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.		090373	1	316

(2) HWY. 264-PLEASANT GROVE RD. (S)

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

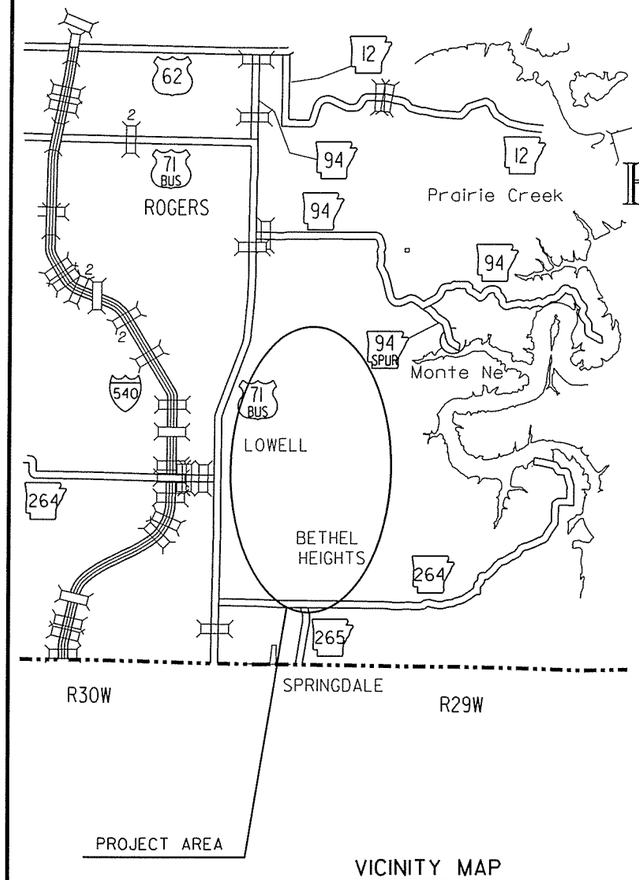
HWY. 264-PLEASANT GROVE RD. (S)

BENTON COUNTY
ROUTE 265 SECTION 3

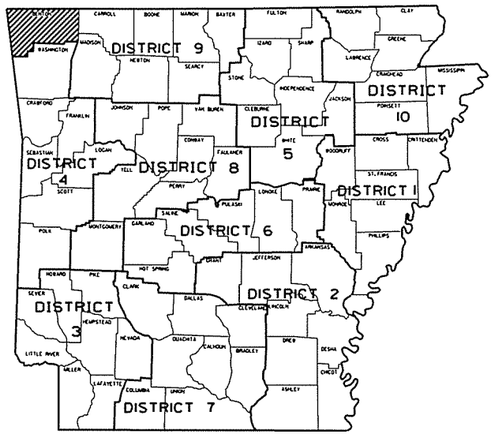
FED. AID PROJ. CA-STP-STPF-TIFA-0004(45)

JOB 090373

NOT TO SCALE



VICINITY MAP



ARK. HWY. DIST. NO. 9

DESIGN TRAFFIC DATA

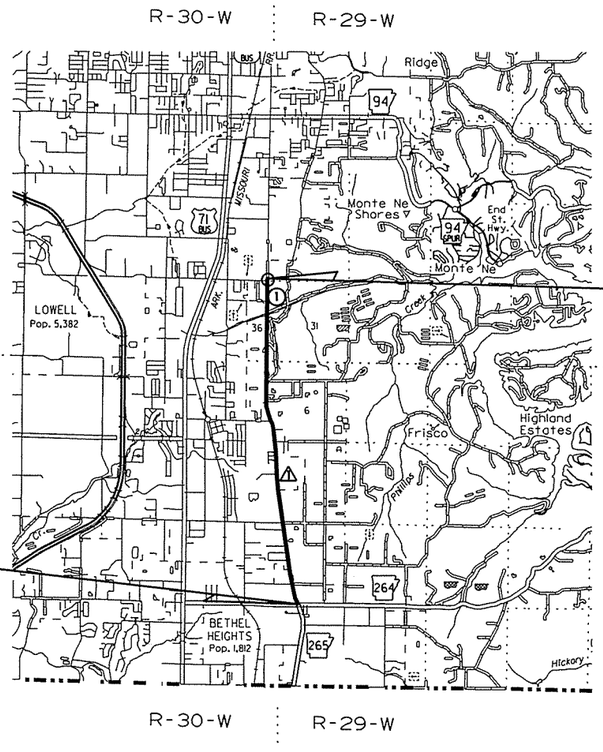
DESIGN YEAR	2015
2015 ADT	9600
2035 ADT	16500
2035 DHV	1815
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	4%
DESIGN SPEED	45 MPH

BRIDGE DATA

(1) STA. 489+28.92 BR. END
672'-2" CONTINUOUS COMPOSITE
PLATE GIRDER (110', 110', 150', 150', 150')
46'-0" CLEAR ROADWAY
BR. NO. 07333
STA. 496+01.08 BR. END

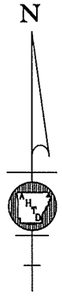
STRUCTURE OVER 20'-0" SPAN

⚠ STA. 391+37 IN PLACE
DBL. 10' X 6' X 47' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
ON A 30° RT. FWD. SKEW
RETAIN AND EXTEND 24' LT. AND 23' RT.
TO A COMPLETED LENGTH OF 94'
Q50 = 720 CFS D.A. = 0.8 SQ. MI.
TOTAL SPAN= 25'-6"



STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279

STA. 524+56.72
END JOB 090373



APPROVED

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

9-11-15

DEPUTY DIRECTOR
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°13'28"	N 36°16'34"	N 36°17'06"
LONGITUDE	W 94°06'51"	W 94°07'11"	W 94°07'05"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF	PROJECT	21034.22	FEET	OR	3.984	MILES
NET	ROADWAY	20336.56			3.852	MILES
NET	BRIDGES	697.66			0.132	MILES
NET	PROJECT	21034.22			3.984	MILES

P.E. JOB 012126

2/10/2015

R090373.DGN

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11495 TIMOTHY D. SMITH 9-10-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

(2) INDEX OF SHEETS

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6	ARK.		2	316

JOB NO. 090373

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/21/2015				6	ARK.			
				JOB NO.		090373	3	316
				(2)	GOVERNING SPECIFICATIONS AND GENERAL NOTES			

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 - TRAINING PROGRAM - JOB 090373
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
108-1_____	LIQUIDATED DAMAGES
400-1_____	TACK COATS
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 090373__	AIRPORT CLEARANCE REQUIREMENTS
JOB 090373__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 090373__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090373__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 090373__	CABINET DRAWER ASSEMBLY
JOB 090373__	CAVE DISCOVERY
JOB 090373__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 090373__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 090373__	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 090373__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 090373__	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 090373__	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 090373__	EXPLORATORY HOLES
JOB 090373__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090373__	HIGH PERFORMANCE PAVEMENT MARKING
JOB 090373__	IP VIDEO DETECTION SYSTEM
JOB 090373__	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 090373__	LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB 090373__	LED TRAFFIC SIGNAL HEAD
JOB 090373__	LOUVERS FOR SIGNAL HEADS
JOB 090373__	MANDATORY ELECTRONIC CONTRACT
JOB 090373__	NESTING SITES OF MIGRATORY BIRDS
JOB 090373__	OFF-SITE RESTRAINING CONDITIONS FOR BATS
JOB 090373__	PARTNERING REQUIREMENTS
JOB 090373__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 090373__	PLASTIC PIPE
JOB 090373__	PROSECUTION AND PROGRESS
JOB 090373__	ROCK FILL
JOB 090373__	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 090373__	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
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JOB 090373__	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 090373__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090373__	SYSTEM LOCAL CONTROLLER
JOB 090373__	UTILITY ADJUSTMENTS
JOB 090373__	VALUE ENGINEERING
JOB 090373__	WARM MIX ASPHALT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-27-15

GENERAL NOTES

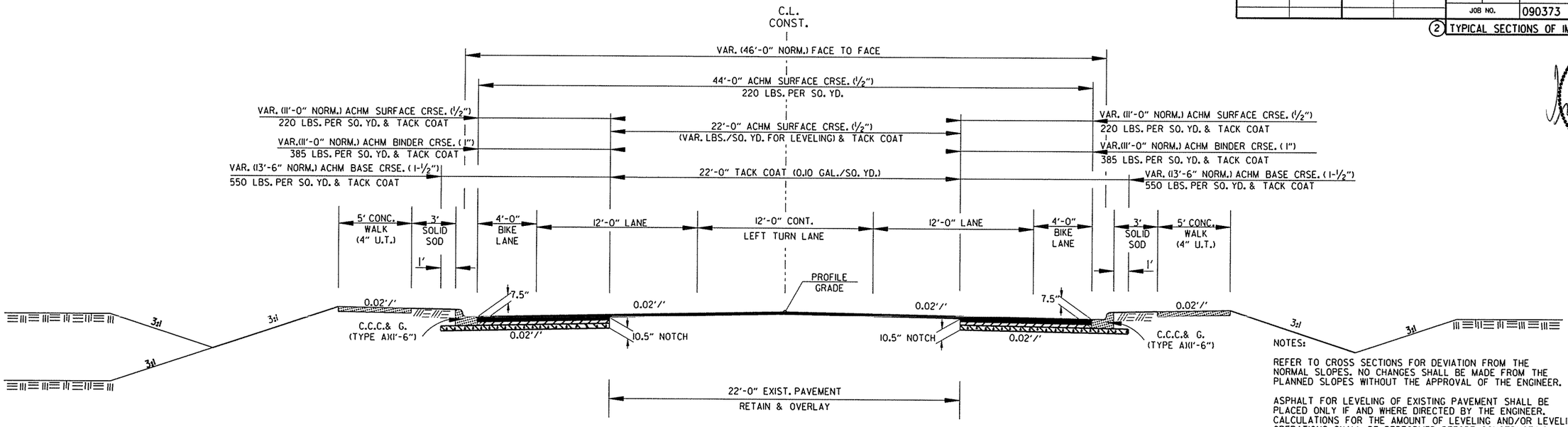
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY 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. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. 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.

r090373.dgn 09-01-2015

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.		090373	4	316

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



NOTCH AND WIDEN
TYPICAL SECTION OF IMPROVEMENT

NOTES:

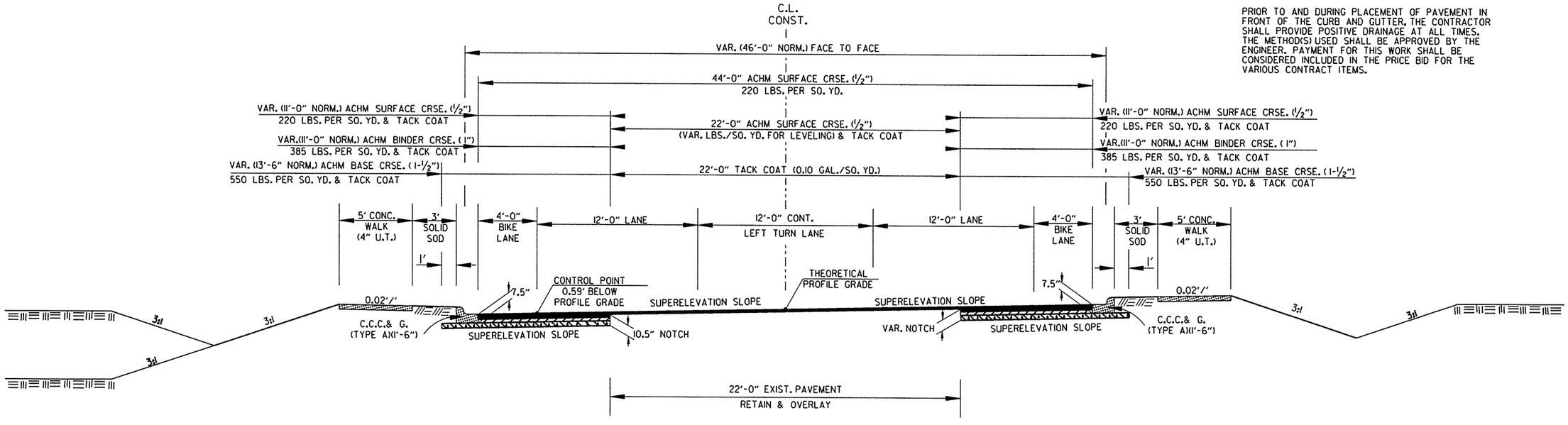
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

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.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



NOTCH AND WIDEN
SUPERELEVATION
TYPICAL SECTION OF IMPROVEMENT

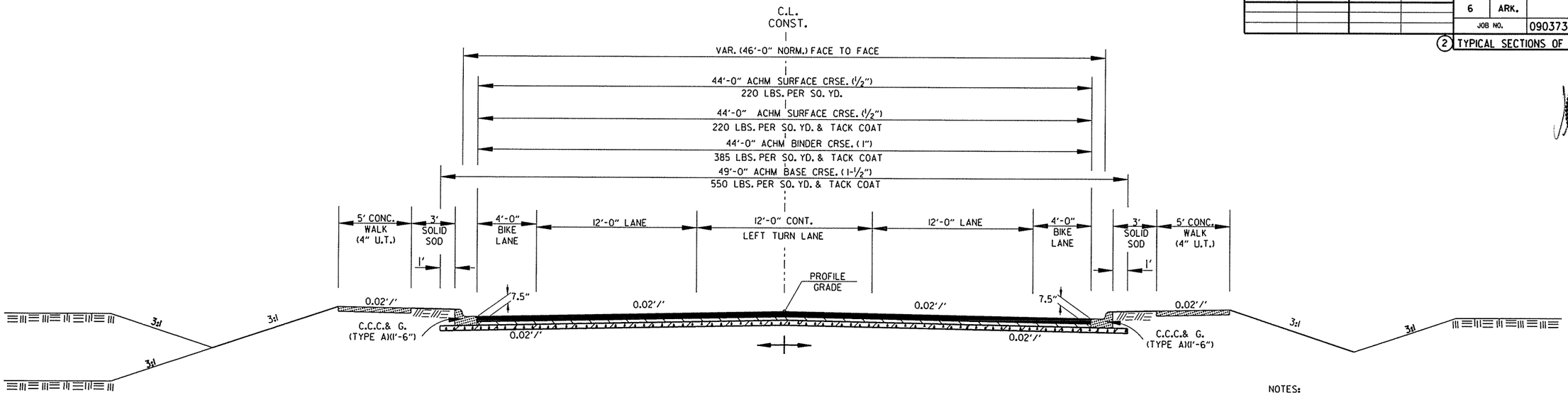
TYPICAL SECTIONS OF IMPROVEMENT

TYPICALS 090373 .DGN 9/1/2015

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.		090373	5	316

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



FULL DEPTH
TYPICAL SECTION OF IMPROVEMENT

NOTES:

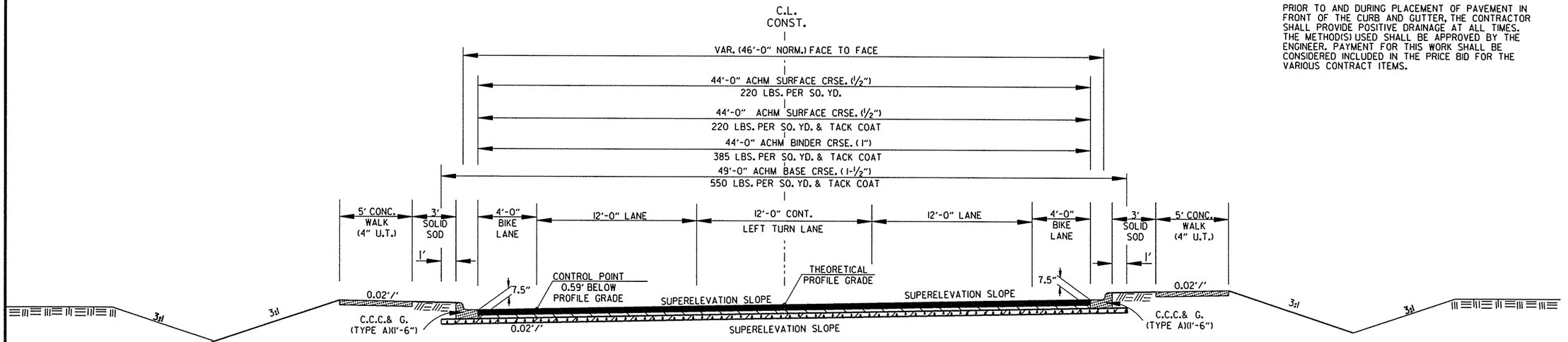
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FULL DEPTH
SUPERELEVATION
TYPICAL SECTION OF IMPROVEMENT

8/21/2015

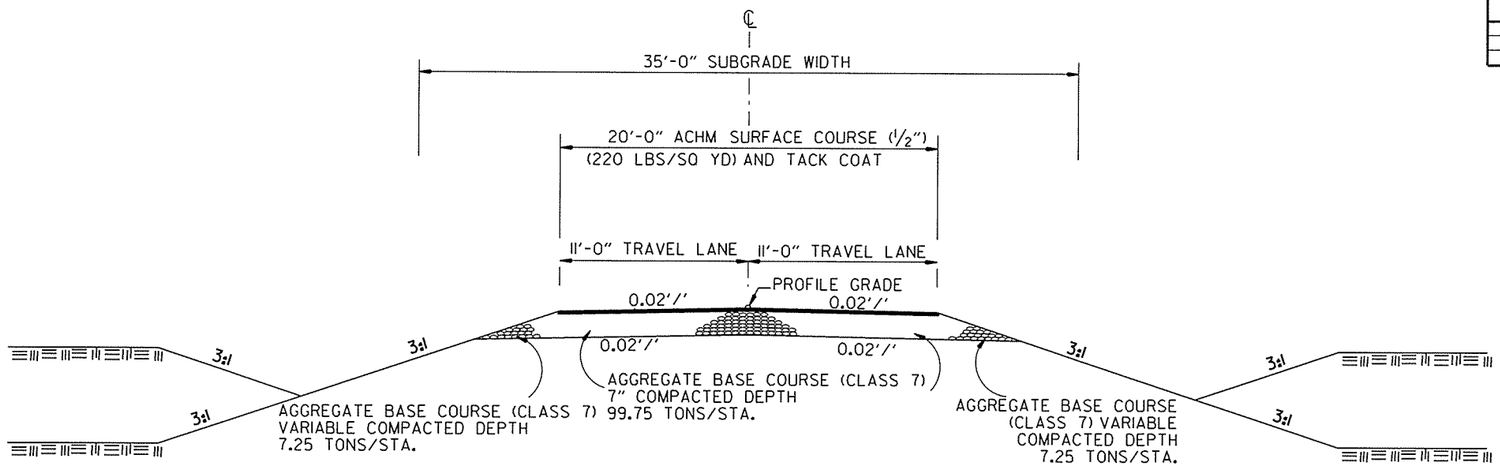
R050264.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.		090373	6	316

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



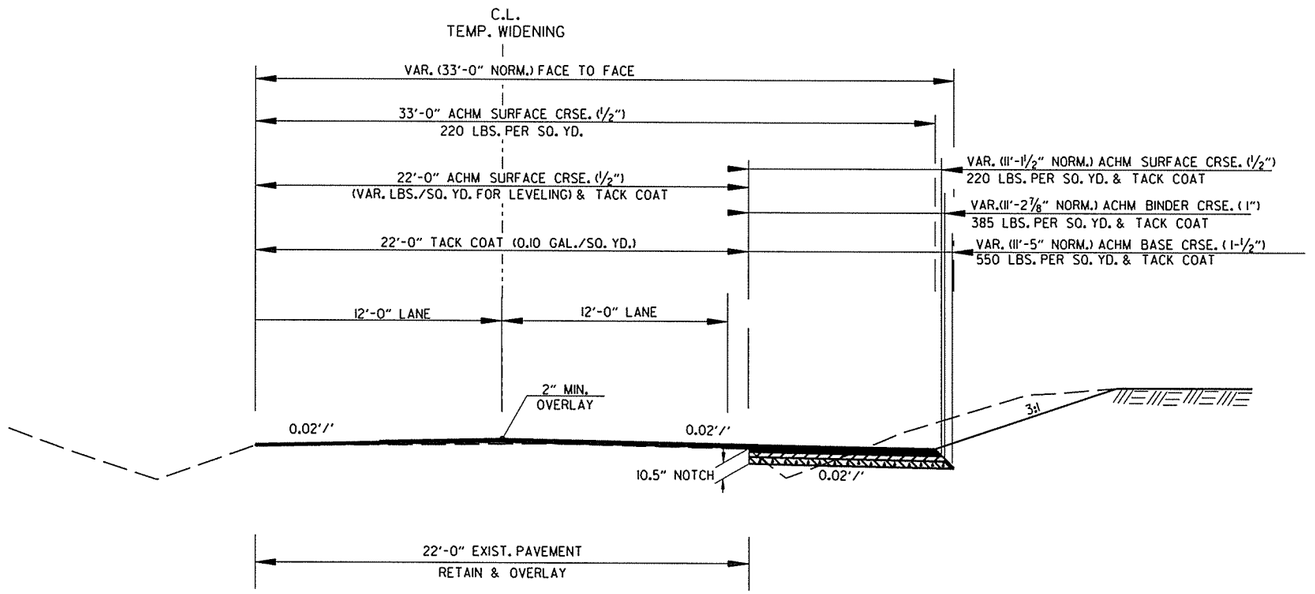
APPLE BLOSSOM AVENUE
FULL DEPTH
OPEN SHOULDER

STA. 20+00.00 - STA. 22+49.00
STA. 23+83.00 - STA. 25+92.00

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.



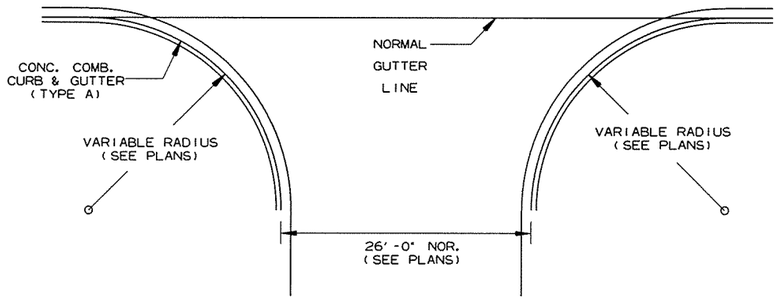
TEMPORARY WIDENING
STA. 308+00.00 (STA. 70+03.75) - STA. 314+22.50

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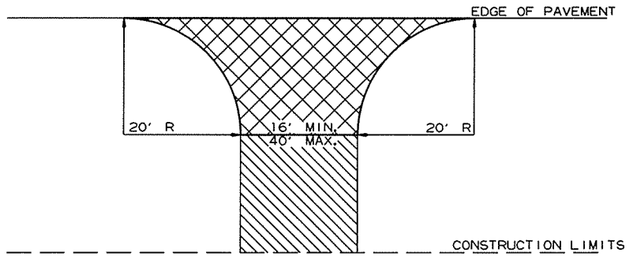
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(2) SPECIAL DETAILS



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

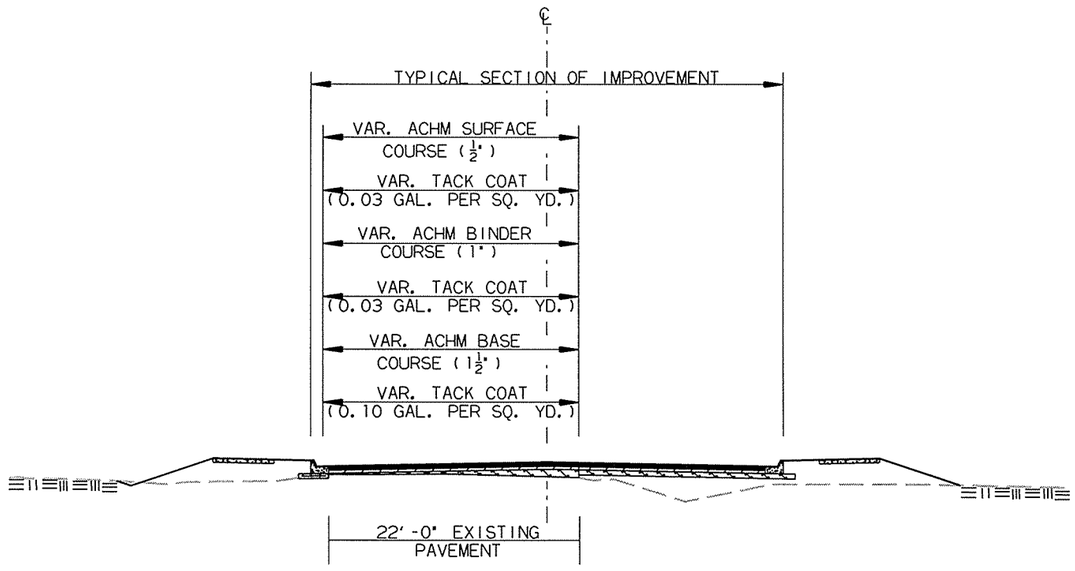
DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION



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

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

DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)



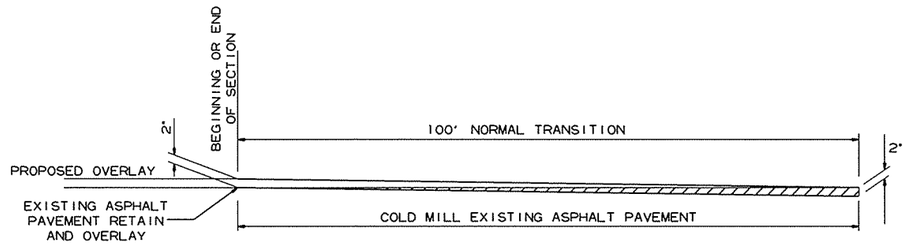
METHOD OF RAISING GRADE

NOTES:

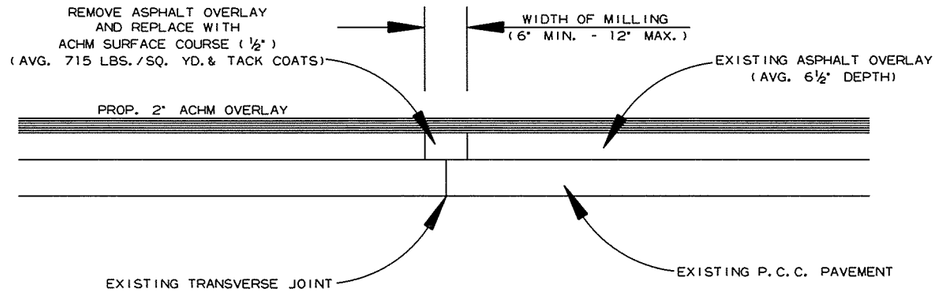
(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

(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 SPECIFICATIONS, EDITION OF 2014.



DETAIL FOR TRANSITIONS



DETAIL FOR COLD MILLING JOINTS IN EXISTING ASPHALT PAVEMENT OVERLAY OF P.C.C. PAVEMENT

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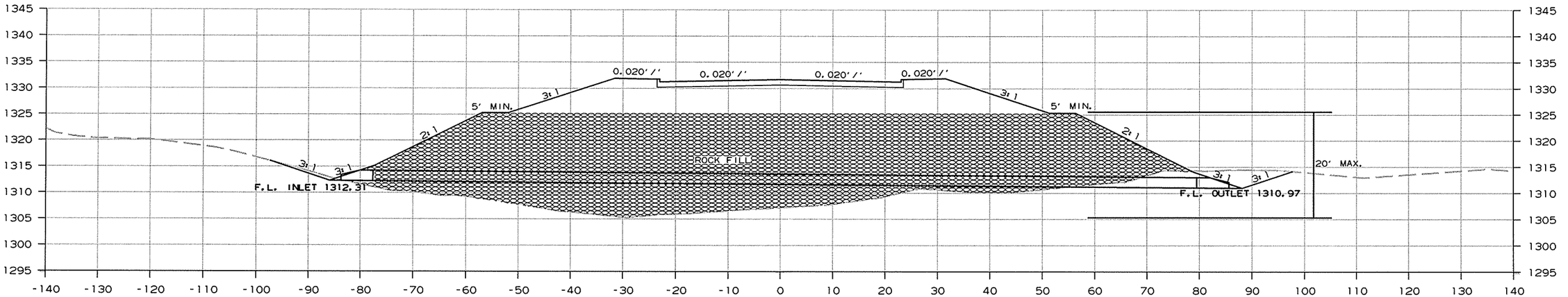
9/1/2015

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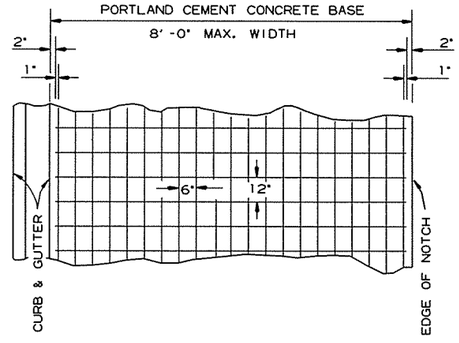
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(2) SPECIAL DETAILS

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HIGH EMBANKMENT DETAIL
STA. 509+00 - STA. 512+00

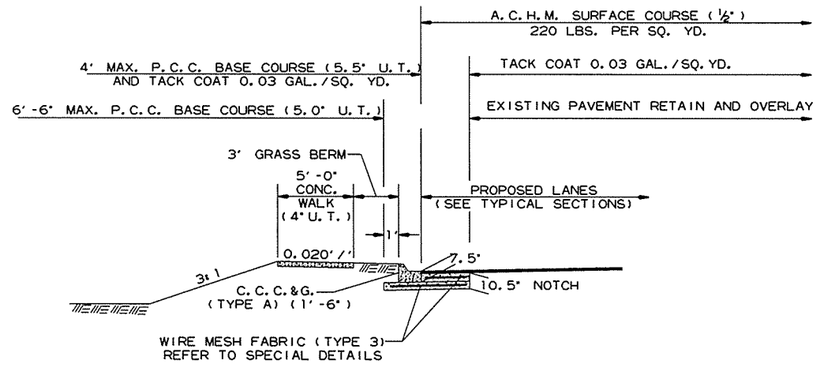


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ.YD.

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (5.5" U.T.)

DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)



P.C.C. BASE WIDENING DETAIL

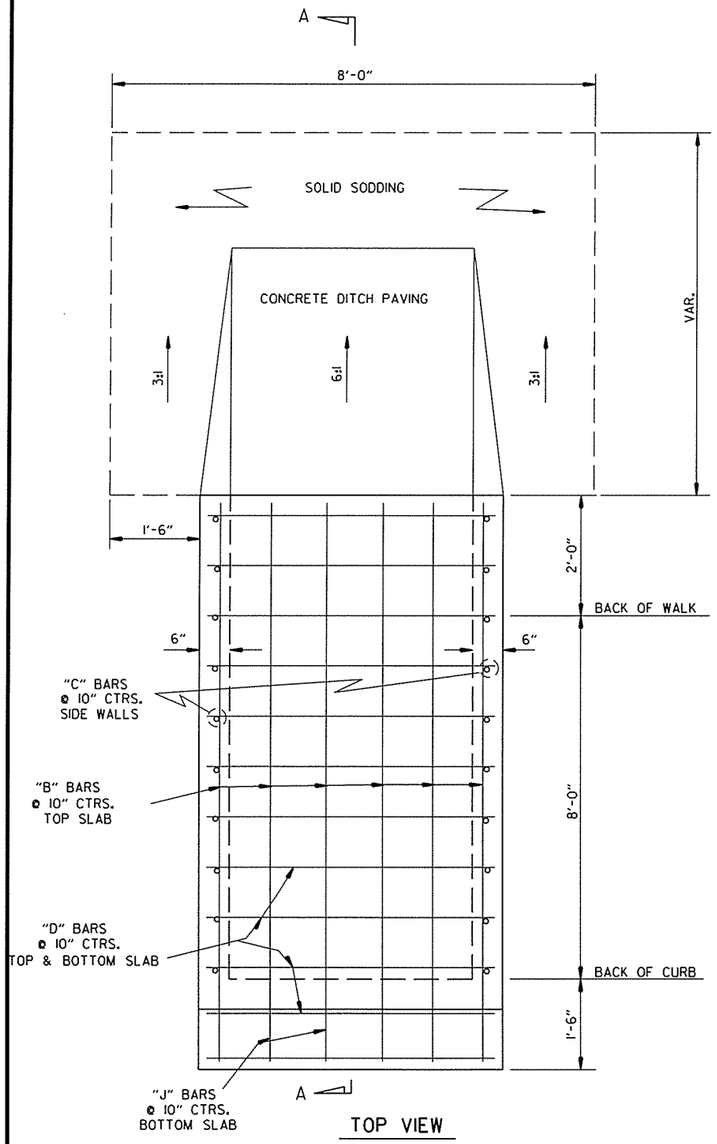
P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

9/1/2015

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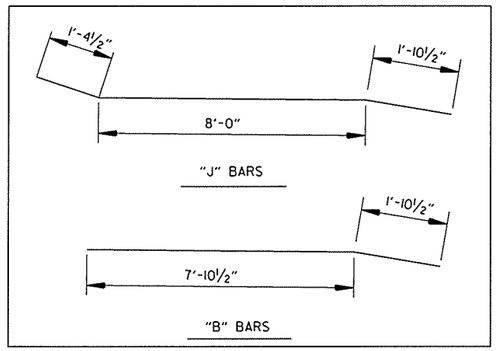
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(2) SPECIAL DETAILS



TOP VIEW

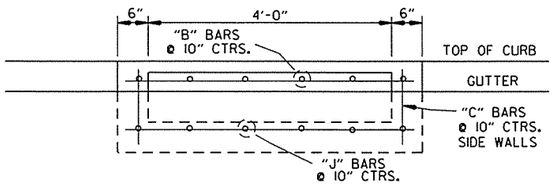
BAR DIAGRAM



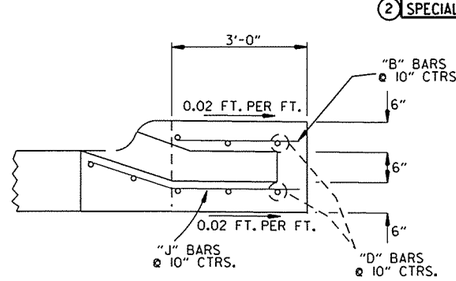
CLASS A CONC.	REINF. STEEL-RDWY. (GRADE 60)
CU. YDS.	POUND
2.53	207

QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)

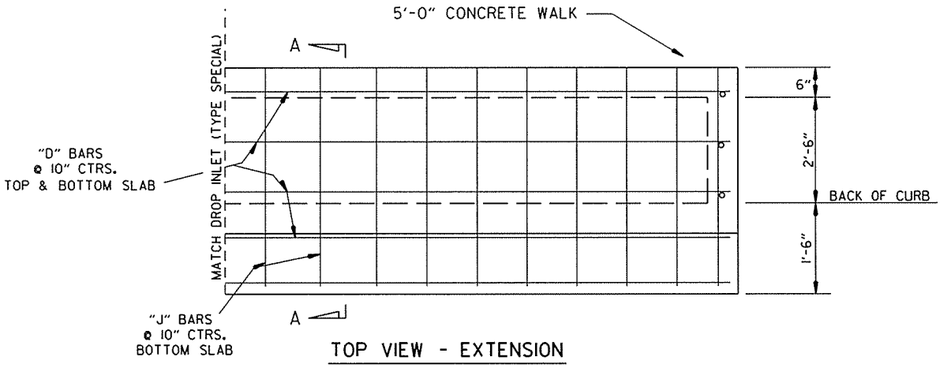
BACK VIEW



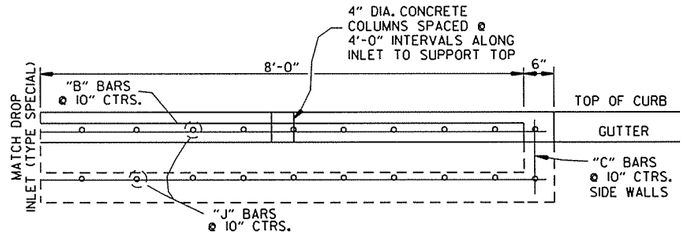
FRONT VIEW



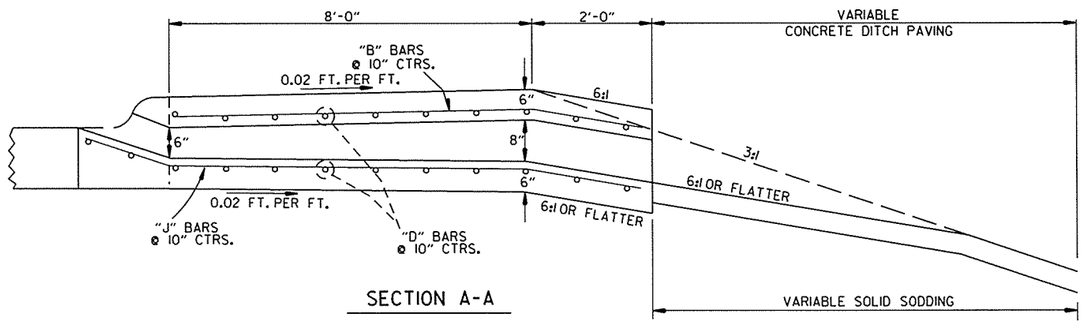
SECTION A-A - EXTENSION



TOP VIEW - EXTENSION



FRONT VIEW - EXTENSION



SECTION A-A

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
3. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
5. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
6. CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. CONSTRUCT EXTENSIONS UPSTREAM OF DROP INLET UNLESS OTHERWISE SPECIFIED.

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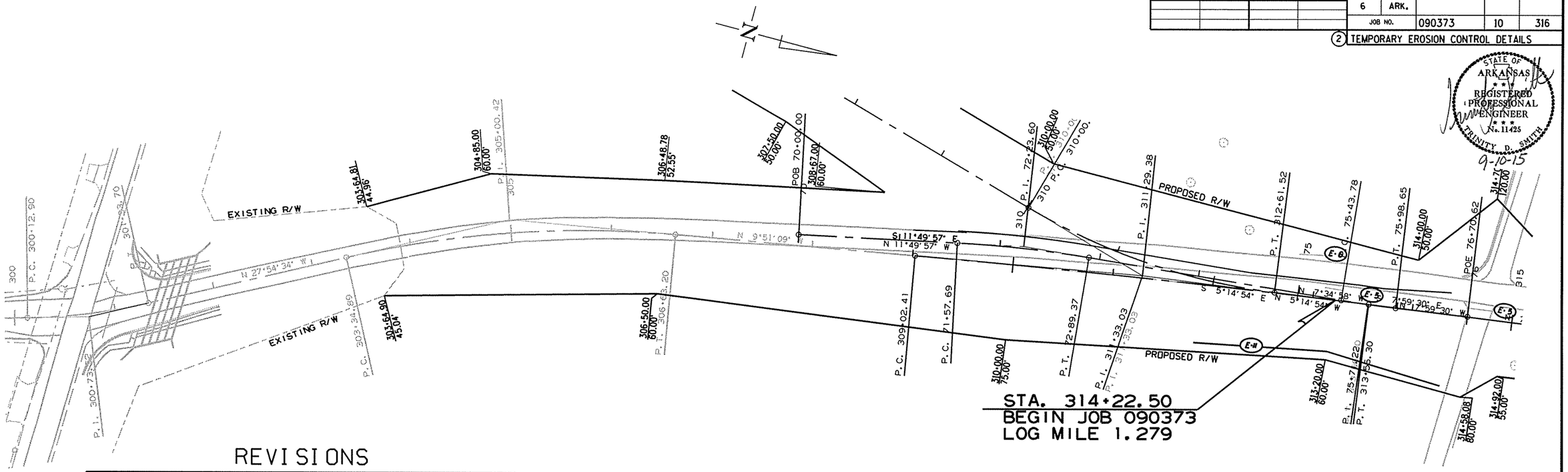
DROP INLET (TYPE SPECIAL)

SPECIAL DETAILS

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(2) TEMPORARY EROSION CONTROL DETAILS

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9-10-15



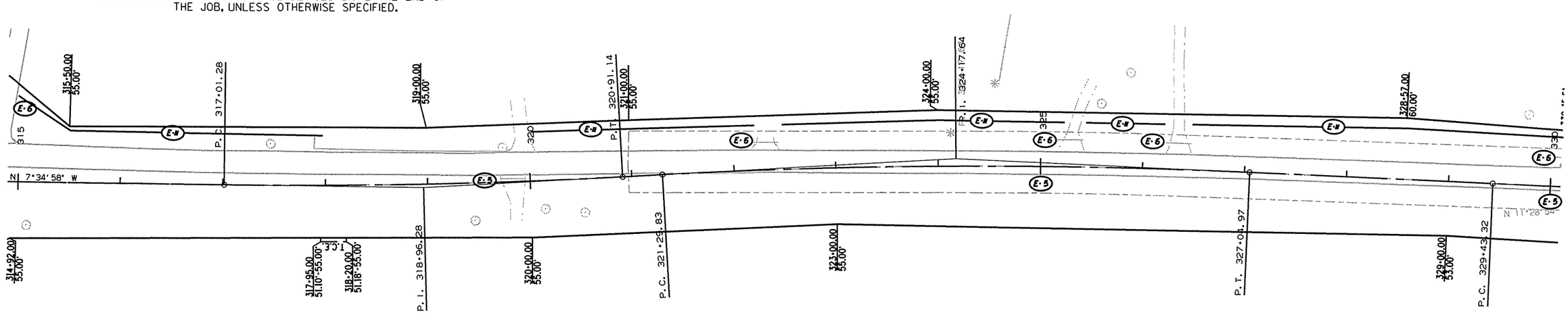
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

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



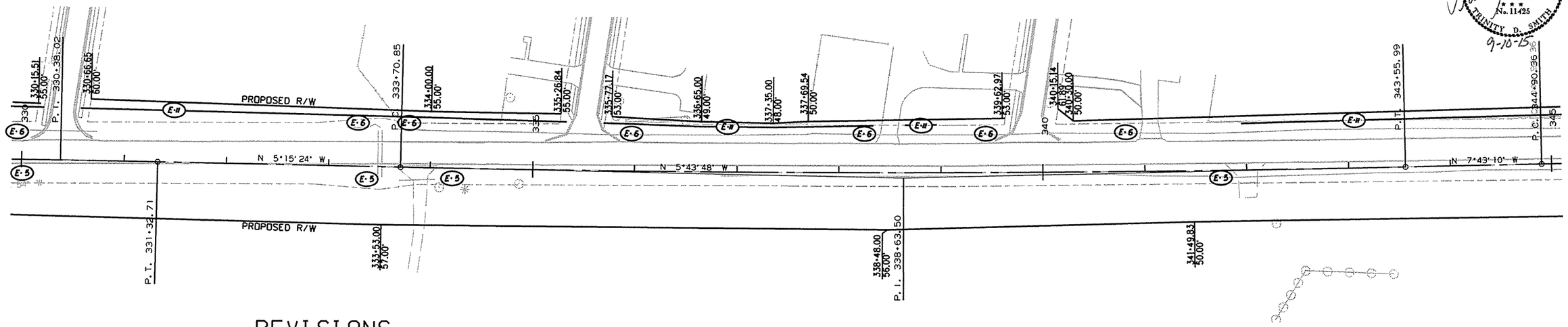
CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

9/8/2015

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(2) TEMPORARY EROSION CONTROL DETAILS



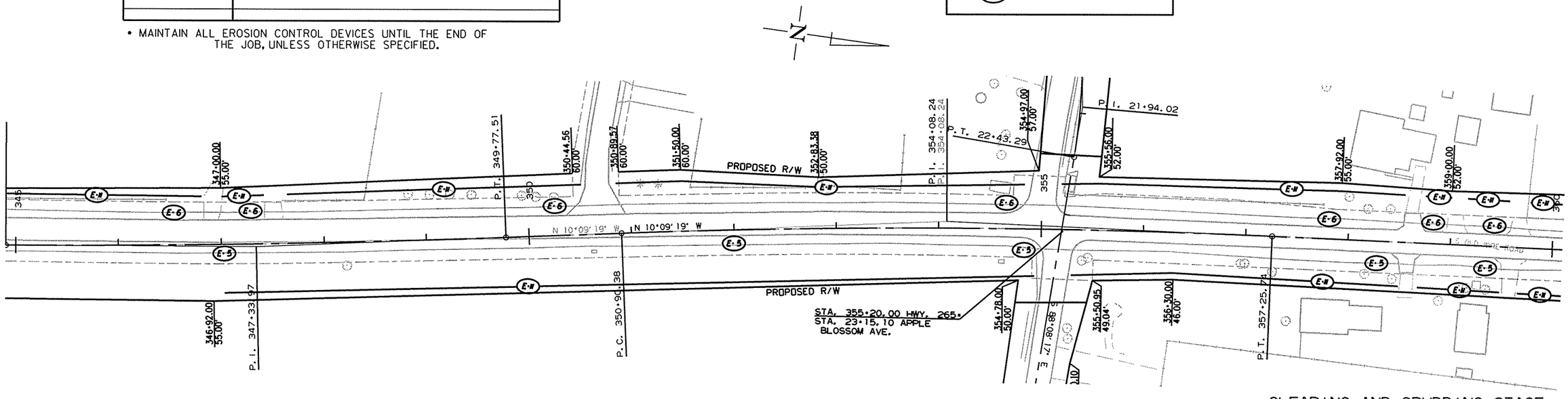
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

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



CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

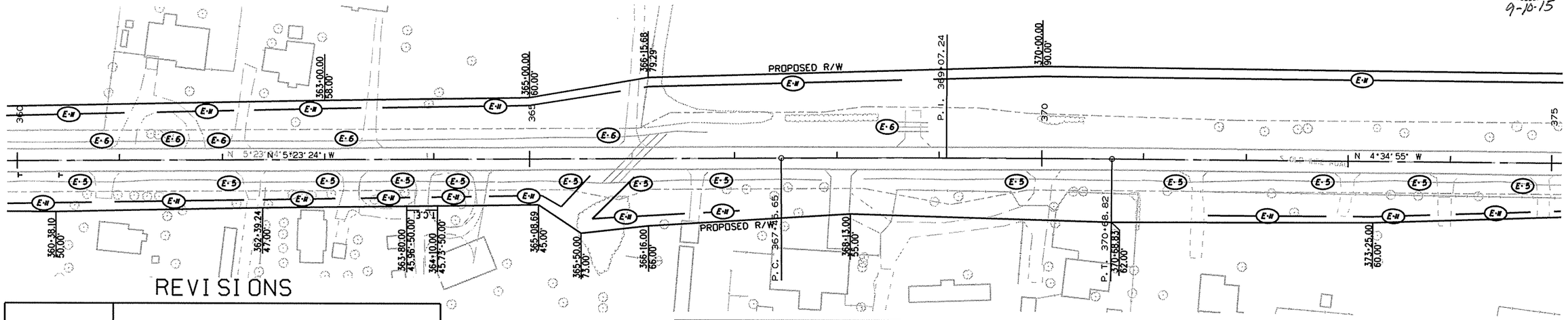
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(2) TEMPORARY EROSION CONTROL DETAILS

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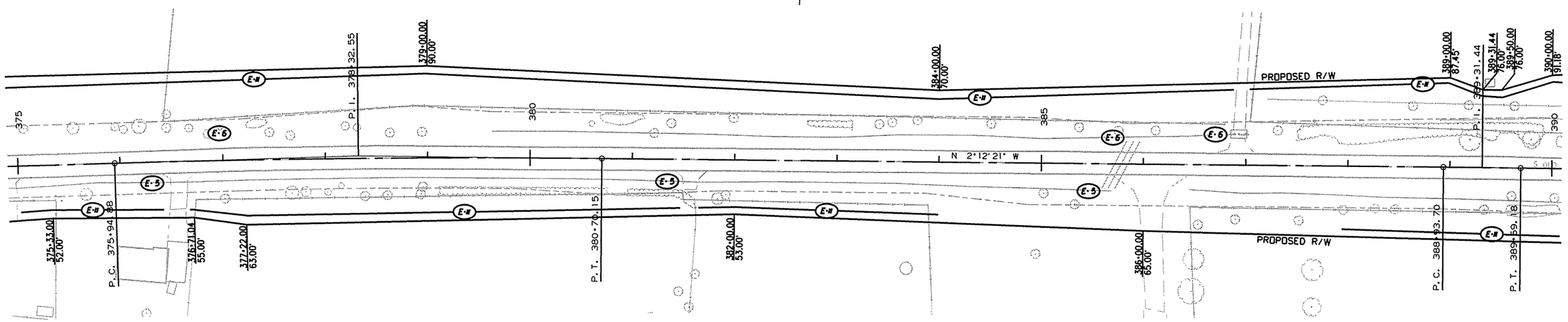
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CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

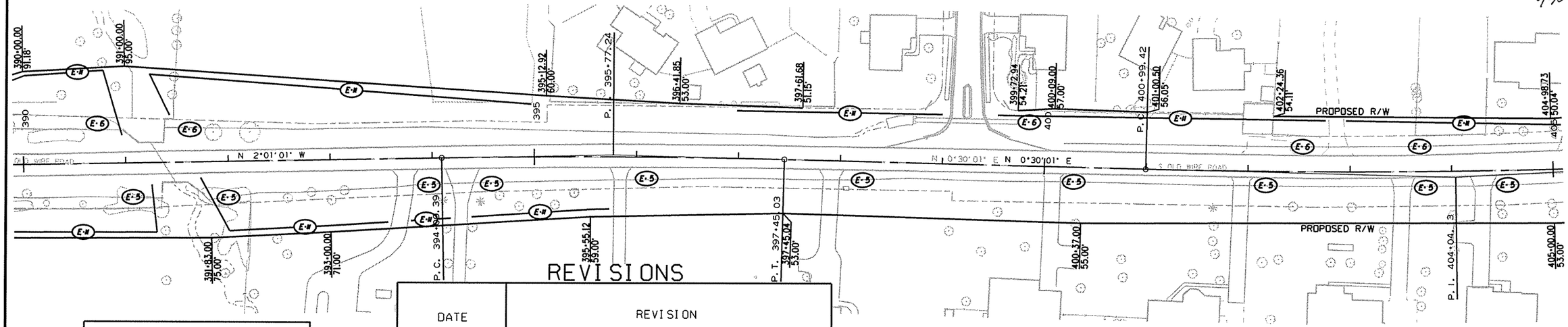
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(2) TEMPORARY EROSION CONTROL DETAILS

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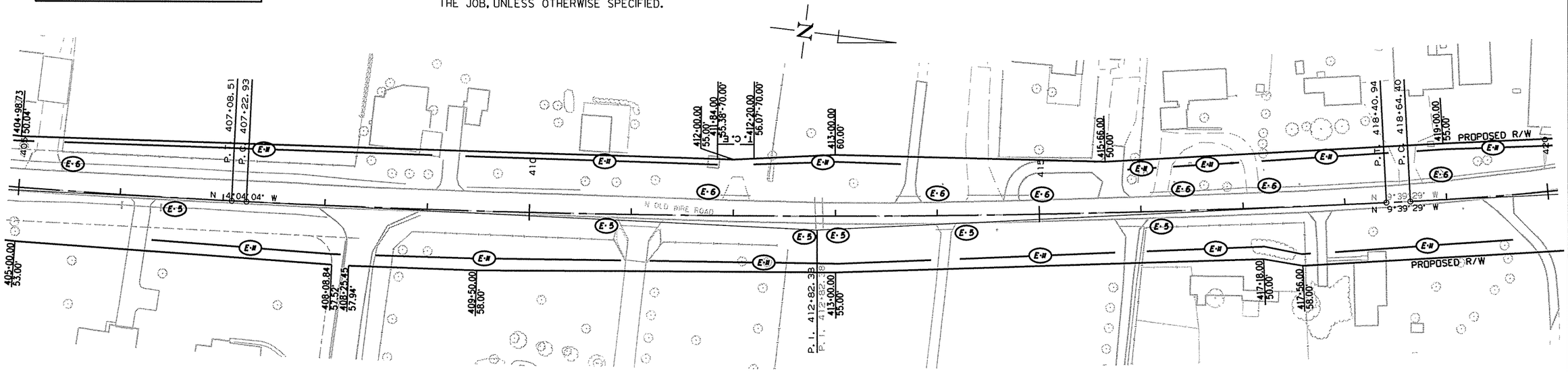
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CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

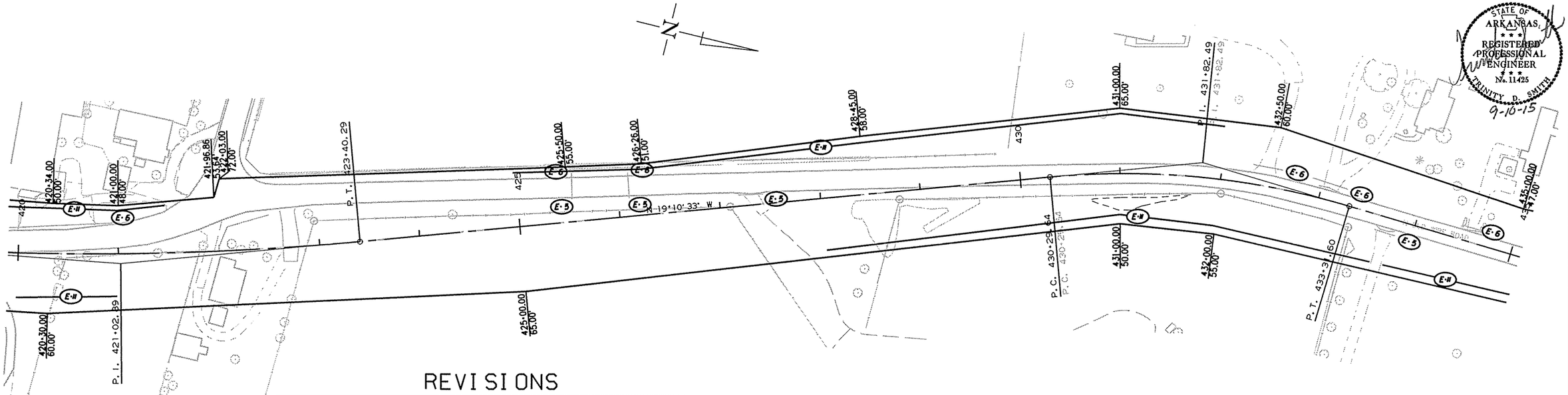
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(2) TEMPORARY EROSION CONTROL DETAILS

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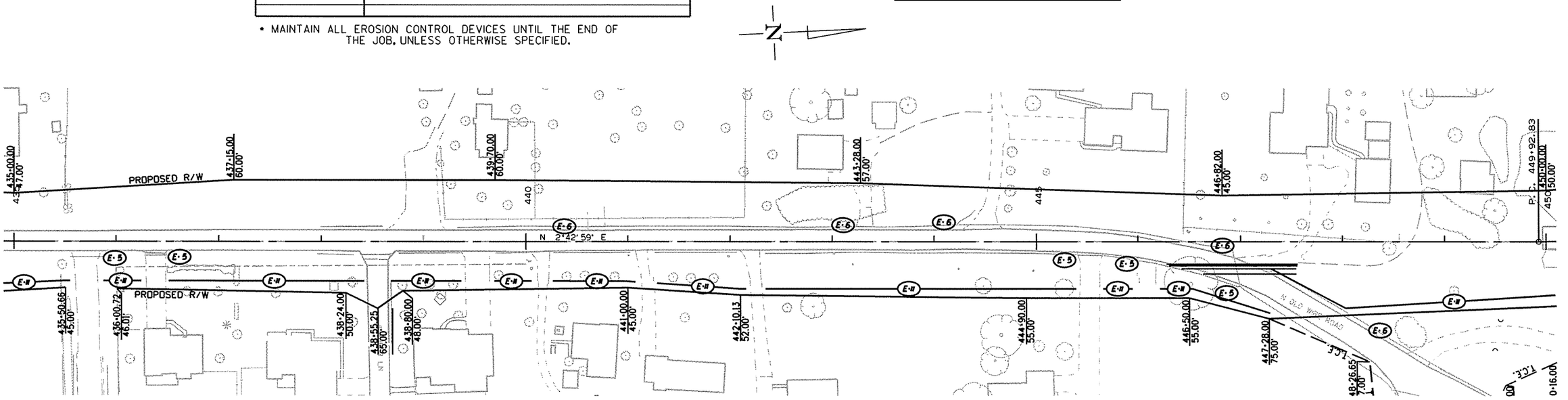
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CLEARING AND GRUBBING STAGE
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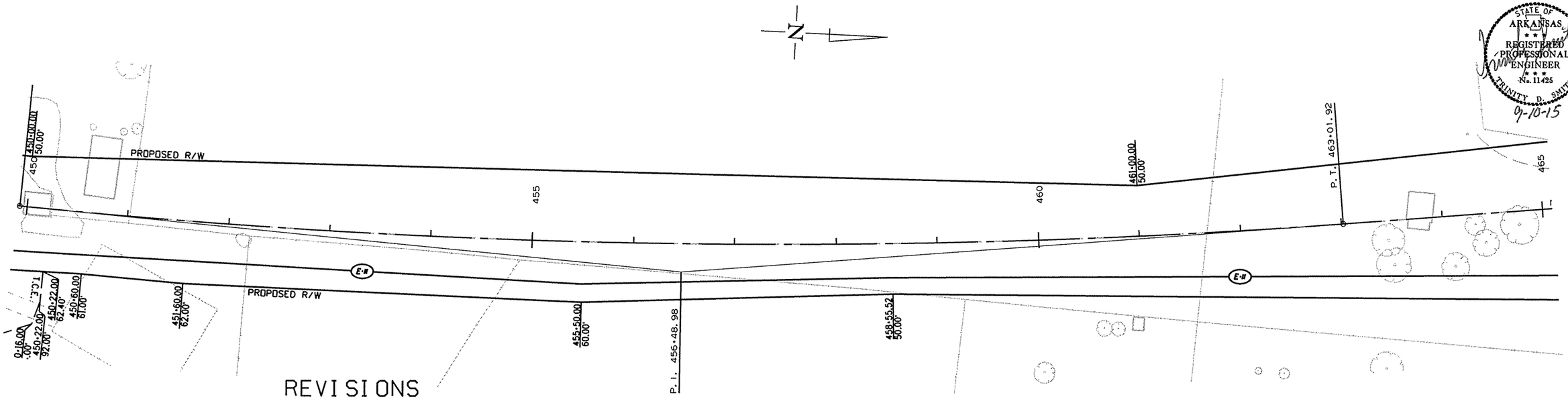
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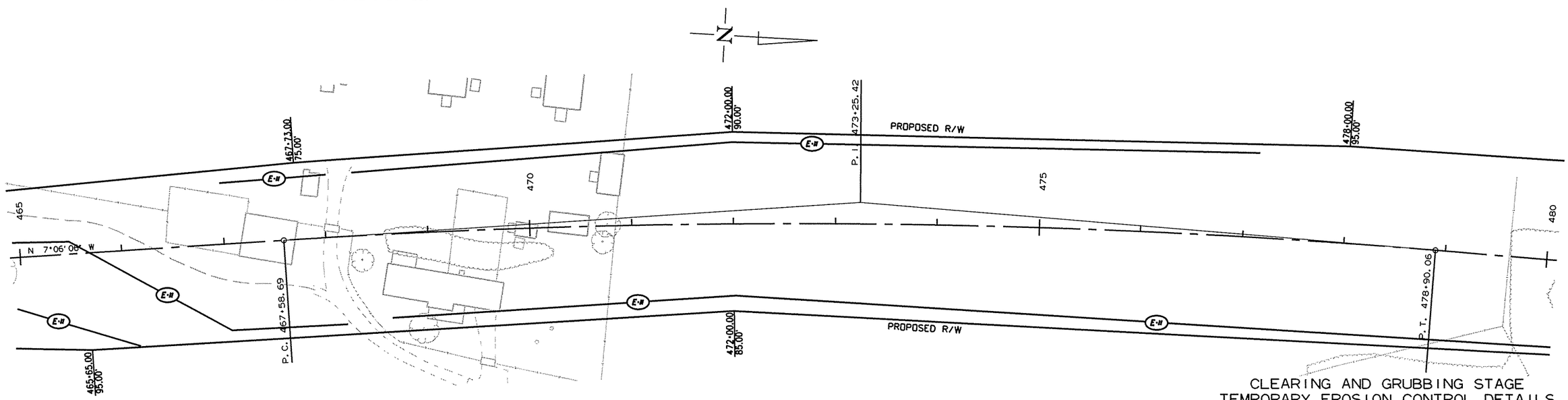
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CLEARING AND GRUBBING STAGE
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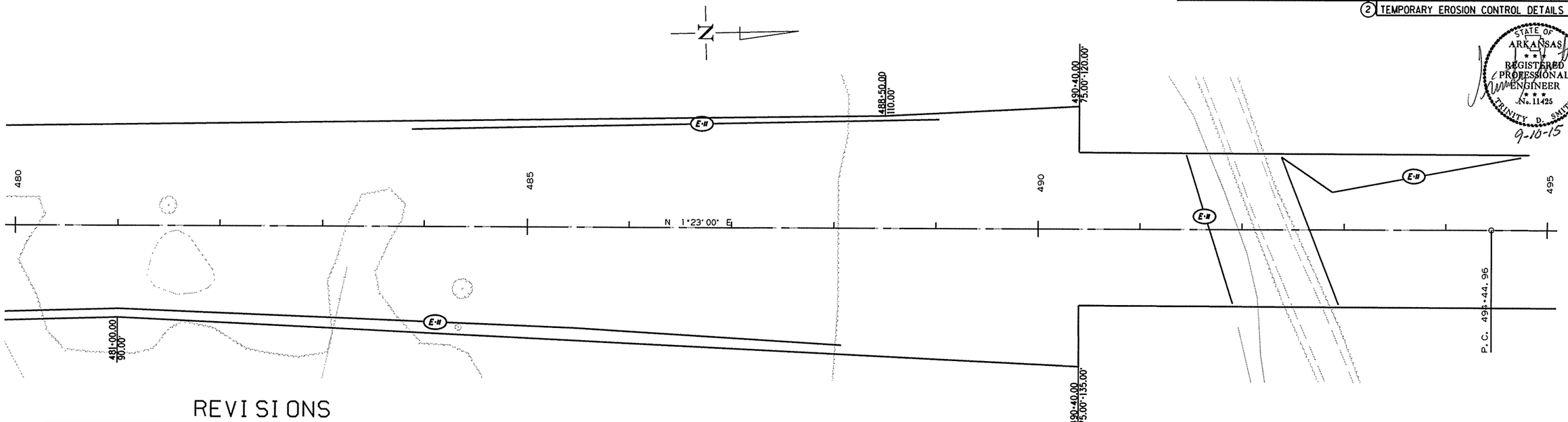
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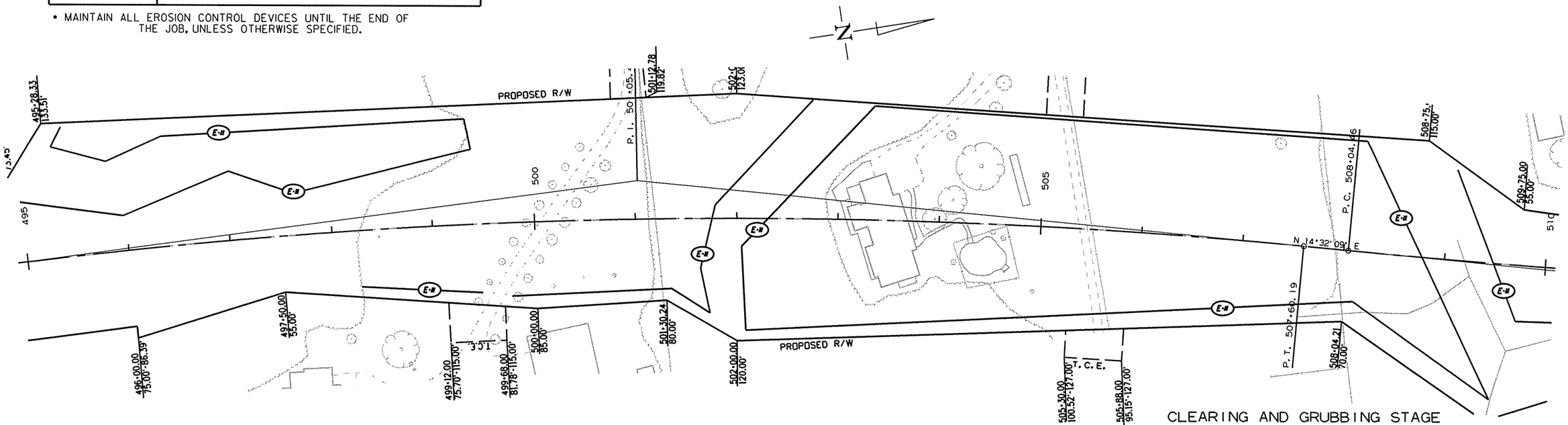
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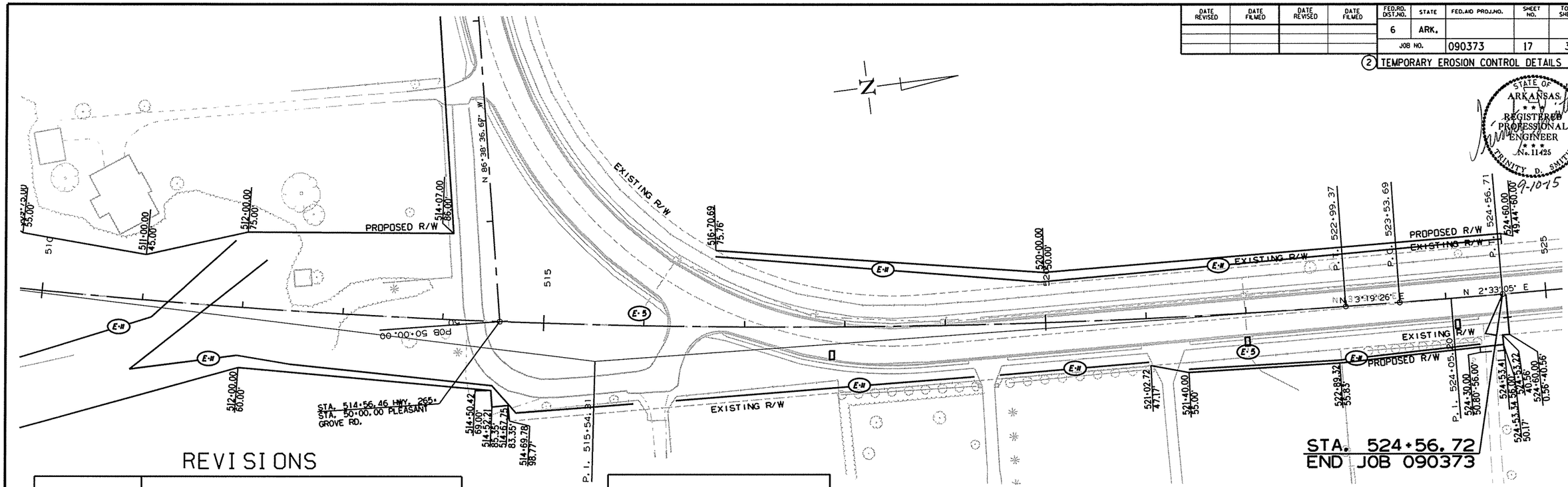
CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

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REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

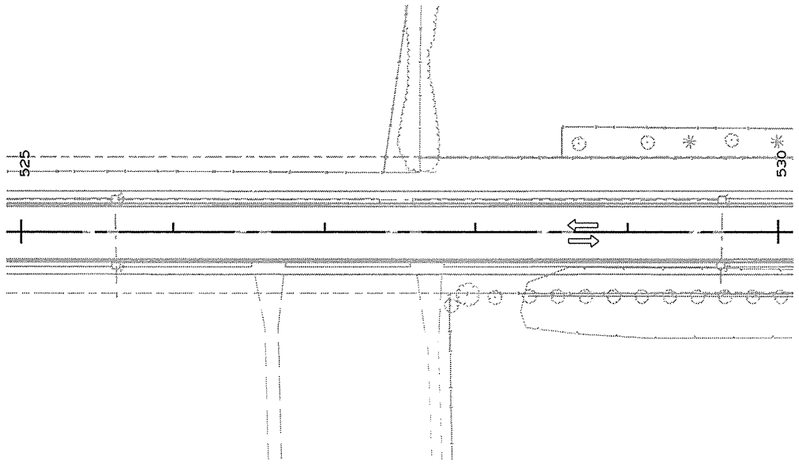
REVISIONS

DATE	REVISION

LEGEND

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

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



CLEARING AND GRUBBING STAGE
TEMPORARY EROSION CONTROL DETAILS

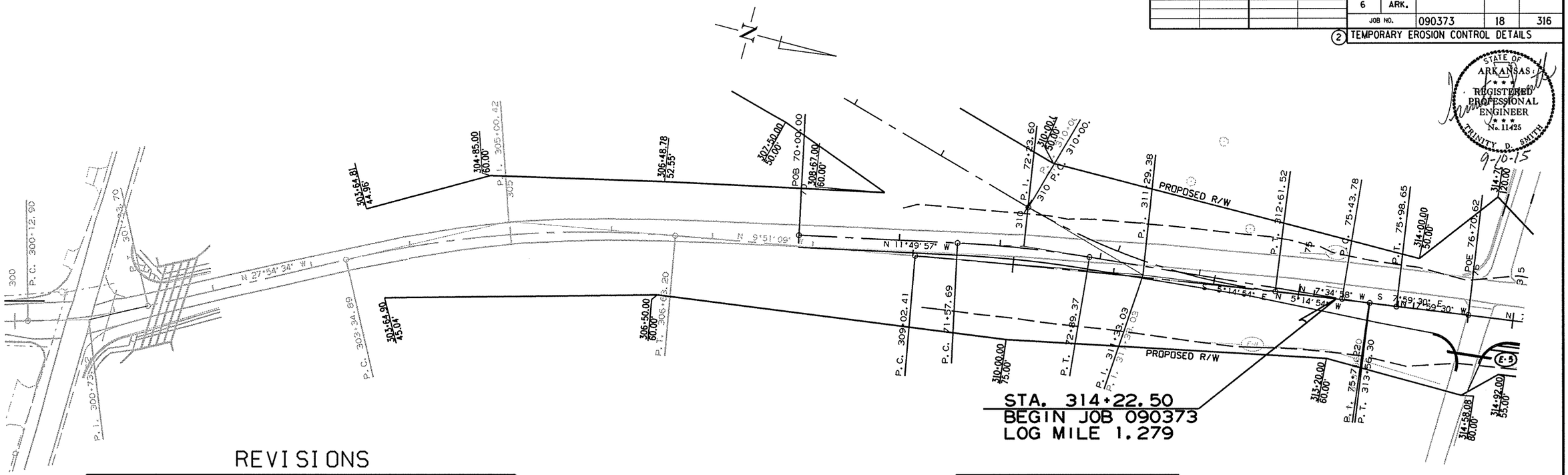
9/8/2015

R090373.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.		090373	18	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



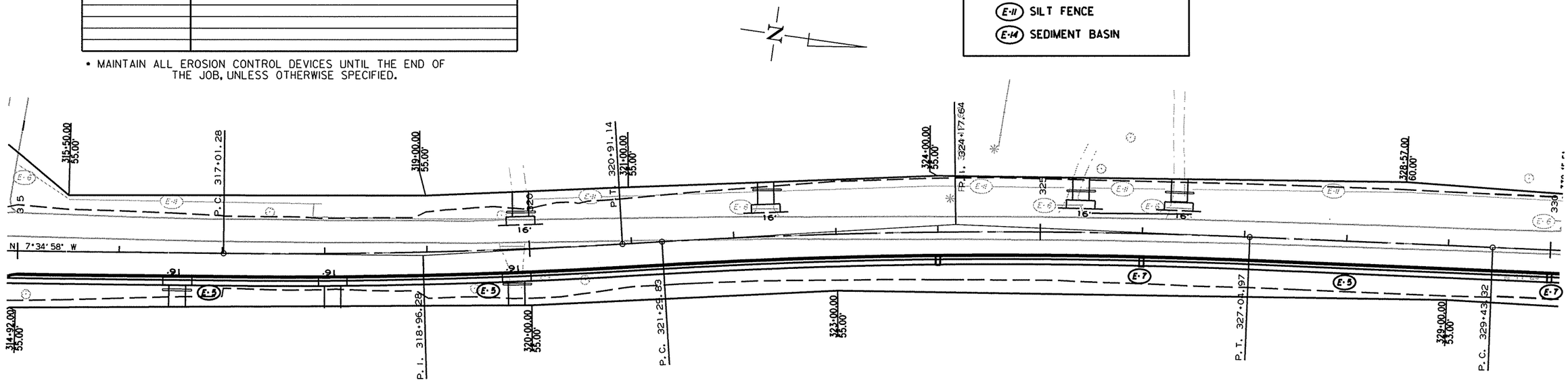
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



9/9/2015

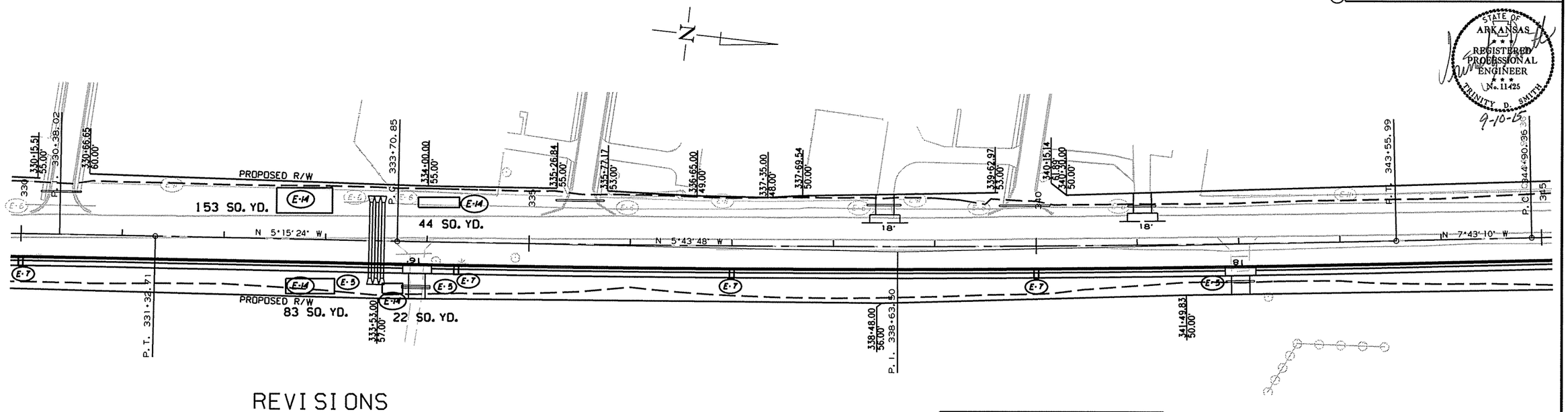
R090373.DGN

STAGE 1
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.		090373	19	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



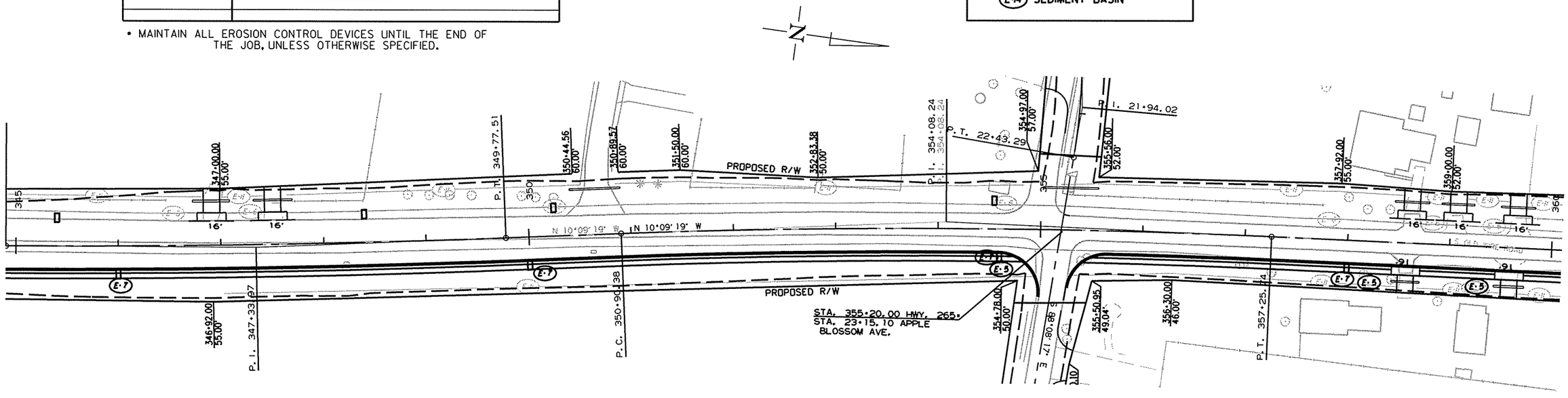
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN



STAGE 1
TEMPORARY EROSION CONTROL DETAILS

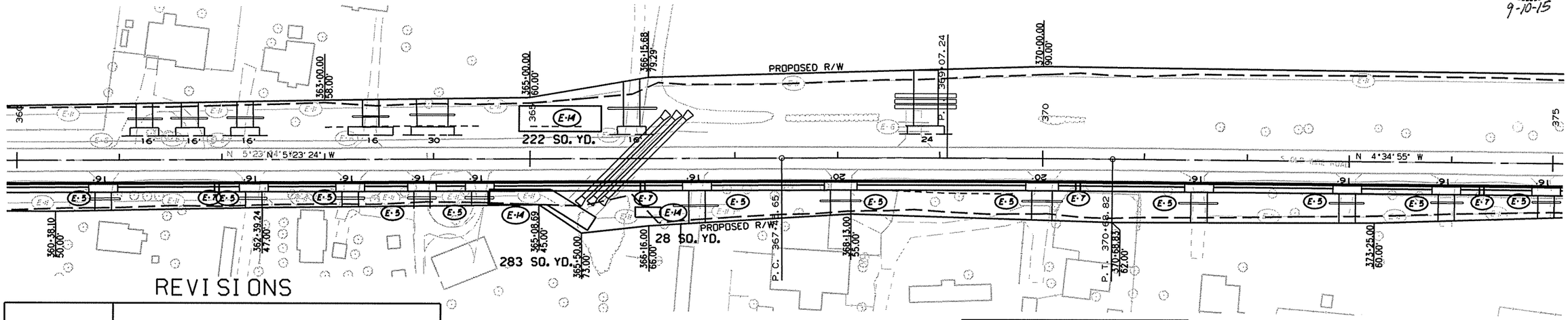
9/8/2015

R090373.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.		090373	20	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



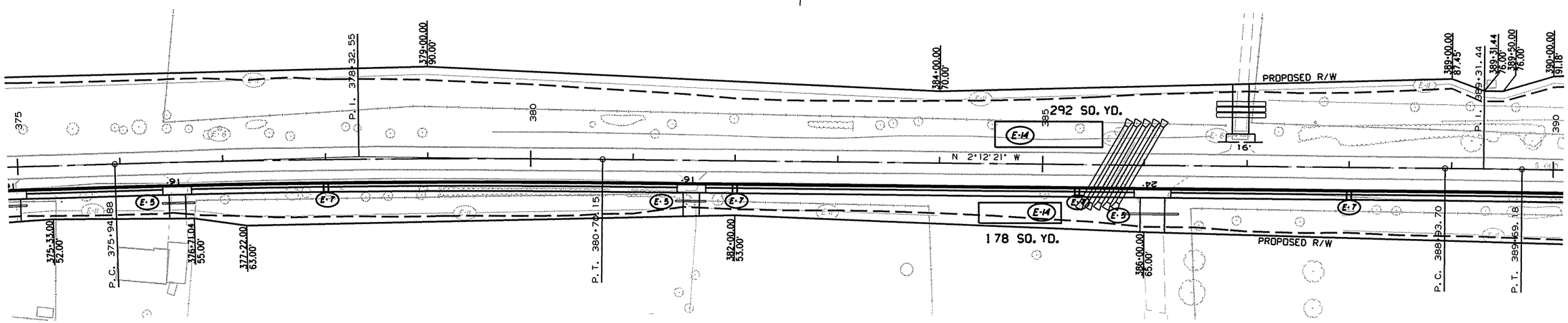
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN



STAGE 1
TEMPORARY EROSION CONTROL DETAILS

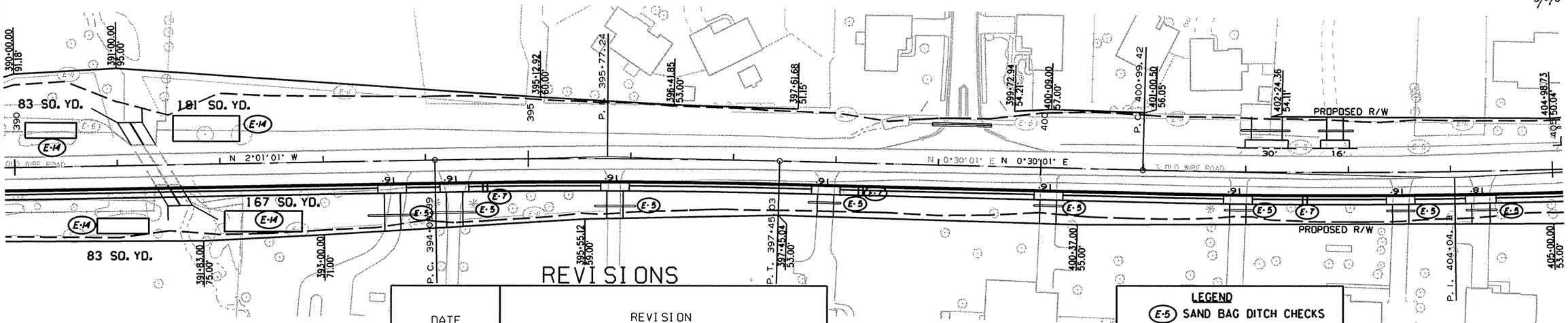
9/8/2015

R090373.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.		090373	21	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



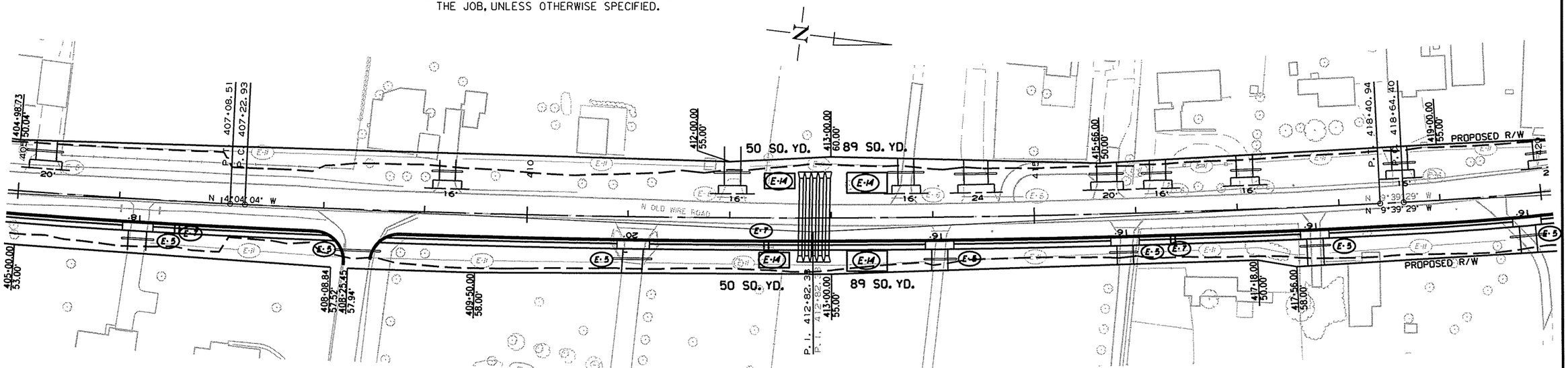
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



9/8/2015

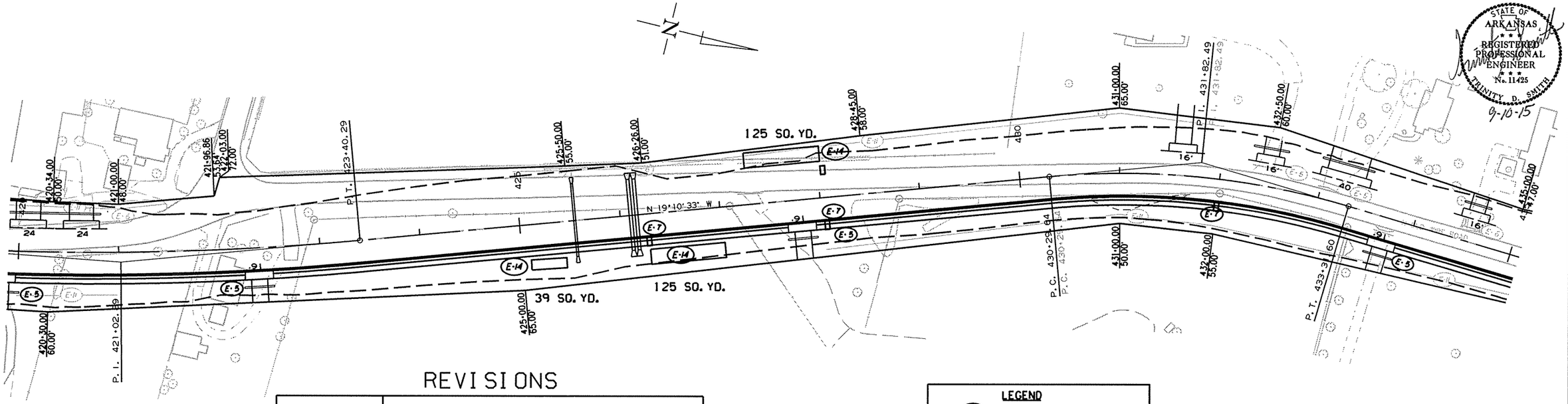
R090373.DGN

STAGE 1
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.		090373	22	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



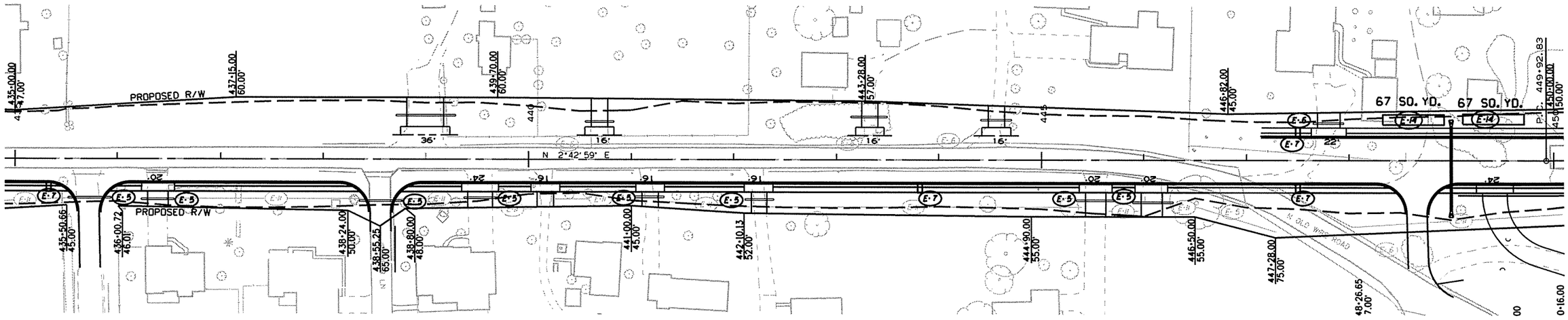
REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



STAGE 1
TEMPORARY EROSION CONTROL DETAILS

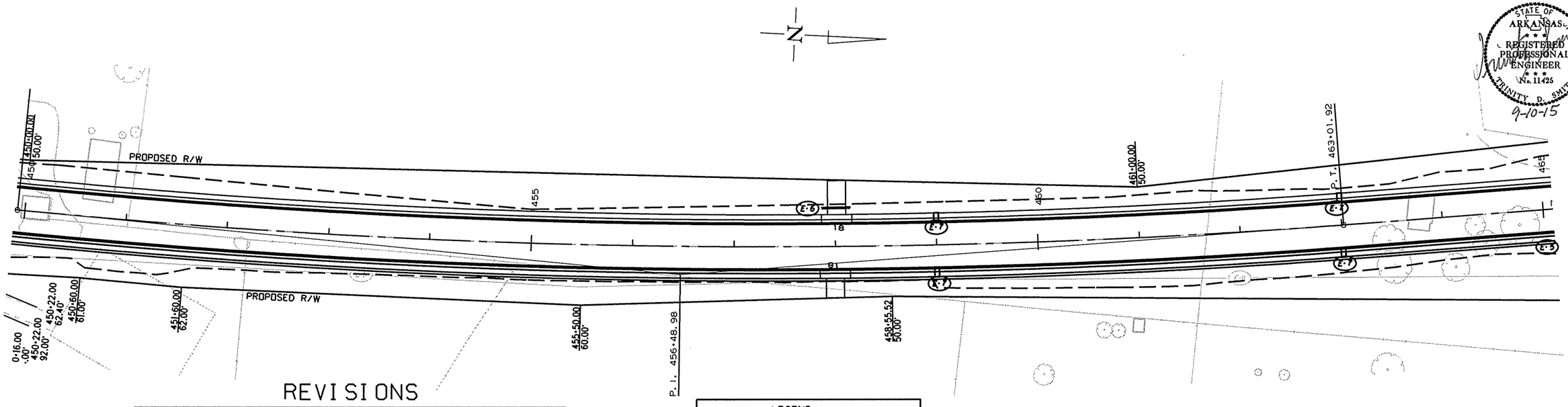
9/8/2015

R090373.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.		090373	23	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



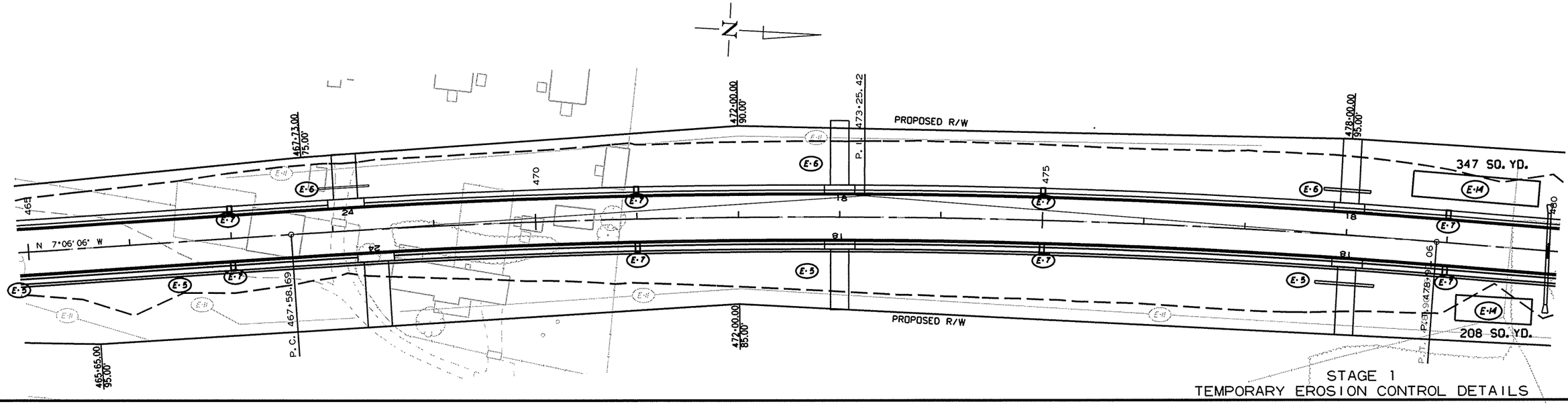
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



STAGE 1
TEMPORARY EROSION CONTROL DETAILS

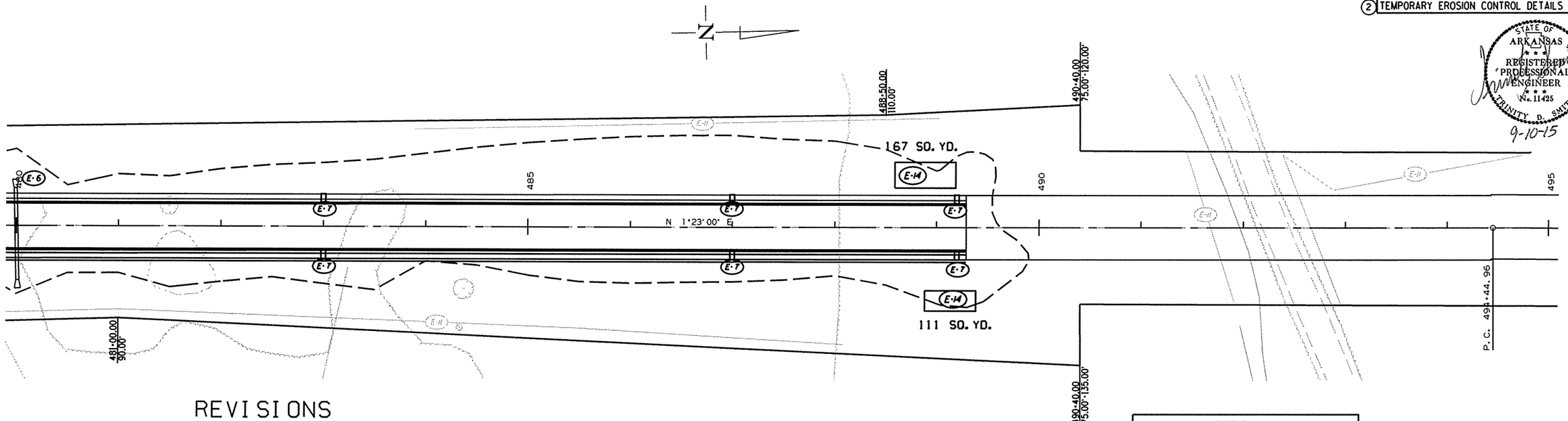
9/8/2015

R090373.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.		090373	24	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



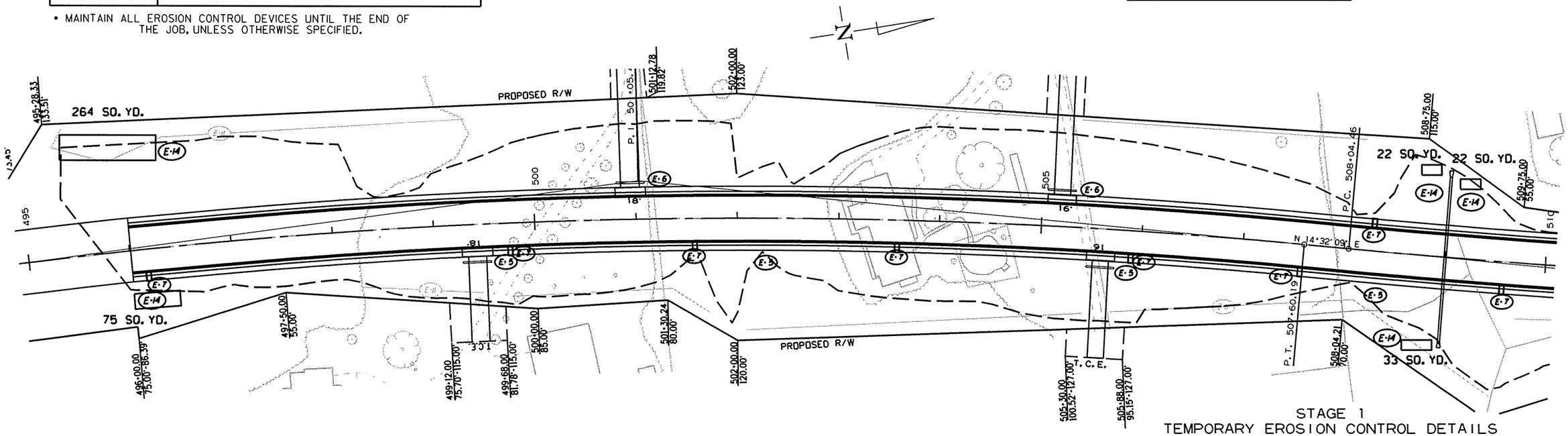
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

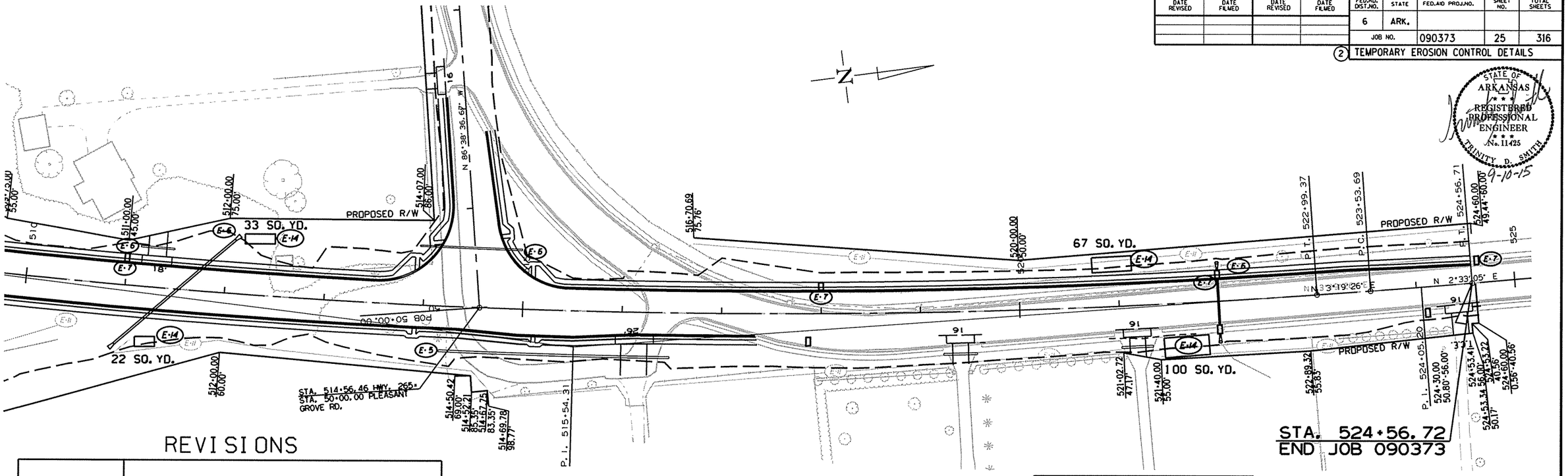


9/8/2015

R090373.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.		090373	25	316

(2) TEMPORARY EROSION CONTROL DETAILS



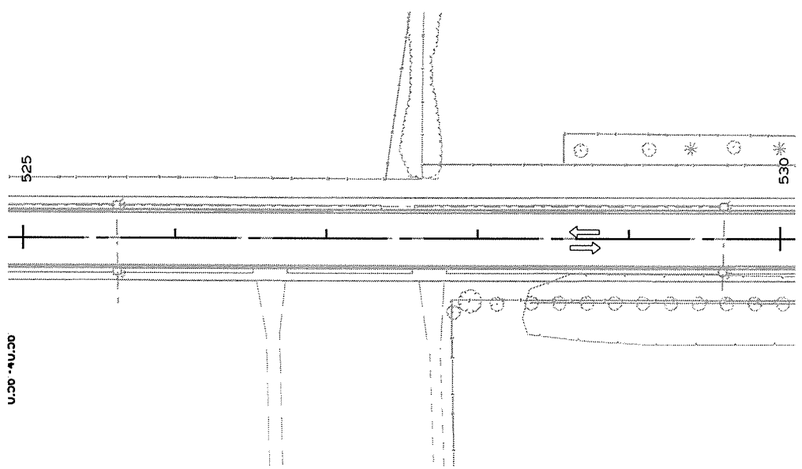
REVISIONS

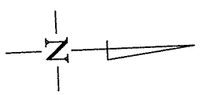
DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN





STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

9/8/2015

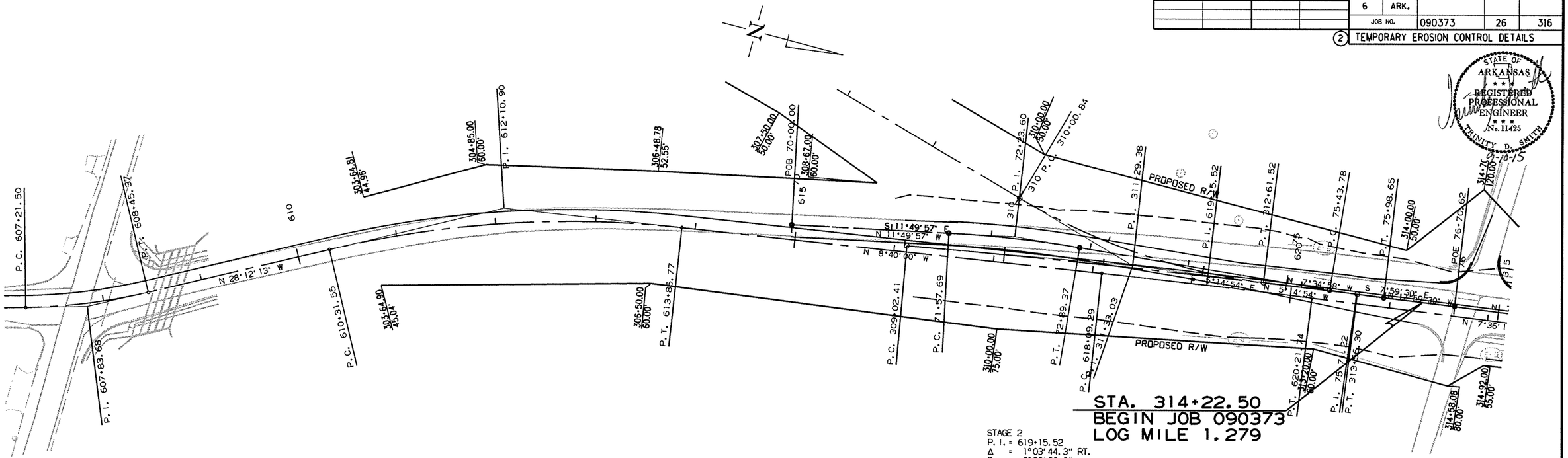
R090373.DGN

STAGE 1
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.		090373	26	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-10-15



STAGE 2
P. I. = 619+15.52
Δ = 1°03' 44.3" RT.
D = 0°30' 00.0"
T = 106.23'
L = 212.46'

STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279

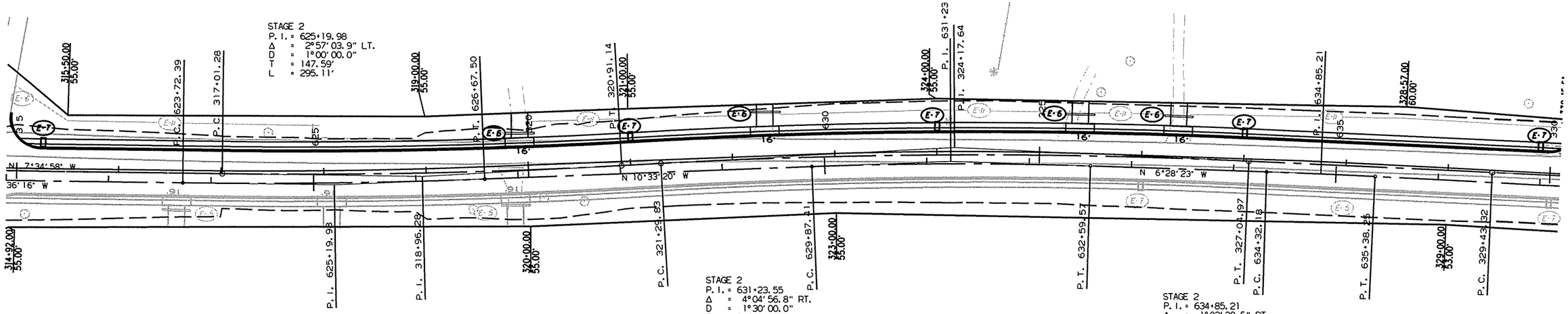
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



STAGE 2
P. I. = 625+19.98
Δ = 2°57' 03.9" LT.
D = 1°00' 00.0"
T = 147.59'
L = 295.11'

STAGE 2
P. I. = 631+23.55
Δ = 4°04' 56.8" RT.
D = 1°30' 00.0"
T = 136.14'
L = 272.16'

STAGE 2
P. I. = 634+85.21
Δ = 1°03' 38.5" RT.
D = 1°00' 00.0"
T = 53.04'
L = 106.07'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

9/8/2015

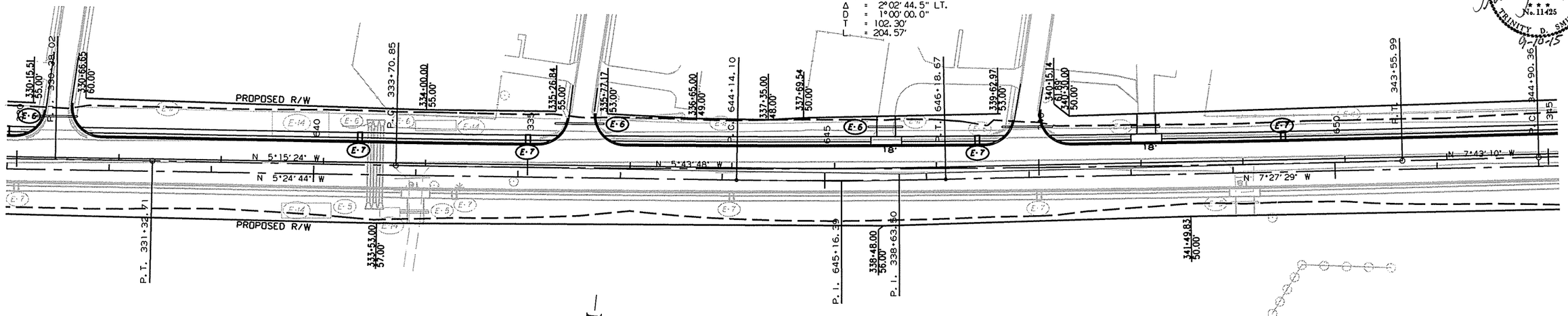
R090373.DGN

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.		090373	27	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



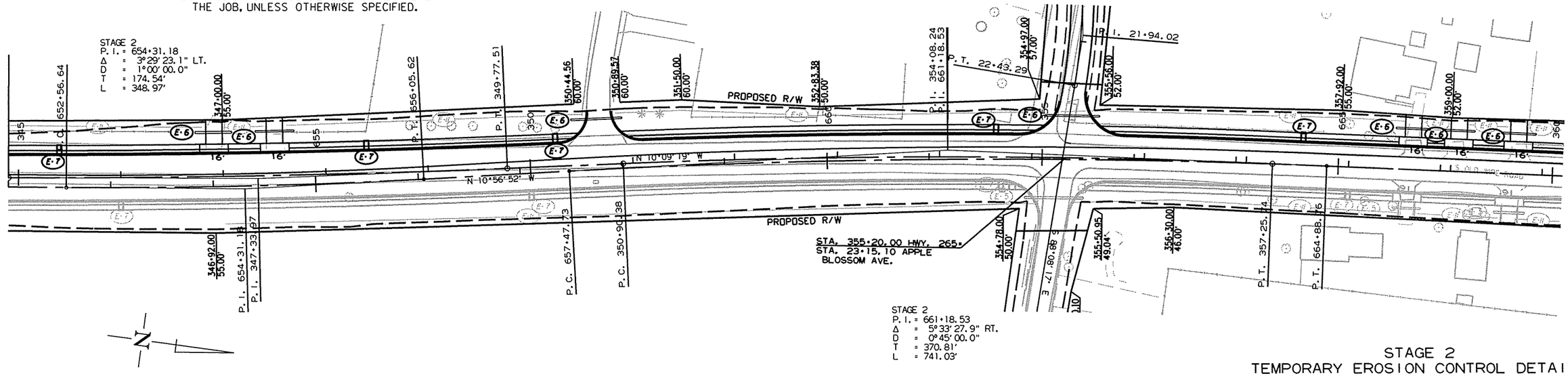
REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



STAGE 2
P. I. = 661+18.53
Δ = 5°33'27.9" RT.
D = 0°45'00.0"
T = 370.81'
L = 741.03'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

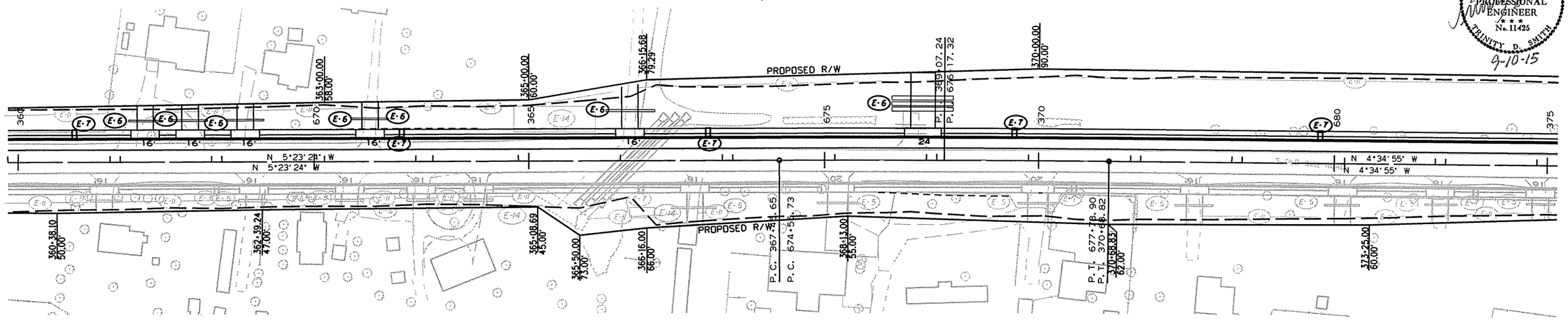
9/8/2015

R090373.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.		090373	28	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



STAGE 2
P. I. = 676+17.32
Δ = 0°48'28.6" RT.
D = 0°15'00.0"
T = 161.59'
L = 323.17'

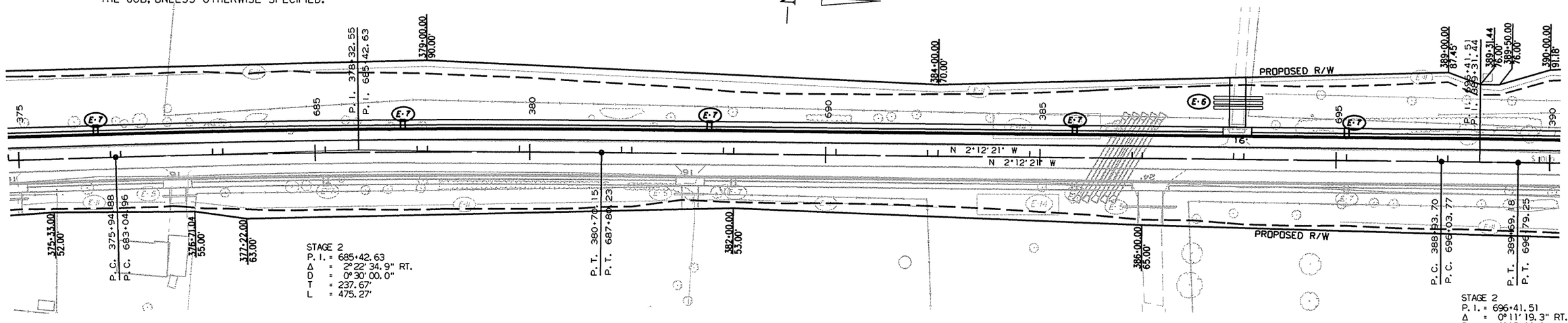
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN



STAGE 2
P. I. = 685+42.63
Δ = 2°22'34.9" RT.
D = 0°30'00.0"
T = 237.67'
L = 475.27'

STAGE 2
P. I. = 696+41.51
Δ = 0°11'19.3" RT.
D = 0°15'00.0"
T = 37.74'
L = 75.48'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

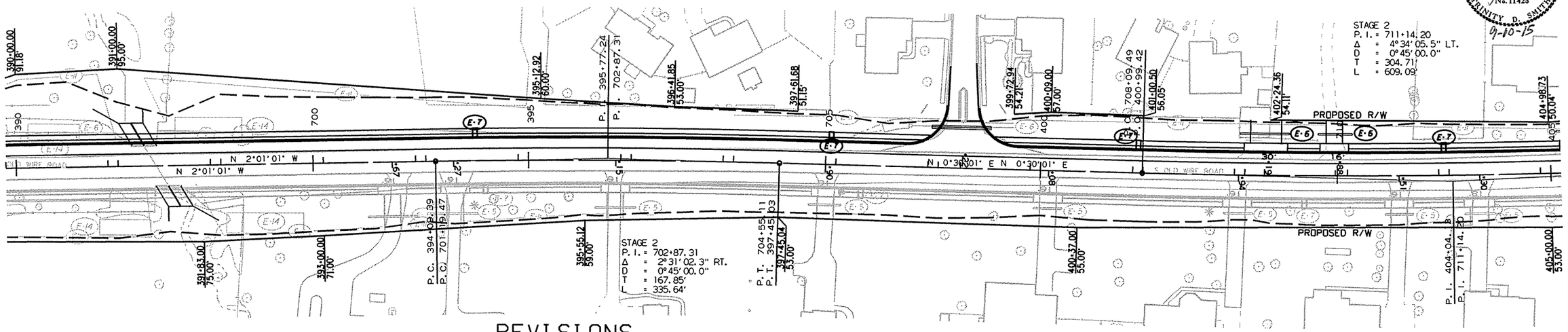
9/8/2015

R090373.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.		090373	29	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



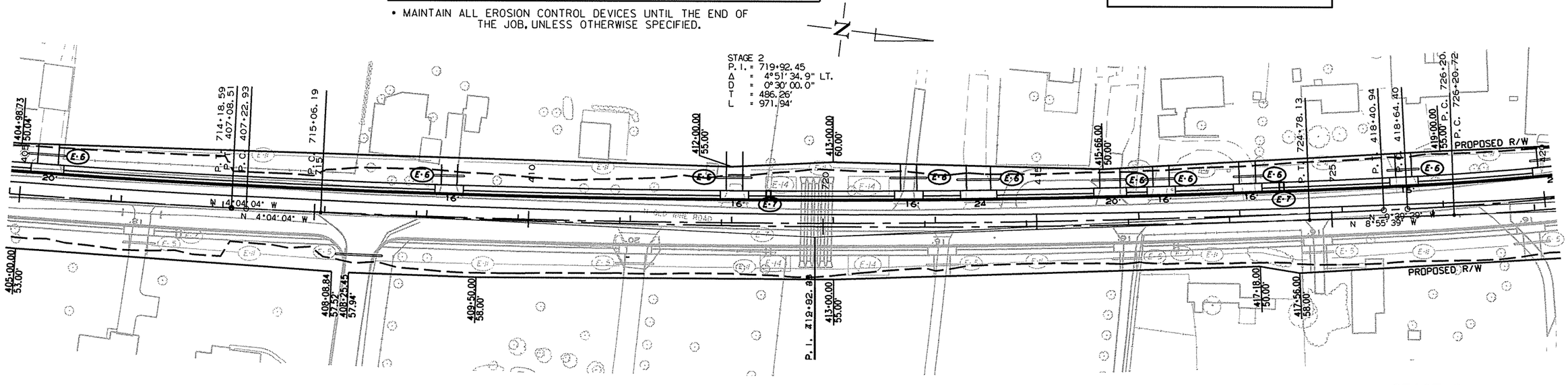
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

9/8/2015

R090373.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.		090373	30	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-16-15

STAGE 2
P. I. = 727+83.17
Δ = 9°43' 24.8" LT.
D = 3°00' 00.0"
T = 162.45'
L = 324.12'

STAGE 2
P. I. = 733+77.84
Δ = 1°40' 44.4" LT.
D = 0°30' 00.0"
T = 167.91'
L = 335.80'

STAGE 2
P. I. = 738+94.61
Δ = 23°02' 47.8" RT.
D = 7°15' 00.0"
T = 161.12'
L = 317.88'

REVISIONS

DATE	REVISION

LEGEND
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

9/8/2015

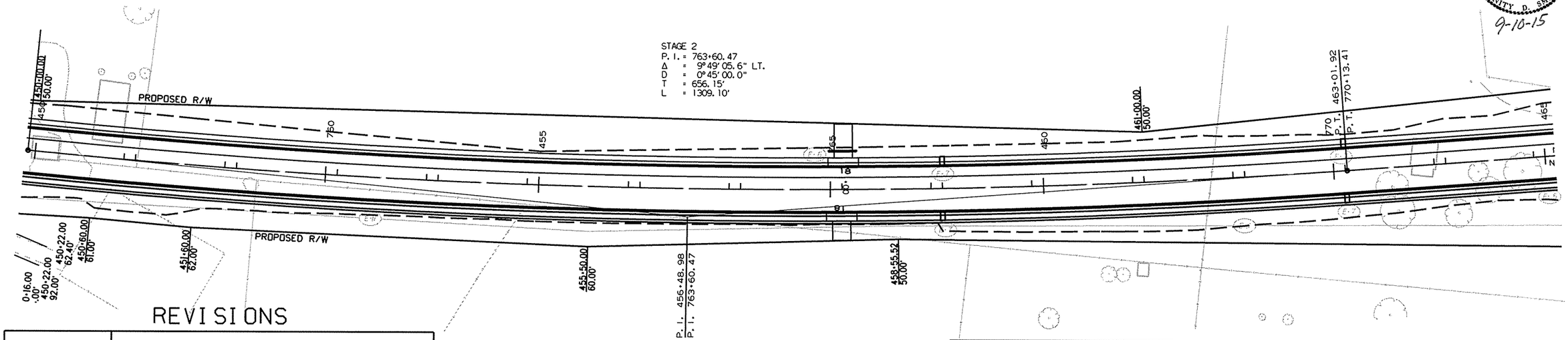
R090373.DGN

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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.		090373	31	316

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



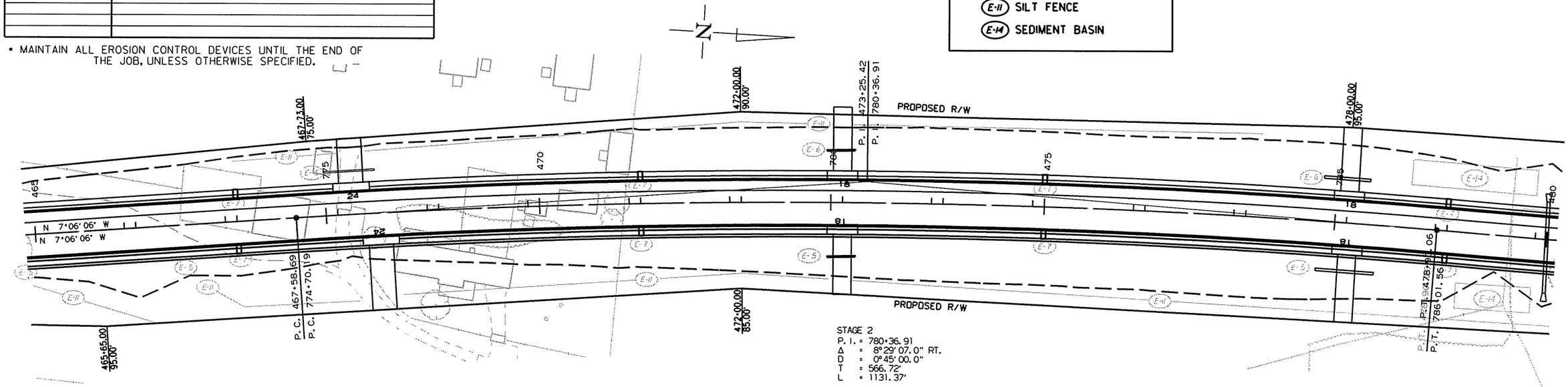
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

9/8/2015

R090373.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.		090373	32	316

(2) TEMPORARY EROSION CONTROL DETAILS

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

REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

STAGE 2
P. I. = 808+16.97
Δ = 13°09'08.4" RT.
D = 1°00'00.0"
T = 660.52'
L = 1315.23'

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

9/8/2015

R090373.DGN

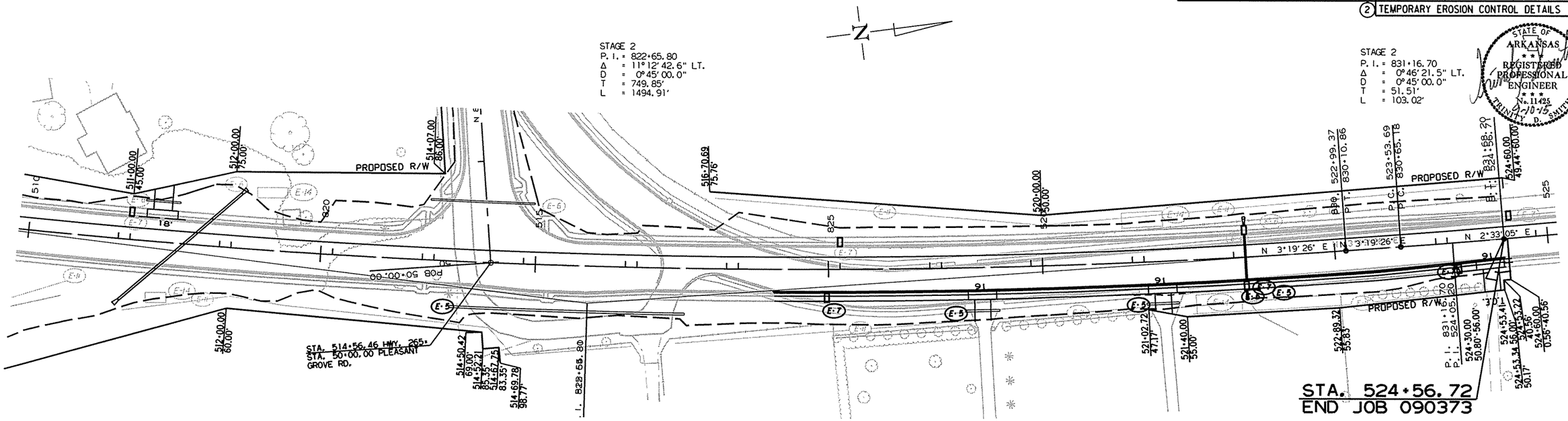
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				6	ARK.			
				JOB NO.		090373	33	316

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2
P. I. = 822+65.80
Δ = 11°12'42.6" LT.
D = 0°45'00.0"
T = 749.85'
L = 1494.91'

STAGE 2
P. I. = 831+16.70
Δ = 0°46'21.5" LT.
D = 0°45'00.0"
T = 51.51'
L = 103.02'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
9-10-15
TRINITY D. SMITH



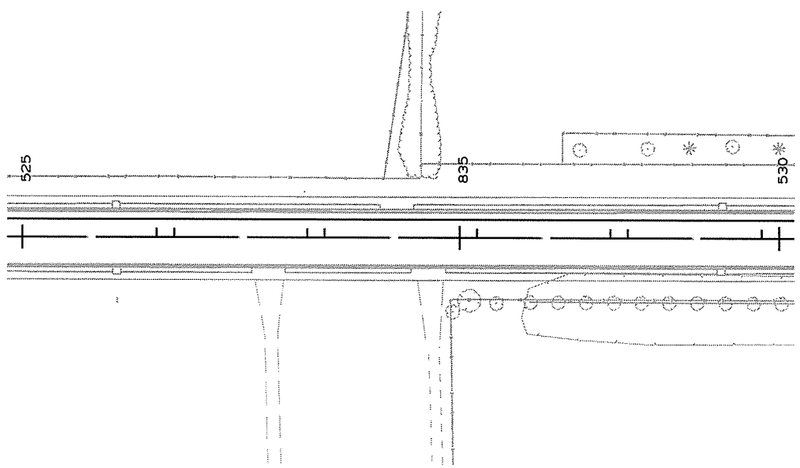
REVISIONS

DATE	REVISION

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN



9/8/2015

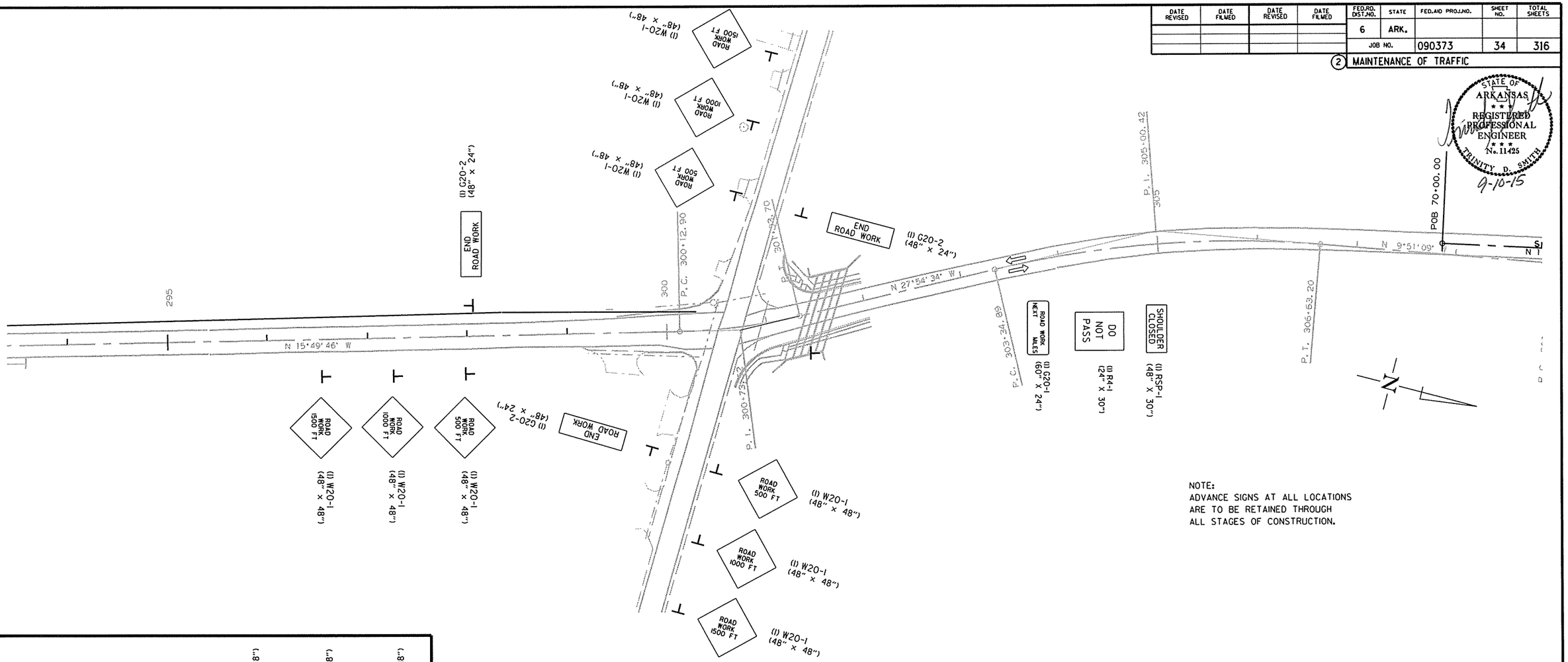
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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

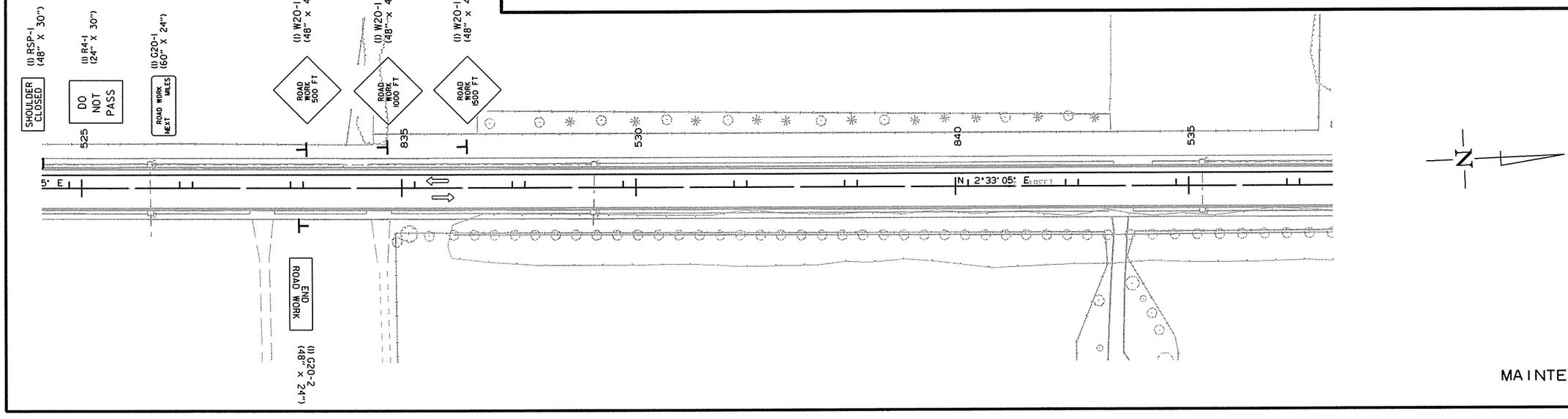
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	34	316

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



NOTE:
ADVANCE SIGNS AT ALL LOCATIONS ARE TO BE RETAINED THROUGH ALL STAGES OF CONSTRUCTION.



MAINTENANCE OF TRAFFIC
ALL STAGES

9/8/2015

R090373.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.		090373	35	316

(2) MAINTENANCE OF TRAFFIC

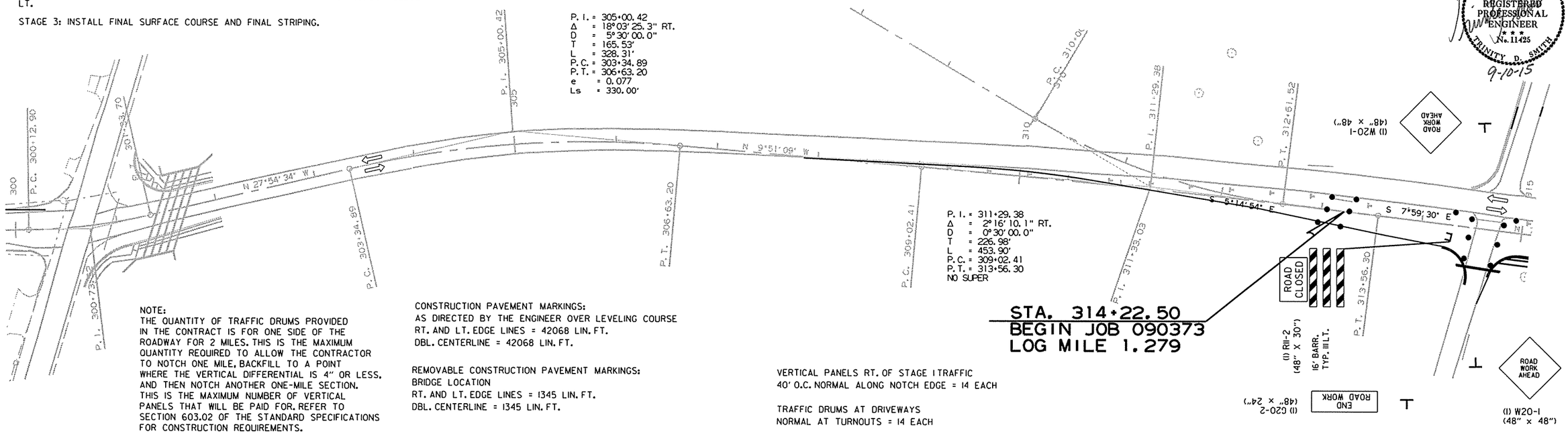
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279

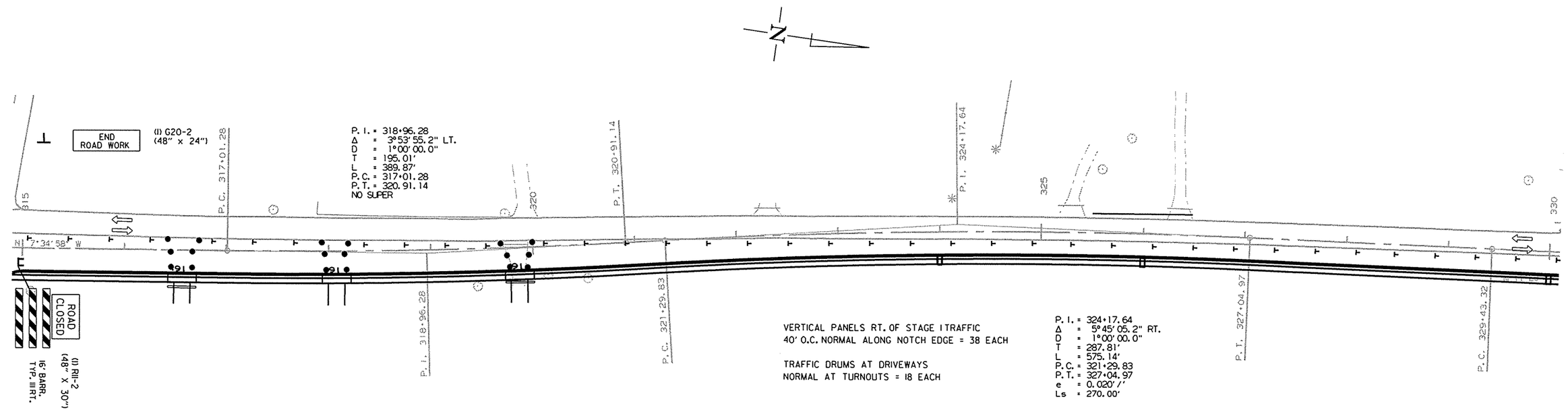
NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS 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:
AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
RT. AND LT. EDGE LINES = 42068 LIN. FT.
DBL. CENTERLINE = 42068 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS:
BRIDGE LOCATION
RT. AND LT. EDGE LINES = 1345 LIN. FT.
DBL. CENTERLINE = 1345 LIN. FT.

VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 14 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 14 EACH



VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 18 EACH

MAINTENANCE OF TRAFFIC
STAGE 1

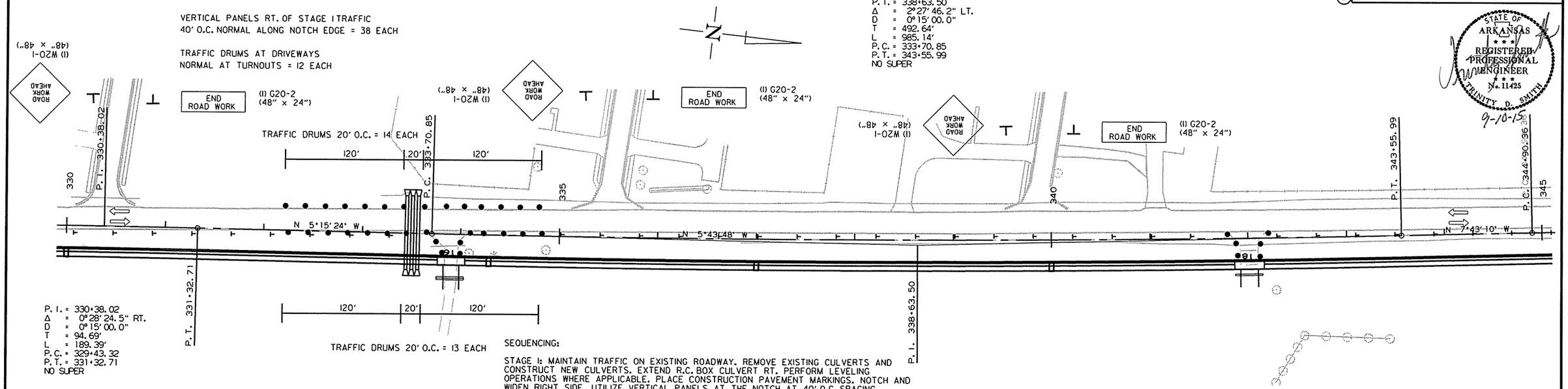
9/9/2015

R090373.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.		090373	36	316

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



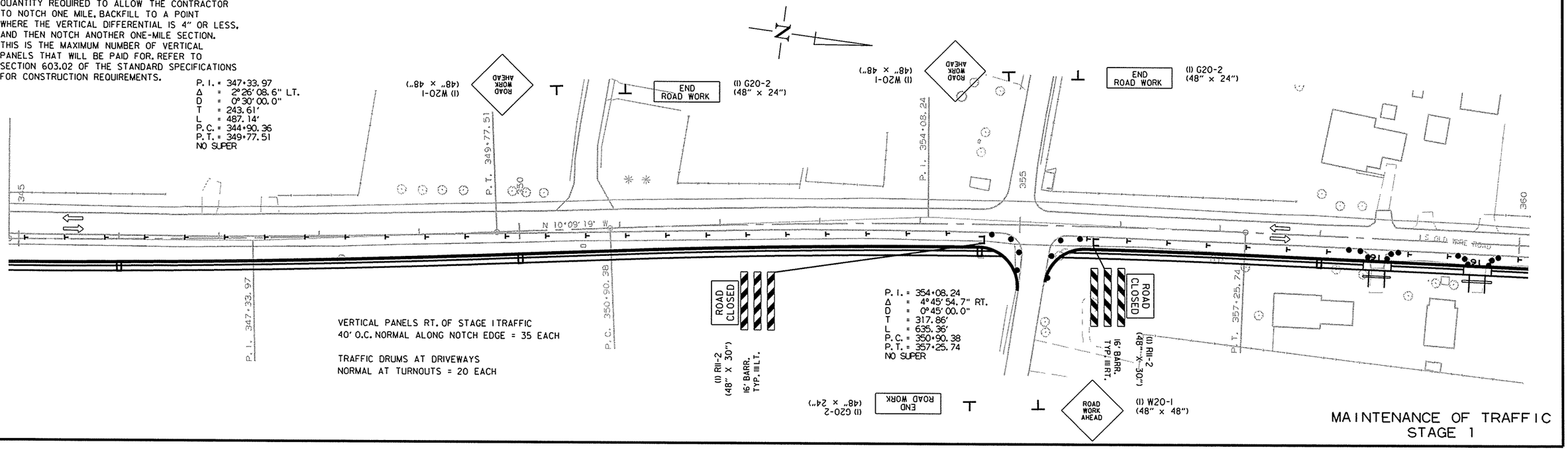
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.



MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015

R090373.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.		090373	37	316

(2) MAINTENANCE OF TRAFFIC

VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 72 EACH

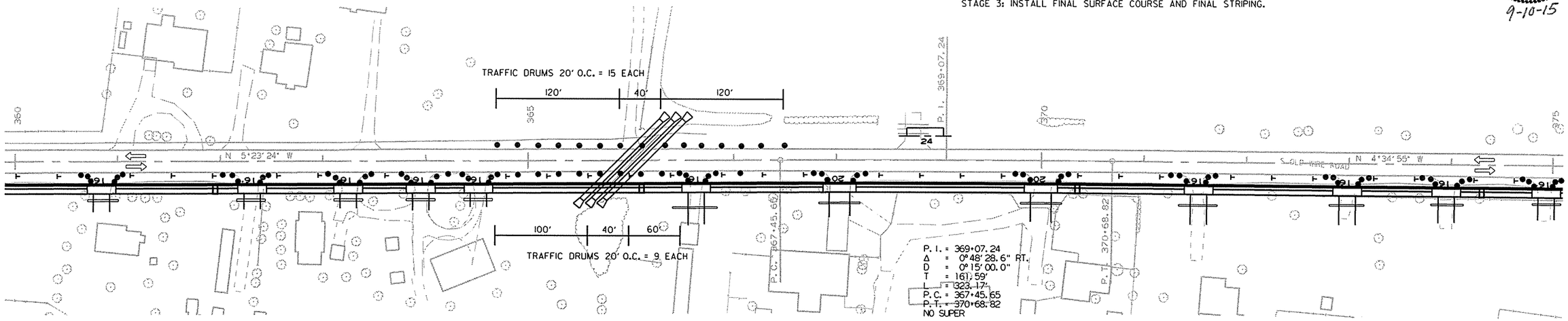
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

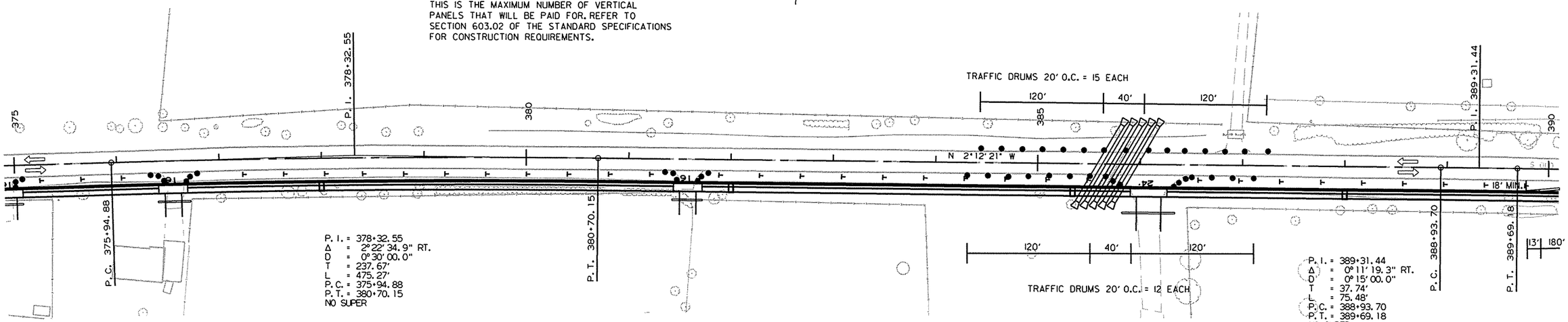
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 18 EACH

NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.



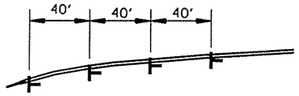
MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015

R090373.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.		090373	38	316

(2) MAINTENANCE OF TRAFFIC



DETAIL OF OM-3 AT
ALL PCCB INSTALLATIONS
OM-4 RT ON ENTRANCE
OM-3 LT ON EXIT

VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 31 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 48 EACH

NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

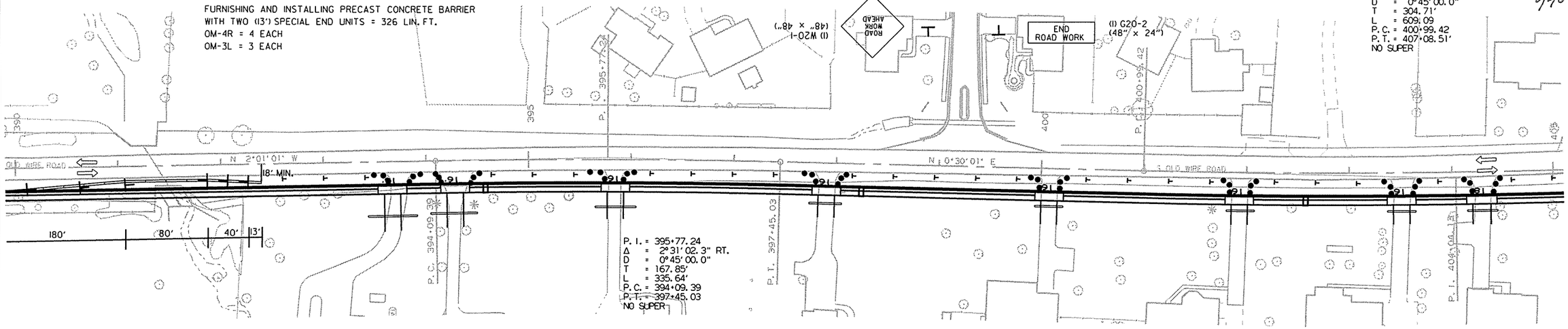
STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

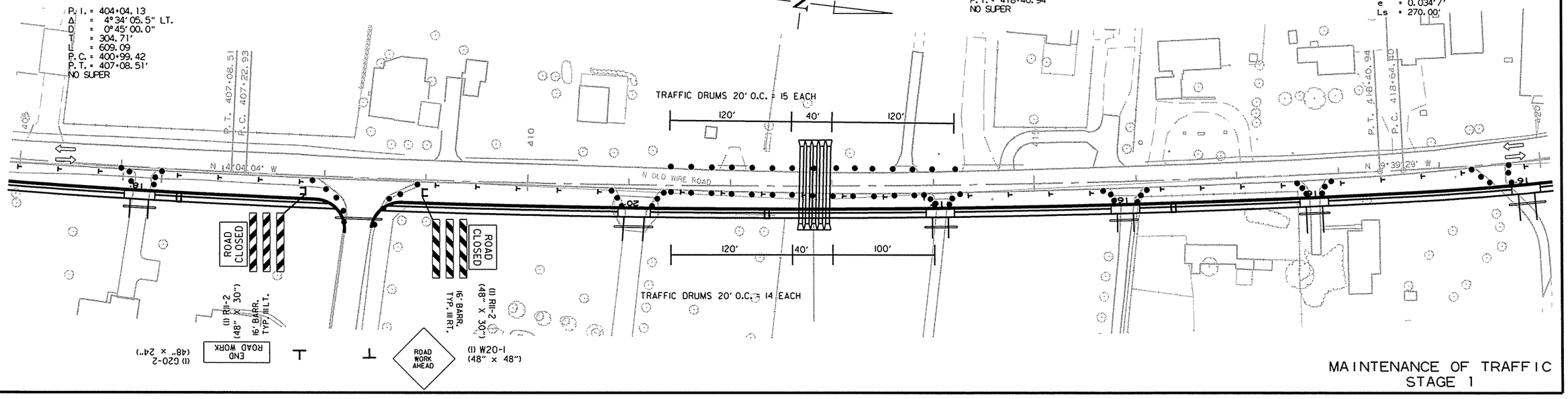
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
9-10-15

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 326 LIN. FT.
OM-4R = 4 EACH
OM-3L = 3 EACH

P. I. = 404+04.13
Δ = 4°34'05.5" LT.
D = 0°45'00.0"
T = 304.71'
L = 609.09
P.C. = 400+99.42
P.T. = 407+08.51'
NO SUPER





MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015

R090373.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.		090373	39	316

(2) MAINTENANCE OF TRAFFIC

VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 12 EACH

P. I. = 421+02.89
Δ = 9°31'04.0" LT.
D = 2°00'00.0"
T = 238.49'
L = 475.89'
P. C. = 418+64.40
P. T. = 423+40.29
e = 0.034'/'
Ls = 270.00'

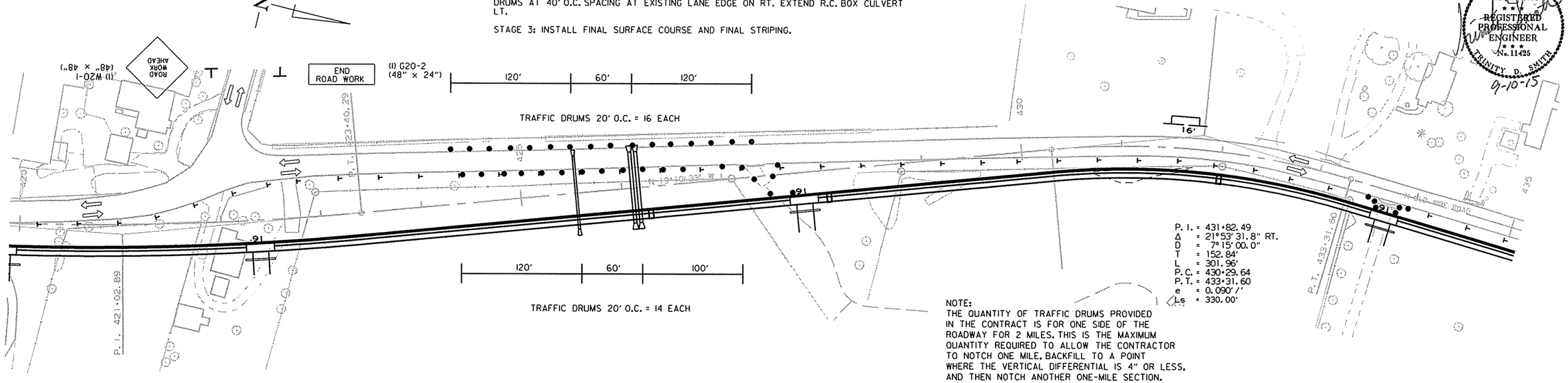
SEQUENCING:

STAGE I: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

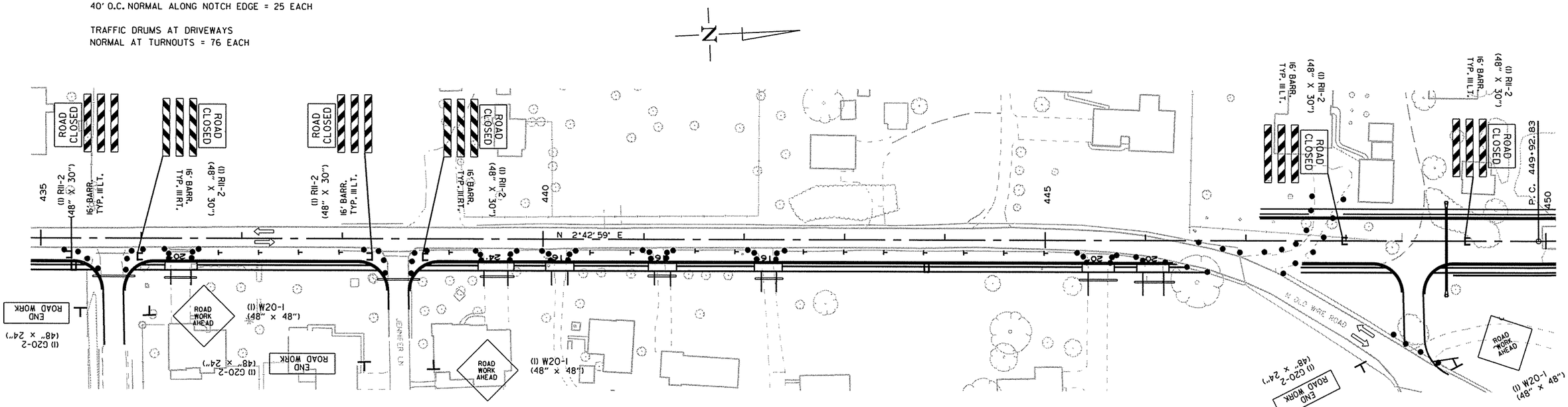
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



NOTE:
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VERTICAL PANELS RT. OF STAGE I TRAFFIC
40' O.C. NORMAL ALONG NOTCH EDGE = 25 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 76 EACH



MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015

R090373.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.		090373	40	316

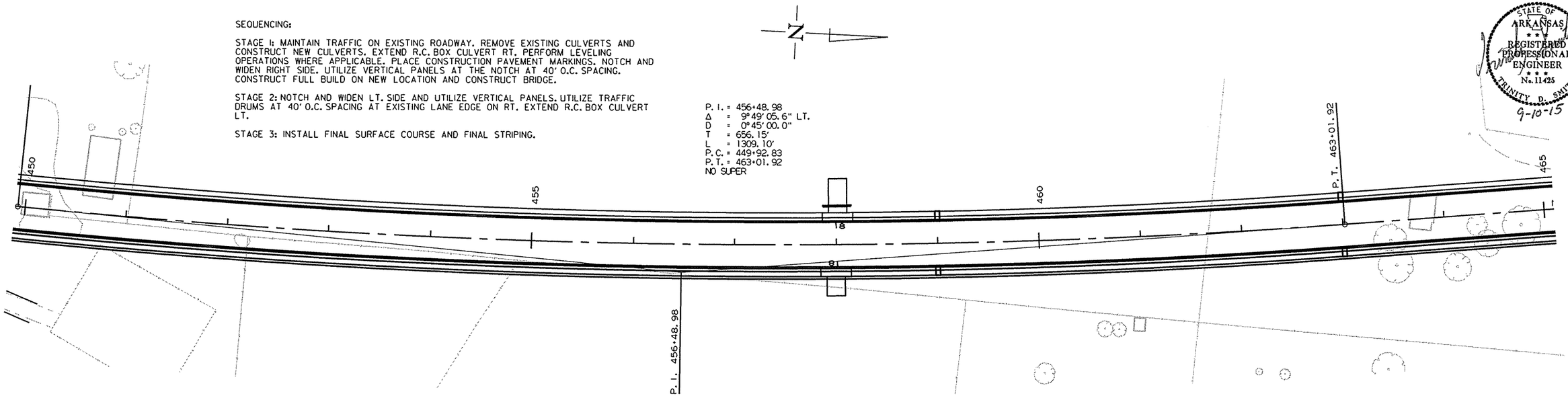
(2) MAINTENANCE OF TRAFFIC

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

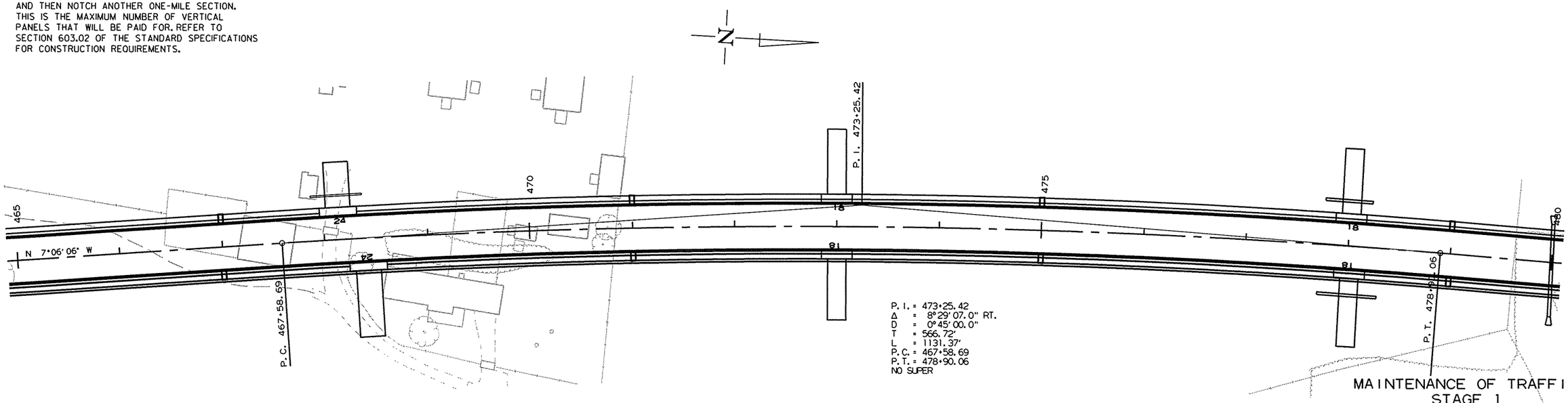
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.



P. I. = 456+48.98
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'
P. C. = 449+92.83
P. T. = 463+01.92
NO SUPER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

NOTE:
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P. I. = 473+25.42
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'
P. C. = 467+58.69
P. T. = 478+90.06
NO SUPER

MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015
R090373.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.		090373	41	316
				(2) MAINTENANCE OF TRAFFIC				

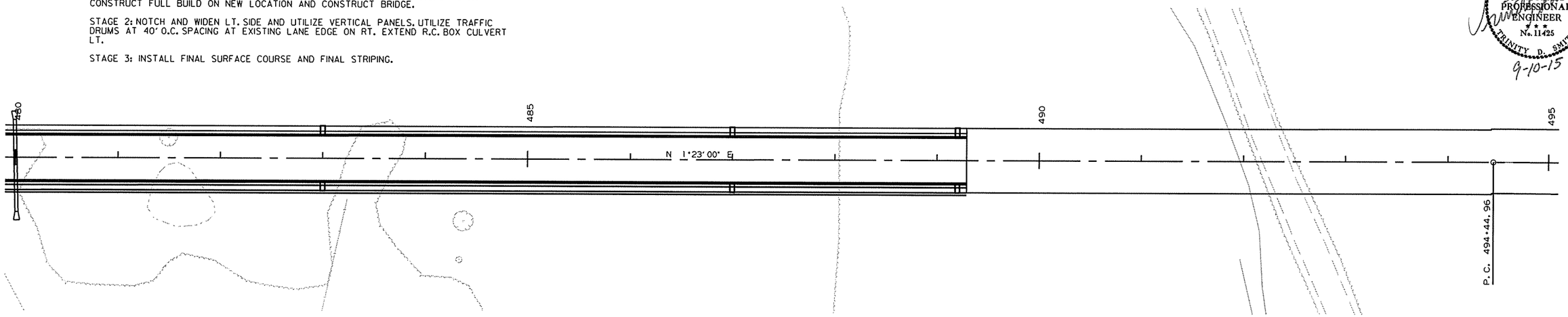
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

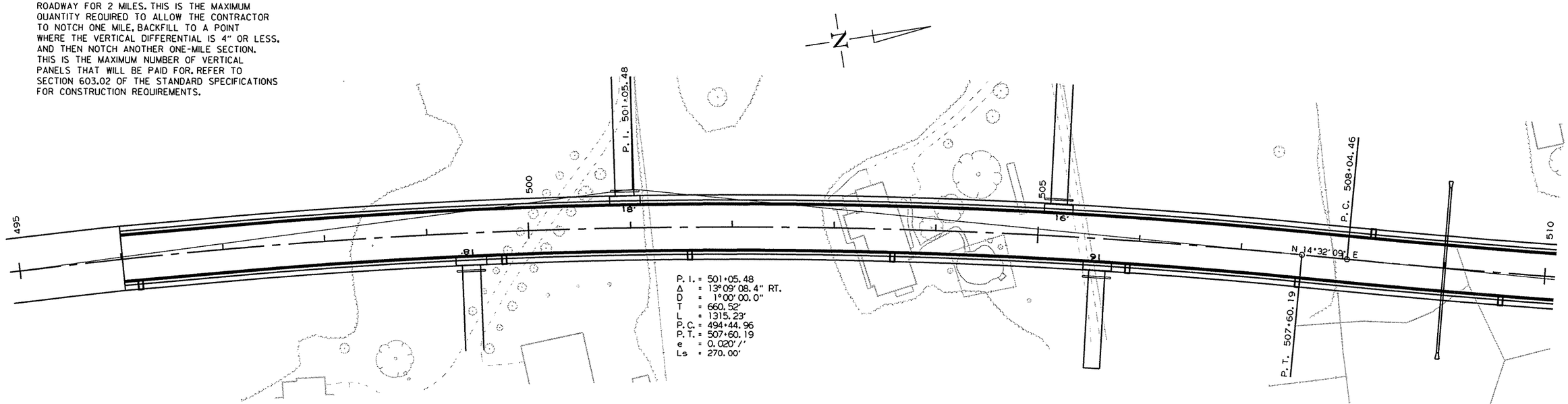
STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.



P. I. = 501+05.48
Δ = 13°09'08.4" RT.
D = 1°00'00.0"
T = 660.52'
L = 1315.23'
P.C. = 494+44.96
P.T. = 507+60.19
e = 0.020'/'
Ls = 270.00'

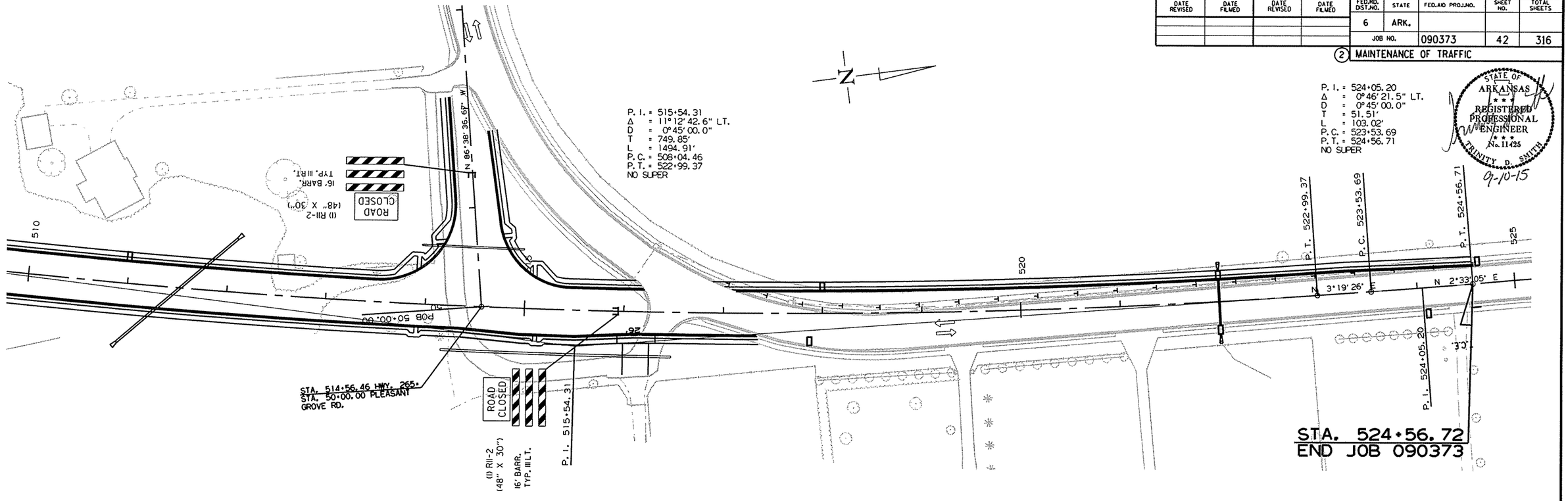
MAINTENANCE OF TRAFFIC
STAGE 1

9/8/2015

R090373.DGN

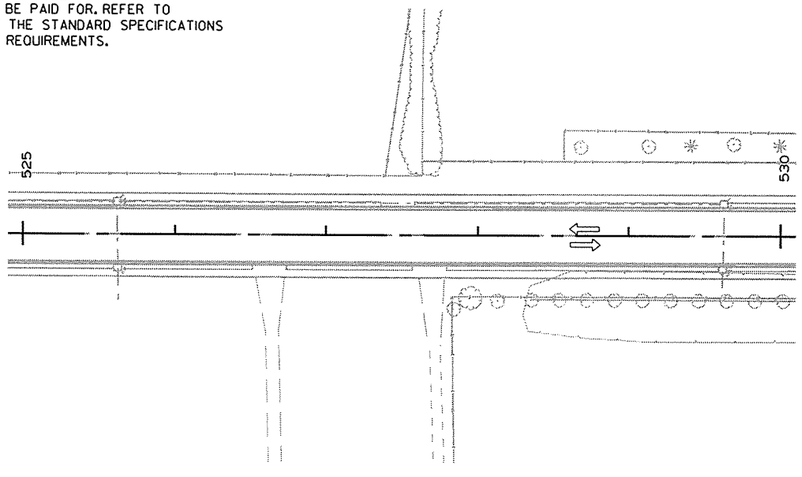
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	42	316

(2) MAINTENANCE OF TRAFFIC



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

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SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

MAINTENANCE OF TRAFFIC
STAGE 1

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				6	ARK.			
				JOB NO.		090373	43	316

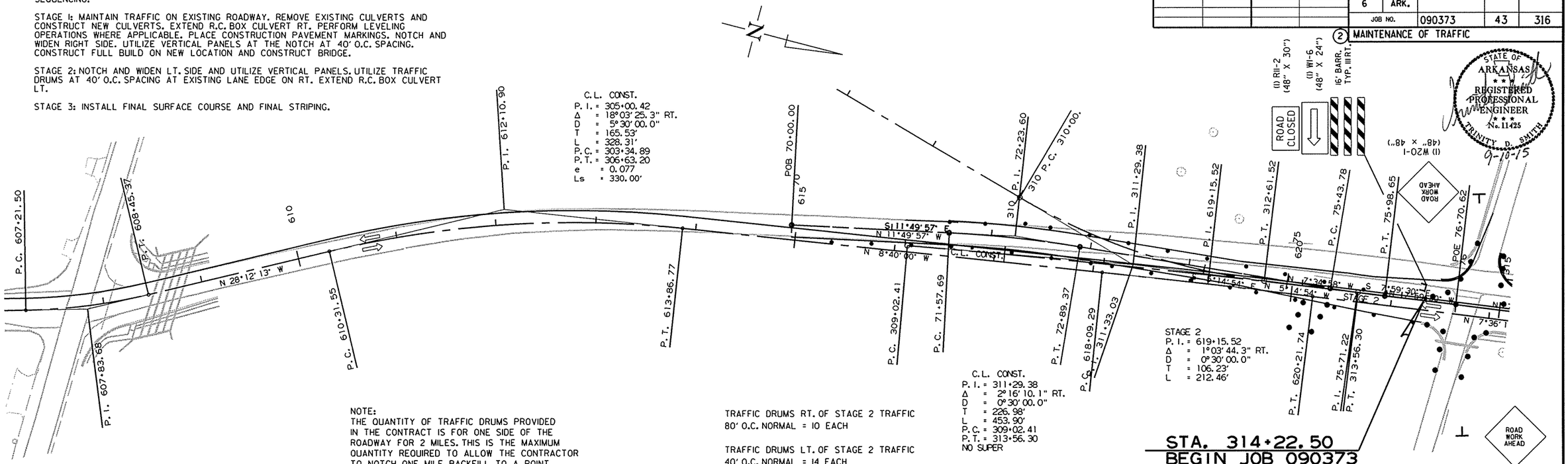
(2) MAINTENANCE OF TRAFFIC

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.



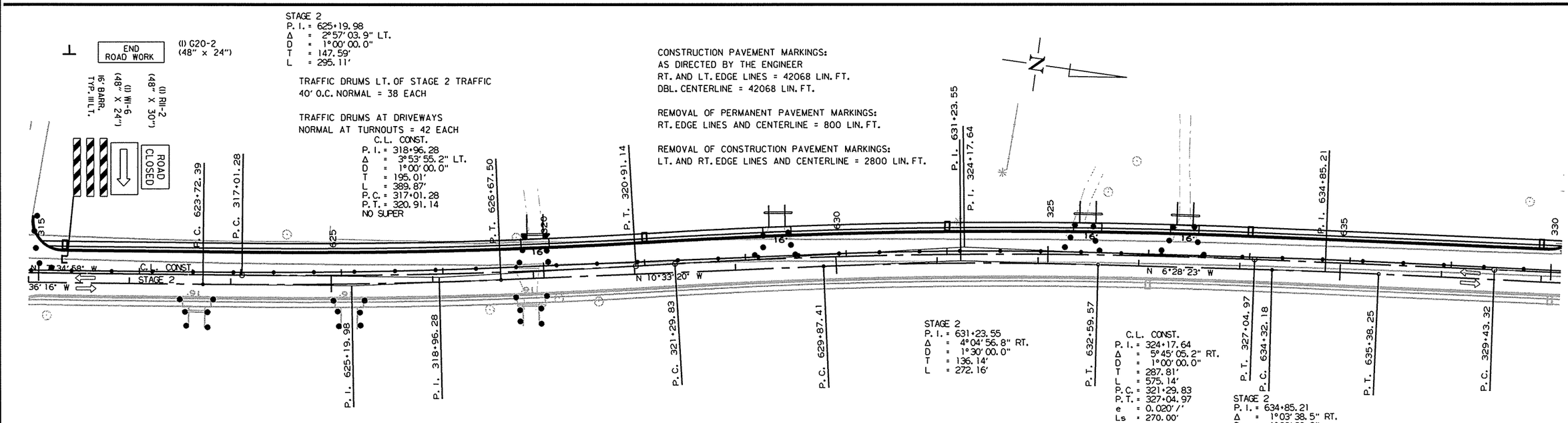
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TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 10 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 14 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 24 EACH

C.L. CONST.
P.I. = 311+29.38
Δ = 2°16' 10.1" RT.
D = 0°30' 00.0"
T = 226.98'
L = 453.90'
P.C. = 309+02.41
P.T. = 313+56.30
NO SUPER



MAINTENANCE OF TRAFFIC
STAGE 2

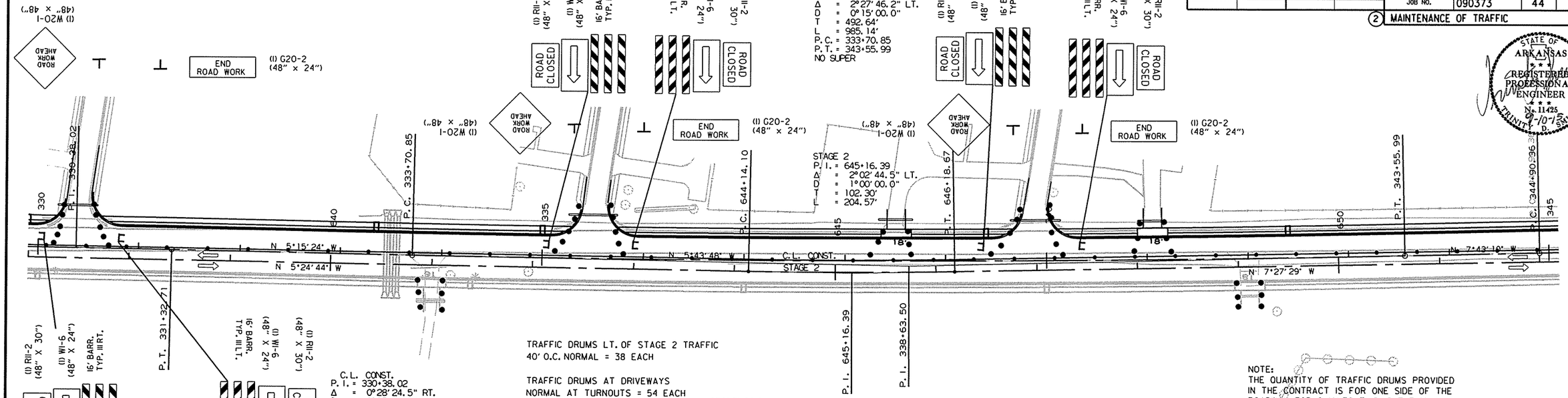
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				6	ARK.			
				JOB NO.		090373	44	316

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
9-10-15
TRINITY D. SMITH



TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 54 EACH

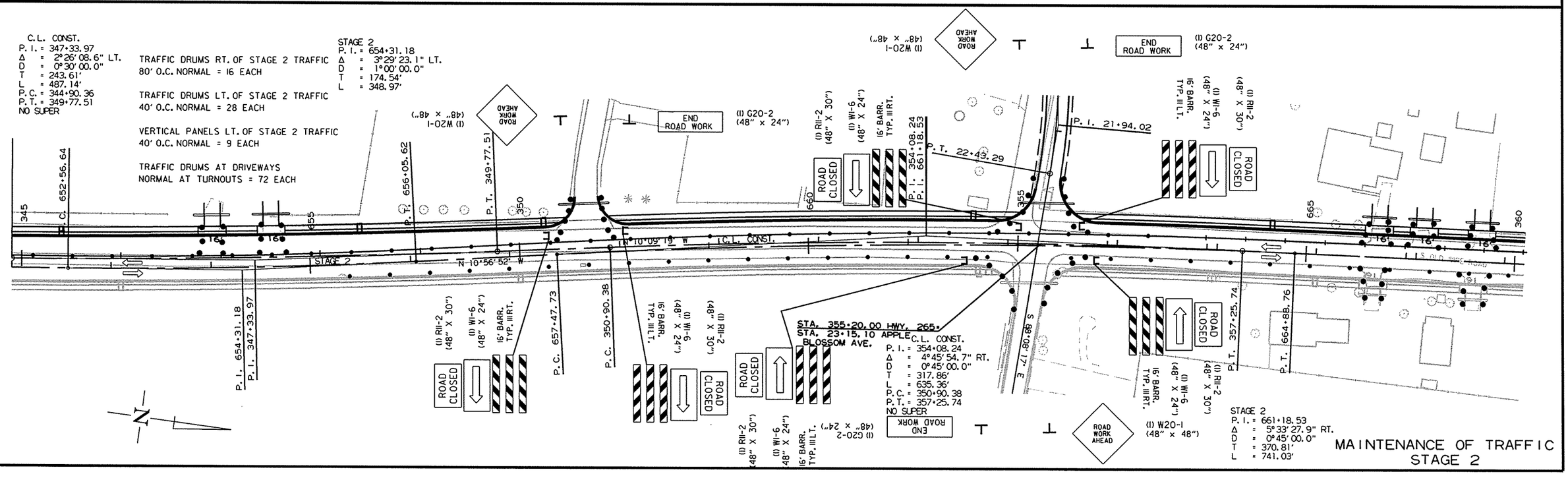
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

NOTE:
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MAINTENANCE OF TRAFFIC
STAGE 2

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				6	ARK.			
				JOB NO.		090373	45	316

(2) MAINTENANCE OF TRAFFIC

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

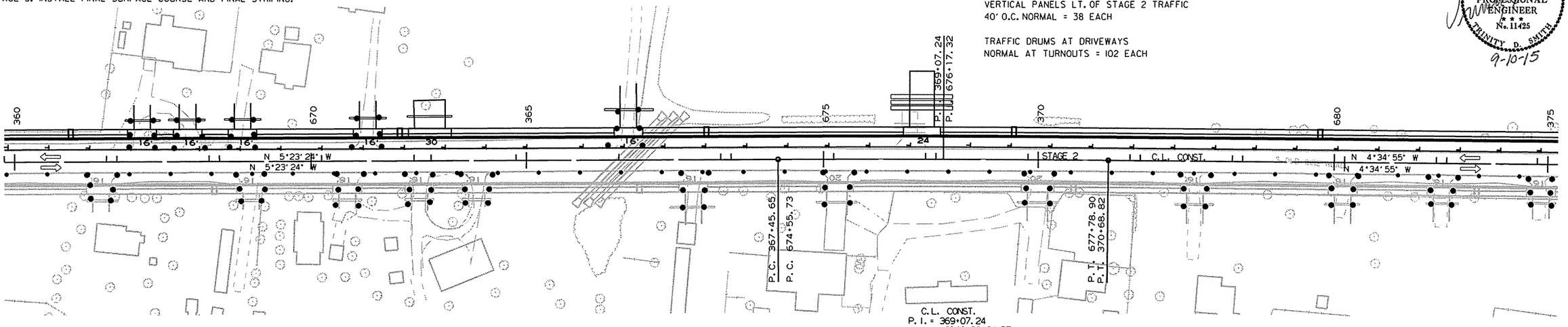
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

VERTICAL PANELS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 102 EACH



C.L. CONST.
P.I. = 369+07.24
Δ = 0°48'28.6" RT.
D = 0°15'00.0"
T = 161.59'
L = 323.17'
P.C. = 367+45.65
P.T. = 370+68.82
NO SUPER

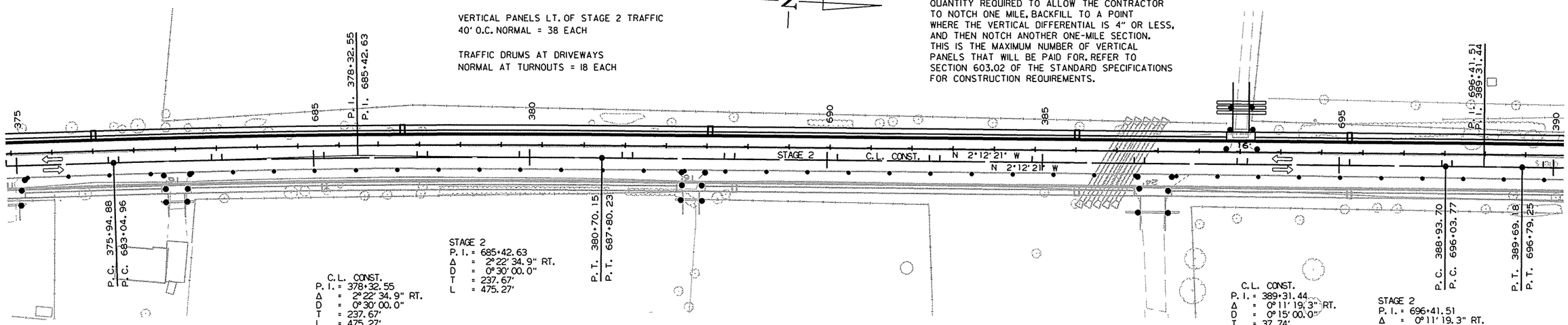
STAGE 2
P.I. = 676+17.32
Δ = 0°48'28.6" RT.
D = 0°15'00.0"
T = 161.59'
L = 323.17'

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

VERTICAL PANELS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 18 EACH

NOTE:
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C.L. CONST.
P.I. = 378+32.55
Δ = 2°22'34.9" RT.
D = 0°30'00.0"
T = 237.67'
L = 475.27'
P.C. = 375+94.88
P.T. = 380+70.15
NO SUPER

STAGE 2
P.I. = 685+42.63
Δ = 2°22'34.9" RT.
D = 0°30'00.0"
T = 237.67'
L = 475.27'

C.L. CONST.
P.I. = 389+31.44
Δ = 0°11'19.3" RT.
D = 0°15'00.0"
T = 37.74'
L = 75.48'
P.C. = 388+93.70
P.T. = 389+69.18
NO SUPER

STAGE 2
P.I. = 696+41.51
Δ = 0°11'19.3" RT.
D = 0°15'00.0"
T = 37.74'
L = 75.48'

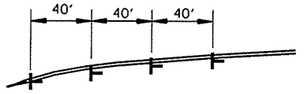
MAINTENANCE OF TRAFFIC
STAGE 2

9/8/2015

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(2) MAINTENANCE OF TRAFFIC



DETAIL OF OM-3 AT
ALL PCCB INSTALLATIONS
OM-4 RT ON ENTRANCE
OM-3 LT ON EXIT

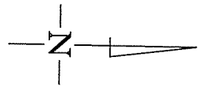
RELOCATE PRECAST CONCRETE BARRIER
WITH TWO (13') SPECIAL END UNITS = 326 LIN. FT.
OM-4R = 4 EACH
OM-3L = 3 EACH

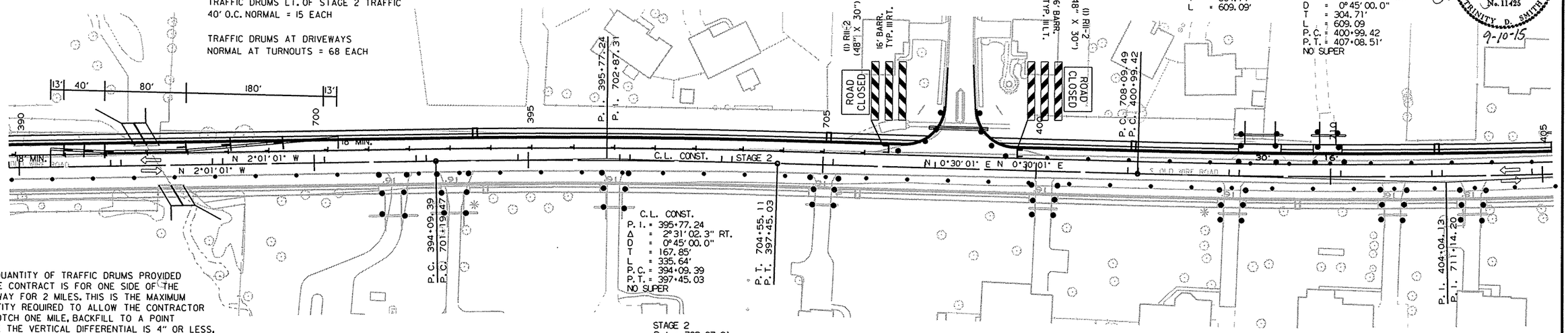
TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

VERTICAL PANELS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 23 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 15 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 68 EACH





C.L. CONST.
P. I. = 395+77.24
Δ = 2°31'02.3" RT.
D = 0°45'00.0"
T = 167.85'
L = 335.64'
P.C. = 394+09.39
P.T. = 397+45.03
NO SUPER

STAGE 2
P. I. = 702+87.31
Δ = 2°31'02.3" RT.
D = 0°45'00.0"
T = 167.85'
L = 335.64'

STAGE 2
P. I. = 711+14.20
Δ = 4°34'05.5" LT.
D = 0°45'00.0"
T = 304.71'
L = 609.09'

C.L. CONST.
P. I. = 404+04.13
Δ = 4°34'05.5" LT.
D = 0°45'00.0"
T = 304.71'
L = 609.09
P.C. = 400+99.42
P.T. = 407+08.51'
NO SUPER

STATE OF ARKANSAS
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TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 38 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 98 EACH

C.L. CONST.
P. I. = 412+82.38
Δ = 5°35'24.2" LT.
D = 0°30'00.0"
T = 559.45'
L = 1118.01'
P.C. = 407+22.93
P.T. = 418+40.94
NO SUPER

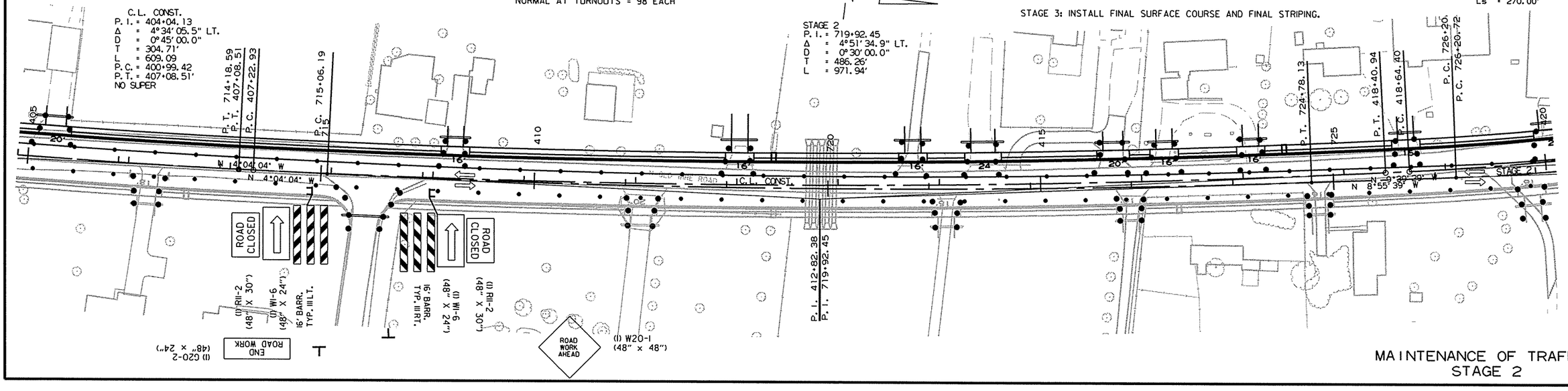
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

C.L. CONST.
P. I. = 421+02.89
Δ = 9°31'04.0" LT.
D = 2°00'00.0"
T = 238.49'
L = 475.89'
P.C. = 418+64.40
P.T. = 423+40.29
e = 0.034'/'
Ls = 270.00'



STAGE 2
P. I. = 719+92.45
Δ = 4°51'34.9" LT.
D = 0°30'00.0"
T = 486.26'
L = 971.94'

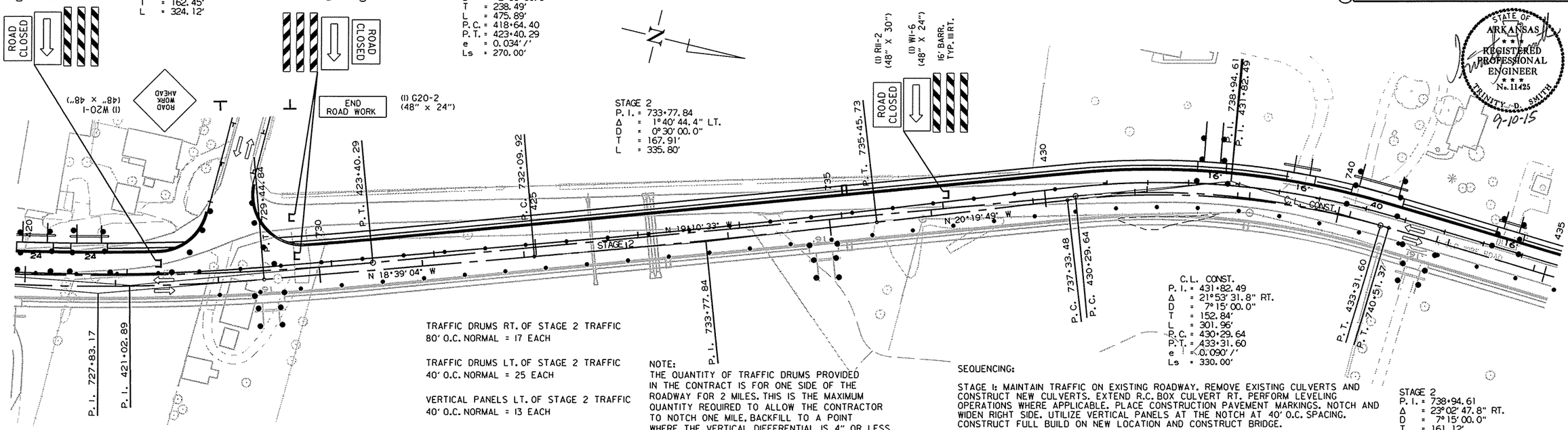
MAINTENANCE OF TRAFFIC
STAGE 2

9/8/2015
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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 17 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 25 EACH

VERTICAL PANELS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 13 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 56 EACH

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SEQUENCING:

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STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

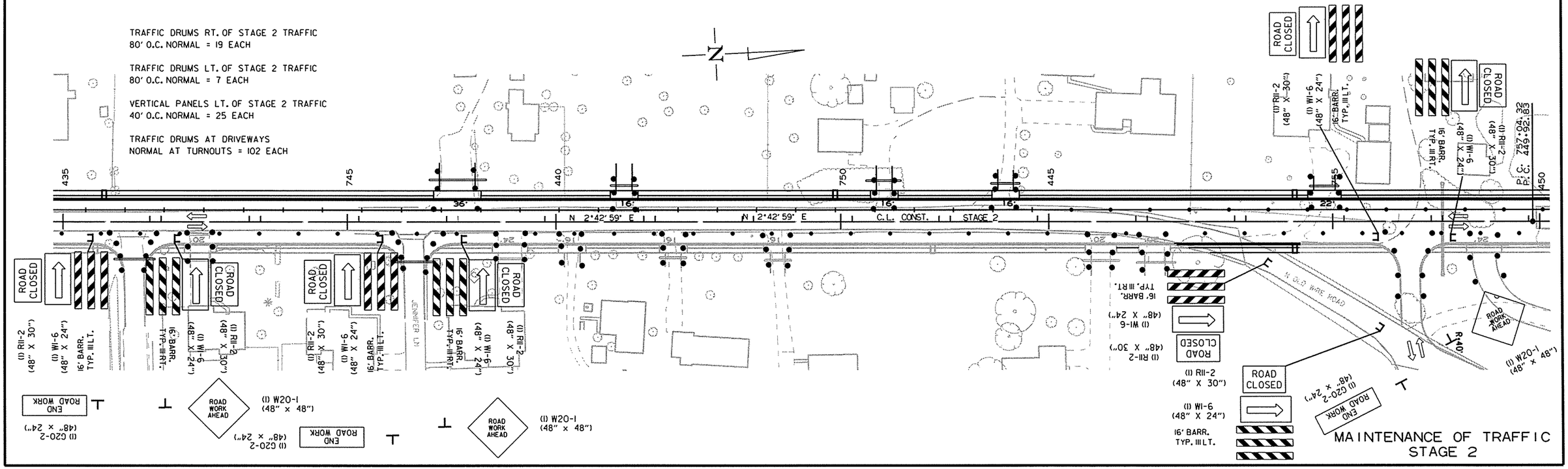
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 7 EACH

VERTICAL PANELS LT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 25 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 102 EACH



MAINTENANCE OF TRAFFIC
STAGE 2

9/8/2015

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(2) MAINTENANCE OF TRAFFIC

NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 12 EACH

C.L. CONST.
P. I. = 456+48.98
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'
P.C. = 449+92.83
P.T. = 463+01.92
NO SUPER

STAGE 2
P. I. = 763+60.47
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'

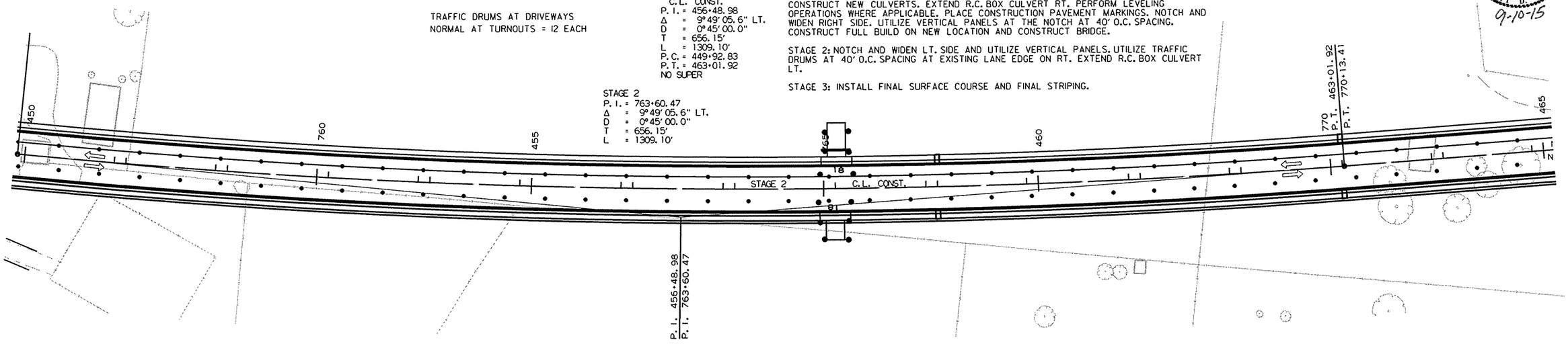
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

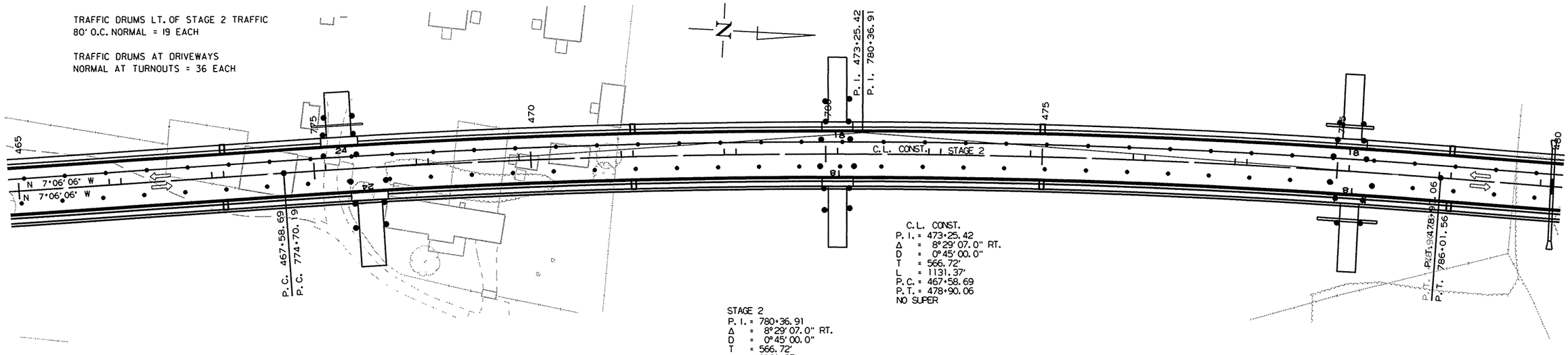
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 36 EACH



C.L. CONST.
P. I. = 473+25.42
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'
P.C. = 467+58.69
P.T. = 478+90.06
NO SUPER

STAGE 2
P. I. = 780+36.91
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'

MAINTENANCE OF TRAFFIC
STAGE 2

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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.		090373	49	316

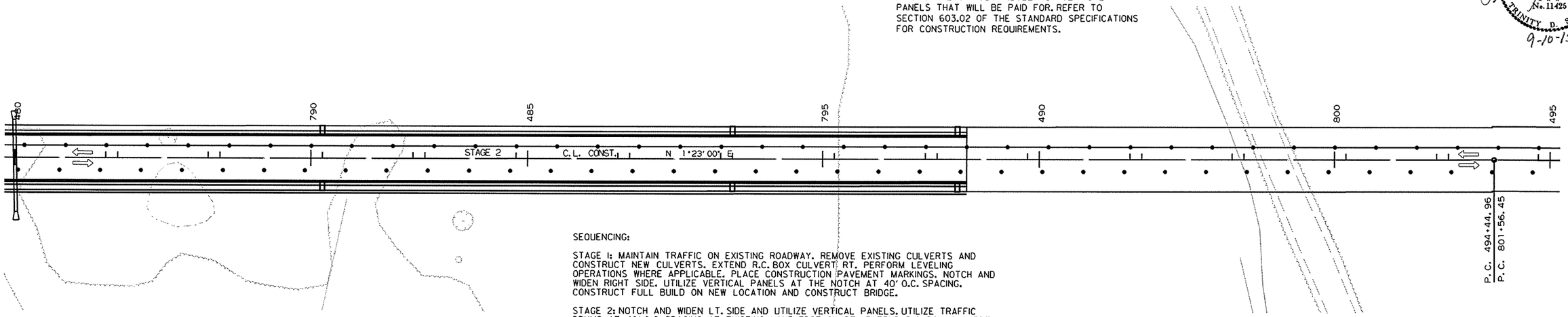
(2) MAINTENANCE OF TRAFFIC

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.

