DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	1	207
				(2) PANGBURN - FOURMILE HILL (SAFETY IMPVTS.) (SEL. SECS.) (S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

PANGBURN - FOURMILE HILL

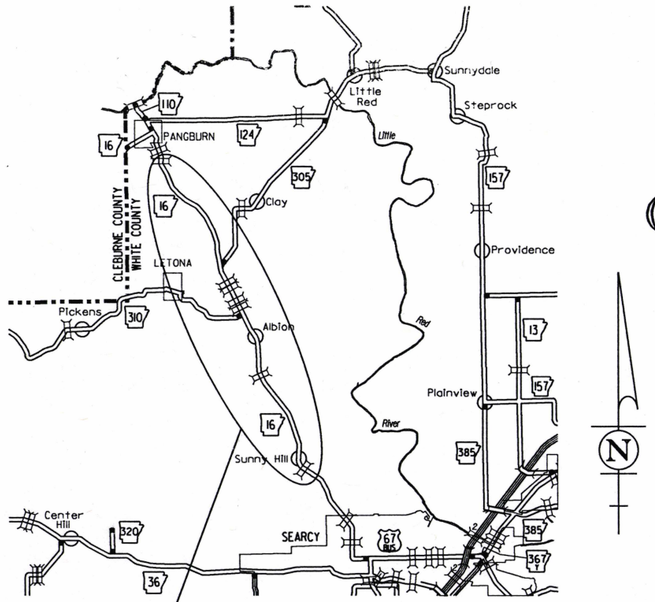
(SAFETY IMPVTS.) (SEL. SECS.) (S)

WHITE COUNTY

ROUTE 16 SECTION 13

JOB 050279

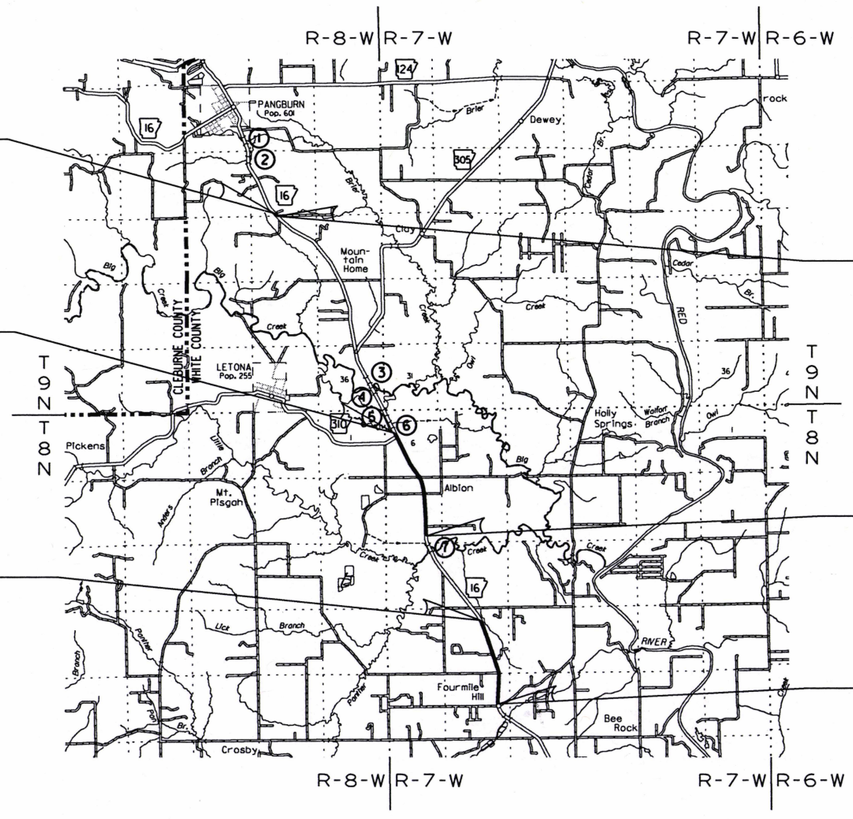
FED. AID PROJ. HSIP-0073(61)



PROJECT LOCATION

VICINITY MAP

NOT TO SCALE



STA. 195+92.00
BEGIN JOB 050279
BEGIN SITE 1
LOG MILE 2.74

STA. 198+39.00
END SITE 1

STA. 405+85.00
BEGIN SITE 2
LOG MILE 6.72

STA. 495+50.00
END SITE 2

STA. 585+00.00
BEGIN SITE 3
LOG MILE 10.11

STA. 648+60.00
END SITE 3
END JOB 050279

BRIDGE DATA

① LOG MILE 1.46 RETAIN
BRIDGE NO. M0453
CONTINUOUS CONCRETE SLAB UNIT
21' BRIDGE LENGTH

② LOG MILE 1.78 RETAIN
BRIDGE NO. X0575
CONTINUOUS CONCRETE SLAB UNIT
38' BRIDGE LENGTH

③ LOG MILE 5.82 RETAIN
BRIDGE NO. M0455
CONTINUOUS CONCRETE SLAB UNIT
31' BRIDGE LENGTH

④ LOG MILE 5.97 RETAIN
BRIDGE NO. 05338
R.C. SLAB UNIT
214' BRIDGE LENGTH

⑤ LOG MILE 6.39 RETAIN
BRIDGE NO. M0456
R.C. SLAB UNIT
133' BRIDGE LENGTH

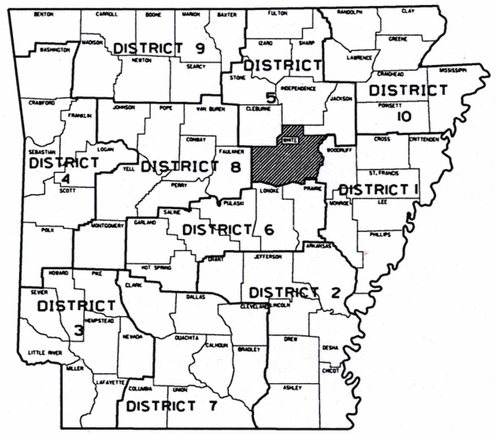
⑥ LOG MILE 6.58 RETAIN
BRIDGE NO. M0457
CONTINUOUS CONCRETE SLAB UNIT
21' BRIDGE LENGTH

⑦ LOG MILE 8.61 RETAIN
BRIDGE NO. 05337
STEEL, STRINGER/MULTI-BEAM
302' BRIDGE LENGTH

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°24'08"	N 35°20'54"	N 35°17'28"
LONGITUDE	W 91°49'35"	W 91°47'37"	W 91°46'12"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	15572.00	FEET	OR	2.949	MILES
NET : ROADWAY	15572.00	:		2.949	MILES
NET : BRIDGES	0.00	:		0.000	MILES
NET : PROJECT	15572.00	:		2.949	MILES



ARK. HWY. DIST. NO. 5

DESIGN TRAFFIC DATA

DESIGN YEAR	2039
2019 ADT	5300
2039 ADT	6900
2039 DHV	759
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	7%
AVG. RUNNING SPEED	
SITE 1	55 MPH
SITE 3	55 MPH
DESIGN SPEED	
SITE 2	45 MPH

N

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7856
M.E. BANKS
11-7-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

5/30/2018

R050279.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.		050279	2	207

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-10-2020

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 6		TYPICAL SECTIONS OF IMPROVEMENT
7 - 9		SPECIAL DETAILS
10 - 49		TEMPORARY EROSION CONTROL DETAILS
50 - 79		MAINTENANCE OF TRAFFIC DETAILS
80 - 82		PERMANENT PAVEMENT MARKING DETAILS
83 - 88		QUANTITIES
89		SUMMARY OF QUANTITIES AND REVISIONS
90 - 112		SURVEY CONTROL DETAILS
113 - 126		PLAN AND PROFILE SHEETS
127 - 207		CROSS SECTIONS

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

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-3	CHAIN LINK FENCE	11-17-10
WF-4	WIRE FENCE TYPE C AND D	08-22-02
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
W-X15	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	06-13-63
W-X153-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
W-X45	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	06-15-64
W-X452-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
R-100X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-08-63
R-115X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	08-14-63
R-145X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	07-10-64

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INDEX OF SHEETS AND STANDARD DRAWINGS

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(2) GOVERNING SPECS, AND GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-10-2020

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
404-3_____	DESIGN OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 050279__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 050279__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 050279__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 050279__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 050279__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 050279__	EXTENSION FOR PIPE CULVERTS
JOB 050279__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 050279__	MANDATORY ELECTRONIC CONTRACT
JOB 050279__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 050279__	NESTING SITES OF MIGRATORY BIRDS
JOB 050279__	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 050279__	PARTNERING REQUIREMENTS
JOB 050279__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)
JOB 050279__	PLASTIC PIPE
JOB050279__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 050279__	RUMBLE STRIPS
JOB 050279__	SHORING FOR CULVERTS
JOB 050279__	SOIL STABILIZATION
JOB 050279__	STORM WATER POLLUTION PREVENTION PLAN
JOB 050279__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 050279__	UTILITY ADJUSTMENTS
JOB 050279__	VALUE ENGINEERING
JOB 050279__	WARM MIX ASPHALT

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. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

10/9/2018

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GOVERNING SPECIFICATIONS AND GENERAL NOTES

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				6	ARK.			
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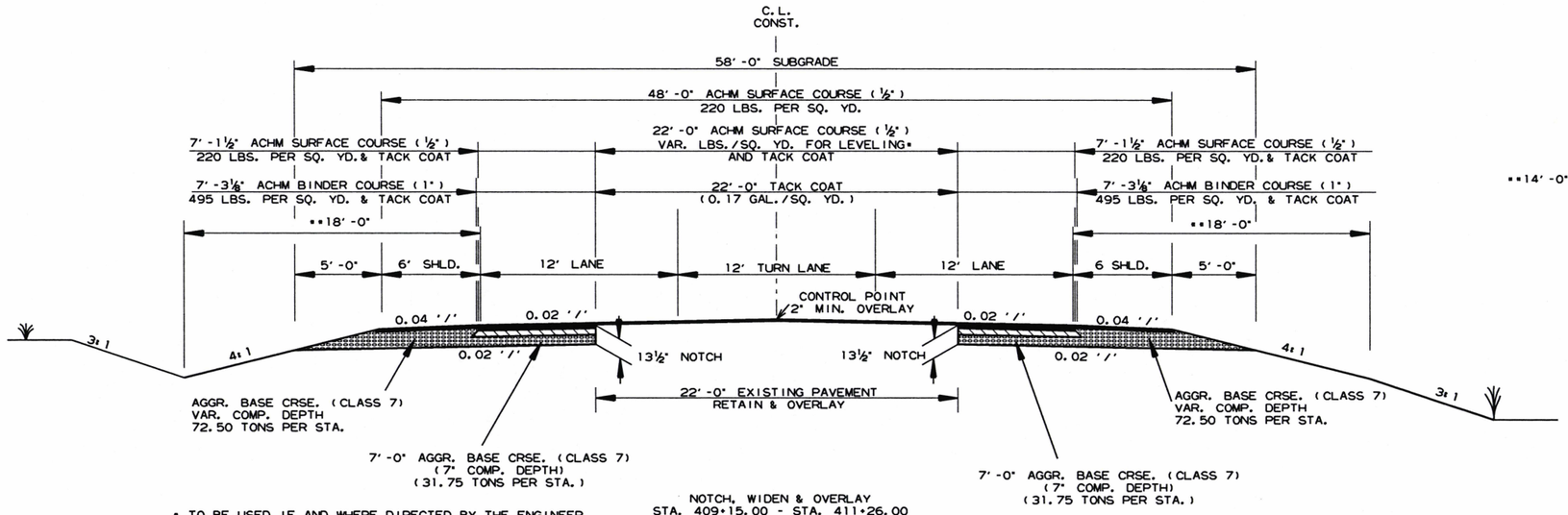
(2) TYPICAL SECTIONS OF IMPROVEMENT

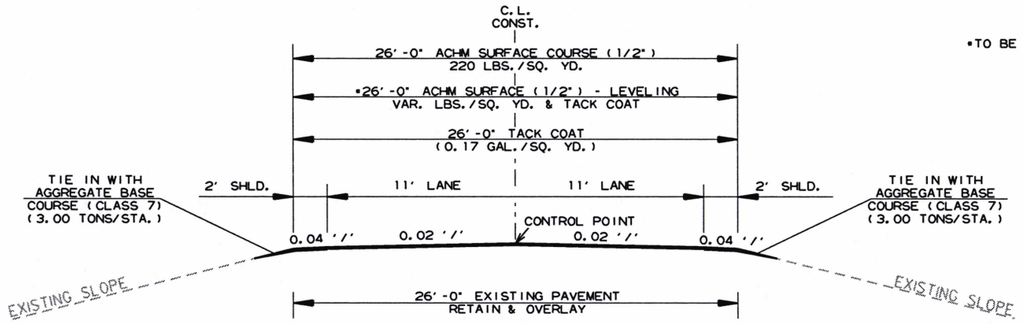
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH, WIDEN & OVERLAY
STA. 409+15.00 - STA. 411+26.00
STA. 426+30.00 - STA. 429+78.45
STA. 438+24.04 - STA. 444+60.40
STA. 456+34.38 - STA. 457+32.46
STA. 464+88.09 - STA. 484+38.00
STA. 588+30.00 - STA. 619+14.57
STA. 629+26.04 - STA. 643+53.12

**14'-0" CLEARZONE MIN. 18'-0" DESIRED



OVERLAY
STA. 415+56.00 - STA. 422+00.00

*TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

NOTES:

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

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

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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 CONTRACT ITEMS.

10/11/2018

R050279.DGN

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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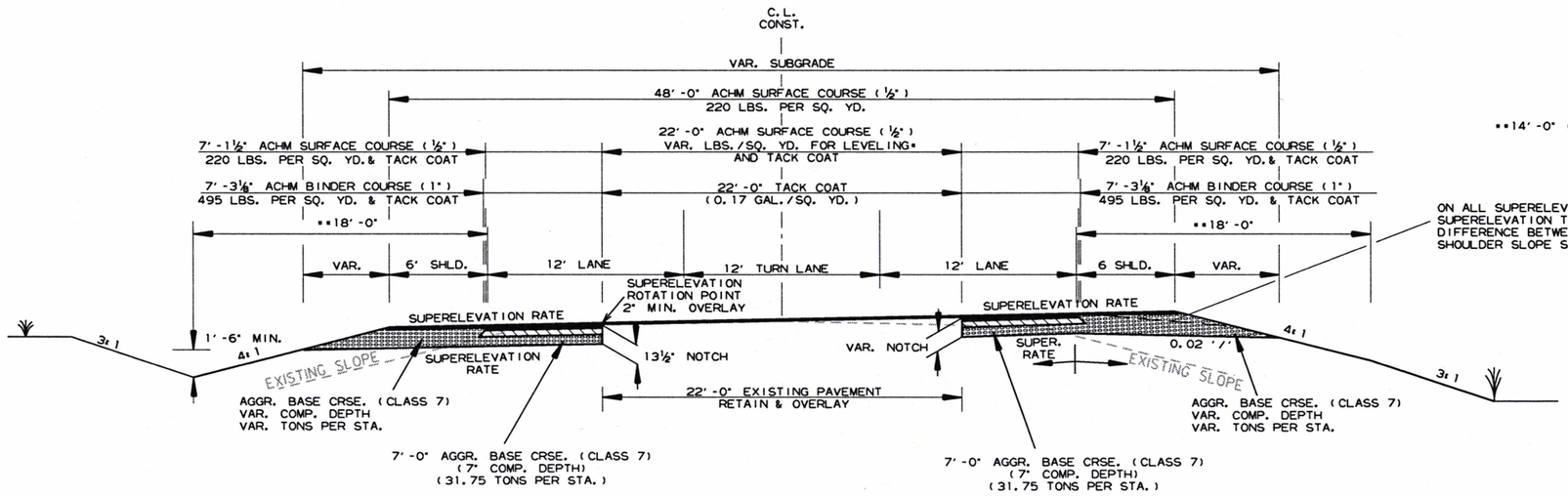
TRINITY D. SMITH
11-6-19



**14'-0" CLEARZONE MIN. 18'-0" DESIRED

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

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH, WIDEN & OVERLAY SUPERELEVATION
STA. 429+78.45 - STA. 438+24.04
STA. 444+60.40 - STA. 456+34.38
STA. 457+32.46 - STA. 464+88.09
STA. 619+14.57 - STA. 629+26.04
STA. 643+53.12 - STA. 649+60.00

NOTES:

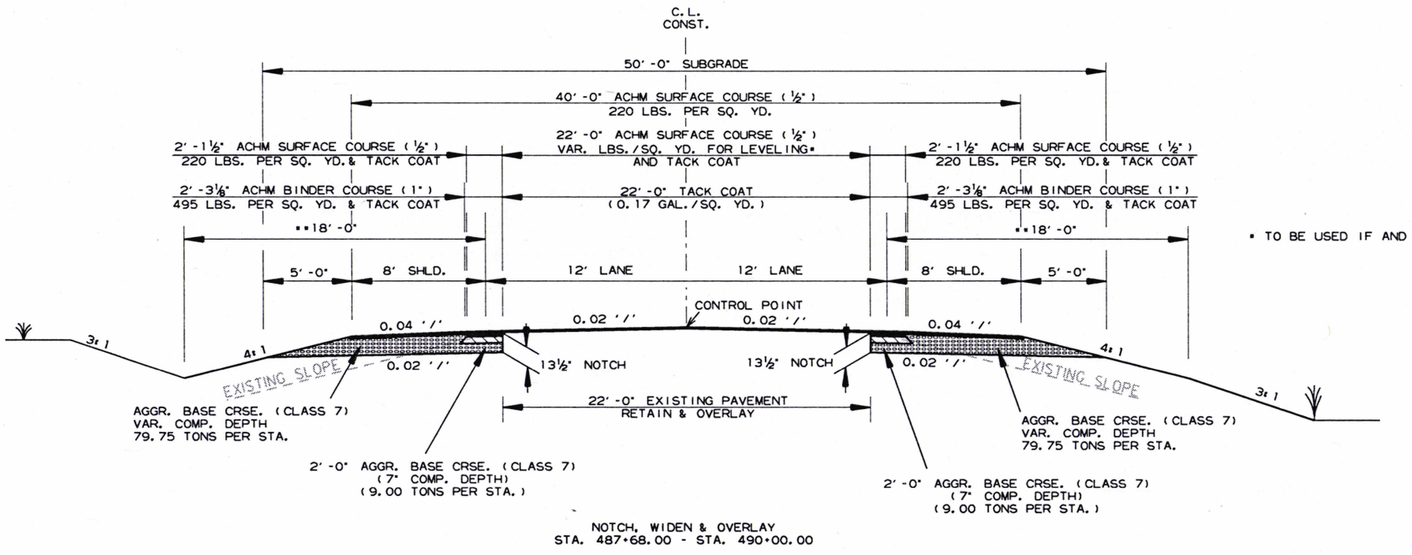
REFER TO CROSS SECTIONS FOR DEVIATION FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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 CONTRACT ITEMS.



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH, WIDEN & OVERLAY
STA. 487+68.00 - STA. 490+00.00

10/11/2018

RD50279.DGN

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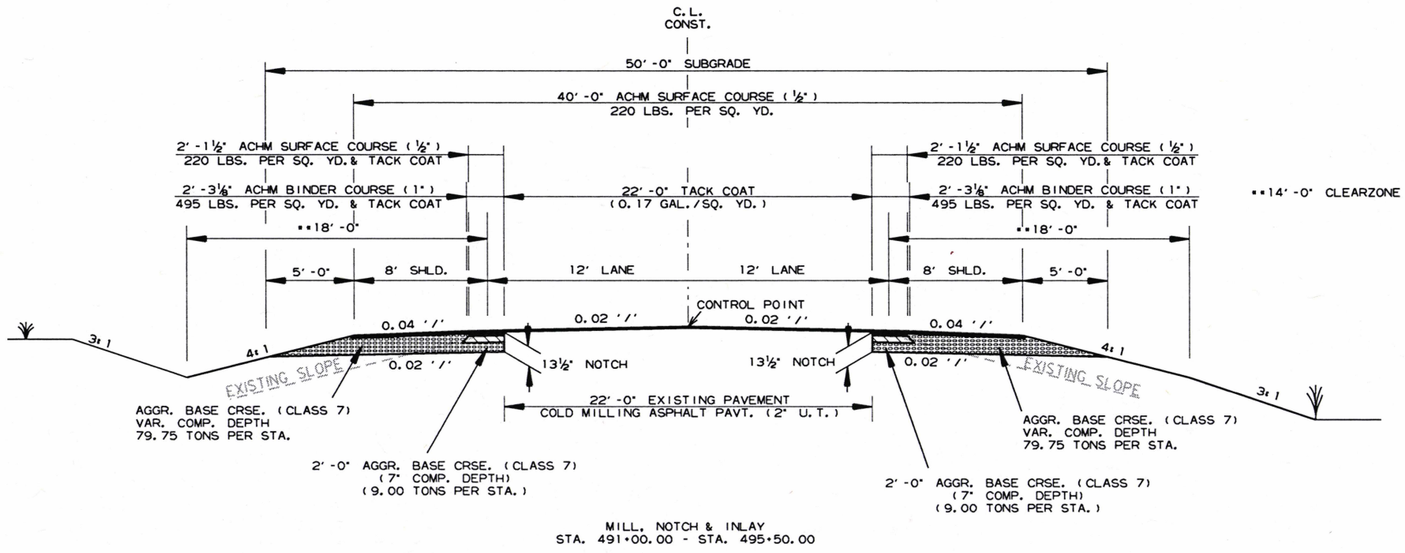
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



MILL, NOTCH & INLAY
STA. 491+00.00 - STA. 495+50.00

**14'-0" CLEARZONE MIN. 18'-0" DESIRED

NOTES:

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

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

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10/11/2018

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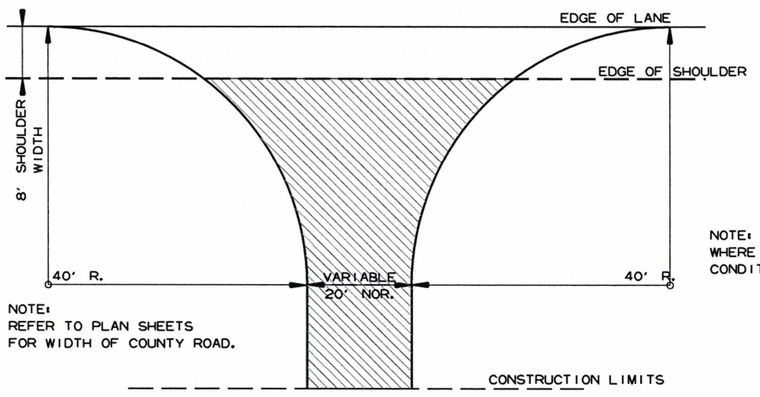
(2) SPECIAL DETAILS

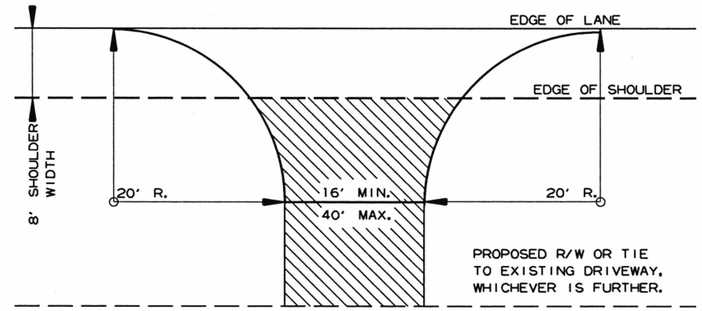


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION

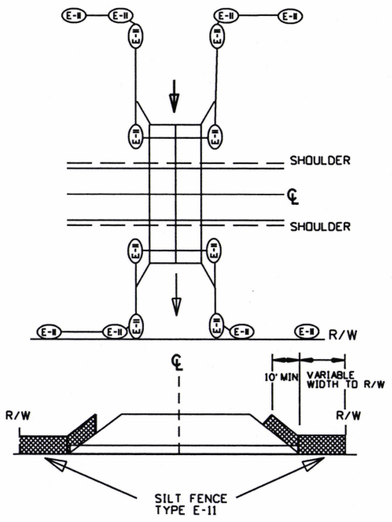


DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)

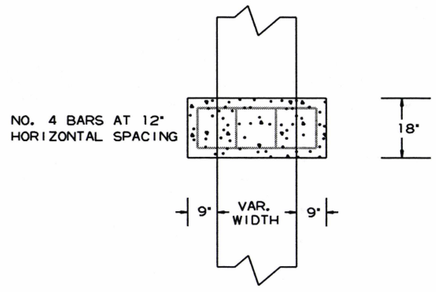
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

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

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

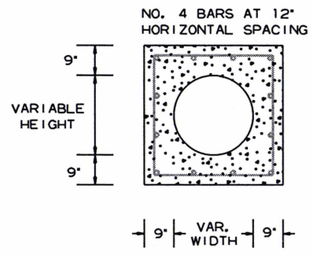


DETAILS OF SILT FENCE AT BOX CULVERTS

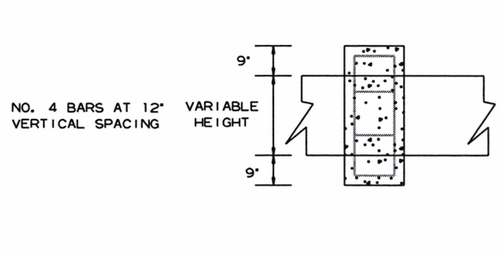


TOP VIEW

MIN 3" COVER

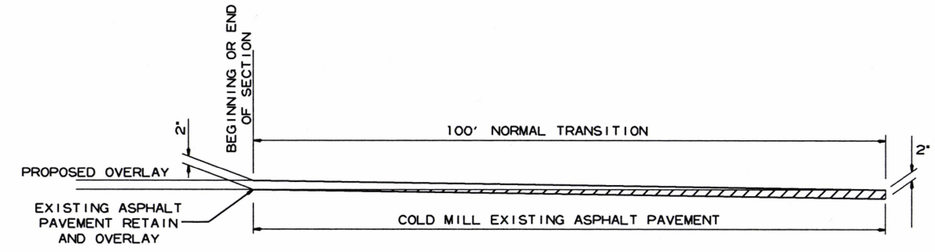


FRONT VIEW



SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL



DETAIL FOR TRANSITIONS

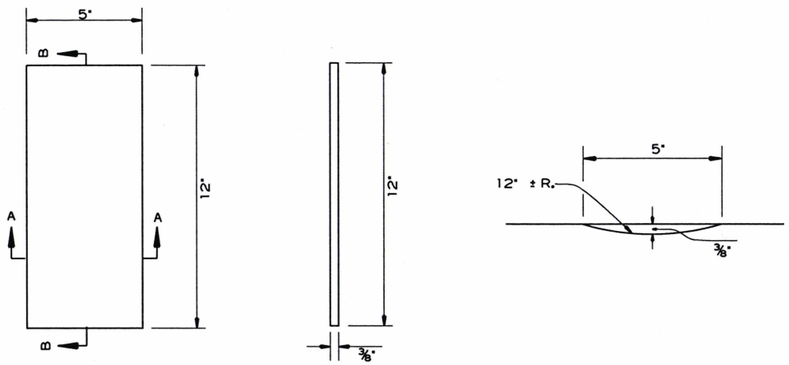
10/11/2018

R050279.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.		050279	8	207

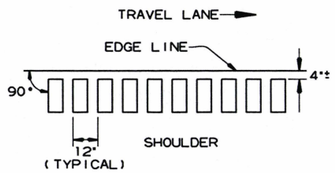
(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

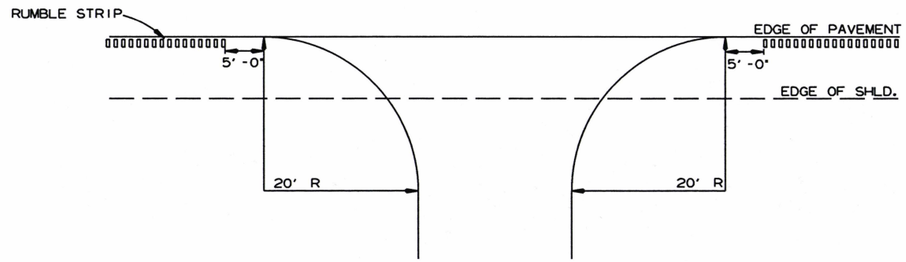


PLAN SECTION B-B SECTION A-A

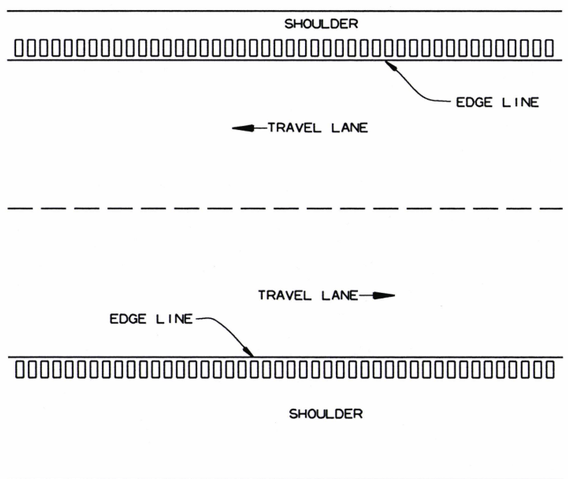
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



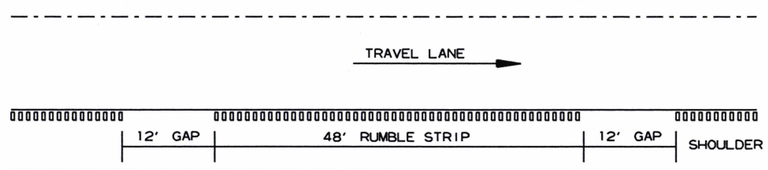
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



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

DETAIL FOR GAP PATTERN RUMBLE STRIP

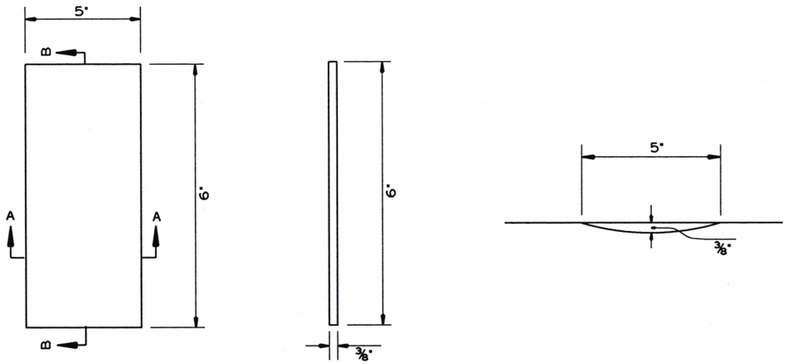
10/11/2018

R050279.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.		050279	9	207

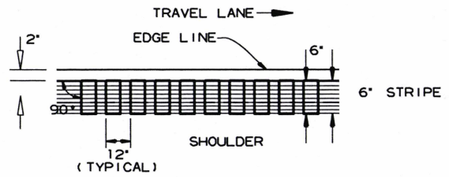
(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

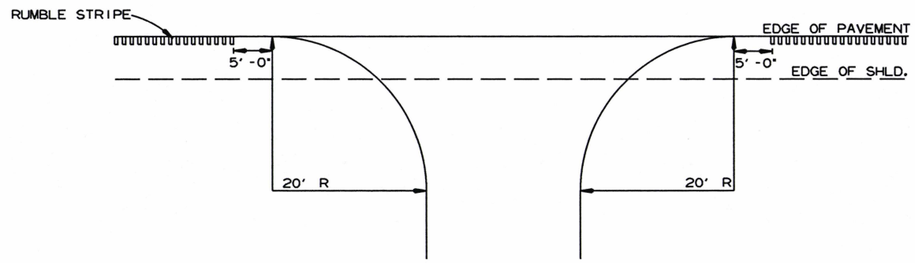


PLAN SECTION B-B SECTION A-A

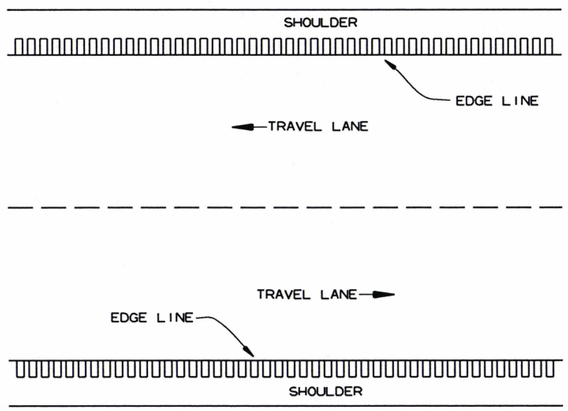
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



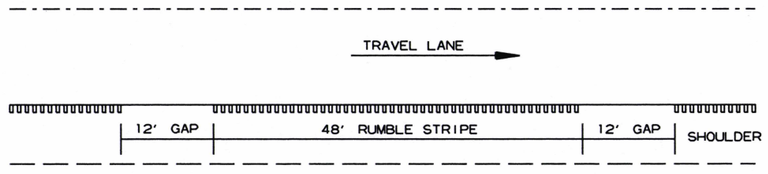
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



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

DETAIL FOR GAP PATTERN RUMBLE STRIPE

10/11/2018

R050279.DGN

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) SAND BAG DITCH CHECKS

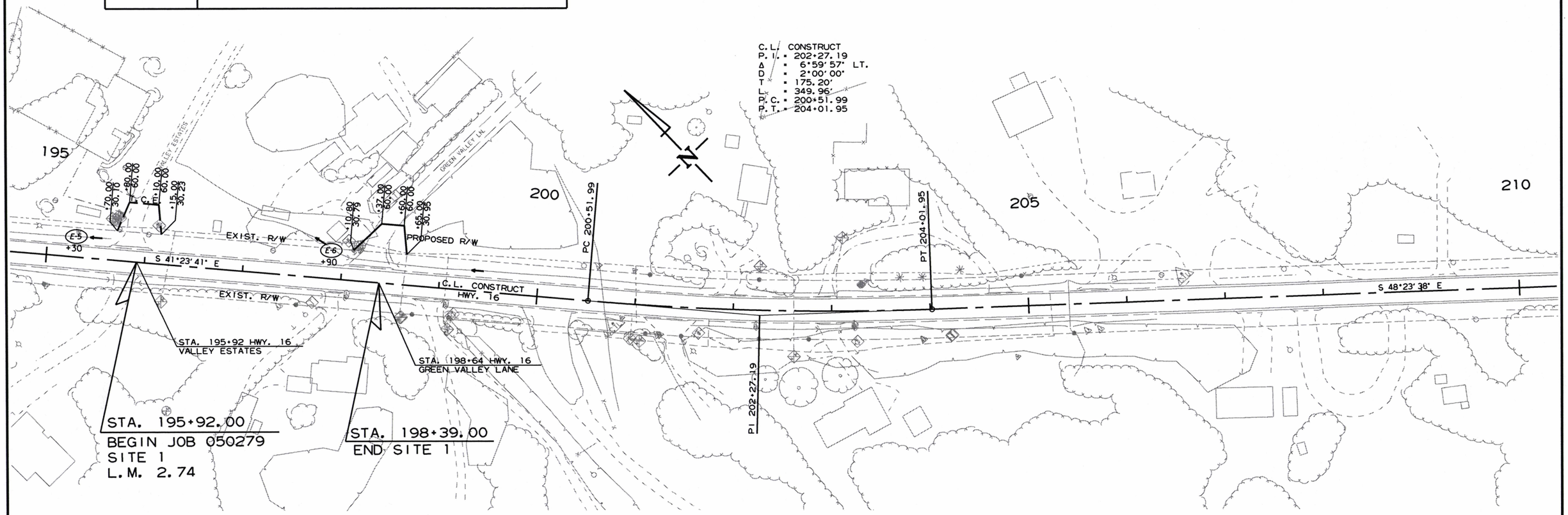
(E-6) ROCK DITCH CHECKS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	10	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

ALL STAGES
SAND BAG DITCH CHECKS (E-5)
(1 LOCATIONS = 22 BAGS)
ROCK DITCH CHECKS (E-6)
(1 LOCATIONS = 3 CU. YDS.)



C.L. CONSTRUCT
P.I. = 202+27.19
Δ = 6°59'57" LT.
D = 2°00'00"
T = 175.20'
L = 349.96'
P.C. = 200+51.99
P.T. = 204+01.95

ALL STAGES
SITE I
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	II	207

(2) TEMPORARY EROSION CONTROL DETAILS

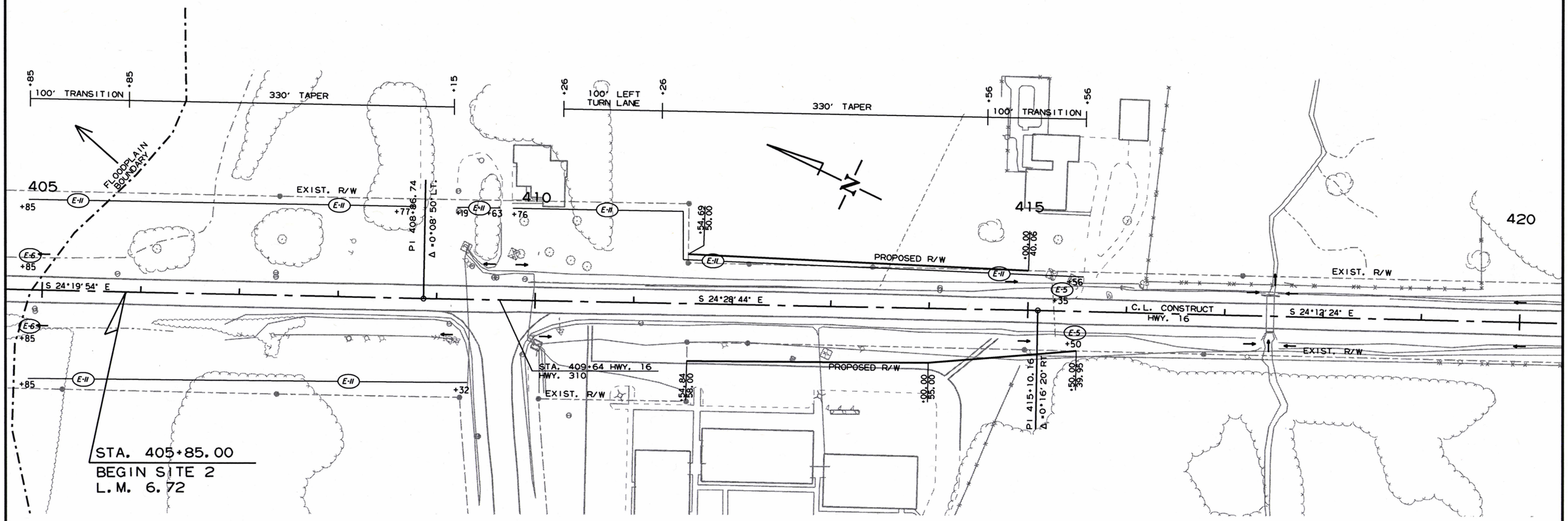
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAGS)
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)
SILT FENCE (E-11)
(4 LOCATIONS = 1511 LIN. FT.)

CLEARING AND GRUBBING STAGE
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	12	207

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

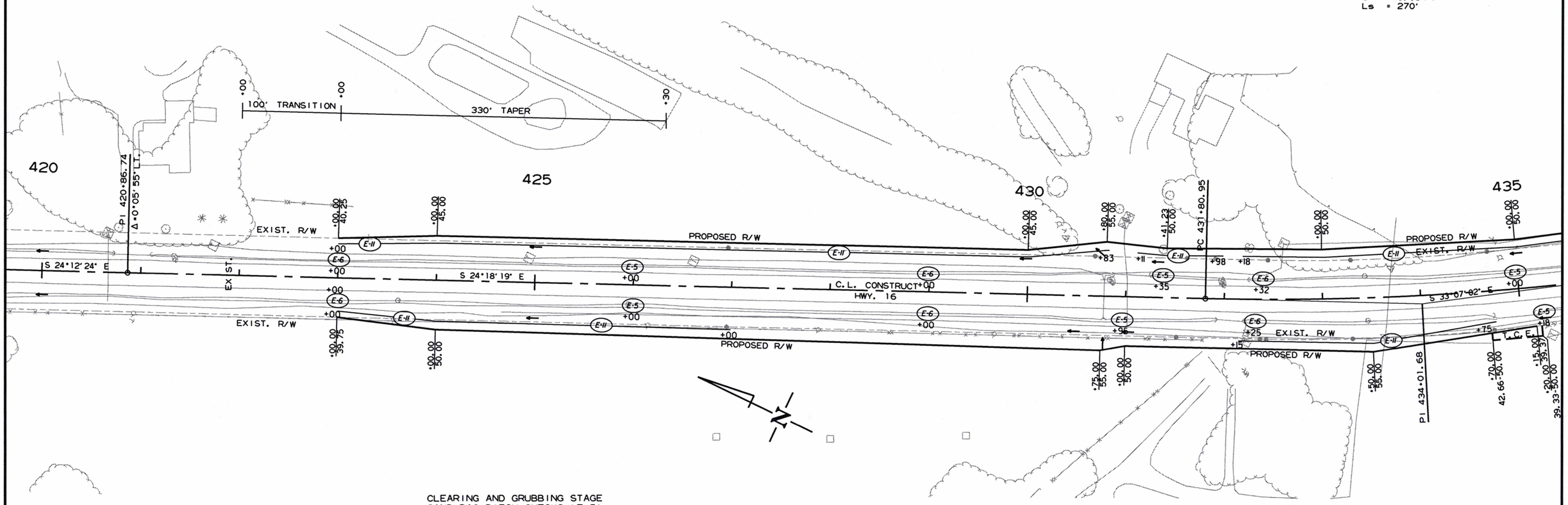
DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-8-19

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(6 LOCATIONS = 18 CU. YDS.)
SILT FENCE (E-11)
(5 LOCATIONS = 1822 LIN. FT.)

2/21/2019

R050279.DGN

CLEARING AND GRUBBING STAGE
SITE 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.		050279	13	207

(2) TEMPORARY EROSION CONTROL DETAILS

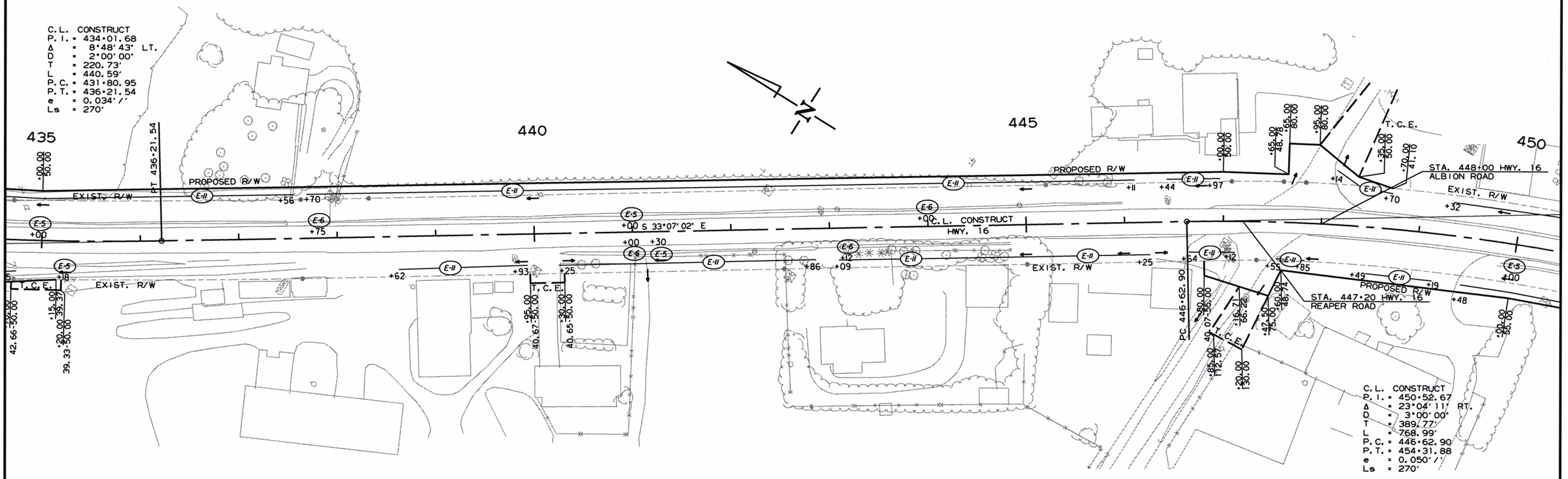
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)
SILT FENCE (E-11)
(12 LOCATIONS = 2200 LIN. FT.)

CLEARING AND GRUBBING STAGE
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	14	207

(2) TEMPORARY EROSION CONTROL DETAILS

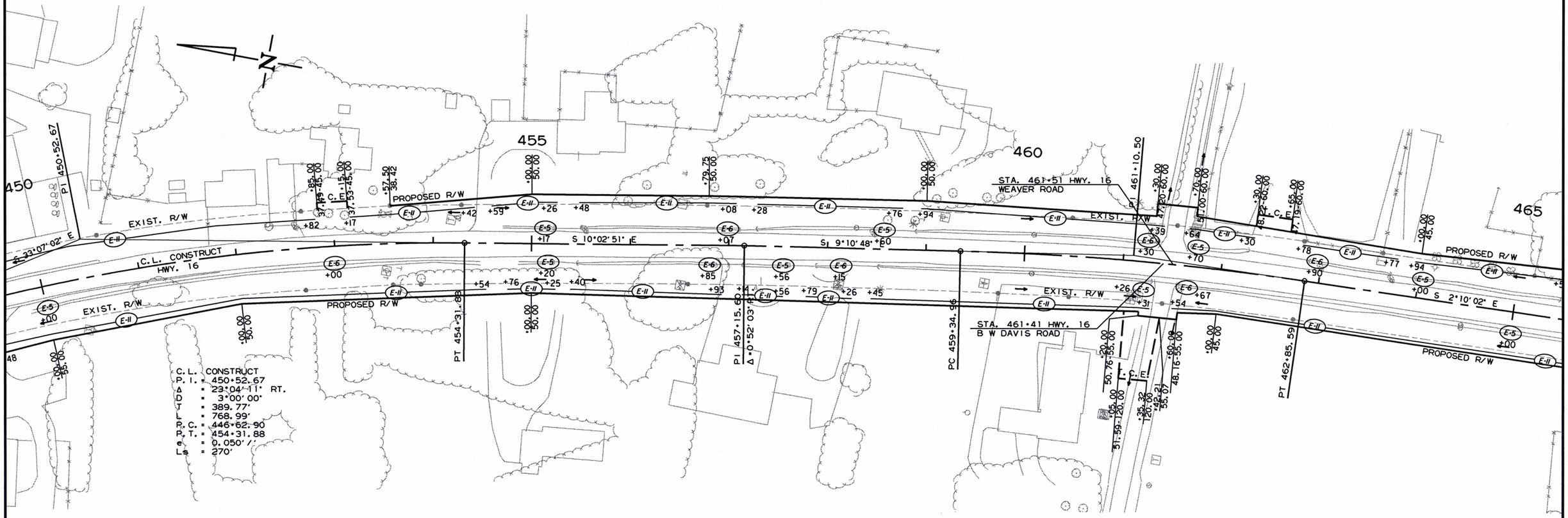
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



C.L. CONSTRUCT
P.I. = 450+52.67
Δ = 23°04'11" RT.
D = 3°00'00"
T = 389.77'
L = 768.99'
P.C. = 446+62.90
P.T. = 454+31.88
e = 0.050'/'
Ls = 270'

CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAGS)
ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YDS.)
SILT FENCE (E-11)
(16 LOCATIONS = 2680 LIN. FT.)

C.L. CONSTRUCT
P.I. = 461+10.50
Δ = 7°00'45" RT.
D = 2°00'00"
T = 175.53'
L = 350.63'
P.C. = 459+34.96
P.T. = 462+85.59
e = 0.034'/'
Ls = 270'

CLEARING AND GRUBBING STAGE
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	15	207

(2) TEMPORARY EROSION CONTROL DETAILS

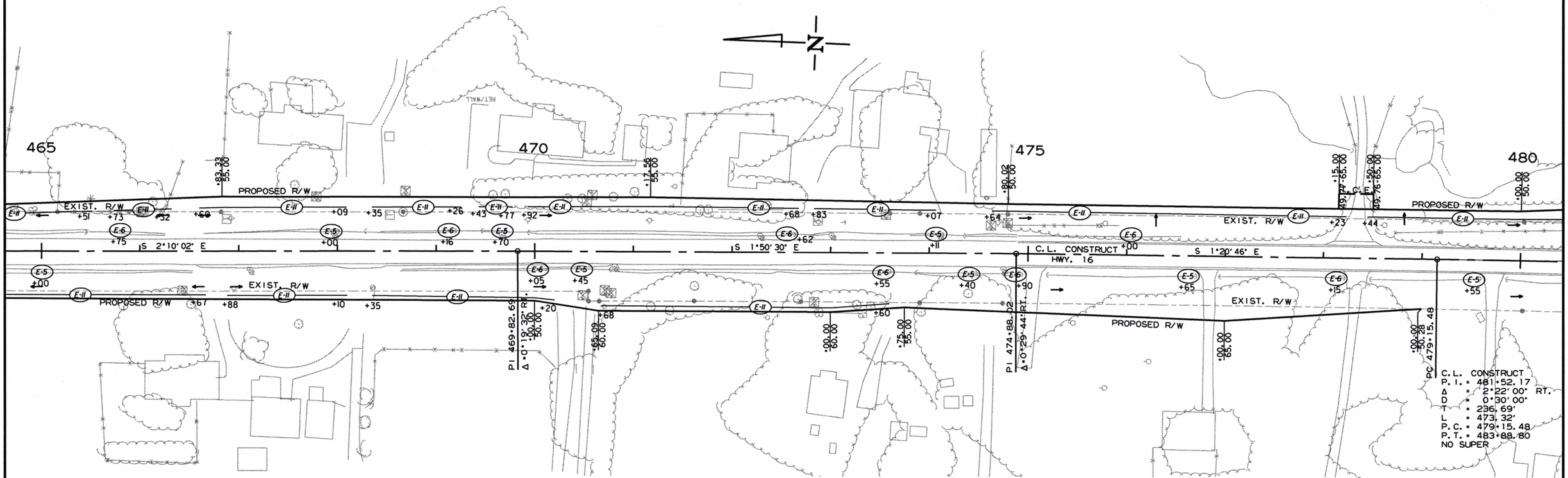
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAGS)
ROCK DITCH CHECKS (E-6)
(8 LOCATIONS = 24 CU. YDS.)
SILT FENCE (E-11)
(13 LOCATIONS = 2069 LIN. FT.)

2/21/2019

R050279.DGN

CLEARING AND GRUBBING STAGE
SITE 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.		050279	16	207

(2) TEMPORARY EROSION CONTROL DETAILS

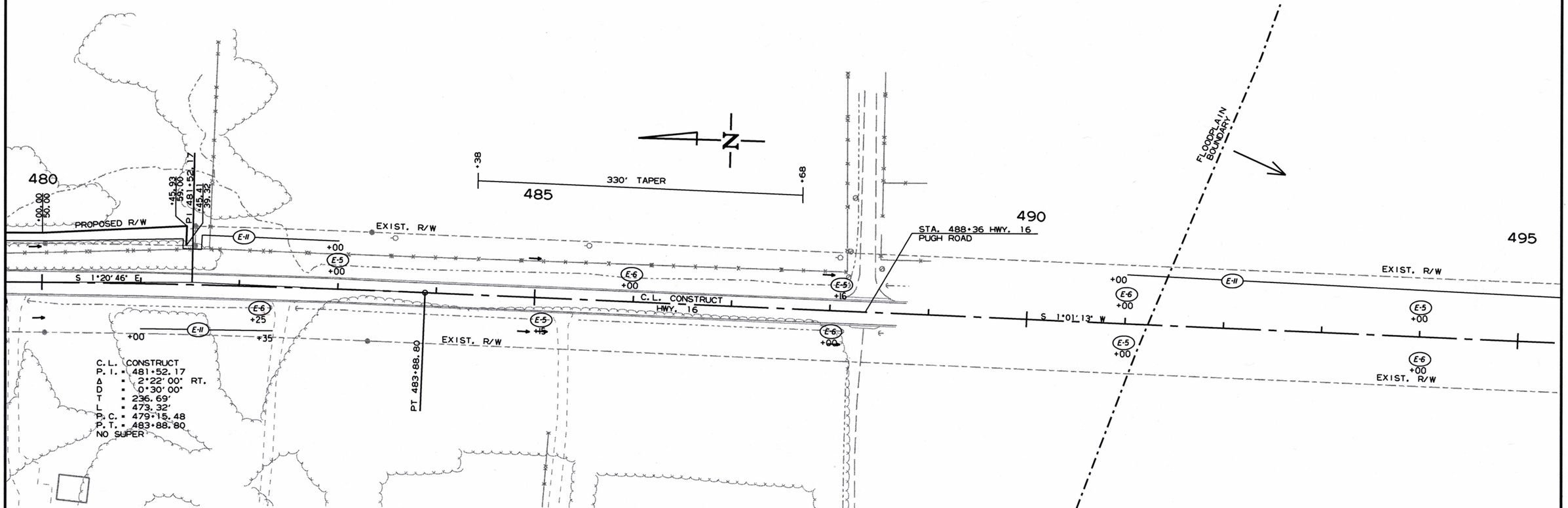
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAGS)
ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YDS.)
SILT FENCE (E-11)
(3 LOCATIONS = 872 LIN. FT.)

2/21/2019

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CLEARING AND GRUBBING STAGE
SITE 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.		050279	17	207

(2) TEMPORARY EROSION CONTROL DETAILS

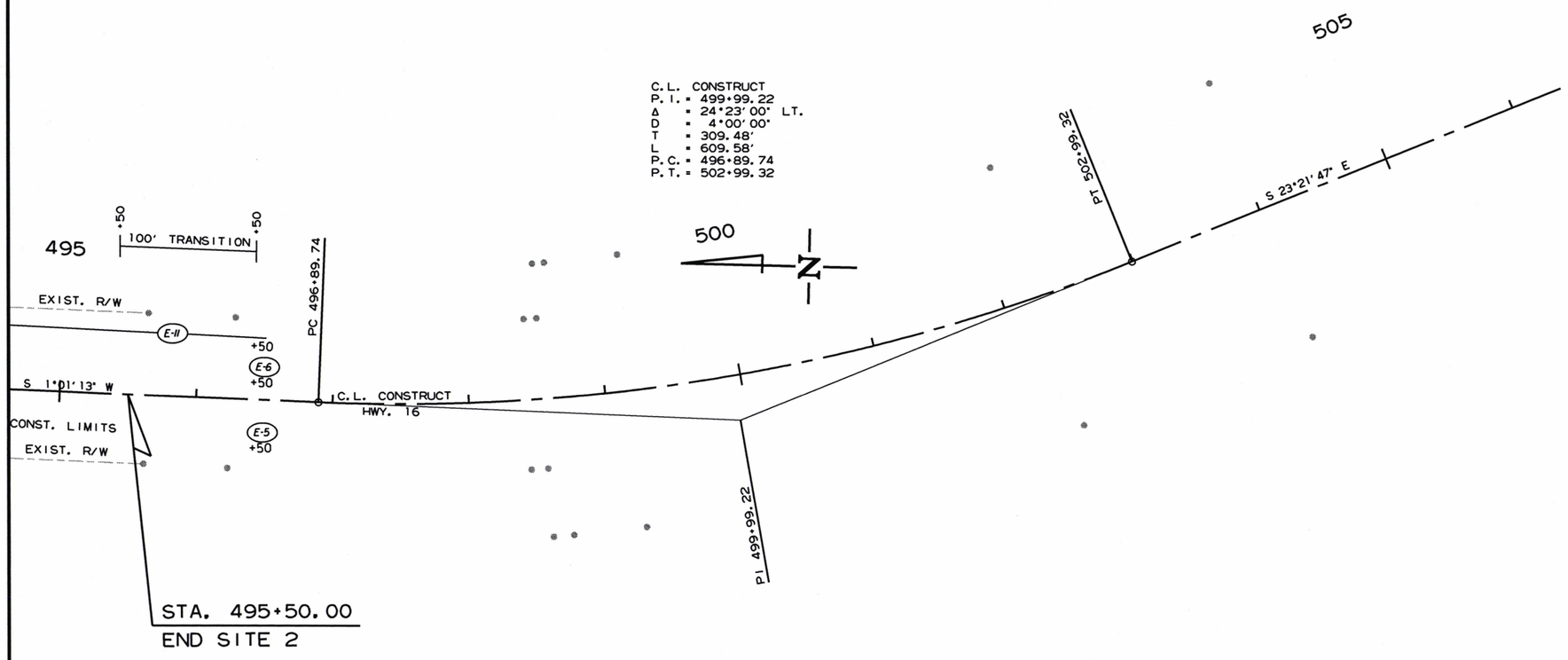
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(1 LOCATIONS = 22 BAGS)
ROCK DITCH CHECKS (E-6)
(1 LOCATIONS = 3 CU. YDS.)
SILT FENCE (E-11)
(1 LOCATIONS = 150 LIN. FT.)

2/21/2019

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CLEARING AND GRUBBING STAGE
SITE 2
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

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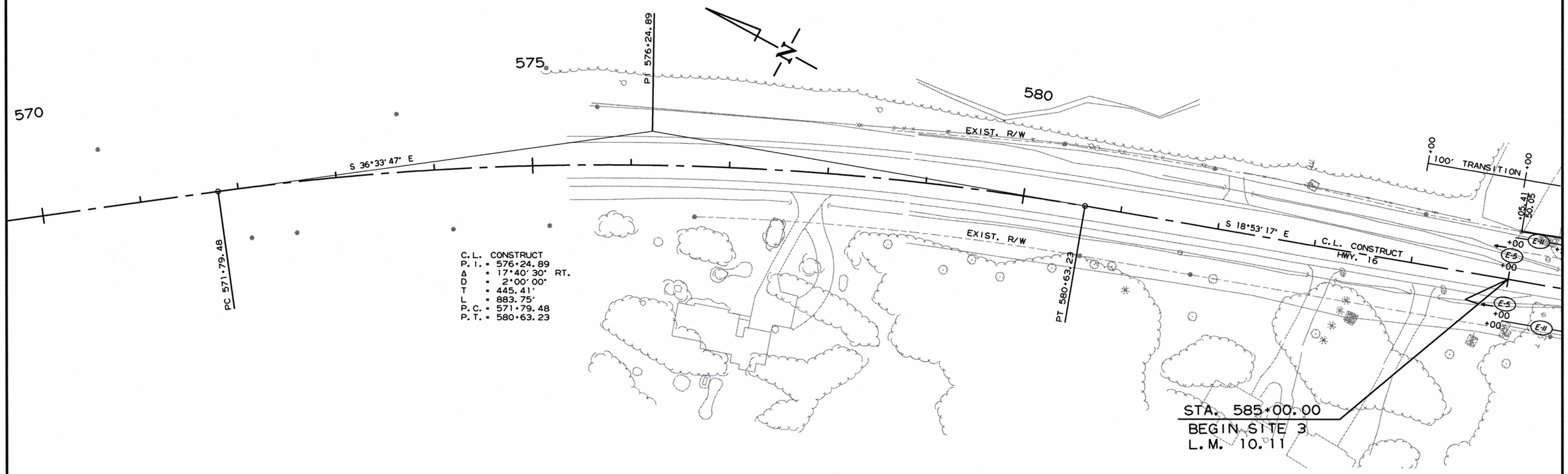
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	19	207

(2) TEMPORARY EROSION CONTROL DETAILS

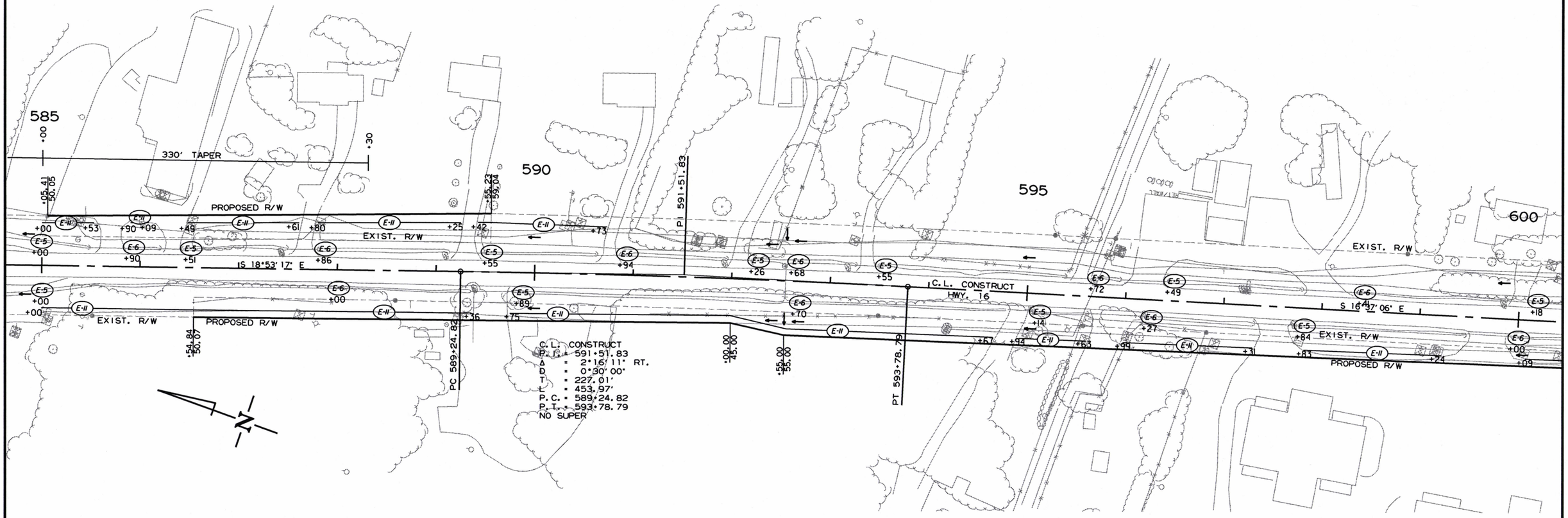
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(10 LOCATIONS = 220 BAGS)
ROCK DITCH CHECKS (E-6)
(9 LOCATIONS = 27 CU. YDS.)
SILT FENCE (E-11)
(10 LOCATIONS = 1732 LIN. FT.)

CLEARING AND GRUBBING STAGE
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.DGN

REVISIONS

DATE OF REVISION	REVISION

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.		050279	20	207

(2) TEMPORARY EROSION CONTROL DETAILS

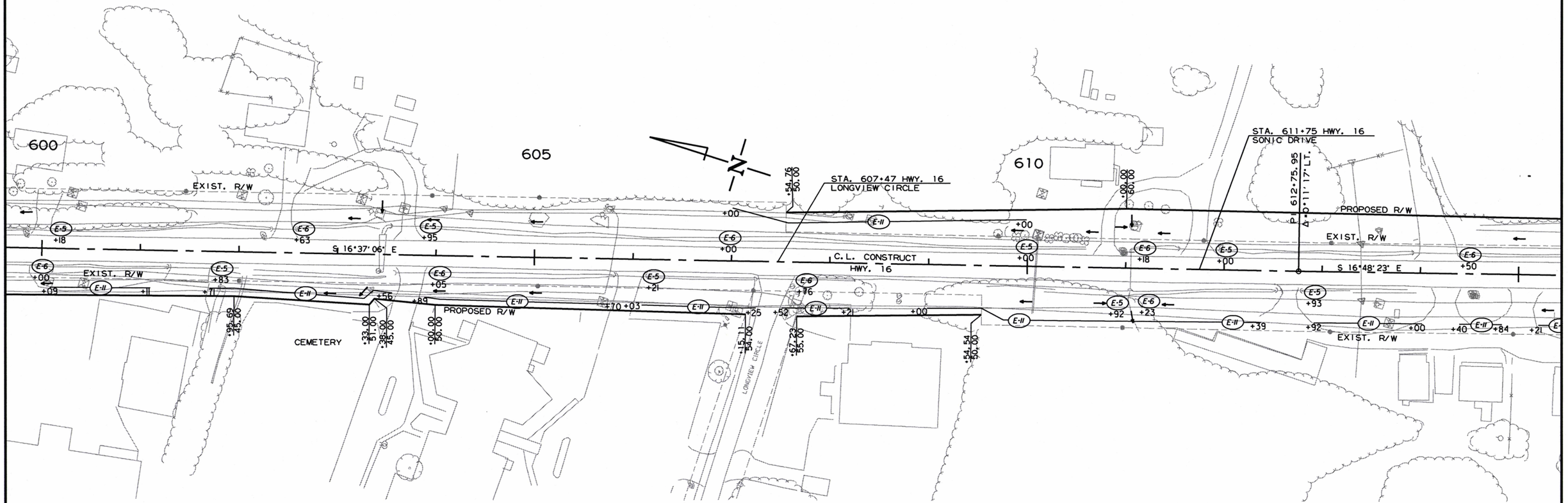
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

(E-5) SAND BAG DITCH CHECKS

(E-6) ROCK DITCH CHECKS

(E-11) SILT FENCE



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAGS)
ROCK DITCH CHECKS (E-6)
(8 LOCATIONS = 24 CU. YDS.)
SILT FENCE (E-11)
(9 LOCATIONS = 1464 LIN. FT.)

2/21/2019

R050279.DGN

CLEARING AND GRUBBING STAGE
SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

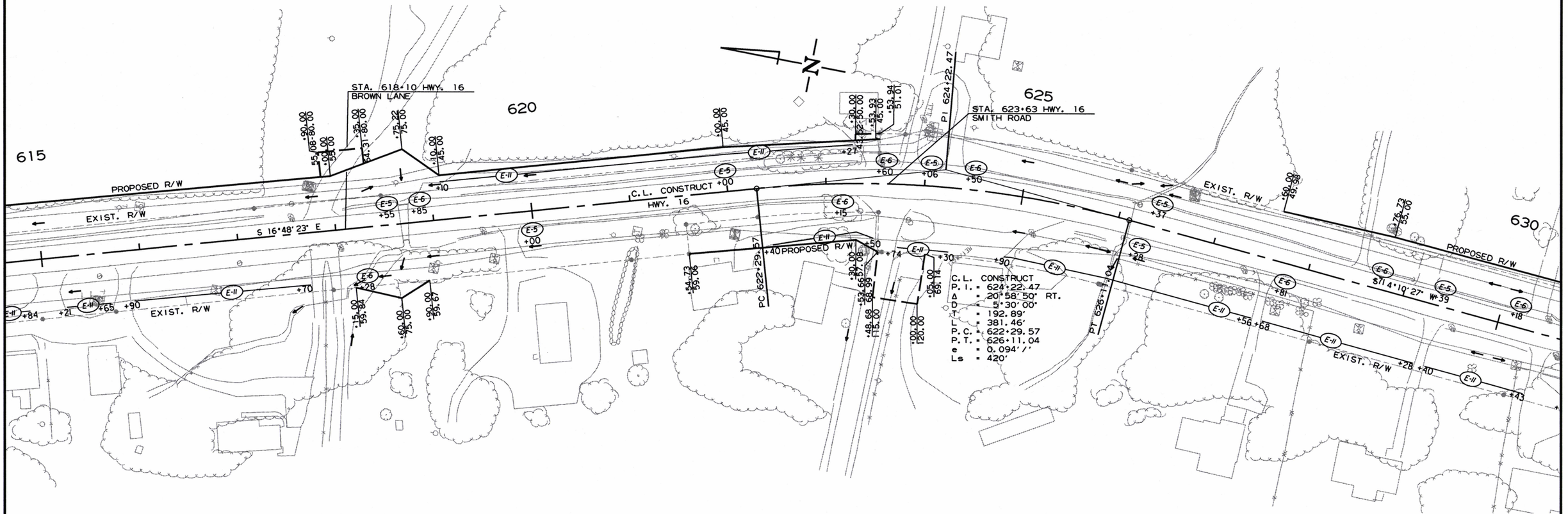
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	21	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(7 LOCATIONS = 154 BAGS)
ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YDS.)
SILT FENCE (E-11)
(8 LOCATIONS = 1230 LIN. FT.)

2/21/2019

R050279.DGN

CLEARING AND GRUBBING STAGE
SITE 3
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.		050279	22	207

(2) TEMPORARY EROSION CONTROL DETAILS

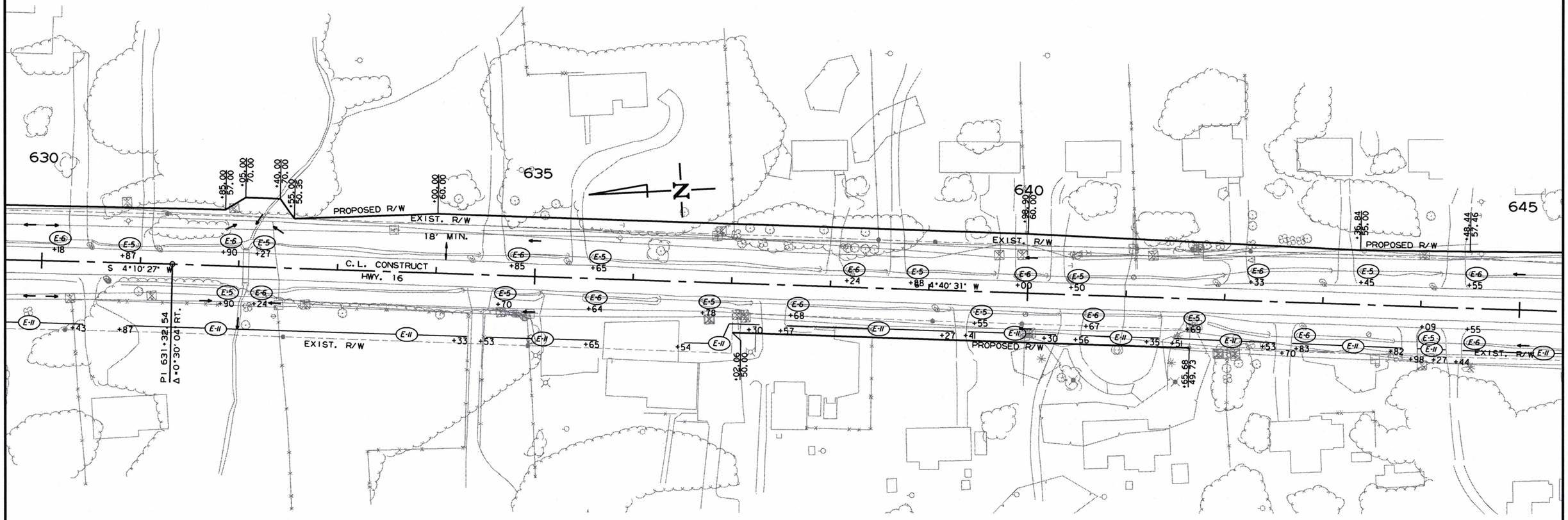
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(12 LOCATIONS = 264 BAGS)
ROCK DITCH CHECKS (E-6)
(13 LOCATIONS = 39 CU. YDS.)
SILT FENCE (E-11)
(11 LOCATIONS = 1227 LIN. FT.)

2/21/2019

R050279.DGN

CLEARING AND GRUBBING STAGE
SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

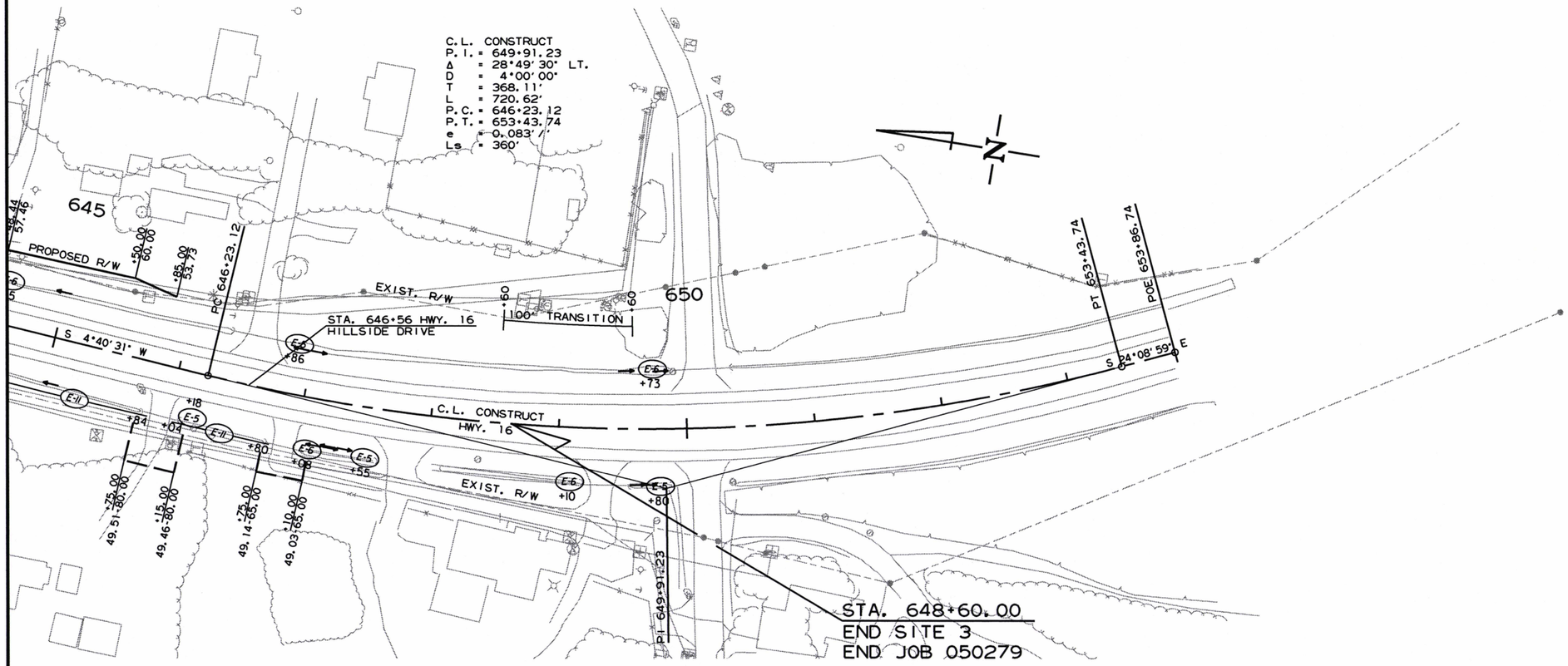
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	23	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



CLEARING AND GRUBBING STAGE
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YDS.)
SILT FENCE (E-11)
(2 LOCATIONS = 159 LIN. FT.)

CLEARING AND GRUBBING STAGE
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	24	207

(2) TEMPORARY EROSION CONTROL DETAILS

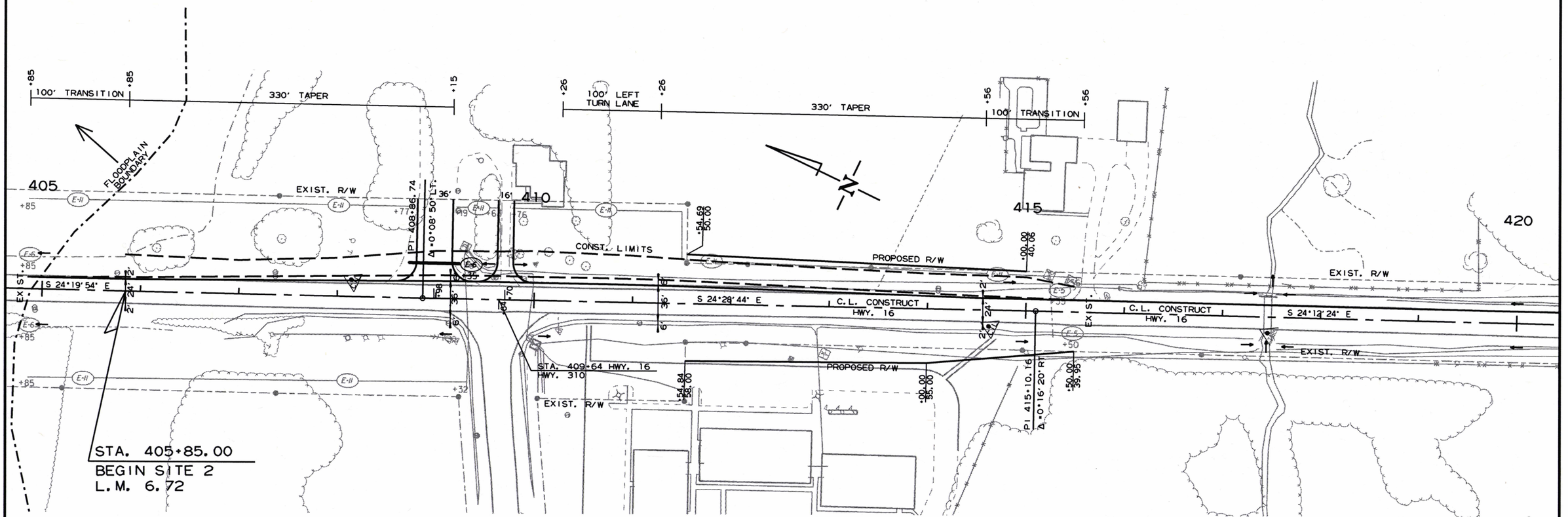
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
ROCK DITCH CHECKS (E-6)
(1 LOCATIONS = 3 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 1
SITE 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.		050279	25	207

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

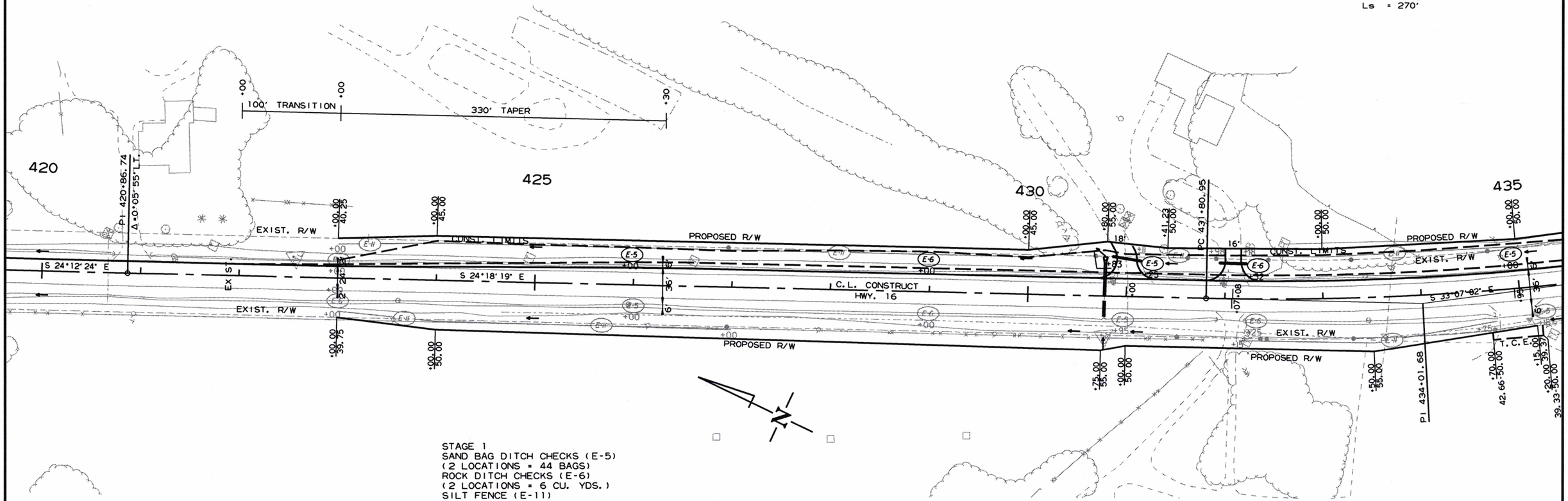
DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

C. L. CONSTRUCT
P. I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P. C. = 431+80.95
P. T. = 436+21.54
e = 0.034'/'
Ls = 270'



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAGS)
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)
SILT FENCE (E-11)
(1 LOCATIONS = 34 LIN. FT.)

STAGE 1
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	26	207

(2) TEMPORARY EROSION CONTROL DETAILS

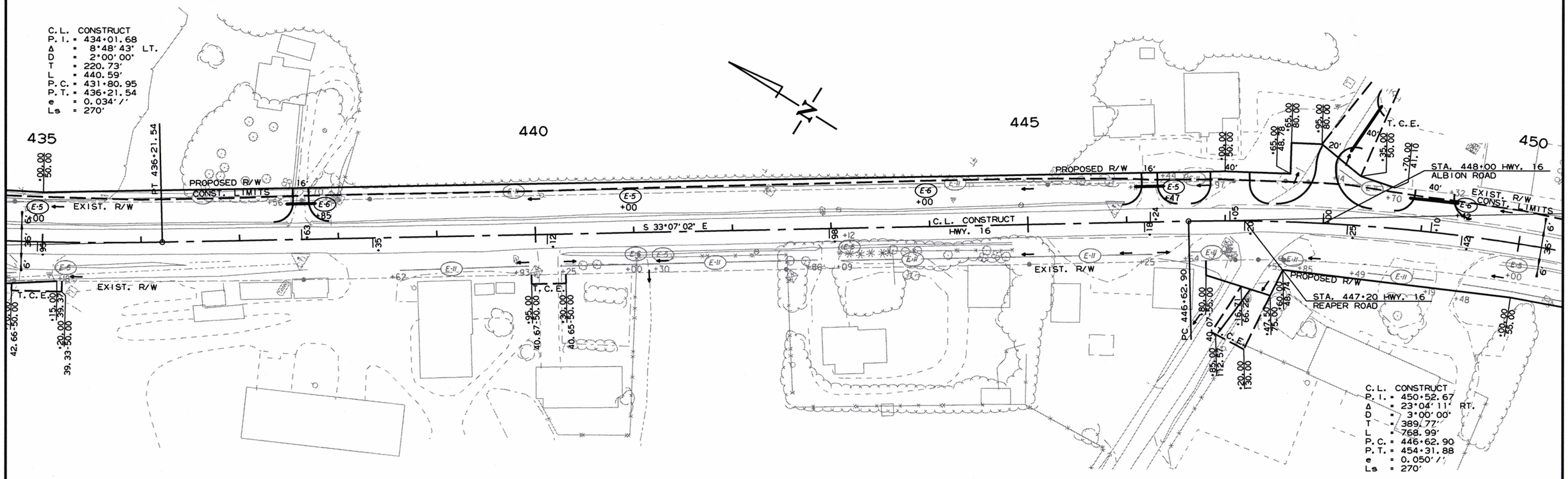
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAGS)
ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YDS.)

STAGE 1
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	27	207

(2) TEMPORARY EROSION CONTROL DETAILS

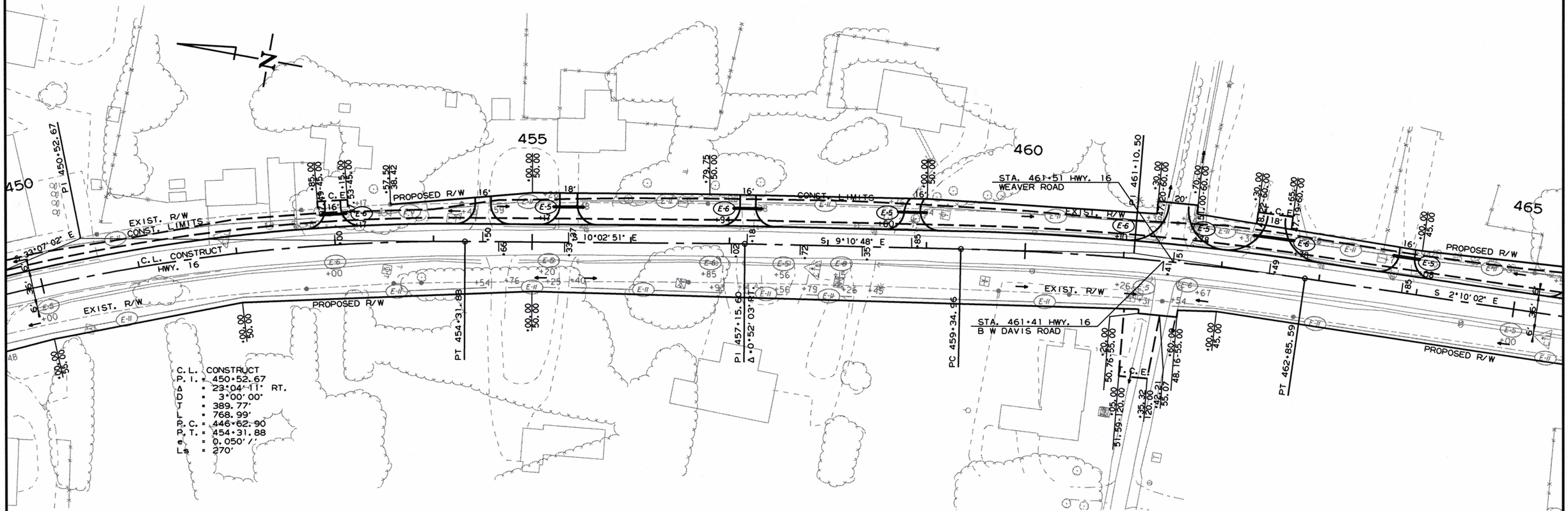
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

STAGE 1
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	28	207

(2) TEMPORARY EROSION CONTROL DETAILS

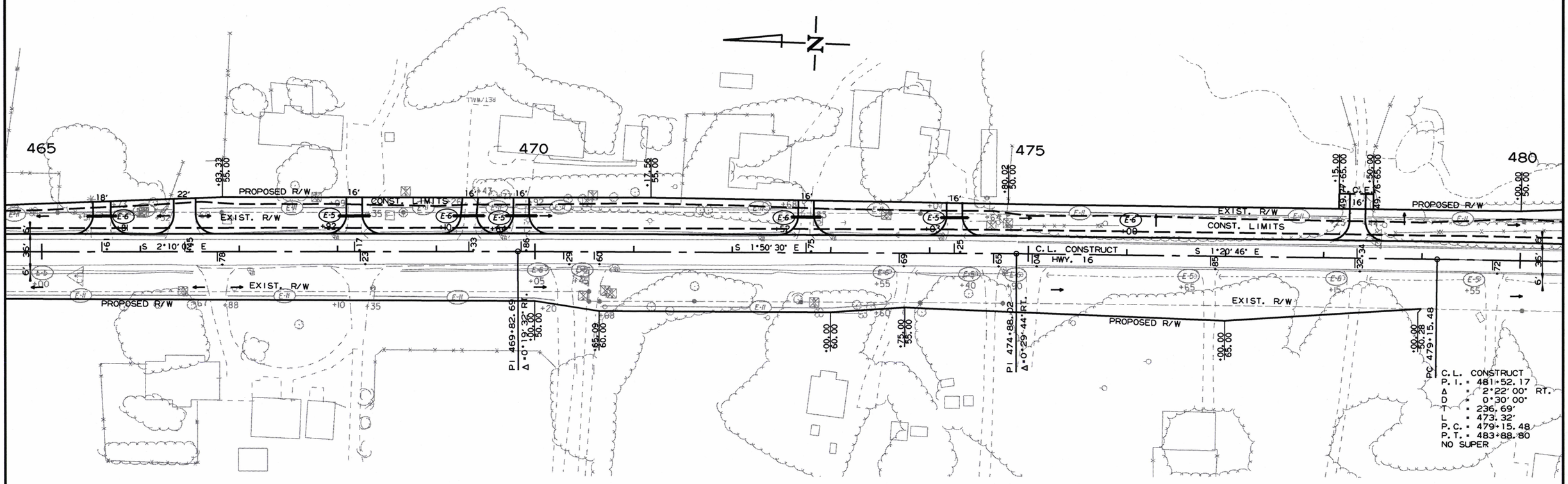
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

STAGE I
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	29	207

(2) TEMPORARY EROSION CONTROL DETAILS

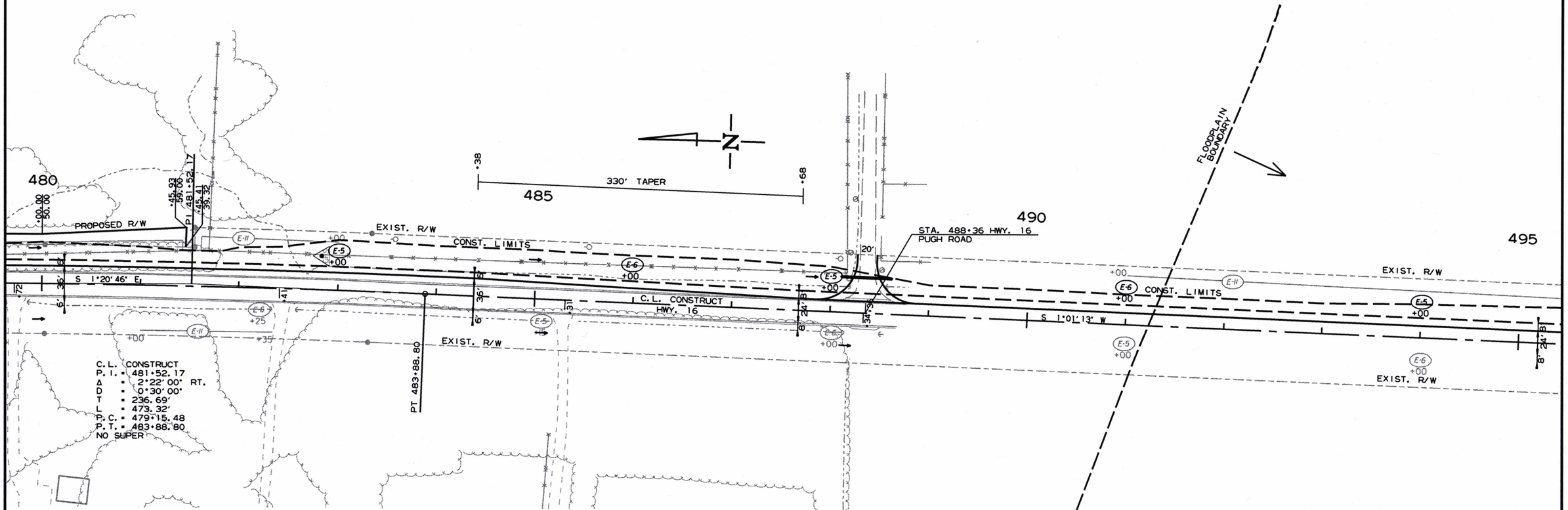
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAGS)
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 1
SITE 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.		050279	30	207

(2) TEMPORARY EROSION CONTROL DETAILS

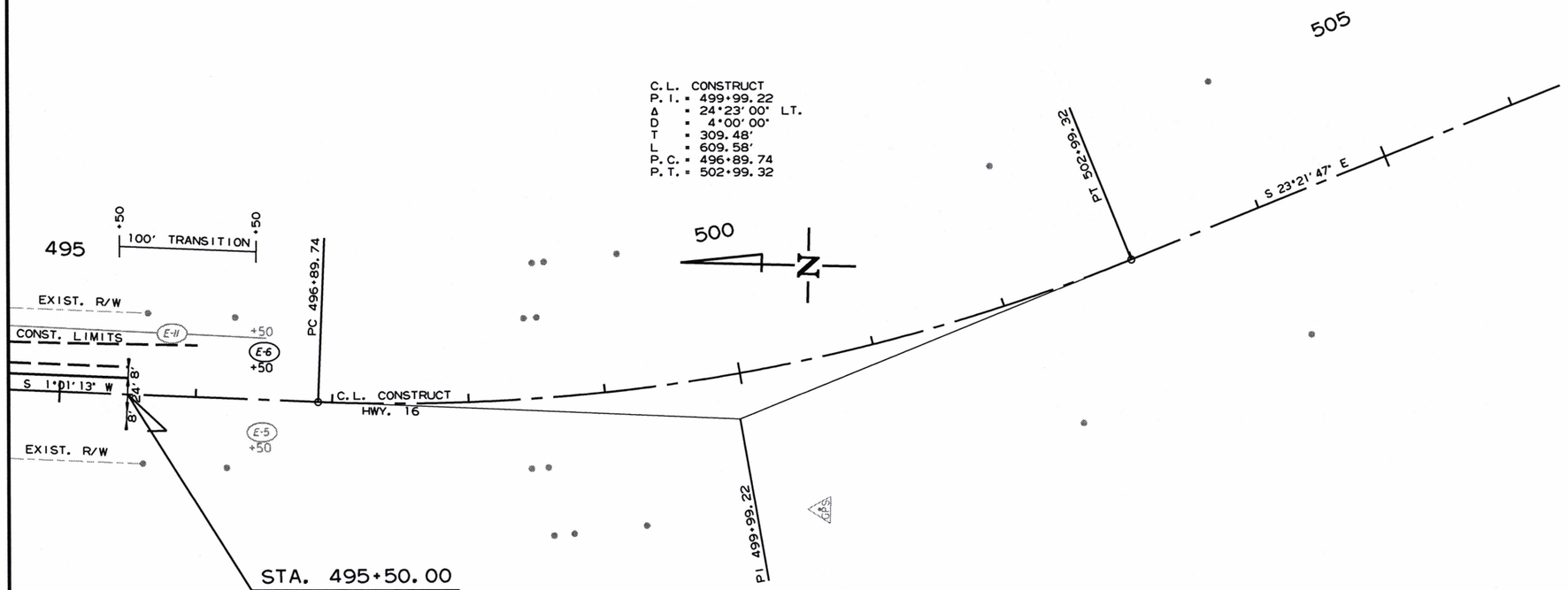
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
ROCK DITCH CHECKS (E-6)
(1 LOCATIONS = 3 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 1
SITE 2
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

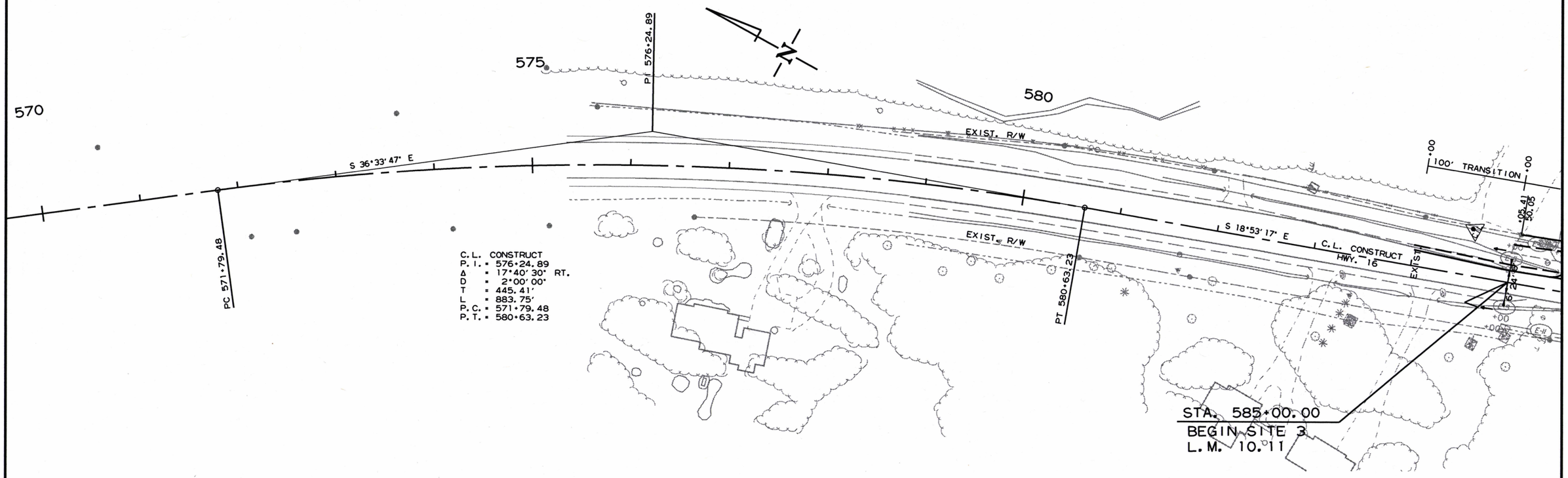
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	31	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE I
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	32	207

(2) TEMPORARY EROSION CONTROL DETAILS

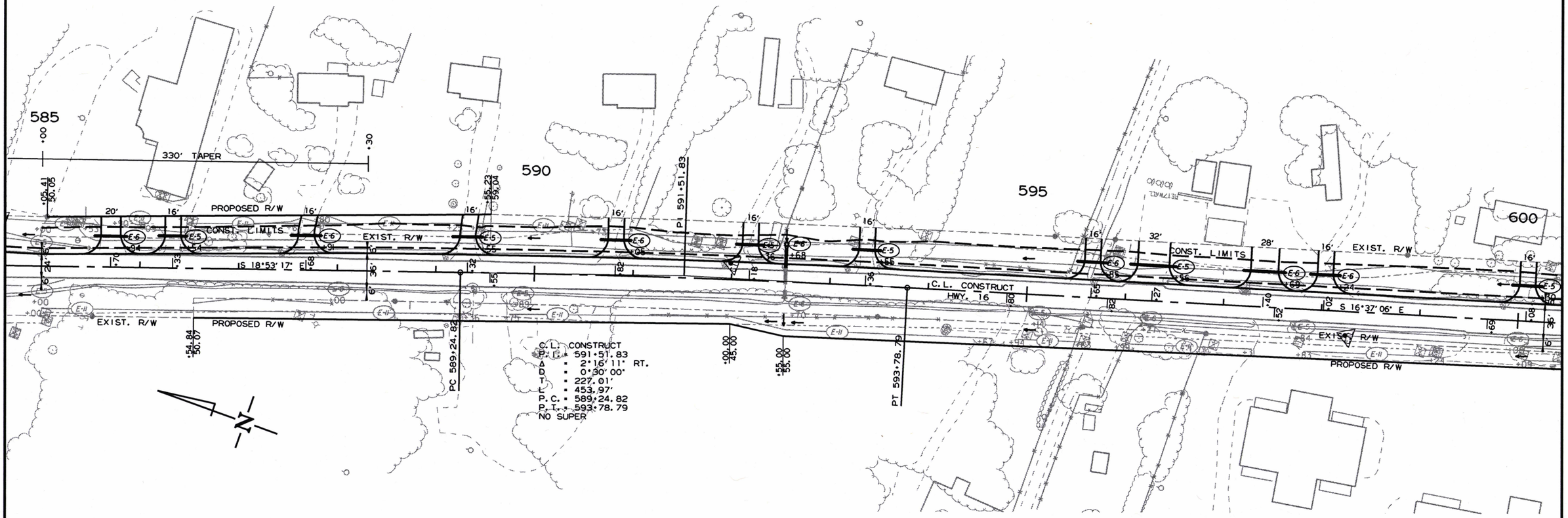
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAGS)
ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YDS.)

STAGE 1
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	33	207

(2) TEMPORARY EROSION CONTROL DETAILS

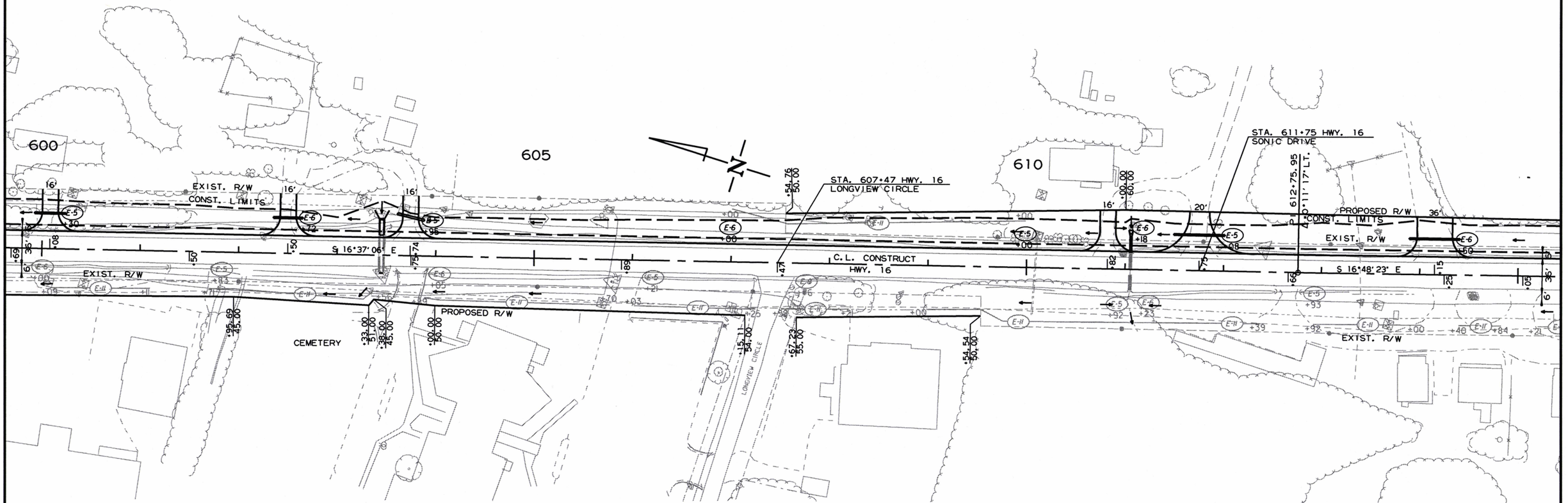
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 1
SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

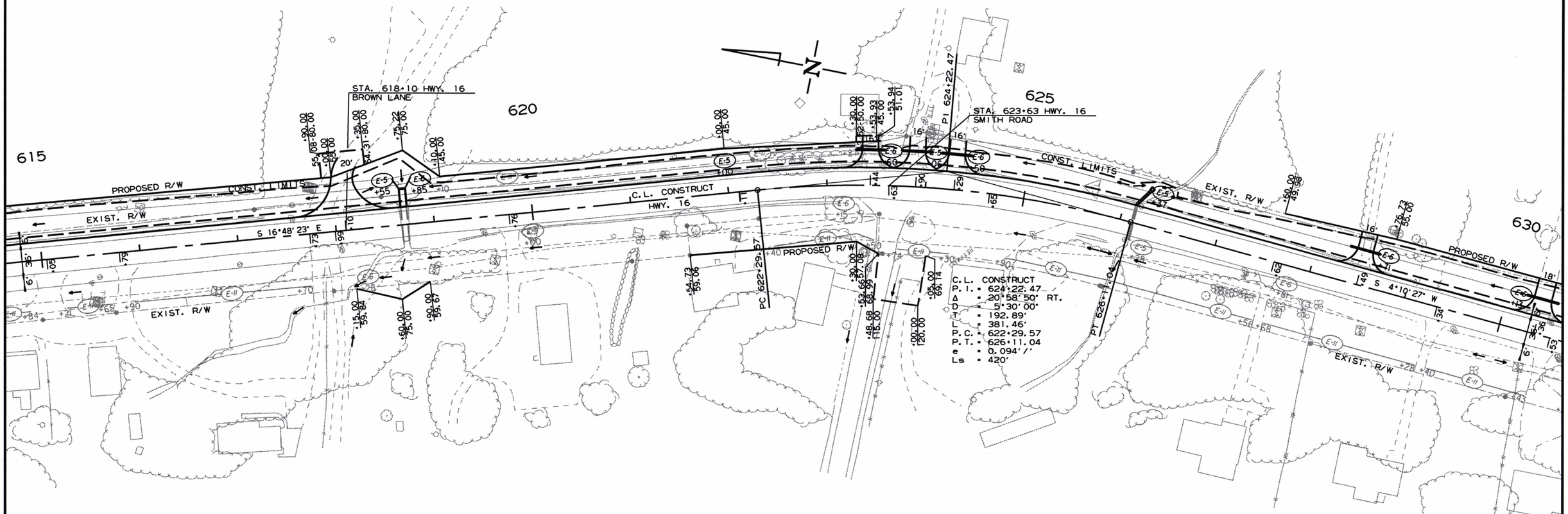
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050279	34	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 1
SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

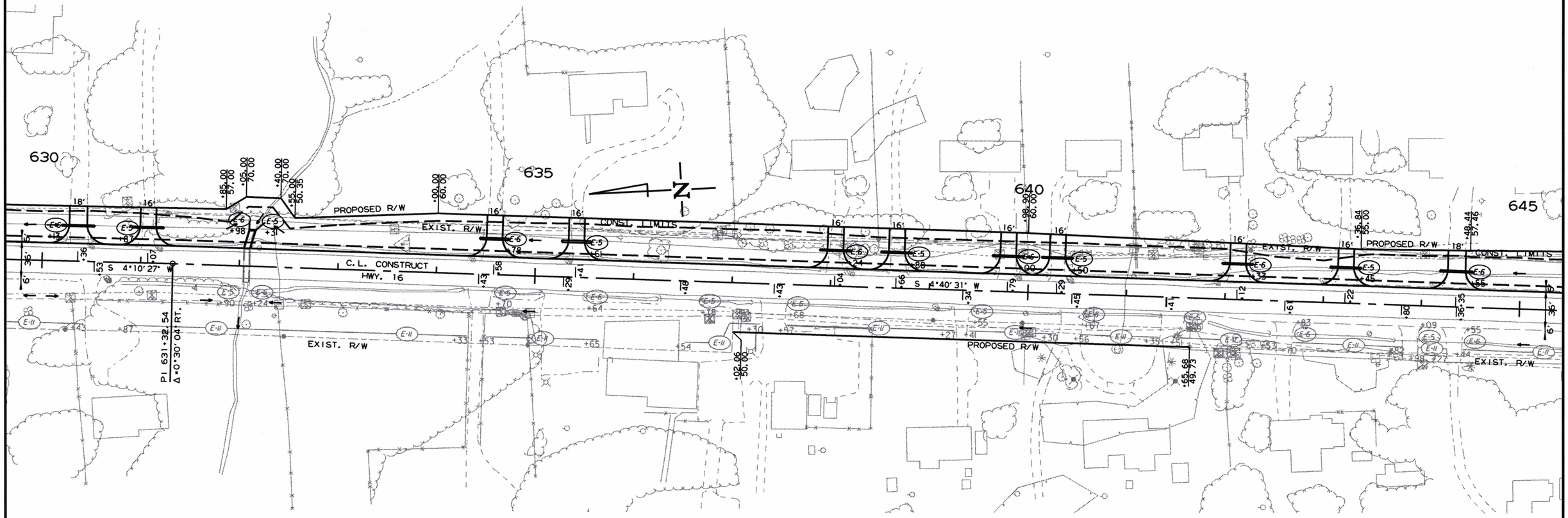
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	35	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAGS)
ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YDS.)

STAGE I
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.DGN

REVISIONS

DATE OF REVISION	REVISION

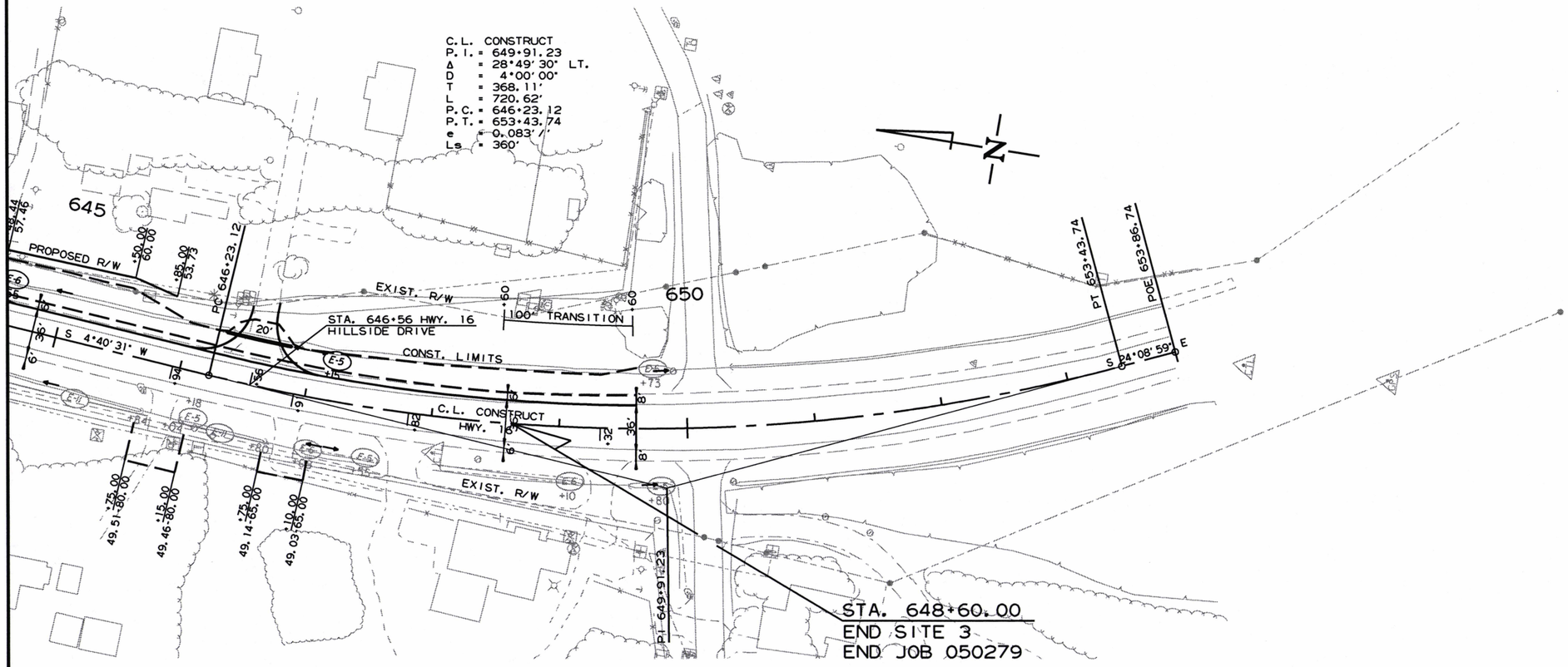
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	36	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 1
SAND BAG DITCH CHECKS (E-5)
(1 LOCATIONS = 22 BAGS)

STAGE 1
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	37	207

(2) TEMPORARY EROSION CONTROL DETAILS

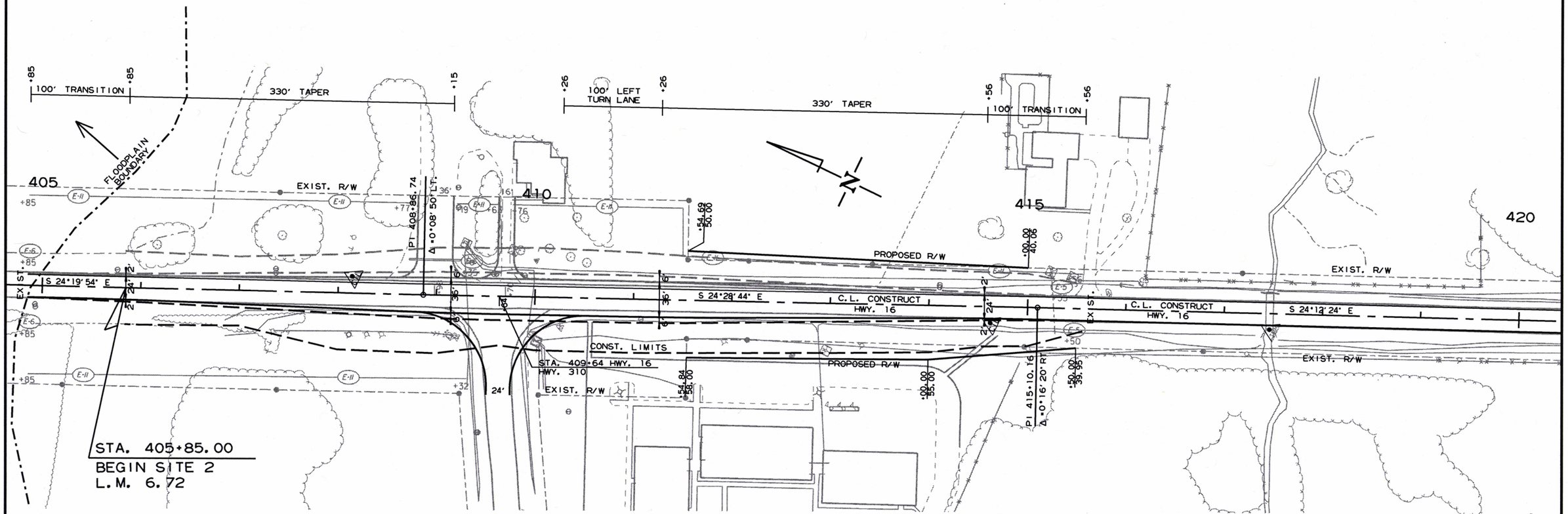
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



2/21/2019

R050279.DGN

STAGE 2
SITE 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.		050279	38	207

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

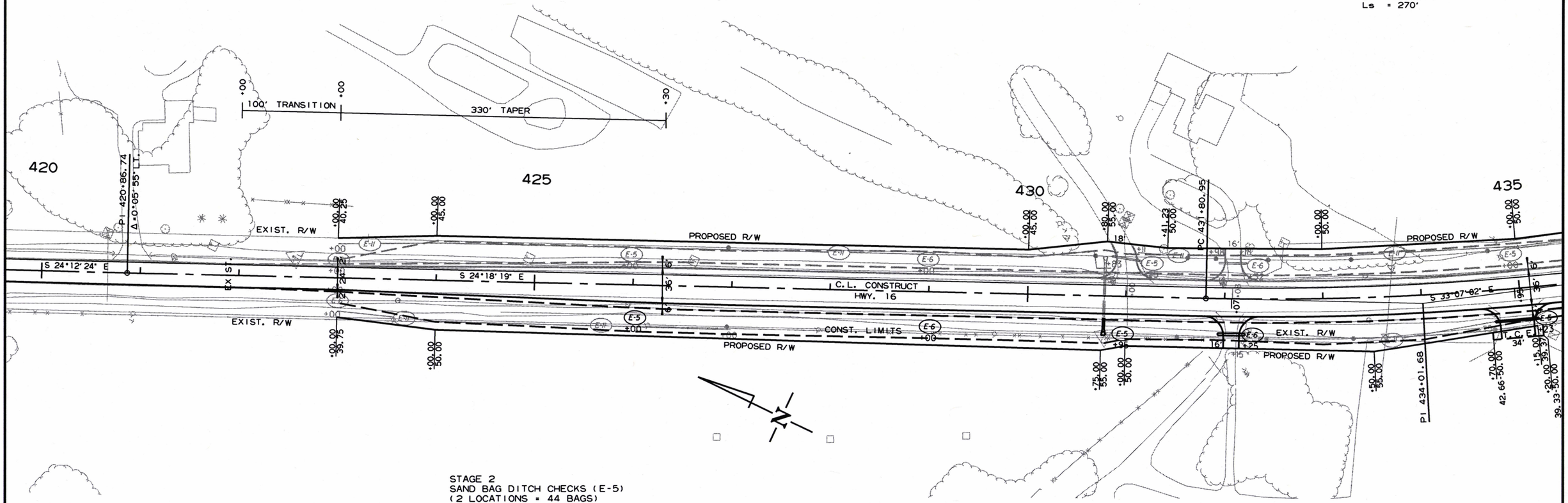
DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAGS)
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)

STAGE 2
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	39	207

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

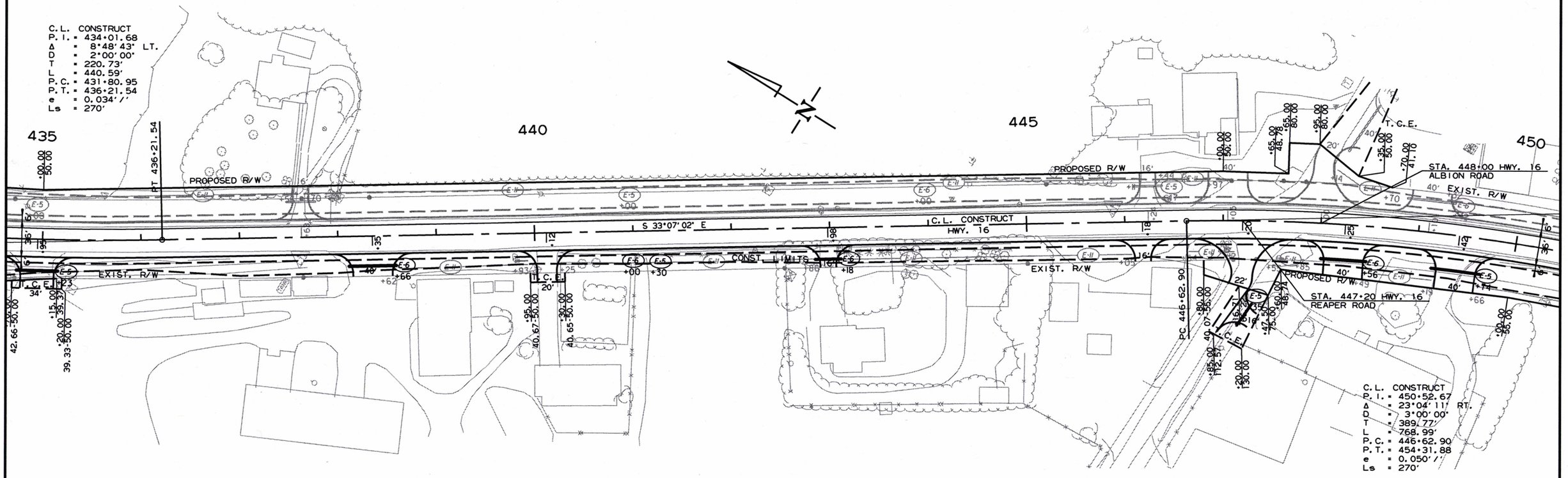
DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

STAGE 2
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	40	207

(2) TEMPORARY EROSION CONTROL DETAILS

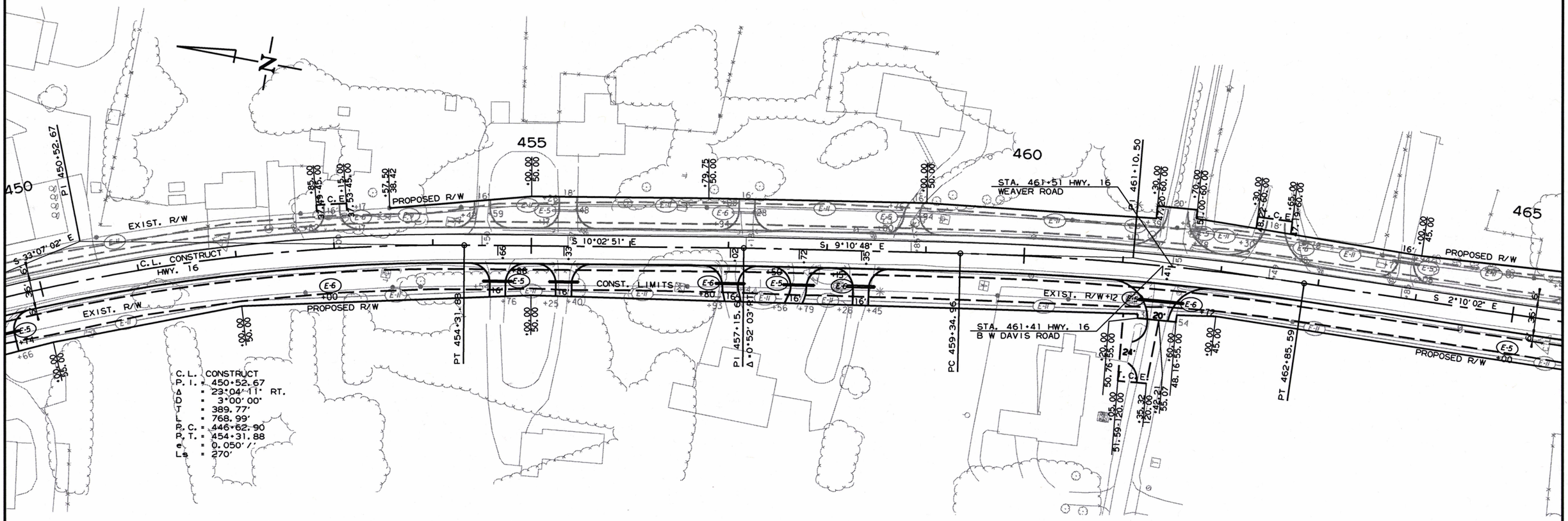
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

STAGE 2
SITE 2
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	41	207

(2) TEMPORARY EROSION CONTROL DETAILS

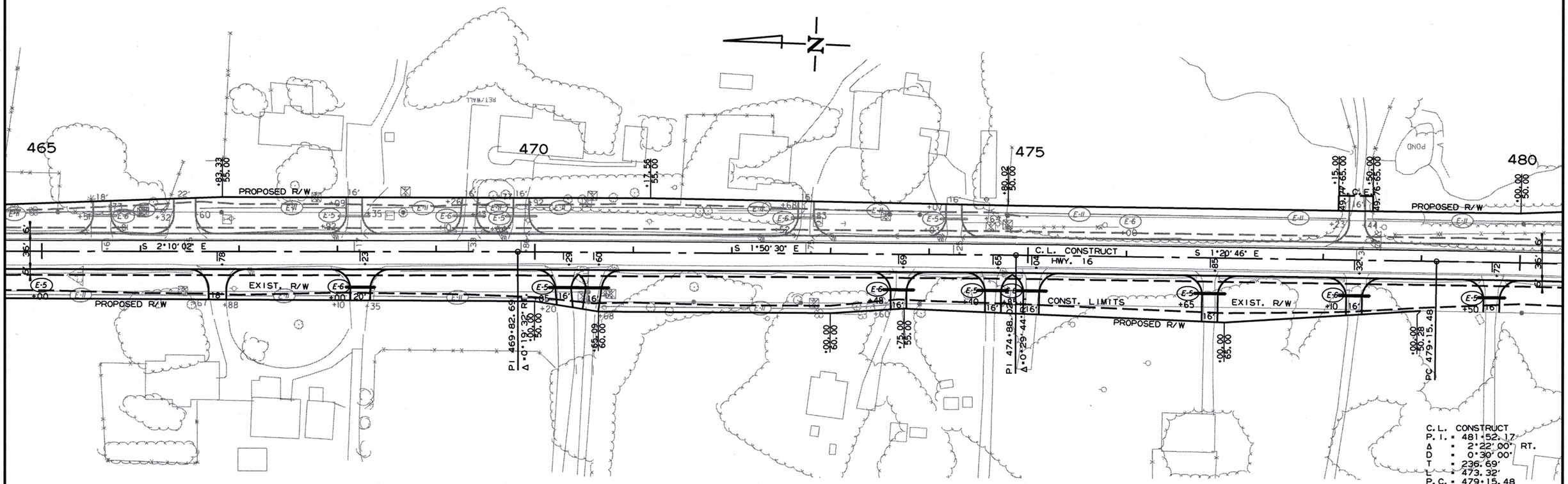
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 2
SITE 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.		050279	42	207

(2) TEMPORARY EROSION CONTROL DETAILS

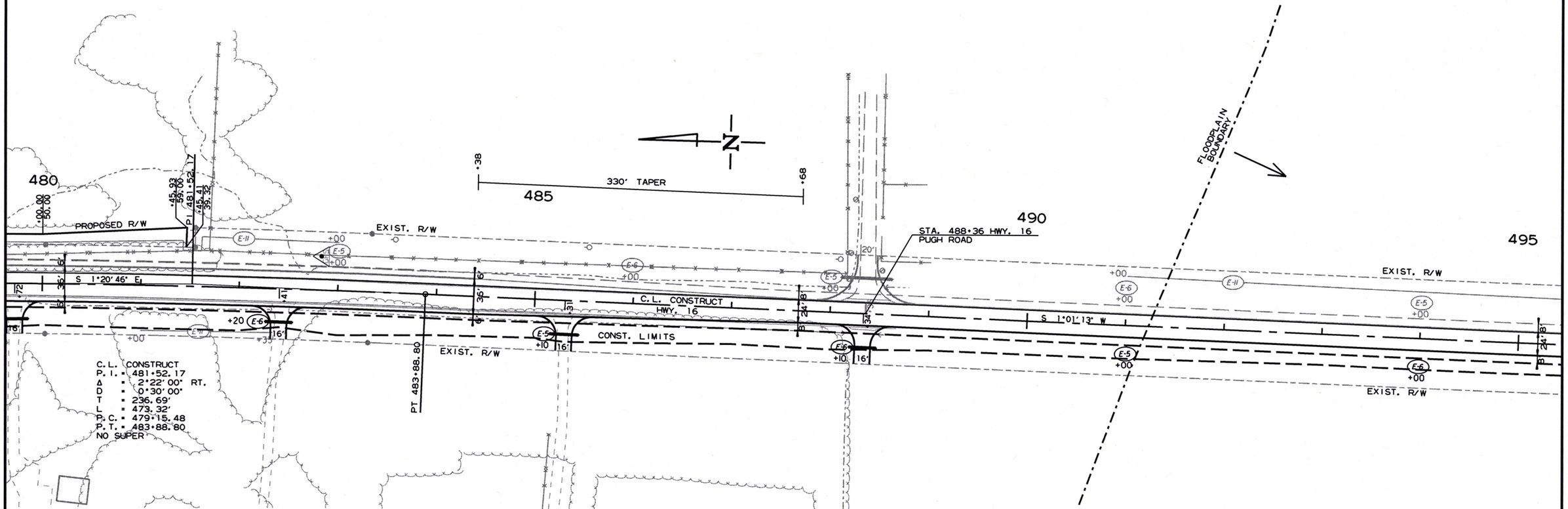
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAGS)
ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 2
SITE 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.		050279	43	207

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

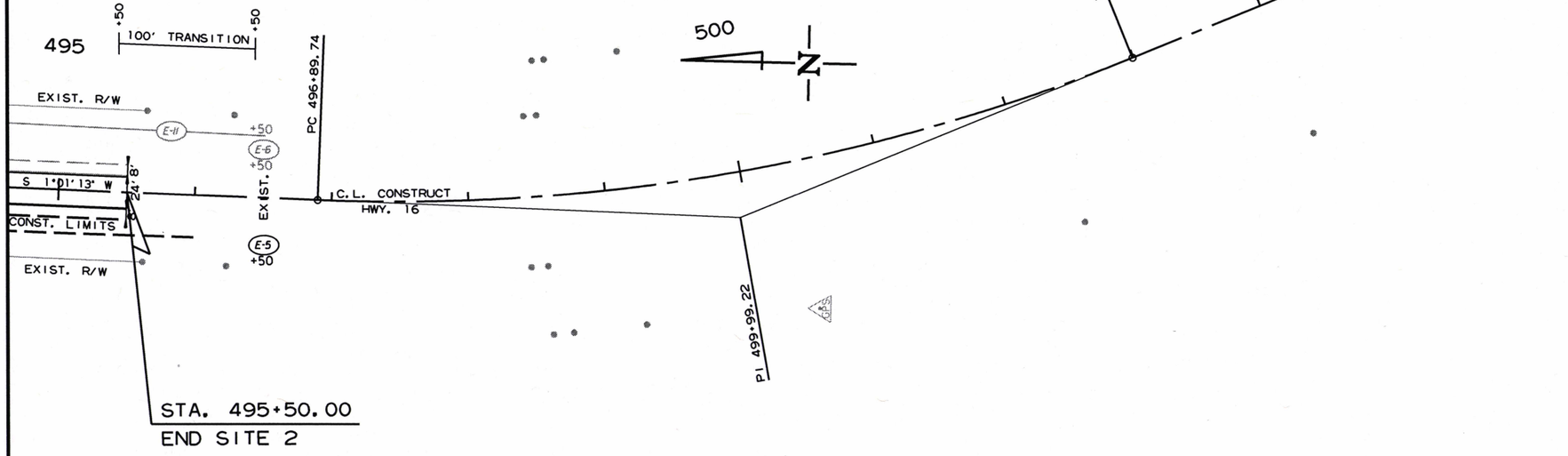
DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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

C. L. CONSTRUCT
P. I. = 499+99.22
Δ = 24°23' 00" LT.
D = 4°00' 00"
T = 309.48'
L = 609.58'
P. C. = 496+89.74
P. T. = 502+99.32



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(1 LOCATIONS = 22 BAGS)

2/21/2019

R050279.DGN

STAGE 2
SITE 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.		050279	44	207

(2) TEMPORARY EROSION CONTROL DETAILS

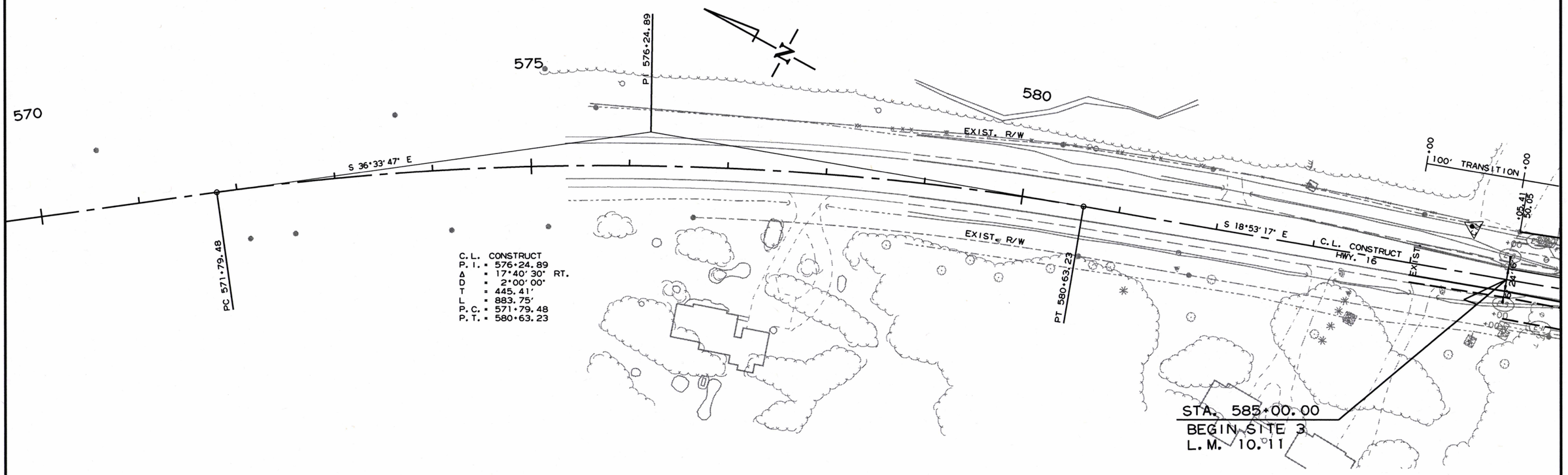
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.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.		050279	45	207

(2) TEMPORARY EROSION CONTROL DETAILS

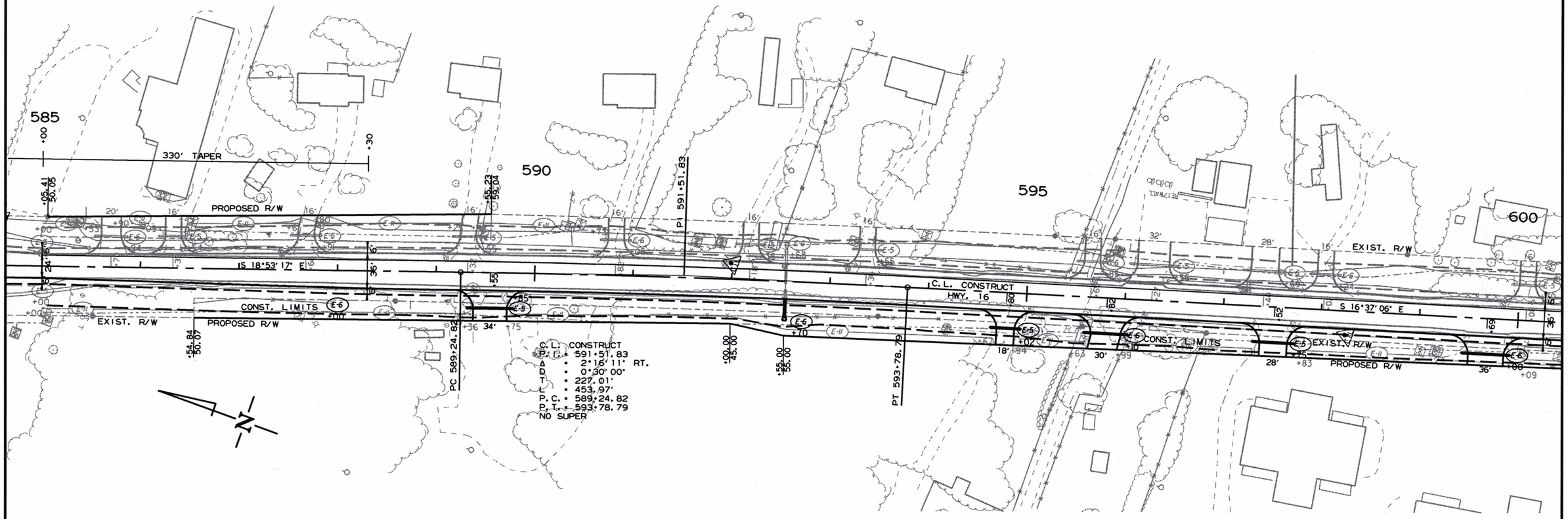
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAGS)
ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 2
SITE 3
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.		050279	46	207

(2) TEMPORARY EROSION CONTROL DETAILS

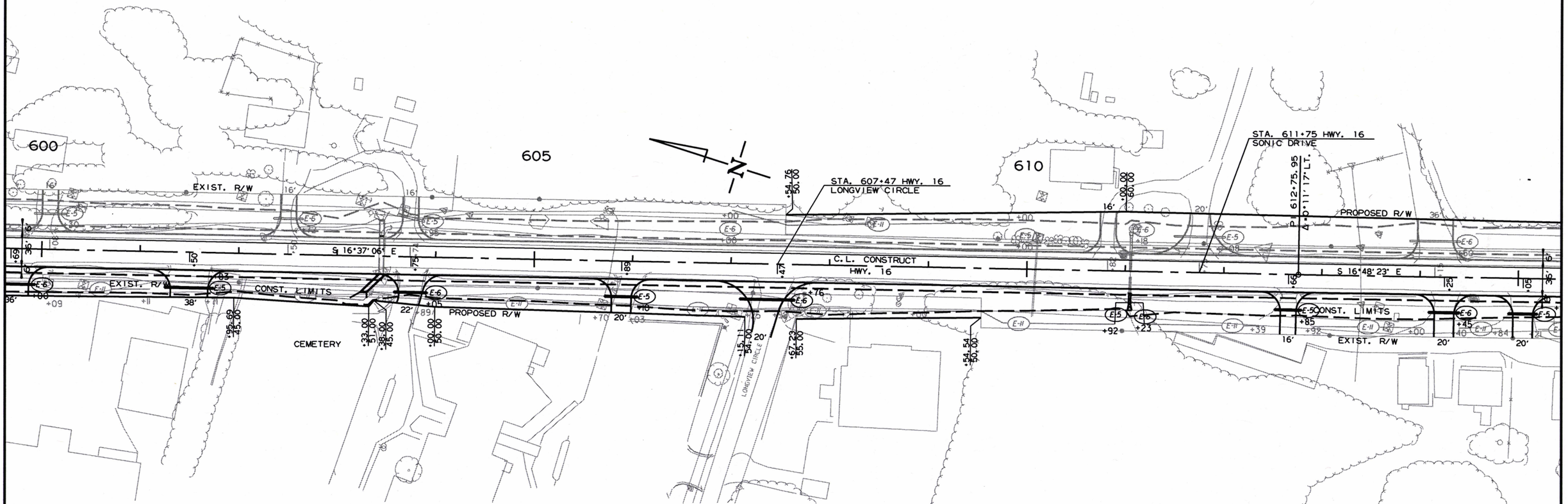
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAGS)
ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YDS.)
SILT FENCE (E-11)
(1 LOCATIONS = 72 LIN. FT.)

