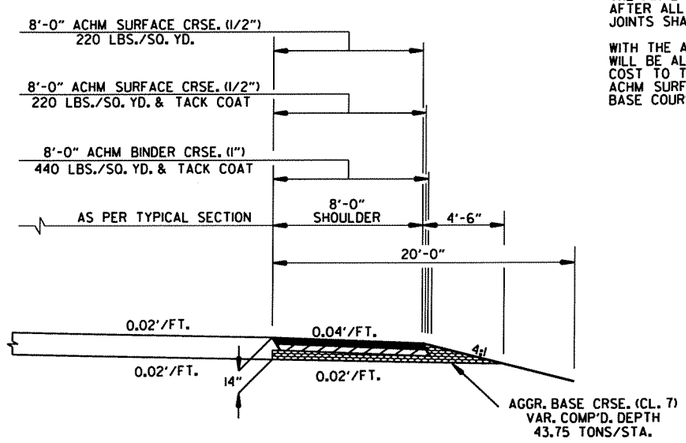


WIDENING FOR MAINTENANCE OF TRAFFIC

STA. 100+00 - STA. 108+50
STA. 125+50 - STA. 128+50
STA. 135+50 - STA. 139+00
STA. 157+50 - STA. 161+50



FULL DEPTH SHOULDER
FOR MAINTENANCE OF TRAFFIC

STA. 100+62 - STA. 111+00
STA. 122+00 - STA. 129+30
STA. 134+75 - STA. 141+00
STA. 155+00 - STA. 163+88

TYPICAL SECTIONS OF IMPROVEMENT

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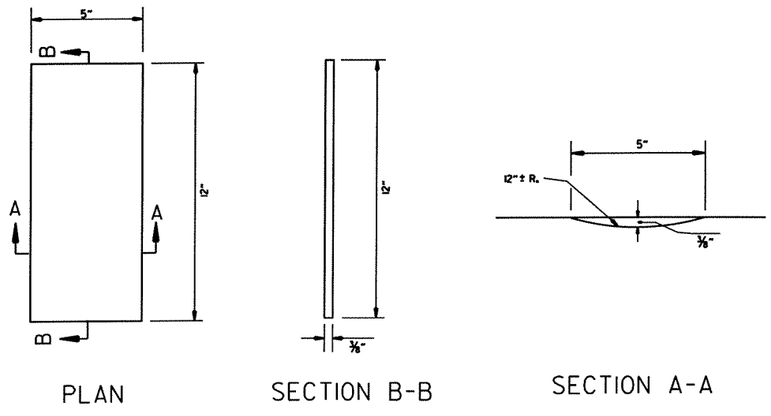
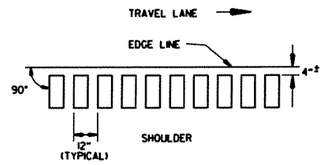
(2) SPECIAL DETAILS

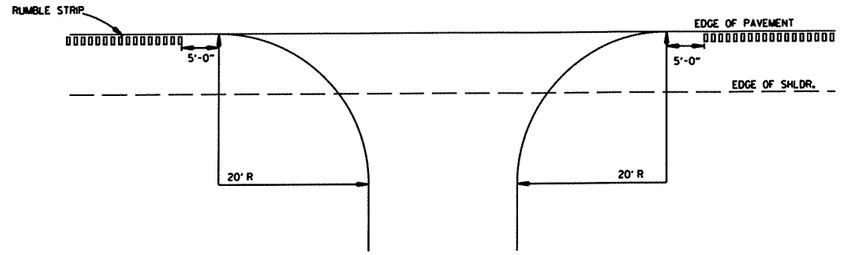
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



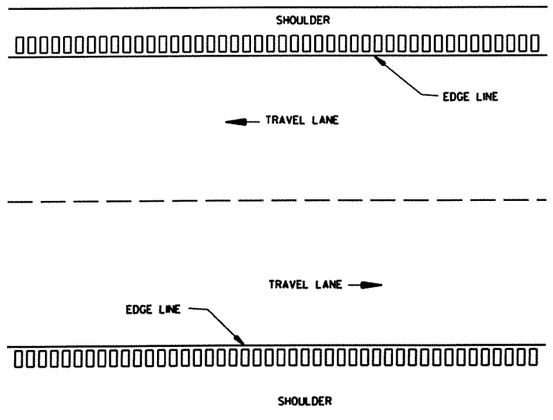
DETAILS OF RUMBLE STRIPS



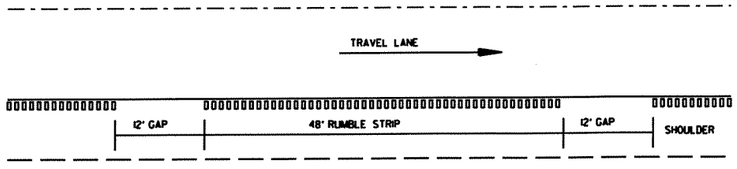
LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW



DETAIL FOR GAP PATTERN RUMBLE STRIP

NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE ⅜" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.

11/6/2012

080387.DGN

SPECIAL DETAILS

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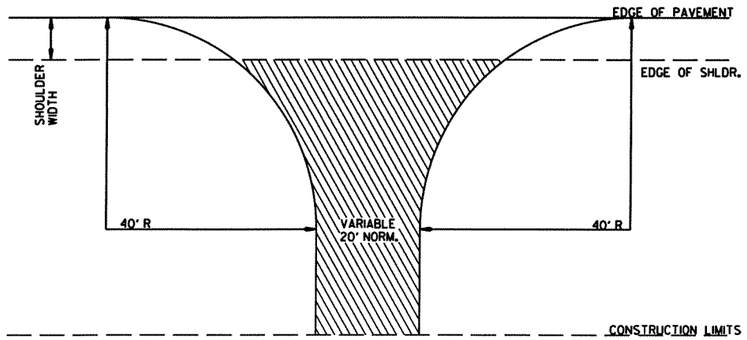
(2) SPECIAL DETAILS

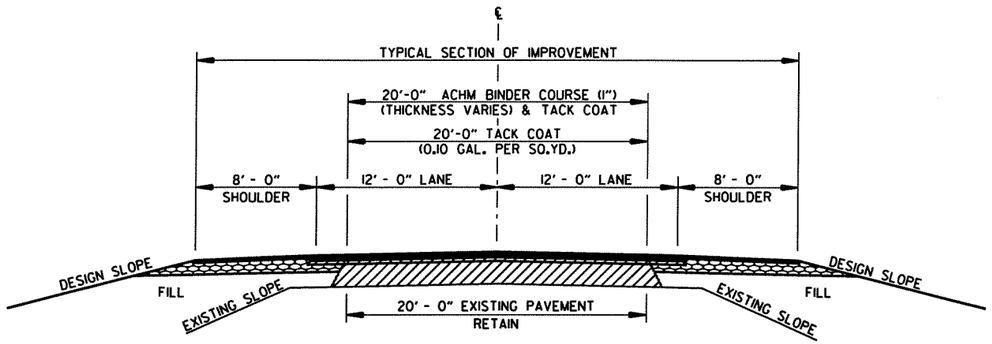
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AND AGGREATE BASE COURSE (CLASS 7) 7" COMP.

NOTE:
REFER TO PLAN SHEETS FOR WIDTHS OF COUNTY ROADS.

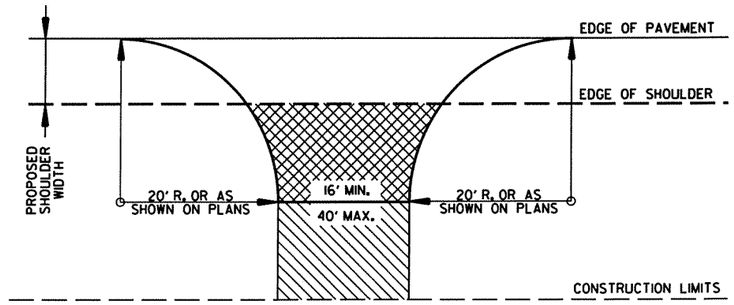
DETAIL FOR COUNTY ROAD TURNOUTS



METHOD OF RAISING GRADE

NOTES:

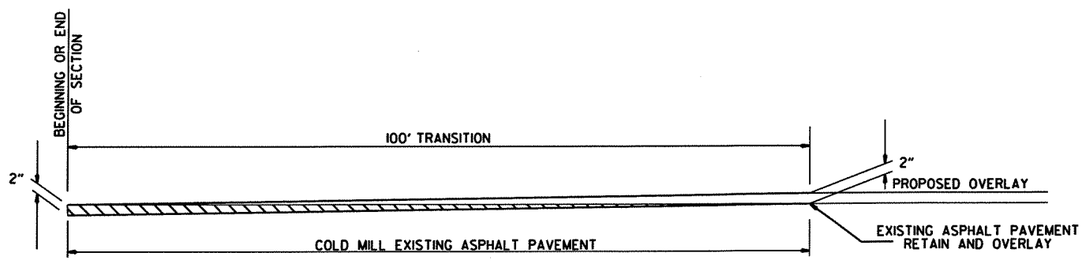
1. THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
3. IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.



DETAIL FOR DRIVEWAY TURNOUTS

ASPHALT CONCRETE HOT MIX SURFACE COURSE (½") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXISTS; OR 6" CONCRETE IF CONCRETE DRIVE EXISTS.

AGGREGATE BASE COURSE (CLASS 7) 9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY.



DETAIL FOR TRANSITIONS

11/6/2012

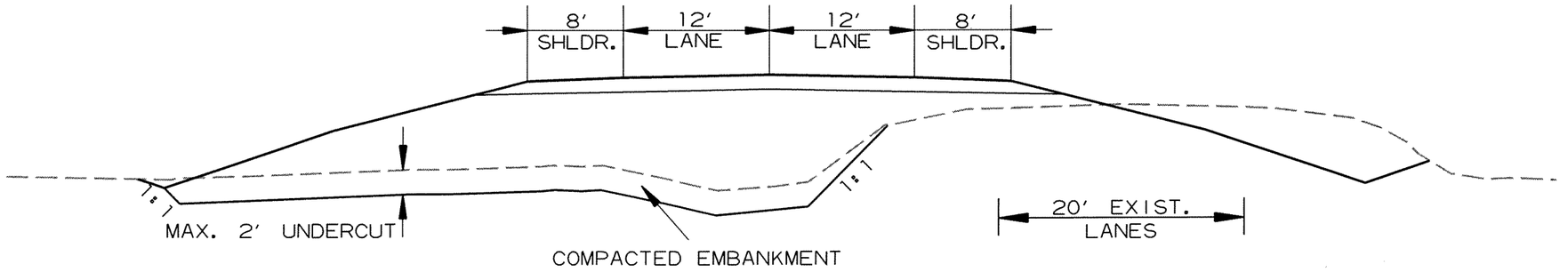
R080387.DGN

SPECIAL DETAILS

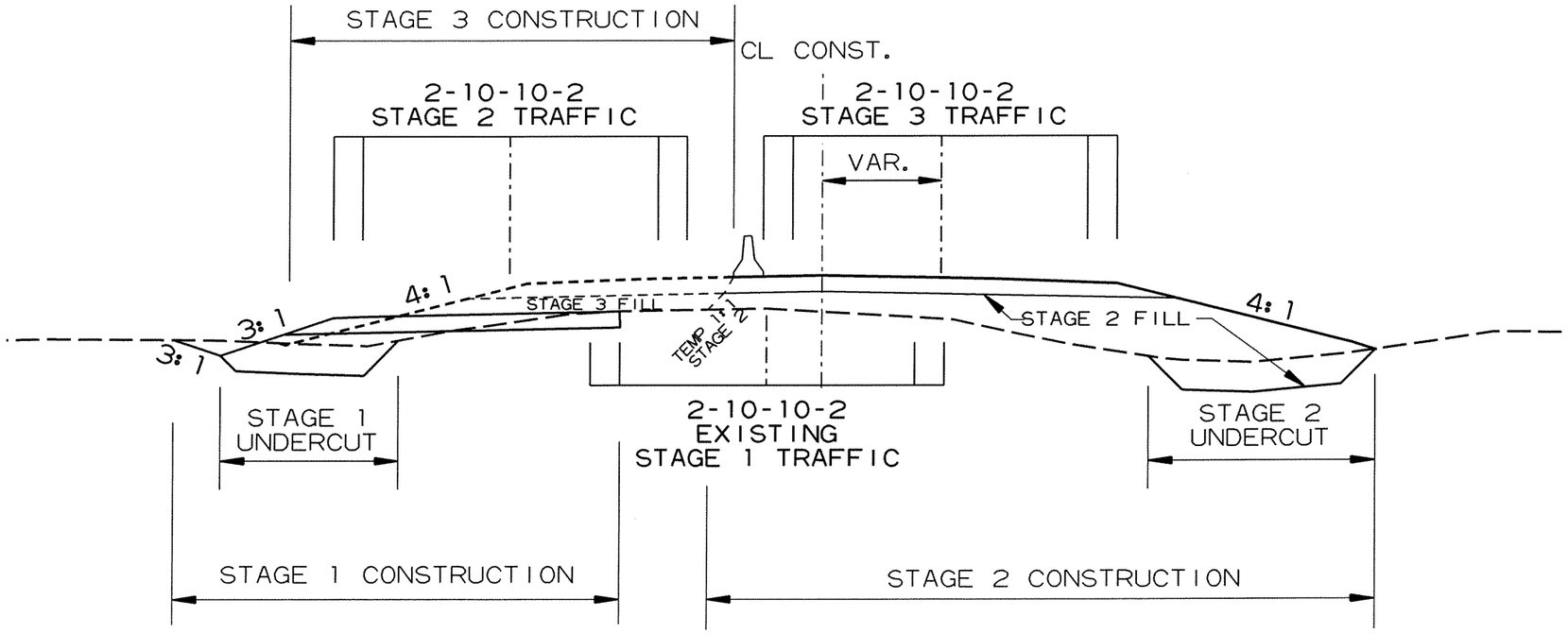
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	7	111

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



DETAIL OF UNDERCUT



DETAIL OF STAGE CONSTRUCTION

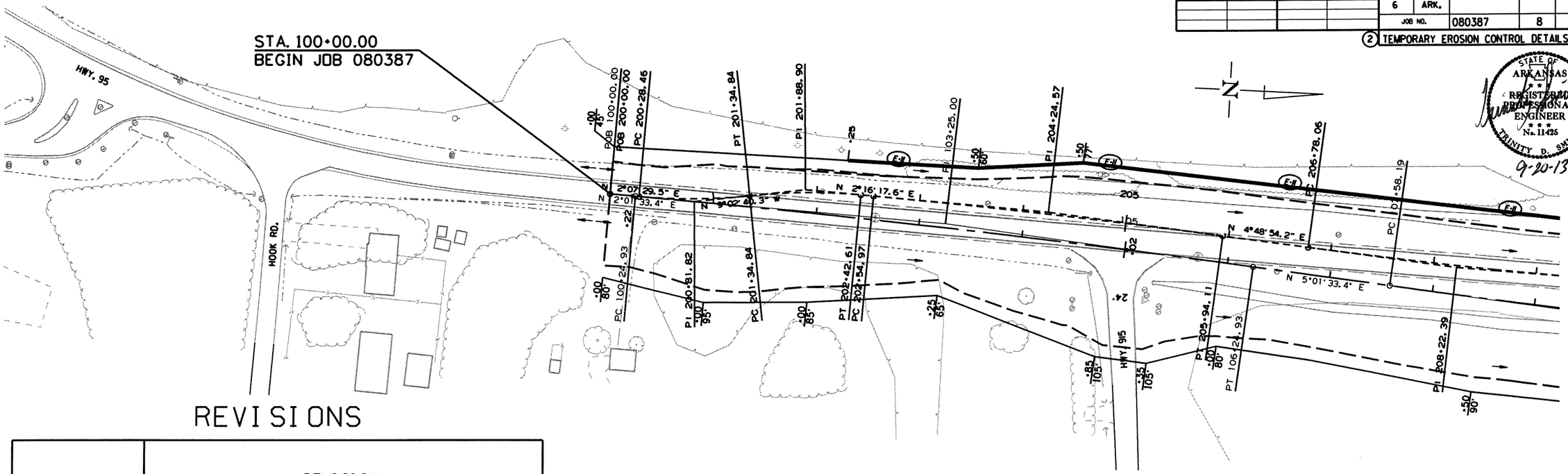
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	8	111

(2) TEMPORARY EROSION CONTROL DETAILS

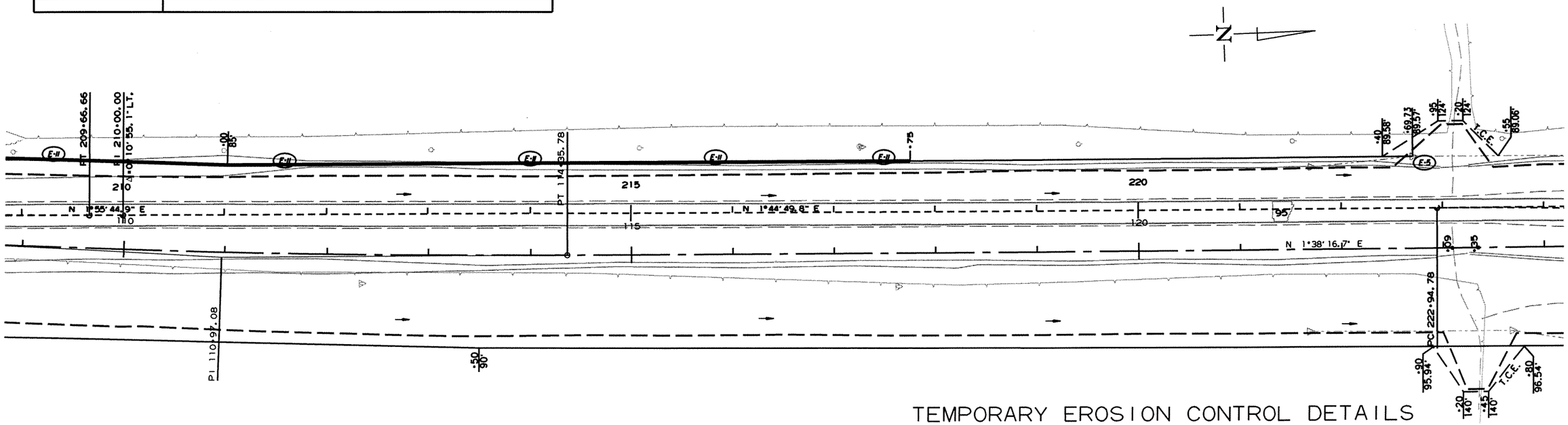
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



REVISIONS

DATE	REVISION

LEGEND
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 SILT FENCE



TEMPORARY EROSION CONTROL DETAILS
STAGE 1

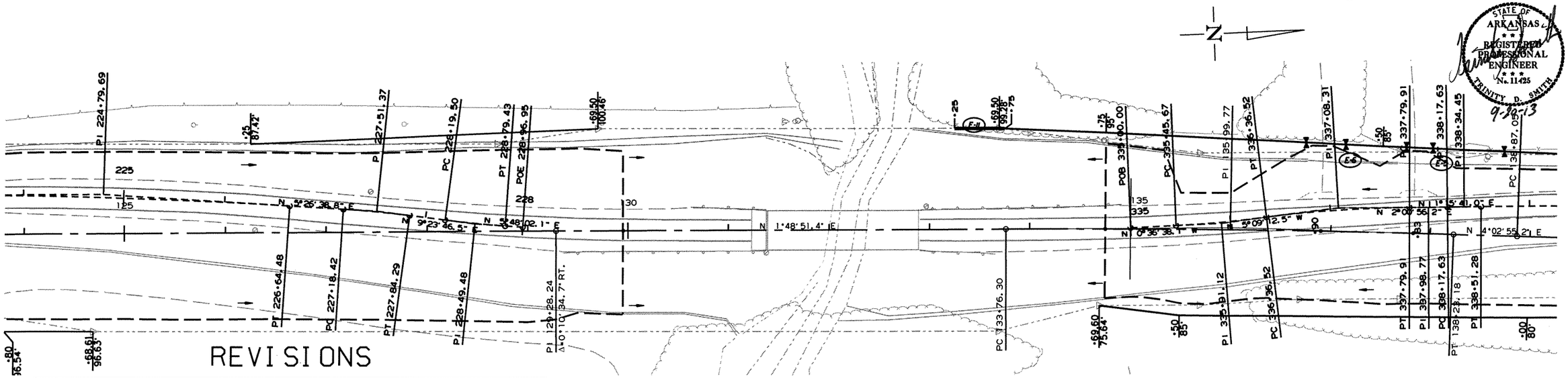
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	9	111

(2) TEMPORARY EROSION CONTROL DETAILS

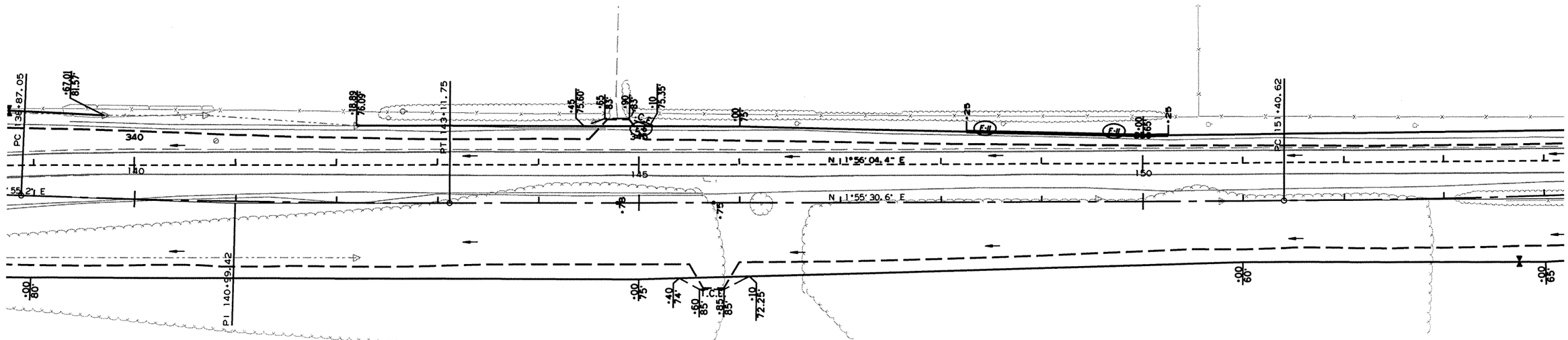
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-12-13



REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-H) SILT FENCE



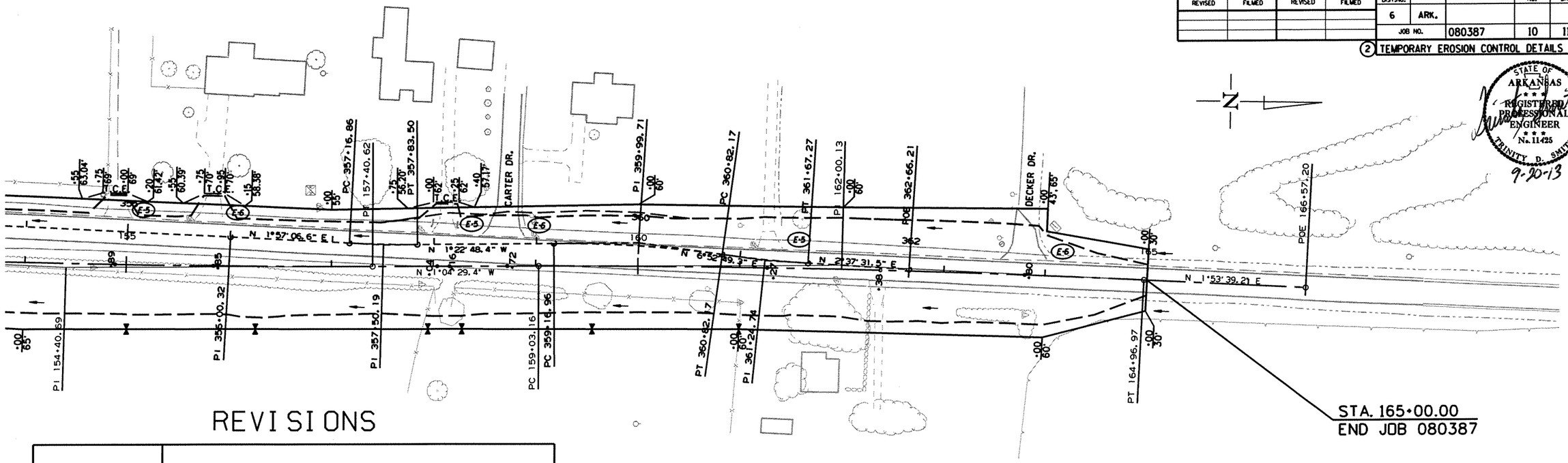
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	10	111

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE

11/6/2012

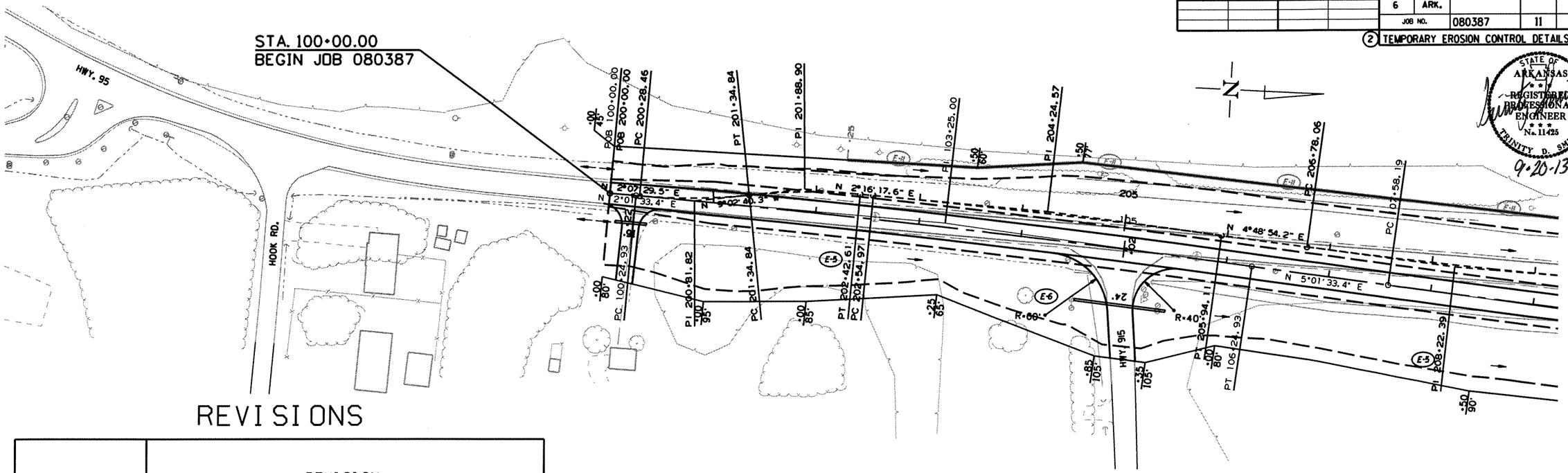
R080387.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	11	111

(2) TEMPORARY EROSION CONTROL DETAILS

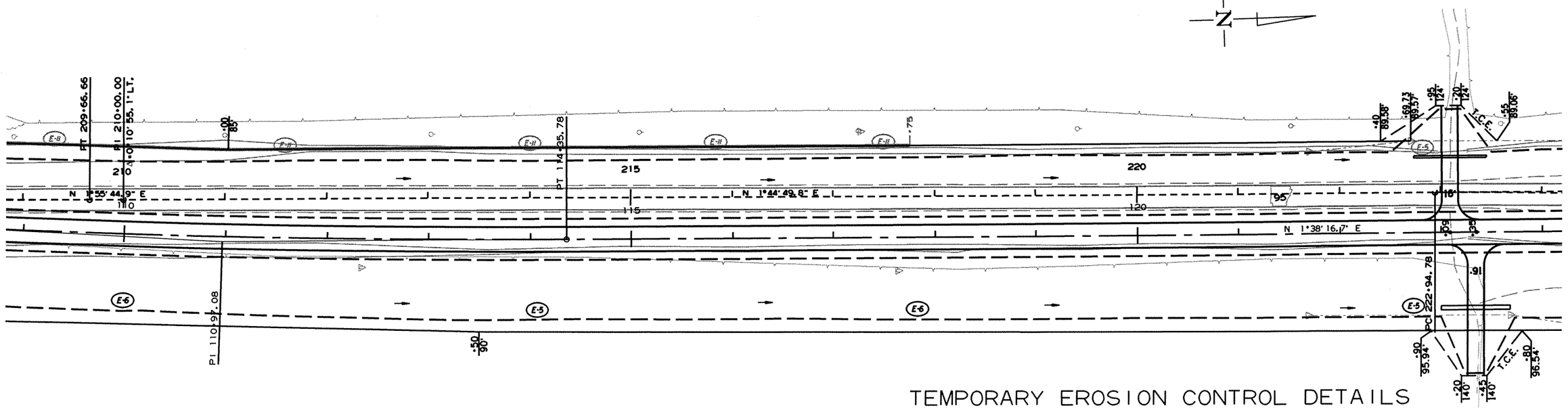
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE



TEMPORARY EROSION CONTROL DETAILS
STAGE 2

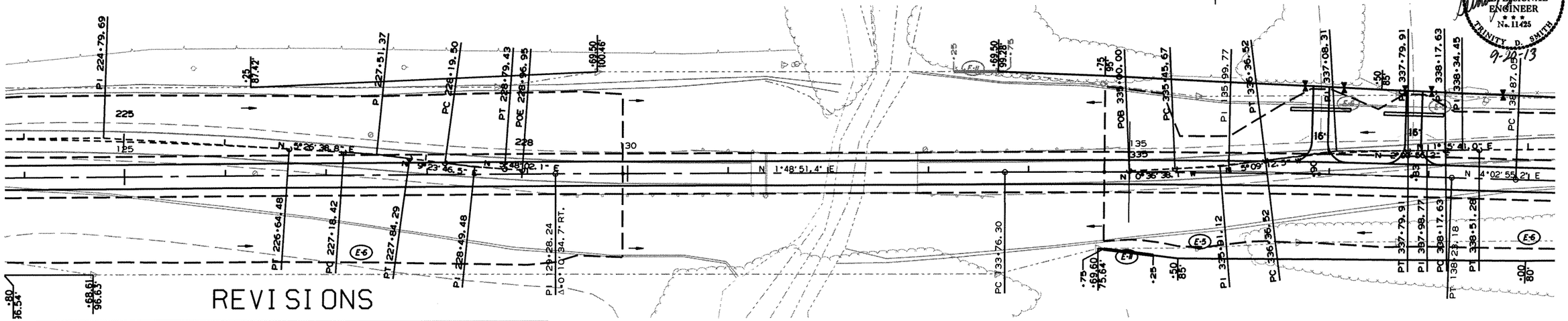
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	12	111

(2) TEMPORARY EROSION CONTROL DETAILS

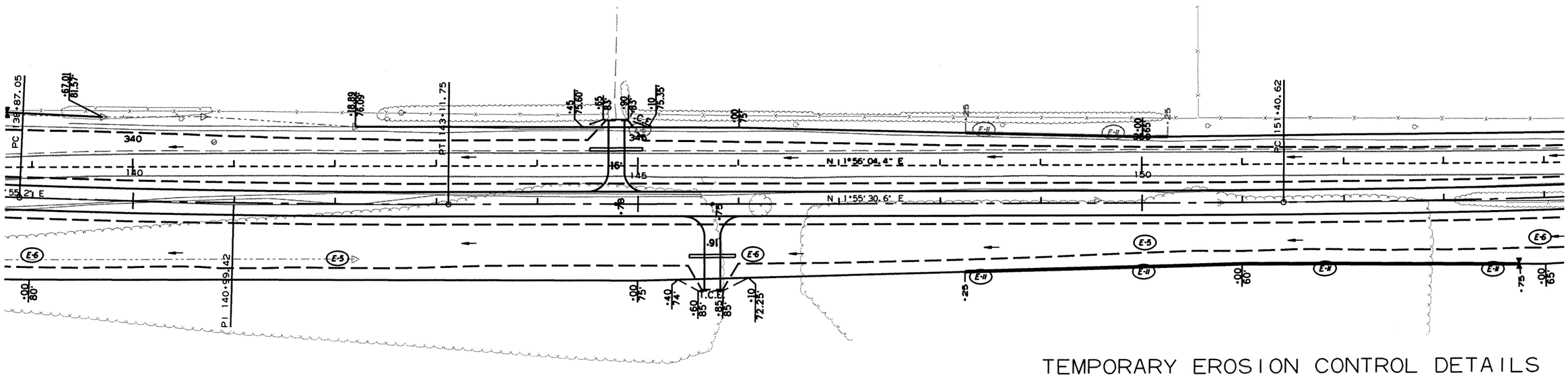
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE



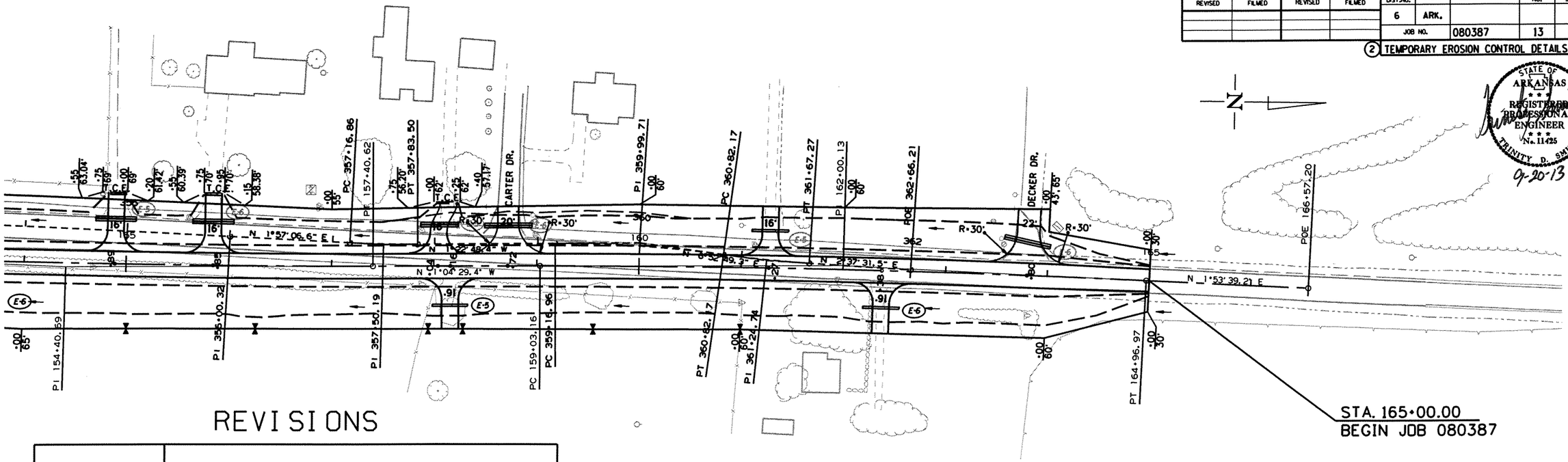
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	13	111

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE

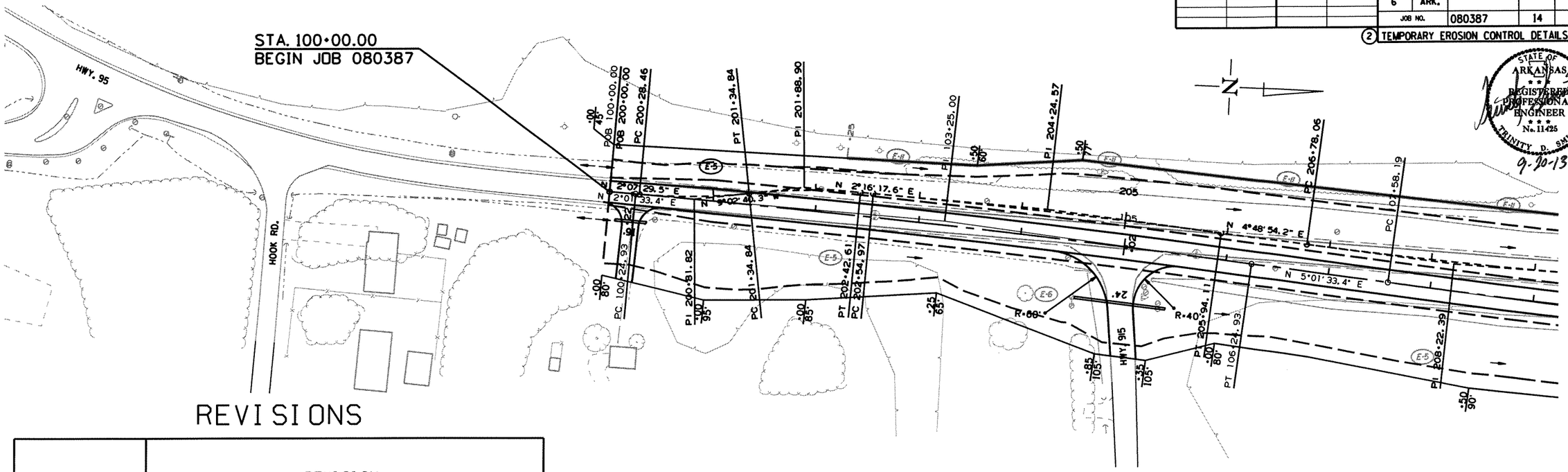
11/6/2012

R080387.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	14	111

(2) TEMPORARY EROSION CONTROL DETAILS



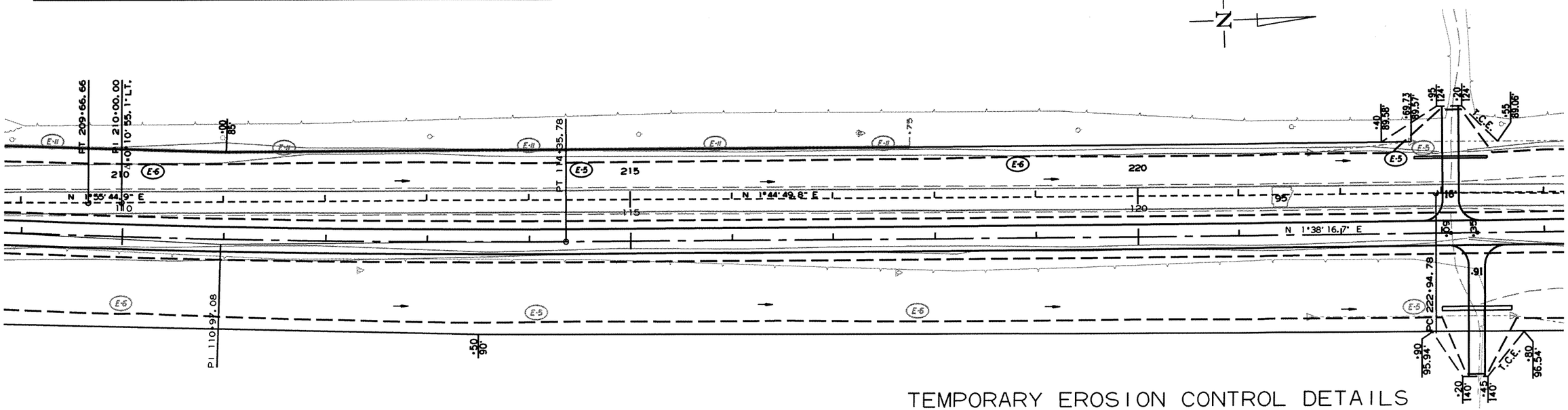
LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 SILT FENCE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-30-13

REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS
STAGE 3

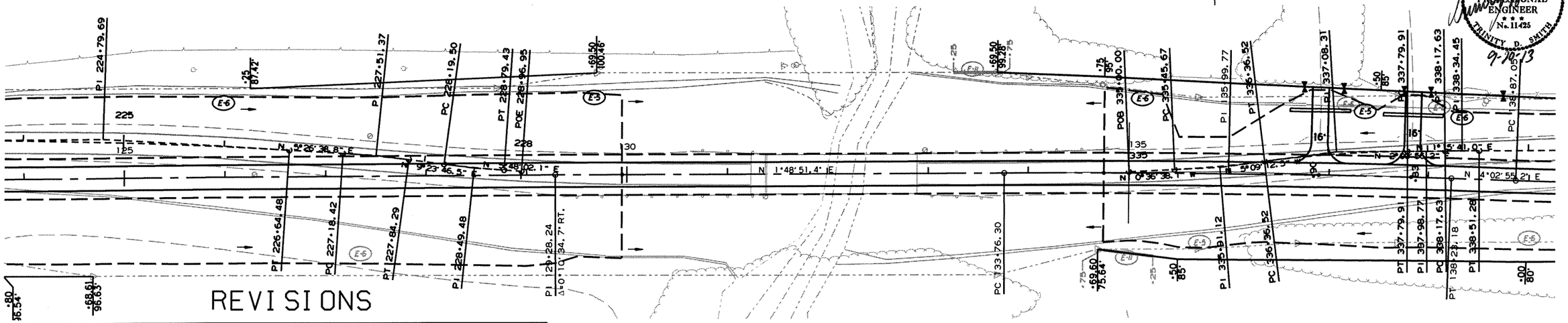
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	15	111

(2) TEMPORARY EROSION CONTROL DETAILS

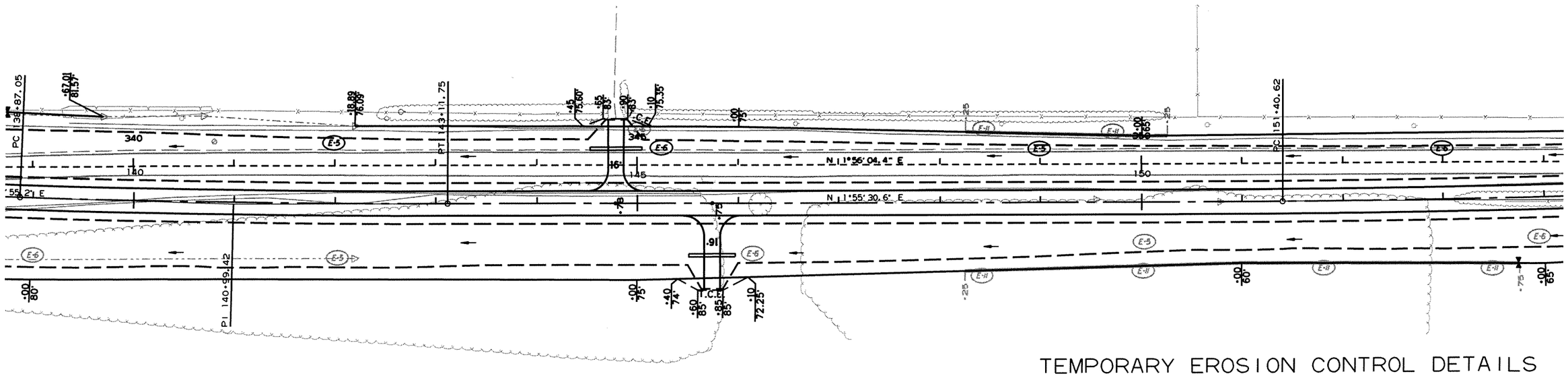
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-13



REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE



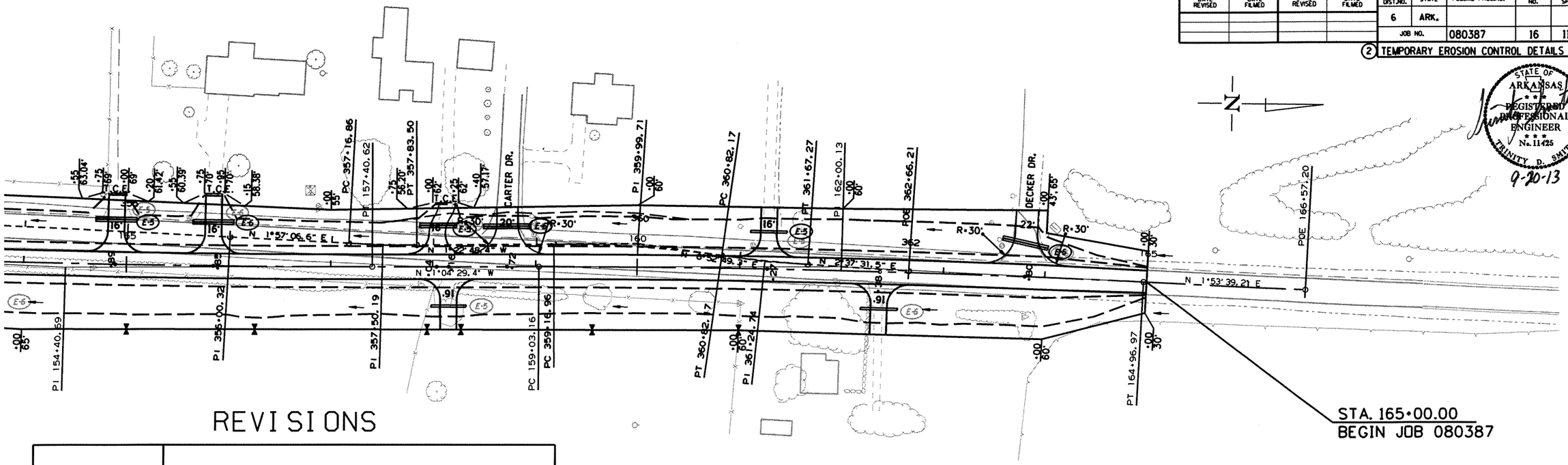
TEMPORARY EROSION CONTROL DETAILS
STAGE 3

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	16	111

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE

11/6/2012

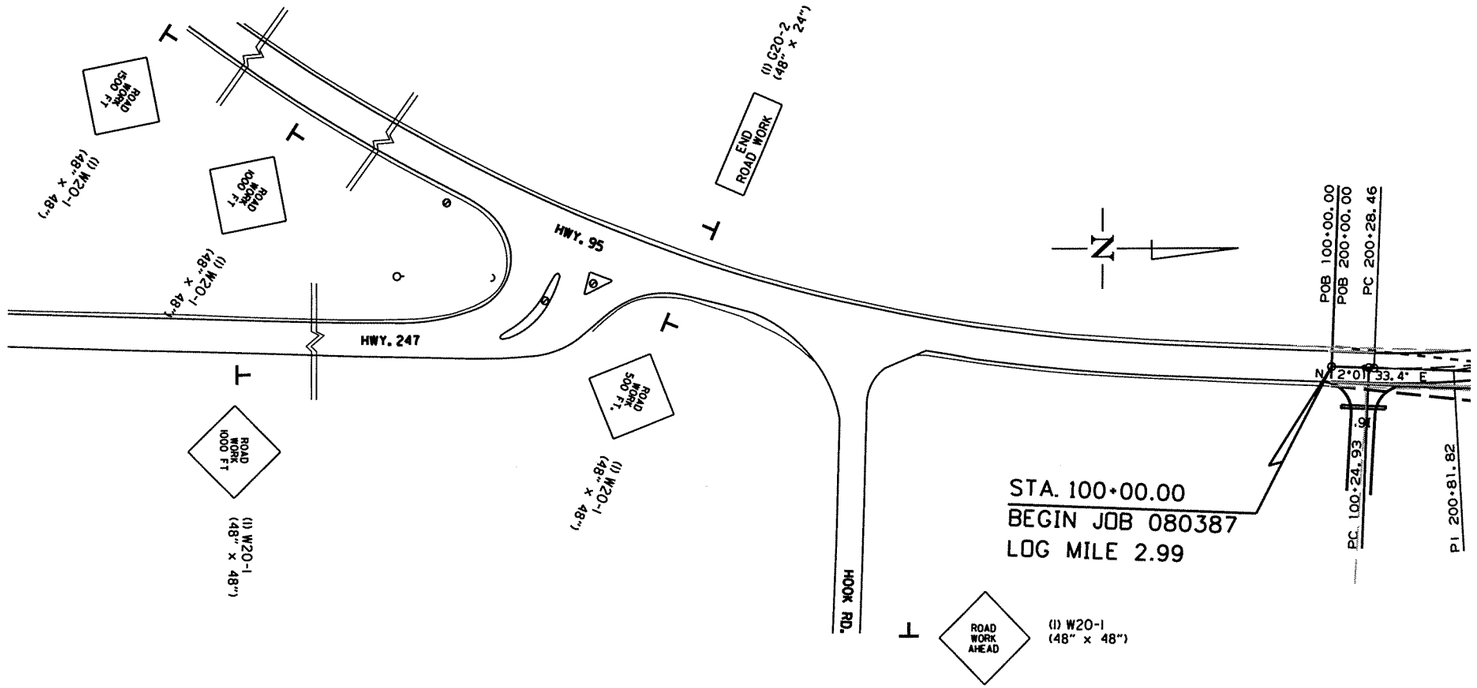
R080387.DGN

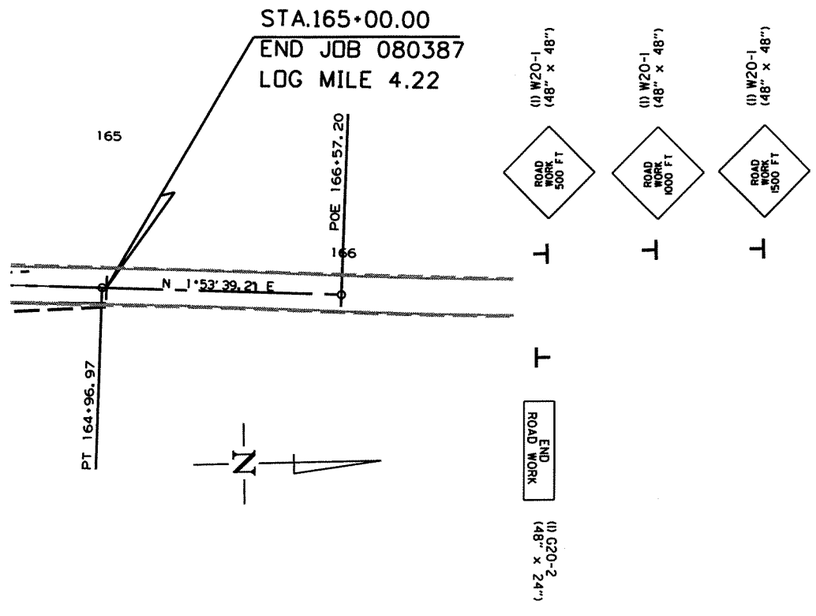
TEMPORARY EROSION CONTROL DETAILS
STAGE 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	17	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13





MAINTENANCE OF TRAFFIC
ADVANCE SIGNS ALL STAGES

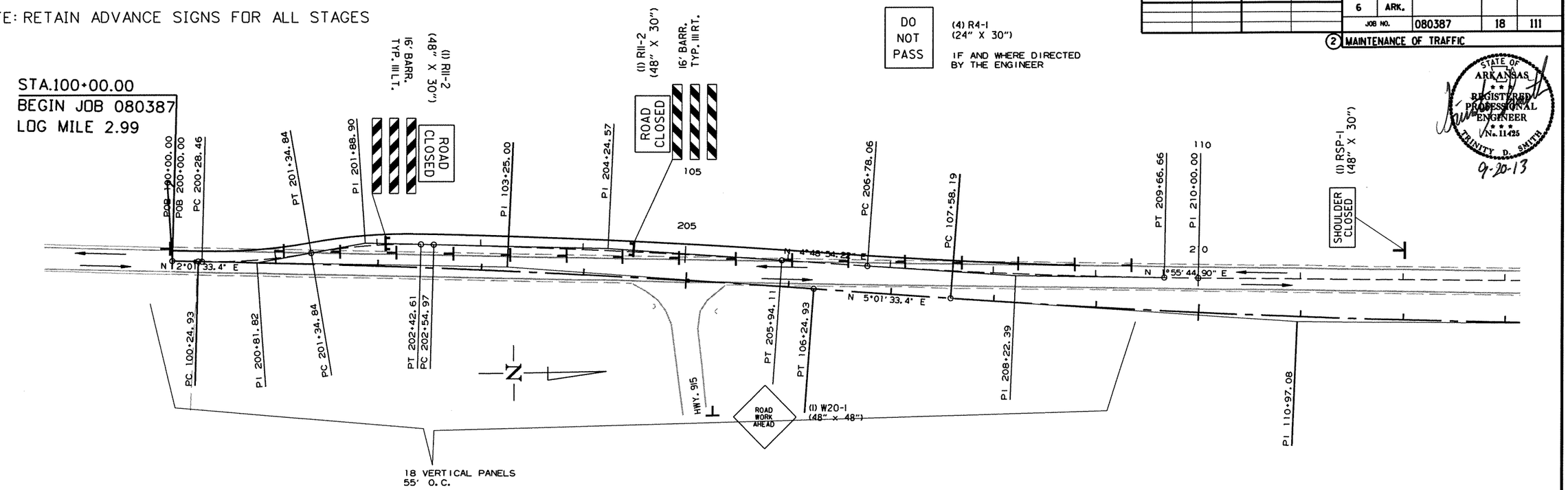
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	18	111

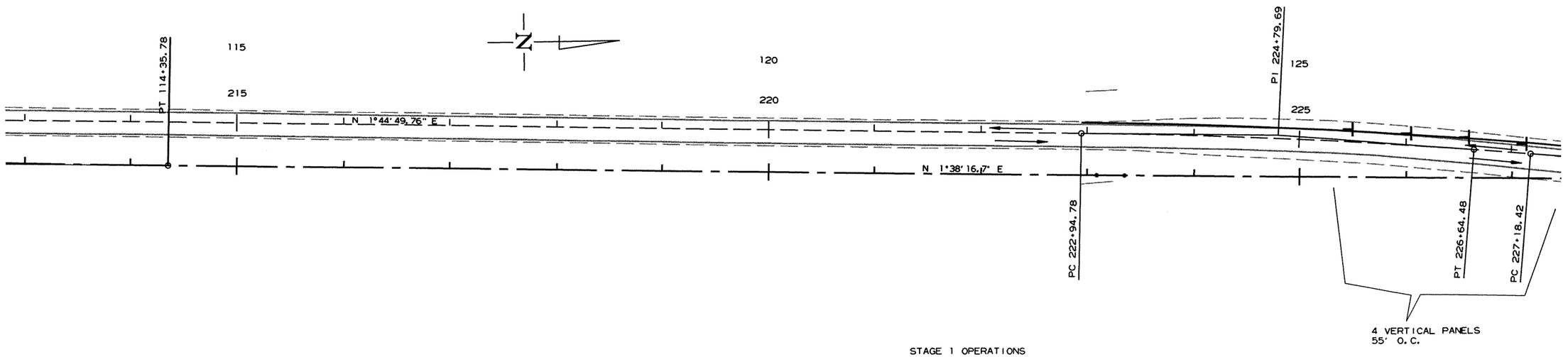
(2) MAINTENANCE OF TRAFFIC

NOTE: RETAIN ADVANCE SIGNS FOR ALL STAGES



CONSTRUCTION PAVEMENT MARKINGS
OVER ACHM FOR LEVELING OR GRADE RAISE
MATCH EXISTING STRIPING
STA. 101+00 - STA. 102+15 = 374 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



STAGE 1 OPERATIONS

NOTCH AND WIDEN LEFT OF EXISTING WHERE SHOWN ON PLANS, TO CARRY STAGE 2 TRAFFIC

MAINTENANCE OF TRAFFIC STAGE 1

11/6/2012

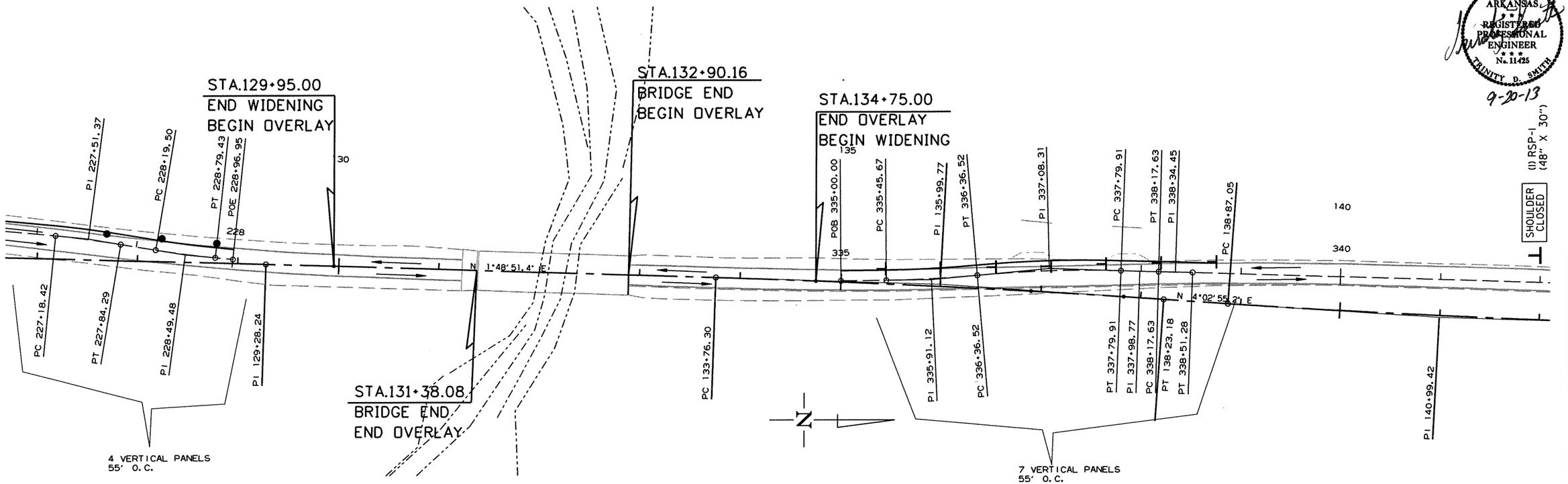
R080387.DGN

mot 1a

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	19	111

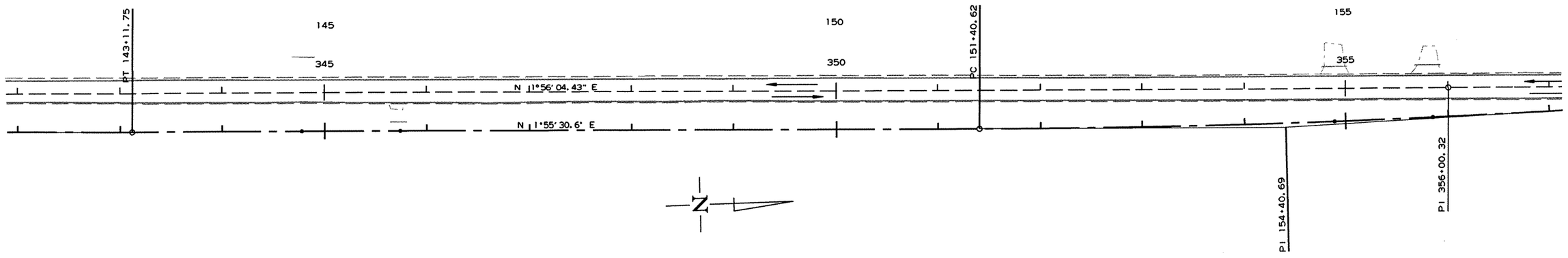
(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



CONSTRUCTION PAVEMENT MARKINGS
OVER ACHM FOR LEVELING OR GRADE RAISE
MATCH EXISTING STRIPING
STA. 127+00 - STA. 129+95 = 959 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
OVER ACHM FOR LEVELING OR GRADE RAISE
MATCH EXISTING STRIPING
STA. 134+75 - STA. 137+18 = 788 LIN. FT.