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SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

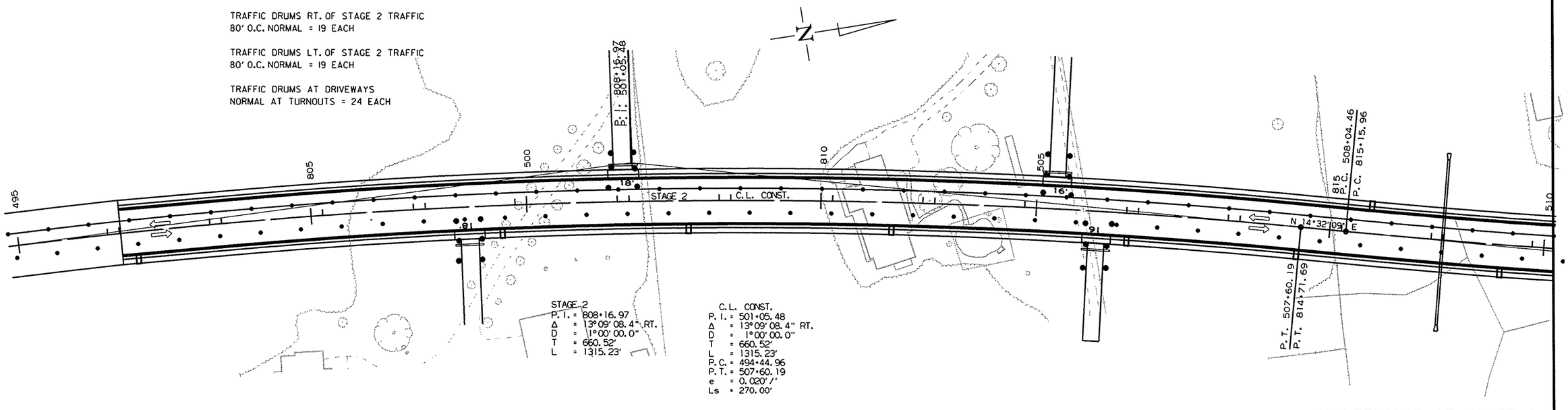
STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 24 EACH



STAGE 2
P.I. = 808+16.97
Δ = 13°09' 08.4" RT.
D = 1°00' 00.0"
T = 660.52'
L = 1315.23'

C.L. CONST.
P.I. = 501+05.48
Δ = 13°09' 08.4" RT.
D = 1°00' 00.0"
T = 660.52'
L = 1315.23'
P.C. = 494+44.96
P.T. = 507+60.19
e = 0.020'/'
Ls = 270.00'

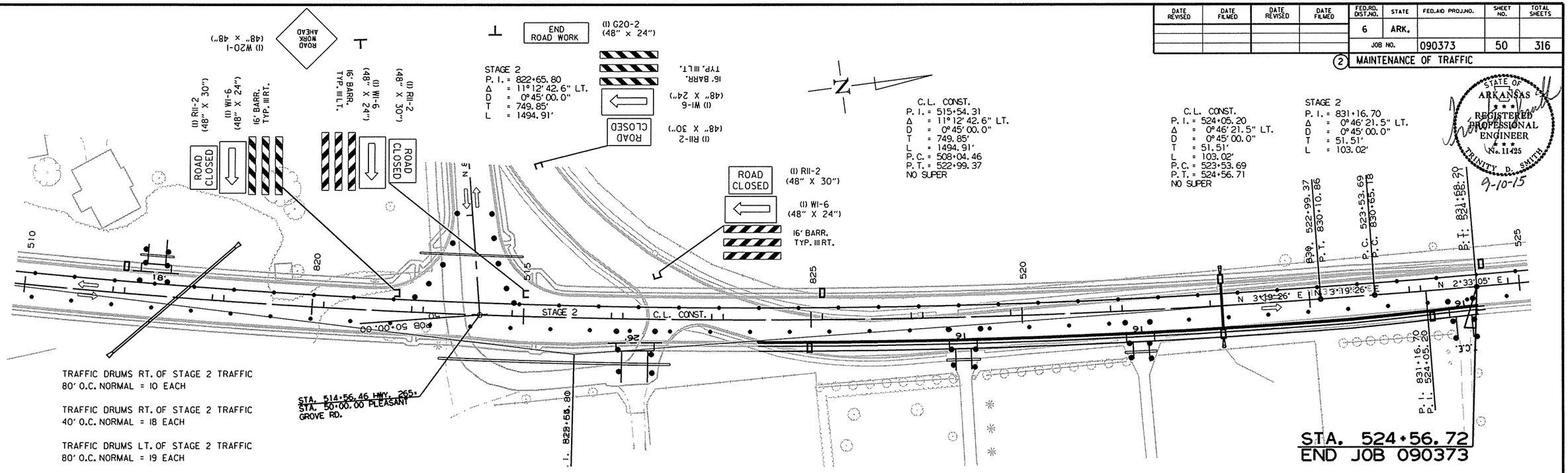
MAINTENANCE OF TRAFFIC
STAGE 2

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC

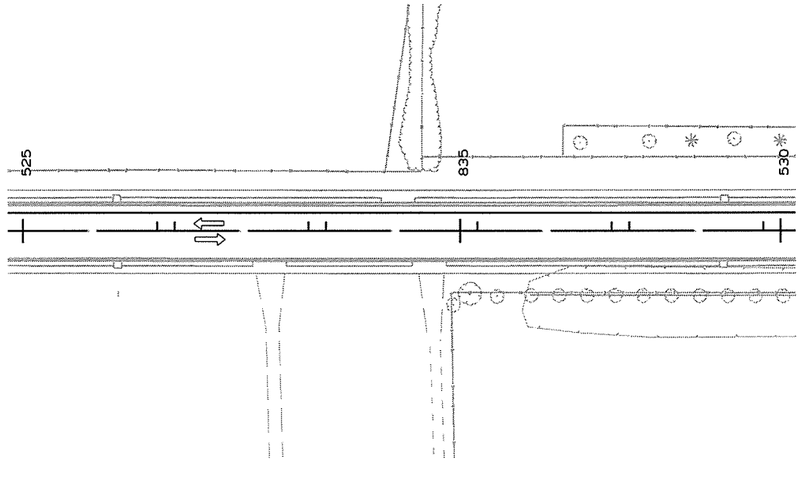


TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 10 EACH

TRAFFIC DRUMS RT. OF STAGE 2 TRAFFIC
40' O.C. NORMAL = 18 EACH

TRAFFIC DRUMS LT. OF STAGE 2 TRAFFIC
80' O.C. NORMAL = 19 EACH

TRAFFIC DRUMS AT DRIVEWAYS
NORMAL AT TURNOUTS = 40 EACH



NOTE:
THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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.

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. REMOVE EXISTING CULVERTS AND CONSTRUCT NEW CULVERTS. EXTEND R.C. BOX CULVERT RT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. PLACE CONSTRUCTION PAVEMENT MARKINGS. NOTCH AND WIDEN RIGHT SIDE. UTILIZE VERTICAL PANELS AT THE NOTCH AT 40' O.C. SPACING. CONSTRUCT FULL BUILD ON NEW LOCATION AND CONSTRUCT BRIDGE.

STAGE 2: NOTCH AND WIDEN LT. SIDE AND UTILIZE VERTICAL PANELS. UTILIZE TRAFFIC DRUMS AT 40' O.C. SPACING AT EXISTING LANE EDGE ON RT. EXTEND R.C. BOX CULVERT LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

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MAINTENANCE OF TRAFFIC
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	51	316

(2) PERMANENT PAVEMENT MARKING DETAILS



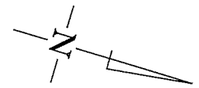
BIKE EMBLEMS

PERMANENT PAVEMENT MARKING QUANTITIES:
THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 5785 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (4) = 51431 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 3994 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WORDS = 3 EACH
THERMOPLASTIC PAVEMENT MARKING ARROWS = 3 EACH
THERMOPLASTIC PAVEMENT MARKING BIKE EMBLEMS = 93 EACH

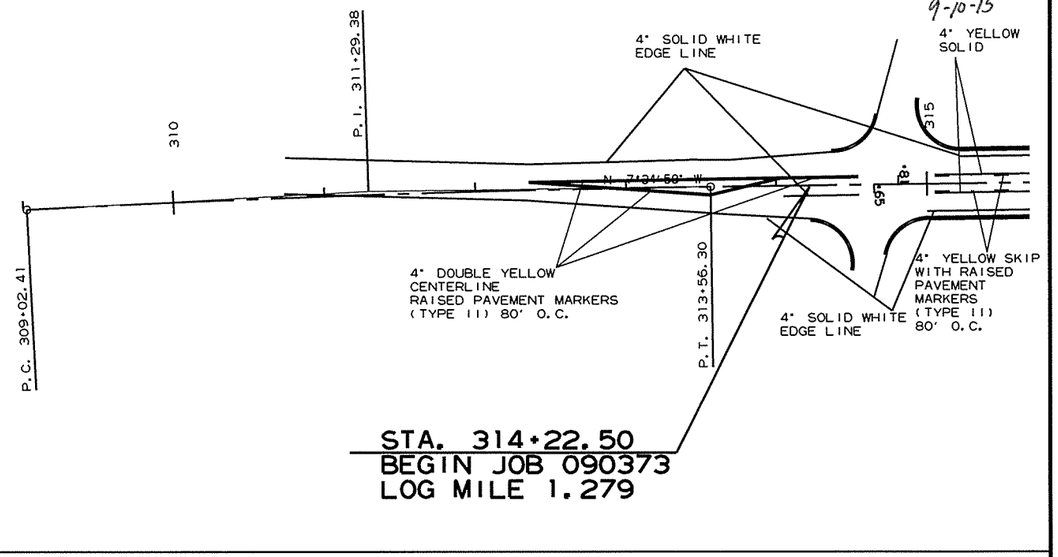
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4") = 1780 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.) (YEL./YEL.) = 487 EACH

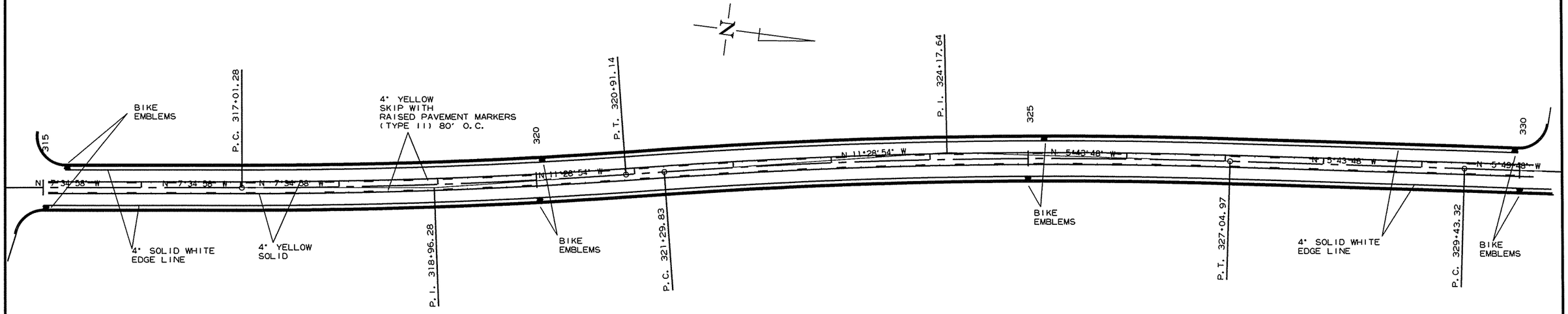
THE 4" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.



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STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279



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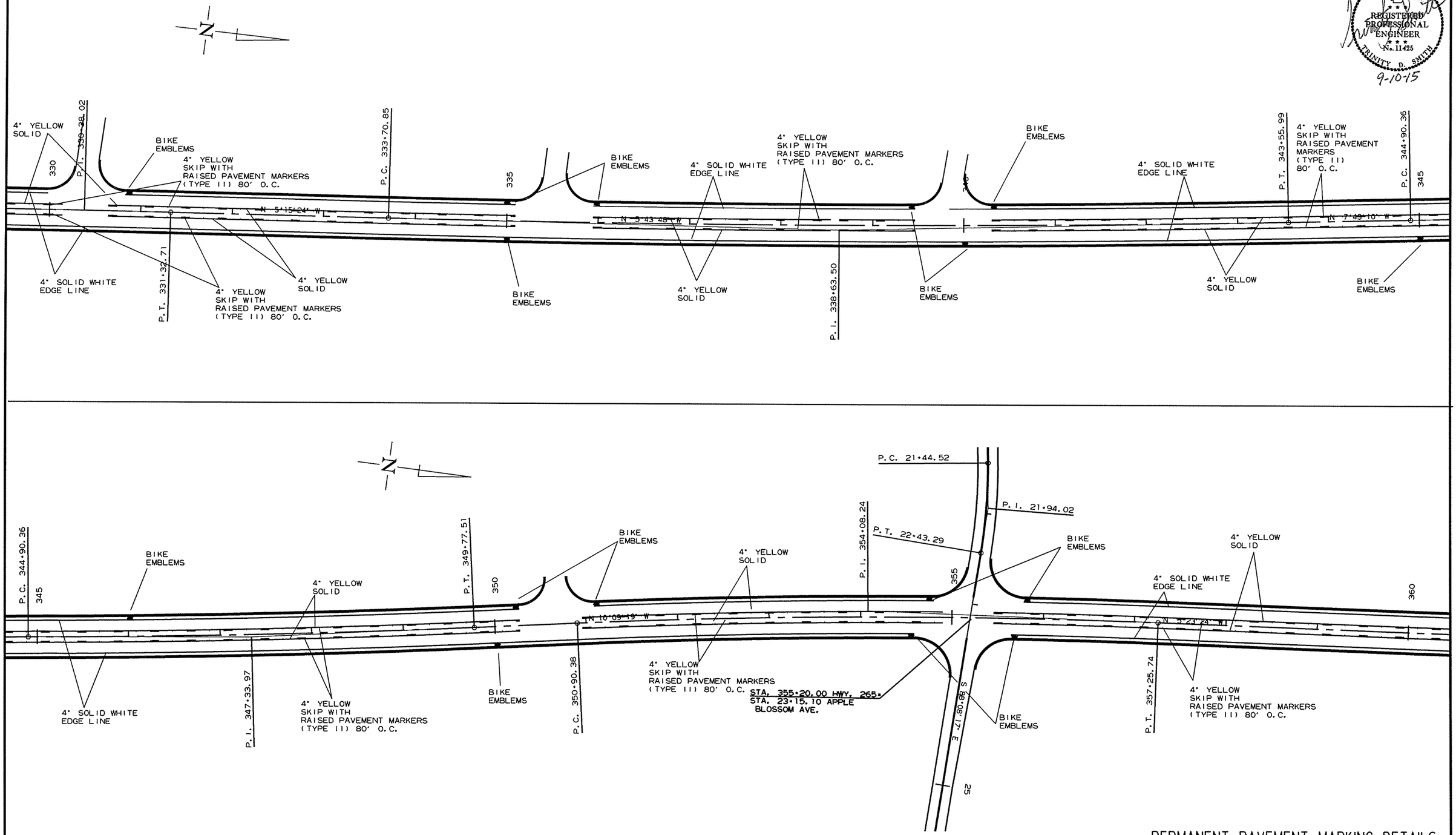
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PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	52	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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PERMANENT PAVEMENT MARKING DETAILS

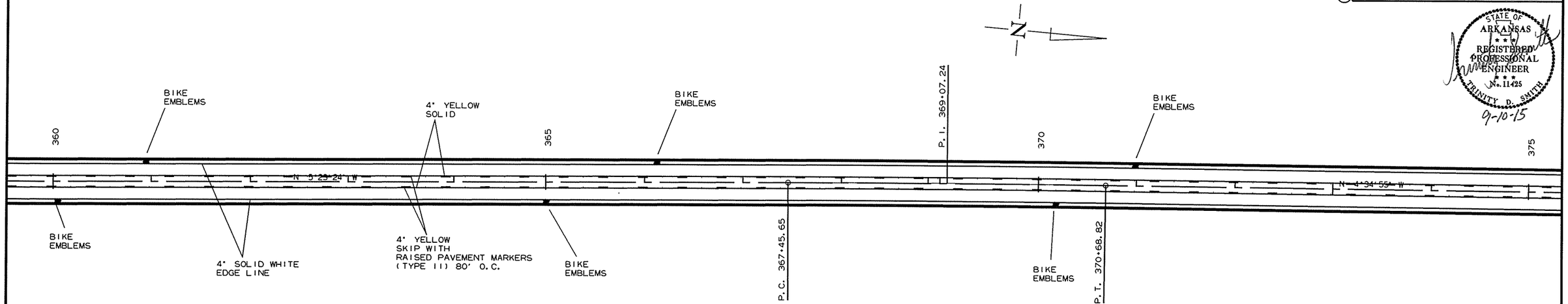
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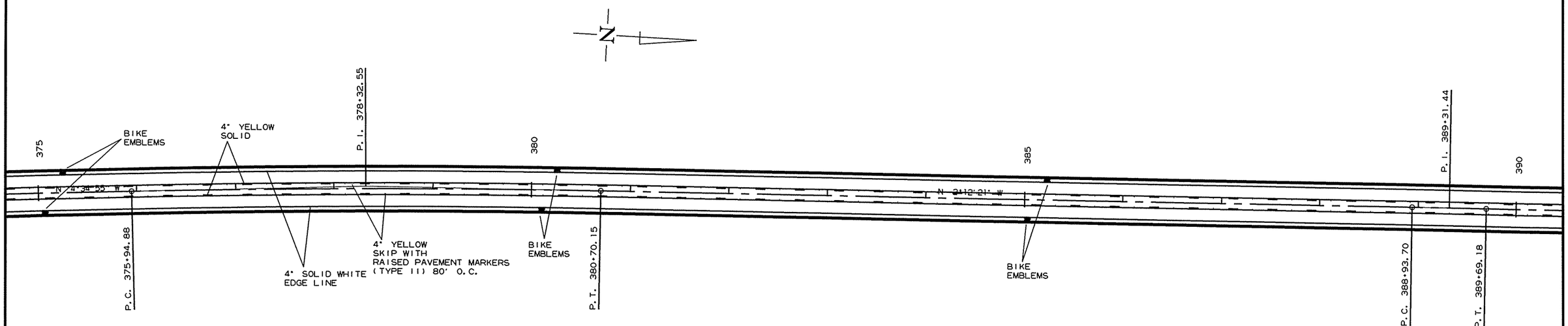
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	53	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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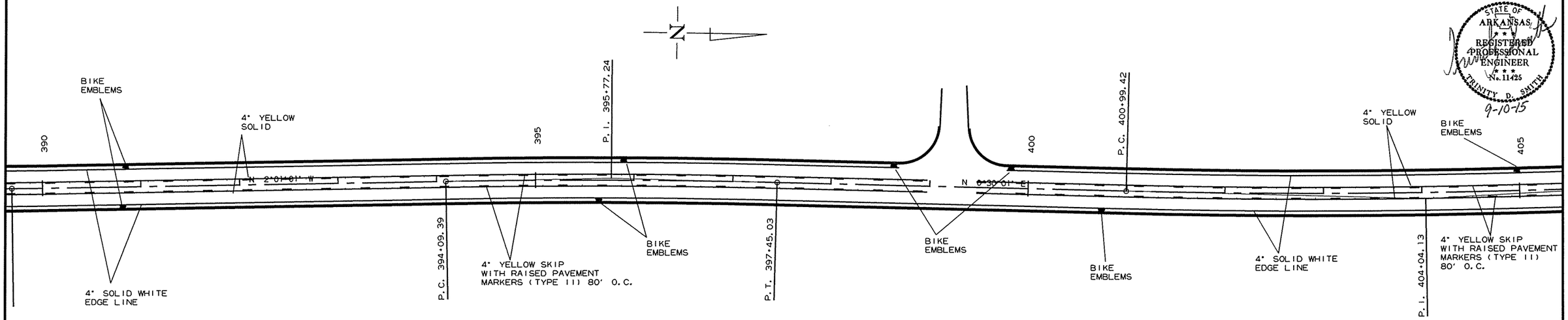
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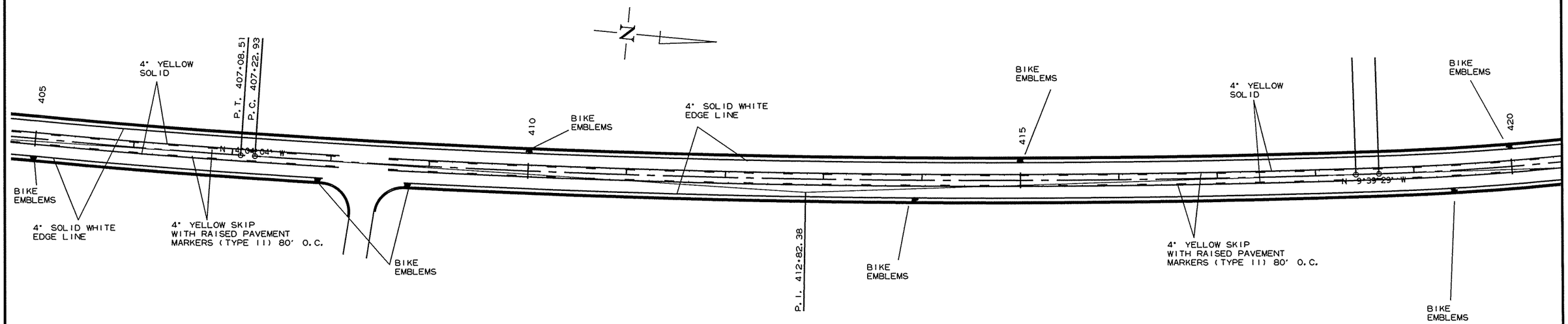
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	54	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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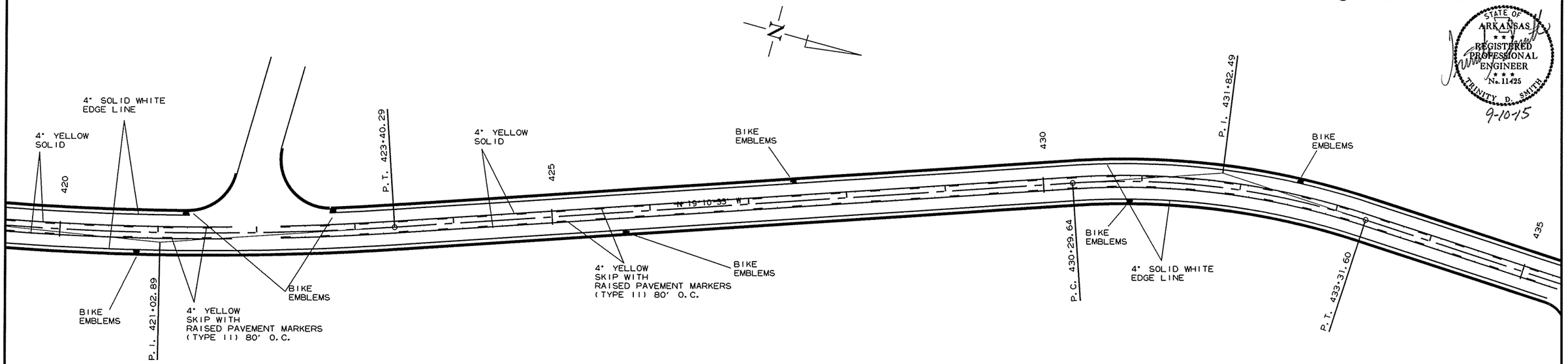
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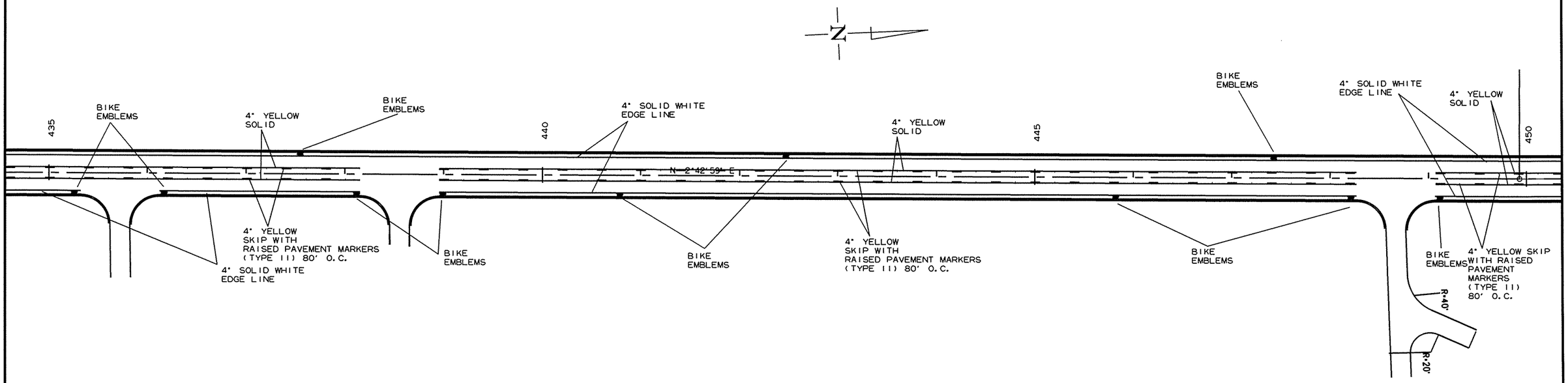
PERMANENT PAVEMENT MARKING DETAILS

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.		090373	55	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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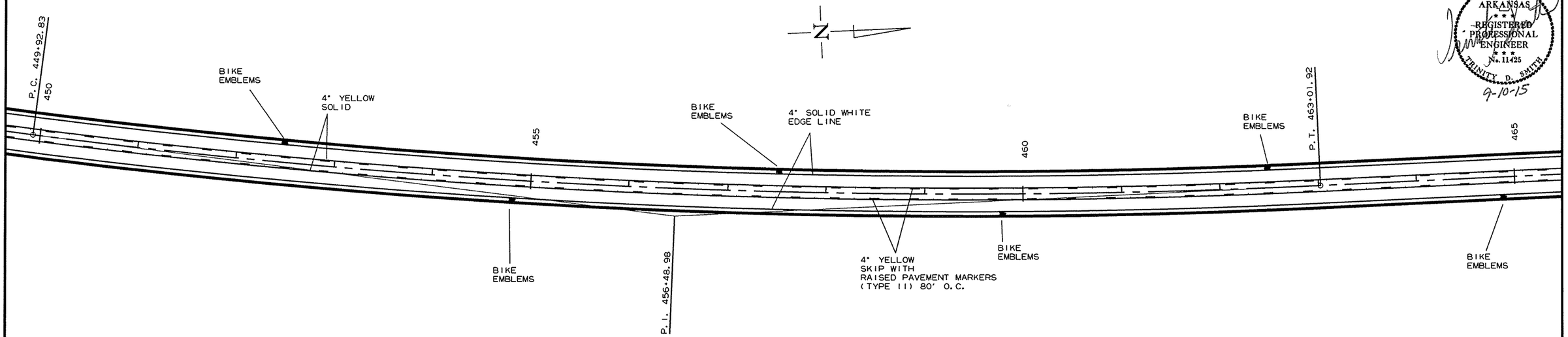
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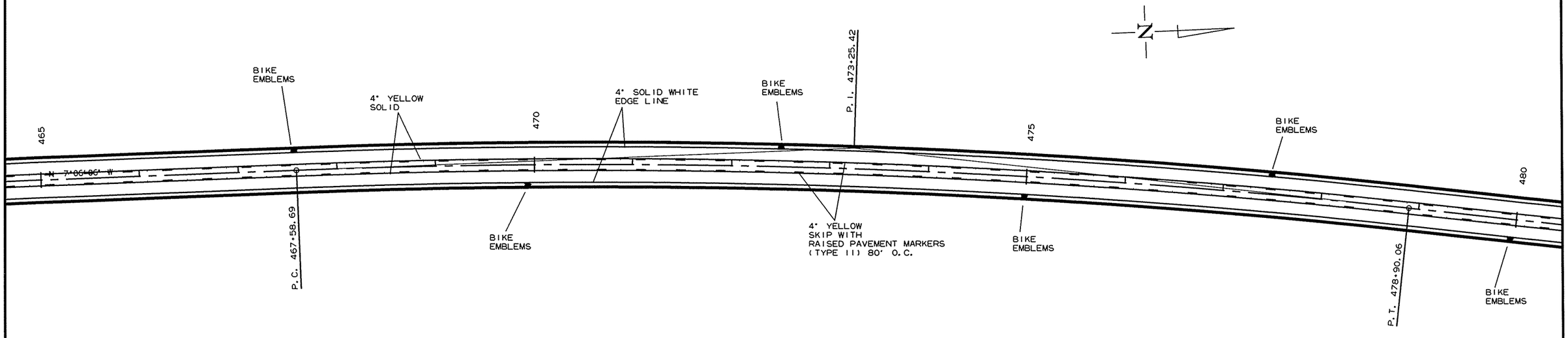
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	56	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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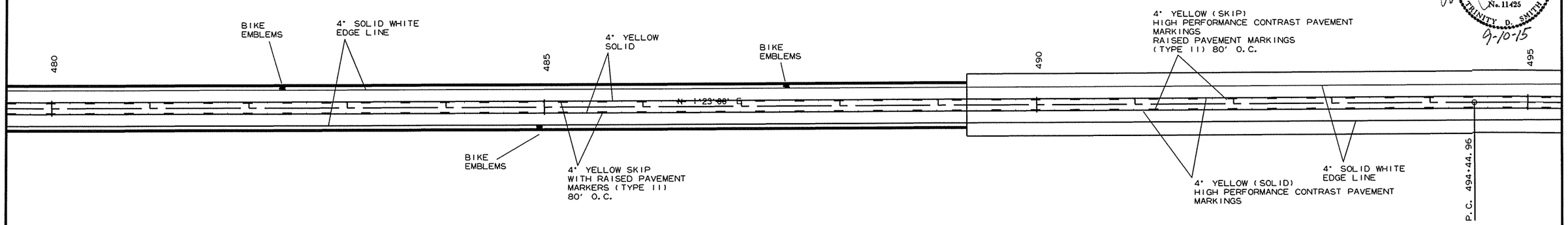
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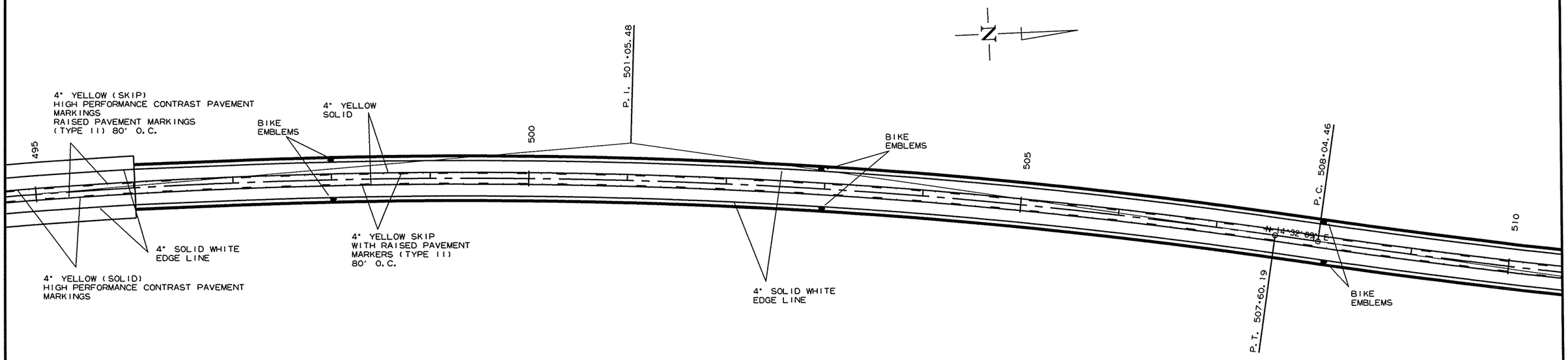
PERMANENT PAVEMENT MARKING DETAILS

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.		090373	57	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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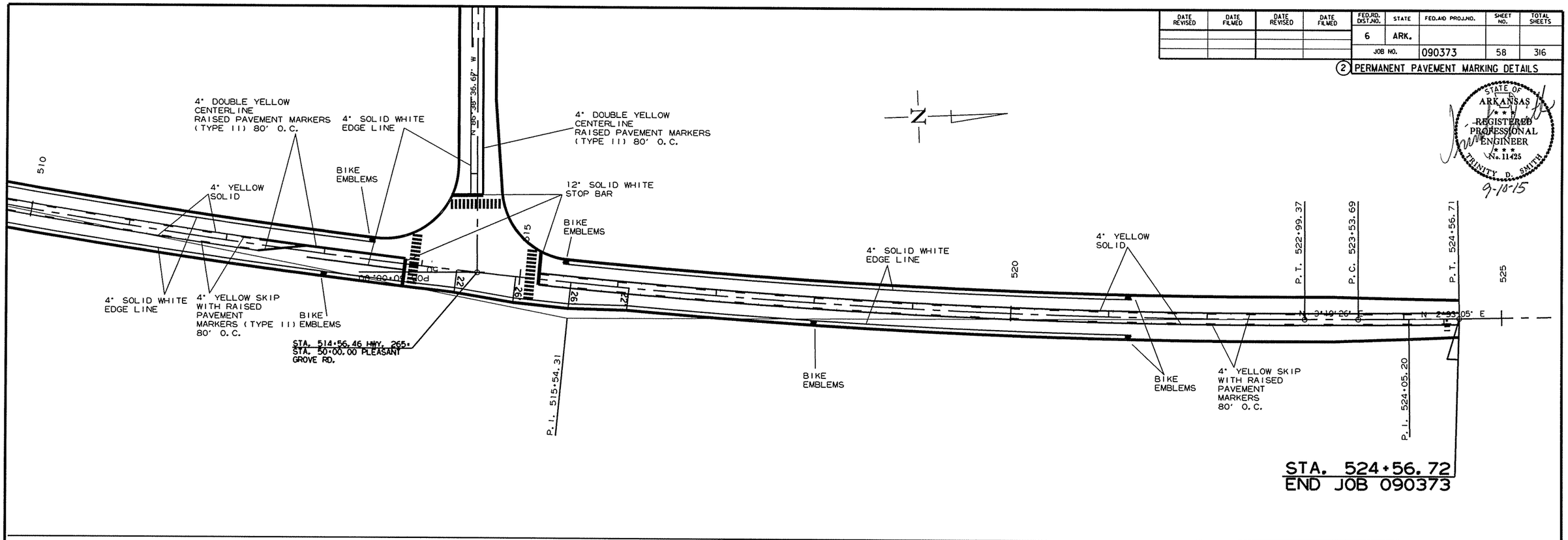
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PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	58	316

(2) PERMANENT PAVEMENT MARKING DETAILS



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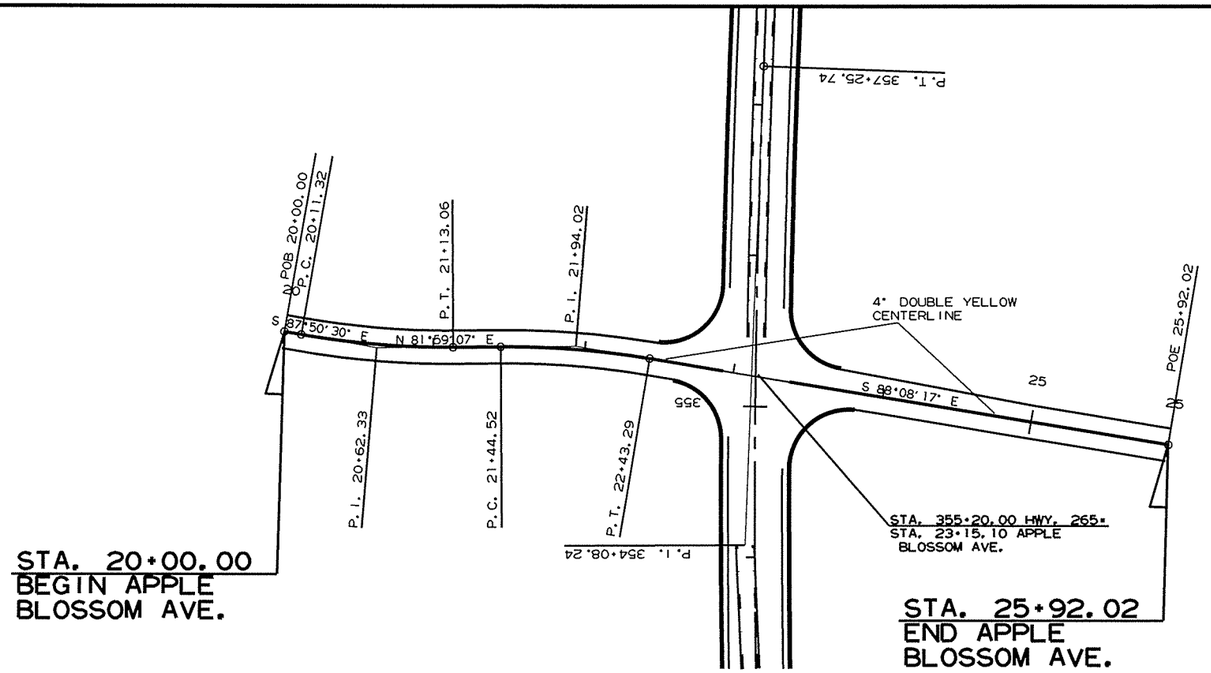
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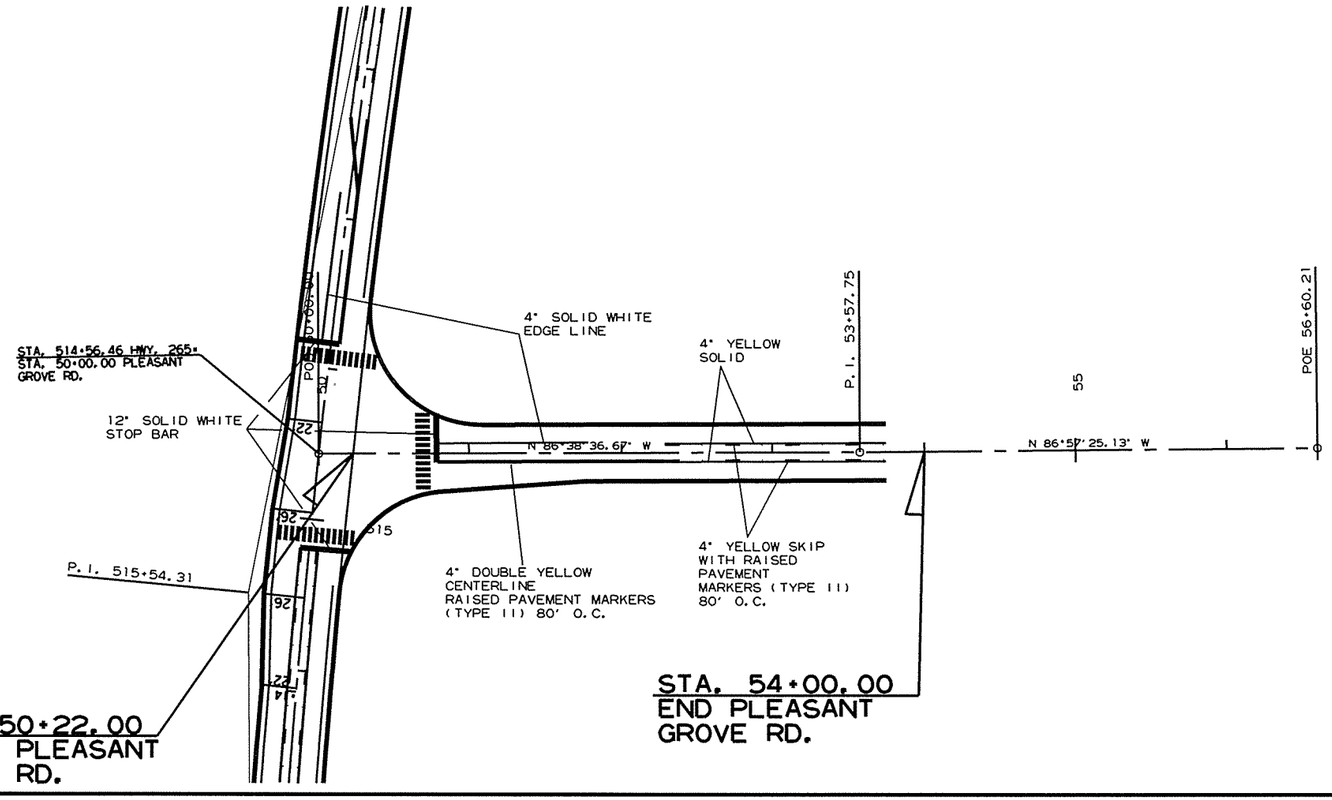
PERMANENT PAVEMENT MARKING DETAILS

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				6	ARK.			
				JOB NO.		090373	59	316

(2) PERMANENT PAVEMENT MARKING DETAILS

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No. 11425
TRINITY D. SMITH
9-10-15





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PERMANENT PAVEMENT MARKING DETAILS

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				6	ARK.			
				JOB NO.		090373	60	316

(2) QUANTITIES

STATE OF ARKANSAS
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TRINITY D. SMITH
9-10-15

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER
											RIGHT	LEFT		
			LIN. FT. - EACH				NO.	SQ. FT.	EACH				LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	4	64.0						
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	4	64.0						
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	4	64.0						
W20-1	ROAD WORK AHEAD	48"x48"	14	15		15	15	240.0						
G20-2	END ROAD WORK	48"x24"	18	19	4	19	19	152.0						
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	2	2	20.0						
R11-2	ROAD CLOSED	48"x30"	14	33		33	33	330.0						
OM-3L	OBJECT MARKER	12"x36"	3	3		3	3	9.0						
OM-3R	OBJECT MARKER	12"x36"	4	4		4	4	12.0						
W1-6	LARGE ARROW	48"x24"		31		31	31	248.0						
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0						
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	2	20.0						
	VERTICAL PANELS		331	146		331			331					
	TRAFFIC DRUMS		473	1288		1288				1288				
	TYPE III BARRICADE-RT. (16')		9	17		17					272			
	TYPE III BARRICADE-LT. (16')		9	16		16						256		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		326			326							326	
	RELOCATING PRECAST CONCRETE BARRIER			326		326								326
TOTALS:								1233.0	331	1288	272	256	326	326

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

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. 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	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING						HIGH PERFORMANCE CONTRAST PAVEMENT MARKING
								TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	12" WHITE	WORDS	ARROWS	BIKE EMBLEMS	4" YELLOW
	LIN. FT. - EACH			LIN. FT.		LIN. FT.		EACH	LIN. FT.			EACH			LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS		800		800											
CONSTRUCTION PAVEMENT MARKINGS	84136	84136			168272										
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		2800				2800									
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2690						2690								
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			487					487							
THERMOPLASTIC PAVEMENT MARKING WHITE (4")			5785						5785						
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")			51431							51431					
THERMOPLASTIC PAVEMENT MARKING WHITE (12")			3994								3994				
THERMOPLASTIC PAVEMENT MARKING WORDS			3									3			
THERMOPLASTIC PAVEMENT MARKING ARROWS			3										3		
THERMOPLASTIC PAVEMENT MARKING BIKE EMBLEMS			93											93	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")			1780												1780
TOTALS:				800	168272	2800	2690	487	5785	51431	3994	3	3	93	1780

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

8/25/2015

R090373.DGN

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	BRICK COLUMNS	ROCK COLUMNS	POSTS	BRICK WALLS	CONCRETE PAVEMENT	WELL	CONCRETE DRIVEWAYS	WALKS	SIDEWALKS	FOUNDATIONS	SIGN FOUNDATIONS	CANOPY	LUMINAIRE POLES	SEPTIC SYSTEM	BUILDINGS	CATTLE GUARD	SWIMMING POOL	SIGNS	PLANTERS
			LIN. FT.	EACH			LIN. FT.	SQ. YD.	EACH	SQ. YD.	SQ. YD.		SQ. YD.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
317+90	319+85	HWY. 265 LT.			16																	
318+15		HWY. 265 LT.																				1
319+88		HWY. 265 RT.								102												
319+95		HWY. 265 LT.								50												
320+10	320+90	HWY. 265 LT.			4																	
320+16		HWY. 265 LT.																				1
330+08	330+28	HWY. 265 LT.	38																			
330+53	330+69	HWY. 265 LT.	40																			
330+78		HWY. 265 LT.												2							1	
335+11	335+42	HWY. 265 LT.	42																			
335+62	335+85	HWY. 265 LT.	37																			
335+69		HWY. 265 LT.									3											
335+79		HWY. 265 LT.														1						
335+91	336+51	HWY. 265 LT.					60															
338+51		HWY. 265 LT.								46												
339+52	339+75	HWY. 265 LT.	29																			
339+70		HWY. 265 LT.									2											
340+01	340+18	HWY. 265 LT.	32																			
341+06		HWY. 265 LT.								40												
354+61		HWY. 265 LT.											23									
354+73		HWY. 265 RT.												2							1	
355+27		HWY. 265 LT.											20									
359+28		HWY. 265 RT.																				1
366+57		HWY. 265 RT.													1							
368+03		HWY. 265 RT.								103												
368+65		HWY. 265 LT.				1																
375+94		HWY. 265 RT.												2							1	
386+95		HWY. 265 LT.																	1			
393+73		HWY. 265 RT.								101												
394+28		HWY. 265 RT.								113												
395+85		HWY. 265 RT.								71												
397+91		HWY. 265 RT.								84												
398+57		HWY. 265 LT.						29														
398+81	399+07	HWY. 265 LT.	48																			
398+83		HWY. 265 LT.												1							1	
399+38	399+65	HWY. 265 LT.	45																			
399+62		HWY. 265 LT.												1							1	
400+00	402+00	HWY. 265 LT.		5																		
400+08		HWY. 265 LT.								85												
401+94		HWY. 265 RT.								81												
403+51		HWY. 265 RT.								88												
404+30		HWY. 265 RT.								92												
405+09		HWY. 265 LT.					10															
405+37		HWY. 265 LT.					10															
406+19		HWY. 265 RT.								94												
408+20		HWY. 265 RT.	22																			
408+45		HWY. 265 LT.												2							1	
408+74		HWY. 265 LT.															1	1				
409+02		HWY. 265 LT.								12												
411+05		HWY. 265 RT.								144												
411+80		HWY. 265 LT.							1									1				
412+30		HWY. 265 LT.				1																
414+05		HWY. 265 LT.				1																
414+62		HWY. 265 LT.				1																
415+30		HWY. 265 LT.																			1	
416+05		HWY. 265 LT.																				1
416+34		HWY. 265 LT.																				1
416+50		HWY. 265 LT.																				1
416+63		HWY. 265 LT.																				1
416+92		HWY. 265 LT.																				1
417+22		HWY. 265 LT.																				1
417+56		HWY. 265 LT.																				1
417+79	418+19	HWY. 265 RT.									14											
418+20		HWY. 265 RT.															1	1				
418+88		HWY. 265 LT.																1				
422+06		HWY. 265 RT.															1	1				
422+06		HWY. 265 RT.																1				
433+43		HWY. 265 RT.																				1
433+73		HWY. 265 RT.								56												
436+06		HWY. 265 RT.																				1
436+06		HWY. 265 RT.							1													
436+68		HWY. 265 RT.								76												
436+50	437+16	HWY. 265 RT.																				1
438+13		HWY. 265 RT.							1							1						1
439+52		HWY. 265 RT.								101												
440+05		HWY. 265 RT.		1																		
440+27		HWY. 265 RT.		1																		
443+33		HWY. 265 LT.								34												
444+19		HWY. 265 LT.																			1	
444+69		HWY. 265 LT.																			1	
445+53		HWY. 265 RT.								98												
446+95		HWY. 265 RT.		2																		
446+97		HWY. 265 RT.																			1	
448+27		HWY. 265 LT.															1	1				
449+34		HWY. 265 LT.															1	1				
450+11		HWY. 265 LT.															1	1				
450+71		HWY. 265 RT.																1				
463+76		HWY. 265 LT.											99									
467+50		HWY. 265 LT.																1				
467+90		HWY. 265 LT.																1				
468+06		HWY. 265 LT.																	1			
469+20		HWY. 265 RT.															1	1				
470+00		HWY. 265 RT.																1				
470+40		HWY. 265 LT.																1				
470+83		HWY. 265 LT.																1				
503+44		HWY. 265 RT.								180							1	1				
503+85		HWY. 265 LT.														1						
504+44		HWY. 265 RT.																		1		
504+77		HWY. 265 LT.											41									
512+57		HWY. 265 LT.											31									
515+42	516+25	HWY. 265 RT.	136									56										
515+42	524+57	HWY. 265 LT.	950									528										
516+43	524+57	HWY. 265 RT.	836									444										
519+41		HWY. 265 RT.								63												
521+17		HWY. 265 RT.								100												
50+72	52+23	PLEASANT GROVE ROAD LT.	190									103										
51+26	53+75	PLEASANT GROVE ROAD LT.	265									147										
52+42	53+75	PLEASANT GROVE ROAD RT.	139									70										
TOTALS:			2849	9	20	4	80	29	3	2014	19	1348	214	10	1	3	8	17	2	1	10	14

QUANTITIES

(2) QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROL DES.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	090373	61	316

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11485
KENNETH D. SMITH
9-10-15

REMOVAL AND DISPOSAL OF FENCE & GATES

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
315+04	317+91	LT. OF C.L.	325	
320+42	328+33	LT. OF C.L.	817	
333+60	335+20	LT. OF C.L.	160	
335+70	338+40	LT. OF C.L.	270	
341+63	346+46	LT. OF C.L.	490	
347+60	348+43	LT. OF C.L.	98	
351+61	353+64	LT. OF C.L.	238	
355+27	357+75	LT. OF C.L.	295	
359+68	360+88	LT. OF C.L.	137	
359+74	359+76	LT. OF C.L.	24	
366+08	366+15	LT. OF C.L.	49	
366+08	368+58	LT. OF C.L.	256	
376+40	376+48	LT. OF C.L.	49	
376+40	386+80	LT. OF C.L.	1039	
395+15	397+93	LT. OF C.L.	285	
399+90	402+25	LT. OF C.L.	256	
401+92	402+70	LT. OF C.L.	94	
403+64	404+35	LT. OF C.L.	105	
405+40	408+30	LT. OF C.L.	319	
415+97	416+00	LT. OF C.L.	25	
422+87	427+10	LT. OF C.L.	442	
426+26	429+98	LT. OF C.L.	399	
435+50		LT. OF C.L.	20	
439+20	442+15	LT. OF C.L.	367	
440+10		LT. OF C.L.	38	
446+43	446+44	LT. OF C.L.	39	
446+45	448+55	LT. OF C.L.	240	
451+02	451+06	LT. OF C.L.	65	
461+67	461+73	LT. OF C.L.	54	
465+17	466+67	LT. OF C.L.	132	
466+44	467+27	LT. OF C.L.	172	
467+73	468+26	LT. OF C.L.	18	
469+24	469+80	LT. OF C.L.	123	
470+84	470+95	LT. OF C.L.	87	
479+62	479+55	LT. OF C.L.	81	
501+08	501+19	LT. OF C.L.	121	
505+25	505+50	LT. OF C.L.	114	
507+67	507+91	LT. OF C.L.	113	
513+37	514+03	LT. OF C.L.	115	
514+52	524+59	LT. OF C.L.	1214	
320+83	332+48	RT. OF C.L.	1232	
342+02		RT. OF C.L.		1
368+54	370+14	RT. OF C.L.	190	
370+12	370+95	RT. OF C.L.	131	
370+95	375+40	RT. OF C.L.	485	
376+70	383+90	RT. OF C.L.	756	
386+45	391+50	RT. OF C.L.	550	
391+77	392+21	RT. OF C.L.	86	
408+67	412+52	RT. OF C.L.	174	
416+00	417+60	RT. OF C.L.	234	
420+35	421+80	RT. OF C.L.	254	
422+68	422+87	RT. OF C.L.	59	
428+61	433+39	RT. OF C.L.	547	
429+87	427+44	RT. OF C.L.	69	
435+46		RT. OF C.L.	13	
450+25	458+55	RT. OF C.L.	870	
450+63	451+50	RT. OF C.L.	110	
452+20	452+22	RT. OF C.L.	51	
454+66	454+72	RT. OF C.L.	46	
461+52	461+67	RT. OF C.L.	65	
466+67	467+14	RT. OF C.L.	54	
468+26	468+54	RT. OF C.L.	106	
469+18	469+24	RT. OF C.L.	42	
469+65	469+80	RT. OF C.L.	51	
469+83	469+95	RT. OF C.L.	39	
470+73	470+84	RT. OF C.L.	92	
478+74	479+78	RT. OF C.L.	122	
479+61	479+62	RT. OF C.L.	69	
483+10	483+25	RT. OF C.L.	63	
501+19	501+26	RT. OF C.L.	81	
505+50	505+74	RT. OF C.L.	100	
507+91	508+05	RT. OF C.L.	75	
514+74	516+02	RT. OF C.L.	136	
516+30	516+28	RT. OF C.L.	187	
521+02	522+91	RT. OF C.L.	203	
TOTALS:			16627	1

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS
		EACH	EACH
312+94	12" X 25' C.M. PIPE CULVERT ON LT.	1	
313+19	12" X 18' C.M. PIPE CULVERT ON LT.	1	
314+66	12" X 27' C.M. PIPE CULVERT ON LT.	1	
319+83	12" X 24' C.M. PIPE CULVERT ON LT.	1	
322+32	18" X 26' C.M. PIPE CULVERT ON LT.	1	
325+29	18" X 26' C.M. PIPE CULVERT ON LT.	1	
326+35	18" X 26' C.M. PIPE CULVERT ON LT.	1	
330+39	18" X 70' C.M. PIPE CULVERT ON LT.	1	
333+48	24" X 47' C.M. PIPE CULVERT	1	
333+52	24" X 47' C.M. PIPE CULVERT	1	
333+87	16" X 36' C.M. PIPE CULVERT ON RT.	1	
335+49	16" X 70' C.M. PIPE CULVERT ON LT.	1	
338+49	16" X 24' C.M. PIPE CULVERT ON LT.	1	
339+85	16" X 56' C.M. PIPE CULVERT ON LT.	1	
341+06	16" X 26' C.M. PIPE CULVERT ON LT.	1	
342+00	16" X 26' C.M. PIPE CULVERT ON RT.	1	
346+86	24" X 36' C.M. PIPE CULVERT ON LT.	1	
347+53	16" X 24' C.M. PIPE CULVERT ON LT.	1	
350+66	15" X 54' R.C. PIPE CULVERT ON LT.	1	
355+00	16" X 39' C.M. PIPE CULVERT ON LT.	1	
355+14	24" X 39' C.M. PIPE CULVERT ON RT.	1	
358+34	16" X 82' C.M. PIPE CULVERT ON LT.	1	
358+59	16" X 24' C.M. PIPE CULVERT ON RT.	1	
359+05	16" X 26' C.M. PIPE CULVERT ON LT.	1	
359+59	24" X 26' C.M. PIPE CULVERT ON RT.	1	
359+67	16" X 25' C.M. PIPE CULVERT ON LT.	1	
360+86	24" X 26' C.M. PIPE CULVERT ON RT.	1	
361+07	16" X 26' C.M. PIPE CULVERT ON LT.	1	
361+77	16" X 26' C.M. PIPE CULVERT ON LT.	1	
362+16	16" X 26' C.M. PIPE CULVERT ON LT.	1	
262+29	24" X 26' C.M. PIPE CULVERT ON RT.	1	
363+28	24" X 26' C.M. PIPE CULVERT ON RT.	1	
363+44	16" X 26' C.M. PIPE CULVERT ON LT.	1	
363+96	24" X 26' C.M. PIPE CULVERT ON RT.	1	
364+53	24" X 26' C.M. PIPE CULVERT ON RT.	1	
365+94	36" X 68' C.M. PIPE CULVERT	1	
365+99	24" X 24' C.M. PIPE CULVERT ON LT.	1	
366+02	36" X 68' C.M. PIPE CULVERT	1	
366+10	36" X 68' C.M. PIPE CULVERT	1	
366+63	16" X 24' C.M. PIPE CULVERT ON RT.	1	
368+75	36" X 30' C.M. PIPE CULVERT ON LT.	3	
370+02	16" X 26' C.M. PIPE CULVERT ON RT.	1	
371+51	16" X 20' C.M. PIPE CULVERT ON RT.	1	
373+00	16" X 19' C.M. PIPE CULVERT ON RT.	1	
373+96	16" X 26' C.M. PIPE CULVERT ON RT.	1	
374+91	16" X 20' C.M. PIPE CULVERT ON RT.	1	
376+58	16" X 26' C.M. PIPE CULVERT ON RT.	1	
381+57	16" X 26' C.M. PIPE CULVERT ON RT.	1	
385+71	42" X 52' C.M. PIPE CULVERT	1	
385+78	42" X 52' C.M. PIPE CULVERT	1	
385+84	42" X 52' C.M. PIPE CULVERT	1	
393+74	18" X 23' R.C. PIPE CULVERT ON RT.	1	
394+27	18" X 31' R.C. PIPE CULVERT ON RT.	1	
395+84	18" X 23' R.C. PIPE CULVERT ON RT.	1	
397+95	18" X 31' R.C. PIPE CULVERT ON RT.	1	
399+22	18" X 30" X 24' C.M. ARCH PIPE CULVERT ON LT.	2	
400+08	12" X 19' R.C. PIPE CULVERT ON RT.	1	
401+94	12" X 19' R.C. PIPE CULVERT ON RT.	1	
402+19	12" X 49' C.M. PIPE CULVERT ON LT.	1	
403+16	16" X 84' C.M. PIPE CULVERT ON LT.	1	
403+52	12" X 19' R.C. PIPE CULVERT ON RT.	1	
404+31	12" X 19' R.C. PIPE CULVERT ON RT.	1	
405+24	16" X 36' C.M. PIPE CULVERT ON LT.	1	
406+21	12" X 39' C.M. PIPE CULVERT ON RT.	1	
411+08	12" X 38' R.C. PIPE CULVERT ON RT.	1	
412+02	12" X 30' C.M. PIPE CULVERT ON LT.	1	
412+80	24" X 15" X 31' C.M. ARCH PIPE CULVERT	1	
412+88	24" X 15" X 31' C.M. ARCH PIPE CULVERT	1	
413+72	12" X 25' R.C. PIPE CULVERT ON LT.	1	
414+07	18" X 18' C.M. PIPE CULVERT ON RT.	1	
414+60	12" X 61' R.C. PIPE CULVERT ON LT.	1	
415+90	12" X 26' R.C. PIPE CULVERT ON RT.	1	
416+19	12" X 20' C.M. PIPE CULVERT ON LT.	1	
417+11	12" X 16' C.M. PIPE CULVERT ON LT.	1	
418+69	16" X 30' C.M. PIPE CULVERT ON LT.	1	
420+43	12" X 98' C.M. PIPE CULVERT ON LT.	1	
425+55	18" X 26' C.M. PIPE CULVERT	1	
426+11	18" X 25' C.M. PIPE CULVERT	1	
427+31	15" X 24' C.M. PIPE CULVERT ON LT.	1	
432+45	18" X 30' C.M. PIPE CULVERT ON LT.	1	
433+08	18" X 36' R.C. PIPE CULVERT ON LT.	1	
433+73	12" X 21' C.M. PIPE CULVERT ON RT.	1	
434+56	18" X 21' R.C. PIPE CULVERT ON LT.	1	
435+72	15" X 33' C.M. PIPE CULVERT ON RT.	1	
436+39	9" X 21' C.M. PIPE CULVERT ON RT.	1	
440+71	12" X 42' C.M. PIPE CULVERT ON LT.	1	
443+32	12" X 22' R.C. PIPE CULVERT ON LT.	1	
444+47	12" X 46' C.M. PIPE CULVERT ON LT.	1	
445+53	12" X 26' R.C. PIPE CULVERT ON RT.	1	
446+09	18" X 20' C.M. PIPE CULVERT ON RT.	1	
446+96	18" X 35' C.M. PIPE CULVERT	1	
448+66	18" X 60' C.M. PIPE CULVERT ON RT.	1	
448+74	18" X 50' C.M. PIPE CULVERT ON RT.	1	
516+16	18" X 53' R.C. PIPE CULVERT ON LT.	1	
516+31	DROP INLET ON LT.		1
517+00	18" X 144' R.C. PIPE CULVERT ON LT.	1	
517+68	DROP INLET ON LT.		1
518+33	18" X 126' R.C. PIPE CULVERT ON LT.	1	
518+98	DROP INLET ON LT.		1
520+48	18" X 299' R.C. PIPE CULVERT ON LT.	1	
521+98	18" X 20' R.C. PIPE CULVERT ON LT.	1	
521+99	DROP INLET ON LT.		1
521+99	18" X 40' R.C. PIPE CULVERT	1	
522+00	DROP INLET ON RT.		1
522+00	18" X 12' R.C. PIPE CULVERT ON RT.	1	
523+31	18" X 263' R.C. PIPE CULVERT ON LT.	1	
53+31	18" X 15' R.C. PIPE CULVERT ON RT.	1	
53+31	DROP INLET ON RT.		1
TOTALS:		105	6

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

QUANTITIES

(2) QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	090373	62	316

JOB NO.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11,495
TRINITY D. SMITH
9-10-15

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.		090373	63	316

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
314+00	321+00	HWY. 265	7	7
323+00	331+00	HWY. 265	8	8
332+00	333+00	HWY. 265	1	1
334+00	335+00	HWY. 265	1	1
341+00	347+00	HWY. 265	6	6
348+00	352+00	HWY. 265	4	4
355+00	396+00	HWY. 265	41	41
399+00	400+00	HWY. 265	1	1
401+00	405+00	HWY. 265	4	4
408+00	414+00	HWY. 265	6	6
415+00	431+00	HWY. 265	16	16
434+00	436+00	HWY. 265	2	2
437+00	451+00	HWY. 265	14	14
452+00	453+00	HWY. 265	1	1
463+00	465+00	HWY. 265	2	2
468+00	471+00	HWY. 265	3	3
479+00	482+00	HWY. 265	3	3
483+00	485+00	HWY. 265	2	2
488+00	505+00	HWY. 265	17	17
507+00	516+00	HWY. 265	9	9
522+00	525+00	HWY. 265	3	3
23+00	25+00	APPLE BLOSSOM AVE.	2	2
TOTALS:			153	153

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
313+22.50	314+22.50	MAIN LANES	22.00	244.44
524+56.72	525+56.72	MAIN LANES	36.00	400.00
19+00.00	20+00.00	APPLE BLOSSOM AVENUE	20.00	222.22
25+92.02	26+92.02	APPLE BLOSSOM AVENUE	20.00	222.22
53+75.07	54+75.07	PLEASANT GROVE ROAD	36.00	400.00
TOTAL:				1488.88

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	100
DIRECTED BY THE ENGINEER	
TOTAL:	100

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	100	200
DIRECTED BY THE ENGINEER		
TOTALS:	100	200

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC....25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
391+61.00	RT. HDWL. OF BOX CULVERT	1
489+28.92	RT. BRIDGE END	1
TOTAL:		2

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
314+22.44	314+50.36	RT. OF C.L.	28
314+70.99	354+97.61	RT. OF C.L.	4027
314+36.86	314+66.30	LT. OF C.L.	29
314+93.67	330+26.31	LT. OF C.L.	1533
330+54.39	335+37.98	LT. OF C.L.	484
335+65.77	339+74.79	LT. OF C.L.	409
340+02.50	350+56.14	LT. OF C.L.	1054
350+79.64	355+15.95	LT. OF C.L.	436
355+42.59	399+07.19	LT. OF C.L.	4365
355+26.67	408+20.41	RT. OF C.L.	5294
399+39.27	421+78.73	LT. OF C.L.	2239
408+48.06	435+60.98	RT. OF C.L.	2713
422+28.69	489+28.92	LT. OF C.L.	6700
435+84.00	438+44.07	RT. OF C.L.	260
438+67.09	448+55.58	RT. OF C.L.	988
448+78.68	489+28.92	RT. OF C.L.	4050
496+01.48	513+94.48	LT. OF C.L.	1793
496+01.48	524+56.71	RT. OF C.L.	2855
514+32.05	524+56.71	LT. OF C.L.	1025
TOTAL:			40282

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3	TYPE 4
		SQ.YD.	
314+88	HWY. 265 RT.	5.5	
315+10	HWY. 265 LT.	5.5	
330+11	HWY. 265 LT.	5.4	
330+70	HWY. 265 LT.	5.4	
335+22	HWY. 265 LT.	5.5	
335+82	HWY. 265 LT.	5.5	
339+60	HWY. 265 LT.	5.4	
340+18	HWY. 265 LT.	5.4	
350+40	HWY. 265 LT.	5.4	
350+97	HWY. 265 LT.	5.4	
354+74	HWY. 265 RT.	5.8	
354+93	HWY. 265 LT.	5.7	
355+50	HWY. 265 RT.	6.0	
355+65	HWY. 265 LT.	5.9	
398+84	HWY. 265 LT.	5.9	
399+63	HWY. 265 LT.	5.9	
408+05	HWY. 265 RT.	5.4	
408+64	HWY. 265 RT.	5.4	
421+48	HWY. 265 LT.	5.9	
422+60	HWY. 265 LT.	6.5	
435+45	HWY. 265 RT.	5.4	
436+00	HWY. 265 RT.	5.4	
438+28	HWY. 265 RT.	5.4	
438+83	HWY. 265 RT.	5.4	
448+39	HWY. 265 RT.	5.7	
448+95	HWY. 265 RT.	5.6	
513+92	HWY. 265 RT.		9.9
513+92	HWY. 265 LT.		11.2
515+12	HWY. 265 RT.		10.0
515+12	HWY. 265 LT.		10.4
50+68	PLEASANT GROVE ROAD LT.		13.2
50+68	PLEASANT GROVE ROAD RT.		9.0
TOTALS:		145.7	63.7

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH		
ENTIRE PROJECT	67	47	10
TOTALS:	67	47	10

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
315+16.46	330+04.95	LT. OF MAIN LANES	1312	729
330+75.87	335+16.33	LT. OF MAIN LANES	440	244
335+87.71	339+53.51	LT. OF MAIN LANES	320	178
340+23.89	350+34.37	LT. OF MAIN LANES	876	487
351+02.78	354+86.88	LT. OF MAIN LANES	384	213
355+71.76	398+77.61	LT. OF MAIN LANES	3800	2111
399+68.78	421+41.57	LT. OF MAIN LANES	1559	866
422+66.09	489+28.92	LT. OF MAIN LANES	6117	3398
496+01.42	513+84.59	LT. OF MAIN LANES	1647	915
513+97.27	514+04.49	LT. OF MAIN LANES	7	4
514+87.40	515+04.40	LT. OF MAIN LANES	17	9
515+15.14	524+56.71	LT. OF MAIN LANES	942	523
314+93.80	354+67.93	RT. OF MAIN LANES	3752	2084
355+56.21	407+98.90	RT. OF MAIN LANES	4079	2266
408+69.54	435+39.17	RT. OF MAIN LANES	2314	1286
436+05.77	438+22.31	RT. OF MAIN LANES	169	94
438+88.85	448+33.39	RT. OF MAIN LANES	665	369
449+00.67	489+28.92	RT. OF MAIN LANES	3832	2129
496+00.78	513+83.60	RT. OF MAIN LANES	1683	935
513+96.90	515+06.48	RT. OF MAIN LANES	110	61
515+19.92	524+56.71	RT. OF MAIN LANES	752	418
50+75.35	53+75.07	LT. OF PLEASANT GROVE ROAD	256	142
50+81.96	53+75.07	RT. OF PLEASANT GROVE ROAD	293	163
TOTALS:				19624

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
314+61	HATCHER ROAD RT.	7.33	25	5.1
314+61	HATCHER ROAD RT.	7.92	22	4.8
330+39	BOB WHITE AVE.	7.92	35	7.7
330+39	BOB WHITE AVE.	7.92	22	4.8
333+51	HWY. 265	25.00	22	15.3
335+50	QUAIL MEADOWS AVE.	7.92	42	9.2
335+50	QUAIL MEADOWS AVE.	7.92	29	6.4
339+89	QUAIL RUN	7.92	34	7.5
350+66	APPLE MEADOWS	7.92	44	9.7
350+66	APPLE MEADOWS	7.92	26	5.7
355+00	APPLE BLOSSOM AVE.	7.92	33	7.3
355+14	APPLE BLOSSOM AVE.	8.50	32	7.6
355+14	APPLE BLOSSOM AVE.	8.50	26	6.1
366+01	HWY. 265	32.00	31	27.6
385+78	HWY. 265	49.08	25	34.1
399+22	SARAH AVE.	15.67	40	17.4
408+35	NAIL AVE.	7.92	26	5.7
412+83	HWY. 265	46.17	20	25.7
425+55	HWY. 265	8.50	20	4.7
426+13	HWY. 265	17.33	20	9.6
446+96	HWY. 265	7.92	26	5.7
522+00	HWY. 265	7.92	35	7.7
TOTAL:				235.4

AVG. DEPTH = 9"

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL	* SOIL STABILIZATION
			CU. YD.			TON
ENTIRE	PROJECT	STAGE 1-MAIN LANES	164695	83123	13392	
ENTIRE	PROJECT	APPROACHES	1550	4310		
ENTIRE	PROJECT	TEMPORARY APPROACHES	150	400		
		APPLE BLOSSOM AVENUE	147	340		
		PLEASANT GROVE ROAD	1778	45		
391+37		CHANNEL CHANGE	150			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE				1000
		DIRECTED BY THE ENGINEER				
TOTALS:			168470	88218	13392	1000

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

8/25/2015

R090373.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	64	316

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

4" PIPE UNDERDRAIN

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

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

CONCRETE BASE

STATION	STATION	LOCATION	PORTLAND CEMENT CONCRETE BASE		
			AVG. AREA.	5" U.T.	5.5" U.T.
			SQ. FT.		SQ. YD.
ENTIRE PROJECT		TO BE USED AT CITY STREET TURNOUTS	4896.00		544.00
		TO BE USED AT CITY STREET TURNOUTS	5400.00	600.00	
TOTAL:				600.00	544.00

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.
ENTIRE PROJECT		TO BE USED IF AND WHERE	1500.00	6.00	1000.00	666.67	8.40
		DIRECTED BY THE ENGINEER					
TOTALS:					1000.00	666.67	8.40

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
433+00.00	436+00.00	HWY. 265 RT.	300.00	266.67
440+71.00	446+00.00	HWY. 265 RT.	529.00	470.22
440+71.00	446+00.00	HWY. 265 LT.	529.00	470.22
468+13.00	480+00.00	HWY. 265 RT.	1187.00	1055.11
503+00.00	505+90.00	HWY. 265 RT.	290.00	257.78
513+00.00	515+00.00	HWY. 265 LT.	200.00	177.78
ENTIRE PROJECT		TO BE USED IF AND WHERE	1000.00	888.89
		DIRECTED BY THE ENGINEER		
TOTAL:				3586.67

NOTE: AVERAGE WIDTH = 8'-0"

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SQ. YDS.
333+50	OUTLET OF PIPE CULVERT	17	33
366+02	OUTLET OF PIPE CULVERT	42	83
385+77	OUTLET OF PIPE CULVERT	63	125
391+37	OUTLET OF PIPE CULVERT	42	83
412+84	OUTLET OF PIPE CULVERT	34	67
425+55	OUTLET OF PIPE CULVERT	13	25
426+12	OUTLET OF PIPE CULVERT	17	33
449+00	OUTLET OF PIPE CULVERT	13	25
480+00	OUTLET OF PIPE CULVERT	25	50
509+00	OUTLET OF PIPE CULVERT	34	67
511+50	OUTLET OF PIPE CULVERT	50	100
522+00	OUTLET OF PIPE CULVERT	17	33
	TO BE USED IF AND WHERE	1000	2000
	DIRECTED BY THE ENGINEER		
TOTALS:		1367	2724

*NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	570
AND WHERE DIRECTED BY THE	
ENGINEER	
TOTAL:	570

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D-1)	* 4' CHAIN LINK FENCE	* 16'-0" GATES	* 18'-0" GATES	* 20'-0" GATES	* 24'-0" GATES
			LIN. FT.			EACH	EACH	EACH	EACH
315+09	317+97	LT. OF MAIN LANES		299		1			
320+44	325+44	LT. OF MAIN LANES		487		1			
325+44	328+41	LT. OF MAIN LANES			280	2			
341+63	346+46	LT. OF MAIN LANES		483					
347+60	348+43	LT. OF MAIN LANES		82					
355+56	357+75	LT. OF MAIN LANES		221					
359+68	360+88	LT. OF MAIN LANES		114					
376+49	391+50	LT. OF MAIN LANES		1510		1			
401+95	402+24	LT. OF MAIN LANES			29				
402+24	402+72	LT. OF MAIN LANES	47						
403+65	404+35	LT. OF MAIN LANES		68					
405+40	408+30	LT. OF MAIN LANES		287					
426+26	429+98	LT. OF MAIN LANES		370					
439+18	442+15	LT. OF MAIN LANES			91				
450+21	479+63	LT. OF MAIN LANES		2946			2		1
501+09	507+67	LT. OF MAIN LANES		656		1			
513+36	514+02	LT. OF MAIN LANES		66					
516+71	524+60	LT. OF MAIN LANES		805		1			
320+83	330+71	RT. OF MAIN LANES		982					
368+53	370+93	RT. OF MAIN LANES	239					1	
370+93	375+36	RT. OF MAIN LANES		395		3			
376+71	383+91	RT. OF MAIN LANES		718			1		
386+46	392+19	RT. OF MAIN LANES		573					
416+00	417+58	RT. OF MAIN LANES		161					
420+30	421+53	RT. OF MAIN LANES		134					
422+67	427+43	RT. OF MAIN LANES		477					
428+60	433+37	RT. OF MAIN LANES		456					
450+64	451+44	RT. OF MAIN LANES		81					
451+44	458+81	RT. OF MAIN LANES		743					
468+57	483+12	RT. OF MAIN LANES		1425			1		
501+30	508+07	RT. OF MAIN LANES		667		1			
521+40	522+91	RT. OF MAIN LANES		152					
TOTALS:			286	15358	400	11	4	1	1

* DENOTES ALTERNATE BID ITEM.

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
		FEET				
315+00	5'RT	0-5	27	14	A-6(9)	BR/RD
323+00	13'LT	0-5	28	16	A-6(9)	RD/BR
323+00	5'LT	0-5	27	14	A-6(7)	BR/RD
331+00	13'RT	0-5	24	9	A-4(3)	BR/RD
331+00	5'RT	0-5	23	9	A-4(2)	BR/RD
339+00	5'LT	0-5	34	21	A-6(15)	RD/BR
339+00	13'LT	0-5	27	13	A-6(4)	BR/RD
347+00	5'RT	0-5	31	18	A-6(11)	BR/RD
347+00	13'RT	0-5	27	13	A-6(6)	RD/BR
356+00	13'LT	0-5	42	26	A-7-6(9)	BR/RD
356+00	5'LT	0-5	24	11	A-6(3)	BR/RD
363+00	5'RT	0-5	22	8	A-4(1)	RD/BR
363+00	13'RT	0-5	31	16	A-6(7)	BR/RD
371+00	13'LT	0-5	25	7	A-4(2)	BROWN
371+00	5'LT	0-5	33	18	A-6(10)	BR/RD
379+00	5'RT	0-5	34	9	A-4(4)	BR/RD
379+00	13'RT	0-5	33	17	A-6(7)	BR/RD
387+00	5'LT	0-5	28	13	A-6(5)	BROWN
395+00	13'RT	0-5	19	2	A-4(0)	BR/RD
395+00	5'RT	0-5	22	8	A-4(1)	BROWN
404+00	5'LT	0-5	25	9	A-4(2)	BR/RD
404+00	13'LT	0-5	29	14	A-6(4)	RD/BR
411+00	5'RT	0-5	31	15	A-6(8)	BR/RD
419+00	13'LT	0-5	42	23	A-7-6(16)	BR/RD
419+00	5'LT	0-5	22	7	A-4(3)	RD/BR
427+00	13'RT	0-5	30	10	A-4(6)	BROWN
427+00	5'RT	0-5	44	23	A-7-6(10)	BROWN
435+00	13'LT	0-5	ND	NP	A-4(0)	BROWN
435+00	5'LT	0-5	30	16	A-6(11)	RD/BR
443+00	5'RT	0-5	32	19	A-6(6)	RD/BR
451+00	CL	0-5	24	8	A-4(4)	BR/RD
451+00	CL	0-5	28	10	A-4(4)	BR/RD
459+00	CL	0-5	34	16	A-6(12)	BROWN
467+00	CL	0-5	ND	NP	A-4(0)	BR/RD
475+00	CL	0-5	27	10	A-4(4)	RED
483+00	CL	0-5	26	8	A-4(3)	BR/RD
492+00	CL	0-5	28	12	A-6(5)	BROWN
499+00	CL	0-5	25	7	A-4(3)	BROWN
507+00	CL	0-5	26	9	A-4(3)	RED
515+00	CL	0-4.5Z	31	14	A-6(7)	RD/BR
515+00	CL	0-5	34	17	A-6(7)	RD/BR
522+00	21'RT	0-5	23	4	A-4(1)	RD/BR
530+00	21'LT	0-5	26	8	A-4(3)	RD/BR
530+00	12'LT	0-5	29	10	A-4(2)	RD/BR
538+00	21'RT	0-5	25	8	A-4(3)	RD/BR
547+00	12'LT	0-5	36	19	A-6(5)	RD/BR
553+00	12'RT	0-5	53	37	A-7-6(21)	BR/RD
562+00	24'LT	0-5	50	33	A-7-6(25)	RD/BR
570+00	12'RT	0-5	51	33	A-7-6(22)	BR/RD
578+00	24'LT	0-5	36	21	A-6(16)	RD/BR
586+00	12'RT	0-5	41	25	A-7-6(14)	BR/RD
596+00	24'LT	0-5	42	28	A-7-6(23)	RD/BR
602+00	12'RT	0-5	29	11	A-6(3)	BR/RD
610+00	12'LT	0-5	44	27	A-7-6(15)	RD/BR
617+00	12'RT	0-5	49	31	A-7-6(14)	RD/BR

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
NP - NON-PLASTIC
ND - NOT DETERMINABLE

8/25/2015

R090373.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	65	316

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STRUCTURES (BOX 1 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	36"	36"X23"	(CLASS IV) 36"X23"	44"X27"	51"X31"	59"X36"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	36"	36"X23"	44"X27"	51"X31"	59"X36"	DROP INLETS TYPE MO	TYPE SPECIAL	EXT. 4'	8'	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.									EACH												LIN. FT.		CU.YD.	POUND	CU.YD.	SQ. YD.	SQ.YD.	M.GAL.	
315+26	CONST. D.I. ON LT.																	1										1.78	4	0.05	SPECIAL DETAIL
321+00	CONST. D.I. ON LT.																	1	1									0.89	3	0.04	SPECIAL DETAIL
324+00	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
326+00	CONST. D.I. ON RT.																	1		1								0.88	3	0.04	SPECIAL DETAIL
327+00	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
329+90	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
330+00	CONST. D.I. ON RT.																	1	1									2.00	3	0.04	SPECIAL DETAIL
333+35	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
333+50	CONST. TRI. R.C. ARCH PIPE CULVERT W/FES LT. & RT.					228								6															30	0.38	FES-1, FES-2, PCC-1
334+29	CONST. D.I. ON RT.																	1										2.22	4	0.05	SPECIAL DETAIL
335+00	CONST. D.I. ON LT.																	1										2.22	4	0.05	SPECIAL DETAIL
337+00	CONST. D.I. ON RT.																	1										1.91	4	0.05	SPECIAL DETAIL
339+40	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
340+00	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
342+40	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
345+40	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
346+00	CONST. D.I. ON RT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
348+40	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
350+00	CONST. D.I. ON RT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
350+25	CONST. D.I. ON LT.																	1										2.22	4	0.05	SPECIAL DETAIL
354+55	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
354+60	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
357+55	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
358+00	CONST. D.I. ON RT.																	1		1								1.77	4	0.05	SPECIAL DETAIL
360+55	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
361+95	CONST. D.I. ON RT.																	1		1								1.82	4	0.05	SPECIAL DETAIL
363+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
366+02	CONST. TRI. R.C. ARCH PIPE CULVERT ON 45^ LT. FWD. SKEW W/FES LT. & RT.								324								6												66	0.83	FES-1, FES-2, PCC-1
366+10	CONST. D.I. ON RT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
366+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
369+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
370+35	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
372+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
374+30	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
375+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
378+00	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
378+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
381+76	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
382+00	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
385+34	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
385+34	CONST. D.I. ON RT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
385+77	CONST. QUINT. R.C. ARCH PIPE CULVERT ON 30^ LT. FWD. SKEW W/FES LT. & RT.						440									10													62	0.78	FES-1, FES-2, PCC-1
388+00	CONST. D.I. ON LT.																	1										2.22	4	0.05	SPECIAL DETAIL
388+00	CONST. D.I. ON RT.																	1										2.22	4	0.05	SPECIAL DETAIL
394+48	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
394+58	CONST. D.I. ON RT.																	1										2.22	4	0.05	SPECIAL DETAIL
397+95	CONST. D.I. ON LT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
398+25	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
400+95	CONST. D.I. ON LT.																	1										2.22	4	0.05	SPECIAL DETAIL
402+58	CONST. D.I. ON RT.																	1	1									1.64	3	0.04	SPECIAL DETAIL
403+95	CONST. D.I. ON LT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
406+58	CONST. D.I. ON RT.																	1	1									2.22	4	0.05	SPECIAL DETAIL
412+36	CONST. D.I. ON LT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
412+36	CONST. D.I. ON RT.																	1		1								2.22	4	0.05	SPECIAL DETAIL
412+84	CONST. QUINT. R.C. ARCH PIPE CULVERT W/FES LT. & RT.						380									10													42	0.53	FES-1, FES-2, PCC-1
416+36	CONST. D.I. ON RT.																	1		1								1.73	4	0.05	SPECIAL DETAIL
417+42	CONST. D.I. ON LT.																	1		1								2.13	4	0.05	SPECIAL DETAIL
425+55	CONST. R.C. PIPE CULVERT W/FES LT. & RT.		76								2																		16	0.20	FES-1, FES-2, PCC-1
426+12	CONST. DBL. R.C. ARCH PIPE CULVERT W/FES LT. & RT.				148									4															28	0.35	FES-1, FES-2, PCC-1
SUBTOTALS:			76		148	228	380	440	324		2			10	10	10	6		53	29	15							112.01	452	5.68	

8/25/2015

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	66	316

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STRUCTURES (BOX 2 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	36"	(CLASS IV) 36"X23"	36"X23"	44"X27"	51"X31"	59"X36"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	36"	36"X23"	44"X27"	51"X31"	59"X36"	DROP INLETS TYPE MO	TYPE SPECIAL	EXT. 4'	EXT. 8'	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.									EACH							EACH				LIN. FT.			CU.YD.	POUND	CU.YD.	SQ. YD.	SQ.YD.	M.GAL.	
426+27	CONST. D.I. ON RT.																		1		1								1.15	3	0.04	SPECIAL DETAIL
428+05	CONST. D.I. ON LT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
428+05	CONST. D.I. ON RT.																		1		1								2.09	4	0.05	SPECIAL DETAIL
432+00	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
435+33	CONST. D.I. ON RT.																		1		1								1.82	4	0.05	SPECIAL DETAIL
435+42	CONST. D.I. ON LT.																		1		1								1.69	3	0.04	SPECIAL DETAIL
442+83	CONST. D.I. ON LT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
443+82	CONST. D.I. ON RT.																		1		1								1.69	3	0.04	SPECIAL DETAIL
447+50	CONST. D.I. ON LT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
447+50	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
449+00	CONST. R.C. PIPE CULVERT W/FES LT. & RT.		82									2																	16	0.20	FES-1, FES-2, PCC-1
459+00	CONST. D.I. ON LT.																		1	1									1.82	4	0.05	SPECIAL DETAIL
459+00	CONST. D.I. ON RT.																		1	1									2.04	4	0.05	SPECIAL DETAIL
463+00	CONST. D.I. ON LT.																		1	1									1.24	3	0.04	SPECIAL DETAIL
463+00	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
467+00	CONST. D.I. ON LT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
467+00	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
471+00	CONST. D.I. ON LT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
471+00	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
471+00	CONST. D.I. ON LT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
471+00	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
475+00	CONST. D.I. ON LT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
475+00	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
479+00	CONST. D.I. ON LT.																		1	1									1.16	3	0.04	SPECIAL DETAIL
479+00	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
480+00	CONST. R.C. PIPE CULVERT W/FES LT. & RT.			90									2																	34	0.43	FES-1, FES-2, PCC-1
483+00	CONST. D.I. ON LT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
483+00	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
487+00	CONST. D.I. ON LT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
487+00	CONST. D.I. ON RT.																		1	1									1.56	3	0.04	SPECIAL DETAIL
489+20	CONST. D.I. ON LT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
489+20	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
496+16	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
499+75	CONST. D.I. ON RT.																		1		1								1.20	3	0.04	SPECIAL DETAIL
501+58	CONST. D.I. ON RT.																		1	1									2.22	4	0.05	SPECIAL DETAIL
503+58	CONST. D.I. ON RT.																		1	1									1.06	3	0.04	SPECIAL DETAIL
505+90	CONST. D.I. ON RT.																		1	1									1.82	4	0.05	SPECIAL DETAIL
507+58	CONST. D.I. ON RT.																		1		1								1.38	3	0.04	SPECIAL DETAIL
508+28	CONST. D.I. ON LT.																		1		1								1.11	3	0.04	SPECIAL DETAIL
509+00	CONST. R.C. PIPE CULVERT W/FES LT. & RT.		158									2																	16	0.20	FES-1, FES-2, PCC-1
509+58	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
511+00	CONST. D.I. ON LT.																		1	1									1.78	4	0.05	SPECIAL DETAIL
511+50	CONST. R.C. PIPE CULVERT ON 30^ LT. FWD. SKEW W/FES LT. & RT.		162									2																	16	0.20	FES-1, FES-2, PCC-1
517+87	CONST. D.I. ON RT.																		1		1								2.22	4	0.05	SPECIAL DETAIL
518+00	CONST. D.I. ON LT.																		1	1									1.56	3	0.04	SPECIAL DETAIL
522+00	CONST. D.I. ON LT. W/R.C. PIPE OUTLET W/FES	7									1							1			1									5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
522+00	CONST. D.I. ON RT. W/R.C. PIPE OUTLET W/FES & R.C. PIPE OUTLET	53									1							1			1									5	0.06	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
524+10	CONST. D.I. ON RT.																		1	1									1.82	4	0.05	SPECIAL DETAIL
524+63	CONST. D.I. ON LT. W/PIPE OUTLET									262								1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
SUBTOTALS (BOX 2 OF 2):		60	402	90						262	2	6	2					3	40	23	20								76.83	241	3.04	
SUBTOTALS (BOX 1 OF 2):			76		148	228	380	440	324			2		10	10	10	6		53	29	15								112.01	452	5.68	
	STRUCTURES OVER 20' - 0" SPAN																															
391+37	EXTEND DBL. R.C. BOX CULVERT 24' LT. & 23' RT. ON 30^ RT. FWD. SKEW W/3:1 WINGS LT. & RT.																					10	6	49	119.32	17127	63		31	0.39	RCB-1, RCB-2, RCB-3, R-230X-02, W-X30, W-X303-1
SUBTOTALS:																									119.32	17127	63		31	0.39	
TOTALS:		60	478	90	148	228	380	440	324	262	2	8	2	10	10	10	6	3	93	52	35				119.32	17127	63	188.84	724	9.11	

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

8/25/2015

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QUANTITIES

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS							STANDARD DRAWINGS
										18"	24"	30"	48"	54"	21"X15"	28"X20"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.							
314+65	RT.	HATCHER ROAD	20				200.72	22.08	81.96	34							PCC-1, PCM-1, PCP-1, PCP-2
314+81	LT.	HATCHER ROAD	20				247.38	27.21	101.01								
316+55	RT.	DRIVE	16	316+33	316+77	39.11	37.33	4.11	15.24						28		PCC-1, PCM-1, PCP-1, PCP-2
318+07	RT.	DRIVE	16	317+85	318+29	39.11	38.63	4.25	15.77								
319+89	LT.	DRIVE	16	319+67	320+11	39.11	43.38	4.77	17.71	28							PCC-1, PCM-1, PCP-1, PCP-2
319+93	RT.	DRIVE	16	319+71	320+15	39.11	41.26	4.54	16.85						28		PCC-1, PCM-1, PCP-1, PCP-2
322+33	LT.	DRIVE	16	322+11	322+55	39.11	38.40	4.22	15.68	28							PCC-1, PCM-1, PCP-1, PCP-2
325+39	LT.	DRIVE	16	325+17	325+61	39.11	38.70	4.26	15.80	28							PCC-1, PCM-1, PCP-1, PCP-2
326+35	LT.	DRIVE	16	326+13	326+57	39.11	39.73	4.37	16.22	30							PCC-1, PCM-1, PCP-1, PCP-2
330+39	LT.	BOB WHITE AVENUE	20				571.83	62.90	233.50	44							PCC-1, PCM-1, PCP-1, PCP-2
333+90	RT.	DRIVE	16	333+68	334+12	39.11	44.37	4.88	18.12	68							PCC-1, PCM-1, PCP-1, PCP-2
335+52	LT.	QUAIL MEADOWS AVENUE	20				747.38	82.21	305.18	46							PCC-1, PCM-1, PCP-1, PCP-2
338+50	LT.	DRIVE	18	338+27	338+73	40.89	40.12	4.41	16.38	30							PCC-1, PCM-1, PCP-1, PCP-2
339+89	LT.	QUAIL RUN	20				737.92	81.17	301.32	38							PCC-1, PCM-1, PCP-1, PCP-2
341+05	LT.	DRIVE	18	340+82	341+28	40.89	38.92	4.28	15.89	28							PCC-1, PCM-1, PCP-1, PCP-2
342+03	RT.	DRIVE	18	341+80	342+26	40.89	37.00	4.07	15.11	28							PCC-1, PCM-1, PCP-1, PCP-2
346+91	LT.	DRIVE	16	346+69	347+13	39.11	42.19	4.64	17.23		34						PCC-1, PCM-1, PCP-1, PCP-2
347+51	LT.	DRIVE	16	347+29	347+73	39.11	45.56	5.01	18.60	34							PCC-1, PCM-1, PCP-1, PCP-2
350+66	LT.	APPLE MEADOWS	20				771.83	84.90	315.16	48							PCC-1, PCM-1, PCP-1, PCP-2
355+29	LT.	APPLE BLOSSOM AVENUE	20							56							PCC-1, PCM-1, PCP-1, PCP-2
355+14	RT.	APPLE BLOSSOM AVENUE	20								58						PCC-1, PCM-1, PCP-1, PCP-2
358+62	LT.	DRIVE	16	358+40	358+84	39.11	30.47	3.35	12.44	30							PCC-1, PCM-1, PCP-1, PCP-2
358+58	RT.	DRIVE	16	358+36	358+80	39.11	38.70	4.26	15.80	30							PCC-1, PCM-1, PCP-1, PCP-2
359+07	LT.	DRIVE	16	358+85	359+29	39.11	36.48	4.01	14.90	28							PCC-1, PCM-1, PCP-1, PCP-2
359+59	RT.	DRIVE	16	359+37	359+81	39.11	31.43	3.46	12.83		30						PCC-1, PCM-1, PCP-1, PCP-2
359+66	LT.	DRIVE	16	359+44	359+88	39.11	37.94	4.17	15.49	30							PCC-1, PCM-1, PCP-1, PCP-2
360+86	RT.	DRIVE	16	360+64	361+08	39.11	32.14	3.54	13.12		30						PCC-1, PCM-1, PCP-1, PCP-2
361+25	LT.	DRIVE	16	361+03	361+47	39.11	42.20	4.64	17.23	34							PCC-1, PCM-1, PCP-1, PCP-2
361+68	LT.	DRIVE	16	361+46	361+90	39.11	43.40	4.77	17.72	36							PCC-1, PCM-1, PCP-1, PCP-2
362+30	RT.	DRIVE	16	362+08	362+52	39.11	28.05	3.09	11.45							32	PCC-1, PCM-1, PCP-1, PCP-2
362+18	LT.	DRIVE	16	361+96	362+40	39.11	44.84	4.93	18.31	36							PCC-1, PCM-1, PCP-1, PCP-2
363+25	RT.	DRIVE	16	363+03	363+47	39.11	26.51	2.92	10.82							28	PCC-1, PCM-1, PCP-1, PCP-2
363+45	LT.	DRIVE	16	363+23	363+67	39.11	47.80	5.26	19.52	36							PCC-1, PCM-1, PCP-1, PCP-2
363+95	RT.	DRIVE	16	363+73	364+17	39.11	30.40	3.34	12.41							28	PCC-1, PCM-1, PCP-1, PCP-2
364+05	LT.	DRIVE	30	363+76	364+34	51.56	90.30	9.93	36.87	48							PCC-1, PCM-1, PCP-1, PCP-2
364+51	RT.	DRIVE	16	364+29	364+73	39.11	24.55	2.70	10.02							28	PCC-1, PCM-1, PCP-1, PCP-2
366+00	LT.	DRIVE	16	365+78	366+22	39.11	77.71	8.55	31.73		48						PCC-1, PCM-1, PCP-1, PCP-2
366+62	RT.	DRIVE	16	366+40	366+84	39.11	55.91	6.15	22.83	44							PCC-1, PCM-1, PCP-1, PCP-2
368+03	RT.	DRIVE	20	367+79	368+27	42.67	51.53	5.67	21.04	40							PCC-1, PCM-1, PCP-1, PCP-2
368+88	LT.	DRIVE	24	368+62	369+14	46.22	144.77	15.92	59.11				156				PCC-1, PCM-1, PCP-1, PCP-2
370+00	RT.	DRIVE	20	369+76	370+24	42.67	64.02	7.04	26.14	40							PCC-1, PCM-1, PCP-1, PCP-2
371+53	RT.	DRIVE	16	371+31	371+75	39.11	51.18	5.63	20.90	38							PCC-1, PCM-1, PCP-1, PCP-2
373+00	RT.	DRIVE	16	372+78	373+22	39.11	48.18	5.30	19.67	34							PCC-1, PCM-1, PCP-1, PCP-2
373+96	RT.	DRIVE	16	373+74	374+18	39.11	43.13	4.74	17.61	32							PCC-1, PCM-1, PCP-1, PCP-2
374+94	RT.	DRIVE	16	374+72	375+16	39.11	31.88	3.51	13.02	28							PCC-1, PCM-1, PCP-1, PCP-2
376+56	RT.	DRIVE	16	376+34	376+78	39.11	41.71	4.59	17.03	32							PCC-1, PCM-1, PCP-1, PCP-2
381+57	RT.	DRIVE	16	381+35	381+79	39.11	40.18	4.42	16.41	30							PCC-1, PCM-1, PCP-1, PCP-2
386+08	RT.	DRIVE	24	385+82	386+34	46.22	90.35	9.94	36.89	52							PCC-1, PCM-1, PCP-1, PCP-2
386+94	LT.	DRIVE	16	386+72	387+16	39.11	86.15	9.48	35.18					144			PCC-1, PCM-1, PCP-1, PCP-2
393+67	RT.	DRIVE	16	393+45	393+89	39.11	64.43	7.09	26.31	48							PCC-1, PCM-1, PCP-1, PCP-2
394+27	RT.	DRIVE	16	394+05	394+49	39.11	59.70	6.57	24.38	46							PCC-1, PCM-1, PCP-1, PCP-2
395+85	RT.	DRIVE	16	395+63	396+07	39.11	47.27	5.20	19.30	40							PCC-1, PCM-1, PCP-1, PCP-2
397+90	RT.	DRIVE	16	397+68	398+12	77.99				32							PCC-1, PCM-1, PCP-1, PCP-2
399+22	LT.	SARAH AVENUE	20				725.16	79.77	296.11	116							PCC-1, PCM-1, PCP-1, PCP-2
400+08	RT.	DRIVE	16	399+86	400+30	80.43				28							PCC-1, PCM-1, PCP-1, PCP-2
401+94	RT.	DRIVE	16	401+72	402+16	74.17				28							PCC-1, PCM-1, PCP-1, PCP-2
402+19	LT.	DRIVE	30	401+90	402+48	51.56	75.20	8.27	30.71	48							PCC-1, PCM-1, PCP-1, PCP-2
402+68	LT.	DRIVE	16	402+66	403+10	39.11	40.04	4.40	16.35	34							PCC-1, PCM-1, PCP-1, PCP-2
403+51	RT.	DRIVE	16	403+29	403+73	73.21				28							PCC-1, PCM-1, PCP-1, PCP-2
404+30	RT.	DRIVE	18	404+07	404+53	80.65				30							PCC-1, PCM-1, PCP-1, PCP-2
405+24	LT.	DRIVE	20	405+00	405+48	86.65				36							PCC-1, PCM-1, PCP-1, PCP-2
406+20	RT.	DRIVE	18	405+97	406+43	79.11				32							PCC-1, PCM-1, PCP-1, PCP-2
408+35	RT.	NAIL AVENUE	20				713.72	78.51	291.44	46							PCC-1, PCM-1, PCP-1, PCP-2
409+21	LT.	DRIVE	16	408+99	409+43	39.11	36.48	4.01	14.90	30							PCC-1, PCM-1, PCP-1, PCP-2
411+08	RT.	DRIVE	20	410+84	411+32	95.47				38							PCC-1, PCM-1, PCP-1, PCP-2
412+02	LT.	DRIVE	16				84.28	9.27	34.41	36							PCC-1, PCM-1, PCP-1, PCP-2
413+74	LT.	DRIVE	16	413+52	413+96	39.11	46.33	5.10	18.92	36							PCC-1, PCM-1, PCP-1, PCP-2
414+07	RT.	DRIVE	16	413+85	414+29	39.11	37.21	4.09	15.19	32							PCC-1, PCM-1, PCP-1, PCP-2
414+43	LT.	DRIVE	24	414+17	414+69	46.22	64.91	7.14	26.50	42							PCC-1, PCM-1, PCP-1, PCP-2
415+87	RT.	DRIVE	16	415+65	416+09	39.11	33.74	3.71	13.78	28							PCC-1, PCM-1, PCP-1, PCP-2
415+72	LT.	DRIVE	16	415+50	415+94	39.11	32.82	3.61	13.40	34							PCC-1, PCM-1, PCP-1, PCP-2
416+22	LT.	DRIVE	16	416+00	416+44	39.11	35.29	3.88	14.41	30							PCC-1, PCM-1, PCP-1, PCP-2
417+10	LT.	DRIVE	16	416+88	417+32	39.11	39.09	4.30	15.96	30							PCC-1, PCM-1, PCP-1, PCP-2
417+75	RT.	DRIVE	16	417+53	417+97	39.11	46.17	5.08	18.85	30							PCC-1, PCM-1, PCP-1, PCP-2
418+62	LT.	DRIVE	16	418+40	418+84	39.11	41.72	4.59	17.04	32							PCC-1, PCM-1, PCP-1, PCP-2
419+84	RT.	DRIVE	16	419+62	420+06	39.11	47.64	5.24	19.45	36							PCC-1, PCM-1, PCP-1, PCP-2
420+09	LT.	DRIVE	24	419+83	420+35	46.22	54.85	6.03	22.40	92							PCC-1, PCM-1, PCP-1, PCP-2
420+63	LT.	DRIVE	24	420+37	420+89	46.22	48.96	5.39	19.99								
422+00	LT.	MCCLURE AVENUE	20				867.61	95.44	354.27								
422+38	RT.	DRIVE	16	422+16	422+60	39.11	41.17	4.53	16.81	30							PCC-1, PCM-1, PCP-1, PCP-2
427+80	RT.	DRIVE	16	427+58	428+02	39.11	49.17	5.41	20.08	30							PCC-1, PCM-1, PCP-1, PCP-2
432+48	LT.	DRIVE	16	432+26	432+70	39.11	29.00	3.19	11.84	36							PCC-1, PCM-1, PCP-1, PCP-2
433+21	LT.	DRIVE	40	432+87	433+55	60.44	92.36	10.16	37.71	54							PCC-1, PCM-1, PCP-1, PCP-2
433+73	RT.	DRIVE	16	433+51	433+95	39.11	42.88	4.72	17.51	30							PCC-1, PCM-1, PCP-1, PCP-2
434+56	LT.	DRIVE	16	434+34	434+78	39.11	29.64	3.26	12.10	28							PCC-1, PCM-1, PCP-1, PCP-2
435+73	RT.	JENNIFER LANE	20				266.50	29.32	108.82	42							PCC-1, PCM-1, PCP-1, PCP-2
436+39	RT.	DRIVE	20	436+15	436+63	42.67	34.18	3.76	13.96	32							PCC-1, PCM-1, PCP-1, PCP-2
438+56	RT.	JENNIFER LANE	20				250.98	27.61	102.48	42							PCC-1, PCM-1, PCP-1, PCP-2
439+00	LT.	DRIVE	36	438+68	439+32	56.89	61.36	6.75	25.06	58							PCC-1, PCM-1, PCP-1, PCP-2
439+52	RT.	DRIVE	24	439+26	439+78	46.22	39.33	4.33	16.06	34							PCC-1, PCM-1, PCP-1, PCP-2
440+18	RT.	DRIVE	16	439+96	440+40	39.11	25.94	2.85	10.59								PCC-1, PCM-1, PCP-1, PCP-2
440+69	LT.	DRIVE	16	440+47	440+91	39.11	49.07	5.40	20.04	28							PCC-1, PCM-1, PCP-1, PCP-2
441+18	RT.	DRIVE	16	440+96	441+40	39.11	27.34	3.01	11.16						28		PCC-1, PCM-1, PCP-1, PCP-2
442+25	RT.	DRIVE	16	442+03	442+47	39.11	37.03	4.07	15.12	28							PCC-1, PCM-1, PCP-1, PCP-2
443+32	LT.	DRIVE	16	443+10	443+54	39.11	45.39	4.99	18.53	36							PCC-1, PCM-1, PCP-1, PCP-2
444+56	LT.	DRIVE	16	444+34	444+78	39.11	38.08	4.19	15.55	30							PCC-1, PCM-1, PCP-1, PCP-2
445+53	RT.	DRIVE	20	445+29	445+77	42.67	52.22	5.74	21.32	38							PCC-1, PCM-1, PCP-1, PCP-2
446+09	RT.	DRIVE	20	445+85	446+33	42.67	52.22	5.74	21.32	40							PCC-1, PCM-1, PCP-1, PCP-2
447+80	LT.	DRIVE	22	447+55	448+05	44.44	37.18	4.09	15.18	30							PCC-1, PCM-1, PCP-1, PCP-2
448+69	RT.	FRISCO CEMETERY ROAD	20				466.09	51.27	190.32								
449+40	RT.	DRIVE	24	449+14	449+66	46.22	273.60	30.10	111.72								
458+00	LT.	DRIVE	18	457+77	458+23	40.89	66.90	7.36	27.32	28							PCC-1, PCM-1, PCP-1, PCP-2
458+00	RT.	DRIVE	18	457+77	458+23	40.89	38.40	4.22	15.68								
468+11	LT.	DRIVE	24	467+85	468+37	46.22	117.63	12.94	48.03	48							PCC-1, PCM-1, PCP-1, PCP-2
468+30	RT.	DRIVE	24	468+04	468+56	46.22	171.60	18.88	70.07								
478+00	LT.	DRIVE	18	477+77	478+23	40.89	126.96	13.97	51.84			46					PCC-1, PCM-1, PCP-1, PCP-2
478+00	RT.	DRIVE	18	477+77	478+23	40.89	132.82	14.61	54.23			58					PCC-1, PCM-1, PCP-1, PCP-2
499+42	RT.	DRIVE	18	499+19	499+65	40.89	167.10	18.38	68.23	28							PCC-1, PCM-1, PCP-1, PCP-2
500+95	LT.	DRIVE	18	500+72	501+18	40.89	276.66	30.43	112.97						28		PCC-1, PCM-1, PCP-1, PCP-2
505+19	LT.	DRIVE	16	504+97	505+41	39.11	219.54	24.15	89.65						28		PCC-1, PCM-1, PCP-1, PCP-2
505+60	RT.	DRIVE	16	505+38	505+82	39.11	169.85	18.68	69.36	28							PCC-1, PCM-1, PCP-1, PCP-2
511+30	LT.	DRIVE	18	511+07	511+53	40.89	46.00	5.06	18.78	34							PCC-1, PCM-1, PCP-1, PCP-2
514+53	LT.	PLEASANT GROVE ROAD	36							92							PCC-1, PCM-1, PCP-1, PCP-2
516+14	RT.	DRIVE	25	515+88	516+41	47.11	89.22	9.81	36.43		232						PCC-1, PCM-1, PCP-1, PCP-2
519+40	RT.	DRIVE	16	519+18	519+62	39.11	36.89	4.06	15.06		34						PCC-1, PCM-1, PCP-1, PCP-2
521+17	RT.	DRIVE	16	520+95	521+39	39.11	33.78	3.72	13.79		32						PCC-1, PCM-1, PCP-1, PCP-2
524+41	RT.	DRIVE	16	524+19	524+63	39.11	39.52	4.35	16.14								
21+24	LT.	DRIVE ON APPLE BLOSSOM AVENUE	16				37.01	4.07	15.11	40							PCC-1, PCM-1, PCP-1, PCP-2
21+69	RT.	DRIVE ON APPLE BLOSSOM AVENUE	16				43.45	4.78	17.74								
24+44	LT.	DRIVE ON APPLE BLOSSOM AVENUE	30				61.90	6.81	25.28	44							PCC-1, PCM-1, PCP-1, PCP-2
52+30	LT.	DRIVE ON PLEASANT GROVE ROAD	16	52+08	52+52	39.11	19.29	2.12	7.88								
* ENTIRE PROJECT TEMPORARY DRIVES									500.00								
TOTALS:						4500.95	12392.43	1363.17	5560.16	3352	498	104	156	144	140	116	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

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

** FOR INFORMATION ONLY

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.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER TIMOTHY R. SMITH No. 11435 9-10-15

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED/AID PROJ. NO.	STATE	SHEET NO.	TOTAL SHEETS
				090373	ARK.	67	316

2 QUANTITIES

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	68	316

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING							55.67	55.67	1135.7	1276	162		29270			1196
ENTIRE	PROJECT	STAGE 1	13.21	26.42	13.21	1379.9	13.21	2576				1320	36	1400		6653	6653	6777
ENTIRE	PROJECT	STAGE 2	0.76	1.52	0.76	97.8	0.76	1610				110	123	875				78
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			4.00	8.00	4.00	433.2	4.00	2000				220	30	125	5000			190
TOTALS:			17.97	35.94	17.97	1910.9	17.97	6186	55.67	55.67	1135.7	2926	351	2400	34270	6653	6653	8241

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
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
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.

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																										
308+43.12	309+43.12	TRANSITION	100.00			22.00	244.44	0.10	24.44													22.00	244.44	220.00	26.89	26.89
309+43.12	314+36.86	VAR. NOTCH & WIDEN TEMP. ALIGNMENT	493.74			78.56	4309.80	0.03	129.29	22.83	1252.45	550.00	344.42	22.48	1233.25	385.00	237.40	22.25	1220.64	220.00	134.27	33.00	1810.38	220.00	199.14	333.41
314+36.86	321+63.19	VAR. NOTCH & WIDEN	726.33			102.00	8231.74	0.03	246.95	34.00	2743.91	550.00	754.58	29.00	2340.40	385.00	450.53	29.00	2340.40	220.00	257.44	44.00	3550.95	220.00	390.60	648.04
321+63.19	332+25.39	NOTCH & WIDEN	1062.20			88.00	10385.96	0.03	311.58	27.00	3186.60	550.00	876.32	22.00	2596.49	385.00	499.82	22.00	2596.49	220.00	285.61	44.00	5192.98	220.00	571.23	856.84
332+25.39	348+95.75	VAR. NOTCH & WIDEN	1670.36			96.00	17817.17	0.03	534.52	31.00	5753.46	550.00	1582.20	26.00	4825.48	385.00	928.90	26.00	4825.48	220.00	530.80	44.00	8166.20	220.00	898.28	1429.08
348+95.75	388+50.00	NOTCH & WIDEN	3954.25			88.00	38663.78	0.03	1159.91	27.00	11862.75	550.00	3262.26	22.00	9665.94	385.00	1860.69	22.00	9665.94	220.00	1063.25	44.00	19331.89	220.00	2126.51	3189.76
388+50.00	394+50.00	FULL DEPTH	600.00			132.00	8800.00	0.03	264.00	49.00	3266.67	550.00	898.33	44.00	2933.33	385.00	564.67	44.00	2933.33	220.00	322.67	44.00	2933.33	220.00	322.67	645.34
394+50.00	419+92.25	NOTCH & WIDEN	2542.25			88.00	24857.56	0.03	745.73	27.00	7626.75	550.00	2097.36	22.00	6214.39	385.00	1196.27	22.00	6214.39	220.00	683.58	44.00	12428.78	220.00	1367.17	2050.75
419+92.25	421+29.09	VAR. NOTCH & WIDEN	136.84			110.00	1672.49	0.03	50.17	38.00	577.77	550.00	158.89	33.00	501.75	385.00	96.59	33.00	501.75	220.00	55.19	44.00	669.00	220.00	73.59	128.78
421+29.09	426+27.00	FULL DEPTH	497.91			132.00	7302.68	0.03	219.08	49.00	2710.84	550.00	745.48	44.00	2434.23	385.00	468.59	44.00	2434.23	220.00	267.77	44.00	2434.23	220.00	267.77	535.54
426+27.00	428+84.99	VAR. NOTCH & WIDEN	257.99			112.00	3210.54	0.03	96.32	39.00	1117.96	550.00	307.44	34.00	974.63	385.00	187.62	34.00	974.63	220.00	107.21	44.00	1261.28	220.00	138.74	245.95
428+84.99	446+33.36	NOTCH & WIDEN	1748.37			92.00	17872.23	0.03	536.17	29.00	5633.64	550.00	1549.25	24.00	4662.32	385.00	897.50	24.00	4662.32	220.00	512.86	44.00	8547.59	220.00	940.23	1453.09
446+33.36	489+28.92	FULL DEPTH	4295.56			132.00	63001.55	0.03	1890.05	49.00	23386.94	550.00	6431.41	44.00	21000.52	385.00	4042.60	44.00	21000.52	220.00	2310.06	44.00	21000.52	220.00	2310.06	4620.12
496+01.08	516+50.00	FULL DEPTH	2048.92			132.00	30050.83	0.03	901.52	49.00	11155.23	550.00	3067.69	44.00	10016.94	385.00	1928.26	44.00	10016.94	220.00	1101.86	44.00	10016.94	220.00	1101.86	2203.72
516+50.00	523+28.72	VAR. NOTCH & WIDEN	678.72			96.00	7239.68	0.03	217.19	31.00	2337.81	550.00	642.90	26.00	1960.75	385.00	377.44	26.00	1960.75	220.00	215.68	44.00	3318.19	220.00	365.00	580.68
523+28.72	524+56.72	TRANSITION	128.00			48.00	682.67	0.03	20.48	9.00	128.00	550.00	35.20	4.00	56.89	385.00	10.95	4.00	56.89	220.00	6.26	40.00	568.89	220.00	62.58	68.84
20+00.00	21+98.63	APPLE BLOSSOM AVENUE VAR. NOTCH	198.63	64.50	128.12																	22.00	485.54	220.00	53.41	53.41
21+98.63	22+92.54	APPLE BLOSSOM AVENUE FULL DEPTH	93.91	114.25	107.29																	22.00	229.56	220.00	25.25	25.25
23+37.15	25+92.00	APPLE BLOSSOM AVENUE NOTCH	254.85	14.50	36.95																	22.00	622.97	220.00	68.53	68.53
50+22.00	53+00.00	PLEASANT GROVE ROAD FULL DEPTH	278.00			108.00	3336.00	0.03	100.08	41.00	1266.44	550.00	348.27	36.00	1112.00	385.00	214.06	36.00	1112.00	220.00	122.32	36.00	1112.00	220.00	122.32	244.64
53+00.00	54+00.00	PLEASANT GROVE ROAD NOTCH & WIDEN	100.00			42.00	466.67	0.03	14.00	8.00	88.89	550.00	24.44	3.00	33.33	385.00	6.42	3.00	33.33	220.00	3.67	36.00	400.00	220.00	44.00	47.67
54+00.00	55+00.00	PLEASANT GROVE ROAD TRANSITION	100.00			36.00	400.00	0.10	40.00													36.00	400.00	220.00	44.00	44.00
ADDITIONAL FOR LEVELING																										
309+43.12	314+36.86	HWY. 265 MAIN LANES	493.74			11.00	603.46	0.10	60.35													11.00	603.46	220.00	66.38	66.38
314+36.86	321+63.19	HWY. 265 MAIN LANES	726.33			15.00	1210.55	0.10	121.06													15.00	1210.55	220.00	133.16	133.16
321+63.19	332+25.39	HWY. 265 MAIN LANES	1062.20			22.00	2596.49	0.10	259.65													22.00	2596.49	220.00	285.61	285.61
332+25.39	348+95.75	HWY. 265 MAIN LANES	1670.36			18.00	3340.72	0.10	334.07													18.00	3340.72	220.00	367.48	367.48
348+95.75	388+50.00	HWY. 265 MAIN LANES	3954.25			22.00	9665.94	0.10	966.59													22.00	9665.94	220.00	1063.25	1063.25
394+50.00	419+92.25	HWY. 265 MAIN LANES	2542.25			22.00	6214.39	0.10	621.44													22.00	6214.39	220.00	683.58	683.58
419+92.25	421+29.09	HWY. 265 MAIN LANES	136.84			11.00	167.25	0.10	16.73													11.00	167.25	220.00	18.40	18.40
426+27.00	428+84.99	HWY. 265 MAIN LANES	257.99			11.00	315.32	0.10	31.53													11.00	315.32	220.00	34.69	34.69
428+84.99	446+33.36	HWY. 265 MAIN LANES	1748.37			20.00	3885.27	0.10	388.53													20.00	3885.27	220.00	427.38	427.38
516+50.00	523+28.72	HWY. 265 MAIN LANES	678.72			36.00	2714.88	0.10	271.49													36.00	2714.88	220.00	298.64	298.64
20+00.00	21+98.63	APPLE BLOSSOM AVENUE	198.63			VAR.	292.89	0.10	29.29													VAR.	292.89	220.00	32.22	32.22
23+37.15	25+92.02	APPLE BLOSSOM AVENUE	254.87			22.00	623.02	0.10	62.30													22.00	623.02	220.00	68.53	68.53
50+20.89	53+74.94	PLEASANT GROVE ROAD	354.05			VAR.	845.43	0.10	84.54													VAR.	1690.87	220.00	186.00	186.00
TOTALS:					272.36		281021.40		10749.05		84096.11		23126.44		72562.64		13968.31		72550.03		7980.50		138046.71		15185.15	23165.65

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.4% MIN. AGGR.....4.6% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.7% MIN. AGGR.....4.3% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

8/25/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	69	316
				① 07333		- QUANTITIES -		56337

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 090373

BRIDGE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	801	802	802	803	804	804	805	805	806	806	SP & 807	808	809	812	816	816	SP JOB 090373
		ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	② STEEL PILING (HP 14x89)	PREBORING	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	⑤ STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50W)	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	BRIDGE NAME PLATE (TYPE D)	DUMPED RIPRAP	FILTER BLANKET	EXPLORATORY HOLES
		UNIT	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LB.	CU. IN.	LIN. FT.	EACH	CU. YD.	SQ. YD.	LIN. FT.
07333 DOGWOOD DR. & MONTE NE BRANCH	END BENT NO. 1		76.20		19.0	6,705		330			2	905	2,340.0			430	808	
	INTERIOR BENT NO. 2	210	267.30			43,050		264	240				3,915.0					40
	INTERIOR BENT NO. 3	386	460.60			64,175		240					7,236.0					
	INTERIOR BENT NO. 4	273	398.50			61,075		840					3,806.0					
	INTERIOR BENT NO. 5	253	268.00			46,360							3,806.0					
	END BENT NO. 6		78.90		20.7	7,475		290			2	905	4,896.0			442	839	
	220' CONT. COMP. PLATE GIRDER UNIT			506.15	1,630.0		106,753			434		353,655		123	1			
	450' CONT. COMP. PLATE GIRDER UNIT			1,022.85	3,335.6		228,297			894		1,029,485		62				
TOTALS FOR JOB NO. 090373		1,122 ①	1,549.50	1,529.00	5,005.3	228,840	335,050	1,964	240 ④	1,328	4	1,384,950	25,999.0	185	1	872	1,647	③ 40

① INCLUDES APPROX. 75 CU. YDS. OF ROCK EXCAVATION

② THESE STEEL PILES SHALL BE GRADE 50 AND ARE REQUIRED TO HAVE SPECIAL PILE TIPS WHICH WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "STEEL PILING (HP 14x89)".

③ QUANTITY OF EXPLORATORY HOLES SHOWN IS FOR ESTIMATING AND BIDDING PURPOSES ONLY. ACTUAL QUANTITY WILL BE DETERMINED IN THE FIELD.

④ QUANTITY OF PREBORING SHOWN IS FOR ESTIMATING AND BIDDING PURPOSES ONLY. ACTUAL QUANTITY, IF ANY, WILL BE DETERMINED IN THE FIELD.

⑤ QUANTITY FOR INLET FRAMES AND GRATES, PIPES, CLAMPS, FITTINGS AND ALL REQUIRED COMPONENTS FOR DECK DRAINAGE SYSTEM SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50W)".

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 264 - PLEASANT GROVE RD. (S)
BENTON COUNTY

ROUTE 265 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 5/6/15 FILENAME: b090373_ql.dgn
CHECKED BY: AMS DATE: 6/12/15 SCALE: NONE
DESIGNED BY: - DATE: -

BRIDGE NO. 07333 DRAWING NO. 56337

PRINT DATE: 8/18/2015

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
SP & 201	CLEARING		153	STATION
201	GRUBBING		153	STATION
202	REMOVAL AND DISPOSAL OF CURB		2849	LIN. FT.
202	REMOVAL AND DISPOSAL OF BRICK COLUMNS		9	EACH
202	REMOVAL AND DISPOSAL OF WELL		3	EACH
202	REMOVAL AND DISPOSAL OF FENCE		16627	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		1	EACH
202	REMOVAL AND DISPOSAL OF POSTS		4	EACH
202	REMOVAL AND DISPOSAL OF BRICK WALLS		80	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT		29	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		2014	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS		19	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIDEWALKS		1348	SQ. YD.
202	REMOVAL AND DISPOSAL OF FOUNDATIONS		214	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		10	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS		6	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		105	EACH
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLES		3	EACH
202	REMOVAL AND DISPOSAL OF SWIMMING POOL		1	EACH
202	REMOVAL AND DISPOSAL OF BUILDINGS		17	EACH
202	REMOVAL AND DISPOSAL OF ROCK COLUMNS		20	EACH
202	REMOVAL AND DISPOSAL OF CATTLE GUARD		2	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		10	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS		14	EACH
202	REMOVAL AND DISPOSAL OF CANOPY		1	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM		8	EACH
210	UNCLASSIFIED EXCAVATION		168470	CU. YD.
210	COMPACTED EMBANKMENT		88218	CU. YD.
SP & 210	ROCK FILL		13392	CU. YD.
SP & 210	SOIL STABILIZATION		1000	TON
303	AGGREGATE BASE COURSE (CLASS 7)		5833	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)		600	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (5 1/2" UNIFORM THICKNESS)		544	SQ. YD.
SS & 401	TACK COAT		10949	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		22132	TON
SP & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")		994	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		13325	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		643	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		23155	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		1374	TON
412	COLD MILLING ASPHALT PAVEMENT		1489	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		100	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY		100	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY		4500.95	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
602	FURNISHING FIELD LABORATORY		1	EACH
603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		1233	SQ. FT.
SS & 604	BARRICADES		528	LIN. FT.
SS & 604	TRAFFIC DRUMS		1288	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		326	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER		326	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		168272	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		2690	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		2800	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		800	LIN. FT.
SS & 604	VERTICAL PANELS		331	EACH
605	CONCRETE DITCH PAVING (TYPE B)		1189	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		60	LIN. FT.
* 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	262	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	262	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		478	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		90	LIN. FT.
606	36" X 23" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)		148	LIN. FT.
606	36" X 23" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS IV)		228	LIN. FT.
606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS IV)		380	LIN. FT.
606	51" X 31" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS IV)		440	LIN. FT.
606	59" X 36" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS IV)		324	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		3352	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		498	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN		104	LIN. FT.
SP, SS, & 606	48" SIDE DRAIN		156	LIN. FT.
SS & 606	54" SIDE DRAIN		144	LIN. FT.
SS & 606	21" X 15" SIDE DRAIN		140	LIN. FT.
SS & 606	28" X 20" SIDE DRAIN		116	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		8	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	36" X 23" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		10	EACH
606	44" X 27" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		10	EACH
606	51" X 31" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		10	EACH
606	59" X 36" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		6	EACH
606	SELECTED PIPE BEDDING		570	CU. YD.
609	DROP INLETS (TYPE SPECIAL)		93	EACH
609	DROP INLETS (TYPE MO)		3	EACH
609	DROP INLET EXTENSIONS (4')		52	EACH
609	DROP INLET EXTENSIONS (8')		35	EACH
611	UNDERDRAIN OUTLET PROTECTORS		10	EACH
611	4" PIPE UNDERDRAINS		2000	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)		235.4	CU. YD.
619	WIRE FENCE (TYPE C)		286	LIN. FT.
619	WIRE FENCE (TYPE D-1)		15358	LIN. FT.
* 619	4' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	400	LIN. FT.
* 619	4' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	400	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	11	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	11	EACH
* 619	18' STEEL GATES	(ALTERNATE NO. 1)	4	EACH
* 619	18' ALUMINUM GATES	(ALTERNATE NO. 2)	4	EACH
* 619	20' STEEL GATES	(ALTERNATE NO. 1)	1	EACH
* 619	20' ALUMINUM GATES	(ALTERNATE NO. 2)	1	EACH
* 619	24' STEEL GATES	(ALTERNATE NO. 1)	1	EACH
* 619	24' ALUMINUM GATES	(ALTERNATE NO. 2)	1	EACH
620	LIME		36	TON
620	SEEDING		17.97	ACRE
SS & 620	MULCH COVER		73.64	ACRE
620	WATER		3064.1	M.GAL.

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TIMOTHY D. SMITH 10-27-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/21/2015				6	ARK.	090373	70	316

JOB NO.

2 SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
621	TEMPORARY SEEDING		55.67	ACRE
621	SILT FENCE		34270	LIN. FT.
621	SAND BAG DITCH CHECKS		2926	BAG
621	DROP INLET SILT FENCE		2400	LIN. FT.
621	SEDIMENT BASIN		6653	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		6653	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		8241	CU. YD.
621	ROCK DITCH CHECKS		351	CU. YD.
623	SECOND SEEDING APPLICATION		17.97	ACRE
624	SOLID SODDING		7577	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		3587	SQ. YD.
633	CONCRETE WALKS		19624	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		40282	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		67	EACH
637	MAILBOX SUPPORTS (SINGLE)		47	EACH
637	MAILBOX SUPPORTS (DOUBLE)		10	EACH
641	WHEELCHAIR RAMPS (TYPE 3)		146	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)		64	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)		1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)		1	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)		851	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)		8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)		1	EACH
SP	LOUVERS		9	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED		6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)		2335	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)		242	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)		272	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)		555	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)		232	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)		20	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES		463	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")		20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")		20	LIN. FT.
710	NON-METALLIC CONDUIT (2")		95	LIN. FT.
710	NON-METALLIC CONDUIT (3")		426	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1 HD)		2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)		5	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (70')		1	EACH
SP	LED LUMINAIRE ASSEMBLY		3	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION		3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)		1	EACH
SP	18" STREET NAME SIGN		3	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		5785	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		3994	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		51431	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)		93	EACH
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	1780	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	1780	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		487	EACH
733	VIDEO MONITOR (CLR)		1	EACH
SP & 733	VIDEO DETECTOR (IP)		5	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)		1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)		1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD IP (1 CAMERA)		8	EACH
816	FILTER BLANKET		2724	SQ. YD.
816	DUMPED RIPRAP		1367	CU. YD.
SP	NET-SUBSCRIBER RADIO (5.8 GHz, 32 MBPS)		1	EACH
	STRUCTURES OVER 20' SPAN			
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		1122	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		63	CU. YD.
802	CLASS S CONCRETE-ROADWAY		119.32	CU. YD.
802	CLASS S CONCRETE-BRIDGE		1549.50	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE		1529.00	CU. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT		5005.3	SQ. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		17127	POUND
804	REINFORCING STEEL-BRIDGE (GRADE 60)		228840	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)		335050	POUND
805	STEEL PILING (HP 14X89)		1964	LIN. FT.
805	PREBORING		240	LIN. FT.
SP	EXPLORATORY HOLES		40	LIN. FT.
806	METAL BRIDGE RAILING (TYPE H)		1328	LIN. FT.
806	TRANSITIONAL APPROACH RAILING		4	EACH
SP & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)		1384950	POUND
808	ELASTOMERIC BEARINGS		25999.0	CU. IN.
809	ARMORED JOINT WITH NEOPRENE STRIP SEAL		185	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)		1	EACH
816	FILTER BLANKET		1647	SQ. YD.
816	DUMPED RIPRAP		872	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
10/21/2015	REVISED SPECIAL PROVISION SITE USE (A+C METHOD), ADDED SUPPLEMENTAL SPECIFICATION 400-1 TACK COATS AND ADD SS & TO PAY ITEM "TACK COAT"	3, 70, 71

SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11495 TIMOTHY D. SMITH 10-27-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/21/2015				6	ARK.		71	316
				JOB NO.	090373			

(2) 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.		090373	72	316

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES

Project Name: s012153
Date: 1/14/2013
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	699559.5487	688669.0589	1378.64	CTL	*AHTD STD. MON STAMPED T-1
2	700266.9467	688501.4941	1370.70	CTL	*AHTD STD. MON STAMPED T-2
3	701047.9988	688469.5200	1358.87	CTL	*AHTD STD. MON STAMPED T-3
4	701852.0481	688365.1584	1352.97	CTL	*AHTD STD. MON STAMPED T-4
5	702661.0989	688301.9059	1345.77	CTL	*AHTD STD. MON STAMPED T-5
6	703440.9714	688268.7635	1335.41	CTL	*AHTD STD. MON STAMPED T-6
7	704217.2989	688271.1191	1336.10	CTL	*AHTD STD. MON STAMPED T-7
8	704838.7096	688222.7400	1337.76	CTL	*AHTD STD. MON STAMPED T-8
9	705675.2494	688256.7125	1353.94	CTL	*AHTD STD. MON STAMPED T-9
10	706300.9040	688184.9223	1350.65	CTL	*AHTD STD. MON STAMPED T-10
11	706993.9005	687966.5689	1362.22	CTL	*AHTD STD. MON STAMPED PN: 11
12	707857.6163	687720.8753	1359.94	CTL	*AHTD STD. MON STAMPED T-12
13	708632.0331	687712.7161	1371.76	CTL	*AHTD STD. MON STAMPED T-13
14	709325.2755	687782.2097	1362.13	CTL	*AHTD STD. MON STAMPED T-14
15	709991.8165	687836.0385	1358.76	CTL	*AHTD STD. MON STAMPED T-15
16	710611.2313	687553.2664	1360.41	CTL	*AHTD STD. MON STAMPED T-16
17	711417.5082	687577.3812	1350.46	CTL	*AHTD STD. MON STAMPED T-17
18	712238.7826	687498.9329	1340.69	CTL	*AHTD STD. MON STAMPED T-18 384' NE PP
19	712911.5089	687387.9004	1331.26	CTL	*AHTD STD. MON STAMPED T-19
20	713534.6665	687261.7852	1322.10	CTL	*AHTD STD. MON STAMPED T-20
21	713629.9376	687202.4299	1301.71	CTL	*AHTD STD. MON STAMPED T-21
22	713815.3728	687073.2057	1247.77	CTL	*AHTD STD. MON STAMPED T-22
23	713975.4656	687533.5520	1242.75	CTL	*AHTD STD. MON STAMPED T-23
24	714089.5878	687458.6245	1295.97	CTL	*AHTD STD. MON STAMPED T-24
25	714206.6090	687429.8333	1310.77	CTL	*AHTD STD. MON STAMPED T-25
26	714632.9221	687212.5304	1324.17	CTL	*AHTD STD. MON STAMPED T-26
27	714877.9707	687370.9883	1330.29	CTL	*AHTD STD. MON STAMPED T-27 WEST OF RD
28	715373.6377	687364.6484	1340.04	CTL	*AHTD STD. MON STAMPED T-28 WEST OF RD
29	715825.1031	687413.4930	1340.29	CTL	*AHTD STD. MON STAMPED T-29 EAST OF RD
30	716907.3128	688059.4861	1335.61	CTL	*AHTD STD. MON STAMPED T-30
31	717694.6580	688094.9415	1339.25	CTL	*AHTD STD. MON STAMPED T-31
32	718486.9317	688129.6266	1335.59	CTL	*AHTD STD. MON STAMPED T-32
33	719279.5766	688168.4023	1333.04	CTL	*AHTD STD. MON STAMPED T-33
34	720067.8805	688209.4772	1334.19	CTL	*AHTD STD. MON STAMPED T-34
35	720856.1023	688237.3288	1337.97	CTL	*AHTD STD. MON STAMPED T-35
36	721647.6083	688273.7640	1343.80	CTL	*AHTD STD. MON STAMPED T-36
37	722389.7002	688304.7947	1347.58	CTL	*AHTD STD. MON STAMPED T-37
38	723036.1775	688334.1455	1354.17	CTL	*AHTD STD. MON STAMPED T-38
39	723735.3671	688364.6793	1363.31	CTL	*AHTD STD. MON STAMPED T-39
40	724437.0812	688407.7930	1373.19	CTL	*AHTD STD. MON STAMPED T-40
41	725235.2585	688442.8548	1383.43	CTL	*AHTD STD. MON STAMPED T-41
42	726032.5937	688477.4504	1363.95	CTL	*AHTD STD. MON STAMPED T-42
100	697165.1198	688896.2073	1389.09	GPS	*AHTD GPS *040054
101	698849.7276	688757.5704	1381.11	GPS	*AHTD GPS 040054A
102	706987.9989	687587.0981	1354.06	GPS	*AHTD GPS *040104
103	707161.2523	685813.3242	1365.16	GPS	*AHTD GPS *040104A
106	716336.1864	686210.0731	1333.75	GPS	*AHTD GPS *040106
107	716195.9429	687715.9108	1343.76	GPS	*AHTD GPS *040106A
108	726809.2354	688284.9151	1353.16	GPS	*AHTD GPS *040107
109	726930.6612	686701.5108	1331.35	GPS	*AHTD GPS *040107A
901	700423.0076	687706.6876	1365.20	TBM	*FLANGE BOLT ON FIRE HYDRANT
902	697925.4284	688697.3494	1381.20	TBM	*CHISELED SQUARE IN T/C
903	703987.4502	688246.4817	1335.58	TBM	*CHISELED SQUARE IN CONC
905	717740.8005	688147.1198	1339.35	TBM	*CHISELED SQUARE IN CONC
906	718854.4569	688198.1043	1332.62	TBM	*CHISELED SQUARE IN CONC
907	718817.9439	690039.1006	1341.52	TBM	*CHISELED SQUARE IN CONC
908	718085.1666	691568.7455	1253.39	TBM	*CHISELED SQUARE IN CONC
909	717784.4608	694329.5710	1200.62	TBM	*CHISLELED SQUARE IN CONC
911	-99999.0000	-99999.0000	1359.97	TBM	*CHISELED SQUARE IN CONC
913	736652.8628	691326.0226	1351.00	TBM	*CHISELED SQUARE IN CONC
914	738108.2580	693800.0754	1194.64	TBM	*CHISELED SQUARE IN CONC
951	716966.1213	685470.5185	1324.94	TBM	*CHISLED SQUARE IN CONC
955	726806.0828	690618.1622	1363.84	TBM	*CHISELED SQUARE IN CONC
956	726684.5913	693697.9931	1391.38	TBM	*CHISLED SQUARE IN CONC
959	713678.1891	686650.8966	1252.70	TBM	*5/8" REBAR W/ 2" ALUMINUM CAP
960	713321.6468	686672.6958	1323.01	TBM	*5/8" REBAR W/ 2" ALUMINUM CAP
993	726854.7618	686239.1176	1329.22	BM	*NGS BM M 309
997	718961.4936	685485.6462	1325.56	BM	*NGS L 309
998	700534.9174	684825.2779	1337.56	BM	*NGS J 309
999	706495.8881	684037.3486	1342.95	BM	*NGS V 26

*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).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999386648 HAS BEEN USED TO COMPUTE THE ABOVE LISTED GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GROUND COORDINATES ARE PROJECTED FROM AR. STATE PLANE GRID COORDINATES BY SCALING ALL X,Y
COORDINATE VALUES WITH THE INVERSE (1/X) OF THE COMBINED AJUSTMENT FACTOR (CAF) ABOUT X=0,Y=0.

GRID COORDINATES ARE STORED UNDER FILE NAME.s012153gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 ELEVATIONS FOR POINTS 1-42, 100-109, AND 900-999 WERE ESTABLISHED BY 3-WIRE LEVEL TECHNIQUES FROM NGS BENCHMARKS.

POSITIONAL ACCURACY:

HORIZONTAL-GPS(POINTS 100-109): 1.0 CM 10 PPM, PRIMARY CONTROL(POINTS 1-42): 2.0 CM 20 PPM

VERTICAL-POSITIONAL ACCURACY IS THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 040054 - 040054A, 040104 - 040104A, 040106 - 040106A, 040106 - 040106A, 040107 - 040107A
CONVERGENCE ANGLE: 01-14-01.62 LEFT AT PN: 19
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

LT: 36-16-23.89 LG: 094-07-12.98

GRID NORTHING: 712867.7823 GRID EASTING: 687345.7393

GROUND NORTHING: 712911.5089 GROUND EASTING: 687387.9004

CONST

POINT NO.	TYPE	STATION	NORTHING	EASTING
8002	PT	301+33.70	695090.1217	689386.0782
8003	PC	303+34.89	695267.9138	689291.9047
8005	PT	306+63.20	695577.2743	689186.1022
8006	PC	309+02.41	695812.9499	689145.1721
8008	PT	313+56.30	696261.5739	689076.3817
8009	PC	317+01.28	696603.5309	689030.8589
8011	PT	320+91.14	696987.9391	688966.3088
8012	PC	321+29.83	697025.8519	688958.6081
8014	PT	327+04.97	697594.2816	688872.5821
8015	PC	329+43.32	697831.4415	688848.7845
8017	PT	331+32.71	698019.9600	688830.6543
8018	PC	333+70.85	698257.0978	688808.8367
8020	PT	343+55.99	699235.8503	688697.5288
8021	PC	344+90.36	699369.0079	688679.4791
8023	PT	349+77.51	699850.2008	688603.8050
8024	PC	350+90.38	699961.3057	688583.9038
8026	PT	357+25.74	700590.6450	688498.0016
8027	PC	367+45.65	701606.0470	688402.1966
8029	PT	370+68.82	701927.9950	688374.1088
8030	PC	375+94.88	702452.3714	688332.0837
8032	PT	380+70.15	702926.7738	688303.9497
8033	PC	388+93.70	703749.7083	688272.2534
8035	PT	389+69.18	703825.1376	688269.4726
8036	PC	394+09.39	704265.0772	688253.9787
8038	PT	397+45.03	704600.6621	688249.5366
8039	PC	400+99.42	704955.0358	688252.6310
8041	PT	407+08.51	705563.6721	688233.6760
8042	PC	407+22.93	705578.0545	688232.6532
8044	PT	418+40.94	706687.6129	688099.1102
8045	PC	418+64.40	706710.7370	688095.1750
8047	PT	423+40.29	707171.1108	687976.8268
8048	PC	430+29.64	707822.2180	687750.3964
8050	PT	433+31.60	708119.2546	687707.4358
8051	PC	449+92.83	709778.6133	687786.1657
8053	PT	463+01.92	711085.1505	687736.1404
8054	PC	467+58.69	711538.4180	687679.6685
8056	PT	478+90.05	712667.3463	687623.2861
8057	PC	494+44.96	714221.7906	687660.8271
8059	PT	507+60.19	715521.4948	687842.5549
8060	PC	508+04.46	715564.3470	687853.6658
8062	PT	522+99.37	717038.7816	688085.3442
8063	PC	523+53.69	717093.0103	688088.4938
8065	PT	524+56.71	717195.8942	688093.7735

APPLE BLOSSOM

POINT NO.	TYPE	STATION	NORTHING	EASTING
8200	POB	20+00.00	700373.9871	688205.8595
8201	PC	20+11.32	700373.5606	688217.1761
8203	PT	21+13.06	700378.7507	688318.6424
8204	PC	21+44.52	700383.1374	688349.7964
8206	PT	22+43.29	700388.4312	688448.2986
8207	POE	25+92.02	700377.1013	688796.8535

PLEASANT GROVE RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8300	POB	50+00.00	716201.6832	687990.1921
8301	PI	53+57.75	716222.6287	687633.0579
8302	POE	56+60.21	716238.6851	687331.0225

TRANSITION

POINT NO.	TYPE	STATION	NORTHING	EASTING
8400	POB	70+00.00	695696.0043	689154.4927
8401	PC	71+57.69	695850.3392	689122.1594
8403	PT	72+89.37	695980.4909	689102.6145
8404	PC	75+43.78	696233.8335	689079.3436
8406	PT	75+98.65	696288.3325	689073.0186
8407	POE	76+70.62	696359.6041	689063.0126

STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8104	PT	608+45.37	695091.3896	689385.2318
8105	PC	610+31.55	695255.4706	689297.2392
8107	PT	613+86.77	695590.8280	689185.4524
8108	PC	618+09.29	696008.5179	689121.7856
8110	PT	620+21.74	696218.8351	689091.7200
8111	PC	623+72.39	696566.3977	689045.3183
8113	PT	626+67.50	696857.7762	688998.7518
8114	PC	629+87.41	697172.2734	688940.1483
8116	PT	632+59.57	697441.3794	688899.8618
8117	PC	634+32.18	697612.8838	688880.4032
8119	PT	635+38.25	697718.3819	688869.4216
8120	PC	644+14.10	698590.3273	688786.8093
8122	PT	646+18.67	698793.5983	688763.8825
8123	PC	652+56.64	699426.1757	688681.0735
8125	PT	656+05.62	699770.6042	688625.2703
8126	PC	657+47.73	699910.1287	688598.2815
8128	PT	664+88.76	700643.3567	688493.0282
8129	PC	674+55.73	701606.0470	688402.1966
8131	PT	677+78.90	701927.9950	688374.1088
8132	PC	683+04.96	702452.3714	688332.0837
8134	PT	687+80.23	702926.7738	688303.9497
8135	PC	696+03.77	703749.7083	688272.2534
8137	PT	696+79.25	703825.1376	688269.4726
8138	PC	701+19.47	704265.0772	688253.9787
8140	PT	704+55.11	704600.6621	688249.5366
8141	PC	708+09.49	704955.0358	688252.6310
8143	PT	714+18.59	705563.6721	688233.6760
8144	PC	715+06.19	705651.0570	688227.4614
8146	PT	724+78.13	706616.4642	688117.5054
8147	PC	726+20.72	706757.3289	688095.3771
8149	PT	729+44.84	707071.7286	688018.2149
8150	PC	732+09.92	707322.8885	687933.4404
8152	PT	735+45.73	707639.4369	687821.4027
8153	PC	737+33.48	707815.4984	687756.1701
8155	PT	740+51.37	708127.5212	687707.8280
8156	PC	757+04.32	709778.6133	687786.1657
8158	PT	770+13.41	711085.1505	687736.1404
8159	PC	774+70.19	711538.4180	687679.6685
8161	PT	786+01.56	712667.3463	687623.2861
8162	PC	801+56.45	714221.7906	687660.8271
8164	PT	814+71.69	715521.4948	687842.5549
8165	PC	815+15.96	715564.3470	687853.6658
8167	PT	830+10.86	717038.7816	688085.3442
8168	PC	830+65.18	717093.0103	688088.4938
8170	PT	831+68.20	717195.8942	688093.7735
8171	PC	849+01.11	718927.0853	688170.9128
8173	PT	850+32.87	719058.6766	688177.5345
8174	PI	852+37.24	719262.7203	688188.9785
8175	PI	860+97.30	720121.6670	688232.7671
8176	PI	862+01.34	720225.7055	688232.9514
8177	PI	874+09.01	721431.9796	688291.1571
8178	PI	890+49.56	723070.9745	688362.4703
8179	PI	900+33.86	724054.3454	688405.1981
8180	PI	904+01.56	724421.4073	688426.8526
8181	PI	919+46.28	725964.5842	688495.8082
8182	PI	924+93.94	726511.7347	688519.4069
8183	POE	927+45.90	726763.3638	688532.3429

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

R090373PRDPOSED DESIGN,SURVEY,PLAN, SPECIAL.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.		090373	73	316

BASELINE BEGINS AT STA. 346+80.00 (2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

C.L. TRANSITION
P.I. = 75+71.22
Δ = 2°44'36.6" LT.
D = 5°00'00.0"
T = 27.44'
L = 54.87'
NO SUPER

P.I. = 305+00.42
Δ = 18°03'25.3" RT.
D = 5°30'00.0"
T = 165.53'
L = 328.31'

C.L. STAGE 2
P.I. = 612+10.90
Δ = 19°32'12.8" RT.
D = 5°30'00.0"
T = 179.35'
L = 355.22'

C.L. TRANSITION
P.I. = 72+23.60
Δ = 6°35'03.0" RT.
D = 5°00'00.0"
T = 65.91'
L = 131.68'
NO SUPER

P.I. = 311+29.38
Δ = 2°16'10.1" RT.
D = 0°30'00.0"
T = 226.98'
L = 453.90'
P.C. = 309+02.41
P.T. = 313+56.30
NO SUPER

STAGE 2
P.I. = 619+15.52
Δ = 1°03'44.3" RT.
D = 0°30'00.0"
T = 106.23'
L = 212.46'

STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279

STAGE 2
P.I. = 625+19.98
Δ = 2°57'03.9" LT.
D = 1°00'00.0"
T = 147.59'
L = 295.11'

P.I. = 318+96.28
Δ = 3°53'55.2" LT.
D = 1°00'00.0"
T = 195.01'
L = 389.87'
P.C. = 317+01.28
P.T. = 320.91.14
NO SUPER

STAGE 2
P.I. = 631+23.55
Δ = 4°04'56.8" RT.
D = 1°30'00.0"
T = 136.14'
L = 272.16'

P.I. = 324+17.64
Δ = 5°45'05.2" RT.
D = 1°00'00.0"
T = 287.81'
L = 575.14'
P.C. = 321+29.83
P.T. = 327+04.97
e = 0.020'/'
Ls = 270.00'

STAGE 2
P.I. = 634+85.21
Δ = 1°03'38.5" RT.
D = 1°00'00.0"
T = 53.04'
L = 106.07'

SURVEY CONTROL DETAILS

R090373PROPOSED DESIGN,SURVEY PLAN, SPECIAL.DGN 9/10/2015

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.		090373	74	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
2-10-15

P. I. = 338+63.50
Δ = 2°27' 46.2" LT.
D = 0°15' 00.0"
T = 492.64'
L = 985.14'
P.C. = 333+70.85
P.T. = 343+55.99
NO SUPER

STAGE 2
P. I. = 645+16.39
Δ = 2°02' 44.5" LT.
D = 1°00' 00.0"
T = 102.30'
L = 204.57'

P. I. = 330+38.02
Δ = 0°28' 24.5" RT.
D = 0°15' 00.0"
T = 94.69'
L = 189.39'
P.C. = 329+43.32
P.T. = 331+32.71
NO SUPER

STAGE 2
P. I. = 654+31.18
Δ = 3°29' 23.1" LT.
D = 1°00' 00.0"
T = 174.54'
L = 348.97'

P. I. = 347+33.97
Δ = 2°26' 08.6" LT.
D = 0°30' 00.0"
T = 243.61'
L = 487.14'
P.C. = 344+90.36
P.T. = 349+77.51
NO SUPER

P. I. = 354+08.24
Δ = 4°45' 54.7" RT.
D = 0°45' 00.0"
T = 317.86'
L = 635.36'
P.C. = 350+90.38
P.T. = 357+25.74
NO SUPER

STAGE 2
P. I. = 661+18.53
Δ = 5°33' 27.9" RT.
D = 0°45' 00.0"
T = 370.81'
L = 741.03'

9/8/2015

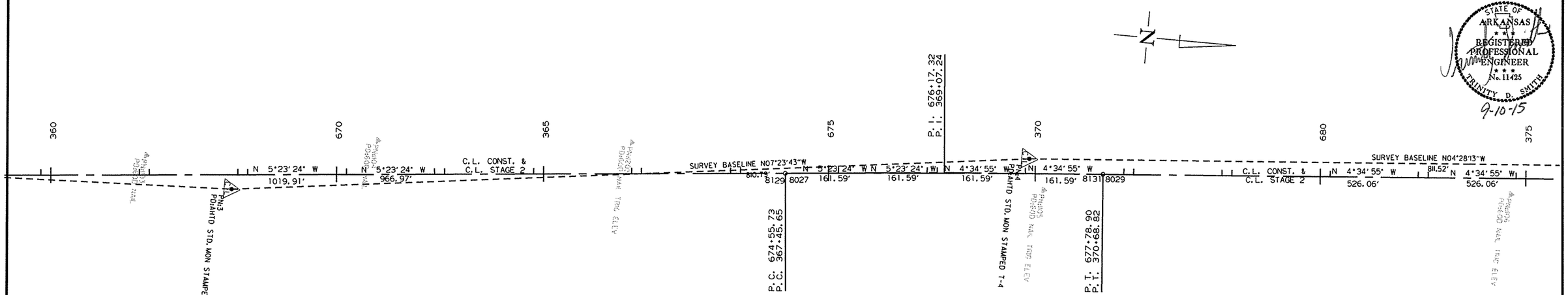
R090373.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	75	316

(2) SURVEY CONTROL DETAILS

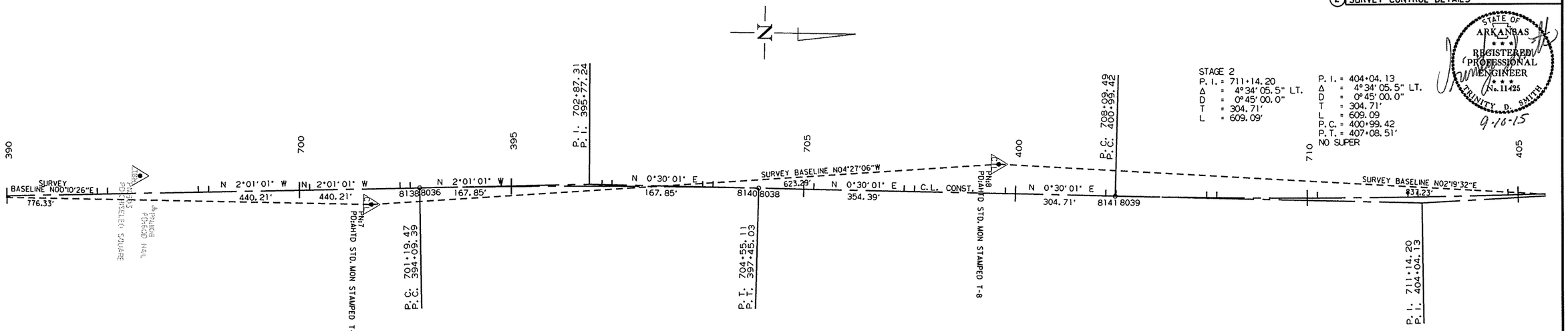
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15


360
670
365
675
370
680
375
N 5°23'24" W
1019.91'
5°23'24" W
966.97'
C.L. CONST. & C.L. STAGE 2
SURVEY BASELINE N07°23'43"W
810.73
8129
8027
161.59'
161.59'
161.59'
161.59'
8131
8029
C.L. CONST. & C.L. STAGE 2
N 4°34'55" W
526.06'
811.52'
N 4°34'55" W
526.06'
P.I. 676+17.32
P.I. 369+07.24
P.C. 674+55.73
P.C. 367+45.65
P.T. 677+78.90
P.T. 370+68.82
PK NAIL
PK NAIL FND
PK NAIL FND FLUSH
PK NAIL FND FLUSH
PK NAIL FND FLUSH

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.		090373	76	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15


390
700
395
705
400
710
405
SURVEY BASELINE N00°10'26"E
776.33'
N 2°01'01" W
440.21'
N 2°01'01" W
440.21'
N 2°01'01" W
167.85'
N 0°30'01" E
623.29'
N 0°30'01" E
167.85'
N 0°30'01" E
354.39'
N 0°30'01" E
304.71'
SURVEY BASELINE N04°27'06"W
SURVEY BASELINE N02°19'32"E
937.23'
8138
8036
8140
8038
8141
8039
PK NAIL FOUND
PK NAIL PUNCHED
PK NAIL PUNCHED
PK NAIL PUNCHED

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AND PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	77	316

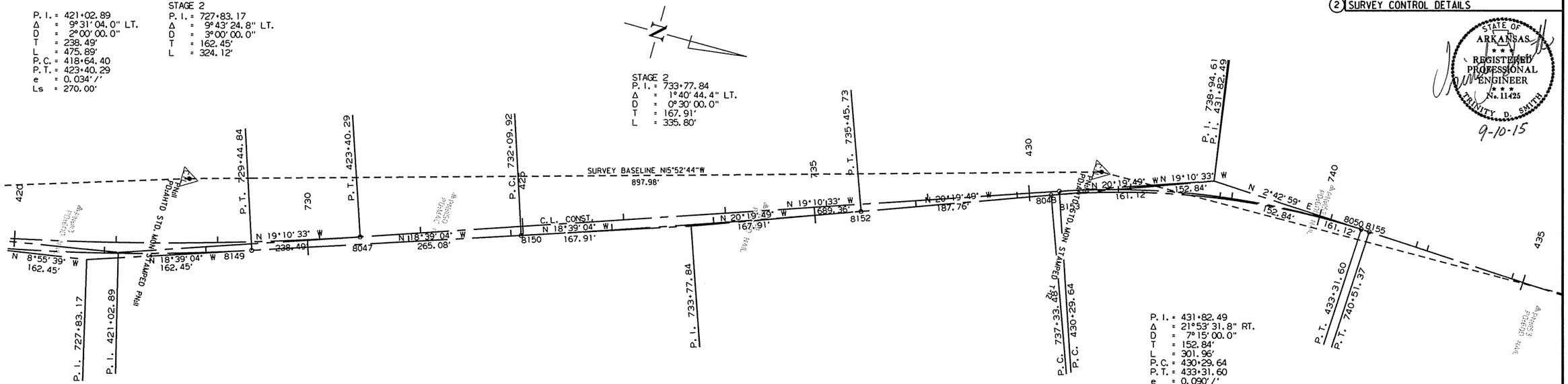
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

P. I. = 421+02.89
Δ = 9°31'04.0" LT.
D = 2°00'00.0"
T = 238.49'
L = 475.89'
P.C. = 418+64.40
P.T. = 423+40.29
e = 0.034'/'
Ls = 270.00'

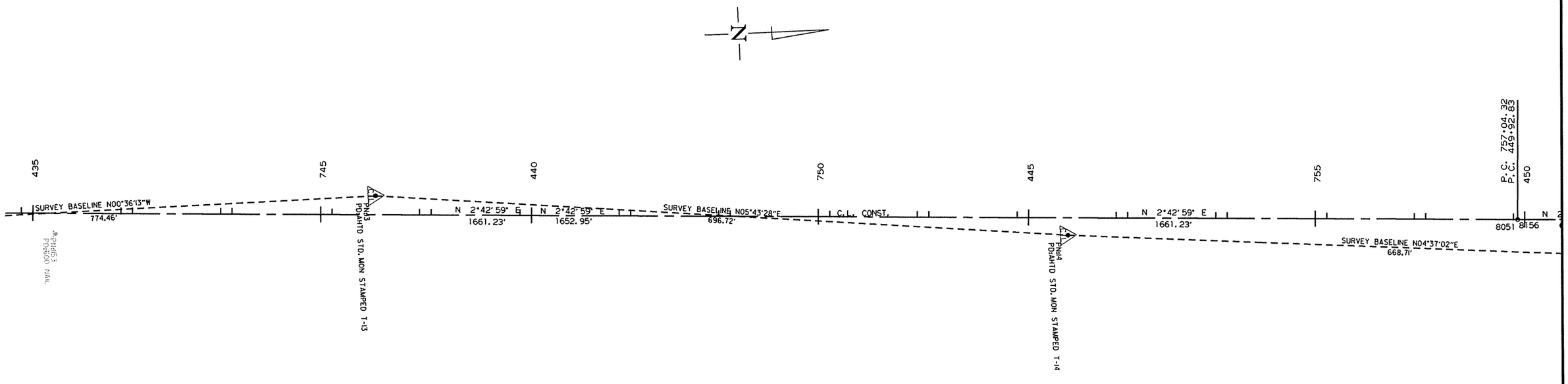
STAGE 2
P. I. = 727+83.17
Δ = 9°43'24.8" LT.
D = 3°00'00.0"
T = 162.45'
L = 324.12'

STAGE 2
P. I. = 733+77.84
Δ = 1°40'44.4" LT.
D = 0°30'00.0"
T = 167.91'
L = 335.80'



P. I. = 431+82.49
Δ = 21°53'31.8" RT.
D = 7°15'00.0"
T = 152.84'
L = 301.96'
P.C. = 430+29.64
P.T. = 433+31.60
e = 0.090'/'
Ls = 330.00'

STAGE 2
P. I. = 738+94.61
Δ = 23°02'47.8" RT.
D = 7°15'00.0"
T = 161.12'
L = 317.88'



SURVEY CONTROL DETAILS

9/8/2015

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				6	ARK.			
				JOB NO.		090373	78	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

P. I. = 456+48.98
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'
P. C. = 449+92.83
P. T. = 463+01.92
NO SUPER

STAGE 2
P. I. = 763+60.47
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'

P. C. 757+04.32
P. C. 449+92.83

SURVEY BASELINE N24°32'15"W
680.91'

SURVEY BASELINE N01°42'47"E
806.64'

P. T. 770+13.41
P. T. 463+01.92

8051 8156 N 2°42'59" E 656.15' N 2°42'59" E 656.15'

C. L. CONST.

N 7°06'06" W 656.15' N 7°06'06" W 656.15' 8158 8053 N 7°06'06" W 456.77'

PK nail
PDAHTD STD. MON STAMPED T-15

PK nail
PDAHTD STD. MON STAMPED T-16

P. I. 763+60.47
P. I. 456+48.98

450 760 455 765 460 465

SURVEY BASELINE N05°27'23"W
825.01'

SURVEY BASELINE N09°22'20"W
681.83'

PK nail
PDAHTD STD. MON STAMPED T-17

PK nail
PDAHTD STD. MON STAMPED T-18

P. I. 780+36.91
P. I. 473+25.42

P. C. 774+70.19
P. C. 467+58.69

8159 8054 N 7°06'06" W 566.72' N 7°06'06" W 566.72' C. L. CONST. N 1°23'00" E 566.72' N 1°23'00" E 566.72' 8161 8056

P. T. 786+01.56
P. T. 478+90.06

465 775 470 780 475 785 480

STAGE 2
P. I. = 780+36.91
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'

P. I. = 473+25.42
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'
P. C. = 467+58.69
P. T. = 478+90.06
NO SUPER

SURVEY CONTROL DETAILS

9/8/2015

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				6	ARK.			
				JOB NO.		090373	79	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

N

PN19 PDOAHTD STD. MON STAMPED T-19

SURVEY BASELINE N11°26'28"W 635.79'

PN20 PDOAHTD STD. MON STAMPED T-20

PN21 PDOAHTD STD. MON STAMPED T-21

SURVEY BASELINE N34°52'17"W 226.02'

PN22 PDOAHTD STD. MON STAMPED T-22

SURVEY BASELINE N10°49'27"E 481.39'

PINE TREE

PN23 PDOAHTD STD. MON STAMPED T-23

SURVEY BASELINE N33°17'14"W 136.52'

PN24 PDOAHTD STD. MON STAMPED T-24

PN25 PDOAHTD STD. MON STAMPED T-25

480 790 485 795 490 800 495

N 1°23' 00" E 1554.90'

N 1°23' 00" E 1554.90'

C.L. CONST.

8162 8057

N 1°2 66

P.C. 801+56.45
P.C. 494+44.96

P. I. = 501+05.48
Δ = 13°09' 08.4" RT.
D = 1°00' 00.0"
T = 660.52'
L = 1315.23'
P.C. = 494+44.96
P.T. = 507+60.19
e = 0.020'/'
Ls = 270.00'

SURVEY CONTROL DETAILS

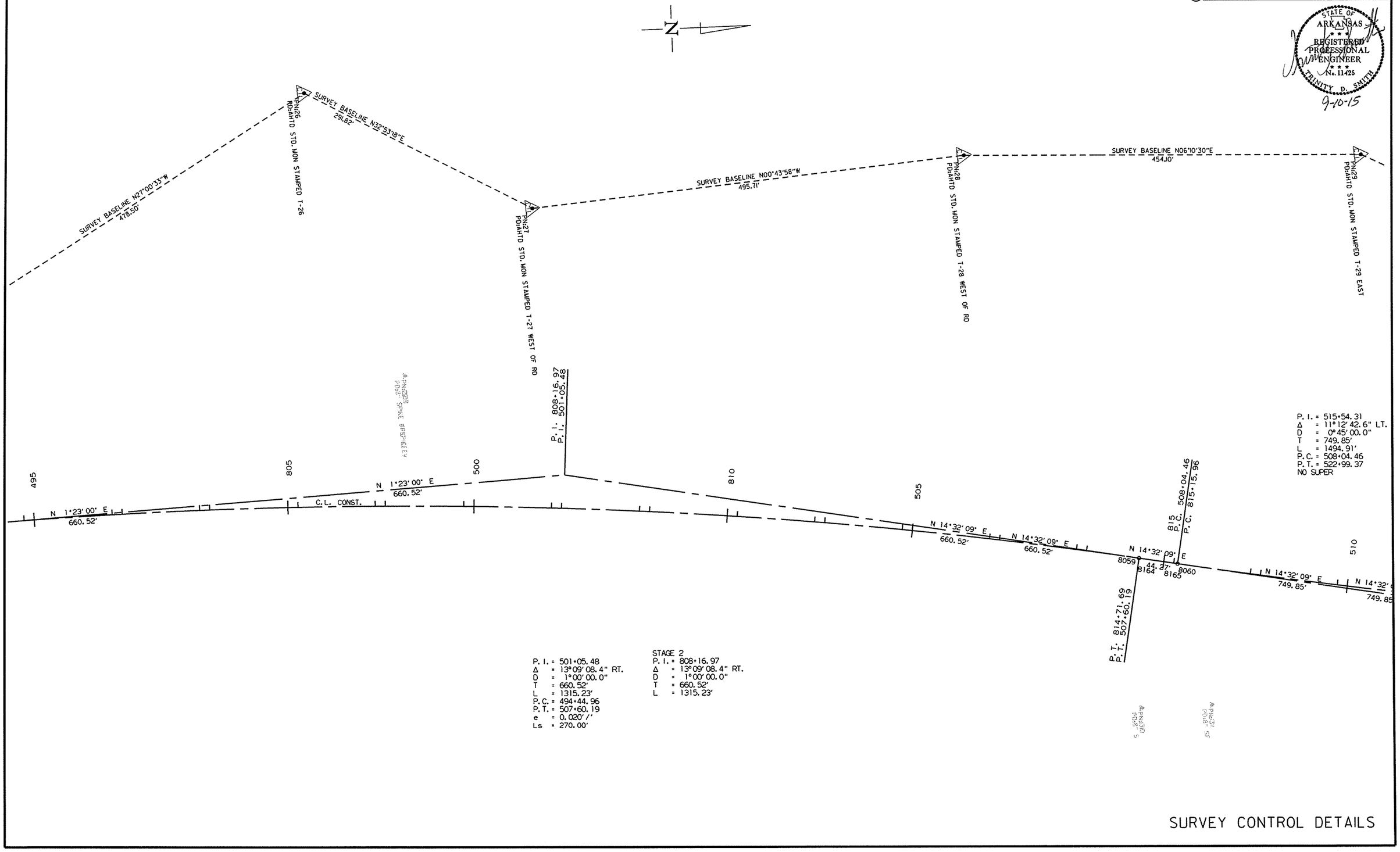
9/8/2015

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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.		090373	80	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		090373	81	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STAGE 2
P. I. = 822+65.80
Δ = 11°12'42.6" LT.
D = 0°45'00.0"
T = 749.85'
L = 1494.91'

P. I. = 515+54.31
Δ = 11°12'42.6" LT.
D = 0°45'00.0"
T = 749.85'
L = 1494.91'
P. C. = 508+04.46
P. T. = 522+99.37
NO SUPER

STAGE 2
P. I. = 831+16.70
Δ = 0°46'21.5" LT.
D = 0°45'00.0"
T = 51.51'
L = 103.02'

P. I. = 524+05.20
Δ = 0°46'21.5" LT.
D = 0°45'00.0"
T = 51.51'
L = 103.02'
P. C. = 523+53.69
P. T. = 524+56.71
NO SUPER

P. I. 53+57.75
Δ = 09°18'48.5" LT.

SURVEY BASELINE N30°50'01"E
1260.35'

N 86°38'37" W
357.75'

14°32'09" E
749.85'

POB 50+00.00

P. I. 822+65.80
P. I. 515+54.31

N 3°19'26" E
749.85'

P.I. 830+10.86
P.T. 522+99.37

P.C. 830+65.18
P.C. 523+53.69

P.T. 831+68.20
P.T. 524+56.71

SURVEY BASELINE N02°34'42"E
788.14'

N 3°19'26" E
8168
8062 54.32' 8167

N 2°33'05" E
8170
8063 51.51' 51.51'
8065
8061

P.I. 831+16.70
P.I. 524+05.20

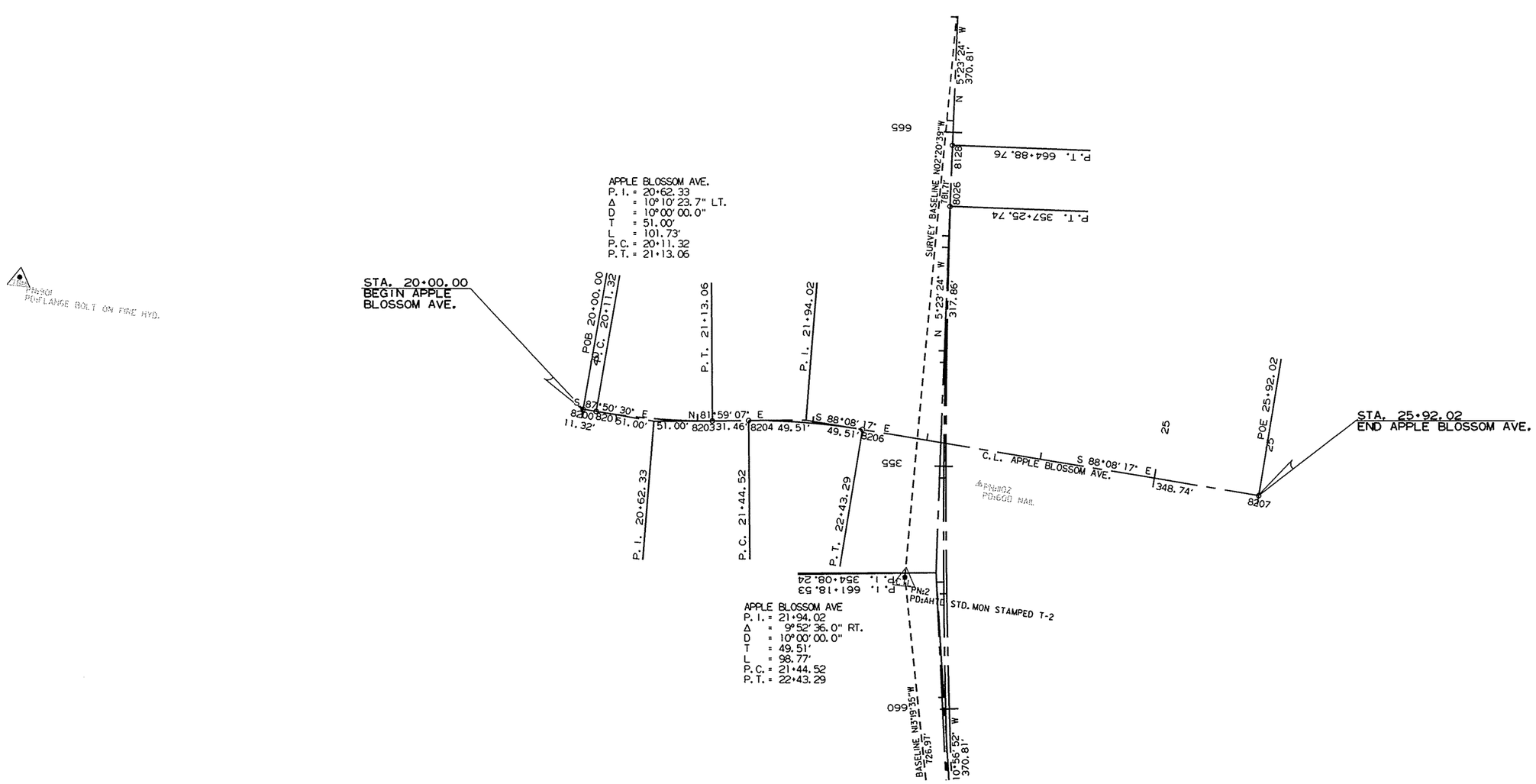
C.L. CONST.

PI STA 524+56.71
PI STA 524+56.71
PI STA 524+56.71

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				6	ARK.			
				JOB NO.		090373	82	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



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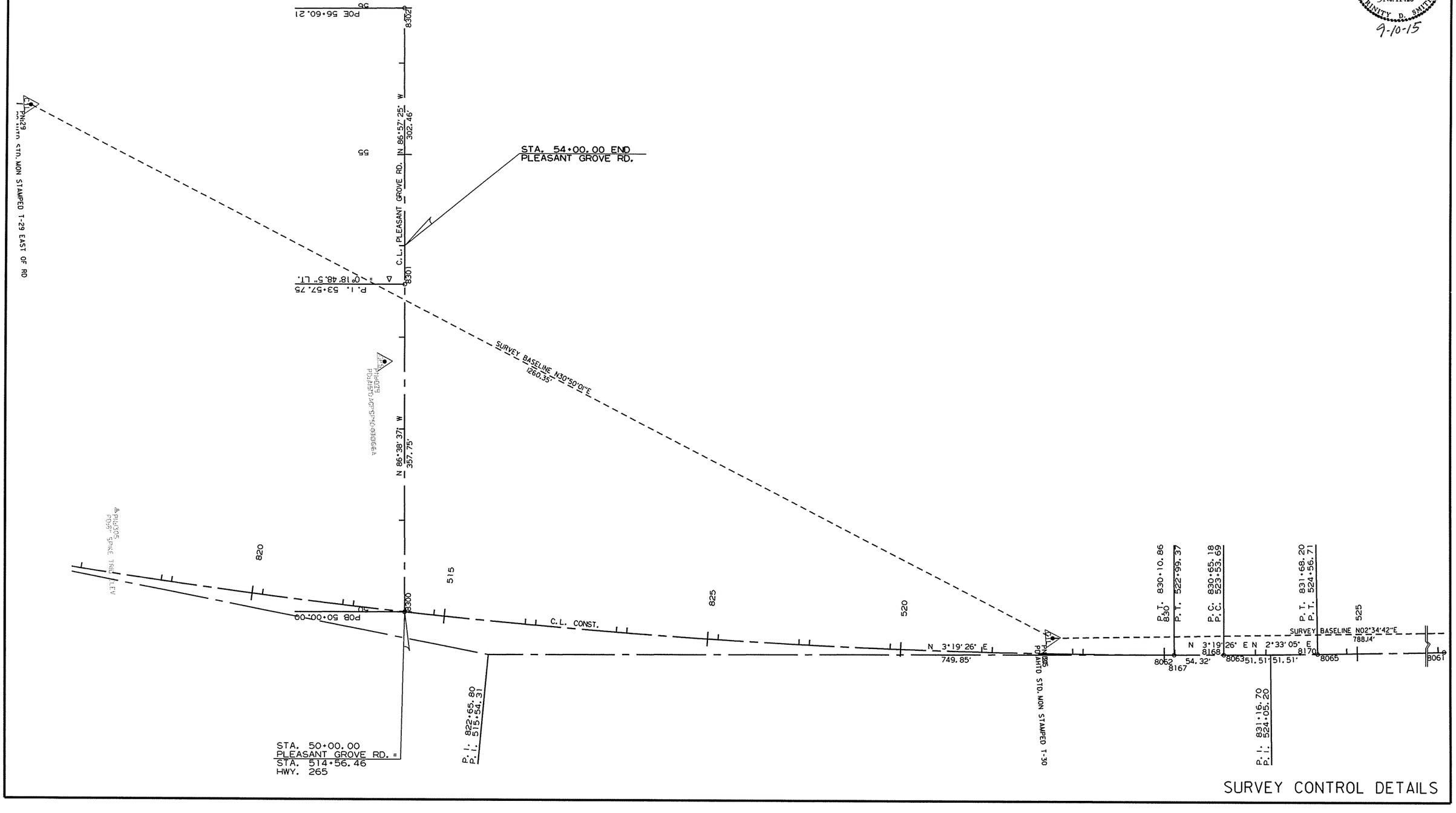
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SURVEY CONTROL DETAILS

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.		090373	83	316

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15



SURVEY CONTROL DETAILS

9/8/2015

R090373.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.		090373	84	316

(2) PLAN AND PROFILE SHEETS

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

STA. 313+00 - IN PLACE
12' X 25' C.M. PIPE CULVERT
LT. SIDE DRAIN
RETAIN

C.L. TRANSITION
P.I. = 75+71.22
Δ = 2°44' 36.6" LT.
D = 5°00' 00.0"
T = 27.44'
L = 54.87'
NO SUPER

STA. 314+81 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STATE OF ARKANSAS
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TRINITY D. SMITH
9-10-15

C.L. TRANSITION
P.I. = 72+23.60
Δ = 6°35' 03.0" RT.
D = 5°00' 00.0"
T = 65.91'
L = 131.68'
NO SUPER

STA. 313+05 - IN PLACE
12' X 19' C.M. PIPE CULVERT
RT. SIDE DRAIN
RETAIN

STA. 314+22.50
BEGIN JOB 090373
LOG MILE 1.279

STA. 314+65 - IN PLACE
12' X 27' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND REPLACE
18' X 34' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 20 CU. YDS

2/26/2014
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				6	ARK.			
				JOB NO.		090373	85	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 315+26.00 - CONST.
TYPE SPECIAL D. I. ON LT.
H = (1'-0")

STA. 319+93 - INSTALL
21" X 15" X 28' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 5 CU. YDS.

P. I. = 318+96.28
Δ = 3°53'55.2" LT.
D = 1°00'00.0"
T = 195.01'
L = 389.87'
P.C. = 317+01.28
P.T. = 320.91.14
NO SUPER

STA. 321+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 322+33 - IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 10 CU. YDS.

STA. 325+39 - IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 20 CU. YDS.

STA. 326+35 - IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSRUCT APPROACH = 25 CU. YDS.

STA. 327+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 330+11 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 329+90.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 315+10 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.5 SQ. YDS.
ON LT.

HATCHER RD.

314+70.00
120.00'

315+50.00
55.00'

317+01.28
P.C.

319+00.00
55.00'

320+91.14
P.T.

321+00.00
55.00'

324+00.00
55.00'

324+17.64
P.I.

328+67.00
60.00'

330+15.51
55.00'

330+38.02
P.T.

PROPOSED R/W

EXISTING R/W

CONST LIMITS

N 7°34'58" W

N 11°28'54" W

N 5°43'48" W

314+92.00
55.00'

314+58.08
80.00'

317+95.00
51.10'-55.00'

318+20.00
51.18'-55.00'

318+96.28
P.I.

