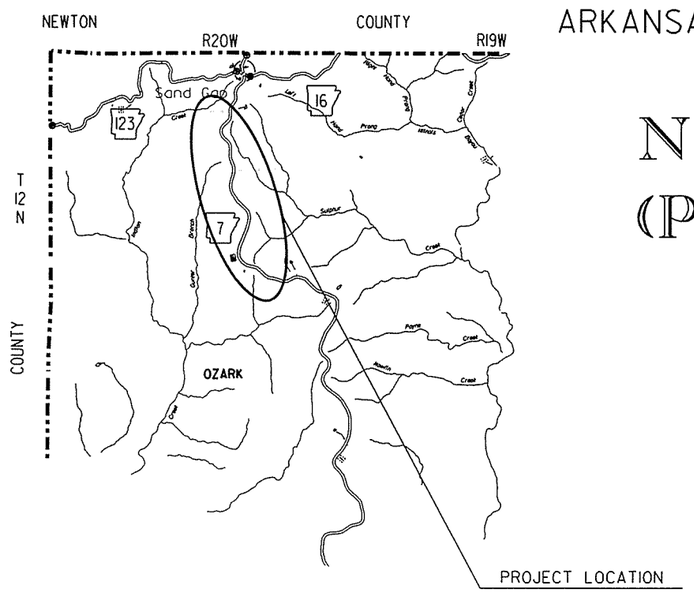
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080464	1	115

(2) NEWTON CO. LINE-SOUTH (PASSING LANE) (PH. II) (S)



VICINITY MAP

NOT TO SCALE

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

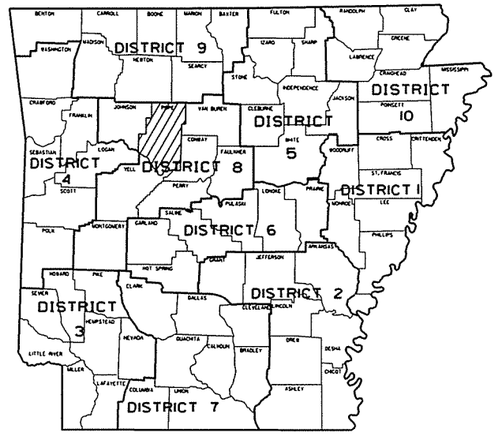
NEWTON CO. LINE-SOUTH (PASSING LANE) (PH. II) (S)

POPE COUNTY

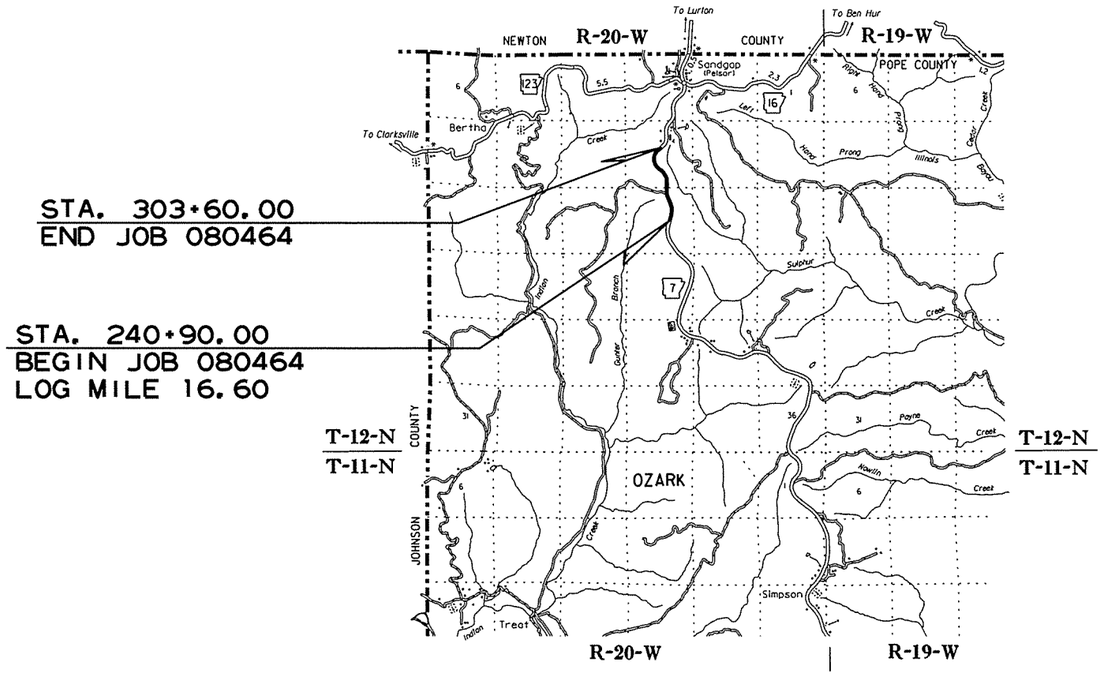
ROUTE 7 SECTION 16

FEDERAL AID PROJ. STP-STPR-0058(40)

JOB 080464



ARK. HWY. DIST. NO. 8



DESIGN TRAFFIC DATA	
DESIGN YEAR	2035
2015 ADT	1000
2035 ADT	1300
2035 DHV	143
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	15%
AVERAGE RUNNING SPEED	52 MPH

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7836
M.E. BANKS

9-31-15

DEPUTY DIRECTOR
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°41'32"	N 35°42'03"	N 35°42'29"
LONGITUDE	W 93°05'59"	W 93°06'05"	W 93°06'04"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF	PROJECT	6270.00	FEET	OR	1.188	MILES
NET	ROADWAY	6270.00			1.188	MILES
NET	BRIDGES	0000.00			0.000	MILES
NET	PROJECT	6270.00			1.188	MILES

P.E. JOB 080376

8/31/2015

R080464.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.		080464	2	115

(2) INDEX OF SHEETS, GOV. SPECS., & GEN. NOTES

INDEX OF SHEETS

SHEET NO.	TITLE	DRWG.NO.	DATE
1	TITLE SHEET		
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES		
3 - 5	TYPICAL SECTIONS OF IMPROVEMENT		
6 - 9	SPECIAL DETAILS		
10 - 18	TEMPORARY EROSION CONTROL DETAILS		
19 - 25	MAINTENANCE OF TRAFFIC		
26 - 28	PERMANENT PAVEMENT MARKING		
29 - 33	QUANTITIES		
34	SUMMARY OF QUANTITIES AND REVISIONS		
35 - 41	SURVEY CONTROL DETAILS		
42 - 46	PLAN AND PROFILE SHEETS		
47	CONCRETE DITCH PAVING	CDP-1	11-17-10
48	FLARED END SECTION	FES-1	10-18-96
49	FLARED END SECTION	FES-2	10-18-96
50	MAILBOX DETAILS	MB-1	11-18-04
51	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	2-27-14
52	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	2-27-14
53	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	PCP-1	2-27-14
54	PLASTIC PIPE CULVERT (PVC F949)	PCP-2	2-27-14
55	PAVEMENT MARKING DETAILS	PM-1	9-12-13
56	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
57	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2	10-18-96
58	DETAILS OF SPECIAL ITEMS	SI-1	9-12-13
59	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	9-02-15
60	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-02-15
61	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	9-02-15
62	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4	2-27-14
63	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5	10-15-09
64	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
65	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6-02-94
66	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
67 - 115	CROSS SECTIONS		

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

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, 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
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
JOB 080464	BIDDING REQUIREMENTS AND CONDITIONS
JOB 080464	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080464	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080464	CULVERT CLEAN OUT
JOB 080464	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 080464	EXTENSION FOR PIPE CULVERTS
JOB 080464	FOREST SERVICE REQUIREMENTS
JOB 080464	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080464	MANDATORY ELECTRONIC CONTRACT
JOB 080464	OFF-SITE RESTRAINING CONDITIONS FOR BATS
JOB 080464	PARTNERING REQUIREMENTS
JOB 080464	PLASTIC PIPE
JOB 080464	ROCK FILL
JOB 080464	RUMBLE STRIPS
JOB 080464	SHORING FOR CULVERTS
JOB 080464	SOIL STABILIZATION
JOB 080464	SPECIAL CLEARING REQUIREMENTS
JOB 080464	SPECIAL SEEDING REQUIREMENTS
JOB 080464	STORM WATER POLLUTION PREVENTION PLAN
JOB 080464	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080464	UTILITY ADJUSTMENTS
JOB 080464	VALUE ENGINEERING
JOB 080464	WARM MIX ASPHALT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-28-15

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 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, 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.

6/29/2015
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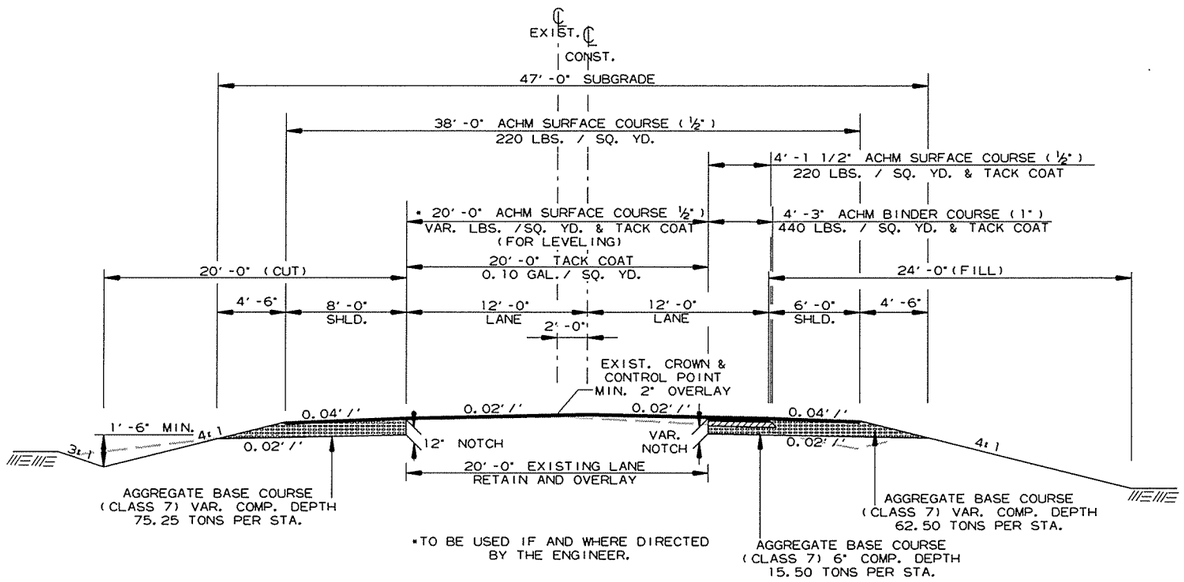
				6	ARK.			
				JOB NO.		080464	3	115

(2) TYPICAL SECTIONS OF IMPROVEMENT

TRANSITION
FROM 2-LANE TO 3-LANE
STA. 240+90.00 TO STA. 244+20.00
FROM 3-LANE TO 2-LANE
STA. 297+00.00 TO STA. 303+60.00



TANGENT SECTION
2 LANE SECTION - NOTCH AND WIDENING

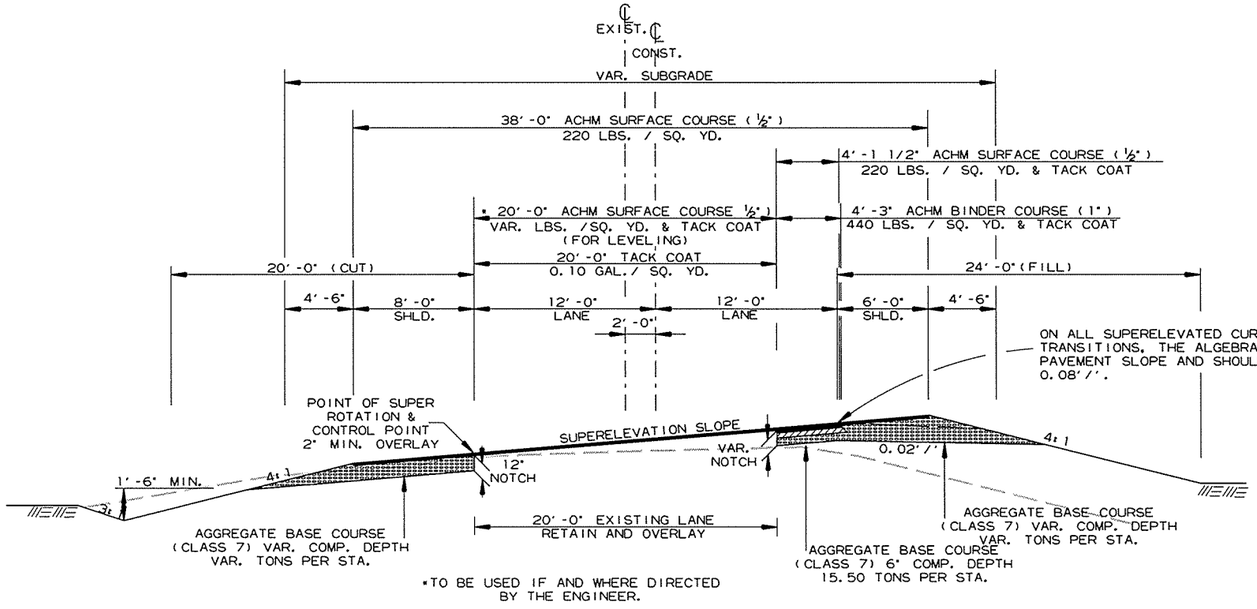
NOTES:
REFER TO CROSS SECTIONS FOR DEVIATIONS FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" 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 INDICATED.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY 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.

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 (½") IN LIEU OF AGGREGATE BASE COURSE IN SHOULDERS.



SUPERELEVATION SECTION
2 LANE SECTION - NOTCH AND WIDENING

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TYPICAL SECTIONS OF IMPROVEMENT

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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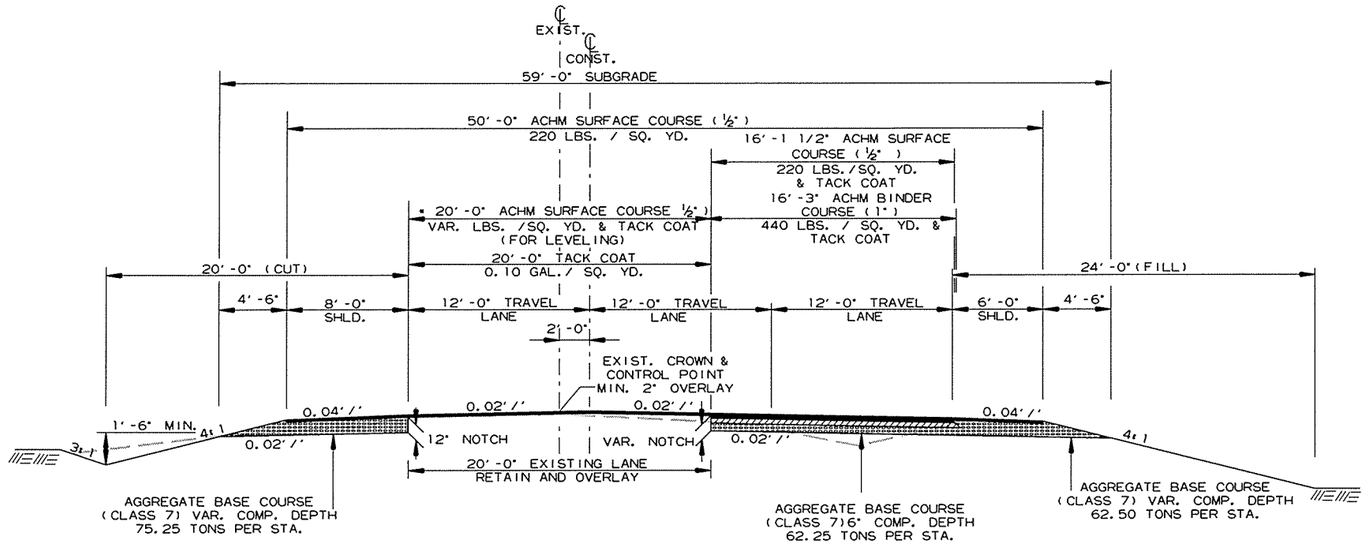
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

TANGENT SECTION
3 LANE SECTION - NOTCH AND WIDENING

NOTES:
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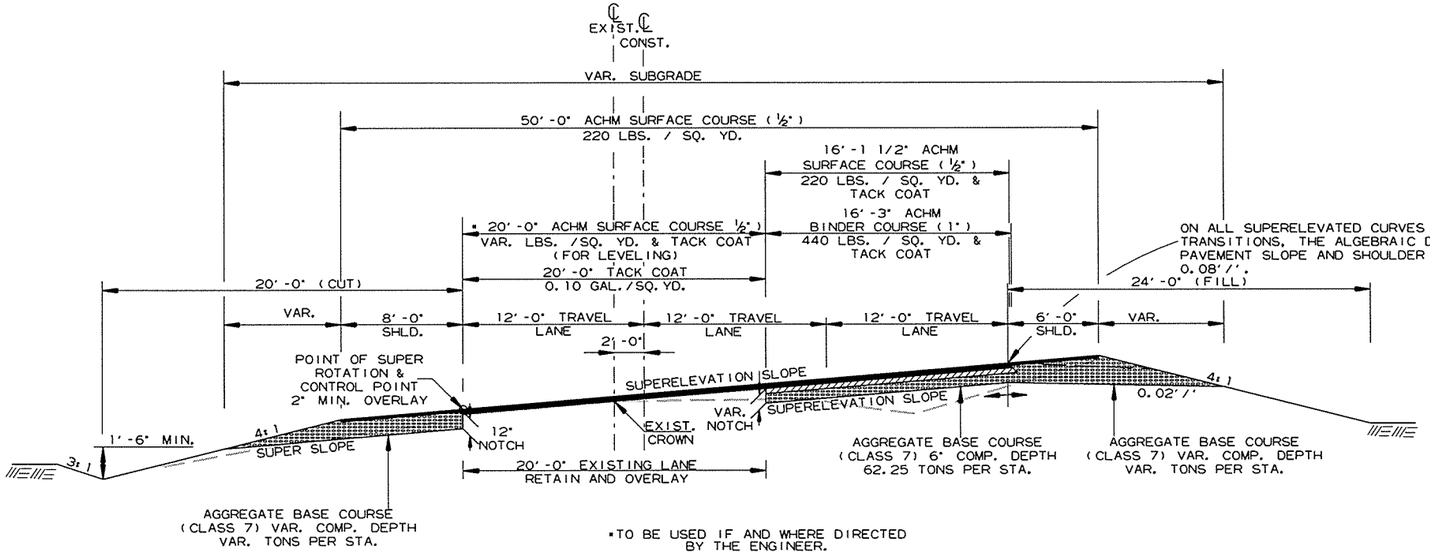

ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

SUPERELEVATION SECTION
3 LANE SECTION - NOTCH AND WIDENING

6/29/2015

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TYPICAL SECTIONS OF IMPROVEMENT

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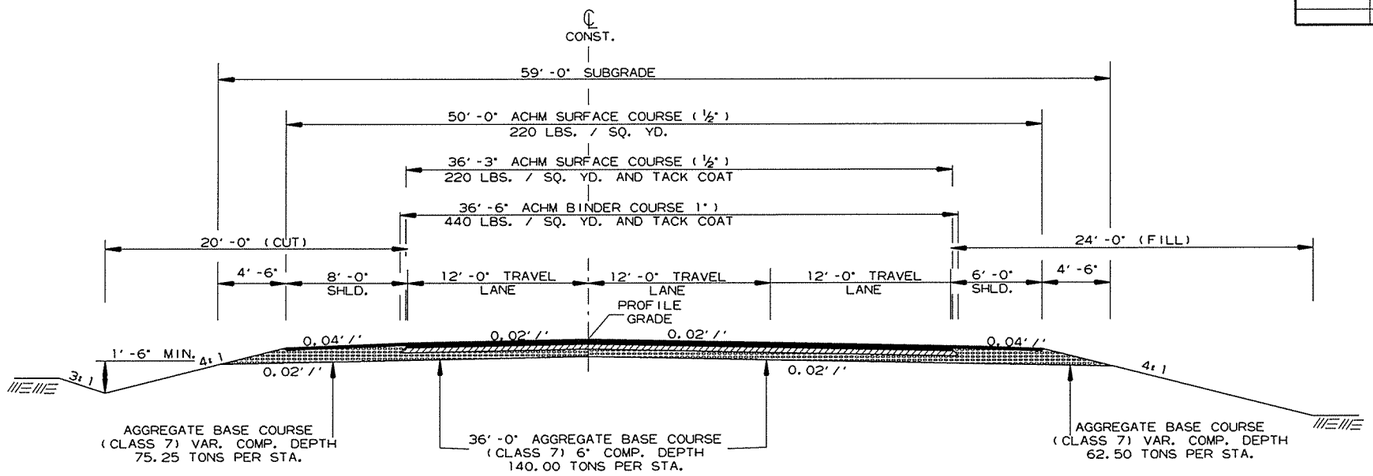
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



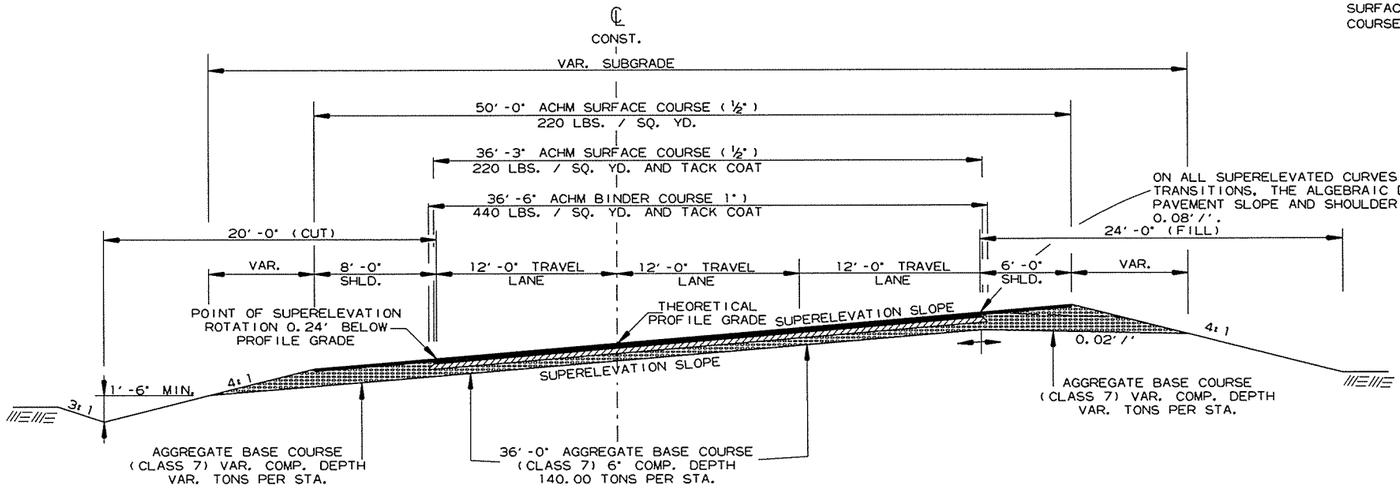
TANGENT SECTION
3 LANE SECTION - FULL DEPTH

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

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" 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 INDICATED.

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 (½") IN LIEU OF AGGREGATE BASE COURSE IN SHOULDERS.



SUPERELEVATION SECTION
3 LANE SECTION - FULL DEPTH

6/29/2015

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TYPICAL SECTIONS OF IMPROVEMENT

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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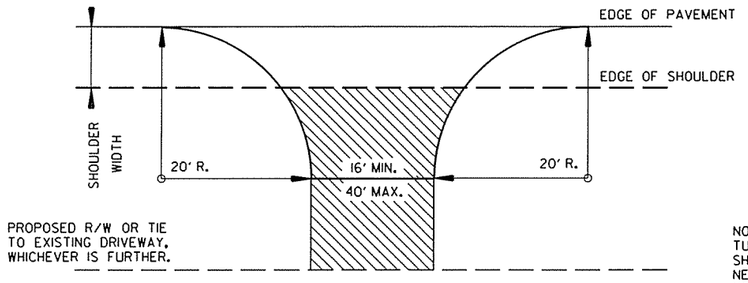
(2) SPECIAL DETAILS

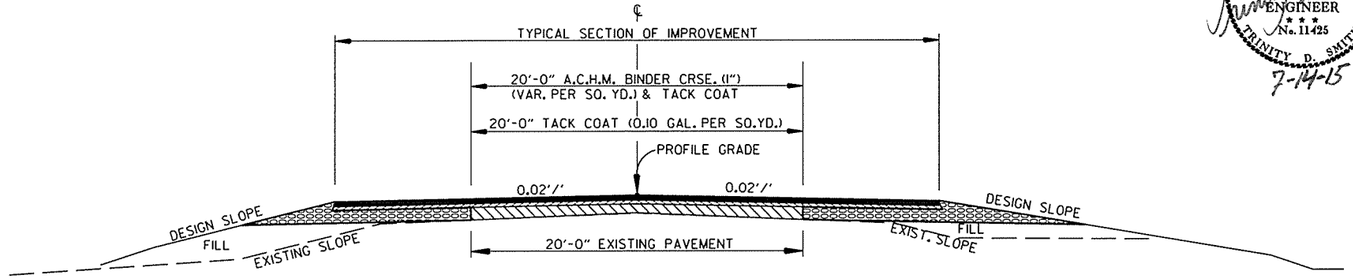
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

DETAIL FOR DRIVEWAY TURNOUTS

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



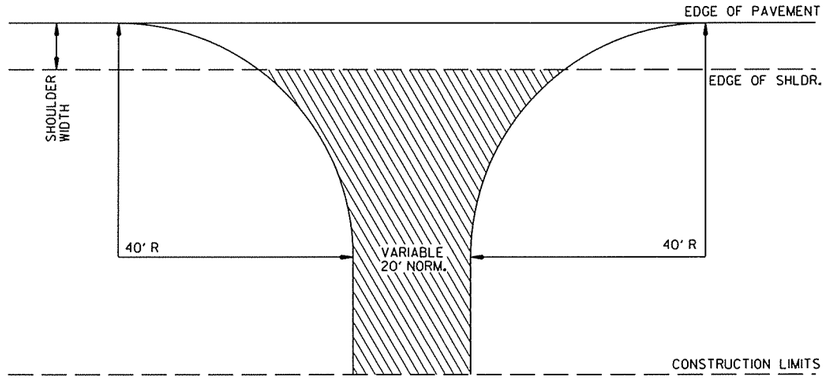
METHOD OF RAISING GRADE

NOTES:

(1) THIS DETAIL TO BE USED ONLY 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.

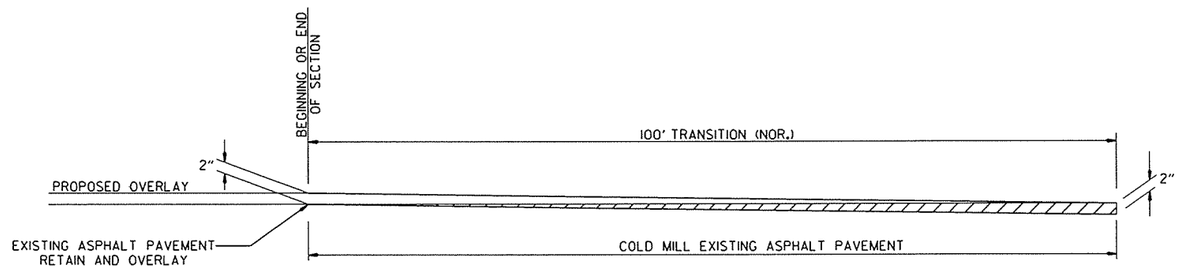
(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATION, EDITION OF 2014.



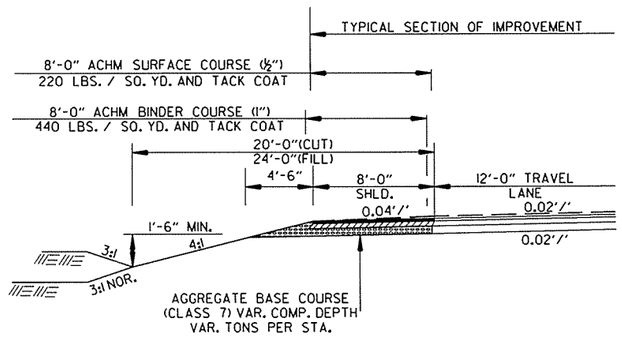
ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

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

DETAIL FOR COUNTY ROAD TURNOUTS



DETAIL FOR TRANSITIONS



TYPICAL SECTION OF SHOULDER IMPROVEMENT FOR TRAFFIC SHIFT

LEFT SHOULDER
STA. 265+00 - STA. 282+00

6/30/2015

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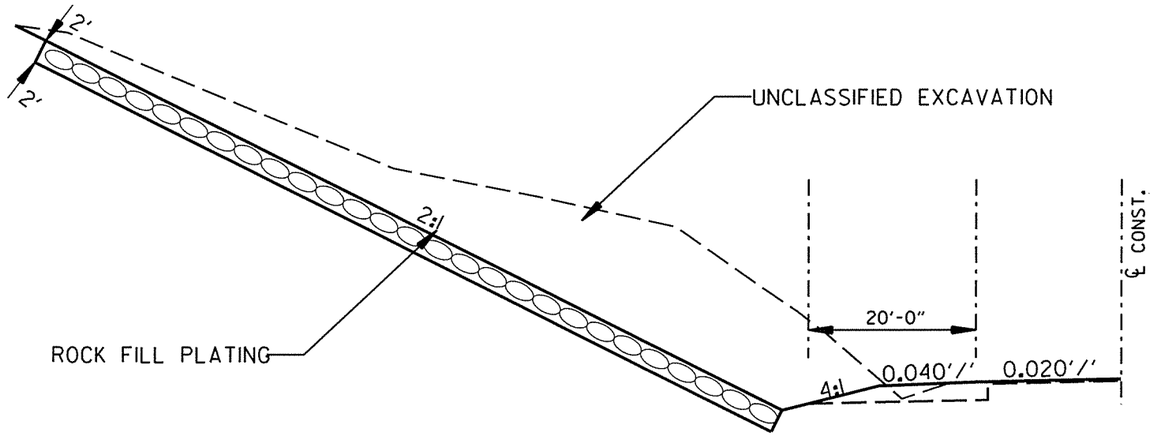
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

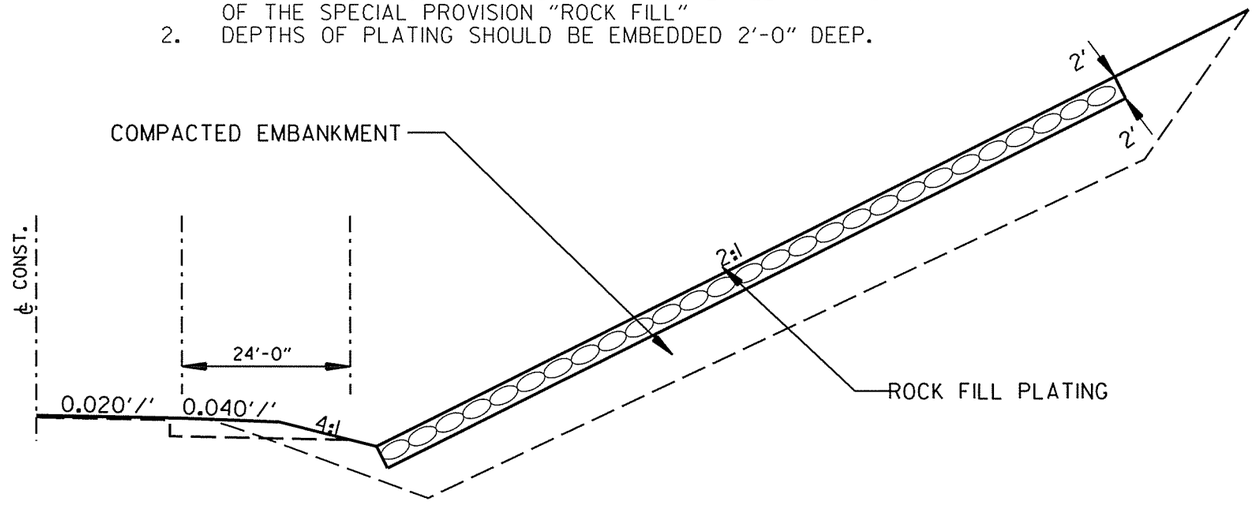


DETAIL SHOWING SLOPE PLATING
STA. 275+00 TO STA. 282+00 LT.

NOTE: REFER TO CROSS SECTIONS AND QUANTITY SHEETS FOR QUANTITIES.

NOTE:

1. SHOULD BE CONSTRUCTED USING MATERIAL MEETING THE REQUIREMENTS OF THE SPECIAL PROVISION "ROCK FILL"
2. DEPTHS OF PLATING SHOULD BE EMBEDDED 2'-0" DEEP.

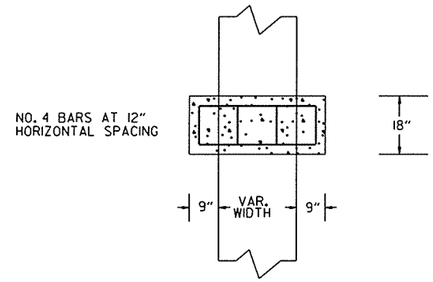


DETAIL SHOWING SLOPE PLATING
STA. 283+00 TO STA. 286+00 RT.
STA. 290+00 TO STA. 292+00 RT.

NOTE: REFER TO CROSS SECTIONS AND QUANTITY SHEETS FOR QUANTITIES.

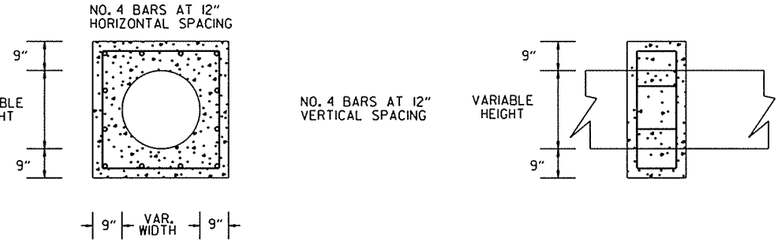
NOTE:

1. SHOULD BE CONSTRUCTED USING MATERIAL MEETING THE REQUIREMENTS OF THE SPECIAL PROVISION "ROCK FILL"
2. DEPTHS OF PLATING SHOULD BE EMBEDDED 2'-0" DEEP.



TOP VIEW

MIN 3" COVER



FRONT VIEW

SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL

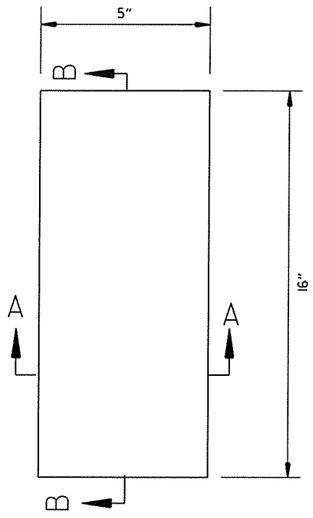
6/30/2015

R080464.DGN

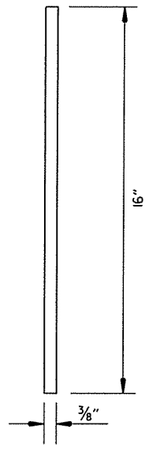
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080464	8	115

(2) SPECIAL DETAILS

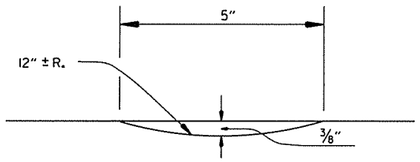
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



PLAN



SECTION B-B

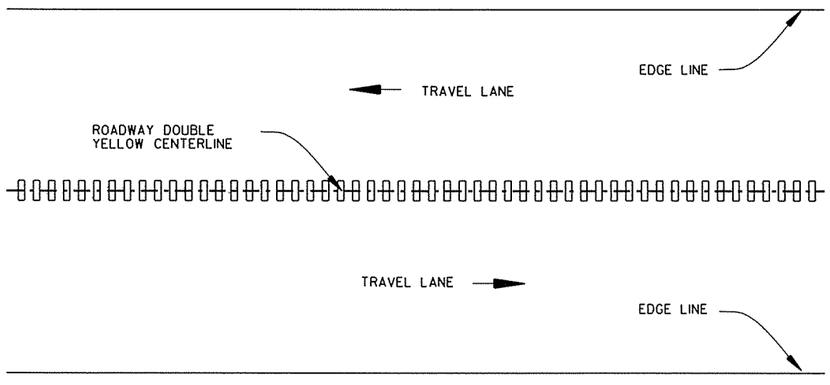


SECTION A-A

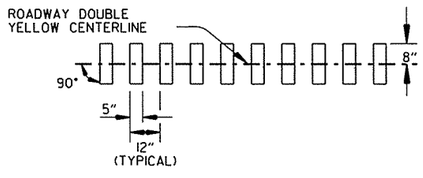
DETAILS OF RUMBLE STRIPS

NOTES:

1. CENTERLINE RUMBLE STRIPS SHALL FOLLOW THE ROADWAY CENTERLINE MARKINGS BUT MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE CENTERLINE AS DIRECTED BY THE ENGINEER. CENTERLINE RUMBLE STRIPS SHALL NOT BE PLACED ACROSS INTERSECTIONS WHERE CENTERLINE PAVEMENT MARKINGS DO NOT EXIST.
2. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT ROADWAY CROWN MAY BE NECESSARY.
3. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED ON CONCRETE BRIDGE DECKS OR APPROACH SLABS.
4. ANY DAMAGE TO EXISTING PAVEMENT OR OTHER HIGHWAY FEATURES RESULTING FROM THE RUMBLE STRIP CONSTRUCTION OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO COST TO THE DEPARTMENT.
5. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE CENTERLINE ON WHICH RUMBLE STRIPS HAS BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR TURNOUTS OR OTHER PUBLIC ROADS INTERSECTIONS WHERE RUMBLE STRIPS HAS NOT BEEN CONSTRUCTED.
6. CENTERLINE RUMBLE STRIPS SHALL NOT BE INSTALLED IN PASSING ZONES.



PLAN VIEW OF CENTERLINE RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
ALONG CENTERLINE OF ROADWAY

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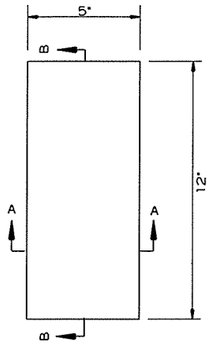
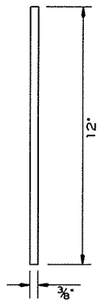
				6	ARK.			
				JOB NO.		080464	9	115

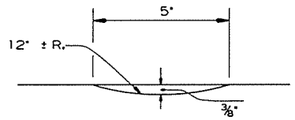
(2) SPECIAL DETAILS



PLAN

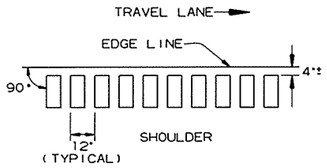


SECTION B-B

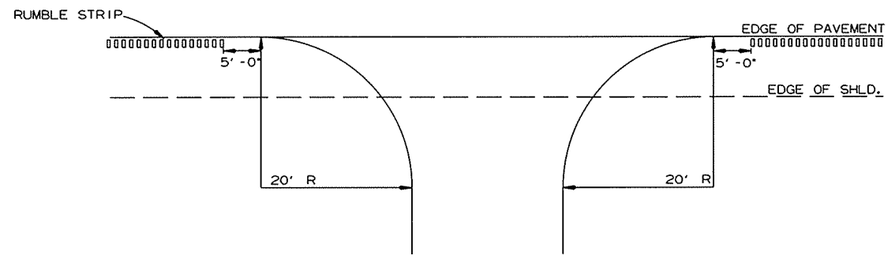


SECTION A-A

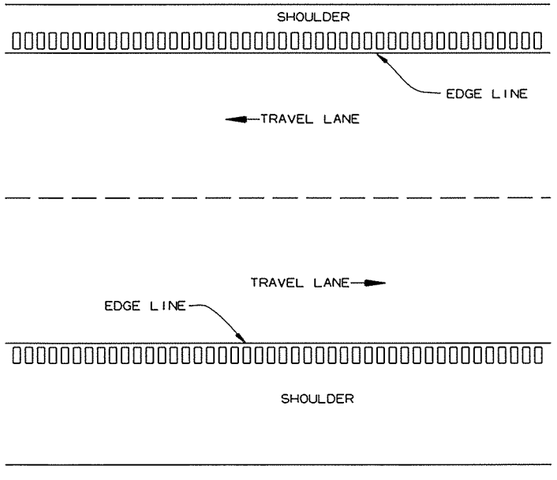
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



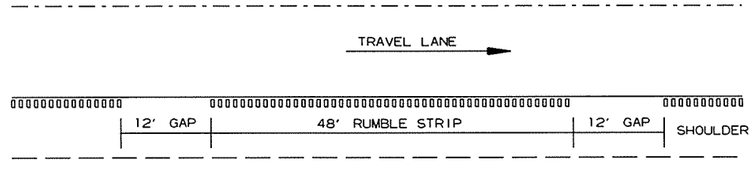
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

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 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



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

DETAIL FOR GAP PATTERN RUMBLE STRIP

6/30/2015

R080464.DGN

SPECIAL DETAILS

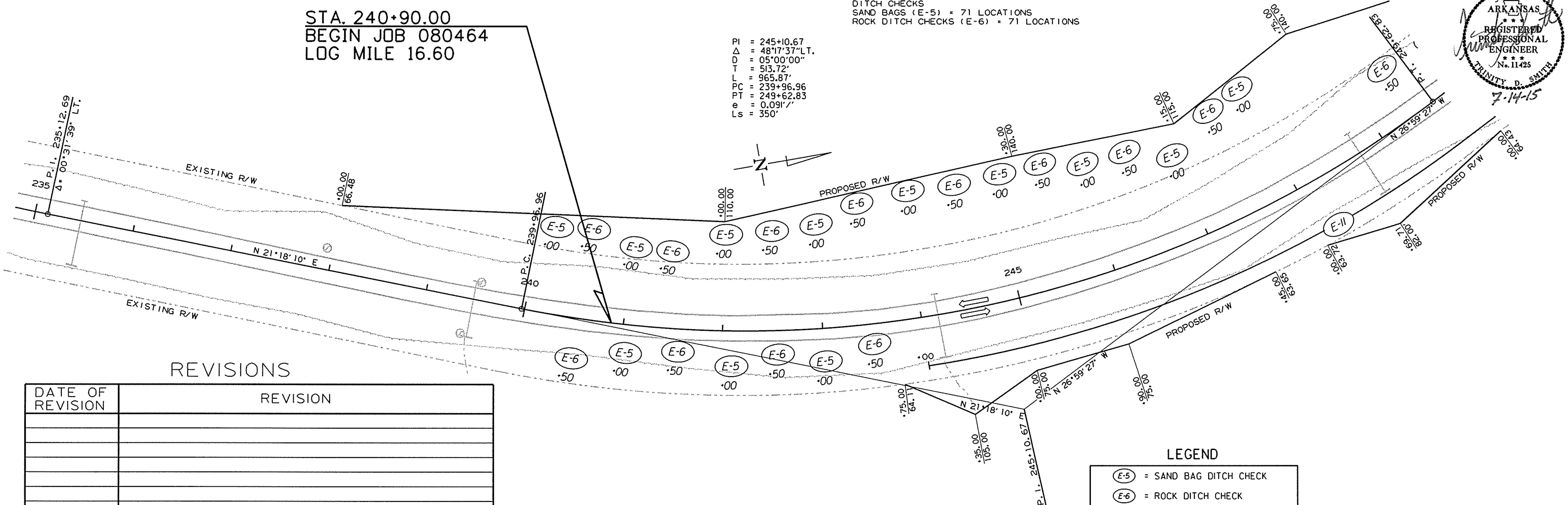
SILT FENCE (E-11)
STA. 244+00 TO STA. 251+25 ON RT. = 775 LIN. FT.
STA. 254+00 TO STA. 257+00 ON LT. = 316 LIN. FT.
STA. 254+00 TO STA. 276+00 ON RT. = 2248 LIN. FT.
STA. 282+00 TO STA. 286+00 ON RT. = 380 LIN. FT.
STA. 290+00 TO STA. 292+00 ON RT. = 250 LIN. FT.
STA. 302+00 TO STA. 304+00 ON RT. = 220 LIN. FT.

DITCH CHECKS
SAND BAGS (E-5) = 71 LOCATIONS
ROCK DITCH CHECKS (E-6) = 71 LOCATIONS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
7-14-15

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

PI = 245+10.67
Δ = 48°17'37"LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.091'/'
Ls = 350'



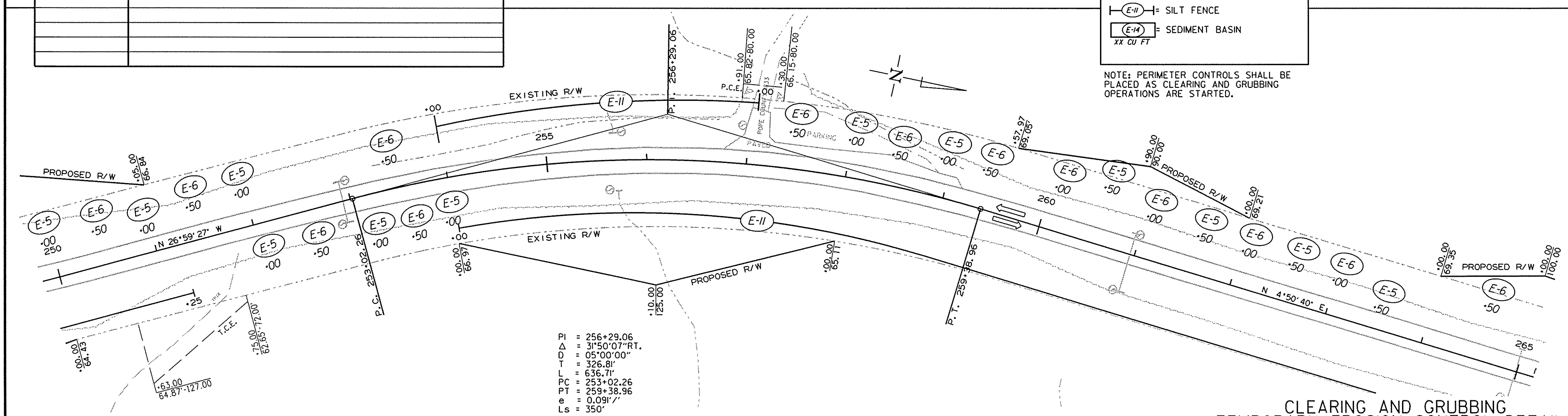
REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5)	= SAND BAG DITCH CHECK
(E-6)	= ROCK DITCH CHECK
(E-11)	= SILT FENCE
(E-14) XX CU FT	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.



PI = 256+29.06
Δ = 31°50'07"RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

CLEARING AND GRUBBING
TEMPORARY EROSION 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.		080464	11	115

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

PI = 269+04.03
Δ = 39°08'36"LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

PI = 276+51.89
Δ = 06°33'18"LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

6/30/2015

R080464.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.		080464	12	115

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
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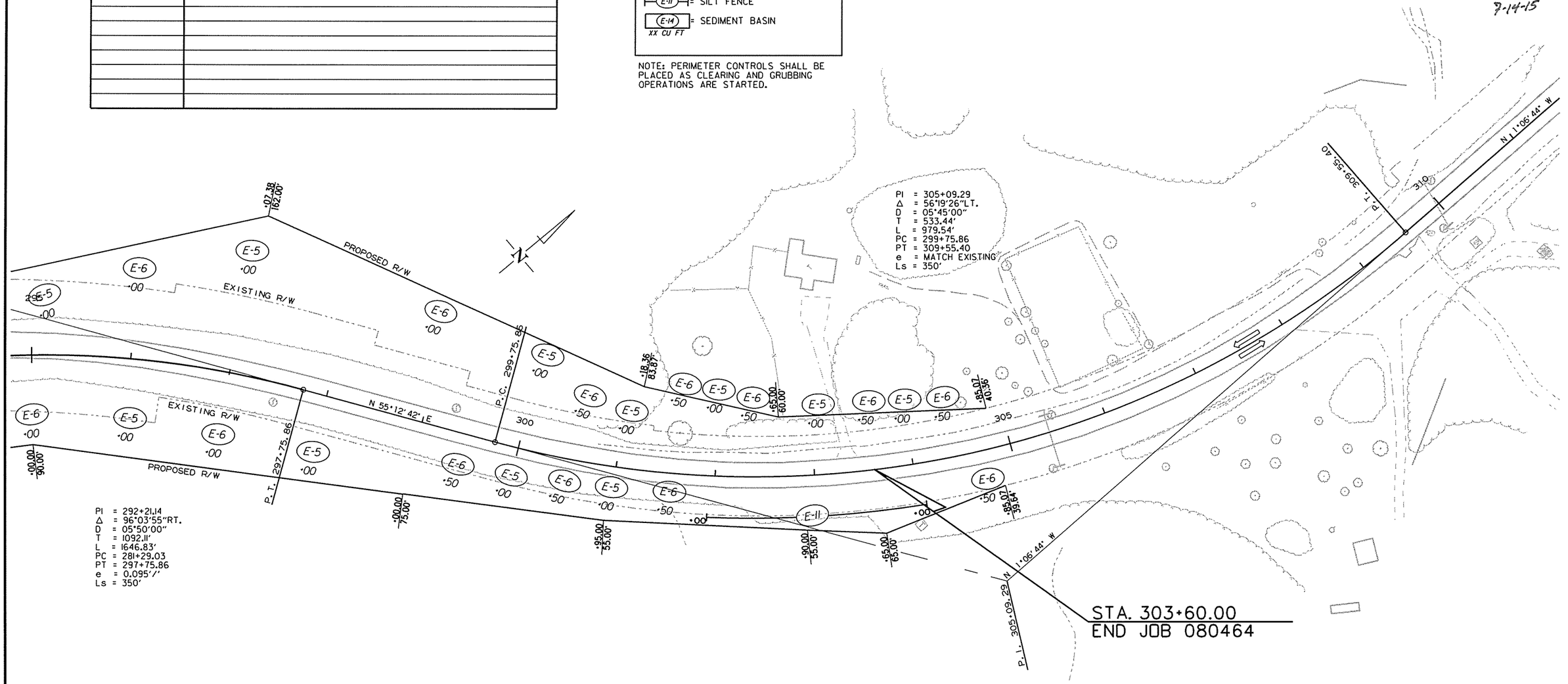
No. 11425
TRINITY D. SMITH
7-14-15



CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

6/30/2015

R080464.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.		080464	13	115

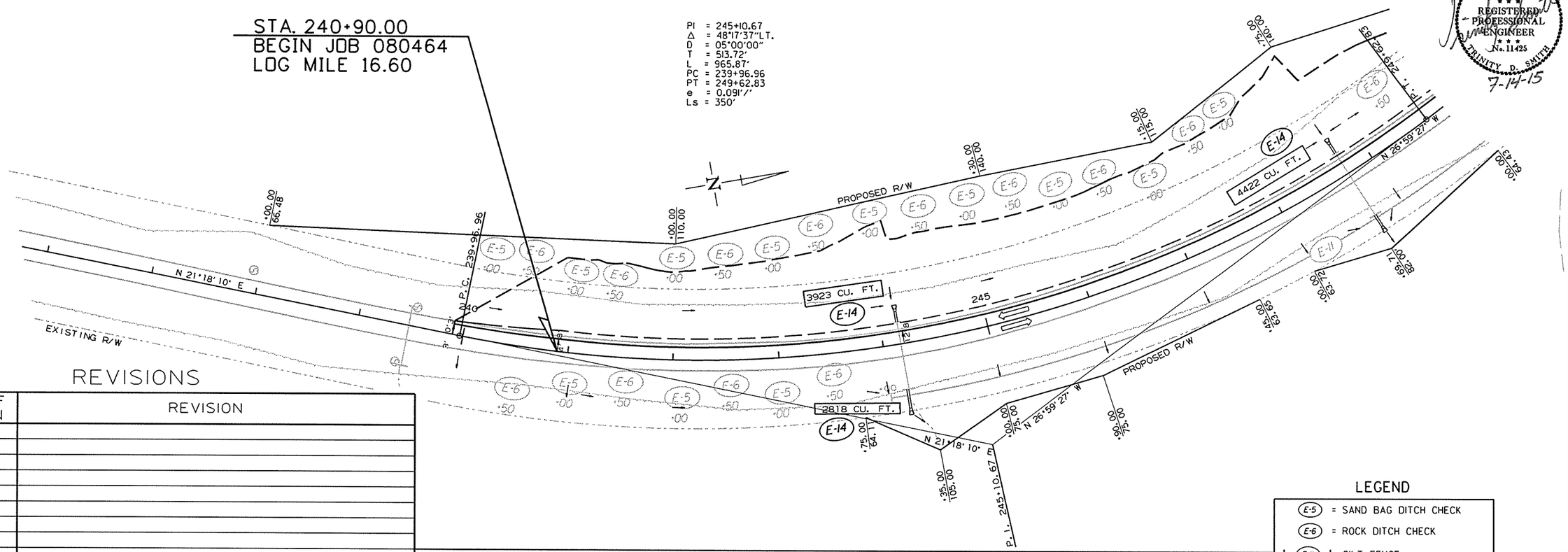
(2) TEMPORARY EROSION CONTROL DETAILS

DITCH CHECKS
SAND BAGS (E-5) = 5 LOCATIONS
ROCK DITCH CHECKS (E-6) = 4 LOCATIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

PI = 245+10.67
Δ = 48°17'37"LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.091'/'
Ls = 350'



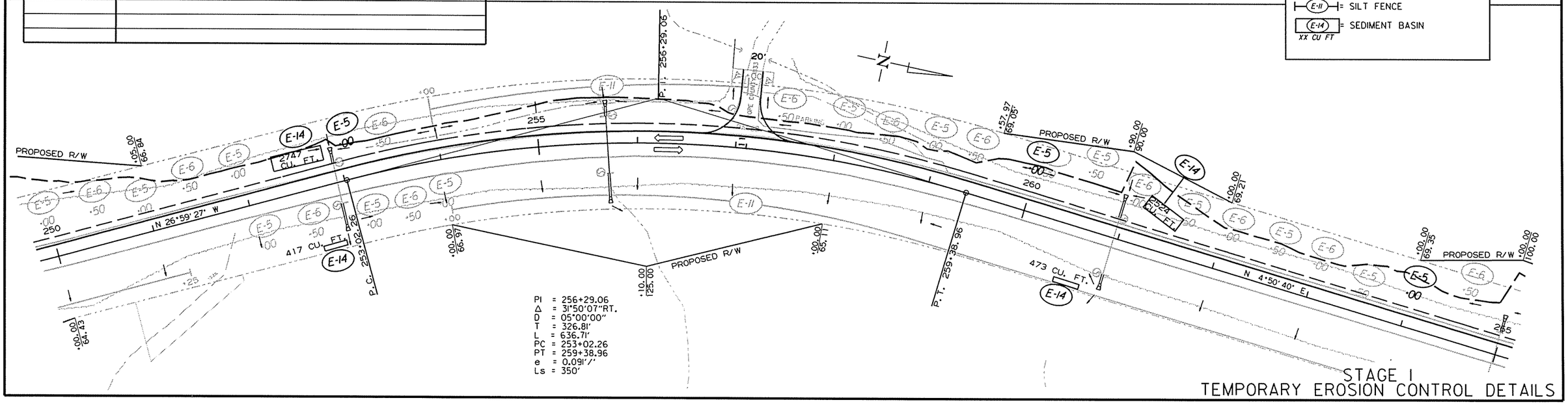
REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN, XX CU FT

PI = 256+29.06
Δ = 31°50'07"RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'



STAGE I
TEMPORARY EROSION CONTROL DETAILS

6/30/2015

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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.		080464	14	115

(2) TEMPORARY EROSION CONTROL DETAILS

PI = 269+04.03
Δ = 39°08'36"LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

PI = 276+51.89
Δ = 06°33'18"LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN
  XX CU FT

PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

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STAGE I
TEMPORARY EROSION 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.		080464	15	115

(2) TEMPORARY EROSION CONTROL DETAILS

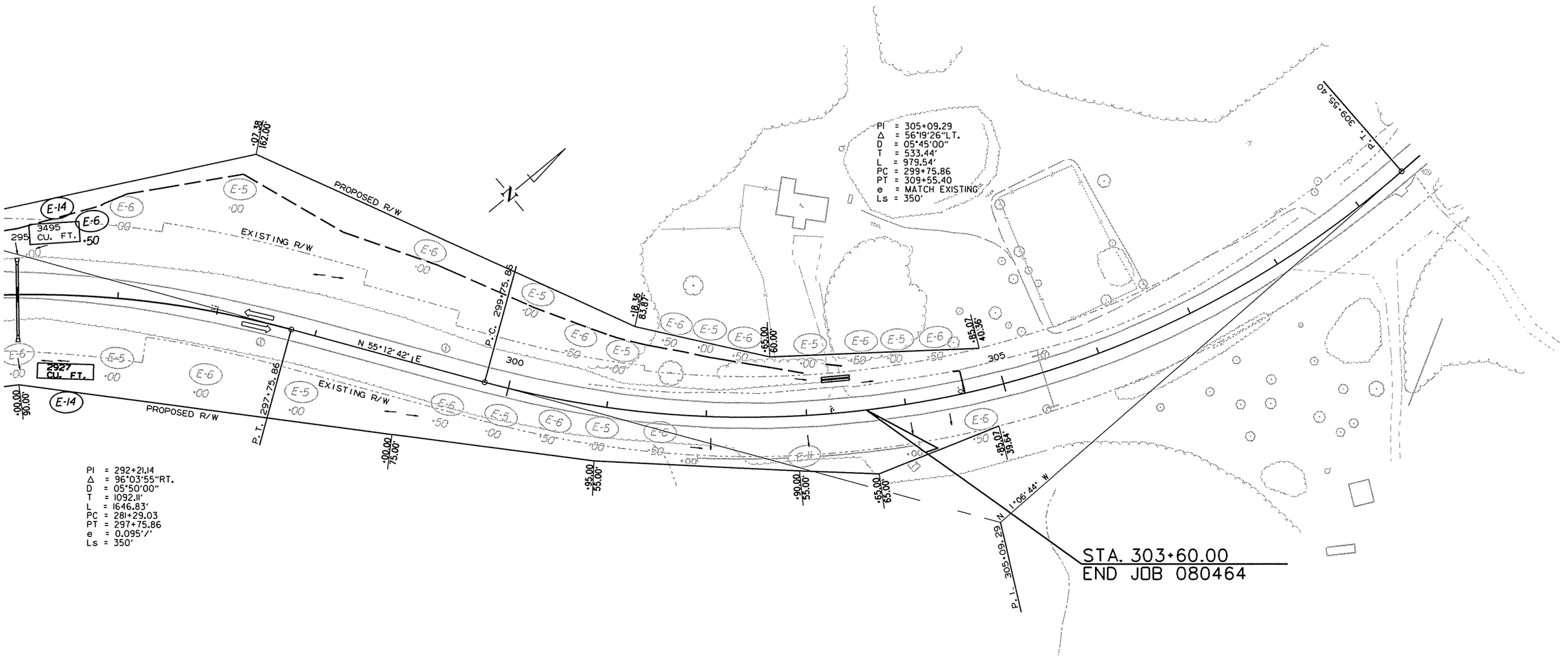
REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN
  XX CU FT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



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STAGE I
TEMPORARY EROSION 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.		080464	16	115

(2) TEMPORARY EROSION CONTROL DETAILS

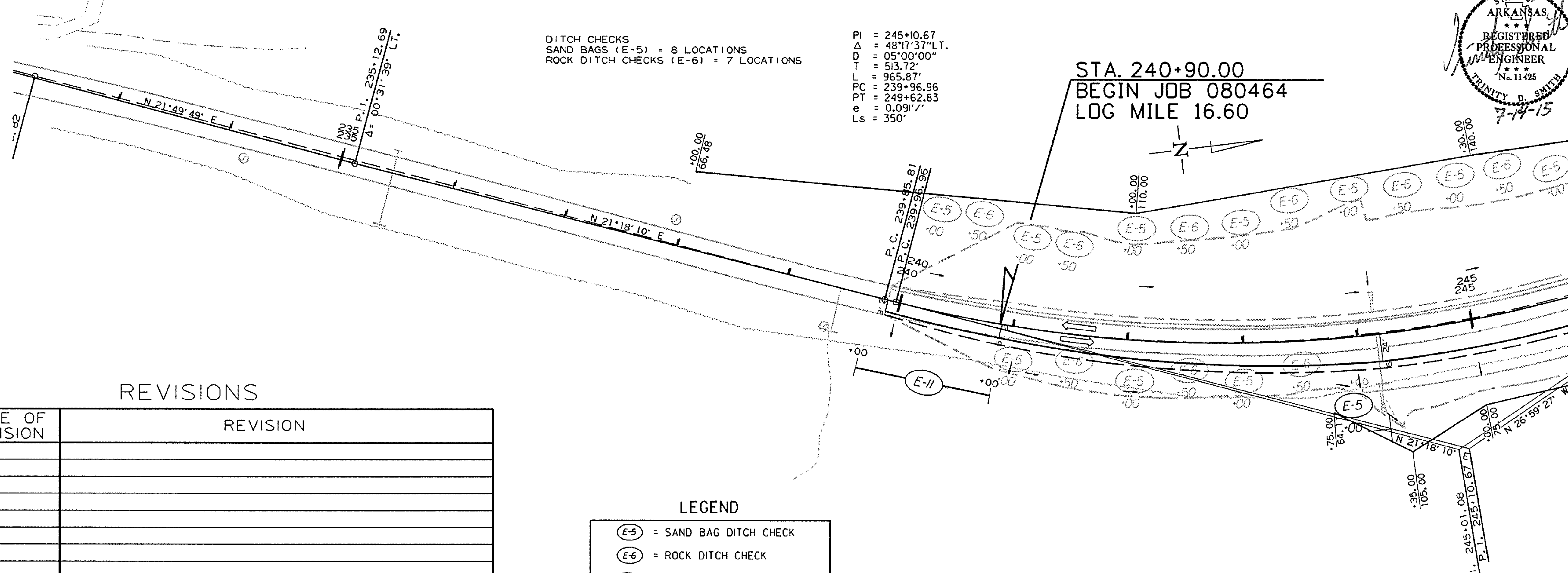
STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 11425 — TRINITY D. SMITH — 7-14-15

SILT FENCE (E-11)
STA. 240+00 TO STA. 241+00 ON RT. = 100 LIN. FT.
STA. 251+50 TO STA. 252+00 ON RT. = 50 LIN. FT.
STA. 281+00 TO STA. 282+00 ON RT. = 120 LIN. FT.
STA. 286+00 TO STA. 286+70 ON RT. = 70 LIN. FT.
STA. 304+00 TO STA. 304+60 ON RT. = 70 LIN. FT.