MAINTENANCE OF TRAFFIC
STAGE 1

11/6/2012

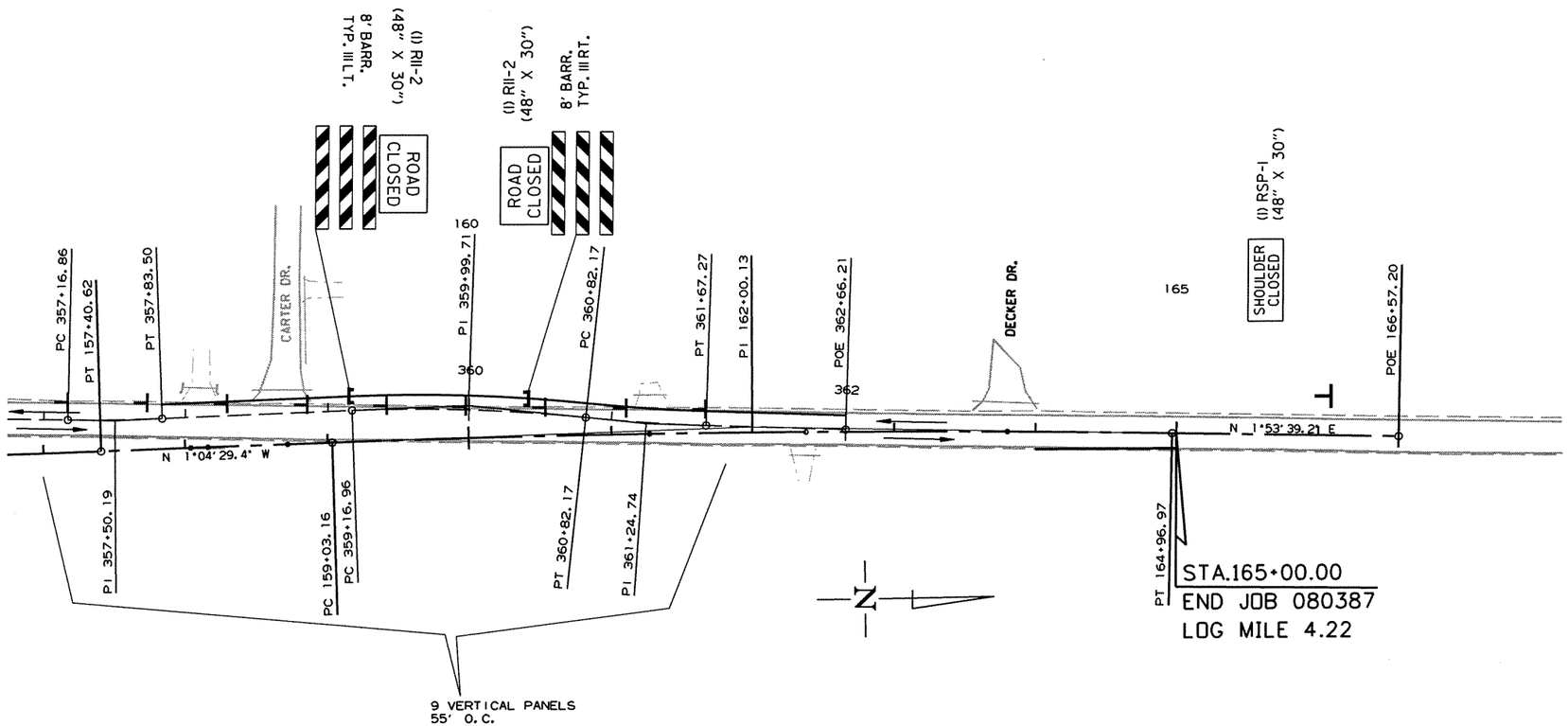
R080387.DGN

mat 1b

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	20	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



CONSTRUCTION PAVEMENT MARKINGS
OVER ACHM FOR LEVELING OR GRADE RAISE
MATCH EXISTING STRIPING
STA. 157+00 - STA. 164+00 = 1575 LIN. FT.

11/6/2012

R080387.DGN

MAINTENANCE OF TRAFFIC STAGE 1

mot 1c

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	21	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
LT. EDGE LINE & CENTERLINE MARKINGS
STA. 101+00 - STA. 102+15 CL CONST. =259 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
STA. 200+00 - STA. 228+97 CL STAGE 2 = 11558 LIN. FT.

END DETOUR
(1) M4-8A (24" X 18")

HWY. 95
(1) D3 (12"xVARIABLE)

(1) M6-1 (21" X 15")
LAKEVIEW RD.
(1) D3 (12"xVARIABLE)
DETOUR
(1) M4-8 (24" X 12")

HWY. 95
HWY. 247

PORTABLE CHANGEABLE MESSAGE SIGN

JUNCTION HWY. 915 CLOSED	LAKEVIEW TRAFFIC USE HOOK

HOOK RD.

STA. 100+00.00
BEGIN JOB 080387
LOG MILE 2.99

8 TRAFFIC DRUMS
30' O.C.

13 TRAFFIC DRUMS
55' O.C.

POB 100+00.00
POB 200+00.00
PC 200+28.46
PT 201+34.84
PI 201+98.90
PI 103+25.00
PI 204+24.57
PC 206+78.06
PC 107+58.19
PC 100+24.93
PI 200+81.82
PC 202+34.84
PT 202+42.61
PC 202+54.97
PT 205+94.11
PT 106+24.93
PI 208+22.39

105
205
N 12°01'33.4" E
N 5°01'33.4" E
4°48'54.22"
R=60'
R=40'

HWY. 95 LAKEVIEW RD.

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. III RT.

ROAD CLOSED
(1) R11-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

PORTABLE CHANGEABLE MESSAGE SIGN

JUNCTION HWY. 915 CLOSED	LAKEVIEW TRAFFIC USE HOOK

(1) M6-1 (21" X 15")
LAKEVIEW RD.
(1) D3 (12"xVARIABLE)
DETOUR
(1) M4-8 (24" X 12")

(1) M6-1 (21" X 15")
HWY. 95
(1) D3 (12"xVARIABLE)
(1) M4-8 (24" X 12")
DETOUR

CRAPPIE RD.

BREAM RD.

MAINTENANCE OF TRAFFIC STAGE 2

11/6/2012

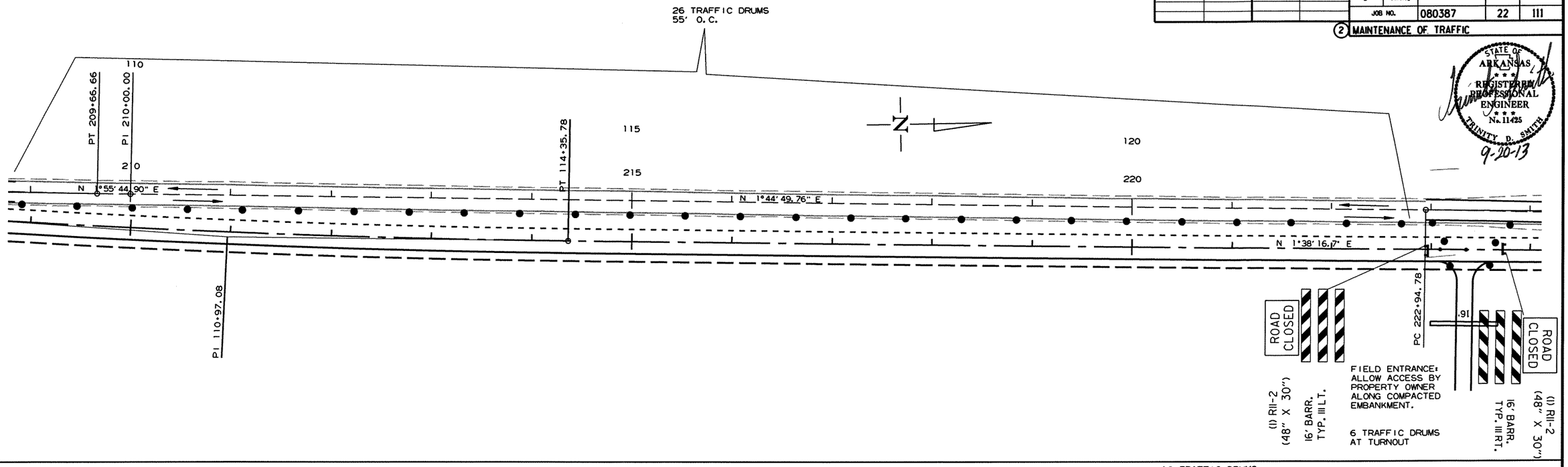
R080387.DGN

not 2a

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	22	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
LT. EDGE + CENTERLINE MARKINGS
STA. 127+00 - STA. 128+97 CL CONST. = 443 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
LT. EDGE + CENTERLINE MARKINGS
STA. 134+75 - STA. 136+50 CL CONST. = 394 LIN. FT.

STAGE 2 OPERATIONS

SHIFT HWY. 95 TRAFFIC ONTO STAGE 2 ALIGNMENT.

CLOSE INTERSECTION WITH HWY. 915 (LAKEVIEW RD.) AND DETOUR TRAFFIC ON HOOK AND CRAPPIE ROADS.

PARTIALLY CONSTRUCT NEW ALIGNMENT RIGHT OF EXISTING.

MAINTENANCE OF TRAFFIC STAGE 2

11/6/2012

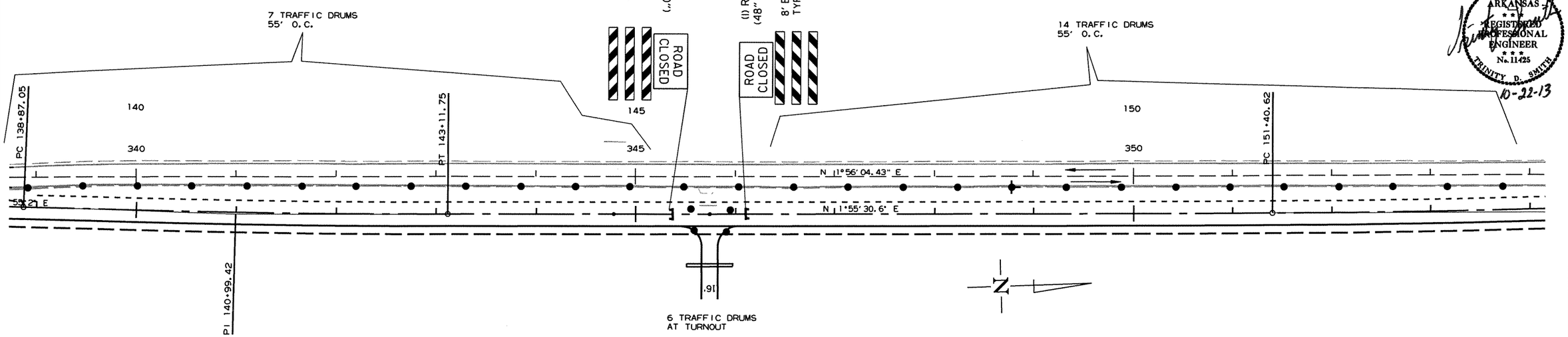
R080387.DGN

mat 2b

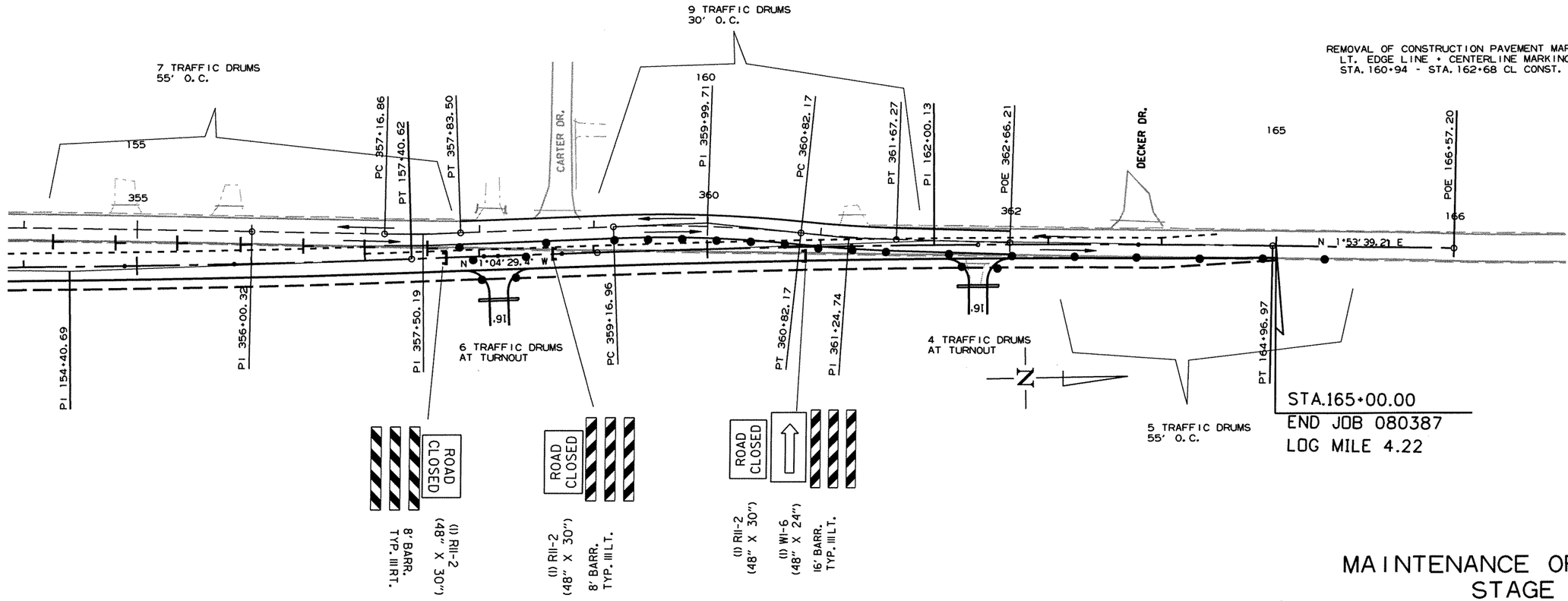
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-22-13				6	ARK.			
				JOB NO.		080387	23	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-22-13



CONSTRUCTION PAVEMENT MARKINGS
STA. 355+00 - STA. 362+66 CL STAGE 2 = 3064 LIN. FT.



REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
LT. EDGE LINE + CENTERLINE MARKINGS
STA. 160+94 - STA. 162+68 CL CONST. = 392 LIN. FT.

STA.165+00.00
END JOB 080387
LOG MILE 4.22

MAINTENANCE OF TRAFFIC STAGE 2

11/6/2012
R080387.DGN
mot 2c

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	24	111

(2) MAINTENANCE OF TRAFFIC

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
RT. EDGE + CENTERLINE MARKINGS FROM STAGE 2
STA. 100+00 - STA. 102+00 CL CONST. = 600 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
LT. & RT. EDGE LINES + DBL. CENTERLINE
STA. 100+00 - STA. 129+95 CL CONST. = 11980 LIN. FT.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA. 101+27 - STA. 129+43 = 2816 LIN. FT.
THIS INCLUDES (2) SPECIAL END UNITS

STATE OF ARKANSAS
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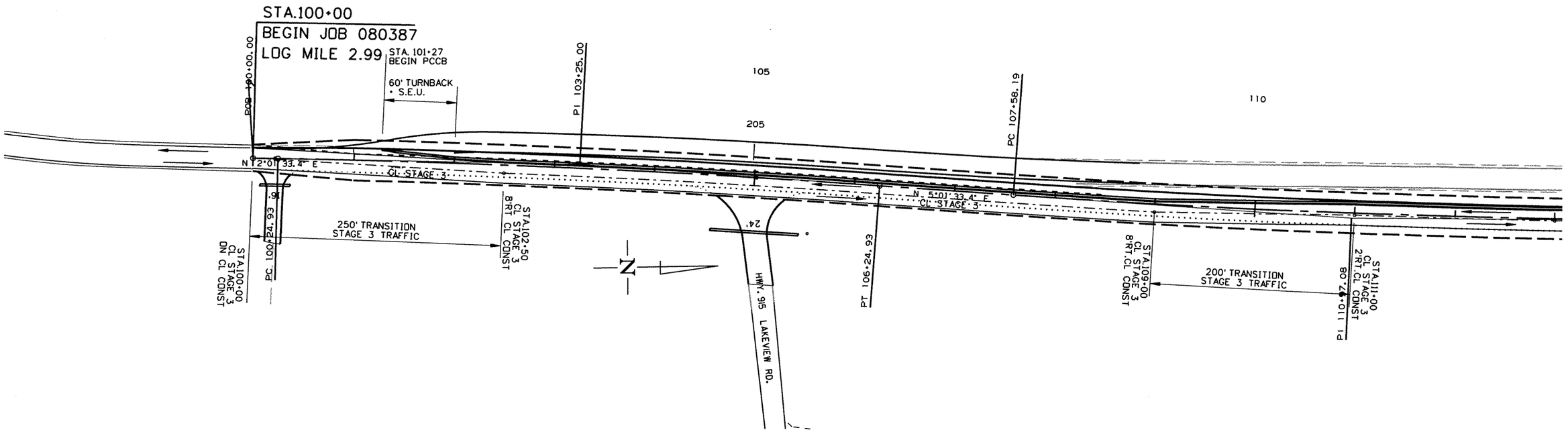


STAGE 3 OPERATIONS

SHIFT HWY. 95 TRAFFIC ONTO STAGE 3 ALIGNMENT.

REOPEN INTERSECTION WITH HWY. 915 (LAKEVIEW RD.)

FINISH CONSTRUCTING LEFT SHOULDER OF NEW ALIGNMENT.

MAINTENANCE OF TRAFFIC STAGE 3

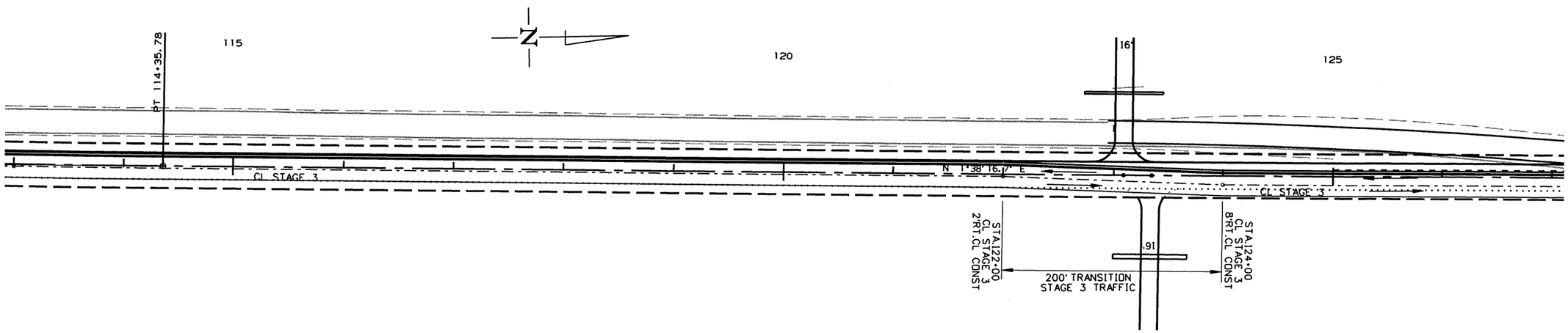
R080387.DGN 11/6/2012

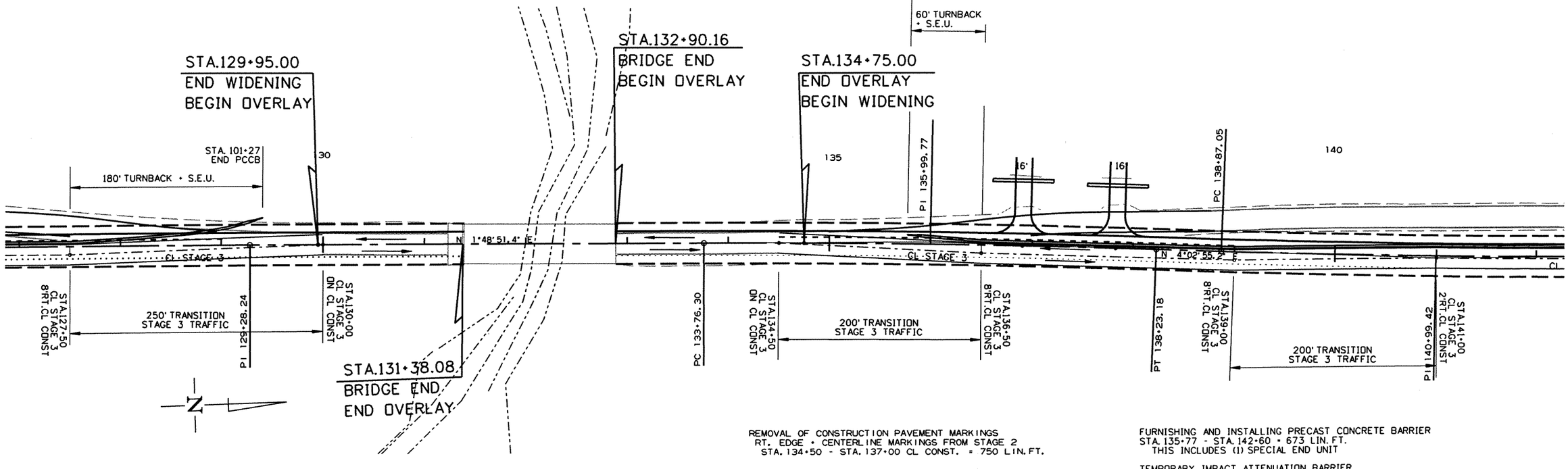
mot 3a

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	25	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13





REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
RT. EDGE • CENTERLINE MARKINGS FROM STAGE 2
STA. 127+50 - STA. 130+00 CL CONST. = 750 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
RT. EDGE • CENTERLINE MARKINGS FROM STAGE 2
STA. 134+50 - STA. 137+00 CL CONST. = 750 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
LT. & RT. EDGE LINES • DBL. CENTERLINE
STA. 134+50 - STA. 165+00 CL CONST. = 12200 LIN. FT.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA. 135+77 - STA. 142+60 = 673 LIN. FT.
THIS INCLUDES (1) SPECIAL END UNIT

TEMPORARY IMPACT ATTENUATION BARRIER
AT STA. 142+50 • 1 EACH

MAINTENANCE OF TRAFFIC
STAGE 3

11/6/2012

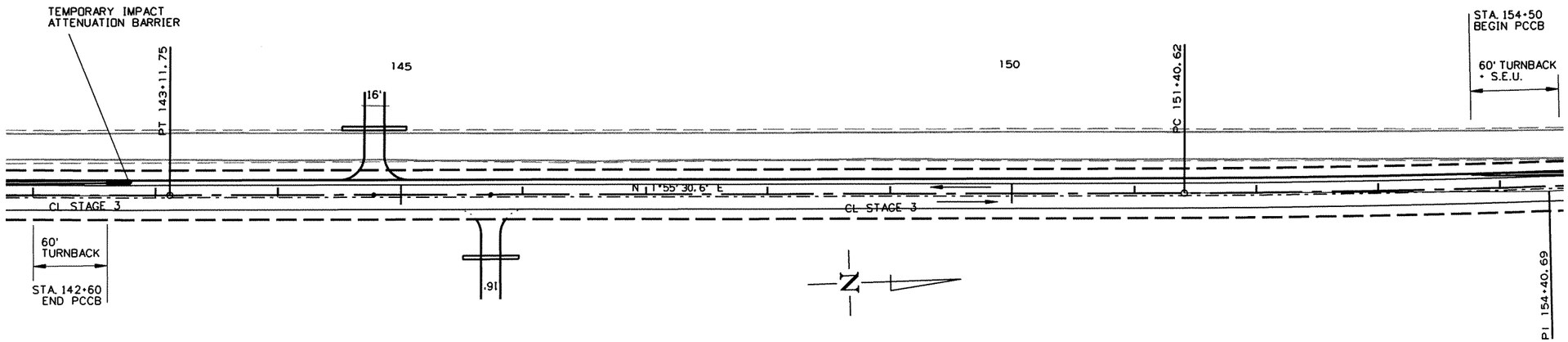
R080387.DGN

mot 3b

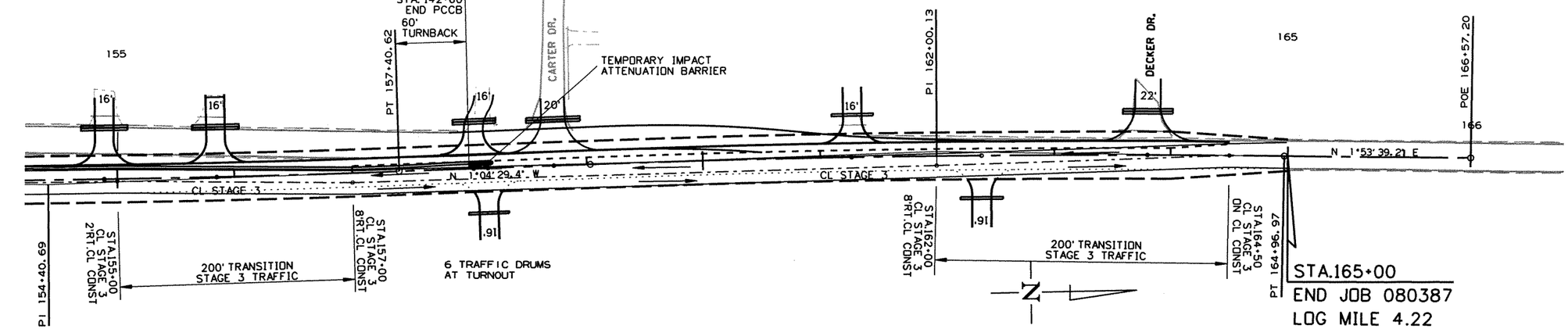
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	26	111

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



NOTE:
RETAIN ENOUGH OF EXISTING HWY. 95 PAVEMENT TO MAINTAIN RESIDENTIAL TRAFFIC ON THESE DRIVEWAYS UNTIL EACH DRIVEWAY TURNOUT IS RECONSTRUCTED.



FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA. 153+57 - STA. 158+00 = 423 LIN. FT.
THIS INCLUDES (1) SPECIAL END UNIT

TEMPORARY IMPACT ATTENUATION BARRIER
AT STA.158+00 = 1 EACH

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
RT. EDGE + CENTERLINE MARKINGS FROM STAGE 2
STA. 160+50 - STA. 162+67 CL CONST. = 651 LIN. FT.

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MAINTENANCE OF TRAFFIC STAGE 3

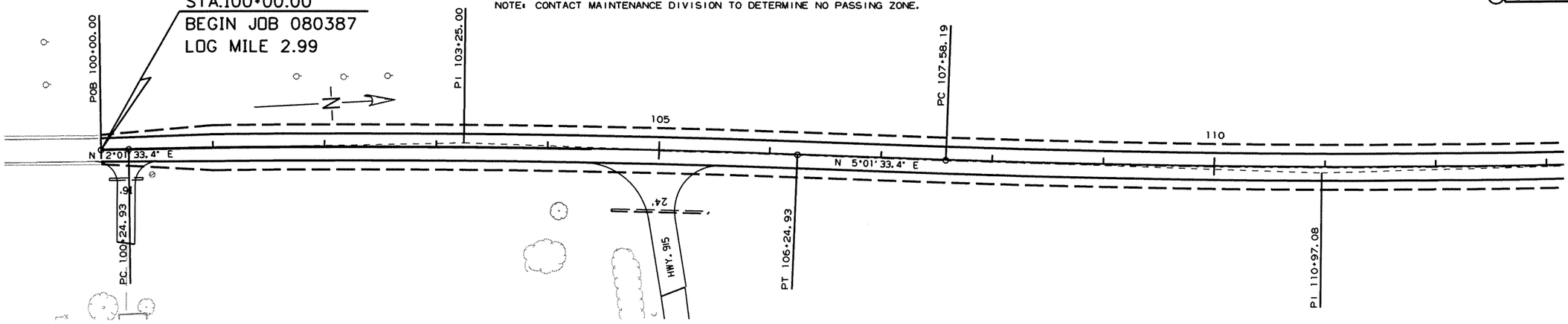
mot 3c

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080387		27	III

(2) PERMANENT PAVEMENT MARKING DETAILS

THERMOPLASTIC PAVEMENT MARKINGS
DBL. CENTERLINE STA. 100+00 - STA. 115+00 = 3000 LIN.FT. 4" YELLOW
RT. & LT. EDGE LINES ENTIRE JOB + BRIDGE DECK = 13,000 LIN.FT. 4" WHITE
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) AT 40' O.C. = 38 EACH

NOTE: CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONE.



STATE OF ARKANSAS
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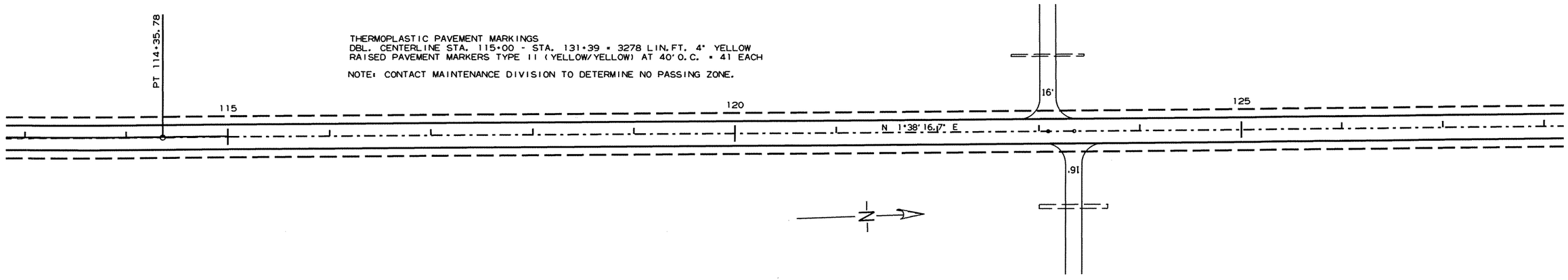
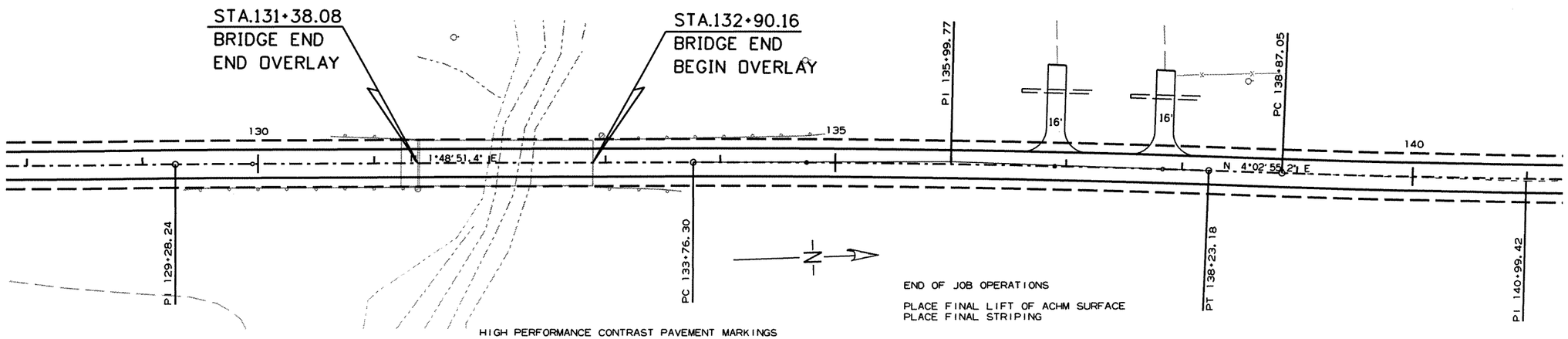
No. 11425
TRINITY D. SMITH
9-20-13

THERMOPLASTIC PAVEMENT MARKINGS
DBL. CENTERLINE STA. 115+00 - STA. 131+39 = 3278 LIN.FT. 4" YELLOW
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) AT 40' O.C. = 41 EACH

NOTE: CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONE.





END OF JOB OPERATIONS

PLACE FINAL LIFT OF ACHM SURFACE
PLACE FINAL STRIPING

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
DBL. CENTERLINE ON CONCRETE BRIDGE DECK
STA. 131+38.08 - STA. 132+90.16 = 305 LIN.FT. 4" YELLOW
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) AT 40' O.C. = 4 EACH

PERMANENT PAVEMENT MARKING DETAILS

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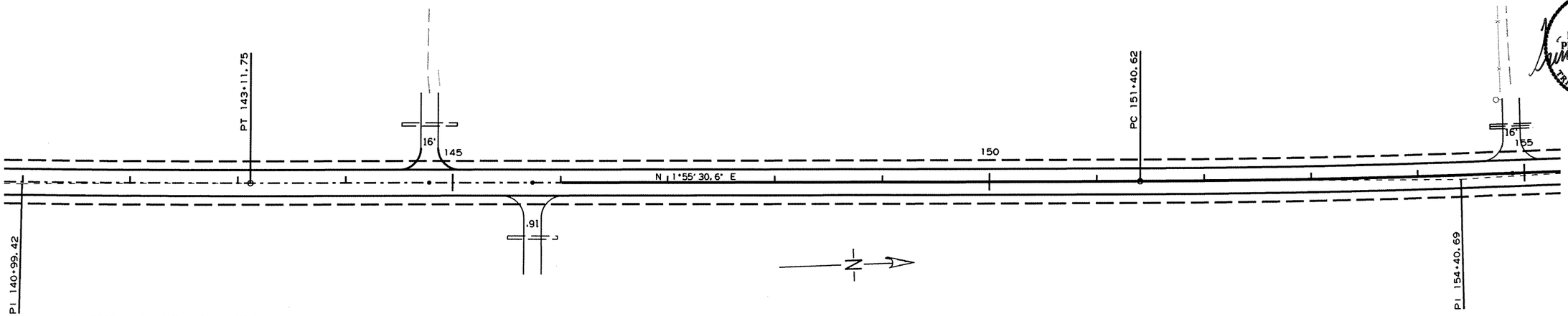
				6	ARK.			
				JOB NO.		080387	28	III

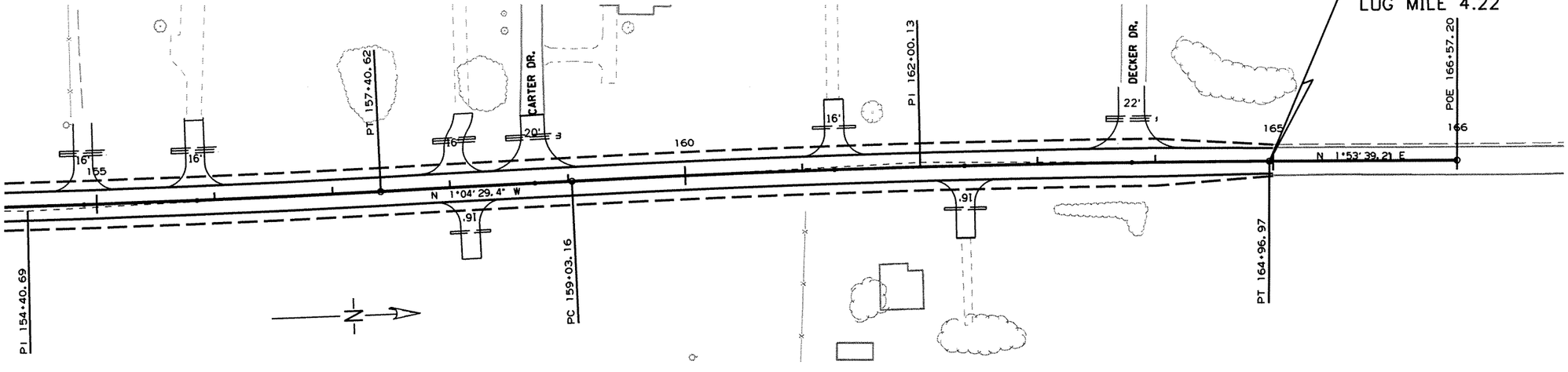
(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



THERMOPLASTIC PAVEMENT MARKINGS
DBL. CENTERLINE STA. 132+90.16 - STA. 146+00 = 2600 LIN.FT. 4" YELLOW
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) AT 40' O.C. = 33 EACH
NOTE: CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONE.

STA.165+00.00
END JOB 080387
LOG MILE 4.22



THERMOPLASTIC PAVEMENT MARKINGS
DBL. CENTERLINE STA. 146+00 - STA. 165+00 = 3800 LIN.FT. 4" YELLOW
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) AT 40' O.C. = 48 EACH
NOTE: CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONE.

11/6/2012

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PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-22-13				6	ARK.			
				JOB NO.		080387	29	111

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-22-13

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKINGS		HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
							TYPE II (YEL/YEL)	4"		
								WHITE	YELLOW	YELLOW (4")
	LIN. FT. - EACH				LIN. FT.		EACH	LIN. FT.		
CONSTRUCTION PAVEMENT MARKINGS	3696	14622	24180		42498					
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		1488	2751			4239				
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)							164			
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")				13000				13000		
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")				12678					12678	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")				320						305
TOTALS					**42498**	**4239**	**164**	**13000**	**12678**	**305**

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	PORTABLE CHANGEABLE MESSAGE SIGN	VERTICAL PANELS
											RIGHT	LEFT					
			LIN. FT. - EACH					NO.	SQ. FT.	EACH	LIN. FT.			EACH		WEEK	EACH
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	3	48.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	2	2	32.0								
G20-2	END ROAD WORK	48"x24"	3	3	3	3	3	3	24.0								
W1-6	LARGE ARROW	48"x24"		4			4	4	32.0								
M4-8A	END DETOUR	24"x18"		1			1	1	3.0								
D3	STREET NAME: LAKEVIEW RD.	12"x36"		3			3	3	9.0								
D3	HWY. 95	12"x36"		3			3	3	9.0								
M6-1	ARROW LT OR RT	12"x15"		5			5	5	6.3								
M4-8	DETOUR	24"x12"		5			5	5	10.0								
R11-2	ROAD CLOSED	48"x30"	4	11			11	11	110.0								
R4-1	DO NOT PASS	24"x30"	4	4	4		4	4	20.0								
RSP-1	SHOULDER CLOSED	48"x30"	3				3	3	30.0								
	TRAFFIC DRUMS			144			144			144							
	VERTICAL PANELS		42				42										42
	TYPE III BARRICADE-RT. (8')		1	3			3				24						
	TYPE III BARRICADE-LT. (8')		1	3			3					24					
	TYPE III BARRICADE-RT. (16')		1	3			3				48						
	TYPE III BARRICADE-LT. (16')		1	3			3					48					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER				3912		3912						3912				
	TEMPORARY IMPACT ATTENUATION BARRIER				2		2							2			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)				2		2								2		
	PORTABLE CHANGEABLE MESSAGE SIGN			2			2									30	
TOTALS									**397.3**	**144**	**72**	**72**	**3912**	**2**	**2**	**30**	**42**

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	30	111

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
105+02	24" X 59' C.M. PIPE ON LT.	1
123+09	24" X 30' C.M. PIPE ON LT.	1
123+10	48" X 30' C.M. PIPE ON RT.	1
136+90	36" X 31' C.M. PIPE ON LT.	1
137+83	36" X 30' C.M. PIPE ON LT.	1
144+78	36" X 23' C.M. PIPE ON LT	1
145+74	36" X 17' R.C. PIPE ON RT.	1
154+89	18" X 25' R.C. PIPE ON LT.	1
155+85	18" X 25' R.C. PIPE ON LT.	1
158+04	18" X 25' R.C. PIPE ON LT.	1
158+16	24" X 24' C.M. PIPE ON RT.	1
158+72	12" X 62' C.M. PIPE ON LT.	1
161+27	18" X 24' R.C. PIPE ON LT.	1
162+38	24" X 22' C.M. PIPE ON RT.	1
163+80	18" X 48' C.M. PIPE ON LT.	1
TOTAL		15

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
100+45	123+42	24	24
134+75	135+29	2	2
136+15	159+75	24	24
160+53	160+77	1	1
161+43	162+29	2	2
163+14	163+93	1	1
TOTALS		54	54

DUMPED RIPRAP AND FILTER BLANKET

	STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
				CU. YDS.	SQ. YDS.
*	131+18	133+10	SCOUR PREVENTION	1269	2422
TOTALS:				1269	2422

* SEE SHEET 44 FOR ADDITIONAL INFORMATION.

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

EARTHWORK

	STATION	STATION	DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	SOIL STABILIZATION
				CU. YD.		TON
	ENTIRE	PROJECT	STAGE 1-MAIN LANES	756	838	
	ENTIRE	PROJECT	STAGE 1-UNDERCUT & BACKFILL	581	581	
	ENTIRE	PROJECT	STAGE 2-MAIN LANES	7076	93108	
	ENTIRE	PROJECT	STAGE 2-UNDERCUT & BACKFILL	18854	18854	
	ENTIRE	PROJECT	STAGE 3-MAIN LANES	12733	11044	
*	131+18	133+10	SCOUR PREVENTION	1269		
	ENTIRE	PROJECT	APPROACHES	5	4140	
**	ENTIRE	PROJECT	TO BE USED IF AND WHERE			
			DIRECTED BY THE ENGINEER			300
TOTALS				41274	128565	300

* SEE SHEET 44 FOR ADDITIONAL INFORMATION.

** QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

09/18/2012

R080387.DGN

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+00	101+00	MAIN LANES	20	222
130+39	131+39	MAIN LANES	20	222
132+89	133+89	MAIN LANES	20	222
164+00	165+00	MAIN LANES	20	222
TOTAL				888

NOTE: AVERAGE MILLING DEPTH 1".

REMOVAL AND DISPOSAL OF ITEMS

STATION		DESCRIPTION	SIGNS	POST
			EACH	
104+52		SIGN ON RT.	1	
122+95	123+20	GATE POST WITH CABLE ON LT.		2
123+40	123+45	GATE POST WITH CABLE ON RT.		2
164+02	164+02	SIGN ON LT.	1	
TOTALS			2	4

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
101+00	35	11	22.80	92	44	6.30	5' RT.	0-4.5Z	35	18	A-6(16)	BR/GR
101+00	35	11	22.70	92	44	6.30	11' RT.	0-4.5Z	33	17	A-6(14)	BROWN
101+00	35	11	22.80	92	44	6.20	19' RT.	0-4.5Z	33	20	A-6(16)	BROWN
109+00	35	11	30.60	92	44	6.00	C.L.	0-5	33	14	A-6(10)	BROWN
117+00	35	11	38.70	92	44	5.50	C.L.	0-5	34	15	A-6(14)	BROWN
125+00	35	11	45.30	92	44	5.60	C.L.	0-5	36	19	A-6(15)	BROWN
134+00	35	11	55.20	92	44	5.20	5' LT.	0-5	25	12	A-6(5)	BROWN
134+00	35	11	55.20	92	44	5.30	11' LT.	0-5	47	33	A-7-6(25)	BROWN
141+00	35	12	2.20	92	44	4.90	C.L.	0-5	38	21	A-6(18)	RD/BR
149+00	35	12	10.10	92	44	4.70	C.L.	0-5	28	10	A-4(8)	BROWN
157+00	35	12	18.00	92	44	4.50	C.L.	0-5	31	14	A-6(10)	BROWN
164+00	35	12	25.00	92	44	4.50	5' LT.	0-5	21	8	A-4(3)	BROWN
164+00	35	12	25.00	92	44	4.60	12' LT.	0-5	23	9	A-4(4)	BROWN
164+00	35	12	25.00	92	44	4.70	22' LT.	0-5	34	17	A-6(14)	BROWN
157+00	35	12	18.00	92	44	4.50	C.L.	0-5	31	13	A-6(9)	BROWN

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

Z- AUGER REFUSAL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	31	111

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.
100+00	122+76	HWY. 95 ON LT.	1832
123+42	131+38	HWY. 95 ON LT.	640
132+90	136+57	HWY. 95 ON LT.	295
137+23	137+50	HWY. 95 ON LT.	27
138+16	144+45	HWY. 95 ON LT.	509
145+11	154+56	HWY. 95 ON LT.	765
155+22	155+52	HWY. 95 ON LT.	30
156+18	157+71	HWY. 95 ON LT.	129
159+17	160+95	HWY. 95 ON LT.	154
161+61	163+34	HWY. 95 ON LT.	149
164+26	165+00	HWY. 95 ON LT.	62
100+56	104+27	HWY. 95 ON RT.	299
105+62	123+01	HWY. 95 ON RT.	1403
123+67	131+38	HWY. 95 ON RT.	627
132+90	145+41	HWY. 95 ON RT.	1011
146+07	157+83	HWY. 95 ON RT.	948
158+49	162+05	HWY. 95 ON RT.	296
162+71	165+00	HWY. 95 ON RT.	193
TOTAL			9369

FENCING

STATION	STATION	SIDE	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	* 16'-0" GATES	* 20'-0" GATES
			LIN. FT.		EACH	EACH
136+82	136+98	LT.			1	
137+53	138+47	LT.		74		1
152+80	161+00	RT.	804		1	
161+43	163+65	LT.	222			
162+71	163+84	RT.	113			
TOTALS			1139	74	2	1

* DENOTES ALTERNATE BID ITEM.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE 1						0.35	0.35	7.1						
ENTIRE	PROJECT	STAGE 2	6.13	12.26	6.13	625.3	6.13	1.03	1.03	21.0						
ENTIRE	PROJECT	STAGE 3	5.71	11.42	5.71	582.4	5.71									
ENTIRE	PROJECT	EXISTING STAGE									550	72	2252			132
ENTIRE	PROJECT	STAGE 1									44	6				4
ENTIRE	PROJECT	STAGE 2									330	51				32
ENTIRE	PROJECT	STAGE 3									330	45	152			36
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								24.00	24.00	489.6	330	45	600	455	455	550
TOTALS			11.84	23.68	11.84	1207.7	11.84	25.38	25.38	517.7	1584	219	3004	455	455	754

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING.
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

NOTE: THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

*QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

09/18/2012

R080387.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	32	111

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-2013

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM BINDER COURSE (1") 440 LBS. PER SQ. YD. (PG 64-22)		ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		
									24"	36"	48"
			FEET	SQ. YD.	TON	SQ. YD.	TON	TON	LIN.FT.		
100+22	RT.	DRIVEWAY	16			91.5	10.1	51.4	30		
105+02	RT.	HIGHWAY 915	24	300.9	66.2	586.1	64.5	108.4	86		
123+09	LT.	DRIVEWAY	16			181.9	20.0	77.6	72		
123+35	RT.	DRIVEWAY	16			212.3	23.4	89.0			68
136+90	LT.	DRIVEWAY	16			117.3	12.9	50.3		60	
137+83	LT.	DRIVEWAY	16			112.0	12.3	48.8		60	
144+78	LT.	DRIVEWAY	16			113.8	12.5	47.3		52	
145+74	RT.	DRIVEWAY	16			116.7	12.8	48.7		46	
154+89	LT.	DRIVEWAY	16			87.0	9.6	37.3	80		
155+85	LT.	DRIVEWAY	16			88.4	9.7	38.2	80		
158+04	LT.	DRIVEWAY	16			78.4	8.6	33.5	72		
158+16	RT.	DRIVEWAY	16			53.8	5.9	33.8	34		
158+72	LT.	CARTER DRIVE	20			130.5	14.4	53.3	92		
161+27	LT.	DRIVEWAY	16			55.0	6.1	32.4	72		
162+38	RT.	DRIVEWAY	16			56.0	6.2	33.4	36		
163+80	LT.	DECKER DRIVE	22			174.1	19.2	71.1	96		
* ENTIRE PROJECT TEMPORARY DRIVES								276.0			
TOTALS				**300.9**	**66.2**	**2254.8**	**248.2**	**1130.5**	**750**	**218**	**68**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE PROJECT TO BE USED IF AND				
WHERE DIRECTED BY THE ENGINEER			2000	10
TOTALS			**2000**	**10**

NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

DITCH LINING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER	EROSION CONTROL MATTING (CLASS 3)
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.	SQ. YD.
100+00	105+50	DITCH ON RT.	550	8	488.89	244.44	3.08	
101+00	102+00	DITCH ON LT.	100	8	88.89	44.44	0.56	
102+00	103+00	DITCH ON LT.	100	8				88.89
163+00	163+60	DITCH ON LT.	60	8				53.33
TOTALS					**577.78**	**288.88**	**3.64**	**142.22**

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND	
WHERE DIRECTED BY THE ENGINEER.	180
TOTAL	**180**

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	62
DIRECTED BY THE ENGINEER	
TOTAL	**62**

NOTE: QUANTITY IS ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	31	62
DIRECTED BY THE ENGINEER		
TOTALS	**31**	**62**

BASIS OF ESTIMATE:
ACHM PATCH ..... 25 TONS / MILE
TACK..... 50 GAL. / MILE
NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS	
		(SINGLE)	(DOUBLE)
	EACH		
ENTIRE PROJECT	10	4	3
TOTALS	**10**	**4**	**3**

09/18/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	33	111

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")			
			FEET	TON / STATION	TON	TOTAL WID. FEET	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON
MAIN LANES																	
100+00	101+00	MAIN LANES - NOTCH & WIDEN TRANSITION	100.0	15.50	15.5	29.5	327.8	0.03	9.8	5.0	55.6	440.0	12.2	28.5	316.7	220.0	34.8
101+00	101+73	MAIN LANES - NOTCH & WIDEN	73.0	15.50	11.3	29.5	239.3	0.03	7.2	5.0	40.6	440.0	8.9	28.5	231.2	220.0	25.4
101+73	127+74	MAIN LANES - FULL DEPTH	2601.0	93.25	2425.4	49.5	14305.5	0.03	429.2	25.0	7225.0	440.0	1589.5	48.5	14016.5	220.0	1541.8
127+74	129+95	MAIN LANES - NOTCH & WIDEN	221.0	15.50	34.3	29.5	724.4	0.03	21.7	5.0	122.8	440.0	27.0	28.5	699.8	220.0	77.0
129+95	131+38.08	MAIN LANES - OVERLAY	143.1	VAR.	2.4	40.0	636.0	0.10	63.6					40.0	636.0	220.0	70.0
132+90.16	134+75	MAIN LANES - OVERLAY	184.8	VAR.	3.1	40.0	821.3	0.10	82.1					40.0	821.3	220.0	90.3
134+75	136+54	MAIN LANES - NOTCH & WIDEN	179.0	15.50	27.7	29.5	586.7	0.03	17.6	5.0	99.4	440.0	21.9	28.5	566.8	220.0	62.3
136+54	160+27	MAIN LANES - FULL DEPTH	2373.0	93.25	2212.8	49.5	13051.5	0.03	391.5	25.0	6591.7	440.0	1450.2	48.5	12787.8	220.0	1406.7
160+27	164+00	MAIN LANES - NOTCH & WIDEN	373.0	15.50	57.8	29.5	1222.6	0.03	36.7	5.0	207.2	440.0	45.6	28.5	1181.2	220.0	129.9
164+00	165+00	MAIN LANES - NOTCH & WIDEN TRANSITION	100.0	15.50	15.5	29.5	327.8	0.03	9.8	5.0	55.6	440.0	12.2	28.5	316.7	220.0	34.8
SHOULDERS																	
100+00	100+62	SHOULDER TRANSITION	62.0	49.88	30.9									4.0	27.6	220.0	3.0
100+62	101+00	SHOULDER TRANSITION - FULL DEPTH ON RT.	38.0	106.25	40.4	13.0	54.9	0.03	1.6	6.5	27.4	440.0	6.0	13.0	54.9	220.0	6.0
101+00	111+00	SHOULDERS - FULL DEPTH ON RT.	1000.0	118.50	1185.0	16.0	1777.8	0.03	53.3	8.0	888.9	440.0	195.6	24.0	2666.7	220.0	293.3
111+00	122+00	SHOULDERS	1100.0	149.50	1644.5									16.0	1955.6	220.0	215.1
122+00	129+30	SHOULDERS - FULL DEPTH ON RT.	730.0	118.50	865.1	16.0	1297.8	0.03	38.9	8.0	648.9	440.0	142.8	24.0	1946.7	220.0	214.1
129+30	129+95	SHOULDERS	65.0	149.50	97.2									16.0	115.6	220.0	12.7
134+75	141+00	SHOULDERS - FULL DEPTH ON RT.	625.0	118.50	740.6	16.0	1111.1	0.03	33.3	8.0	555.6	440.0	122.2	24.0	1666.7	220.0	183.3
141+00	155+00	SHOULDERS	1400.0	149.50	2093.0									16.0	2488.9	220.0	273.8
155+00	163+88	SHOULDERS - FULL DEPTH ON RT.	888.0	118.50	1052.3	16.0	1578.7	0.03	47.4	8.0	789.3	440.0	173.6	24.0	2368.0	220.0	260.5
163+88	164+00	SHOULDERS	12.0	149.50	17.9									16.0	21.3	220.0	2.3
164+00	165+00	SHOULDER TRANSITION	100.0	117.75	117.8									11.0	122.2	220.0	13.4
DETOUR FOR MAINTENANCE OF TRAFFIC																	
100+00	108+50	DETOUR FOR MOT - LANE WIDENING	850.0	VAR.	565.1									VAR.	1076.5	440.0	236.8
100+00	108+50	DETOUR FOR MOT - SHOULDER	850.0	VAR.	232.0									VAR.	177.8	220.0	19.6
125+50	128+50	DETOUR FOR MOT - LANE WIDENING	300.0	VAR.	115.5									VAR.	219.9	440.0	48.4
125+50	128+50	DETOUR FOR MOT - SHOULDER	300.0	VAR.	72.5									VAR.	55.6	220.0	6.1
135+50	139+00	DETOUR FOR MOT - LANE WIDENING	350.0	VAR.	47.3									VAR.	90.1	440.0	19.8
135+50	139+00	DETOUR FOR MOT - SHOULDER	350.0	VAR.	87.0									VAR.	66.7	220.0	7.3
157+50	161+50	DETOUR FOR MOT - LANE WIDENING	400.0	VAR.	108.2									VAR.	206.1	440.0	45.3
157+50	161+50	DETOUR FOR MOT - SHOULDER	400.0	VAR.	101.5									VAR.	77.8	220.0	8.6
ADDITIONAL FOR LEVELING																	
101+00	101+73	MAIN LANES	73.0			VAR.		0.10	47.7					VAR.			43.7
127+74	130+38	MAIN LANES	264.0			VAR.		0.10	71.2					VAR.			65.3
133+90	136+54	MAIN LANES	264.0			VAR.		0.10	54.0					VAR.			49.5
160+27	164+00	MAIN LANES	373.0			VAR.		0.10	105.7					VAR.			96.8
ADDITIONAL FOR METHOD OF RAISING GRADE																	
101+73	102+18	MAIN LANES	45.0			VAR.		VAR.	10.4	VAR.		VAR.	52.8				
136+78	137+34	MAIN LANES	56.0			VAR.		VAR.	8.8	VAR.		VAR.	44.1				
TOTALS					**14019.6**		**38063.2**		**1541.5**		**17308.0**		**3904.6**		**46978.7**		**5597.7**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

09/18/2012

R080387.DGN

QUANTITIES

SUMMARY OF QUANTITIES

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	SP & 201	CLEARING		54	STATION
	SP & 201	GRUBBING		54	STATION
	202	REMOVAL AND DISPOSAL OF POSTS		4	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		15	EACH
	202	REMOVAL AND DISPOSAL OF SIGNS		2	EACH
	210	UNCLASSIFIED EXCAVATION		41274	CU. YD.
	210	COMPACTED EMBANKMENT		128565	CU. YD.
	SP & 210	SOIL STABILIZATION		300	TON
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		15150	TON
	401	TACK COAT		1604	GAL.
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		3792	TON
	SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		179	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		5524	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		322	TON
	412	COLD MILLING ASPHALT PAVEMENT		888	SQ. YD.
	SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		31	TON
	SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		62	TON
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	EACH
	SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	SS & 604	SIGNS		397	SQ. FT.
	SS & 604	BARRICADES		144	LIN. FT.
	SS & 604	TRAFFIC DRUMS		144	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		3912	LIN. FT.
	SS & 604	CONSTRUCTION PAVEMENT MARKINGS		42498	LIN. FT.
	SP, SS, & 604	PORTABLE CHANGEABLE MESSAGE SIGN		30	WEEK
	604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		4239	LIN. FT.
	SS & 604	VERTICAL PANELS		42	EACH
	605	CONCRETE DITCH PAVING (TYPE B)		578	SQ. YD.
	SP, SS, & 606	24" SIDE DRAIN		750	LIN. FT.
	SP, SS, & 606	36" SIDE DRAIN		218	LIN. FT.
	SP, SS, & 606	48" SIDE DRAIN		68	LIN. FT.
	606	SELECTED PIPE BEDDING		180	CU. YD.
	611	UNDERDRAIN OUTLET PROTECTORS		10	EACH
	611	4" PIPE UNDERDRAINS		2000	LIN. FT.
	619	WIRE FENCE (TYPE D)		1139	LIN. FT.
	619	WIRE FENCE (TYPE D-1)		74	LIN. FT.
*	619	16' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
*	619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
*	619	20' STEEL GATES	(ALTERNATE NO. 1)	1	EACH
*	619	20' ALUMINUM GATES	(ALTERNATE NO. 2)	1	EACH
	620	LIME		24	TON
	620	SEEDING		11.84	ACRE
	620	MULCH COVER		37.22	ACRE
	SS & 620	WATER		1729.0	M.GAL.
	621	TEMPORARY SEEDING		25.38	ACRE
	621	SILT FENCE		3004	LIN. FT.
	621	SAND BAG DITCH CHECKS		1584	BAG
	621	SEDIMENT BASIN		455	CU. YD.
	621	OBLITERATION OF SEDIMENT BASIN		455	CU. YD.
	621	SEDIMENT REMOVAL AND DISPOSAL		754	CU. YD.
	621	ROCK DITCH CHECKS		219	CU. YD.
	623	SECOND SEEDING APPLICATION		11.84	ACRE
	624	SOLID SODDING		289	SQ. YD.
	626	EROSION CONTROL MATTING (CLASS 3)		142	SQ. YD.
	635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
	637	MAILBOXES		10	EACH
	637	MAILBOX SUPPORTS (SINGLE)		4	EACH
	637	MAILBOX SUPPORTS (DOUBLE)		3	EACH
	642	RUMBLE STRIPS IN ASPHALT SHOULDERS		9369	LIN. FT.
	SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		13000	LIN. FT.
	SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		12678	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	305	LIN. FT.
*	SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	305	LIN. FT.
	721	RAISED PAVEMENT MARKERS (TYPE II)		164	EACH
	SP	TEMPORARY IMPACT ATTENUATION BARRIER		2	EACH
	SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	EACH
	816	DUMPED RIPRAP		1269	CU. YD.
	816	FILTER BLANKET		2422	SQ. YD.