320+00.00
55.00'

321+29.83
P.C.

323+00.00
55.00'

327+04.97
P.T.

329+43.32
P.C.

STA. 314+88 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.5 SQ. YDS.
ON RT.

STA. 316+55 INSTALL
21" X 15" X 28' PIPE CULVERT
RT. SIDE DRAIN
APPROACH ON RT. = 10 CU. YDS.

STA. 318+07 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

STA. 319+89 IN PLACE
12' X 24' C.M. PIPE CULVERT
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 5 CU. YDS.

P. I. = 324+17.64
Δ = 5°45'05.2" RT.
D = 1°00'00.0"
T = 287.81'
L = 575.14'
P.C. = 321+29.83
P.T. = 327+04.97
e = 0.020'/'
Ls = 270.00'

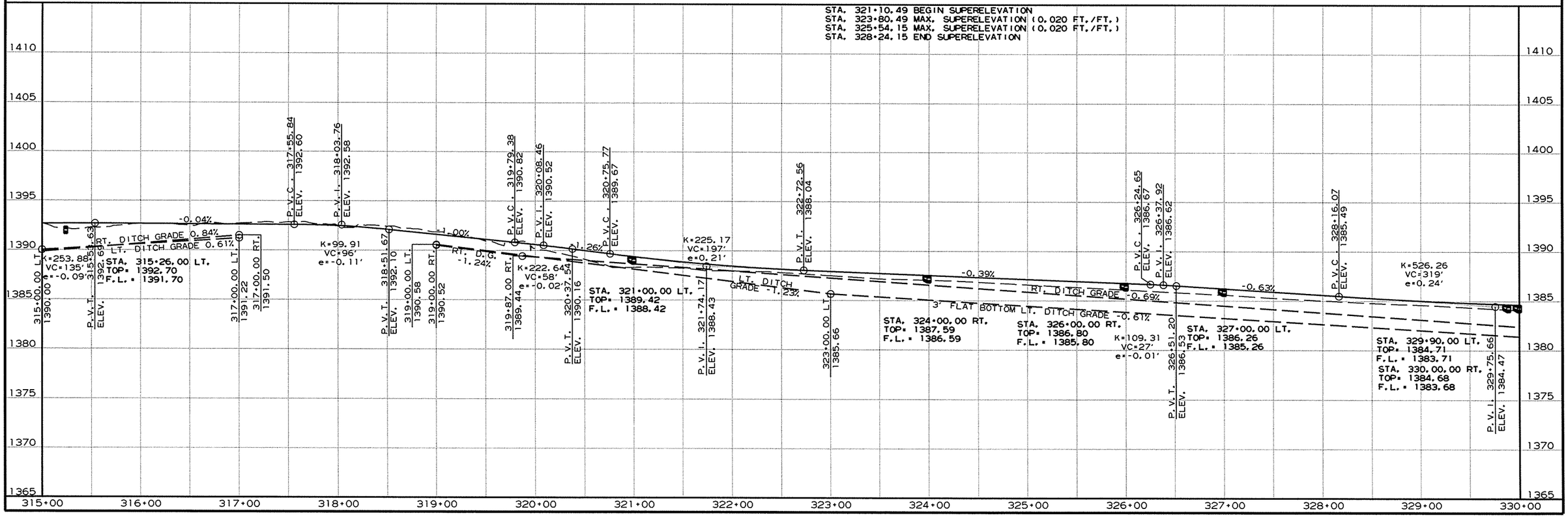
STA. 324+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 326+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 330+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

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

STA. 321+10.49 BEGIN SUPERELEVATION
STA. 323+80.49 MAX. SUPERELEVATION (0.020 FT./FT.)
STA. 325+54.15 MAX. SUPERELEVATION (0.020 FT./FT.)
STA. 328+24.15 END SUPERELEVATION



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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TRINITY D. SMITH
No. 11425
9-10-15

STA. 330+39 - IN PLACE
18" X 70' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 44' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.

STA. 333+50 IN PLACE
DBL. 24" X 46' C.M. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
TRIPLE 36" X 23" X 76' R.C. ARCH PIPE
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 102 CFS D.A. = 52 ACRES
36" X 23" R.C. ARCH PIPE = 228 LIN. FT.
36" X 23" FES = 6 EA.

STA. 333+35.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 335+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
H = (1'-0")

STA. 335+22 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.5 SQ. YDS.
ON LT.

STA. 330+70 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 335+52 - IN PLACE
16" X 70' PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 46' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.

STA. 335+82 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.5 SQ. YDS. NO SUPER
ON LT.

STA. 338+50 IN PLACE
16" X 24' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 339+89 IN PLACE
16" X 56' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 339+60 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 339+40.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 340+18 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 341+05 IN PLACE
16" X 26' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 342+40.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

P. I. = 338+63.50
Δ = 2°27'46.2" LT.
D = 0°15'00.0"
T = 492.64'
L = 985.14'
P.C. = 333+70.85
P.T. = 343+55.99

P. I. = 330+38.02
Δ = 0°28'24.5" RT.
D = 0°15'00.0"
T = 94.69'
L = 189.39'
P.C. = 329+43.32
P.T. = 331+32.71
NO SUPER

STA. 334+29.00 - CONST.
TYPE SPECIAL D. I. ON RT.
H = (1'-0")

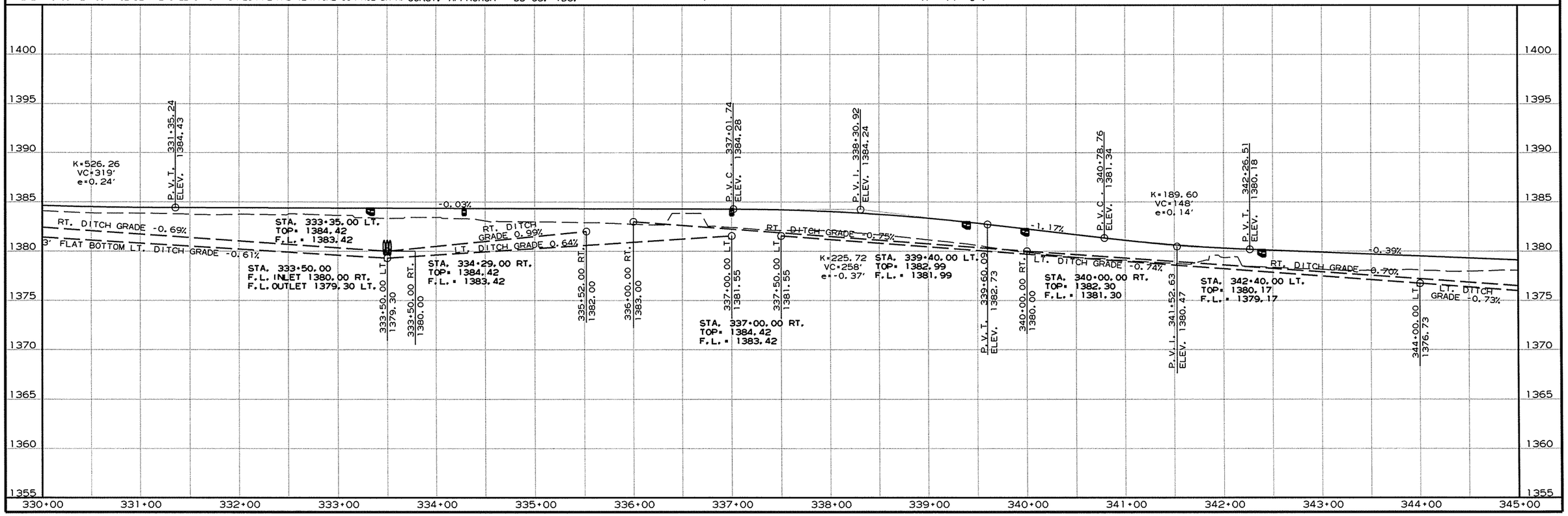
STA. 333+90 - IN PLACE
DBL. 18" X 35' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND REPLACE
DBL. 18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 35 CU. YDS.

STA. 337+00.00- CONST.
TYPE SPECIAL D. I. ON RT.
H = (1'-0")

STA. 340+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 342+03 IN PLACE
16" X 26' C.M. PIPE CULVERT
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL ℄ +01
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

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



2/26/2014

R090373.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.		090373	87	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
09-10-15

STA. 346+86 IN PLACE
24' X 36' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24' X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 347+51 IN PLACE
16' X 24' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 345+40.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 348+40.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 350+25.00 - CONST.
TYPE SPECIAL D. I. ON LT.
H = (1'-0")

STA. 350+40 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 350+66 - IN PLACE
15' X 54' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 48' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 55 CU. YDS.

STA. 350+97 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON LT.

STA. 354+93 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.7 SQ. YDS.
ON LT.

STA. 354+55.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 355+00 - IN PLACE
16' X 39' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +29
18' X 56' PIPE CULVERT
LT. SIDE DRAIN

STA. 355+65 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.9 SQ. YDS.
ON LT.

STA. 358+62 IN PLACE
16' X 82' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 359+07 IN PLACE
16' X 26' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 359+67 IN PLACE
16' X 25' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 357+55.00- CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 358+58 IN PLACE
16' X 24' C.M. PIPE CULVERT
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18' X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 359+59 IN PLACE
24' X 26' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
24' X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 358+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 355+50 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 6.0 SQ. YDS.
ON RT.

STA. 354+74 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.8 SQ. YDS.
ON RT.

STA. 354+60.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 355+14 - IN PLACE
24' X 39' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +12
24' X 58' PIPE CULVERT
RT. SIDE DRAIN

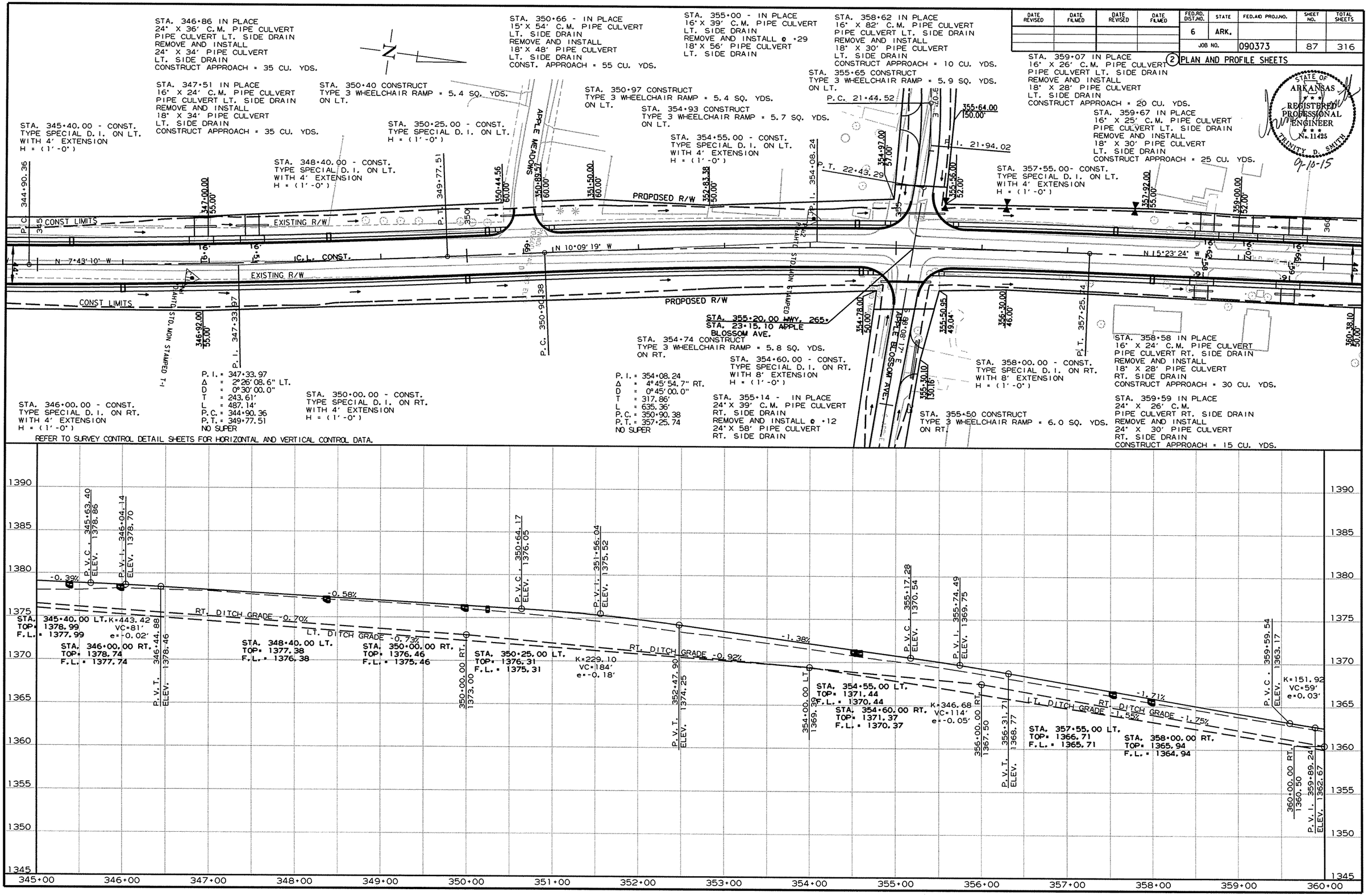
STA. 346+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 350+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

P. I. = 347+33.97
Δ = 2°26'08.6" LT.
D = 0°30'00.0"
T = 243.61'
L = 487.14'
P. C. = 344+90.36
P. T. = 349+77.51
NO SUPER

P. I. = 354+08.24
Δ = 4°45'54.7" RT.
D = 0°45'00.0"
T = 317.86'
L = 635.36'
P. C. = 350+90.38
P. T. = 357+25.74
NO SUPER

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



9/9/2015

R090373.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.		090373	88	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 361+25 IN PLACE
16' X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 361+77 IN PLACE
16' X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 362+16 IN PLACE
16' X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL ℄ +23
18' X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 363+45 IN PLACE
16' X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 365+99 IN PLACE
24' X 24' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24' X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.

STA. 368+88 IN PLACE
TRI. 36" X 30' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
TRI. 48" X 52" PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 240 CU. YDS.

STA. 360+55.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 363+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

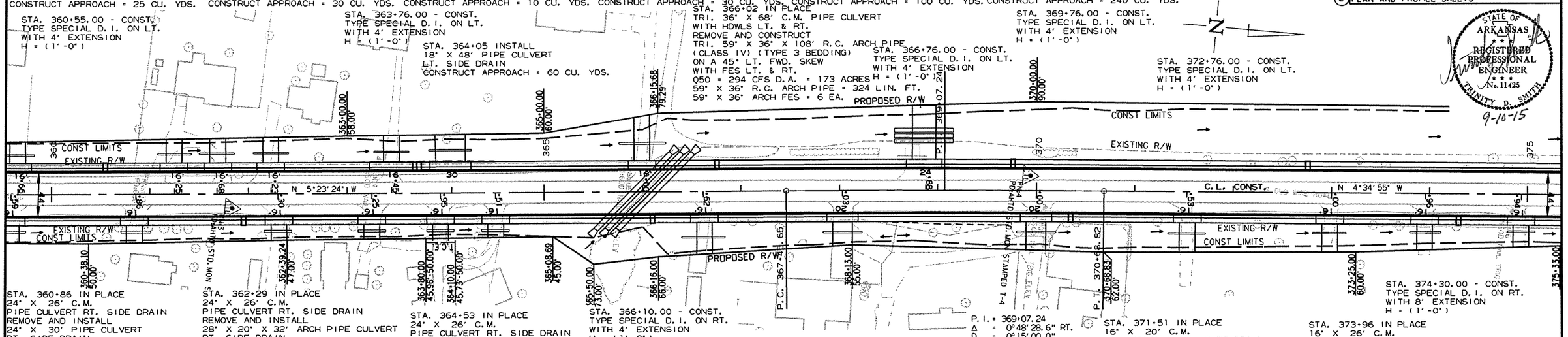
STA. 364+05 INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YDS.

STA. 366+02 IN PLACE
TRI. 36" X 68' C.M. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
TRI. 59" X 36" X 108' R.C. ARCH PIPE
(CLASS IV) (TYPE 3 BEDDING)
ON A 45° LT. FWD. SKEW
WITH FES LT. & RT.
Q50 = 294 CFS D.A. = 173 ACRES
59" X 36" R.C. ARCH PIPE = 324 LIN. FT.
59" X 36" ARCH FES = 6 EA.

STA. 366+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 369+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 372+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")



STA. 360+86 IN PLACE
24" X 26" C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 362+29 IN PLACE
24" X 26" C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
28" X 20" X 32' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 364+53 IN PLACE
24" X 26" C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL ℄ +51
28" X 20" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 366+10.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 368+03 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 371+51 IN PLACE
16" X 20' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 373+96 IN PLACE
16" X 26' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 374+30.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 361+95.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 363+28 IN PLACE
24" X 26" C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
28" X 20" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 363+96 IN PLACE
24" X 26" C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
28" X 20" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 366+63 IN PLACE
16" X 24' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

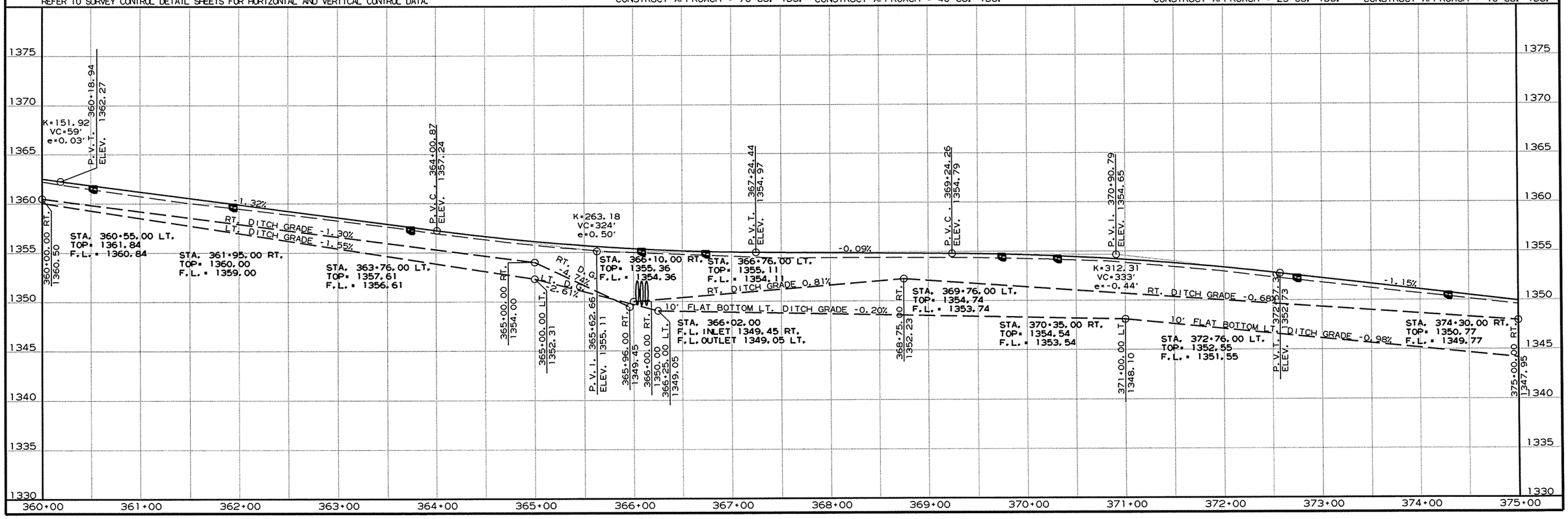
STA. 370+02 IN PLACE
16" X 26' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 370+35.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 373+00 IN PLACE
16" X 19' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL ℄ 372+98
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 374+91 IN PLACE
16" X 20' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

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



9/9/2015

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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.		090373	89	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 375+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 378+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 381+76.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 385+77 IN PLACE
TRI. 42' X 52' C.M. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
QUINT. 51' X 31' X 88' R.C. ARCH PIPE
(CLASS IV) (TYPE 3 BEDDING)
ON A 30° LT. FWD. SKEW
WITH FES LT. & RT.
Q50 = 250 CFS D.A. = 167 ACRES
51' X 31' R.C. ARCH PIPE = 440 LIN. FT.
51' X 31' ARCH FES = 10 EA.

STA. 386+94 IN PLACE
18' X 30' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
TRI. 54' X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.

STA. 385+34.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 388+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
H = (1'-0")

CONST LIMITS
EXISTING R/W
PROPOSED R/W
C.L. CONST.
N 4°34'55" W
N 2°12'21" W
N 2°01'01" W
P.I. 378+32.55
P.I. 389+31.44
P.C. 375+94.88
P.T. 380+70.15
P.C. 388+93.70
P.T. 389+69.18
375+33.00 52.00'
376+71.04 55.00'
377+22.00 63.00'
382+00.00 53.00'
386+00.00 65.00'
379+00.00 90.00'
384+00.00 70.00'
389+00.00 87.45'
STAMPED T-5
STAMPED T-6
16' WIDE GRAVEL DRIVE
EXISTING 16' WIDE GRAVEL DRIVE

STA. 376+58 IN PLACE
16' X 26' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18' X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 378+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

P.I. = 378+32.55
Δ = 2°22'34.9" RT.
D = 0°30'00.0"
T = 237.67'
L = 475.27'
P.C. = 375+94.88
P.T. = 380+70.15
NO SUPER

STA. 382+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

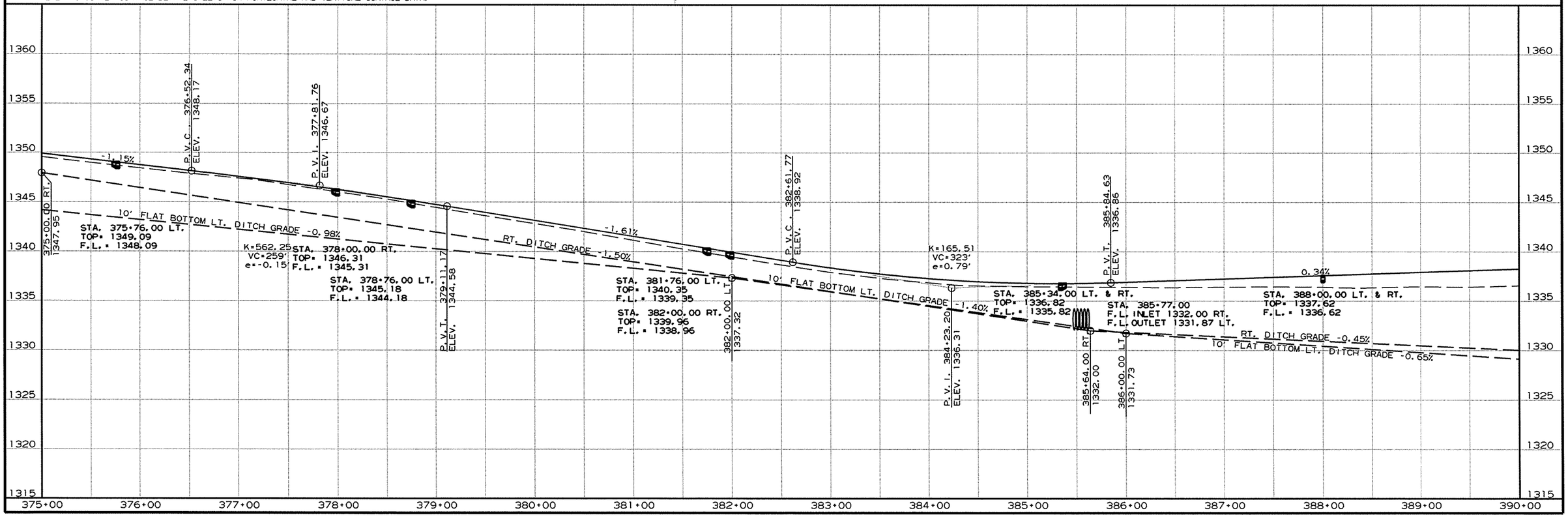
STA. 381+57 IN PLACE
16' X 26' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18' X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 385+34.00- CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 386+08 INSTALL
18' X 52' PIPE CULVERT
RT. SIDE DRAIN
APPROACH ON RT. = 95 CU. YDS.

STA. 388+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.)
H = (1'-0")

P.I. = 389+31.44
Δ = 0°11'19.3" RT.
D = 0°15'00.0"
T = 37.74'
L = 75.48'
P.C. = 388+93.70
P.T. = 389+69.18
NO SUPER



9/9/2015

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				6	ARK.			
				JOB NO.	090373		90	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 391+37 IN PLACE
DBL. 10' X 6' X 47' R.C. BOX CULVERT
WITH 31 WINGS LT. & RT.
ON A 30° RT. FWD. SKEW
RETAIN AND EXTEND 24' LT. AND 23' RT.
TO A COMPLETED LENGTH OF 94'
Q50 = 720 CFS D.A. = 0.8 SQ. MI.
TOTAL SPAN LENGTH = 25'-6"

STA. 394+48.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 397+95.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 399+22 IN PLACE
DBL. 18" X 30" X 100' R.C.
ARCH PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 18" X 58' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 402+19 IN PLACE
12" X 49' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 398+84 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.9 SQ. YDS.
ON LT.

STA. 399+63 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.9 SQ. YDS.
ON LT.

STA. 400+95.00- CONST.
TYPE SPECIAL D.I. ON LT.
H = (1'-0")

STA. 402+88 IN PLACE
16" X 84' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 403+95.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

P.I. = 404+04.13
Δ = 4°34'05.5" LT.
D = 0°45'00.0"
T = 304.71'
L = 609.09
P.C. = 400+99.42
P.T. = 407+08.51'
NO SUPER

CONST LIMITS
EXISTING R/W
PROPOSED R/W
C.L. CONST.
N 2°01'01" W
N 0°30'01" E
N 4°04'04" W
S. OLD WIRE ROAD
SARAH AVE.
PRN8
PO-DAHO STAMPED T-8
STAMPED T-1
390+00.00 91.18
391+00.00 95.00
391+83.00 75.00
393+00.00 71.00
394+08.39
395+12.92 60.00'
395+77.24
396+41.85 53.00'
397+61.68 51.15'
397+45.03
395+55.12 59.00'
397+45.04 53.00'
399+72.94 54.21'
400+09.00 57.00'
400+99.42
401+00.50 56.05'
402+24.36 54.11'
404+91 50.04'
405+00.00 53.00'
400+37.00 55.00'
404+04.13

P.I. = 395+77.24
Δ = 2°31'02.3" RT.
D = 0°45'00.0"
T = 167.85'
L = 335.64'
P.C. = 394+09.39
P.T. = 397+45.03
NO SUPER

STA. 394+58.00 - CONST.
TYPE SPECIAL D.I. ON RT.
H = (1'-0")

STA. 398+25.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 402+58.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 393+74 IN PLACE
18" X 23' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL @ +67
18" X 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 115 CU. YDS.

STA. 394+27 IN PLACE
18" X 31' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 95 CU. YDS.

STA. 395+84 IN PLACE
18" X 24' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 397+95 IN PLACE
18" X 32' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 400+08 IN PLACE
12" X 19' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 401+94 IN PLACE
12" X 19' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 403+51 IN PLACE
12" X 19' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 404+30 IN PLACE
12" X 19' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

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

STREAM NAME: UNNAMED TRIBUTARY
STATION: STA. 391+20-STA.391+40
STREAM TYPE: INTERMITTENT
TOP OF CHANNEL: 1332.0 ft. msl

P.V.C. , 390+68.94 ELEV. 1338.48
P.V.I. , 391+48.18 ELEV. 1338.75
P.V.T. , 392+27.43 ELEV. 1338.56
P.V.C. , 397+73.48 ELEV. 1337.25
P.V.I. , 398+84.97 ELEV. 1336.99
P.V.T. , 399+96.46 ELEV. 1339.07
P.V.C. , 403+99.24 ELEV. 1346.61
P.V.I. , 404+66.74 ELEV. 1347.87

0.34%
-0.24%
1.87%
RT. DITCH GRADE 0.86%
LT. DITCH GRADE 0.86%
RT. DITCH GRADE 1.80%
LT. DITCH GRADE 1.86%
RT. D.G. -0.45%
10' FLAT BOTTOM
LT. D.G. -0.65%

K=275.40
VC=158'
e=-0.11'
K=105.66
VC=223'
e=0.59'
K=731.59
VC=135'
e=0.03'

391+00.00 LT. 1328.50 Q50 DESIGN H.W. ELEV. 1334.62
391+58.00 RT. 1329.32
391+58.00 LT. 1329.15

STA. 391+37.00
F.L. INLET 1329.32 RT.
F.L. OUTLET 1328.57 LT.

STA. 394+48.00 LT. TOP= 1338.07 F.L.= 1337.07
STA. 394+58.00 RT. TOP= 1338.05 F.L.= 1337.05
STA. 397+95.00 LT. TOP= 1337.27 F.L.= 1336.27
STA. 398+25.00 RT. TOP= 1337.33 F.L.= 1336.33
399+00.00 RT. 1335.67
400+00.00 LT. 1336.35
STA. 400+95.00 LT. TOP= 1340.96 F.L.= 1339.96
STA. 402+58.00 RT. TOP= 1344.01 F.L.= 1343.01
STA. 403+95.00 LT. TOP= 1346.57 F.L.= 1345.57

1355 1350 1345 1340 1335 1330 1325 1320 1315 1310

390+00 391+00 392+00 393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00 401+00 402+00 403+00 404+00 405+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	91	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 405+24 IN PLACE
16" X 36" C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36" PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 409+21 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 412+02 IN PLACE
12" X 30' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 413+74 IN PLACE
12" X 25' R.C.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 414+43 IN PLACE
12" X 61' R.C.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 415+87 INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =10CU. YDS.

STA. 412+84 IN PLACE
DBL. 24" X 15' X 31' C.M. ARCH PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
QUINT. 44" X 27" X 76' R.C. ARCH PIPE
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 225 CFS D.A. = 122 ACRES
44"X 27" R.C. PIPE = 380 LIN. FT.
44" X 27" ARCH FES = 10 EA.

STA. 412+36.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

P.I. = 412+82.38
Δ = 5°35'24.2" LT.
D = 0°30'00.0"
T = 559.45'
L = 1118.01'
P.C. = 407+22.93
P.T. = 418+40.94
NO SUPER

STA. 416+19 IN PLACE
12" X 20' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 417+11 IN PLACE
12" X 16' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 417+42.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 418+62 IN PLACE
16" X 30' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL @ +62
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

404+98.73 50.04'
407+08.51
407+22.93
P.I. C
EXISTING R/W
CONST LIMITS
N 14°04'04" W
C.L. CONST.
N OLD WIRE ROAD
EXISTING R/W
405+00.00 53.00'
412+00.00 55.00' 55.38' 70.00'
412+20.00 56.07' 70.00'
413+00.00 60.00'
415+66.00 50.00'
418+64 ΔC
418+40.94
419+00.00 55.00'
PROPOSED R/W
420+34.00 60.00'
N 9°39'29" W
CONST LIMITS
PROPOSED R/W
P.I. 412+82.38
413+00.00 55.00'
417+18.00 50.00'
417+56.00 58.00'
420+30.00 60.00'
STD. NON STAMPED
STA. 408+05 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.
408+08.89 57.52'
408+27.35 57.94'
409+50.00 58.00'
STA. 408+64 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.

STA. 406+21 IN PLACE
12" X 39' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 406+58.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 408+35 INSTALL
18" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 411+08 IN PLACE
12" X 39' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL @ +05
18" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 412+36.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 414+07 IN PLACE
18" X 18' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 415+72 IN PLACE
12" X 26' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL @ +87
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 416+36.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 417+75 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 419+84 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

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

STA. 418+53.00 BEGIN SUPERELEVATION
STA. 421+02.00 MAX. SUPERELEVATION (0.0314 FT./FT.)
STA. 421+03.00 MAX. SUPERELEVATION (0.0314 FT./FT.)
STA. 423+52 END SUPERELEVATION

1370 1365 1360 1355 1350 1345 1340 1335 1330 1325

P.V.T. 405+34.24 ELEV. 1349.26
K=731.59 VC=135' e=0.03'
2.06%
RT. DITCH GRADE 1.80%
LT. DITCH GRADE 1.86%
STA. 406+58.00 RT. TOP= 1351.84 F.L.= 1350.84
407+00.00 LT. 1349.39
407+00.00 RT. 1350.10
P.V.C. 407+21.61 ELEV. 1353.11
P.V.I. 408+37.28 ELEV. 1355.49
408+00.00 LT. 1352.19
408+00.00 RT. 1352.11
LT. D.G. -0.70%
RT. D.G. -0.95%
K=65.64 VC=231' e=-1.02'
P.V.C. 409+72.33 ELEV. 1353.50
P.V.T. 409+52.94 ELEV. 1353.79
410+00.00 LT. 1350.79
P.V.I. 410+39.83 ELEV. 1352.51
LT. DITCH GRADE -1.45%
K=124.48 VC=135' e=0.18'
P.V.T. 411+07.33 ELEV. 1352.25
0.38'
P.V.C. 411+43.95 ELEV. 1352.11
STA. 412+36.00 LT.& RT. TOP= 1351.97 F.L.= 1350.97
STA. 412+84.00 F.L. INLET 1347.50 RT. F.L. OUTLET 1346.67 LT.
412+85.00 LT. 1346.67
412+85.00 RT. 1347.50
K=255.91 VC=539' e=1.42'
P.V.I. 414+13.33 ELEV. 1351.08
P.V.T. 416+82.71 ELEV. 1355.71
1.58%
RT. DITCH GRADE 1.72%
LT. DITCH GRADE 1.72%
STA. 416+36.00 RT. TOP= 1355.00 F.L.= 1354.00
STA. 417+42.00 LT. TOP= 1356.78 F.L.= 1355.78
1.72%
K=143.53 VC=392' e=-1.34
P.V.C. 419+83.40 ELEV. 1360.89

405+00 406+00 407+00 408+00 409+00 410+00 411+00 412+00 413+00 414+00 415+00 416+00 417+00 418+00 419+00 420+00

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				JOB NO.		090373	92	316

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 420+43 IN PLACE
12" X 98' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL @ +09
18" X 92' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 420+63 CONSTRUCT
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 425+55 IN PLACE
18" X 26' R.C. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
24" X 76' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 20 CFS D.A. = 8 ACRES
24" R.C. PIPE = 76 LIN. FT.
24" FES = 2 EA.

STA. 426+12 IN PLACE
18" X 25' R.C. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE AND CONSTRUCT
DBL. 36" X 23" X 74' R.C. ARCH PIPE
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 47 CFS D.A. = 22 ACRES
36" X 23" R.C. ARCH PIPE = 148 LIN. FT.
36" X 23" ARCH FES = 4 EA.

STA. 432+45 IN PLACE
18" X 30' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 434+56 IN PLACE
18" X 21' R.C.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

P. I. = 421+02.89
Δ = 9°31'04.0" LT.
D = 2°00'00.0"
T = 238.49'
L = 475.89'
P.C. = 418+64.40
P.T. = 423+40.29
e = 0.034'/'
Ls = 270.00'

STA. 422+00 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 421+48 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.9 SQ. YDS.
ON LT.
STA. 422+60 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 6.5 SQ. YDS.
ON LT.

STA. 428+05.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 433+21 IN PLACE
18" X 36' R.C. & C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL @ +21
18" X 54' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

P. I. 431+82.49
Δ = 21°53'31.8" RT.
D = 7°15'00.0"
T = 152.84'
L = 301.96'
P.C. = 430+29.64
P.T. = 433+31.60
e = 0.090'/'
Ls = 330.00'

STA. 432+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 433+73 IN PLACE
12" X 21' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 422+38 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 426+27.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 427+80 IN PLACE
15" X 24' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL @ +80
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 428+05.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

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

STA. 418+53.00 BEGIN SUPERELEVATION
STA. 421+02.00 MAX. SUPERELEVATION (0.0314 FT./FT.)
STA. 421+03.00 MAX. SUPERELEVATION (0.0314 FT./FT.)
STA. 423+52 END SUPERELEVATION

STA. 427+82.15 BEGIN SUPERELEVATION
STA. 431+12.15 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 432+49.11 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 435+79.11 END SUPERELEVATION

P.V.I. 421+79.52 ELEV. 1364.27
P.V.C. 424+30.95 ELEV. 1361.72
P.V.T. 425+65.95 ELEV. 1361.01
P.V.C. 427+61.29 ELEV. 1360.93
P.V.T. 428+51.87 ELEV. 1360.95
P.V.C. 429+79.50 ELEV. 1361.03
P.V.I. 430+42.29 ELEV. 1361.08
P.V.T. 431+05.07 ELEV. 1361.50
P.V.C. 432+83.05 ELEV. 1362.70
P.V.I. 433+42.08 ELEV. 1363.10
P.V.T. 434+01.12 ELEV. 1364.31

K=143.53 VC=392' e=-1.34'
K=139.03 VC=135' e=-0.16'
K=837.76 VC=91' e=0.01'
K=206.53 VC=126' e=0.10'
K=85.65 VC=118' e=0.20'

LT. DITCH GRADE 1.72%
RT. DITCH GRADE 1.58%
RT. DITCH GREADE -1.63%
LT. DITCH GRADE -1.37%
-0.01%
-0.04%
0.07%
0.68%
LT. DITCH GRADE 1.07%
RT. DITCH GRADE 0.25%
2.05%
RT. DITCH GRADE 2.17%
RT. D.G. 0.00%
LT. D.G. 0.13%
RT. DITCH GRADE 0.38%
LT. DITCH GRADE 0.60%

422+00.00 RT. 1361.97
422+00.00 LT. 1362.42
423+75.60 1362.28
425+55.00 RT. 1357.10
425+55.00 LT. 1356.63
426+00.00 LT. 1356.69
426+00.00 RT. 1358.00
426+13.00 RT. 1358.05
426+13.00 LT. 1356.77
428+00.00 LT. 1357.90
428+06.58 1360.92
428+00.00 RT. 1358.75
430+42.29 1361.08
433+00.00 RT. 1360.00

STA. 425+55.00
F.L. INLET 1357.10 RT.
F.L. OUTLET 1356.63 LT.

STA. 426+12.00
F.L. INLET 1357.00 RT.
F.L. OUTLET 1356.71 LT.

STA. 426+27.00 RT.
TOP= 1361.03
F.L.= 1360.03

STA. 428+05.00 RT.
TOP= 1360.97
F.L.= 1359.97

STA. 428+05.00 LT.
TOP= 1361.24
F.L.= 1360.24

STA. 432+00.00 RT.
TOP= 1362.18
F.L.= 1361.18

1380 1375 1370 1365 1360 1355 1350 1345 1340 1335

420+00 421+00 422+00 423+00 424+00 425+00 426+00 427+00 428+00 429+00 430+00 431+00 432+00 433+00 434+00 435+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 435+42.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 439+00 INSTALL
18" X 58' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

STA. 440+69 - IN PLACE
12" X 42' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +69
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 5 CU. YDS.

STA. 442+83.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 443+32 - IN PLACE
12" X 22' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 35 CU. YDS.

STA. 444+47 - IN PLACE
12" X 46' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +56
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 15 CU. YDS.

STA. 446+98 IN PLACE
18" X 35' R.C. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE

STA. 447+80 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 447+50.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 449+00 CONSTRUCT
24" X 82' R.C. PIPE
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 10 CFS D.A. = 2 ACRES
24" R.C. PIPE = 82 LIN. FT.
24" FES = 2 EA.

PROPOSED R/W
CONST LIMITS
EXISTING R/W
C.L. CONST.
N 2°42'59" E
JENNIFER LN
FRISCO CEMETERY RD.
STD. NON STAMP
P.C. 449+92.00
P.T. 450+00.00

STA. 435+33.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 435+73 IN PLACE
15" X 33' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 436+39 IN PLACE
9" X 21' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 438+56 INSTALL
18" X 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 439+52 INSTALL
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 440+18 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 441+18 INSTALL
21" X 15" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 442+25 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 443+82.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 445+53 - IN PLACE
12" X 26' P.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 30 CU. YDS.

STA. 446+09 - IN PLACE
18" X 20' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 0 CU. YDS.

STA. 447+50.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 448+69 CONSTRUCT
APPROACH ON RT. = 465 CU. YDS.

STA. 449+40 - IN PLACE
18" X 280' C.M. PIPE CULVERT
RT. SIDE DRAIN REMOVE
CONST. APPROACH = 495 CU. YDS.

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

STA. 435+45 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.

STA. 436+00 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.

STA. 438+28 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.

STA. 438+83 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.4 SQ. YDS.
ON RT.

STA. 448+66 - IN PLACE
18" X 60' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = CU. YDS.

STA. 448+74 - IN PLACE
18" X 50' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = CU. YDS.

STA. 448+39 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.7 SQ. YDS.
ON RT.

STA. 448+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.7 SQ. YDS.
ON RT.

P.V.I. 440+58.45
ELEV. 1377.82

P.V.C. 437+00.34
ELEV. 1370.46

P.V.C. 444+63.65
ELEV. 1364.70

P.V.T. 447+86.66
ELEV. 1360.18

P.V.I. 446+25.15
ELEV. 1359.47

2.05%
RT. D.G. 1.00%
RT. DITCH GRADE 1.57%
LT. DITCH GRADE 1.07%
RT. D.G. 2.17%
RT. DITCH GRADE -2.18%
LT. DITCH GRADE -2.28%
-3.24%
RT. D.G. -3.39%
LT. DITCH GRADE -0.96%
0.44%
LT. DITCH GRADE 0.62%

436+00.00 RT.
1366.50

437+00.00 RT.
1367.50

439+54.00 RT.
1371.50

440+50.00 LT.
1371.22

440+71.00 LT.
1371.48

440+71.00 RT.
1372.19

K=135.35
VC=716'
e=-4.74'

STA. 443+82.00 LT.& RT.
TOP= 1367.32
F.L.= 1366.32

444+00.00 RT.
1365.03

444+16.57
1366.22

446+00.00 RT.
1358.24

446+00.00 LT.
1359.44

K=87.93
VC=323'
e=1.48'

447+50.00 LT.
1358.00

STA. 447+50.00 LT.& RT.
TOP= 1360.13
F.L.= 1359.13

449+00.00 LT.
1357.83

STA. 449+00.00
F.L. INLET 1357.83 LT.
F.L. OUTLET 1352.03 RT.

STA. 435+33.00 RT.
TOP= 1367.06
F.L.= 1366.06

STA. 435+42.00 LT.
TOP= 1367.77
F.L.= 1366.77

1385 1380 1375 1370 1365 1360 1355 1350 1345 1340

435+00 436+00 437+00 438+00 439+00 440+00 441+00 442+00 443+00 444+00 445+00 446+00 447+00 448+00 449+00 450+00

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(2) PLAN AND PROFILE SHEETS

P. I. = 456+48.98
Δ = 9°49'05.6" LT.
D = 0°45'00.0"
T = 656.15'
L = 1309.10'
P. C. = 449+92.83
P. T. = 463+01.92
NO SPUR

STA. 458+00 INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 458+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 463+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 459+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 458+00 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 463+00.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

PROPOSED R/W
CONST LIMITS
C.L. CONST.
N 2°42'59" E
N 7°06'06" W
P.I. 449+92.83
450-45.83 50.00'
450-16.00 115.00'
450-22.00 92.00'
450-22.00 62.40'
450-60.00 61.00'
451-60.00 62.00'
455-50.00 60.00'
458-55.52 50.00'
461-00.00 50.00'
P.I. 456+48.98
P.T. 463+01.92
PT#5 PUNCHED STD. NON STAMPED T-S
PT#6 PUNCHED STD. NON STAMPED T-S
18"
28'
6'
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

P.V.C. 451+27.09
ELEV. 1361.66
P.V.I. 456+92.47
ELEV. 1364.12
0.44%
LT. DITCH GRADE 0.62%
455+00.00 LT.
1361.52
K=507.56
VC=1131'
e=-3.15'
LT. DITCH GRADE -1.09%
STA. 459+00.00 LT.& RT.
TOP= 1359.19
F.L.= 1358.19
459+00.00 RT.
1357.00
461+00.00 LT.
1355.00
LT. DITCH GRADE -1.52%
RT. DITCH GRADE -1.60%
P.V.T. 462+57.85
ELEV. 1353.99
463+00.00 LT.
1351.95
-1.79%
464+00.00 RT.
1349.00
464+00.00 LT.
1347.29
LT. DITCH GRADE -1.67%
STA. 463+00.00 LT.& RT.
TOP= 1353.28
F.L.= 1352.28

1370 1365 1360 1355 1350 1345 1340 1335 1330 1325

450+00 451+00 452+00 453+00 454+00 455+00 456+00 457+00 458+00 459+00 460+00 461+00 462+00 463+00 464+00 465+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 468+11 INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 95 CU. YDS.

STA. 467+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 471+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

STA. 475+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 480+00 CONSTRUCT
36" X 90' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 20 CFS D.A. = 8 ACRES
36" R.C. PIPE = 90 LIN. FT.
36" FES = 2 EA.

STA. 479+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 478+00 INSTALL
30" X 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 95 CU. YDS.

PNH3010 CAP RBR TRI ELEV PD:AHTD STD.MON STAMPED T-17

PNH3011 CAP RBR TRI ELEV PD:AHTD STD.MON STAMPED T-18 3874 NE PP

467+13.00 75.00

472+00.00 90.00

473+25.42

478+00.00 95.00

CONST LIMITS

PROPOSED R/W

C.L. CONST.

465

470

475

N 7°06'06" W

N 1°23'00" E

24°

30°

18

80

44'

465+65.00 95.00

P.C. 467+58.169

472+00.00 85.00

P.T. 478+90.06

STA. 468+30 CONSTRUCT
APPROACH = 80 CU. YDS.
UNCLASSIFIED EXCAVATION

STA. 467+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 471+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

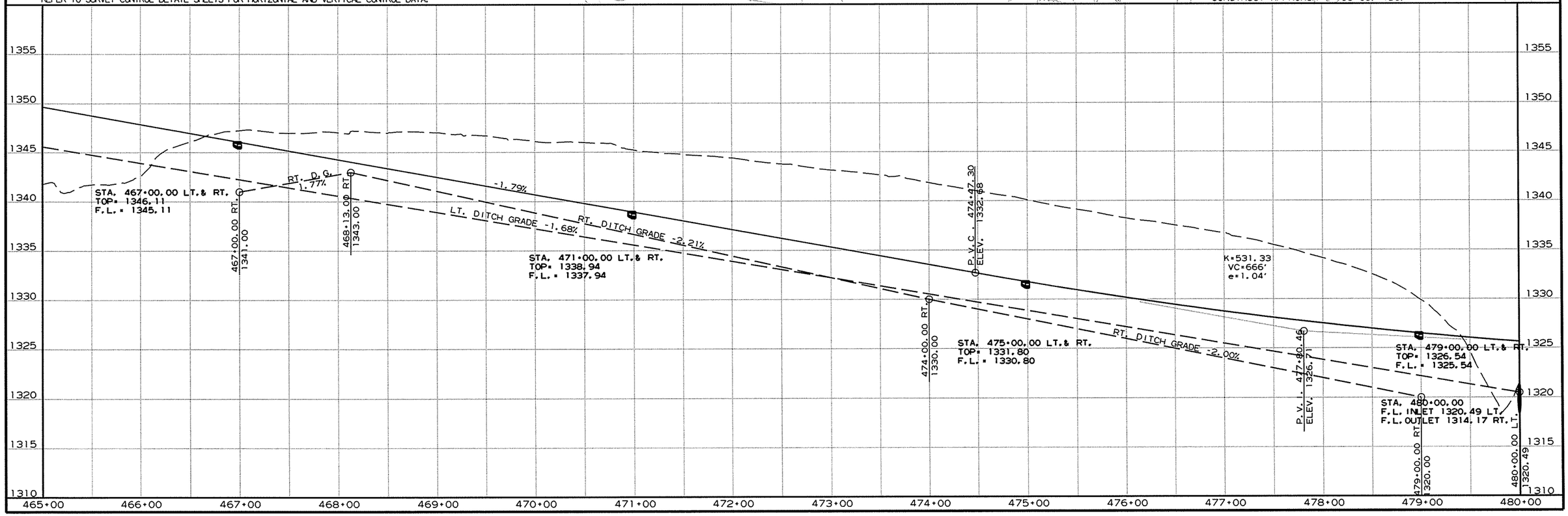
P.I. = 473+25.42
Δ = 8°29'07.0" RT.
D = 0°45'00.0"
T = 566.72'
L = 1131.37'
P.C. = 467+58.69
P.T. = 478+90.06
NO SUPER

STA. 475+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 479+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 478+00 INSTALL
30" X 58' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 195 CU. YDS.

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



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(2) PLAN AND PROFILE SHEETS

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REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 483+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 487+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 489+20.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

PN19 PO:AHTD STD. MON STAMPED T-19

CONST LIMITS

C.L. CONST. N 1°23'00" E

44'

CONST LIMITS

481+00.00 90.00'

488+50.00 110.00'

490+40.00 75.00'-120.00'

490+40.00 75.00'-135.00'

PN23 PO:AHTD STD. MON STAMPED T-23

STAMPED T-24

TD. MON STAMPED T-25

DOGWOOD DR.

P.C. 491+44.96

491+50

493+00

SPECIAL FLOOD HAZARD AREA

STA. 483+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 487+00.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 489+20.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

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

STREAM NAME	STATION	STREAM TYPE	TOP OF CHANNEL
MONTE NE BRANCH	STA. 491+80-STA.492+10	PERENNIAL	1237.0 ft. msl

K=531.33
VC=666'
e=1.04'

P.V.T. 481+13.62 ELEV. 1324.92

480+50.00 LT. 1323.81

STA. 480+00.00
F.L. INLET 1320.49 LT.
F.L. OUTLET 1314.17 RT.

STA. 483+00.00 LT.& RT.
TOP= 1323.96
F.L.= 1322.96

LT. DITCH GRADE -1.22%

RT. DITCH GRADE -1.00%

485+00.00 RT. 1322.00

STA. 487+00.00 LT.& RT.
TOP= 1321.81
F.L.= 1320.81

488+00.00 RT. 1319.00

489+00.00 LT. 1313.41

-0.54%

BRIDGE END
STA. 489+28.92
ELEVATION 1320.54

STA. 489+20.00 LT.& RT.
TOP= 1320.62
F.L.= 1319.62

Q50 DESIGN H.W.
ELEV. 1242.3

1335 1330 1325 1320 1315 1310 1305 1300 1295 1290

480+00 481+00 482+00 483+00 484+00 485+00 486+00 487+00 488+00 489+00 490+00 491+00 492+00 493+00 494+00 495+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
4-10-15

STA. 500+95 INSTALL
21" X 15" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH ON LT. = 5 CU. YDS.

STA. 505+19 INSTALL
21" X 15" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH ON LT. = 5 CU. YDS.
390 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 509+00 CONSTRUCT
24" X 158' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = CFS D.A. = ACRES
24" R.C. PIPE = 158 LIN. FT.
24" FES = 2 EA.

STA. 508+28.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 8' EXTENSION
H = (1'-0")

PROPOSED R/W
CONST LIMITS
495-28.33 133.51
494+81.54 73.45
500-78.00 118.93 170.00'
501+08.59 170.00'
501+12.78 119.82'
502+00.00 123.00'
505+60.00 110.13 160.00'
505+36.00 109.66 160.00'
508+75.00 115.00'
508+04.46
509+75.00 55.00'
510
N 14°32'09" E
497+50.00 55.00'
496+00.00 75.00' 86.39'
500+00.00 85.00'
501+30.24 80.00'
502+00.00 120.00'
505+30.00 100.52' 127.00'
505+88.00 95.15' 127.00'
507+60.19
508+04.21 70.00'
50.00'
495
500
505
510
56.18'
42.18'
16.09'
44.09'

STA. 496+16.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 499+75.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 499+42 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 501+58.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

P.I. = 501+05.48
Δ = 13°09'08.4" RT.
D = 1°00'00.0"
T = 660.52'
L = 1315.23'
P.C. = 494+44.96
P.T. = 507+60.19
e = 0.020'/'
Ls = 270.00'

STA. 503+58.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 505+90 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 505+60 INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 507+58 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 509+58.00 - CONST.
TYPE SPECIAL D. I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

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

STA. 492+42.47 BEGIN SUPERELEVATION
STA. 495+12.47 MAX. SUPERELEVATION (0.020 FT./FT.)
STA. 505+12.33 MAX. SUPERELEVATION (0.020 FT./FT.)
STA. 507+82.33 END SUPERELEVATION

BRIDGE END
STA. 496+01.08
ELEVATION 1316.92

-0.54%

STA. 496+16.00 RT.
TOP= 1316.88
F.L.= 1315.88

RT. DITCH GRADE 0.26%

497+90.00 RT.
1312.99

LT. D.G. 0.22%

P.V.C. 498+67.10
ELEV. 1315.49

499+00.00 LT.
1314.86

RT. D.G. 0.13%

499+84.00 RT.
1313.74

STA. 499+75.00 RT.
TOP= 1315.28
F.L.= 1314.28

P.V.I. 501+17.10
ELEV. 1314.15

501+58.00 RT.
1313.97

STA. 501+58.00 RT.
TOP= 1316.33
F.L.= 1315.33

K=179.51
VC=500'
e=1.74'

502+00.00 LT.
1315.53

503+00.00 LT.
1318.00

503+00.00 RT.
1317.00

P.V.T. 503+67.10
ELEV. 1319.77

STA. 503+58.00 RT.
TOP= 1319.61
F.L.= 1318.61

RT. DITCH GRADE 2.00%

LT. DITCH GRADE 2.99%

505+00.00 RT.
1323.00

STA. 505+90.00 RT.
TOP= 1324.82
F.L.= 1323.82

2.25%

RT. D.G. -0.95%

507+00.00 RT.
1327.00

STA. 507+58.00 RT.
TOP= 1328.59
F.L.= 1327.59

508+00.00 RT.
1326.05

508+00.00 LT.
1329.00

STA. 508+28.00 LT.
TOP= 1330.60
F.L.= 1329.60

STA. 509+58.00 RT.
TOP= 1333.09
F.L.= 1332.09

STA. 509+00.00
F.L. INLET 1313.32 LT.
F.L. OUTLET 1312.00 RT.

1335 1330 1325 1320 1315 1310 1305 1300 1295 1290

495+00 496+00 497+00 498+00 499+00 500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 511+50 CONSTRUCT
24" X 162' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
ON A 30° LT. FWD. SKEW
Q50 = CFS D.A. = ACRES
24" R.C. PIPE = 162 LIN. FT.
24" FES = 2 EA.

STA. 448+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.7 SQ. YDS.
ON RT.

STA. 511+30 INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 511+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 513+92 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 11.2 SQ. YDS.
ON LT.

STA. 514+53 CONSTRUCT
APPROACH ON LT. = 0 CU. YDS.

P.I. = 515+54.31
Δ = 11°12'42.6" LT.
D = 0°45'00.0"
T = 749.85'
L = 1494.91'
P.C. = 508+04.46
P.T. = 522+99.37
NO SUPER

STA. 517+68 - IN PLACE
DROP INLET W/
18" X 144' R.C. PIPE CULVERT
REMOVE

STA. 515+12 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 10.4 SQ. YDS.
ON LT.

STA. 521+98 - IN PLACE
DROP INLET W/
18" X 263' R.C. PIPE CULVERT
REMOVE

STA. 524+63.00 - CONST.
WITH 4' EXTENSION
CONNECT EXISTING 18" R.C. PIPE CULVERT
H = (3'-9")
TYPE MO = 4'
TYPE C = 4' X 4'

STA. 518+00.00 - CONST.
TYPE SPECIAL D.I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 519+00 - IN PLACE
DROP INLET W/
18" X 299' R.C. PIPE CULVERT
REMOVE

STA. 522+00.00 - CONST.
WITH 8' EXTENSION
18" X 7' R.C.PIPE OUTLET WITH FES
18" X 263' PIPE OUTLET TO STA. 524+63 LT.
H = (3'-9")
TYPE MO = 4'
TYPE C = 4' X 4'

STA. 523+31 - IN PLACE
18" X 263' R.C. PIPE CULVERT
REMOVE

P.I. = 524+05.20
Δ = 0°46'21.5" LT.
D = 0°45'00.0"
T = 51.51'
L = 103.02'
P.C. = 523+53.69
P.T. = 524+56.71
NO SUPER

128' TRANSITION

STA. 513+92 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 9.9 SQ. YDS.
ON RT.

STA. 515+12 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 10.0 SQ. YDS.
ON RT.

STA. 514+56.46 HWY. 265+
STA. 50+00.00 PLEASANT
GROVE RD.

STA. 516+14 INSTALL
24" X 232' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 517+87.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 8' EXTENSION
H = (1'-0")

STA. 519+40 INSTALL
24" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 521+17 INSTALL
24" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

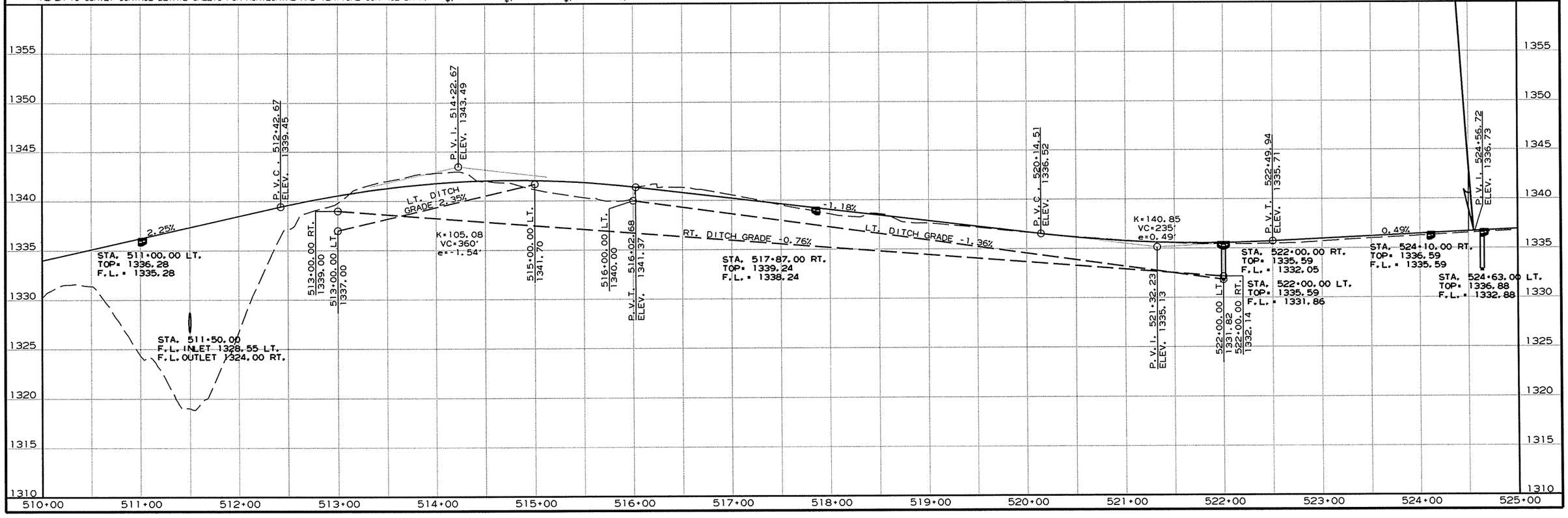
STA. 522+00.00 - CONST.
WITH 8' EXTENSION
18" X 7' R.C.PIPE INLET WITH FES
18" X 46' R.C. PIPE OUTLET TO STA. 522+00 LT.
H = (3'-6")
TYPE MO = 4'
TYPE C = 4' X 4'

STA. 524+10.00 - CONST.
TYPE SPECIAL D.I. ON RT.
WITH 4' EXTENSION
H = (1'-0")

STA. 524+56.72
END JOB 090373

STA. 524+41 CONSTRUCT
APPROACH = 5 CU. YDS.

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



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(2) PLAN AND PROFILE SHEETS APPLE BLOSSOM AVE.

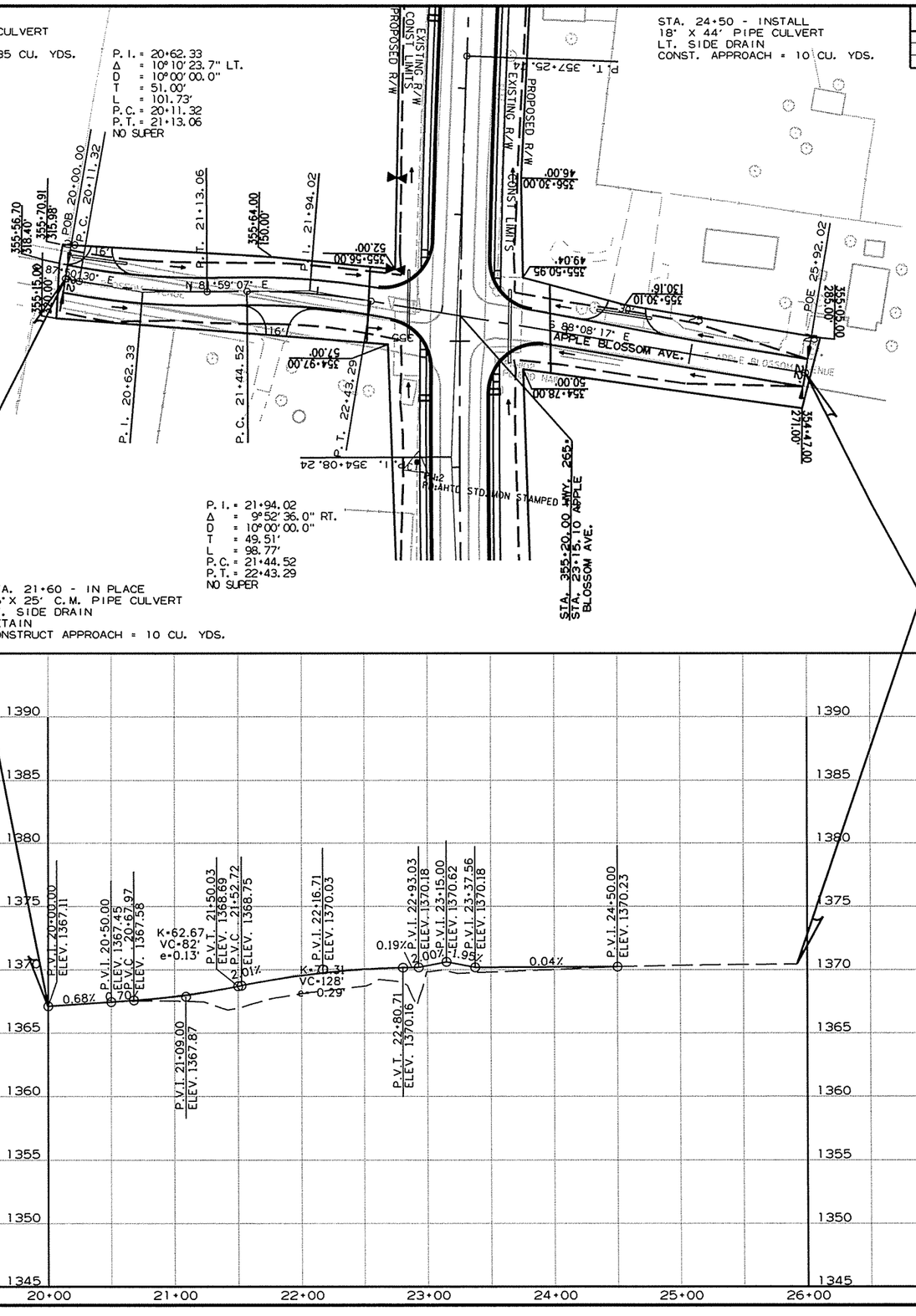
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 20+30 INSTALL
21' X 15' X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

P.I. = 20+62.33
Δ = 10°10'23.7" LT.
D = 10°00'00.0"
T = 51.00'
L = 101.73'
P.C. = 20+11.32
P.T. = 21+13.06
NO SUPER

STA. 24+50 - INSTALL
18' X 44' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 10 CU. YDS.

MK901
PD/FLANGE BOLT ON FIRE HYD.



P.I. = 21+94.02
Δ = 9°52'36.0" RT.
D = 10°00'00.0"
T = 49.51'
L = 98.77'
P.C. = 21+44.52
P.T. = 22+43.29
NO SUPER

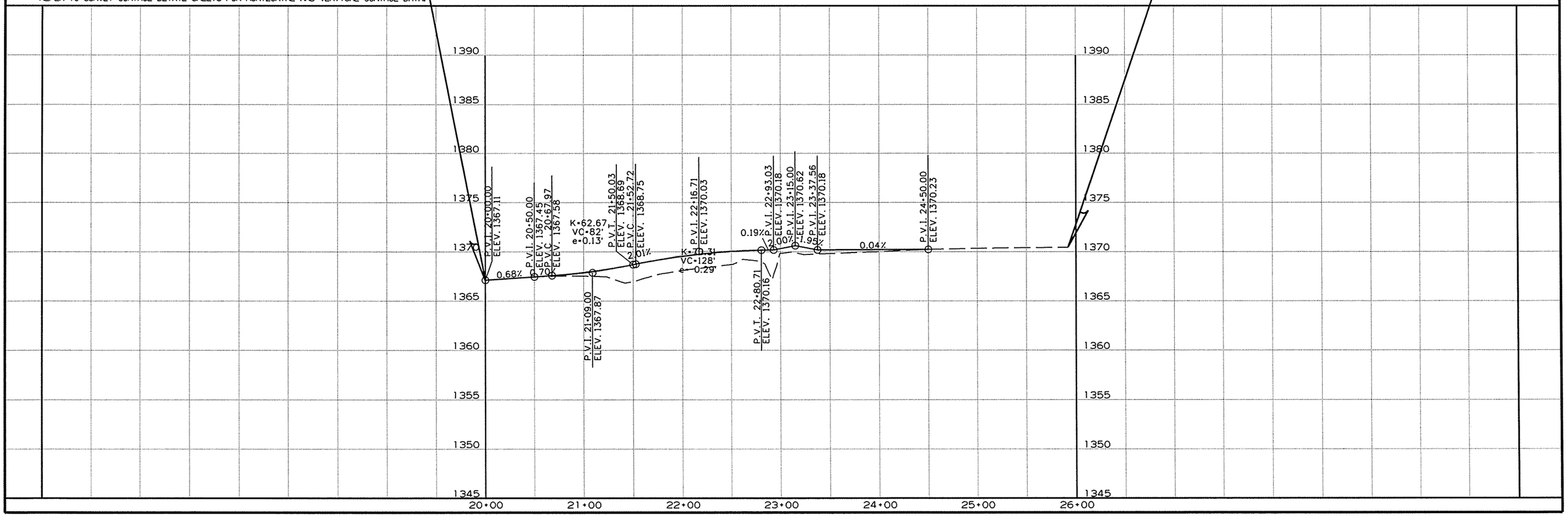
STA. 21+60 - IN PLACE
16' X 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
RETAIN
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 20+00.00
BEGIN APPLE BLOSSOM AVE.

STA. 25+92.02
END APPLE BLOSSOM AVE.

APPLE BLOSSOM AVE.

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



R090373.DGN 9/9/2015

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.		090373	100	316

(2) PLAN AND PROFILE SHEETS PLEASANT GROVE RD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

STA. 52+33 CONST.
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 50+68 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 13.2 SQ. YDS.
ON LT.

STA. 50+68 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 9.0 SQ. YDS.
ON RT.

STA. 53+31 - IN PLACE
DROP INLET ON RT. W/
18" X 15' R.C. PIPE CULVERT
REMOVE

STA. 50+22.00
BEGIN PLEASANT GROVE RD.

STA. 54+00
END PLEASANT GROVE RD.

PLEASANT GROVE RD.

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

P.V.I. 50+00.00
ELEV. 1342.05

P.V.I. 50+22.00 PLEASANT GROVE RD. STA. 514+56.46 HWY. 265
ELEV. 1341.61

P.V.C. 51+70.12
ELEV. 1342.34

K=64.00
VC=60'
e=0.07'

P.V.T. 52+29.95
ELEV. 1342.91

P.V.I. 52+00.03
ELEV. 1342.49

P.V.C. 52+36.82
ELEV. 1343.01

P.V.I. 53+11.82
ELEV. 1344.08

K=62.41
VC=150'
e=-0.45'

P.V.T. 53+86.82
ELEV. 1343.35

P.V.I. 54+99.93
ELEV. 1342.25

0.49%
1.43%
-0.98%
-0.96%

1360 1355 1350 1345 1340 1335 1330 1325 1320 1315

50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00

9/9/2015

R090373.DGN

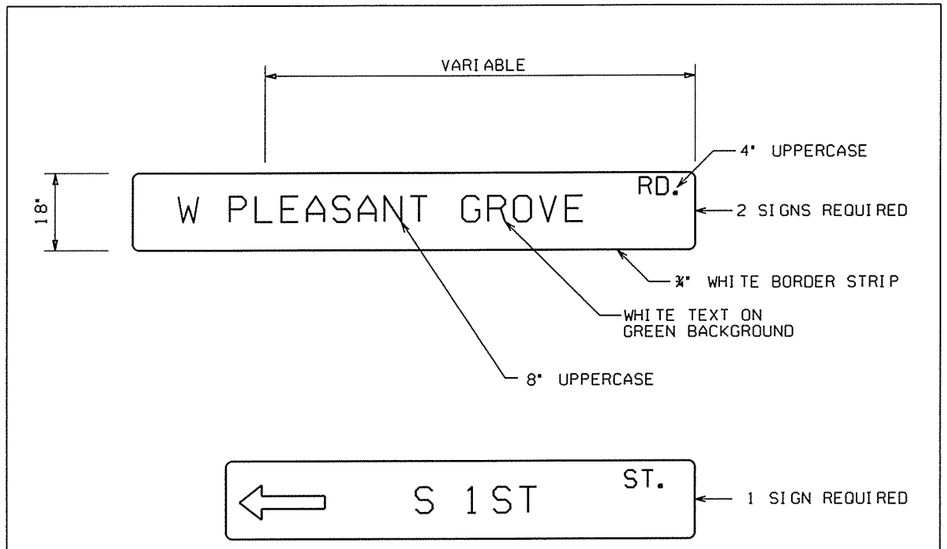
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	101	316

(2) TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2, E-NET (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2335	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	242	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	272	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	95	LIN. FT.
710	NON-METALLIC CONDUIT (3")	426	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1 HD)	2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (70')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO DETECTOR (IP)	5	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD IP (1 CAMERA)	8	EACH
SP&733	CENTRAL CONTROL UNIT (8 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	463	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	555	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	232	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	E-NET CABLE (EXTERIOR CAT 5E)	851	LIN. FT.
SP	ETHERNET SWITCH, TIOO HARDENED (8-PORT)	1	EACH
SP	LED LUMINAIRE ASSEMBLY	3	EACH
SP	LOUVERS	9	EACH
SP	NET-SUBSCRIBER RADIO (5.8 GHz, 32 MBPS)	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	18" STREET NAME SIGN	3	EACH



NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

1090373.dgn 9-8-15

DATE: 9-8-15 FILE NAME: t090373.dgn

LOCATION: HWY. 265/PLEASANT GROVE RD.
CITY: ROGERS
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: CJS

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.		090373	102	316

(2) TRAFFIC SIGNAL NOTES

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101(2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.

3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. THE SERVICE POINT SHALL NOT BE MORE THAN 10 FEET FROM THE CONTROLLER. THE CONTRACTOR SHALL PROVIDE AND INSTALL A TWO CIRCUIT BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.

4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.

5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS OT THE CONTROLLER.

6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.

8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.

9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.

10. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.

11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.

13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.

15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.

16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDIATION SYSTEM IN THE CITY.

17. TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY AVOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF RAODWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY THE FACE OF A NON-BREAKWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVEING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.

20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND THE HAND-HOLE COVER AT THE BASE OF THE POLE. THE TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT THE POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.

21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.

22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.

23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.

24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGN, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

25. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

9-8-15

t090373.dgn

DATE: 9-8-15 FILE NAME: t090373.dgn

LOCATION: HWY. 265/PLEASANT GROVE ROAD
CITY: ROGERS
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: CJS

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.		090373	103	316

(2) SIGNALIZATION PLAN SHEET

DETECTOR SPACING CHART

HWY. 265-S. 1ST ST.		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
PLEASANT GROVE RD.		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
40 MPH	100'	N/A

SIGNAL FACES

12" LENSES

One Section (Solid Symbol)

10, 11, 12, 13, 14, 15

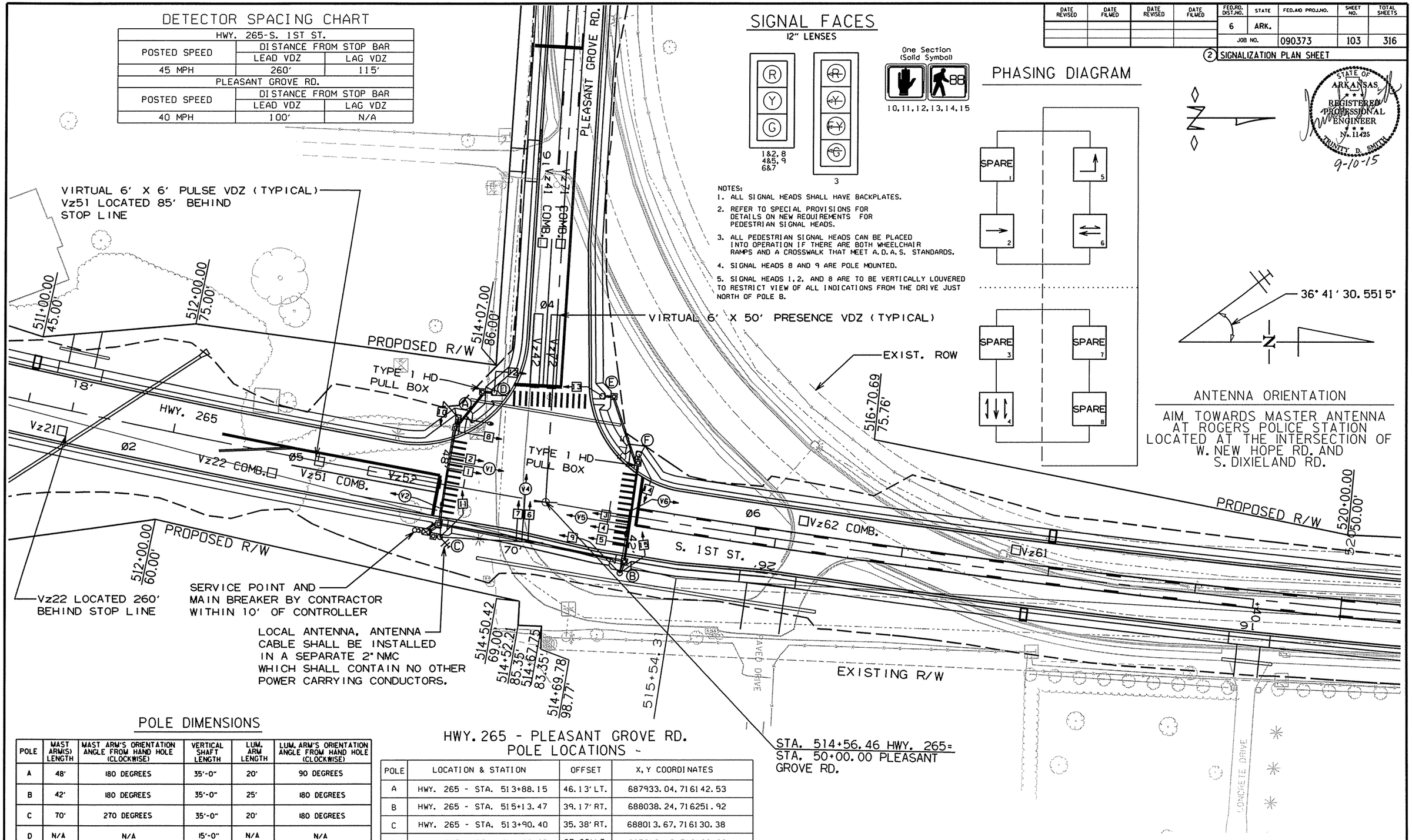
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.
4. SIGNAL HEADS 8 AND 9 ARE POLE MOUNTED.
5. SIGNAL HEADS 1, 2, AND 8 ARE TO BE VERTICALLY LOUVERED TO RESTRICT VIEW OF ALL INDICATIONS FROM THE DRIVE JUST NORTH OF POLE B.

PHASING DIAGRAM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

ANTENNA ORIENTATION

AIM TOWARDS MASTER ANTENNA AT ROGERS POLICE STATION LOCATED AT THE INTERSECTION OF W. NEW HOPE RD. AND S. DIXIELAND RD.



POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	48'	180 DEGREES	35'-0"	20'	90 DEGREES
B	42'	180 DEGREES	35'-0"	25'	180 DEGREES
C	70'	270 DEGREES	35'-0"	20'	180 DEGREES
D	N/A	N/A	15'-0"	N/A	N/A
E	N/A	N/A	15'-0"	N/A	N/A
F	N/A	N/A	15'-0"	N/A	N/A

HWY. 265 - PLEASANT GROVE RD. POLE LOCATIONS -

POLE	LOCATION & STATION	OFFSET	X,Y COORDINATES
A	HWY. 265 - STA. 513+88.15	46.13' LT.	687933.04, 716142.53
B	HWY. 265 - STA. 515+13.47	39.17' RT.	688038.24, 716251.92
C	HWY. 265 - STA. 513+90.40	35.38' RT.	688013.67, 716130.38
D	HWY. 265 - STA. 514+09.27	67.06' LT.	687916.10, 716166.83
E	HWY. 265 - STA. 514+82.32	76.85' LT.	687918.68, 716239.86
F	HWY. 265 - STA. 515+13.38	42.26' LT.	687957.81, 716264.61

SCALE IN FEET
0 30 60 120

DATE: 9-8-15 FILE NAME: t090373.dgn

LOCATION:	HWY. 265/S. 1ST ST.-PLEASANT GROVE RD.
CITY:	ROGERS
COUNTY:	BENTON
DISTRICT:	9 SCALE: 1"=60' DRAWN BY: CJS

9-8-15
t090373.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) SIGNALIZATION PLAN SHEET

NOTE TO CONTRACTOR:
VIDEO DETECTOR V2 SHALL
BE INSTALLED ON THE
LUMINAIRE ARM ON POLE C

75.00'

PROPOSED R/W

514+07.00
86.00'

PLEASANT GROVE RD.

Vz42

Vz72

TYPE 1 HD
PULL BOX

2" NMC

HWY. 265

Vz22 COMB.

Vz51 COMB.

Vz52

2-3" NMC

TYPE 1 HD
PULL BOX

2" NMC

Vz62 COMB.

S. 1ST ST.

70'

92'

514+52.21
85.35'
514+67.75
83.35'
1+69.78
77'

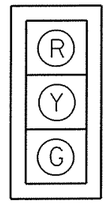
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EXIST. ROW

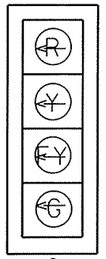
516+70.69
75.76'

SIGNAL FACES

12" LENSES



1&2, 8
4&5, 9
6&7



3

One Section
(Solid Symbol)

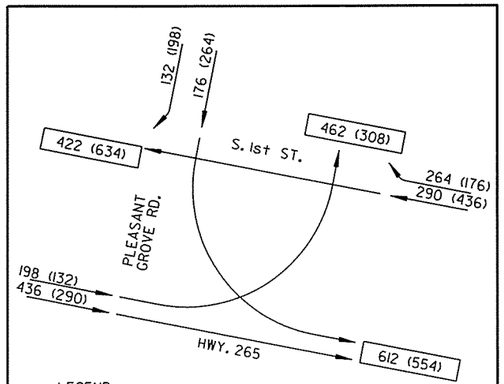


10, 11, 12, 13, 14, 15

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.
4. SIGNAL HEADS 8 AND 9 ARE POLE MOUNTED.
5. SIGNAL HEADS 1, 2, AND 8 ARE TO BE VERTICALLY LOUVERED TO RESTRICT VIEW OF ALL INDICATIONS FROM THE DRIVE JUST NORTH OF POLE B.

STATE OF ARKANSAS
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9-10-15

TRAFFIC FLOW DIAGRAM



LEGEND:
100 - AM PEAK
(100) - PM PEAK

(2015) PROJECTED PEAK HOUR VOLUMES

DESIGN PARAMETERS

POSTED SPEED LIMIT:
40 MPH WEST APPROACH
45 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKINGS PLANS FOR DETAILS.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER -
CONTACT AHTD ROADWAY DESIGN DIVISION

SCALE IN FEET
0 15 30 60

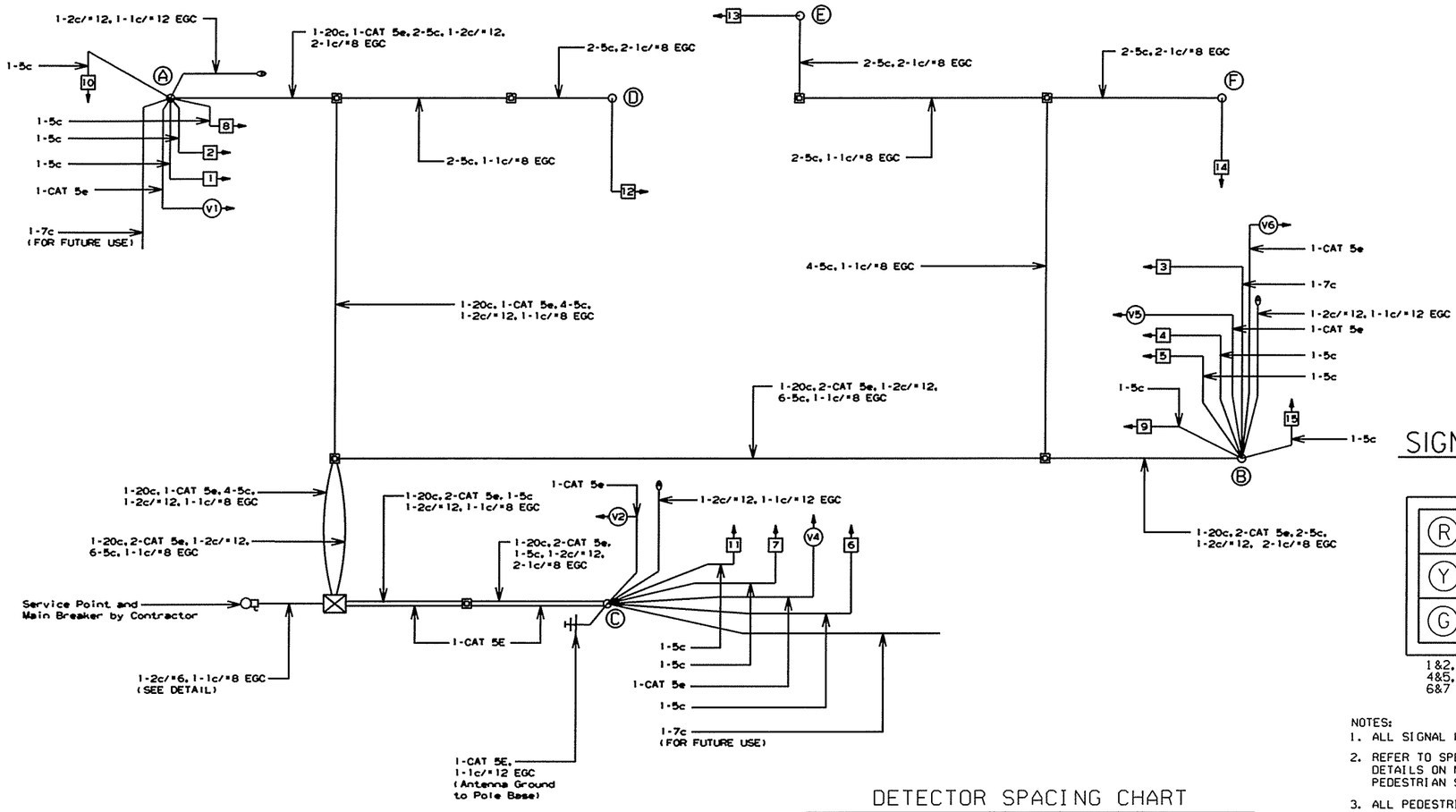
DATE: 9-8-15 FILE NAME: t090373.dgn

LOCATION: HWY. 265/S. 1ST ST.-PLEASANT GROVE RD.
CITY: ROGERS
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=30' DRAWN BY: CJS

t090373.dgn 9-8-15

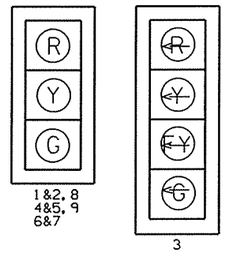
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	105	316

(2) WIRING DIAGRAM & SIGNALIZATION CHARTS

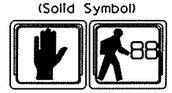


SIGNAL FACES

12" LENSES

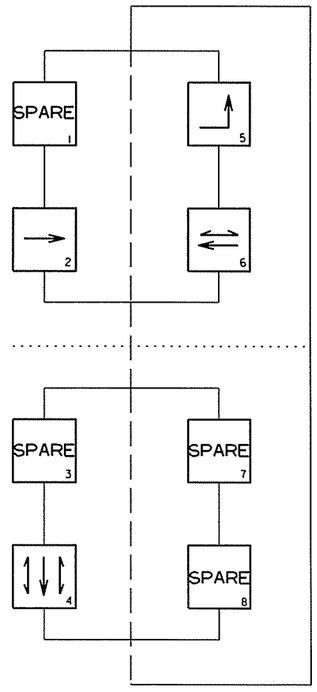


One Section (Solid Symbol)



10, 11, 12, 13, 14, 15

PHASING DIAGRAM



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.
4. SIGNAL HEADS 8 AND 9 ARE POLE MOUNTED.
5. SIGNAL HEADS 1, 2, AND 8 ARE TO BE VERTICALLY LOUVERED TO RESTRICT VIEW OF ALL INDICATIONS FROM THE DRIVE JUST NORTH OF POLE B.

DETECTOR SPACING CHART

HWY. 265-1ST ST.		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD LOOP	LAG LOOP
45 MPH	260'	115'
PLEASANT GROVE RD.		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD LOOP	LAG LOOP
40 MPH	100'	N/A

INTERVAL CHART

SIGNAL FACES	HWY. 265-S. IST ST./PLEASANT GROVE RD.							FLASH SEQ.
	2+5	CLR.	2+6	CLR.	4+7	CLR.		
1&2	R	R	G	••	R	R		R
3	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~		~~R~~
4&5	G	••	G	••	R	R		R
6&7	R	R	R	R	G	••		R
8	R	R	G	••	R	R		R
9	G	••	G	••	R	R		R
10&11	DW	DW	DW	DW	W	FDW		BLK
12&13	DW	DW	W	FDW	DW	DW		BLK
14&15	DW	DW	DW	DW	W	FDW		BLK

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DETECTOR SYSTEM DESCRIPTION: JOB 090373

HWY. 265-S. IST ST./PLEASANT GROVE RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz21	NB FAR	LOCAL			5	V2	2			CAMERA V2	23'
Vz22	NB NEAR	COMB.			6	V10	2	2		CAMERA V2	23'
Vz41	EB FAR	COMB.			9	V12	4	4		CAMERA V4	23'
Vz42	EB NEAR	LOCAL			10	V4	4			CAMERA V4	23'
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23'
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	23'
Vz61	SB FAR	LOCAL			3	V6	6			CAMERA V6	74'
Vz62	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	74'
Vz71	EB LEFT TURN FAR	COMB.			11	V15	7	7		CAMERA V4	23'
Vz72	EB LEFT TURN NEAR	LOCAL			12	V7	7			CAMERA V4	23'
PB4A&B	NORTH LEG	PED.				P4	4				
PB4C&D	SOUTH LEG	PED.				P4	4				
PB2A&B	WEST LEG	PED.				P6	6				
					SPARE AMP CHN. * = 1, 2, 13-16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN=" REFERS TO THE DETECTOR RACK OUTPUT POSITION. THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMED TO ACTUATE THE DESIGNATED PHASE. EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-10-15

9-8-15

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DATE: 9-8-15 FILE NAME: t090373.dgn

LOCATION: HWY. 264/PLEASANT GROVE
CITY: ROGERS
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: CJS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	106	316
				07333	- LAYOUT -		56338	

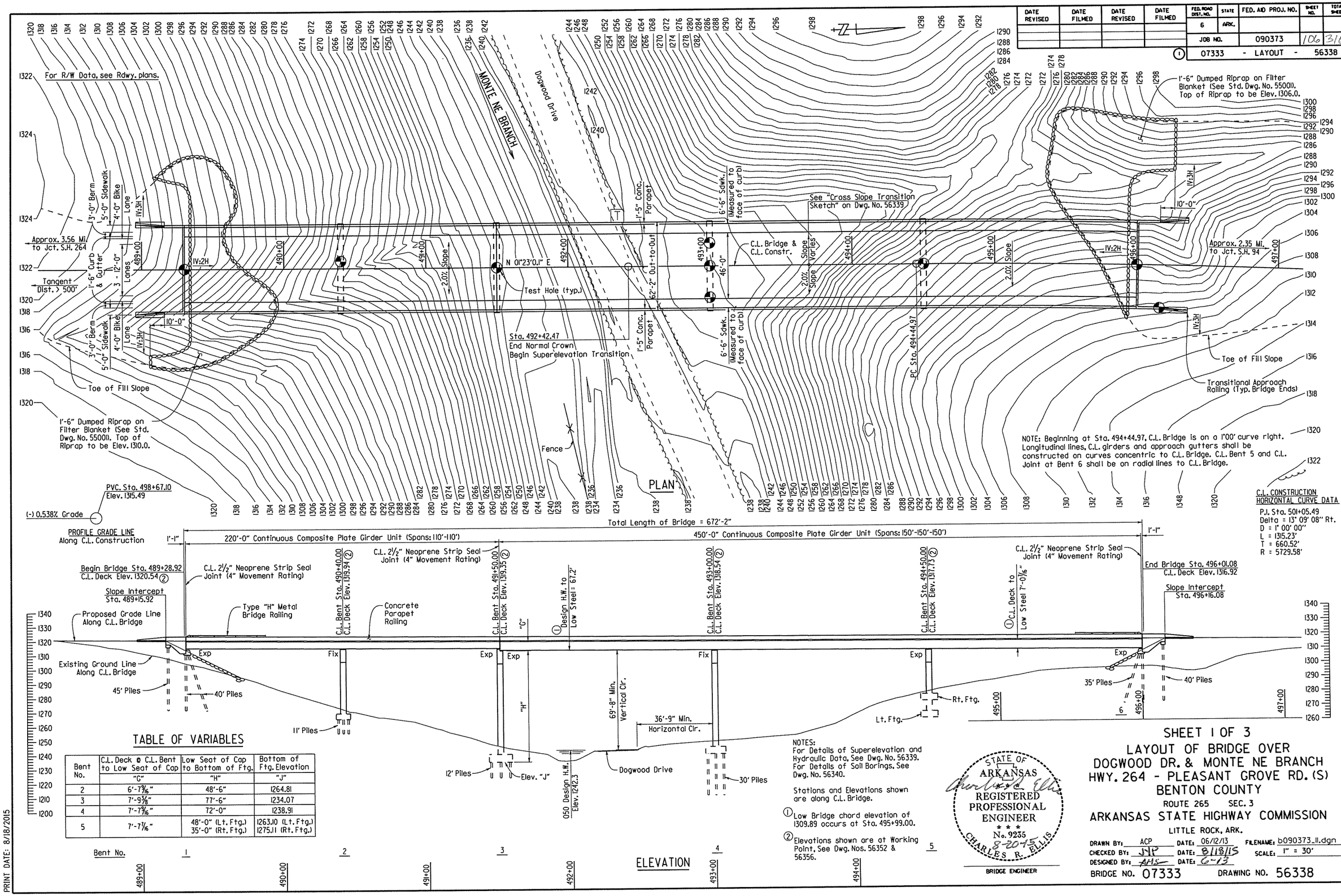


TABLE OF VARIABLES

Bent No.	C.L. Deck @ C.L. Bent to Low Seat of Cap "G"	Low Seat of Cap to Bottom of Ftg. "H"	Bottom of Ftg. Elevation "J"
2	6'-7 3/8"	48'-6"	1264.81
3	7'-9 3/8"	77'-6"	1234.07
4	7'-7 3/16"	72'-0"	1238.91
5	7'-7 1/16"	48'-0" (Lt. Ftg.) 35'-0" (Rt. Ftg.)	1263.10 (Lt. Ftg.) 1275.11 (Rt. Ftg.)

NOTES:
For Details of Superelevation and Hydraulic Data, See Dwg. No. 56339.
For Details of Soil Borings, See Dwg. No. 56340.

Stations and Elevations shown are along C.L. Bridge.

(1) Low Bridge chord elevation of 1309.89 occurs at Sta. 495+99.00.

(2) Elevations shown are at Working Point, See Dwg. Nos. 56352 & 56356.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-2015
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
LAYOUT OF BRIDGE OVER DOGWOOD DR. & MONTE NE BRANCH HWY. 264 - PLEASANT GROVE RD. (S) BENTON COUNTY

ROUTE 265 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

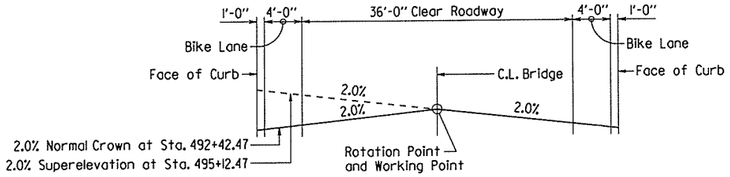
LITTLE ROCK, ARK.

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CHECKED BY:	JMP	DATE:	8/18/15	SCALE:	1" = 30'
DESIGNED BY:	AHS	DATE:	6-13		

BRIDGE NO. 07333 DRAWING NO. 56338

PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	107	316
				07333	- LAYOUT -		56339	



CROSS SLOPE TRANSITION SKETCH

No Scale
Looking Ahead

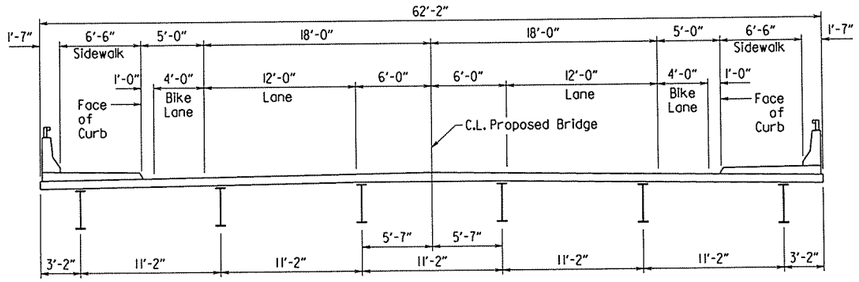
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	990	1242.1	1242.3
Base	100	1,160	1242.4	1242.6
Extreme	500	1,720	1243.3	1243.5
Overtopping	> 500	NA	NA	NA

*Unconstricted water surface without structure or roadway approaches.

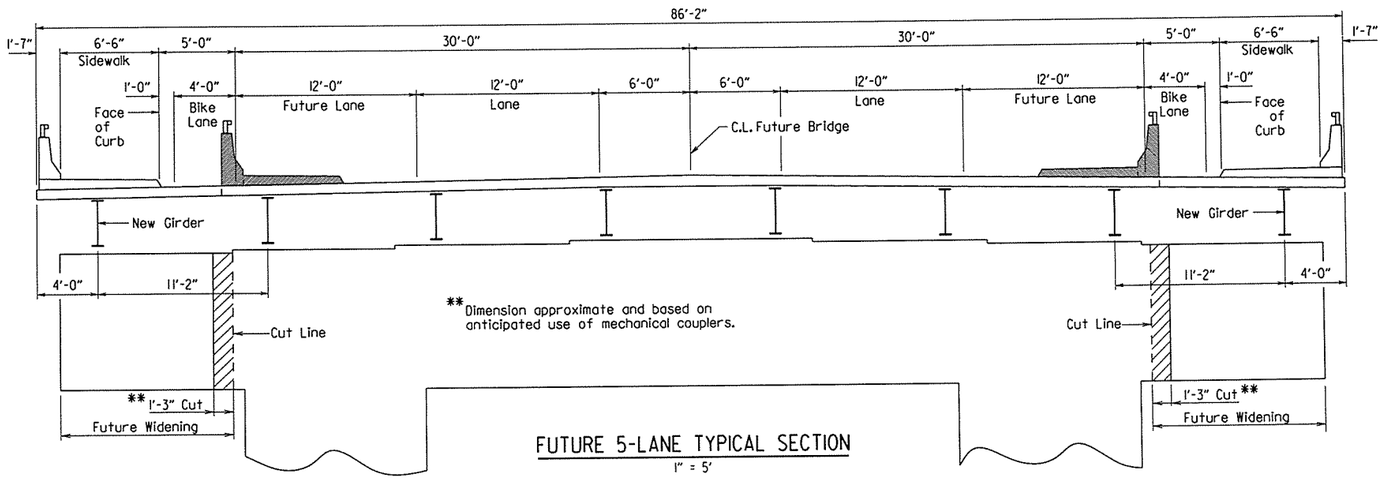
Proposed Low Bridge Chord Elev. = 1309.89 at Station 495+99.00

Drainage Area = 1.0 Sq. Mile



PROPOSED 3-LANE TYPICAL SECTION

1" = 5'



FUTURE 5-LANE TYPICAL SECTION

1" = 5'

FOR INFORMATION ONLY - NOT IN THIS CONTRACT

GENERAL NOTES:

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012) with 2013 Interims.

LIVE LOADING: HL-93
SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at Bent 2 in accordance with Job SP "Exploratory Holes". The quantities of exploratory holes shown are for bidding purposes only. The actual locations, number, and depths of exploratory holes are to be determined in the field by the Engineer.

STEEL PILING: All piling shall be HP 14x89 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 160 tons per pile and into the material designated as Limestone, Chert or Cherty Limestone on the boring legend. Piling in end bents shall be driven after embankment to bottom of cap is in place. Minimum penetration shall be 8' below natural ground for all piles in Bents 1 and 6, and 8' below bottom of footing for all piles in Bents 2 thru 4.

Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths shall be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling in Bent 2 if exploratory holes indicate that the depth to rock is less than 8 feet below bottom of footing plan elevation. Preboring shall be to a minimum 3' depth into material designated as Cherty Limestone on the boring legend. The actual size and depth of preboring shall be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free of debris prior to driving piles and backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to top of the rock and the remaining length backfilled in accordance with Subsection 805.08(a). Any related cost for backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item "Preboring".

FOOTINGS: The top of the footings at Bents 2 thru 4 shall be set a minimum of 2' below natural ground as determined by the lowest existing elevation within the footprint of the footing.

The footings at Bent 5 shall be set a minimum of 2' into the material designated as Limestone or Cherty Limestone on the boring legend and the top of the footings shall be set at or below natural ground as determined by the lowest existing elevation within the footprint of the footing. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in Bent 5 footings shall be poured directly against excavated surfaces of rock.

Foundations for all footings shall be prepared in accordance with Subsection 801.04. All excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

BRIDGE DECK: The concrete bridge deck, except sidewalks, shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Sidewalks shall be given a Class 6 Broomed Finish.

SURFACE FINISH: All exposed surfaces of wingwall and parapet rails (including the outside face), and surfaces above finished ground of columns and wingwalls, the outside vertical surface of the slab, and the underneath side of the overhang outside the exterior girder shall be given a Class 2 Rubbed Finish in accordance with Subsection 802.19(a)(2). A Class 3 Textured Coating Finish will not be allowed.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway and sidewalk surface and to the roadway face and top of the concrete parapet rail.

DETAIL DRAWINGS:	DRAWING NOS.
End Bents	56341 & 56342, 56348 & 56349
Interior Bents	56343 - 56347
Transitional Approach Railing	56350
Elastomeric Bearings	56351
220'-0" Continuous Plate Girder Unit	56352 - 56355 & 56362 - 56364
450'-0" Continuous Plate Girder Unit	56356 - 56361 & 56362 - 56364
Type H Railing	56365
Steel Piling	55020

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
BRIDGE ENGINEER

SHEET 2 OF 3

LAYOUT OF BRIDGE OVER DOGWOOD DR. & MONTE NE BRANCH HWY. 264 - PLEASANT GROVE RD. (S) BENTON COUNTY

ROUTE 265 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

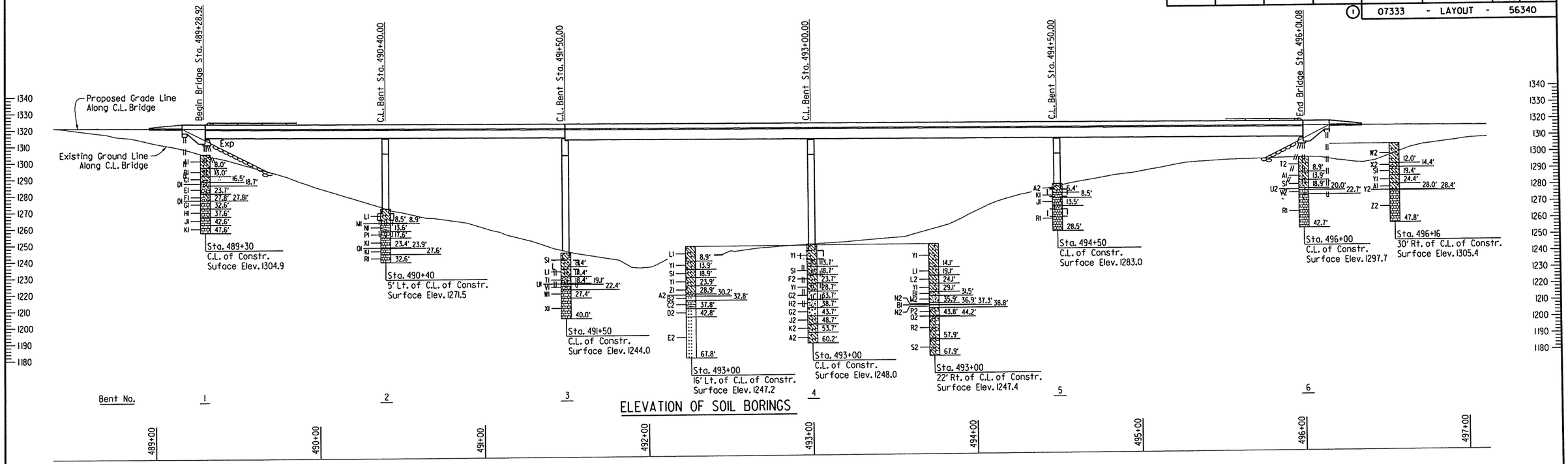
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BRIDGE NO. 07333 DRAWING NO. 56339

PRINT DATE: 9/3/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090373	108	316
07333	- LAYOUT -		56340	



ELEVATION OF SOIL BORINGS

BORING LEGEND

AI-Moist, Hard, Reddish Brown Clay with White Gravel (Chert Fragments)
BI-Moist, Very Stiff, Reddish Brown Clay with Sand and White Gravel (Chert Fragments)
CI-Moist, Hard, Reddish Brown Clay with Sand and White Gravel (Cherty Limestone Fragments)
DI-Moist, Very Hard, Reddish Brown Clay with Sand, White Gravel (Cherty Limestone Fragments) and Cobbles
EI-Moist, Hard, Reddish Brown Clay with Sand, White Gravel (Cherty Limestone Fragments) and Cobbles
FI-Moist, Medium Stiff, Reddish Brown Clay with Sand, White Gravel (Cherty Limestone Fragments) and Cobbles
GI-CHERTY LIMESTONE - Light Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
HI-CHERTY LIMESTONE - Light Gray, Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
JI-CHERTY LIMESTONE - Light Gray, Very Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
KI-CHERTY LIMESTONE - Light Gray, Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
LI-Moist, Medium Stiff, Reddish Brown Clay with White Gravel (Chert Fragments)
MI-Moist, Very Hard, Reddish Brown Sandy Clay with White Gravel (Cherty Limestone Fragments)
NI-CHERTY LIMESTONE WITH CLAY LAYERS - Light Gray, Medium Bedded, Weathered, Moderately Hard, with Slight Dip
PI-CHERTY LIMESTONE - Light Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
OI-Cavity (23.4' to 23.9')
RI-CHERTY LIMESTONE - Light Gray, Very Thick Bedded, Slightly Weathered, Hard, with Slight Dip
SI-Moist, Very Stiff, Reddish Brown Clay with White Gravel (Chert Fragments)
TI-Moist, Medium Dense to Dense, White Gravel (Chert Fragments) and Cobbles with Reddish Brown Clay
UI-Moist, Very Dense, White Gravel (Chert Fragments) and Cobbles with Reddish Brown Clay
VI-LIMESTONE WITH WHITE TRIPOLI LAYERS - Light Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
WI-LIMESTONE WITH WHITE TRIPOLI LAYERS - Light Gray, Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
XI-LIMESTONE WITH WHITE CHERT AND TRIPOLI LAYERS - Light Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
YI-Moist, Stiff, Reddish Brown Clay with White Gravel (Chert Fragments)
ZI-Moist, Medium Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
A2-Moist, Very Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
B2-TRIPOLI - White, Thin Bedded, Weathered, Moderately Hard, with Slight Dip
C2-LIMESTONE WITH REDDISH BROWN CLAY LAYERS - Light Gray, Very Thick Bedded, Slightly Weathered, Moderately Hard, with Slight Dip and Vertically Fractured Layers
D2-CHERT WITH LIGHT GRAY LIMESTONE AND REDDISH BROWN CLAY LAYERS - White, Thick Bedded, Weathered, Hard, with Slight Dip and Fractured Layers
E2-CHERT WITH REDDISH BROWN CLAY LAYERS - White, Thick Bedded, Weathered, Hard, with Slight Dip and Fractured Layers
F2-Moist, Soft, Reddish Brown Clay with White Gravel (Chert Fragments)
G2-Moist, Very Dense, White Gravel (Chert Fragments)
H2-Moist, Dense, White Gravel (Chert Fragments) with Brown Sand
J2-Moist, Very Hard, Reddish Brown Clay with White Gravel (Chert Fragments)
K2-Moist, Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
L2-Moist to Wet, Medium Dense, White Gravel (Chert Fragments) with Reddish Brown Clay
M2-Moist, Very Dense, White Gravel (Chert Fragments) with Reddish Brown Clayey Sand
N2-CHERT - White, Hard
P2-CHERT WITH REDDISH BROWN CLAY LAYERS - White, Thin Bedded, Weathered, Hard, with Slight Dip and Fractured Layers
O2-Cavity (43.8' to 44.2')
R2-CHERT WITH REDDISH BROWN CLAY LAYERS - White, Thin Bedded, Weathered, Hard, with Slight Dip and Fractured Layers
S2-CHERT WITH REDDISH BROWN CLAY LAYERS - White, Very Thin Bedded, Weathered, Hard, with Slight Dip and Fractured Layers
T2-Moist, Very Hard, Reddish Brown Clay with White Gravel (Chert Fragments) and some Iron Nodules
U2-Dry, Very Dense, White Gravel (Chert Fragments) with Gray and Brown Sand
V2-CHERTY LIMESTONE - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip
W2-Moist, Hard, Reddish Brown Clay with White Gravel (Chert Fragments) and some Iron Nodules
X2-Moist, Very Hard, Reddish Brown Clay with White Gravel (Chert Fragments), Cobbles and some Iron Nodules
Y2-CHERTY LIMESTONE - Light Gray, Hard
Z2-CHERTY LIMESTONE - Light Gray, Very Thick Bedded, Slightly Weathered, Hard, with Slight Dip

"N" VALUES

Sta. 489+30 - C.L. of Constr.
3.5- 4.5, N=45
8.5- 9.5, N=29
13.5- 14.5, N=38
16.5- 16.5, N=30 (.01")
19.2- 20.2, N=33
24.2- 25.2, N=7
27.8- 27.8, N=30 (.01")

Sta. 490+40 - 5' Lt. of C.L. of Constr.
4.0- 5.0, N=7
8.5- 8.8, N=60 (3")
8.9- 8.9, N=60 (.01")

Sta. 491+50 - C.L. of Constr.
3.9- 4.9, N=16
8.9- 9.9, N=7
13.9- 14.9, N=25
18.4- 18.6, N=60 (3")

Sta. 493+00 - 16' Lt. of C.L. of Constr.
4.4- 5.4, N=7
9.4- 10.4, N=12
14.4- 15.4, N=16
19.4- 20.4, N=13
24.4- 25.4, N=11
29.4- 29.8, N=60 (5")

Sta. 493+00 - C.L. of Constr.
4.2- 5.2, N=11
9.2- 10.2, N=12
14.2- 15.2, N=17
19.2- 20.2, N=4
24.2- 25.2, N=15
28.7- 28.9, N=37 (2")
34.2- 35.2, N=41
38.7- 38.9, N=60 (2")
44.2- 44.5, N=60 (3")
49.2- 50.2, N=31
54.2- 55.2, N=54
59.2- 60.2, N=82

Sta. 493+00 - 22' Rt. of C.L. of Constr.
4.6- 5.6, N=12
9.6- 10.6, N=14
14.6- 15.6, N=8
19.6- 20.6, N=25
24.6- 25.6, N=9
29.6- 30.6, N=22
34.6- 35.6, N=93

Sta. 494+50 - C.L. of Constr.
4.6- 5.0, N=60 (5")
5.4- 5.4, N=10 (.01")

Sta. 496+00 - C.L. of Constr.
4.4- 5.4, N=75
9.4- 10.4, N=38
14.4- 15.4, N=19
19.4- 19.6, N=60 (2")
20.0- 20.0, N=10 (.01")

Sta. 496+16 - 30' Rt. of C.L. of Constr.
4.9- 5.9, N=49
9.9- 10.9, N=41
14.9- 15.9, N=28
19.9- 20.9, N=11
24.9- 25.9, N=37
28.4- 28.4, N=10 (.01")

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE OVER
DOGWOOD DR. & MONTE NE BRANCH
HWY. 264 - PLEASANT GROVE RD. (S)
BENTON COUNTY
ROUTE 265 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

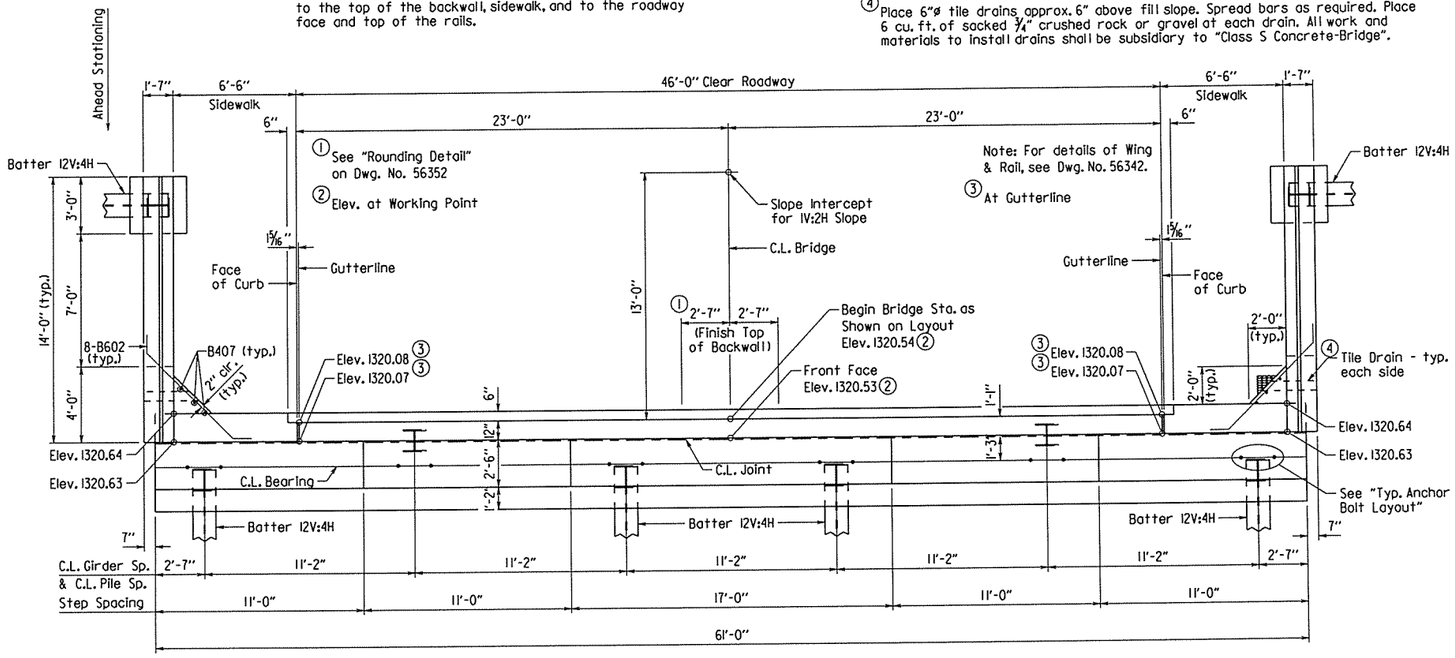
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BRIDGE NO. 07333 DRAWING NO. 56340

PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	109	316
				(1) 07333 -		END BENT	- 56341	

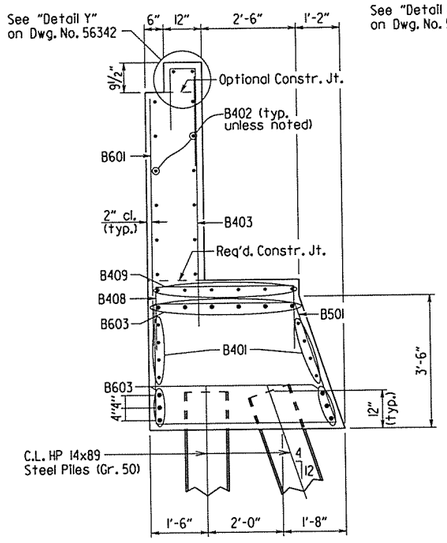
NOTE: Class 2 Protective Surface Treatment shall be applied to the top of the backwall, sidewalk, and to the roadway face and top of the rails.

④ NOTE: For Bar List, see Dwg. No. 56342.
Place 6"ø tile drains approx. 6" above fill slope. Spread bars as required. Place 6 cu. ft. of sacked ¾" crushed rock or gravel at each drain. All work and materials to install drains shall be subsidiary to "Class S Concrete-Bridge".



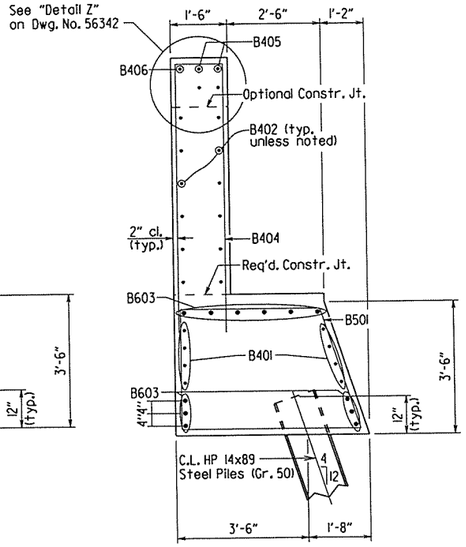
PLAN - END BENT 1

¼" = 1'-0"



SECTION A-A

½" = 1'-0"

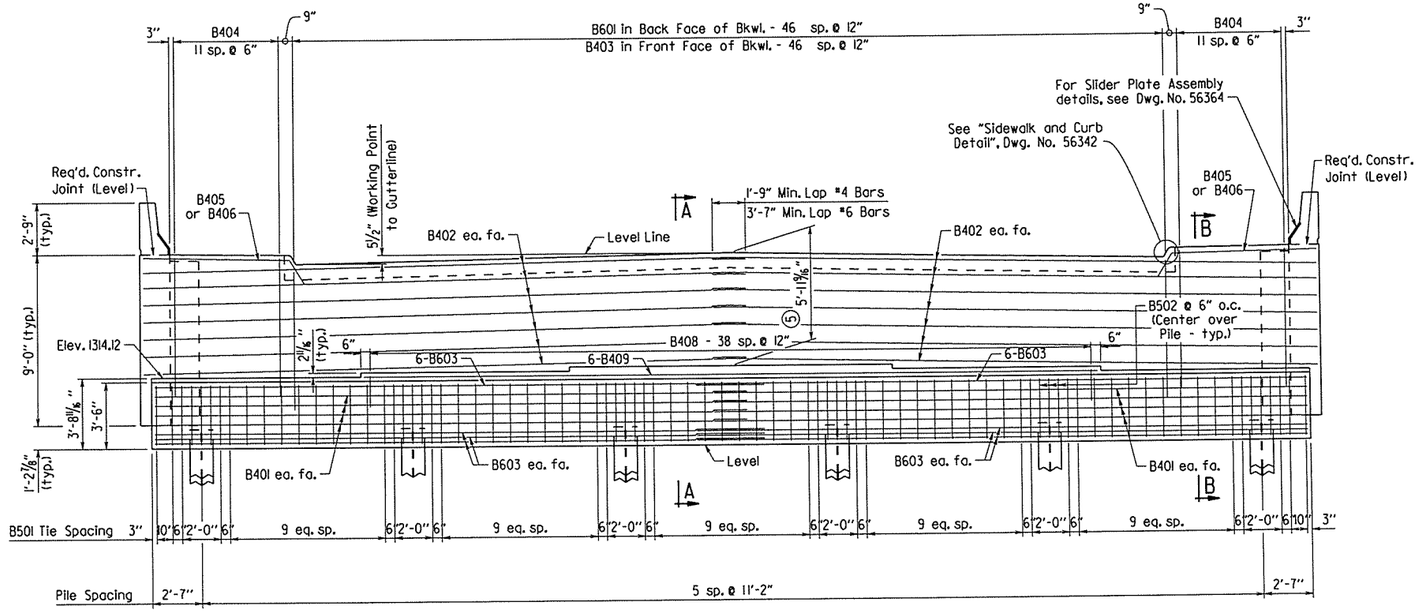


SECTION B-B

½" = 1'-0"

NOTE: The Backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See Dwg. No. 56364, "Expansion Device Installation at End Bents", for additional information.

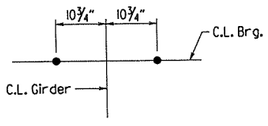
⑤ Measured to Working Point at front face of backwall at C.L. Bridge



ELEVATION - END BENT 1

Looking Back

¼" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

TYPICAL ANCHOR BOLT LAYOUT

¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENT 1

ROUTE SEC.

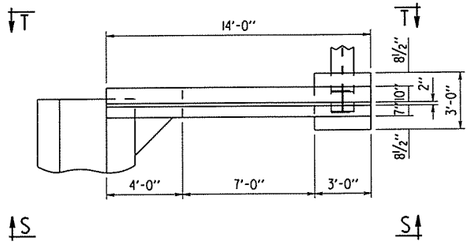
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 5-29-14
CHECKED BY: AMS DATE: 6-8-15
DESIGNED BY: JWP DATE: 5/14
FILENAME: b090373_b1.dgn
SCALE: AS NOTED

BRIDGE NO. 07333 DRAWING NO. 56341

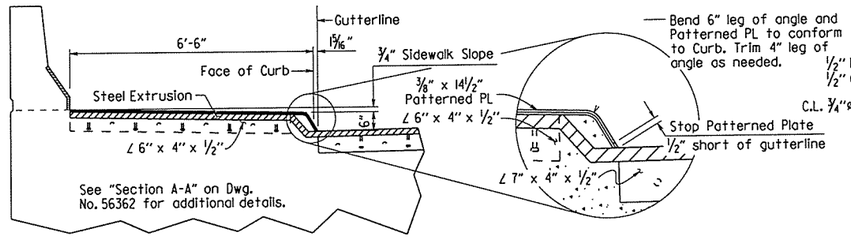
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	110	314
				(1) 07333 -		END BENT	- 56342	



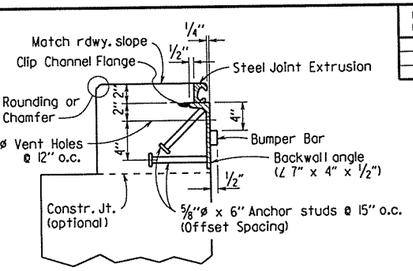
PLAN OF WING & RAIL

1/4" = 1'-0"



SIDEWALK AND CURB DETAIL

No Scale

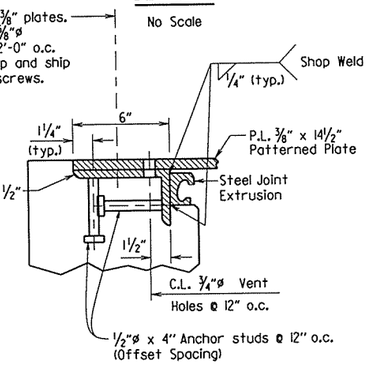


NOTES: For additional joint details, see Dwg. No. 56364.

Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Y

No Scale



NOTES: For additional joint details, see Dwg. No. 56364.

Concrete shall be hand packed under the joint armor in the sidewalk.

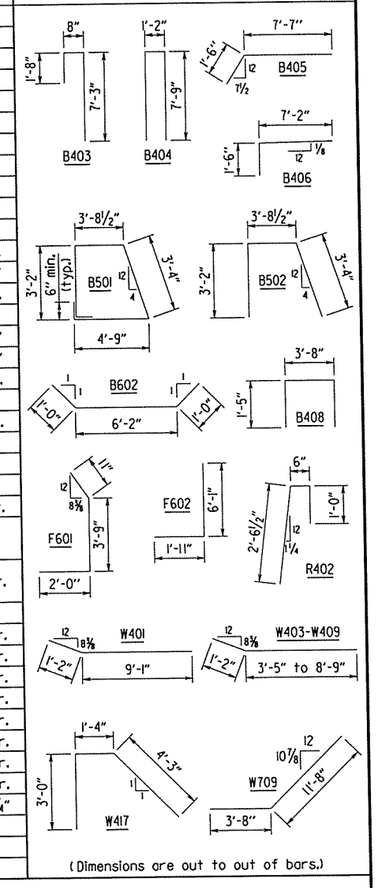
DETAIL Z

No Scale

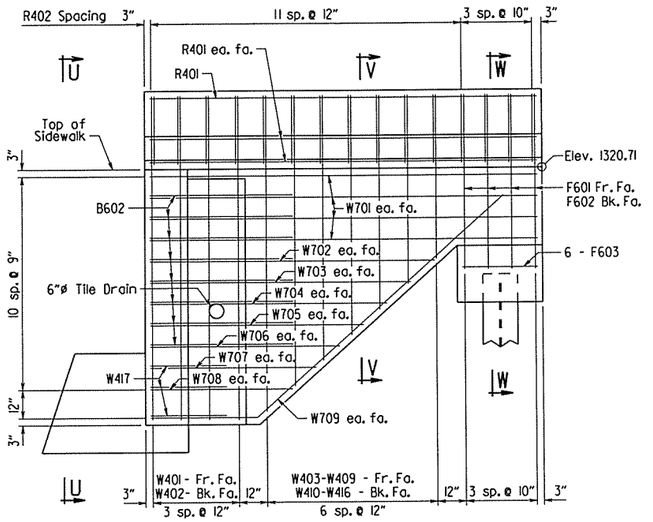
BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
B401	16	31'-3"	Str.
B402	28	31'-10"	Str.
B403	47	9'-5"	2"
B404	24	16'-6"	2"
B405	4	9'-0"	2"
B406	2	8'-7"	2"
B407	6	8'-4"	Str.
B408	39	6'-4"	2"
B409	6	38'-8"	Str.
B501	66	15'-6"	2½"
B502	18	10'-0"	2½"
B601	47	7'-6"	Str.
B602	16	8'-2"	4½"
B603	24	32'-2"	Str.
F601	8	6'-6"	4½"
F602	8	7'-10"	4½"
F603	12	2'-8"	Str.
R401	10	13'-8"	Str.
R402	30	3'-11"	2"
W401	8	10'-3"	2"
W402	8	11'-5"	Str.
W403-W409	2 each	4'-7" to 9'-11"	2"
W410-W416	2 each	5'-9" to 11'-1"	Str.
W417	6	8'-5"	2"
W701	16	13'-8"	Str.
W702	4	10'-0"	Str.
W703	4	9'-2"	Str.
W704	4	8'-4"	Str.
W705	4	7'-6"	Str.
W706	4	6'-8"	Str.
W707	4	5'-10"	Str.
W708	4	5'-0"	Str.
W709	4	15'-4"	5¼"

Bending Diagrams

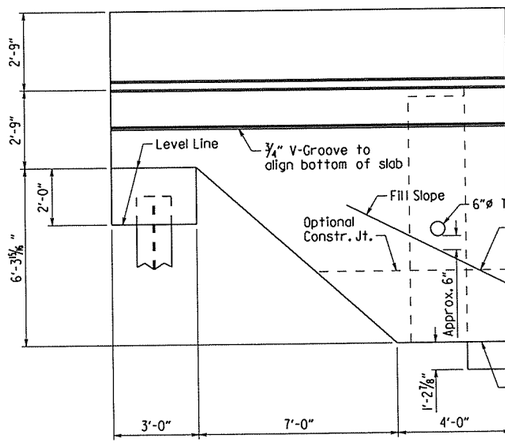


(Dimensions are out to out of bars.)



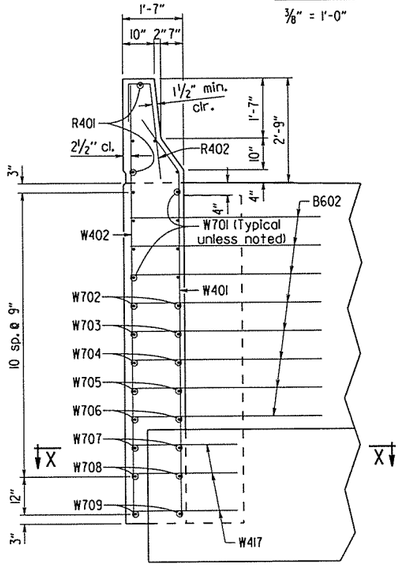
VIEW S-S

⅜" = 1'-0"



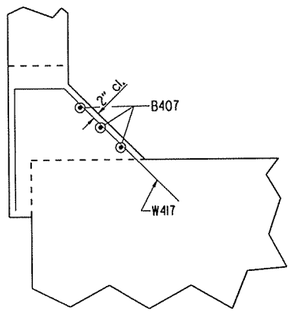
VIEW T-T

⅜" = 1'-0"



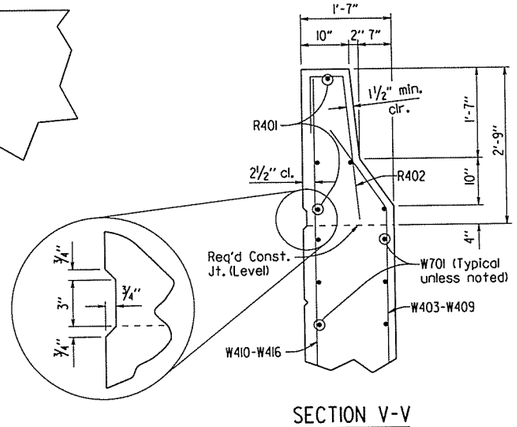
VIEW U-U

½" = 1'-0"



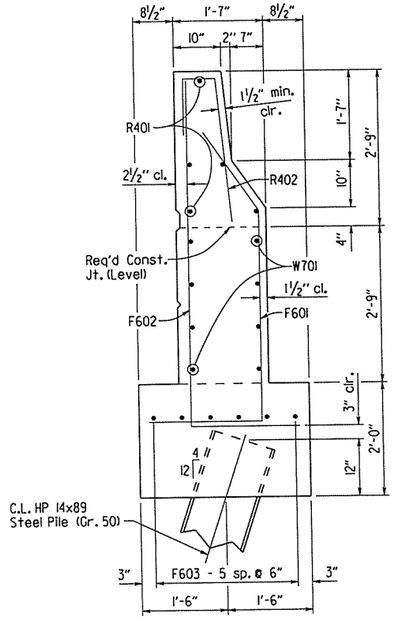
SECTION X-X

½" = 1'-0"



SECTION V-V

¾" = 1'-0"



SECTION W-W

¾" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENT 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 5-29-14 FILENAME: b090373.bl.dgn

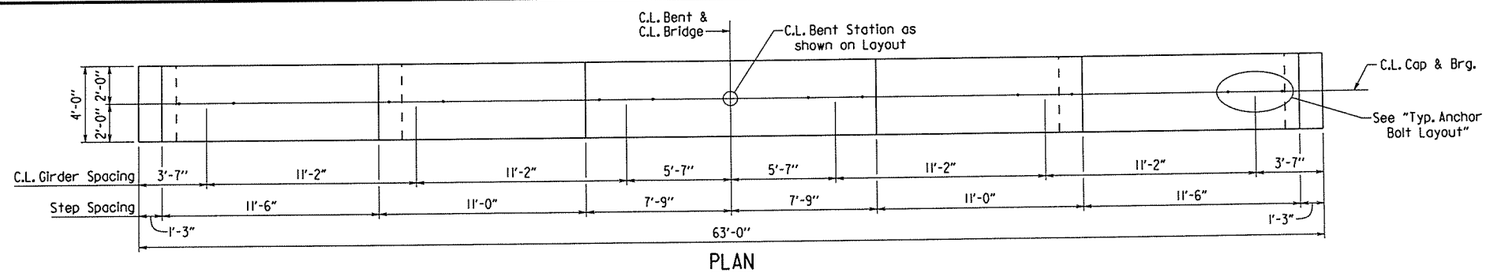
CHECKED BY: AMS DATE: 6-3-15 SCALE: AS NOTED

DESIGNED BY: JYP DATE: 5/14

BRIDGE NO. 07333 DRAWING NO. 56342

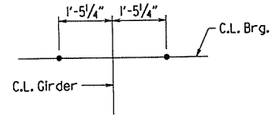
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	111	3110
				(1) 07333 -		BENT 2	- 56343	



PLAN

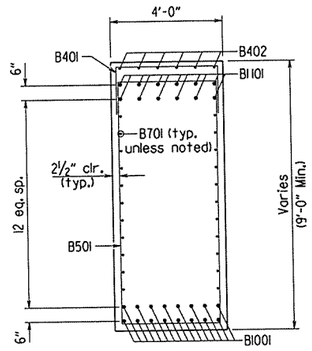
1/4" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

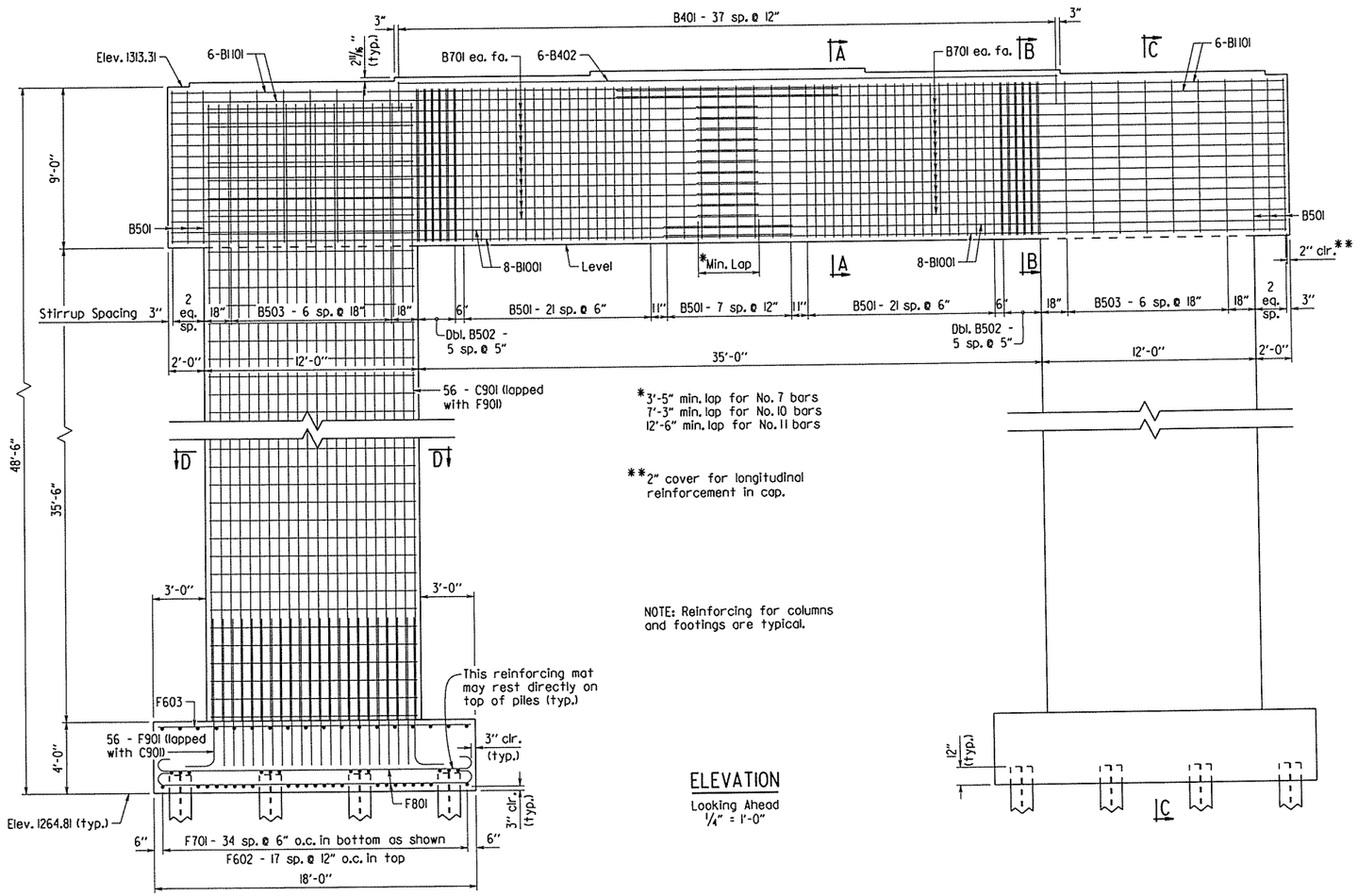
TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"



SECTION A-A

3/8" = 1'-0"



*3'-5" min. lap for No. 7 bars
7'-3" min. lap for No. 10 bars
12'-6" min. lap for No. 11 bars

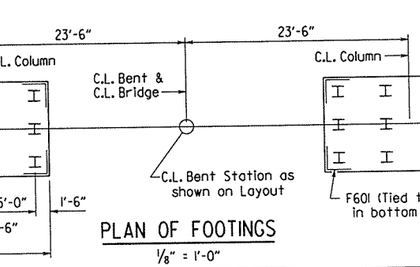
**2" cover for longitudinal reinforcement in cap.

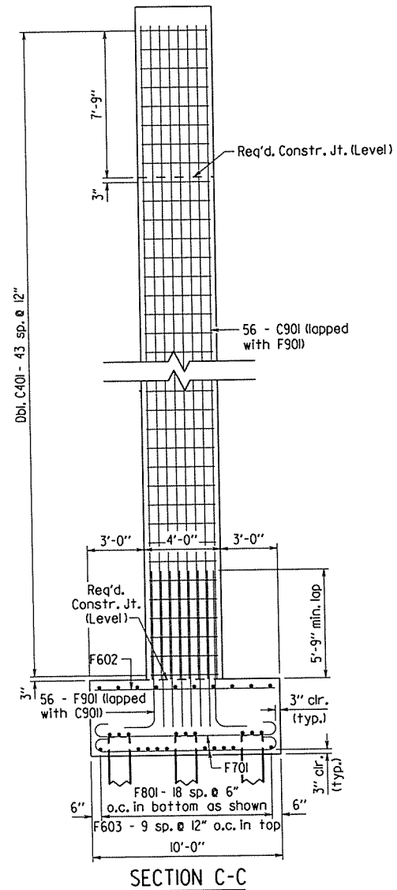
NOTE: Reinforcing for columns and footings are typical.

ELEVATION

Looking Ahead

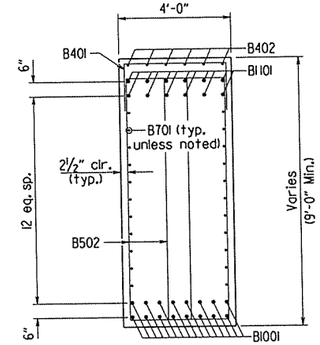
1/4" = 1'-0"





SECTION C-C

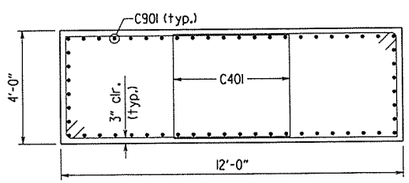
1/4" = 1'-0"



SECTION B-B

3/8" = 1'-0"

NOTE: For General Notes and Bar List see Dwg. No. 56347.



SECTION D-D

3/8" = 1'-0"

PLAN OF FOOTINGS

1/8" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-25-14 FILENAME: b090373_b2.dgn

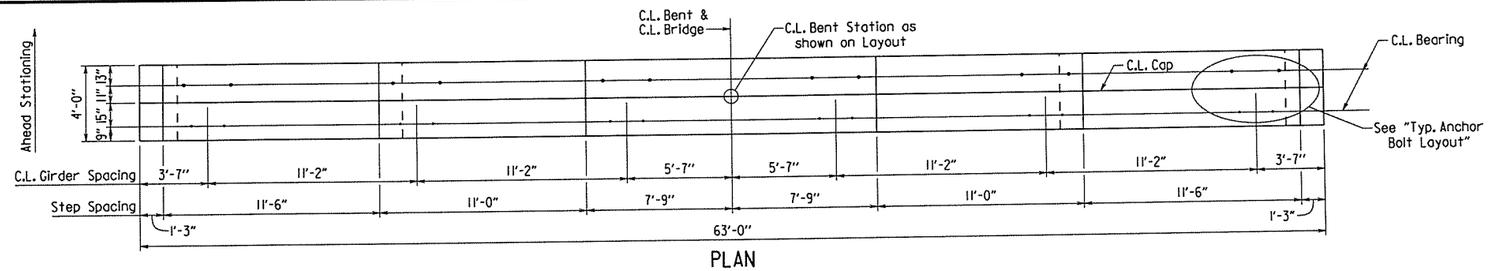
CHECKED BY: AMS DATE: 8-4-15 SCALE: As Noted

DESIGNED BY: NP DATE: 6/14

BRIDGE NO. 07333 DRAWING NO. 56343

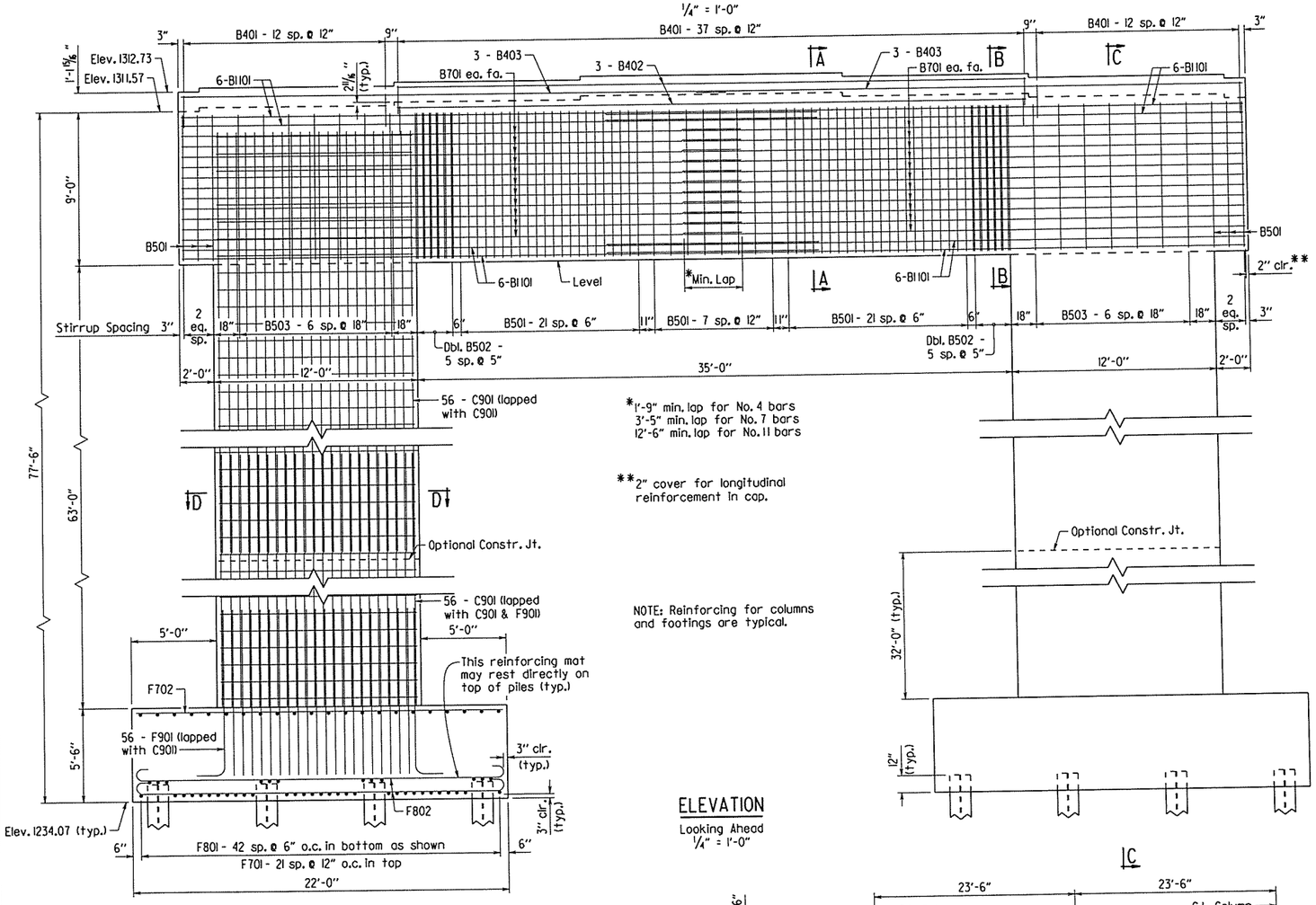
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	112	316
				07333 -		BENT 3		- 56344



PLAN

1/4" = 1'-0"



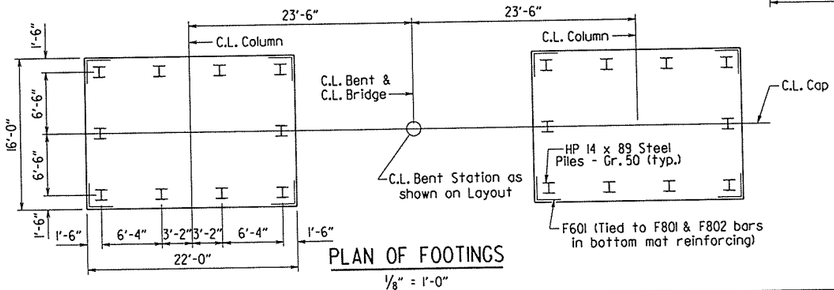
*1'-9" min. lap for No. 4 bars
3'-5" min. lap for No. 7 bars
12'-6" min. lap for No. 11 bars

**2" cover for longitudinal reinforcement in cap.

NOTE: Reinforcing for columns and footings are typical.

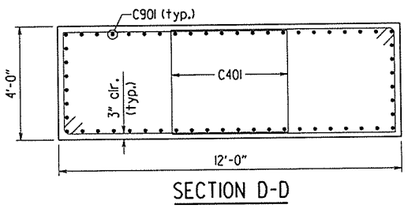
ELEVATION

Looking Ahead
1/4" = 1'-0"



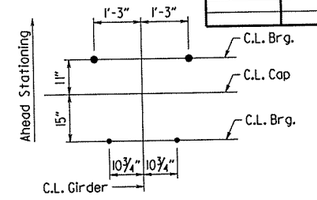
PLAN OF FOOTINGS

1/8" = 1'-0"



SECTION D-D

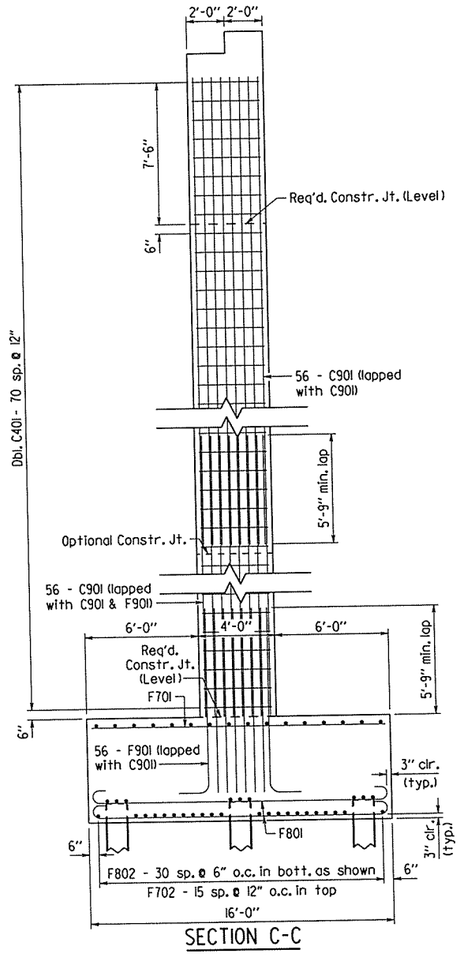
3/8" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

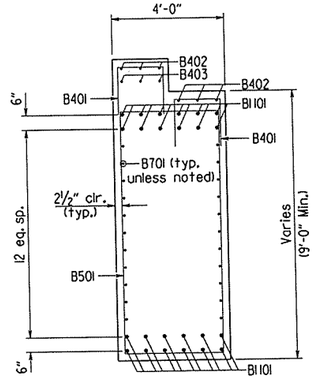
TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"



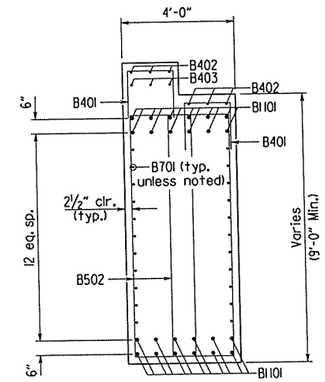
SECTION C-C

1/4" = 1'-0"



SECTION A-A

3/8" = 1'-0"



SECTION B-B

3/8" = 1'-0"

NOTE: For General Notes and Bar List see Dwg. No. 56347.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

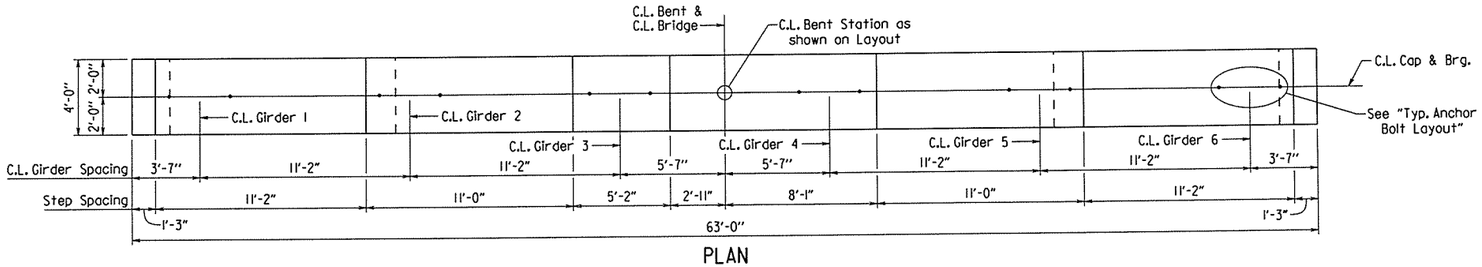
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-25-14 FILENAME: b090373_b2.dgn
CHECKED BY: AMS DATE: 6-4-15 SCALE: As Noted
DESIGNED BY: JYP DATE: 6/14

BRIDGE NO. 07333 DRAWING NO. 56344

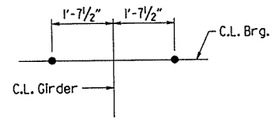
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	113	316
				07333 -		BENT 4	- 56345	



PLAN

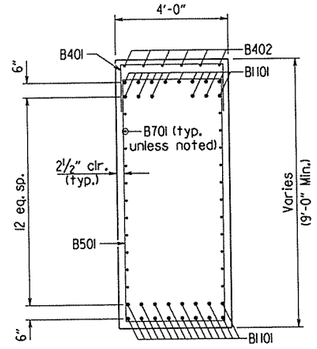
1/4" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

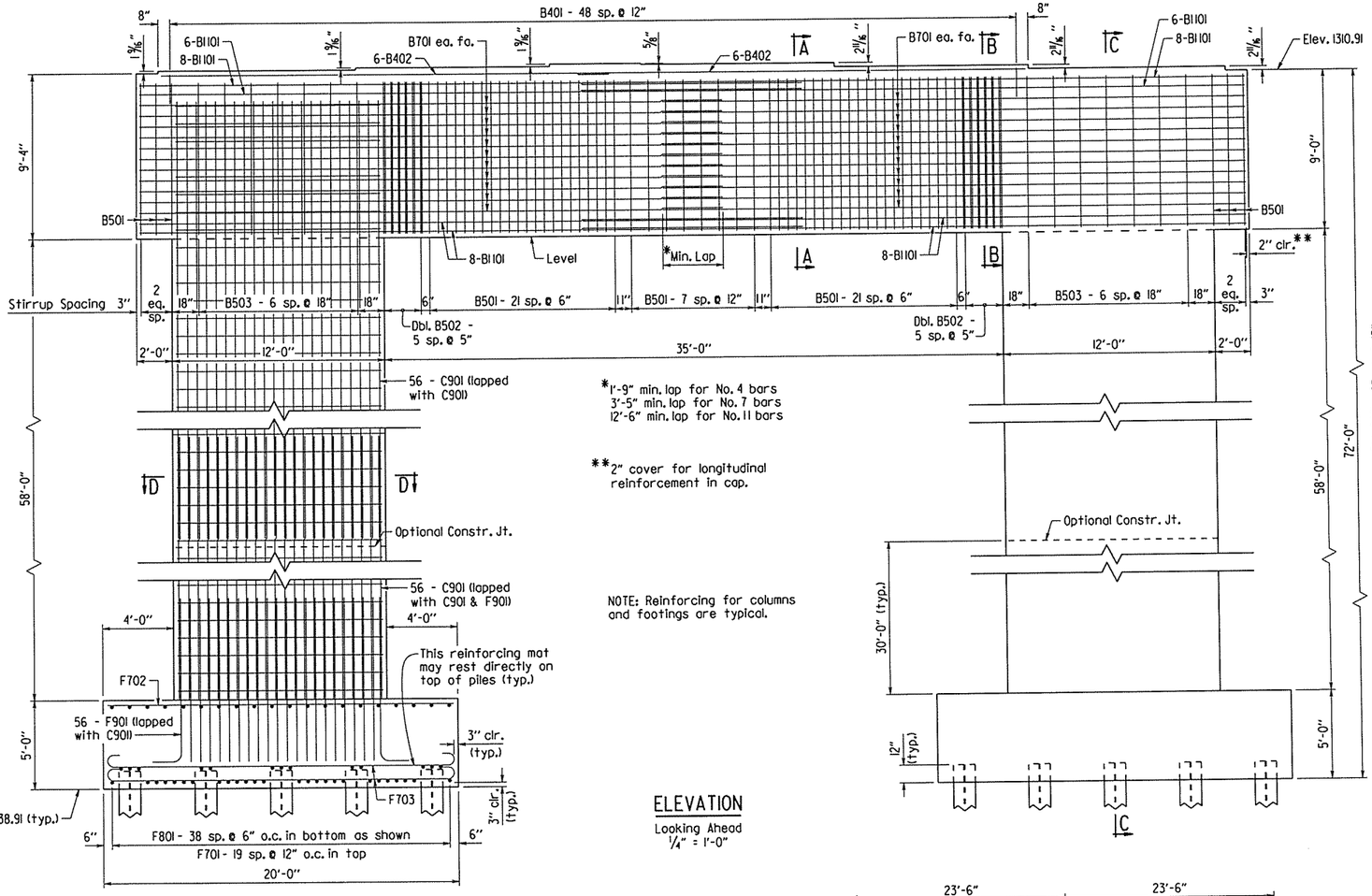
TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"



SECTION A-A

⅜" = 1'-0"



*1'-9" min. lap for No. 4 bars
3'-5" min. lap for No. 7 bars
12'-6" min. lap for No. 11 bars

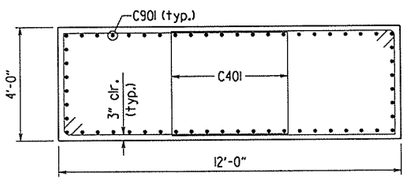
**2" cover for longitudinal reinforcement in cap.

NOTE: Reinforcing for columns and footings are typical.

ELEVATION

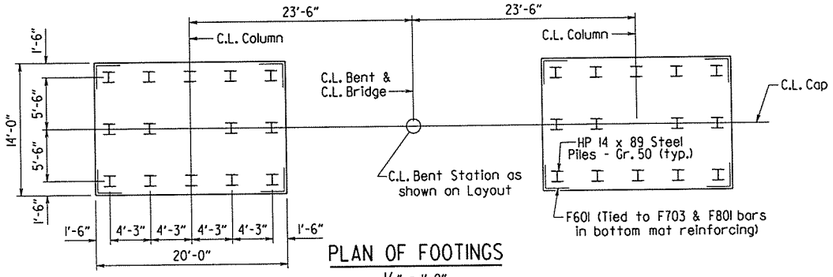
Looking Ahead

1/4" = 1'-0"



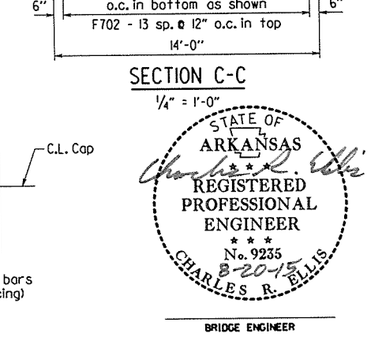
SECTION D-D

⅜" = 1'-0"



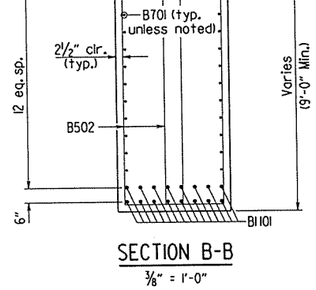
PLAN OF FOOTINGS

⅛" = 1'-0"



SECTION C-C

¼" = 1'-0"



SECTION B-B

⅜" = 1'-0"

NOTE: For General Notes and Bar List see Dwg. No. 56347.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-25-14 FILENAME: b090373_b2.dgn

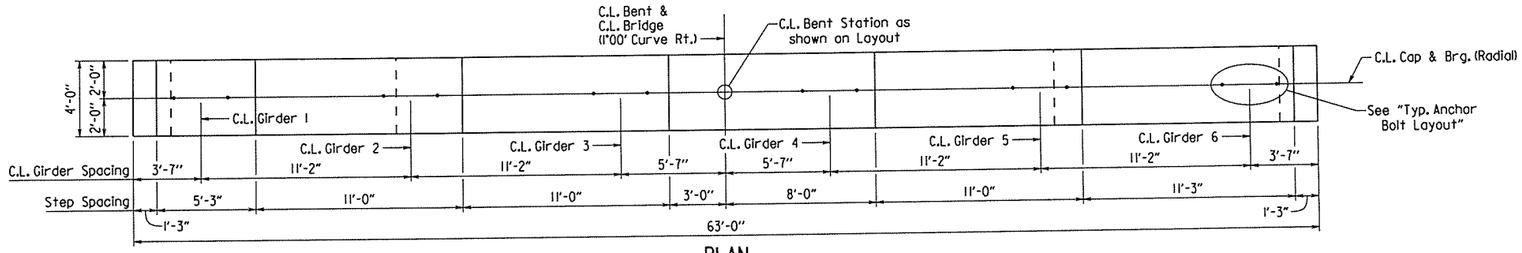
CHECKED BY: ANS DATE: 6-4-15 SCALE: As Noted

DESIGNED BY: JYP DATE: 6/14

BRIDGE NO. 07333 DRAWING NO. 56345

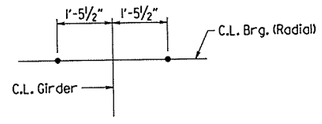
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	114	316
				(1) 07333 -		BENT 5	- 56346	



PLAN

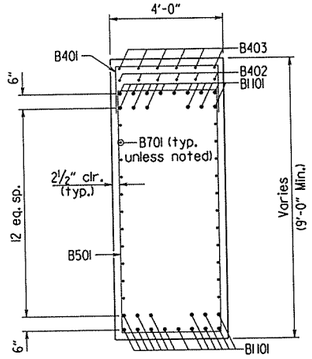
1/4" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

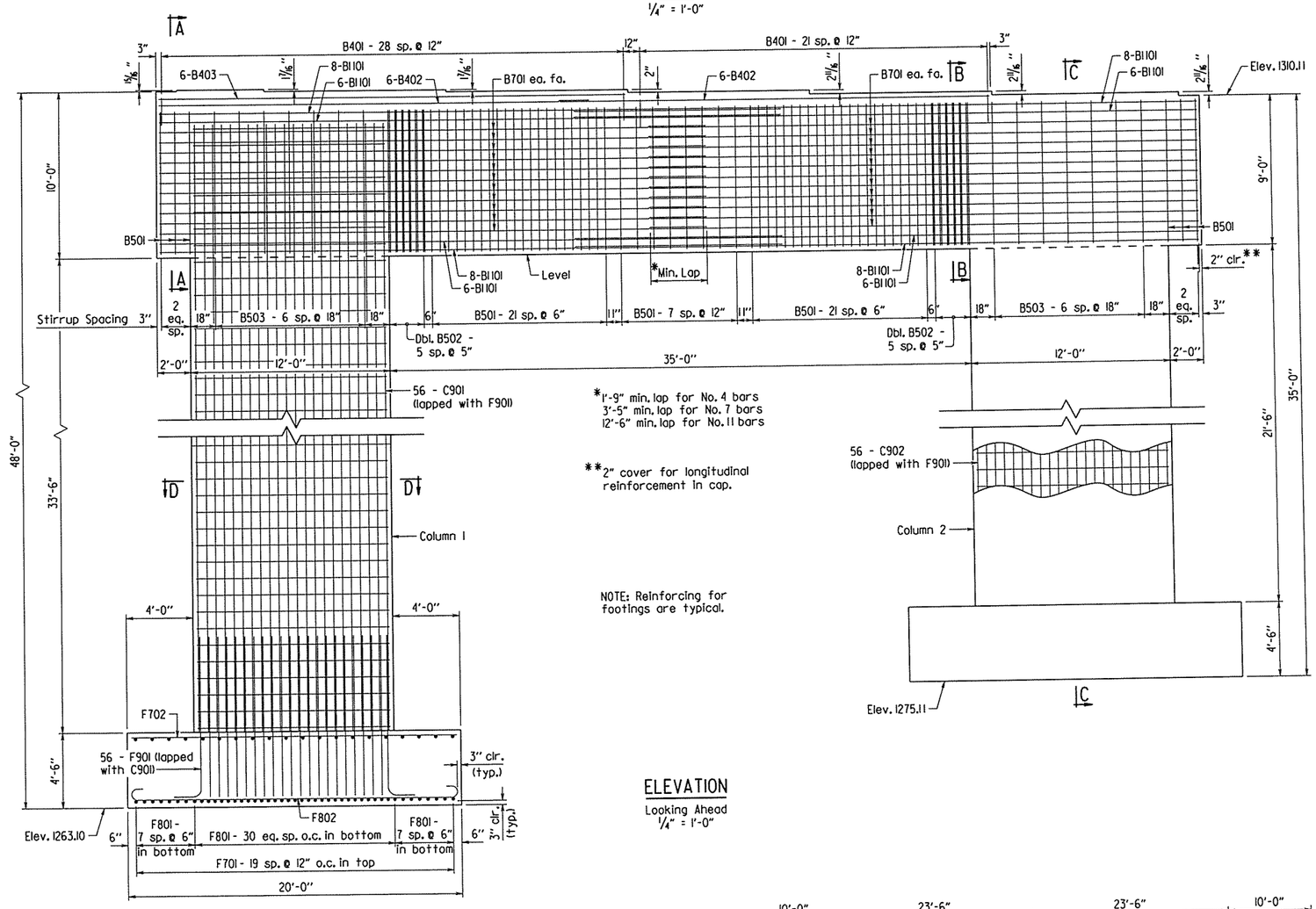
TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"



SECTION A-A

3/8" = 1'-0"



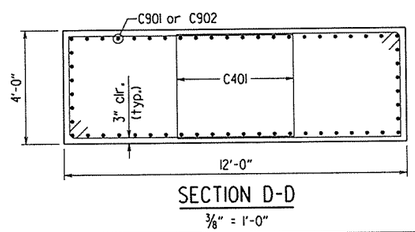
**2" cover for longitudinal reinforcement in cap.

NOTE: Reinforcing for footings are typical.

ELEVATION

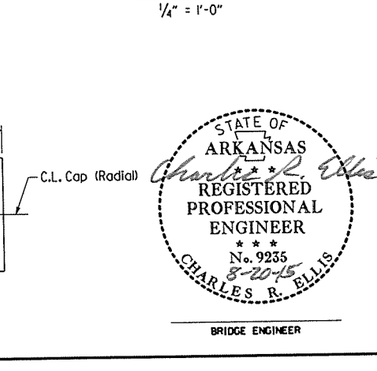
Looking Ahead

1/4" = 1'-0"



SECTION D-D

3/8" = 1'-0"



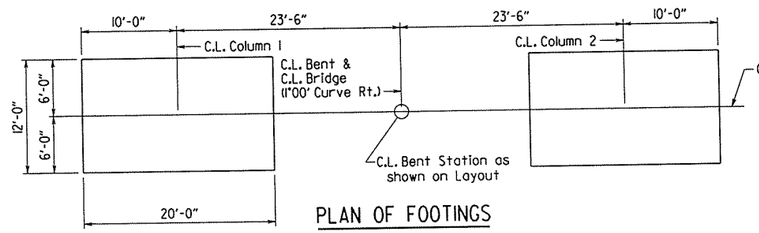
SECTION C-C

1/4" = 1'-0"

SECTION B-B

3/8" = 1'-0"

NOTE: For General Notes and Bar List see Dwg. No. 56347.



PLAN OF FOOTINGS

1/8" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
* * *
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 5

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-25-14 FILENAME: b090373_b2.dgn

CHECKED BY: AMS DATE: 6-4-15 SCALE: As Noted

DESIGNED BY: JYP DATE: 6/14

BRIDGE NO. 07333 DRAWING NO. 56346

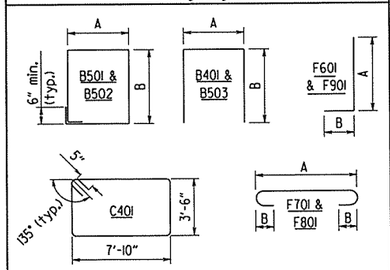
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	115	316
				(1) 07333 -		INT. BENTS	- 56347	

BAR LIST BENT 2

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	38	6'-9"	3'-7"	1'-8"	2"
B402	6	37'-2"			Str.
B501	58	24'-10"	3'-7"	8'-7"	2½"
B502	24	22'-2"	2'-3"	8'-7"	2½"
B503	14	20'-7"	3'-7"	8'-7"	2½"
B701	44	33'-1"			Str.
B1001	32	35'-0"			Str.
B1101	24	37'-7"			Str.
C401	176	23'-2"			3"
C901	112	43'-6"			Str.
F601	8	4'-10"	2'-6"	2'-6"	4½"
F602	36	9'-6"			Str.
F603	20	17'-6"			Str.
F701	70	11'-2"	9'-6"	7"	5¼"
F801	38	19'-4"	17'-6"	8"	6"
F901	112	10'-1"	8'-8"	1'-8"	9"

Bending Diagrams

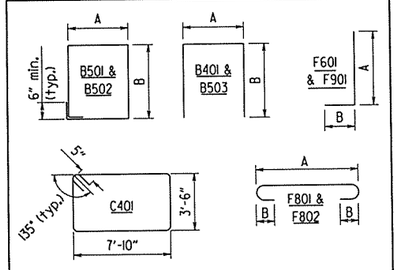


(Dimensions are out to out of bars.)

BAR LIST BENT 3

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	102	5'-5"	1'-7"	2'-0"	2"
B402	6	37'-2"			Str.
B403	6	32'-3"			Str.
B501	58	24'-10"	3'-7"	8'-7"	2½"
B502	24	22'-2"	2'-3"	8'-7"	2½"
B503	14	20'-7"	3'-7"	8'-7"	2½"
B701	44	33'-1"			Str.
B1101	48	37'-7"			Str.
C401	284	23'-2"			3"
C901	224	38'-3"			Str.
F601	8	4'-10"	2'-6"	2'-6"	4½"
F701	44	15'-6"			Str.
F702	32	21'-6"			Str.
F801	86	17'-4"	15'-6"	8"	6"
F802	62	23'-4"	21'-6"	8"	6"
F901	112	11'-6"	10'-1"	1'-8"	9"

Bending Diagrams

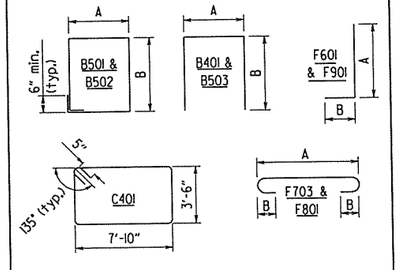


(Dimensions are out to out of bars.)

BAR LIST BENT 4

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	49	6'-9"	3'-7"	1'-8"	2"
B402	12	25'-5"			Str.
B501	58	24'-10"	3'-7"	8'-7"	2½"
B502	24	22'-0"	2'-2"	8'-7"	2½"
B503	14	20'-7"	3'-7"	8'-7"	2½"
B701	44	33'-1"			Str.
B1101	60	37'-7"			Str.
C401	264	23'-2"			3"
C901	224	35'-9"			Str.
F601	8	4'-10"	2'-6"	2'-6"	4½"
F701	40	13'-6"			Str.
F702	28	19'-6"			Str.
F703	54	21'-2"	19'-6"	7"	5¼"
F801	78	15'-4"	13'-6"	8"	6"
F901	112	11'-1"	9'-8"	1'-8"	9"

Bending Diagrams

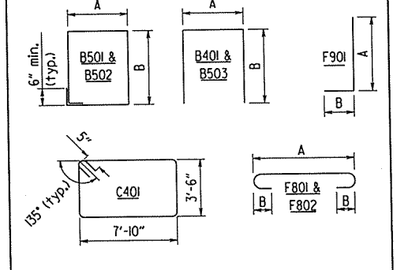


(Dimensions are out to out of bars.)

BAR LIST BENT 5

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	51	7'-5"	3'-7"	2'-0"	2"
B402	12	26'-0"			Str.
B403	6	28'-2"			Str.
B501	58	24'-10"	3'-7"	8'-7"	2½"
B502	24	22'-0"	2'-2"	8'-7"	2½"
B503	14	20'-7"	3'-7"	8'-7"	2½"
B701	44	33'-1"			Str.
B1101	56	37'-7"			Str.
C401	144	23'-2"			3"
C901	56	41'-6"			Str.
C902	56	29'-6"			Str.
F701	40	11'-6"			Str.
F702	24	19'-6"			Str.
F801	90	13'-4"	11'-6"	8"	6"
F802	46	21'-4"	19'-6"	8"	6"
F901	112	15'-3"	13'-10"	1'-8"	9"

Bending Diagrams



(Dimensions are out to out of bars.)

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

COMMON DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-25-14 FILENAME: b090373_b2.dgn

CHECKED BY: AMS DATE: 6-4-15 SCALE: As Noted

DESIGNED BY: JYP DATE: 6/14

BRIDGE NO. 07333 DRAWING NO. 56347

PRINT DATE: 8/18/2015

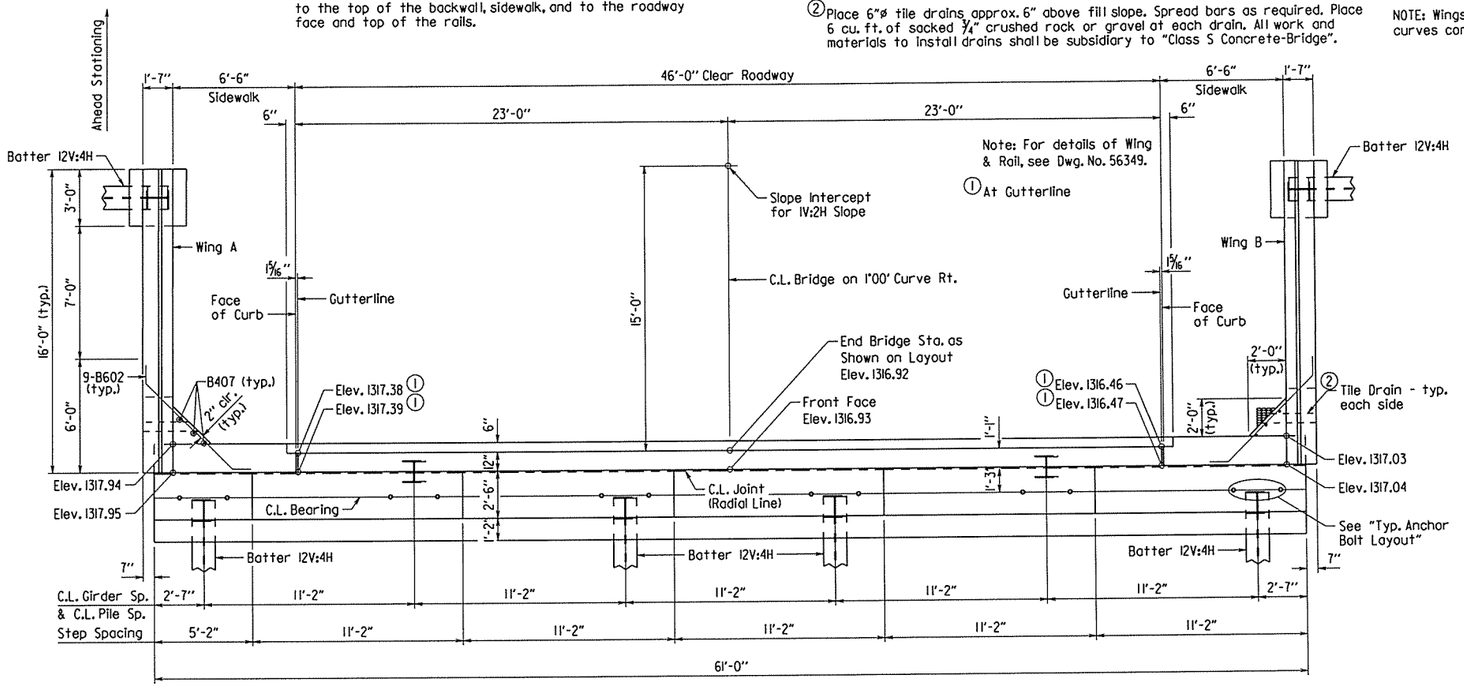
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	116	316
				① 07333 -		END BENT	- 56348	

NOTE: Class 2 Protective Surface Treatment shall be applied to the top of the backwall, sidewalk, and to the roadway face and top of the rails.

NOTE: For Bar List, see Dwg. No. 56349.

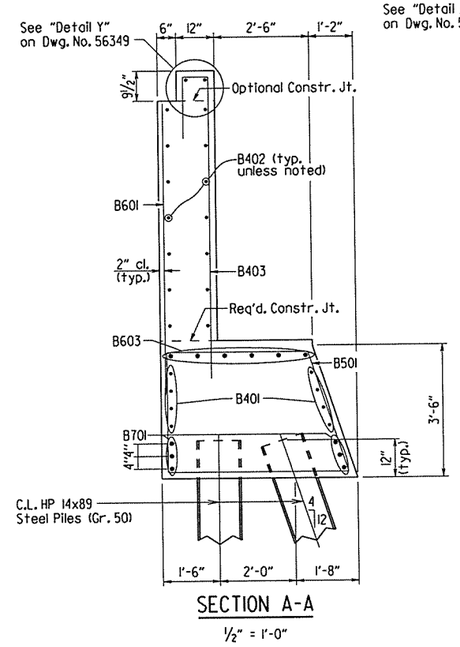
② Place 6"ø tile drains approx. 6" above fill slope. Spread bars as required. Place 6 cu. ft. of sacked ¾" crushed rock or gravel at each drain. All work and materials to install drains shall be subsidiary to "Class S Concrete-Bridge".

NOTE: Wings and rails are constructed on curves concentric to C.L. Bridge.



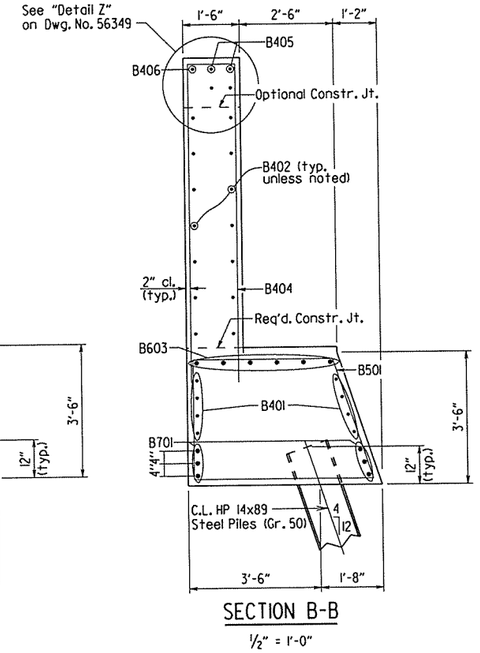
PLAN - END BENT 6

¼" = 1'-0"



SECTION A-A

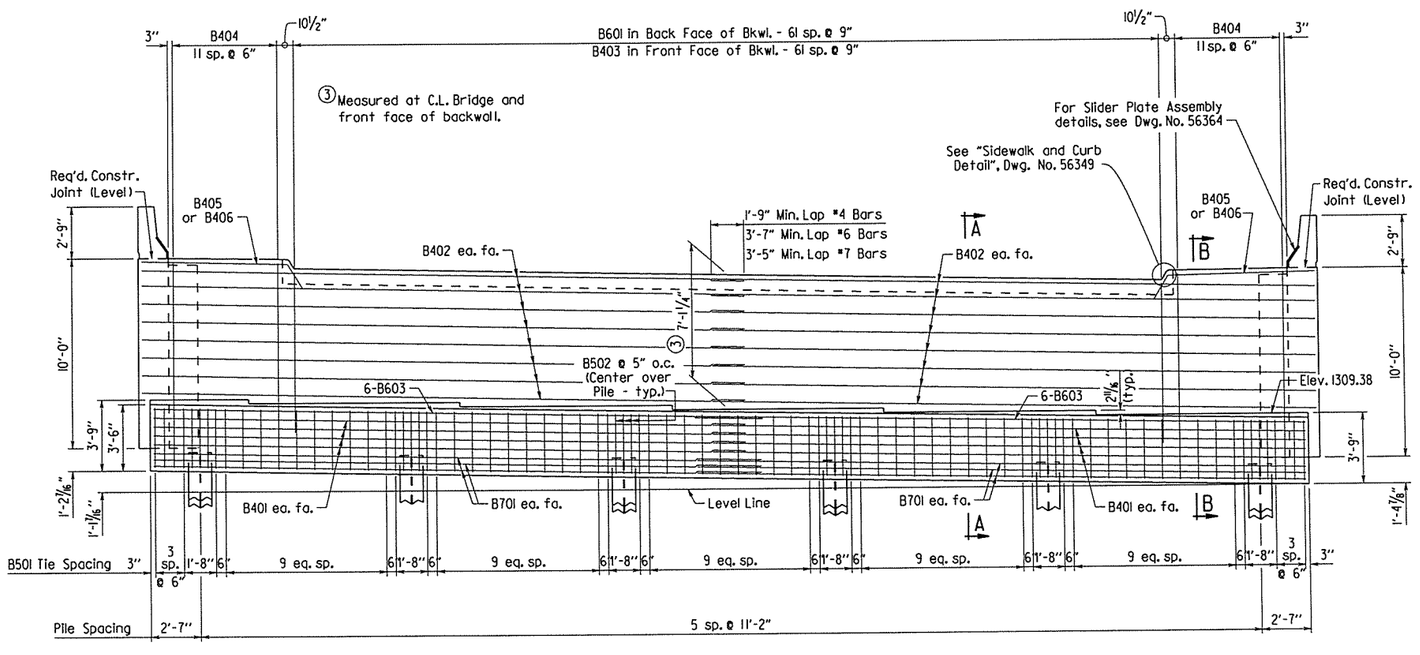
½" = 1'-0"



SECTION B-B

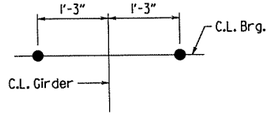
½" = 1'-0"

NOTE: The Backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See Dwg. No. 56364, "Expansion Device Installation at End Bents", for additional information.



ELEVATION - END BENT 6

Looking Ahead
¼" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 56351.

TYPICAL ANCHOR BOLT LAYOUT

¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
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No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENT 6

ROUTE SEC.

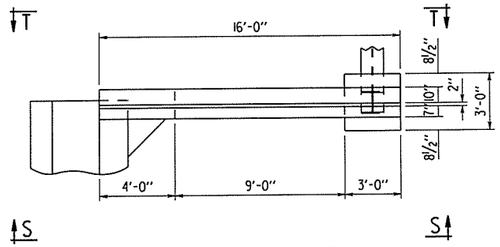
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: AMS DATE: 6-18-15 SCALE: AS NOTED
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BRIDGE NO. 07333 DRAWING NO. 56348

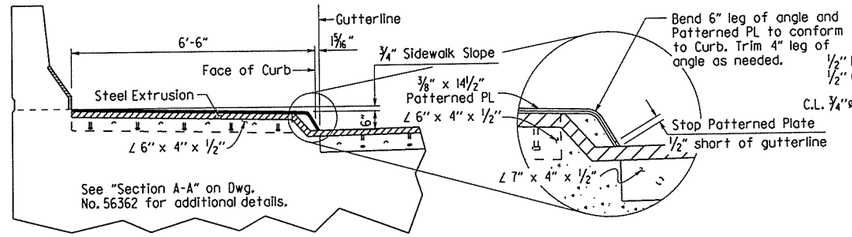
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				6	ARK.			
				JOB NO.		090373	117	316
				(1)	07333 -	END BENT	- 56349	



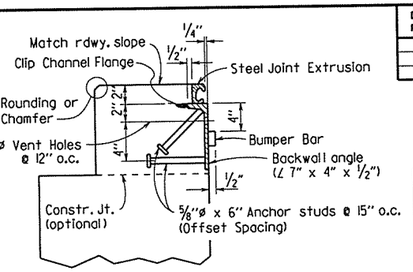
PLAN OF WING & RAIL

1/4" = 1'-0"



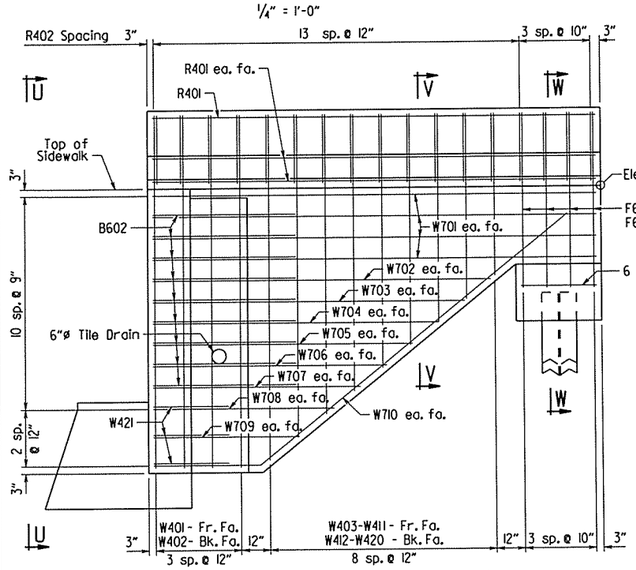
SIDEWALK AND CURB DETAIL

No Scale



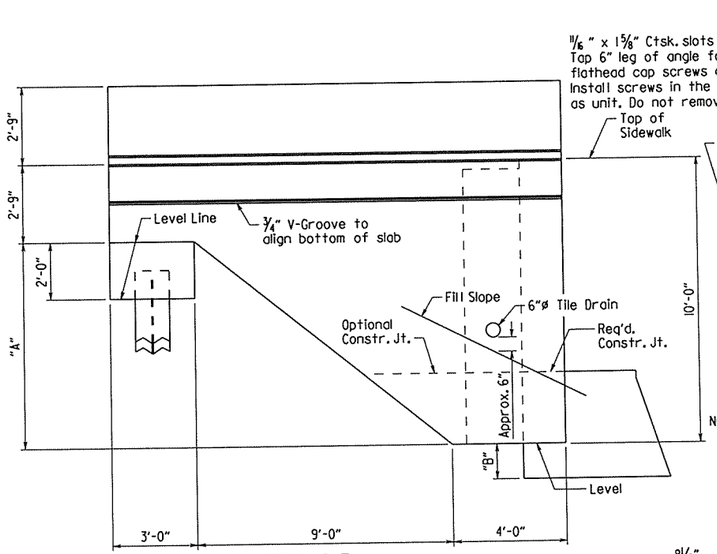
NOTES: For additional joint details, see Dwg. No. 56364.

Concrete shall be hand packed under the joint armor in the backwall.



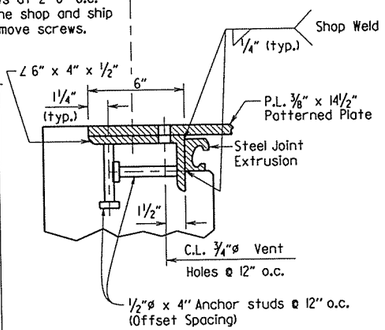
VIEW S-S

⅜" = 1'-0"



VIEW T-T

⅜" = 1'-0"



DETAIL Y

No Scale

NOTES: For additional joint details, see Dwg. No. 56364.

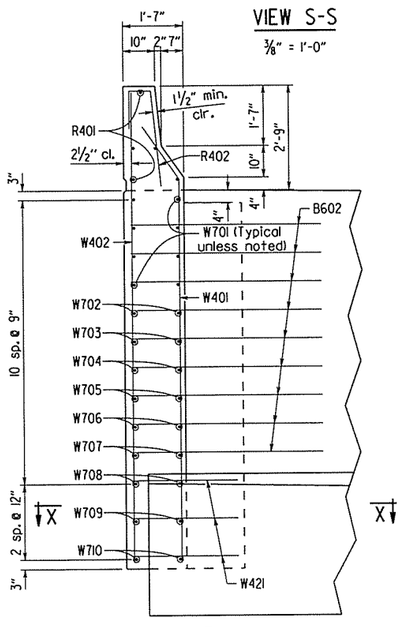
Concrete shall be hand packed under the joint armor in the sidewalk.