2/21/2019

R050279.DGN

STAGE 2
SITE 3
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.		050279	47	207

(2) TEMPORARY EROSION CONTROL DETAILS

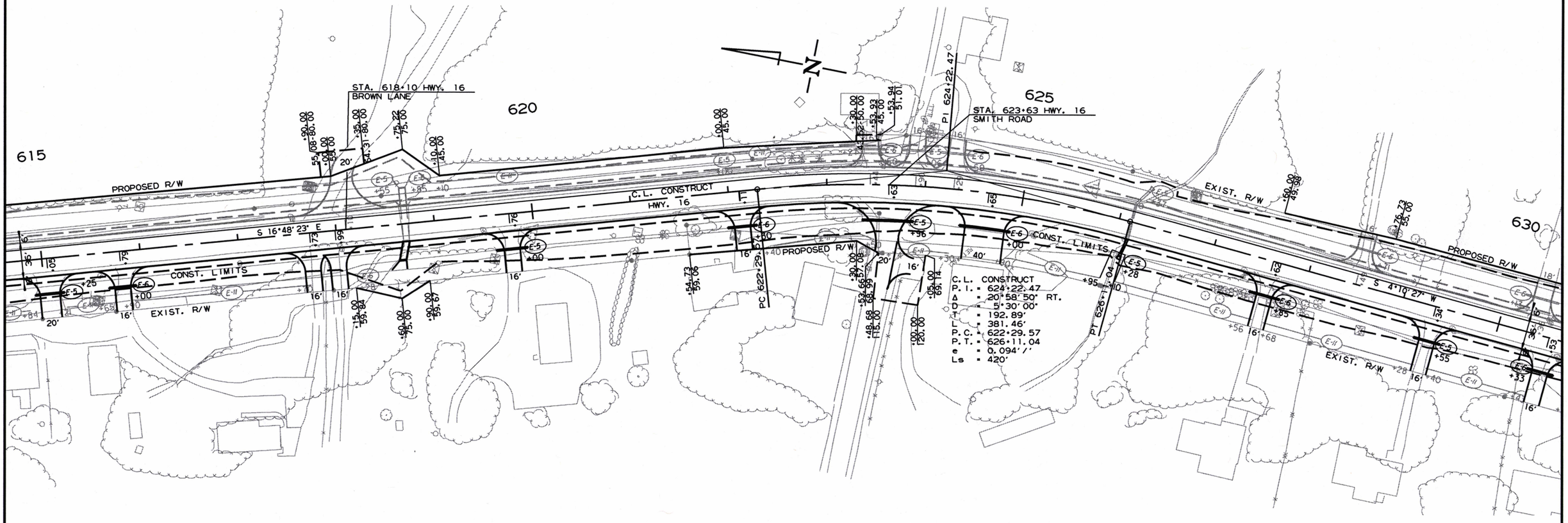
REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAGS)
ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YDS.)
SILT FENCE (E-11)
(1 LOCATIONS = 76 LIN. FT.)

2/21/2019

R050279.DGN

STAGE 2
SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

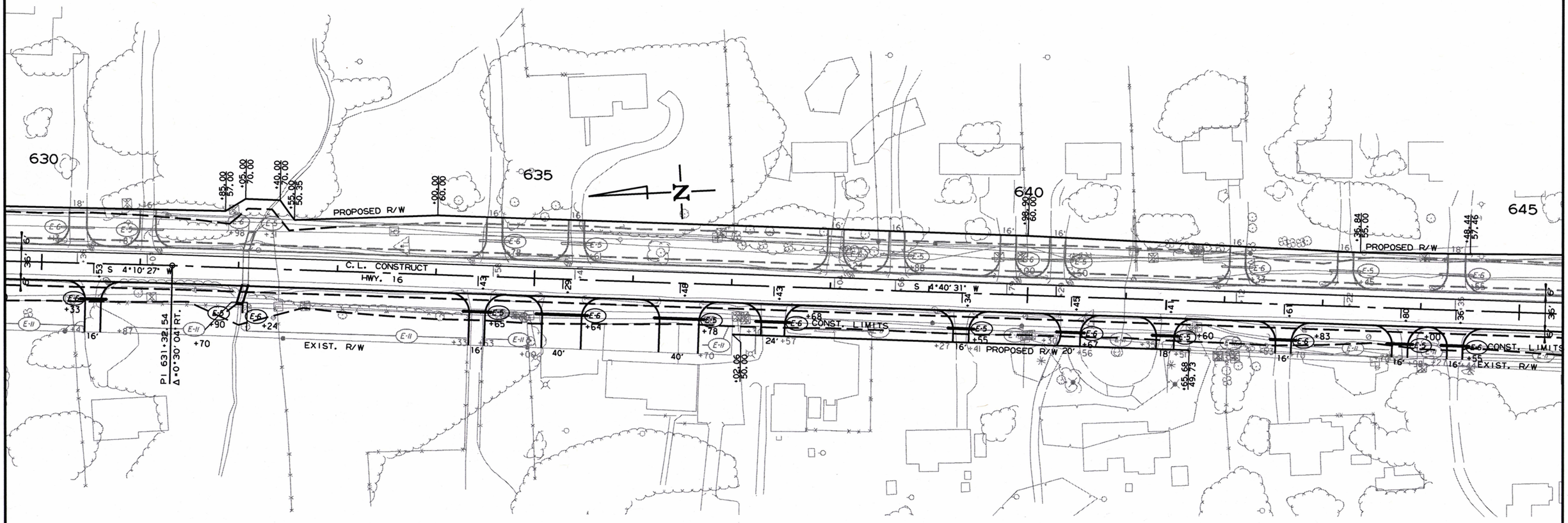
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	48	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAGS)
ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YDS.)
SILT FENCE (E-11)
(1 LOCATIONS = 84 LIN. FT.)

STAGE 2
SITE 3
TEMPORARY EROSION CONTROL DETAILS

2/21/2019

R050279.DGN

REVISIONS

DATE OF REVISION	REVISION

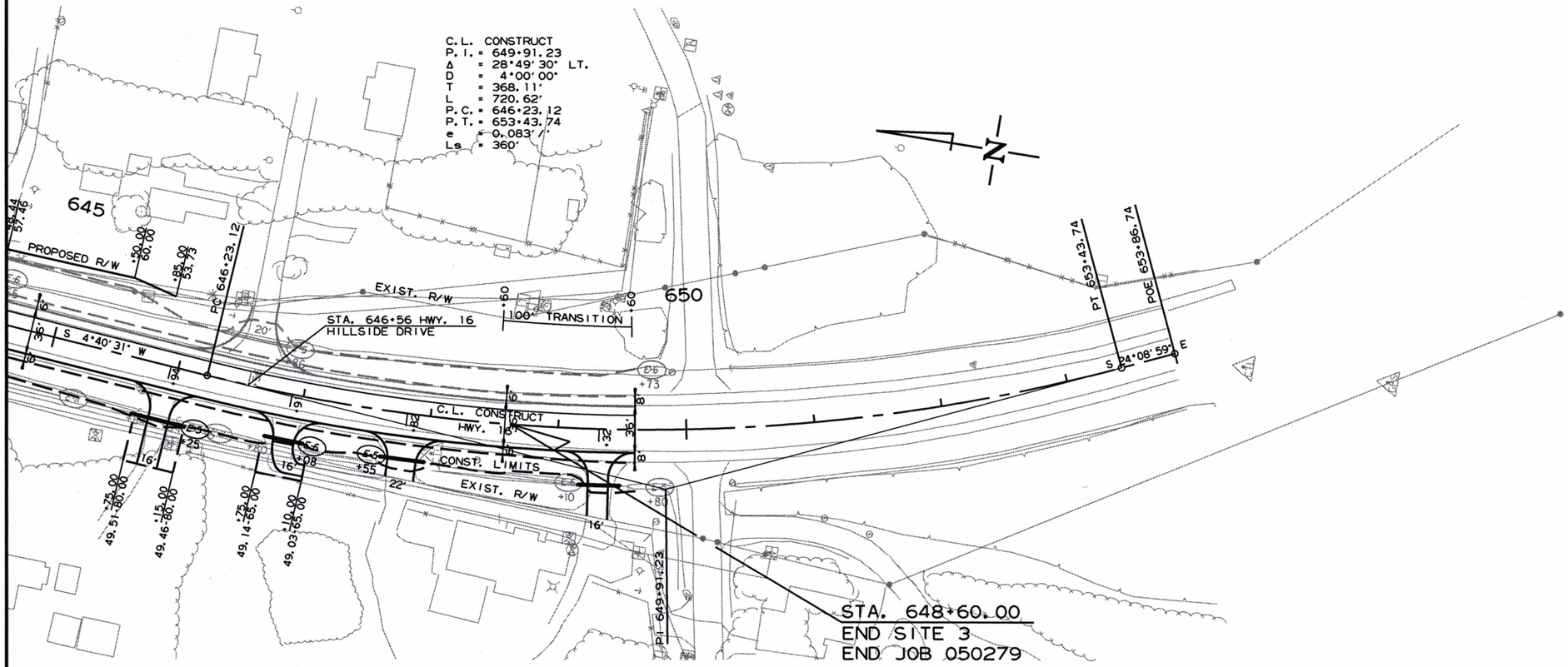
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	49	207

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

LEGEND

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



STAGE 2
SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAGS)
ROCK DITCH CHECKS (E-6)
(1 LOCATIONS = 3 CU. YDS.)

2/21/2019

R050279.DGN

STAGE 2
SITE 3
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.		050279	50	207

(2) MAINTENANCE OF TRAFFIC DETAILS

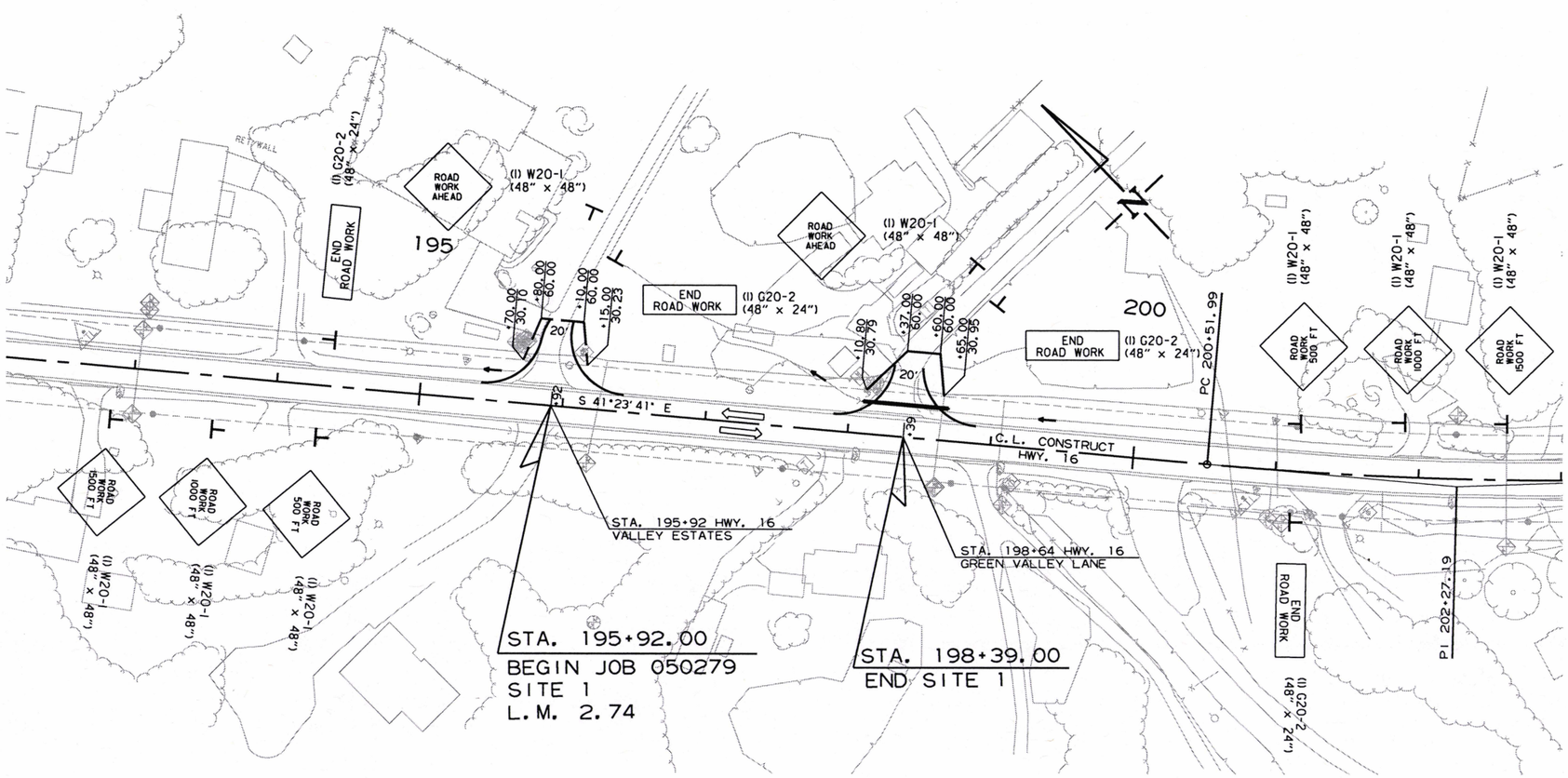
SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



DO NOT PASS (2) R4-1 (24" X 30")

RIGHT SHOULDER CLOSED (I) W21-5a (36" X 36")

ADVANCE WARNING SIGNS
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	51	207

(2) MAINTENANCE OF TRAFFIC DETAILS

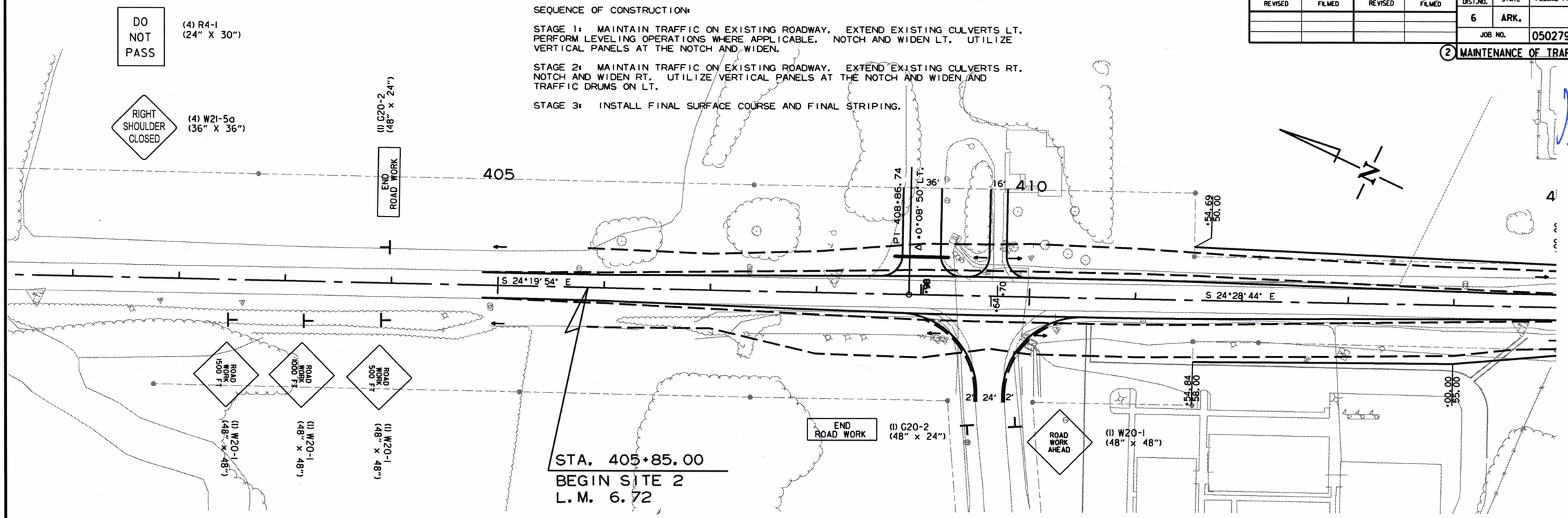
SEQUENCE OF CONSTRUCTION:

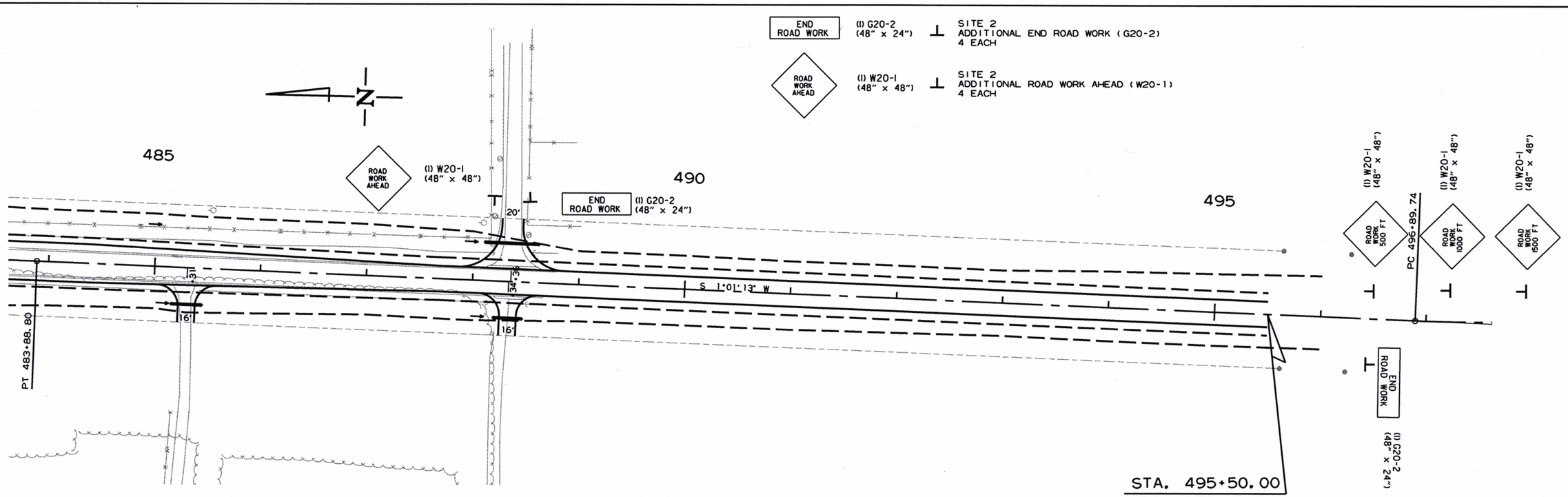
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19





ADVANCE WARNING SIGNS
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	52	207

(2) MAINTENANCE OF TRAFFIC DETAILS

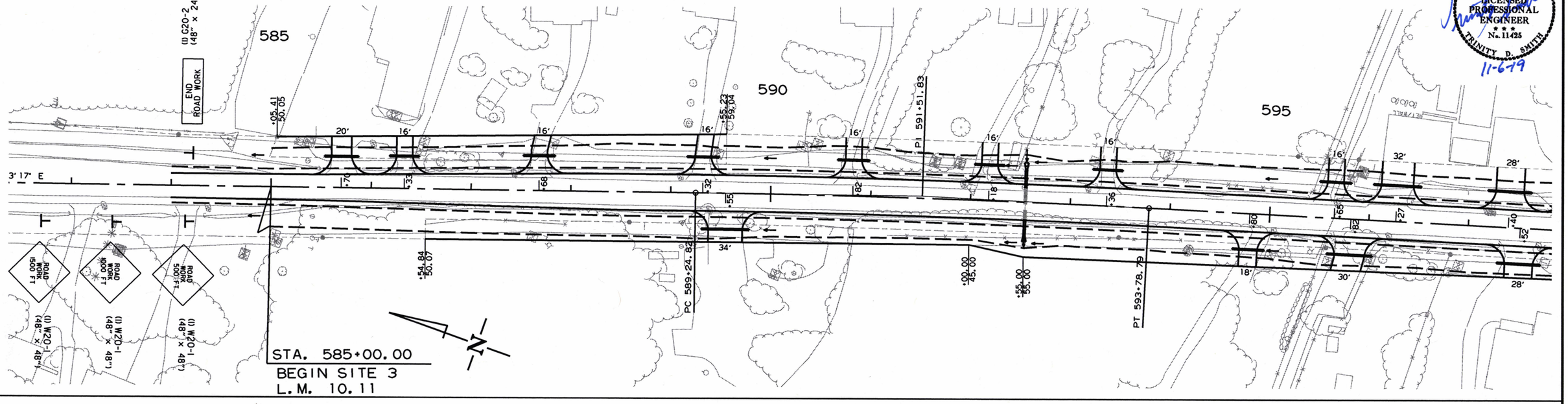
SEQUENCE OF CONSTRUCTION:

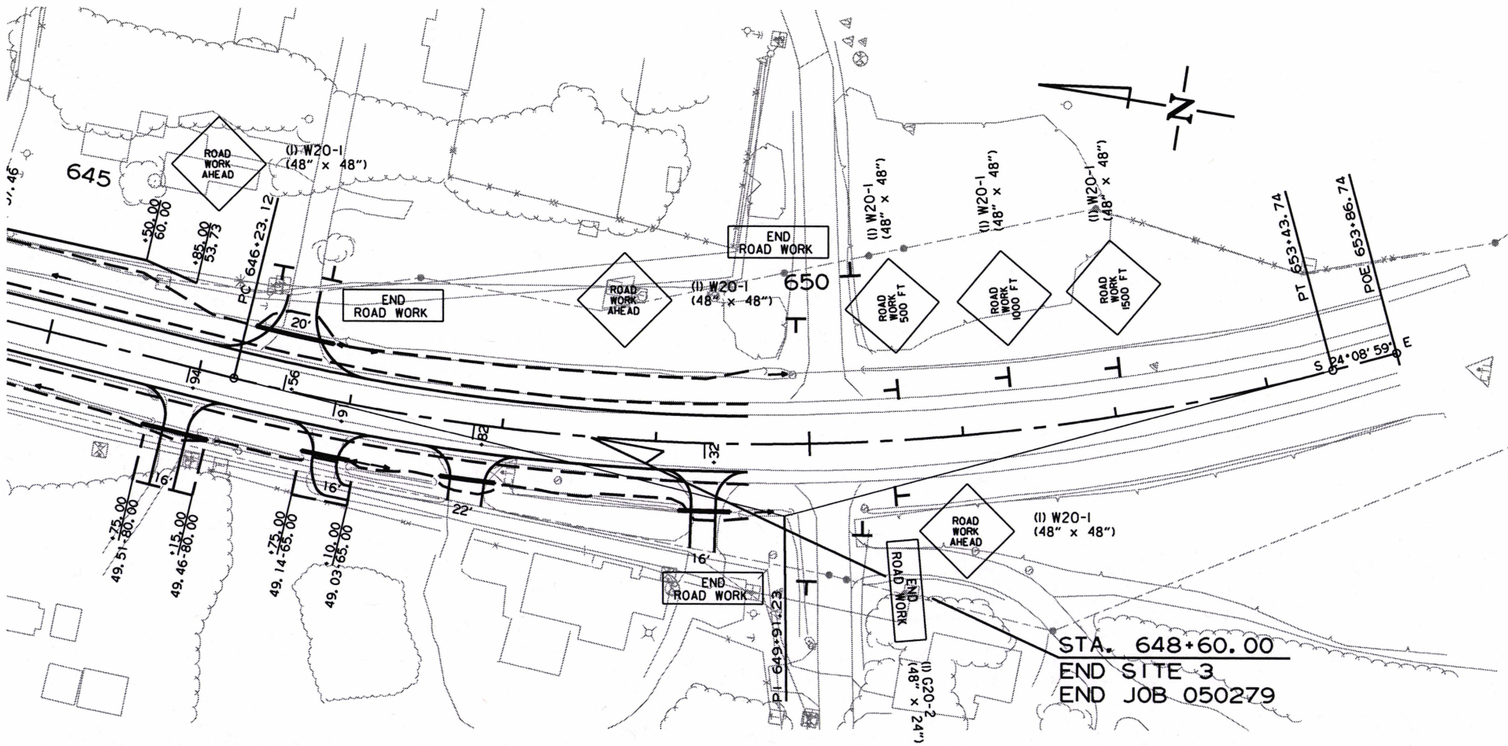
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19





DO NOT PASS (4) R4-1 (24" X 30")

RIGHT SHOULDER CLOSED (4) W21-5a (36" X 36")

END ROAD WORK (1) G20-2 (48" x 24") ⊥ SITE 3 ADDITIONAL END ROAD WORK (G20-2) 4 EACH

ROAD WORK AHEAD (1) W20-1 (48" x 48") ⊥ SITE 3 ADDITIONAL ROAD WORK AHEAD (W20-1) 4 EACH

ADVANCE WARNING SIGNS
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	53	207

(2) MAINTENANCE OF TRAFFIC DETAILS

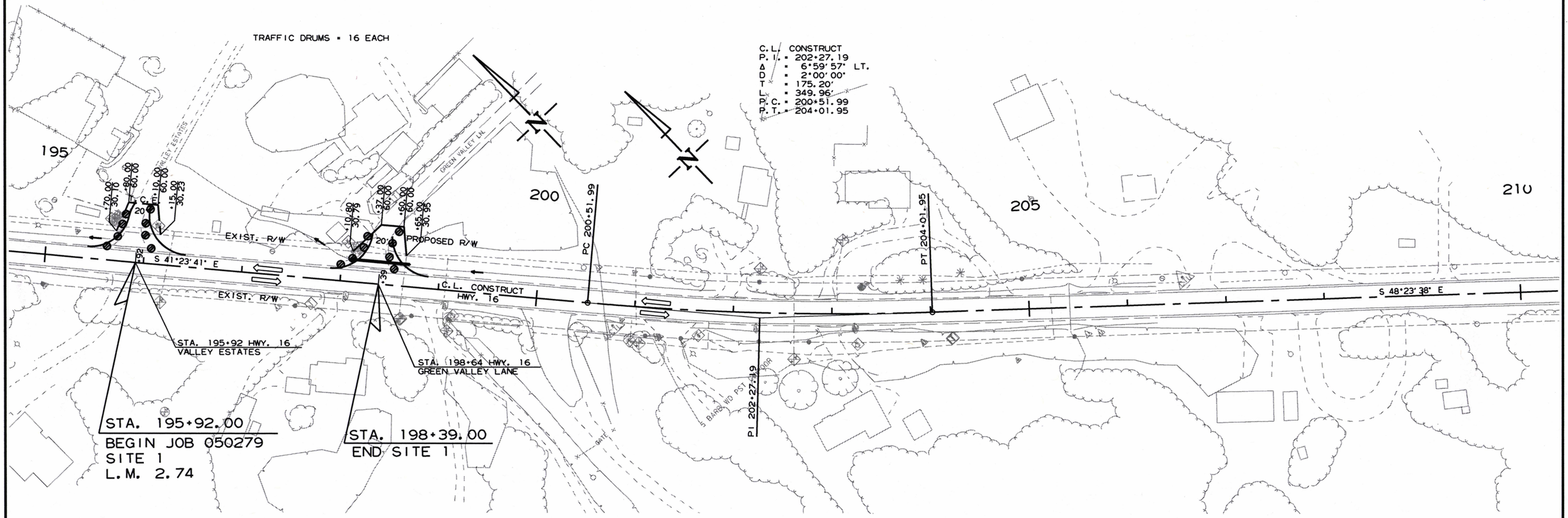
SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-679



ALL STAGES
SITE 1
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	54	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

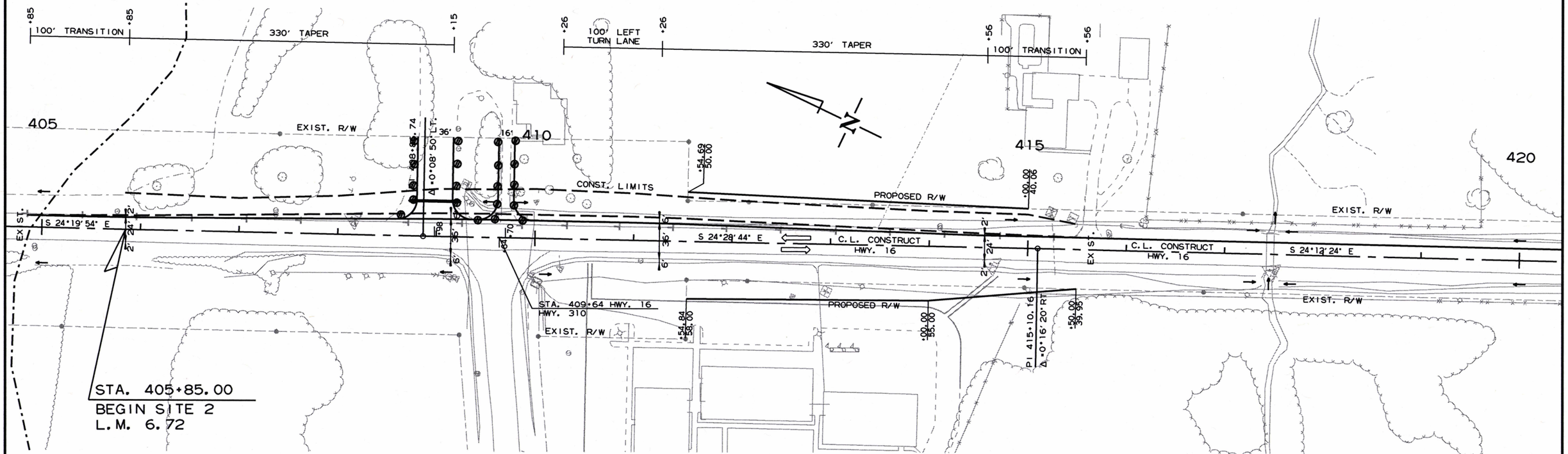
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

TRAFFIC DRUMS = 20 EACH

VERTICAL PANELS @ 55' O.C. = 20 EACH



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	55	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS:

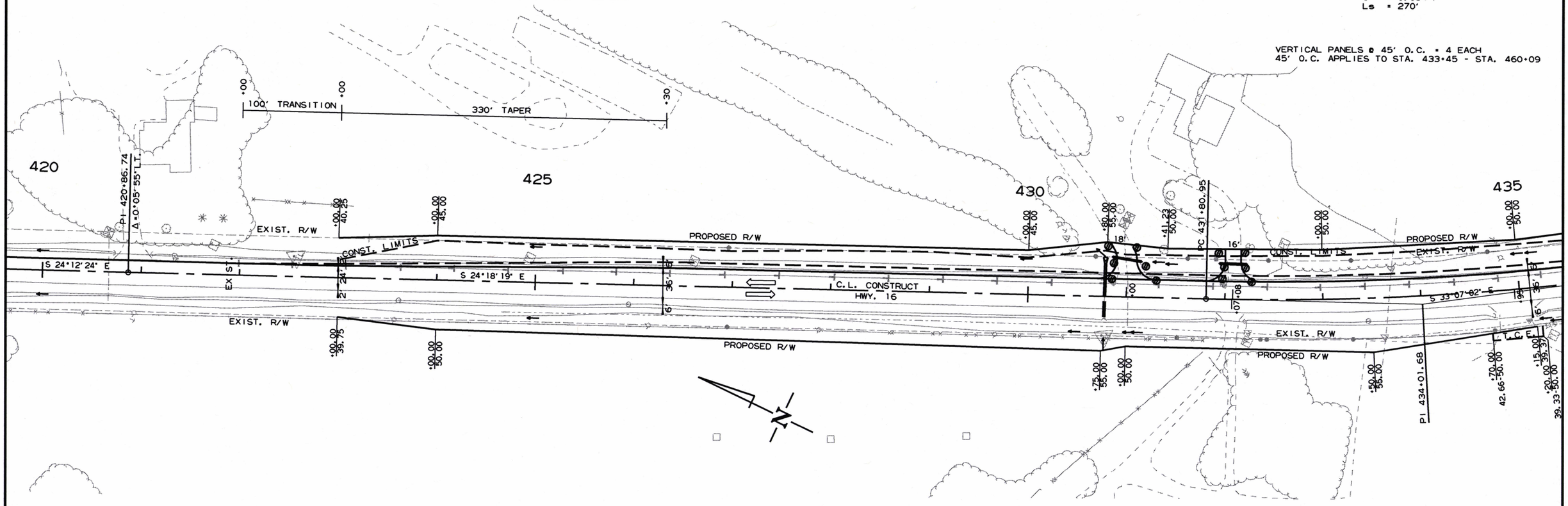
AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

TRAFFIC DRUMS = 12 EACH

VERTICAL PANELS @ 55' O.C. = 22 EACH

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'

VERTICAL PANELS @ 45' O.C. = 4 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	56	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

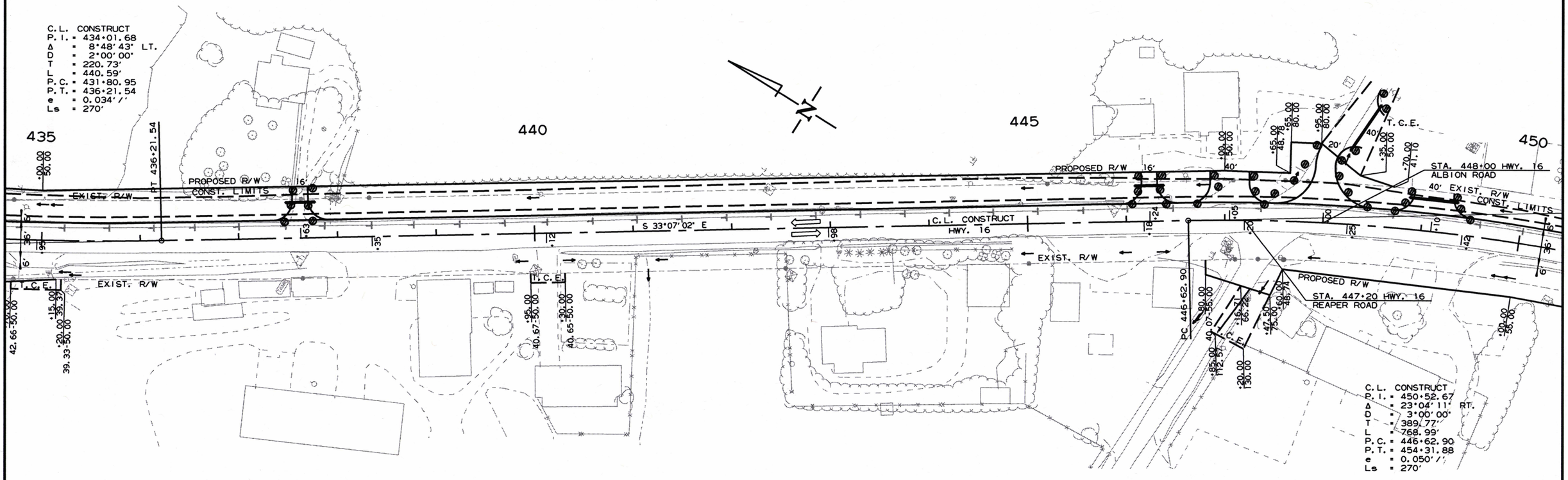
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

TRAFFIC DRUMS = 35 EACH

VERTICAL PANELS @ 45' O.C. = 30 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	57	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

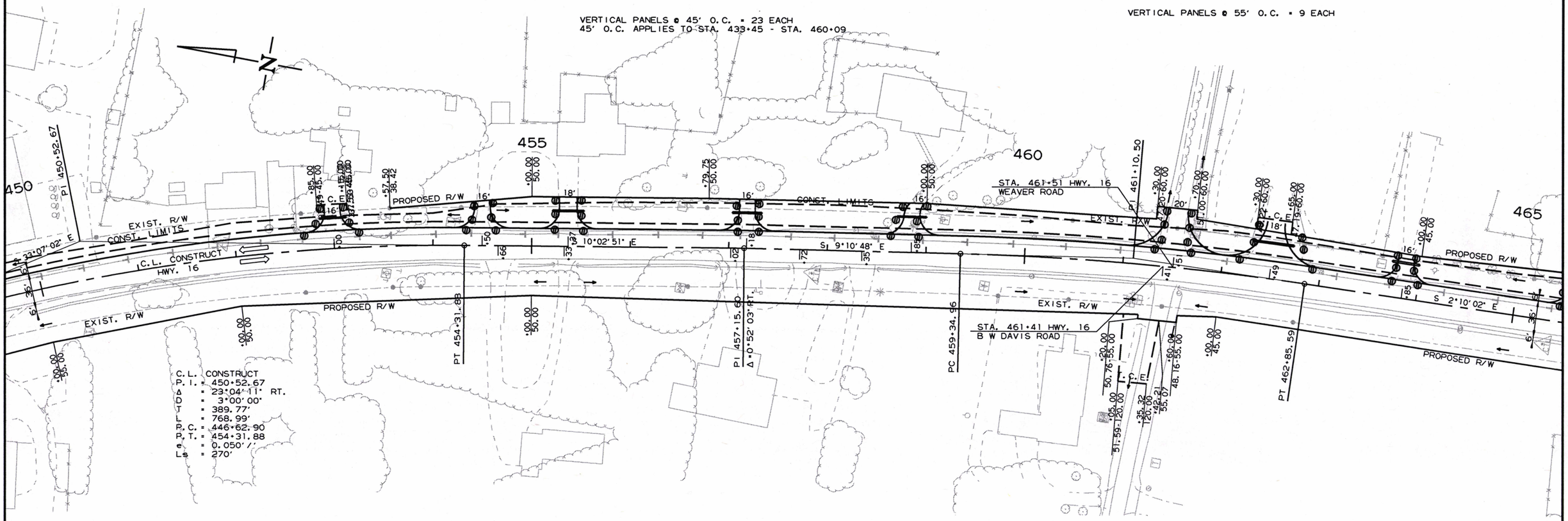
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

TRAFFIC DRUMS = 50 EACH

VERTICAL PANELS @ 45' O.C. = 23 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09

VERTICAL PANELS @ 55' O.C. = 9 EACH



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	58	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

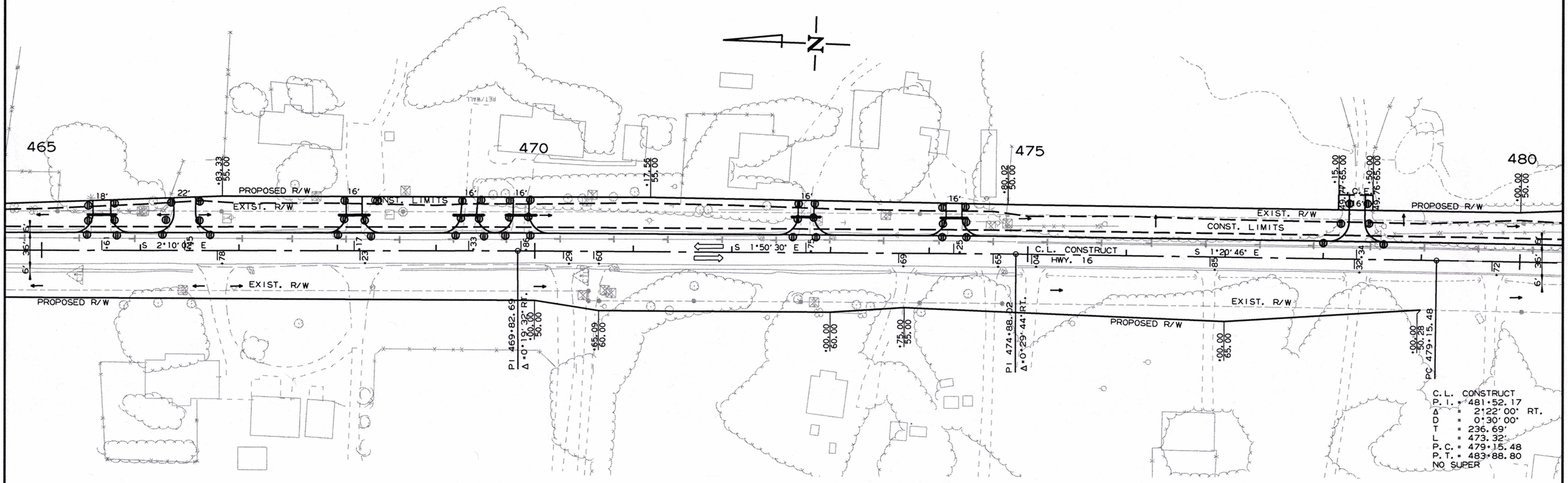
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

TRAFFIC DRUMS = 48 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	59	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

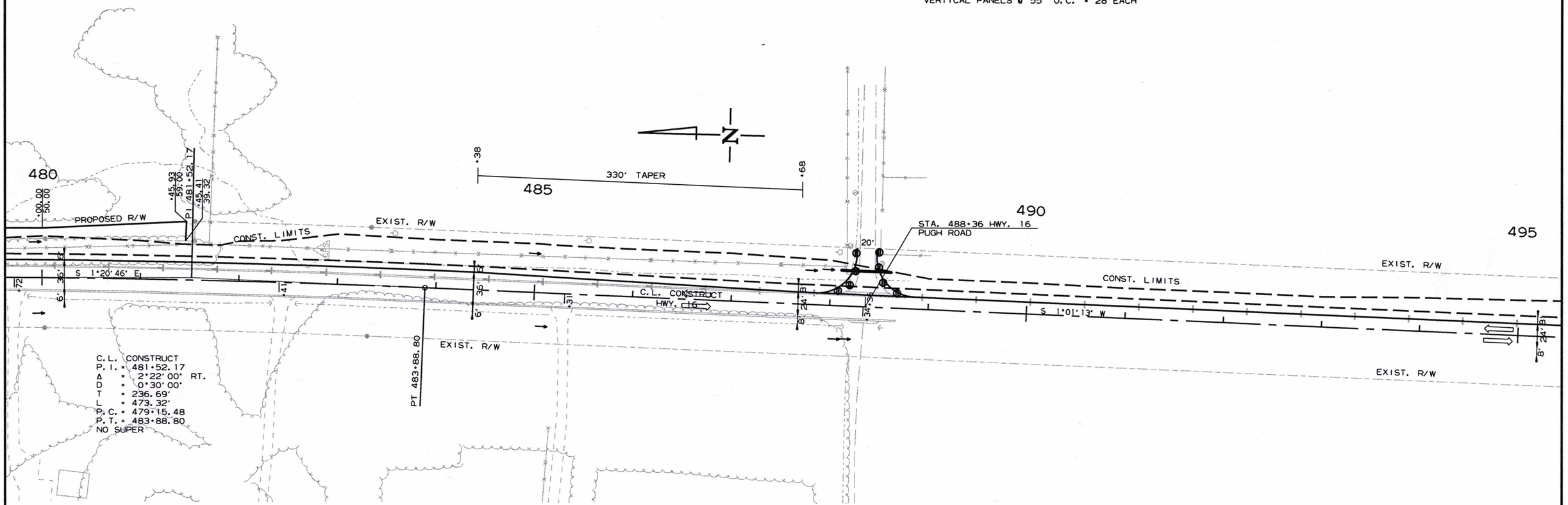
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 8 EACH

VERTICAL PANELS @ 55' O.C. = 28 EACH



11/28/2018

R050279.DGN

STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC 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.		050279	60	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

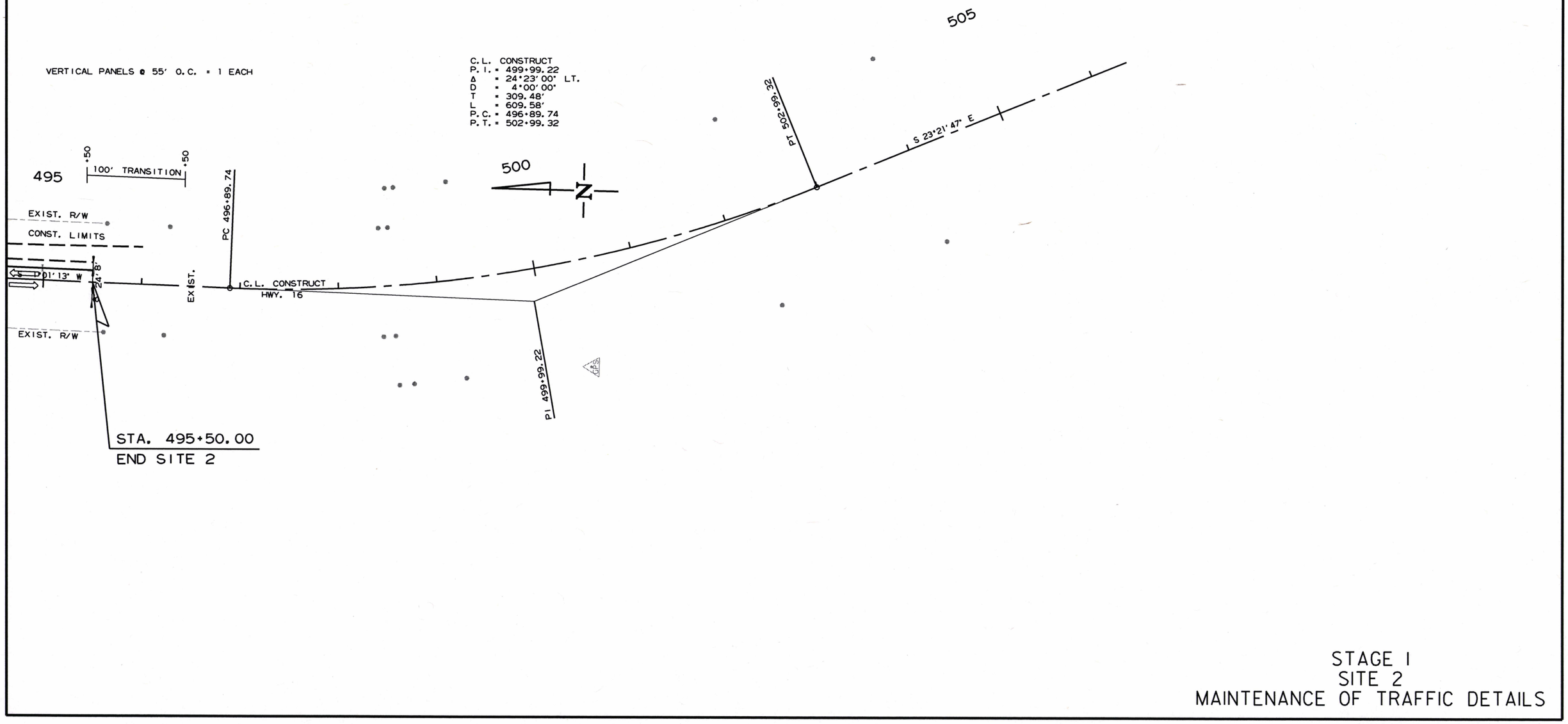
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 404+85 - STA. 487+68
AS DIRECTED BY THE ENGINEER OVER COLD MILLING
HWY. 16 STA. 487+68 - STA. 496+50
LT. AND RT. EDGE LINES = 18330 LIN. FT.
DBL. CENTERLINE = 18330 LIN. FT.

VERTICAL PANELS @ 55' O.C. = 1 EACH

C.L. CONSTRUCT
P.I. = 499+99.22
Δ = 24°23'00" LT.
D = 4°00'00"
T = 309.48'
L = 609.58'
P.C. = 496+89.74
P.T. = 502+99.32



STAGE 1
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

RD050279.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.		050279	61	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

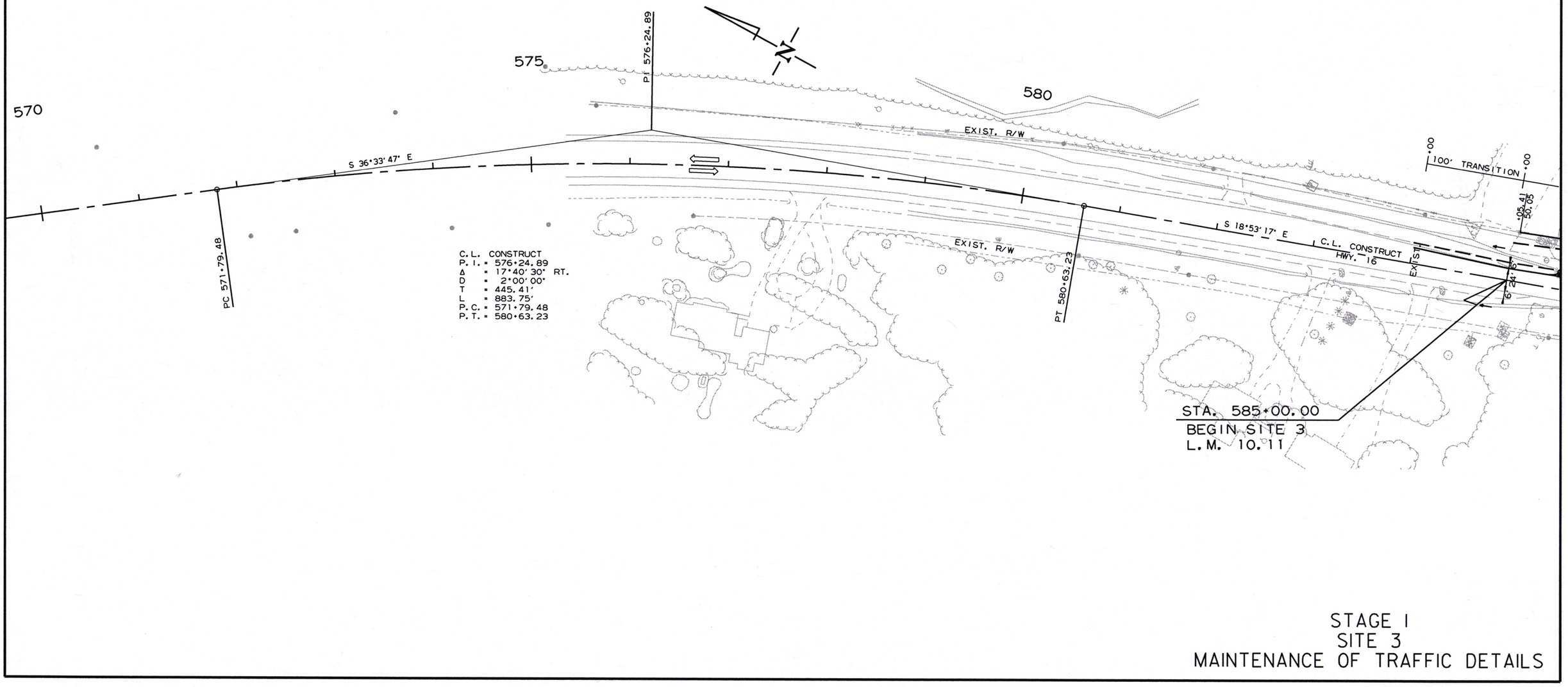
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STAGE 1
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	62	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

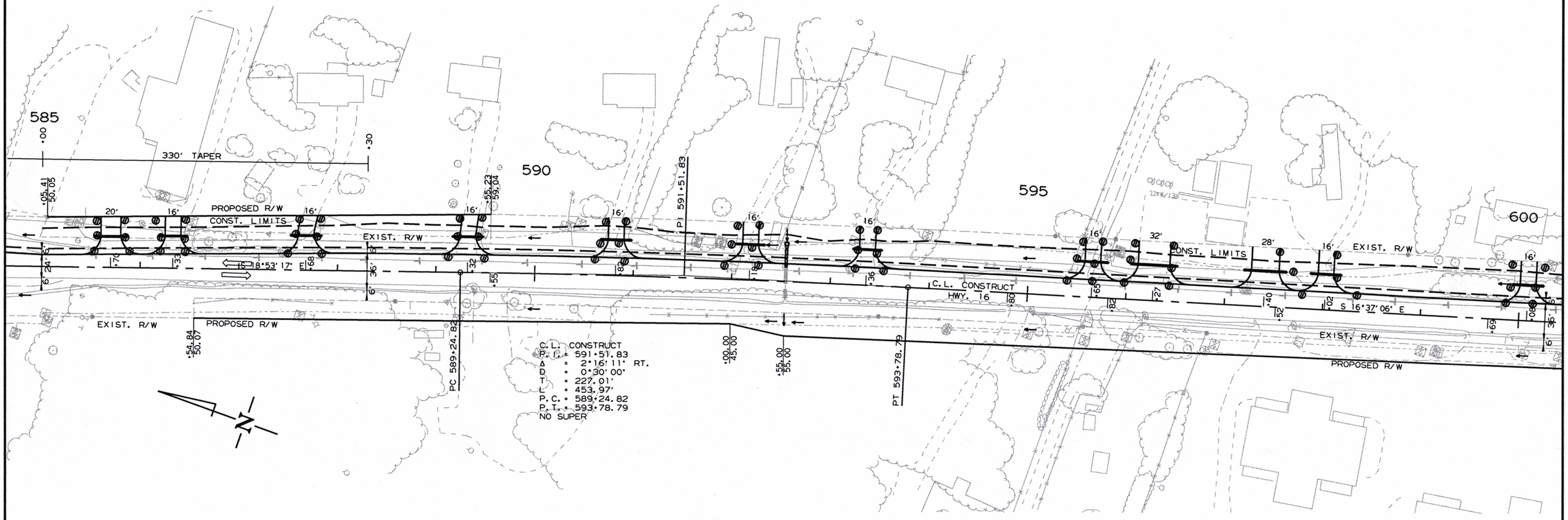
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 66 EACH

VERTICAL PANELS @ 55' O.C. = 28 EACH



11/28/2018

R050279.DGN

STAGE 1
SITE 3
MAINTENANCE OF TRAFFIC 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.		050279	63	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

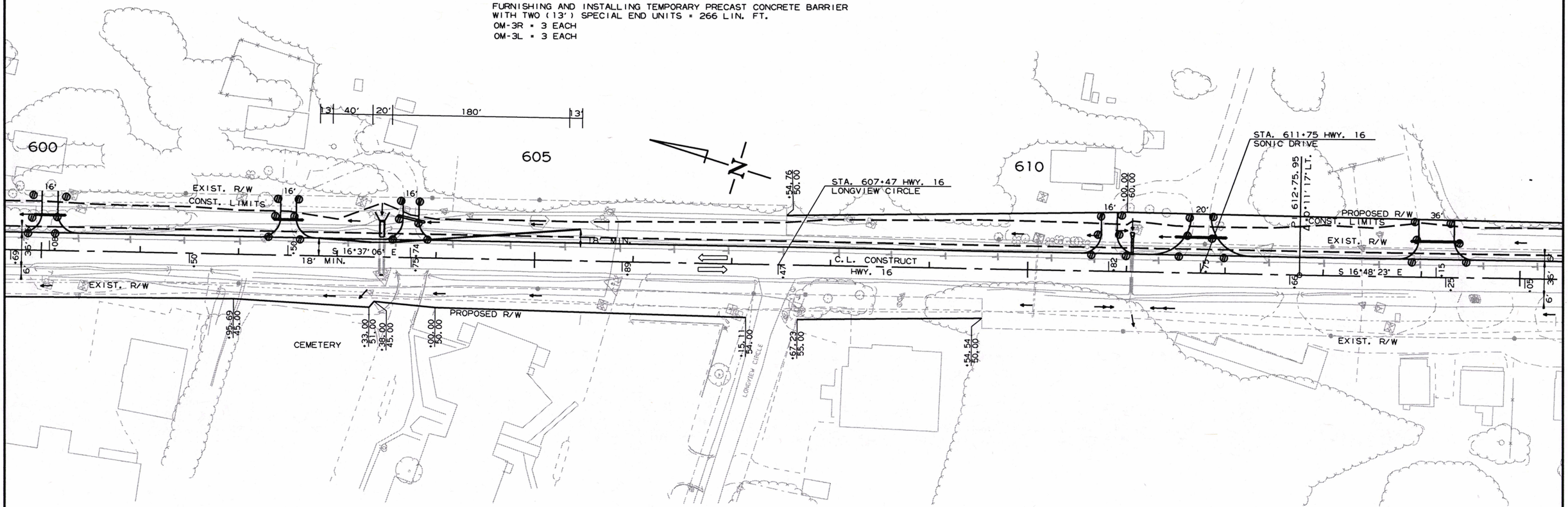
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.

TRAFFIC DRUMS = 30 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH

FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 266 LIN. FT.
OM-3R = 3 EACH
OM-3L = 3 EACH



STAGE 1
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

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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.		050279	64	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS:

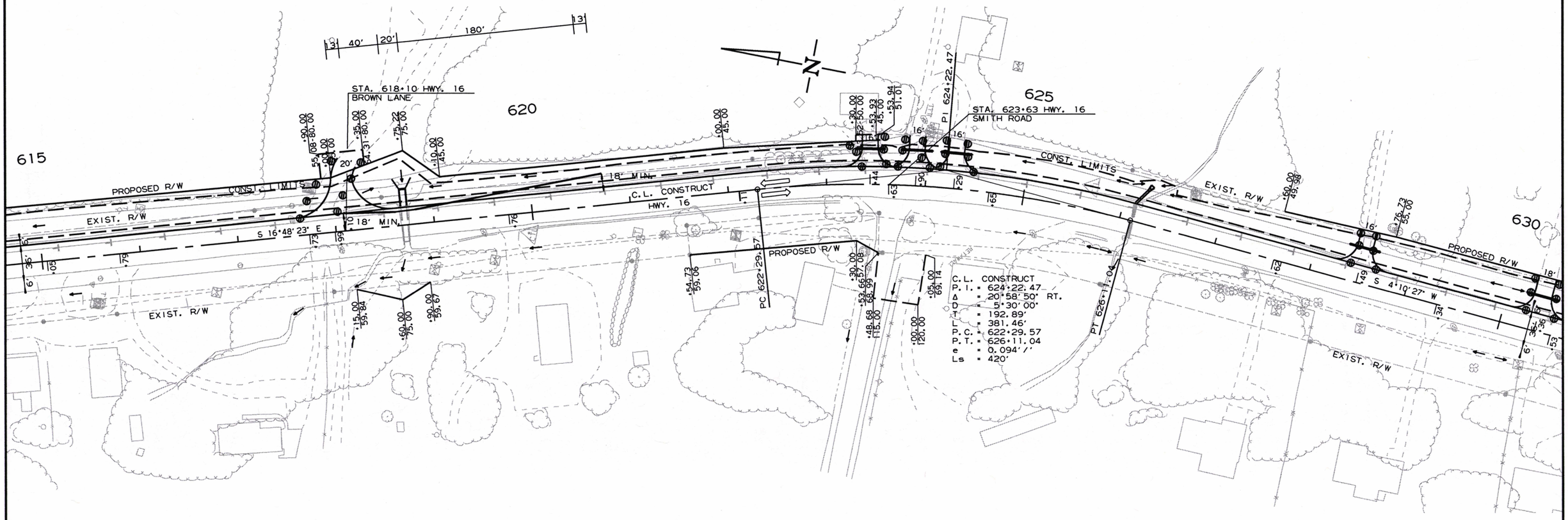
AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.

FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 266 LIN. FT.
OM-3R = 3 EACH
OM-3L = 3 EACH

TRAFFIC DRUMS = 32 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 1
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	65	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

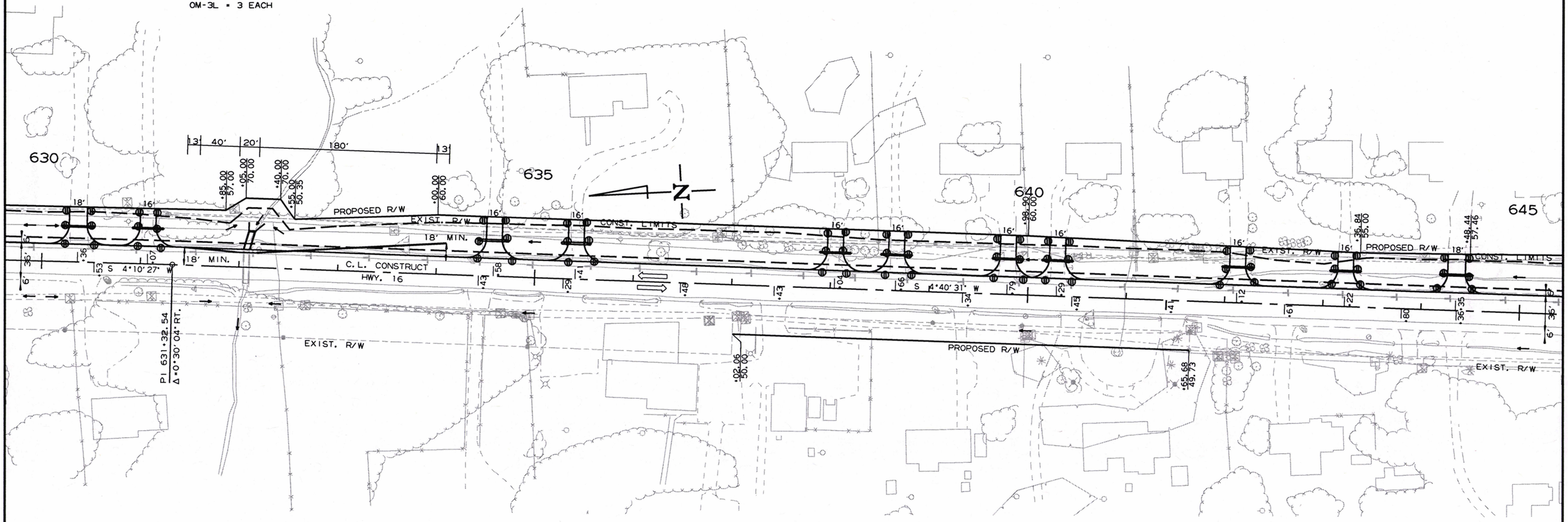
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.

FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 266 LIN. FT.
OM-3R = 3 EACH
OM-3L = 3 EACH

TRAFFIC DRUMS = 66 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH



STAGE I
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	66	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

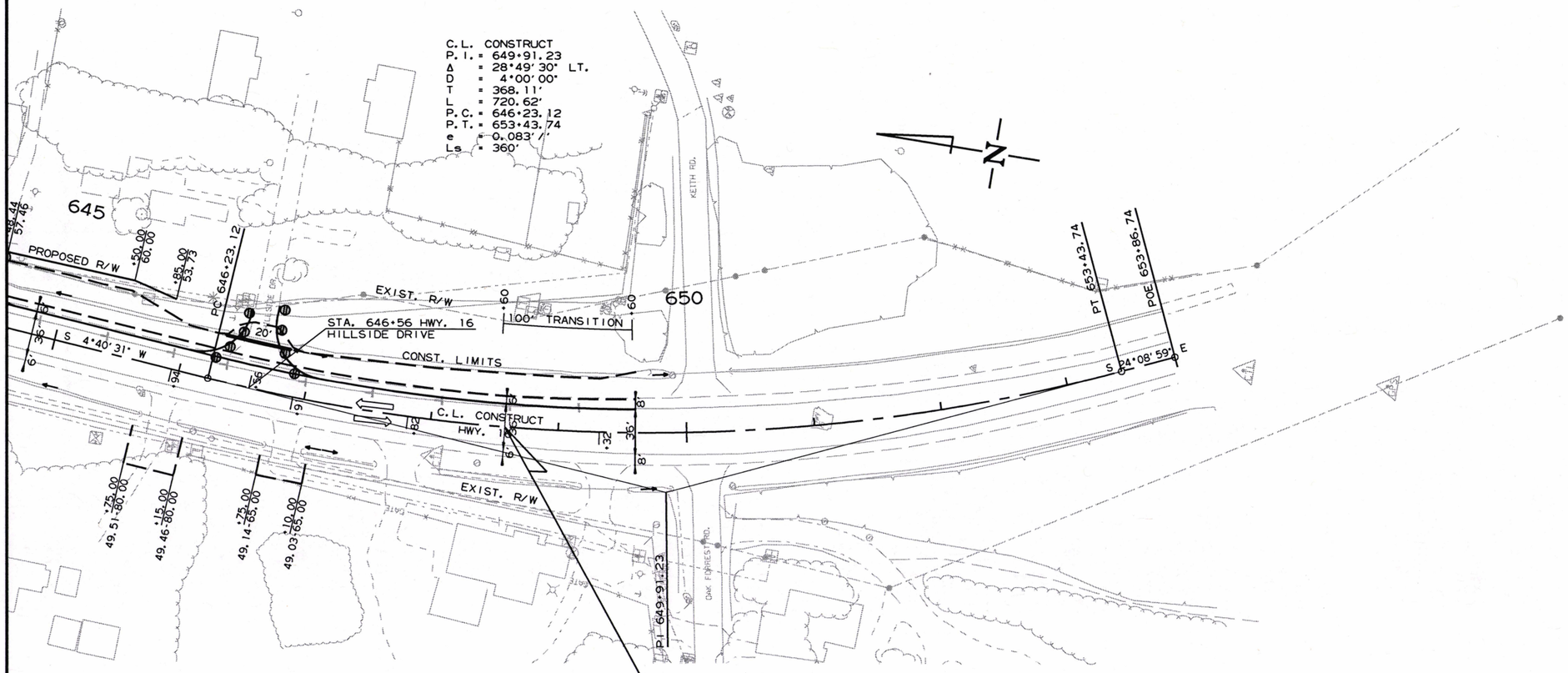
CONSTRUCTION PAVEMENT MARKINGS:

AS DIRECTED BY THE ENGINEER OVER LEVELING COURSE
HWY. 16 STA. 584+00 - STA. 649+60
LT. AND RT. EDGE LINES = 13120 LIN. FT.
DBL. CENTERLINE = 13120 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 8 EACH

VERTICAL PANELS @ 55' O.C. = 8 EACH



STAGE 1
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	67	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

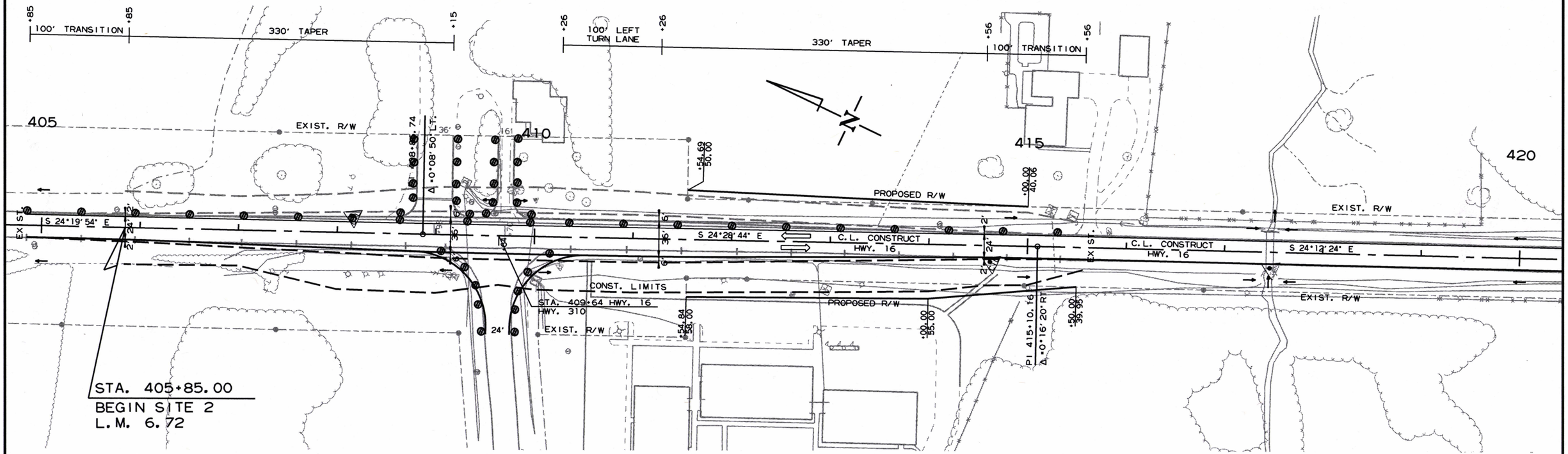
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS = 20 EACH

TRAFFIC DRUMS @ 55' O.C. = 20 EACH



VERTICAL PANELS @ 55' O.C. = 19 EACH

TRAFFIC DRUMS = 10 EACH

11/28/2018

R050279.DGN

STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC 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.		050279	68	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

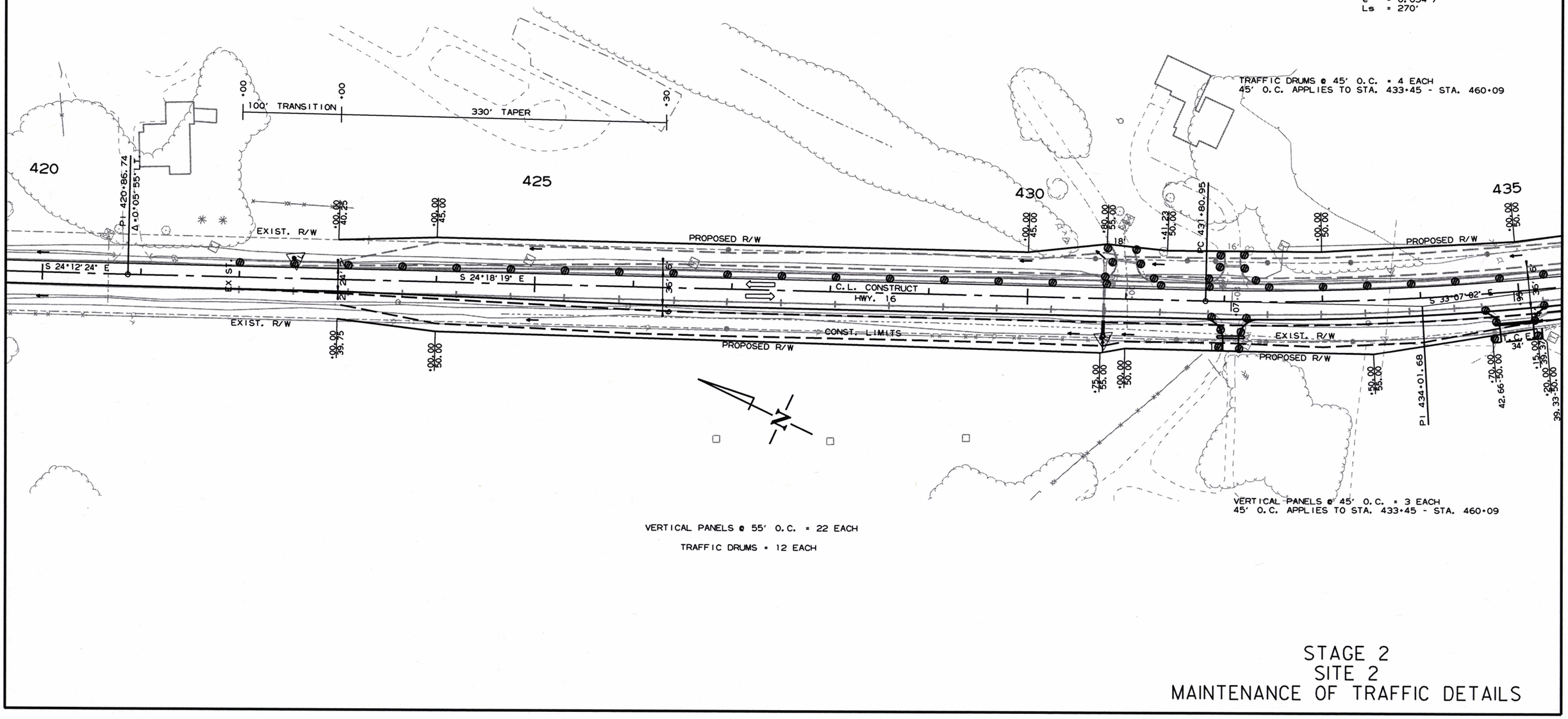
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 12 EACH

TRAFFIC DRUMS @ 55' O.C. = 22 EACH

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'

TRAFFIC DRUMS @ 45' O.C. = 4 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09



VERTICAL PANELS @ 55' O.C. = 22 EACH

TRAFFIC DRUMS = 12 EACH

VERTICAL PANELS @ 45' O.C. = 3 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09

STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	69	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

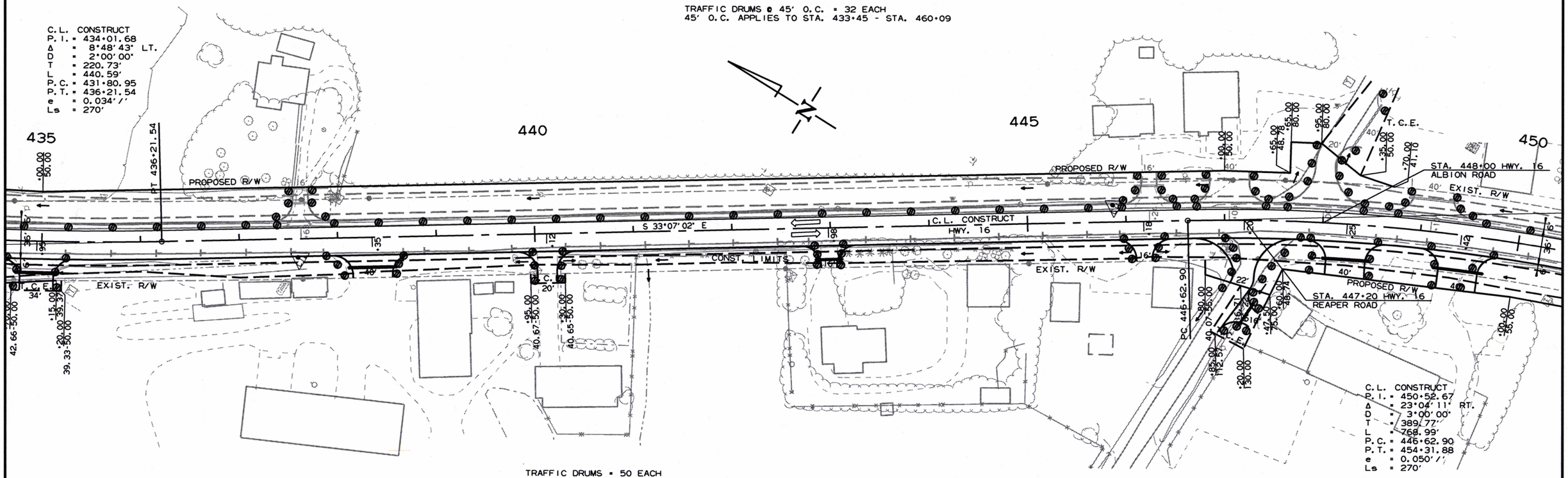
STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 35 EACH

TRAFFIC DRUMS @ 45' O.C. = 32 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09



TRAFFIC DRUMS = 50 EACH

VERTICAL PANELS @ 45' O.C. = 32 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09

11/28/2018

R050279.DGN

STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC 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.		050279	70	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

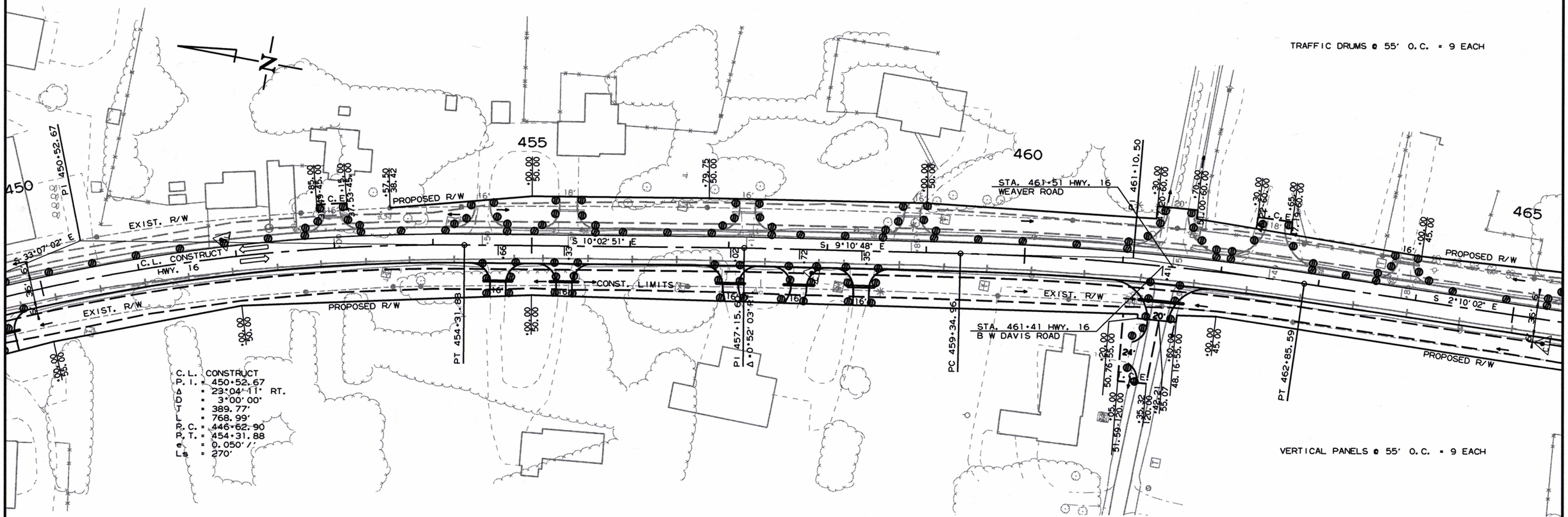
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 50 EACH

TRAFFIC DRUMS @ 45' O.C. = 23 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09

TRAFFIC DRUMS @ 55' O.C. = 9 EACH



C.L. CONSTRUCT
P.I. = 450+52.67
Δ = 23°04'11" RT.
D = 3°00'00"
T = 389.77'
L = 768.99'
P.C. = 446+62.90
P.T. = 454+31.88
e = 0.050'/'
Ls = 270'

TRAFFIC DRUMS = 40 EACH

VERTICAL PANELS @ 45' O.C. = 23 EACH
45' O.C. APPLIES TO STA. 433+45 - STA. 460+09

VERTICAL PANELS @ 55' O.C. = 9 EACH

C.L. CONSTRUCT
P.I. = 461+10.50
Δ = 7°00'45" RT.
D = 2°00'00"
T = 175.53'
L = 350.63'
P.C. = 459+34.96
P.T. = 462+85.59
e = 0.034'/'
Ls = 270'

STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	71	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

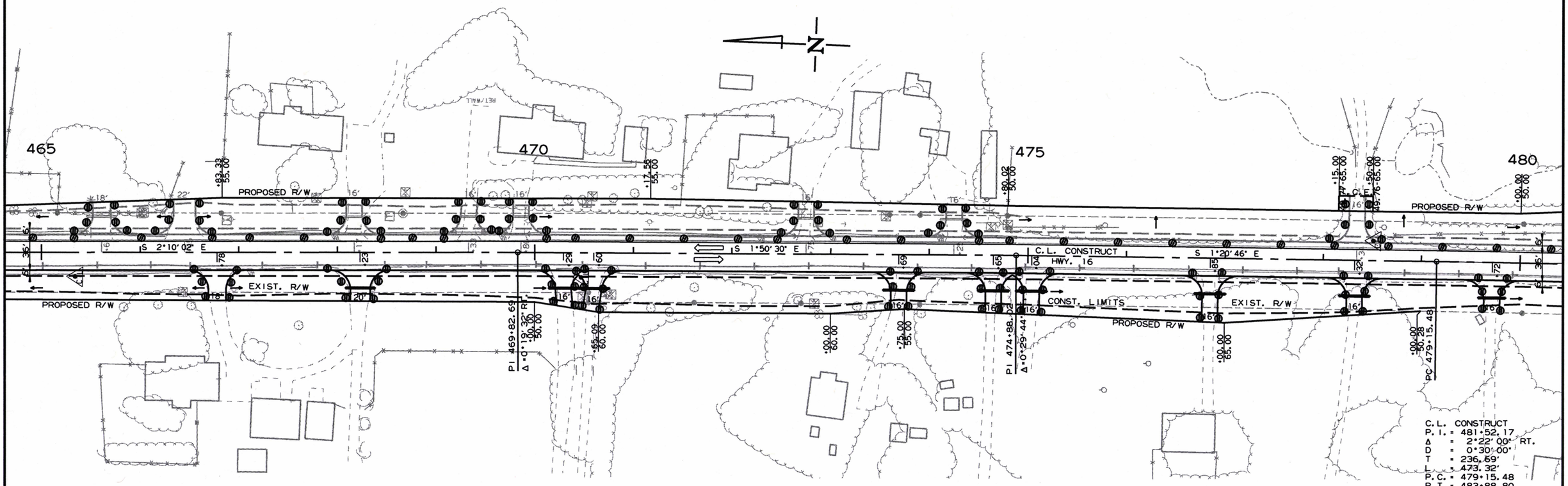
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS = 48 EACH

TRAFFIC DRUMS @ 55' O.C. = 27 EACH



TRAFFIC DRUMS = 60 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH

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STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC 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.		050279	72	207

(2) MAINTENANCE OF TRAFFIC DETAILS

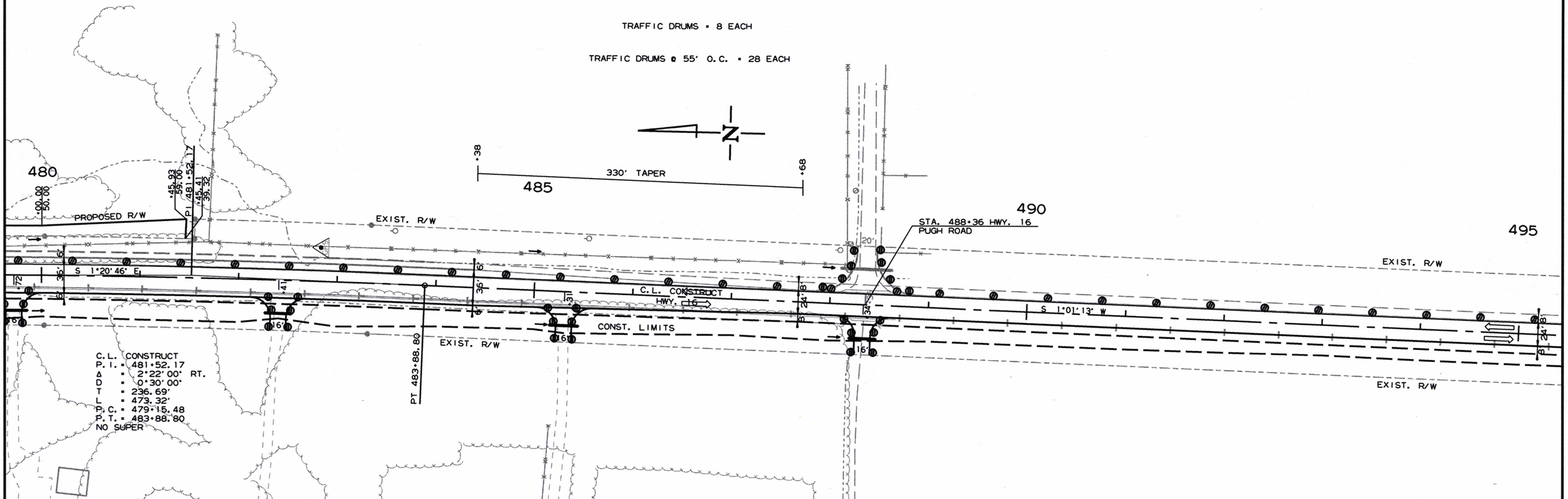
SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	73	207

(2) MAINTENANCE OF TRAFFIC DETAILS

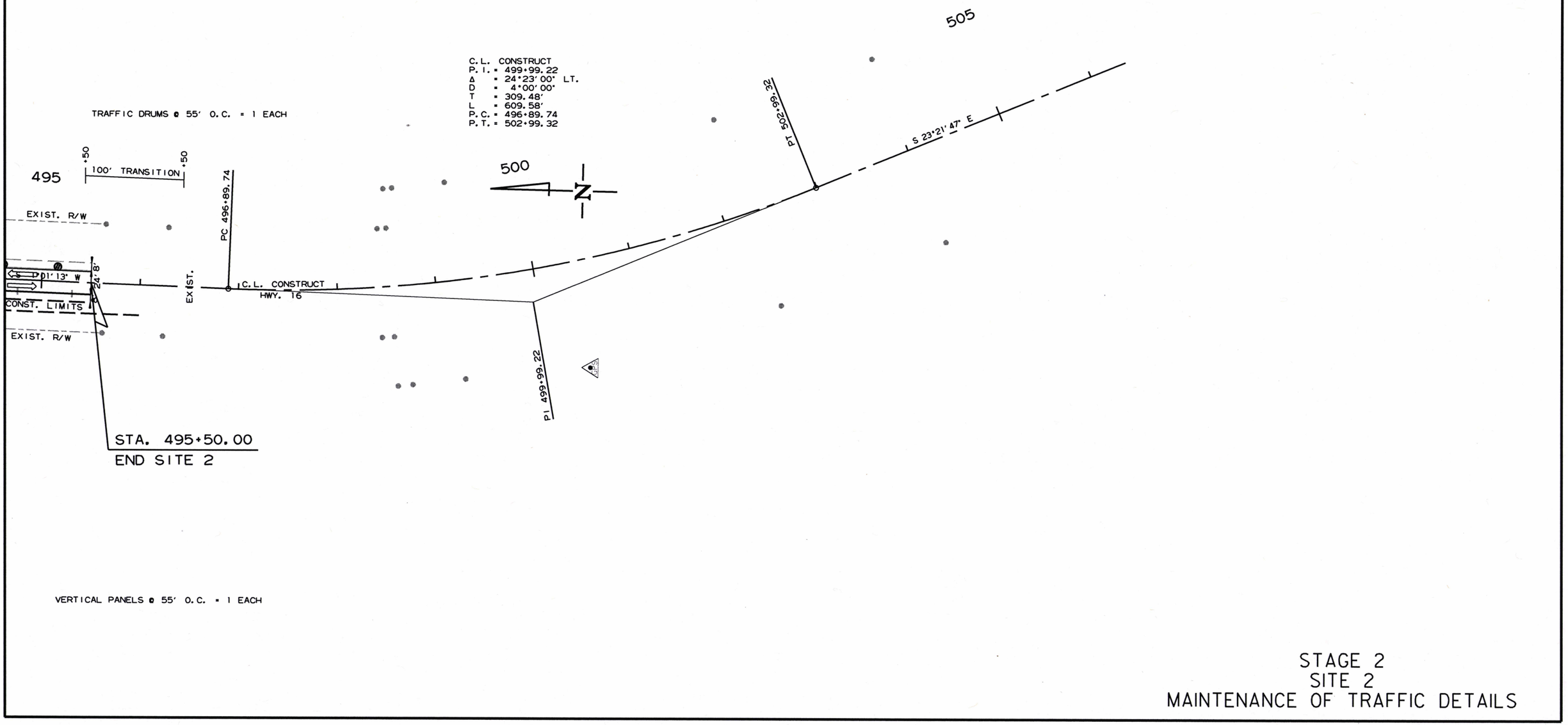
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.



STAGE 2
SITE 2
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	74	207

(2) MAINTENANCE OF TRAFFIC DETAILS

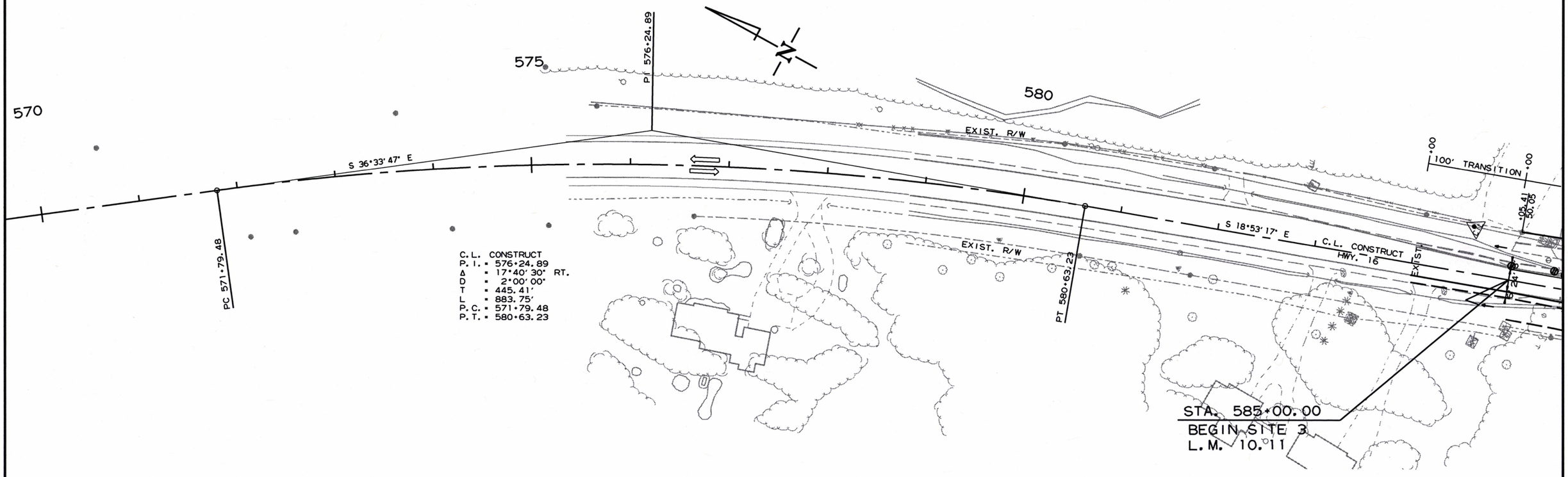
SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	75	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 66 EACH

TRAFFIC DRUMS @ 55' O.C. = 28 EACH



TRAFFIC DRUMS = 30 EACH

VERTICAL PANELS @ 55' O.C. = 28 EACH

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STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC 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.		050279	76	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

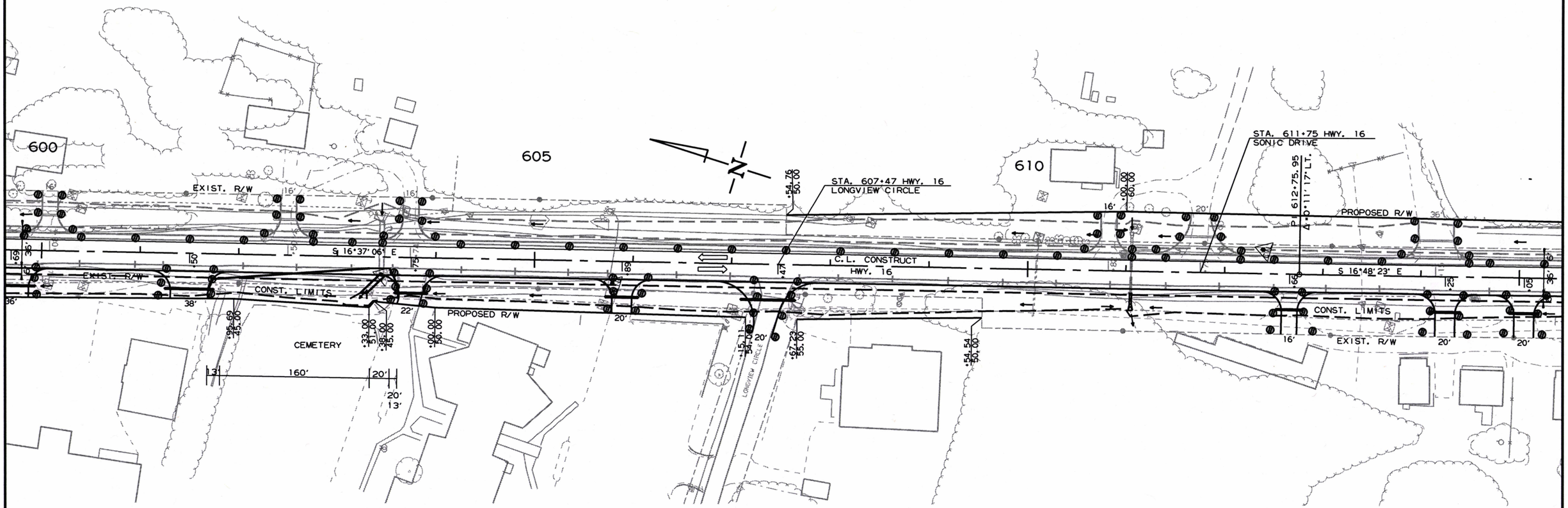
STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 30 EACH

TRAFFIC DRUMS @ 55' O.C. = 27 EACH



RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 226 LIN. FT.
OM-3R = 3 EACH
OM-3L = 3 EACH

TRAFFIC DRUMS = 38 EACH

VERTICAL PANELS @ 55' O.C. = 27 EACH

11/28/2018

R050279.DGN

STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC 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.		050279	77	207

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

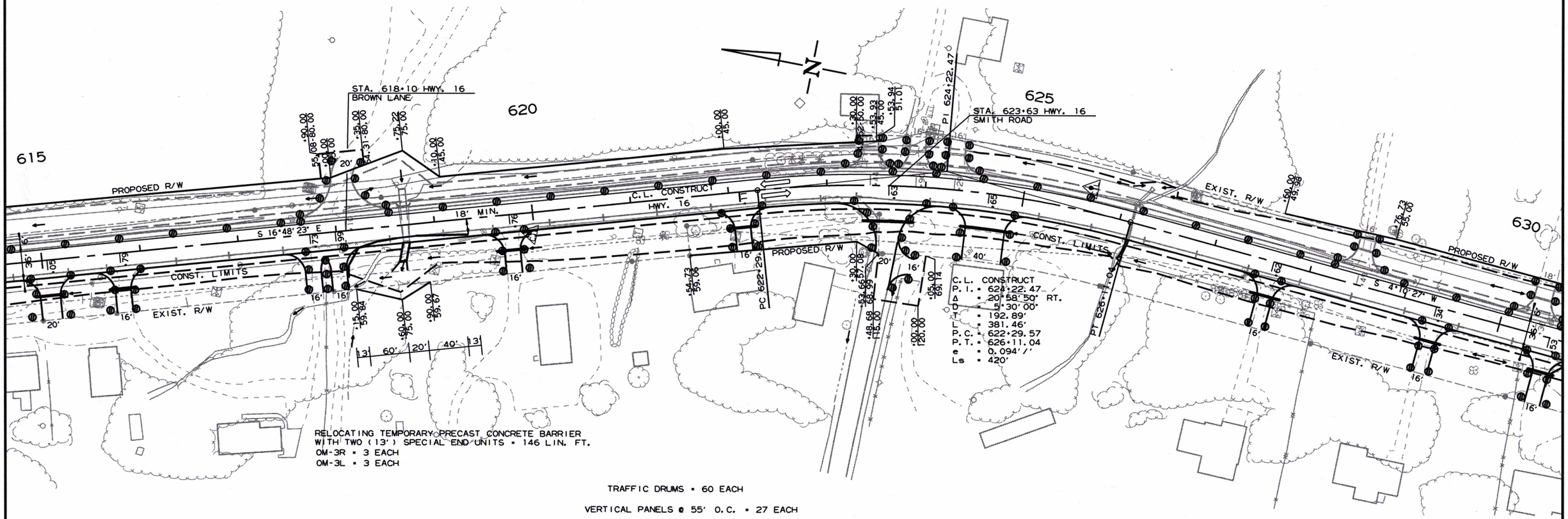
STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

TRAFFIC DRUMS = 32 EACH

TRAFFIC DRUMS @ 55' O.C. = 27 EACH



STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

11/28/2018

R050279.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.		050279	78	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

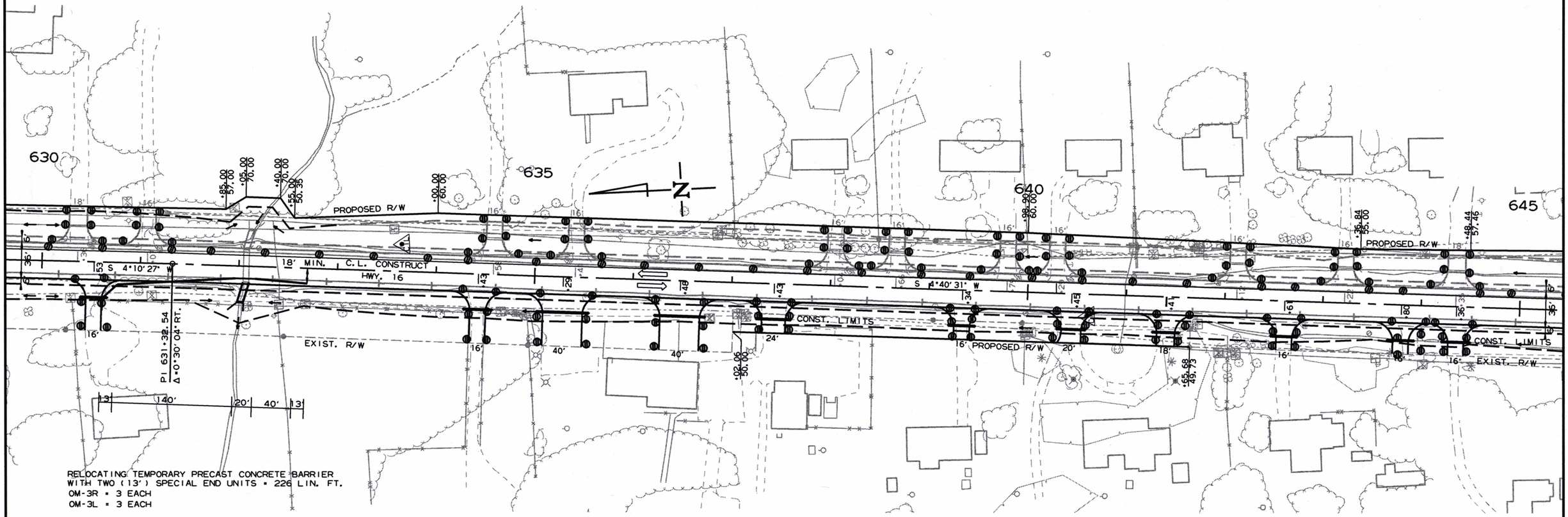
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS = 66 EACH

TRAFFIC DRUMS @ 55' O.C. = 27 EACH



RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 226 LIN. FT.
OM-3R = 3 EACH
OM-3L = 3 EACH

TRAFFIC DRUMS = 66 EACH

VERTICAL PANELS @ 55' O.C. = 28 EACH

11/28/2018

R050279.DGN

STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC 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.		050279	79	207

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SEQUENCE OF CONSTRUCTION:

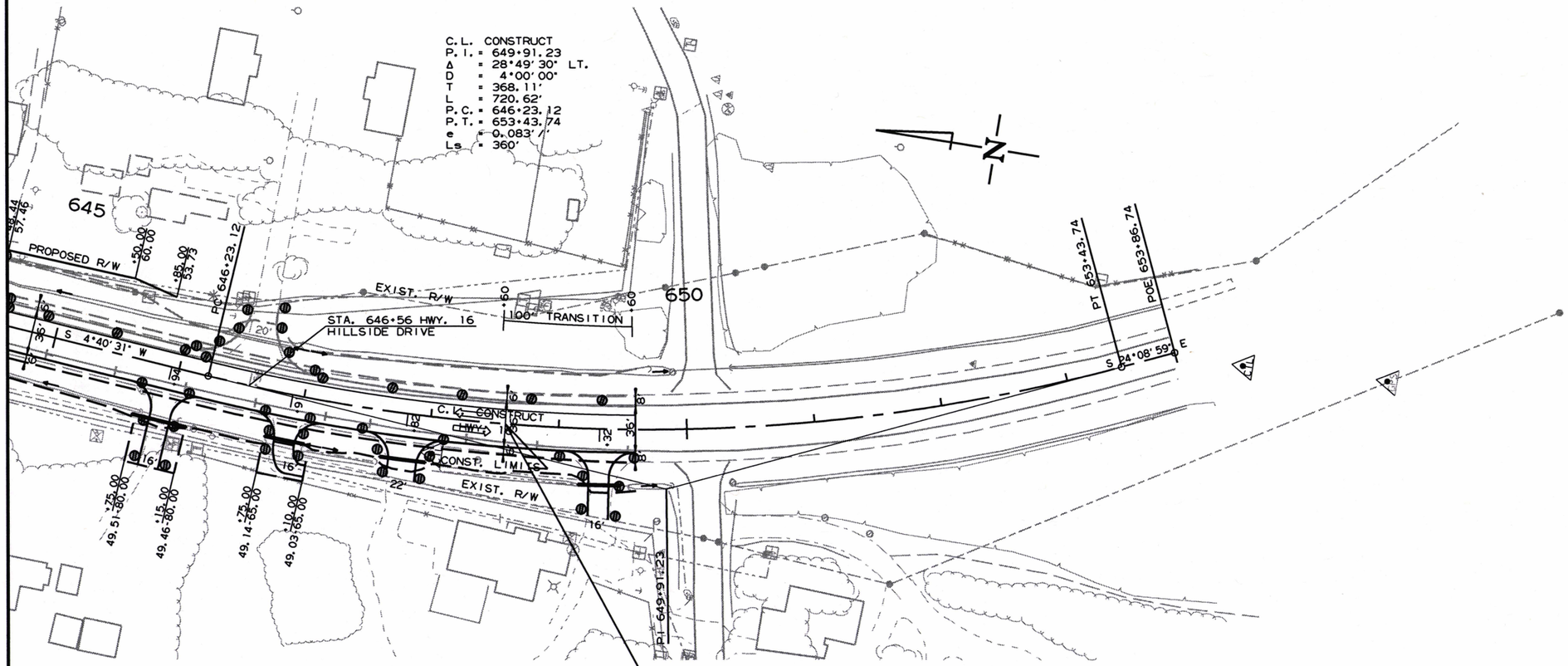
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS LT. PERFORM LEVELING OPERATIONS WHERE APPLICABLE. NOTCH AND WIDEN LT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN.

STAGE 2: MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERTS RT. NOTCH AND WIDEN RT. UTILIZE VERTICAL PANELS AT THE NOTCH AND WIDEN AND TRAFFIC DRUMS ON LT.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

TRAFFIC DRUMS = 8 EACH

TRAFFIC DRUMS @ 55' O.C. = 8 EACH



STA. 648+60.00
END SITE 3
END JOB 050279

TRAFFIC DRUMS = 24 EACH

VERTICAL PANELS @ 55' O.C. = 8 EACH

11/28/2018

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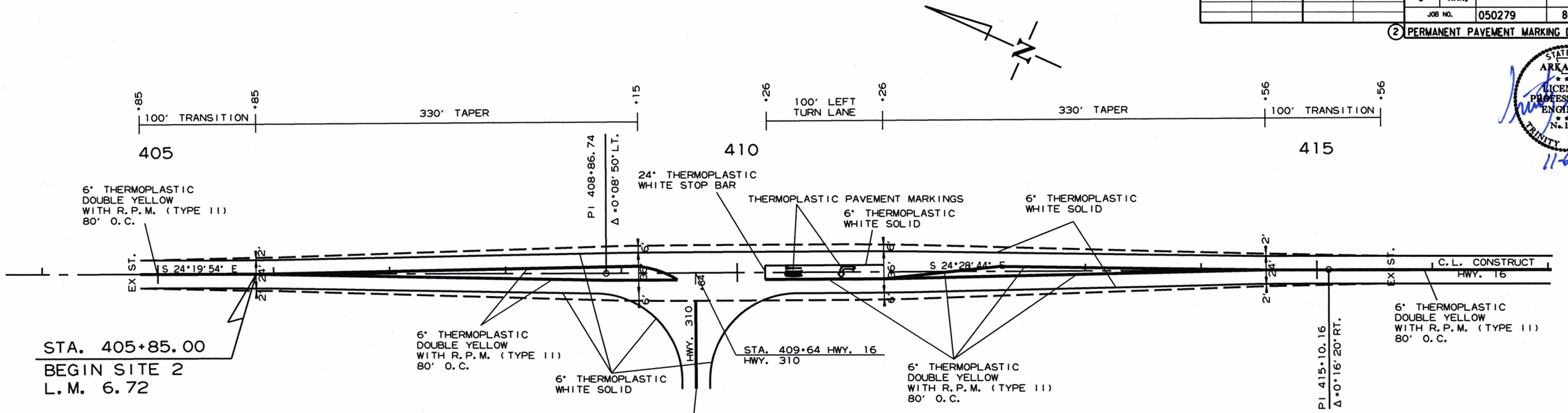
STAGE 2
SITE 3
MAINTENANCE OF TRAFFIC DETAILS

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.		050279	80	207

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



QUANTITIES:

HWY. 16
THERMOPLASTIC PAVEMENT MARKINGS
6" YELLOW DBL. = 9270 LIN. FT.
6" CONTINUOUS LT. TURN LANE = 14520 LIN. FT.
6" WHITE SOLID = 18258 LIN. FT.
24" WHITE STOP BAR = 12 LIN. FT.
WORDS = 1 EACH
ARROWS = 25 EACH

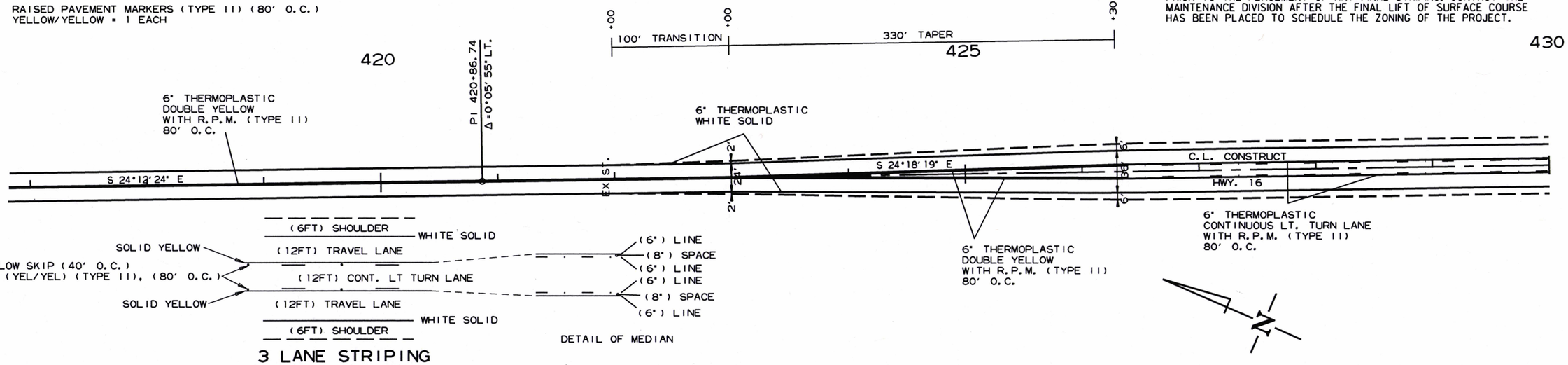
RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
YELLOW/YELLOW = 203 EACH

HWY. 310
THERMOPLASTIC PAVEMENT MARKINGS
6" YELLOW DBL. = 152 LIN. FT.
6" WHITE SOLID = 249 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
YELLOW/YELLOW = 1 EACH

THE 6" 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.

THE 6" 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.