* DENOTES ALTERNATE BID ITEMS

REVISIONS

DATE	REVISION	SHEET NUMBER
10/22/2013	DECREASED CONSTRUCTION PAVEMENT MARKINGS FROM 70082 LIN.FT. TO 42498 LIN.FT.	23, 29 AND 34

SUMMARY OF QUANTITIES & REVISIONS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TIMOTHY D. SMITH 10-22-13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-22-13			

(2) SUMMARY OF QUANTITIES & REVISIONS

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		34	111

JOB NO. 080387

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	35	111

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

APPROXIMATE MIDPOINT
LT: 35-11-52
LG: 92-44-04

SURVEY CONTROL COORDINATES

Project Name: s080387
Date: 4/21/2011
Coordinate System: ARKANSAS STATE PLANE - NORTH/SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	311831.3825	1092702.8918	306.152	CTL	*2" REBAR/CAP, 247, MORRILTON
2	312411.8405	1092763.0072	311.873	CTL	*2" REBAR/CAP, 95, MORRILTON
3	313206.1906	1092787.2656	298.131	CTL	*2" REBAR/CAP, 16.7' E CNT LINE HWY 95
4	314043.8901	1092815.8842	297.815	CTL	*2" REBAR/CAP, 17' E CNT LINE HWY 95, 95
5	314916.0896	1092852.2473	298.650	CTL	*2" REBAR/CAP, 23.5' E CNT LINE HWY 95
6	315520.0769	1092908.5535	306.066	CTL	*2" REBAR/CAP, 95, MORRILTON
7	316206.0329	1092864.3700	301.797	CTL	*2" REBAR/CAP, 95, MORRILTON
8	317121.5918	1092928.5016	300.278	CTL	*2" REBAR/CAP, 95, MORRILTON
9	317903.9552	1092956.3882	301.317	CTL	*2" REBAR/CAP, 95, MORRILTON
10	318786.6683	1092990.9402	305.400	CTL	*2" REBAR/CAP, 95, MORRILTON
11	319816.6748	1092979.7395	340.932	CTL	*2" REBAR/CAP, 95, MORRILTON
12	320670.9633	1093010.0973	345.457	CTL	*2" REBAR/CAP, 95, MORRILTON
13	321459.3660	1093069.7476	343.111	CTL	*2" REBAR/CAP, 95, MORRILTON
100	307108.8905	1089910.2163	334.939	GPS	*AHTD GPS *150004
102	325375.3403	1093211.0547	349.215	GPS	*AHTD GPS *150008
103	327294.8092	1093231.4665	369.110	GPS	*AHTD GPS *150008A
900	311960.5989	1092678.1884	303.994	TBM	*CHSLD SQ HEADWALL E SIDE, 95
901	315548.4685	1092895.8778	307.630	TBM	*CHSLD SQ SE CORNER OF, 95, MORRILTON
902	315710.1777	1092905.3843	307.708	TBM	*CHSLD SQ NE CORNER OF, 95, MORRILTON
903	318743.5099	1092911.4197	306.458	TBM	*CHSLD SQ SE CORNER, CONCRETE PHONE BOX
904	324060.4997	1093117.0423	348.088	TBM	*CHSLD SQ SE CORNER OF, 95, MORRILTON
905	330671.4189	1093365.4274	373.135	TBM	*2" REBAR/CAP, 95, MORRILTON
906	333623.1314	1093470.3624	330.533	TBM	*CHSLD SQ E HEADWALL, 95, MORRILTON

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped *(standard markings common to all caps), or as indicated (other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF XXXXX HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME, XXXCTL
HORIZONTAL DATUM: NAD 83 (19XX)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE or 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 880088-880088A
CONVERGENCE ANGLE: 0-99-99.9 LEFT/RIGHT AT LT: 34-99-99.9 LG: 093-99-99.9
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

C.L. HWY. 95 - MAIN LANES

POINT NAME	CENTERLINE STATION	NORTHING	EASTING
8000	100+00.00	312413.37260	1092743.24710
8001	100+24.93	312438.28846	1092744.12847
8002	103+25.00	312033.18557	1104196.12156
8003	106+24.93	313037.08429	1092781.02448
8004	107+58.19	313169.83113	1092792.69888
8005	110+97.08	314173.72985	1081377.60180
8006	114+35.78	313846.17809	1092832.07533
8007	129+28.24	315338.02372	1092874.73610
8008	133+76.30	315785.86293	1092888.92168
8009	135+99.77	315423.06908	1104342.33316
8010	138+23.18	316232.12847	1092911.77426
8011	138+87.05	316295.83584	1092916.28349
8012	140+99.42	317104.89523	1081485.72458
8013	143+11.75	316719.93454	1092938.41244
8014	151+40.62	317548.34374	1092966.25787
8015	154+40.69	317933.30443	1081513.57001
8016	157+40.62	318148.25869	1092970.70965
8017	159+03.16	318310.76488	1092967.66077
8018	162+00.13	318525.71914	1104424.80041
8019	164+96.97	318904.49670	1092971.90638
8020	166+57.20	319064.64215	1092977.20282

C.L. HWY. 95 - DETOURS

POINT NAME	CENTERLINE STATION	NORTHING	EASTING
8000	200+00.00	312413.37260	1092743.24710
8021	200+28.46	312441.81439	1092744.30238
8022	200+81.82	312462.04664	1092199.00350
8023	201+34.84	312547.82797	1092737.89289
8024	201+34.84	312547.82808	1092737.89287
8025	201+88.90	312633.60941	1093276.78226
8026	202+42.61	312655.23768	1092731.53697
8027	202+54.97	312667.59221	1092732.02704
8028	204+24.57	312364.79644	1100365.46116
8029	205+94.11	313006.04909	1092752.98477
8030	206+78.06	313089.70908	1092760.03204
8031	208+22.39	313570.64856	1087050.67474
8032	209+66.66	313377.77101	1092777.00531
8033	210+00.00	313411.09463	1092778.12774
8034	222+94.78	314705.27806	1092817.60433
8035	224+79.69	314530.58949	1098544.51863
8036	226+64.48	315074.18182	1092840.78556
8037	227+18.42	315127.87821	1092845.90308
8038	227+51.37	315037.27949	1093796.52526
8039	227+84.29	315193.18240	1092854.40799
8040	228+19.50	315227.92650	1092860.15750
8041	228+49.48	315383.82941	1091918.04024
8042	228+79.43	315287.31820	1092868.08036
8043	228+96.95	315304.74386	1092869.85057
8044	335+00.00	315909.52603	1092892.33955
8045	335+45.67	315955.19063	1092891.85289
8046	335+91.12	315942.97907	1091746.00237
8047	336+36.52	316045.90888	1092887.28586
8048	337+08.31	316148.83892	1094028.56932
8049	337+79.91	316189.14304	1092883.36274
8050	337+79.91	316189.15161	1092883.36304
8051	337+98.77	316289.91177	1090020.34658
8052	338+17.63	316226.84702	1092884.44132
8053	338+17.63	316226.84721	1092884.44133
8054	338+34.45	316163.78247	1095748.53607
8055	338+51.28	316260.49233	1092885.37994
8056	356+00.32	318008.52787	1092944.42397
8057	357+16.86	318125.00325	1092948.39333
8058	357+50.19	318164.03227	1091803.14258
8059	357+83.50	318191.63180	1092948.72576
8060	359+16.96	318325.05686	1092945.51126
8061	359+99.71	318352.65640	1094091.09444
8062	360+82.17	318489.93292	1092953.43118
8063	360+82.17	318489.93347	1092953.43124
8064	361+24.74	318627.21000	1091815.76798
8065	361+67.27	318574.72006	1092960.48076
8066	362+66.21	318673.55095	1092965.01257

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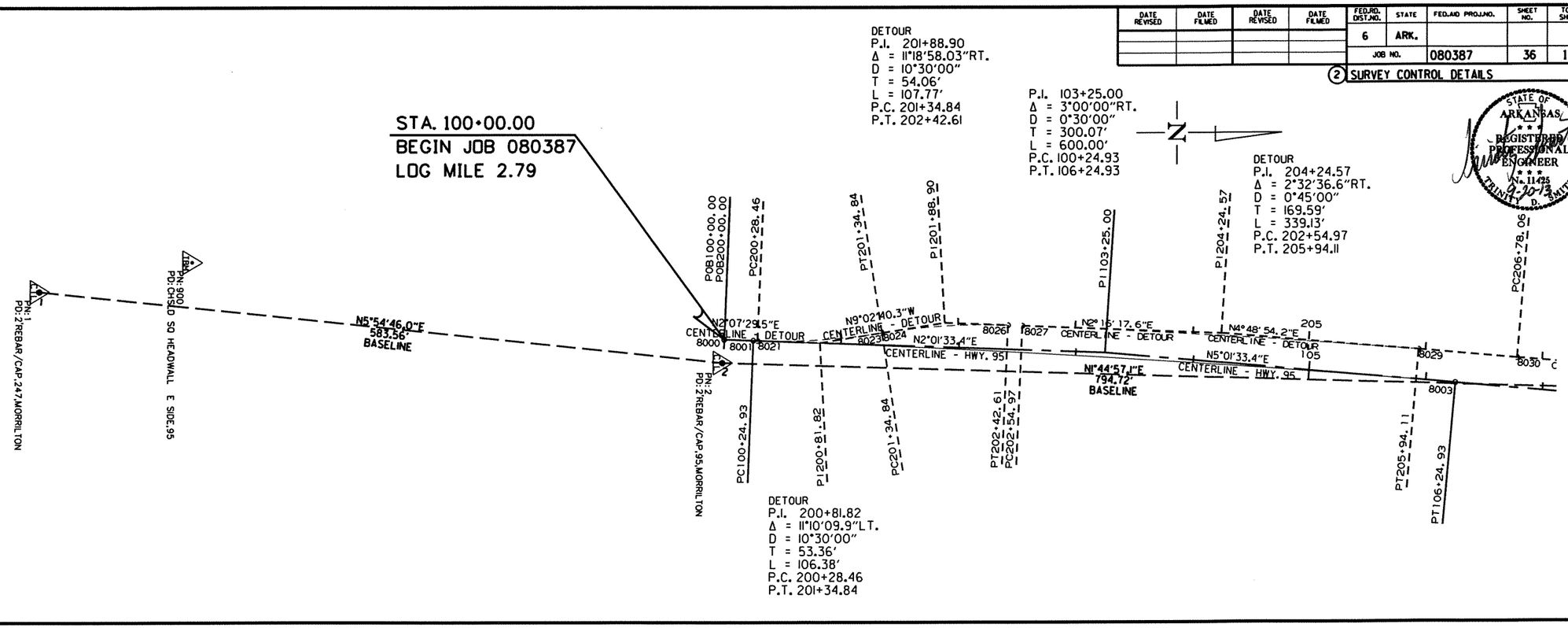
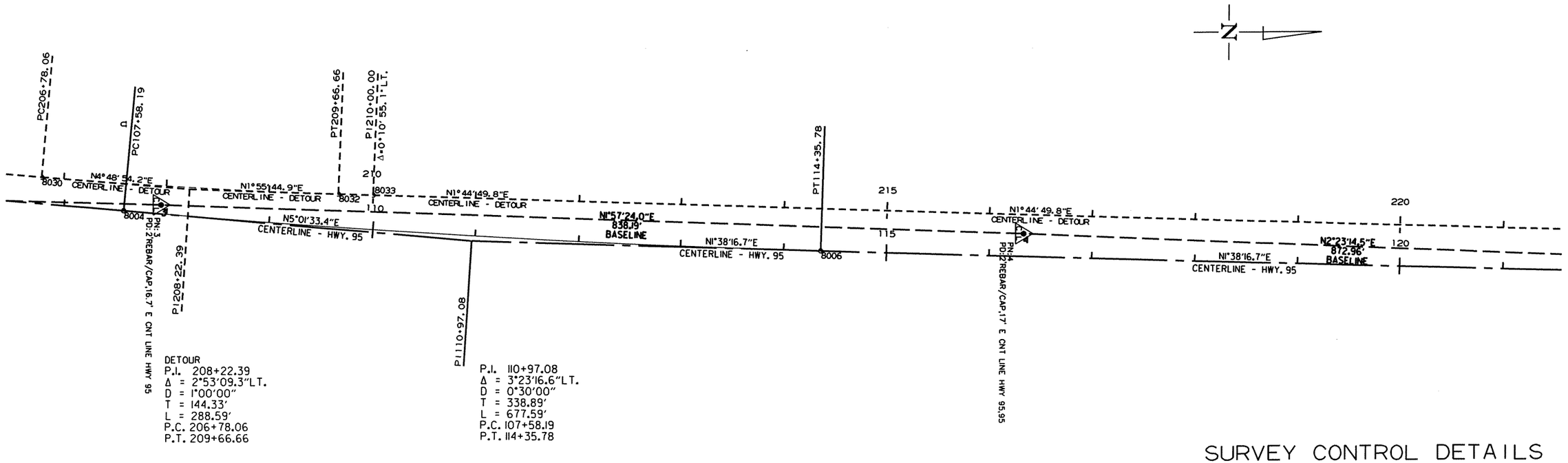
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	36	111

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13





DETOUR
P.I. 208+22.39
Δ = 2°53'09.3"LT.
D = 1°00'00"
T = 144.33'
L = 288.59'
P.C. 206+78.06
P.T. 209+66.66

P.I. 110+97.08
Δ = 3°23'16.6"LT.
D = 0°30'00"
T = 338.89'
L = 677.59'
P.C. 107+58.19
P.T. 114+35.78

SURVEY CONTROL DETAILS

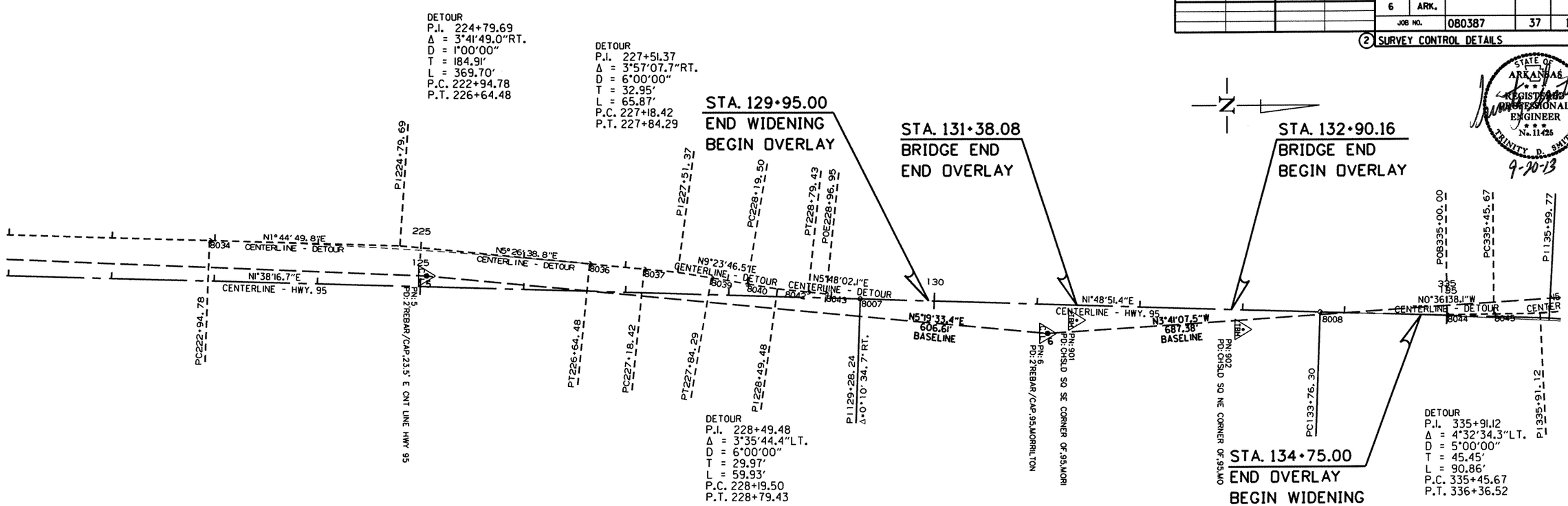
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	37	111

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13



SURVEY CONTROL DETAILS

11/6/2012

R080387.DGN

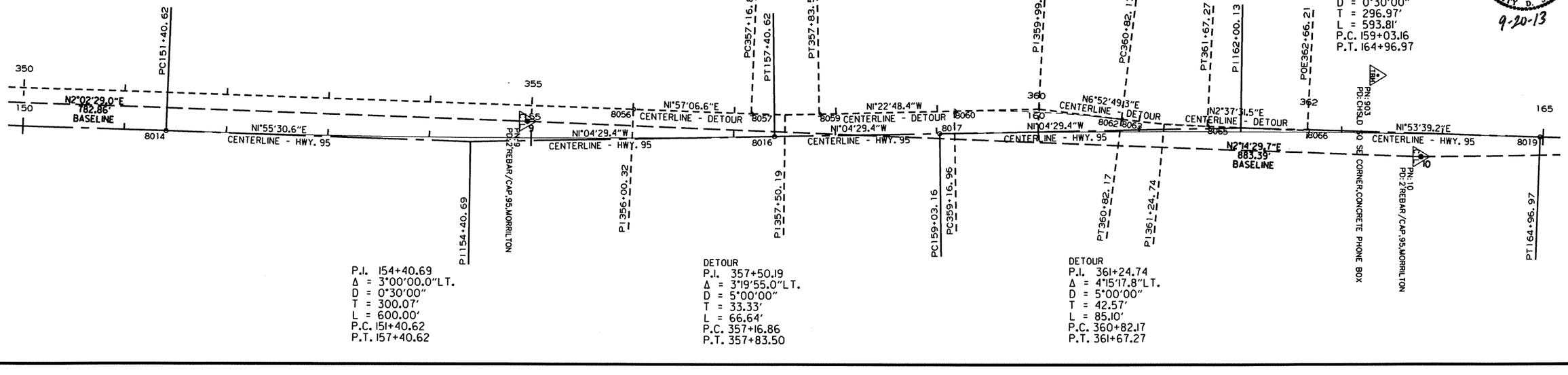
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	38	111

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

DETOUR
P.I. 359+99.71
Δ = 8°15'37.7"RT.
D = 5°00'00"
T = 82.75'
L = 165.21'
P.C. 359+16.96
P.T. 360+82.17

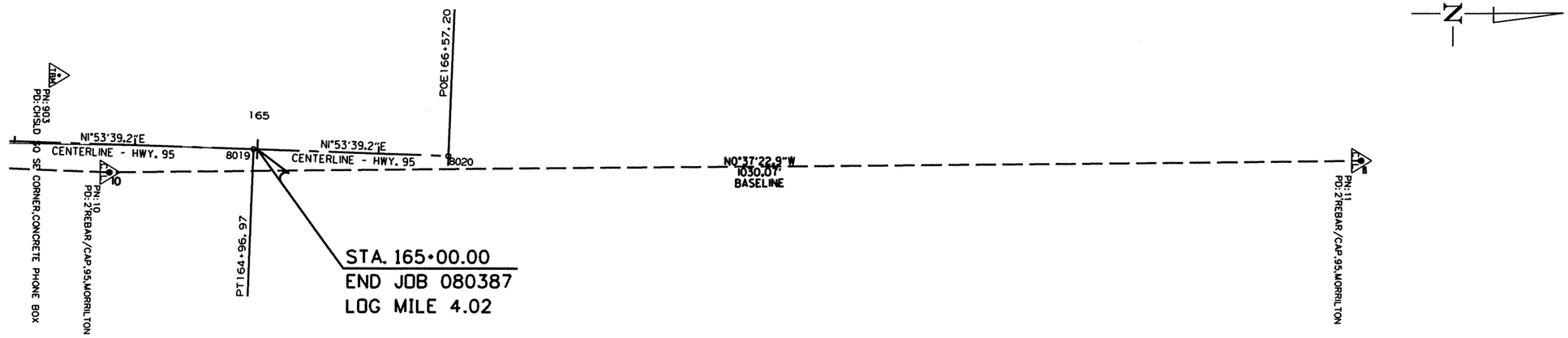
P.I. 162+00.13
Δ = 2°58'08.6"RT.
D = 0°30'00"
T = 296.97'
L = 593.81'
P.C. 159+03.16
P.T. 164+96.97



P.I. 154+40.69
Δ = 3°00'00.0"LT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 151+40.62
P.T. 157+40.62

DETOUR
P.I. 357+50.19
Δ = 3°19'55.0"LT.
D = 5°00'00"
T = 33.33'
L = 66.64'
P.C. 357+16.86
P.T. 357+83.50

DETOUR
P.I. 361+24.74
Δ = 4°15'17.8"LT.
D = 5°00'00"
T = 42.57'
L = 85.10'
P.C. 360+82.17
P.T. 361+67.27



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R080387.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	39	111

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-27-13

STA. 100+00.00
BEGIN JOB 080387
BEGIN WIDENING
LOG MILE 2.79

(2) DETOUR
P.I. 201+88.90
Δ = 11°18'58.03"RT.
D = 10°30'00"
T = 54.06'
L = 107.77'
P.C. 201+34.84
P.T. 202+42.61
e = NC

P.I. 103+25.00
Δ = 3°00'00"RT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 100+24.93
P.T. 106+24.93
e = NC

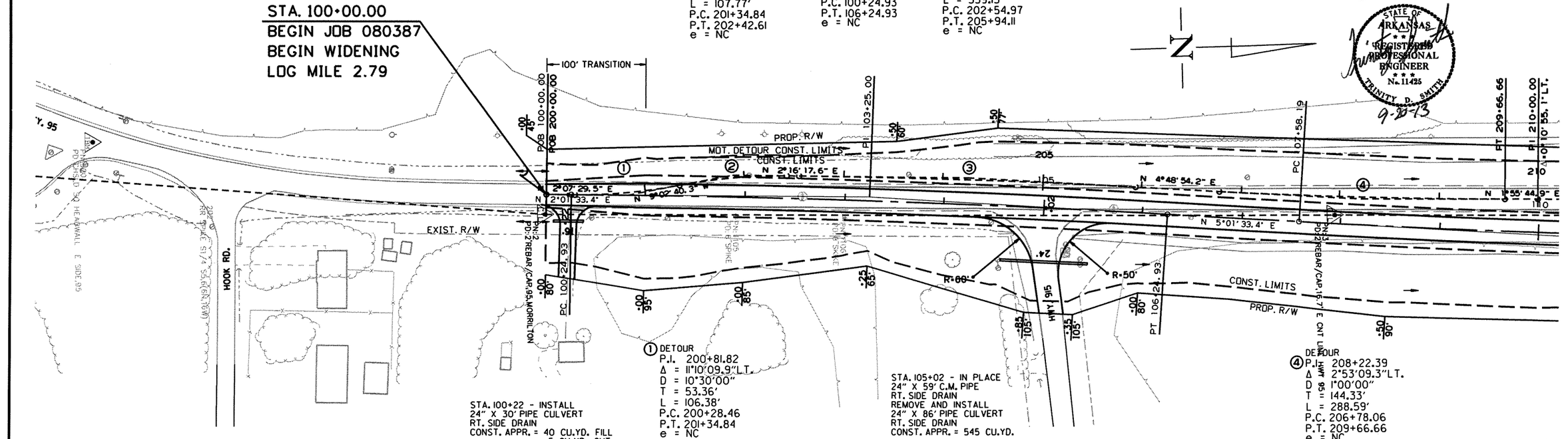
(3) DETOUR
P.I. 204+24.57
Δ = 2°32'36.6"RT.
D = 0°45'00"
T = 169.59'
L = 339.13'
P.C. 202+54.97
P.T. 205+94.11
e = NC

(1) DETOUR
P.I. 200+81.82
Δ = 11°10'09.9"LT.
D = 10°30'00"
T = 53.36'
L = 106.38'
P.C. 200+28.46
P.T. 201+34.84
e = NC

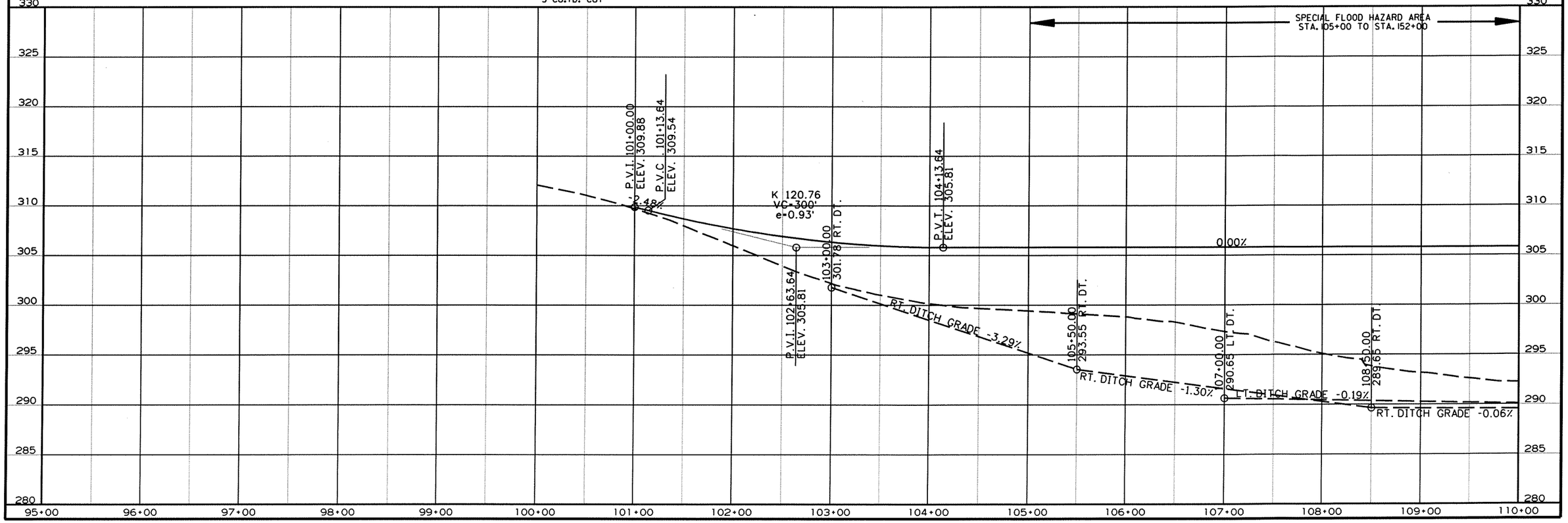
(4) DETOUR
P.I. 208+22.39
Δ = 2°53'09.3"LT.
D = 1°00'00"
T = 144.33'
L = 288.59'
P.C. 206+78.06
P.T. 209+66.66
e = NC

STA. 100+22 - INSTALL
24" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 40 CU.YD. FILL
5 CU.YD. CUT

STA. 105+02 - IN PLACE
24" X 59' C.M. PIPE
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 86' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 545 CU.YD.



SPECIAL FLOOD HAZARD AREA
STA. 105+00 TO STA. 152+00



11/6/2012
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080387	40	111

(2) PLAN AND PROFILE SHEETS

STA. 123+09 - IN PLACE
24" X 30' C.M. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 72' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 715 CU.YD.

(5) DETOUR
P.I. 224+79.69
Δ = 3°41'49.0"RT.
D = 1°00'00"
T = 184.91'
L = 369.70'
P.C. 222+94.78
P.T. 226+64.48
e = NC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

PI 110+97.08
P.I. 110+97.08
Δ = 3°23'16.6"LT.
D = 0°30'00"
T = 338.89'
L = 677.59'
P.C. 107+58.19
P.T. 114+35.78
e = NC

PT 114+35.78

N 1°44'49.8" E

N 1°38'16.7" E

PROP. R/W
CONST. LIMITS
EXIST. R/W
T.C.E.
PROP. 22.50
REBAR/CAP 17' E CNT LINE HWY 95.95
REBAR/CAP 23.5' E CNT LINE HWY 95

STA. 123+10 - IN PLACE
48" X 30' C.M. PIPE
RT. SIDE DRAIN
REMOVE AND INSTALL
@ STA. 123+35
48" X 68' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 960 CU.YD.

SPECIAL FLOOD HAZARD AREA
STA. 105+00 TO STA. 152+00

0.00%

@ 112+00.00
289.71 LT. DT.

@ 123+50.00
288.58 LT. DT.

LT. DITCH GRADE -0.19%
LT. DITCH GRADE -0.10%
RT. DITCH GRADE -0.06%
LT. DITCH GRADE -0.02%

330 325 320 315 310 305 300 295 290 285 280

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00

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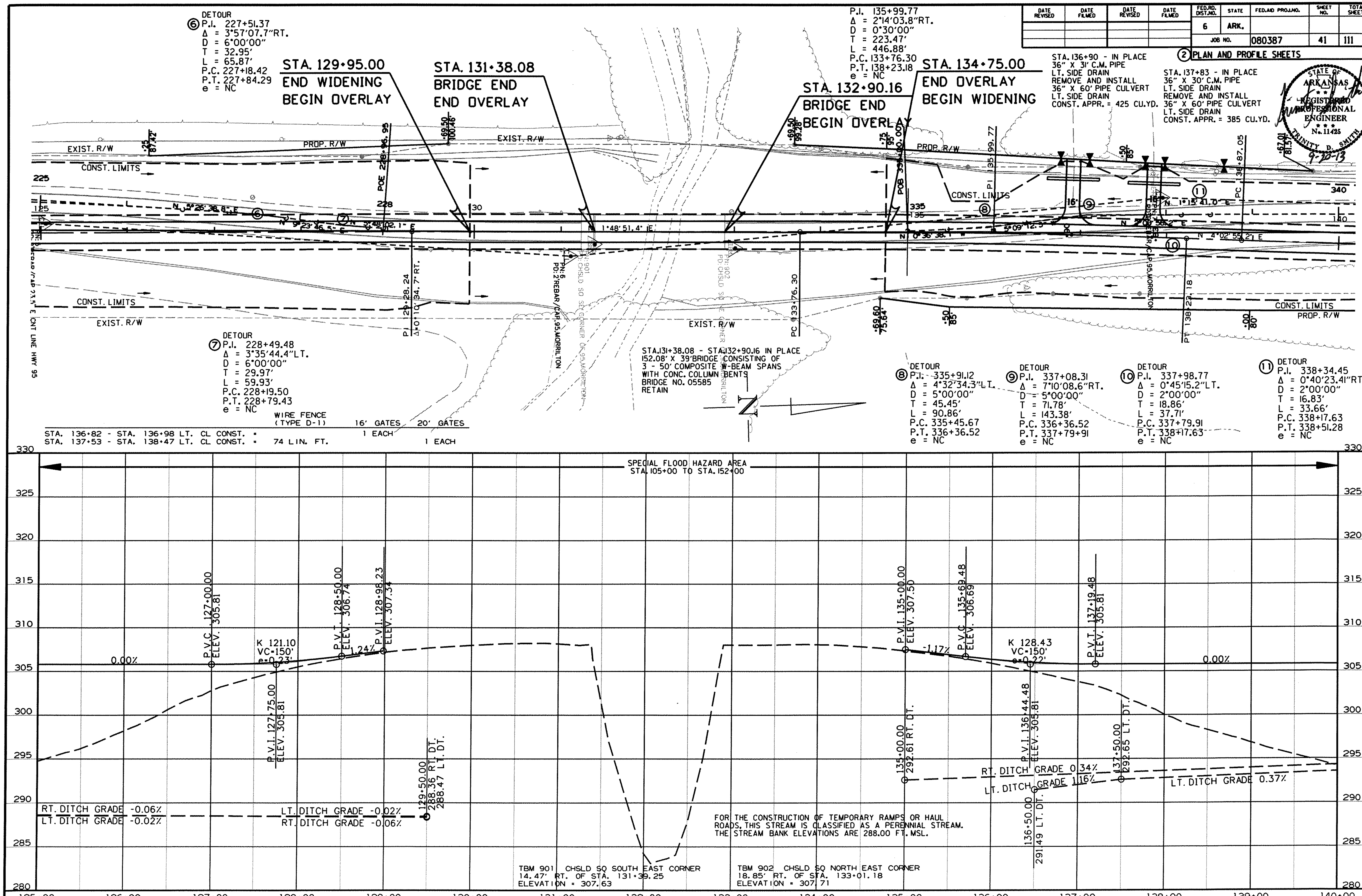
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	41	111

(2) PLAN AND PROFILE SHEETS



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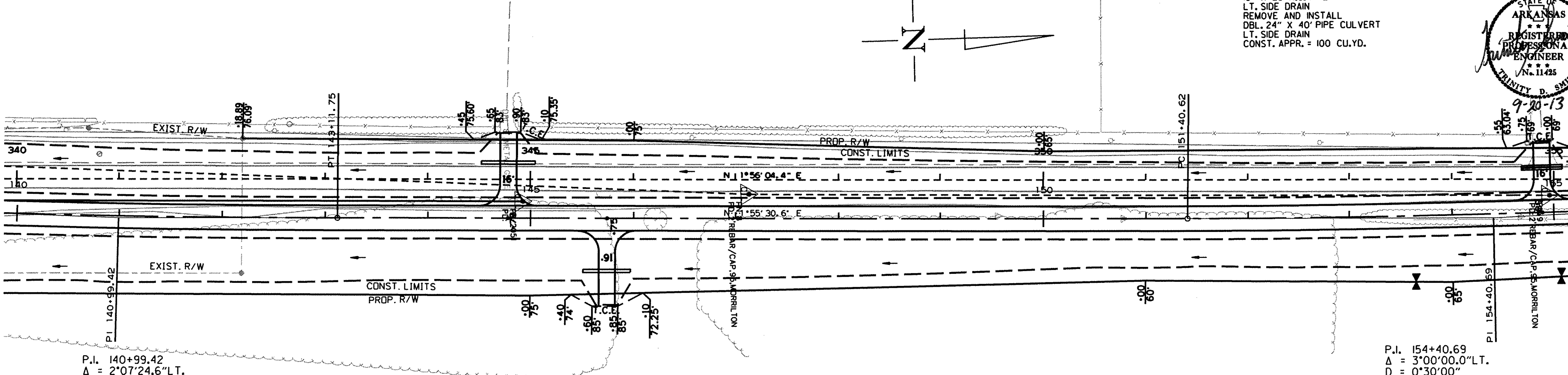
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	42	111

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 9-20-13

STA. 144+78 - IN PLACE
36" X 23' C.M. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
36" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 270 CU.YD.

STA. 154+89 - IN PLACE
18" X 25' R.C. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 100 CU.YD.



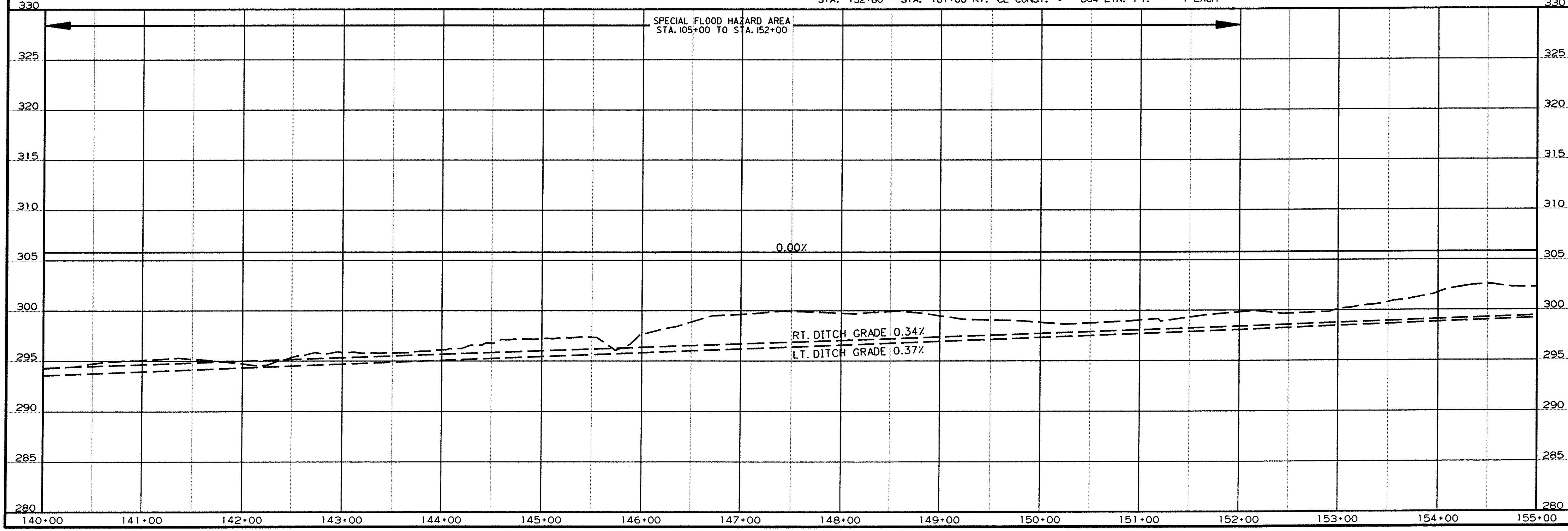
P.I. 140+99.42
Δ = 2°07'24.6"LT.
D = 0°30'00"
T = 212.37'
L = 424.70'
P.C. 138+87.05
P.T. 143+11.75
e = NC

STA. 145+74 - IN PLACE
36" X 17' R.C. PIPE
SIDE DRAIN
REMOVE AND INSTALL
36" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 210 CU.YD.

P.I. 154+40.69
Δ = 3°00'00.0"LT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 151+40.62
P.T. 157+40.62
e = NC

FENCE

	WIRE FENCE (TYPE D)	16' GATES
STA. 152+80 - STA. 161+00 RT. CL CONST. =	804 LIN. FT.	1 EACH



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R080387.DGN

STA. 155+85 - IN PLACE
18" X 25' R.C. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 95 CU.YD.

STA. 158+04 - IN PLACE
18" X 25' R.C. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL.24" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 70 CU.YD.

STA. 158+72 - IN PLACE
12" X 62' C.M. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 46' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 75 CU.YD.

STA. 161+27 - IN PLACE
18" X 24' R.C. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 65 CU.YD.

P.I. 162+00.13
Δ = 2°58'08.6"RT.
D = 0°30'00"
T = 296.97'
L = 593.81'
P.C. 159+03.16
P.T. 164+96.97
e = NC

STA. 163+80 - IN PLACE
18" X 48' C.M. PIPE
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 80 CU.YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	43	111

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

(13) DETOUR
P.I. 359+99.71
Δ = 8°15'37.7"RT.
D = 5°00'00"
T = 82.75'
L = 165.21'
P.C. 359+16.96
P.T. 360+82.17
e = NC

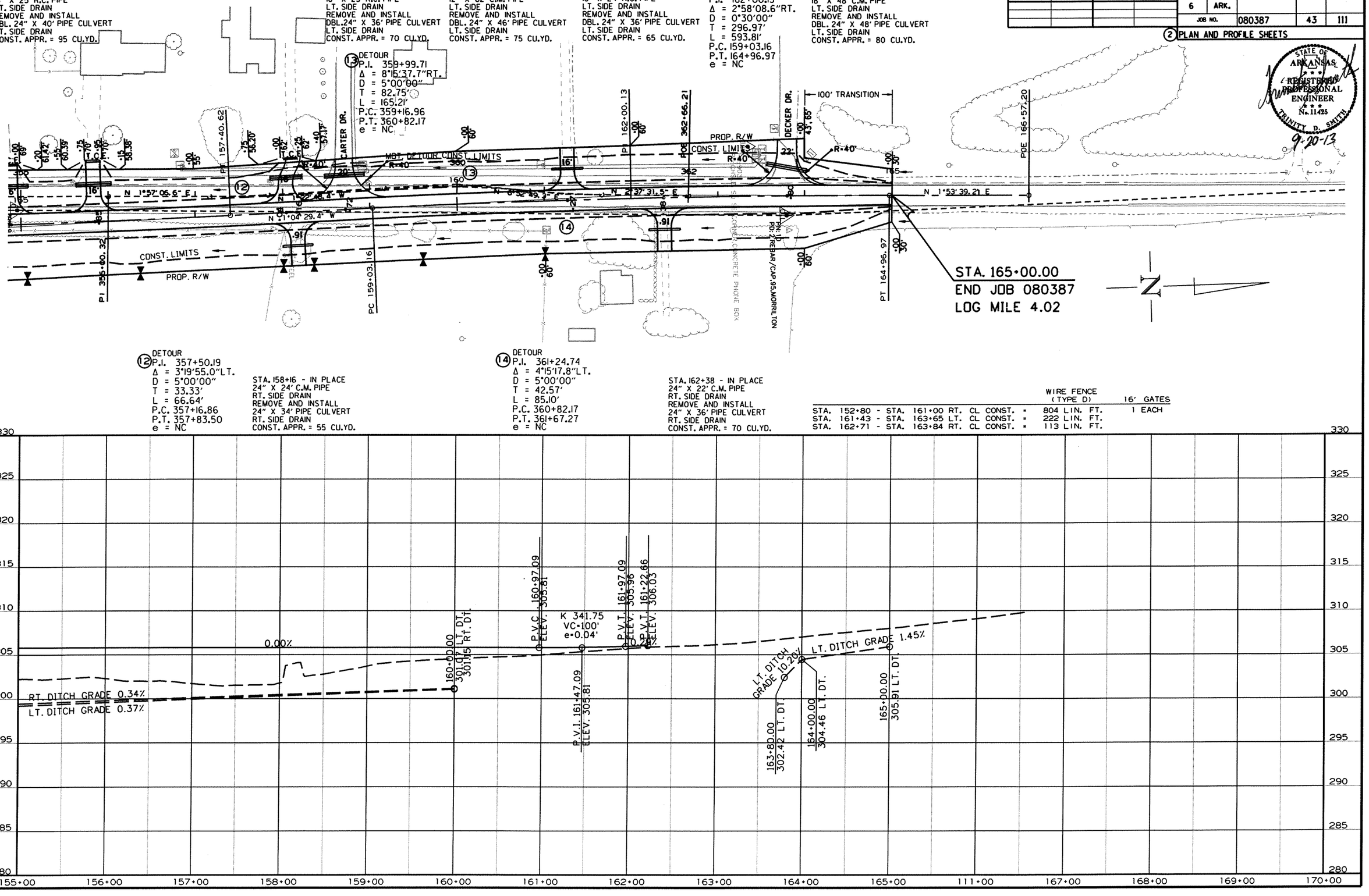
(12) DETOUR
P.I. 357+50.19
Δ = 3°19'55.0"LT.
D = 5°00'00"
T = 33.33'
L = 66.64'
P.C. 357+16.86
P.T. 357+83.50
e = NC

STA. 158+16 - IN PLACE
24" X 24' C.M. PIPE
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 55 CU.YD.

(14) DETOUR
P.I. 361+24.74
Δ = 4°15'17.8"LT.
D = 5°00'00"
T = 42.57'
L = 85.10'
P.C. 360+82.17
P.T. 361+67.27
e = NC

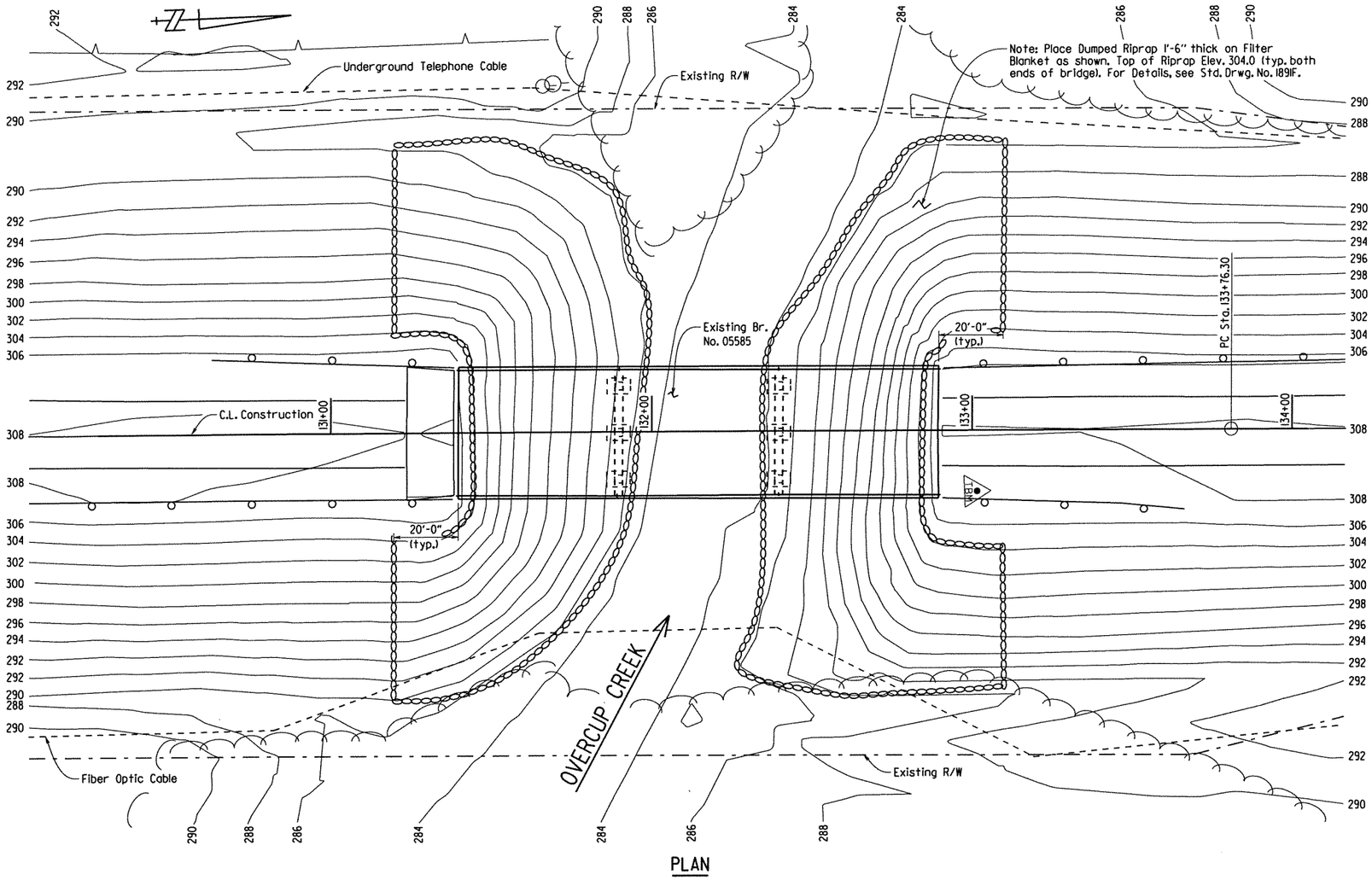
STA. 162+38 - IN PLACE
24" X 22' C.M. PIPE
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 70 CU.YD.

	WIRE FENCE (TYPE D)	16' GATES
STA. 152+80 - STA. 161+00 RT. CL CONST. =	804 LIN. FT.	1 EACH
STA. 161+43 - STA. 163+65 LT. CL CONST. =	222 LIN. FT.	
STA. 162+71 - STA. 163+84 RT. CL CONST. =	113 LIN. FT.	

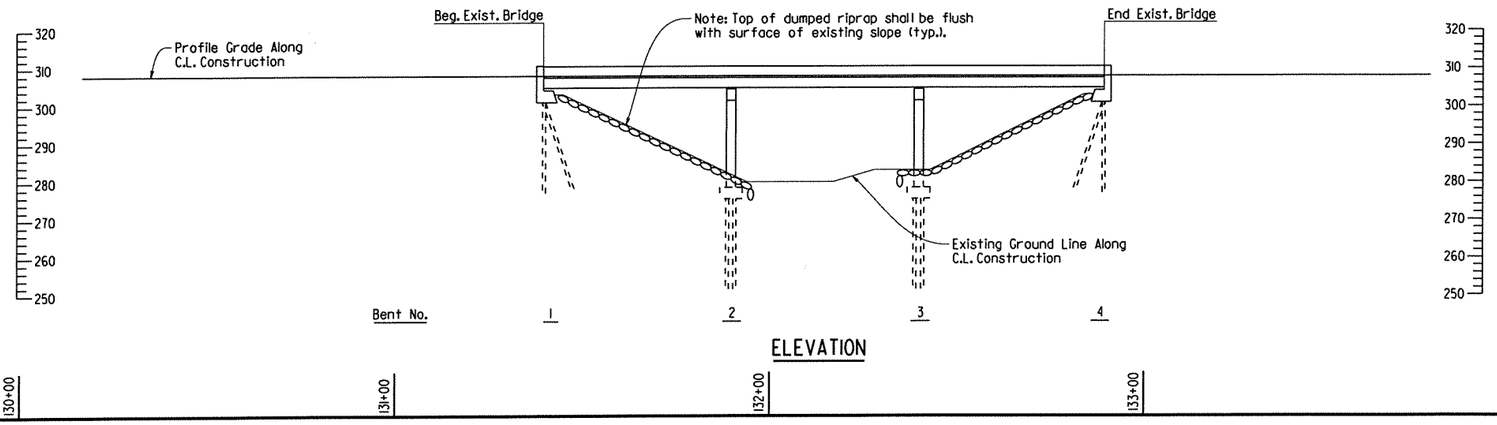


11/6/2012
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	44	111
				(1) 05585		SCOUR PREVENTION		51228



PLAN



ELEVATION

GENERAL NOTES

BENCH MARK: CHSLD SO North East Corner of Bridge, 18.85' Rt. of C.L. constr., Sta. 133+01.18, Elev. 307.71.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Section and subsection refer to the standard Construction Specifications unless otherwise noted in the Plans.

The proposed work consists of placing Dumped Riprap with Filter Blanket on the embankment slopes at Bent Nos. 1 and 4 as shown. Care shall be taken to avoid damaging the bridge during excavation and placement of the riprap under the spans and around the bents.

Excavated material shall be hauled away and disposed of by the Contractor. See Section 210. All excavation shall be paid for as "Unclassified Excavation".

Drift and debris in the channel and on the slopes that interferes with the work shall be removed and disposed of prior to placement of the riprap. Payment for drift and debris removal will not be made directly, but shall be considered subsidiary to the other items. Securing disposal sites for drift and debris shall be the responsibility of the Contractor.

Previous foundations may be encountered and shall be removed to the extent necessary to complete the proposed work. Payment for this work shall be considered incidental to the item "Unclassified Excavation".

TABLE OF BRIDGE QUANTITIES

LOCATION / ITEM / UNIT	ITEM NO. 210 UNCLASSIFIED EXCAVATION CU. YD.	ITEM NO. 816 DUMPED RIPRAP CU. YD.	ITEM NO. 816 FILTER BLANKET SQ. YD.
BENT 1	640	640	1224
BENT 4	629	629	1198
TOTALS	1269	1269	2422

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	*DISCHARGE	WATER SURFACE ELEVATION WITH BACKWATER FOR OVERCUP CREEK	**WATER SURFACE ELEVATION WITH BACKWATER FROM POINT REMOVE CREEK
	YEARS	CFS	FEET	FEET
Design	25	5,780	294.9	302.5
Base	100	8,230	296.3	304.3
Extreme	500	11,680	298.2	306.2
Overtopping	>500	-	-	-

Existing Low Bridge Chord Elev. = 305.0
Drainage area = 17.3 square miles

*Discharge for Overcup Creek

**Highwater controlled by backwater from Point Remove Creek.

Note: Hydraulic Data by Department Hydraulics Section

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/31/12

BRIDGE ENGINEER

SCOUR PREVENTION DETAILS
OVERCUP CREEK
OVERCUP CREEK - NORTH & SOUTH
GRADE IMPVTS. (S)
CONWAY COUNTY

ROUTE 95 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

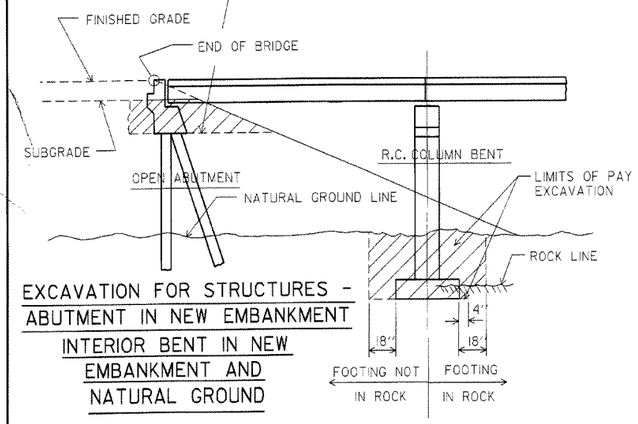
DRAWN BY: ACW DATE: 03-06-12 FILENAME: b080387_br.dgn
CHECKED BY: AMS DATE: 5/31/12 SCALE: 1" = 20' or As Noted
DESIGNED BY: AMS DATE: 3/2/12

BRIDGE NO. 05585 DRAWING NO. 51228

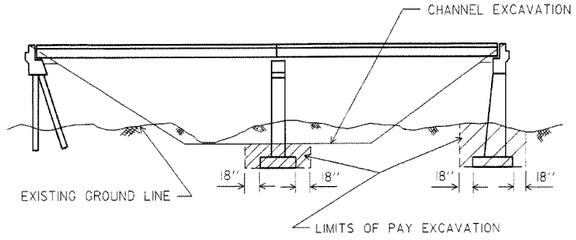
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		45	
				JOB NO.				

1 RIP. & EXCAV. 1891F

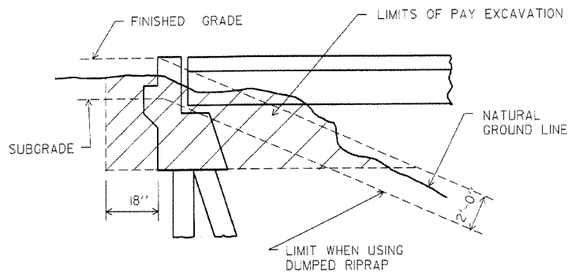
EMBANKMENT MUST BE PLACED TO ELEVATION OF BOTTOM OF CAP BEFORE BEGINNING CONSTRUCTION OF OPEN ABUTMENT. NO PAYMENT WILL BE MADE FOR EXCAVATION IN NEW EMBANKMENT.



EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND

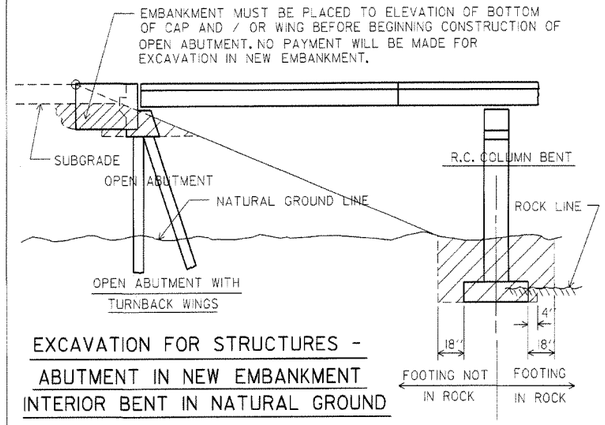


EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE

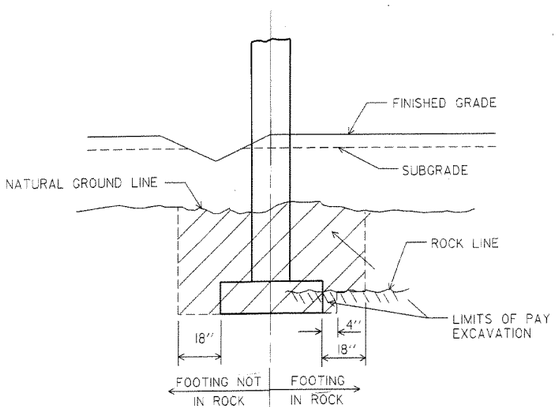


EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND

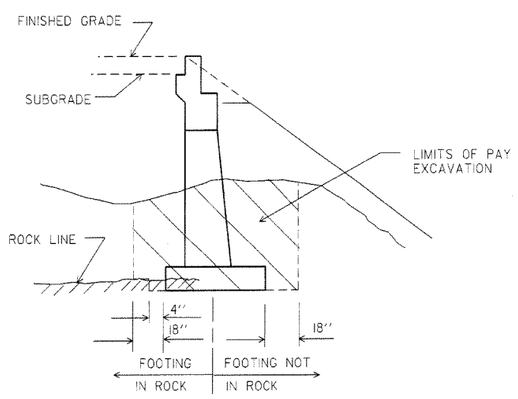
EMBANKMENT MUST BE PLACED TO ELEVATION OF BOTTOM OF CAP AND / OR WING BEFORE BEGINNING CONSTRUCTION OF OPEN ABUTMENT. NO PAYMENT WILL BE MADE FOR EXCAVATION IN NEW EMBANKMENT.



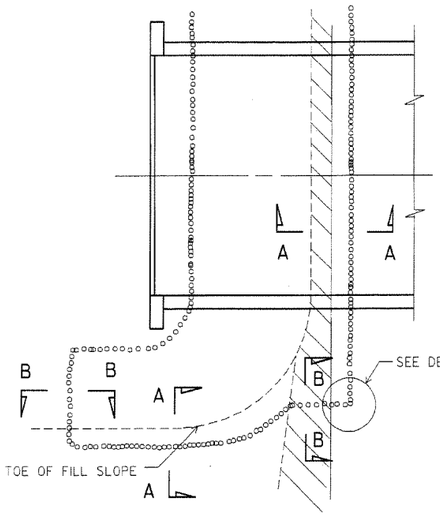
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



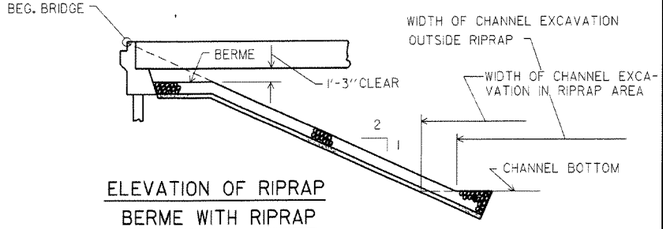
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



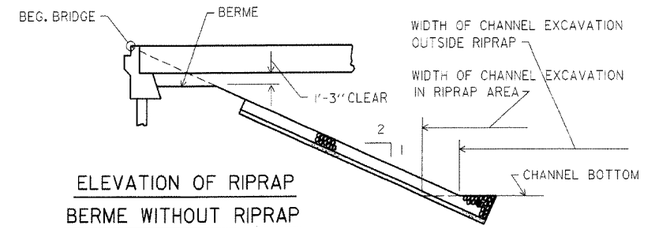
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



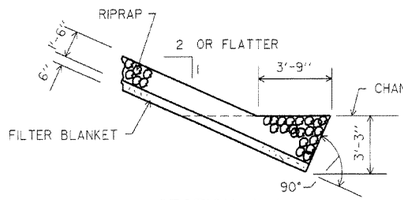
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP



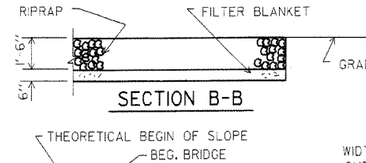
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



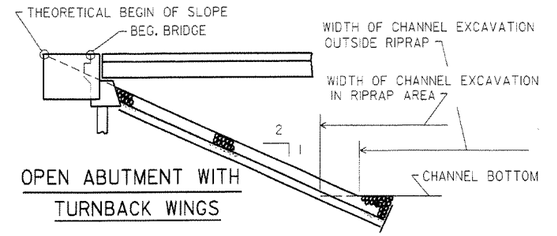
SECTION A-A

(TOE EXCAVATION IN SOIL)

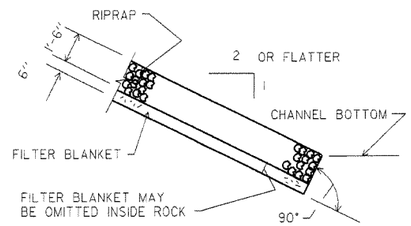
EXCAVATION FOR TOES IS NOT A PAY ITEM



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



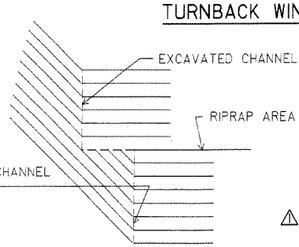
SECTION A-A

(TOE EXCAVATION IN ROCK)

NOTE : USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

NOTE : IN LIEU OF AN AGGREGATE FILTER BLANKET, A SYNTHETIC FIBER GEOTEXTILE FABRIC COMPLYING WITH THE REQUIREMENTS OF SUBSECTION 816.02(e) MAY BE USED.