DETAIL Z

No Scale

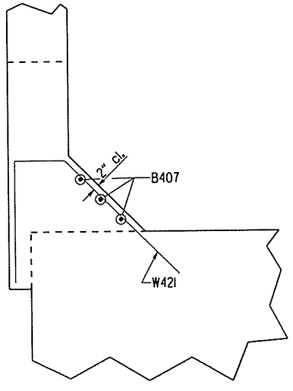
TABLE OF VARIABLES

	Elev. "R"	"A"	"B"
Wing A	1317.86	7'-1 15/16"	1'-2 7/16"
Wing B	1316.95	7'-1 15/16"	1'-4 7/8"



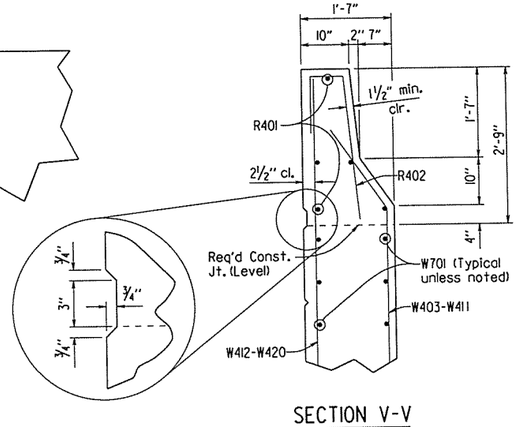
VIEW U-U

½" = 1'-0"



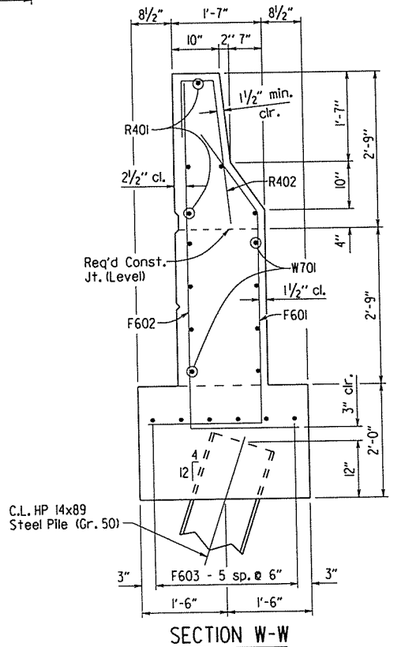
SECTION X-X

½" = 1'-0"



SECTION V-V

¾" = 1'-0"



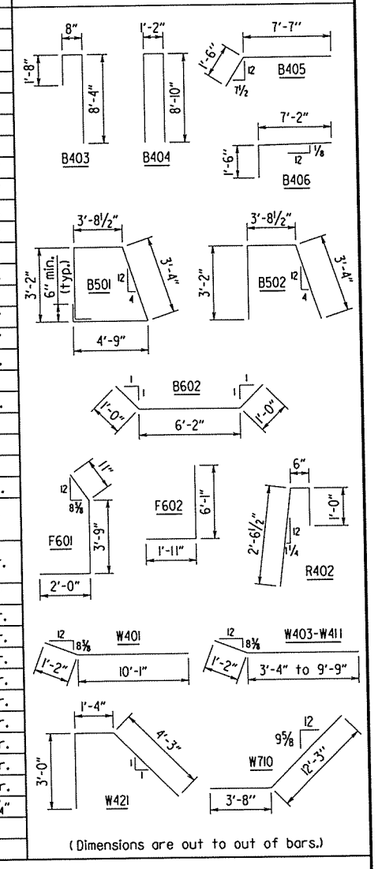
SECTION W-W

¾" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
B401	16	31'-3"	Str.
B402	32	31'-10"	Str.
B403	62	10'-6"	2"
B404	24	18'-8"	2"
B405	4	9'-0"	2"
B406	2	8'-7"	2"
B407	6	9'-4"	Str.
B501	68	15'-6"	2½"
B502	18	10'-0"	2½"
B601	62	8'-7"	Str.
B602	18	8'-2"	4½"
B603	12	32'-2"	Str.
B701	12	32'-1"	Str.
F601	8	6'-6"	4½"
F602	8	7'-10"	4½"
F603	12	2'-8"	Str.
R401	10	15'-8"	Str.
R402	34	3'-11"	2"
W401	8	11'-3"	2"
W402	8	12'-5"	Str.
W403-W411	2 each	4'-6" to 10'-11"	2"
W412-W420	2 each	5'-8" to 12'-1"	Str.
W421	6	8'-5"	2"
W701	16	15'-8"	Str.
W702	4	11'-11"	Str.
W703	4	11'-0"	Str.
W704	4	10'-1"	Str.
W705	4	9'-1"	Str.
W706	4	8'-2"	Str.
W707	4	7'-3"	Str.
W708	4	6'-4"	Str.
W709	4	5'-1"	Str.
W710	4	15'-11"	5¼"

Bending Diagrams



(Dimensions are out to out of bars.)

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENT 6

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-3-14 FILENAME: b090373_b6.dgn

CHECKED BY: AMS DATE: 6-8-15 SCALE: AS NOTED

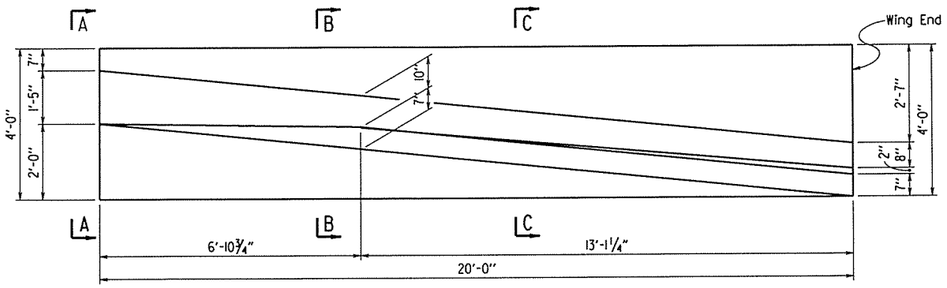
DESIGNED BY: JYP DATE: 5/14

BRIDGE NO. 07333 DRAWING NO. 56349

PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090373	118	316
①	07333 -	TRANS. RAIL	- 56350	



PLAN OF TRANSITIONAL APPROACH RAILING

No Scale

NOTE: RAILINGS ON EACH SIDE OF ROADWAY ARE OPPOSITE HAND TO EACH OTHER.

Note: Railings at Bent 6 are constructed on curves concentric to C.L. Bridge.

General Notes

Transitional Approach Railing shall be placed at ends of turnback wings at locations shown on the layout. Do not connect to turnback wing or rail.

All Concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All Reinforcing Steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

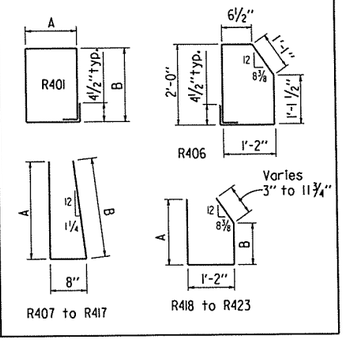
Class 2 Protective Surface Treatment shall be applied to the roadway surface, front face and top of the Transitional Approach Railing. At the option of the Contractor, a Class 3 finish may be used on all surfaces requiring a Class 2 finish provided the same class of finish is used on all bridge, wing, and transitional approach railing.

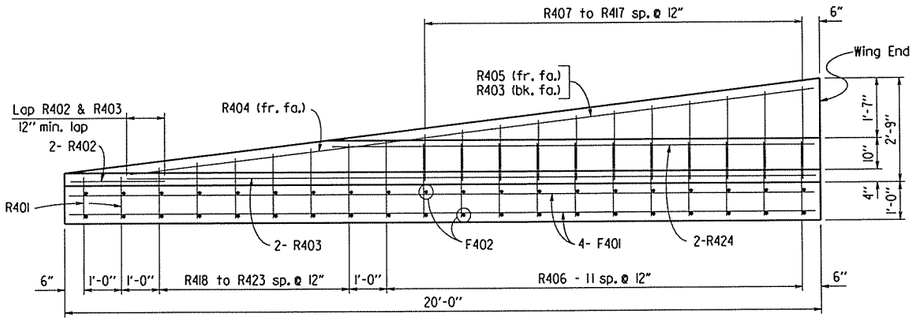
Transitional Approach Railing shall be paid for at the contract unit price bid per each for "Transitional Approach Railing". See Section 806 for additional information.

BAR LIST - ONE TRANSITIONAL RAIL

Mark	No. Req'd.	Length	A	B	Pin Dia.
F401	8	19'-8"			str.
F402	40	3'-8"			str.
R401	2	4'-10"	1'-2"	1'-1"	2"
R402	2	3'-0"			str.
R403	3	17'-9"			str.
R404	1	5'-0"			str.
R405	1	12'-9"			str.
R406	12	6'-3"			2"
R407 to R417	1 ea.	3'-0" to 5'-5"	1'-3" to 2'-5½"	1'-3" to 2'-5½"	2"
R418 to R423	1 ea.	3'-9" to 5'-1"	1'-4" to 1'-11¼"	1'-1½"	2"
R424	2	10'-9"			str.

Bending Diagram
Dimensions are out to out of bars.



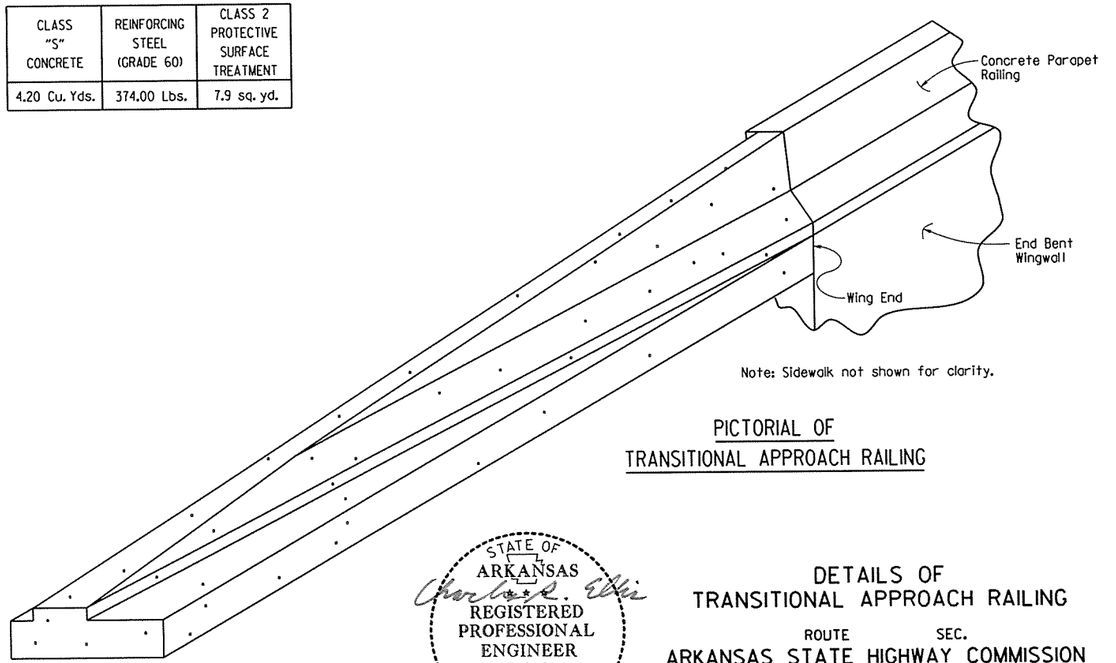


ELEVATION OF TRANSITIONAL APPROACH RAILING

No Scale

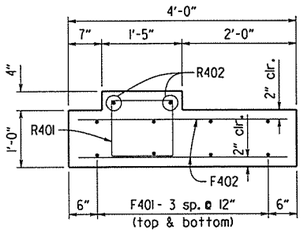
FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS 2 PROTECTIVE SURFACE TREATMENT
4.20 Cu. Yds.	374.00 Lbs.	7.9 sq. yd.



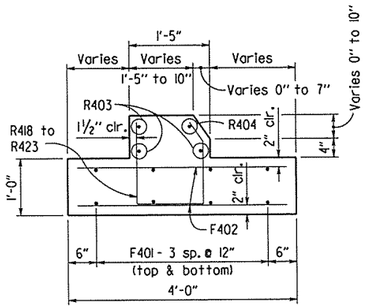
Note: Sidewalk not shown for clarity.

PICTORIAL OF TRANSITIONAL APPROACH RAILING



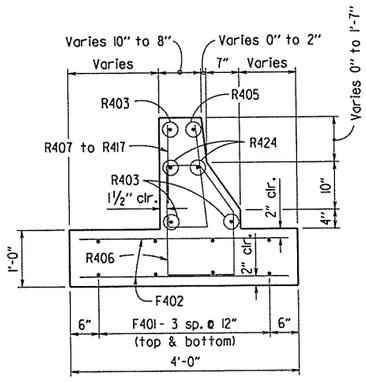
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TRANSITIONAL APPROACH RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

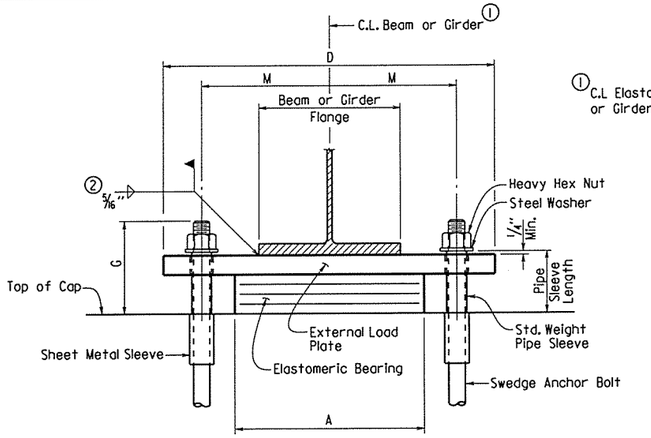
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-10-14 FILENAME: b090373_tr.dgn
CHECKED BY: AMS DATE: 6-8-15 SCALE: As Noted
DESIGNED BY: STD. DATE: —

BRIDGE NO. 07333 DRAWING NO. 56350

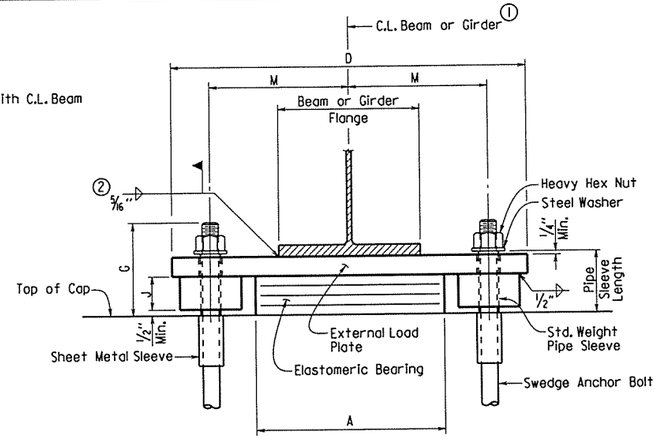
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	119	316
				① 07333 - ELASTO BRGS. - 56351				

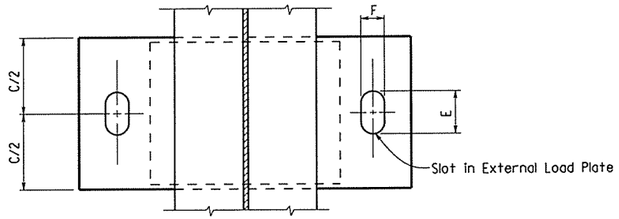


FRONT VIEW - AT BENT NOS. 1, 3, 5 & 6

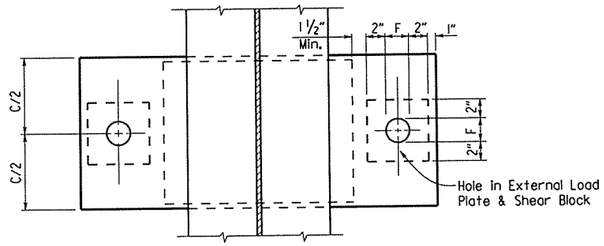
① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.



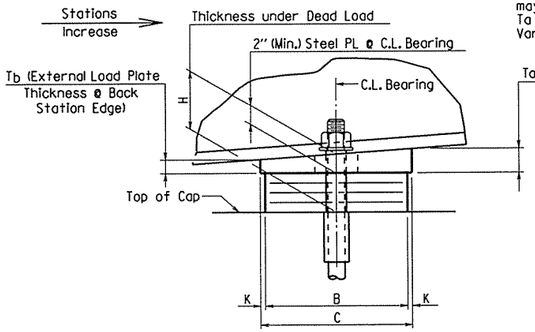
FRONT VIEW - AT BENT NOS. 2 & 4



PLAN VIEW - AT BENT NOS. 1, 3, 5 & 6



PLAN VIEW - AT BENT NOS. 2 & 4

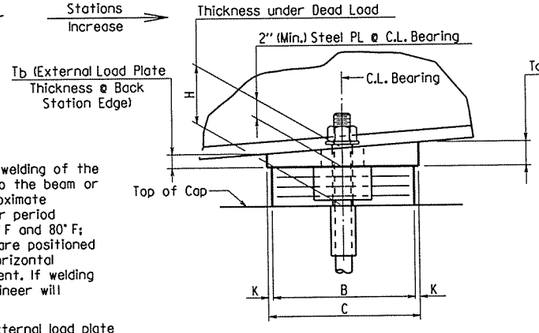


SIDE VIEW - AT BENT NOS. 1, 3, 5 & 6

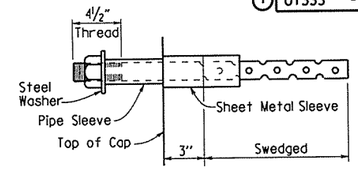
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



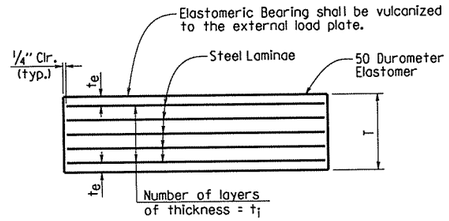
SIDE VIEW - AT BENT NOS. 2 & 4



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE FOR EXTERNAL LOAD PL THICKNESS

BENT	GIRDER	NO. of BEARINGS	T_a	T_b
4	1, 2 & 3	3	1.98"	2.02"
	4, 5 & 6	3	1.96"	2.04"
5	1, 2 & 3	3	1.98"	2.02"
	4, 5 & 6	3	1.96"	2.04"

Note: Beams are numbered left to right looking ahead station.

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07333	1	All	Exp.	6	184	7 5/8"	4 3/8"	16"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 11/16"	11"	28"	5 1/8"	3 1/8"	—	1/2"	10 3/4"	1.97"	2.03"	2" x 31"	55	2 1/2" x 4 5/8"	4" x 12"	3 1/4"
	2	All	Fix.	6	533	7 3/8"	3 11/16"	24"	15"	2	1/2"	1/4"	3 @ 12 Ga.	1 15/16"	16"	43 3/4"	—	3 1/8"	1 1/4"	1/2"	17 1/4"	1.96"	2.04"	2 1/4" x 34"	55	2 1/2" x 4 1/8"	4" x 13"	4"
	3 Bk.	All	Exp.	6	184	7 5/8"	4 3/8"	16"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 11/16"	11"	28"	5 1/8"	3 1/8"	—	1/2"	10 3/4"	1.97"	2.03"	2" x 35"	55	2 1/2" x 4 5/8"	4" x 27"	3 1/4"
	3 Ahd.	All	Exp.	6	224	9 7/8"	6 1/8"	24"	8"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	11"	37"	7 1/2"	3 3/4"	—	1 1/2"	15"	1.97"	2.03"	2 1/2" x 38"	55	3" x 6 3/8"	4" x 13"	4 1/2"
	4	All	Fix.	6	564	7 1/2"	3 3/4"	28"	12 1/2"	2	1/2"	1/4"	3 @ 12 Ga.	1 15/16"	13 1/2"	48 3/4"	—	3 3/4"	1 1/4"	1/2"	19 1/2"	See Table		2 1/2" x 36"	55	3" x 4"	4" x 13"	4 1/2"
	5	All	Exp.	6	569	8"	3 3/4"	28"	12 1/2"	2	1/2"	1/4"	3 @ 12 Ga.	1 15/16"	13 1/2"	42"	4 7/8"	3 3/4"	—	1/2"	17 1/2"			2 3/4" x 39"	55	3" x 4"	5" x 13"	5"
	6	All	Exp.	6	224	9 7/8"	6 1/8"	24"	8"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	11"	37"	7 1/2"	3 3/4"	—	1 1/2"	15"	1.97"	2.03"	2 1/2" x 38"	55	3" x 6 3/8"	4" x 6"	4 1/2"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 8/19/14 FILENAME: b090373_ebl.dgn

CHECKED BY: AMS DATE: 5-28-15 SCALE: None

DESIGNED BY: PGT DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56351

PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	120	316
				① 07333 - 220' UNIT - 56352				

Slab Reinforcing:

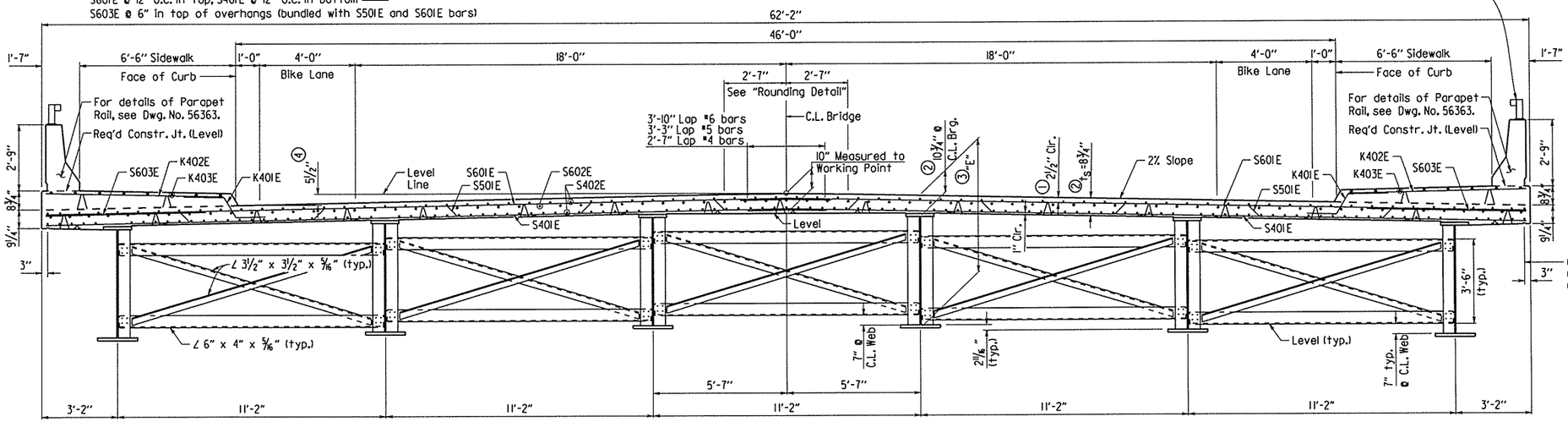
Longitudinal: S402E as shown
S602E placed as shown over interior support, see "Half-Reinforcing Plan & Slab Pouring Sequence" on Dwg. No. 56355.

Transverse: S501E @ 12" o.c. bent up over beams
S601E @ 12" o.c. in top, S401E @ 12" o.c. in bottom — Alternate
S603E @ 6" in top of overhangs (bundled with S501E and S601E bars)

NOTE: At the Contractor's option, in lieu of providing bars S501E, one epoxy coated #5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S501E.

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway and Sidewalk Surface and to the Roadway Face & Top of the Concrete Parapet Rail.

For details and location of Type H Metal Bridge Railing, see Dwg. No. 56365.



TYPICAL ROADWAY SECTION

⅜" = 1'-0"

① Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

② See "Adjustment for Slab Thickness Tolerance".

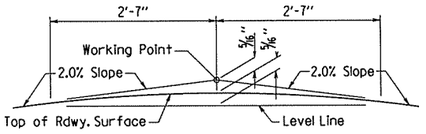
③ "E" equals 5'-4¾" plus bottom flange thickness measured at C.L. Bearing & C.L. Girder.

④ Working Point to Gutterline.

Notes:

For details of Connection Plates, Bearing Stiffeners, Cross-frames and connections, see Dwg. No. 56353.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06.

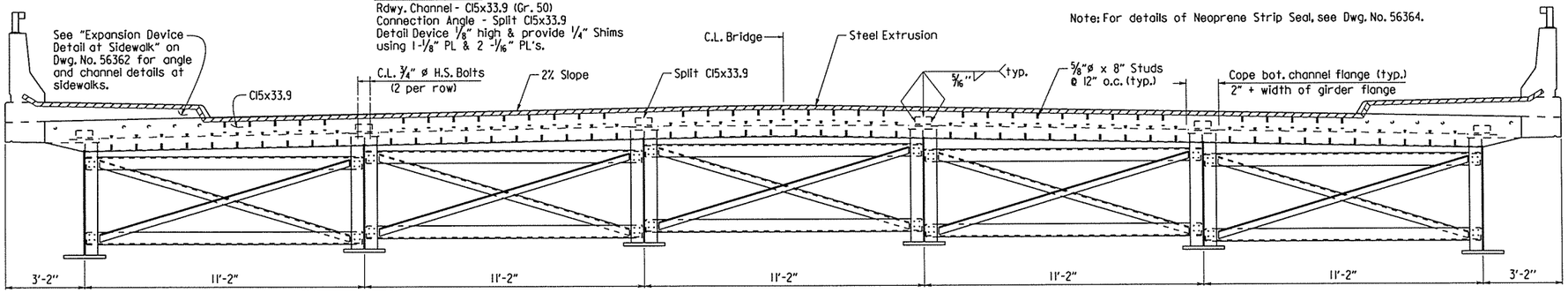


NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

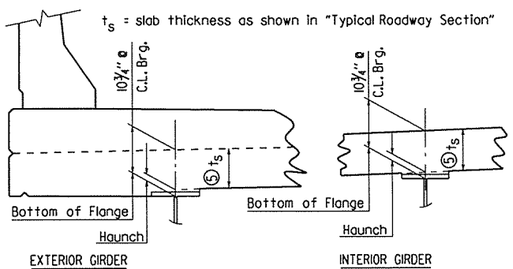
NTS

Expansion Device:
Rdwy. Channel - C15x33.9 (Gr. 50)
Connection Angle - Split C15x33.9
Detail Device ⅛" high & provide ¼" Shims using 1-⅛" PL & 2 -1/16" PL's.



TYPICAL ROADWAY SECTION NEAR JOINT

⅜" = 1'-0"



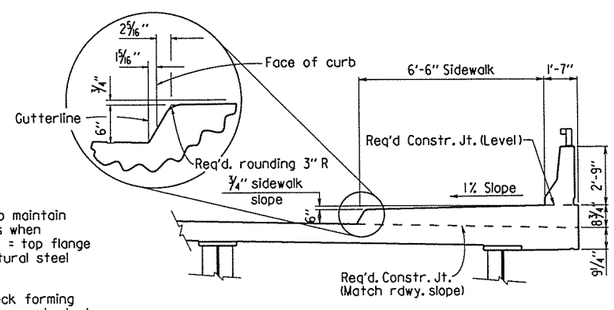
⑤ Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NTS

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



SIDEWALK & CURB DETAIL

½" = 1'-0"

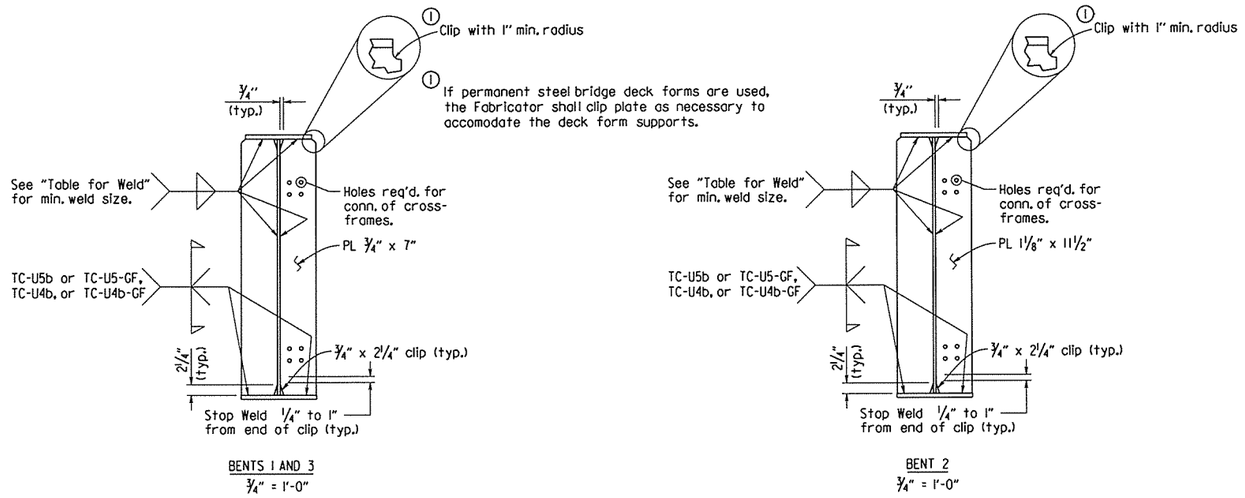
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF 220'-0" CONTINUOUS PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/07/14 FILENAME: b090373_sl.dgn
CHECKED BY: JNP DATE: 8/18/15 SCALE: As Shown
DESIGNED BY: PGT DATE: 10/13
BRIDGE NO. 07333 DRAWING NO. 56352

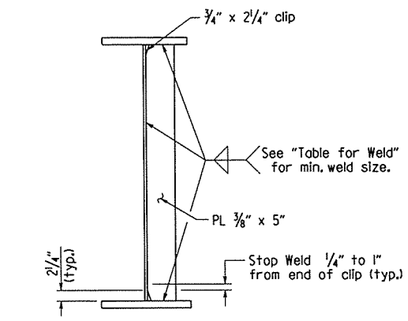
PRINT DATE: 8/18/2015

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				JOB NO.		090373	121	316
				①	07333 - 220' UNIT - 56353			



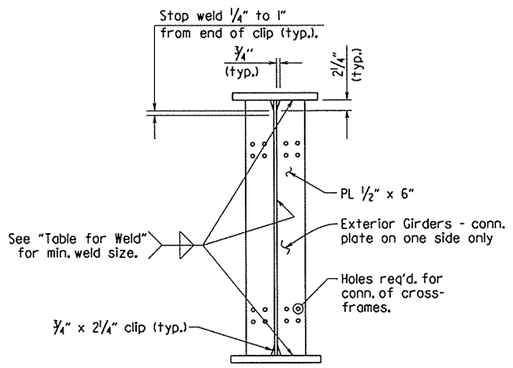
BEARING STIFFENER DETAILS

NOTE: Bearing stiffeners shall be vertical in final position.



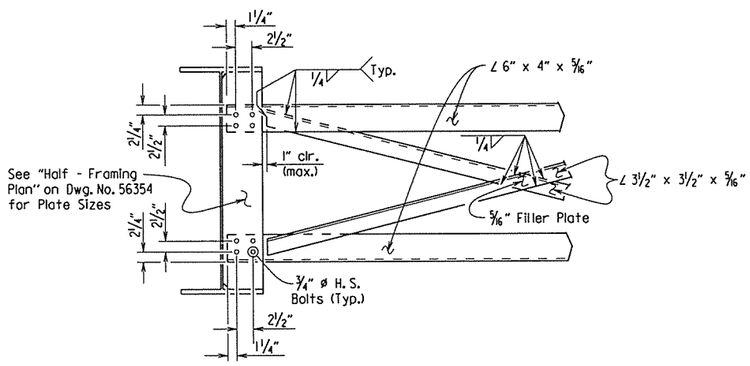
INTERMEDIATE STIFFENER DETAIL

¾" = 1'-0"



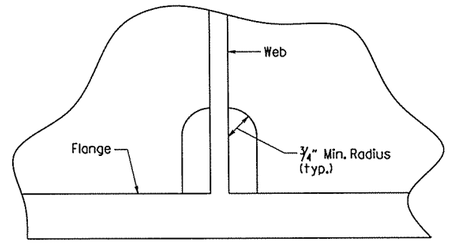
CROSS-FRAME CONNECTION DETAIL

¾" = 1'-0"



TYPICAL CROSS-FRAME CONNECTION

N.T.S.



Height and width of clip shall be as noted in other details.

ALTERNATE CLIP DETAIL

(For Bearing Stiffeners, Intermediate Stiffeners, and Cross-frame Connection Plates)

N.T.S.

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

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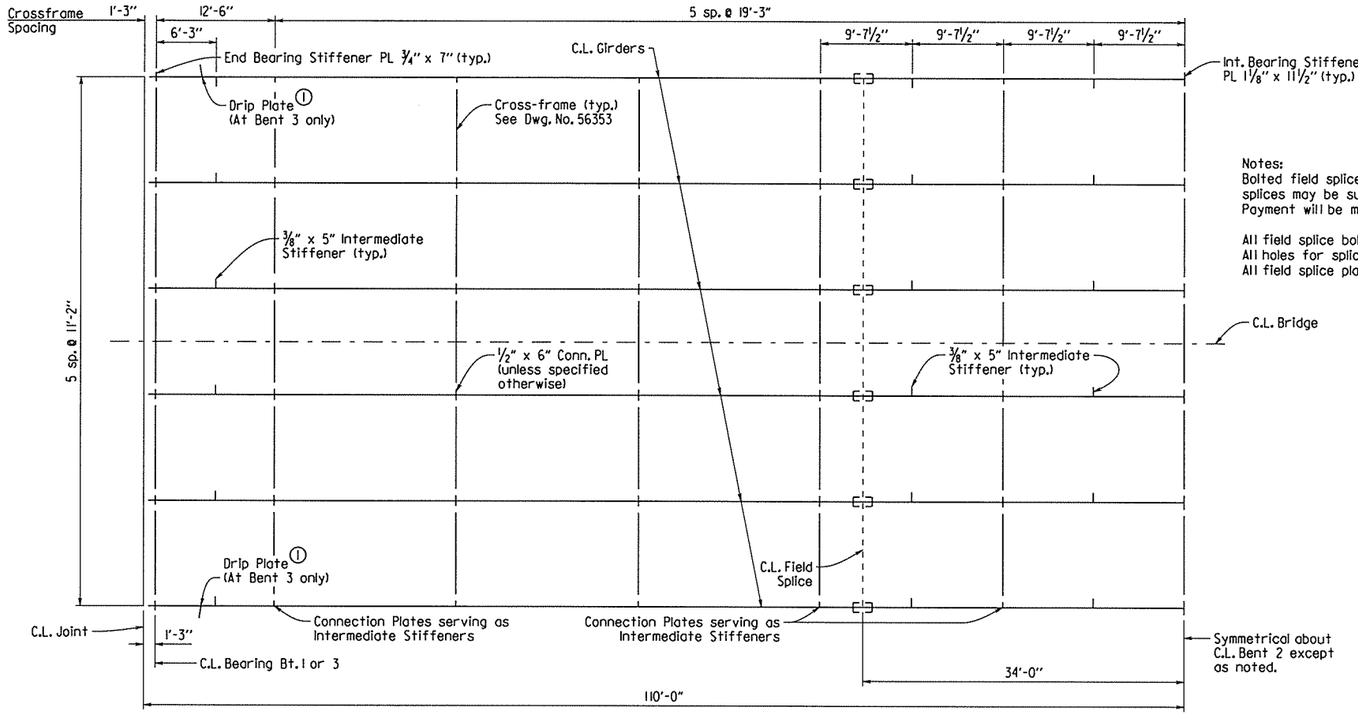
SHEET 2 OF 4
DETAILS OF 220'-0"
CONTINUOUS PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/07/14 FILENAME: b090373_sl.dgn
CHECKED BY: JHP DATE: 8/18/15 SCALE: As Shown
DESIGNED BY: RCT DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56353

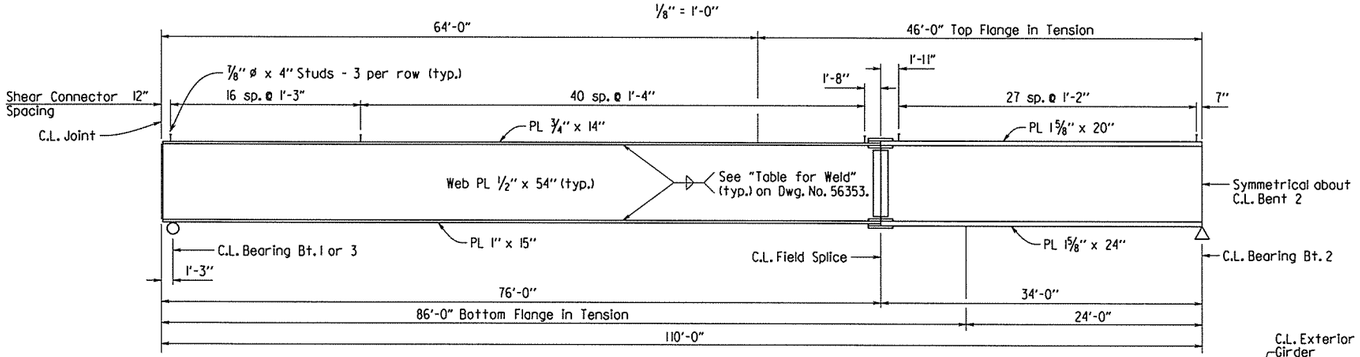
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	122	316
				①		07333 - 220' UNIT - 56354		



HALF - FRAMING PLAN

⅛" = 1'-0"

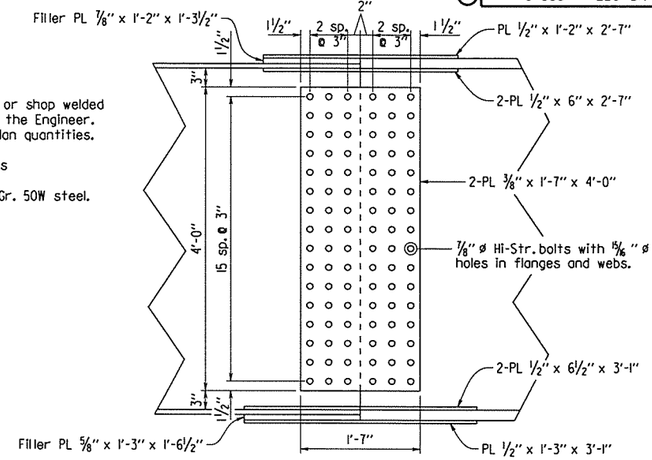


HALF - GIRDER ELEVATION

N.T.S.

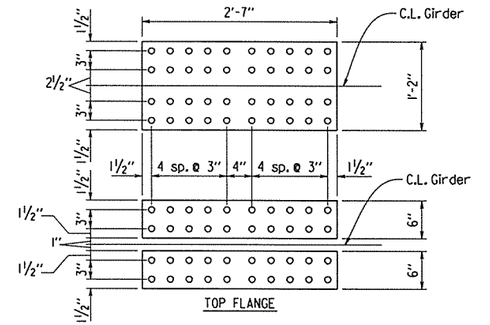
Notes:
Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

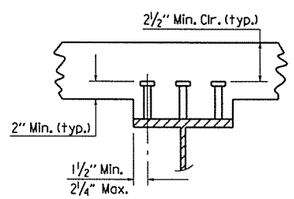
All field splice bolts shall be ⅞"ø Hi-str. bolts
All holes for splice bolts shall be 15/16" ø
All field splice plates shall be AASHTO M 270 Gr. 50W steel.



DETAILS OF FIELD SPLICE

1" = 1'-0"

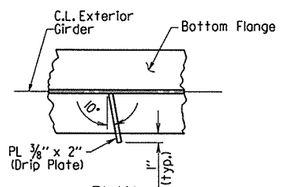




SHEAR CONNECTOR DETAIL

N.T.S.

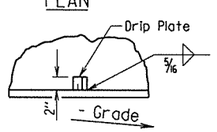
Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞" studs shown, at the ratio of 1.361 - ¾" ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.



PLAN

Note:
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

① Locate drip plate 5'-0" from C.L. Bearing on high side of Bent 3.



ELEVATION

BOTTOM FLANGE DRIP PLATE

N.T.S.

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SHEET 3 OF 4
DETAILS OF 220'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

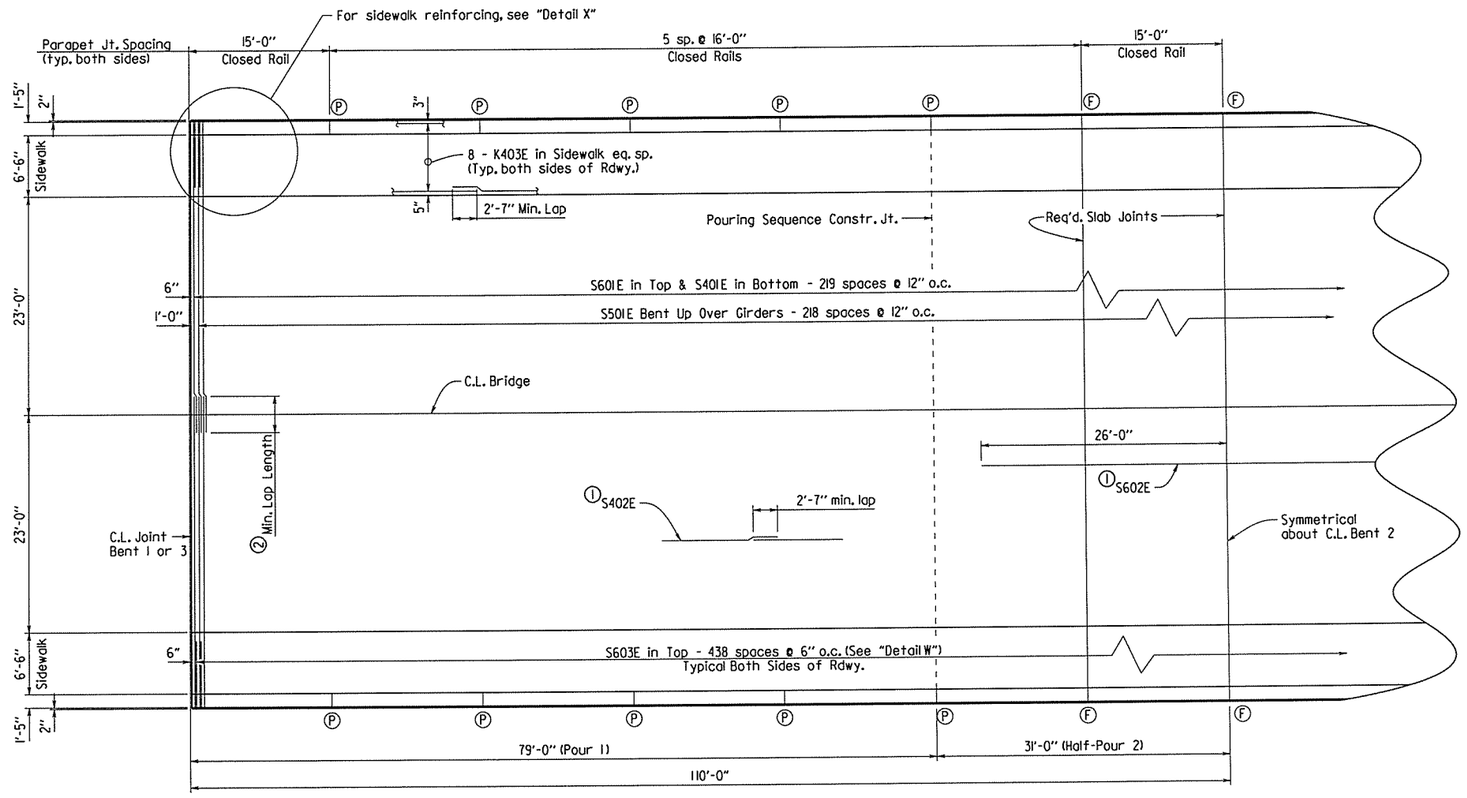
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JVP DATE: 8/20/15 SCALE: As Shown
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BRIDGE NO. 07333 DRAWING NO. 56354

PRINT DATE: 8/20/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	123	316
				①	07333 - 220' UNIT - 56355			



HALF-REINFORCING PLAN & SLAB POURING SEQUENCE

1/8" = 1'-0"

Ⓟ Partial depth parapet joint at this location.
Ⓕ Full depth parapet joint at this location.

POURING SEQUENCE NOTES:

Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. After the completion of the entire deck slab, a minimum of 72 hours shall elapse before pouring the sidewalk. A minimum of 72 hours shall elapse between completion of the sidewalk and pouring of the parapet rail.

Any railing or sidewalk pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Note: Req'd. slab joints and pouring sequence construction joints shall align with open joints at the front face of the parapet rail.

For parapet rail details and reinforcing, see Dwg. No. 56363.

① Place as shown in "Typical Roadway Section", Dwg. No. 56352.

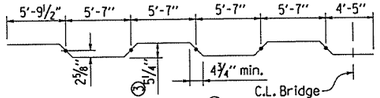
② 3'-10" min. lap typ. for #6 bars
3'-3" min. lap typ. for #5 bars
2'-7" min. lap typ. for #4 bars

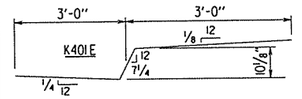
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	440	32'-3"	Str.
S402E	1,134	38'-10"	Str.
S501E	438	33'-4"	3"
S601E	440	32'-10"	Str.
S602E	73	52'-0"	Str.
S603E	878	5'-6"	Str.
K401E	440	6'-8"	2"
K402E	440	7'-7"	Str.
K403E	96	38'-10"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



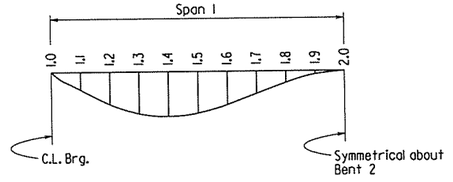


Bars designated with an "E" are epoxy coated.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

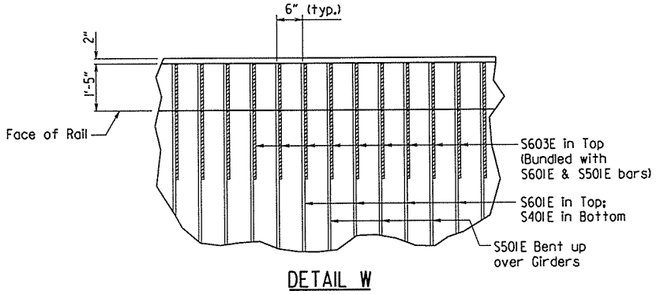
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Str. Steel + Slab + Parapet + Sidewalk	
		Exterior	Interior	Exterior	Interior	Exterior	Interior
1	1.0	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.111	0.121	0.671	0.837	0.881	0.936
	1.2	0.202	0.221	1.222	1.525	1.606	1.705
	1.3	0.262	0.285	1.572	1.961	2.070	2.195
	1.4	0.282	0.308	1.683	2.099	2.221	2.352
	1.5	0.265	0.289	1.559	1.943	2.065	2.181
	1.6	0.216	0.234	1.248	1.554	1.661	1.748
	1.7	0.148	0.160	0.839	1.044	1.122	1.177
	1.8	0.079	0.085	0.439	0.546	0.589	0.616
	1.9	0.023	0.025	0.128	0.159	0.172	0.180
	2.0	0.000	0.000	0.000	0.000	0.000	0.000

Symmetrical about Bent 2

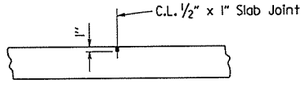


DEAD LOAD DEFLECTION DIAGRAM

NOTE: Camber for Dead Load Deflection +/- 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing.

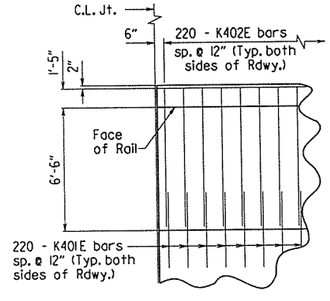


DETAIL W
No Scale



Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall be installed before the sidewalk is poured. After installation of the joint in the sidewalk and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and across the top of the sidewalk to the edge of the slab. Slab joints shall align with open joints at the front face of the parapet. No joint sealer shall be placed on the deck slab under the sidewalk. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL
No Scale



DETAIL X
1/4" = 1'-0"

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SHEET 4 OF 4
DETAILS OF 220'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: PGT DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56355

PRINT DATE: 8/17/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	124	316
				①	07333 - 450' UNIT - 56356			

Slab Reinforcing:

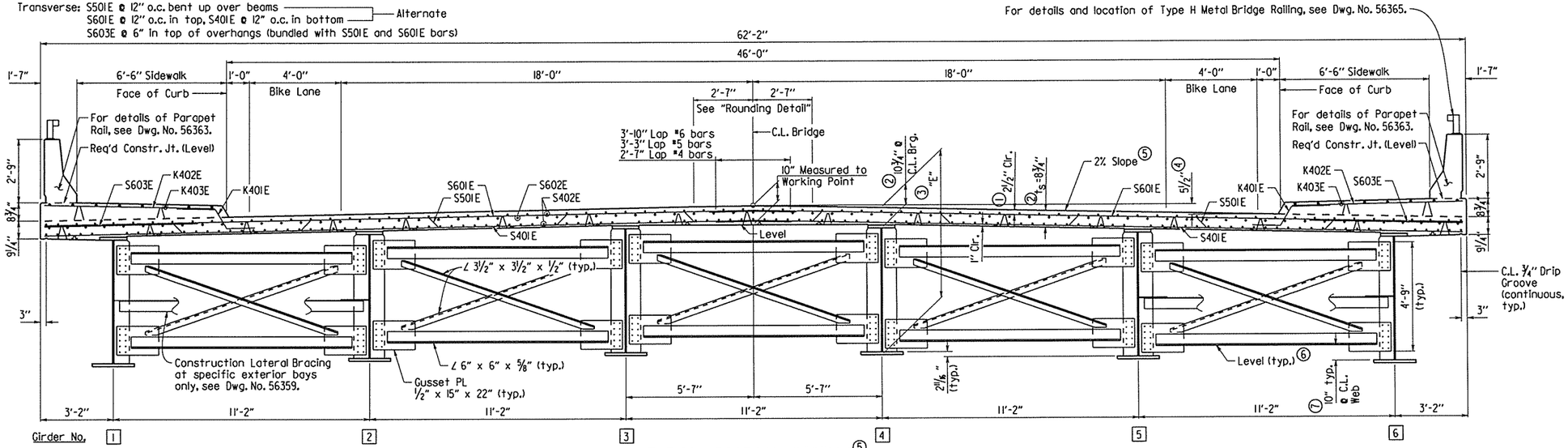
Longitudinal: S402E as shown
S602E palced as shown over interior supports, see "Reinforcing Plan & Slab Pouring Sequence" on Dwg. No. 56361.

Transverse: S501E @ 12" o.c. bent up over beams ——┐ Alternate
S601E @ 12" o.c. in top, S401E @ 12" o.c. in bottom ——┘
S603E @ 6" in top of overhangs (bundled with S501E and S601E bars)

NOTE: At the Contractor's option, in lieu of providing bars S501E, one epoxy coated #5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S501E.

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway and Sidewalk Surface and to the Roadway Face & Top of the Concrete Parapet Rail.

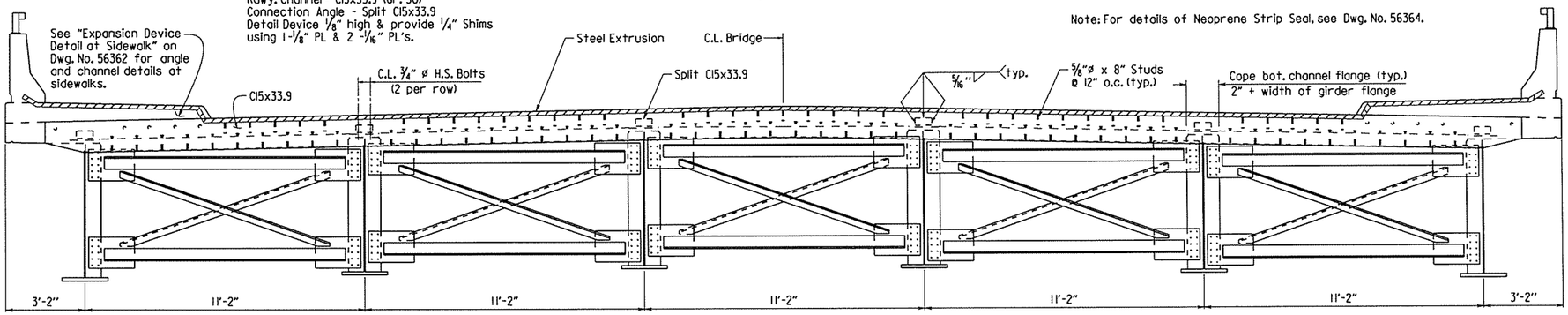
For details and location of Type H Metal Bridge Railing, see Dwg. No. 56365.



TYPICAL ROADWAY SECTION ⑤

LOOKING AHEAD
2% Peaked Crown Shown
⅜" = 1'-0"

Expansion Device:
Rdwy. Channel - C15x33.9 (Gr. 50)
Connection Angle - Split C15x33.9
Detail Device ⅛" high & provide ¼" Shims using 1-⅛" PL & 2 -¹/₁₆" PL's.



TYPICAL ROADWAY SECTION NEAR JOINT ⑤

LOOKING AHEAD
2% Peaked Crown Shown
⅜" = 1'-0"

① Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

② See "Adjustment for Slab Thickness Tolerance".

③ "E" equals 6'-4¾" plus bottom flange thickness measured at C.L. Bearing & C.L. Girder.

④ Working Point to Gutterline.

⑤ 2% Peaked crown from Sta. 489+28.92 to Sta. 492+42.47. Slope varies from Sta. 492+42.47 to Sta. 495+12.47. See "Cross-Slope Transition Sketch" on Dwg. No 56339.

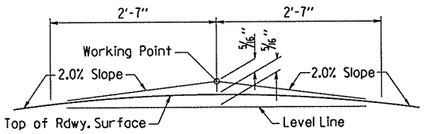
⑥ Cross-frames shall remain level for entire unit.

⑦ In areas of cross-slope transition, this dimension is applied at the left side of the girder web(s) looking ahead.

Notes:

For details of Bearing Stiffeners, Intermediate Stiffeners, Connection Plates, Cross-frames and connections, and Lateral Bracing and connections, see Dwg. Nos. 56357 and 56358.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06.

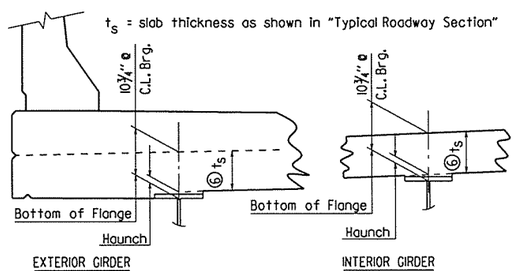


NOTES: Working Point matches Theoretical Roadway Grade.

Values shown are for 2% Peaked Crown. Dimension from working point to top of roadway surface varies from 5/16" at Sta. 492+42.47 to 0" at Sta. 495+12.47.

ROUNDING DETAIL

N.T.S.



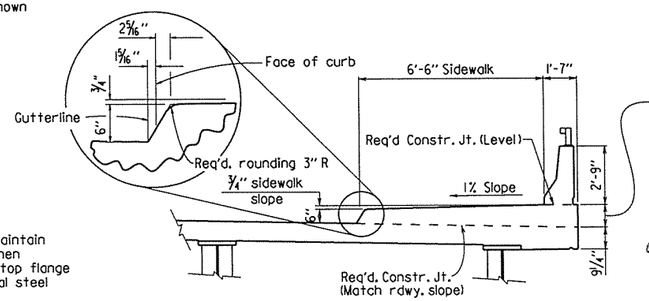
⑥ Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NTS

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



SIDEWALK & CURB DETAIL

½" = 1'-0"

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SHEET 1 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

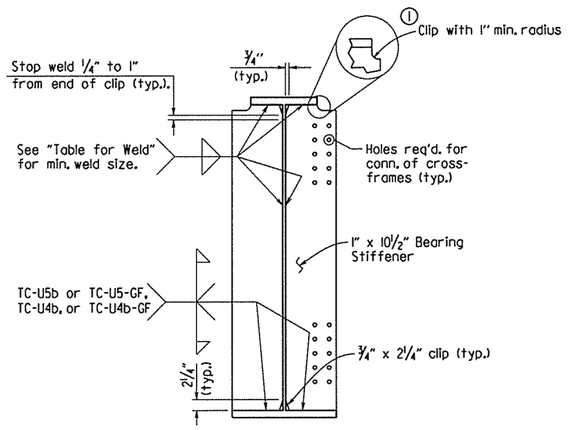
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ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JVP DATE: 8/18/15 SCALE: As Shown
DESIGNED BY: PGT/JVP DATE: 10/13
BRIDGE NO. 07333 DRAWING NO. 56356

PRINT DATE: 8/17/2015

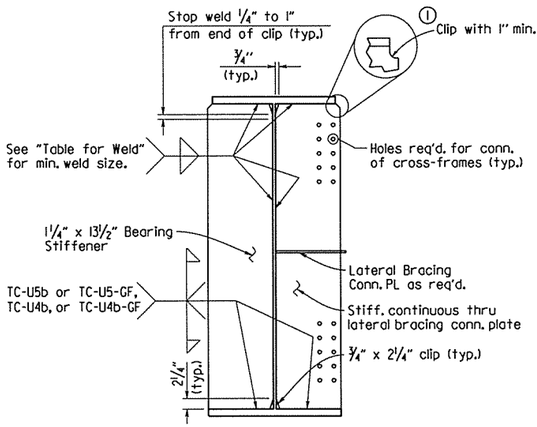
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				6	ARK.			
				JOB NO.		090373	125	316
				① 07333 - 450' UNIT - 56357				



BEARING STIFFENER DETAILS

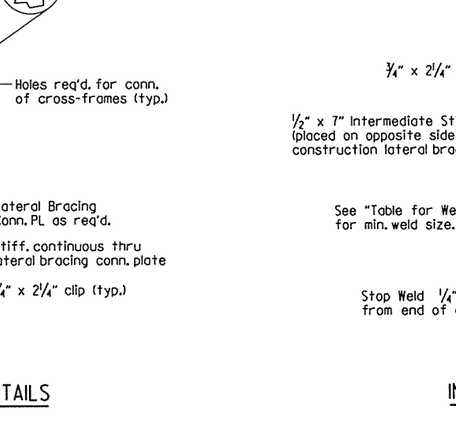
REGION A
3/4" = 1'-0"

NOTE: All Bearing stiffeners shall be vertical in final position.



BEARING STIFFENER DETAILS

REGION B
3/4" = 1'-0"



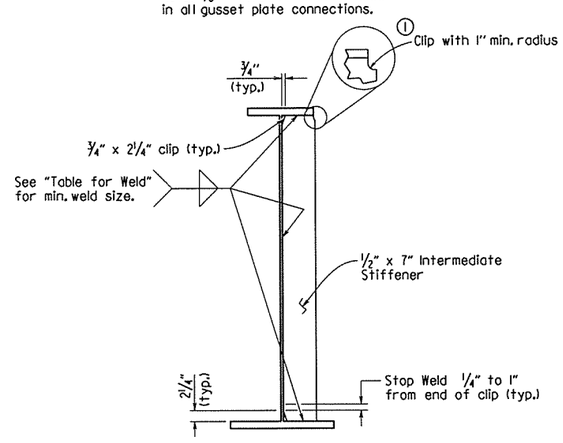
Height and width of clip shall be as noted in other details.

ALTERNATE CLIP DETAIL

(For Bearing Stiffeners, Intermediate Stiffeners, and Cross-frame Connection Plates)

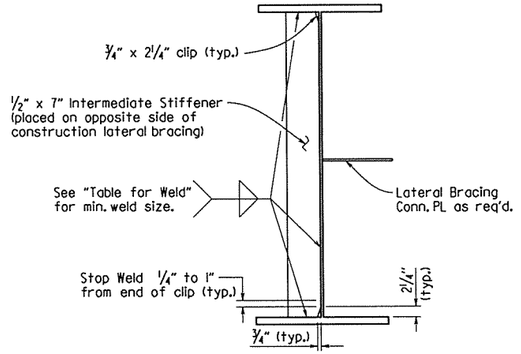
N.T.S.

NOTE: 7/8"ø H.S. Bolts shall be used in all gusset plate connections.



INTERMEDIATE STIFFENER DETAILS

REGION A
3/4" = 1'-0"



INTERMEDIATE STIFFENER DETAILS

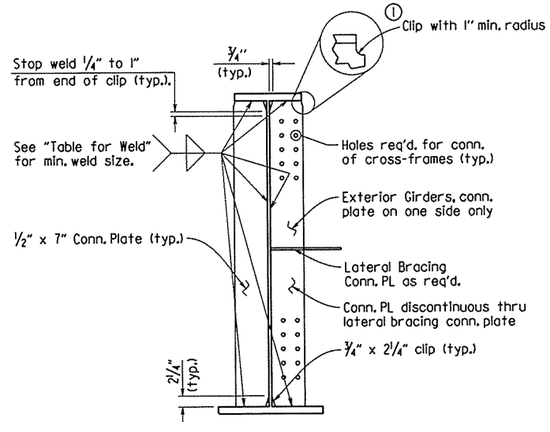
REGION B
3/4" = 1'-0"

① If permanent steel bridge deck forms are used, the Fabricator shall clip plate as necessary to accomodate the deck form supports.

TABLE FOR WELD

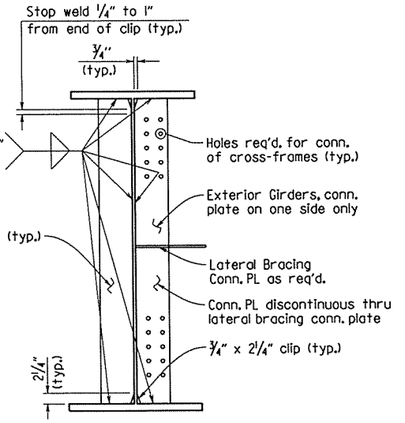
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



CROSS-FRAME CONNECTION DETAILS

REGION A
3/4" = 1'-0"



CROSS-FRAME CONNECTION DETAILS

REGION B
3/4" = 1'-0"

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SHEET 2 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

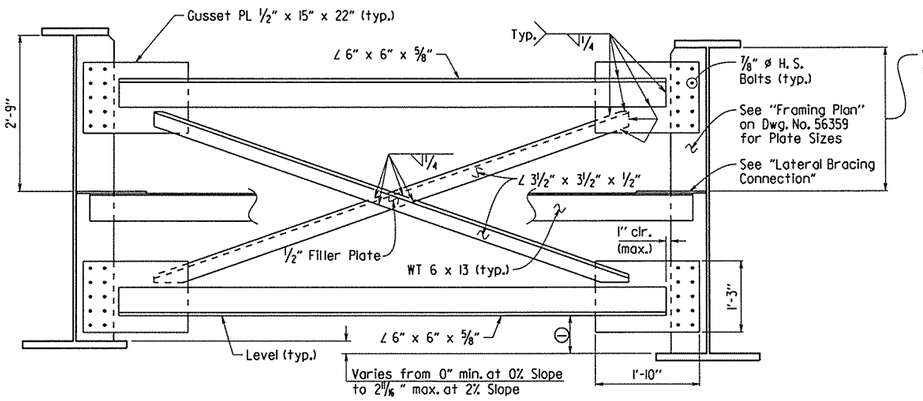
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JNP DATE: 8/18/15
DESIGNED BY: PLK | JNP DATE: 10/13
FILENAME: b090373_sl.dgn
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BRIDGE NO. 07333 DRAWING NO. 56357

PRINT DATE: 8/18/2015

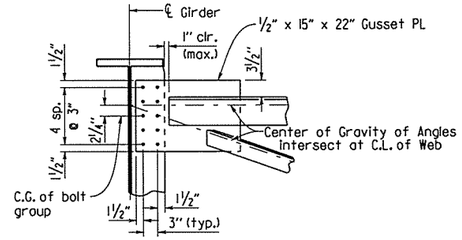
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				6	ARK.			
				JOB NO.		090373	126	316
				①	07333 - 450' UNIT - 56358			



TYPICAL CROSS-FRAME CONNECTION

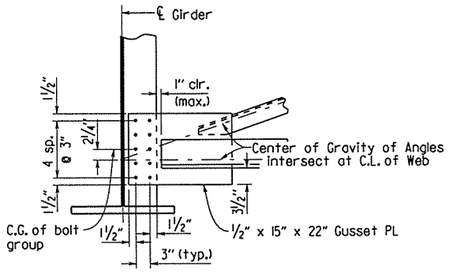
¾" = 1'-0"

① See "Typical Roadway Section" and notes on Dwg. No. 56356.



UPPER CROSS-FRAME CONNECTION

¾" = 1'-0"



LOWER CROSS-FRAME CONNECTION

¾" = 1'-0"

LATERAL BRACING CONNECTION A

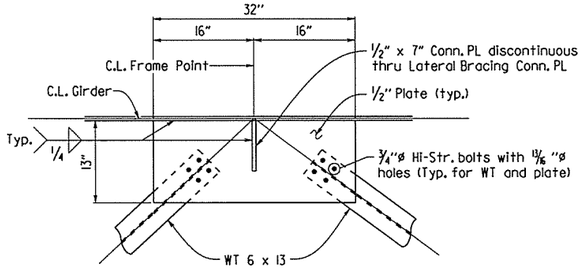
With Connection Plate
1" = 1'-0"

LATERAL BRACING CONNECTION B

Without Connection Plate or Stiffener
1" = 1'-0"

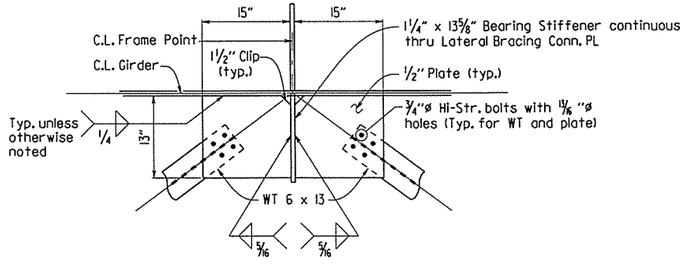
LATERAL BRACING CONNECTION B

With Connection Plate
1" = 1'-0"



LATERAL BRACING CONNECTION C

With Connection Plate
1" = 1'-0"



LATERAL BRACING CONNECTION D

With Bearing Stiffener at Bents 4 and 5
1" = 1'-0"

Notes:
The ends of lateral bracing members shall be a minimum of 4" clear from the web or any stiffener or connection plate.

At the Contractor's option, holes in one end of the WT may be field drilled. Minimum clearance from C.L. Bolt to edge of plate is 1¼".

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

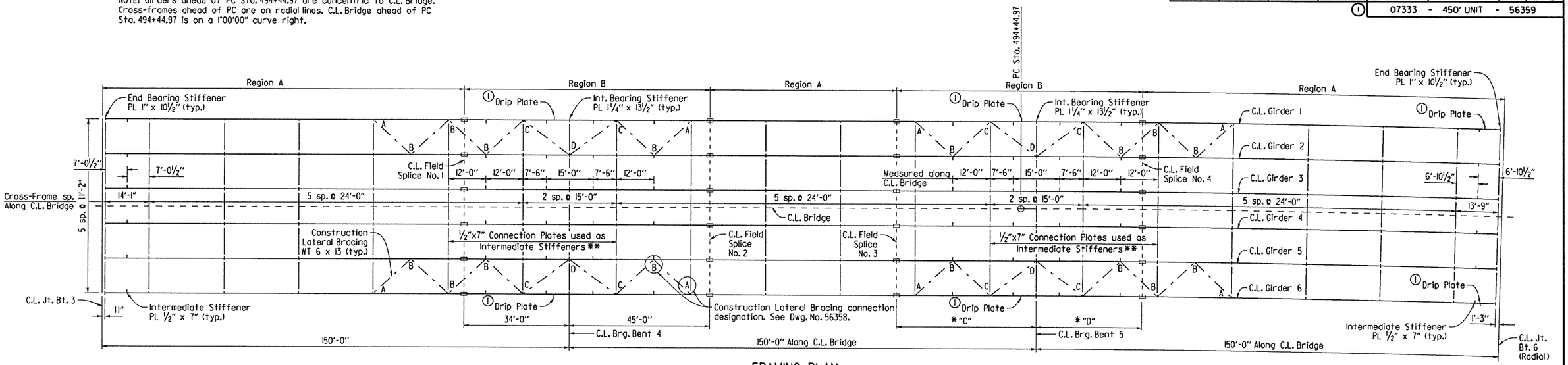
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CHECKED BY: JWP DATE: 8/18/15 SCALE: As Shown
DESIGNED BY: PLT/JWP DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56358

PRINT DATE: 8/17/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	127	316
				(1)	07333 - 450' UNIT - 56359			

NOTE: Girders ahead of PC Sta. 494+44.97 are concentric to C.L. Bridge. Cross-frames ahead of PC are on radial lines. C.L. Bridge ahead of PC Sta. 494+44.97 is on a 1°00'00" curve right.

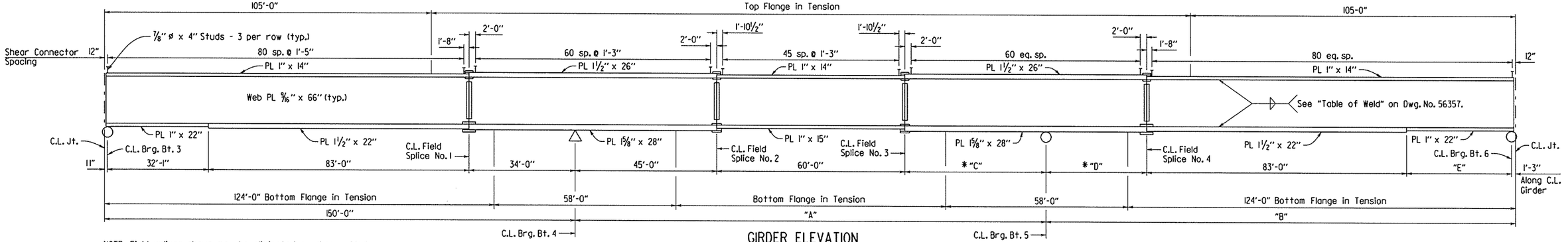


FRAMING PLAN

1/16" = 1'-0"

*Measured from C.L. Bearing to C.L. Field Splice along each girder.

**Does not include Bearing Stiffener Plates at Bearing Lines.



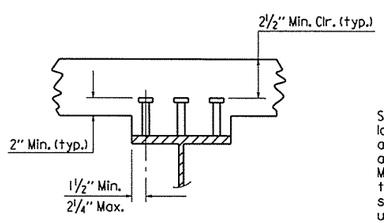
GIRDER ELEVATION

No Scale

NOTE: Field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

TABLE OF VARIABLES

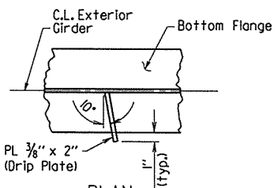
Girder No.	"A"	"B"	"C"	"D"	"E"
1	150'-0 5/16"	150'-8 3/4"	45'-0 5/16"	33'-11 11/16"	32'-6 1/16"
2	150'-0 3/16"	150'-5 1/4"	45'-0 3/16"	33'-11 11/16"	32'-2 7/16"
3	150'-0 1/16"	150'-1 3/4"	45'-0 1/16"	33'-11 15/16"	31'-10 13/16"
4	149'-11 15/16"	149'-10 1/4"	44'-11 15/16"	34'-0 1/16"	31'-7 5/16"
5	149'-11 13/16"	149'-6 3/4"	44'-11 13/16"	34'-0 3/16"	31'-3 9/16"
6	149'-11 11/16"	149'-3 1/4"	44'-11 11/16"	34'-0 5/16"	30'-11 5/16"



SHEAR CONNECTOR DETAIL

NTS

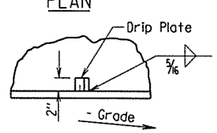
Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞" studs shown, at the ratio of 1.361 - ¾" ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.



PLAN

Note:
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

(1) Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent.



ELEVATION

BOTTOM FLANGE DRIP PLATE

N.T.S.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

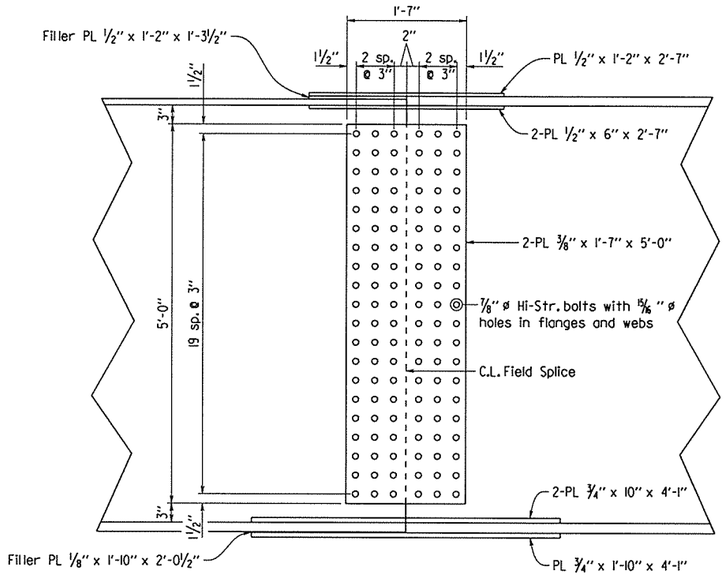
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/10/14 FILENAME: b090373_sl.dgn
CHECKED BY: JNP DATE: 8/20/15 SCALE: As Shown
DESIGNED BY: PGH/JNP DATE: 10/13

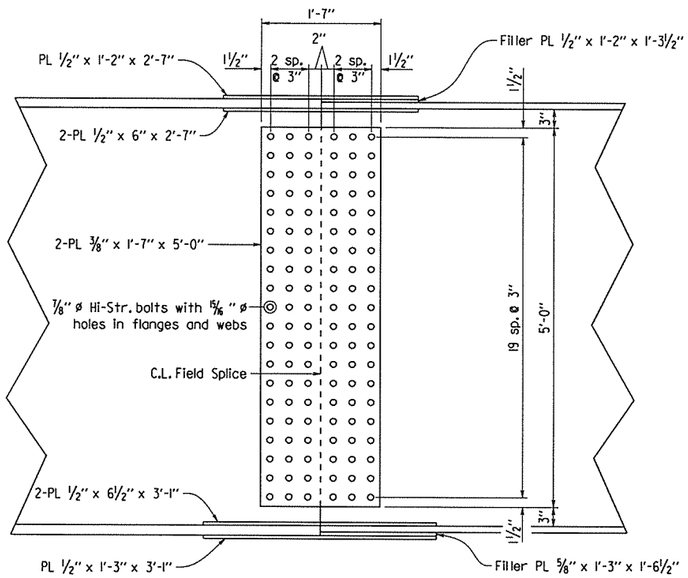
BRIDGE NO. 07333 DRAWING NO. 56359

PRINT DATE: 8/20/2015

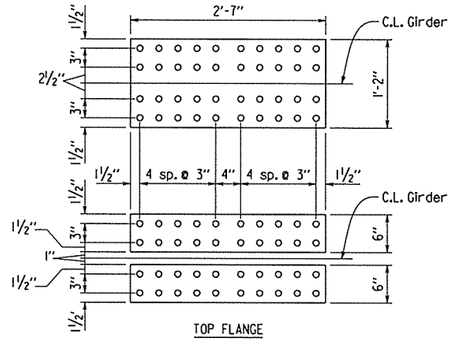
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				6	ARK.			
				JOB NO.		090373	128	316
				①	07333 - 450' UNIT - 56360			



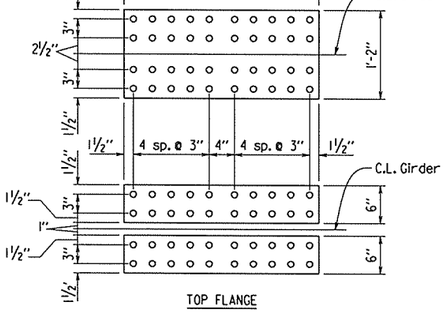
DETAILS OF FIELD SPLICES NO. 1 AND 4



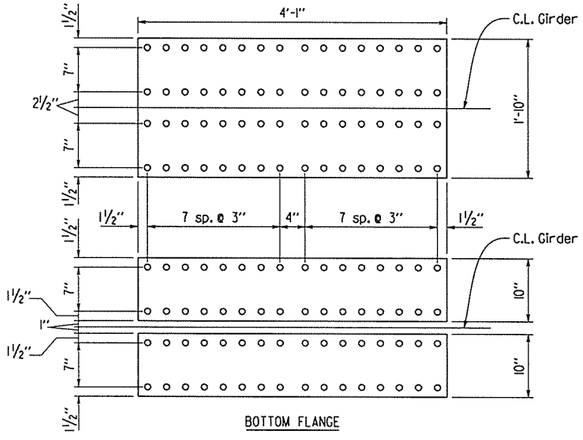
DETAILS OF FIELD SPLICES NO. 2 AND 3



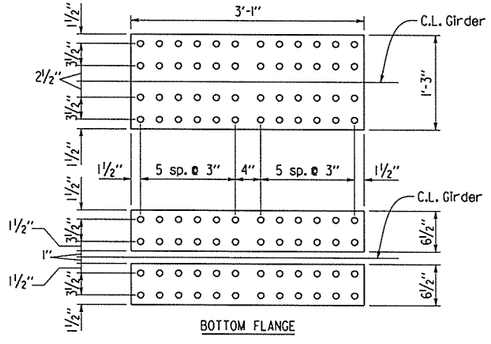
TOP FLANGE



TOP FLANGE



BOTTOM FLANGE

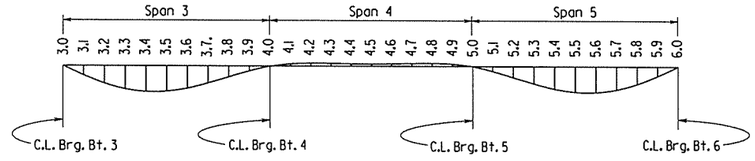


BOTTOM FLANGE

Note:
All field splice bolts shall be ⅞"ø Hi-str. bolts
All holes for splice bolts shall be 15/16 " ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel			Structural Steel + Slab			Structural Steel + Slab + Parapet + Sidewalk		
		Girders 1 & 2	Girders 3 & 4	Girders 5 & 6	Girders 1 & 2	Girders 3 & 4	Girders 5 & 6	Girders 1 & 2	Girders 3 & 4	Girders 5 & 6
3	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3.1	0.355	0.356	0.353	1.762	1.853	1.752	2.053	2.016	2.042
	3.2	0.655	0.657	0.651	3.245	3.409	3.226	3.785	3.713	3.763
	3.3	0.859	0.862	0.853	4.244	4.454	4.216	4.949	4.855	4.917
	3.4	0.956	0.959	0.949	4.710	4.934	4.676	5.492	5.383	5.452
	3.5	0.943	0.945	0.935	4.629	4.840	4.592	5.397	5.284	5.354
	3.6	0.829	0.829	0.821	4.053	4.227	4.016	4.728	4.621	4.686
	3.7	0.638	0.638	0.631	3.108	3.231	3.075	3.626	3.537	3.588
	3.8	0.399	0.398	0.394	1.936	2.001	1.912	2.257	2.198	2.229
	3.9	0.173	0.173	0.171	0.842	0.862	0.829	0.977	0.951	0.961
4	4.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4.1	-0.087	-0.085	-0.083	-0.431	-0.413	-0.414	-0.476	-0.471	-0.456
	4.2	-0.112	-0.107	-0.104	-0.561	-0.502	-0.525	-0.590	-0.589	-0.548
	4.3	-0.110	-0.103	-0.098	-0.548	-0.439	-0.492	-0.540	-0.540	-0.473
	4.4	-0.101	-0.090	-0.085	-0.477	-0.324	-0.401	-0.430	-0.428	-0.339
	4.5	-0.098	-0.085	-0.078	-0.436	-0.257	-0.344	-0.369	-0.361	-0.258
	4.6	-0.112	-0.099	-0.091	-0.490	-0.319	-0.393	-0.437	-0.424	-0.319
	4.7	-0.128	-0.116	-0.108	-0.573	-0.438	-0.482	-0.561	-0.539	-0.451
	4.8	-0.131	-0.122	-0.116	-0.606	-0.525	-0.535	-0.640	-0.614	-0.554
	4.9	-0.097	-0.092	-0.088	-0.455	-0.424	-0.415	-0.504	-0.482	-0.454
5	5.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5.1	0.184	0.178	0.171	0.869	0.866	0.811	1.009	0.954	0.937
	5.2	0.419	0.406	0.392	1.992	2.004	1.867	2.324	2.200	2.170
	5.3	0.656	0.639	0.616	3.143	3.180	2.952	3.669	3.481	3.434
	5.4	0.856	0.834	0.804	4.125	4.188	3.878	4.816	4.577	4.513
	5.5	0.980	0.955	0.920	4.748	4.831	4.467	5.540	5.273	5.197
	5.6	0.992	0.968	0.933	4.829	4.924	4.546	5.636	5.369	5.289
	5.7	0.891	0.869	0.837	4.353	4.445	4.098	5.081	4.844	4.771
	5.8	0.678	0.662	0.638	3.327	3.403	3.133	3.886	3.706	3.649
	5.9	0.369	0.360	0.347	1.812	1.855	1.707	2.115	2.018	1.987
	6.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

NOTE: Camber for Dead Load Deflection +/- ¼" tolerance. Deflections shown in Spans 3 and 4 are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Deflections shown in Span 5 are along C.L. Girder from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above plane.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-2015
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/10/14
CHECKED BY: JHP DATE: 8/20/15
DESIGNED BY: RCE/JHP DATE: 10/15

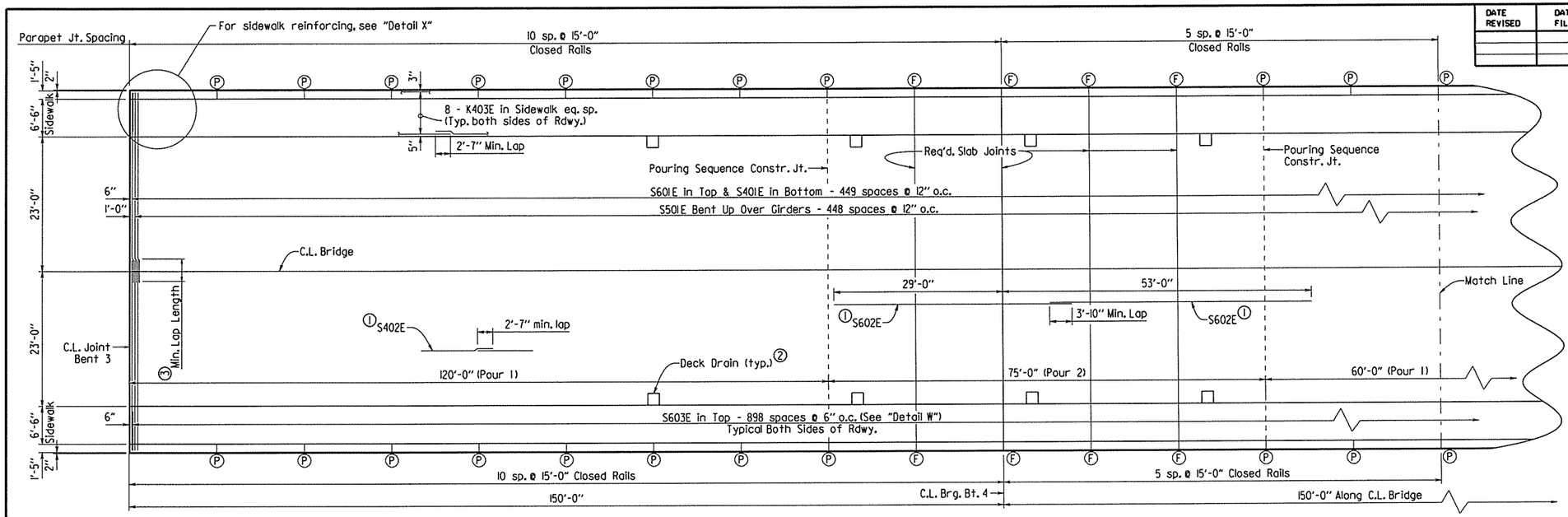
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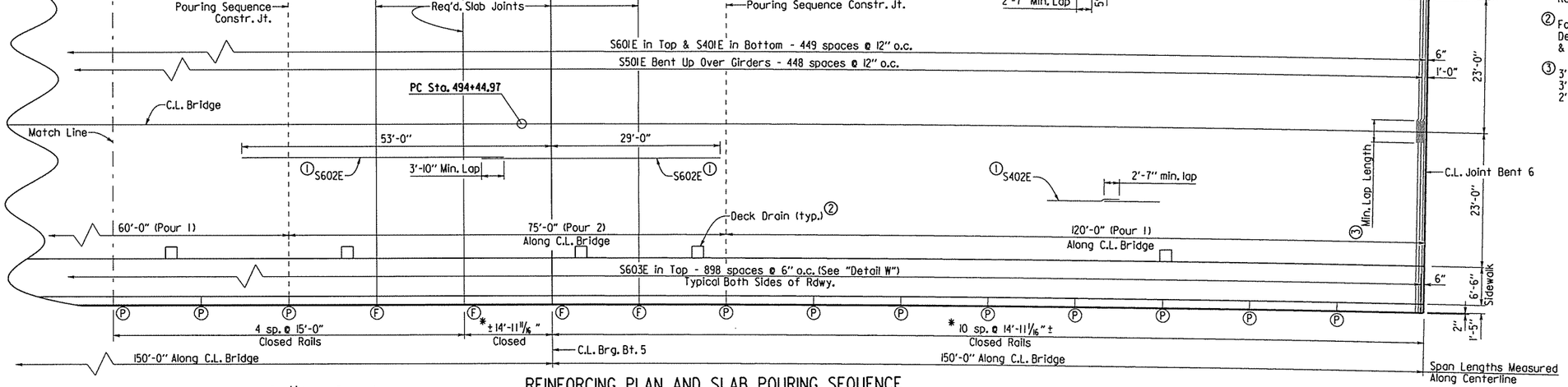
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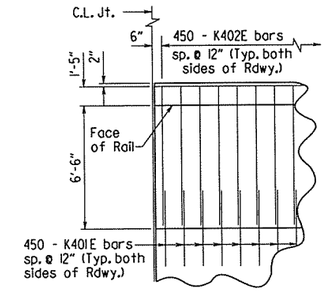
PRINT DATE: 8/20/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090373	129	316
①	07333 - 450' UNIT - 56361			







DETAIL X
1/8" = 1'-0"

NOTES:

Req'd. slab joints and pouring sequence construction joints shall align with joints at the front face of the parapet.

C.L. Bridge ahead of PC Sta. 494+44.97 is on a 1°00'00" curve right. All longitudinal lines and longitudinal reinforcing steel ahead of PC shall be placed on curves concentric with C.L. Bridge. All transverse reinforcing steel shall be placed on radial lines to C.L. Bridge. Spacing shown is measured along C.L. Bridge.

BAR LIST

* Measured Along Gutterline

For parapet rail details and reinforcing, see Dwg. No. 56363.

① Place as shown in "Typical Rdwy. Section", Dwg. No. 56356.

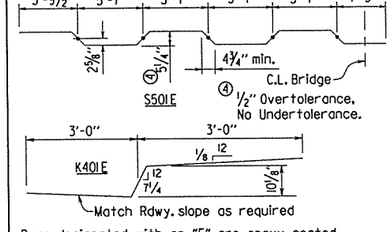
② For locations and details of Deck Drains, see Dwg. Nos. 56366 & 56367.

③ 3'-10" min. lap typ. for #6 bars
3'-3" min. lap typ. for #5 bars
2'-7" min. lap typ. for #4 bars

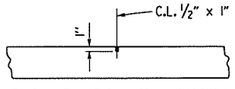
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	900	32'-3"	Str.
S402E	2,268	39'-11"	Str.
S501E	898	33'-4"	3"
S601E	900	32'-10"	Str.
S602E	292	42'-11"	Str.
S603E	1,798	5'-6"	Str.
K401E	900	6'-8"	2"
K402E	900	7'-7"	Str.
K403E	192	39'-11"	Str.
② X401E	104	7'-6"	Str.
② X402E	104	5'-4"	Str.
② X601E	104	10'-6"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars designated with an "E" are epoxy coated.



Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class SAE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall be installed before the sidewalk is poured. After installation of the joint in the sidewalk and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and across the top of the sidewalk to the edge of the slab. Slab joints shall align with open joints at the front face of the parapet. No joint sealer shall be placed on the deck slab under the sidewalk. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL
No Scale

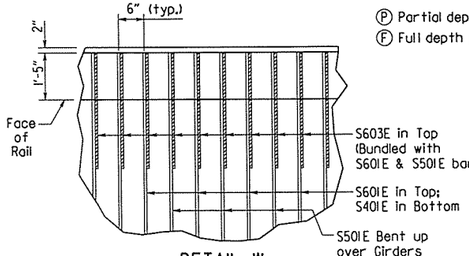
REINFORCING PLAN AND SLAB POURING SEQUENCE

1/2" = 1'-0"

POURING SEQUENCE NOTES:

Pours with the same number may be placed simultaneously or separately. Lengths of pours are measured along C.L. Bridge. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. After the completion of the entire deck slab, a minimum of 72 hours shall elapse before pouring the sidewalk. A minimum of 72 hours shall elapse between completion of the sidewalk and pouring the parapet rail.

Any railing or sidewalk pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.



DETAIL W
No Scale

Ⓟ Partial depth parapet joint at this location.
Ⓕ Full depth parapet joint at this location.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 450'-0" CONTINUOUS PLATE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/13/14 FILENAME: b090373_sl.dgn
CHECKED BY: JNP DATE: 8/19/15 SCALE: As Shown
DESIGNED BY: PGT/JNP DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56361

PRINT DATE: 8/17/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	130	316
				①	07333 - COMMON - 56362			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012) with 2013 interims.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (M 270, Gr. 36)	Fy = 36,000 psi

CONCRETE :
Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. The sidewalk shall receive a Broomed Finish as specified for final finishing in Subsection 802.19, for Class 6, Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam.

The use of a longitudinal screed is prohibited on the curved 450'-0" Unit.

If a longitudinal strike-off is used on the 220'-0" Unit, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing.

REINFORCING STEEL :
All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)."

STRUCTURAL STEEL :
All structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36, 50 or 50W unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Girder web, flange plates, and field splice plates, along with cross-frames and connection plates on the 450' Unit ahead of PC Sta. 494+44.97, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

All girders shall be assembled in the shop as specified in Section 807.54(b)(2) and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment for welds for these splices will be made.

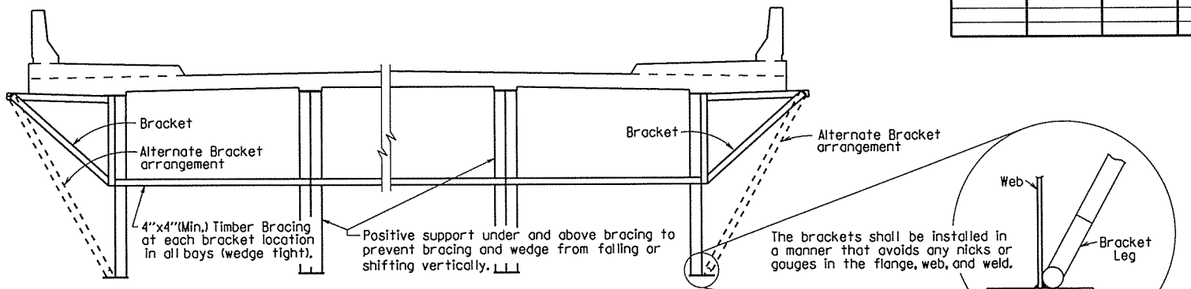
Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the governing specifications in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense.

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 11/16 " ø open holes. Holes for ¾" ø high-strength bolts may be 15/16 " ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

Cross-frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

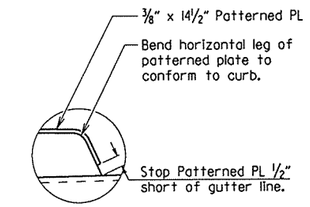
PRINT DATE: 8/17/2015



Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on Drawing Nos. 56353 & 56357. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

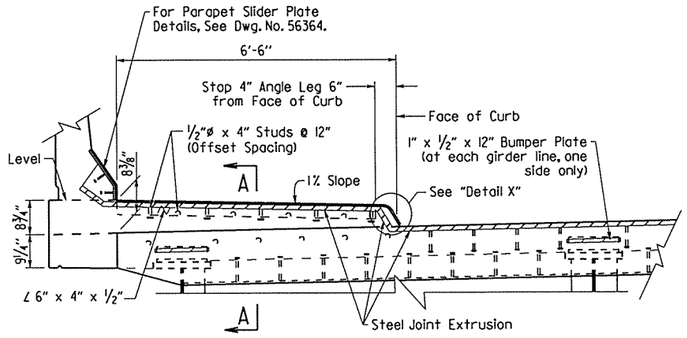
SCREED RAIL SUPPORT

N.T.S.



DETAIL X

N.T.S.



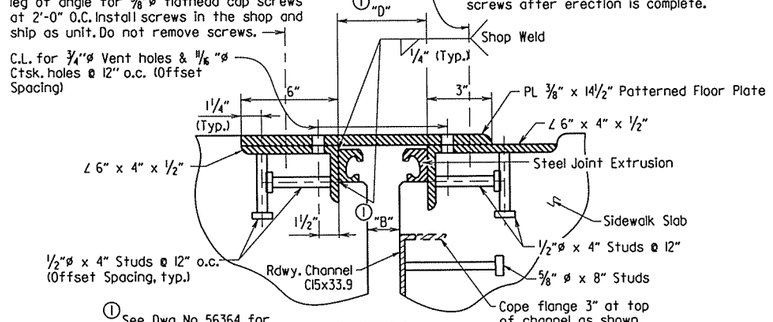
EXPANSION DEVICE DETAIL AT SIDEWALK

2% Peaked Crown Shown (2% Constant Slope Similar)
⅜" = 1'-0"

Note: Concrete shall be Hand Packed Under the Joint Armor in the Sidewalk.

11/16 " x 1⅝" Ctsk. slots in ⅜" plates. Tap 6" leg of angle for ⅝"ø flathead cap screws at 2'-0" O.C. Install screws in the shop and ship as unit. Do not remove screws.

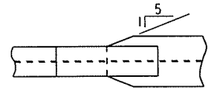
11/16 " x 1⅝" Ctsk. slots in ⅜" plates. Tap 6" leg of angle for ⅝"ø flathead cap screws at 2'-0" O.C. Install screws in the shop and ship as unit. Remove screws after erection is complete.



① See Dwg. No. 56364 for dimensions "B" and "D".

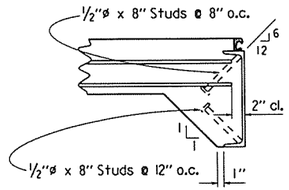
SECTION A-A

N.T.S.



FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

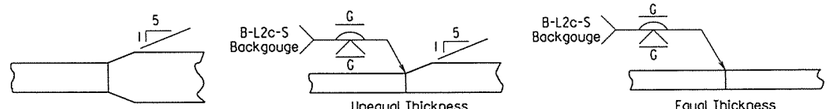
N.T.S.



Note: As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

N.T.S.



DETAILS OF WELDED SPLICES

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
COMMON DETAILS OF PLATE GIRDER UNITS

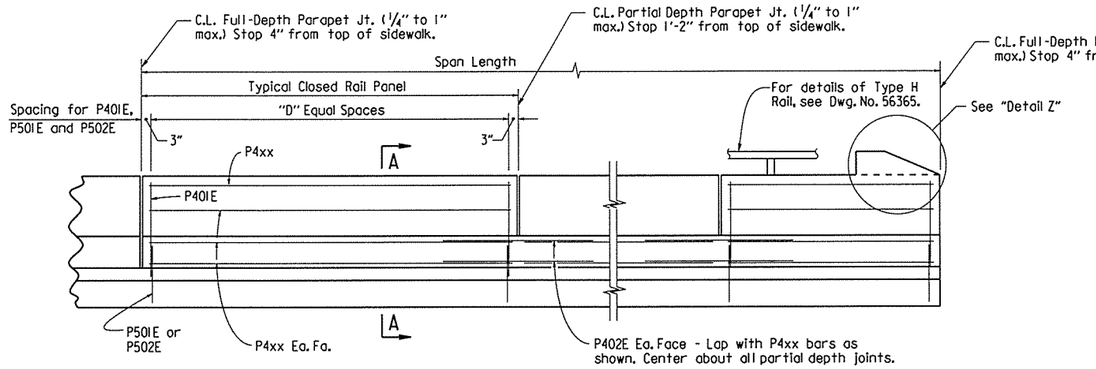
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/10/14 FILENAME: b090373_sl.dgn
CHECKED BY: JWP DATE: 8/18/15 SCALE: As Shown
DESIGNED BY: P&T/JWP DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56362

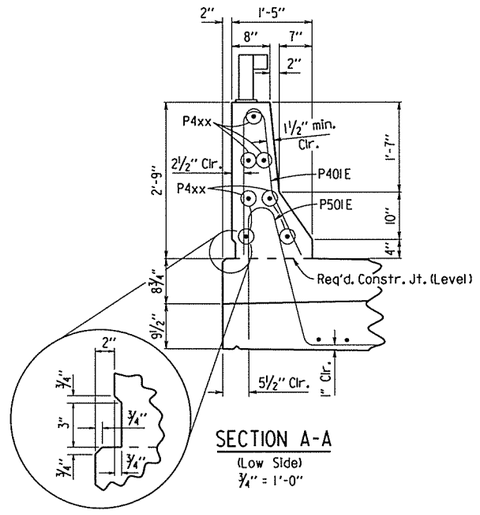
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				6	ARK.			
				JOB NO.		090373	131	316
				①	07333 - COMMON - 56363			



ELEVATION - CONCRETE PARAPET RAIL

1/2" = 1'-0"

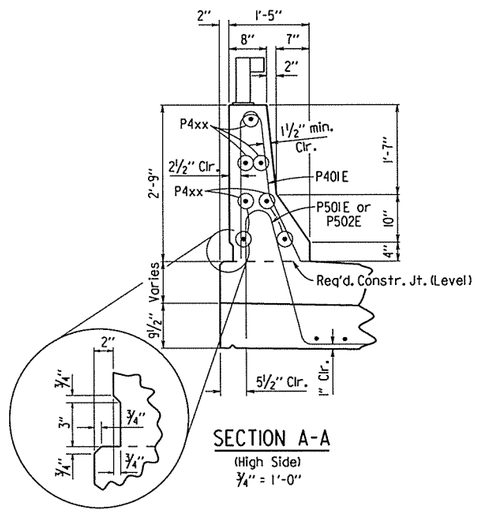
Note: For location of full and partial depth parapet joints, see Dwg. No. 56355 for 220' Unit & Dwg. No. 56361 for 450' Unit.



SECTION A-A

(Low Side)

3/4" = 1'-0"



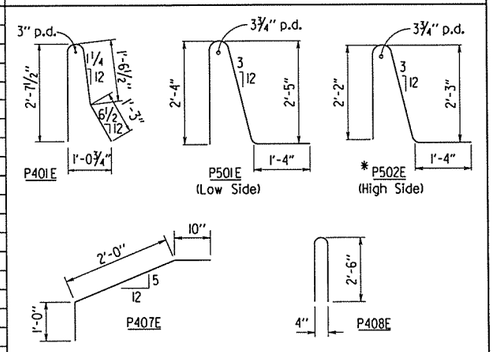
SECTION A-A

(High Side)

3/4" = 1'-0"

BAR LIST

	Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
220' UNIT	P401E	880	5'-6"	2"	
	P402E	80	5'-7"	Str.	
	P403E	56	14'-7"	Str.	
	P404E	140	15'-7"	Str.	
	P407E	2	3'-10"	2"	
	P408E	6	5'-2"	3"	
	P501E	880	6'-3"	3 3/4"	
450' UNIT	P401E	1,800	5'-6"	2"	
	P402E	168	5'-7"	Str.	
	P403E	280	14'-7"	Str.	
	P405E	70	14'-6"	Str.	
	P406E	70	14'-8"	Str.	
	P407E	2	3'-10"	2"	
	P408E	6	5'-2"	3"	
	P501E	1,350	6'-3"	3 3/4"	
	P502E	450	5'-11"	3 3/4"	



Note: All bars designated with an "E" are to be epoxy coated.

* Note: P502E bars are to be used on the high side starting at Sta. 493+75.00.

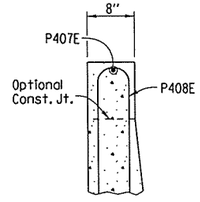
TABLE OF VARIABLES

	Closed Rail Panels		
	Panel Length	"D"	P4xx Bar
220' UNIT	15'-0"	29	P403E
	16'-0"	31	P404E
450' UNIT	14'-11 1/16" ±	29	P405E
	14'-11 11/16" ±	29	P403E
	15'-0"	29	P403E
	15'-0 5/16" ±	29	P403E
	15'-0 15/16" ±	29	P406E

DETAIL Z

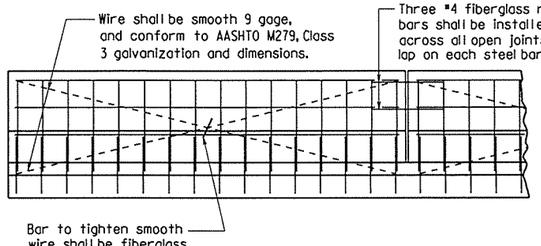
Bents 1 and 6 Only

N.T.S.

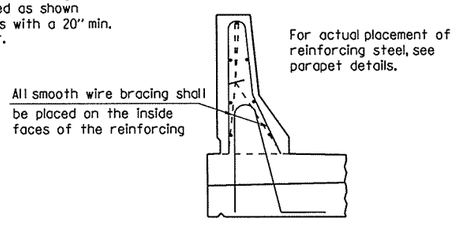


SECTION C-C

N.T.S.



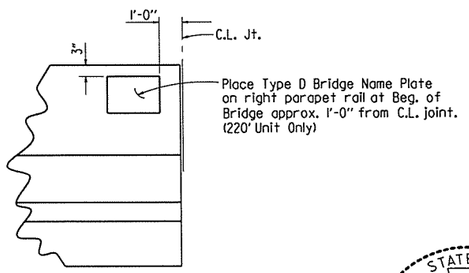
All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.



The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces shall be given a Class 2 Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

N.T.S.



VIEW SHOWING LOCATION OF NAME PLATE

N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
COMMON DETAILS OF PLATE GIRDER UNITS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 05/13/14 FILENAME: b090373_sl.dgn

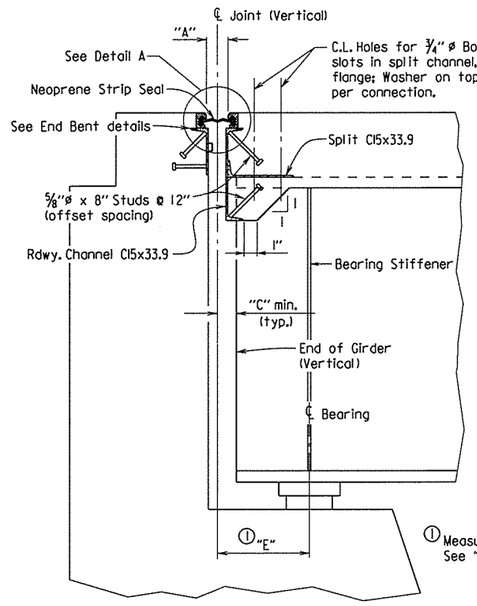
CHECKED BY: JHP DATE: 8/18/15 SCALE: As Shown

DESIGNED BY: PGF/JHP DATE: 10/13

BRIDGE NO. 07333 DRAWING NO. 56363

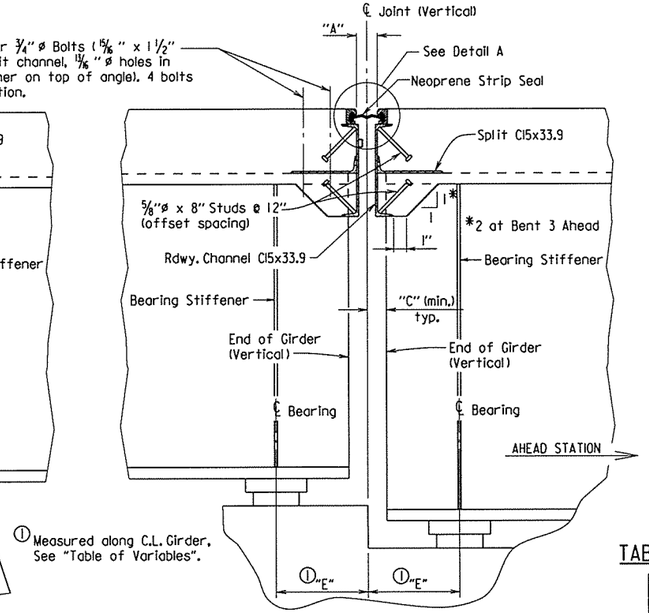
PRINT DATE: 9/3/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	132	316
				①	07333	- COMMON -	56364	



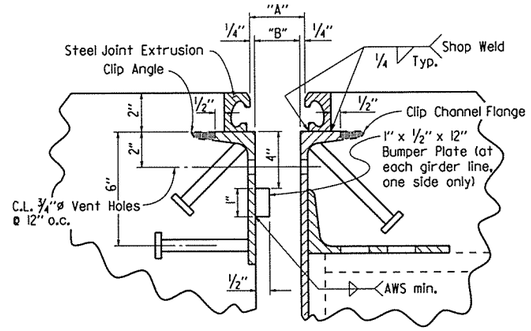
Note: Section thru Joint is taken perpendicular to C.L. Joint.

SECTION THRU JOINT AT END BENTS



Note: Section thru Joint is taken perpendicular to C.L. Joint.

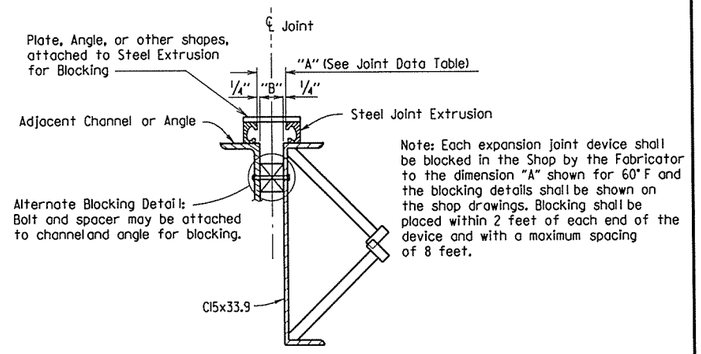
SECTION THRU JOINT AT INT. BENT 3



Note: Concrete shall be hand packed under the joint armor. Care shall be taken to ensure that concrete completely fills the areas below the top channel flanges in the backwall and in the span.

DETAIL A

Detail is shown at end bent.
Details at interior bent are similar.



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERIOR BENTS:

After all girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES FOR NEOPRENE STRIP SEAL JOINTS:

The expansion device shall provide for the movement rating(s) shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

All structural steel shall be Grade 50W except for the parapet slider plates which shall be Grade 36. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). All exposed surfaces of the parapet slider plates shall be cleaned and painted in accordance with Section 638. Painting will not be paid for directly and structural steel completely embedded in concrete need not be painted. All structural steel shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

The steel extrusion and neoprene strip seal shall be paid for in accordance with Section 809.

TABLE OF VARIBLES

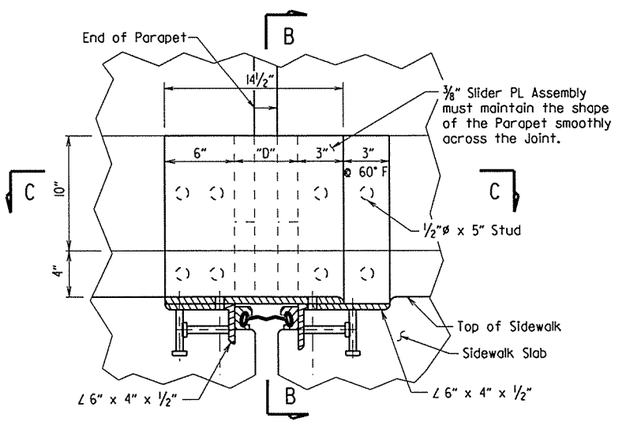
Bent No.	"E"
1	15"
3 Back	15"
3 Ahead	11"
6	15"

STRIP SEAL JOINT DATA

Bent No(s).	Movement Rating (inch)	"A" Width Perpendicular to Joint at 24 Hour Average Temperature② of:			"B" Width Perpendicular to Joint at 24 Hour Average Temperature② of:			"C" (min.) Perpendicular to Joint at 24 Hour Average Temperature of 60° F	③ "D" at 60° F
		40° F	60° F	80° F	40° F	60° F	80° F		
1	4"	2 11/16"	2 1/2"	2 5/16"	2 3/16"	2"	1 13/16"	2 1/4" ±	5 1/2"
3	4"	3 1/16"	2 1/2"	1 15/16"	2 3/16"	2"	1 13/16"	2 1/4" ±	5 1/2"
6	4"	2 13/16"	2 1/2"	2 3/16"	2 3/16"	2"	1 11/16"	2 1/4" ±	5 1/2"

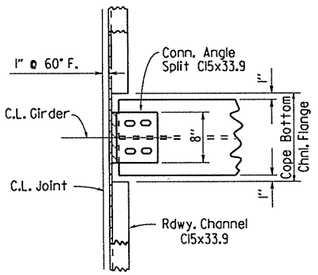
② The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

③ Dimension "D" based on 1 1/2" w x 2" d Steel Extrusions

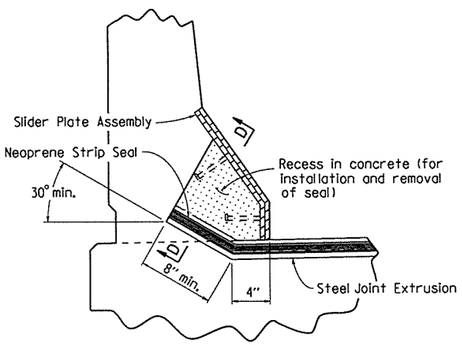


DETAIL OF NEOPRENE STRIP SEAL AT RAIL

For additional details of Expansion Device at Sidewalk, see Dwg. No. 56362.

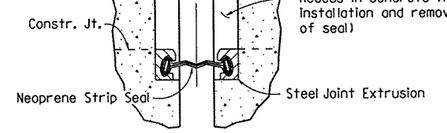


CHANNEL CONNECTION DETAIL

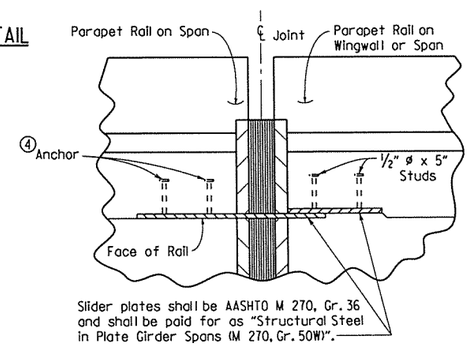


Note: Details of Joint turn-up in curb and parapet are general and show basic design controls only.

SECTION B-B



SECTION D-D



Slider plates shall be AASHTO M 270, Gr. 36 and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

SECTION C-C

④ The method of attachment of the slider plate assembly must be such that it may be removed to provide for future replacement of the neoprene seal. Anchors will not be paid for directly, but shall be considered subsidiary to "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

Method of installation and fabrication shall be determined by the Manufacturer.

STATE OF ARKANSAS
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REGISTERED PROFESSIONAL ENGINEER
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5-20-15
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BRIDGE ENGINEER

SHEET 3 OF 3
COMMON DETAILS OF PLATE GIRDER UNITS

ROUTE SEC.

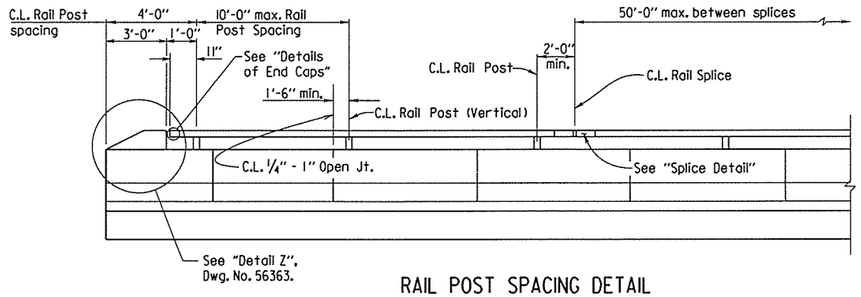
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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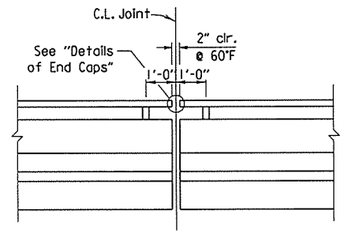
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PRINT DATE: 8/17/2015

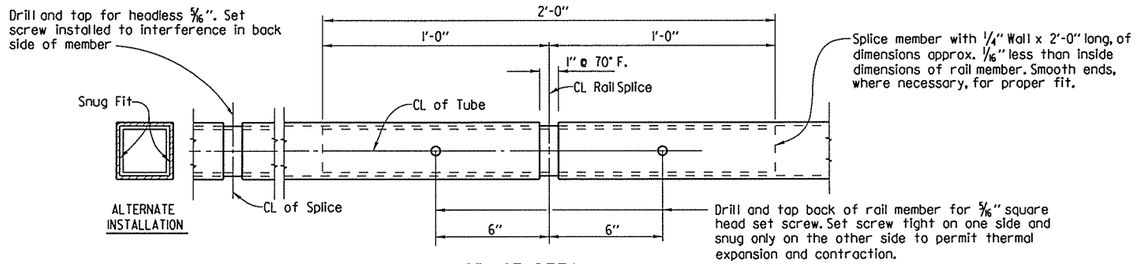
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				JOB NO.		090373	133	316
				(1)	07333 - TYPE H RAILING - 56365			



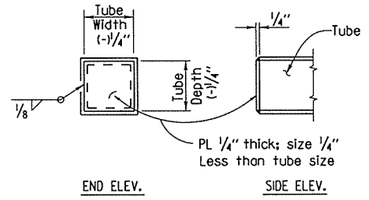
RAIL POST SPACING DETAIL



RAIL POST SPACING @ INTERMEDIATE BENT 3



SPLICE DETAIL



DETAILS OF END CAPS

MATERIALS:

Tubing, Posts, and Accessories: AASHTO M 270, Gr. 36 or ASTM A 500-Grade B.

Railing End Caps: AASHTO M 270, Grade 36, galvanized.

Steel Rail Members shall be galvanized in accordance with AASHTO M 111 after fabrication.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A 193 or A 320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to ASTM A 325 or A 354-Grade BC galvanized in accordance with AASHTO M 232 or ASTM B 695, Class 40 or 50.

Splice Set Screws: Stainless steel, ASTM Specifications A 193 or A 320-Grade B8, or AASHTO M 270, Grade 36, galvanized.

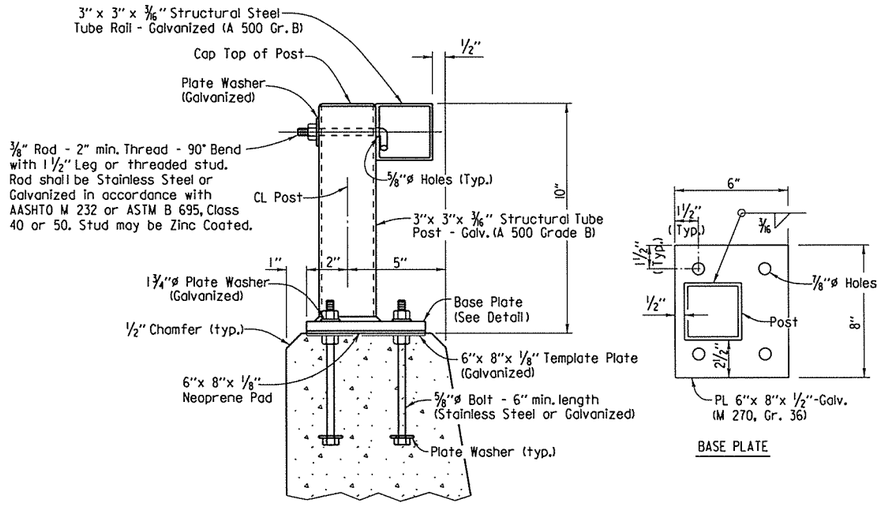
Nuts: Nuts shall conform to AASHTO M 292, Gr. 8 (Stainless steel) or galvanized in accordance with AASHTO M 232 or ASTM B 695, Class 40 or 50.

Threads: Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1.

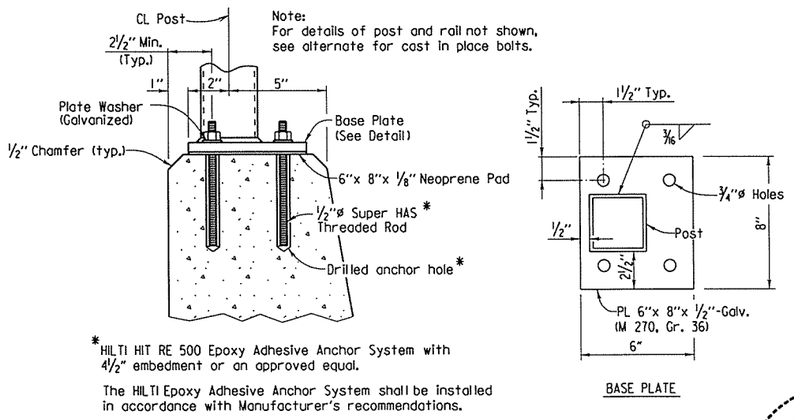
Washers shall conform to ASTM F 436, galvanized in accordance with AASHTO M 232 or ASTM B 695, Class 40 or 50, or of stainless steel conforming to ASTM A 276 or A 167-Type 302.

Plate Washers shall be stainless steel and conform to the requirements of ASTM A 167-Type 302 or AASHTO M 270, Gr. 36, galvanized in accordance with AASHTO M 232 or ASTM B 695, Class 40 or 50. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

Mixing of stainless steel and galvanized fasteners will not be permitted.



DETAILS OF POST ANCHOR SYSTEM
(CAST IN PLACE BOLTS)



*HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge.

Maximum post spacing = 10'-0"

Minimum distance from centerline post to centerline open or contraction joints in parapet = 1'-6".

Rail splices shall be at 50' maximum spacing. Centerline splices shall be located at a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Bridge railing, including posts, fasteners, template plates, and neoprene pad shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

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DETAILS OF TYPE H RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

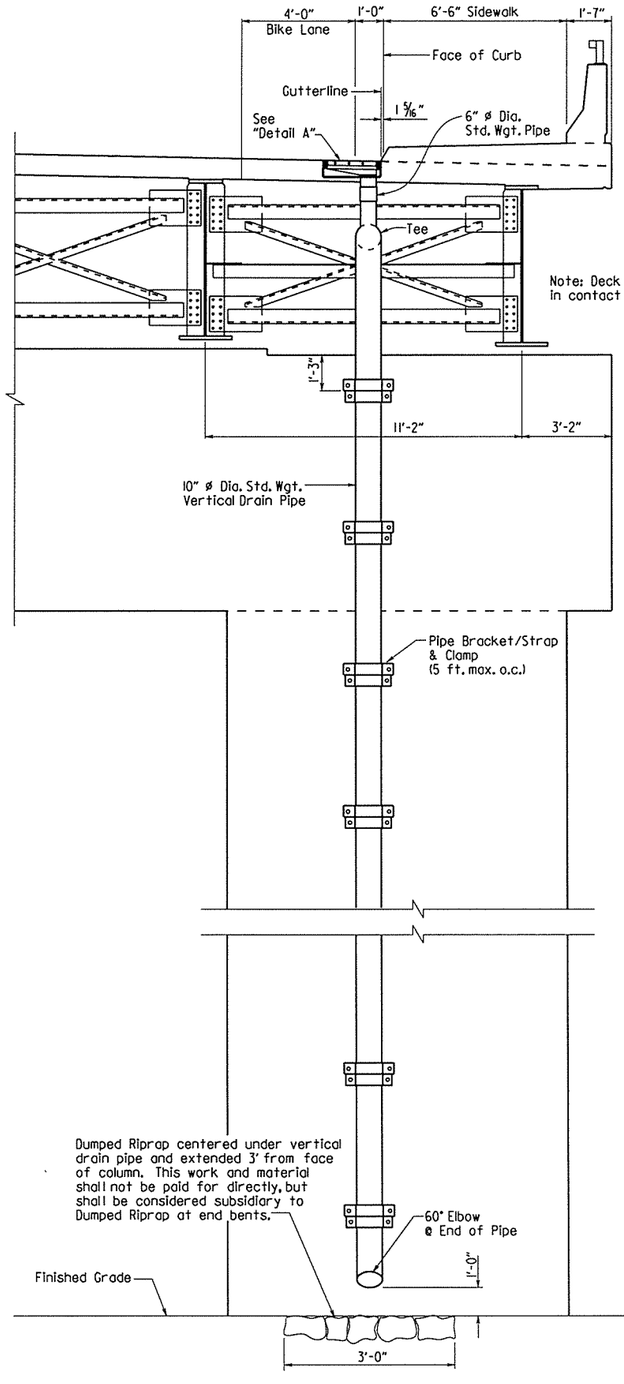
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BRIDGE NO. 07333 DRAWING NO. 56365

PRINT DATE: 8/17/2015

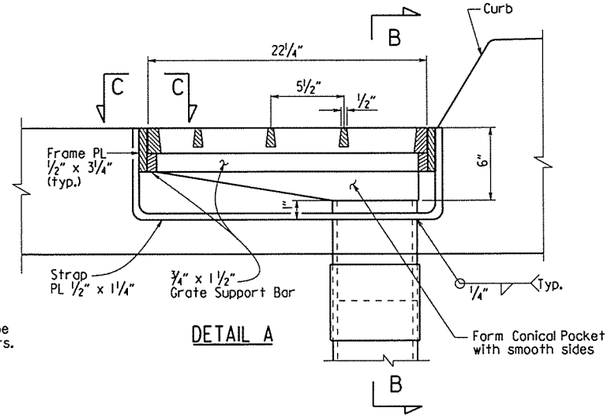
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				(1) 07333		- DECK DRAINS -		56366



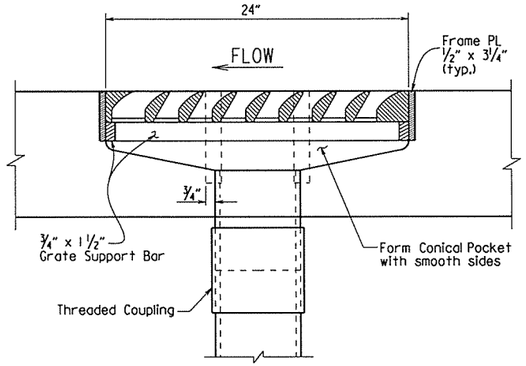
ELEVATION AT BENTS 4 & 5

LOOKING BACK

Note: Deck drain system shall not be in contact with cross-frame members.

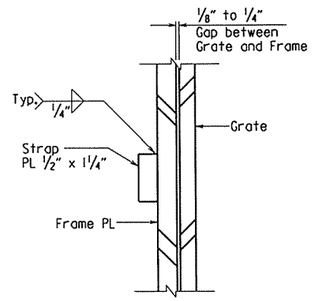


DETAIL A

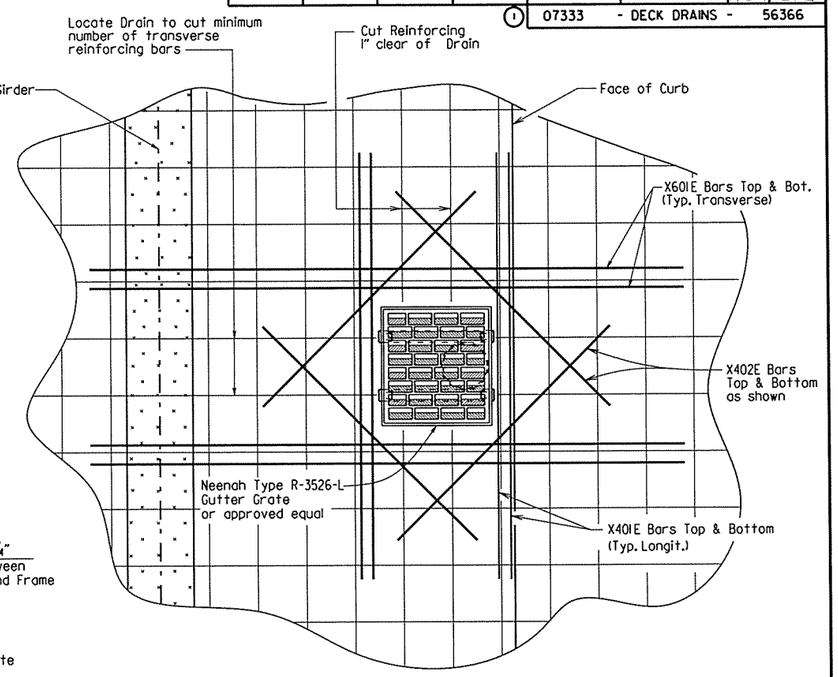


SECTION B-B

Note:
Steel frames and grate support bars shall be welded with ¼" fillet welds in accordance with Section 807.

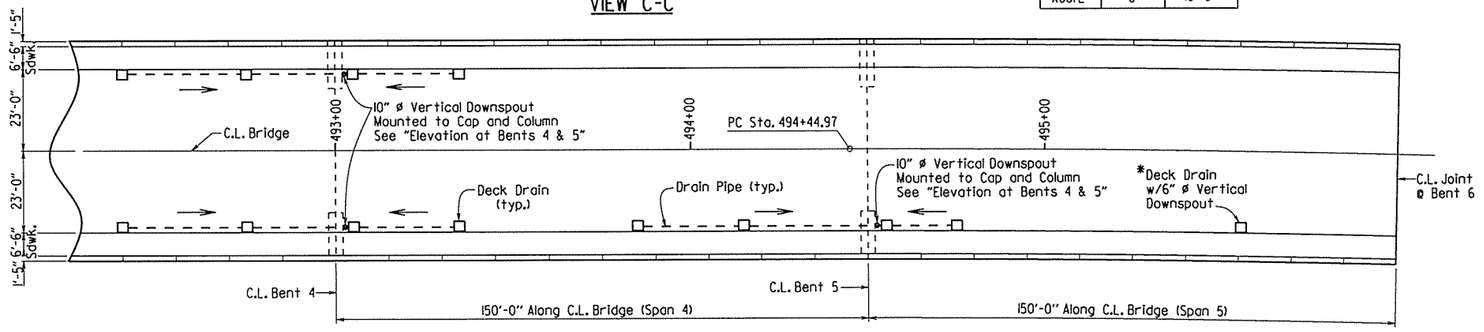


VIEW C-C



PLAN OF REINFORCING AT DECK DRAINS

BAR LIST FOR ONE DRAIN		
Mark	No. Req'd.	Length
X401E	8	7'-6"
X402E	8	5'-4"
X601E	8	10'-6"



DRAIN SYSTEM PLAN

For "Drain System Elevation", See Dwg. No. 56367.

*Extend Vertical Downspout to 6" below bottom of exterior girder.

DECK DRAIN LOCATIONS	
LEFT	RIGHT
STA. 492+40	STA. 492+40
STA. 492+75	STA. 492+75
STA. 493+05	STA. 493+05
STA. 493+35	STA. 493+35
	STA. 493+85
	STA. 494+15
	STA. 494+55
	STA. 494+75
	STA. 495+55

Left and Right are looking ahead station.

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SHEET 1 OF 2

DETAILS OF DECK DRAINS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

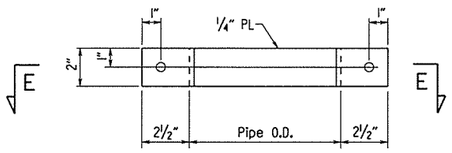
LITTLE ROCK, ARK.

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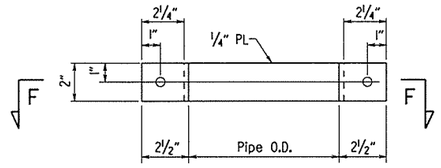
BRIDGE NO. 07333 DRAWING NO. 56366

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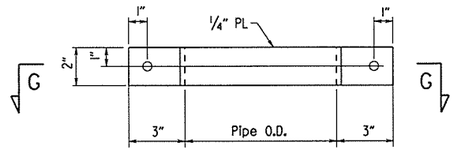
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				(1) 07333		- DECK DRAINS -		56367



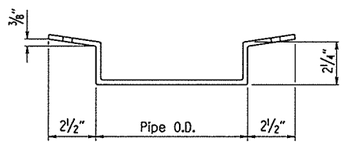
PIPE BRACKET DETAIL



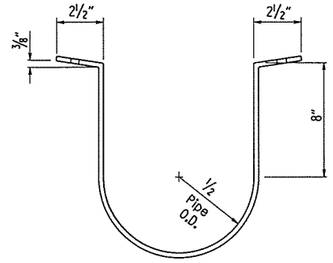
PIPE STRAP DETAIL



PIPE CLAMP DETAIL



VIEW E-E



VIEW F-F

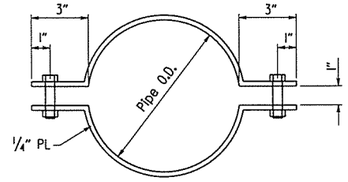
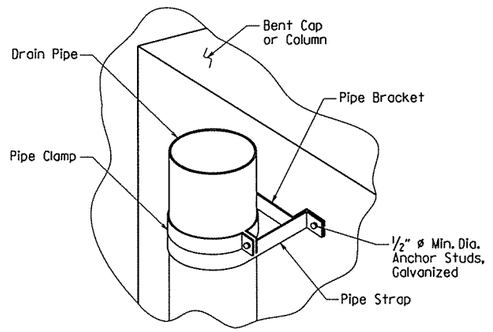


Diagram represents one complete unit.

VIEW G-G

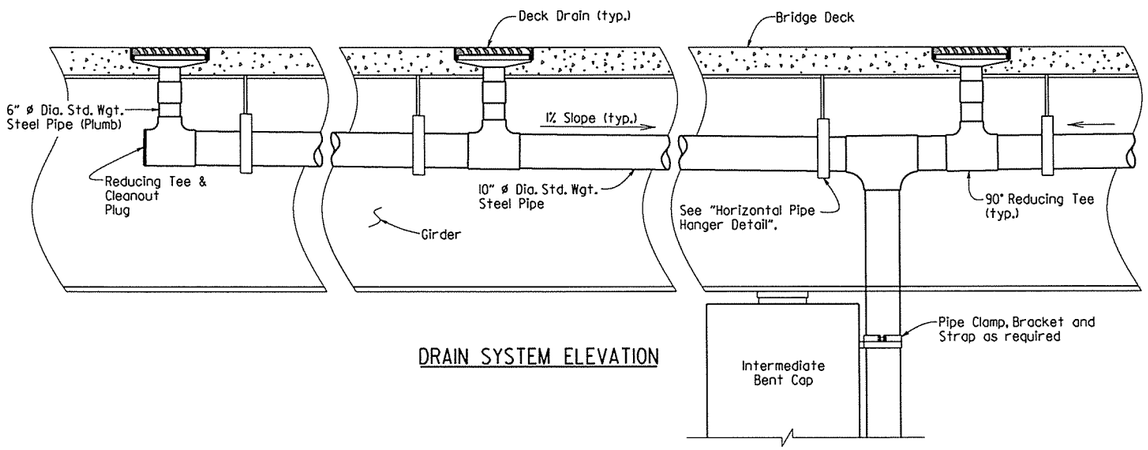


PIPE ATTACHMENT TO COLUMN

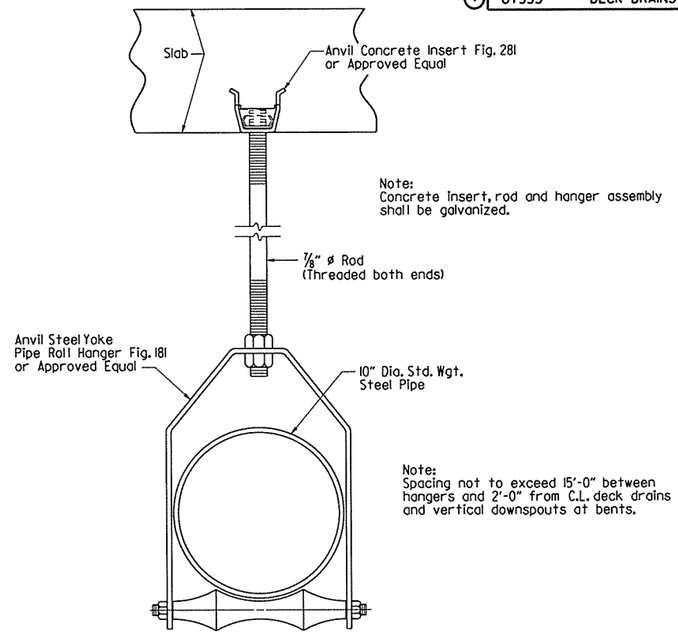
Notes:
Place pipe clamps atop the pipe strap/bracket assemblies attached to cap and column only. Pipe clamp spacing not to exceed 5'-0".

Structural Steel for pipe bracket, strap and clamp shall conform to AASHTO M 270, Gr. 36 and shall be galvanized after fabrication in accordance with AASHTO M 111. Subject to approval by the Engineer, functionally equivalent and commercially available galvanized metal products of equal or greater strength may be substituted for the bracket, strap and clamp details shown.

Concrete anchor studs shall be used to attach the pipe strap/bracket assemblies to bent column and cap. The method of installation and minimum embedment depth shall be in accordance with manufacturer's recommendations.



DRAIN SYSTEM ELEVATION



HORIZONTAL PIPE HANGER DETAIL

GENERAL NOTES:

Gutter grates shall conform to Neenah Foundry Type R-3526-L or approved equal of similar type suitable for bicycle use and with equivalent hydraulic capacity.

Iron castings for gutter grates shall comply with AASHTO M 105, Class 35B and shall be galvanized after fabrication in accordance with AASHTO M 111. Bearing surfaces between grates and frames shall be fabricated with such precision that uniform bearing is provided throughout the perimeter area of contact.

Drain locations may be adjusted to clear cross frame members and lateral bracing and to avoid reinforcing bars.

Standard weight pipe, elbows and reducers for deck drains shall conform to ASTM A53, Grade B and shall be Galvanized. All other structural steel shall conform to AASHTO M 270, Grade 36 and shall be galvanized after fabrication in accordance with AASHTO M 111.

Drain grates and frames, catch basins, concrete inserts and hanger assemblies, pipe, fittings, bracket/strap assemblies, clamps and anchors shall not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

Reinforcing steel in the slab shall be cut as required to install the deck drains. No more than four bars per transverse mat shall be cut. Repair all cut or damaged epoxy bars in accordance with the Standard Specifications.

See "Plan of Reinforcing at Deck Drains" on Dwg. No. 56366 for additional reinforcing required. All additional reinforcing steel placed around deck drains shall be epoxy-coated and shall be paid for at the unit price bid for "Epoxy Coated Reinforcing Steel (Grade 60)".

Note: A pre-manufactured grate and frame assembly may be submitted for approval by the Engineer in place of the steel fabrication shown in the plans.

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SHEET 2 OF 2
DETAILS OF DECK DRAINS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

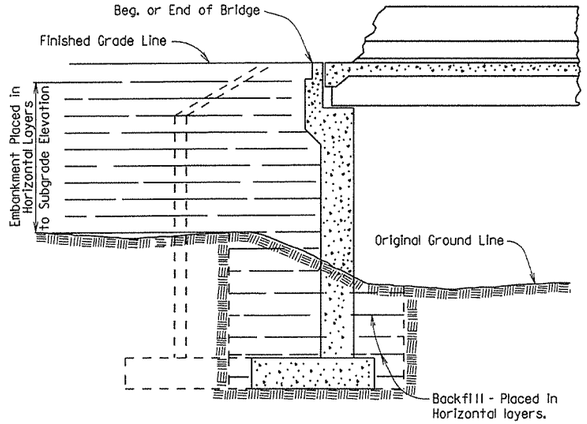
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BRIDGE NO. 07333 DRAWING NO. 56367

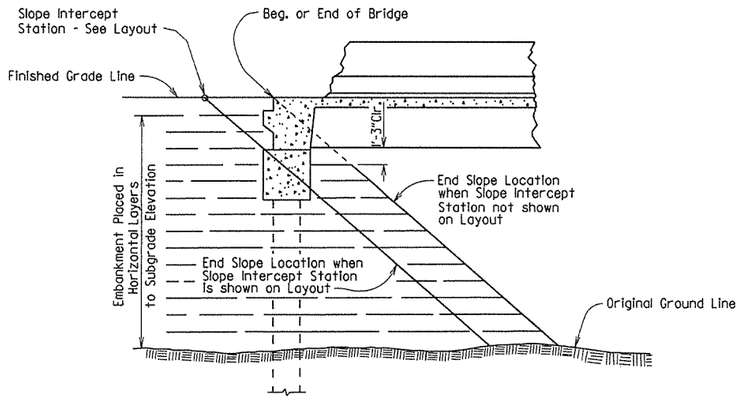
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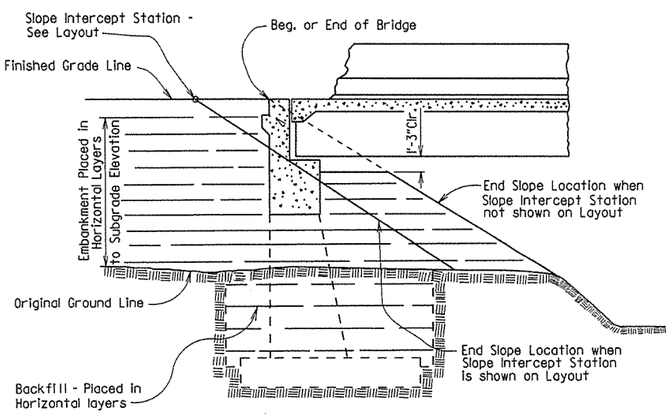
(1) EMBANKMENT & BACKFILL 55000



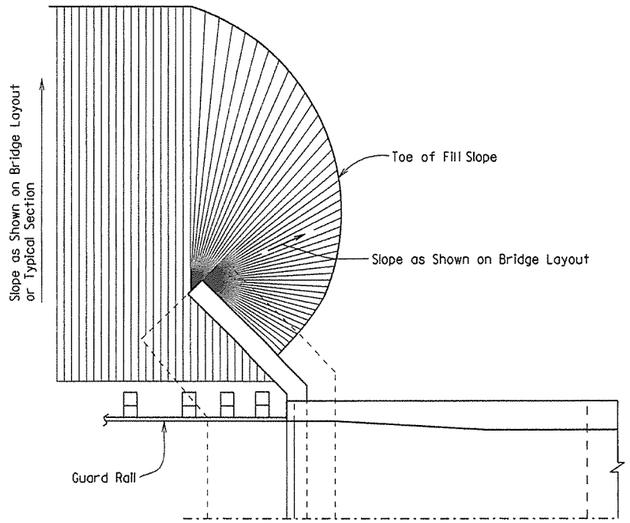
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



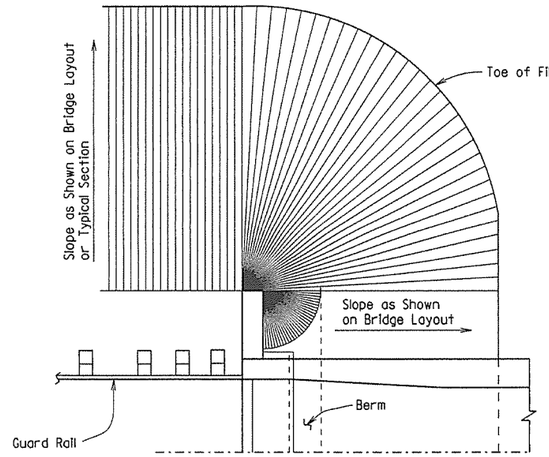
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



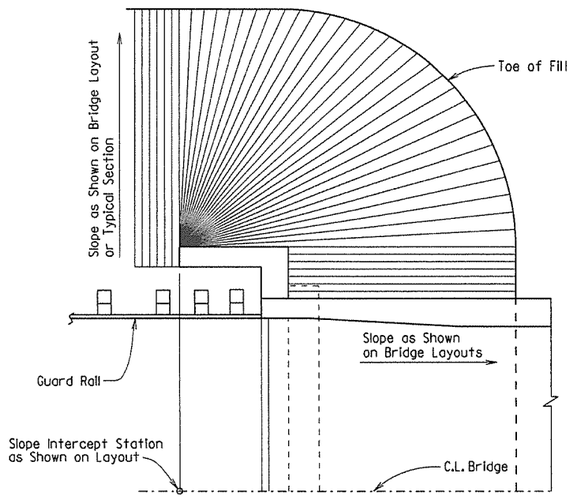
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



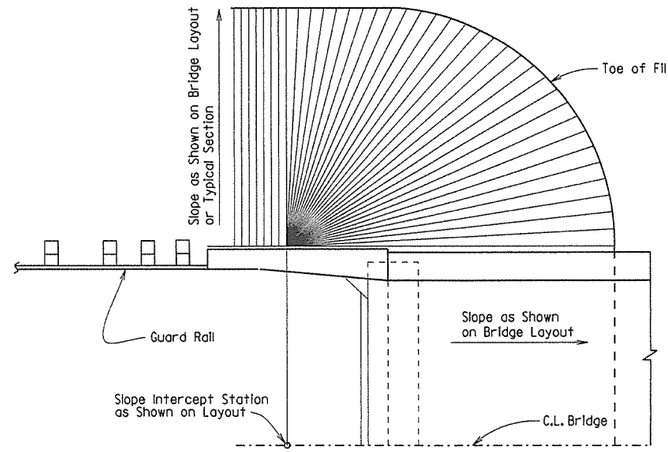
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

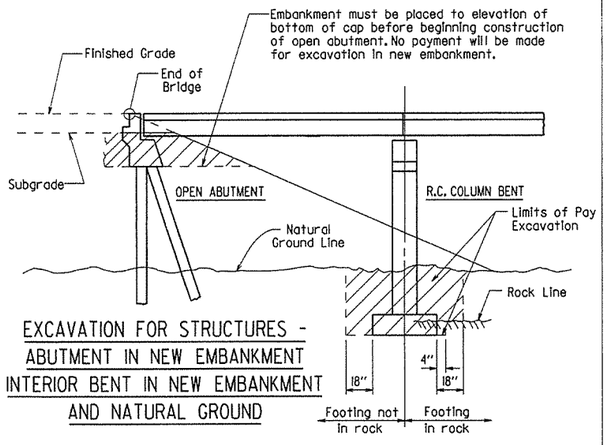
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LITTLE ROCK, ARK.

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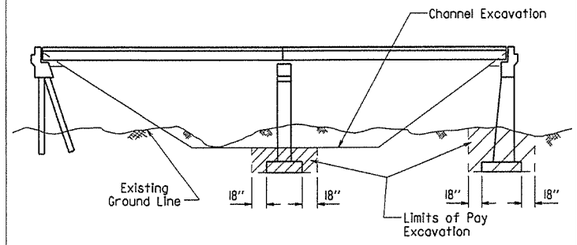
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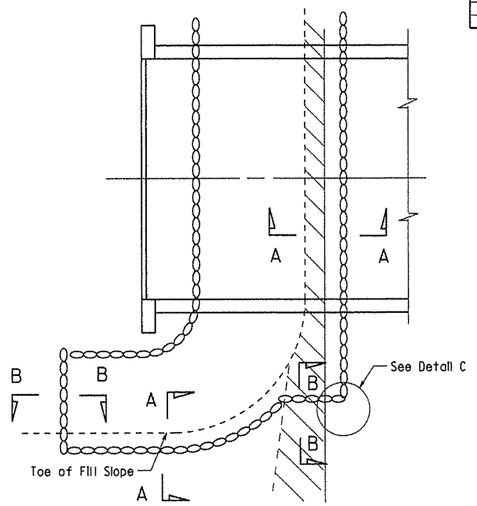
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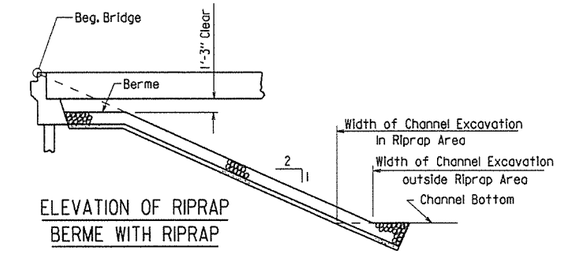
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



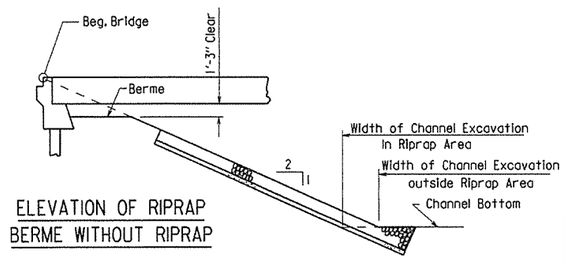
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



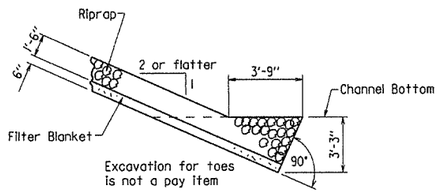
PLAN OF DUMPED RIPRAP



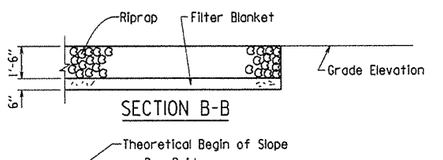
ELEVATION OF RIPRAP BERME WITH RIPRAP



ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION A-A
(Toe Excavation in Soil)



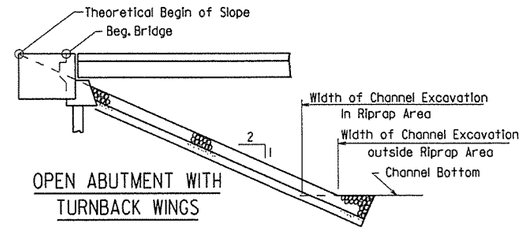
SECTION B-B

SECTION A-A
(Toe Excavation in Rock)

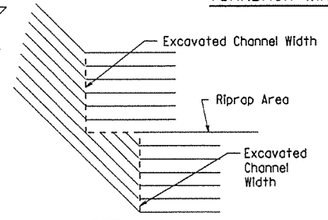
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

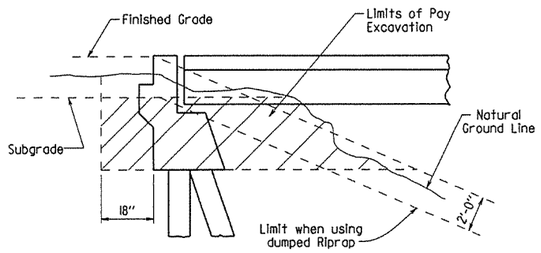
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



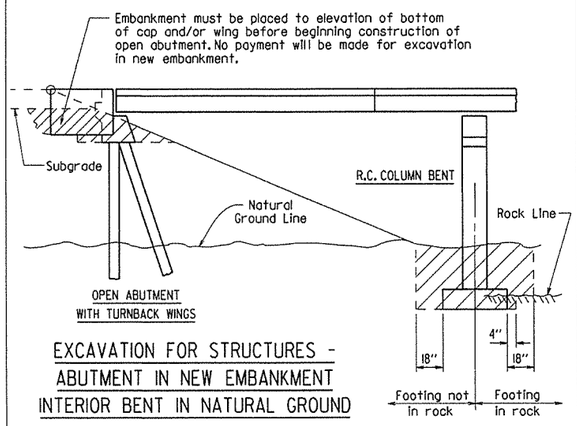
OPEN ABUTMENT WITH TURNBACK WINGS



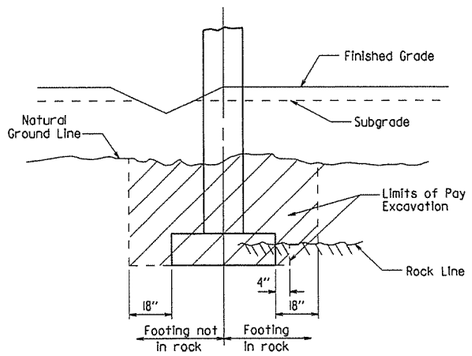
DETAIL C



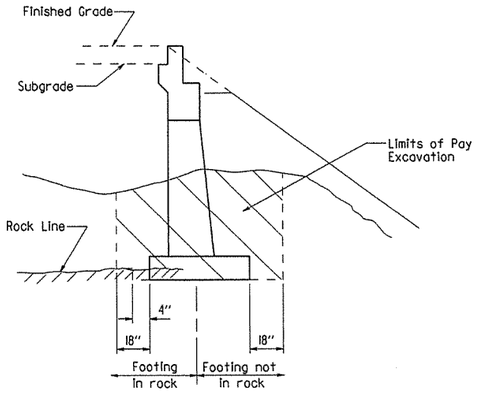
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



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



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



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

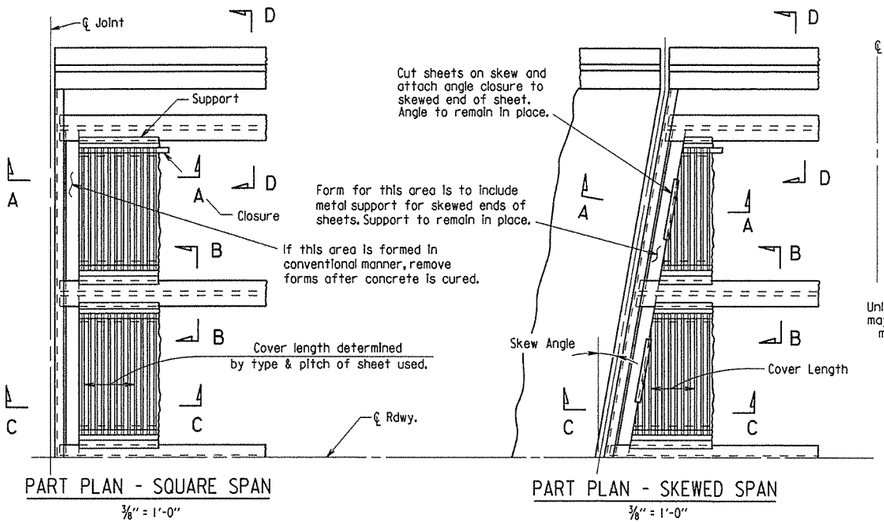
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

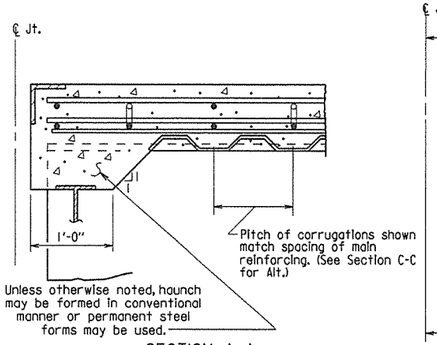


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

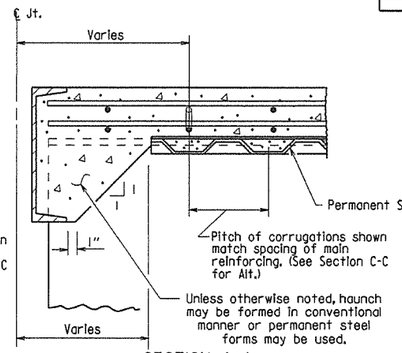
3/8" = 1'-0"



SECTION A-A

N.T.S.

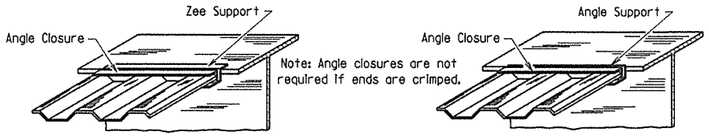
(Angle at end of span)



SECTION A-A

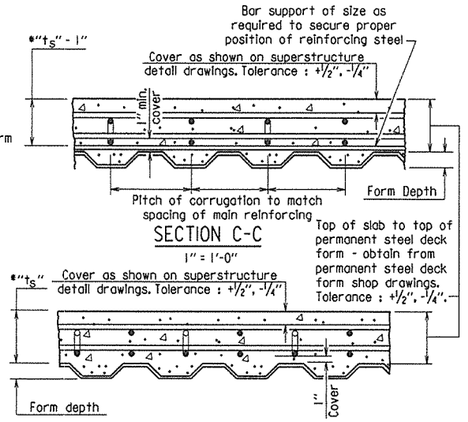
N.T.S.

(Channel at end of span)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.



SECTION C-C

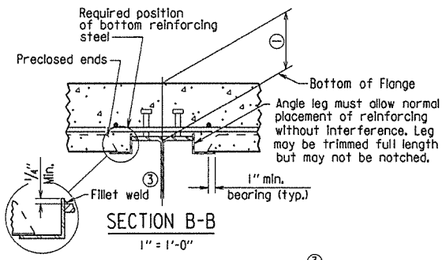
1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)

*t_s = slab thickness as shown on superstructure detail drawings.

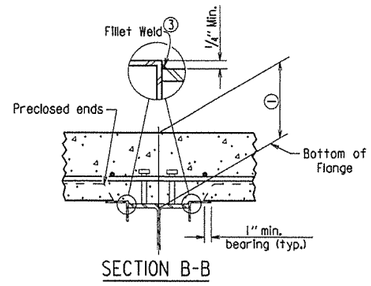


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

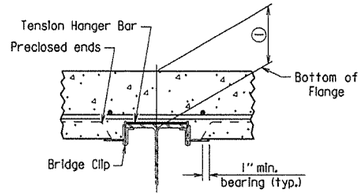
③ Minimum weld: 1/8" x 1' ℄ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

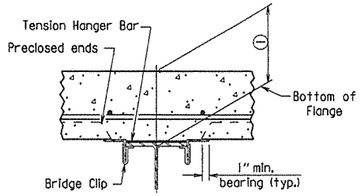
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

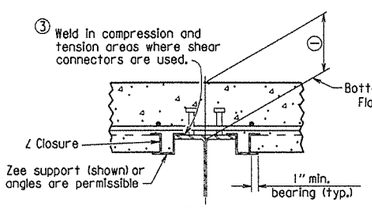
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

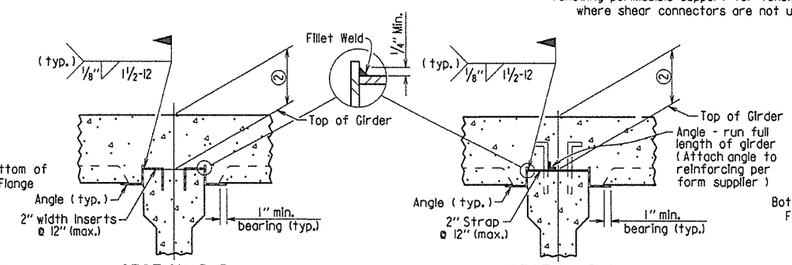
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)



SECTION B-B (FOR CONCRETE GIRDERS)

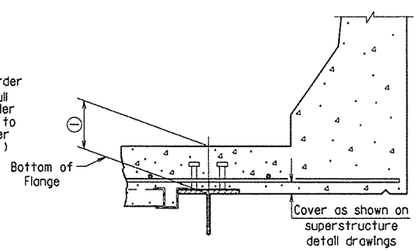
1" = 1'-0"

(Showing support by insert cast in girder)

SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

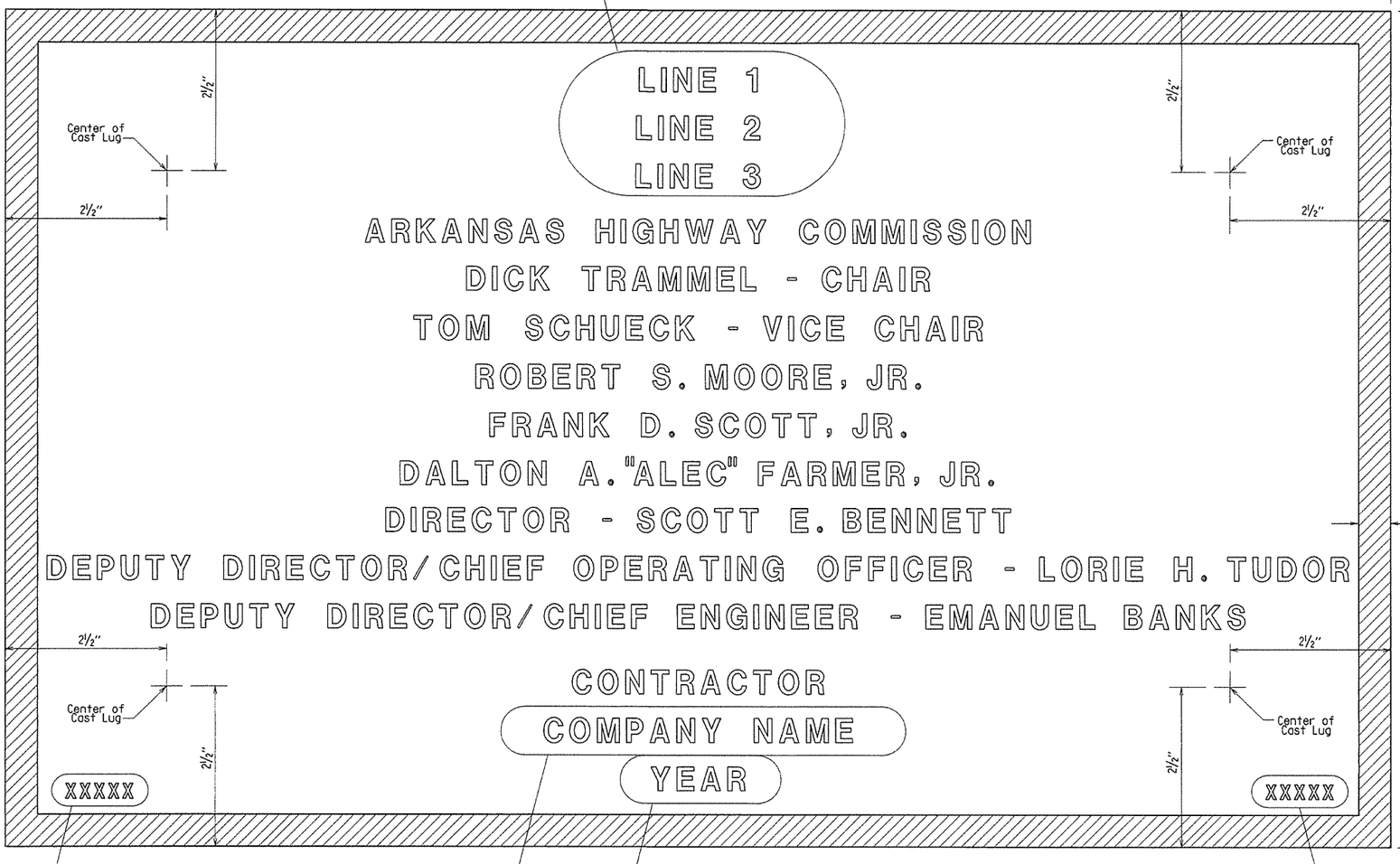
DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14				6	ARK.		139	
1-14-15				JOB NO.				
				① TYPE D NAME PLATE			55010	

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



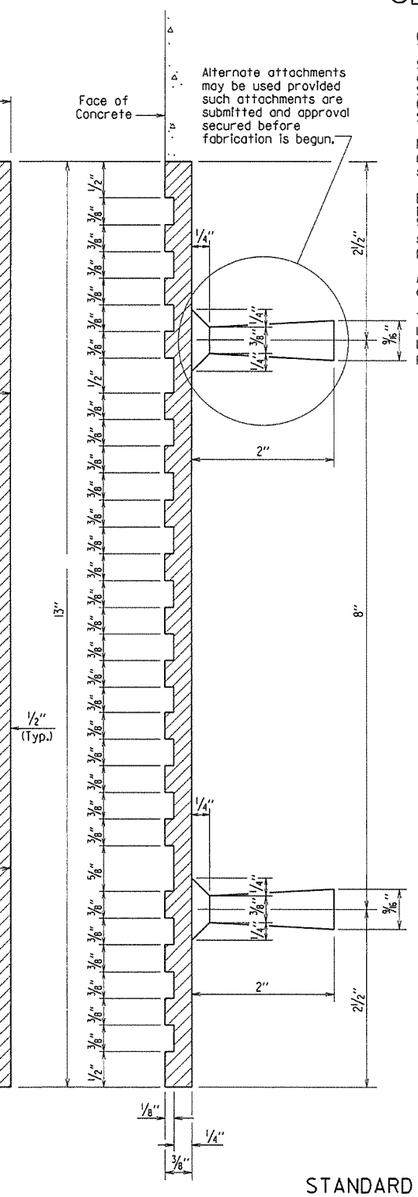
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : AI234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16"x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

② Revised Chair and Vice Chair
Added New Commissioner
1-14-15 KDH Checked By: CRE

① Revised Deputy Director/
Chief Engineer
Added Deputy Director/
Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		140	
				JOB NO.				
				①		STEEL H-PILES		55020

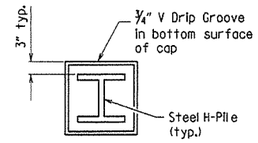
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

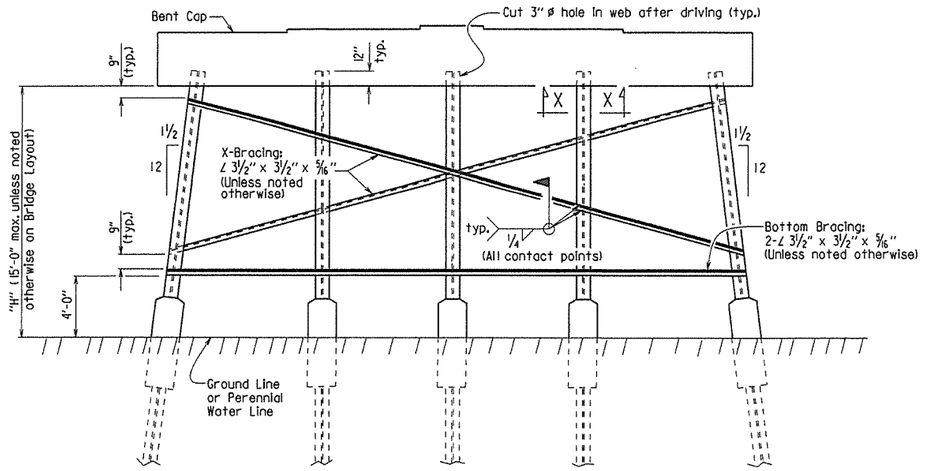
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

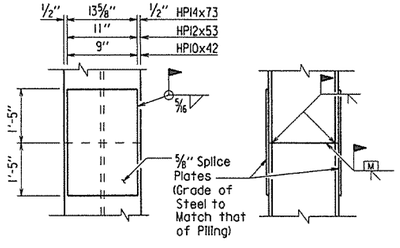
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)

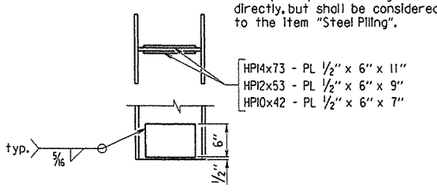


Note:
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

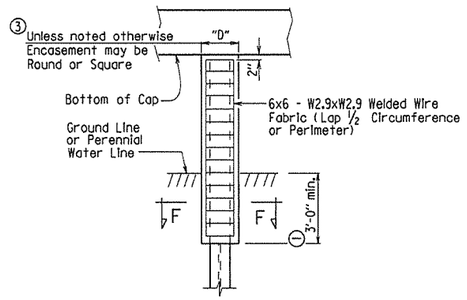
See Bridge Layout for additional notes and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

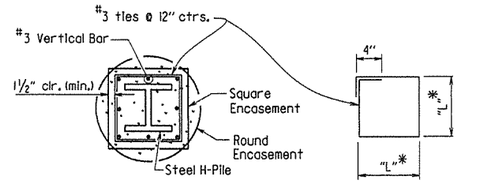
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

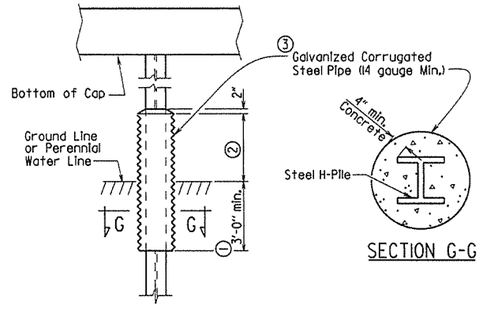


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HP10x42	1'-7"	2'-0"	1'-4"
HP12x53	1'-8"	2'-2"	1'-5"
HP14x73	1'-11"	2'-6"	1'-8"



SECTION G-G

⑤ ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

⑤ Alternate pile encasement may not be allowed. See Bridge Layout.

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on February 27, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 7510 CARL J. FUSELIER

BRIDGE ENGINEER

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

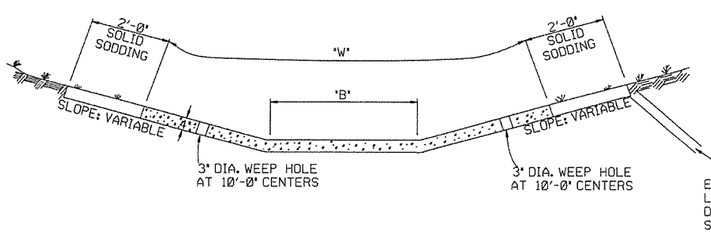
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn

CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

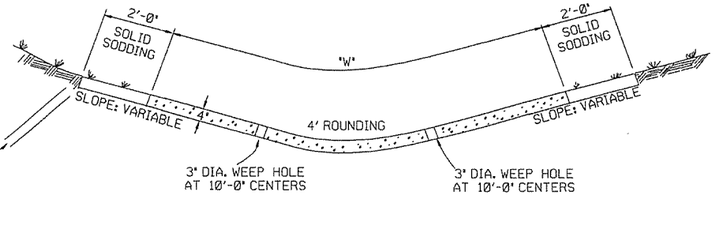
REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



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

TYPE A

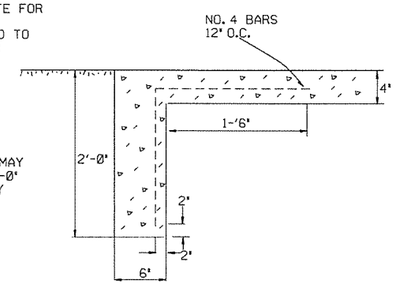
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



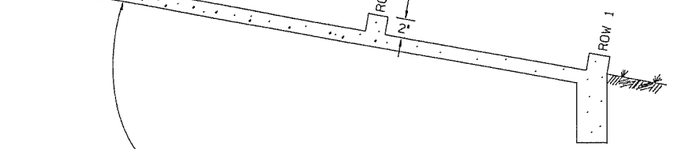
TYPE B

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

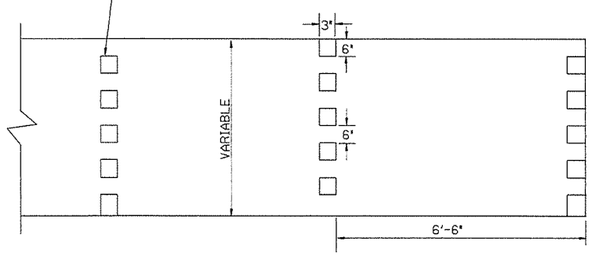
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED



ENERGY DISSIPATORS
(NO SCALE)

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

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

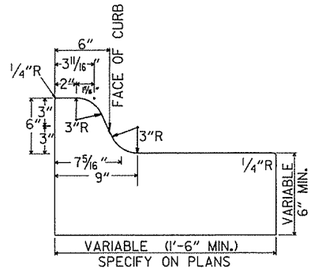
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

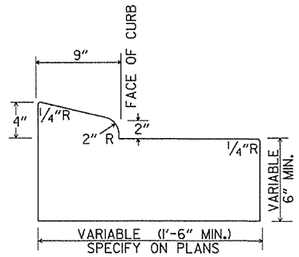
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

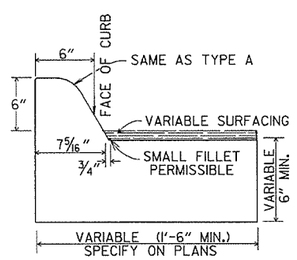
STANDARD DRAWING CDP-1



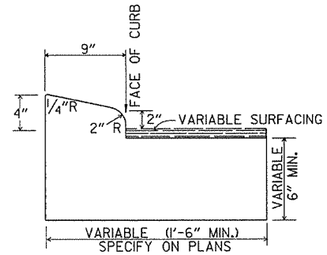
TYPE A



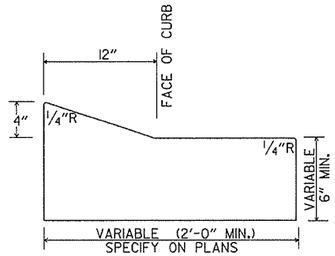
TYPE B-1



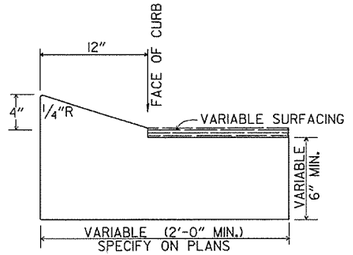
TYPE C



TYPE B-2

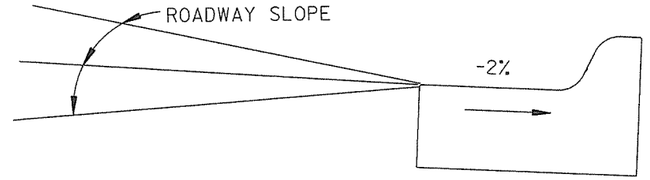


TYPE E-1



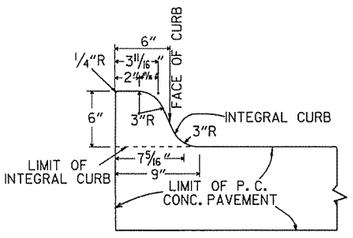
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

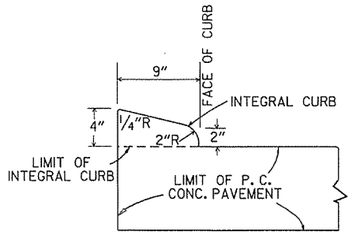


DETAIL OF GUTTER SLOPE

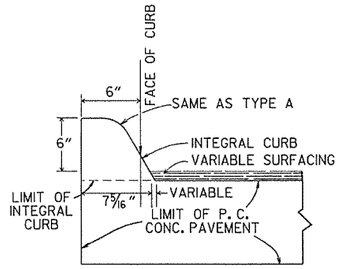
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

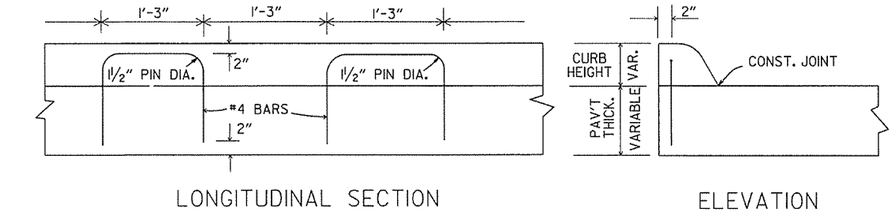


TYPE B

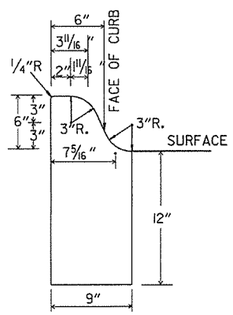


TYPE C

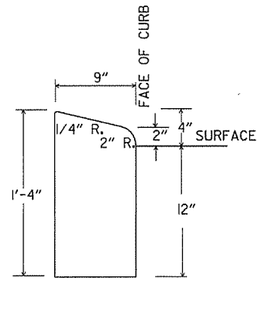
INTEGRAL CURB



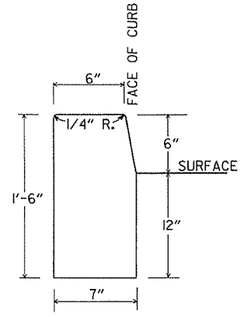
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



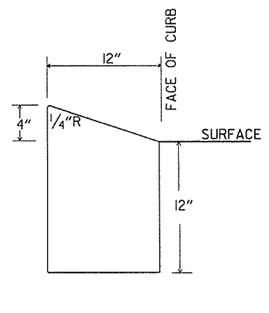
TYPE A



TYPE B

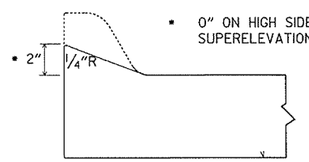


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

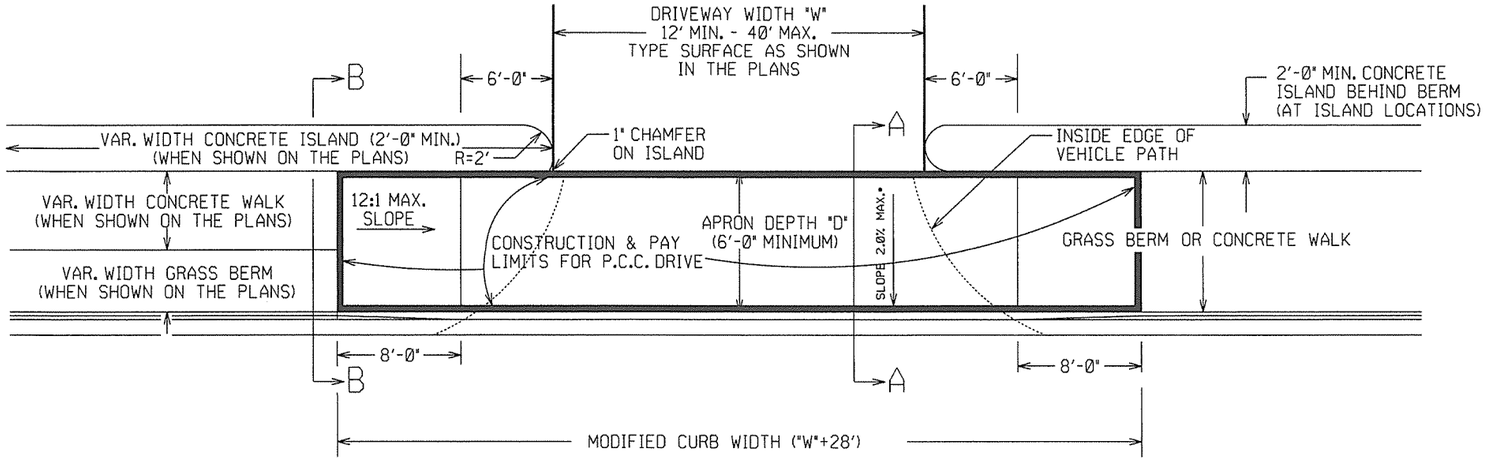
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

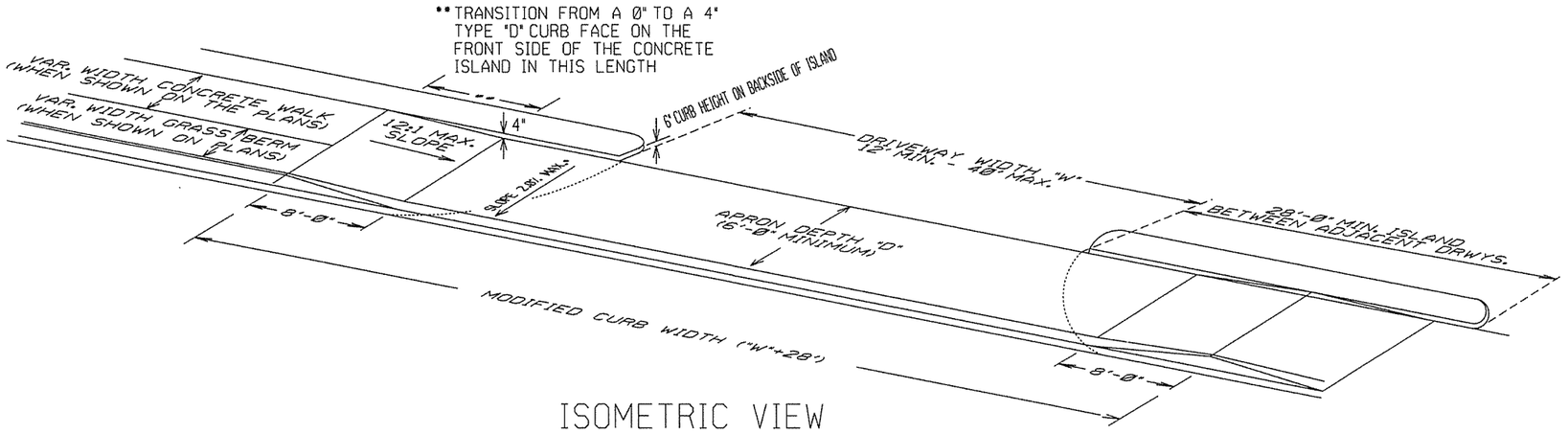
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

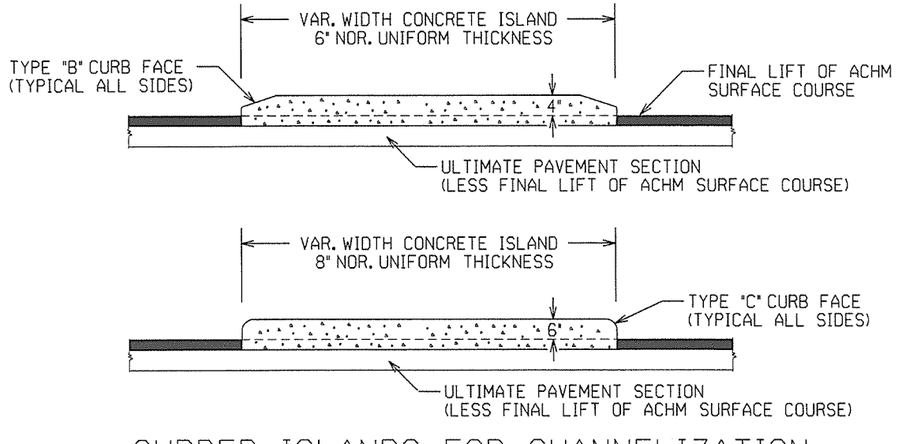
STANDARD DRAWING CG-1



PLAN VIEW

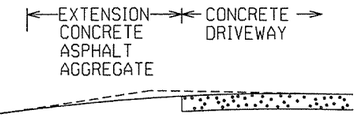


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

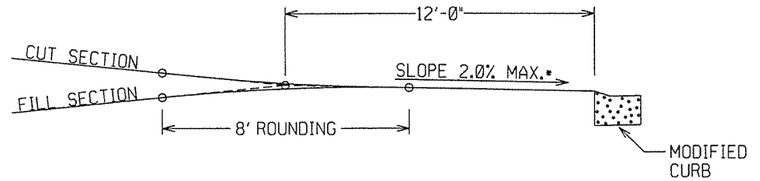
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

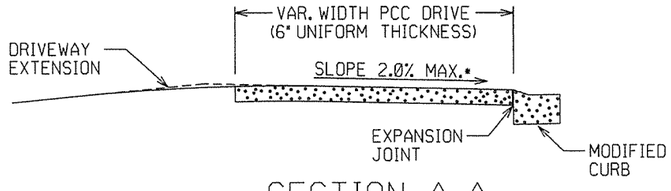
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

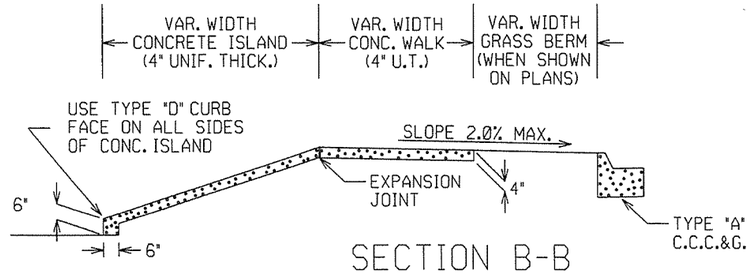


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



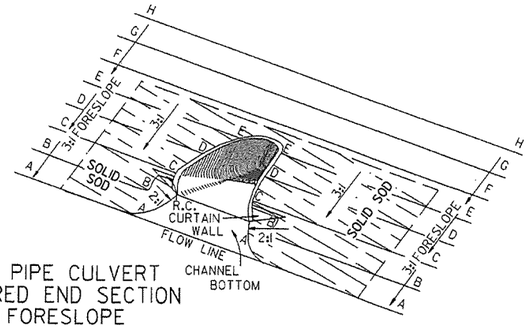
SECTION A-A



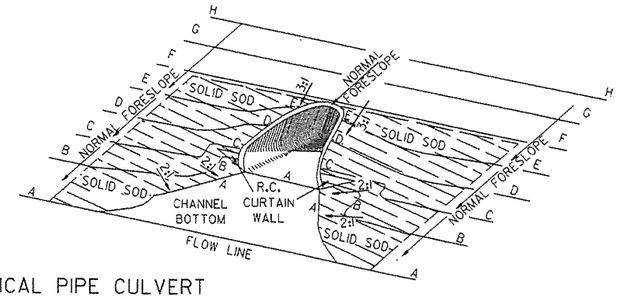
SECTION B-B
CURBED ISLAND BEHIND WALK

2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED
DATE REV	DATE FILMED	DESCRIPTION

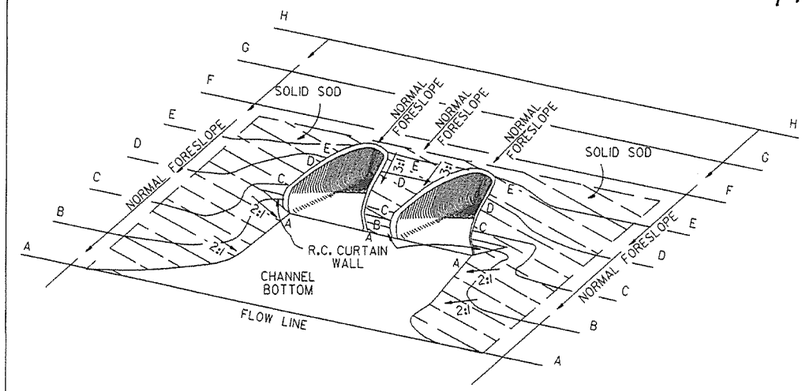
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



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

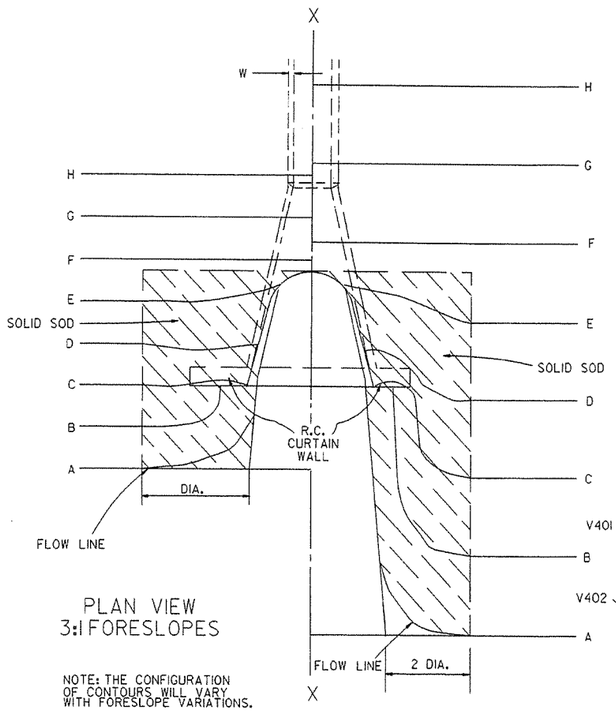
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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

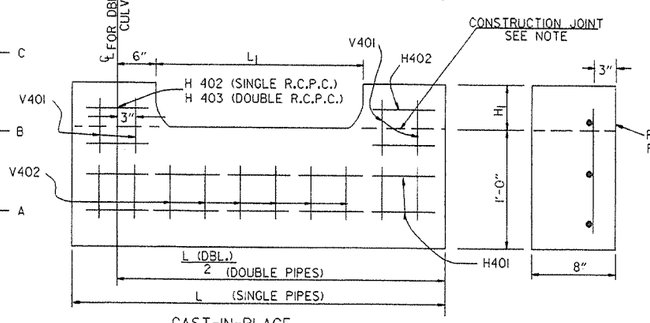
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

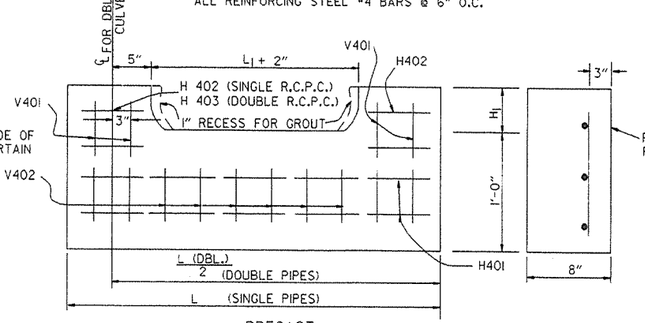
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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

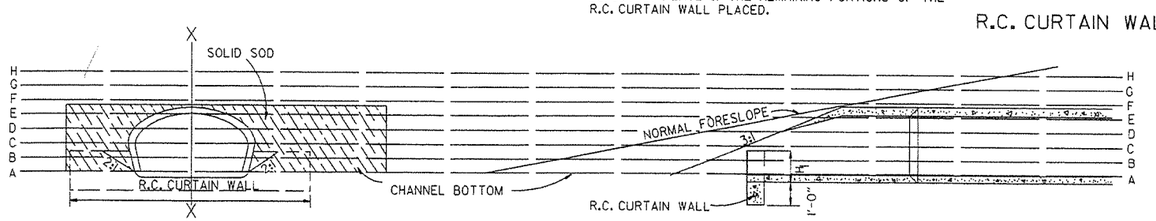
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 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"	35	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	10-18-96
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	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

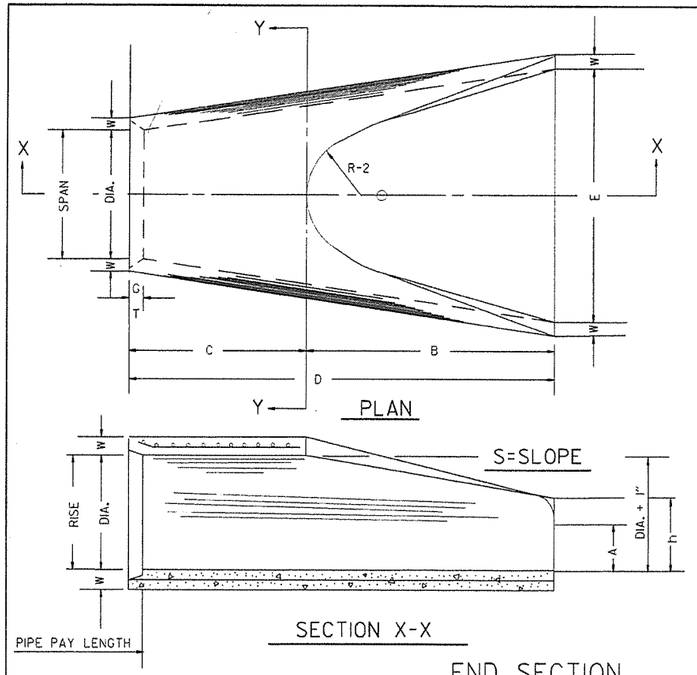
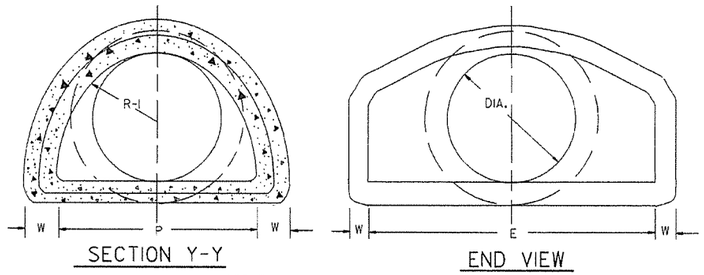


TABLE OF DIMENSIONS

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"	33⅜"	16¹³⁄₁₆"	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'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47¹³⁄₁₆"	24⁵⁄₁₆"	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"	36¹¹⁄₁₆"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77¹³⁄₁₆"	38¹⁵⁄₁₆"	24"	5"	13250	4'-6"



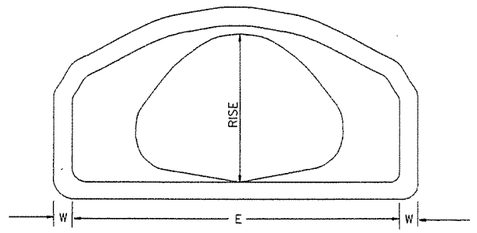
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

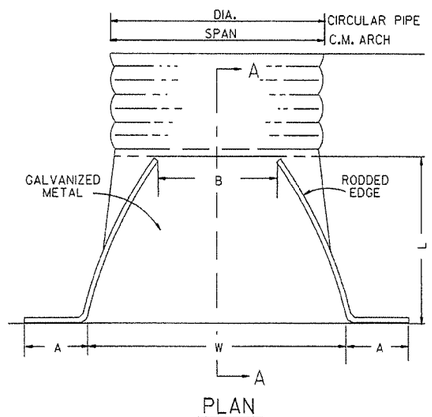
ARCH PIPE

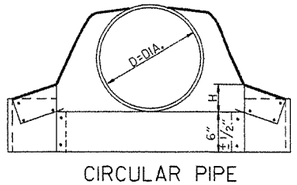
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	8'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36¹³⁄₁₆"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47¹³⁄₁₆"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅛"	22"	3½"	2½:1
42	51⅛	51	31⅜	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"	72¹⁄₁₆"	24"	4¾"	2½:1
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.