DETAIL OF MEDIAN

3 LANE STRIPING
OPEN SHOULDER
CONTINUOUS LT. TURN LANE

LINE WIDTHS (6 in)

SITE 2
PERMANENT PAVEMENT MARKING DETAILS

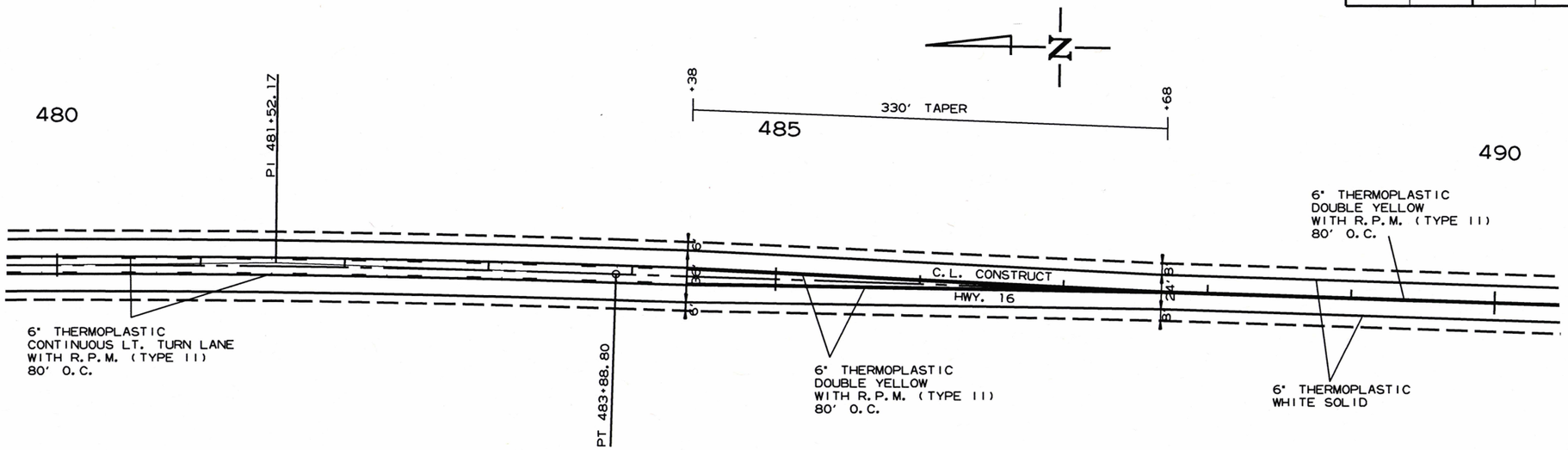
11/27/2018

R050279.DGN

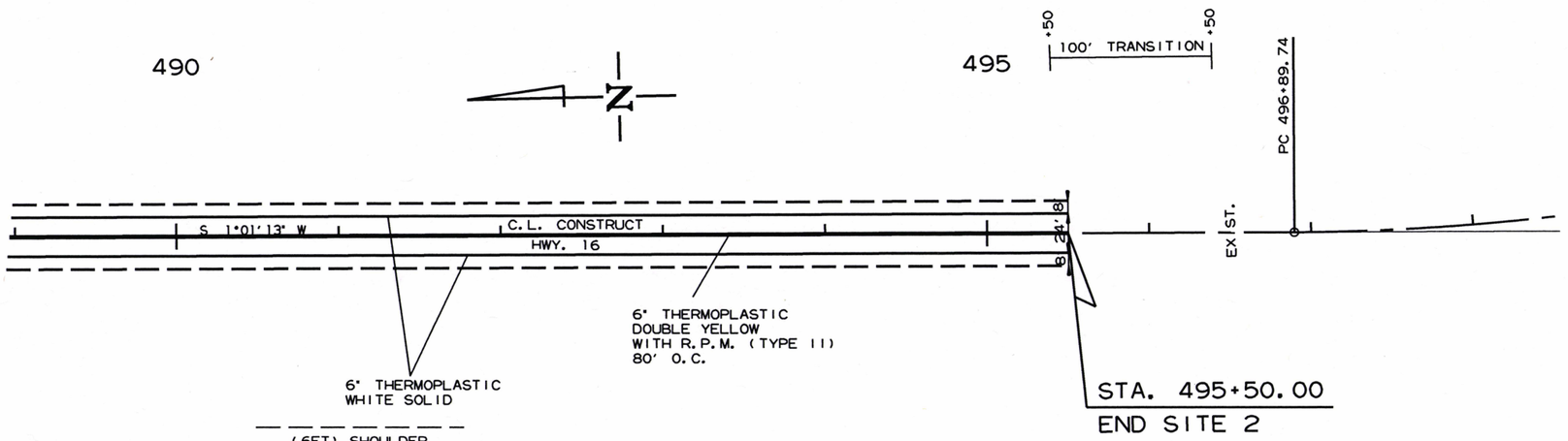
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	81	207

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



THE 6" 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.



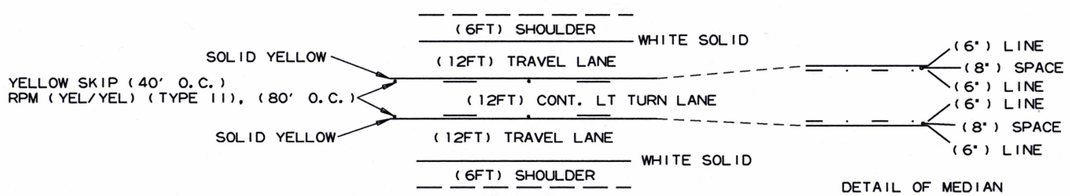
QUANTITIES:

HWY. 16
THERMOPLASTIC PAVEMENT MARKINGS
6" YELLOW DBL. = 9270 LIN. FT.
6" CONTINUOUS LT. TURN LANE = 14520 LIN. FT.
6" WHITE SOLID = 18258 LIN. FT.
24" WHITE STOP BAR = 12 LIN. FT.
WORDS = 1 EACH
ARROWS = 1 EACH

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
YELLOW/YELLOW = 203 EACH

HWY. 310
THERMOPLASTIC PAVEMENT MARKINGS
6" YELLOW DBL. = 152 LIN. FT.
6" WHITE SOLID = 249 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
YELLOW/YELLOW = 1 EACH



DETAIL OF MEDIAN

3 LANE STRIPING
OPEN SHOULDER
CONTINUOUS LT. TURN LANE

LINE WIDTHS (6 in)

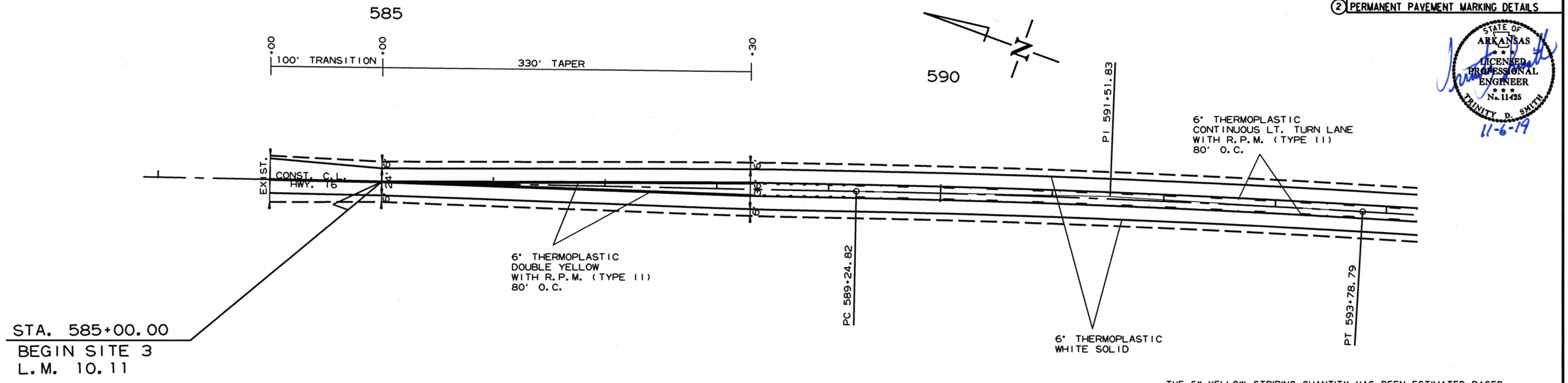
SITE 2
PERMANENT PAVEMENT MARKING DETAILS

11/27/2018

R050279.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.		050279	82	207

(2) PERMANENT PAVEMENT MARKING DETAILS



STATE OF ARKANSAS
LICENED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

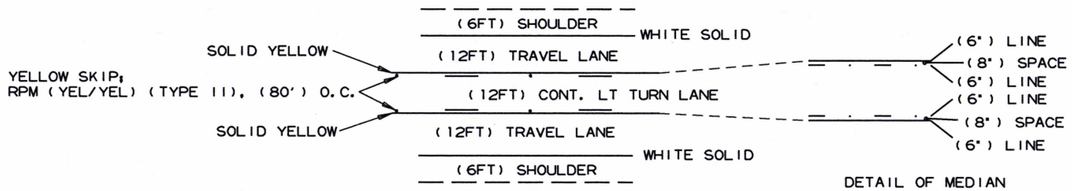
THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

QUANTITIES:

HWY. 16
THERMOPLASTIC PAVEMENT MARKINGS
6" YELLOW DBL. = 1520 LIN. FT.
6" CONTINUOUS LT. TURN LANE = 15325 LIN. FT.
6" WHITE SOLID = 13120 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
YELLOW/YELLOW = 163 EACH

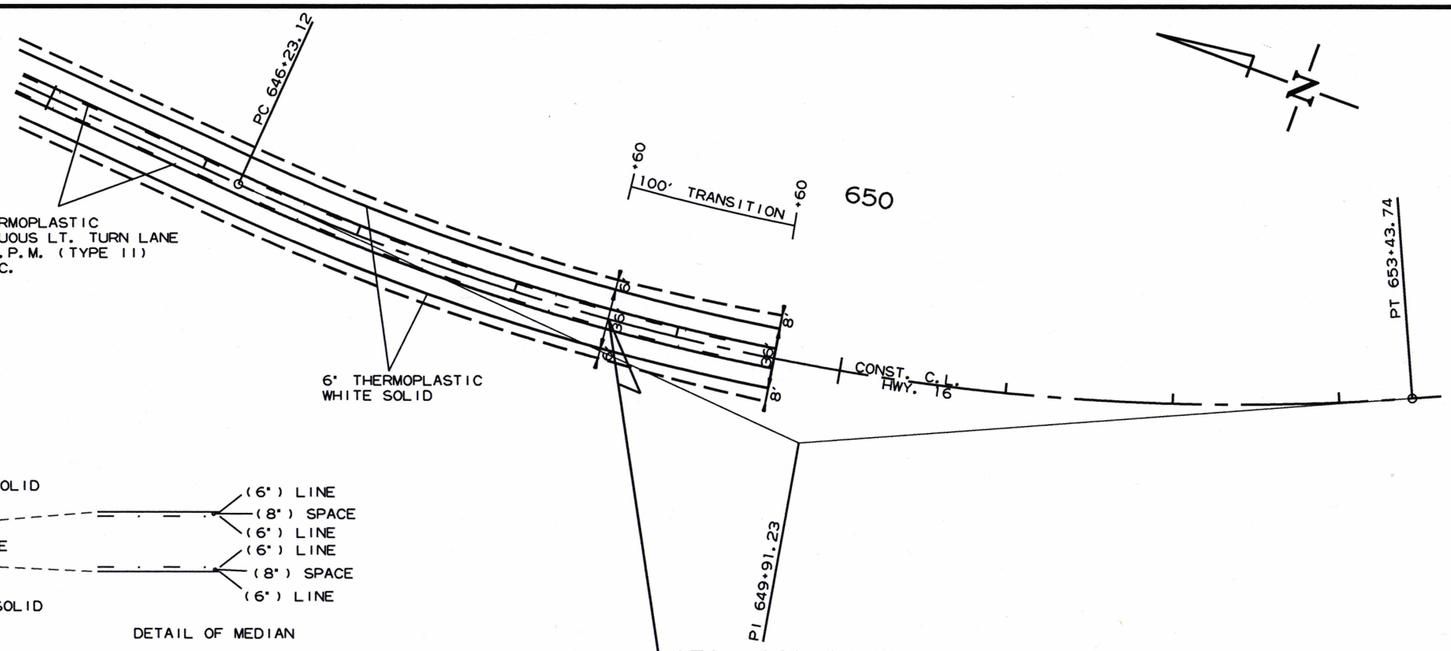
THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.



DETAIL OF MEDIAN

3 LANE STRIPING
OPEN SHOULDER
CONTINUOUS LT. TURN LANE

LINE WIDTHS (6 in)



SITE 3
PERMANENT PAVEMENT MARKING DETAILS

11/27/2018

R050279.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.		050279	83	207

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING				
				TYPE II	6"		24"	WORDS	ARROWS
				(YEL/YEL)	WHITE	YELLOW	WHITE		
	LIN. FT. - EACH		LIN. FT.	EACH	LIN. FT.			EACH	
CONSTRUCTION PAVEMENT MARKINGS	62900		62900						
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)		367		367					
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		31627			31627				
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		40787				40787			
THERMOPLASTIC PAVEMENT MARKING WHITE (24")		12					12		
THERMOPLASTIC PAVEMENT MARKING (WORDS)		1						1	
THERMOPLASTIC PAVEMENT MARKING (ARROWS)		1							1
TOTALS:			**62900**	**367**	**31627**	**40787**	**12**	**1**	**1**

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

NOTE: THE 6" 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.

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	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	6	6	6	6	6	96.0				
W20-1	ROAD WORK 1000 FT.	48"x48"	6	6	6	6	6	96.0				
W20-1	ROAD WORK 500 FT.	48"x48"	6	6	6	6	6	96.0				
W20-1	ROAD WORK AHEAD	48"x48"	15	15	15	15	15	240.0				
G20-2	END ROAD WORK	48"x24"	21	21	21	21	21	168.0				
OM-3L	OBJECT MARKER	12"x36"	9	9		9	9	27.0				
OM-3R	OBJECT MARKER	12"x36"	9	9		9	9	27.0				
R4-1	DO NOT PASS	24"x30"	10	10	10	10	10	50.0				
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	9	9	9	9	9	81.0				
	VERTICAL PANELS		281	281		281			281			
	TRAFFIC DRUMS		391	1082		1082				1082		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		798			798					798	
	RELOCATING PRECAST CONCRETE BARRIER			598		598						598
TOTALS:								**881.0**	**281**	**1082**	**798**	**598**

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.

5/31/2018

R050279.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.		050279	84	207

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-15-19

SOIL LOG (BOX 1 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
108+00	35	25	28.40	91	50	7.50	6' RT.	0-4Z	25	10	A-4(3)	BROWN
108+00	35	25	28.40	91	50	7.70	18' RT.	0-2.5Z	29	14	A-6(7)	BROWN
116+00	35	25	20.70	91	50	8.10	6' LT.	0-5	62	39	A-7-6(37)	BROWN
116+00	35	25	20.50	91	50	7.70	18' LT.	0-5	54	33	A-7-6(37)	BROWN
124+00	35	25	13.40	91	50	5.30	6' RT.	0-5	32	15	A-6(6)	BROWN
124+00	35	25	13.30	91	50	5.40	18' RT.	0-5	38	21	A-6(11)	BROWN
124+00	35	25	13.20	91	50	5.40	22' RT.	0-5	32	15	A-6(10)	BROWN
132+00	35	25	6.00	91	50	2.10	6' LT.	0-5	31	13	A-6(10)	BROWN
132+00	35	25	6.00	91	50	1.80	18' LT.	0-5	39	20	A-6(15)	BROWN
140+00	35	24	58.50	91	49	59.70	6' RT.	0-5	39	21	A-6(17)	BROWN
140+00	35	24	58.30	91	49	59.70	18' RT.	0-5	37	19	A-6(14)	BROWN
148+00	35	24	50.60	91	49	59.70	6' LT.	0-5	33	16	A-6(12)	BROWN
148+00	35	24	50.30	91	49	59.40	27' LT.	0-5	31	16	A-6(6)	BROWN
156+00	35	24	42.60	91	49	56.80	6' RT.	0-5	36	21	A-6(12)	BROWN
156+00	35	24	42.80	91	49	56.90	18' RT.	0-5	34	9	A-4(7)	BROWN
164+00	35	24	37.00	91	49	52.70	6' LT.	0-5	30	13	A-6(8)	BROWN
164+00	35	24	36.10	91	49	51.70	18' LT.	0-4.5Z	28	13	A-6(4)	BROWN
172+00	35	24	28.90	91	49	48.50	6' RT.	0-5	32	14	A-6(9)	BROWN
172+00	35	24	28.60	91	49	48.40	18' RT.	0-5	28	11	A-6(5)	BROWN
172+00	35	24	28.50	91	49	48.40	21' RT.	0-5	28	12	A-6(2)	BROWN
180+00	35	24	21.50	91	49	44.90	6' LT.	0-4Z	33	15	A-6(9)	BROWN
180+00	35	24	21.50	91	49	44.70	18' LT.	0-2Z	ND	NP	A-4(0)	BROWN
188+00	35	24	14.10	91	49	41.20	6' RT.	0-5	32	14	A-6(8)	BROWN
188+00	35	24	14.80	91	49	41.70	18' RT.	0-5	33	17	A-6(10)	BROWN
196+00	35	24	8.10	91	49	35.10	6' LT.	0-5	38	19	A-6(10)	BROWN
204+00	35	24	2.10	91	49	28.40	6' RT.	0-5	37	22	A-6(14)	BROWN
204+00	35	24	2.40	91	49	28.90	18' RT.	0-5	56	35	A-7-6(39)	BROWN
212+00	35	23	57.00	91	49	21.10	6' LT.	0-3Z	31	12	A-6(5)	BROWN
212+00	35	23	56.90	91	49	21.20	18' LT.	0-5	ND	NP	A-4(0)	BROWN
220+00	35	23	52.30	91	49	13.30	6' RT.	0-5	ND	NP	A-4(0)	BROWN
220+00	35	23	52.50	91	49	13.70	18' RT.	0-5	24	9	A-4(4)	BROWN
288+00	35	22	59.90	91	48	28.30	6' RT.	0-5	33	15	A-6(10)	BROWN
288+00	35	22	59.80	91	48	28.40	18' RT.	0-5	29	14	A-6(7)	BROWN
296+00	35	22	51.30	91	48	24.90	6' LT.	0-5	49	29	A-7-6(32)	RD/BR
296+00	35	22	52.70	91	48	25.70	18' LT.	0-5	53	36	A-7-6(35)	RD/BR
304+00	35	22	43.40	91	48	25.10	6' RT.	0-5	34	16	A-6(15)	BROWN
304+00	35	22	44.70	91	48	25.10	18' RT.	0-5	26	12	A-6(8)	BROWN
312+00	35	22	35.50	91	48	24.30	6' RT.	0-5	24	8	A-4(3)	BROWN
312+00	35	22	36.90	91	48	24.70	18' RT.	0-5	45	22	A-7-6(18)	BROWN
312+00	35	22	35.70	91	48	24.80	22' RT.	0-5	43	22	A-7-6(18)	BROWN
320+00	35	22	27.70	91	48	22.70	6' LT.	0-5	30	15	A-6(6)	RD/BR
320+00	35	22	27.90	91	48	22.90	18' LT.	0-5	75	46	A-7-6(48)	RD/BR
328+00	35	22	19.80	91	48	21.50	6' RT.	0-5	37	21	A-6(15)	BROWN
328+00	35	22	19.60	91	48	21.60	18' RT.	0-5	28	13	A-6(8)	BROWN
336+00	35	22	12.00	91	48	19.90	6' LT.	0-5	82	56	A-7-6(61)	RD/BR
336+00	35	22	12.10	91	48	19.90	18' LT.	0-5	72	43	A-7-6(42)	RD/BR
344+00	35	22	4.50	91	48	17.40	6' RT.	0-5	30	16	A-6(9)	BROWN
344+00	35	22	5.60	91	48	18.10	18' RT.	0-5	36	21	A-6(12)	BROWN
352+00	35	21	57.50	91	48	12.90	6' LT.	0-5	32	18	A-6(15)	GRAY
352+00	35	21	58.30	91	48	13.50	18' LT.	0-5	29	14	A-6(10)	GRAY
375+00	35	21	38.00	91	48	1.30	6' RT.	0-5	28	10	A-4(6)	BROWN
375+00	35	21	41.40	91	48	3.50	18' RT.	0-5	28	10	A-4(8)	BROWN
375+00	35	21	41.30	91	48	3.50	20' RT.	0-5	30	11	A-6(4)	BROWN
383+00	35	21	30.90	91	47	56.90	6' LT.	0-5	ND	NP	A-4(0)	BROWN
383+00	35	21	31.00	91	47	57.10	18' LT.	0-5	29	9	A-4(7)	BROWN
391+00	35	21	23.00	91	47	52.80	6' RT.	0-5	25	8	A-4(4)	BROWN
391+00	35	21	23.30	91	47	53.00	18' RT.	0-5	24	7	A-4(3)	BROWN
400+00	35	21	16.50	91	47	48.90	6' LT.	0-5	28	11	A-6(8)	BROWN
400+00	35	21	18.10	91	47	50.10	18' LT.	0-5	29	11	A-6(8)	BROWN
408+00	35	21	9.30	91	47	45.00	6' LT.	0-5	31	14	A-6(10)	BROWN
408+00	35	21	9.30	91	47	45.20	18' LT.	0-5	31	13	A-6(8)	BROWN
416+00	35	21	1.90	91	47	41.20	6' RT.	0-5	23	14	A-6(8)	BROWN
416+00	35	21	3.20	91	47	41.90	18' RT.	0-5	29	11	A-6(8)	BROWN
424+00	35	20	55.00	91	47	37.30	6' LT.	0-5	30	13	A-6(8)	BROWN
424+00	35	20	54.90	91	47	37.00	18' LT.	0-5	28	12	A-6(5)	BROWN
432+00	35	20	45.80	91	47	32.20	6' RT.	0-5	27	11	A-6(5)	BROWN
432+00	35	20	45.70	91	47	32.40	18' RT.	0-5	30	14	A-6(7)	BROWN
440+00	35	20	39.10	91	47	27.30	6' LT.	0-5	32	14	A-6(12)	BROWN
440+00	35	20	39.10	91	47	27.60	18' LT.	0-5	32	16	A-6(13)	BROWN
448+00	35	20	32.10	91	47	22.20	6' RT.	0-5	36	19	A-6(16)	BROWN
448+00	35	20	32.30	91	47	22.30	28' RT.	0-5	32	17	A-6(14)	BROWN
456+00	35	20	25.00	91	47	19.10	6' LT.	0-5	32	16	A-6(14)	BROWN
456+00	35	20	25.00	91	47	19.00	18' LT.	0-5	36	22	A-6(18)	BROWN
464+00	35	20	17.00	91	47	18.10	6' RT.	0-5	33	20	A-6(17)	BR/GR
464+00	35	20	16.90	91	47	18.20	18' RT.	0-5	40	25	A-6(22)	BR/GR
464+00	35	20	16.90	91	47	18.20	18' RT.	0-5	37	24	A-6(18)	BROWN
472+00	35	20	9.30	91	47	17.70	6' LT.	0-5	41	23	A-7-6(11)	BROWN
472+00	35	20	9.10	91	47	17.50	18' LT.	0-5	37	22	A-6(9)	BROWN
488+00	35	19	53.00	91	47	17.70	6' LT.	0-5	23	8	A-4(3)	BROWN
488+00	35	19	53.20	91	47	17.40	18' LT.	0-5	21	7	A-4(2)	BROWN
586+00	35	18	31.70	91	46	25.20	6' RT.	0-2Z	ND	NP	A-4(0)	BROWN
586+00	35	18	29.20	91	46	23.90	18' RT.	0-1.5Z	ND	NP		BROWN
594+00	35	18	21.90	91	46	20.90	6' LT.	0-4Z	26	10	A-4(1)	BROWN
594+00	35	18	21.80	91	46	20.60	18' LT.	0-1.5Z				BROWN
602+00	35	18	14.30	91	46	18.30	6' RT.	0-4Z	23	9	A-4(2)	BROWN
602+00	35	18	14.00	91	46	18.20	18' RT.	0-2.5Z	ND	NP	A-4(0)	BROWN
610+00	35	18	8.60	91	46	16.10	6' LT.	0-3Z	ND	NP	A-4(0)	BROWN
610+00	35	18	6.60	91	46	15.10	18' LT.	0-1.8Z	ND	NP	A-4(0)	BROWN

SOIL LOG (BOX 2 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
618+00	35	17	59.80	91	46	13.00	6' RT.	0-2Z	ND	NP	A-4(0)	BROWN
626+00	35	17	51.60	91	46	10.70	6' LT.	0-5	ND	NP	A-4(0)	BROWN
626+00	35	17	51.10	91	46	10.40	18' LT.	0-4Z	ND	NP	A-4(0)	BROWN
634+00	35	17	42.80	91	46	11.70	6' RT.	0-2.5Z	ND	NP	A-2-4(0)	BROWN
634+00	35	17	43.30	91	46	11.50	18' RT.	0-2.5Z	ND	NP	A-4(0)	BROWN
642+00	35	17	37.40	91	46	12.20	6' LT.	0-4.5Z	ND	NP	A-4(0)	BROWN
642+00	35	17	35.60	91	46	11.90	18' LT.	0-5	ND	NP	A-4(0)	BROWN
642+00	35	17	35.50	91	00	30.50	22' LT.	0-5	ND	NP	A-2-4(0)	BROWN

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
SITE 1			
592+55	OUTLET OF PIPE CULVERT	9	17
603+45	OUTLET OF PIPE CULVERT	14	28
618+71	OUTLET OF PIPE CULVERT	17	33
	TO BE USED IF AND WHERE	10	19
	DIRECTED BY THE ENGINEER		
TOTALS:		50	97

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

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

RUMBLE STRIPS AND STRIPES IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS	* RUMBLE STRIPES IN ASPHALT SHOULDERS
			LIN.FT.	LIN.FT.
126+22	143+00	HWY. 16 LT.		1480
126+22	143+20	HWY. 16 RT.		1368
143+00	148+40	HWY. 16 LT.	474	
143+20	149+00	HWY. 16 RT.	448	
148+40	223+37	HWY. 16 LT.		5517
149+00	223+37	HWY. 16 RT.		5523
285+81	360+51	HWY. 16 RT.		6084
286+22	360+28	HWY. 16 LT.		5888
374+44	388+41	HWY. 16 LT.		1397
374+44	388+41	HWY. 16 RT.		1331
389+72	409+15	HWY. 16 LT.		1791
389+72	409+15	HWY. 16 RT.		1943
582+28	585+00	HWY. 16 LT.		272
585+00	649+60	HWY. 16 LT.	4028	
585+00	649+60	HWY. 16 RT.	3732	
TOTALS:			8682	32594

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
SITE 2			
423+23	431+79	HWY. 16 RT.	865
431+92	432+15	HWY. 16 RT.	23
437+98	438+05	HWY. 16 LT.	33
441+01	442+55	HWY. 16 RT.	184
443+62	444+96	HWY. 16 RT.	166
461+79	462+29	HWY. 16 LT.	81
462+80	463+61	HWY. 16 LT.	92
465+16	466+30	HWY. 16 LT.	133
471+48	471+96	HWY. 16 LT.	56
474+78	478+28	HWY. 16 LT.	397
478+57	488+16	HWY. 16 LT.	1019
SITE 3			
586+54	588+51	HWY. 16 RT.	212
591+01	591+92	HWY. 16 LT.	107
591+18	594+12	HWY. 16 RT.	320
592+26	592+56	HWY. 16 LT.	51
593+91	595+54	HWY. 16 LT.	221
595+50	595+56	HWY. 16 RT.	29
596+00	596+83	HWY. 16 RT.	122
617+84		HWY. 16 RT.	11
626+04	628+17	HWY. 16 RT.	270
630+31	632+44	HWY. 16 RT.	269
632+44	634+34	HWY. 16 RT.	224
634+50	634+96	HWY. 16 RT.	104
637+01	638+47	HWY. 16 LT.	181
637+56	638+44	HWY. 16 RT.	96
639+99		HWY. 16 LT.	21
642+03		HWY. 16 RT.	13
TOTAL:			5300

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	280
AND WHERE DIRECTED BY THE	
ENGINEER	
TOTAL:	280

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

5/31/2018

R050279.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.		050279	85	207

(2) QUANTITIES

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	75	150
DIRECTED BY THE ENGINEER		
TOTALS:	**75**	**150**

NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH		
SITE 1	2	2	
SITE 2	20	14	3
SITE 3	49	35	7
TOTALS:	**71**	**51**	**10**

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE 2				
406+00	411+00	HWY. 16	5	5
432+00	436+00	HWY. 16	4	4
437+00	438+00	HWY. 16	1	1
440+00	441+00	HWY. 16	1	1
442+00	446+00	HWY. 16	4	4
451+00	457+00	HWY. 16	6	6
458+00	459+00	HWY. 16	1	1
461+00	462+00	HWY. 16	1	1
464+00	467+00	HWY. 16	3	3
468+00	489+00	HWY. 16	21	21
SITE 3				
585+00	597+00	HWY. 16	12	12
598+00	603+00	HWY. 16	5	5
605+00	606+00	HWY. 16	1	1
607+00	613+00	HWY. 16	6	6
616+00	620+00	HWY. 16	4	4
621+00	624+00	HWY. 16	3	3
625+00	639+00	HWY. 16	14	14
641+00	644+00	HWY. 16	3	3
TOTALS:			**95**	**95**

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
SITE 3		
603+45	LT. HEADWALL	1
618+71	RT. HEADWALL	1
632+07	LT. HEADWALL	1
TOTAL:		**3**

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

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
SITE 2				
461+41	B W DAVIS ROAD	8.50	18	4.3
SITE 3				
607+47	LONGVIEW CIRCLE	7.92	24	5.3
623+63	SMITH ROAD	7.92	28	6.2
646+56	HILLSIDE DRIVE	7.92	26	5.7
TOTAL:				**21.5**

AVG. DEPTH = 9"

REMOVAL AND DISPOSAL OF CULVERTS (BOX 1 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
SITE 1		
198+39	18" X 42' C.M. PIPE CULVERT ON LT.	1
SITE 2		
412+88	8" X 120' PLASTIC PIPE CULVERT ON RT. (27' TO R/W)	1
431+06	18" X 37' P.V.C. PIPE CULVERT ON LT.	1
432+06	24" X 26' C.M. PIPE CULVERT ON RT.	1
432+12	18" X 24' C.M. PIPE CULVERT ON LT.	1
434+95	18" X 37' R.C. PIPE CULVERT ON RT.	1
437+61	18" X 22' C.M. PIPE CULVERT ON LT.	1
442+98	18" X 22' C.M. PIPE CULVERT ON RT.	1
455+35	18" X 20' C.M. PIPE CULVERT ON RT.	1
455+37	18" X 24' C.M. PIPE CULVERT ON LT.	1
457+01	18" X 24' C.M. PIPE CULVERT ON RT.	1
457+19	12" X 14' C.M. PIPE CULVERT ON LT.	1
457+76	18" X 30' C.M. PIPE CULVERT ON RT.	1
458+36	24" X 31' STEEL PIPE CULVERT ON RT.	1
458+77	18" X 23' C.M. PIPE CULVERT ON LT.	1
461+45	18" X 26' C.M. PIPE CULVERT ON RT.	1
462+57	18" X 60' C.M. PIPE CULVERT ON LT.	1
463+85	18" X 23' C.M. PIPE CULVERT ON LT.	1
465+61	18" X 24' C.M. PIPE CULVERT ON LT.	1
468+15	18" X 10' C.M. PIPE CULVERT ON LT.	1
469+33	18" X 25' C.M. PIPE CULVERT ON LT.	1
469+83	18" X 20' C.M. PIPE CULVERT ON LT.	1
470+29	15" X 50' STEEL PIPE CULVERT ON RT.	1
470+64	18" X 24' C.M. PIPE CULVERT ON RT.	1
472+74	12" X 17' C.M. PIPE CULVERT ON LT.	1
473+74	18" X 24' C.M. PIPE CULVERT ON LT.	1
474+25	18" X 20' C.M. PIPE CULVERT ON LT.	1
474+62	18" X 24' C.M. PIPE CULVERT ON LT.	1
475+04	18" X 24' C.M. PIPE CULVERT ON RT.	1
476+85	18" X 22' C.M. PIPE CULVERT ON RT.	1
478+32	18" X 24' C.M. PIPE CULVERT ON RT.	1
479+72	18" X 24' C.M. PIPE CULVERT ON RT.	1
482+41	18" X 22' C.M. PIPE CULVERT ON RT.	1
485+31	18" X 24' C.M. PIPE CULVERT ON RT.	1
488+34	18" X 34' C.M. PIPE CULVERT ON RT.	1
488+36	18" X 36' C.M. PIPE CULVERT ON LT.	1
SITE 3		
585+69	18" X 40' C.M. PIPE CULVERT ON LT.	1
586+32	18" X 22' R.C. PIPE CULVERT ON LT.	1
587+65	18" X 20' PLASTIC PIPE CULVERT ON LT.	1
589+29	18" X 33' C.M. PIPE CULVERT ON LT.	1
589+56	18" X 40' PLASTIC PIPE CULVERT ON RT.	1
590+76	18" X 24' C.M. PIPE CULVERT ON LT.	1
592+07	18" X 26' R.C. PIPE CULVERT ON LT.	1
593+36	18" X 23' R.C. PIPE CULVERT ON LT.	1
594+93	18" X 24' C.M. PIPE CULVERT ON RT.	1
595+52	18" X 24' C.M. PIPE CULVERT ON LT.	1
595+91	18" X 56' C.M. PIPE CULVERT ON RT.	1
596+18	18" X 46' PLASTIC PIPE CULVERT ON LT.	1
597+54	18" X 44' C.M. PIPE CULVERT ON RT.	1
598+06	18" X 54' PLASTIC PIPE CULVERT ON LT.	1
599+69	18" X 44' C.M. PIPE CULVERT ON RT.	1
600+00	18" X 24' C.M. PIPE CULVERT ON LT.	1
601+51	18" X 24' C.M. PIPE CULVERT ON RT.	1
602+45	18" X 24' PLASTIC PIPE CULVERT ON LT.	1
603+69	24" X 31' C.M. PIPE CULVERT ON LT.	1
603+77	15" X 35' C.M. PIPE CULVERT ON RT.	1
605+97	18" X 31' C.M. PIPE CULVERT ON RT.	1
607+45	18" X 21' C.M. PIPE CULVERT ON RT.	1
611+75	18" X 40' C.M. PIPE CULVERT ON LT.	1
612+66	18" X 23' C.M. PIPE CULVERT ON RT.	1
614+17	18" X 46' C.M. PIPE CULVERT ON LT.	1
619+76	18" X 24' C.M. PIPE CULVERT ON RT.	1
623+46	18" X 24' C.M. PIPE CULVERT ON LT.	1
623+86	18" X 26' C.M. PIPE CULVERT ON RT.	1
624+27	18" X 30' C.M. PIPE CULVERT ON LT.	1
627+61	18" X 25' C.M. PIPE CULVERT ON RT.	1
628+53	18" X 24' C.M. PIPE CULVERT ON LT.	1
629+19	18" X 23' C.M. PIPE CULVERT ON LT.	1
630+37	18" X 24' C.M. PIPE CULVERT ON LT.	1
631+10	18" X 24' C.M. PIPE CULVERT ON LT.	1
634+44	18" X 30' C.M. PIPE CULVERT ON RT.	1
634+59	24" X 32' C.M. PIPE CULVERT ON RT.	1
635+28	18" X 43' C.M. PIPE CULVERT ON RT.	1
635+46	24" X 23' C.M. PIPE CULVERT ON LT.	1
636+48	18" X 43' C.M. PIPE CULVERT ON RT.	1
637+41	18" X 40' C.M. PIPE CULVERT ON RT.	1
638+04	18" X 24' C.M. PIPE CULVERT ON LT.	1
638+68	18" X 20' PLASTIC PIPE CULVERT ON LT.	1
639+34	18" X 24' C.M. PIPE CULVERT ON RT.	1
639+79	18" X 24' C.M. PIPE CULVERT ON LT.	1
640+32	18" X 24' C.M. PIPE CULVERT ON LT.	1
640+47	18" X 25' C.M. PIPE CULVERT ON RT.	1
641+49	18" X 24' C.M. PIPE CULVERT ON RT.	1
642+12	18" X 28' C.M. PIPE CULVERT ON LT.	1
SUBTOTAL (BOX 1 OF 2):		**84**

REMOVAL AND DISPOSAL OF CULVERTS (BOX 2 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
642+61	18" X 25' C.M. PIPE CULVERT ON RT.	1
643+23	18" X 28' C.M. PIPE CULVERT ON LT.	1
643+89	18" X 28' C.M. PIPE CULVERT ON RT.	1
644+34	18" X 28' C.M. PIPE CULVERT ON RT.	1
644+35	18" X 28' C.M. PIPE CULVERT ON LT.	1
645+94	18" X 27' C.M. PIPE CULVERT ON RT.	1
646+58	18" X 43' C.M. PIPE CULVERT ON LT.	1
646+91	18" X 28' C.M. PIPE CULVERT ON RT.	1
647+82	18" X 42' C.M. PIPE CULVERT ON RT.	1
649+36	18" X 36' C.M. PIPE CULVERT ON RT.	1
SUBTOTAL (BOX 1 OF 2):		**84**
SUBTOTAL (BOX 2 OF 2):		**10**
TOTAL:		**94**

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
SITE 2				
404+85.00	405+85.00	MAIN LANES	22.00	244.44
409+64.00		HWY. 310	24.00	266.67
489+00.00	490+00.00	MAIN LANES	22.00	244.44
* 490+00.00	495+50.00	MAIN LANES	22.00	1344.44
SITE 3				
584+00.00	585+00.00	MAIN LANES	22.00	244.44
649+60.00	650+60.00	MAIN LANES	36.00	400.00
TOTAL:				**2744.43**

NOTE: AVERAGE MILLING DEPTH 1".
* NOTE: MILLING DEPTH 2".

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.

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			15500	63
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**15500**	**63**

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

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.
SITE 2							
476+00.00	479+00.00	RT. DITCH	268.00	7.00	208.44	119.11	1.50
482+00.00	483+00.00	LT. DITCH	100.00	6.00	66.67	44.44	0.56
SITE 3							
618+71.00	622+50.00	LT. DITCH	379.00	7.00	294.78	168.44	2.12
618+71.00	622+50.00	RT. DITCH	347.00	7.00	269.89	154.22	1.94
632+07.00	638+50.00	LT. DITCH	595.00	7.00	462.78	264.44	3.33
632+07.00	638+50.00	RT. DITCH	523.00	7.00	406.78	232.44	2.93
TOTALS:					**1709.34**	**983.09**	**12.38**

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-15-19

5/31/2018

R050279.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.		050279	86	207

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-10-2020

DRIVEWAYS & TURNOUTS (BOX 1 OF 2)

STATION	SIDE	LOCATION	WIDTH	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"	21"X15"	28"X20"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.				
SITE 1												
195+92	LT.	VALLEY ESTATES	20		177.80	19.56	72.60					
198+39	LT.	GREEN VALLEY LANE	20		146.69	16.14	59.90	60				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SITE 2												
408+98	LT.	HWY. 16 DRIVE	36		314.34	34.58	128.36	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
409+70	LT.	HWY. 16 DRIVE	16		142.07	15.63	58.01					
431+00	LT.	HWY. 16 DRIVE	18		58.34	6.42	23.82	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
432+07	RT.	HWY. 16 DRIVE	16		52.12	5.73	21.28				28	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
432+08	LT.	HWY. 16 DRIVE	16		53.54	5.89	21.86	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
434+95	RT.	HWY. 16 DRIVE	34		104.52	11.50	42.68			44		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
437+63	LT.	HWY. 16 DRIVE	16		55.14	6.07	22.52	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
438+35	RT.	HWY. 16 DRIVE	40		80.20	8.82	32.75			50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
440+12	RT.	HWY. 16 DRIVE	20	58.87								
442+98	RT.	HWY. 16 DRIVE	16		34.70	3.82	14.17			28		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
446+18	RT.	HWY. 16 DRIVE	16		34.34	3.78	14.02					
446+24	LT.	HWY. 16 DRIVE	16		51.41	5.66	20.99	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
447+05	LT.	HWY. 16 DRIVE	40		121.54	13.37	49.63					
447+20	RT.	REAPER ROAD	22		161.53	17.77	65.96					
447+20		DRIVE OFF REAPER ROAD	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
448+00	LT.	ALBION ROAD	20		163.56	17.99	66.79					
448+00		DRIVE OFF ALBION ROAD	40		92.80	10.21	37.89	56				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
448+25	RT.	HWY. 16 DRIVE	40		138.87	15.28	56.71			48		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
449+10	LT.	HWY. 16 DRIVE	40		82.87	9.12	33.84	50				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
449+42	RT.	HWY. 16 DRIVE	40		147.32	16.21	60.16	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
453+00	LT.	HWY. 16 DRIVE	16		43.76	4.81	17.87			28		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
454+50	LT.	HWY. 16 DRIVE	16		45.01	4.95	18.38					
454+66	RT.	HWY. 16 DRIVE	16	55.32				30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
455+33	RT.	HWY. 16 DRIVE	16		52.65	5.79	21.50	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
455+37	LT.	HWY. 16 DRIVE	18		57.54	6.33	23.50	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
457+02	RT.	HWY. 16 DRIVE	16		55.67	6.12	22.73	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
457+18	LT.	HWY. 16 DRIVE	16		52.12	5.73	21.28	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
457+72	RT.	HWY. 16 DRIVE	16		61.36	6.75	25.06	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
458+35	RT.	HWY. 16 DRIVE	16		60.83	6.69	24.84		28			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
458+85	LT.	HWY. 16 DRIVE	16		54.43	5.99	22.23	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
461+41	RT.	B W DAVIS ROAD	20		117.56	12.93	48.00			46		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
461+41		DRIVE OFF B W DAVIS ROAD	24		60.80	6.69	24.83					
461+51	LT.	WEAVER ROAD	20		117.56	12.93	48.00					
462+49	LT.	HWY. 16 DRIVE	18	110.00				42				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
463+85	LT.	HWY. 16 DRIVE	16		43.59	4.79	17.80			28		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
465+61	LT.	HWY. 16 DRIVE	18		59.34	6.53	24.23	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
466+45	LT.	HWY. 16 DRIVE	22		78.87	8.68	32.21					
466+78	RT.	HWY. 16 DRIVE	18		54.54	6.00	22.27					
468+17	LT.	HWY. 16 DRIVE	16		60.12	6.61	24.55	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
468+23	RT.	HWY. 16 DRIVE	20		61.54	6.77	25.13	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
469+33	LT.	HWY. 16 DRIVE	16		59.94	6.59	24.48	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
469+86	LT.	HWY. 16 DRIVE	16		59.59	6.55	24.33	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
470+29	RT.	HWY. 16 DRIVE	16		61.72	6.79	25.20	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
470+60	RT.	HWY. 16 DRIVE	16		74.16	8.16	30.28	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
472+75	LT.	HWY. 16 DRIVE	16		57.99	6.38	23.68	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
473+69	RT.	HWY. 16 DRIVE	16		62.25	6.85	25.42	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
474+25	LT.	HWY. 16 DRIVE	16		55.14	6.07	22.52	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
474+65	RT.	HWY. 16 DRIVE	16		66.87	7.36	27.31	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
475+04	RT.	HWY. 16 DRIVE	16		69.19	7.61	28.25	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
476+85	RT.	HWY. 16 DRIVE	16		77.36	8.51	31.59	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
478+32	RT.	HWY. 16 DRIVE	16		62.25	6.85	25.42	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
478+34	LT.	HWY. 16 DRIVE	16		78.43	8.63	32.03					
479+72	RT.	HWY. 16 DRIVE	16		52.65	5.79	21.50	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
482+41	RT.	HWY. 16 DRIVE	16		53.19	5.85	21.72	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
485+31	RT.	HWY. 16 DRIVE	16		55.85	6.14	22.81	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
488+34	RT.	HWY. 16 DRIVE	16		58.33	6.42	23.82	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
488+36	LT.	PUGH ROAD	20		121.15	13.33	49.47	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SITE 3												
585+70	LT.	HWY. 16 DRIVE	20		76.87	8.46	31.39	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
586+33	LT.	HWY. 16 DRIVE	16		62.79	6.91	25.64	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
587+68	LT.	HWY. 16 DRIVE	16		59.41	6.54	24.26	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
589+32	LT.	HWY. 16 DRIVE	16		67.41	7.42	27.53	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
589+55	RT.	HWY. 16 DRIVE	34	58.43	41.56	4.57	16.97	48				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
590+82	LT.	HWY. 16 DRIVE	16		66.87	7.36	27.31	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
592+18	LT.	HWY. 16 DRIVE	16		66.70	7.34	27.24	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
593+36	LT.	HWY. 16 DRIVE	16		67.59	7.43	27.60	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
594+80	RT.	HWY. 16 DRIVE	18		63.94	7.03	26.11	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
595+65	LT.	HWY. 16 DRIVE	16		69.54	7.65	28.40	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
595+82	RT.	HWY. 16 DRIVE	30		100.54	11.06	41.05	46				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
596+27	LT.	HWY. 16 DRIVE	32		133.54	14.69	54.53	48				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
597+40	LT.	HWY. 16 DRIVE	28		117.86	12.96	48.13	44				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
597+52	RT.	HWY. 16 DRIVE	28		87.06	9.58	35.55	44				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
598+02	LT.	HWY. 16 DRIVE	16		69.90	7.69	28.54	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
599+69	RT.	HWY. 16 DRIVE	36		100.74	11.08	41.14	50				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
600+08	LT.	HWY. 16 DRIVE	16		70.25	7.73	28.69	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SUBTOTALS (BOX 1 OF 2):				282.62	5844.42	642.95	2386.55	1904	28	272	28	

DRIVEWAYS & TURNOUTS (BOX 2 OF 2)

STATION	SIDE	LOCATION	WIDTH	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"	21"X15"	28"X20"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.				
601+50	RT.	HWY. 16 DRIVE	38	64.65	32.93	3.62	13.45	50				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
602+50	LT.	HWY. 16 DRIVE	16		70.61	7.77	28.83	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
603+74	LT.	HWY. 16 DRIVE	16		70.96	7.81	28.98		28			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
603+75	RT.	HWY. 16 DRIVE	22		104.05	11.45	42.49	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
605+89	RT.	HWY. 16 DRIVE	20		68.43	7.53	27.94	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
607+47	RT.	LONGVIEW CIRCLE	20		117.56	12.93	48.00	56				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
610+82	LT.	HWY. 16 DRIVE	16		68.30	7.51	27.89					
611+75	LT.	SONIC DRIVE	20		121.34	13.35	49.55	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
612+66	RT.	HWY. 16 DRIVE	16		70.96	7.81	28.98	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
614+15	LT.	HWY. 16 DRIVE	36		142.34	15.66	58.12	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
614+25	RT.	HWY. 16 DRIVE	20		87.32	9.61	35.66	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
615+05	RT.	HWY. 16 DRIVE	20		86.87	9.56	35.47	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
615+79	RT.	HWY. 16 DRIVE	16		70.25	7.73	28.69	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
617+73	RT.	HWY. 16 DRIVE	16		69.54	7.65	28.40					
617+99	RT.	HWY. 16 DRIVE	16		69.36	7.63	28.32					
618+10	LT.	BROWN LANE	20		169.12	18.60	69.06					
619+76	RT.	HWY. 16 DRIVE	16		68.65	7.55	28.03	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
622+11	RT.	HWY. 16 DRIVE	16		69.54	7.65	28.40	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
623+44	LT.	HWY. 16 DRIVE	16		41.45	4.56	16.93	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
623+63	RT.	SMITH ROAD	20		141.12	15.52	57.62	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
623+63	RT.	DRIVE OFF SMITH ROAD	16		44.80	4.93	18.29					
623+90	LT.	HWY. 16 DRIVE	16		54.07	5.95	22.08	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
624+29	LT.	HWY. 16 DRIVE	16		53.72	5.91	21.94	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
624+65	RT.	HWY. 16 DRIVE	40		204.20	22.46	83.38	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
627+62	RT.	HWY. 16 DRIVE	16		87.32	9.61	35.66	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
628+49	LT.	HWY. 16 DRIVE	16		56.92	6.26	23.24	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
629+34	RT.	HWY. 16 DRIVE	16		86.79	9.55	35.44	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
630+36	LT.	HWY. 16 DRIVE	18		68.94	7.58	28.15	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
630+53	RT.	HWY. 16 DRIVE	16		86.25	9.49	35.22	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
631+07	LT.	HWY. 16 DRIVE	16		62.61	6.89	25.57	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
634+43	RT.	HWY. 16 DRIVE	16		87.50	9.63	35.73	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
634+58	LT.	HWY. 16 DRIVE	16		69.54	7.65	28.40		30			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
635+29	RT.	HWY. 16 DRIVE	40		211.76	23.29	86.47	54				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
635+41	LT.	HWY. 16 DRIVE	16		69.54	7.65	28.40		30			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
636+48	RT.	HWY. 16 DRIVE	40		212.65	23.39	86.83	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
637+43	RT.	HWY. 16 DRIVE	24		74.88	8.24	30.58	36				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
638+04	LT.	HWY. 16 DRIVE	16		69.54	7.65	28.40	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
638+66	LT.	HWY. 16 DRIVE	16	30.43	39.11	4.30	15.97	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
639+34	RT.	HWY. 16 DRIVE	16		51.59	5.67	21.07	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
639+79	LT.	HWY. 16 DRIVE	16		69.54	7.65	28.40	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
640+29	LT.	HWY. 16 DRIVE	16		69.01	7.59	28.18	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
640+45	RT.	HWY. 16 DRIVE	20	62.87				30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
641+41	RT.	HWY. 16 DRIVE	18	57.14				28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
642+12	LT.	HWY. 16 DRIVE	16		64.39	7.08	26.29	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
642+61	RT.	HWY. 16 DRIVE	16		51.41	5.66	20.99	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
643+22	LT.	HWY. 16 DRIVE	16		61.54	6.77	25.13	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
643+80	RT.	HWY. 16 DRIVE	16		51.23	5.64	20.92	28				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
644+35	LT.	HWY. 16 DRIVE	18		72.34	7.96	29.54	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
644+36	RT.	HWY. 16 DRIVE	16		51.23	5.64	20.92	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
645+94	RT.	HWY. 16 DRIVE	16		96.21	10.58	39.29	44				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
646+56	LT.	HILLSIDE DRIVE	20		136.45	15.01	55.72	52				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
646+91	RT.	HWY. 16 DRIVE	16		90.87	10.00	37.11	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
647+82	RT.	HWY. 16 DRIVE	22		73.98	8.14	30.21	38				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
649+32	RT.	HWY. 16 DRIVE	16		83.04	9.13	33.91	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
* ENTIRE PROJECT		TEMPORARY DRIVES					500.00					
SUBTOTALS (BOX 1 OF 2):				282.62	5844.42	642.95	2386.55	1904	28	272	28	
SUBTOTALS (BOX 2 OF 2):				215.09	4403.67	484.45	2298.24	1642	88			
TOTALS:				497.71	10248.09	1127.40	4684.79	3546	116	272	28	

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

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

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

5/31/2018

R050279.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.		050279	87	207

(2) QUANTITIES

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	FOOT BRIDGE	CURB AND GUTTER	POSTS	BILLBOARD	CONCRETE PAVEMENT	CONCRETE DRIVEWAYS	SIGN FOUNDATIONS	CONCRETE DITCH PAVING	LUMINAIRE POLES	BUILDINGS	FLAG POLE	SIGNS	PLANTERS
			EACH	LIN. FT.	EACH	EACH	SQ. YD.	SQ. YD.	EACH	SQ. YD.	EACH	EACH	EACH	EACH	EACH
SITE 1															
195+50		HWY. 16 LT.			1									1	
SITE 2															
410+03		HWY. 16 RT.												1	
410+03		HWY. 16 LT.												1	
410+56		HWY. 16 RT.								15					
411+02		HWY. 16 RT.													
414+37	414+70	HWY. 16 RT.								19					
423+30		HWY. 16 LT.												1	
438+00		HWY. 16 LT.			1										
440+12		HWY. 16 RT.						80							
441+05		HWY. 16 RT.												1	
443+60		HWY. 16 RT.													1
446+62		HWY. 16 LT.							2					1	
447+00		HWY. 16 RT.							2					1	
448+95		HWY. 16 RT.							2					2	
454+66		HWY. 16 RT.						77							
457+33		HWY. 16 RT.							1					1	
457+34		HWY. 16 RT.											1		
459+74		HWY. 16 RT.							1					1	
462+49		HWY. 16 LT.						156							
467+12		HWY. 16 RT.													1
467+54		HWY. 16 LT.												1	
467+97		HWY. 16 LT.													1
468+37		HWY. 16 RT.							2					1	
469+27		HWY. 16 LT.			1						1				
469+94		HWY. 16 LT.									1				
470+27		HWY. 16 LT.													1
471+53		HWY. 16 LT.													1
472+54		HWY. 16 LT.													1
SITE 3															
585+44		HWY. 16 LT.							2					1	
588+74		HWY. 16 RT.							2					3	
592+43		HWY. 16 LT.										1			
596+02		HWY. 16 LT.												1	
596+98		HWY. 16 LT.												1	
597+23		HWY. 16 LT.	1												
589+55		HWY. 16 RT.						62							
590+63		HWY. 16 RT.							2					3	
601+50		HWY. 16 RT.						83							
601+86		HWY. 16 RT.				1			2						
603+62		HWY. 16 RT.		35											
603+88		HWY. 16 RT.		38											
608+71		HWY. 16 RT.												1	
613+77		HWY. 16 RT.													1
613+92		HWY. 16 LT.							2					1	
615+37		HWY. 16 RT.												1	
615+47		HWY. 16 RT.												1	
616+43		HWY. 16 RT.												1	
635+72	636+48	HWY. 16 RT.						241							
637+07		HWY. 16 RT.							1					1	
638+66		HWY. 16 LT.						35							
640+45		HWY. 16 RT.						89							
641+41		HWY. 16 RT.						71							
TOTALS:			1	73	3	1	241	653	21	34	2	1	1	28	7

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
ENTIRE	PROJECT	SITE 2 STAGE 1	8408	1823	
ENTIRE	PROJECT	SITE 2 STAGE 2	11499	875	
ENTIRE	PROJECT	SITE 3 STAGE 1	11481	1208	
ENTIRE	PROJECT	SITE 3 STAGE 2	7933	1288	
ENTIRE	PROJECT	APPROACHES	50	4670	
409+64		HWY. 310	10	50	
603+45		CHANNEL CHANGE	31		
618+71		CHANNEL CHANGE	50		
632+07		CHANNEL CHANGE	58		
ENTIRE	PROJECT	TO BE USED IF AND WHERE	1000	1000	500
		DIRECTED BY THE ENGINEER			
TOTALS:			40520	10914	500

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-15-19

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D-1)	WIRE FENCE (TYPE D-2)	* 4' CHAIN LINK FENCE	* 5' CHAIN LINK FENCE	* 6' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.						EACH
SITE 2									
423+23	431+79	HWY. 16 RT.			856				
441+01	442+55	HWY. 16 RT.			153				
443+62	444+96	HWY. 16 RT.		134					
461+79	462+29	HWY. 16 LT.						51	
462+80	463+61	HWY. 16 LT.						81	
465+16	466+30	HWY. 16 LT.						113	
474+78	478+28	HWY. 16 LT.	346						
478+57	481+70	HWY. 16 LT.	355						
481+70	488+16	HWY. 16 LT.		647					
SITE 3									
586+54	588+51	HWY. 16 RT.	197						
591+06	591+92	HWY. 16 LT.				88			
591+18	594+12	HWY. 16 RT.	294						
592+26	592+56	HWY. 16 LT.				30			
593+91	595+54	HWY. 16 LT.	160						
596+00	596+77	HWY. 16 RT.				76			
626+04	628+17	HWY. 16 RT.				197			1
630+34	631+58	HWY. 16 RT.					209		1
631+58	632+08	HWY. 16 RT.	62						1
632+08	634+34	HWY. 16 RT.	191						
634+50	634+96	HWY. 16 RT.	46						
637+01	638+43	HWY. 16 LT.				130			1
637+56	638+44	HWY. 16 RT.				86			
TOTALS:			1651	781	1009	607	209	245	4

* DENOTES ALTERNATE BID ITEM.

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS V) 24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.	EACH	LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
SITE 2												
430+78	EXTEND R.C. PIPE CULVERT 18' LT. & 12' RT. W/FES LT. & RT.	38	2							16	0.20	FES-1, FES-2, PCC-1
SITE 3												
592+55	EXTEND R.C. PIPE CULVERT 20' LT. & 18' RT. W/FES LT. & RT.	46	2							16	0.20	FES-1, FES-2, PCC-1
603+45	EXTEND R.C. BOX CULVERT 17' LT. STRAIGHT & 27' RT. ON 45^ LT. FWD. SKEW W/3:1 WINGS LT. & 2:1 WINGS RT.			4	3	44	21.64	2397	15	13	0.16	RCB-1, RCB-2, RCB-3, R-100X-0, R-145X-0, W-X003-1, W-X45, W-X452-1
611+05	EXTEND R.C. PIPE CULVERT 18' LT. & 12' RT. W/FES LT. & RT.	38	2							16	0.20	FES-1, FES-2, PCC-1
618+71	EXTEND R.C. BOX CULVERT 18' LT. STRAIGHT & 21' RT. ON 15^ LT. FWD. SKEW W/3:1 WINGS LT. & RT.			6	4	39	30.05	3419	20	16	0.20	RCB-1, RCB-2, RCB-3, R-100X-0, R-115X-0, W-X003-1, W-X15, W-X153-1
626+13	EXTEND R.C. PIPE CULVERT 18' LT. ON 30^ LT. FWD. SKEW AND 16' RT. ON 15^ LT. FWD. SKEW W/FES LT. & RT.	42	2							16	0.20	FES-1, FES-2, PCC-1
632+07	EXTEND R.C. BOX CULVERT 20' LT. & 22' RT. ON 15^ LT. FWD. SKEW W/3:1 WINGS LT. & RT.			6	3	42	27.83	3456	19	14	0.18	RCB-1, RCB-2, RCB-3, R-115X-0, W-X15, W-X153-1
TOTALS:		164	8				79.52	9272	54	107	1.34	

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.

5/31/2018

R050279.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.		050279	88	207

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-15-19

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	FILTER SOCK (12") (E-3)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
SITE 1																	
ENTIRE	SITE	ALL STAGES	0.14	0.28	0.14	14.3	0.14	0.14	0.14	2.9		22	3				2
SITE 2																	
ENTIRE	SITE	CLEARING AND GRUBBING						16.91	16.91	345.0		704	99	11304			484
ENTIRE	SITE	STAGE 1	3.54	7.08	3.54	361.1	3.54					330	51	34			33
ENTIRE	SITE	STAGE 2	3.80	7.60	3.80	387.6	3.80					374	51				34
SITE 3																	
ENTIRE	SITE	CLEARING AND GRUBBING						14.03	14.03	286.2		902	120	5812			296
ENTIRE	SITE	STAGE 1	3.39	6.78	3.39	345.8	3.39					440	66				42
ENTIRE	SITE	STAGE 2	2.90	5.80	2.90	295.8	2.90					440	60	232			49
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			3.23	6.46	3.23	329.5	3.23	8.92	8.92	182.0	500	286	48	2618	5000	5000	5126
TOTALS:			**17.00**	**34.00**	**17.00**	**1734.1**	**17.00**	**40.00**	**40.00**	**816.1**	**500**	**3498**	**498**	**20000**	**5000**	**5000**	**6066**

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

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

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
SITE 2				
423+00.00	435+00.00	LT. DITCH	1166.00	1036.44
423+00.00	435+00.00	RT. DITCH	1168.00	1038.22
470+00.00	476+00.00	LT. DITCH	568.00	504.89
470+00.00	476+00.00	RT. DITCH	520.00	462.22
479+00.00	482+00.00	LT. DITCH	300.00	266.67
479+00.00	484+00.00	RT. DITCH	468.00	416.00
SITE 3				
585+00.00	602+00.00	LT. DITCH	1476.00	1312.00
585+00.00	602+00.00	RT. DITCH	1516.00	1347.56
605+00.00	609+50.00	LT. DITCH	450.00	400.00
605+00.00	609+50.00	RT. DITCH	410.00	364.44
613+00.00	614+00.00	LT. DITCH	100.00	88.89
613+00.00	614+00.00	RT. DITCH	100.00	88.89
622+50.00	624+50.00	LT. DITCH	152.00	135.11
622+50.00	624+50.00	RT. DITCH	160.00	142.22
627+00.00	629+00.00	LT. DITCH	184.00	163.56
627+00.00	629+00.00	RT. DITCH	184.00	163.56
630+50.00	631+50.00	LT. DITCH	84.00	74.67
630+50.00	631+50.00	RT. DITCH	84.00	74.67
642+00.00	645+50.00	LT. DITCH	300.00	266.67
642+00.00	645+50.00	RT. DITCH	302.00	268.44
TOTAL:				**8615.12**

NOTE: AVERAGE WIDTH = 8'-0"

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				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	TOTAL PG 64-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																						
SITE 2																						
409+64.00		HWY. 310		VAR.	124.50	VAR.	587.49	0.17	99.87	VAR.	98.38	495.00	24.35	VAR.	89.44	220.00	9.84	VAR.	439.78	220.00	48.38	58.22
404+85.00	405+85.00	TRANSITION	100.00	44.00	44.00	29.39	326.56	0.05	16.33	2.26	25.11	495.00	6.21	2.13	23.67	220.00	2.60	25.00	277.78	220.00	30.56	33.16
405+85.00	409+15.00	LANE TAPER	330.00	148.25	489.23	43.77	1604.90	0.05	80.25	9.52	349.07	495.00	86.39	9.25	339.17	220.00	37.31	38.00	1393.33	220.00	153.27	190.58
409+15.00	411+26.00	LEFT TURN LANE	211.00	208.50	439.94	50.77	1190.27	0.05	59.51	14.52	340.41	495.00	84.25	14.25	334.08	220.00	36.75	48.00	1125.33	220.00	123.79	160.54
411+26.00	414+56.00	LANE TAPER	330.00	148.25	489.23	43.77	1604.90	0.05	80.25	9.52	349.07	495.00	86.39	9.25	339.17	220.00	37.31	38.00	1393.33	220.00	153.27	190.58
414+56.00	415+56.00	TRANSITION	100.00	44.00	44.00	29.39	326.56	0.17	55.52	2.26	25.11	495.00	6.21	2.13	23.67	220.00	2.60	25.00	277.78	220.00	30.56	33.16
415+56.00	422+00.00	OVERLAY	644.00	6.00	38.64	26.00	1860.44	0.17	316.27									22.00	1574.22	220.00	173.16	173.16
422+00.00	423+00.00	TRANSITION	100.00	44.00	44.00	29.29	325.44	0.17	55.32	2.26	25.11	495.00	6.21	2.13	23.67	220.00	2.60	25.00	277.78	220.00	30.56	33.16
423+00.00	426+30.00	LANE TAPER	330.00	148.25	489.23	43.77	1604.90	0.05	80.25	9.52	349.07	495.00	86.39	9.25	339.17	220.00	37.31	38.00	1393.33	220.00	153.27	190.58
426+30.00	484+38.00	CONTINUOUS LEFT TURN LANE	5808.00	208.50	12109.68	50.77	32763.57	0.05	1638.18	14.52	9370.24	495.00	2319.13	14.25	9196.00	220.00	1011.56	48.00	30976.00	220.00	3407.36	4418.92
484+38.00	487+68.00	LANE TAPER	330.00	193.00	636.90	43.77	1604.90	0.05	80.25	9.52	349.07	495.00	86.39	9.25	339.17	220.00	37.31	44.00	1613.33	220.00	177.47	214.78
487+68.00	490+00.00	OVERLAY W/8' SHOULDERS	232.00	177.50	411.80	52.78	1360.55	0.05	68.03	4.52	116.52	495.00	28.84	4.25	109.56	220.00	12.05	40.00	1031.11	220.00	113.42	125.47
490+00.00	491+00.00	TRANSITION	100.00	177.50	177.50	30.77	341.89	0.17	58.12	4.52	50.22	495.00	12.43	4.25	47.22	220.00	5.19	40.00	444.44	220.00	48.89	54.08
491+00.00	495+50.00	MILL & INLAY W/8' SHOULDERS	450.00	177.50	798.75	30.77	1538.50	0.17	261.55	4.52	226.00	495.00	55.94	4.25	212.50	220.00	23.38	40.00	2000.00	220.00	220.00	243.38
495+50.00	496+50.00	TRANSITION	100.00			24.00	266.67	0.17	45.33									40.00	444.44	220.00	48.89	48.89
SITE 3																						
584+00.00	585+00.00	TRANSITION	100.00			39.00	433.33	0.17	73.67									39.00	433.33	220.00	47.67	47.67
585+00.00	588+30.00	LANE TAPER	330.00	179.25	591.53	40.77	1494.90	0.05	74.75	9.52	349.07	495.00	86.39	9.25	339.17	220.00	37.31	42.00	1540.00	220.00	169.40	206.71
588+30.00	646+60.00	CONTINUOUS LEFT TURN LANE	5830.00	208.50	12155.55	50.77	32887.68	0.05	1644.38	14.52	9405.73	495.00	2327.92	14.25	9230.83	220.00	1015.39	48.00	31093.33	220.00	3420.27	4435.66
646+60.00	648+60.00	CONTINUOUS LEFT TURN LANE W/VAR. NOTCH	200.00	189.50	379.00	66.77	1483.78	0.05	74.19	9.52	211.56	495.00	52.36	9.25	205.56	220.00	22.61	48.00	1066.67	220.00	117.33	139.94
648+60.00	649+60.00	TRANSITION	100.00	170.25	170.25	58.77	653.00	0.17	111.01	4.52	50.22	495.00	12.43	4.25	47.22	220.00	5.19	50.00	555.56	220.00	61.11	66.30
ADDITIONAL FOR LEVELING																						
SITE 2																						
405+85.00	414+56.00	MAIN LANES	871.00			22.00	2129.11	0.17	361.95					22.00	2129.11	220.00	234.20					234.20
423+00.00	490+00.00	MAIN LANES	6700.00			22.00	16377.78	0.17	2784.22					22.00	16377.78	220.00	1801.56					1801.56
SITE 3																						
585+00.00	646+60.00		6160.00			22.00	15057.78	0.17	2559.82					22.00	15057.78	220.00	1656.36					1656.36
646+60.00	648+60.00		200.00			26.00	577.78	0.17	98.22					26.00	577.78	220.00	63.56					63.56
ADDITIONAL FOR SUPERELEVATION																						
SITE 2																						
444+60.40	456+34.38	MAIN LANES	1173.98	VAR.	447.48																	
457+32.46	464+88.09	MAIN LANES	755.63																			
SITE 3																						
619+14.57	629+26.04	MAIN LANES	1011.47	VAR.	489.05																	
643+53.12	649+60.00	MAIN LANES	606.88	VAR.	318.28																	
TOTALS:					**30888.54**		**118402.68**		**10777.24**		**21689.96**		**5368.23**		**55381.72**		**6091.99**		**79350.87**		**8728.63**	**14820.62**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

5/31/2018

R050279.DGN

QUANTITIES

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		95	STATION
201	GRUBBING		95	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		73	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE		5300	LIN. FT.
202	REMOVAL AND DISPOSAL OF POSTS		3	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT		241	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		653	SQ. YD.
202	REMOVAL AND DISPOSAL OF FOOT BRIDGE		1	EACH
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		21	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		94	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		34	SQ. YD.
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLES		2	EACH
202	REMOVAL AND DISPOSAL OF BUILDINGS		1	EACH
202	REMOVAL AND DISPOSAL OF BILLBOARDS		1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		28	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS		7	EACH
202	REMOVAL AND DISPOSAL OF FLAG POLE		1	EACH
SS & 210	UNCLASSIFIED EXCAVATION		40520	CU. YD.
210	COMPACTED EMBANKMENT		10914	CU. YD.
SP & 210	SOIL STABILIZATION		500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		35573	TON
SS & 401	TACK COAT		10927	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		5126	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		242	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		15071	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		877	TON
412	COLD MILLING ASPHALT PAVEMENT		2744	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		75	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		100	TON
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		497.71	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		881	SQ. FT.
SS & 604	TRAFFIC DRUMS		1082	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		798	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER		598	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		62900	LIN. FT.
SS & 604	VERTICAL PANELS		281	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)		1709	SQ. YD.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		164	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		3546	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		116	LIN. FT.
SS & 606	21" X 15" SIDE DRAIN		272	LIN. FT.
SS & 606	28" X 20" SIDE DRAIN		28	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		8	EACH
606	SELECTED PIPE BEDDING		280	CU. YD.
SS & 611	4" PIPE UNDERDRAINS		15500	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		63	EACH
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)		21.5	CU. YD.
619	WIRE FENCE (TYPE C)		1651	LIN. FT.
619	WIRE FENCE (TYPE D-1)		781	LIN. FT.
619	WIRE FENCE (TYPE D-2)		1009	LIN. FT.
* 619	4' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	607	LIN. FT.
* 619	4' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	607	LIN. FT.
* 619	5' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	209	LIN. FT.
* 619	5' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	209	LIN. FT.
* 619	6' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	245	LIN. FT.
* 619	6' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	245	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	4	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	4	EACH
620	LIME		34	TON
620	SEEDING		17.00	ACRE
SS & 620	MULCH COVER		57.00	ACRE
620	WATER		2563.9	M. GAL.
621	TEMPORARY SEEDING		40.00	ACRE
621	SILT FENCE		20000	LIN. FT.
621	SAND BAG DITCH CHECKS		3498	BAG
621	SEDIMENT BASIN		5000	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		5000	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		6066	CU. YD.
621	ROCK DITCH CHECKS		498	CU. YD.
SS & 621	FILTER SOCK (12")		500	LIN. FT.
623	SECOND SEEDING APPLICATION		17.00	ACRE
624	SOLID SODDING		1090	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		8615	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		71	EACH
637	MAILBOX SUPPORTS (SINGLE)		51	EACH
637	MAILBOX SUPPORTS (DOUBLE)		10	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		8682	LIN. FT.
SP & 642	RUMBLE STRIPES IN ASPHALT SHOULDERS		32594	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")		31627	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")		12	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		40787	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		1	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		1	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)		367	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		54	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY		79.52	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		9272	POUND
816	FILTER BLANKET		97	SQ. YD.
816	DUMPED RIPRAP		50	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	89	207

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
3-10-2020

REVISIONS

DATE	REVISION	SHEET NUMBER

5/31/2018

R050279.DGN

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES
Project Name: 050279
Date: 1/6/2016
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *730019 - 730021- 730021 - 730041 - 730042A*
Based on NGS PTS : *E 206 - F 206*
Projected to Ground Coordinates
Units: U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	389921.0827	0.0290	1363555.0151	0.0250	339.52	0.001	CTL	PD:STD AHTD MON STAMPED PN 1
2	389388.5349	0.0270	1363972.0102	0.0250	341.88	0.002	CTL	PD:STD AHTD MON STAMPED PN 2
3	388747.3450	0.0230	1364479.8484	0.0220	340.91	0.002	CTL	PD:STD AHTD MON STAMPED PN 3
4	388384.6624	0.0220	1364932.5829	0.0220	343.64	0.002	CTL	PD:STD AHTD MON STAMPED PN 4
5	372985.2551	0.0250	1372412.3781	0.0230	226.88	0.002	CTL	PD:STD AHTD MON STAMPED PN 5
6	372208.0590	0.0210	1372809.5019	0.0200	226.60	0.002	CTL	PD:STD AHTD MON STAMPED PN 6
7	371538.6221	0.0240	1373070.8205	0.0240	225.57	0.002	CTL	PD:STD AHTD MON STAMPED PN 7
8	370869.6098	0.0220	1373411.6634	0.0210	231.30	0.002	CTL	PD:STD AHTD MON STAMPED PN 8
9	370265.6995	0.0230	1373649.4675	0.0220	228.78	0.001	CTL	PD:STD AHTD MON STAMPED PN 9
10	369558.1259	0.0220	1374008.7927	0.0210	236.74	0.001	CTL	PD:STD AHTD MON STAMPED PN 10
11	368785.0038	0.0250	1374291.7638	0.0240	254.98	0.002	CTL	PD:STD AHTD MON STAMPED PN 11
12	368193.9806	0.0240	1374642.0314	0.0230	268.28	0.002	CTL	PD:STD AHTD MON STAMPED PN 12
13	367520.7837	0.0240	1375124.2439	0.0220	271.65	0.003	CTL	PD:STD AHTD MON STAMPED PN 13
14	366980.7584	0.0230	1375391.9179	0.0220	277.16	0.003	CTL	PD:STD AHTD MON STAMPED PN 14
15	366385.8462	0.0230	1375469.8322	0.0220	275.68	0.003	CTL	PD:STD AHTD MON STAMPED PN 15
16	365643.6752	0.0230	1375536.5357	0.0230	273.12	0.003	CTL	PD:STD AHTD MON STAMPED PN 16
17	365131.0415	0.0220	1375555.1459	0.0230	271.81	0.003	CTL	PD:STD AHTD MON STAMPED PN 17
18	364328.7329	0.0130	1375622.7735	0.0120	246.87	0.004	CTL	PD:STD AHTD MON STAMPED PN 18
19	355055.4202	0.0200	1380075.5956	0.0190	296.71	0.002	CTL	PD:STD AHTD MON STAMPED PN 19
20	354341.7498	0.0200	1380283.6326	0.0200	313.68	0.002	CTL	PD:STD AHTD MON STAMPED PN 20
21	353730.3597	0.0190	1380425.1062	0.0190	328.07	0.001	CTL	PD:STD AHTD MON STAMPED PN 21
22	353007.9216	0.0190	1380642.7048	0.0190	342.60	0.001	CTL	PD:STD AHTD MON STAMPED PN 22
23	352389.3748	0.0190	1380875.9856	0.0190	357.26	0.002	CTL	PD:STD AHTD MON STAMPED PN 23
24	351652.6458	0.0200	1381051.3574	0.0190	371.32	0.002	CTL	PD:STD AHTD MON STAMPED PN 24
25	351102.5597	0.0210	1381207.3509	0.0210	389.51	0.002	CTL	PD:STD AHTD MON STAMPED PN 25
26	350303.4988	0.0220	1381151.4901	0.0220	394.97	0.002	CTL	PD:STD AHTD MON STAMPED PN 26
27	349613.5614	0.0210	1381045.0850	0.0220	411.91	0.002	CTL	PD:STD AHTD MON STAMPED PN 27
28	348869.3371	0.0190	1380989.6512	0.0200	427.31	0.002	CTL	PD:STD AHTD MON STAMPED PN 28
29	348254.5849	0.0190	1381158.0366	0.0190	403.78	0.002	CTL	PD:STD AHTD MON STAMPED PN 29
100	346738.0196	0.0000	1383194.6889	0.0000	403.41	0.000	GPS	PD:AHTD GPS MON 730019
101	348141.5136	0.0000	1381163.9854	0.0000	389.57	0.000	GPS	PD:AHTD GPS MON 730019A
102	362120.5382	0.0000	1375511.9390	0.0000	221.88	0.000	GPS	PD:AHTD GPS MON 730020
103	363896.0677	0.0000	1375641.2619	0.0000	233.76	0.000	GPS	PD:AHTD GPS MON 730020A
104	381375.0911	0.0000	1370004.6798	0.0000	318.53	0.000	GPS	PD:AHTD GPS MON 730021
105	380084.4919	0.0000	1369960.3589	0.0000	317.95	0.000	GPS	PD:AHTD GPS MON 730021A
106	386906.8132	0.0131	1367140.7208	0.0131	328.40	0.000	GPS	PD:AHTD GPS MON 730041
107	398179.9310	0.0000	1360993.1641	0.0000	350.00	0.000	GPS	PD:AHTD GPS MON 730042
108	399708.2656	0.0000	1360066.9840	0.0000	335.29	0.000	GPS	PD:AHTD GPS MON 730042A
900	384281.0881	30.0000	1368891.3778	30.0000	298.73	0.008	TBM	PD:CHISLED SQ IN CONC HW
901	390337.8163	30.0000	1363416.0427	30.0000	343.06	0.016	TBM	PD:CHISLED SQ IN CONC HW
902	393672.3941	30.0000	1362168.6436	30.0000	305.75	0.018	TBM	PD:AHTD ALUM DISK IN HW
903	396401.3160	30.0000	1361501.8887	30.0000	307.58	0.020	TBM	PD:CHISLED SQ IN CONC HW
904	397917.1772	30.0000	1361002.7830	30.0000	355.22	0.022	TBM	PD:CHISLED SQ IN CONC SW
905	353233.9885	30.0000	1380580.2496	30.0000	339.29	0.019	TBM	PD:TBM 902 FROM JOB 050188
913	370007.0790	30.0000	1373766.2956	30.0000	228.87	0.011	TBM	PD:TBM 913 FROM JOB 050188
929	347682.2721	30.0000	1381790.9511	30.0000	352.06	0.022	BM	PD:TBM 929 FROM JOB 050188
990	381755.2148	30.0000	1369889.9251	30.0000	311.70	0.000	BM	PD:NGS BM E 206
991	378015.3757	15.0000	1370559.7902	15.0000	258.38	0.000	BM	PD:NGS BM F 206

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job######", & "PS####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
Horizontal - GPS (1.0 cm± 1PPM) *PN: 100-108*
Horizontal - Primary (2.0cm± 20PPM): *PN:1-29*
Horizontal - Secondary (3 cm ± 50PPM): *PN:N/A*
Vertical - NGS 1st Order (±4mm x √dist in km) *PN:990 & 991*
Vertical - NGS 2nd Order (±6mm x √dist in km) *PN:N/A*
Vertical - NGS 3rd Order (±8mm x √dist in km) *PN:1-913*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0301 - North Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999932596 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM: E 206 - F 206
A project Elevation Factor of: 0.9999851342 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 310.79 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-29, 100-108, 900-913 From NGS BM: E 206 - F 206

Basis of Bearing: Grid Bearings based on AHTD GPS points: *730019 - 730021- 730021 - 730041 - 730042A*
Convergence Angle is: 0°20'46.38" Right at PN: 717
LT: 35-22-42 N LG: 091-48-25W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

Note: Information in Italics is for clarification only. It is not to be part of the actual Control Table or Control Detail Sheets.

STATE OF ARKANSAS
TIMOTHY D. HAINES
LICENSED PROFESSIONAL ENGINEER
No. 11485
10-9-18

SURVEY CONTROL DETAILS

DATE REVISED	DATE PLATTED	DATE REVISED	DATE PLATTED	FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050279	90	207

2 SURVEY CONTROL DETAILS

CONST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	397942.8989	1361086.9512
8001	PI	104+95.28	397508.8363	1361325.4615
8002	PC	108+53.87	397195.7458	1361500.2948
8004	PT	112+80.52	396783.9536	1361526.0613
8005	PC	114+65.53	396612.4422	1361456.7012
8007	PT	117+20.46	396362.9617	1361449.6270
8008	PC	136+35.16	394550.0868	1362065.7264
8010	PT	140+87.61	394105.0640	1362132.9508
8011	PC	148+57.90	393335.0754	1362111.5773
8013	PT	153+08.18	392903.9791	1362220.4197
8014	PC	162+42.92	392093.8986	1362686.7943
8016	PT	168+29.15	391565.4401	1362939.2287
8017	PI	170+24.25	391383.4647	1363009.5792
8018	PI	181+42.48	390337.6377	1363405.4095
8019	PC	184+47.07	390053.4119	1363514.9259
8021	PT	191+24.48	389477.2143	1363864.3457
8022	PC	200+51.99	388781.4282	1364477.6516
8024	PT	204+01.95	388533.6680	1364724.5003
8025	PC	213+75.38	387887.3060	1365452.3617
8027	PT	216+69.12	387716.0675	1365690.3916
8028	PI	222+14.90	387444.3587	1366163.7402
8029	PI	228+05.29	387148.3314	1366674.5461
8030	PC	231+43.32	386981.8005	1366968.7078
8032	PT	235+65.26	386706.2158	1367284.4105
8033	PI	245+84.78	385894.9758	1367901.9189
8034	PC	254+41.58	385216.3530	1368424.9611
8036	PT	257+41.33	384961.5946	1368581.8612
8037	PI	265+03.86	384274.1069	1368911.7388
8038	PC	273+27.72	383535.6928	1369277.0921
8040	PT	277+97.43	383099.5390	1369450.0260
8041	PC	295+38.02	381434.3969	1369956.9214
8043	PT	298+16.98	381159.2097	1369994.9344
8044	PC	305+29.66	380446.6820	1369979.9902
8046	PT	307+99.54	380177.3633	1369993.3817
8047	PI	311+24.59	379854.6589	1370032.4032
8048	PI	317+80.05	379206.9722	1370133.0383
8049	PI	326+04.78	378390.2300	1370247.5195
8050	PI	333+62.70	377641.8012	1370367.0783
8051	PC	338+22.22	377186.5285	1370429.4440
8053	PT	341+98.14	376829.0239	1370540.0975
8054	PI	350+43.74	376072.9011	1370918.6725
8055	PI	357+84.36	375409.1394	1371247.2082
8056	PI	365+55.54	374719.1773	1371591.6937
8057	PI	377+35.98	373662.1671	1372117.2005
8058	PI	383+96.19	373064.8234	1372398.3776
8059	PI	387+57.22	372736.5456	1372548.6391
8060	PI	408+86.74	370796.1773	1373426.0399
8061	PI	415+10.16	370228.7974	1373684.3567
8062	PI	420+86.74	369702.9121	1373920.7725
8063	PC	431+80.95	368705.6913	1374371.1474
8065	PT	436+21.54	368319.6512	1374582.5969
8066	PC	446+62.90	367447.4574	1375151.5456
8068	PT	454+31.88	366737.2035	1375432.5020
8069	PI	457+15.60	366457.8417	1375482.0000
8070	PC	459+34.96	366241.2866	1375516.9962
8072	PT	462+85.59	365892.5907	1375551.6381
8073	PI	469+82.69	365195.9882	1375578.0000
8074	PI	474+88.02	364690.9246	1375594.2396
8075	PC	479+15.48	364263.5826	1375604.2823
8077	PT	483+88.80	363790.3014	1375605.6282
8078	PC	496+89.74	362489.5651	1375582.4614
8080	PT	502+99.32	361896.0335	1375699.6753
8081	PC	515+03.92	360790.2016	1376177.3645
8083	PT	521+63.92	360219.6738	1376506.2684
8084	PC	571+79.48	356191.1704	1379494.0725
8086	PT	580+63.23	355411.9835	1379903.5982
8087	PC	589+24.82	354596.7894	1380182.5113
8089	PT	593+78.79	354164.4685	1380320.9242
8090	PI	612+75.95	352346.5429	1380863.5000
8091	PC	622+29.57	351433.6532	1381139.2276
8093	PT	626+11.04	351056.6195	1381180.9596
8094	PI	631+32.54	350536.5000	1381143.0000
8095	PC	646+23.12	349050.8837	1381021.5043
8097	PT	653+43.74	348348.1082	1381142.1008
8098	POE	653+86.74	348308.8744	1381159.6917

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11485
KEITH D. SMITH
11-6-18

(2) SURVEY CONTROL DETAILS

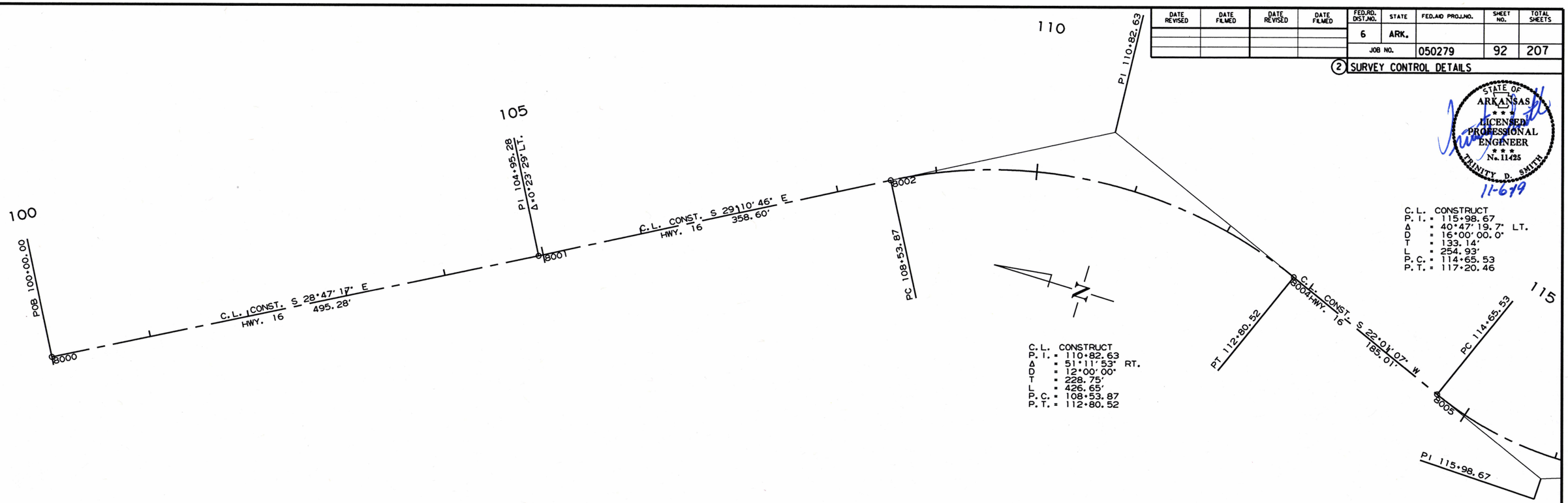
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		91	207
				JOB NO. 050279				

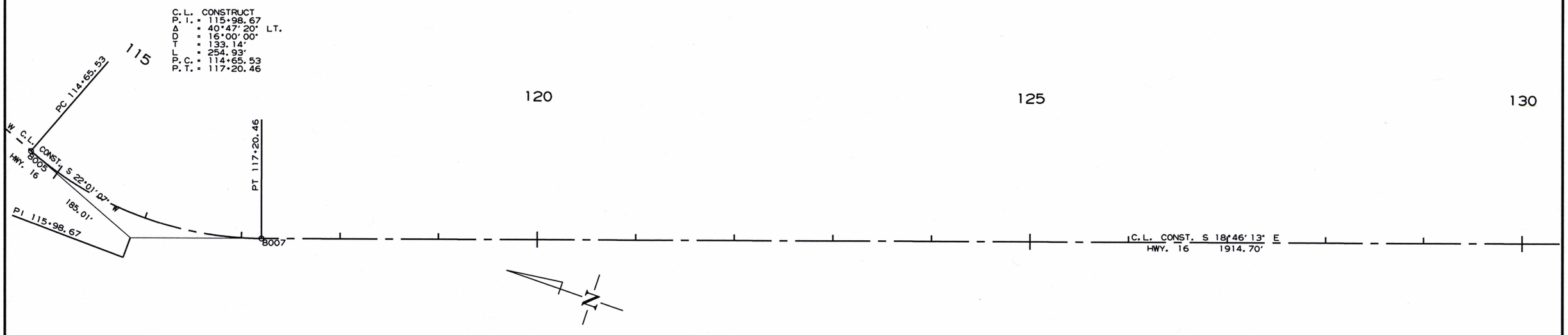
SURVEY CONTROL DETAILS

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.		050279	92	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
* * *
LICENSED PROFESSIONAL ENGINEER
* * *
No. 11425
TRINITY D. SMITH
11-6-19





10/11/2018

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				6	ARK.			
				JOB NO.		050279	93	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

130 135 140 145

C.L. CONST. S 18°46' 13" E
HWY. 16 1914.70'

8008

PC 136+35.16

PI 138+63.80

C.L. CONSTRUCT
P.I. = 138+63.80
Δ = 20°21' 37" RT.
D = 4°30' 00"
T = 228.64'
L = 452.45'
P.C. = 136+35.16
P.T. = 140+87.61

PT 140+87.61

8010

C.L. CONST. S 1°35' 24" W
HWY. 16 770.29'

145 150 155 160

C.L. CONST. S 1°35' 24" W
HWY. 16 770.29'

8011

PC 148+57.90

C.L. CONSTRUCT
P.I. = 150+88.89
Δ = 31°31' 11" LT.
D = 7°00' 00"
T = 231.00'
L = 450.28'
P.C. = 148+57.90
P.T. = 153+08.18

PI 150+88.89

PT 153+08.18

8013

C.L. CONST. S 29155' 47" E
HWY. 16 934.74'

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		050279	94	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-18

160 165 170 175

P.I. 165+36.61

C.L. CONST. S 29°55'47" E
HWY. 16 934.74'

8014

PC 162+42.92

C.L. CONSTRUCT
P.I. = 165+36.61
Δ = 8°47'36" RT.
D = 1°30'00"
T = 293.69'
L = 586.23'
P.C. = 162+42.92
P.T. = 168+29.15

PT 168+29.15

8016

C.L. CONST. S 21°08'10" E
HWY. 16 195.10'

8017

PI 170+24.25
Δ=0°24'19" RT.

C.L. CONST. S 20°43'51" E
HWY. 16 1118.23'

175 180 185 190

C.L. CONST. S 20°43'51" E
HWY. 16 1118.23'

PI 181+42.48
Δ=0°20'29" LT.

8018

C.L. CONST. S 21°04'21" E
HWY. 16 304.60'

8019

PC 184+47.07

PKNH POSTD AHTD MON STAMPED PN 1

C.L. CONSTRUCT
P.I. = 187+89.37
Δ = 20°19'21" LT.
D = 3°00'00"
T = 342.30'
L = 677.41'
P.C. = 184+47.07
P.T. = 191+24.48

SURVEY BASELINE S38°03'42"E
676.38'

C.L. CONST. S 41°23'41" E
HWY. 16 927.50'

PI 187+89.37

PKNH02 POSTD SPK TRIG ELEV

10/11/2018

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		050279	95	207

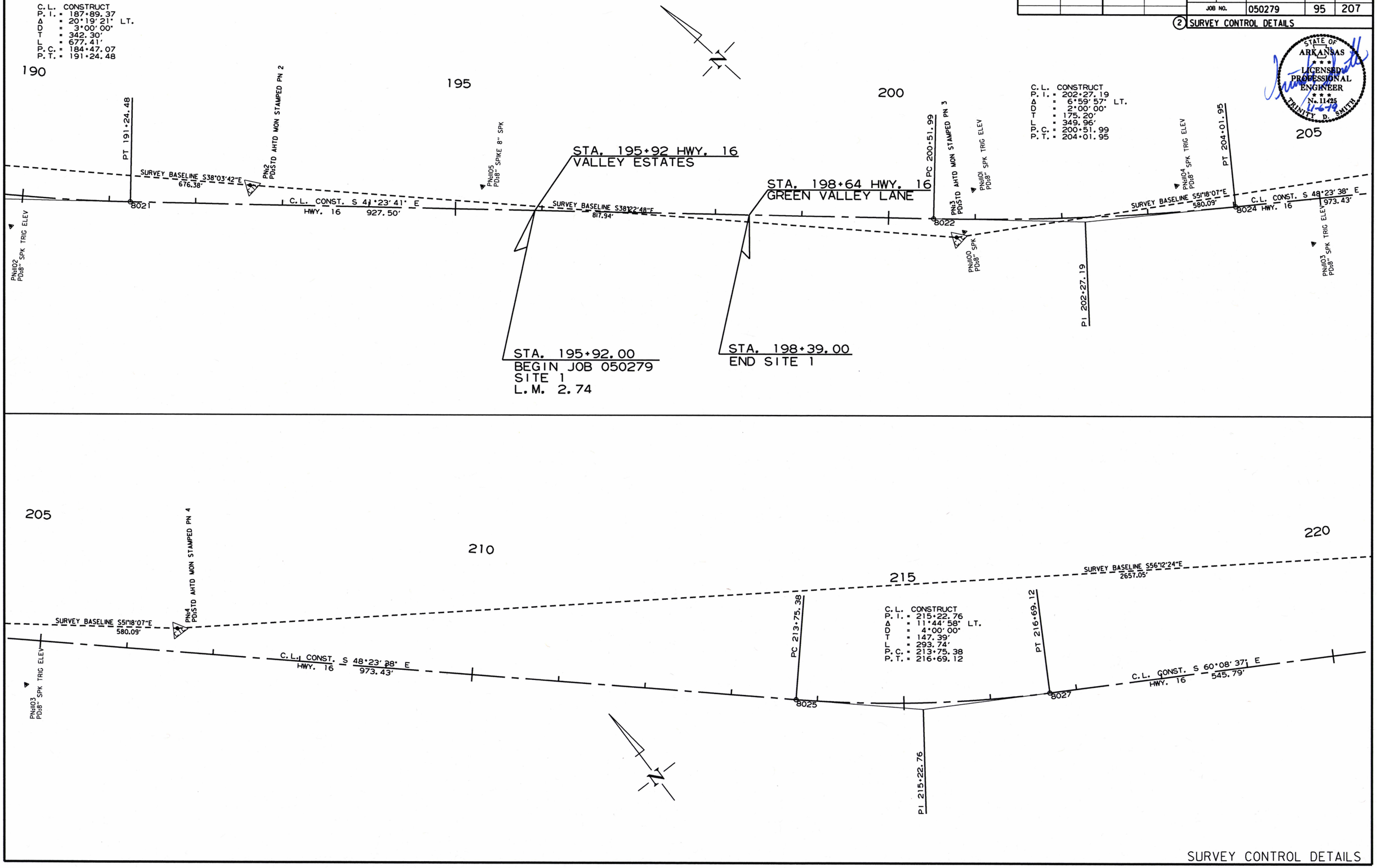
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-18

C.L. CONSTRUCT
P.I. = 187+89.37
Δ = 20°19'21" LT.
D = 3°00'00"
T = 342.30'
L = 677.41'
P.C. = 184+47.07
P.T. = 191+24.48

C.L. CONSTRUCT
P.I. = 202+27.19
Δ = 6°59'57" LT.
D = 2°00'00"
T = 175.20'
L = 349.96'
P.C. = 200+51.99
P.T. = 204+01.95

C.L. CONSTRUCT
P.I. = 215+22.76
Δ = 11°44'58" LT.
D = 4°00'00"
T = 147.39'
L = 293.74'
P.C. = 213+75.38
P.T. = 216+69.12



10/11/2018

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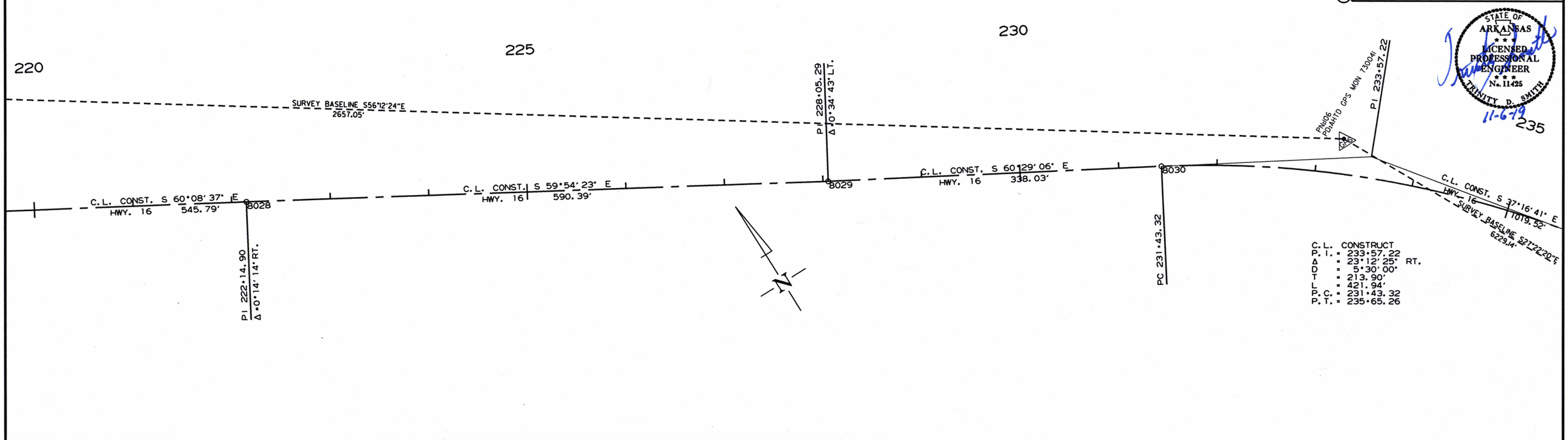
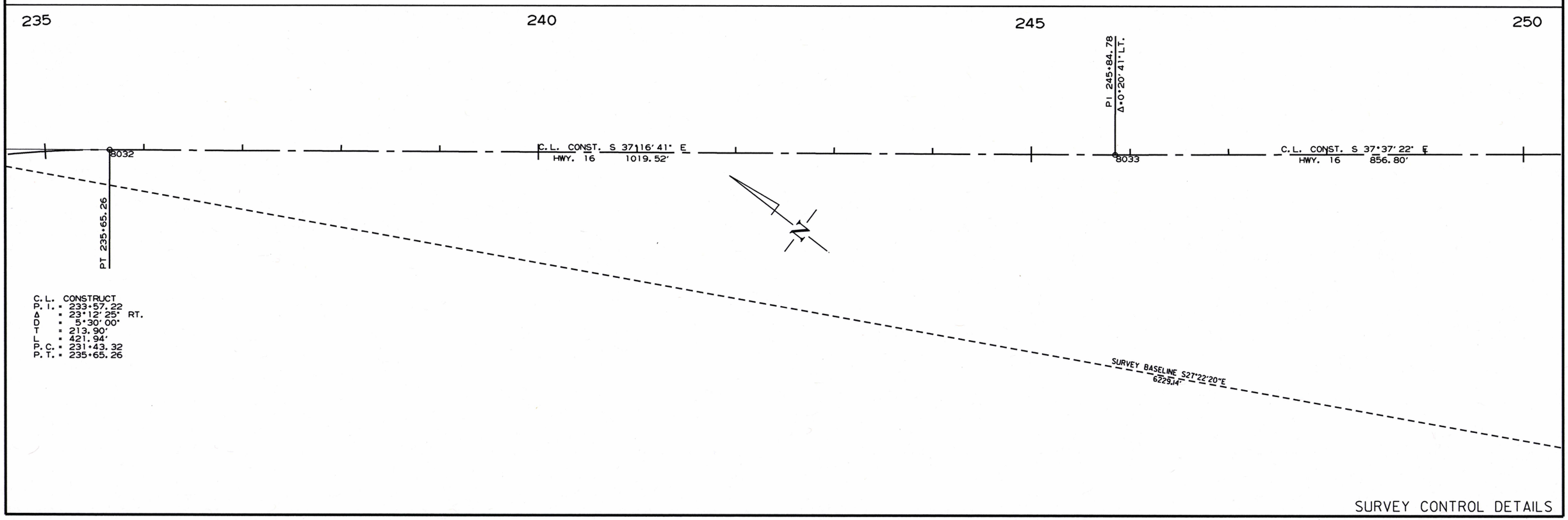
SURVEY CONTROL DETAILS

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.		050279	96	207

(2) SURVEY CONTROL DETAILS





STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

SURVEY CONTROL DETAILS

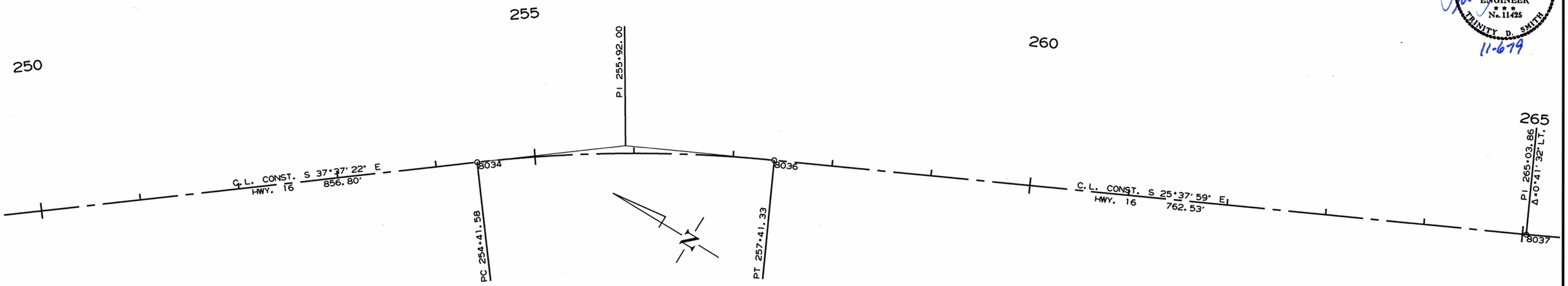
10/11/2018

R050279.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.		050279	97	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



C. L. CONSTRUCT
P. I. = 255+92.00
Δ = 11°59'23" RT.
D = 4°00'00"
T = 150.42'
L = 299.74'
P. C. = 254+41.58
P. T. = 257+41.33

SURVEY BASELINE S27°22'20"E
6229.14'

10/11/2018

R050279.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	98	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

265 270 275

P.I. 265+03.86
Δ = 0°41'32" LT.

8037

C.L. CONST. S 26°19'31" E
HWY. 16 823.86'

8038

P.I. 275+63.10

C.L. CONSTRUCT
P.I. = 275+63.10
Δ = 9°23'39" RT.
D = 2°00'00"
T = 235.38'
L = 469.71'
P.C. = 273+27.72
P.T. = 277+97.43

PC 273+27.72

PT 277+97.43

8040

C.L. CONST. S 16°55'52" E
HWY. 16 1740.59'

280

SURVEY BASELINE S27°22'20"E
6229.14'

280 285 290 295

C.L. CONST. S 16°55'52" E
HWY. 16 1740.59'

8041

PC 295+38.02

SURVEY BASELINE S27°22'20"E
6229.14'

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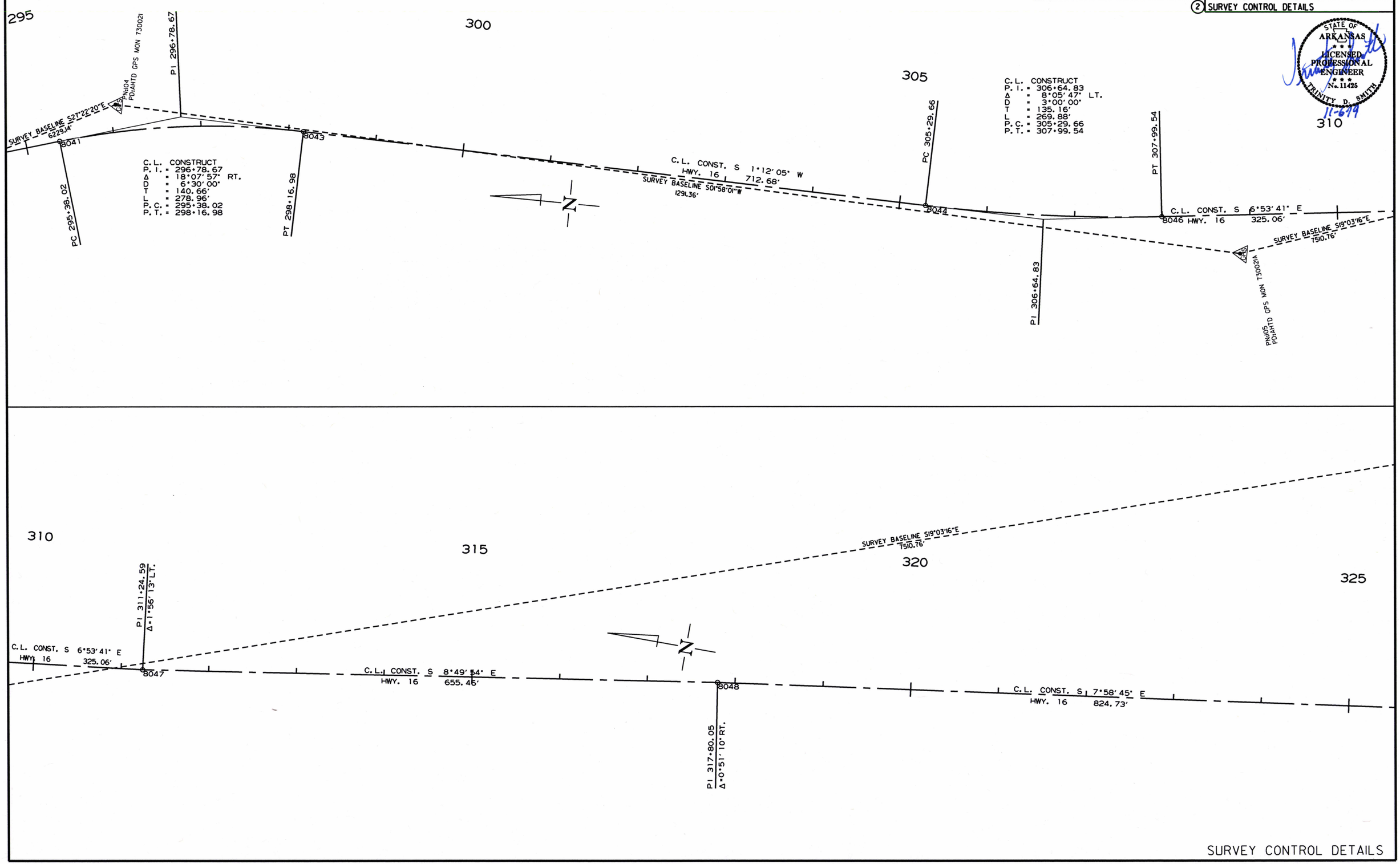
SURVEY CONTROL DETAILS

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.		050279	99	207

(2) SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

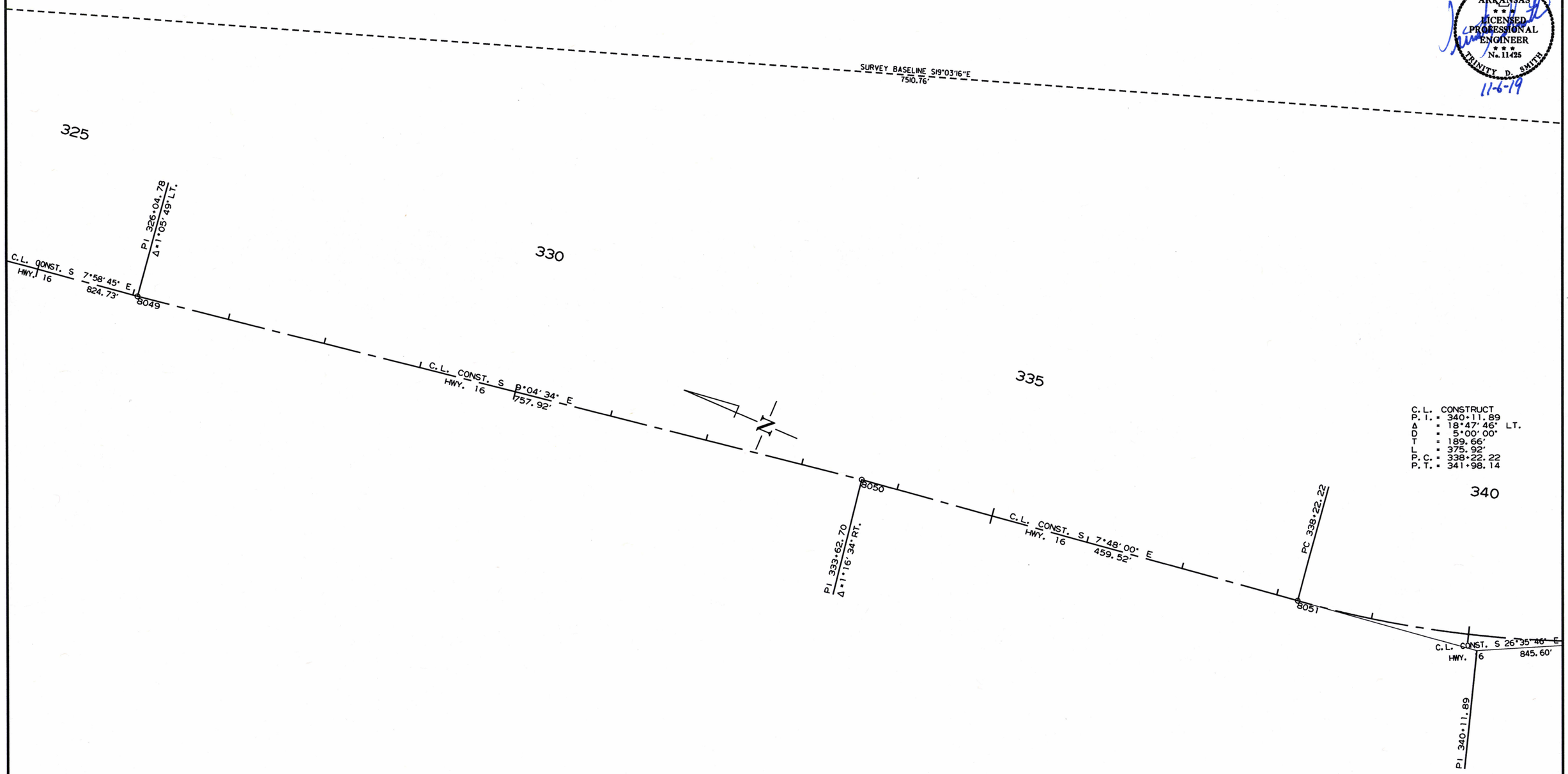
10/11/2018

R050279.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.		050279	100	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



C.L. CONSTRUCT
P.I. = 340+11.89
Δ = 18°47'46" LT.
D = 5°00'00"
T = 189.66'
L = 375.92'
P.C. = 338+22.22
P.T. = 341+98.14

10/11/2018

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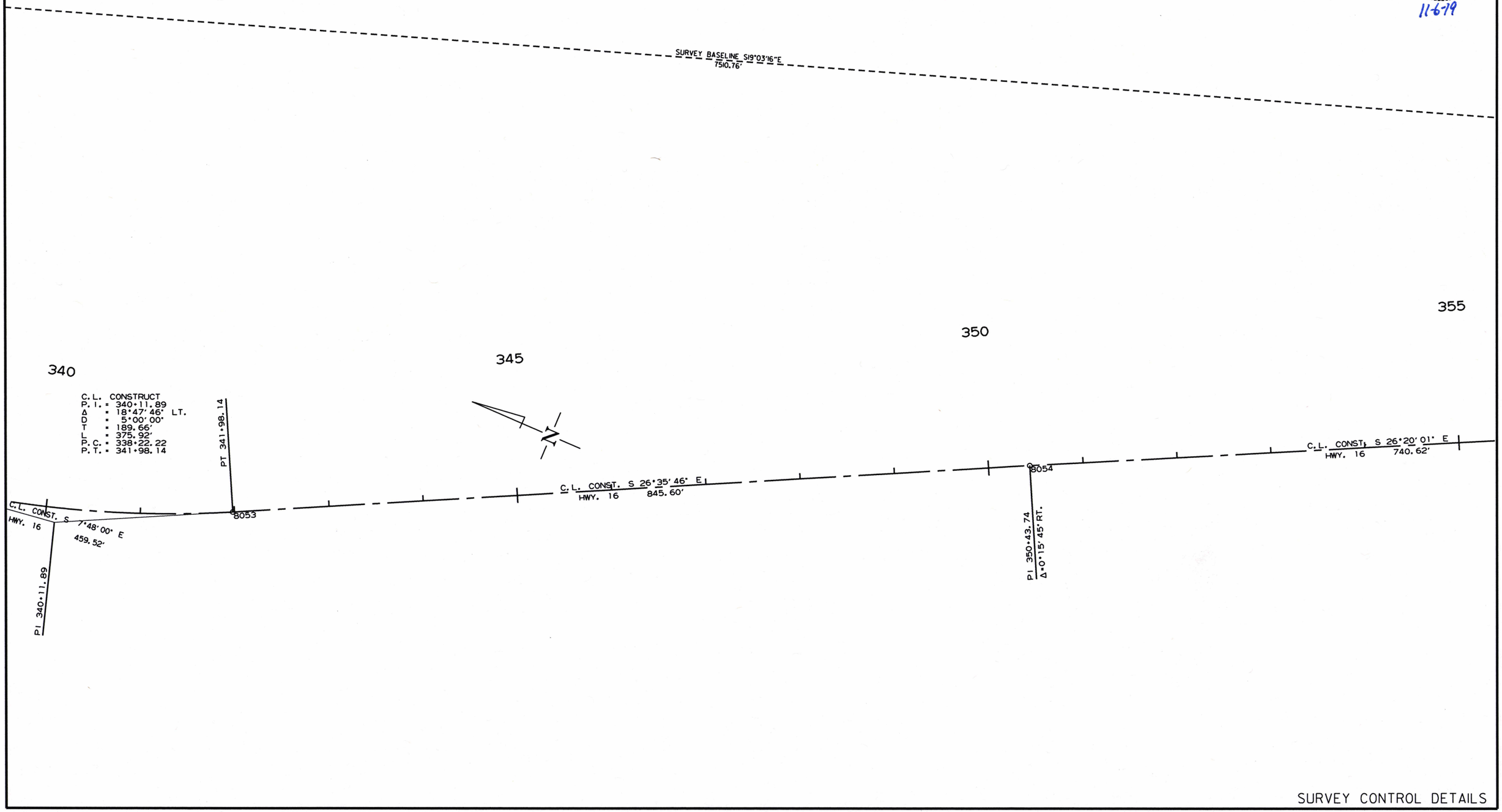
SURVEY CONTROL DETAILS

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.		050279	101	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19



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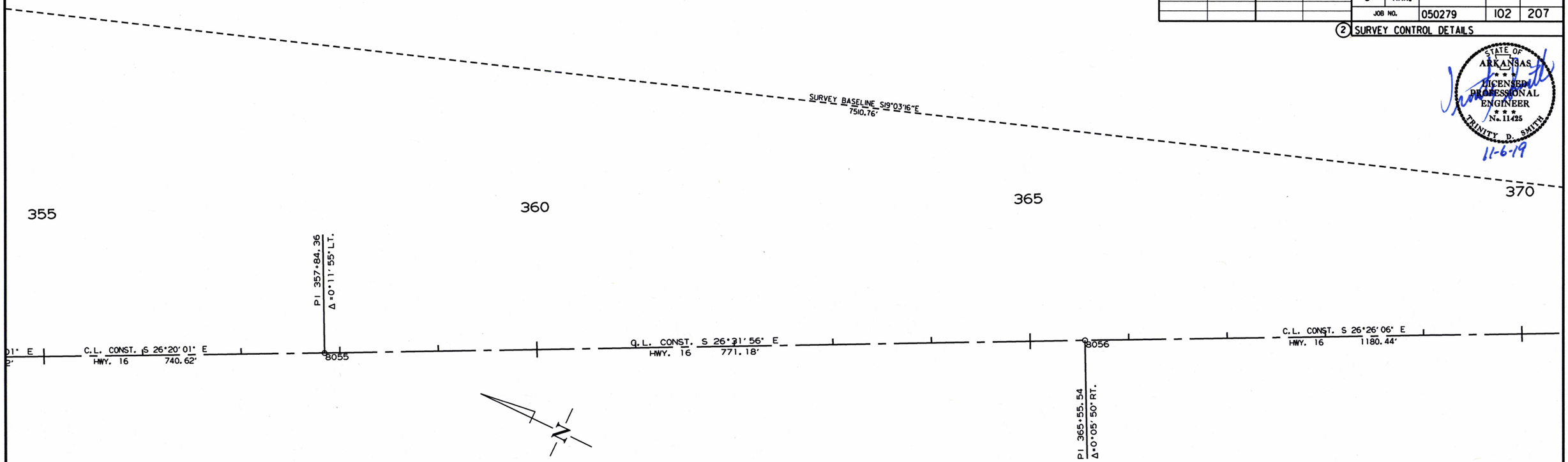
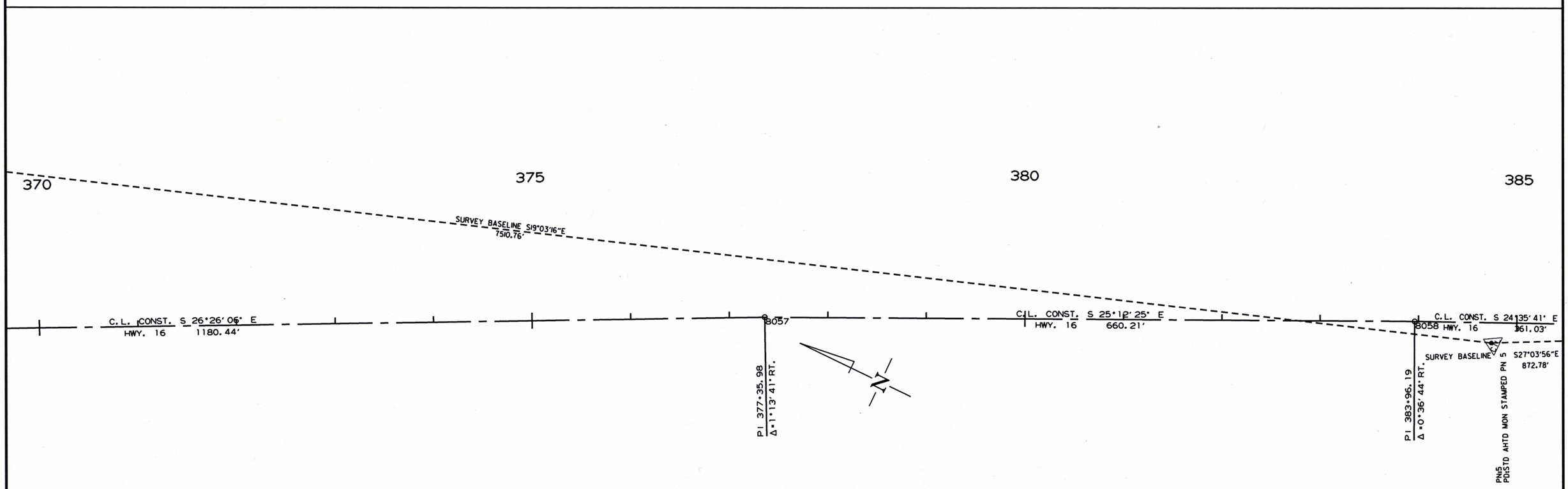
SURVEY CONTROL DETAILS

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.		050279	102	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19





10/11/2018

R050279.DGN

SURVEY 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.		050279	103	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

385 390 395 400

PNull09 PD:8-SPK TRIG ELEV

PN5 PD:STD AHTD MON STAMPED PN 5

℄ L. CONST. S 24°35'41" E
HWY. 16 361.03'

PNull07 PD:8-SPK TRIG ELEV

PNull08 PD:8-SPK TRIG ELEV

PI 387+57.22
Δ=0°15'47" RT.

8059

PNull06 PD:8-SPK TRIG ELEV

SURVEY BASELINE S27°03'56"E
872.78'

PNull10 PD:8-SPK TRIG ELEV

PNull11 PD:8-SPK TRIG ELEV

PN6 PD:STD AHTD MON STAMPED PN 6

SURVEY BASELINE S21°19'25"E
718.63'

PNull12 PD:8-SPK TRIG ELEV

PNull13 PD:8-SPK TRIG ELEV

PNull14 PD:8-SPK TRIG ELEV

C.L. CONST. S 24°19'54" E
HWY. 16 2129.52'

400 405 410 415

C.L. CONST. S 24°19'54" E
HWY. 16 2129.52'

SURVEY BASELINE S21°19'25"E
718.63'

PN7 PD:STD AHTD MON STAMPED PN 7

PNull17 PD:8-SPK TRIG ELEV

PNull18 PD:8-SPK TRIG ELEV

SURVEY BASELINE S26°59'51"E
750.83'

PN8 PD:STD AHTD MON STAMPED PN 8

PI 408+86.74
Δ=0°08'50" LT.

8060

PNull19 PD:8-SPK

SURVEY BASELINE S21°29'36"E
649.04'

C.L. CONST. S 24°28'44" E
HWY. 16 623.42'

8061

PN9 PD:STD AHTD MON STAMPED PN 9

PI 415+10.16
Δ=0°16'20" RT.

STA. 405+85.00
BEGIN SITE 2
L.M. 6.72

STA. 409+64 HWY. 16
HWY. 310

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		050279	104	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-18

415 420 425 430

E

C.L. CONST. S 24°12'24" E
HWY. 16 576.58'

8061

PI 415+10.16
Δ = 0°16'20" RT.

PNI9
PDISTD AHTD MON STAMPED PN 9

PI 420+86.74
Δ = 0°05'55" LT.