NOTE : DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



DETAIL C

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
BRIDGE ENGINEER

⚠ Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

ROUTE SEC.

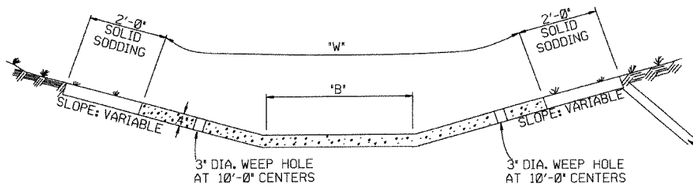
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——

BRIDGE NO. DRAWING NO. 1891F

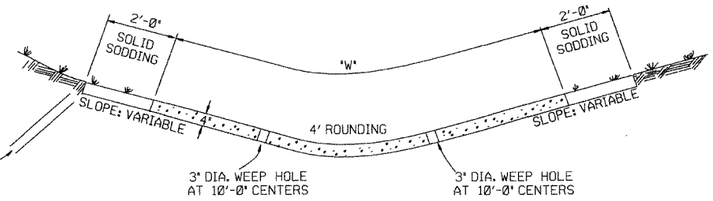
REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

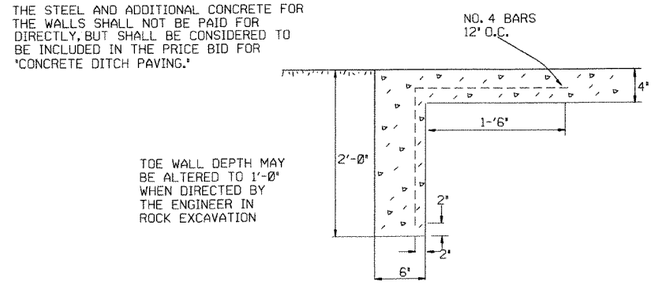
TYPE A

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



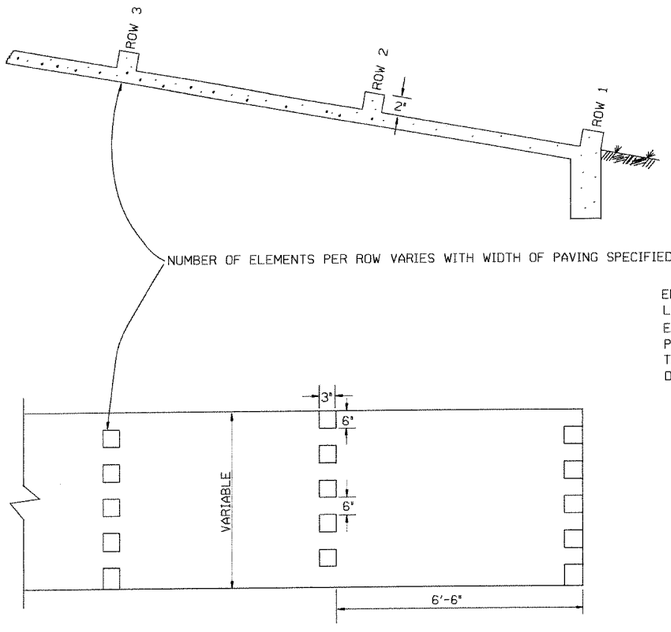
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

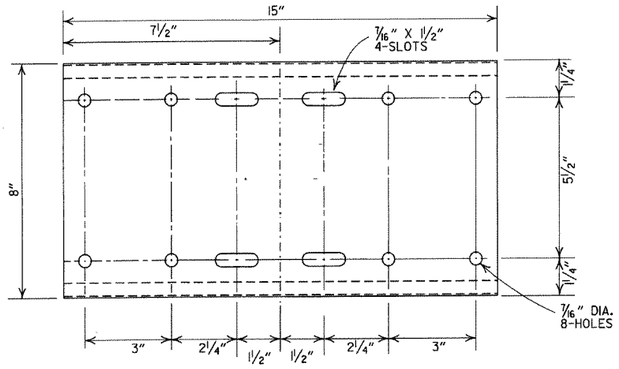
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

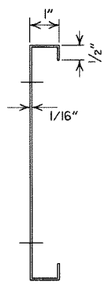
ARKANSAS STATE HIGHWAY COMMISSION

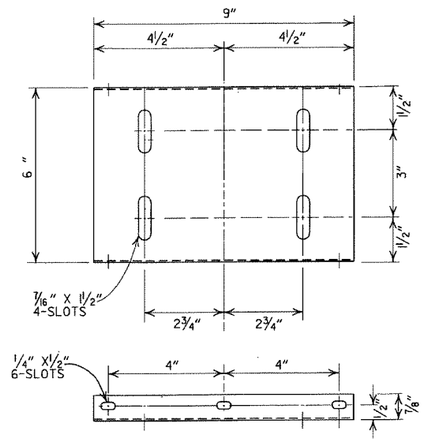
CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

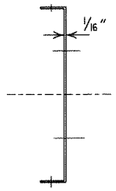


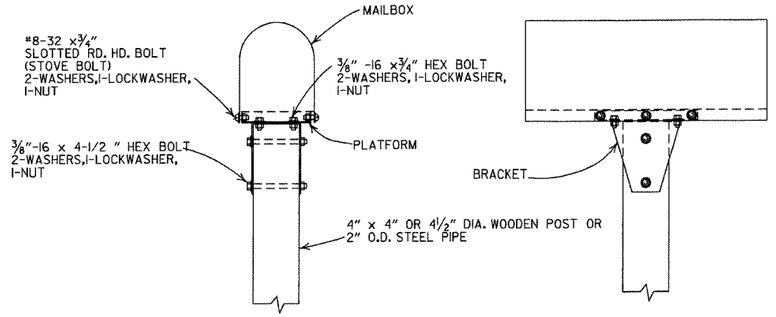
SHELF



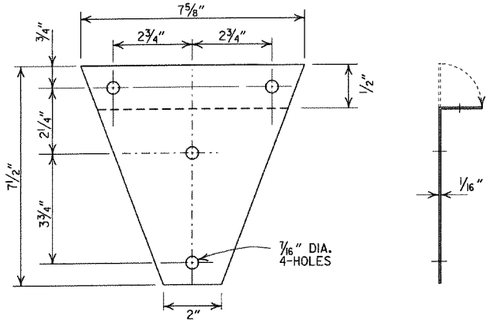


PLATFORM





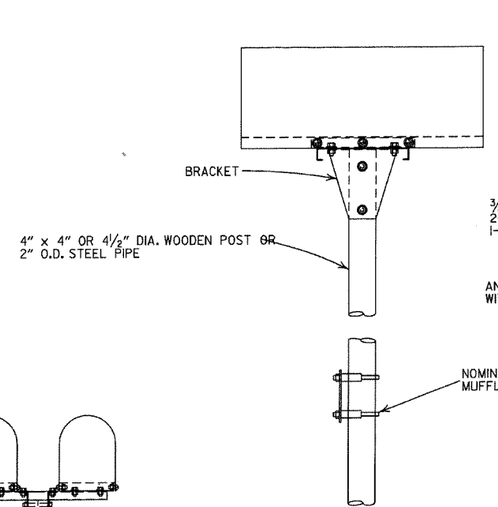
SINGLE INSTALLATION



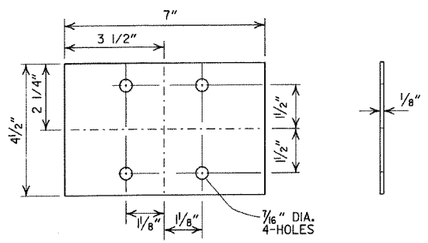
BRACKET

GENERAL NOTES

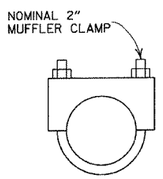
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X ¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



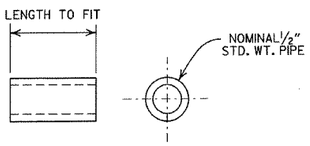
DOUBLE INSTALLATION



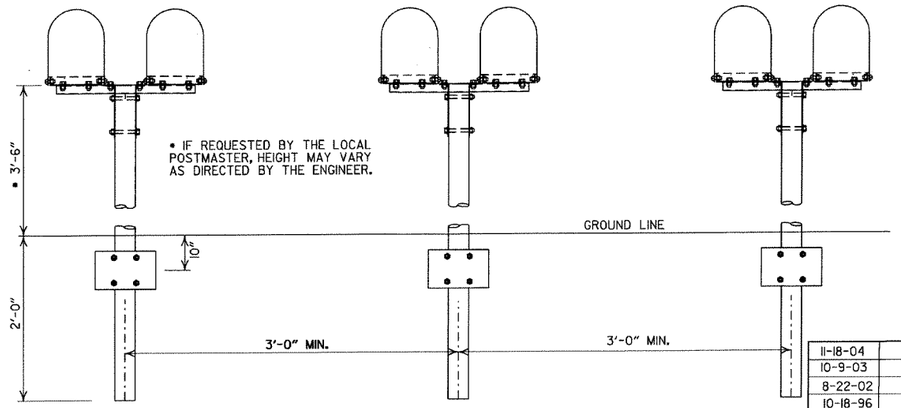
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

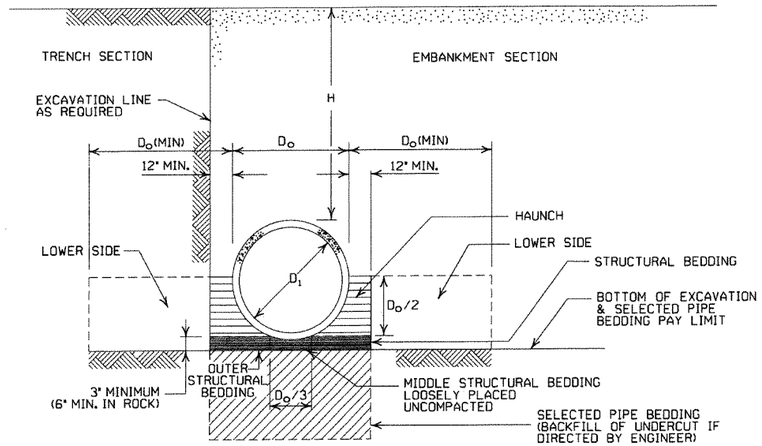
- LEGEND -

D_i = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL MIN. THICKNESS REQUIRED INCHES	STEEL ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	STEEL MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	ALUMINUM MIN. THICKNESS REQUIRED INCHES	ALUMINUM ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	ALUMINUM MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL MIN. THICKNESS REQUIRED INCHES	② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM INSTALLATION TYPE 2	INSTALLATION TYPE 1	INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2	12	15
42	46x36	6	0.079	3	2	13	15
48	53x41	7	0.079	3	2	13	15
54	60x46	8	0.079	3	2	13	15
60	66x51	9	0.079	3	2	13	15
66	73x55	12	0.079	3	2	15	15
72	81x59	14	0.079	3	2	15	15
78	87x63	14	0.079	3	2	15	15
84	95x67	16	0.109	3	2	15	15
90	103x71	16	0.109	3	2	15	15
96	112x75	18	0.109	3	2	15	15
102	117x79	18	0.109	3	2	15	15
108	128x83	18	0.138	3	2	15	15

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

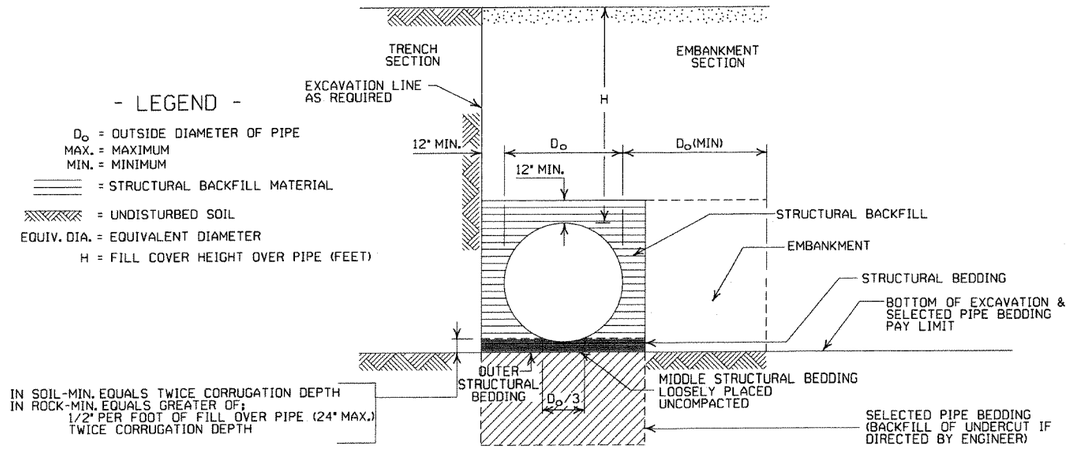
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8



- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)

EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALAALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

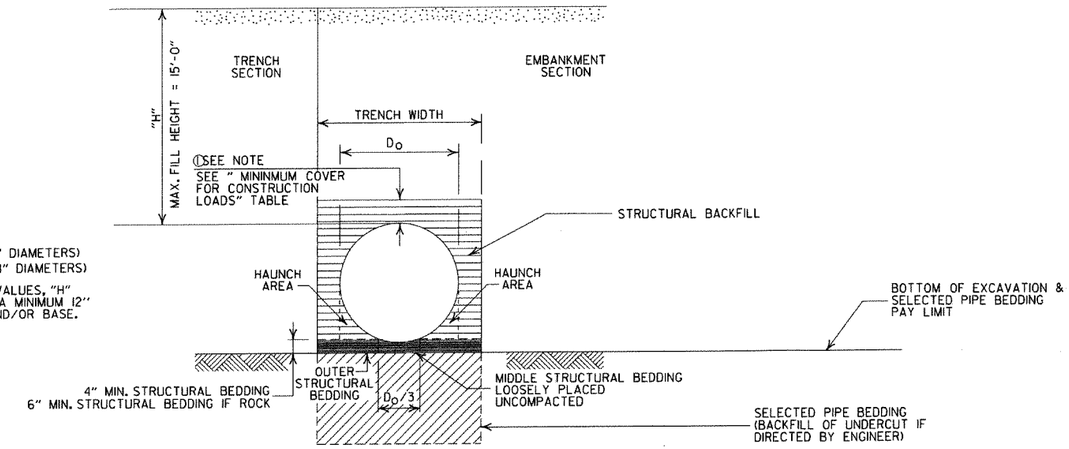
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS 18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

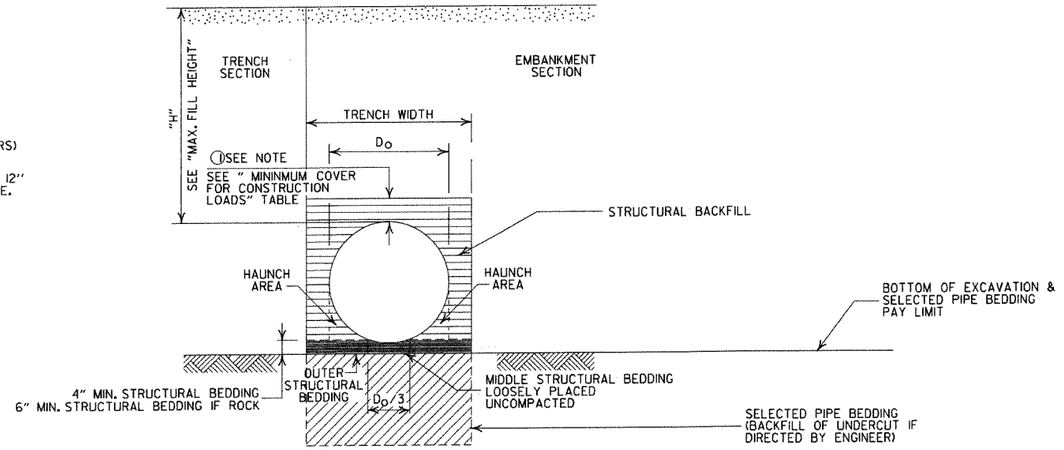
① NOTE:
12" MIN. (18" - 36" DIAMETERS)

MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8", THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

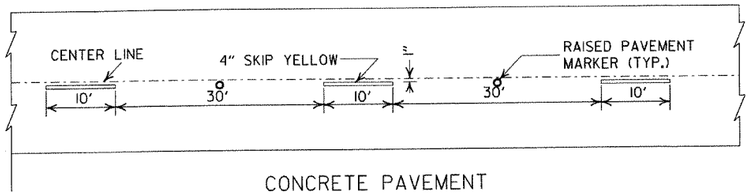
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

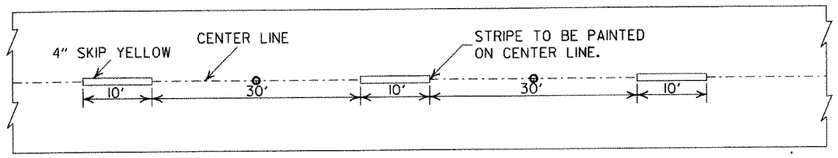
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

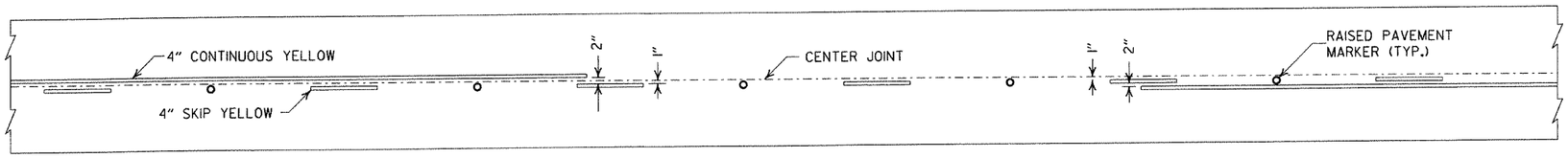


CONCRETE PAVEMENT

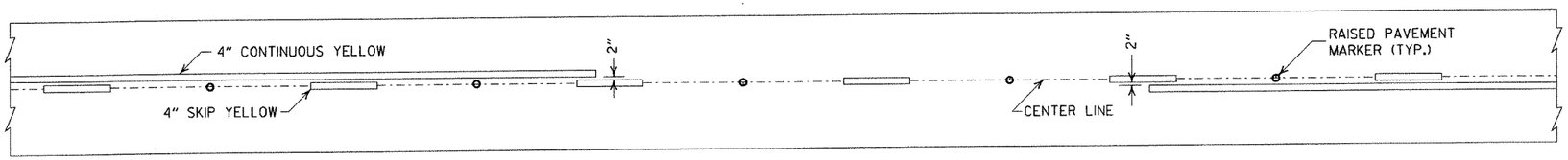


ASPHALT PAVEMENT

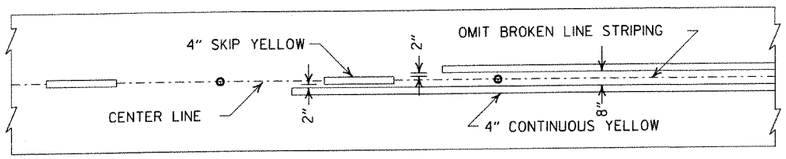
BROKEN LINE STRIPING



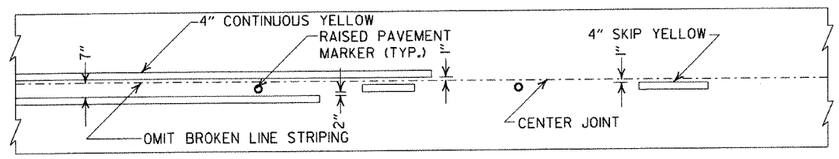
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

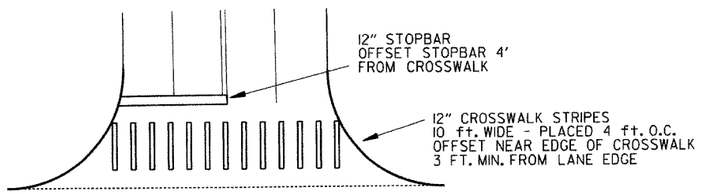


ASPHALT PAVEMENT



CONCRETE PAVEMENT

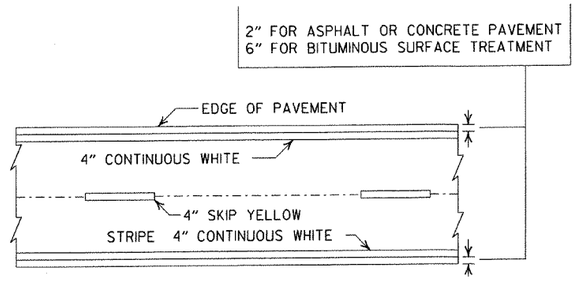
STRIPING AT ADJACENT NO PASSING LANES



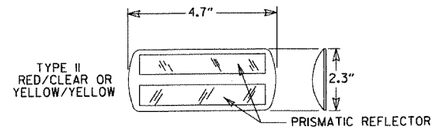
CROSSWALK AND STOPBAR DETAILS

NOTES:

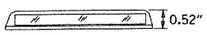
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

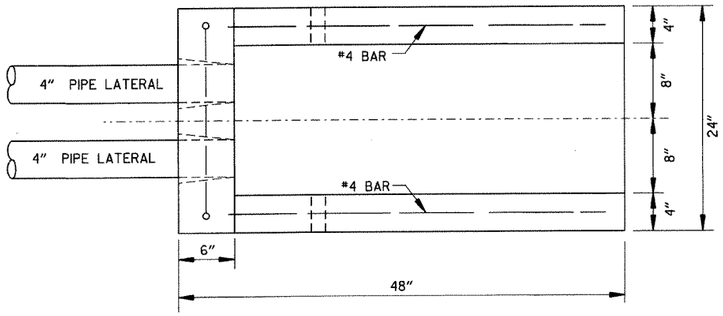
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

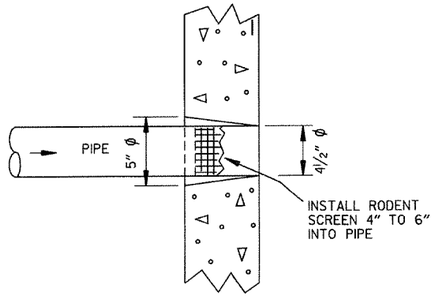
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

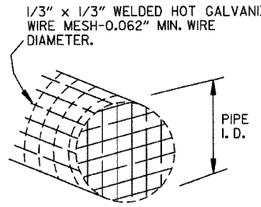
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



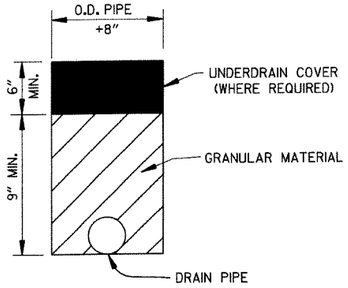
PLAN VIEW

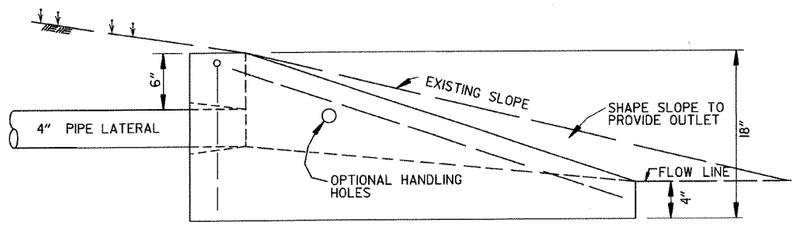


DETAIL OF HOLE FOR 4" PIPE

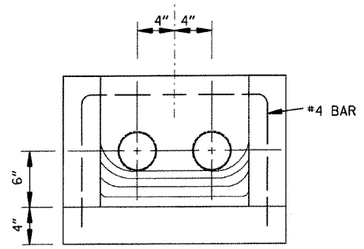


DETAIL OF RODENT SCREEN

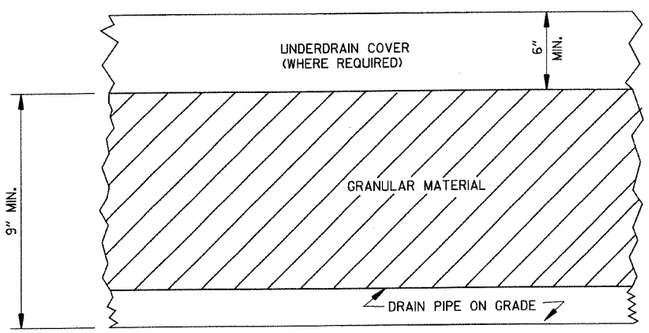




SIDE VIEW

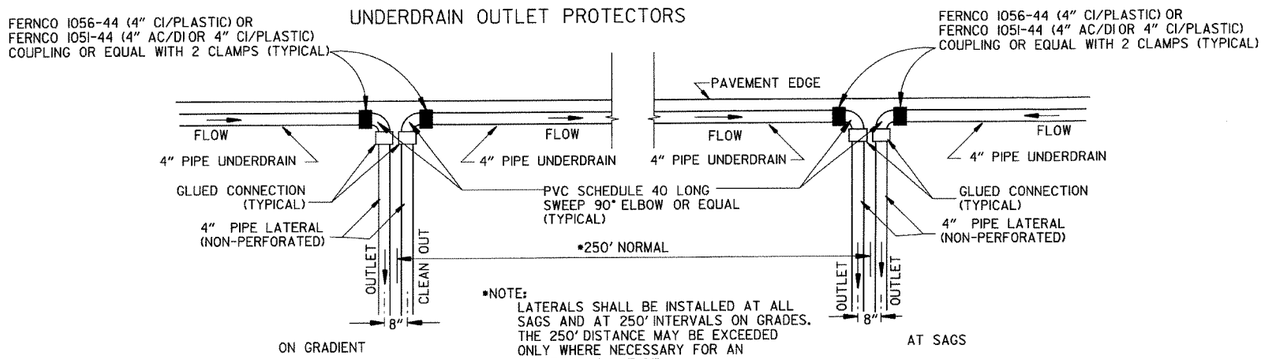


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

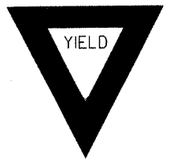
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

R1-1

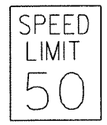
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

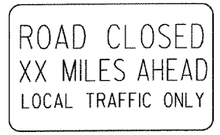
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

48"X30"

R11-3A

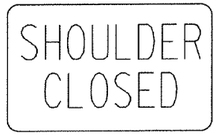


60"X30"

R11-4

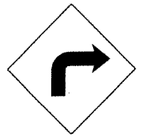
60"X30"

RSP-1



48"X30"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

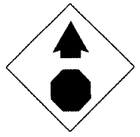
W1-6

STD. 48"X24"
SPECIAL 60"X30"

W1-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

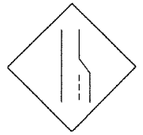


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

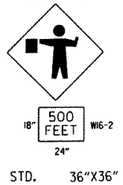
W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

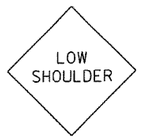
R56-1

STD. 18"X18"

W8-11

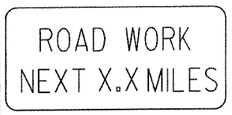
STD. 36"X36"
FWY. 48"X48"

W8-9



STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *

WHEN WORKERS
ARE PRESENT **

36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT, HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

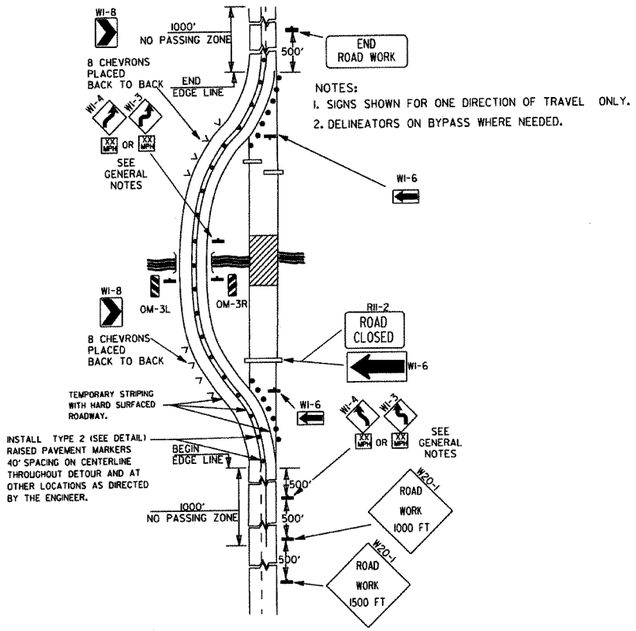
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

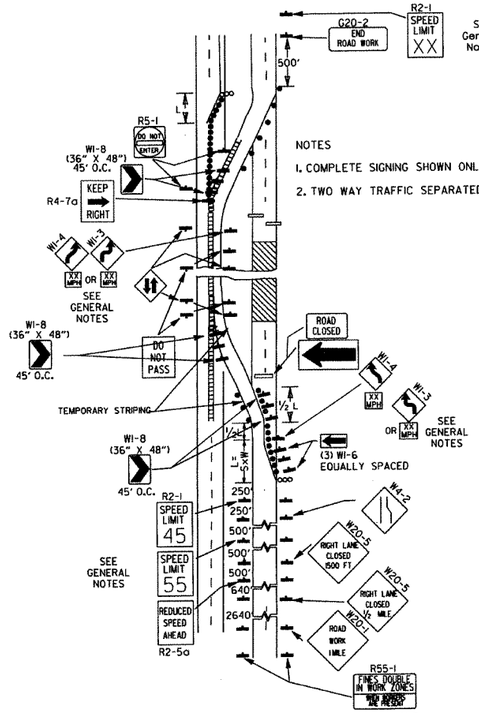
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



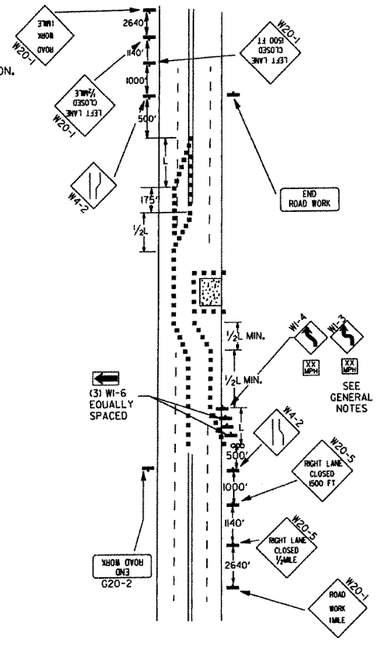
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

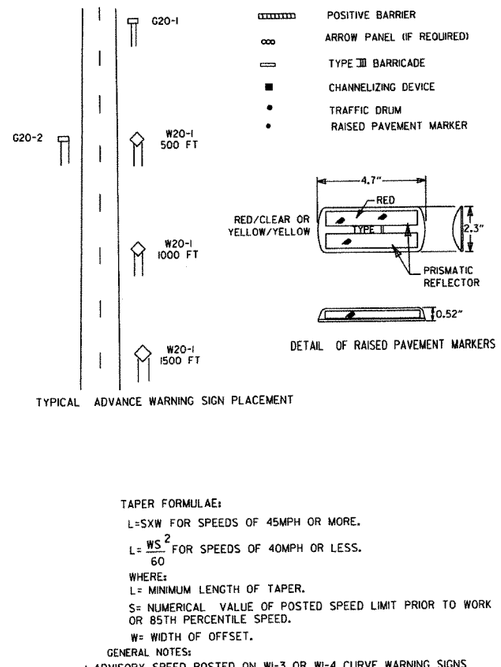


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

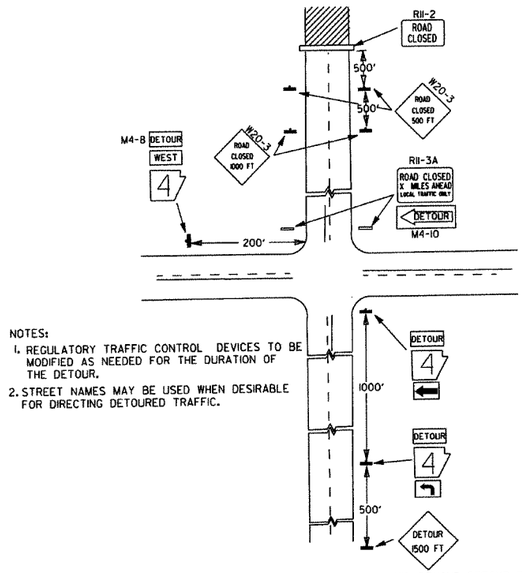


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



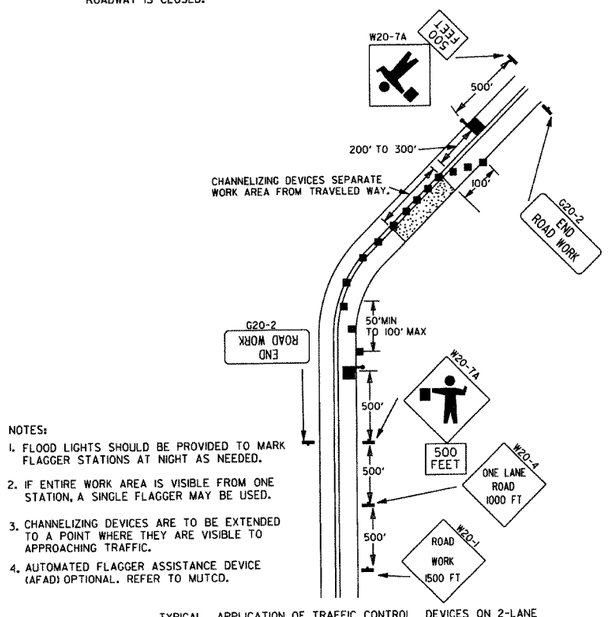
DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT



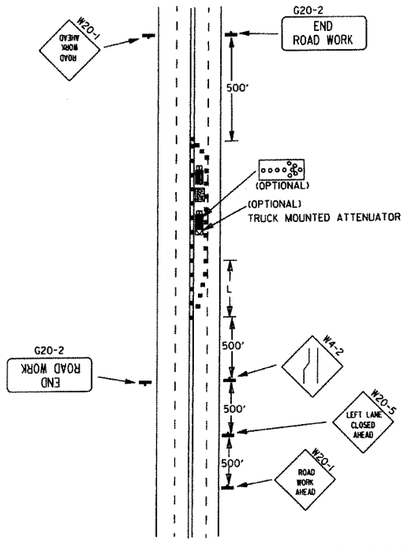
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L=\frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

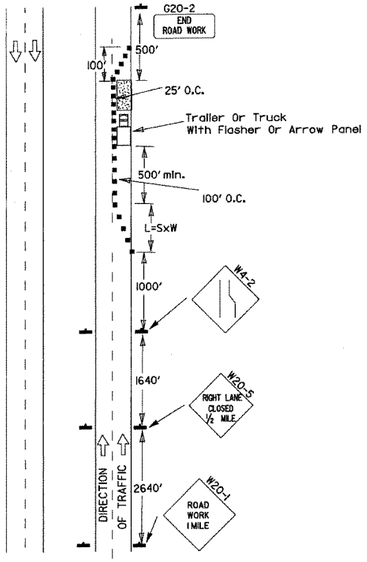
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

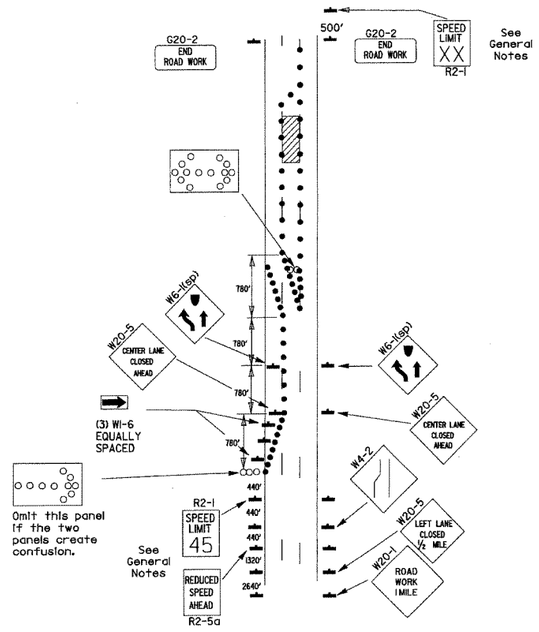
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

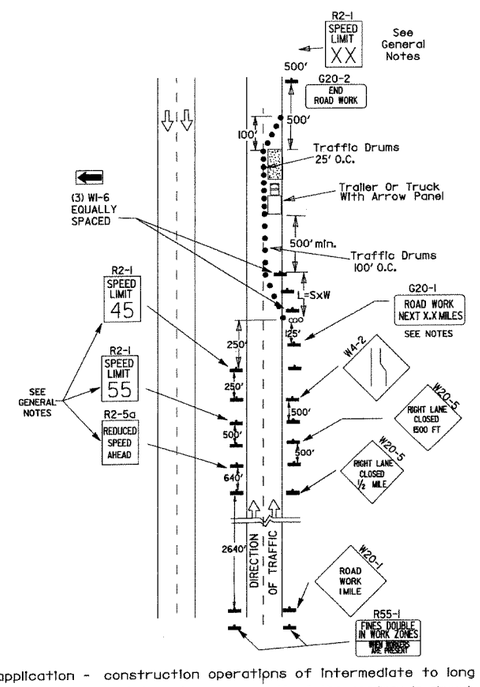
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

○○○ Arrow Panel (If Required)

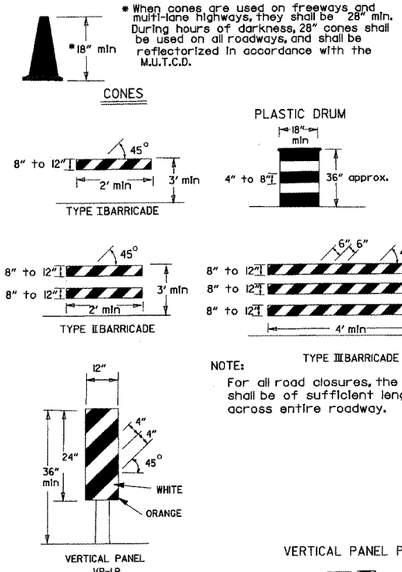
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

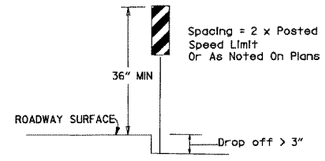
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

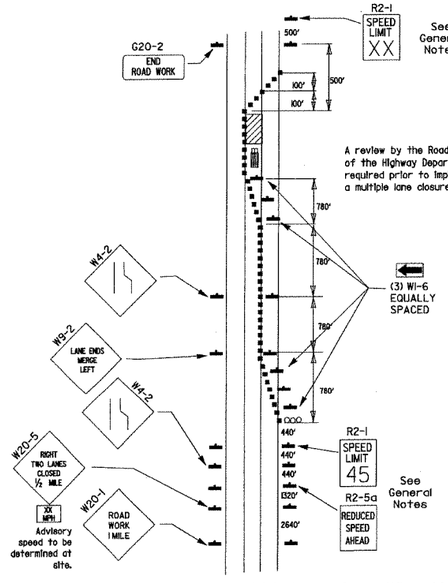
Channelizing devices



NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

VERTICAL PANEL PLACEMENT





(D) Typical application - closing multiple lanes of a multilane highway.

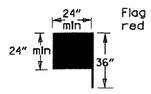
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

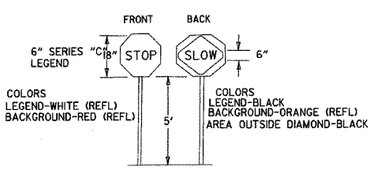
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

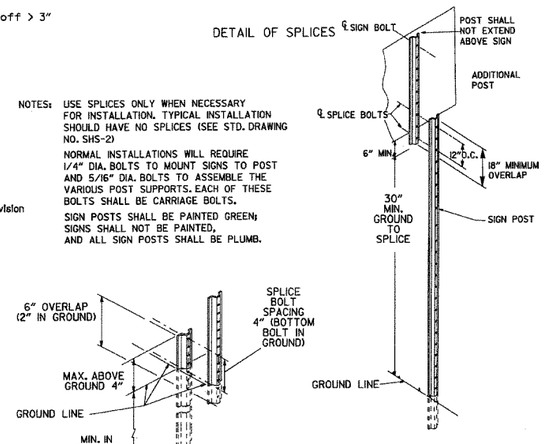


Flag shall be of good grade red material

STOP SLOW PADDLE



DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

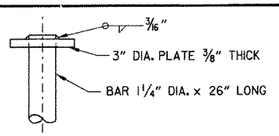
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

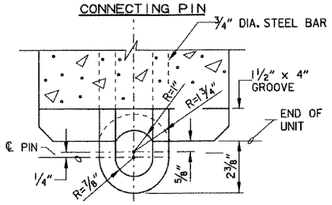
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR, 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12", 2'-1 3/8", 4 3/8", 3 1/2", 9"

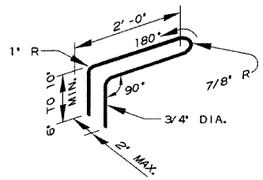


CONNECTION PIN

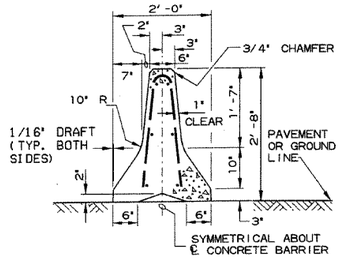


SECTION E-E

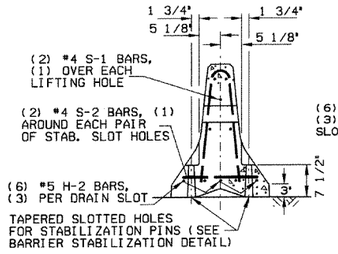
CONNECTION DETAILS



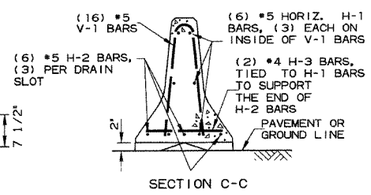
CONNECTION LOOP



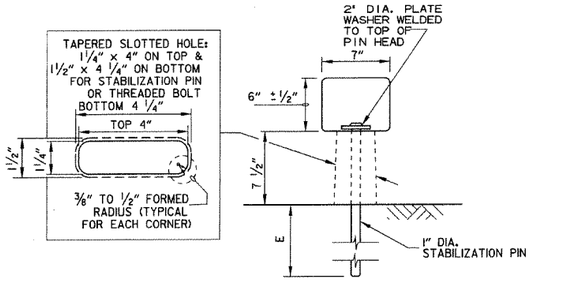
SECTION A-A



SECTION B-B



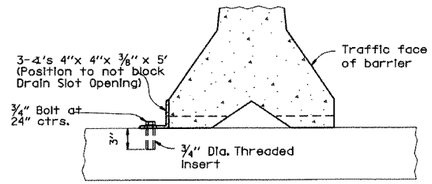
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

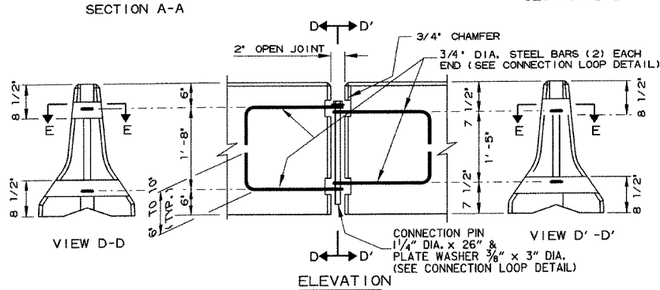
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

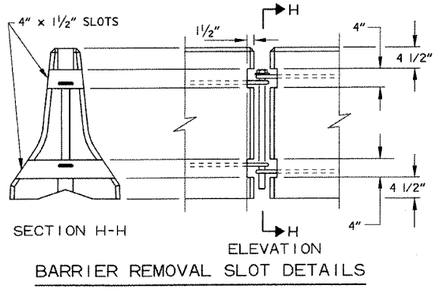
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

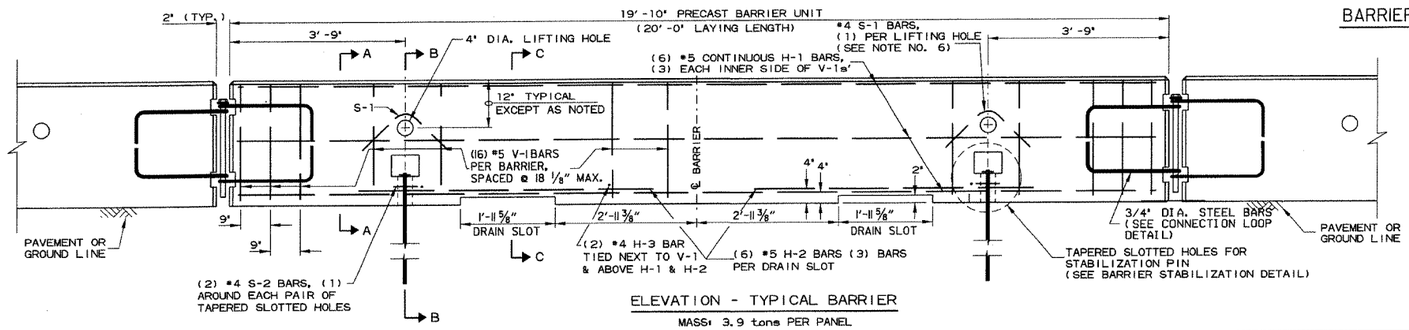
ELEVATION



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier".
The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

(3) Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

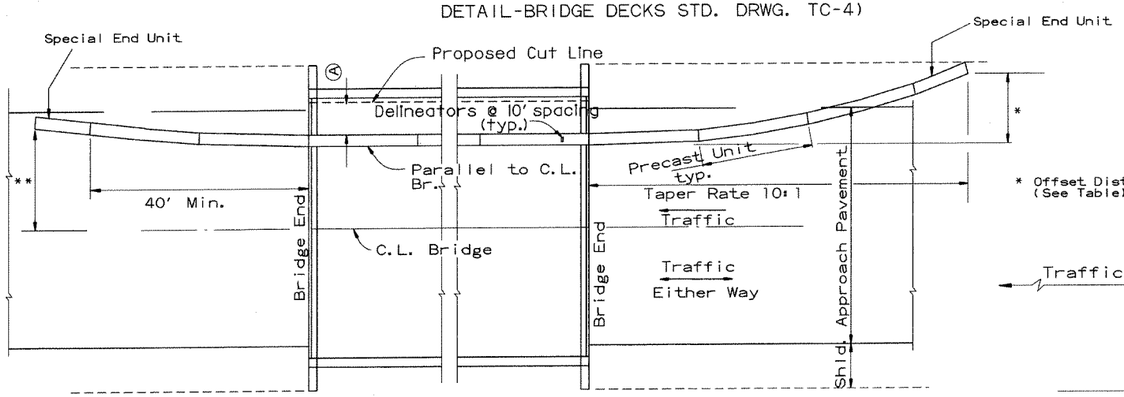
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

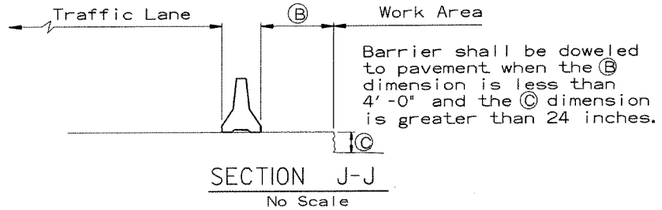
STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

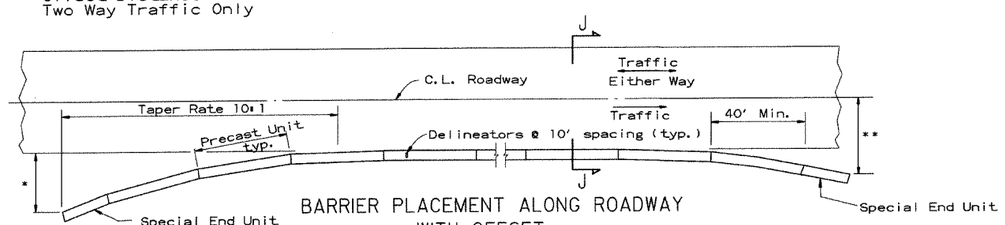


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

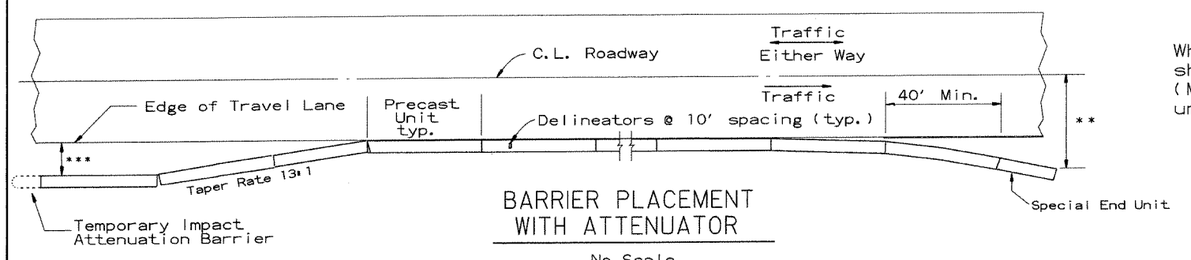
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.