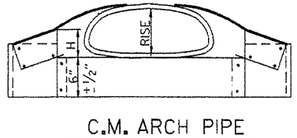


END VIEW
CONCRETE ARCH PIPE





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

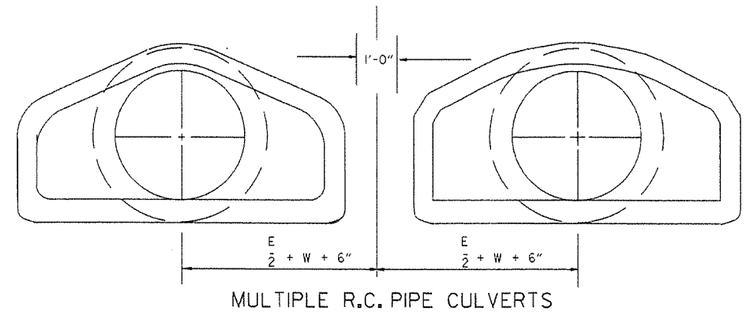
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

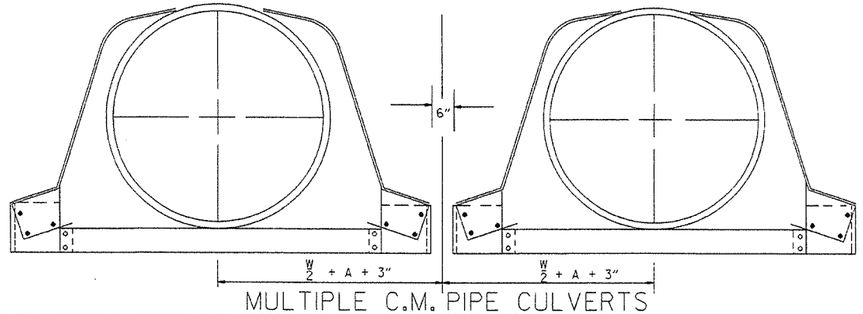
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	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

stdfes2.dgn

4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

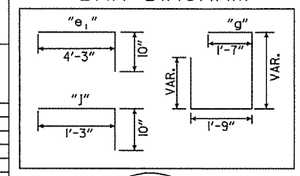
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

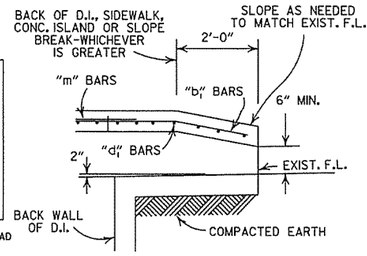
DROP INLET EXTENSION

4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

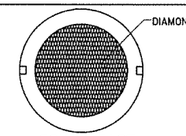
BAR DIAGRAM





BACK OPENING

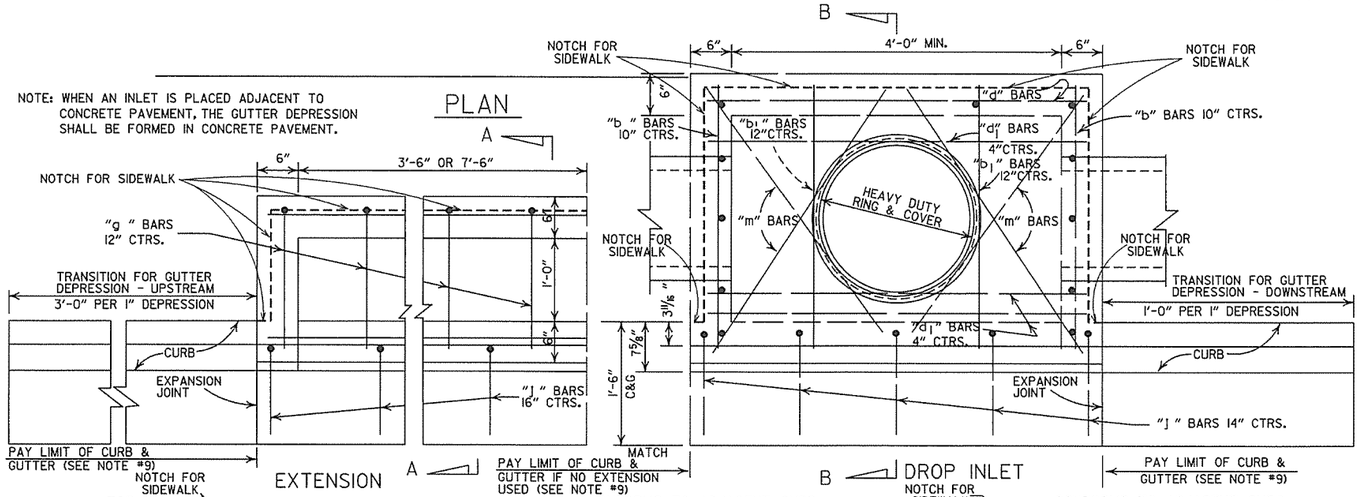
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

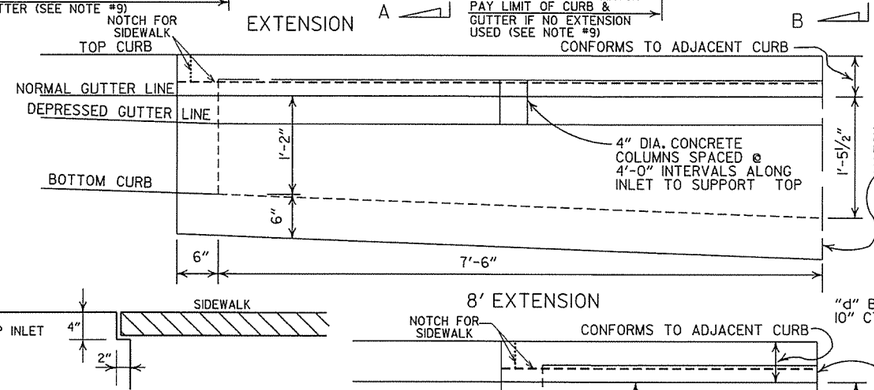


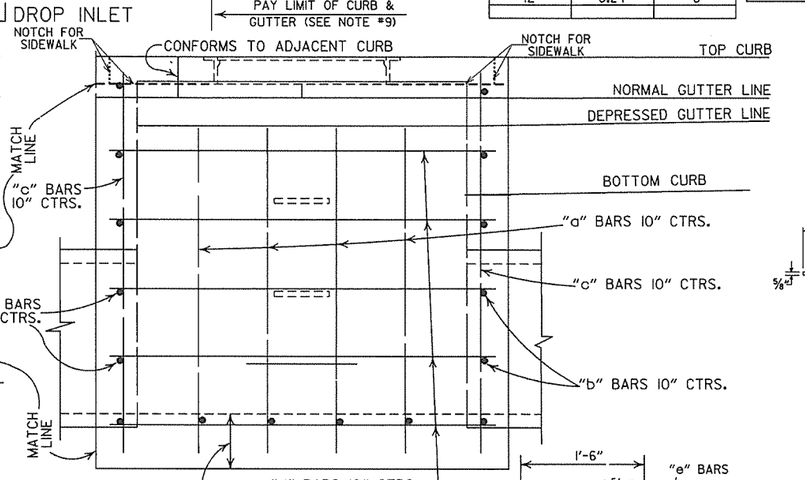
APPROXIMATE TOTAL WEIGHT = 333 LBS.

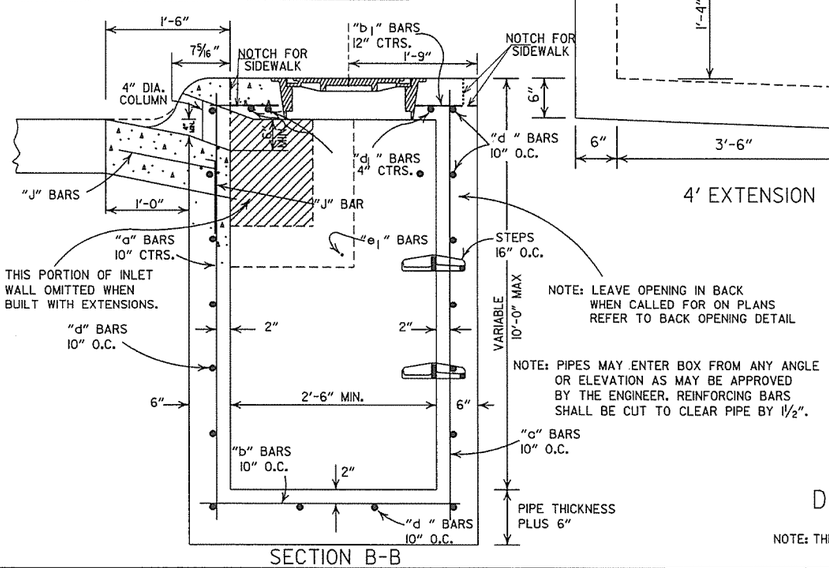
HEAVY DUTY RING & COVER

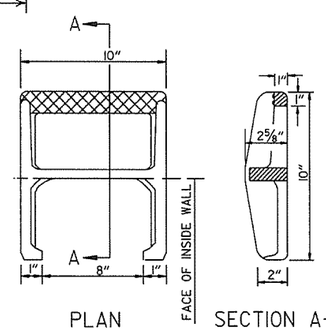
GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

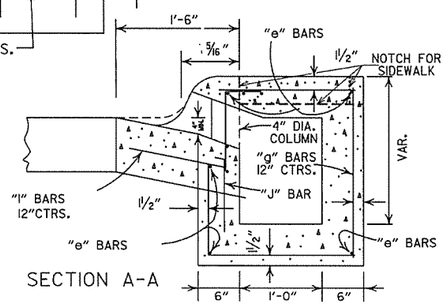












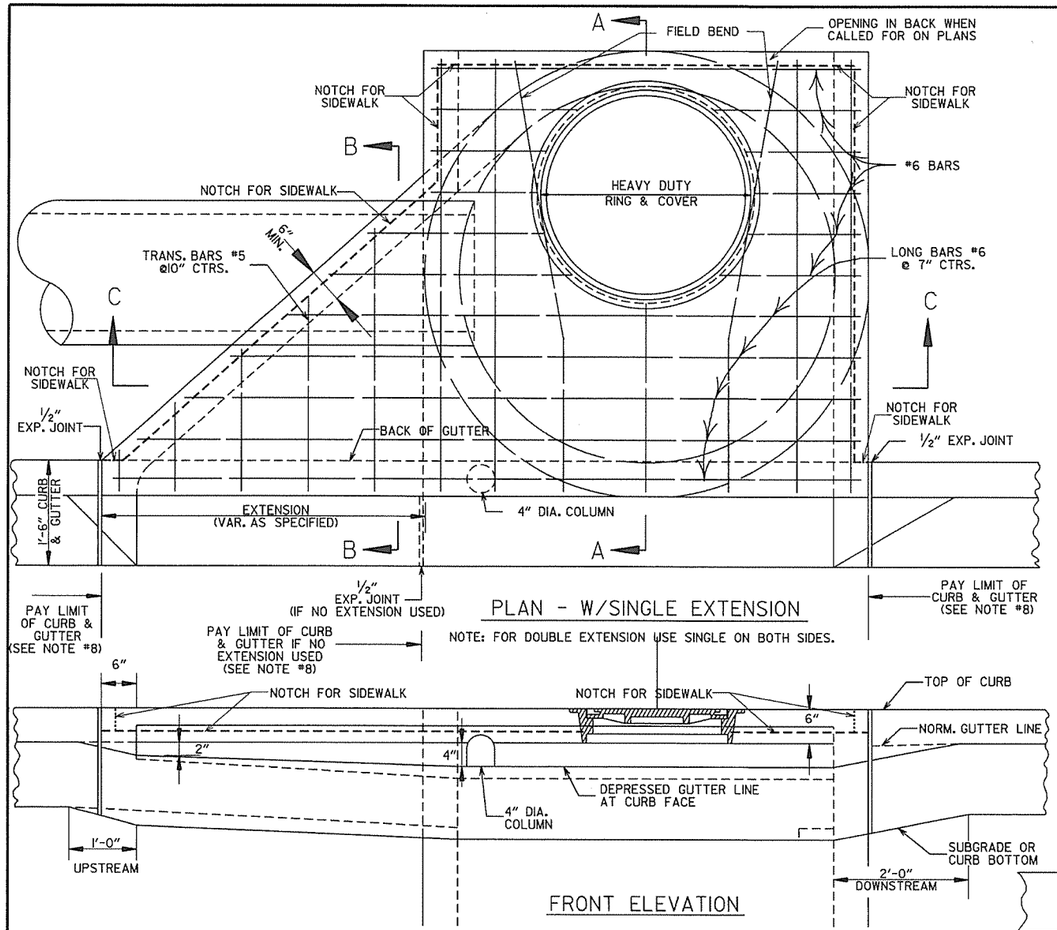
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

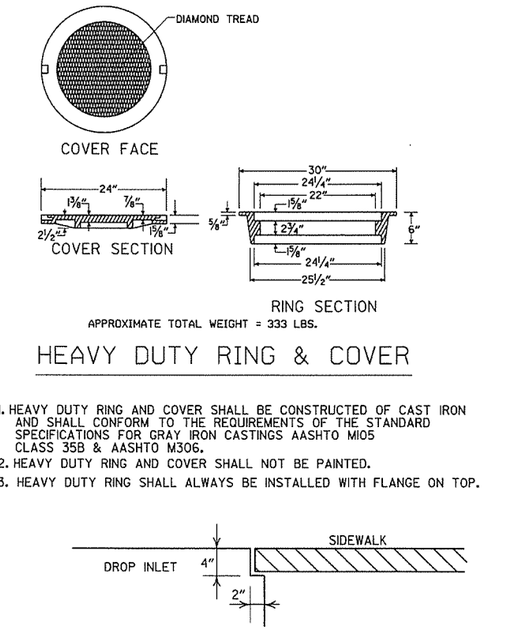
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

STANDARD DRAWING FPC-9E

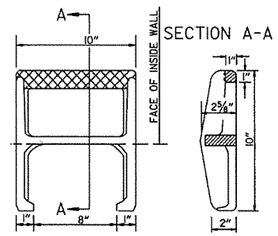




HEAVY DUTY RING & COVER

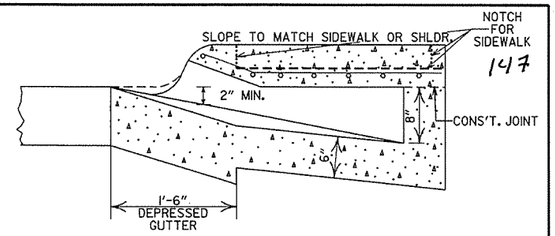
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.

DETAIL OF NOTCH FOR SIDEWALKS

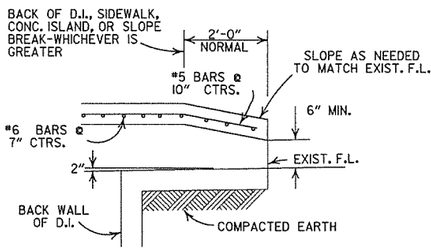


NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

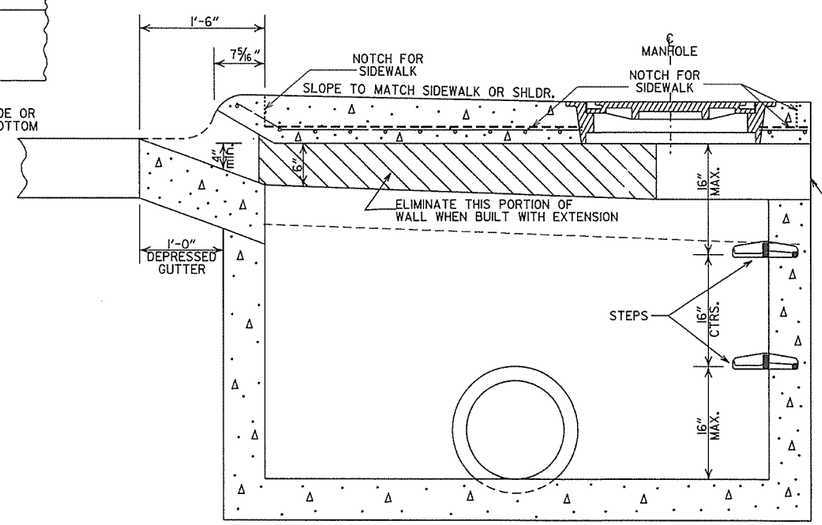


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



SECTION A-A

DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

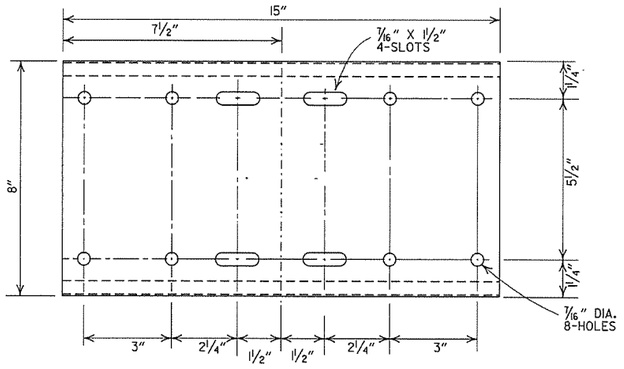
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 ADJ. OPENING DIMENSION	
10-12-95	CORRECTED "6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-20-89	ADDED NOTE NO. 12	11-20-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	635-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

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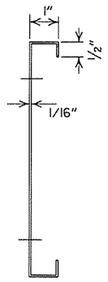
DETAILS OF DROP INLET (TYPE MO)

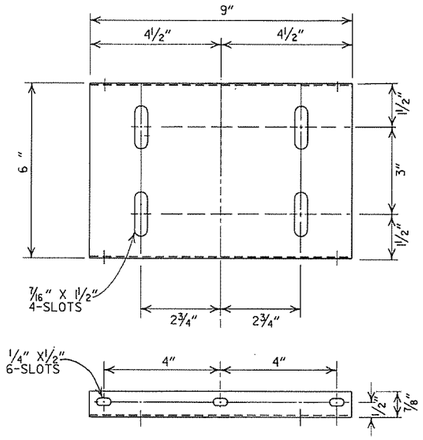
STANDARD DRAWING FPC-9M

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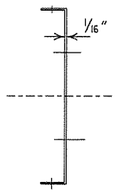


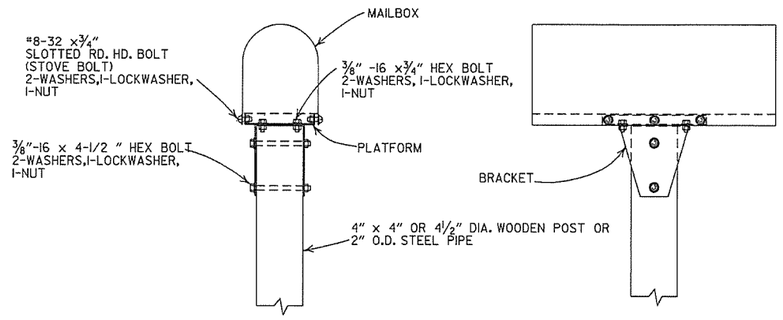
SHELF



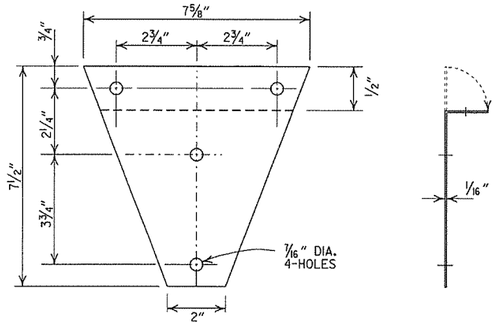


PLATFORM

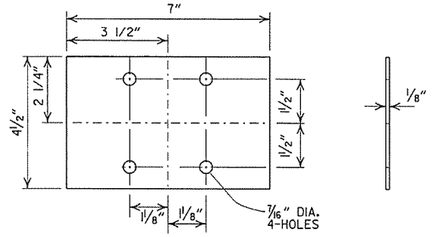




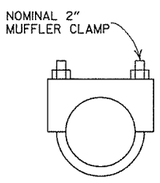
SINGLE INSTALLATION



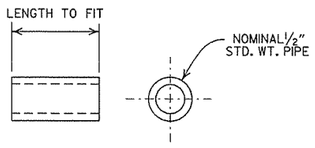
BRACKET



ANTI-TWIST PLATE



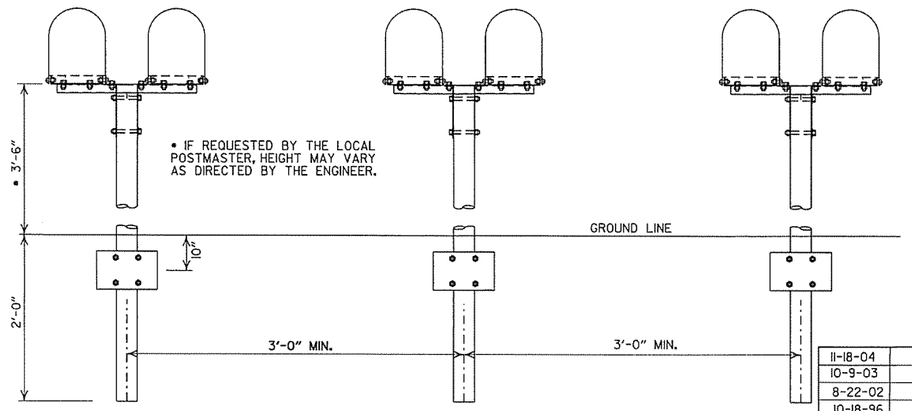
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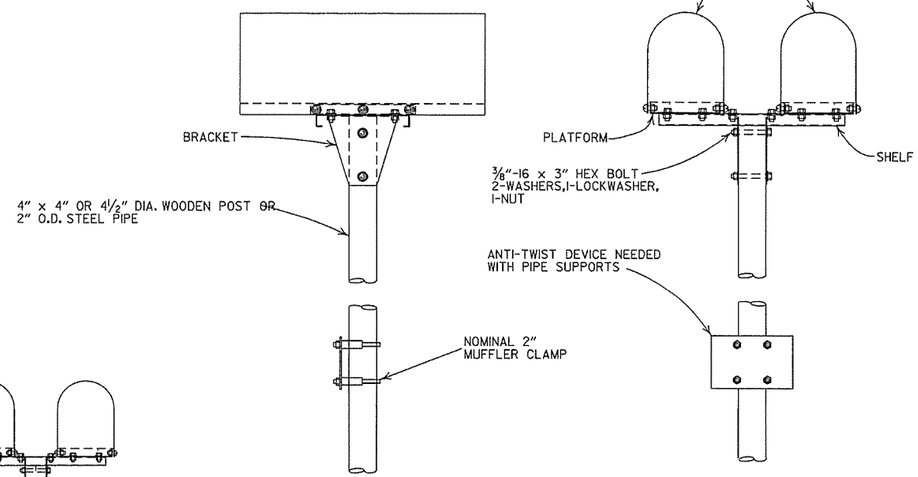
SPACER

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.



SPACING FOR MULTIPLE POST INSTALLATION



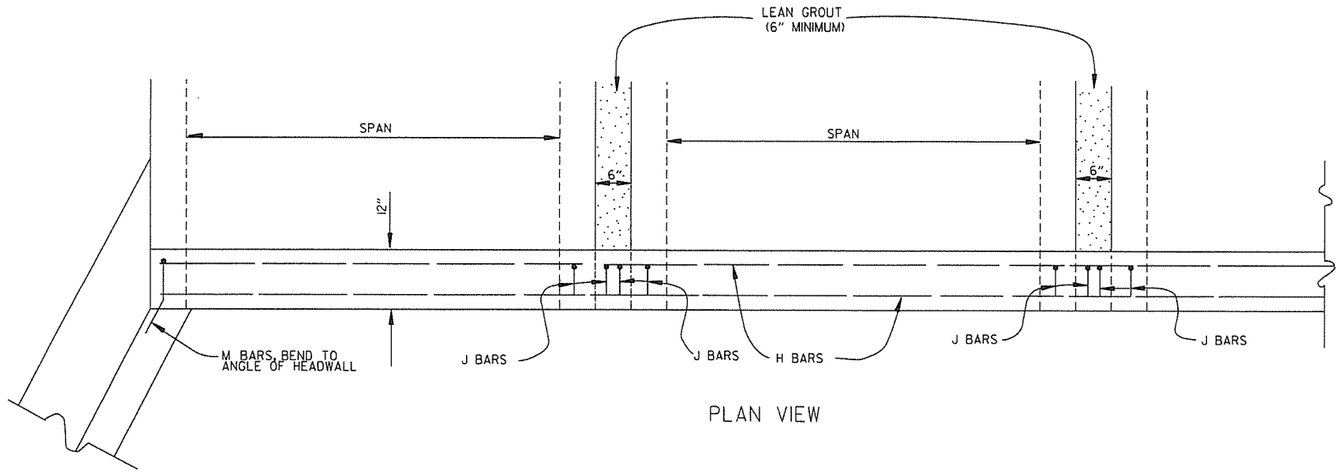
DOUBLE INSTALLATION

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

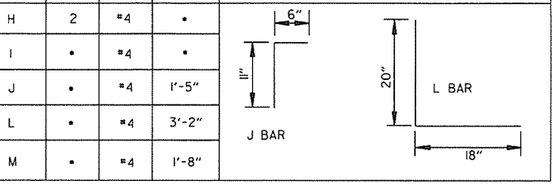
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

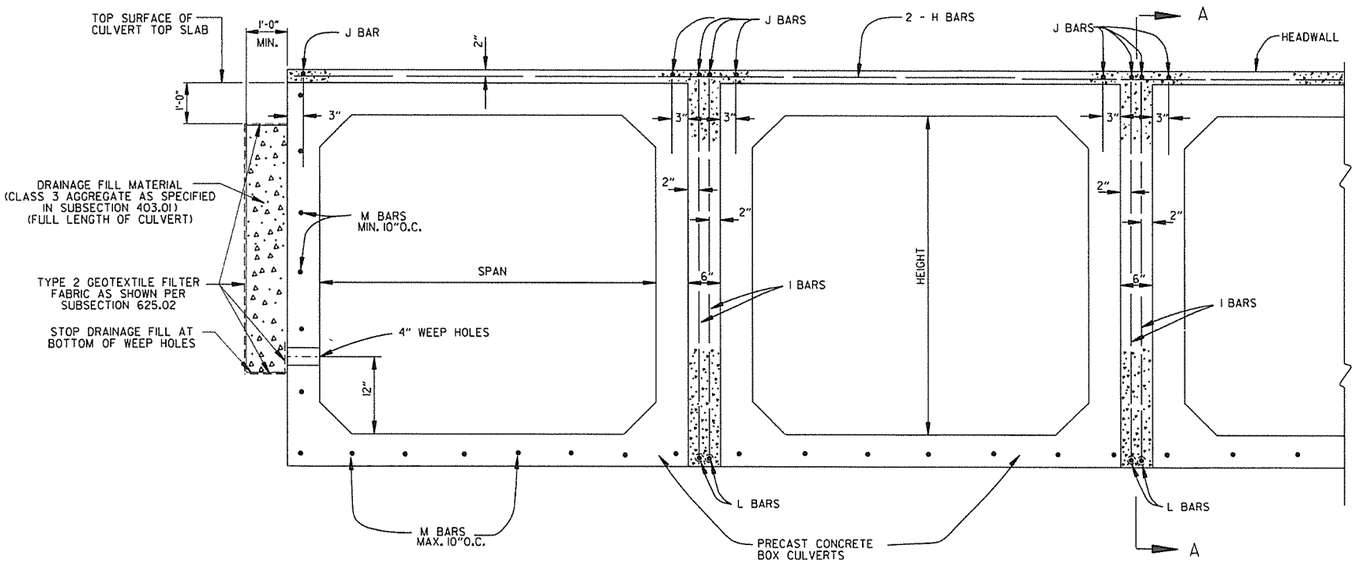
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

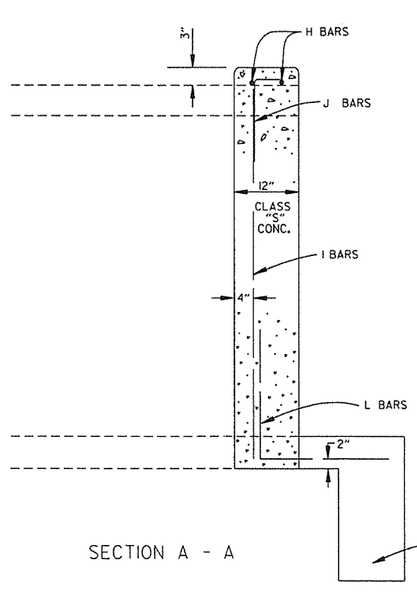
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED: JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-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	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

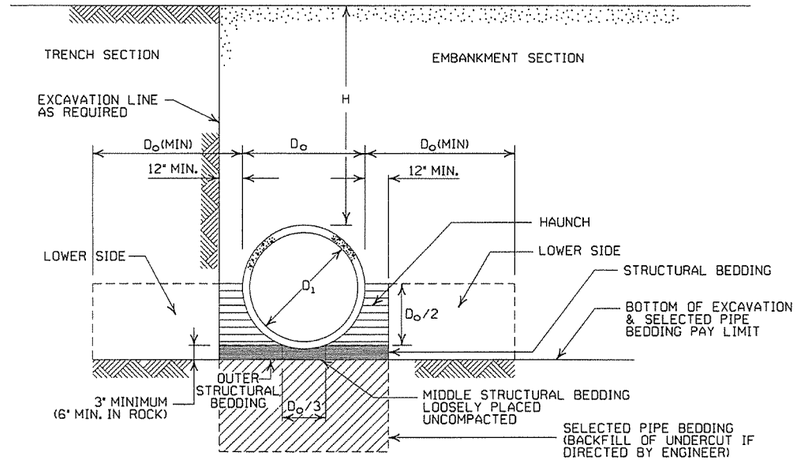
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DATE	REVISION	DATE FILMED
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

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.

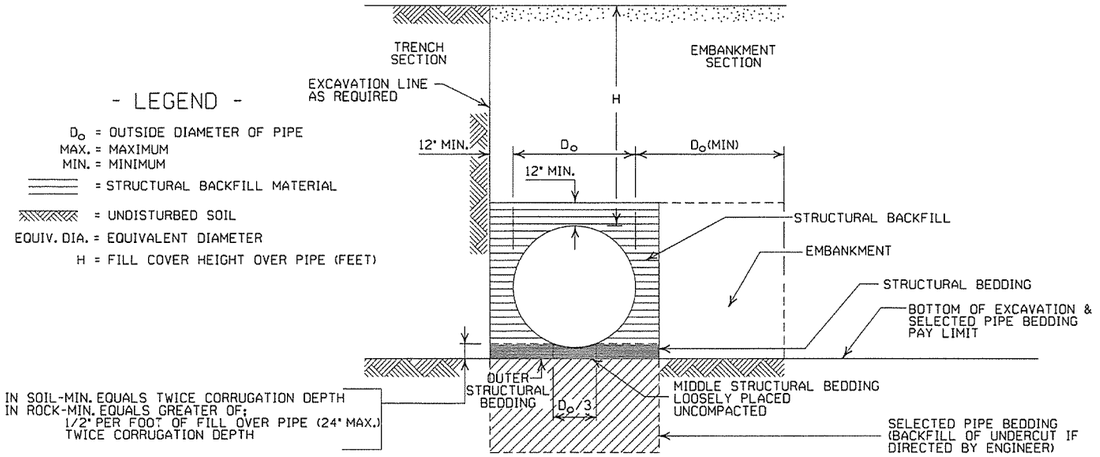
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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



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. INSTALALTION 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."

CORRUGATED METAL PIPE ARCHES

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

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

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.

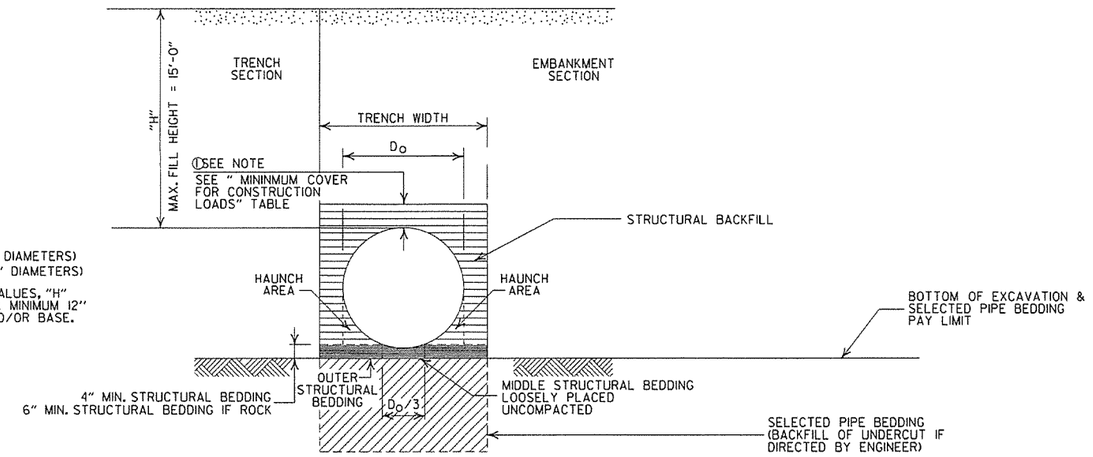
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

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.



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.

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 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.

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.)
Do = 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

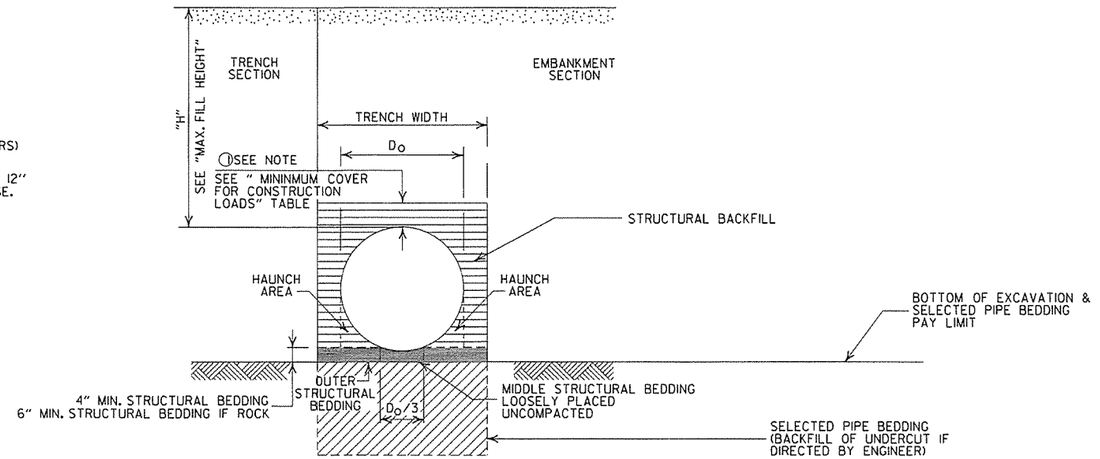
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

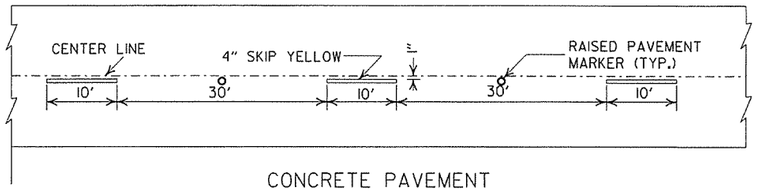
= UNDISTURBED SOIL

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	

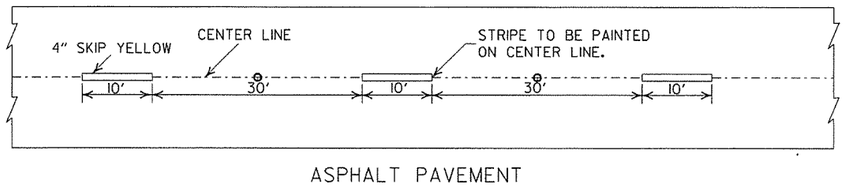
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

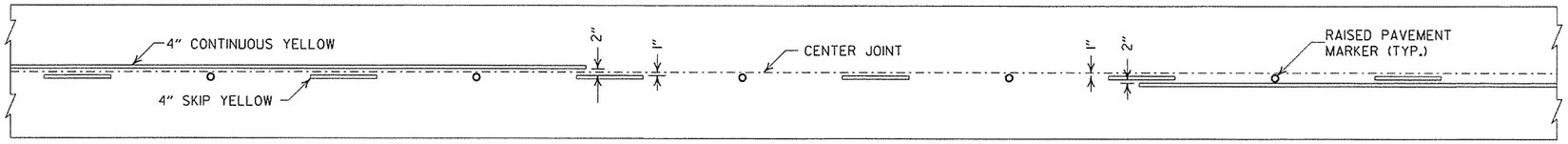


CONCRETE PAVEMENT

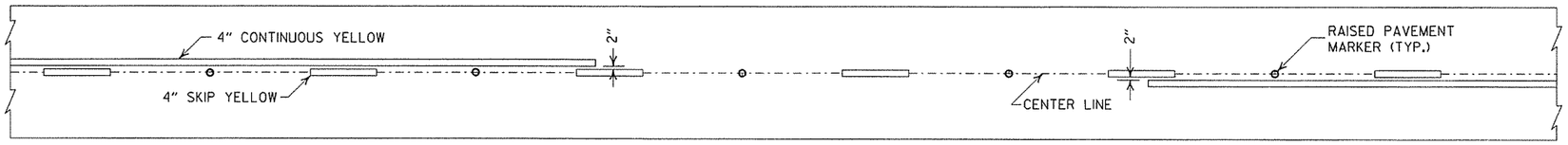


ASPHALT PAVEMENT

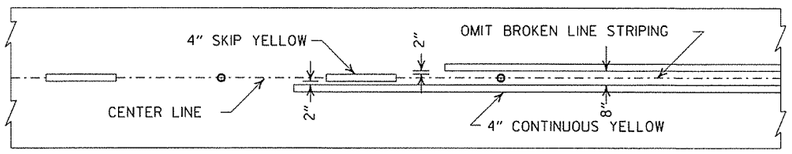
BROKEN LINE STRIPING



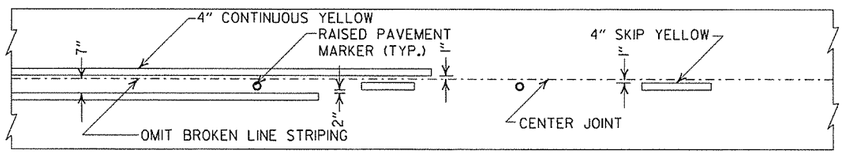
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

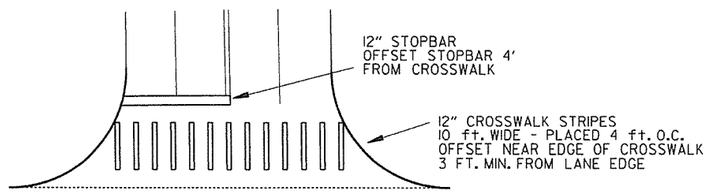


ASPHALT PAVEMENT



CONCRETE PAVEMENT

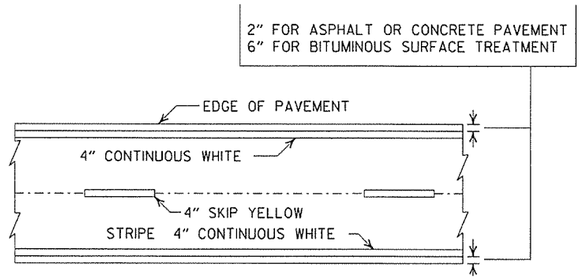
STRIPING AT ADJACENT NO PASSING LANES



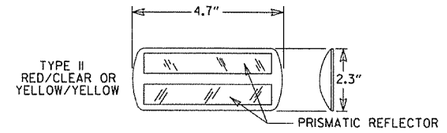
CROSSWALK AND STOPBAR DETAILS

NOTES:

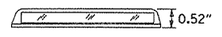
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED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



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

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

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

NOTE:

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

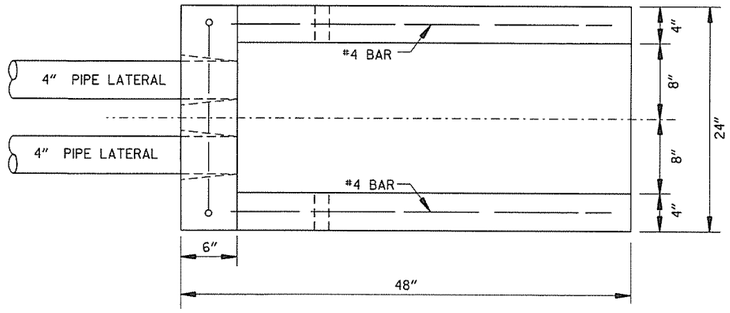
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4;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

ARKANSAS STATE HIGHWAY COMMISSION

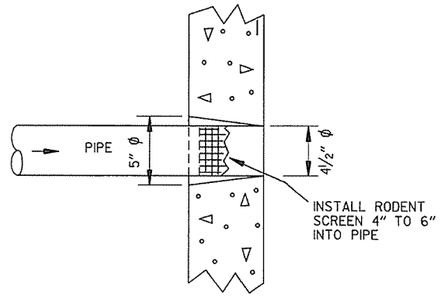
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

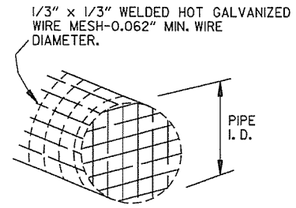
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



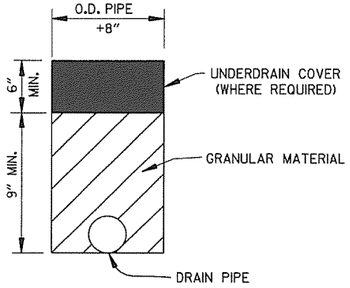
PLAN VIEW

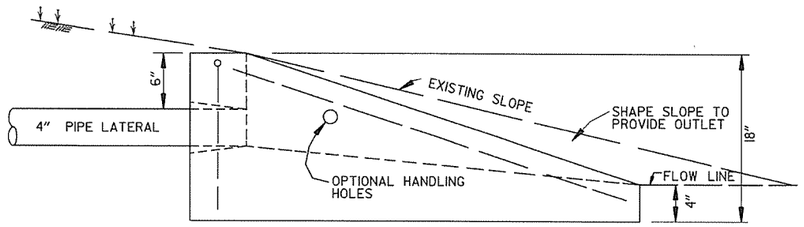


DETAIL OF HOLE FOR 4" PIPE

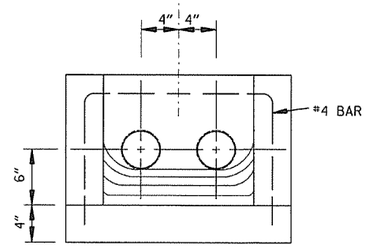


DETAIL OF RODENT SCREEN

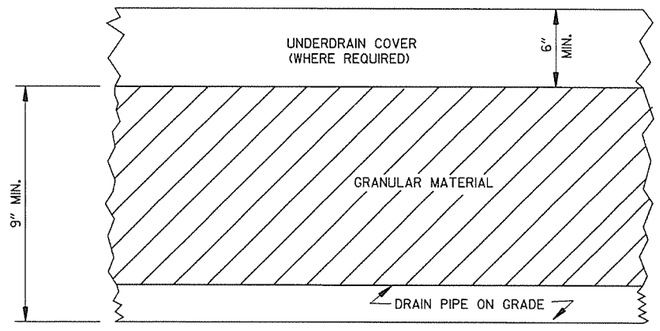




SIDE VIEW

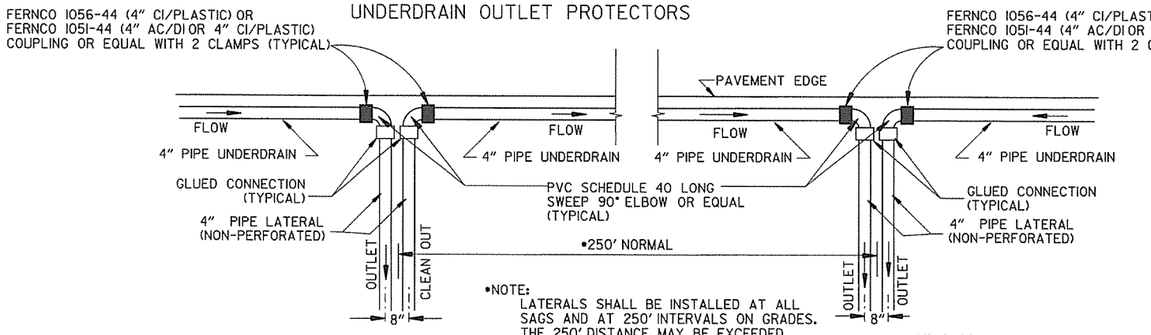


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF JNDERDRAIN 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

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DETAILS OF PIPE UNDERDRAIN

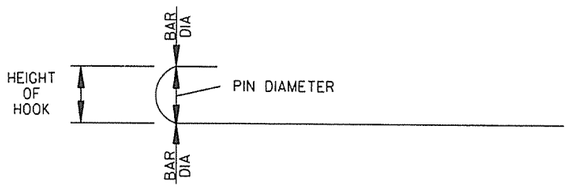
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3 "	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

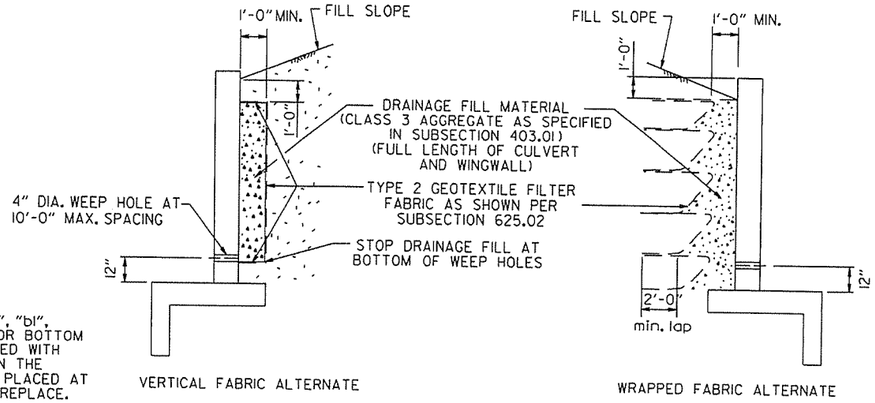
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

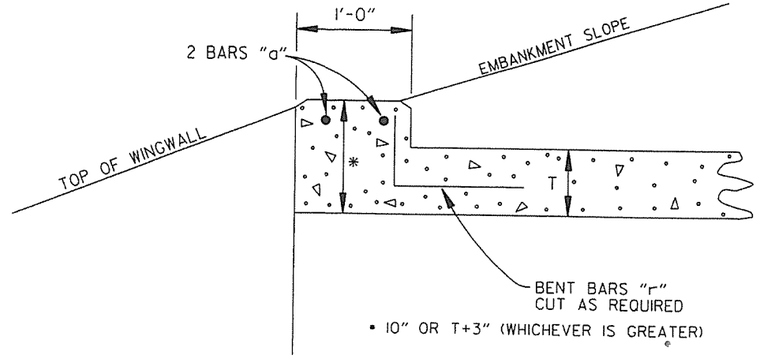
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

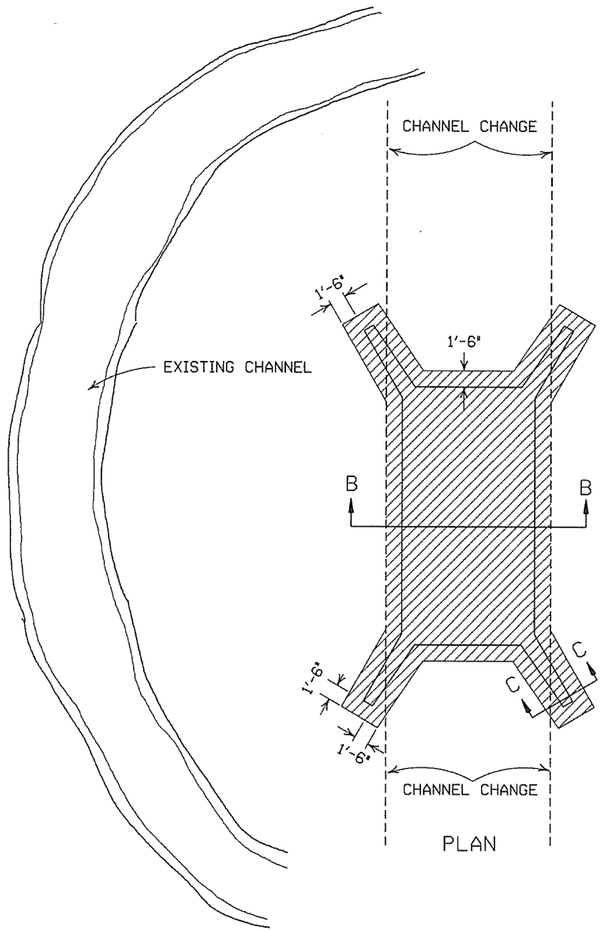
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

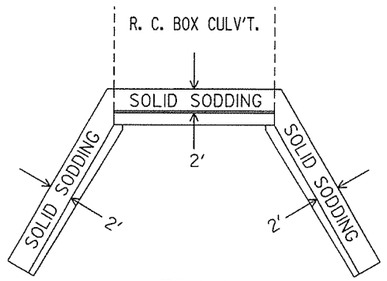
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

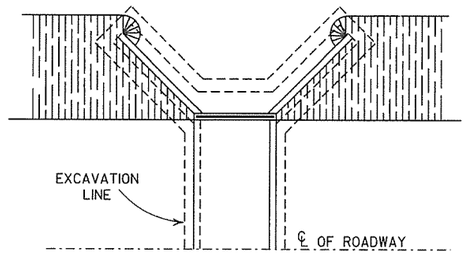
SOLID SODDING



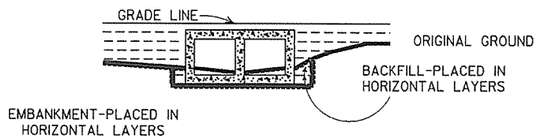
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

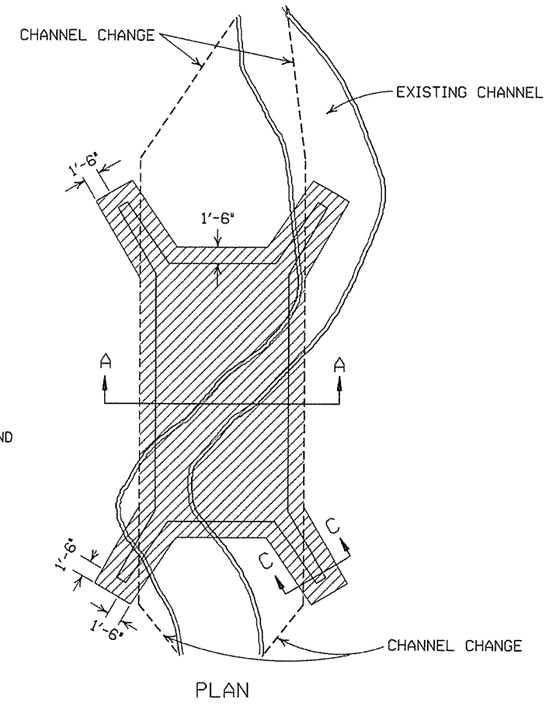


PLAN

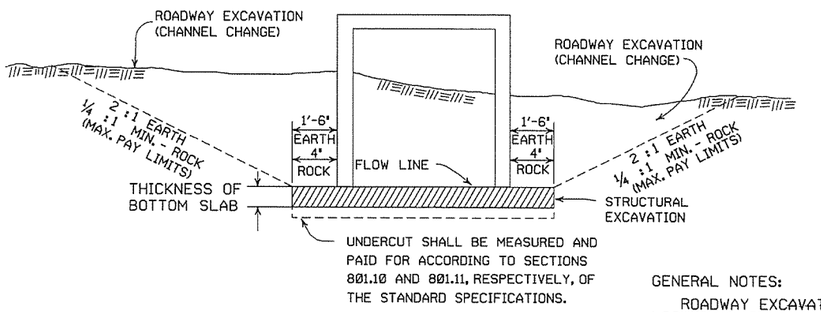


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

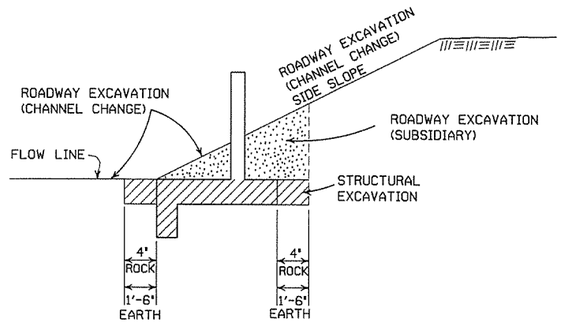


PLAN

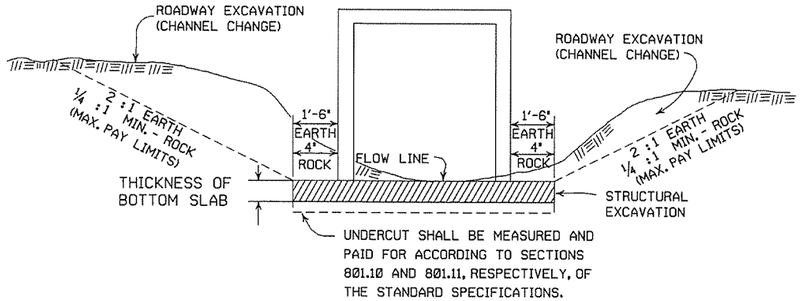


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

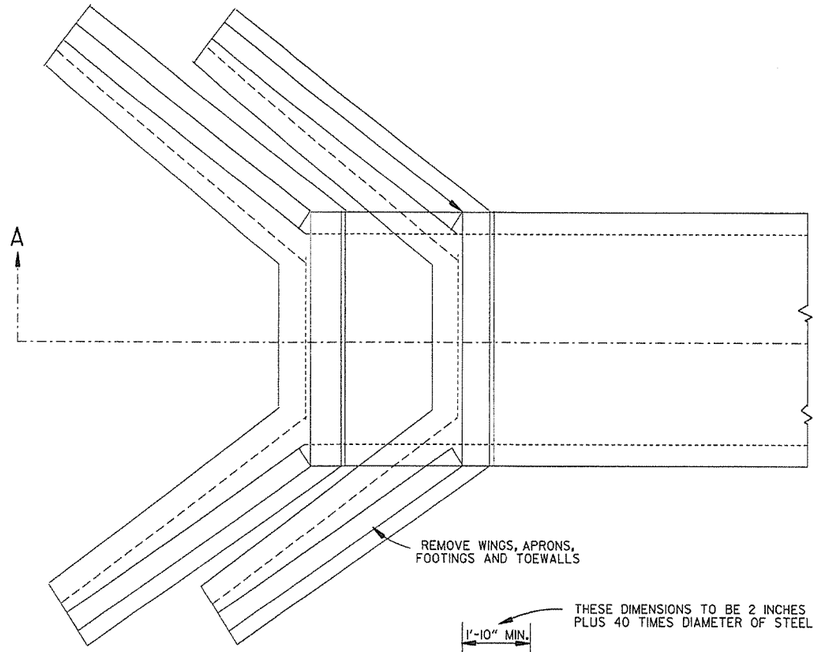
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

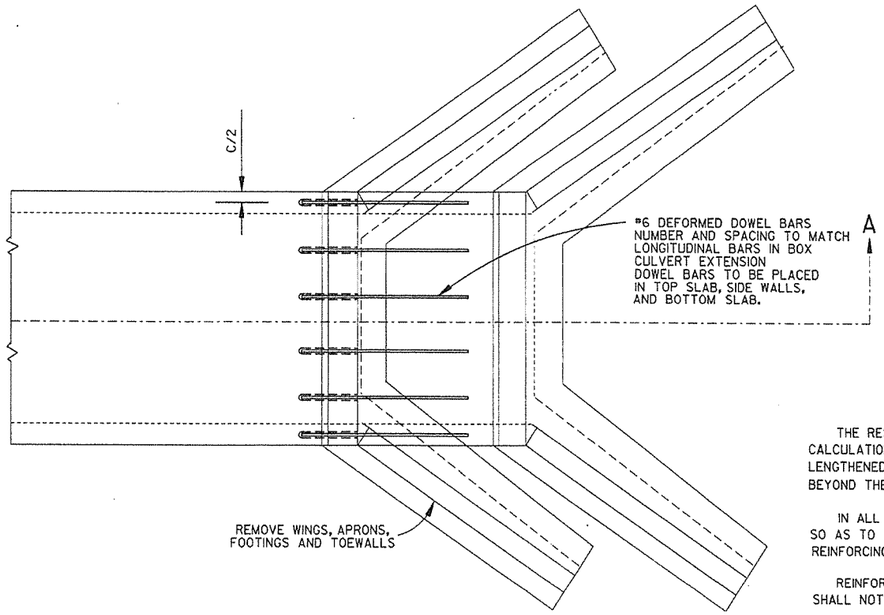
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS; THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER. AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

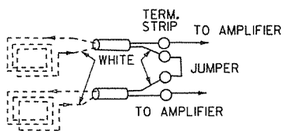
STANDARD DRAWING RCB-3

LOOP DETECTOR INSTALLATION AND TESTING

NOTES:

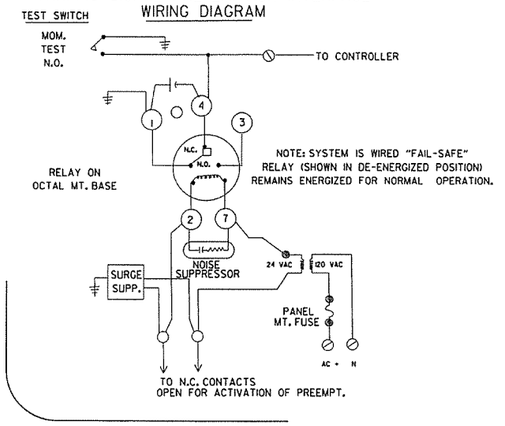
1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"O) Ø CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

SERIES CONNECTED LOOPS

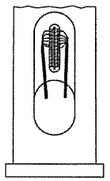


WIND LOOPS COUNTERCLOCKWISE; TAG WIRE EXITING SLOT AND TIE TO WHITE LEAD OF FEEDER WIRE; WHEN LOOPS ARE TIED TO SAME VEHICLE DETECTOR, SERIES CONNECT IN CABINET AS SHOWN.

TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM

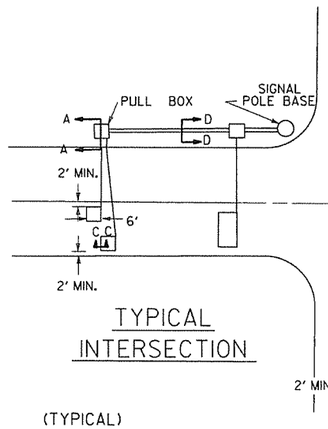


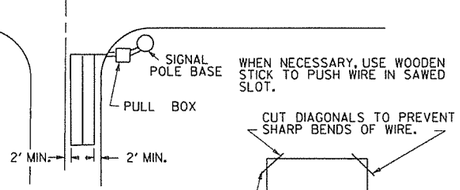
HANDHOLE TERMINAL



QUADRUPOLE LOOP

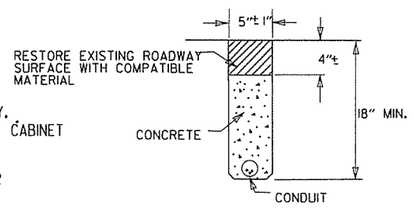
TYPICAL INTERSECTION





TRENCHING DETAIL

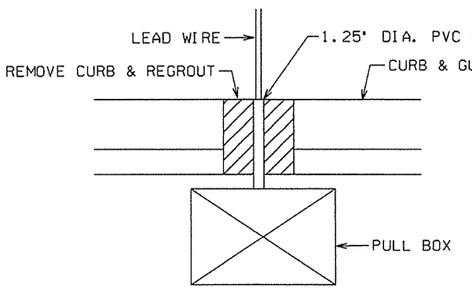
(FOR SAW CUT TRENCH IN ROADWAY)

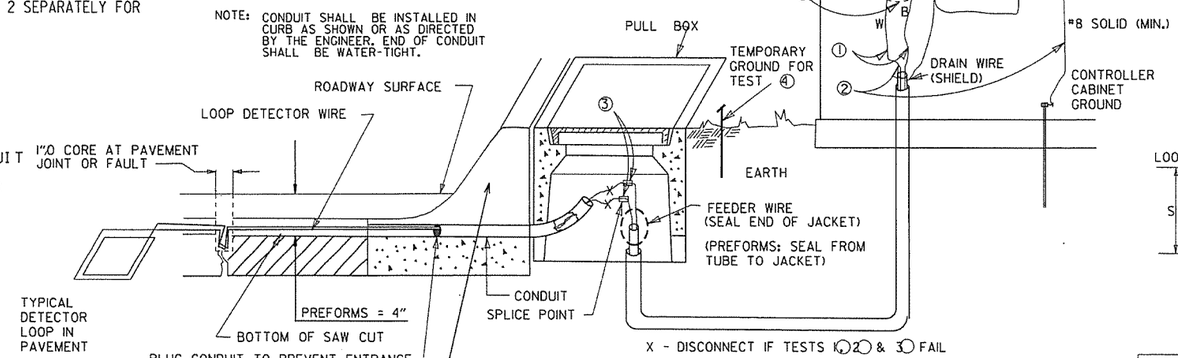


TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

1. DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
2. TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM) IF TESTS 1 & 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1 & 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
3. OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1 & 2 IF TEST 3 IS BAD, GO TO TEST 4
4. BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1 & 2 SEPARATELY FOR FEEDER AND FOR LOOP

FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.





SECTION A-A

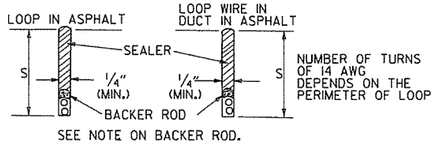
1'-6" CONCRETE COMBINATION CURB AND GUTTER

(TYPICAL)

SPECIAL NOTE

IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

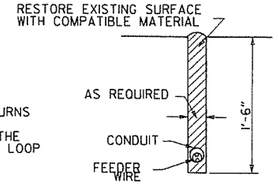
TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS



SEE NOTE ON BACKER ROD.

SECTION C-C

S=2 1/2" IN ASPHALT
S=1 1/2" IN CONCRETE



SECTION D-D

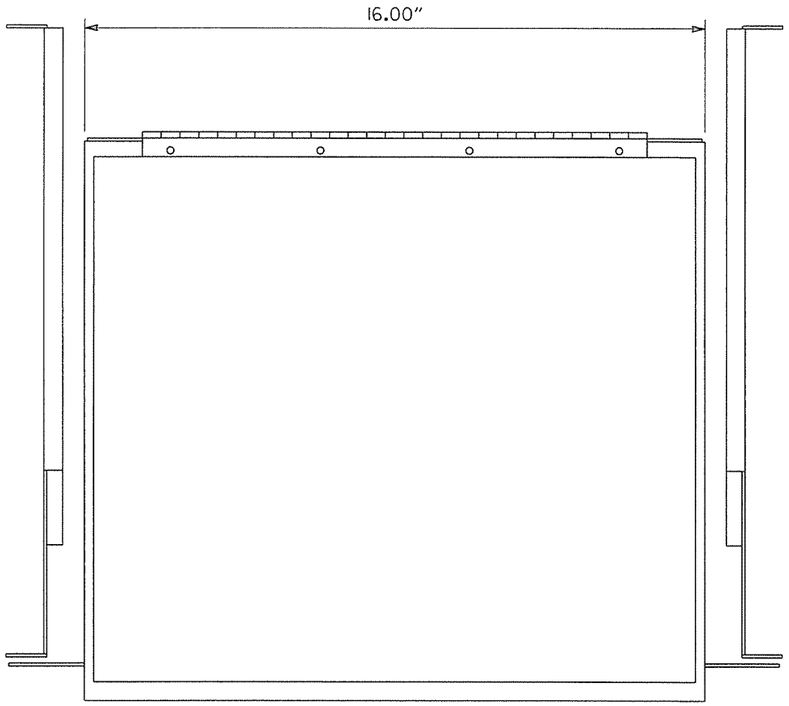
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-17-01	REVISED	
4-11-01	REVISED	
2-4-00	REVISED PRE-EMPTION TEST SWITCH	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

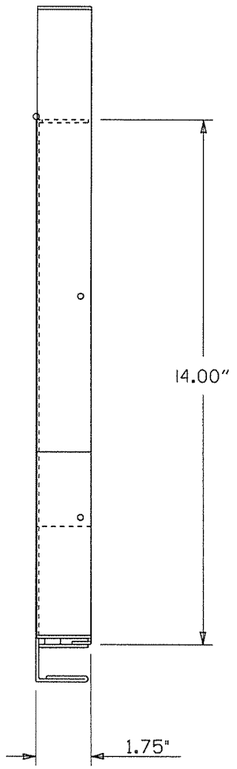
ARKANSAS STATE HIGHWAY COMMISSION

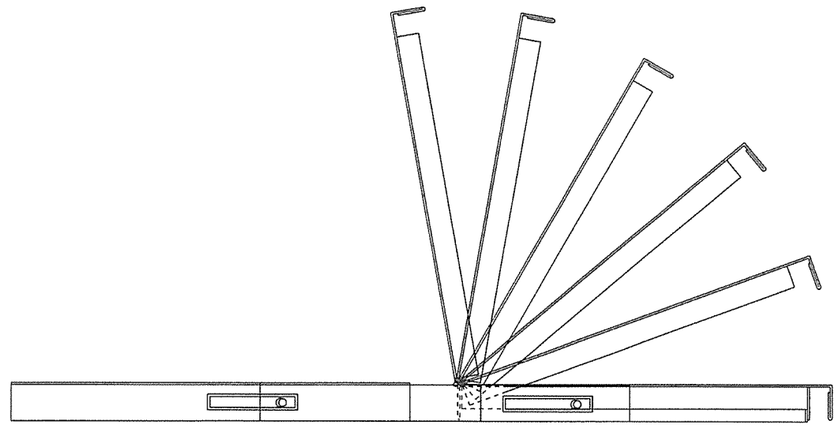
LOOP DETECTOR INSTALLATION

STANDARD DRAWING SD-4

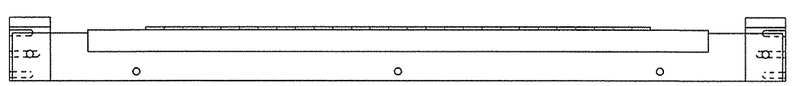
DRAWER PLAN VIEW



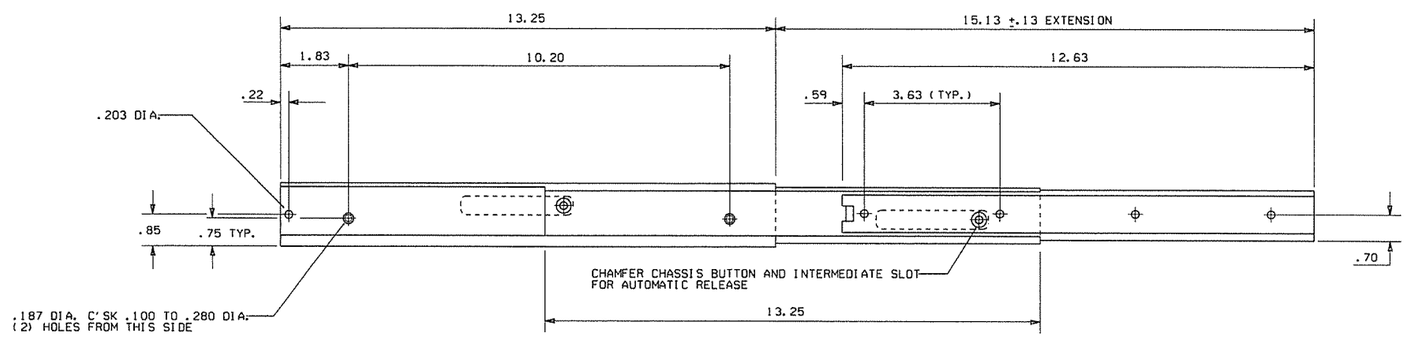




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

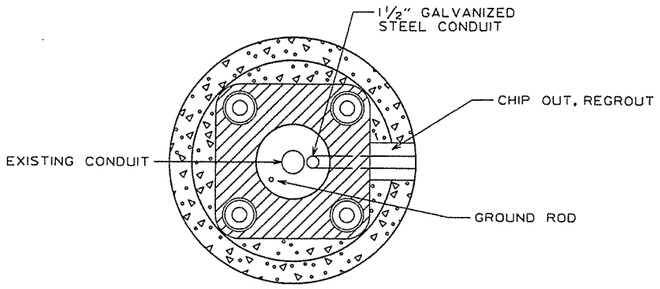
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

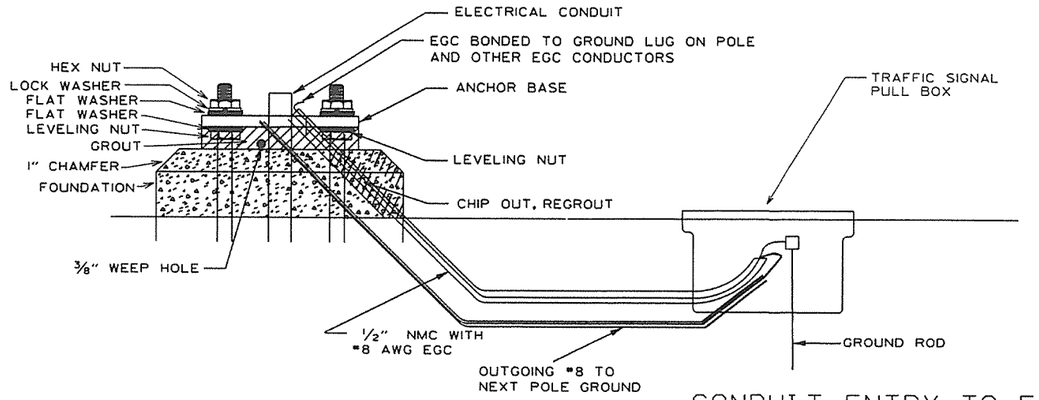
CONTROLLER CABINET
UTILITY DRAWER

STANDARD DRAWING SD-5

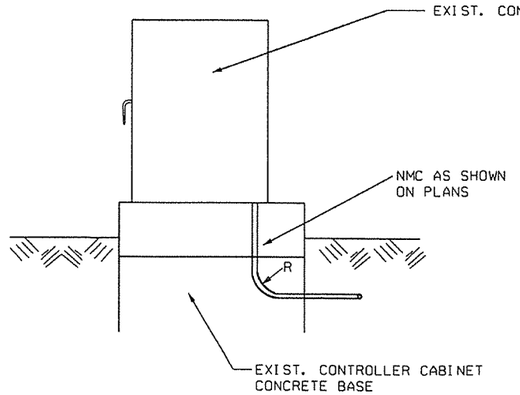
CONDUIT ENTRY TO EXISTING POLE BASE



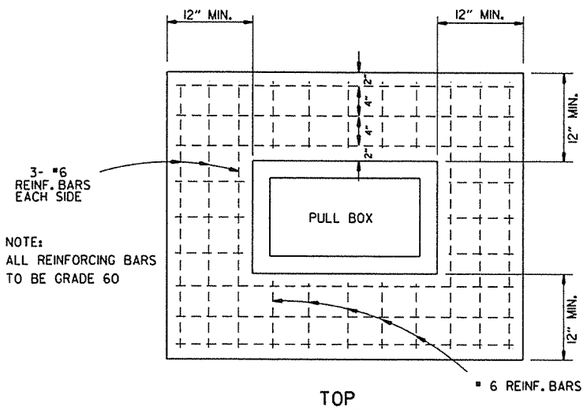
ANCHOR BASE



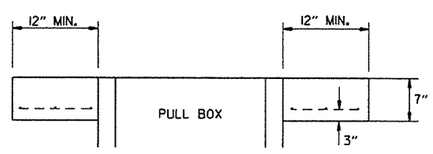
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

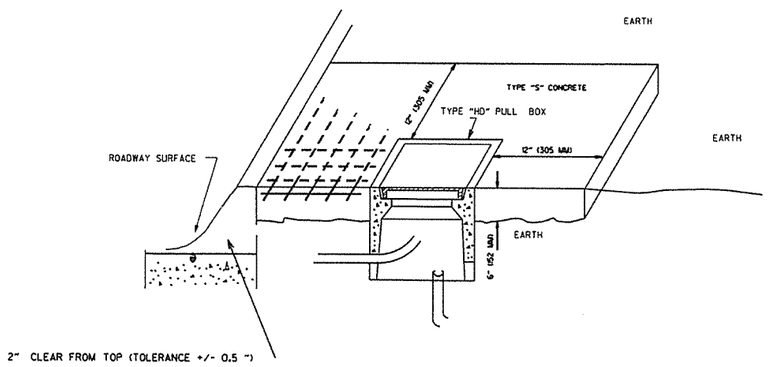


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



NOTE: ALL TYPE I AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 7" (178 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

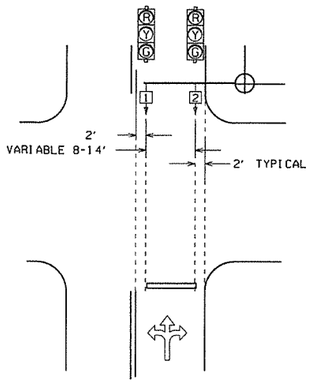
DATE	REVISION	DATE FILM
9-2-15	REVISED PULL BOX DEPTH	
9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

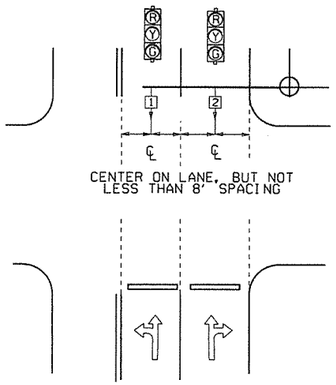
HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6

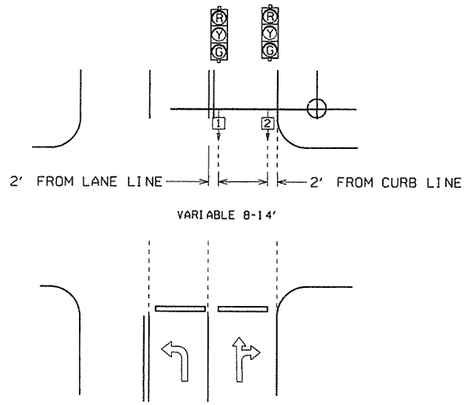
(A)



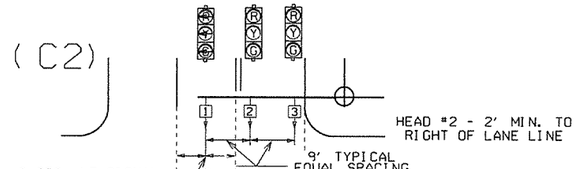
(B)



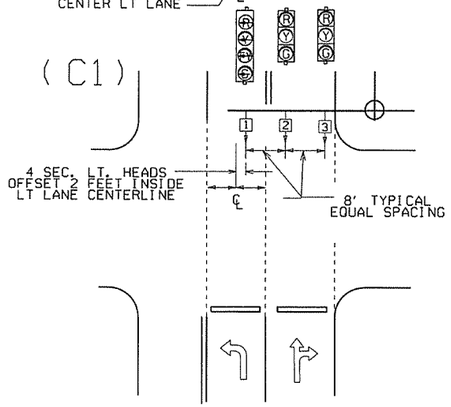
(C)



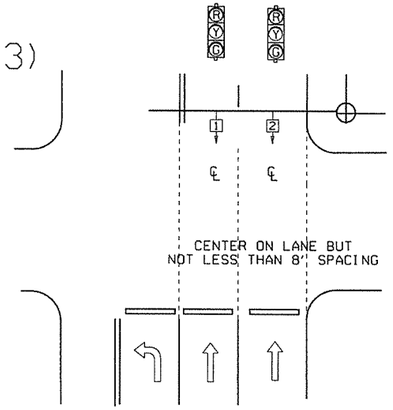
(C2)



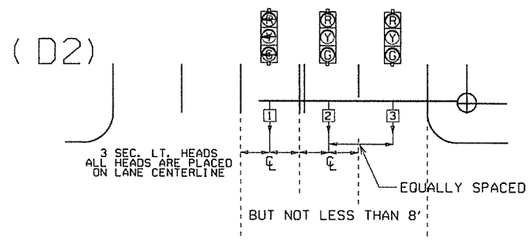
(C1)



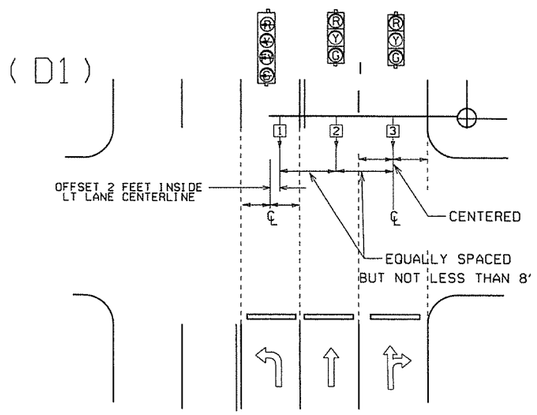
(C3)



(D2)

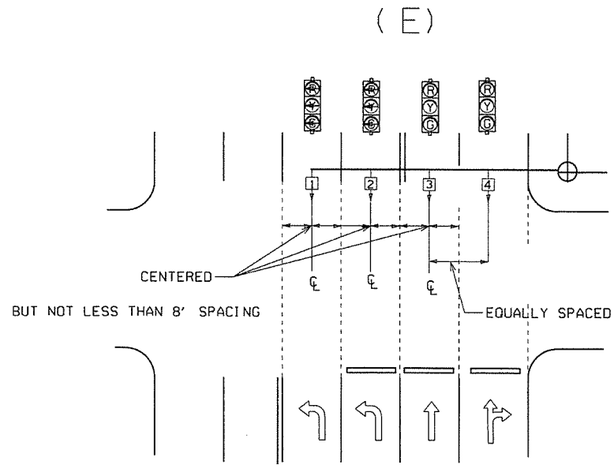


(D1)



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

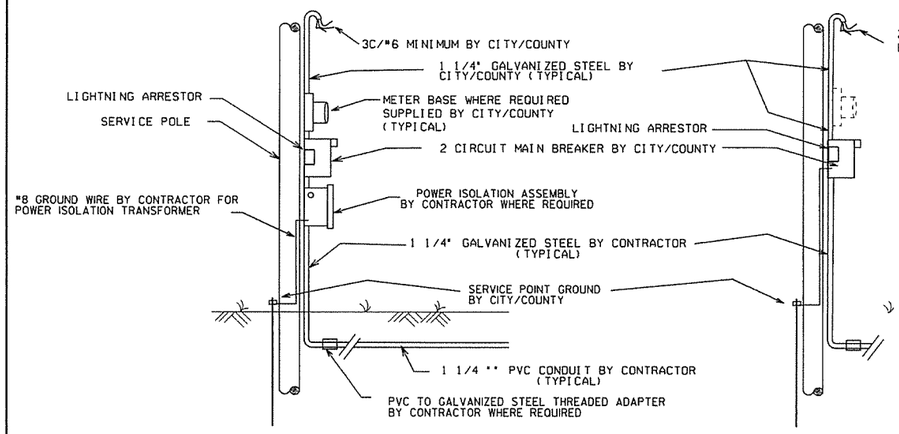
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

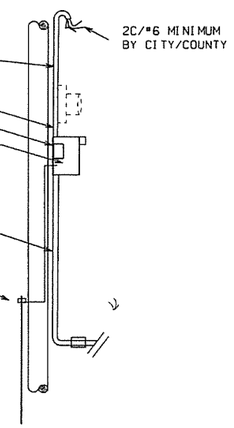
STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

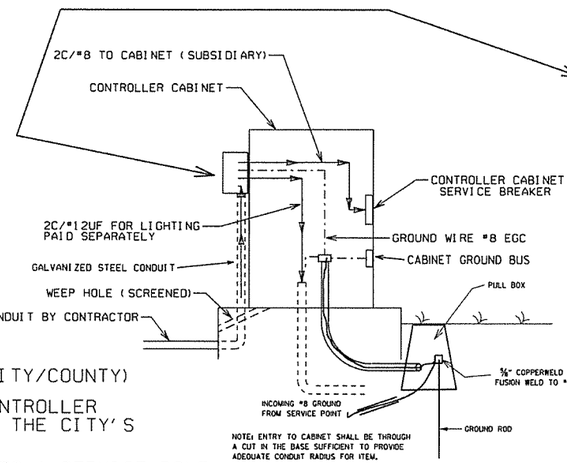


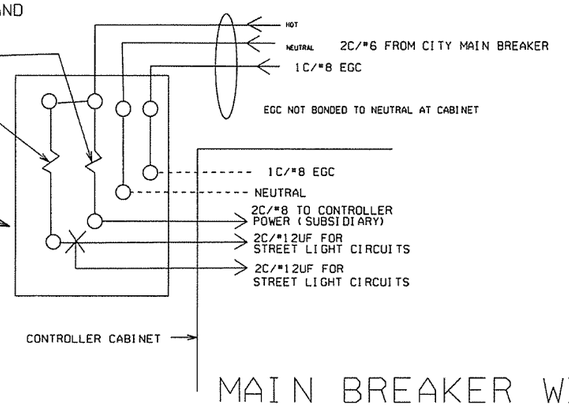
WITHOUT POWER ISOLATION ASSEMBLY



GROUND ROD-A 10'X ⅝" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)





MAIN BREAKER WIRING (TYPICAL)

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2C/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

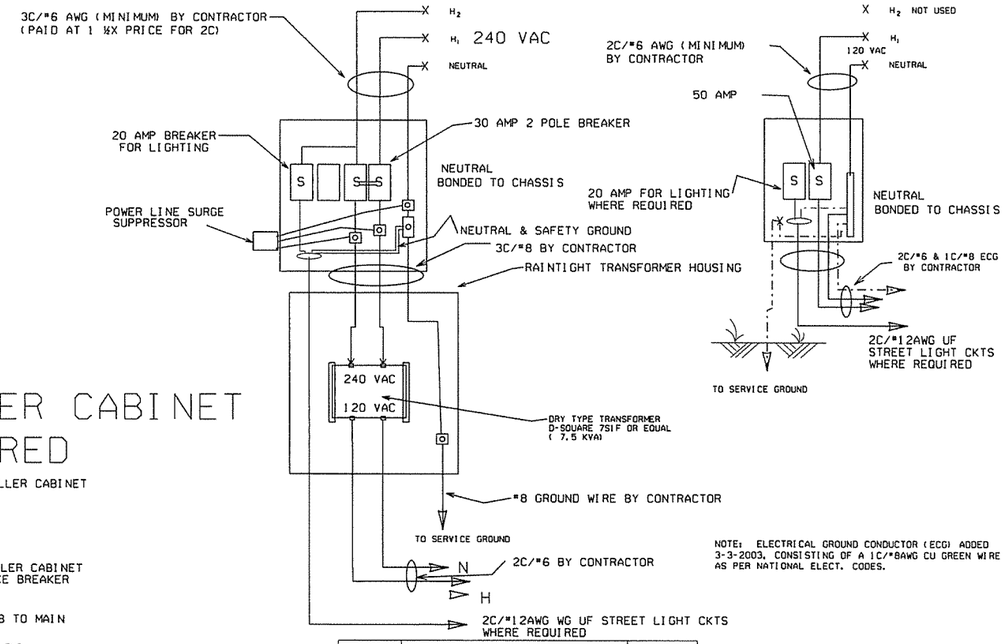
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

3. MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

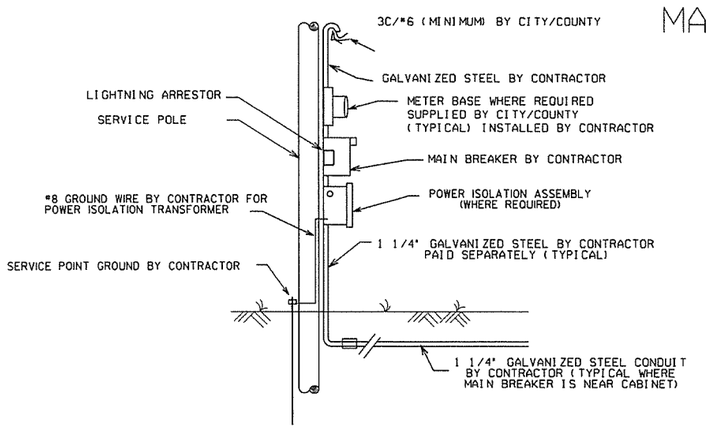
WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

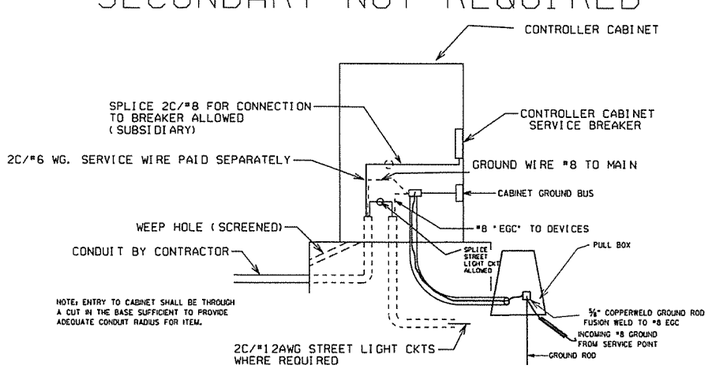
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (EGG) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
4-18-13	ADDED LIGHTNING ARRESTOR	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL " 2' X 0" X 2' " 6"; 20 LB. REMAINING HEADS SPACED A 8 FT. " 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT.; INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) " VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

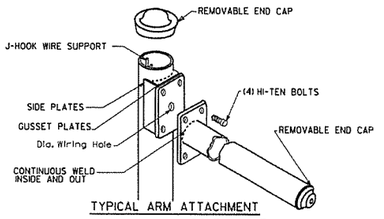
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

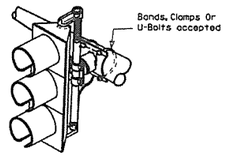
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

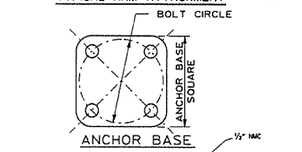
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



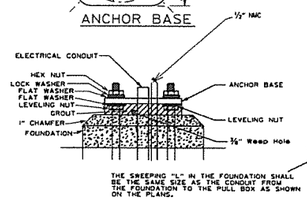
TYPICAL ARM ATTACHMENT

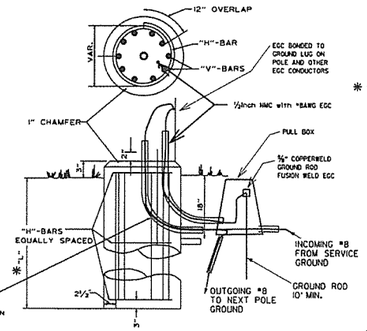


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



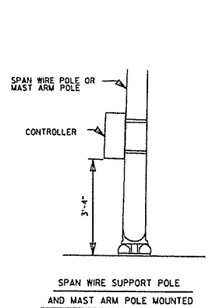


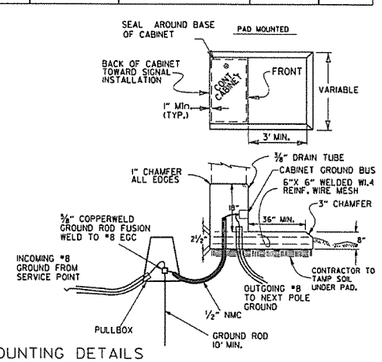
THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH "L" *	STEEL VERT.	STEEL HORZ.	STEEL O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"





CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

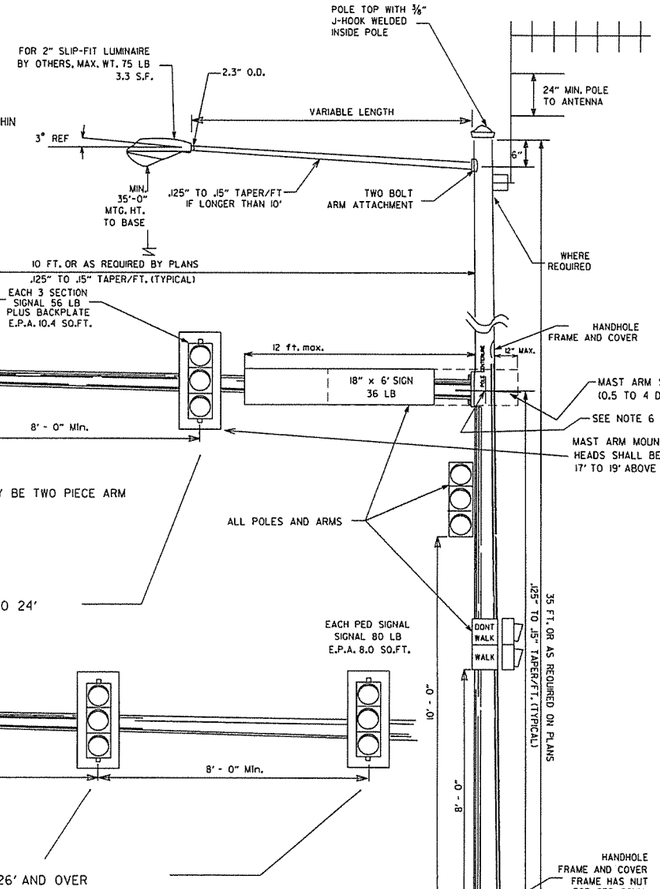
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

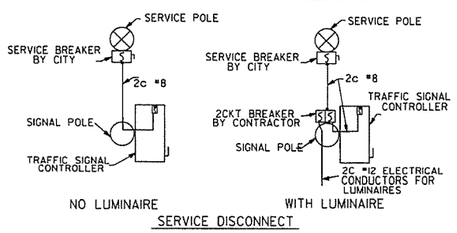
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

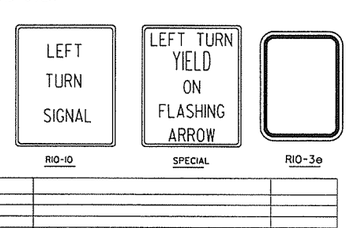
** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.





SERVICE DISCONNECT



2-27-14	REVISED NOTES.	
9-12-13	ISSUED AS STANDARD DRAWING	
7-21-11	REVISED WAD SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-11-04	REV. NOTE 3 AASHTO REQUIREMENTS	
6-11-01	REV. NOTES & POLE MAST ARM SLOPE	
4-11-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	
DATE	REVISION	DATE TAU

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING

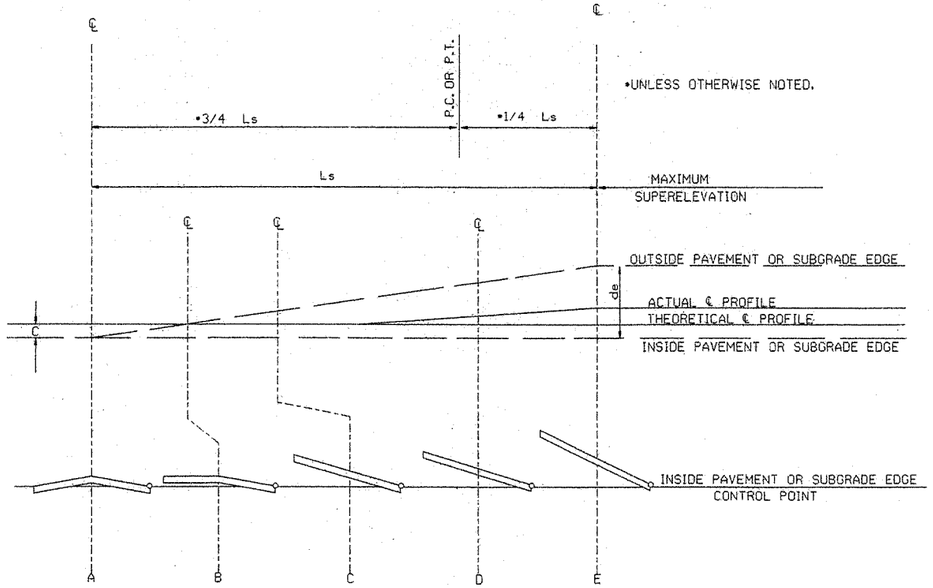
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15′	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30′	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45′	N.C.			0.025	175		0.036			0.043		300	0.049		300	0.062		
2° 00′	R.C.			0.028			0.040			0.048			0.055			0.070		
2° 15′	R.C.			0.031			0.045			0.053			0.061			0.078	300	350
2° 30′	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45′	0.023			0.037		200	0.053			0.063			0.072			0.091	335	
3° 00′	0.025			0.040			0.057			0.067	230		0.077	260		0.096	350	400
3° 15′	0.027	150		0.043			0.061			0.072	245		0.082	275		0.098	360	
3° 30′	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45′	0.031		200	0.049			0.069	215		0.080	265		0.090	295	350	D MAX = 3° 30′		
4° 00′	0.033			0.051			0.072	225		0.083	270		0.093	305				
4° 30′	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00′	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30′	0.043			0.066	185		0.088	260		0.094	300		D MAX = 5° 15′					
6° 00′	0.046			0.070	190		0.092	270	300	0.096	305							
6° 30′	0.050			0.074	200		0.095	280		0.100	315							
7° 00′	0.053			0.078	210		0.098	285		D MAX = 6° 30′								
7° 30′	0.056			0.081	215		0.099	290										
8° 00′	0.058			0.084	220		0.100	290										
8° 30′	0.061			0.087	225	250	D MAX = 8° 15′											
9° 00′	0.063			0.089	230													
10° 00′	0.068	160		0.094	235													
11° 00′	0.072	170		0.097	250													
12° 00′	0.076	175		0.099	250													
13° 00′	0.080	180		0.100	250													
14° 00′	0.083	190		D MAX = 13° 15′														
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′

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.)



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

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

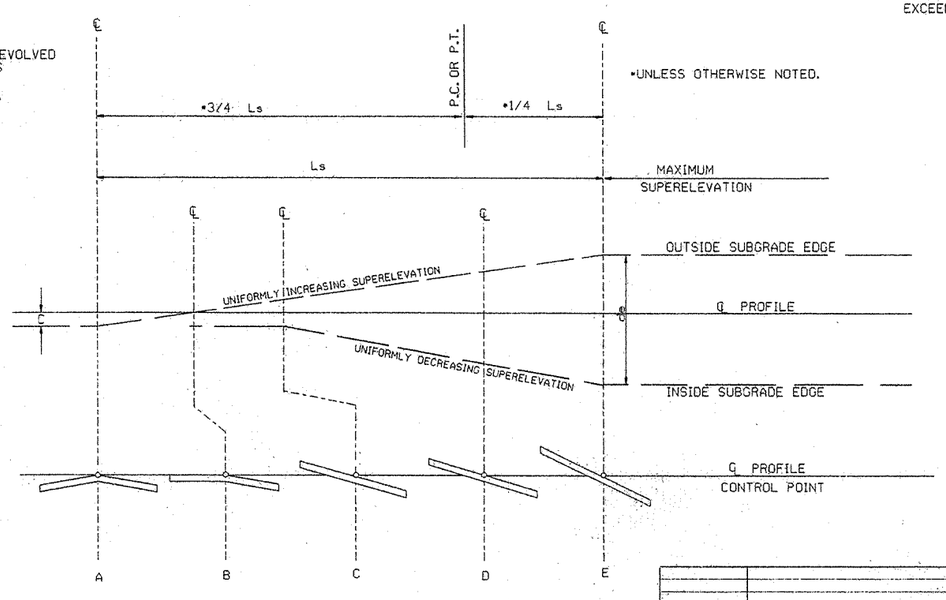
GENERAL NOTES

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.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

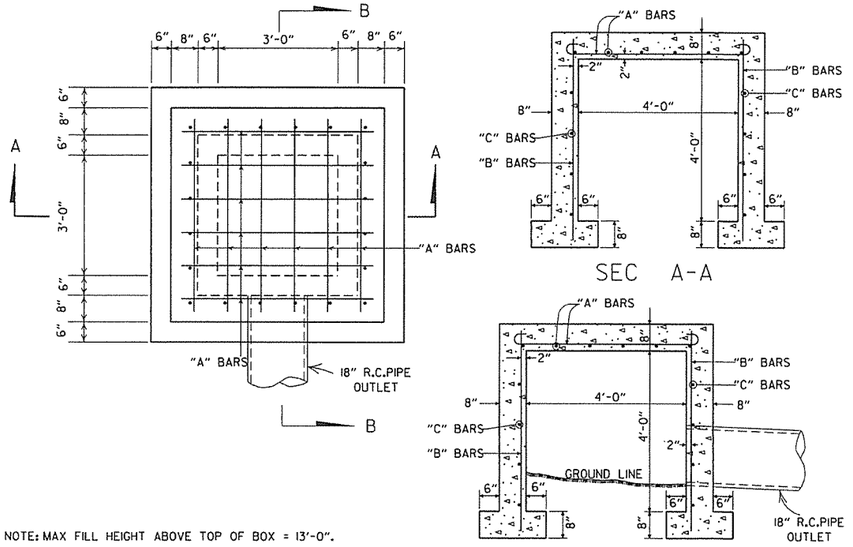
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

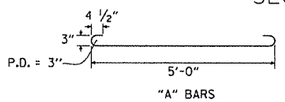


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

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

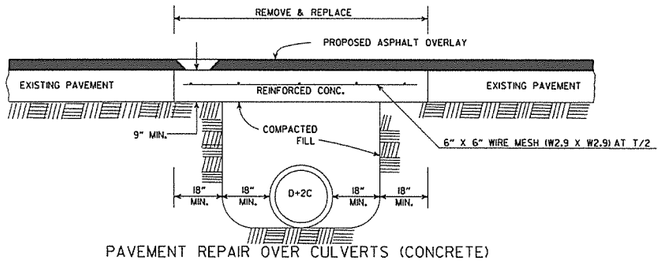
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

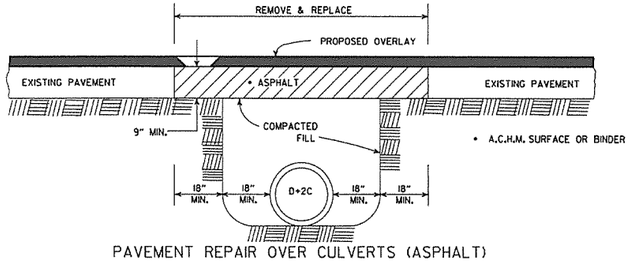
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



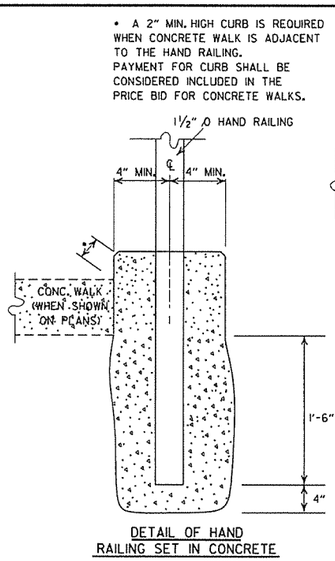
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



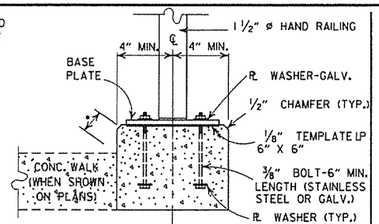
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

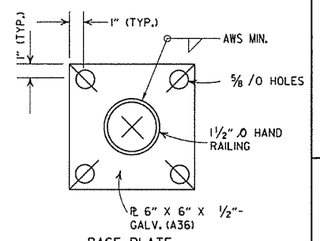
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

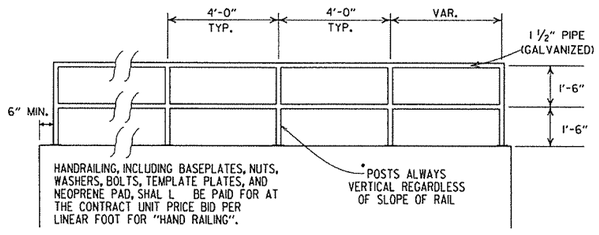


POST CONNECTION TO WALL

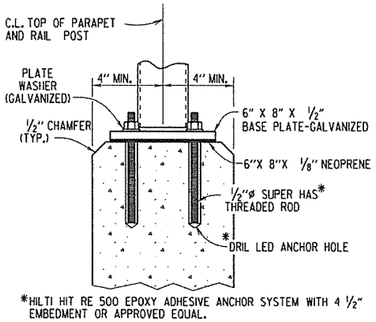


BASE PLATE

POST CONNECTION DETAILS



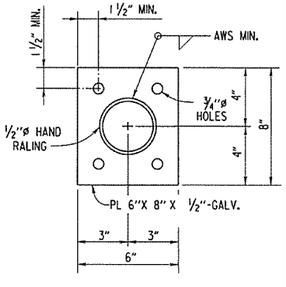
HAND RAILING SHALL CONFORM TO SECTION 633.



*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.

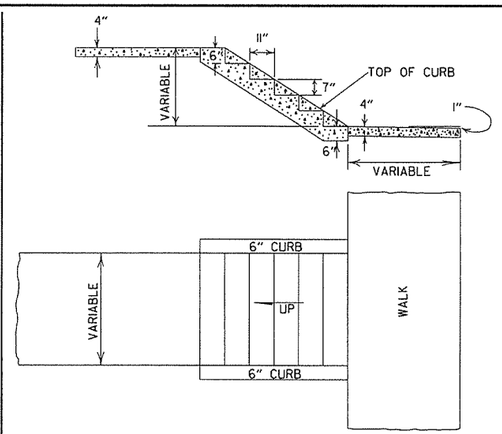
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



DETAILS OF CONCRETE STEPS & WALKS

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.

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

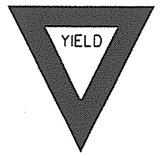
STANDARD DRAWING SI-1

R1-1



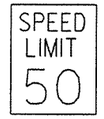
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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



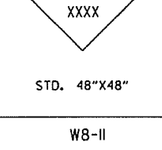
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



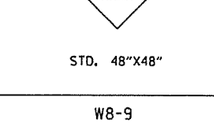
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



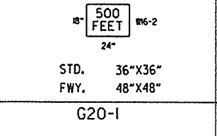
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



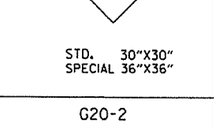
48"X30"

R11-3A



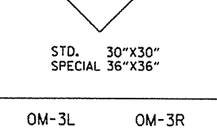
60"X30"

R11-4



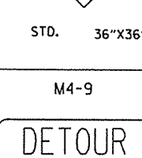
60"X30"

RSP-1



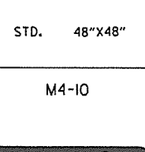
48"X30"

W1-1



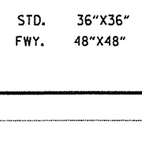
STD. 36"X36"
FWY. 48"X48"

W1-2



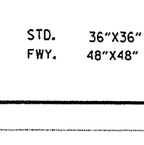
STD. 36"X36"
FWY. 48"X48"

W1-3



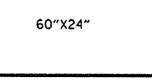
STD. 48"X48"

W1-4



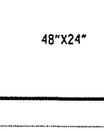
STD. 48"X48"

W1-6



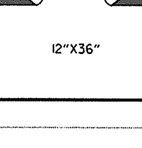
STD. 48"X24"
SPECIAL 60"X30"

W1-8



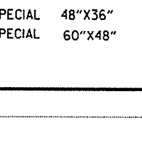
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



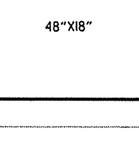
STD. 36"X36"
SPECIAL 48"X48"

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



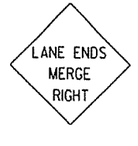
EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



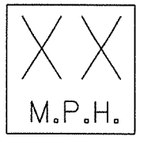
EXPWY. 36"X36"
FWY. 48"X48"

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



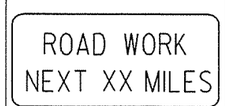
STD. 36"X36"
FWY. 48"X48"

W8-9



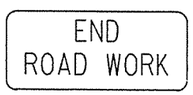
STD. 36"X36"
FWY. 48"X48"

G20-1



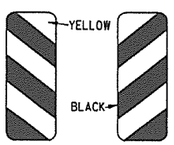
60"X24"

G20-2



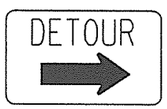
48"X24"

OM-3L OM-3R



12"X36"

M4-9



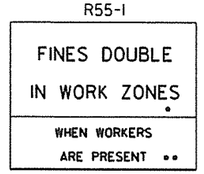
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

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.

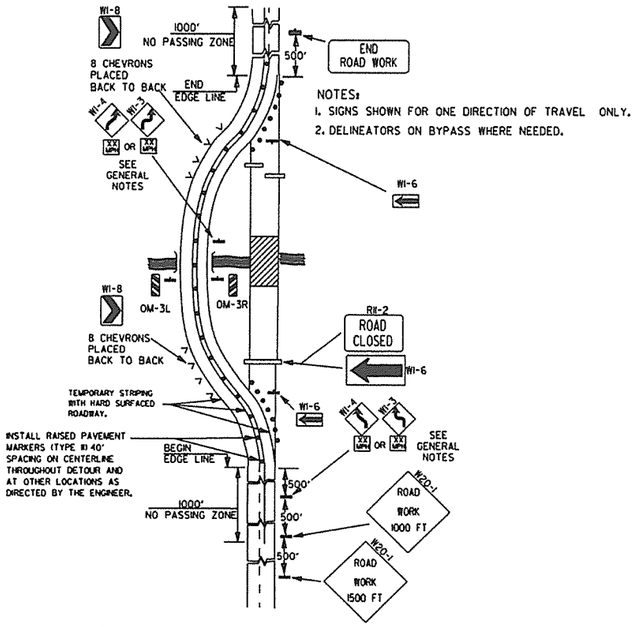
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY 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	
8-15-78	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

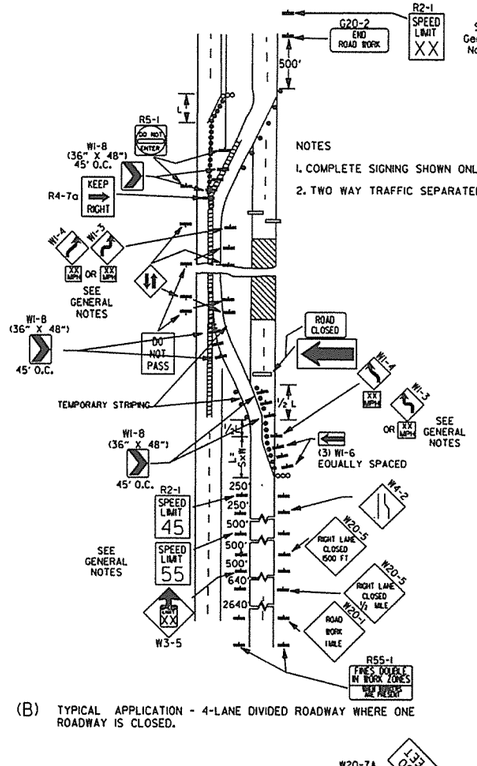
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



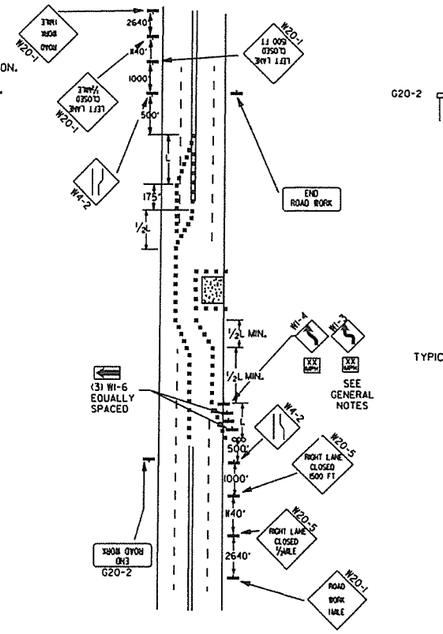
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

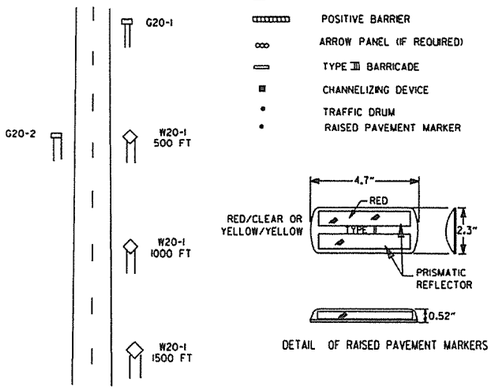


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

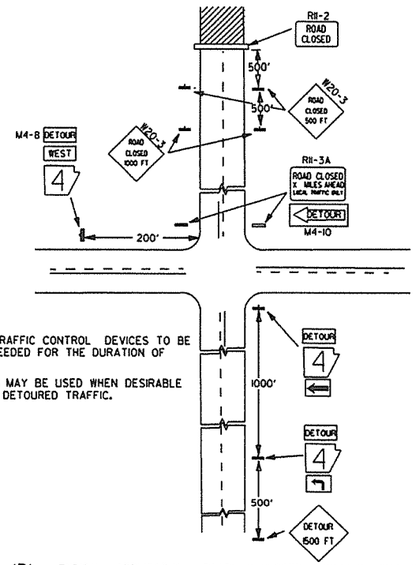
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ 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.

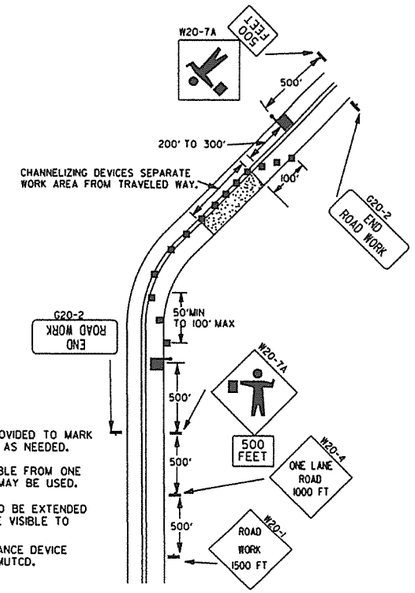
GENERAL NOTES:

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.



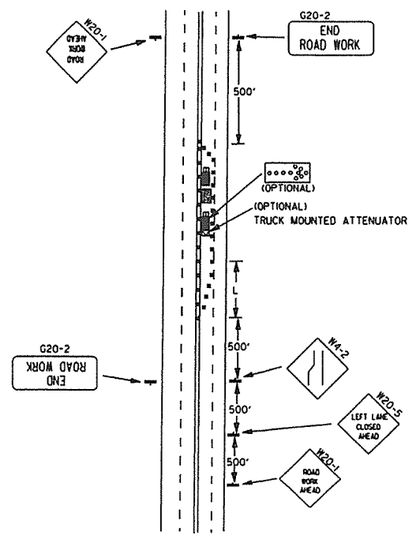
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



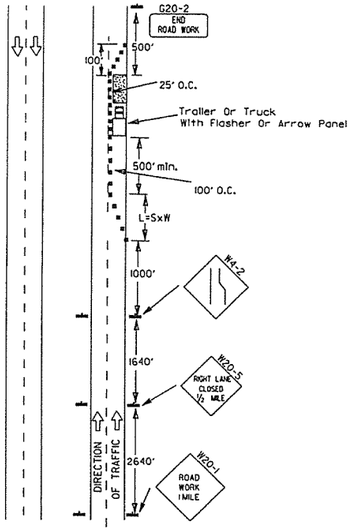
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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	
3-11-10	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	

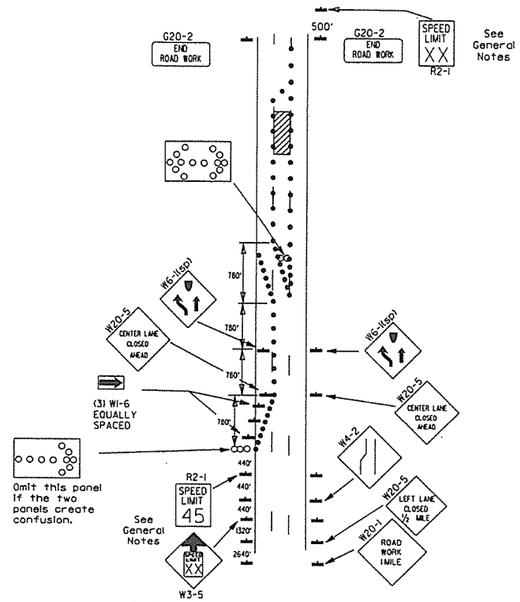
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

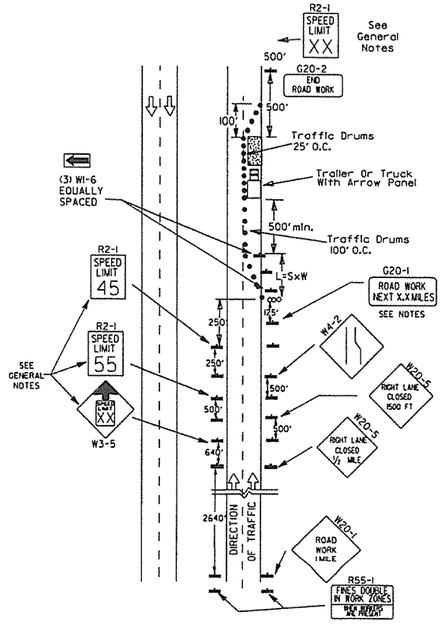
STANDARD DRAWING TC-2



(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.



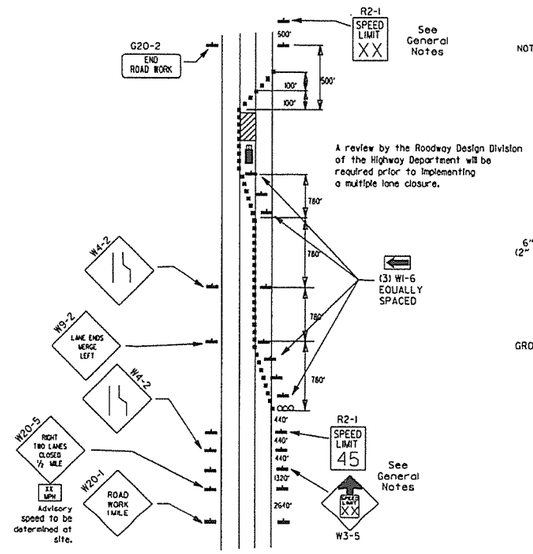
(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

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

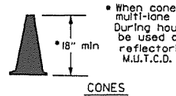
GENERAL NOTES:

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



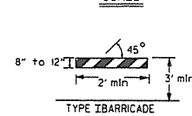
(D) Typical application - closing multiple lanes of a multilane highway.

Channelizing devices

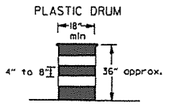


CONES

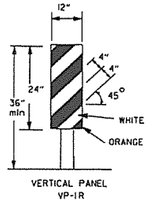
- When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.



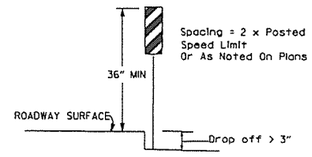
PLASTIC DRUM



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



VERTICAL PANEL PLACEMENT



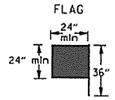
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

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

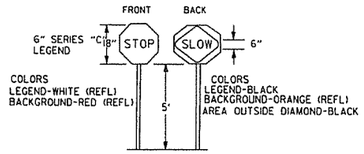
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

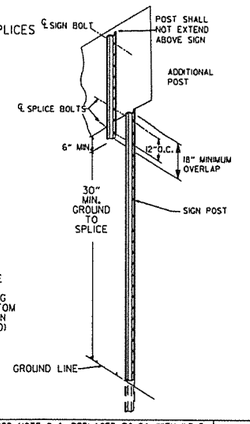


Flag shall be of good grade red material

STOP SLOW PADDLE



DETAIL OF SPLICES



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

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

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

DATE	REVISION	FILMED
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	

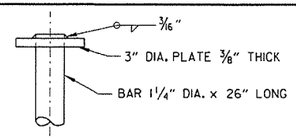
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

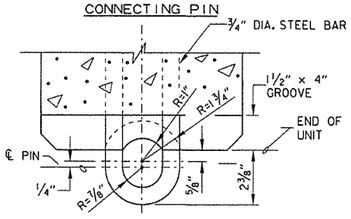
STANDARD DRAWING TC-3

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'-6", 1" MIN. CLEAR TO BAR, 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 9 1/2", 2'-1 3/8", 4 3/8"

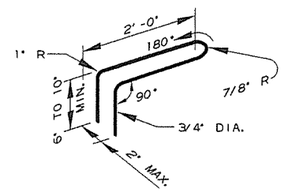


CONNECTING PIN

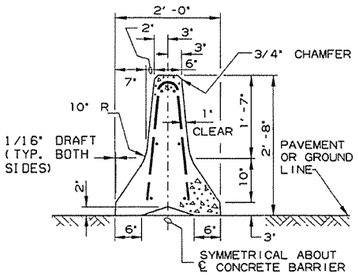


SECTION E-E

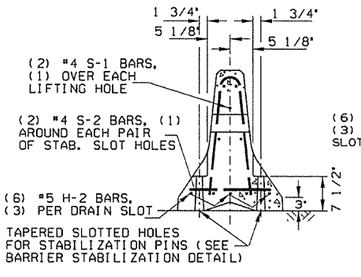
CONNECTION DETAILS



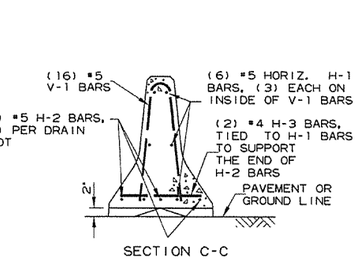
CONNECTION LOOP



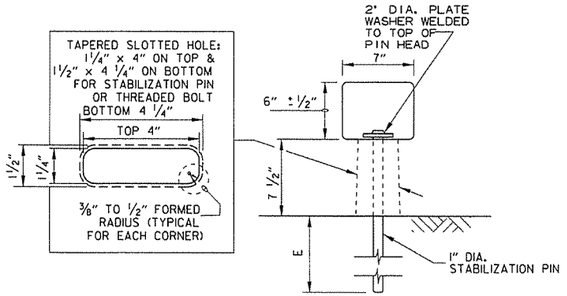
SECTION A-A



SECTION B-B



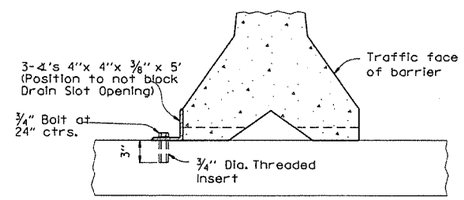
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

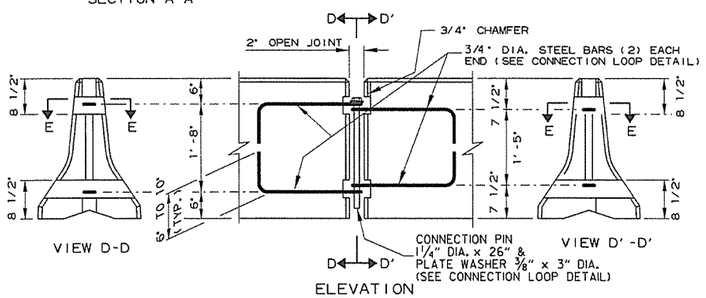
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

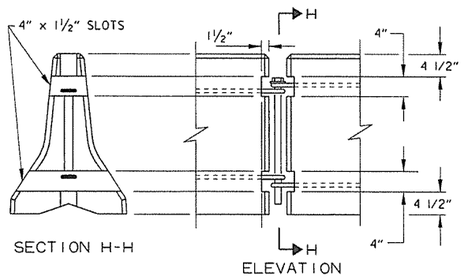
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

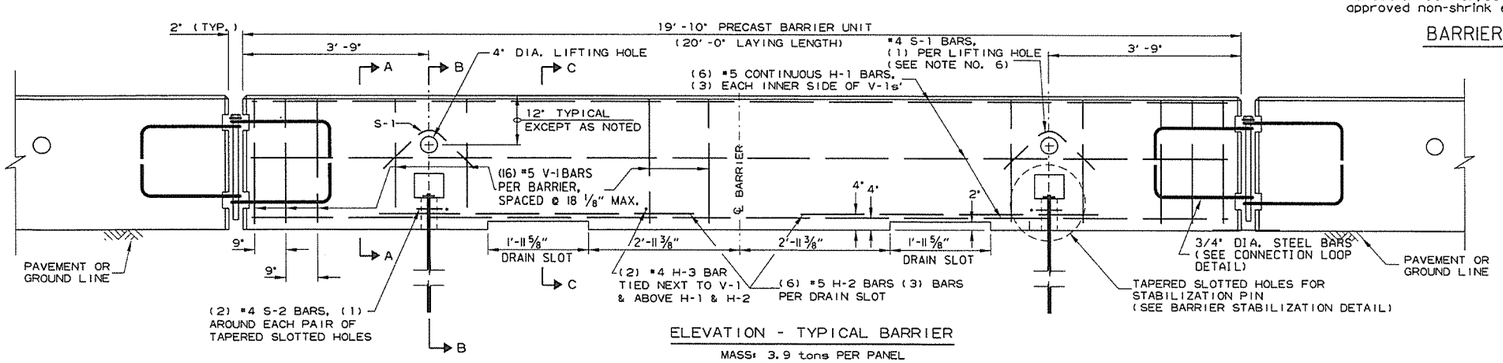
ELEVATION



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.

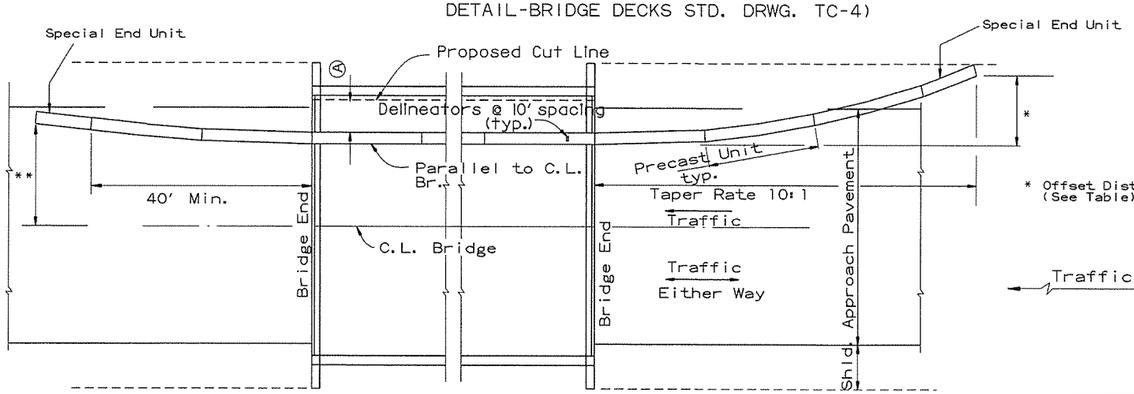
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

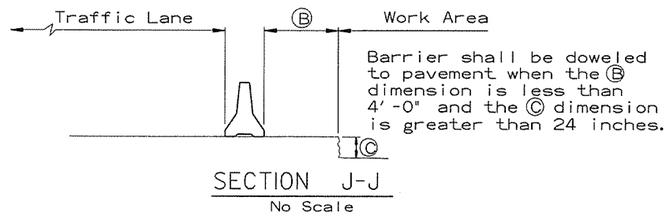


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

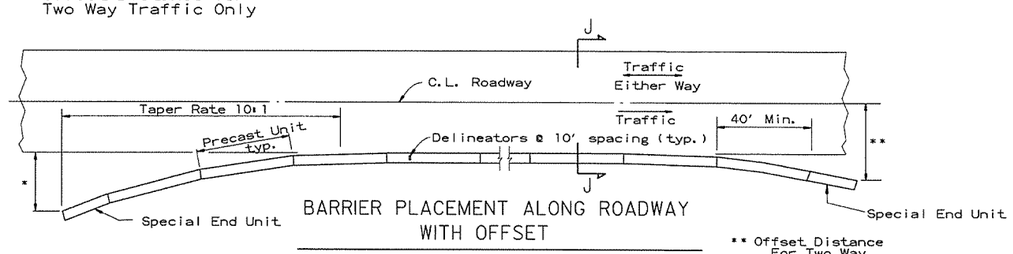
* Offset Distance (See Table)



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

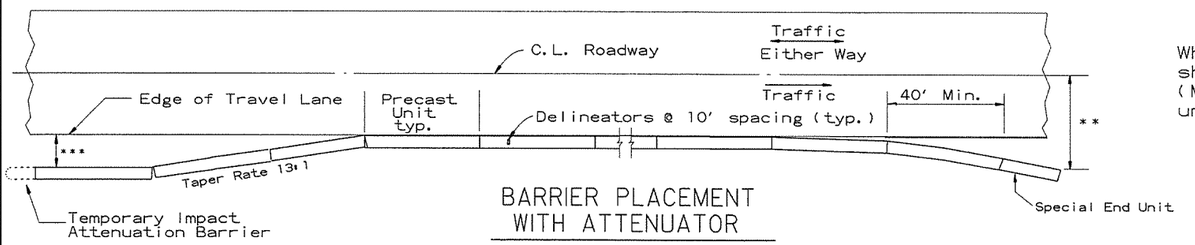
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

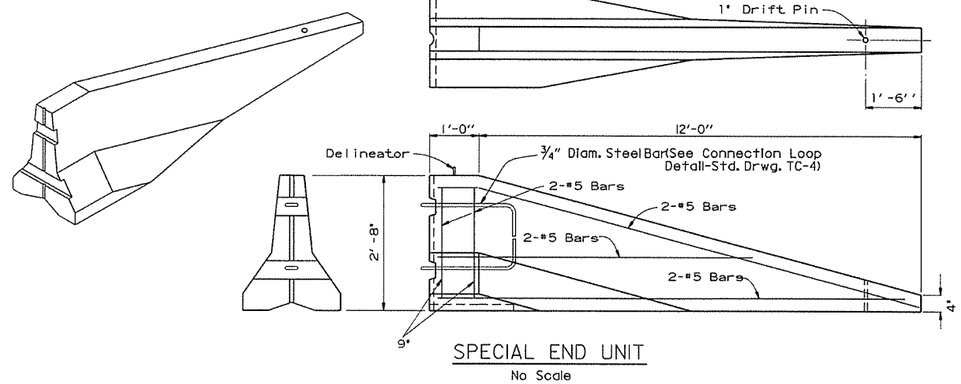


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

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

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

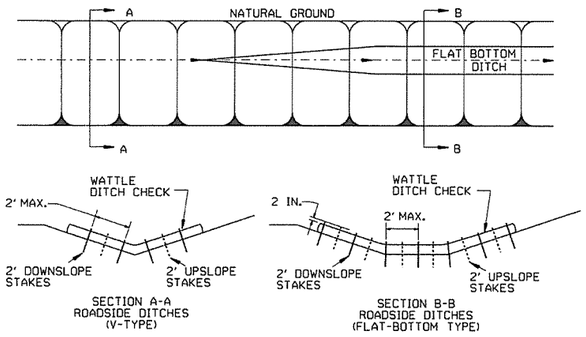
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

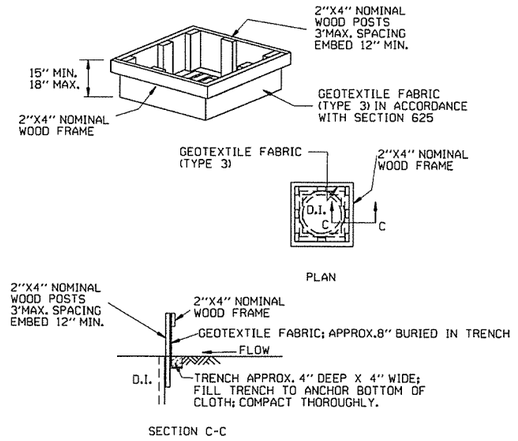
STANDARD DRAWING TC-5

GENERAL NOTES

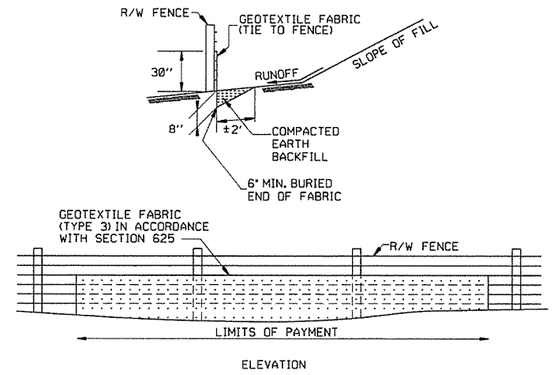
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

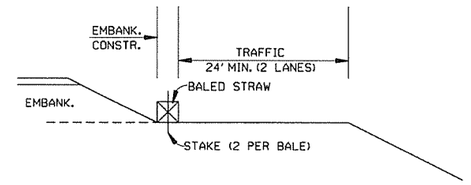
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

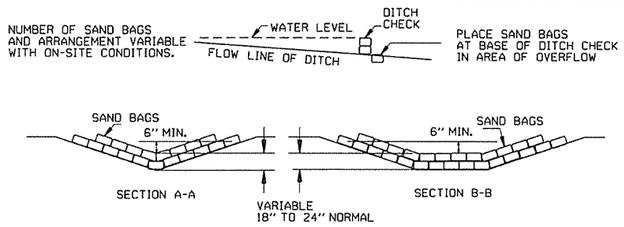
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

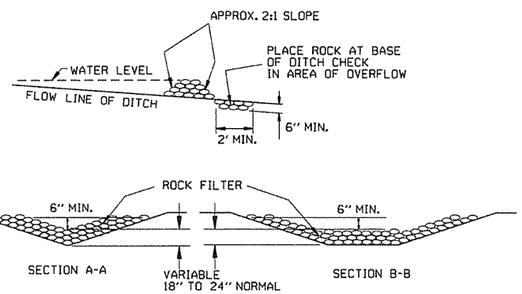
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



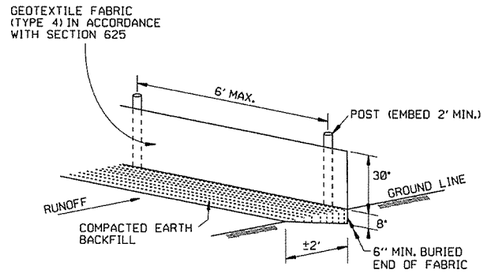
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

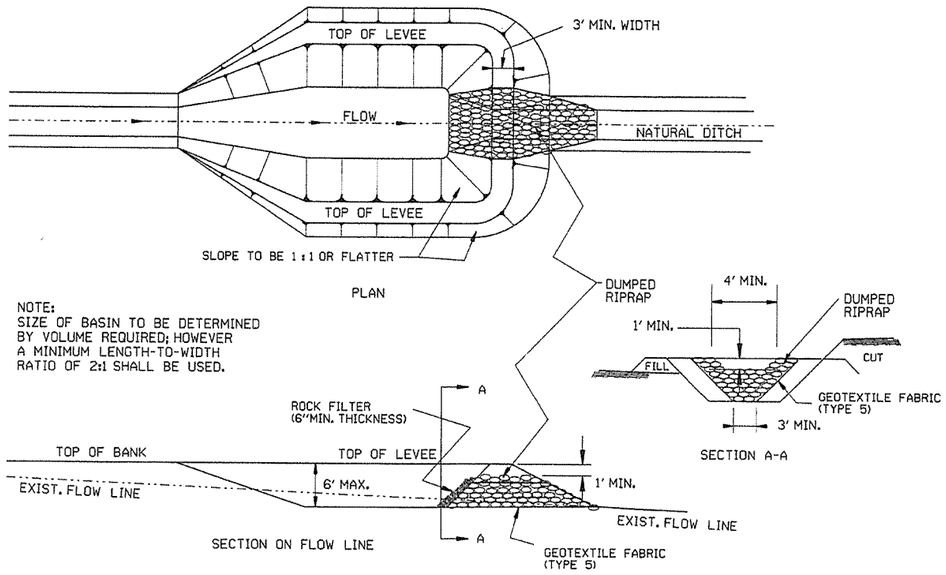
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

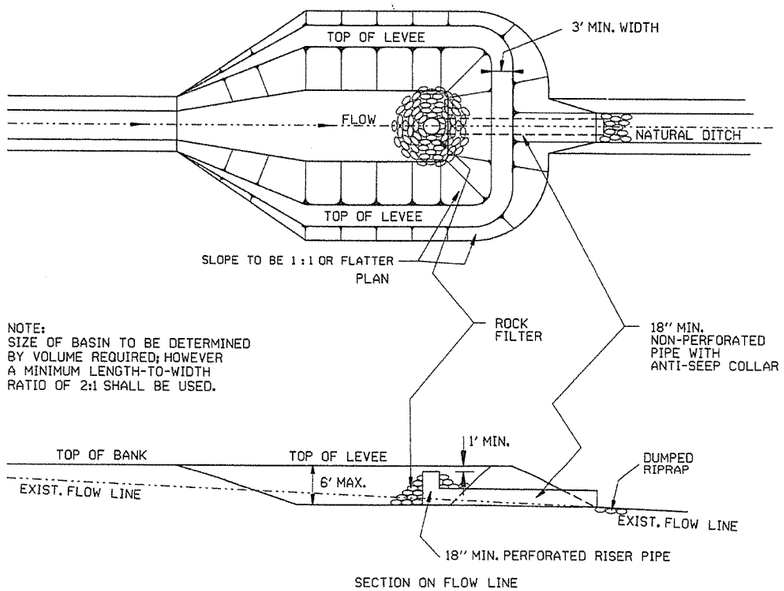
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

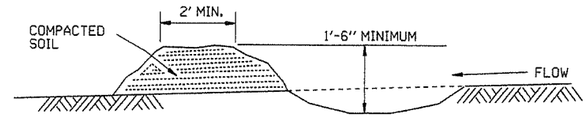
STANDARD DRAWING TEC-1



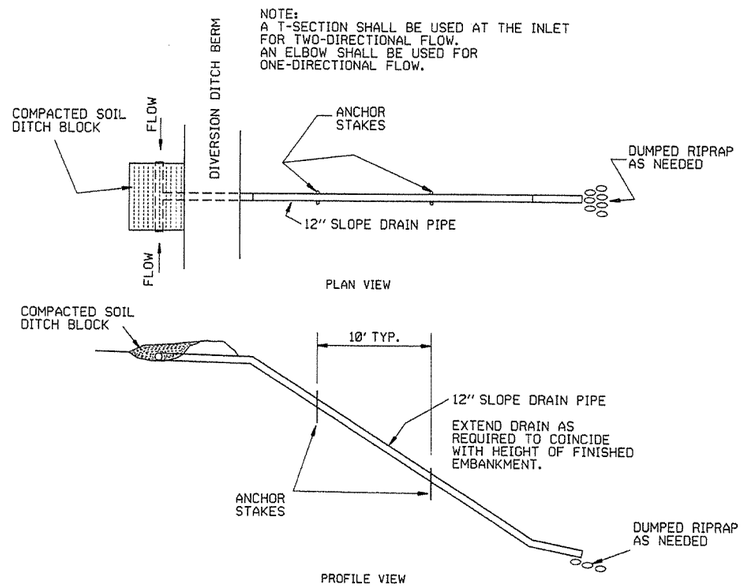
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



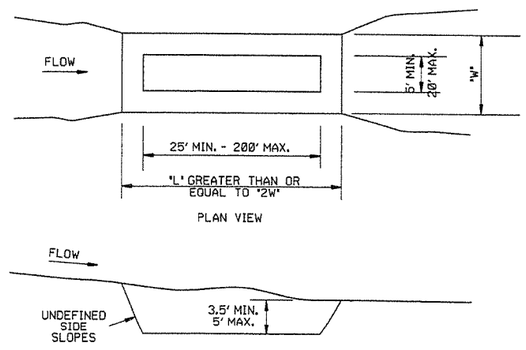
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

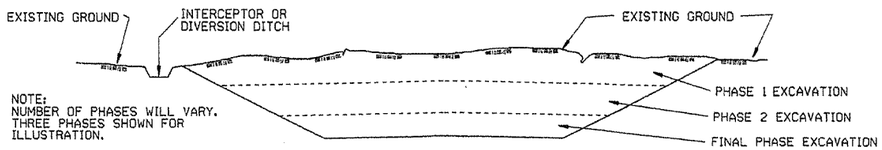
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



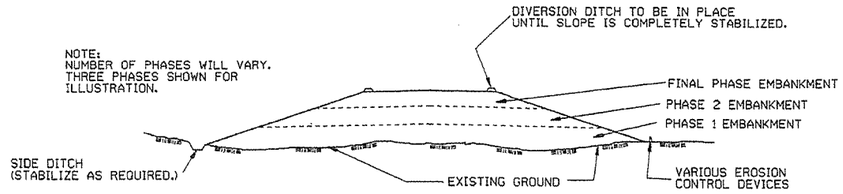
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

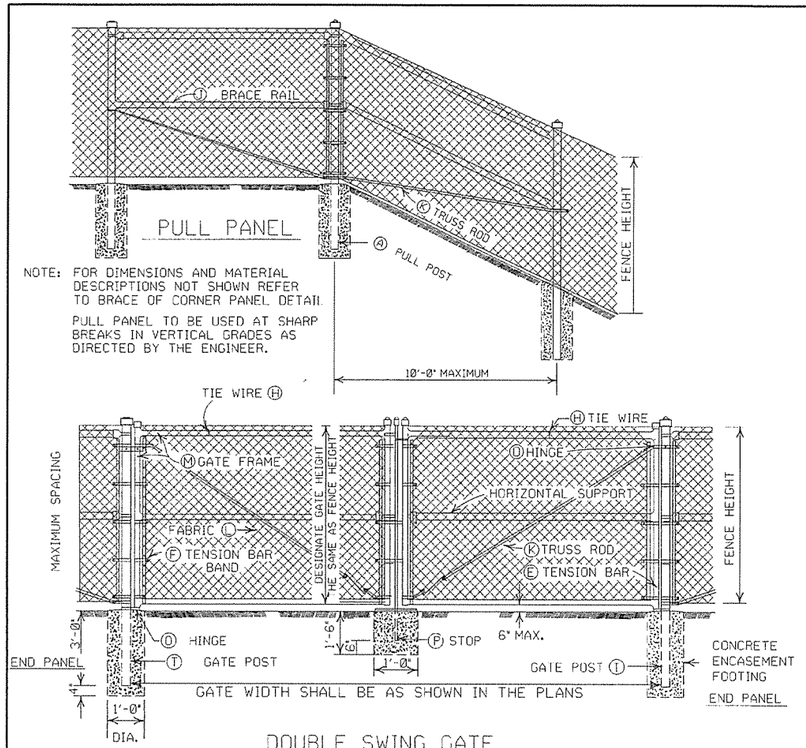
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

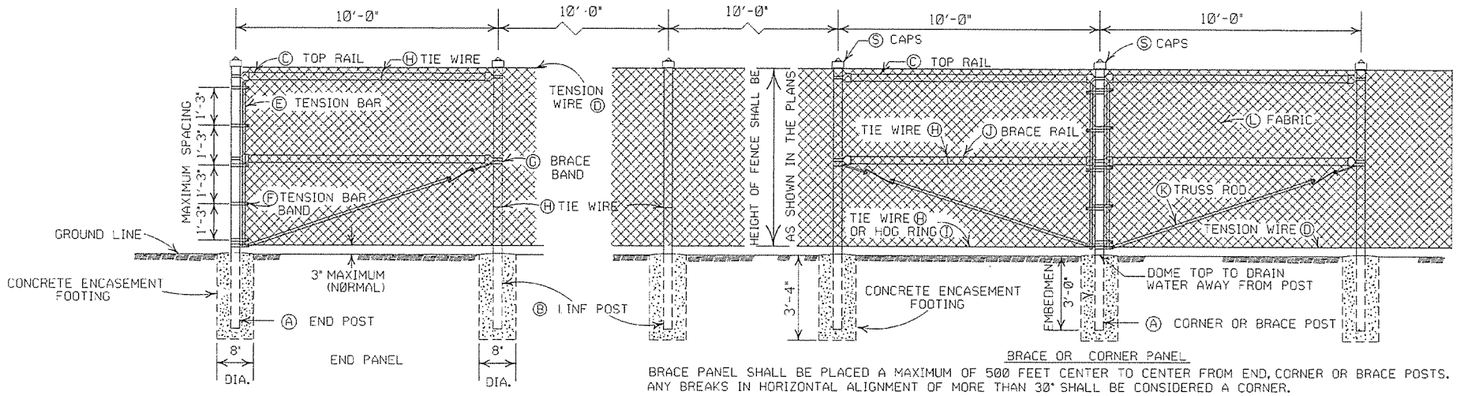
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

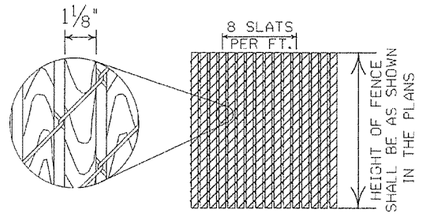
STANDARD DRAWING TEC-3

stdtec3.dgn





BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.								

HEIGHT OF FENCE FABRIC	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	MIN. OF ¾" X 0.074	⅝"X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.					

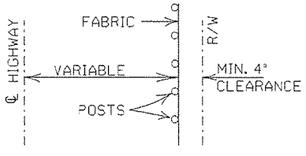
HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK -ING AND/OR TWIST -ING
OVER 6' TO 12' INCL.								

HEIGHT OF FENCE FABRIC	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3' O.D.	4" O.D.
OVER 6' TO 12' INCL.						4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS.
9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.122	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

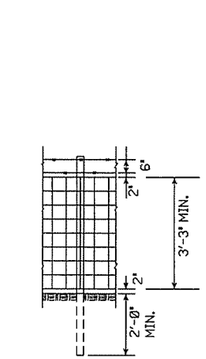
TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91 8-15-91
11-30-89	DELETED CLASS CONCRETE	11 30 89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

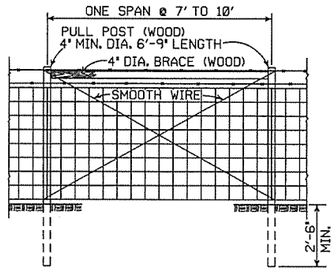
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

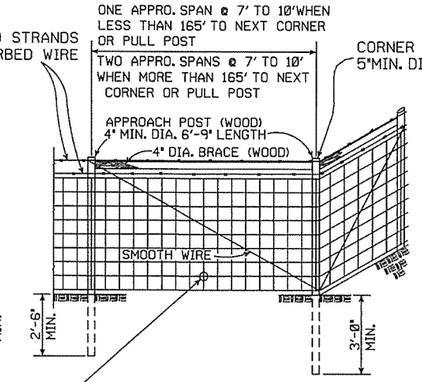
STANDARD DRAWING WF-3

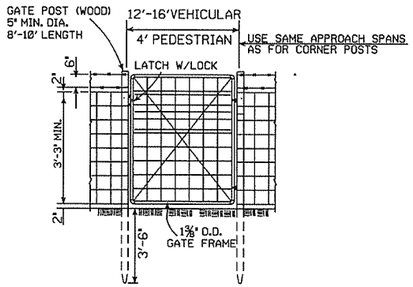


LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"



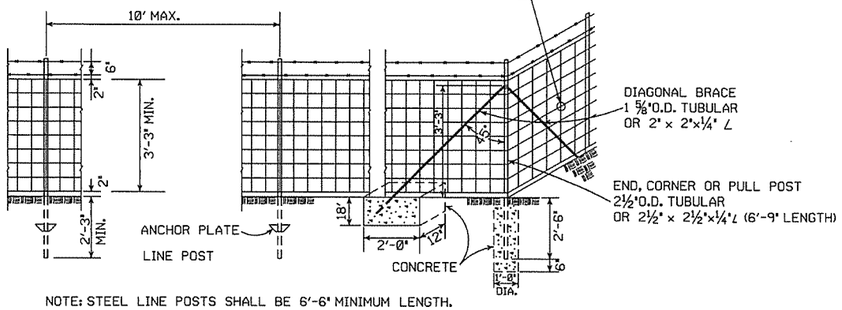
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'



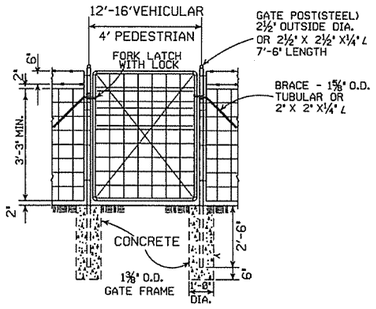


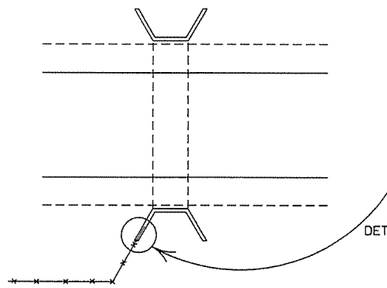
TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED

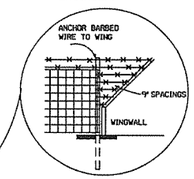


NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.





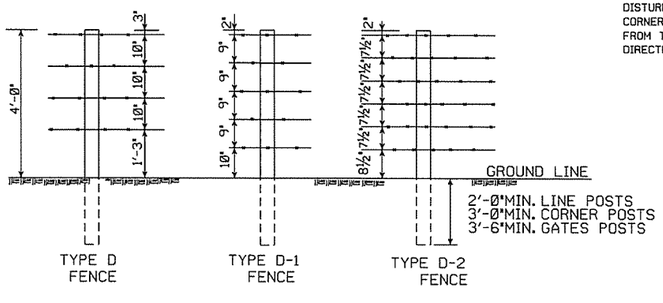
NOTE: USE ⅜" X 1½" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



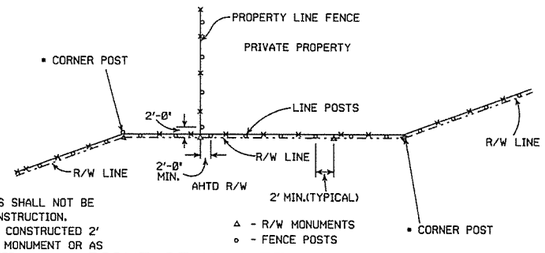
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

TYPE C FENCE (STEEL POSTS)

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

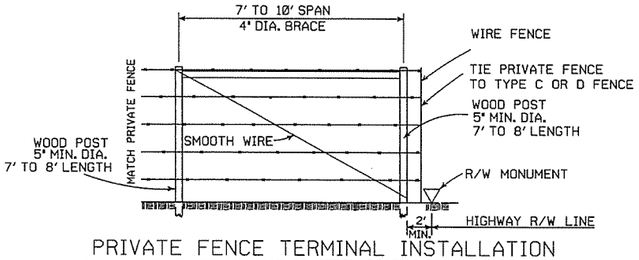


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



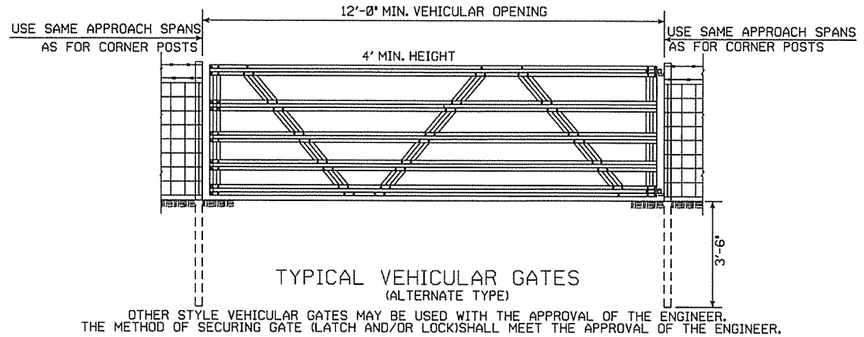
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

GENERAL NOTES:

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

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

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

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

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

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

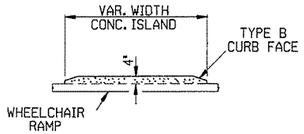
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

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

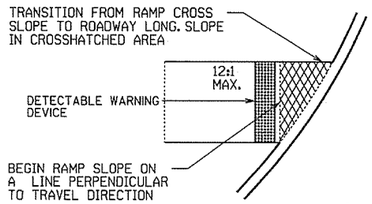
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4



CONCRETE ISLAND DETAIL



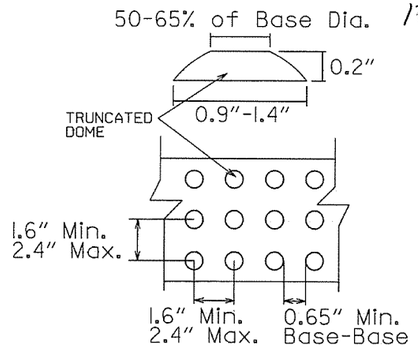
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

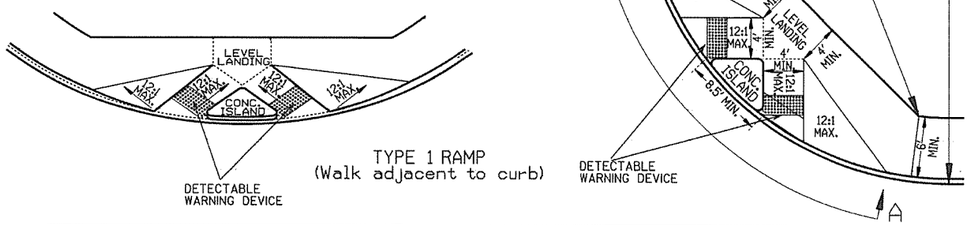
RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

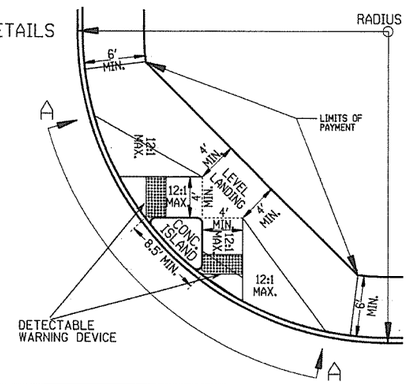
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

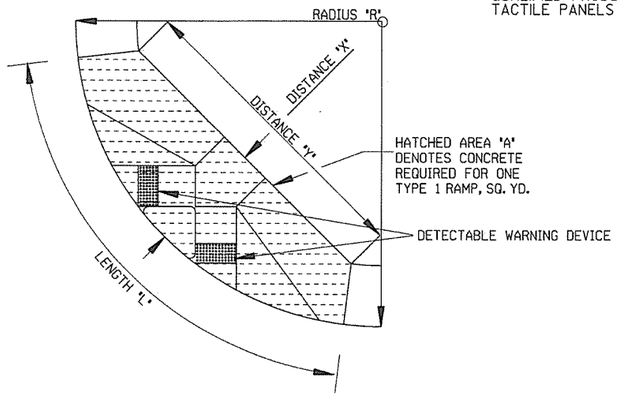


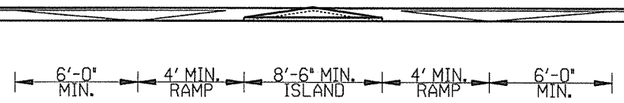
DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)



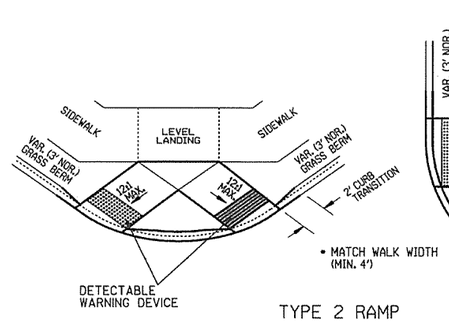




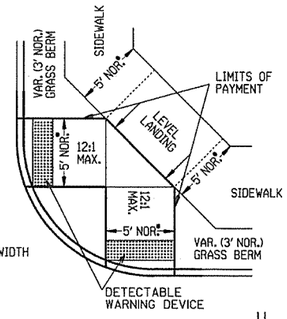
SECTION A-A

GENERAL NOTES:

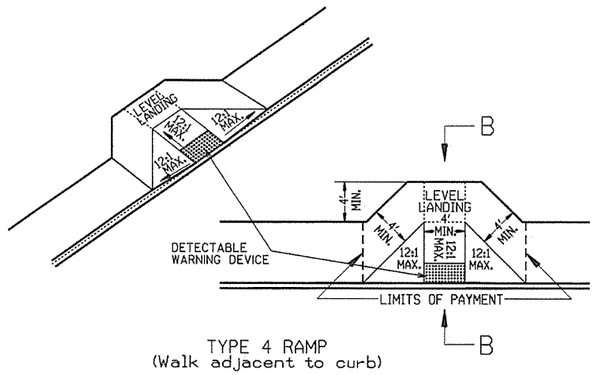
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



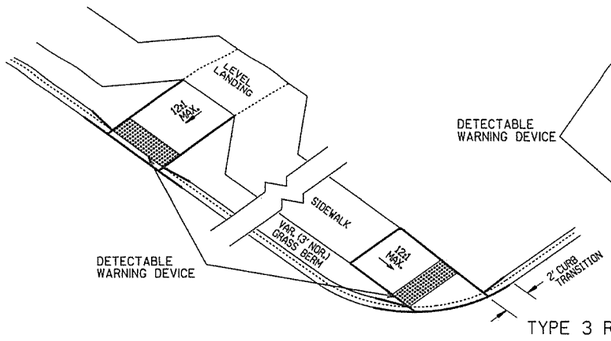
TYPE 2 RAMP



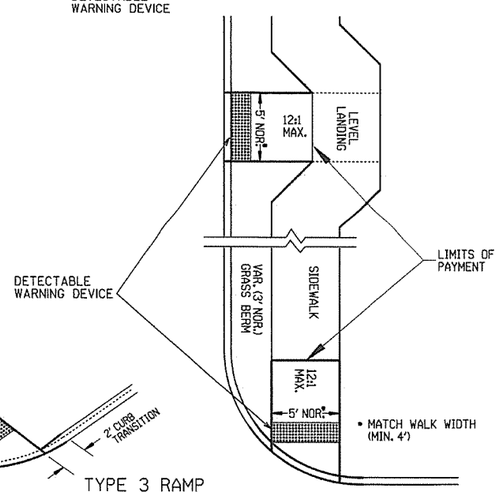
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

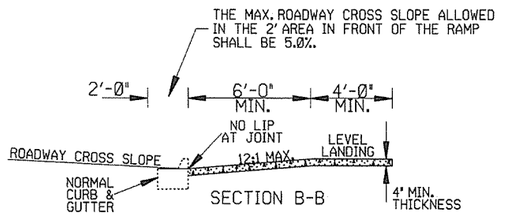


TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP





SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
8-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8:1TO12:1MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	-------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

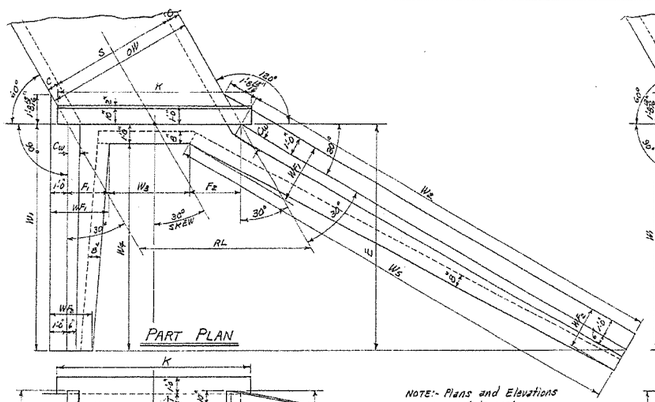
WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1

Reshot 3-8-93

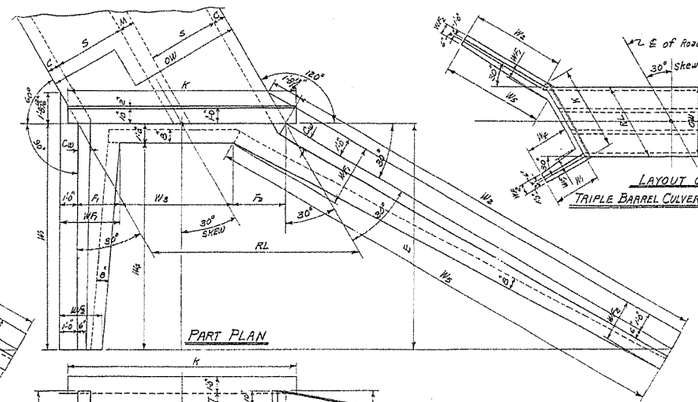
191

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			178	
JOB No.					



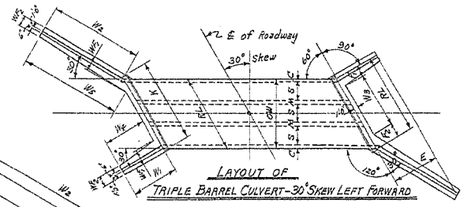
SINGLE BARREL CULVERT-30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

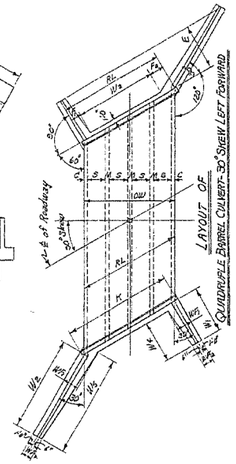


DOUBLE BARREL CULVERT-30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

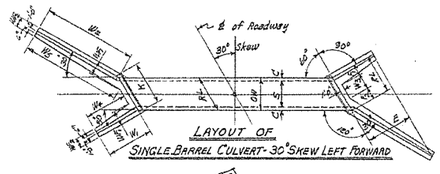


LAYOUT OF TRIPLE BARREL CULVERT-30° SKEW LEFT FORWARD

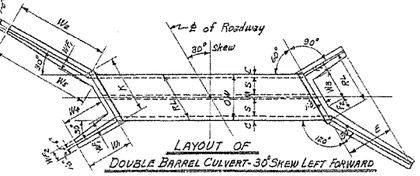


LAYOUT OF QUADRUPLE BARREL CULVERT-30° SKEW LEFT FORWARD

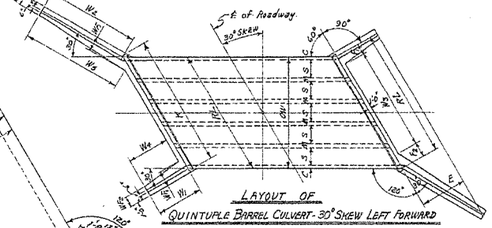
NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



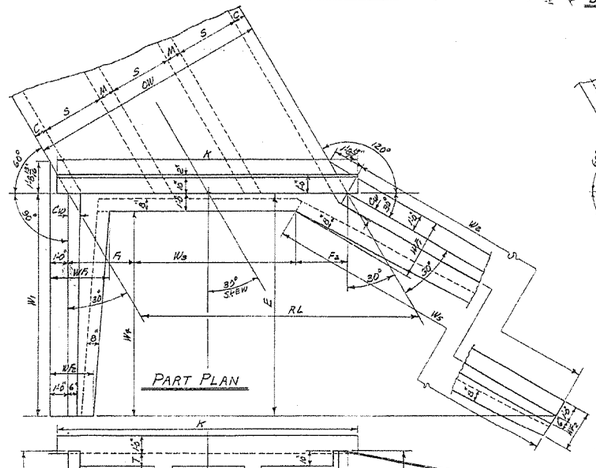
LAYOUT OF SINGLE BARREL CULVERT-30° SKEW LEFT FORWARD



LAYOUT OF DOUBLE BARREL CULVERT-30° SKEW LEFT FORWARD

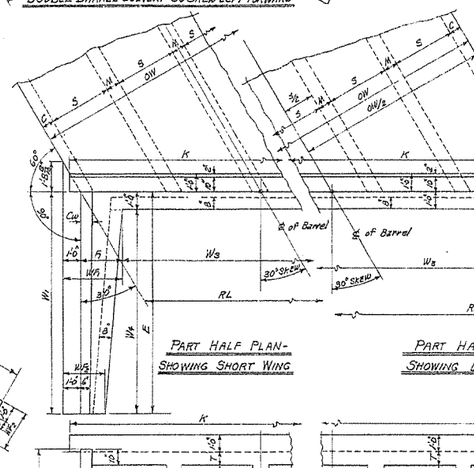


LAYOUT OF QUINTUPLE BARREL CULVERT-30° SKEW LEFT FORWARD



TRIPLE BARREL CULVERT-30° SKEW RIGHT FORWARD

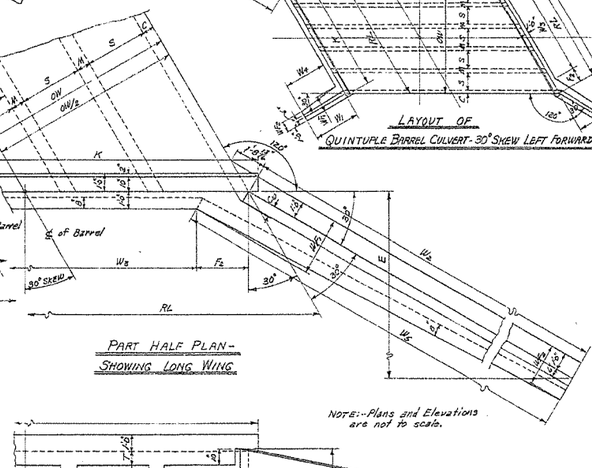
Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.



PART END ELEVATION

QUADRUPLE BARREL CULVERT-30° SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at above center.



PART END ELEVATION

QUINTUPLE BARREL CULVERT-30° SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout above.

NOTE:--Plans and Elevations are not to scale.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW × 1.1547 — $K = RL + (I' - \frac{12''}{\sin\theta})$ — $W_3 = RL - (F_1 + F_2)$

USE WITH DRAWING No.	CLEAR SPAN	CLEAR HEIGHT	SUM OF SIDE DIMENSIONS	SINGLE BARREL CULVERT				DOUBLE BARREL CULVERT				TRIPLE BARREL CULVERT				QUADRUPLE BARREL CULVERT				QUINTUPLE BARREL CULVERT			
	S	H	F_1 & F_2	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3
W-X302-1, W-X303-1 or W-X304-1. (FOR H=8'0" OR LESS)	4'	2'-3⅜"	5'-0"	5'-9⅛"	6'-11⅝"	3'-1⅝"	2'-8"	11'-2"	12'-3⅜"	8'-11⅛"	19'-2"	16'-6⅝"	17'-3⅝"	14'-3⅝"	19'-0"	21'-11⅛"	22'-1⅝"	19'-1⅝"	23'-8"	27'-4⅜"	28'-5⅛"	25'-0⅜"
		3'	2'-9⅜"	5'-0"	"	"	2'-1⅝"	9'-8"	"	"	7'-10⅜"	14'-9"	"	"	13'-3⅜"	19'-0"	"	"	16'-8"	23'-8"	"	"	20'-1⅜"
		4'	3'-3⅜"	5'-0"	"	"	1'-1⅝"	9'-8"	"	"	6'-10⅜"	14'-9"	"	"	12'-3⅜"	19'-0"	"	"	17'-8"	23'-8"	"	"	19'-2⅜"
		5'	5'-3⅜"	5'-0"	5'-9⅛"	6'-11⅝"	3'-1⅝"	9'-8"	11'-2"	12'-3⅜"	8'-11⅛"	16'-6"	16'-6⅝"	17'-3⅝"	14'-3⅝"	19'-0"	21'-11⅛"	22'-1⅝"	19'-1⅝"	23'-8"	27'-4⅜"	28'-5⅛"	25'-0⅜"
		6'	6'-3⅜"	5'-2"	5'-11⅝"	7'-1⅞" Ⓐ 0°		9'-11"	11'-5⅞"	12'-7⅛"	5'-2⅛"	14'-8"	16'-11⅝"	18'-1"	10'-8"	19'-5"	22'-5"	23'-7"	16'-1⅝"	24'-2"	27'-10⅝"	29'-0⅛"	21'-7⅜"
	5'	3'	3'-3⅜"	6'-0"	6'-11⅝"	8'-1"	3'-7⅛"	11'-8"	13'-5⅝"	14'-7½"	10'-2⅛"	17'-4"	20'-0⅛"	21'-2"	16'-9"	23'-0"	26'-6⅝"	27'-8⅛"	23'-3½"	28'-8"	33'-1½"	34'-3"	29'-10"
		4'	4'-3⅜"	6'-0"	"	"	2'-7⅛"	11'-8"	"	"	9'-2⅛"	17'-4"	"	"	15'-3"	23'-0"	"	"	22'-3½"	28'-8"	"	"	28'-10"
		5'	5'-3⅜"	6'-0"	6'-11⅝"	8'-1"	1'-7⅛"	11'-8"	13'-5⅝"	14'-7½"	8'-2⅛"	17'-4"	20'-0⅛"	21'-2"	14'-9"	23'-0"	26'-6⅝"	27'-8⅛"	21'-3½"	28'-8"	33'-1½"	34'-3"	27'-10"
		6'	6'-3⅜"	6'-2"	7'-1⅝"	8'-3⅝" Ⓐ 0°		11'-11"	13'-7⅝"	14'-11"	7'-5⅛"	17'-8"	20'-2⅜"	21'-4½"	14'-1⅛"	23'-5"	27'-0⅝"	28'-2⅛"	20'-3½"	29'-2"	33'-8½"	34'-10"	27'-5"
		7'	7'-3⅜"	6'-3"	7'-2⅝"	8'-4⅝" Ⓐ 0°		12'-1"	13'-11⅛"	15'-1¼"	6'-2⅛"	17'-11"	20'-5⅛"	21'-6½"	13'-1½"	23'-9"	27'-5¼"	28'-7"	19'-5"	29'-7"	34'-2"	35'-3½"	26'-9⅜"
	6'	3'	3'-3⅜"	7'-0"	8'-1"	9'-2⅞"	4'-3⅝"	13'-8"	15'-9⅜"	16'-11⅛"	12'-6⅝"	20'-1"	23'-5⅛"	24'-7½"	20'-2⅝"	27'-0"	31'-2⅛"	32'-4"	27'-1"	33'-8"	38'-10⅝"	40'-0⅛"	35'-0⅝"
		4'	4'-3⅜"	7'-0"	"	"	3'-1⅝"	13'-8"	"	"	11'-6⅝"	20'-1"	"	"	19'-2⅝"	27'-0"	"	"	26'-1"	33'-8"	"	"	34'-10"
		5'	5'-3⅜"	7'-0"	8'-1"	9'-2⅞"	2'-9⅜"	13'-8"	15'-9⅜"	16'-11⅛"	10'-6⅝"	20'-1"	23'-5⅛"	24'-7½"	18'-2⅝"	27'-0"	31'-2⅛"	32'-4"	25'-1"	33'-8"	38'-10⅝"	40'-0⅛"	33'-7⅛"
		6'	6'-3⅜"	7'-2"	8'-3⅝"	9'-5⅛"	2'-1⅜"	13'-11"	16'-1⅛"	17'-2⅝"	9'-9⅛"	20'-8"	23'-10⅜"	25'-0⅛"	17'-1⅛"	27'-5"	31'-7⅛"	32'-9⅝"	23'-10½"	34'-2"	39'-5½"	40'-7⅛"	33'-0½"
		7'	7'-3⅜"	7'-3"	8'-4⅝"	9'-7½"	0'-7⅛"	14'-1"	16'-3⅜"	17'-5"	8'-6"	20'-11"	24'-1⅛"	25'-3⅜"	16'-4½"	27'-9"	32'-0⅛"	33'-2⅝"	22'-8½"	34'-7"	39'-10½"	41'-1"	32'-2"
		8'	8'-3⅜"	7'-4"	8'-5⅝"	9'-7½" Ⓐ 0°		14'-2"	16'-4⅝"	17'-6¼"	7'-1"	21'-2"	24'-3"	25'-5⅝"	16'-1⅛"	27'-10"	32'-1⅝"	33'-3⅝"	22'-1⅛"	34'-8"	39'-11⅝"	41'-2⅛"	30'-9⅝"
	7'	4'	4'-3⅜"	8'-0"	9'-2⅝"	10'-5⅜"	4'-1⅝"	15'-8"	16'-11⅛"	18'-5"	13'-3⅜"	23'-2"	26'-4⅛"	28'-1⅛"	22'-8"	31'-0"	35'-3½"	36'-11⅛"	31'-4"	38'-8"	44'-0⅝"	45'-3"	40'-4½"
		5'	5'-3⅜"	8'-0"	9'-2⅝"	10'-5⅜"	3'-1⅝"	15'-8"	16'-11⅛"	18'-5"	12'-3⅜"	23'-2"	26'-4⅛"	28'-1⅛"	21'-8"	31'-0"	35'-3½"	36'-11⅛"	30'-4½"	38'-8"	44'-0⅝"	45'-3"	39'-4½"
		6'	6'-3⅜"	8'-2"	9'-5⅛"	10'-7"	3'-2"	15'-11"	18'-1½"	19'-4½"	12'-1⅛"	23'-8"	27'-1"	28'-10⅝"	21'-0⅝"	31'-5"	36'-3⅝"	37'-10⅛"	30'-0"	39'-2"	45'-0⅜"	46'-4⅛"	38'-11⅝"
		7'	7'-3⅜"	8'-3"	9'-6⅛"	10'-8⅝"	1'-0"	16'-1"	18'-3½"	19'-6½"	10'-9⅛"	23'-11"	27'-3⅜"	28'-10⅝"	19'-10⅛"	31'-9"	36'-6⅜"	37'-10⅝"	27'-6"	39'-5"	45'-3⅝"	46'-6⅛"	37'-11⅝"
		8'	8'-3⅜"	8'-3"	9'-7½"	10'-9⅝"	0'-5⅛"	16'-2"	18'-5"	19'-8⅝"	9'-4⅝"	24'-0"	27'-5"	28'-10⅝"	18'-5⅛"	31'-10"	36'-7⅝"	37'-11⅝"	25'-4"	39'-6"	45'-5⅜"	46'-7⅝"	36'-6⅝"
	8'	4'	4'-3⅜"	9'-0"	10'-4⅝"	11'-6⅝"	4'-1½"	17'-6"	20'-0⅝"	21'-4½"	14'-1⅝"	26'-4"	30'-0⅝"	31'-4⅝"	24'-7⅝"	35'-0"	40'-1"	41'-6⅛"	34'-1⅝"	43'-8"	50'-0⅝"	51'-2"	44'-1⅞"
		5'	5'-3⅜"	9'-2"	10'-5"	11'-8⅜"	3'-1⅝"	17'-11"	20'-3⅜"	21'-10"	13'-5"	26'-8"	30'-3⅛"	31'-11⅜"	23'-6⅜"	35'-5"	40'-5⅜"	42'-0⅛"	33'-2½"	43'-11"	50'-3⅜"	51'-5"	43'-4⅜"
		6'	6'-3⅜"	9'-2"	10'-7"	11'-8⅜"	4'-3⅜"	17'-11"	20'-3⅜"	21'-10"	14'-5"	26'-8"	30'-3⅛"	31'-11⅜"	24'-6⅜"	35'-5"	40'-5⅜"	42'-0⅛"	34'-2½"	43'-11"	50'-3⅜"	51'-5"	43'-4⅜"
		7'	7'-3⅜"	9'-3"	10'-8⅝"	11'-10"	2'-1"	18'-1"	20'-5⅞"	22'-2½"	13'-1⅛"	26'-11"	31'-1"	32'-3⅜"	23'-3⅜"	35'-9"	41'-3⅜"	42'-5⅝"	32'-7½"	44'-4"	51'-5½"	52'-7½"	43'-3⅝"
		8'	8'-3⅜"	9'-4"	10'-9⅜"	11'-11⅛"	1'-4⅝"	18'-2"	20'-11⅞"	22'-7½"	11'-8⅝"	27'-0"	31'-2⅝"	32'-4"	21'-11"	35'-10"	41'-5⅛"	42'-6⅝"	31'-1⅝"	44'-5"	51'-7"	52'-8½"	42'-3⅝"
	9'	5'	5'-3⅜"	10'-2"	11'-8⅜"	12'-10⅝"	6'-5⅝"	19'-11"	23'-0"	24'-7½"	17'-8⅝"	29'-8"	34'-3⅝"	35'-5"	28'-11⅝"	39'-5"	45'-5½"	46'-8"	40'-3"	49'-2"	56'-9⅝"	57'-11⅝"	51'-6"
		6'	6'-3⅜"	10'-3"	11'-10"	13'-0"	5'-6⅝"	20'-1"	23'-2⅛"	24'-10⅝"	16'-11"	29'-11"	34'-6⅝"	35'-8½"	27'-11⅝"	39'-10"	45'-9⅝"	47'-0⅛"	38'-7½"	49'-5"	57'-1⅜"	58'-3½"	50'-1⅛"
		7'	7'-3⅜"	10'-3"	11'-10"	13'-0"	4'-6⅜"	20'-1"	23'-2⅛"	24'-10⅝"	15'-5"	29'-11"	34'-6⅝"	35'-8½"	26'-5⅜"	39'-10"	45'-9⅝"	47'-0⅛"	36'-1½"	49'-5"	57'-1⅜"	58'-5"	49'-5⅝"
		8'	8'-3⅜"	10'-4"	11'-11⅝"	13'-1"	3'-4"	20'-2"	23'-3⅝"	24'-11⅜"	14'-0⅝"	30'-0"	34'-7⅝"	35'-9⅝"	25'-4⅝"	39'-10"	46'-0"	47'-1⅜"	36'-0⅝"	49'-6"	57'-2⅝"	58'-6"	49'-1"
	10'	5'	5'-3⅜"	11'-2"	12'-10⅝"	14'-0⅝"	7'-5⅛"	21'-11"	25'-3⅜"	26'-9⅝"	20'-0⅛"	32'-6"	37'-6⅝"	38'-10½"	32'-5⅛"	43'-5"	50'-1⅝"	51'-3⅝"	44'-1⅛"	54'-2"	62'-6⅛"	63'-8½"	57'-1⅜"
		6'	6'-3⅜"	11'-3"	12'-11⅝"	14'-1⅝"	6'-6⅝"	22'-1"	25'-4"	26'-10⅜"	19'-2⅝"	32'-11"	38'-0⅛"	39'-2"	31'-0"	43'-9"	50'-6⅛"	51'-8"	44'-2"	54'-7"	63'-0⅝"	64'-2⅞"	56'-9"
		7'	7'-3⅜"	11'-3"	12'-11⅝"	14'-1⅝"	5'-5⅜"	22'-1"	25'-4"	26'-10⅜"	17'-8⅝"	32'-11"	38'-0⅛"	39'-2"	29'-10"	43'-9"	50'-6⅛"	51'-8"	42'-10"	54'-7"	63'-0⅝"	64'-2⅞"	55'-8"
		8'	8'-3⅜"	11'-4"	13'-1"	14'-3"	3'-10⅝"	22'-2"	25'-5⅛"	26'-9"	16'-4"	33'-0"	38'-1⅛"	39'-3"	28'-10"	43'-10"	50'-7⅜"	51'-9⅝"	41'-6½"	54'-8"	63'-1⅜"	64'-3⅝"	53'-10⅛"
	11'	6'	6'-3⅜"	12'-4"	14'-0⅝"	15'-0⅝"	7'-11⅝"	24'-5"	27'-10⅜"	29'-0½"	21'-7⅝"	36'-0"	41'-6⅛"	42'-8⅝"	35'-3⅝"	47'-10"	55'-2⅛"	56'-4⅝"	48'-0⅛"	——	——	——	——
		7'	7'-3⅜"	12'-5"	"	"	6'-5⅜"	24'-6"	"	"	20'-1⅞"	36'-0"	"	"	32'-9⅝"	47'-10"	"	"	46'-8"	——	——	——	——
		8'	8'-3⅜"	12'-6"	"	"	4'-11⅛"	24'-6"	"	"	18'-7⅝"	36'-0"	"	"	30'-9⅝"	47'-10"	"	"	45'-8"	——	——	——	——
	12'	6'	6'-3⅜"	13'-4"	15'-2⅝"	16'-4⅝"	9'-1½"	26'-2"	30'-2⅝"	31'-6½"	23'-1½"	39'-0"	45'-0⅝"	46'-2⅝"	38'-0⅝"	51'-10"	59'-10⅛"	61'-0"	53'-7"	——	——	——	——
		7'	7'-3⅜"	13'-4"	"	"	7'-7½"	26'-6"	"	"	22'-5⅝"	39'-0"	"	"	37'-3⅝"	51'-10"	"	"	52'-1"	——	——	——	——
		8'	8'-3⅜"	13'-5"	"	"	6'-1½"	26'-8"	"	"	20'-11½"	39'-0"	"	"	35'-3⅝"	51'-10"	"	"	50'-7"	——	——	——	——
W-X302-2, W-X303-2 or W-X304-2. (FOR H=9'0" & OVER)	7'	9'	10'-3⅜"	8'-6"	9'-9⅜"	10'-11⅝"	0' 0" Ⓐ	16'-5"	18'-11½"	20'-1½"	8'-2⅝"	28'-9"	28'-1⅝"	29'-3"	17'-9"	32'-3"	37'-2⅜"	38'-4⅝"	26'-5⅝"	40'-2"	46'-6⅝"	47'-6⅝"	36'-7⅜"
	8'	9'	10'-3⅜"	9'-6"	10'-11⅝"	12'-1⅝"	0'-2⅝"	18'-5"	21'-3⅛"	22'-6"	10'-6"	27'-9"	31'-6⅝"	32'-8½"	20'-9⅜"	36'-3"	41'-10⅝"	43'-0⅛"	31'-1"	45'-2"	52'-1⅜"	53'-3⅝"	41'-6⅝"
		10'	12'-3⅜"	9'-8"	11'-2"	12'-3⅜" Ⓐ 0°		18'-8"	21'-6⅝"	22'-8½"	9'-3⅜"	27'-8"	31'-11⅜"	33'-1⅛"	19'-0⅝"	36'-8"	42'-2⅝"	43'-4"	30'-0⅜"	45'-8"	52'-8⅝"	53'-10⅝"	40'-5⅝"
	9'	9'	10'-3⅜"	10'-6"	12'-1⅛"	13'-3⅜"	1'-4⅛"	20'-5"	23'-6⅛"	24'-10⅝"	12'-3⅜"	30'-9"	35'-0⅝"	36'-2⅝"	24'-3"	40'-3"	46'-5⅜"	47'-7⅝"	35'-0½"	50'-2"	57'-7⅛"	59'-1"	47'-2"
		10'	12'-3⅜"	10'-8"	12'-3⅜"	13'-5⅝"	0'-0⅝"	20'-8"	23'-10⅜"	25'-0⅛"	11'-7⅛"	30'-8"	35'-4⅞"	36'-6⅝"	23'-1⅜"	40'-6"	46'-11⅝"	48'-1⅛"	34'-5⅝"	50'-5"	58'-0"	59'-5"	46'-10⅝"
		11'	13'-3⅜"	10'-10"	12'-6⅛"	13'-8" Ⓐ 0°		20'-10"	24'-0⅛"	25'-2⅝"	10'-3⅝"	30'-10"	35'-7⅝"	36'-9"	21'-10"	40'-10"	47'-1⅝"	48'-3⅝"	33'-9½"	50'-10"	58'-3⅝"	59'-10⅝"	46'-11⅝"
	10'	9'	10'-3⅜"	11'-6"	13'-3⅜"	14'-5⅝"	2'-4⅝"	22'-5"	25'-10⅝"	27'-0⅝"	15'-3⅜"	33'-6"	38'-5⅝"	39'-7⅝"	27'-3⅜"	44'-3"	51'-1⅞"	52'-3⅜"	40'-9"	55'-2"	63'-0⅜"	64'-3⅝"	52'-11⅝"
		10'	12'-3⅜"	11'-8"	13'-5⅝"	14'-7⅝"	1'-2⅜"	22'-8"	26'-2⅜"	27'-4"	13'-10⅜"	33'-10"	39'-0⅛"	40'-0⅝"	26'-7⅜"	44'-8"	51'-7"	52'-8⅝"	39'-4⅜"	55'-8"	64'-3⅜"	65'-5½"	52'-10"
		11'	13'-3⅜"	11'-10"	13'-8"	14'-9⅜" Ⓐ 0°		22'-10"	26'-4⅜"	27'-6⅛"	12'-6⅜"	33'-10"	39'-0⅛"	40'-0⅝"	25'-3⅜"	44'-8"	51'-7⅝"	52'-11"	38'-0"	55'-10"	64'-5⅝"	65'-7⅝"	52'-10½"
		12'	15'-3⅜"	12'-0"	13'-10⅛"	15'-0⅛" Ⓐ 0°		23'-0"	26'-6⅜"	27'-8⅝"	11'-3⅜"	34'-10"	39'-11⅝"	40'-11⅝"	24'-0"	45'-0"	51'-11⅝"	53'-1⅛"	36'-9⅝"	56'-0"	64'-11⅝"	66'-1⅜"	53'-9⅝"
	11'	9'	10'-3⅜"	12'-6"	14'-5⅝"	15'-7⅞"	3'-1⅜"	24'-5"	28'-2⅜"	29'-4¾"	17'-5"	36'-4"	41'-10⅜"	43'-1⅛"	31'-2⅝"	48'-3"	55'-0⅝"	56'-2⅝"	44'-1⅛"	——	——	——	——
		10'	12'-3⅜"	12'-8"	14'-7⅝"	15'-9⅝"	2'-4⅝"	24'-10"	28'-5⅞"	29'-7⅝"	16'-2⅝"	36'-8"	42'-0⅝"	43'-2⅝"	30'-0⅝"	48'-8"	55'-2⅝"	56'-4⅝"	43'-1⅛"	——	——	——	——
		11'	13'-3⅜"	12'-10"	14'-9⅜"	15'-11⅝"	1'-0⅝"	24'-10"	28'-8⅝"	29'-10"	14'-11"	36'-10"	42'-2⅝"	43'-3⅝"	28'-9⅝"	48'-10"	55'-4⅝"	56'-6⅝"	42'-1⅛"	——	——	——	——
		12'	15'-3⅜"	13'-0"	15'-0⅛"	16'-2" Ⓐ 0°		25'0"	28'-10⅛"	30'-0⅛"	13'-7⅝"	37'-0"	42'-5⅛"	43'-6⅝"	27'-5⅜"	49'-0"	55'-7"	56'-8⅝"	41'-3⅛"	——	——	——	——
	12'	9'	10'-3⅜"	13'-6"	15'-3⅞"	16'-5"	4'-9⅜"	26'-5"	30'-1⅜"	31'-3"	19'-8⅛"	39'-4"	45'-5"	46'-7"	34'-7⅜"	52'-3"	60'-1"	61'-3⅛"	49'-6⅛"	——	——	——	——
		10'	12'-3⅜"	13'-8"	15'-5⅞"	16'-11⅜"	3'-6⅛"	26'-8"	30'-3⅜"	31'-11⅝"	18'-6⅛"	39'-8"	45'-9⅝"	46'-10⅝"	33'-6⅛"	52'-8"	60'-3⅝"	61'-11⅜"	48'-6⅛"	——	——	——	——
		11'	13'-3⅜"	13'-10"	15'-11⅝"	17'-1⅛"	2'-2⅝"	26'-10"	30'-5⅛"	32'-1⅝"	17'-2⅛"	39'-10"	46'-0"	47'-1⅛"	32'-2⅝"	52'-10"	61'-0⅛"	62'-2"	47'-2⅛"	——	——	——	——
		12'	15'-3⅜"	14'-0"	16'-2"	17'-3⅜"	0'-10⅝"	27'-0"	31'-2⅜"	32'-4"	15'-11"	40'-0"	46'-2⅝"	47'-3"	30'-11"	53'-0"	61'-2⅝"	62'-4⅝"	45'-11⅝"	——	——	——	——

Ⓐ Special case for these boxes, See Detail 'A' and Table 'A' for revised values of F_1, F_2, W_2 and W_3, when apron width is more than 1'0" and W_3=0". For Details 'A' and Tables 'A' for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 30° skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X302-1 or W-X302-2	W-X303-1 or W-X303-2	W-X304-1 or W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS

FOR

REINFORCED CONCRETE BOX CULVERTS

30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

STANDARD DRAWING NO. W-X30

Designed by:- W.C.H. 5-16-63 — Checked by:- [illegible]

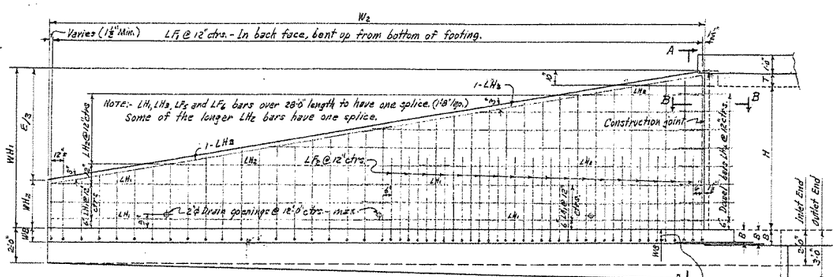
Drawn by:- W.C.H. 7-15-63 — Checked by:- [illegible]

Quantities by:- [illegible] — Checked by:- [illegible]

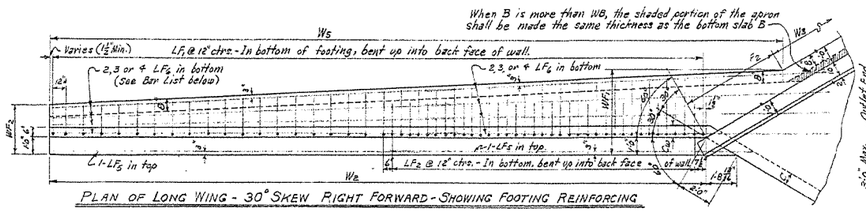
(50)

Reshot 3-8-93

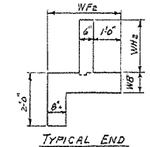
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			179	
JOB No.					