8062

SURVEY BASELINE S26°55'22"E
793.58'

PNI10
PDISTD AHTD MON STAMPED PN 10

C.L. CONST. S 24°18'19" E
HWY. 16 1094.21'

SURVEY BASELINE S20°06'11"E
823.28'

430 435 440 445

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'

C.L. CONST. S 24°18'19" E
HWY. 16 1094.21'

PC 431+80.95

8063

SURVEY BASELINE S20°06'11"E
823.28'

PNI11
PDISTD AHTD MON STAMPED PN 11

SURVEY BASELINE S30°10'22"E
686.09'

PI 434+01.68

PNI20
PDI8-SPK TRIG ELEV

PT 436+21.54

8065

SURVEY BASELINE S36°00'14"E
829.55'

PNI12
PDISTD AHTD MON STAMPED PN 12

C.L. CONST. S 33°07'02" E
HWY. 16 1041.36'

PNI22
PDI8-SPK TRIG ELEV

PNI121
PDI8-SPK TRIG ELEV

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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.		050279	105	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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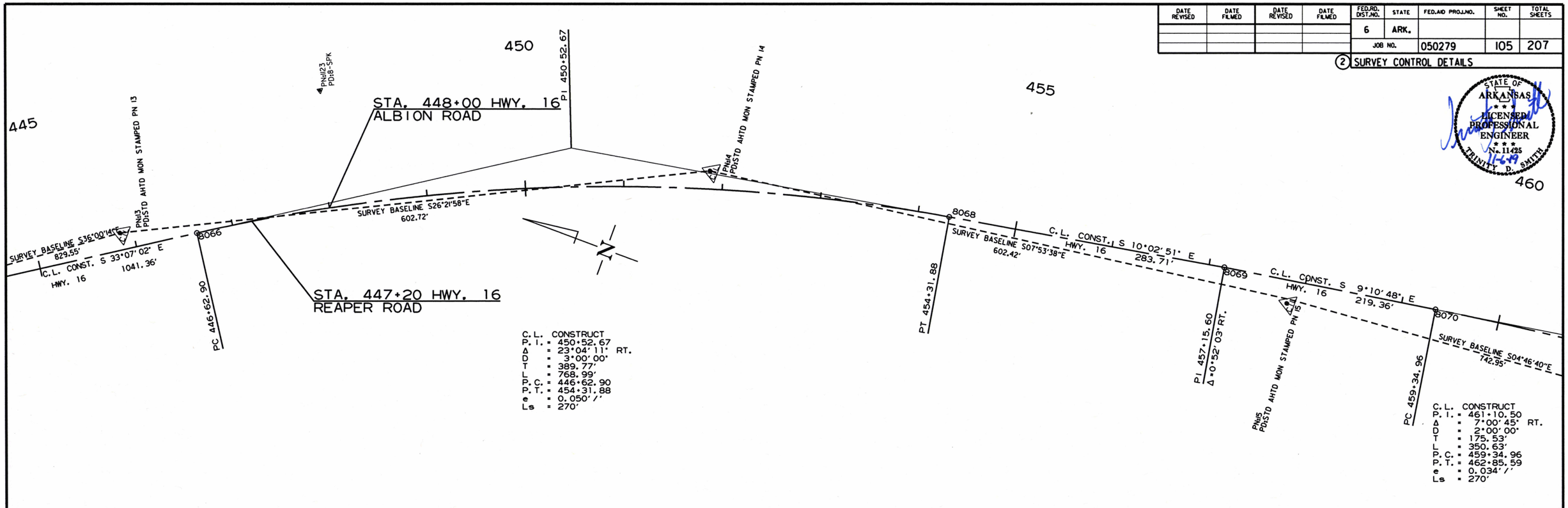
11-6-19



SURVEY CONTROL DETAILS

10/11/2018

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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.			
				JOB NO.		050279	106	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

475 480 485 490

SURVEY BASELINE S04°49'05"E
805.15'
C.L. CONST. S 1°29'46" E
HWY. 16 427.46'

8074

PI 474+88.02
Δ=0°29'44" RT.

PNu8
PDJSTD AHTD MON STAMPED PN 18

8075

PC 479+15.48

PI 481+52.17

SURVEY BASELINE S02°26'49"E
433.06'

PNu103
PDJAHTD GPS MON 730020A

C.L. CONSTRUCT
P.I. = 481+52.17
Δ = 2°22'00" RT.
D = 0°30'00"
T = 236.69'
L = 473.32'
P.C. = 479+15.48
P.T. = 483+88.80
NO SUPER

8077

PT 483+88.80

C.L. CONST. S 1°01'13" W
HWY. 16 1300.94'

SURVEY BASELINE S04°09'57"W
1780.23'

STA. 488+36 HWY. 16
PUGH ROAD

490 495 500 505

SURVEY BASELINE S04°09'57"W
1780.23'

C.L. CONST. S 1°01'13" W
HWY. 16 1300.94'

8078

PC 496+89.74

C.L. CONSTRUCT
P.I. = 499+99.22
Δ = 24°23'00" LT.
D = 4°00'00"
T = 309.48'
L = 609.58'
P.C. = 496+89.74
P.T. = 502+99.32

PT 502+99.32

8080

C.L. CONST. S 23°21'47" E
HWY. 16 1204.60'

SURVEY BASELINE S32°51'36"E
8410.88'

PI 499+99.22

PNu102
PDJAHTD GPS MON 730020

STA. 495+50.00
END SITE 2

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SURVEY CONTROL DETAILS

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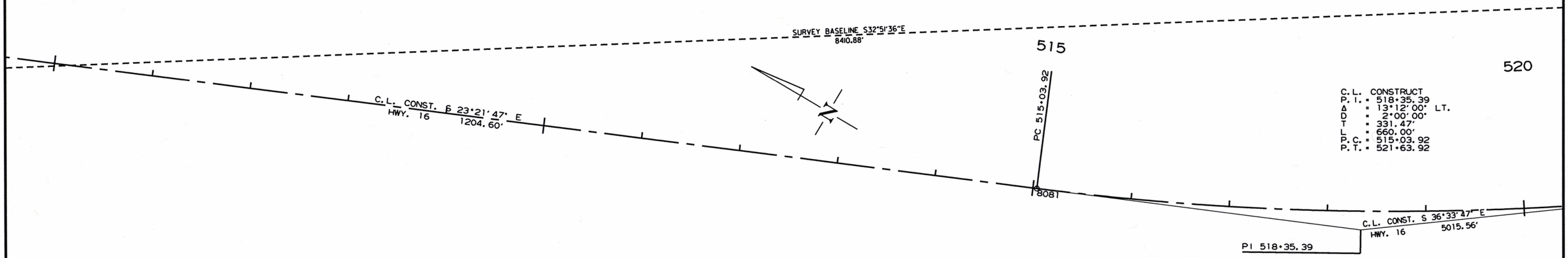
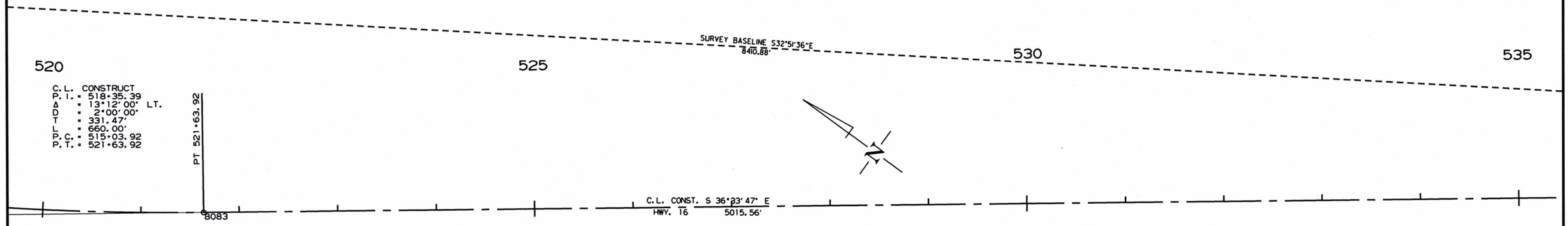
				6	ARK.			
				JOB NO.		050279	107	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19





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SURVEY CONTROL DETAILS

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				JOB NO.		050279	108	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
11-6-19

535 540 545 550

SURVEY BASELINE S32°51'36"E 8410.88'

C.L. CONST. HWY. 16 S 36°33'47" E 5015.56'

550 555 560 565

C.L. CONST. HWY. 16 S 36°33'47" E 5015.56'

SURVEY BASELINE S32°51'36"E 8410.88'

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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.		050279	109	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

565 570 575 580

C.L. CONST. S 36°39'47" E
HWY. 16 5015.56'

8084

PC 571+79.48

SURVEY BASELINE S32°51'36"E
8410.88'

PI 576+24.89

C.L. CONST. S 18°53'17" E
HWY. 16 861.59'

C.L. CONSTRUCT
P.I. = 576+24.89
Δ = 17°40'30" RT.
D = 2°00'00"
T = 445.41'
L = 883.75'
P.C. = 571+79.48
P.T. = 580+63.23

PN#125
PD:8-SPK TRIG ELEV

580 585 590 595

PN#9
PD:STD AHTD MON STAMPED PN 19

PN#28
PD8-SPK

SURVEY BASELINE S16°15'06"E
743.37'

PI 591+51.83

PN#20
PD:STD AHTD MON STAMPED PN 20

C.L. CONST. S 16°37'06" E
HWY. 16 897.17'

SURVEY BASELINE S13°01'43"E
627.54'

8086

SURVEY BASELINE S32°51'36"E
8410.88'

C.L. CONST. S 18°53'17" E
HWY. 16 861.59'

8087

8089

PT 580+63.23

PN#25
PD8-SPK TRIG ELEV

PN#26
PD8-SPK

PN#27
PD8-SPK TRIG ELEV

PN#29
PD8 SPK TRIG ELEV

PC 589+24.82

PT 593+78.79

STA. 585+00.00
BEGIN SITE 3
L.M. 10.11

C.L. CONSTRUCT
P.I. = 576+24.89
Δ = 17°40'30" RT.
D = 2°00'00"
T = 445.41'
L = 883.75'
P.C. = 571+79.48
P.T. = 580+63.23

C.L. CONSTRUCT
P.I. = 591+51.83
Δ = 2°16'11" RT.
D = 0°30'00"
T = 227.01'
L = 453.97'
P.C. = 589+24.82
P.T. = 593+78.79
NO SUPER

10/11/2018

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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.		050279	110	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
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11-6-19

595 600 605 610

SURVEY BASELINE S13°01'43"E 627.54'

PN21 PD:STD AHTD MON STAMPED PN 21

PNil30 PD:8 SPK TRIG ELEV

C.L. CONST. S 16°37'06" E HWY. 16 1897.17'

SURVEY BASELINE S16°45'44"E 754.50'

PN22 PD:STD AHTD MON STAMPED PN 22

SURVEY BASELINE S20°39'49"E 661.07'

PNil31 PD:8 SPK TRIG ELEV

STA. 607+47 HWY. 16
LONGVIEW CIRCLE

610 615 620 625

PN23 PD:STD AHTD MON STAMPED PN 23

PI 612+75.95
Δ=0°11'17" LT.

SURVEY BASELINE S20°39'49"E 661.07'

C.L. CONST. S 16°37'06" E HWY. 16 1897.17'

8090

SURVEY BASELINE S13°23'22"E 757.31'

PNil32 PD:8 SPK TRIG ELEV

STA. 611+75 HWY. 16
SONIC DRIVE

STA. 618+10 HWY. 16
BROWN LANE

C.L. CONST. S 16°48'23" E HWY. 16 953.62'

PN24 PD:STD AHTD MON STAMPED PN 24

8091

STA. 623+63 HWY. 16
SMITH ROAD

PI 624+22.47

C.L. CONST. S 4°10'27" W HWY. 16 Ext. 30'

SURVEY BASELINE S15°49'56"E 571.78'

PC 622+29.57

PNil33 PD:8 SPK

C.L. CONSTRUCT
P.I. = 624+22.47
Δ = 20°58'50" RT.
D = 5°30'00"
T = 192.89'
L = 381.46'
P.C. = 622+29.57
P.T. = 626+11.04
e = 0.094'/'
Ls = 420'

10/11/2018

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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.		050279	III	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

625 630 635 640

PN25 PDSTD AHTD MON STAMPED PN 25

SURVEY BASELINE S15°49'56"E 571.78'

SURVEY BASELINE S03°59'56"W 801.01'

8093

C.L. CONSTRUCT
P.I. = 624+22.47
Δ = 20°58'50" RT.
D = 5°30'00"
T = 192.89'
L = 381.46'
P.C. = 622+29.57
P.T. = 626+11.04
e = 0.094'/'
Ls = 420'

PT 626+11.04

C.L. CONST. S 4°10'27" W HWY. 16 521.50'

PNail34 PDsB SPK TRIG ELEV

8094

PI 631+32.54
Δ=0°30'04" RT.

PNail35 PDsB SPK TRIG ELEV

PN26 PDSTD AHTD MON STAMPED PN 26

SURVEY BASELINE S08°46'02"W 698.09'

C.L. CONST. S 4°40'31" W HWY. 16 1490.58'

640 645 650

PN27 PDSTD AHTD MON STAMPED PN 27

SURVEY BASELINE S08°46'02"W 698.09'

C.L. CONST. S 4°40'31" W HWY. 16 1490.58'

PNail38 PDsB SPK TRIG ELEV

PC 646+23.12

8095

SURVEY BASELINE S04°15'35"W 746.29'

STA. 646+56 HWY. 16
HILLSIDE DRIVE

PN28 PDSTD AHTD MON STAMPED PN 28

PNail37 PDsB SPK

PNail36 PDsB SPK

PI 649+91.23

STA. 648+60.00
END SITE 3
END JOB 050279

C.L. CONSTRUCT
P.I. = 649+91.23
Δ = 28°49'30" LT.
D = 4°00'00"
T = 368.11'
L = 720.62'
P.C. = 646+23.12
P.T. = 653+43.74
e = 0.083'/'
Ls = 360'

PNail39 PDsB SPK TRIG ELEV

PT 653+43.74

POE 653+86.74

C.L. CONST. S 24°08'59" E 43.00'

8098

8097

PN29 PDSTD AHTD MON STAMPED PN 29

SURVEY BASELINE S3°00'42"W 113.23'

SURVEY BASELINE S15°19'05"E 637.40'

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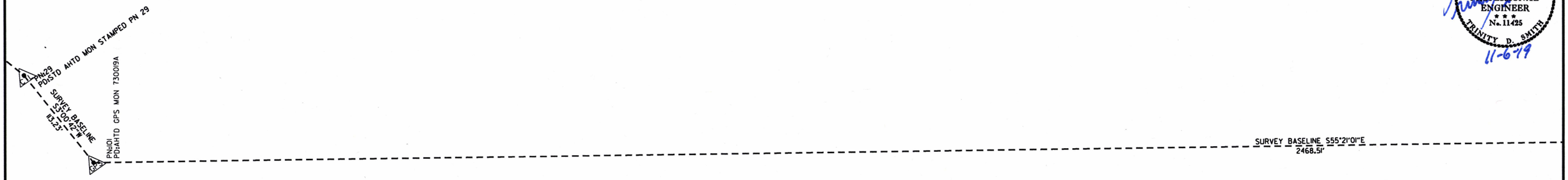
R050279.DGN

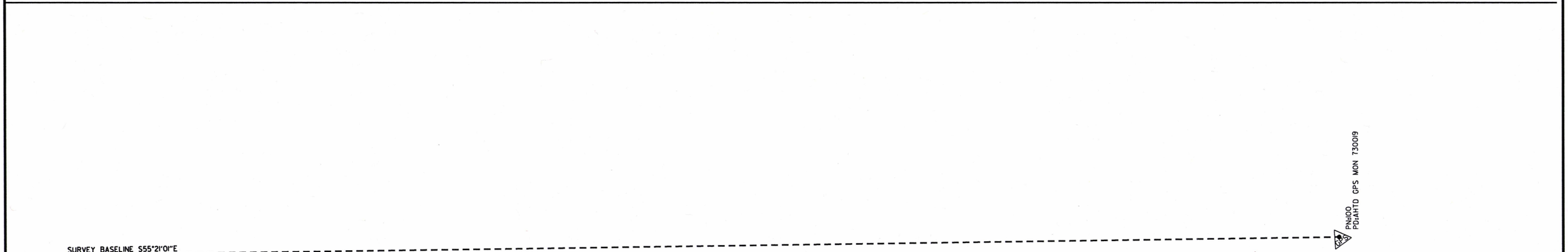
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	112	207

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19





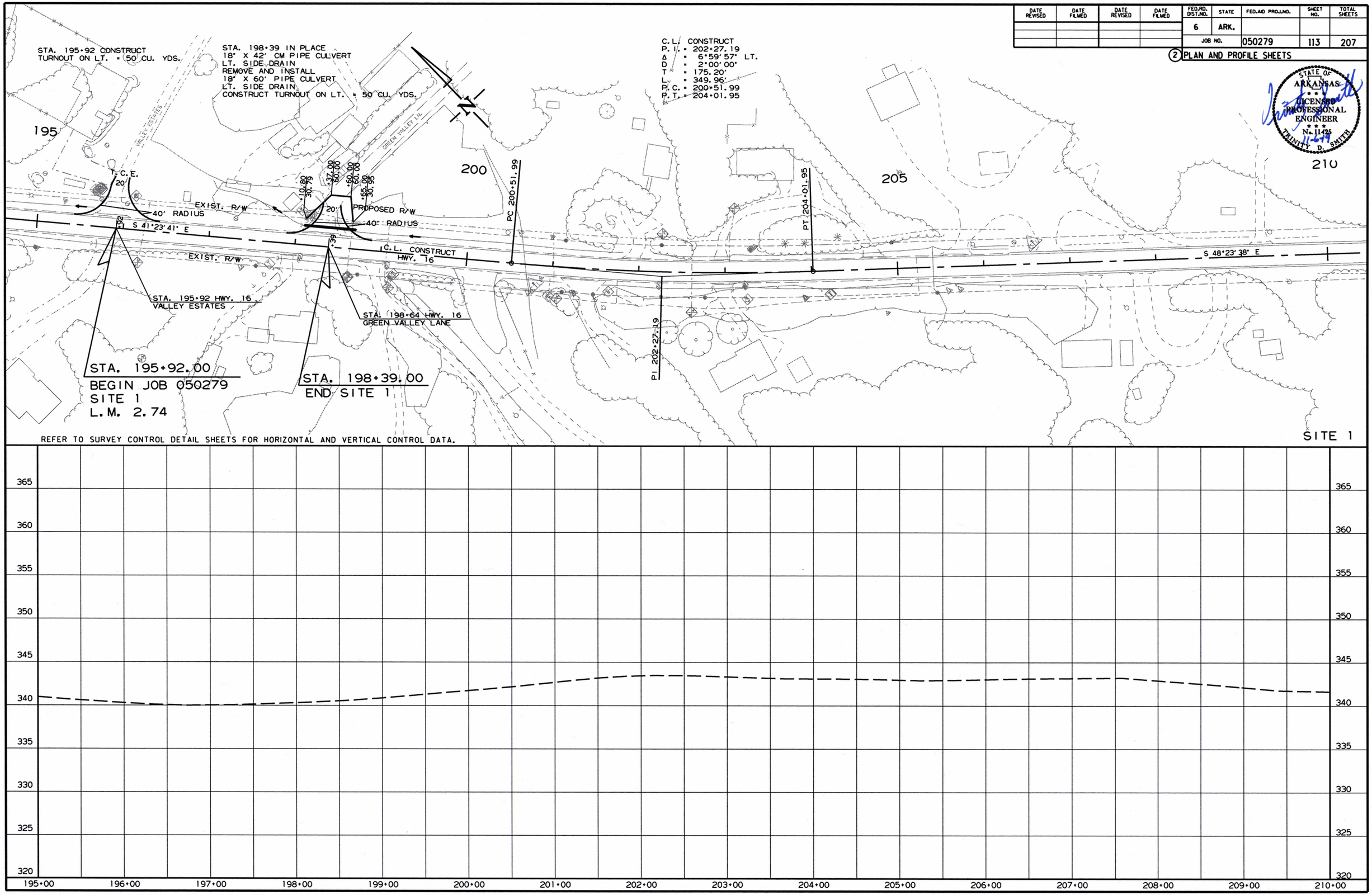
10/11/2018

R050279.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	113	207

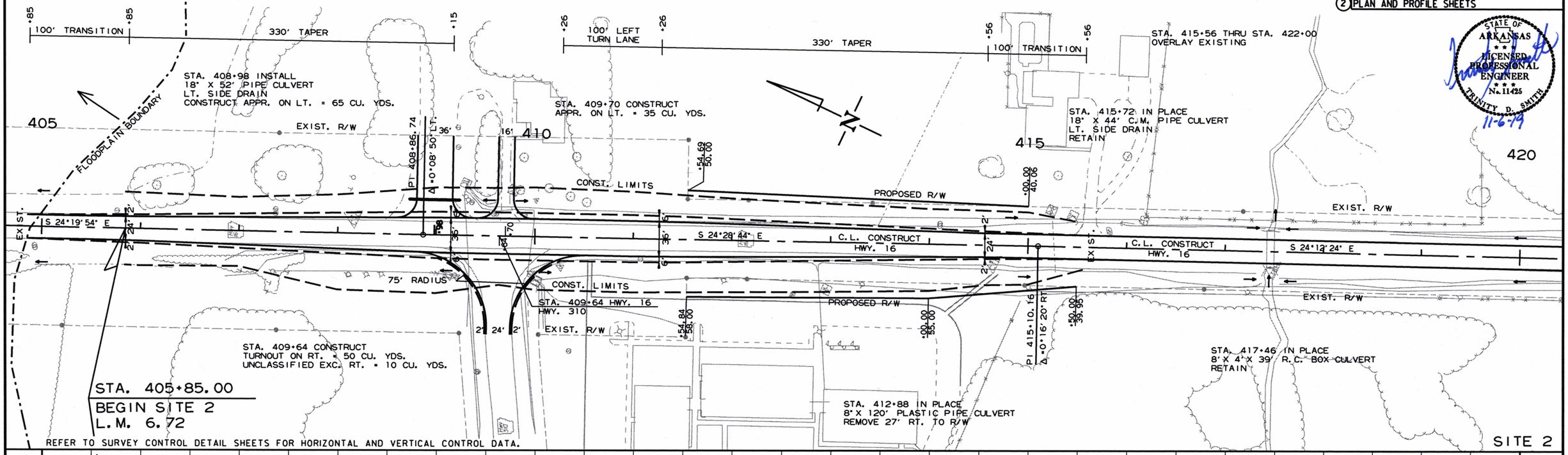
(2) PLAN AND PROFILE SHEETS



R050279.DGN 4/13/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	114	207

(2) PLAN AND PROFILE SHEETS



4/13/2017

R050279.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.		050279	115	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-13

STA. 420+92 IN PLACE
18" X 36' C.M. PIPE CULVERT
LT. SIDE DRAIN
RETAIN

100' TRANSITION

330' TAPER

420

425

430

435

PI 420+86.74
Δ 0°05'55" LT.

EXIST. R/W

CONST. LIMITS

PROPOSED R/W

S 24°12'24" E

EX. S.

24'

36'

S 24°18'19" E

C.L. CONSTRUCT
HWY. 16

EXIST. R/W

CONST. LIMITS

PROPOSED R/W

WIRE FENCE (TYPE D-2)
STA. 423+23 - STA. 431+79 RT. 856 LIN. FT.

STA. 430+78 IN PLACE
24" X 39' R.C. PIPE CULVERT
W/HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. & EXTEND R.C. PIPE
18' LT. & 12' RT.
(CLASS V) (TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 1.67 AC., Q50 = 3.85 C.F.S.
24" R.C. PIPE = 38 LIN. FT.
24" FES = 2 EACH

STA. 431+06 IN PLACE
18" X 37' PVC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +00
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 432+12 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +08
18" X 28" PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 20 CU. YDS.

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'

PC 431+80.95

PI 434+01.68

STA. 415+56 THRU STA. 422+00
OVERLAY EXISTING

REMOVAL AND DISPOSAL OF FENCE

STA. 423+23 - STA. 431+79	RT.	865 LIN. FT.
STA. 431+92 - STA. 432+15	RT.	23 LIN. FT.

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
423+00	435+00	LT.	1166 LIN. FT.	1036.44 SQ. YD.
423+00	435+00	RT.	1168 LIN. FT.	1038.22 SQ. YD.

STA. 432+06 IN PLACE
24" X 26' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +07
28" X 20" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

STA. 431+91 IN PLACE
7' X 21' STEEL PIPE CULVERT
RT. SIDE DRAIN
RETAIN

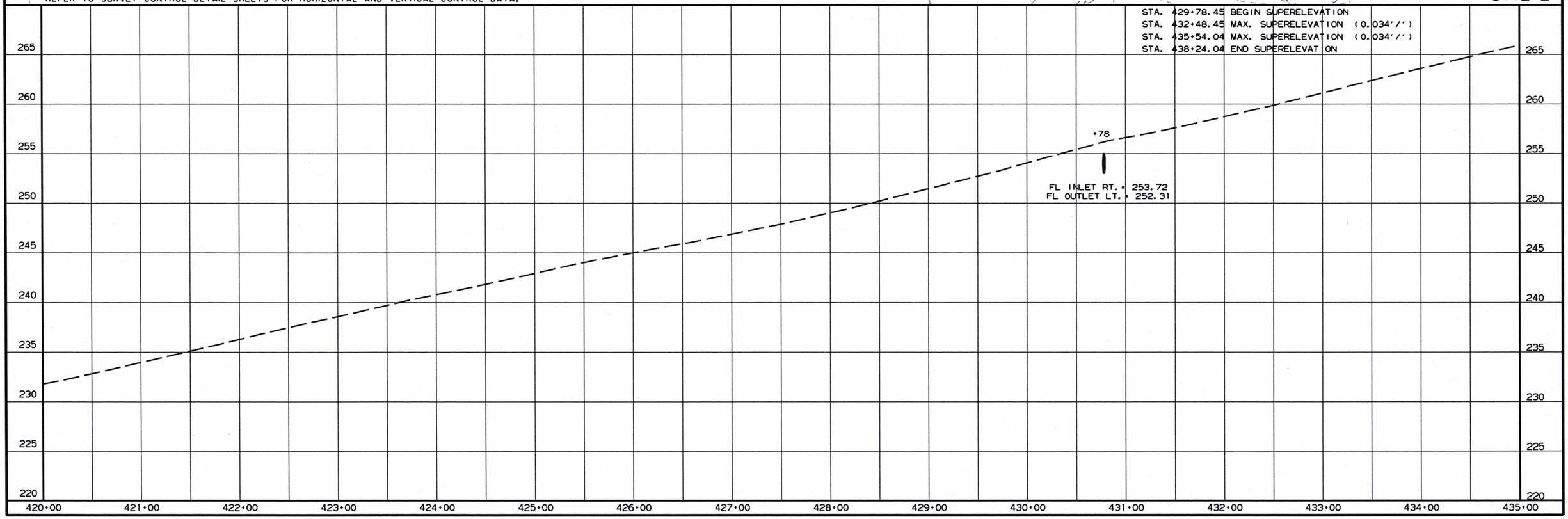
STA. 434+95 IN PLACE
18" X 37' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 44' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

T.C.E. 34'

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

SITE 2

STA. 429+78.45 BEGIN SUPERELEVATION
STA. 432+48.45 MAX. SUPERELEVATION (0.034'/')
STA. 435+54.04 MAX. SUPERELEVATION (0.034'/')
STA. 438+24.04 END SUPERELEVATION



4/13/2017

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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050279	116	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-6-17

REMOVAL AND DISPOSAL OF FENCE

STA. 437+98 - STA. 438+05	LT.	33 LIN. FT.	
STA. 441+01 - STA. 442+55	RT.	184 LIN. FT.	
STA. 443+62 - STA. 444+96	RT.	166 LIN. FT.	

WIRE FENCE		(TYPE D-1)	(TYPE D-2)
STA. 441+01 - STA. 442+55	RT.		153 LIN. FT.
STA. 443+62 - STA. 444+96	RT.	134 LIN. FT.	

C.L. CONSTRUCT
P.I. = 434+01.68
Δ = 8°48'43" LT.
D = 2°00'00"
T = 220.73'
L = 440.59'
P.C. = 431+80.95
P.T. = 436+21.54
e = 0.034'/'
Ls = 270'

STA. 437+61 IN PLACE
18" X 22' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ -63
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 446+24 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 447+05 CONSTRUCT
APPR. ON LT. = 60 CU. YDS.

STA. 448+00 CONSTRUCT
TURNOUT ON LT. = 110 CU. YDS.

STA. 449+10 INSTALL
18" X 50' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 448+00 OFF ALBION ROAD
INSTALL
18" X 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 85 CU. YDS.

435 440 445

PROPOSED R/W 16'
CONST. LIMITS
EXIST. R/W
PT 436+21.54
S 33°07'02" E
C.L. CONSTRUCT HWY. 16
T.C.E. 34'
T.C.E. 20'
T.C.E. 40' RADIUS
STA. 448+00 HWY. 16 ALBION ROAD
40' EXIST. R/W
CONST. LIMITS
PROPOSED R/W 16'
STA. 447+20 HWY. 16 REAPER ROAD
EXIST. R/W 40' RADIUS
PC 446+62.90
REAPER RD.

STA. 438+35 INSTALL
21" X 15" X 50' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 15 CU. YDS.

STA. 440+12 CONSTRUCT
APPR. ON RT. = 15 CU. YDS.

STA. 442+98 IN PLACE
18" X 22' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 28' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 10 CU. YDS.

STA. 447+20 OFF REAPER ROAD
INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 40 CU. YDS.

STA. 447+20 CONSTRUCT
TURNOUT ON RT. = 20 CU. YDS.
UNCLASSIFIED EXC. ON RT. = 5 CU. YDS.

STA. 448+25 INSTALL
21" X 15" X 48' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.

STA. 446+18 CONSTRUCT
APPR. ON RT. = 10 CU. YDS.

STA. 449+42 INSTALL
18" X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 50 CU. YDS.

STA. 454+66 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

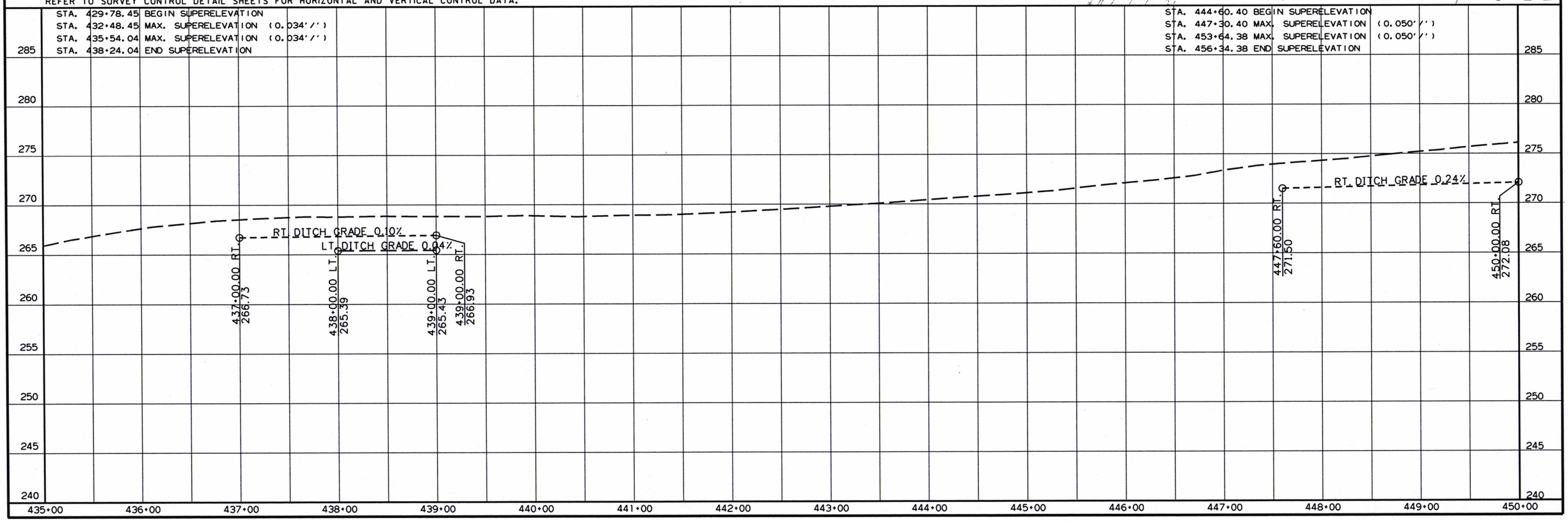
C.L. CONSTRUCT
P.I. = 450+52.67
Δ = 23°04'11" RT.
D = 3°00'00"
T = 389.77'
L = 768.99'
P.C. = 446+62.90
P.T. = 454+31.88
e = 0.050'/'
Ls = 270'

SITE 2

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

STA. 429+78.45 BEGIN SUPERELEVATION
STA. 432+48.45 MAX. SUPERELEVATION (0.034'/')
STA. 435+54.04 MAX. SUPERELEVATION (0.034'/')
STA. 438+24.04 END SUPERELEVATION

STA. 444+60.40 BEGIN SUPERELEVATION
STA. 447+30.40 MAX. SUPERELEVATION (0.050'/')
STA. 453+64.38 MAX. SUPERELEVATION (0.050'/')
STA. 456+34.38 END SUPERELEVATION



4/13/2017

R050279.DGN

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				6	ARK.			
				JOB NO.		050279	117	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 454+50 CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 455+37 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 457+19 IN PLACE
12" X 14' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +18
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 458+77 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +85
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 461+51 CONSTRUCT TURNOUT ON LT. = 35 CU. YDS.

STA. 462+57 IN PLACE
18" X 60' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +49
18" X 42" PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 463+85 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 28' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 15 CU. YDS.

STA. 453+00 INSTALL
21" X 15" X 28' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 15 CU. YDS.

450 455 460 465

PI 450+52.67

T.C.E. 16' PROPOSED R/W 16' 18' 16' CONST. LIMITS 16' EXIST. R/W

EXIST. R/W CONST. LIMITS

S 33°07'02" E

C.L. CONSTRUCT HWY. 16

S 10°02'51" E

S 9°10'48" E

S 2°10'02" E

PROPOSED R/W

EXIST. R/W CONST. LIMITS

PT 454+31.88

PI 457+15.66 Δ 0°52'03" RT.

PC 459+34.96

PT 462+85.59

STA. 461+51 HWY. 16 WEAVER ROAD

PI 461+10.50

40' RADIUS

STA. 461+41 HWY. 16 B W DAVIS ROAD

B W DAVIS RD.

T.C.E. 18' 16' PROPOSED R/W

40' RADIUS

CONST. LIMITS

PROPOSED R/W

C.L. CONSTRUCT
P.I. = 450+52.67
Δ = 23°04'11" RT.
D = 3°00'00"
T = 389.77'
L = 768.99'
P.C. = 446+62.90
P.T. = 454+31.88
e = 0.050'/'
Ls = 270'

STA. 454+66 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 455+35 IN PLACE
18" X 20' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +33
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 457+01 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +02
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 457+76 IN PLACE
18" X 30' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +72
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 458+36 IN PLACE
24" X 31' STEEL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +35
24" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 461+41 OFF B W DAVIS ROAD
CONSTRUCT APPR. ON RT. = 55 CU. YDS.

C.L. CONSTRUCT
P.I. = 461+10.50
Δ = 7°00'45" RT.
D = 2°00'00"
T = 175.53'
L = 350.63'
P.C. = 459+34.96
P.T. = 462+85.59
e = 0.034'/'
Ls = 270'

STA. 461+45 IN PLACE
18" X 26' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +41
21" X 15" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT ON RT. = 20 CU. YDS.

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

SITE 2

STA. 444+60.40 BEGIN SUPERELEVATION
STA. 447+30.40 MAX. SUPERELEVATION (0.050'/')
STA. 453+64.38 MAX. SUPERELEVATION (0.050'/')
STA. 456+34.38 END SUPERELEVATION

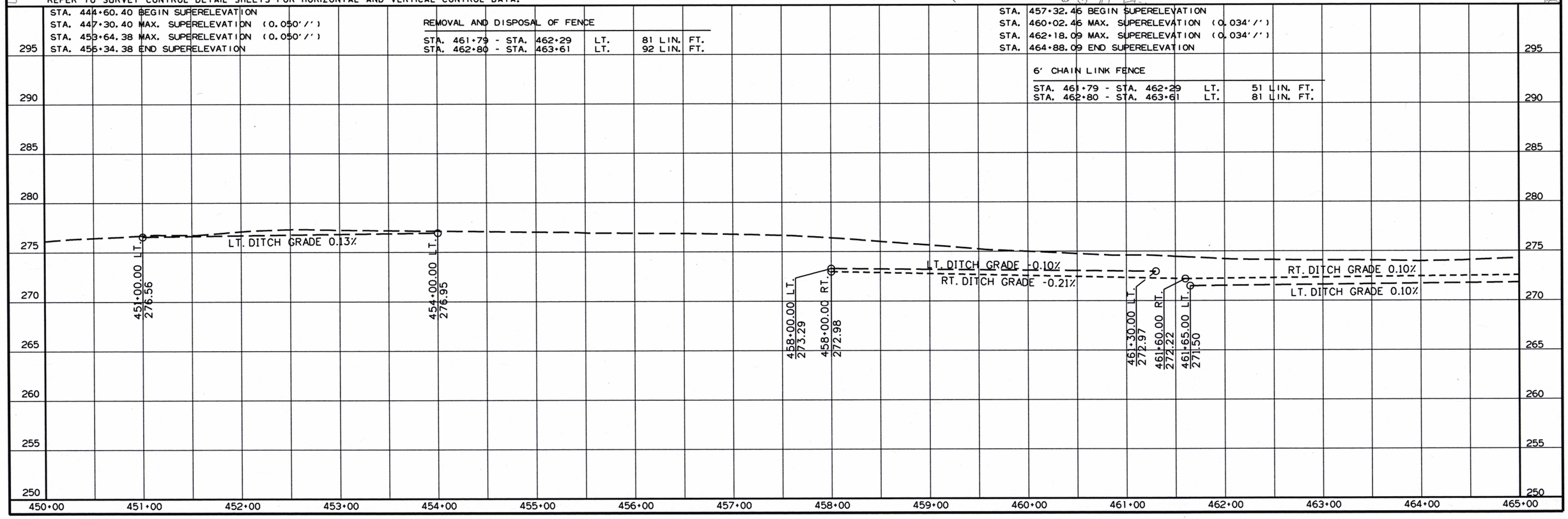
REMOVAL AND DISPOSAL OF FENCE

STA. 461+79 - STA. 462+29	LT.	81 LIN. FT.	
STA. 462+80 - STA. 463+61	LT.	92 LIN. FT.	

STA. 457+32.46 BEGIN SUPERELEVATION
STA. 460+02.46 MAX. SUPERELEVATION (0.034'/')
STA. 462+18.09 MAX. SUPERELEVATION (0.034'/')
STA. 464+88.09 END SUPERELEVATION

6' CHAIN LINK FENCE

STA. 461+79 - STA. 462+29	LT.	51 LIN. FT.
STA. 462+80 - STA. 463+61	LT.	81 LIN. FT.



4/13/2017

R050279.DGN

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				6	ARK.			
				JOB NO.		050279	118	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 465+61 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 466+45 CONSTRUCT
APPR. ON LT. = 45 CU. YDS.

STA. 466+78 CONSTRUCT
APPR. ON RT. = 25 CU. YDS.

STA. 468+15 IN PLACE
18" X 10' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +17
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 468+23 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 469+33 IN PLACE
18" X 25' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 469+83 IN PLACE
18" X 20' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +86
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 470+29 IN PLACE
15" X 50' STEEL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 470+64 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +60
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.
UNCLASSIFIED EXC. ON RT. = 5 CU. YDS.

STA. 472+74 IN PLACE
12" X 17' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +75
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 473+74 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +69
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 474+25 IN PLACE
18" X 20' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 20 CU. YDS.

STA. 474+62 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +65
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.

STA. 475+04 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.

STA. 476+85 IN PLACE
18" X 22' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 50 CU. YDS.

STA. 478+34 CONSTRUCT
APPR. ON LT. = 40 CU. YDS.

STA. 478+32 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 40 CU. YDS.

STA. 479+72 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

C.L. CONSTRUCT
P.I. = 481+52.17
Δ = 2°22'00" RT
D = 0°30'00"
T = 236.69'
L = 473.32'
P.C. = 479+15.48
P.T. = 483+88.80
NO SUPER

465 470 475 480

PROPOSED R/W 18' 22' EXIST. R/W 16' CONST. LIMITS 16' 16' 16' 16' 16' T.C.E. 16' PROPOSED R/W
EXIST. R/W 18' CONST. LIMITS 20' 16' 16' 16' 16' 16' 16' EXIST. R/W 16' CONST. LIMITS 16' PROPOSED R/W

S 2°10'05" E S 1°50'30" E S 1°20'46" E
C.L. CONSTRUCT HWY. 16

PI 469+82.69 Δ = 0°19'32" RT
PI 474+88.02 Δ = 0°29'44"
PC 479+15.48

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

SITE 2

6' CHAIN LINK FENCE

STA.	STA.		
465+16 - STA.	466+30	LT.	113 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA. 465+16 - STA.	466+30	LT.	133 LIN. FT.
STA. 471+48 - STA.	471+96	LT.	56 LIN. FT.
STA. 474+78 - STA.	478+28	LT.	397 LIN. FT.
STA. 478+57 - STA.	488+16	LT.	1019 LIN. FT.

CONCRETE DITCH PAVING

STA.	STA.	LOCATION	LENGTH	"W"	(TYPE B)
476+00	479+00	RT.	68 LIN. FT.	7.00 FT.	208.44 SQ. YD.

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
470+00	476+00	LT.	568 LIN. FT.	504.89 SQ. YD.
470+00	476+00	RT.	520 LIN. FT.	462.22 SQ. YD.
479+00	482+00	LT.	300 LIN. FT.	266.67 SQ. YD.
479+00	484+00	RT.	468 LIN. FT.	416.00 SQ. YD.

WIRE FENCE (TYPE C)

STA. 474+78 - STA.	478+28	LT.	346 LIN. FT.
STA. 478+57 - STA.	481+70	LT.	355 LIN. FT.

RT. DITCH GRADE 0.10%
LT. DITCH GRADE 0.10%

466+78.00 LT. 272.01
466+78.00 RT. 272.74

280 275 270 265 260 255 250 245 240 235

465+00 466+00 467+00 468+00 469+00 470+00 471+00 472+00 473+00 474+00 475+00 476+00 477+00 478+00 479+00 480+00

4/13/2017

R050279.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.		050279	119	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

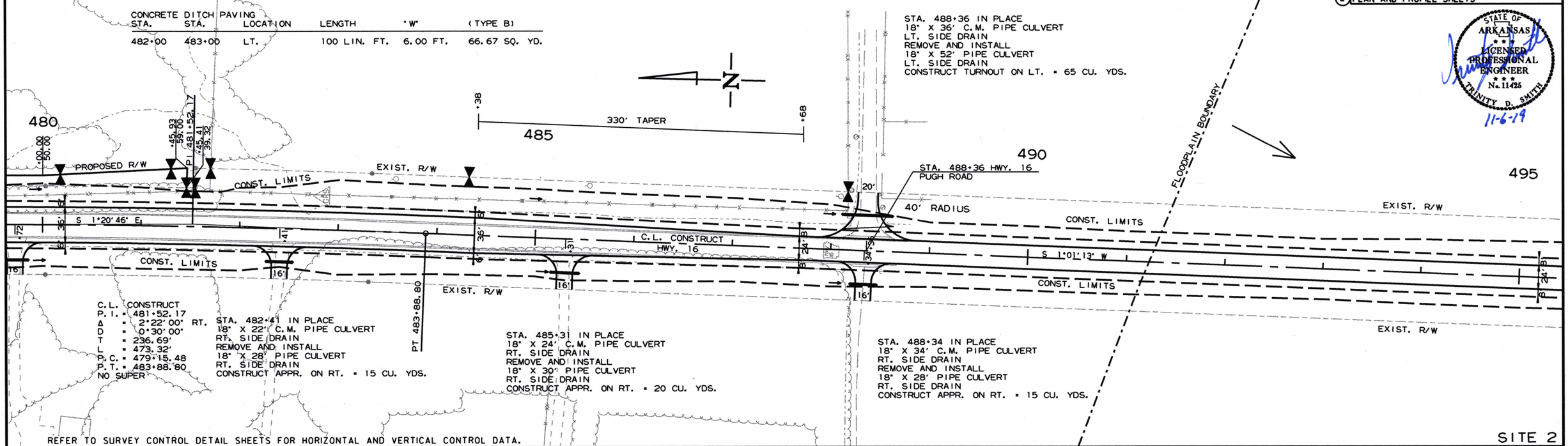
11-6-19

REMOVAL AND DISPOSAL OF FENCE

STA. 478+57 - STA. 488+16 LT. 1019 LIN. FT.

CONCRETE DITCH PAVING

STA.	STA.	LOCATION	LENGTH	"W"	(TYPE B)
482+00	483+00	LT.	100 LIN. FT.	6.00 FT.	66.67 SQ. YD.



STA. 488+36 IN PLACE
18" X 36' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT ON LT. = 65 CU. YDS.

C.L. CONSTRUCT
P.I. = 481+52.17
Δ = 2°22'00" RT.
D = 0°30'00"
T = 236.69'
L = 473.32'
P.C. = 479+15.48
P.T. = 483+88.80
NO SUPER

STA. 482+41 IN PLACE
18" X 22' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 15 CU. YDS.

STA. 485+31 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

STA. 488+34 IN PLACE
18" X 34' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 15 CU. YDS.

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

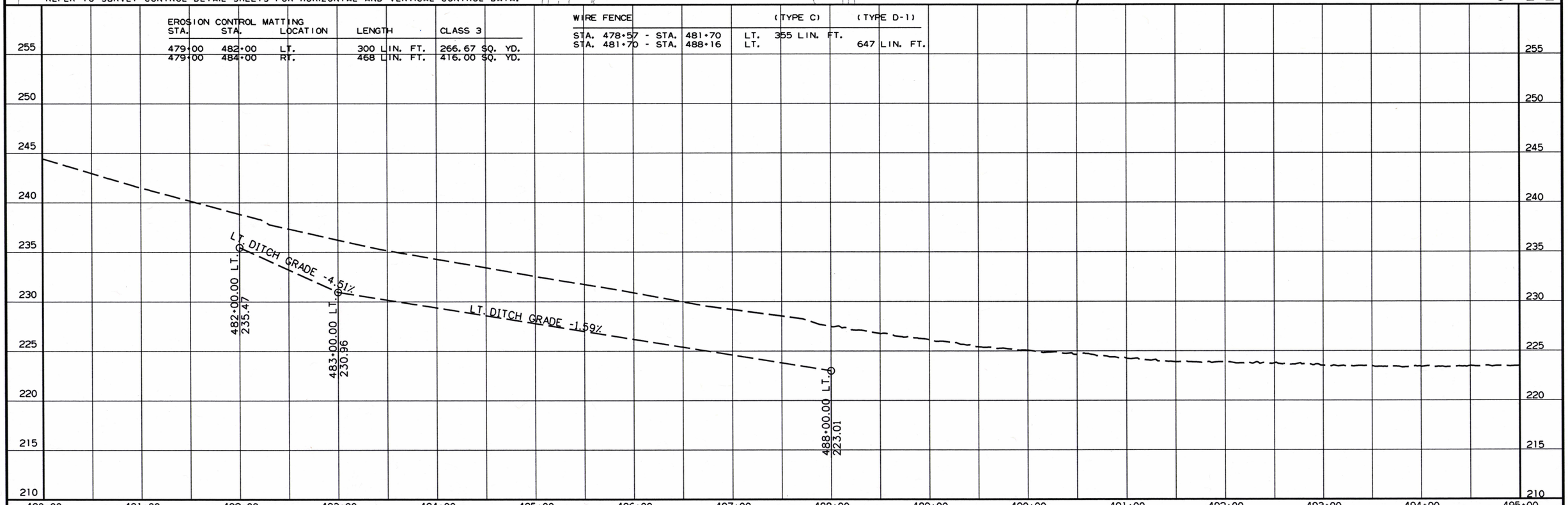
SITE 2

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
479+00	482+00	LT.	300 LIN. FT.	266.67 SQ. YD.
479+00	484+00	RT.	468 LIN. FT.	416.00 SQ. YD.

WIRE FENCE

			(TYPE C)	(TYPE D-1)
STA. 478+57 - STA.	481+70	LT.	355 LIN. FT.	
STA. 481+70 - STA.	488+16	LT.		647 LIN. FT.



4/13/2017

R050279.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.		050279	120	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

C.L. CONSTRUCT
P.I. = 499+99.22
Δ = 24°23' 00" LT.
D = 4°00' 00"
T = 309.48'
L = 609.58'
P.C. = 496+89.74
P.T. = 502+99.32

505
500
495

PT 502+99.32
S 23°21' 47" E
PC 496+89.74
+50
100' TRANSITION
+50
EXIST. R/W
CONST. LIMITS
S 1°01' 13" W
24.8'
CONST. LIMITS
EXIST. R/W
EXIST.
C.L. CONSTRUCT
HWY. 16
PI 499+99.22

STA. 495+50.00
END SITE 2

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

SITE 2

255 250 245 240 235 230 225 220 215 210

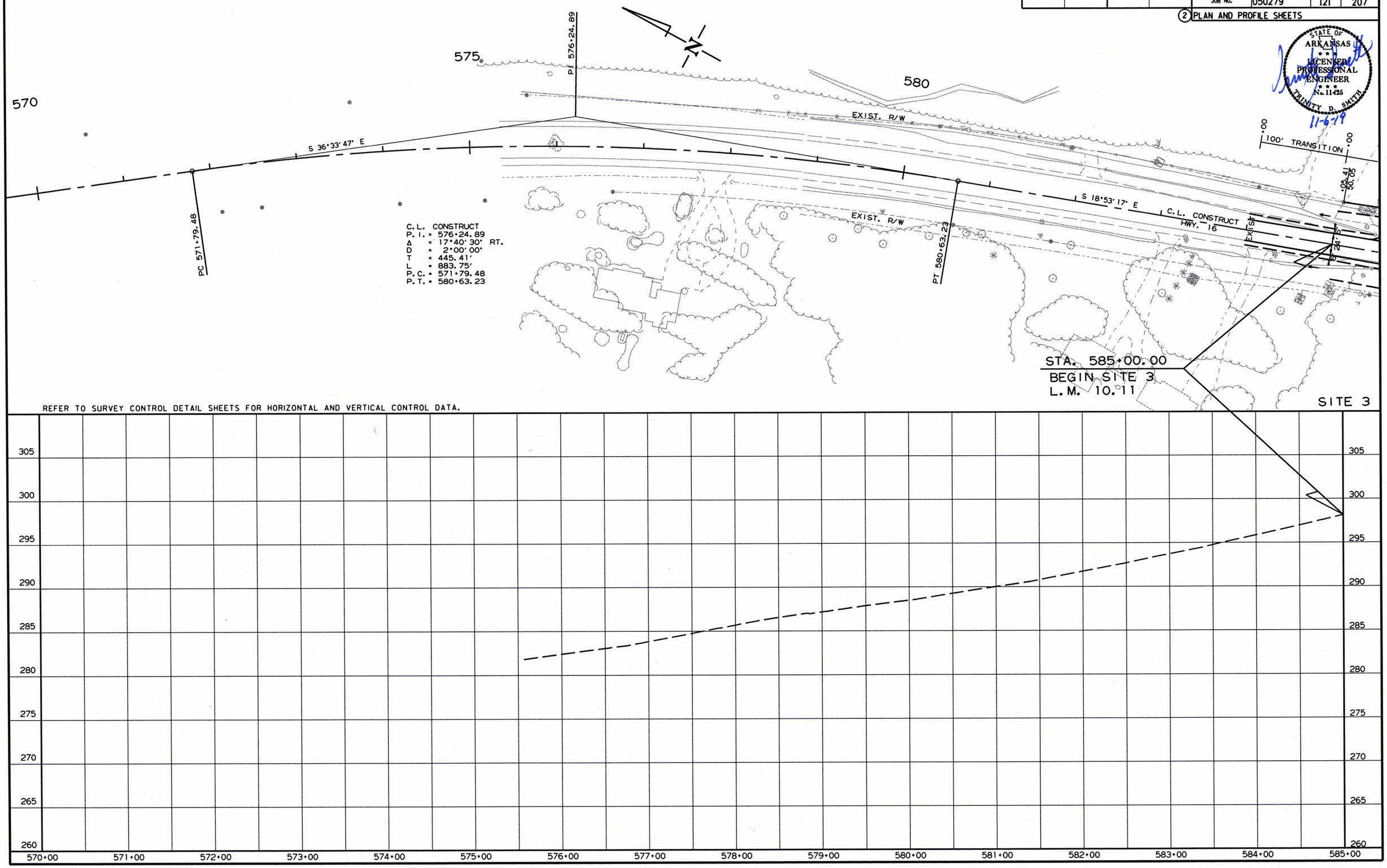
495+00 496+00 497+00 498+00 499+00 500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00

4/13/2017

R050279.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.		050279	121	207

(2) PLAN AND PROFILE SHEETS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

R050279.DGN 4/13/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	122	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-17

STA. 585+69 IN PLACE
18" X 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +70
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 586+32 IN PLACE
18" X 22' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +33
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 587+65 IN PLACE
18" X 20' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +68
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 589+29 IN PLACE
18" X 33' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +32
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 590+76 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +82
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 592+07 IN PLACE
18" X 26' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +18
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 593+36 IN PLACE
18" X 23' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 595+52 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +65
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 596+18 IN PLACE
18" X 46' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +27
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 55 CU. YDS.

STA. 597+40 INSTALL
18" X 44' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 45 CU. YDS.

STA. 598+06 IN PLACE
18" X 54' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +02
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

585 +00 · 330' TAPER · +30 590 595 600

+05.41 50.05 · 20' · 16' PROPOSED R/W · 16' CONST. LIMITS · 16' · +55.23 59.04 · 16' · 16' · 16' · 16' · 32' · 28' · 16' EXIST. R/W · 16'

EXIST. R/W · 24' · +70 · +33 · 36' · +68 · +32 · +55 · +82 · +18 · +36 · +60 · +65 · +27 · +40 · +52 · +02 · 36' · +08 · 16'

IS 18°53'17" E · PI 591+51.83 · C.L. CONSTRUCT HWY. 16 · S 16°37'06" E

CONST. LIMITS · EXIST. R/W · PROPOSED R/W · +54.84 50.07 · 34' · PC 589+24.82 · +00.00 45.00 · +55.00 55.00 · PT 593+78.79 · 18' · 30' · CONST. LIMITS · 28' · EXIST. R/W · PROPOSED R/W · 36'

C.L. CONSTRUCT
P.I. = 591+51.83
Δ = 2°16'11" RT.
D = 0°30'00"
T = 227.01'
L = 453.97'
P.C. = 589+24.82
P.T. = 593+78.79
NO SUPER

STA. 589+56 IN PLACE
18" X 40' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +55
18" X 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 50 CU. YDS.

STA. 592+55 IN PLACE
24" X 31' R.C. PIPE CULVERT
W/HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. & EXTEND R.C. PIPE
20' LT. & 18' RT.
(CLASS V)(TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 18.63 AC., Q50 = 30.20 C.F.S.
24" R.C. PIPE = 46 LIN. FT.
24" FES = 2 EACH

STA. 594+93 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +80
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 595+91 IN PLACE
18" X 56' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +82
18" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 50 CU. YDS.

STA. 597+54 IN PLACE
18" X 44' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +52
18" X 44" PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 45 CU. YDS.

STA. 599+69 IN PLACE
18" X 44' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 45 CU. YDS.

SITE 3

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

EROSION CONTROL STA.	MATTING STA.	LOCATION	LENGTH	CLASS 3
585+00	602+00	LT.	1476 LIN. FT.	1312.00 SQ. YD.
585+00	602+00	RT.	1516 LIN. FT.	1347.56 SQ. YD.

WIRE FENCE (TYPE C)

STA. 586+54 -	STA. 588+51	RT.	197 LIN. FT.
STA. 591+18 -	STA. 594+12	RT.	294 LIN. FT.
STA. 593+91 -	STA. 595+54	LT.	160 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA. 586+54 -	STA. 588+51	RT.	212 LIN. FT.
STA. 591+01 -	STA. 591+92	LT.	107 LIN. FT.
STA. 591+18 -	STA. 594+12	RT.	320 LIN. FT.
STA. 592+26 -	STA. 592+56	LT.	51 LIN. FT.
STA. 593+91 -	STA. 595+54	LT.	221 LIN. FT.
STA. 595+50 -	STA. 595+56	RT.	29 LIN. FT.
STA. 596+00 -	STA. 596+83	RT.	122 LIN. FT.

4' CHAIN LINK FENCE

STA. 591+06 -	STA. 591+92	LT.	88 LIN. FT.
STA. 592+26 -	STA. 592+56	LT.	30 LIN. FT.
STA. 596+00 -	STA. 596+77	RT.	76 LIN. FT.

335 · 330 · 325 · 320 · 315 · 310 · 305 · 300 · 295 · 290

+55

FL INLET LT. = 312.26
FL OUTLET RT. = 311.70

585+00 · 586+00 · 587+00 · 588+00 · 589+00 · 590+00 · 591+00 · 592+00 · 593+00 · 594+00 · 595+00 · 596+00 · 597+00 · 598+00 · 599+00 · 600+00

4/13/2017

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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.		050279	123	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 600+00 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +08
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 602+45 IN PLACE
18" X 24' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +50
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.

STA. 603+69 IN PLACE
24" X 31' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +74
24" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 25 CU. YDS.

STA. 603+45 IN PLACE
4' X 3' X 38' R.C. BOX CULVERT
W/WINGS LT. & RT.
REMOVE WINGS LT. & RT.
AND EXTEND 17' LT. STRAIGHT &
27' RT. ON 45° LT. FWD. SKEW
W/3:1 WINGS LT. & 2:1 WINGS RT.
CHANNEL CHANGE = 31 CU. YDS.
D.A. = 10.94 AC., Q50 = 18.10 C.F.S.

STA. 610+82 CONSTRUCT
APPR. ON LT. = 35 CU. YDS.

STA. 611+75 IN PLACE
18" X 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT ON LT. = 40 CU. YDS.
UNCLASSIFIED EXC. ON LT. = 5 CU. YDS.

STA. 614+17 IN PLACE
18" X 46' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +15
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 85 CU. YDS.

600 605 610

STA. 607+47 HWY. 16
LONGVIEW CIRCLE

STA. 611+75 HWY. 16
SONIC DRIVE

612+75.95
40°11'17" LT.

EXIST. R/W
CONST. LIMITS
PROPOSED R/W
40' RADIUS
C.L. CONSTRUCT HWY. 16
S 16°37'06" E
S 16°48'23" E
LONGVIEW CIRCLE
SONIC DR.
CEMETERY

STA. 601+51 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +50
18" X 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 40 CU. YDS.

STA. 603+77 IN PLACE
15" X 35' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +75
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 605+97 IN PLACE
18" X 31' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +89
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.

STA. 607+45 IN PLACE
18" X 21' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +47
18" X 56' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT ON RT. = 40 CU. YDS.

STA. 611+05 IN PLACE
24" X 38' R.C. PIPE CULVERT
W/HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. & EXTEND R.C. PIPE
18' LT. & 12' RT.
(CLASS V)(TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 12.24 AC., Q50 = 21.70 C.F.S.
24" R.C. PIPE = 38 LIN. FT.
24" FES = 2 EACH

STA. 614+25 INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 612+66 IN PLACE
18" X 23' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

SITE 3

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

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
585+00	602+00	LT.	1476 LIN. FT.	1312.00 SQ. YD.
585+00	602+00	RT.	1516 LIN. FT.	1347.56 SQ. YD.
605+00	609+50	LT.	450 LIN. FT.	400.00 SQ. YD.
605+00	609+50	RT.	410 LIN. FT.	364.44 SQ. YD.
613+00	614+00	LT.	100 LIN. FT.	88.89 SQ. YD.
613+00	614+00	RT.	100 LIN. FT.	88.89 SQ. YD.

365 360 355 350 345 340 335 330 325 320

+45
FL INLET LT. = 336.39
FL OUTLET RT. = 334.82
RT. DITCH GRADE 0.61%
602+00.00 RT. Ø 333.94
603+45.00 RT. Ø 334.82

+05
FL INLET LT. = 353.50
FL OUTLET RT. = 352.55

600+00 601+00 602+00 603+00 604+00 605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00 613+00 614+00 615+00

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				6	ARK.			
				JOB NO.		050279	124	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 618+71 IN PLACE
6' X 4' X 36' R.C. BOX CULVERT
W/WINGS LT. & RT.
REMOVE WINGS LT. & RT.
AND EXTEND 18' LT. STRAIGHT &
21' RT. ON 15° LT. FWD. SKEW
W/3:1 WINGS LT. & RT.
CHANNEL CHANGE = 50 CU. YDS.
D.A. = 36.66 AC., Q50 = 79.20 C.F.S.

STA. 618+10 CONSTRUCT
TURNOUT ON LT. = 40 CU. YDS.

STA. 623+46 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +44
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 624+27 IN PLACE
18" X 30' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +29
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 628+53 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +49
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 629+19 IN PLACE
18" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

615

620

625

630

STA. 618+10 HWY. 16
BROWN LANE

STA. 623+86 IN PLACE
18" X 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +90
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 623+63 HWY. 16
SMITH ROAD

PROPOSED R/W
CONST. LIMITS
EXIST. R/W
40' RADIUS
S 16°48'23" E
C.L. CONSTRUCT
HWY. 16
PI 624+22.47
PC 622+29.57
PT 626+11.04
S 4°10'27" W

STA. 615+05 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 615+79 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 616+33 IN PLACE
24" X 20' C.M. PIPE CULVERT
RETAIN

STA. 617+73 CONSTRUCT
APPR. ON RT. = 25 CU. YDS.

STA. 617+99 CONSTRUCT
APPR. ON RT. = 25 CU. YDS.

STA. 617+83 IN PLACE
18" X 42' PLASTIC PIPE CULVERT
RETAIN

STA. 619+76 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.

STA. 622+11 INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 35 CU. YDS.
UNCLASSIFIED EXC. ON RT. = 5 CU. YDS.

STA. 623+63 OFF SMITH ROAD
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

C.L. CONSTRUCT
P.I. = 624+22.47
Δ = 20°58'50" RT.
D = 5°30'00"
T = 192.89'
L = 381.46'
P.C. = 622+29.57
P.T. = 626+11.04
e = 0.094'/'
Ls = 420'

STA. 623+63 INSTALL
18" X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT ON RT. = 25 CU. YDS.
UNCLASSIFIED EXC. ON RT. = 20 CU. YDS.

STA. 624+65 INSTALL
18" X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 45 CU. YDS.

STA. 626+13 IN PLACE
24" X 37' R.C. PIPE CULVERT
W/HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. & EXTEND R.C. PIPE
18' LT. ON 30° LT. FWD. SKEW
& 16' RT. ON 15° LT. FWD. SKEW
(CLASS V)(TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 7.64 AC., Q50 = 14.40 C.F.S.
24" R.C. PIPE = 42 LIN. FT.
24" FES = 2 EACH

STA. 627+61 IN PLACE
18" X 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +62
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 629+34 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

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

SITE 3

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.			
617+84		RT.	11	LIN. FT.
626+04	628+17	RT.	270	LIN. FT.

CONCRETE DITCH PAVING

STA.	STA.	LOCATION	LENGTH	"W"	(TYPE B)
618+71	622+50	LT.	379 LIN. FT.	7.00 FT.	294.78 SQ. YD.
618+71	622+50	RT.	347 LIN. FT.	7.00 FT.	269.89 SQ. YD.

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
622+50	624+50	LT.	152 LIN. FT.	135.11 SQ. YD.
622+50	624+50	RT.	160 LIN. FT.	142.22 SQ. YD.
627+00	629+00	LT.	184 LIN. FT.	163.56 SQ. YD.
627+00	629+00	RT.	184 LIN. FT.	163.56 SQ. YD.

STA. 619+14.57 BEGIN SUPERELEVATION
STA. 623+34.57 MAX. SUPERELEVATION (0.094'/')
STA. 625+06.04 MAX. SUPERELEVATION (0.094'/')
STA. 629+26.04 END SUPERELEVATION

4' CHAIN LINK FENCE

STA.	STA.			16'-0" GATES
626+04	628+17	RT.	197 LIN. FT.	1

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS.
THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM
BANK ELEVATION IS 365 FEET MSL AT STA. 618+68 - STA. 618+73. REFER TO SECTION
110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

+71
FL INLET LT. = 363.09
FL OUTLET RT. = 362.18

+13
FL INLET LT. = 387.12
FL OUTLET RT. = 384.99

400 395 390 385 380 375 370 365 360 355

615+00 616+00 617+00 618+00 619+00 620+00 621+00 622+00 623+00 624+00 625+00 626+00 627+00 628+00 629+00 630+00

4/13/2017
R050279.DGN

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.		050279	125	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 630+37 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +36
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 45 CU. YDS.

STA. 631+10 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +07
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 634+59 IN PLACE
24" X 32' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +58
24" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 635+46 IN PLACE
24" X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +41
24" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 45 CU. YDS.

STA. 638+04 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 638+68 IN PLACE
18" X 20' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +66
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 639+79 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 640+32 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +29
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 642+12 IN PLACE
18" X 28' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 35 CU. YDS.

STA. 643+23 IN PLACE
18" X 28' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +22
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 40 CU. YDS.

STA. 644+35 IN PLACE
18" X 28' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 45 CU. YDS.

630 635 640 645

+85.00 57.00 +05.00 70.00 +40.00 70.00 +55.00 50.35 +00.00 60.00 +98.90 60.00 +36.84 55.00 +48.44 57.46

PROPOSED R/W EXIST. R/W CONST. LIMITS

C.L. CONSTRUCT HWY. 16 S 4°10'27" W

S 4°40'31" W

CONST. LIMITS EXIST. R/W

PI 631+32.54 Δ 4°30'04" RT.

GATE

STA. 630+53 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 40 CU. YDS.

STA. 632+07 IN PLACE
6' X 3' X 34' R.C. BOX CULVERT
W/WINGS LT. & RT.
REMOVE WINGS LT. & RT.
AND EXTEND 20' LT. & 22' RT.
ON 15° LT. FWD. SKEW
W/3:1 WINGS LT. & RT.
CHANNEL CHANGE = 58 CU. YDS.
D.A. = 48.36 AC., Q50 = 101.00 C.F.S.

STA. 634+44 IN PLACE
18" X 30' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +43
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

STA. 635+28 IN PLACE
18" X 43' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +29
18" X 54' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 65 CU. YDS.

STA. 636+48 IN PLACE
18" X 43' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 60 CU. YDS.

STA. 637+41 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +43
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 639+34 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

STA. 640+47 IN PLACE
18" X 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +45
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 641+49 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +41
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 642+61 IN PLACE
18" X 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 20 CU. YDS.

STA. 643+89 IN PLACE
18" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +80
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 25 CU. YDS.

STA. 644+34 IN PLACE
18" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +36
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 30 CU. YDS.

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

SITE 3

REMOVAL AND DISPOSAL OF FENCE

STA. 630+31 -	STA. 632+44	RT.	269	LIN. FT.
STA. 632+44 -	STA. 634+34	RT.	224	LIN. FT.
STA. 634+50 -	STA. 634+96	RT.	104	LIN. FT.
STA. 637+01 -	STA. 638+47	LT.	181	LIN. FT.
STA. 637+56 -	STA. 638+44	RT.	96	LIN. FT.
STA. 639+99		LT.	21	LIN. FT.
STA. 642+03		RT.	13	LIN. FT.

CONCRETE DITCH PAVING

STA.	STA.	LOCATION	LENGTH	"W"	(TYPE B)
632+07	638+50	LT.	595 LIN. FT.	7.00 FT.	462.78 SQ. YD.
632+07	638+50	RT.	523 LIN. FT.	7.00 FT.	406.78 SQ. YD.

4' CHAIN LINK FENCE — 16'-0" GATES

STA. 637+01 -	STA. 638+43	LT.	130 LIN. FT.	1
STA. 637+56 -	STA. 638+44	RT.	86 LIN. FT.	

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
630+50	631+50	LT.	84 LIN. FT.	74.67 SQ. YD.
630+50	631+50	RT.	84 LIN. FT.	74.67 SQ. YD.
642+00	645+50	LT.	300 LIN. FT.	266.67 SQ. YD.
642+00	645+50	RT.	302 LIN. FT.	268.44 SQ. YD.

WIRE FENCE (TYPE C)

STA. 632+44 -	STA. 634+34	RT.	191	LIN. FT.
STA. 634+50 -	STA. 634+96	RT.	46	LIN. FT.

5' CHAIN LINK FENCE — 16'-0" GATES

STA. 630+34 -	STA. 632+44	RT.	209 LIN. FT.	1

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS.
THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATION IS 389 FEET MSL AT STA. 632+05 - STA. 632+09. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

+07

FL INLET LT. = 387.28
FL OUTLET RT. = 385.00

430 425 420 415 410 405 400 395 390 385

630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00 641+00 642+00 643+00 644+00 645+00

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				6	ARK.			
				JOB NO.		050279	126	207

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-6-19

STA. 646+58 IN PLACE
18" X 43' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL @ +56
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT ON LT. = 35 CU. YDS.
UNCLASSIFIED EXC. ON LT. = 10 CU. YDS.

C.L. CONSTRUCT
P.I. = 649+91.23
Δ = 28°49'30" LT.
D = 4°00'00"
T = 368.11'
L = 720.62'
P.C. = 646+23.12
P.T. = 653+43.74
e = 0.083'/'
Ls = 360'

645

650

KEITH RD.

PROPOSED R/W

EXIST. R/W

PC 646+23.12

STA. 646+56 HWY. 16
HILLSIDE DRIVE

100' TRANSITION

CONST. LIMITS

S 4°40'31" W

C.L. CONSTRUCT HWY. 16

PT 653+43.74

POE 653+86.74

S 24°08'59" E

STA. 645+94 IN PLACE
18" X 27' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 125 CU. YDS.

STA. 646+91 IN PLACE
18" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 105 CU. YDS.

PT 649+91.23

DAK FORREST RD.

STA. 647+82 IN PLACE
18" X 42' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 55 CU. YDS.

STA. 649+36 IN PLACE
18" X 36' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +32
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 40 CU. YDS.

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

SITE 3

STA. 643+53.12 BEGIN SUPERELEVATION
STA. 647+13.12 MAX. SUPERELEVATION (0.083'/')
STA. 649+60.00 MATCH EXISTING SUPERELEVATION

STA. 648+60.00
END SITE 3
END JOB 050279

EROSION CONTROL MATTING

STA.	STA.	LOCATION	LENGTH	CLASS 3
642+00	645+50	LT.	300 LIN. FT.	266.67 SQ. YD.
642+00	645+50	RT.	302 LIN. FT.	268.44 SQ. YD.

440 435 430 425 420 415 410 405 400 395

645+00 646+00 647+00 648+00 649+00 650+00 651+00 652+00 653+00 654+00 655+00 656+00 657+00 658+00 659+00 660+00

4/13/2017

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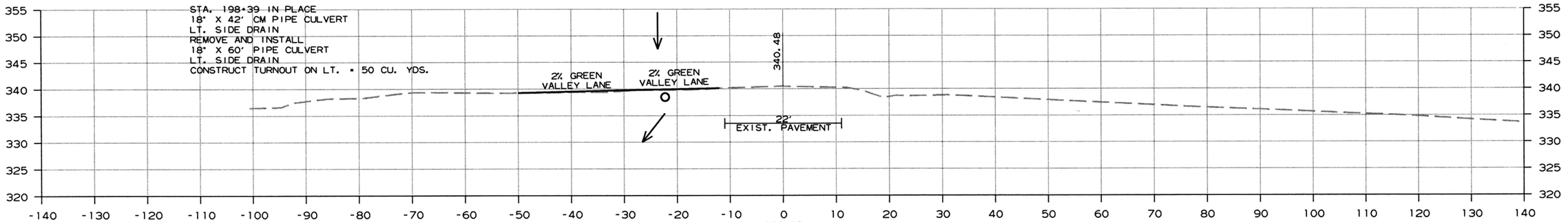
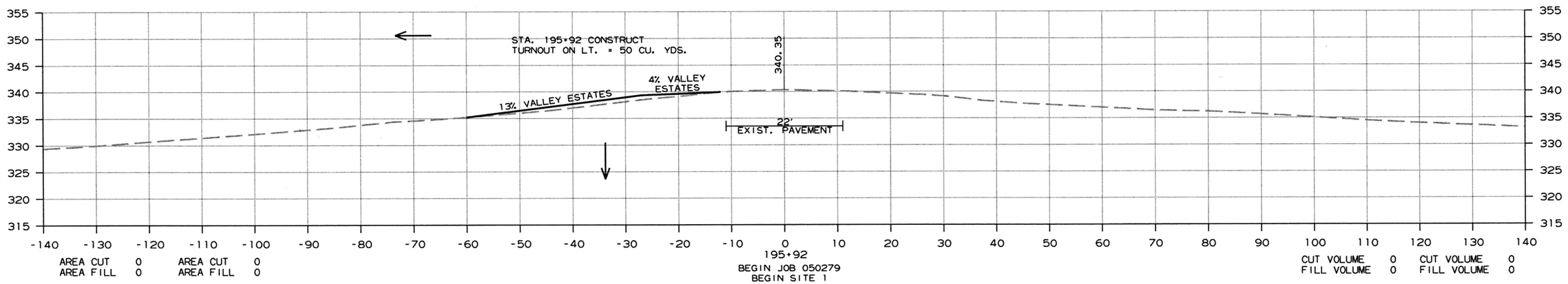
				6	ARK.			
				JOB NO.		050279	127	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2



STAGE 1 STAGE 2



CROSS SECTION STA. 195+92 AND STA. 198+39

6/26/2018

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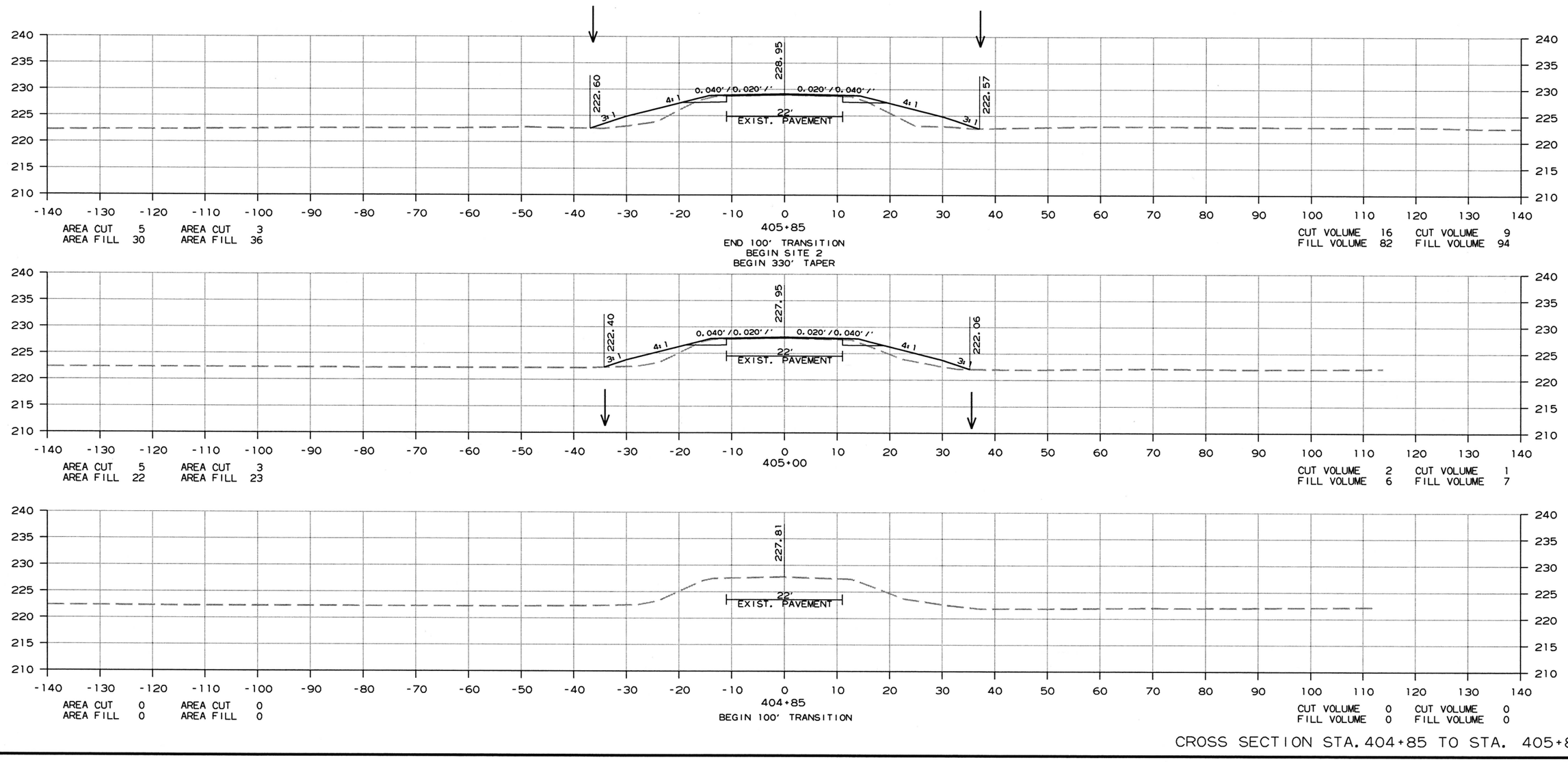
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	128	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



AREA CUT 5 AREA CUT 3
AREA FILL 30 AREA FILL 36

405+85
END 100' TRANSITION
BEGIN SITE 2
BEGIN 330' TAPER

CUT VOLUME 16 CUT VOLUME 9
FILL VOLUME 82 FILL VOLUME 94

AREA CUT 5 AREA CUT 3
AREA FILL 22 AREA FILL 23

405+00

CUT VOLUME 2 CUT VOLUME 1
FILL VOLUME 6 FILL VOLUME 7

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

404+85
BEGIN 100' TRANSITION

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

CROSS SECTION STA. 404+85 TO STA. 405+85

6/26/2018

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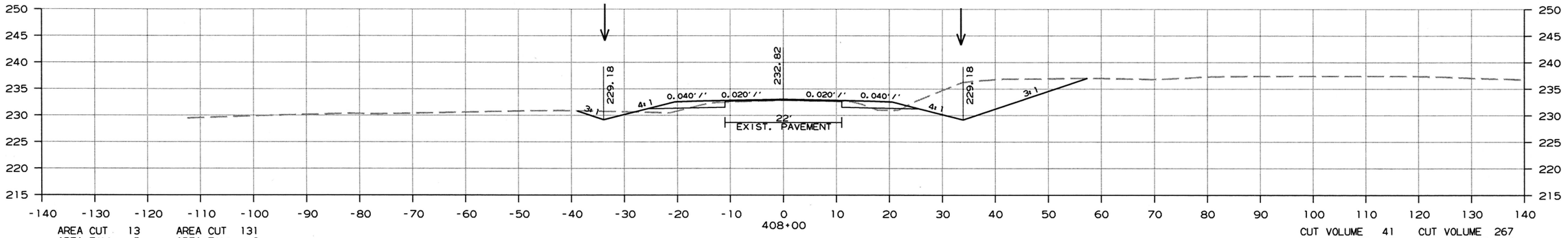
				6	ARK.			
				JOB NO.		050279	129	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

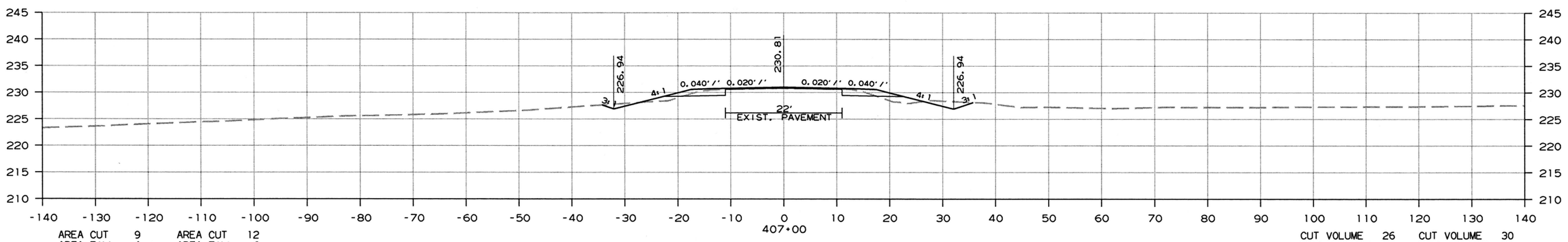


AREA CUT 13 AREA FILL 5

AREA CUT 131 AREA FILL 2

CUT VOLUME 41 FILL VOLUME 19

CUT VOLUME 267 FILL VOLUME 15

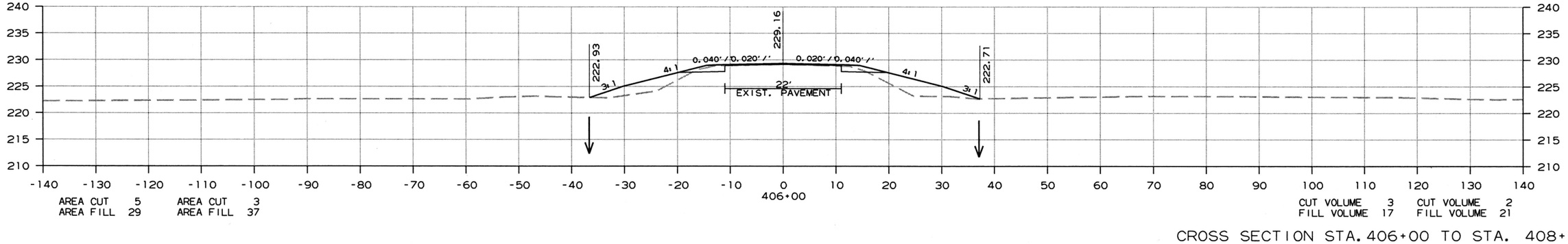


AREA CUT 9 AREA FILL 4

AREA CUT 12 AREA FILL 6

CUT VOLUME 26 FILL VOLUME 63

CUT VOLUME 30 FILL VOLUME 81



AREA CUT 5 AREA FILL 29

AREA CUT 3 AREA FILL 37

CUT VOLUME 3 FILL VOLUME 17

CUT VOLUME 2 FILL VOLUME 21

CROSS SECTION STA. 406+00 TO STA. 408+00

6/26/2018

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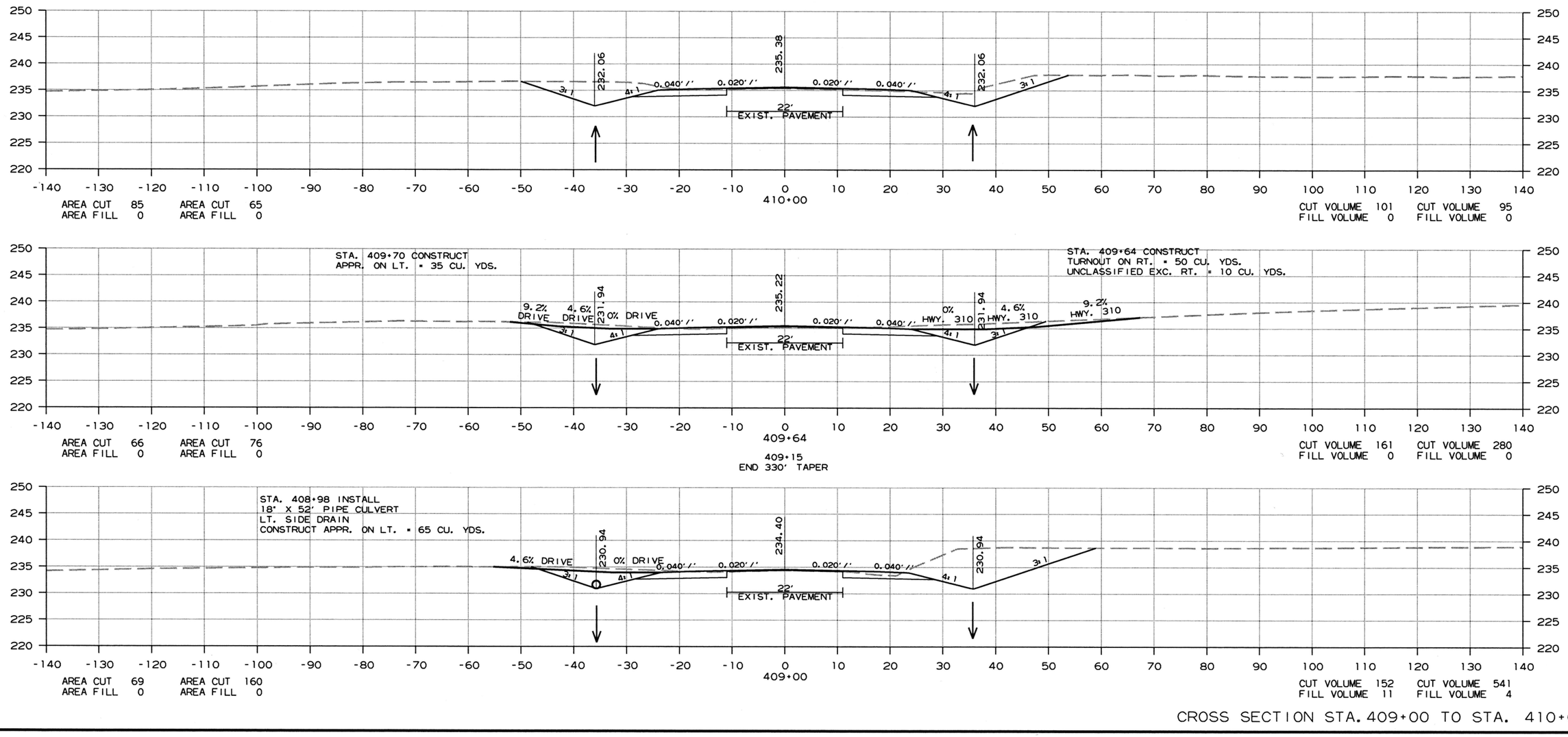
				6	ARK.			
				JOB NO.		050279	130	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 409+00 TO STA. 410+00

6/26/2018

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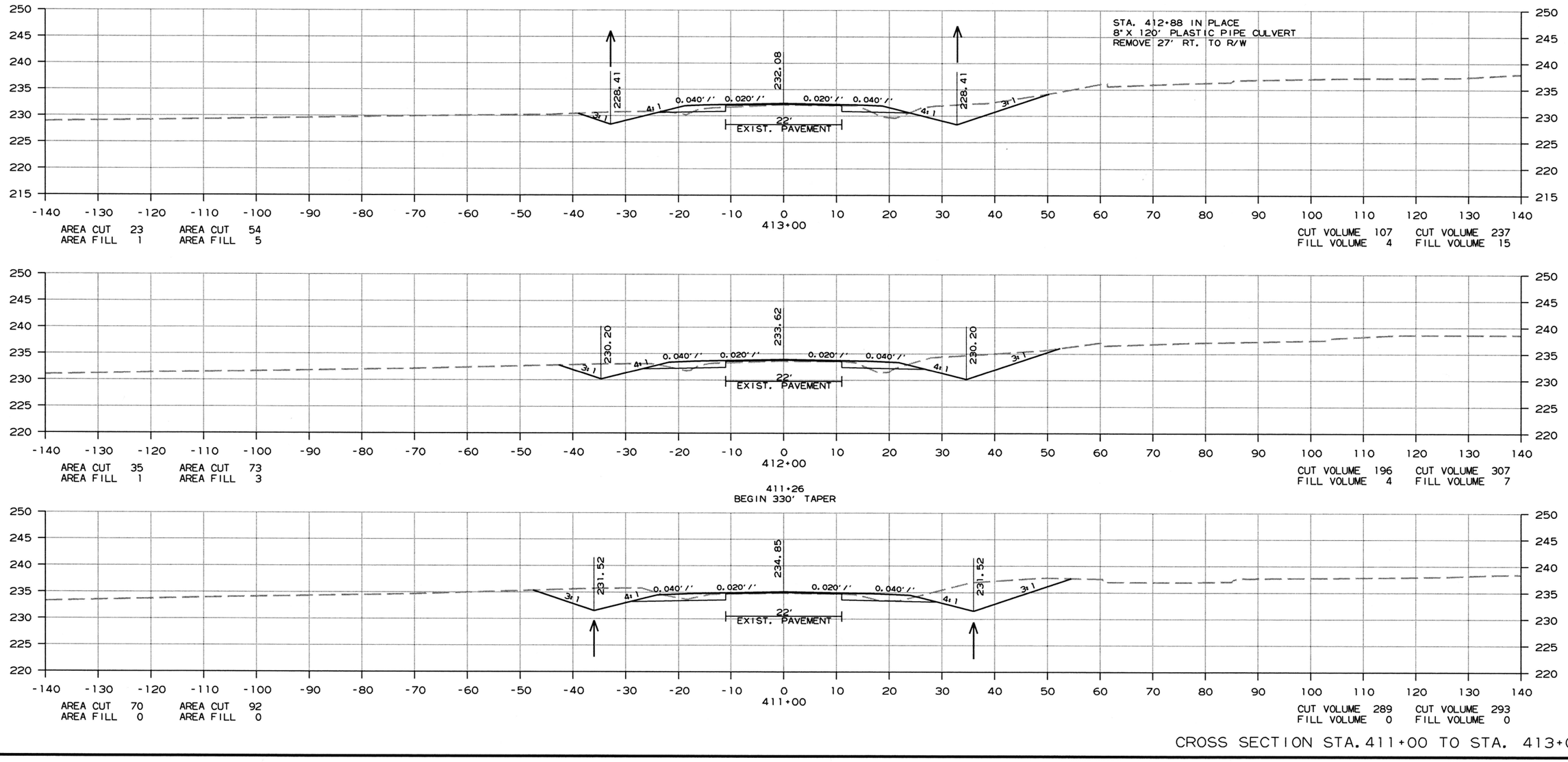
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	131	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 411+00 TO STA. 413+00

6/26/2018

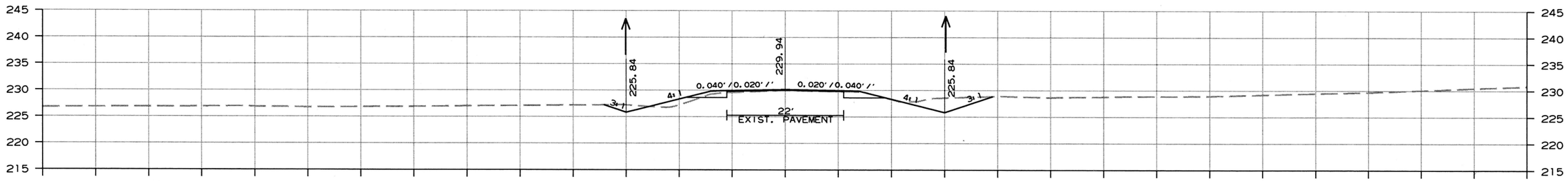
R050279.DGN

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.		050279	132	207

(2) CROSS SECTIONS

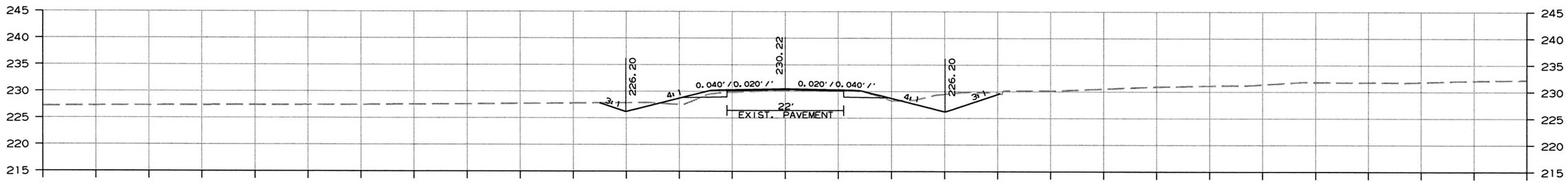
STAGE 1 STAGE 2

STAGE 1 STAGE 2



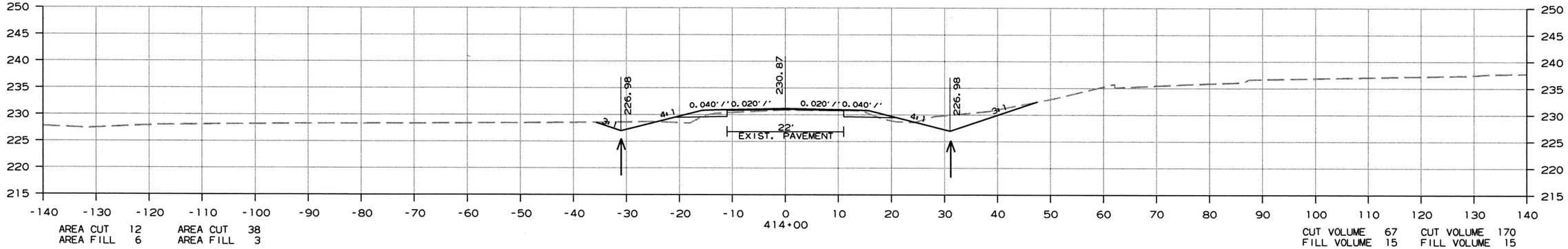
AREA CUT 9 AREA CUT 29
AREA FILL 7 AREA FILL 0

CUT VOLUME 18 CUT VOLUME 55
FILL VOLUME 10 FILL VOLUME 2



AREA CUT 13 AREA CUT 39
AREA FILL 5 AREA FILL 1

CUT VOLUME 27 CUT VOLUME 81
FILL VOLUME 12 FILL VOLUME 4



AREA CUT 12 AREA CUT 38
AREA FILL 6 AREA FILL 3

CUT VOLUME 67 CUT VOLUME 170
FILL VOLUME 15 FILL VOLUME 15

CROSS SECTION STA. 414+00 TO STA. 415+00

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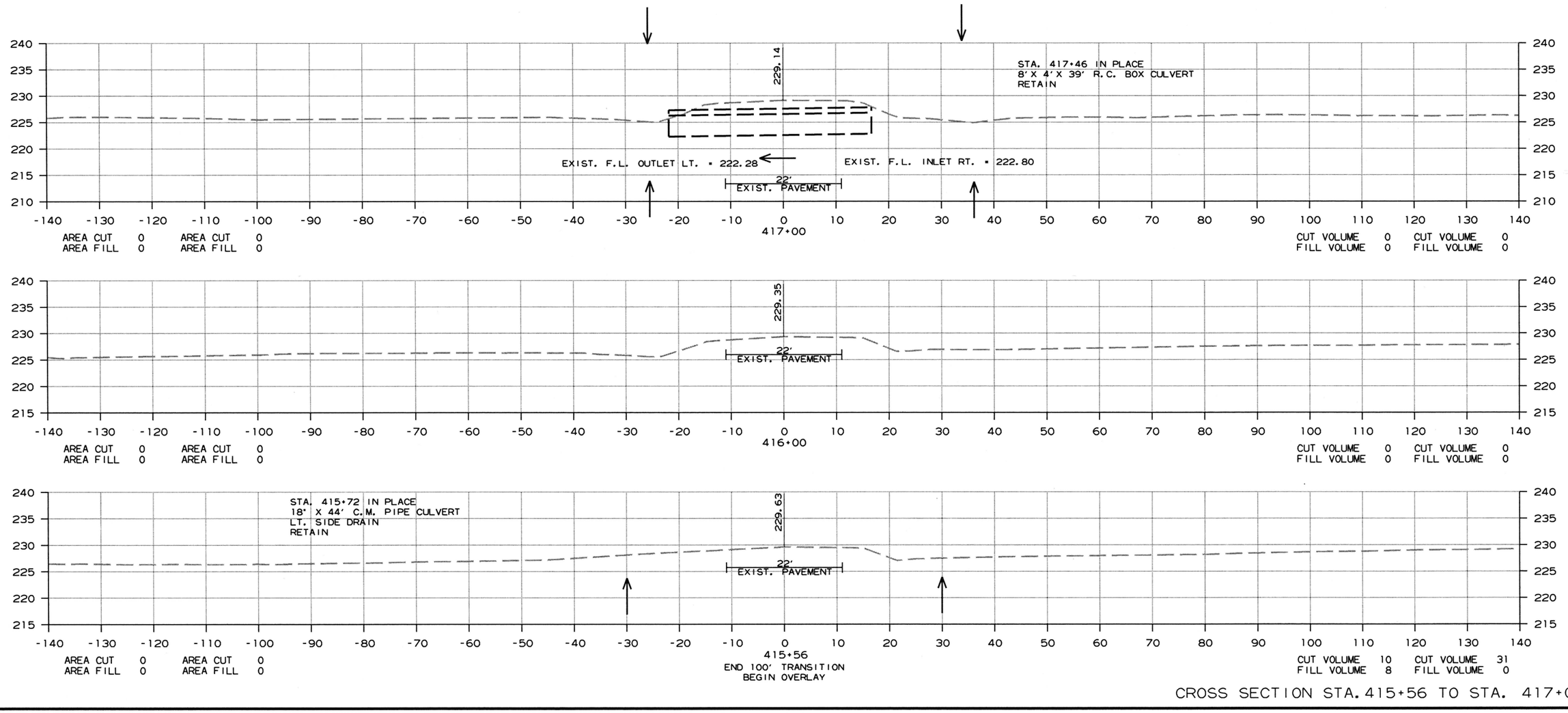
				6	ARK.			
				JOB NO.		050279	133	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 415+56 TO STA. 417+00

6/26/2018

R050279.DGN

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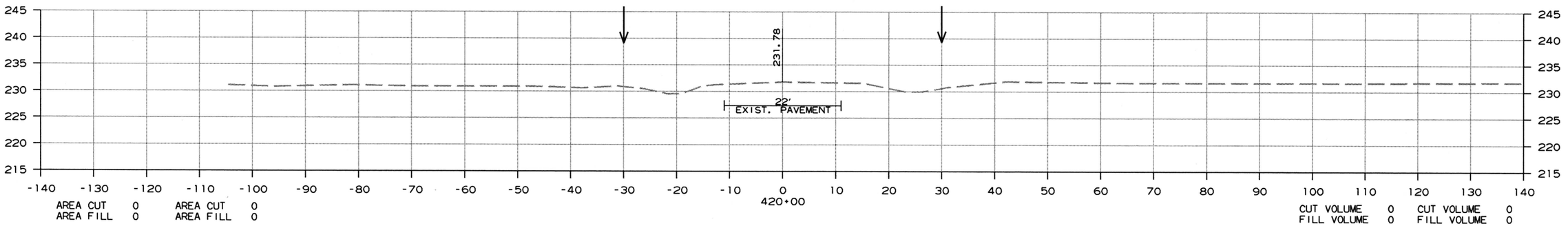
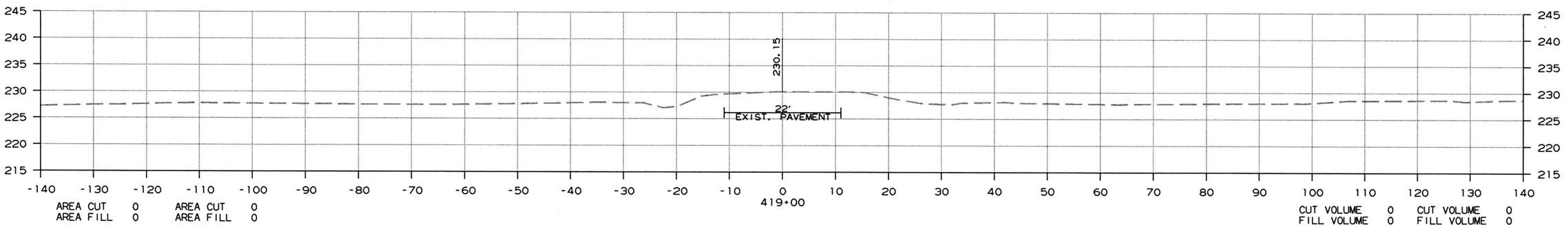
				6	ARK.			
				JOB NO.		050279	134	207

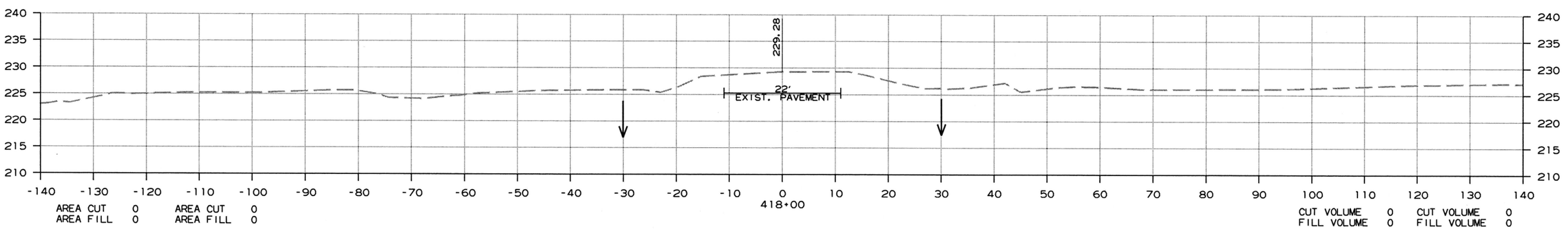
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 418+00 TO STA. 420+00

6/26/2018

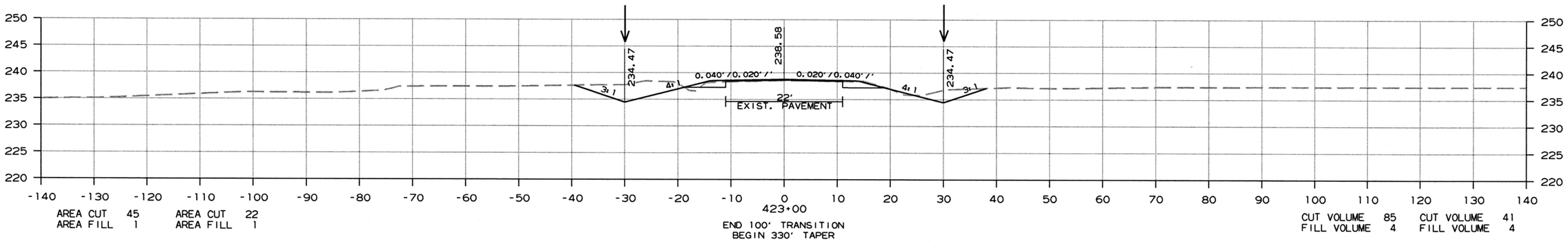
R050279.DGN

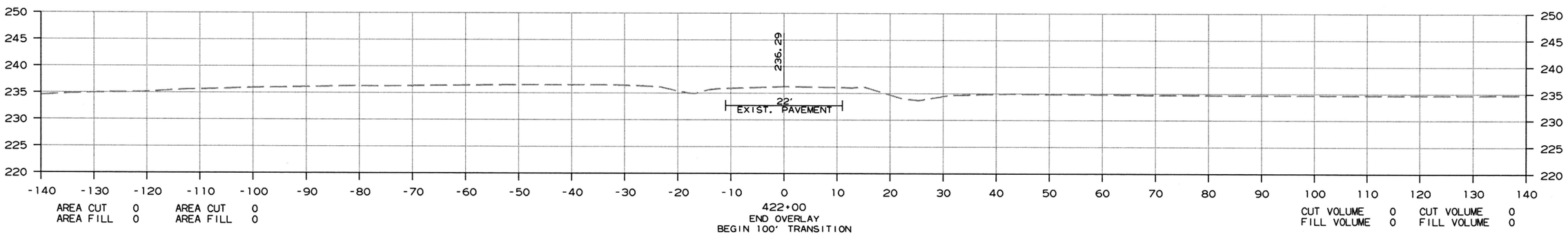
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	135	207

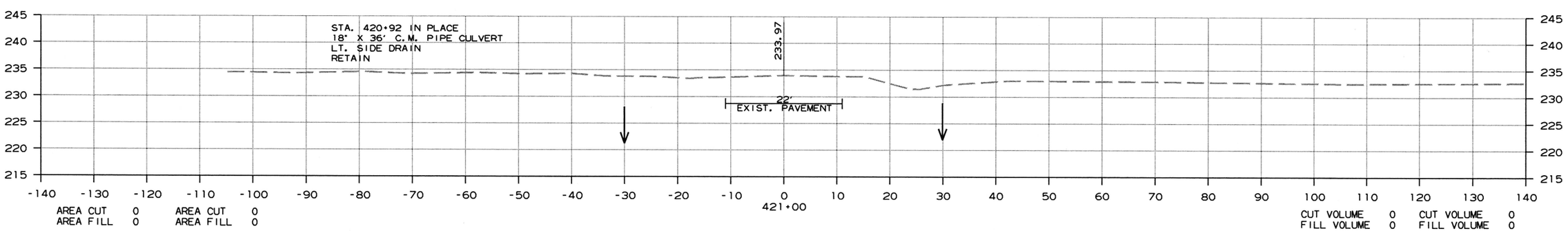
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 421+00 TO STA. 423+00

6/26/2018

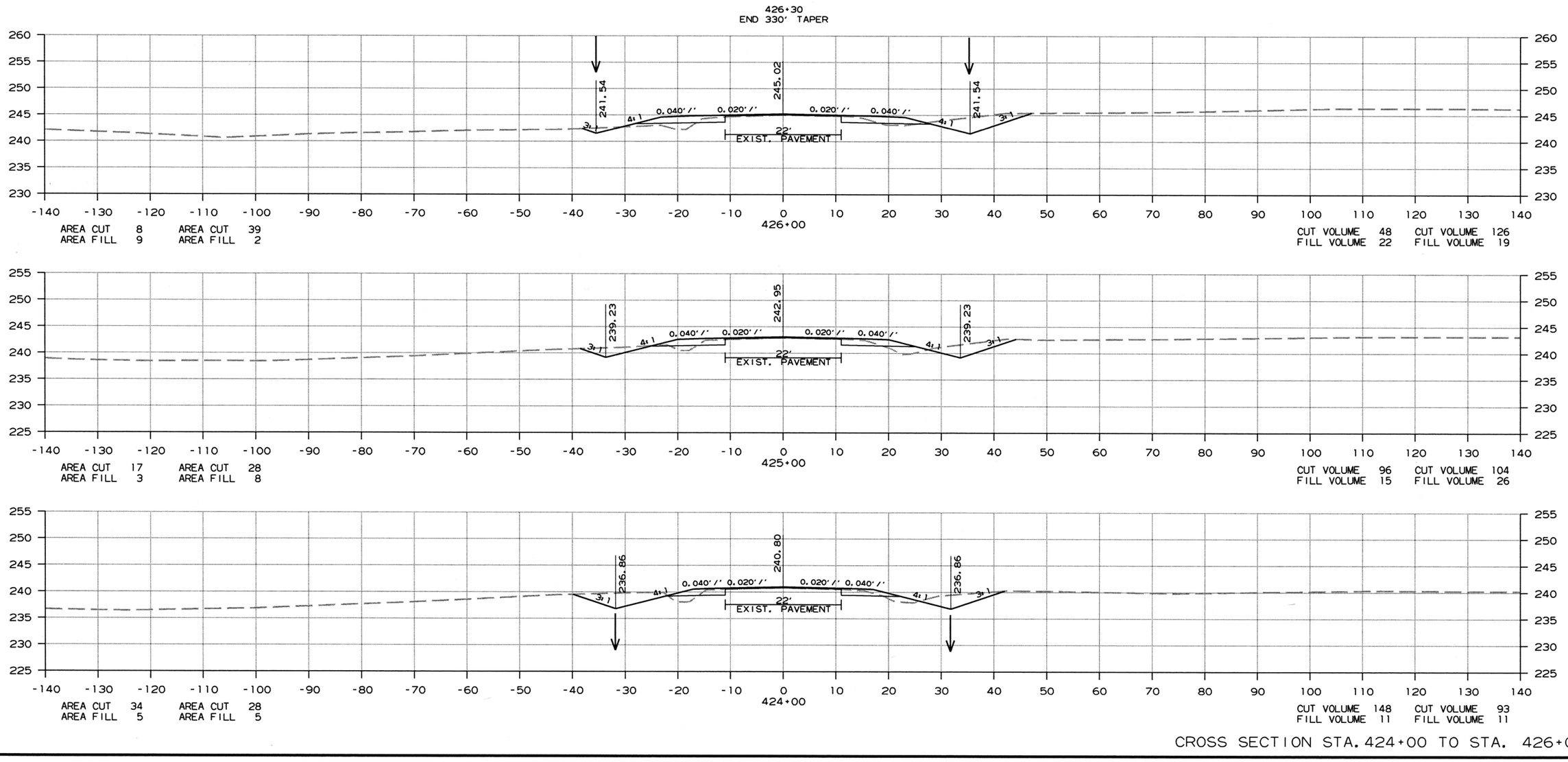
R050279.DGN

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.		050279	136	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 424+00 TO STA. 426+00

6/26/2018

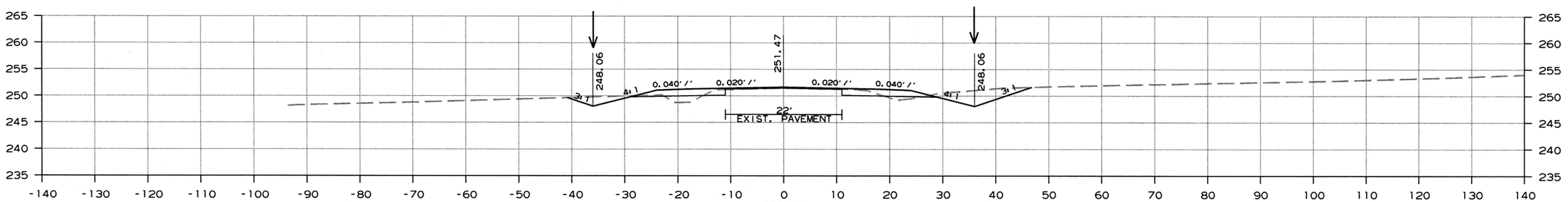
R050279.DGN

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.		050279	137	207

(2) CROSS SECTIONS

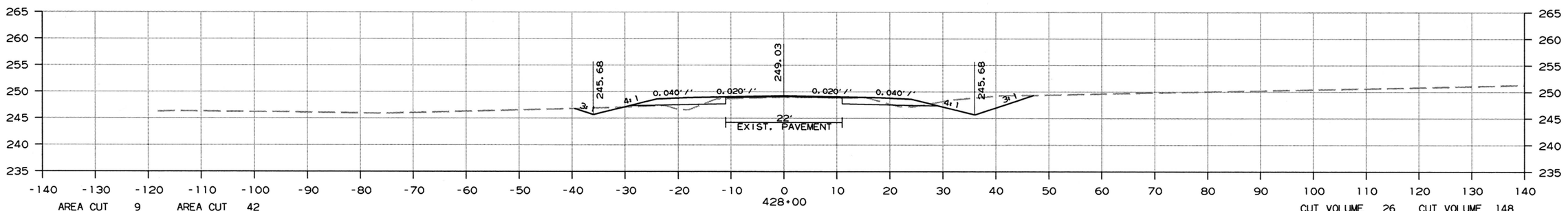
STAGE 1 STAGE 2

STAGE 1 STAGE 2



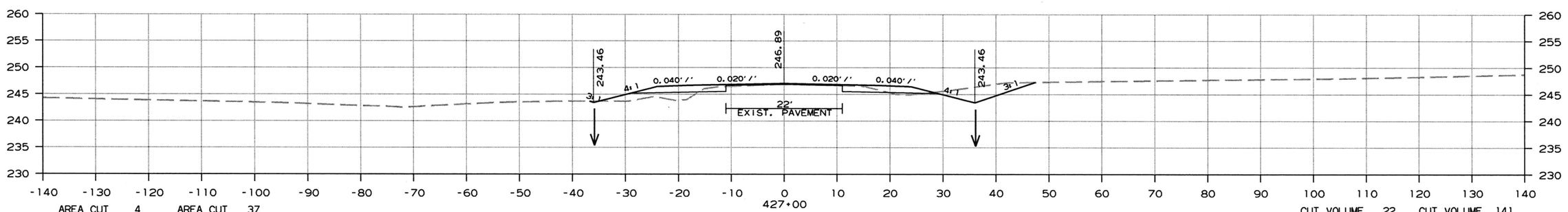
AREA CUT 15 AREA CUT 37
AREA FILL 6 AREA FILL 3

CUT VOLUME 44 CUT VOLUME 148
FILL VOLUME 22 FILL VOLUME 7



AREA CUT 9 AREA CUT 42
AREA FILL 6 AREA FILL 1

CUT VOLUME 26 CUT VOLUME 148
FILL VOLUME 44 FILL VOLUME 7



AREA CUT 4 AREA CUT 37
AREA FILL 18 AREA FILL 2

CUT VOLUME 22 CUT VOLUME 141
FILL VOLUME 52 FILL VOLUME 7

CROSS SECTION STA. 427+00 TO STA. 429+00

6/26/2018

R050279.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.		050279	138	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 430+00 TO STA. 431+00

6/26/2018

R050279.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.		050279	139	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 432+00 TO STA. 434+00

6/26/2018

R050279.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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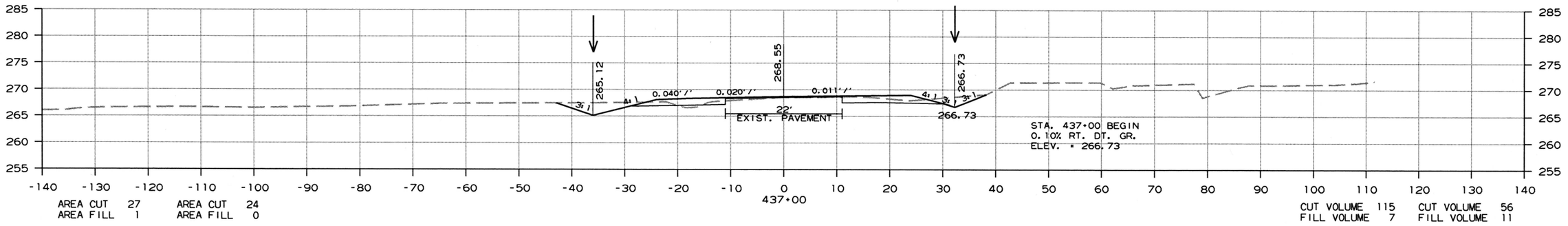
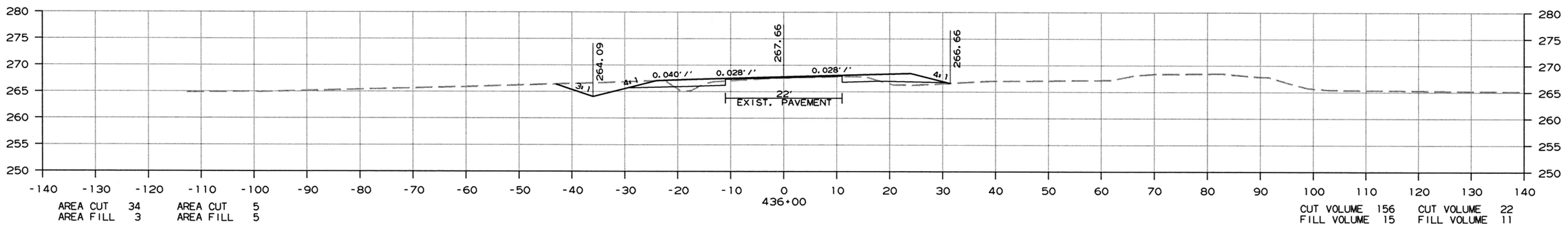
				JOB NO.		050279	140	207

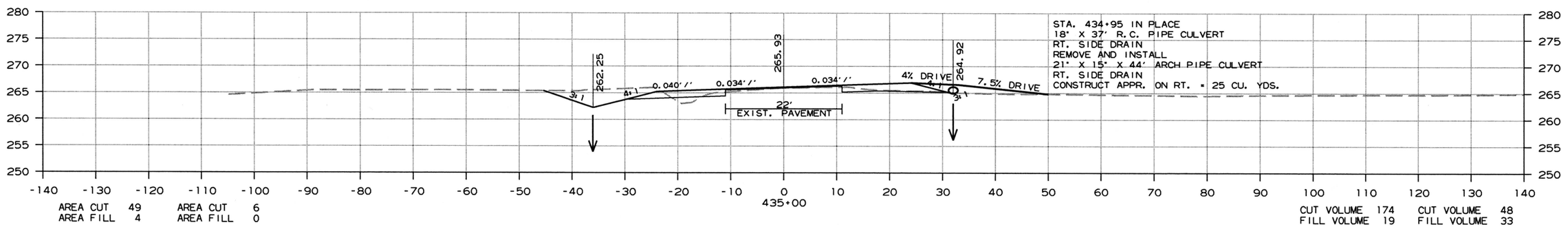
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 435+00 TO STA. 437+00

6/26/2018

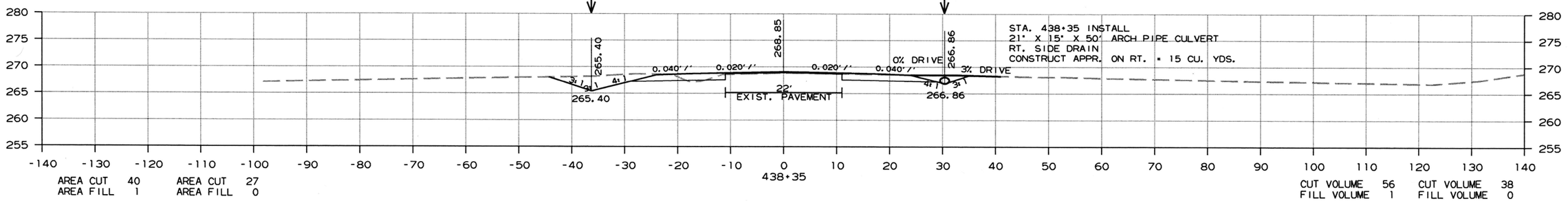
R050279.DGN

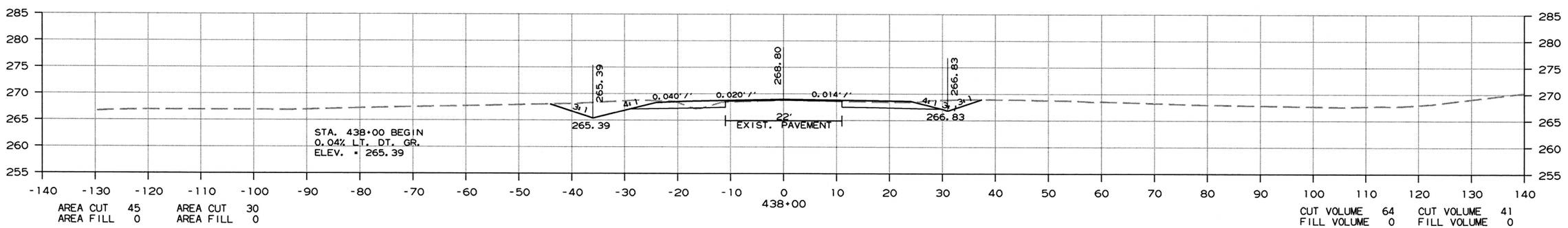
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	141	207

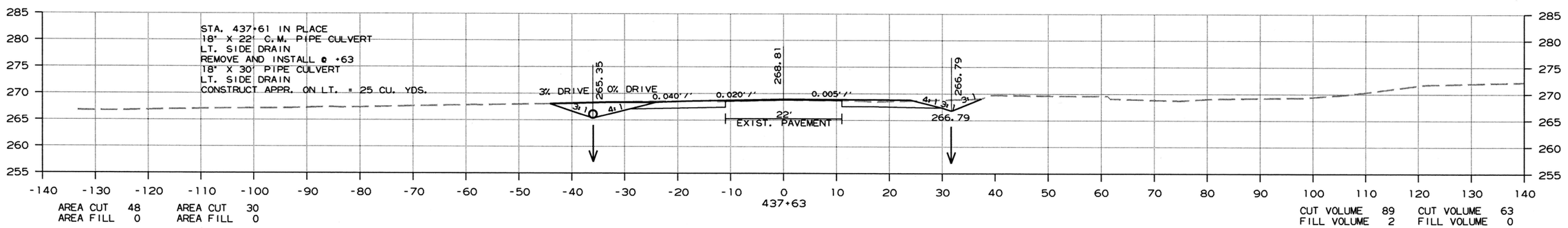
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 437+63 TO STA. 438+35

6/26/2018

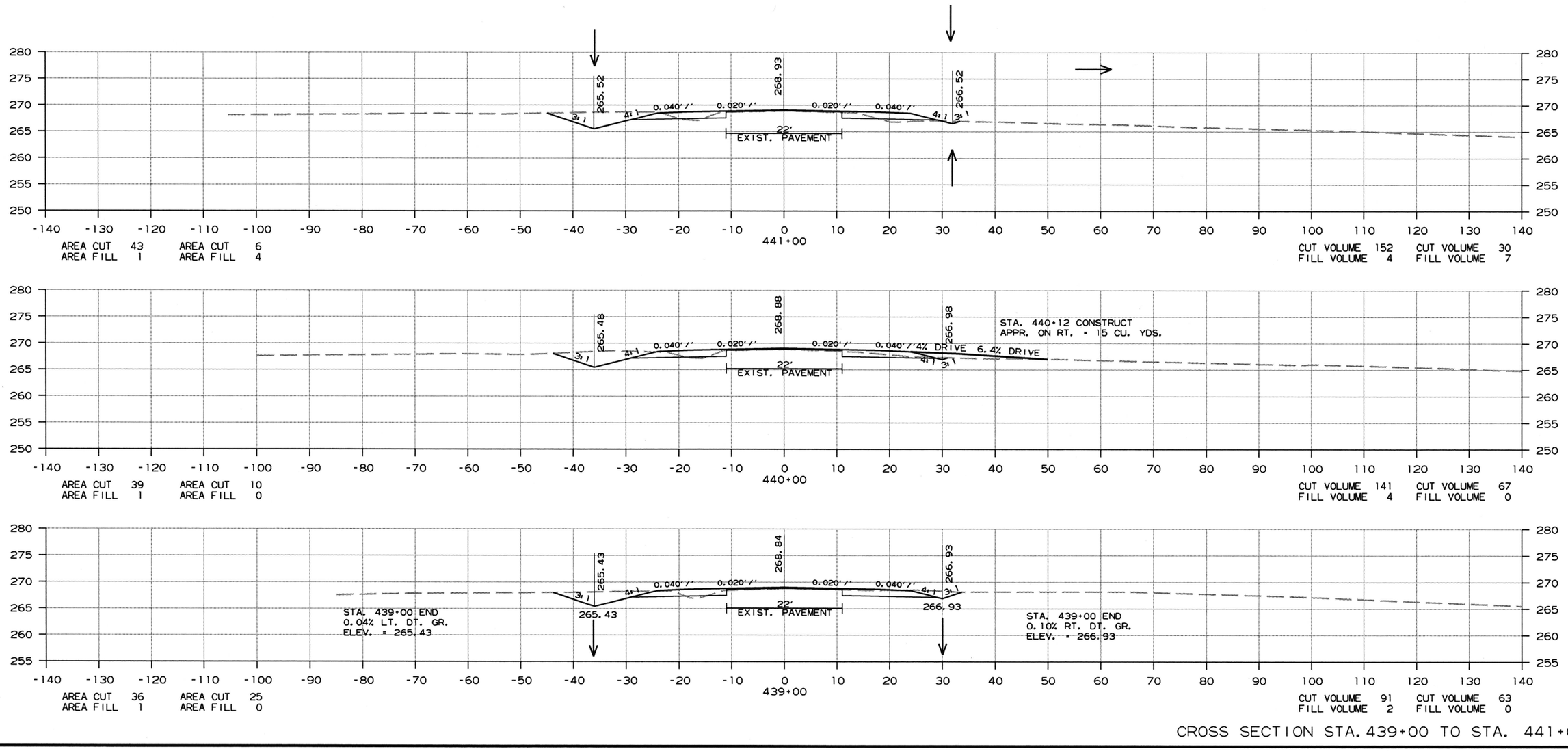
R050279.DGN

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.		050279	142	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 439+00 TO STA. 441+00