DITCH CHECKS
SAND BAGS (E-5) = 8 LOCATIONS
ROCK DITCH CHECKS (E-6) = 7 LOCATIONS

PI = 245+10.67
Δ = 48°17'37"LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.091'/'
Ls = 350'

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

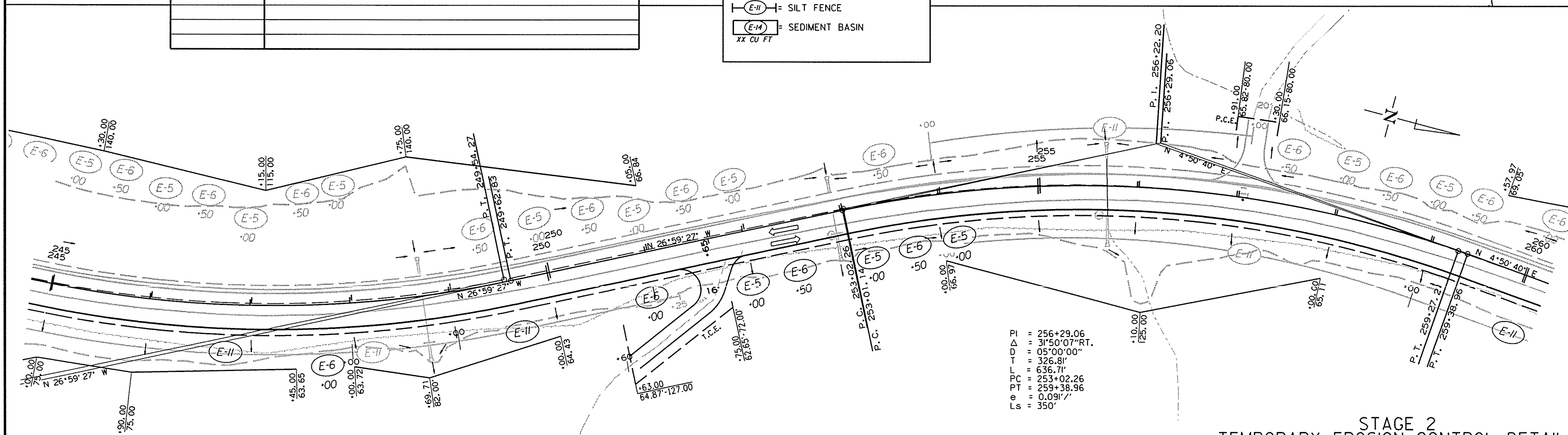


REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5)	= SAND BAG DITCH CHECK
(E-6)	= ROCK DITCH CHECK
(E-11)	= SILT FENCE
(E-14) XX CU FT	= SEDIMENT BASIN



PI = 256+29.06
Δ = 31°50'07"RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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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.		080464	17	115

(2) TEMPORARY EROSION CONTROL DETAILS

NEW LOCATION

PI = 269+04.03
Δ = 39°08'36"LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN
  XX CU FT

PI = 276+51.89
Δ = 06°33'18"LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

6/30/2015

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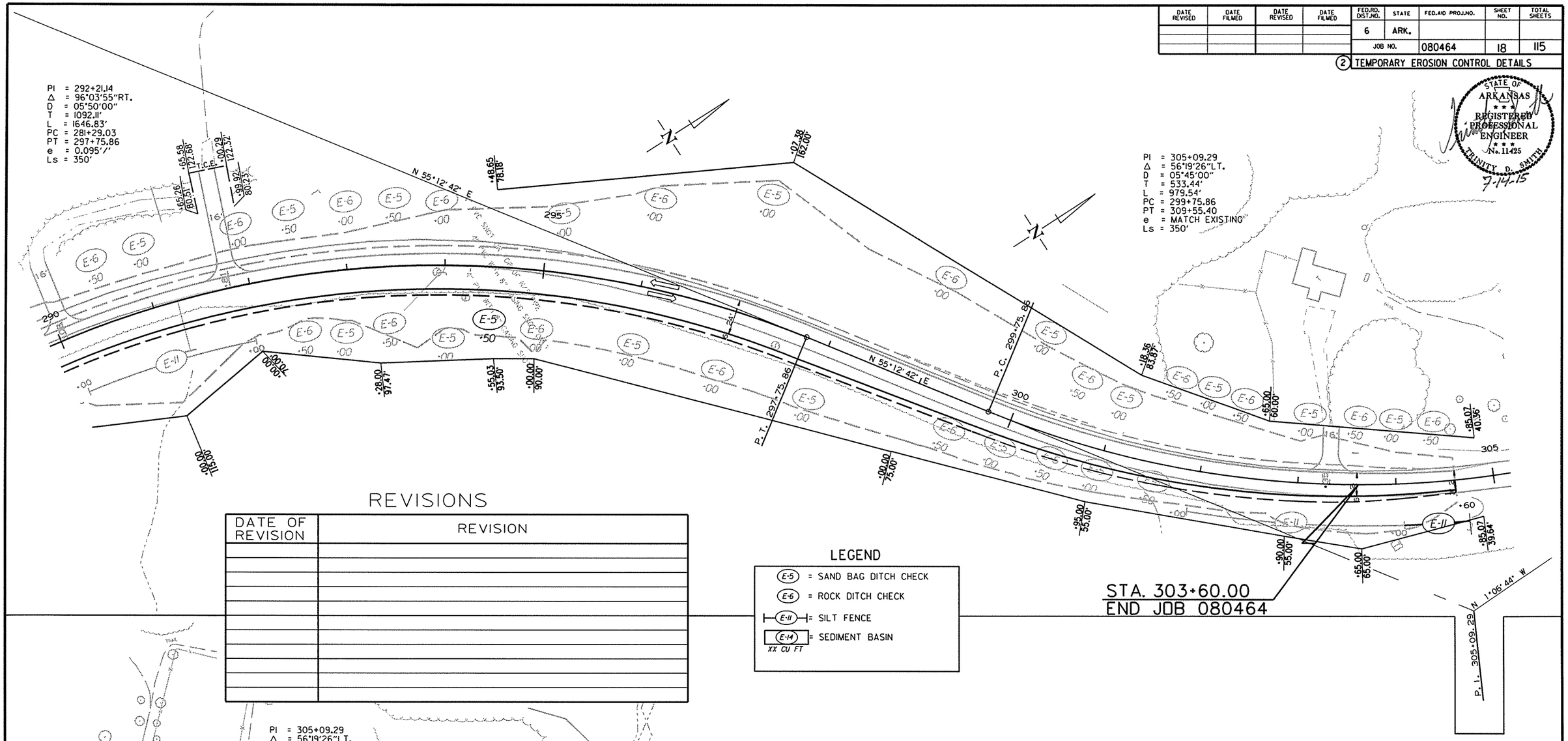
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080464	18	115

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

PI = 305+09.29
Δ = 56°19'26"LT.
D = 05°45'00"
T = 533.44'
L = 979.54'
PC = 299+75.86
PT = 309+55.40
e = MATCH EXISTING
Ls = 350'



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN, XX CU FT

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

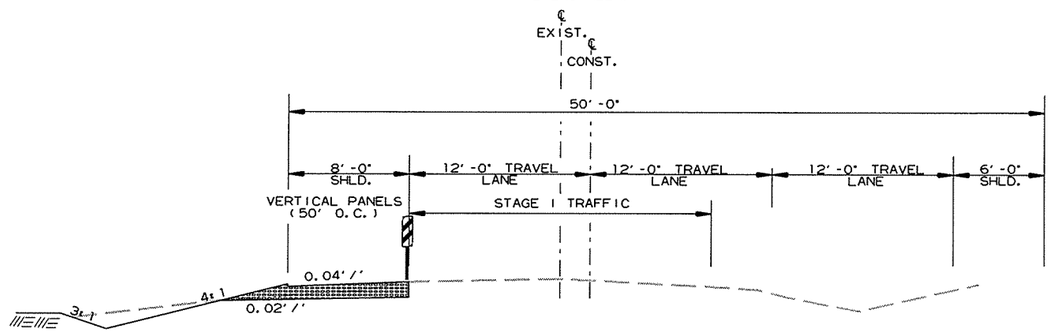
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080464	19	115

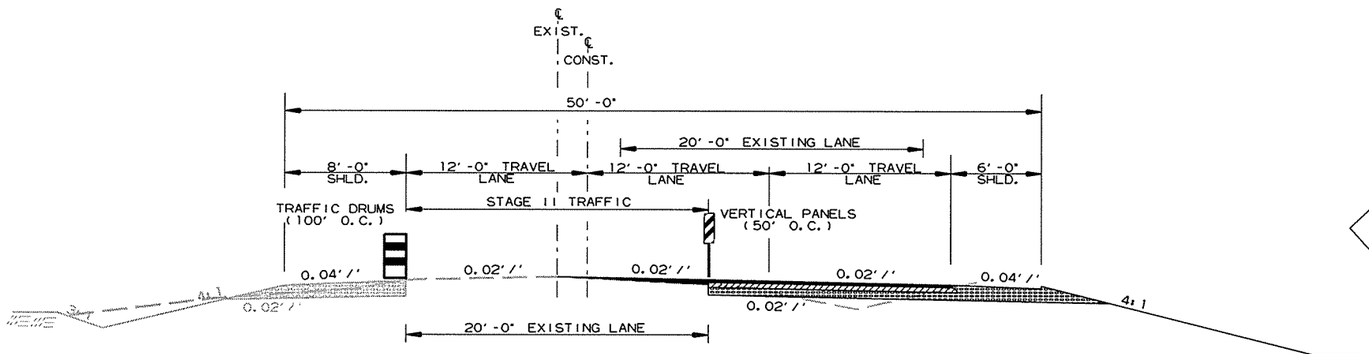
(2) MAINTENANCE OF TRAFFIC

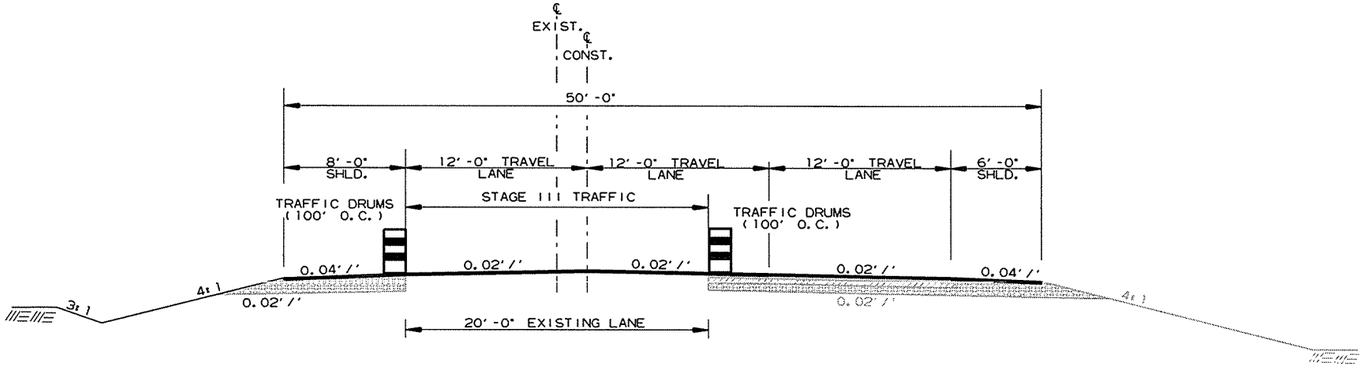
SHOULDER CLOSED — (2) RSP-1 (48" X 30") TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

SHOULDER DROP OFF — (2) W8-9a (36" X 36") TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

DO NOT PASS — (4) R4-1 (24" X 30") TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.







SEQUENCE OF CONSTRUCTION

STAGE 1:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE.
PLACE LEVELING COURSE AND CONSTRUCTION PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
NOTCH AND WIDEN ON LT. WHERE SHOWN.
EXTEND MOST CROSS DRAINS LT.
CONSTRUCT DRIVES WHERE SHOWN ON LT.

STAGE 2:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE WHERE SHOWN.
SHIFT TRAFFIC TO NEW LOCATION FROM STA. 265+00 - STA. 282+00.
NOTCH AND WIDEN ON RT. WHERE SHOWN.
EXTEND CROSS DRAINS ON RT. WHERE SHOWN.
CONSTRUCT DRIVES WHERE SHOWN ON RT.

STAGE 3:
SHIFT TRAFFIC TO CONSTRUCTION CENTERLINE.
OBLITERATE EXISTING PAVEMENT WHERE INDICATED ON PLANS.
COLD MILL TRANSITION AREAS.
INSTALL FINAL LAYER OF ACHM SURFACE COURSE.
INSTALL PERMANENT PAVEMENT MARKINGS.

MAINTENANCE OF TRAFFIC NOTES:

CONSTRUCTION PAVEMENT MARKING QUANTITIES BASED ON ONE APPLICATION OF RT. & LT. EDGE LINES AND DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH THE REMAINDER OF THE JOB. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

TEMPORARY DRIVES AND ROADS ARE TO BE CONSTRUCTED DURING STAGE THEY APPEAR.

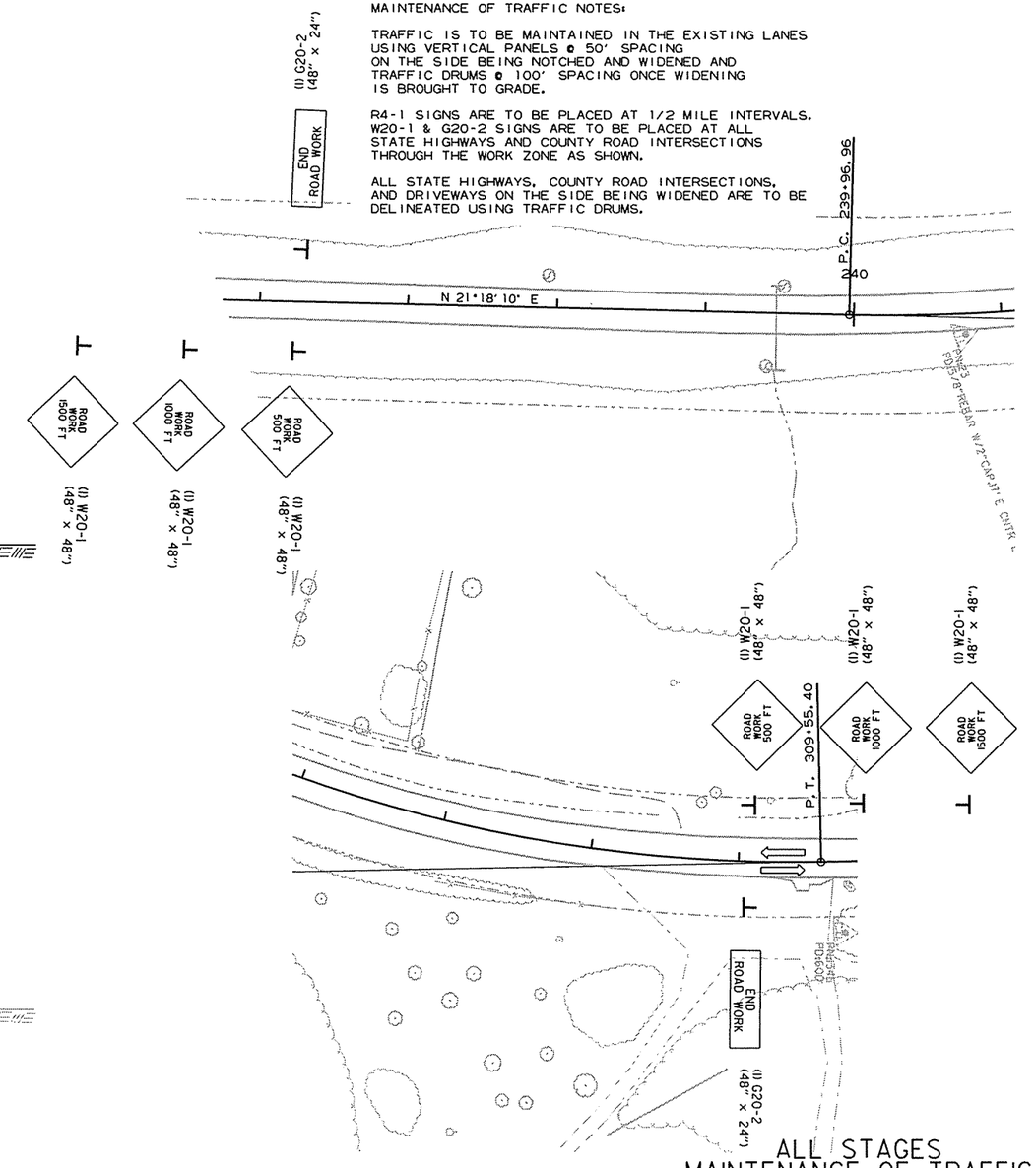
MAINTENANCE OF TRAFFIC NOTES:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANES USING VERTICAL PANELS @ 50' SPACING ON THE SIDE BEING NOTCHED AND WIDENED AND TRAFFIC DRUMS @ 100' SPACING ONCE WIDENING IS BROUGHT TO GRADE.

R4-1 SIGNS ARE TO BE PLACED AT 1/2 MILE INTERVALS. W20-1 & G20-2 SIGNS ARE TO BE PLACED AT ALL STATE HIGHWAYS AND COUNTY ROAD INTERSECTIONS THROUGH THE WORK ZONE AS SHOWN.

ALL STATE HIGHWAYS, COUNTY ROAD INTERSECTIONS, AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



ALL STAGES MAINTENANCE OF TRAFFIC

6/10/2015

RD080464.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.		080464	20	115

(2) MAINTENANCE OF TRAFFIC

MAINTENANCE OF TRAFFIC QUANTITIES
STAGE 1:
SIGNS = 206.00 SQ.FT.

VERTICAL PANELS = 27 EACH (50' O.C. NOR.)

TRAFFIC DRUMS (10' O.C.) = 18 EACH

TRAFFIC DRUMS (20' O.C.) = 253 EACH

BARRICADE (TYPE III)
8' LT. = 2 EACH
8' RT. = 2 EACH

CONSTRUCTION PAVEMENT MARKINGS = 25080 LIN. FT.

SEQUENCE OF CONSTRUCTION
STAGE 1:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE.
PLACE LEVELING COURSE AND CONSTRUCTION PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
NOTCH AND WIDEN ON LT. WHERE SHOWN.
EXTEND MOST CROSS DRAINS LT.
CONSTRUCT DRIVES WHERE SHOWN ON LT.

STAGE 2:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE WHERE SHOWN.
SHIFT TRAFFIC TO NEW LOCATION FROM STA. 265+00 - STA. 282+00.
NOTCH AND WIDEN ON RT. WHERE SHOWN.
EXTEND CROSS DRAINS ON RT. WHERE SHOWN.
CONSTRUCT DRIVES WHERE SHOWN ON RT.

STAGE 3:
SHIFT TRAFFIC TO CONSTRUCTION CENTERLINE.
OBLITERATE EXISTING PAVEMENT WHERE INDICATED ON PLANS.
COLD MILL TRANSITION AREAS.
INSTALL FINAL LAYER OF ACHM SURFACE COURSE.
INSTALL PERMANENT PAVEMENT MARKINGS.

MAINTENANCE OF TRAFFIC NOTES:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANES USING VERTICAL PANELS @ 50' SPACING ON THE SIDE BEING NOTCHED AND WIDENED AND TRAFFIC DRUMS @ 100' SPACING ONCE WIDENING IS BROUGHT TO GRADE.

R4-1 SIGNS ARE TO BE PLACED AT 1/2 MILE INTERVALS. W20-1 & G20-2 SIGNS ARE TO BE PLACED AT ALL STATE HIGHWAYS AND COUNTY ROAD INTERSECTIONS THROUGH THE WORK ZONE AS SHOWN.

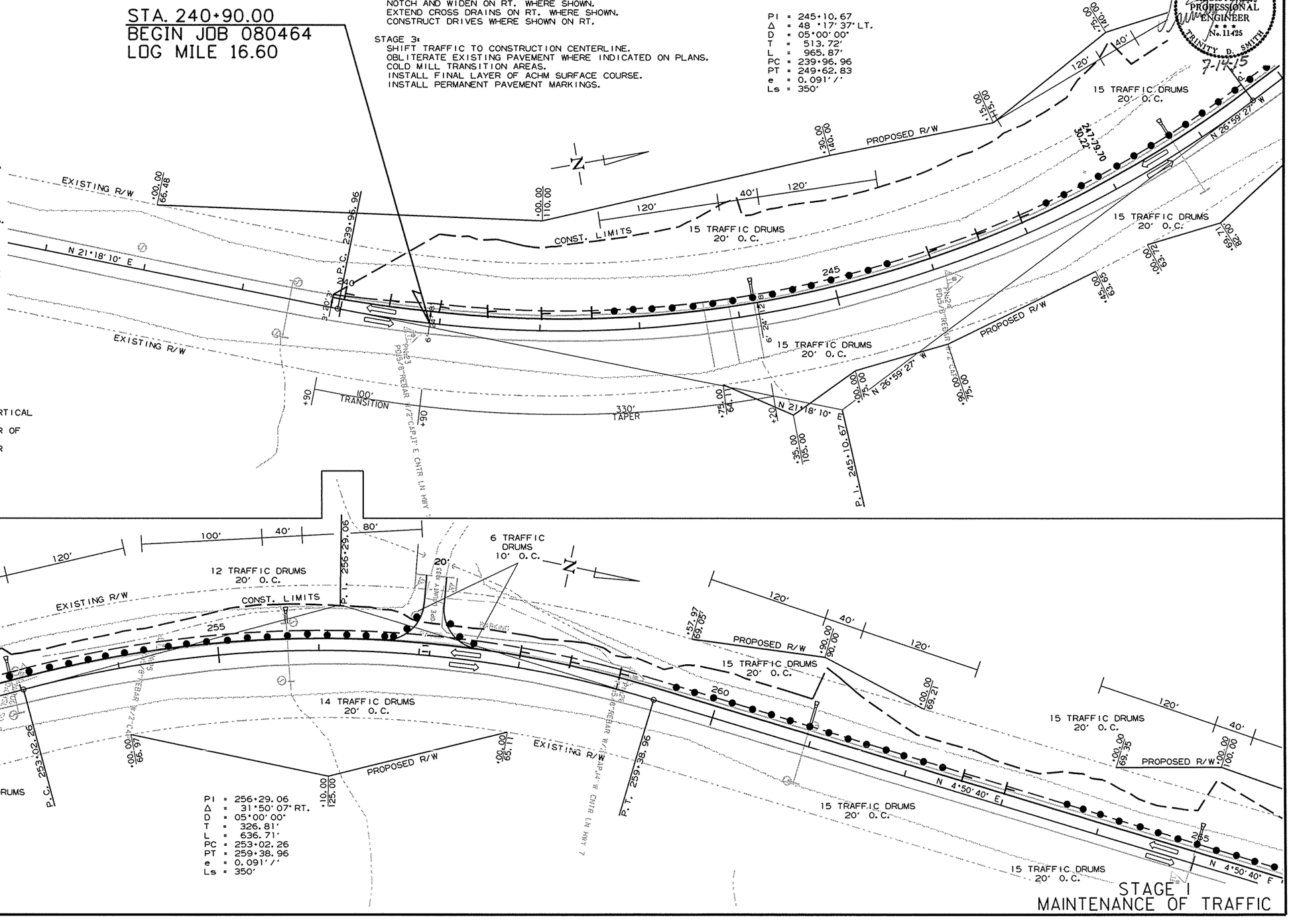
ALL STATE HIGHWAYS, COUNTY ROAD INTERSECTIONS, AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS.

MAINTENANCE OF TRAFFIC NOTES:

CONSTRUCTION PAVEMENT MARKING QUANTITIES BASED ON ONE APPLICATION OF RT. & LT. EDGE LINES AND DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH THE REMAINDER OF THE JOB. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

TEMPORARY DRIVES AND ROADS ARE TO BE CONSTRUCTED DURING STAGE THEY APPEAR.

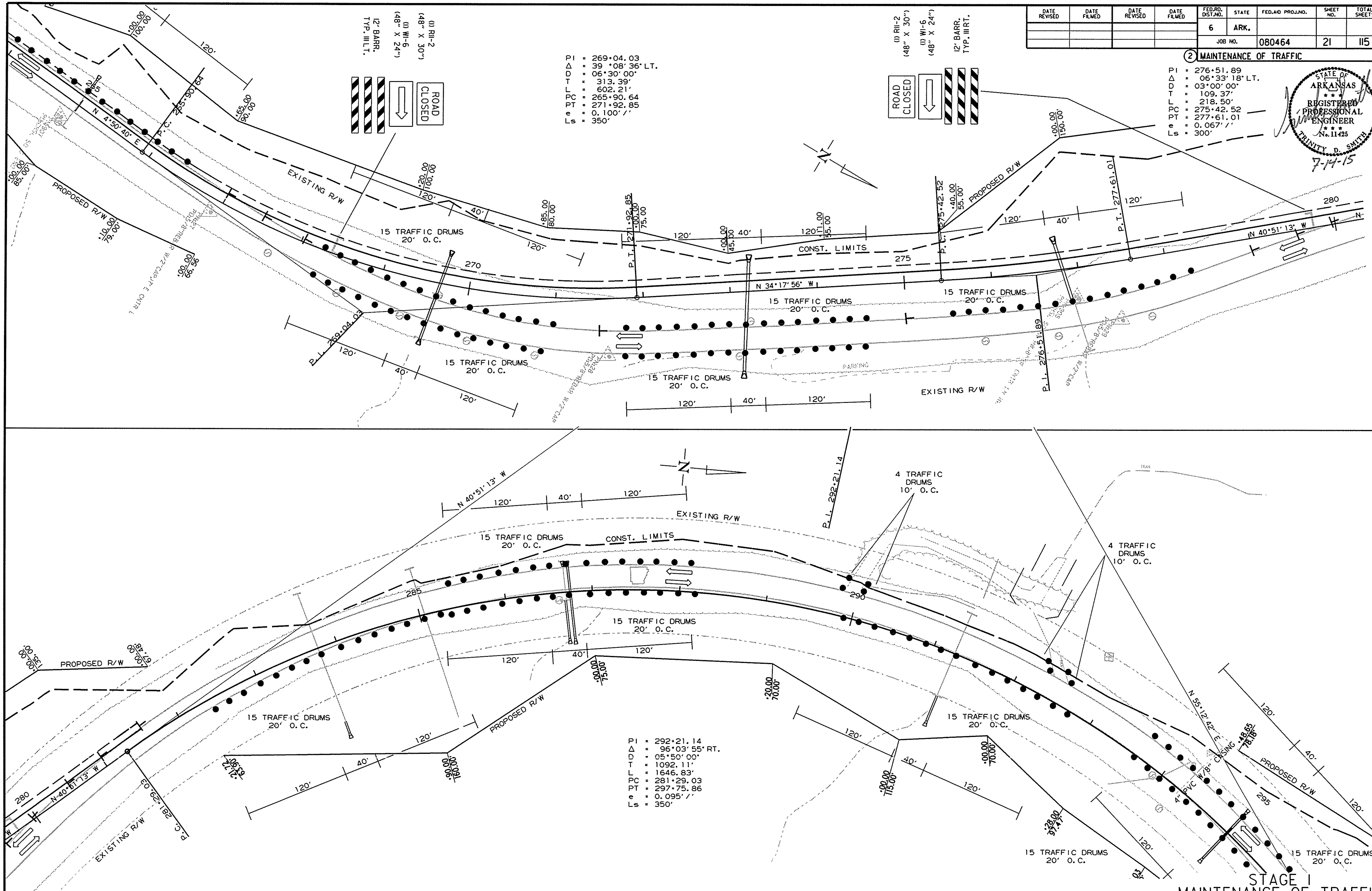


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

4/15/2015
R080464.DGN
06-26-2012 r080464.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.		080464	21	115

(2) MAINTENANCE OF TRAFFIC



STAGE I
MAINTENANCE OF TRAFFIC

4/15/2015

R080464.DGN

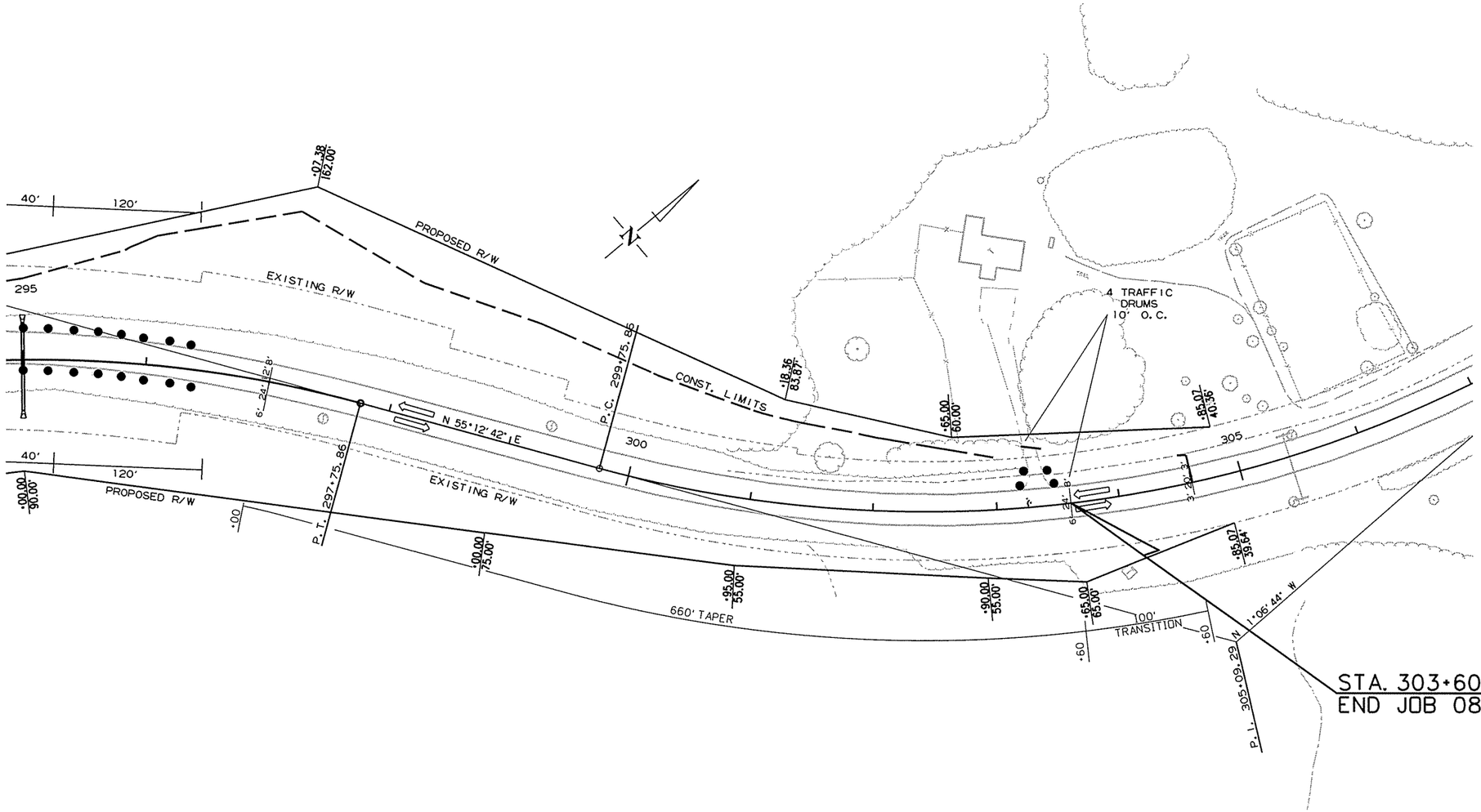
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080464	22	115

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

PI = 305+09.29
Δ = 56°19'26" LT.
D = 05°45'00"
T = 533.44'
L = 979.54'
PC = 299+79.86
PT = 309+55.40
e = MATCH EXISTING
Ls = 350'



STAGE I
MAINTENANCE OF TRAFFIC

4/15/2015

R080464.DGN

MAINTENANCE OF TRAFFIC NOTES:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANES USING VERTICAL PANELS @ 50' SPACING ON THE SIDE BEING NOTCHED AND WIDENED AND TRAFFIC DRUMS @ 100' SPACING ONCE WIDENING IS BROUGHT TO GRADE.

R4-1 SIGNS ARE TO BE PLACED AT 1/2 MILE INTERVALS. W20-1 & G20-2 SIGNS ARE TO BE PLACED AT ALL STATE HIGHWAYS AND COUNTY ROAD INTERSECTIONS THROUGH THE WORK ZONE AS SHOWN.

ALL STATE HIGHWAYS, COUNTY ROAD INTERSECTIONS, AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS.

MAINTENANCE OF TRAFFIC NOTES:

CONSTRUCTION PAVEMENT MARKING QUANTITIES BASED ON ONE APPLICATION OF RT. & LT. EDGE LINES AND DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH THE REMAINDER OF THE JOB. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

TEMPORARY DRIVES AND ROADS ARE TO BE CONSTRUCTED DURING STAGE THEY APPEAR.

MAINTENANCE OF TRAFFIC QUANTITIES
STAGE 2:
SIGNS = 245 SQ. FT.

VERTICAL PANELS = 115 EACH (50' O.C. NOR.)

TRAFFIC DRUMS (10' O.C.) = 23 EACH

TRAFFIC DRUMS (20' O.C.) = 88 EACH

TRAFFIC DRUMS (100' O.C.) = 63 EACH

CONSTRUCTION PAVEMENT MARKINGS = 6400 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS =2400
STA. 266+00 TO STA. 269+00
STA. 279+00 TO STA. 282+00

BARRICADE (TYPE III)
8' LT. = 2 EACH
8' RT. = 2 EACH

18" TEMPORARY PIPE = 96 LIN. FT.

FURNISH & INSTALL PRECAST CONCRETE BARRIER WALL = 406 LIN. FT.

SEQUENCE OF CONSTRUCTION
STAGE 1:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE.
PLACE LEVELING COURSE AND CONSTRUCTION PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
NOTCH AND WIDEN ON LT. WHERE SHOWN.
EXTEND MOST CROSS DRAINS LT.
CONSTRUCT DRIVES WHERE SHOWN ON LT.

STAGE 2:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE WHERE SHOWN.
SHIFT TRAFFIC TO NEW LOCATION FROM STA. 265+00 - STA. 282+00.
NOTCH AND WIDEN ON RT. WHERE SHOWN.
EXTEND CROSS DRAINS ON RT. WHERE SHOWN.
CONSTRUCT DRIVES WHERE SHOWN ON RT.

STAGE 3:
SHIFT TRAFFIC TO CONSTRUCTION CENTERLINE.
OBLITERATE EXISTING PAVEMENT WHERE INDICATED ON PLANS.
COLD MILL TRANSITION AREAS.
INSTALL FINAL LAYER OF ACHM SURFACE COURSE.
INSTALL PERMANENT PAVEMENT MARKINGS.

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.		080464	23	115

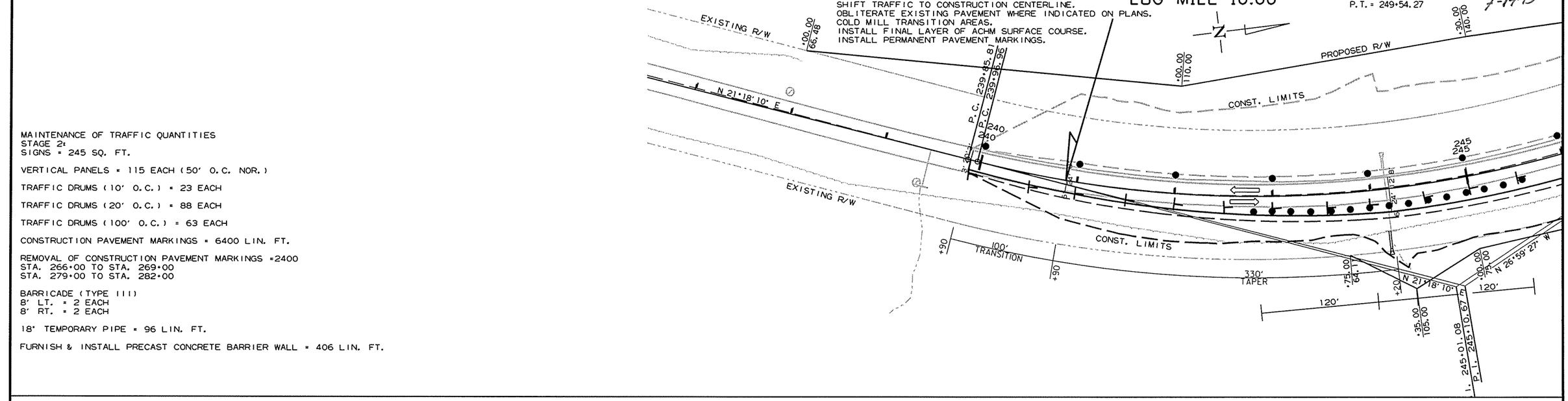
(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

PI = 245+10.67
Δ = 48°17'37" LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.091'/'
Ls = 350'

STAGE 2
P.I. = 245+01.08
Δ = 48°25'21.3" LT.
D = 5°00'00.0"
T = 515.27'
L = 968.45'
P.C. = 239+85.81
P.T. = 249+54.27



STAGE 2
P.I. = 256+22.20
Δ = 31°18'12.5" RT.
D = 5°00'00.0"
T = 321.06'
L = 626.07'
P.C. = 253+01.14
P.T. = 259+27.21

PI = 256+29.06
Δ = 31°50'07" RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

STAGE 2
MAINTENANCE OF TRAFFIC

4/15/2015

R080464.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.		080464	24	115

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

STAGE 2
P. I. = 268+50.98
Δ = 34°00'00.3" LT.
D = 6°30'00.0"
T = 269.49'
L = 523.08'
P.C. = 265+81.48
P.T. = 271+04.56

PI = 269+04.03
Δ = 39°08'36" LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

N 4°50'40" E

N 34°17'55" W

PROPOSED R/W

CONST. LIMITS

EXISTING R/W

P.C. 265+81.48

P.C. 265+90.64

P.T. 271+04.56

P.I. 269+04.03

P.I. 268+50.98

(1) W1-2L (48" X 48")

(1) W1-2R (48" X 48")

ROAD CLOSED

(1) R11-2 (48" X 30")

(1) W1-6 (48" X 24")

12' BARR. TYP. III RT.

STA. 269+66 INSTALL 18" X 54' TEMPORARY PIPE CULVERT

(4) OM-3R (12"X 36")

STA. 273+00 INSTALL 18" X 42' TEMPORARY PIPE CULVERT

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL = 406 LIN. FT.

STAGE 2
P. I. = 276+22.55
Δ = 5°16'25.3" LT.
D = 3°00'00.0"
T = 87.96'
L = 175.79'
P.C. = 275+34.59
P.T. = 277+10.38

PI = 276+51.89
Δ = 06°33'18" LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

N 40°51'13" W

N 34°17'55" W

PROPOSED R/W

EXISTING R/W

CONST. LIMITS

P.C. 275+34.59

P.C. 275+42.52

P.T. 277+10.38

P.T. 277+61.01

P.I. 276+22.55

P.I. 276+51.89

P.I. 280+92.62
Δ = 29°06.4" LT.

P.C. 281+29.03

P.I. 292+21.14

(3) OM-3L (12"X 36")

(1) R11-2 (48" X 30")

(1) W1-6 (48" X 24")

ROAD CLOSED

12' BARR. TYP. III LT.

PI = 292+21.14
Δ = 96°03'55" RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL = 406 LIN. FT.

STAGE 2
MAINTENANCE OF TRAFFIC

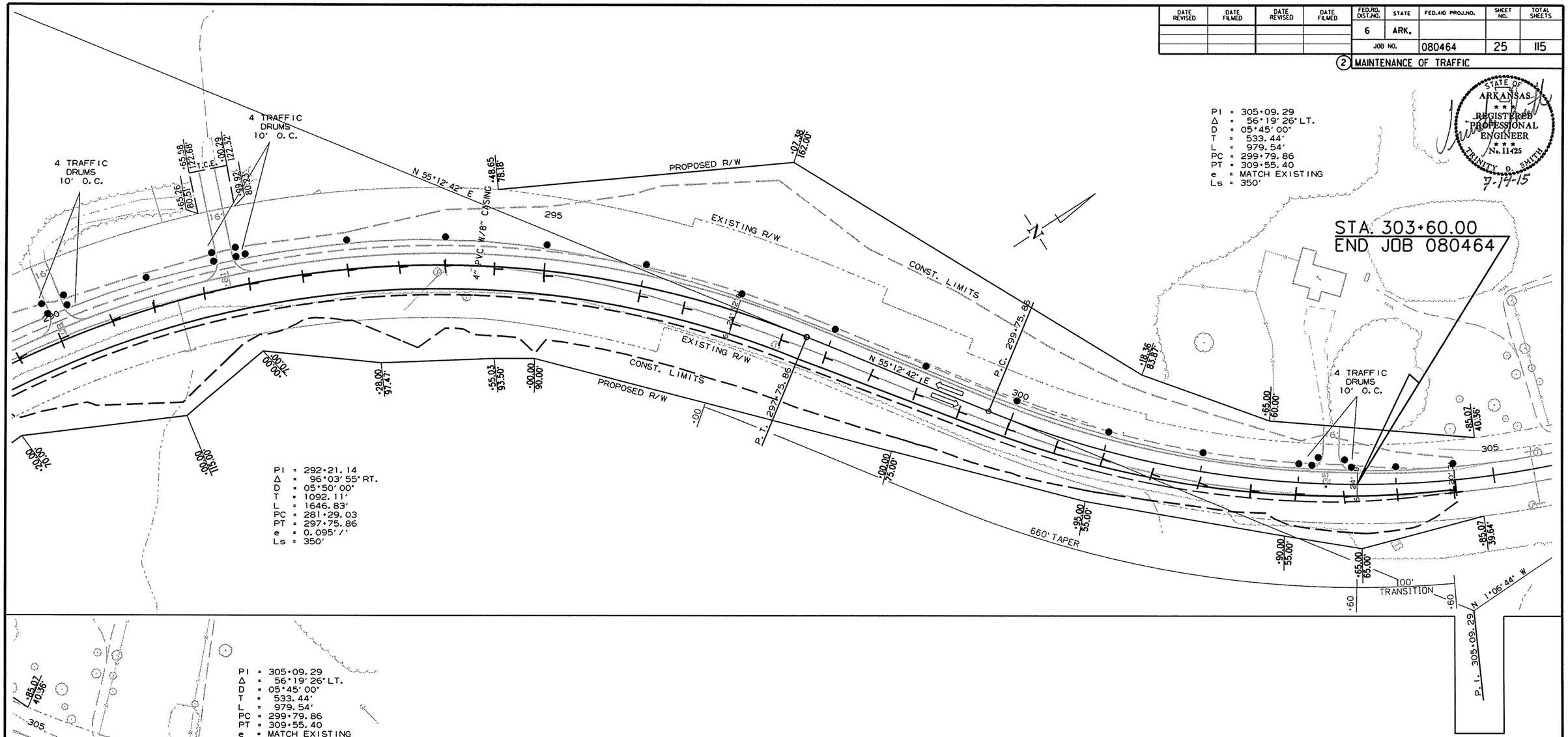
4/15/2015

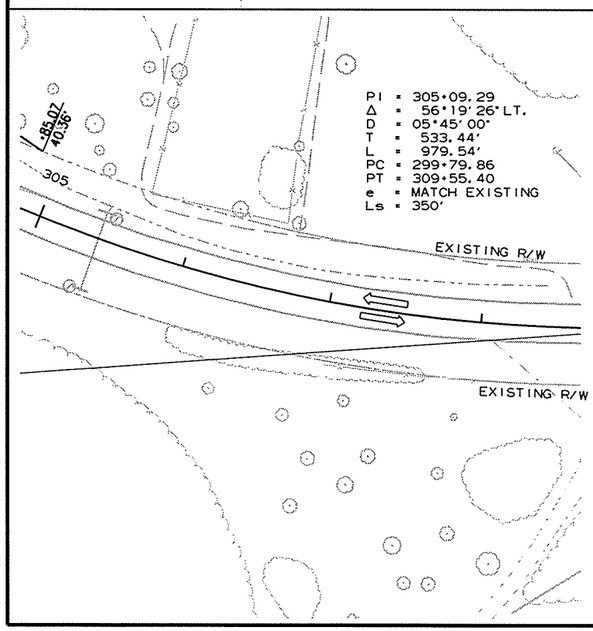
R080464.DGN

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.		080464	25	115

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15





4/15/2015

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STAGE 2
MAINTENANCE OF TRAFFIC

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.		080464	26	115

(2) PERMANENT PAVEMENT MARKING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

SEQUENCE OF CONSTRUCTION
STAGE 1:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE.
PLACE LEVELING COURSE AND CONSTRUCTION PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
NOTCH AND WIDEN ON LT. WHERE SHOWN.
EXTEND MOST CROSS DRAINS LT.
CONSTRUCT DRIVES WHERE SHOWN ON LT.

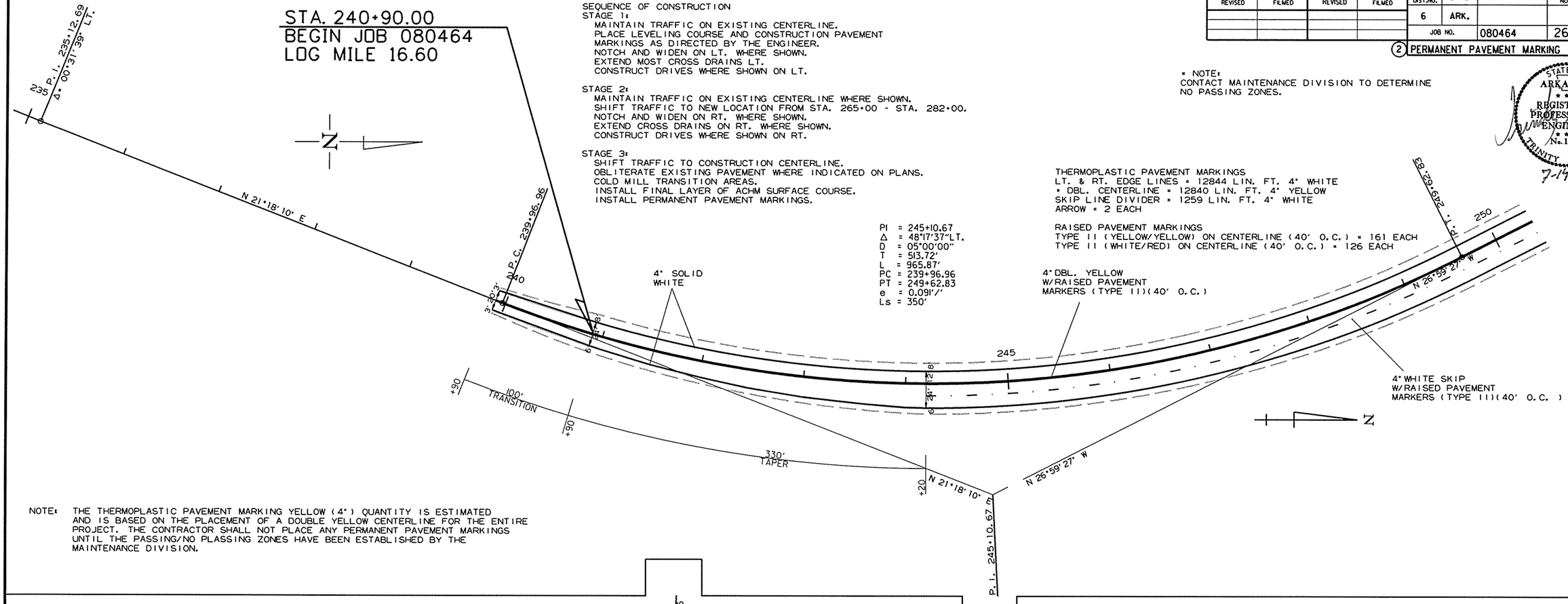
STAGE 2:
MAINTAIN TRAFFIC ON EXISTING CENTERLINE WHERE SHOWN.
SHIFT TRAFFIC TO NEW LOCATION FROM STA. 265+00 - STA. 282+00.
NOTCH AND WIDEN ON RT. WHERE SHOWN.
EXTEND CROSS DRAINS ON RT. WHERE SHOWN.
CONSTRUCT DRIVES WHERE SHOWN ON RT.

STAGE 3:
SHIFT TRAFFIC TO CONSTRUCTION CENTERLINE.
OBLITERATE EXISTING PAVEMENT WHERE INDICATED ON PLANS.
COLD MILL TRANSITION AREAS.
INSTALL FINAL LAYER OF ACHM SURFACE COURSE.
INSTALL PERMANENT PAVEMENT MARKINGS.

* NOTE:
CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONES.

THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 12844 LIN. FT. 4" WHITE
* DBL. CENTERLINE = 12840 LIN. FT. 4" YELLOW
SKIP LINE DIVIDER = 1259 LIN. FT. 4" WHITE
ARROW = 2 EACH

RAISED PAVEMENT MARKINGS
TYPE II (YELLOW/YELLOW) ON CENTERLINE (40' O.C.) = 161 EACH
TYPE II (WHITE/RED) ON CENTERLINE (40' O.C.) = 126 EACH



NOTE: THE THERMOPLASTIC PAVEMENT MARKING YELLOW (4") QUANTITY IS ESTIMATED AND IS BASED ON THE PLACEMENT OF A DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT. THE CONTRACTOR SHALL NOT PLACE ANY PERMANENT PAVEMENT MARKINGS UNTIL THE PASSING/NO PLASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.

PI = 256+29.06
Δ = 31°50'07"RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

4/15/2015

R080464.DGN

PERMANENT PAVEMENT MARKING

NOTE: THE THERMOPLASTIC PAVEMENT MARKING YELLOW (4") QUANTITY IS ESTIMATED AND IS BASED ON THE PLACEMENT OF A DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT. THE CONTRACTOR SHALL NOT PLACE ANY PERMANENT PAVEMENT MARKINGS UNTIL THE PASSING/NO PASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.

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.		080464	27	115

(2) PERMANENT PAVEMENT MARKING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

PI = 269+04.03
Δ = 39°08'36"LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

PI = 276+51.89
Δ = 06°33'18"LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

265
N 4°50'40" E
P.C. 265+90.64
270
4" DBL. YELLOW W/RAISED PAVEMENT MARKERS (TYPE II)(40' O.C.)
P.T. 271+92.85
4" SOLID WHITE
275
P.C. 275+42.52
N 34°17'56" W
4" WHITE SKIP W/RAISED PAVEMENT MARKERS (TYPE II)(40' O.C.)
P.T. 277+61.01
280
N 40°51'13" W
P.I. 276+51.89
P.I. 269+04.03
N 40°51'13" W
4" SOLID WHITE
4" DBL. YELLOW W/RAISED PAVEMENT MARKERS (TYPE II)(40' O.C.)
P.I. 292+21.14
285
16'
280
8'
16'
8'
PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'
4" WHITE SKIP W/RAISED PAVEMENT MARKERS (TYPE II)(40' O.C.)
280
N 40°51'13" W
P.C. 281+29.03
N 55°12'42" E
24243.75'
295

PERMANENT PAVEMENT MARKING

4/15/2015

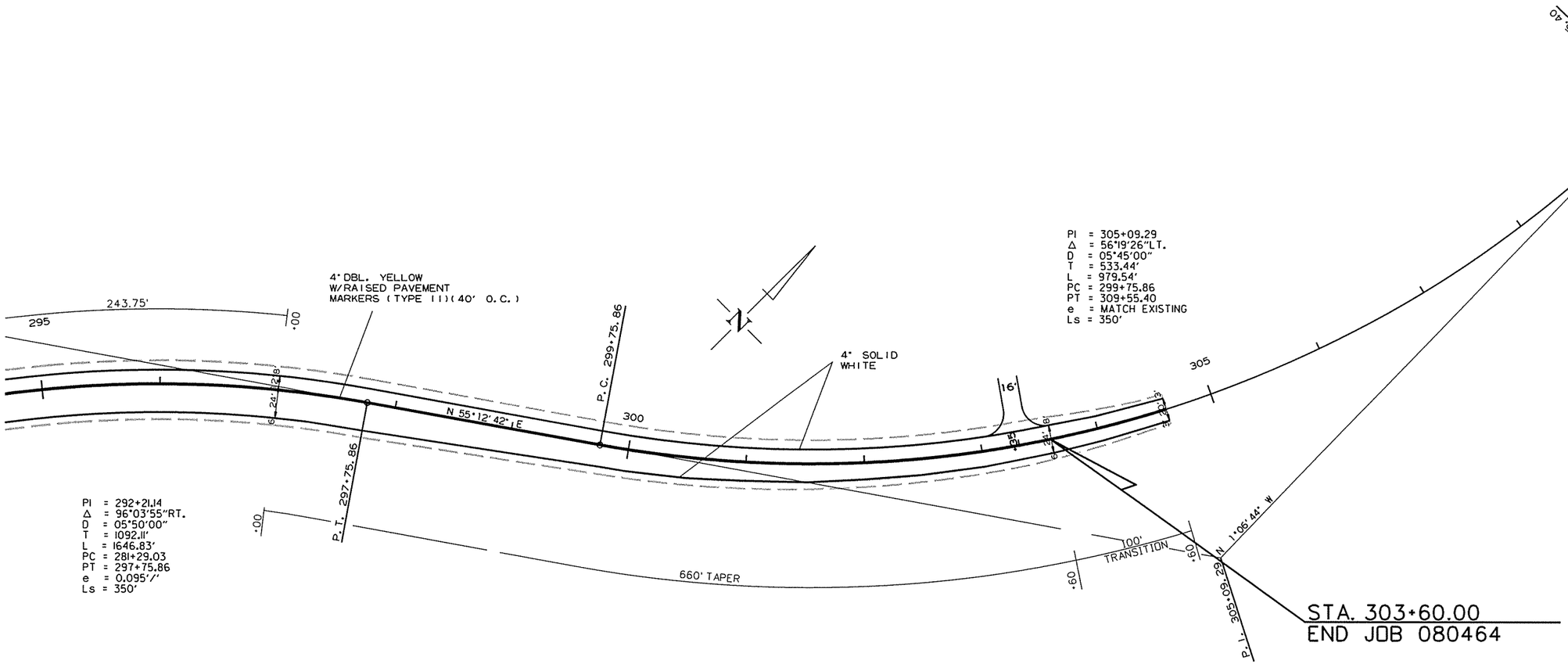
R080464.DGN

NOTE: THE THERMOPLASTIC PAVEMENT MARKING YELLOW (4") QUANTITY IS ESTIMATED AND IS BASED ON THE PLACEMENT OF A DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT. THE CONTRACTOR SHALL NOT PLACE ANY PERMANENT PAVEMENT MARKINGS UNTIL THE PASSING/NO PLASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.