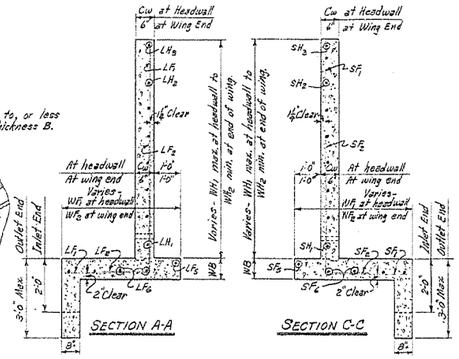
REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



PLAN OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING

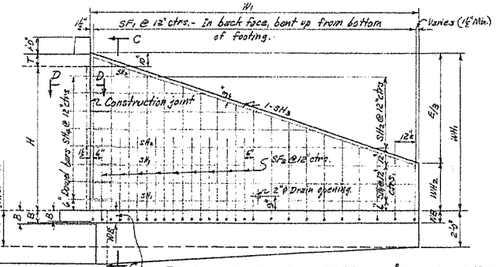


TYPICAL END VIEW OF WING

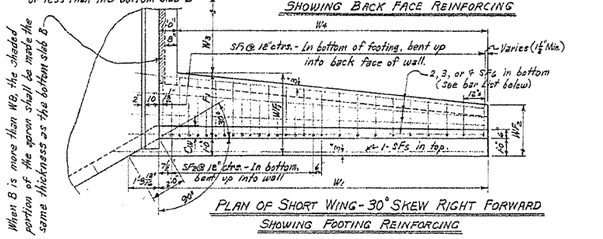


SECTION A-A

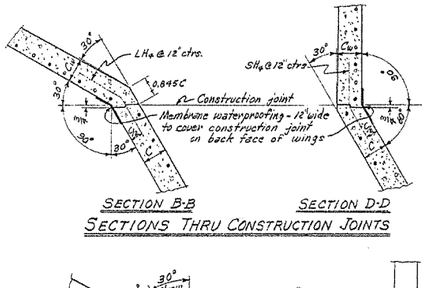
SECTION C-C



REAR ELEVATION OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING BACK FACE REINFORCING



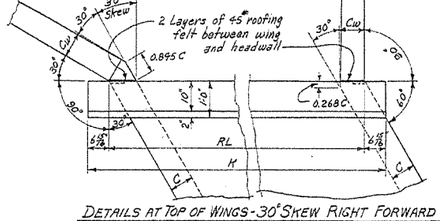
PLAN OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD

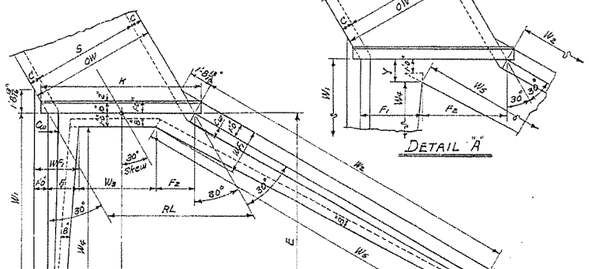
REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL & END OF WING	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	FOOTING DIMENSION PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIST. FROM HEAD TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSION SHORT WING	INSIDE FOOTING DIMENSION LONG WING	* QUANTITY PER WING CLASS S CONCRETE INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	C_W	WH_1	WH_2	WF_1	WF_2	F_1	F_2	E	W_1	W_2	W_3	W_5	Cu.Yds.	Cu.Yds.	Cu.Yds.	Cu.Yds.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	1'-4"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	13'-3⅜"	0.752	1.593	0.836	1.717
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-1½"	8'-6"	8'-6"	17'-0"	7'-6"	17'-10⅜"	1.130	2.340	1.259	2.565
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	2'-0"	2'-3⅜"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5½"	1.577	3.270	1.711	3.552
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.093	4.341	2.252	4.680
		7"	5'-10"	1'-8"	3'-6"	2'-4½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.179	4.529	2.337	4.862
° 6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.908	6.026	3.092	6.419
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.964	6.147	3.150	6.543
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	3.025	6.272	3.208	6.667
° 7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-1⅝"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.911	7.895	4.019	8.350
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-1⅝"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.997	8.057	4.095	8.512
° 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	5'-2⅛"	18'-6"	18'-6"	37'-0"	17'-6"	41'-5⅜"	4.874	10.097	5.107	10.612

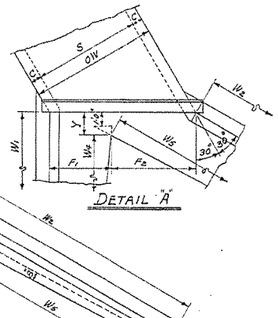
* Quantity per wing does not include headwall or that portion of apron or footwall for the length W_3.
° See Table 'A' for special values of F_1 & F_2 and W_3 & W_5 for Single 9'6, 5'x7' and 6'x8' Box Culverts.

TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F_1	F_2	W_3	Y	W_4	W_5
4'	6'	2'-7⅞"	3'-8⅝"	0"	1'-1⅞"	13'-9⅝"	31'-3⅝"
5'	7'	3'-1⅞"	4'-1"	0"	1'-3⅛"	15'-2⅜"	35'-10⅝"
6'	8'	3'-7⅛"	4'-10⅝"	0"	1'-4⅜"	17'-1⅛"	40'-6"

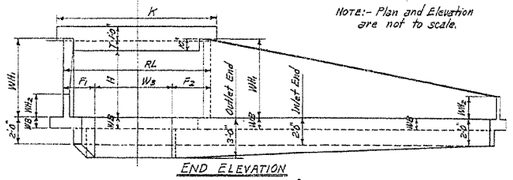


PART PLAN



DETAIL "A"

Note:- Plan and Elevation are not to scale.



END ELEVATION

SINGLE BARREL CULVERT - 30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Drawing No. W-X30.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X30. For values of RL, K and W_3 for each box, see above Std. also.

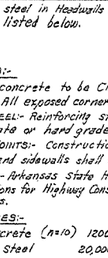
MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints at wings.

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length							SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel.			SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe.			SH1 & LH1 STRAIGHT: Horizontal in back face of wing.			SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length.				SH3 & LH3 STRAIGHT: In back face of wing at top - on slope.			SH4 & LH4 BENT: Dowels thru construction joint at headwall				BAR BENDING DIAGRAM	QUANTITY: REINFORCING STEEL PER WING - LBS.	
					LENGTHS VARY		X		Y																LENGTHS VARY													SHORT WING	LONG WING
H	SHORT LONG	SIZE	SPACING	NO. REQD	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X		
2'	Short	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"	—	—	—	—	—	—	#3	1	9'-0"	#3	2	6'-0"	#3	12"	1	6'-3"	#3	12"	1	—	3'-3"	#3	1	6'-7"	#3	12"	2	2'-8"	1'-4"	29.7	45.6
	Long	#3	12"	14	1'-5"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"	—	—	—	—	—	—	#3	1	15'-6"	#3	2	15'-6"	#3	12"	1	—	#3	12"	2	6'-6"	#3	1	12'-11"	#3	12"	2	"	"		
3'	Short	#3	12"	9	2'-1"	5'-3"	0'-10"	1'-2"	1'-3"	4'-0"	—	—	—	—	—	—	#3	1	11'-6"	#3	2	10'-0"	#3	12"	1	8'-3"	#3	12"	2	6'-3"	3'-3"	#3	1	8'-8"	#3	12"	3	"	"	37.0	69.5
	Long	#3	12"	18	1'-11"	5'-3"	0'-10"	1'-2"	1'-2"	4'-0"	—	—	—	—	—	—	#3	1	19'-6"	#3	2	20'-0"	#3	12"	1	16'-8"	#3	12"	2	12'-6"	6'-6"	#3	1	16'-11"	#3	12"	3	"	"		
4'	Short	#3	12"	11	2'-6"	6'-7"	0'-11"	1'-3"	1'-5"	5'-0"	—	—	—	—	—	—	#3	1	13'-0"	#3	3	15'-0"	#3	12"	1	10'-3"	#3	12"	3	9'-3"	3'-3"	#3	1	10'-9"	#3	12"	4	"	"	56.2	107.2
	Long	#3	12"	22	2'-6"	6'-7"	0'-11"	1'-3"	1'-7"	5'-0"	—	—	—	—	—	—	#3	1	23'-6"	#3	3	24'-6"	#3	12"	1	20'-8"	#3	12"	3	18'-6"	6'-6"	#3	1	21'-0"	#3	12"	4	"	"		
5'	Short	#3	12"	13	2'-11"	7'-11"	1'-0"	1'-4"	2'-0"	6'-0"	#3	12"	3	3'-6"	1'-1"	2'-6"	#3	1	15'-0"	#3	3	16'-0"	#3	12"	2	12'-3"	#3	12"	3	9'-3"	3'-3"	#3	1	12'-11"	#3	12"	5	"	"	78.0	152.2
	Long	#3	12"	26	2'-9"	7'-10"	1'-0"	1'-11"	1'-10"	6'-0"	#3	12"	6	3'-6"	1'-1"	2'-6"	#3	1	27'-6"	#3	3	28'-0"	#3	12"	2	24'-8"	#3	12"	3	18'-6"	6'-6"	#3	2	25'-1"	#3	12"	5	"	"		
6'	Short	#5	12"	15	3'-6"	9'-6"	1'-2"	1'-6"	2'-5"	7'-1"	#3	12"	9	4'-6"	1'-4"	3'-2"	#3	1	17'-0"	#3	3	16'-0"	#3	12"	2	14'-3"	#3	12"	4	12'-3"	3'-3"	#3	1	15'-0"	#3	12"	6	"	"	127.8	253.1
	Long	#5	12"	30	3'-6"	9'-6"	1'-2"	1'-8"	2'-5"	7'-1"	#3	12"	6	4'-6"	1'-4"	3'-2"	#3	2	16'-8"	#3	6	18'-0"	#3	12"	4	15'-2"	#3	12"	4	24'-6"	6'-6"	#3	2	15'-5"	#3	12"	6	2'-8"	1'-4"		
7'	Short	#6	12"	17	3'-11"	10'-10"	1'-3"	2'-10"	2'-9"	8'-1"	#4	12"	6	5'-6"	1'-7"	4'-0"	#4	1	19'-0"	#6	4	18'-0"	#6	12"	2	16'-3"	#4	12"	5	15'-3"	3'-3"	#4	1	17'-1"	#4	12"	7	3'-6"	1'-9"	267.0	489.8
	Long	#6	12"	34	3'-9"	10'-8"	1'-3"	2'-8"	2'-7"	8'-1"	#4	12"	12	5'-6"	1'-7"	4'-0"	#4	2	18'-8"	#6	8	20'-6"	#6	12"	4	17'-2"	#4	12"	5	°30'-6"	6'-6"	#4	2	17'-5"	#4	12"	7	"	"		
8'	Short	#6	12"	19	4'-6"	12'-5"	1'-5"	3'-4"	3'-2"	9'-2"	#4	12"	9	6'-6"	1'-10"	4'-9"	#4	1	21'-0"	#6	4	20'-0"	#6	12"	3	18'-3"	#4	12"	5	15'-3"	3'-3"	#4	1	19'-5"	#4	12"	8	"	"	312.9	622.3
	Long	#6	12"	38	4'-6"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	18	6'-6"	1'-10"	4'-9"	#4	2	20'-6"	#6	8	22'-0"	#6	12"	6	19'-2"	#4	12"	5	°30'-6"	6'-6"	#4	2	19'-6"	#4	12"	8	3'-6"	1'-9"		

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

* Length without splice. Bars over 28'-0" length may be spliced. (1'-8" lap.)



REVISIONS:- Membrane Added. 5-10-66 W.C.H.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL FOR 4 WINGS @ LB.	CLASS S CONCRETE - 4 WINGS: HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS — SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	C_W	WB	LB	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
4'	2'	6"	7"	141	5.80	6.90	8.01	9.12	10.23
	3'	6"	7"	213	8.08	9.18	10.29	11.40	12.51
	4'	6"	7"	327	10.78	11.88	12.99	14.10	15.21
	5'	6"	7"	460	13.90	15.00	16.11	17.22	18.32
	6'	7"	8"	762	18.85	19.99	21.13	22.27	23.41
5'	3'	6"	7"	213	8.33	9.47	11.01	12.36	13.70
	4'	6"	7"	327	11.03	12.36	13.71	15.06	16.40
	5'	6"	7"	460	16.14	15.98	16.83	18.17	19.52
	6'	7"	8"	762	19.11	20.98	21.86	23.24	24.62
	7'	7½"	8½"	1494	24.51	25.94	27.35	28.75	30.16
6'	3'	6"	7"	213	8.57	10.17	11.73	13.33	14.92
	4'	6"	7"	327	11.27	12.86	14.43	16.03	17.62
	5'	6"	7"	460	16.38	15.98	17.55	19.15	20.73
	6'	7"	8"	762	19.35	20.98	22.59	24.21	25.83
	7'	7½"	8½"	1494	24.79	26.44	28.08	29.73	31.38
	8'	8"	9"	1870	31.15	32.87	34.51	36.17	37.83
7'	4'	6"	7"	327	11.52	13.37	15.19	17.05	18.85
	5'	6"	7"	460	16.43	16.49	18.31	20.16	21.97
	6'	7"	8"	762	19.61	21.98	23.82	25.20	27.04
	7'	7½"	8½"	1494	25.05	26.94	28.82	30.71	32.59
	8'	8"	9"	1870	31.47	33.37	35.25	37.16	39.05
8'	4'	6"	7"	327	11.77	13.89	15.97	18.09	20.12
	5'	7"	7"	460	15.96	17.60	19.70	21.83	23.89
	6'	7"	8"	762	19.86	21.98	24.05	26.17	28.20
	7'	7½"	8½"	1494	25.30	27.06	29.58	31.73	33.81
	8'	8"	9"	1870	31.72	33.88	36.00	38.16	40.27
9'	5'	7"	7"	460	15.72	18.13	20.97	22.87	25.15
	6'	7½"	8"	762	20.50	22.93	25.29	27.71	30.01
	7'	7½"	8½"	1494	25.55	27.98	30.87	32.74	35.07
	8'	8"	9"	1870	31.97	34.39	36.76	39.18	41.49
10'	5'	7"	7"	460	15.98	18.65	21.25	23.80	26.42
	6'	7½"	8"	762	20.74	23.65	26.07	28.69	31.28
	7'	7½"	8½"	1494	25.81	28.50	31.12	33.70	36.34
	8'	8"	9"	1870	32.22	34.91	37.54	40.12	42.76
11'	6'	8"	8"	762	21.39	24.98	27.25	30.11	——
	7'	8"	8½"	1494	26.55	29.53	32.41	35.27	——
	8'	8"	9"	1870	32.97	35.95	38.83	41.19	——
12'	6'	8"	8"	762	21.66	24.03	28.05	31.20	——
	7'	8"	8½"	1494	26.81	30.08	33.21	36.36	——
	8'	8"	9"	1870	32.73	35.99	39.13	42.28	——

@ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X303-1

Designed By- W.C.H. 5-13-63 Checked By- 2-19-63
Drawn By- W.C.H. 7-26-63 Checked By- Date 7-15-63
Quantities By- W.C.H. 1-7-64 Checked By-

(53)

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			180	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'a' bars STRAIGHT In Top and Bottom Slab of Barrel. SIZE	SPACING	No. REQ'D	LENGTH	'a1' bars STRAIGHT In Top and Bottom Slab of Barrel (four of each Length). SIZE	SPACING	No. REQ'D	LENGTH	'b' bars BENT - See Diagrams below In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with 'a' and 'c' bars. SIZE	SPACING	No. REQ'D	LENGTH	X	Y	Z
0'-0" TO 5'-0" MAXIMUM	2 @ 9'	5'-0"	#6	12"	110	19'-8"	#6	12"	40	18'-1" 3'-10"	#6	11"	52	21'-1" 0'-5⅜" 4'-6" 7'-2"			
		6'-0"			110	19'-10"			40	18'-8" 4'-0"			52	21'-3" " 4'-5" 7'-3⅛"			
		7'-0"			110	19'-10"			40	" "			52	21'-3" " " "			
		8'-0"			110	19'-11"			44	18'-5" 2'-6"			52	21'-4" " " 7'-3"			
		9'-0"			110	20'-2"			44	18'-7" 2'-9"			52	21'-7" " 4'-6" 7'-4"			
		10'-0"			110	20'-5"			44	18'-10" 3'-0"			52	21'-10" " 4'-7" 7'-5"			
		11'-0"			108	20'-7"			44	19'-0" 3'-2"			52	22'-0" 0'-5⅝" " 7'-6"			
	2 @ 10'	5'-0"	#6	12"	98	21'-8"	#6	12"	40	19'-11" 4'-2"	#6	11"	47	23'-2" 0'-6" 4'-9" 7'-1"			
		6'-0"			98	21'-10"			44	20'-1" 3'-3"			47	23'-4" " " 7'-1⅛"			
		7'-0"			98	21'-10"			44	" "			47	23'-5" " " "			
		8'-0"	#6	11"	98	21'-11"	#6	12"	44	20'-2" 3'-6"	#6	12"	47	23'-5" " " 8'-0"			
		9'-0"			98	22'-2"			44	20'-5" 3'-9"			47	23'-8" " 4'-11" 8'-1"			
		10'-0"			98	22'-5"			44	20'-8" 3'-10"			47	23'-11" " 5'-0" 8'-2"			
		11'-0"			98	22'-7"			44	20'-10" 4'-0"			46	24'-1" " " 8'-3"			
		12'-0"			98	22'-9"			44	21'-0" 4'-2"			46	24'-3" 0'-6" 5'-0" 8'-4"			
	2 @ 11'	6'-0"	#6	12"	96	23'-1"	#6	12"	48	22'-2" 2'-11"	#6	12"	46	25'-5" 0'-6⅝" 5'-3" 8'-9"			
		7'-0"			96	23'-1"			48	" "			46	25'-5" " " "			
		8'-0"			96	23'-1"			48	" "			46	25'-5" " " "			
		9'-0"	#6	11"	96	23'-2"	#6	12"	48	22'-5" 3'-2"	#6	12"	46	25'-8" " 5'-4" 8'-10"			
		10'-0"			94	23'-5"			48	22'-8" 3'-5"			45	25'-11" " 5'-5" 8'-11"			
		11'-0"			94	24'-0"			48	22'-10" 3'-7"			45	26'-1" " " 9'-0"			
		12'-0"			96	24'-3"			48	23'-0" 3'-9"			45	26'-3" 0'-6⅝" 5'-5" 9'-1"			
	2 @ 12'	6'-0"	#6	12"	102	25'-1"	#6	12"	56	24'-4" 3'-9"	#6	12"	49	27'-5" 0'-7" 5'-8" 9'-6"			
		7'-0"			102	25'-1"			56	" "			49	27'-5" " " "			
		8'-0"			102	25'-1"			56	" "			49	27'-5" " " "			
		9'-0"	#6	11"	102	25'-2"	#6	12"	56	24'-7" 4'-0"	#6	12"	48	27'-8" " 5'-9" 9'-7"			
		10'-0"			102	25'-5"			60	24'-10" 2'-8"			48	27'-11" " 5'-10" 9'-9"			
		11'-0"			102	25'-7"			60	25'-0" 2'-10"			48	28'-1" " " 9'-9"			
		12'-0"			102	25'-9"			60	25'-2" 3'-0"			48	28'-3" 0'-7" 5'-11" 9'-10"			

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'b1' bars BENT - See Diagrams below In Bottom of Top Slab - some bent up over Division Wall - one end hooked. (2 of Each Length). Alternate with 'a1' and 'c1' bars. SIZE	SPACING	No. REQ'D	LENGTH	L MAX.	L MIN.	'b2' bars BENT - See Diagrams below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with 'a' and 'c' bars. SIZE	SPACING	No. REQ'D	LENGTH	X	Y	Z	'b3' bars BENT - See Diagrams below. In Top of Bottom Slab - some bent down under Division Wall - one end hooked. (2 of Each Length). Alternate with 'a1' and 'c1' bars. SIZE	SPACING	No. REQ'D	LENGTH	L MAX.	L MIN.
0'-0" TO 5'-0" MAXIMUM	2 @ 9'	5'-0"	#6	11"	22	19'-9"	3'-7"	18'-10"	3'-6"	#6	11"	54	21'-1"	0'-5⅜" 4'-3⅛" 7'-2"				#6	11"	22	19'-9"	3'-7"	16'-10"	3'-6"
		6'-0"			22	19'-11"	3'-8"	19'-0"	3'-7"			54	21'-3" " 4'-4⅛" 7'-2⅝"						22	19'-11"	3'-8"	19'-0"	3'-7"
		7'-0"			22	" "	"	"	"			54	21'-3" " " "						22	" "	"	"	"
		8'-0"	#6	11"	22	20'-0"	3'-10"	19'-1"	3'-8"			54	21'-4" " " 7'-3"						22	20'-0"	4'-1"	19'-1"	3'-8"
		9'-0"			22	20'-3"	4'-1"	19'-4"	3'-9"			54	21'-7" " 4'-5⅛" 7'-4"						22	20'-3"	4'-1"	19'-4"	3'-9"
		10'-0"			22	20'-6"	4'-4"	19'-7"	3'-10"			54	21'-10" " 4'-6⅛" 7'-5"						22	20'-6"	4'-4"	19'-7"	3'-10"
		11'-0"			22	20'-8"	4'-6"	19'-8"	3'-11"			54	22'-0" 0'-5⅝" " 7'-6"						22	20'-8"	4'-6"	19'-8"	3'-11"
	2 @ 10'	5'-0"	#6	11"	22	21'-9"	3'-10"	20'-9"	3'-9"	#6	11"	49	23'-2" 0'-6⅝" 4'-8" 7'-1"				#6	11"	22	21'-9"	3'-10"	20'-9"	3'-9"
		6'-0"			22	21'-11"	4'-0"	20'-11"	3'-10"			49	23'-4" " " 7'-1⅛"						22	21'-11"	4'-0"	20'-11"	3'-10"
		7'-0"			22	" "	"	"	"			49	23'-4" " " "						22	" "	"	"	"
		8'-0"	#6	12"	22	22'-0"	4'-1"	21'-0"	3'-11"			49	23'-5" " " 8'-0"						22	22'-0"	4'-1"	21'-0"	3'-11"
		9'-0"			22	22'-3"	4'-4"	21'-3"	3'-11"			49	23'-8" " 4'-10" 8'-1"						22	22'-3"	4'-4"	21'-3"	3'-11"
		10'-0"			22	22'-6"	4'-7"	21'-6"	4'-0"			49	23'-11" " 5'-0" 8'-2"						22	22'-6"	4'-7"	21'-6"	4'-0"
		11'-0"			22	22'-8"	4'-9"	21'-8"	4'-0"			48	24'-1" " " 8'-3"						22	22'-8"	4'-9"	21'-8"	4'-0"
		12'-0"			24	22'-10"	5'-0"	21'-10"	4'-1"			48	24'-3" 0'-6⅝" 5'-0" 8'-4"						24	22'-10"	5'-0"	21'-10"	4'-1"
	2 @ 11'	6'-0"	#6	12"	24	24'-0"	4'-6"	23'-0"	3'-9"	#6	12"	48	25'-6" 0'-7⅛" 5'-2" 8'-9"				#6	12"	24	24'-1"	4'-5"	23'-0"	3'-9"
		7'-0"			24	" "	"	"	"			48	25'-6" " " "						24	" "	"	"	"
		8'-0"			24	" "	"	"	"			48	25'-6" " " "						24	" "	"	"	"
		9'-0"	#6	12"	24	24'-3"	4'-7"	23'-3"	4'-0"			48	25'-8" " 5'-2" 8'-10"						24	24'-4"	4'-7"	23'-3"	4'-0"
		10'-0"			24	24'-6"	4'-10"	23'-6"	4'-1"			47	26'-0" " 5'-3" 8'-11"						24	24'-7"	4'-10"	23'-6"	4'-1"
		11'-0"			24	24'-8"	5'-1"	23'-8"	4'-2"			47	26'-2" " " 9'-0"						24	24'-9"	5'-1"	23'-8"	4'-2"
		12'-0"			24	24'-10"	5'-3"	23'-10"	4'-3"			47	26'-4" 0'-7⅛" 5'-3" 9'-1"						24	24'-11"	5'-3"	23'-10"	4'-3"
	2 @ 12'	6'-0"	#6	11"	30	26'-1"	3'-4"	25'-1"	2'-11"	#6	11"	51	27'-7" 0'-7⅝" 5'-5" 9'-6"				#6	11"	30	26'-3"	3'-6"	25'-1"	2'-11"
		7'-0"			30	" "	"	"	"			51	27'-7" " " "						30	" "	"	"	"
		8'-0"			30	" "	"	"	"			51	27'-7" " " "						30	" "	"	"	"
		9'-0"	#6	11"	30	26'-4"	3'-5"	25'-4"	3'-2"			51	27'-10" " 5'-6" 9'-7"						30	26'-6"	3'-5"	25'-4"	3'-2"
		10'-0"			30	26'-7"	4'-0"	25'-7"	3'-5"			50	28'-1" " 5'-7" 9'-8"						30	26'-9"	4'-0"	25'-7"	3'-5"
		11'-0"			30	26'-9"	4'-2"	25'-9"	3'-7"			50	28'-3" " " 9'-9"						30	27'-0"	4'-2"	25'-9"	3'-7"
		12'-0"			30	26'-11"	4'-4"	25'-11"	3'-9"			50	28'-5" 0'-8⅛" 5'-7" 9'-10"						30	27'-1"	4'-4"	25'-11"	3'-9"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	'c' bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with 'b' and 'b2' bars. SIZE	SPACING	No. REQ'D	LENGTH	'c1' bars STRAIGHT In Top and Bottom Slab of Barrel. All with ½"ø Bars (four of each Length) SIZE	SPACING	No. REQ'D	LENGTH	'd' bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	'd1' bars STRAIGHT Longitudinal in Sidewalls and Division Wall. SIZE	SPACING	No. REQ'D	LENGTH	'd2' bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	No. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM	2 @ 9'	5'-0"	#6	11"	122	9'-8"	#5	16"	16	9'-5" 3'-6"	#6	11½"	26		#6	12"	20		#6	12"	25	
		6'-0"			122	9'-10"			16	9'-6" 3'-9"			26				24				25	
		7'-0"			122	9'-10"			16	" "			26				28				25	
		8'-0"	#6	11"	122	9'-11"	#5	16"	16	9'-7" 3'-10"			26				32				25	
		9'-0"			122	9'-11"			16	9'-9" 4'-0"			26				36				25	
		10'-0"			122	10'-0"			20	9'-11" 2'-7"			26				40				25	
		11'-0"			120	10'-0"			20	9'-10" 2'-9"			26				44				25	
	2 @ 10'	5'-0"	#6	11"	110	10'-3"	#5	16"	16	9'-3" 4'-0"	#6	11½"	26		#6	12"	20		#6	12"	27	
		6'-0"			110	10'-10"			16	9'-4" 4'-1"			26				24				27	
		7'-0"			110	10'-10"			16	" "			26				28				27	
		8'-0"	#6	11"	110	11'-0"	#5	16"	16	9'-5" 4'-3"			26				32				27	
		9'-0"			110	11'-0"			20	9'-3" 2'-7"			26				36				27	
		10'-0"			110	11'-0"			20	9'-3" 2'-9"			26				40				27	
		11'-0"			110	11'-0"			20	9'-3" 2'-11"			26				44				27	
	2 @ 11'	6'-0"	#6	12"	108	11'-10"	#5	16"	20	10'-1" 3'-1"	#6	11½"	30		#6	12"	24		#6	12"	29	
		7'-0"			108	11'-10"			20	" "			30				28				29	
		8'-0"			108	11'-10"			20	" "			30				32				29	
		9'-0"	#6	12"	108	11'-11"	#5	16"	20	11'-1" 4'-1"			30				36				29	
		10'-0"			108	12'-0"			20	11'-3" 4'-3"			30				40				29	
		11'-0"			108	12'-0"			20	11'-4" 4'-5"			30				44				29	
		12'-0"			108	12'-0"			20	11'-5" 2'-8"			30				48				29	
	2 @ 12'	6'-0"	#6	12"	118	12'-10"	#5	16"	24	11'-6" 3'-1"	#6	11½"	32		#6	12"	24		#6	12"	31	
		7'-0"			118	12'-10"			24	" "			32				28				31	
		8'-0"			118	12'-10"			24	" "			32				32				31	
		9'-0"	#6	11"	118	12'-11"	#5	16"	24	11'-9" 3'-3"			32				36				31	
		10'-0"			118	13'-0"			24	11'-10" 3'-5"			32				40				31	
		11'-0"			118	13'-0"			24	11'-11" 3'-7"			32				44				31	
		12'-0"			118	13'-0"			24	12'-0" 4'-1"			32				48				31	

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM FOR BARS 'b' AND 'b2'
#6	3"	5"	1'-2"	K, Pin diam., Z, X, Y, X, Z

BAR SIZE	PIN DIAM.	K	ADD FOR 1 HOOK	BENDING DIAGRAM FOR BARS 'b1' AND 'b3'.
#6	3"	5"	0'-7"	K, Pin diameter, Z, X, Y, X, Less Than L, Min. 66% L, 33% Max., Less than Z

SPAN	SIZE	SPACING	No. REQ'D	LENGTH	X
9'	#5	12"	48	2'-10"	1'-5"
10'	#5	12"	52	2'-11"	1'-5½"
11'	#5	12"	58	3'-0"	1'-6"
12'	#5	12"	62	3'-1"	1'-6½"

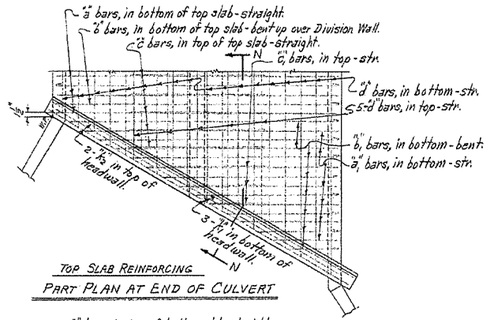
Dowel bars 'f' in Two Headwalls

NOTE:- Dimensions are to centers of bars (b, b1, b2, & b3). The X, Y & Z values for b1 bars are same as for b bars and for b3 bars same as for b2 bars.

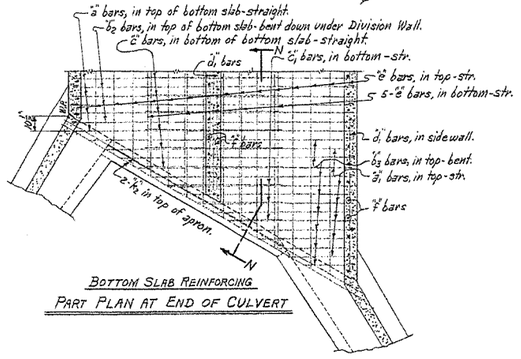
These bars are in the skewed portion of barrel only. The length of 'a1' and 'c1' bars and overall length L of 'b1' and 'b3' bars vary by 1-9" for 12" spacing and 1-7" for 11" spacing.

In the regular portion of the barrel begin and end with a set of 'a' & 'c' bars. If the spacing is such that the last set of bars would be 'a1' & 'b2' bars, use a set of 'a' & 'c' bars instead.

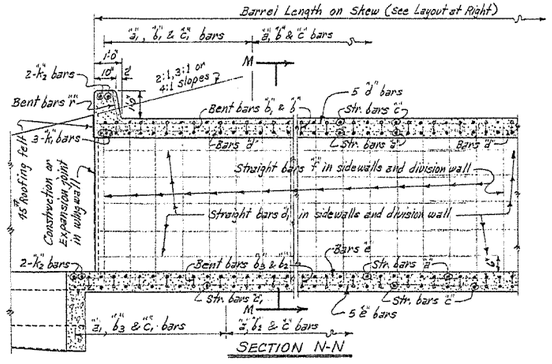
NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X302-1 or W-X302-2; W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.



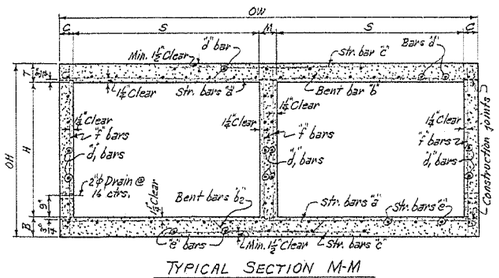
TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT



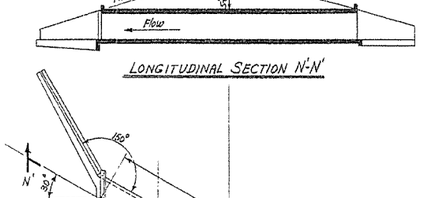
BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT



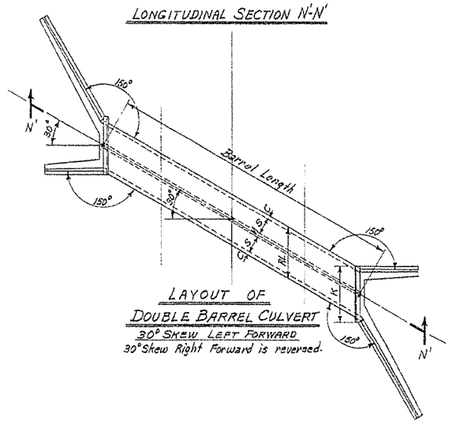
SECTION N-N



TYPICAL SECTION M-M



LONGITUDINAL SECTION N-N'



LAYOUT OF
DOUBLE BARREL CULVERT
30° SKEW LEFT FORWARD
30° Skew Right Forward is reversed.

BARREL DIMENSIONS

MAX. DESIGN DEPTH OF COVER D	CLEAR SPANS S	CLEAR HEIGHT H	SQ. FT. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDE WALLS C	THICKNESS OF DIVISION WALL M	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	ROADWAY WIDTH RL	LENGTH OF HEADWALLS K
5'-0"	2 @ 9'	5'-0"	90	19'-11"	7"	9"			6'-6½"	23'-0"	26'-1⅝"
		6'-0"	108	20'-1"	7⅛"	10"			7'-6⅝"	23'-2⅝"	26'-2⅝"
		7'-0"	126	20'-1"	"	"			8'-6⅝"	"	"
		8'-0"	144	20'-2"	7⅝"	10"			9'-6⅝"	23'-3⅝"	26'-3⅝"
		9'-0"	162	20'-5"	8"	11"			10'-6⅝"	23'-4⅝"	26'-4⅝"
		10'-0"	180	20'-8"	10"	12"			11'-6⅝"	23'-6⅝"	25'-0⅝"
		11'-0"	198	20'-10"	11"	12"			12'-6⅝"	24'-0⅝"	25'-2⅝"
	2 @ 10'	5'-0"	100	21'-11"	7"	9"			6'-7½"	25'-3⅝"	26'-5⅛"
		6'-0"	120	22'-1"	7⅛"	10"			7'-7½"	25'-4"	26'-6⅛"
		7'-0"	140	22'-1"	7⅛"	10"			8'-7½"	"	"
		8'-0"	160	22'-2"	8"	10"	10"	9½"	9'-7½"	25'-7⅝"	26'-9"
		9'-0"	180	22'-5"	9"	11"			10'-7½"	25'-10⅝"	27'-0⅝"
		10'-0"	200	22'-8"	10"	12"			11'-7½"	26'-2⅝"	27'-4"
		11'-0"	220	22'-10"	11"	12"			12'-7½"	26'-4⅝"	27'-6⅝"
		12'-0"	240	23'-0"	12"	12"			13'-7½"	26'-6⅝"	27'-8⅝"
	2 @ 11'	6'-0"	132	24'-2"	8"	10"			7'-9"	27'-10⅝"	29'-0⅝"
		7'-0"	154	24'-2"	8"	10"			8'-9"	"	"
		8'-0"	176	24'-2"	8"	10"			9'-9"	"	"
		9'-0"	198	24'-5"	9"	11"			10'-9"	28'-2⅝"	29'-4⅝"
		10'-0"	220	24'-8"	10"	12"			11'-9"	28'-5⅝"	29'-7⅝"
		11'-0"	242	24'-10"	11"	12"			12'-9"	28'-8⅝"	29'-10⅝"
		12'-0"	264	25'-0"	12"	12"			13'-9"	28'-10⅝"	30'-0⅝"
	2 @ 12'	6'-0"	144	26'-3"	8"	10"			7'-10½"	30'-2⅝"	31'-4⅝"
		7'-0"	168	26'-4"	8"	10"			8'-10½"	"	"
		8'-0"	192	26'-5"	8"	10"			9'-10½"	"	"
		9'-0"	216	26'-5"	9"	11"			10'-10½"	30'-6"	31'-8"
		10'-0"	240	26'-8"	10"	12"			11'-10½"	30'-9⅝"	31'-11⅝"
		11'-0"	264	26'-10"	11"	12"			12'-10½"	30'-11⅝"	32'-1⅝"
		12'-0"	288	27'-0"	12"	12"			13'-10½"	31'-2⅝"	32'-4⅝"

QUANTITIES REINFORCING STEEL CLASS S CONC. PER LIN. FT. OF BARREL	TOTAL FOR LENGTH OF BARREL	PER LIN. FT. OF BARREL	ADDITIONAL PER LAP
CU.YD.	LB.	LB.	LB.
1.477	15,084	239.37	82.77
1.594	15,508	246.09	86.11
1.671	15,831	251.43	89.95
1.778	16,507	262.26	92.79
1.856	17,595	279.95	96.13
2.152	18,946	292.97	99.97
2.328	18,969	306.86	102.81
1.674	17,746	279.49	89.93
1.792	18,227	286.50	91.26
1.863	18,551	291.85	99.60
1.976	18,222	302.77	97.94
2.158	20,353	320.79	101.28
2.352	21,210	338.99	109.62
2.529	21,976	348.01	100.96
2.718	23,353	370.23	111.30
2.048	19,701	309.86	96.91
2.126	20,025	319.70	99.75
2.208	20,652	325.18	103.09
2.388	21,600	343.25	106.93
2.586	22,586	356.57	109.77
2.764	23,955	370.47	113.11
2.954	24,823	393.05	116.45
2.299	22,496	353.31	101.55
2.479	22,822	358.65	104.89
2.659	23,952	369.12	108.23
2.840	24,976	387.52	111.57
3.020	25,617	401.07	114.91
3.019	26,273	415.31	118.25
3.208	27,459	437.88	121.59

* For quantities in Wings see Standard Wing Drawings listed below. Total steel quantities listed above included one lap of longitudinal bars.

GENERAL NOTES

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾ chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each add'l 33'-0" length of barrel over 32'-0. Lap longitudinal bars 30 diam. min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division wall and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

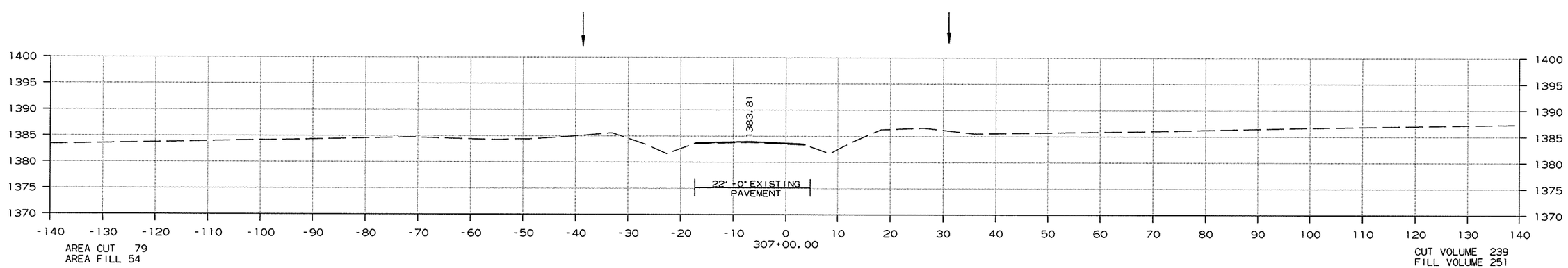
9', 10', 11' AND 12' SPANS 2:1, 3:1 OR 4:1 SLOPES
DOUBLES UNDER 5'-0" COVER

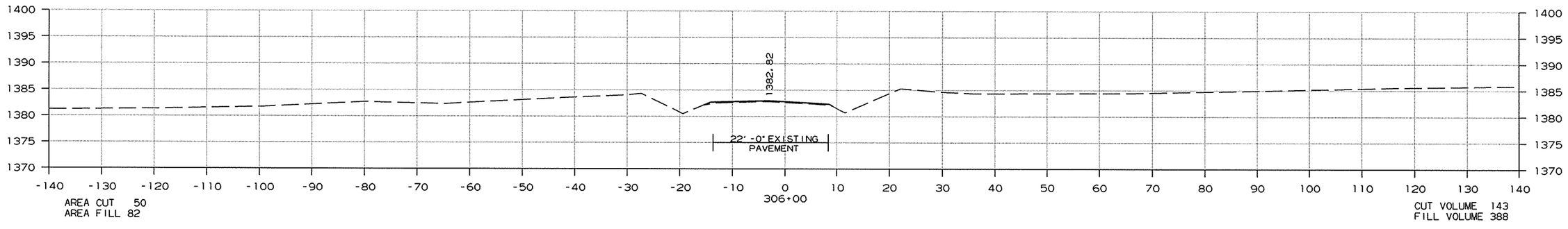
STANDARD DRAWING NO. R-230X-02

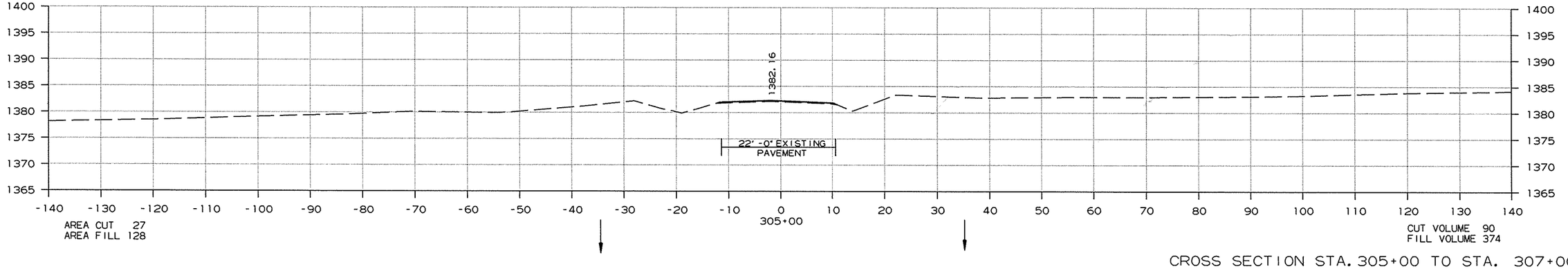
Designed by:- W.C.H. 1-17-62.
Drawn by:- W.C.H. 3-20-64.
Quantities by:- W.C.H. 4-7-64.
Checked by:- R.H.S. 5-14-63
Checked by:-
Checked by:-

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.		090373	181	316

(2) CROSS SECTIONS







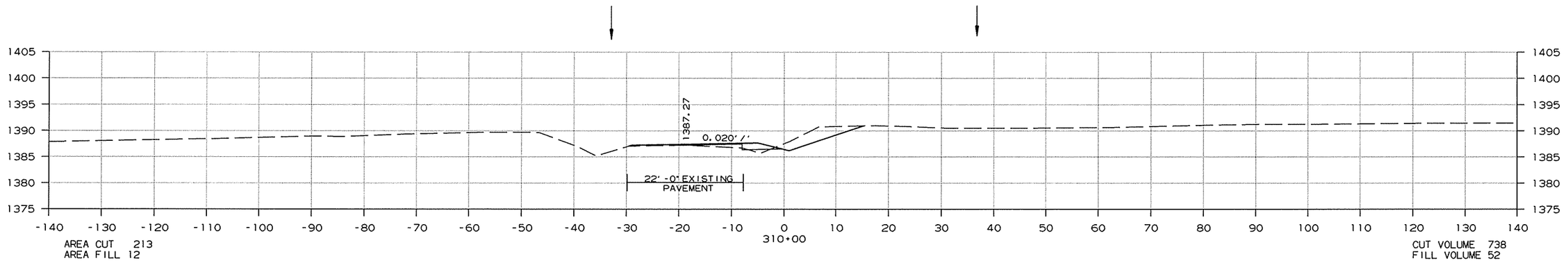
CROSS SECTION STA. 305+00 TO STA. 307+00

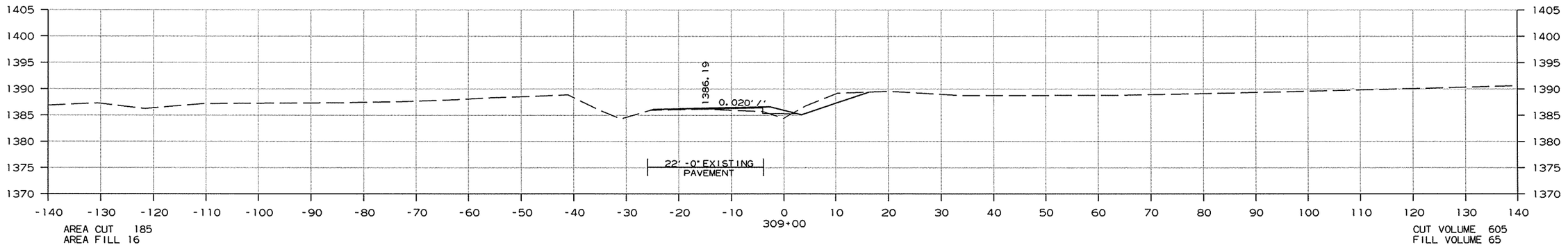
9/9/2015

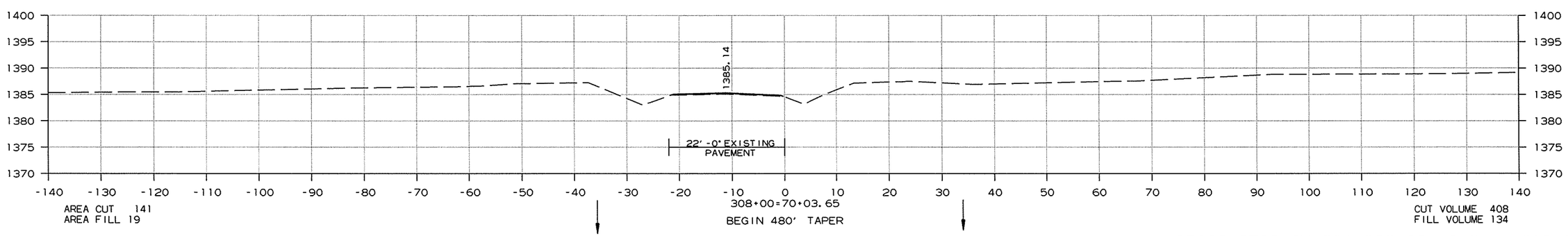
R090373.DGN

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.		090373	182	316

(2) CROSS SECTIONS







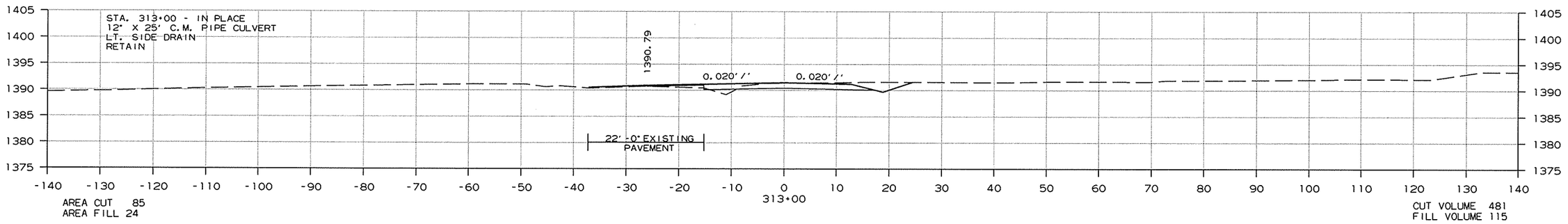
CROSS SECTION STA. 308+00 TO STA. 310+00

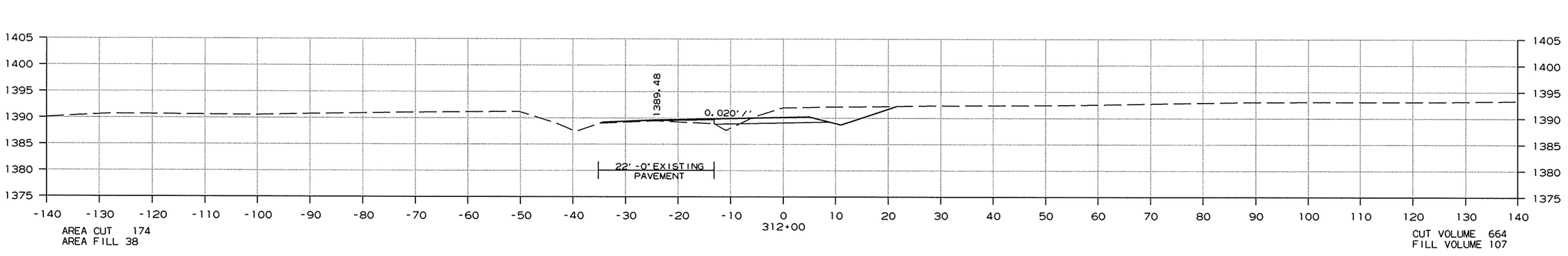
9/9/2015

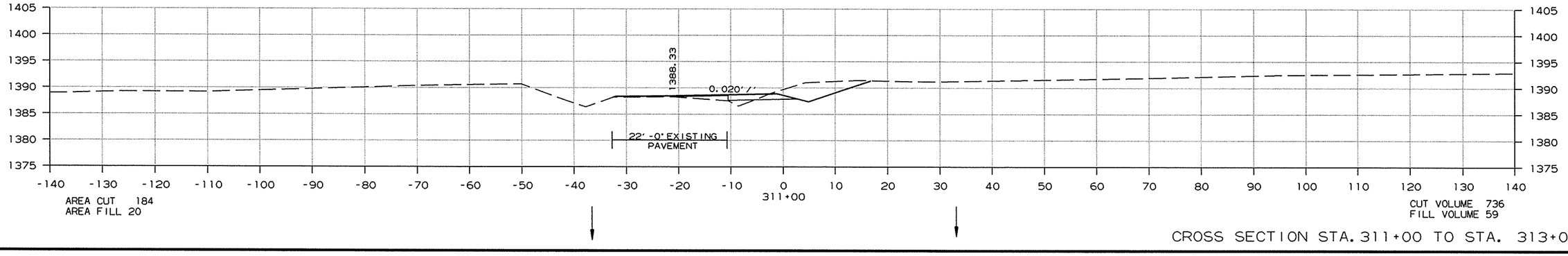
R090373.DGN

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.		090373	183	316

(2) CROSS SECTIONS







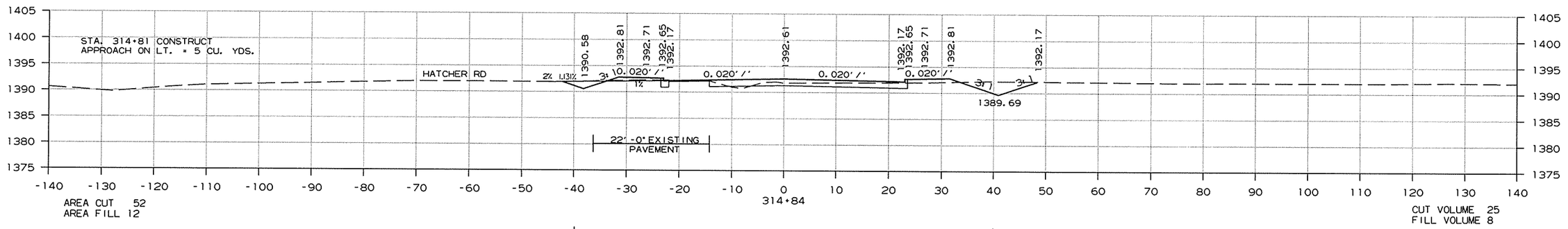
CROSS SECTION STA. 311+00 TO STA. 313+00

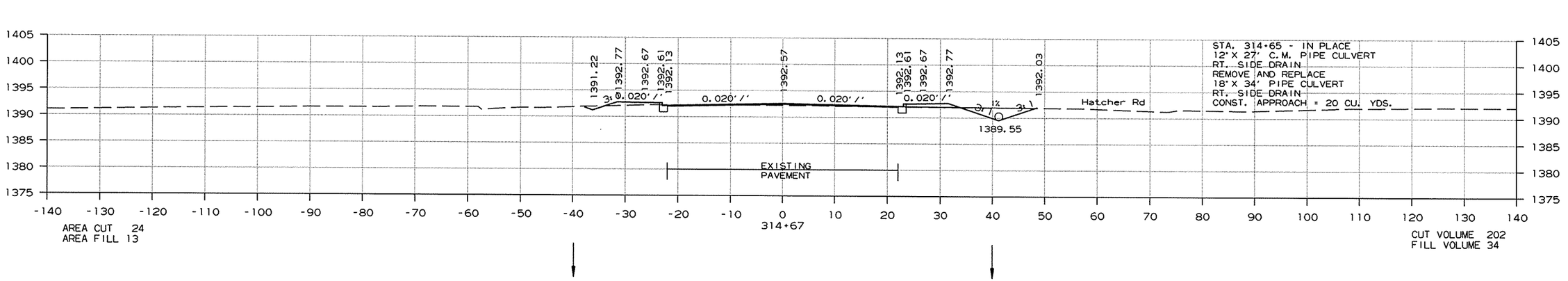
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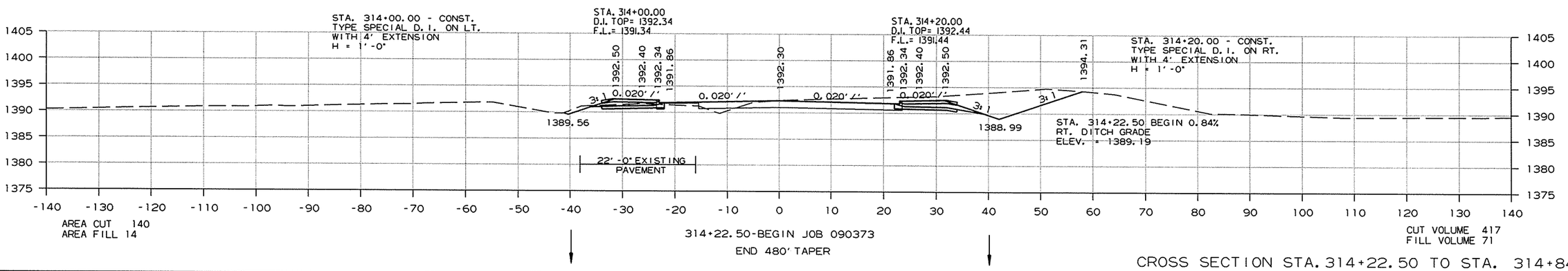
R090373.DGN

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.		090373	184	316

(2) CROSS SECTIONS







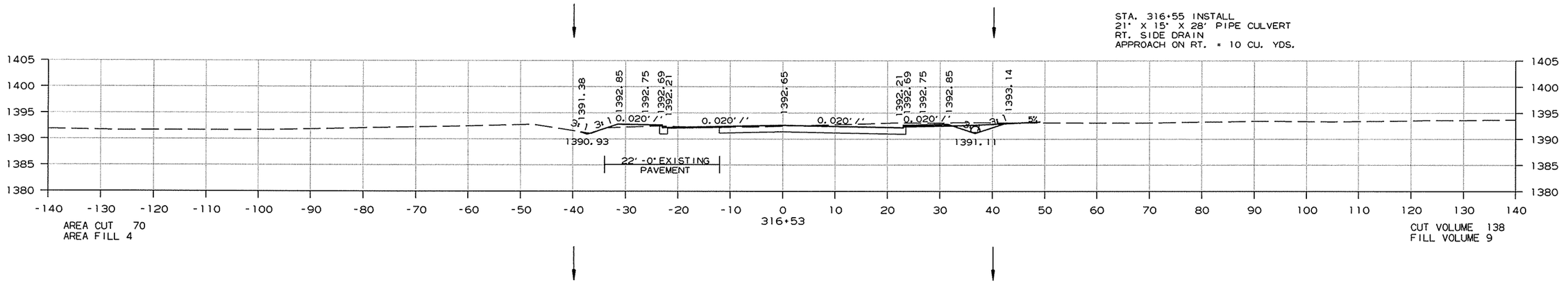
CROSS SECTION STA. 314+22.50 TO STA. 314+84

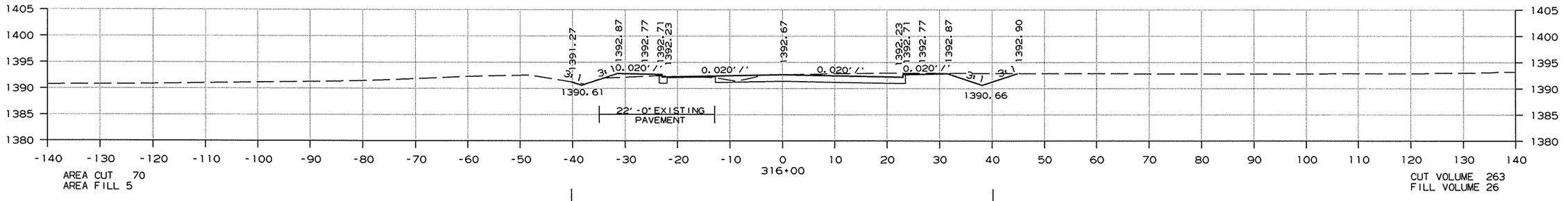
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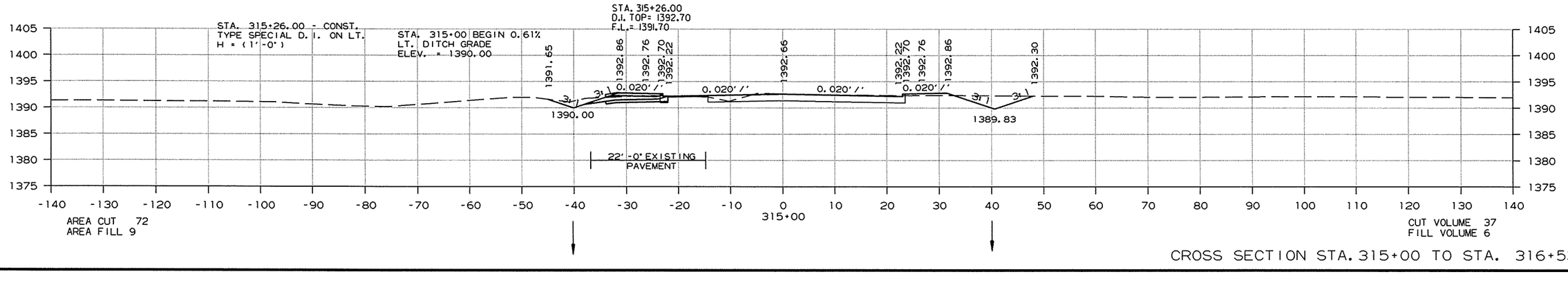
R090373.DGN

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.		090373	185	316

(2) CROSS SECTIONS







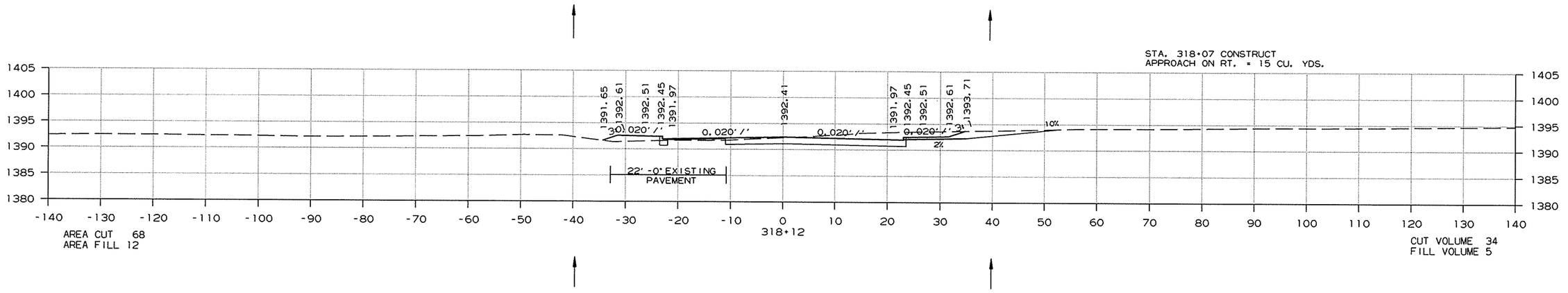
CROSS SECTION STA. 315+00 TO STA. 316+53

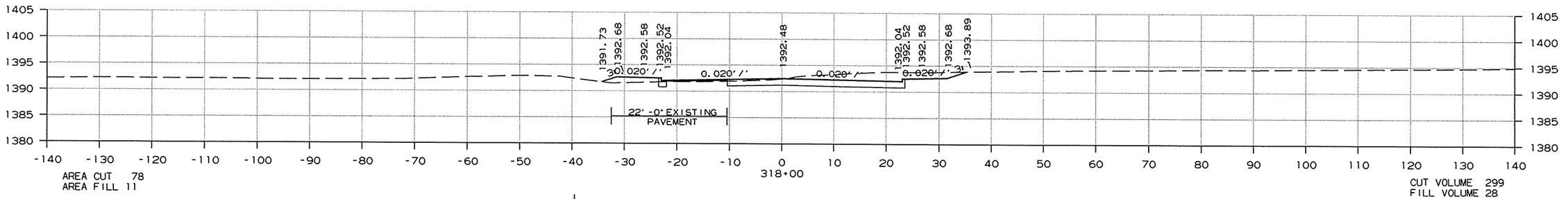
9/9/2015

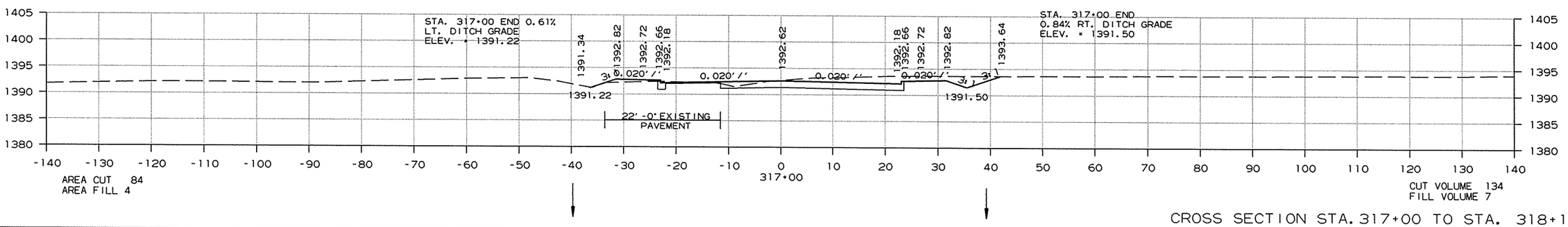
R090373.DGN

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.		090373	186	316

(2) CROSS SECTIONS







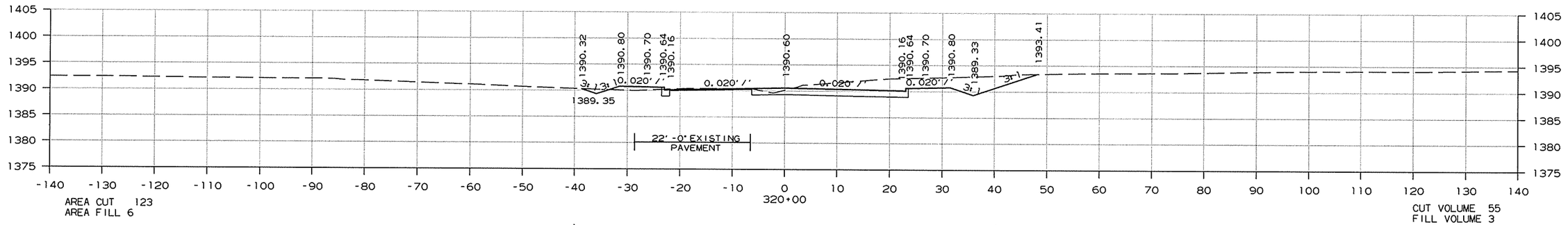
CROSS SECTION STA. 317+00 TO STA. 318+12

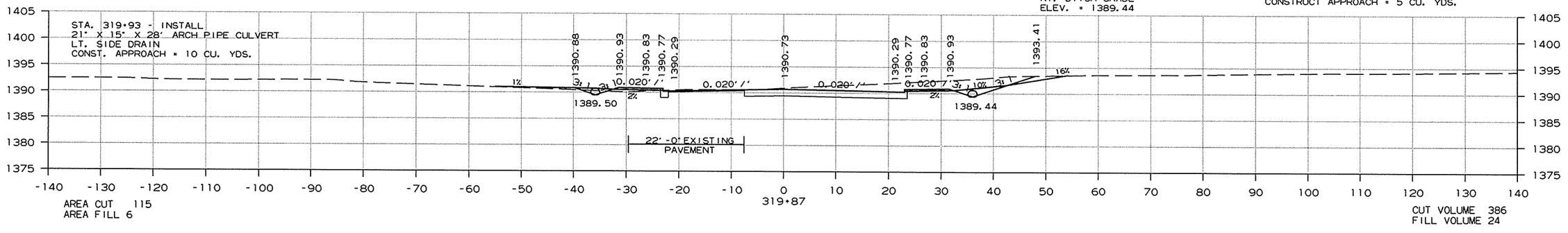
9/9/2015

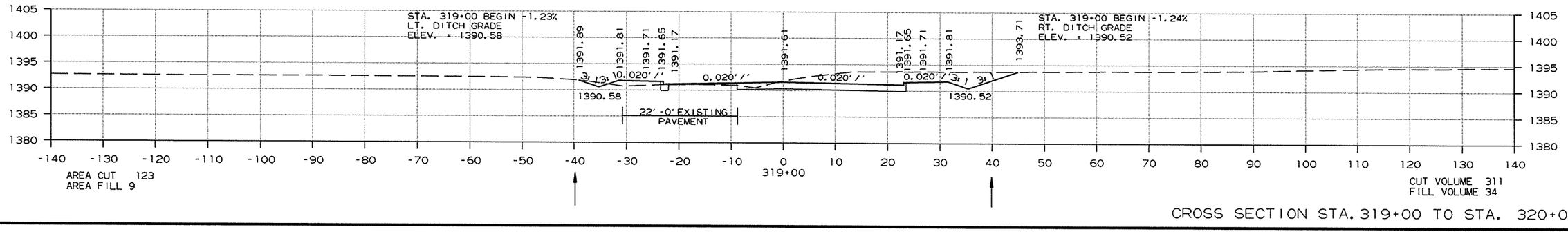
R090373.DGN

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.		090373	187	316

(2) CROSS SECTIONS







CROSS SECTION STA. 319+00 TO STA. 320+00

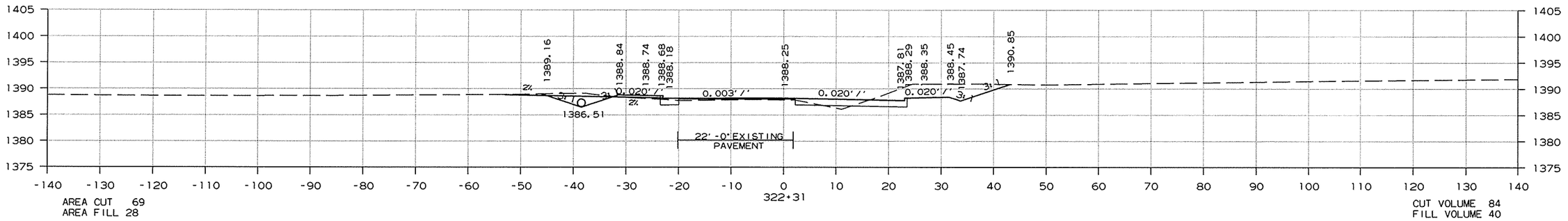
9/9/2015

R090373.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.		090373	188	316

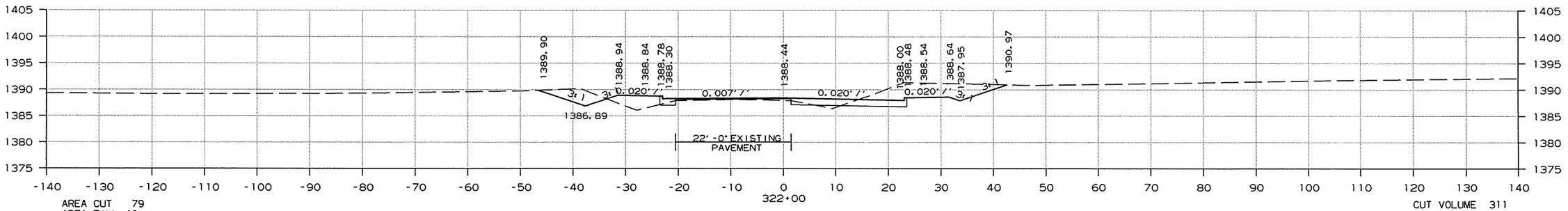
(2) CROSS SECTIONS

STA. 322+33 - IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 15 CU. YDS.



AREA CUT 69
AREA FILL 28

CUT VOLUME 84
FILL VOLUME 40

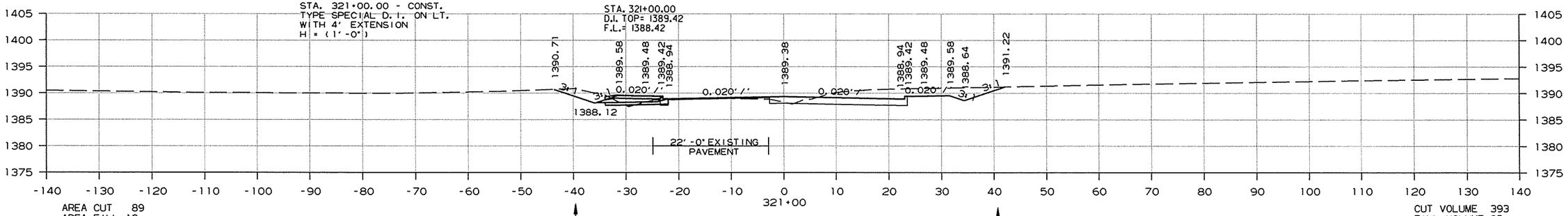


AREA CUT 79
AREA FILL 43

CUT VOLUME 311
FILL VOLUME 103

STA. 321+00.00 - CONST.
TYPE SPECIAL D. I. ON LT.
WITH 4' EXTENSION
H = (1'-0")

STA. 321+00.00
D.I. TOP= 1389.42
F.L.= 1388.42



AREA CUT 89
AREA FILL 13

CUT VOLUME 393
FILL VOLUME 35

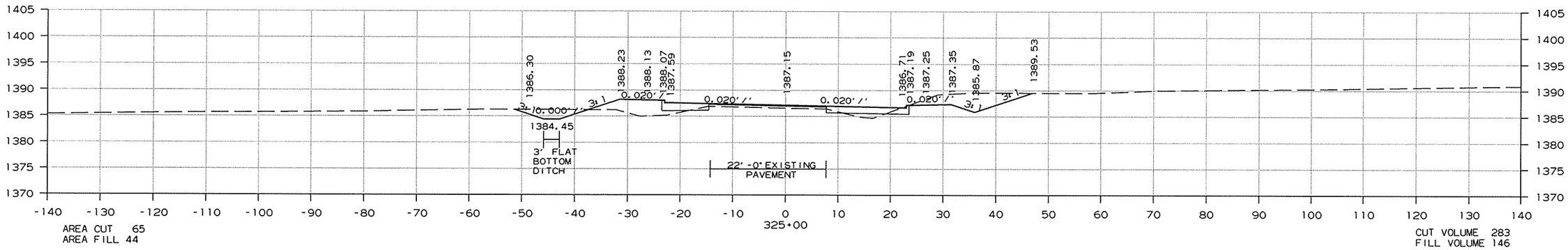
CROSS SECTION STA. 321+00 TO STA. 322+31

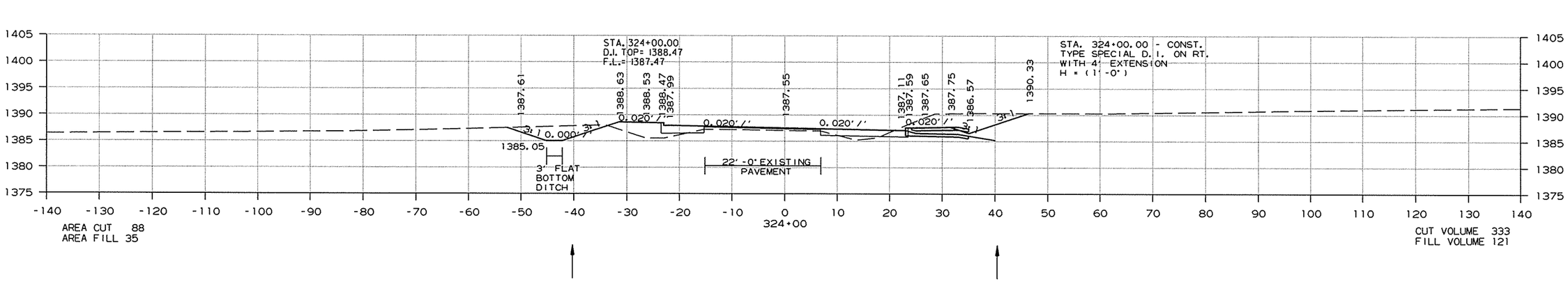
9/9/2015

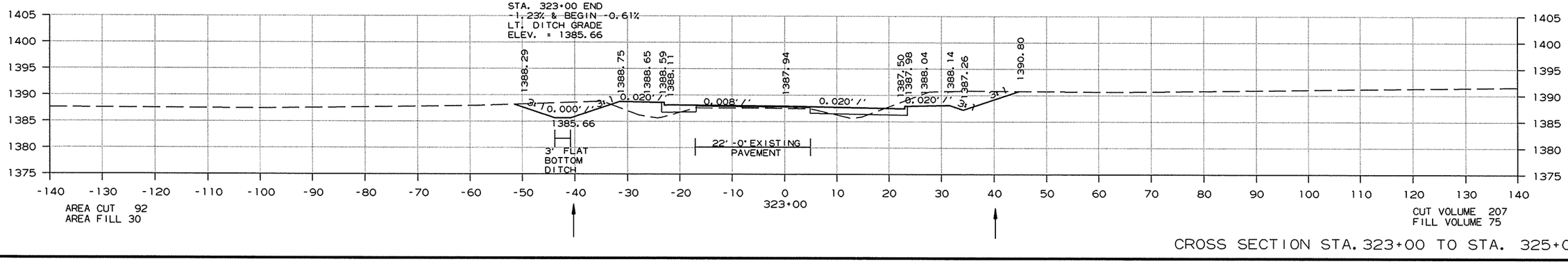
R090373.DGN

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.		090373	189	316

(2) CROSS SECTIONS







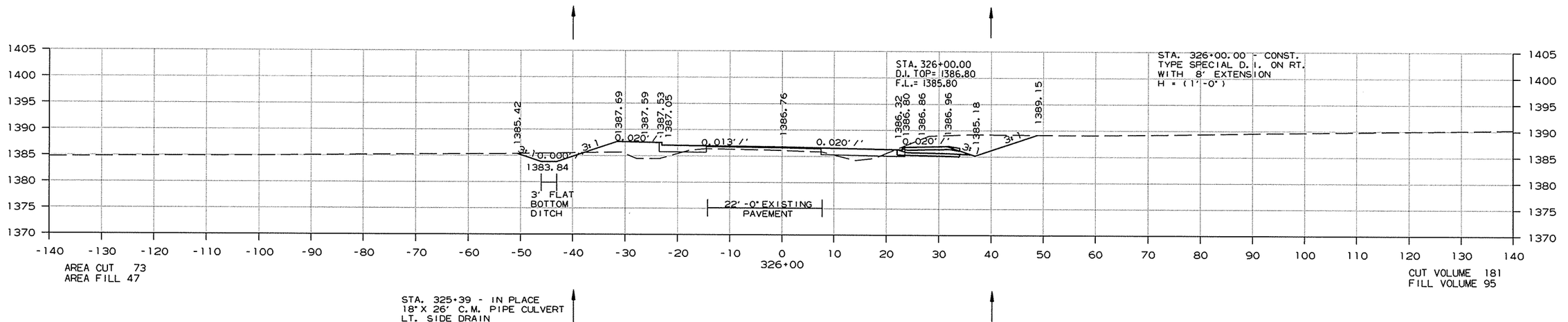
CROSS SECTION STA. 323+00 TO STA. 325+00

9/9/2015

R090373.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.		090373	190	316

(2) CROSS SECTIONS



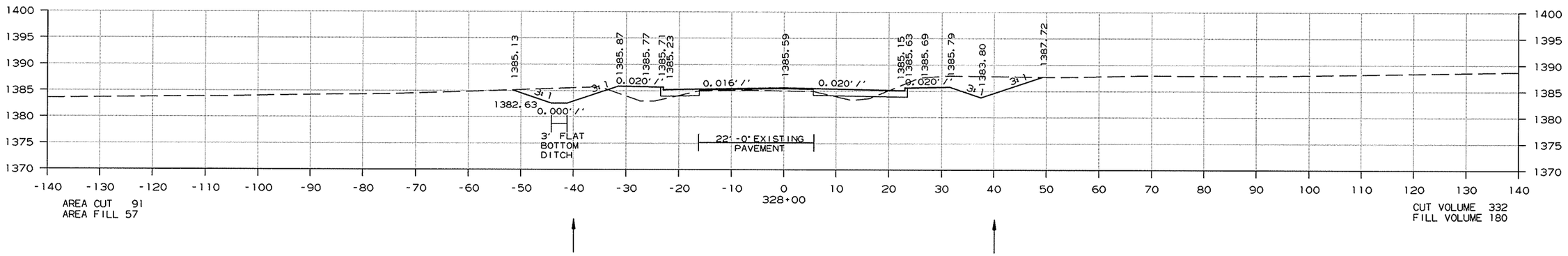
CROSS SECTION STA. 325+34 TO STA. 326+00

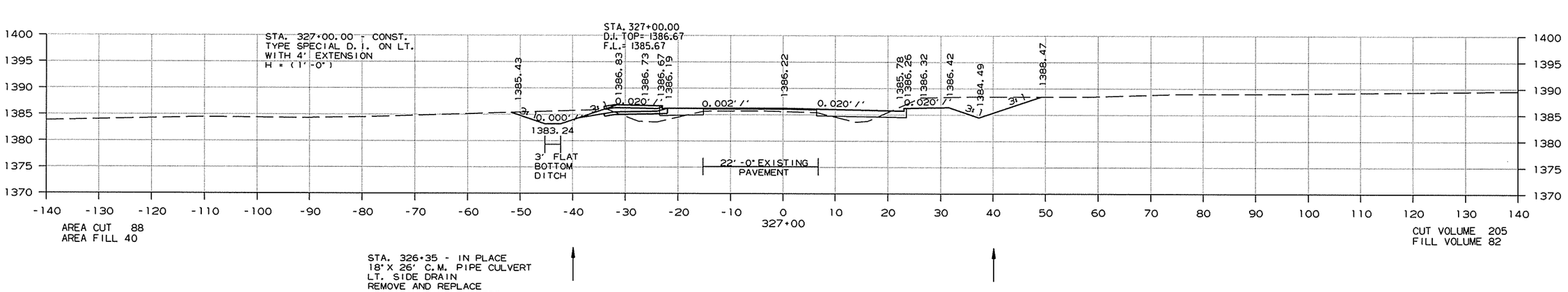
9/9/2015

R090373.DGN

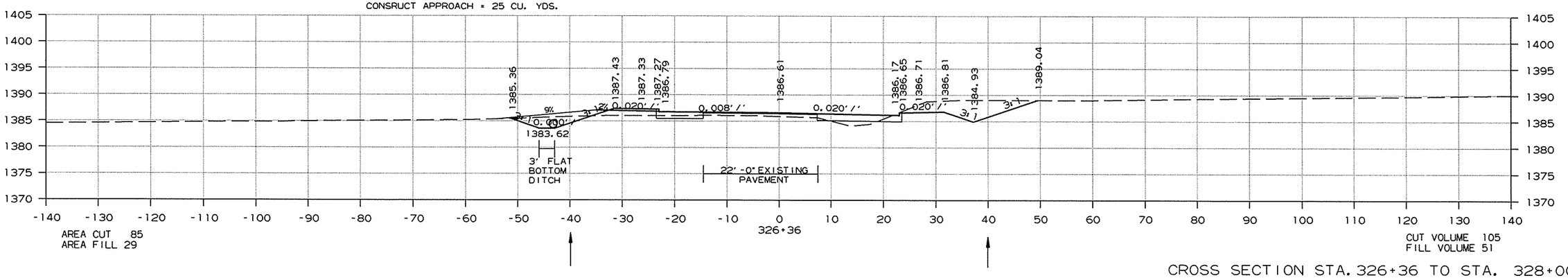
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	191	316

(2) CROSS SECTIONS





STA. 326+35 - IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND REPLACE
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSRUCT APPROACH = 25 CU. YDS.



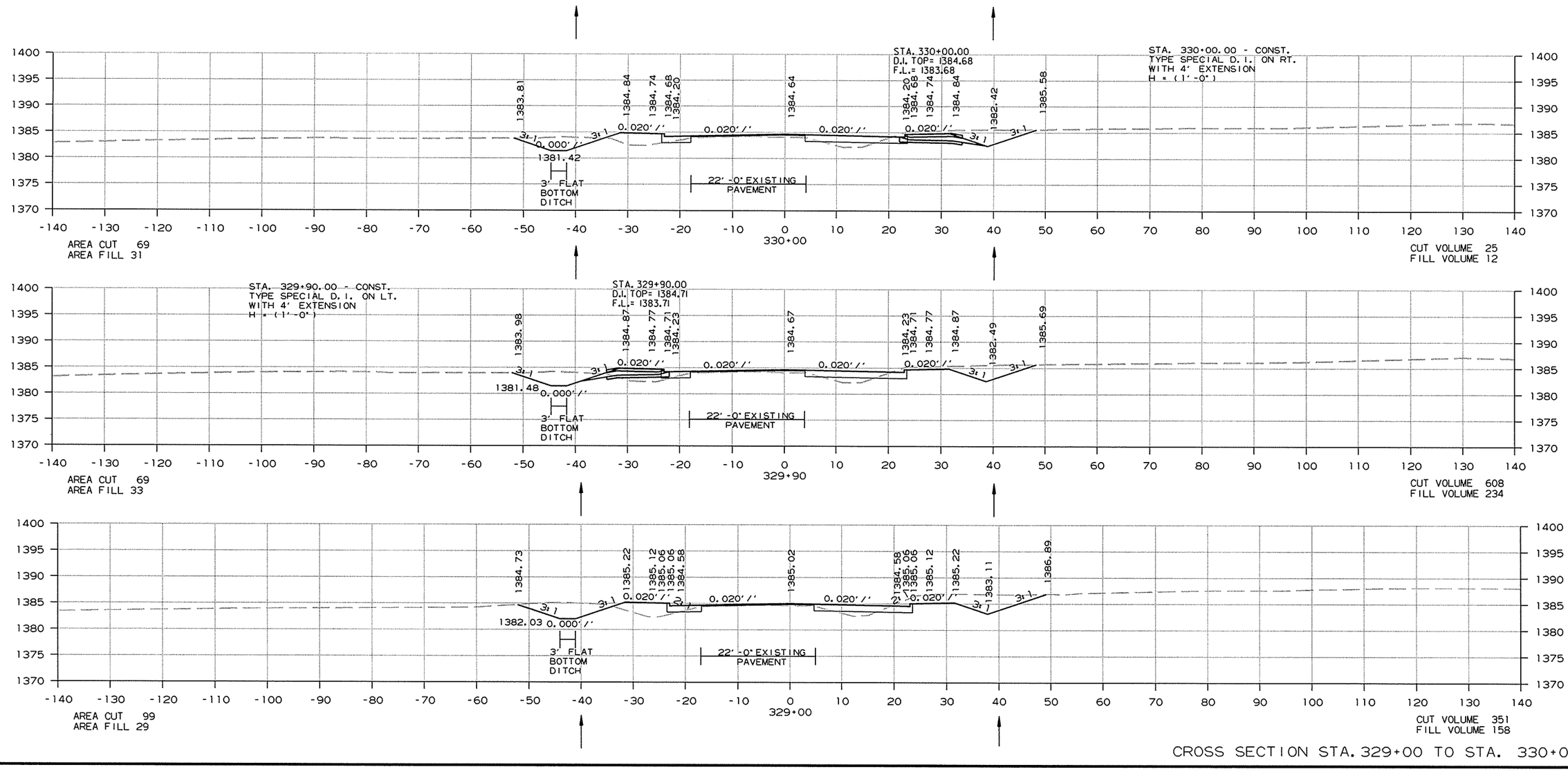
CROSS SECTION STA. 326+36 TO STA. 328+00

9/9/2015

R090373.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.		090373	192	316

(2) CROSS SECTIONS



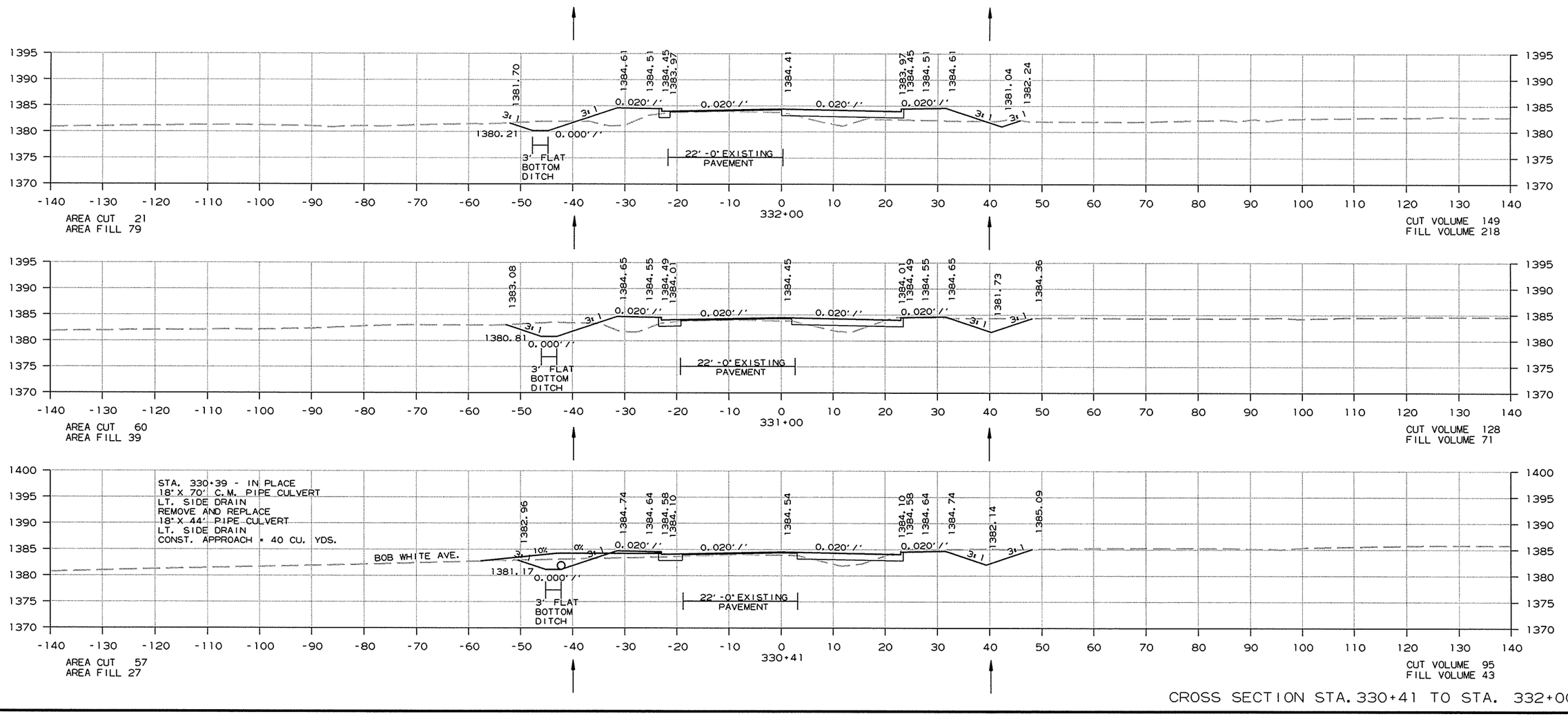
CROSS SECTION STA. 329+00 TO STA. 330+00

9/9/2015

R090373.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.		090373	193	316

(2) CROSS SECTIONS



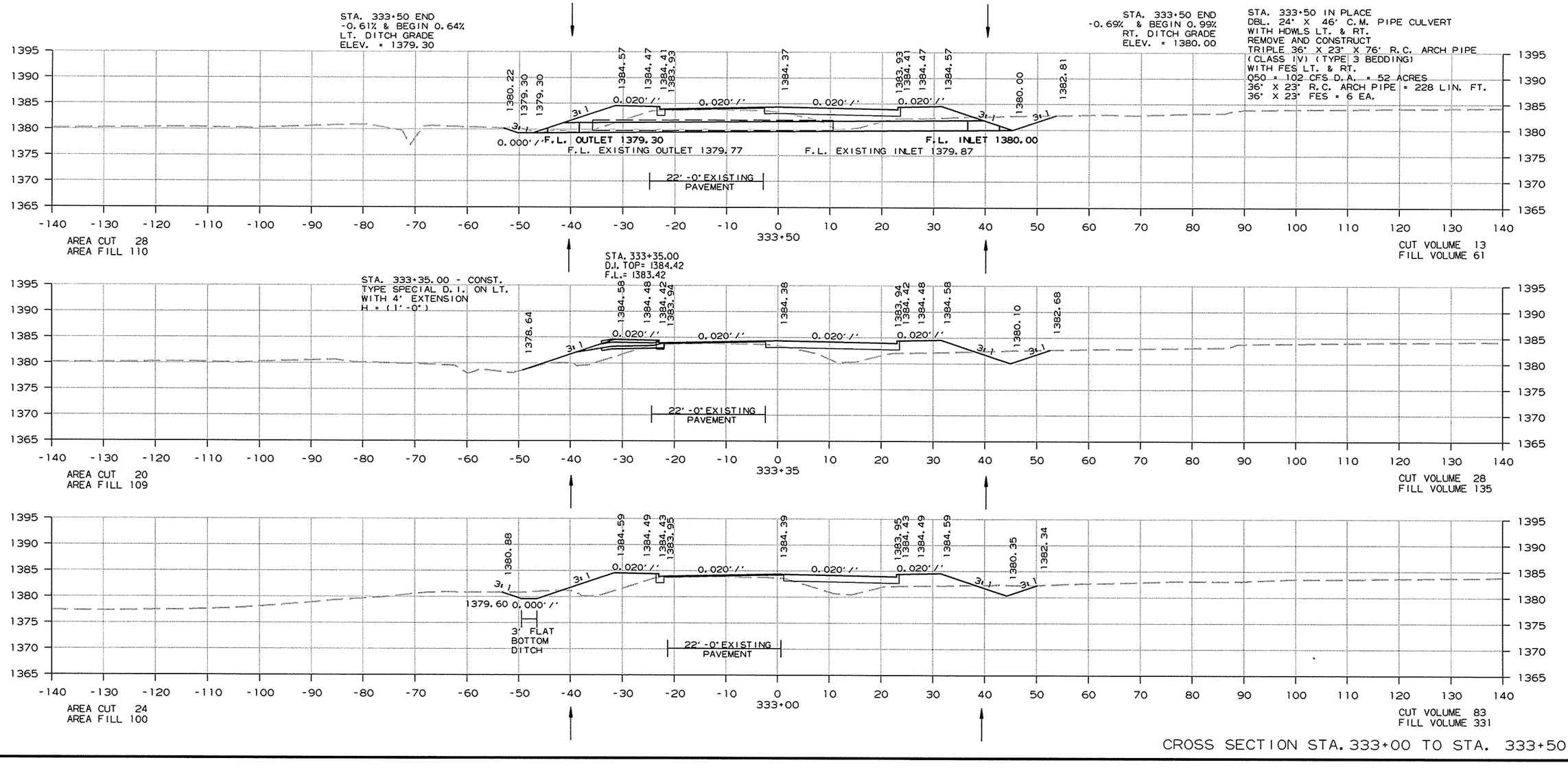
CROSS SECTION STA. 330+41 TO STA. 332+00

9/9/2015

R090373.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.		090373	194	316

(2) CROSS SECTIONS



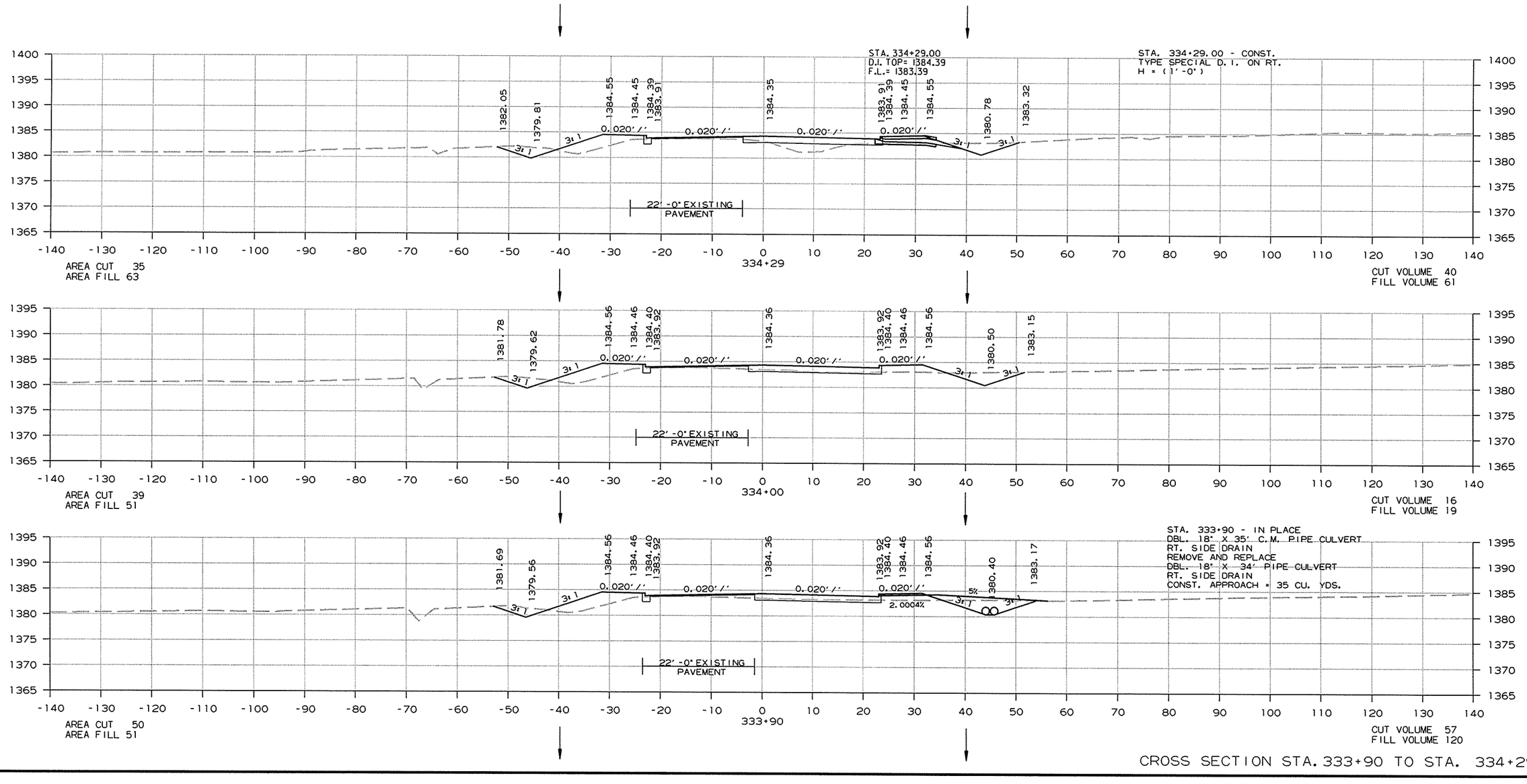
CROSS SECTION STA. 333+00 TO STA. 333+50

9/9/2015

R090373.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.		090373	195	316

(2) CROSS SECTIONS



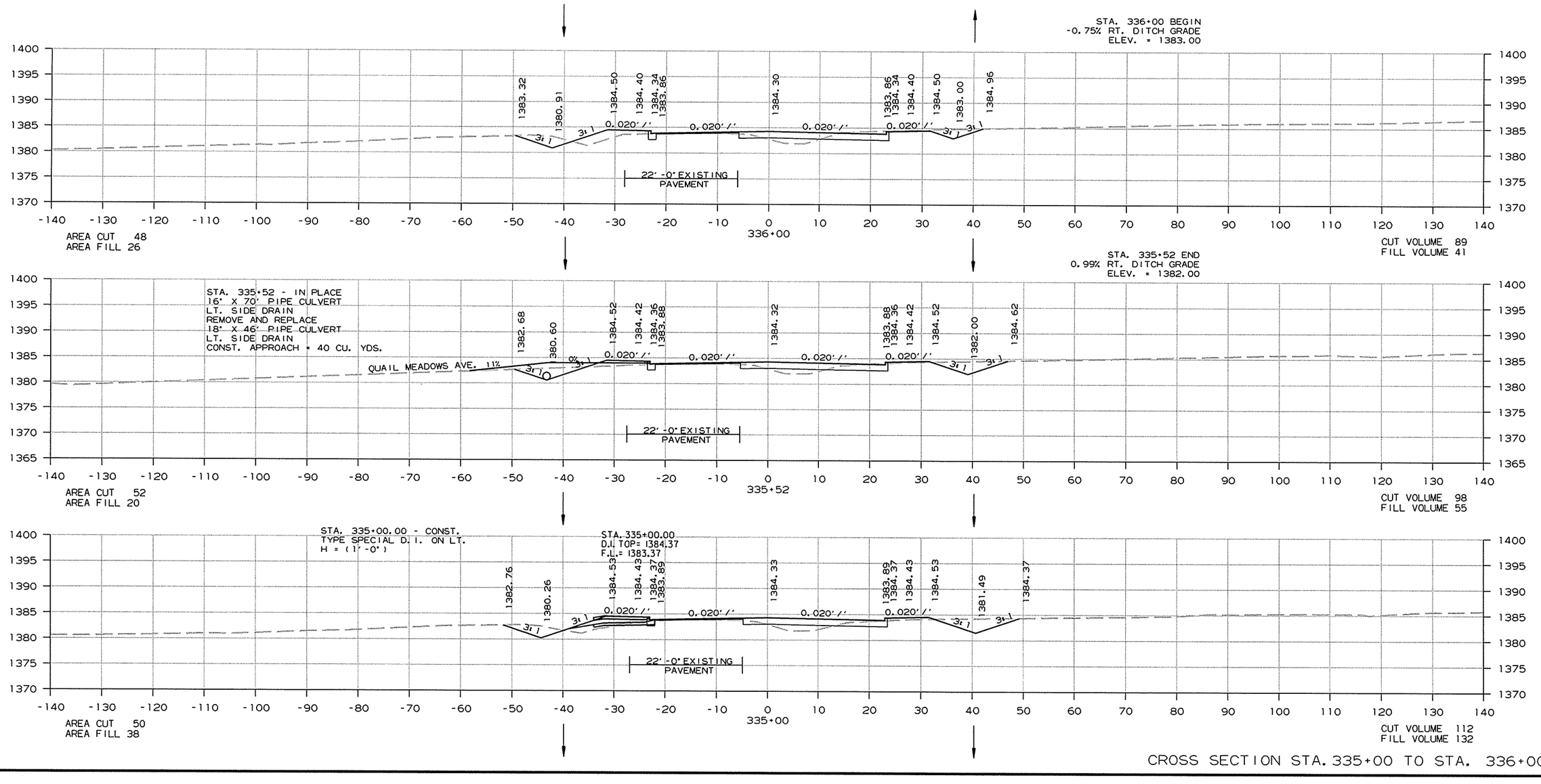
CROSS SECTION STA. 333+90 TO STA. 334+29

9/9/2015

R090373.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.		090373	196	316

(2) CROSS SECTIONS



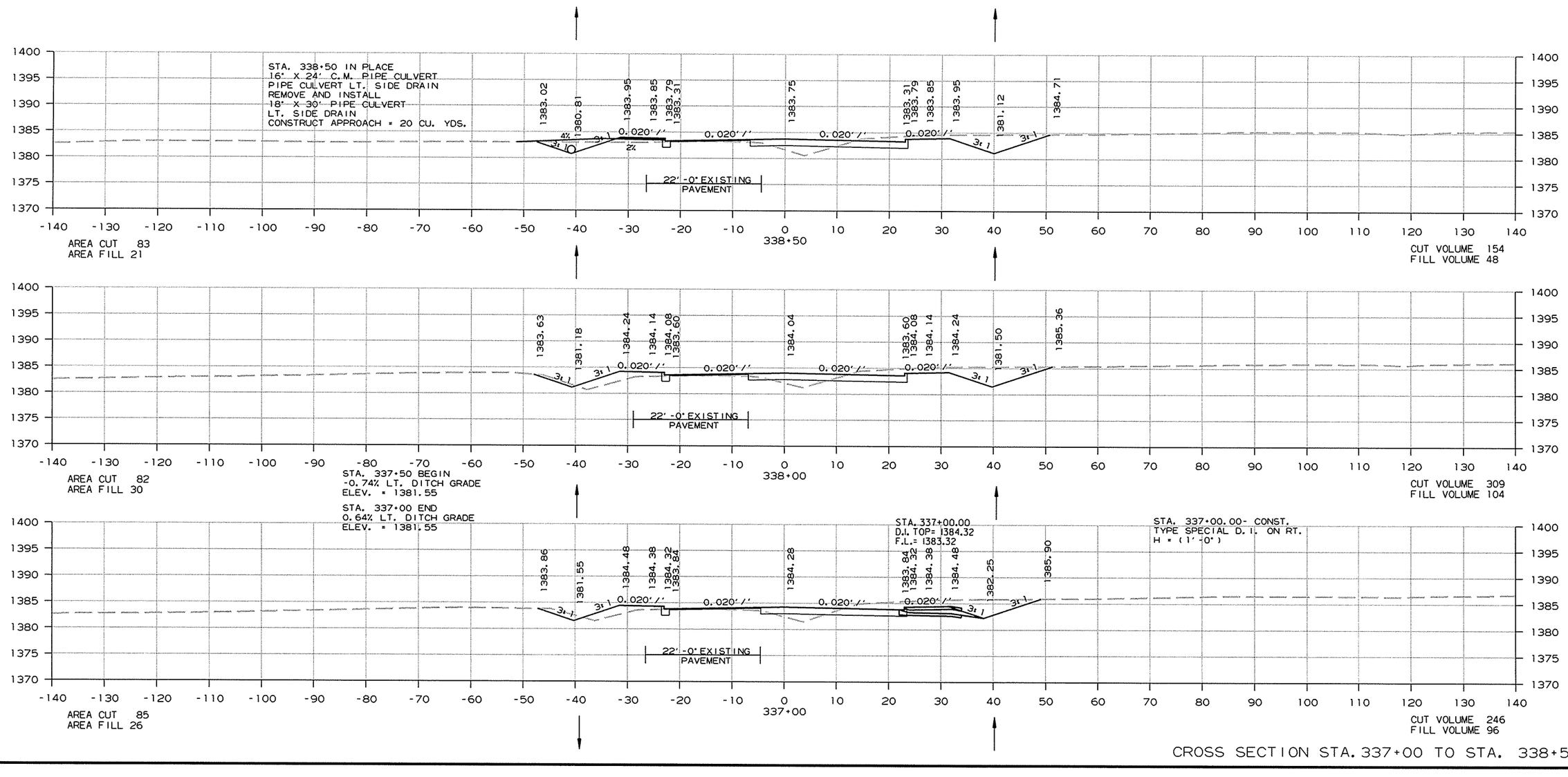
CROSS SECTION STA. 335+00 TO STA. 336+00

9/9/2015

R090373.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.		090373	197	316

(2) CROSS SECTIONS



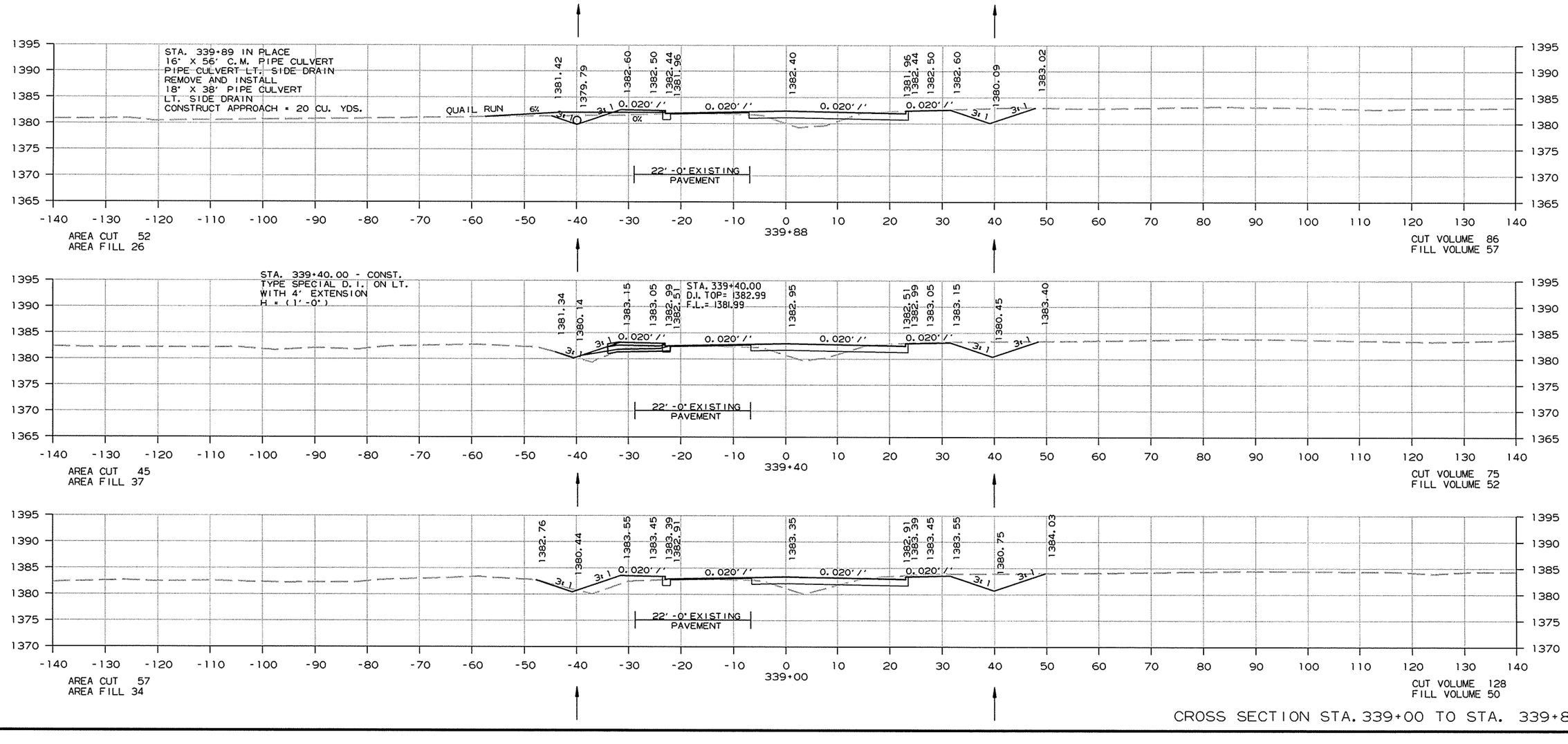
CROSS SECTION STA. 337+00 TO STA. 338+50

9/9/2015

R090373.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.		090373	198	316

(2) CROSS SECTIONS



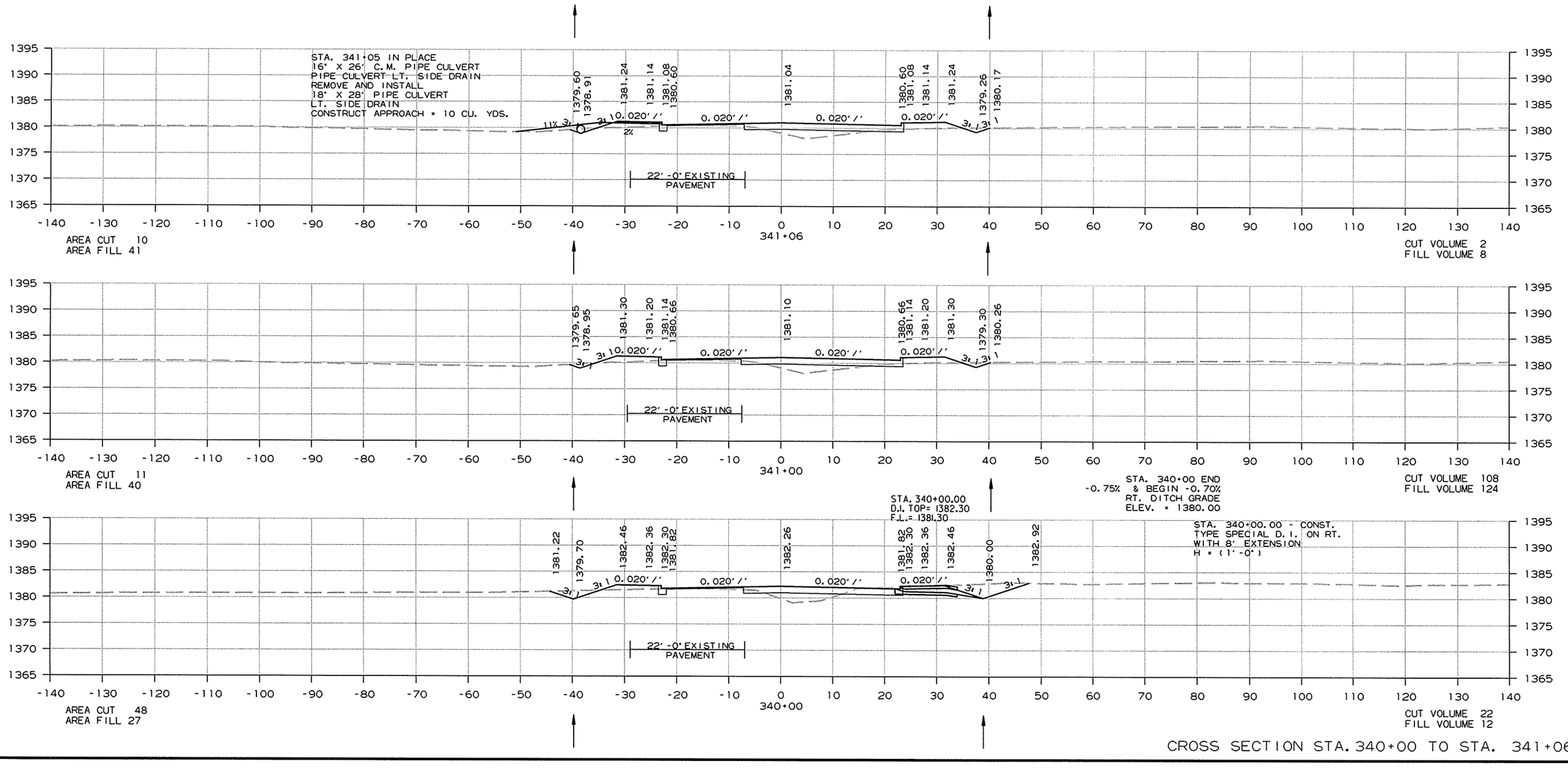
CROSS SECTION STA. 339+00 TO STA. 339+88

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	199	316

(2) CROSS SECTIONS



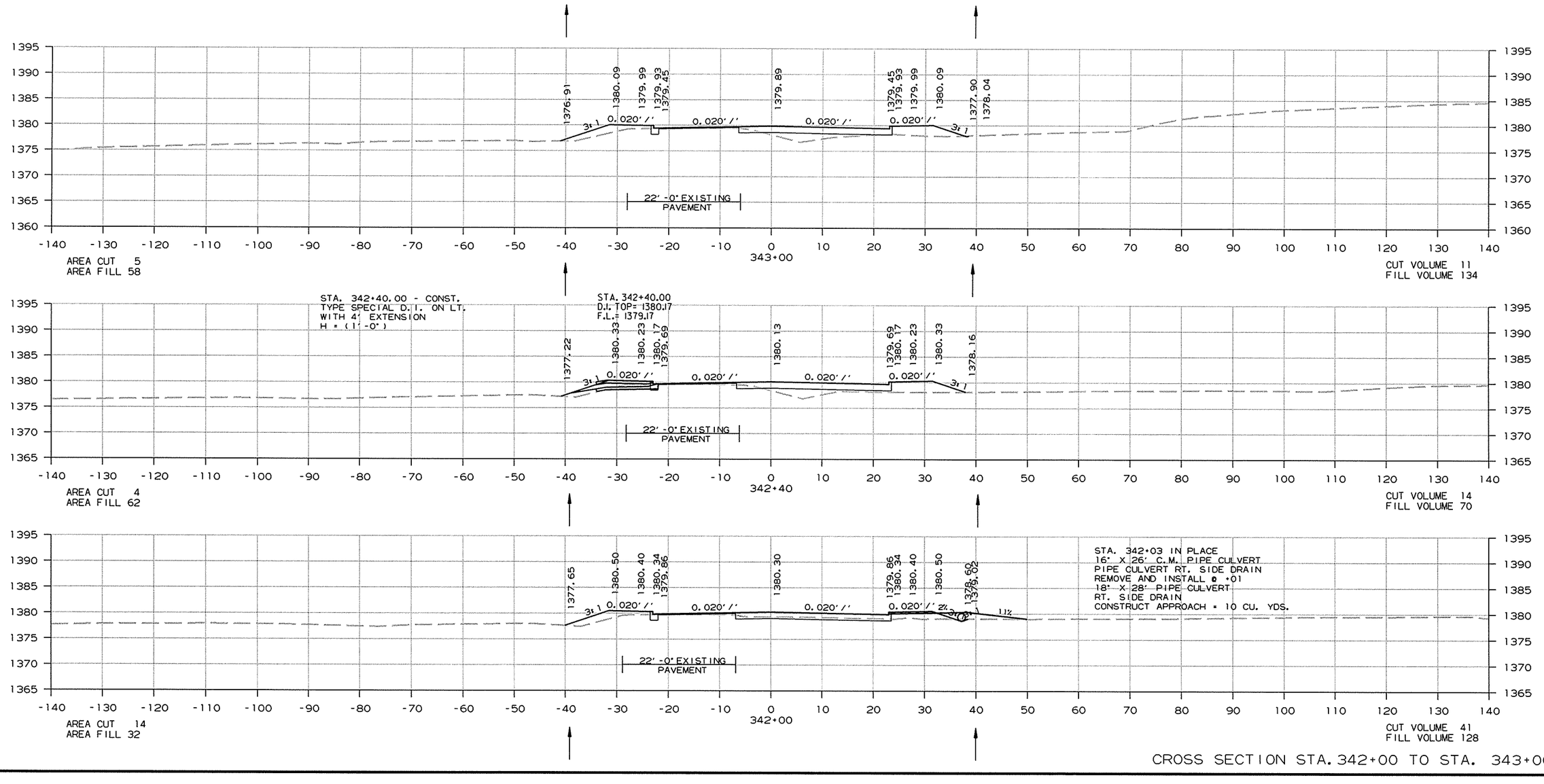
CROSS SECTION STA. 340+00 TO STA. 341+06

9/9/2015

R090373.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.		090373	200	316

(2) CROSS SECTIONS



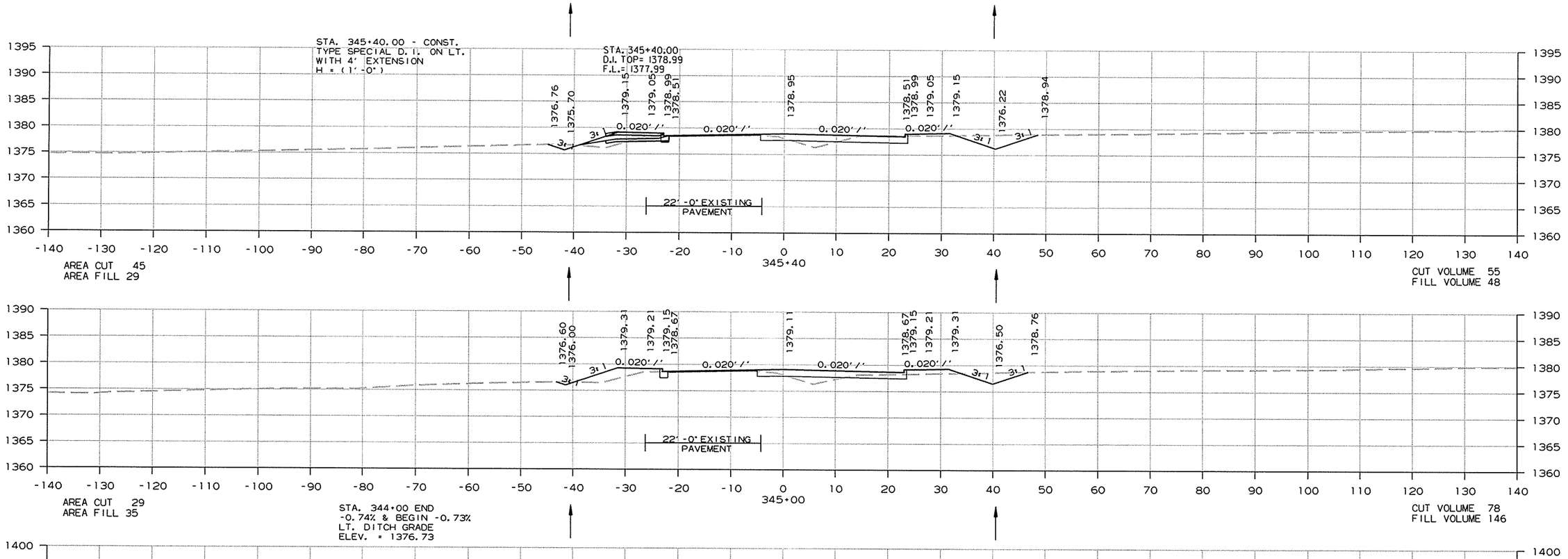
CROSS SECTION STA. 342+00 TO STA. 343+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	201	316

(2) CROSS SECTIONS



CROSS SECTION STA. 344+00 TO STA. 345+40

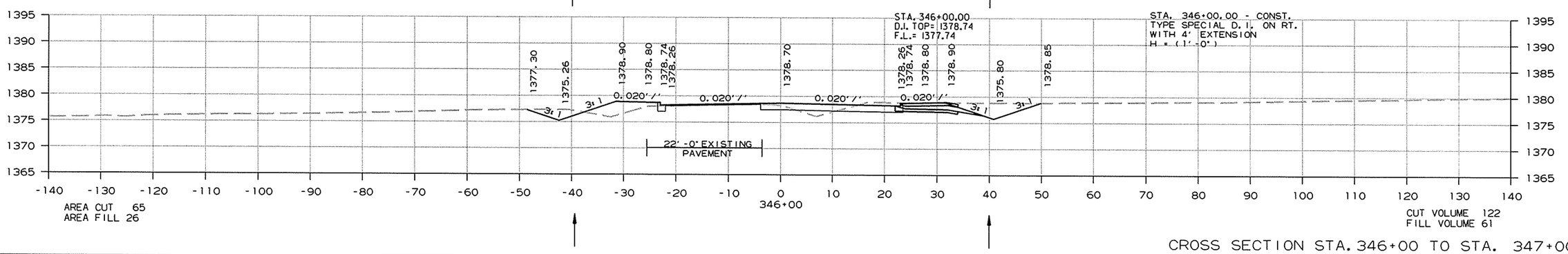
9/9/2015

R090373.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.		090373	202	316

(2) CROSS SECTIONS





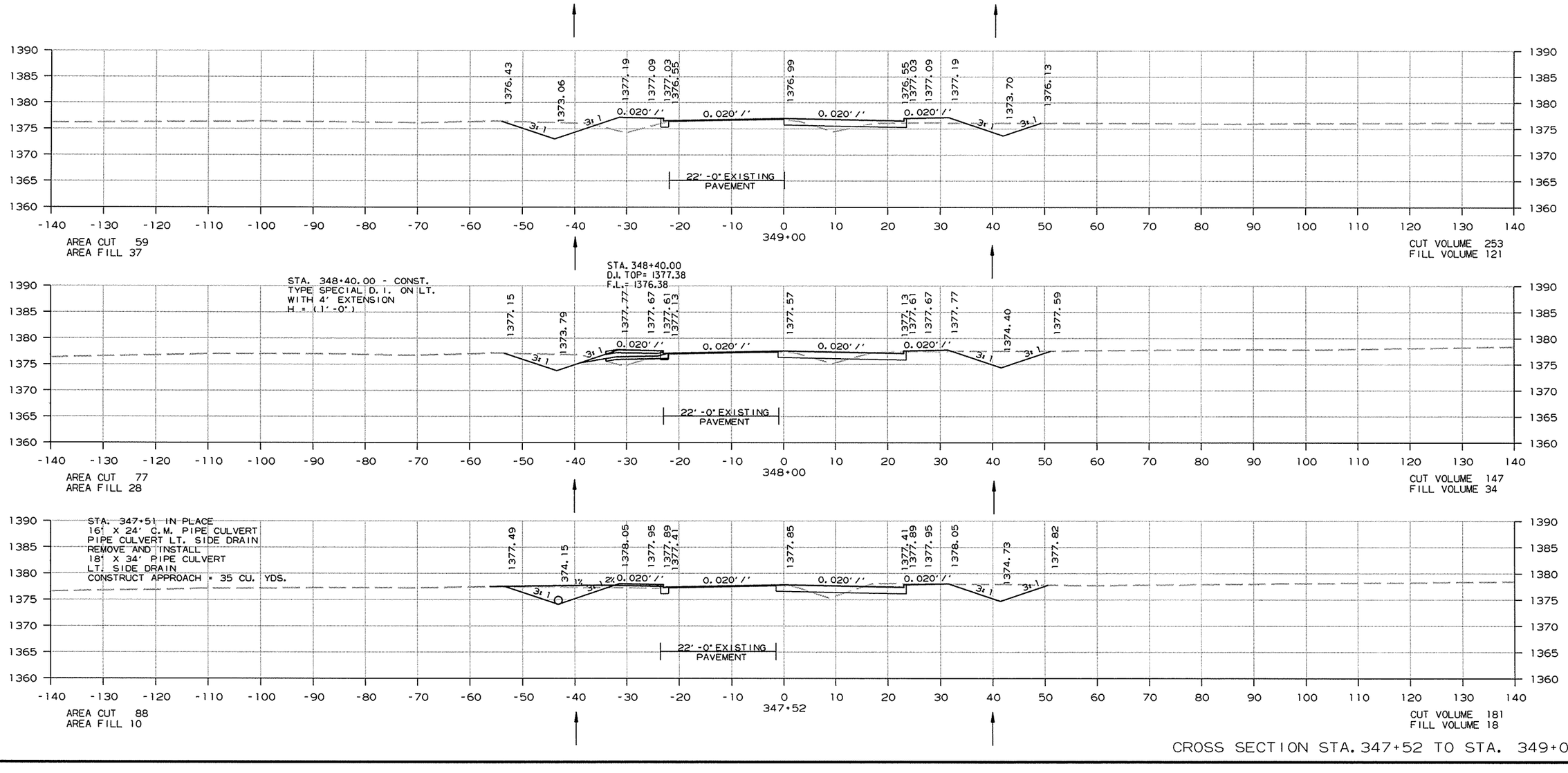
CROSS SECTION STA. 346+00 TO STA. 347+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	203	316

(2) CROSS SECTIONS



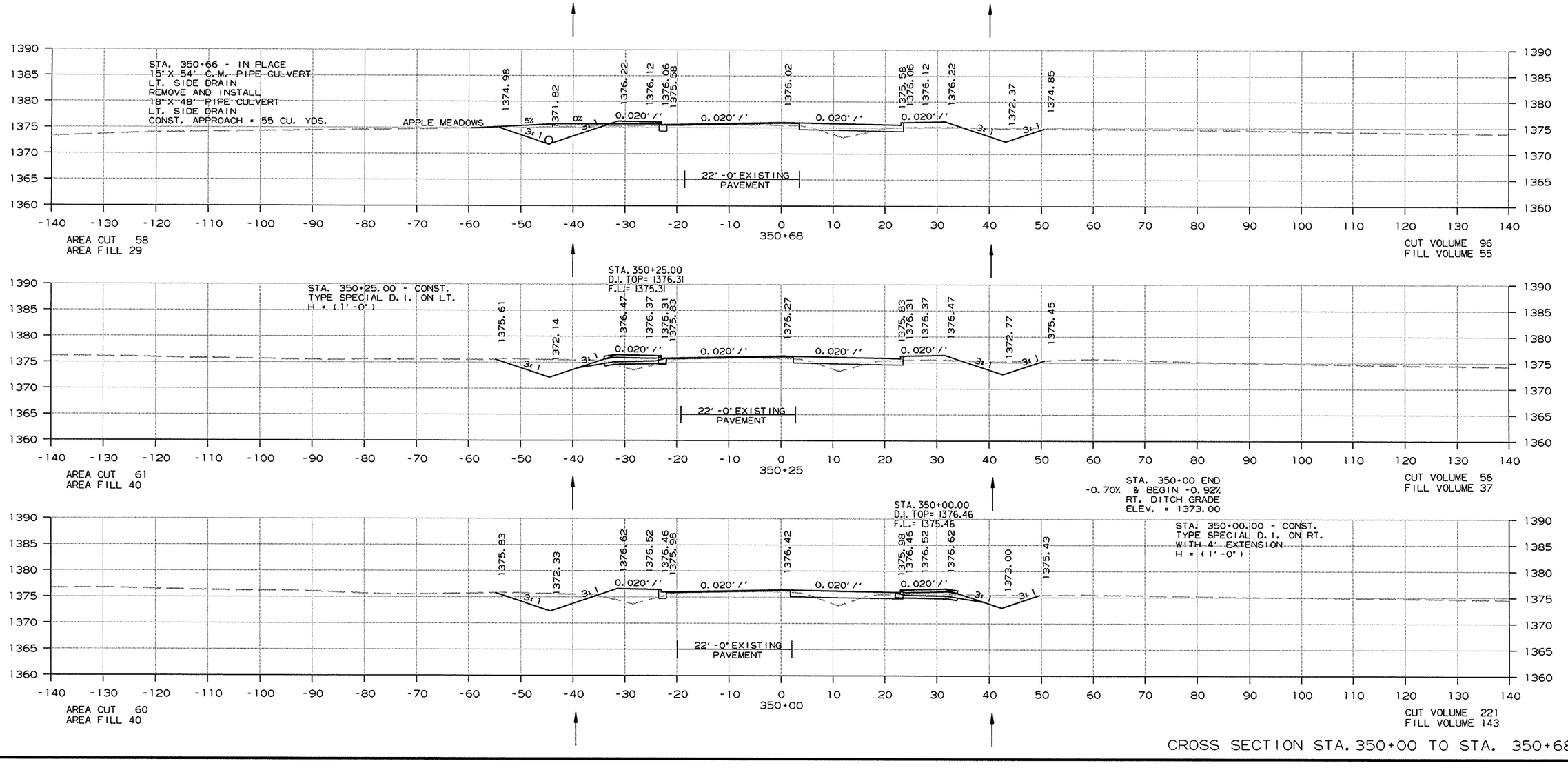
CROSS SECTION STA. 347+52 TO STA. 349+00

9/9/2015

R090373.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.		090373	204	316

(2) CROSS SECTIONS



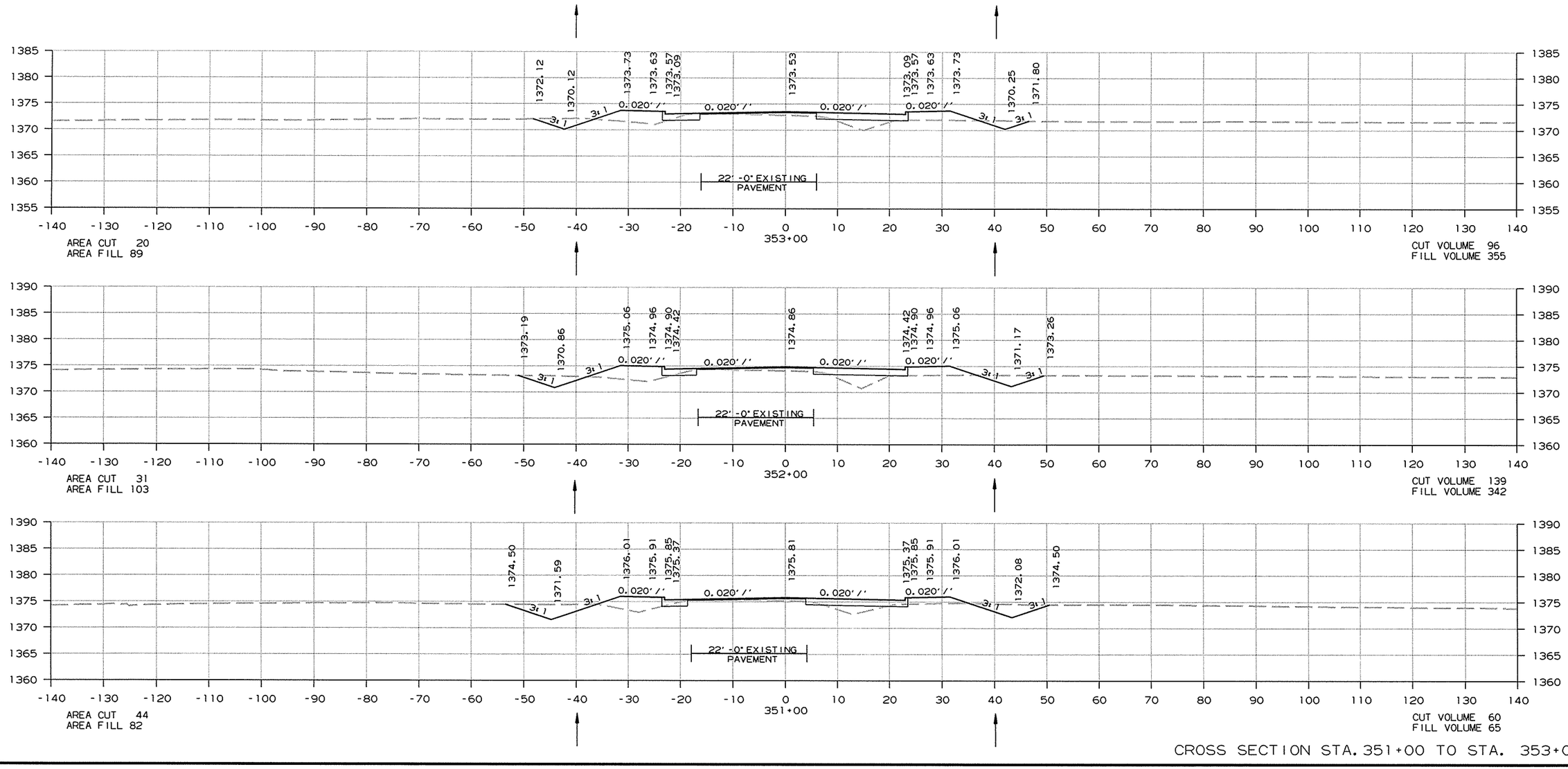
CROSS SECTION STA. 350+00 TO STA. 350+68

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	205	316

(2) CROSS SECTIONS



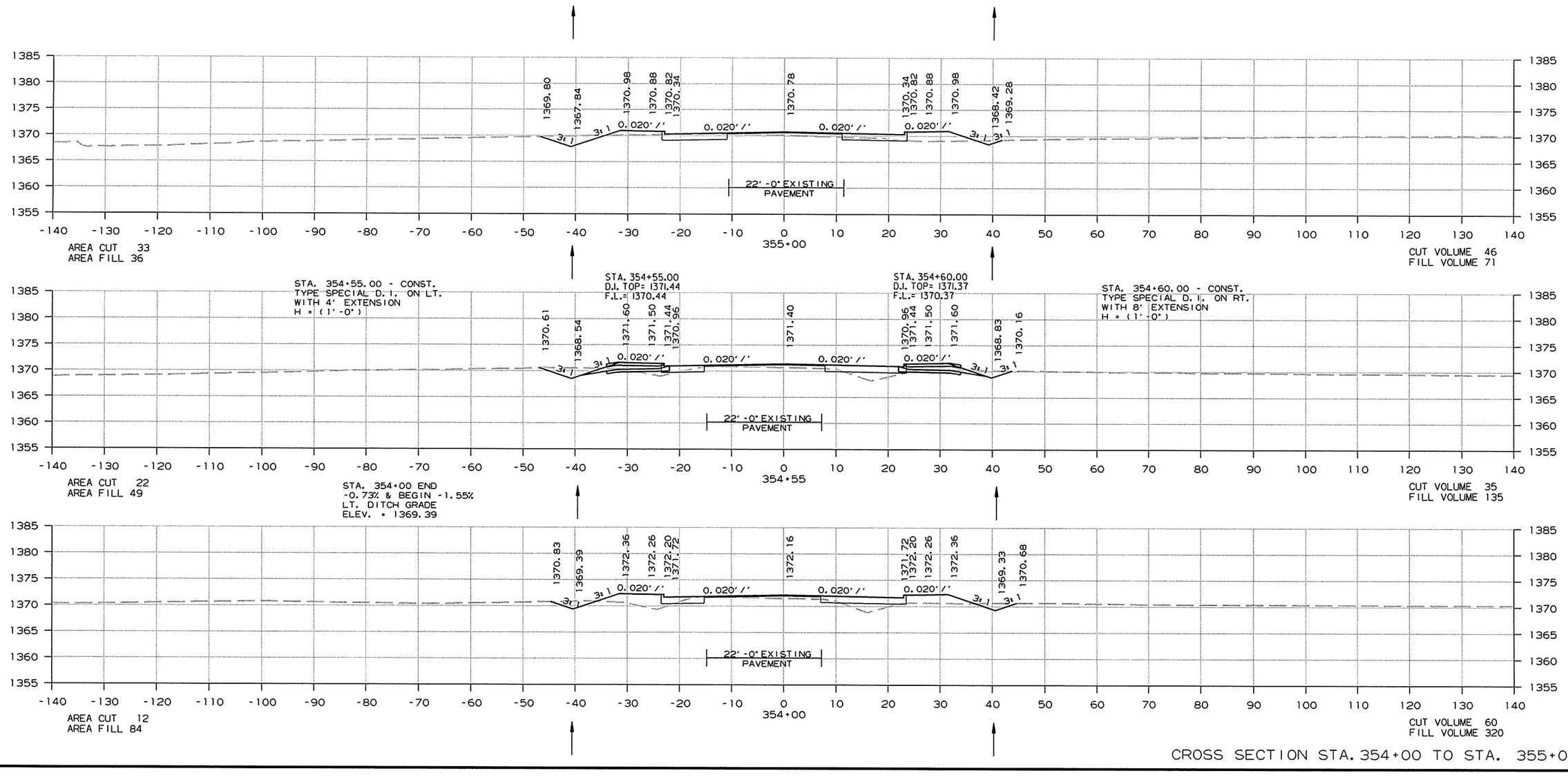
CROSS SECTION STA. 351+00 TO STA. 353+00

9/9/2015

R090373.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.		090373	206	316

(2) CROSS SECTIONS



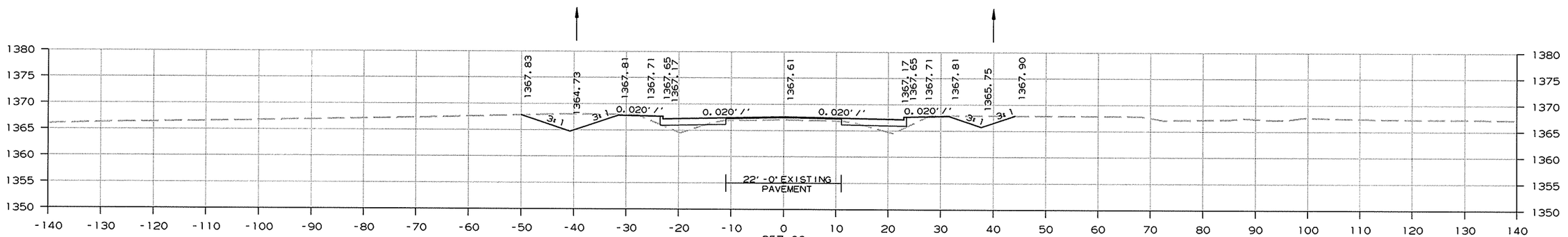
CROSS SECTION STA. 354+00 TO STA. 355+00

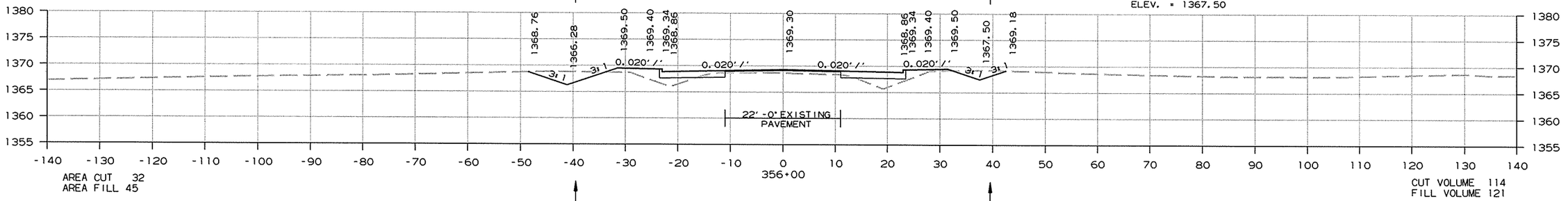
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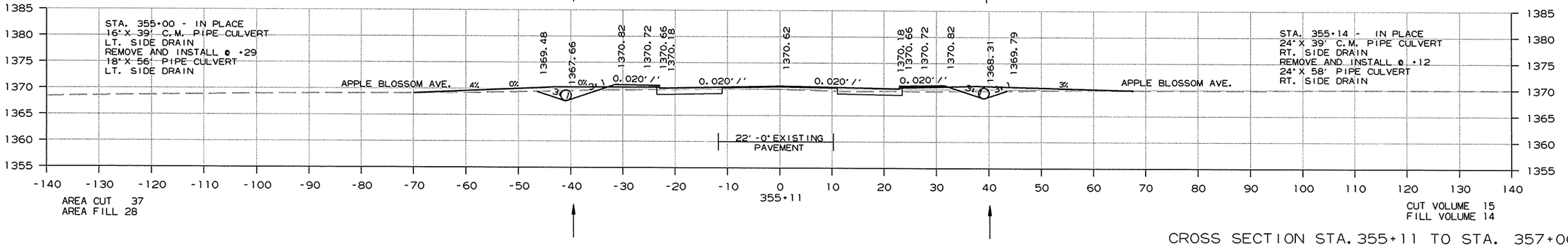
R090373.DGN

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.		090373	207	316

(2) CROSS SECTIONS







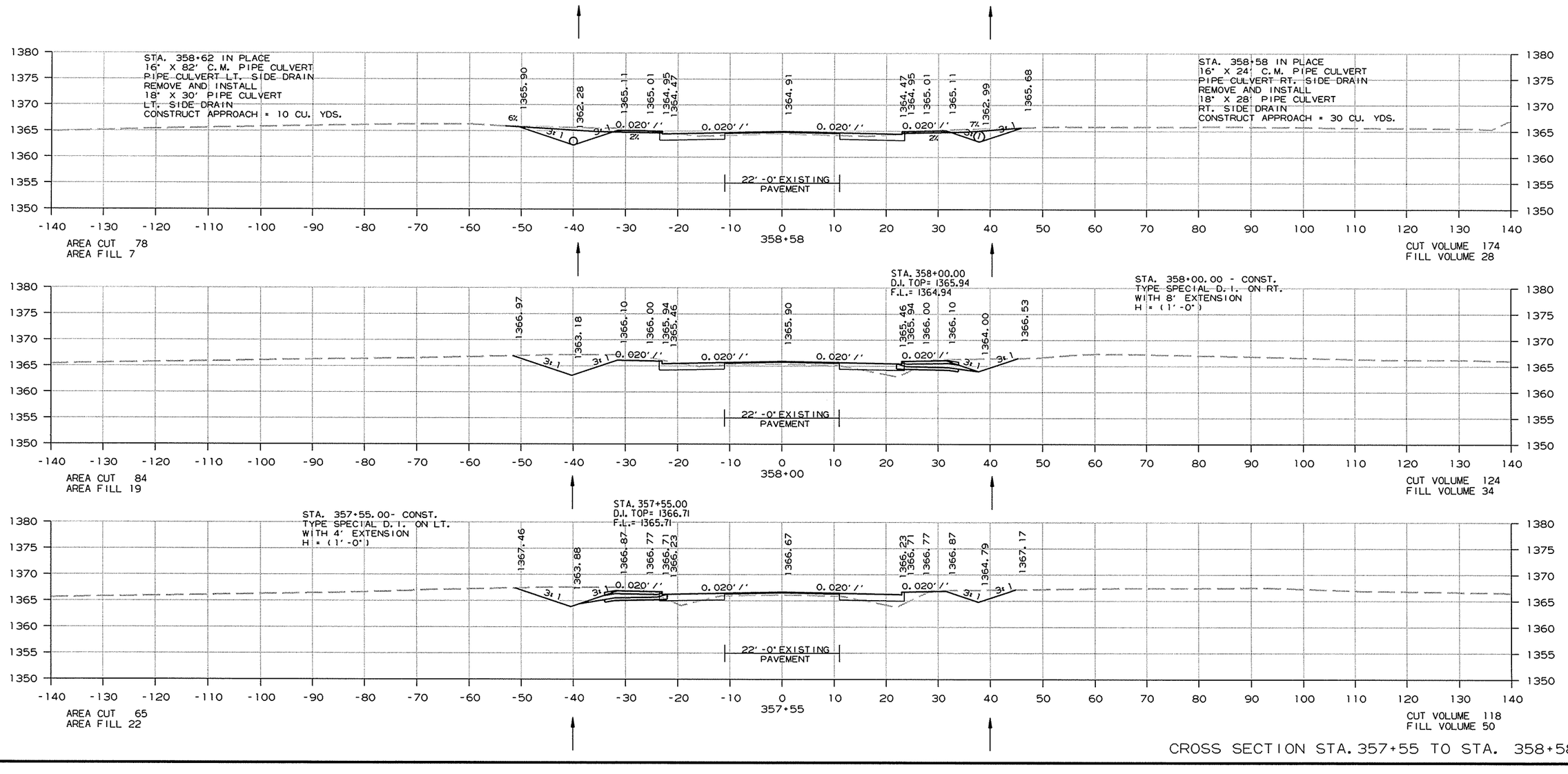
CROSS SECTION STA. 355+11 TO STA. 357+00

9/9/2015

R090373.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.		090373	208	316

(2) CROSS SECTIONS



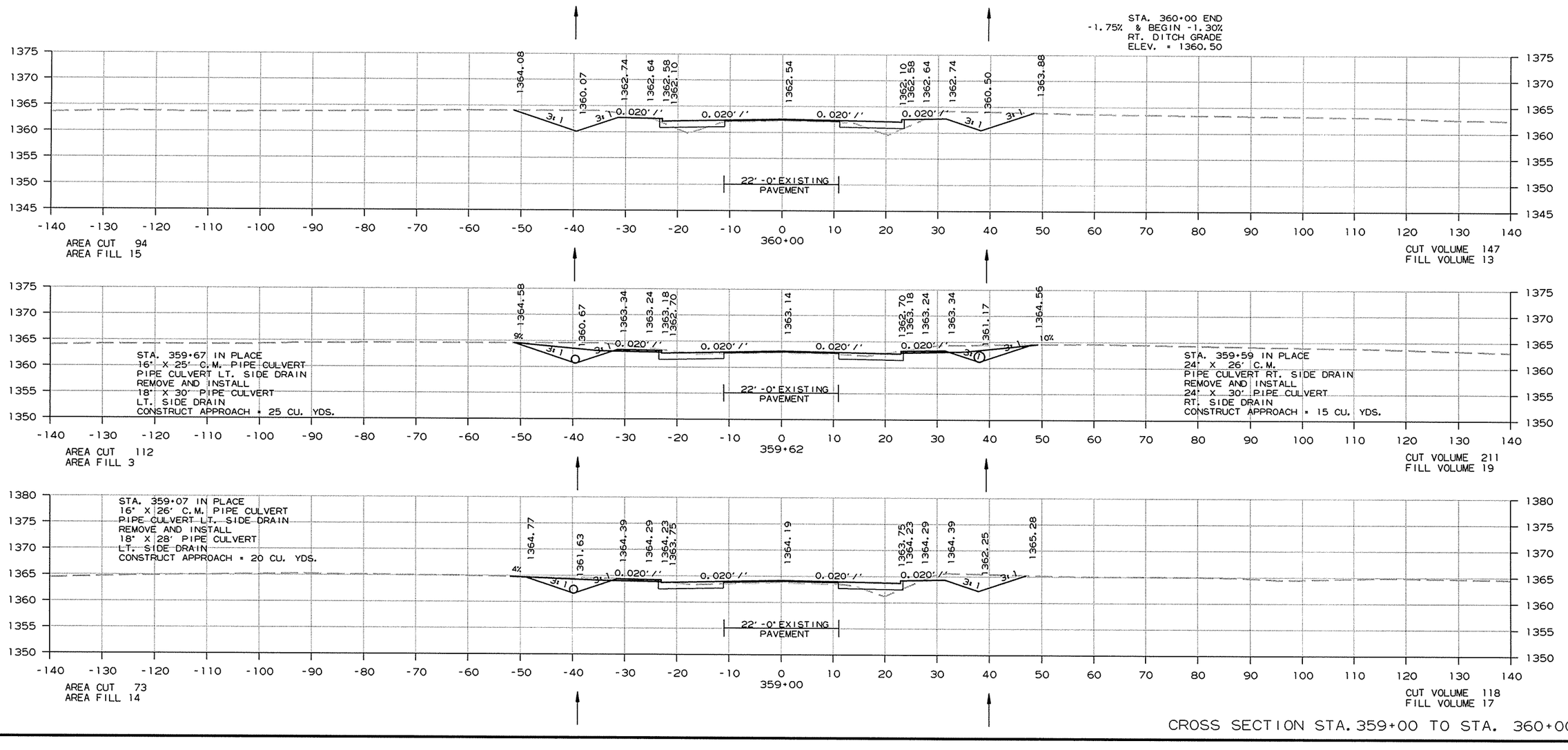
CROSS SECTION STA. 357+55 TO STA. 358+58

9/9/2015

R090373.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.		090373	209	316

(2) CROSS SECTIONS



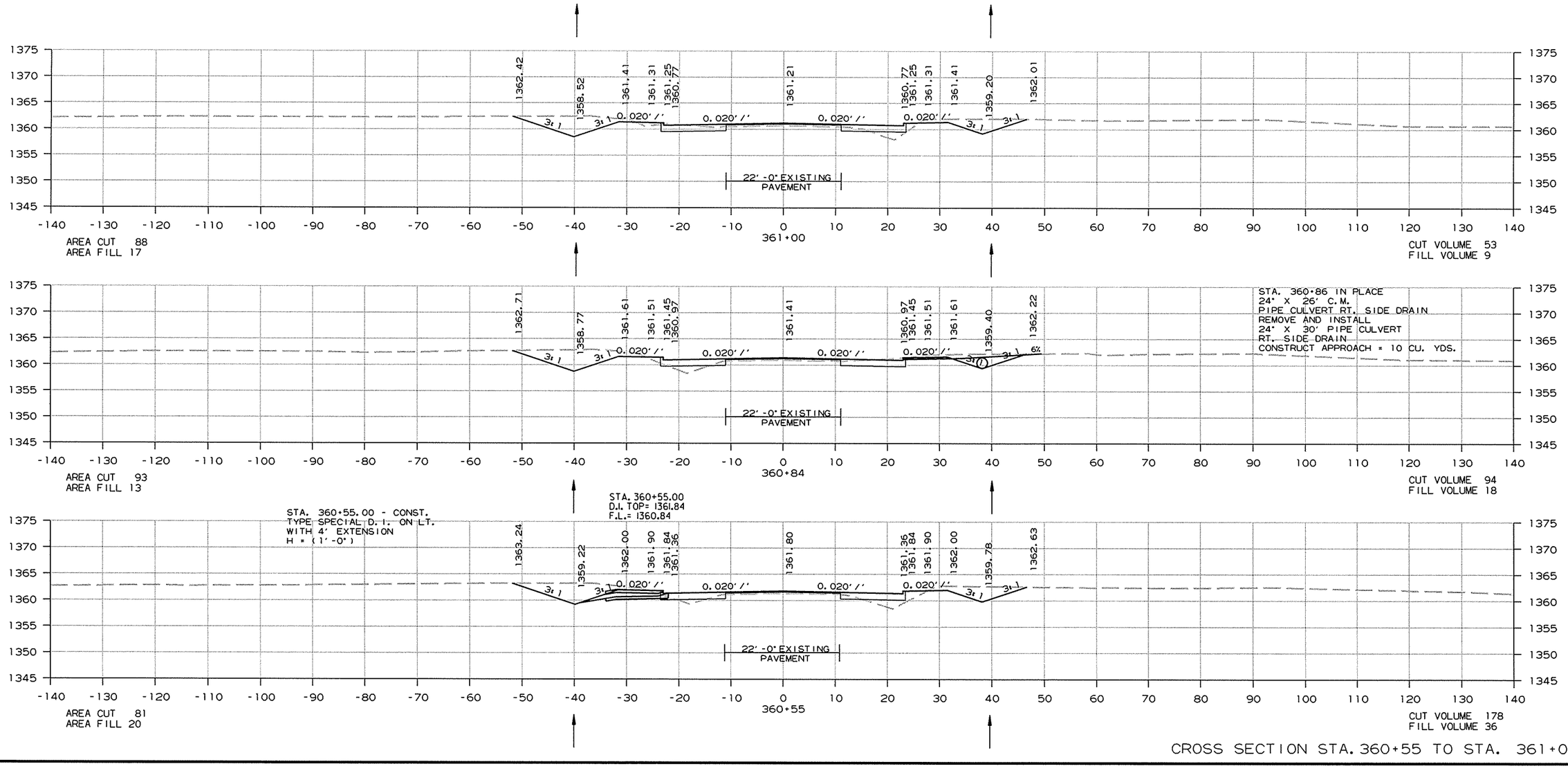
CROSS SECTION STA. 359+00 TO STA. 360+00

9/9/2015

R090373.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.		090373	210	316

(2) CROSS SECTIONS



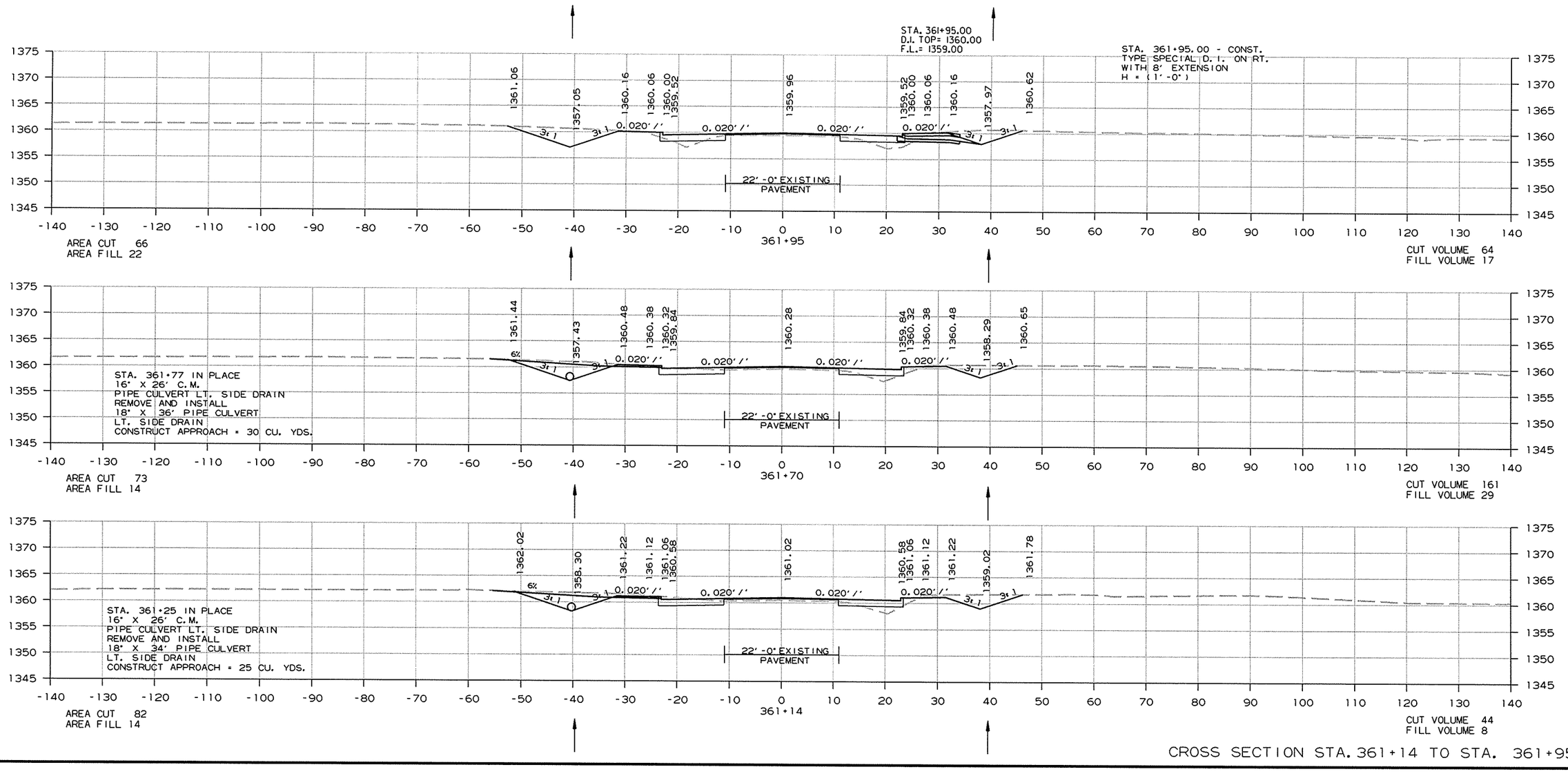
CROSS SECTION STA. 360+55 TO STA. 361+00

9/9/2015

R090373.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.		090373	211	316

(2) CROSS SECTIONS



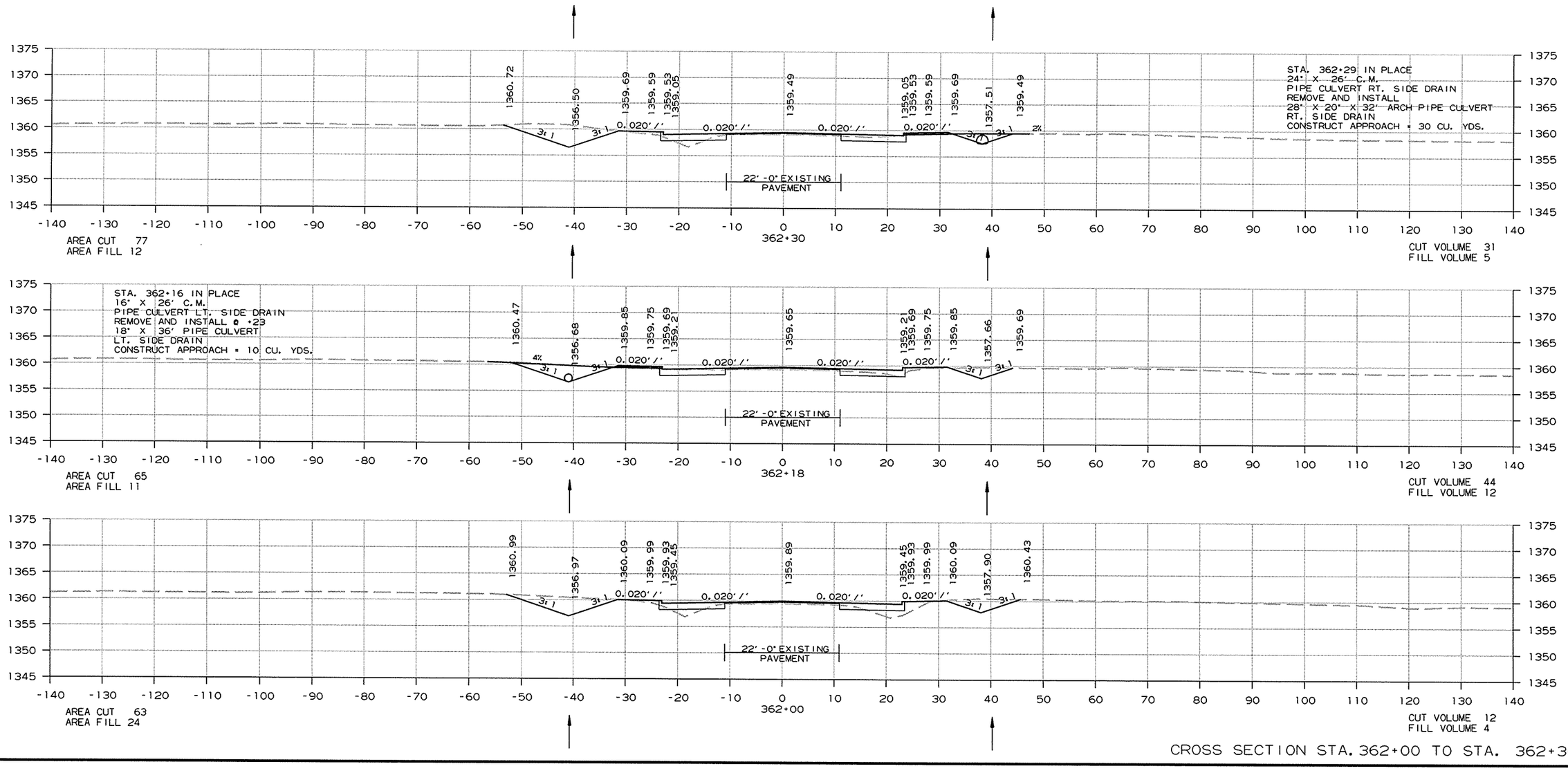
CROSS SECTION STA. 361+14 TO STA. 361+95

9/9/2015

R090373.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.		090373	212	316

(2) CROSS SECTIONS



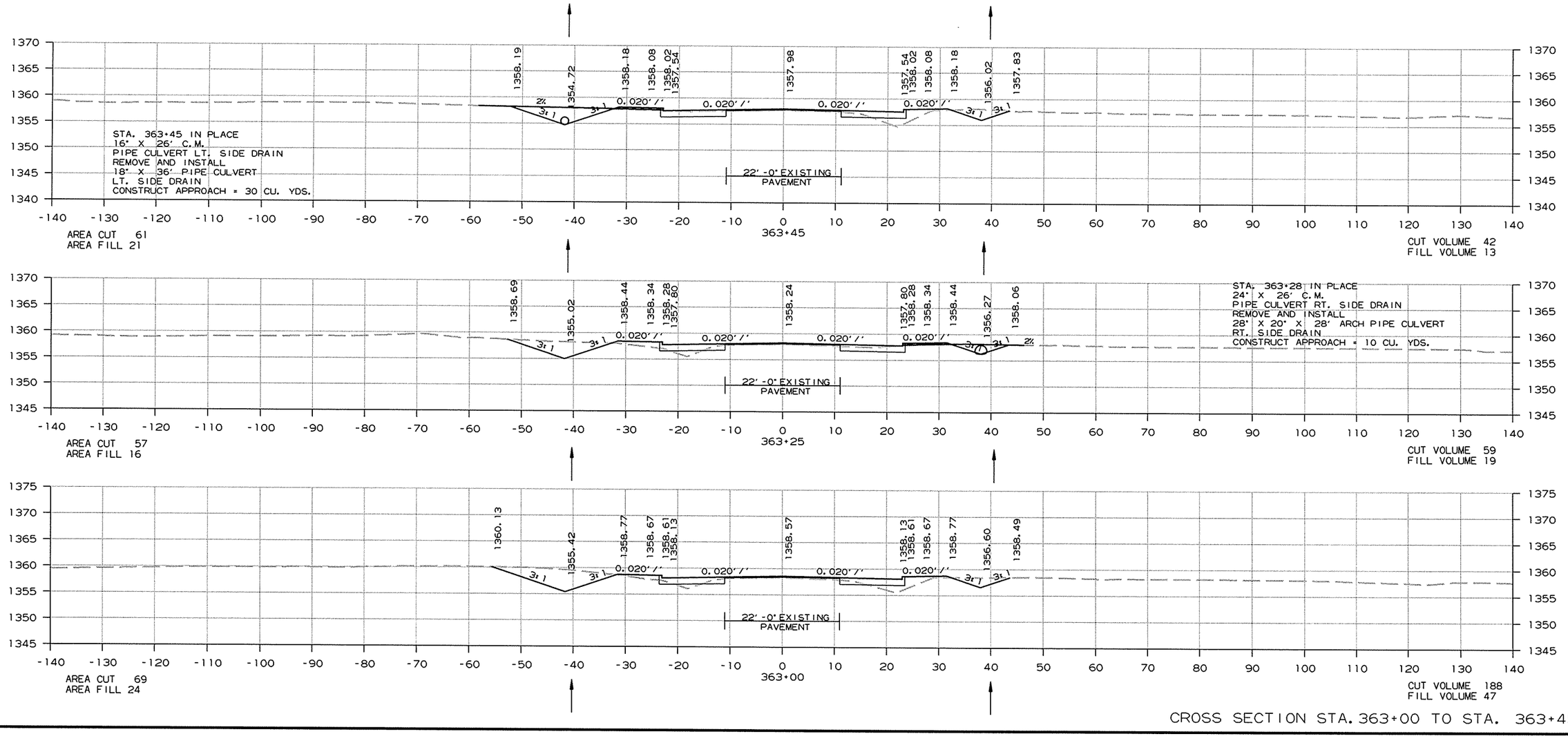
CROSS SECTION STA. 362+00 TO STA. 362+30

9/9/2015

R090373.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.		090373	213	316

(2) CROSS SECTIONS



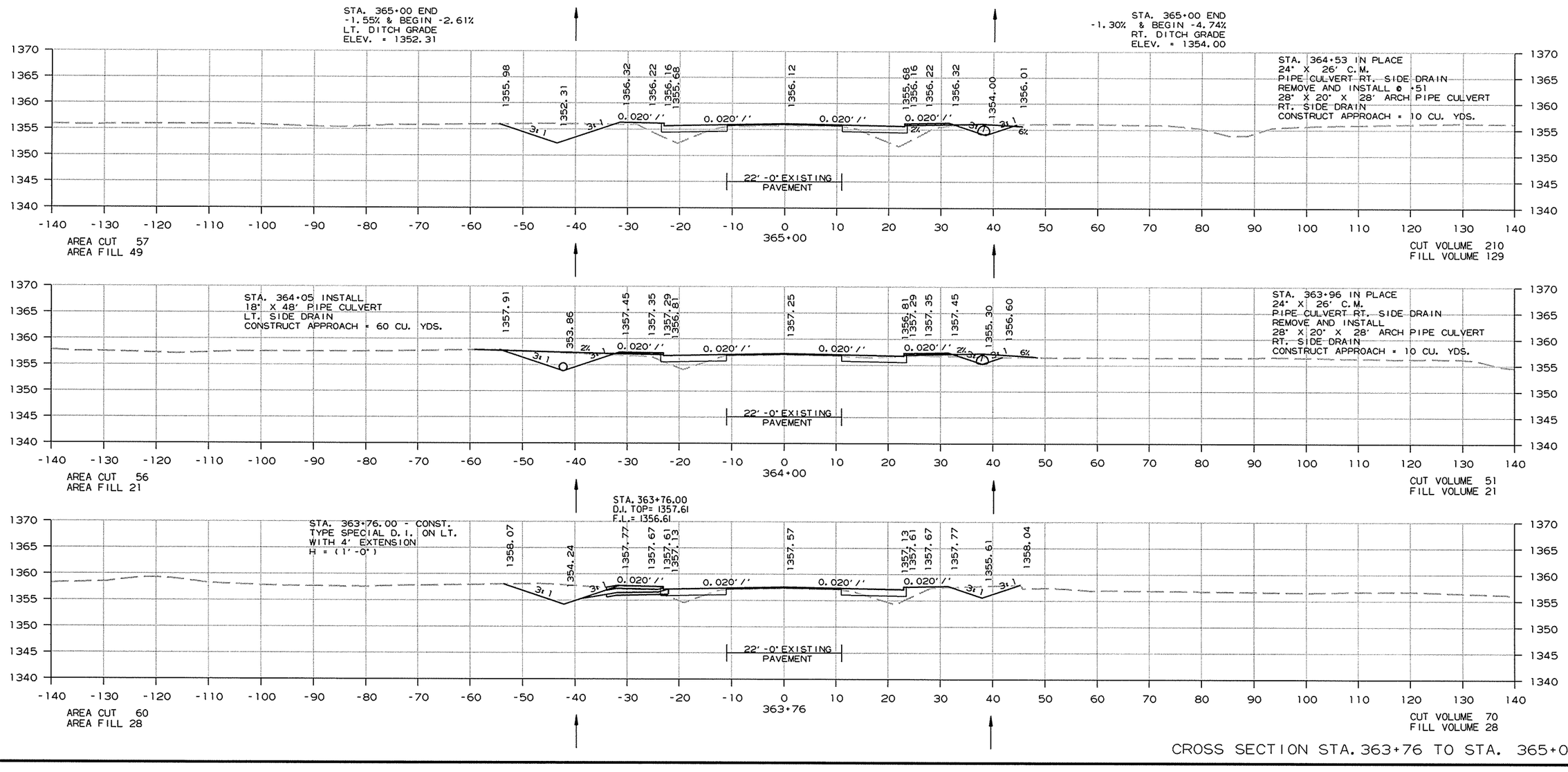
CROSS SECTION STA. 363+00 TO STA. 363+45

9/9/2015

R090373.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.		090373	214	316

(2) CROSS SECTIONS



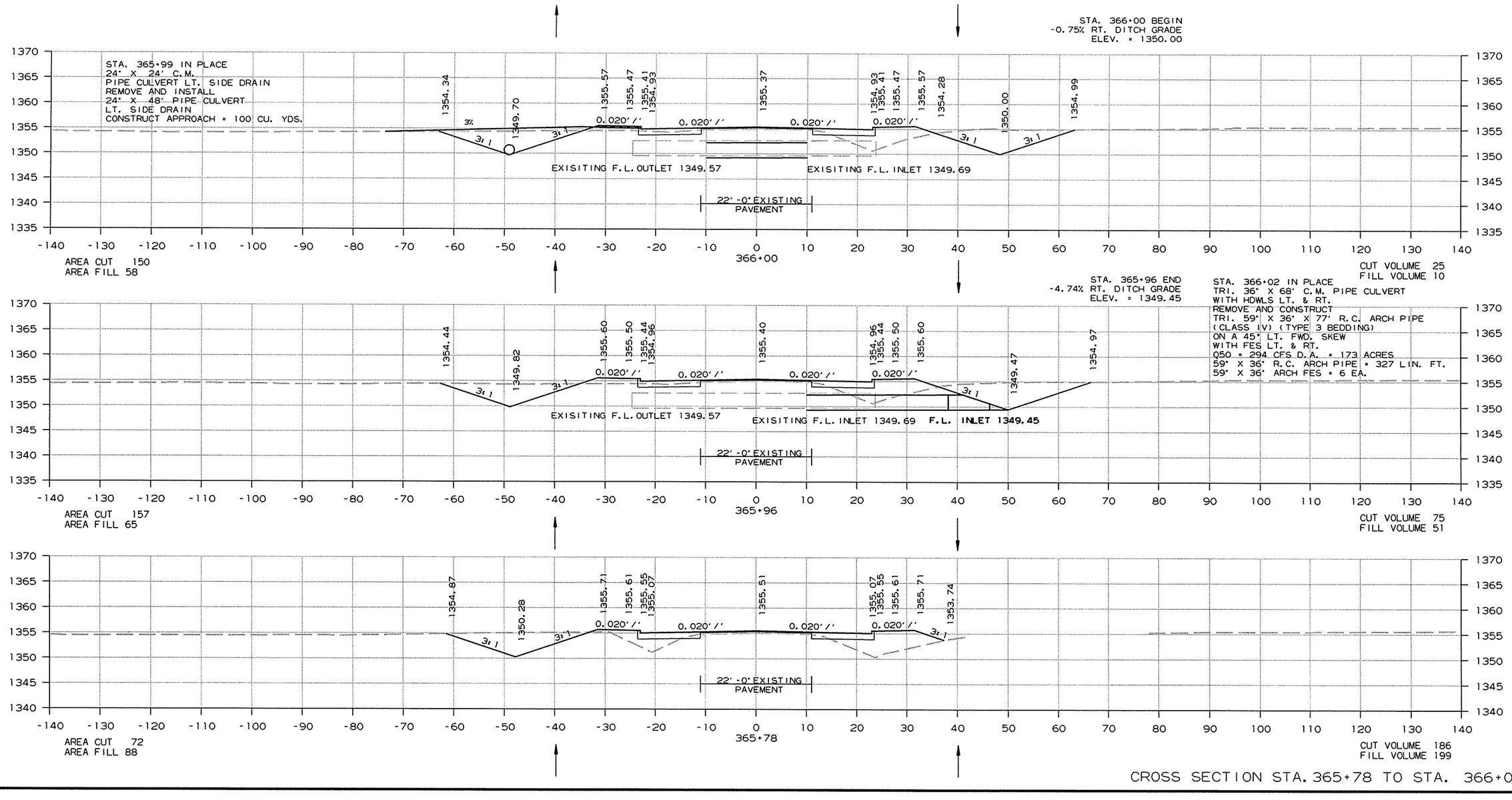
CROSS SECTION STA. 363+76 TO STA. 365+00