6/26/2018

R050279.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.		050279	143	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 442+00 TO STA. 444+00

6/26/2018

R050279.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.		050279	144	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 445+00 TO STA. 446+24

6/26/2018

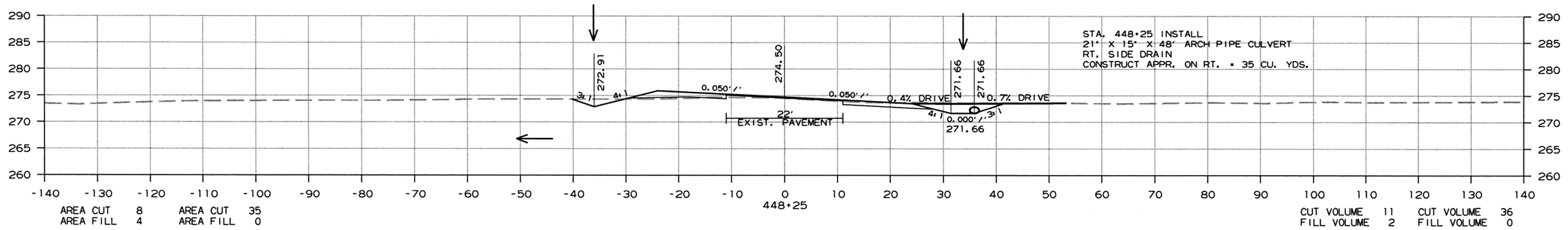
R050279.DGN

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.		050279	145	207

(2) CROSS SECTIONS

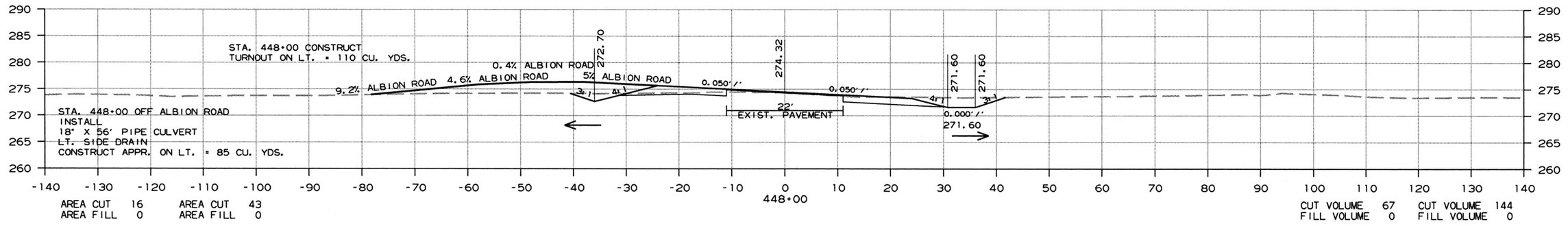
STAGE 1 STAGE 2

STAGE 1 STAGE 2



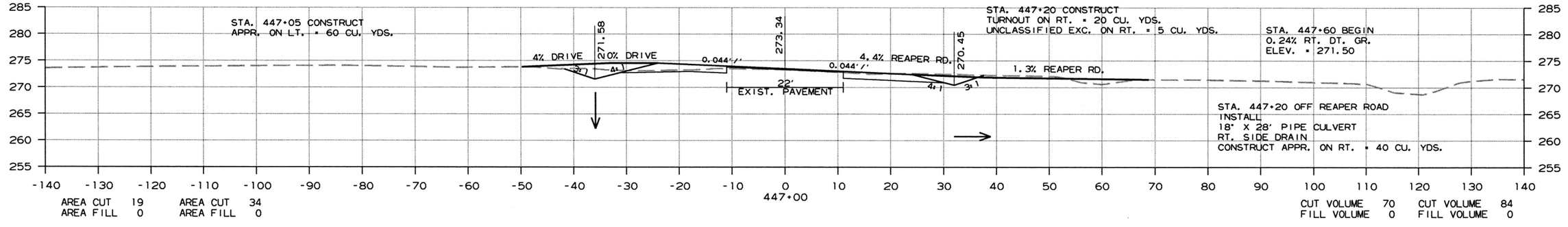
AREA CUT 8 AREA CUT 35
AREA FILL 4 AREA FILL 0

CUT VOLUME 11 CUT VOLUME 36
FILL VOLUME 2 FILL VOLUME 0



AREA CUT 16 AREA CUT 43
AREA FILL 0 AREA FILL 0

CUT VOLUME 67 CUT VOLUME 144
FILL VOLUME 0 FILL VOLUME 0



AREA CUT 19 AREA CUT 34
AREA FILL 0 AREA FILL 0

CUT VOLUME 70 CUT VOLUME 84
FILL VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 447+00 TO STA. 448+25

6/26/2018

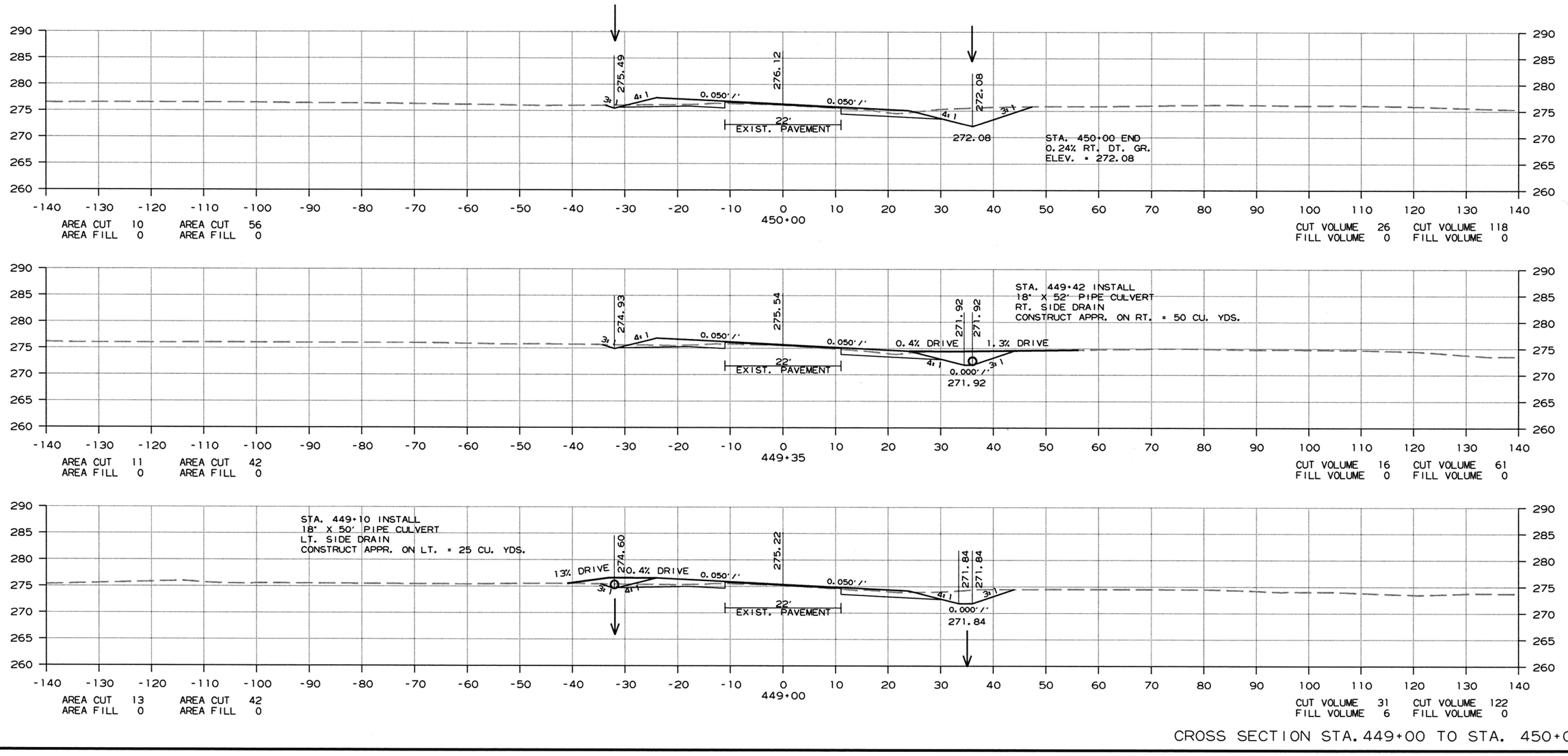
R050279.DGN

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.		050279	146	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 449+00 TO STA. 450+00

6/26/2018

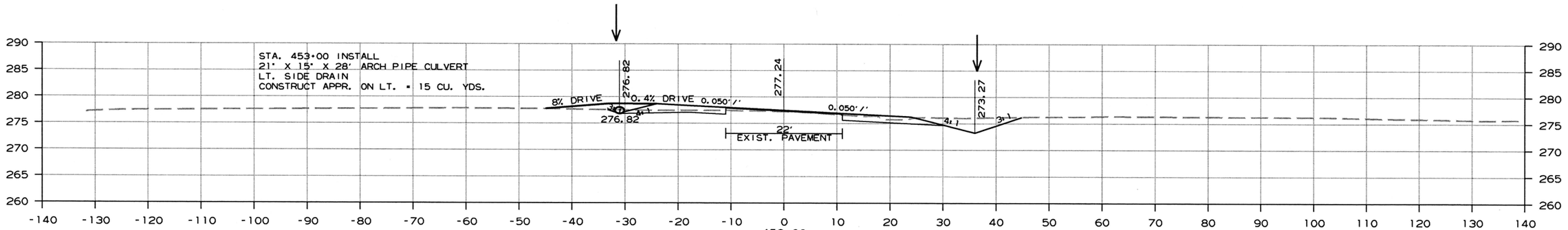
R050279.DGN

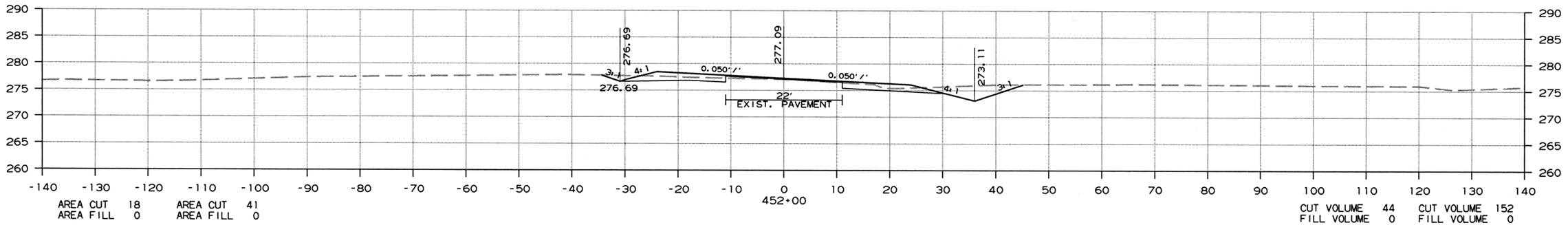
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	147	207

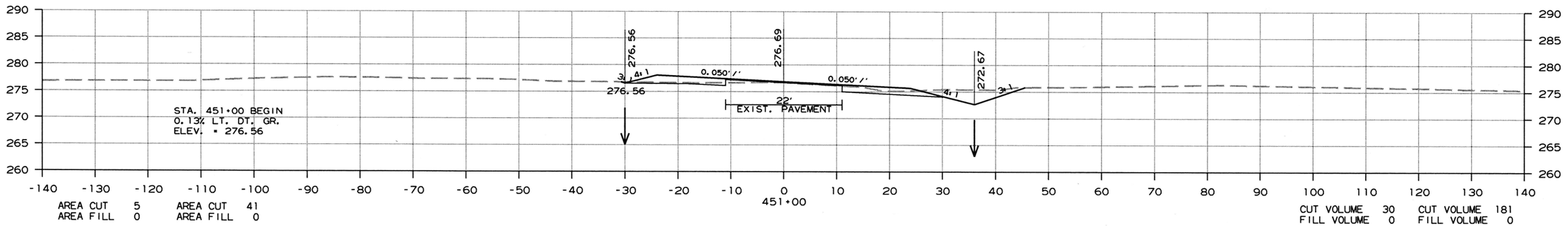
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







6/26/2018

R050279.DGN

CROSS SECTION STA. 451+00 TO STA. 453+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	148	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 454+00 TO STA. 455+00

6/26/2018

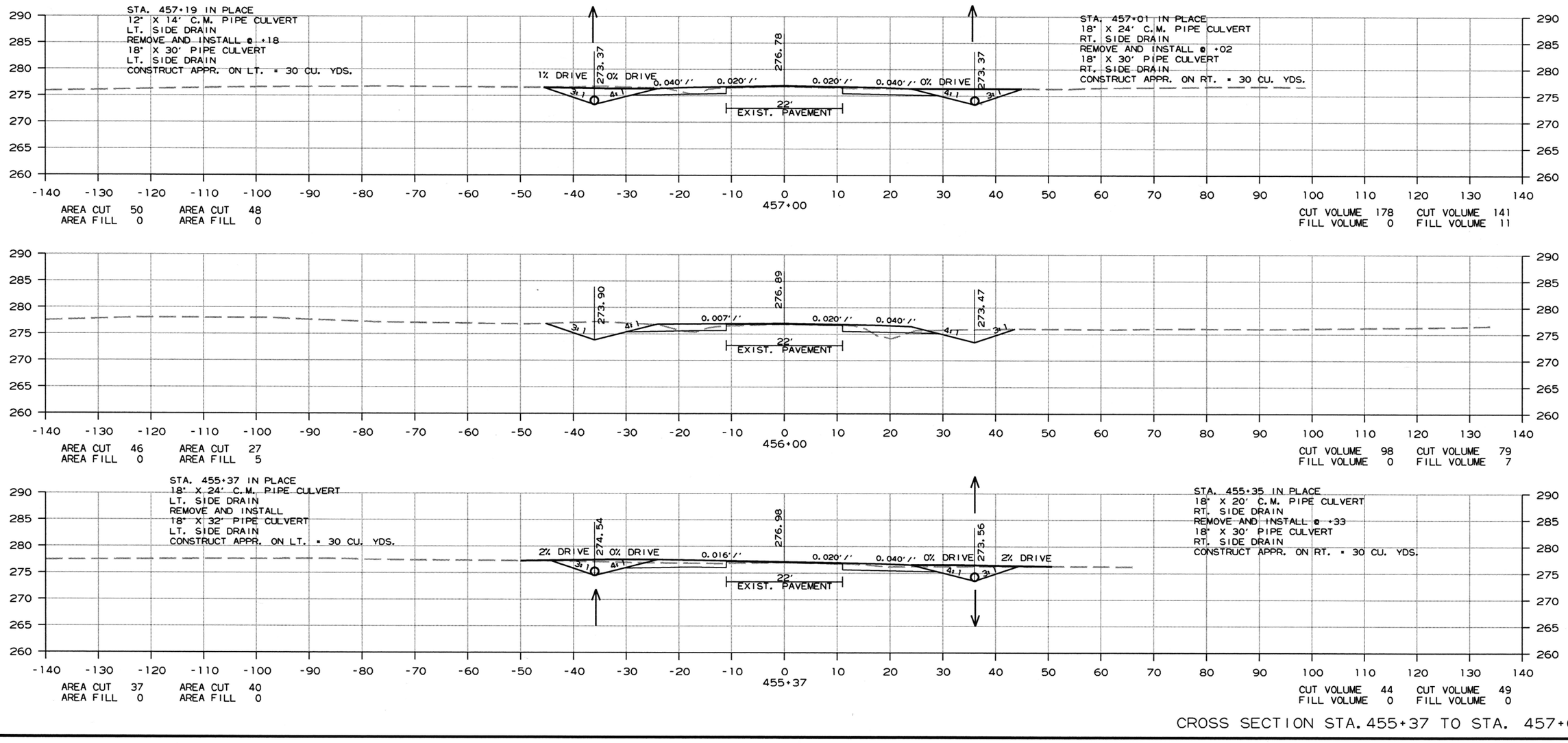
R050279.DGN

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.		050279	149	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 455+37 TO STA. 457+00

6/26/2018

R050279.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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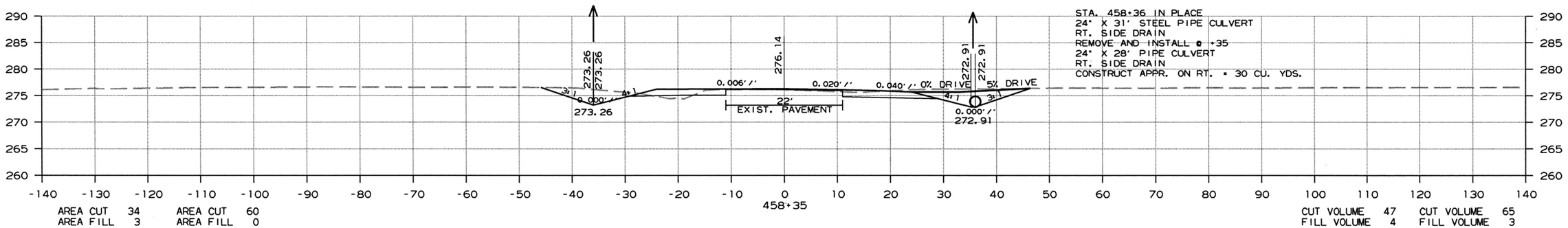
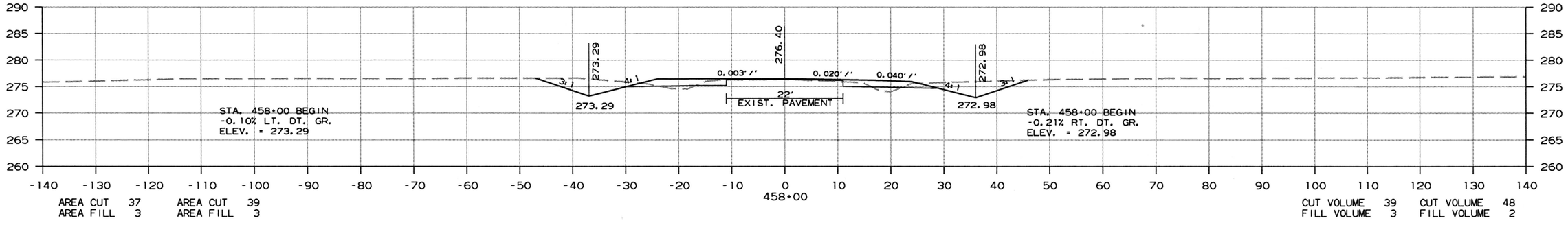
				JOB NO.		050279	150	207

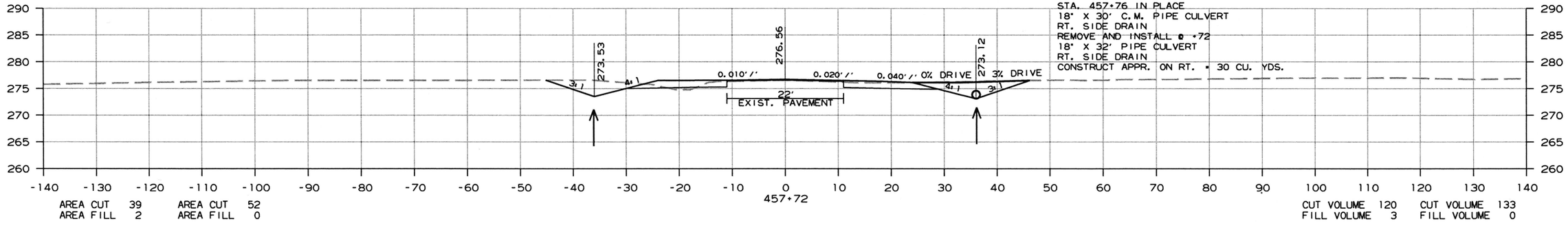
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 457+72 TO STA. 458+35

6/26/2018

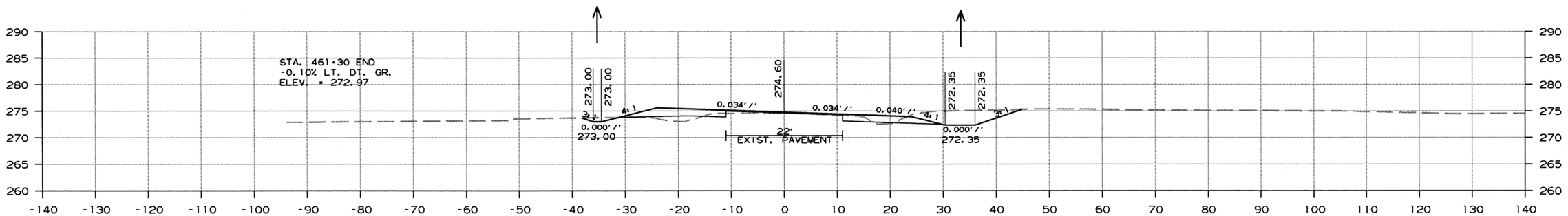
R050279.DGN

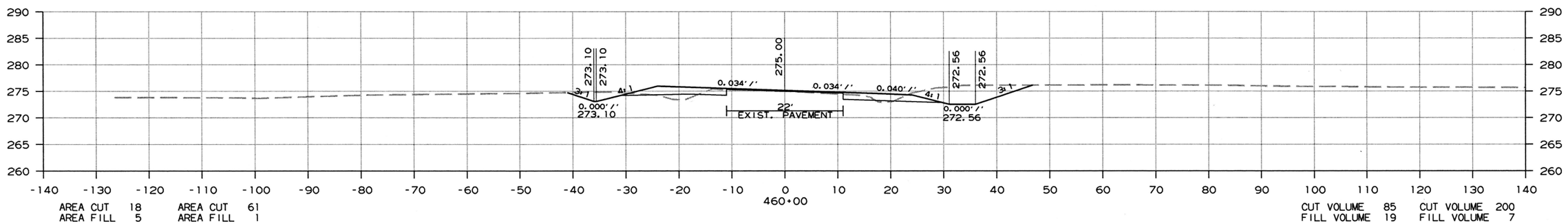
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	151	207

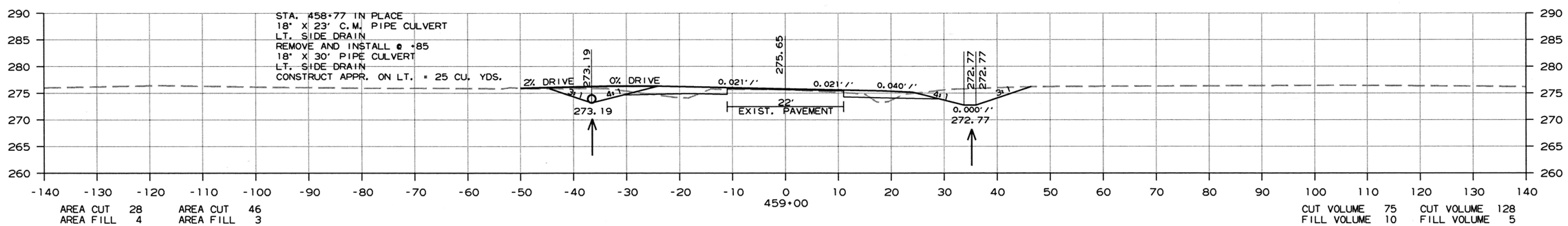
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 459+00 TO STA. 461+00

6/26/2018

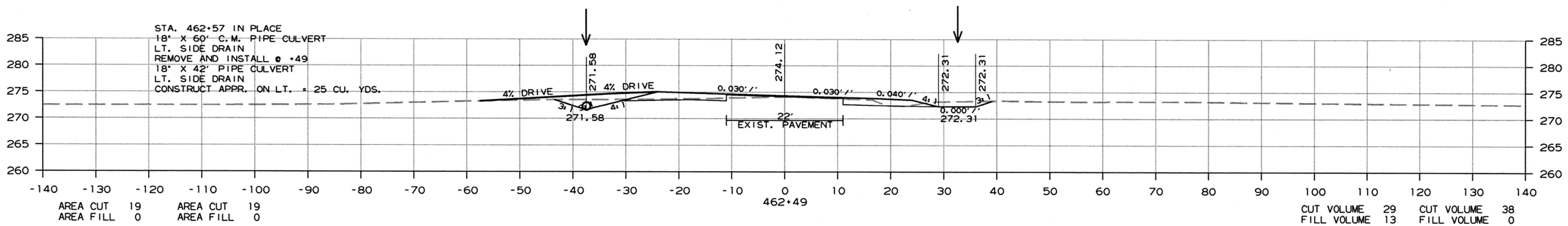
R050279.DGN

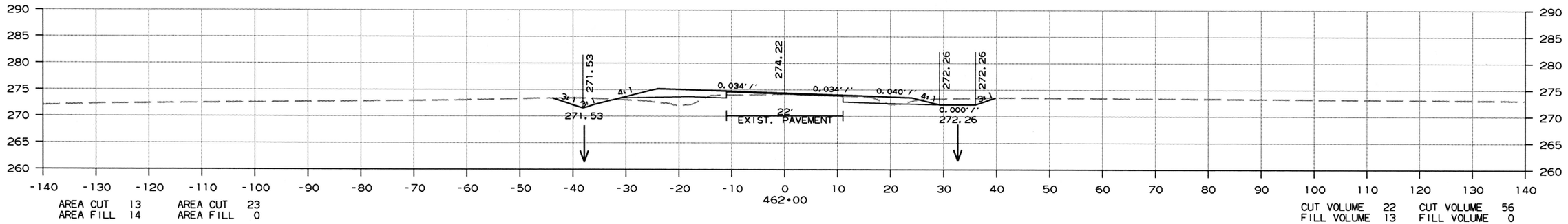
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	152	207

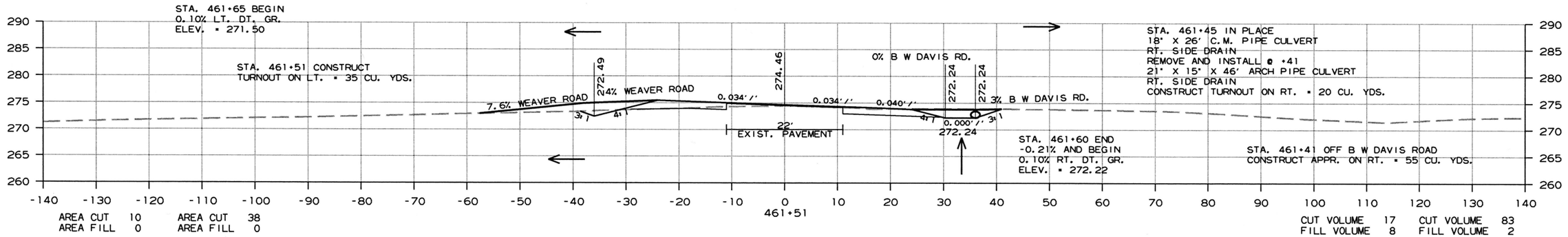
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 461+51 TO STA. 462+49

6/26/2018

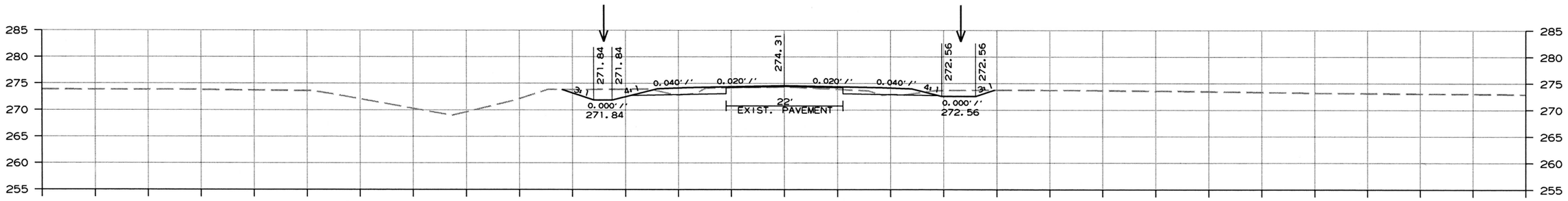
R050279.DGN

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.		050279	153	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

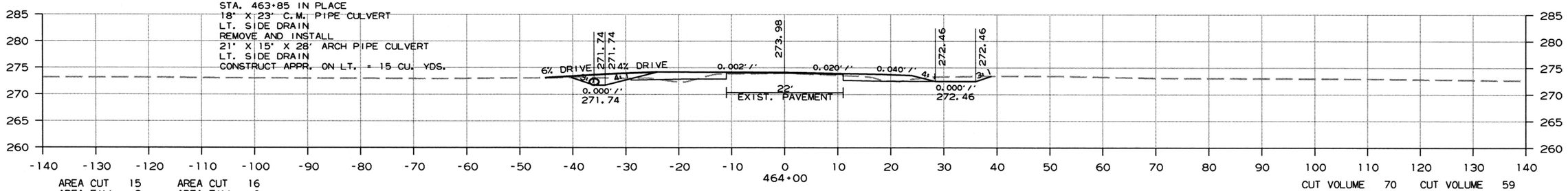
STAGE 1 STAGE 2



AREA CUT 31 AREA CUT 17
AREA FILL 0 AREA FILL 0

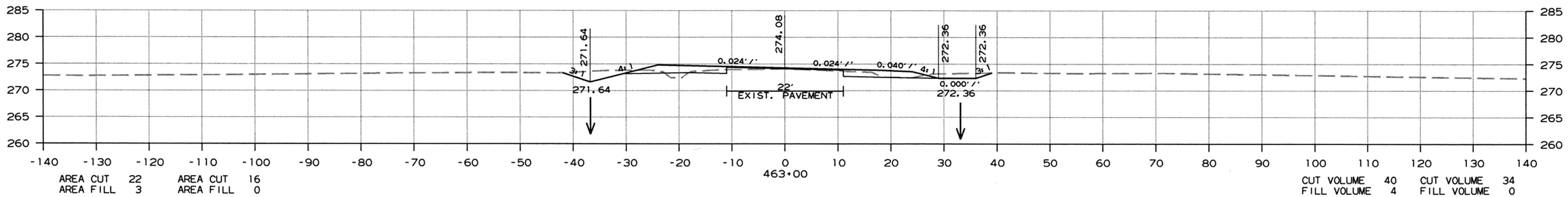
CUT VOLUME 85 CUT VOLUME 63
FILL VOLUME 4 FILL VOLUME 0

STA. 463+85 IN PLACE
18' X 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
21' X 15' X 28' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 15 CU. YDS.



AREA CUT 15 AREA CUT 16
AREA FILL 2 AREA FILL 0

CUT VOLUME 70 CUT VOLUME 59
FILL VOLUME 11 FILL VOLUME 0



AREA CUT 22 AREA CUT 16
AREA FILL 3 AREA FILL 0

CUT VOLUME 40 CUT VOLUME 34
FILL VOLUME 4 FILL VOLUME 0

CROSS SECTION STA. 463+00 TO STA. 465+00

6/26/2018

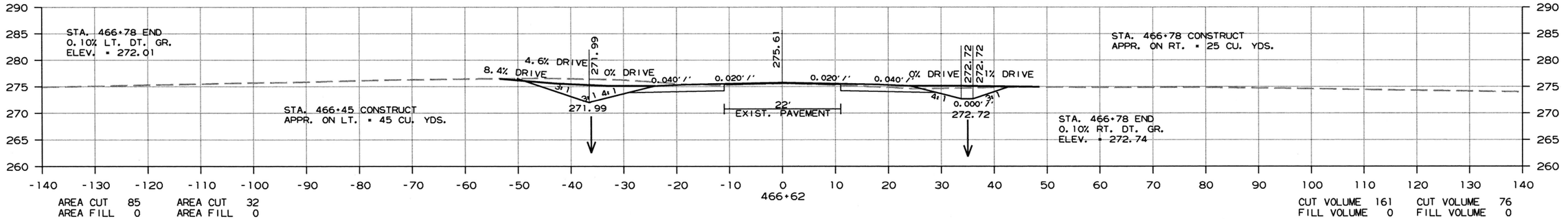
R050279.DGN

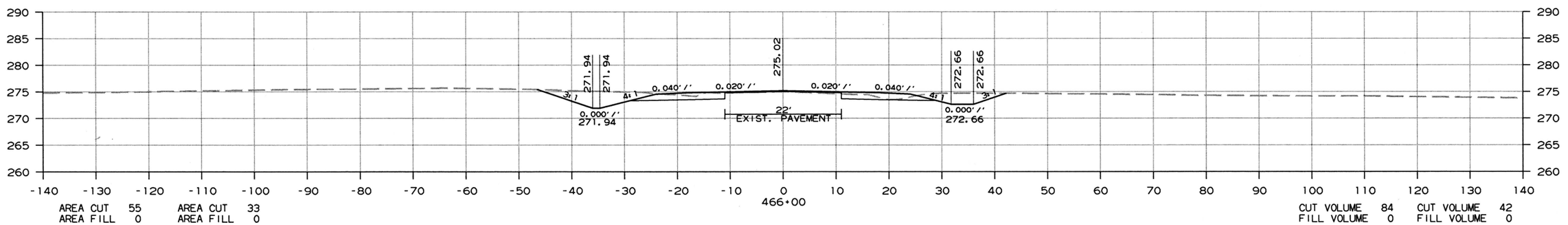
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	154	207

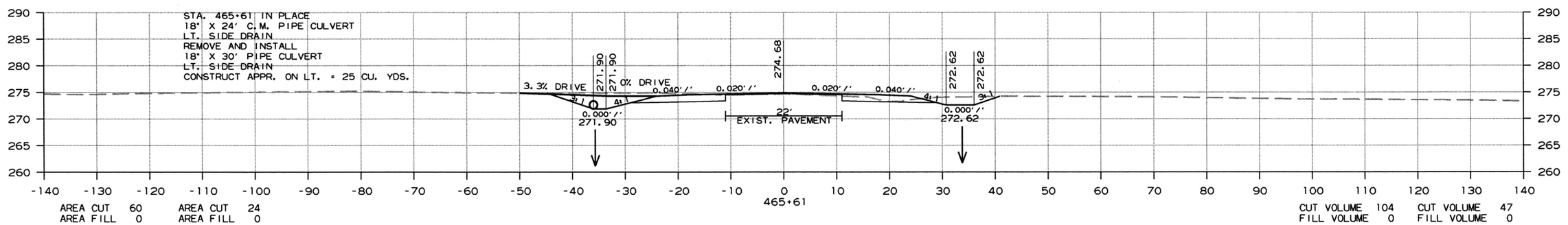
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 465+61 TO STA. 466+62

6/26/2018

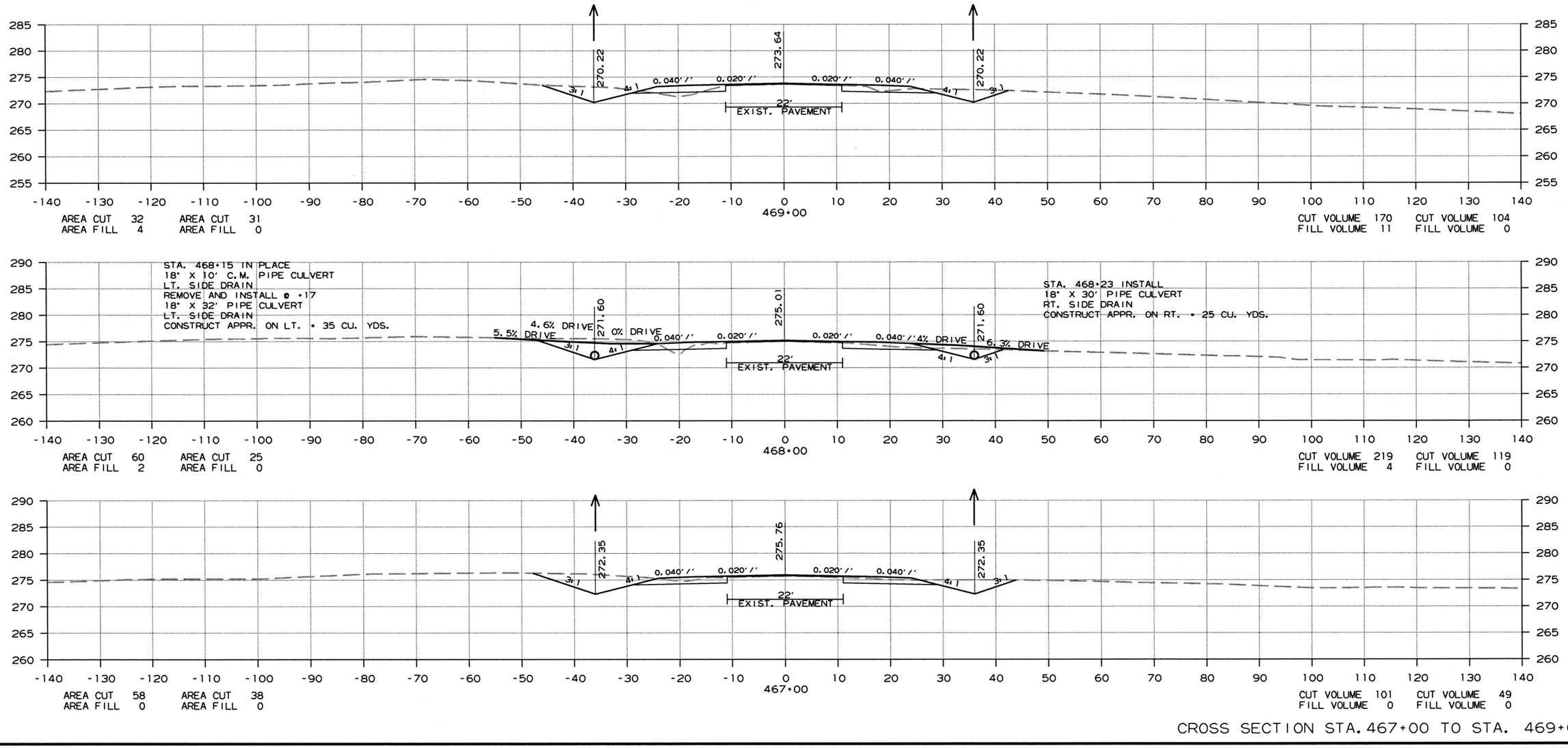
R050279.DGN

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.		050279	155	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 467+00 TO STA. 469+00

6/26/2018

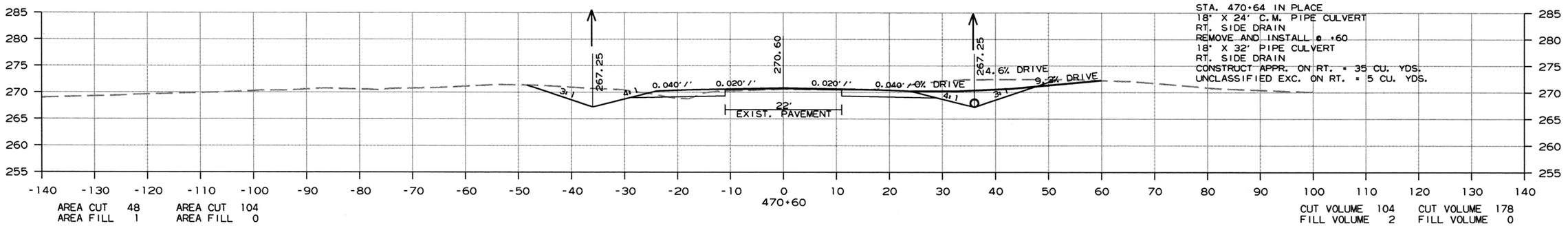
R050279.DGN

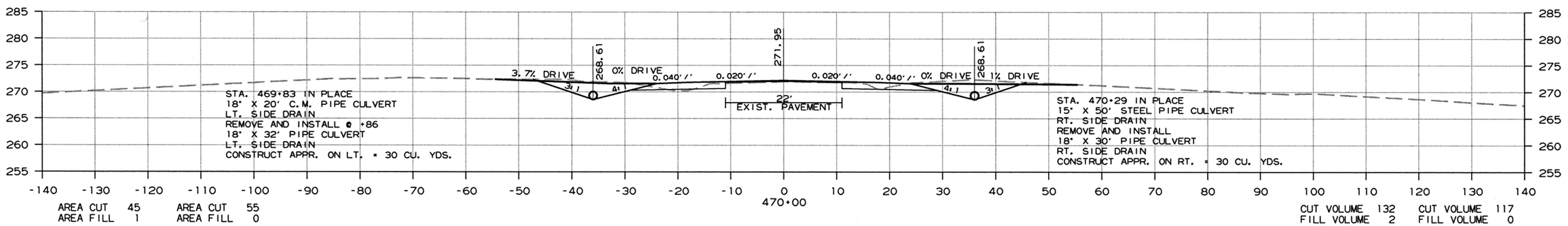
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	156	207

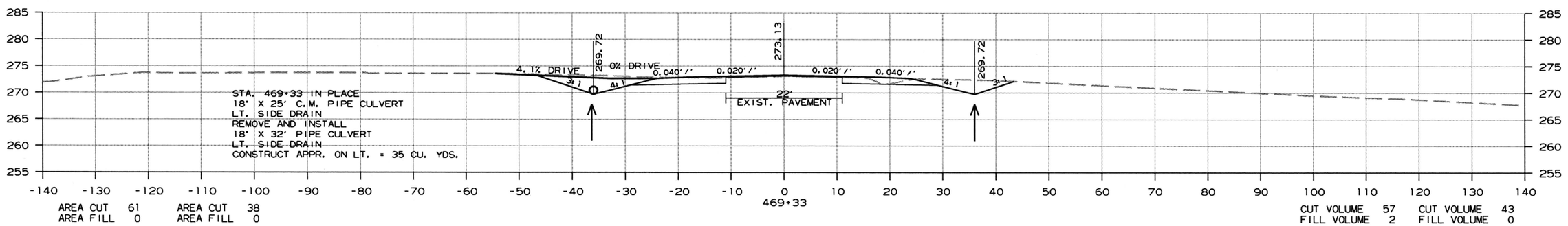
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 469+33 TO STA. 470+60

6/26/2018

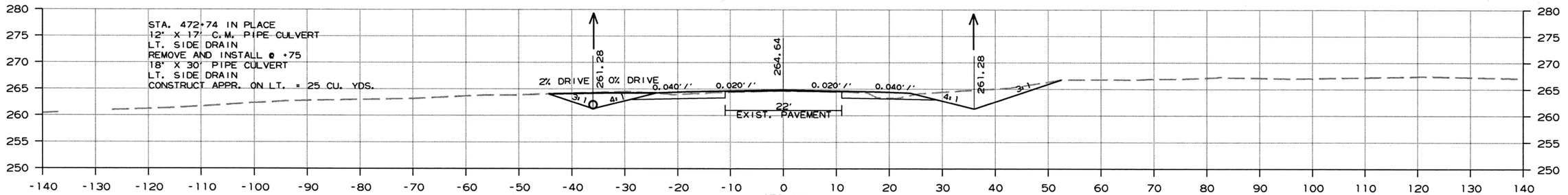
R050279.DGN

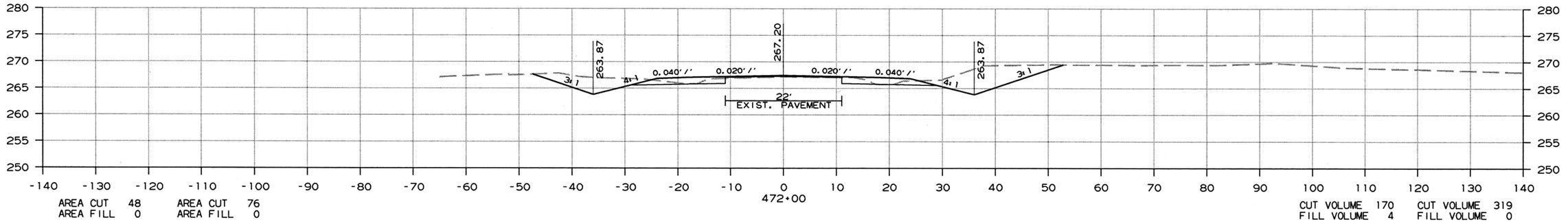
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	157	207

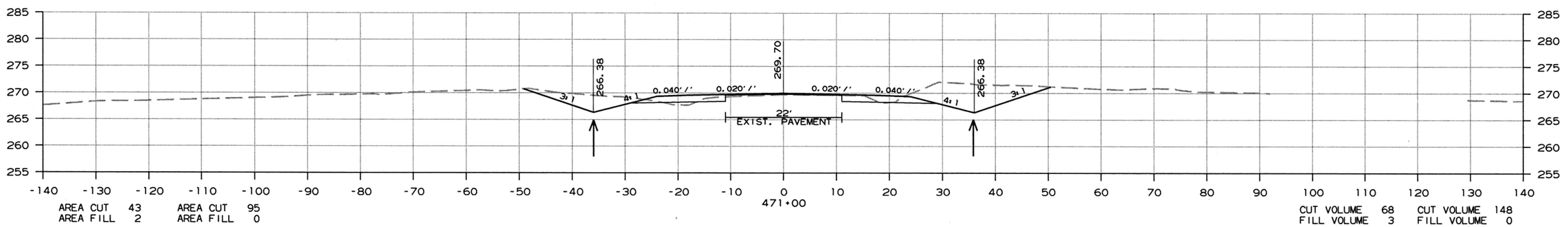
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 471+00 TO STA. 473+00

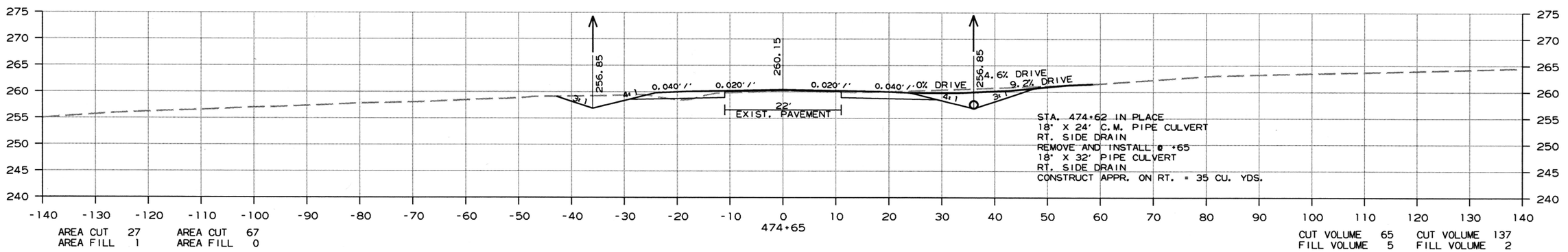
6/26/2018

R050279.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.		050279	158	207

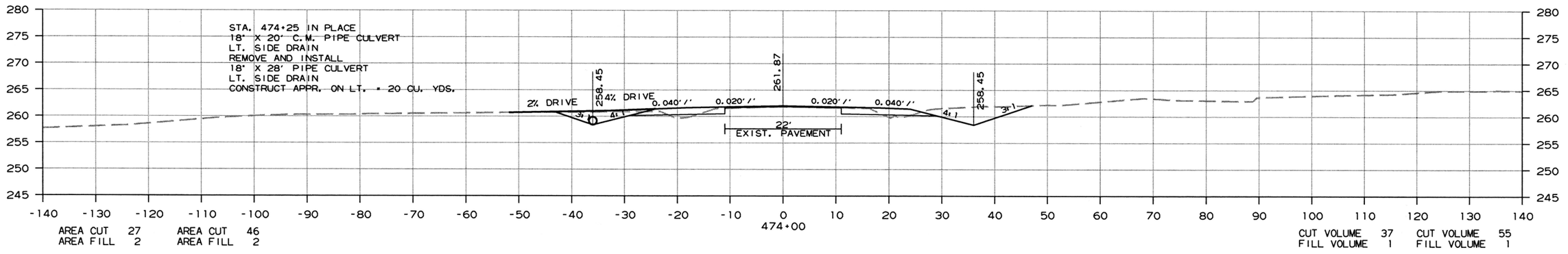
(2) CROSS SECTIONS

STAGE 1 STAGE 2



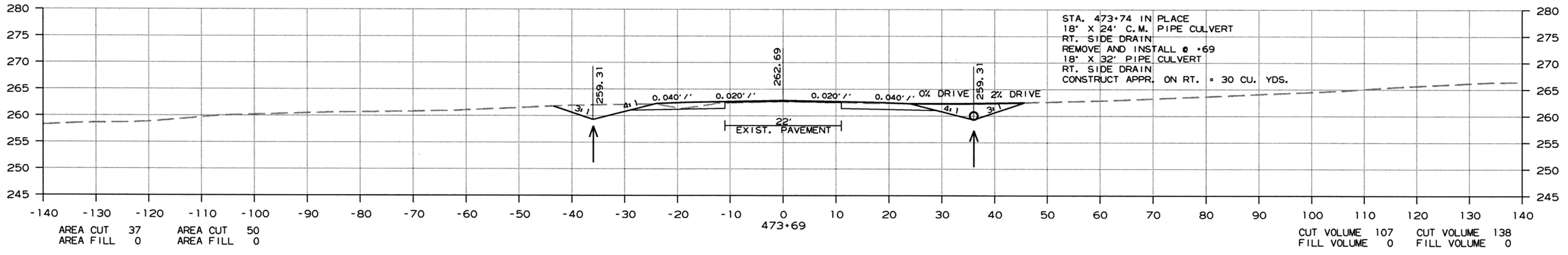
AREA CUT 27 AREA CUT 67
AREA FILL 1 AREA FILL 0

CUT VOLUME 65 CUT VOLUME 137
FILL VOLUME 5 FILL VOLUME 2



AREA CUT 27 AREA CUT 46
AREA FILL 2 AREA FILL 2

CUT VOLUME 37 CUT VOLUME 55
FILL VOLUME 1 FILL VOLUME 1



AREA CUT 37 AREA CUT 50
AREA FILL 0 AREA FILL 0

CUT VOLUME 107 CUT VOLUME 138
FILL VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 473+69 TO STA. 474+65

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R050279.DGN

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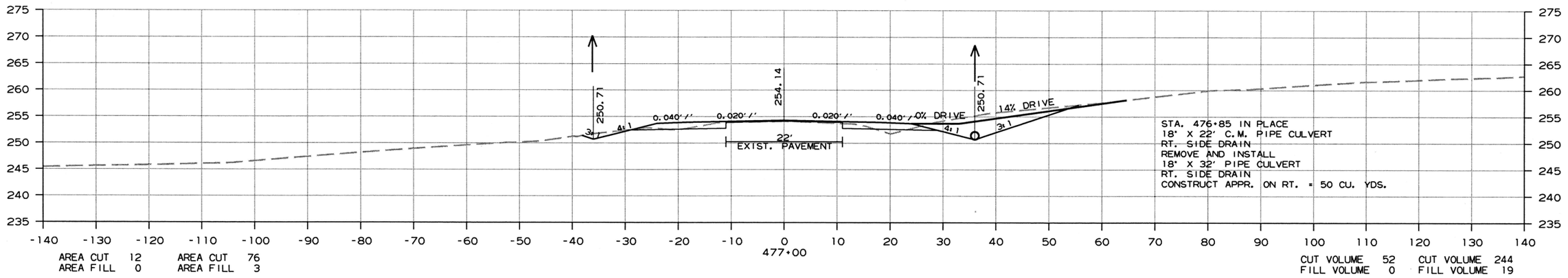
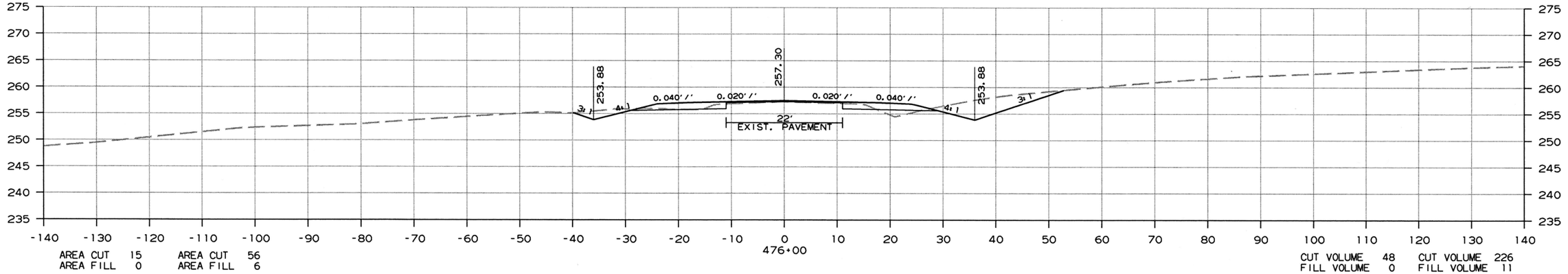
				6	ARK.			
				JOB NO.		050279	159	207

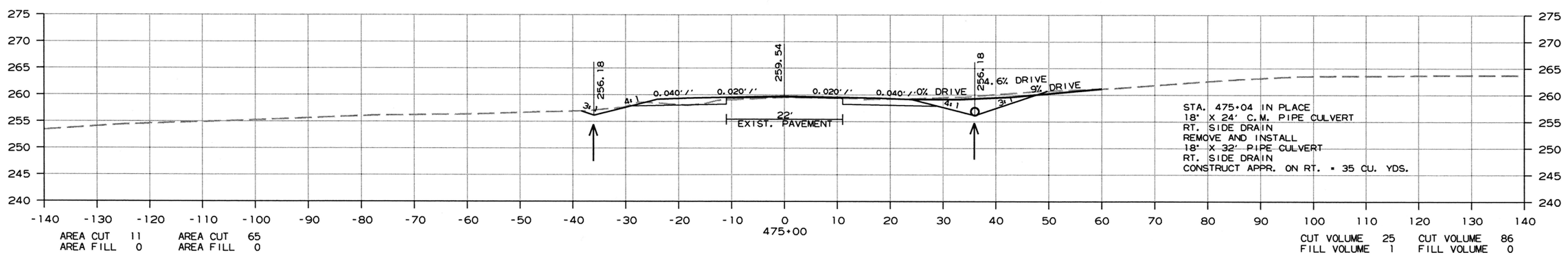
(2) CROSS SECTIONS

STAGE 1 STAGE 2



STAGE 1 STAGE 2





CROSS SECTION STA. 475+00 TO STA. 477+00

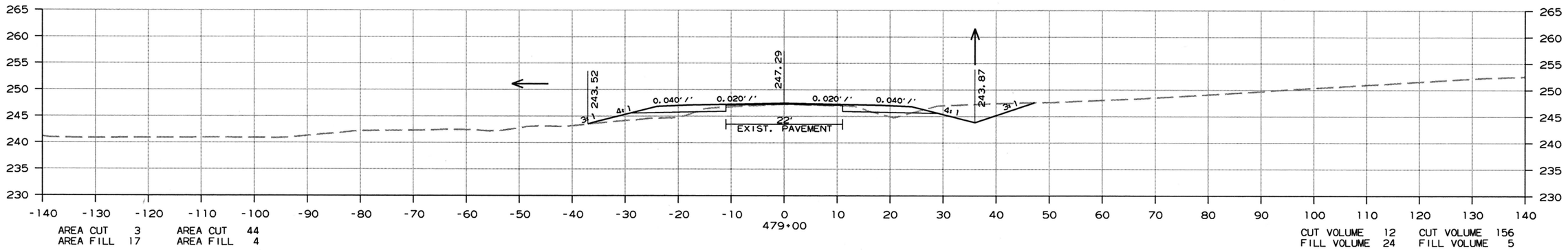
6/26/2018

R050279.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.		050279	160	207

(2) CROSS SECTIONS

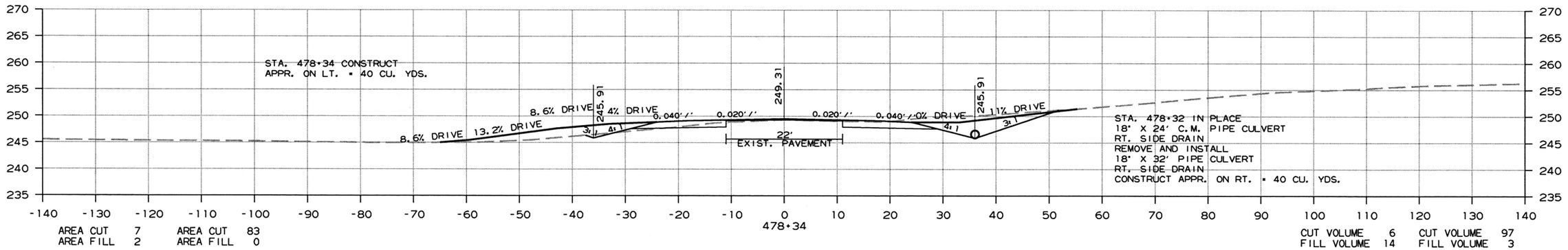
STAGE 1 STAGE 2



AREA CUT 3 AREA CUT 44
AREA FILL 17 AREA FILL 4

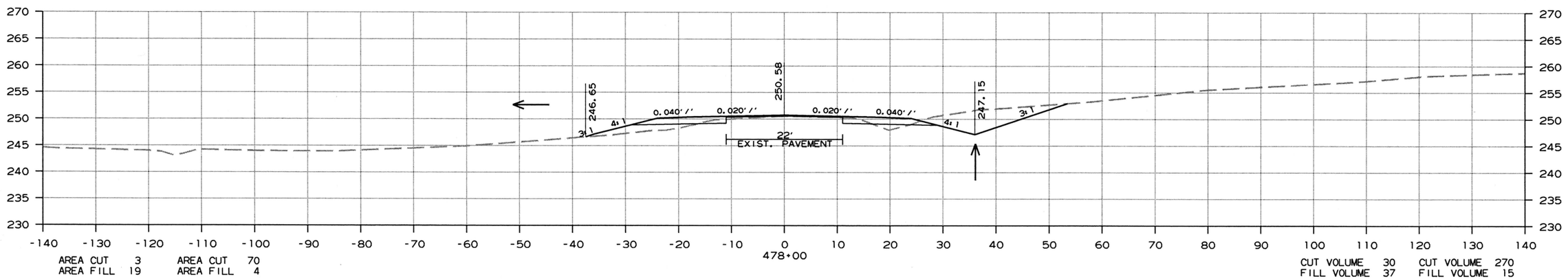
CUT VOLUME 12 CUT VOLUME 156
FILL VOLUME 24 FILL VOLUME 5

STAGE 1 STAGE 2



AREA CUT 7 AREA CUT 83
AREA FILL 2 AREA FILL 0

CUT VOLUME 6 CUT VOLUME 97
FILL VOLUME 14 FILL VOLUME 3



AREA CUT 3 AREA CUT 70
AREA FILL 19 AREA FILL 4

CUT VOLUME 30 CUT VOLUME 270
FILL VOLUME 37 FILL VOLUME 15

CROSS SECTION STA. 478+00 TO STA. 479+00

6/26/2018

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				6	ARK.			
				JOB NO.		050279	161	207

(2) CROSS SECTIONS

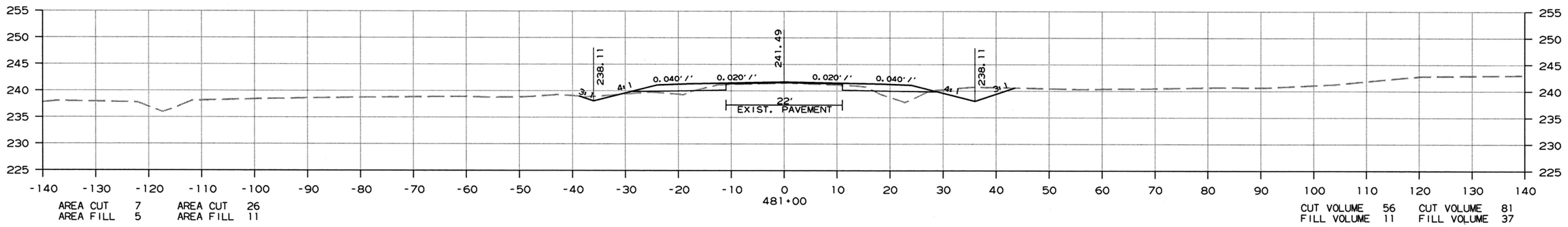
STAGE 1 STAGE 2

STAGE 1 STAGE 2



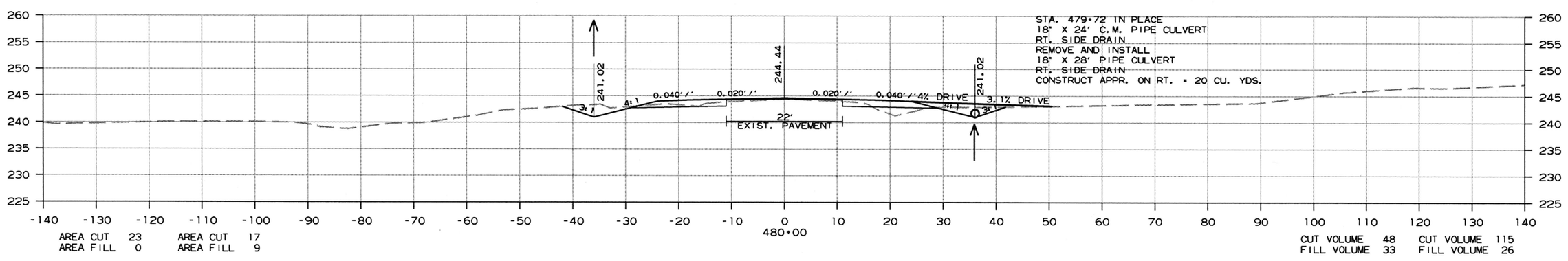
AREA CUT 6 AREA CUT 20
AREA FILL 6 AREA FILL 8

CUT VOLUME 26 CUT VOLUME 85
FILL VOLUME 22 FILL VOLUME 37



AREA CUT 7 AREA CUT 26
AREA FILL 5 AREA FILL 11

CUT VOLUME 56 CUT VOLUME 81
FILL VOLUME 11 FILL VOLUME 37



AREA CUT 23 AREA CUT 17
AREA FILL 0 AREA FILL 9

CUT VOLUME 48 CUT VOLUME 115
FILL VOLUME 33 FILL VOLUME 26

CROSS SECTION STA. 480+00 TO STA. 482+00

6/26/2018

R050279.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.		050279	162	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 482+41 TO STA. 484+00

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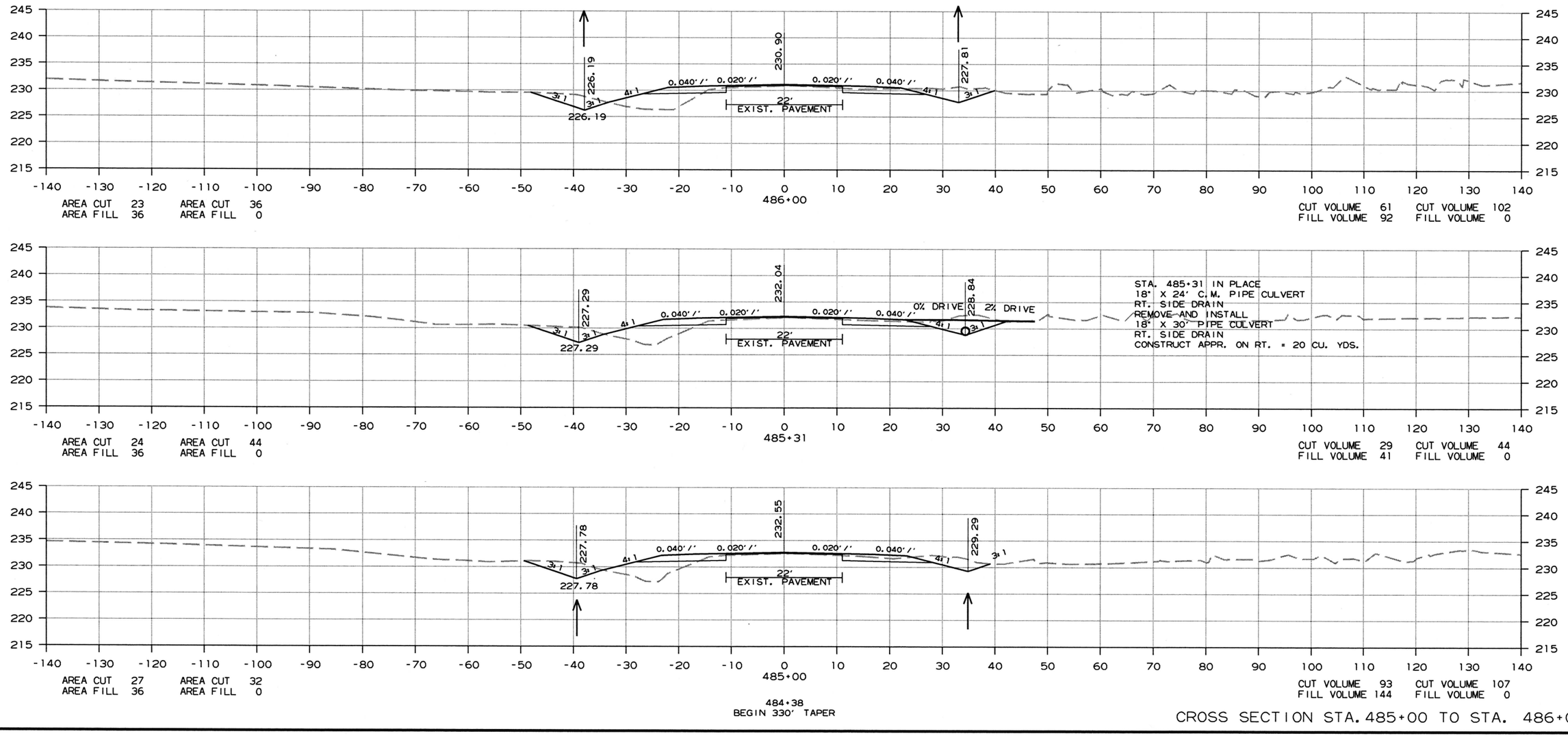
R050279.DGN

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.		050279	163	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



AREA CUT 23 AREA CUT 36
AREA FILL 36 AREA FILL 0

CUT VOLUME 61 CUT VOLUME 102
FILL VOLUME 92 FILL VOLUME 0

AREA CUT 24 AREA CUT 44
AREA FILL 36 AREA FILL 0

CUT VOLUME 29 CUT VOLUME 44
FILL VOLUME 41 FILL VOLUME 0

AREA CUT 27 AREA CUT 32
AREA FILL 36 AREA FILL 0

CUT VOLUME 93 CUT VOLUME 107
FILL VOLUME 144 FILL VOLUME 0

CROSS SECTION STA. 485+00 TO STA. 486+00

6/26/2018

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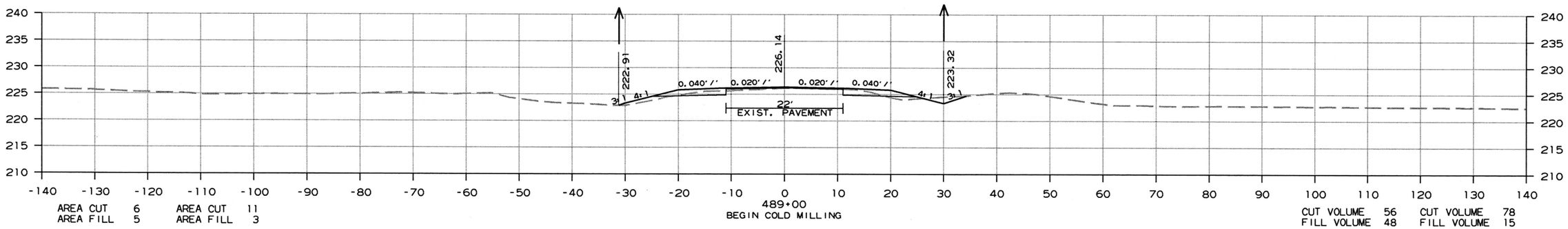
				6	ARK.			
				JOB NO.		050279	164	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



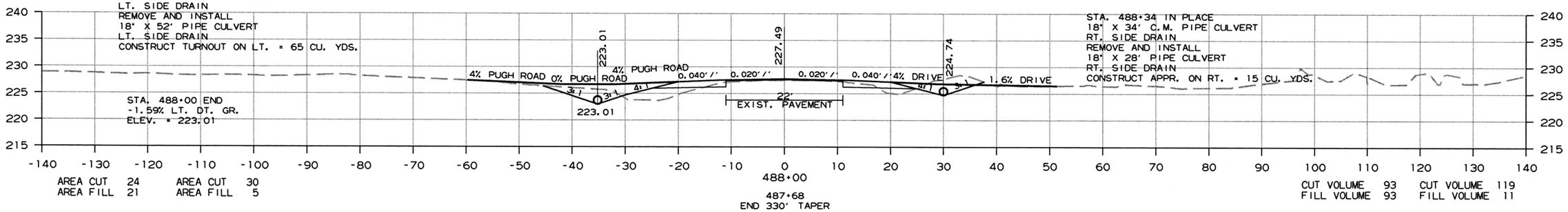
AREA CUT 6 AREA CUT 11
AREA FILL 5 AREA FILL 3

CUT VOLUME 56 CUT VOLUME 78
FILL VOLUME 48 FILL VOLUME 15

STA. 488+36 IN PLACE
18" X 36' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT ON LT. = 65 CU. YDS.

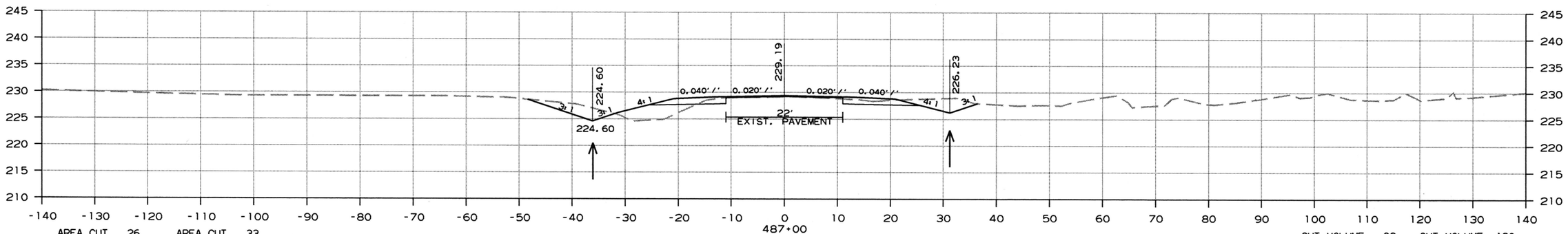
STA. 488+00 END
-1.59% LT. DT. GR.
ELEV. = 223.01

STA. 488+34 IN PLACE
18" X 34' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPR. ON RT. = 15 CU. YDS.



AREA CUT 24 AREA CUT 30
AREA FILL 21 AREA FILL 5

CUT VOLUME 93 CUT VOLUME 119
FILL VOLUME 93 FILL VOLUME 11



AREA CUT 26 AREA CUT 33
AREA FILL 28 AREA FILL 0

CUT VOLUME 93 CUT VOLUME 130
FILL VOLUME 119 FILL VOLUME 0

CROSS SECTION STA. 487+00 TO STA. 489+00

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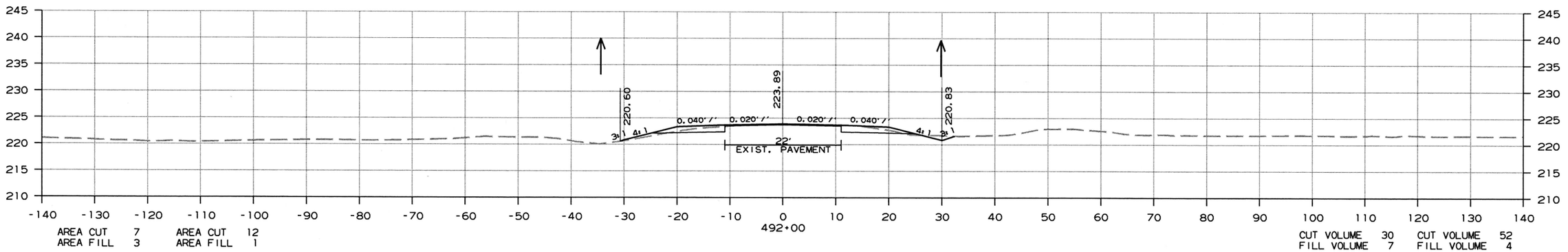
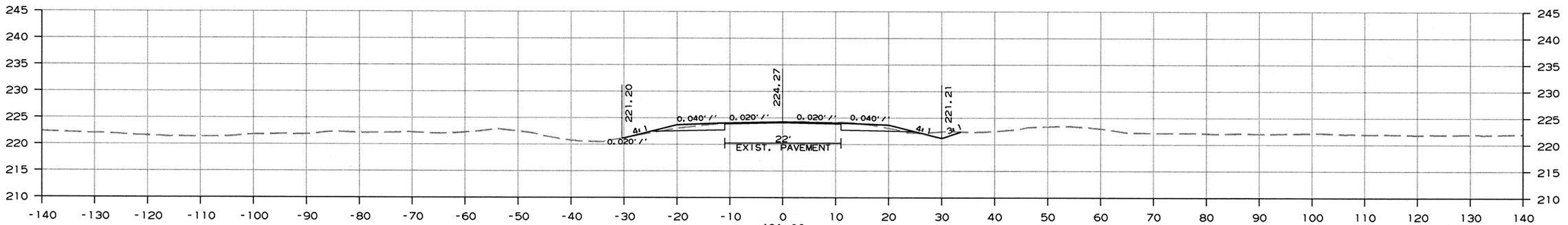
				6	ARK.			
				JOB NO.		050279	165	207

(2) CROSS SECTIONS



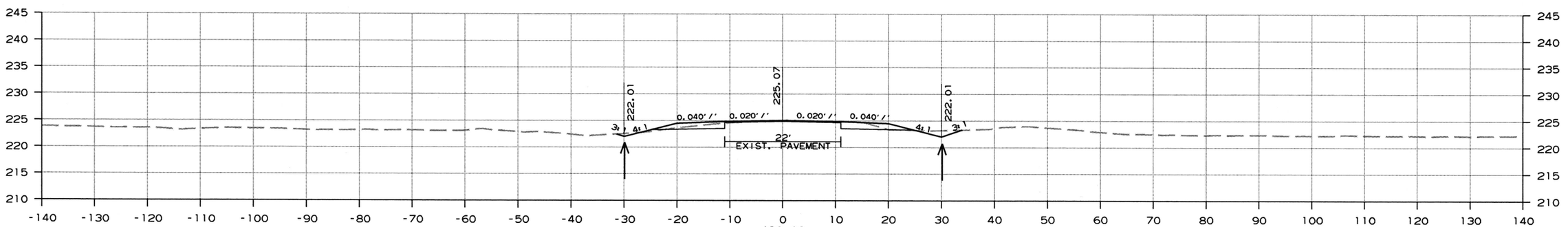
AREA CUT 7 AREA CUT 12
AREA FILL 3 AREA FILL 1

CUT VOLUME 30 CUT VOLUME 52
FILL VOLUME 7 FILL VOLUME 4



AREA CUT 9 AREA CUT 16
AREA FILL 1 AREA FILL 1

CUT VOLUME 33 CUT VOLUME 56
FILL VOLUME 4 FILL VOLUME 4



AREA CUT 8 AREA CUT 14
AREA FILL 1 AREA FILL 0

CUT VOLUME 26 CUT VOLUME 48
FILL VOLUME 11 FILL VOLUME 7

CROSS SECTION STA. 490+00 TO STA. 492+00

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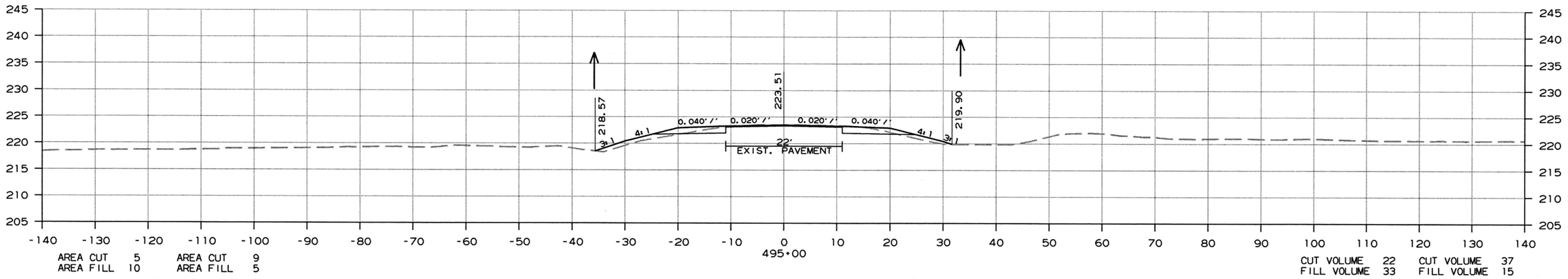
				6	ARK.			
				JOB NO.		050279	166	207

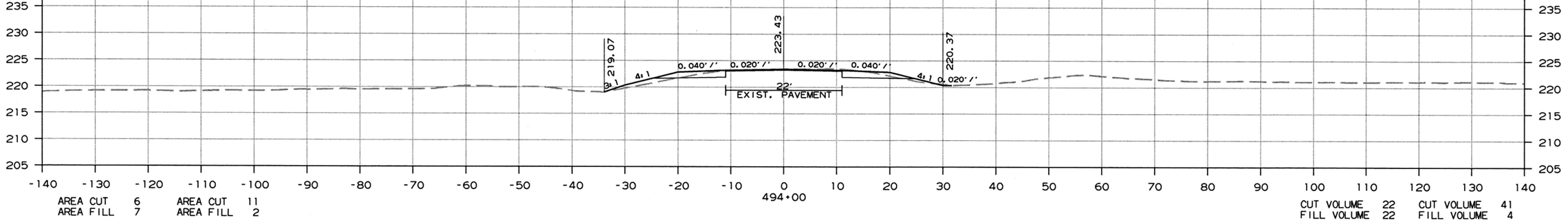
(2) CROSS SECTIONS

495+50
END SITE 2
BEGIN 100' TRANSITION



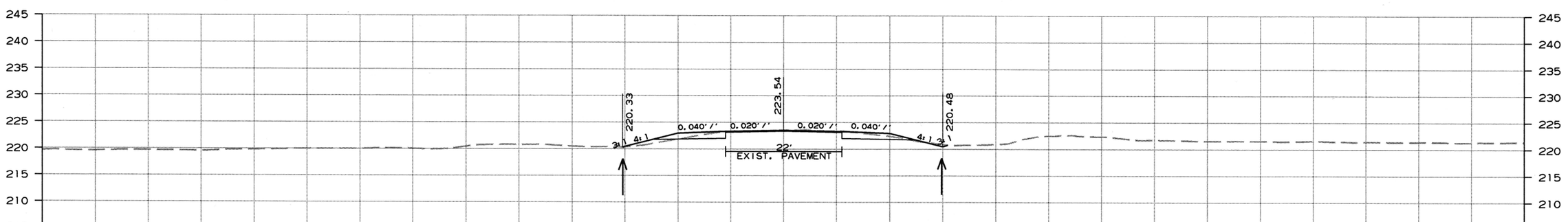
AREA CUT 5 AREA CUT 9
AREA FILL 10 AREA FILL 5

CUT VOLUME 22 CUT VOLUME 37
FILL VOLUME 33 FILL VOLUME 15



AREA CUT 6 AREA CUT 11
AREA FILL 7 AREA FILL 2

CUT VOLUME 22 CUT VOLUME 41
FILL VOLUME 22 FILL VOLUME 4



AREA CUT 6 AREA CUT 11
AREA FILL 4 AREA FILL 0

CUT VOLUME 26 CUT VOLUME 44
FILL VOLUME 15 FILL VOLUME 4

CROSS SECTION STA. 493+00 TO STA. 495+00

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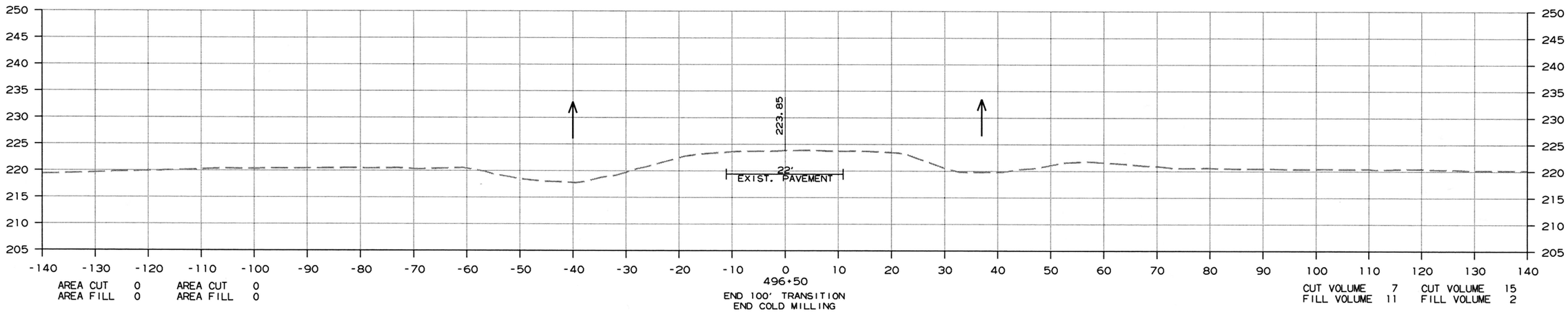
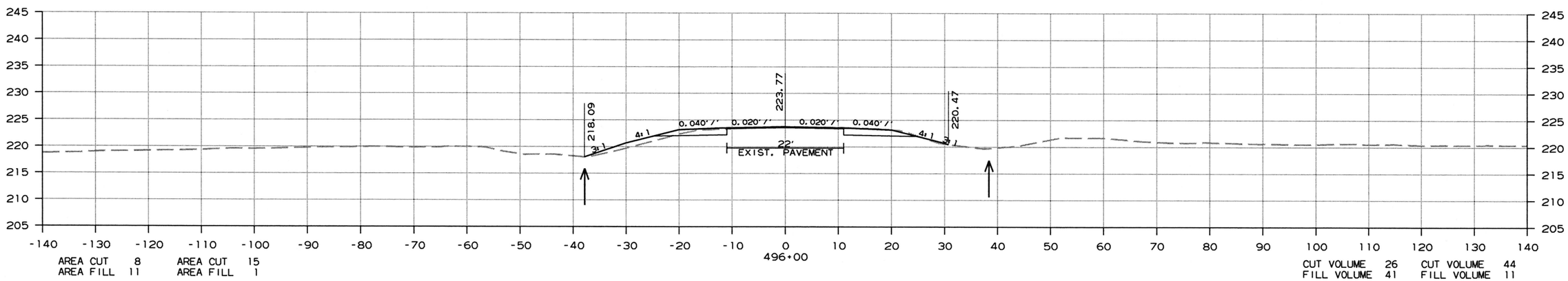
				6	ARK.			
				JOB NO.		050279	167	207

(2) CROSS SECTIONS





CROSS SECTION STA. 496+00 TO STA. 496+50

6/26/2018

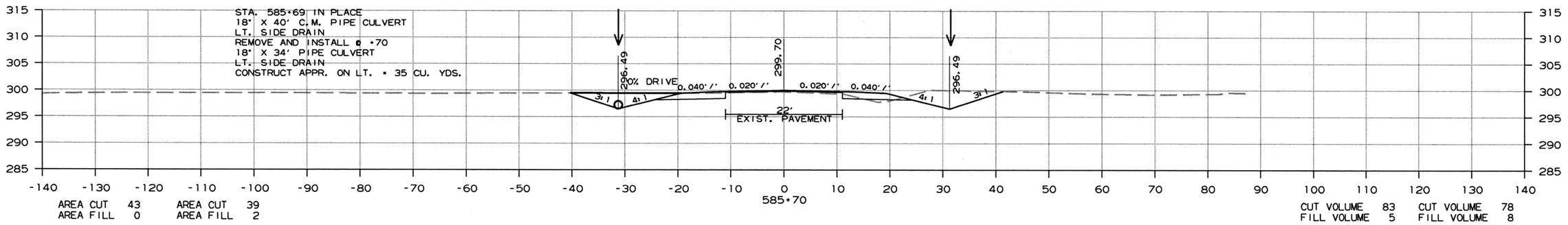
R050279.DGN

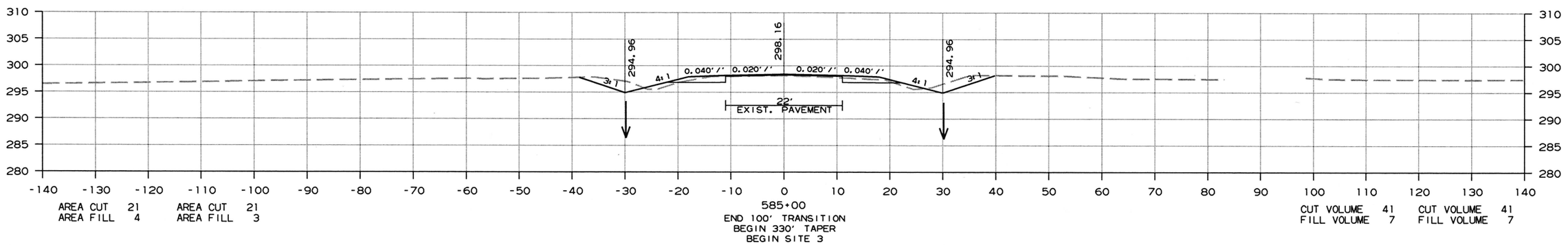
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	168	207

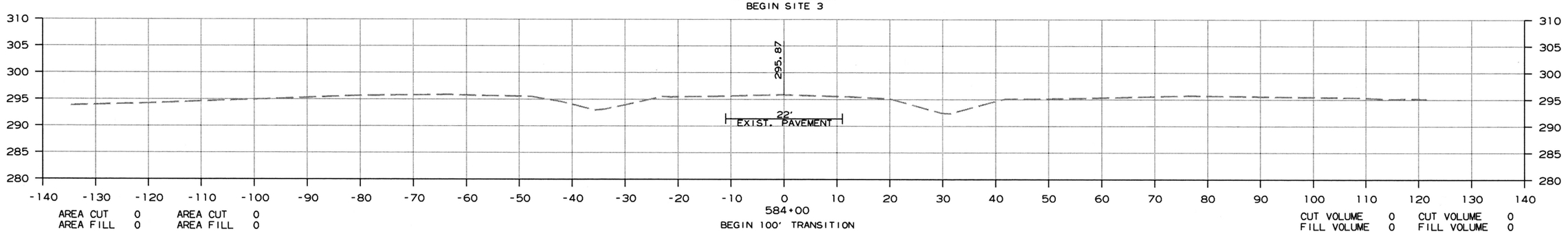
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 584+00 TO STA. 585+70

6/26/2018

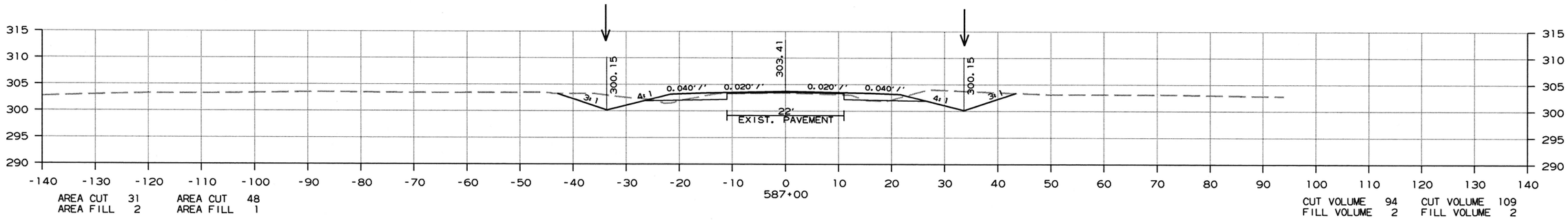
R050279.DGN

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.		050279	169	207

(2) CROSS SECTIONS

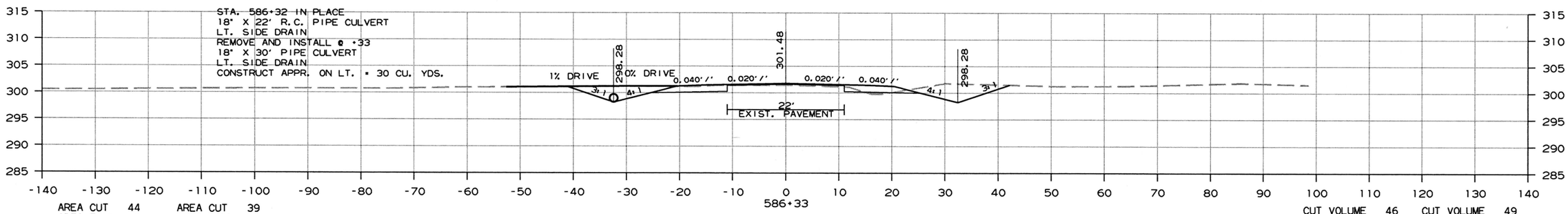
STAGE 1 STAGE 2

STAGE 1 STAGE 2



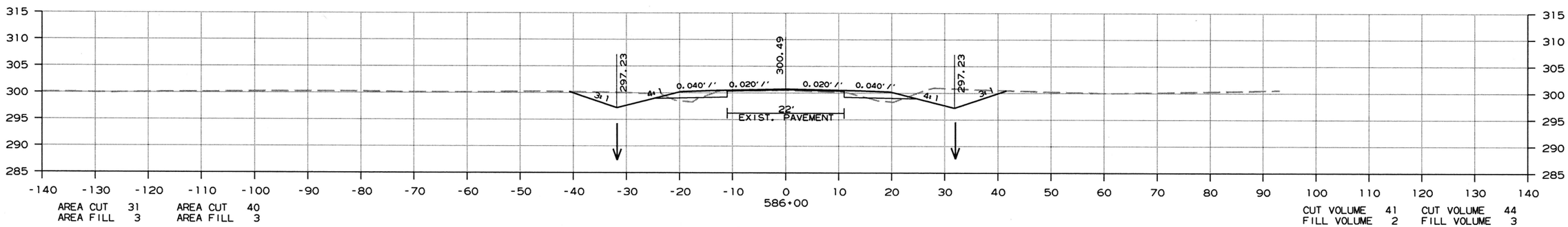
AREA CUT 31 AREA CUT 48
AREA FILL 2 AREA FILL 1

CUT VOLUME 94 CUT VOLUME 109
FILL VOLUME 2 FILL VOLUME 2



AREA CUT 44 AREA CUT 39
AREA FILL 0 AREA FILL 1

CUT VOLUME 46 CUT VOLUME 49
FILL VOLUME 2 FILL VOLUME 2



AREA CUT 31 AREA CUT 40
AREA FILL 3 AREA FILL 3

CUT VOLUME 41 CUT VOLUME 44
FILL VOLUME 2 FILL VOLUME 3

CROSS SECTION STA. 586+00 TO STA. 587+00

6/26/2018

R050279.DGN

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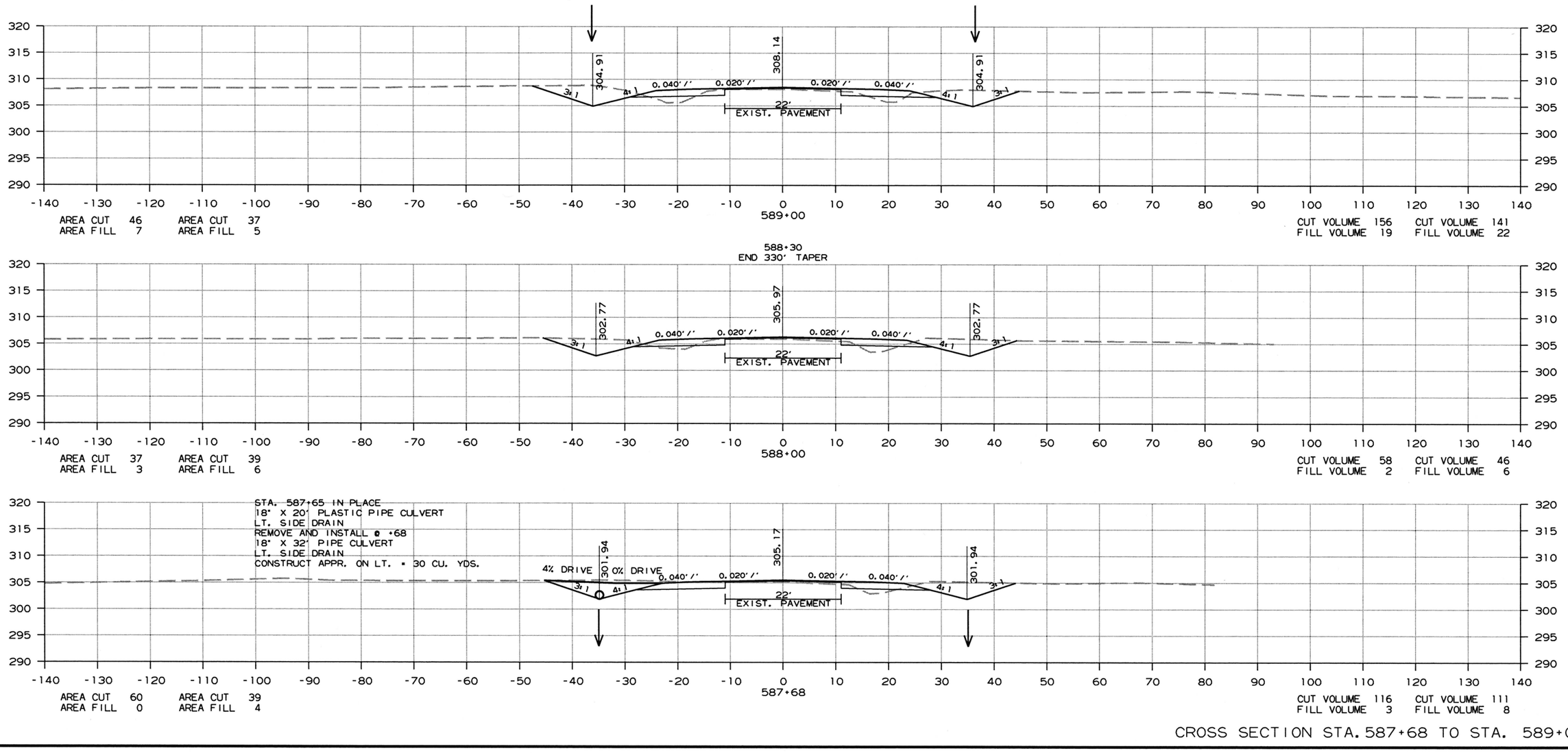
				6	ARK.			
				JOB NO.		050279	170	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 587+68 TO STA. 589+00

6/26/2018

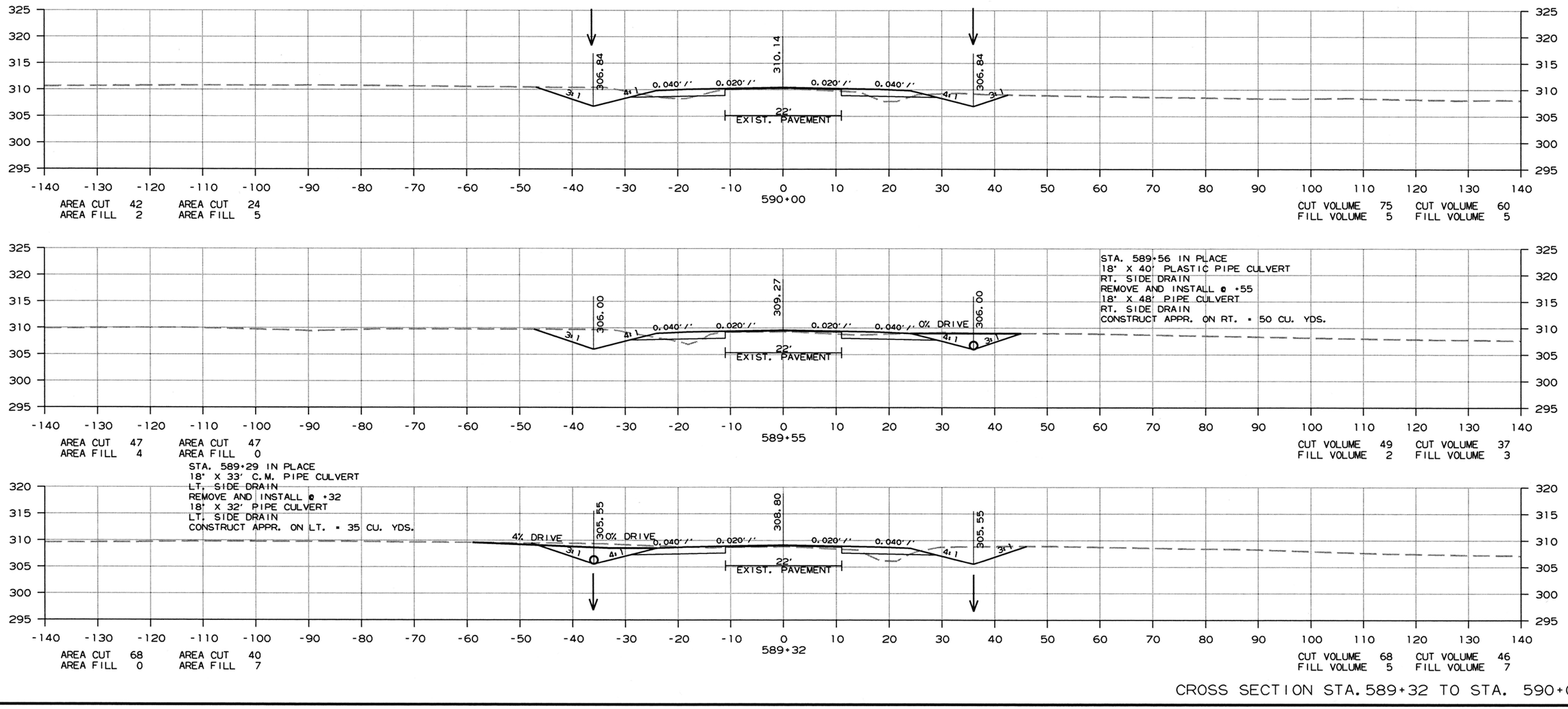
R050279.DGN

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.		050279	171	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 589+32 TO STA. 590+00

6/26/2018

R050279.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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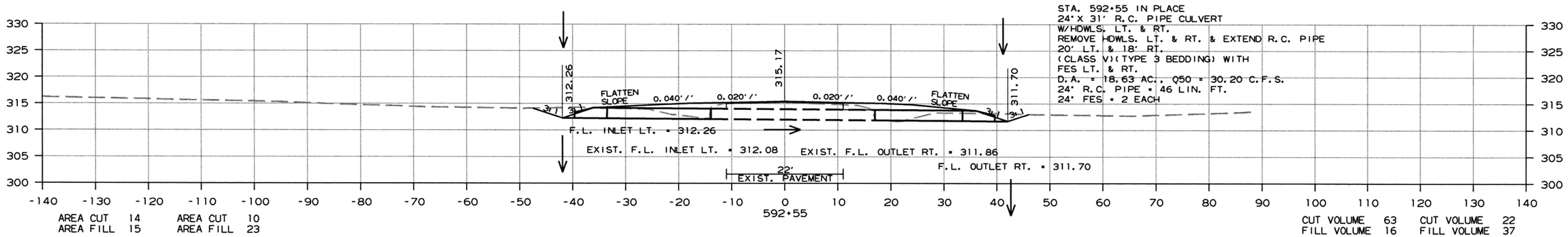
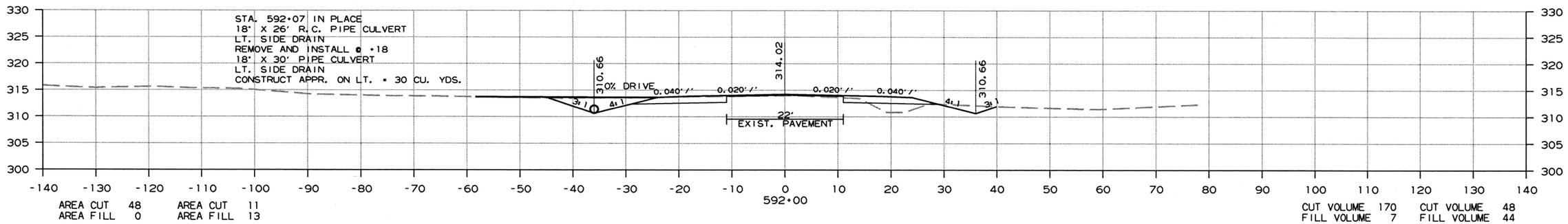
				JOB NO.		050279	172	207

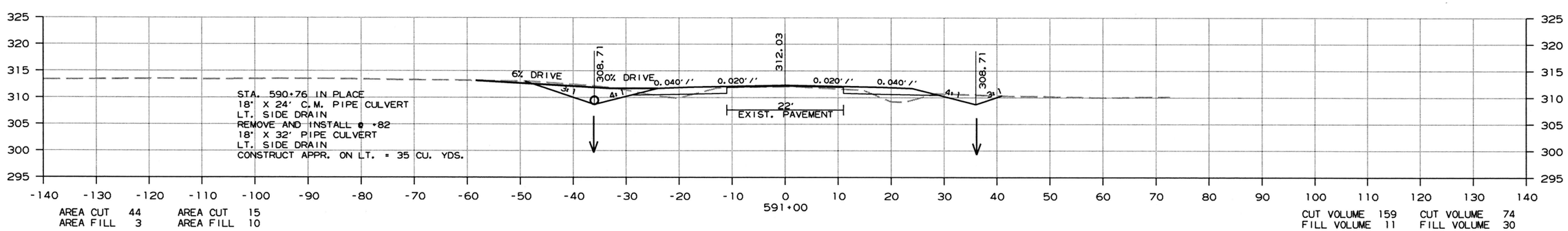
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 591+00 TO STA. 592+55

6/26/2018

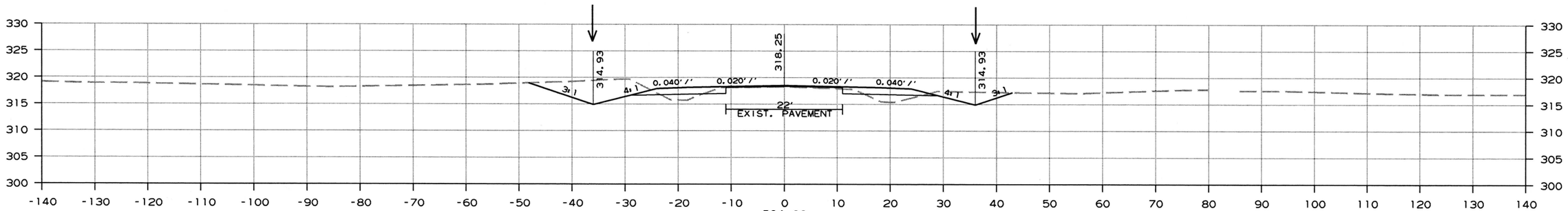
R050279.DGN

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.		050279	173	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

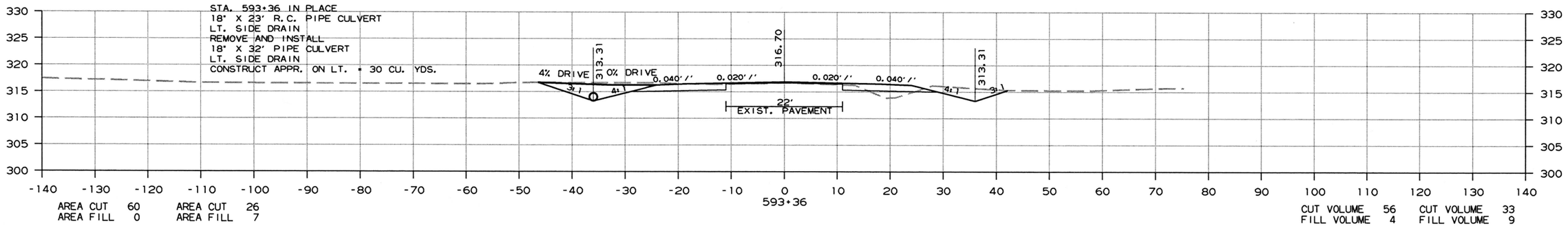
STAGE 1 STAGE 2



AREA CUT 66 AREA CUT 23
AREA FILL 6 AREA FILL 9

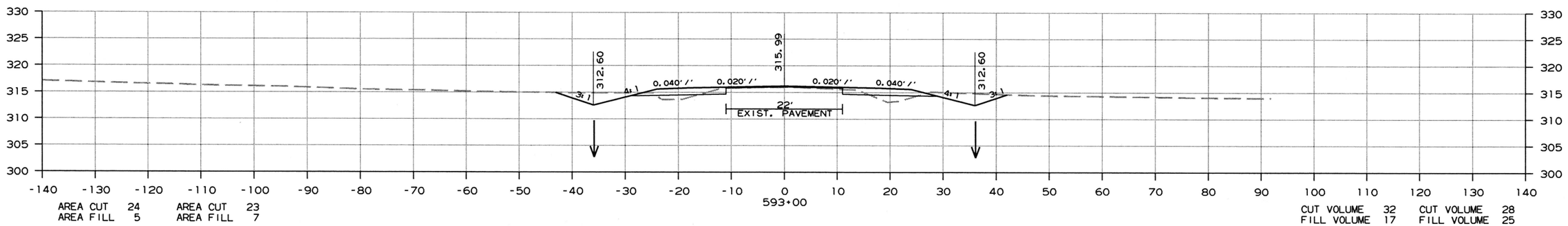
CUT VOLUME 149 CUT VOLUME 59
FILL VOLUME 7 FILL VOLUME 19

STA. 593+36 IN PLACE
18" X 23' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPR. ON LT. = 30 CU. YDS.



AREA CUT 60 AREA CUT 26
AREA FILL 0 AREA FILL 7

CUT VOLUME 56 CUT VOLUME 33
FILL VOLUME 4 FILL VOLUME 9



AREA CUT 24 AREA CUT 23
AREA FILL 5 AREA FILL 7

CUT VOLUME 32 CUT VOLUME 28
FILL VOLUME 17 FILL VOLUME 25

CROSS SECTION STA. 593+00 TO STA. 594+00

6/26/2018

R050279.DGN

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				6	ARK.			
				JOB NO.		050279	174	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 595+00 TO STA. 596+00

6/26/2018

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				6	ARK.			
				JOB NO.		050279	175	207

(2) CROSS SECTIONS

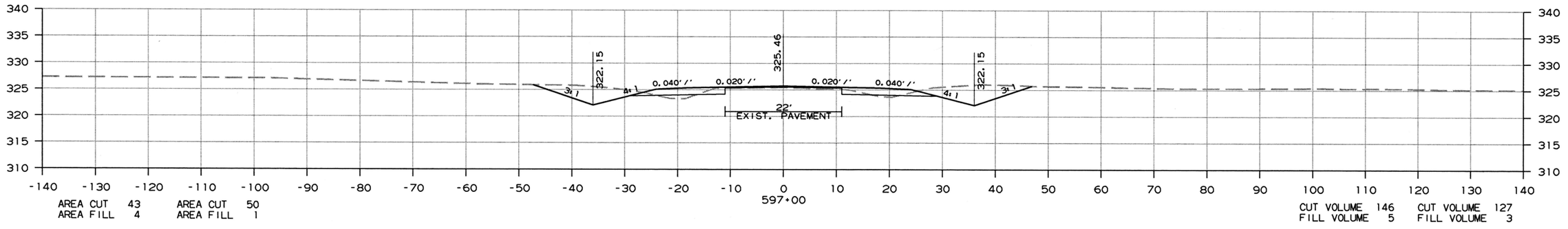
STAGE 1 STAGE 2



AREA CUT 43 AREA CUT 57
AREA FILL 3 AREA FILL 0

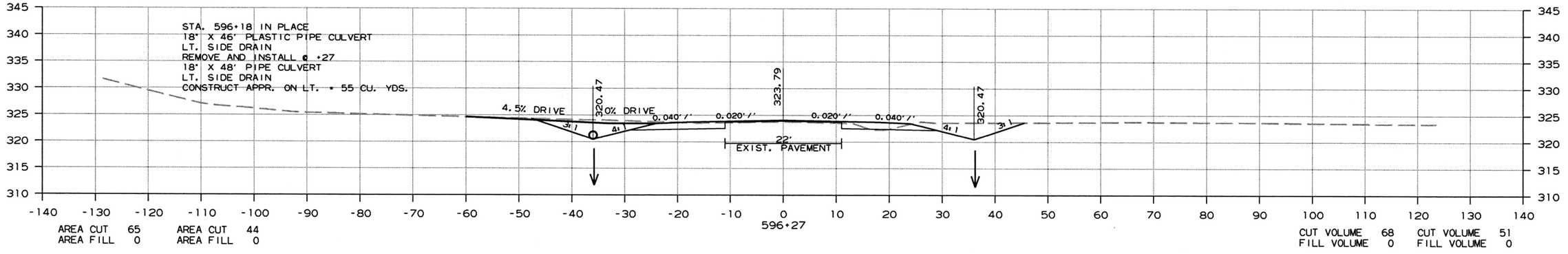
CUT VOLUME 83 CUT VOLUME 104
FILL VOLUME 8 FILL VOLUME 2

STAGE 1 STAGE 2



AREA CUT 43 AREA CUT 50
AREA FILL 4 AREA FILL 1

CUT VOLUME 146 CUT VOLUME 127
FILL VOLUME 5 FILL VOLUME 3



AREA CUT 65 AREA CUT 44
AREA FILL 0 AREA FILL 0

CUT VOLUME 68 CUT VOLUME 51
FILL VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 596+27 TO STA. 597+52

6/26/2018

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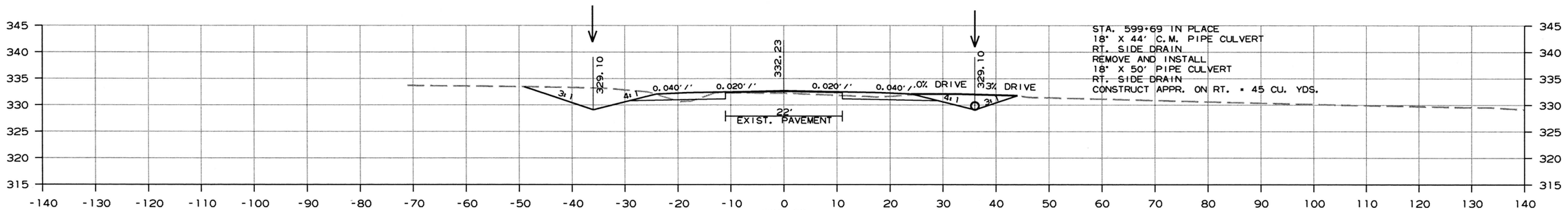
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	176	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



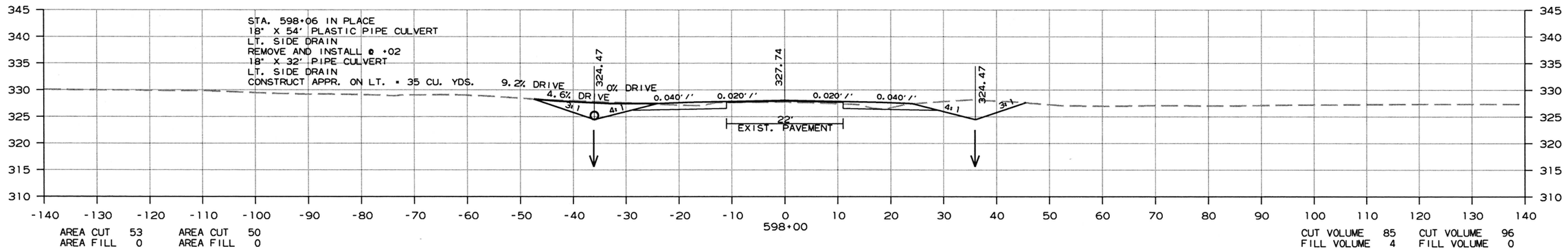
AREA CUT 63 AREA CUT 41
AREA FILL 1 AREA FILL 0

CUT VOLUME 169 CUT VOLUME 100
FILL VOLUME 3 FILL VOLUME 3



AREA CUT 69 AREA CUT 37
AREA FILL 1 AREA FILL 1

CUT VOLUME 226 CUT VOLUME 163
FILL VOLUME 4 FILL VOLUME 4



AREA CUT 53 AREA CUT 50
AREA FILL 0 AREA FILL 0

CUT VOLUME 85 CUT VOLUME 96
FILL VOLUME 4 FILL VOLUME 0

CROSS SECTION STA. 598+00 TO STA. 599+69

6/26/2018

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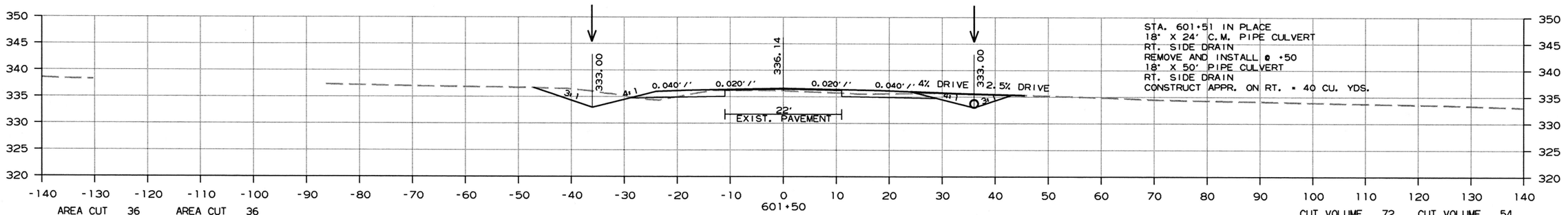
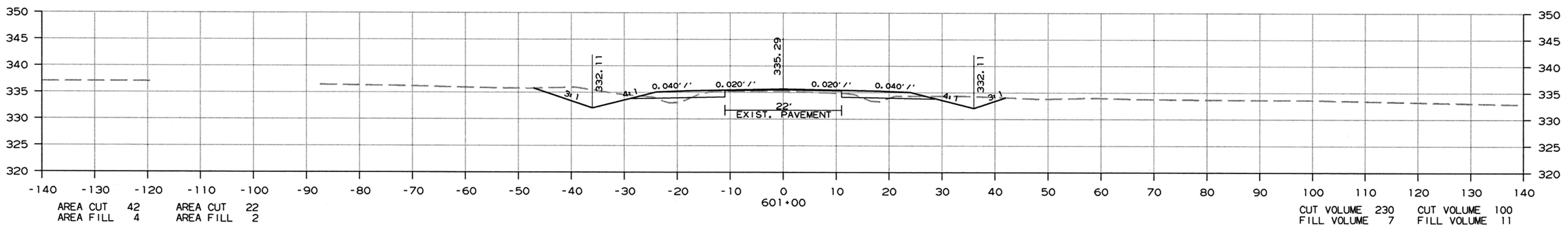
				6	ARK.			
				JOB NO.		050279	177	207

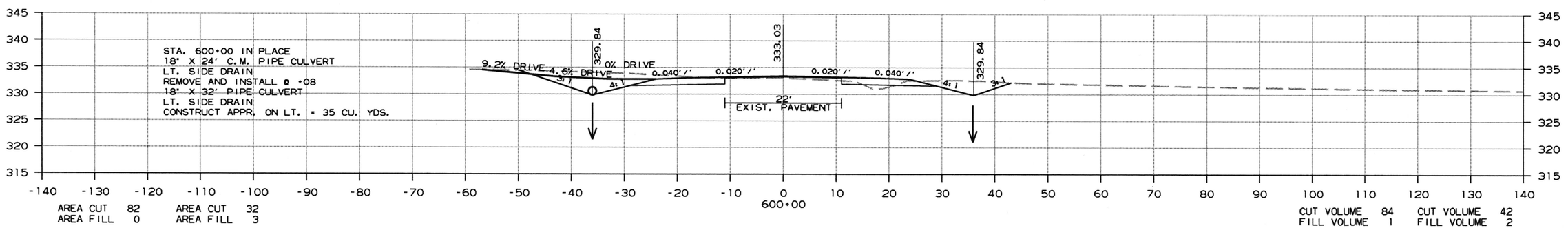
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 600+00 TO STA. 601+50

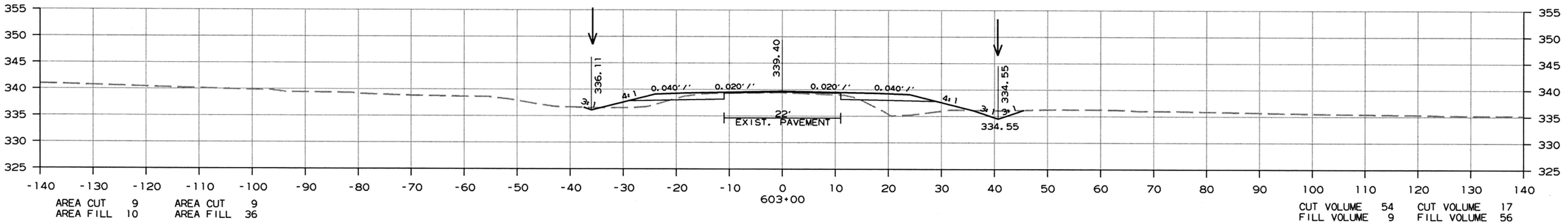
6/26/2018

R050279.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.		050279	178	207

(2) CROSS SECTIONS

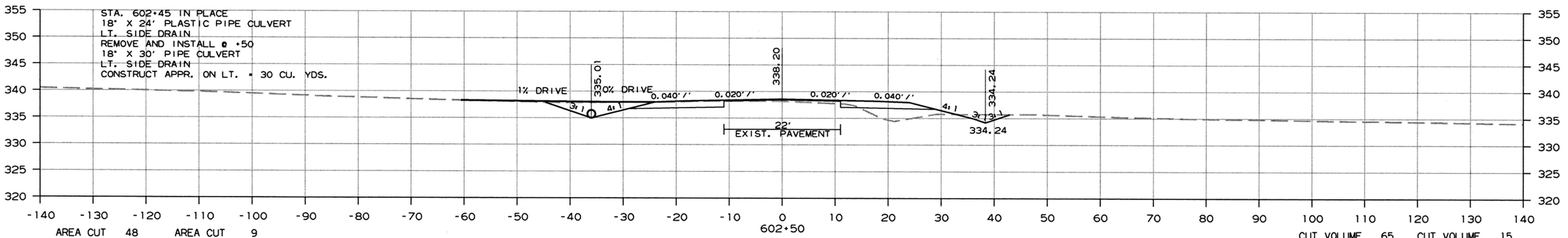
STAGE 1 STAGE 2



AREA CUT 9 AREA FILL 10
AREA CUT 9 AREA FILL 36

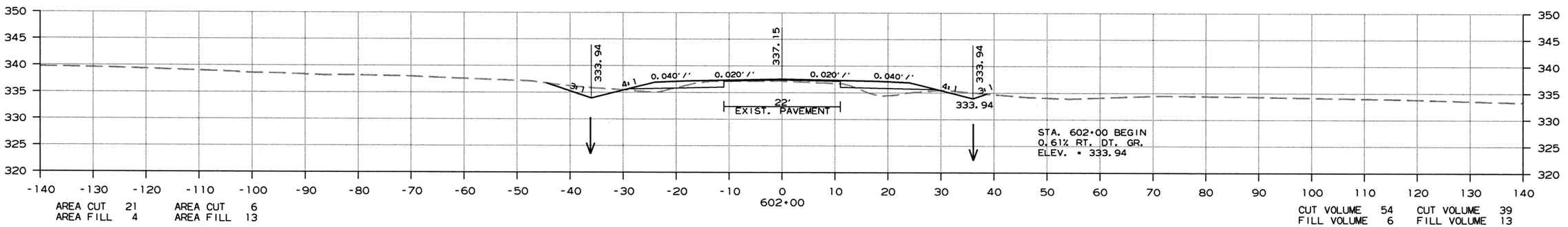
CUT VOLUME 54 FILL VOLUME 9
CUT VOLUME 17 FILL VOLUME 56

STAGE 1 STAGE 2



AREA CUT 48 AREA FILL 0
AREA CUT 9 AREA FILL 24

CUT VOLUME 65 FILL VOLUME 4
CUT VOLUME 15 FILL VOLUME 35



AREA CUT 21 AREA FILL 4
AREA CUT 6 AREA FILL 13

CUT VOLUME 54 FILL VOLUME 6
CUT VOLUME 39 FILL VOLUME 13

CROSS SECTION STA. 602+00 TO STA. 603+00

6/26/2018

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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
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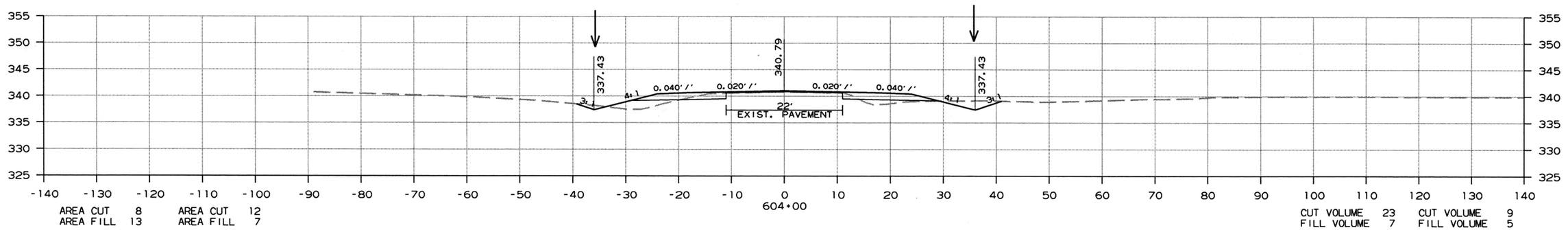
(2) CROSS SECTIONS

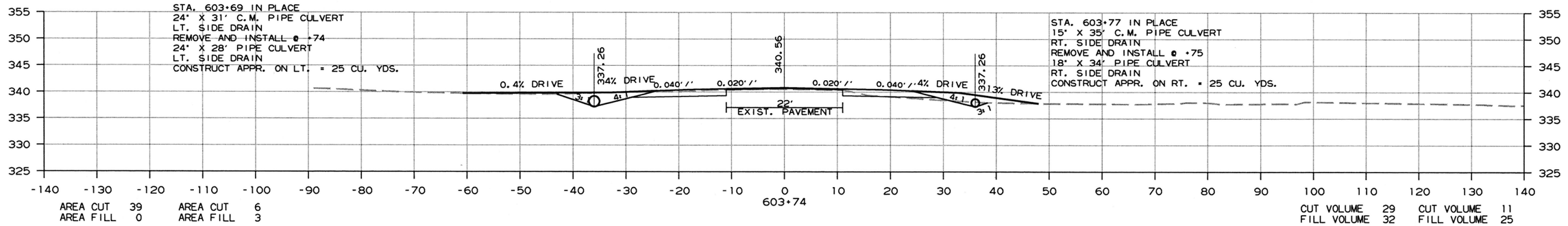
STAGE 1 STAGE 2

STAGE 1 STAGE 2



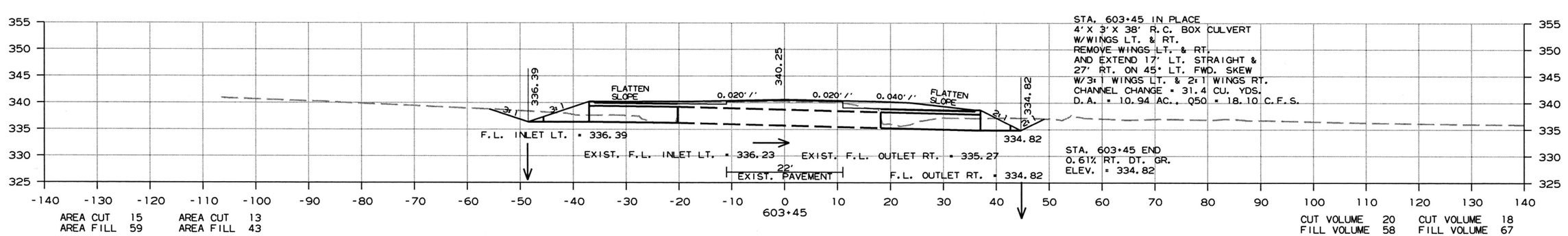
AREA CUT 8 AREA CUT 12
AREA FILL 13 AREA FILL 7

CUT VOLUME 23 CUT VOLUME 9
FILL VOLUME 7 FILL VOLUME 5



AREA CUT 39 AREA CUT 6
AREA FILL 0 AREA FILL 3

CUT VOLUME 29 CUT VOLUME 11
FILL VOLUME 32 FILL VOLUME 25



AREA CUT 15 AREA CUT 13
AREA FILL 59 AREA FILL 43

CUT VOLUME 20 CUT VOLUME 18
FILL VOLUME 58 FILL VOLUME 67

CROSS SECTION STA. 603+45 TO STA. 604+00

6/26/2018

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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
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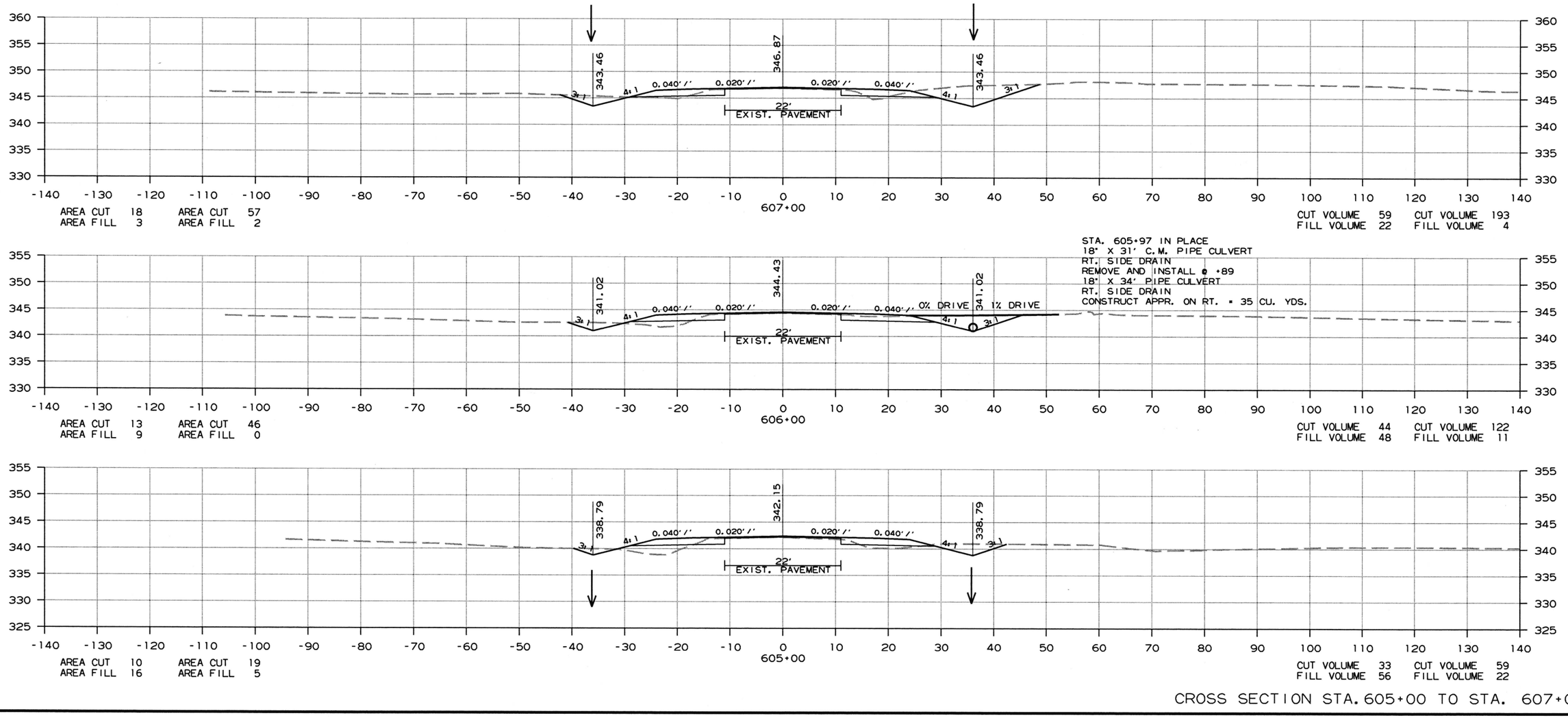
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 605+00 TO STA. 607+00

6/26/2018

R050279.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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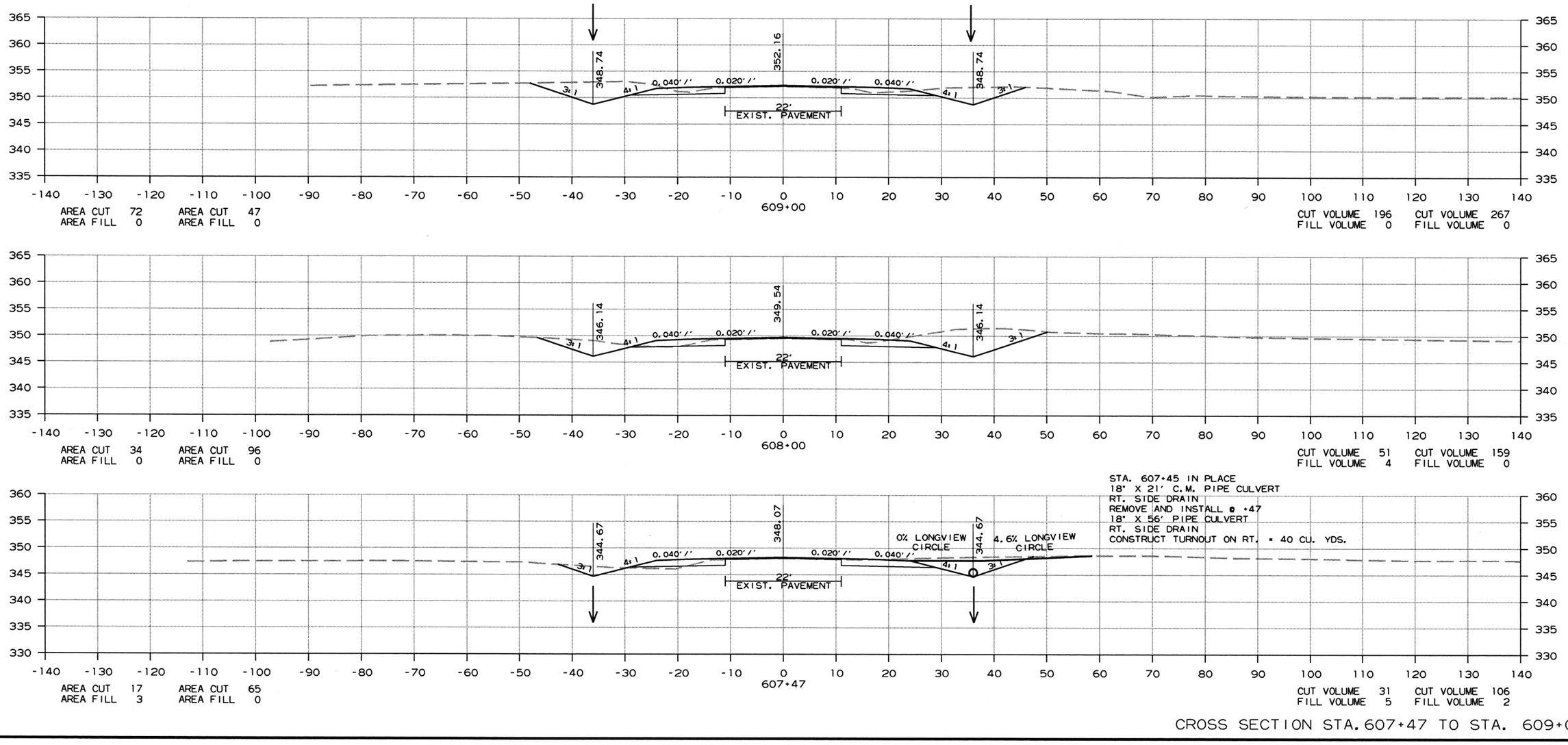
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



STA. 607+45 IN PLACE
18" X 21' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ +47
18" X 56' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT ON RT. = 40 CU. YDS.