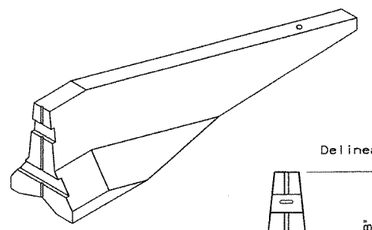


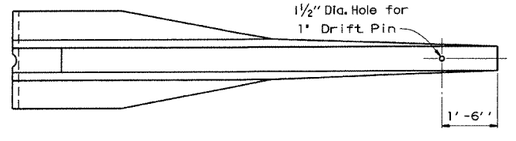
BARRIER PLACEMENT WITH ATTENUATOR

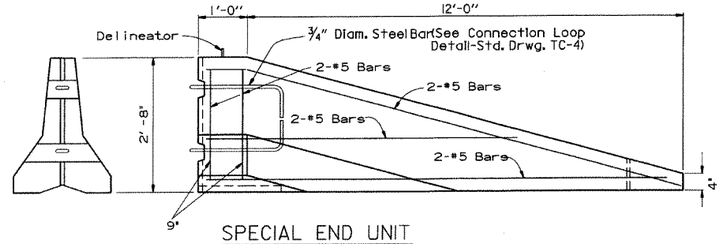
No Scale

** Offset Distance For Two Way Traffic Only

***Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator







SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

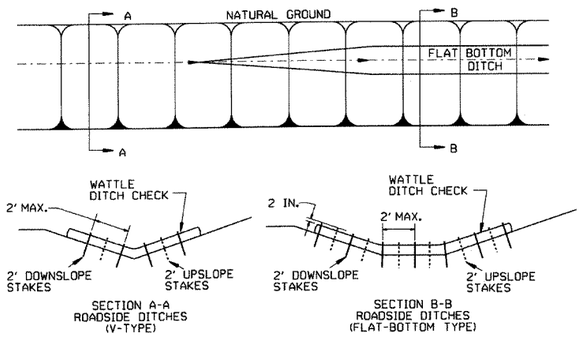
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

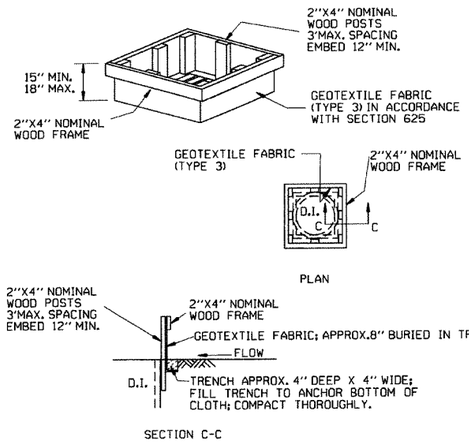
STANDARD DRAWING TC-5

GENERAL NOTES

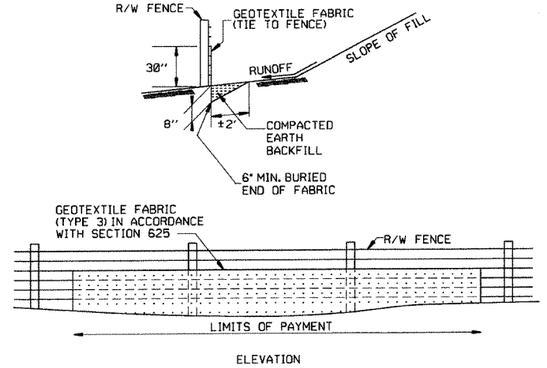
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



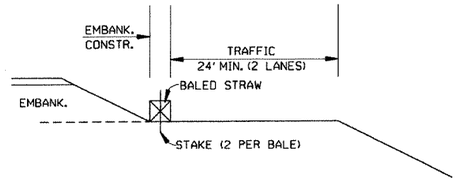
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

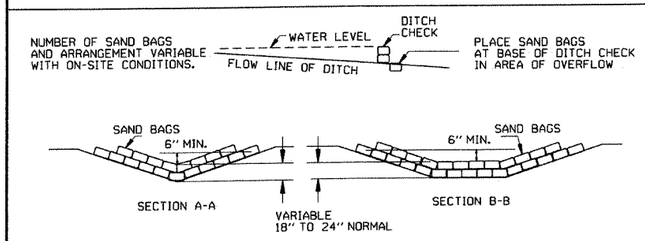
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

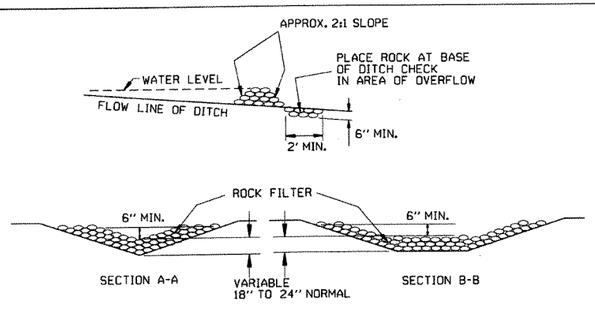
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



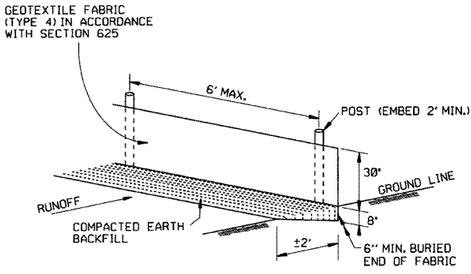
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

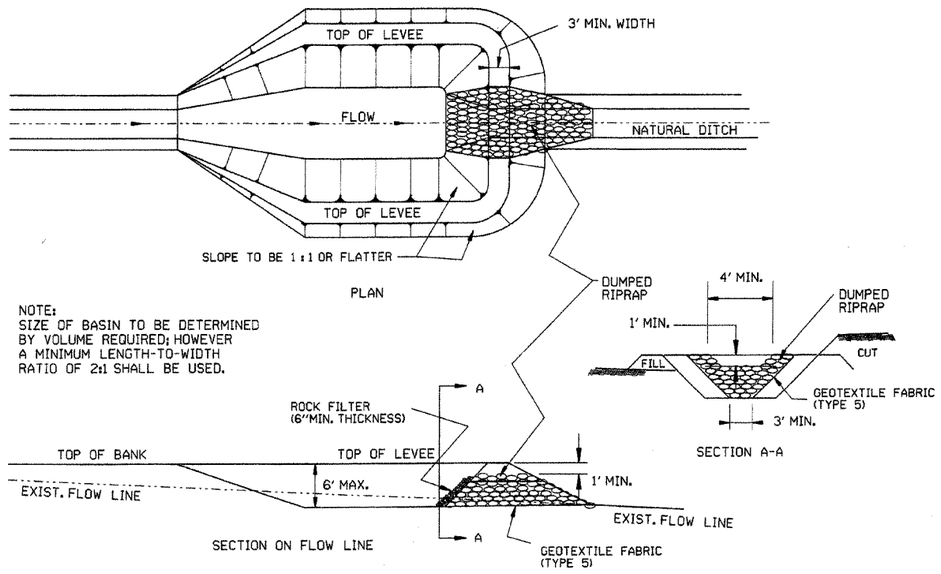
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

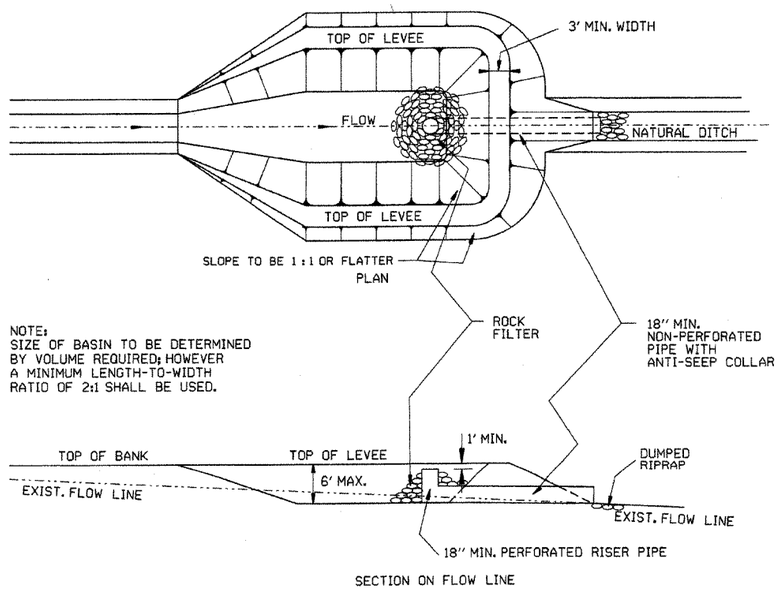
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

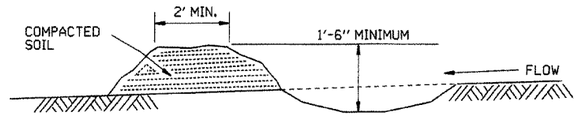
STANDARD DRAWING TEC-1



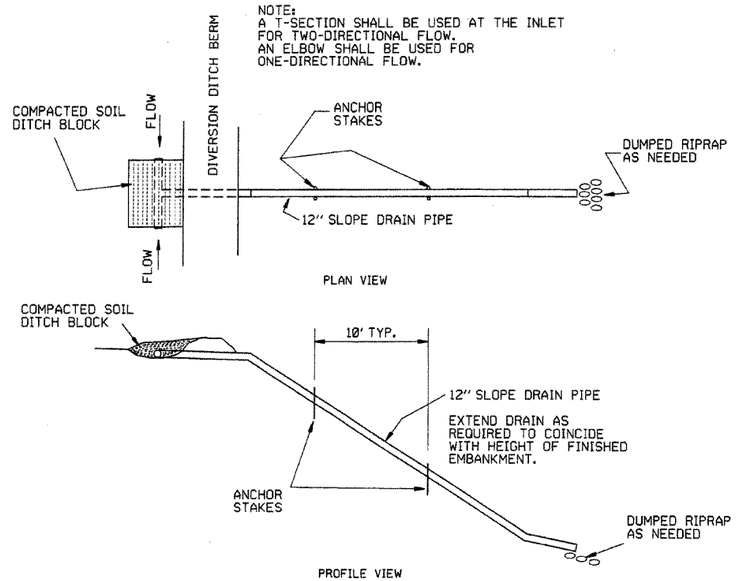
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



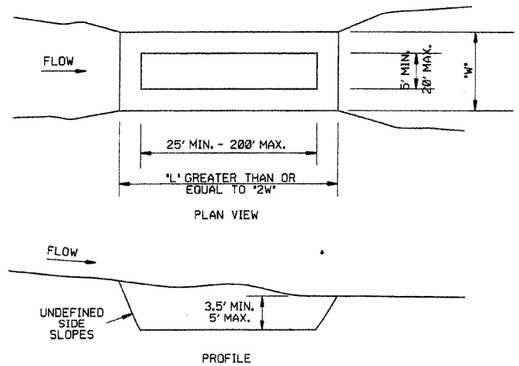
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

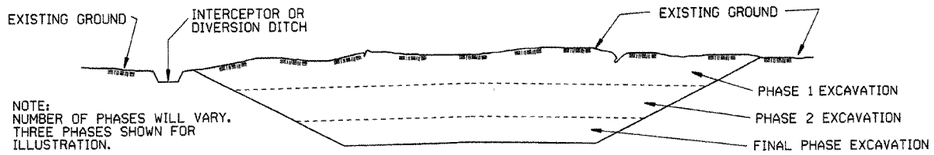
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



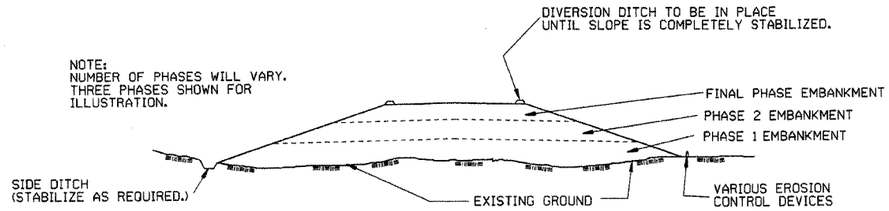
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

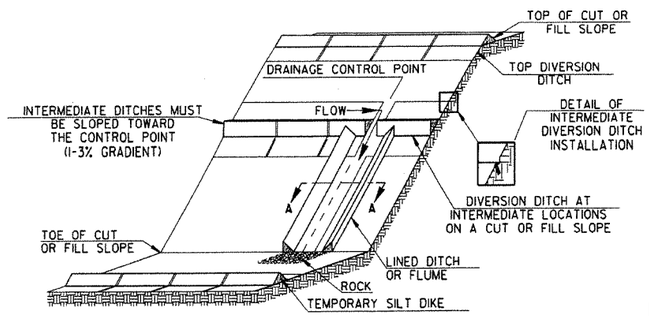
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

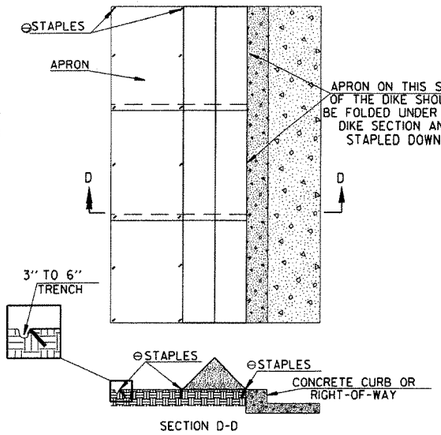
STANDARD DRAWING TEC-3

stdtec3.dgn



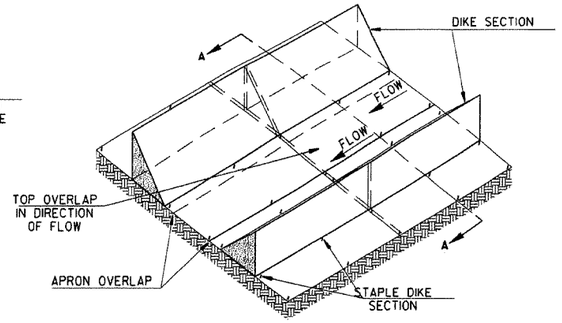
TEMPORARY DITCH LINER
SECTION A-A

TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER

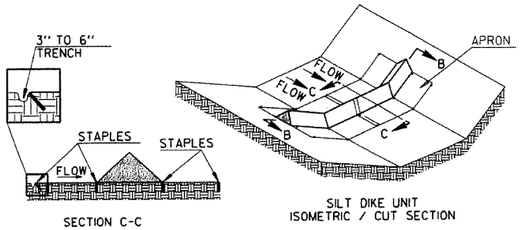


SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER

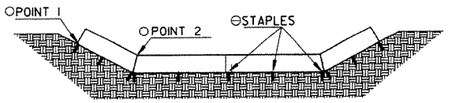


TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER



SECTION C-C

SILT DIKE UNIT
ISOMETRIC / CUT SECTION

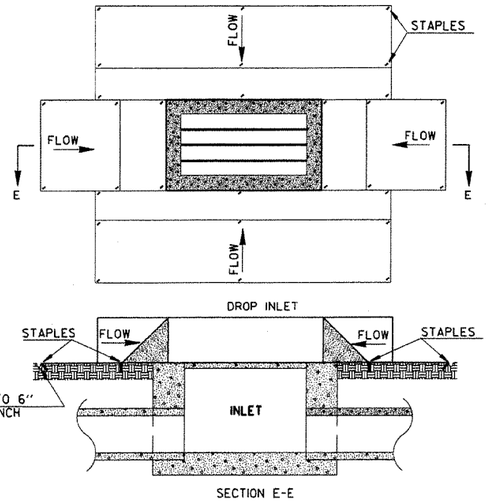


DIKE SECTION
SECTION B-B

TRIANGULAR SILT DIKE INSTALLATION
FOR
ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



SECTION E-E

TRIANGULAR SILT DIKE INSTALLATION
FOR
DROP INLETS

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

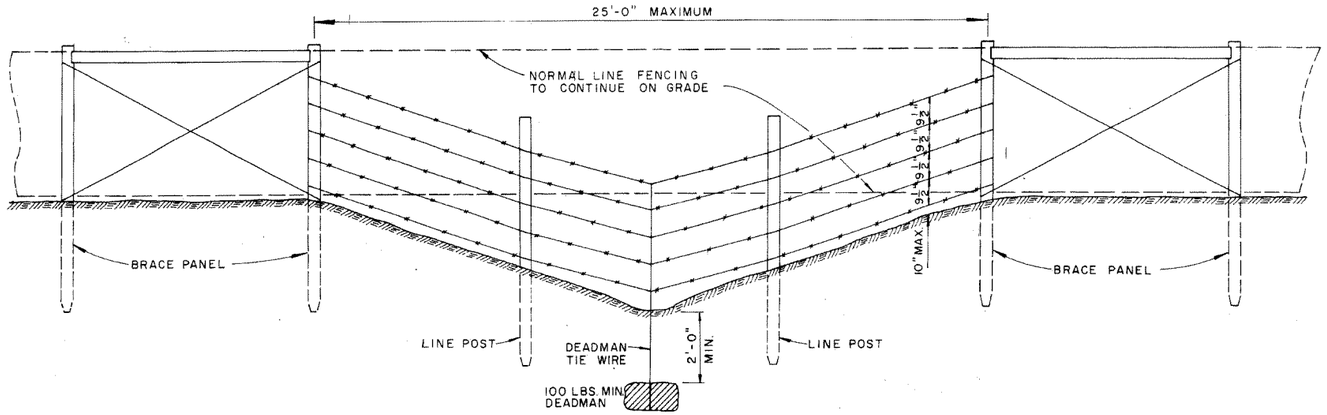
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

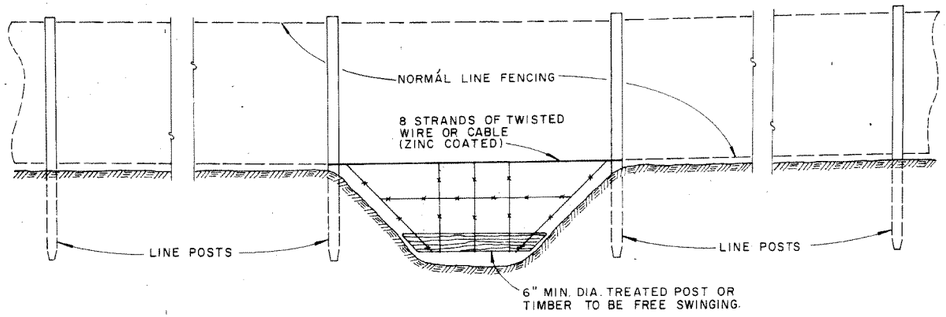
DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

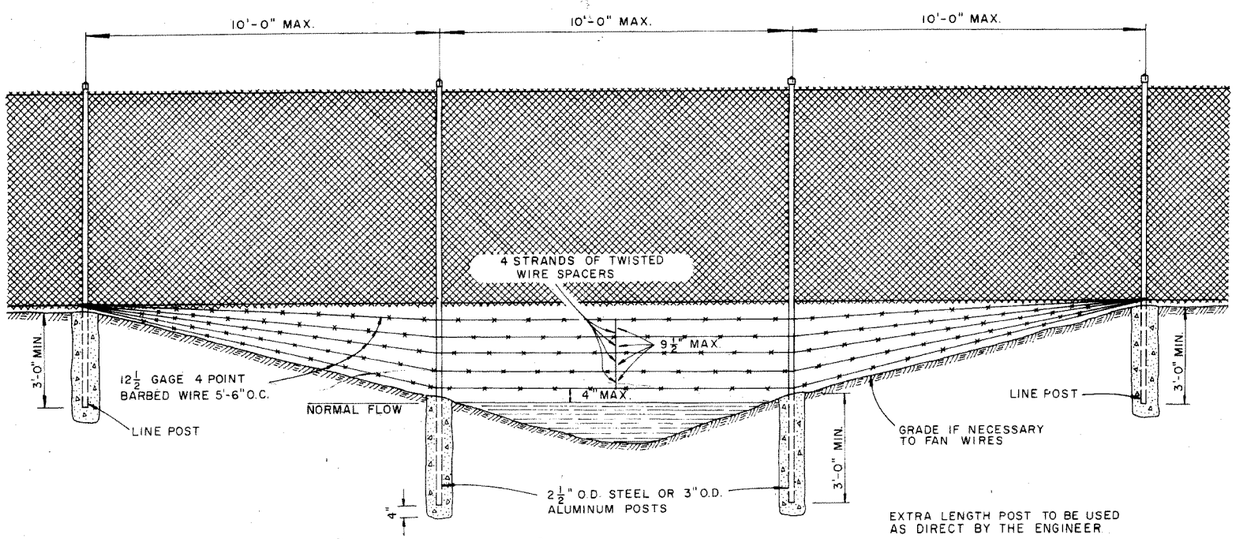
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	DATE FILMD.
4-20-79	REVISED TOP RAIL & TENSION WIRE	696 4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

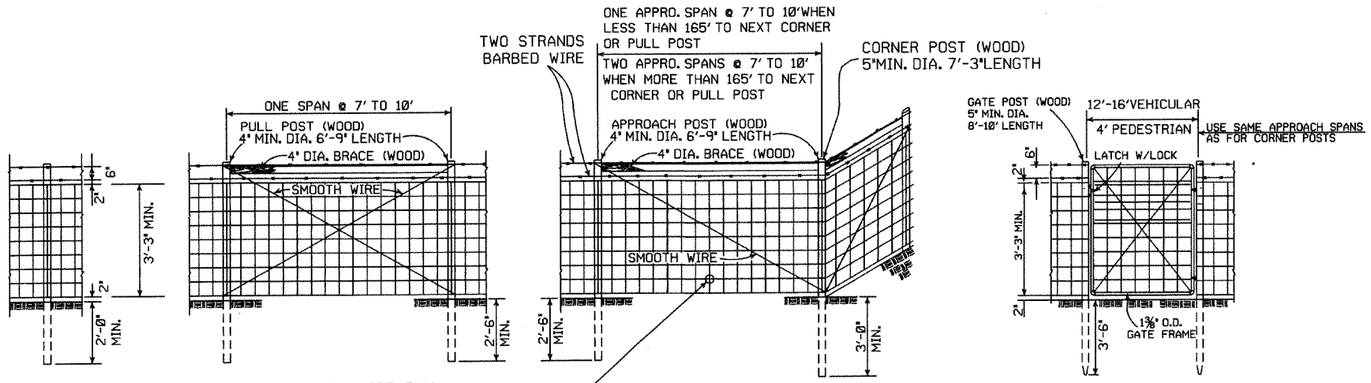
WIRE FENCE WATER GAPS

STANDARD DRAWING

WF-2

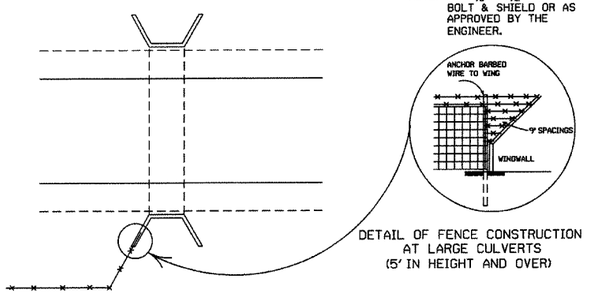
73

LM—11-71—61000—PPASC



TYPE C FENCE (WOOD POSTS)

NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

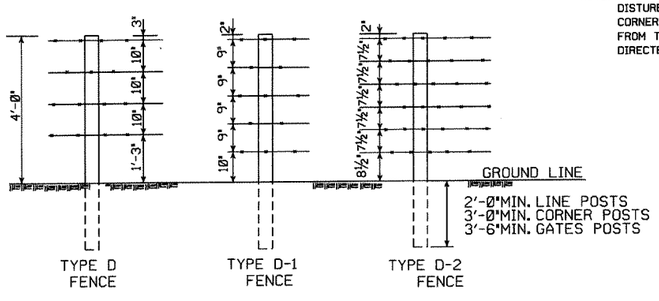
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

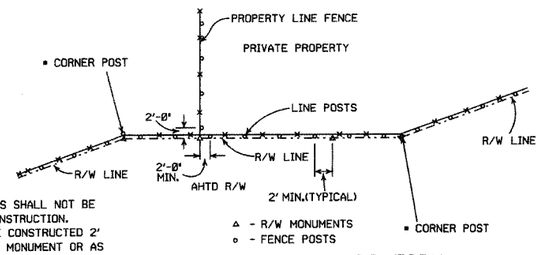
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

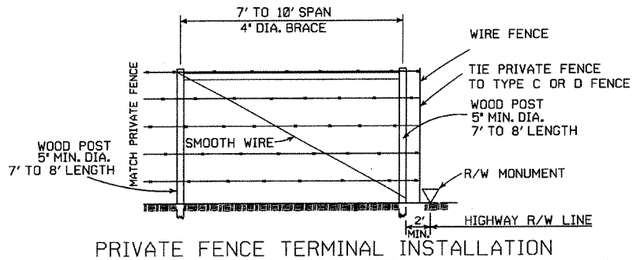


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



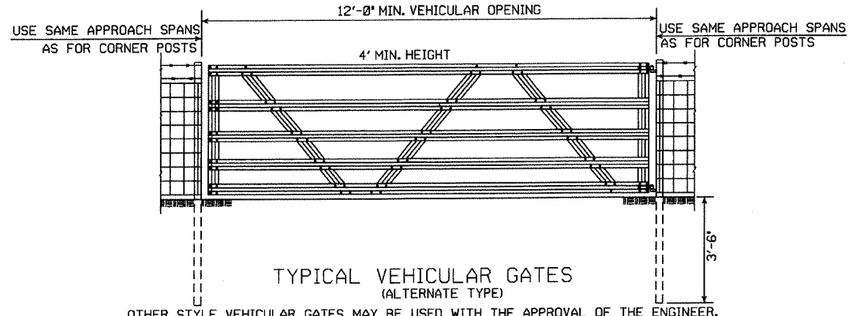
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

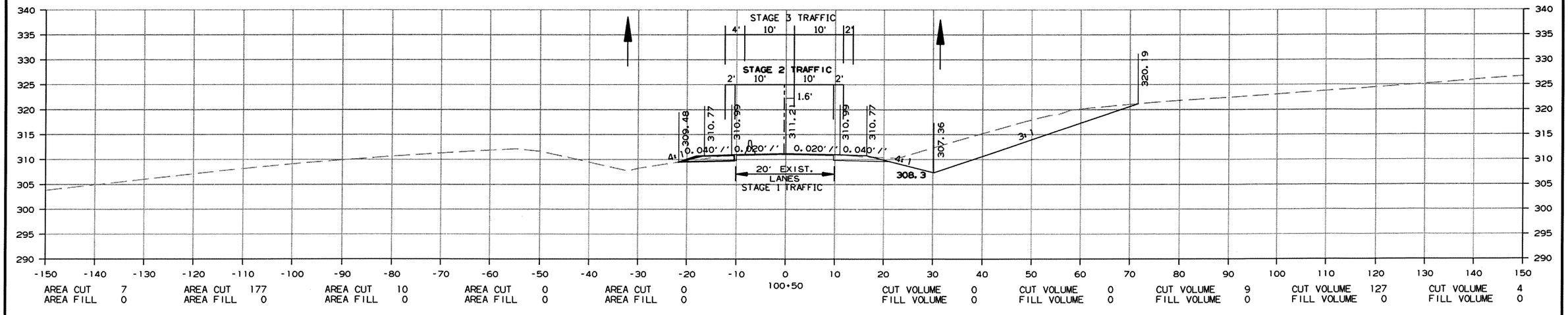
ARKANSAS STATE HIGHWAY COMMISSION

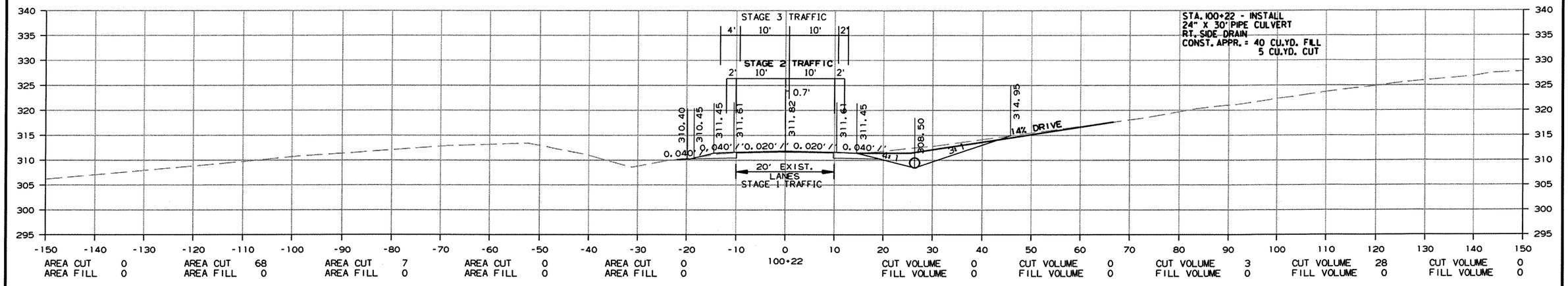
WIRE FENCE TYPE C AND D

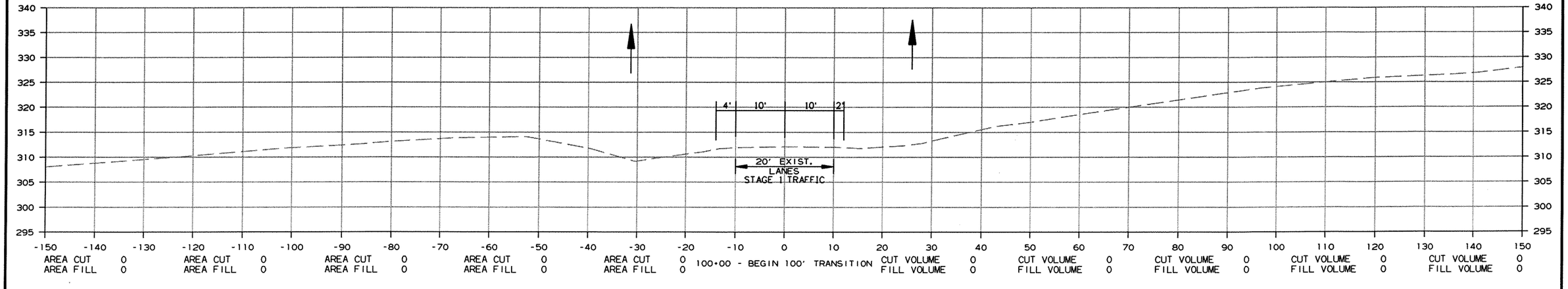
STANDARD DRAWING WF-4

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	65	111

(2) CROSS SECTIONS







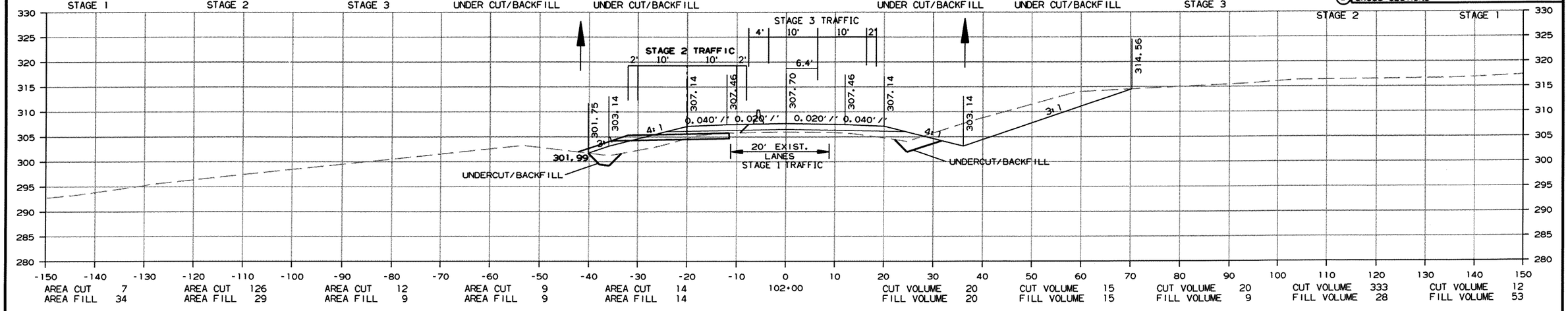
CROSS SECTION STA. 100+00 TO STA. 100+50

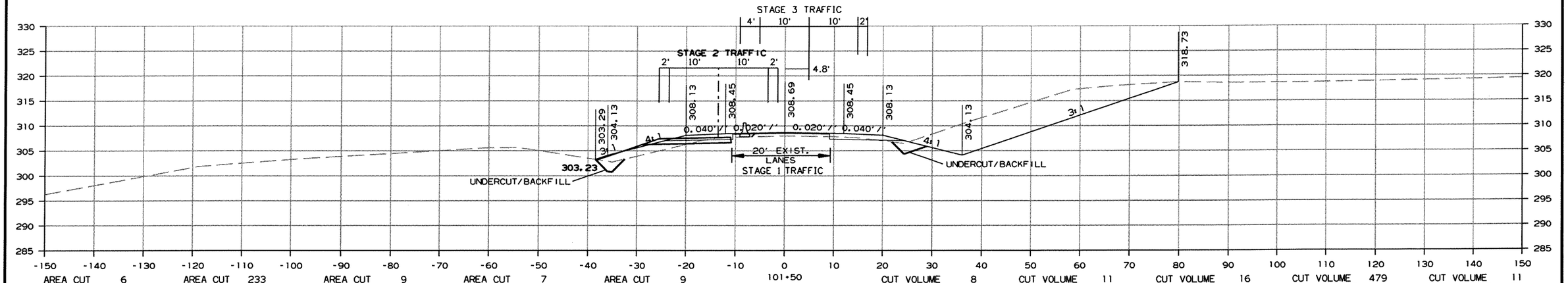
11/6/2012

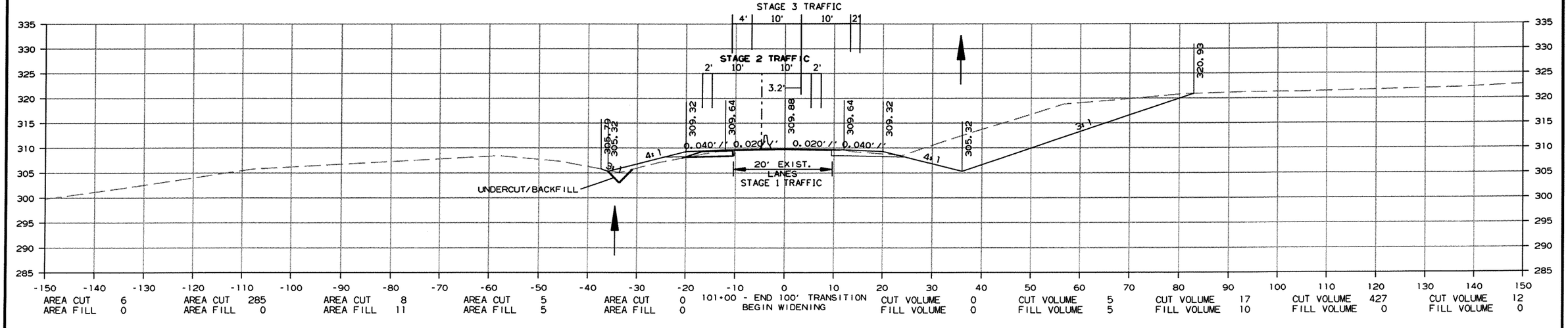
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	66	111

(2) CROSS SECTIONS







CROSS SECTION STA. 101+00 TO STA. 102+00

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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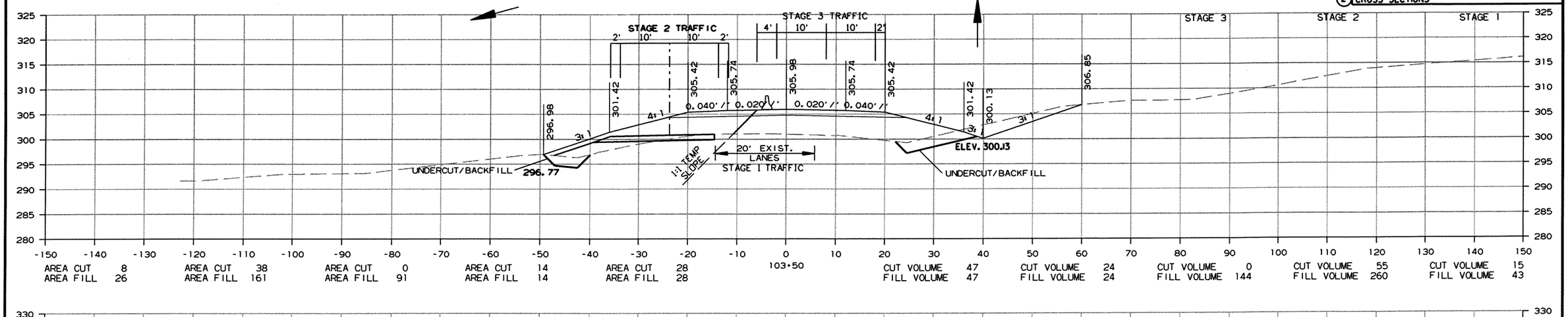
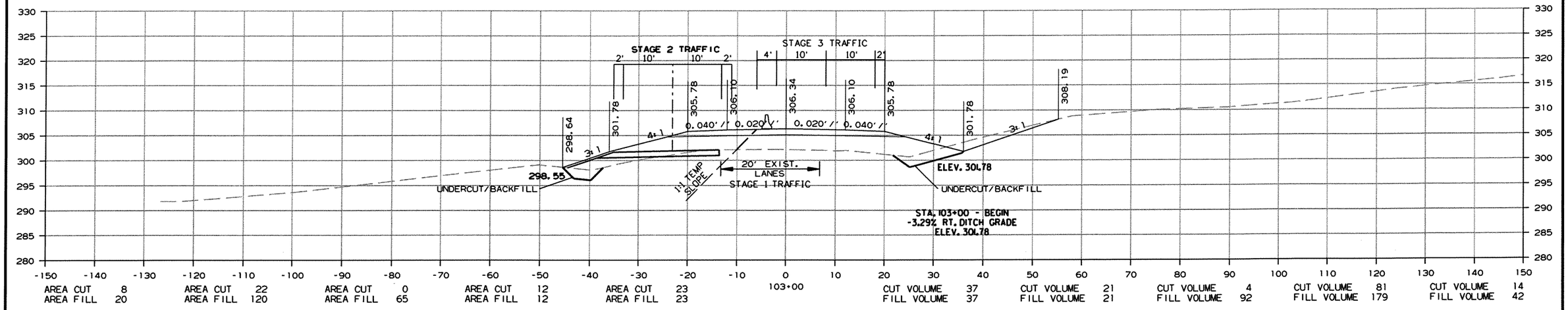
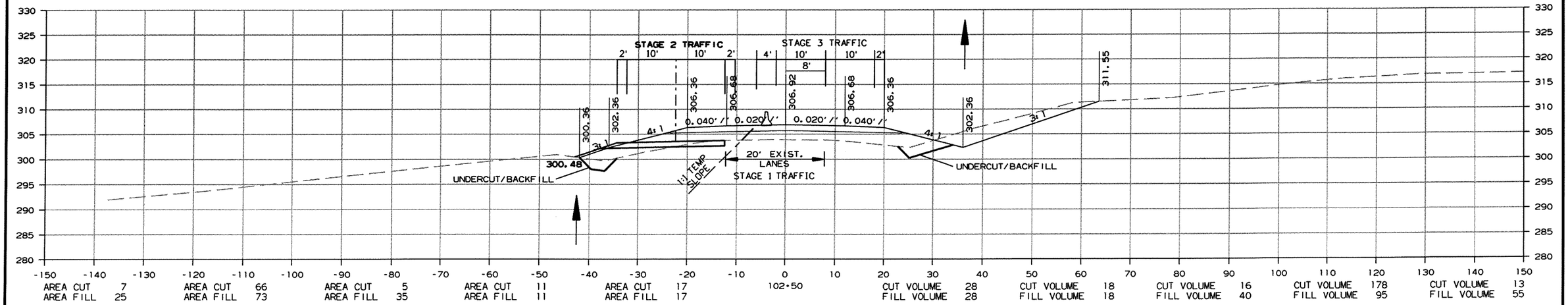
				JOB NO.		080387	67	111

(2) CROSS SECTIONS







CROSS SECTION STA. 102+50 TO STA. 103+50

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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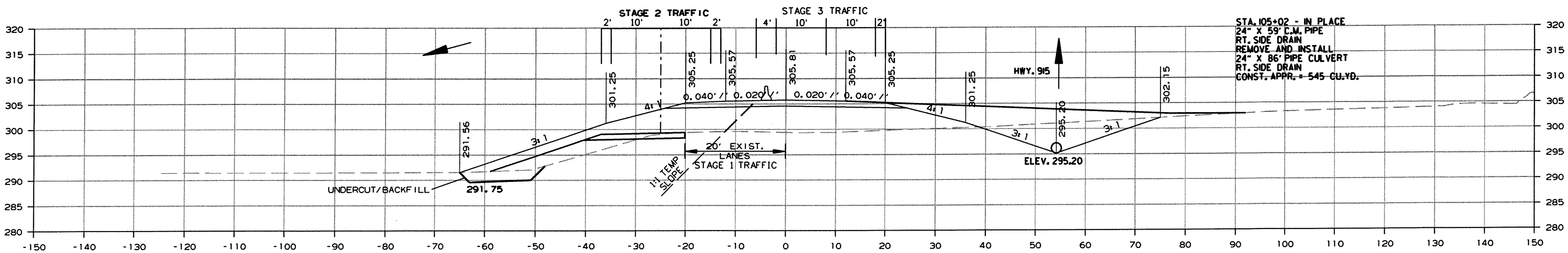
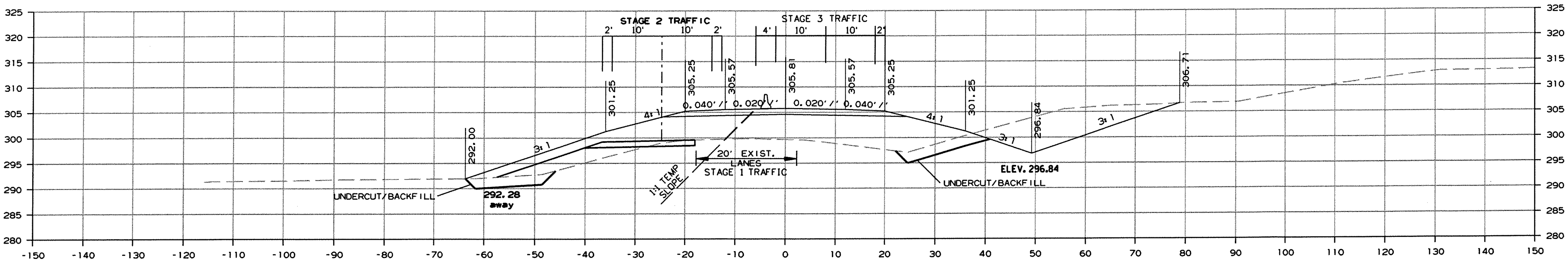
(2) CROSS SECTIONS



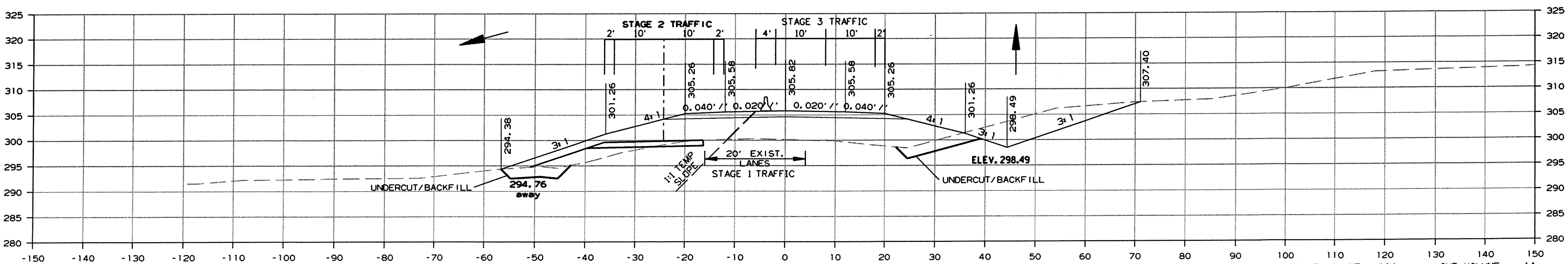
105+00

STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 7	AREA CUT 107	AREA CUT 0	AREA CUT 29	AREA CUT 43	CUT VOLUME 70	CUT VOLUME 56	CUT VOLUME 0	CUT VOLUME 250	CUT VOLUME 13
AREA FILL 54	AREA FILL 197	AREA FILL 159	AREA FILL 29	AREA FILL 43	FILL VOLUME 70	FILL VOLUME 56	FILL VOLUME 290	FILL VOLUME 400	FILL VOLUME 98



104+50

STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 7	AREA CUT 163	AREA CUT 0	AREA CUT 31	AREA CUT 33	CUT VOLUME 57	CUT VOLUME 50	CUT VOLUME 0	CUT VOLUME 250	CUT VOLUME 13
AREA FILL 52	AREA FILL 235	AREA FILL 154	AREA FILL 31	AREA FILL 33	FILL VOLUME 57	FILL VOLUME 50	FILL VOLUME 259	FILL VOLUME 396	FILL VOLUME 81



104+00

STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 7	AREA CUT 107	AREA CUT 0	AREA CUT 23	AREA CUT 29	CUT VOLUME 53	CUT VOLUME 34	CUT VOLUME 0	CUT VOLUME 134	CUT VOLUME 14
AREA FILL 35	AREA FILL 193	AREA FILL 126	AREA FILL 23	AREA FILL 29	FILL VOLUME 53	FILL VOLUME 34	FILL VOLUME 201	FILL VOLUME 327	FILL VOLUME 56

CROSS SECTION STA. 104+00 TO STA. 105+00

11/6/2012

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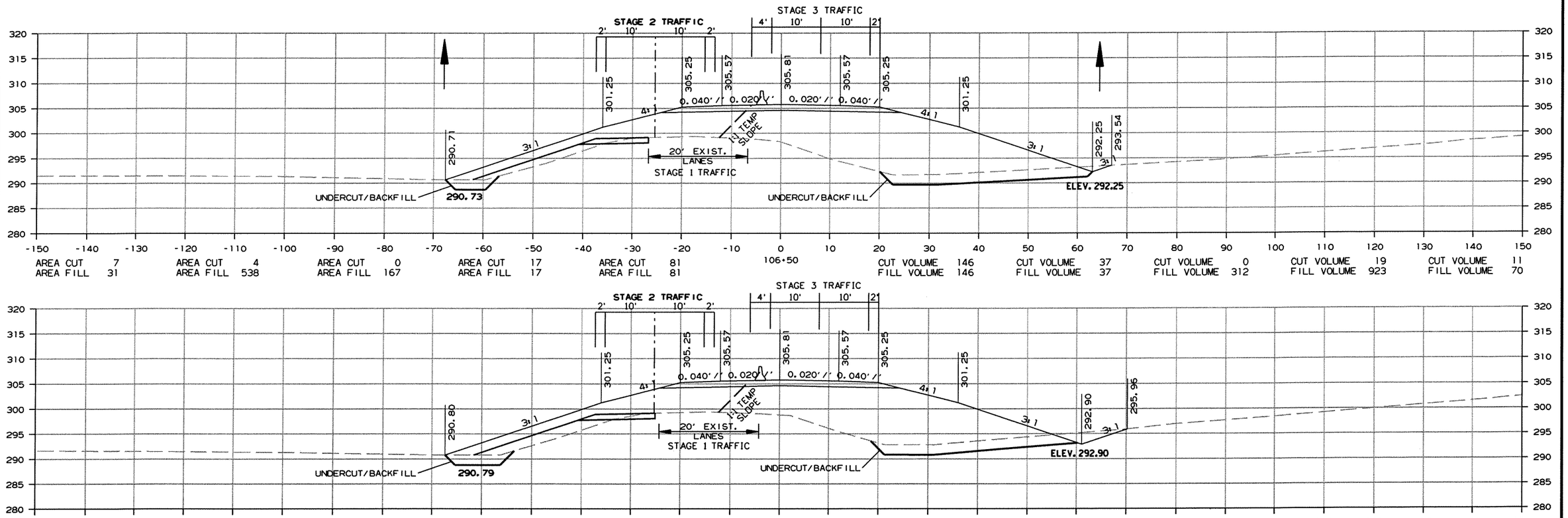
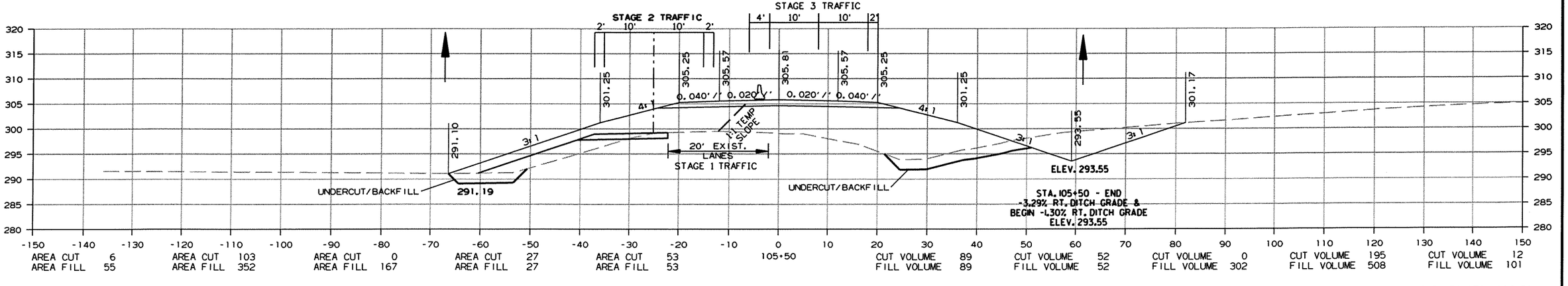
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080387		69	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1





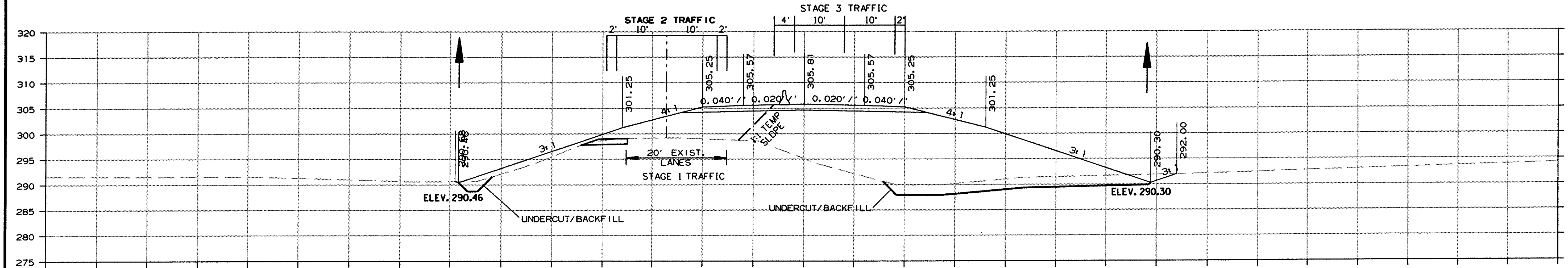
CROSS SECTION STA. 105+50 TO STA. 106+50

11/6/2012

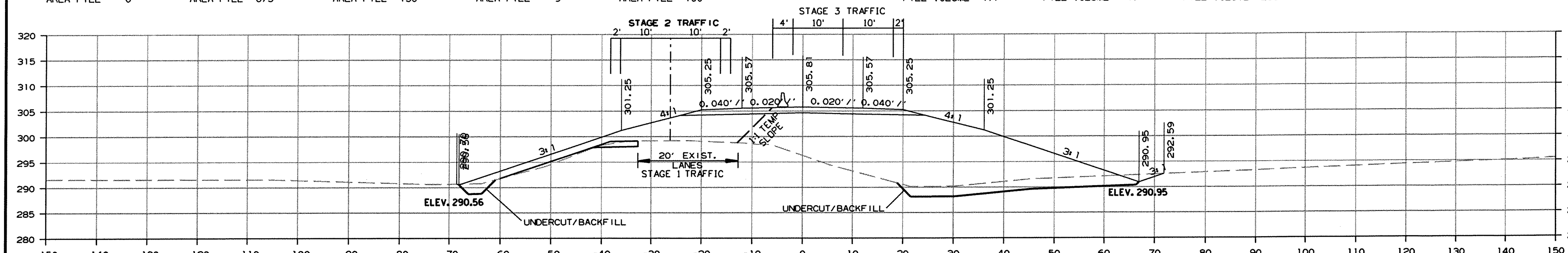
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	70	111

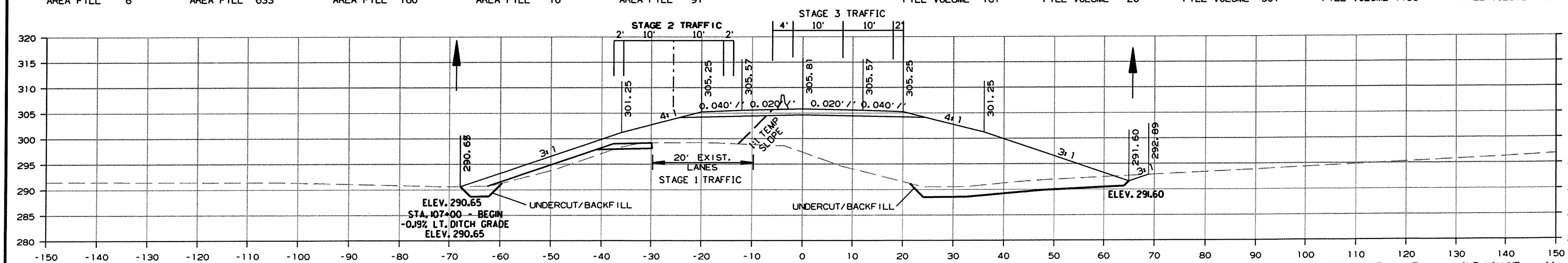
(2) CROSS SECTIONS



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STATION	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 7	AREA CUT 8	AREA CUT 0	AREA CUT 9	AREA CUT 100	108+00	CUT VOLUME 177	CUT VOLUME 17	CUT VOLUME 0	CUT VOLUME 13	CUT VOLUME 12
AREA FILL 0	AREA FILL 673	AREA FILL 150	AREA FILL 9	AREA FILL 100		FILL VOLUME 177	FILL VOLUME 17	FILL VOLUME 288	FILL VOLUME 1209	FILL VOLUME 6



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STATION	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 6	AREA CUT 7	AREA CUT 0	AREA CUT 10	AREA CUT 91	107+50	CUT VOLUME 161	CUT VOLUME 20	CUT VOLUME 0	CUT VOLUME 10	CUT VOLUME 11
AREA FILL 6	AREA FILL 633	AREA FILL 160	AREA FILL 10	AREA FILL 91		FILL VOLUME 161	FILL VOLUME 20	FILL VOLUME 301	FILL VOLUME 1138	FILL VOLUME 24



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STATION	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 6	AREA CUT 4	AREA CUT 0	AREA CUT 12	AREA CUT 83	107+00	CUT VOLUME 152	CUT VOLUME 27	CUT VOLUME 0	CUT VOLUME 7	CUT VOLUME 11
AREA FILL 20	AREA FILL 595	AREA FILL 165	AREA FILL 12	AREA FILL 83		FILL VOLUME 152	FILL VOLUME 27	FILL VOLUME 307	FILL VOLUME 1049	FILL VOLUME 47

CROSS SECTION STA. 107+00 TO STA. 108+00

11/6/2012

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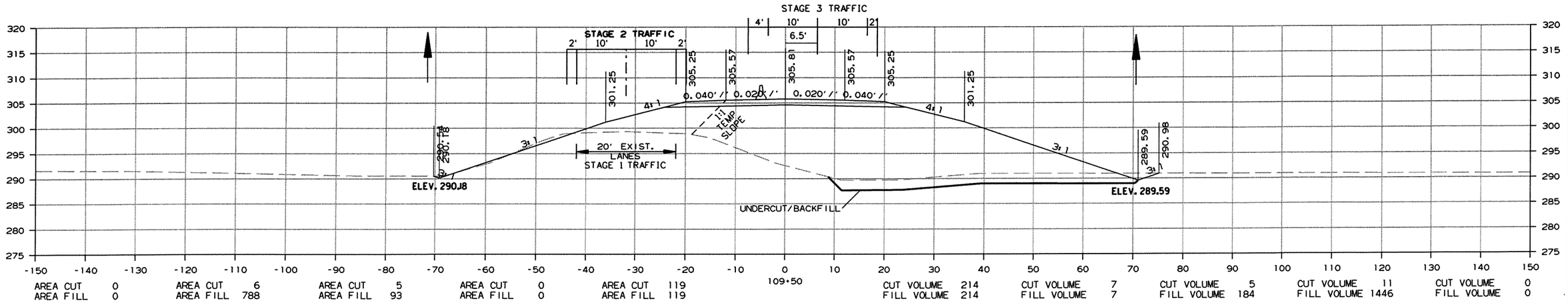
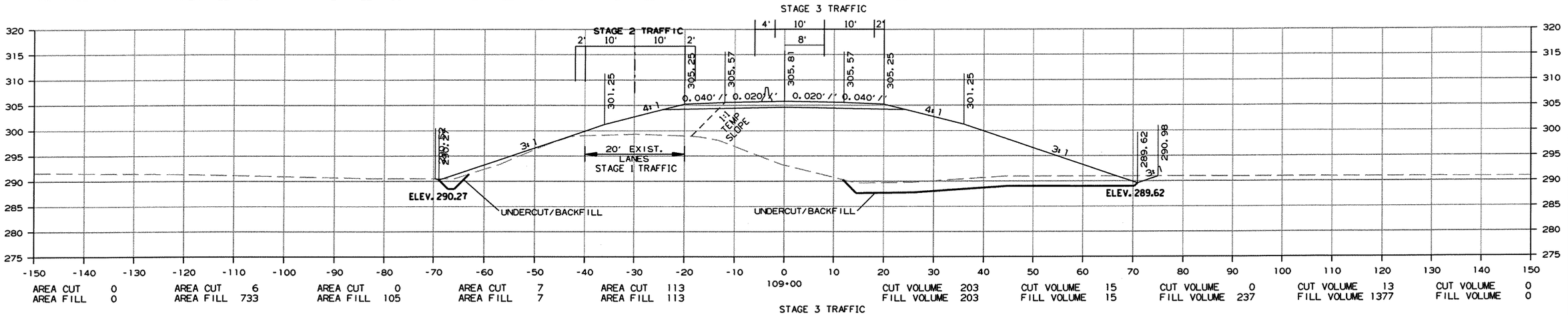
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	71	111

(2) CROSS SECTIONS

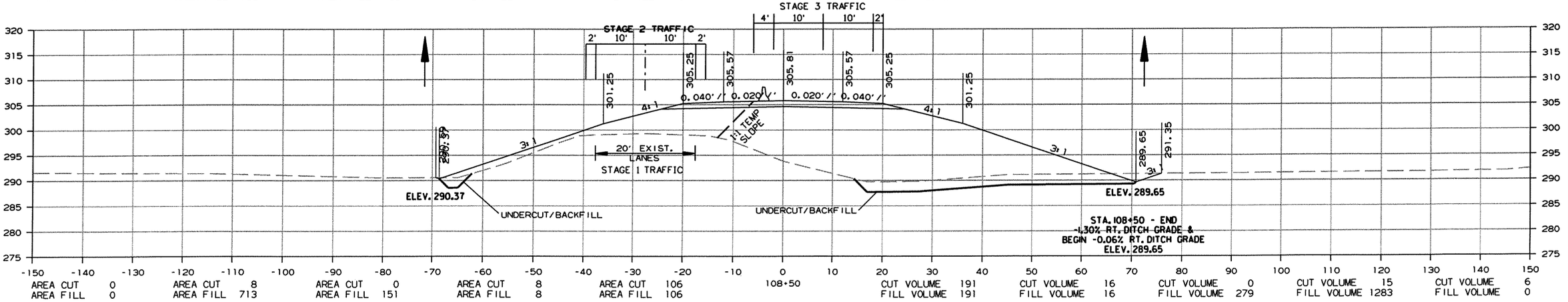
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT 0	AREA CUT 6	AREA CUT 5	AREA CUT 0	AREA CUT 119	CUT VOLUME 214	CUT VOLUME 7	CUT VOLUME 5	CUT VOLUME 11	CUT VOLUME 0
AREA FILL 0	AREA FILL 788	AREA FILL 93	AREA FILL 0	AREA FILL 119	FILL VOLUME 214	FILL VOLUME 7	FILL VOLUME 184	FILL VOLUME 1446	FILL VOLUME 0



AREA CUT 0	AREA CUT 6	AREA CUT 0	AREA CUT 7	AREA CUT 113	CUT VOLUME 203	CUT VOLUME 15	CUT VOLUME 0	CUT VOLUME 13	CUT VOLUME 0
AREA FILL 0	AREA FILL 733	AREA FILL 105	AREA FILL 7	AREA FILL 113	FILL VOLUME 203	FILL VOLUME 15	FILL VOLUME 237	FILL VOLUME 1377	FILL VOLUME 0



AREA CUT 0	AREA CUT 8	AREA CUT 0	AREA CUT 8	AREA CUT 106	CUT VOLUME 191	CUT VOLUME 16	CUT VOLUME 0	CUT VOLUME 15	CUT VOLUME 6
AREA FILL 0	AREA FILL 713	AREA FILL 151	AREA FILL 8	AREA FILL 106	FILL VOLUME 191	FILL VOLUME 16	FILL VOLUME 279	FILL VOLUME 1283	FILL VOLUME 0

CROSS SECTION STA. 108+50 TO STA. 109+50

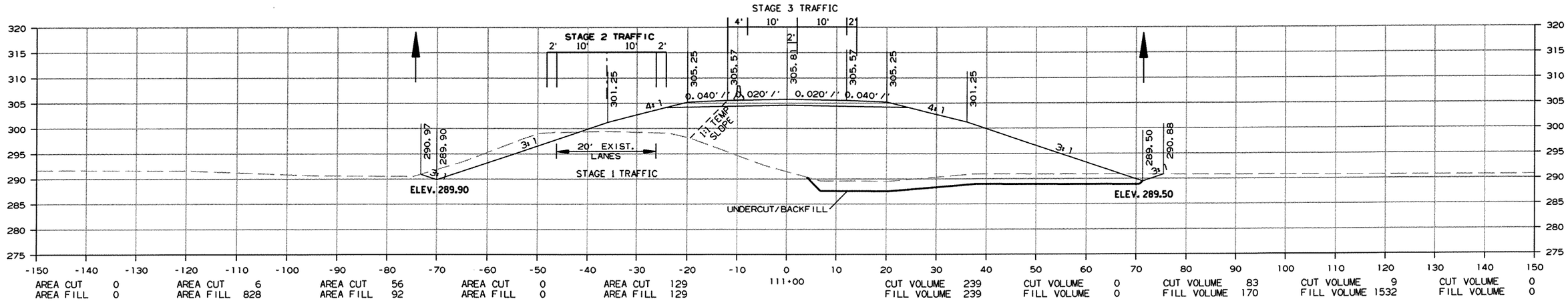
11/6/2012

R080387.DGN

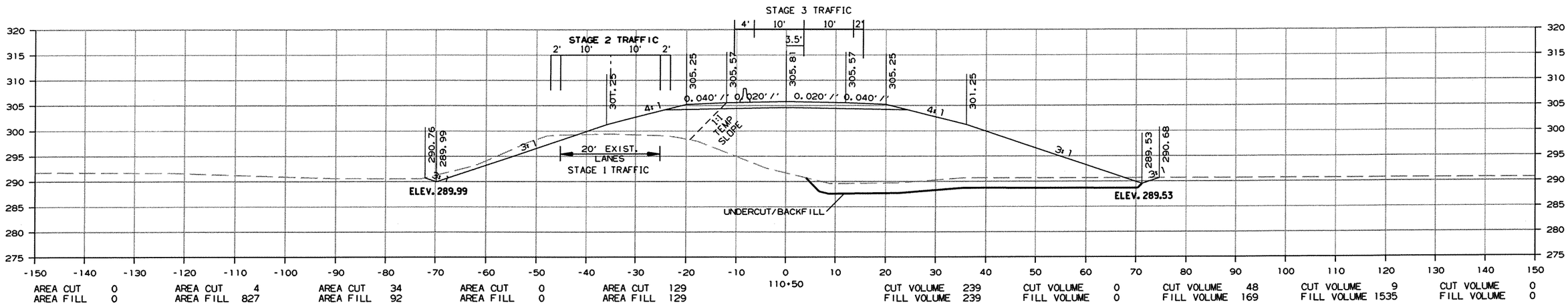
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	72	111

(2) CROSS SECTIONS

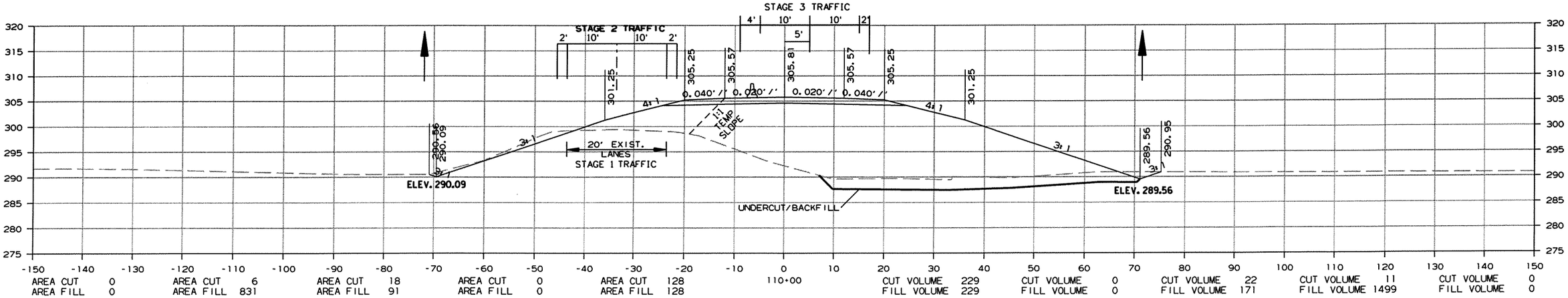
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	0	AREA CUT	6	AREA CUT	56	AREA CUT	0	AREA CUT	129	CUT VOLUME	239	CUT VOLUME	0	CUT VOLUME	83	CUT VOLUME	9	CUT VOLUME	0
AREA FILL	0	AREA FILL	828	AREA FILL	92	AREA FILL	0	AREA FILL	129	FILL VOLUME	239	FILL VOLUME	0	FILL VOLUME	170	FILL VOLUME	1532	FILL VOLUME	0



AREA CUT	0	AREA CUT	4	AREA CUT	34	AREA CUT	0	AREA CUT	129	CUT VOLUME	239	CUT VOLUME	0	CUT VOLUME	48	CUT VOLUME	9	CUT VOLUME	0
AREA FILL	0	AREA FILL	827	AREA FILL	92	AREA FILL	0	AREA FILL	129	FILL VOLUME	239	FILL VOLUME	0	FILL VOLUME	169	FILL VOLUME	1535	FILL VOLUME	0