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.		080464	28	115

(2) PERMANENT PAVEMENT MARKING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



4/15/2015

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PERMANENT PAVEMENT MARKING

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.		080464	29	115

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER
											RIGHT	LEFT	
			LIN.FT. - EACH				NO.	SQ. FT.	EACH		LIN.FT.		
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.00					
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.00					
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.00					
G20-2	END ROAD WORK	48"x24"	2	2	2	2	2	16.00					
R11-2	ROAD CLOSED	48"x30"	2	2		2	2	20.00					
OM-3L	OBJECT MARKER	12"x36"		3		3	3	9.00					
OM-3R	OBJECT MARKER	12"x36"		4		4	4	12.00					
W1-2L	CURVE LEFT	36"x36"		1		1	1	9.00					
W1-2R	CURVE RIGHT	36"x36"		1		1	1	9.00					
W1-6	LARGE ARROW	48"x24"	2	2		2	2	16.00					
R4-1	DO NOT PASS	24"x30"	4	4	4	4	4	20.00					
RSP-1	SHOULDER CLOSED	48"x30"	2	2		2	2	20.00					
W8-9A	SHOULDER DROP OFF	36"X36"	2	2		2	2	18.00					
	VERTICAL PANELS		27	114		114			114				
	TRAFFIC DRUMS		253	174		253				253			
	TYPE III BARRICADE-RT. (8')		2	2		2					16		
	TYPE III BARRICADE-LT. (8')		2	2		2						16	
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			406		406							406
TOTALS:							245.00		114	253	16	16	406

NOTE: THIS IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING	
						TYPE II (YEL/YEL)	TYPE II (WHITE/RED)	4" WHITE	4" YELLOW
	LIN.FT. - EACH			LIN.FT.	LIN.FT.	EACH		LIN.FT.	
CONSTRUCTION PAVEMENT MARKINGS	25080	6400		31480					
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		2400			2400				
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			161			161			
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			126				126		
THERMOPLASTIC PAVEMENT MARKING WHITE (4")			14103					14103	
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")			12840						12840
TOTALS:				31480	2400	161	126	14103	12840

NOTE: THIS IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

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				6	ARK.			
				JOB NO.		080464	30	115

(2) QUANTITIES

RUMBLE STRIPS

STATION	STATION	LOCATION	* CENTERLINE RUMBLE STRIPS IN ASPHALT ROADWAY	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.	LIN. FT.
239+90.00	304+60.00	MAIN LANES	6470.00	12940.00
TOTALS:			6470.00	12940.00

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN.FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			3000	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			3000	10

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

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
		FEET				
217+00	33LT	0-5	65	42	A-7-6(41)	BROWN
261+00	CL	0-5	24	6	A-4(0)	RED
261+00	27RT	0-5	41	21	A-7-6(13)	RED
269+00	28RT	0-2.3Z	24	9	A-6(7)	BROWN
269+00	13RT	0-3.2Z	22	7	A-4(1)	BROWN
277+00	4LT	0-3.2Z	33	19	A-6(8)	RED
277+00	30RT	0-5	55	22	A-7-5(22)	RD/BR
285+00	26LT	0-5	19	2	A-4(0)	BROWN
285+00	17LT	0-5	24	11	A-6(3)	RD/BR
293+00	15RT	0-4.5Z	31	15	A-6(6)	BROWN
293+00	8LT	0-5	23	6	A-4(1)	RED
301+00	29LT	0-5	50	30	A-7-6(19)	BROWN
301+00	17LT	0-5	25	9	A-4(3)	BROWN
309+00	1RT	0-5	33	18	A-6(10)	RD/BR
309+00	7LT	0-5	29	13	A-6(4)	RD/BR
309+00	24RT	0-5	58	36	A-7-6(34)	RD/BR
317+00	14LT	0-5	20	5	A-4(0)	BROWN
325+00	10RT	0-5	32	16	A-6(9)	RD/BR
325+00	10LT	0-5	24	9	A-4(1)	RD/BR
325+00	2LT	0-5	24	9	A-4(2)	RD/BR
325+00	10RT	0-5	40	22	A-6(14)	RED

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

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS
		EACH	EACH
260+95.00	DROP INLET ON LT.		1
264+99.00	DROP INLET ON LT.		1
269+60.00	DROP INLET ON LT.		1
269+60.00	24"x55' R.C. PIPE CULVERT	1	
273+16.00	24"x53' C.M. PIPE CULVERT	1	
276+96.00	24"x63' R.C. PIPE CULVERT	1	
293+75.00	24"x51' R.C. PIPE CULVERT	1	
303+35.00	24"x20' R.C. PIPE CULVERT ON LT.	1	
303+35.00	24"x20' C.M. PIPE CULVERT ON LT.	1	
TOTALS:		6	3

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
239+90.00	304+60.00	LT. & RT. OF HWY. 7	66	66
TOTALS:			66	66

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	EACH
ENTIRE PROJECT	5	5
TOTALS:	5	5

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION	ROCK FILL
			CU. YD.		TON	CU. YD.
ENTIRE	PROJECT	STAGE 1 - MAIN LANES	60297	7866		
ENTIRE	PROJECT	STAGE 2 - MAIN LANES	11227	34885		
ENTIRE	PROJECT	APPROACHES		665		
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			500	
		DIRECTED BY THE ENGINEER				
282+00.00	286+00.00	MAIN LANES				648
290+00.00	292+00.00	MAIN LANES				365
TOTALS:			71524	43416	500	1013

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

CULVERT CLEAN OUT

STATION	LOCATION	EACH
283+77	HWY. 7	1
TOTAL:		1

REMOVAL AND DISPOSAL OF ITEMS

STATION	LOCATION	POSTS	GATES
		EACH	
251+45	WOOD POST ON RT.	1	
251+60	METAL GATE ON RT.		1
251+75	WOOD POST ON RT.	1	
303+25	WOOD POST ON LT.	1	
303+37	METAL GATE ON LT.		1
303+50	WOOD POST ON LT.	1	
TOTALS:		4	2

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	30	60
DIRECTED BY THE ENGINEER		
TOTALS:	30	60

NOTE: QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
BASIS OF ESTIMATE: PATCHING: 25 TONS PER MILE
TACK COAT: 50 GAL. PER MILE

STATE OF ARKANSAS
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7-14-15

6/16/2015

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				6	ARK.			
				JOB NO.		080464	31	115

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
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DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SQ. YDS.
252+92.00	OUTLET OF PIPE CULVERT	1	2
255+70.00	OUTLET OF PIPE CULVERT	1	2
269+66.00	OUTLET OF PIPE CULVERT	1	2
273+19.00	OUTLET OF PIPE CULVERT	1	2
283+77.00	OUTLET OF PIPE CULVERT	1	2
286+69.00	OUTLET OF PIPE CULVERT	2	4
291+25.00	OUTLET OF PIPE CULVERT	1	2
295+00.00	OUTLET OF PIPE CULVERT	1	2
	TO BE USED IF AND WHERE	3	6
	DIRECTED BY THE ENGINEER		
TOTALS:		12	24

NOTE: QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
239+90.00	241+00.00	RT. OF HWY. 7	110.00	97.78
244+00.00	251+48.00	RT. OF HWY. 7	748.00	664.89
251+82.00	269+56.00	RT. OF HWY. 7	1774.00	1576.89
253+00.00	256+00.00	LT. OF HWY. 7	300.00	266.67
258+00.00	260+00.00	LT. OF HWY. 7	200.00	177.78
272+00.00	277+00.00	RT. OF HWY. 7	500.00	444.44
273+00.00	275+00.00	LT. OF HWY. 7	200.00	177.78
281+00.00	286+74.00	RT. OF HWY. 7	574.00	510.22
289+00.00	293+00.00	RT. OF HWY. 7	400.00	355.56
302+00.00	304+60.00	RT. OF HWY. 7	260.00	231.11
TOTAL:				4503.12

NOTE: AVERAGE WIDTH = 8'-0"

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT - TO BE USED IF	
AND WHERE DIRECTED BY THE	100
ENGINEER	
TOTAL:	100

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

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
269+66.00	HWY. 7	9.08	24	8.07
273+19.00	HWY. 7	9.67	24	8.60
276+82.00	HWY. 7	9.67	24	8.60
286+74.00	HWY. 7	8.50	22	6.93
295+00.00	HWY. 7	8.50	22	6.93
TOTAL:				39.13

AVG. DEPTH = 1'-0"

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
239+90	240+90	MAIN LANES	20.00	222.22
303+60	304+60	MAIN LANES	20.00	222.22
* 239+90	304+60	MAIN LANES - HWY. 7 CENTERLINE	0.40	287.56
TOTAL:				732.00

NOTE: AVERAGE MILLING DEPTH 1".
* AVERAGE MILLING DEPTH 3/8".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50
DIRECTED BY THE ENGINEER	
TOTAL:	50

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SPECIAL SEEDING	LIME	MULCH COVER	WATER	SPECIAL SECOND SEEDING APPLICATION	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	CLEARING AND GRUBBING - MAIN LANES									1474	210	4189			292
ENTIRE	PROJECT	STAGE 1 - MAIN LANES	6.57	13.14	6.57	670.14	6.57	3.34	3.34	68.14	110	12		1671	1671	1680
ENTIRE	PROJECT	STAGE 2 - MAIN LANES	4.55	9.10	4.55	464.10	4.55				176	21	410			30
ENTIRE	PROJECT	OBLITERATION AREA	0.23	0.46	0.23	23.46	0.23	0.23	0.23	4.69		60				40
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.11	2.22	1.11	113.22	1.11	1.00	1.00	20.40	440	60	1500	300	300	356
TOTALS:			12.46	24.92	12.46	1270.92	12.46	4.57	4.57	93.23	2200	363	6099	1971	1971	2398

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 ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

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				6	ARK.			
				JOB NO.		080464	32	115

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS
							24"
			FEET	SQ. YD.	TON	TON	LIN. FT.
251+65.00	RT.	MAIN LANES	16	233.10	25.64	95.18	
257+11.00	LT.	MAIN LANES CO. RD. TURNOUT	20	169.73	18.67	69.31	
290+08.00	LT.	MAIN LANES	16	113.80	12.52	46.47	
291+81.00	LT.	MAIN LANES	16	194.53	21.40	79.43	38
303+35.00	LT.	MAIN LANES	16	72.11	7.93	29.44	64
* ENTIRE PROJECT TEMPORARY DRIVES						50.00	
TOTALS:				783.27	86.16	369.83	102

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% 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.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
239+90.00	253+00.00	LT. OF HWY. 7	1310.00	7.00	1018.89	582.22	7.34
241+00.00	244+00.00	RT. OF HWY. 7	300.00	7.00	233.33	133.33	1.68
260+00.00	265+25.00	LT. OF HWY. 7	525.00	7.00	408.33	233.33	2.94
269+25.00	273+00.00	LT. OF HWY. 7	375.00	7.00	291.67	166.67	2.10
275+00.00	277+00.00	LT. OF HWY. 7	200.00	7.00	155.56	88.89	1.12
281+00.00	283+00.00	LT. OF HWY. 7	200.00	6.00	133.33	88.89	1.12
286+00.00	287+00.00	LT. OF HWY. 7	100.00	6.25	69.44	44.44	0.56
292+02.00	295+25.00	RT. OF HWY. 7	323.00	7.00	251.22	143.56	1.81
293+00.00	296+00.00	LT. OF HWY. 7	300.00	7.00	233.33	133.33	1.68
300+00.00	303+16.00	RT. OF HWY. 7	316.00	7.00	245.78	140.44	1.77
301+00.00	302+00.00	LT. OF HWY. 7	100.00	7.00	77.78	44.44	0.56
TOTALS:					3118.66	1799.54	22.68

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	(CLASS III) 30"	(CLASS III) 36"	(CLASS IV) 24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	36"	TEMPORARY CULVERTS 18"	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.				EACH			LIN. FT.	SQ.YD.	M.GAL	
244+17.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	36				2				20	0.25	FES-1, FES-2, & PCC-1
248+73.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	30				2				20	0.25	FES-1, FES-2, & PCC-1
252+92.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	44				2				20	0.25	FES-1, FES-2, & PCC-1
255+70.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	46				2				16	0.20	FES-1, FES-2, & PCC-1
260+95.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	34				2				20	0.25	FES-1, FES-2, & PCC-1
264+99.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	48				2				20	0.25	FES-1, FES-2, & PCC-1
269+66.00	CONSTRUCT R.C. PIPE CULVERT 8° LFS W/FES LT. & RT.		102				2			36	0.45	FES-1, FES-2, & PCC-1
269+66.00	INSTALL TEMPORARY PIPE CULVERT								54			FES-1, FES-2, & PCC-1
273+00.00	INSTALL TEMPORARY PIPE CULVERT								42			FES-1, FES-2, & PCC-1
273+17.00	CONSTRUCT R.C. PIPE CULVERT 5° LFS W/FES LT. & RT.			126				2		43	0.54	FES-1, FES-2, & PCC-1
276+85.00	CONSTRUCT R.C. PIPE CULVERT 10° RFS W/FES LT. & RT.			90				2		43	0.54	FES-1, FES-2, & PCC-1
283+77.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES RT.	100				1				8	0.10	FES-1, FES-2, & PCC-1
286+69.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	48				2				20	0.25	FES-1, FES-2, & PCC-1
286+74.00	CONSTRUCT R.C. PIPE CULVERT LT. & RT. W/FES LT.& RT.	86				2				16	0.20	FES-1, FES-2, & PCC-1
291+25.00	EXTEND R.C. PIPE CULVERT LT. & RT. W/FES RT.				60	1				8	0.10	FES-1, FES-2, & PCC-1
295+00.00	CONSTRUCT R.C. PIPE CULVERT W/FES LT. & RT.	72				2				16	0.20	FES-1, FES-2, & PCC-1
TOTALS:		544	102	216	60	20	2	4	96	306	3.83	

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

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

6/16/2015

R080464.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.		080464	33	115

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

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																	
239+90.00	240+90.00	TRANSITION	100.00	76.50	76.50	27.20	302.22	0.03	9.07	2.10	23.33	440.00	5.13	31.13	345.89	220.00	38.05
240+90.00	244+20.00	330' TAPER RIGHT - NOTCH AND WIDEN LT. & RT.	330.00	176.50	582.45	40.40	1481.33	0.03	44.44	8.10	297.00	440.00	65.34	50.13	1838.10	220.00	202.19
244+20.00	265+90.64	NOTCH AND WIDEN LT. AND RT.	2170.64	200.00	4341.28	52.40	12637.95	0.03	379.14	16.25	3919.21	440.00	862.23	66.13	15949.38	220.00	1754.43
265+90.64	267+50.00	CENTERLINE SHIFT LEFT - NOTCH AND WIDEN	159.36	200.00	318.72	52.40	927.83	0.03	27.83	16.25	287.73	440.00	63.30	66.13	1170.94	220.00	128.80
267+50.00	268+50.00	CENTERLINE SHIFT LEFT - FULL DEPTH WITH GRADE RAISE	100.00	200.00	200.00	72.75	808.33	0.03	24.25	36.50	405.56	440.00	89.22	86.25	958.33	220.00	105.42
268+50.00	279+50.00	CENTERLINE SHIFT LEFT - FULL DEPTH	1100.00	277.75	3055.25	72.75	8891.67	0.03	266.75	36.50	4461.11	440.00	981.44	86.25	10541.67	220.00	1159.58
279+50.00	297+00.00	CENTERLINE SHIFT - NOTCH AND WIDEN	1750.00	VAR.	3962.70	VAR.	13434.00	0.03	403.02	VAR.	4786.20	440.00	1052.96	VAR.	14436.70	220.00	1588.04
297+00.00	303+60.00	660' TAPER - NOTCH AND WIDEN LT.& RT.	660.00	176.50	1164.90	40.40	2962.67	0.03	88.88	8.10	594.00	440.00	130.68	50.13	3676.20	220.00	404.38
303+60.00	304+60.00	TRANSITION	100.00	76.50	76.50	27.20	302.22	0.03	9.07	2.10	23.33	440.00	5.13	31.13	345.89	220.00	38.05
ADDITIONAL FOR LEVELING																	
239+90.00	240+90.00	TRANSITION	100.00			3.00	33.33	0.10	3.33					3.00	33.33	220.00	3.67
240+90.00	268+00.00	MAIN LANES - HWY. 7	2710.00			20.00	6022.22	0.10	602.22					20.00	6022.22	220.00	662.44
279+50.00	297+00.00	MAIN LANES - HWY. 7	1750.00			VAR.	3373.00	0.10	337.30					VAR.	3373.00	220.00	371.03
297+00.00	303+60.00	MAIN LANES - HWY. 7	660.00			20.00	1466.67	0.10	146.67					20.00	1466.67	220.00	161.33
303+60.00	304+60.00	TRANSITION	100.00			23.00	255.56	0.10	25.56					23.00	255.56	220.00	28.11
239+90.00	304+60.00	MAIN LANES - HWY. 7 CENTERLINE	6470.00			0.40	287.56	0.10	28.76					0.40	287.56	41.30	5.94
ADDITIONAL FOR SUPERELEVATION																	
239+90.00	240+84.46	MAIN LANES - HWY. 7	94.46	77.25	72.97					20.00	209.91	220.00	23.09				
240+84.46	247+82.55	MAIN LANES - HWY. 7 MAX SUPER	698.09	98.50	687.62					20.00	1551.31	220.00	170.64				
247+82.55	254+82.55	MAIN LANES - HWY. 7	700.00	119.75	838.25					20.00	1555.56	220.00	171.11				
254+82.55	258+51.46	MAIN LANES - HWY. 7 MAX SUPER	368.91	119.75	441.77					20.00	819.80	220.00	90.18				
258+51.46	266+78.14	MAIN LANES - HWY. 7	826.68	94.25	779.15					20.00	1837.07	220.00	202.08				
266+78.14	270+17.69	MAIN LANES - HWY. 7 MAX SUPER	339.55	98.75	335.31					20.00	754.56	220.00	83.00				
270+17.69	276+17.52	MAIN LANES - HWY. 7	599.83	120.00	719.80												
276+17.52	276+76.19	MAIN LANES - HWY. 7 MAX SUPER	58.67	111.25	65.27												
276+76.19	283+10.19	MAIN LANES - HWY. 7	634.00	64.00	405.76					20.00	1408.89	220.00	154.98				
283+10.19	295+25.86	MAIN LANES - HWY. 7 MAX SUPER	1215.67	16.50	200.59					20.00	2701.49	220.00	297.16				
295+25.86	302+25.86	MAIN LANES - HWY. 7	700.00	16.50	115.50					20.00	1555.56	220.00	171.11				
302+25.86	303+60.00	MAIN LANES - HWY. 7 MAX SUPER	134.14	16.50	22.13					20.00	298.09	220.00	32.79				
303+60.00	304+60.00	MAIN LANES - HWY. 7	100.00	80.00	80.00												
ADDITIONAL FOR GRADE RAISE																	
267+50.00	268+50.00	MAIN LANES - HWY. 7	100.00			VAR.	222.22	0.03	6.67	20.00	222.22	550.00	61.11				
TOTALS:					**18542.42**		**53408.78**		**2402.96**		**27711.93**		**4712.68**		**60701.44**		**6651.46**

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

6/16/2015

R080464.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-30-2015				6	ARK.			
				JOB NO.		080464	34	115

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-1-15

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	66	STATION
201	GRUBBING	66	STATION
202	REMOVAL AND DISPOSAL OF GATES	2	EACH
202	REMOVAL AND DISPOSAL OF POSTS	4	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	3	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	6	EACH
210	UNCLASSIFIED EXCAVATION	71524	CU. YD.
210	COMPACTED EMBANKMENT	43416	CU. YD.
SP & 210	ROCK FILL	1013	CU. YD.
SP & 210	SOIL STABILIZATION	500	TON
303	AGGREGATE BASE COURSE (CLASS 7)	18912	TON
401	TACK COAT	2463	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	4501	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	212	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	6367	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	371	TON
412	COLD MILLING ASPHALT PAVEMENT	732	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	30	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	50	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	96	LIN. FT.
SS & 604	SIGNS	245	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	253	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	406	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	31480	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	2400	LIN. FT.
SS & 604	VERTICAL PANELS	114	EACH
605	CONCRETE DITCH PAVING (TYPE B)	3119	SQ. YD.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	544	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	60	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	102	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	216	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	102	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	20	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
611	UNDERDRAIN OUTLET PROTECTORS	10	EACH
611	4" PIPE UNDERDRAINS	3000	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	39.1	CU. YD.
620	LIME	25	TON
SP & 620	SPECIAL SEEDING	12.46	ACRE
SS & 620	MULCH COVER	17.03	ACRE
620	WATER	1390.7	M.GAL.
621	TEMPORARY SEEDING	4.57	ACRE
621	SILT FENCE	6099	LIN. FT.
621	SAND BAG DITCH CHECKS	2200	BAG
621	SEDIMENT BASIN	1971	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	1971	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	2398	CU. YD.
621	ROCK DITCH CHECKS	363	CU. YD.
SP & 623	SPECIAL SECOND SEEDING APPLICATION	12.46	ACRE
624	SOLID SODDING	2106	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	4503	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	5	EACH
637	MAILBOX SUPPORTS (SINGLE)	5	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	12940	LIN. FT.
SP & 642	CENTERLINE RUMBLE STRIPS IN ASPHALT ROADWAYS	6470	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	14103	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	12840	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	287	EACH
816	FILTER BLANKET	24	SQ. YD.
816	DUMPED RIPRAP	12	CU. YD.
SP	CULVERT CLEAN OUT	1	EACH

REVISIONS

DATE	REVISION	SHEET NUMBER
9/30/2015	REVISED SPECIAL CLEARING REQUIREMENTS SPECIAL PROVISION	34

9/30/2015

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SUMMARY OF QUANTITIES AND REVISIONS

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.		080464	35	115

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

SURVEY CONTROL COORDINATES

Project Name: s080392
Date: 11/8/2010
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	462986.1566	996924.1427	1808.835	CTL	*5/8" Rebar with 2" Aluminum Cap
2	463861.6877	996721.1496	1812.264	CTL	*5/8" Rebar with 2" Aluminum Cap
3	464358.6609	996498.2499	1846.368	CTL	*5/8" Rebar with 2" Aluminum Cap
4	464821.7421	996091.5952	1859.335	CTL	*5/8" Rebar with 2" Aluminum Cap
5	465412.1532	995696.3146	1857.117	CTL	*5/8" Rebar with 2" Aluminum Cap
6	466048.1494	995759.3525	1853.726	CTL	*5/8" Rebar with 2" Aluminum Cap
7	466690.9860	996316.8804	1859.701	CTL	*5/8" Rebar with 2" Aluminum Cap
8	467199.0577	996772.4840	1885.800	CTL	*5/8" Rebar with 2" Aluminum Cap
9	467866.8941	997149.4699	1897.564	CTL	*5/8" Rebar with 2" Aluminum Cap
10	468665.1958	997409.5179	1891.173	CTL	*5/8" Rebar with 2" Aluminum Cap
11	469486.9546	997516.6095	1881.393	CTL	*5/8" Rebar with 2" Aluminum Cap
12	470247.8364	997497.6074	1872.742	CTL	*5/8" Rebar with 2" Aluminum Cap
13	471140.9642	997280.1332	1864.073	CTL	*5/8" Rebar with 2" Aluminum Cap
14	471652.4419	997040.9047	1844.223	CTL	*5/8" Rebar with 2" Aluminum Cap
15	492015.8544	987459.3012	1968.400	CTL	*5/8" Rebar with 2" Aluminum Cap
16	492553.6617	987246.5327	1994.649	CTL	*5/8" Rebar with 2" Aluminum Cap
17	493044.4064	986755.2080	2003.290	CTL	*5/8" Rebar with 2" Aluminum Cap
18	493463.2480	986285.4827	1984.098	CTL	*5/8" Rebar with 2" Aluminum Cap
19	494085.4140	985884.9579	1942.814	CTL	*5/8" Rebar with 2" Aluminum Cap
20	494848.1548	985575.8600	1902.394	CTL	*5/8" Rebar with 2" Aluminum Cap
21	495339.0342	985533.5130	1872.743	CTL	*5/8" Rebar with 2" Aluminum Cap, 17' W CNTR LN HWY 7
22	495799.8216	985640.9080	1859.807	CTL	*5/8" Rebar with 2" Aluminum Cap
23	496574.9105	985977.4235	1822.483	CTL	*5/8" Rebar with 2" Aluminum Cap, 17' E CNTR LN HWY 7
24	497116.3072	986015.2865	1798.935	CTL	*5/8" Rebar with 2" Aluminum Cap
25	497872.5285	985665.7367	1748.462	CTL	*5/8" Rebar with 2" Aluminum Cap
26	498338.8435	985599.1352	1749.145	CTL	*5/8" Rebar with 2" Aluminum Cap, 14' W CNTR LN HWY 7
27	499112.7664	985690.3584	1780.809	CTL	*5/8" Rebar with 2" Aluminum Cap, 17' E CNTR LN HWY 7
28	499589.6906	985596.4097	1784.735	CTL	*5/8" Rebar with 2" Aluminum Cap
29	500072.5396	985256.0906	1814.246	CTL	*5/8" Rebar with 2" Aluminum Cap
30	500425.0658	984845.5040	1819.103	CTL	*5/8" Rebar with 2" Aluminum Cap
31	500932.0579	984680.1231	1806.154	CTL	*5/8" Rebar with 2" Aluminum Cap, 16' W CNTR LN HWY 7
32	501440.5903	984800.0092	1830.707	CTL	*5/8" Rebar with 2" Aluminum Cap, 17' W CNTR LN HWY 7
33	501765.2441	985094.4283	1845.608	CTL	*5/8" Rebar with 2" Aluminum Cap
34	502007.5634	985464.0211	1839.270	CTL	*5/8" Rebar with 2" Aluminum Cap
35	502811.1591	985706.6389	1828.461	CTL	*5/8" Rebar with 2" Aluminum Cap, 15' W CNTR LN HWY 7
36	504042.0678	986200.4479	1908.537	CTL	*5/8" Rebar with 2" Aluminum Cap
100	490181.7099	987030.8124	1927.600	GPS	*AHTD GPS 580024
101	491304.4108	987370.9519	1926.148	GPS	*AHTD GPS 580024A
102	502243.6895	985636.7224	1825.497	GPS	*AHTD GPS 580025
103	503459.1338	985767.2899	1868.289	GPS	*AHTD GPS 580025A
104	462354.5294	997365.8174	1794.341	GPS	*AHTD GPS 580022
105	461617.7753	998149.5666	1722.378	GPS	*AHTD GPS 580022A
106	472416.5966	996538.4363	1815.678	GPS	*AHTD GPS 580023
107	473825.8955	994928.3430	1842.862	GPS	*AHTD GPS 580023A

Note - Rebar and Cap - Standard -"" 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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9998483076 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 s080392gi.CTL
HORIZONTAL DATUM: NAD 83 (1997)
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
DETERMINED FROM GPS CONTROL POINTS:
580022 - 580022A
580023 - 580023A
580024 - 580024A
580025 - 580025A
CONVERGENCE ANGLE: 0-38-12.7 LEFT AT LT: 35-40-47.73 LG: 093-05-39.97
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 7 CONSTRUCT

POINT NO.	TYPE	STATION	NORTHING	EASTING
8017	POB	217+22.52	494341.5585	985790.9815
8018	PC	220+89.43	494680.6219	985650.7590
8020	PT	231+96.88	495760.6816	985644.7481
8021	PI	235+12.69	496053.8400	985762.1825
8022	PC	239+96.96	496505.0205	985938.1146
8024	PT	249+62.83	497441.3965	985891.5961
8025	PC	253+02.26	497743.8556	985737.5466
8027	PT	259+38.96	498360.7028	985616.8265
8028	PC	265+90.64	499010.0489	985671.8624
8030	PT	271+92.85	499581.2104	985521.7319
8031	PC	275+42.52	499870.0795	985324.6875
8033	PT	277+61.01	500043.1520	985191.5178
8034	PC	281+29.03	500321.5117	984950.7886
8036	PT	297+75.86	501770.6640	985133.3183
8037	PC	299+75.86	501884.7693	985297.5655
8039	PT	309+55.40	502722.4582	985725.3052
8040	PC	312+88.12	503055.1205	985718.8471
8042	PT	319+03.86	503632.6791	985899.3983
8043	PC	320+25.47	503731.2762	985970.5921
8045	PT	322+26.55	503895.3251	986086.8704
8046	PC	323+75.27	504017.4007	986171.7986
8048	PT	330+91.81	504695.5808	986355.0573
8049	POE	332+37.02	504840.3221	986343.4533

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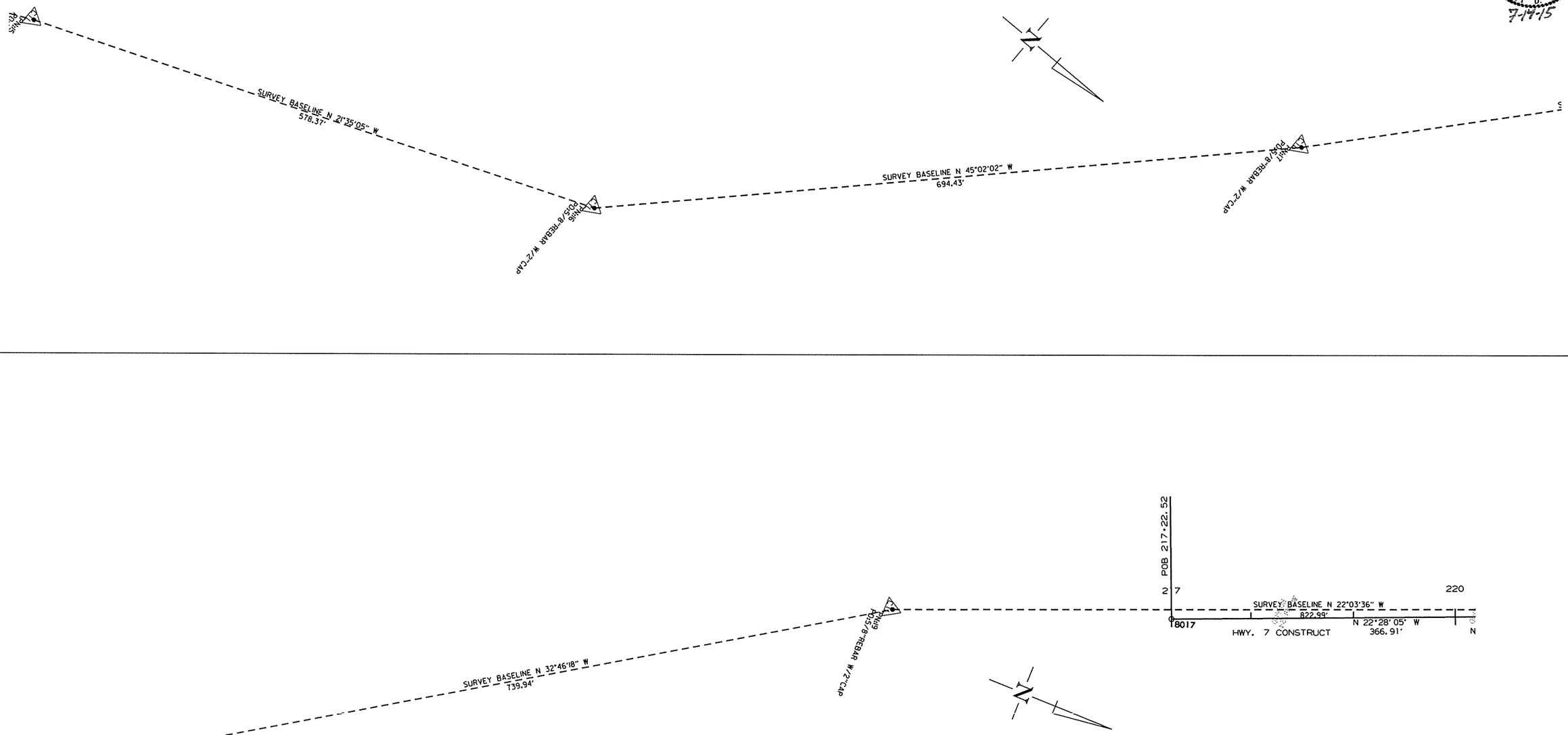
SURVEY CONTROL DETAILS

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.		080464	36	115

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15



6/16/2015

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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.		080464	37	115

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-14-15

P.I. 226+72.49

225

SURVEY BASELINE N 04°55'50" W
492.70'

PK20
PD5/8"REBAR W/2"CAP

PK19
PD600

PK21
PD5/8"REBAR W/2"CAP,1'W CNTR LN HWY. 7

230

SURVEY BASELINE N 13°07'11" E
473.14'

PI = 226+72.49
Δ = 44°17'53" RT.
D = 04°00'00"
T = 583.06'
L = 1107.45'
PC = 220+89.43
PT = 231+96.88

220

N 22°28'05" W
366.91'

8018

P.C. 220+89.43

P.T. 231+96.88

8020

PK22
PD5/8"REBAR W/2"CAP

N 21°49'49" E
315.80'

HWY. 7 CONSTRUCT

P.I. 235+12.69
Δ= 00°31'39" LT.

235

8021

N 21°18'10" E
484.25'

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

P.I. 235+12.69
Δ= 00°31'39" LT.

235

SURVEY BASELINE

SURVEY BASELINE N 23°28'07" E
844.99'

8021

N 21°18'10" E
484.25'

PK27
PD600

HWY. 7 CONSTRUCT

P.C. 239+96.96

240

8022

PK28
PD600 NAIL

PK23
PD5/8"REBAR W/2"CAP,1'E CNTR LN HWY. 7

PI = 245+10.67
Δ = 48°17'37" LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.091'/'
Ls = 350'

SURVEY BASELINE N 04°00'02" E
542.72'

245

PK24
PD5/8"REBAR W/2"CAP

P.I. 245+10.67

P.T. 249+62.83

SURVEY BASELINE N 24°48'28" W
833.10'

250

8024

N 26°59'27" W
339.43'

PK25
PD600 NAIL

SURVEY CONTROL DETAILS

6/16/2015

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				6	ARK.			
				JOB NO.		080464	38	115

(2) SURVEY CONTROL DETAILS

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SURVEY BASELINE N 24°48'28" W
250
833.10'
N 26°59'27" W
339.43'
HWY. 7 CONSTRUCT
8025
P.C. 253+02.26
255
P.I. 256+29.06
SURVEY BASELINE N 08°07'42" W
471.05'
8027
P.T. 259+38.96
260
N 4°50'40" E
651.67'
SURVEY BASELINE N 06°43'21" E
115.28'
265
N 4°50'40" E
651.67'

PI = 256+29.06
Δ = 31°50'07" RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

265
N 4°50'40" E
651.67'
8028
P.C. 265+90.64
270
SURVEY BASELINE N 11°08'38" W
486.09'
8030
P.I. 269+04.03
P.T. 271+92.85
N 34°17'56" W
349.67'
275
8031
P.C. 275+42.52
P.T. 277+61.01
8033
280
N 40°51'13" W
368.01'
HWY. 7 CONSTRUCT
SURVEY BASELINE
541.16'

PI = 269+04.03
Δ = 39°08'36" LT.
D = 06°30'00"
T = 313.39'
L = 602.21'
PC = 265+90.64
PT = 271+92.85
e = 0.100'/'
Ls = 350'

PI = 276+51.89
Δ = 06°33'18" LT.
D = 03°00'00"
T = 109.37'
L = 218.50'
PC = 275+42.52
PT = 277+61.01
e = 0.067'/'
Ls = 300'

SURVEY BASELINE N 35°10'36" W
590.73'

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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.		080464	39	115

(2) SURVEY CONTROL DETAILS

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REGISTERED PROFESSIONAL ENGINEER
No. 11425
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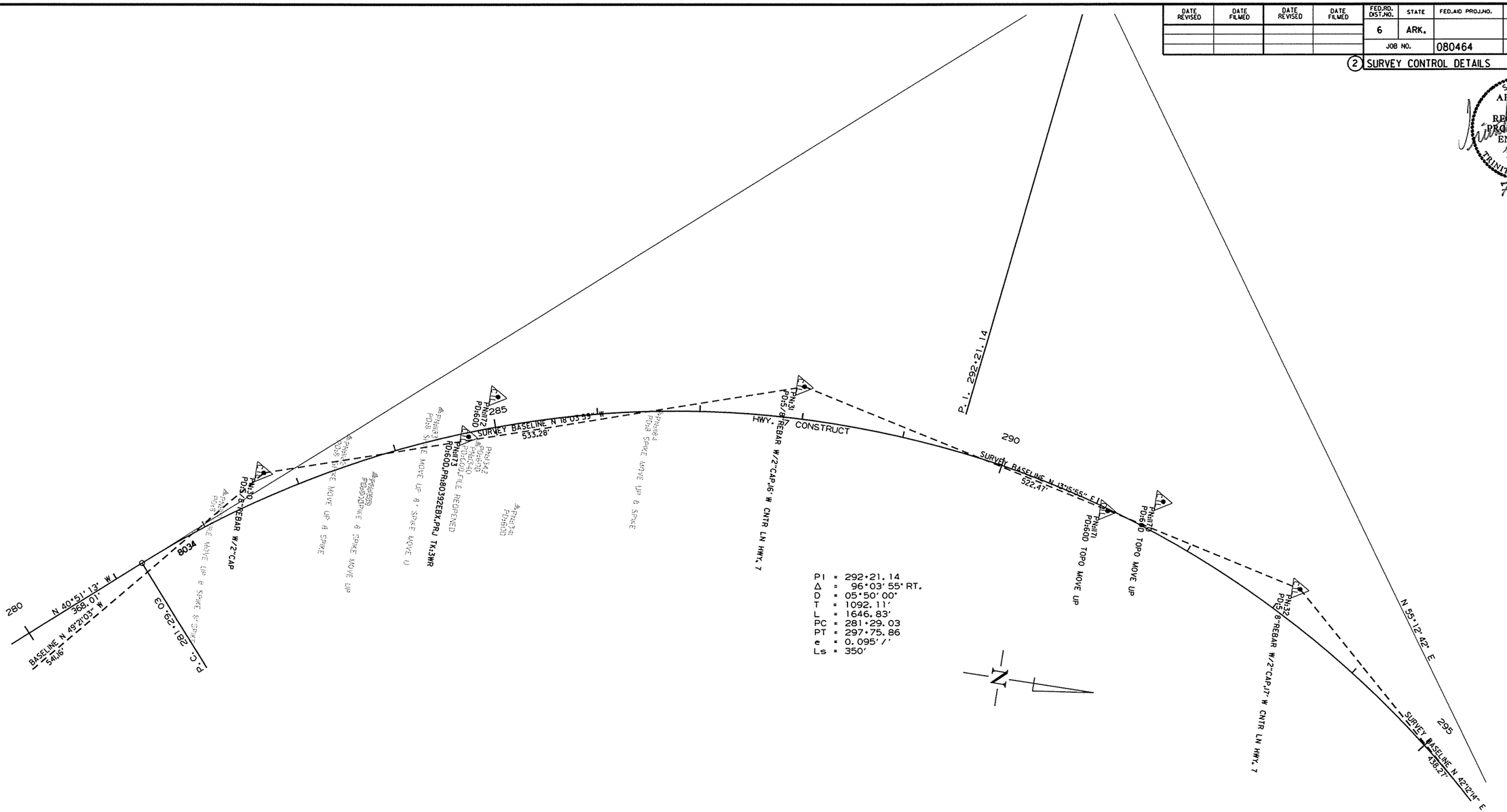
7-14-15



SURVEY CONTROL DETAILS

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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.		080464	40	115

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS ★ ★ ★ REGISTERED PROFESSIONAL ENGINEER ★ ★ ★ No. 11425 TRINITY D. SMITH

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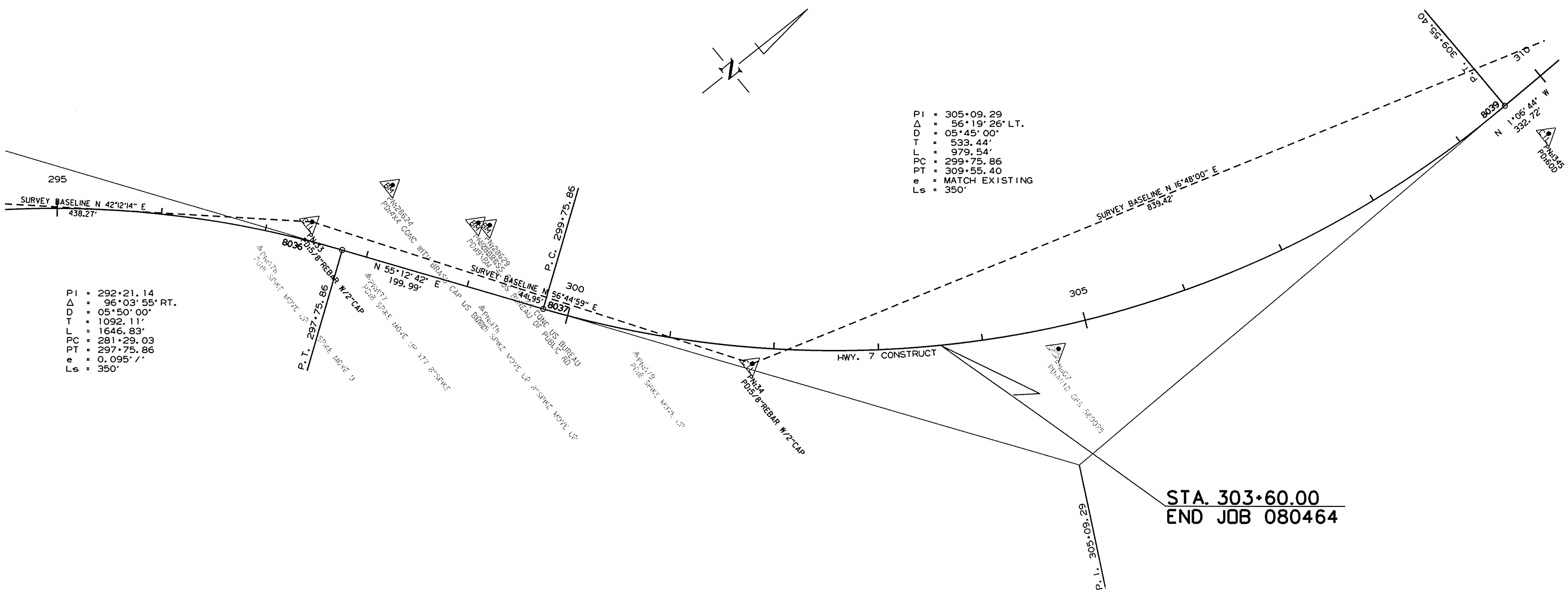

SURVEY CONTROL DETAILS

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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.		080464	41	115

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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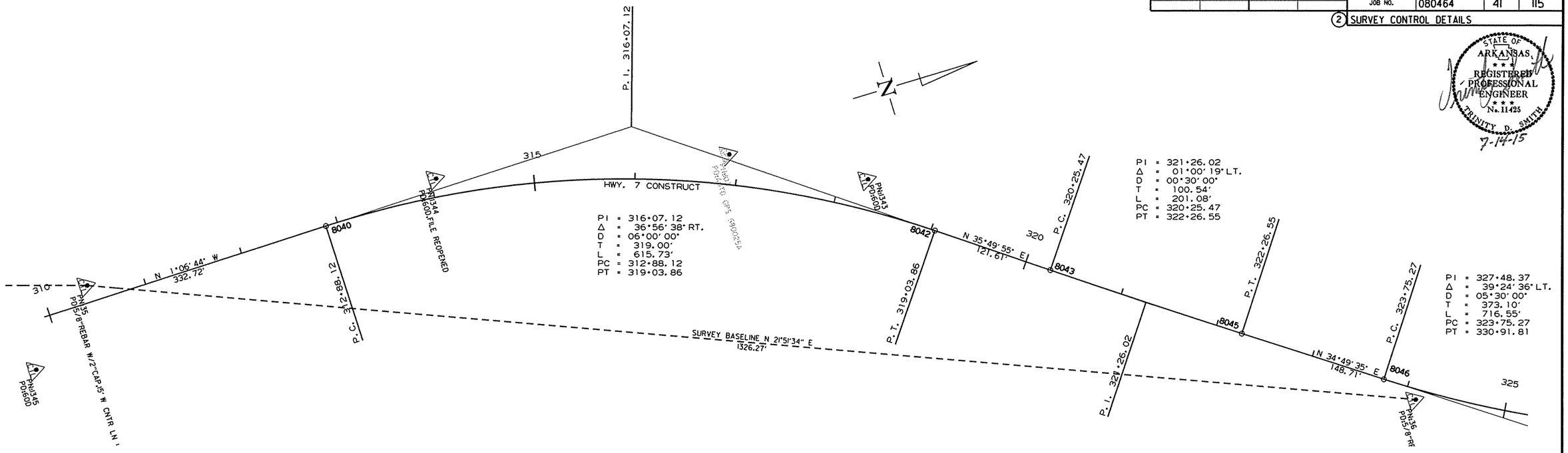

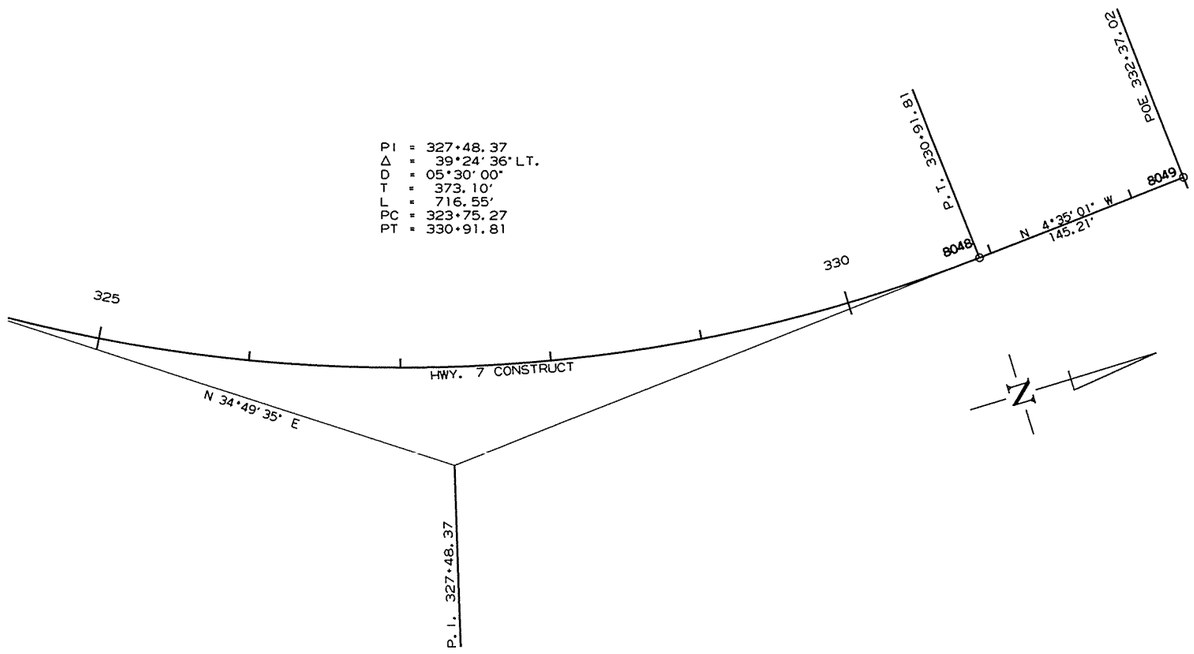

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SURVEY CONTROL DETAILS

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.		080464	42	115

(2) PLAN AND PROFILE SHEETS

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YD.
239+90	253+00	LT.	7'	1019
241+00	244+00	RT.	7'	233

STA. 240+90.00
BEGIN JOB 080464
LOG MILE 16.60

PI = 245+10.67
Δ = 48°17'37"LT.
D = 05°00'00"
T = 513.72'
L = 965.87'
PC = 239+96.96
PT = 249+62.83
e = 0.09I'/'
Ls = 350'

STA.244+17 IN PLACE
24" x 66' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 10' LT. AND 18' RT.
TO A COMPLETED LENGTH OF 94'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
050 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 36 LIN.FT.
24" FES = 2 EACH

STA.248+73 IN PLACE
24" x 71' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 10' LT. AND 12' RT.
TO A COMPLETED LENGTH OF 93'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 10 CFS D.A. = 2 ACRES
24" R.C. PIPE = 30 LIN.FT.
24" FES = 2 EACH

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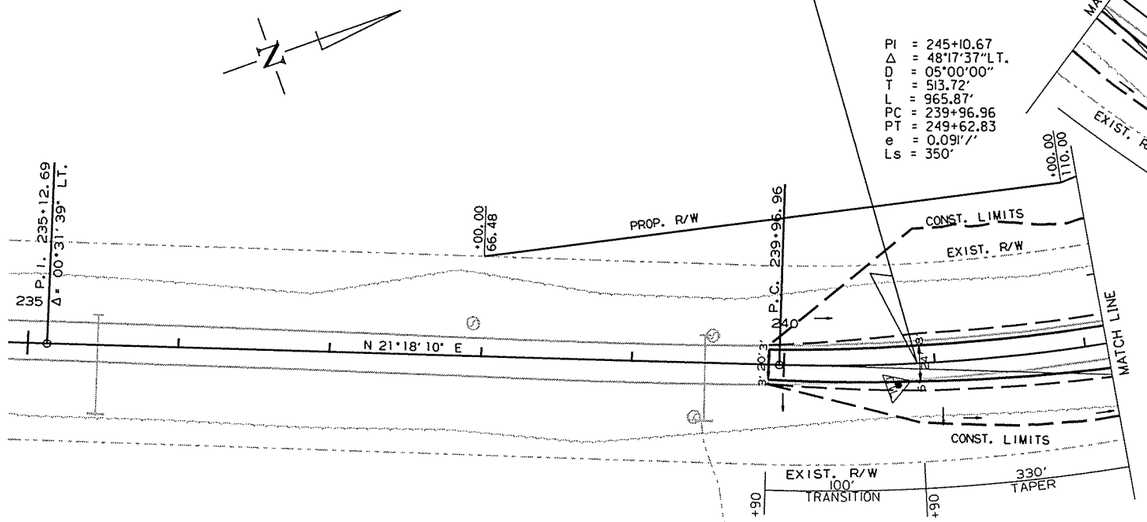
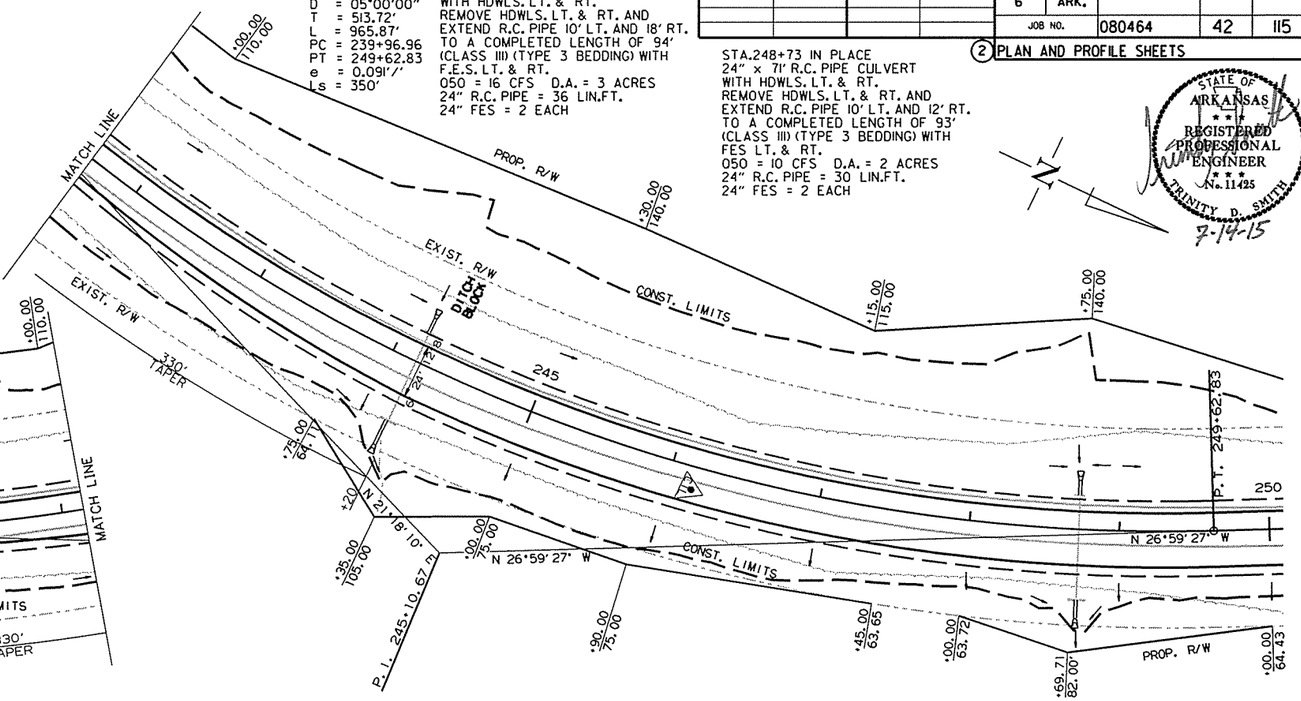
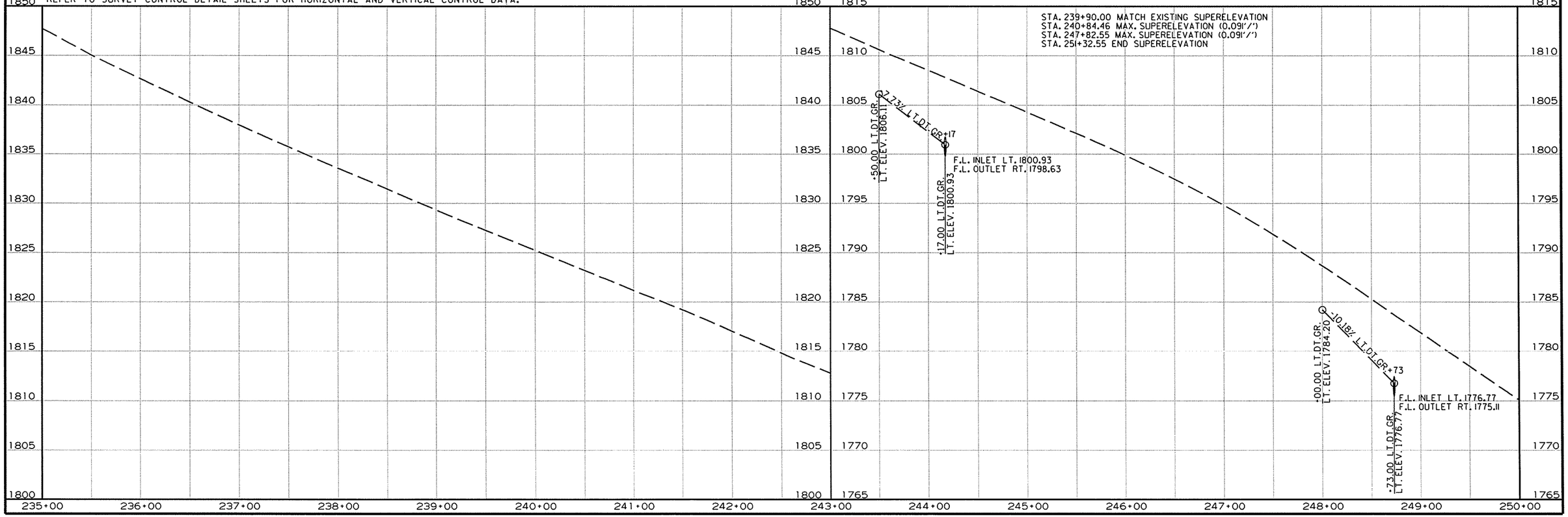




1850 REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA. 1850



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R080464.DGN

STA.252+92 IN PLACE
24" x 44' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 12' LT. AND 24' RT.
TO A COMPLETED LENGTH OF 80'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 44 LIN.FT.
24" FES = 2 EACH

STA.255+70 IN PLACE
24" x 60' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 12' LT. AND 26' RT.
TO A COMPLETED LENGTH OF 98'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 2 CFS D.A. = 1 ACRES
24" R.C. PIPE = 46 LIN.FT.
24" FES = 2 EACH

STA. 257+11
CONST. TURNOUT ON LT. = 145 CU. YDS.

STA.260+95 IN PLACE
DROP INLET ON LT.
REMOVE

STA.264+99 IN PLACE
DROP INLET ON LT.
REMOVE

STA.260+95 IN PLACE
24" x 61' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 16' LT. AND 10' RT.
TO A COMPLETED LENGTH OF 87'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 34 LIN. FT.
24" FES = 2 EACH

STA.264+99 IN PLACE
24" x 54' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 12' LT. AND 28' RT.
TO A COMPLETED LENGTH OF 94'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 21 CFS D.A. = 4 ACRES
24" R.C. PIPE = 48 LIN. FT.
24" FES = 2 EACH

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				6	ARK.			
				JOB NO.		080464	43	115

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
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CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YD.
260+00	265+25	LT.	7'	408

TO BE MAINTAINED BY OTHERS

PI = 256+29.06
Δ = 31°50'07"RT.
D = 05°00'00"
T = 326.81'
L = 636.71'
PC = 253+02.26
PT = 259+38.96
e = 0.091'/'
Ls = 350'

STA. 251+65 CONSTRUCT
FOREST SERVICE DRIVE ON RT. = 215 CU. YDS.

1780 REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA. 1780

STA. 239+90.00 MATCH EXISTING SUPERELEVATION
STA. 240+84.46 MAX. SUPERELEVATION (0.091'/')
STA. 247+82.55 MAX. SUPERELEVATION (0.091'/')
STA. 251+32.55 END SUPERELEVATION

STA. 251+32.55 BEGIN SUPERELEVATION
STA. 254+82.55 MAX. SUPERELEVATION (0.091'/')
STA. 258+51.46 MAX. SUPERELEVATION (0.091'/')
STA. 262+01.46 END SUPERELEVATION

STA. 263+28.14 BEGIN SUPERELEVATION
STA. 266+78.14 MAX. SUPERELEVATION (0.100'/')
STA. 270+17.69 MAX. SUPERELEVATION (0.100'/')
STA. 272+97.69 TRANS. SUPERELEVATION (R.C.)