CROSS SECTION STA. 607+47 TO STA. 609+00

6/26/2018

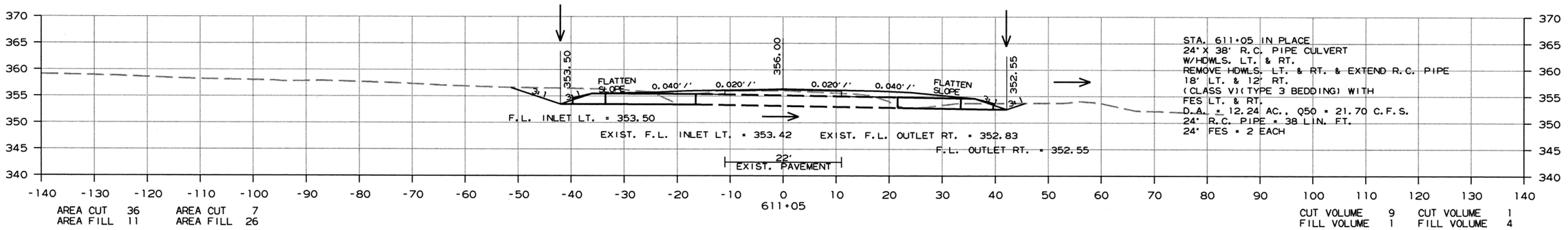
R050279.DGN

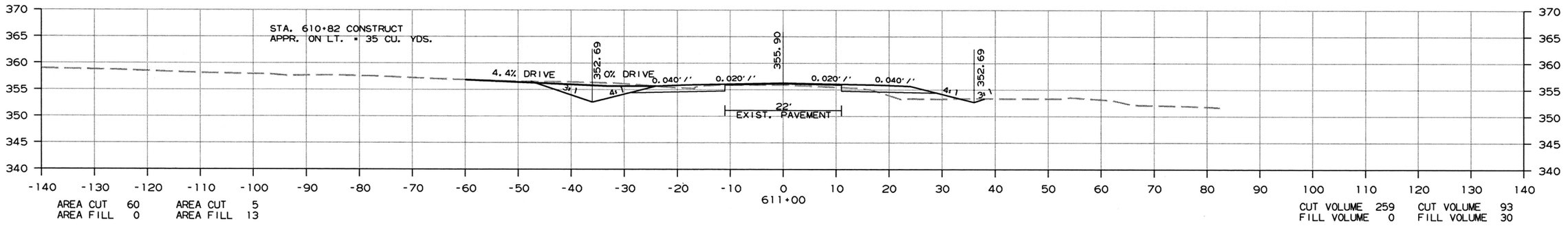
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	182	207

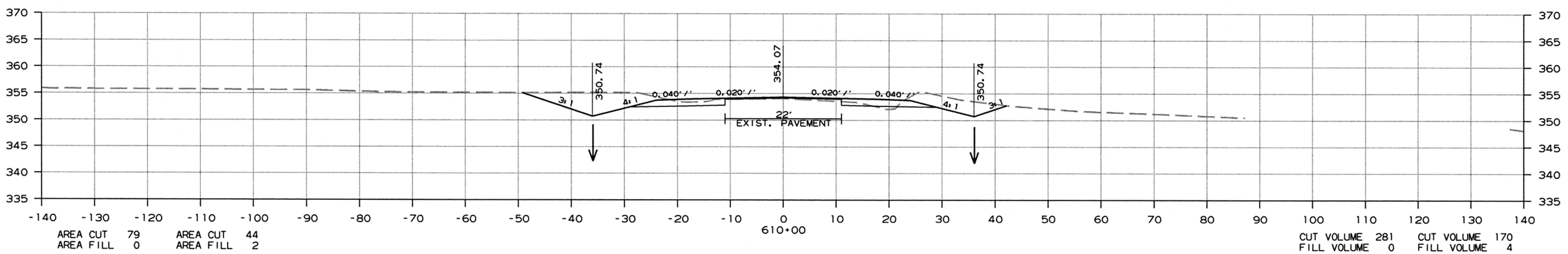
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 610+00 TO STA. 611+05

6/26/2018

R050279.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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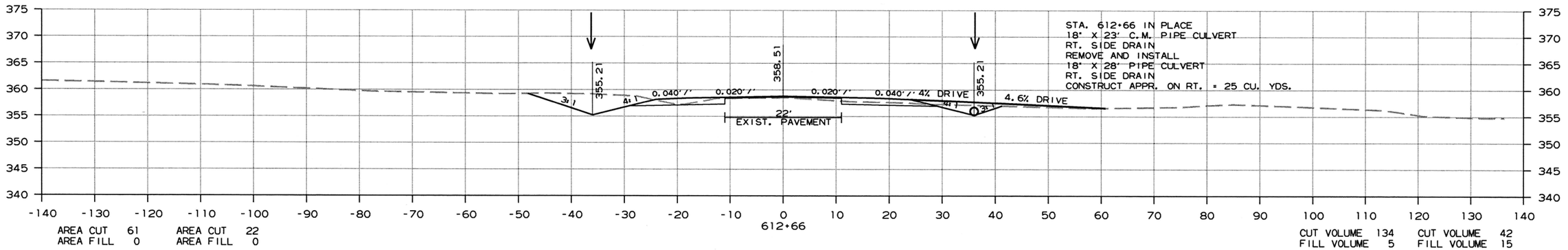
				JOB NO.		050279	183	207

(2) CROSS SECTIONS

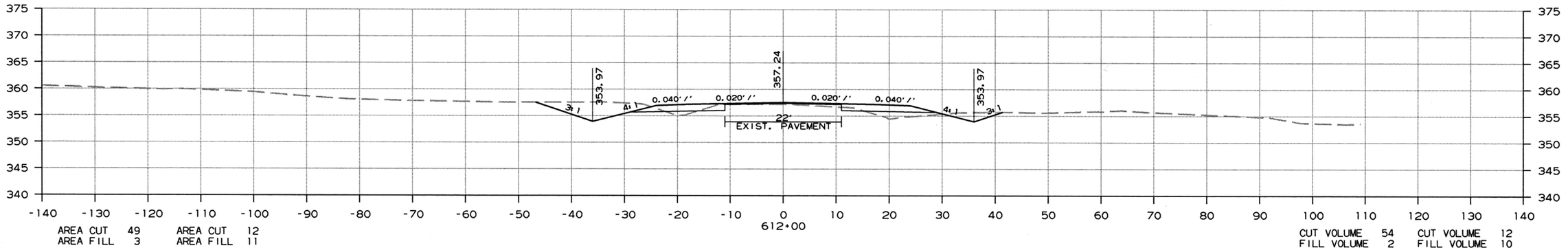
STAGE 1 STAGE 2

STAGE 1 STAGE 2



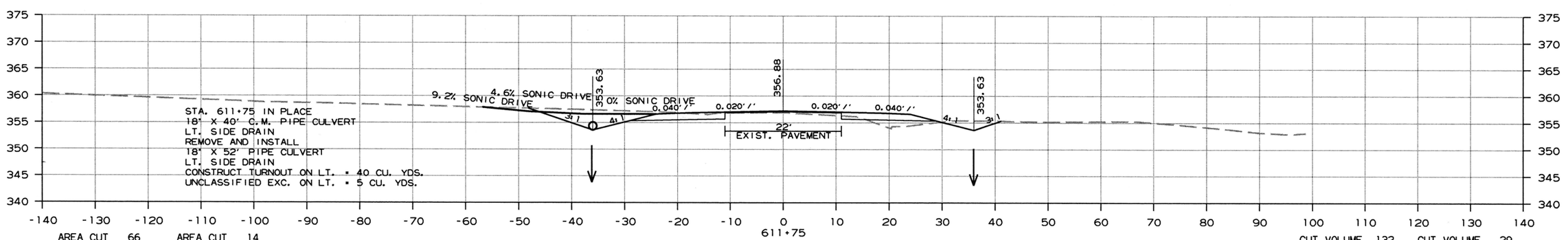
AREA CUT 61 AREA FILL 0 | AREA CUT 22 AREA FILL 0

CUT VOLUME 134 FILL VOLUME 5 | CUT VOLUME 42 FILL VOLUME 15



AREA CUT 49 AREA FILL 3 | AREA CUT 12 AREA FILL 11

CUT VOLUME 54 FILL VOLUME 2 | CUT VOLUME 12 FILL VOLUME 10



AREA CUT 66 AREA FILL 0 | AREA CUT 14 AREA FILL 11

CUT VOLUME 132 FILL VOLUME 16 | CUT VOLUME 29 FILL VOLUME 49

CROSS SECTION STA. 611+75 TO STA. 612+66

6/26/2018

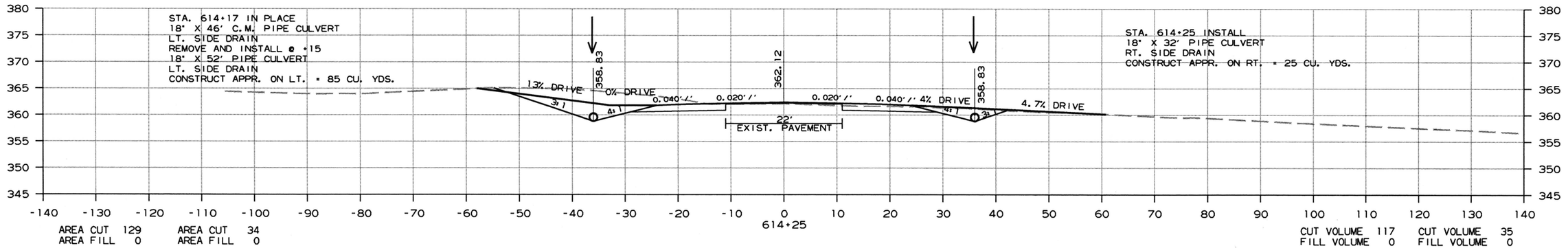
R050279.DGN

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.		050279	184	207

(2) CROSS SECTIONS

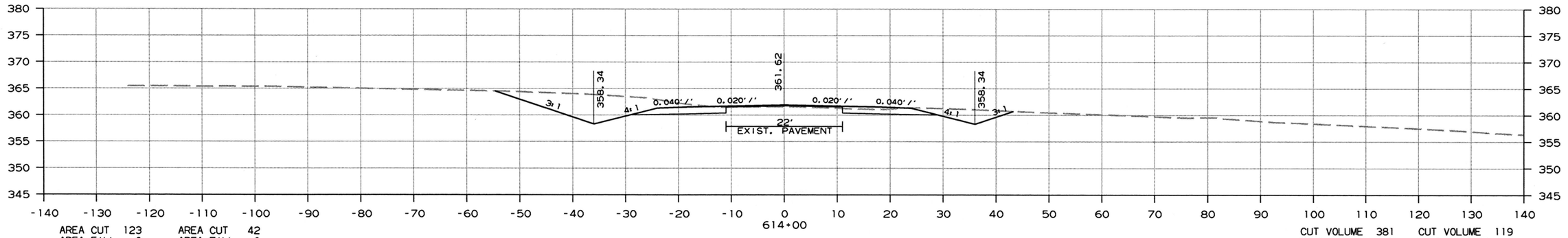
STAGE 1 STAGE 2

STAGE 1 STAGE 2



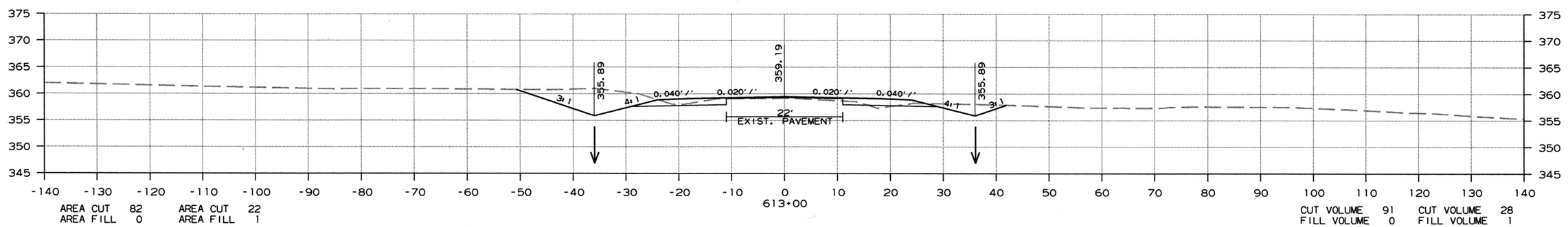
AREA CUT 129 AREA CUT 34
AREA FILL 0 AREA FILL 0

CUT VOLUME 117 CUT VOLUME 35
FILL VOLUME 0 FILL VOLUME 0



AREA CUT 123 AREA CUT 42
AREA FILL 0 AREA FILL 0

CUT VOLUME 381 CUT VOLUME 119
FILL VOLUME 0 FILL VOLUME 4



AREA CUT 82 AREA CUT 22
AREA FILL 0 AREA FILL 1

CUT VOLUME 91 CUT VOLUME 28
FILL VOLUME 0 FILL VOLUME 1

CROSS SECTION STA. 613+00 TO STA. 614+25

6/26/2018

R050279.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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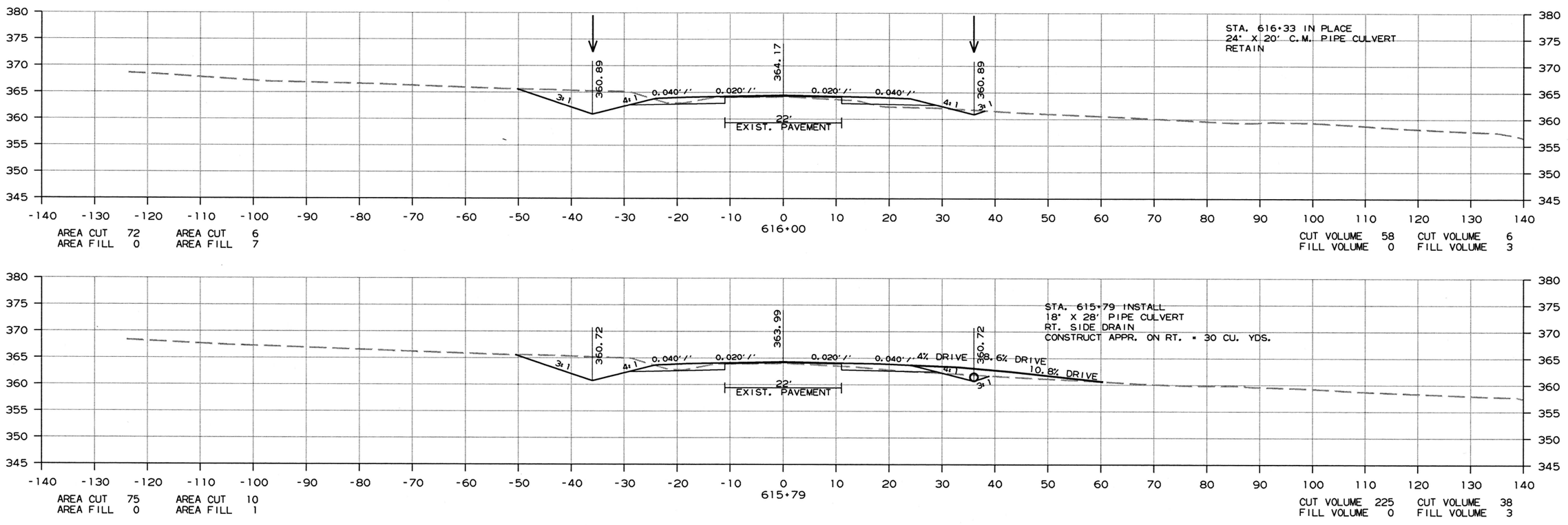
				JOB NO.		050279	185	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 615+00 TO STA. 616+00

6/26/2018

R050279.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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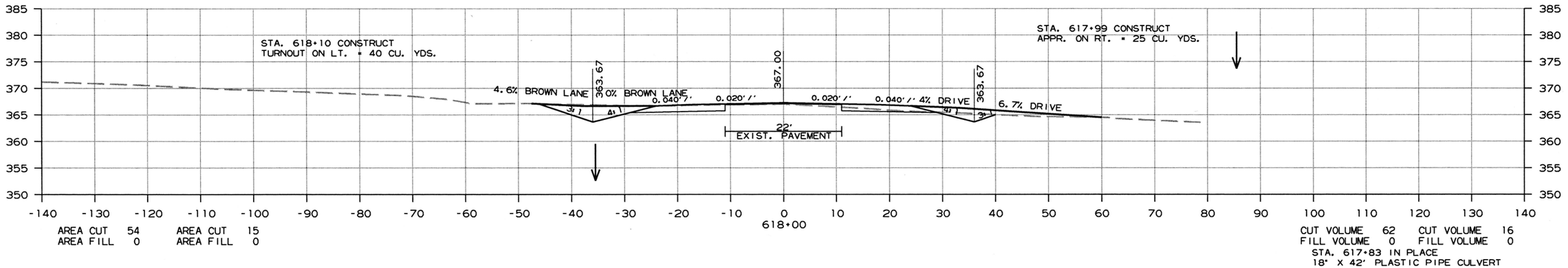
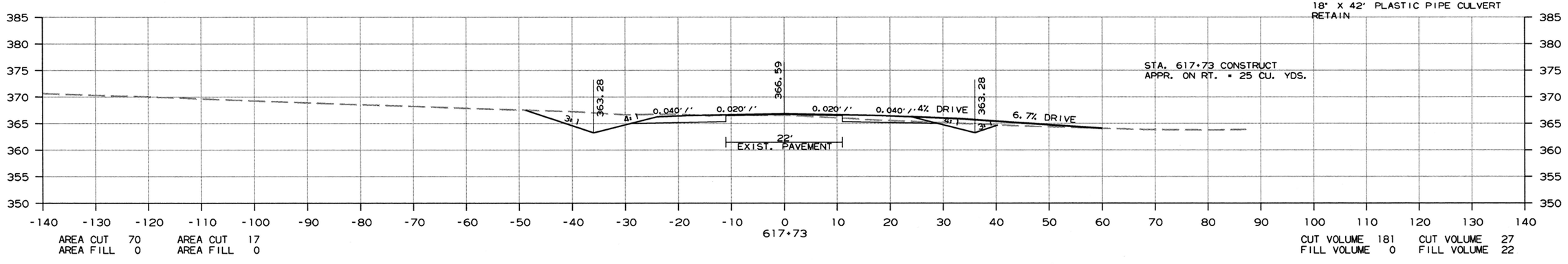
				JOB NO.		050279	186	207

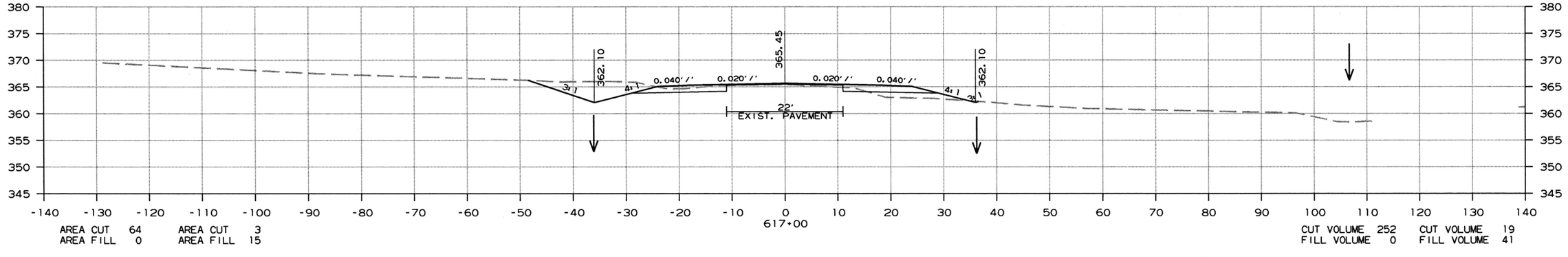
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 617+00 TO STA. 618+00

6/26/2018

R050279.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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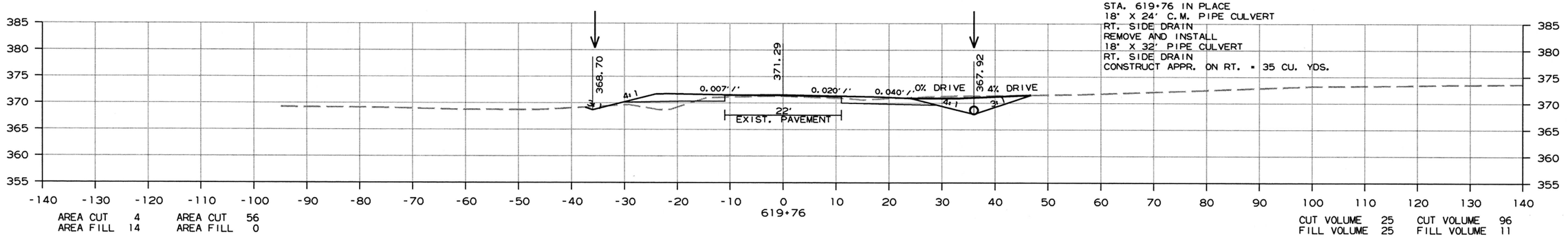
(2) CROSS SECTIONS

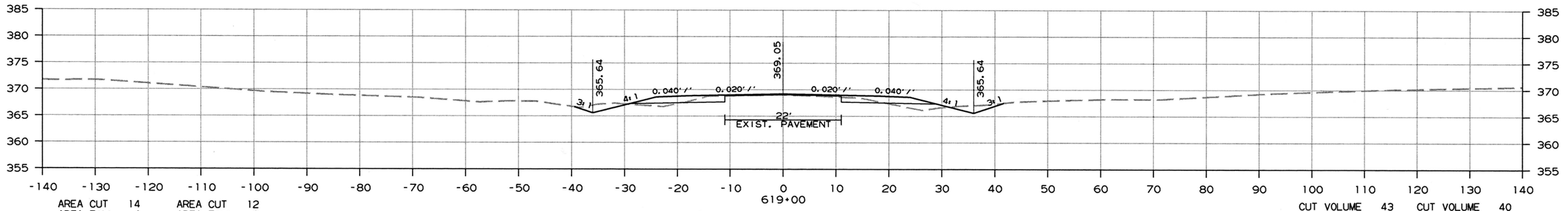
STAGE 1 STAGE 2

STAGE 1 STAGE 2



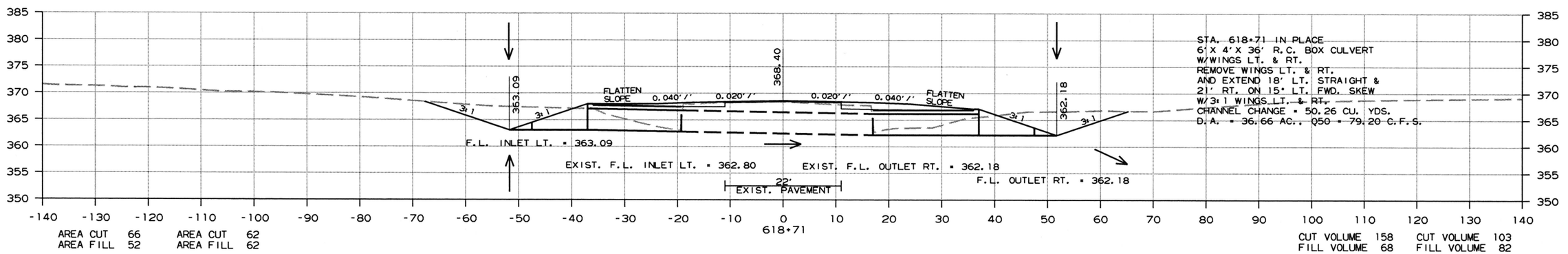
AREA CUT 4 AREA CUT 56
AREA FILL 14 AREA FILL 0

CUT VOLUME 25 CUT VOLUME 96
FILL VOLUME 25 FILL VOLUME 11



AREA CUT 14 AREA CUT 12
AREA FILL 4 AREA FILL 8

CUT VOLUME 43 CUT VOLUME 40
FILL VOLUME 30 FILL VOLUME 38



AREA CUT 66 AREA CUT 62
AREA FILL 52 AREA FILL 62

CUT VOLUME 158 CUT VOLUME 103
FILL VOLUME 68 FILL VOLUME 82

CROSS SECTION STA. 618+71 TO STA. 619+76

6/26/2018

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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
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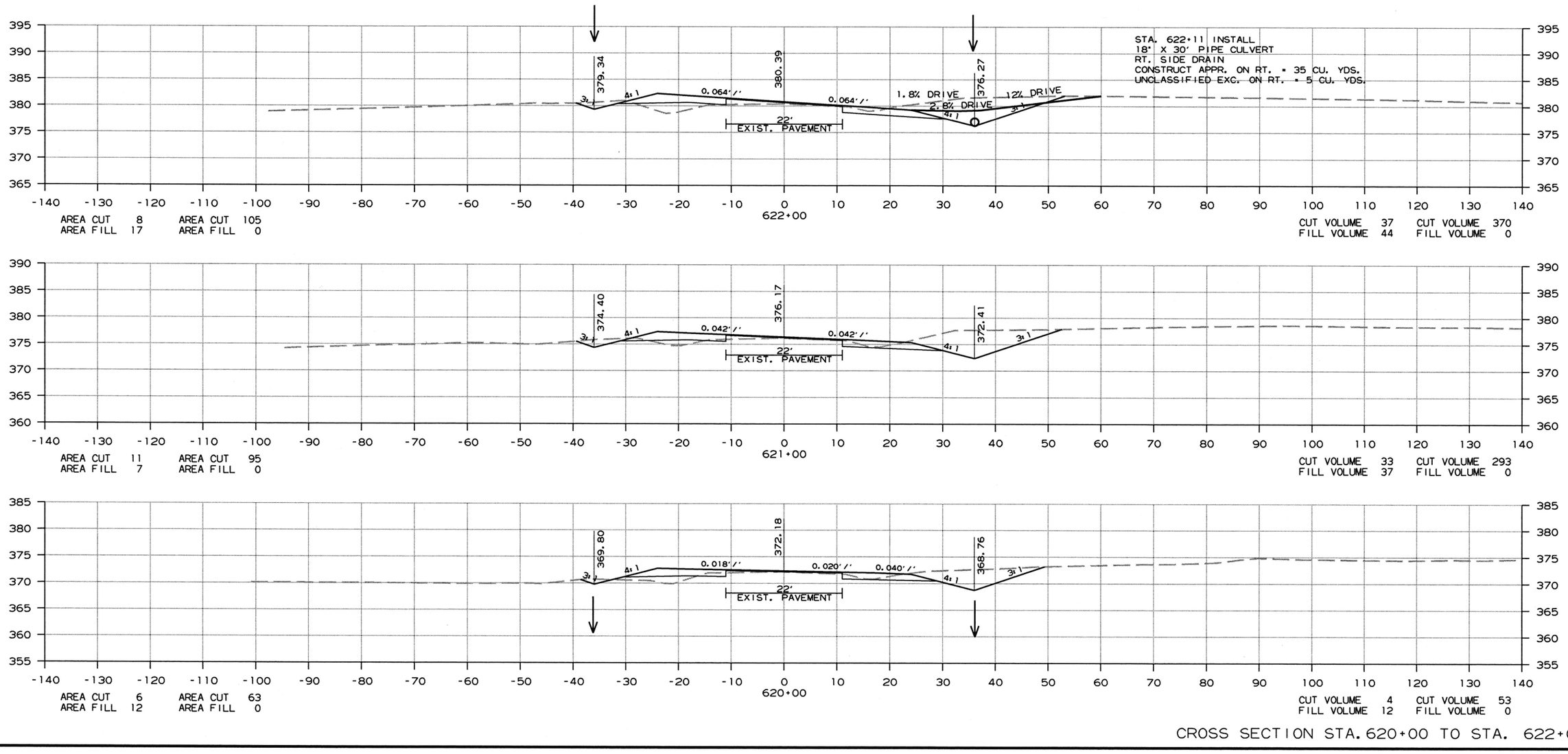
				JOB NO.		050279	188	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 620+00 TO STA. 622+00

6/26/2018

R050279.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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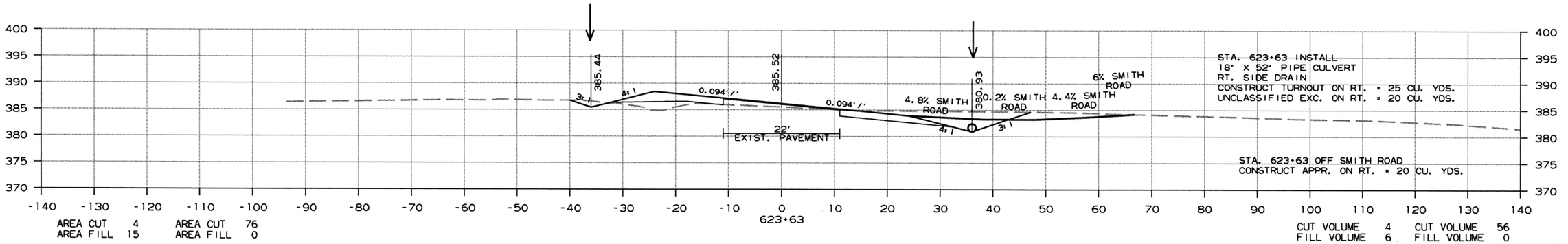
(2) CROSS SECTIONS

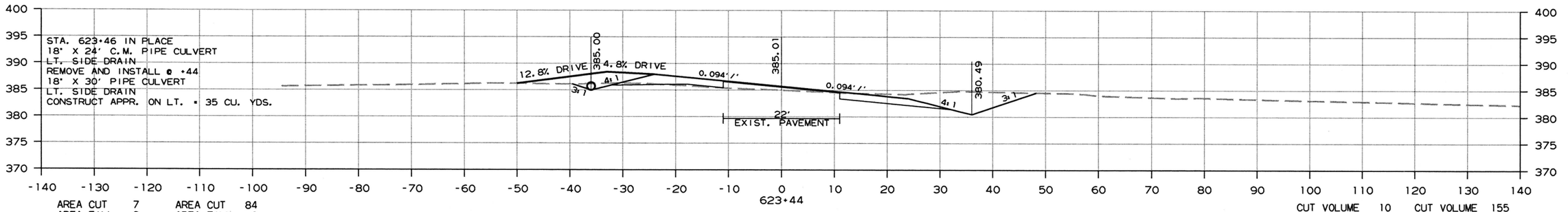
STAGE 1 STAGE 2



AREA CUT 4 AREA CUT 76
AREA FILL 15 AREA FILL 0

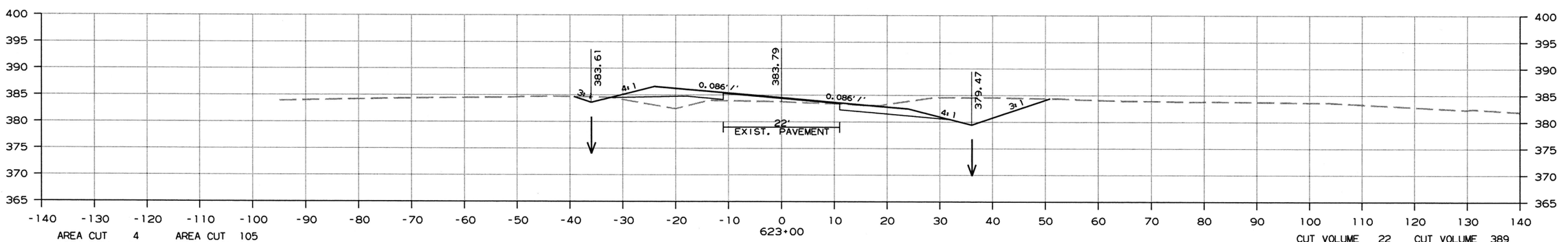
CUT VOLUME 4 CUT VOLUME 56
FILL VOLUME 6 FILL VOLUME 0

STAGE 1 STAGE 2



AREA CUT 7 AREA CUT 84
AREA FILL 2 AREA FILL 0

CUT VOLUME 10 CUT VOLUME 155
FILL VOLUME 21 FILL VOLUME 0



AREA CUT 4 AREA CUT 105
AREA FILL 24 AREA FILL 0

CUT VOLUME 22 CUT VOLUME 389
FILL VOLUME 78 FILL VOLUME 0

CROSS SECTION STA. 623+00 TO STA. 623+63

6/26/2018

R050279.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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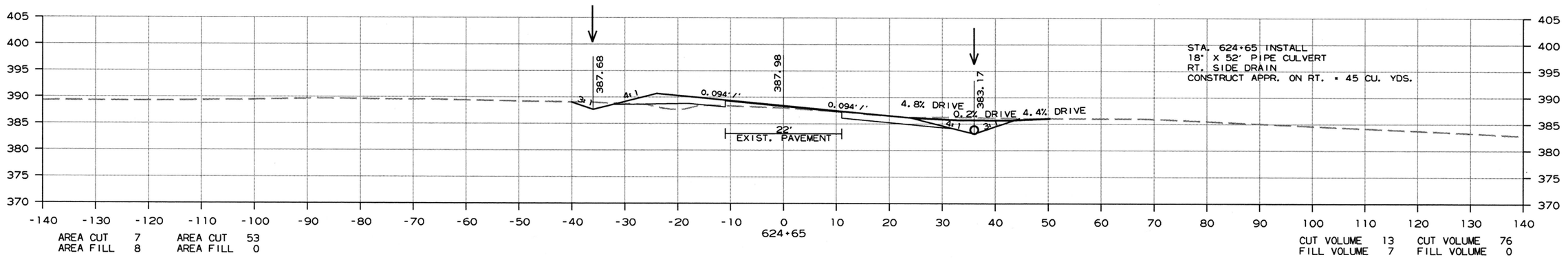
				JOB NO.		050279	190	207

(2) CROSS SECTIONS

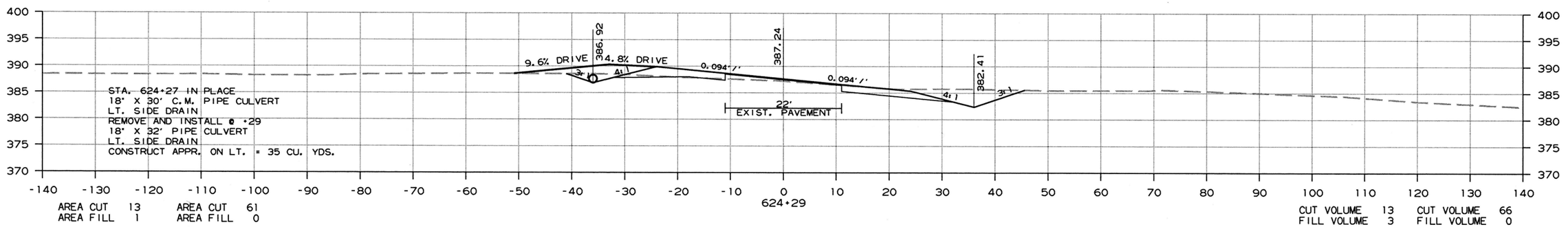
STAGE 1 STAGE 2

STAGE 1 STAGE 2



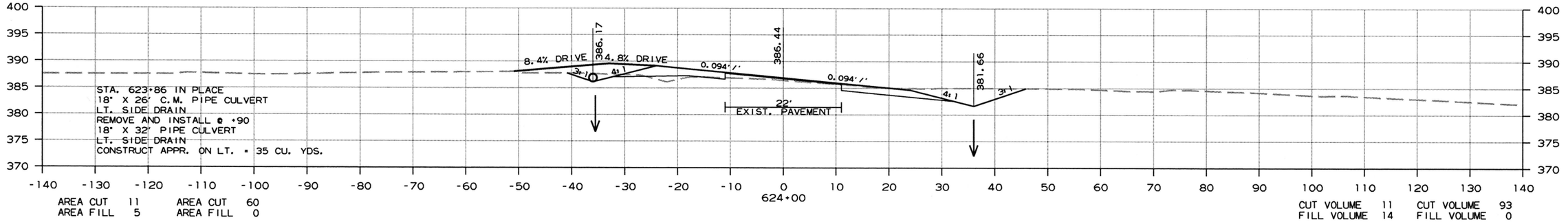
AREA CUT 7 AREA CUT 53
AREA FILL 8 AREA FILL 0

CUT VOLUME 13 CUT VOLUME 76
FILL VOLUME 7 FILL VOLUME 0



AREA CUT 13 AREA CUT 61
AREA FILL 1 AREA FILL 0

CUT VOLUME 13 CUT VOLUME 66
FILL VOLUME 3 FILL VOLUME 0



AREA CUT 11 AREA CUT 60
AREA FILL 5 AREA FILL 0

CUT VOLUME 11 CUT VOLUME 93
FILL VOLUME 14 FILL VOLUME 0

CROSS SECTION STA. 624+00 TO STA. 624+65

6/26/2018

R050279.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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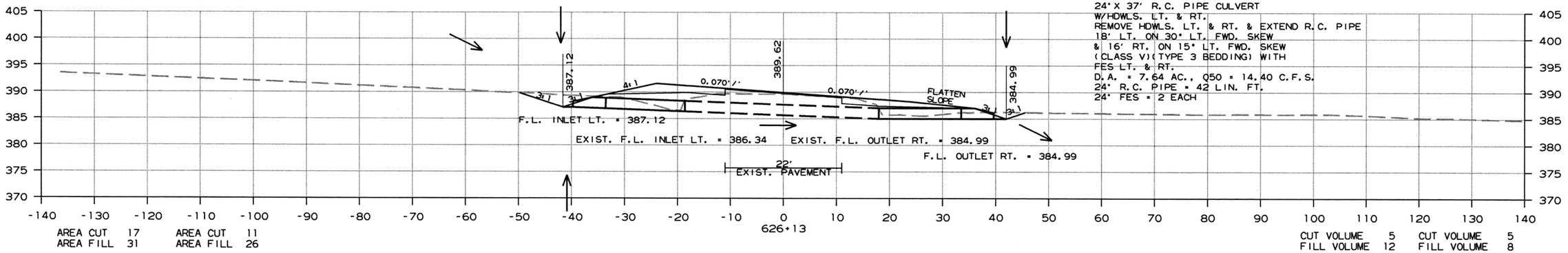
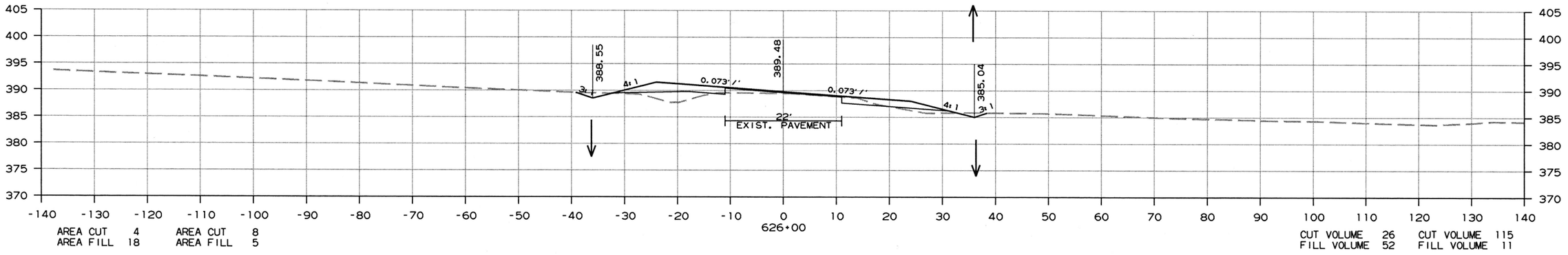
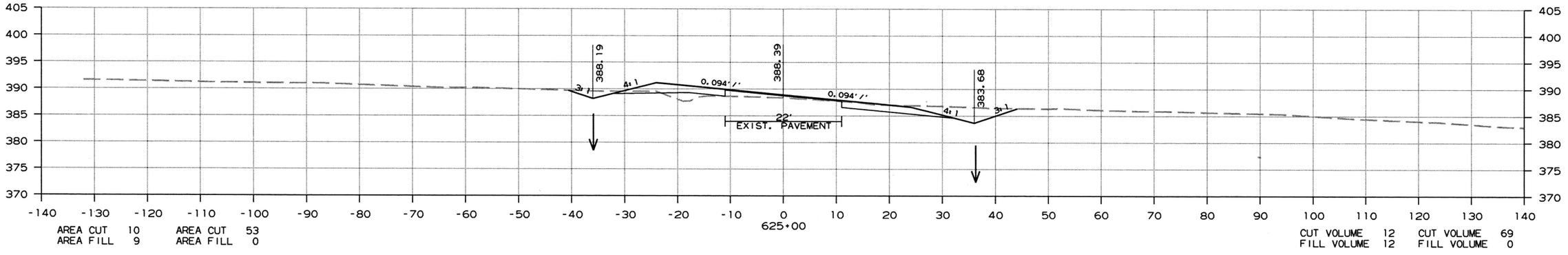
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 625+00 TO STA. 626+13

6/26/2018

R050279.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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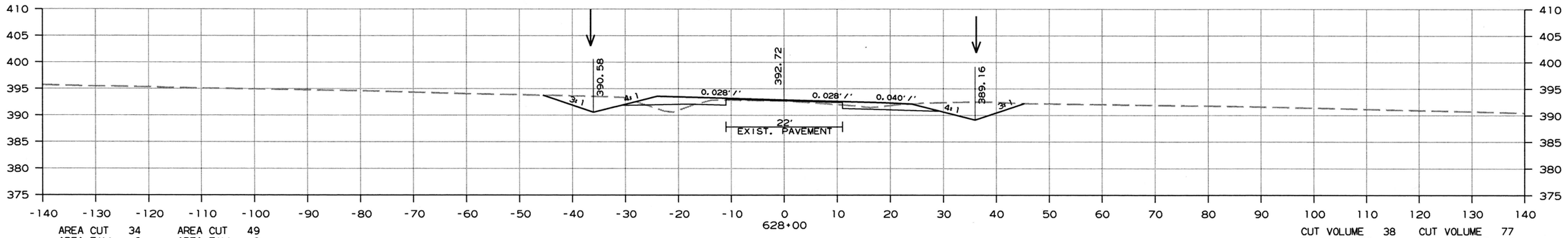
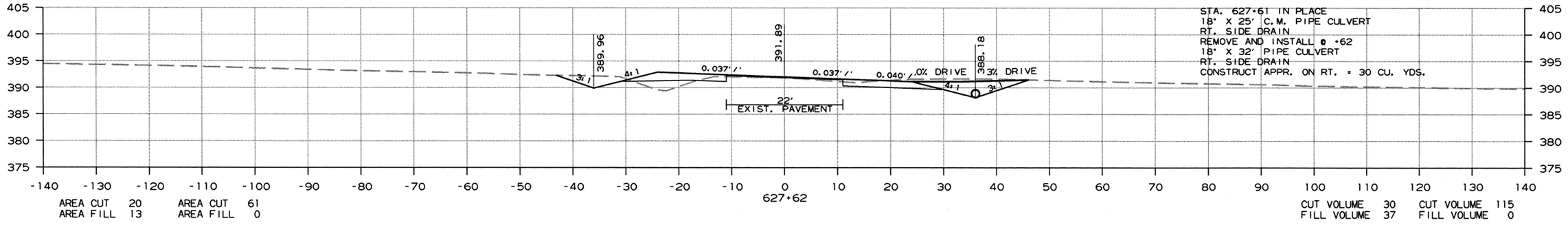
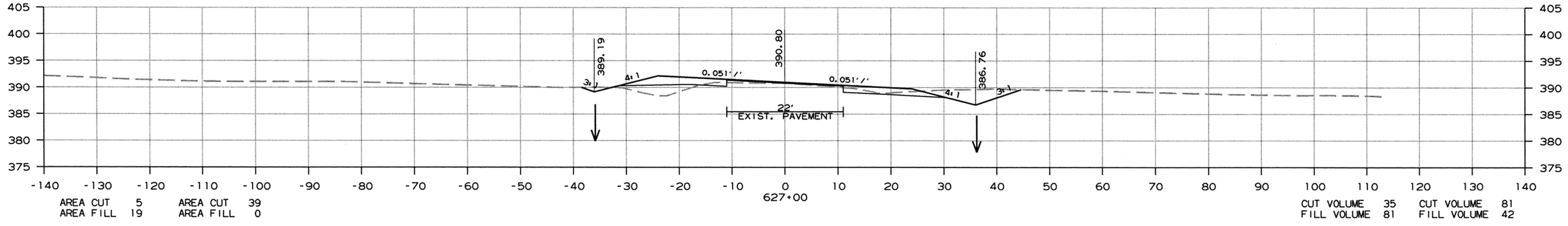
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 627+00 TO STA. 628+00

6/26/2018

R050279.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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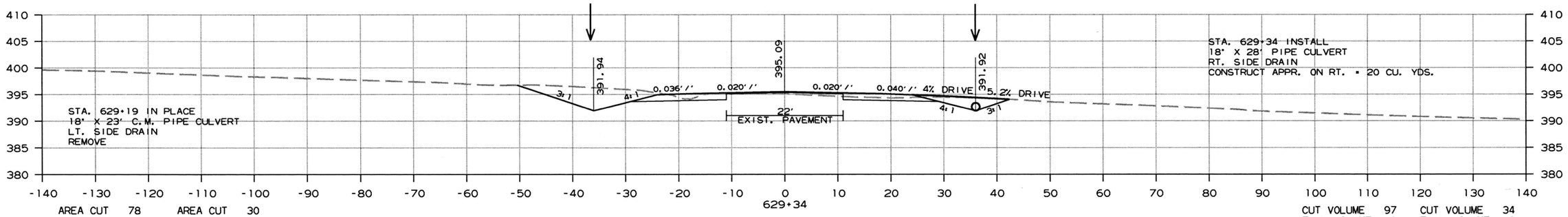
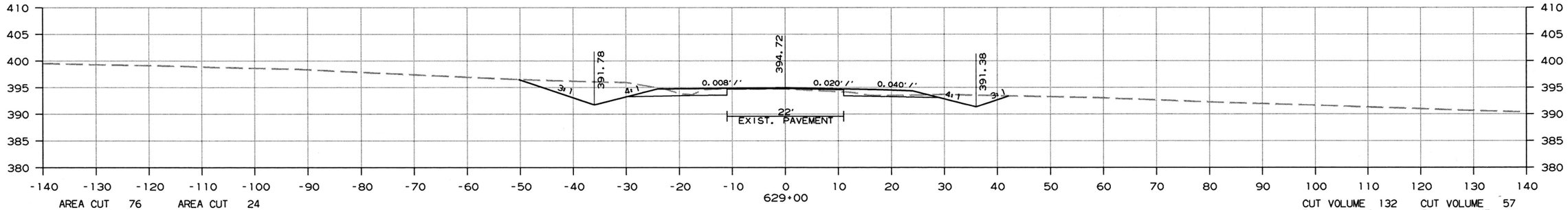
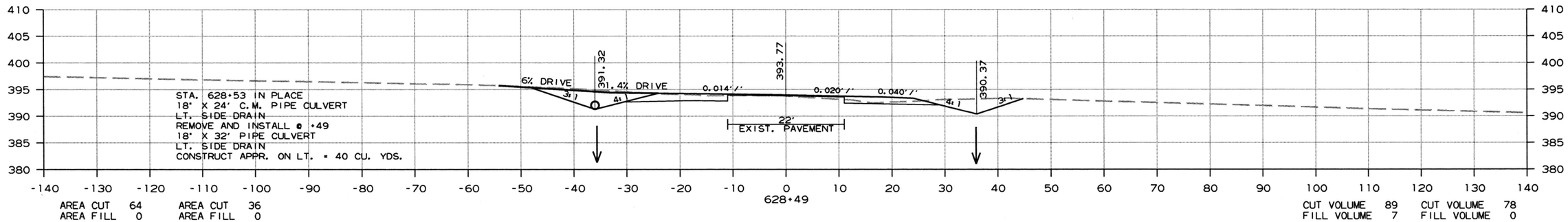
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 628+49 TO STA. 629+34

6/26/2018

R050279.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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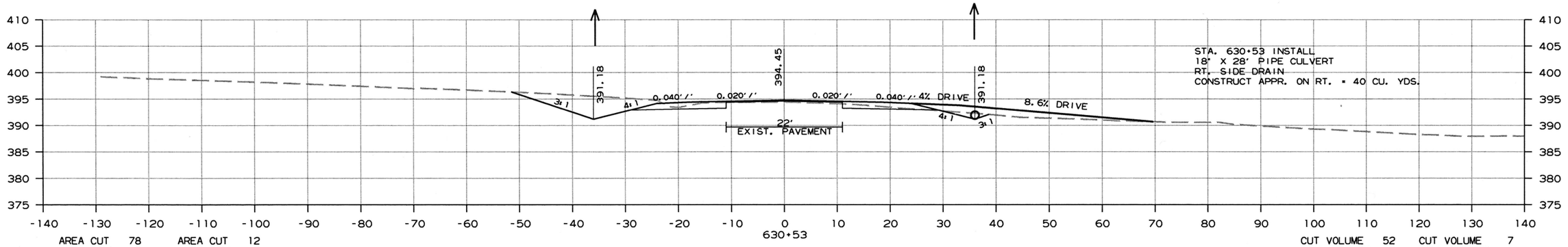
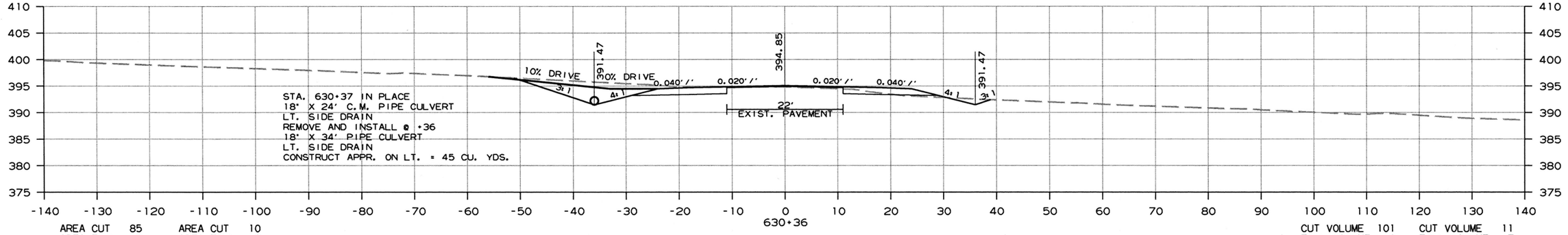
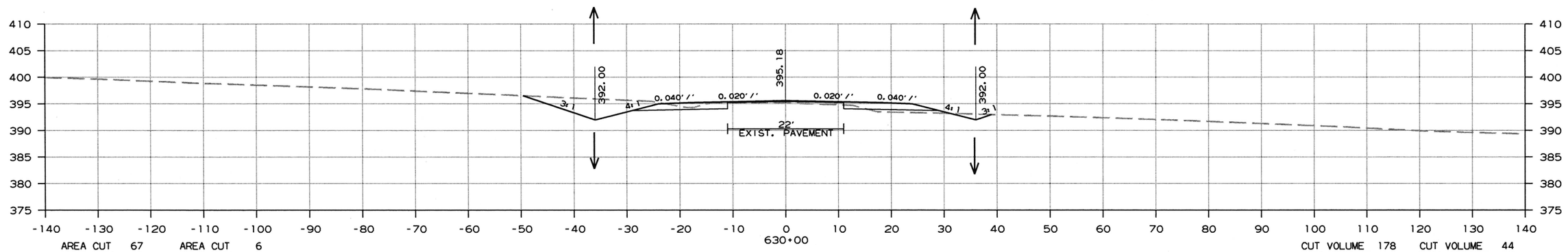
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 630+00 TO STA. 630+53

6/26/2018

R050279.DGN

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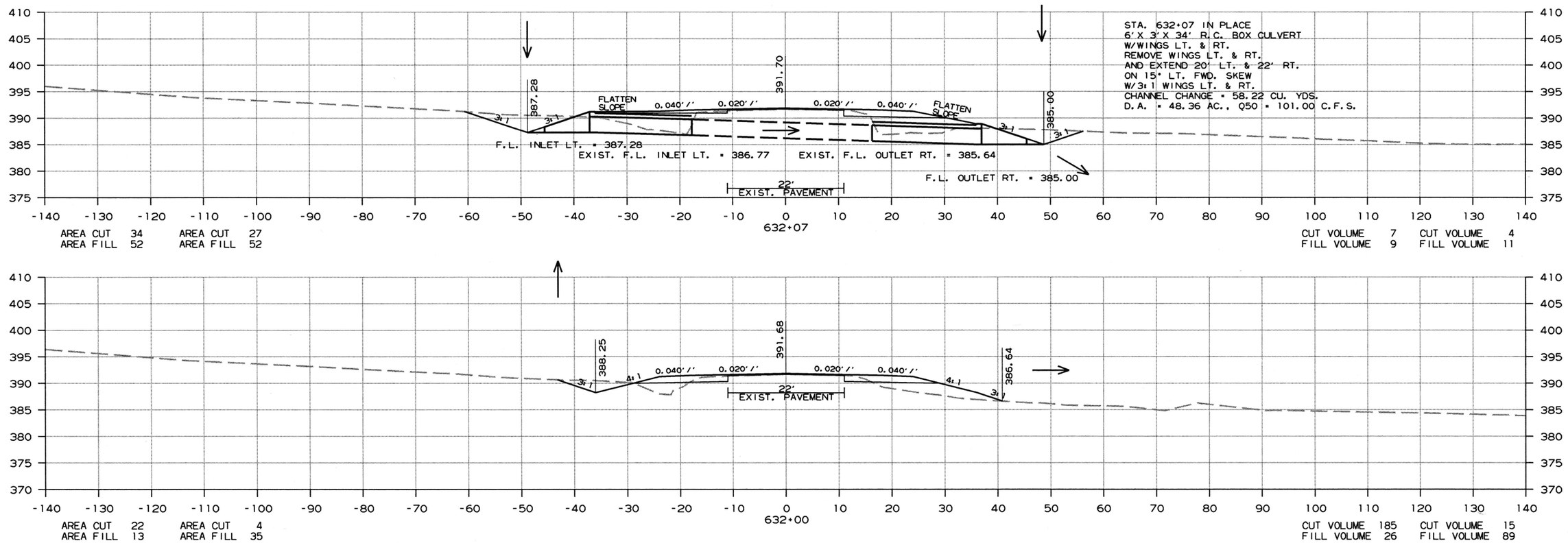
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 631+00 TO STA. 632+07

6/26/2018

R050279.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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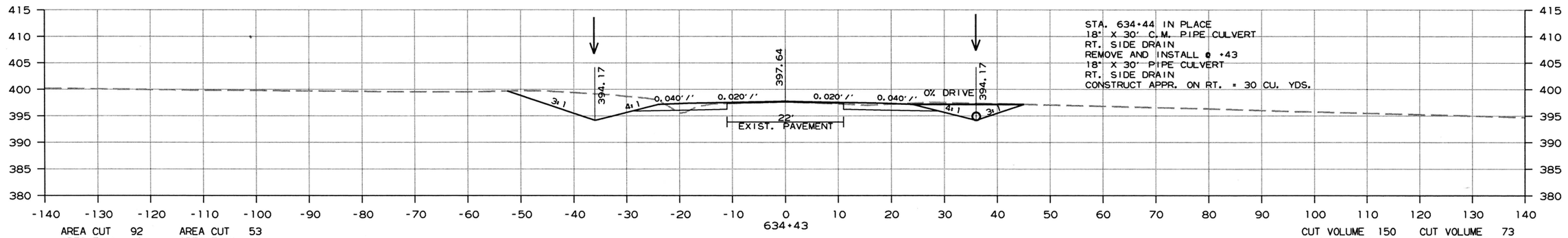
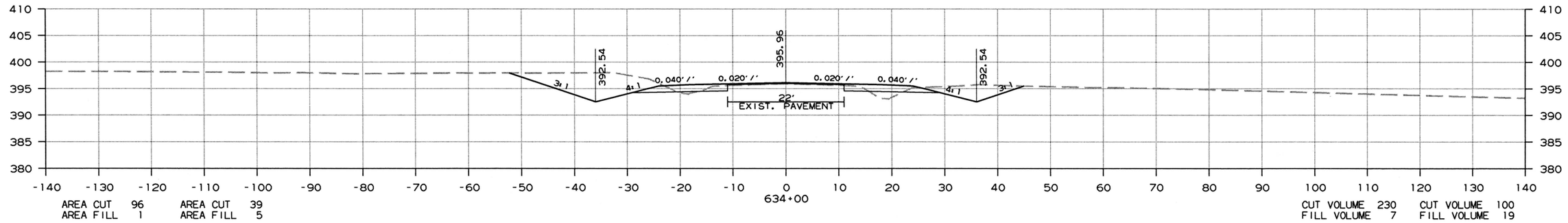
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 633+00 TO STA. 634+43

6/26/2018

R050279.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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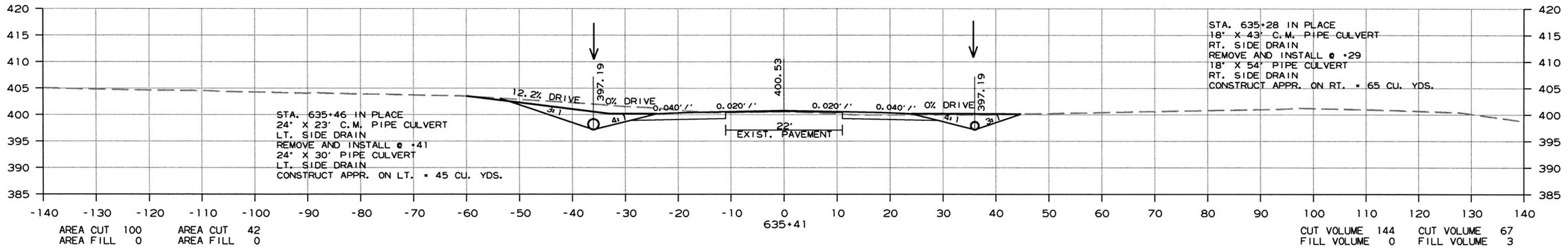
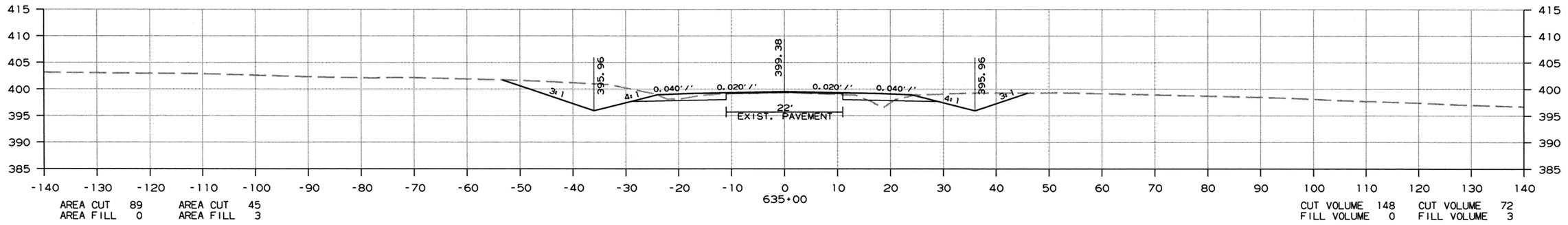
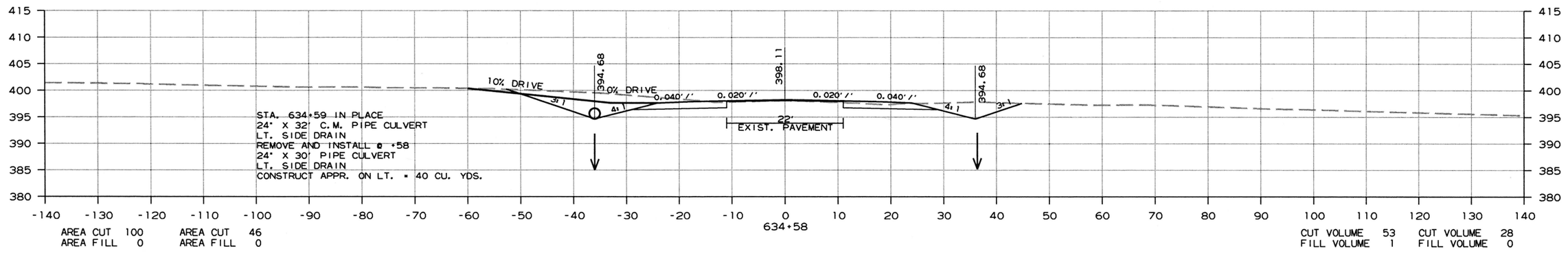
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 634+58 TO STA. 635+41

6/26/2018

R050279.DGN

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(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2

CROSS SECTION STA. 636+00 TO STA. 637+00

6/26/2018

R050279.DGN

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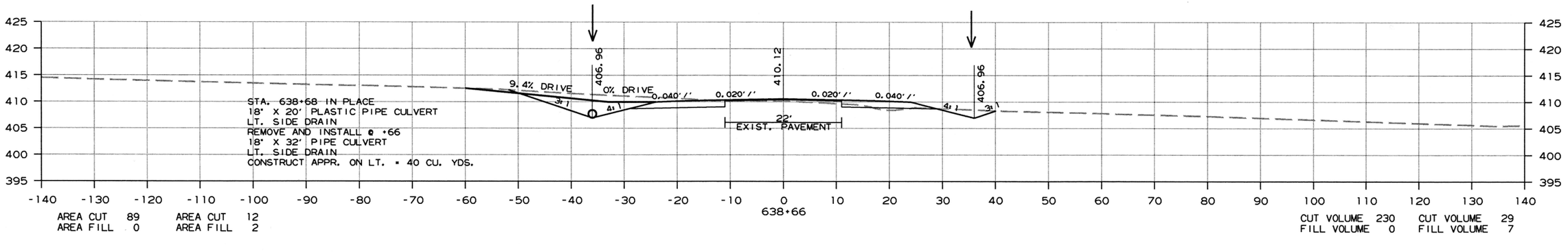
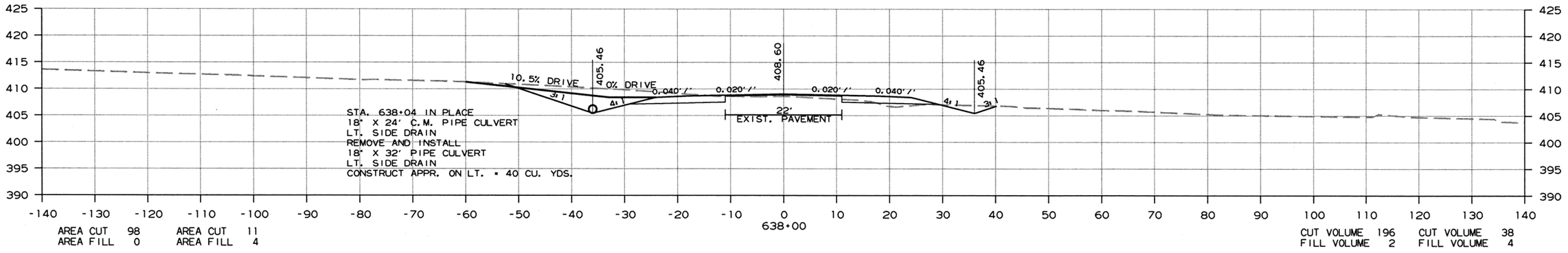
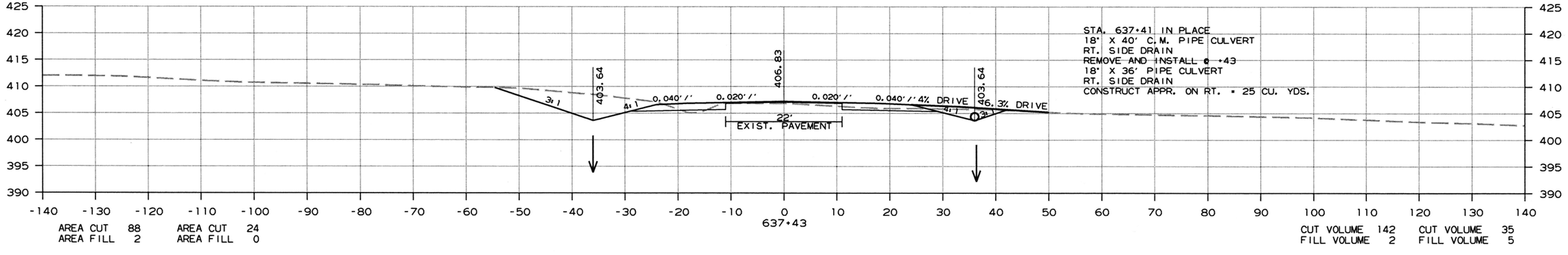
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 637+43 TO STA. 638+66

6/26/2018

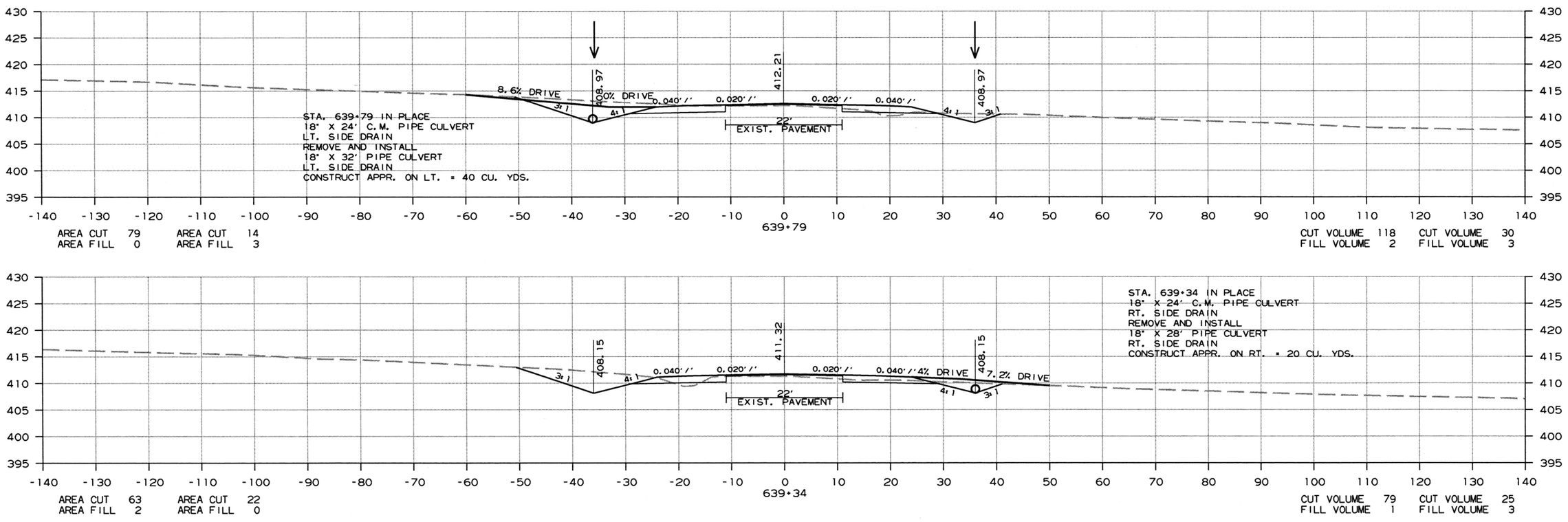
R050279.DGN

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.		050279	200	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2



CROSS SECTION STA. 639+00 TO STA. 639+79

6/26/2018

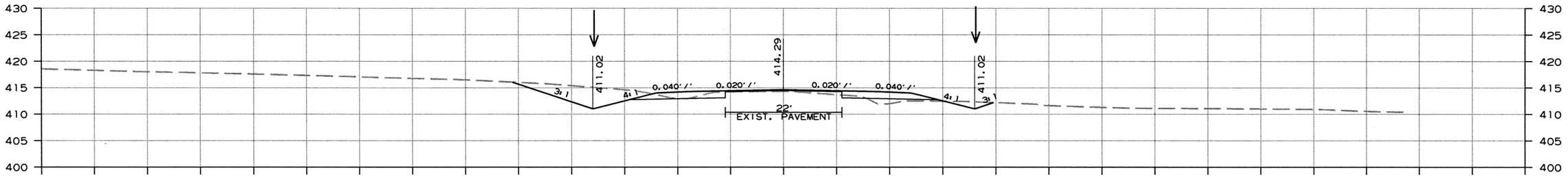
R050279.DGN

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.		050279	201	207

(2) CROSS SECTIONS

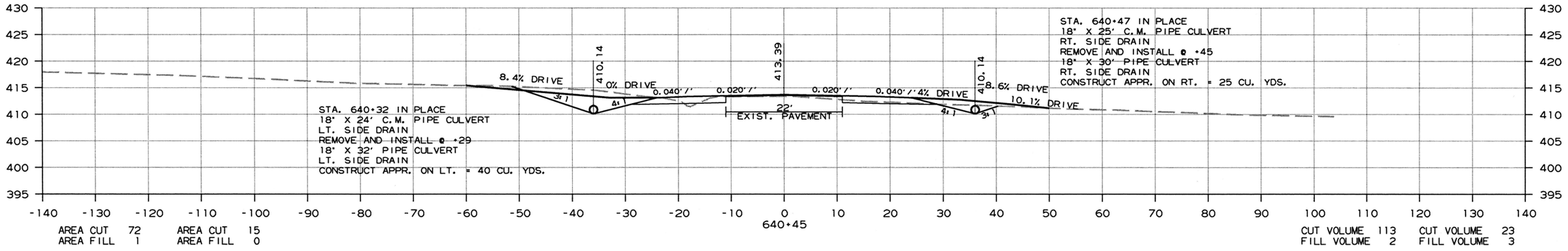
STAGE 1 STAGE 2

STAGE 1 STAGE 2



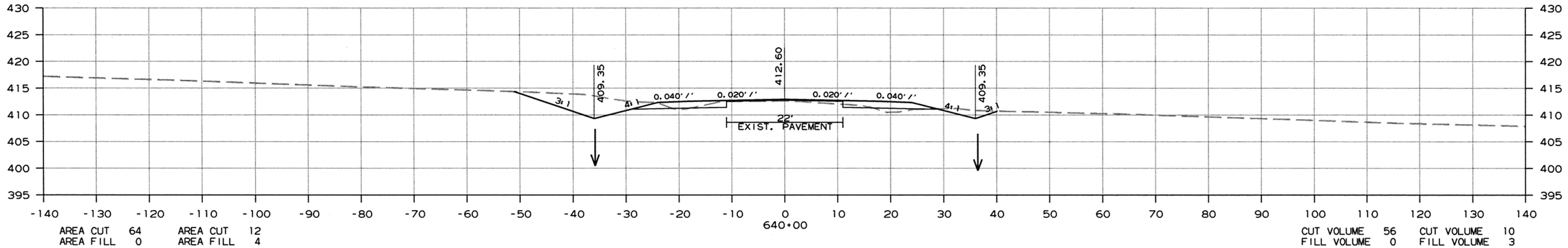
AREA CUT 65 AREA CUT 8
AREA FILL 0 AREA FILL 7

CUT VOLUME 141 CUT VOLUME 24
FILL VOLUME 2 FILL VOLUME 8



AREA CUT 72 AREA CUT 15
AREA FILL 1 AREA FILL 0

CUT VOLUME 113 CUT VOLUME 23
FILL VOLUME 2 FILL VOLUME 3



AREA CUT 64 AREA CUT 12
AREA FILL 0 AREA FILL 4

CUT VOLUME 56 CUT VOLUME 10
FILL VOLUME 0 FILL VOLUME 3

CROSS SECTION STA. 640+00 TO STA. 641+00

6/26/2018

R050279.DGN

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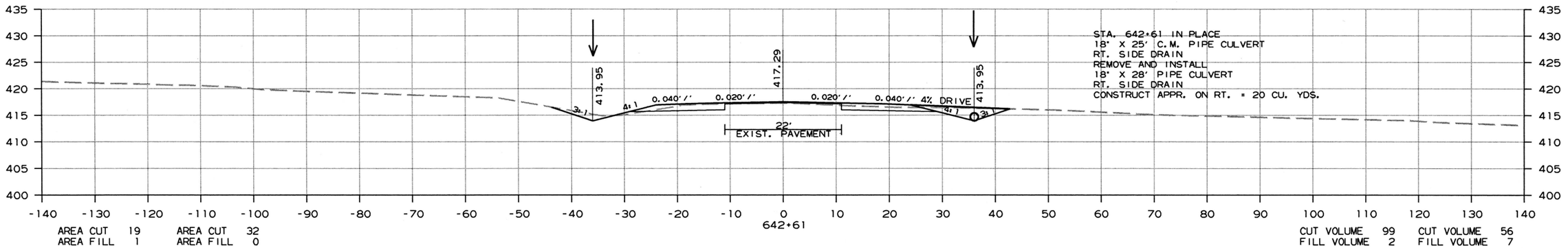
				6	ARK.			
				JOB NO.		050279	202	207

(2) CROSS SECTIONS

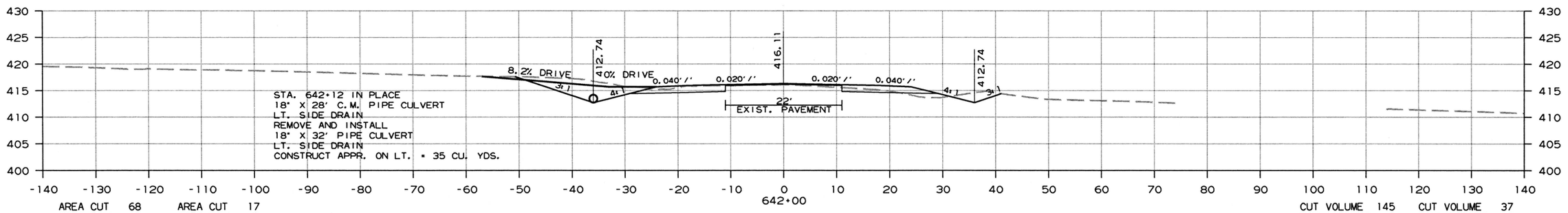
STAGE 1 STAGE 2

STAGE 1 STAGE 2



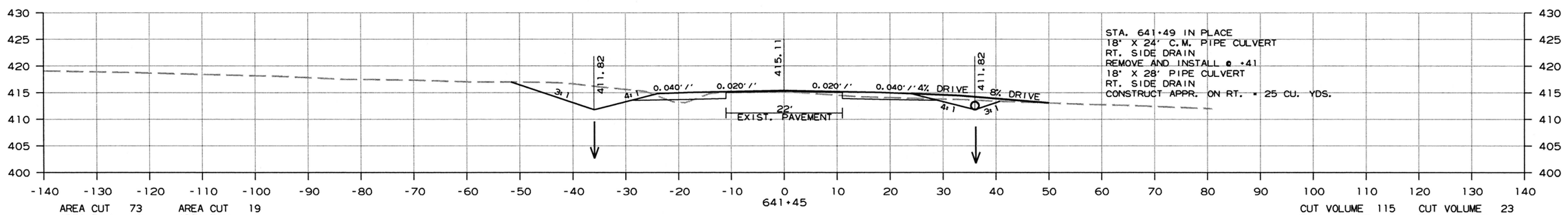
AREA CUT 19 AREA CUT 32
AREA FILL 1 AREA FILL 0

CUT VOLUME 99 CUT VOLUME 56
FILL VOLUME 2 FILL VOLUME 7



AREA CUT 68 AREA CUT 17
AREA FILL 0 AREA FILL 5

CUT VOLUME 145 CUT VOLUME 37
FILL VOLUME 2 FILL VOLUME 6



AREA CUT 73 AREA CUT 19
AREA FILL 2 AREA FILL 0

CUT VOLUME 115 CUT VOLUME 23
FILL VOLUME 2 FILL VOLUME 7

CROSS SECTION STA. 641+45 TO STA. 642+61

6/26/2018

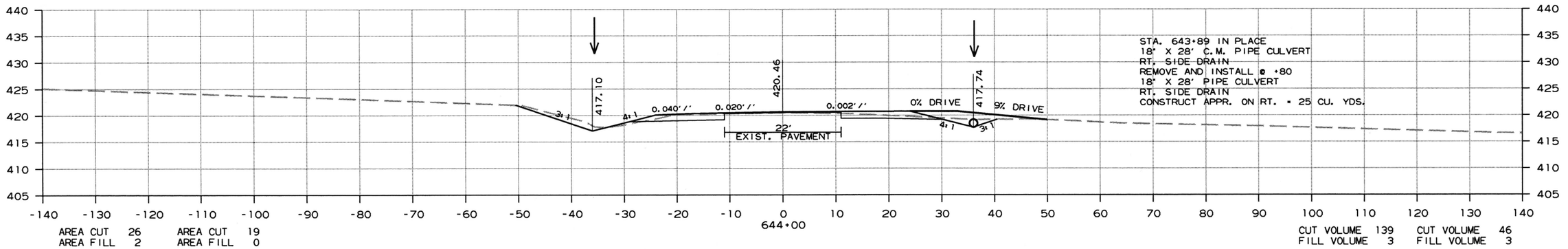
R050279.DGN

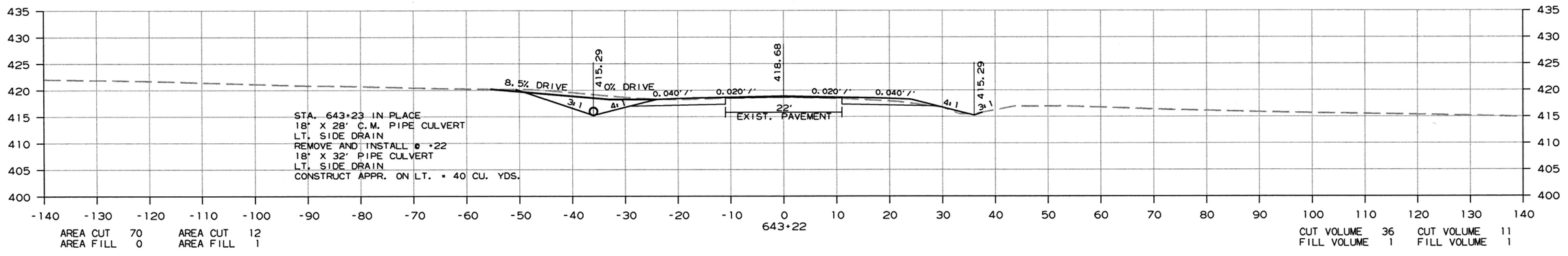
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	203	207

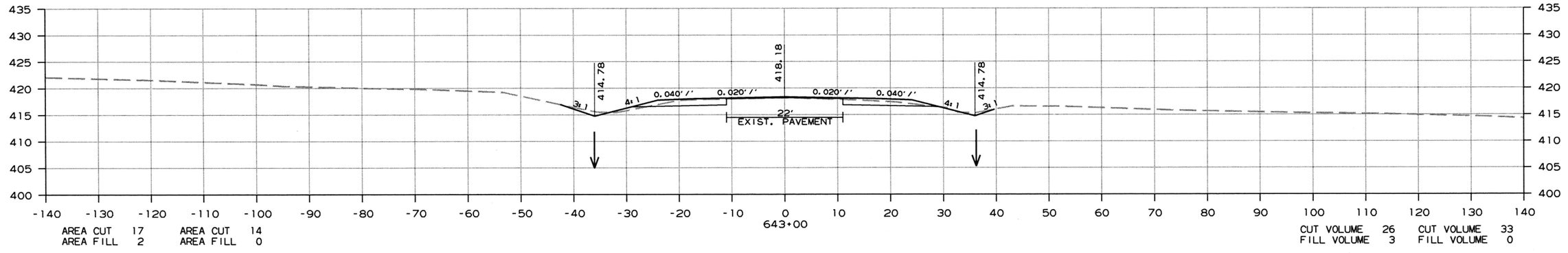
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 643+00 TO STA. 644+00

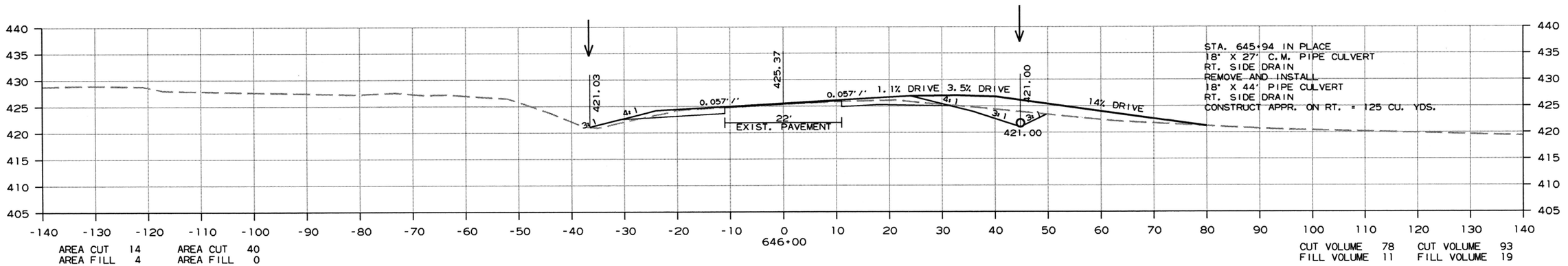
6/26/2018

R050279.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.		050279	204	207

(2) CROSS SECTIONS

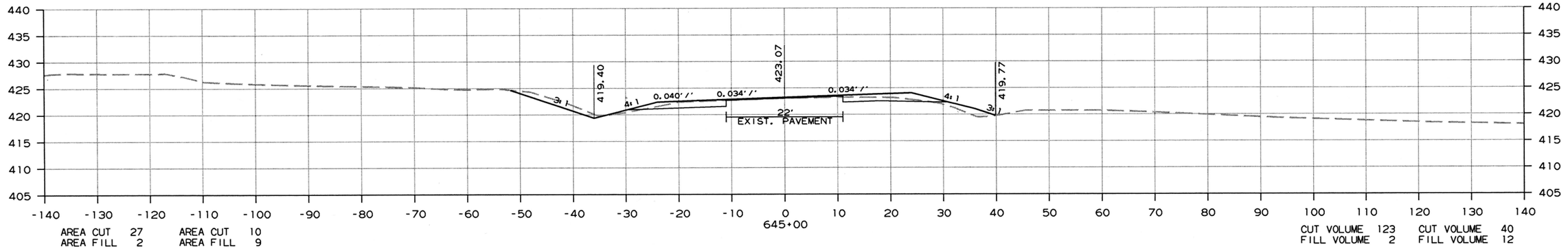
STAGE 1 STAGE 2



AREA CUT 14 AREA FILL 4 | AREA CUT 40 AREA FILL 0

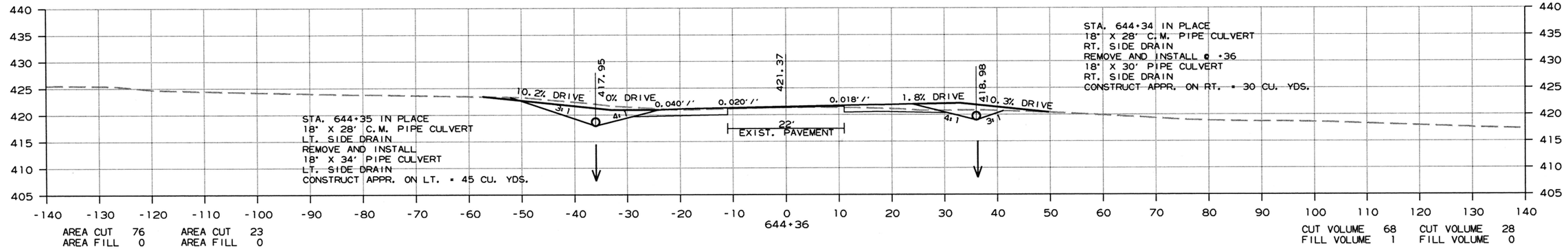
CUT VOLUME 78 FILL VOLUME 11 | CUT VOLUME 93 FILL VOLUME 19

STAGE 1 STAGE 2



AREA CUT 27 AREA FILL 2 | AREA CUT 10 AREA FILL 9

CUT VOLUME 123 FILL VOLUME 2 | CUT VOLUME 40 FILL VOLUME 12



AREA CUT 76 AREA FILL 0 | AREA CUT 23 AREA FILL 0

CUT VOLUME 68 FILL VOLUME 1 | CUT VOLUME 28 FILL VOLUME 0

CROSS SECTION STA. 644+36 TO STA. 646+00

6/26/2018

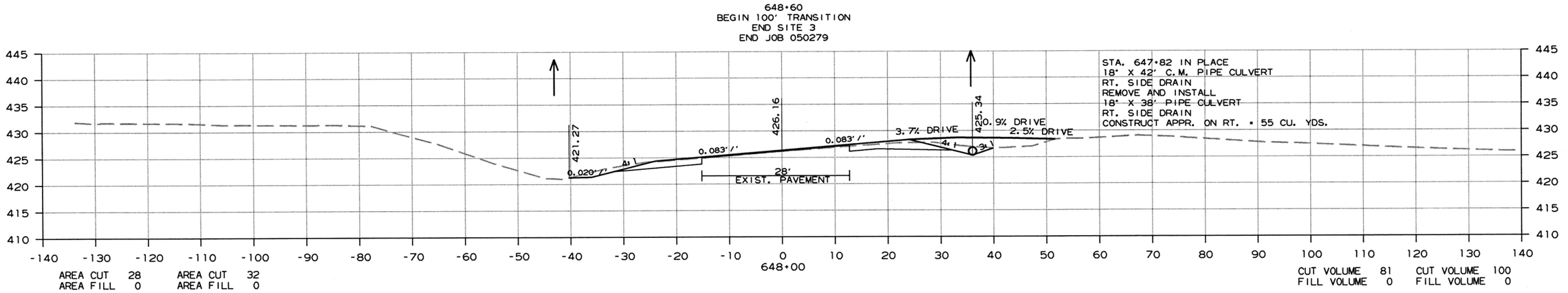
R050279.DGN

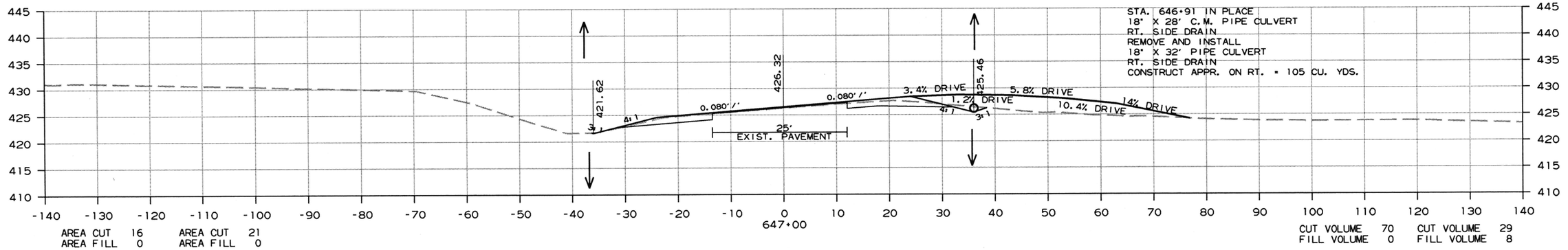
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	205	207

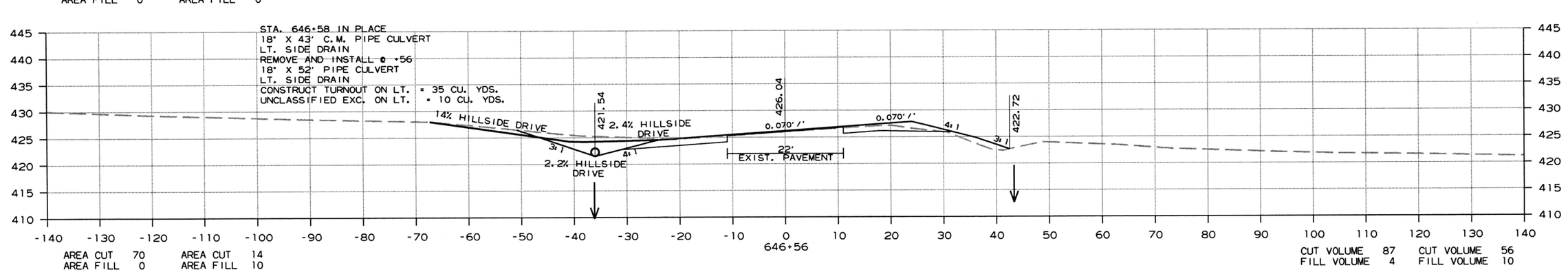
(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2







CROSS SECTION STA. 646+56 TO STA. 648+00

6/26/2018

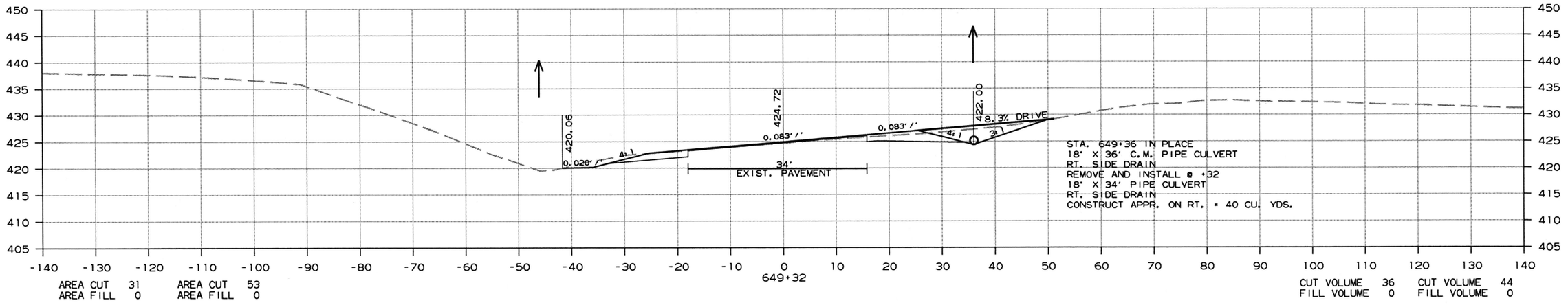
R050279.DGN

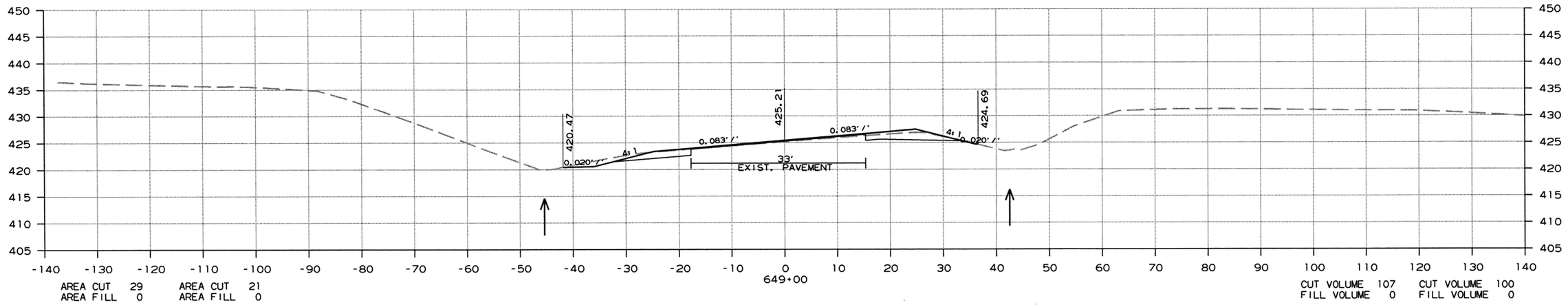
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050279	206	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 1 STAGE 2





CROSS SECTION STA. 649+00 TO STA. 649+32

6/26/2018

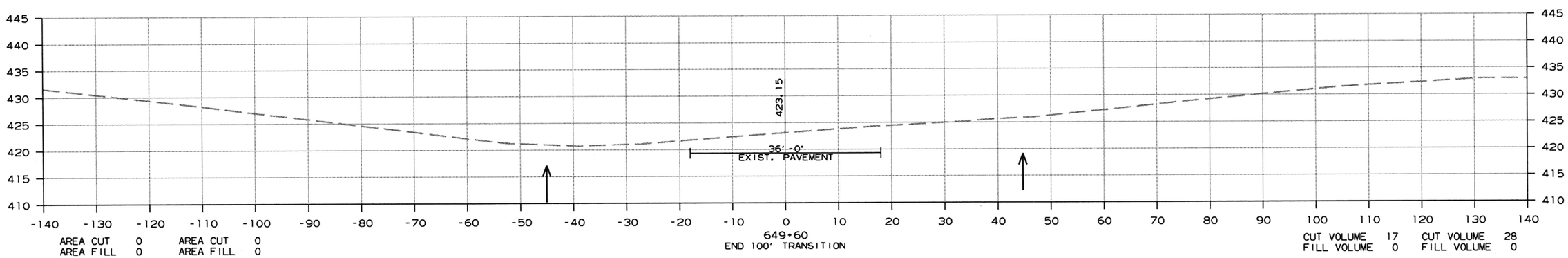
R050279.DGN

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.		050279	207	207

(2) CROSS SECTIONS

STAGE 1 STAGE 2

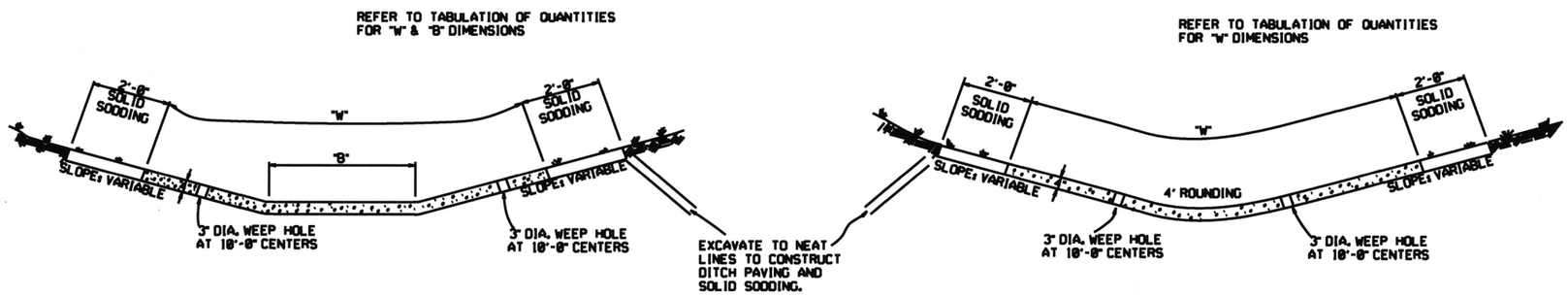
STAGE 1 STAGE 2



CROSS SECTION STA. 649+60

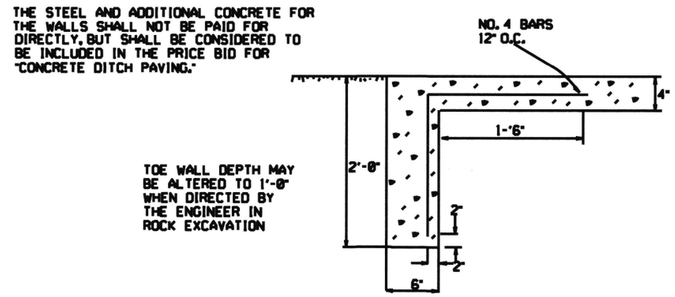
6/26/2018

R050279.DGN

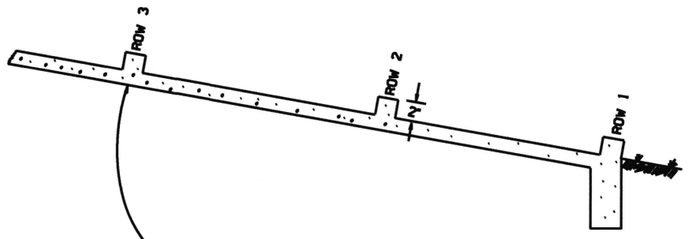


TYPE A

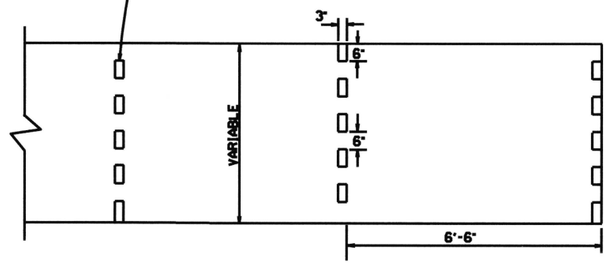
TYPE B



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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 INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

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.

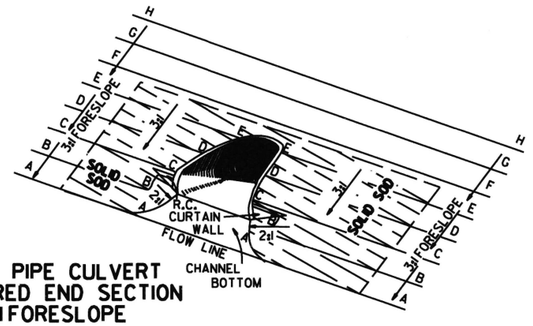
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
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.	495-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

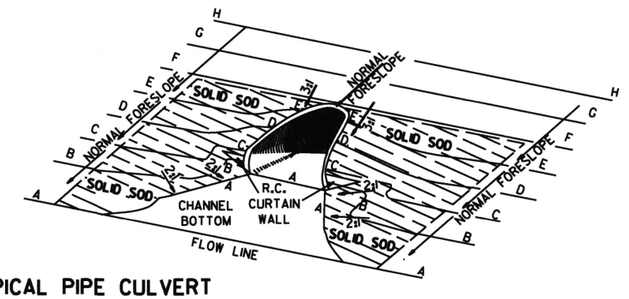
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

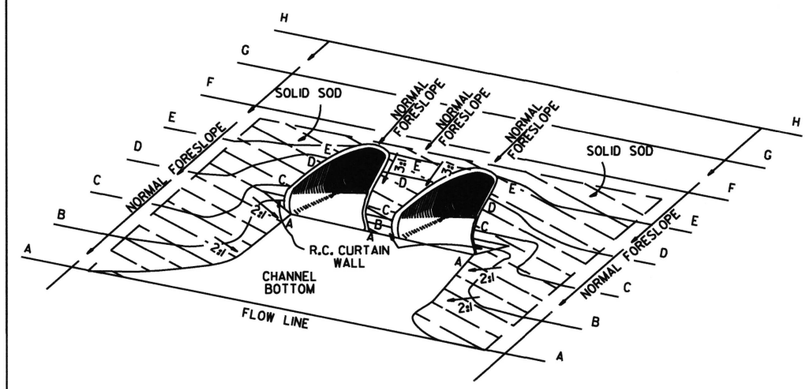
STANDARD DRAWING CDP-1



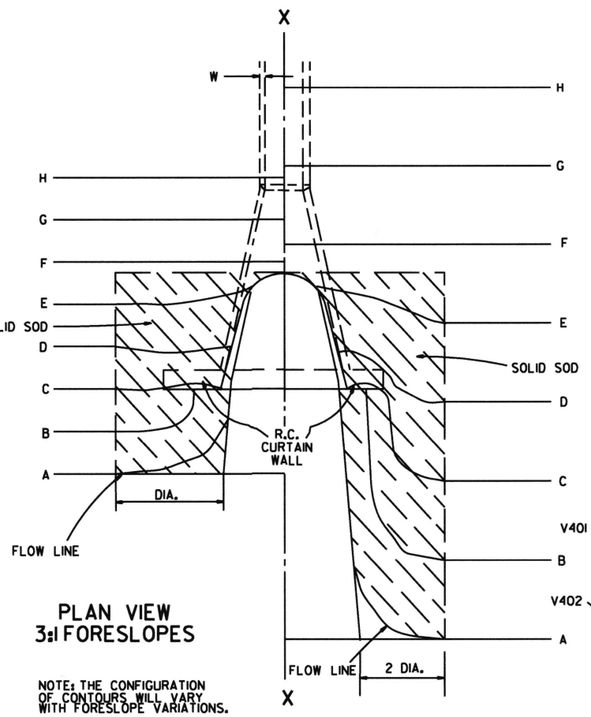
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

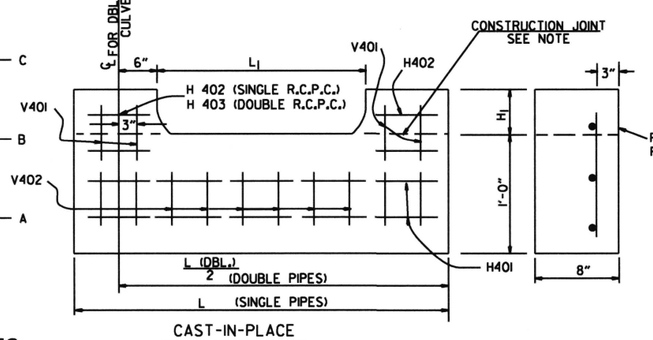
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

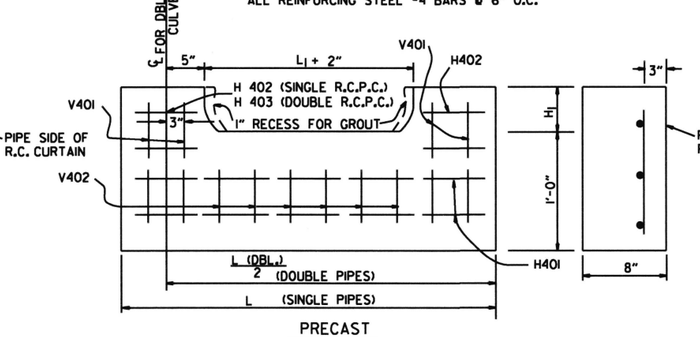
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	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.



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

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	V401 L	NO.	V402	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403	NO.	V401 L	NO.	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.