AREA CUT	0	AREA CUT	6	AREA CUT	18	AREA CUT	0	AREA CUT	128	CUT VOLUME	229	CUT VOLUME	0	CUT VOLUME	22	CUT VOLUME	11	CUT VOLUME	0
AREA FILL	0	AREA FILL	831	AREA FILL	91	AREA FILL	0	AREA FILL	128	FILL VOLUME	229	FILL VOLUME	0	FILL VOLUME	171	FILL VOLUME	1499	FILL VOLUME	0

CROSS SECTION STA. 110+00 TO STA. 111+00

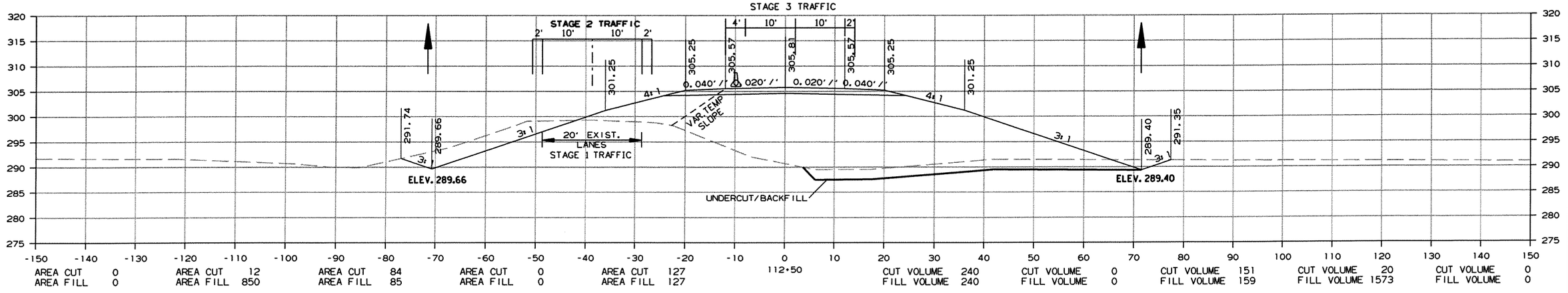
11/6/2012

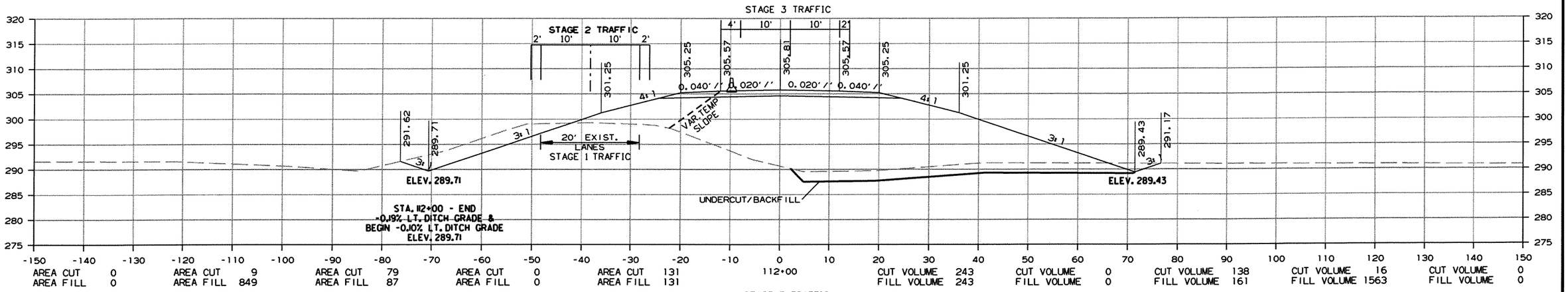
R080387.DGN

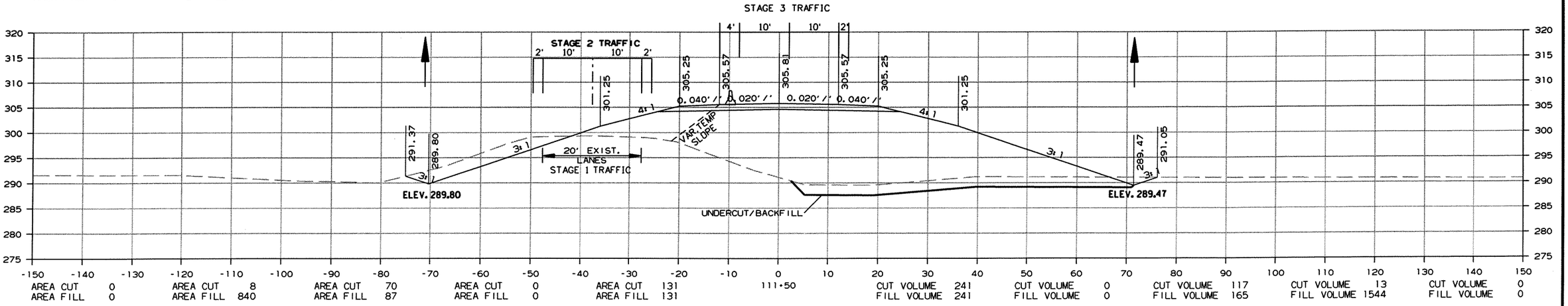
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	73	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1







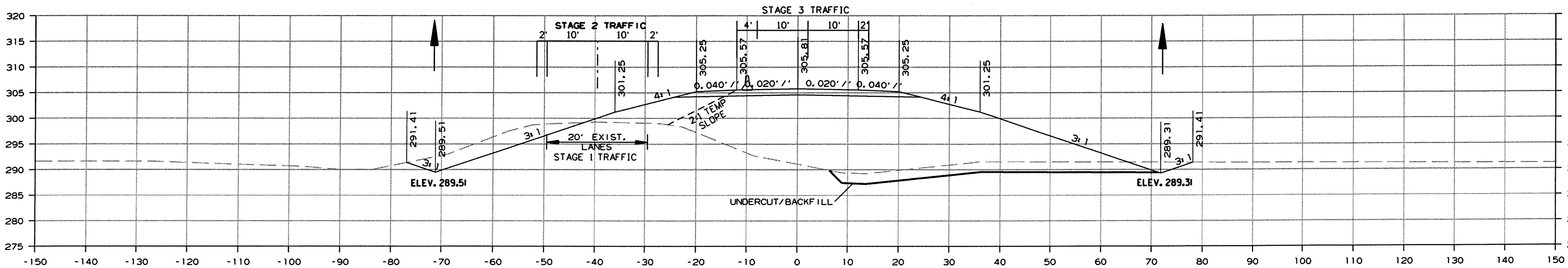
CROSS SECTION STA. 111+50 TO STA. 112+50

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	74	111

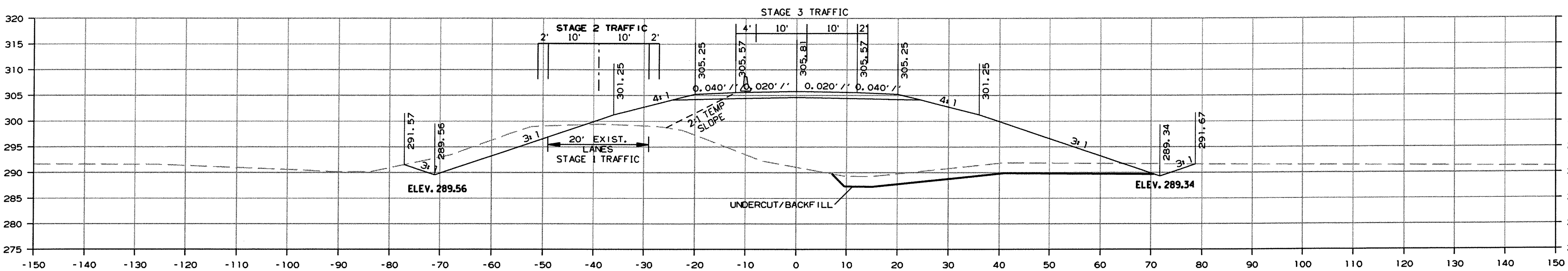
(2) CROSS SECTIONS



Station 114+00

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	14	81	0	122
AREA FILL	0	852	72	0	122

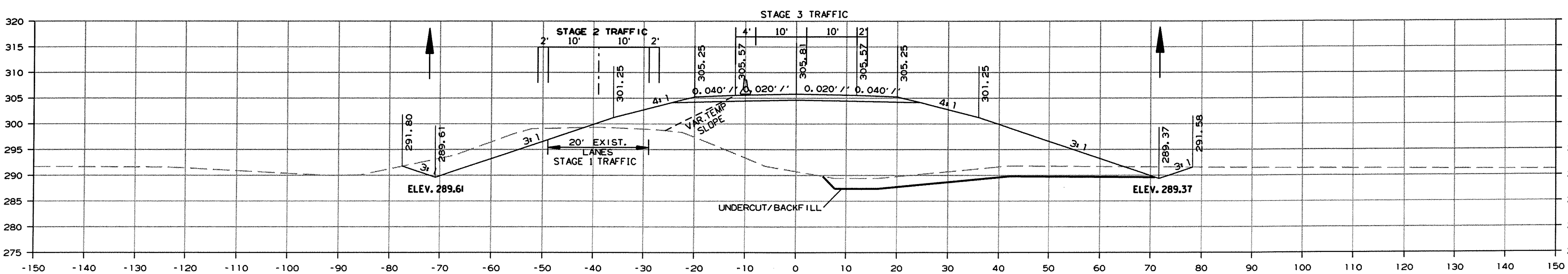
	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	223	0	153	28	0
FILL VOLUME	223	0	132	1570	0



Station 113+50

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	17	84	0	119
AREA FILL	0	844	71	0	119

	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	224	0	160	30	0
FILL VOLUME	224	0	132	1571	0



Station 113+00

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	15	89	0	123
AREA FILL	0	853	72	0	123

	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	232	0	160	25	0
FILL VOLUME	232	0	146	1576	0

CROSS SECTION STA. 113+00 TO STA. 114+00

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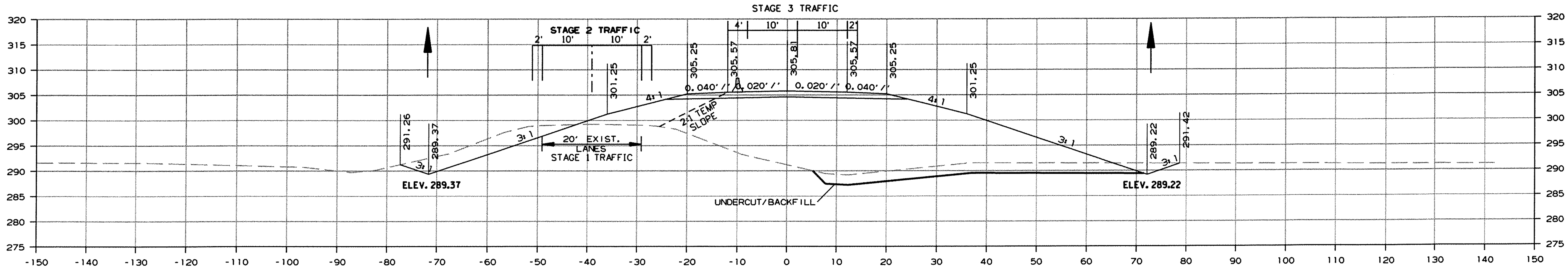
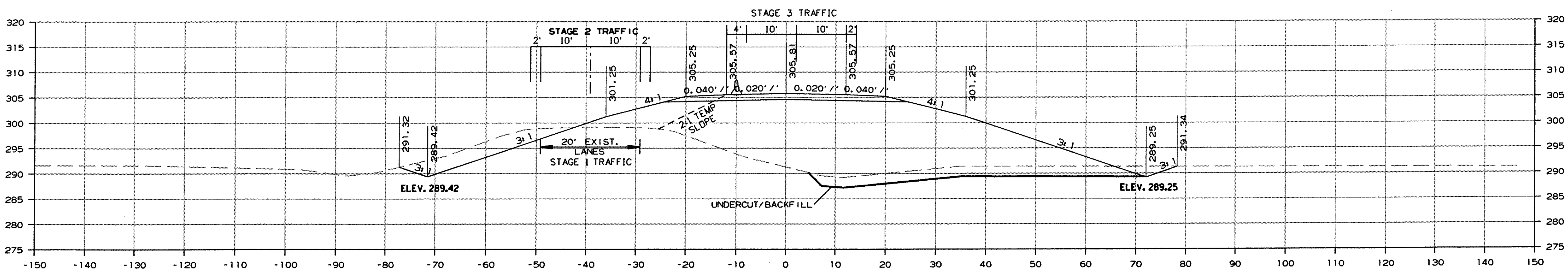
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	75	111

(2) CROSS SECTIONS

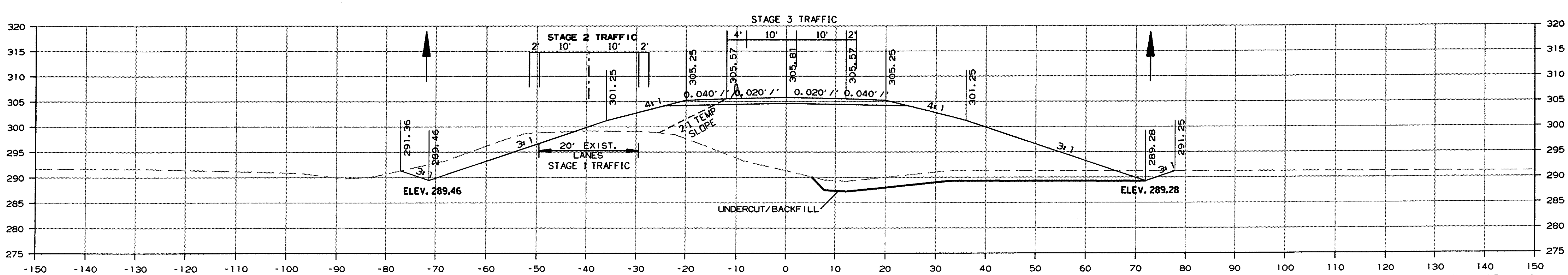
STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL		STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1



AREA CUT 0 AREA FILL 0	AREA CUT 15 AREA FILL 846	AREA CUT 83 AREA FILL 72	AREA CUT 0 AREA FILL 0	AREA CUT 124 AREA FILL 124	115+50	CUT VOLUME 231 FILL VOLUME 231	CUT VOLUME 0 FILL VOLUME 0	CUT VOLUME 153 FILL VOLUME 134	CUT VOLUME 26 FILL VOLUME 1564	CUT VOLUME 0 FILL VOLUME 0



AREA CUT 0 AREA FILL 0	AREA CUT 13 AREA FILL 843	AREA CUT 82 AREA FILL 72	AREA CUT 0 AREA FILL 0	AREA CUT 126 AREA FILL 126	115+00	CUT VOLUME 232 FILL VOLUME 232	CUT VOLUME 0 FILL VOLUME 0	CUT VOLUME 149 FILL VOLUME 134	CUT VOLUME 23 FILL VOLUME 1564	CUT VOLUME 0 FILL VOLUME 0



AREA CUT 0 AREA FILL 0	AREA CUT 12 AREA FILL 846	AREA CUT 79 AREA FILL 72	AREA CUT 0 AREA FILL 0	AREA CUT 125 AREA FILL 125	114+50	CUT VOLUME 229 FILL VOLUME 229	CUT VOLUME 0 FILL VOLUME 0	CUT VOLUME 148 FILL VOLUME 133	CUT VOLUME 23 FILL VOLUME 1572	CUT VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 114+50 TO STA. 115+50

11/6/2012

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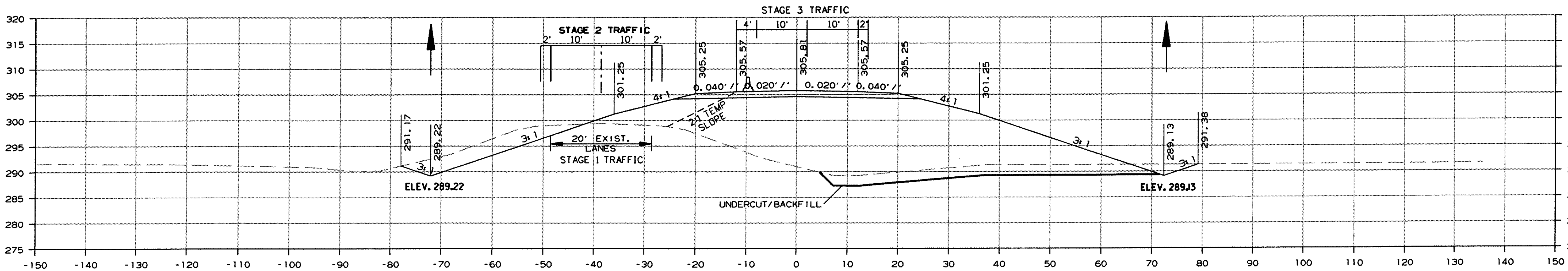
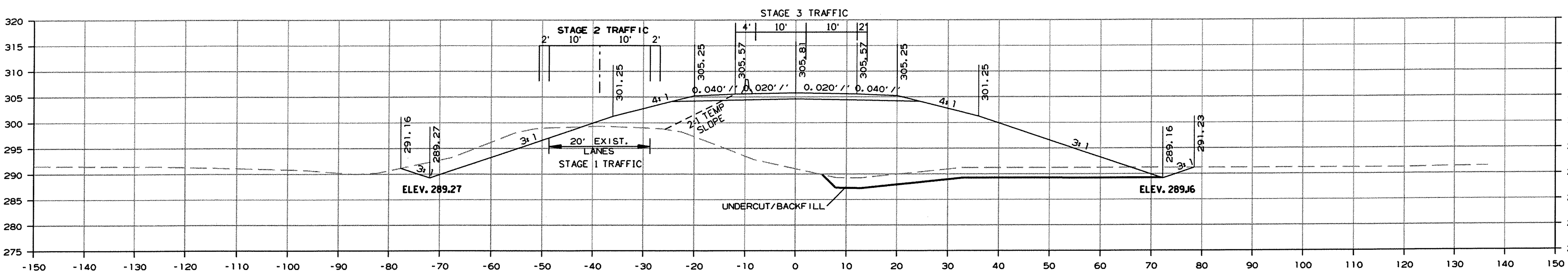
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	76	111

(2) CROSS SECTIONS

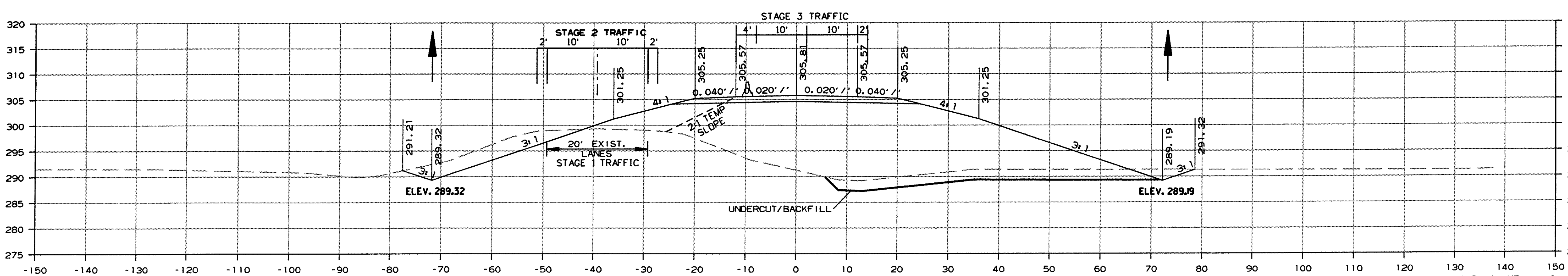
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT 0 / AREA FILL 0 — AREA CUT 15 / AREA FILL 855 — AREA CUT 88 / AREA FILL 71 — AREA CUT 0 / AREA FILL 0 — AREA CUT 126 / AREA FILL 126 — CUT VOLUME 232 / FILL VOLUME 232 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 156 / FILL VOLUME 132 — CUT VOLUME 26 / FILL VOLUME 1587 — CUT VOLUME 0 / FILL VOLUME 0



AREA CUT 0 / AREA FILL 0 — AREA CUT 13 / AREA FILL 859 — AREA CUT 81 / AREA FILL 72 — AREA CUT 0 / AREA FILL 0 — AREA CUT 125 / AREA FILL 125 — CUT VOLUME 230 / FILL VOLUME 230 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 150 / FILL VOLUME 133 — CUT VOLUME 25 / FILL VOLUME 1583 — CUT VOLUME 0 / FILL VOLUME 0



AREA CUT 0 / AREA FILL 0 — AREA CUT 14 / AREA FILL 850 — AREA CUT 82 / AREA FILL 72 — AREA CUT 0 / AREA FILL 0 — AREA CUT 124 / AREA FILL 124 — CUT VOLUME 229 / FILL VOLUME 229 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 152 / FILL VOLUME 133 — CUT VOLUME 27 / FILL VOLUME 1571 — CUT VOLUME 0 / FILL VOLUME 0

CROSS SECTION STA. 116+00 TO STA. 117+00

11/6/2012

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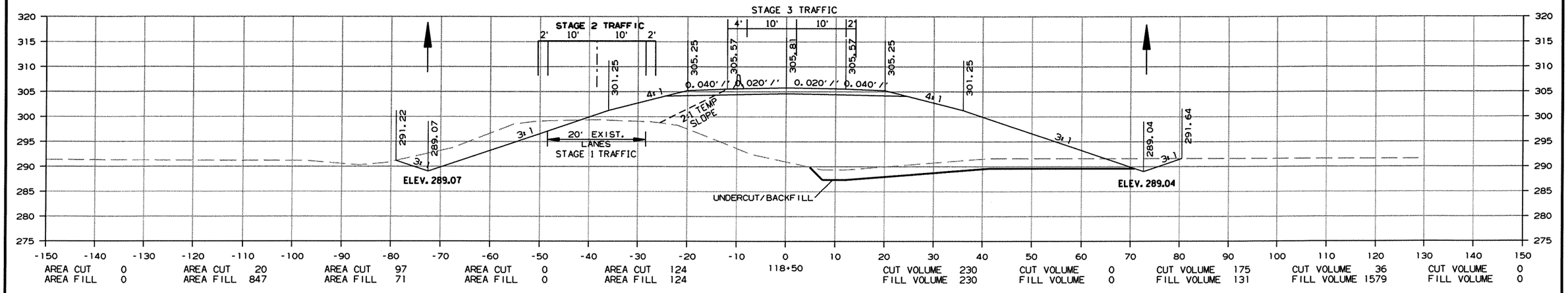
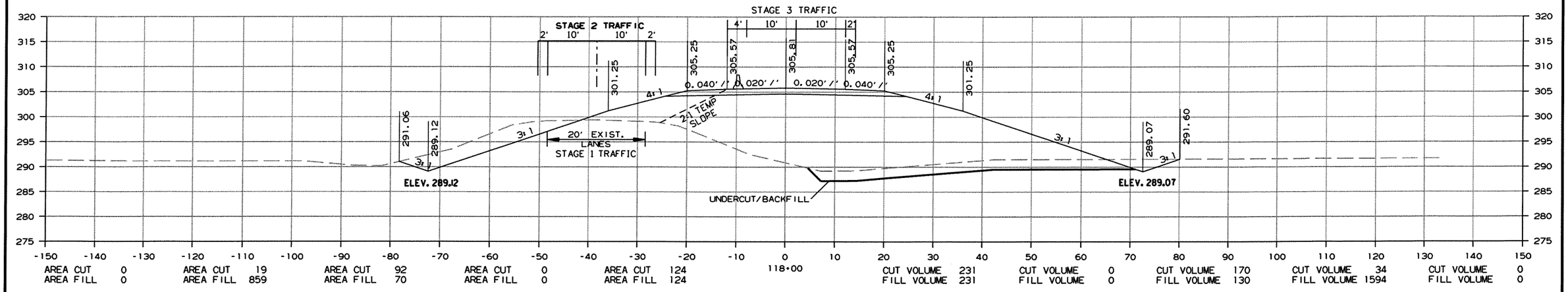
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	77	111

(2) CROSS SECTIONS

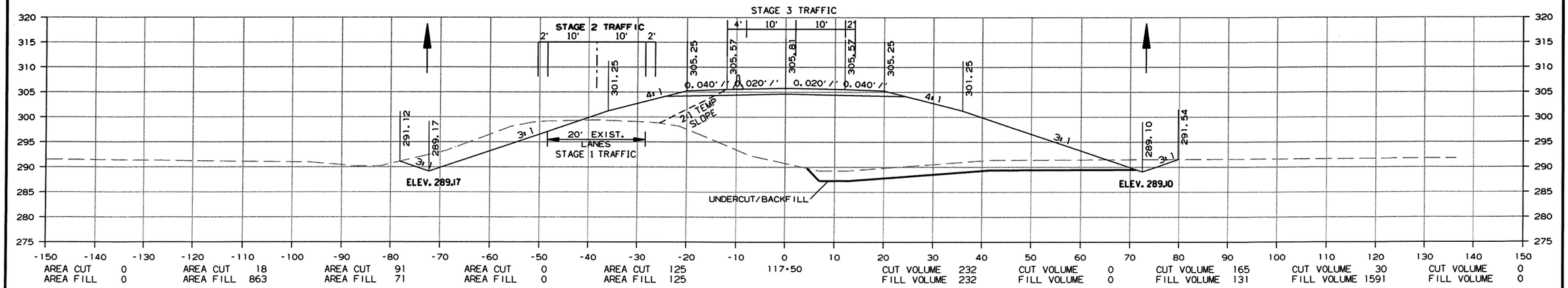
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	0	AREA CUT	20	AREA CUT	97	AREA CUT	0	AREA CUT	124		CUT VOLUME	230	CUT VOLUME	0	CUT VOLUME	175	CUT VOLUME	36	CUT VOLUME	0
AREA FILL	0	AREA FILL	847	AREA FILL	71	AREA FILL	0	AREA FILL	124		FILL VOLUME	230	FILL VOLUME	0	FILL VOLUME	131	FILL VOLUME	1579	FILL VOLUME	0



AREA CUT	0	AREA CUT	19	AREA CUT	92	AREA CUT	0	AREA CUT	124		CUT VOLUME	231	CUT VOLUME	0	CUT VOLUME	170	CUT VOLUME	34	CUT VOLUME	0
AREA FILL	0	AREA FILL	859	AREA FILL	70	AREA FILL	0	AREA FILL	124		FILL VOLUME	231	FILL VOLUME	0	FILL VOLUME	130	FILL VOLUME	1594	FILL VOLUME	0



AREA CUT	0	AREA CUT	18	AREA CUT	91	AREA CUT	0	AREA CUT	125		CUT VOLUME	232	CUT VOLUME	0	CUT VOLUME	165	CUT VOLUME	30	CUT VOLUME	0
AREA FILL	0	AREA FILL	863	AREA FILL	71	AREA FILL	0	AREA FILL	125		FILL VOLUME	232	FILL VOLUME	0	FILL VOLUME	131	FILL VOLUME	1591	FILL VOLUME	0

CROSS SECTION STA. 117+50 TO STA. 118+50

11/6/2012

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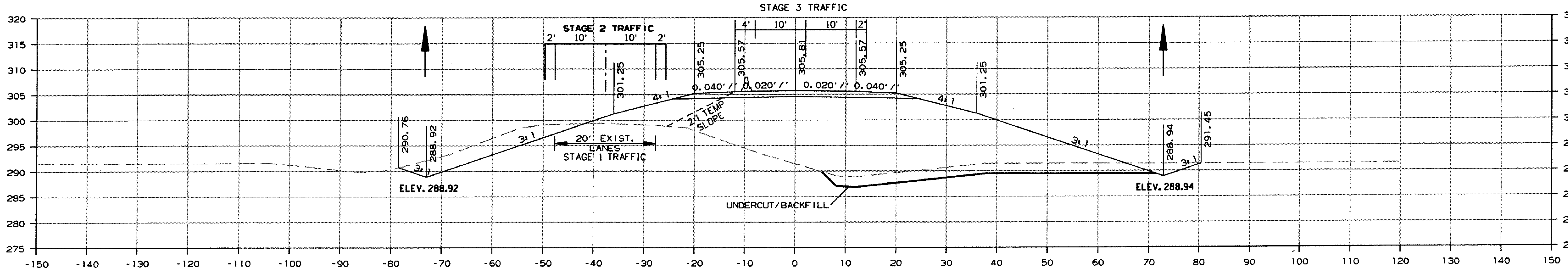
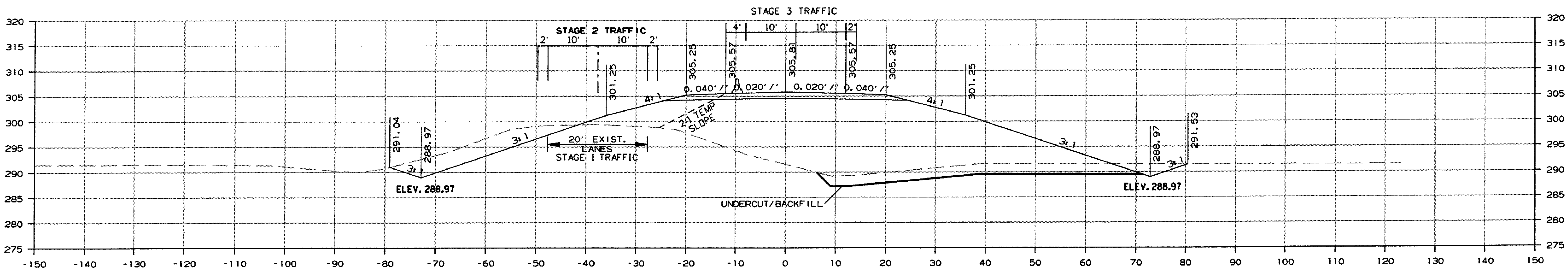
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	78	111

(2) CROSS SECTIONS

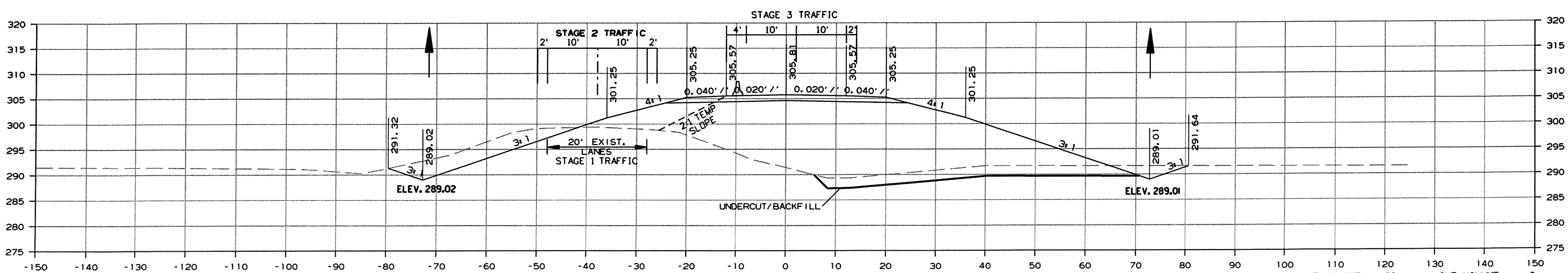
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT 0 / AREA FILL 0 — AREA CUT 19 / AREA FILL 840 — AREA CUT 90 / AREA FILL 71 — AREA CUT 0 / AREA FILL 0 — AREA CUT 124 / AREA FILL 124 — 120+00 — CUT VOLUME 227 / FILL VOLUME 227 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 174 / FILL VOLUME 131 — CUT VOLUME 36 / FILL VOLUME 1548 — CUT VOLUME 0 / FILL VOLUME 0



AREA CUT 0 / AREA FILL 0 — AREA CUT 20 / AREA FILL 833 — AREA CUT 98 / AREA FILL 70 — AREA CUT 0 / AREA FILL 0 — AREA CUT 121 / AREA FILL 121 — 119+50 — CUT VOLUME 225 / FILL VOLUME 225 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 180 / FILL VOLUME 131 — CUT VOLUME 38 / FILL VOLUME 1540 — CUT VOLUME 0 / FILL VOLUME 0



AREA CUT 0 / AREA FILL 0 — AREA CUT 21 / AREA FILL 830 — AREA CUT 97 / AREA FILL 71 — AREA CUT 0 / AREA FILL 0 — AREA CUT 122 / AREA FILL 122 — 119+00 — CUT VOLUME 227 / FILL VOLUME 227 — CUT VOLUME 0 / FILL VOLUME 0 — CUT VOLUME 179 / FILL VOLUME 132 — CUT VOLUME 39 / FILL VOLUME 1553 — CUT VOLUME 0 / FILL VOLUME 0

CROSS SECTION STA. 119+00 TO STA. 120+00

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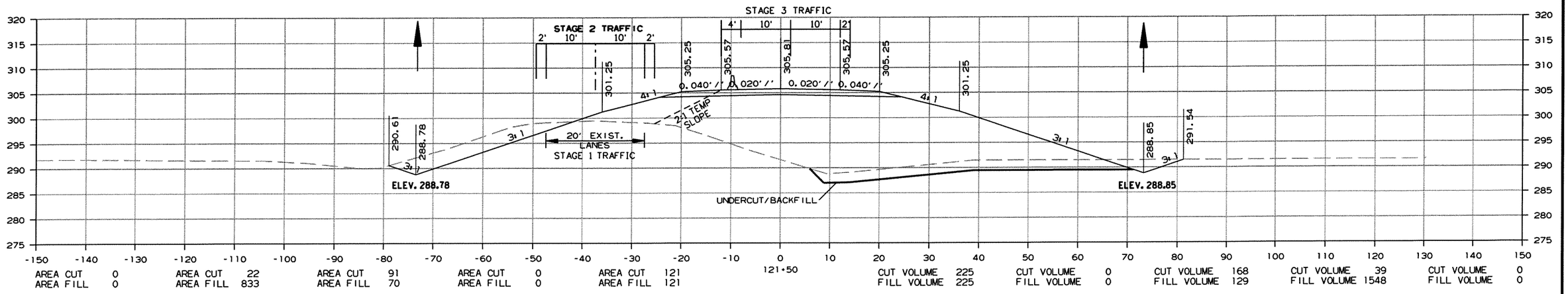
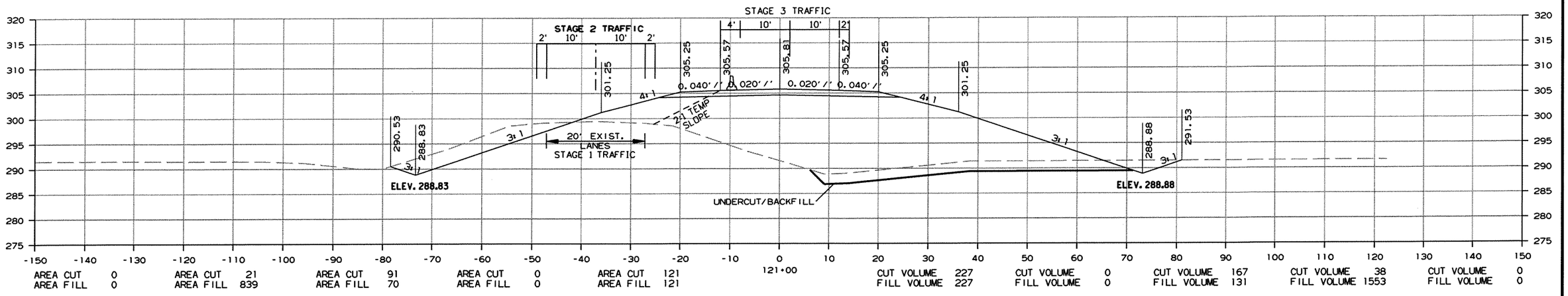
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	79	111

(2) CROSS SECTIONS

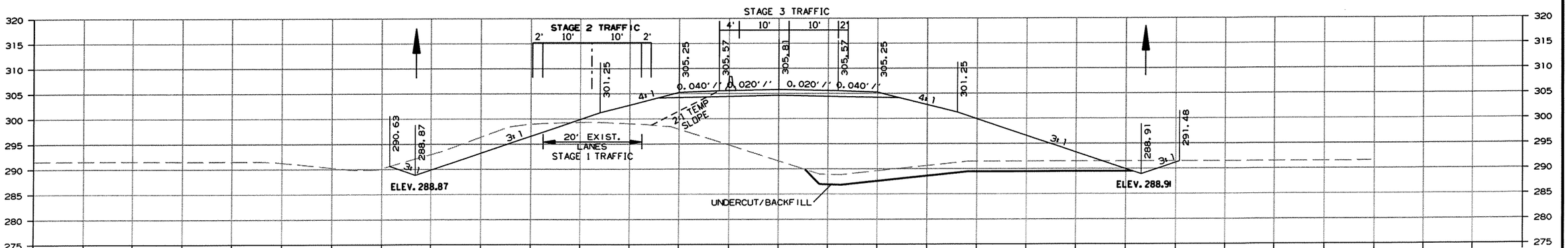
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT 0	AREA CUT 22	AREA CUT 91	AREA CUT 0	AREA CUT 121	CUT VOLUME 225	CUT VOLUME 0	CUT VOLUME 168	CUT VOLUME 39	CUT VOLUME 0
AREA FILL 0	AREA FILL 833	AREA FILL 70	AREA FILL 0	AREA FILL 121	FILL VOLUME 225	FILL VOLUME 0	FILL VOLUME 129	FILL VOLUME 1548	FILL VOLUME 0



AREA CUT 0	AREA CUT 21	AREA CUT 91	AREA CUT 0	AREA CUT 121	CUT VOLUME 227	CUT VOLUME 0	CUT VOLUME 167	CUT VOLUME 38	CUT VOLUME 0
AREA FILL 0	AREA FILL 839	AREA FILL 70	AREA FILL 0	AREA FILL 121	FILL VOLUME 227	FILL VOLUME 0	FILL VOLUME 131	FILL VOLUME 1553	FILL VOLUME 0



AREA CUT 0	AREA CUT 20	AREA CUT 90	AREA CUT 0	AREA CUT 123	CUT VOLUME 229	CUT VOLUME 0	CUT VOLUME 167	CUT VOLUME 36	CUT VOLUME 0
AREA FILL 0	AREA FILL 839	AREA FILL 71	AREA FILL 0	AREA FILL 123	FILL VOLUME 229	FILL VOLUME 0	FILL VOLUME 132	FILL VOLUME 1554	FILL VOLUME 0

CROSS SECTION STA. 120+50 TO STA. 121+50

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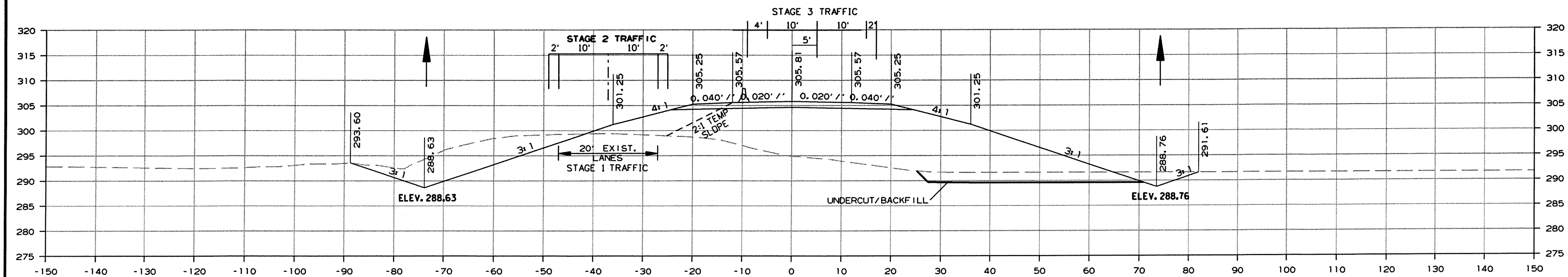
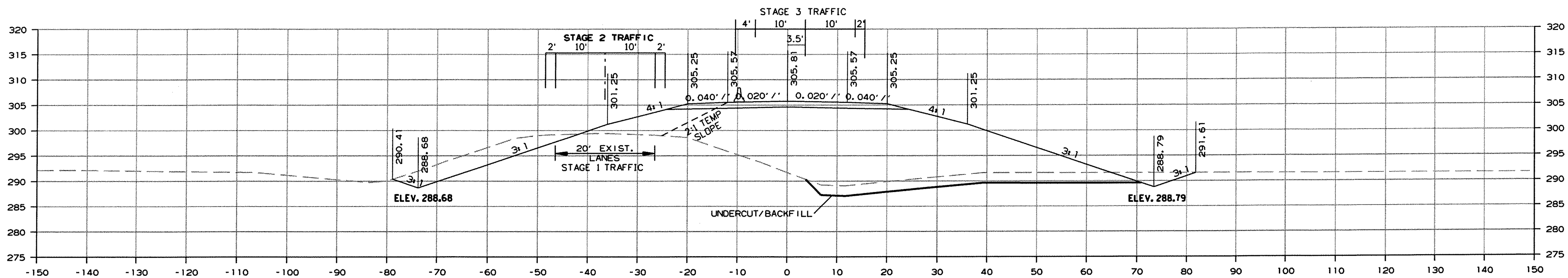
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	80	111

(2) CROSS SECTIONS

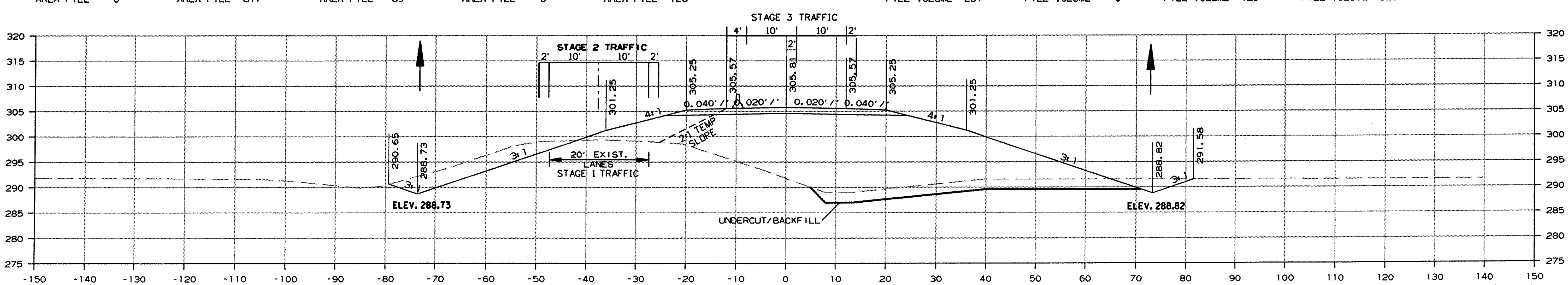
STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL		STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1



AREA	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	VOLUME	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT	0	24	161	0	83	123+00	CUT VOLUME	193	0	239	45	0
AREA FILL	0	680	70	0	83		FILL VOLUME	193	0	129	1386	0



AREA	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	VOLUME	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT	0	24	97	0	126	122+50	CUT VOLUME	231	0	175	43	0
AREA FILL	0	817	69	0	126		FILL VOLUME	231	0	129	1520	0



AREA	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	VOLUME	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT	0	23	92	0	124	122+00	CUT VOLUME	227	0	169	41	0
AREA FILL	0	825	70	0	124		FILL VOLUME	227	0	130	1536	0

CROSS SECTION STA. 122+00 TO STA. 123+00

11/6/2012

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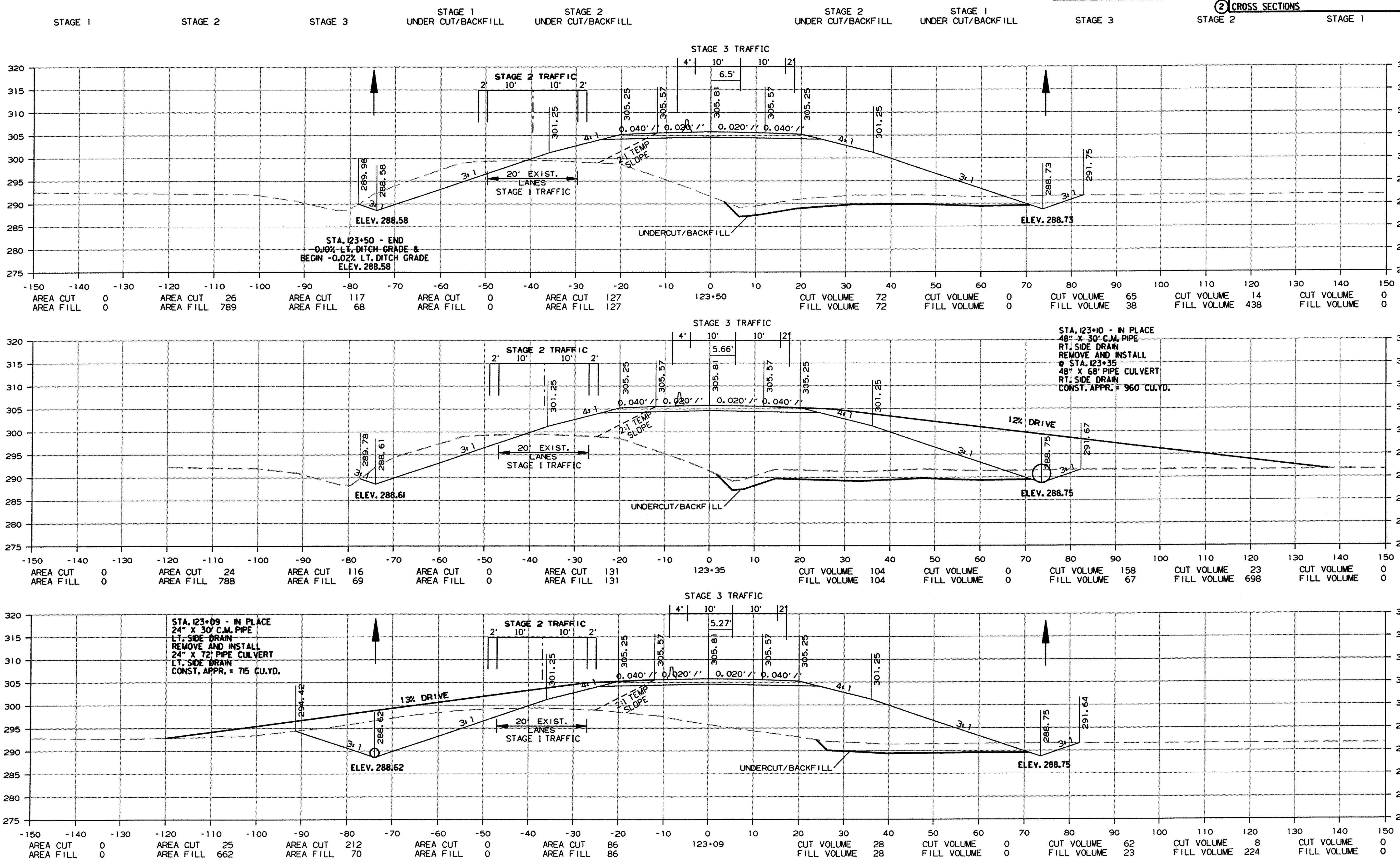
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	81	111

(2) CROSS SECTIONS



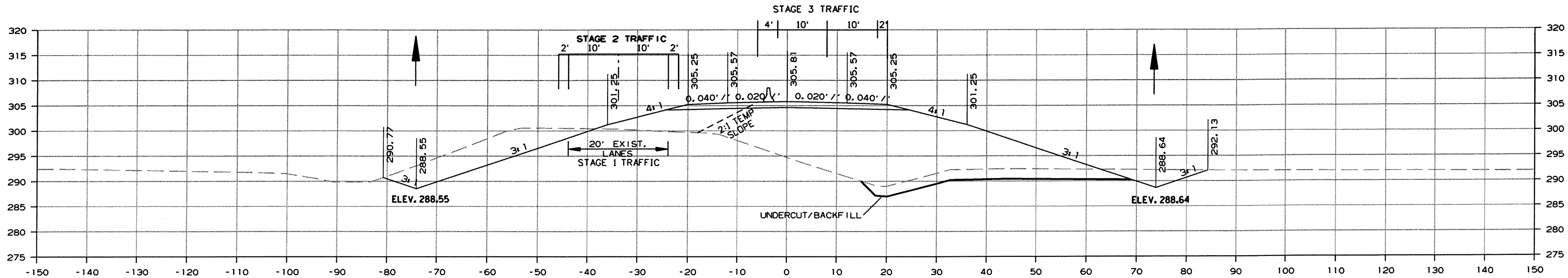
CROSS SECTION STA. 123+09 TO STA. 123+50

11/6/2012

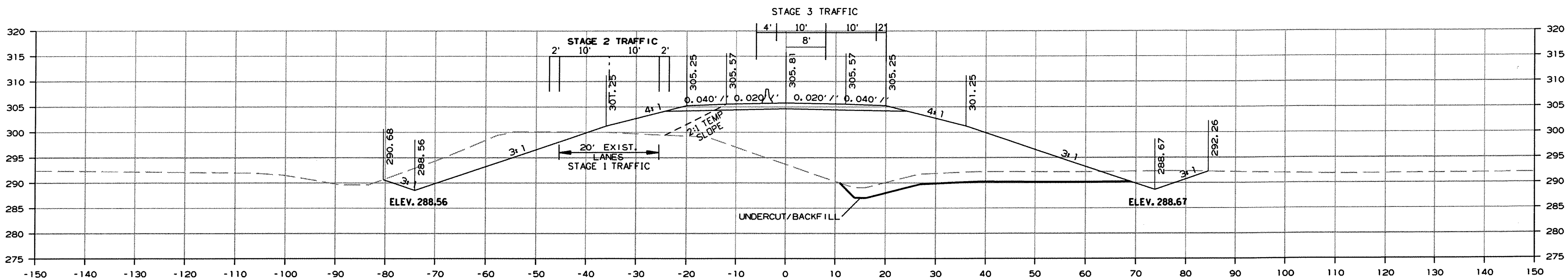
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	82	111

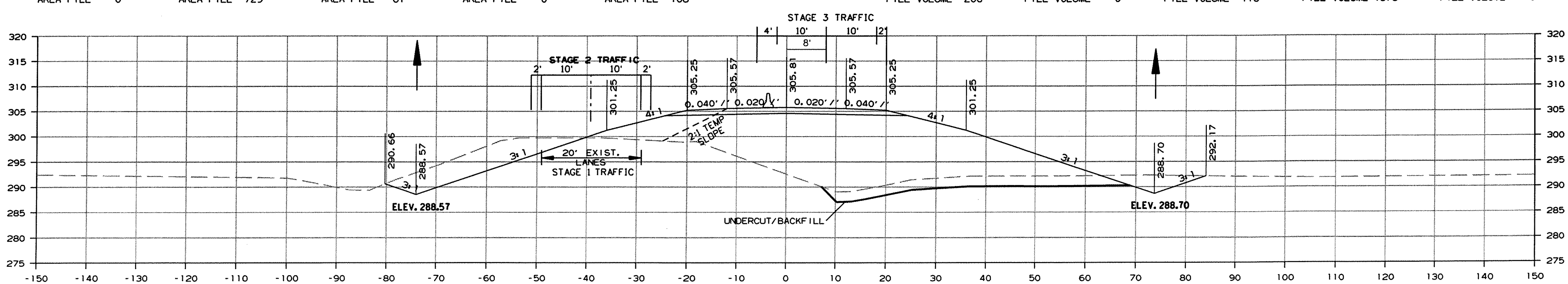
② CROSS SECTIONS



	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT / CUT VOLUME	0	39	158	0	100	125+00	192	0	282	73	0
AREA FILL / FILL VOLUME	0	669	81	0	100		192	0	131	1295	0



	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT / CUT VOLUME	0	40	146	0	108	124+50	206	0	262	72	0
AREA FILL / FILL VOLUME	0	729	61	0	108		206	0	116	1378	0



	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STA.	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT / CUT VOLUME	0	38	137	0	115	124+00	224	0	235	59	0
AREA FILL / FILL VOLUME	0	760	65	0	115		224	0	124	1434	0

CROSS SECTION STA. 124+00 TO STA. 125+00

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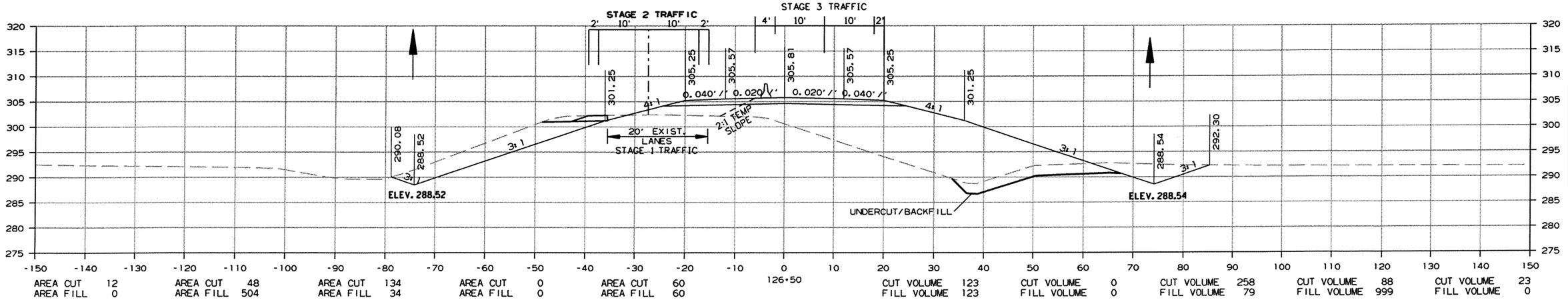
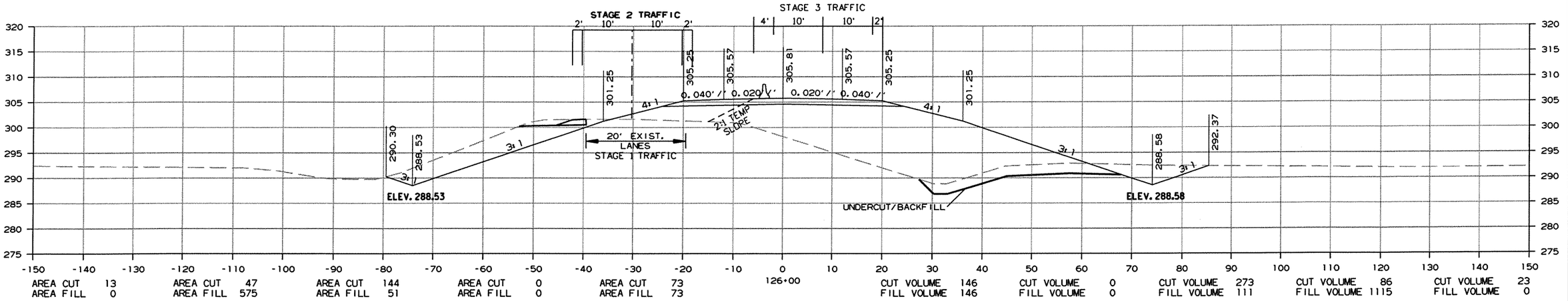
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	83	111

(2) CROSS SECTIONS

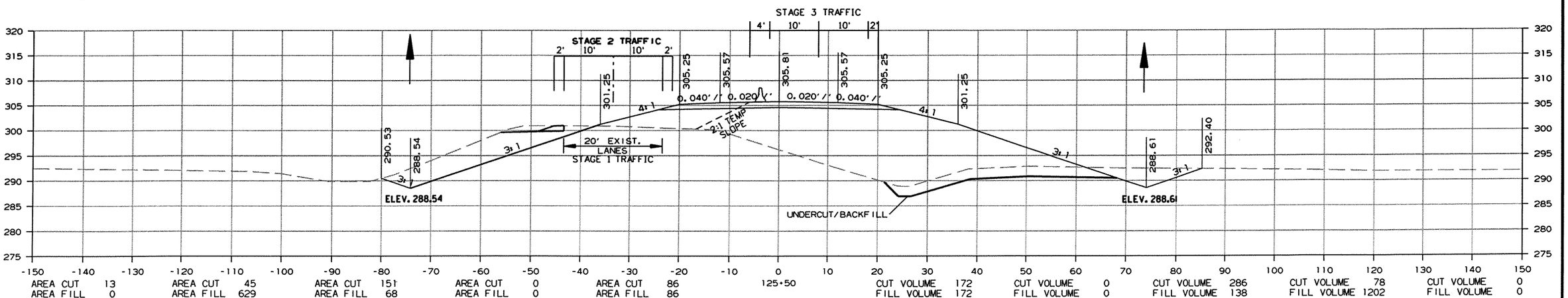
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	12	AREA CUT	48	AREA CUT	134	AREA CUT	0	AREA CUT	60	CUT VOLUME	123	CUT VOLUME	0	CUT VOLUME	258	CUT VOLUME	88	CUT VOLUME	23
AREA FILL	0	AREA FILL	504	AREA FILL	34	AREA FILL	0	AREA FILL	60	FILL VOLUME	123	FILL VOLUME	0	FILL VOLUME	79	FILL VOLUME	999	FILL VOLUME	0



AREA CUT	13	AREA CUT	47	AREA CUT	144	AREA CUT	0	AREA CUT	73	CUT VOLUME	146	CUT VOLUME	0	CUT VOLUME	273	CUT VOLUME	86	CUT VOLUME	23
AREA FILL	0	AREA FILL	575	AREA FILL	51	AREA FILL	0	AREA FILL	73	FILL VOLUME	146	FILL VOLUME	0	FILL VOLUME	111	FILL VOLUME	1115	FILL VOLUME	0



AREA CUT	13	AREA CUT	45	AREA CUT	151	AREA CUT	0	AREA CUT	86	CUT VOLUME	172	CUT VOLUME	0	CUT VOLUME	286	CUT VOLUME	78	CUT VOLUME	0
AREA FILL	0	AREA FILL	629	AREA FILL	68	AREA FILL	0	AREA FILL	86	FILL VOLUME	172	FILL VOLUME	0	FILL VOLUME	138	FILL VOLUME	1202	FILL VOLUME	0