9/9/2015

R090373.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.		090373	215	316

(2) CROSS SECTIONS



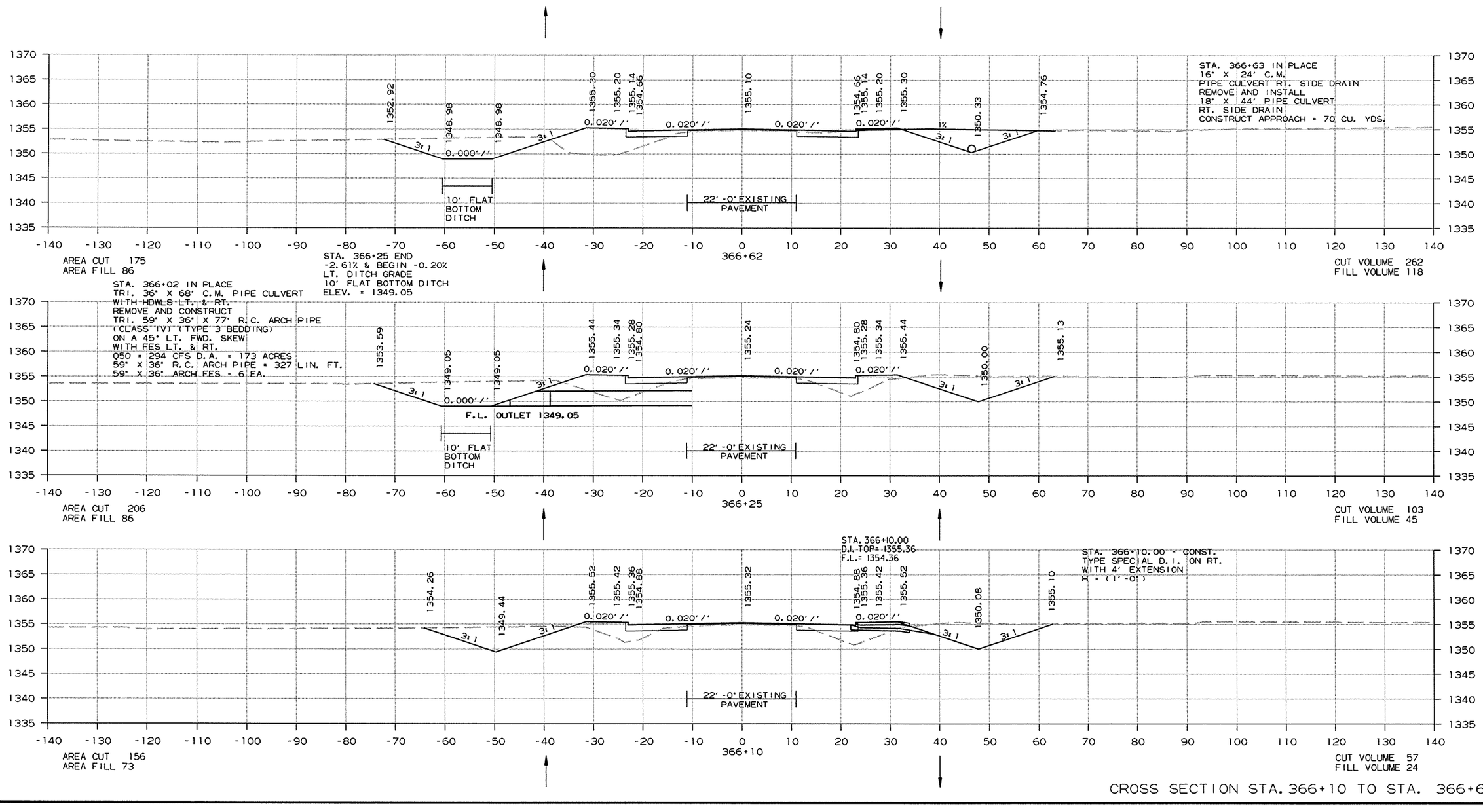
CROSS SECTION STA. 365+78 TO STA. 366+00

9/9/2015

R090373.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.		090373	216	316

(2) CROSS SECTIONS



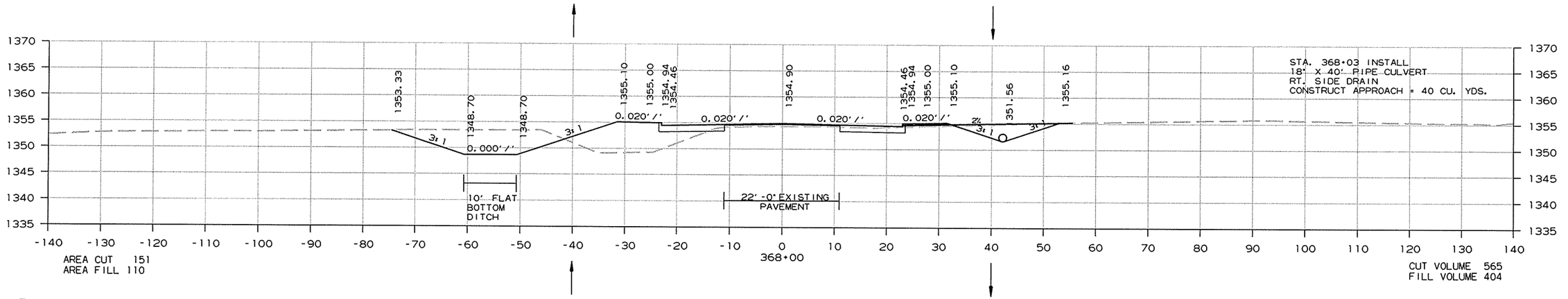
CROSS SECTION STA. 366+10 TO STA. 366+62

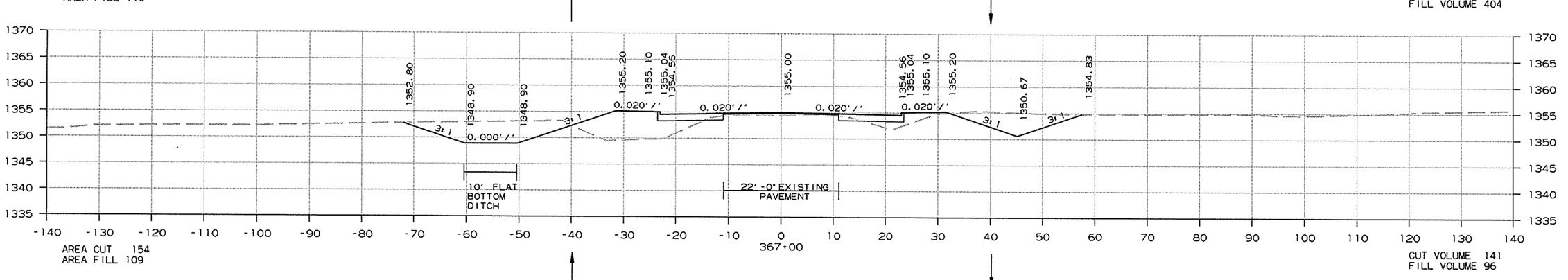
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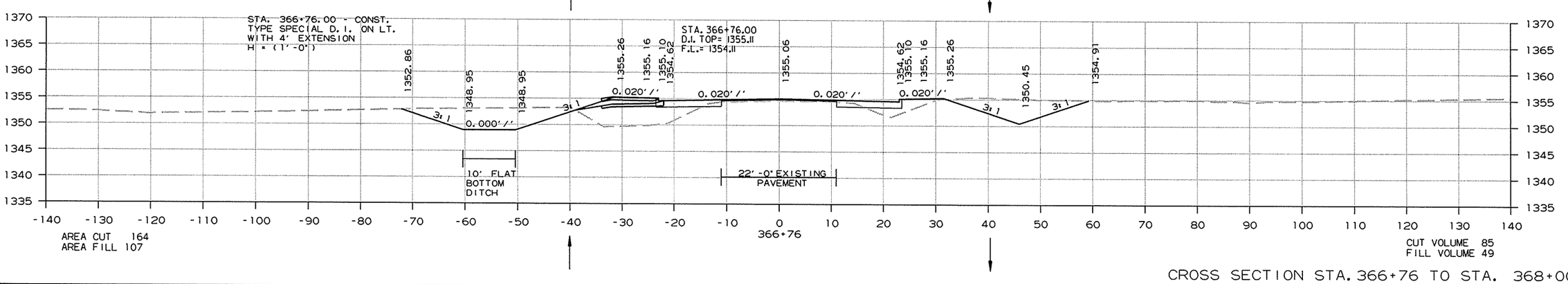
R090373.DGN

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.		090373	217	316

(2) CROSS SECTIONS







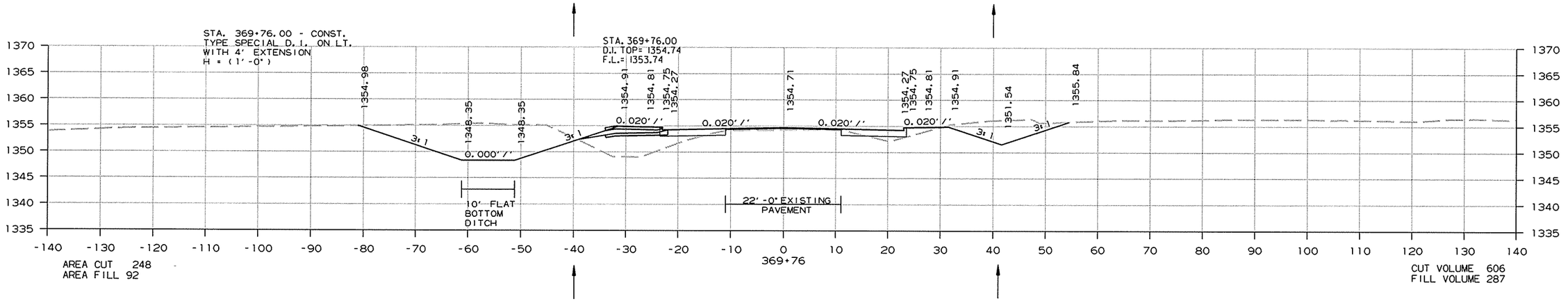
CROSS SECTION STA. 366+76 TO STA. 368+00

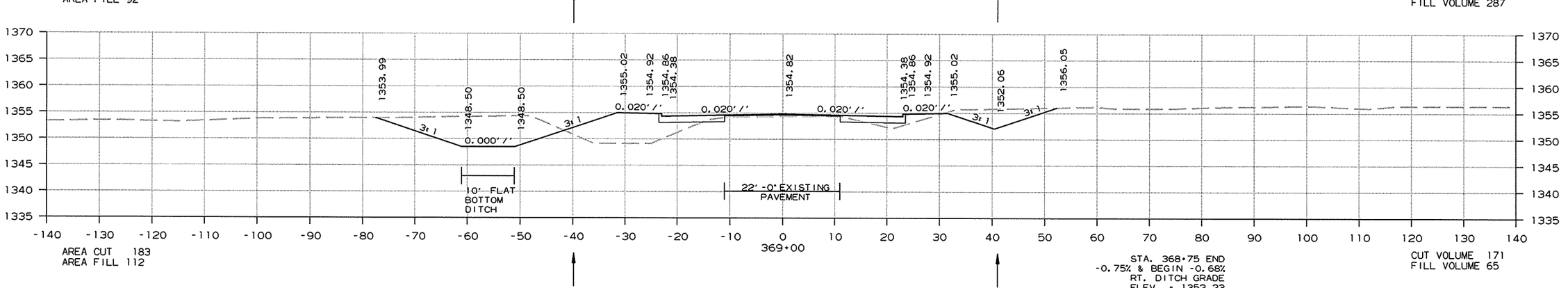
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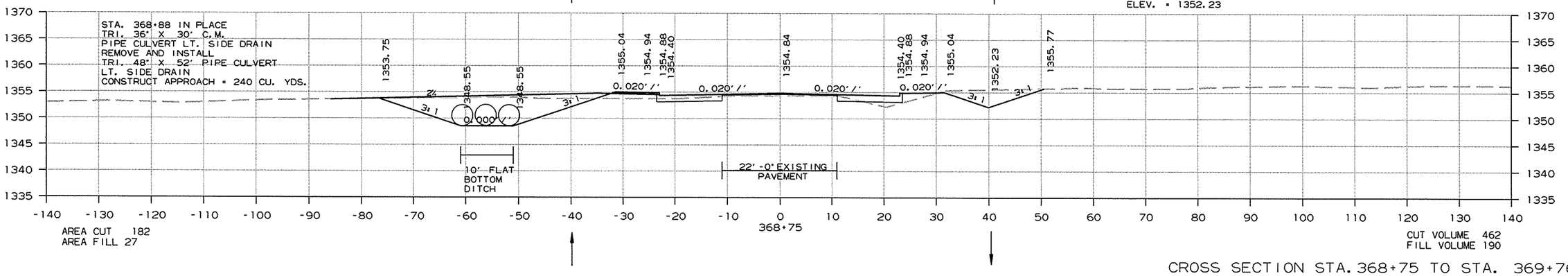
R090373.DGN

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.		090373	218	316

(2) CROSS SECTIONS







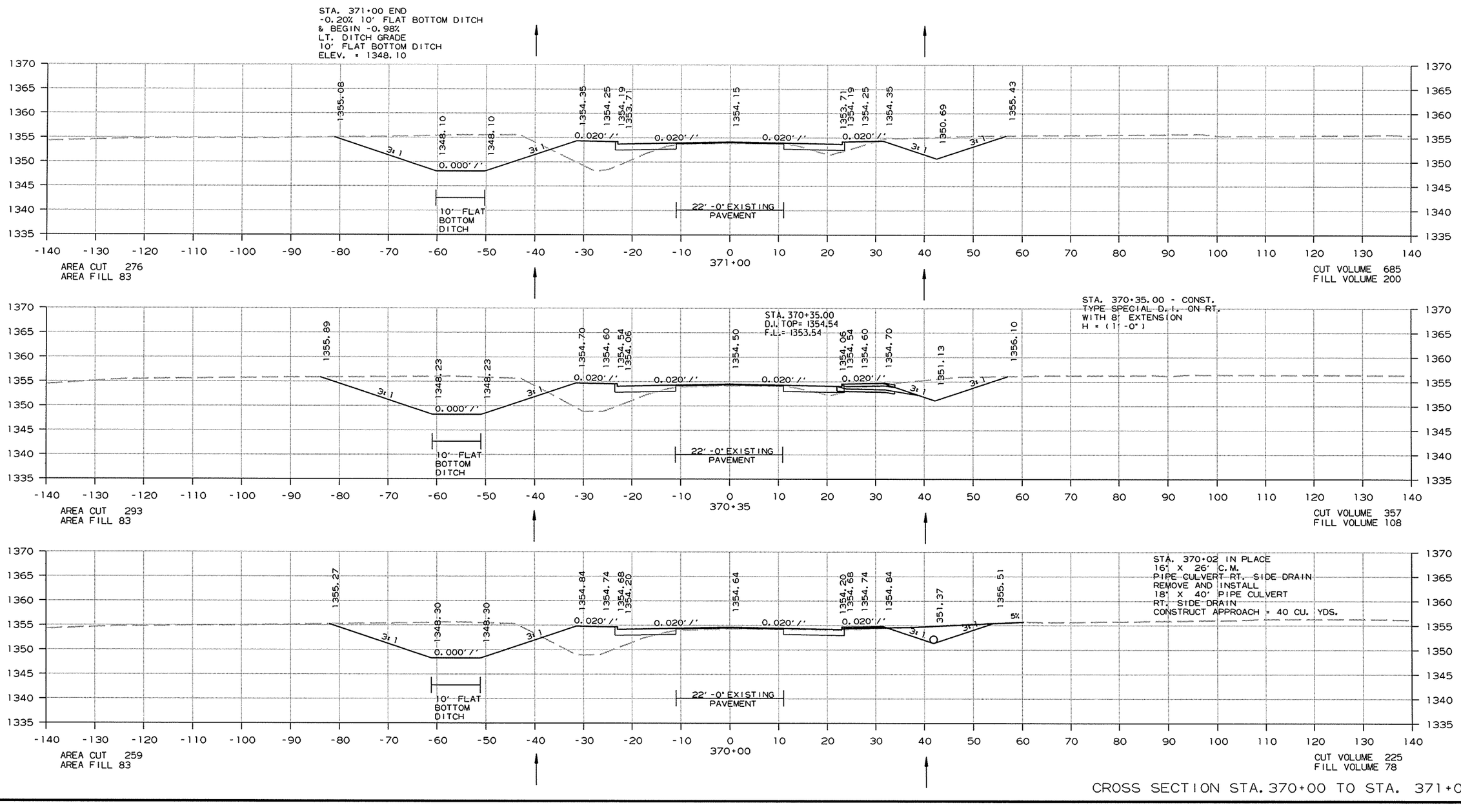
CROSS SECTION STA. 368+75 TO STA. 369+76

9/9/2015

R090373.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.		090373	219	316

(2) CROSS SECTIONS



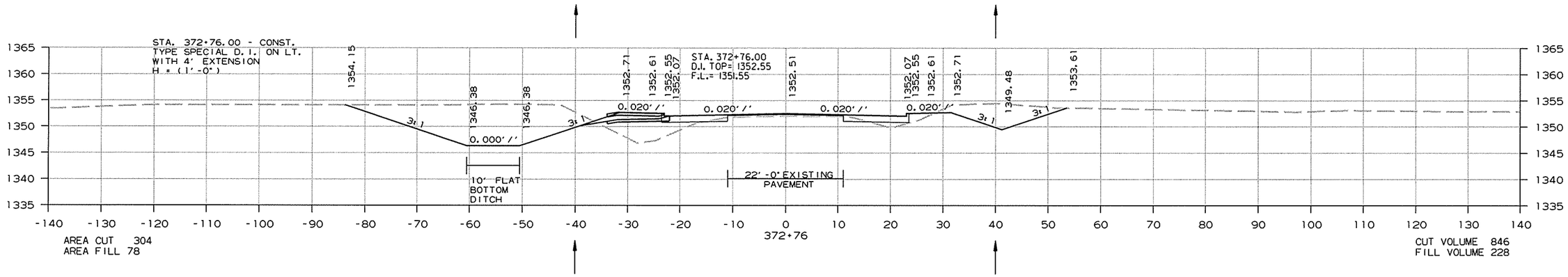
CROSS SECTION STA. 370+00 TO STA. 371+00

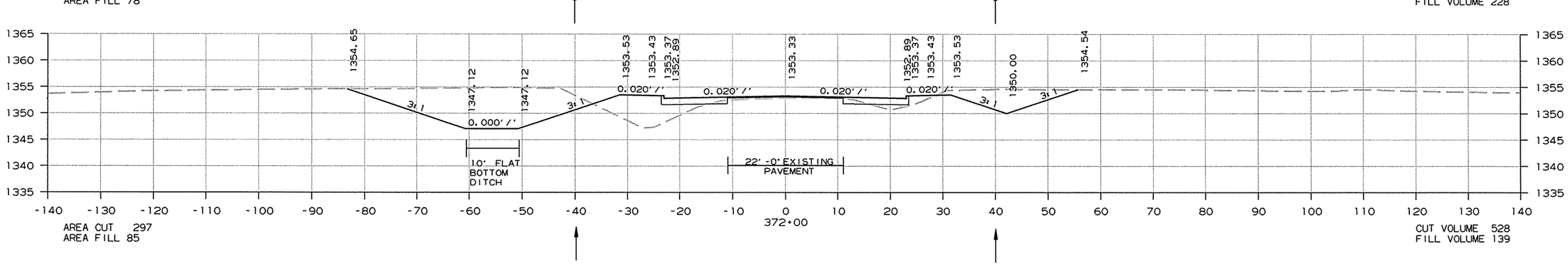
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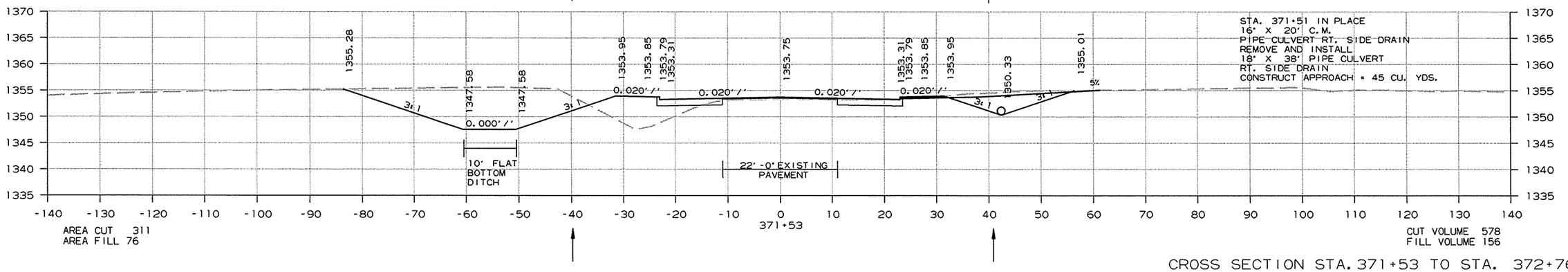
R090373.DGN

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.		090373	220	316

(2) CROSS SECTIONS







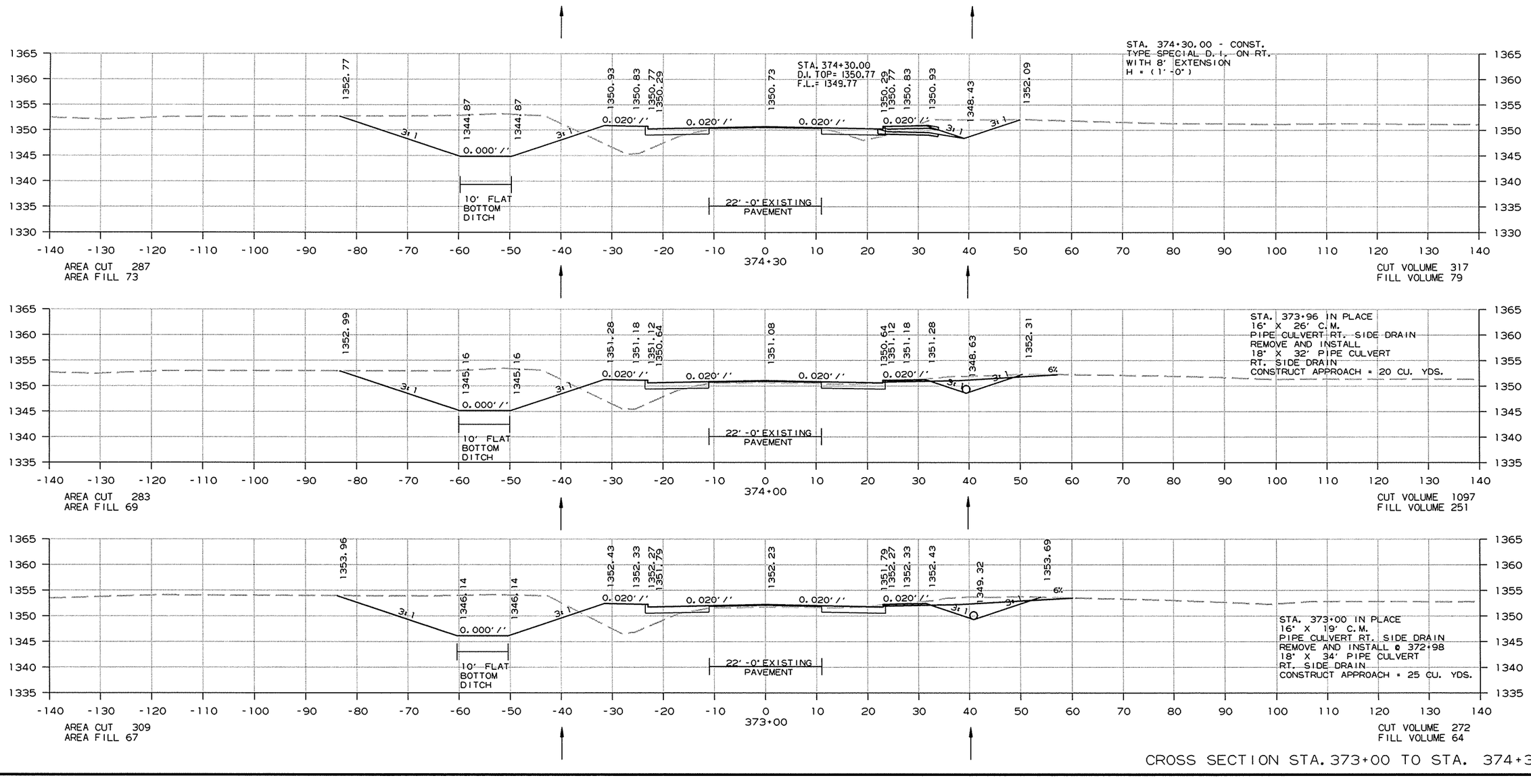
CROSS SECTION STA. 371+53 TO STA. 372+76

9/9/2015

R090373.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.		090373	221	316

(2) CROSS SECTIONS



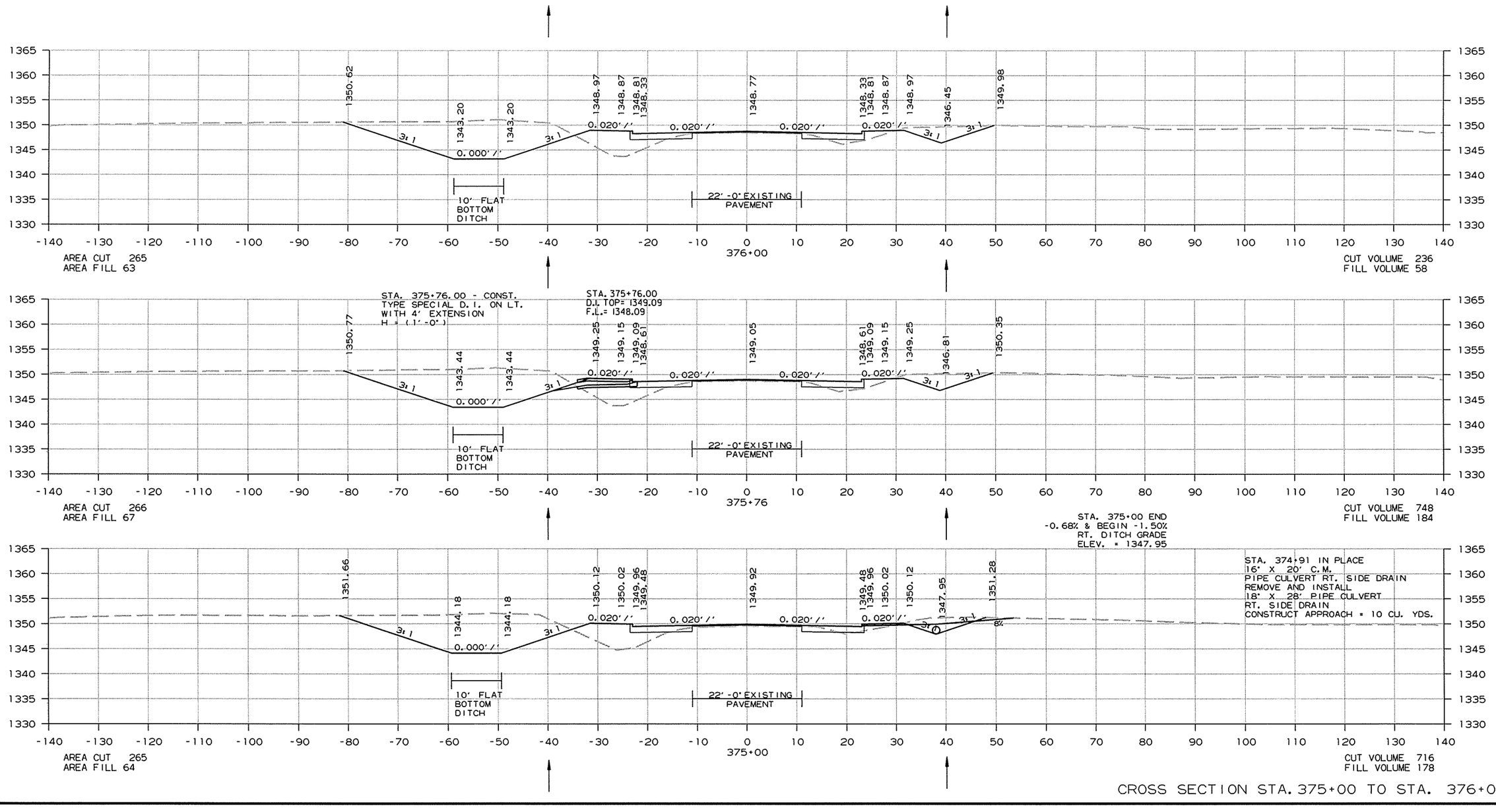
CROSS SECTION STA. 373+00 TO STA. 374+30

9/9/2015

R090373.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.		090373	222	316

(2) CROSS SECTIONS



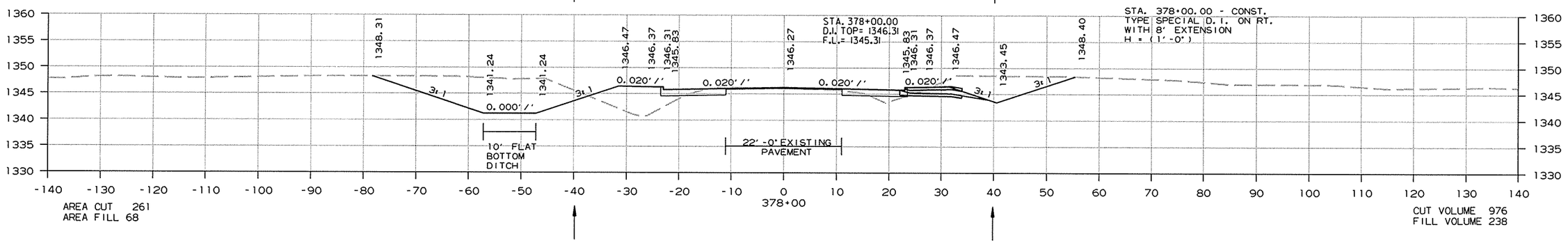
CROSS SECTION STA. 375+00 TO STA. 376+00

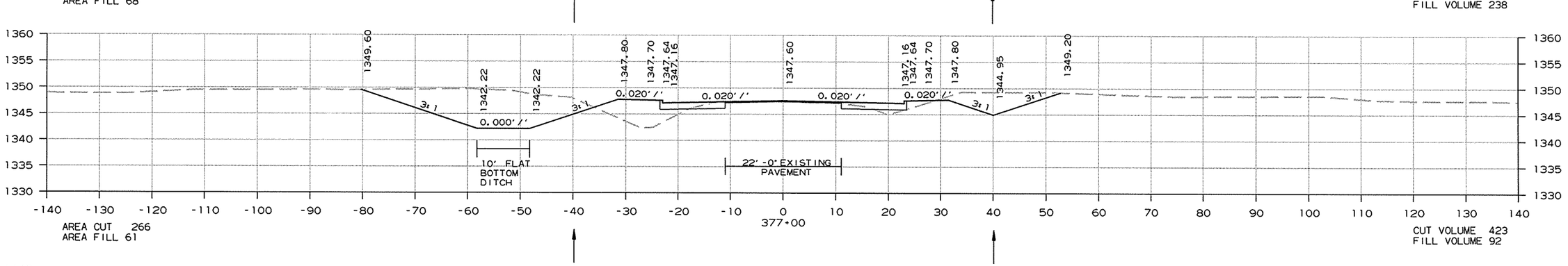
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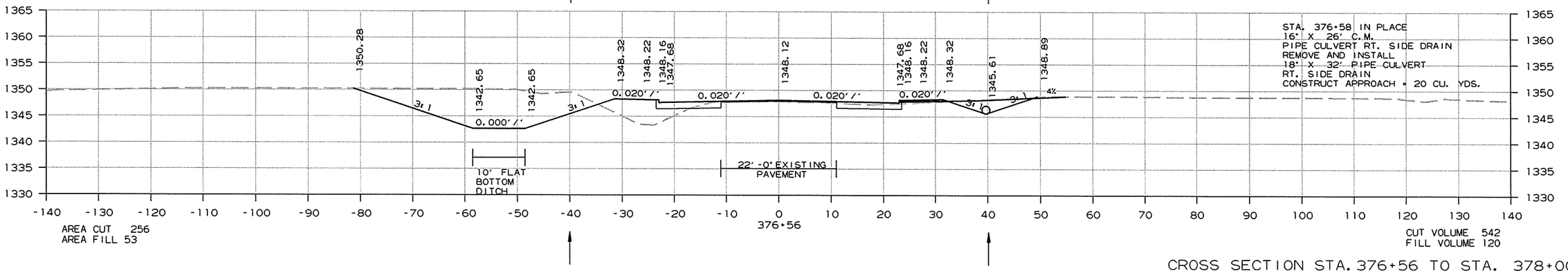
R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	223	316

(2) CROSS SECTIONS







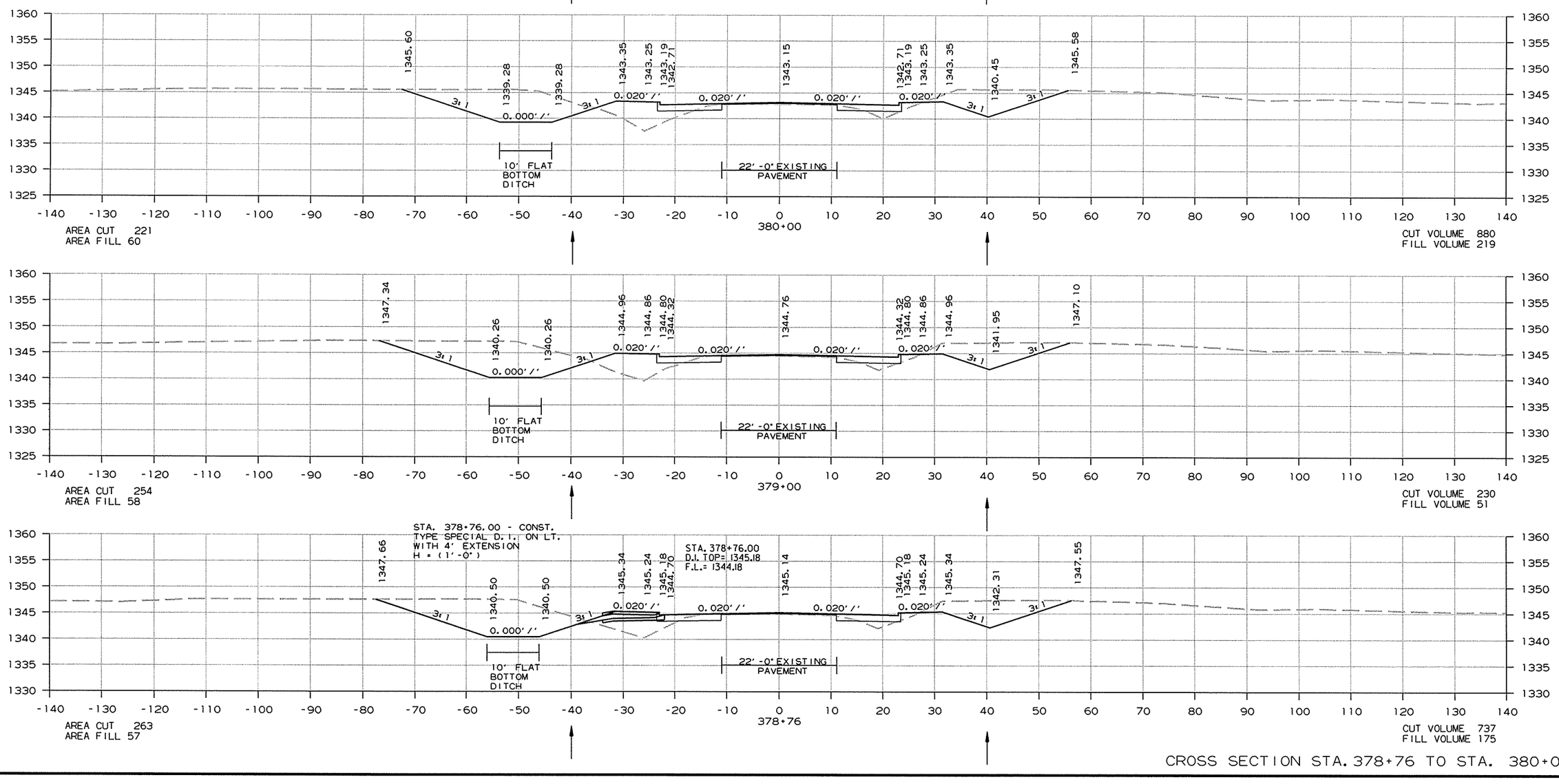
CROSS SECTION STA. 376+56 TO STA. 378+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	224	316

(2) CROSS SECTIONS



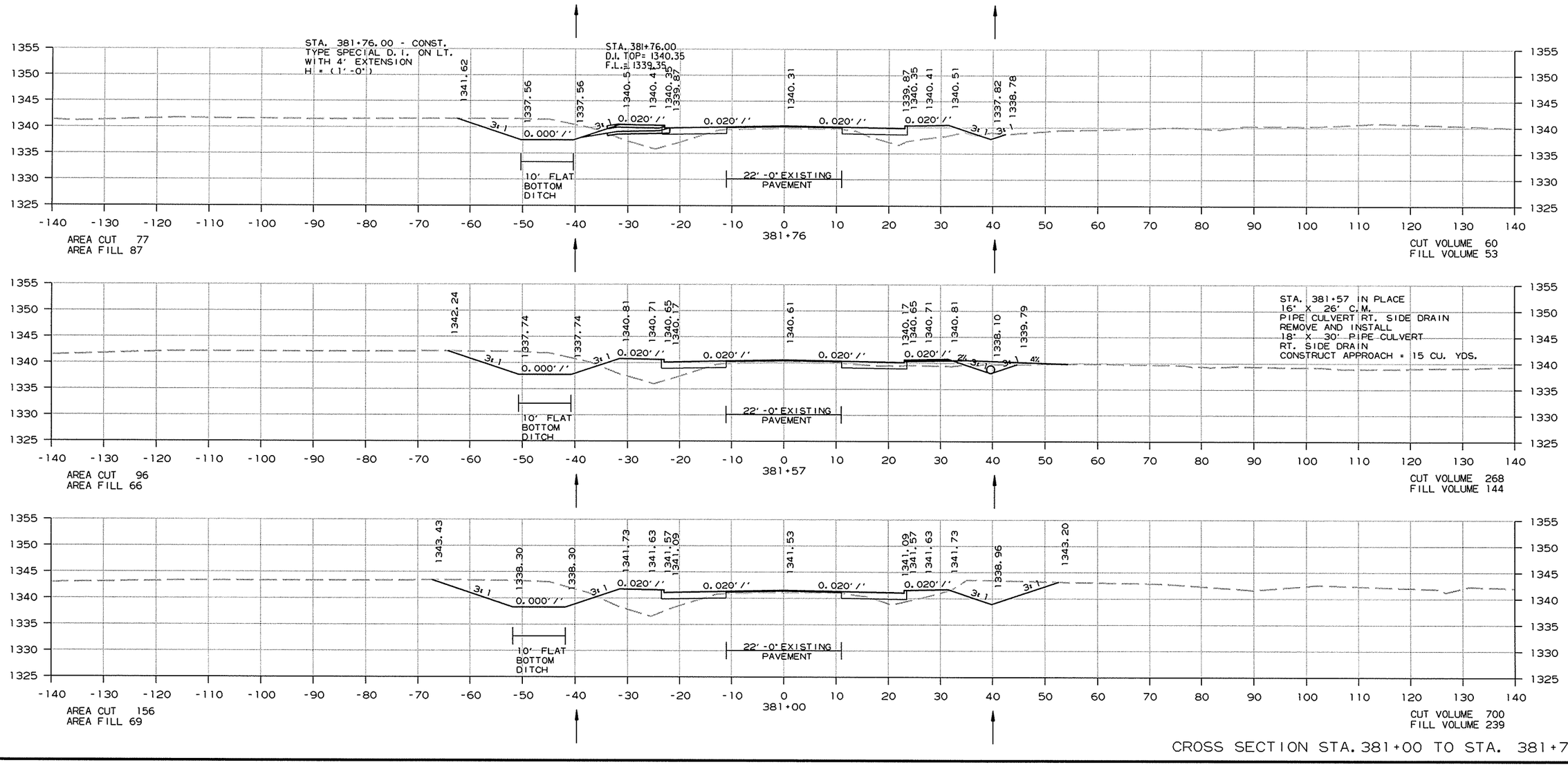
CROSS SECTION STA. 378+76 TO STA. 380+00

9/9/2015

R090373.DGN

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				JOB NO.		090373	225	316

(2) CROSS SECTIONS



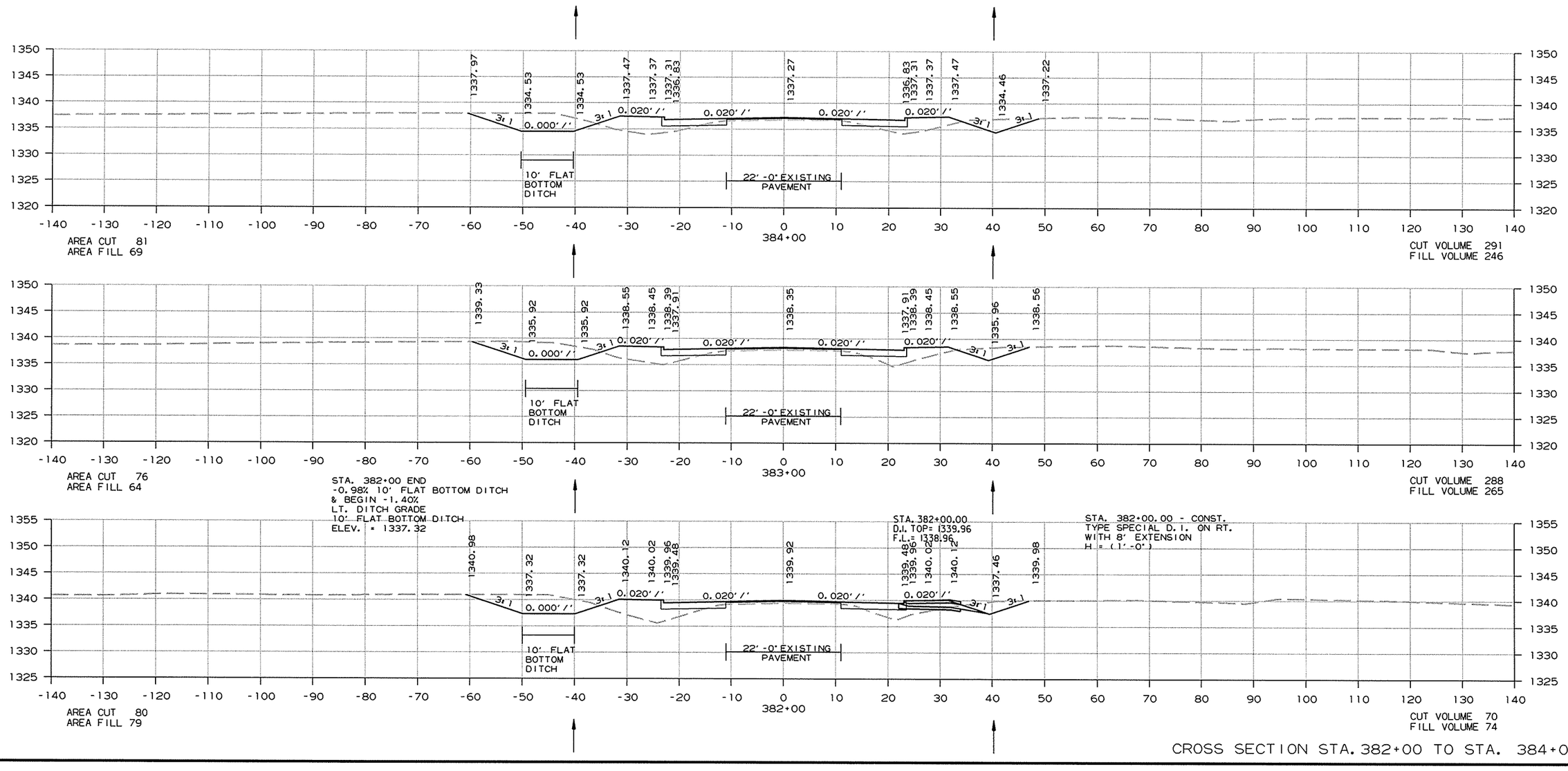
CROSS SECTION STA. 381+00 TO STA. 381+76

9/9/2015

R090373.DGN

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



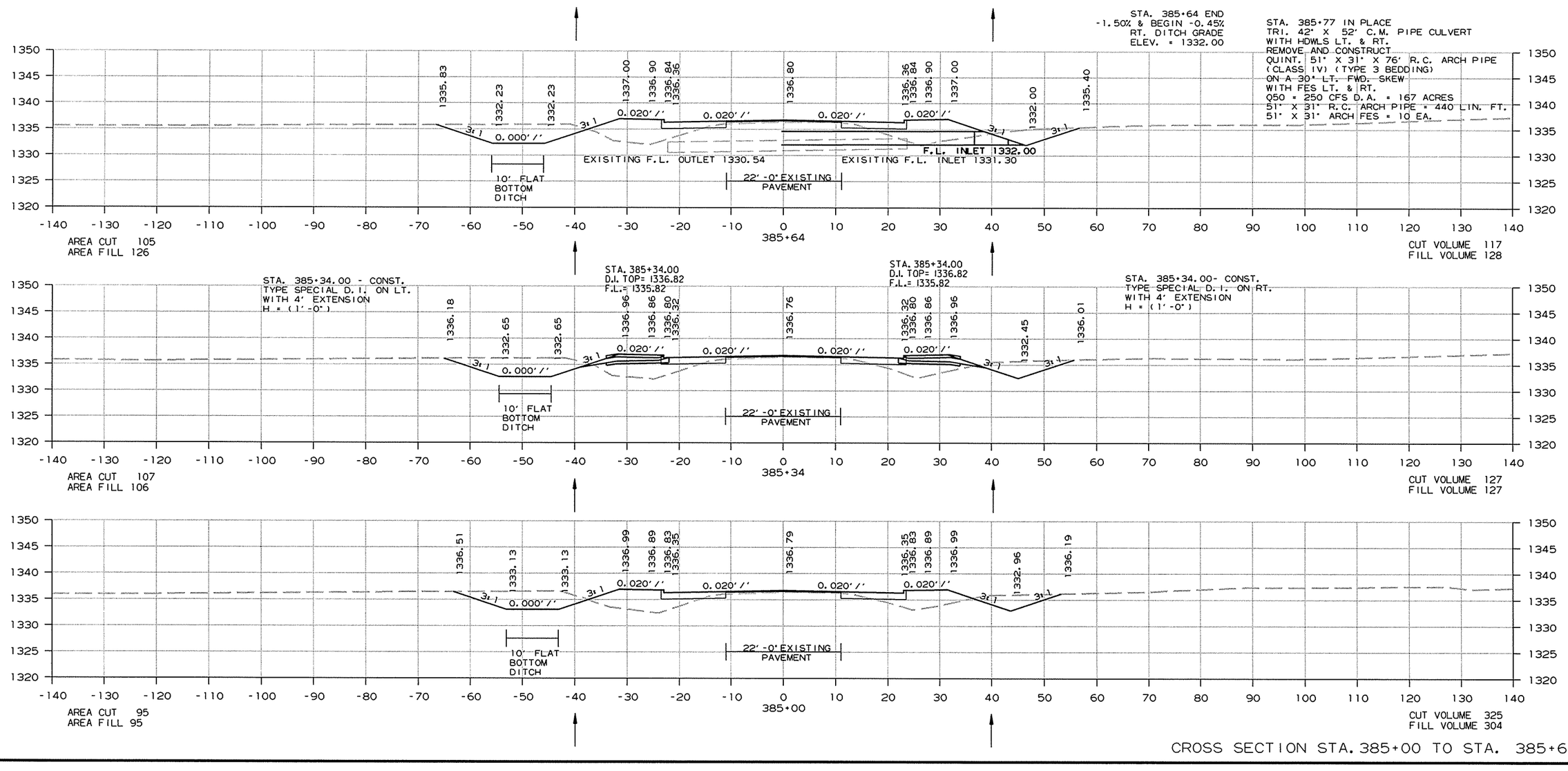
CROSS SECTION STA. 382+00 TO STA. 384+00

9/9/2015

R090373.DGN

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



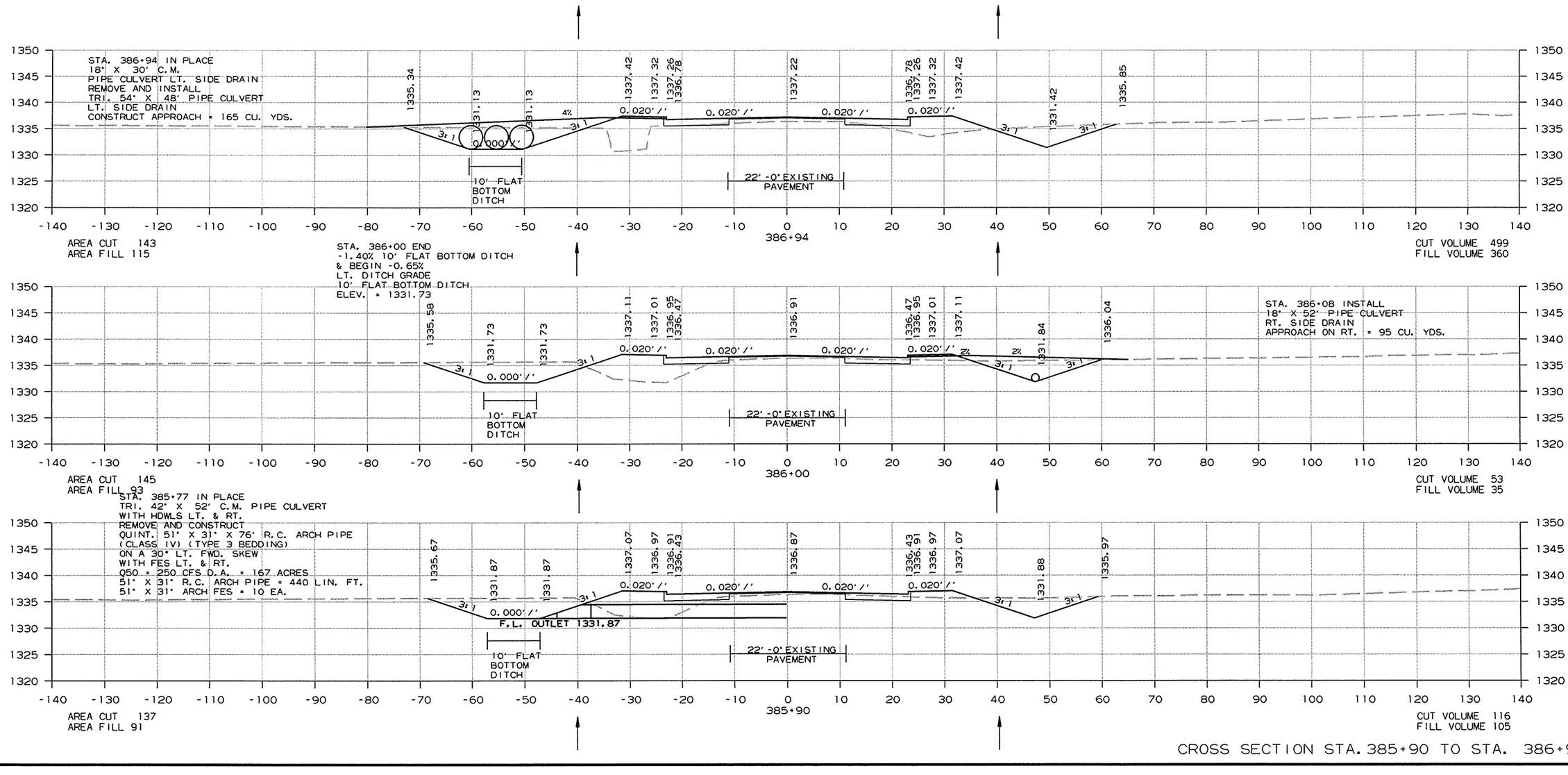
CROSS SECTION STA. 385+00 TO STA. 385+64

9/9/2015

R090373.DGN

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



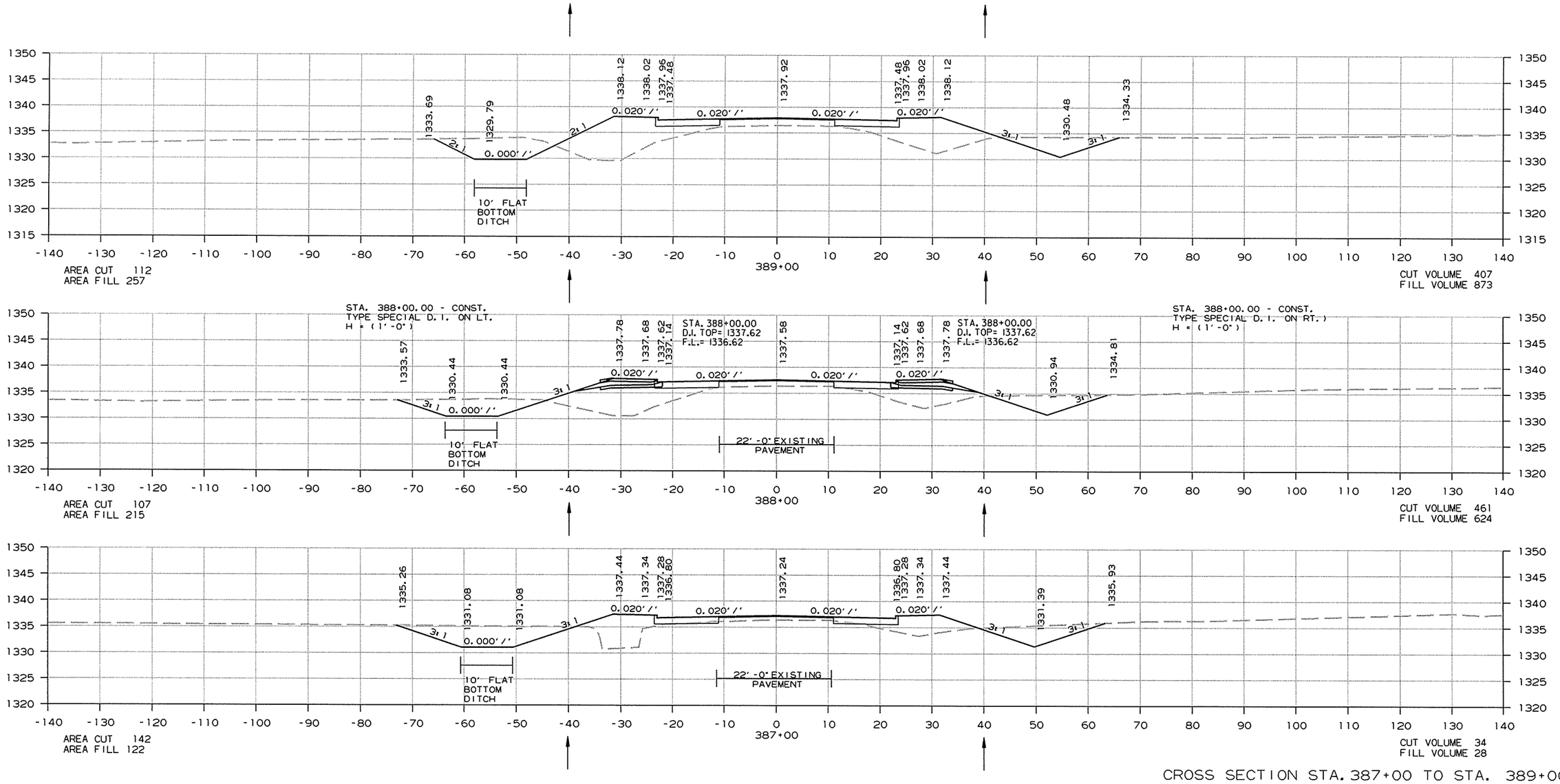
CROSS SECTION STA. 385+90 TO STA. 386+94

9/9/2015

R090373.DGN

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



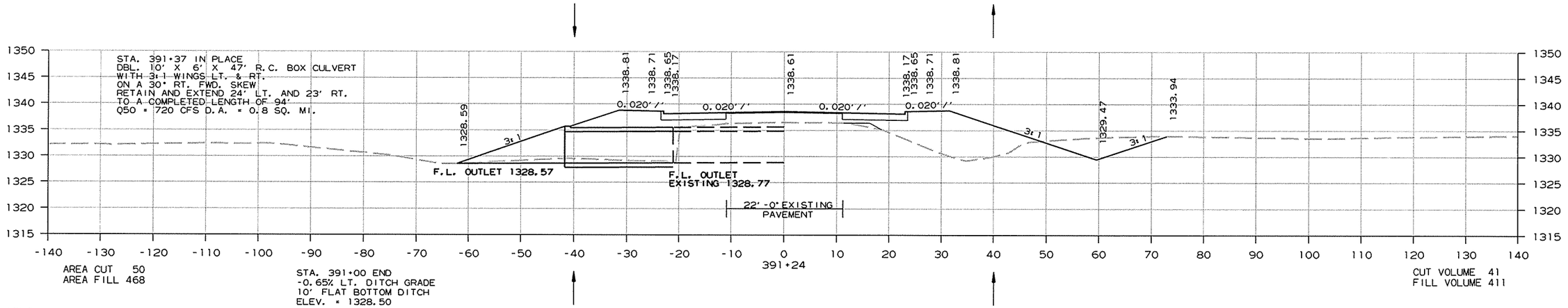
CROSS SECTION STA. 387+00 TO STA. 389+00

9/9/2015

R090373.DGN

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(2) CROSS SECTIONS



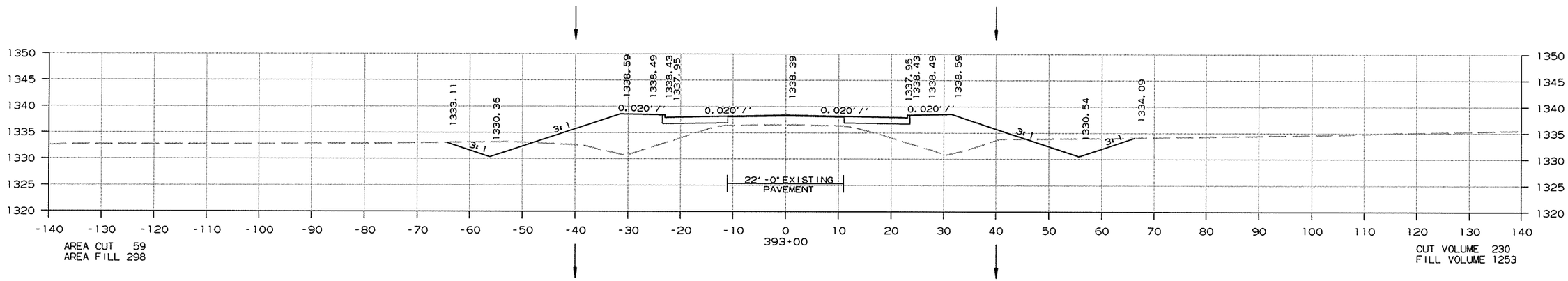
CROSS SECTION STA. 390+00 TO STA. 391+24

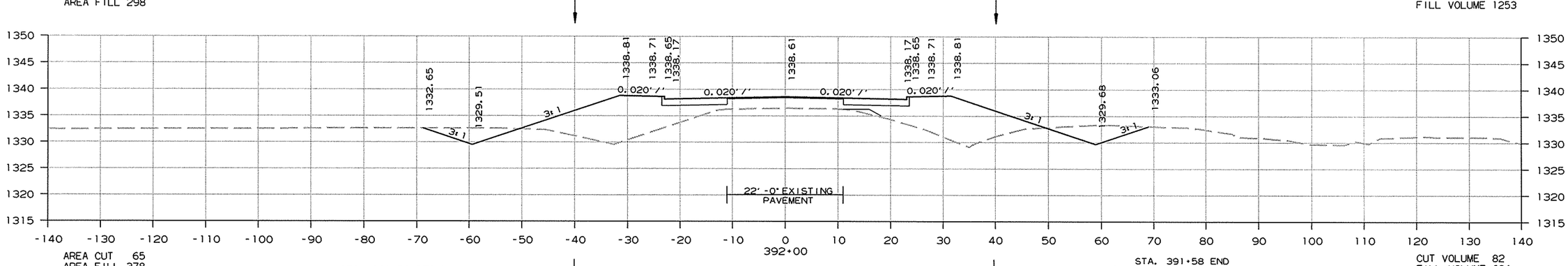
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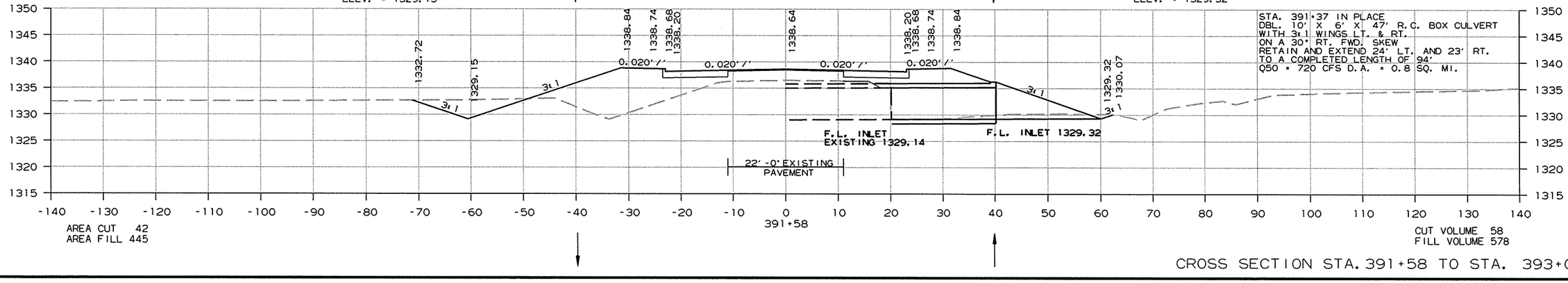
R090373.DGN

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







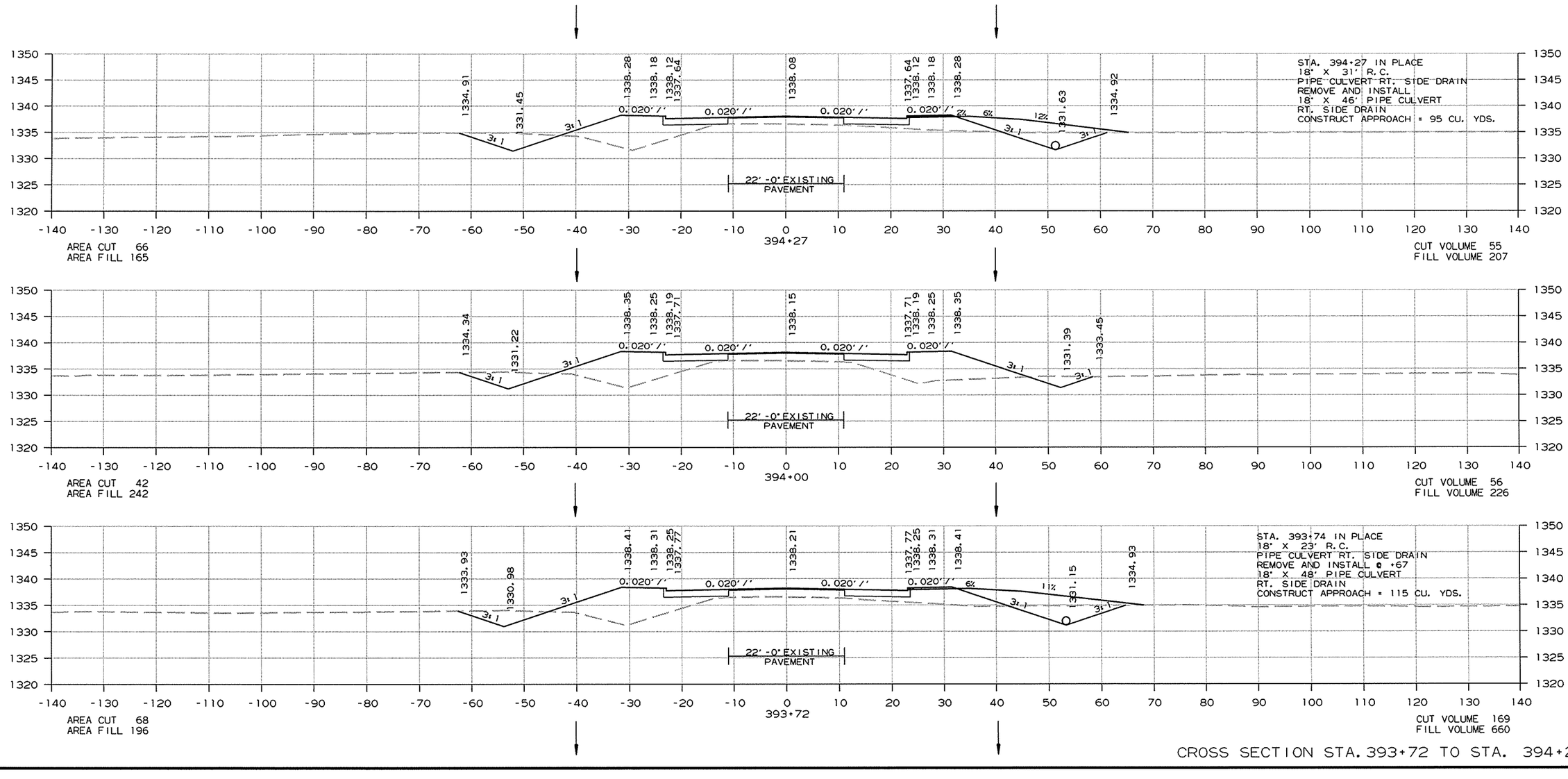
CROSS SECTION STA. 391+58 TO STA. 393+00

9/9/2015

R090373.DGN

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



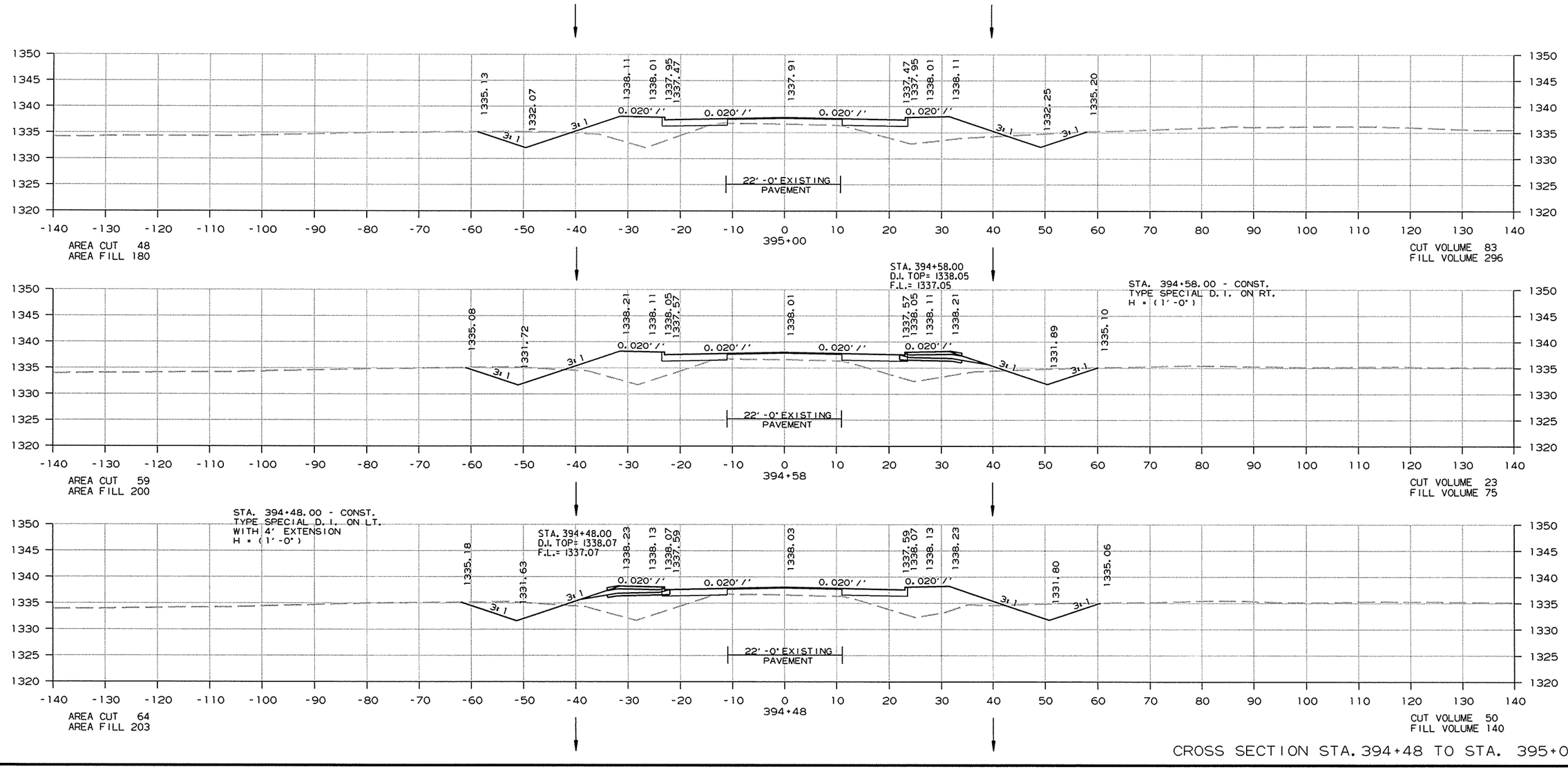
CROSS SECTION STA. 393+72 TO STA. 394+27

9/9/2015

R090373.DGN

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



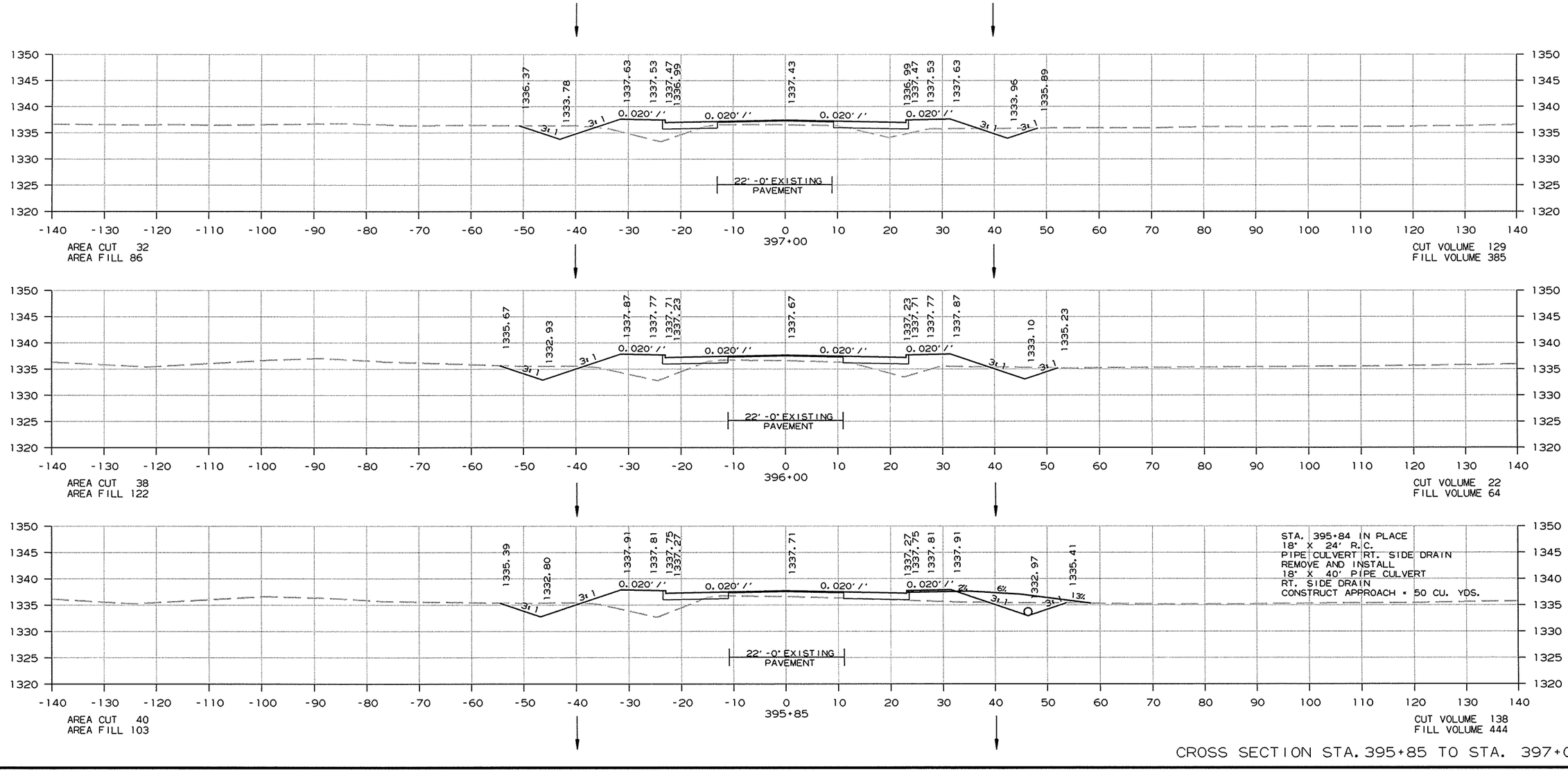
CROSS SECTION STA. 394+48 TO STA. 395+00

9/9/2015

R090373.DGN

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(2) CROSS SECTIONS



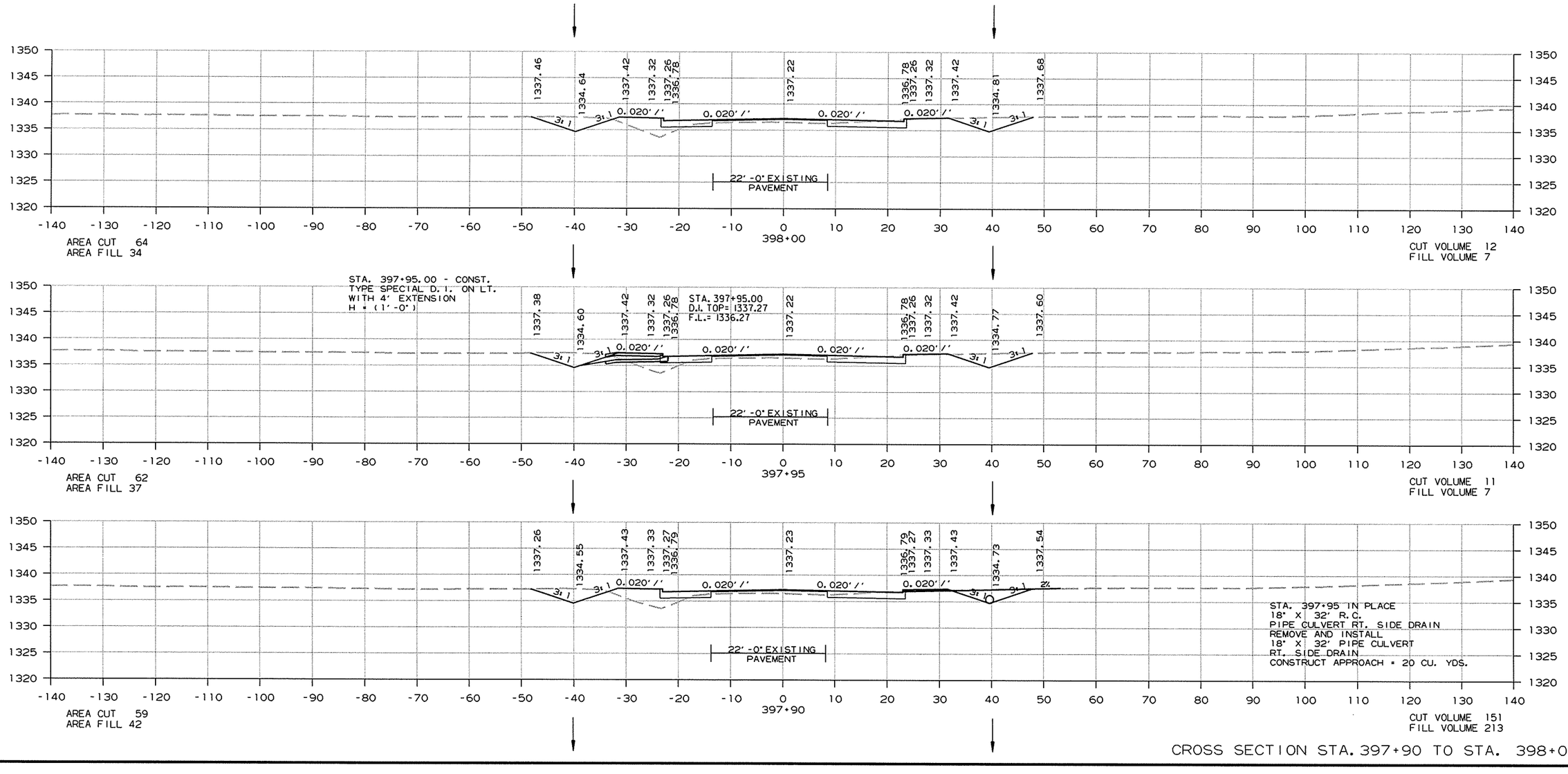
CROSS SECTION STA. 395+85 TO STA. 397+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	235	316

(2) CROSS SECTIONS



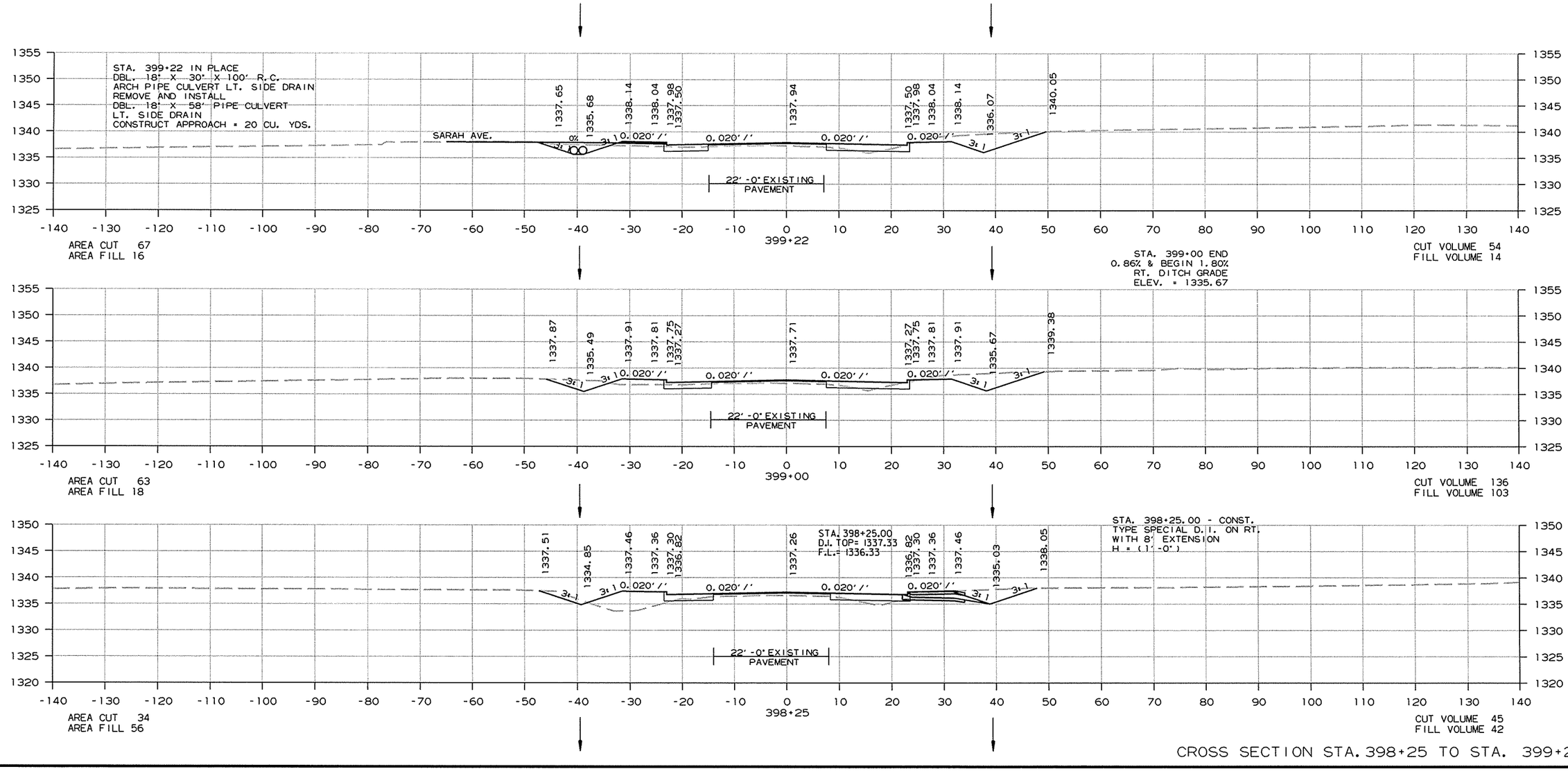
CROSS SECTION STA. 397+90 TO STA. 398+00

9/9/2015

R090373.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.		090373	236	316

(2) CROSS SECTIONS



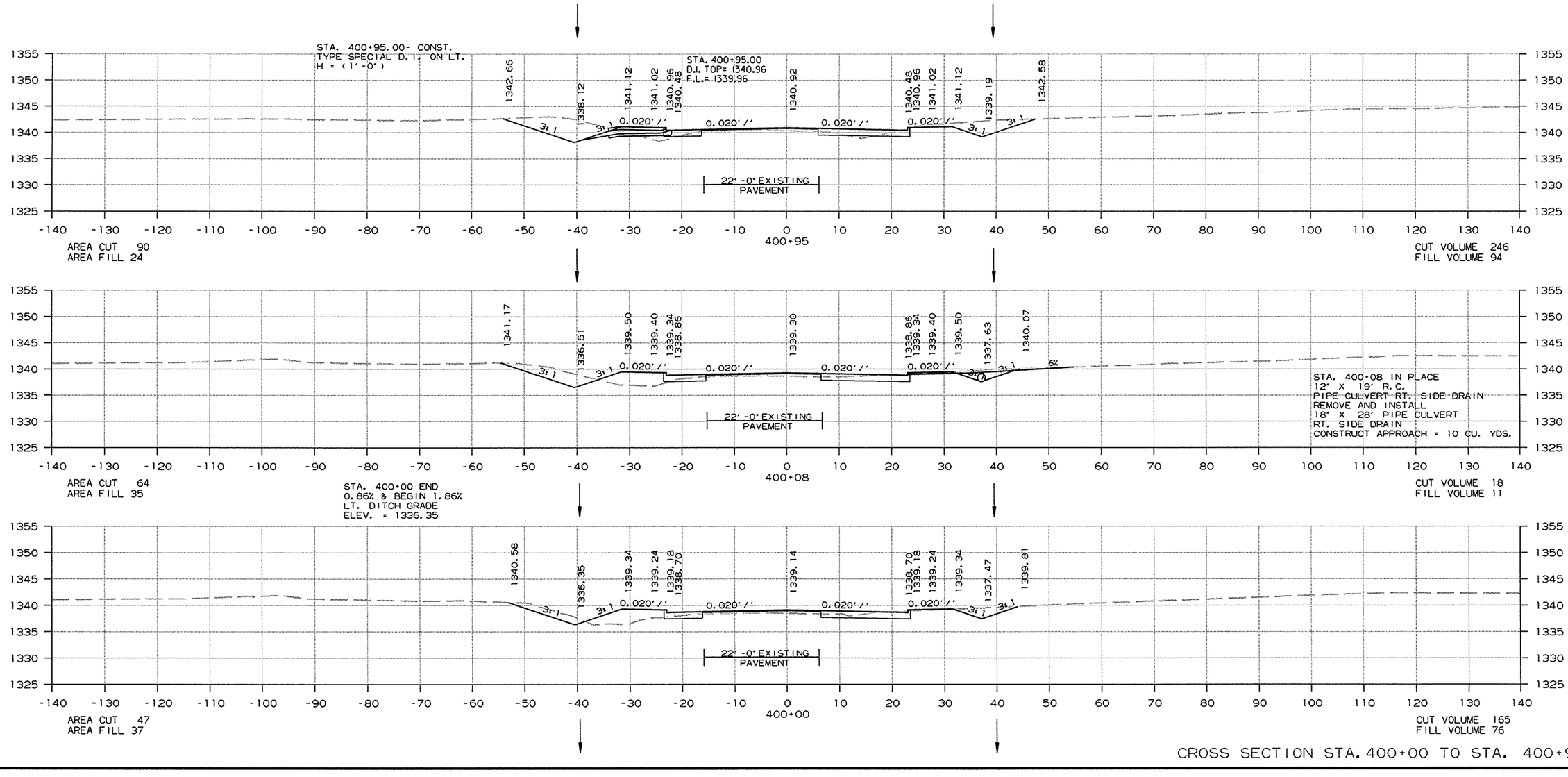
CROSS SECTION STA. 398+25 TO STA. 399+22

9/9/2015

R090373.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.		090373	237	316

(2) CROSS SECTIONS



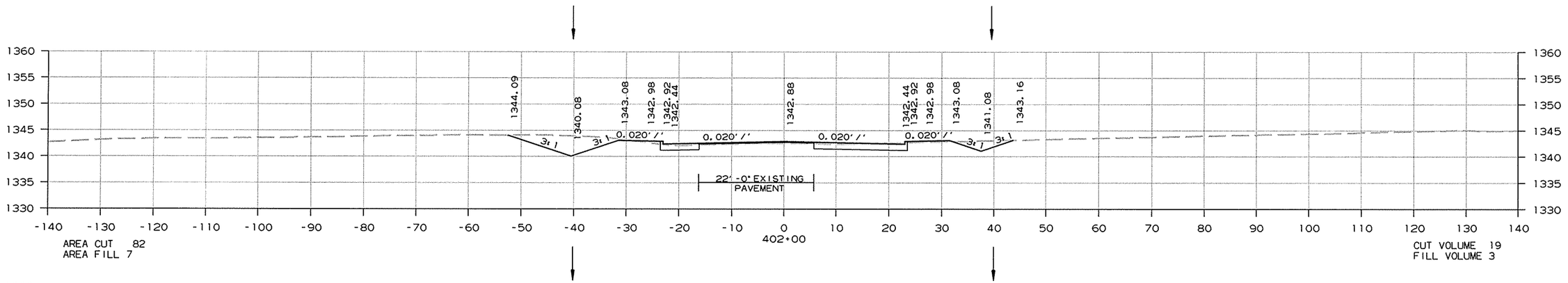
CROSS SECTION STA. 400+00 TO STA. 400+95

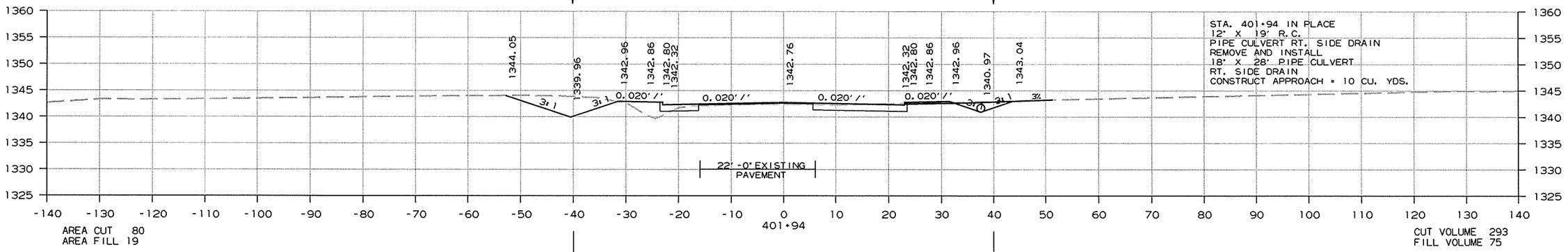
9/9/2015

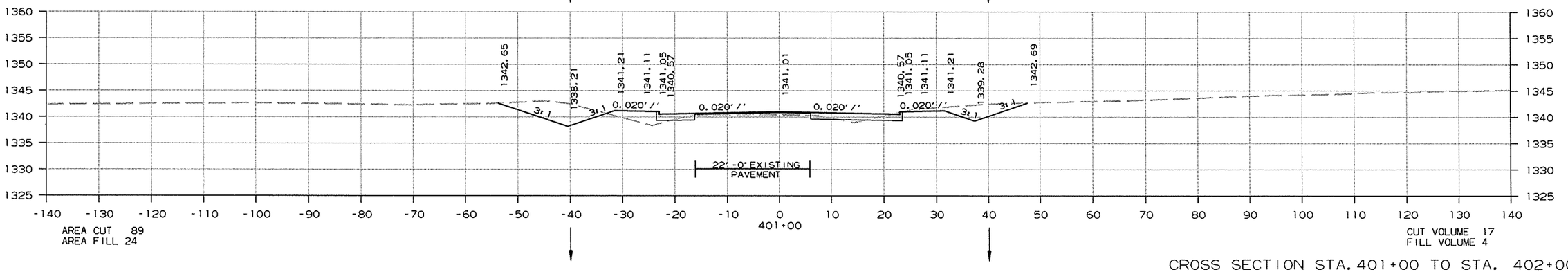
R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	238	316

(2) CROSS SECTIONS







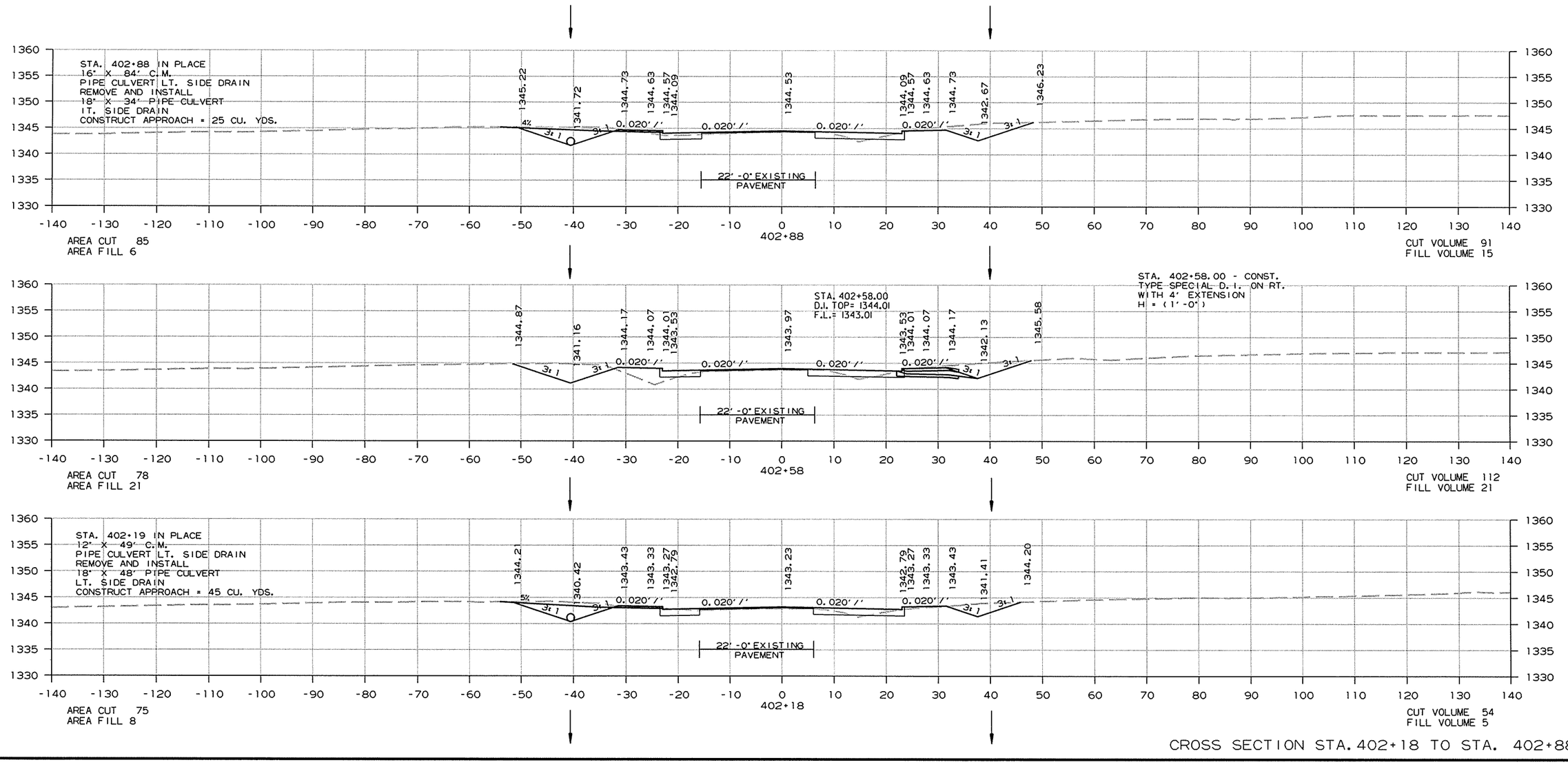
CROSS SECTION STA. 401+00 TO STA. 402+00

9/9/2015

R090373.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.		090373	239	316

(2) CROSS SECTIONS



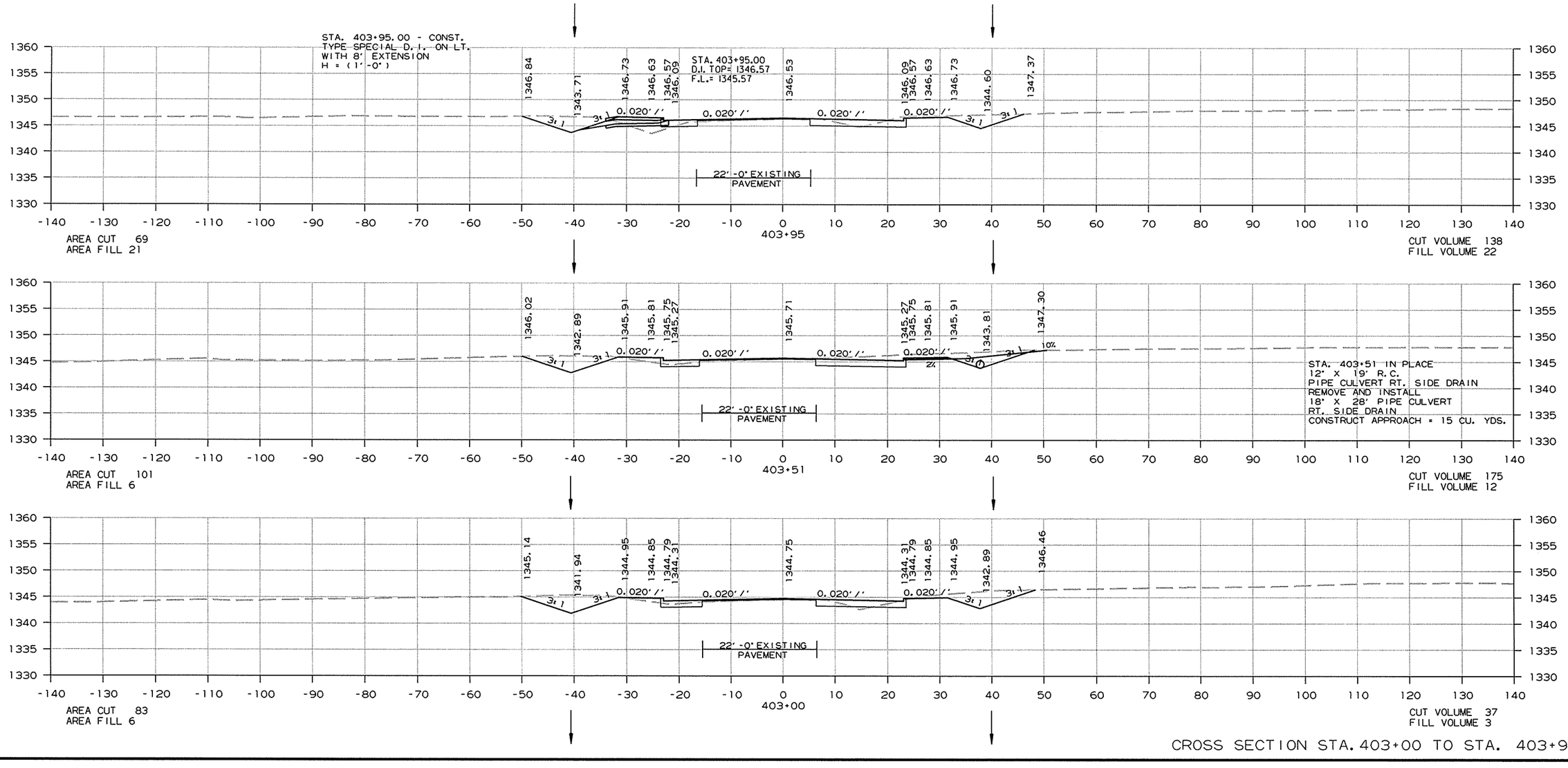
CROSS SECTION STA. 402+18 TO STA. 402+88

9/9/2015

R090373.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.		090373	240	316

(2) CROSS SECTIONS



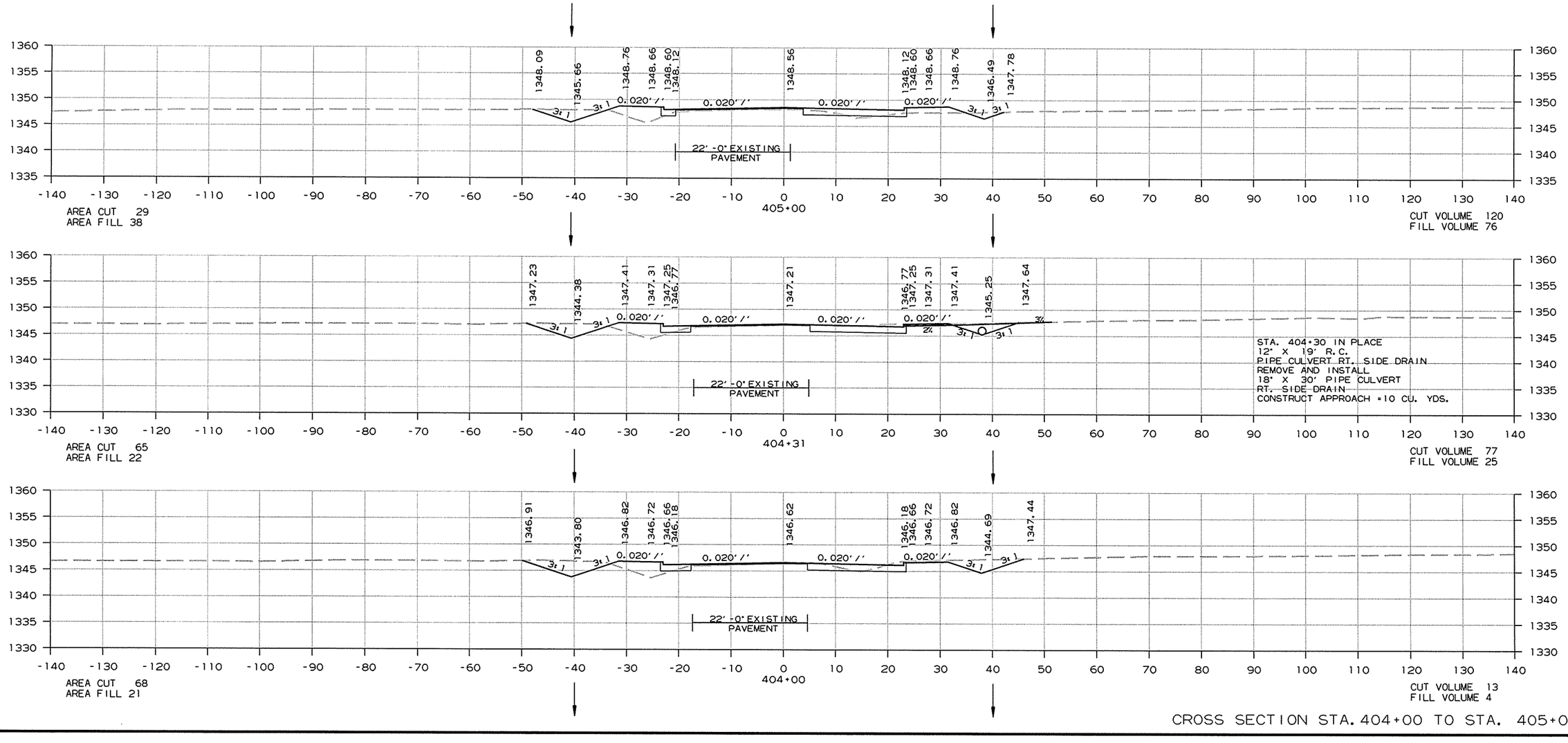
CROSS SECTION STA. 403+00 TO STA. 403+95

9/9/2015

R090373.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.		090373	241	316

(2) CROSS SECTIONS



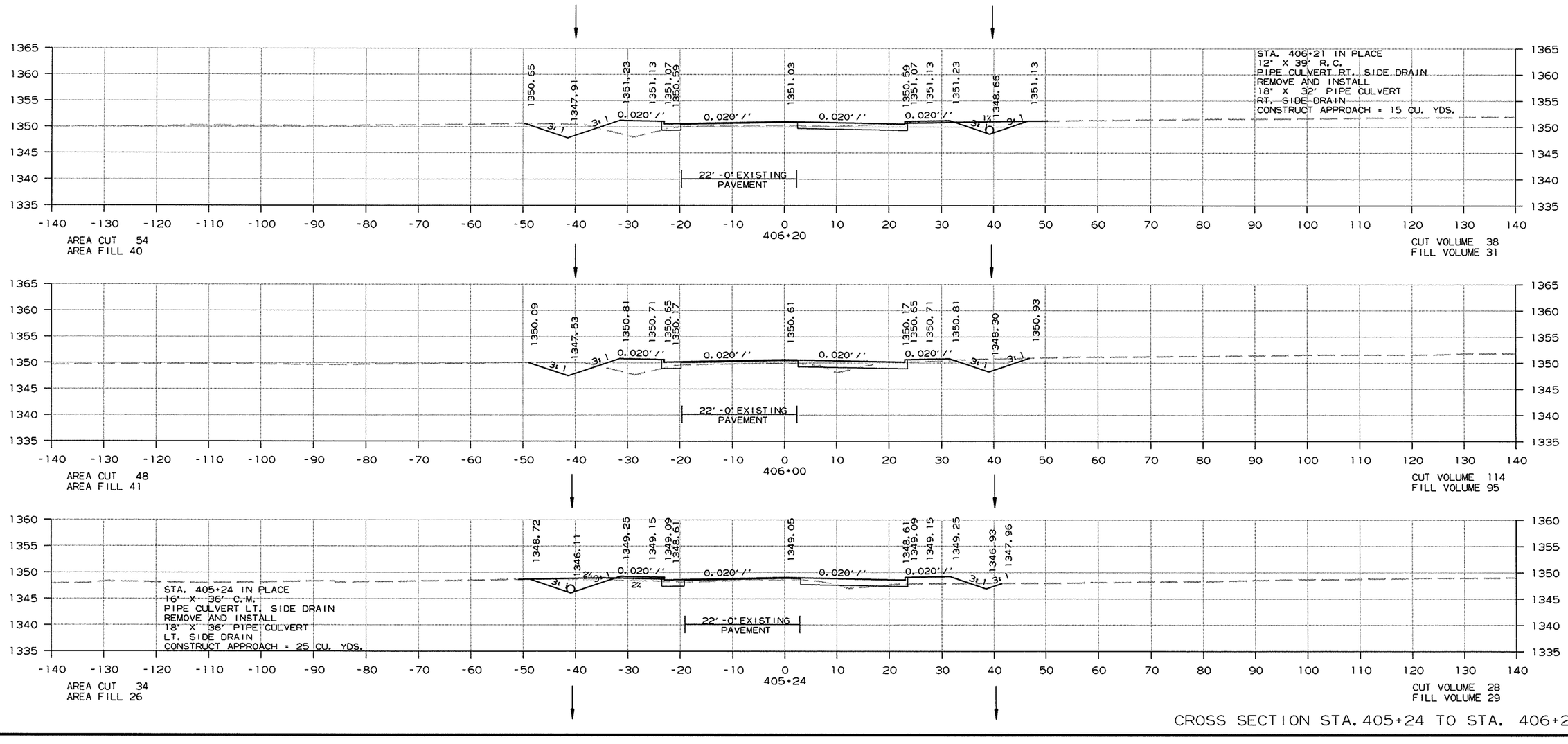
CROSS SECTION STA. 404+00 TO STA. 405+00

9/9/2015

R090373.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.		090373	242	316

(2) CROSS SECTIONS



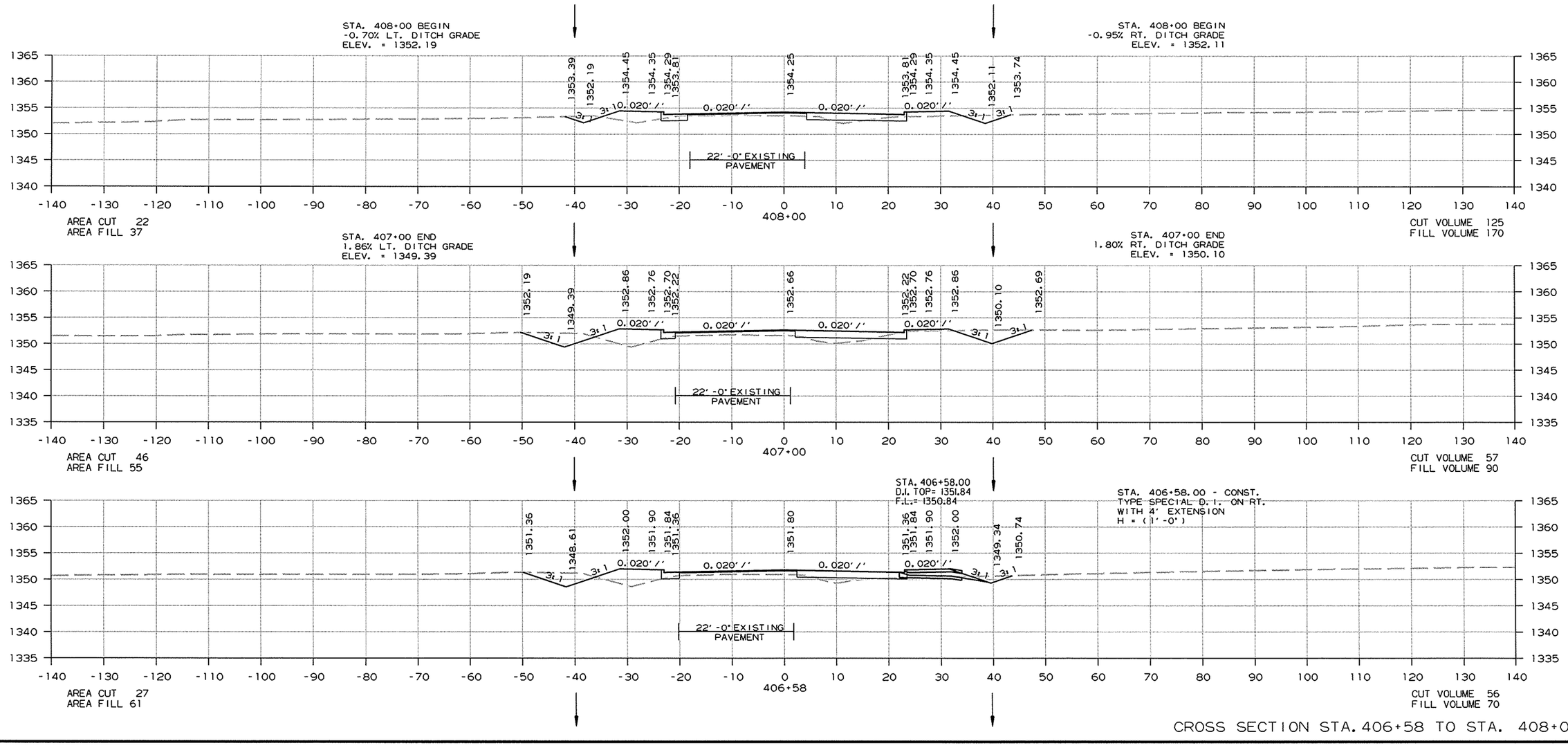
CROSS SECTION STA. 405+24 TO STA. 406+20

9/9/2015

R090373.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.		090373	243	316

(2) CROSS SECTIONS



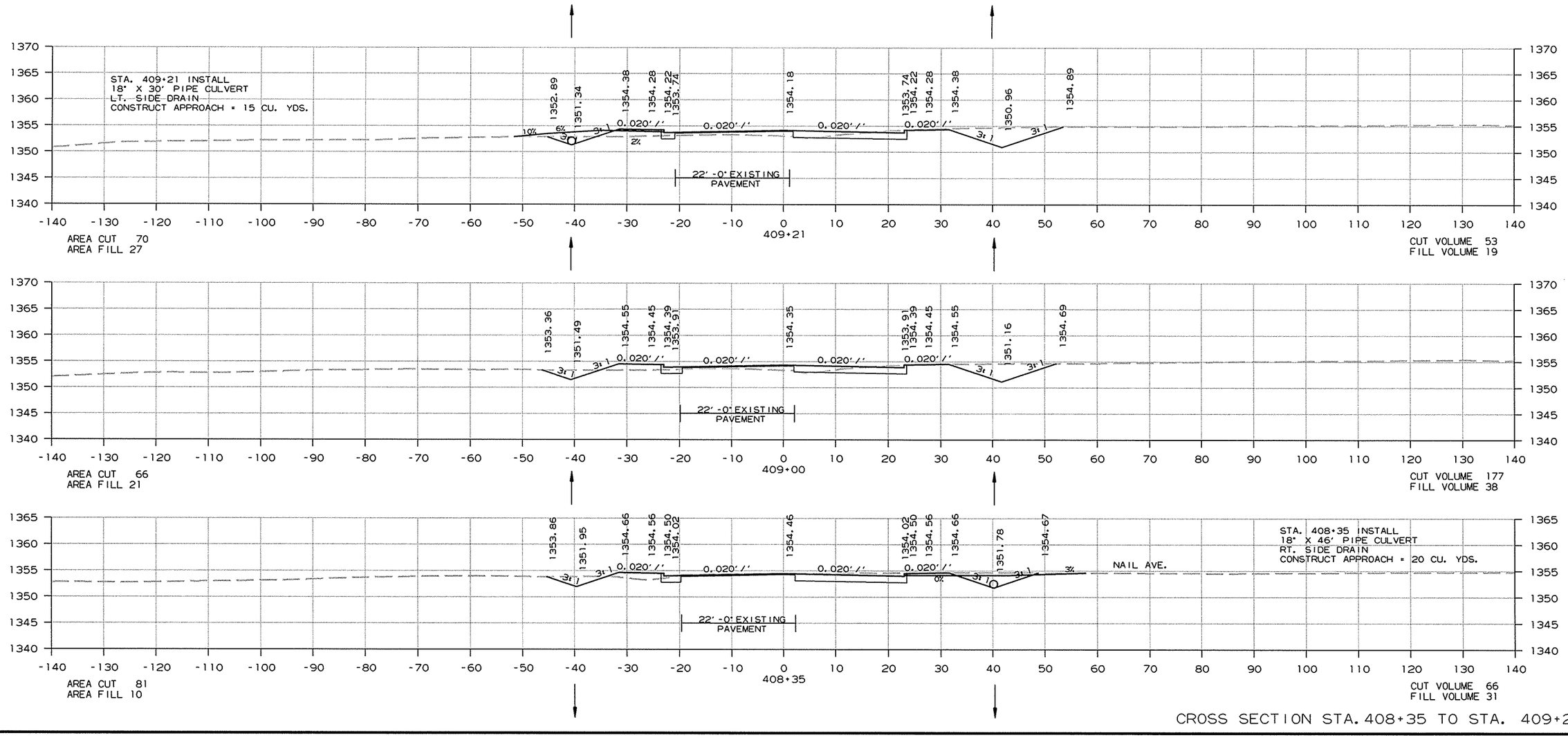
CROSS SECTION STA. 406+58 TO STA. 408+00

9/9/2015

R090373.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.		090373	244	316

(2) CROSS SECTIONS



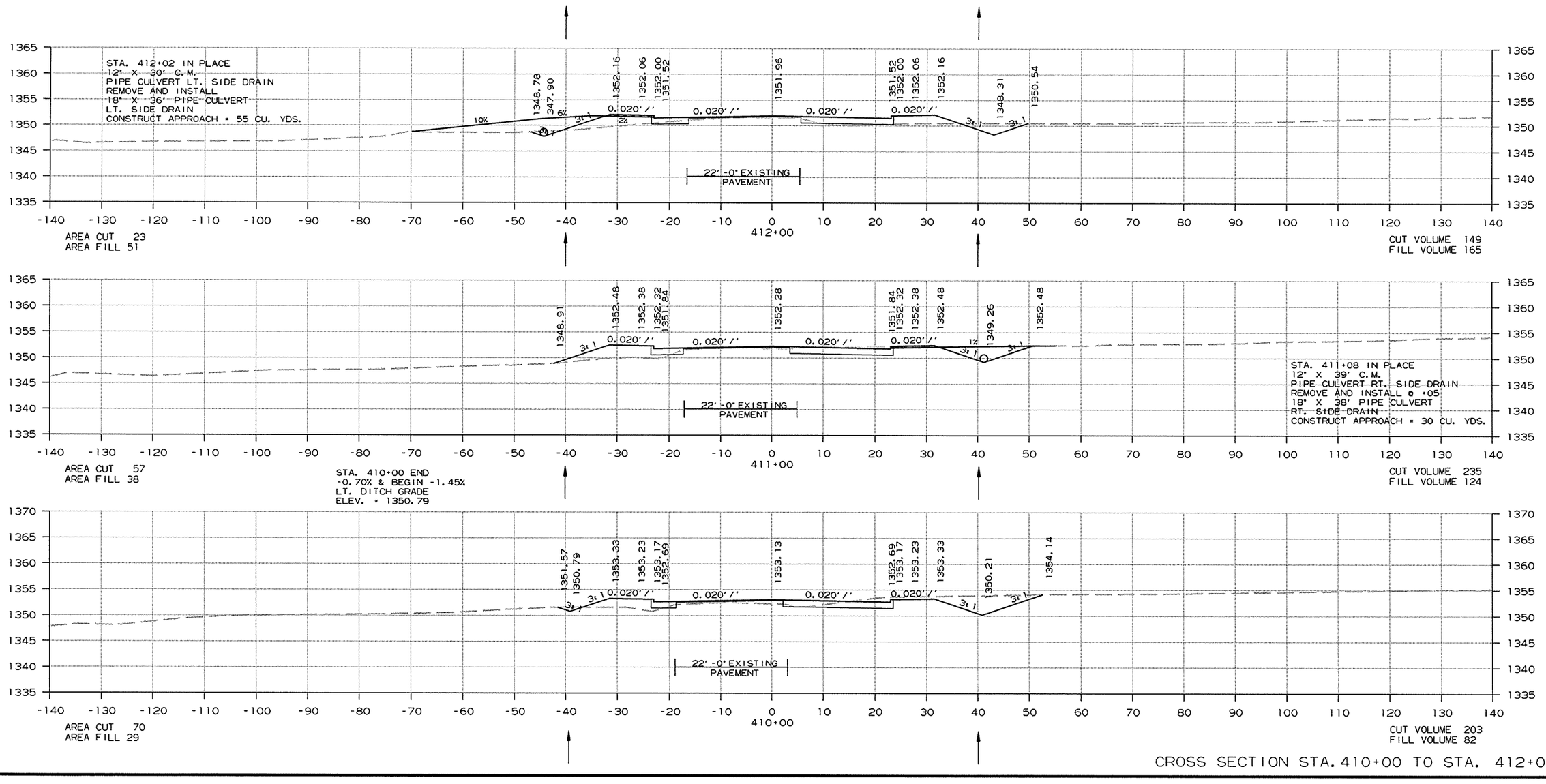
CROSS SECTION STA. 408+35 TO STA. 409+21

9/9/2015

R090373.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.		090373	245	316

(2) CROSS SECTIONS



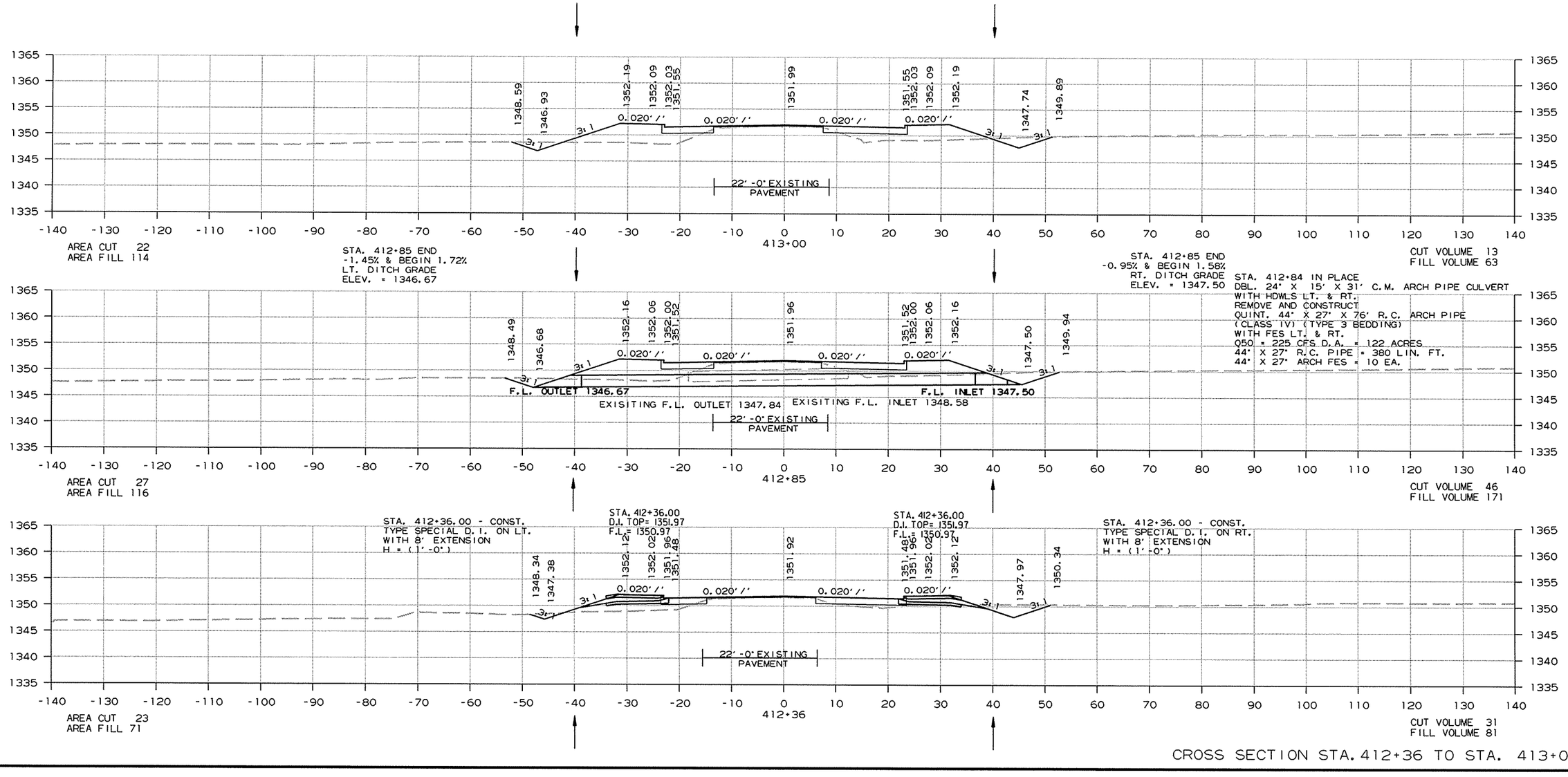
CROSS SECTION STA. 410+00 TO STA. 412+00

9/9/2015

R090373.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.		090373	246	316

(2) CROSS SECTIONS



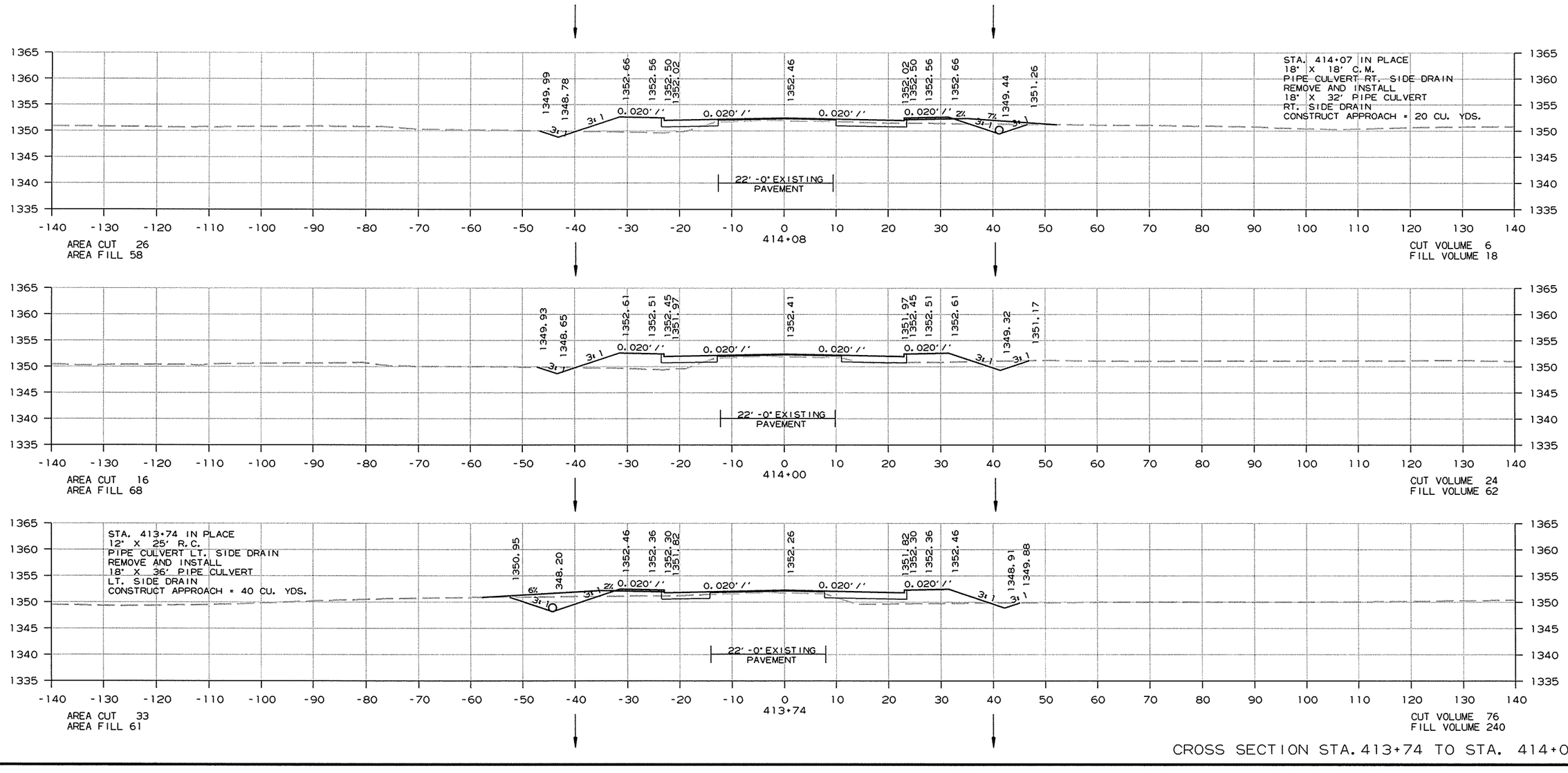
CROSS SECTION STA. 412+36 TO STA. 413+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	247	316

(2) CROSS SECTIONS



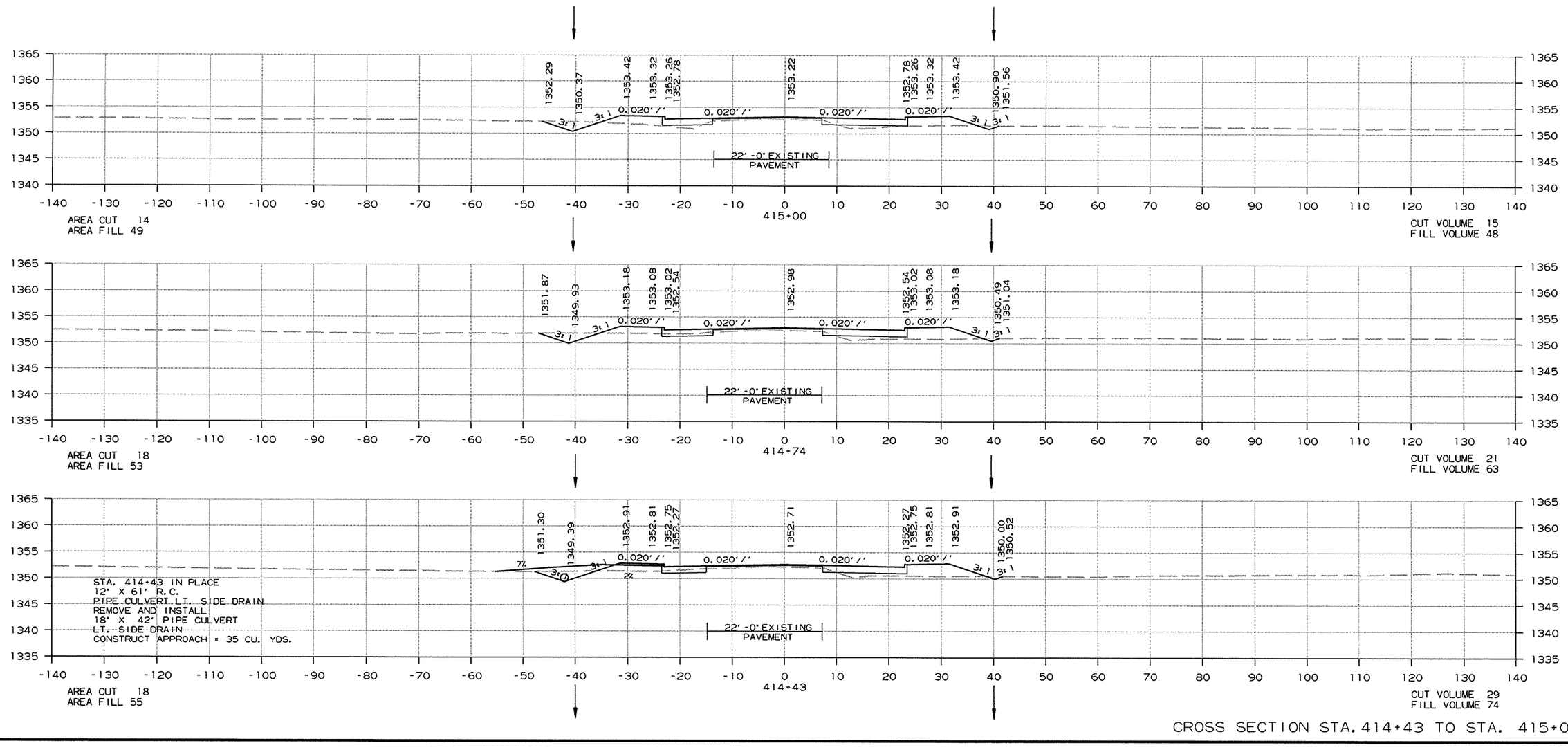
CROSS SECTION STA. 413+74 TO STA. 414+08

9/9/2015

R090373.DGN

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



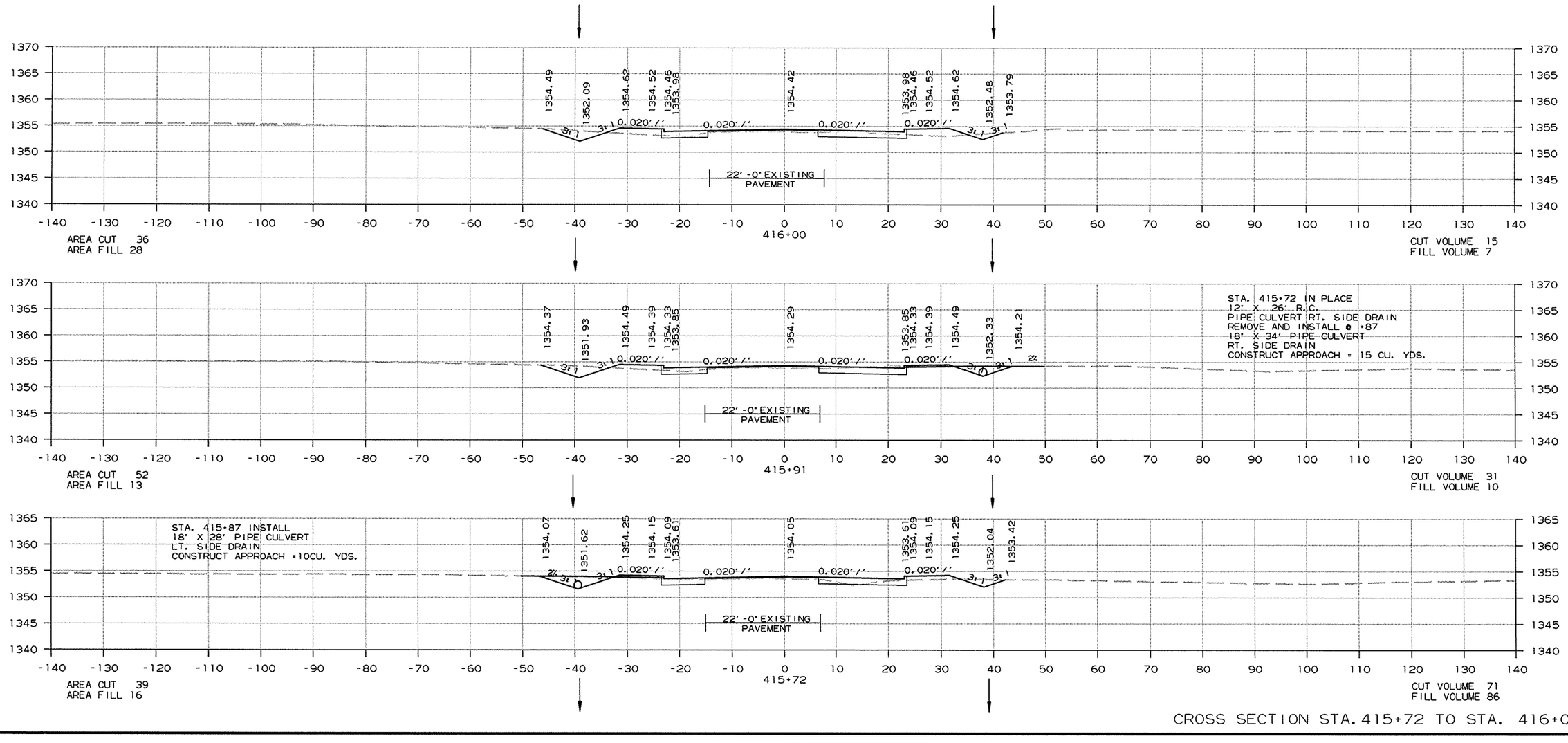
CROSS SECTION STA. 414+43 TO STA. 415+00

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	249	316

(2) CROSS SECTIONS



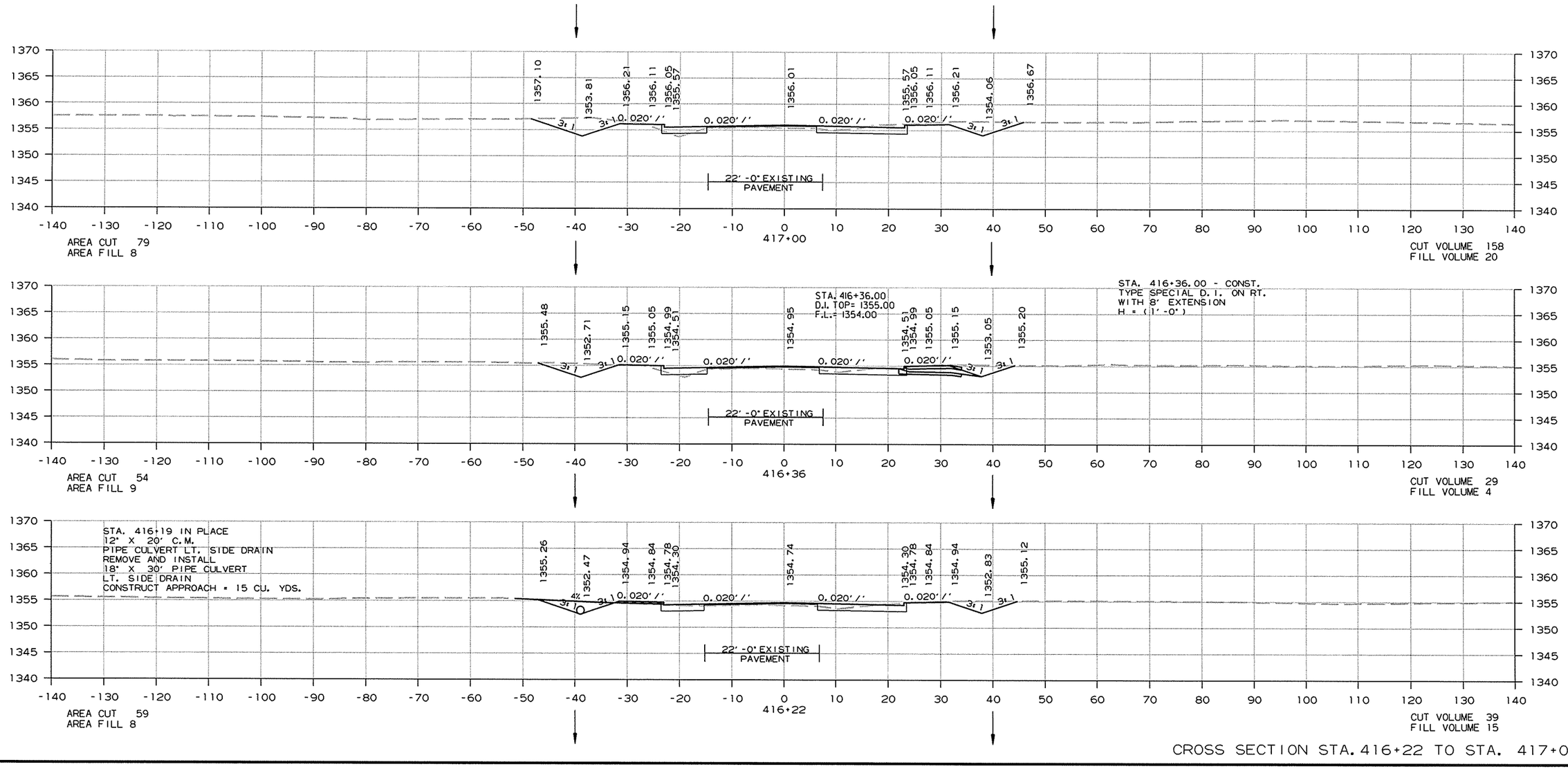
CROSS SECTION STA. 415+72 TO STA. 416+00

9/9/2015

R090373.DGN

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



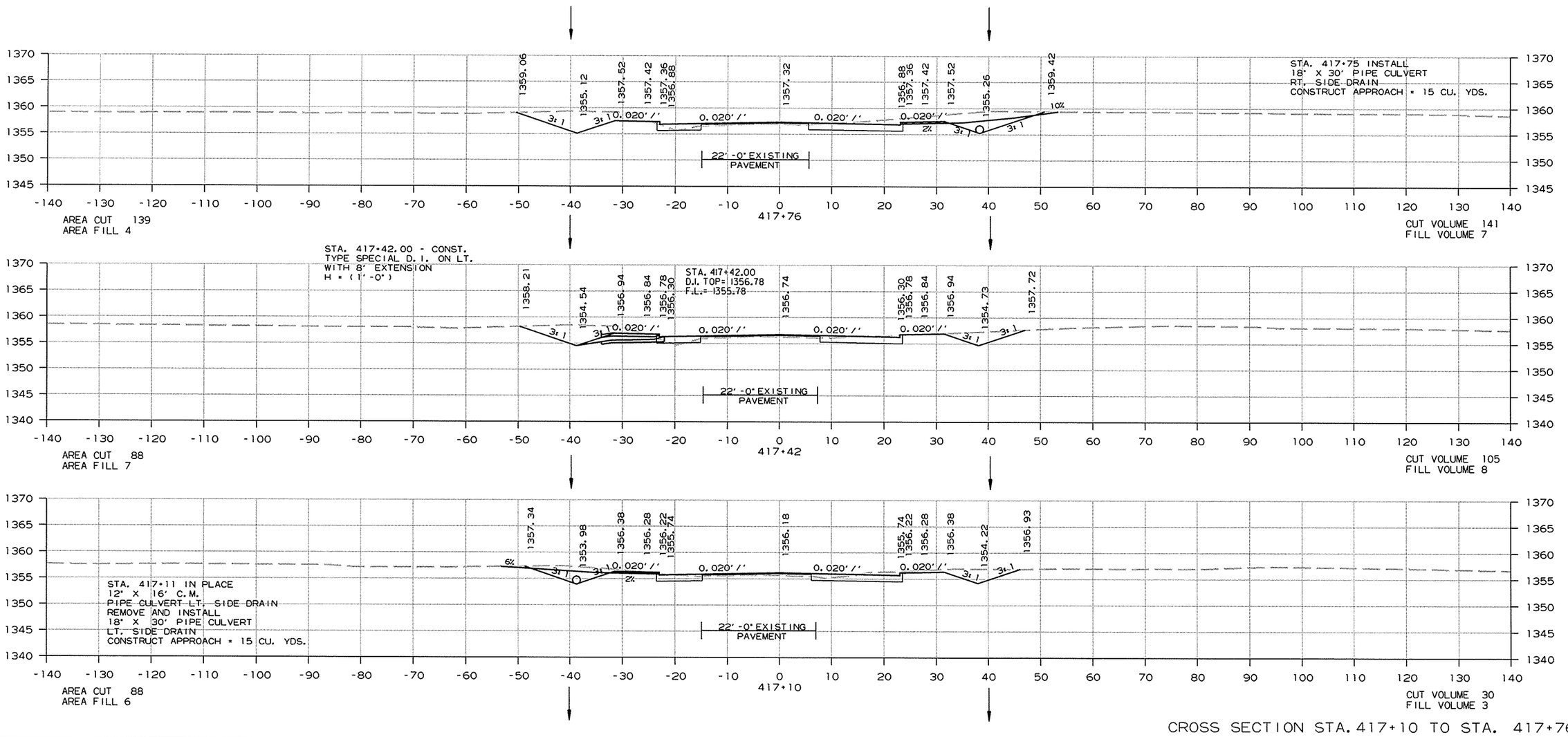
CROSS SECTION STA. 416+22 TO STA. 417+00

9/9/2015

R090373.DGN

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



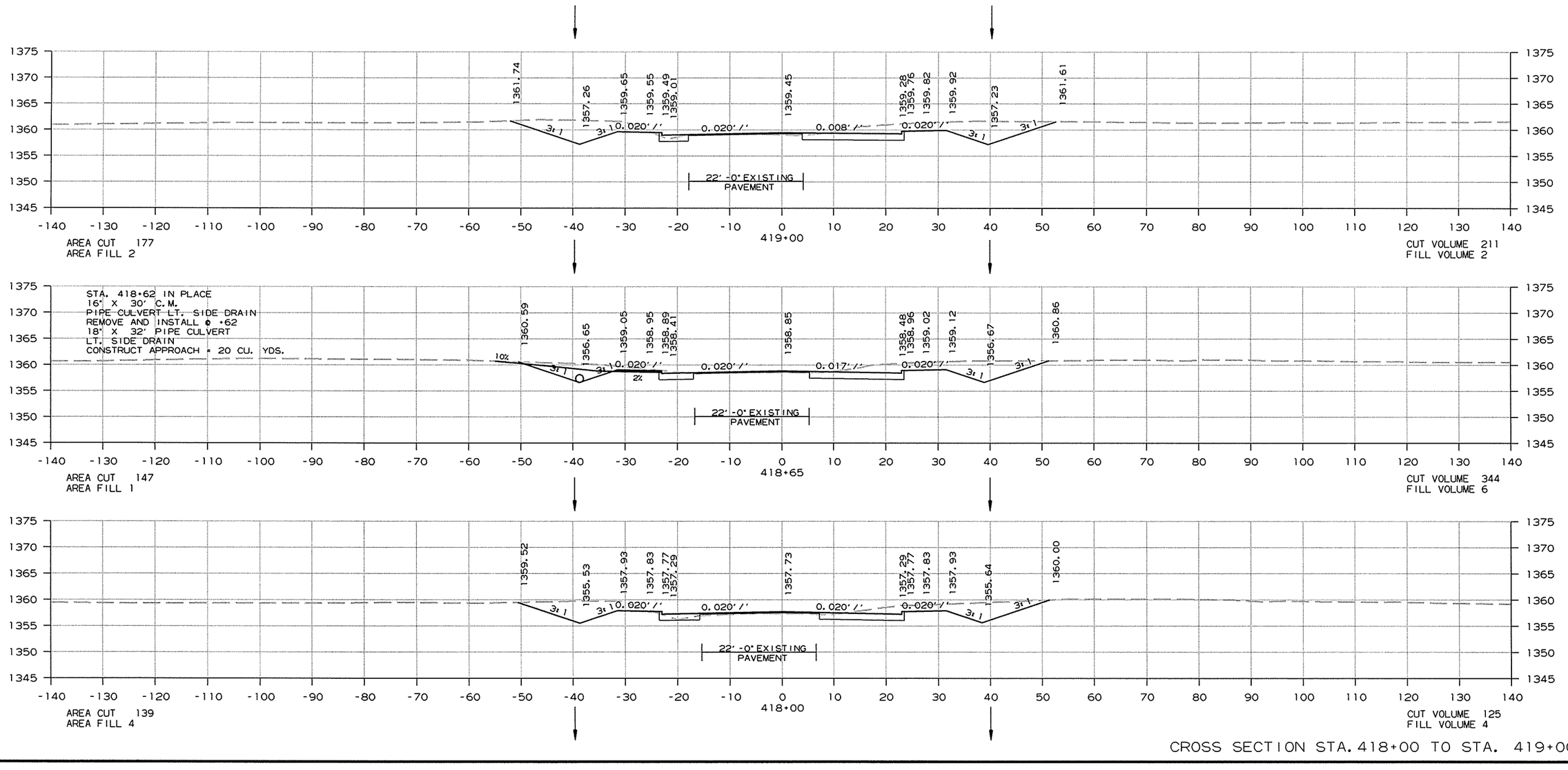
CROSS SECTION STA. 417+10 TO STA. 417+76

9/9/2015

R090373.DGN

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



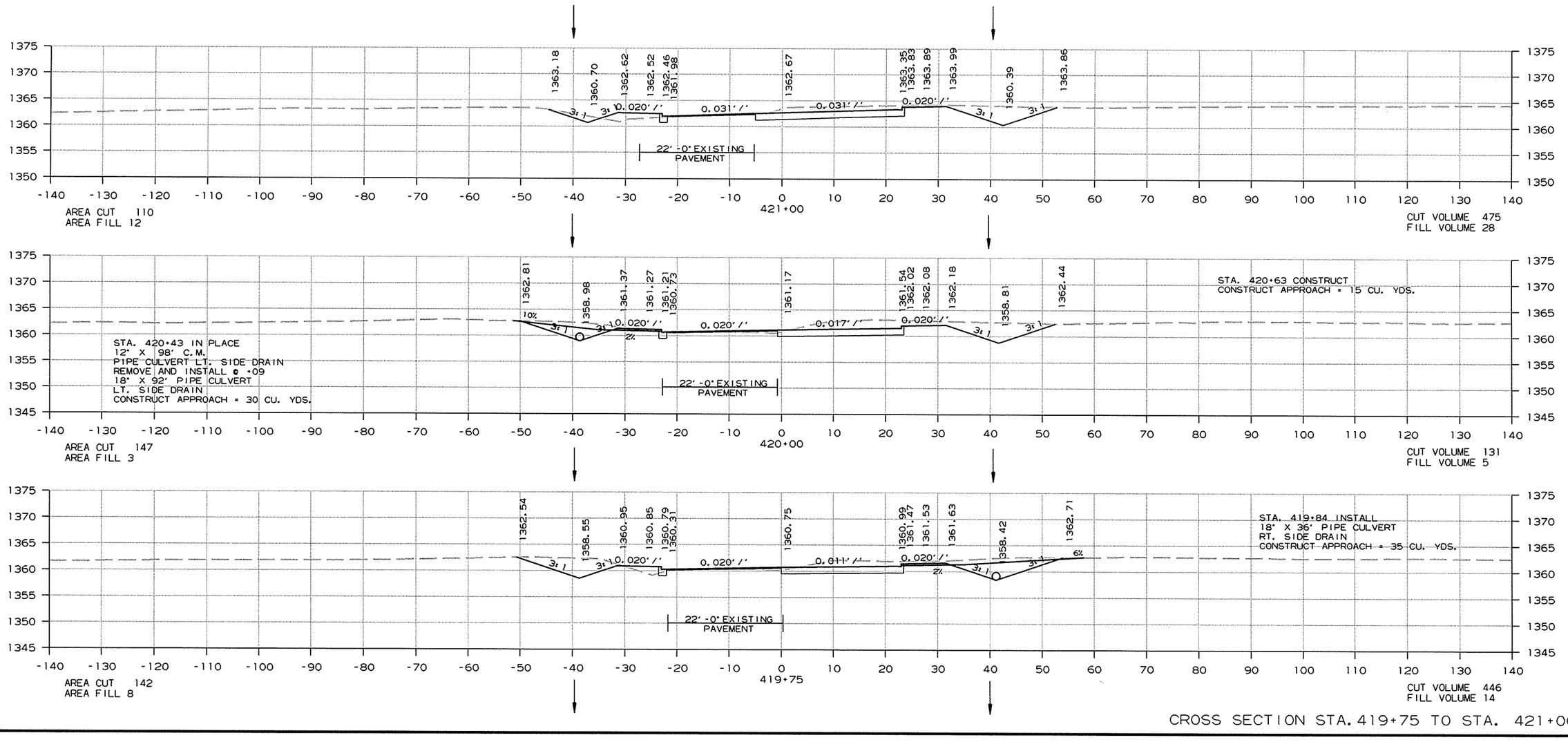
CROSS SECTION STA. 418+00 TO STA. 419+00

9/9/2015

R090373.DGN

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



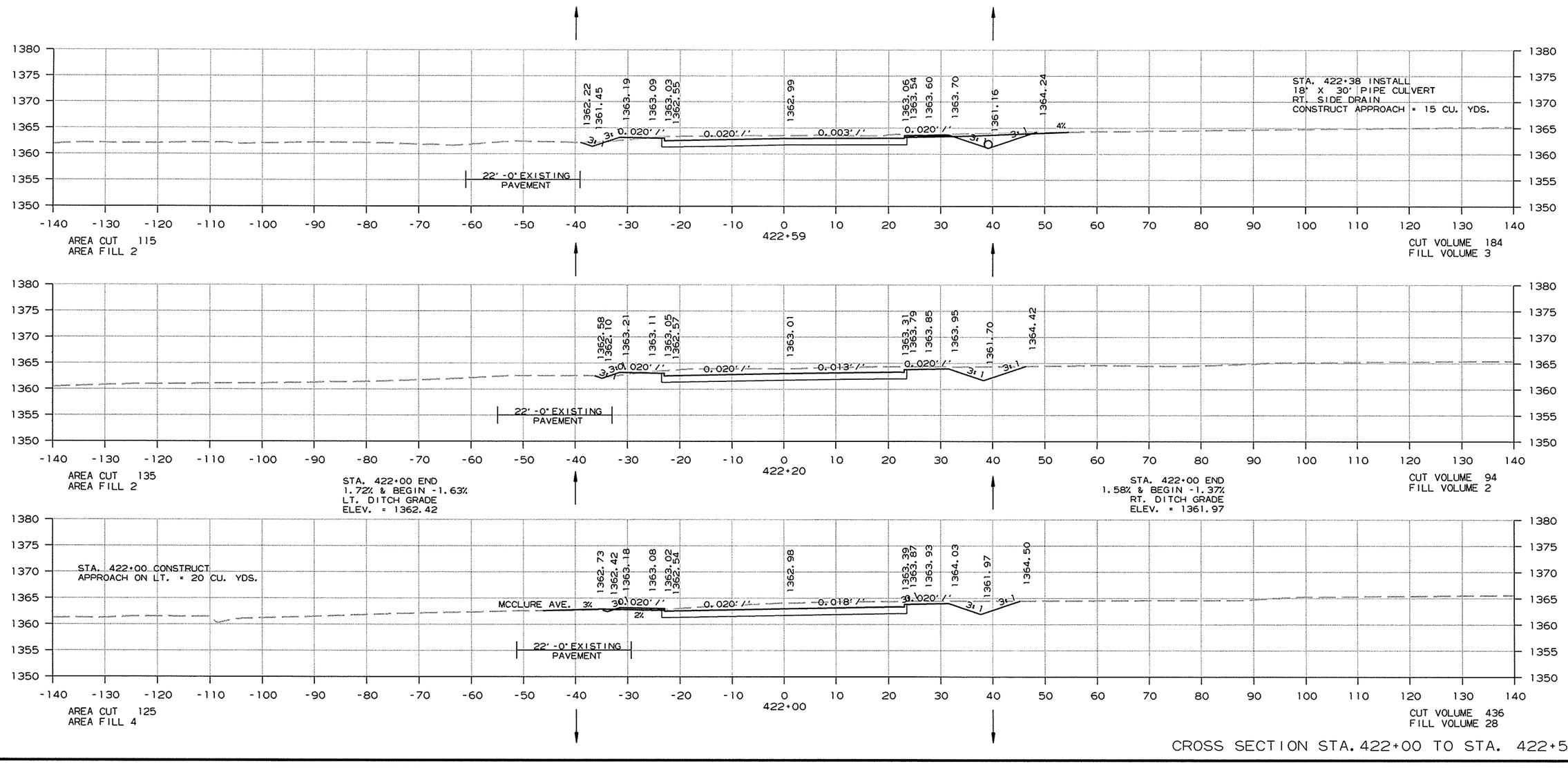
CROSS SECTION STA. 419+75 TO STA. 421+00

9/9/2015

R090373.DGN

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



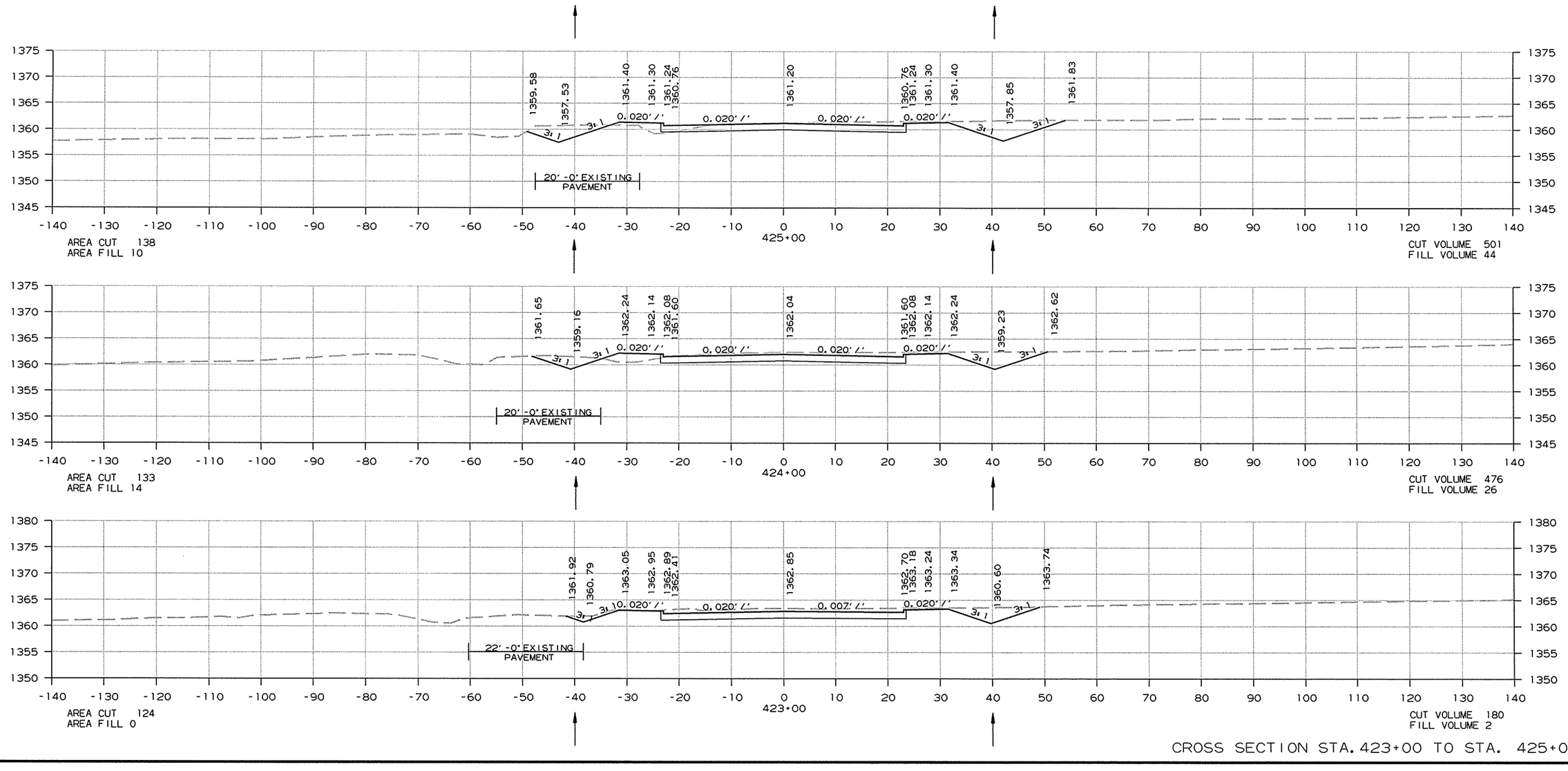
CROSS SECTION STA. 422+00 TO STA. 422+59

9/9/2015

R090373.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090373	255	316

(2) CROSS SECTIONS



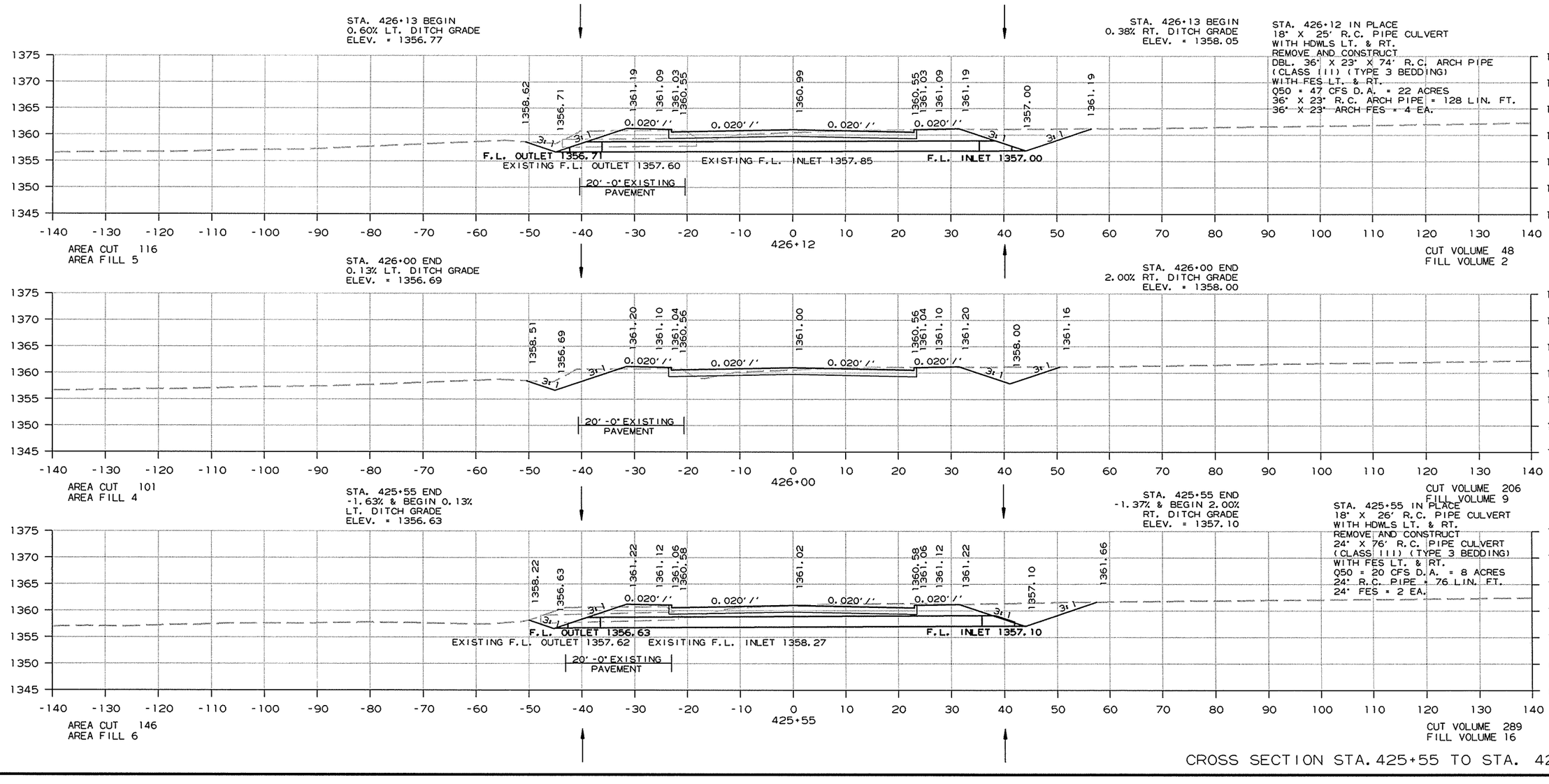
CROSS SECTION STA. 423+00 TO STA. 425+00

9/9/2015

R090373.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.		090373	256	316

(2) CROSS SECTIONS



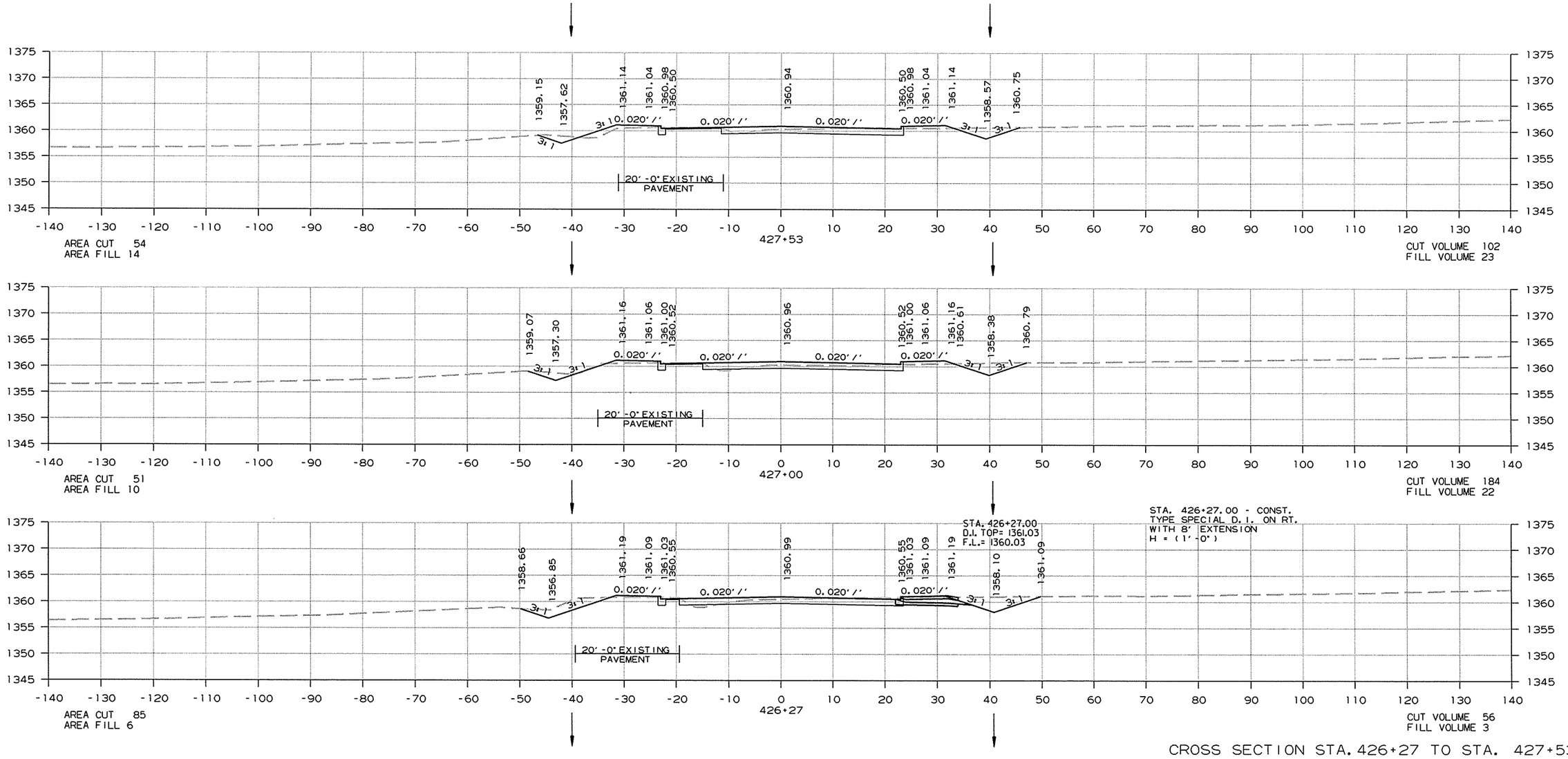
CROSS SECTION STA. 425+55 TO STA. 426+12

9/9/2015

R090373.DGN

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



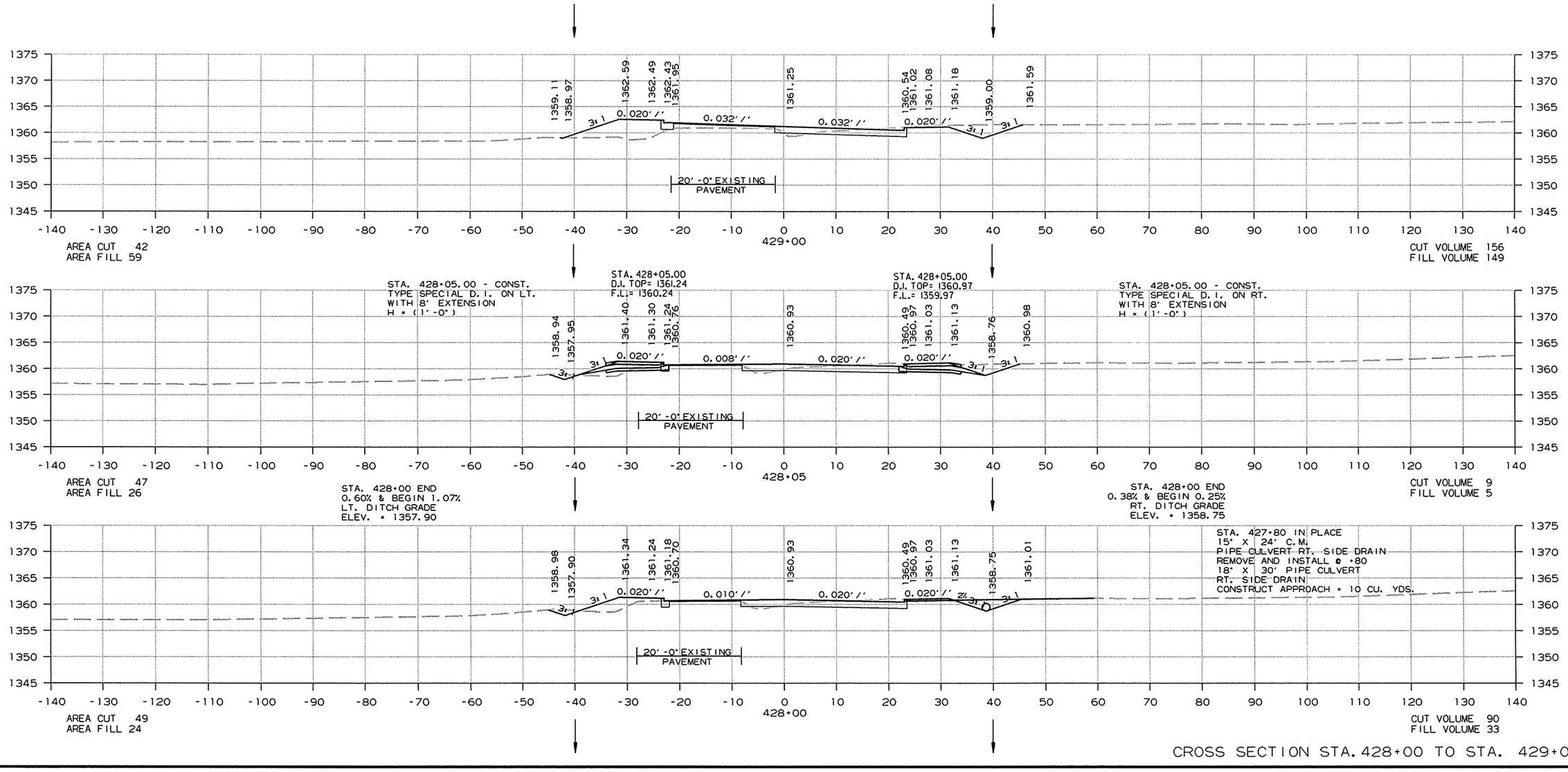
CROSS SECTION STA. 426+27 TO STA. 427+53

9/9/2015

R090373.DGN

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



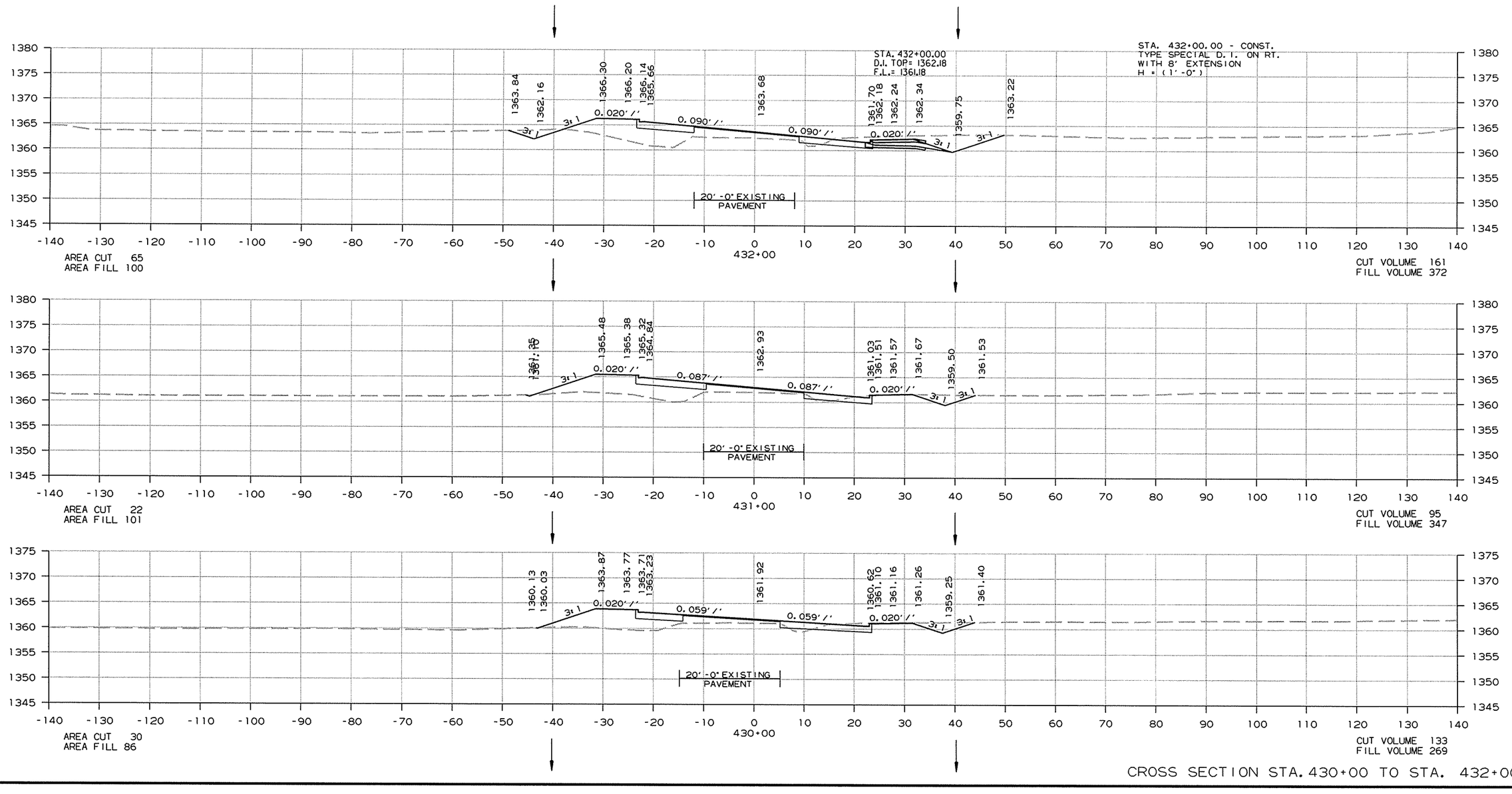
CROSS SECTION STA. 428+00 TO STA. 429+00

9/9/2015

RD090373.DGN

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



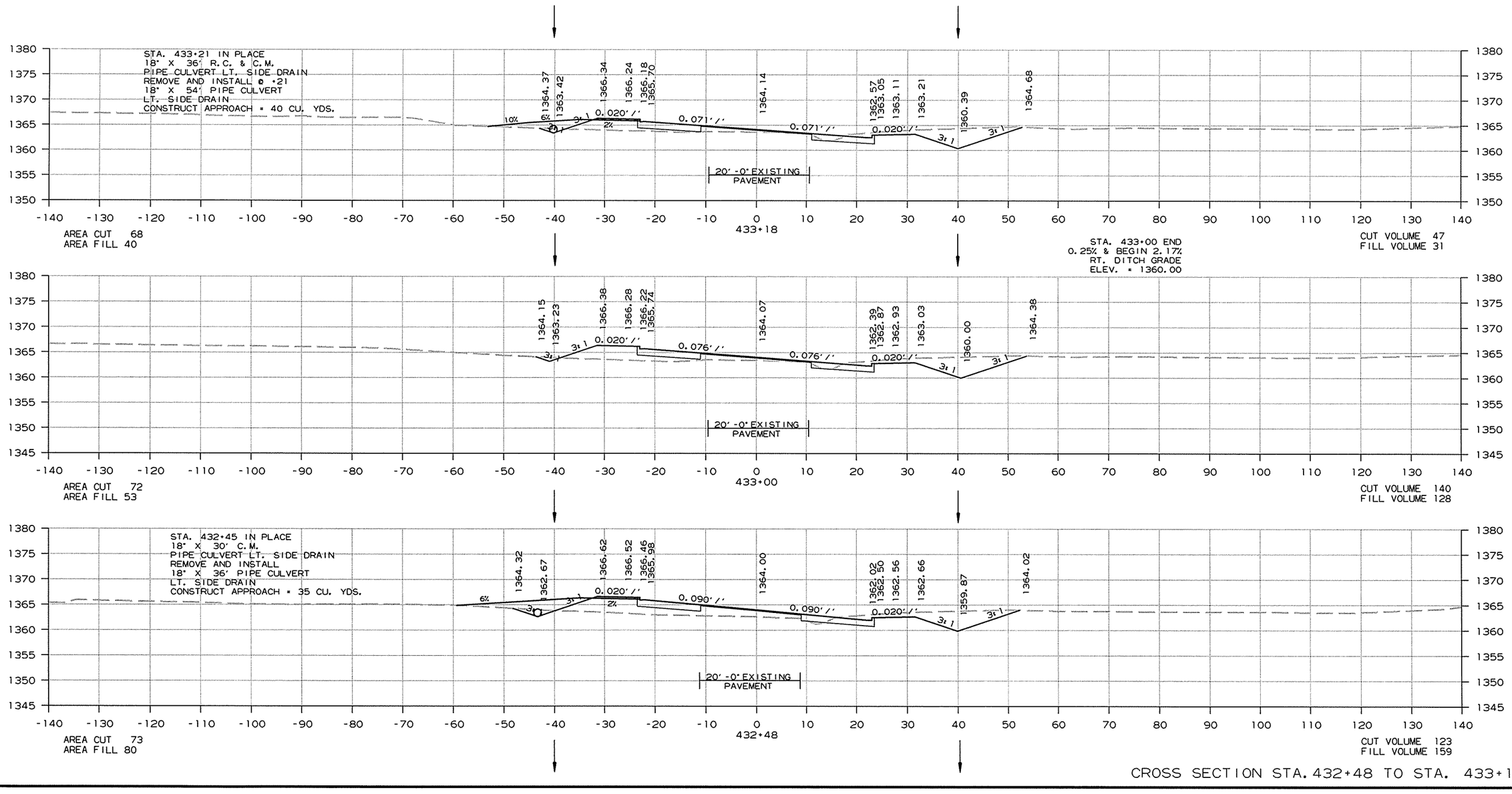
CROSS SECTION STA. 430+00 TO STA. 432+00

9/9/2015

R090373.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.		090373	260	316

(2) CROSS SECTIONS



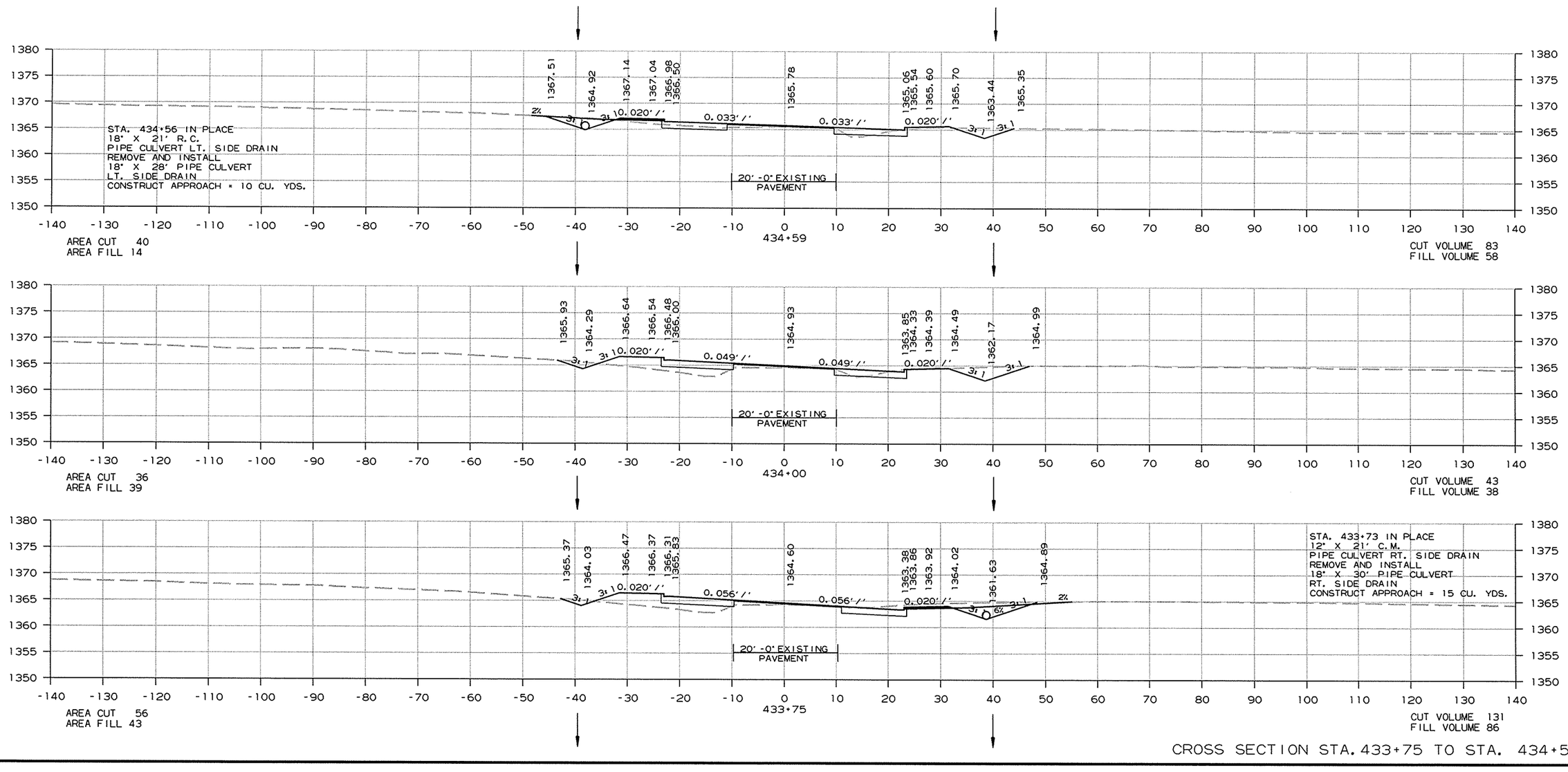
CROSS SECTION STA. 432+48 TO STA. 433+18

9/9/2015

R090373.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.		090373	261	316

(2) CROSS SECTIONS



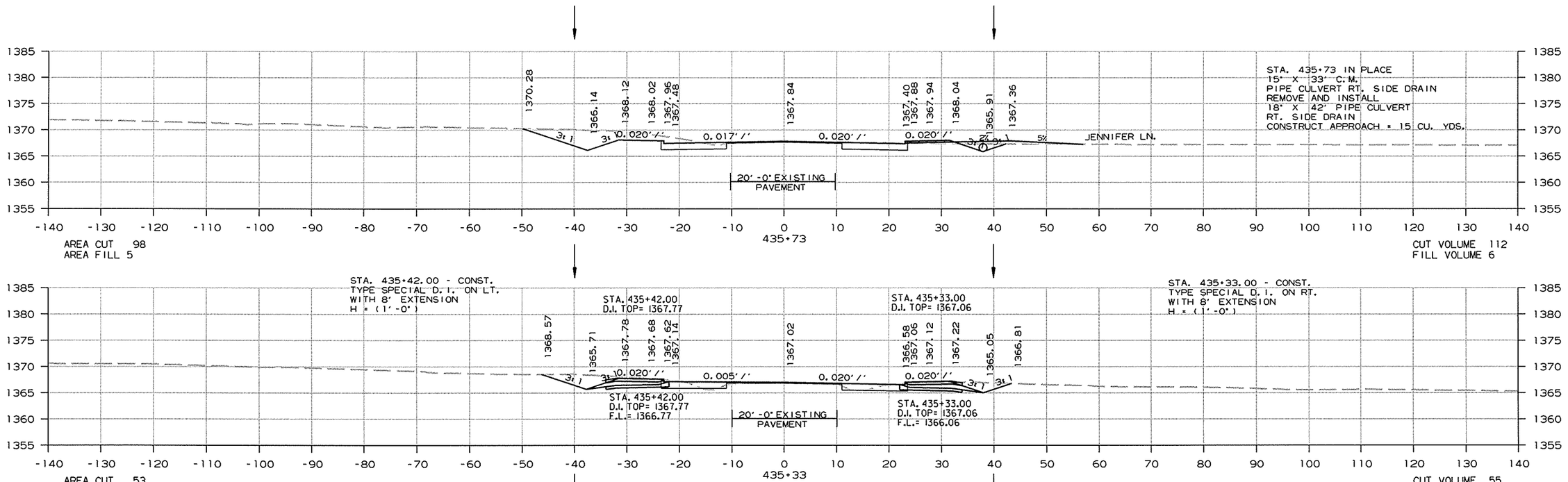
CROSS SECTION STA. 433+75 TO STA. 434+59

9/9/2015

R090373.DGN

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



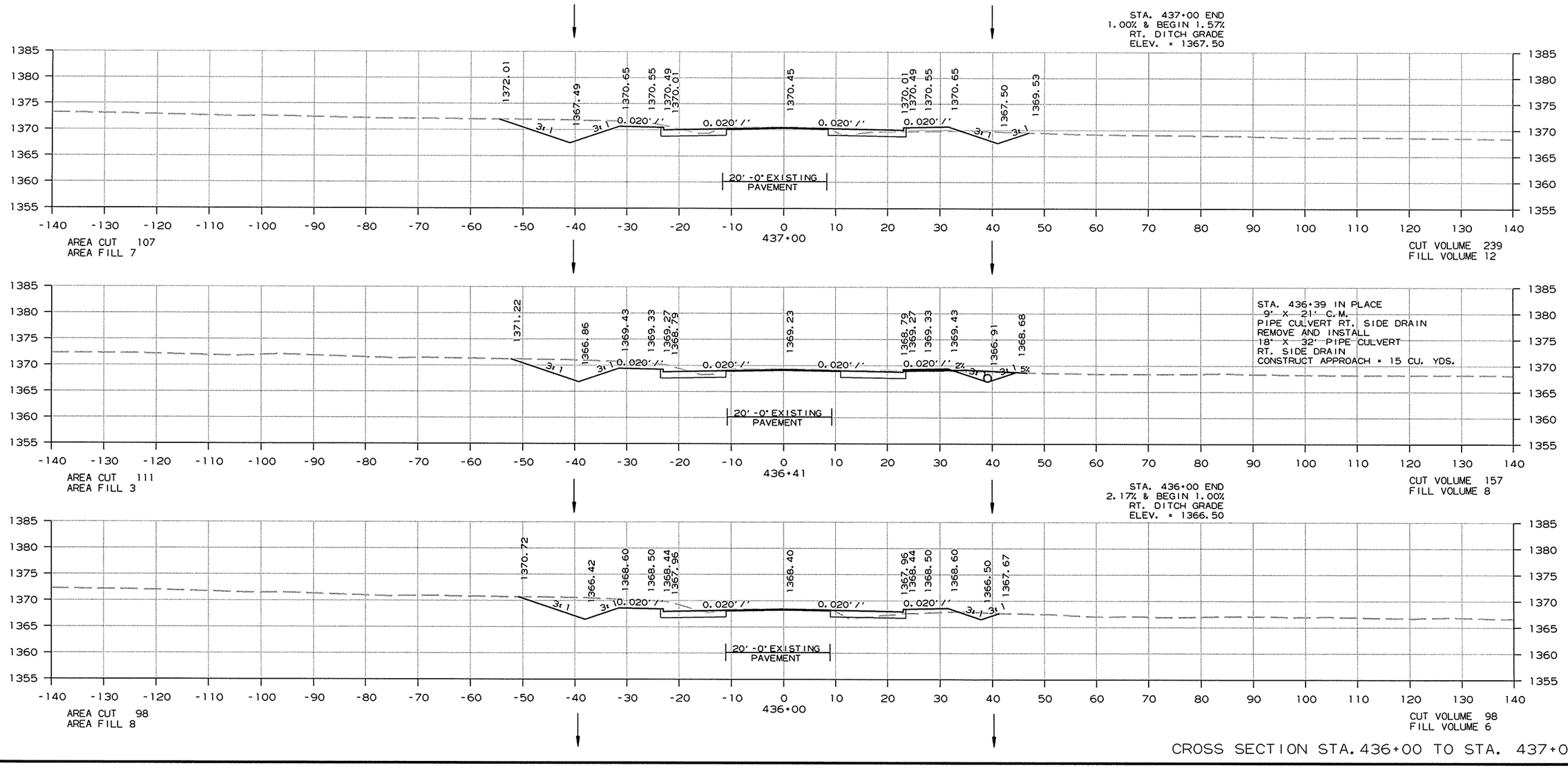
CROSS SECTION STA. 435+00 TO STA. 435+73