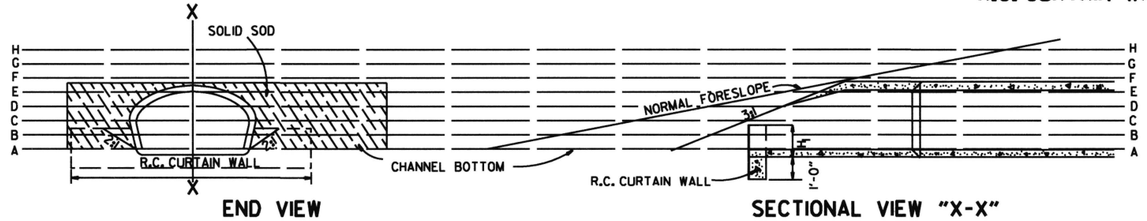
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	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 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

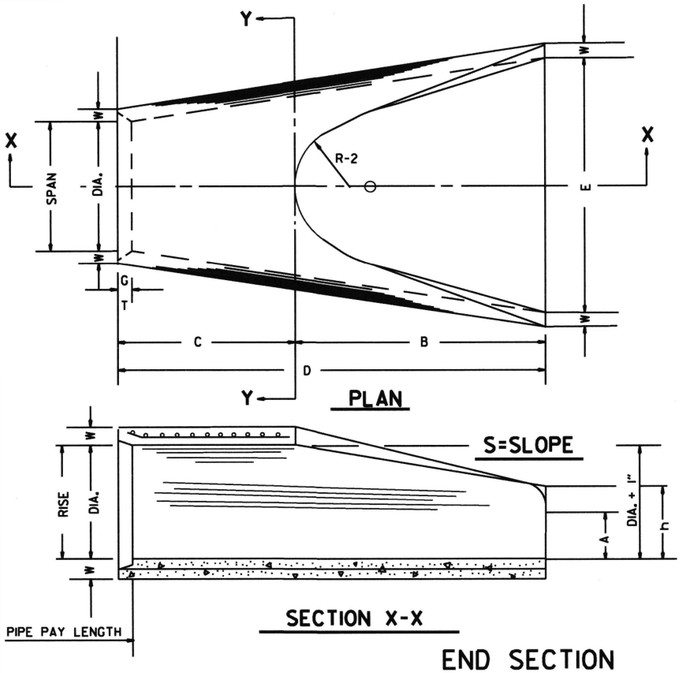
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

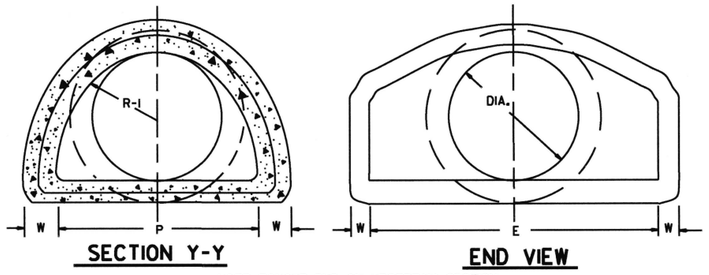
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 5/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10¼"	8'-1¼"	6'-0"	3:1	37"	47 1/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 1/8"	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"	36 5/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 1/16"	38 5/16"	24"	5"	13250	4'-6"

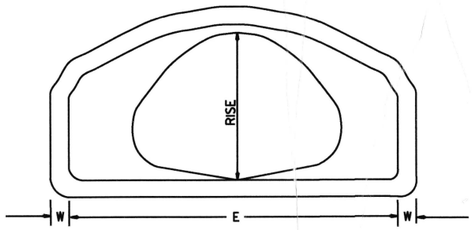


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

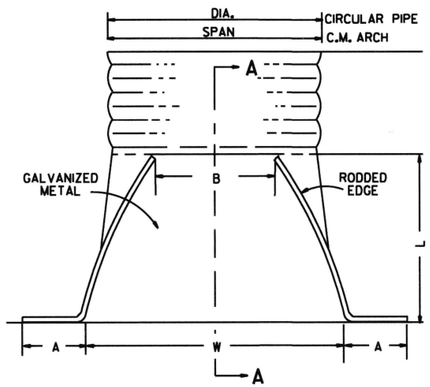
ARCH PIPE

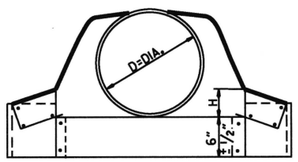
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 5/16"	15"	2½"	2½
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 1/16"	20"	3"	2½
36	43¾	44	26 5/8	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 1/16"	22"	3½"	2½
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72/15"	24"	4¾"	2½
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2½

• 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

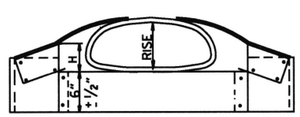




CIRCULAR PIPE

CIRCULAR PIPE

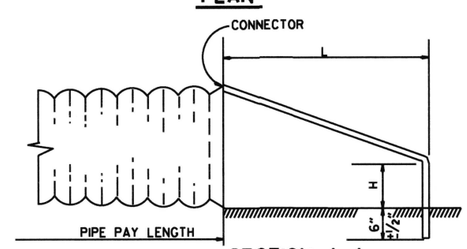
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½
15	16	7	8	6	26	30	2½
18	16	8	10	6	31	36	2½
21	16	9	12	6	36	42	2½
24	16	10	13	6	41	48	2½
30	14	12	16	8	51	60	2½
36	14	14	19	9	60	72	2½
42	12	16	22	11	69	84	2½
48	12	18	27	12	78	90	2½
54	12	18	30	12	84	102	2
60	12	18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



C.M. ARCH PIPE

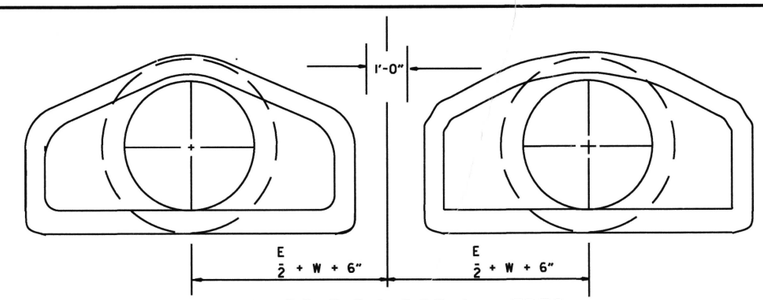
C.M. ARCH PIPE

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	16
18"	21	15	7	10	6	23	36	2½	16
21"	24	18	8	12	6	28	42	2½	16
24"	28	20	9	14	6	32	48	2½	16
30"	35	24	10	16	6	39	60	2½	14
36"	42	29	12	18	8	46	75	2½	14
42"	49	33	13	21	9	53	85	2½	12
48"	57	38	18	26	12	63	90	2½	12
54"	64	43	18	30	12	70	102	2¼	12
60"	71	47	18	33	12	77	114	2¼	12

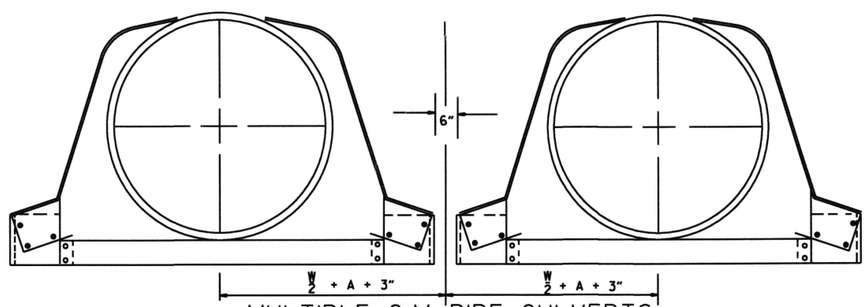


NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



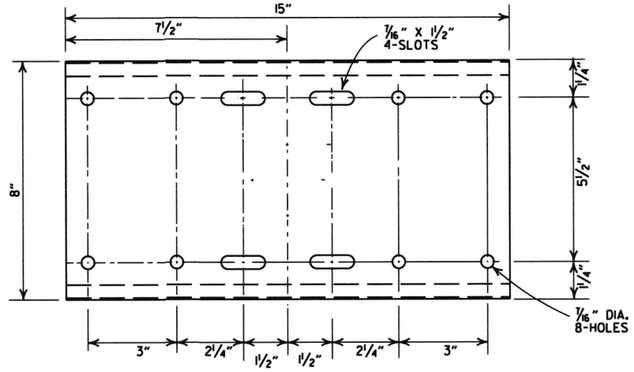
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
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

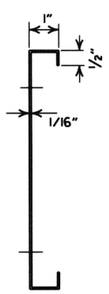
ARKANSAS STATE HIGHWAY COMMISSION

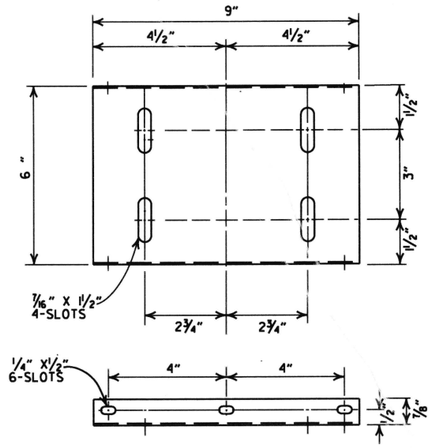
FLARED END SECTION

STANDARD DRAWING FES-2

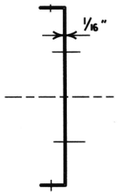


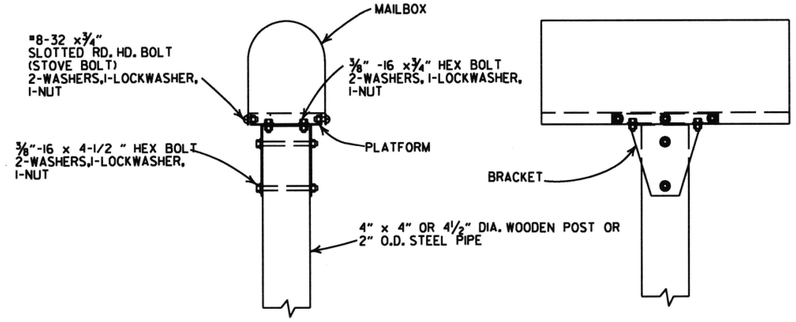
SHELF



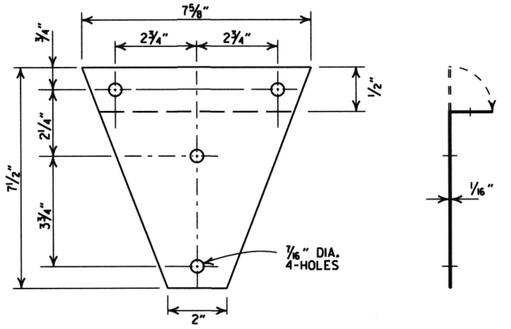


PLATFORM

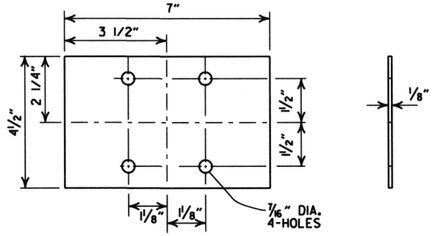




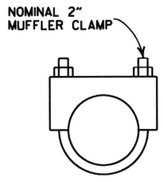
SINGLE INSTALLATION



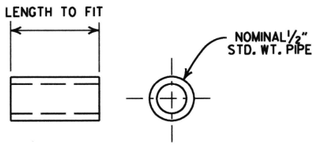
BRACKET



ANTI-TWIST PLATE



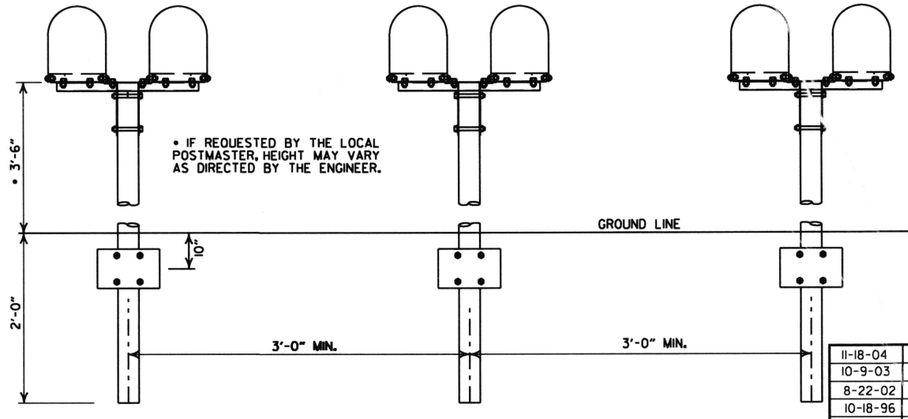
CLAMP



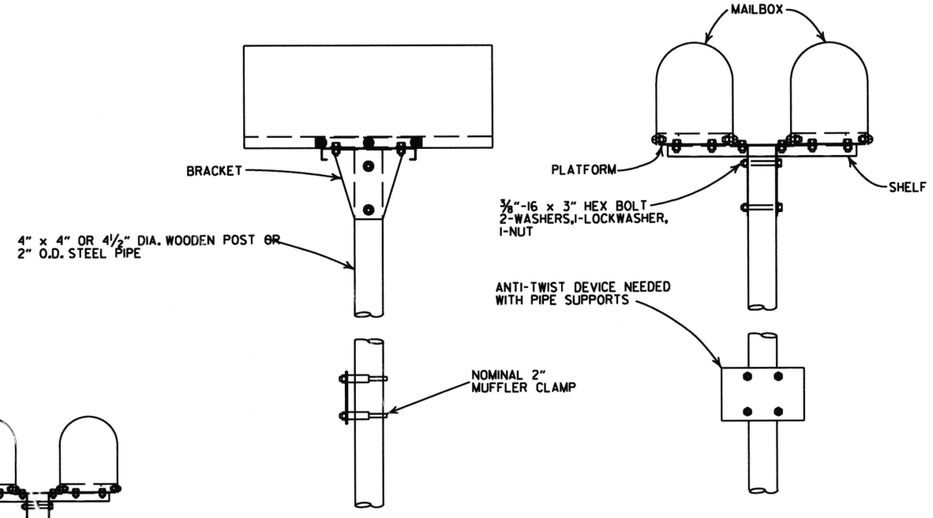
SPACER

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 ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



SPACING FOR MULTIPLE POST INSTALLATION



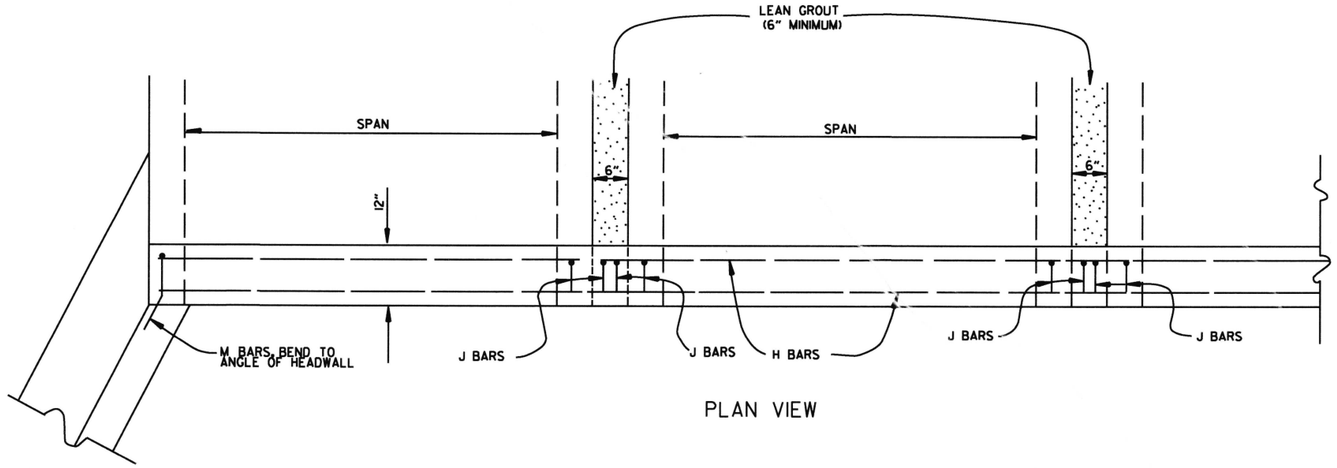
DOUBLE INSTALLATION

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

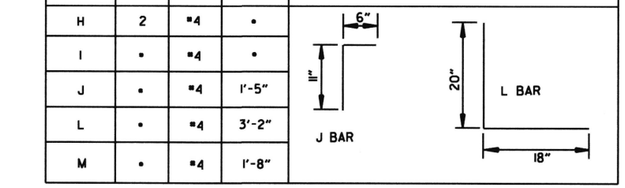
STANDARD DRAWING MB-1



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.

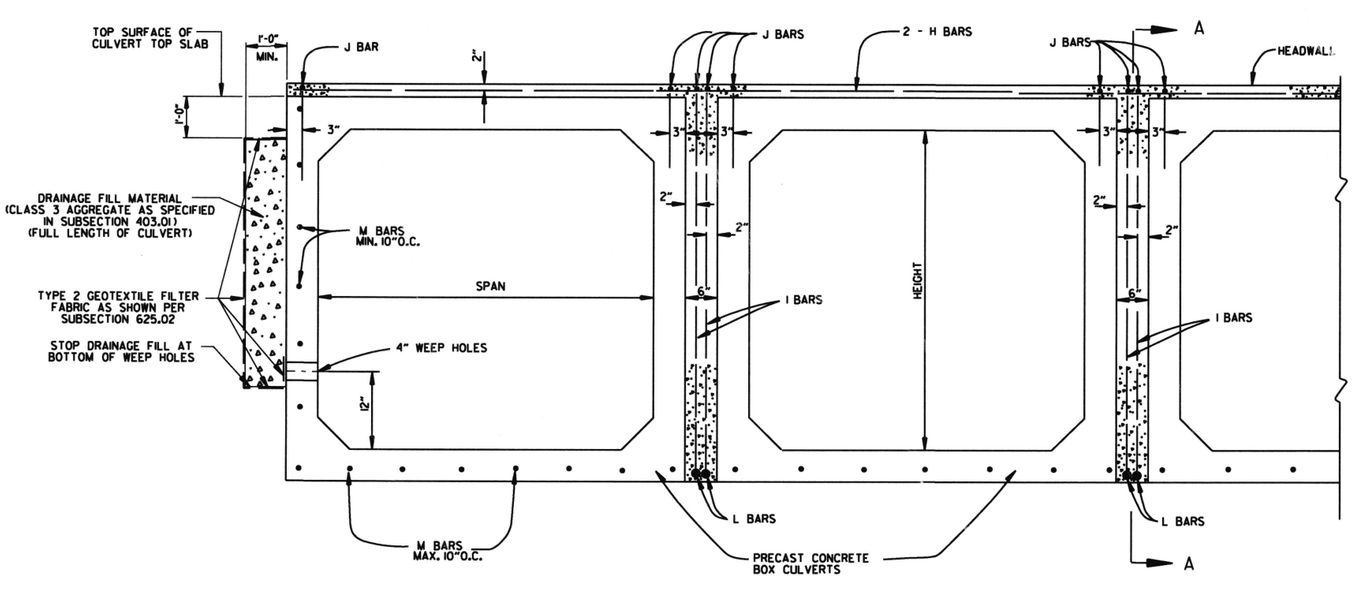
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

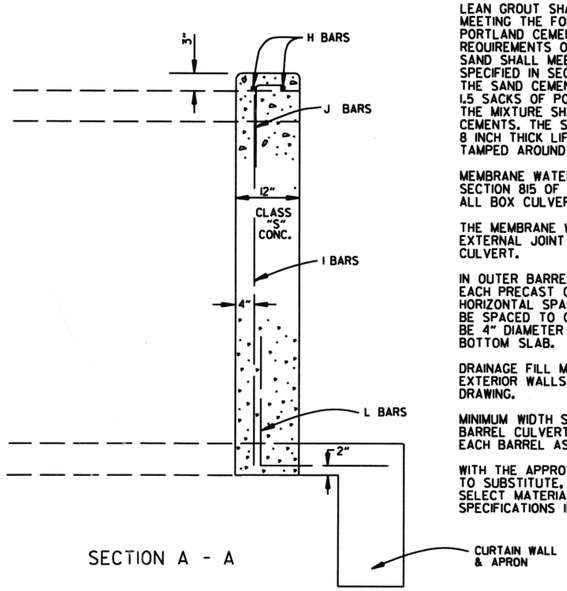
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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	
4-10-05	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	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

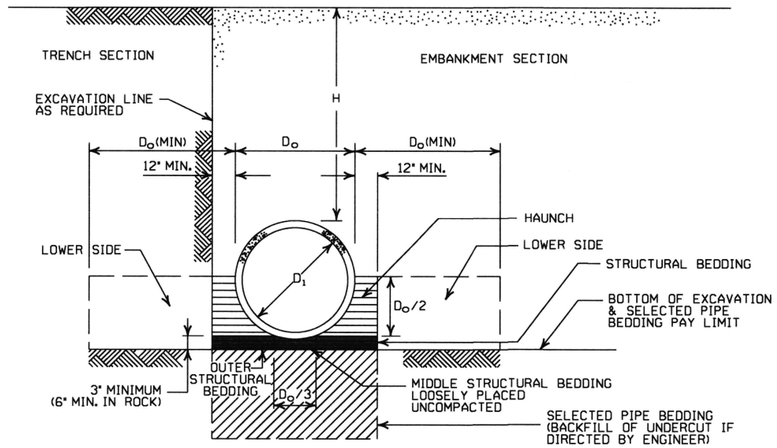
- LEGEND -

D_1 = 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 DEPARTMENT OF TRANSPORTATION 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.

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 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.

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

CORRUGATED METAL PIPE ARCHES

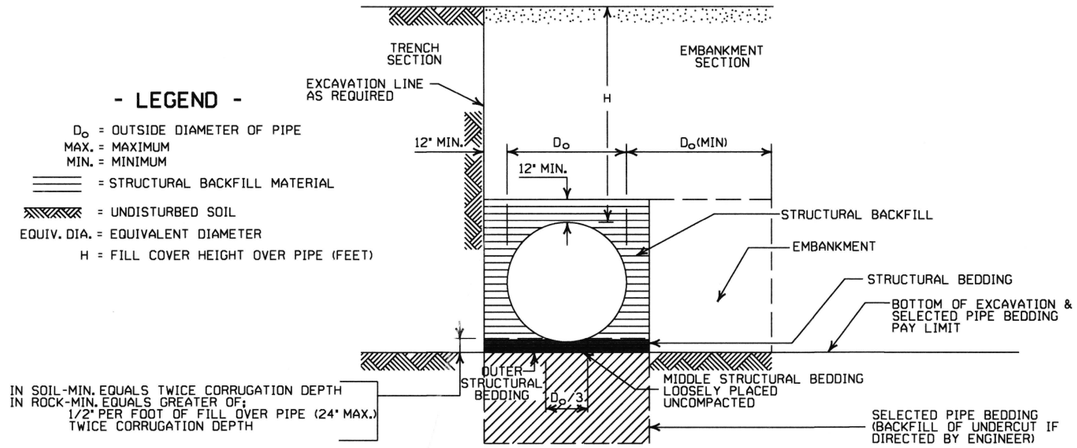
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	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			
			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.

- LEGEND -

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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. 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 DEPARTMENT OF TRANSPORTATION 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."

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 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

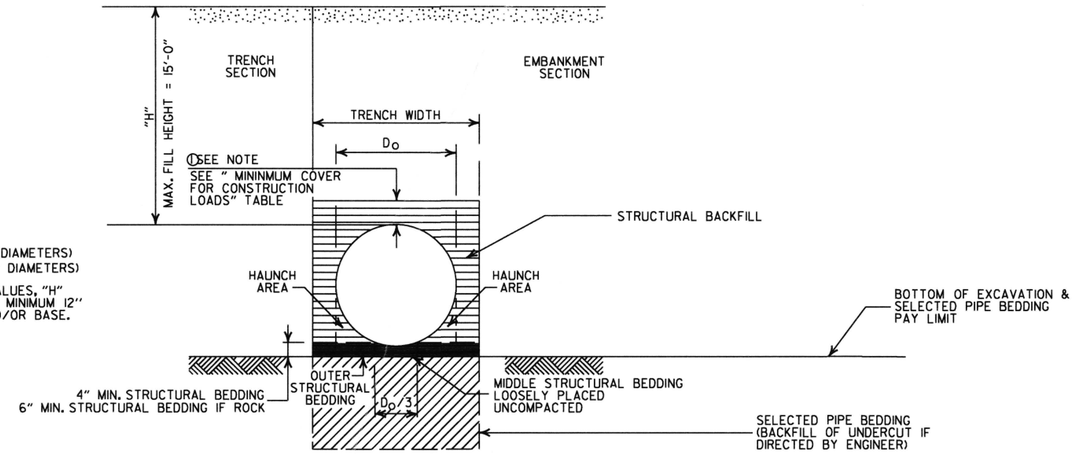
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

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

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



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.

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

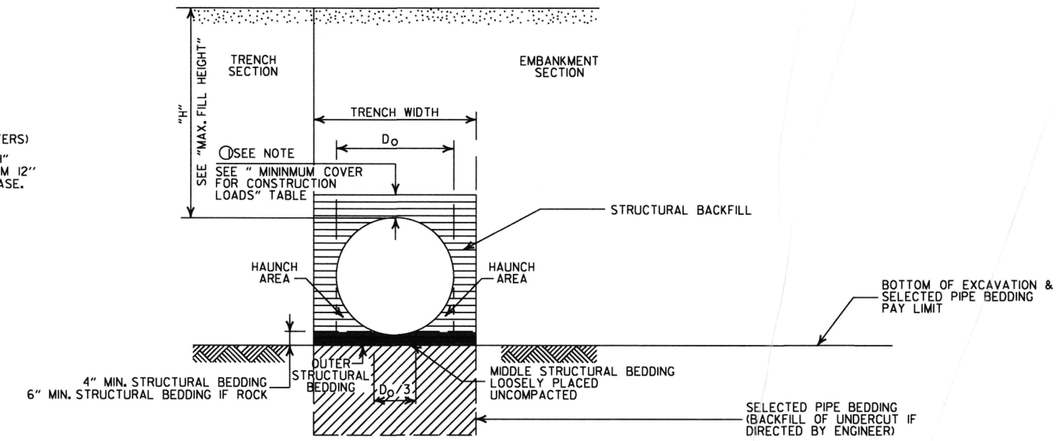
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS 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

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

*SM3 WILL NOT BE ALLOWED.

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

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

MULTIPLE INSTALLATION OF POLYPROPYLENE 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"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

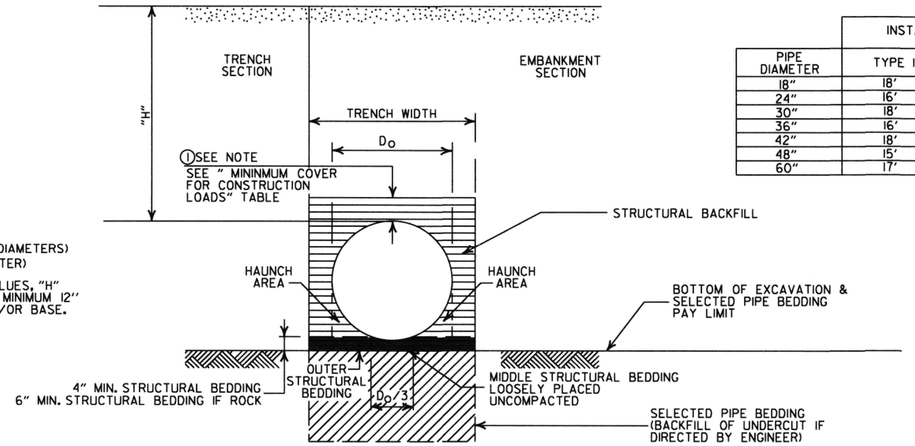
①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (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.



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM 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, SIXTH EDITION (2012) WITH 2013 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. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. 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

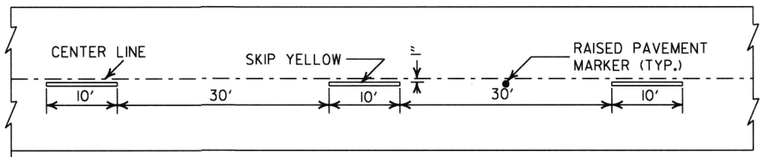
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

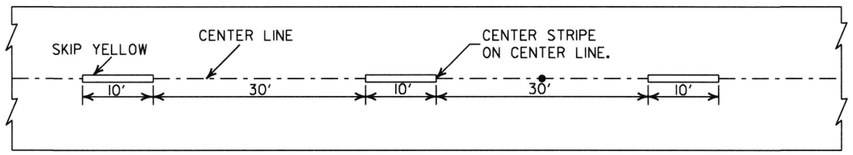
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

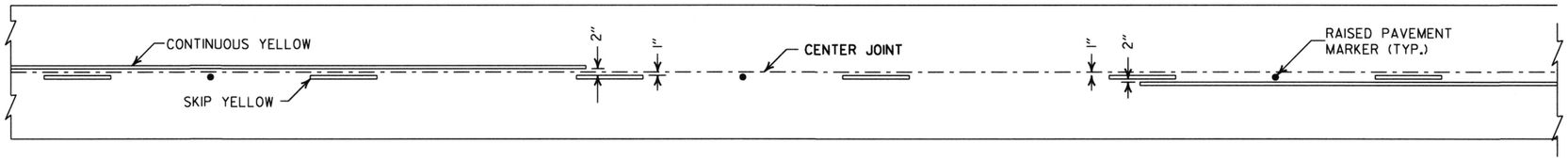


CONCRETE PAVEMENT

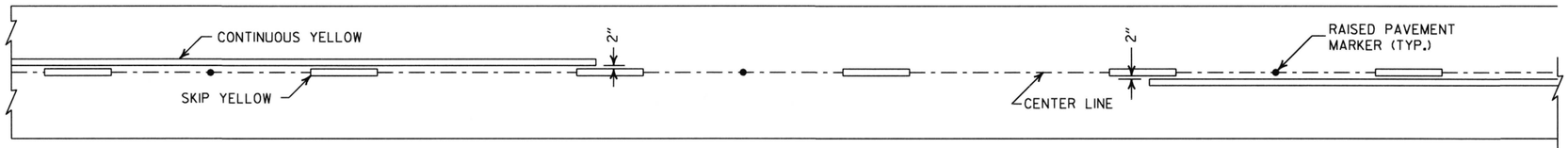


ASPHALT PAVEMENT

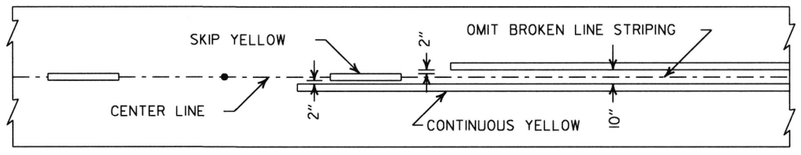
BROKEN LINE STRIPING



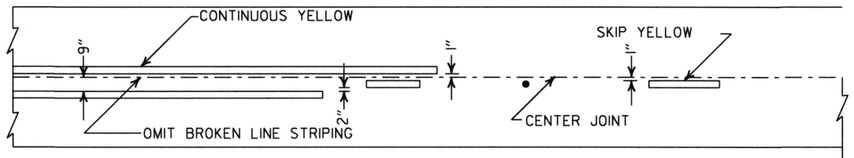
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

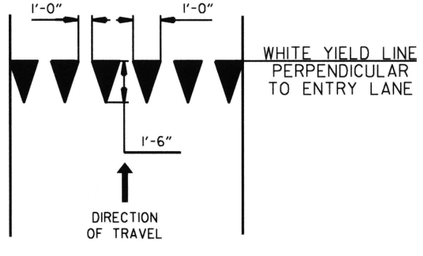


ASPHALT PAVEMENT

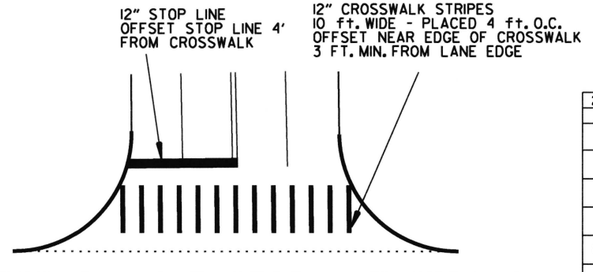


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

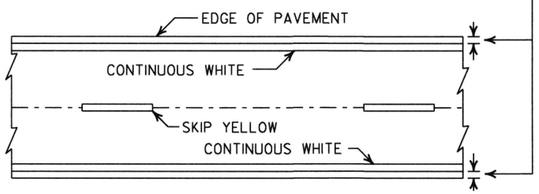


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

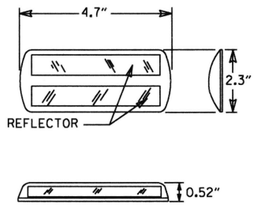
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II RED/CLEAR OR YELLOW/YELLOW



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 ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
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
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

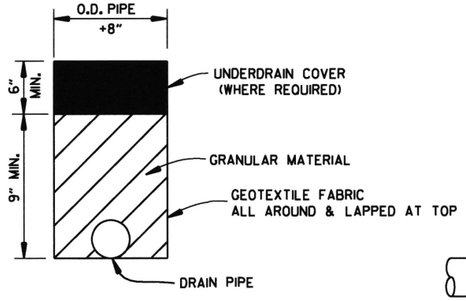
PAVEMENT MARKING DETAILS

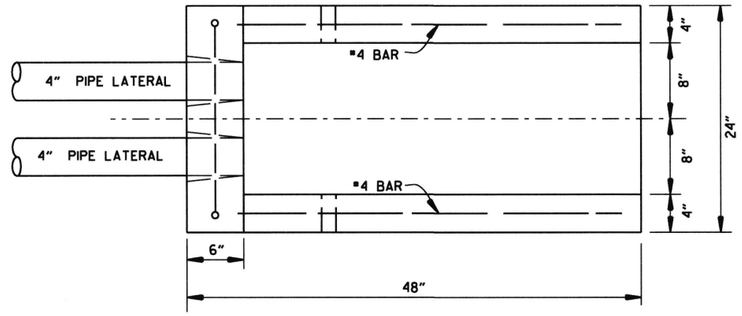
STANDARD DRAWING PM-1

NOTE:

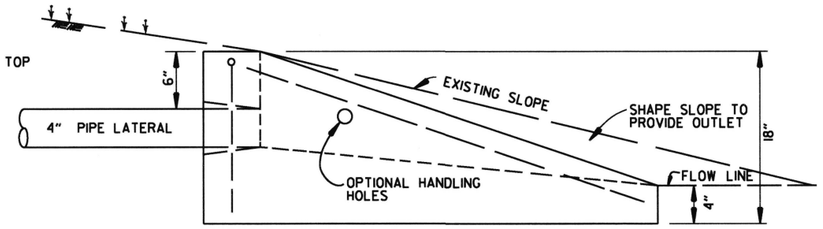
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

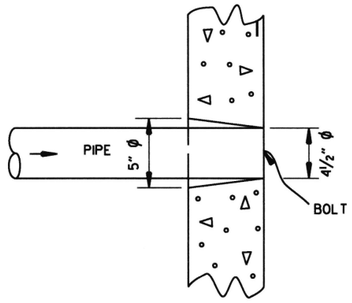




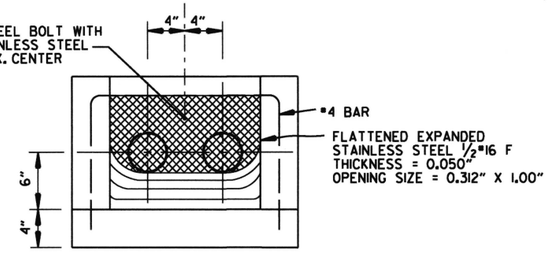
PLAN VIEW



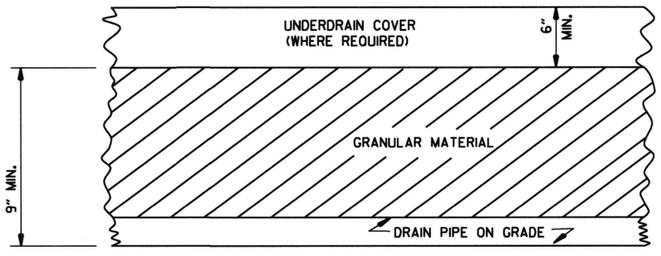
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

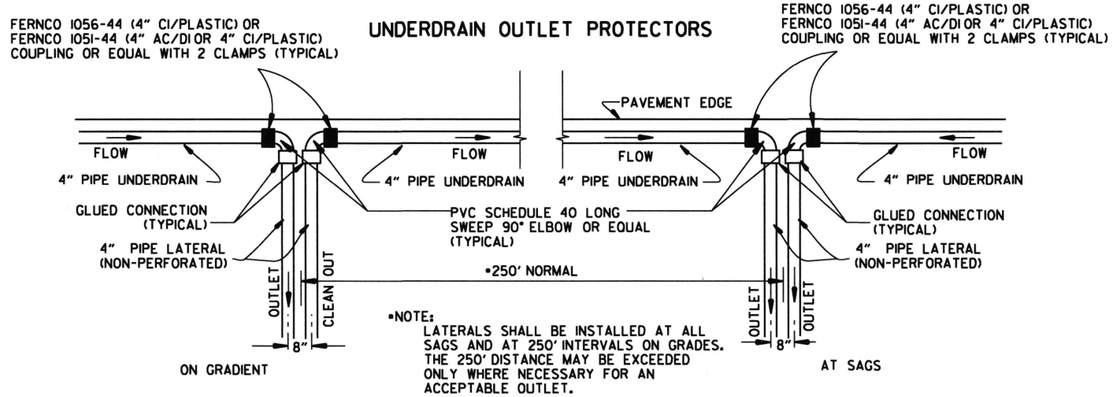


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



•NOTE:
LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

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.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

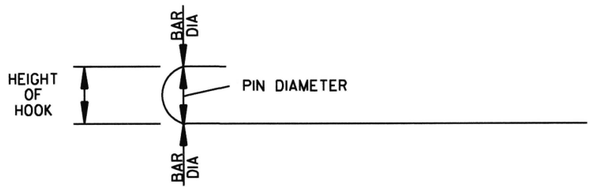
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	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 2¾ 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

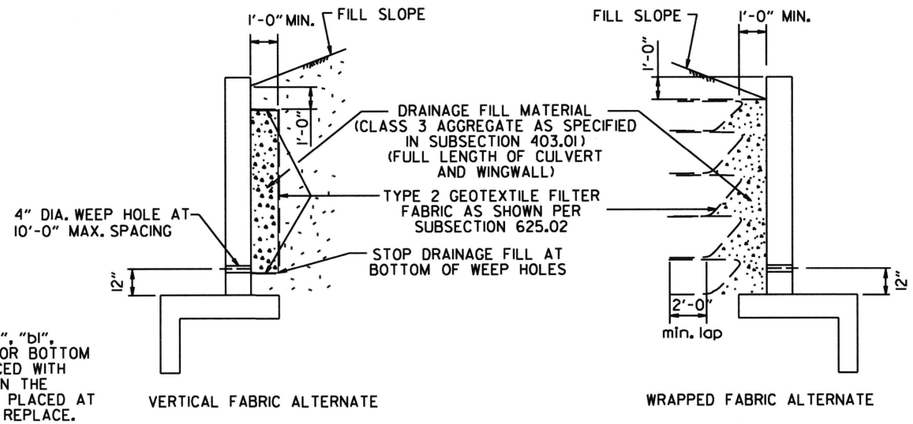
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

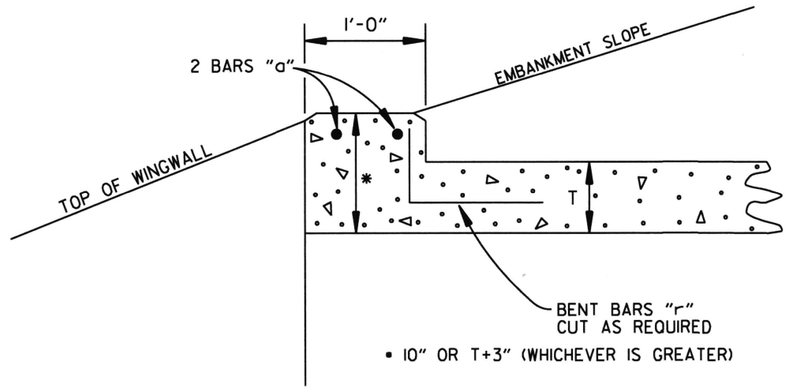
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 ½ 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.

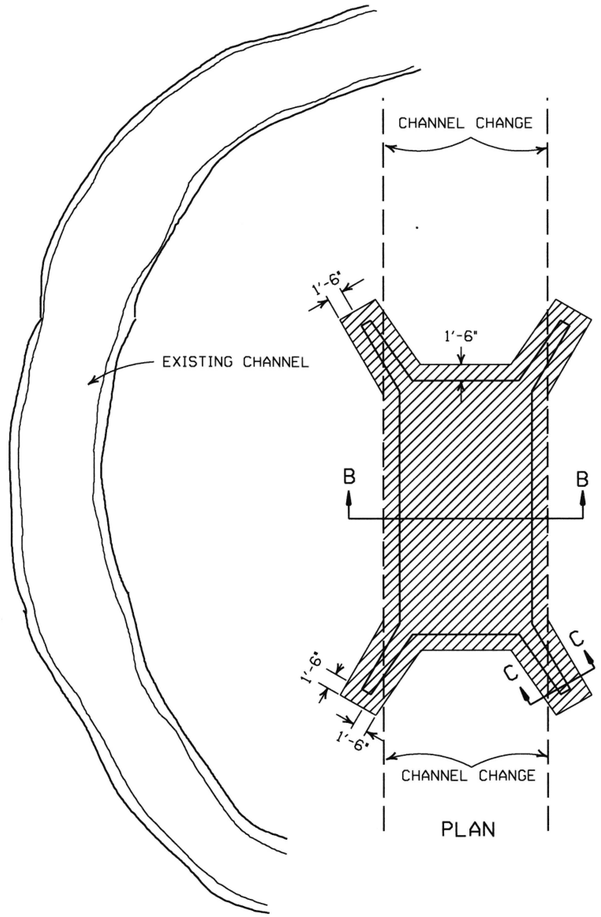
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

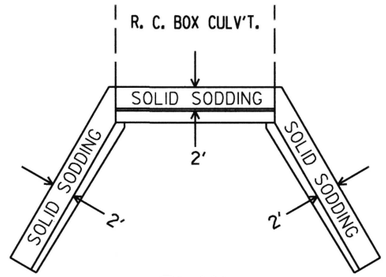
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

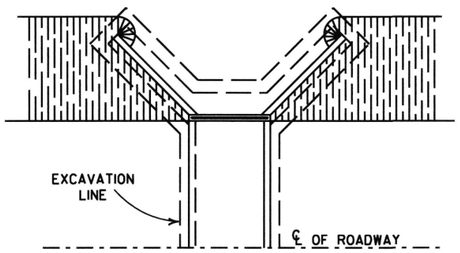
SOLID SODDING



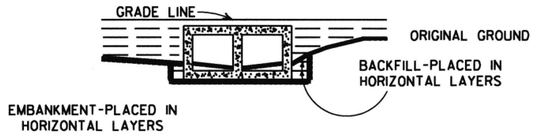
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

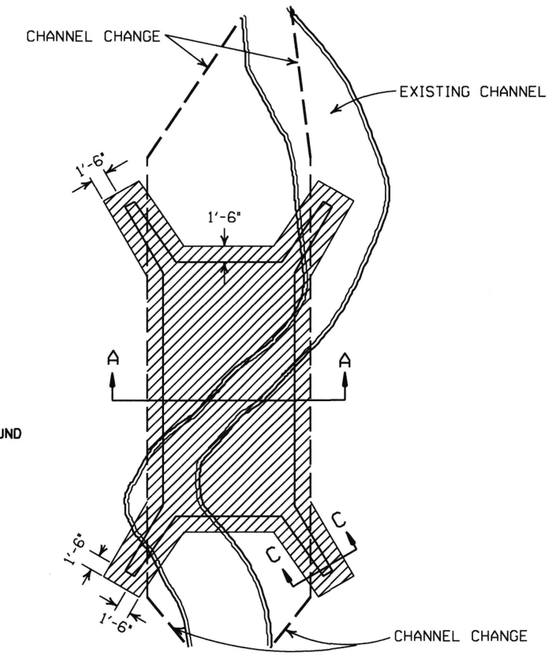


PLAN

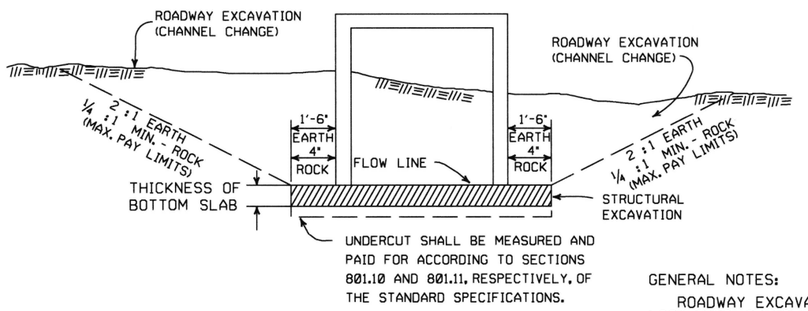


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

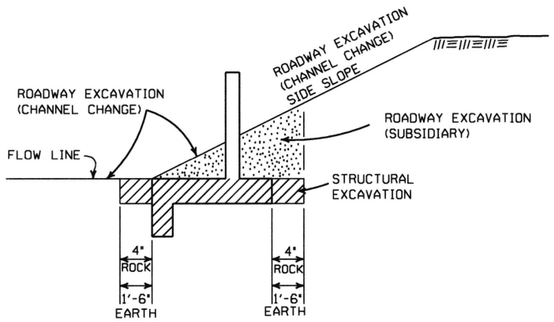


PLAN

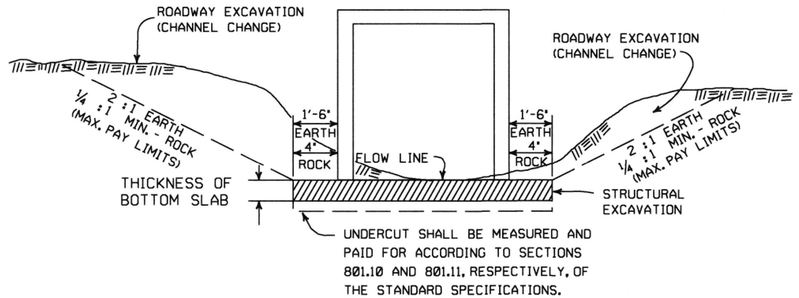


SECTION B-B

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.

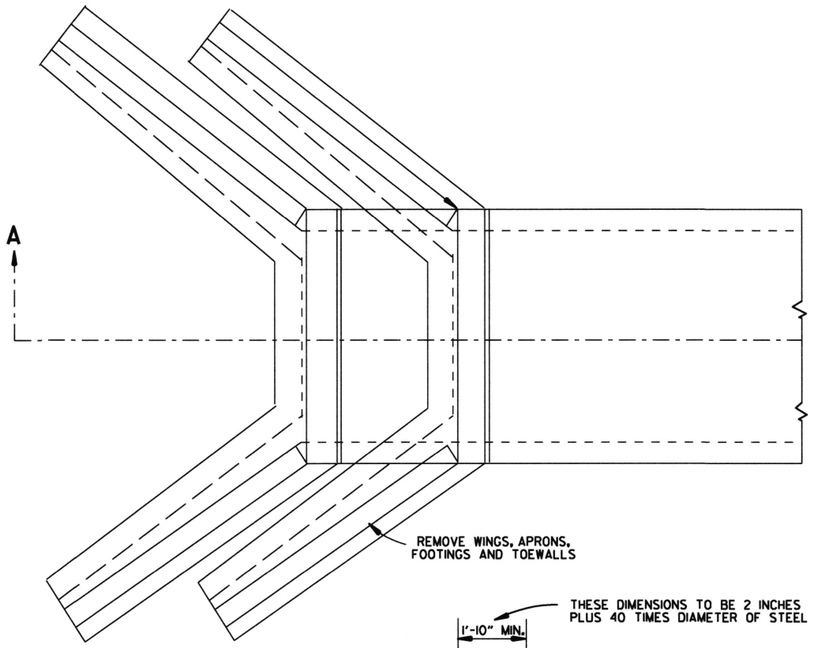
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
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

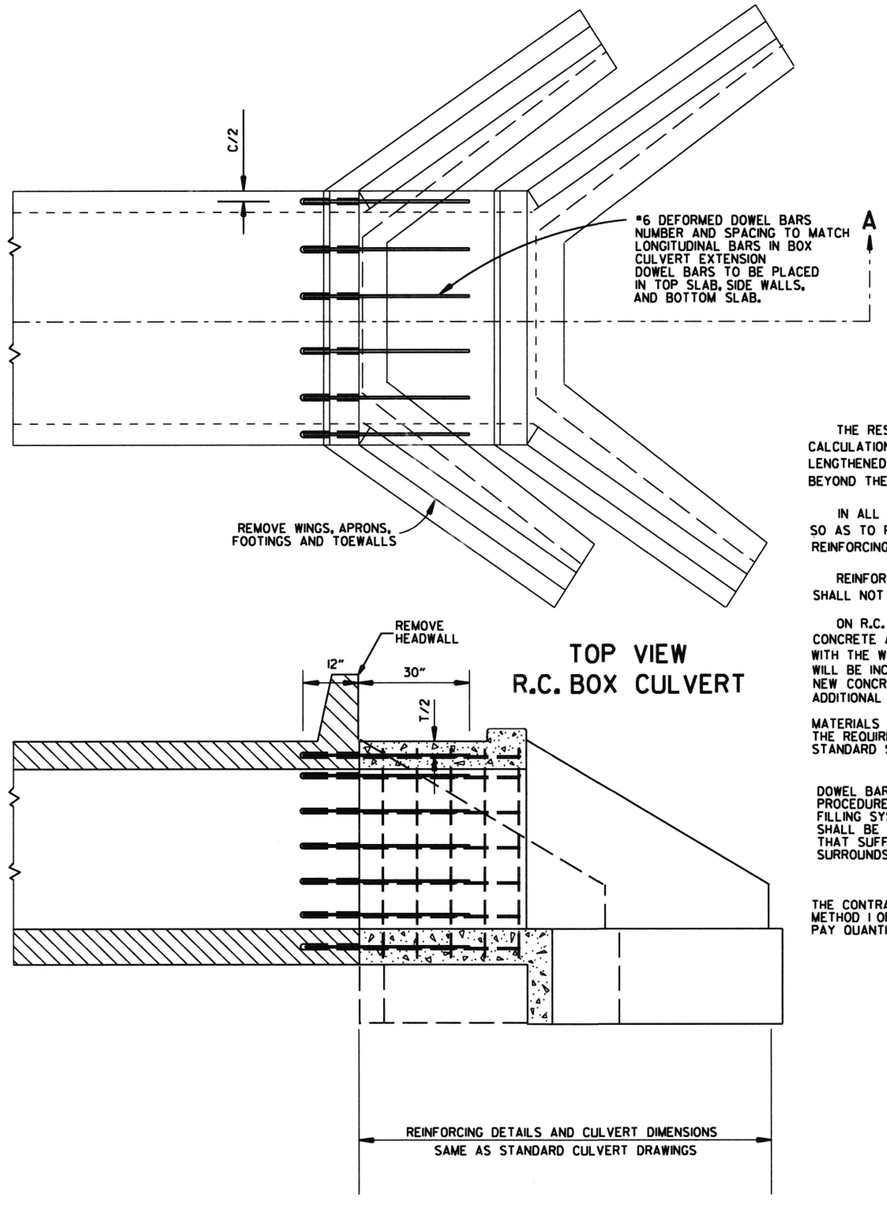
STANDARD DRAWING RCB-2



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

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158	300	0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168		0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	350
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235		0.088	259	
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254	350	0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274	350	D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269	300	0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278		D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261	300																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												
D MAX = 28° 30'																														

ABBREVIATIONS

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

GENERAL NOTES

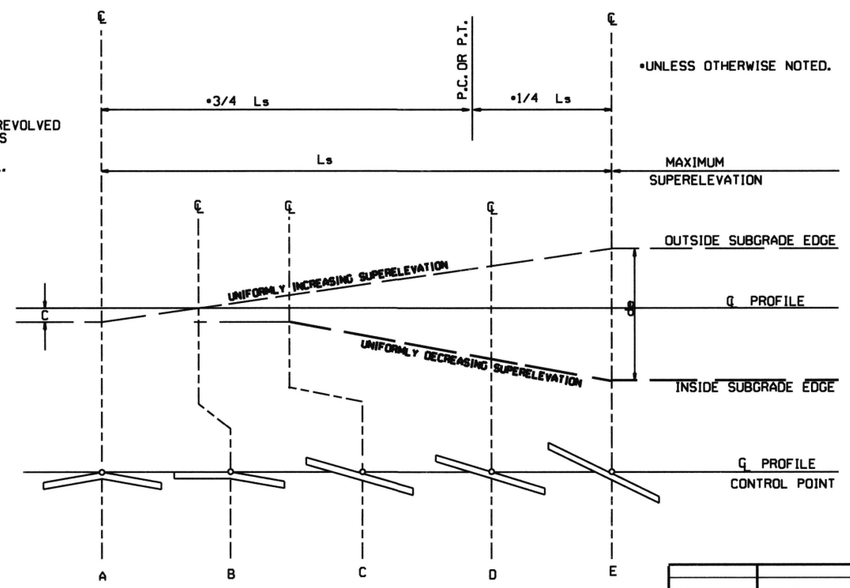
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED 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%

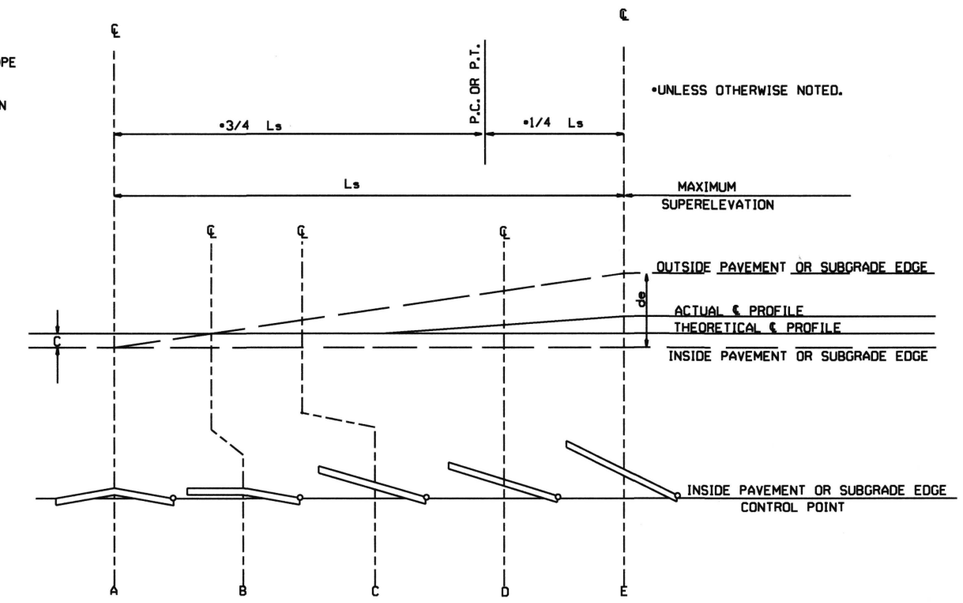
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

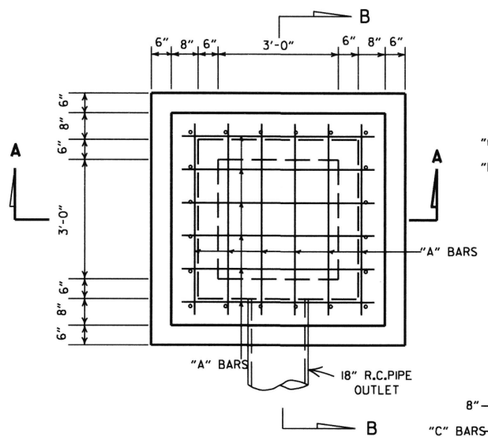
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

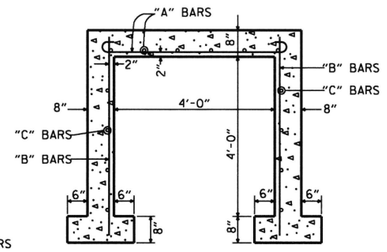
DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

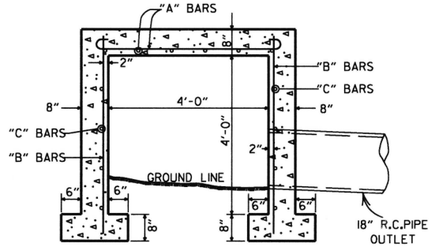
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2





SEC A-A



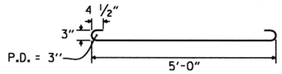
SEC B-B

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

STEEL SCHEDULE

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

ALL STEEL TO BE #4 BARS



"A" BARS

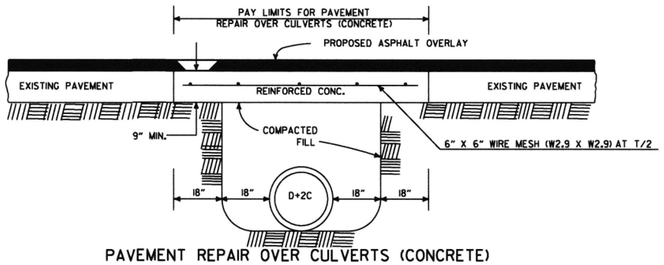
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

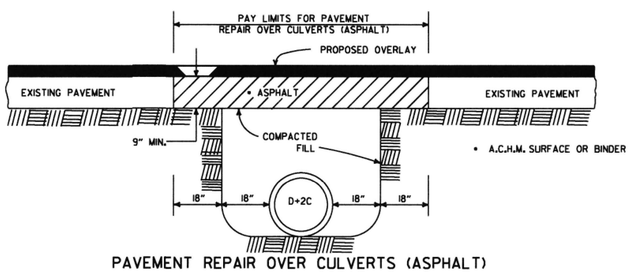
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



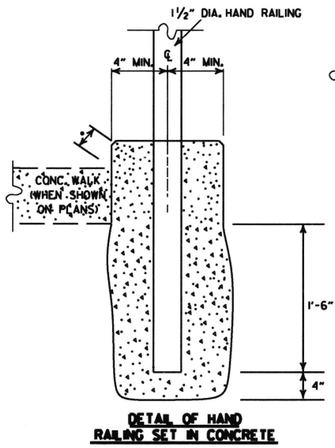
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



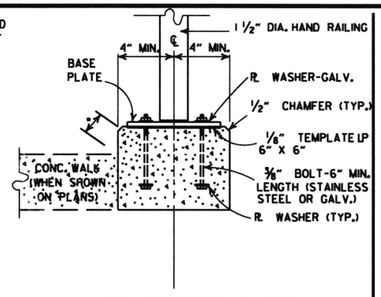
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

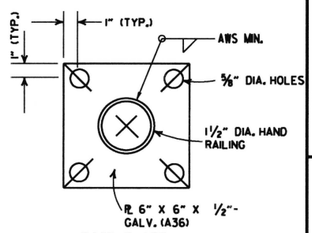
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

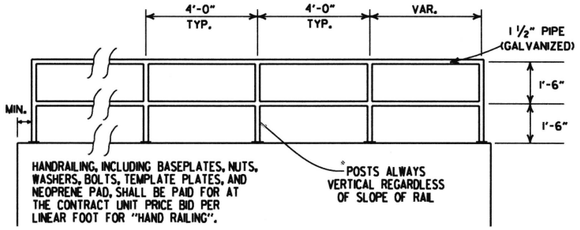


POST CONNECTION TO WALL

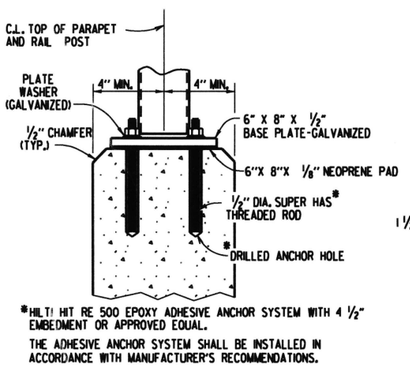


BASE PLATE

POST CONNECTION DETAILS



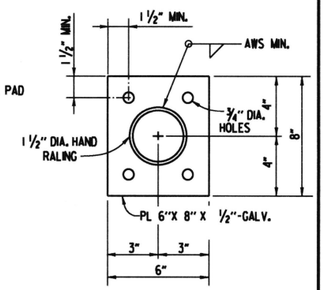
HAND RAILING SHALL CONFORM TO SECTION 633.



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

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

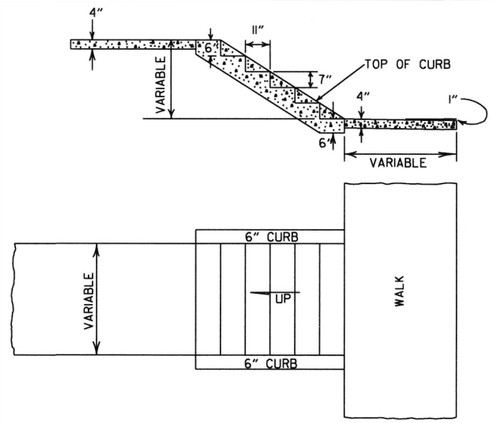
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

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

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
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



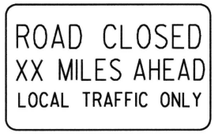
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W21-5a



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

WI-1



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

WI-2



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

WI-3



STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



STD. 48"X24"
SPECIAL 60"X30"

WI-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"

WI3-1



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"

WI-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.

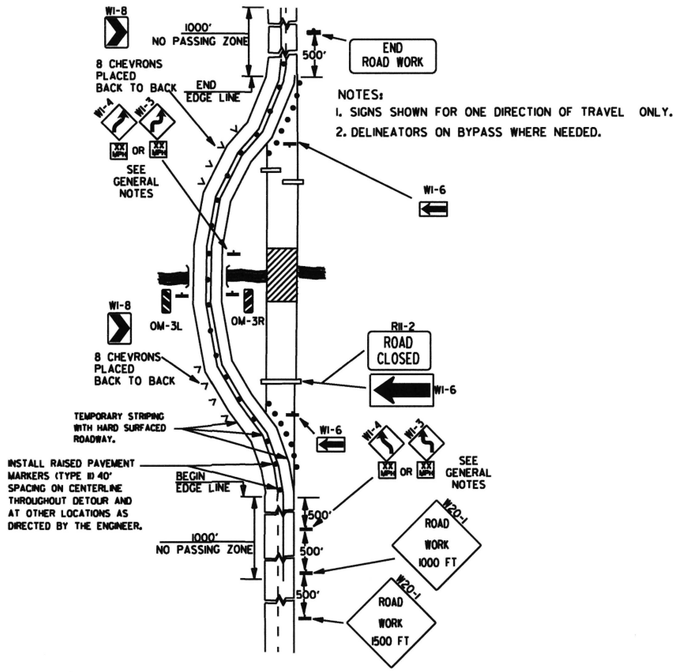
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED R5P-1 & ADDED W21-5a	
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	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

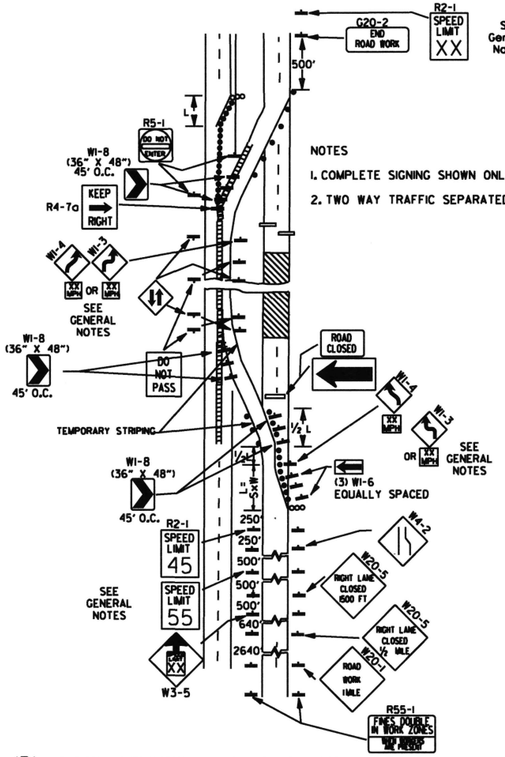
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



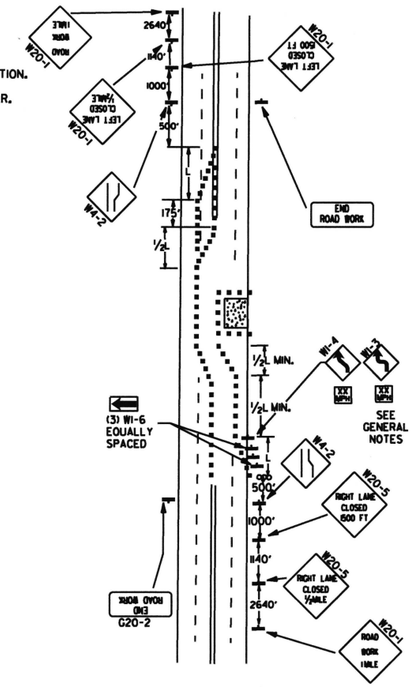
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

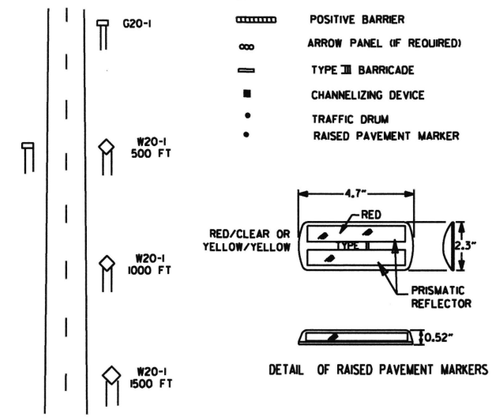


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

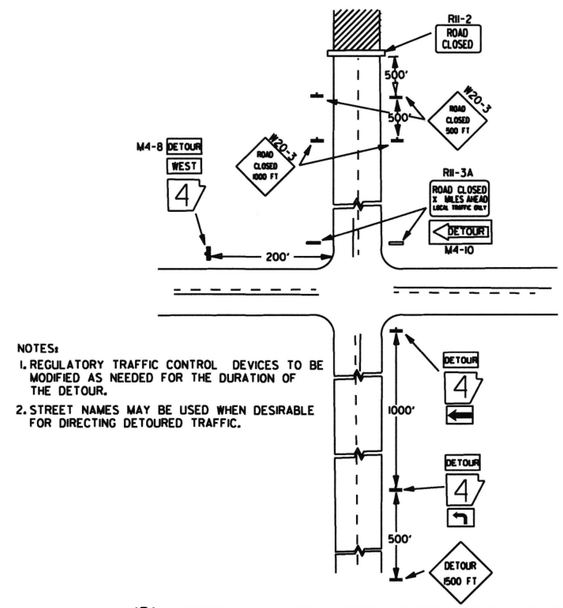
WHERE:
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

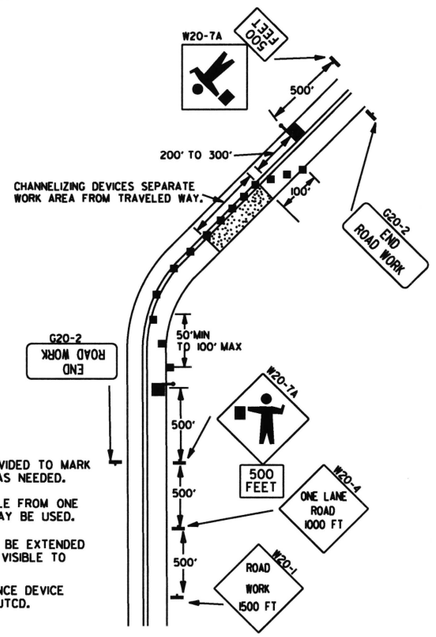
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



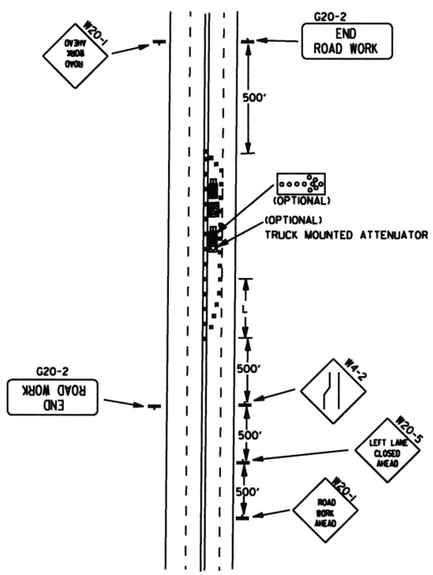
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



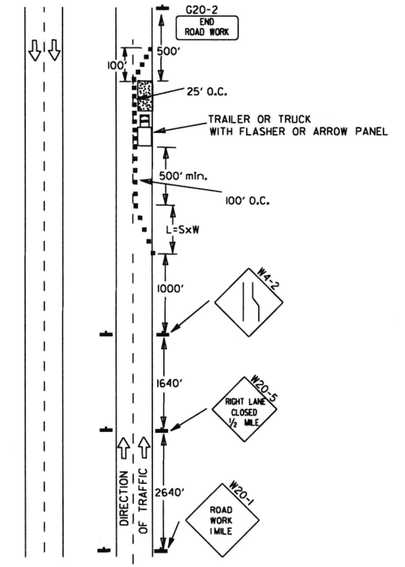
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
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 (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W11-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

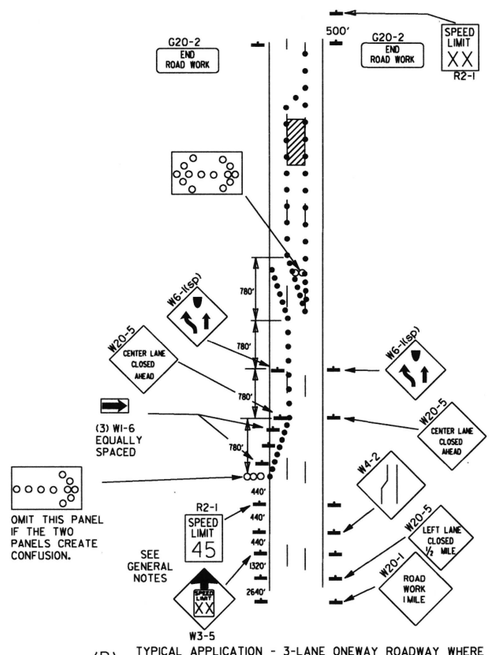
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

KEY:

ooo ARROW PANEL (IF REQUIRED)

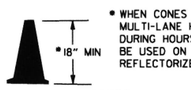
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

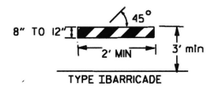
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES



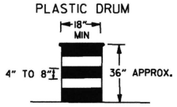
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

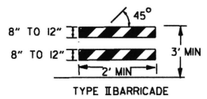
CONES



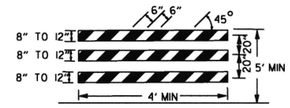
TYPE I BARRICADE

PLASTIC DRUM



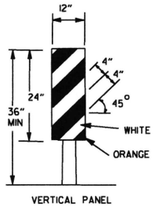


TYPE II BARRICADE



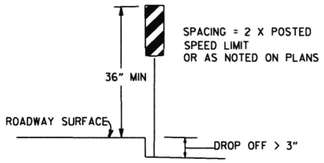
TYPE III BARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

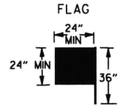


VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL ≤ 45 MPH	TRAFFIC CONTROL > 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE

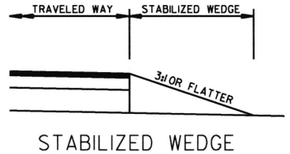
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE

FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

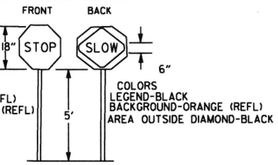
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.



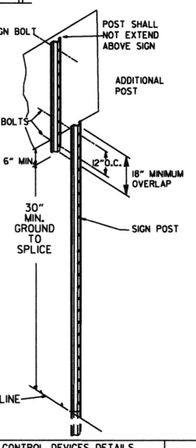
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE



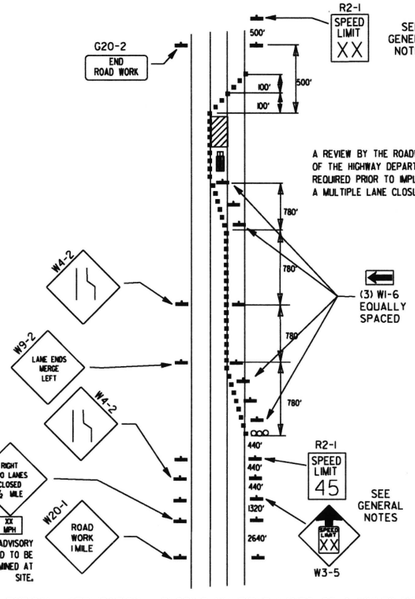
DETAIL OF SPLICES



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.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

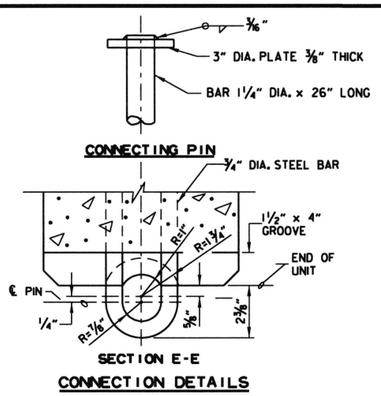
ARKANSAS STATE HIGHWAY COMMISSION

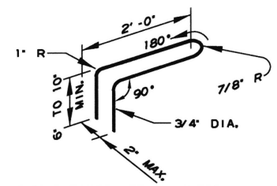
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

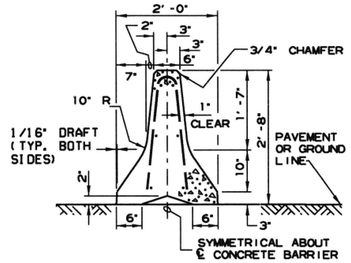
STANDARD DRAWING TC-3

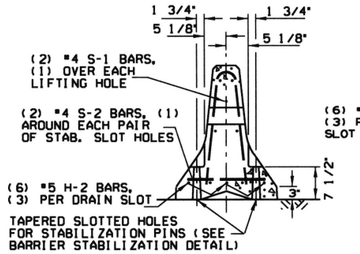
REINFORCING BAR TABLE PER BARRIER UNIT

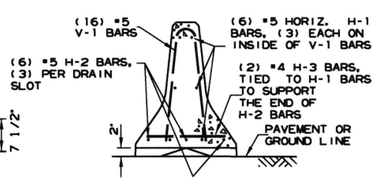
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ.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

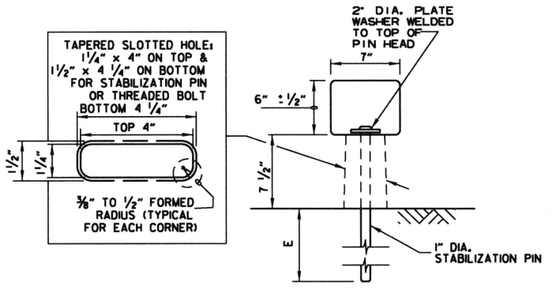


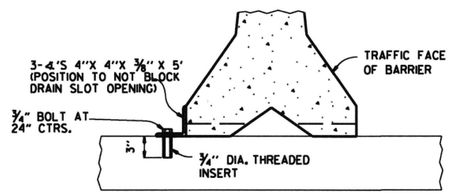


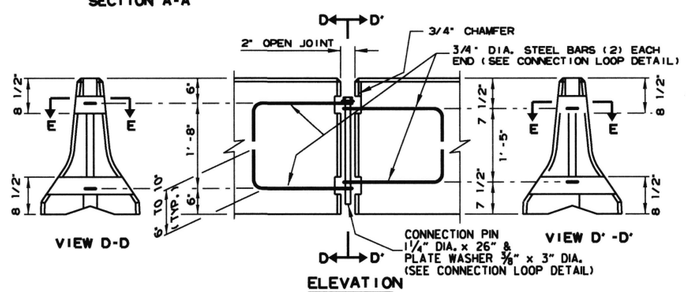


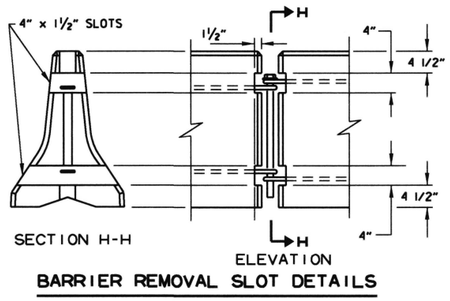


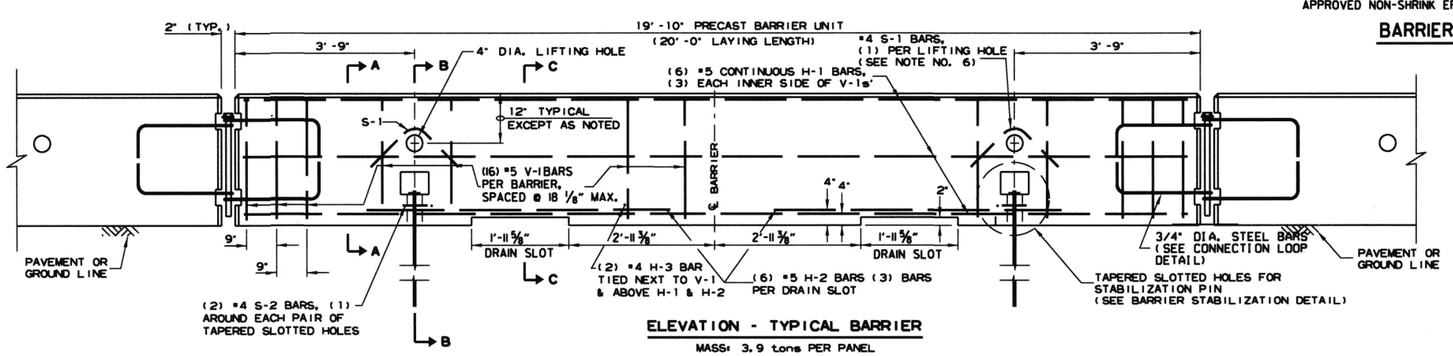












GENERAL NOTES

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 ARDOT 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 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 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 MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). 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.

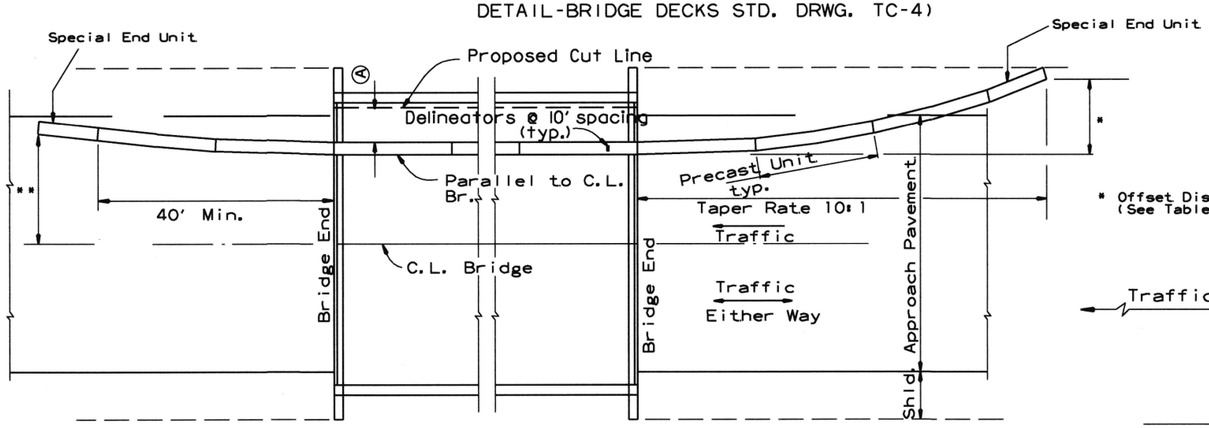
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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)

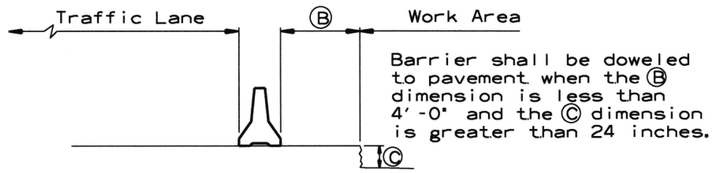


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

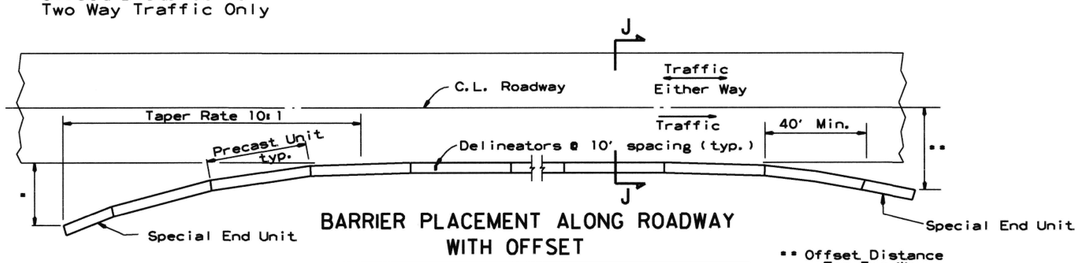
* Offset Distance (See Table)



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

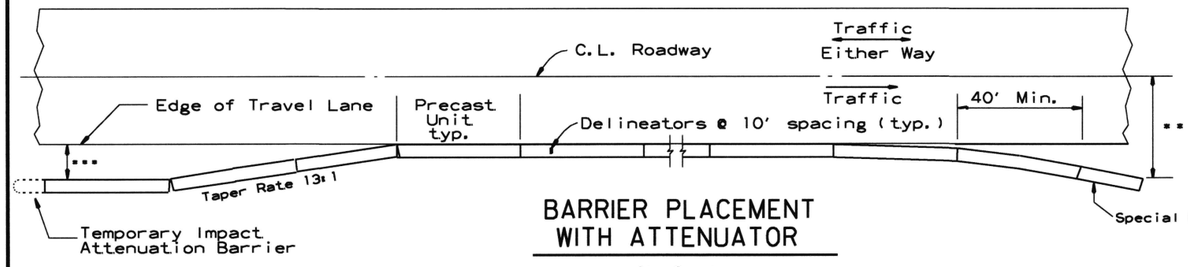
** Offset Distance For Two Way Traffic Only

* 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.

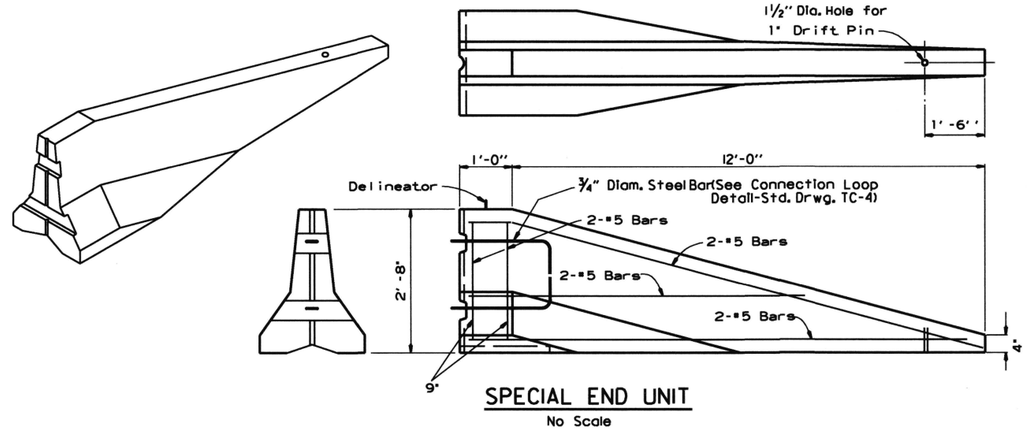


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a 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
8-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

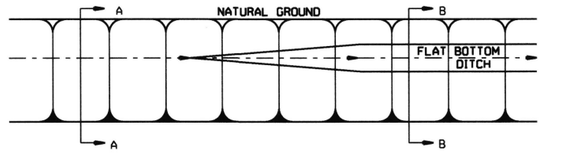
ARKANSAS STATE HIGHWAY COMMISSION

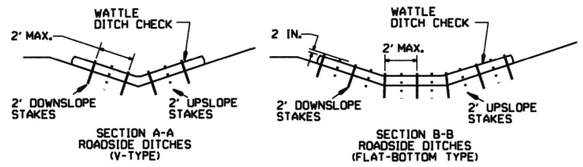
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5

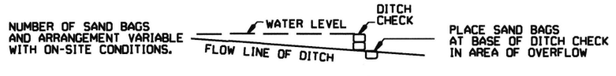
GENERAL NOTES

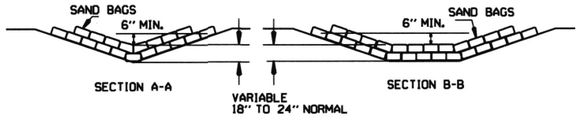
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



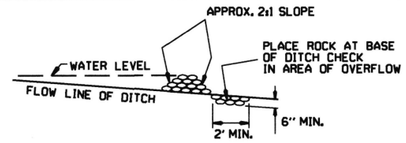


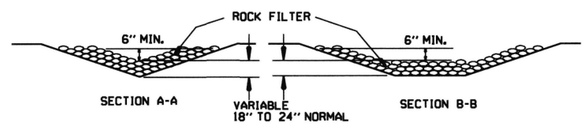
WATTLE DITCH CHECK (E-1)





SAND BAG DITCH CHECK (E-5)



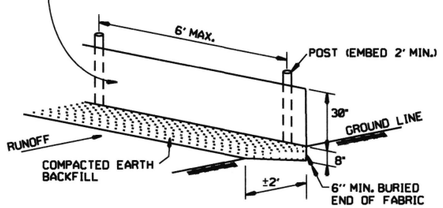


ROCK DITCH CHECK (E-6)

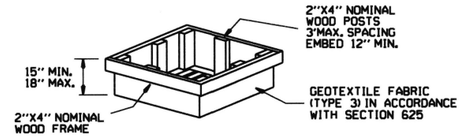
GENERAL NOTES

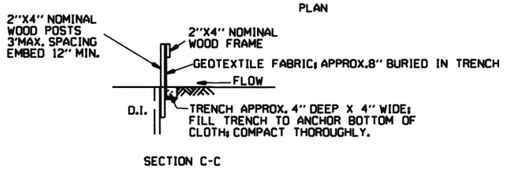
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

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.

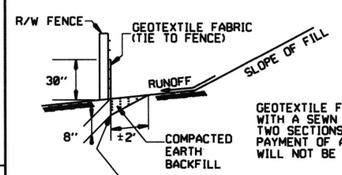


SILT FENCE (E-11)



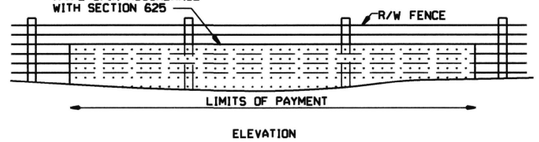


DROP INLET SILT FENCE (E-7)



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.



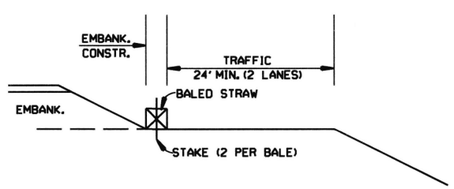
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

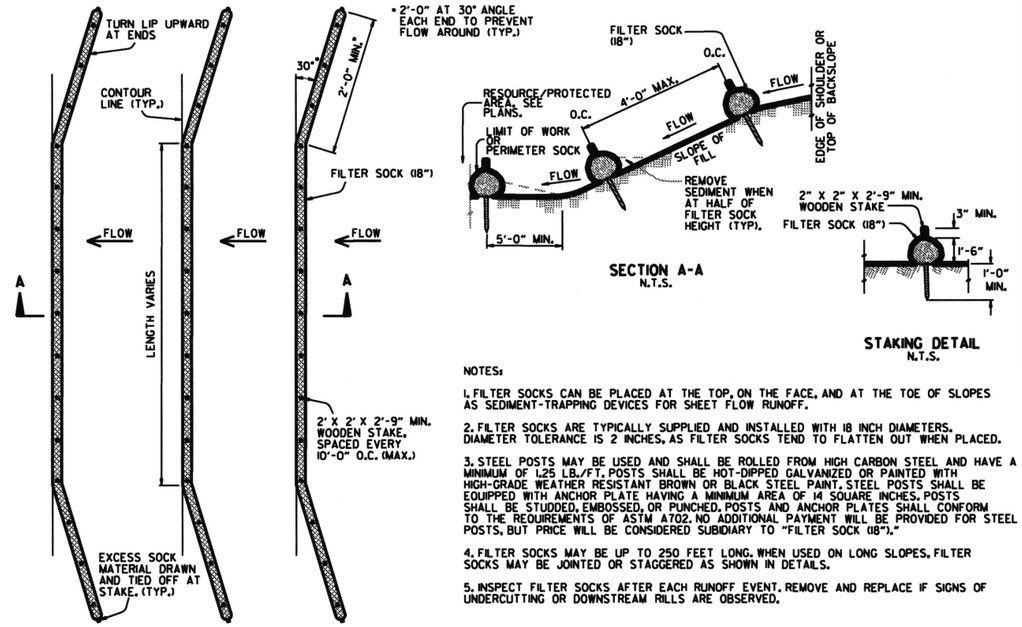
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

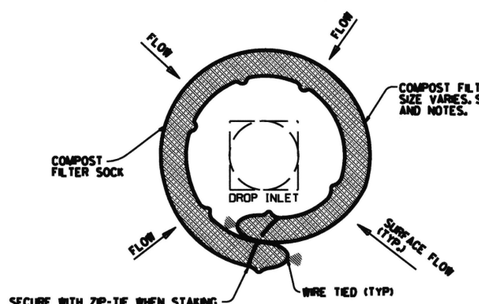
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

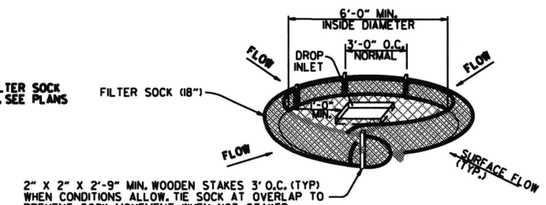
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

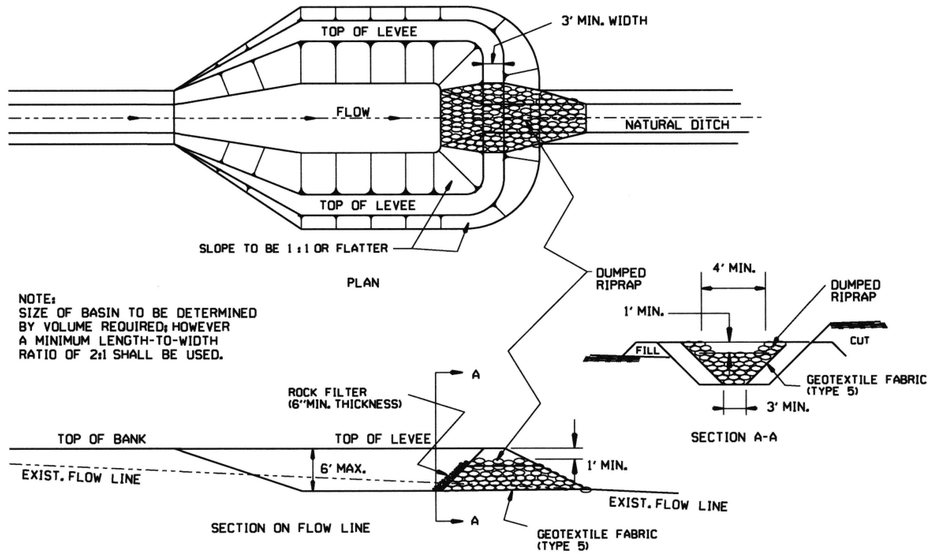
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

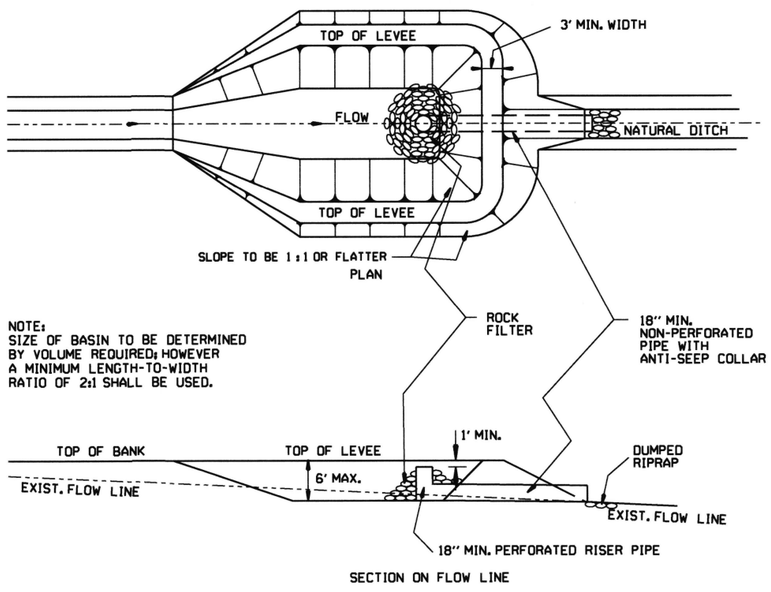
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

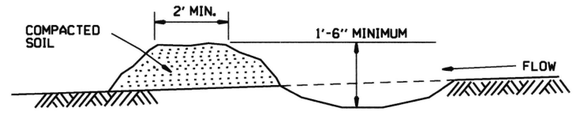
STANDARD DRAWING TEC-1



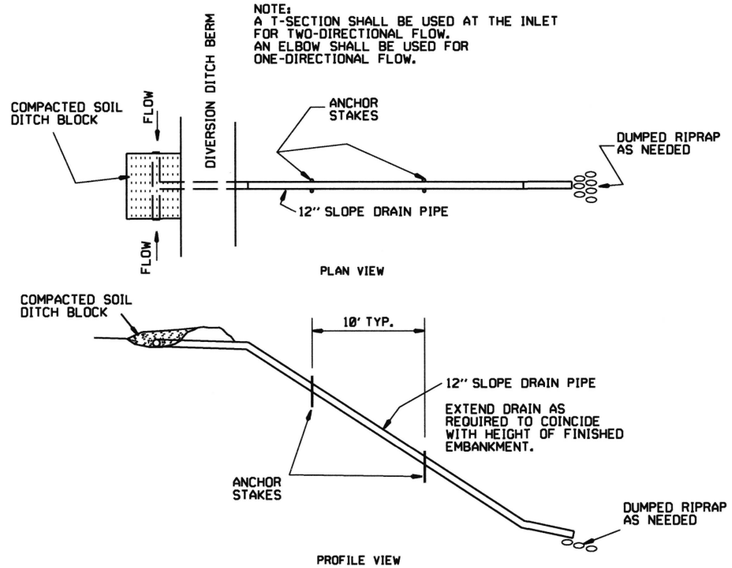
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



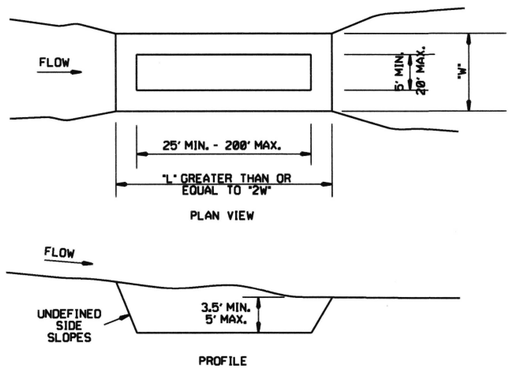
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

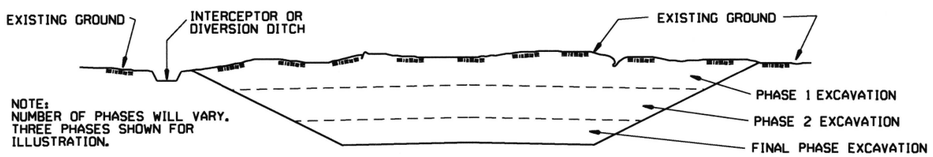
STANDARD DRAWING TEC-2

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



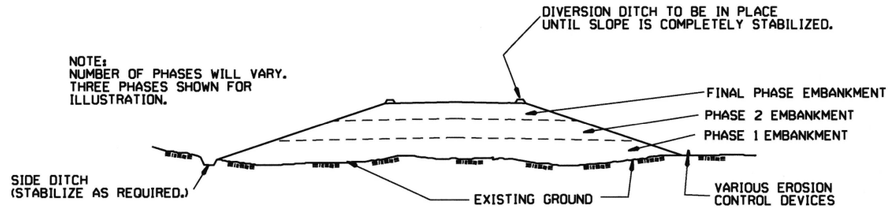
GENERAL NOTE

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

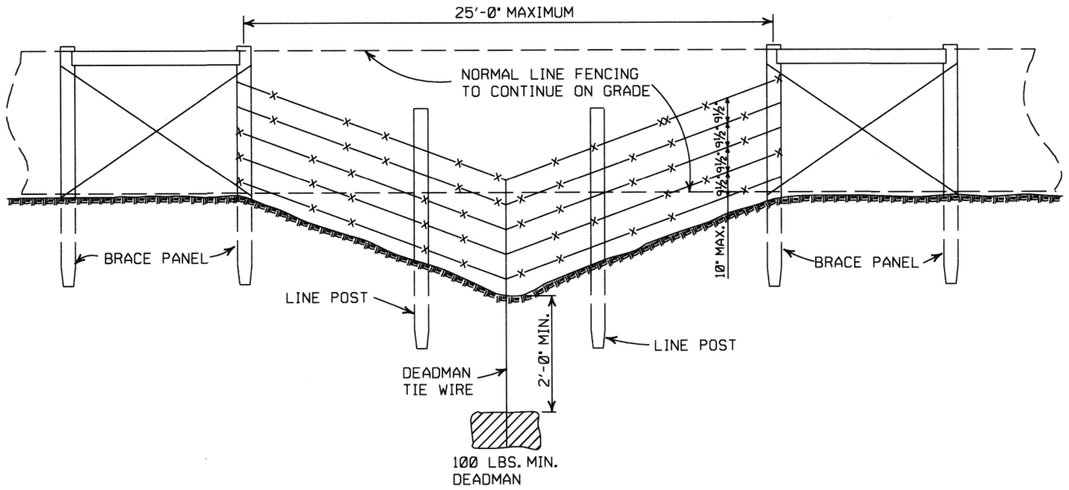
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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.

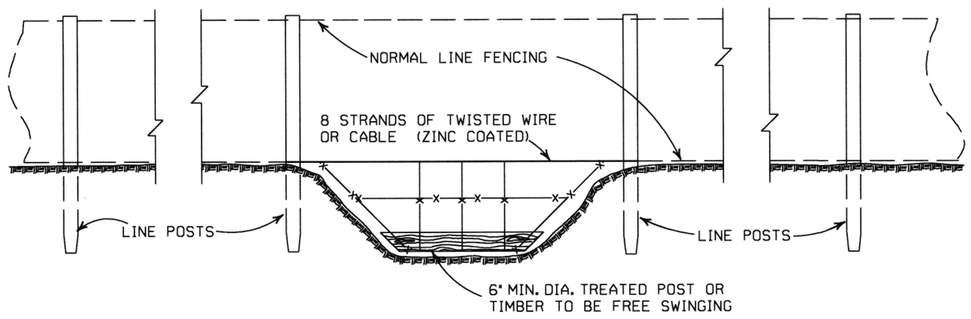
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

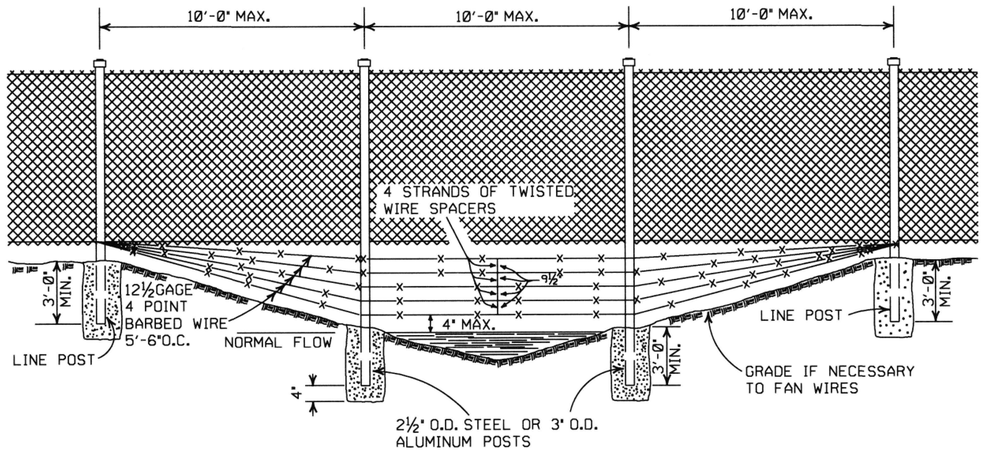
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







GENERAL NOTES:

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

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

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

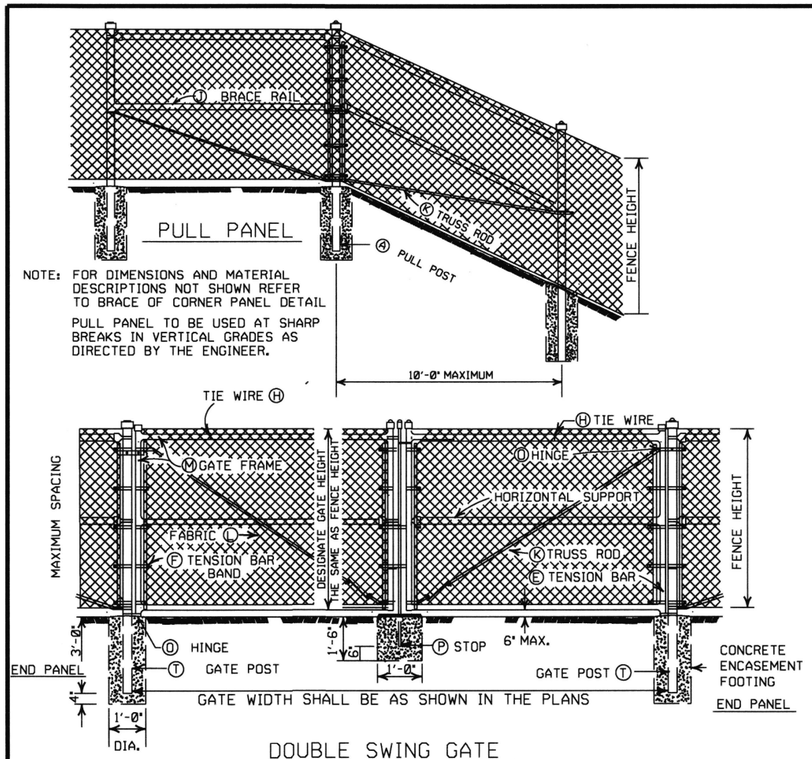
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2

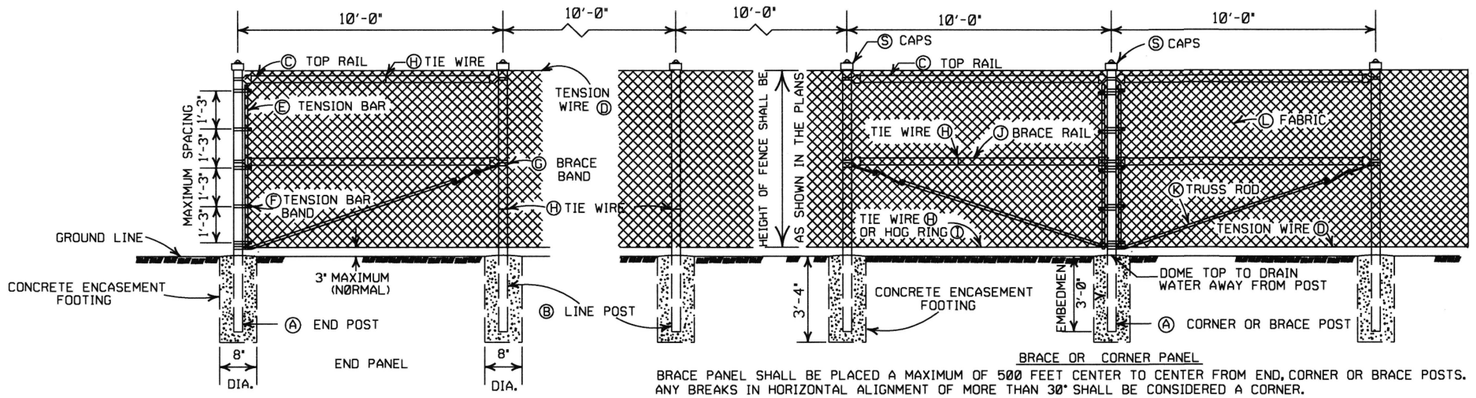


NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.

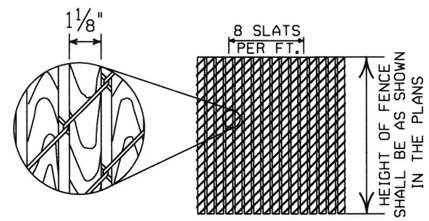
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

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	(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	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 ⅜"	MIN. OF 2" LESS THAN FABRIC HEIGHT	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.	3 " O.D.	2½" O.D.													

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	(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	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	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.

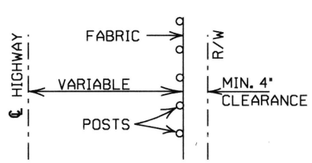
OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

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.

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	0.120	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



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

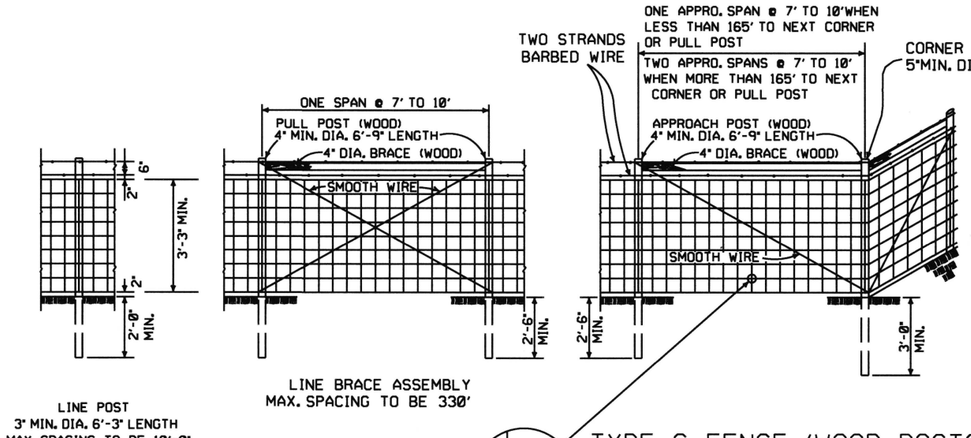
DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE 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

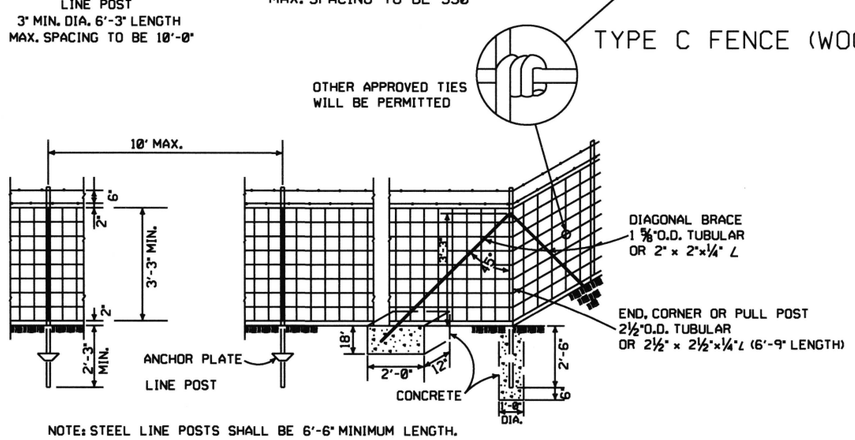
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

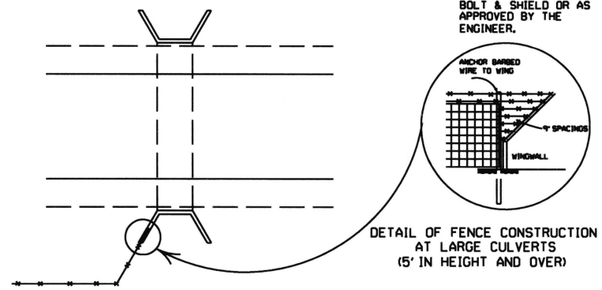
STANDARD DRAWING WF-3

TYPE C FENCE (WOOD POSTS)





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



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

GENERAL NOTES:

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

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

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

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

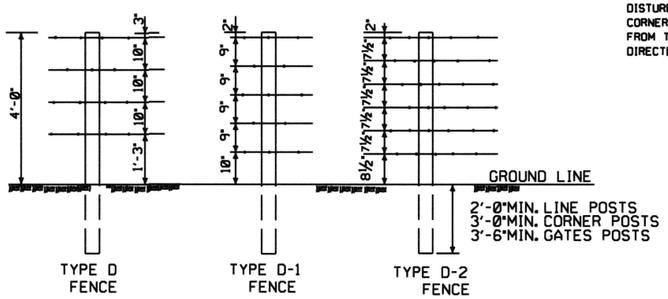
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

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

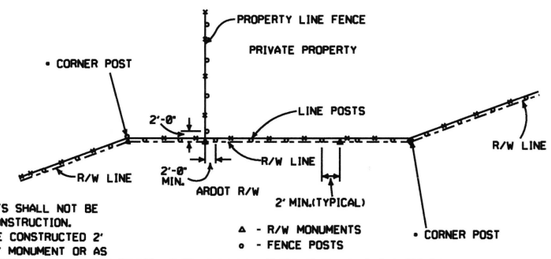
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

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

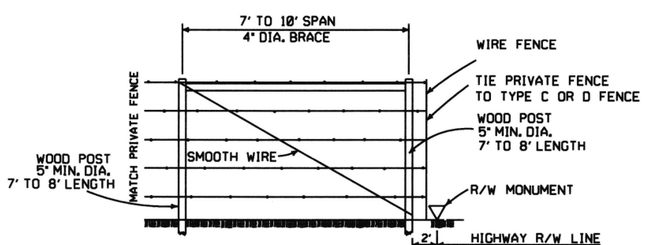


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

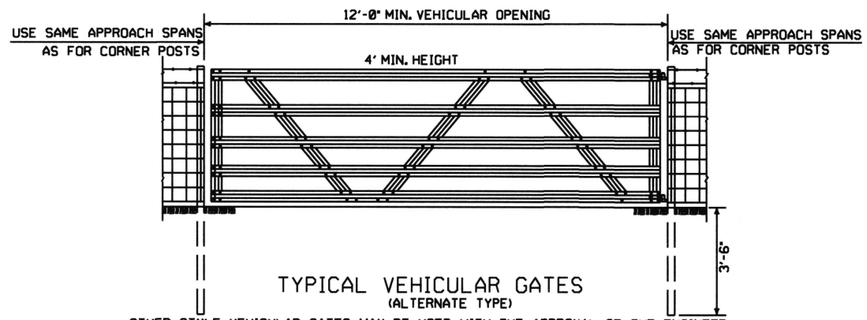


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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



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

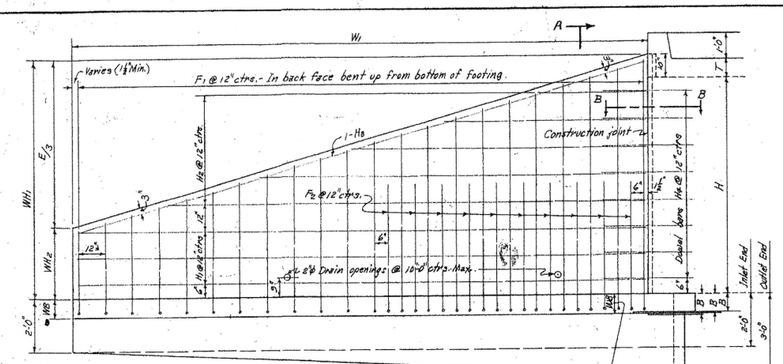
DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89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

ARKANSAS STATE HIGHWAY COMMISSION

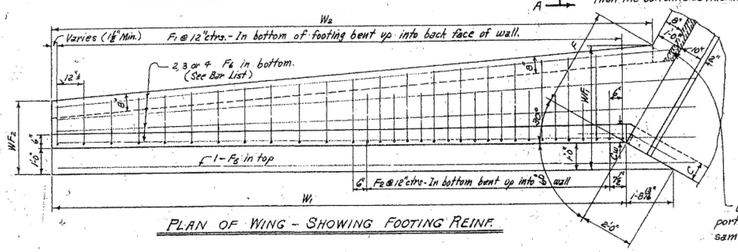
WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

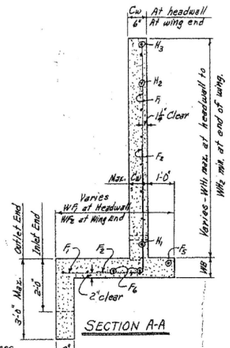


REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

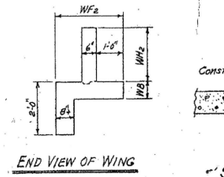


PLAN OF WING - SHOWING FOOTING REINF.

WB may be more, equal to, or less than the bottom slab thickness B.



SECTION A-A



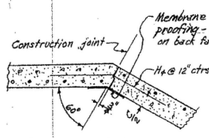
END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.

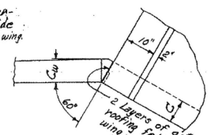
WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTH OF WINGWALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING					INLET END	OUTLET END
H	WB	Cw	WH1	WH2	W5	W5	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-9"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1⅝"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅝"	1'-0⅜"	8'-6"	9'-3⅜"	9'-2⅝"	1.338	1.966
4'	7"	6"	4'-10"	1'-0"	3'-0"	2'-3"	1'-3"	10'-6"	12'-1⅝"	12'-1⅛"	1.868	2.027
5'	7"	6"	5'-10"	1'-0"	3'-4"	2'-4⅝"	2'-1⅜"	12'-6"	14'-10⅝"	14'-7⅛"	2.978	2.668
		7"	5'-10"	1'-0"	3'-4"	2'-4⅝"	2'-1⅜"	12'-6"	14'-5⅝"	14'-7⅛"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	17'-1⅝"	3.440	3.661
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	17'-1⅝"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	17'-1⅝"	3.588	3.803
7'	8½"	7"	7'-10"	2'-8"	4'-2"	2'-7⅝"	3'-1⅛"	16'-6"	19'-0⅝"	19'-0⅝"	4.505	4.758
		8"	7'-10"	2'-8"	4'-2"	2'-7⅝"	3'-1⅛"	16'-6"	19'-0⅝"	19'-0⅝"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-3"	18'-6"	21'-0⅝"	22'-0"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W5.



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

Note:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

APRON DIMENSION W3

W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11⅝"	5'-0"	3'-0⅛"	9'-8"	7'-8⅛"	14'-4"	12'-4⅛"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-0⅜"	5'-0"	2'-3⅜"	9'-8"	6'-11⅝"	14'-4"	11'-7⅛"	19'-0"	16'-3⅛"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-1⅜"	5'-0"	0'-10⅜"	9'-8"	5'-10⅜"	14'-4"	10'-0⅜"	19'-0"	14'-10⅜"	23'-8"	19'-10⅜"
	6'	5'-0⅜"	5'-2"	0'-1⅞"	9'-11"	4'-10⅜"	14'-8"	9'-7⅛"	19'-5"	14'-4⅛"	24'-2"	19'-1⅝"
5'	3'	2'-0⅜"	6'-0"	3'-3⅜"	11'-8"	8'-11⅛"	17'-6"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-6"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-1⅜"	6'-0"	1'-10⅜"	11'-8"	7'-10⅜"	17'-6"	13'-0⅜"	23'-0"	18'-10⅜"	28'-8"	24'-10⅜"
	6'	5'-0⅜"	6'-2"	1'-1⅞"	11'-11"	6'-10⅜"	17'-8"	12'-7⅛"	23'-5"	18'-2⅝"	29'-2"	24'-1⅝"
	7'	6'-2⅜"	6'-5"	0'-10⅜"	12'-1"	5'-10⅜"	17'-11"	11'-8⅛"	23'-8"	17'-6⅛"	29'-7"	23'-4⅛"
6'	3'	2'-0⅜"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-6"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-6"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-1⅜"	7'-0"	2'-8⅜"	13'-8"	9'-9⅜"	20'-6"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-9⅜"
	6'	5'-0⅜"	7'-2"	2'-1⅞"	13'-11"	8'-10⅜"	20'-8"	15'-1⅞"	27'-5"	22'-0⅜"	34'-2"	29'-1⅞"
	7'	6'-2⅜"	7'-5"	1'-6⅜"	14'-1"	7'-10⅜"	20'-11"	14'-3⅞"	27'-9"	21'-1⅜"	34'-7"	28'-4⅞"
	8'	7'-4"	7'-7"	0'-10"	14'-5"	6'-10"	21'-0"	13'-3"	27'-10"	20'-6"	34'-8"	27'-9"
7'	4'	3'-6"	8'-0"	4'-6"	15'-6"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-1⅜"	8'-0"	3'-8⅜"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-10⅜"
	6'	5'-0⅜"	8'-2"	3'-1⅞"	15'-11"	10'-10⅜"	23'-8"	18'-2⅞"	31'-5"	26'-0⅜"	39'-2"	34'-1⅞"
	7'	6'-2⅜"	8'-3"	2'-0⅜"	16'-1"	9'-10⅜"	23'-11"	17'-1⅜"	31'-8"	25'-1⅜"	39'-7"	33'-0⅜"
	8'	7'-4"	8'-6"	1'-0"	16'-5"	8'-10"	24'-0"	16'-0"	31'-10"	24'-6"	39'-8"	32'-6"
9'	4'	3'-6"	9'-0"	5'-6"	17'-6"	14'-2"	26'-4"	22'-10"	35'-8"	31'-6"	43'-8"	40'-2"
	5'	4'-1⅜"	9'-2"	4'-8⅜"	17'-11"	13'-7⅜"	26'-8"	22'-0⅜"	35'-8"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅜"	9'-2"	4'-1⅞"	17'-11"	12'-10⅜"	26'-8"	21'-2⅞"	35'-5"	30'-4⅜"	44'-2"	39'-1⅞"
	7'	6'-2⅜"	9'-3"	3'-0⅜"	18'-1"	11'-10⅜"	26'-11"	20'-1⅜"	35'-9"	29'-6⅜"	44'-7"	38'-0⅜"
	8'	7'-4"	9'-4"	2'-0"	18'-5"	10'-10"	27'-0"	19'-0"	35'-10"	28'-6"	44'-8"	37'-0"
10'	5'	4'-1⅜"	10'-2"	5'-0⅜"	19'-11"	15'-7⅜"	29'-8"	25'-0⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅜"	10'-3"	5'-1⅞"	20'-1"	15'-0⅜"	29'-11"	24'-1⅜"	39'-9"	34'-3⅜"	49'-7"	44'-1⅞"
	7'	6'-2⅜"	10'-3"	4'-1⅜"	20'-1"	13'-10⅜"	29'-11"	23'-1⅜"	39'-9"	33'-1⅜"	49'-7"	43'-0⅜"
	8'	7'-4"	10'-4"	3'-0"	20'-5"	12'-10"	30'-0"	22'-0"	39'-10"	32'-0"	49'-8"	41'-9"
11'	5'	4'-1⅜"	11'-2"	6'-0⅜"	21'-11"	17'-7⅜"	32'-8"	28'-0⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅜"	11'-3"	6'-1⅞"	22'-1"	17'-0⅜"	32'-11"	27'-1⅜"	43'-9"	38'-3⅜"	54'-7"	49'-1⅞"
	7'	6'-2⅜"	11'-3"	5'-0⅜"	22'-1"	15'-10⅜"	32'-11"	26'-0⅜"	43'-9"	37'-1⅜"	54'-7"	48'-0⅜"
	8'	7'-4"	11'-4"	4'-0"	22'-5"	14'-10"	33'-0"	25'-0"	43'-10"	36'-0"	54'-8"	47'-9"
12'	6'	5'-0⅜"	12'-3"	7'-3⅜"	24'-2"	19'-1⅜"	36'-0"	30'-11⅜"	47'-10"	42'-9⅜"		
	7'	6'-2⅜"	12'-4"	6'-1⅞"	24'-2"	17'-11⅜"	36'-0"	29'-10⅜"	47'-10"	41'-7⅜"		
	8'	7'-4"	12'-5"	5'-0"	24'-6"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
	6'	5'-0⅜"	13'-0"	8'-3⅜"	26'-2"	21'-1⅜"	39'-0"	33'-11⅜"	51'-10"	46'-9⅜"		
	7'	6'-2⅜"	13'-0"	7'-1⅞"	26'-2"	19'-11⅜"	39'-0"	32'-9⅜"	51'-10"	45'-7⅜"		
	8'	7'-4"	13'-0"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS ⊗	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	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34
	3'	6"	7"	164.4	6.24	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.4	6.97	7.63	8.29	9.96	11.12
	4'	6"	7"	259.6	8.54	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.93	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7½"	8½"	1134.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	164.4	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7½"	8½"	1134.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1925.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.54	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7½"	8½"	1134.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.34
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7½"	8½"	1134.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1925.6	24.54	26.91	28.29	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.87	18.95	20.97
	6'	7½"	8"	583.1	15.94	18.09	20.09	22.19	24.23
	7'	7½"	8½"	1134.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.26	21.52
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7½"	8½"	1134.6	20.09	22.37	24.64	26.87	29.15
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	9"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8½"	1134.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74	
12'	6'	8"	9"	583.1	16.92	19.75	22.95	25.18	
	7'	8"	8½"	1134.6	20.87	23.69	26.90	29.18	
	8'	8"	9"	1925.6	25.92	28.25	30.96	33.69	

⊗ For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

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:-

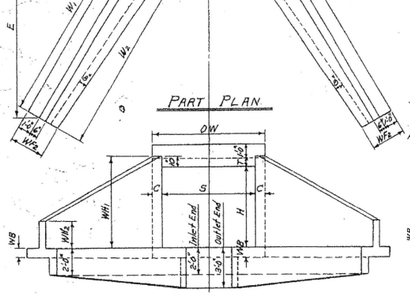
Class S Concrete (n=10) 1200#/□"

Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

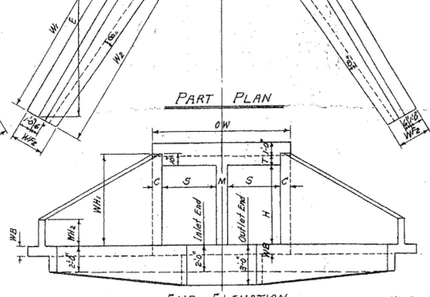
CLASS S CONCRETE



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT

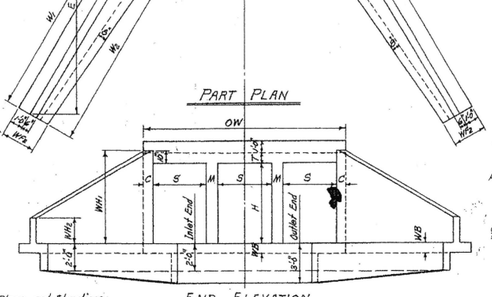


PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

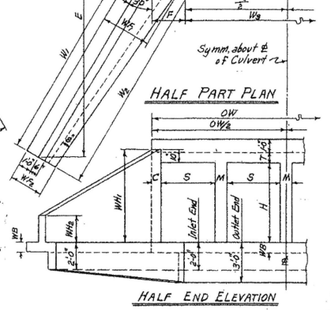
NOTE:- Plans and Elevations are not to scale.



PART PLAN

END ELEVATION

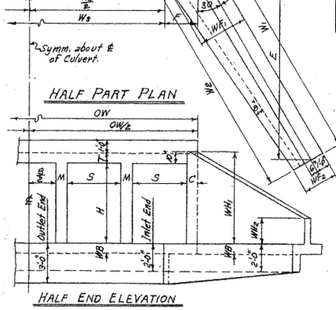
TRIPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

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 in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length.						F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						F5 Straight: Longitudinal in top of wing footing heel.			F4 Straight: Longitudinal in bottom of wing footing toe.			H1 Straight: Horizontal in back face of wing.			H2 Straight: Horizontal in back face of wing. One bar of each length.					H3 Straight: In back face of wing at top - on slope.			H4 Bent: Dowels thru construction joint at headwall.				QUANTITY REINFORCING STEEL PER WING
				LENGTHS VARY																				LENGTHS VARY									
H	SIZE	SPACING	NO. REQD	MIN.	MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	MAX.	MIN.	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X	LB.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-5"	#3	12"	1	—	4'-0"	#8	1	7'-6"	#3	12"	2	2'-8"	1'-9"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	—	—	#3	1	12'-0"	#3	3	11'-0"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	4'-0"	#8	1	9'-5"	#3	12"	3	2'-8"	1'-9"	41.1
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-11"	5'-0"	—	—	—	—	—	—	#3	1	14'-4"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	4'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-9"	63.7
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#3	12"	1	11'-10"	#3	12"	2	14'-2"	#3	12"	3	10'-11"	#3	1	14'-2"	#3	12"	5	2'-8"	1'-9"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	18'-8"	#3	3	18'-6"	#3	12"	2	14'-6"	#3	12"	4	14'-4"	4'-0"	#3	1	14'-2"	#3	12"	6	2'-8"	1'-9"	145.8
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-6"	#4	4	21'-0"	#4	12"	2	16'-5"	#3	12"	5	17'-9"	4'-0"	#4	1	16'-5"	#3	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-6"	#4	12"	3	21'-11"	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	#4	12"	8	3'-6"	1'-9"	356.4

Bar Bending Diagrams: F1 & F6; 5" Pin; X; Y; H4; 7½; 1:2; NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RMS 1-9-63
Drawn By:- W.C.H. 12-9-62. Checked By:- RMS 1-31-63
Quantities By:- W.C.H. 12-19-62. Rechecked By:- RMS 3-29-63

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

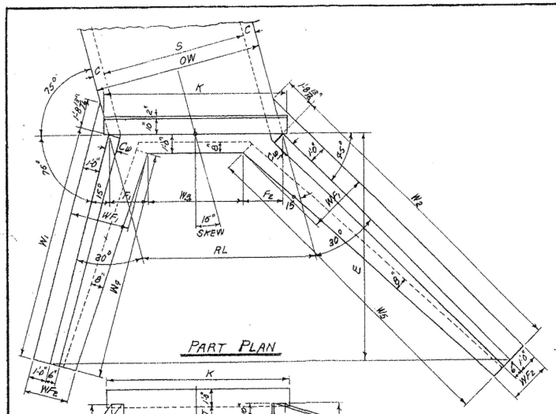
4, 5, 6, 7, 8, 9, 10, 11 & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MYLAR

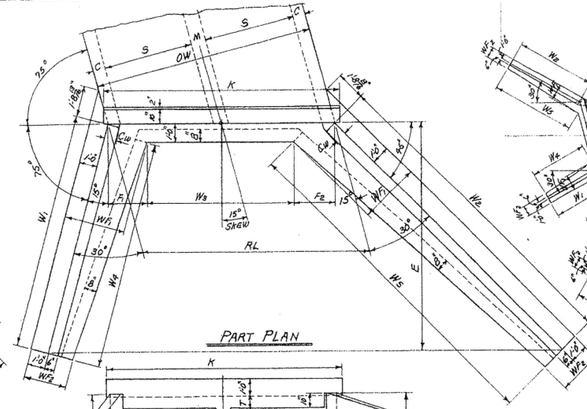
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

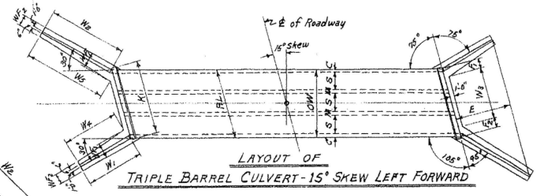
Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.