CROSS SECTION STA. 125+50 TO STA. 126+50

11/6/2012

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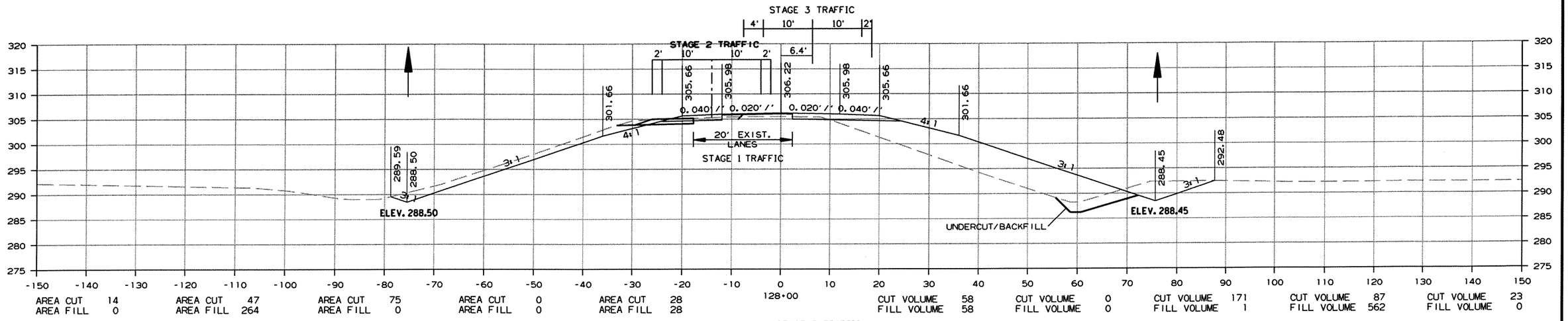
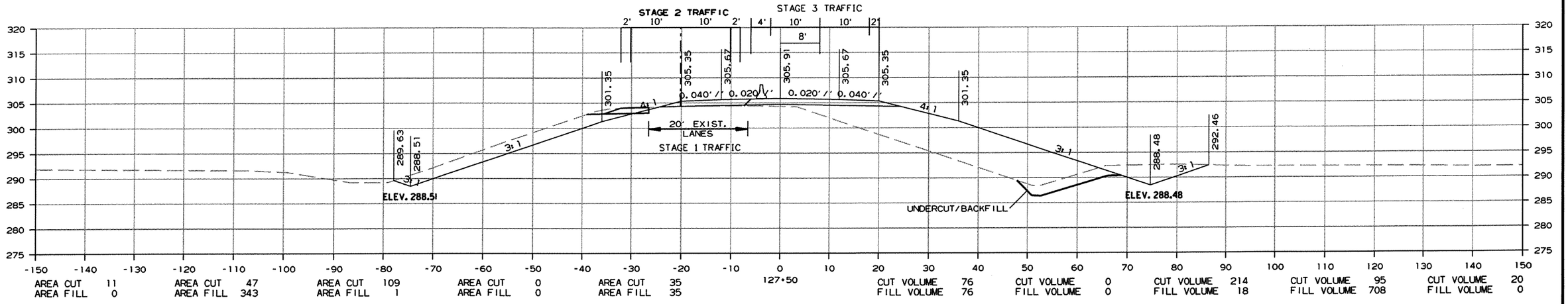
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	84	111

(2) CROSS SECTIONS

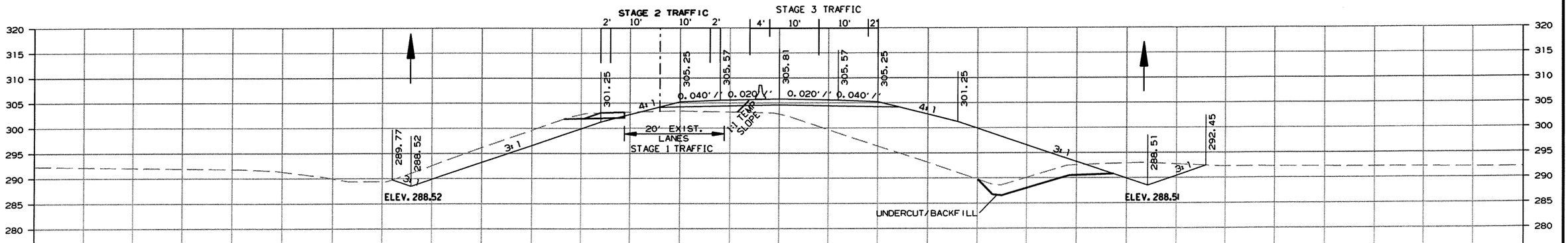
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	14	AREA CUT	47	AREA CUT	75	AREA CUT	0	AREA CUT	28	CUT VOLUME	58	CUT VOLUME	0	CUT VOLUME	171	CUT VOLUME	87	CUT VOLUME	23
AREA FILL	0	AREA FILL	264	AREA FILL	0	AREA FILL	0	AREA FILL	28	FILL VOLUME	58	FILL VOLUME	0	FILL VOLUME	1	FILL VOLUME	562	FILL VOLUME	0



AREA CUT	11	AREA CUT	47	AREA CUT	109	AREA CUT	0	AREA CUT	35	CUT VOLUME	76	CUT VOLUME	0	CUT VOLUME	214	CUT VOLUME	95	CUT VOLUME	20
AREA FILL	0	AREA FILL	343	AREA FILL	1	AREA FILL	0	AREA FILL	35	FILL VOLUME	76	FILL VOLUME	0	FILL VOLUME	18	FILL VOLUME	708	FILL VOLUME	0



AREA CUT	11	AREA CUT	55	AREA CUT	122	AREA CUT	0	AREA CUT	47	CUT VOLUME	99	CUT VOLUME	0	CUT VOLUME	237	CUT VOLUME	95	CUT VOLUME	21
AREA FILL	0	AREA FILL	422	AREA FILL	18	AREA FILL	0	AREA FILL	47	FILL VOLUME	99	FILL VOLUME	0	FILL VOLUME	48	FILL VOLUME	858	FILL VOLUME	0

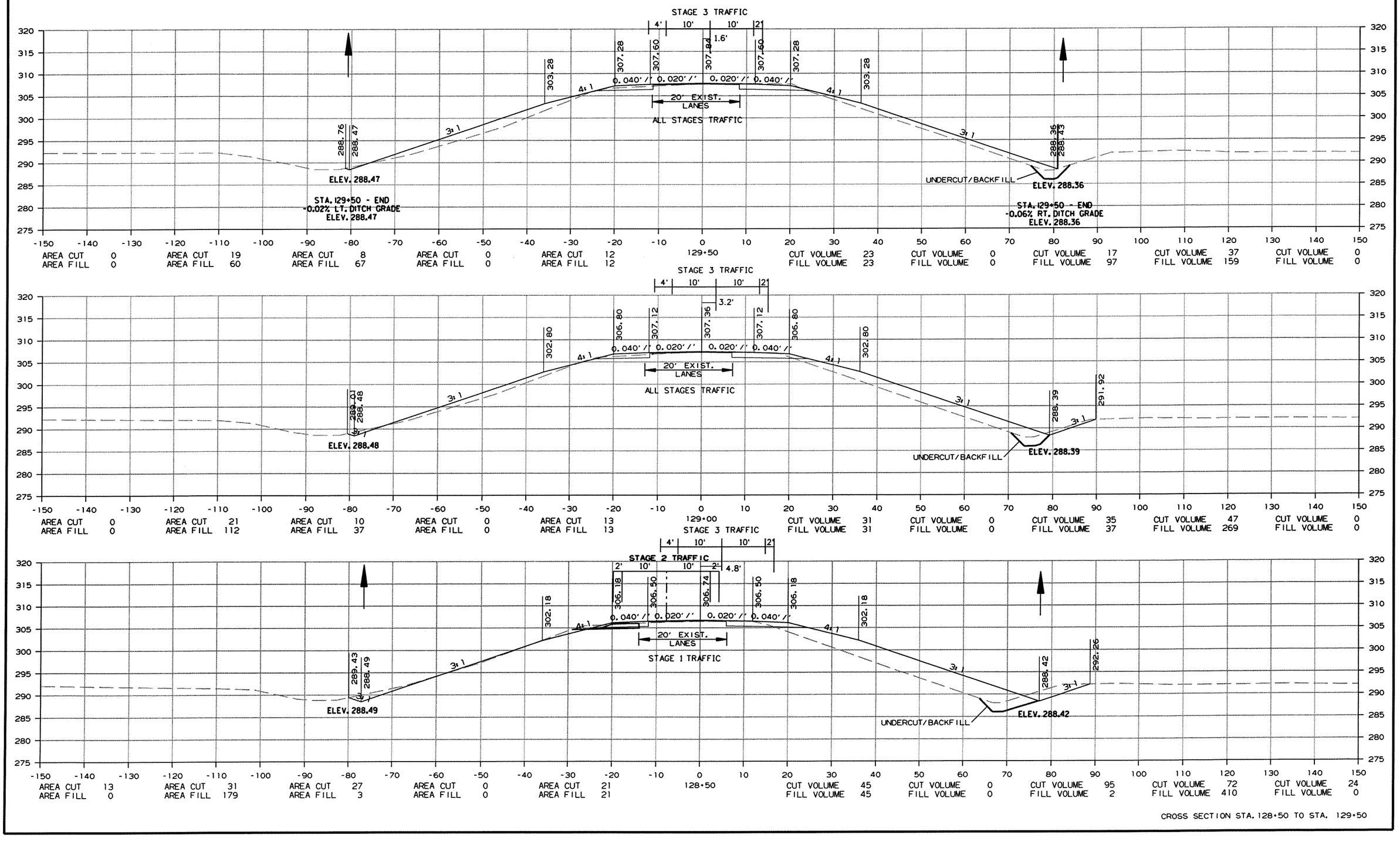
CROSS SECTION STA. 127+00 TO STA. 128+00

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080387		85	111

(2) CROSS SECTIONS



CROSS SECTION STA. 128+50 TO STA. 129+50

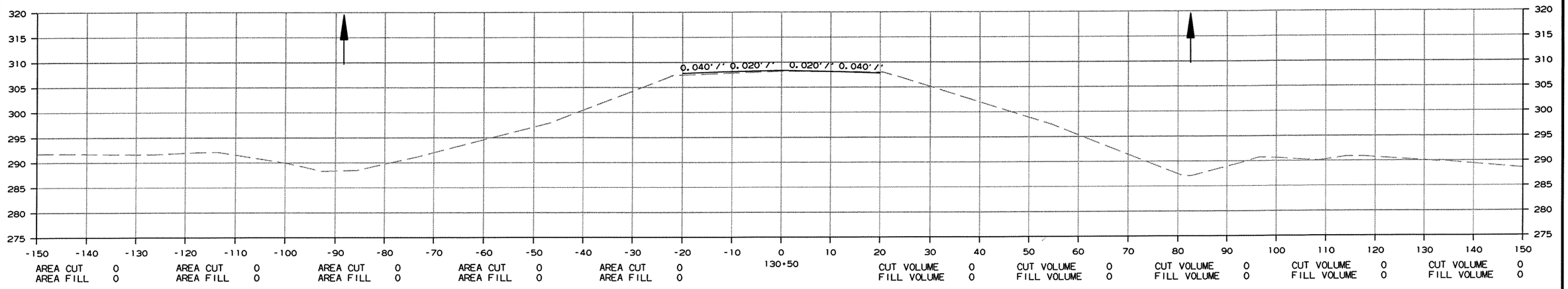
11/6/2012

R080387.DGN

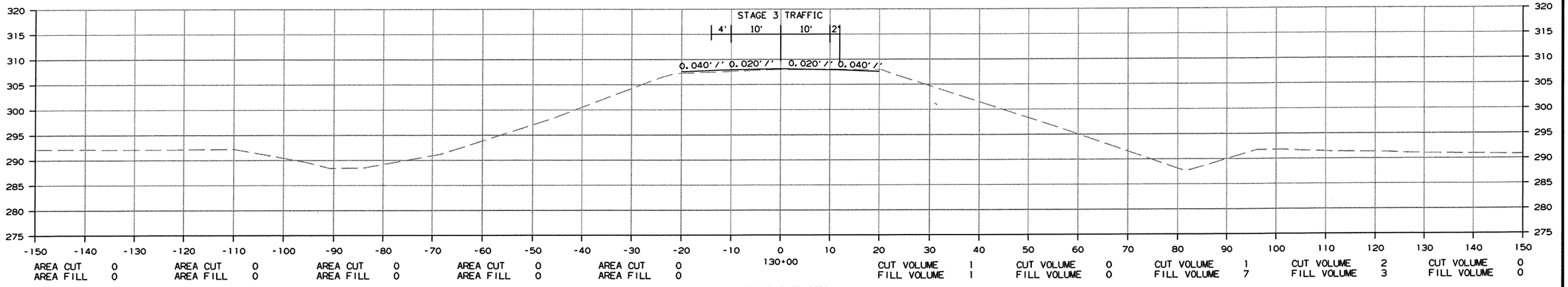
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	86	111

(2) CROSS SECTIONS

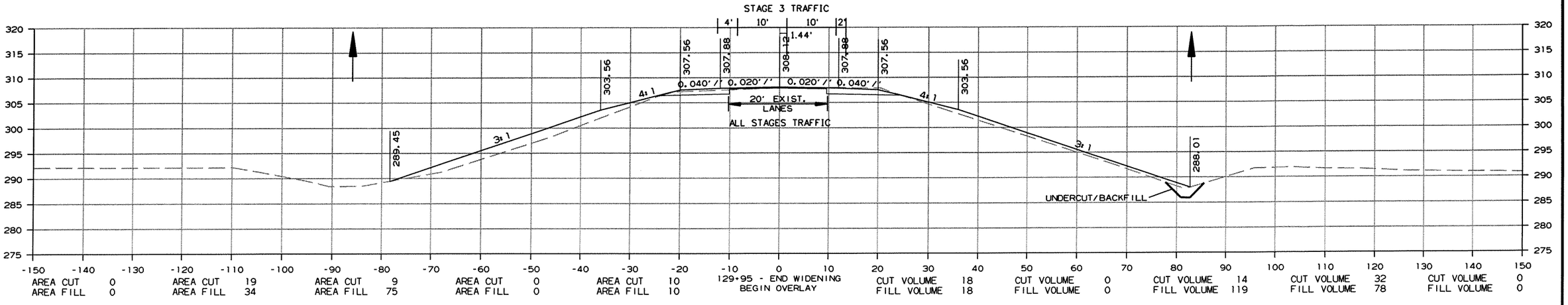
STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1



AREA CUT	0	AREA CUT	0	AREA CUT	0	AREA CUT	0	AREA CUT	0	CUT VOLUME	0	CUT VOLUME	0	CUT VOLUME	0	CUT VOLUME	0	CUT VOLUME	0
AREA FILL	0	AREA FILL	0	AREA FILL	0	AREA FILL	0	AREA FILL	0	FILL VOLUME	0	FILL VOLUME	0	FILL VOLUME	0	FILL VOLUME	0	FILL VOLUME	0



AREA CUT	0	AREA CUT	0	AREA CUT	0	AREA CUT	0	AREA CUT	0	CUT VOLUME	1	CUT VOLUME	0	CUT VOLUME	1	CUT VOLUME	2	CUT VOLUME	0
AREA FILL	0	AREA FILL	0	AREA FILL	0	AREA FILL	0	AREA FILL	0	FILL VOLUME	1	FILL VOLUME	0	FILL VOLUME	7	FILL VOLUME	3	FILL VOLUME	0



AREA CUT	0	AREA CUT	19	AREA CUT	9	AREA CUT	0	AREA CUT	10	CUT VOLUME	18	CUT VOLUME	0	CUT VOLUME	14	CUT VOLUME	32	CUT VOLUME	0
AREA FILL	0	AREA FILL	34	AREA FILL	75	AREA FILL	0	AREA FILL	10	FILL VOLUME	18	FILL VOLUME	0	FILL VOLUME	119	FILL VOLUME	78	FILL VOLUME	0

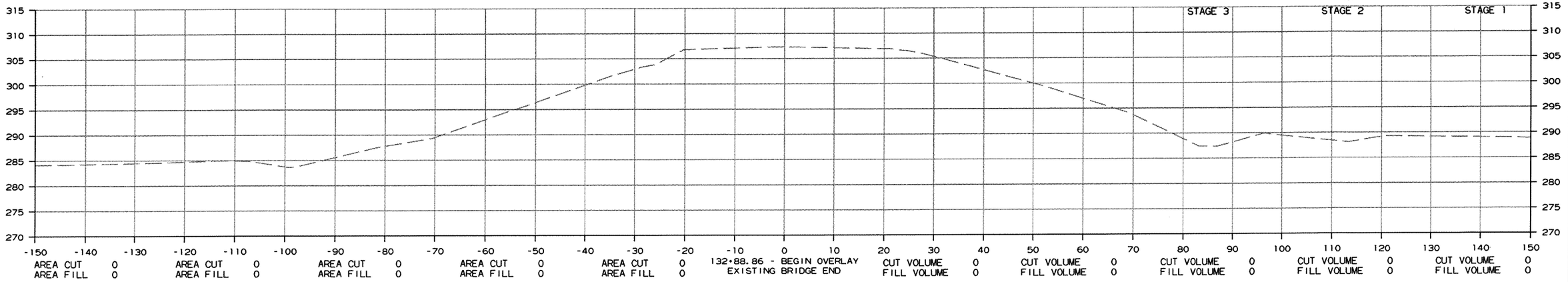
CROSS SECTION STA. 129+95 TO STA. 130+50

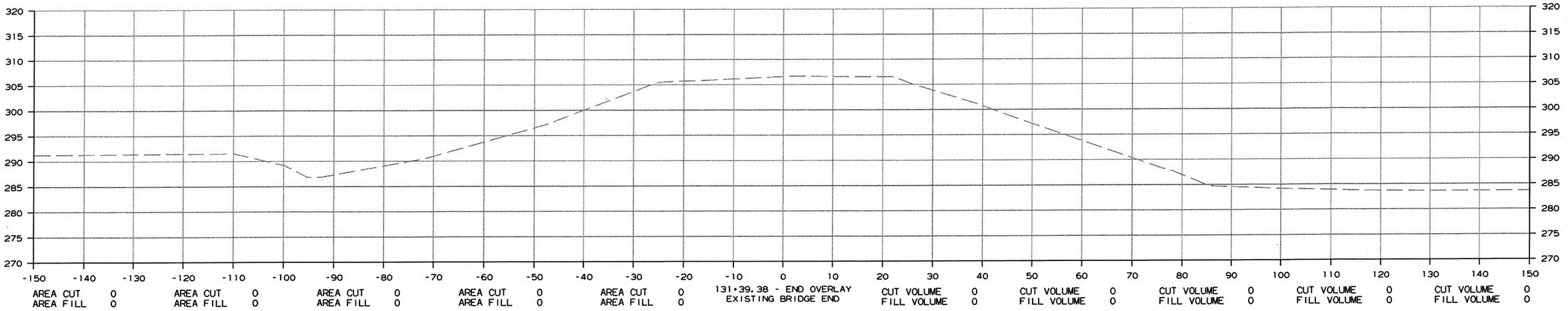
11/6/2012

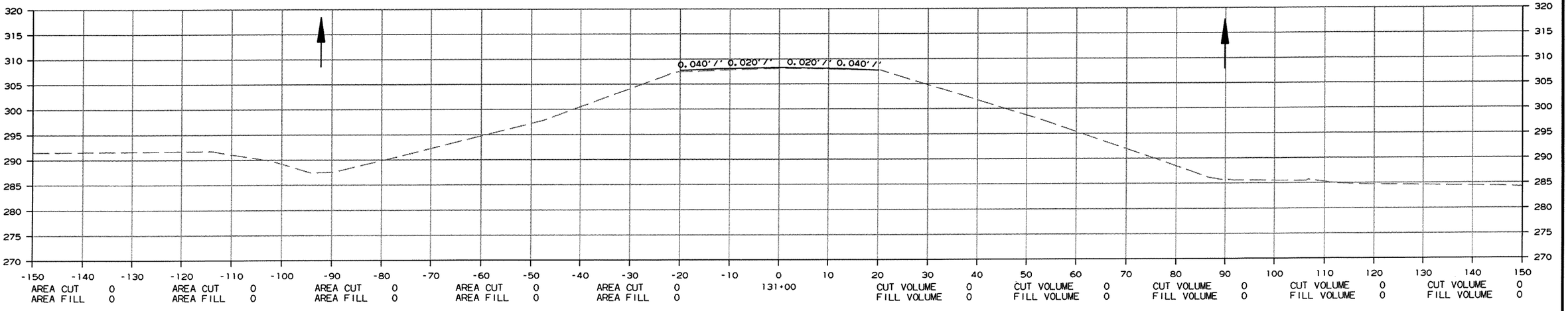
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	87	111

(2) CROSS SECTIONS







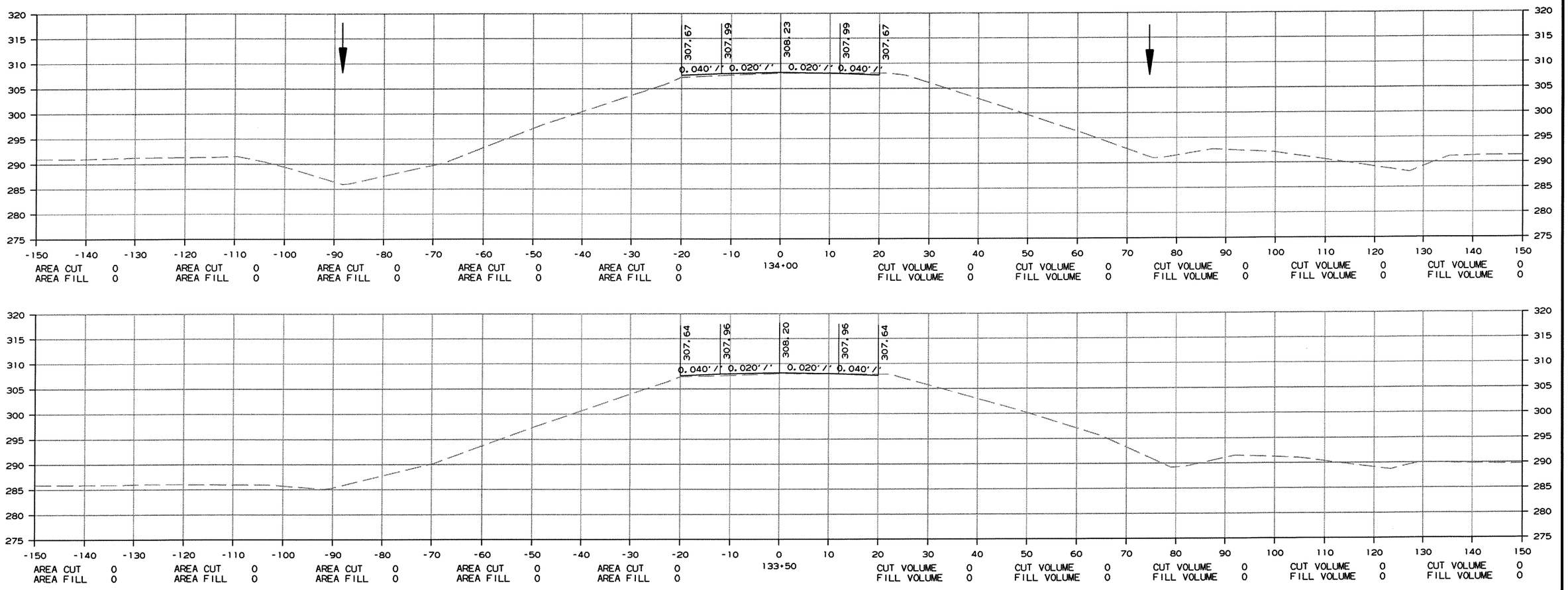
CROSS SECTION STA. 131+00 TO STA. 132+89

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	88	111

(2) CROSS SECTIONS



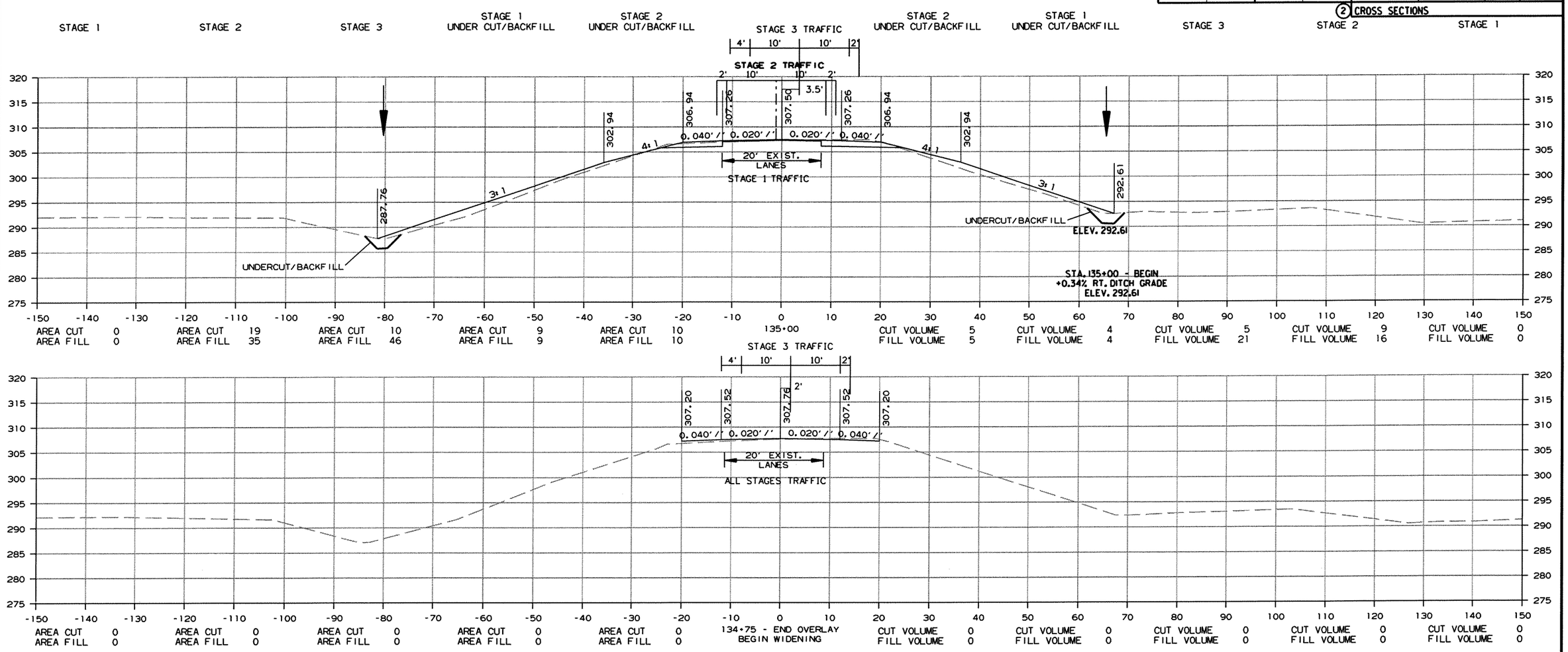
CROSS SECTION STA. 133+00 TO STA. 134+00

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	89	111

(2) CROSS SECTIONS



CROSS SECTION STA. 134+50 TO STA. 135+00

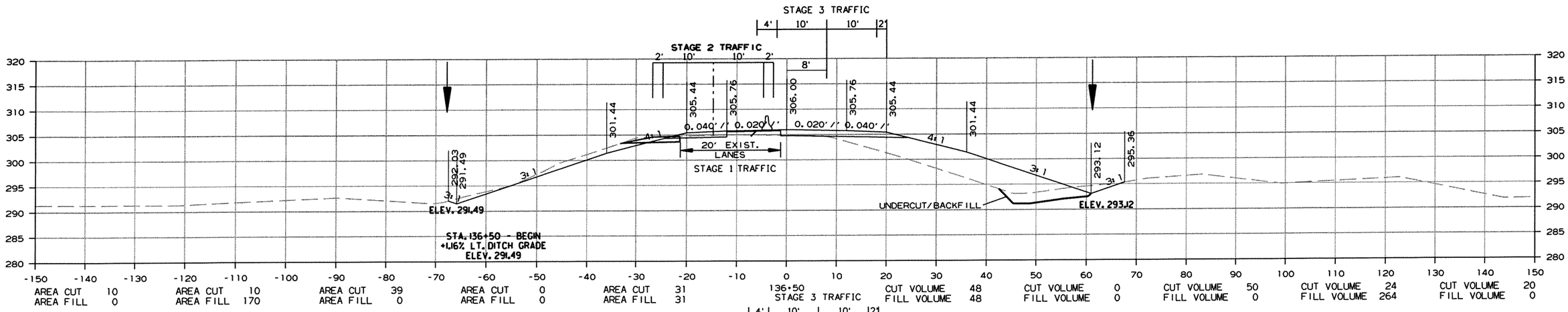
11/6/2012

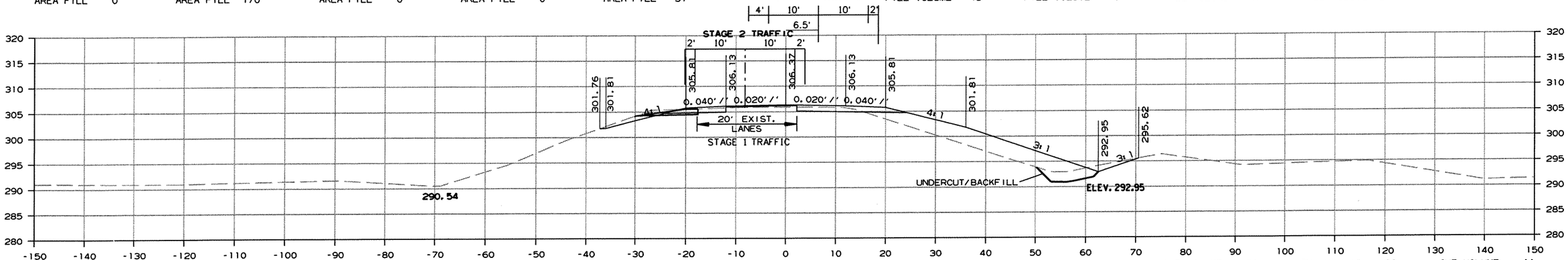
R080387.DGN

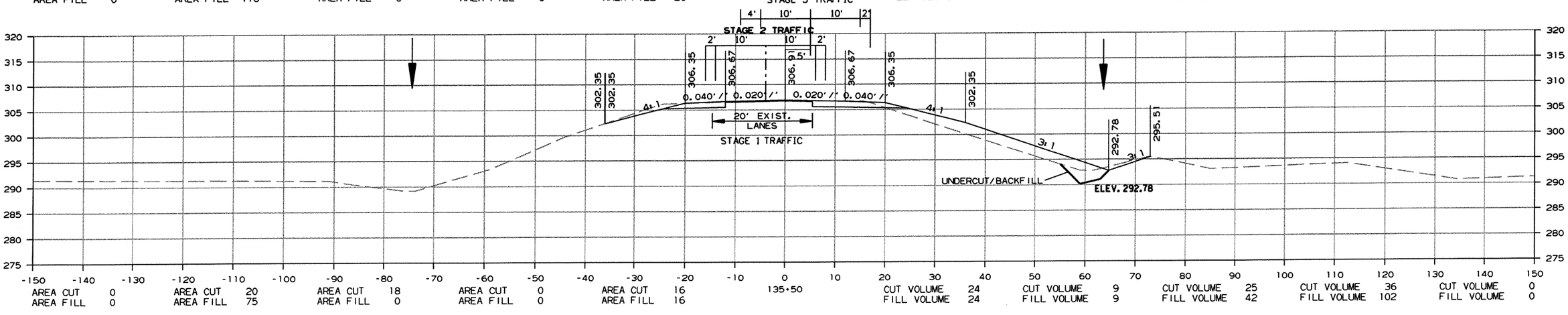
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	90	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1







CROSS SECTION STA. 135+50 TO STA. 136+50

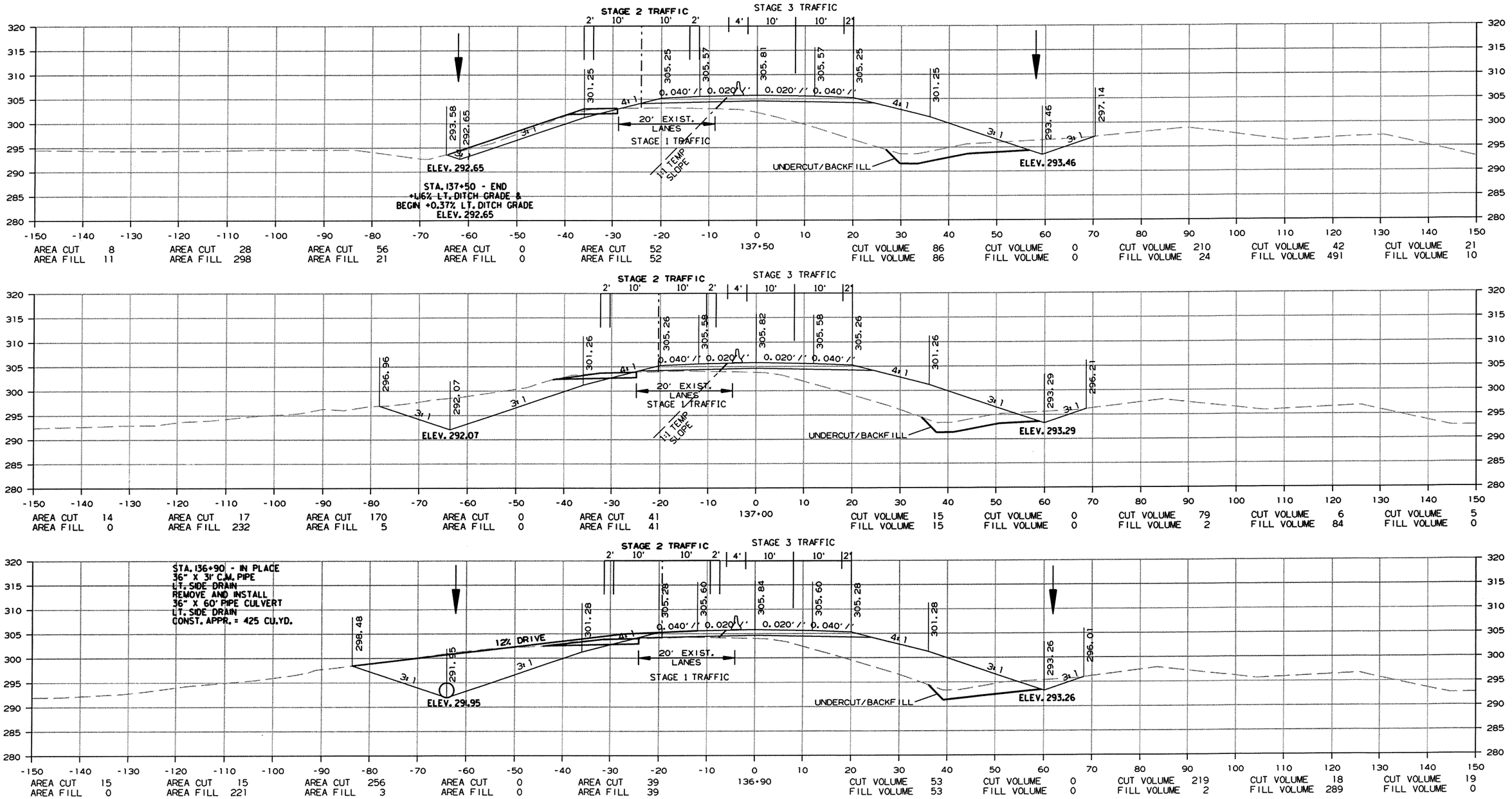
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	91	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



CROSS SECTION STA. 136+90 TO STA. 137+50

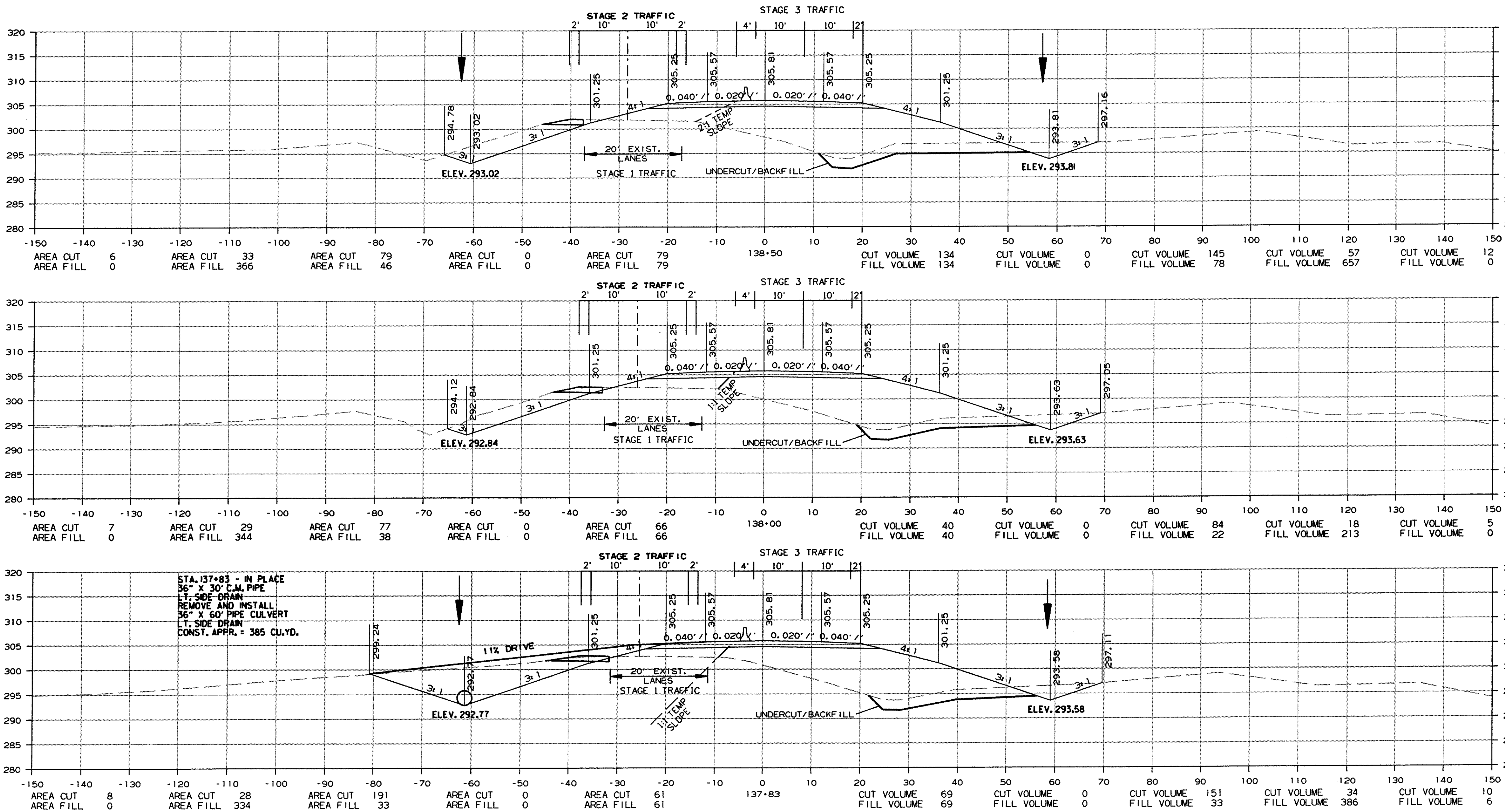
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	92	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



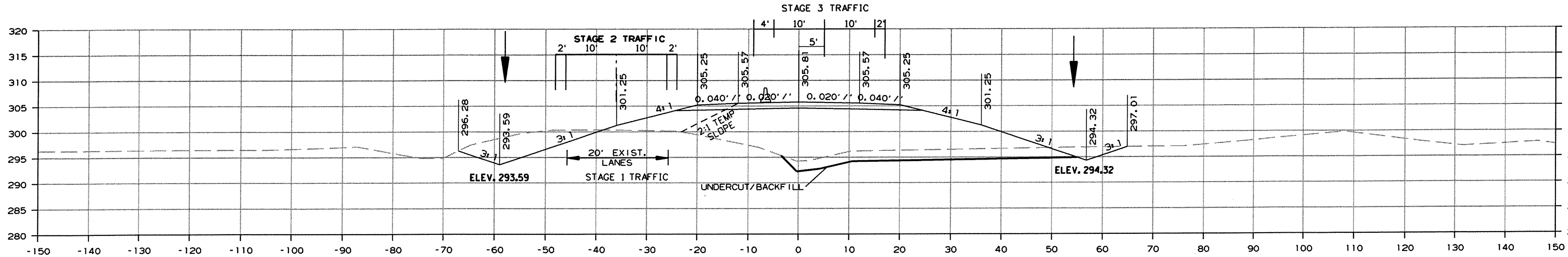
CROSS SECTION STA. 137+83 TO STA. 138+50

11/6/2012

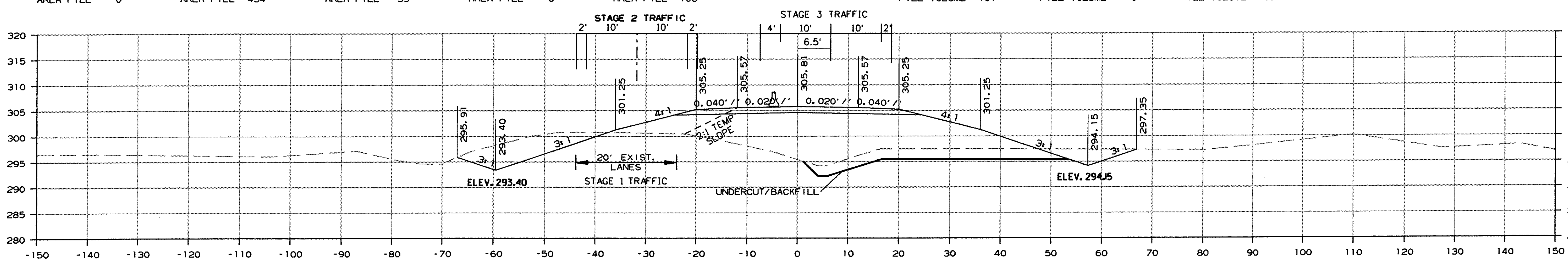
R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	93	111

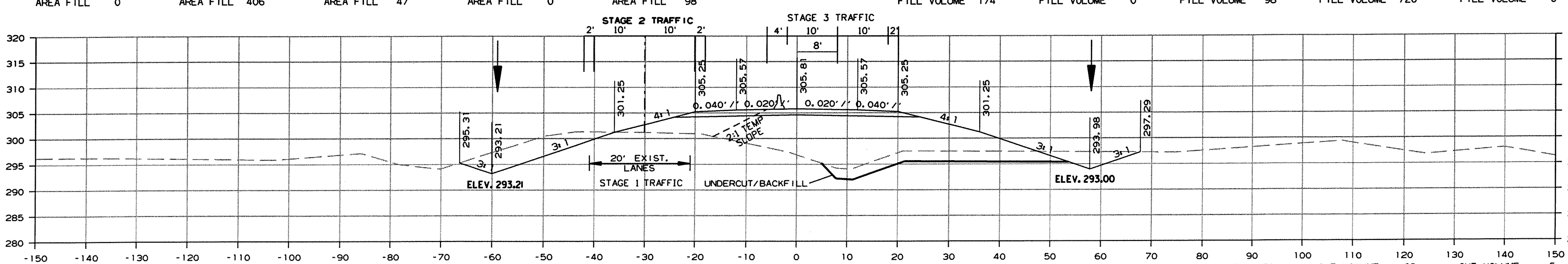
(2) CROSS SECTIONS



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 0	AREA CUT 21	AREA CUT 85	AREA CUT 0	AREA CUT 108	CUT VOLUME 191	CUT VOLUME 0	CUT VOLUME 160	CUT VOLUME 48	CUT VOLUME 0
AREA FILL 0	AREA FILL 454	AREA FILL 53	AREA FILL 0	AREA FILL 108	FILL VOLUME 191	FILL VOLUME 0	FILL VOLUME 92	FILL VOLUME 796	FILL VOLUME 0



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 0	AREA CUT 32	AREA CUT 88	AREA CUT 0	AREA CUT 98	CUT VOLUME 174	CUT VOLUME 0	CUT VOLUME 160	CUT VOLUME 61	CUT VOLUME 0
AREA FILL 0	AREA FILL 406	AREA FILL 47	AREA FILL 0	AREA FILL 98	FILL VOLUME 174	FILL VOLUME 0	FILL VOLUME 98	FILL VOLUME 720	FILL VOLUME 0



STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
AREA CUT 0	AREA CUT 34	AREA CUT 84	AREA CUT 0	AREA CUT 90	CUT VOLUME 156	CUT VOLUME 0	CUT VOLUME 151	CUT VOLUME 62	CUT VOLUME 5
AREA FILL 0	AREA FILL 372	AREA FILL 59	AREA FILL 0	AREA FILL 90	FILL VOLUME 156	FILL VOLUME 0	FILL VOLUME 97	FILL VOLUME 683	FILL VOLUME 0

CROSS SECTION STA. 139+00 TO STA. 140+00

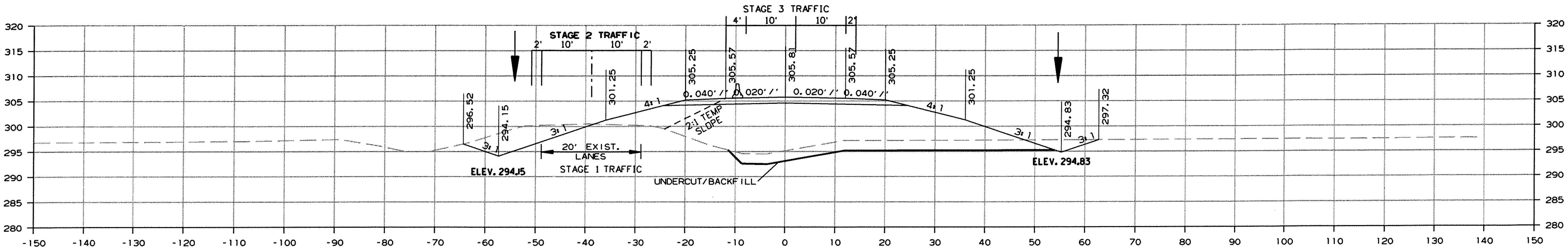
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	94	111

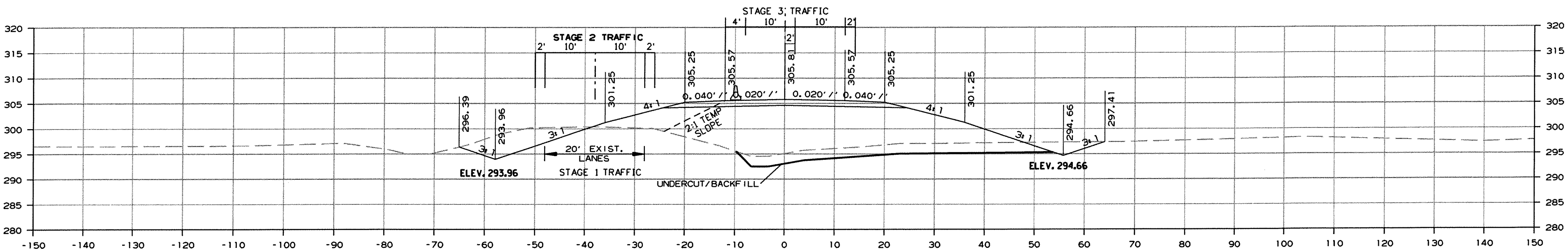
(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



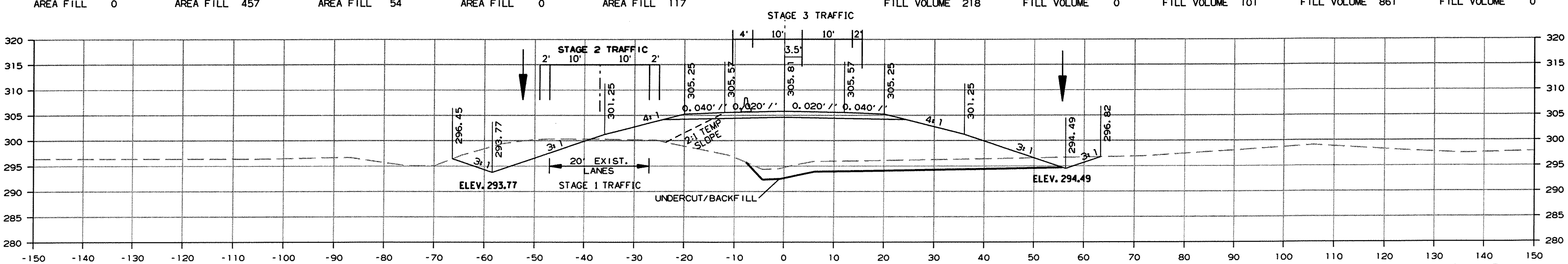
141+50

AREA CUT 0	AREA CUT 18	AREA CUT 68	AREA CUT 0	AREA CUT 122	CUT VOLUME 221	CUT VOLUME 0	CUT VOLUME 129	CUT VOLUME 37	CUT VOLUME 0
AREA FILL 0	AREA FILL 453	AREA FILL 54	AREA FILL 0	AREA FILL 122	FILL VOLUME 221	FILL VOLUME 0	FILL VOLUME 100	FILL VOLUME 842	FILL VOLUME 0



141+00

AREA CUT 0	AREA CUT 22	AREA CUT 72	AREA CUT 0	AREA CUT 117	CUT VOLUME 218	CUT VOLUME 0	CUT VOLUME 141	CUT VOLUME 34	CUT VOLUME 0
AREA FILL 0	AREA FILL 457	AREA FILL 54	AREA FILL 0	AREA FILL 117	FILL VOLUME 218	FILL VOLUME 0	FILL VOLUME 101	FILL VOLUME 861	FILL VOLUME 0



140+50

AREA CUT 0	AREA CUT 15	AREA CUT 80	AREA CUT 0	AREA CUT 118	CUT VOLUME 210	CUT VOLUME 0	CUT VOLUME 153	CUT VOLUME 33	CUT VOLUME 0
AREA FILL 0	AREA FILL 473	AREA FILL 54	AREA FILL 0	AREA FILL 118	FILL VOLUME 210	FILL VOLUME 0	FILL VOLUME 99	FILL VOLUME 858	FILL VOLUME 0

CROSS SECTION STA. 140+50 TO STA. 141+50

11/6/2012

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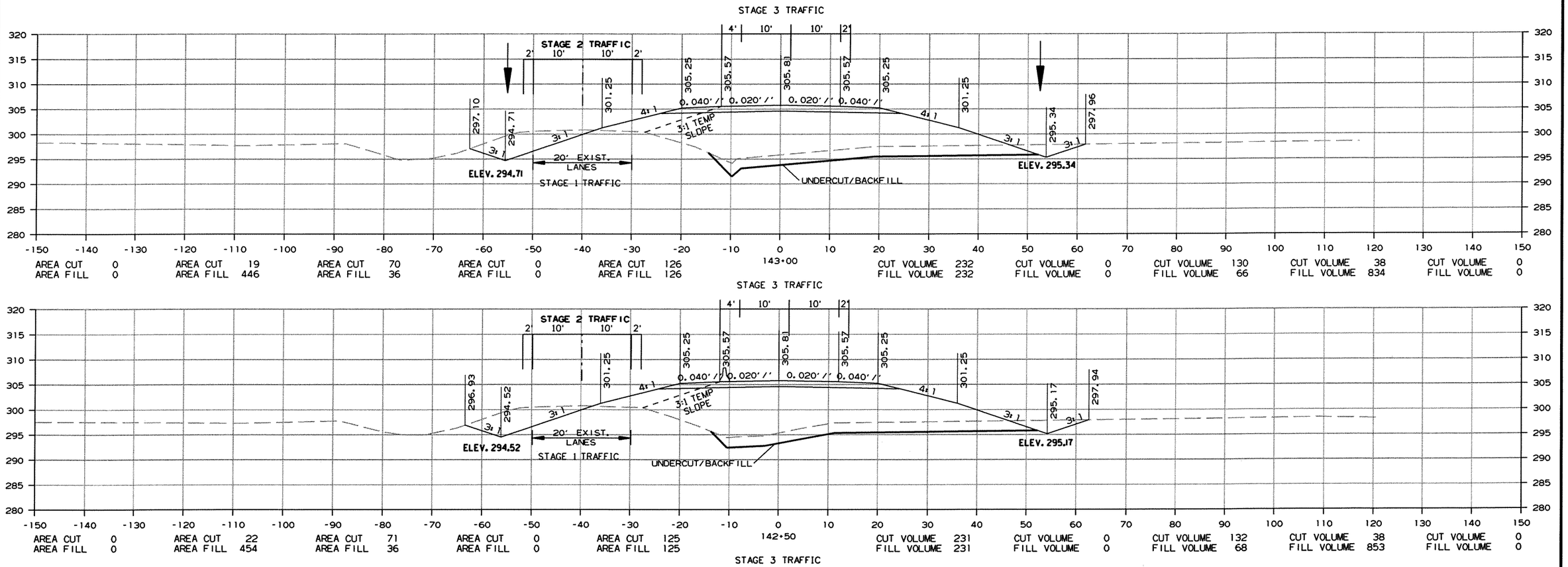
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	95	111

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1



CROSS SECTION STA. 142+00 TO STA. 143+00

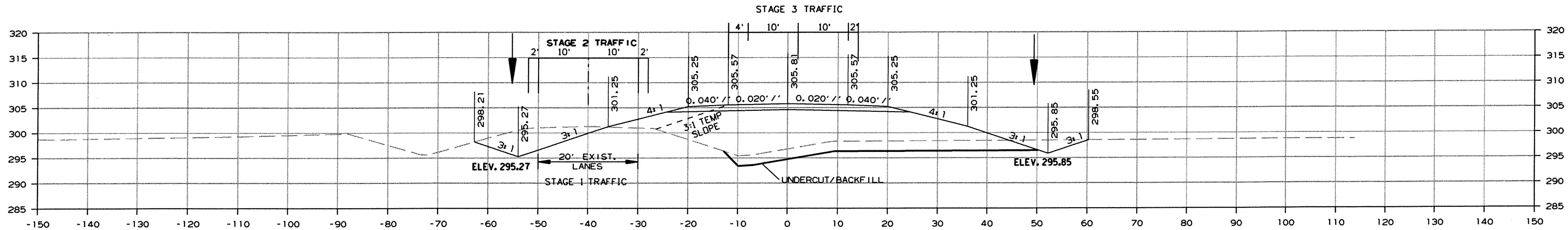
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	96	111

(2) CROSS SECTIONS

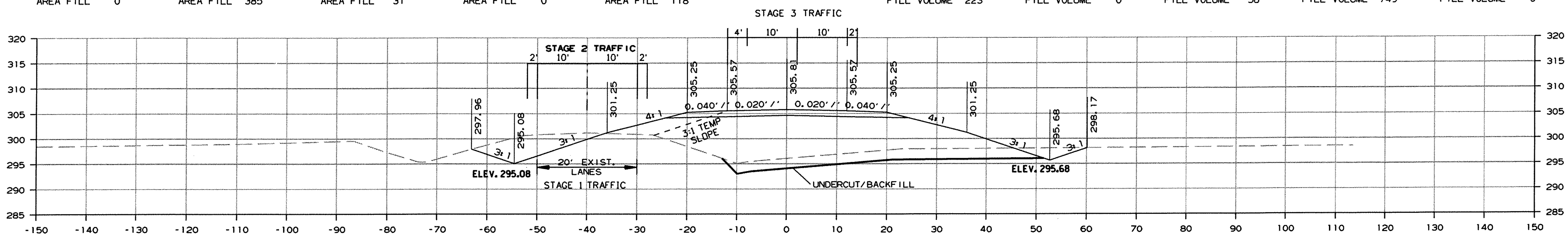
STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1



144+50

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	21	75	0	118
AREA FILL	0	385	31	0	118

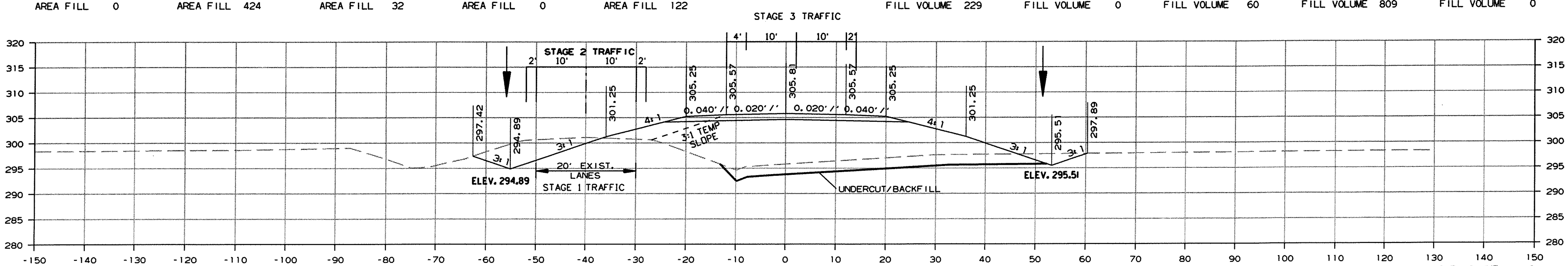
	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	223	0	137	36	0
FILL VOLUME	223	0	58	749	0



144+00

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	18	74	0	122
AREA FILL	0	424	32	0	122

	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	229	0	133	32	0
FILL VOLUME	229	0	60	809	0



143+50

	STAGE 1	STAGE 2	STAGE 3	STAGE 1 UNDER CUT/BACKFILL	STAGE 2 UNDER CUT/BACKFILL
AREA CUT	0	16	71	0	125
AREA FILL	0	450	33	0	125

	STAGE 2 UNDER CUT/BACKFILL	STAGE 1 UNDER CUT/BACKFILL	STAGE 3	STAGE 2	STAGE 1
CUT VOLUME	232	0	130	33	0
FILL VOLUME	232	0	64	830	0