+48.00 LT. DT. GR.
LT. ELEV. 1762.40
-7.37% LT. DT. GR.
+92
+92.00 LT. DT. GR.
LT. ELEV. 1751.79
F.L. INLET LT. 1751.79
F.L. OUTLET RT. 1748.61
+70
F.L. INLET LT. 1739.69
F.L. OUTLET RT. 1732.53
+95
F.L. INLET LT. 1751.42
F.L. OUTLET RT. 1749.62
+99.00 LT. DT. GR.
LT. ELEV. 1770.16
5.18% LT. DT. GR.
F.L. INLET LT. 1770.11
F.L. OUTLET RT. 1767.95

250+00 251+00 252+00 253+00 254+00 255+00 256+00 257+00 258+00 259+00 260+00 261+00 262+00 263+00 264+00 265+00

1780 1775 1770 1765 1760 1755 1750 1745 1740 1735 1730

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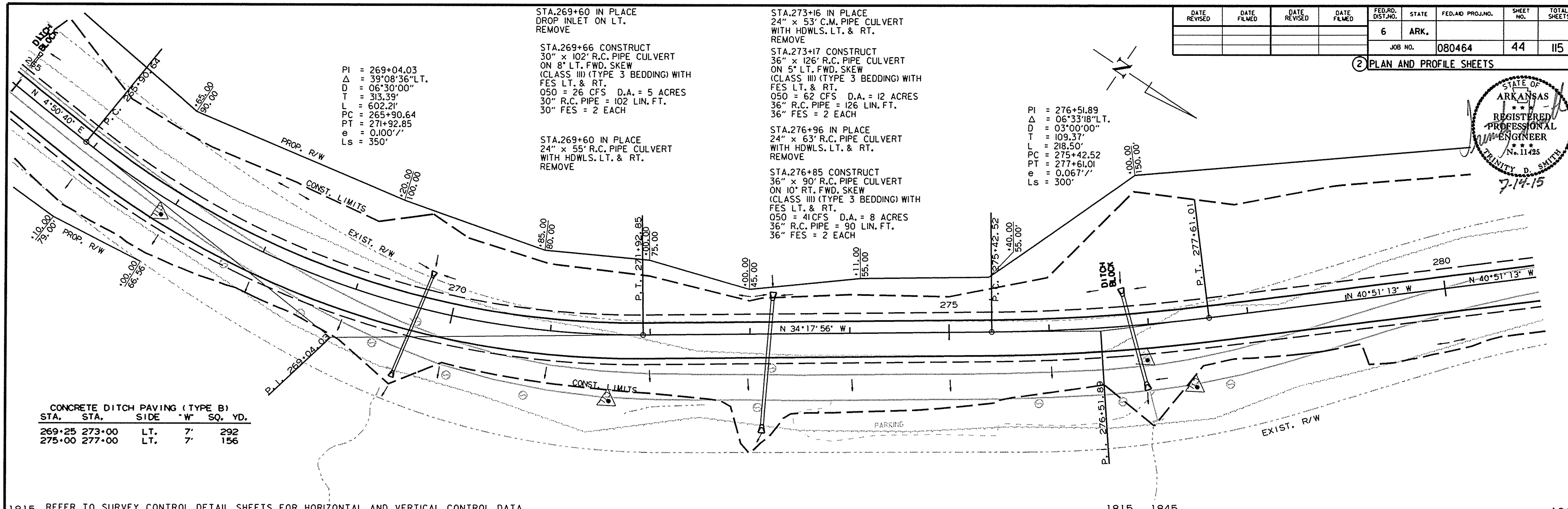
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080464	44	115

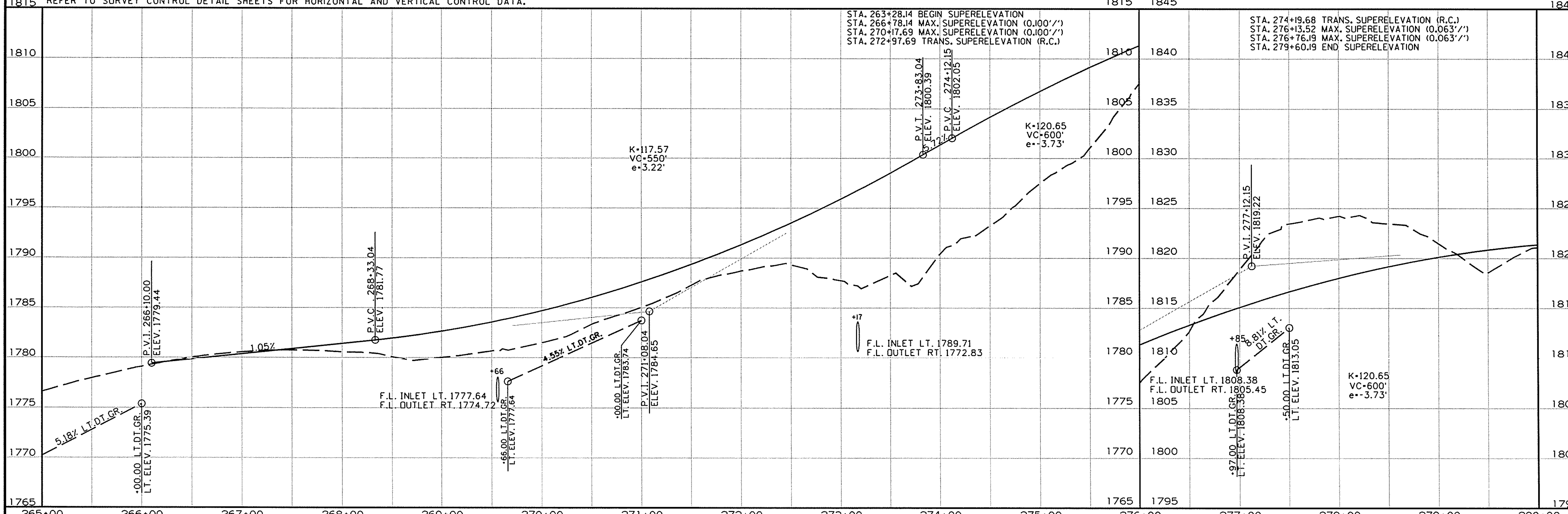
(2) PLAN AND PROFILE SHEETS



CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YD.
269+25	273+00	LT.	7'	292
275+00	277+00	LT.	7'	156

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



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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.		080464	45	115

(2) PLAN AND PROFILE SHEETS

STA.283+77 IN PLACE
24"x 157' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWL. ON RT. AND
EXTEND R.C. PIPE 14' RT.
TO A COMPLETED LENGTH OF 171'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 21CFS D.A. = 4 ACRES
24" R.C. PIPE = 18 LIN.FT.
24" FES = 1EACH

STA. 286+65.06 IN PLACE
2.5' X 2' DROP INLET
ON LT. (35.13')
REMOVE

STA. 290+08
CONST. APPR. ON LT. = 55 CU. YDS.

STA.291+25 IN PLACE
24" x 106' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWL. RT. AND
EXTEND R.C. PIPE 32' RT.
TO A COMPLETED LENGTH OF 138'
(CLASS IV) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 21CFS D.A. = 4 ACRES
24" R.C. PIPE = 36 LIN.FT.
24" FES = 1EACH

STA.291+30 IN PLACE
12" x 49' C.M. PIPE CULVERT
RETAIN

STA. 291+81 INSTALL
24"x 38' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. ON LT. = 200 CU. YDS.

STA.293+75 IN PLACE
24" x 51' R.C. PIPE CULVERT
REMOVE

STA.294+07 IN PLACE
24" x 45' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
PLUG AND ABANDON = 1EACH
050 = 10 CFS D.A. = 2 ACRES

STA.295+00 CONSTRUCT
24" x 72' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 10 CFS D.A. = 2 ACRES

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CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YD.
281+00	283+00	LT.	6'	133
286+00	287+00	LT.	6.25'	69
292+00	295+25	RT.	7'	251
293+00	296+00	LT.	7'	233

N 40°51' 13" W

P.I. 292+21.14

EXIST. R/W

CONST. LIMITS

PROP. R/W

N 55°12' 42" E

N 40°51'13" W

P.C. 281+29.03

STA.285+09 IN PLACE
24" x 181' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
RETAIN

STA.286+69 IN PLACE
24" x 46' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. AND
REMOVE 6' LT. & EXTEND 44' RT.
TO A COMPLETED LENGTH OF 84'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
AND CONSTRUCT ℄ +74
24" x 86' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 41CFS D.A. = 8 ACRES
24" R.C. PIPE = 134 LIN.FT.
24" FES = 4 EACH

PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

4" PVC W/B

CASING

1840 REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 279+60.19 BEGIN SUPERELEVATION
STA. 283+10.19 MAX. SUPERELEVATION (0.095'/')
STA. 295+25.86 MAX. SUPERELEVATION (0.095'/')
STA. 298+75.86 END SUPERELEVATION

0.89%

K=120.65
VC=600'
e=-3.73'

P.V.T. 280+12.15
ELEV. 1821.48

BM: 990 USGS BRASS CAP TT 67 TX.SET IN CONC.
1239938.9 LT. OF STA. 283+32.82
ELEVATION = 2009.40

F.L. INLET LT. 1788.62
F.L. OUTLET RT. 1774.55

EXIST.
F.L. INLET LT. 1789.95
F.L. OUTLET RT. 1770.72

F.L. INLET LT. 1801.79
F.L. OUTLET RT. 1791.66

F.L. INLET LT. 1804.32
F.L. OUTLET RT. 1787.44

F.L. INLET LT. 1836.28
F.L. OUTLET RT. 1830.16

1840 1835 1830 1825 1820 1815 1810 1805 1800 1795 1790

280+00 281+00 282+00 283+00 284+00 285+00 286+00 287+00 288+00 289+00 290+00 291+00 292+00 293+00 294+00 295+00

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				6	ARK.			
				JOB NO.		080464	46	115

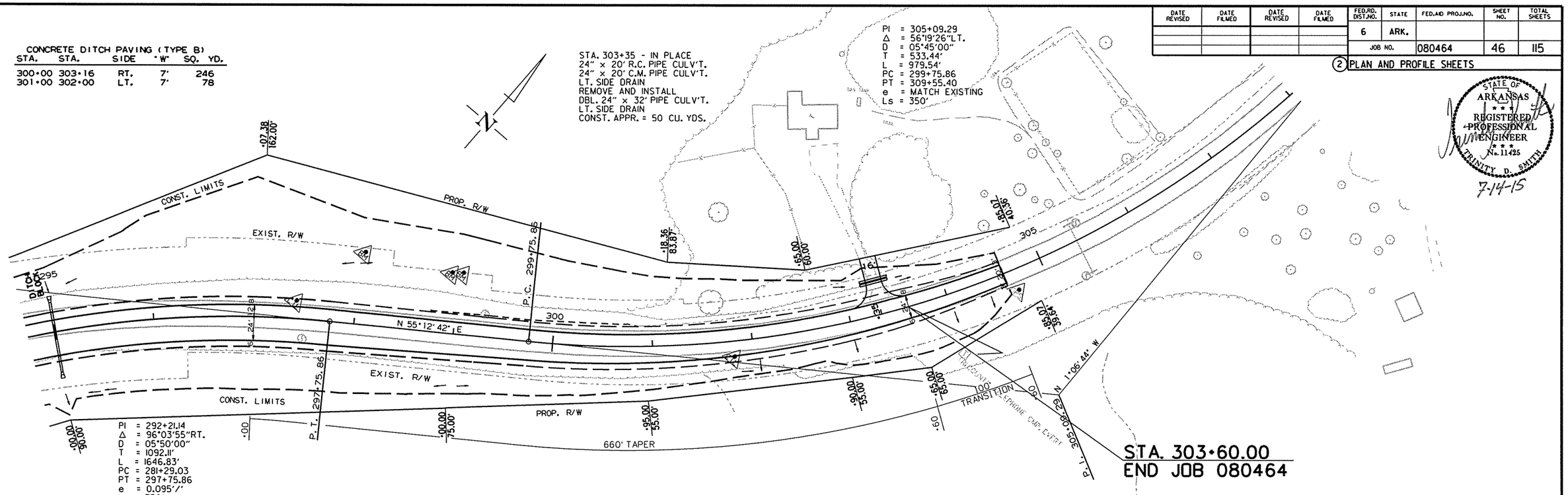
(2) PLAN AND PROFILE SHEETS

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YD.
300+00	303+16	RT.	7'	246
301+00	302+00	LT.	7'	78

STA. 303+35 - IN PLACE
24" x 20' R.C. PIPE CULV'T.
24" x 20' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 50 CU. YDS.

PI = 305+09.29
Δ = 56°19'26"LT.
D = 05°45'00"
T = 533.44'
L = 979.54'
PC = 299+75.86
PT = 309+55.40
e = MATCH EXISTING
Ls = 350'

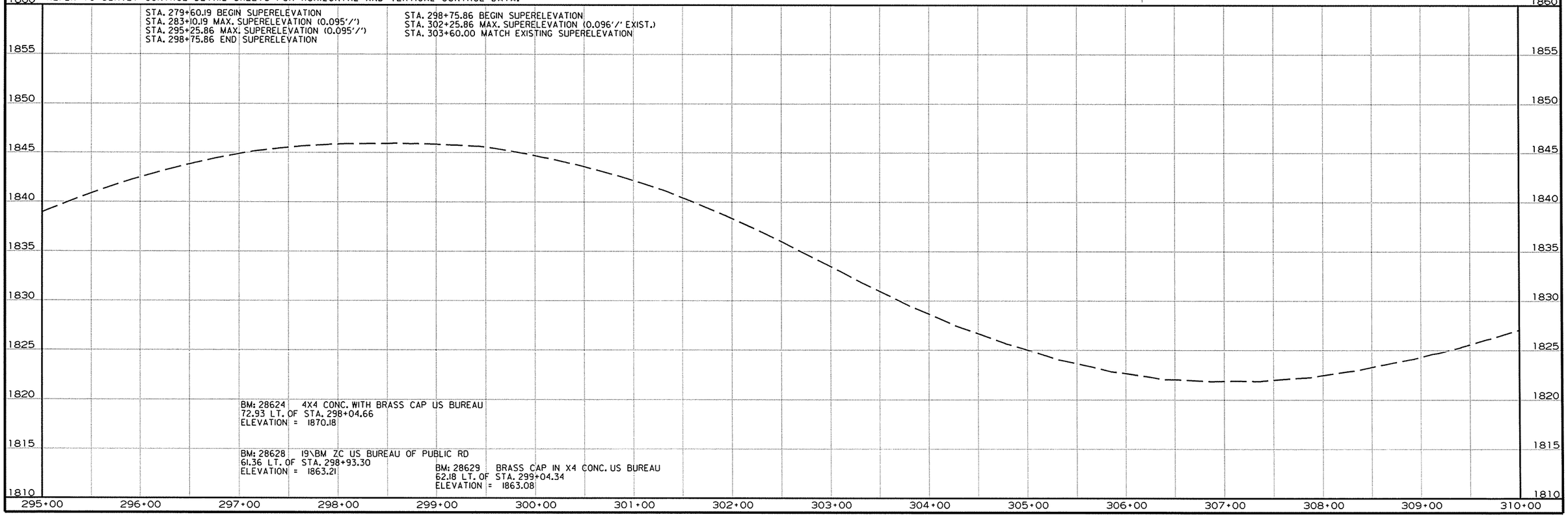


PI = 292+21.14
Δ = 96°03'55"RT.
D = 05°50'00"
T = 1092.11'
L = 1646.83'
PC = 281+29.03
PT = 297+75.86
e = 0.095'/'
Ls = 350'

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 279+60.19 BEGIN SUPERELEVATION
STA. 283+10.19 MAX. SUPERELEVATION (0.095'/')
STA. 295+25.86 MAX. SUPERELEVATION (0.095'/')
STA. 298+75.86 END SUPERELEVATION

STA. 298+75.86 BEGIN SUPERELEVATION
STA. 302+25.86 MAX. SUPERELEVATION (0.096'/' EXIST.)
STA. 303+60.00 MATCH EXISTING SUPERELEVATION



BM: 28624 4X4 CONC. WITH BRASS CAP US BUREAU
72.93 LT. OF STA. 298+04.66
ELEVATION = 1870.18

BM: 28628 19\BM ZC US BUREAU OF PUBLIC RD
61.36 LT. OF STA. 298+93.30
ELEVATION = 1863.21

BM: 28629 BRASS CAP IN X4 CONC. US BUREAU
62.18 LT. OF STA. 299+04.34
ELEVATION = 1863.08

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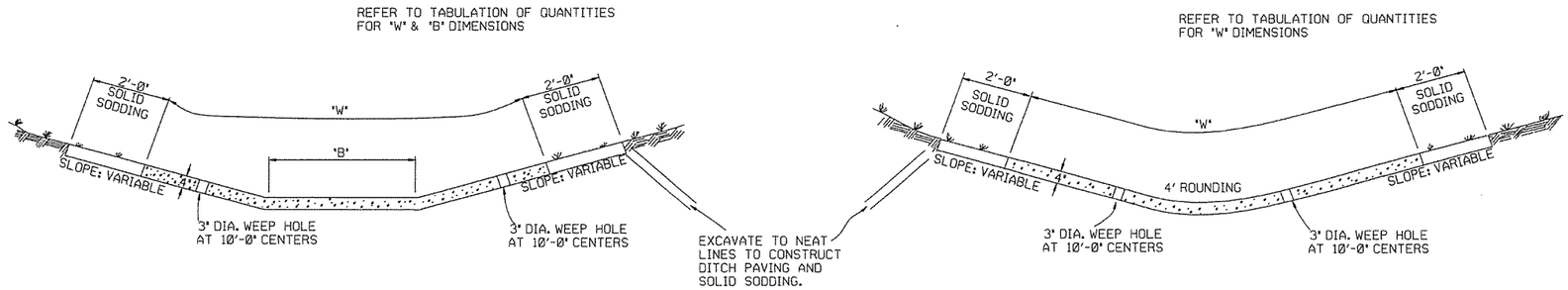
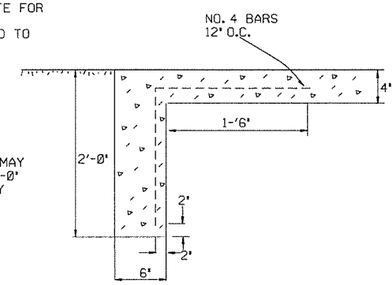


TYPE A

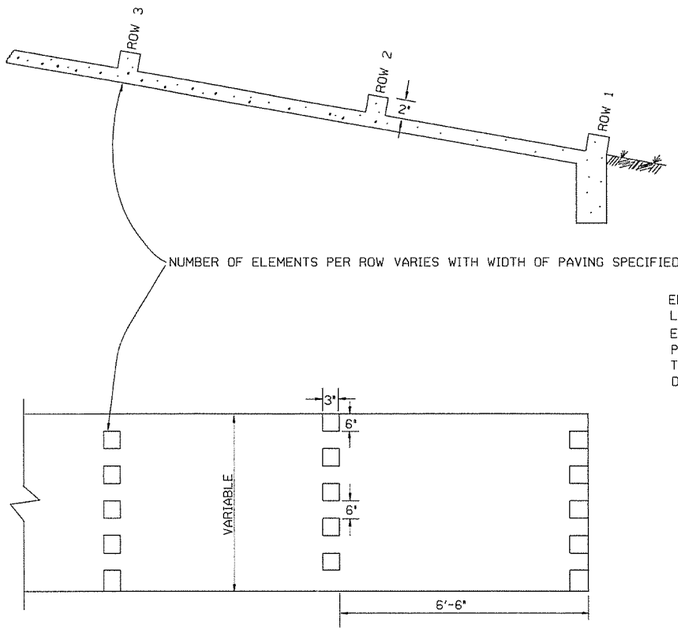
TYPE B

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.

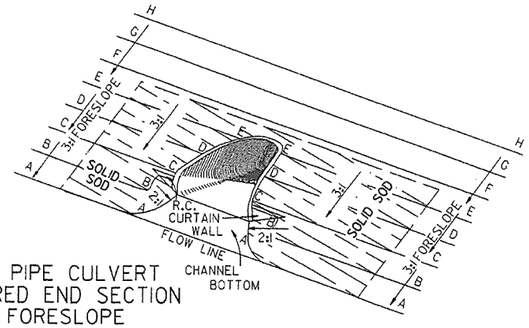
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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	11-30-89
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

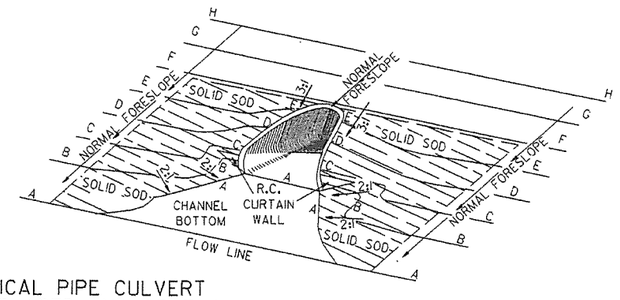
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

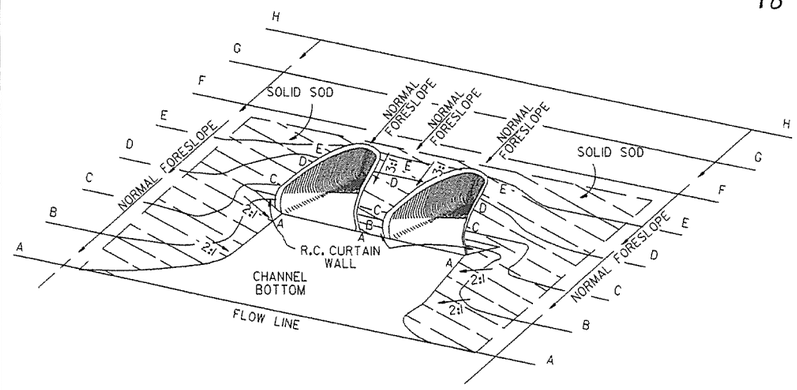
STANDARD DRAWING CDP-1



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

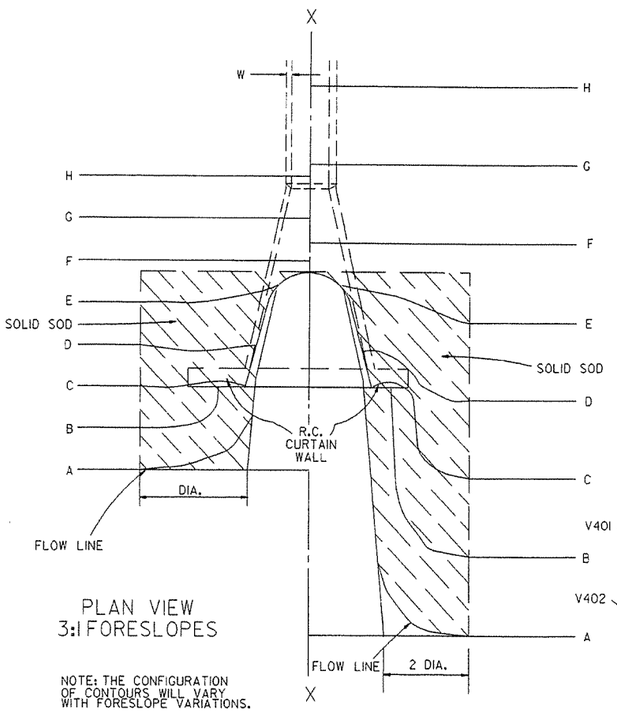
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.



NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
3:1 FORESLOPES

PLAN VIEW
FLATTENED FORESLOPES

CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.

PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

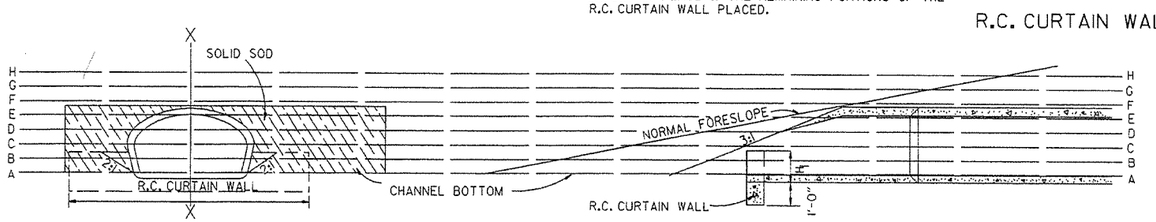
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	36	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

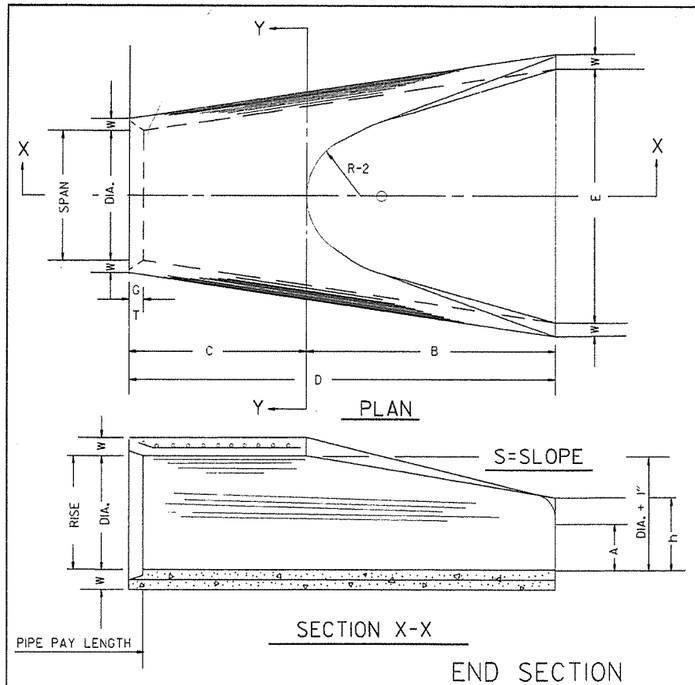
DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

10-18-96

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

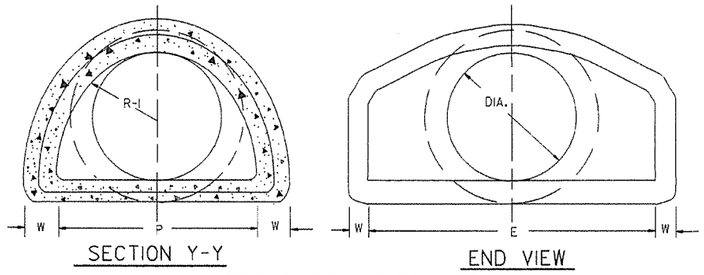
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. ± 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33¾"	16¹¹⁄₁₆"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅜"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47¹³⁄₁₆"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36¹⁵⁄₁₆"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77¹³⁄₁₆"	38⅝"	24"	5"	13250	4'-6"

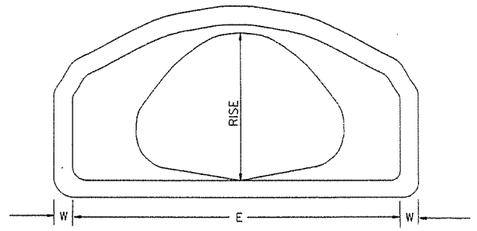


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

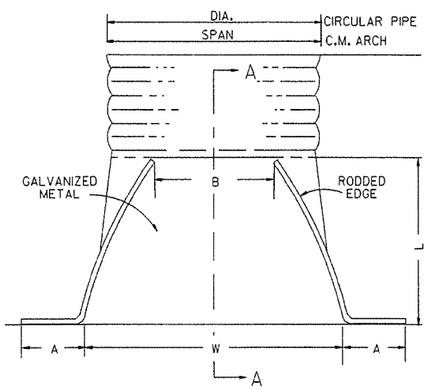
ARCH PIPE

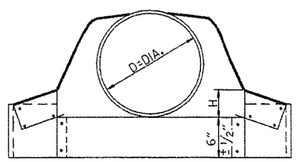
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	8'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36¹¹⁄₁₆"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47¹⁵⁄₁₆"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅜"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72¹⁵⁄₁₆"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77¹³⁄₁₆"	24"	5"	2¼:1

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

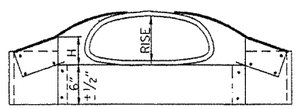


END VIEW
CONCRETE ARCH PIPE





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

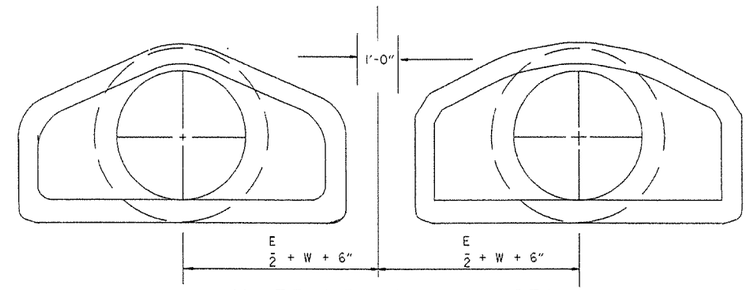
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

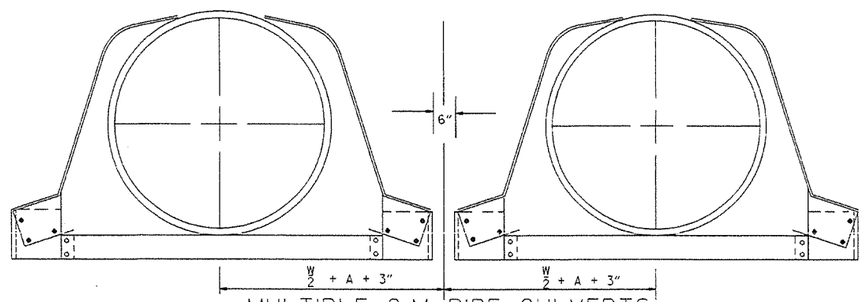
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2½:1	12
60"	71	47	18	33	12	77	114	2½:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



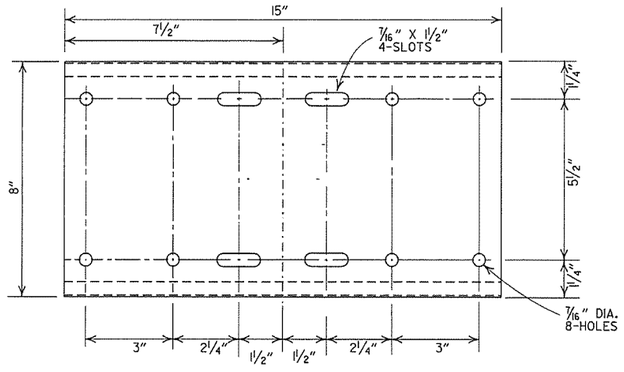
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

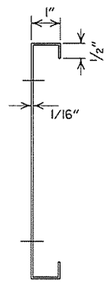
ARKANSAS STATE HIGHWAY COMMISION

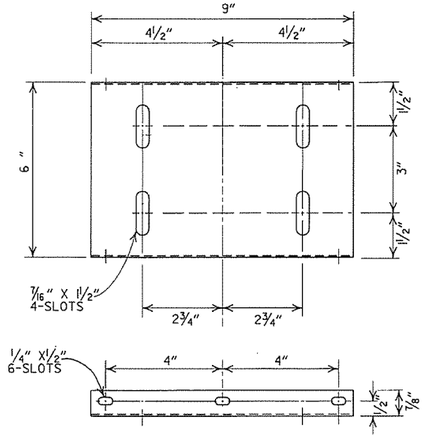
FLARED END SECTION

STANDARD DRAWING FES-2

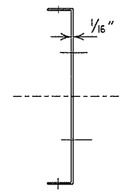


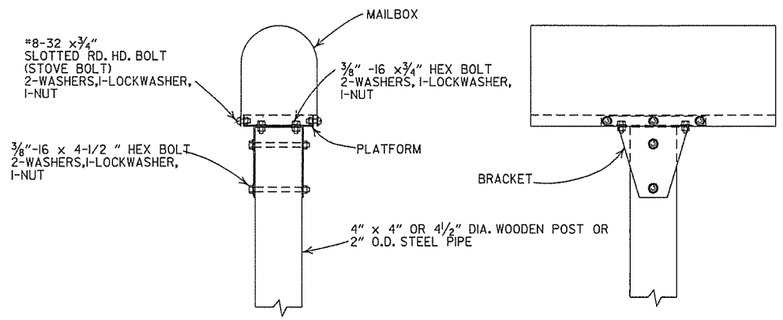
SHELF



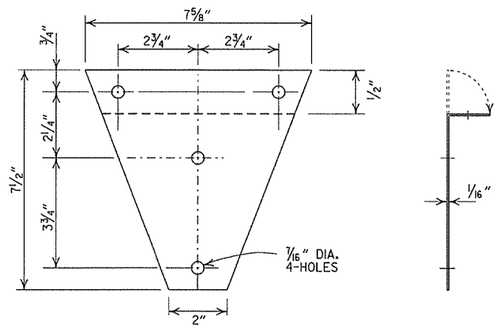


PLATFORM





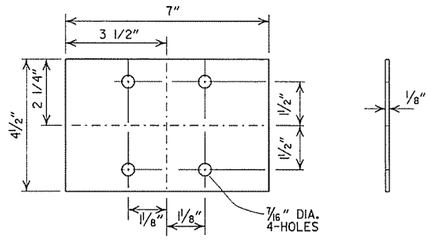
SINGLE INSTALLATION



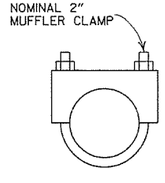
BRACKET

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 X¾" 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.



ANTI-TWIST PLATE



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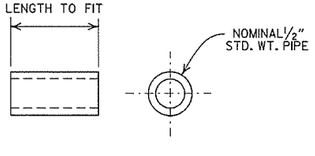
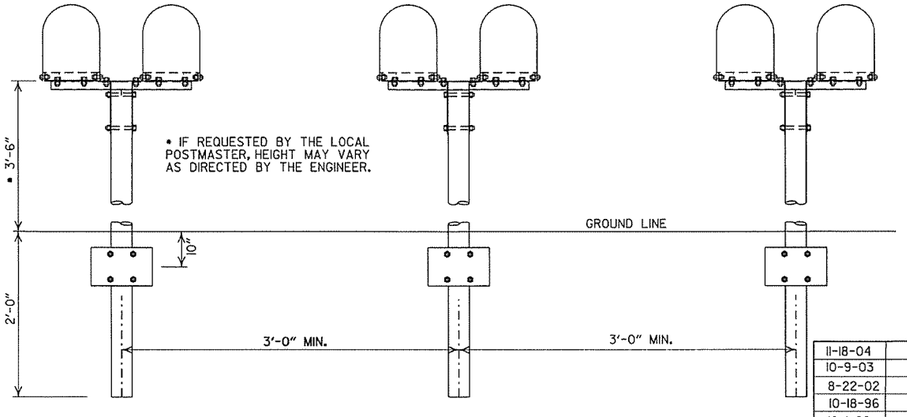
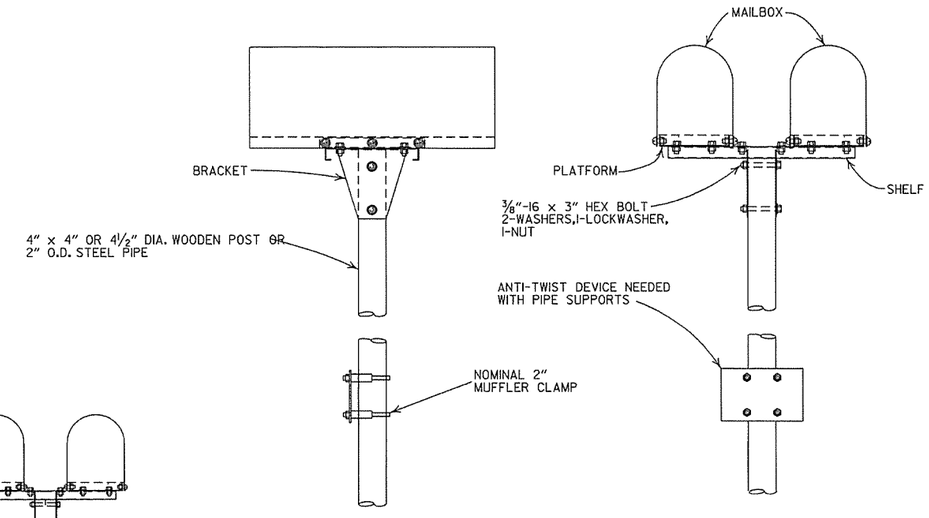


SPACER



SPACING FOR MULTIPLE POST INSTALLATION



DOUBLE 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)(I).

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.

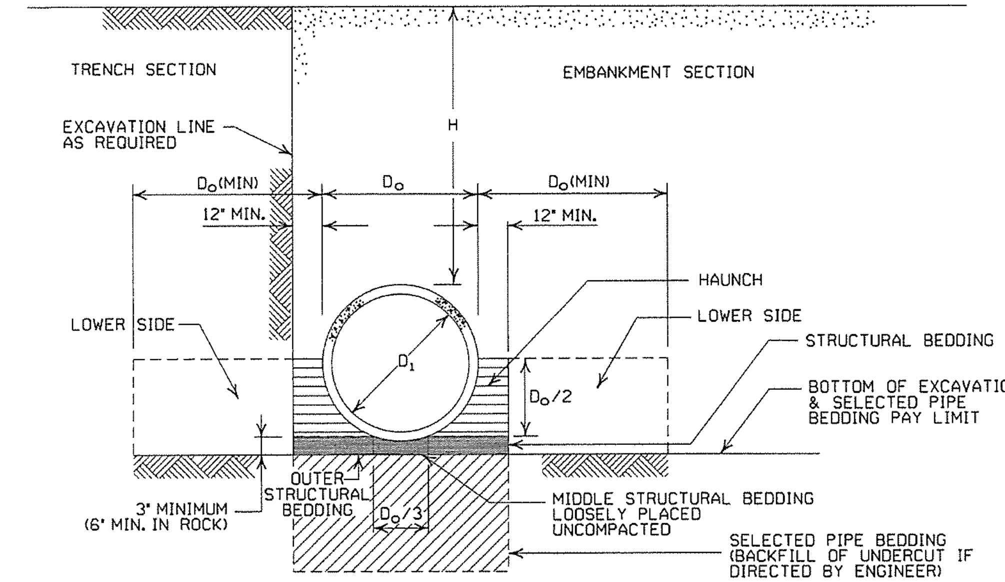
- LEGEND -

D_I = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
(hatched symbol) = 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.

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.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT 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."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
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			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	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	0.060	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	0.135	3	14
66	77x52	8	0.168	3	15	0.164	3	15
72	83x57	9	0.168	3	15			

			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				
				INSTALLATION		INSTALLATION	
				TYPE 2	TYPE 1	TYPE 2	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

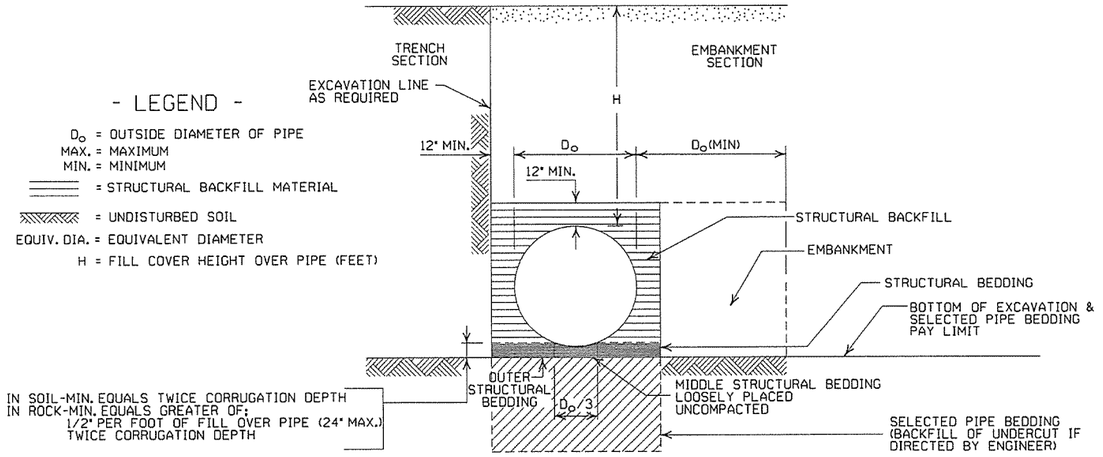
③ SM-3 WILL NOT BE ALLOWED.

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 (CURRENT 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
2-27-14	REVISED GENERAL NOTE 1.	
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"	"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"

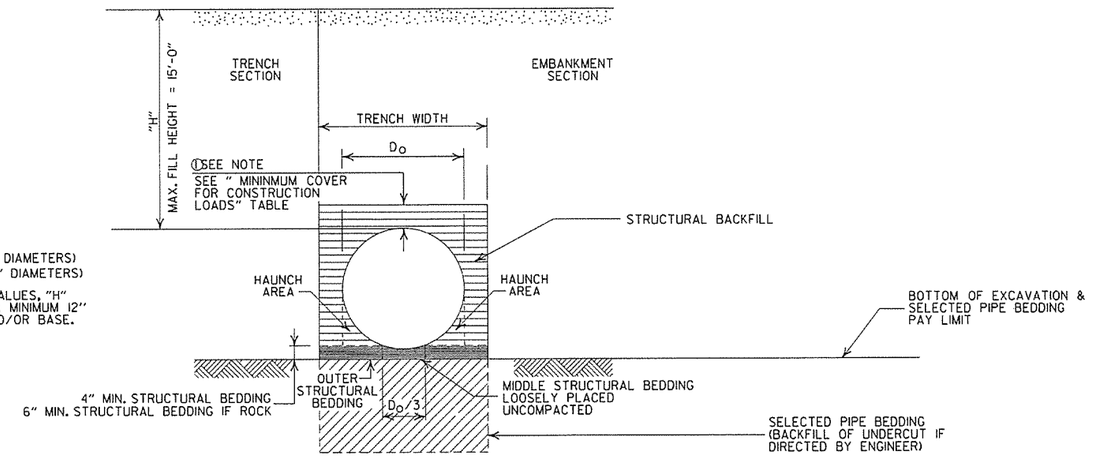
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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 (CURRENT 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
2-27-14	REVISED GENERAL NOTE 1.	
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 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 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

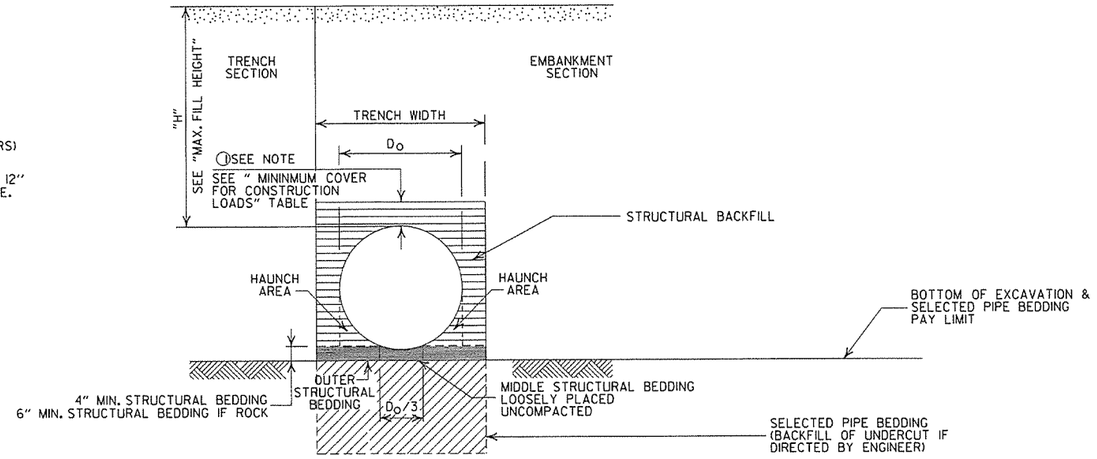
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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 (CURRENT 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

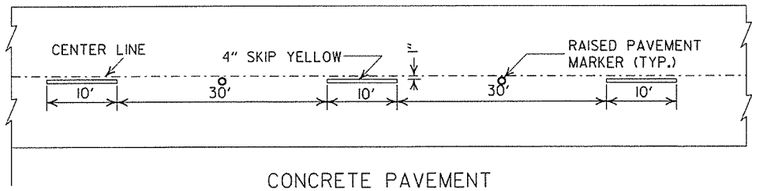
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

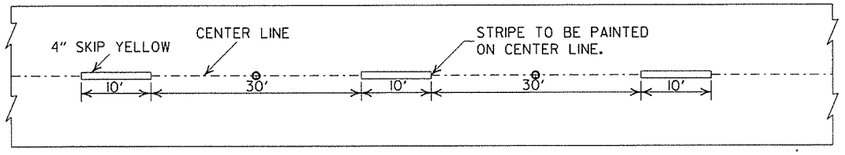
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

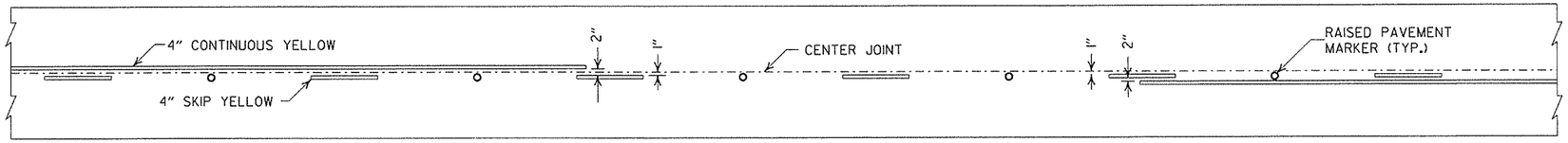


CONCRETE PAVEMENT

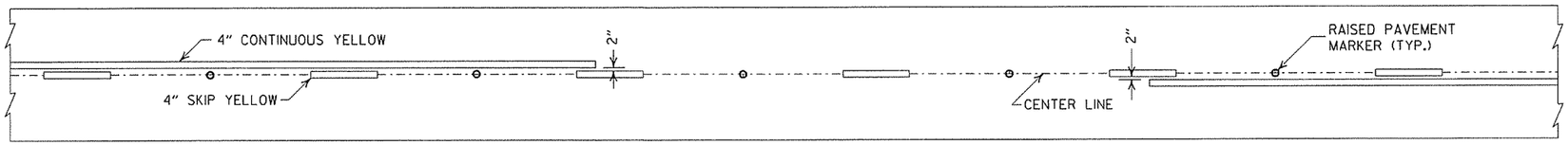


ASPHALT PAVEMENT

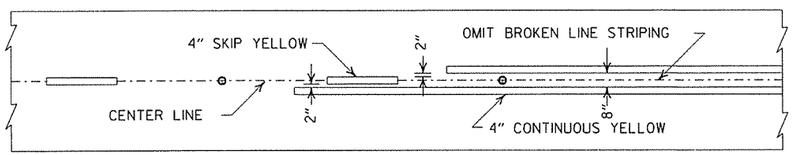
BROKEN LINE STRIPING



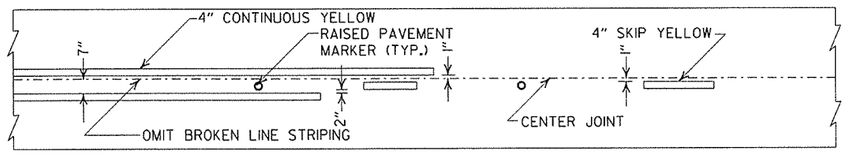
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT



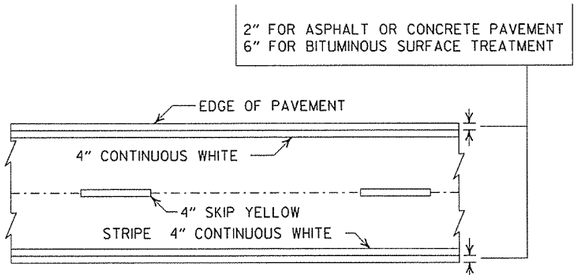
ASPHALT PAVEMENT



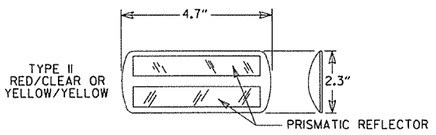
CONCRETE PAVEMENT

NOTES:

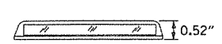
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED 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:

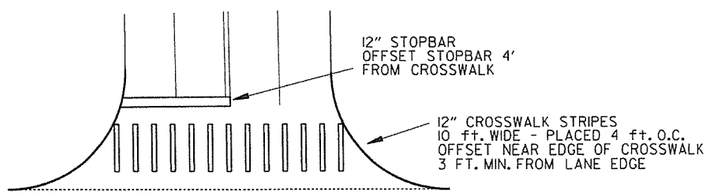
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

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.

STRIPING AT ADJACENT NO PASSING LANES



CROSSWALK AND STOPBAR DETAILS

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

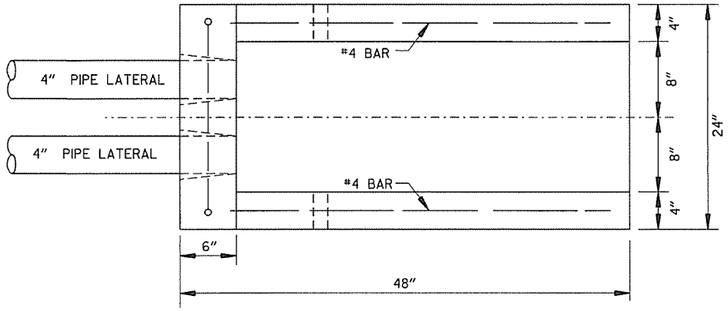
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

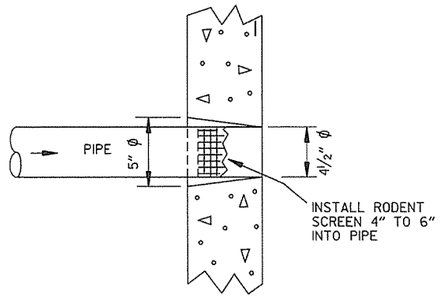
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

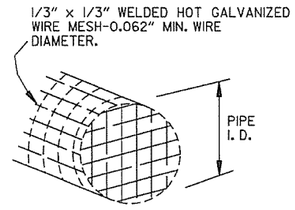
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



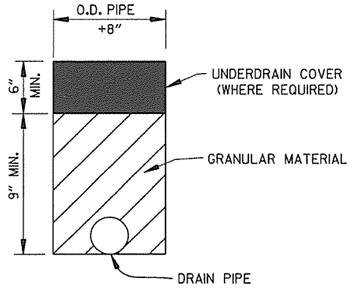
PLAN VIEW

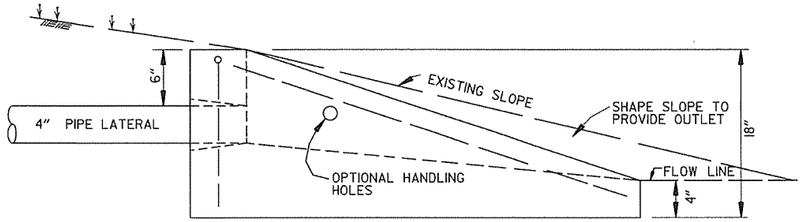


DETAIL OF HOLE FOR 4" PIPE

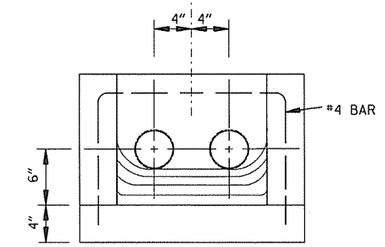


DETAIL OF RODENT SCREEN

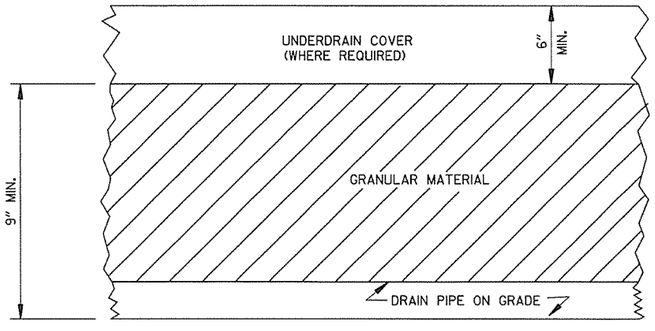




SIDE VIEW

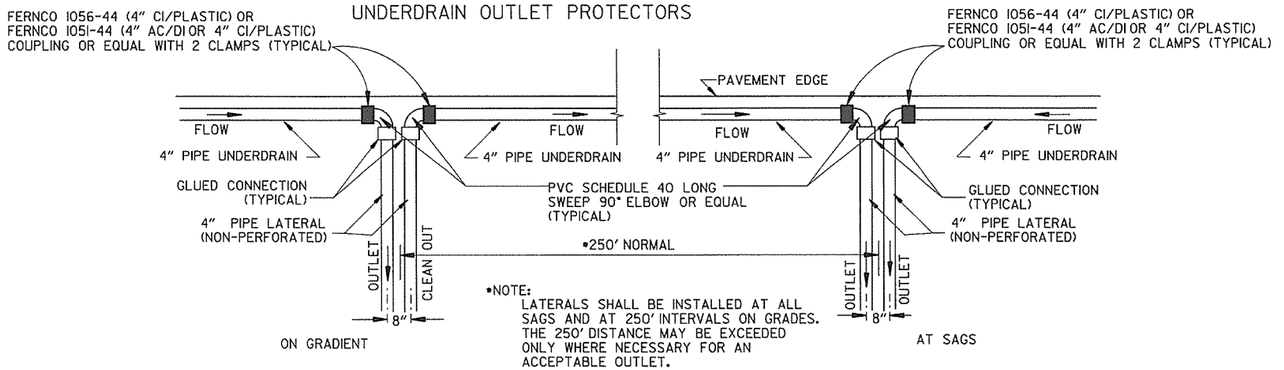


FRONT VIEW



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

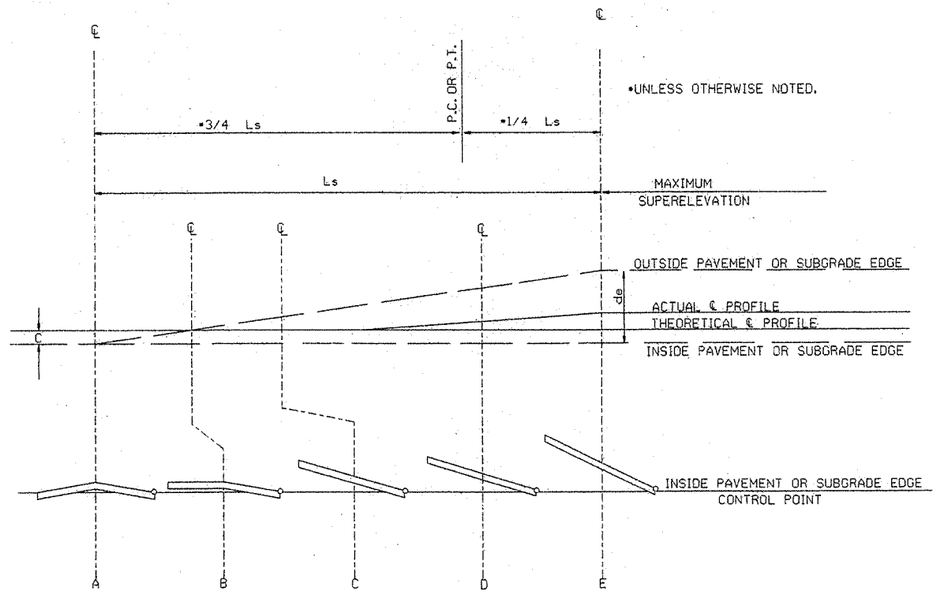
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45′	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00′	N.C.			R.C.			0.021			0.026			0.030			0.037	275	300
1° 15′	N.C.			0.021			0.026			0.032			0.037			0.046		
1° 30′	N.C.			0.025	175		0.031	200		0.037	225		0.043	250	300	0.054		
1° 45′	N.C.			0.028			0.036			0.043			0.049			0.062		
2° 00′	R.C.			0.031			0.040			0.048			0.055			0.070		
2° 15′	R.C.			0.034			0.045		250	0.053			0.061			0.078	300	350
2° 30′	0.021			0.037		200	0.049			0.058			0.067			0.085	315	
2° 45′	0.023			0.040			0.053			0.063			0.072			0.091	335	
3° 00′	0.025	150		0.043			0.057			0.067	230		0.077	260		0.096	350	400
3° 15′	0.027			0.046			0.061			0.072	245		0.082	275		0.098	360	
3° 30′	0.029			0.049			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45′	0.031		200	0.051			0.069	215		0.080	265		0.090	295	350			
4° 00′	0.033			0.056			0.072	225		0.083	270		0.093	305				
4° 30′	0.037			0.061			0.078	240		0.087	280		0.096	315				
5° 00′	0.040			0.066	185		0.083	250		0.091	295	350	0.098	320				
5° 30′	0.043			0.070	190		0.088	260	300	0.094	300							
6° 00′	0.046			0.074	200		0.092	270		0.096	305							
6° 30′	0.050			0.078	210		0.095	280		0.100	315							
7° 00′	0.053			0.081	215		0.098	285										
7° 30′	0.056			0.084	220		0.099	290										
8° 00′	0.058			0.087	225	250	0.100	290										
8° 30′	0.061			0.089	230													
9° 00′	0.063			0.094	235													
10° 00′	0.068	160		0.097	250													
11° 00′	0.072	170		0.099	250													
12° 00′	0.076	175		0.100	250													
13° 00′	0.080	180																
14° 00′	0.083	190																
15° 00′	0.086	195																
16° 00′	0.089	200																
17° 00′	0.091	200																
18° 00′	0.093	205																
19° 00′	0.095	210																
20° 00′	0.097	215	250															
21° 00′	0.098	215																
22° 00′	0.099	215																
23° 00′	0.099	215																
24° 00′	0.100	220																

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 3° 30′

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



•UNLESS OTHERWISE NOTED.

STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

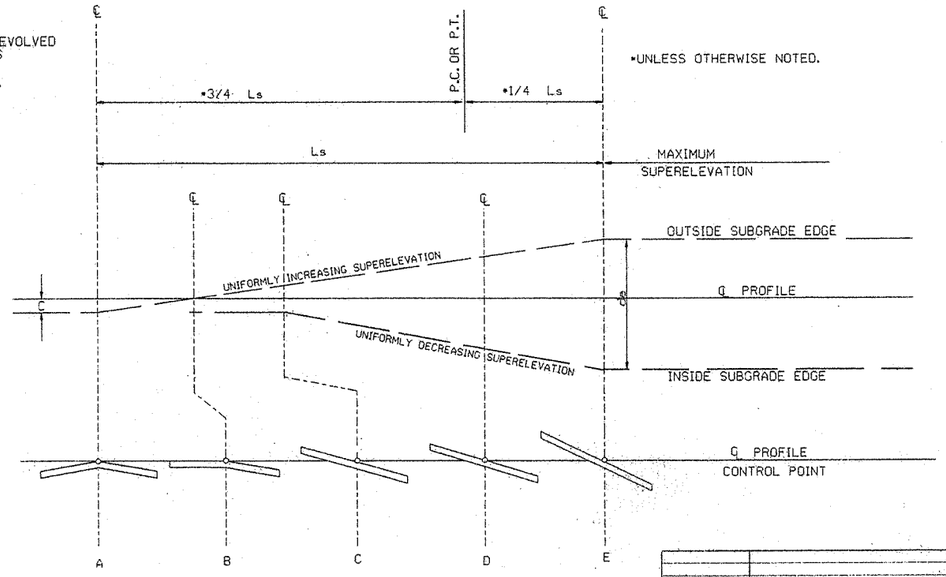
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



•UNLESS OTHERWISE NOTED.

STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

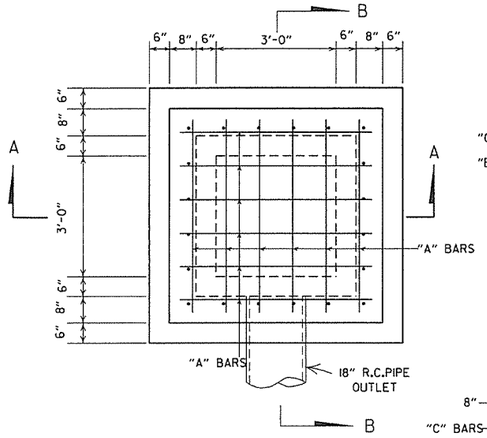
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

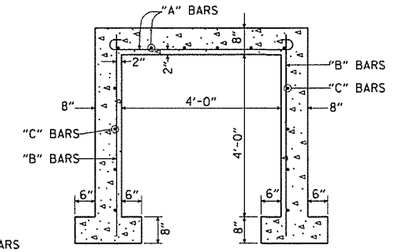
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

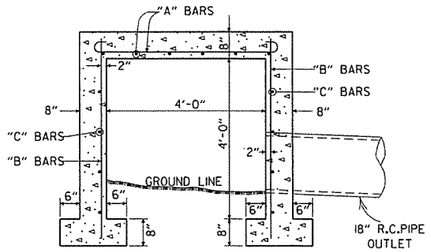
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2





SEC A-A



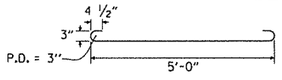
SEC B-B

NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



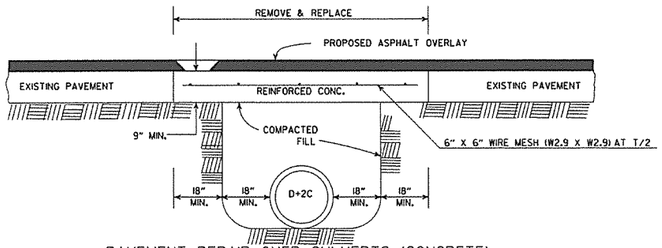
"A" BARS

QUANTITIES

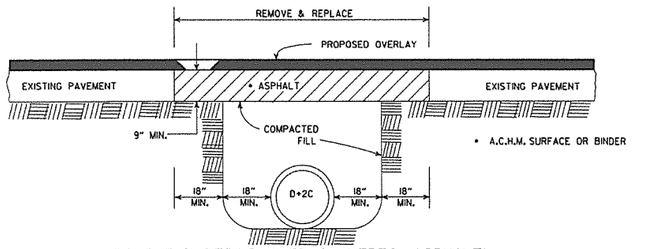
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

GENERAL NOTE:
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



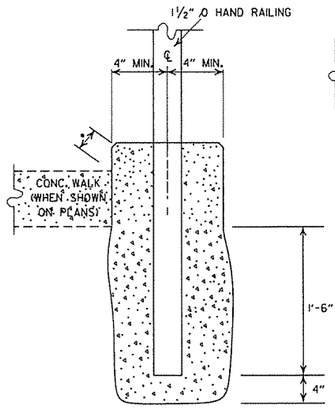
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



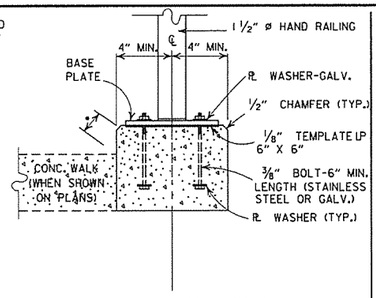
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

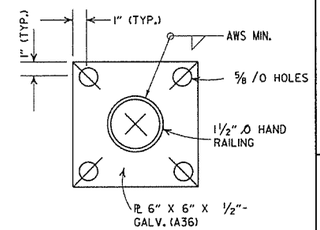
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

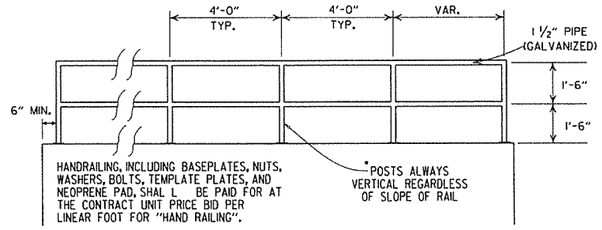


POST CONNECTION TO WALL

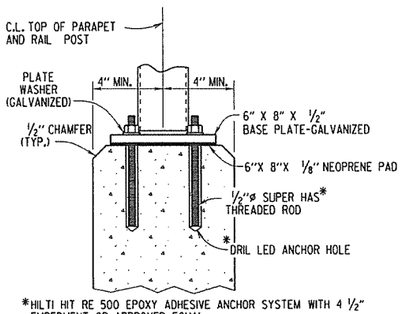


BASE PLATE

POST CONNECTION DETAILS



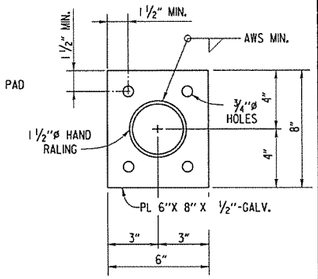
HAND RAILING SHAL L CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHAL L BE INSTAL LED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

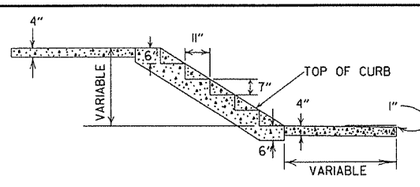
POST CONNECTION TO WALL

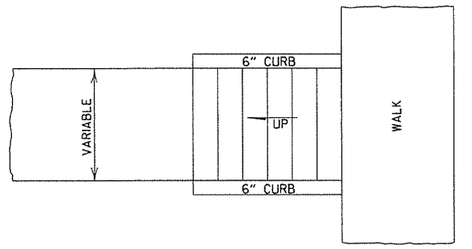


BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS





GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

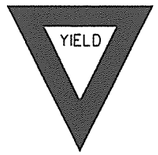
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1

R1-1

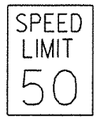
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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"

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

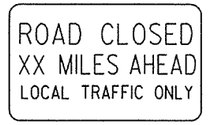
R5-1

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

R11-2

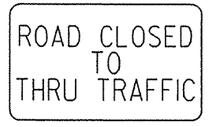
48"X30"

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"

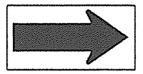
W1-3

STD. 48"X48"

W1-4

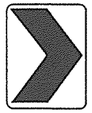
STD. 48"X48"

W1-6



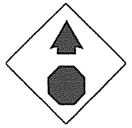
STD. 48"X24"
SPECIAL 60"X30"

W1-8



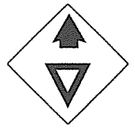
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



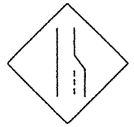
STD. 36"X36"
SPECIAL 48"X48"

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"

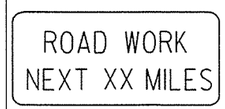
W8-11

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

36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ 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.

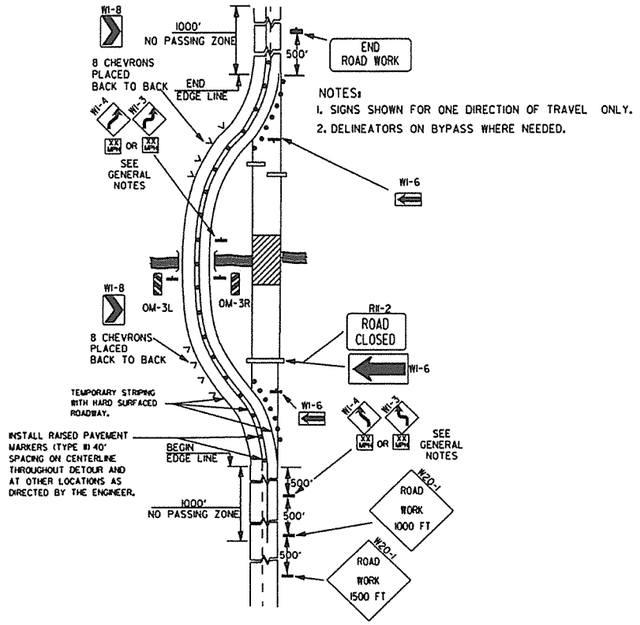
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
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	
8-15-9	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

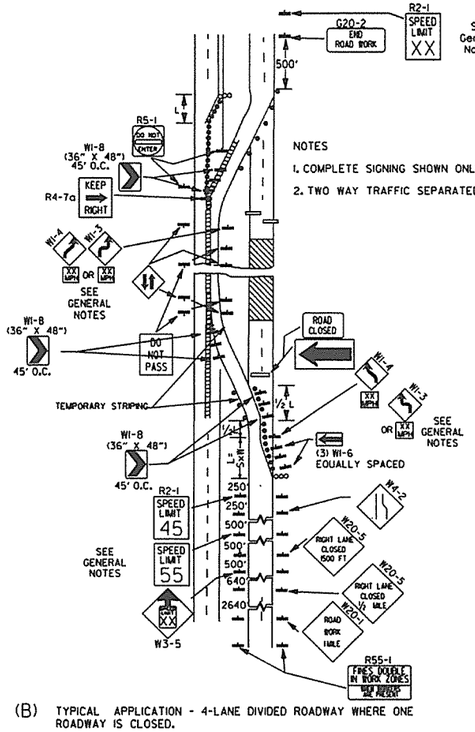
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



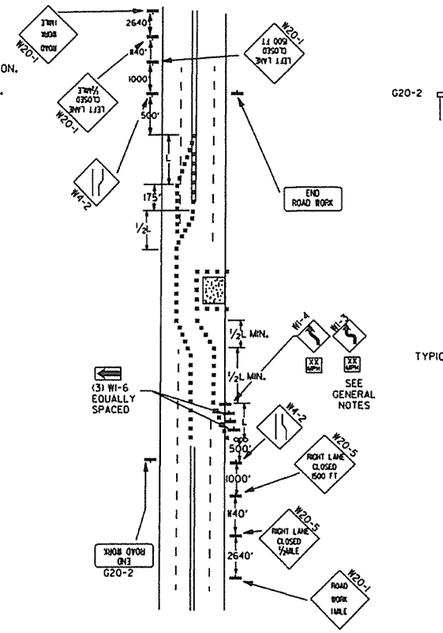
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

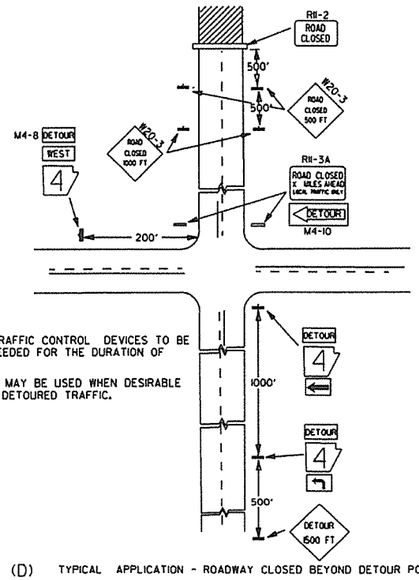


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

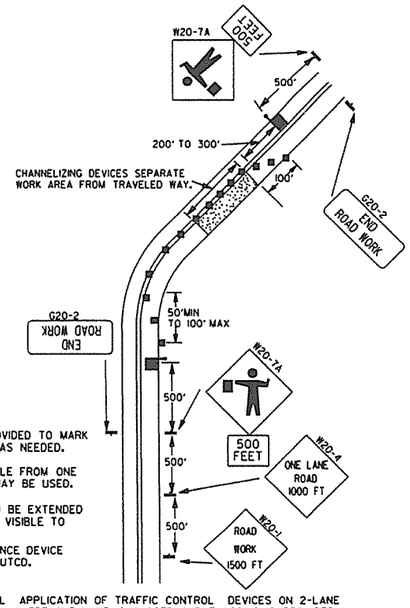


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



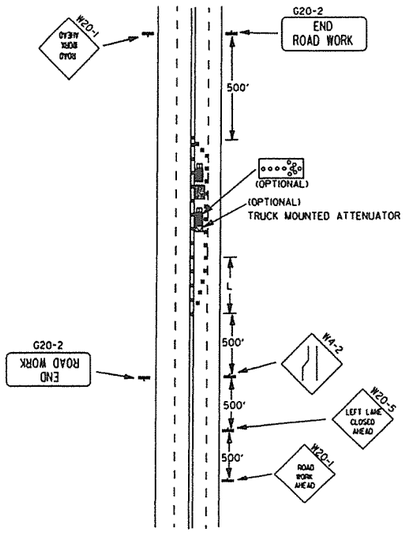
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

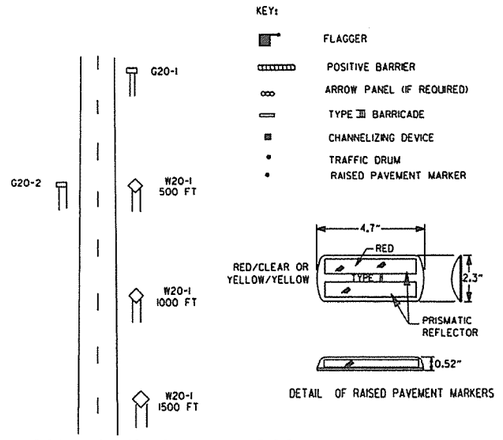


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

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.

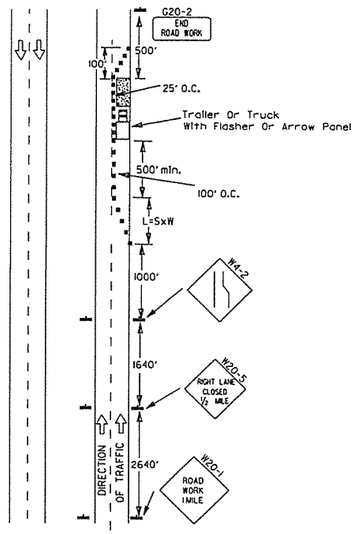
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 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.
8. 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
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
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 (G) 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	

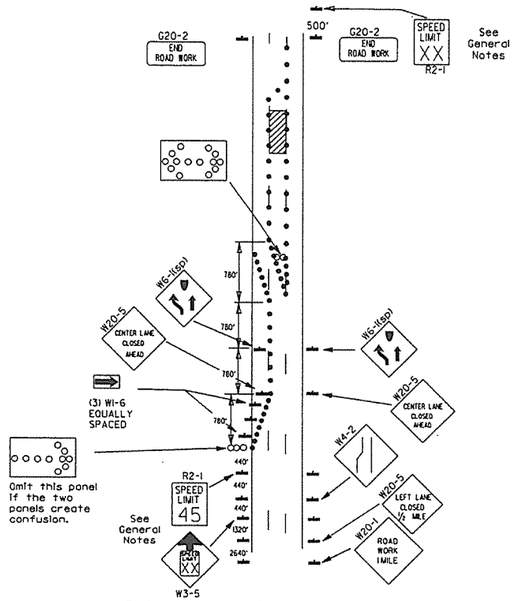
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

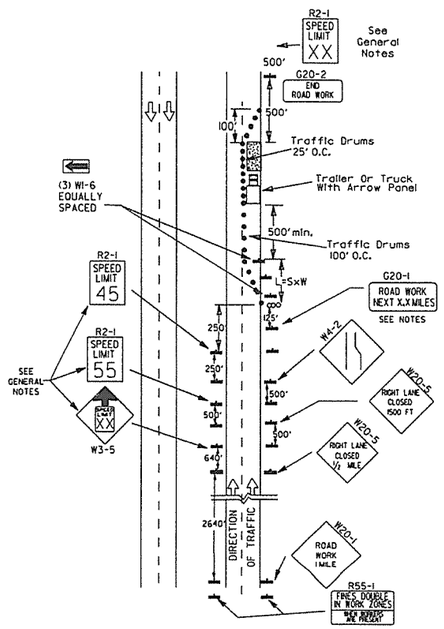
STANDARD DRAWING TC-2



(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.

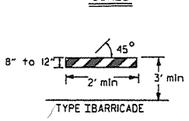
KEY:

- ooo Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

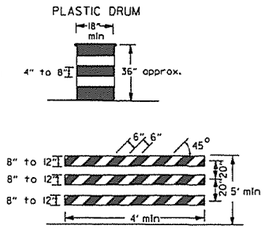
GENERAL NOTES:

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 W3-5 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. 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



* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be reflectorized in accordance with the M.U.T.C.D.



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

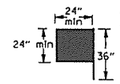
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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.

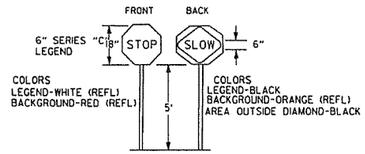
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

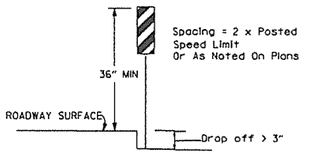


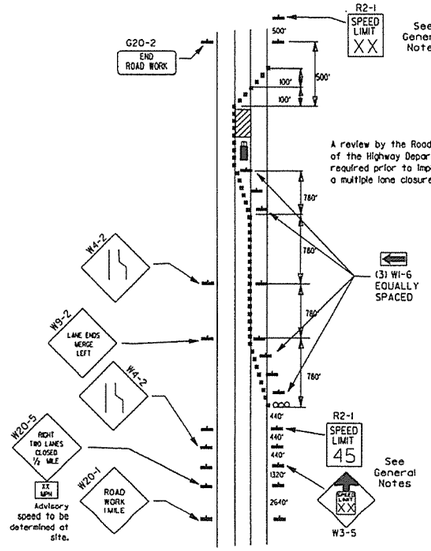
Flag shall be of good grade red material

STOP SLOW PADDLE



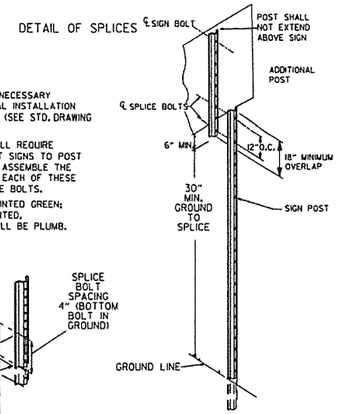
VERTICAL PANEL PLACEMENT





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

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
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	

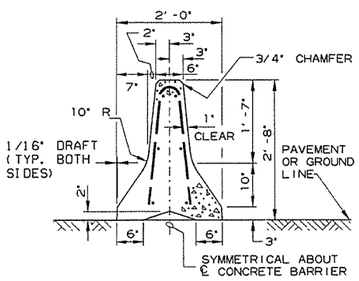
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

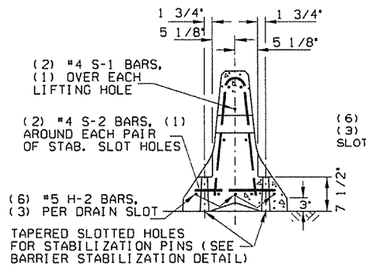
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

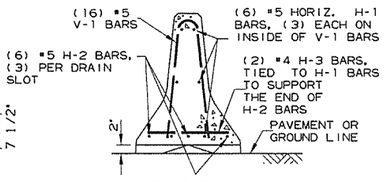
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2. TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ.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



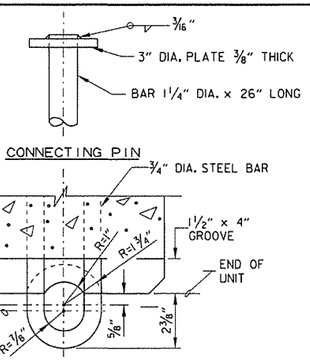
SECTION A-A



SECTION B-B

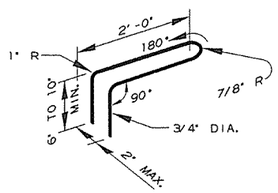


SECTION C-C

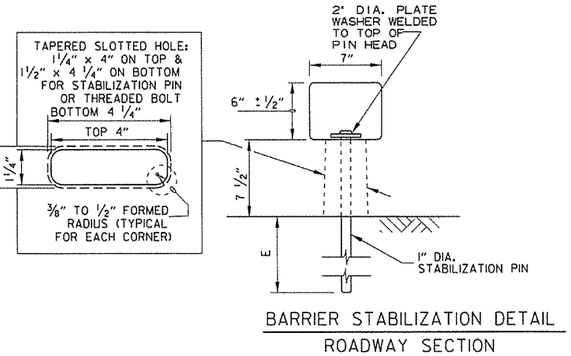


SECTION E-E

CONNECTION DETAILS



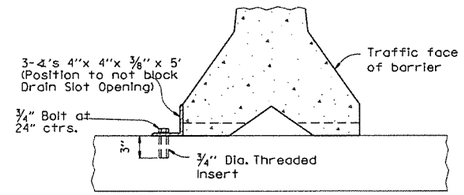
CONNECTION LOOP



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

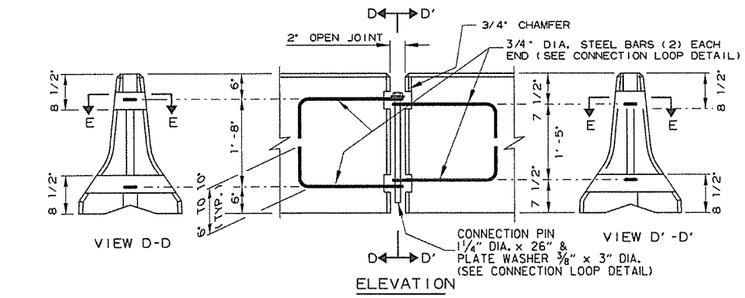
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. 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

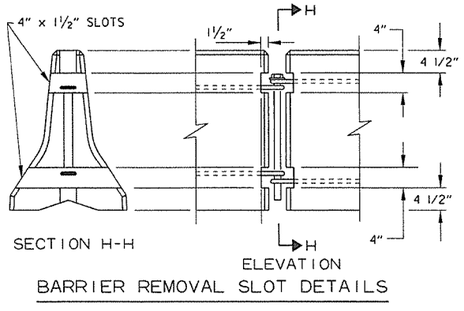
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

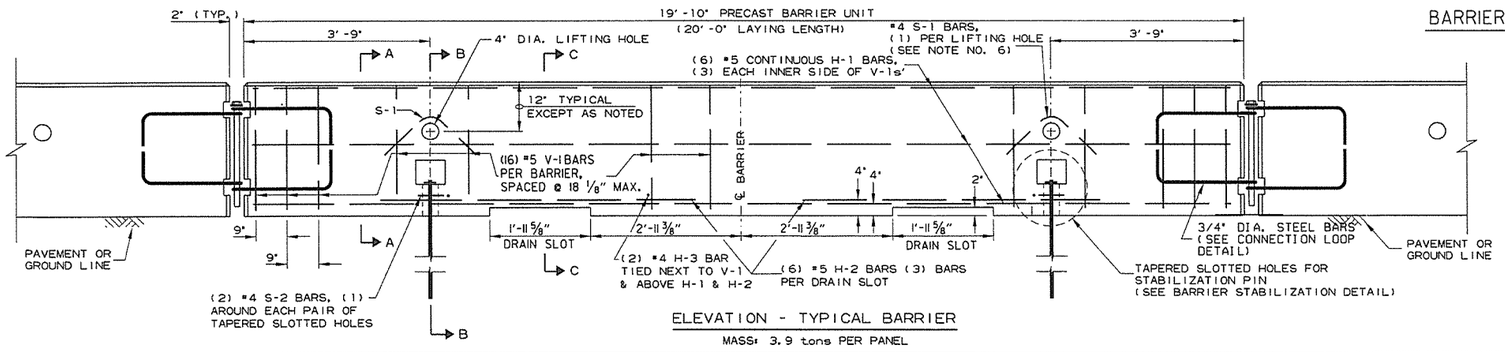
ELEVATION



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.

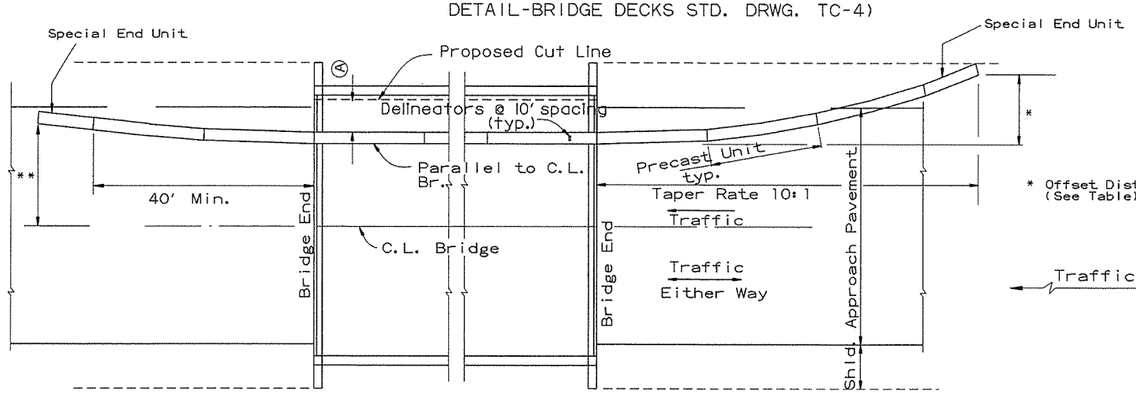
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	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)

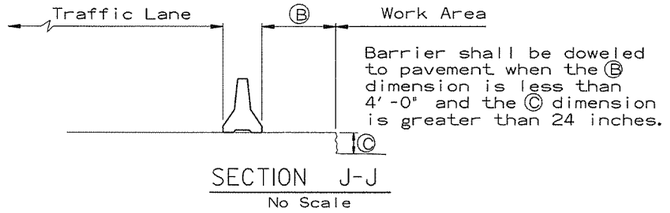


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

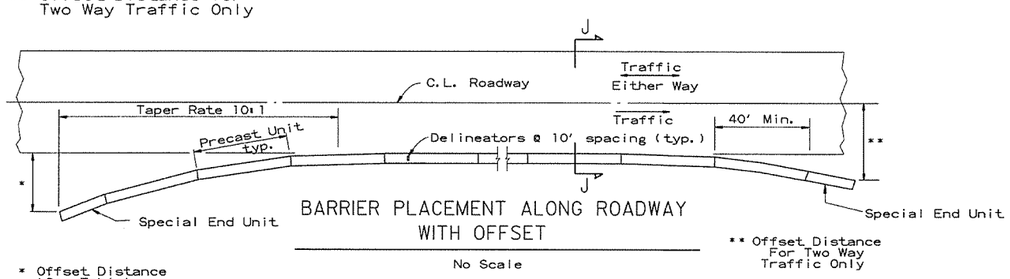
** Offset Distance for Two Way Traffic Only



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



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

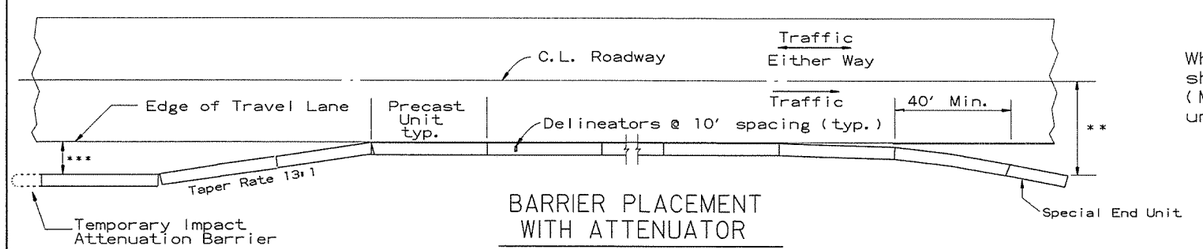
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

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.

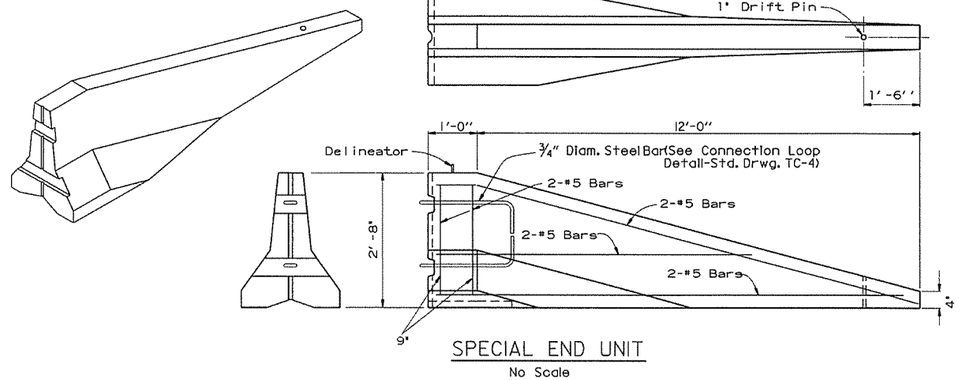


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



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	

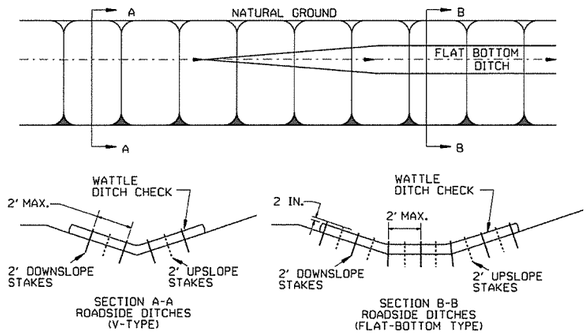
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

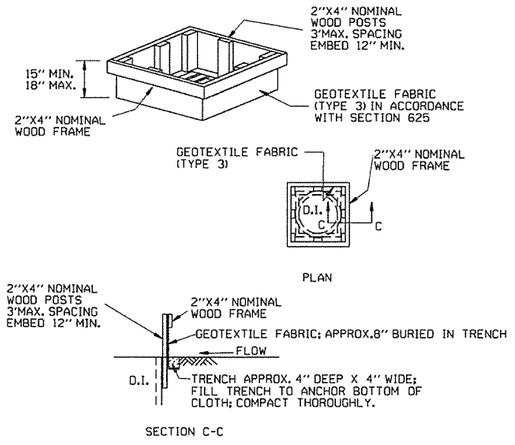
STANDARD DRAWING TC-5

GENERAL NOTES

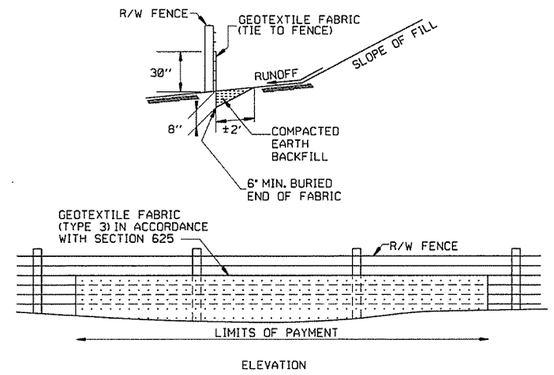
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



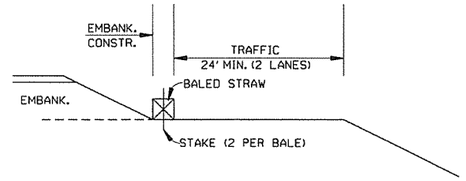
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

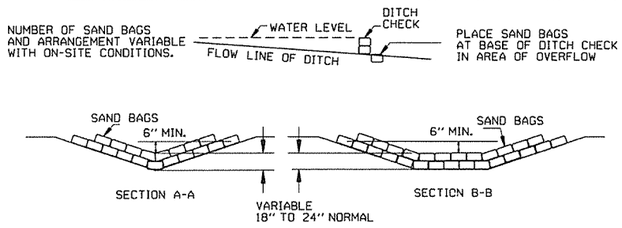
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

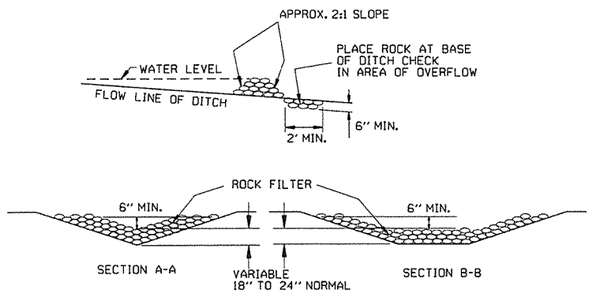
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED 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.



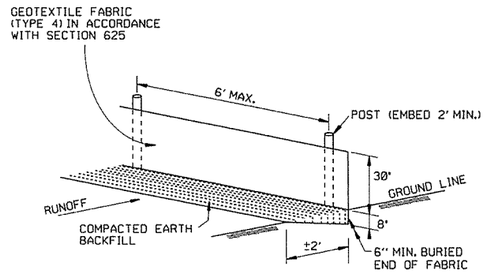
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

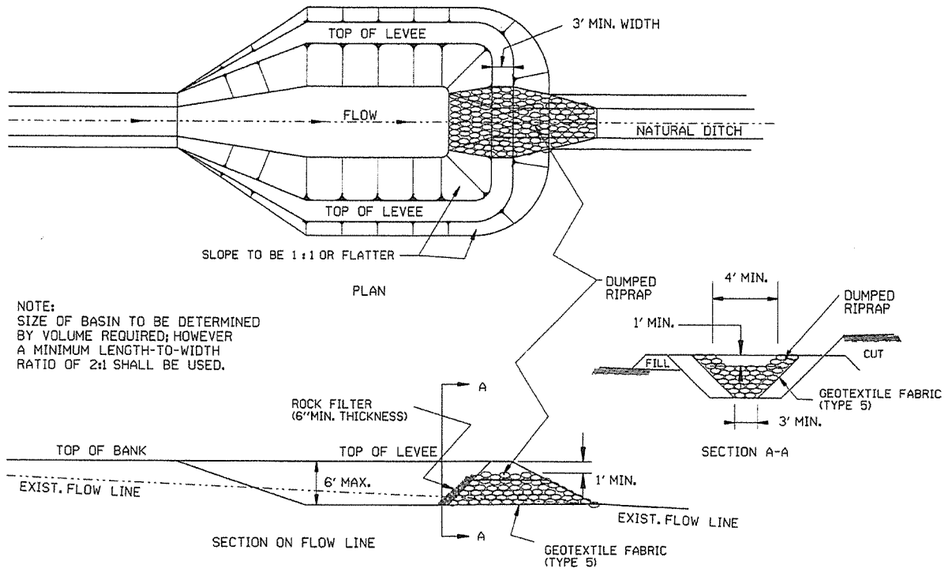
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHEP WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

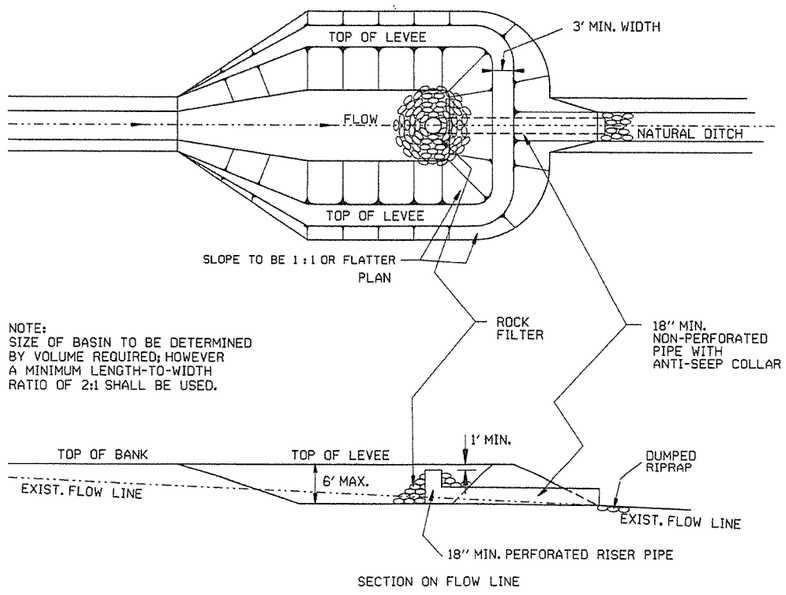
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

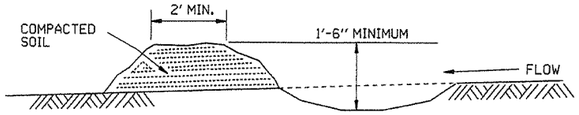
STANDARD DRAWING TEC-1



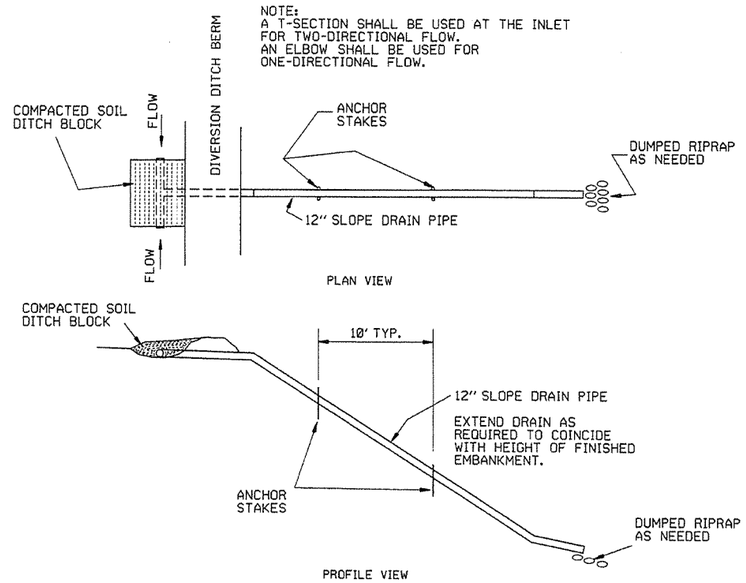
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



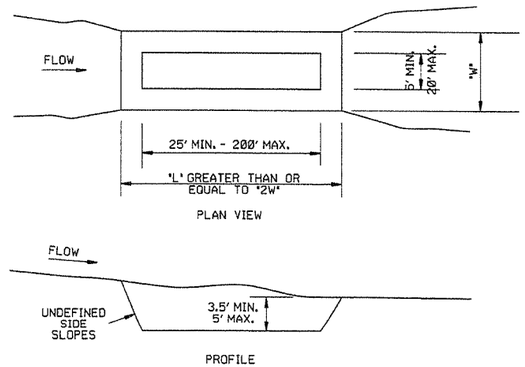
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

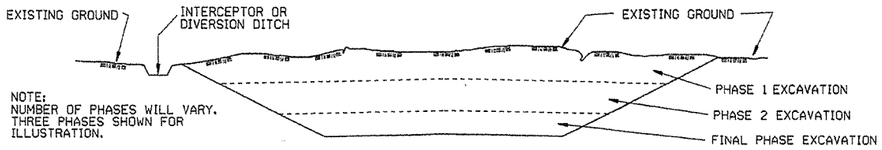
STANDARD DRAWING TEC-2

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



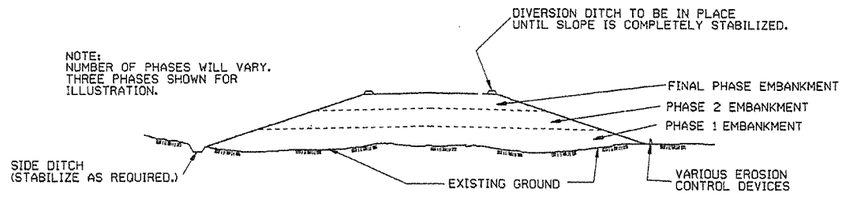
GENERAL NOTE

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

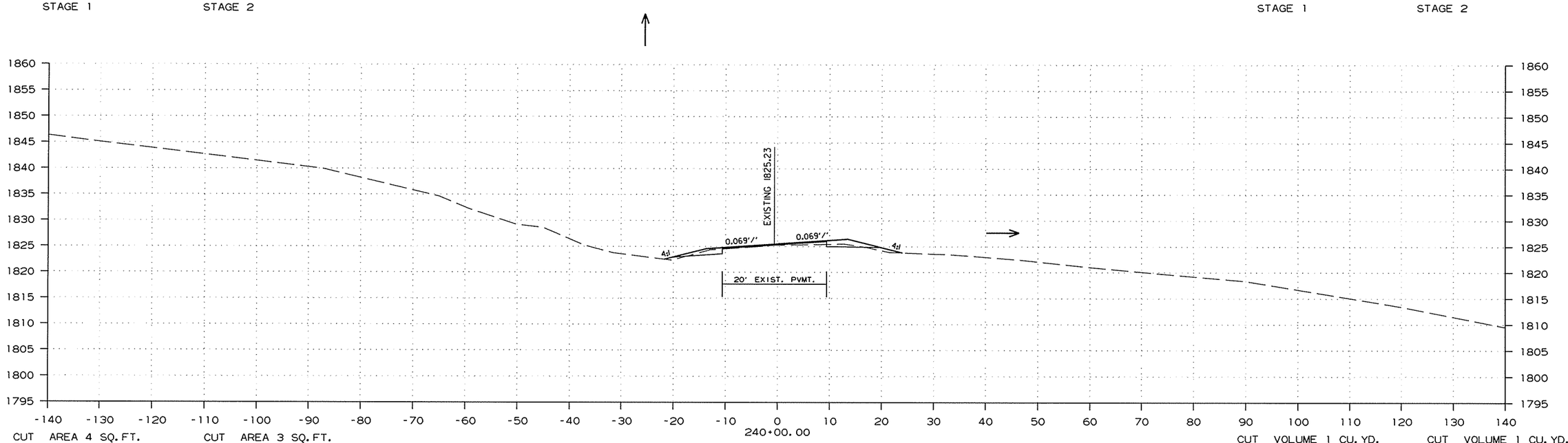
STANDARD DRAWING TEC-3

stdtec3.dgn

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.		080464	67	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



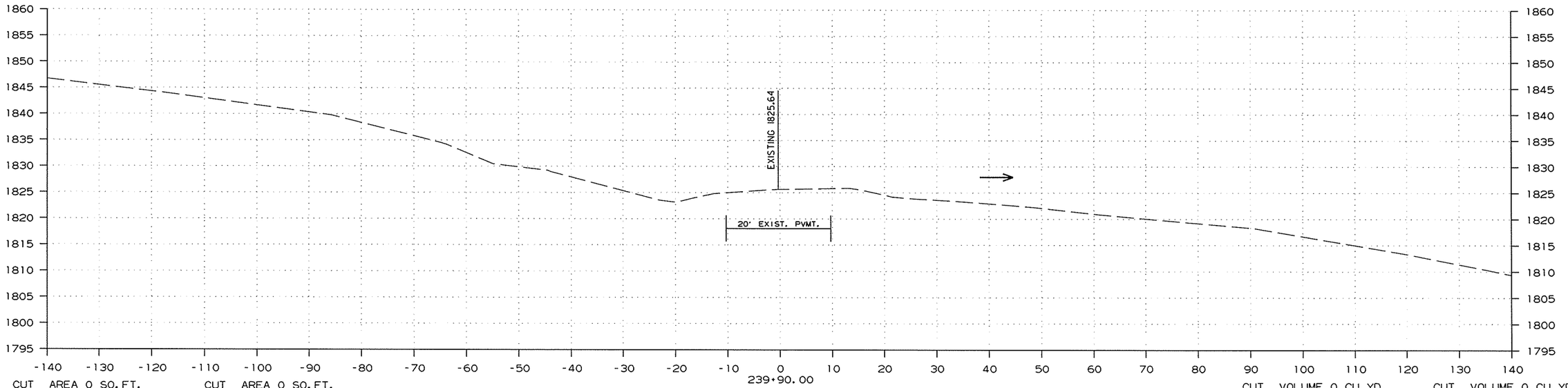
CUT AREA 4 SQ. FT.
FILL AREA 1 SQ. FT.

CUT AREA 3 SQ. FT.
FILL AREA 3 SQ. FT.

CUT VOLUME 1 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 1 CU. YD.
FILL VOLUME 1 CU. YD.

STAGE 1 STAGE 2



CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

BEGIN 100' TRANSITION

STA. 239+90.00 TO STA. 240+00.00

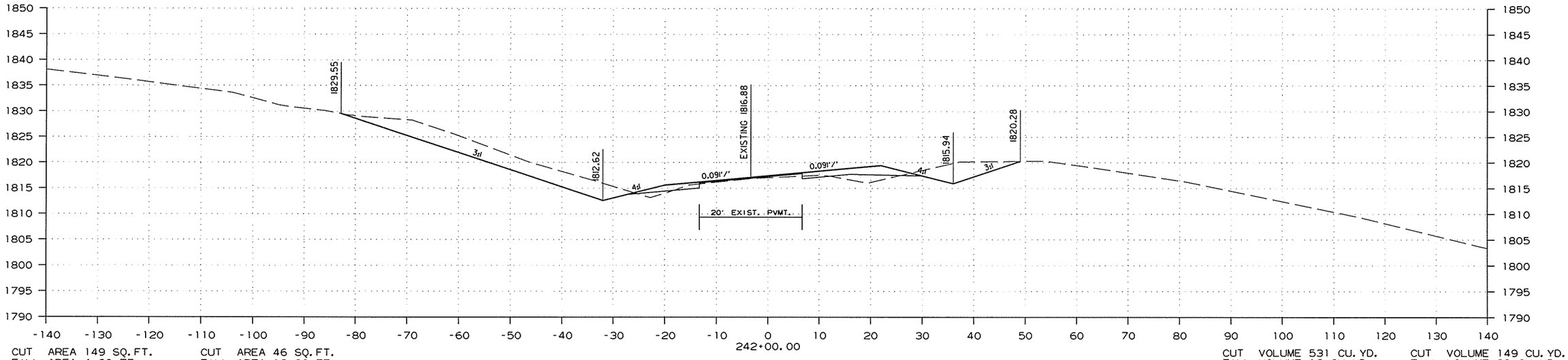
4/16/2015

R080464.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.		080464	68	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



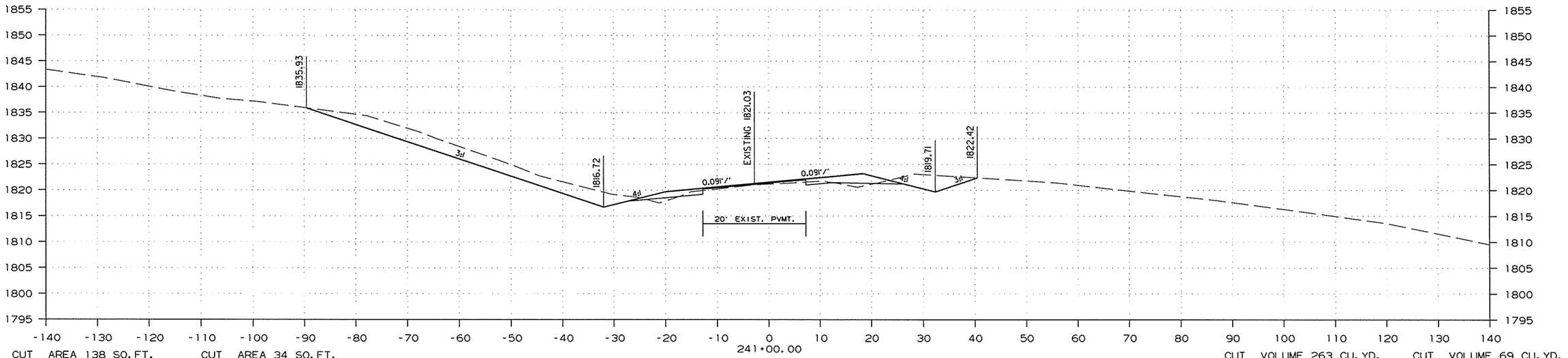
CUT AREA 149 SQ.FT.
FILL AREA 4 SQ.FT.

CUT AREA 46 SQ.FT.
FILL AREA 12 SQ.FT.

CUT VOLUME 531 CU.YD.
FILL VOLUME 12 CU.YD.

CUT VOLUME 149 CU.YD.
FILL VOLUME 29 CU.YD.

STAGE 1 STAGE 2



CUT AREA 138 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 34 SQ.FT.
FILL AREA 3 SQ.FT.

CUT VOLUME 263 CU.YD.
FILL VOLUME 8 CU.YD.

CUT VOLUME 69 CU.YD.
FILL VOLUME 8 CU.YD.

STA. 240+90 END 100' TRANSITION &
BEGIN JOB 080464 & 330' TAPER

STA. 241+00.00 TO STA. 242+00.00

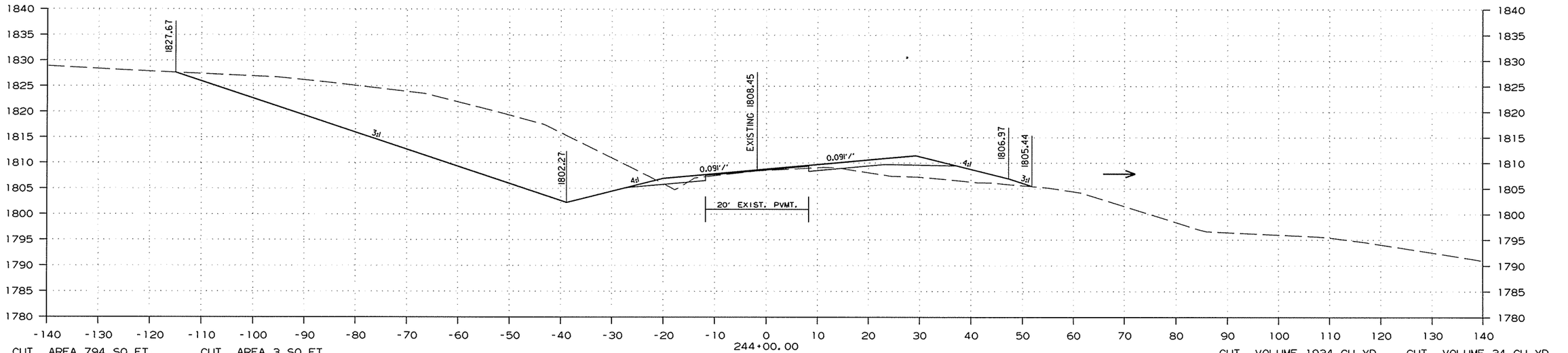
4/16/2015

R080464.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.		080464	69	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



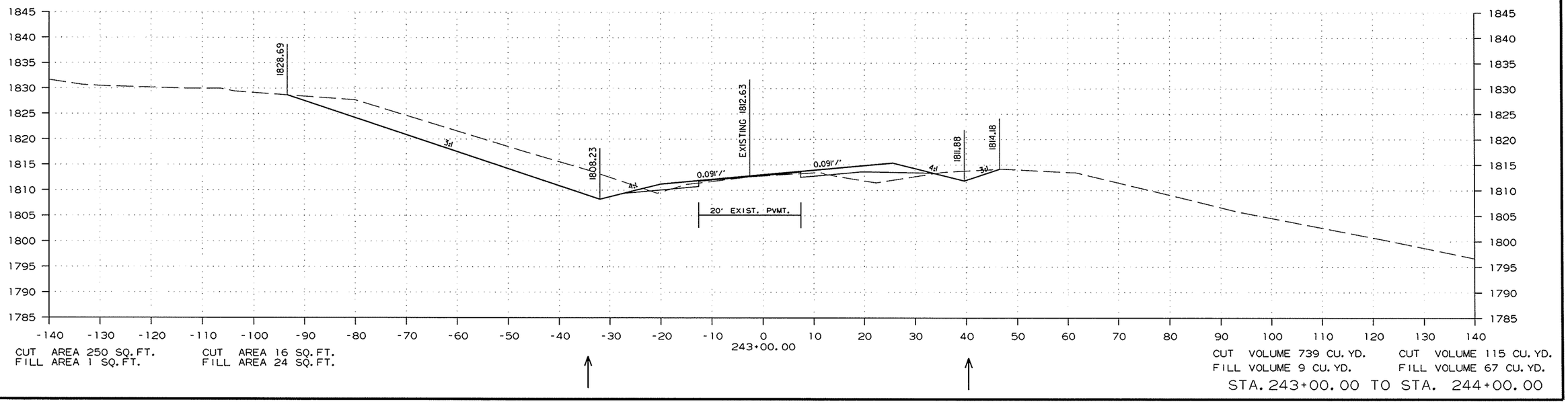
CUT AREA 794 SQ.FT.
FILL AREA 3 SQ.FT.

CUT AREA 3 SQ.FT.
FILL AREA 67 SQ.FT.

CUT VOLUME 1934 CU.YD.
FILL VOLUME 8 CU.YD.

CUT VOLUME 34 CU.YD.
FILL VOLUME 168 CU.YD.

+50.00 BEGIN
-7.73% LT. DITCH GRADE
ELEV. 1806.11



CUT AREA 250 SQ.FT.
FILL AREA 1 SQ.FT.

CUT AREA 16 SQ.FT.
FILL AREA 24 SQ.FT.

CUT VOLUME 739 CU.YD.
FILL VOLUME 9 CU.YD.

CUT VOLUME 115 CU.YD.
FILL VOLUME 67 CU.YD.

STA. 243+00.00 TO STA. 244+00.00

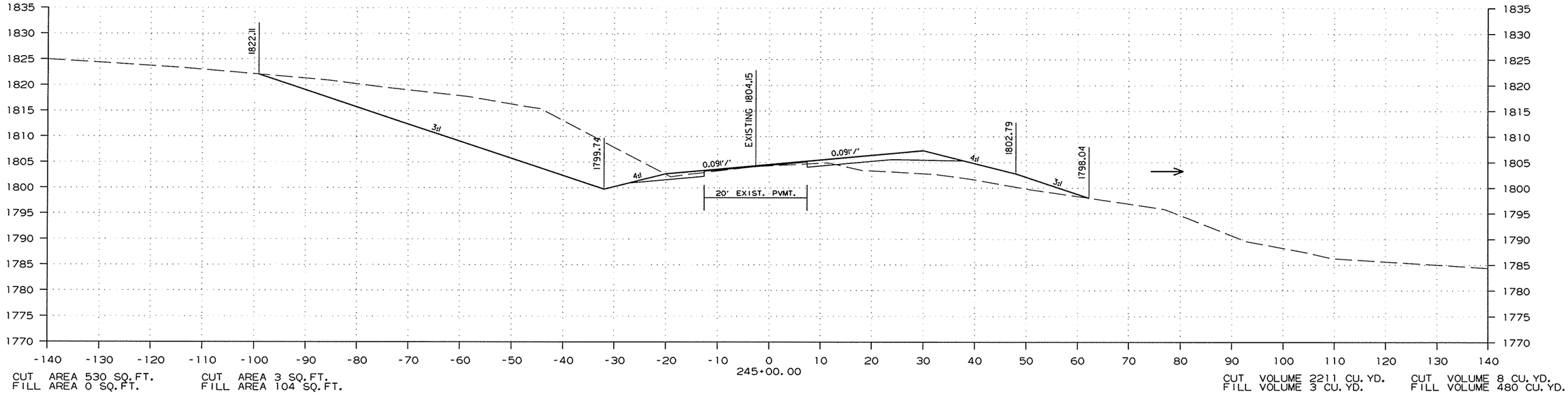
4/16/2015

R080464.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.		080464	70	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 1 STAGE 2



CUT AREA 530 SQ.FT. FILL AREA 0 SQ.FT.

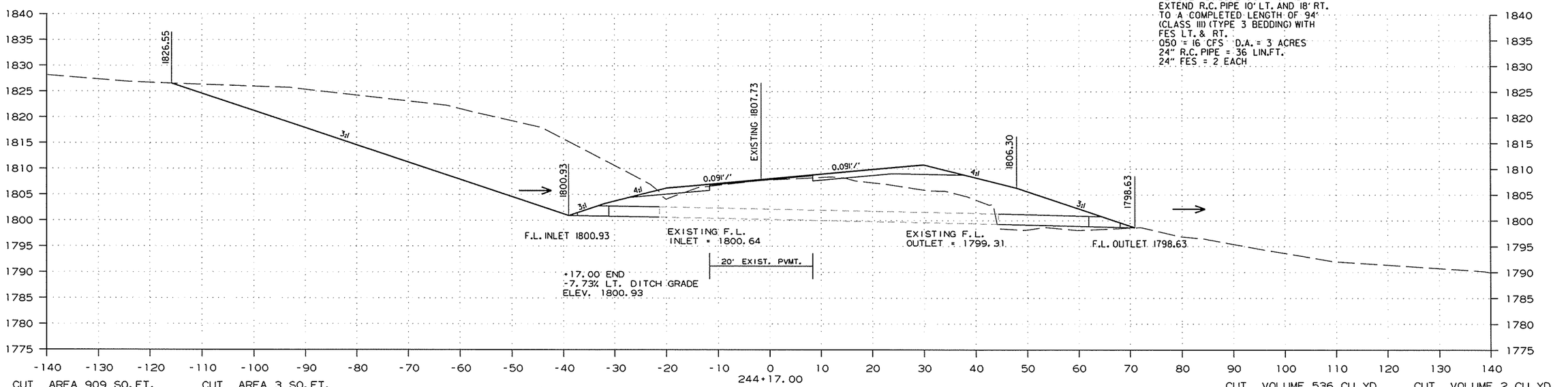
CUT AREA 3 SQ.FT. FILL AREA 104 SQ.FT.

CUT VOLUME 2211 CU. YD. FILL VOLUME 3 CU. YD.

CUT VOLUME 8 CU. YD. FILL VOLUME 480 CU. YD.

STA. 244+20 END 330' TAPER

STA.244+17 IN PLACE
24" × 66' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 10' LT. AND 18' RT.
TO A COMPLETED LENGTH OF 94'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 36 LIN.FT.
24" FES = 2 EACH



CUT AREA 909 SQ.FT. FILL AREA 2 SQ.FT.