9/9/2015

R090373.DGN

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



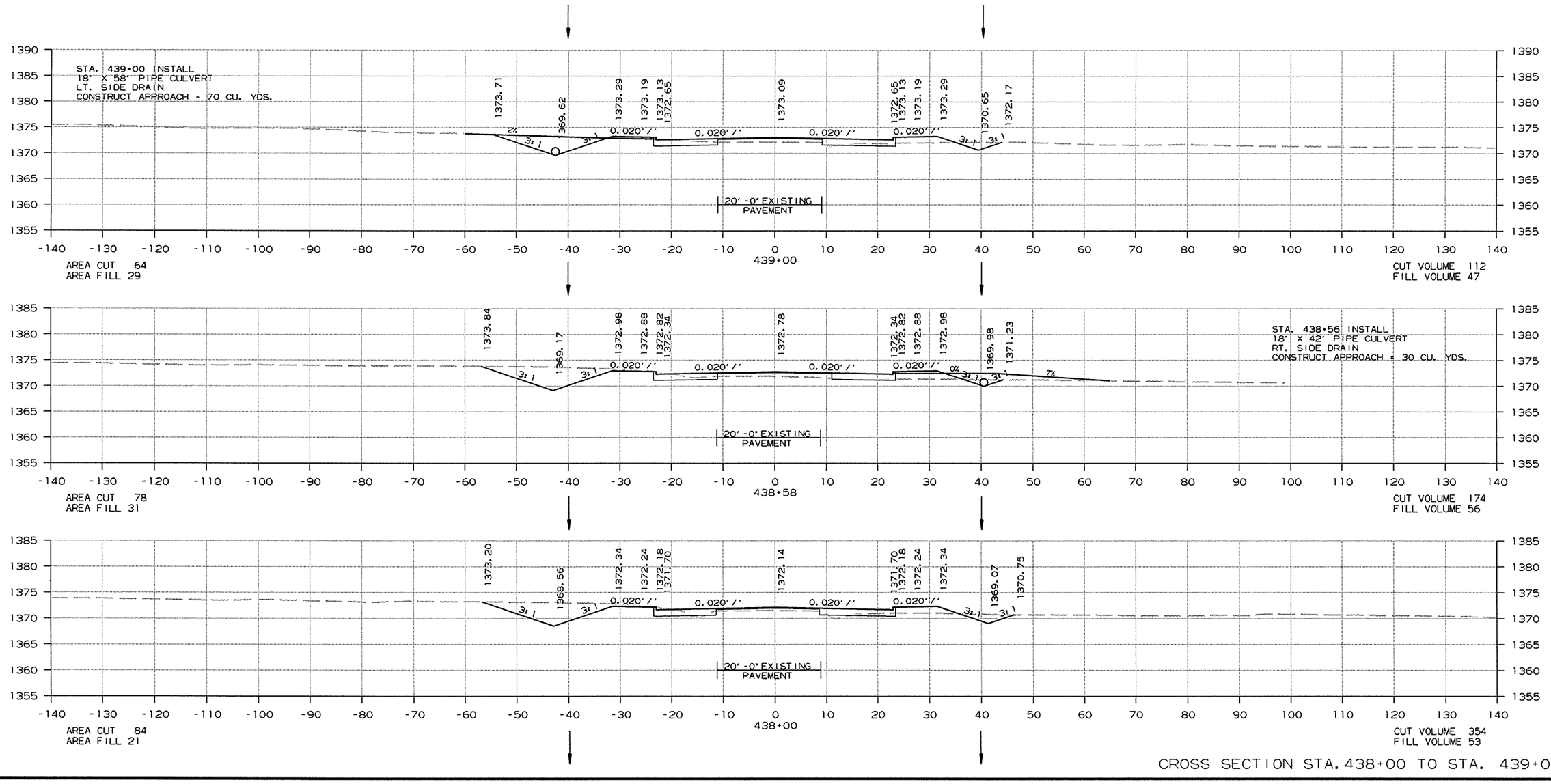
CROSS SECTION STA. 436+00 TO STA. 437+00

9/9/2015

R090373.DGN

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



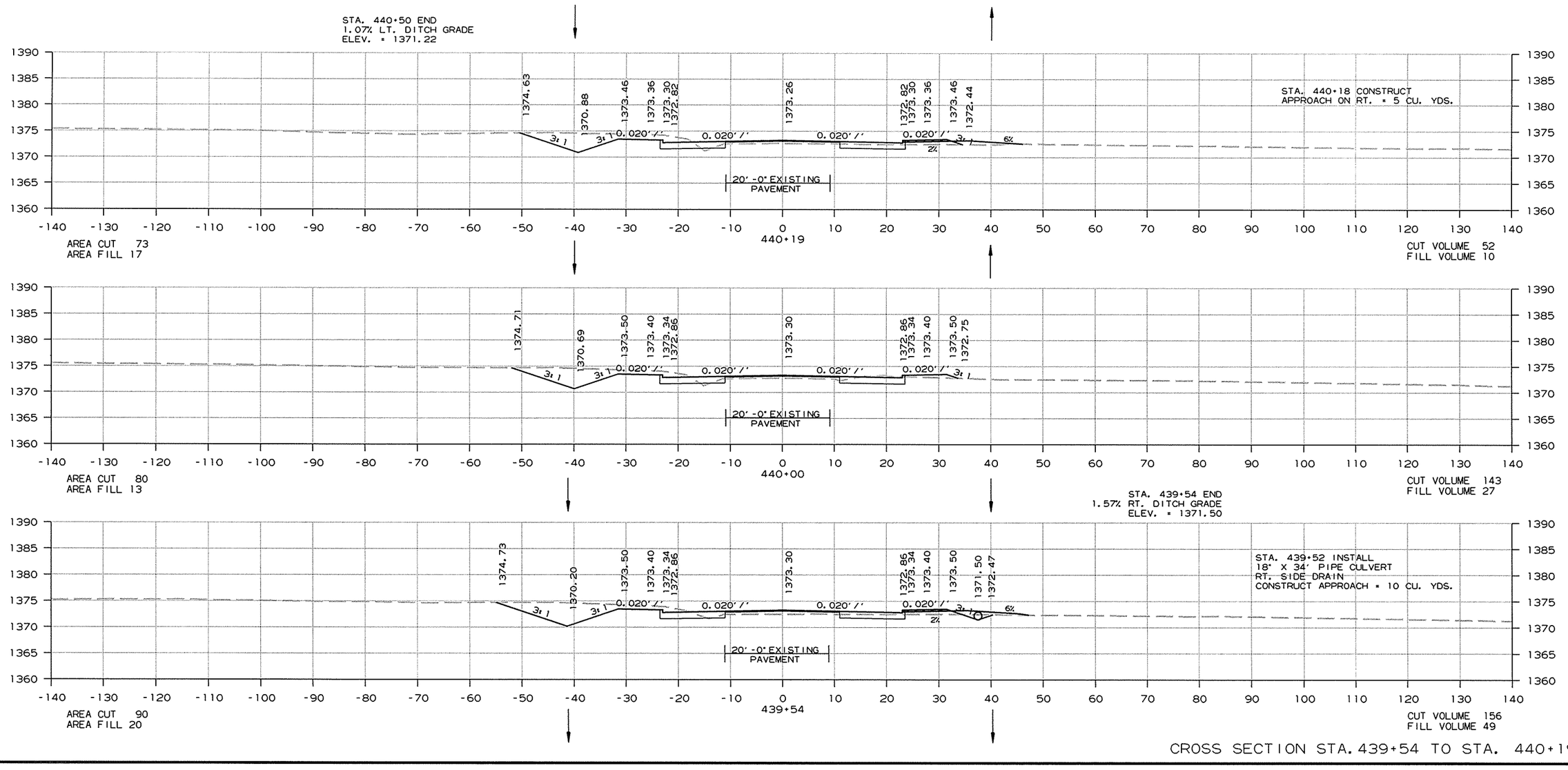
CROSS SECTION STA. 438+00 TO STA. 439+00

9/9/2015

R090373.DGN

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



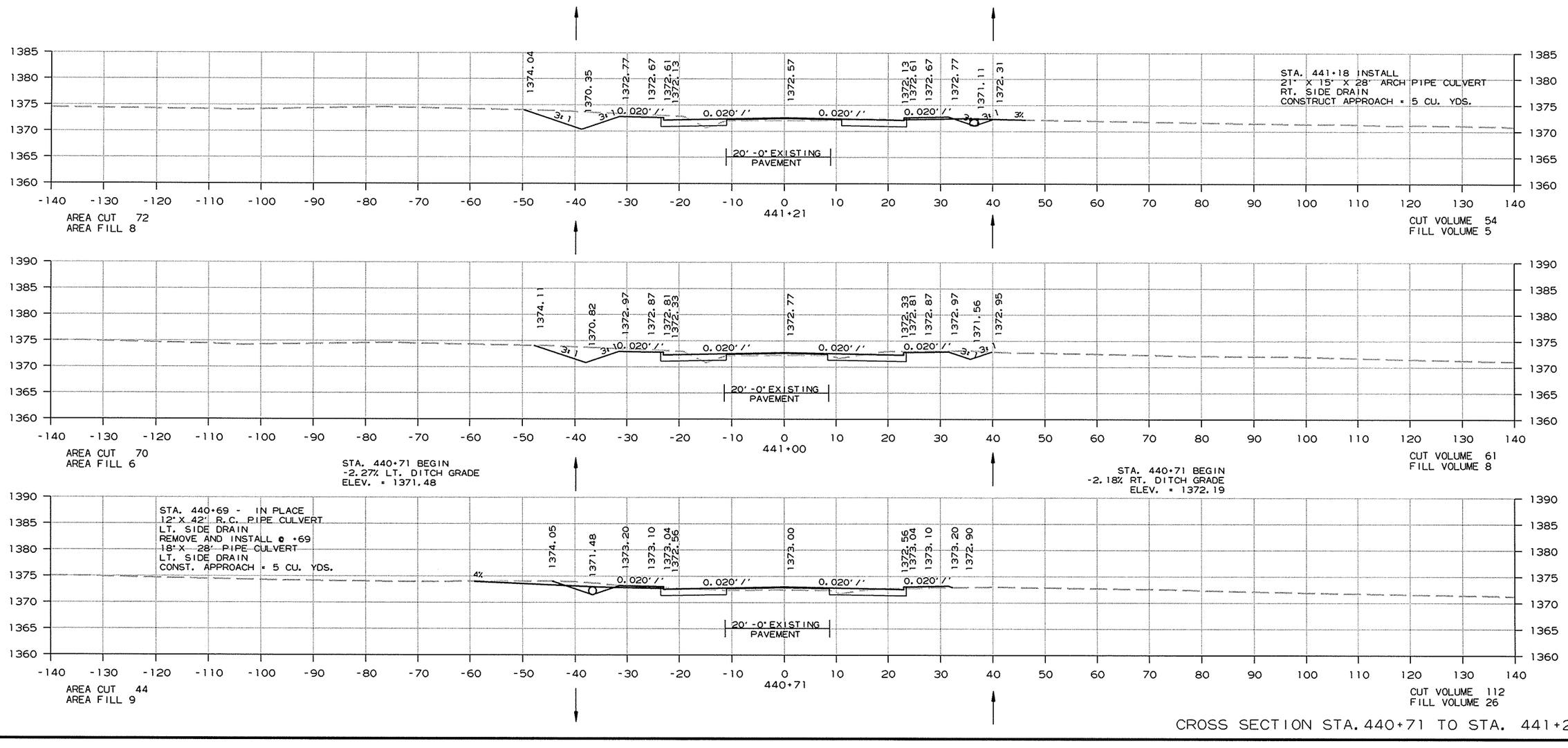
CROSS SECTION STA. 439+54 TO STA. 440+19

9/9/2015

R090373.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.		090373	266	316

(2) CROSS SECTIONS



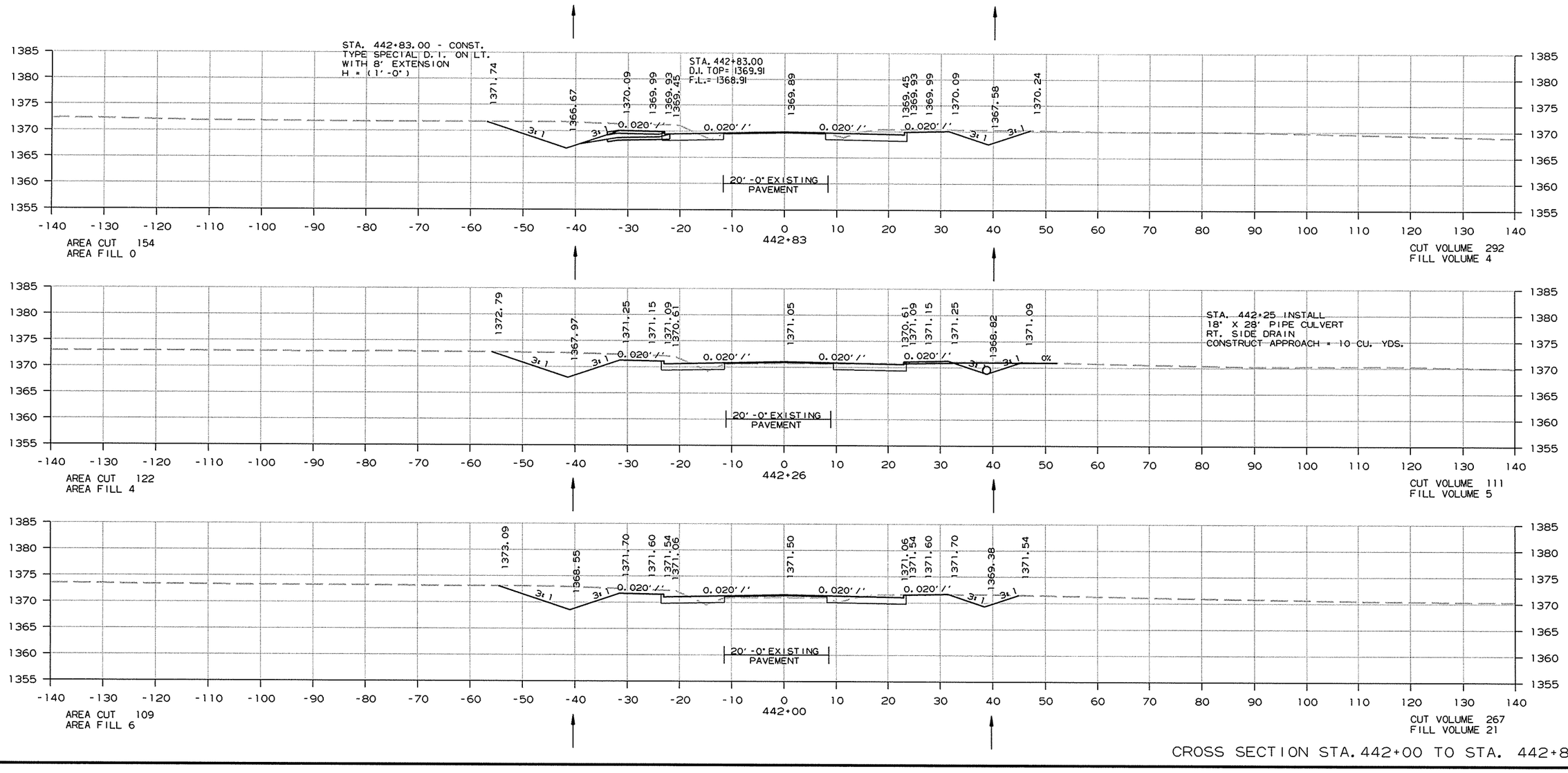
CROSS SECTION STA. 440+71 TO STA. 441+21

9/9/2015

R090373.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.		090373	267	316

(2) CROSS SECTIONS



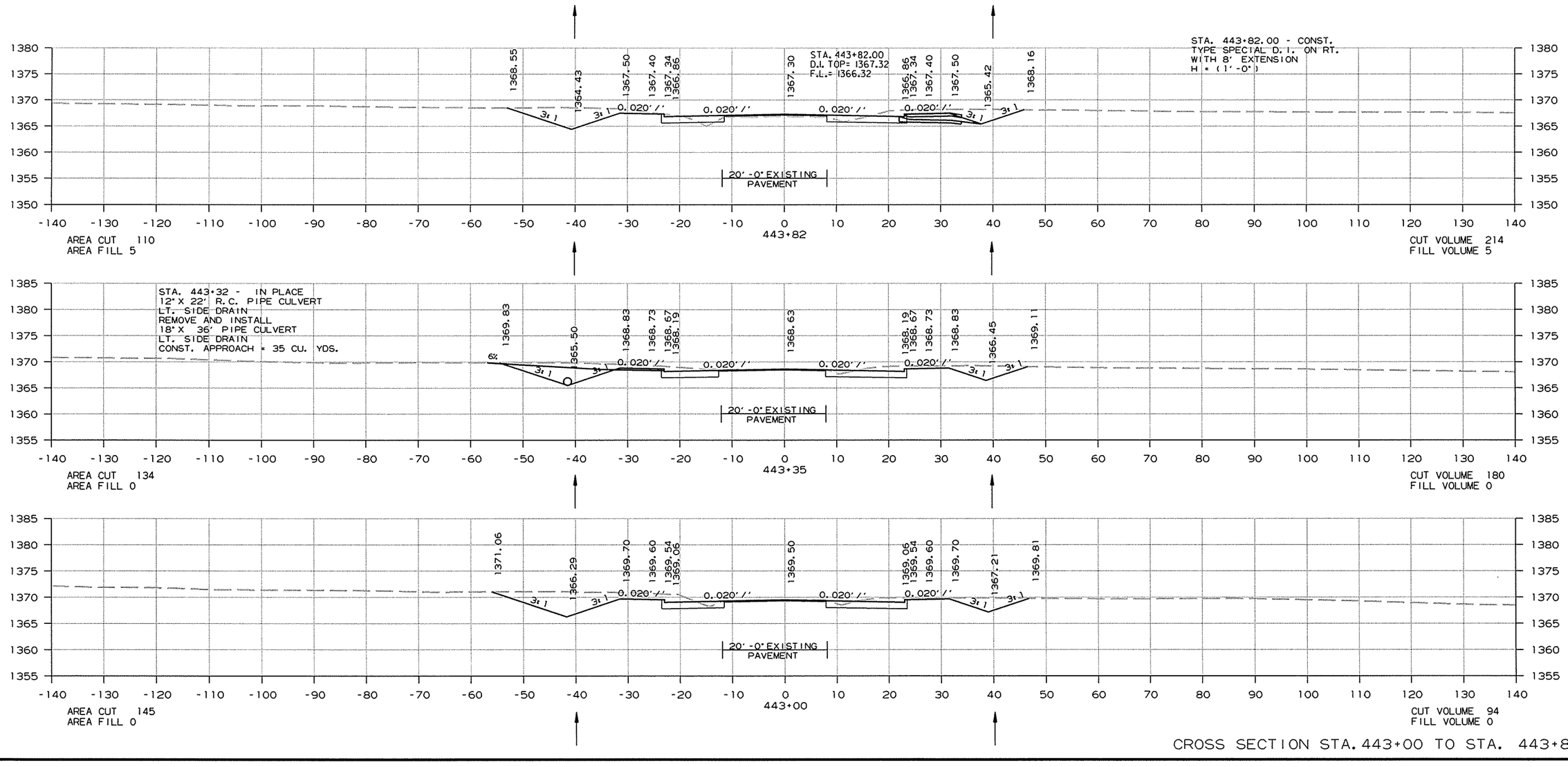
CROSS SECTION STA. 442+00 TO STA. 442+83

9/9/2015

R090373.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.		090373	268	316

(2) CROSS SECTIONS



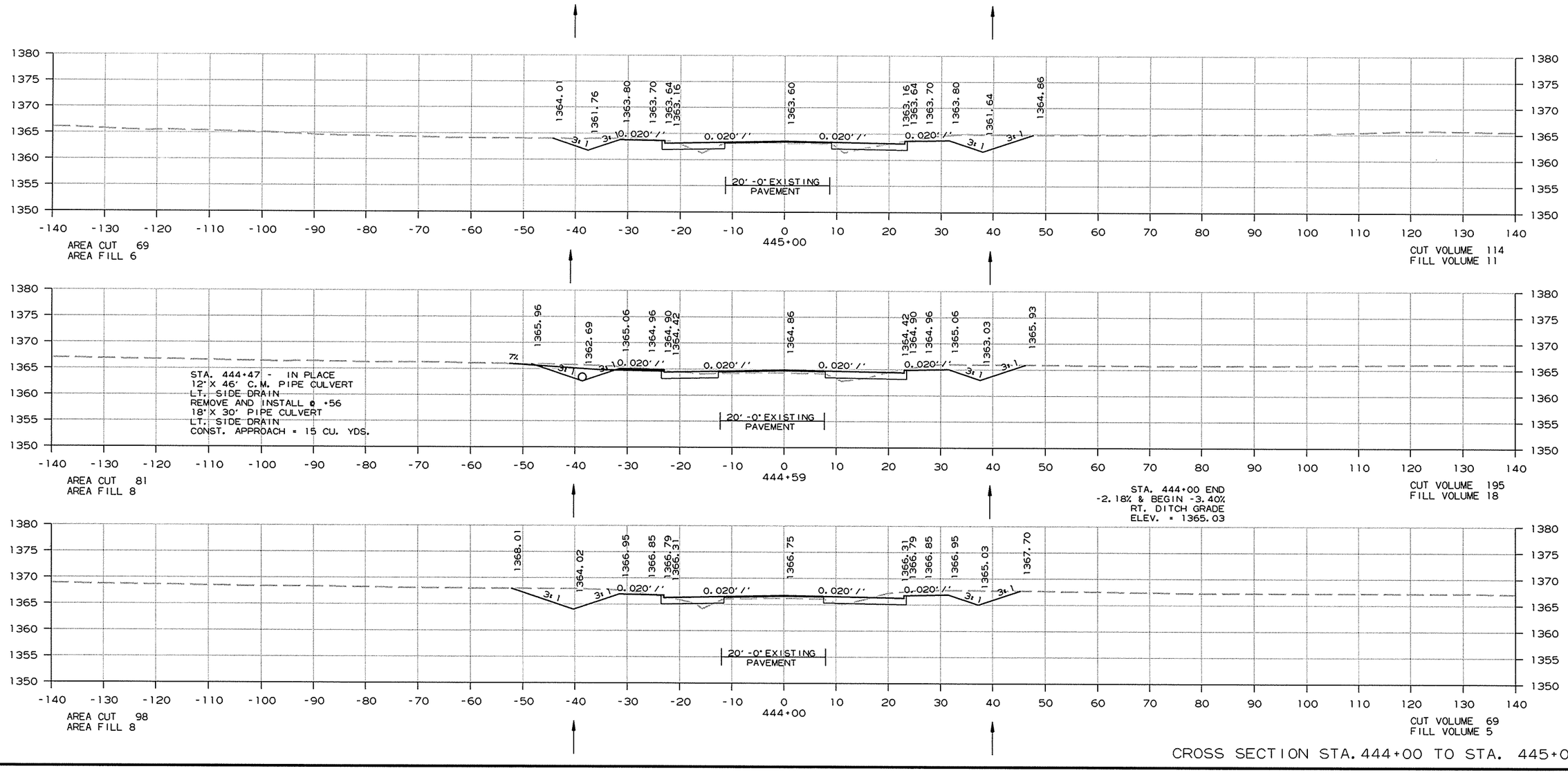
CROSS SECTION STA. 443+00 TO STA. 443+82

9/9/2015

R090373.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.		090373	269	316

(2) CROSS SECTIONS



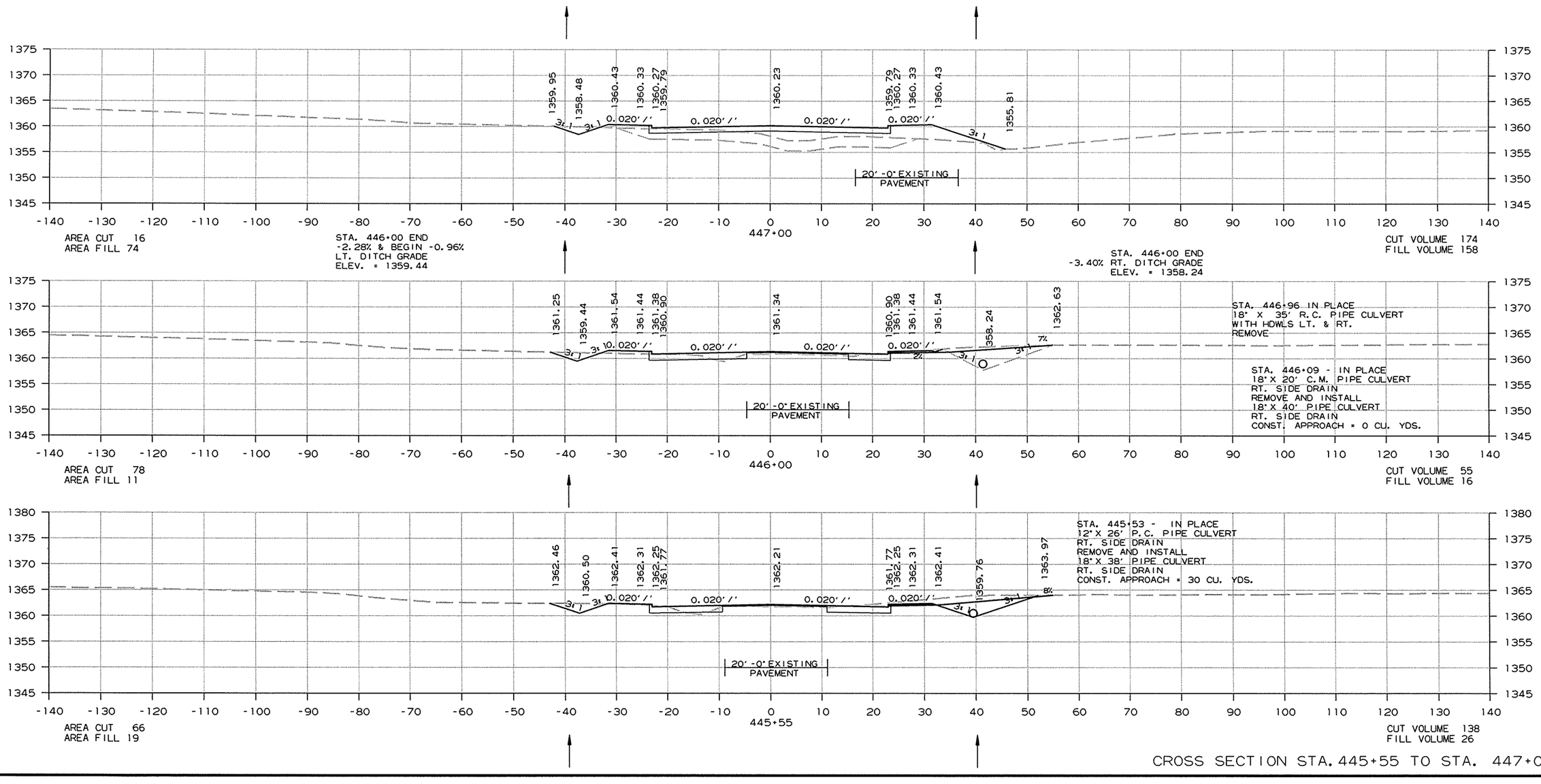
CROSS SECTION STA. 444+00 TO STA. 445+00

9/9/2015

R090373.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.		090373	270	316

(2) CROSS SECTIONS



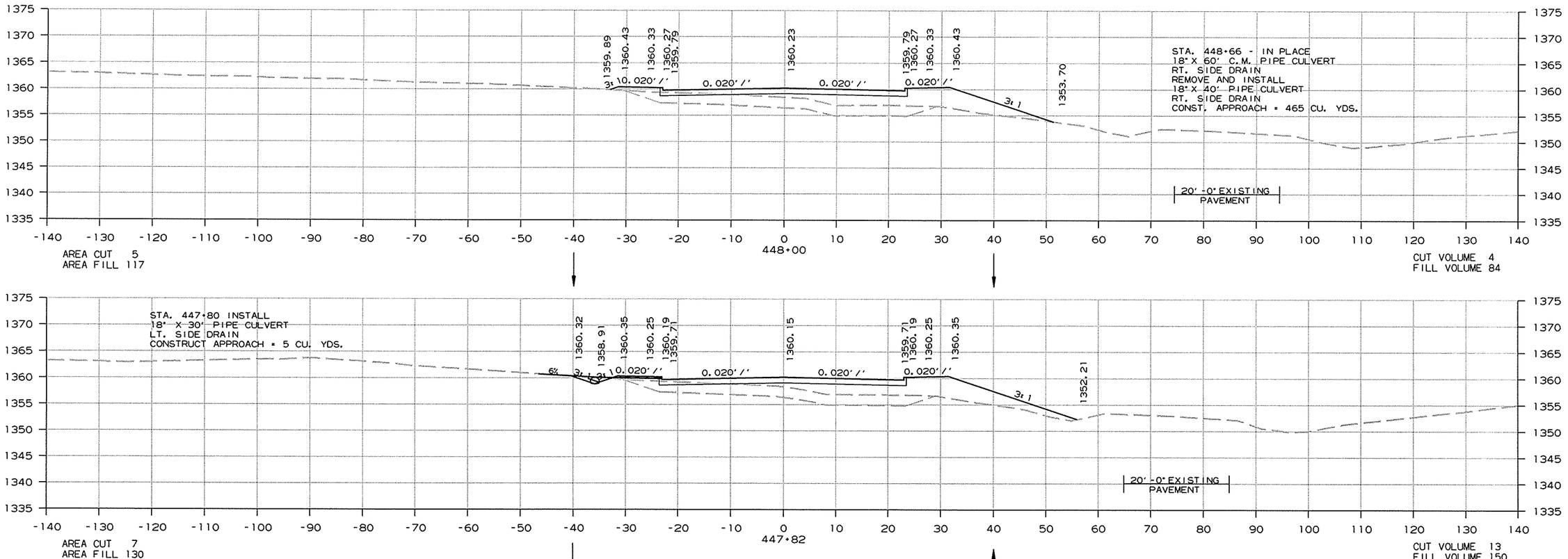
CROSS SECTION STA. 445+55 TO STA. 447+00

9/9/2015

R090373.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.		090373	271	316

(2) CROSS SECTIONS



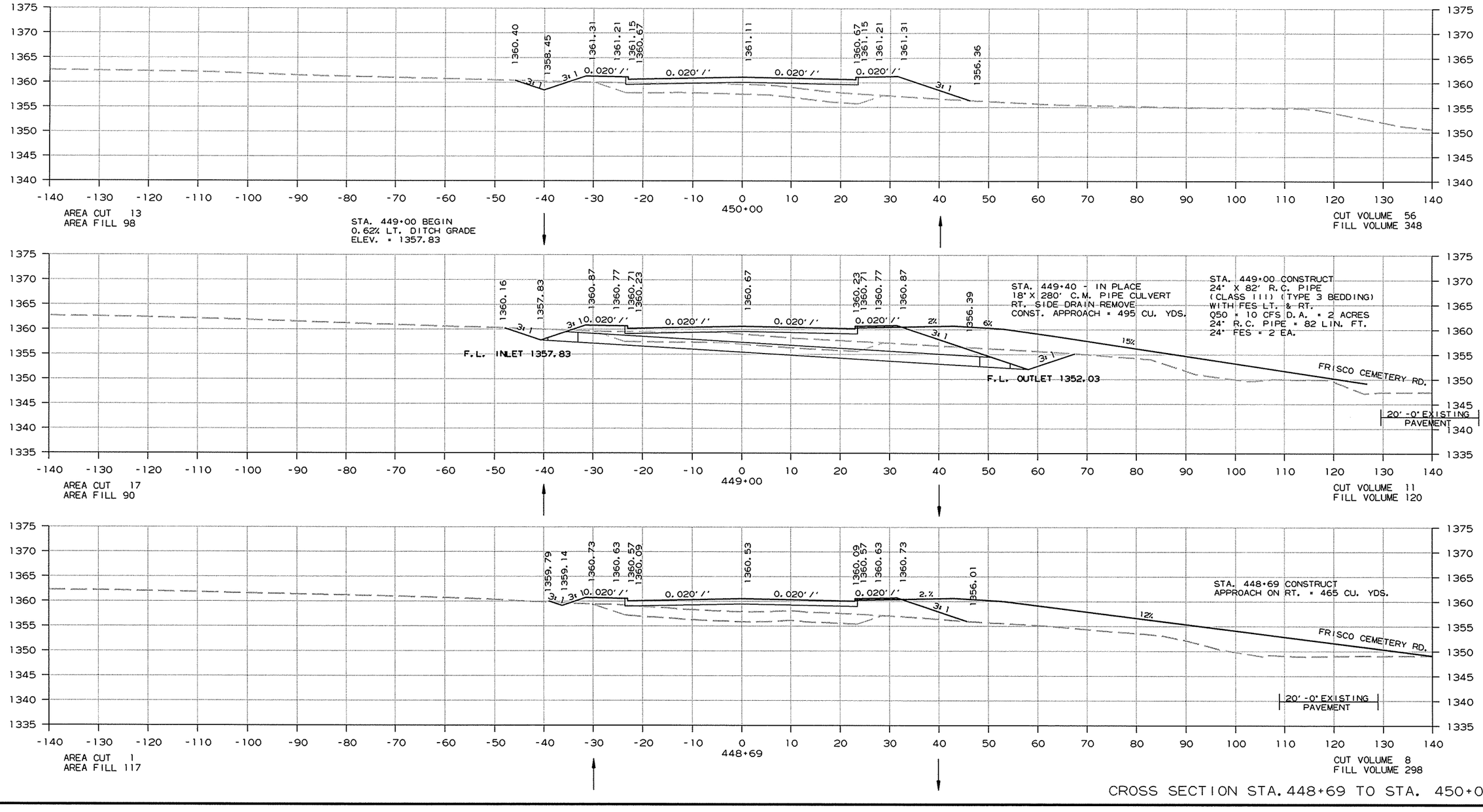
CROSS SECTION STA. 447+50 TO STA. 448+00

9/9/2015

R090373.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.		090373	272	316

(2) CROSS SECTIONS



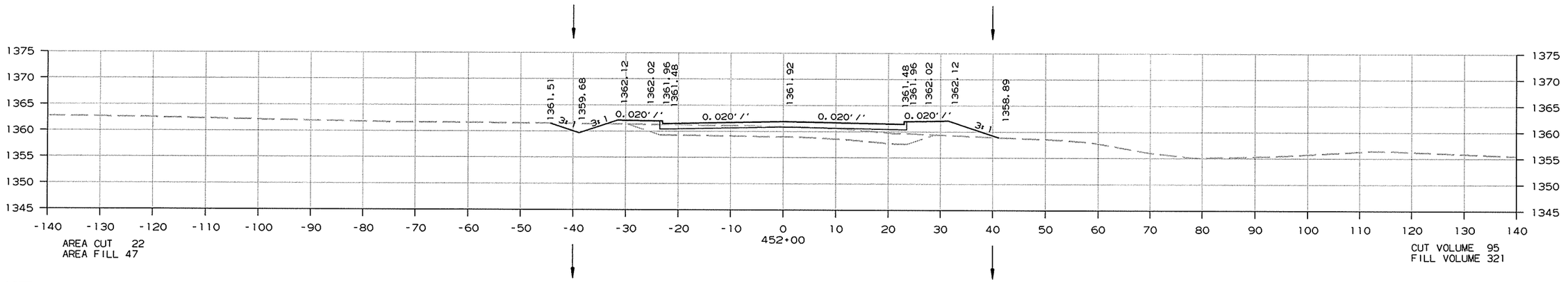
CROSS SECTION STA. 448+69 TO STA. 450+00

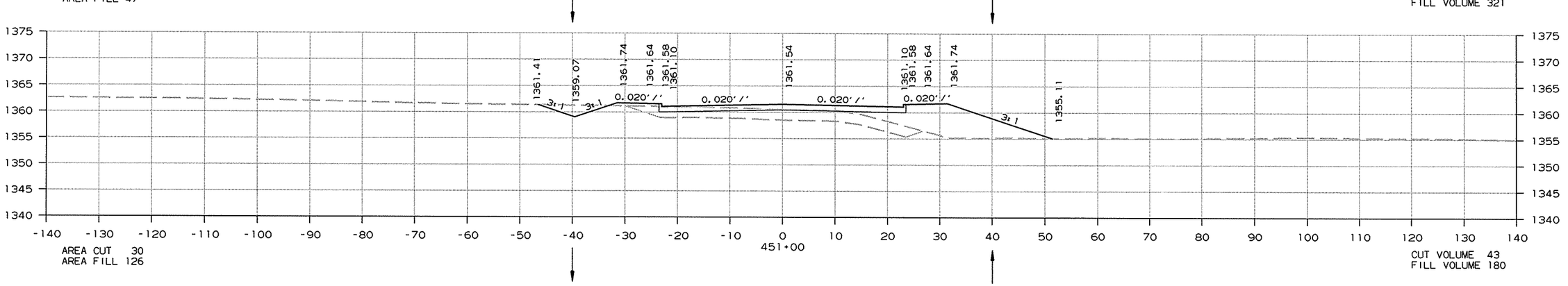
9/9/2015

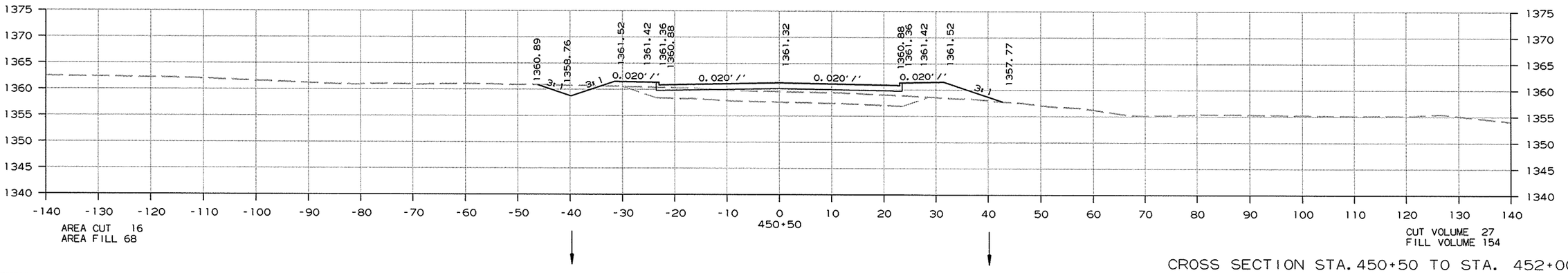
R090373.DGN

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.		090373	273	316

(2) CROSS SECTIONS







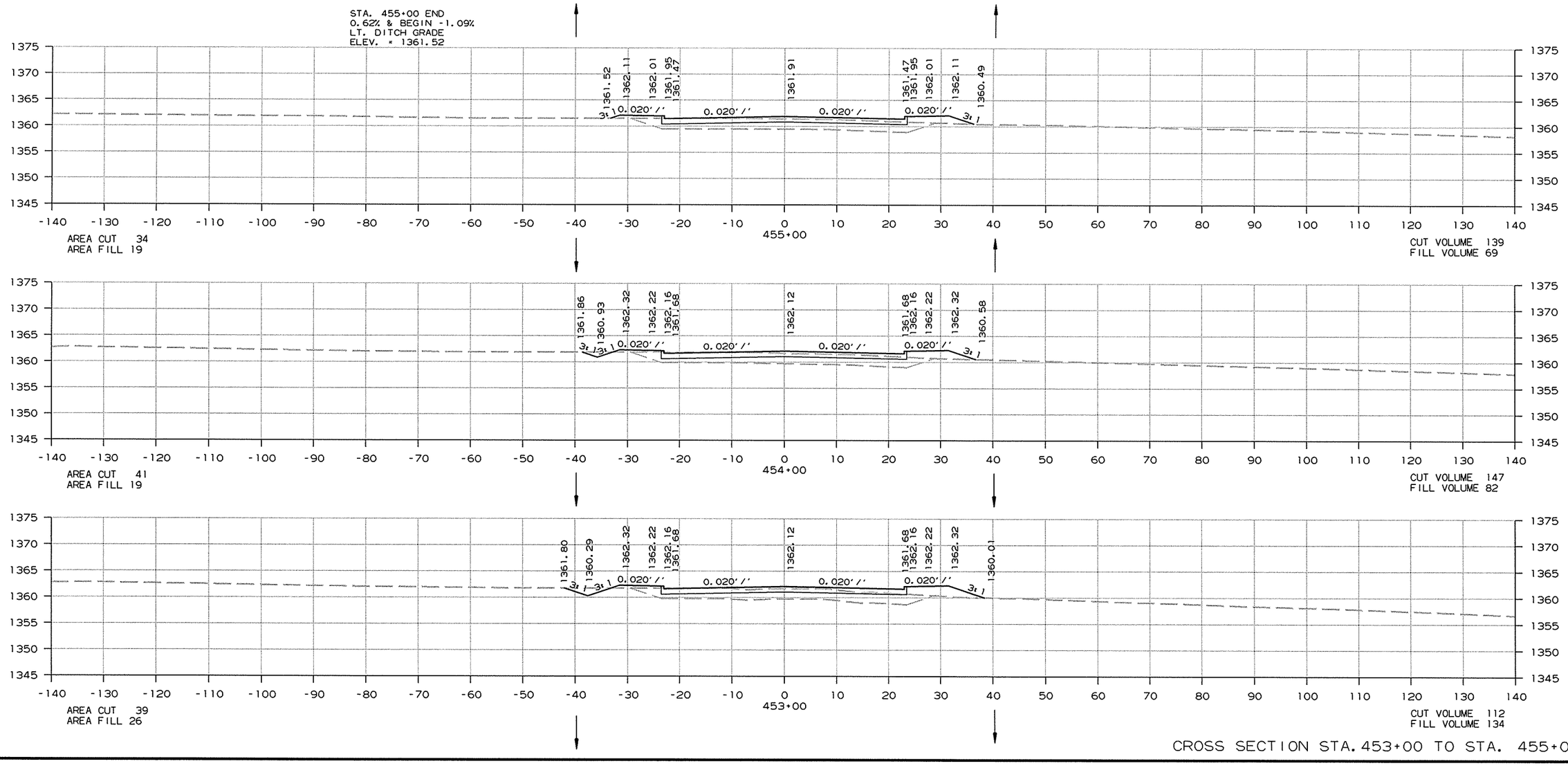
CROSS SECTION STA. 450+50 TO STA. 452+00

9/9/2015

R090373.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.		090373	274	316

(2) CROSS SECTIONS



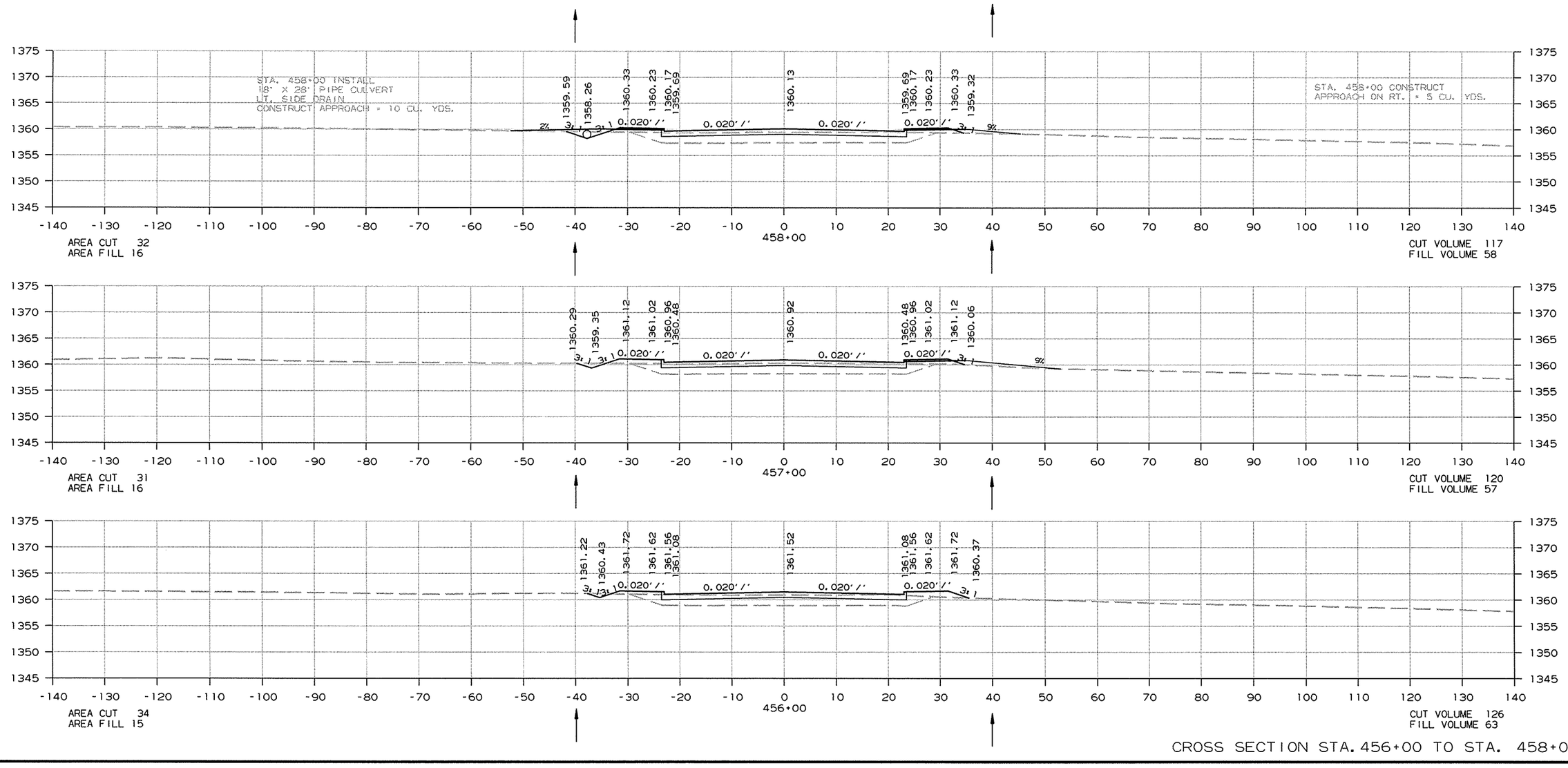
CROSS SECTION STA. 453+00 TO STA. 455+00

9/9/2015

R090373.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.		090373	275	316

(2) CROSS SECTIONS



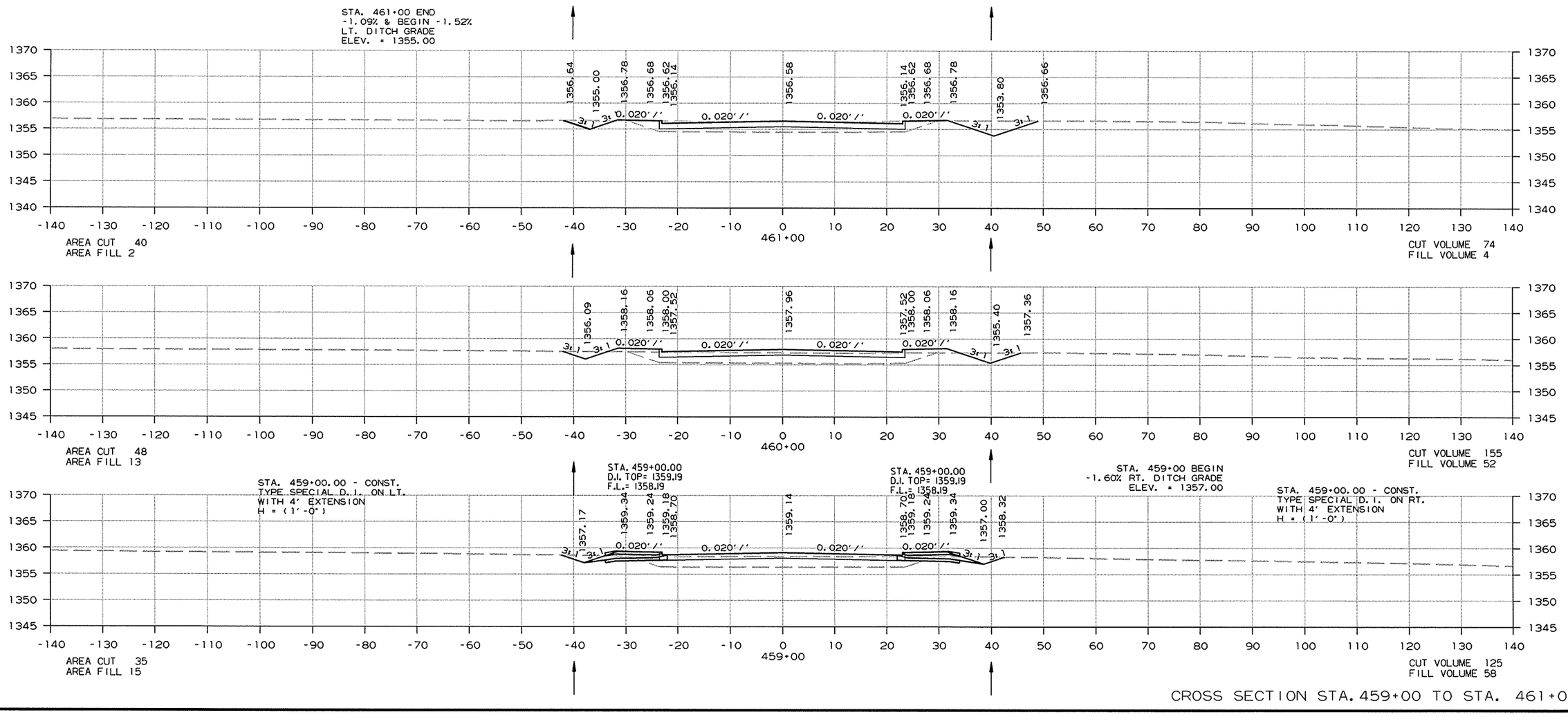
CROSS SECTION STA. 456+00 TO STA. 458+00

9/9/2015

R090373.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.		090373	276	316

(2) CROSS SECTIONS



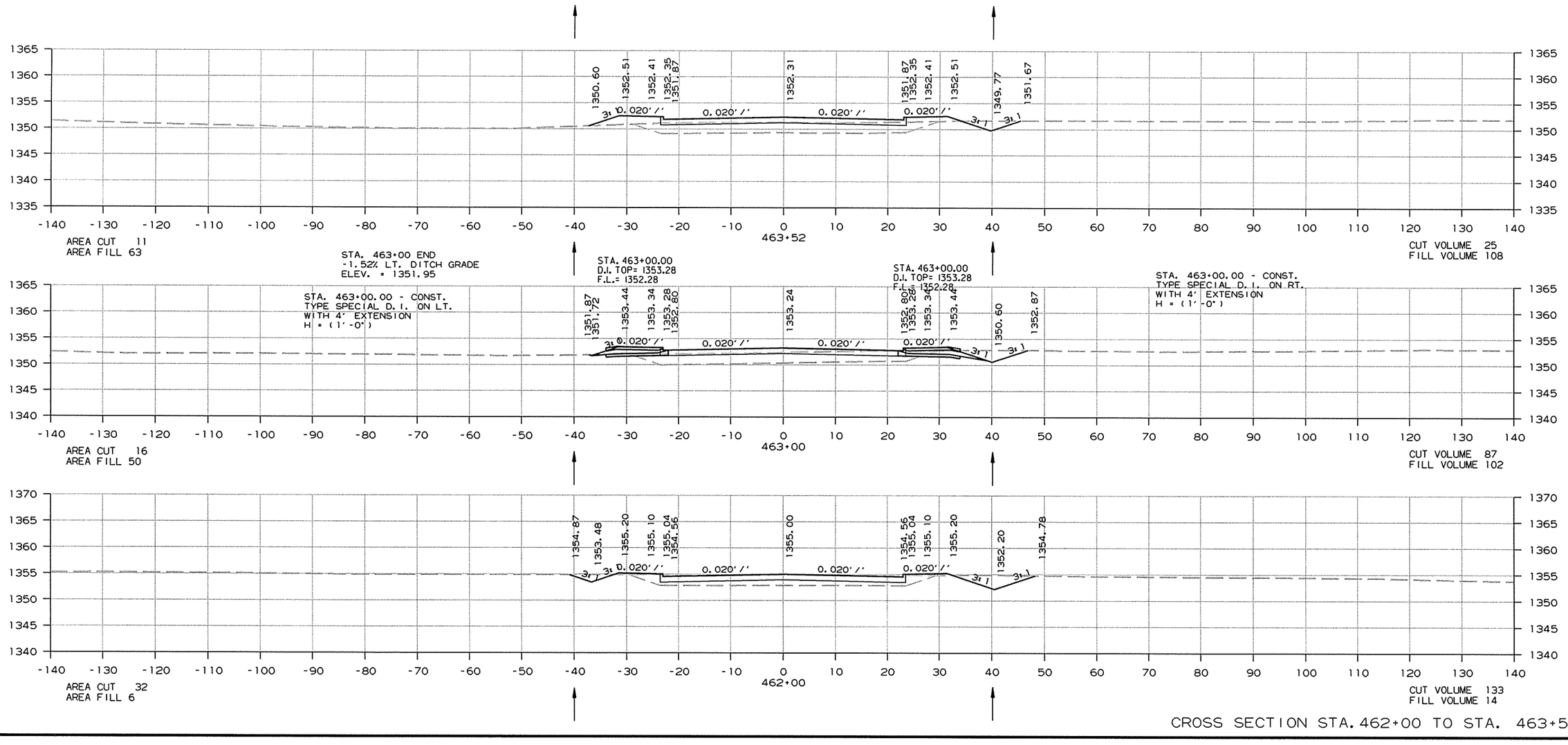
CROSS SECTION STA. 459+00 TO STA. 461+00

9/9/2015

R090373.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.		090373	277	316

(2) CROSS SECTIONS



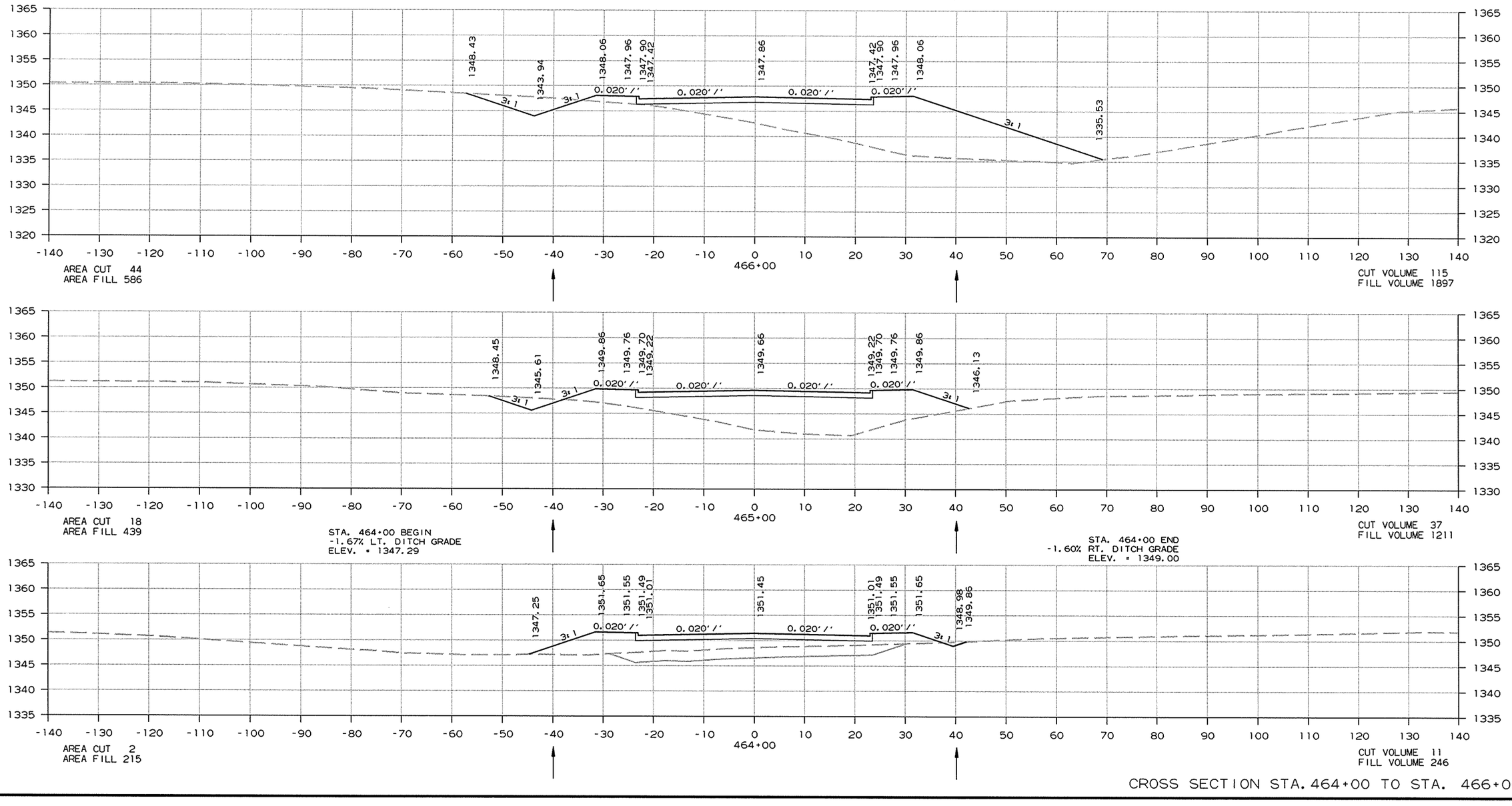
CROSS SECTION STA. 462+00 TO STA. 463+52

9/9/2015

R090373.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.		090373	278	316

(2) CROSS SECTIONS



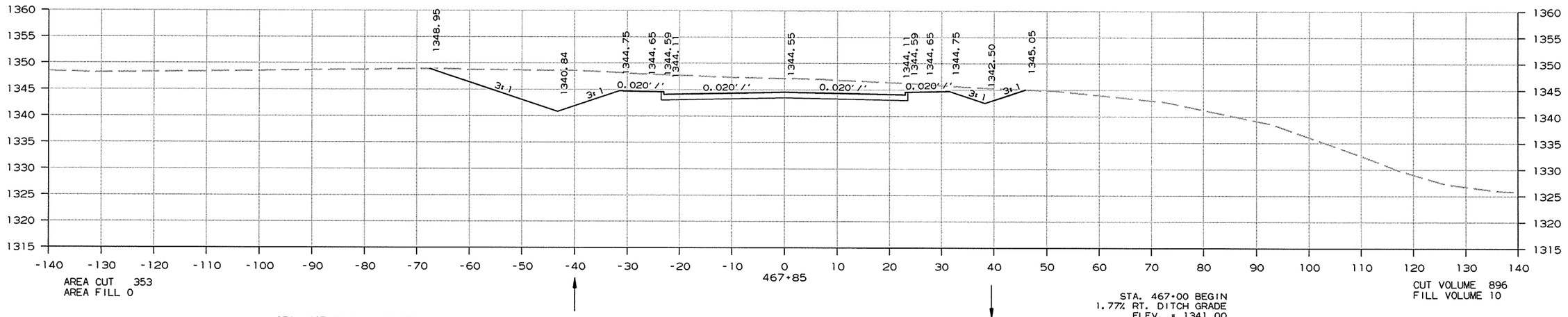
CROSS SECTION STA. 464+00 TO STA. 466+00

9/9/2015

R090373.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.		090373	279	316

(2) CROSS SECTIONS



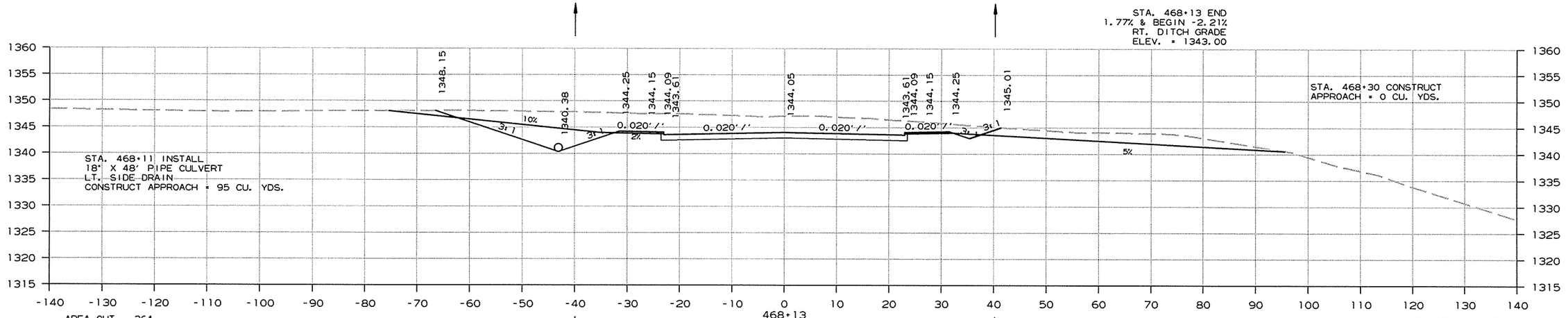
CROSS SECTION STA. 467+00 TO STA. 467+85

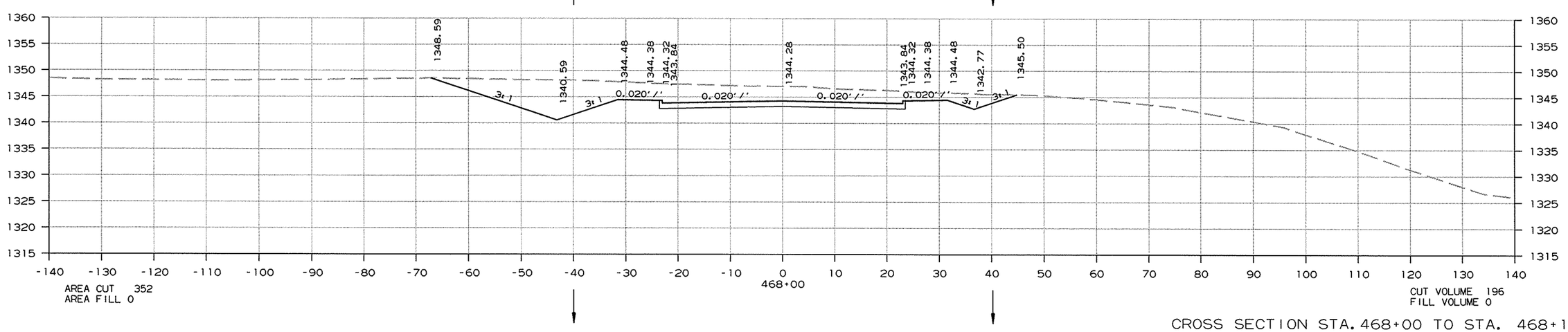
9/9/2015

R090373.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.		090373	280	316

(2) CROSS SECTIONS





CROSS SECTION STA. 468+00 TO STA. 468+13

9/9/2015

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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.		090373	281	316

(2) CROSS SECTIONS

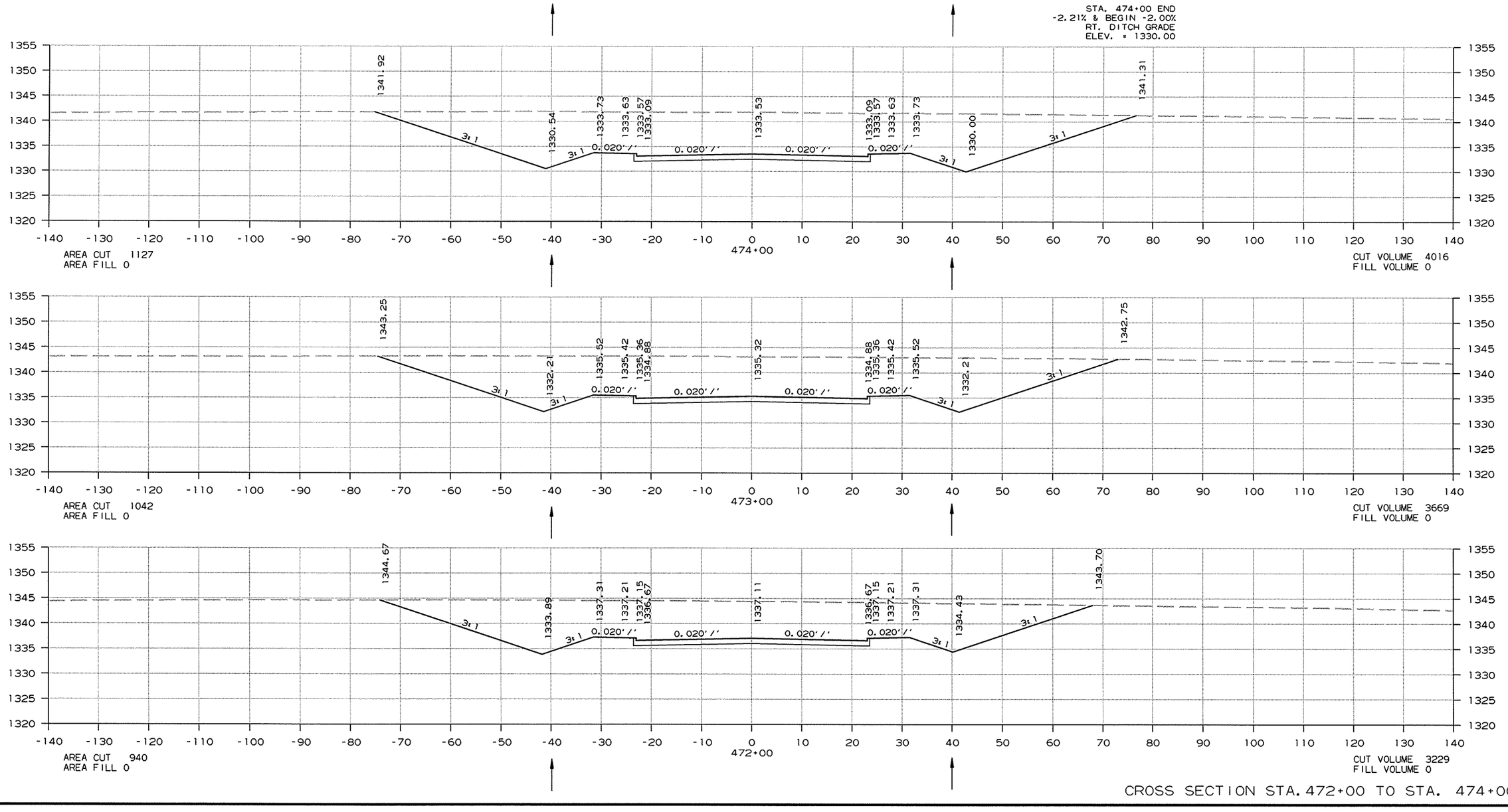
CROSS SECTION STA. 469+00 TO STA. 471+00

9/9/2015

R090373.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.		090373	282	316

(2) CROSS SECTIONS



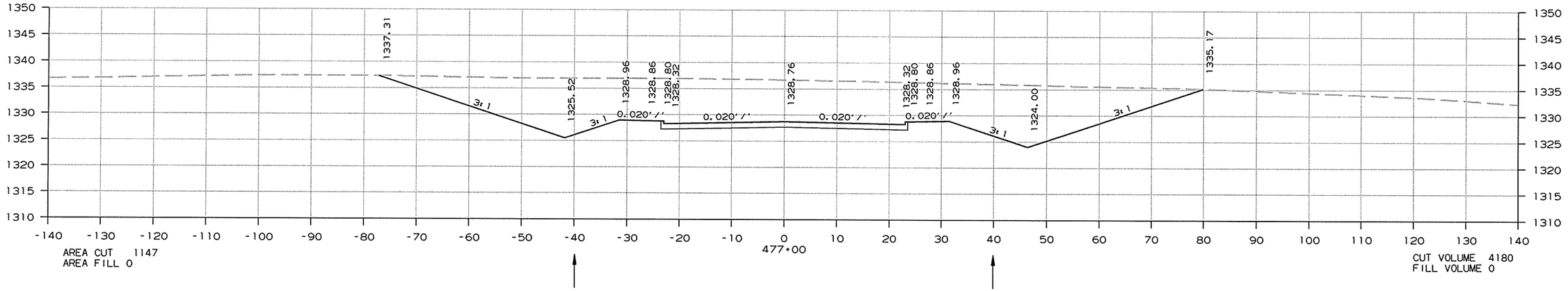
CROSS SECTION STA. 472+00 TO STA. 474+00

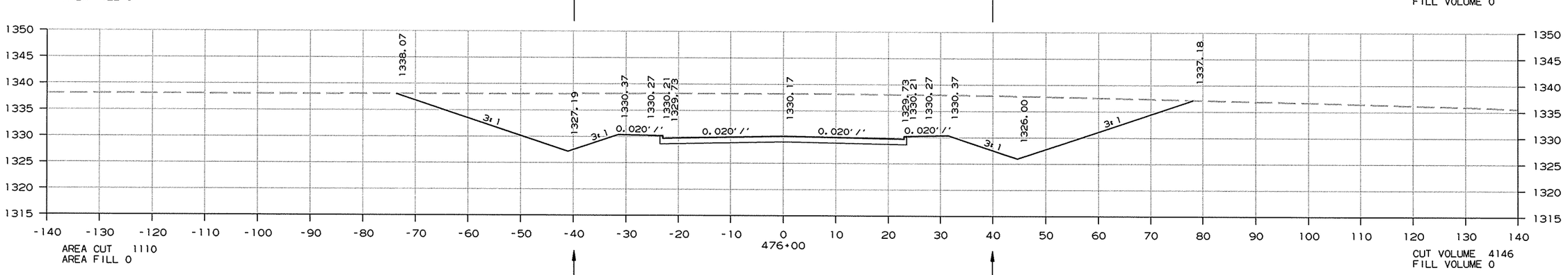
9/9/2015

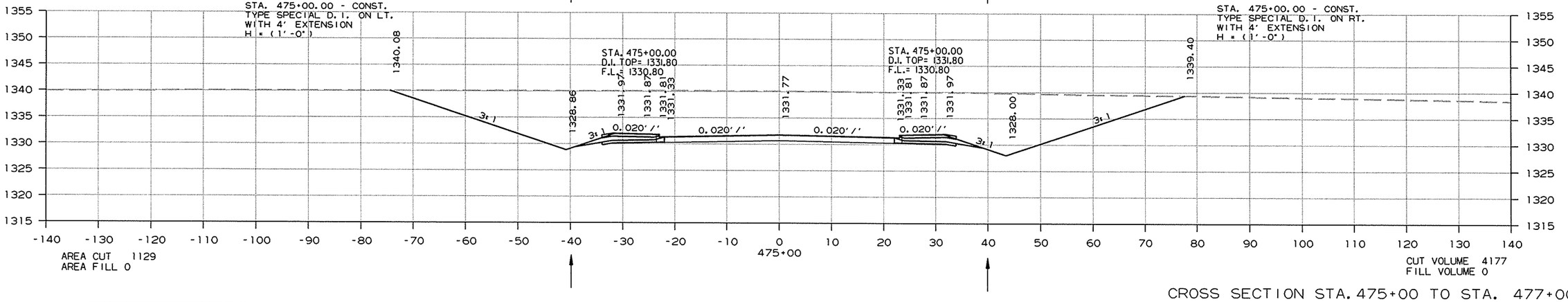
R090373.DGN

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.		090373	283	316

(2) CROSS SECTIONS







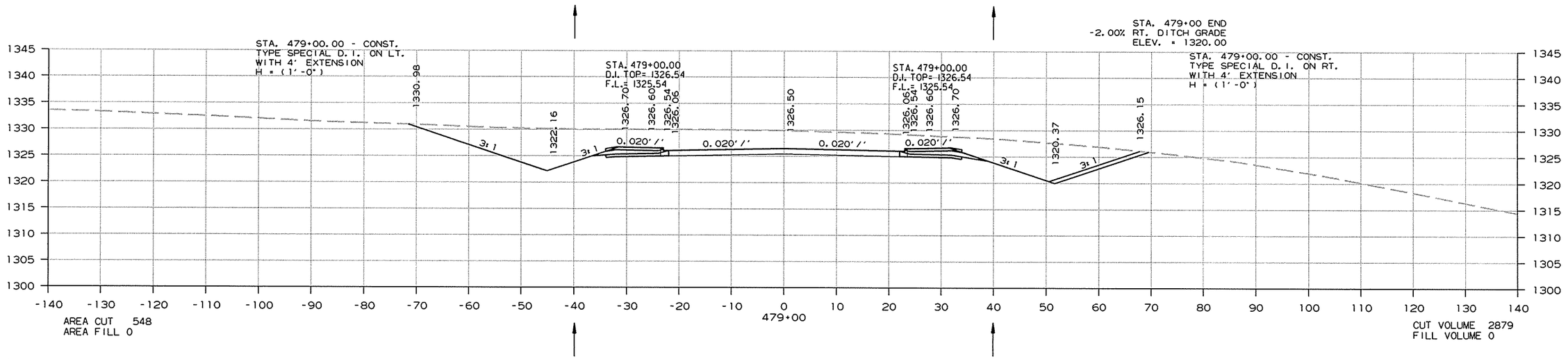
CROSS SECTION STA. 475+00 TO STA. 477+00

9/9/2015

R090373.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.		090373	284	316

(2) CROSS SECTIONS



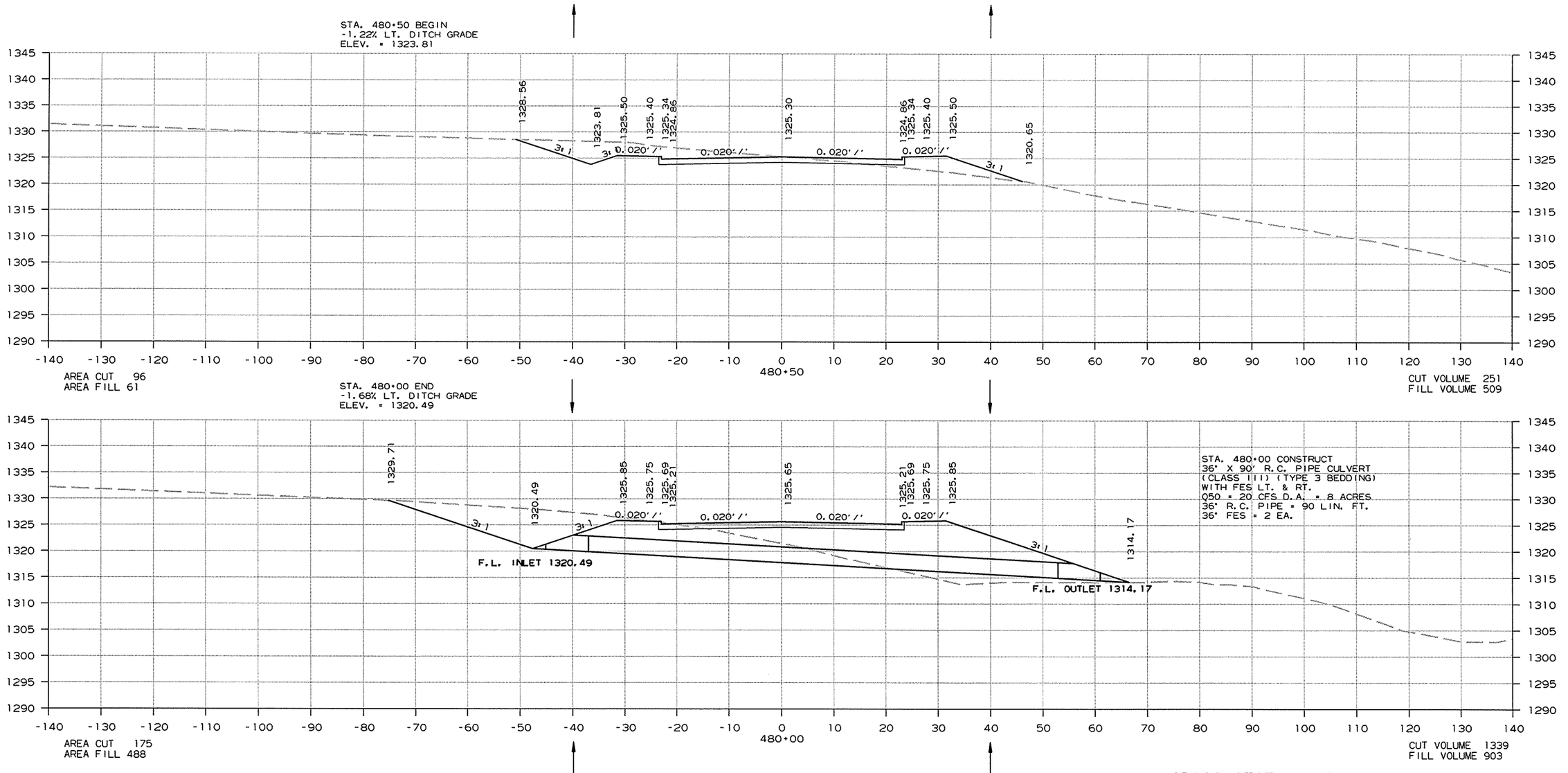
CROSS SECTION STA. 478+00 TO STA. 479+00

9/9/2015

R090373.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.		090373	285	316

(2) CROSS SECTIONS



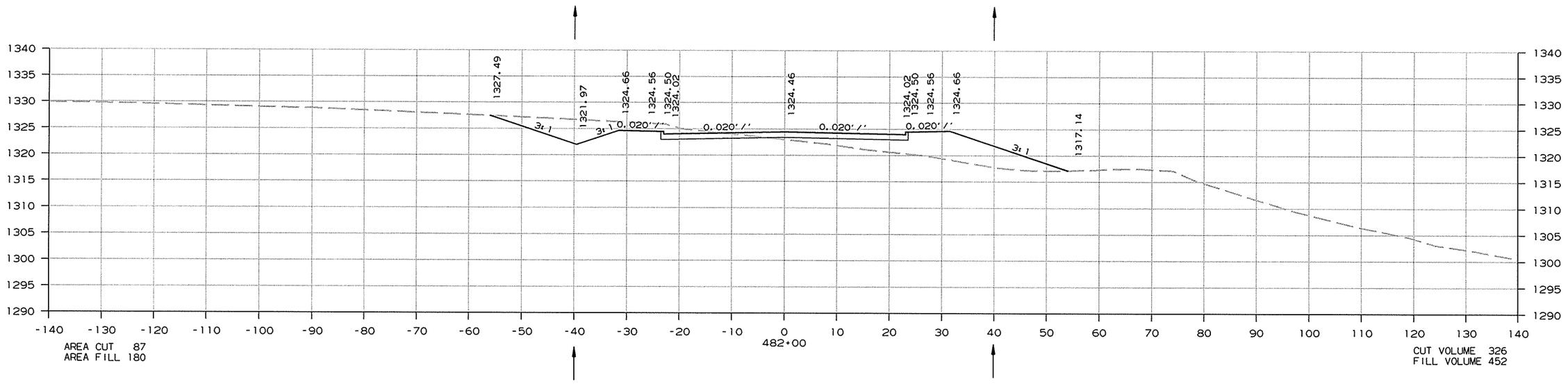
CROSS SECTION STA. 480+00 TO STA. 480+50

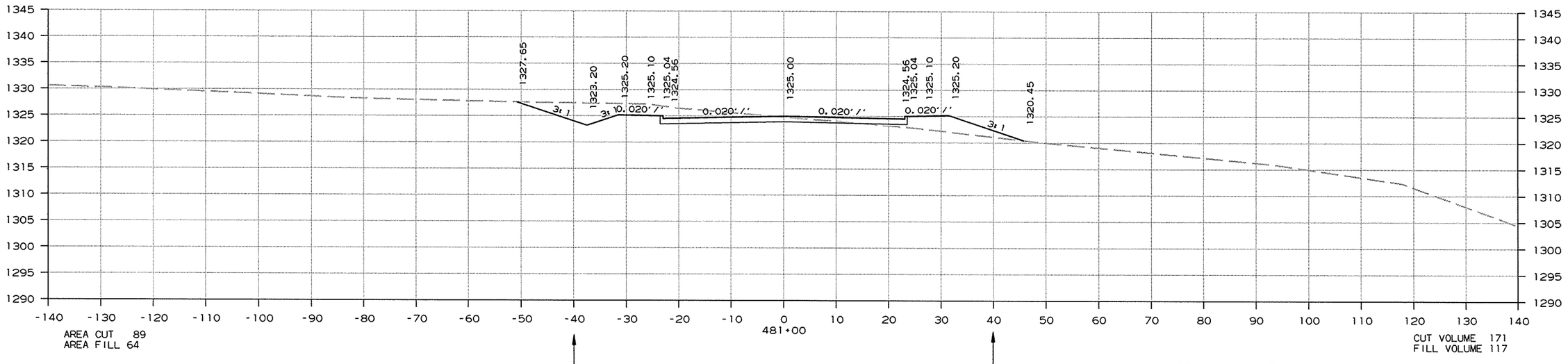
9/9/2015

R090373.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.		090373	286	316

(2) CROSS SECTIONS





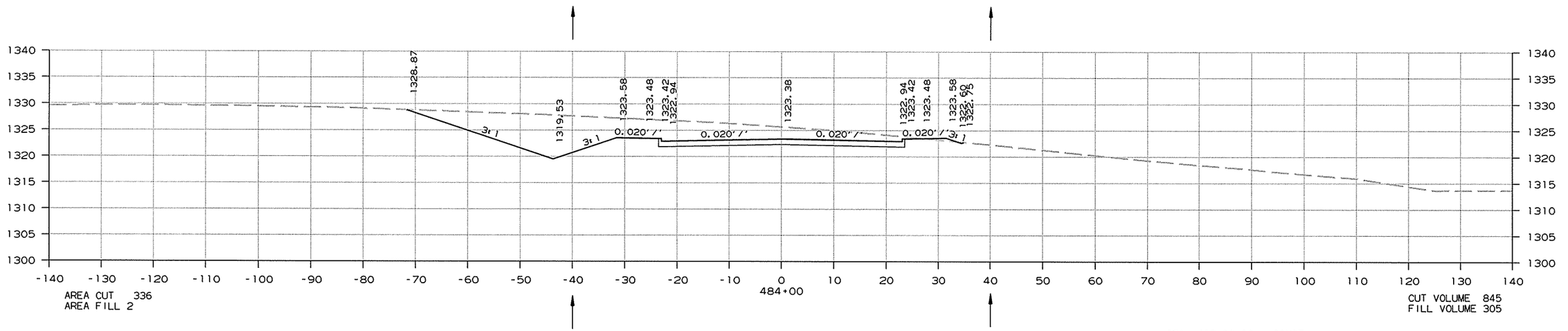
CROSS SECTION STA. 481+00 TO STA. 482+00

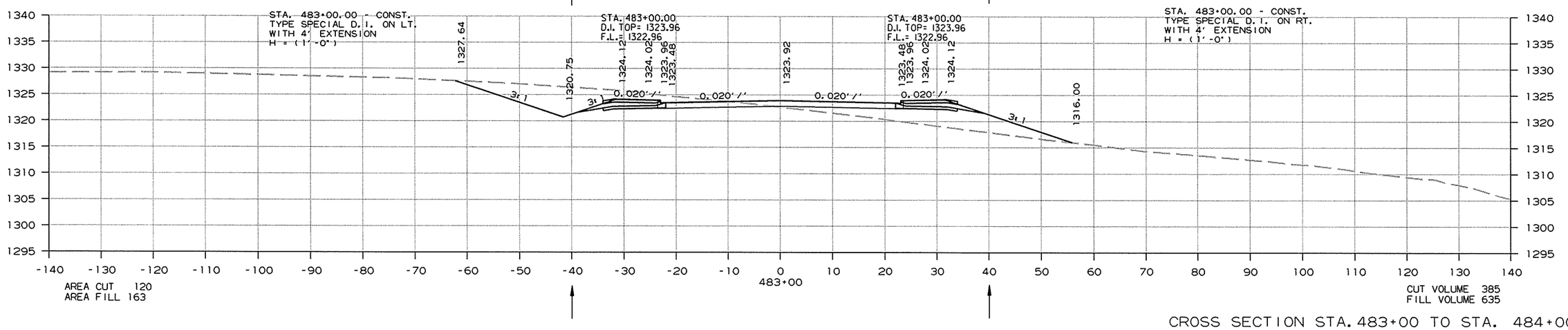
9/9/2015

R090373.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.		090373	287	316

(2) CROSS SECTIONS





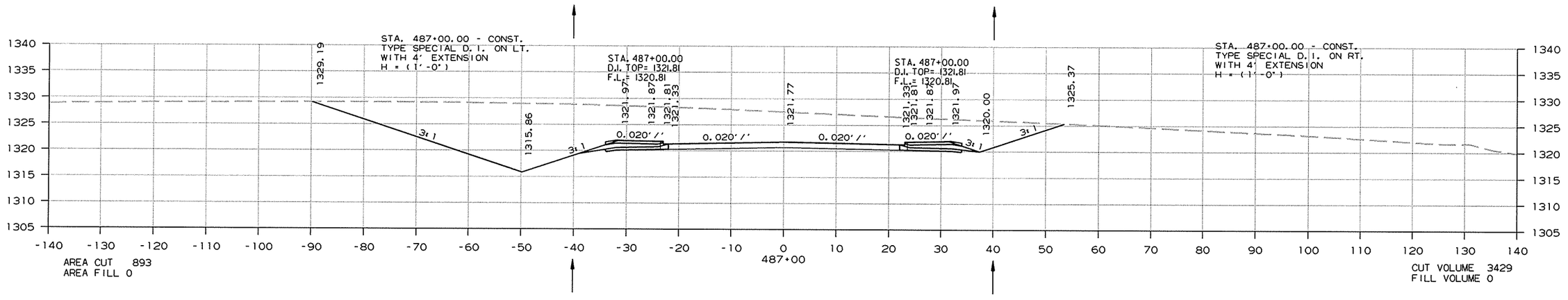
CROSS SECTION STA. 483+00 TO STA. 484+00

9/9/2015

R090373.DGN

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



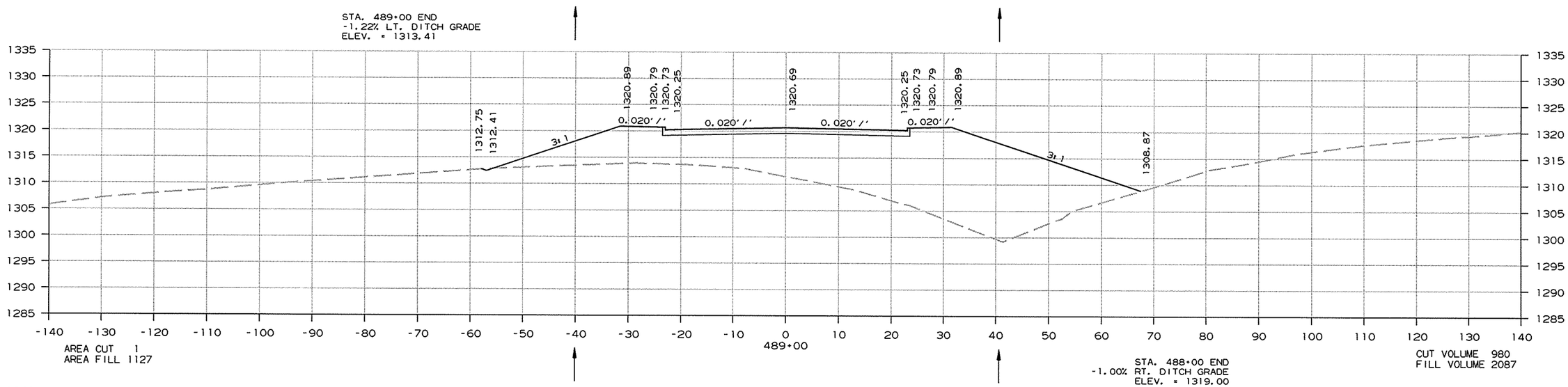
CROSS SECTION STA. 485+00 TO STA. 487+00

9/9/2015

R090373.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.		090373	289	316

(2) CROSS SECTIONS



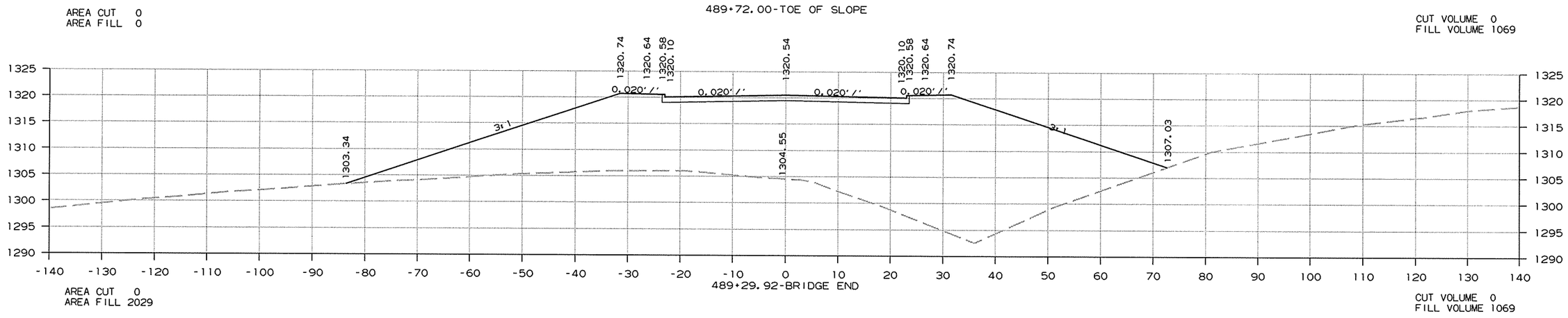
CROSS SECTION STA. 488+00 TO STA. 489+00

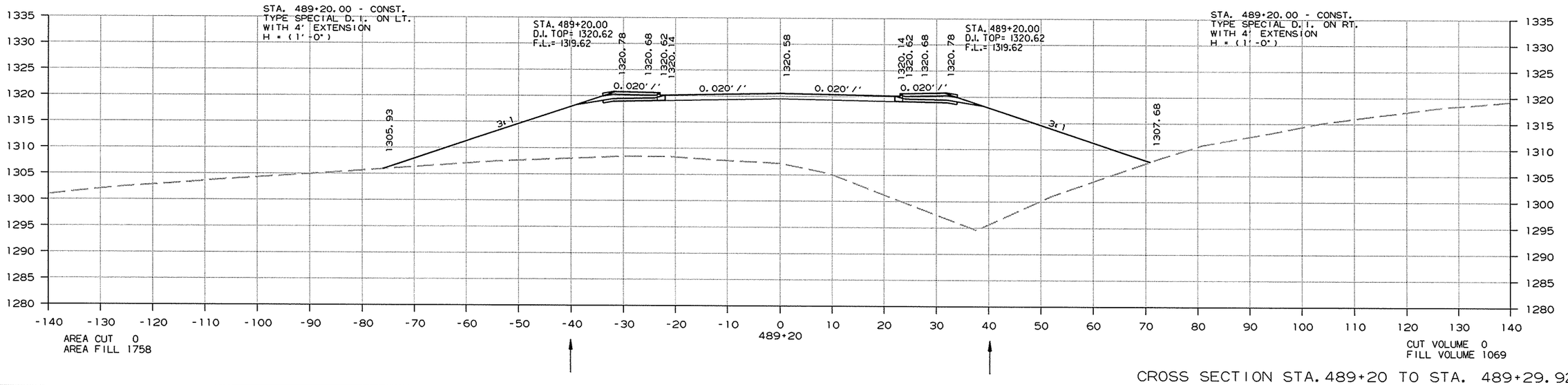
9/9/2015

R090373.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.		090373	290	316

(2) CROSS SECTIONS





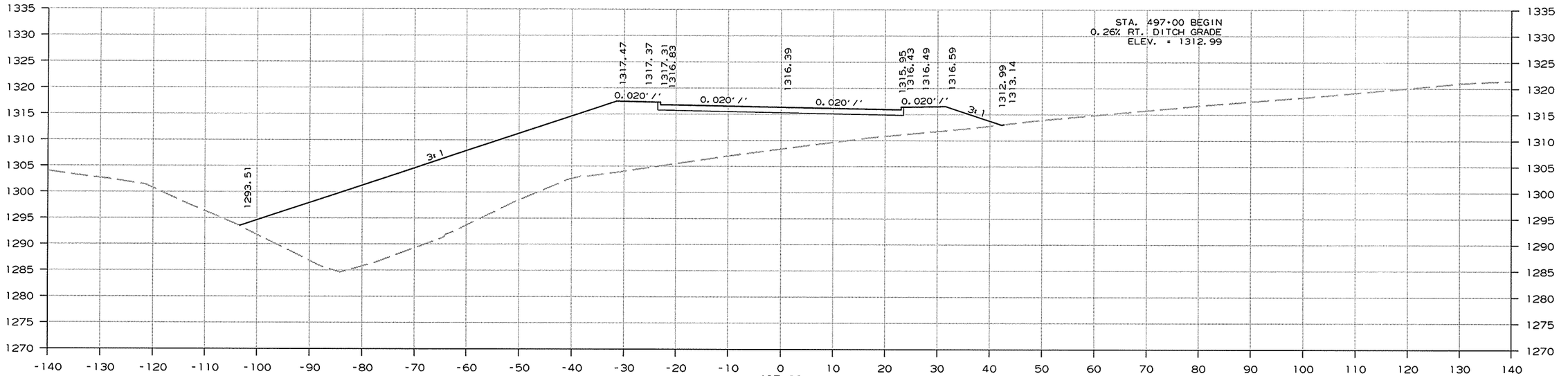
CROSS SECTION STA. 489+20 TO STA. 489+29.92

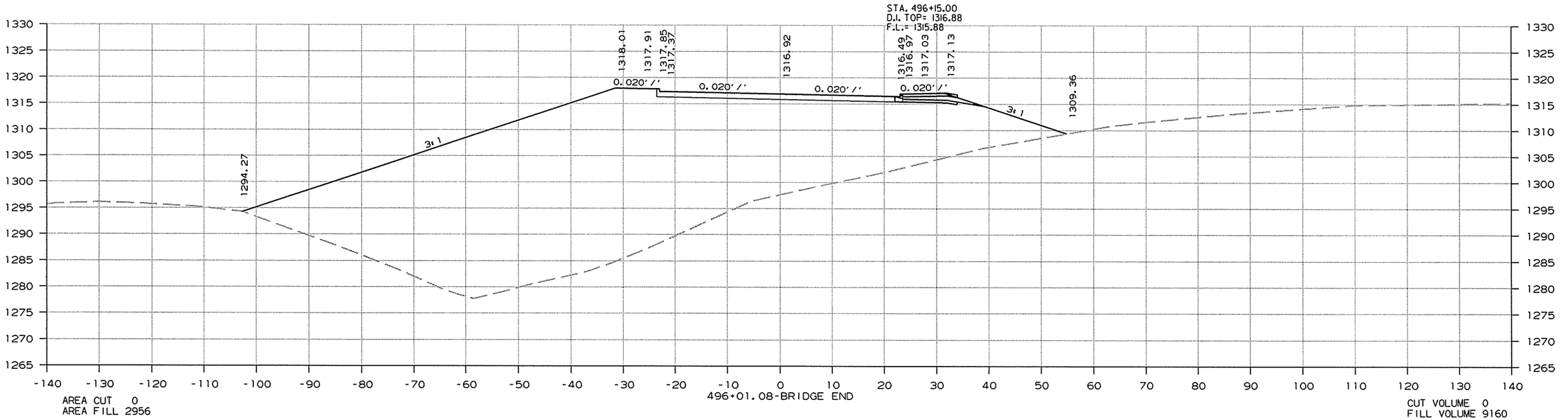
9/9/2015

R090373.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.		090373	291	316

(2) CROSS SECTIONS





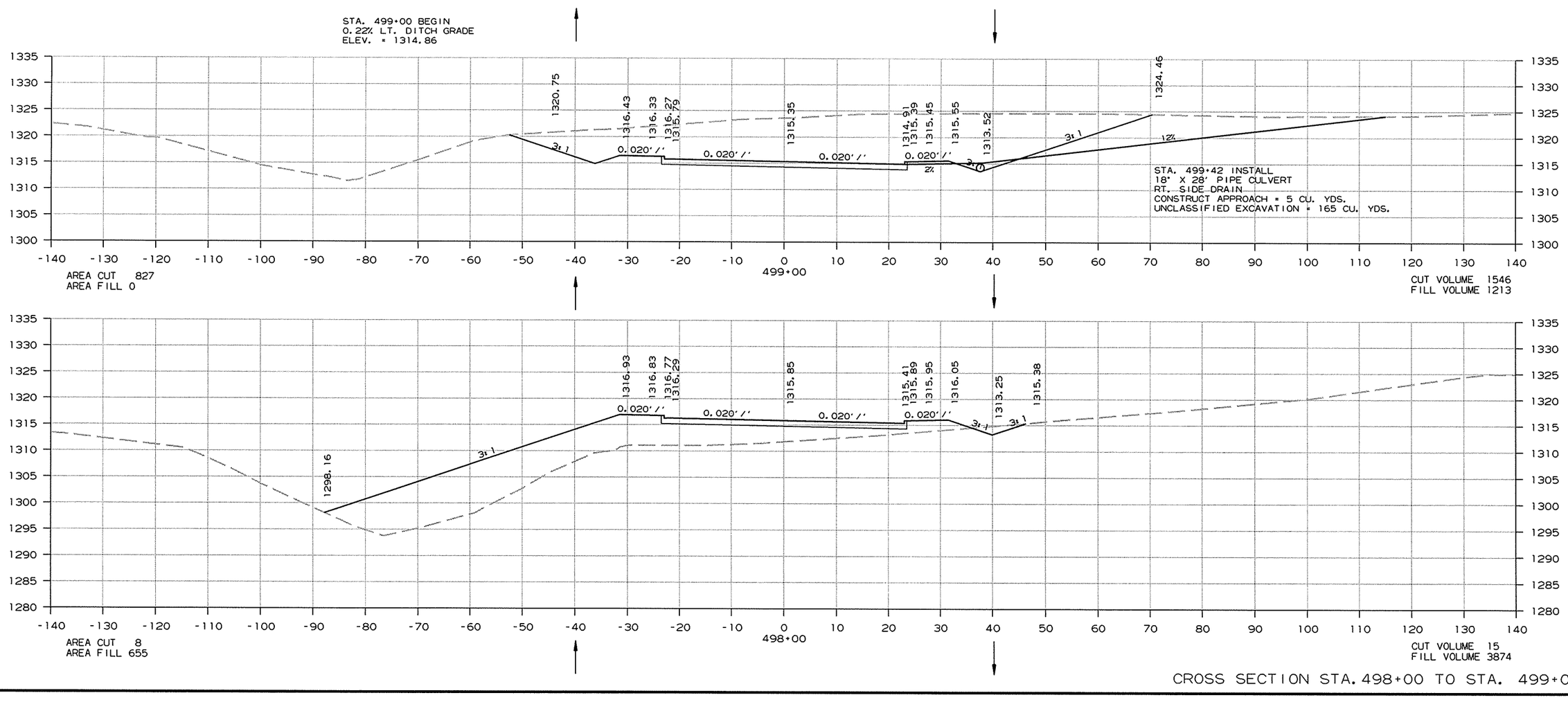
CROSS SECTION STA. 495+74 TO STA. 497+00

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R090373.DGN

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



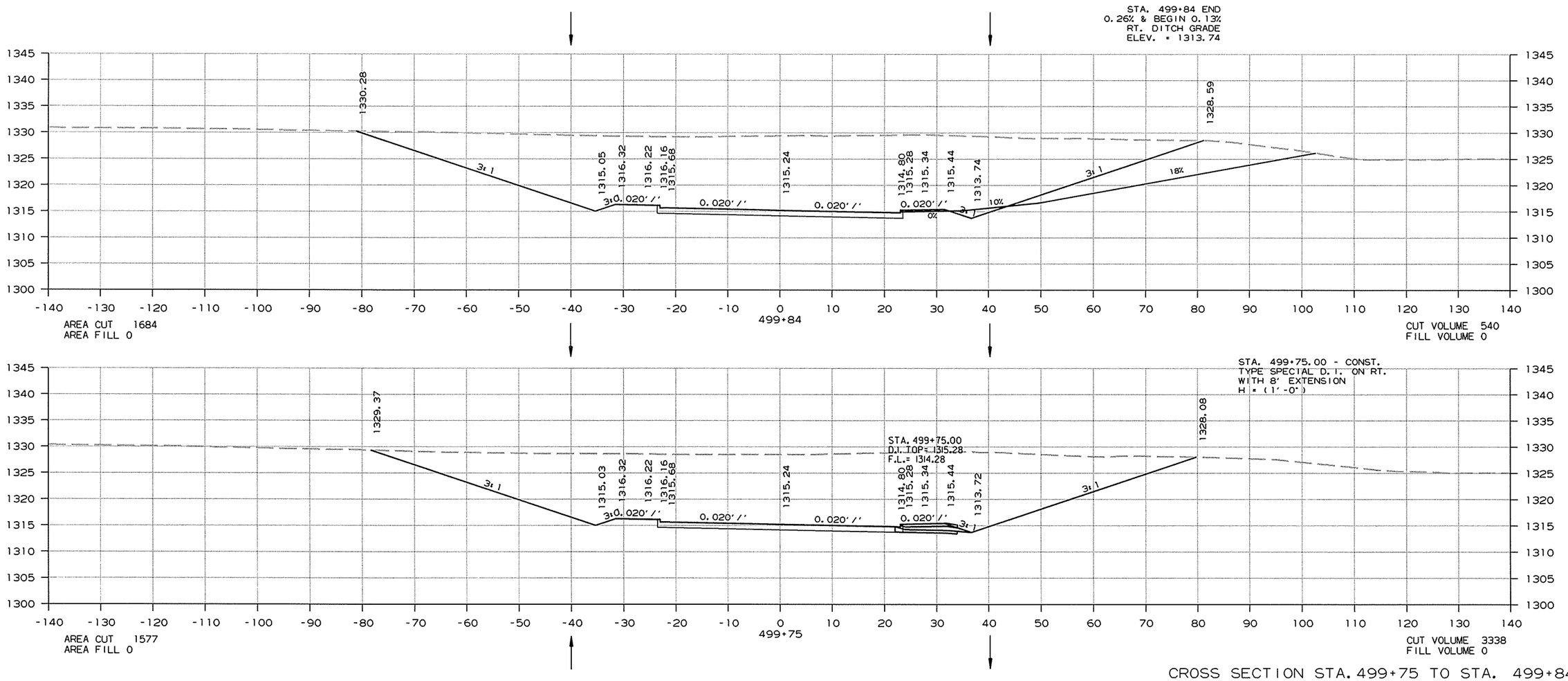
CROSS SECTION STA. 498+00 TO STA. 499+00

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R090373.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.		090373	293	316

(2) CROSS SECTIONS



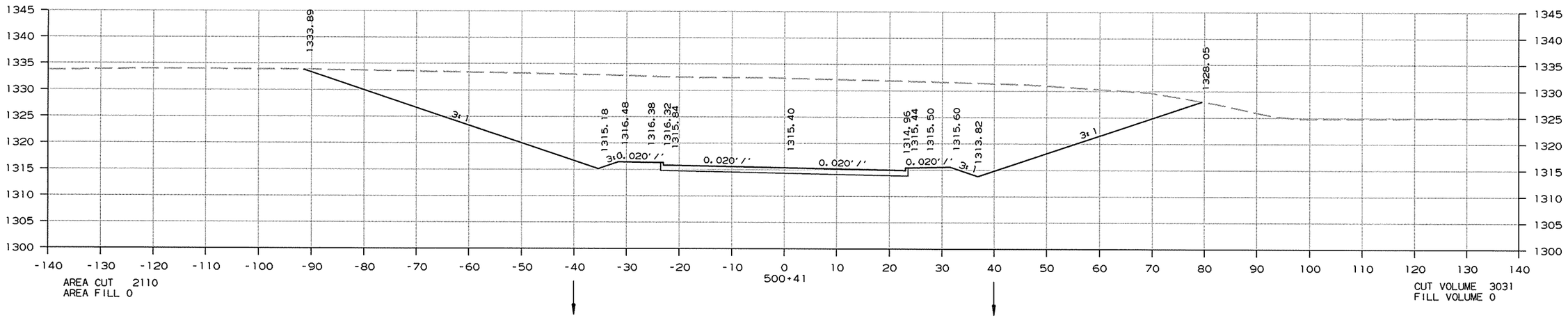
CROSS SECTION STA. 499+75 TO STA. 499+84

9/9/2015

R090373.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.		090373	294	316

(2) CROSS SECTIONS



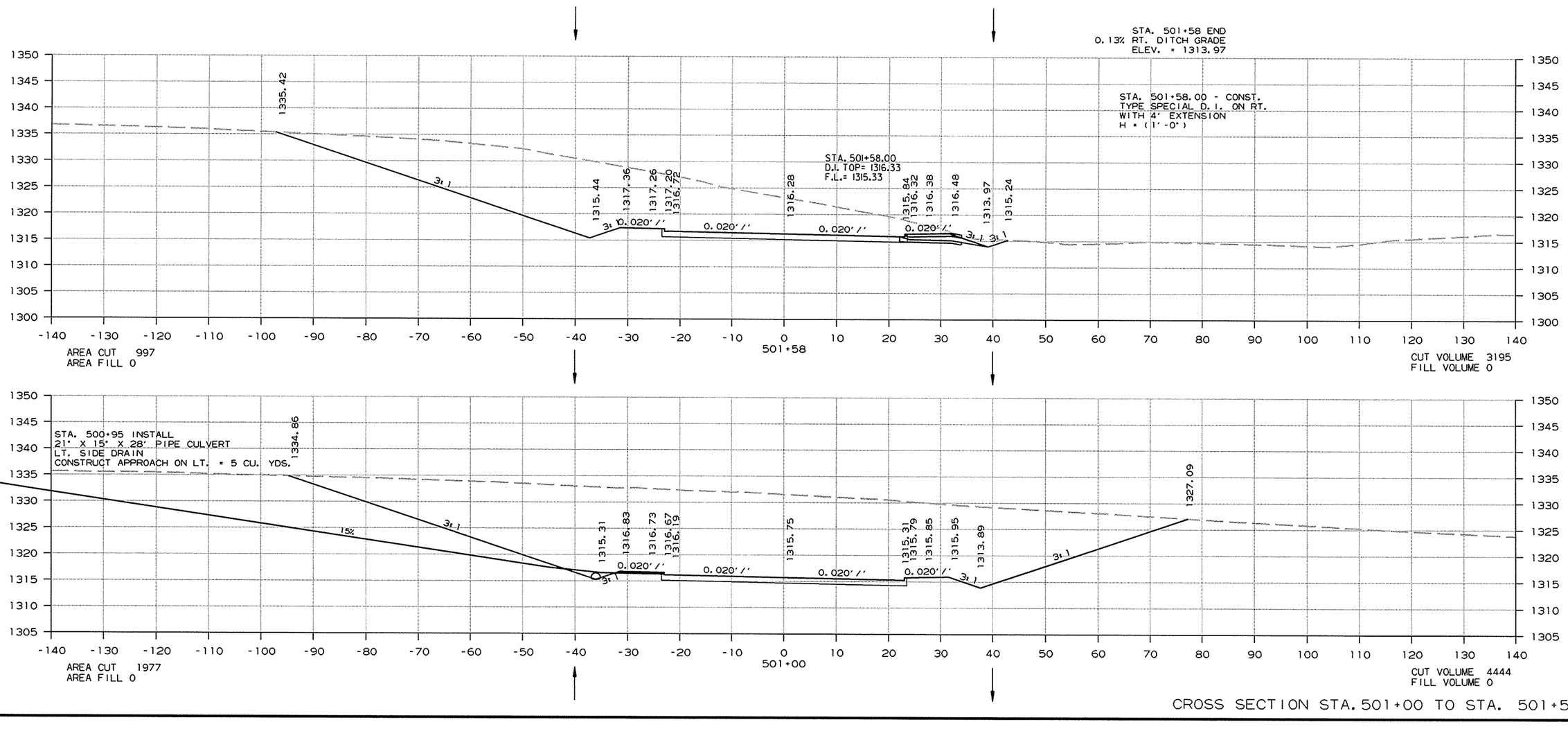
CROSS SECTION STA. 500+00 TO STA. 500+41

9/9/2015

R090373.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.		090373	295	316

(2) CROSS SECTIONS



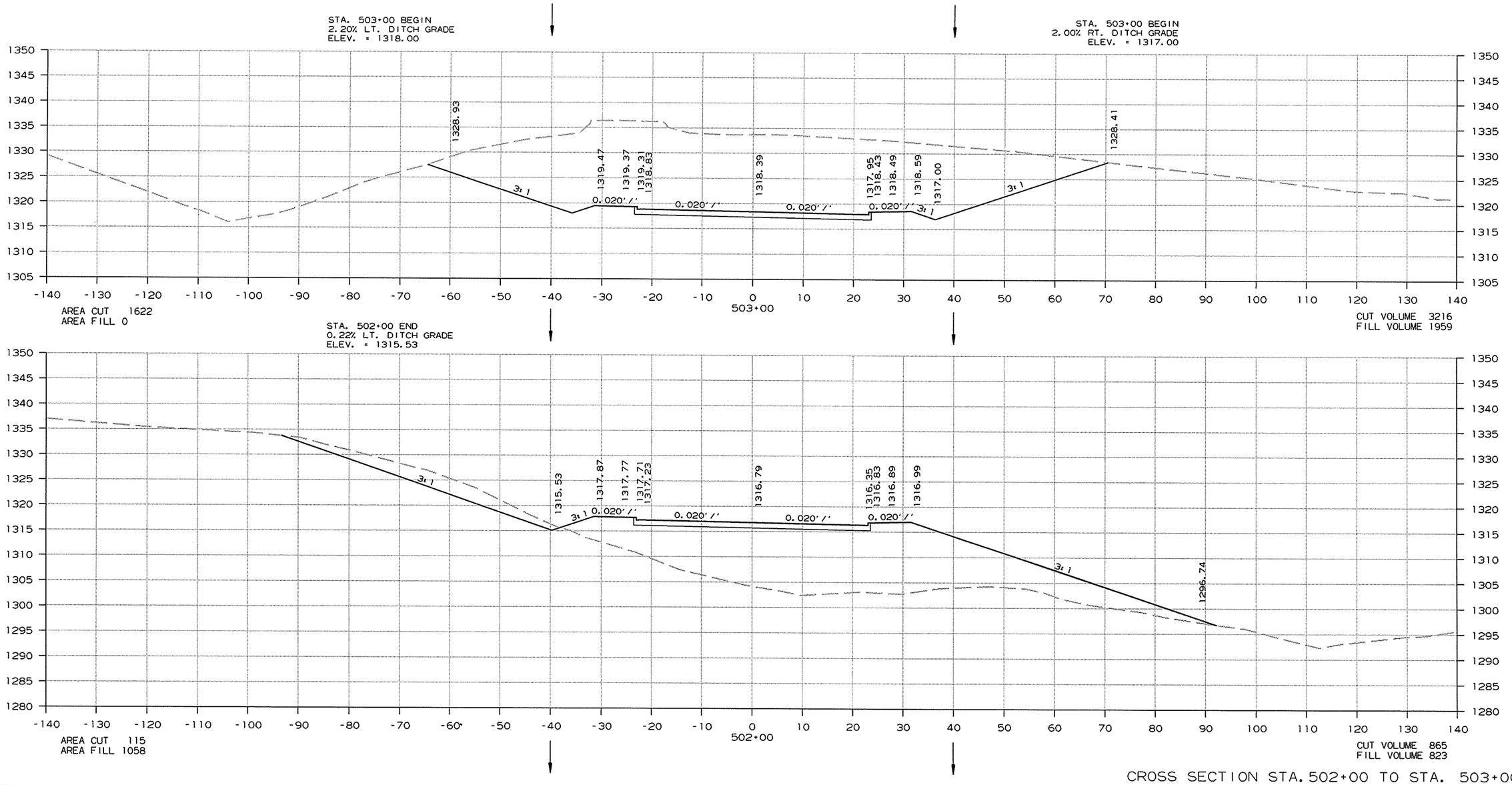
CROSS SECTION STA. 501+00 TO STA. 501+58

9/9/2015

R090373.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.		090373	296	316

(2) CROSS SECTIONS



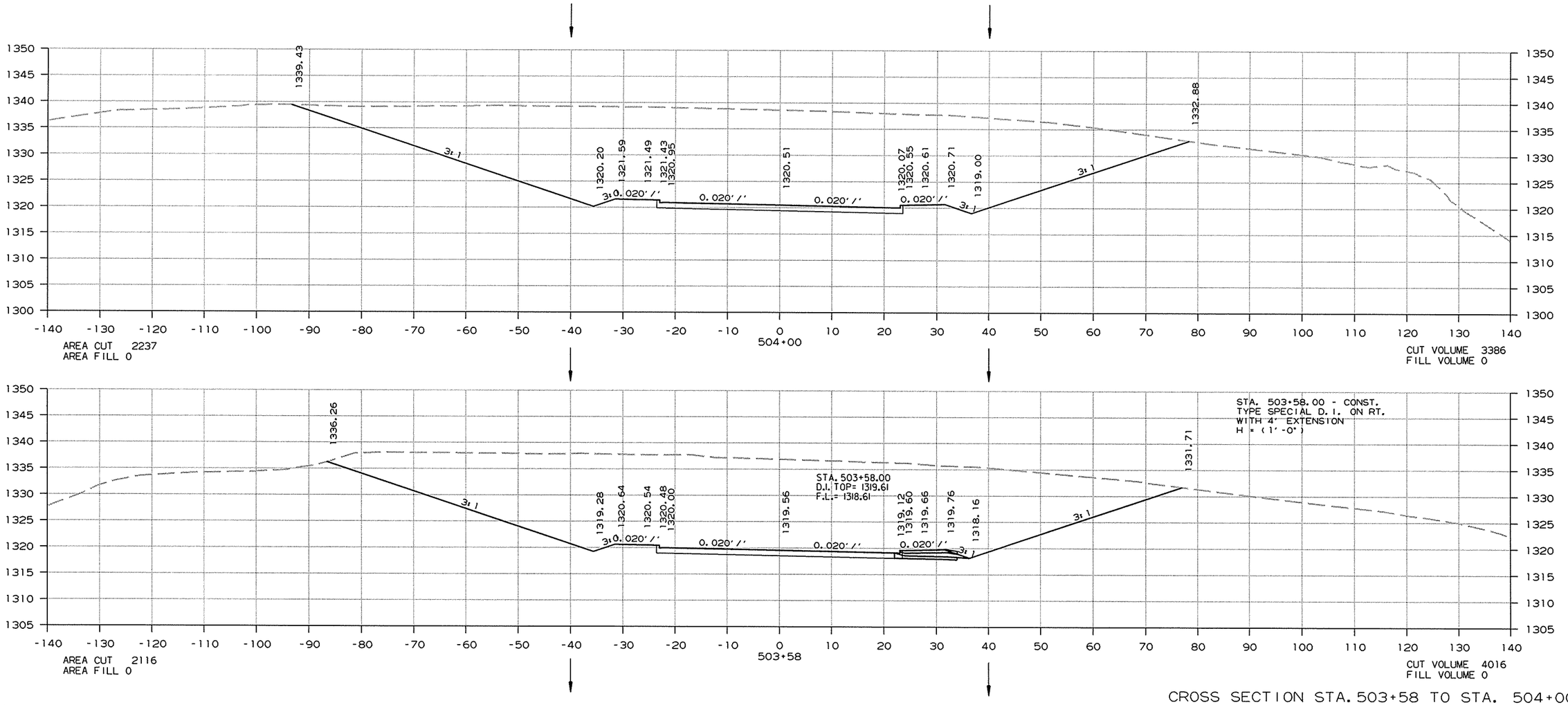
CROSS SECTION STA. 502+00 TO STA. 503+00

9/9/2015

R090373.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.		090373	297	316

(2) CROSS SECTIONS



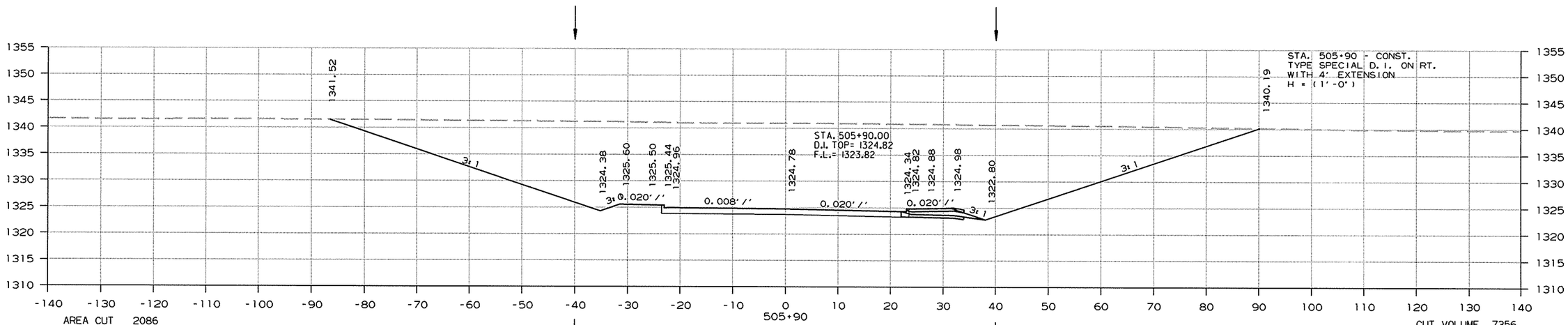
CROSS SECTION STA. 503+58 TO STA. 504+00

9/9/2015

R090373.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.		090373	298	316

(2) CROSS SECTIONS



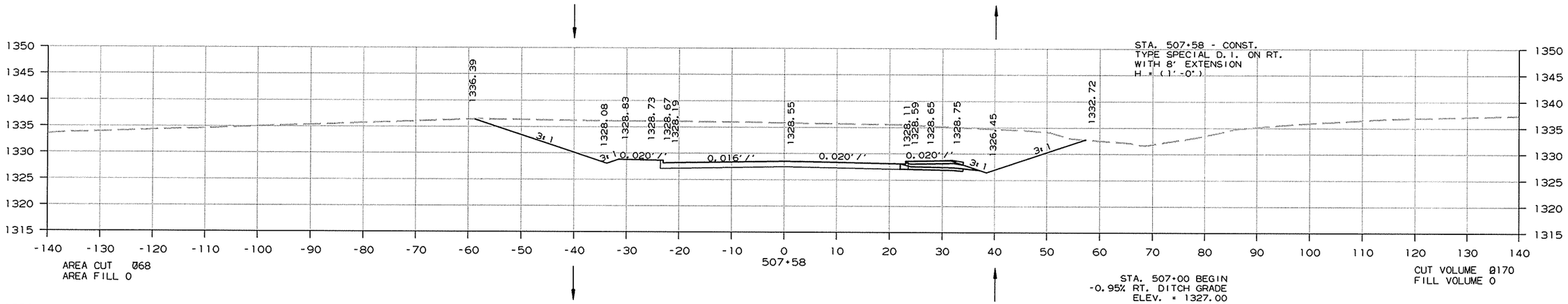
CROSS SECTION STA. 505+00 TO STA. 505+90

9/9/2015

R090373.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.		090373	299	316

(2) CROSS SECTIONS



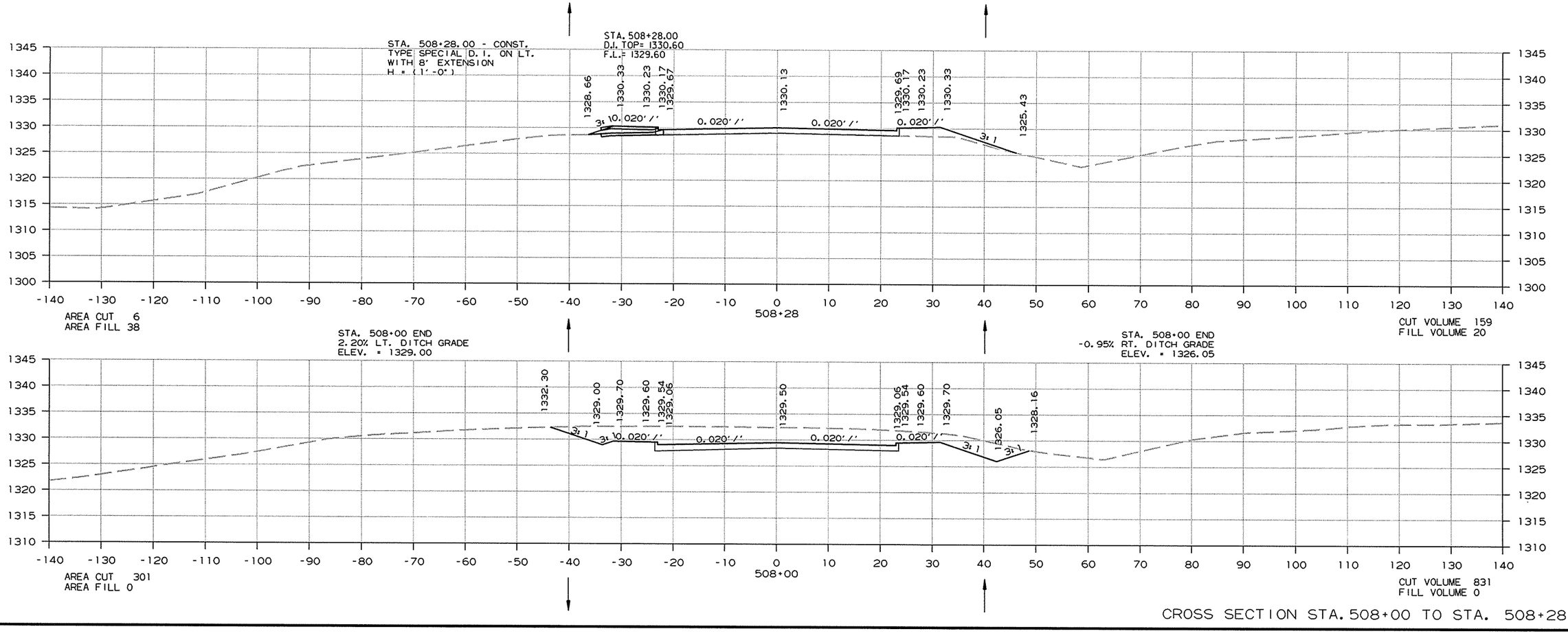
CROSS SECTION STA. 506+00 TO STA. 507+58

9/9/2015

R090373.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.		090373	300	316

(2) CROSS SECTIONS



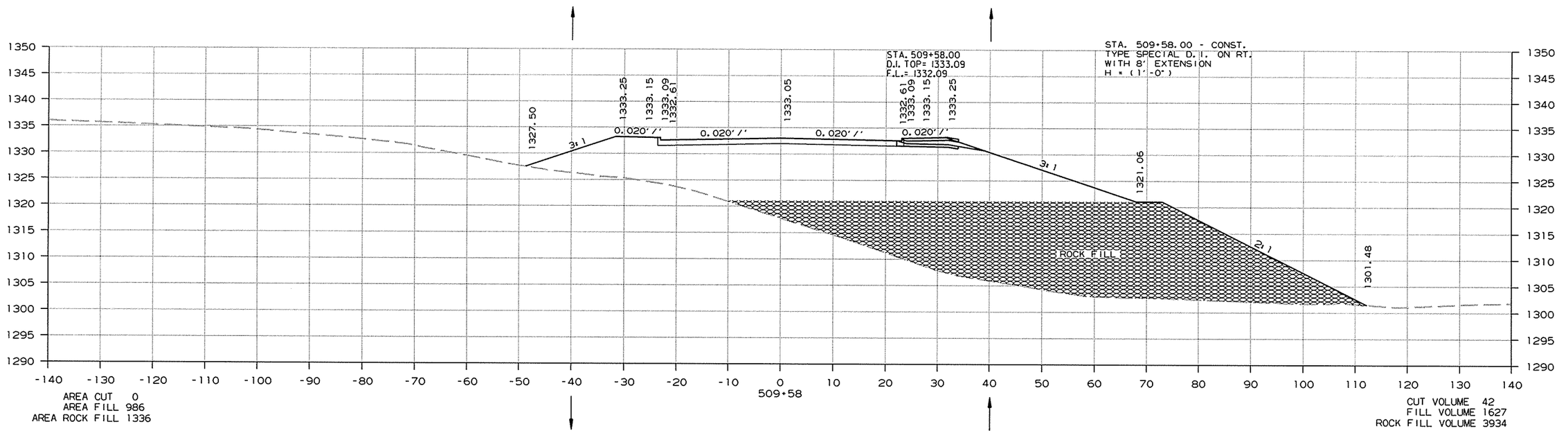
CROSS SECTION STA. 508+00 TO STA. 508+28

9/9/2015

R090373.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.		090373	301	316

(2) CROSS SECTIONS



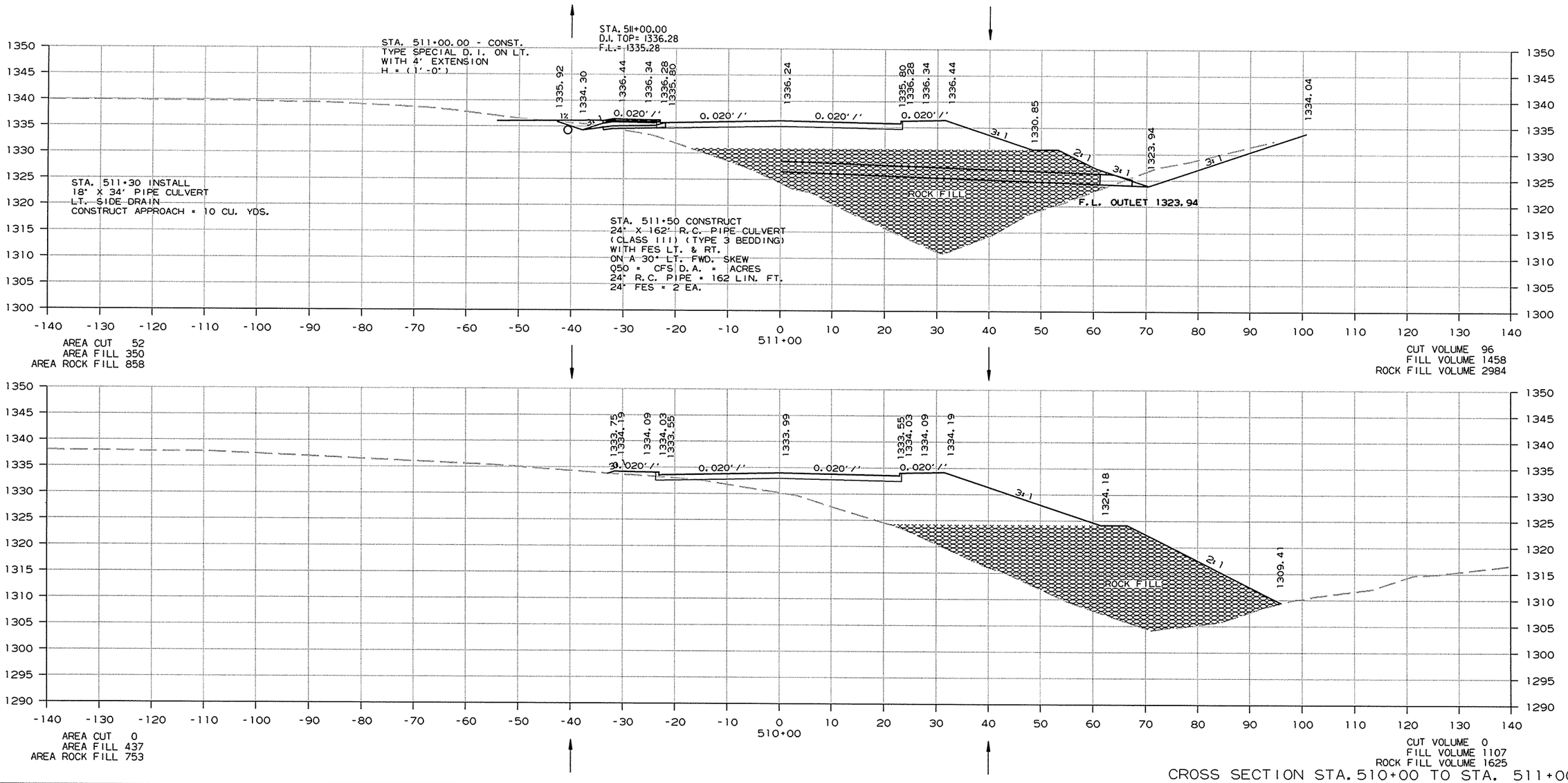
CROSS SECTION STA. 509+00 TO STA. 509+58

9/9/2015

R090373.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.		090373	302	316

(2) CROSS SECTIONS



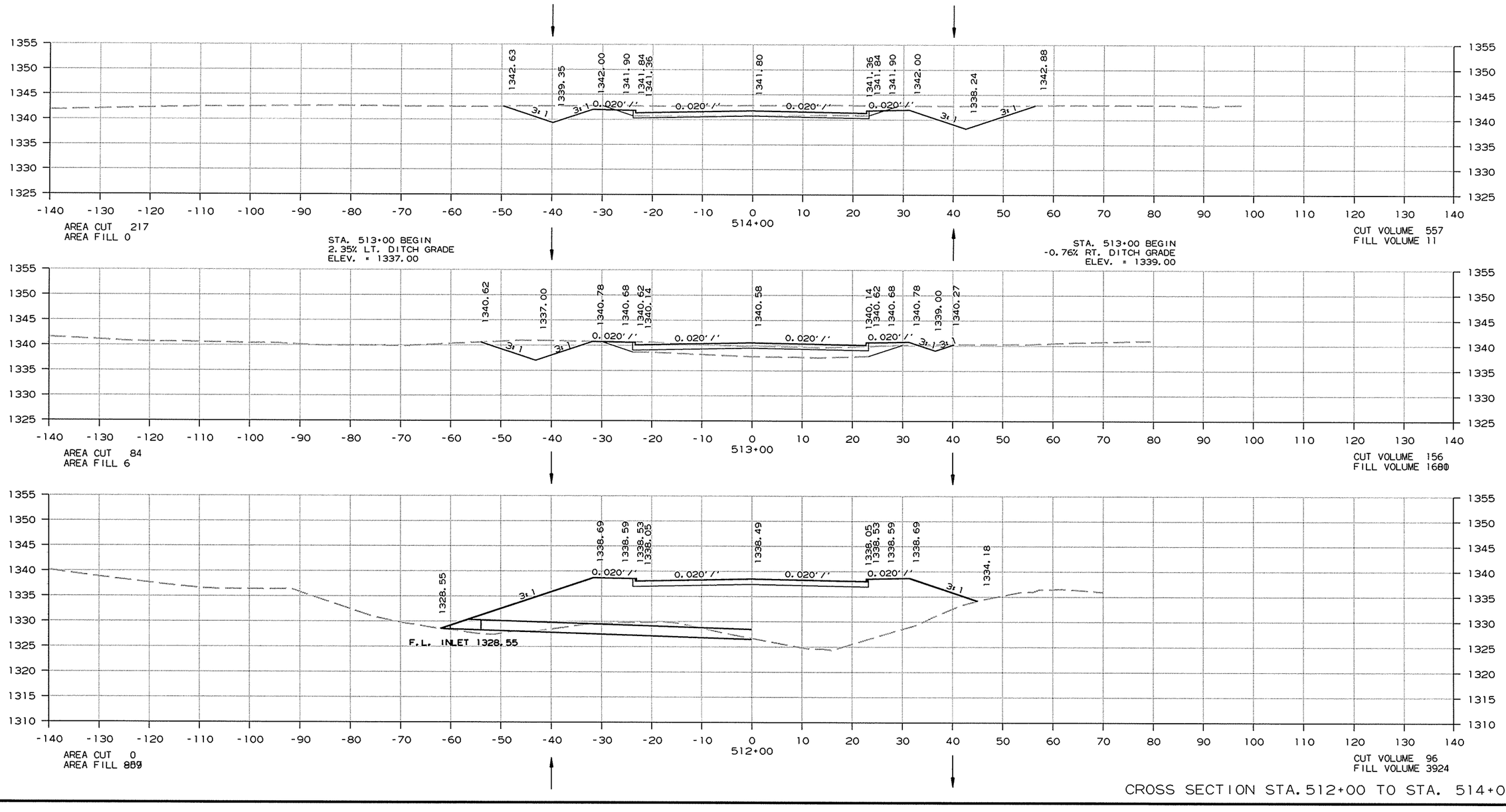
CROSS SECTION STA. 510+00 TO STA. 511+00

9/9/2015

R090373.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.		090373	303	316

(2) CROSS SECTIONS



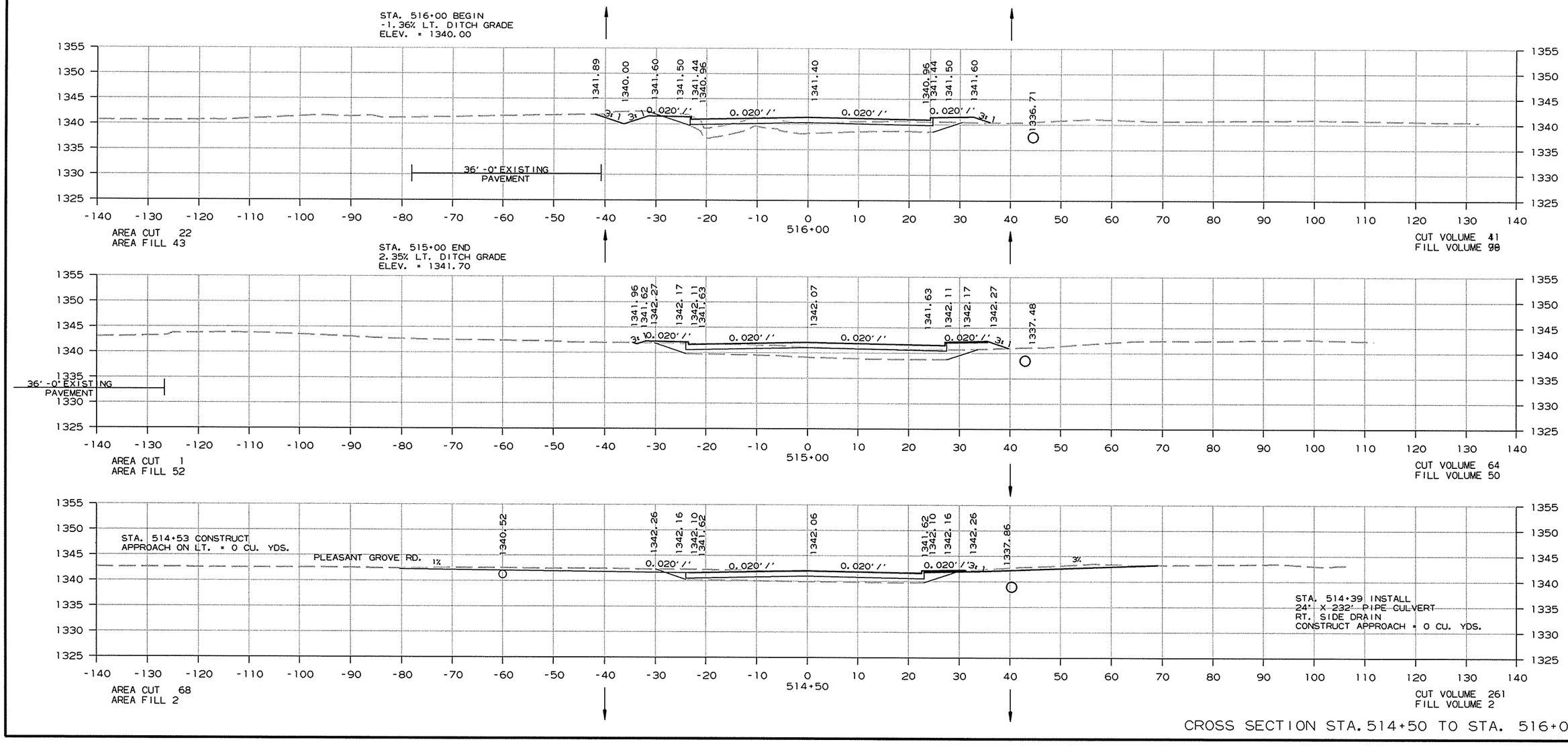
CROSS SECTION STA. 512+00 TO STA. 514+00

9/9/2015

R090373.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.		090373	304	316

(2) CROSS SECTIONS



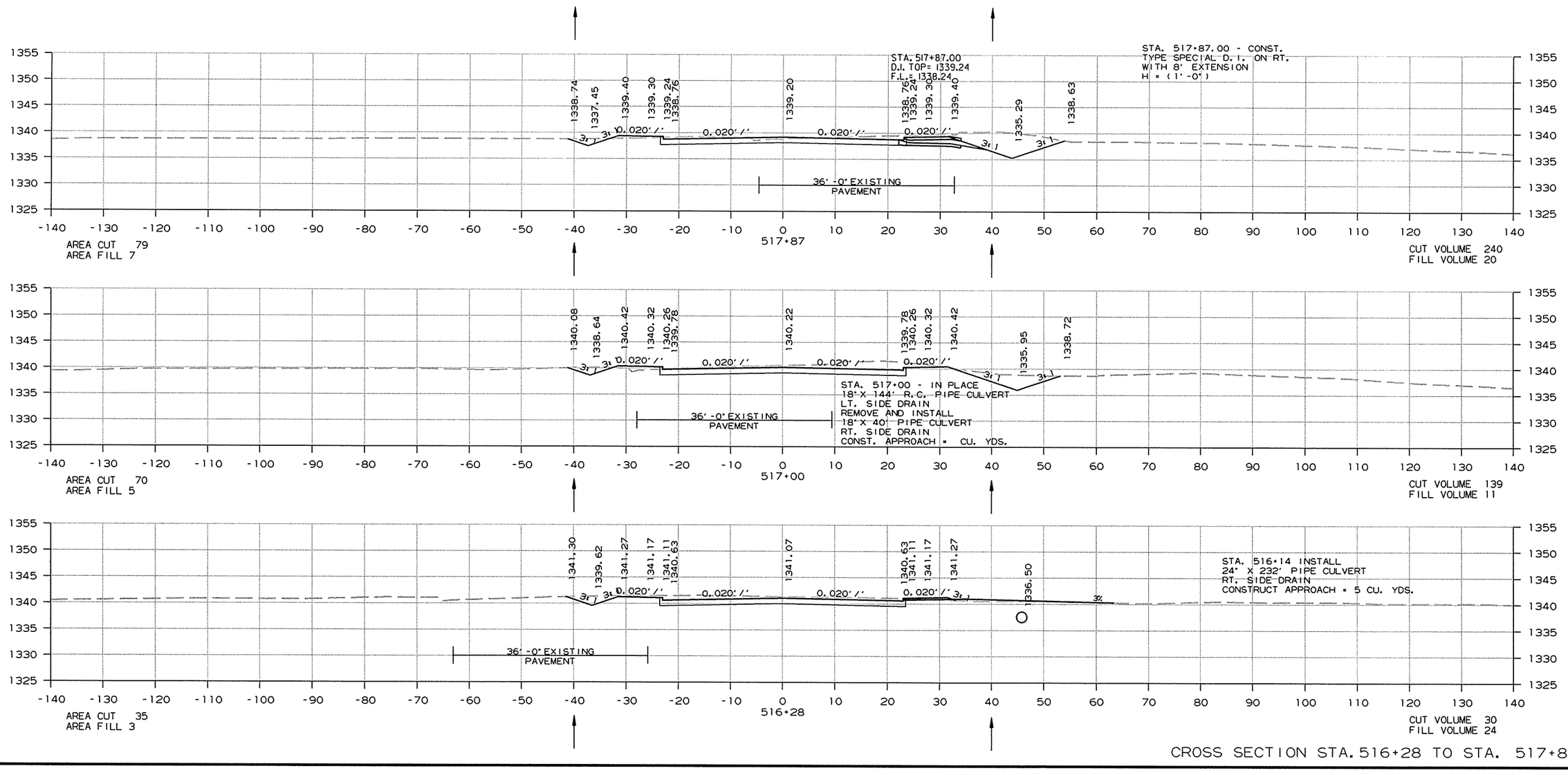
CROSS SECTION STA. 514+50 TO STA. 516+00

9/9/2015

R090373.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.		090373	305	316

(2) CROSS SECTIONS



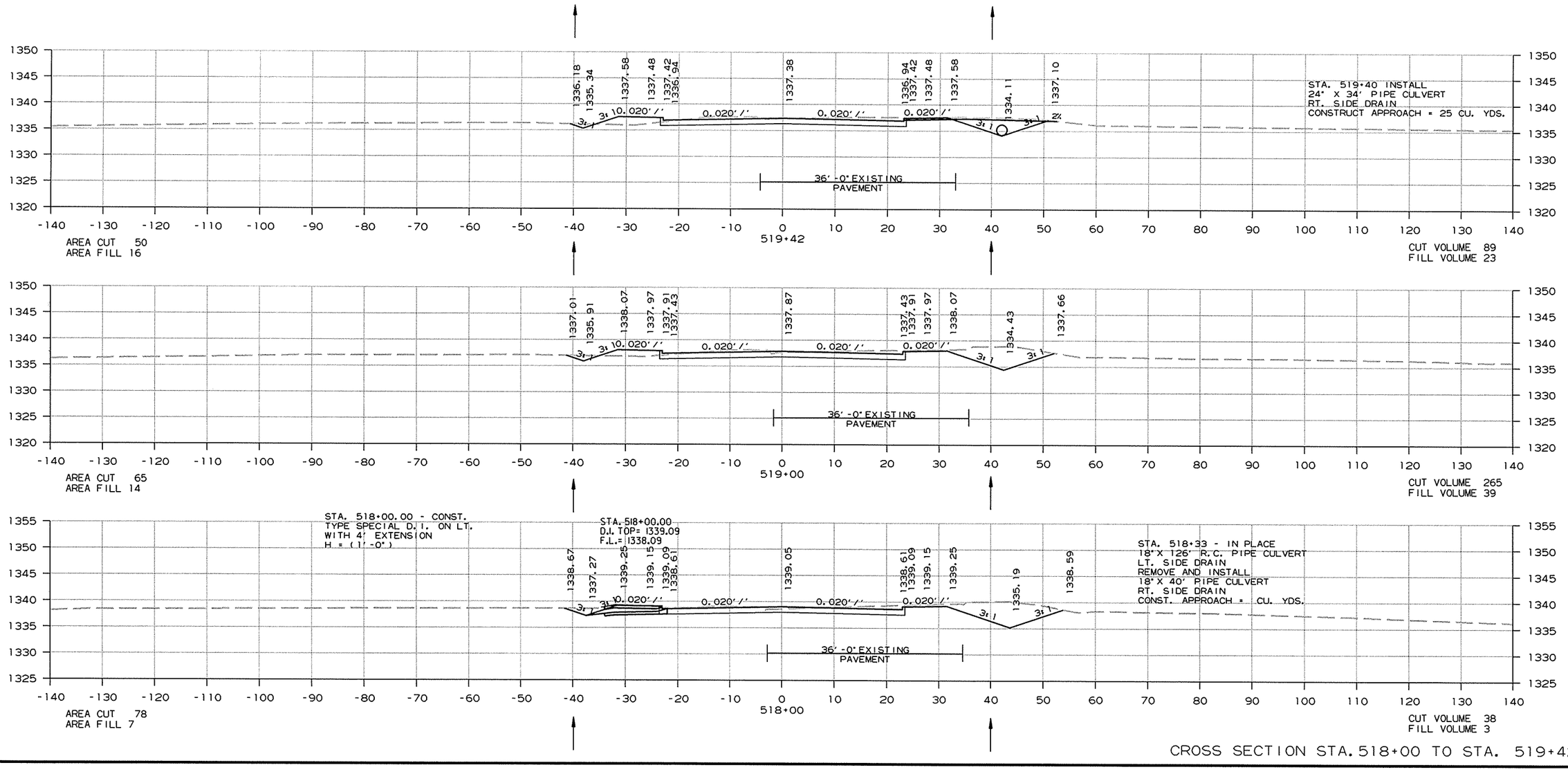
CROSS SECTION STA. 516+28 TO STA. 517+87

9/9/2015

R090373.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.		090373	306	316

(2) CROSS SECTIONS



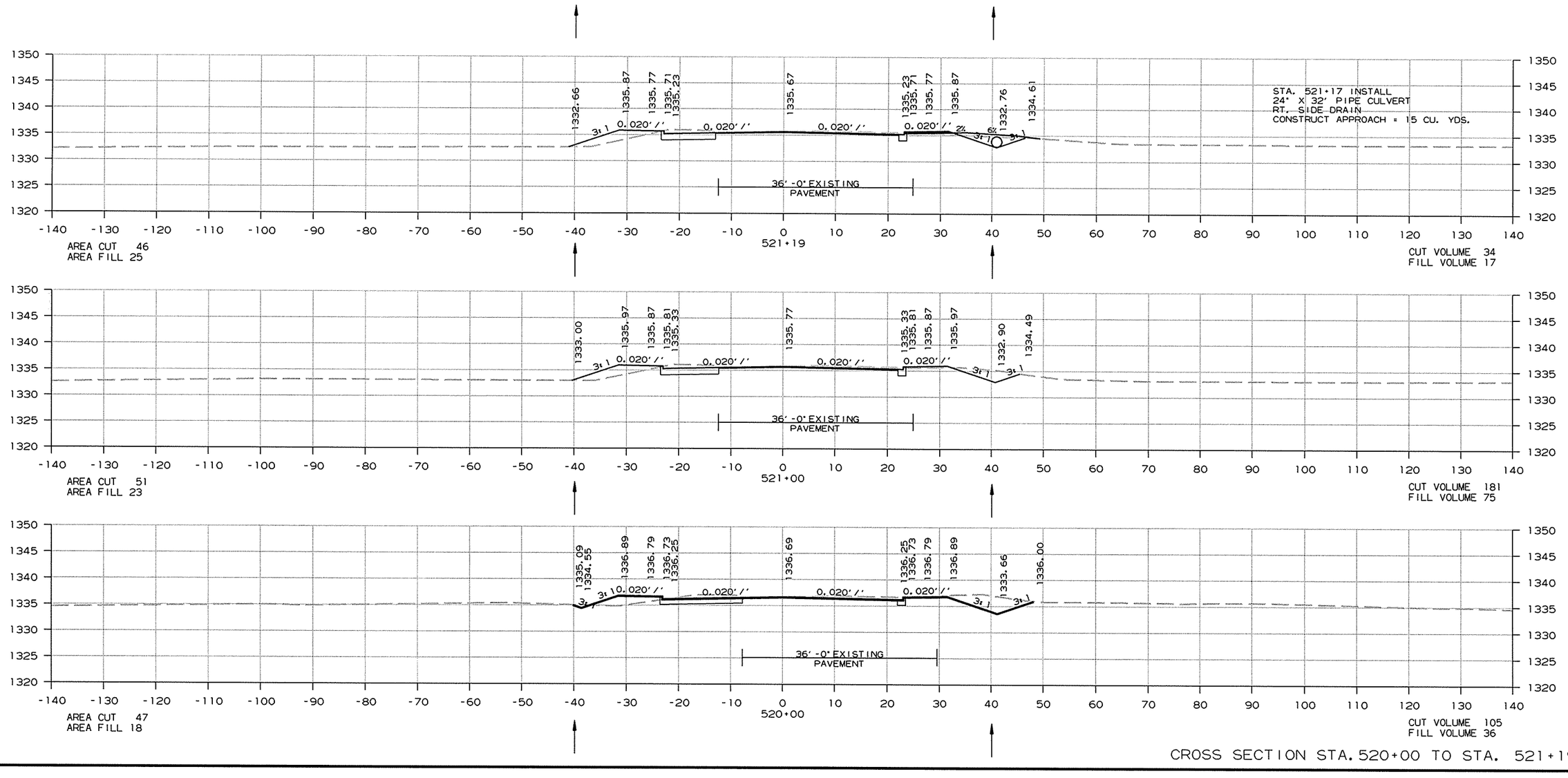
CROSS SECTION STA. 518+00 TO STA. 519+42

9/9/2015

R090373.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.		090373	307	316

(2) CROSS SECTIONS



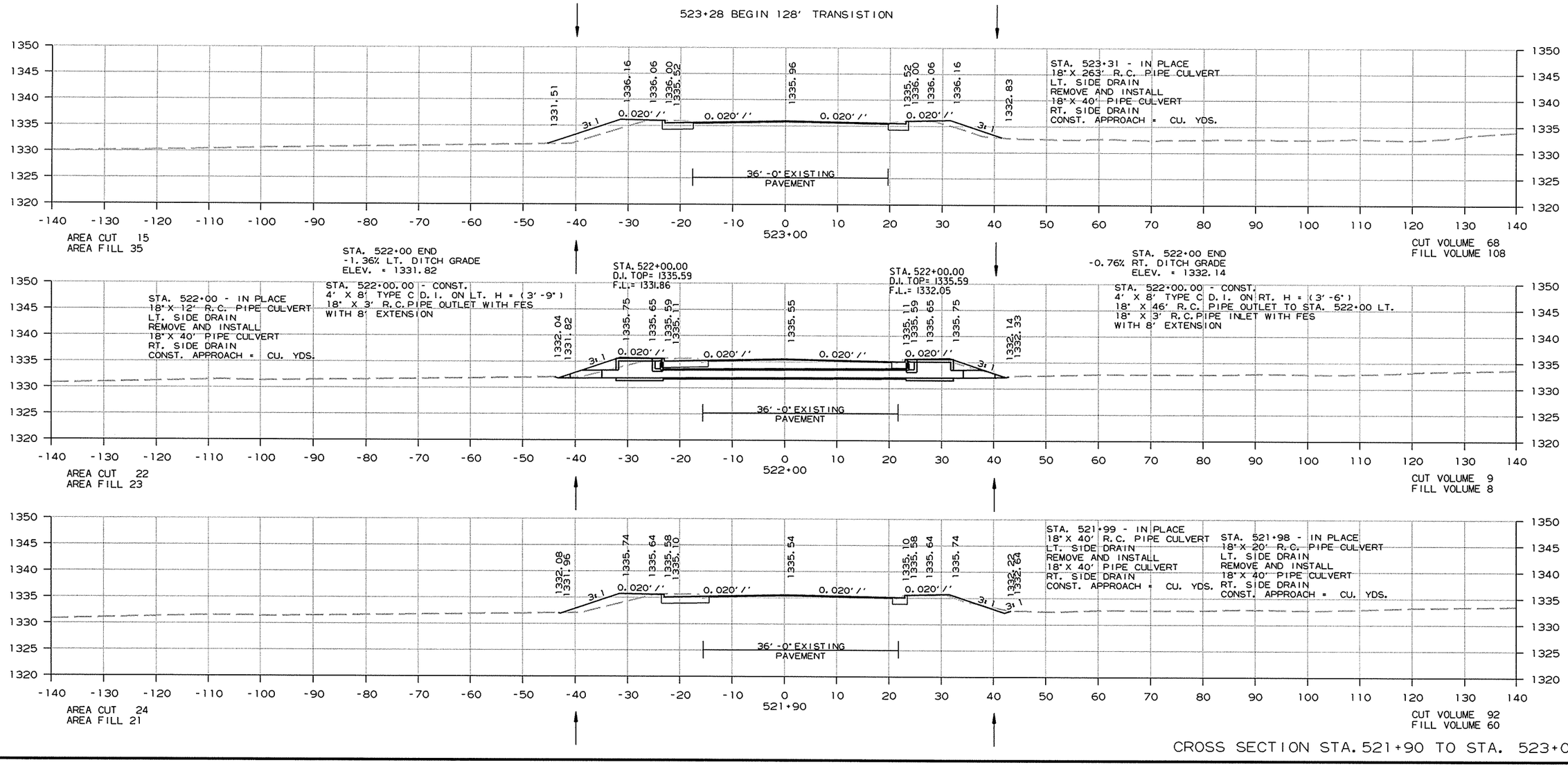
CROSS SECTION STA. 520+00 TO STA. 521+19

9/9/2015

R090373.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.		090373	308	316

(2) CROSS SECTIONS



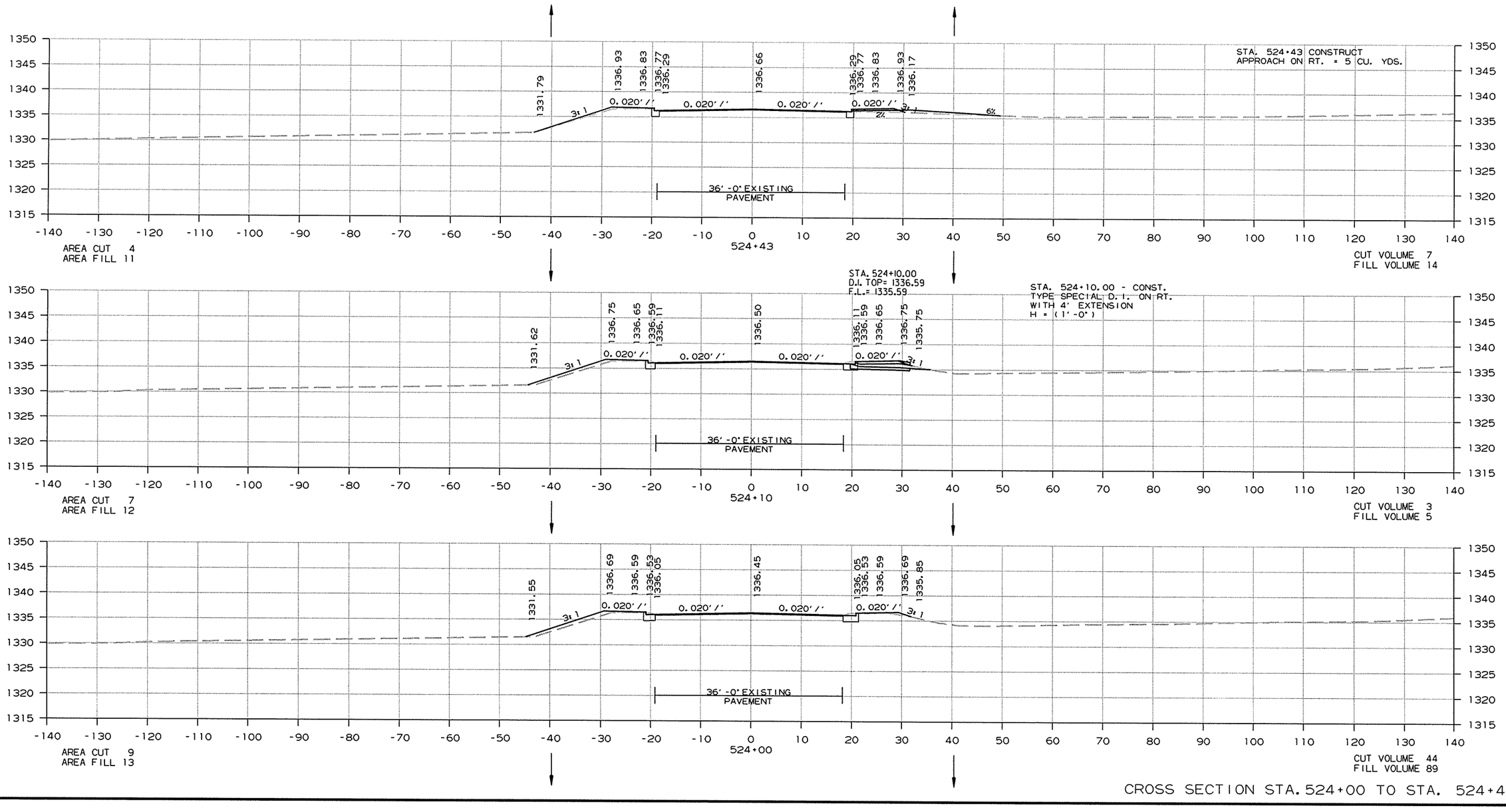
CROSS SECTION STA. 521+90 TO STA. 523+00

9/9/2015

R090373.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.		090373	309	316

(2) CROSS SECTIONS



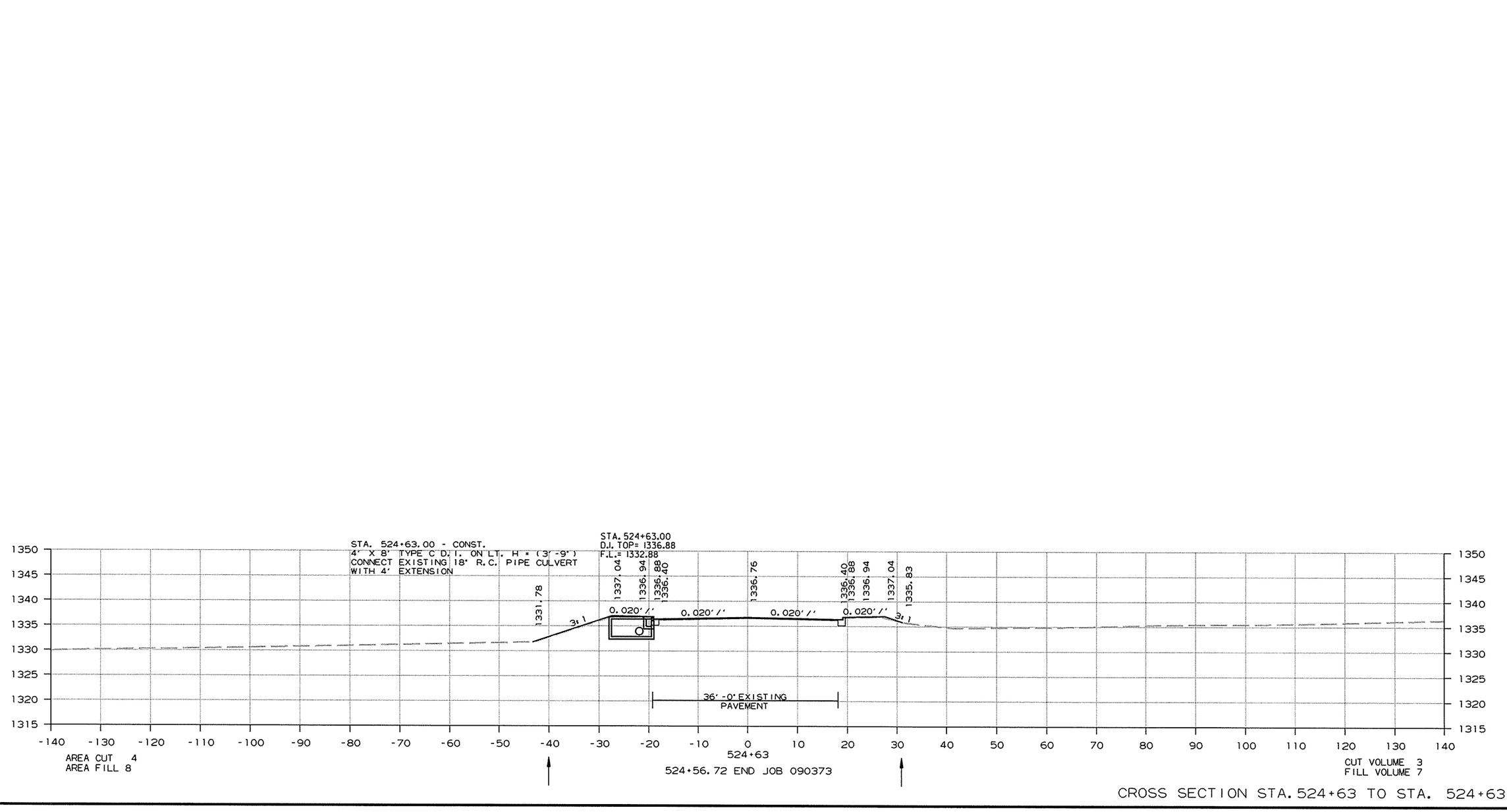
CROSS SECTION STA. 524+00 TO STA. 524+43

9/9/2015

R090373.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.		090373	310	316

(2) CROSS SECTIONS



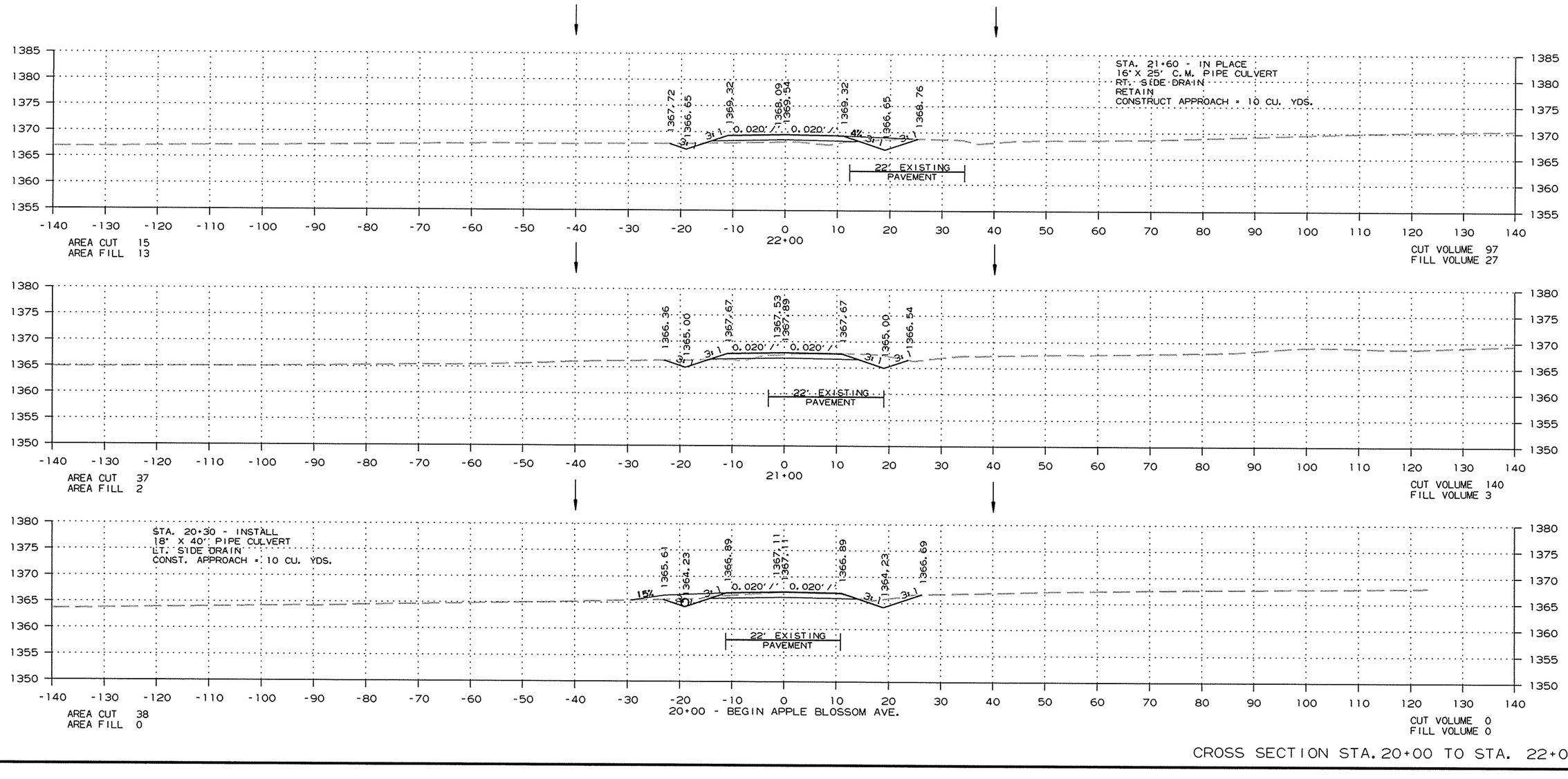
CROSS SECTION STA. 524+63 TO STA. 524+63

9/9/2015

R090373.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.		090373	311	316

(2) CROSS SECTIONS APPLE BLOSSOM AVE.



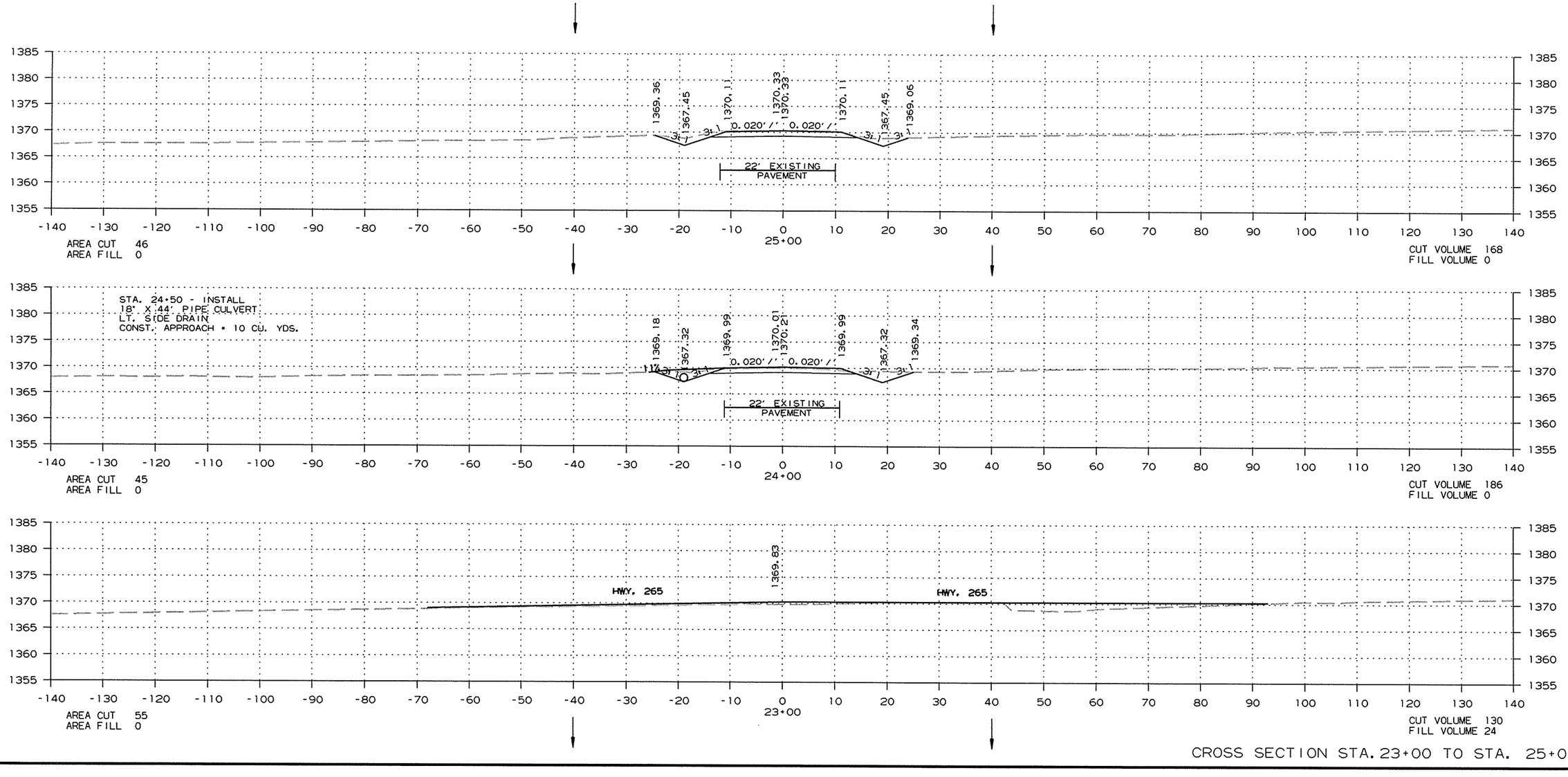
CROSS SECTION STA. 20+00 TO STA. 22+00

9/8/2015

R090373.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.		090373	312	316

(2) CROSS SECTIONS APPLE BLOSSOM AVE.



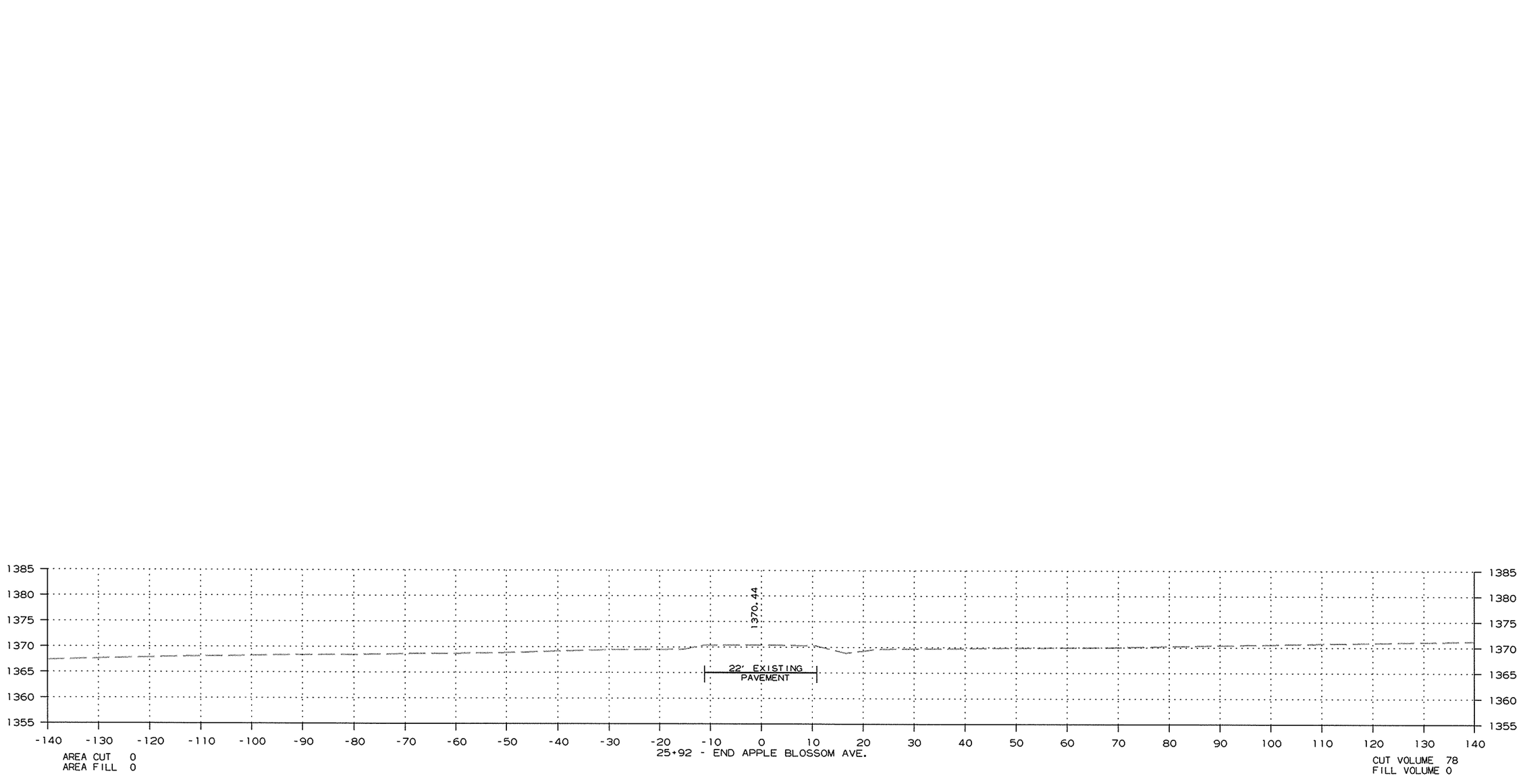
CROSS SECTION STA. 23+00 TO STA. 25+00

9/8/2015

R090373.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.		090373	313	316

(2) CROSS SECTIONS APPLE BLOSSOM AVE.



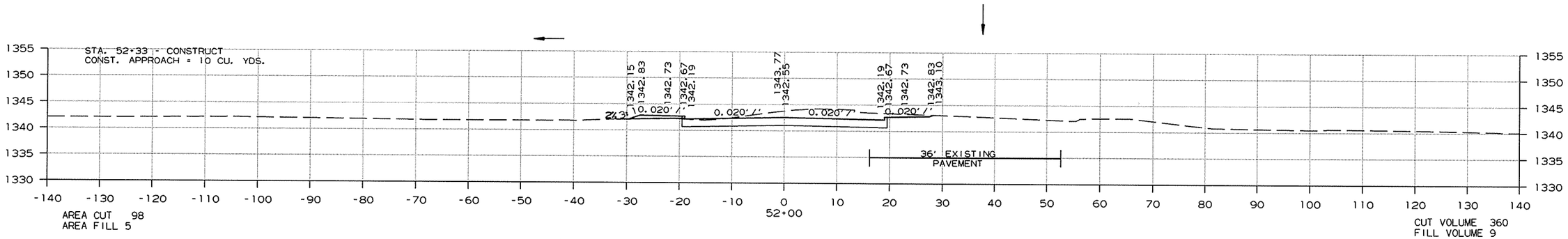
CROSS SECTION STA. 25+92 TO STA. 25+92

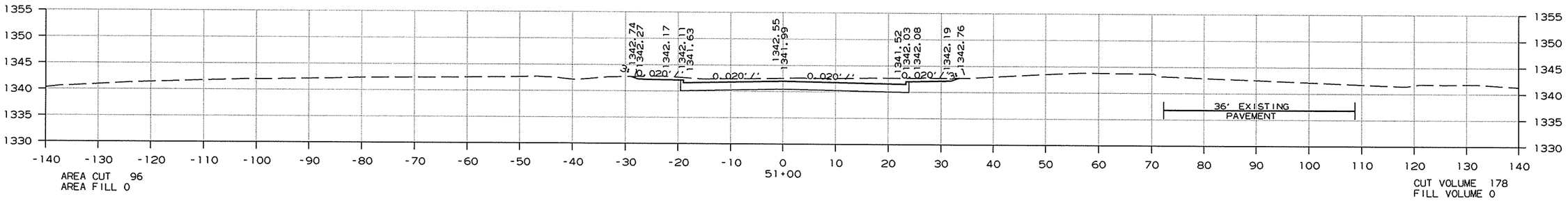
9/8/2015

R090373.DGN

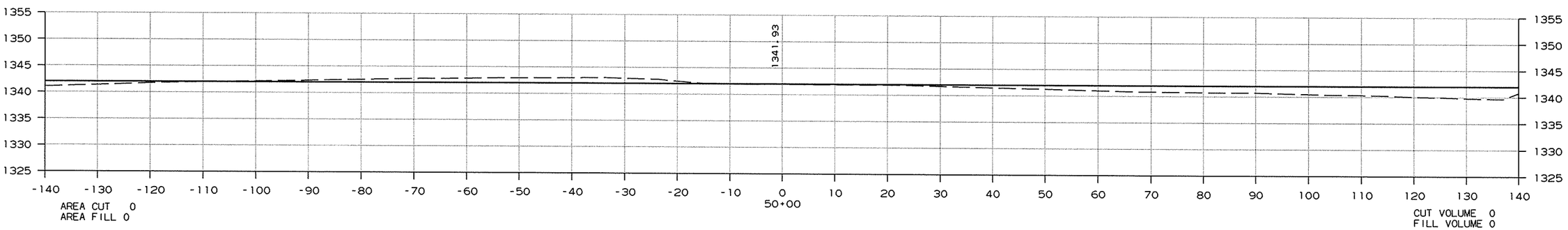
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090373	314	316

(2) CROSS SECTIONS PLEASANT GROVE RD.





50+22 - BEGIN PLEASANT GROVE RD.



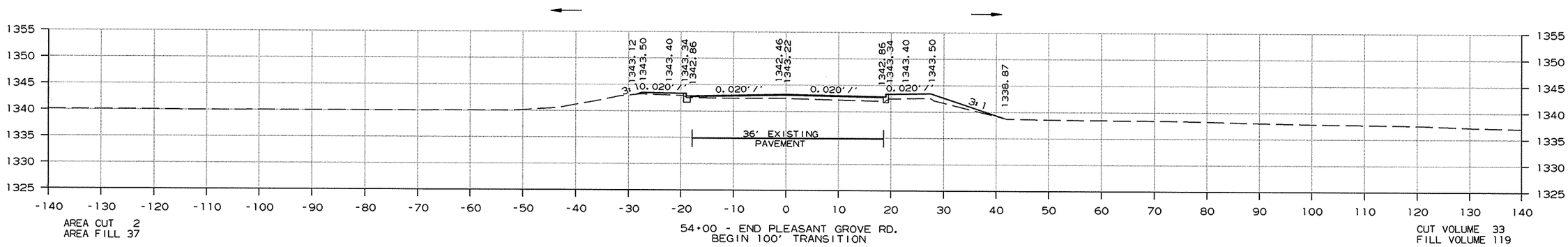
CROSS SECTION STA. 50+00 TO STA. 52+00

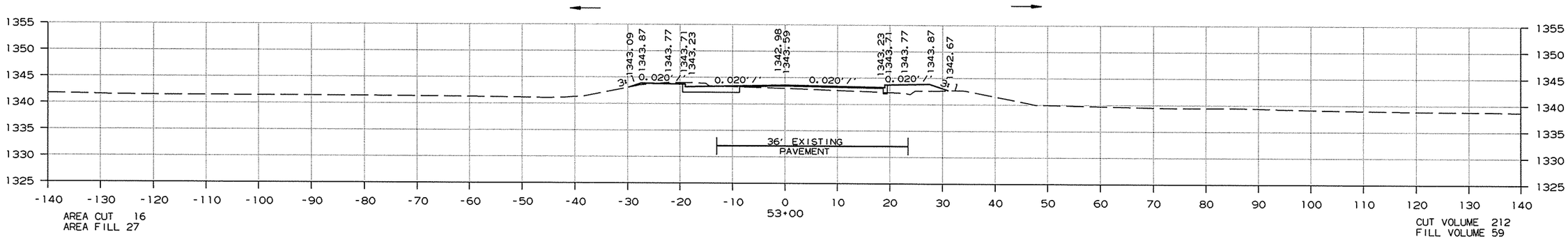
9/9/2015

R090373.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.		090373	315	316

(2) CROSS SECTIONS PLEASANT GROVE RD.





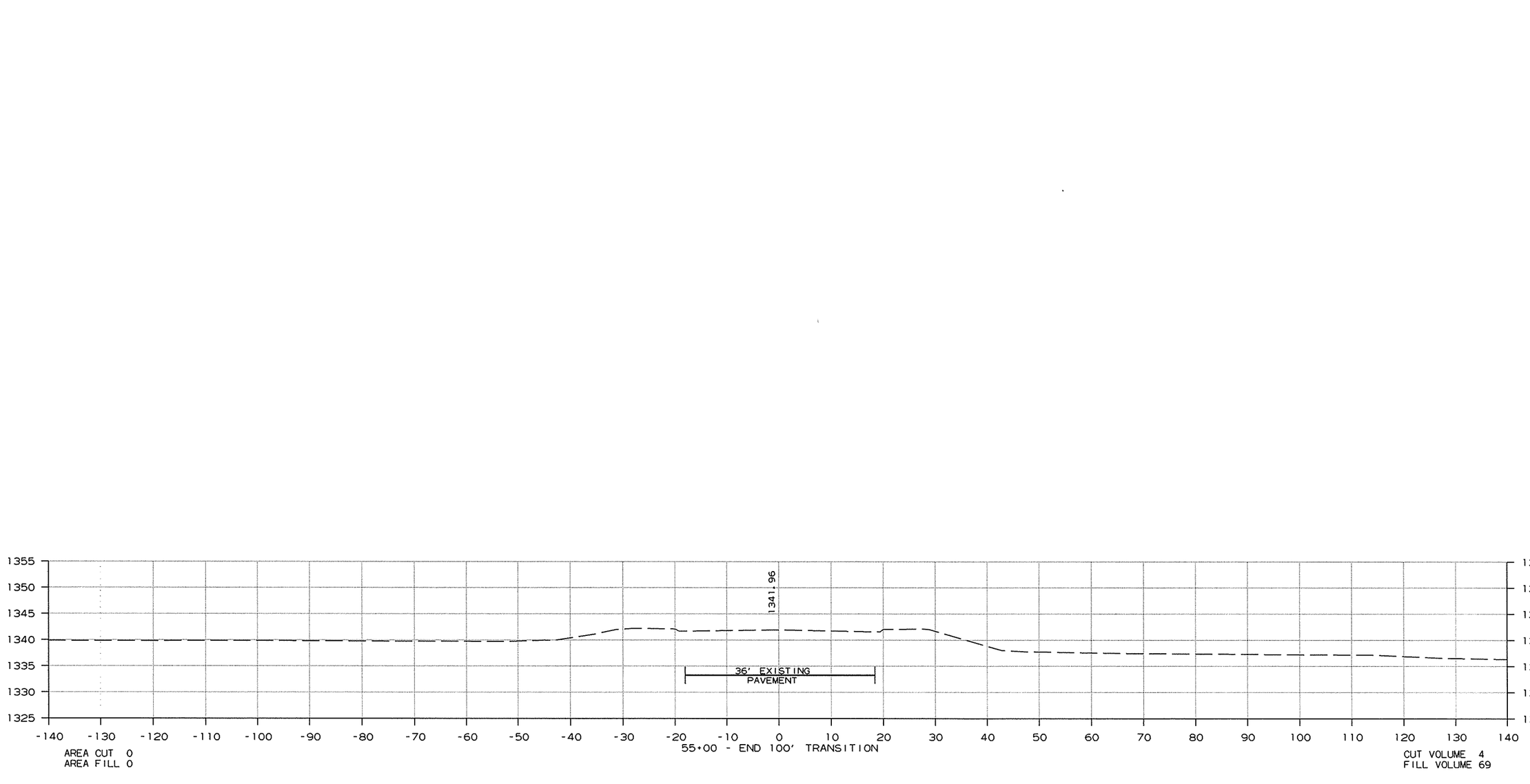
CROSS SECTION STA. 53+00 TO STA. 54+00

9/9/2015

R090373.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.		090373	316	316

(2) CROSS SECTIONS PLEASANT GROVE RD.



CROSS SECTION STA. 55+00 TO STA. 55+00

9/9/2015

R090373.DGN