CROSS SECTION STA. 143+50 TO STA. 144+50

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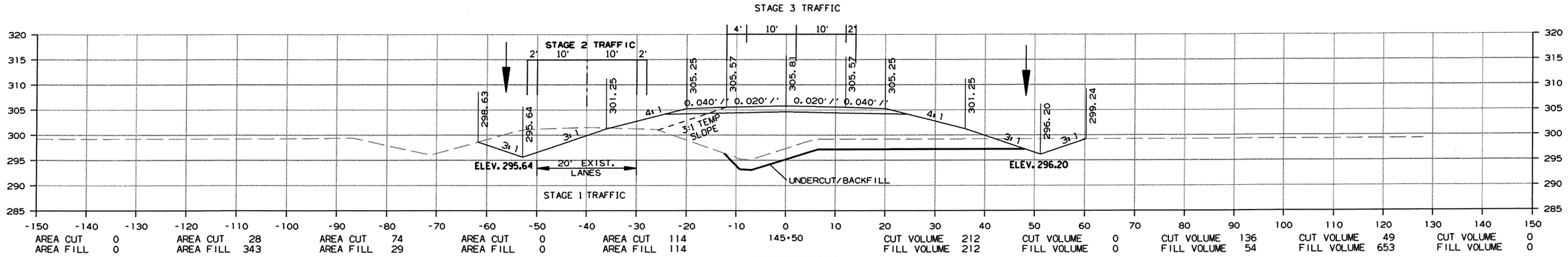
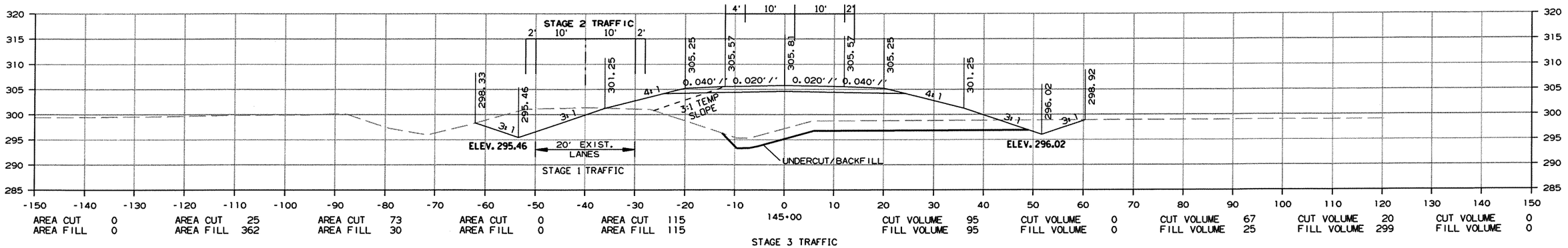
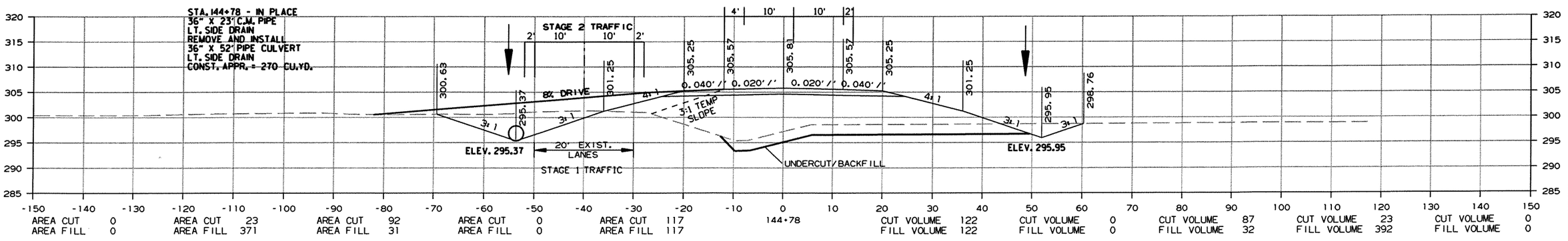
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	97	111

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1







CROSS SECTION STA. 144+78 TO STA. 145+50

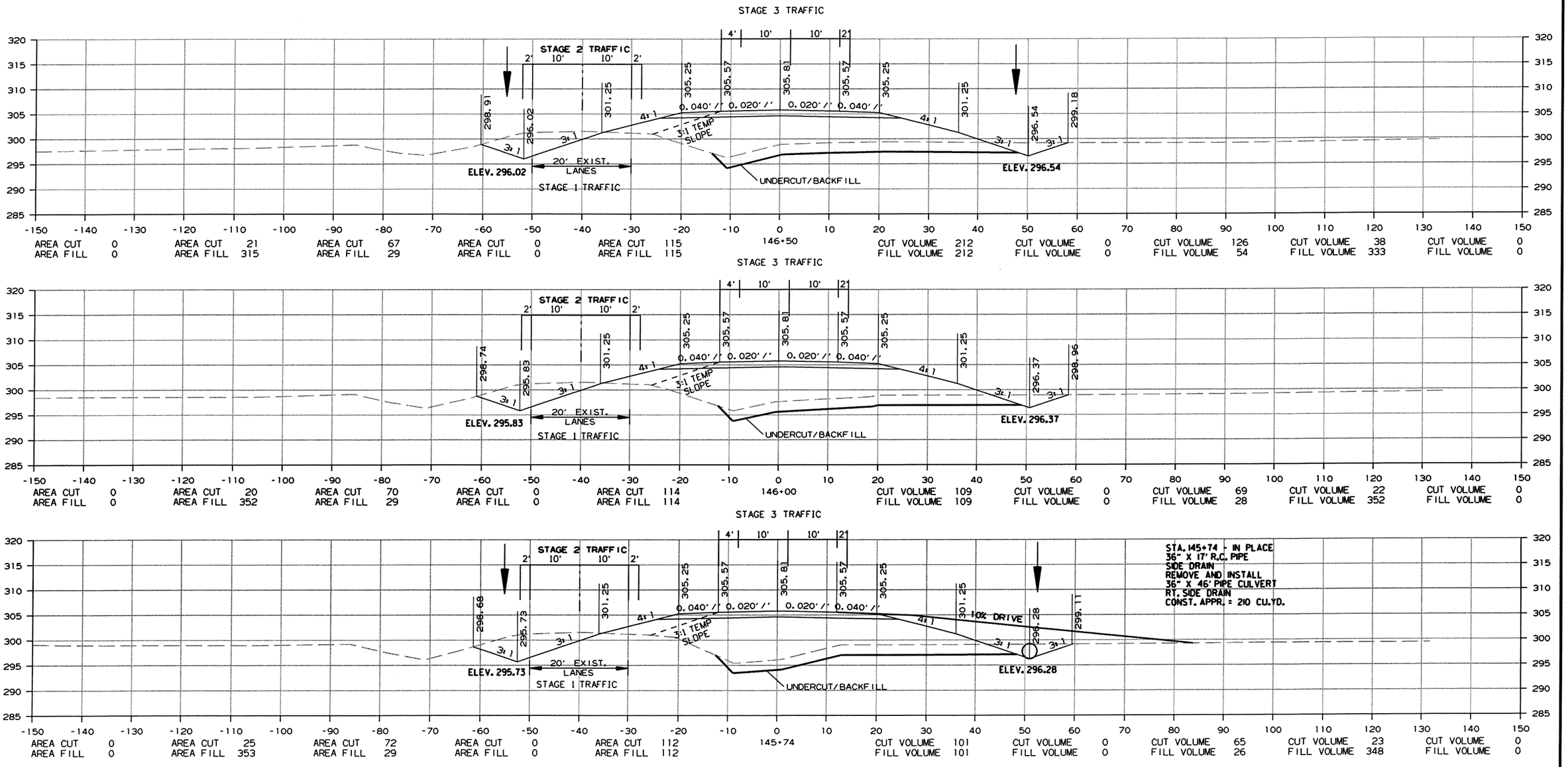
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	98	111

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1



CROSS SECTION STA. 145+74 TO STA. 146+50

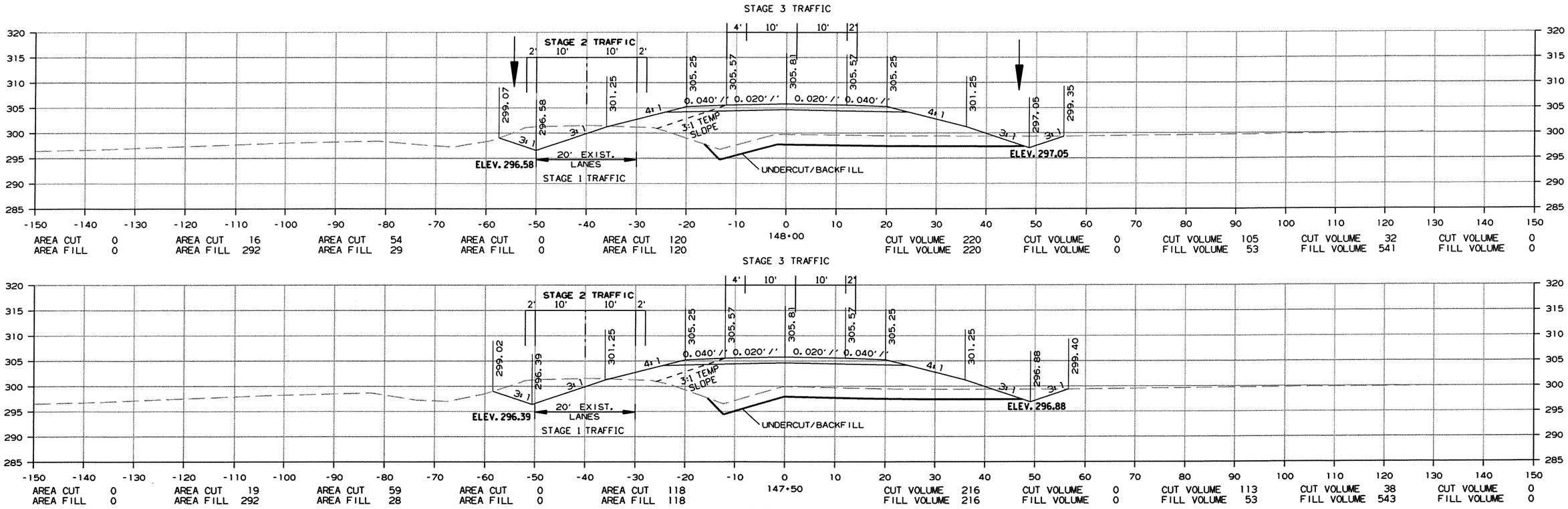
11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	99	111

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1



CROSS SECTION STA. 147+00 TO STA. 148+00

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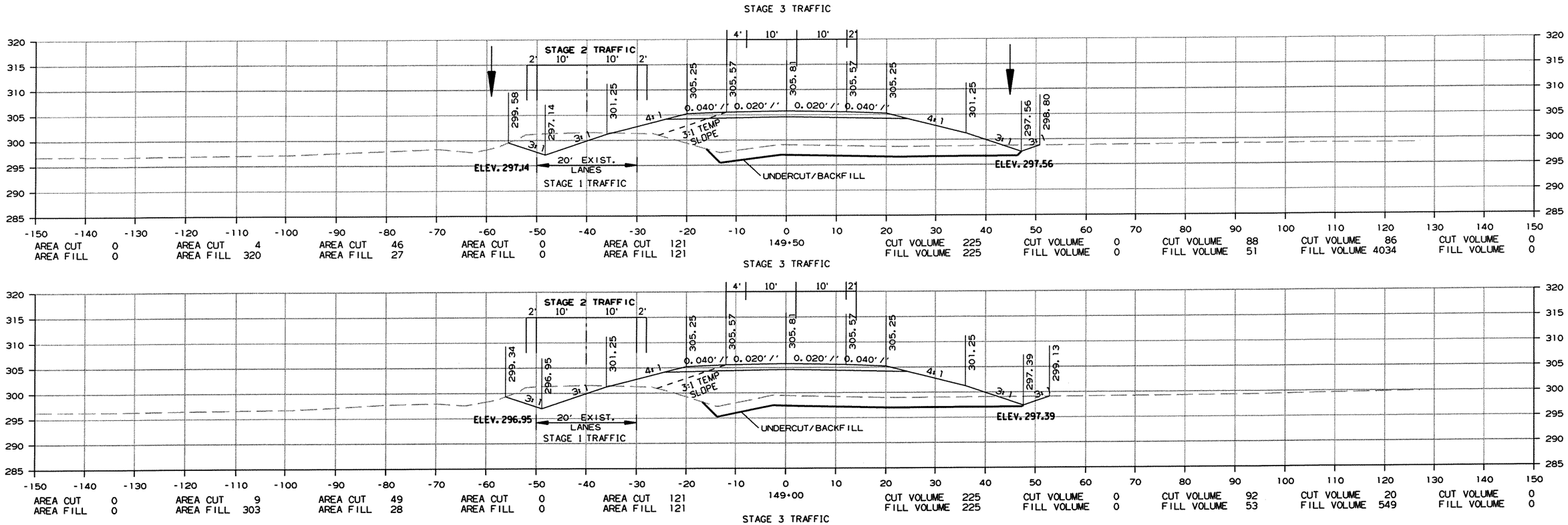
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	100	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



CROSS SECTION STA. 148+50 TO STA. 149+50

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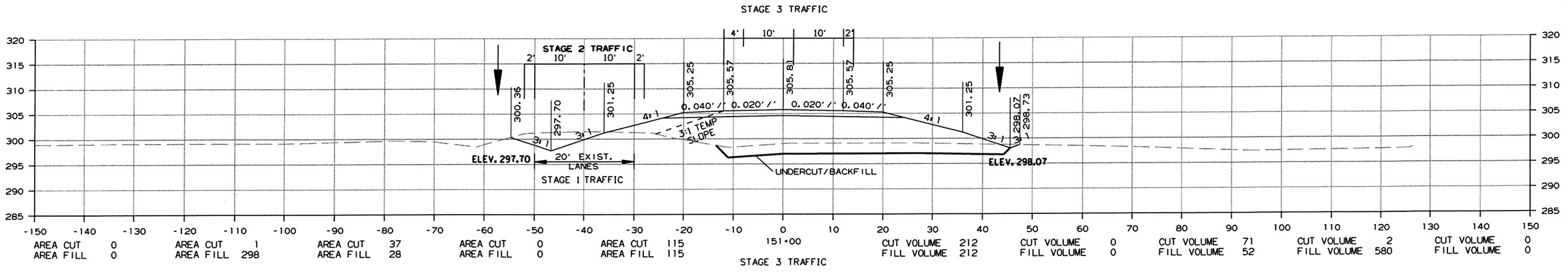
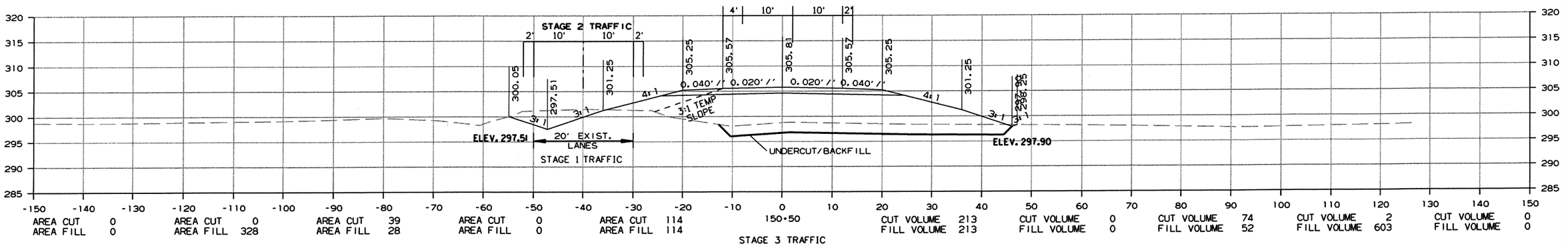
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	101	111

(2) CROSS SECTIONS

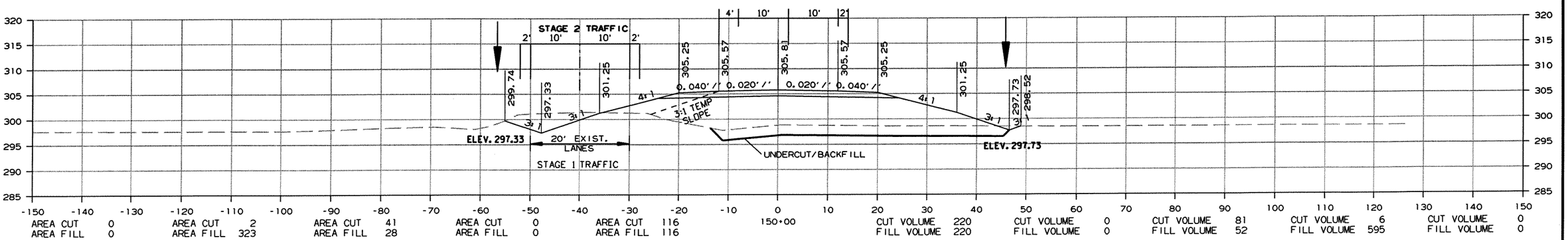
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	151+00	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME
0	0	1	298	37	28	0	0	115	115		212	212	0	0	71	52	2	580	0	0



AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	150+50	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME
0	0	0	328	39	28	0	0	114	114		213	213	0	0	74	52	2	603	0	0



AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	AREA CUT	AREA FILL	150+00	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME	CUT VOLUME	FILL VOLUME
0	0	2	323	41	28	0	0	116	116		220	220	0	0	81	52	6	595	0	0

CROSS SECTION STA. 150+00 TO STA. 151+00

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				6	ARK.			
				JOB NO.		080387	102	111

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 2 UNDER CUT/BACKFILL STAGE 1 UNDER CUT/BACKFILL STAGE 3 STAGE 2 STAGE 1

CROSS SECTION STA. 151+50 TO STA. 152+50

11/6/2012

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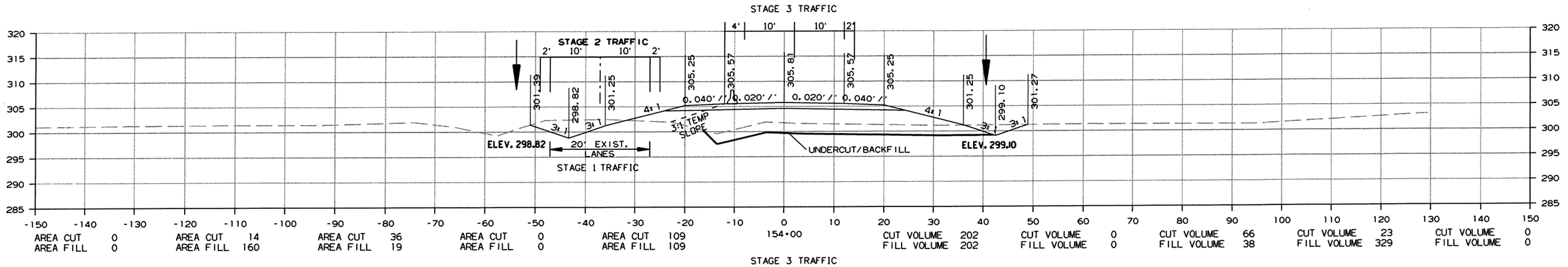
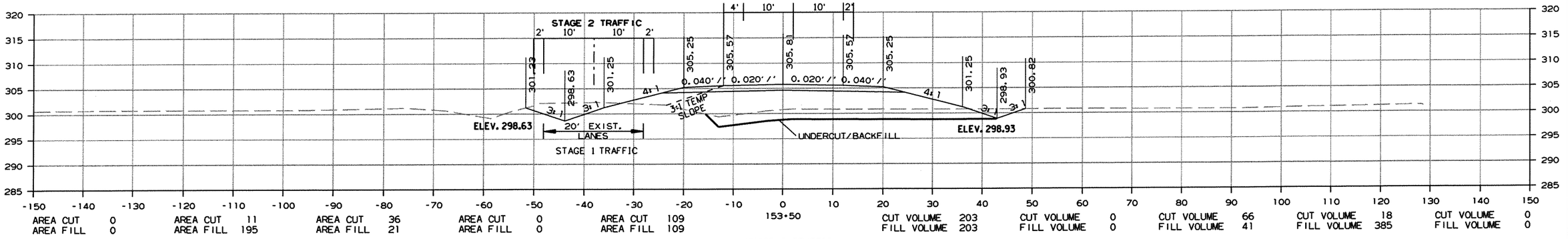
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	103	111

(2) CROSS SECTIONS

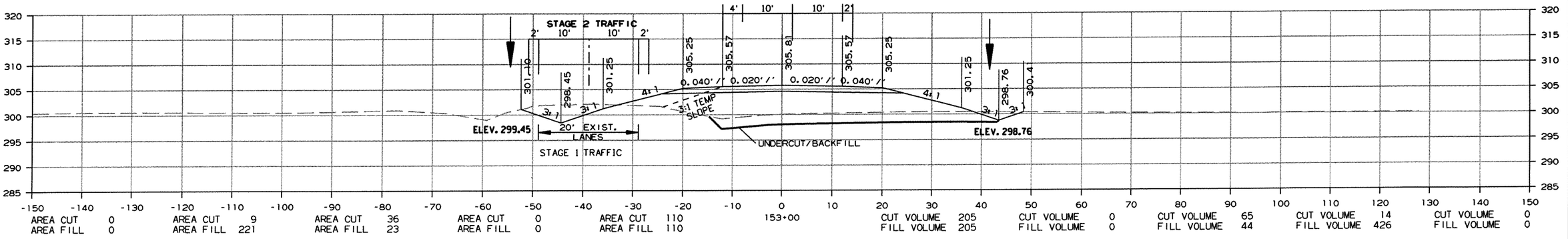
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	0	AREA CUT	14	AREA CUT	36	AREA CUT	0	AREA CUT	109	154+00	CUT VOLUME	202	CUT VOLUME	0	CUT VOLUME	66	CUT VOLUME	23	CUT VOLUME	0
AREA FILL	0	AREA FILL	160	AREA FILL	19	AREA FILL	0	AREA FILL	109		FILL VOLUME	202	FILL VOLUME	0	FILL VOLUME	38	FILL VOLUME	329	FILL VOLUME	0



AREA CUT	0	AREA CUT	11	AREA CUT	36	AREA CUT	0	AREA CUT	109	153+50	CUT VOLUME	203	CUT VOLUME	0	CUT VOLUME	66	CUT VOLUME	18	CUT VOLUME	0
AREA FILL	0	AREA FILL	195	AREA FILL	21	AREA FILL	0	AREA FILL	109		FILL VOLUME	203	FILL VOLUME	0	FILL VOLUME	41	FILL VOLUME	385	FILL VOLUME	0



AREA CUT	0	AREA CUT	9	AREA CUT	36	AREA CUT	0	AREA CUT	110	153+00	CUT VOLUME	205	CUT VOLUME	0	CUT VOLUME	65	CUT VOLUME	14	CUT VOLUME	0
AREA FILL	0	AREA FILL	221	AREA FILL	23	AREA FILL	0	AREA FILL	110		FILL VOLUME	205	FILL VOLUME	0	FILL VOLUME	44	FILL VOLUME	426	FILL VOLUME	0

CROSS SECTION STA. 153+00 TO STA. 154+00

11/6/2012

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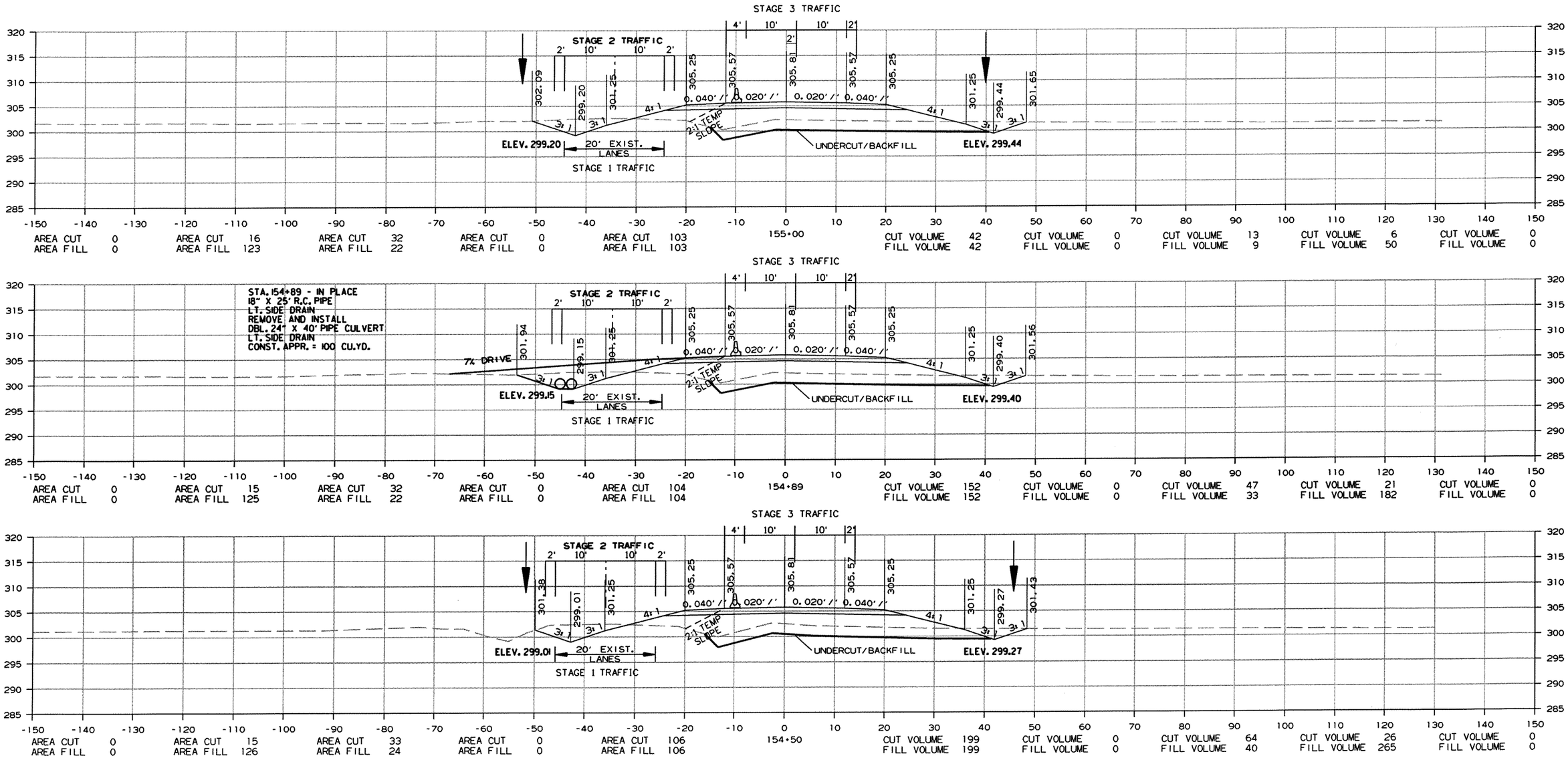
				6	ARK.			
				JOB NO.		080387	104	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



CROSS SECTION STA. 154+50 TO STA. 155+00

11/6/2012

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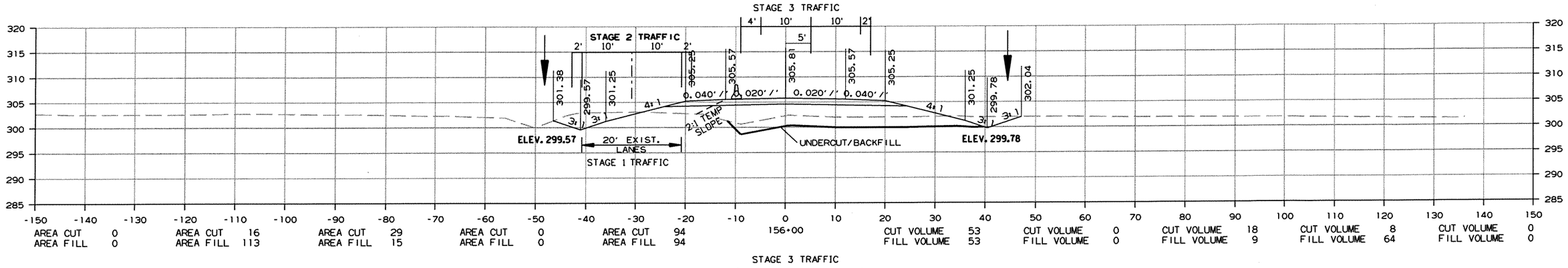
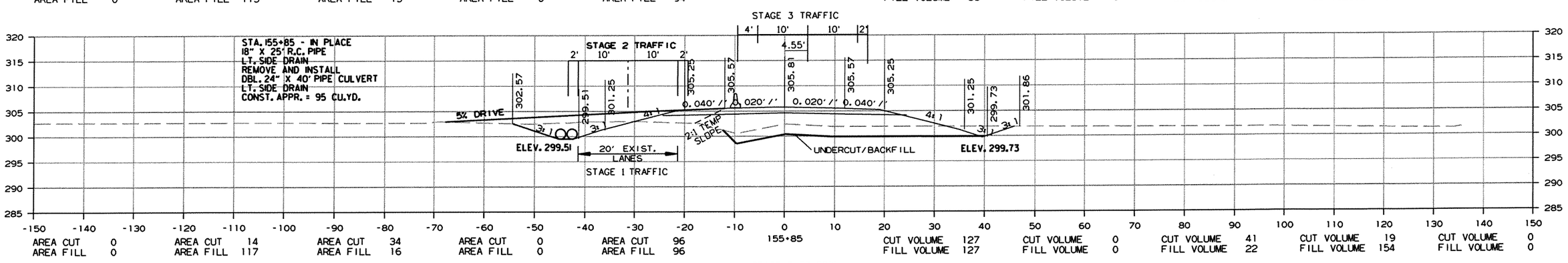
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	105	111

(2) CROSS SECTIONS

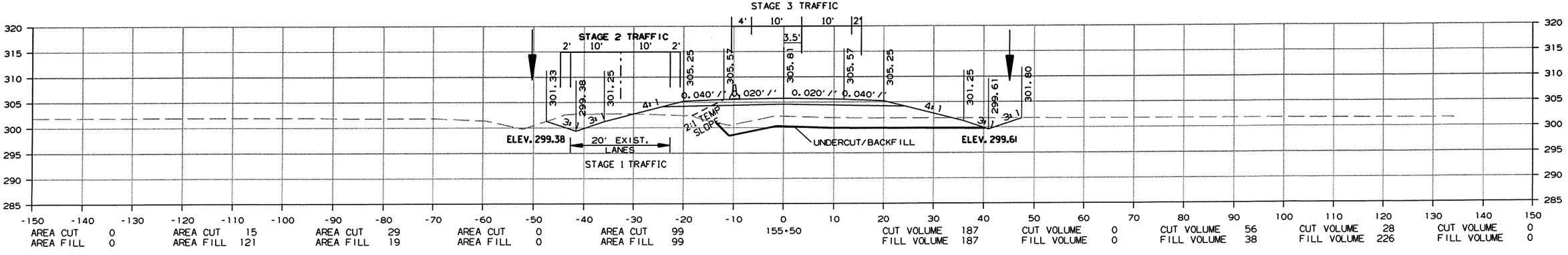
STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT	0	AREA CUT	16	AREA CUT	29	AREA CUT	0	AREA CUT	94	CUT VOLUME	53	CUT VOLUME	0	CUT VOLUME	18	CUT VOLUME	8	CUT VOLUME	0
AREA FILL	0	AREA FILL	113	AREA FILL	15	AREA FILL	0	AREA FILL	94	FILL VOLUME	53	FILL VOLUME	0	FILL VOLUME	9	FILL VOLUME	64	FILL VOLUME	0



AREA CUT	0	AREA CUT	14	AREA CUT	34	AREA CUT	0	AREA CUT	96	CUT VOLUME	127	CUT VOLUME	0	CUT VOLUME	41	CUT VOLUME	19	CUT VOLUME	0
AREA FILL	0	AREA FILL	117	AREA FILL	16	AREA FILL	0	AREA FILL	96	FILL VOLUME	127	FILL VOLUME	0	FILL VOLUME	22	FILL VOLUME	154	FILL VOLUME	0



AREA CUT	0	AREA CUT	15	AREA CUT	29	AREA CUT	0	AREA CUT	99	CUT VOLUME	187	CUT VOLUME	0	CUT VOLUME	56	CUT VOLUME	28	CUT VOLUME	0
AREA FILL	0	AREA FILL	121	AREA FILL	19	AREA FILL	0	AREA FILL	99	FILL VOLUME	187	FILL VOLUME	0	FILL VOLUME	38	FILL VOLUME	226	FILL VOLUME	0

CROSS SECTION STA. 155+50 TO STA. 156+00

11/6/2012

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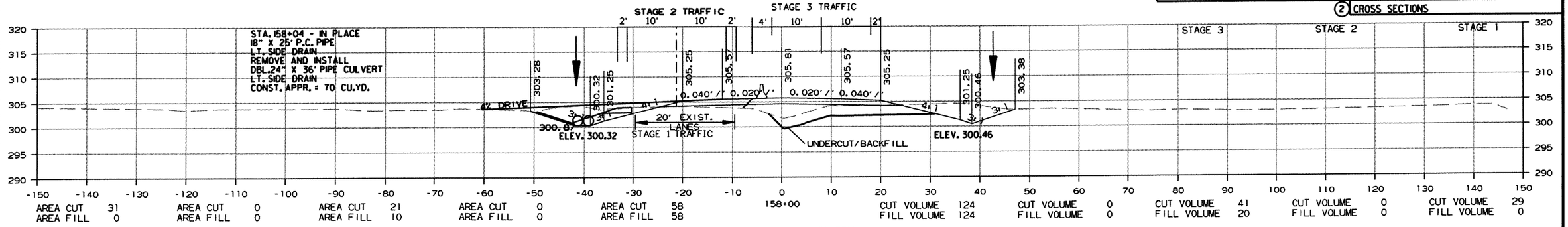
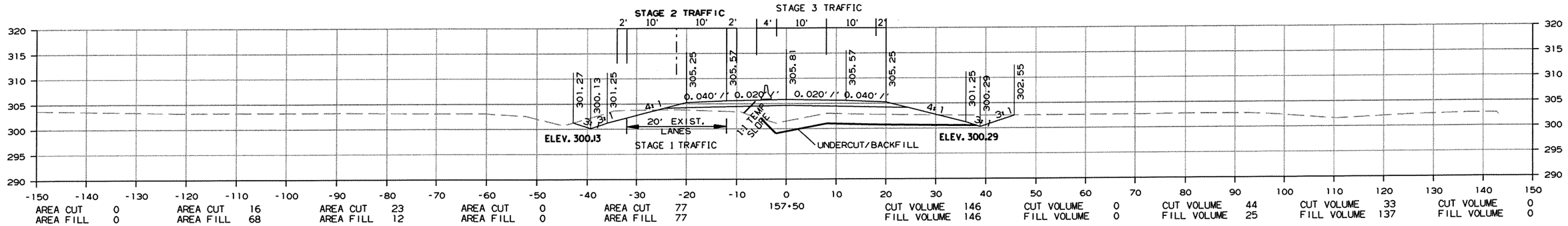
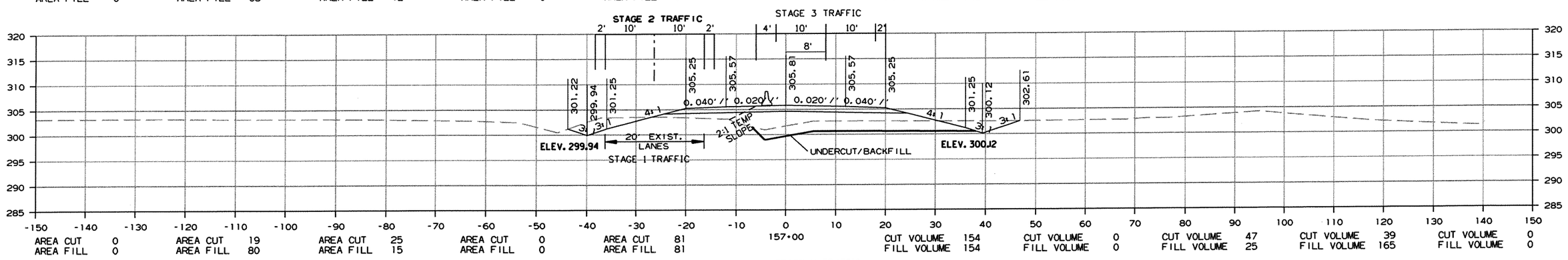
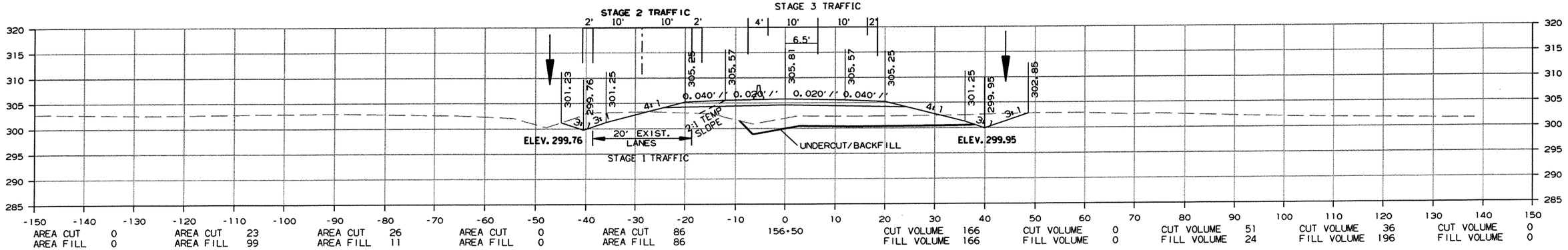
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	106	111

(2) CROSS SECTIONS









CROSS SECTION STA. 156+50 TO STA. 158+00

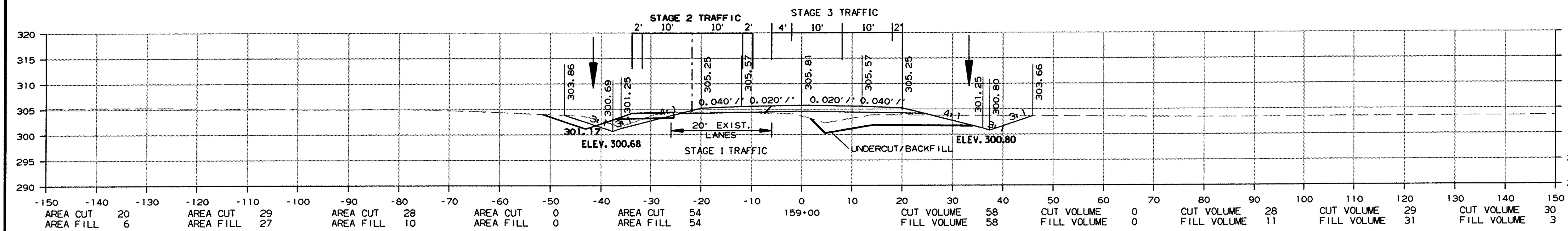
11/6/2012

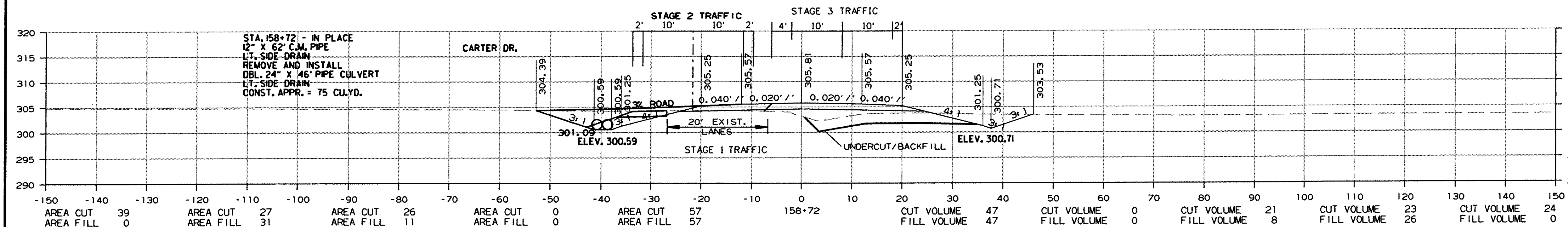
R080387.DGN

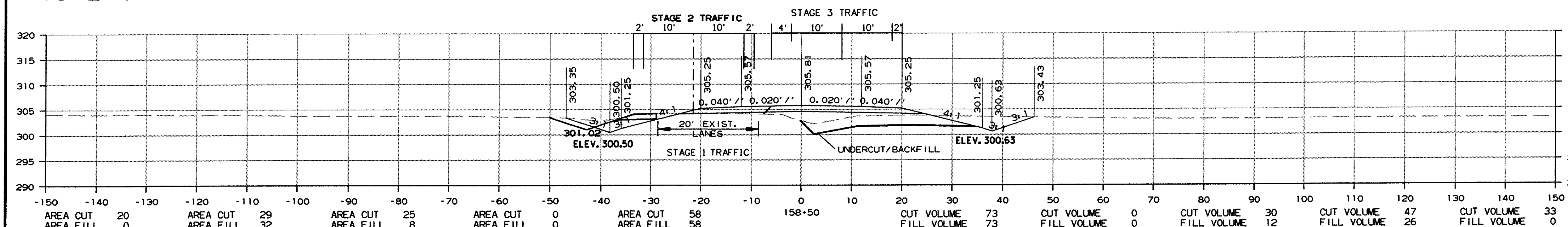
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	107	111

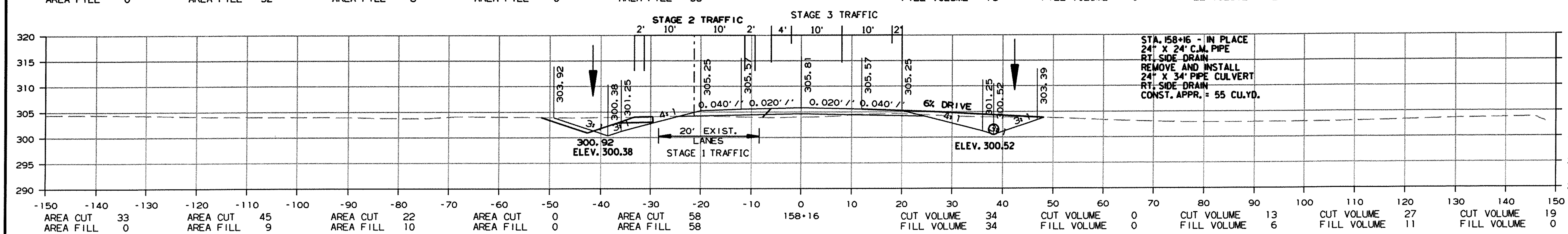
(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1









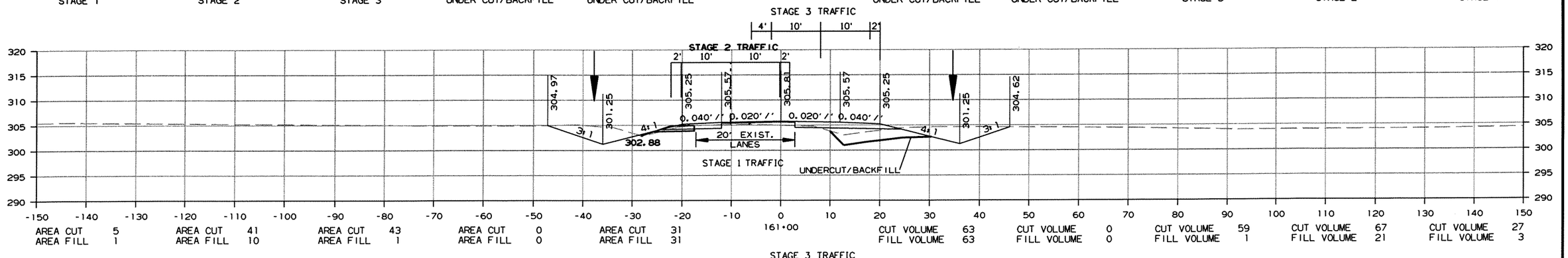
CROSS SECTION STA. 158+16 TO STA. 159+00

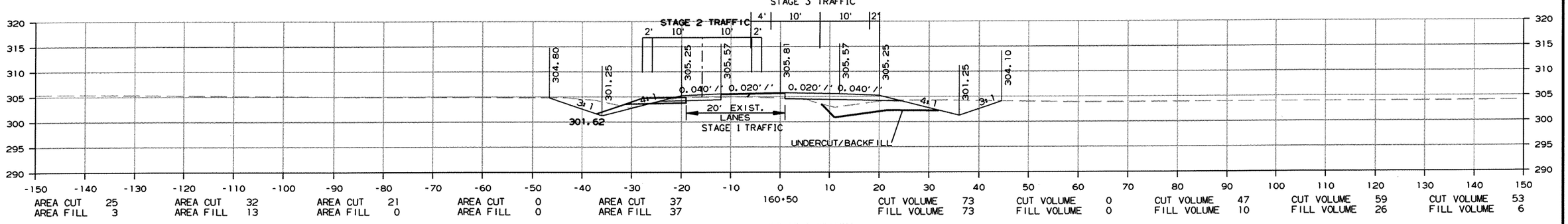
11/6/2012

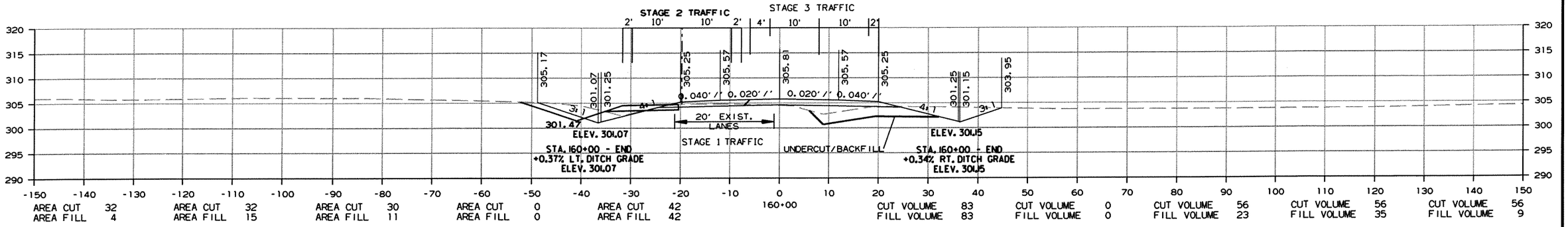
R080387.DGN

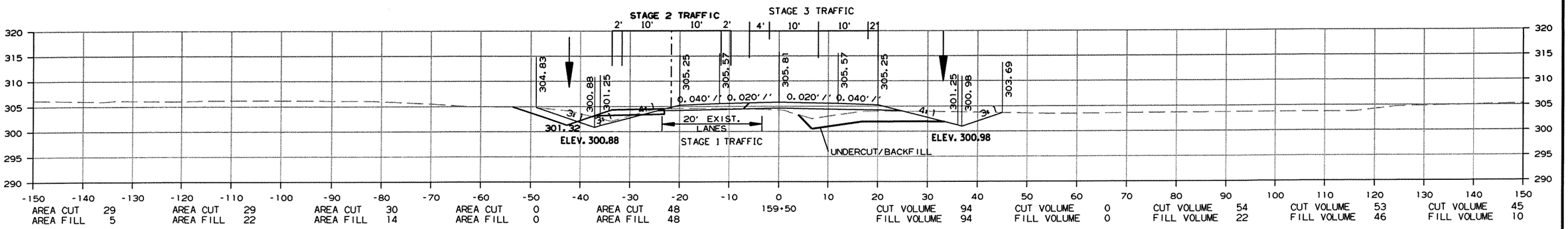
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	108	111

(2) CROSS SECTIONS









CROSS SECTION STA. 159+50 TO STA. 161+00

11/6/2012

R080387.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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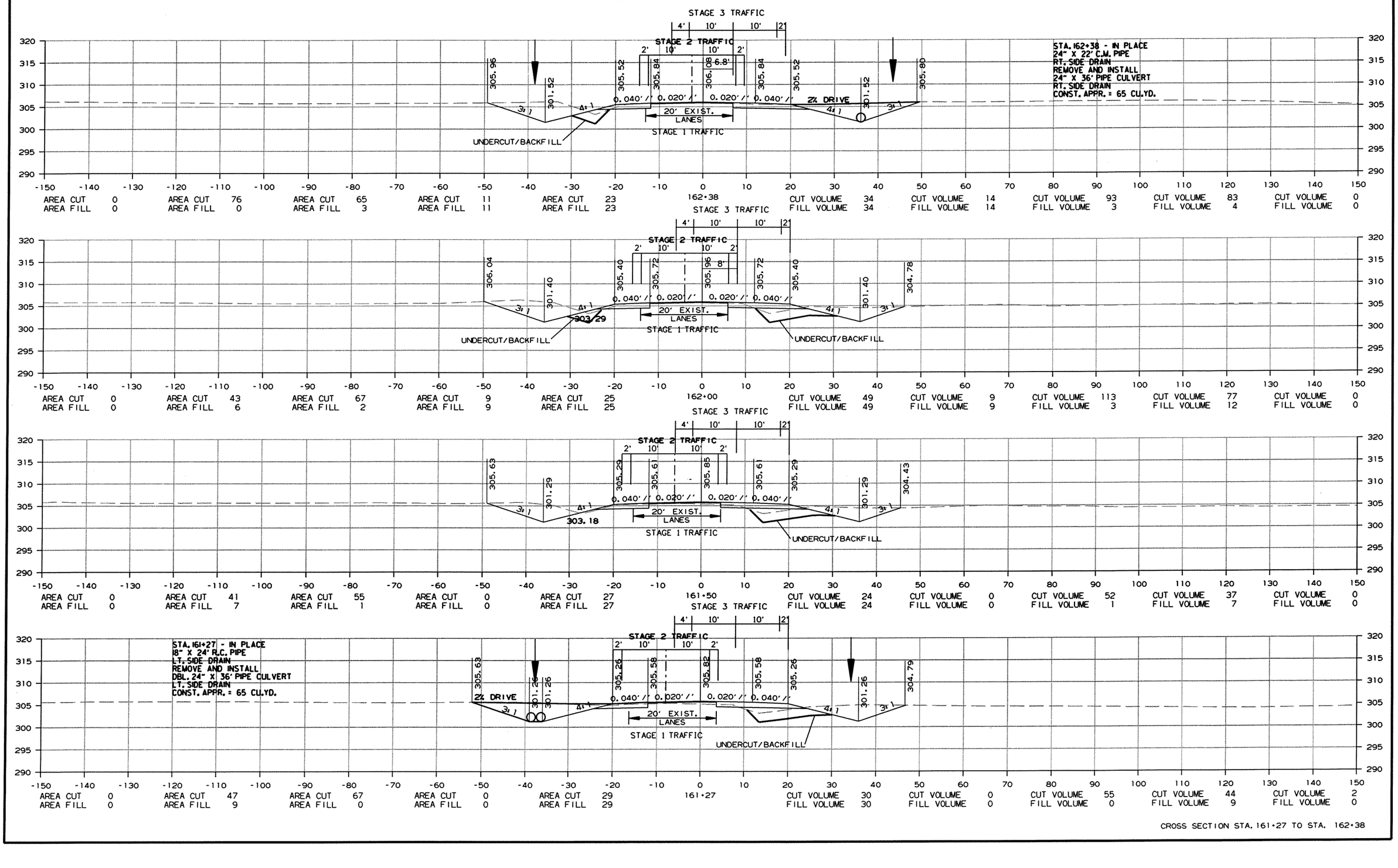
(2) CROSS SECTIONS



CROSS SECTION STA. 161+27 TO STA. 162+38

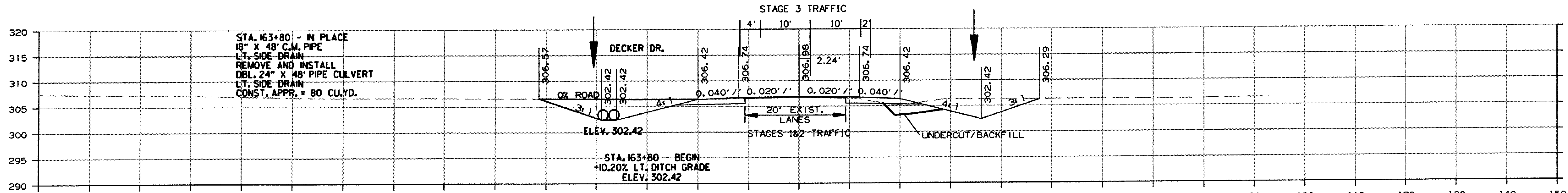
11/6/2012

R080387.DGN

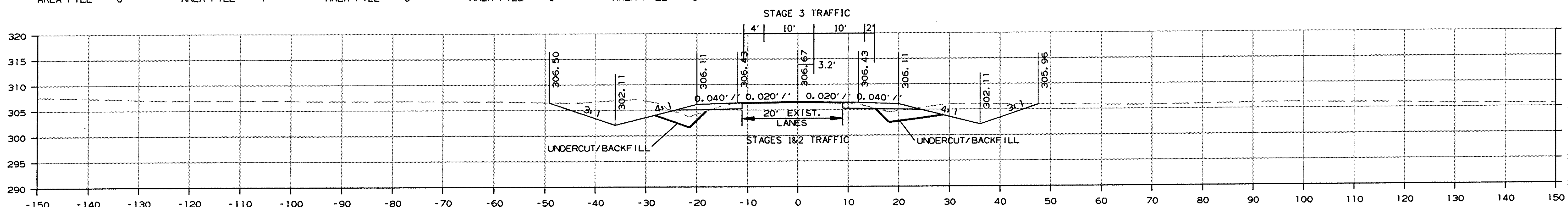
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	110	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1



AREA CUT 0 / AREA FILL 0 — AREA CUT 57 / AREA FILL 1 — AREA CUT 69 / AREA FILL 0 — AREA CUT 0 / AREA FILL 0 — AREA CUT 16 / AREA FILL 16 — 163+80 — CUT VOLUME 19 / FILL VOLUME 19 — CUT VOLUME 8 / FILL VOLUME 8 — CUT VOLUME 77 / FILL VOLUME 3 — CUT VOLUME 63 / FILL VOLUME 1 — CUT VOLUME 0 / FILL VOLUME 0



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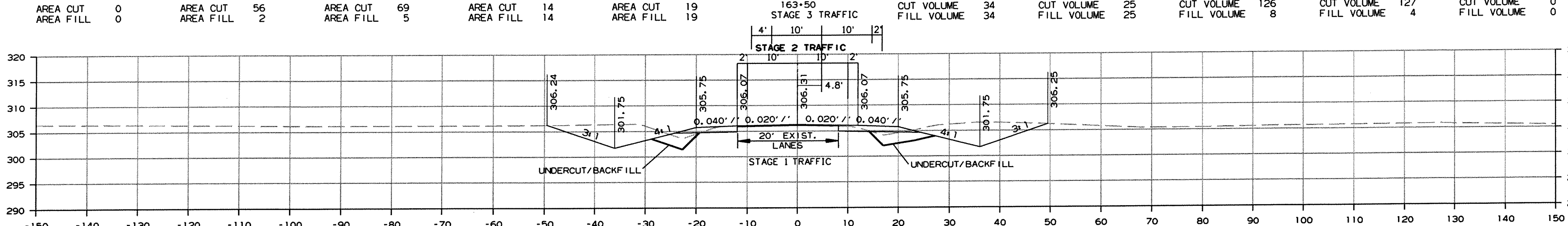

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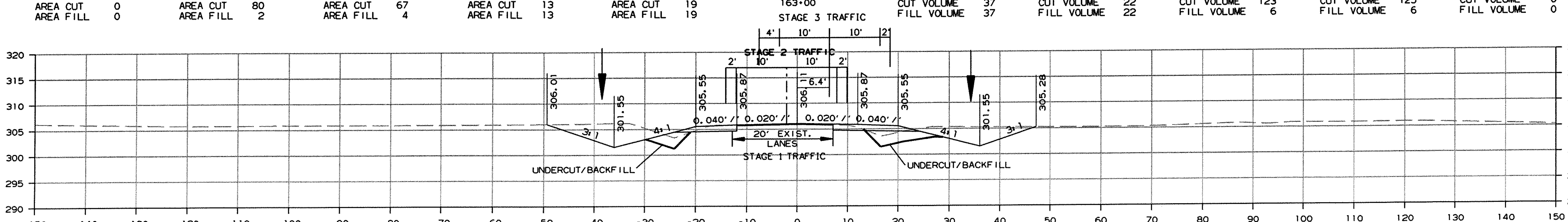


AREA CUT 0 / AREA FILL 0 — AREA CUT 55 / AREA FILL 4 — AREA CUT 65 / AREA FILL 3 — AREA CUT 11 / AREA FILL 11 — AREA CUT 21 / AREA FILL 21 — 162+50 — CUT VOLUME 10 / FILL VOLUME 10 — CUT VOLUME 5 / FILL VOLUME 5 — CUT VOLUME 29 / FILL VOLUME 1 — CUT VOLUME 29 / FILL VOLUME 1 — CUT VOLUME 0 / FILL VOLUME 0

CROSS SECTION STA. 162+50 TO STA. 163+80

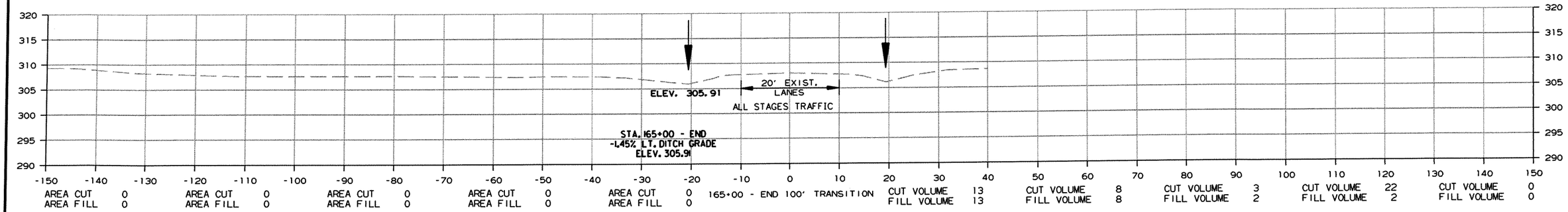
11/6/2012

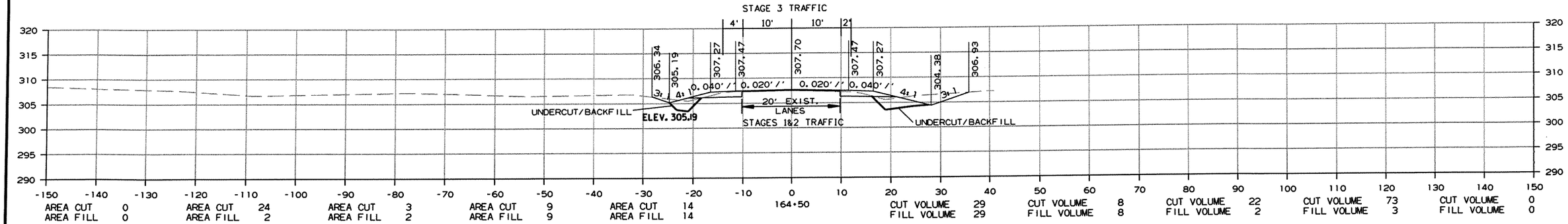
R080387.DGN

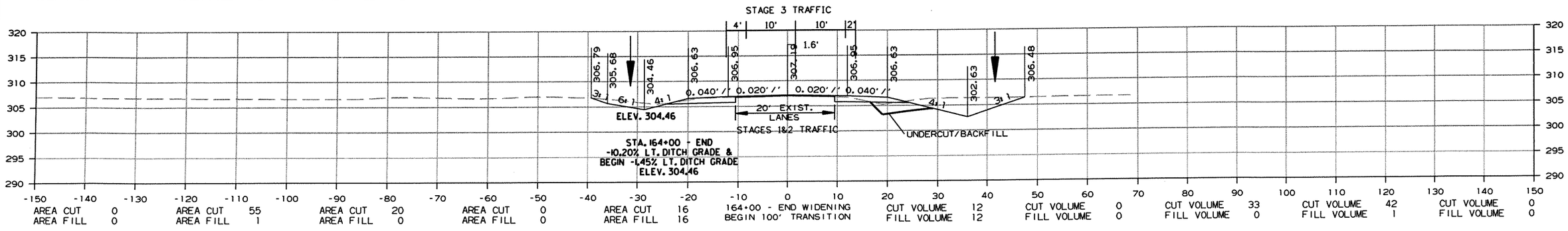
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080387	111	111

(2) CROSS SECTIONS

STAGE 1 | STAGE 2 | STAGE 3 | STAGE 1 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 2 UNDER CUT/BACKFILL | STAGE 1 UNDER CUT/BACKFILL | STAGE 3 | STAGE 2 | STAGE 1







CROSS SECTION STA. 164+00 TO STA. 165+00

11/6/2012

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