CUT AREA 3 SQ.FT. FILL AREA 208 SQ.FT.

CUT VOLUME 536 CU. YD. FILL VOLUME 2 CU. YD.

CUT VOLUME 2 CU. YD. FILL VOLUME 87 CU. YD.

STA. 244+17.00 TO STA. 245+00.00

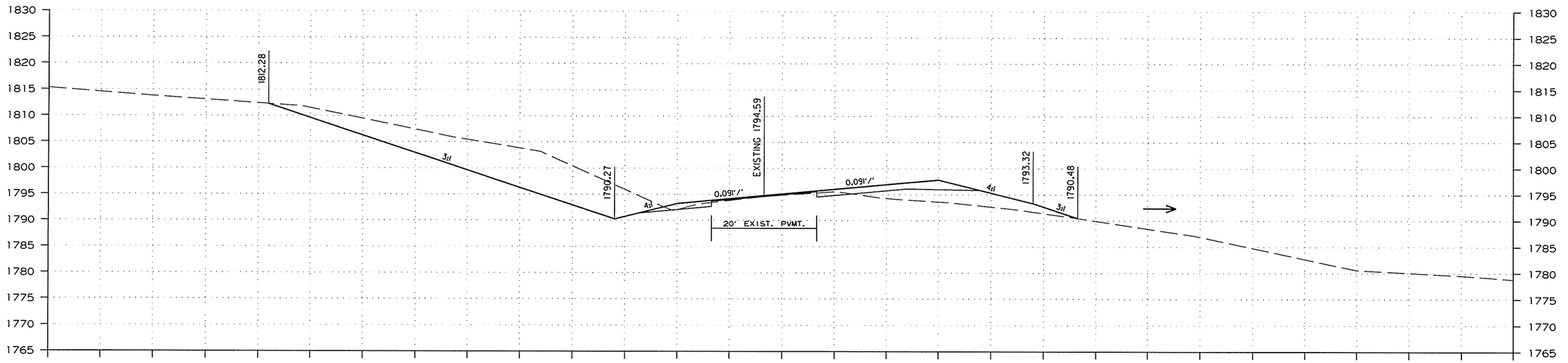
4/16/2015

R080464.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.		080464	71	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



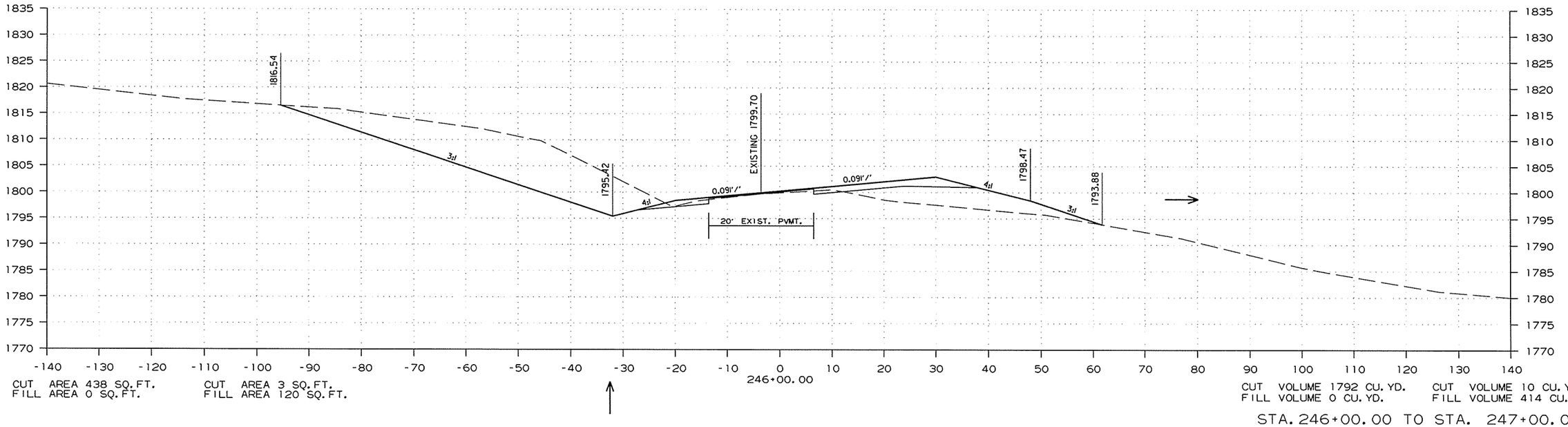
CUT AREA 363 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 77 SQ.FT.

CUT VOLUME 1483 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 12 CU. YD.
FILL VOLUME 364 CU. YD.

STAGE 1 STAGE 2



CUT AREA 438 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 3 SQ.FT.
FILL AREA 120 SQ.FT.

CUT VOLUME 1792 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 10 CU. YD.
FILL VOLUME 414 CU. YD.

STA. 246+00.00 TO STA. 247+00.00

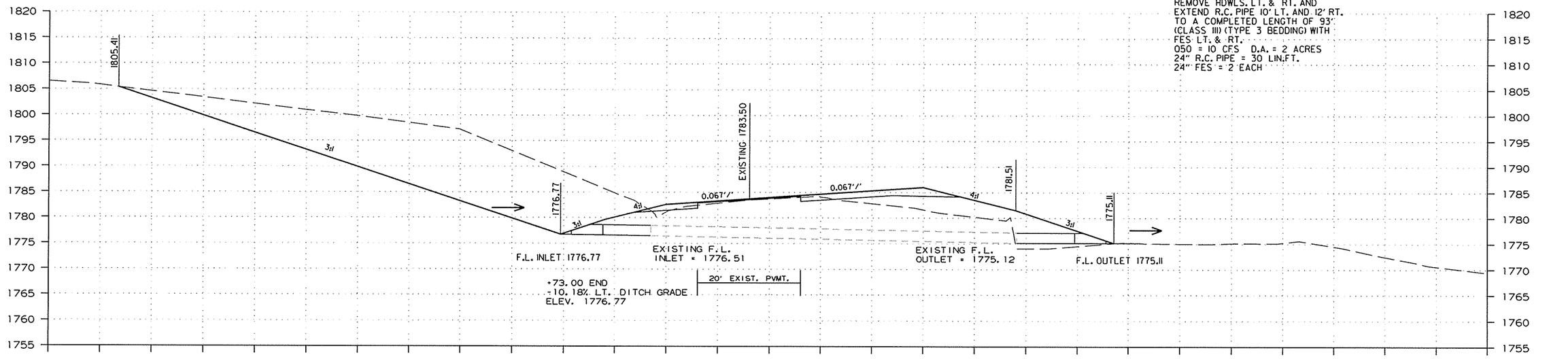
4/16/2015

R080464.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.		080464	72	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



CUT AREA 913 SQ.FT.
FILL AREA 2 SQ.FT.

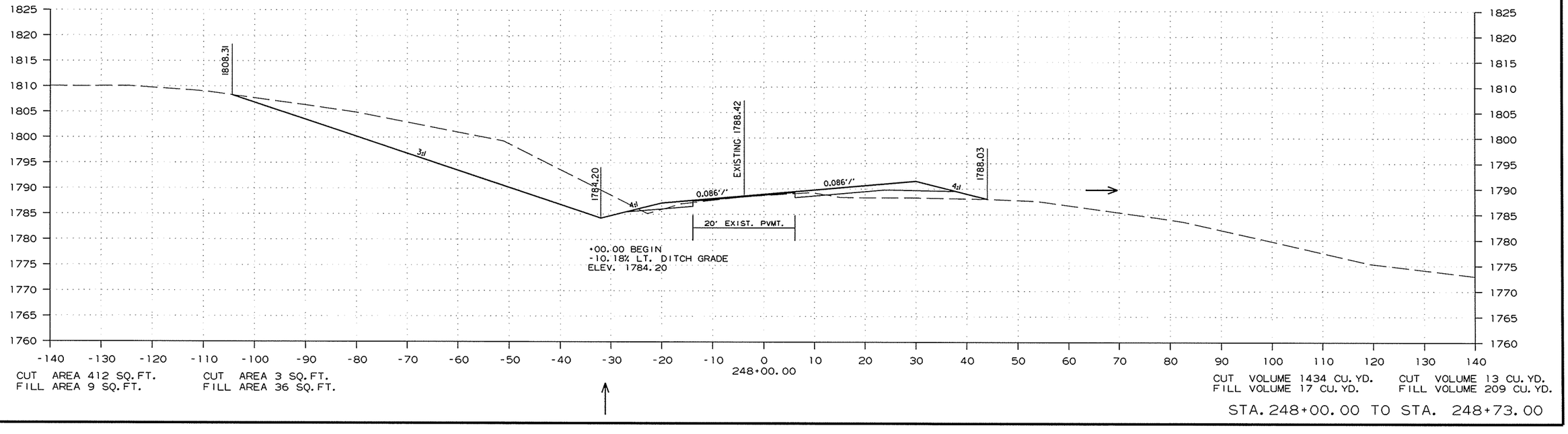
CUT AREA 4 SQ.FT.
FILL AREA 156 SQ.FT.

STAGE 1 STAGE 2

STA.248+73 IN PLACE
24" x 71' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 10' LT. AND 12' RT.
TO A COMPLETED LENGTH OF 93'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = 10 CFS D.A. = 2 ACRES
24" R.C. PIPE = 30 LIN.FT.
24" FES = 2 EACH

CUT VOLUME 1790 CU. YD.
FILL VOLUME 16 CU. YD.

CUT VOLUME 10 CU. YD.
FILL VOLUME 260 CU. YD.



CUT AREA 412 SQ.FT.
FILL AREA 9 SQ.FT.

CUT AREA 3 SQ.FT.
FILL AREA 36 SQ.FT.

CUT VOLUME 1434 CU. YD.
FILL VOLUME 17 CU. YD.

CUT VOLUME 13 CU. YD.
FILL VOLUME 209 CU. YD.

STA. 248+00.00 TO STA. 248+73.00

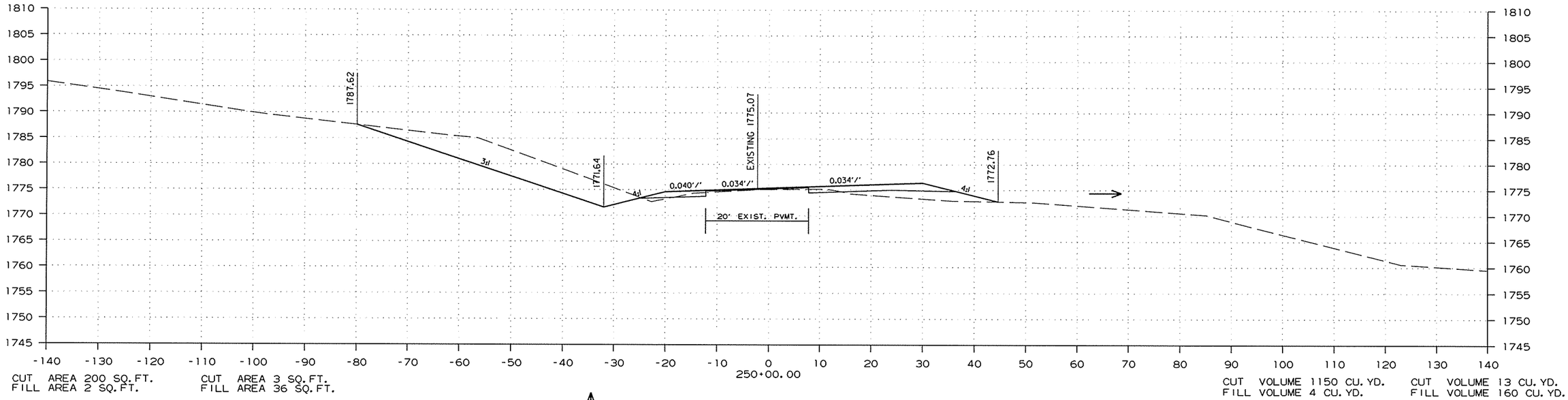
4/16/2015

R080464.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.		080464	73	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



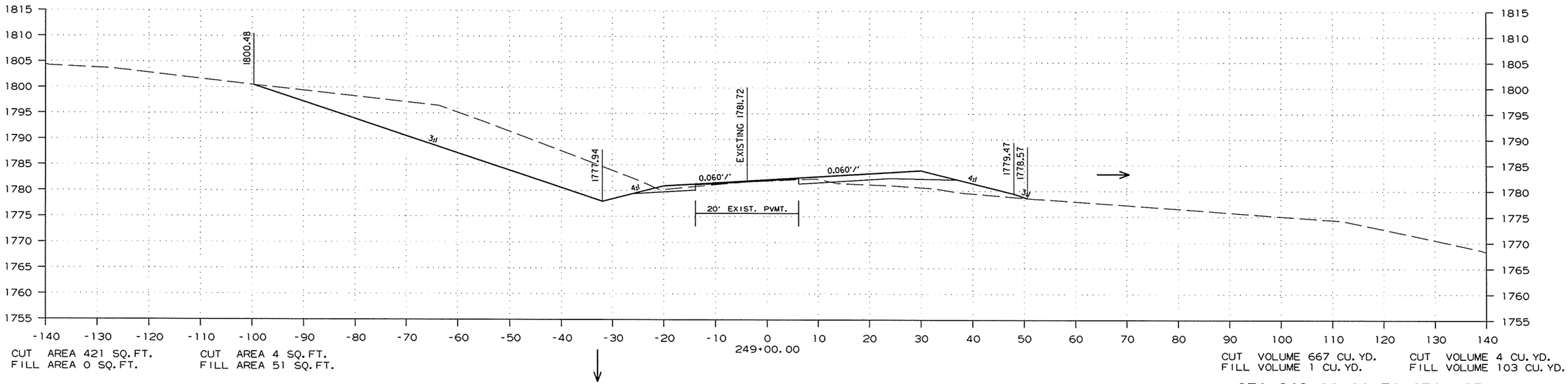
CUT AREA 200 SQ.FT. FILL AREA 2 SQ.FT.

CUT AREA 3 SQ.FT. FILL AREA 36 SQ.FT.

CUT VOLUME 1150 CU. YD. FILL VOLUME 4 CU. YD.

CUT VOLUME 13 CU. YD. FILL VOLUME 160 CU. YD.

STAGE 1 STAGE 2



CUT AREA 421 SQ.FT. FILL AREA 0 SQ.FT.

CUT AREA 4 SQ.FT. FILL AREA 51 SQ.FT.

CUT VOLUME 667 CU. YD. FILL VOLUME 1 CU. YD.

CUT VOLUME 4 CU. YD. FILL VOLUME 103 CU. YD.

STA. 249+00.00 TO STA. 250+00.00

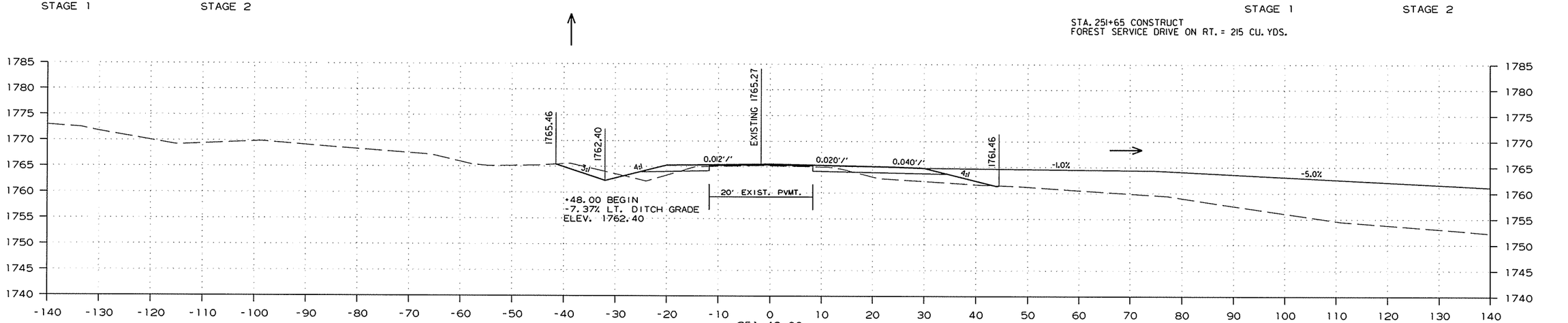
4/16/2015

R080464.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.		080464	74	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



CUT AREA 18 SQ.FT.
FILL AREA 10 SQ.FT.

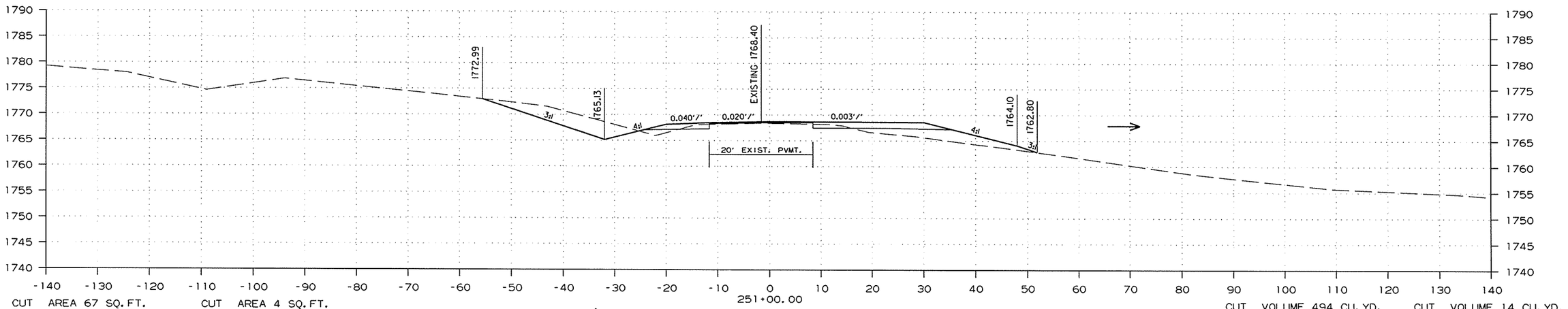
CUT AREA 5 SQ.FT.
FILL AREA 30 SQ.FT.

STAGE 1 STAGE 2

STA. 251+65 CONSTRUCT
FOREST SERVICE DRIVE ON RT. = 215 CU. YDS.

CUT VOLUME 75 CU. YD.
FILL VOLUME 13 CU. YD.

CUT VOLUME 8 CU. YD.
FILL VOLUME 68 CU. YD.



CUT AREA 67 SQ.FT.
FILL AREA 5 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 47 SQ.FT.

CUT VOLUME 494 CU. YD.
FILL VOLUME 13 CU. YD.

CUT VOLUME 14 CU. YD.
FILL VOLUME 152 CU. YD.

STA. 251+00.00 TO STA. 251+48.00

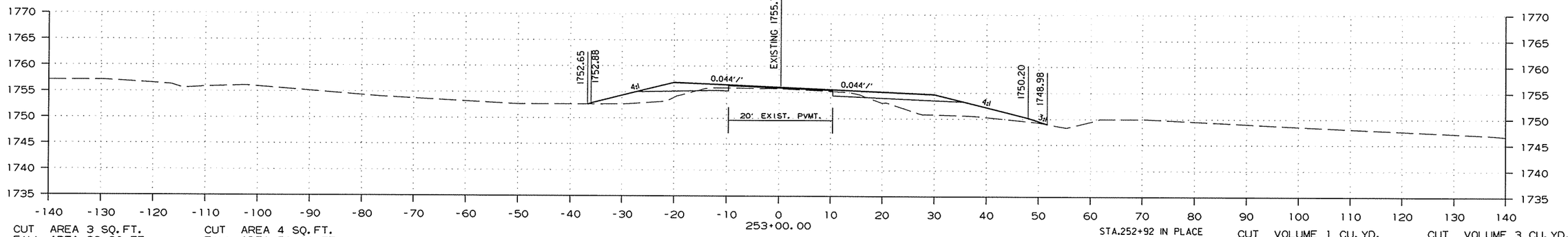
4/16/2015

R080464.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.		080464	75	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



CUT AREA 3 SQ.FT.
FILL AREA 28 SQ.FT.

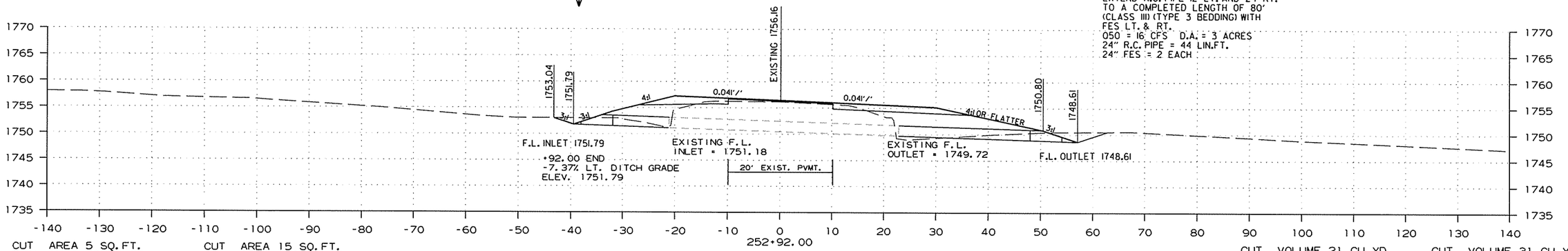
CUT AREA 4 SQ.FT.
FILL AREA 58 SQ.FT.

STAGE 1 STAGE 2

STA.252+92 IN PLACE
24" x 44' R.C. PIPE CULVERT WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE 12' LT. AND 24' RT. TO A COMPLETED LENGTH OF 80' (CLASS III) (TYPE 3 BEDDING) WITH FES LT. & RT.
050 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 44 LIN.FT.
24" FES = 2 EACH

CUT VOLUME 1 CU. YD.
FILL VOLUME 10 CU. YD.

CUT VOLUME 3 CU. YD.
FILL VOLUME 24 CU. YD.

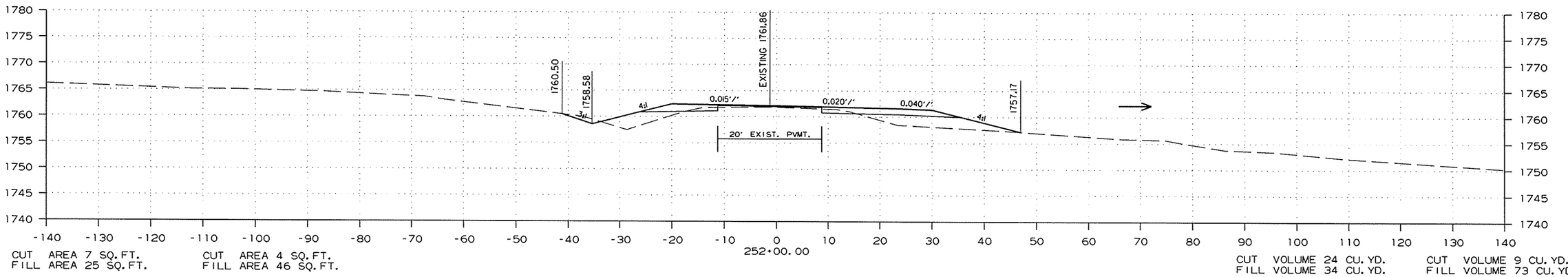


CUT AREA 5 SQ.FT.
FILL AREA 40 SQ.FT.

CUT AREA 15 SQ.FT.
FILL AREA 102 SQ.FT.

CUT VOLUME 21 CU. YD.
FILL VOLUME 110 CU. YD.

CUT VOLUME 31 CU. YD.
FILL VOLUME 252 CU. YD.



CUT AREA 7 SQ.FT.
FILL AREA 25 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 46 SQ.FT.

CUT VOLUME 24 CU. YD.
FILL VOLUME 34 CU. YD.

CUT VOLUME 9 CU. YD.
FILL VOLUME 73 CU. YD.

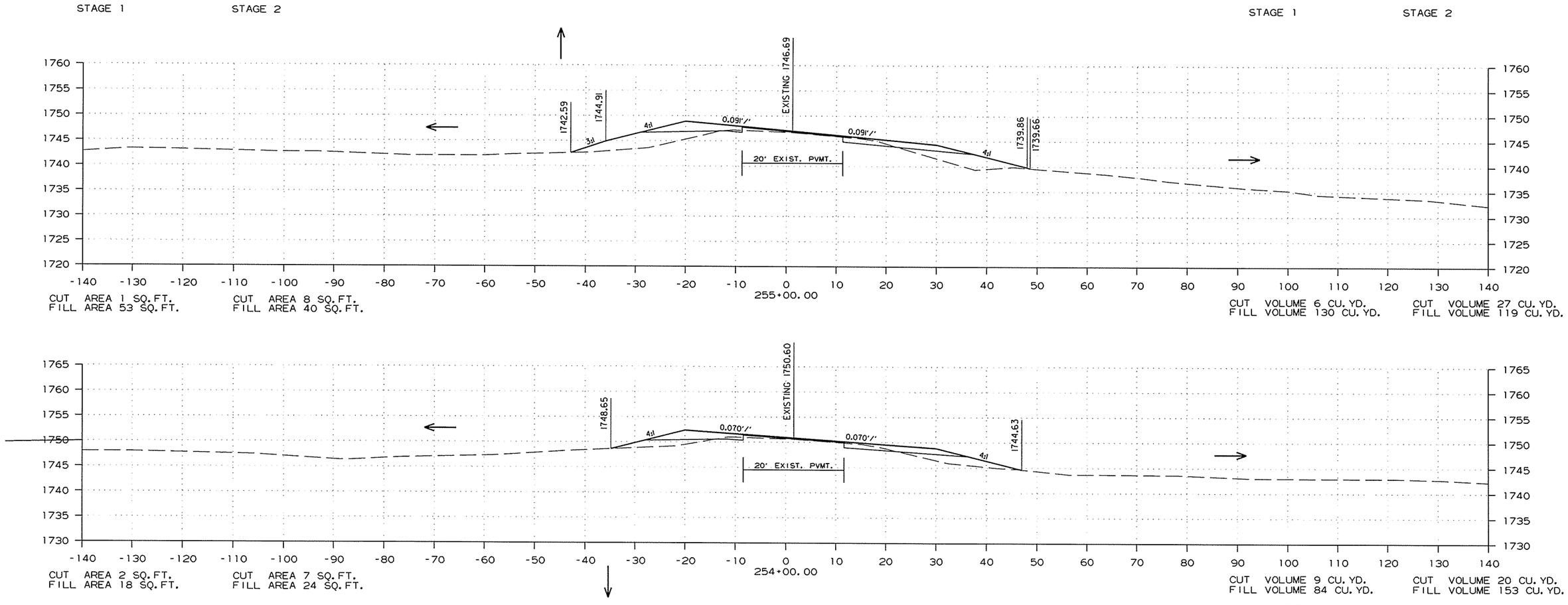
STA. 252+00.00 TO STA. 253+00.00

4/16/2015

R080464.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.		080464	76	115

(2) CROSS SECTIONS



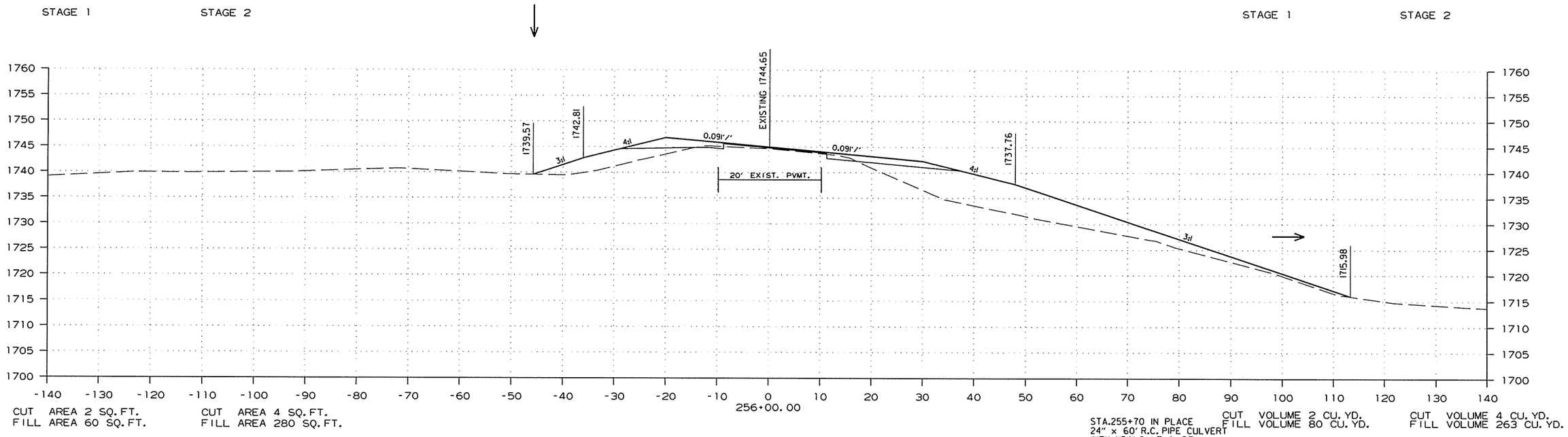
STA. 254+00.00 TO STA. 255+00.00

4/16/2015

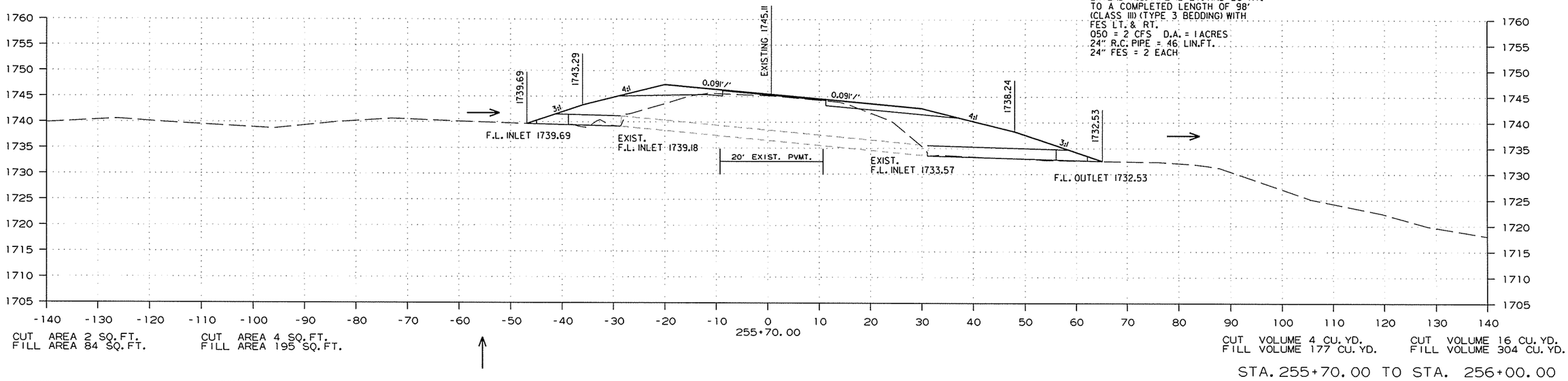
R080464.DGN

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.		080464	77	115

(2) CROSS SECTIONS



STA.255+70 IN PLACE
24" x 60' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 12' LT. AND 26' RT.
TO A COMPLETED LENGTH OF 98'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50 = 2 CFS D.A. = 1 ACRES
24" R.C. PIPE = 46 LIN.FT.
24" FES = 2 EACH



STA. 255+70.00 TO STA. 256+00.00

4/16/2015

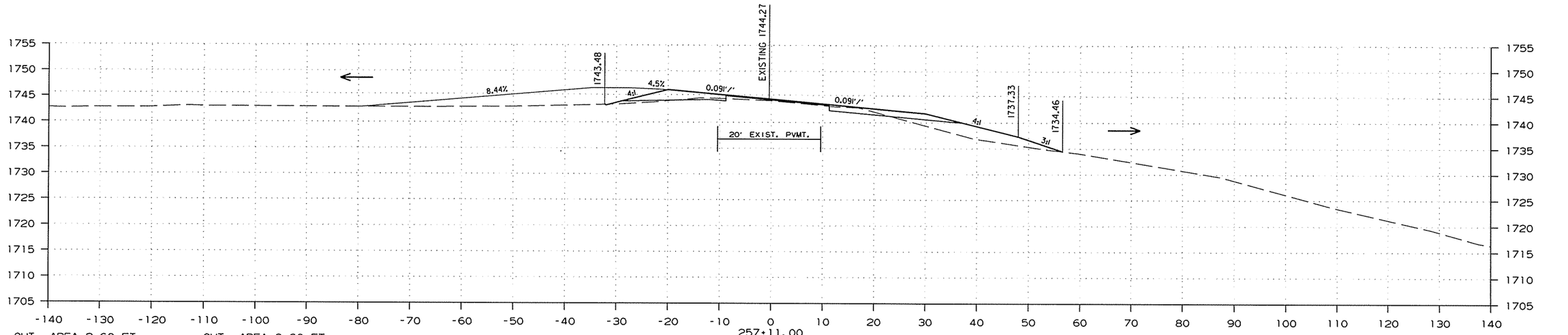
R080464.DGN

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.		080464	78	115

(2) CROSS SECTIONS

STA. 257+11
CONST. APPR. ON LT. = 145 CU. YDS.

STAGE 1 STAGE 2



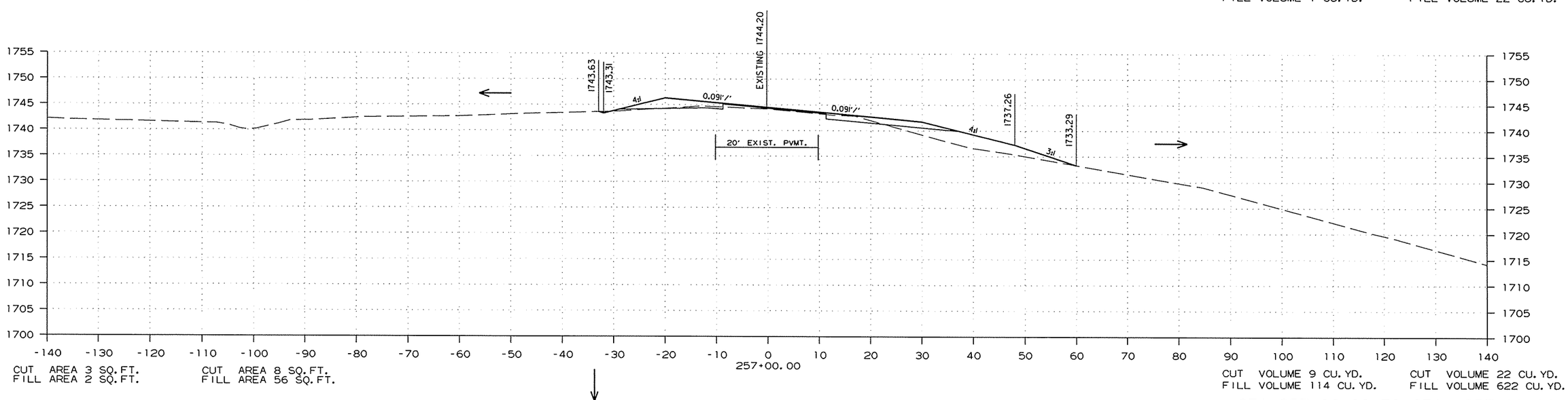
CUT AREA 2 SQ.FT.
FILL AREA 4 SQ.FT.

CUT AREA 8 SQ.FT.
FILL AREA 49 SQ.FT.

STAGE 1 STAGE 2

CUT VOLUME 1 CU. YD.
FILL VOLUME 1 CU. YD.

CUT VOLUME 3 CU. YD.
FILL VOLUME 22 CU. YD.



CUT AREA 3 SQ.FT.
FILL AREA 2 SQ.FT.

CUT AREA 8 SQ.FT.
FILL AREA 56 SQ.FT.

CUT VOLUME 9 CU. YD.
FILL VOLUME 114 CU. YD.

CUT VOLUME 22 CU. YD.
FILL VOLUME 622 CU. YD.

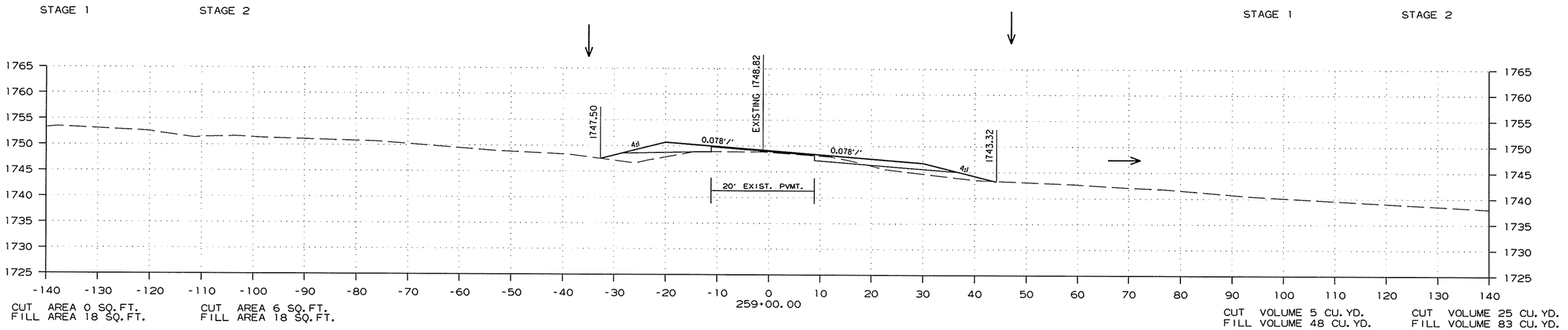
STA. 257+00.00 TO STA. 257+11.00

4/16/2015

R080464.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.		080464	79	115

(2) CROSS SECTIONS

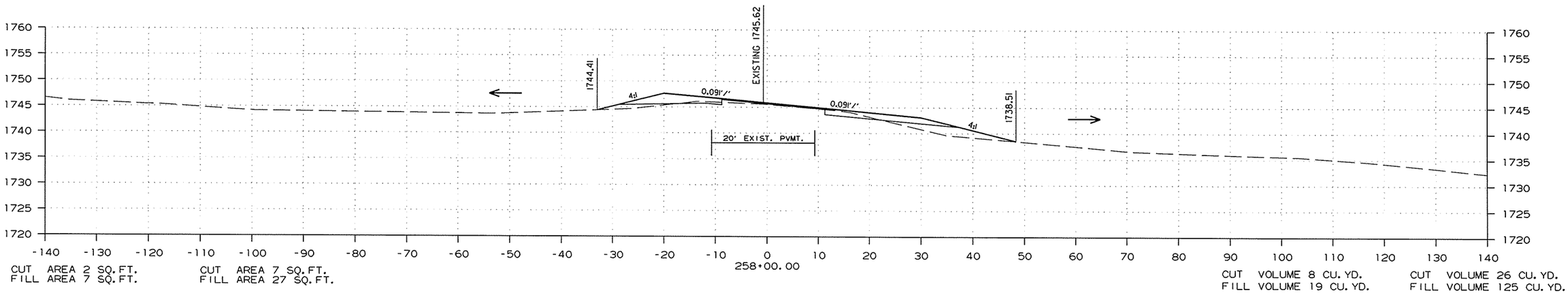


CUT AREA 0 SQ.FT.
FILL AREA 18 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 5 CU.YD.
FILL VOLUME 48 CU.YD.

CUT VOLUME 25 CU.YD.
FILL VOLUME 83 CU.YD.



CUT AREA 2 SQ.FT.
FILL AREA 7 SQ.FT.

CUT AREA 7 SQ.FT.
FILL AREA 27 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 19 CU.YD.

CUT VOLUME 26 CU.YD.
FILL VOLUME 125 CU.YD.

STA. 258+00.00 TO STA. 259+00.00

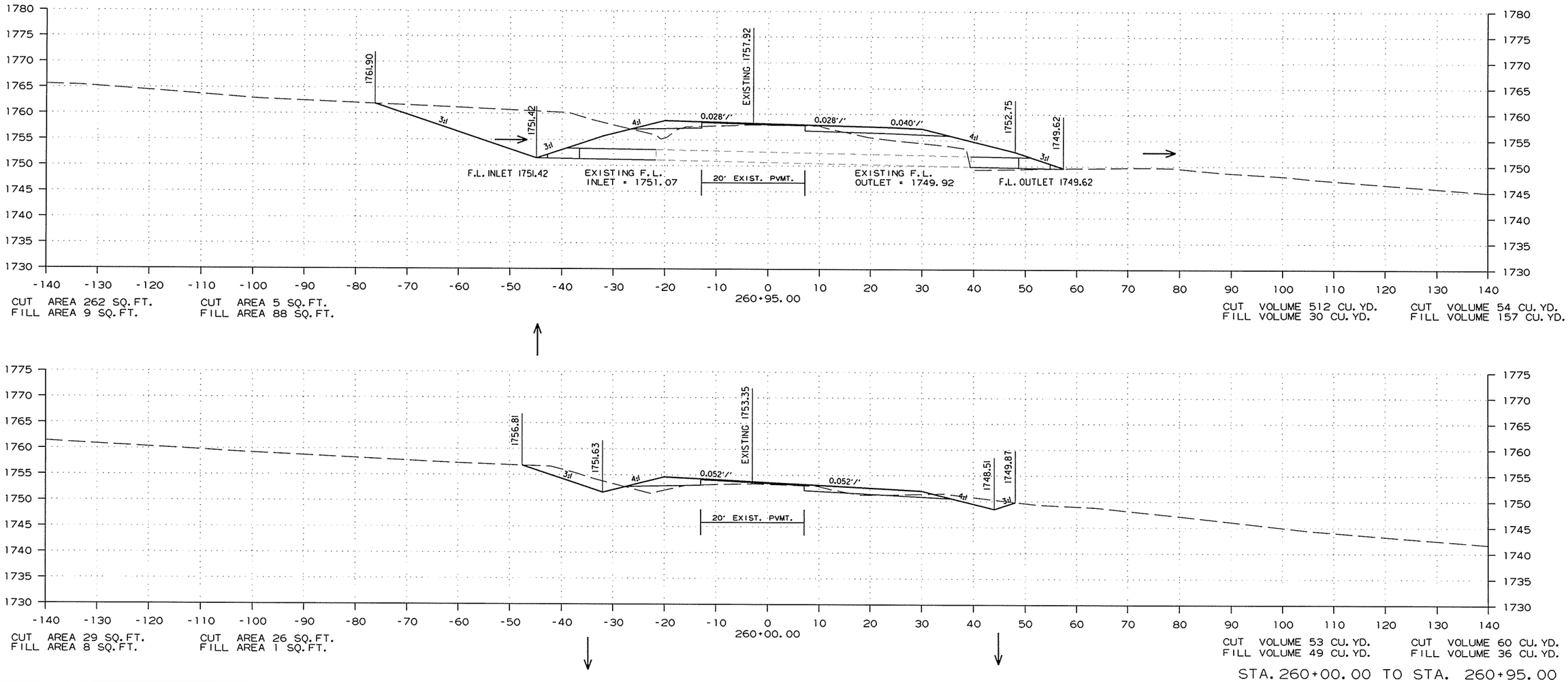
4/16/2015

R080464.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.		080464	80	115

(2) CROSS SECTIONS

STA.260+95 IN PLACE
24" x 61' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND
EXTEND R.C. PIPE 16' LT. AND 10' RT.
TO A COMPLETED LENGTH OF 87'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50 = 16 CFS D.A. = 3 ACRES
24" R.C. PIPE = 34 LIN.FT.
24" FES = 2 EACH



STA. 260+00.00 TO STA. 260+95.00

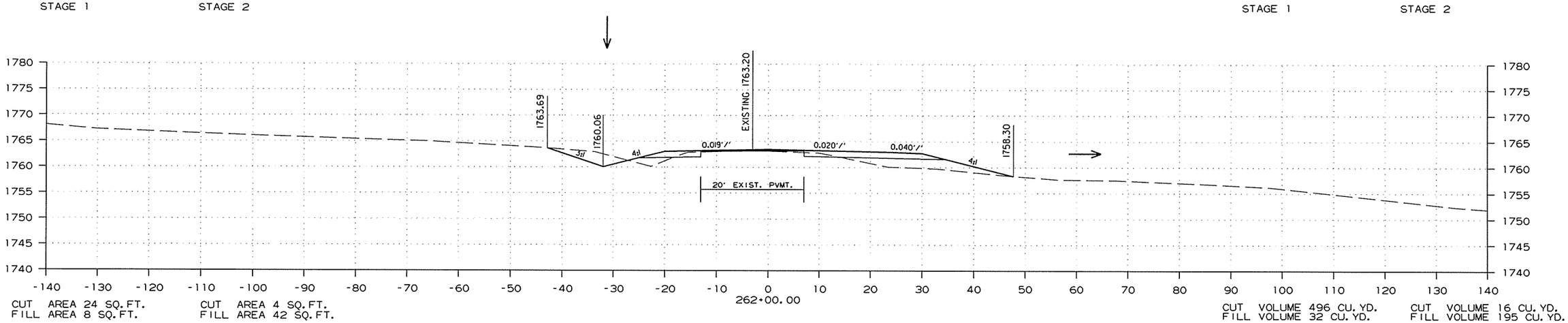
4/16/2015

R080464.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.		080464	81	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



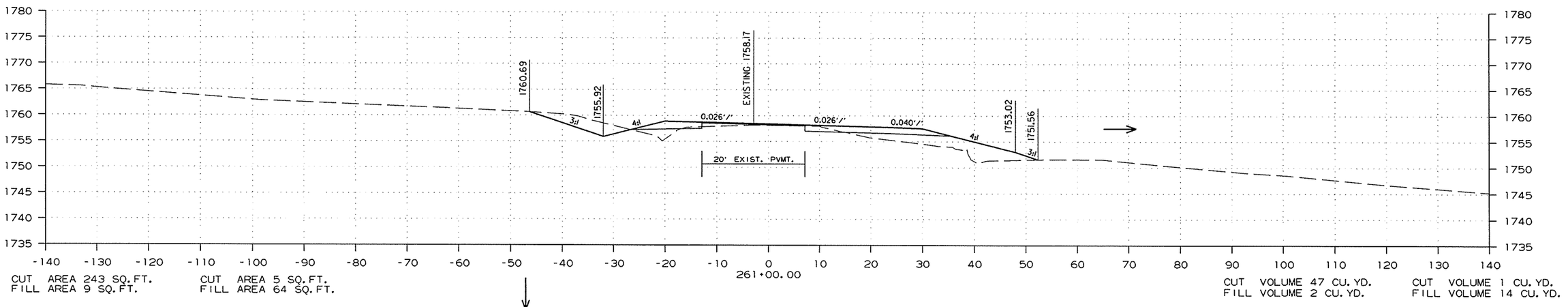
CUT AREA 24 SQ.FT.
FILL AREA 8 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 42 SQ.FT.

CUT VOLUME 496 CU.YD.
FILL VOLUME 32 CU.YD.

CUT VOLUME 16 CU.YD.
FILL VOLUME 195 CU.YD.

STAGE 1 STAGE 2



CUT AREA 243 SQ.FT.
FILL AREA 9 SQ.FT.

CUT AREA 5 SQ.FT.
FILL AREA 64 SQ.FT.

CUT VOLUME 47 CU.YD.
FILL VOLUME 2 CU.YD.

CUT VOLUME 1 CU.YD.
FILL VOLUME 14 CU.YD.

STA. 261+00.00 TO STA. 262+00.00

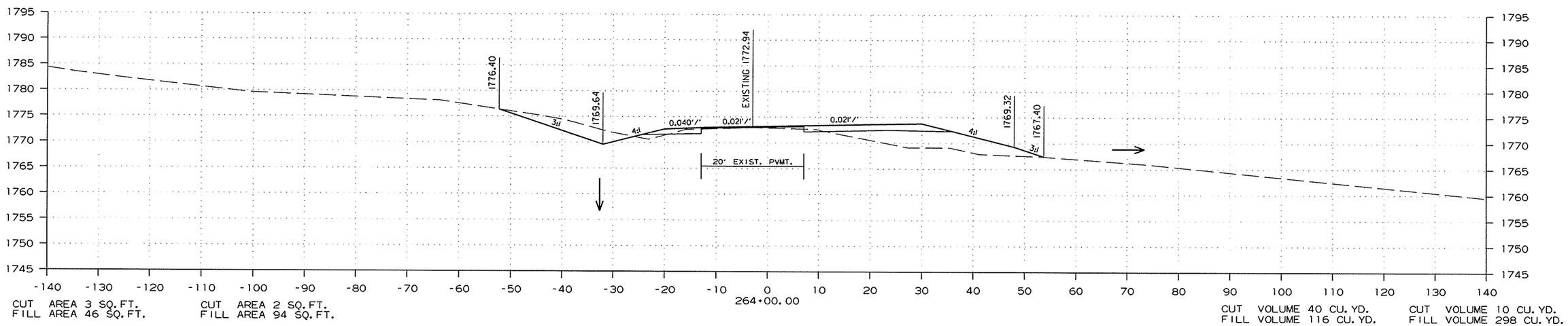
4/16/2015

R080464.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.		080464	82	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



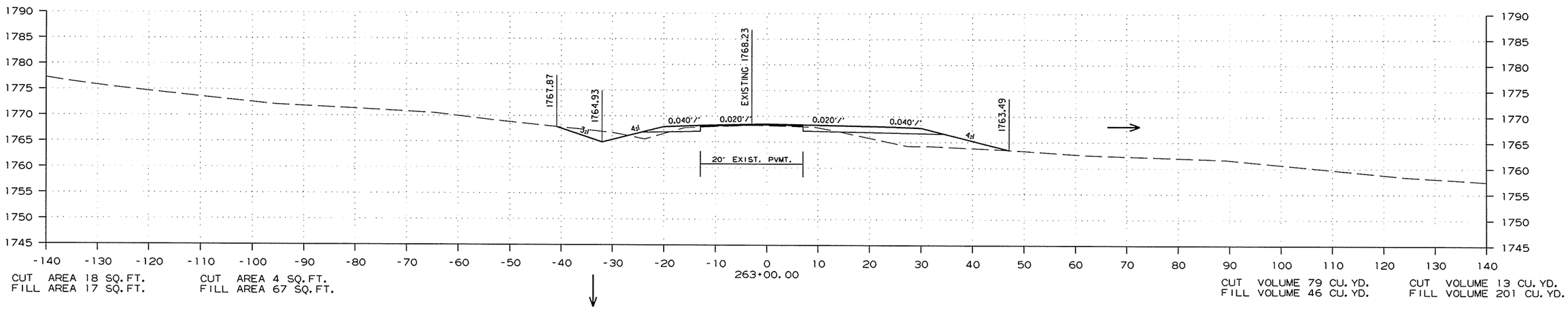
CUT AREA 3 SQ.FT.
FILL AREA 46 SQ.FT.

CUT AREA 2 SQ.FT.
FILL AREA 94 SQ.FT.

CUT VOLUME 40 CU.YD.
FILL VOLUME 116 CU.YD.

CUT VOLUME 10 CU.YD.
FILL VOLUME 298 CU.YD.

STAGE 1 STAGE 2



CUT AREA 18 SQ.FT.
FILL AREA 17 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 67 SQ.FT.

CUT VOLUME 79 CU.YD.
FILL VOLUME 46 CU.YD.

CUT VOLUME 13 CU.YD.
FILL VOLUME 201 CU.YD.

STA. 263+00.00 TO STA. 264+00.00

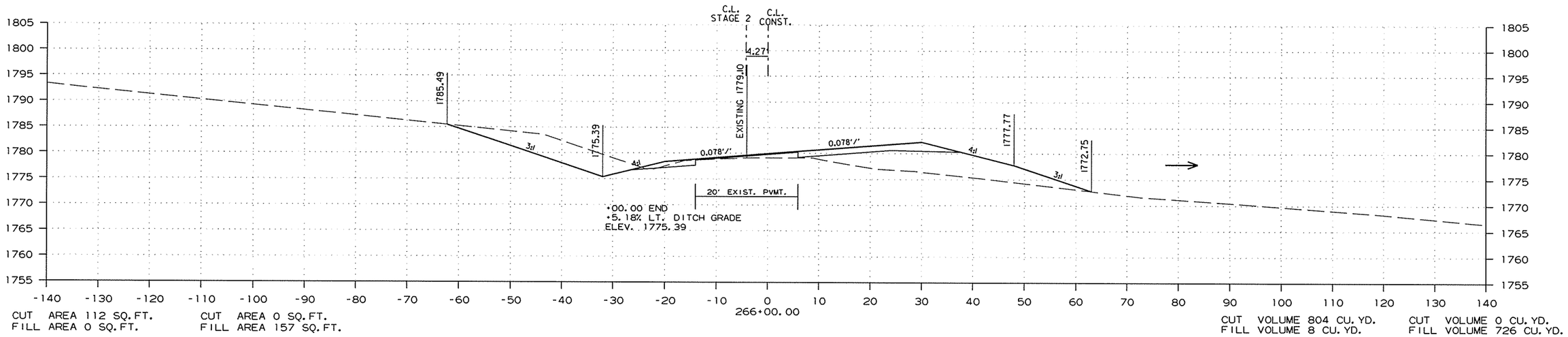
4/16/2015

R080464.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.		080464	83	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

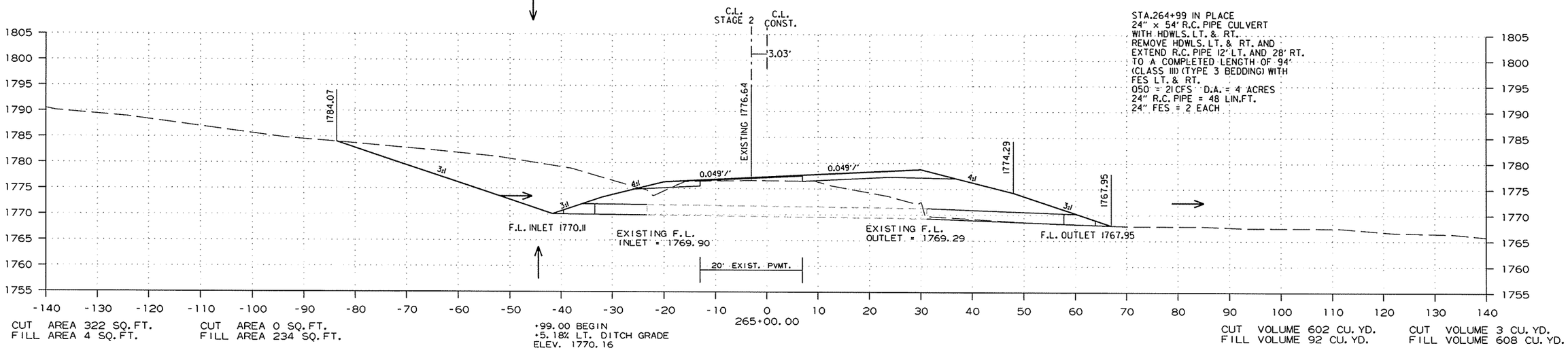


CUT AREA 112 SQ.FT. FILL AREA 0 SQ.FT.

CUT AREA 0 SQ.FT. FILL AREA 157 SQ.FT.

CUT VOLUME 804 CU.YD. FILL VOLUME 8 CU.YD.

CUT VOLUME 0 CU.YD. FILL VOLUME 726 CU.YD.



CUT AREA 322 SQ.FT. FILL AREA 4 SQ.FT.

CUT AREA 0 SQ.FT. FILL AREA 234 SQ.FT.

CUT VOLUME 602 CU.YD. FILL VOLUME 92 CU.YD.

CUT VOLUME 3 CU.YD. FILL VOLUME 608 CU.YD.

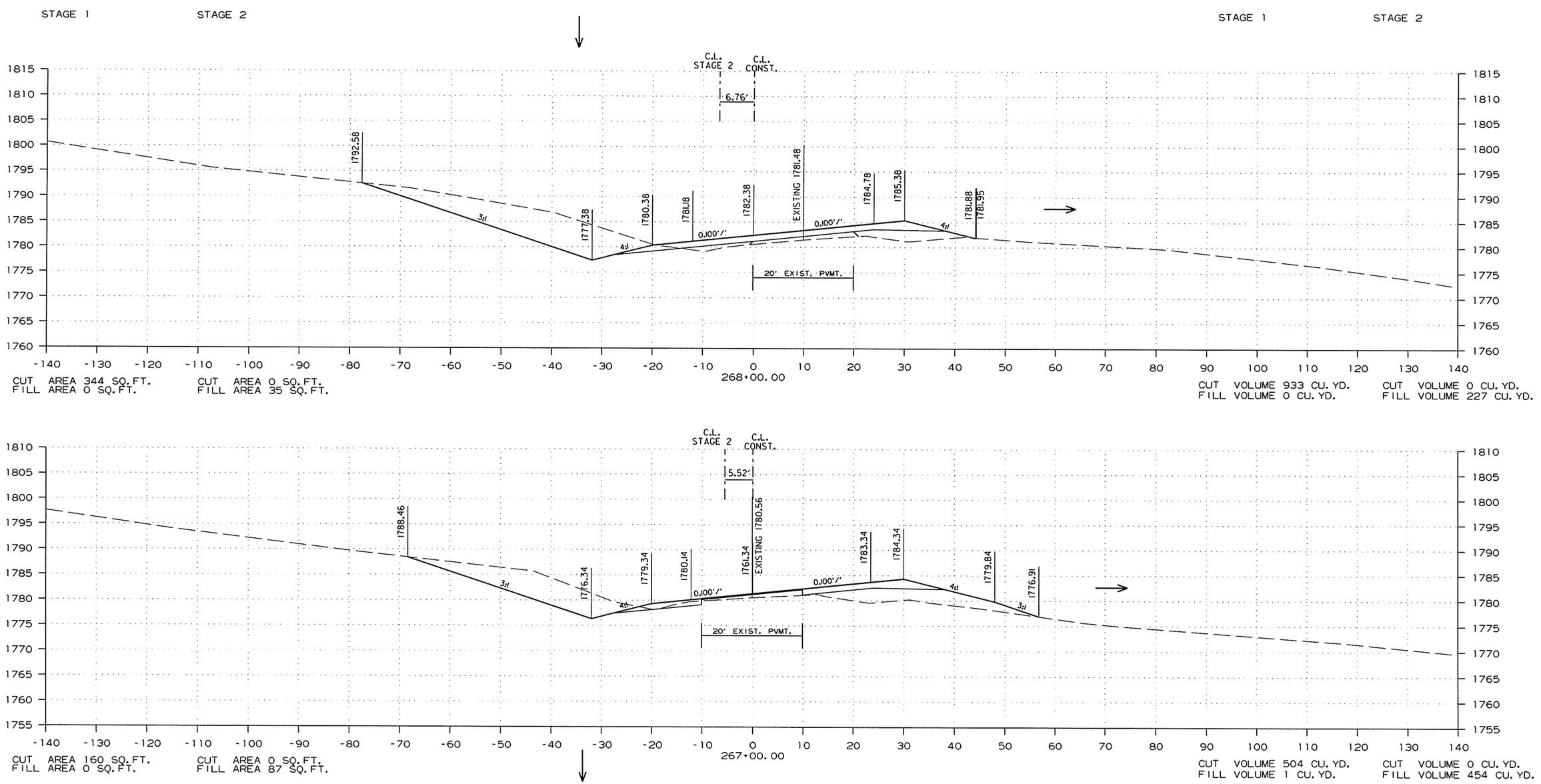
STA. 265+00.00 TO STA. 266+00.00

4/16/2015

R080464.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.		080464	84	115

(2) CROSS SECTIONS



STA. 267+00.00 TO STA. 268+00.00

4/16/2015

R080464.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.		080464	85	115

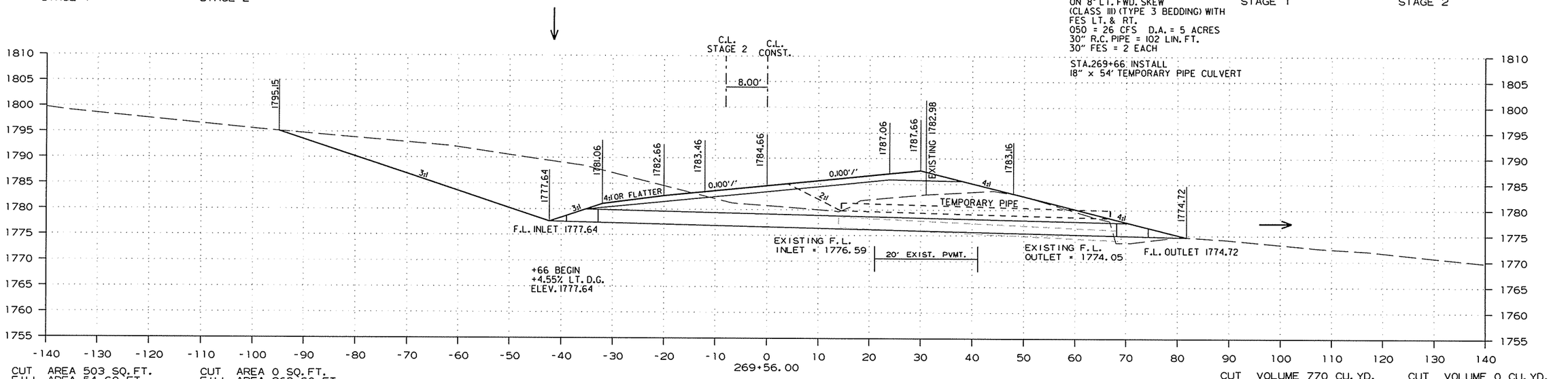
(2) CROSS SECTIONS

STA.269+60 IN PLACE
24" x 55' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE

STA.269+66 CONSTRUCT
30" x 102' R.C. PIPE CULVERT
ON 8° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50 = 26 CFS D.A. = 5 ACRES
30" R.C. PIPE = 102 LIN. FT.
30" FES = 2 EACH

STA.269+66 INSTALL
18" x 54' TEMPORARY PIPE CULVERT

STAGE 1 STAGE 2



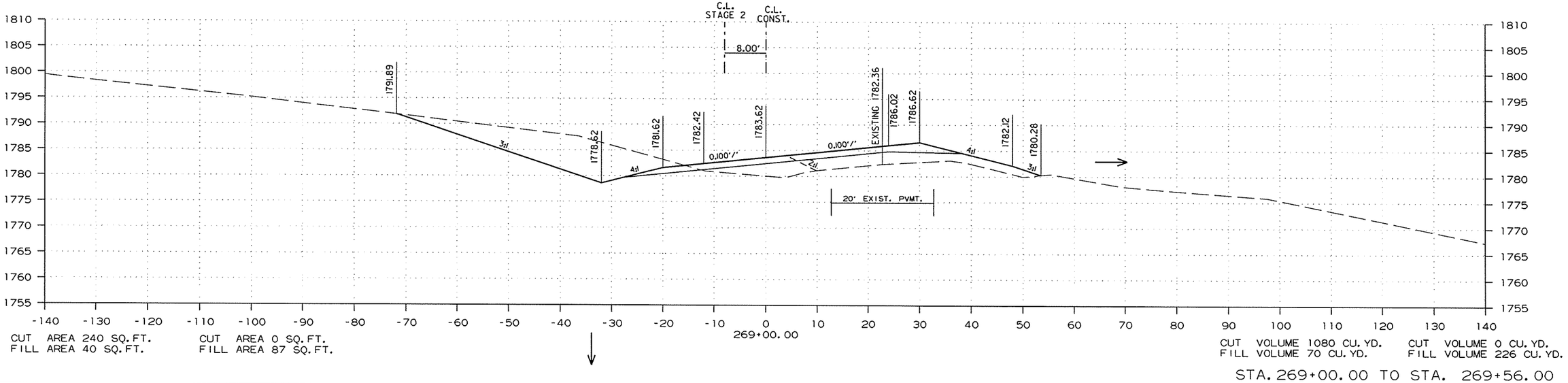
CUT AREA 503 SQ. FT.
FILL AREA 54 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 263 SQ. FT.

CUT VOLUME 770 CU. YD.
FILL VOLUME 95 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 363 CU. YD.

STAGE 1 STAGE 2



CUT AREA 240 SQ. FT.
FILL AREA 40 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 87 SQ. FT.

CUT VOLUME 1080 CU. YD.
FILL VOLUME 70 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 226 CU. YD.

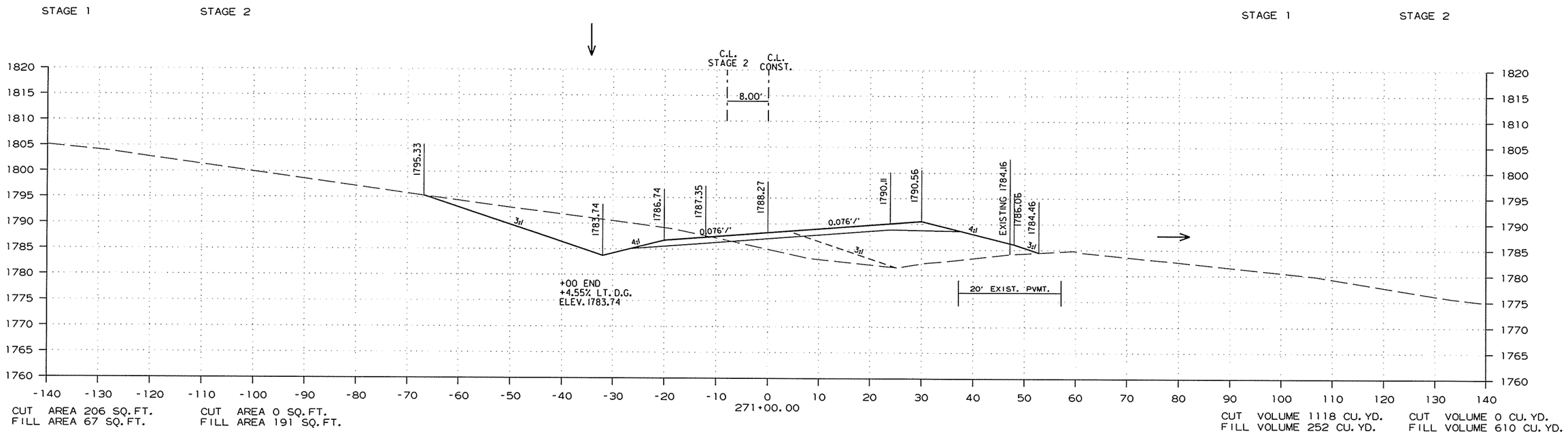
STA. 269+00.00 TO STA. 269+56.00

4/16/2015

R080464.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.		080464	86	115

(2) CROSS SECTIONS

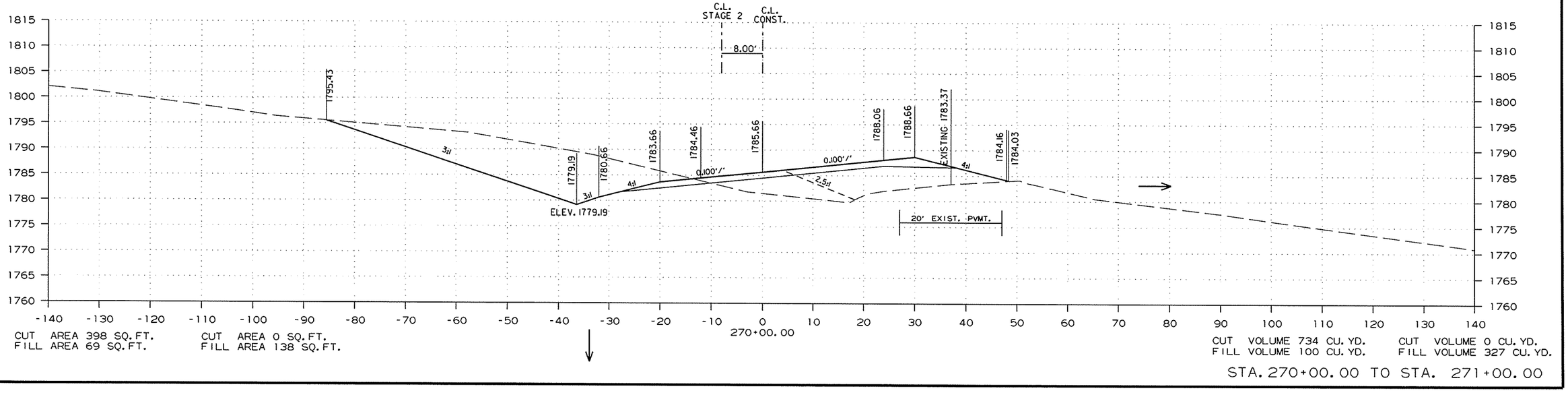


CUT AREA 206 SQ.FT.
FILL AREA 67 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 191 SQ.FT.

CUT VOLUME 1118 CU.YD.
FILL VOLUME 252 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 610 CU.YD.



CUT AREA 398 SQ.FT.
FILL AREA 69 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 138 SQ.FT.

CUT VOLUME 734 CU.YD.
FILL VOLUME 100 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 327 CU.YD.

STA. 270+00.00 TO STA. 271+00.00

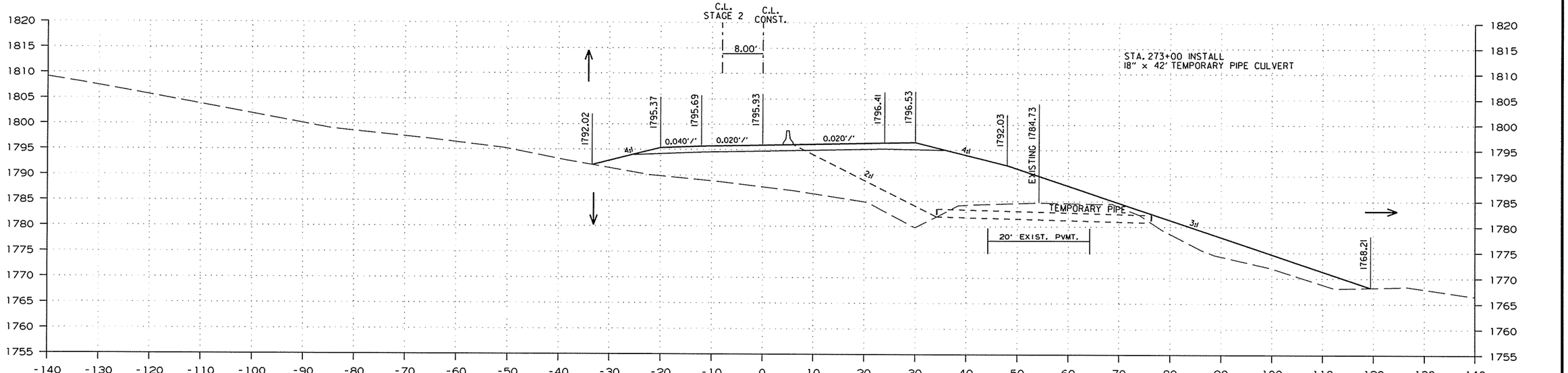
4/16/2015

R080464.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.		080464	87	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



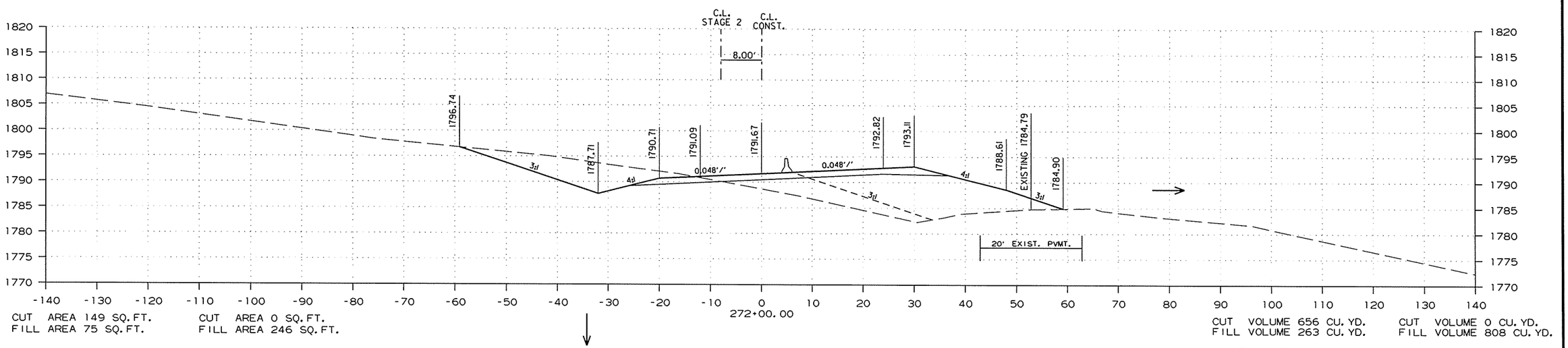
CUT AREA 0 SQ. FT.
FILL AREA 334 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 514 SQ. FT.

CUT VOLUME 275 CU. YD.
FILL VOLUME 758 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 1407 CU. YD.

STAGE 1 STAGE 2



CUT AREA 149 SQ. FT.
FILL AREA 75 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 246 SQ. FT.

CUT VOLUME 656 CU. YD.
FILL VOLUME 263 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 808 CU. YD.

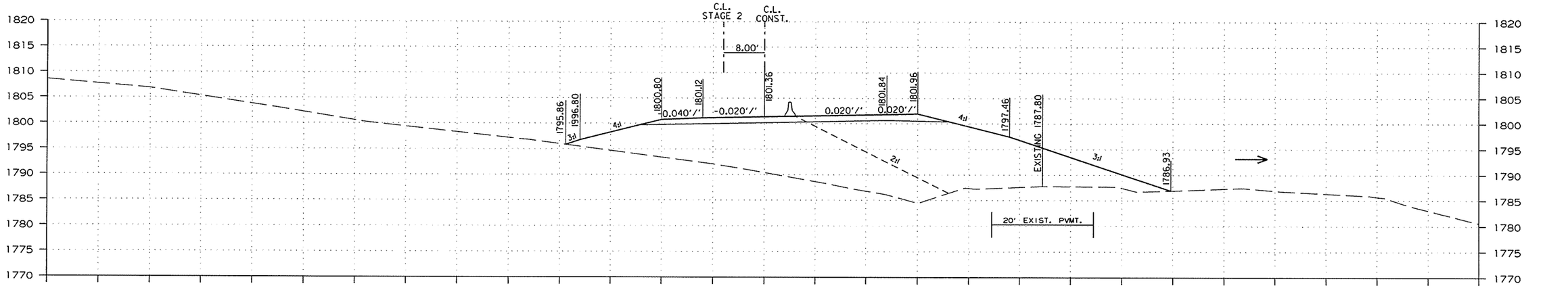
STA. 272+00.00 TO STA. 273+00.00

4/16/2015

R080464.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.		080464	88	115

(2) CROSS SECTIONS



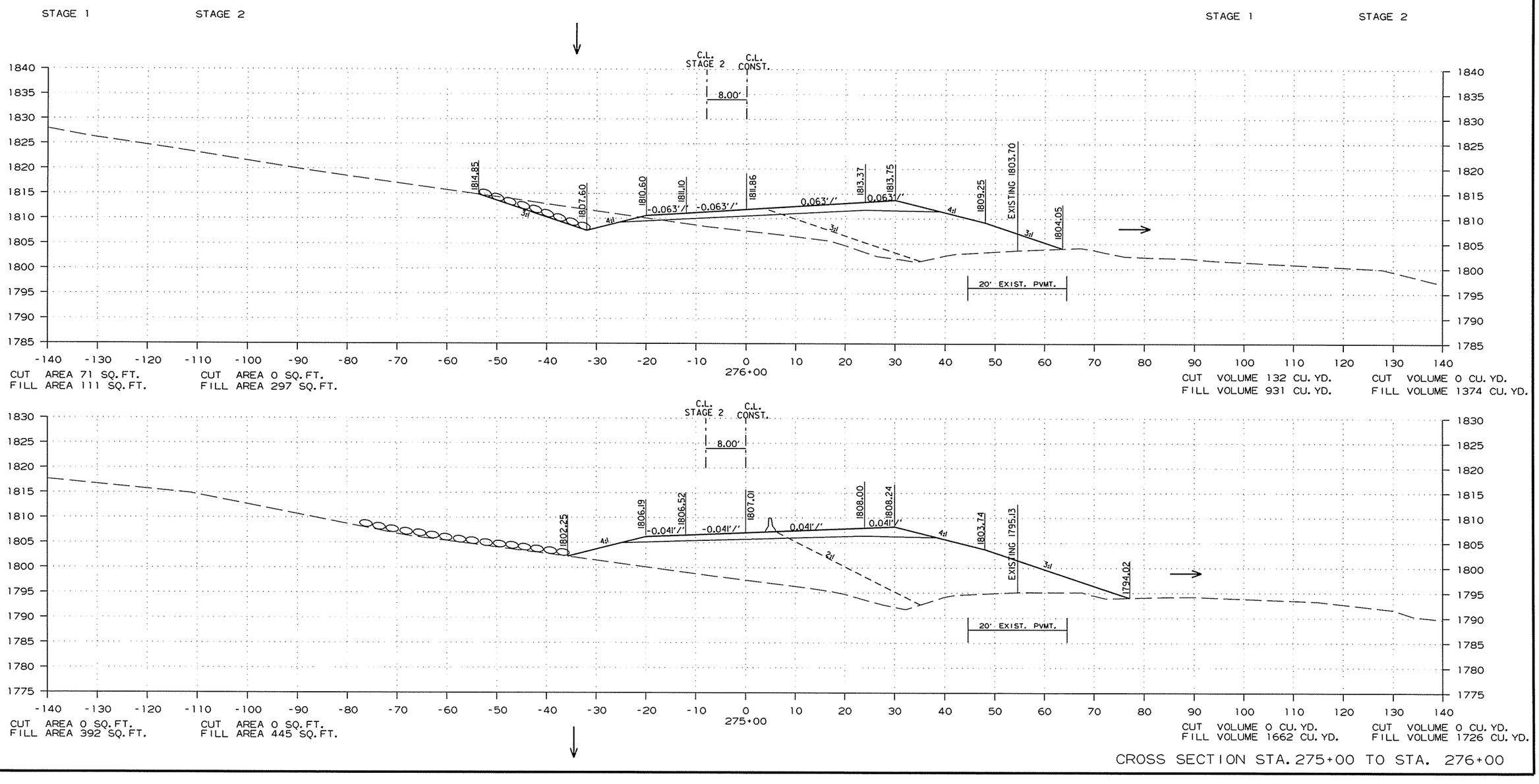
CROSS SECTION STA. 273+13 TO STA. 274+00

4/16/2015

R080464.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.		080464	89	115

(2) CROSS SECTIONS



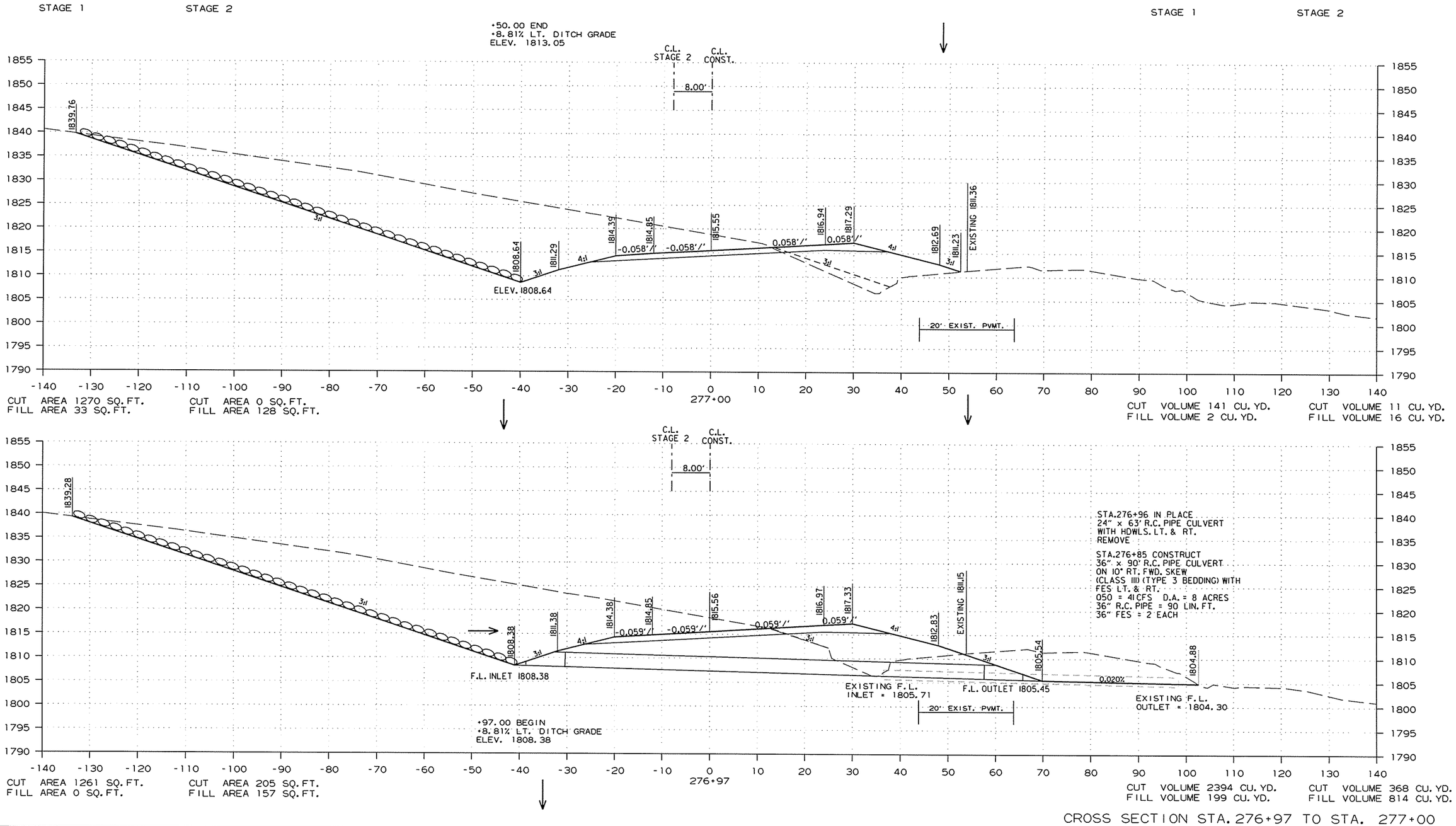
CROSS SECTION STA. 275+00 TO STA. 276+00

4/16/2015

R080464.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.		080464	90	115

(2) CROSS SECTIONS



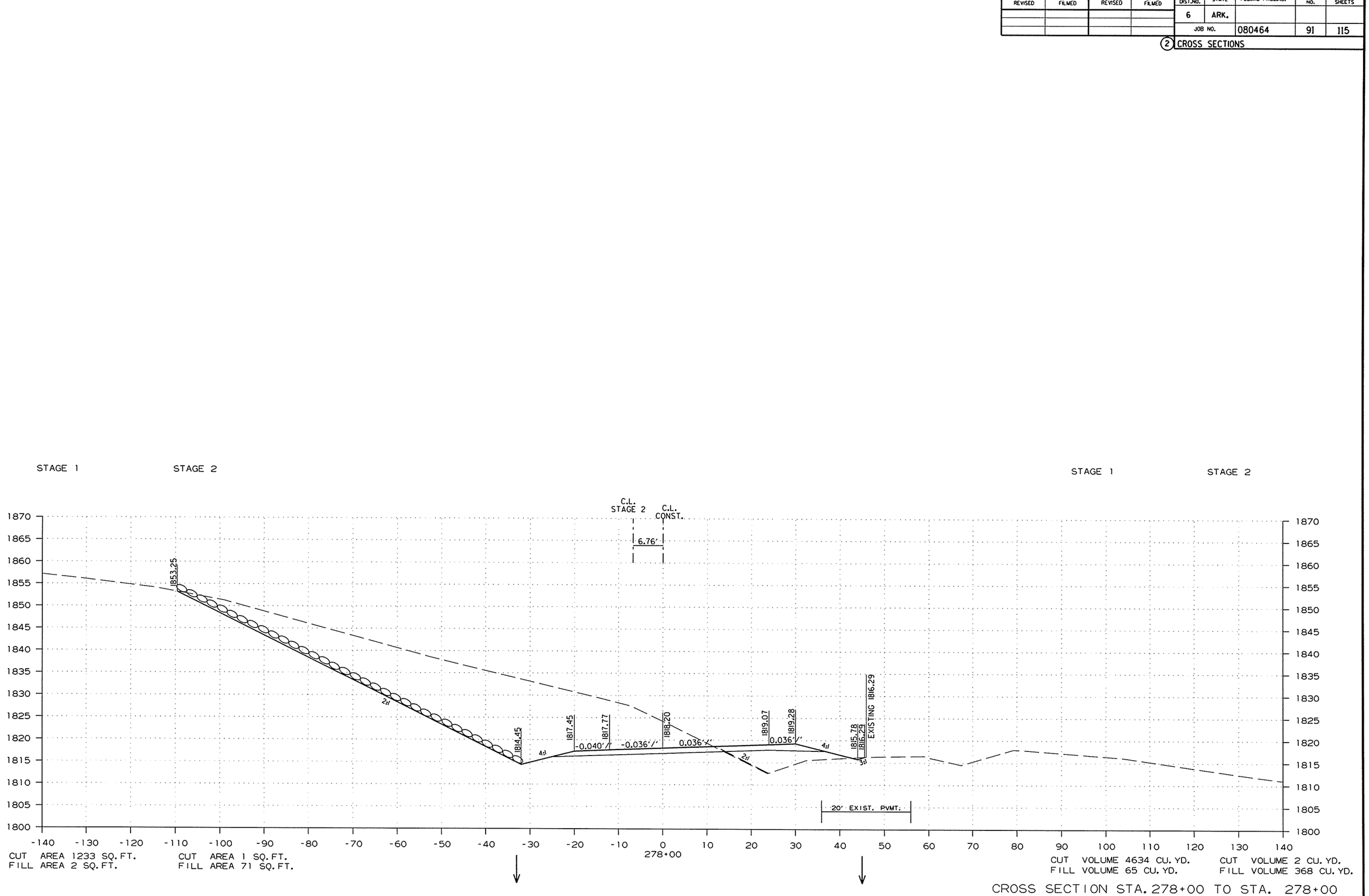
CROSS SECTION STA. 276+97 TO STA. 277+00

4/16/2015

R080464.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.		080464	91	115

(2) CROSS SECTIONS



CROSS SECTION STA. 278+00 TO STA. 278+00

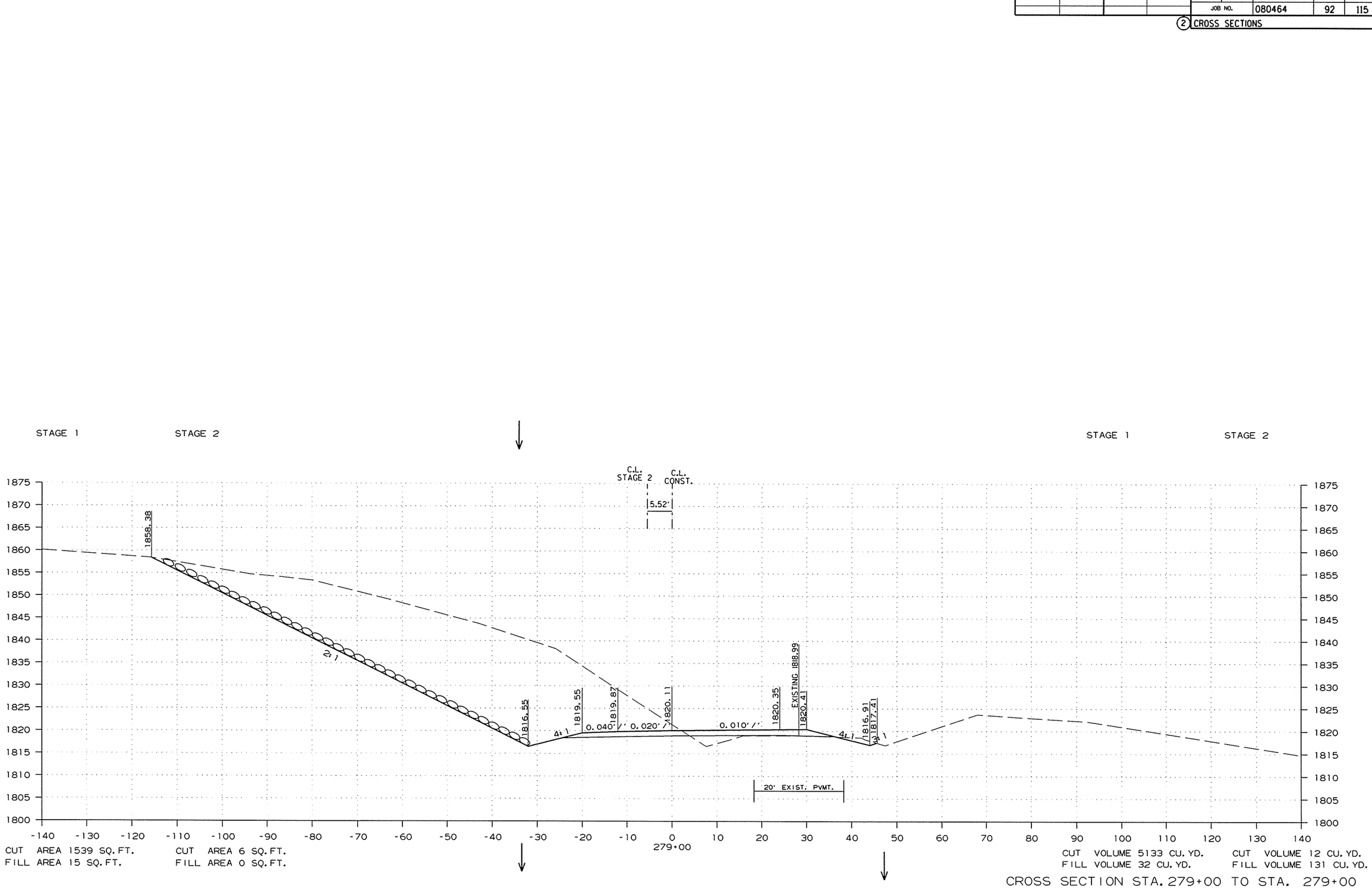
4/16/2015

R080464.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.		080464	92	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



CUT AREA 1539 SQ. FT. CUT AREA 6 SQ. FT.
FILL AREA 15 SQ. FT. FILL AREA 0 SQ. FT.

STAGE 1 STAGE 2

CUT VOLUME 5133 CU. YD. CUT VOLUME 12 CU. YD.
FILL VOLUME 32 CU. YD. FILL VOLUME 131 CU. YD.

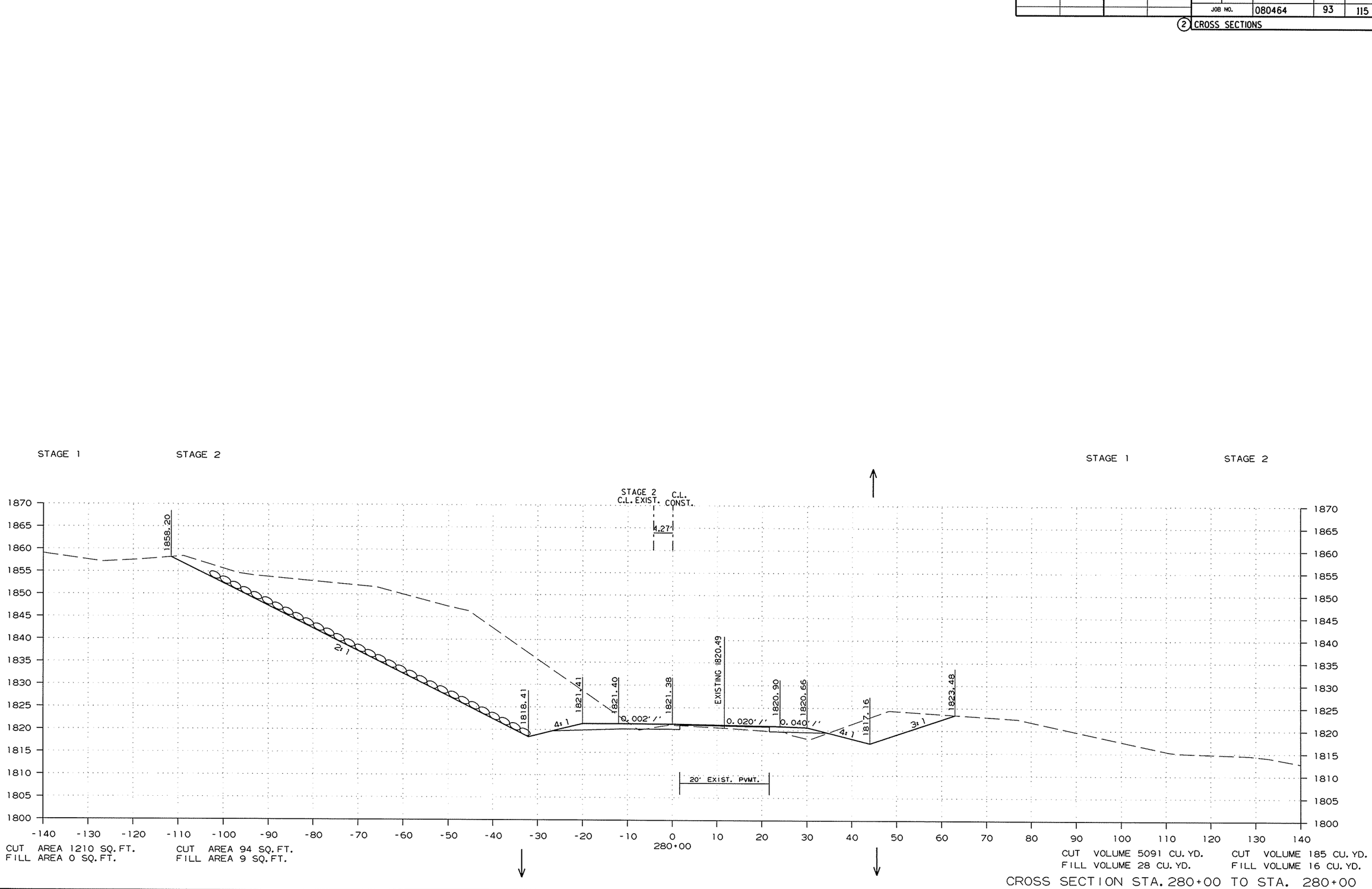
CROSS SECTION STA. 279+00 TO STA. 279+00

4/16/2015

R080464.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.		080464	93	115

(2) CROSS SECTIONS



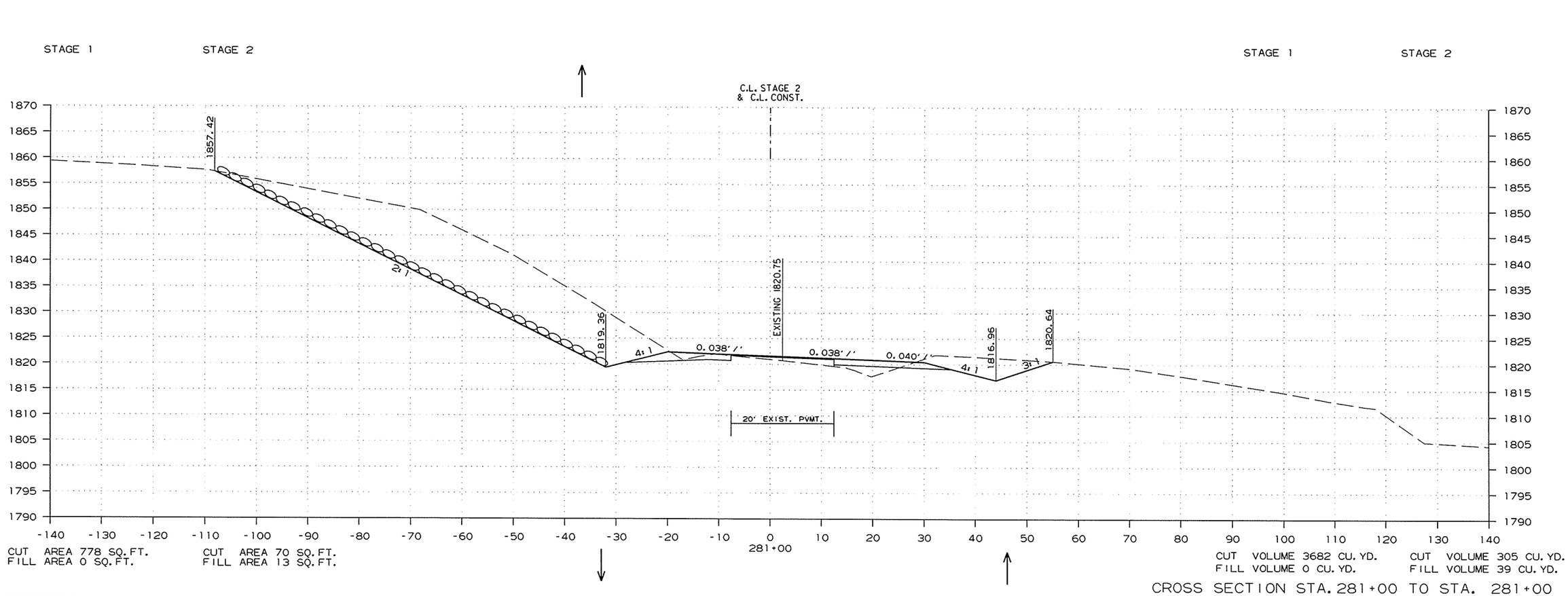
CROSS SECTION STA. 280+00 TO STA. 280+00

4/16/2015

R080464.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.		080464	94	115

(2) CROSS SECTIONS



CUT AREA 778 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 70 SQ.FT.
FILL AREA 13 SQ.FT.

CUT VOLUME 3682 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 305 CU.YD.
FILL VOLUME 39 CU.YD.

CROSS SECTION STA. 281+00 TO STA. 281+00

4/16/2015

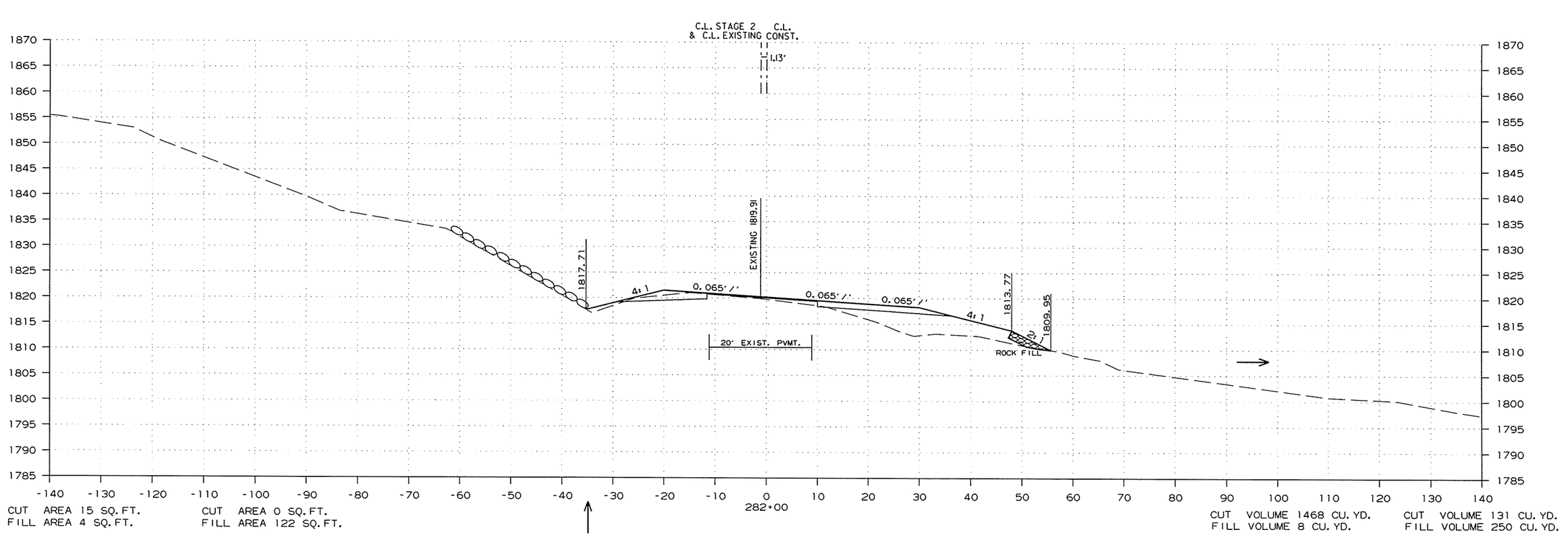
R080464.DGN

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.		080464	95	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CUT AREA 15 SQ. FT.
FILL AREA 4 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 122 SQ. FT.

CUT VOLUME 1468 CU. YD.
FILL VOLUME 8 CU. YD.

CUT VOLUME 131 CU. YD.
FILL VOLUME 250 CU. YD.

CROSS SECTION STA. 282+00 TO STA. 282+00

4/16/2015

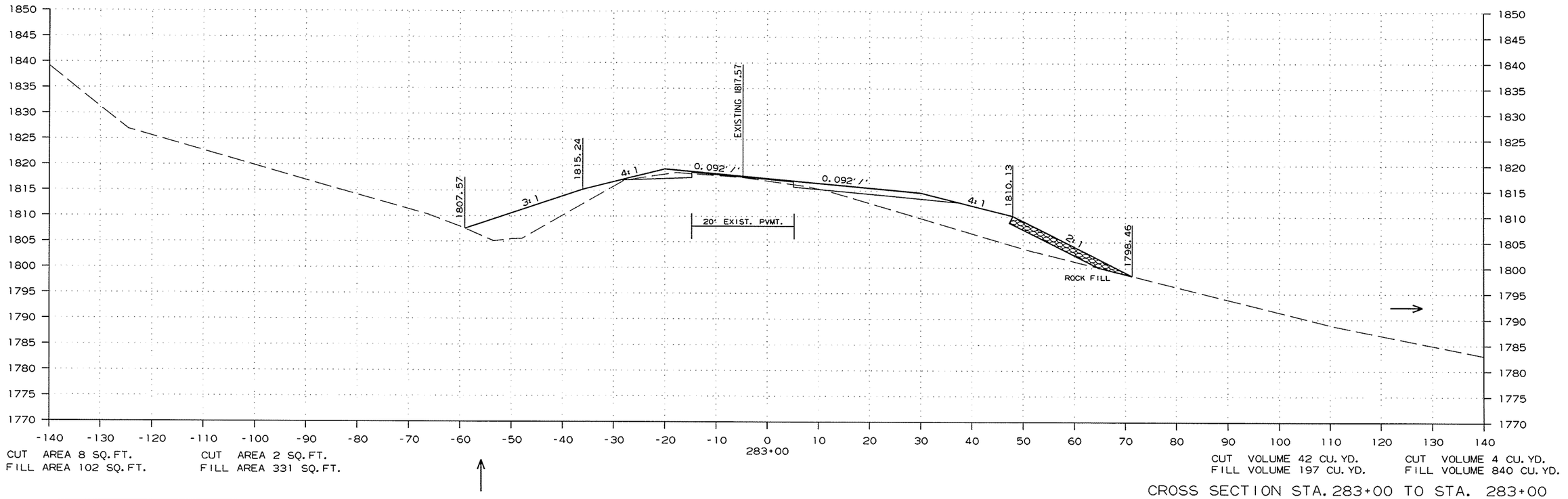
R080464.DGN

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.		080464	96	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CUT AREA 8 SQ.FT.
FILL AREA 102 SQ.FT.

CUT AREA 2 SQ.FT.
FILL AREA 331 SQ.FT.

CUT VOLUME 42 CU.YD.
FILL VOLUME 197 CU.YD.

CUT VOLUME 4 CU.YD.
FILL VOLUME 840 CU.YD.

CROSS SECTION STA. 283+00 TO STA. 283+00

4/16/2015

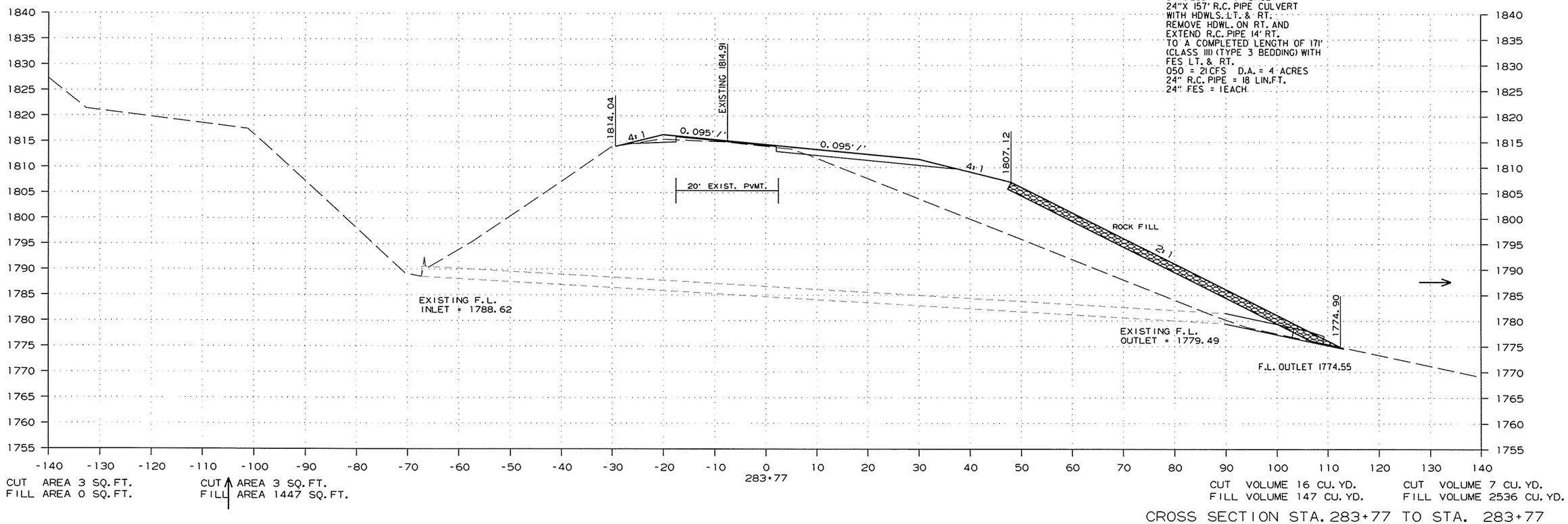
R080464.DGN

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.		080464	97	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CUT AREA 3 SQ. FT.
FILL AREA 0 SQ. FT.

CUT AREA 3 SQ. FT.
FILL AREA 1447 SQ. FT.

CUT VOLUME 16 CU. YD.
FILL VOLUME 147 CU. YD.

CUT VOLUME 7 CU. YD.
FILL VOLUME 2536 CU. YD.

CROSS SECTION STA. 283+77 TO STA. 283+77

4/16/2015

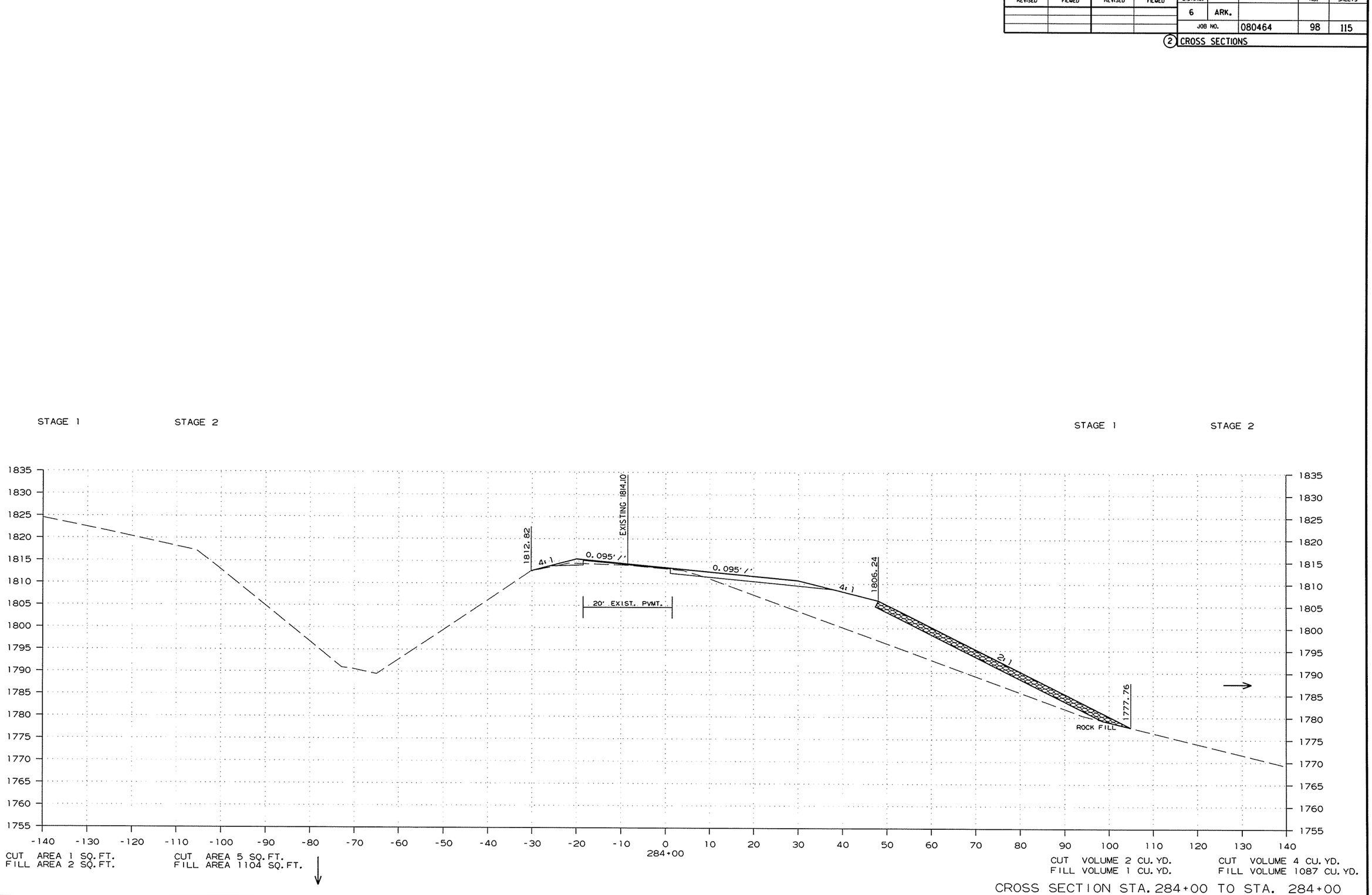
R080464.DGN

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.		080464	98	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CUT AREA 1 SQ. FT.
FILL AREA 2 SQ. FT.

CUT AREA 5 SQ. FT.
FILL AREA 1104 SQ. FT.

CUT VOLUME 2 CU. YD.
FILL VOLUME 1 CU. YD.

CUT VOLUME 4 CU. YD.
FILL VOLUME 1087 CU. YD.

CROSS SECTION STA. 284+00 TO STA. 284+00

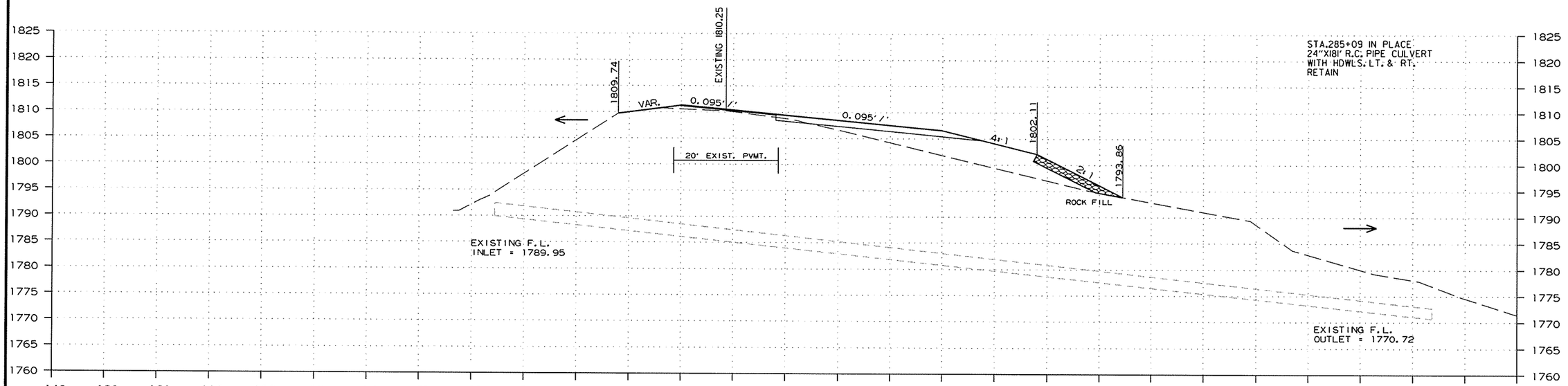
4/16/2015

R080464.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.		080464	99	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



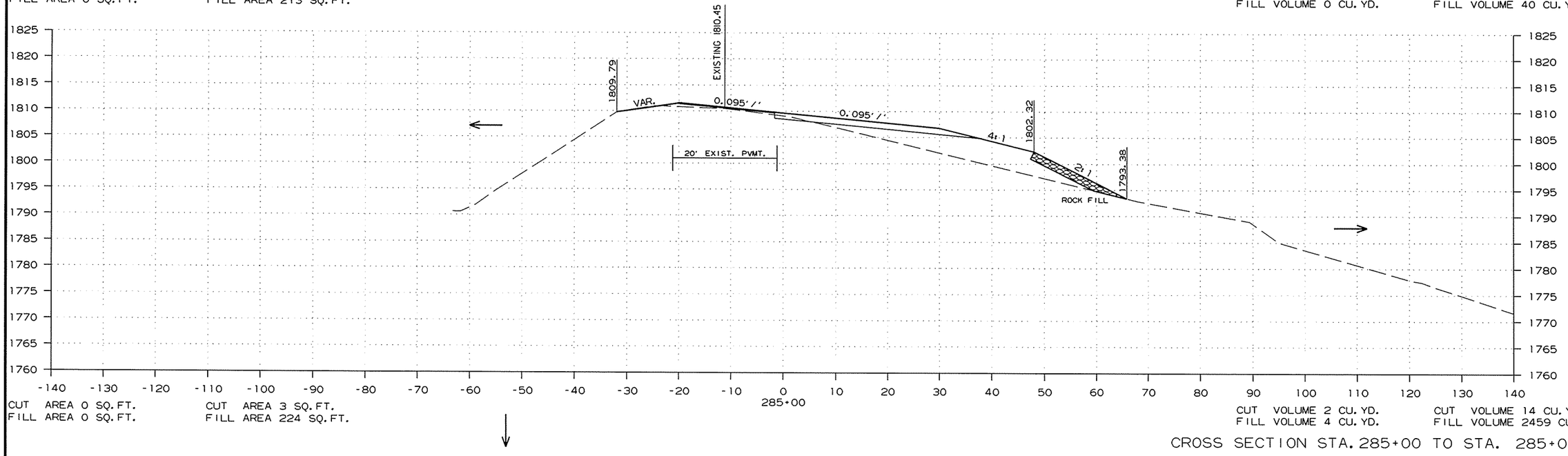
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

CUT AREA 3 SQ. FT.
FILL AREA 213 SQ. FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 1 CU. YD.
FILL VOLUME 40 CU. YD.

STAGE 1 STAGE 2



CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

CUT AREA 3 SQ. FT.
FILL AREA 224 SQ. FT.

CUT VOLUME 2 CU. YD.
FILL VOLUME 4 CU. YD.

CUT VOLUME 14 CU. YD.
FILL VOLUME 2459 CU. YD.

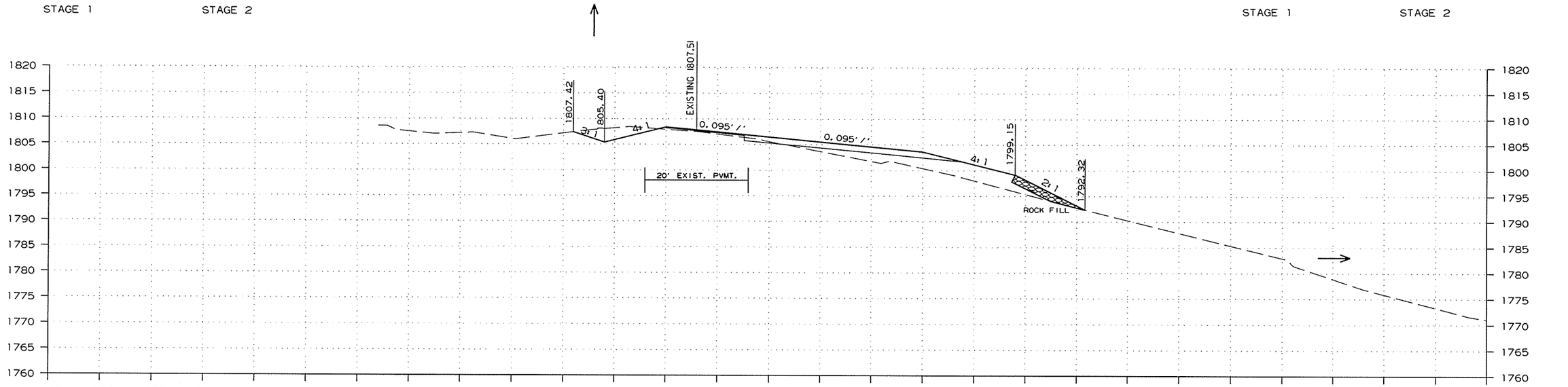
CROSS SECTION STA. 285+00 TO STA. 285+05

4/16/2015

R080464.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.		080464	100	115

(2) CROSS SECTIONS



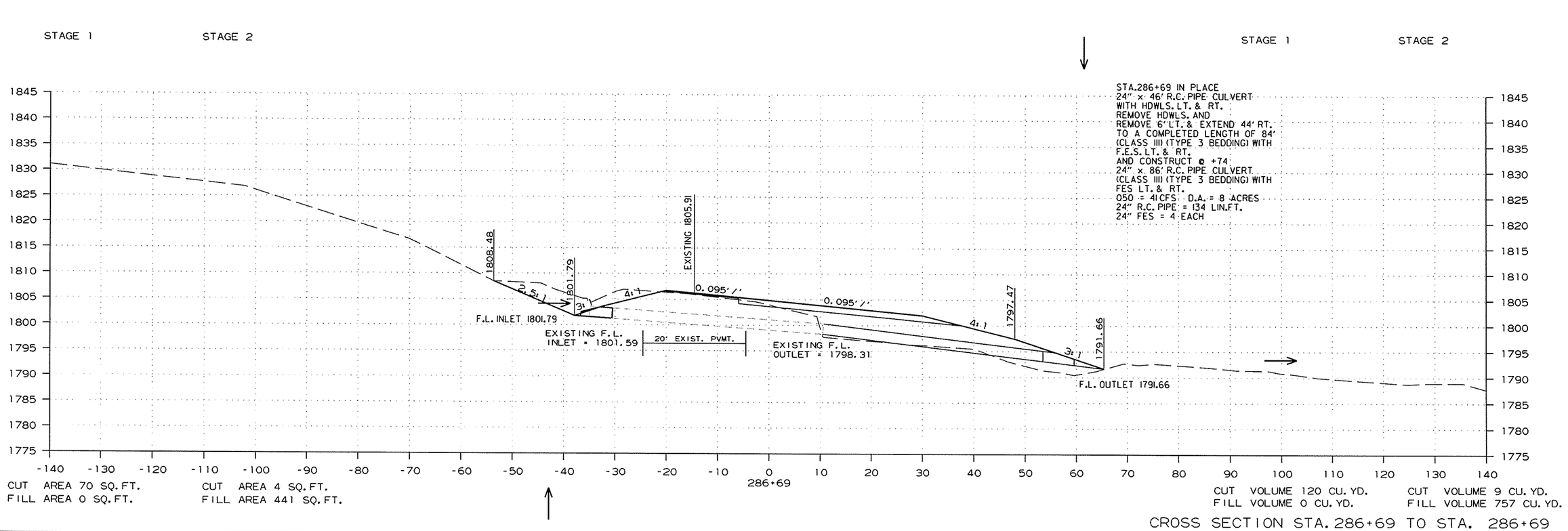
CROSS SECTION STA. 285+10 TO STA. 286+00

4/16/2015

R080464.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.		080464	101	115

(2) CROSS SECTIONS



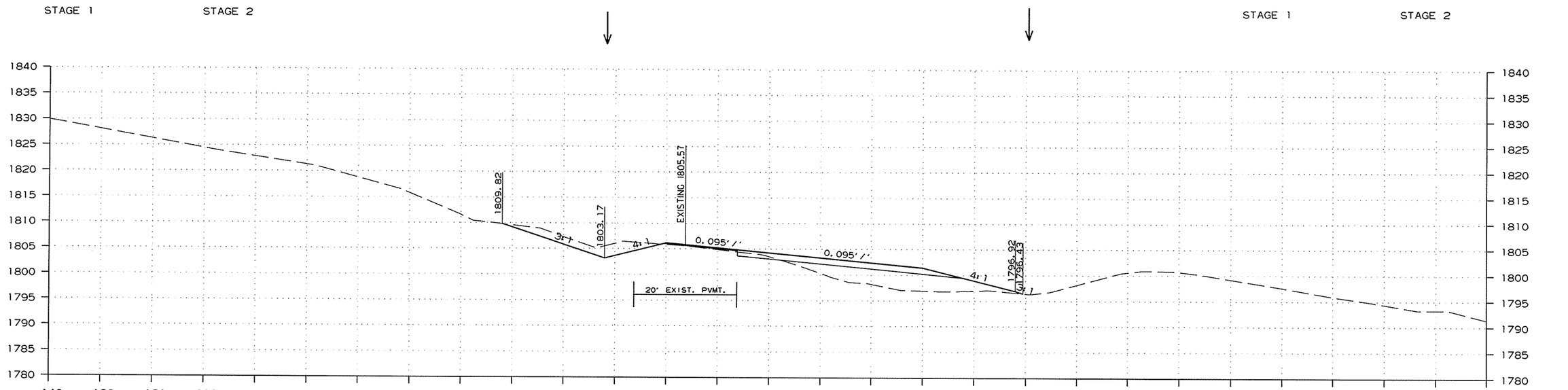
CROSS SECTION STA. 286+69 TO STA. 286+69

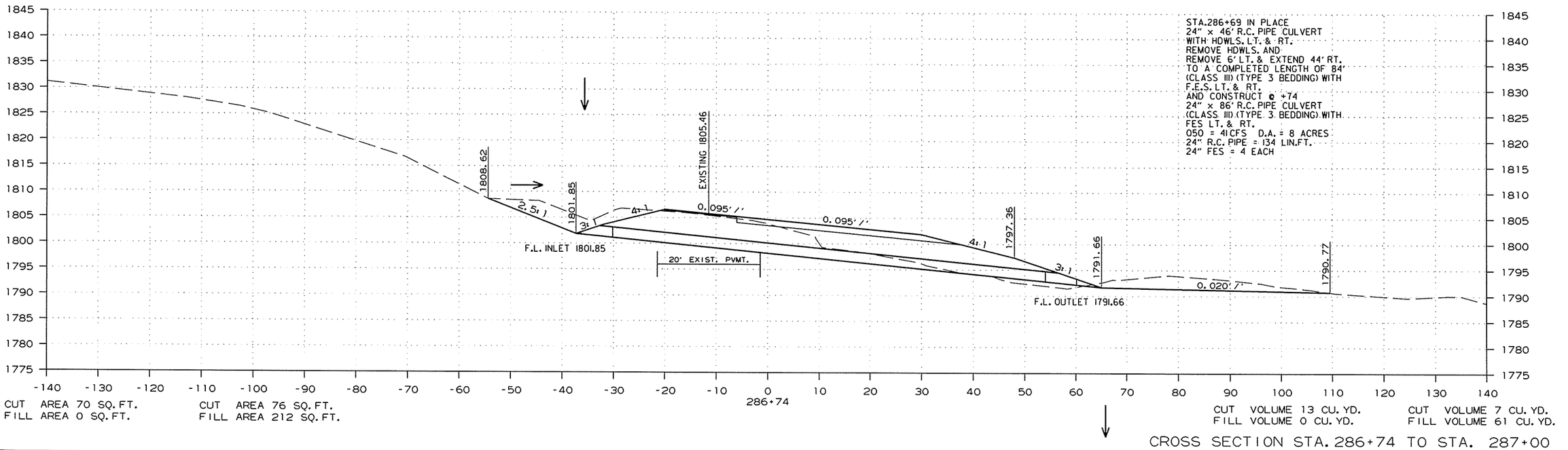
4/16/2015

R080464.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.		080464	102	115

(2) CROSS SECTIONS





CROSS SECTION STA. 286+74 TO STA. 287+00

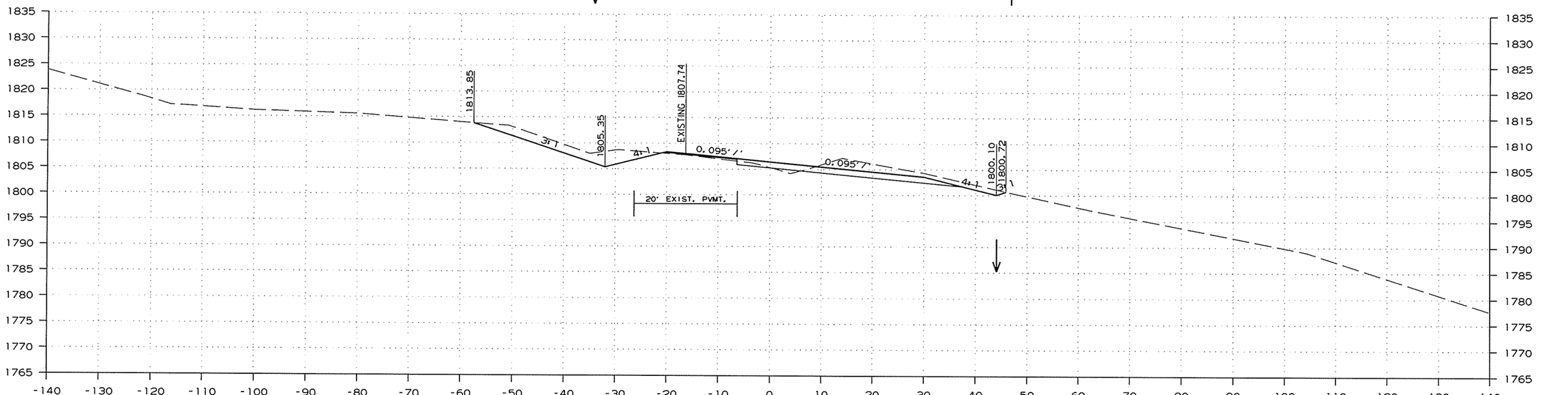
4/16/2015

R080464.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.		080464	103	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



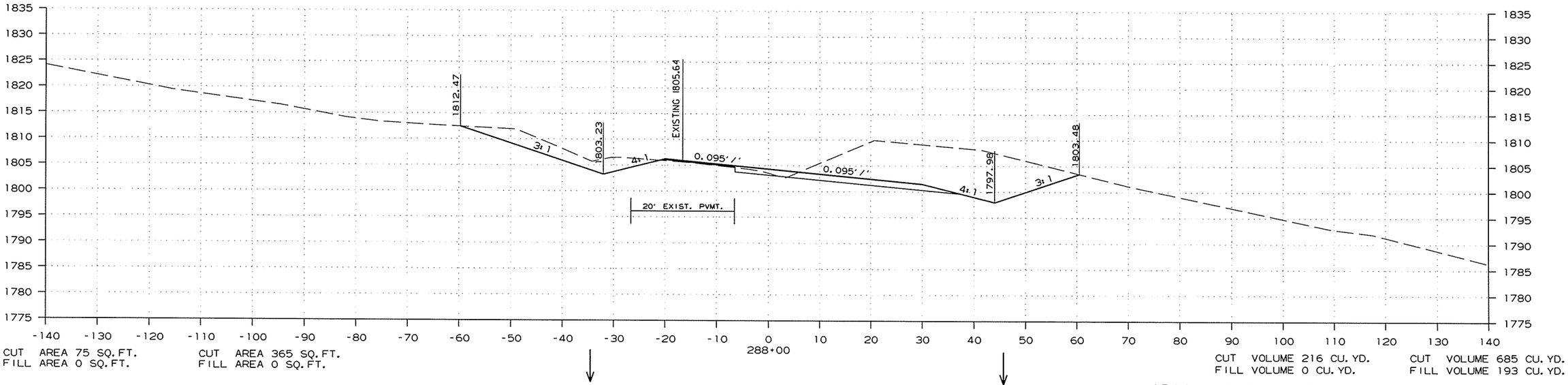
CUT AREA 58 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 73 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 247 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 811 CU.YD.
FILL VOLUME 4 CU.YD.

STAGE 1 STAGE 2



CUT AREA 75 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 365 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 216 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 685 CU.YD.
FILL VOLUME 193 CU.YD.

CROSS SECTION STA. 288+00 TO STA. 289+00

4/16/2015

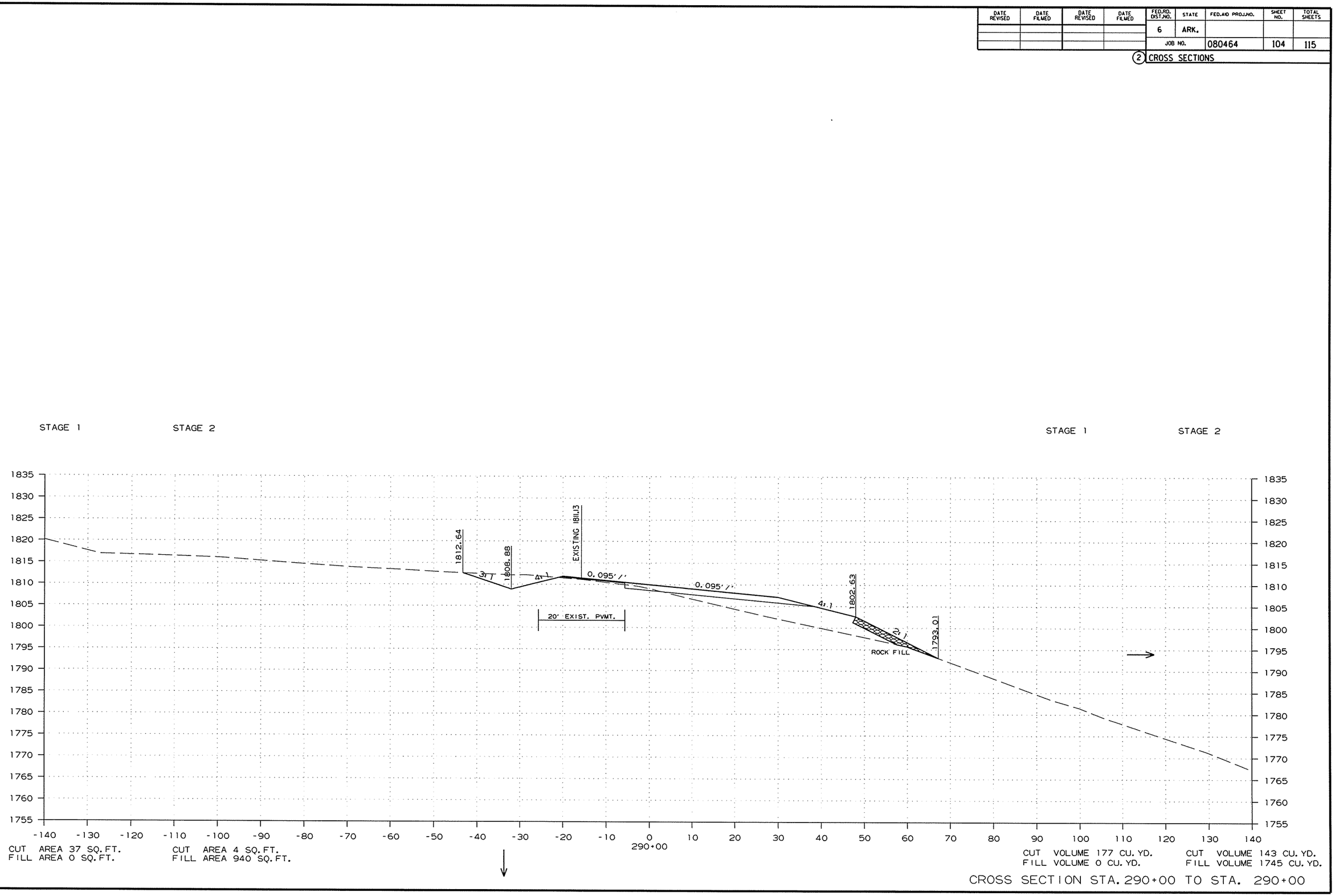
R080464.DGN

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.		080464	104	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CUT AREA 37 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 940 SQ.FT.

CUT VOLUME 177 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 143 CU. YD.
FILL VOLUME 1745 CU. YD.

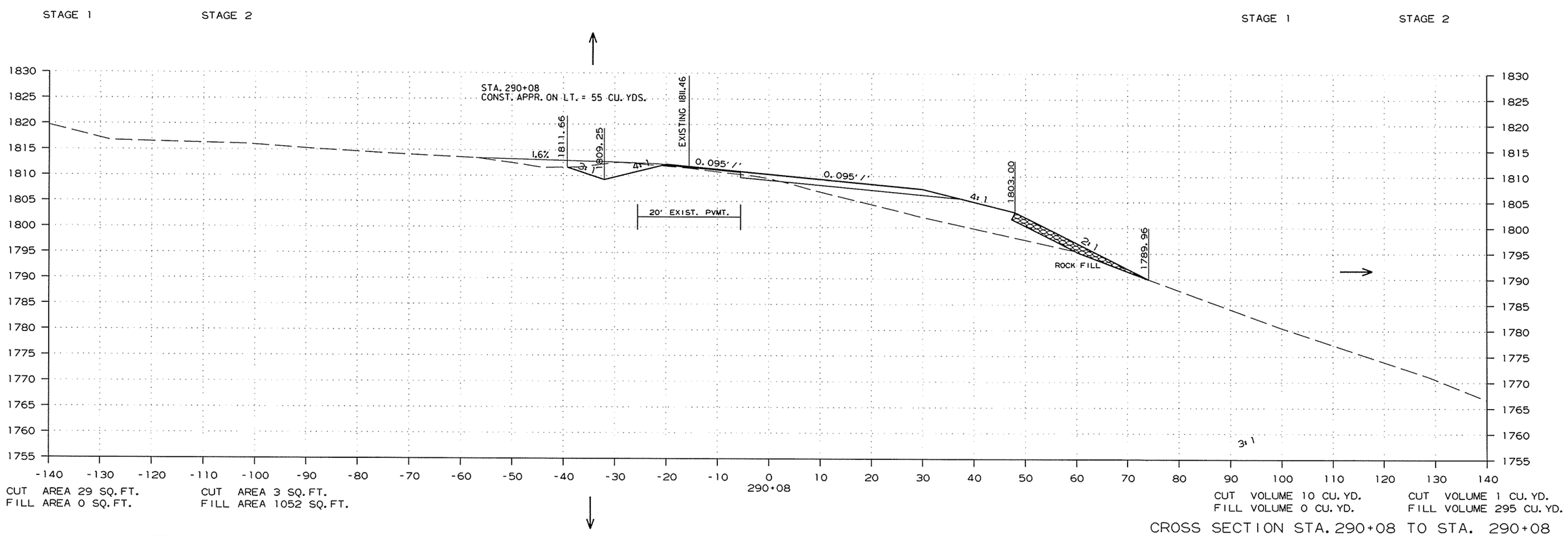
CROSS SECTION STA. 290+00 TO STA. 290+00

4/16/2015

R080464.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.		080464	105	115

(2) CROSS SECTIONS



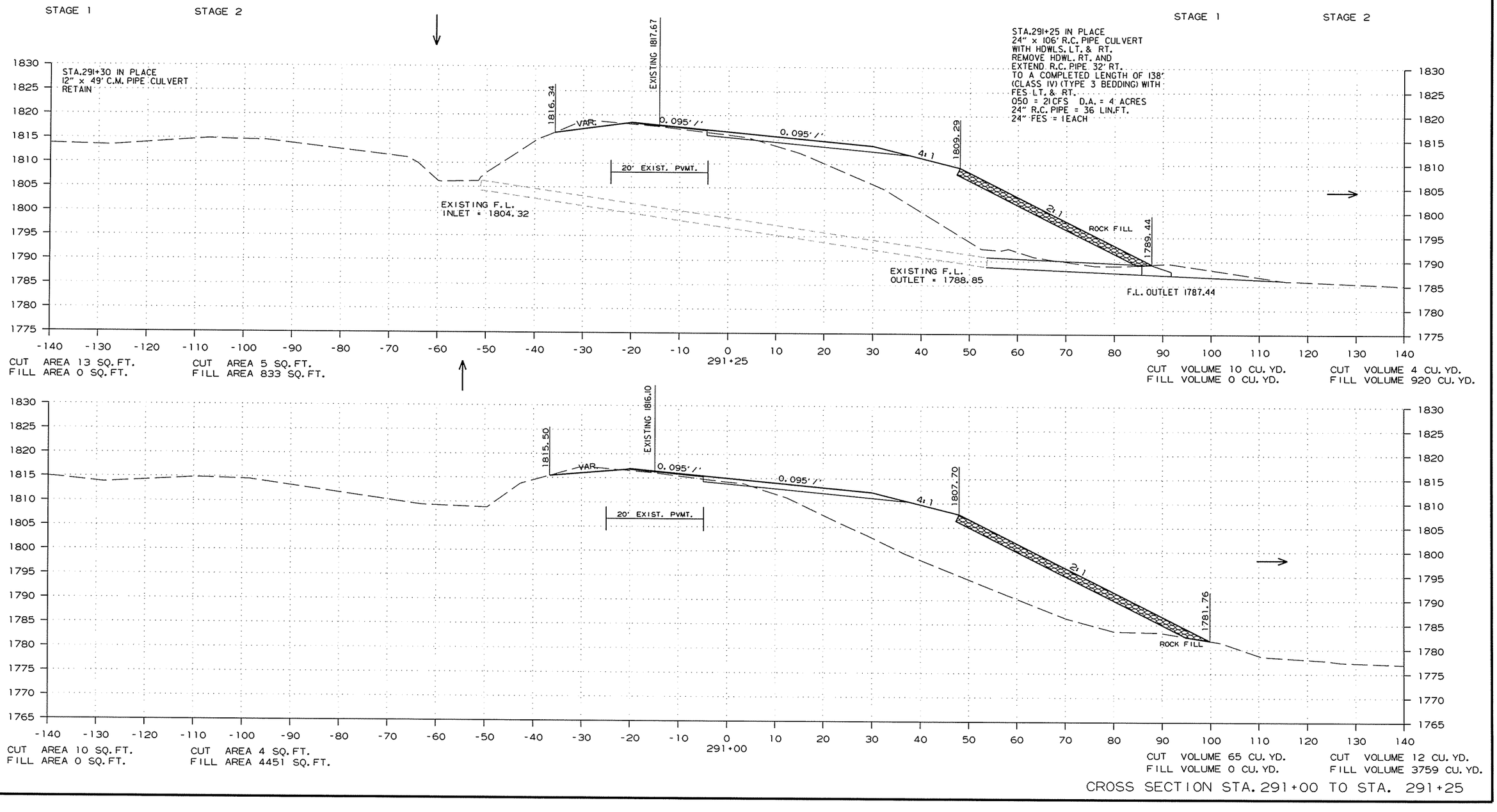
CROSS SECTION STA. 290+08 TO STA. 290+08

4/16/2015

R080464.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.		080464	106	115

(2) CROSS SECTIONS



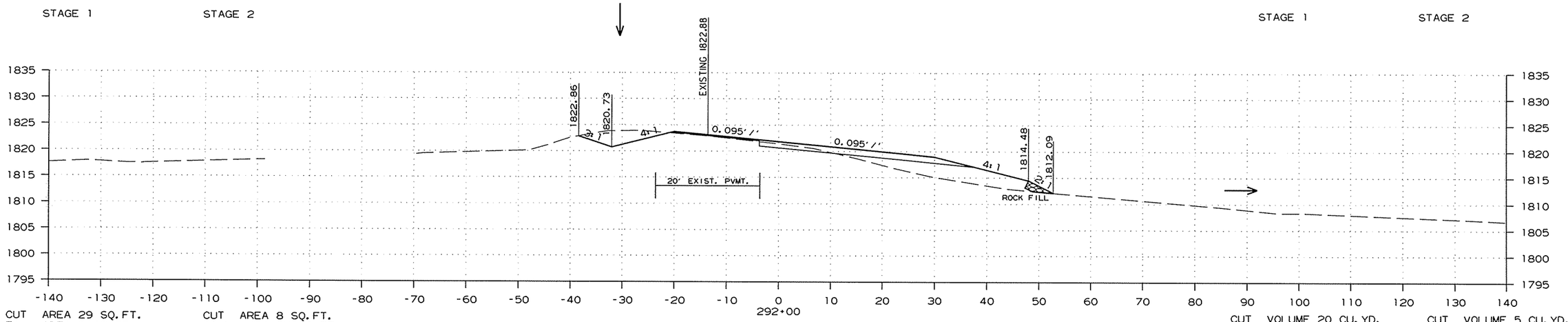
CROSS SECTION STA. 291+00 TO STA. 291+25

4/16/2015

R080464.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.		080464	107	115

(2) CROSS SECTIONS

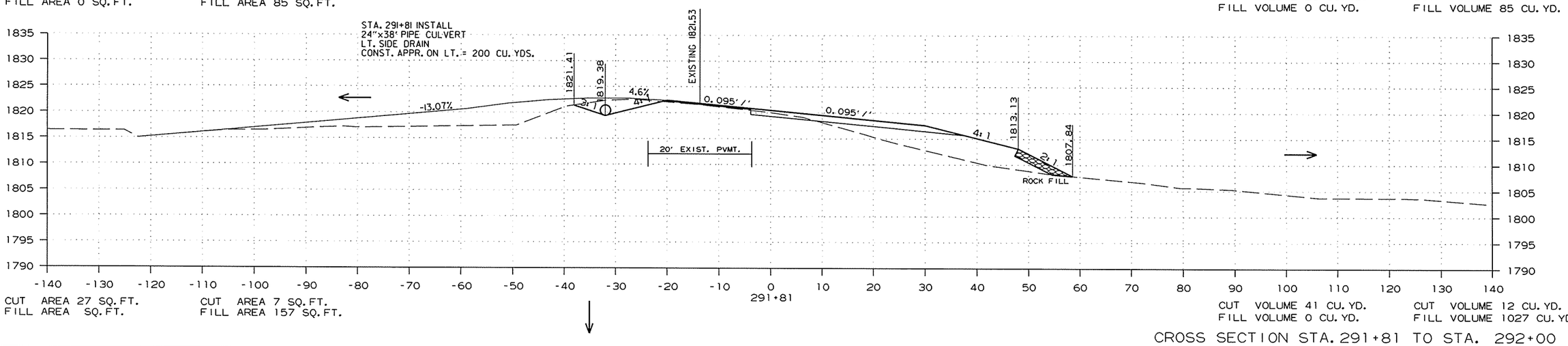


CUT AREA 29 SQ. FT.
FILL AREA 0 SQ. FT.

CUT AREA 8 SQ. FT.
FILL AREA 85 SQ. FT.

CUT VOLUME 20 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 5 CU. YD.
FILL VOLUME 85 CU. YD.



CUT AREA 27 SQ. FT.
FILL AREA SQ. FT.

CUT AREA 7 SQ. FT.
FILL AREA 157 SQ. FT.

CUT VOLUME 41 CU. YD.
FILL VOLUME 0 CU. YD.

CUT VOLUME 12 CU. YD.
FILL VOLUME 1027 CU. YD.

CROSS SECTION STA. 291+81 TO STA. 292+00

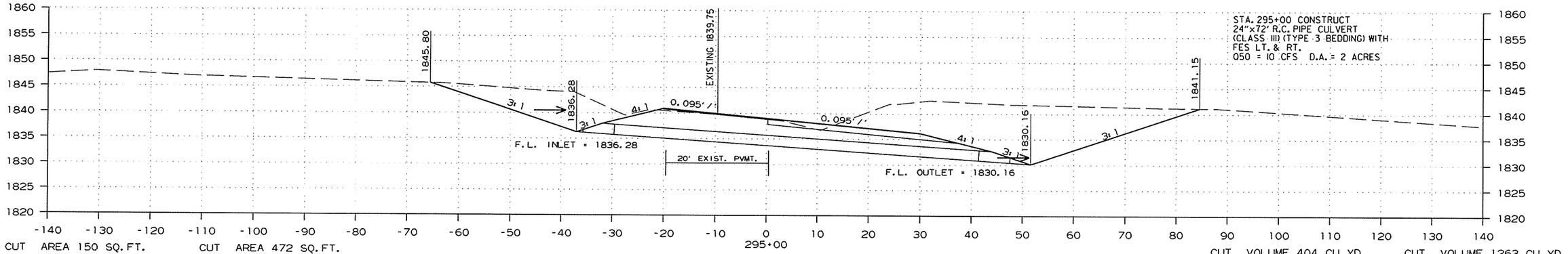
4/16/2015

R080464.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.		080464	108	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

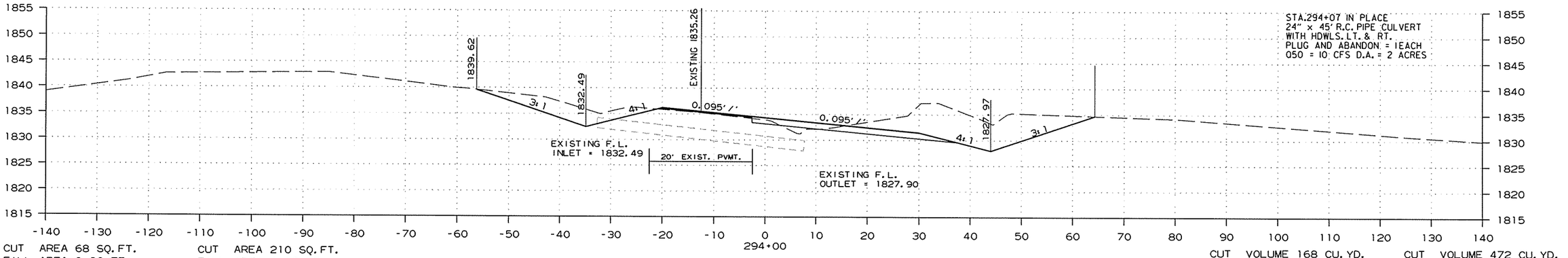


CUT AREA 150 SQ.FT. FILL AREA 0 SQ.FT.

CUT AREA 472 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 404 CU.YD. FILL VOLUME 0 CU.YD.

CUT VOLUME 1263 CU.YD. FILL VOLUME 8 CU.YD.

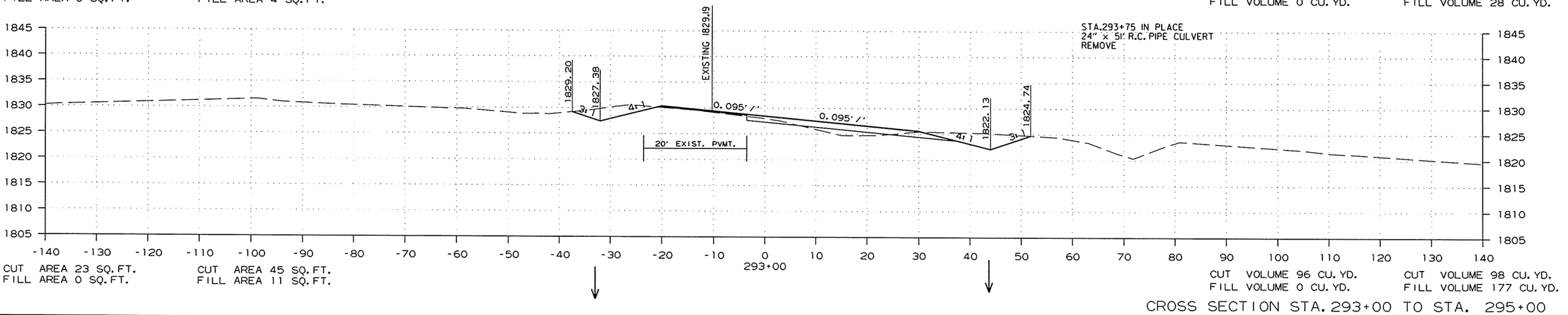


CUT AREA 68 SQ.FT. FILL AREA 0 SQ.FT.

CUT AREA 210 SQ.FT. FILL AREA 4 SQ.FT.

CUT VOLUME 168 CU.YD. FILL VOLUME 0 CU.YD.

CUT VOLUME 472 CU.YD. FILL VOLUME 28 CU.YD.



CUT AREA 23 SQ.FT. FILL AREA 0 SQ.FT.

CUT AREA 45 SQ.FT. FILL AREA 11 SQ.FT.

CUT VOLUME 96 CU.YD. FILL VOLUME 0 CU.YD.

CUT VOLUME 98 CU.YD. FILL VOLUME 177 CU.YD.

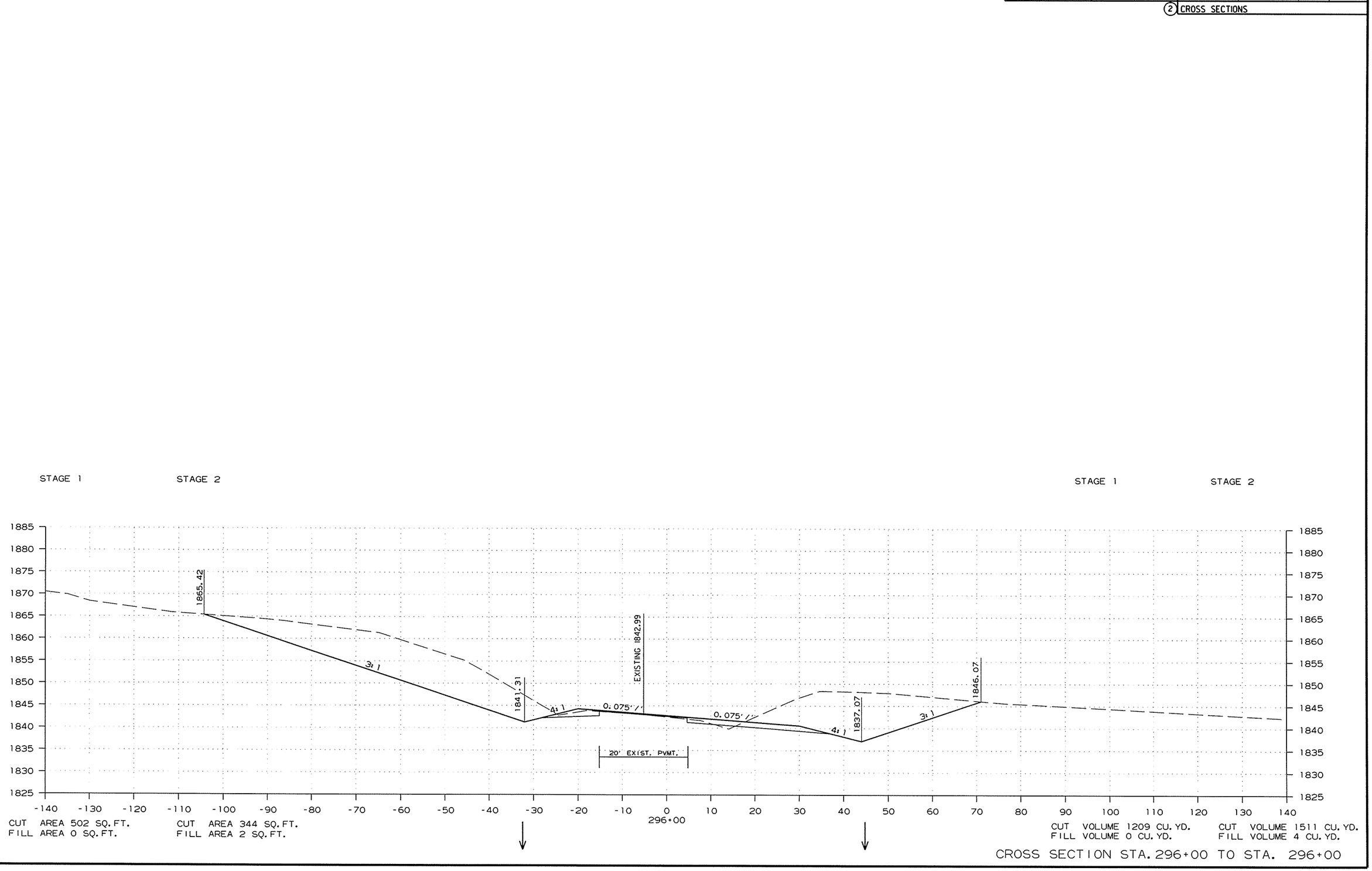
CROSS SECTION STA. 293+00 TO STA. 295+00

4/16/2015

R080464.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.		080464	109	115

(2) CROSS SECTIONS



CROSS SECTION STA. 296+00 TO STA. 296+00

4/16/2015

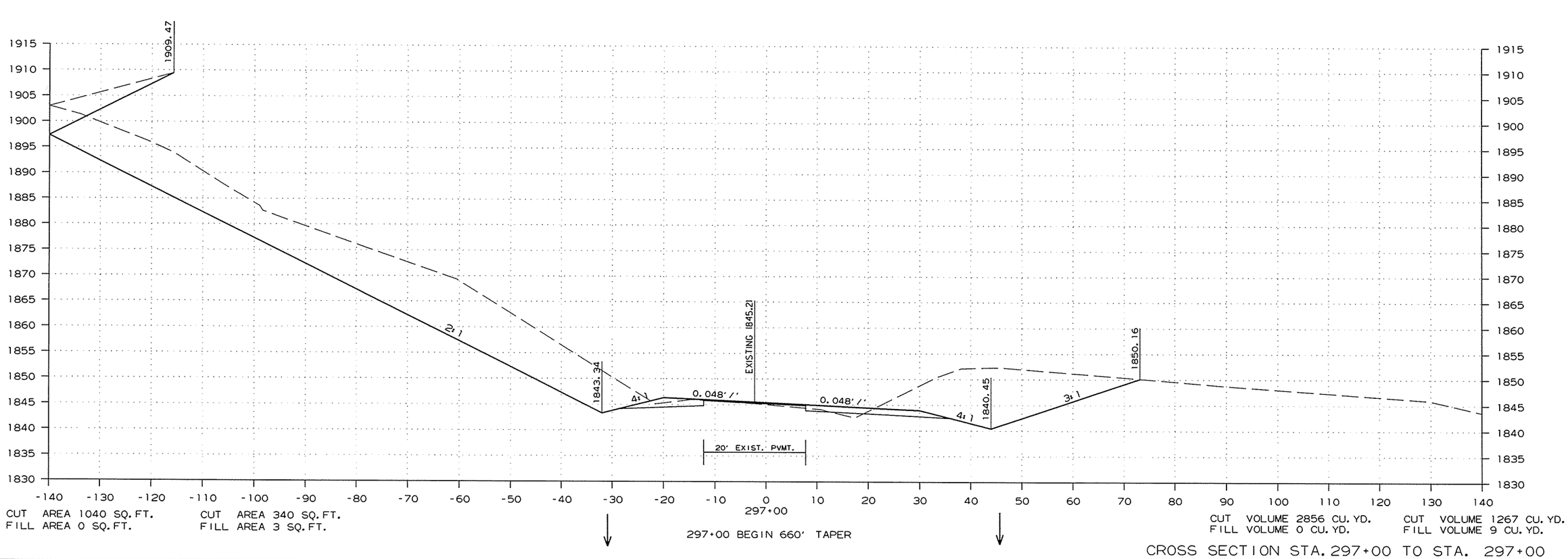
R080464.DGN

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.		080464	110	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



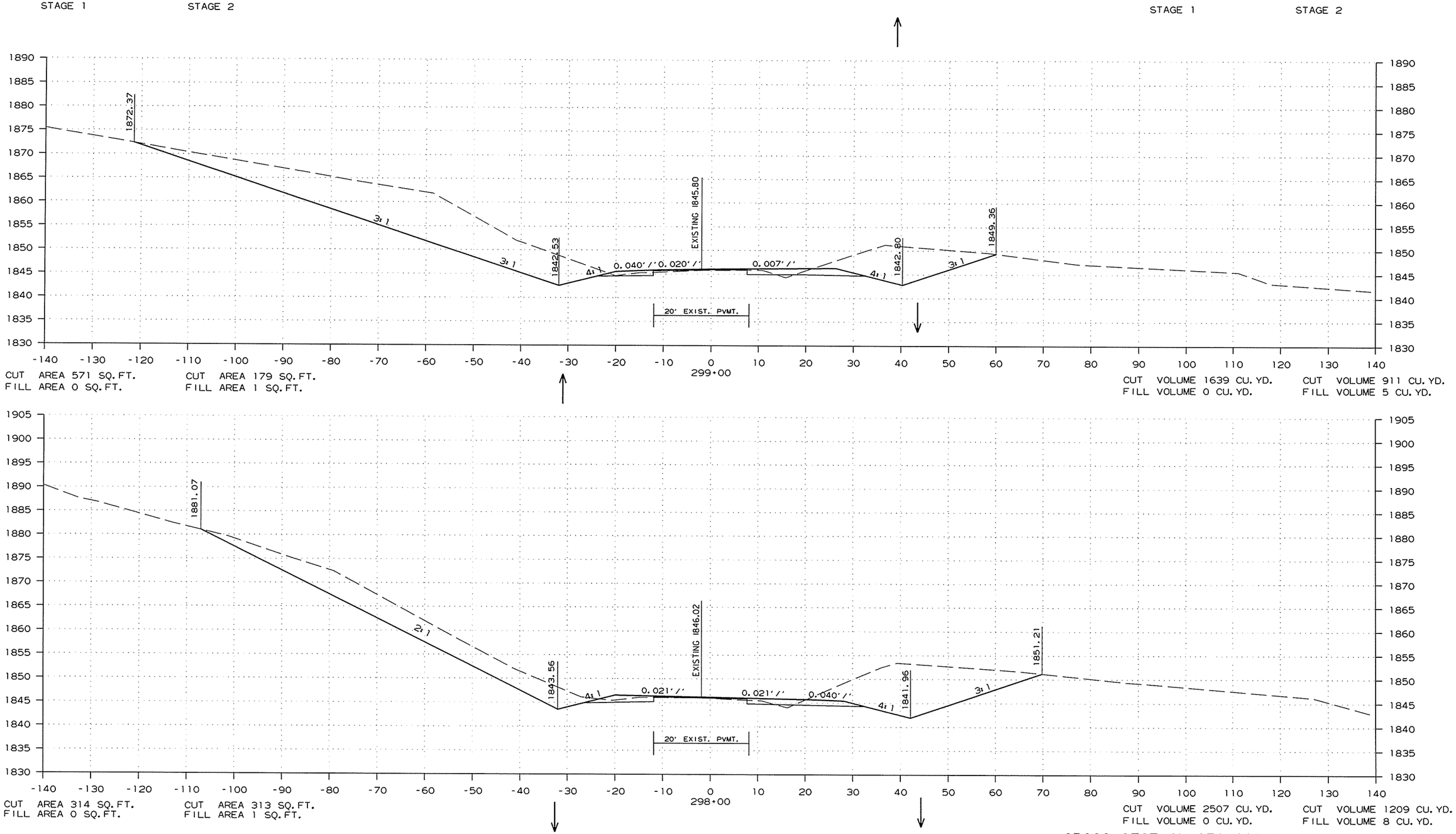
CROSS SECTION STA. 297+00 TO STA. 297+00

4/16/2015

R080464.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.		080464	111	115

(2) CROSS SECTIONS



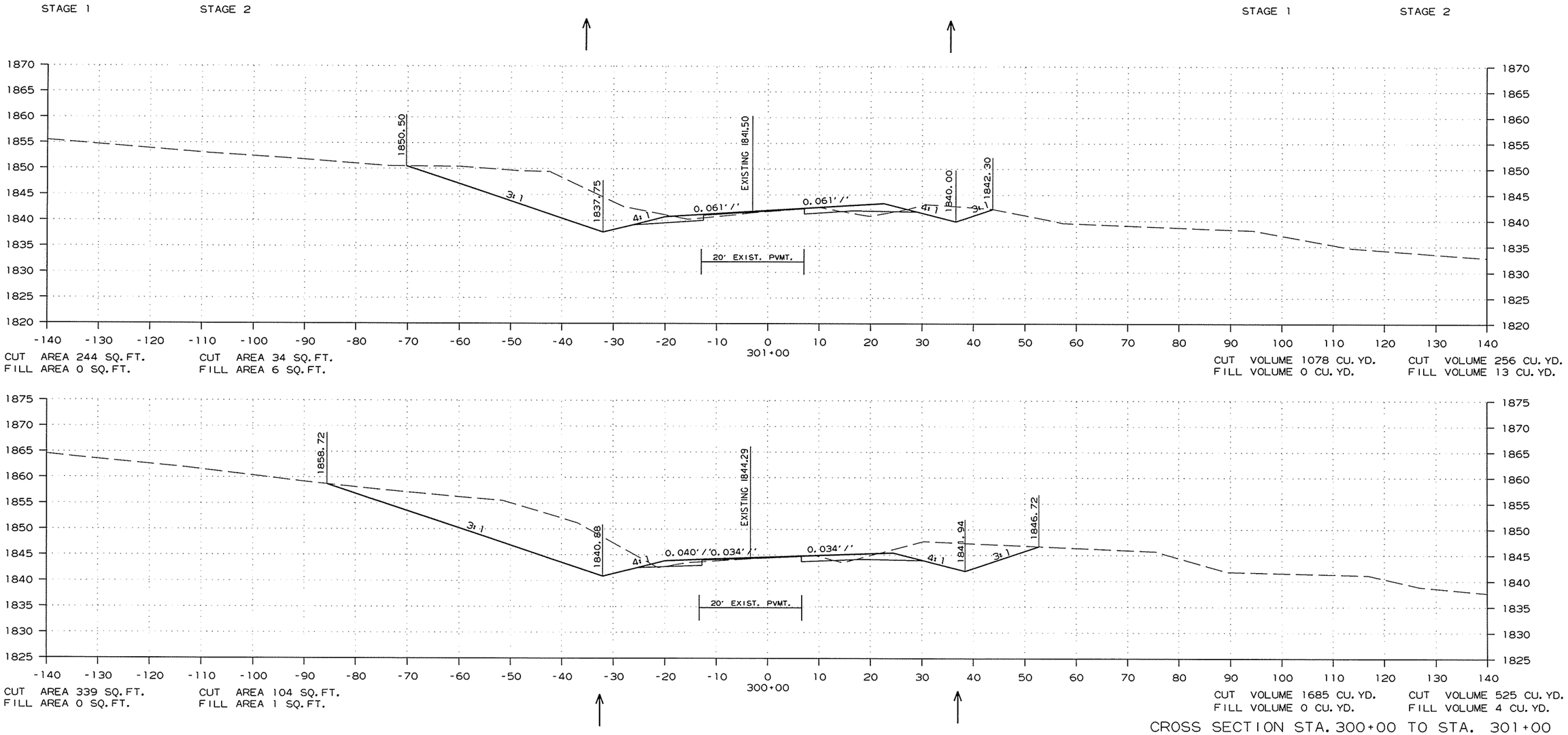
CROSS SECTION STA. 298+00 TO STA. 299+00

4/16/2015

R080464.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.		080464	112	115

(2) CROSS SECTIONS



CROSS SECTION STA. 300+00 TO STA. 301+00

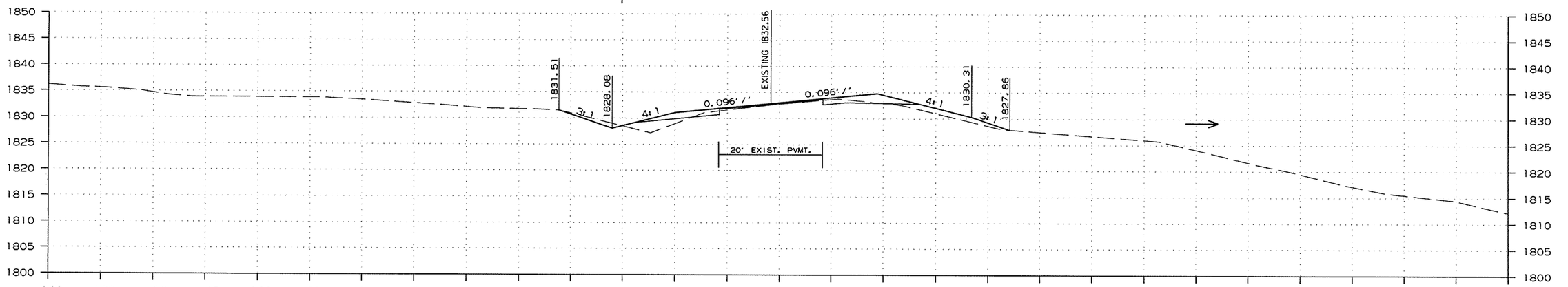
4/16/2015

R080464.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.		080464	113	115

(2) CROSS SECTIONS

STAGE 1 STAGE 2



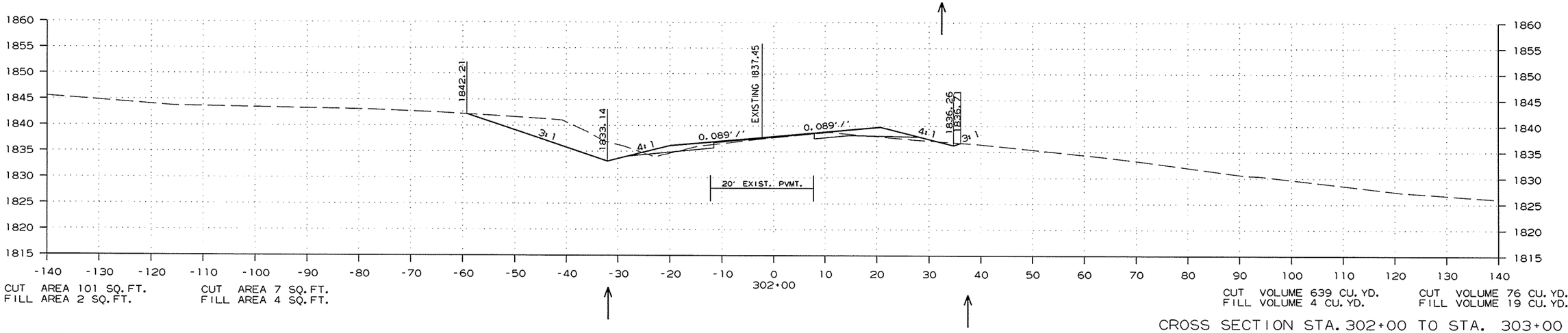
CUT AREA 9 SQ.FT.
FILL AREA 16 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 17 SQ.FT.

CUT VOLUME 203 CU.YD.
FILL VOLUME 33 CU.YD.

CUT VOLUME 23 CU.YD.
FILL VOLUME 39 CU.YD.

STAGE 1 STAGE 2



CUT AREA 101 SQ.FT.
FILL AREA 2 SQ.FT.

CUT AREA 7 SQ.FT.
FILL AREA 4 SQ.FT.

CUT VOLUME 639 CU.YD.
FILL VOLUME 4 CU.YD.

CUT VOLUME 76 CU.YD.
FILL VOLUME 19 CU.YD.

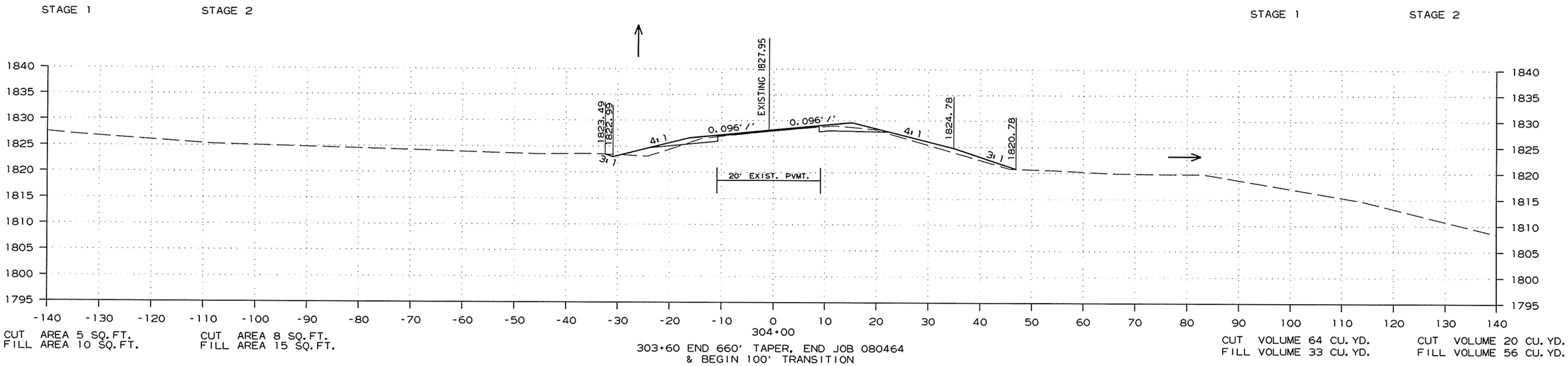
CROSS SECTION STA. 302+00 TO STA. 303+00

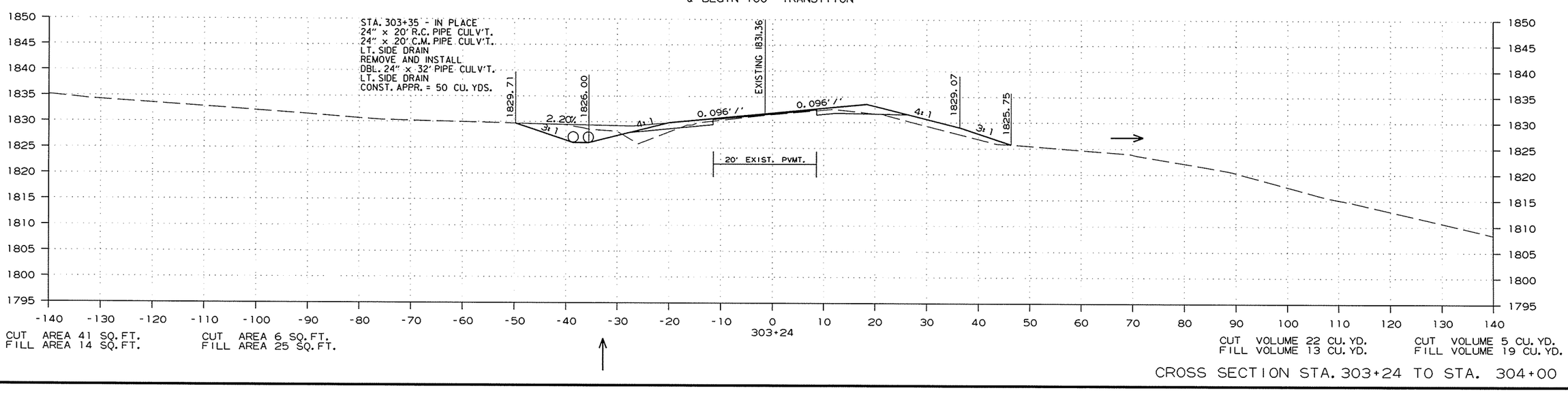
4/16/2015

R080464.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.		080464	114	115

(2) CROSS SECTIONS





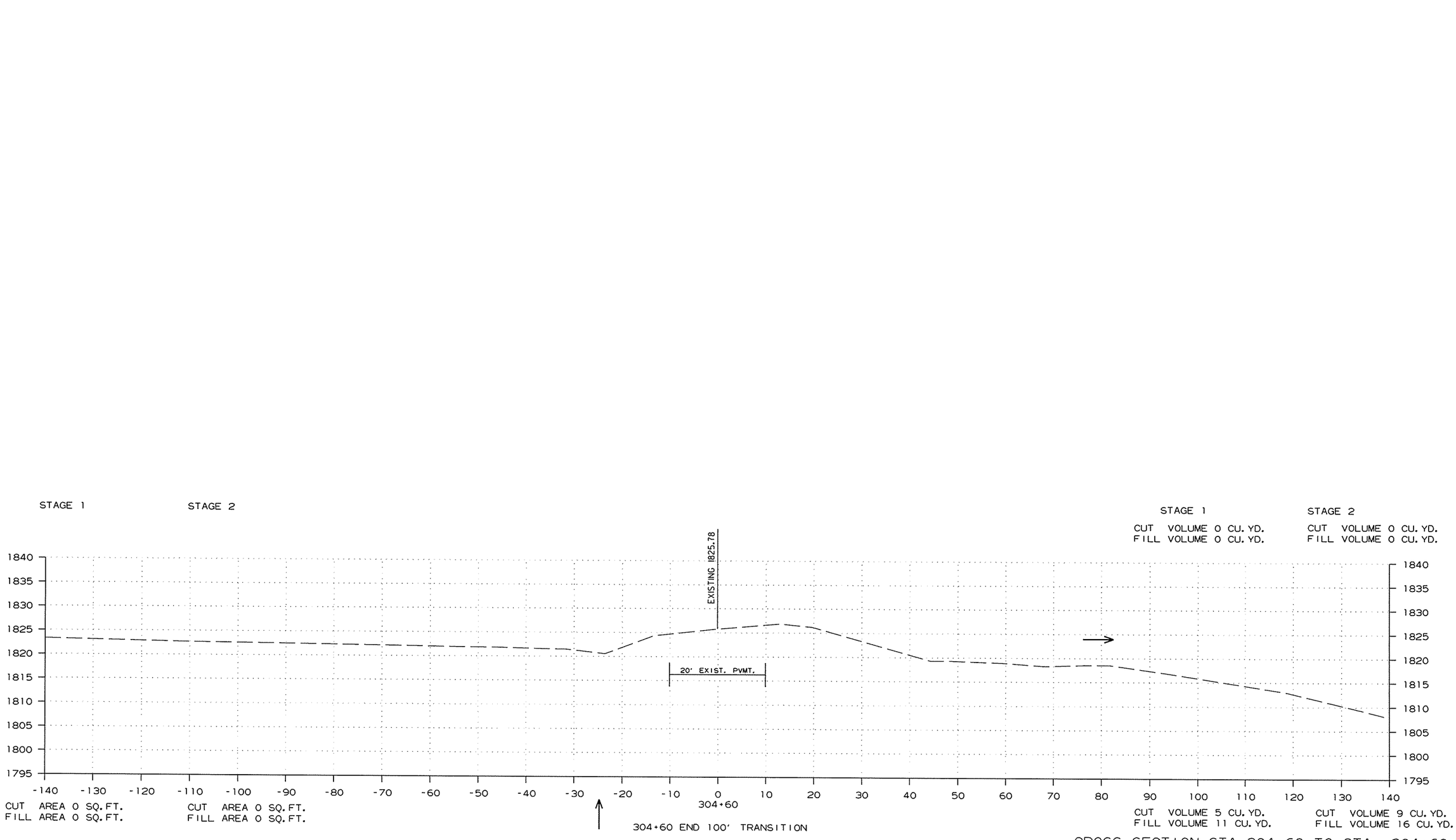
CROSS SECTION STA. 303+24 TO STA. 304+00

4/16/2015

R080464.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.		080464	115	115

(2) CROSS SECTIONS



CROSS SECTION STA. 304+60 TO STA. 304+60

4/16/2015

R080464.DGN