Note:- Plans and Elevations are not to scale.

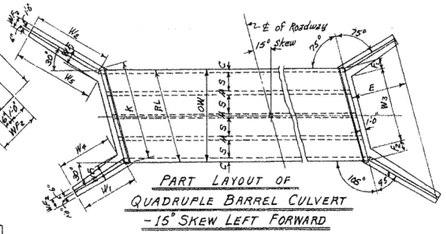


DOUBLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

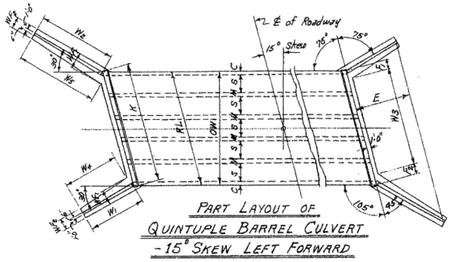
Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.



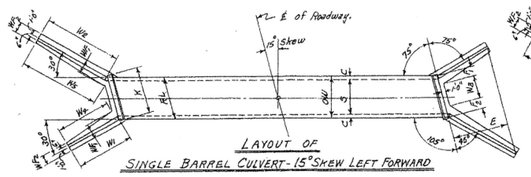
TRIPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



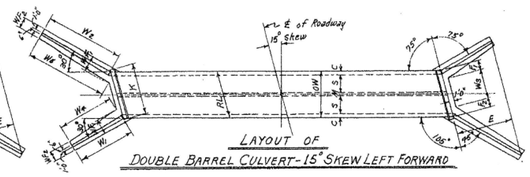
QUADRUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



QUINTUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



SINGLE BARREL CULVERT - 15° SKEW LEFT FORWARD



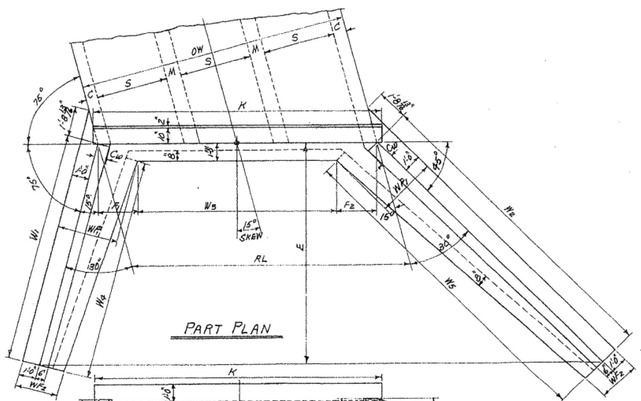
DOUBLE BARREL CULVERT - 15° SKEW LEFT FORWARD

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.035276 — K = RL + (6½") — W_3 = RL - (F_1 + F_2)

USE WITH DRAWING No.	CLEAR SPAN	CLEAR HEIGHT	SLAB OR FOOTING 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
(FOR H=8'0" OR LESS) W-X152-1, W-X153-1 OR W-X154-1.	2'	2'-0"	5'-0"	5'-2⅛"	5'-8⅜"	3'-2⅜"		9'-8"	10'-0"	10'-6⅜"	8'-0"	14'-4"	14'-10"	15'-4⅜"	12'-10"	19'-0"	19'-8"	20'-2½"	17'-8"	23'-8"	24'-6"	25'-0⅝"	22'-6"
	3'	2'-9⅜"	5'-0"	"	"	2'-9⅜"		9'-8"	"	"	7'-7⅜"	14'-9"	"	"	12'-0⅝"	19'-0"	"	"	16'-10⅝"	23'-8"	"	"	21'-8⅜"
	4'	3'-7⅜"	5'-0"	"	"	1'-6⅝"		9'-8"	"	"	6'-6⅝"	14'-9"	"	"	11'-6⅛"	19'-0"	"	"	16'-0⅛"	23'-8"	"	"	20'-10⅝"
	5'	4'-5⅜"	5'-0"	"	"	0'-0⅜"		9'-8"	"	"	5'-6⅜"	14'-9"	"	"	10'-1⅜"	19'-0"	"	"	15'-2⅜"	23'-8"	"	"	20'-0⅜"
	6'	5'-3⅜"	5'-2"	5'-8⅜"	5'-10⅜"	0'-1"		9'-11"	10'-3⅜"	10'-9⅜"	5'-0"	14'-8"	15'-2⅛"	15'-8⅜"	9'-11"	18'-5"	20'-1⅛"	20'-7⅜"	14'-10"	24'-2"	25'-0⅛"	25'-6⅜"	19'-9"
	3'	2'-9⅜"	6'-0"	6'-2⅜"	6'-9"	3'-9⅜"		11'-8"	12'-1"	12'-7⅜"	9'-3⅜"	17'-4"	17'-10⅜"	18'-5⅜"	15'-1⅜"	23'-0"	23'-9⅜"	24'-4⅜"	21'-0"	28'-8"	29'-6⅜"	30'-2⅛"	26'-10⅜"
	4'	3'-7⅜"	6'-0"	"	"	2'-7"		11'-8"	"	"	8'-5⅜"	17'-4"	"	"	14'-3⅜"	23'-0"	"	"	20'-2⅜"	28'-8"	"	"	26'-0⅜"
	5'	4'-5⅜"	6'-0"	"	"	1'-3⅝"		11'-8"	"	"	7'-1⅝"	17'-4"	"	"	13'-6"	23'-0"	"	"	19'-9⅝"	28'-8"	"	"	26'-2⅝"
	6'	5'-3⅜"	6'-2"	6'-8⅜"	6'-11⅜"	1'-1⅜"		11'11"	12'-5"	12'-10⅜"	7'-10⅜"	17'-5"	18'-3½"	18'-10"	13'-10⅜"	23'-5"	24'-2⅜"	24'-9¼"	18'-11⅜"	29'-2"	30'-2⅜"	30'-8⅜"	26'-11⅜"
	7'	6'-5⅜"	6'-8"	6'-8⅜"	7'-0⅛"	Ⓐ 0"		12'-1"	12'-8⅜"	13'-0⅜"	6'-0⅜"	17'-11"	18'-6⅜"	19'-1"	14'-0⅜"	23'-9"	24'-7"	25'-1½"	18'-11⅜"	29'-7"	30'-7½"	31'-2"	26'-11⅜"
	3'	2'-9⅜"	7'-0"	7'-3"	7'-9⅜"	4'-3⅜"		13'-8"	14'-1⅜"	14'-6⅜"	11'-4"	20'-4"	21'-0⅜"	21'-7"	18'-2⅜"	27'-0"	27'-11⅜"	28'-5⅝"	25'-1⅜"	33'-8"	34'-10⅜"	35'-4⅞"	32'-0⅜"
	4'	3'-7⅜"	7'-0"	"	"	3'-1⅞"		13'-8"	"	"	10'-6⅜"	20'-4"	"	"	17'-5"	27'-0"	"	"	24'-3⅜"	33'-8"	"	"	31'-2⅜"
	5'	4'-5⅜"	7'-0"	"	"	2'-0⅜"		13'-8"	"	"	9'-1⅜"	20'-4"	"	"	16'-7⅜"	27'-0"	"	"	23'-1⅛"	33'-8"	"	"	30'-0⅜"
	6'	5'-3⅜"	7'-2"	7'-5"	7'-11⅝"	2'-1⅜"		13'-11"	14'-5"	14'-11⅝"	9'-11⅜"	20'-5"	21'-0⅝"	21'-11⅜"	16'-11⅝"	27'-5"	28'-2⅝"	28'-11"	23'-1⅝"	34'-2"	35'-1⅝"	35'-11"	30'-11⅜"
	7'	6'-5⅜"	7'-5"	7'-8"	8'-2⅛"	1'-0⅜"		14'-1"	14'-7"	15'-1⅝"	8'-1⅛"	20'-11"	21'-7⅜"	22'-2⅝"	15'-2"	27'-9"	28'-8⅜"	29'-3⅜"	22'-3"	34'-7"	35'-6⅜"	36'-1"	29'-3⅜"
	8'	7'-8⅜"	7'-9"	7'-11⅝"	8'-5⅛"	Ⓐ 0"		14'-2"	14'-8"	15'-2⅝"	6'-11⅜"	21'-0"	21'-8⅜"	22'-3⅝"	14'-10⅜"	27'-10"	28'-9⅜"	29'-4⅝"	21'-4⅜"	34'-8"	35'-10⅜"	36'-5"	28'-8"
	4'	3'-7⅜"	8'-0"	8'-3⅜"	8'-9⅜"	4'-7⅜"		15'-9"	16'-2⅝"	16'-9"	12'-7"	23'-4"	24'-1⅜"	24'-10⅜"	20'-6⅜"	31'-0"	32'-1½"	32'-7½"	28'-5⅝"	38'-8"	40'-0⅜"	40'-6⅜"	36'-9⅜"
	5'	4'-5⅜"	8'-0"	"	"	3'-1⅜"		15'-8"	"	"	11'-3⅜"	23'-4"	"	"	19'-3⅝"	31'-0"	"	"	27'-1⅜"	38'-8"	"	"	35'-1"
	6'	5'-3⅜"	8'-2"	8'-5⅝"	9'-0"	3'-2⅝"		15'-11"	16'-5⅜"	17'-0⅜"	11'-2⅝"	23'-5"	24'-1"	25'-0⅛"	19'-2⅜"	31'-5"	32'-4⅛"	33'-0⅜"	27'-3"	39'-2"	40'-3⅝"	41'-1"	35'-3⅜"
	7'	6'-5⅜"	8'-3"	8'-6⅝"	9'-11"	2'-10⅜"		16'-1"	16'-7⅜"	17'-2⅝"	10'-2"	23'-11"	24'-10⅜"	25'-9⅜"	18'-5⅜"	31'-9"	32'-10⅛"	33'-5"	26'-4⅝"	39'-7"	40'-11⅜"	41'-6⅝"	39'-4"
	8'	7'-8⅜"	8'-4"	8'-7⅛"	9'-2"	0'-11"		16'-2"	16'-8⅜"	17'-3⅜"	9'-10⅜"	24'-0"	24'-10⅜"	25'-9⅜"	17'-11⅛"	31'-10"	32'-11½"	33'-6"	25'-3"	39'-8"	41'-0⅜"	41'-7⅛"	33'-9⅛"
	9'	3'-7⅜"	9'-0"	9'-3⅜"	9'-10⅛"	5'-0⅜"		17'-8"	18'-2⅜"	18'-10"	14'-8"	26'-4"	27'-3⅛"	27'-10⅜"	23'-7⅛"	35'-0"	36'-2⅜"	36'-9⅛"	32'-7⅛"	43'-8"	45'-2⅝"	45'-9"	41'-7"
	5'	4'-5⅜"	9'-2"	9'-5⅝"	10'-0⅛"	3'-6⅜"		17'-11"	18'-6⅝"	19'-1"	14'-11⅛"	26'-8"	27'-7⅛"	28'-1⅜"	23'-8"	35'-5"	36'-8"	37'-2⅝"	32'-8⅜"	44'-2"	45'-8⅜"	46'-3⅜"	41'-11⅝"
	6'	5'-3⅜"	9'-2"	"	"	4'-2⅜"		17'-11"	"	"	13'-3⅜"	26'-8"	"	"	20'-3⅛"	35'-5"	"	"	30'-7⅝"	44'-2"	"	"	40'-5⅝"
	7'	6'-5⅜"	9'-3"	9'-6⅝"	10'-11⅝"	3'-1"		18'-1"	18'-8⅜"	19'-3"	12'-2⅜"	26'-11"	27'-11⅜"	28'-6⅜"	21'-11⅜"	35'-9"	37'-0⅜"	37'-6⅛"	30'-6⅜"	44'-7"	46'-1⅜"	46'-8⅜"	39'-8"
	8'	7'-8⅜"	9'-4"	9'-8"	10'-11⅝"	1'-11⅛"		18'-2"	18'-9⅜"	19'-4⅜"	11'-1⅛"	27'-0"	27'-11⅜"	28'-5⅝"	20'-12⅜"	35'-10"	37'-1⅜"	37'-7½"	29'-4⅝"	44'-8"	46'-2⅜"	46'-9½"	38'-6⅝"
	5'	4'-5⅜"	10'-2"	10'-6⅜"	11'-0⅛"	6'-1"		19'-11"	20'-7½"	21'-2"	16'-8"	29'-8"	30'-8⅛"	31'-3"	25'-10⅜"	39'-6"	40'-9⅜"	41'-4⅜"	36'-4⅝"	49'-8"	51'-3⅛"	51'-10⅝"	46'-5⅝"
	6'	5'-3⅜"	10'-3"	10'-7⅛"	11'-1⅜"	5'-0⅝"		20'-1"	20'-3½"	21'-0"	15'-6⅝"	29'-11"	30'-9½"	31'-6"	25'-10⅛"	39'-9"	41'-1⅞"	41'-8⅝"	35'-10⅝"	49'-7"	51'-4"	51'-10⅝"	46'-0⅝"
	7'	6'-5⅜"	10'-3"	"	"	4'-1⅝"		20'-1"	"	"	14'-3⅝"	29'-11"	"	"	24'-5⅝"	39'-9"	"	"	34'-8"	49'-7"	"	"	45'-10"
	8'	7'-8⅜"	10'-4"	10'-8⅛"	11'-2⅝"	2'-11⅝"		20'-2"	20'-10⅝"	21'-5"	13'-2"	30'-0"	31'-0⅝"	31'-7½"	23'-6⅝"	39'-11"	41'-2⅜"	41'-9½"	33'-6¼"	49'-8"	51'-5"	51'-11⅝"	43'-3⅜"
	5'	4'-5⅜"	11'-2"	11'-6⅜"	12'-1⅝"	7'-1⅜"		21'-10"	22'-8½"	23'-2⅜"	18'-9"	32'-8"	33'-9⅜"	34'-4⅝"	29'-1⅜"	43'-5"	44'-11½"	45'-5½"	40'-6"	56'-2"	56'-11"	57'-5"	51'-7½"
	6'	5'-3⅜"	11'-3"	11'-7⅝"	12'-2⅝"	6'-0⅝"		22'-1"	22'-10⅜"	23'-5⅝"	17'-7⅝"	32'-11"	34'-1"	34'-7⅝"	28'-7⅜"	43'-9"	45'-3½"	45'-10"	40'-0⅝"	56'-7"	57'-6"	57'-10⅝"	51'-11⅜"
	7'	6'-5⅜"	11'-3"	"	"	5'-1⅜"		22'-1"	"	"	16'-6⅜"	32'-11"	"	"	27'-7"	43'-9"	"	"	38'-3⅝"	56'-7"	"	"	51'-3"
	8'	7'-8⅜"	11'-4"	11'-8⅝"	12'-3⅜"	4'-0⅜"		22'-2"	22'-10⅞"	23'-5⅝"	15'-5⅝"	33'-0"	34'-1"	34'-8⅜"	26'-5⅝"	43'-10"	45'-4⅛"	45'-11"	37'-10"	56'-8"	56'-7⅝"	57'-1⅝"	48'-10⅝"
	6'	5'-3⅜"	12'-0"	12'-4⅜"	12'-11⅝"	7'-6"		24'-2"	25'-0⅛"	25'-6⅝"	19'-3"	36'-0"	37'-3⅜"	37'-9⅝"	32'-0"	47'-10"	49'-5⅜"	50'-0⅛"	44'-2"	—	—	—	—
	7'	6'-5⅜"	12'-0"	"	"	6'-3⅜"		24'-2"	"	"	18'-0⅝"	36'-0"	"	"	30'-7⅜"	47'-10"	"	"	42'-8"	—	—	—	—
	8'	7'-8⅜"	12'-0"	"	"	5'-0⅜"		24'-2"	"	"	17'-3⅜"	36'-0"	"	"	29'-6⅝"	47'-10"	"	"	41'-3⅝"	—	—	—	—
	6'	5'-3⅜"	13'-1"	13'-5⅝"	14'-0⅜"	8'-6⅝"		26'-8"	27'-1"	27'-7½"	21'-10"	39'-0"	40'-4⅝"	40'-11"	35'-1⅜"	51'-10"	53'-8"	54'-2⅝"	48'-9⅜"	—	—	—	—
	7'	6'-5⅜"	13'-1"	"	"	7'-3⅜"		26'-8"	"	"	20'-7⅜"	39'-0"	"	"	33'-10⅜"	51'-10"	"	"	47'-4"	—	—	—	—
	8'	7'-8⅜"	13'-1"	"	"	6'-1"		26'-8"	"	"	19'-4⅜"	39'-0"	"	"	32'-8"	51'-10"	"	"	45'-11⅝"	—	—	—	—
(FOR H=9'0" & OVER) W-X152-2, W-X153-2 OR W-X154-2.	7'																						
	8'	9'	8'-11⅝"	9'-6"	9'-10⅜"	9'-1⅝"	Ⓐ 0"	16'-5"	17'-0"	17'-6⅝"	8'-0⅜"	24'-9"	25'-6⅛"	25'-10⅝"	16'-3"	32'-8"	33'-6⅝"	33'-11"	24'-5⅜"	40'-2"	41'-1"	42'-1¼"	32'-7⅜"
		9'	8'-11⅝"	9'-6"	9'-10"	10'-0⅝"	0'-10⅜"	16'-5"	17'-0⅜"	17'-6⅝"	10'-1⅝"	24'-9"	25'-6⅛"	25'-10⅝"	18'-9⅜"	32'-8"	33'-6⅝"	33'-11"	28'-7"	40'-2"	41'-1"	42'-1¼"	32'-7⅜"
		10'	10'-2"	9'-8"	10'-0⅜"	10'-2⅝"	Ⓐ 0"	16'-8"	17'-3⅜"	17'-10"	9'-2"	25'-1"	25'-10⅜"	26'-3⅜"	19'-5⅜"	33'-1"	34'-0⅜"	34'-6"	27'-9⅜"	40'-8"	41'-8"	42'-8⅜"	33'-1½"
	9'	8'-11⅝"	10'-6"	10'-10⅜"	11'-5"	1'-11⅝"		20'-5"	21'-1⅝"	21'-8⅜"	12'-2⅝"	30'-9"	31'-11⅝"	32'-5½"	22'-5½"	40'-3"	41'-8"	42'-2⅝"	32'-8⅜"	50'-2"	51'-11⅝"	52'-5⅜"	43'-0"
		10'	10'-2"	10'-8"	11'-0⅝"	11'-3"	0'-10⅜"	20'-6"	21'-2⅜"	21'-11⅛"	11'-2⅜"	30'-8"	31'-11"	32'-3½"	21'-7"	40'-5"	42'-1⅛"	42'-7⅜"	32'-11⅜"	50'-8"	52'-5⅛"	53'-0"	42'-3½"
		11'	11'-0⅝"	10'-10"	11'-2⅝"	11'-9"	Ⓐ 0"	20'-10"	21'-6⅜"	22'-1⅝"	10'-2⅝"	30'-10"	31'-11"	32'-5⅝"	20'-1⅝"	40'-10"	42'-3⅜"	42'-9½"	30'-10⅝"	50'-10"	52'-7½"	53'-2"	41'-2⅝"
	10'	9'	8'-11⅝"	11'-4"	11'-10⅜"	12'-5⅜"	2'-1⅝"	22'-5"	23'-1⅝"	23'-8⅜"	14'-3⅝"	33'-6"	34'-11⅝"	35'-6"	25'-6⅝"	44'-3"	45'-9½"	46'-4⅝"	36'-10⅝"	55'-2"	57'-1⅝"	57'-7⅝"	48'-0"
		10'	10'-2"	11'-8"	12'-1"	12'-7⅜"	1'-11"	22'-8"	23'-5⅛"	24'-0"	13'-3⅝"	33'-8"	34'-10⅝"	35'-5⅝"	24'-10⅝"	44'-5"	46'-0⅝"	46'-7"	35'-10⅝"	55'-5"	57'-4⅝"	58'-0"	47'-5½"
		11'	11'-4⅝"	11'-10"	12'-3⅝"	12'-9⅜"	0'-10⅜"	22'-10"	23'-7⅜"	24'-2"	12'-5"	33'-10"	35'-0⅝"	35'-6⅝"	23'-10⅜"	44'-10"	46'-5"	46'-11½"	35'-0⅝"	55'-10"	57'-9⅝"	58'-3"	46'-5"
		12'	11'-7⅜"	11'-10"	12'-5⅛"	12'-11½"	Ⓐ 0"	23'-0"	23'-9⅝"	24'-4⅜"	11'-2⅜"	34'-0"	35'-2⅜"	35'-8⅜"	22'-7"	45'-0"	46'-7"	47'-1½"	33'-11⅝"	56'-0"	57'-11⅝"	58'-5⅝"	45'-9⅜"
	11'	9'	8'-11⅝"	12'-6"	13'-0⅛"	13'-6⅝"	4'-0"	24'-5"	25'-3⅜"	25'-9⅜"	16'-4"	36'-6"	37'-7⅜"	38'-1⅜"	26'-8"	48'-3"	49'-11⅜"	50'-5⅝"	39'-4"	—	—	—	—
		10'	10'-2"	12'-8"	13'-1⅛"	13'-7⅝"	2'-11⅜"	24'-8"	25'-6⅝"	26'-1⅝"	17'-5⅜"	36'-8"	37'-11⅛"	38'-5⅝"	27'-9⅜"	48'-5"	50'-1⅜"	50'-7⅝"	39'-11"	—	—	—	—
		11'	11'-0⅝"	12'-10"	13'-3⅜"	13'-10"	1'-10⅜"	24'-10"	25'-8⅜"	26'-3⅜"	18'-3⅜"	36'-10"	38'-1⅛"	38'-8"	28'-8"	48'-7"	50'-3⅝"	50'-10"	40'-5⅜"	—	—	—	—
		12'	11'-7⅜"	13'-0"	13'-5⅜"	14'-0"	0'-10⅜"	25'-0"	25'-10⅜"	26'-5"	19'-3⅜"	37'-0"	38'-3⅜"	38'-10"	29'-6⅜"	49'-0"	50'-8⅜"	51'-3⅜"	40'-10⅜"	—	—	—	—
	12'	9'	8'-11⅝"	13'-6"	13'-11⅝"	14'-6⅜"	5'-0⅜"	26'-5"	27'-3⅛"	27'-10⅜"	18'-5"	38'-6"	39'-8"	40'-3⅜"	29'-3⅜"	50'-2"	51'-10⅜"	52'-5⅜"	41'-3"	—	—	—	—
		10'	10'-2"	13'-8"	14'-1⅛"	14'-6⅝"	3'-11⅜"	26'-8"	27'-6⅜"	28'-1⅜"	17'-5⅝"	38'-8"	39'-10⅝"	40'-5⅜"	29'-1⅝"	50'-3"	51'-10⅝"	52'-5⅝"	41'-1⅜"	—	—	—	—
		11'	11'-0⅝"	13'-10"	14'-3⅜"	14'-10⅜"	2'-11⅜"	26'-10"	27'-9⅜"	28'-3⅜"	16'-6⅜"	39'-0"	40'-2⅜"	40'-8"	29'-10⅜"	50'-4"	52'-0"	52'-6⅜"	41'-2⅜"	—	—	—	—
		12'	11'-7⅜"	14'-0"	14'-5⅜"	15'-0⅝"	1'-10⅜"	27'-0"	27'-11⅜"	28'-6"	15'-8"	39'-0"	40'-1⅝"	40'-7⅛"	28'-9⅝"	53'-0"	54'-10⅜"	55'-4⅜"	42'-3"	—	—	—	—

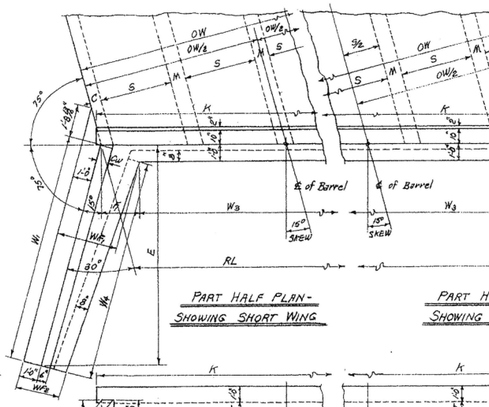
Ⓐ Special case for these boxes, See Detail "A" and Table "A" for revised values of F_1, F_2, W_2 and W_3, when apron width is more than 1'-6" and W_3 = 0". For Details "A" and Tables "A" for each slope, see Drawing Nos. W-X152-1, W-X152-2, or W-X153-1, W-X153-2, or W-X154-1, W-X154-2.



TRIPLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

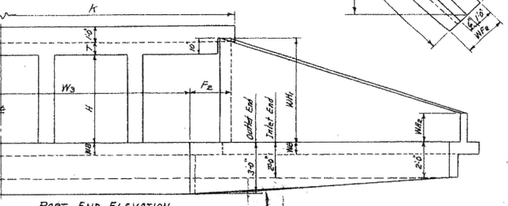
Details of Culvert with 15° Skew Left Forward is reversed, see Layout at top center of sheet.

Note:- Plans and Elevations are not to scale.



QUADRUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout above.

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.

Note:- This drawing to be used in conjunction with Standard Wing Drawings for 15° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X152-1 or W-X152-2	W-X153-1 or W-X153-2	W-X154-1 or W-X154-2.

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

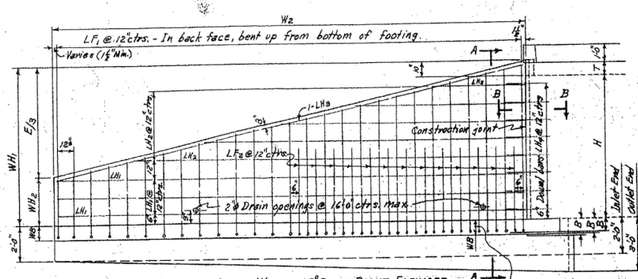
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

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-X15

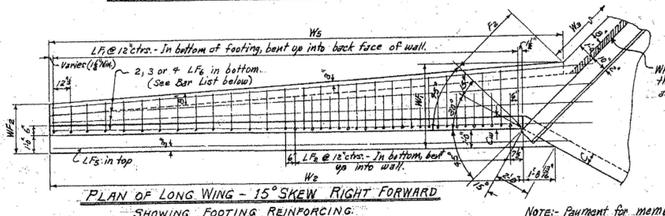
Designed by:- W.C.H. 5-22-63
Traced by:- W.C.H. 6-13-63
Quantities by:-
Checked by:-
Checked by:- J.E.M. 6-20-63
Checked by:-

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING

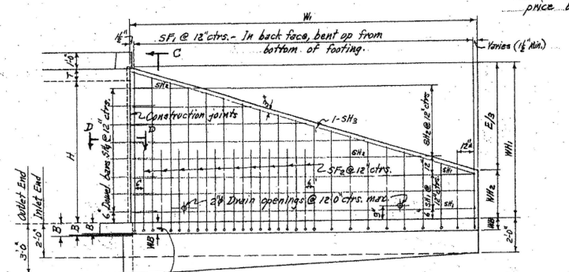
WB may be more, equal to, or less than the bottom slab thickness B.



PLAN OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING

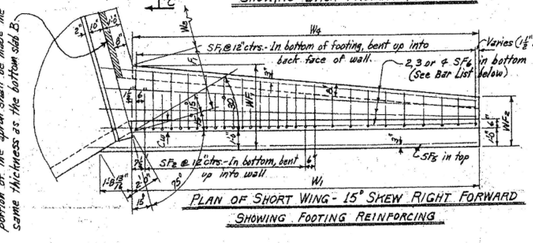
When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B.

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

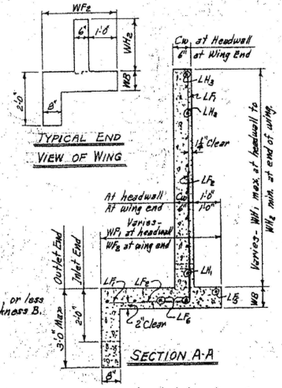


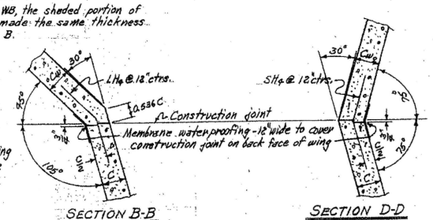
REAR ELEVATION OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING

WB may be more, equal to, or less than the bottom slab B.

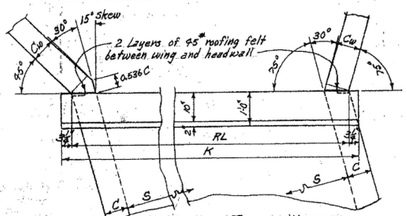


PLAN OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING

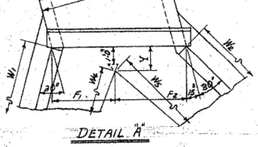




SECTIONS THRU CONSTRUCTION JOINTS



DETAILS AT TOP OF WINGS
15° SKEW RIGHT FORWARD



DETAIL "A"

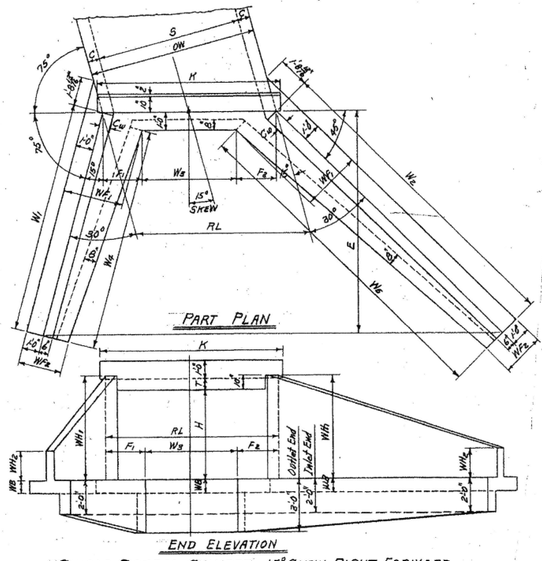
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F_1	F_2	W_4	W_5	W_3	Y
5'	7'	3'-0"	3'-5⅝"	16'-10⅛"	25'-0⅜"	0"	1'-0⅝"
6'	8'	3'-6"	4'-1⅛"	19'-0⅛"	28'-3⅜"	0"	1'-1"

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADW'LL & END	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 DIMENSIONS PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSIONS PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIMENSION AT END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSIONS SHORT WING	INSIDE FOOTING DIMENSIONS 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	Cw	WH1	WH2	WF5	WF6	F1	F2	E	W1	W2	W4	W5	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-1⅜"	0'-10⅝"	6'-6"	6'-0⅜"	9'-2⅝"	6'-0⅝"	9'-1⅝"	0.789	1.094	0.876	1.212
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-4⅝"	1'-5⅝"	1'-4⅜"	8'-6"	8'-3⅜"	12'-0⅝"	8'-2⅝"	12'-3⅝"	1.184	1.650	1.300	1.808
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-13"	1'-9⅝"	1'-10"	10'-6"	10'-10⅝"	14'-10⅛"	10'-9⅛"	15'-5⅛"	1.656	2.305	1.797	2.502
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-1⅝"	2'-1⅜"	2'-3⅝"	12'-6"	12'-11⅛"	17'-8⅛"	12'-6⅛"	18'-7⅛"	2.196	3.059	2.363	3.295
		7"	5'-10"	1'-8"	3'-4"	2'-4⅝"	2'-1⅜"	2'-3⅝"	12'-6"	12'-11⅛"	17'-8⅛"	12'-6⅛"	18'-7⅛"	2.287	3.188	2.455	3.429
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅜"	2'-9⅛"	14'-6"	15'-0⅝"	20'-6"	14'-8⅝"	21'-9"	3.052	4.242	3.276	4.517
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅜"	2'-9⅛"	14'-6"	15'-0⅝"	20'-6"	14'-8⅝"	21'-9"	3.114	4.329	3.309	4.605
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅜"	2'-9⅛"	14'-6"	15'-0⅝"	20'-6"	14'-8⅝"	21'-9"	3.177	4.417	3.371	4.693
° 7'	8½"	7½"	7'-1"	2'-6"	4'-2"	2'-7½"	3'-0⅞"	3'-6⅝"	16'-6"	17'-1"	23'-4"	16'-10⅜"	25'-1"	3.998	5.560	4.220	5.877
		8"	7'-1"	2'-6"	4'-2"	2'-7½"	3'-0⅞"	3'-5⅛"	16'-6"	17'-1"	23'-4"	16'-10⅜"	25'-1"	4.079	5.675	4.301	5.991
° 8'	9"	8"	8'-1"	2'-8"	4'-8"	2'-9"	3'-4⅝"	4'-2⅝"	18'-6"	19'-1⅜"	26'-2"	19'-1⅛"	28'-5"	5.111	7.111	5.360	7.970

* Quantity per wing does not include headwall or that portion of apron or footwall for the length Wa.
° See Table "A" for special values of F_1 & F_2 and W_4 & W_5 for Single 5'x7' and 6'x8' Box Culverts.



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD
Details of Culvert with 15° Skew Left Forward is reversed, see Drwg. No. W-X.15
TYPICAL WING DETAILS

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	* STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
				REINFORCING	SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
4'	2'	6"	7"	117	4.79	5.78	6.77	7.77	8.76
	3'	6"	7"	176	6.65	7.84	9.03	10.23	10.42
	4'	6"	7"	267	8.85	9.84	10.86	11.83	12.82
	5'	6"	7"	379	11.90	12.38	13.38	14.37	15.36
	6'	7"	8"	626	15.95	16.94	17.98	18.51	19.53
5'	3'	6"	7"	176	6.87	8.07	9.28	10.48	11.69
	4'	6"	7"	267	9.08	10.28	11.48	12.69	13.90
	5'	6"	7"	379	11.41	12.81	14.02	15.23	16.44
	6'	7"	8"	626	15.67	16.90	18.14	19.38	20.61
	7'	7½"	8½"	1210	20.11	21.34	22.62	23.86	25.14
6'	3'	6"	7"	176	7.09	8.52	9.92	11.34	12.78
	4'	6"	7"	267	9.29	10.73	12.13	13.54	14.98
	5'	6"	7"	379	11.83	13.26	14.67	16.10	17.53
	6'	7"	8"	626	15.89	17.35	18.79	20.25	21.70
	7'	7½"	8½"	1210	20.83	21.81	23.28	24.76	26.24
	8'	8"	9"	1533	25.56	27.05	28.53	30.02	31.50
7'	4'	6"	7"	267	9.52	11.18	12.81	14.47	16.09
	5'	6"	7"	379	12.05	13.72	15.35	17.01	18.63
	6'	7"	8"	626	16.12	17.80	19.45	21.13	22.78
	7'	7½"	8½"	1210	20.56	22.26	23.94	25.69	27.33
	8'	8"	9"	1533	25.00	27.50	29.20	30.90	32.60
8'	4'	6"	7"	267	9.75	11.65	13.51	15.41	17.23
	5'	7"	7"	379	12.76	14.68	16.55	18.47	20.31
	6'	7"	8"	626	16.39	18.26	20.14	22.06	23.90
	7'	7½"	8½"	1210	20.78	22.72	24.62	26.55	28.42
	8'	8"	9"	1533	26.03	27.96	29.86	31.80	33.71
9'	5'	7"	7"	379	12.99	15.15	17.25	19.40	21.45
	6'	7½"	8"	626	16.89	19.07	21.19	23.34	25.42
	7'	7½"	8½"	1210	21.01	23.19	25.31	27.98	29.59
	8'	8"	9"	1533	26.25	28.42	30.55	32.72	34.78
10'	5'	7"	7"	379	13.23	15.62	17.95	20.24	22.59
	6'	7½"	8"	626	17.18	19.54	21.89	24.20	26.54
	7'	7½"	8½"	1210	21.44	23.66	26.01	28.32	30.68
	8'	8"	9"	1533	26.48	28.88	31.25	33.56	35.92
11'	6'	8"	8"	626	17.47	20.34	22.32	25.48	——
	7'	8"	8½"	1210	21.88	24.55	27.13	29.69	——
	8'	8"	9"	1533	26.70	29.37	31.94	34.52	——
12'	6'	8"	8"	626	17.91	20.84	23.49	26.46	——
	7'	8"	8½"	1210	22.11	25.04	27.85	30.67	——
	8'	8"	9"	1538	26.93	29.86	32.67	35.49	——

* For reinforcing steel in Headwalls and Aprons, see Drawings 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 20000 #/□"

NOTE:-
This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X.15. For values of H, L, K, and W5 for each box, see the above Std. also.

MEMBRANE:- A membrane waterproofing 18" 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 in 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 of each length. SIZE	SPACING	NO. REQD	LENGTH	SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	NO. REQD	LENGTH	SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO. REQD	LENGTH	SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQD	LENGTH	SH1 & LH1 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQD	LENGTH	SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQD	LENGTHS VARY MAX.	LENGTHS VARY MIN.	SH3 & LH3 STRAIGHT: In back face of wing at top on slope. SIZE	NO. REQD	LENGTH	SH4 & LH4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQD	LENGTH	X
H	SHORT / LONG																																		
2'	Short	#3	12"	7	1'-7"	3'-11"	#3	12"	7	3'-6"	1'-1"	2'-6"	#3	1	1'-5"	#3	1	9'-2"	#3	12"	1	6'-5"	#3	12"	1	—	3'-6"	#3	1	6'-10"	#3	12"	2	2'-8"	1'-9"
	Long	#3	12"	10	1'-7"	3'-11"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	8'-11"	#3	1	11'-8"	#3	12"	1	8'-6"	#3	12"	1	—	4'-8"	#3	1	9'-1"	#3	12"	3	"	"
3'	Short	#3	12"	9	2'-2"	5'-8"	#3	12"	7	3'-6"	1'-1"	2'-6"	#3	1	11'-3"	#3	2	10'-0"	#3	12"	1	11'-3"	#3	12"	2	6'-7"	3'-6"	#3	1	9'-10"	#3	12"	3	"	"
	Long	#3	12"	13	1'-11"	5'-2"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	14'-6"	#3	2	14'-0"	#3	12"	1	14'-0"	#3	12"	2	8'-11"	3'-6"	#3	1	11'-2"	#3	12"	4	"	"
4'	Short	#3	12"	11	2'-7"	6'-7"	#3	12"	7	3'-6"	1'-1"	2'-6"	#3	1	13'-4"	#3	3	12'-2"	#3	12"	1	13'-4"	#3	12"	3	9'-2"	3'-6"	#3	1	11'-2"	#3	12"	4	"	"
	Long	#3	12"	15	2'-6"	6'-6"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	17'-1"	#3	3	16'-10"	#3	12"	1	16'-10"	#3	12"	3	11'-8"	3'-6"	#3	1	13'-1"	#3	12"	4	"	"
5'	Short	#3	12"	13	3'-1"	7'-11"	#3	12"	7	3'-6"	1'-1"	2'-6"	#3	1	15'-5"	#3	3	14'-9"	#3	12"	1	15'-5"	#3	12"	3	13'-2"	4'-8"	#3	1	15'-0"	#3	12"	5	"	"
	Long	#3	12"	18	3'-0"	7'-10"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	20'-1"	#3	4	19'-6"	#3	12"	2	20'-1"	#3	12"	4	17'-5"	4'-8"	#3	1	17'-10"	#3	12"	5	"	"
6'	Short	#4	12"	16	3'-9"	9'-6"	#3	12"	7	4'-6"	1'-6"	3'-3"	#3	1	17'-6"	#3	3	16'-6"	#3	12"	2	17'-6"	#3	12"	3	15'-0"	4'-8"	#3	1	17'-10"	#3	12"	5	"	"
	Long	#4	12"	21	3'-5"	9'-3"	#3	12"	5	4'-6"	1'-6"	3'-3"	#3	1	23'-0"	#3	4	22'-6"	#3	12"	2	23'-0"	#3	12"	4	20'-3"	4'-8"	#3	1	20'-9"	#3	12"	6	2'-8"	1'-9"
7'	Short	#4	12"	18	3'-9"	10'-10"	#3	12"	7	5'-6"	1'-9"	4'-0"	#3	1	19'-7"	#4	4	18'-9"	#4	12"	2	19'-7"	#4	12"	4	17'-0"	5'-6"	#4	1	17'-8"	#4	12"	7	3'-6"	1'-9"
	Long	#4	12"	24	3'-10"	10'-8"	#3	12"	5	5'-6"	1'-9"	4'-0"	#4	1	25'-10"	#4	4	24'-10"	#4	12"	2	25'-10"	#4	12"	4	23'-1"	5'-6"	#4	1	23'-8"	#4	12"	7	"	"
8'	Short	#4	12"	20	4'-2"	12'-5"	#3	12"	7	6'-6"	1'-10"	4'-9"	#4	1	21'-8"	#4	4	20'-10"	#4	12"	2	21'-8"	#4	12"	5	21'-8"	4'-8"	#4	1	19'-10"	#4	12"	8	"	"
	Long	#4	12"	27	4'-0"	12'-3"	#3	12"	5	6'-6"	1'-10"	4'-9"	#4	1	28'-5"	#4	4	27'-6"	#4	12"	3	28'-5"	#4	12"	5	21'-8"	4'-8"	#4	1	26'-7"	#4	12"	8	3'-6"	1'-9"

BAR BENDING DIAGRAM



QUANTITY: REINFORCING STEEL PER WING - LBS.	SHORT WING	LONG WING
	24.9	33.4
	37.7	50.3
	57.3	76.4
	81.1	108.4
	134.8	178.1
	259.5	345.2
	328.0	438.3

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

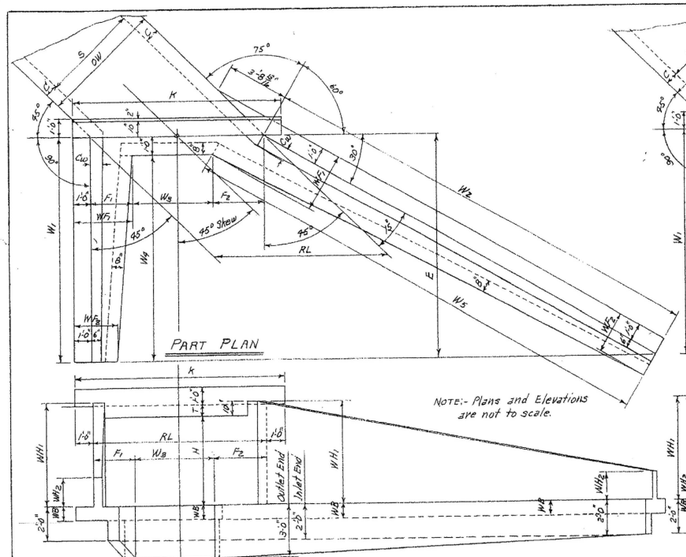
REVISIONS:- Membrane Added. 5-10-66 W.C.H.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
15° SKEW
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, — ALL DEPTHS OF COVER
QUADRUPLES & QUINTUPLES — FOR H = 8'-0" OR LESS
STANDARD DRAWING NO. W-X153-1

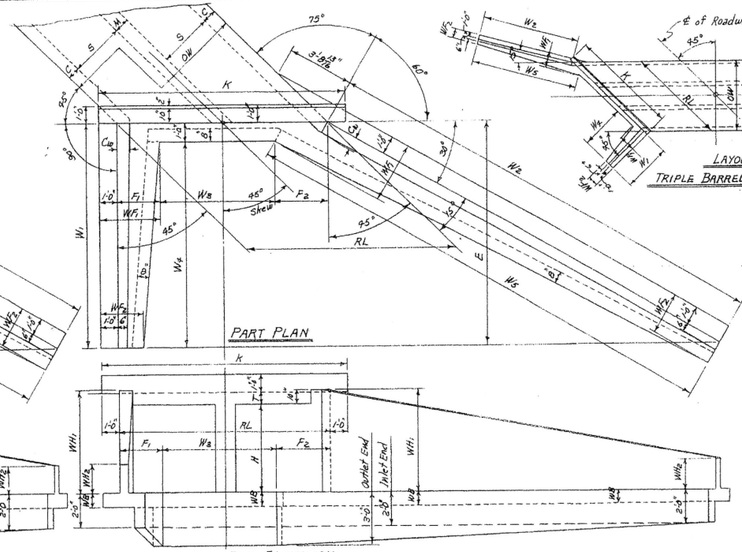
Designed By:- W.C.H. 5-13-63 Checked By:- RHS 8-7-63
Drawn By:- W.C.H. 6-20-63 Checked By:-
Quantities By:- W.C.H. 9-23-63 Checked By:-

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



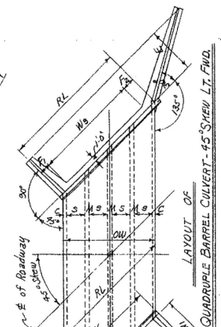
SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

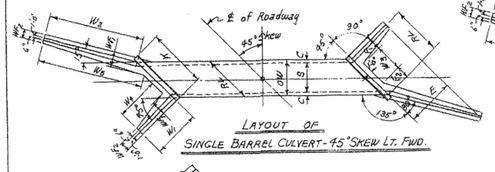
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.

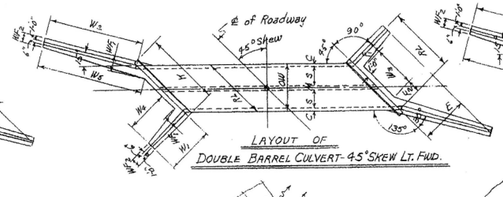


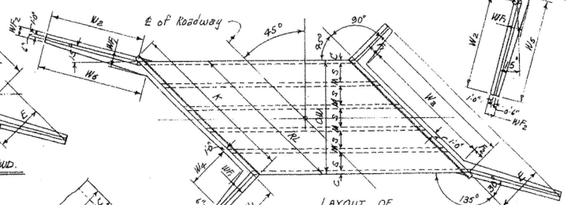
DOUBLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

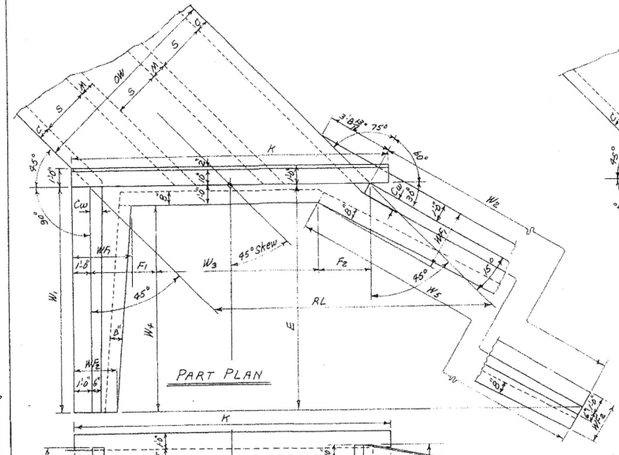
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.





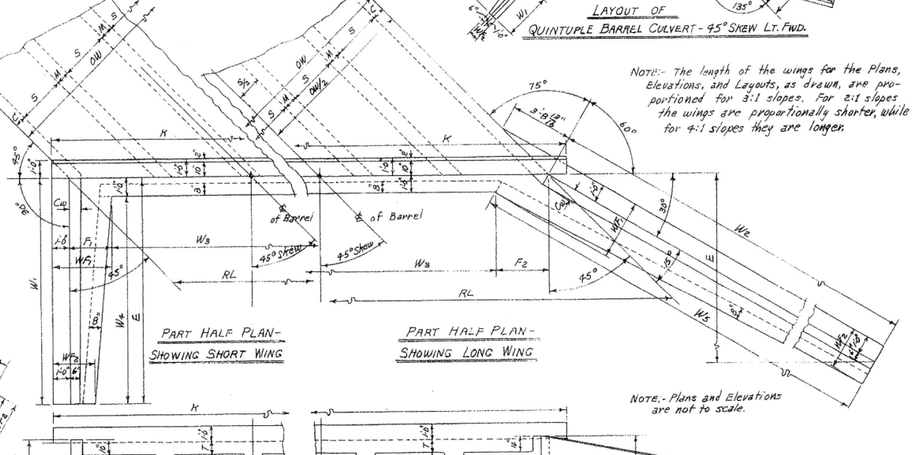


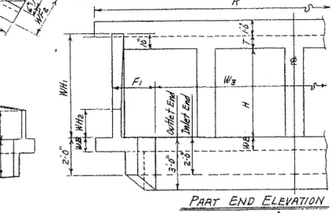




TRIPLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

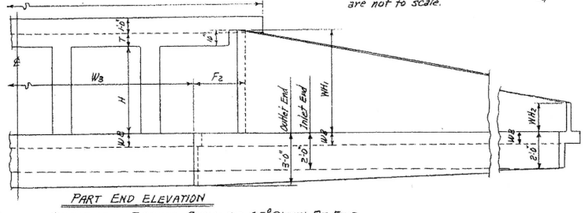
Details of Culvert with 45° Skew Left Forward is reversed, see Layout at top center of sheet.





QUADRUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout above.

Designed by:- W.C.H. 5-16-63
Drawn by:- W.C.H. 6-15-64
Quantities by:-

Checked by:- JEM. 6-23-64
Checked by:-
Checked by:-

ROADWAY LENGTH RL = OW x 1.41421 — HEADWALL LENGTH K = RL + (2'-0") — APRON DIMENSION $W_3 = RL - (F_1 + F_2)$

USE WITH DRAWING NO.	CLEAR SPAN	CLEAR HEIGHT	SUM OF FOOTING 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-X452-1, W-X453-1 OR W-X454-1. (FOR H=8'0" & LESS)	4'	2'	2'-3⅜"	5'-0"	7'-0⅝"	9'-0⅛"	4'-9⅝"	9'-8"	13'-8"	15'-8"	11'-4⅝"	14'-4"	20'-3⅛"	22'-3⅛"	18'-0"	19'-0"	26'-10⅝"	28'-10⅝"	24'-7⅛"	23'-8"	33'-5⅝"	35'-5⅝"	31'-2½"
		3'	3'-3⅜"	5'-0"	"	"	3'-9⅝"	9'-8"	"	"	10'-4⅝"	14'-4"	"	"	17'-0"	19'-0"	"	"	23'-7⅛"	23'-8"	"	"	30'-0½"
		4'	4'-3⅜"	5'-0"	"	"	2'-9⅝"	9'-8"	"	"	9'-4⅝"	14'-4"	"	"	16'-0"	19'-0"	"	"	22'-7⅛"	23'-8"	"	"	29'-2½"
		5'	5'-3⅜"	5'-0"	7'-0⅝"	9'-0⅛"	1'-9⅝"	9'-8"	13'-8"	15'-8"	8'-4⅝"	14'-4"	20'-3⅛"	22'-3⅛"	15'-0"	19'-0"	26'-10⅝"	28'-10⅝"	21'-7⅛"	23'-8"	33'-5⅝"	35'-5⅝"	28'-2½"
		6'	6'-3⅜"	5'-0"	7'-3⅝"	9'-3⅝"	1'-0⅝"	9'-11"	14'-0⅝"	16'-0⅝"	7'-10⅝"	14'-8"	20'-8⅝"	22'-9"	14'-5⅜"	19'-5"	27'-5⅝"	29'-5½"	21'-2⅝"	24'-2"	34'-2⅛"	36'-2"	27'-10⅜"
	5'	3'	3'-3⅜"	6'-0"	8'-5⅝"	10'-5⅛"	5'-2⅝"	11'-8"	16'-6"	18'-6"	13'-2⅝"	17'-4"	24'-6⅝"	26'-6⅝"	21'-3"	23'-0"	32'-6⅝"	34'-6⅝"	29'-3"	28'-8"	40'-4½"	42'-4½"	37'-3⅜"
		4'	4'-3⅜"	6'-0"	"	"	4'-2⅝"	11'-8"	"	"	12'-2⅝"	17'-4"	"	"	20'-3"	23'-0"	"	"	28'-3"	28'-8"	"	"	36'-3½"
		5'	5'-3⅜"	6'-0"	8'-5⅝"	10'-5⅛"	3'-2⅝"	11'-8"	16'-6"	18'-6"	11'-2⅝"	17'-4"	24'-6⅝"	26'-6⅝"	19'-3"	23'-0"	32'-6⅝"	34'-6⅝"	27'-3"	28'-8"	40'-4½"	42'-4½"	35'-3½"
		6'	6'-3⅜"	6'-2"	8'-8⅝"	10'-8⅝"	2'-5⅝"	11'-11"	16'-10⅛"	18'-10⅛"	10'-1"	17'-8"	24'-11⅛"	27'-0"	18'-0⅝"	23'-5"	33'-1⅛"	35'-1⅛"	26'-10⅛"	29'-2"	41'-3"	43'-3"	34'-11⅝"
		7'	7'-3⅜"	6'-3"	8'-10⅝"	10'-10⅝"	1'-0⅝"	12'-1"	17'-1"	19'-1"	9'-3⅝"	17'-11"	25'-4⅝"	27'-4"	17'-2⅝"	23'-9"	33'-7"	35'-7"	26'-3⅝"	29'-7"	41'-10"	43'-10"	34'-10⅜"
	6'	3'	3'-3⅜"	7'-0"	9'-10⅝"	11'-10⅜"	6'-7⅝"	13'-8"	19'-3⅜"	21'-4"	16'-0⅜"	20'-4"	28'-10⅜"	30'-9"	25'-5⅜"	27'-0"	38'-2⅝"	40'-2⅝"	34'-11"	33'-8"	47'-7⅞"	49'-7⅞"	44'-4"
		4'	4'-3⅜"	7'-0"	"	"	5'-7⅝"	13'-8"	"	"	15'-0⅜"	20'-4"	"	"	24'-5⅜"	27'-0"	"	"	33'-11"	33'-8"	"	"	43'-4"
		5'	5'-3⅜"	7'-0"	9'-10⅝"	11'-10⅜"	4'-7⅝"	13'-8"	19'-3⅜"	21'-4"	14'-0⅜"	20'-4"	28'-10⅜"	30'-9"	23'-5⅜"	27'-0"	38'-2⅝"	40'-2⅝"	32'-11"	33'-8"	47'-7⅞"	49'-7⅞"	42'-4"
		6'	6'-3⅜"	7'-2"	10'-1⅜"	12'-1⅝"	3'-10⅜"	13'-11"	19'-8⅛"	21'-8⅛"	13'-5"	20'-8"	29'-2⅞"	31'-2⅞"	21'-8"	27'-3"	38'-5⅛"	40'-5⅛"	32'-2"	34'-2"	48'-3⅜"	50'-3⅜"	42'-10⅝"
		7'	7'-9⅜"	7'-8"	10'-7⅜"	12'-7⅜"	2'-5⅝"	14'-1"	19'-11"	21'-11"	12'-1⅜"	20'-11"	29'-7"	31'-7"	21'-3⅜"	27'-9"	39'-3"	41'-3"	31'-5⅜"	34'-7"	48'-10⅜"	50'-11"	41'-7⅛"
		8'	9'-3⅜"	8'-1"	10'-9⅜"	12'-11½"	1'-1"	14'-2"	20'-1⅛"	22'-1⅛"	10'-9⅜"	21'-2"	29'-11⅜"	31'-10½"	20'-5⅛"	28'-0"	39'-6⅜"	41'-6⅜"	30'-1"	34'-8"	49'-0⅝"	51'-0⅝"	39'-9"
	7'	4'	4'-3⅜"	8'-0"	11'-3⅜"	13'-3⅜"	7'-0½"	15'-8"	22'-1⅞"	24'-1⅞"	17'-0½"	23'-4"	33'-0"	35'-0"	28'-8⅝"	31'-0"	43'-10⅝"	45'-10⅝"	38'-7⅝"	38'-5"	54'-0⅝"	56'-0⅝"	50'-5"
		5'	5'-3⅜"	8'-0"	11'-3⅜"	13'-3⅜"	6'-0½"	15'-9"	22'-1⅞"	24'-1⅞"	16'-0½"	23'-4"	33'-0"	35'-0"	27'-8⅝"	31'-0"	43'-10⅝"	45'-10⅝"	38'-6⅝"	38'-5"	54'-0⅝"	56'-0⅝"	49'-5"
		6'	6'-3⅜"	8'-2"	11'-5⅝"	13'-5⅝"	5'-3⅜"	15'-11"	22'-3⅝"	24'-3⅝"	14'-2⅜"	23'-8"	33'-5⅝"	35'-5⅝"	27'-2⅛"	31'-5"	44'-5⅜"	46'-5⅜"	38'-2"	38'-9"	55'-0⅜"	57'-0⅜"	49'-11⅝"
		7'	7'-9⅜"	8'-3"	11'-8"	13'-8"	4'-10⅝"	16'-1"	22'-5⅜"	24'-5⅜"	12'-9⅝"	23'-11"	33'-9⅜"	35'-10"	26'-10⅝"	31'-9"	44'-10⅝"	46'-10⅝"	37'-11⅝"	39'-1"	55'-10⅝"	57'-10⅝"	49'-2⅝"
		8'	9'-3⅜"	8'-4"	11'-9⅝"	13'-9⅝"	3'-10⅝"	16'-2"	22'-7⅛"	24'-7⅛"	13'-7"	24'-0"	33'-11⅛"	35'-11⅛"	24'-8"	31'-10"	45'-0⅛"	47'-0⅛"	35'-5"	39'-5"	56'-8⅛"	58'-8⅛"	46'-11"
	8'	4'	4'-3⅜"	9'-0"	12'-8⅜"	14'-8⅜"	8'-5⅛"	17'-8"	24'-11⅞"	26'-11⅞"	20'-8¼"	26'-8"	37'-10⅜"	39'-9"	32'-11⅜"	35'-0"	49'-6"	51'-6"	45'-2⅜"	43'-9"	61'-11"	63'-9"	57'-10⅝"
		5'	5'-3⅜"	9'-2"	12'-11⅛"	14'-11⅛"	7'-8⅜"	17'-11"	25'-1"	27'-1"	20'-0⅜"	26'-8"	37'-10⅜"	39'-8⅝"	32'-5⅝"	35'-5"	50'-1"	52'-1"	44'-9⅜"	44'-2"	62'-5⅝"	64'-5⅝"	57'-10⅝"
		6'	6'-3⅜"	9'-2"	12'-11⅛"	14'-11⅛"	6'-8⅜"	17'-11"	25'-1"	27'-1"	19'-0⅜"	26'-11"	38'-0⅜"	39'-10⅝"	31'-5⅝"	35'-5"	50'-1"	52'-1"	43'-10⅜"	44'-2"	62'-5⅝"	64'-5⅝"	56'-10⅝"
		7'	7'-9⅜"	9'-3"	13'-1"	15'-1"	5'-3⅜"	18'-1"	25'-3⅛"	27'-3"	17'-9⅜"	26'-11"	38'-0⅜"	40'-0⅝"	30'-3⅝"	35'-5"	50'-1⅝"	52'-1⅝"	42'-9⅜"	44'-7"	63'-0⅝"	65'-0⅝"	55'-11⅝"
		8'	9'-3⅜"	9'-4"	13'-2⅜"	15'-2⅜"	3'-11⅜"	18'-2"	25'-5⅛"	27'-5⅛"	16'-5"	27'-0"	38'-2⅜"	40'-2⅜"	28'-11"	35'-10"	50'-6"	52'-6"	41'-5"	44'-8"	63'-2"	65'-2"	53'-10⅝"
	9'	5'	5'-3⅜"	10'-2"	14'-4½"	16'-4½"	9'-1⅝"	19'-11"	28'-0"	30'-0"	22'-10⅜"	29'-8"	41'-10⅝"	43'-10⅝"	36'-6⅝"	39'-5"	55'-10⅜"	57'-9"	50'-5⅜"	49'-2"	69'-5⅝"	71'-6"	63'-10⅜"
		6'	6'-3⅜"	10'-3"	14'-6"	16'-6"	8'-2⅜"	20'-1"	28'-3½"	30'-3½"	22'-1⅛"	29'-11"	42'-3⅜"	44'-3⅜"	36'-10⅛"	39'-9"	56'-2⅜"	58'-2⅜"	49'-11⅛"	49'-7"	70'-1½"	72'-1½"	63'-10⅜"
		7'	7'-9⅜"	10'-3"	14'-6"	16'-6"	6'-8⅜"	20'-1"	28'-3½"	30'-3½"	20'-6⅛"	29'-11"	42'-3⅜"	44'-3⅜"	34'-6⅛"	39'-9"	56'-2⅜"	58'-2⅜"	48'-5⅛"	49'-7"	70'-1½"	72'-1½"	62'-4⅜"
		8'	9'-3⅜"	10'-4"	14'-7⅜"	16'-7⅜"	5'-5⅜"	20'-2"	28'-4⅝"	30'-4⅝"	19'-3"	30'-0"	42'-5⅜"	44'-5"	33'-2"	39'-10"	56'-5"	58'-5"	47'-10⅜"	49'-8"	70'-2⅜"	72'-3"	60'-11⅜"
	10'	5'	5'-3⅜"	11'-2"	15'-9⅜"	17'-9⅜"	10'-6⅝"	21'-11"	31'-0"	33'-0"	25'-5⅜"	32'-8"	46'-2⅜"	48'-2⅜"	40'-0"	43'-11"	62'-0⅜"	64'-0⅜"	55'-8"	54'-6"	76'-7⅛"	78'-7⅛"	69'-2⅝"
		6'	6'-3⅜"	11'-2"	15'-9⅜"	17'-9⅜"	9'-10⅝"	22'-1"	31'-2⅛"	33'-2⅛"	24'-7⅝"	32'-11"	46'-6⅝"	48'-6⅝"	39'-3⅜"	43'-11"	62'-0⅜"	64'-0⅜"	54'-7⅜"	54'-9"	76'-7⅛"	78'-7⅛"	68'-4½"
		7'	7'-9⅜"	11'-3"	15'-11"	17'-11"	9'-1⅝"	22'-1"	31'-2⅛"	33'-2⅛"	23'-10⅝"	33'-0"	46'-6⅝"	48'-6⅝"	38'-6⅜"	43'-11"	62'-0⅜"	64'-0⅜"	53'-10⅜"	54'-9"	76'-7⅛"	78'-7⅛"	67'-10⅝"
		8'	9'-3⅜"	11'-4"	16'-0⅜"	18'-0⅜"	8'-4⅜"	22'-2"	31'-3⅝"	33'-3⅝"	23'-1"	33'-0"	46'-7⅜"	48'-7⅜"	37'-9⅝"	43'-10"	61'-11⅜"	63'-11⅜"	53'-1⅛"	54'-8"	76'-6⅜"	78'-6⅜"	67'-1⅝"
	11'	6'	6'-3⅜"	12'-4"	17'-5⅝"	19'-5⅝"	11'-2⅛"	24'-2"	34'-2⅛"	36'-2"	27'-11"	36'-0"	50'-11"	52'-11"	44'-7⅛"	47'-10"	67'-7⅝"	69'-7⅝"	61'-4⅛"	—	—	—	—
		7'	7'-9⅜"	12'-4"	"	"	9'-8⅛"	24'-2"	"	"	26'-5"	36'-0"	"	"	43'-1⅞"	47'-10"	"	"	58'-10⅝"	—	—	—	—
		8'	9'-3⅜"	12'-5"	"	"	8'-2⅛"	24'-2"	"	"	24'-11"	36'-0"	"	"	41'-7⅞"	47'-10"	"	"	56'-4⅝"	—	—	—	—
	12'	6'	6'-3⅜"	13'-0"	18'-10⅛"	20'-10⅛"	12'-7⅛"	26'-2"	37'-0⅛"	39'-0"	30'-8⅜"	39'-0"	55'-1⅛"	57'-1⅛"	48'-10⅝"	51'-10"	73'-3⅜"	75'-3⅜"	67'-0⅛"	—	—	—	—
		7'	7'-9⅜"	13'-1"	"	"	11'-1⅝"	26'-2"	"	"	29'-1⅛"	39'-0"	"	"	47'-6⅜"	51'-10"	"	"	63'-6⅛"	—	—	—	—
		8'	9'-3⅜"	13'-1"	"	"	9'-7⅛"	26'-2"	"	"	27'-10⅜"	39'-0"	"	"	46'-0⅛"	51'-10"	"	"	61'-10⅛"	—	—	—	—
W-X452-2, W-X453-2 OR W-X454-2. (FOR H=9'0" & OVER)	7'	9'	10'-9⅜"	8'-6"	12'-0⅝"	14'-0⅝"	7'-3"	16'-5"	23'-2⅝"	25'-2⅝"	12'-5⅜"	24'-4"	34'-5"	36'-5"	23'-7⅜"	32'-3"	45'-7⅝"	47'-7⅝"	34'-10"	40'-2"	56'-9⅜"	58'-9⅜"	46'-0⅝"
	8'	9'	10'-9⅜"	9'-6"	13'-5⅝"	15'-5⅝"	8'-8"	18'-5"	26'-0⅝"	28'-0⅝"	15'-8⅜"	27'-9"	39'-1⅞"	41'-1⅞"	26'-10⅜"	36'-8"	51'-9⅜"	53'-9⅜"	40'-6"	45'-2"	63'-10⅝"	65'-10⅝"	53'-1⅛"
		10'	12'-3⅜"	9'-8"	13'-8"	15'-8"	7'-10⅝"	18'-8"	26'-4⅞"	28'-4⅞"	14'-7⅝"	27'-8"	39'-1⅛"	41'-1⅛"	26'-10⅝"	36'-8"	51'-10⅝"	53'-10⅝"	39'-7"	45'-8"	64'-5"	66'-5"	52'-3⅝"
	9'	9'	10'-9⅜"	10'-6"	14'-10⅝"	16'-10⅝"	9'-1"	20'-5"	28'-10⅝"	30'-10⅝"	18'-1⅝"	30'-8"	42'-10⅝"	44'-10⅝"	32'-1½"	40'-3"	56'-11⅜"	58'-11⅜"	46'-1¾"	50'-2"	70'-11⅝"	72'-11⅝"	60'-2⅝"
		10'	12'-3⅜"	10'-8"	15'-1"	17'-1"	9'-3⅝"	20'-8"	29'-2⅝"	31'-2⅝"	16'-10⅝"	30'-8"	43'-1⅛"	45'-1⅛"	31'-1⅛"	40'-8"	57'-6⅝"	59'-6⅝"	45'-3"	50'-8"	71'-7⅛"	73'-7⅛"	59'-10⅝"
		11'	13'-3⅜"	10'-10"	15'-3⅜"	17'-3⅜"	9'-5⅛"	20'-10"	29'-5⅛"	31'-5⅛"	15'-10⅛"	30'-10"	43'-3⅞"	45'-3⅞"	30'-0"	40'-10"	57'-9"	59'-9"	44'-3⅛"	50'-10"	71'-10⅝"	73'-10⅝"	58'-7⅛"
	10'	9'	10'-9⅜"	11'-6"	16'-3⅜"	18'-3⅜"	5'-4"	22'-5"	31'-8⅝"	33'-8⅝"	20'-11⅛"	33'-4"	47'-1⅝"	49'-1⅝"	34'-4⅝"	44'-3"	62'-7"	64'-7"	51'-3⅜"	55'-2"	78'-0⅛"	80'-0⅛"	62'-3"
		10'	12'-3⅜"	11'-8"	16'-6"	18'-6"	9'-2⅝"	22'-10"	32'-1⅜"	34'-1⅜"	19'-9⅜"	33'-8"	47'-7⅞"	49'-7⅞"	35'-1⅝"	44'-8"	63'-2"	65'-2"	50'-10⅜"	55'-8"	78'-8⅝"	80'-8⅝"	62'-5⅝"
		11'	13'-9⅜"	11'-10"	16'-8⅜"	18'-8⅜"	8'-11⅝"	23'-0"	32'-3⅜"	34'-3⅜"	18'-6⅝"	33'-10"	47'-10⅜"	49'-10⅜"	34'-1"	44'-10"	63'-5⅜"	65'-5⅜"	49'-7⅝"	55'-10"	78'-11⅛"	80'-11⅛"	62'-8⅜"
		12'	15'-3⅜"	12'-0"	16'-11⅜"	18'-11⅜"	8'-8⅝"	23'-1"	32'-5⅛"	34'-5⅛"	17'-3"	34'-0"	48'-1⅝"	50'-1⅝"	32'-9⅜"	45'-0"	63'-7⅝"	65'-7⅝"	48'-4⅜"	56'-0"	79'-2⅜"	81'-2⅜"	63'-11⅝"
	11'	9'	10'-9⅜"	12'-6"	17'-8⅜"	19'-8⅜"	6'-10⅜"	24'-5"	34'-6⅜"	36'-6⅜"	23'-9⅜"	36'-4"	51'-5⅜"	53'-5⅜"	40'-2⅝"	48'-10"	69'-1⅜"	71'-1⅜"	56'-6"	—	—	—	—
		10'	12'-3⅜"	12'-8"	18'-1⅜"	20'-1⅜"	9'-4⅝"	24'-10"	35'-1⅜"	37'-1⅜"	21'-4⅝"	36'-10"	52'-1⅛"	54'-1"	38'-3⅛"	48'-10"	69'-1⅜"	71'-1⅜"	55'-3⅜"	—	—	—	—
		11'	13'-9⅜"	12'-10"	18'-4⅜"	20'-4⅜"	8'-1⅝"	25'-0"	35'-4⅜"	37'-4⅜"	20'-1"	37'-0"	52'-5⅜"	54'-5"	36'-4⅜"	48'-10"	69'-1⅜"	71'-1⅜"	54'-0⅜"	—	—	—	—
		12'	15'-3⅜"	13'-0"	18'-6⅝"	20'-6⅝"	8'-1⅜"	25'-1"	35'-5⅛"	37'-5⅛"	18'-10⅝"	37'-0"	52'-5⅜"	54'-5"	34'-9"	49'-0"	69'-3⅝"	71'-3⅝"	54'-0⅛"	—	—	—	—
	12'	9'	10'-9⅜"	13'-6"	19'-1⅜"	21'-1"	8'-3⅜"	26'-5"	37'-6⅜"	39'-6⅜"	26'-7"	39'-9"	55'-11⅜"	57'-10⅝"	44'-8⅜"	52'-3"	73'-10⅝"	75'-10⅝"	63'-1⅛"	—	—	—	—
		10'	12'-3⅜"	13'-8"	19'-3⅜"	21'-3⅜"	7'-10⅝"	26'-8"	37'-9⅜"	39'-9⅜"	25'-5⅝"	39'-9"	56'-1⅛"	58'-1"	43'-1"	52'-8"	74'-5⅜"	76'-5⅜"	62'-2⅝"	—	—	—	—
		11'	13'-9⅜"	13'-10"	19'-5⅜"	21'-5⅜"	7'-5⅜"	26'-10"	37'-11⅜"	39'-11⅜"	24'-2⅝"	39'-10"	56'-3⅛"	58'-3"	42'-0"	52'-10"	74'-7⅝"	76'-7⅝"	60'-11⅝"	—	—	—	—
		12'	15'-3⅜"	14'-0"	19'-8⅝"	21'-8⅝"	9'-6⅝"	29'-0"	38'-2⅝"	40'-2⅝"	22'-11"	40'-0"	56'-4⅝"	58'-4⅝"	41'-3⅜"	53'-0"	74'-11⅝"	76'-11⅝"	59'-8⅝"	—	—	—	—

Note:- This drawing to be used in conjunction with Standard Wing Drawings for 45° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X452-1 or W-X452-2	W-X453-1 or W-X453-2	W-X454-1 or W-X454-2.

Note:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

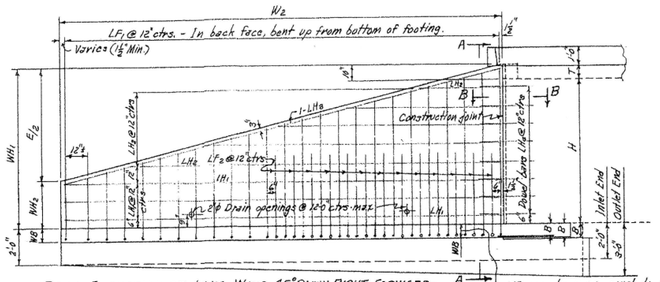
DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

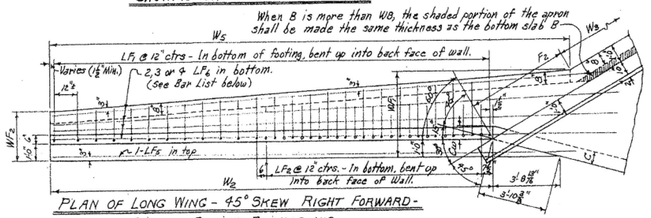
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER H = 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12

STANDARD DRAWING No. W-X45

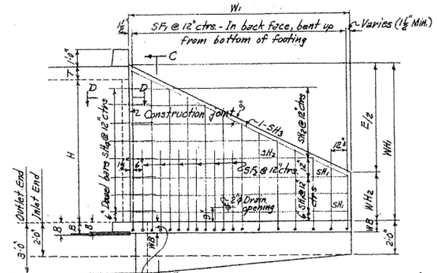
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



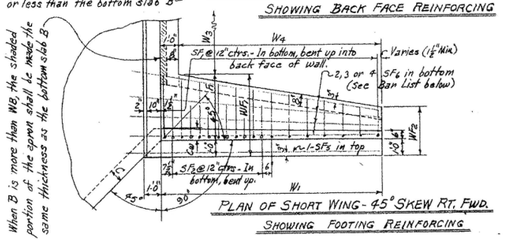
REAR ELEVATION OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



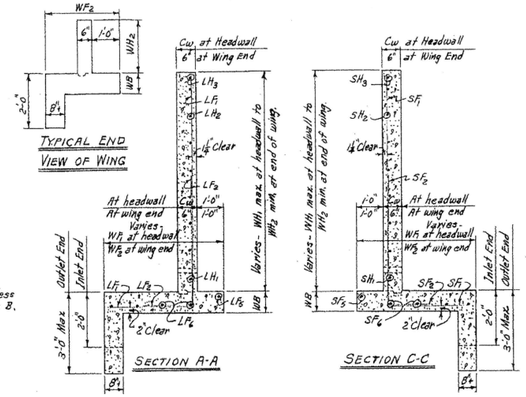
PLAN OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING

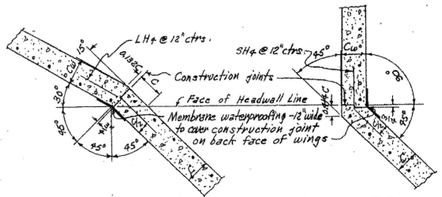


REAR ELEVATION OF SHORT WING - 45° SKEW RT. FWD. SHOWING BACK FACE REINFORCING

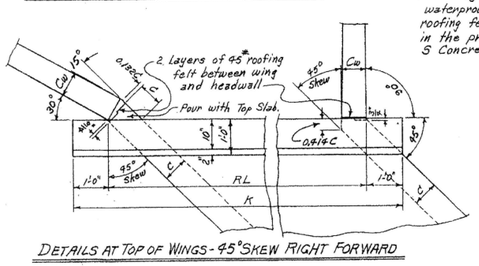


PLAN OF SHORT WING - 45° SKEW RT. FWD. SHOWING FOOTING REINFORCING



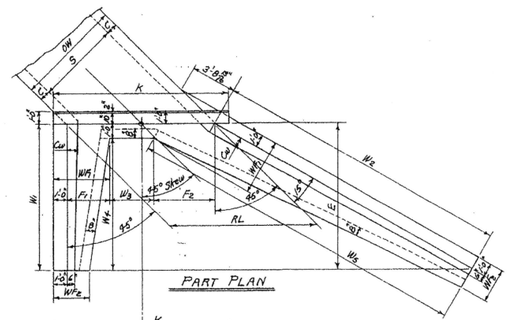


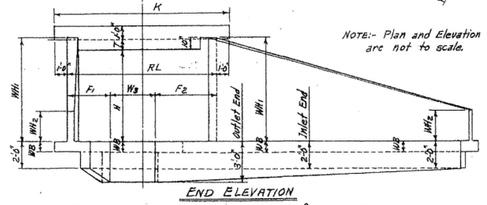
SECTIONS THRU CONSTRUCTION JOINTS



DETAILS AT TOP OF WINGS - 45° SKEW RIGHT FORWARD

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.





SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

Details of Culvert with 45° Skew Left Forward is reversed, see Drawing No. W-X45.

NOTE:- Plan and Elevation are not to scale.

REGULAR WING DIMENSIONS - 2:1 SLOPES

CLEAR HEIGHT OF Box	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL	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 DISTANCE FROM WING TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSIONS SHORT WING	INSIDE FOOTING DIMENSIONS 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	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	1'-4"	0'-11½"	4'-9"	4'-9"	8'-8"	3'-4"	8'-11⅜"	0.495	1.077	0.553	1.193
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-7½"	5'-8"	5'-8"	11'-4"	4'-8"	12'-2⅜"	0.798	1.619	0.821	1.775
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	2'-0"	2'-3½"	7'-0"	7'-0"	14'-0"	6'-0"	15'-5½"	1.096	2.254	1.136	2.449
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅝"	8'-4"	8'-4"	16'-8"	7'-4"	18'-8½"	1.391	2.983	1.498	3.219
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅝"	8'-4"	8'-4"	16'-8"	7'-4"	18'-8½"	1.446	3.110	1.553	3.345
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11½"	1.934	4.132	2.057	4.408
		7⅞"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11½"	1.972	4.218	2.095	4.499
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11½"	2.009	4.305	2.133	4.581
7'	8⅛"	7⅛"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-2⅝"	11'-0"	11'-0"	22'-0"	10'-0"	25'-5⅝"	2.536	5.411	2.676	5.731
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-2⅝"	11'-0"	11'-0"	22'-0"	10'-0"	25'-5⅝"	2.586	5.523	2.726	5.843
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	5'-2⅛"	12'-4"	12'-4"	24'-8"	11'-4"	29'-0⅛"	3.245	6.914	3.403	7.277

* Quantity per wing does not include headwall or that portion of apron or tocwall for the length W5.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - WINGS ⊕	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	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	
4'	2'	6"	7"	101	9.59	5.94	7.30	8.66	10.01	
	3'	6"	7"	152	6.10	7.95	8.80	10.16	11.52	
	4'	6"	7"	283	7.68	9.23	10.59	11.95	13.31	
	5'	6"	7"	322	9.95	11.30	12.66	14.01	15.37	
	6'	7"	8"	523	13.29	15.67	16.07	17.67	18.86	
5'	3'	6"	7"	152	6.90	8.09	9.69	11.33	12.98	
	4'	6"	7"	283	8.18	9.82	11.47	13.12	14.77	
	5'	6"	7"	322	10.25	11.89	13.54	15.19	16.83	
	6'	7"	8"	523	13.59	15.27	16.96	18.65	20.34	
	7'	7½"	8½"	1025	17.82	18.93	20.66	22.38	24.10	
6'	3'	6"	7"	152	6.69	8.65	10.57	12.52	14.45	
	4'	6"	7"	233	8.98	10.93	12.35	14.31	16.23	
	5'	6"	7"	322	10.58	12.50	14.42	16.37	18.30	
	6'	7"	8"	523	13.87	15.88	17.85	19.84	21.82	
	7'	7½"	8½"	1025	17.52	19.54	21.55	23.57	25.59	
	8'	8"	9"	1287	21.81	23.85	25.84	27.89	29.92	
7'	4'	6"	7"	233	8.78	11.06	13.28	15.56	17.76	
	5'	6"	7"	322	10.85	13.12	15.35	17.62	19.83	
	6'	7"	8"	523	14.20	16.99	18.75	21.04	23.30	
	7'	7½"	8½"	1025	17.83	20.15	22.45	24.77	27.07	
	8'	8"	9"	1287	22.13	24.46	26.77	29.10	31.42	
8'	4'	6"	7"	233	9.10	11.63	14.23	16.83	19.32	
	5'	7"	7"	322	11.57	14.19	16.76	19.38	21.90	
	6'	7"	8"	523	14.51	17.13	19.69	22.31	24.83	
	7'	7½"	8½"	1025	18.14	20.78	23.38	26.02	28.56	
	8'	8"	9"	1287	22.45	25.08	27.67	30.32	32.91	
9'	5'	7"	7"	322	11.89	14.84	17.71	20.55	23.49	
	6'	7½"	8"	523	15.10	18.17	20.96	23.83	26.79	
	7'	7½"	8½"	1025	18.45	21.93	24.32	27.19	30.11	
	8'	8"	9"	1287	22.74	25.71	28.61	31.48	34.40	
10'	5'	7"	7"	322	12.22	15.98	18.67	21.79	25.00	
	6'	7½"	8"	523	15.42	18.71	21.92	25.07	28.30	
	7'	7½"	8½"	1025	18.77	22.07	25.28	28.43	31.66	
	8'	8"	9"	1287	23.06	26.36	29.57	32.73	36.96	
11'	6'	8"	8"	523	16.00	19.65	23.17	26.66	——	
	7'	8"	8½"	1025	19.42	23.08	26.40	30.03	——	
	8'	8"	9"	1287	23.86	27.02	30.59	34.06	——	
12'	6'	8"	8"	523	16.32	20.33	24.16	28.01	——	
	7'	8"	8½"	1025	19.75	23.75	27.58	31.43	——	
	8'	8"	9"	1287	23.68	27.69	31.52	35.38	——	

⊕ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

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 of each length. SIZE	SPACING	NO./BAND	LENGTHS VARY MIN.	MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	NO./BAND	LENGTH	X	Y	SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO./BAND	LENGTH	SF6 & LF6 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO./BAND	LENGTH	SH1 & LH1 Horizontal in back face of wing. SIZE	SPACING	NO./BAND	LENGTH	SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO./BAND	LENGTHS VARY MAX.	MIN.	SH3 & LH3 In back face of wing at top - on slope. SIZE	NO./BAND	LENGTH	SH4 & LH4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO./BAND	L'ENGTH	X
H	SHORT OR LONG																																							
2'	Short	#3	12"	5	1'-6"	3'-11"	0'-8"	1'-1"	0'-11"	2'-1"	—	—	—	—	—	—	#3	1	6'-2"	#3	2	6'-6"	#3	12"	1	4'-1"	#3	12"	1	—	2'-6"	#3	1	4'-6"	#3	12"	2	2'-8"	1'-4"
	Long	#3	12"	9	1'-7"	3'-11"	0'-8"	1'-1"	1'-0"	3'-0"	—	—	—	—	—	—	#3	1	11'-2"	#3	2	11'-6"	#3	12"	1	8'-9"	#3	12"	1	—	9'-8"	#3	1	6'-8"	#3	12"	2	"	"
3'	Short	#3	12"	6	2'-2"	5'-3"	0'-10"	1'-5"	1'-5"	3'-11"	—	—	—	—	—	—	#3	1	7'-6"	#3	2	7'-10"	#3	12"	1	5'-5"	#3	12"	2	4'-2"	2'-8"	#3	1	6'-0"	#3	12"	3	"	"
	Long	#3	12"	12	2'-0"	5'-3"	0'-10"	1'-5"	1'-4"	4'-0"	—	—	—	—	—	—	#3	1	15'-10"	#3	2	16'-6"	#3	12"	1	11'-0"	#3	12"	2	8'-4"	4'-4"	#3	1	11'-5"	#3	12"	4	"	"
4'	Short	#3	12"	8	2'-3"	6'-7"	0'-11"	1'-9"	1'-5"	4'-11"	—	—	—	—	—	—	#3	1	8'-10"	#3	3	8'-10"	#3	12"	1	6'-9"	#3	12"	3	6'-2"	2'-2"	#3	1	7'-6"	#3	12"	4	"	"
	Long	#3	12"	15	2'-4"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	#3	1	18'-6"	#3	3	17'-10"	#3	12"	1	13'-5"	#3	12"	3	12'-4"	4'-4"	#3	1	10'-3"	#3	12"	4	"	"
5'	Short	#3	12"	9	2'-10"	7'-11"	1'-0"	2'-1"	1'-11"	5'-11"	#3	12"	2	3'-6"	1'-1"	2'-6"	#3	1	10'-8"	#3	3	10'-0"	#3	12"	2	8'-1"	#3	12"	3	6'-8"	2'-8"	#3	1	9'-0"	#3	12"	5	"	"
	Long	#3	12"	17	2'-11"	7'-10"	1'-0"	2'-1"	1'-11"	6'-8"	#3	12"	2	4'-0"	1'-1"	2'-6"	#3	1	21'-2"	#3	3	21'-2"	#3	12"	2	16'-6"	#3	12"	3	12'-8"	4'-8"	#3	1	16'-11"	#3	12"	5	"	"
6'	Short	#4	12"	10	3'-7"	9'-6"	1'-2"	2'-5"	2'-6"	7'-0"	#3	12"	2	4'-6"	1'-4"	3'-3"	#3	1	11'-6"	#3	3	11'-6"	#3	12"	2	9'-5"	#3	12"	3	8'-2"	2'-8"	#3	1	10'-6"	#3	12"	6	"	"
	Long	#4	12"	20	3'-5"	9'-3"	1'-2"	2'-3"	2'-4"	7'-1"	#3	12"	5	4'-6"	1'-4"	3'-3"	#3	1	23'-10"	#3	3	24'-6"	#3	12"	2	19'-0"	#3	12"	4	16'-4"	4'-8"	#3	1	19'-8"	#3	12"	7	2'-8"	1'-4"
7'	Short	#4	12"	12	3'-8"	10'-10"	1'-3"	2'-11"	2'-6"	8'-0"	#4	12"	4	5'-6"	1'-7"	4'-0"	#4	1	12'-10"	#4	3	12'-8"	#4	12"	2	10'-9"	#4	12"	5	10'-2"	2'-8"	#4	1	12'-0"	#4	12"	7	3'-6"	1'-9"
	Long	#4	12"	23	3'-9"	10'-9"	1'-3"	2'-8"	2'-7"	8'-1"	#4	12"	9	5'-6"	1'-7"	4'-0"	#4	1	26'-6"	#4	4	28'-0"	#4	12"	2	21'-8"	#4	12"	5	20'-6"	4'-8"	#4	1	22'-0"	#4	12"	7	"	"
8'	Short	#4	12"	13	4'-5"	12'-5"	1'-5"	3'-5"	3'-1"	9'-2"	#4	12"	6	6'-6"	1'-10"	4'-9"	#4	1	16'-2"	#4	4	16'-10"	#4	12"	3	12'-11"	#4	12"	5	10'-2"	2'-8"	#4	1	13'-4"	#4	12"	8	"	"
	Long	#4	12"	25	4'-6"	12'-2"	1'-5"	3'-4"	3'-2"	9'-2"	#4	12"	13	6'-6"	1'-10"	4'-9"	#4	1	29'-2"	#4	4	31'-6"	#4	12"	3	20'-6"	#4	12"	5	20'-4"	4'-8"	#4	1	25'-2"	#4	12"	8	3'-6"	1'-9"

BAR BENDING DIAGRAM: SF1 & SF2, LF1 & LF2, 3" Pin, X, Y, SH4, ½, LH4, 3½, ½. Note:- Dimensions are to bar centers.

QUANTITY: REINFORCING STEEL PER WING - LBS.	SHORT WING	LONG WING
	18.0	32.7
	26.4	49.4
	40.5	75.9
	55.1	105.8
	88.5	172.9
	179.8	337.8
	218.5	429.7

NOTE:- Bars for Short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X45. For values of RL, K and W5 for each box, see above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings 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 in wings.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 5-13-63 Checked By:- J.E.M. 7-14-64
Drawn By:- W.C.H. 6-2-64 Checked By:- J.E.M. 7-14-64
Quantities By:-

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-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X452-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60:0" IN LENGTH

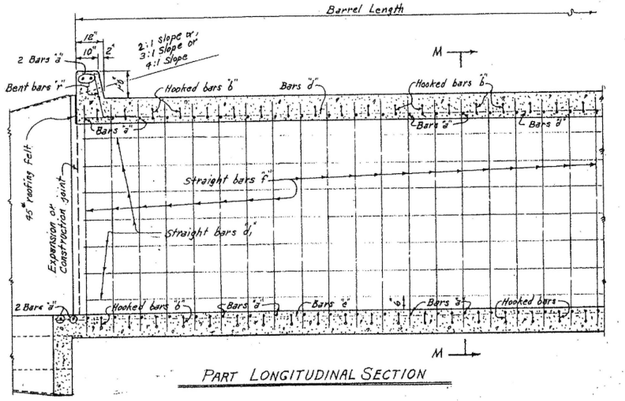
DEPTH OF COVER	CLEAR SPAN	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel & Apron and Headwall - Each. CLEAR HEIGHT	"b" bars Bent - See Diagram below. In Top and Bottom Slabs of Barrel. Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars STRAIGHT. Longitudinal in Top Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	"d'" bars STRAIGHT. Longitudinal in Sidewalls SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Side walls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
D	S	H																							
0'-0" TO 5'-0" MAXIMUM	4'	2'	#5	13"	120	120	4'-9"	#6	13"	110	110	5'-10"	4'-8"	#5	10½"	6	#4	12"	4	#4	12"	5	#4	12"	120	120	2'-11"
		3'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			6			5			120	120	3'-11"
		4'			120	120	4'-9"			110	110	5'-10"	4'-8"			8			8			5			120	120	4'-11"
		5'			120	120	4'-9"			110	110	5'-10"	4'-8"			10			10			5			120	120	5'-11"
		6'			120	120	4'-11"			110	110	6'-0"	4'-10"			12			12			5			120	120	6'-11"
	5'	3'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"	#5	10⅛"	6	#4	12"	6	#4	12"	6	#4	12"	120	120	4'-0"
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			8			8			6			120	120	5'-0"
		5'			120	120	5'-9"			110	110	6'-10"	5'-8"			10			10			6			120	120	6'-0"
		6'			120	120	5'-11"			110	110	7'-0"	5'-10"			12			12			6			120	120	7'-0"
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"			14			14			6			120	120	8'-0"
	6'	3'	#6	12"	128	128	6'-9"	#6	12"	118	118	7'-10"	6'-8"	#5	10⅛"	6	#4	12"	6	#4	12"	7	#4	12"	120	120	4'-1"
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8			7			120	120	5'-1"
		5'			128	128	6'-9"			118	118	7'-10"	6'-8"			10			10			7			120	120	6'-1"
		6'			128	128	6'-11"			118	118	8'-1"	6'-11"			12			12			7			120	120	7'-1"
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			14			14			7			120	120	8'-1"
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			16			16			7			120	120	9'-1"
	7'	4'	#6	11"	140	140	7'-9"	#6	11"	130	130	8'-10"	7'-8"	#5	10⅛"	8	#4	12"	8	#4	12"	8	#5	12"	120	120	5'-2"
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			9			8	#4	12"	120	120	6'-2"
		6'			140	140	7'-11"			130	130	9'-0"	7'-10"			9			9			8			120	120	7'-2"
		7'			140	140	8'-0"			130	130	9'-1"	7'-11"			9			9			8			120	120	8'-2"
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"			9			9			8	#5	12"	120	120	10'-2"
		9'			140	140	8'-3"			130	130	9'-2"	8'-0"			9			9			8					
	8'	4'	#7	12"	128	128	8'-9"	#6	12"	118	118	9'-10"	8'-8"	#5	10"	11	#4	12"	8	#4	12"	8	#4	12"	120	120	5'-9"
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			10			9			120	120	6'-9"
		6'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			12			9			120	120	7'-9"
		7'			128	128	9'-0"			118	118	10'-1"	8'-11"			11			14			9			120	120	8'-9"
		8'			128	128	9'-1"			118	118	10'-2"	9'-0"			11			16			9					
		9'			128	128	9'-3"			118	118	10'-4"	9'-2"			11			18			9					
		10'			128	128	9'-5"			118	118	10'-6"	9'-4"			11			20			9					
	9'	5'	#7	11"	140	140	9'-11"	#6	11"	130	130	11'-0"	9'-10"			12	#4	12"	10	#4	12"	10	#4	12"	120	120	6'-5"
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			12			10			120	120	7'-5"
		7'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			14			10			120	120	8'-5"
		8'			140	140	10'-1"			130	130	11'-2"	10'-0"	#5	10"	12			16			10	#5	11"	132	132	11'-5"
		9'			140	140	10'-3"			130	130	11'-9"	10'-2"			12			18			10			144	144	9'-5"
		10'			140	140	10'-5"			130	130	11'-14"	10'-4"			12			20			10			120	120	10'-5"
		11'			140	140	10'-7"			130	130	11'-19"	10'-6"			12			22			10			144	144	12'-5"
	10'	5'			128	128	10'-11"			118	118	12'-2"	10'-10"			13			10			11	#6	12"	120	120	6'-6"
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			12			11			120	120	7'-6"
		7'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			14			11			120	120	8'-6"
		8'			128	128	11'-1"	#7	12"	118	118	12'-4"	11'-0"	#5	10"	13	#4	12"	16	#4	12"	11	#4	12"	144	144	9'-6"
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"			13			18			11			120	120	10'-6"
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13			20			11	#5	11"	132	132	11'-6"
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13			22			11			144	144	12'-6"
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"			13			24			11	#6	12"	120	120	13'-6"
	11'	6'			140	140	12'-1"			130	130	13'-4"	12'-0"			15			12			12	#4	12"	120	120	7'-7"
		7'			140	140	12'-1"			130	130	13'-5"	12'-0"			15			14			12			120	120	8'-7"
		8'			140	140	12'-1"			130	130	13'-6"	12'-0"			15			16			12			144	144	9'-7"
		9'			140	140	12'-3"	#7	11"	130	130	13'-6"	12'-2"	#5	9⅛"	15	#4	12"	18	#4	12"	12	#5	11"	132	132	11'-7"
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"			15			20			12			144	144	12'-7"
		11'			140	140	12'-7"			130	130	13'-8"	12'-6"			15			22			12	#6	12"	120	120	13'-7"
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"			15			24			12					
	12'	6'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			12			13	#4	12"	120	120	7'-9"
		7'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			14			13			120	120	8'-9"
		8'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			16			13			144	144	9'-9"
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-8"	13'-2"	#5	9⅛"	16	#4	12"	18	#4	12"	13	#5	11"	132	132	11'-9"
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"			16			20			13			144	144	12'-9"
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16			22			13	#6	12"	120	120	13'-9"
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16			24			13					

DIMENSIONS — QUANTITIES

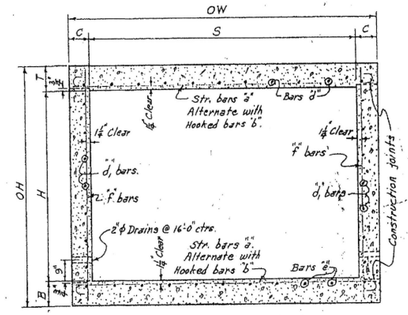
MIN. DESIGN DEPTH OF COVER	BARREL DIMENSIONS CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	ADDITIONAL PER LAP	ADDITIONAL THRU HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
5'-0"	4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	0.282	41.99	17.96	66.35
		3'	12	5'-0"		6"		4'-1½"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1½"	0.356	46.83	21.29	66.35
		5'	20	5'-0"		6"		6'-1½"	0.394	49.50	22.96	66.35
		6'	24	5'-2"		7"		7'-1½"	0.474	52.96	29.63	67.75
	5'	3'	15	6'-0"	7½"	6"	7"	4'-2½"	0.380	55.55	22.19	101.27
		4'	20	6'-0"		6"		5'-2½"	0.417	58.23	23.86	101.27
		5'	25	6'-0"		6"		6'-2½"	0.454	60.90	25.53	101.27
		6'	30	6'-2"		7"		7'-2½"	0.535	64.99	27.20	103.27
		7'	35	6'-3"		7½"		8'-2½"	0.604	67.63	28.87	104.27
	6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	0.496	66.29	29.76	118.94
		4'	24	7'-0"		6"		5'-3½"	0.983	68.96	26.43	118.94
		5'	30	7'-0"		6"		6'-3½"	0.520	71.64	28.10	118.96
		6'	36	7'-2"		7"		7'-3½"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3½"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3½"	0.746	82.47	33.11	122.97
	7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.66	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.76	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	90.98	34.02	139.88
		8'	56	8'-4"		8"		9'-5"	0.832	96.65	35.69	140.88
		9'	63	8'-6"		9"		10'-5"	0.946	105.59	32.36	142.89
	8'	4'	32	9'-0"	9½"	6"	9½"	5'-7"	0.676	95.26	33.32	194.07
		5'	40	9'-2"		7"		6'-7"	0.754	99.12	34.99	196.80
		6'	48	9'-2"		7"		7'-7"	0.797	101.79	36.66	196.80
		7'	56	9'-3"		7½"		8'-7"	0.867	105.05	38.33	198.16
		8'	64	9'-4"		8"		9'-7"	0.942	110.81	40.00	199.52
		9'	72	9'-6"		9"		10'-7"	1.057	119.92	41.67	202.25
		10'	80	9'-8"		10"		11'-7"	1.184	126.67	43.34	204.97
	9'	5'	45	10'-2"	10"	7"	10"	6'-8"	0.844	119.72	37.56	219.61
		6'	54	10'-3"		7½"		7'-8"	0.910	118.04	39.23	220.97
		7'	63	10'-3"		7½"		8'-8"	0.957	120.71	40.90	220.97
		8'	72	10'-4"		8"		9'-8"	1.033	126.54	42.57	222.33
		9'	81	10'-6"		9"		10'-8"	1.198	135.80	44.24	224.06
		10'	90	10'-8"		10"		11'-8"	1.276	142.68	45.91	227.78
		11'	99	10'-10"		11"		12'-8"	1.916	160.90	47.58	230.51
	10'	5'				7"		6'-9½"	0.957	130.64	40.13	242.64
		6'	60	11'-3"		7½"		7'-9½"	1.024	133.99	41.80	244.00
		7'	70	11'-3"		7½"		8'-9½"	1.071	136.66	43.47	244.00
		8'	80	11'-4"		8"		9'-9½"	1.147	142.55	45.14	245.36
		9'	90	11'-6"		9"		10'-9½"	1.263	151.92	46.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	48.98	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	166.71	50.15	253.99
		12'	120	12'-0"		12"		13'-9½"	1.685	178.67	51.82	256.26
	11'	6'	66	12'-4"	10⅝"	8"	11"	7'-10⅝"	1.153	156.16	46.12	268.62
		7'	77	12'-5"		8"		8'-10⅝"	1.202	157.83	47.79	268.62
		8'	88	12'-6"		8"		9'-10⅝"	1.252	163.06	49.46	268.62
		9'	99	12'-6"		9"		10'-10⅝"	1.368	172.60	51.13	271.34
		10'	110	12'-8"		10"		11'-10⅝"	1.497	179.70	52.80	274.07
		11'	121	12'-10"		11"		12'-10⅝"	1.638	187.67	54.97	276.79
		12'	132	13'-0"		12"		13'-10⅝"	1.792	198.79	56.14	278.52
	12'	6'	72	13'-4"	11⅝"	8"	12½"	8'-0"	1.284	172.20	98.69	357.62
		7'	84	13'-5"		8"		9'-0"	1.333	174.87	50.86	357.62
		8'	96	13'-9"		8"		10'-0"	1.383	180.15	52.03	357.62
		9'	108	13'-6"		9"		11'-0"	1.500	189.85	58.70	361.18
		10'	120	13'-8"		10"		12'-0"	1.630	197.07	55.37	369.74
		11'	132	13'-10"		11"		13'-0"	1.772	205.16	57.04	368.30
		12'	144	14'-0"		12"		14'-0"	1.926	217.45	58.71	371.86

W-X002-1, W-X003-1 or W-X004-1 or W-X002-2, W-X003-2, W-X004-2.

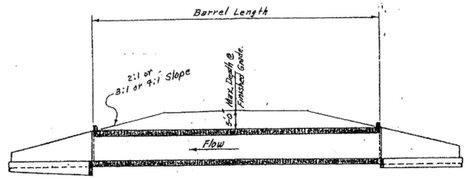
Note:- For details of wings and bar bends, see Drawing Nos. 1nd



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars "b".
#6	3"	5"	1'-2"	K, Pin Diam., X
#7	3⅜"	5⅜"	1'-4"	

NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X	Bars "r" Dowel bars in Headwalls.
4'	#4	11"/2	12	2'-6"	1'-3"	
5'	#4	11"/2	14	2'-7"	1'-3⅜"	
6'	#4	11"/2	16	2'-8"	1'-4"	
7'	#4	11"/2	18	2'-9"	1'-4⅜"	
8'	#4	11½"/2	20	2'-11"	1'-5⅜"	
9'	#4	11⅜"/2	22	3'-0"	1'-6"	
10'	#4	11⅜"/2	24	3'-1"	1'-6⅜"	
11'	#4	12"/2	26	3'-2"	1'-7"	
12'	#4	12"/2	28	3'-3"	1'-7⅜"	

Designed By:- W.C.H. 1-23-63. Checked By:- RBS 5-24-63
Drawn By:- W.C.H. 2-8-63. Checked By:- RBS 5-24-63
Quantities By:- W.C.H. 2-12-63. Checked By:- RBS 5-24-63

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 additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls 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 25,000 Lb. Axles @ 9'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

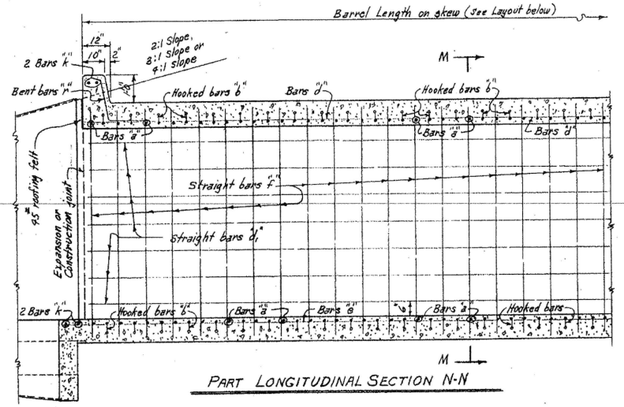
DEPTH OF COVER	SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel.				"b" bars BENT- See Diagram. In Top and Bottom Slabs of Barrel. Alternate with "a" bars					"d" bars STRAIGHT Longitudinal in Top Slab of Barrel.				"d1" bars STRAIGHT Longitudinal in Sidewalls				"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel				"f" bars STRAIGHT Verticals in Sidewalls				"k" bars STRAIGHT 2 in Top of Headwalls and Aprons-Each.		
D	S	H	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH
0'-0" TO 5'-0" MAXIMUM	4'@	2'	#5	13"	112	4'-1"	#6	13"	110	6'-0"	4'-10"	#5	10½"	6	6	#4	12"	4	5	#4	12"	5	5	#4	12"	120	2'-1"	8	5'-5"
		3'			112	4'-11"			110	6'-0"	4'-10"			6	6			6	5			5	5			120	3'-11"	8	5'-5"
		4'			112	4'-11"			110	6'-0"	4'-10"			6	6			8	5			5	5			120	4'-11"	8	5'-5"
		5'			112	4'-11"			110	6'-0"	4'-10"			6	6			10	5			5	5			120	5'-11"	8	5'-5"
		6'			112	5'-1"			110	6'-2"	5'-0"			6	6			12	5			5	5			120	6'-11"	8	5'-7"
	5'@	3'	#6	13"	112	5'-11"	#6	13"	110	7'-1"	5'-11"	#5	10½"	6	7	#4	12"	6	6	#4	12"	6	6	#4	12"	120	4'-8"	8	6'-6"
		4'			112	5'-11"			110	7'-1"	5'-11"			6	7			8	6			6	6			120	5'-8"	8	6'-6"
		5'			112	5'-11"			110	7'-1"	5'-11"			6	7			10	6			6	6			120	6'-0"	8	6'-6"
		6'			112	6'-1"			110	7'-3"	6'-1"			6	7			12	6			6	6			120	7'-0"	8	6'-8"
		7'			112	6'-8"			110	7'-3"	6'-2"			6	7			14	6			6	6			120	8'-0"	8	6'-9"
	6'@	3'	#6	12"	120	7'-0"	#6	12"	118	8'-1"	6'-11"	#5	10½"	6	8	#4	12"	6	7	#4	12"	7	7	#4	12"	120	4'-11"	8	7'-6"
		4'			120	7'-0"			118	8'-1"	6'-11"			6	8			8	7			7	7			120	5'-11"	8	7'-6"
		5'			120	7'-0"			118	8'-1"	6'-11"			6	8			10	7			7	7			120	6'-11"	8	7'-6"
		6'			120	7'-2"			118	8'-3"	7'-1"			6	8			12	7			7	7			120	7'-11"	8	7'-8"
		7'			120	7'-3"			118	8'-4"	7'-2"			6	8			14	7			7	7			120	8'-11"	8	7'-9"
		8'			120	7'-9"			118	8'-5"	7'-3"			6	8			16	7			7	7			120	9'-11"	8	7'-10"
	7'@	4'	#6	11"	132	8'-0"	#6	11"	130	9'-1"	7'-11"	#5	10½"	6	9	#4	12"	6	8	#4	12"	8	8	#4	12"	120	5'-2"	8	8'-7"
		5'			132	8'-0"			130	9'-1"	7'-11"			6	9			8	8			8	8			120	6'-2"	8	8'-7"
		6'			132	8'-2"			130	9'-3"	8'-1"			6	9			10	8			8	8			120	7'-2"	8	8'-9"
		7'			132	8'-3"			130	9'-4"	8'-2"			6	9			12	8			8	8			120	8'-2"	8	8'-10"
		8'			132	8'-4"			130	9'-5"	8'-3"			6	9			14	8			8	8			10'	144 9'-2"	8	8'-11"
		9'			132	8'-6"			130	9'-7"	8'-5"			6	9			16	8			8	8			5'	12" 120 10'-2"	8	9'-1"
	8'@	4'	#7	12"	120	9'-1"	#6	12"	118	10'-2"	9'-0"	#5	10"	6	11	#4	12"	6	9	#4	12"	9	9	#4	12"	120	5'-5"	8	9'-3"
		5'			120	9'-3"			118	10'-4"	9'-2"			6	11			8	9			9	9			120	6'-5"	8	9'-5"
		6'			120	9'-3"			118	10'-4"	9'-2"			6	11			10	9			9	9			120	7'-5"	8	9'-7"
		7'			120	9'-3"			118	10'-4"	9'-2"			6	11			12	9			9	9			120	8'-5"	8	9'-9"
		8'			120	9'-5"			118	10'-6"	9'-4"			6	11			14	9			9	9			10'	144 9'-5"	8	9'-11"
		9'			120	9'-7"			118	10'-8"	9'-6"			6	11			16	9			9	9			12'	120 10'-4"	8	10'-1"
		10'			120	9'-9"			118	10'-10"	9'-8"			6	11			18	9			9	9			11'	132 11'-3"	8	10'-3"
	9'@	5'	#7	12"	132	10'-3"	#6	11"	130	11'-4"	10'-2"	#5	10"	6	12	#4	12"	6	10	#4	12"	10	10	#4	12"	120	6'-5"	8	10'-5"
		6'			132	10'-3"			130	11'-5"	10'-3"			6	12			8	10			10	10			120	7'-5"	8	10'-7"
		7'			132	10'-4"			130	11'-5"	10'-3"			6	12			10	10			10	10			120	8'-5"	8	10'-9"
		8'			132	10'-5"			130	11'-6"	10'-4"			6	12			12	10			10	10			10'	144 9'-5"	8	10'-11"
		9'			132	10'-7"			130	11'-8"	10'-6"			6	12			14	10			10	10			12'	120 10'-5"	8	11'-0"
		10'			132	10'-9"			130	11'-10"	10'-8"			6	12			16	10			10	10			11'	132 11'-5"	8	11'-2"
		11'			132	10'-11"			130	12'-0"	10'-10"			6	12			18	10			10	10			10'	144 12'-5"	8	11'-6"
	10'@	5'	#7	12"	120	11'-3"	#6	11"	118	12'-2"	11'-0"	#5	10"	6	13	#4	12"	6	11	#4	12"	11	11	#4	12"	120	6'-6"	8	11'-10"
		6'			120	11'-3"			118	12'-2"	11'-0"			6	13			8	11			11	11			120	7'-6"	8	11'-10"
		7'			120	11'-4"			118	12'-4"	11'-2"			6	13			10	11			11	11			120	8'-6"	8	11'-11"
		8'			120	11'-5"			118	12'-6"	11'-4"			6	13			12	11			11	11			10'	144 9'-6"	8	12'-0"
		9'			120	11'-5"			118	12'-8"	11'-4"			6	13			14	11			11	11			12'	120 10'-6"	8	12'-0"
		10'			120	11'-10"			118	13'-1"	11'-9"			6	13			16	11			11	11			11'	132 11'-6"	8	12'-2"
		11'			120	12'-0"			118	13'-3"	11'-11"			6	13			18	11			11	11			10'	144 12'-6"	8	12'-4"
		12'			120	12'-2"			118	13'-5"	12'-1"			6	13			20	11			11	11			12'	120 12'-6"	8	12'-6"
	11'@	6'	#7	11"	132	12'-6"	#6	11"	130	13'-9"	12'-5"	#5	9½"	6	15	#4	12"	6	12	#4	12"	12	12	#4	12"	120	7'-6"	8	12'-8"
		7'			132	12'-6"			130	13'-9"	12'-5"			6	15			8	12			12	12			120	8'-6"	8	12'-8"
		8'			132	12'-6"			130	13'-9"	12'-5"			6	15			10	12			12	12			10'	144 9'-6"	8	12'-10"
		9'			132	12'-7"			130	13'-11"	12'-7"			6	15			12	12			12	12			12'	120 10'-6"	8	12'-10"
		10'			132	12'-10"			130	14'-1"	12'-9"			6	15			14	12			12	12			11'	132 11'-6"	8	13'-0"
		11'			132	13'-0"			130	14'-3"	12'-11"			6	15			16	12			12	12			10'	144 12'-6"	8	13'-0"
		12'			132	13'-2"			130	14'-5"	13'-1"			6	15			18	12			12	12			12'	120 12'-6"	8	13'-2"
	12'@	6'	#8	12"	120	13'-6"	#7	12"	118	14'-10"	13'-6"	#5	9½"	6	16	#4	12"	6	13	#4	12"	13	13	#4	12"	120	7'-6"	8	13'-4"
		7'			120	13'-6"			118	14'-10"	13'-6"			6	16			8	13			13	13			120	8'-6"	8	13'-6"
		8'			120	13'-6"			118	14'-10"	13'-6"			6	16			10	13			13	13			10'	144 9'-6"	8	13'-8"
		9'			120	13'-8"			118	15'-0"	13'-8"			6	16			12	13			13	13			12'	120 10'-6"	8	13'-8"
		10'			120	13'-10"			118	15'-2"	13'-10"			6	16			14	13			13	13			11'	132 11'-6"	8	13'-10"
		11'			120	14'-0"			118	15'-4"	14'-0"			6	16			16	13			13	13			10'	144 12'-6"	8	14'-0"
		12'			120	14'-2"			118	15'-6"	14'-2"			6	16			18	13			13	13			12'	120 12'-6"	8	14'-2"

NOTE:- The "a" and "b" bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

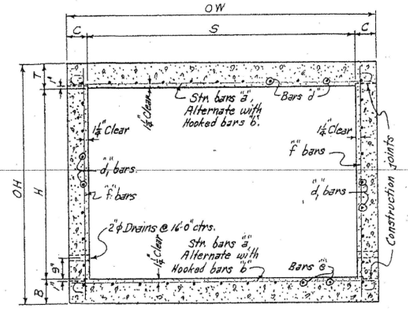
DIMENSIONS AND QUANTITIES

MAX. DESIGN DEPTH OF COVER	SPAN	CLEAR HEIGHT	SQ. FT. OF OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALL	UNIT QUANTITIES CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	RL	K	CU.YD.	LB.	LB.	LB.
5'-0"	4'@	2'	8	5'-0"	7"	6"	6½"	3'-1¼"	5'-2⅛"	5'-8⅜"	0.282	42.27	17.95	71.92
		3'	12	5'-0"		6"		4'-1¼"	"	"	0.319	44.94	19.62	71.92
		4'	16	5'-0"		6"		5'-1¼"	"	"	0.356	47.62	21.29	71.92
		5'	20	5'-0"		6"		6'-1¼"	"	"	0.394	50.29	22.96	71.92
		6'	24	5'-2"		7"		7'-1¼"	5'-4⅜"	5'-10⅝"	0.474	53.74	24.63	73.31
	5'@	3'	15	6'-0"	7"	6"	6½"	4'-2⅜"	6'-2⅝"	6'-9"	0.380	56.71	22.19	110.28
		4'	20	6'-0"		6"		5'-2⅜"	"	"	0.417	59.38	23.86	110.28
		5'	25	6'-0"		6"		6'-2⅜"	"	"	0.456	62.05	25.53	110.28
		6'	30	6'-2"		7"		7'-2⅜"	6'-4⅝"	6'-11⅞"	0.535	65.65	27.20	112.28
		7'	35	6'-3"		7½"		8'-2⅜"	6'-5⅝"	7'-0⅜"	0.604	68.78	28.87	113.28
	6'@	3'	18	7'-0"	8"	6"	7½"	5'-3⅜"	7'-3"	7'-9⅜"	0.446	67.79	24.96	127.97
		4'	24	7'-0"		6"		6'-3⅜"	"	"	0.483	70.47	26.43	127.97
		5'	30	7'-0"		6"		7'-3⅜"	"	"	0.520	73.14	28.10	127.97
		6'	36	7'-2"		7"		8'-3⅜"	7'-5"	7'-11⅝"	0.602	76.81	29.77	129.98
		7'	42	7'-3"		7½"		9'-3⅜"	7'-6"	8'-0⅛"	0.671	79.98	31.44	130.98
		8'	48	7'-4"		8"		10'-3⅜"	7'-7⅜"	8'-1⅝"	0.746	83.97	33.11	131.98
	7'@	4'	28	8'-0"	8½"	6"	8½"	5'-5"	8'-3⅜"	8'-9⅜"	0.568	82.36	29.01	196.89
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	85.63	30.68	196.89
		6'	42	8'-2"		7"		7'-5"	8'-5⅛"	9'-0"	0.688	89.40	32.35	198.89
		7'	49	8'-3"		7½"		8'-5"	8'-6⅛"	9'-1"	0.757	92.62	34.02	199.90
		8'	56	8'-4"		8"		9'-5"	8'-7⅛"	9'-2"	0.832	98.28	35.69	150.90
		9'	63	8'-6"		9"		10'-5"	8'-9⅜"	9'-4"	0.946	107.22	37.36	152.90
	8'@	4'	32	9'-0"	9½"	6"	9½"	5'-7"	9'-3⅜"	9'-10⅛"	0.676	97.69	33.32	207.70
		5'	40	9'-2"		7"		6'-7"	9'-5⅛"	10'-0⅛"	0.754	101.48	34.99	210.42
		6'	48	9'-2"		7"		7'-7"	"	"	0.797	104.15	36.66	210.42
		7'	56	9'-3"		7½"		8'-7"	9'-6⅜"	10'-1⅝"	0.867	107.92	38.33	211.79
		8'	64	9'-4"		8"		9'-7"	9'-8"	10'-2⅝"	0.942	113.17	40.00	213.15
		9'	72	9'-6"		9"		10'-7"	9'-10"	10'-4⅝"	1.057	122.28	41.67	215.87
		10'	80	9'-8"		10"		11'-7"	10'-0⅛"	10'-6⅝"	1.189	129.04	43.34	218.60
	9'@	5'	45	10'-2"	7"	7"	10"	6'-8"	10'-6⅝"	11'-0⅝"	0.896	117.30	37.56	233.23
		6'	54	10'-3"	7½"			7'-8"	10'-7⅜"	11'-1⅝"	0.910	120.62	39.28	234.60
		7'	63	10'-3"	7½"			8'-8"	"	"	0.957	123.29	40.90	234.60
		8'	72	10'-6"	8"			9'-8"	10'-8⅝"	11'-2⅝"	1.033	129.12	42.57	235.96
		9'	81	10'-4"	9"			10'-8"	10'-10⅛"	11'-5"	1.148	138.38	44.24	240.05
		10'	90	10'-8"	10"			11'-8"	11'-0⅝"	11'-7"	1.276	145.26	45.91	242.77
		11'	99	10'-10"	11"			12'-8"	11'-2⅝"	11'-9"	1.416	152.98	47.58	245.50
	10'@	5'	50	11'-2"	7"	7"	10"	6'-9⅜"	11'-6⅝"	12'-1⅝"	0.957	133.70	40.13	257.63
		6'	60	11'-3"	7½"			7'-9⅜"	11'-7⅜"	12'-2⅝"	1.024	137.06	41.80	258.99
		7'	70	11'-3"	7½"			8'-9⅜"	"	"	1.071	139.73	43.47	258.99
		8'	80	11'-4"	8"			9'-9⅜"	11'-8⅜"	12'-3⅝"	1.147	145.62	45.14	260.35
		9'	90	11'-6"	9"			10'-9⅜"	11'-10⅜"	12'-5⅝"	1.263	155.33	46.81	263.08
		10'	100	11'-8"	10"			11'-9⅜"	12'-1"	12'-7⅝"	1.391	162.30	48.48	265.80
		11'	110	11'-10"	11"			12'-9⅜"	12'-3"	12'-9⅝"	1.532	170.12	50.15	268.53
		12'	120	12'-0"	12"			13'-9⅜"	12'-5⅛"	12'-11⅝"	1.685	182.08	51.82	271.25
	11'@	6'	66	12'-4"	8"	8"	11"	7'-10⅜"	12'-9⅛"	13'-3⅜"	1.153	158.87	46.12	283.61
		7'	77	12'-4"	8"			8'-10⅜"	"	"	1.202	161.55	47.79	288.61
		8'	88	12'-4"	8"			9'-10⅜"	"	"	1.252	166.78	49.46	288.61
		9'	99	12'-6"	9"			10'-10⅜"	12'-11⅝"	13'-5⅝"	1.368	176.31	51.13	286.33
		10'	110	12'-8"	10"			11'-10⅜"	13'-1⅝"	13'-7⅝"	1.497	183.42	52.80	289.04
		11'	121	12'-10"	11"			12'-10⅜"	13'-3⅝"	13'-10"	1.638	191.38	54.47	295.15
		12'	132	13'-0"	12"			13'-10⅜"	13'-5⅝"	14'-0"	1.792	203.51	56.14	295.87
	12'@	6'	72	13'-0"	8"	8"	11½"	8'-0"	13'-3⅝"	14'-0"	1.284	176.97	48.69	378.98
		7'	84	13'-0"	8"			9'-0"	"	"	1.333	179.14	50.36	378.98
		8'	96	13'-0"	8"			10'-0"	"	"	1.383	184.42	52.03	378.98
		9'	108	13'-6"	9"			11'-0"	13'-11⅜"	14'-6⅝"	1.500	194.12	53.70	382.54
		10'	120	13'-8"	10"			12'-0"	14'-1⅜"	14'-8⅝"	1.630	201.39	55.37	386.10
		11'	132	13'-10"	11"			13'-0"	14'-3⅜"	14'-10⅝"	1.772	209.93	57.04	389.66
		12'	144	14'-0"	12"			14'-0"	14'-5⅜"	15'-0⅝"	1.926	221.72	58.71	393.22

NOTE:- For details of wings and skew flush, see Drawing Nos. W-X152-1 and W-X152-2 or W-X153-1 or W-X153-2 or W-X154-1 or W-X154-2



PART LONGITUDINAL SECTION N-N



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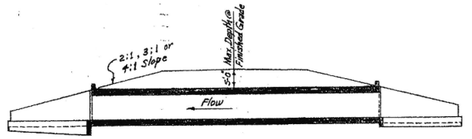

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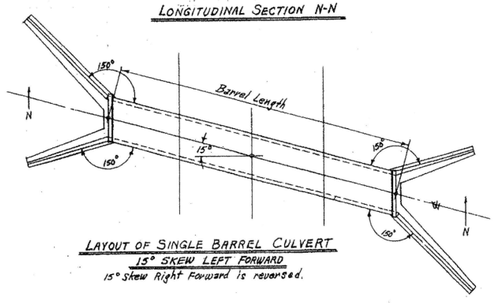


LAYOUT OF SINGLE BARREL CULVERT
15° SKEW LEFT FORWARD
15° Skew Right Forward is reversed.

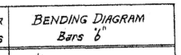
GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls 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 24,000 Lb. Axles @ 4'-0" c/rs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/s"
Reinforcing Steel 20,000 #/s"

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#6	3"	5"	1'-2"
#7	3⅝"	5¾"	1'-4"

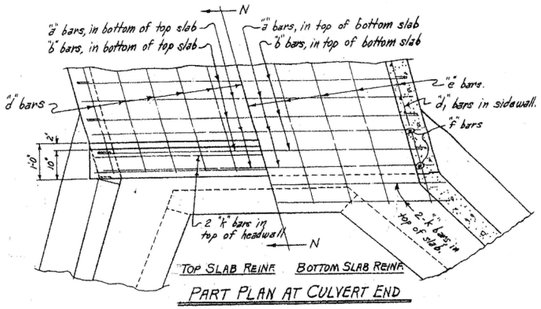
BENDING DIAGRAM Bars "b"



NOTE:-Dimensions are to centers of bars

DOWEL BARS FOR TWO HEADWALLS

SPAN @	SIZE	SPACING	NO. REQD	LENGTH	X	Bars "k" Dowel bars in headwalls
4'	#4	11½	12	2'-6"	1'-3"	
5'	#4	11½	14	2'-7"	1'-3½"	
6'	#4	11½	16	2'-8"	1'-4"	
7'	#4	11½	18	2'-9"	1'-4½"	
8'	#4	11½	20	2'-11"	1'-5½"	
9'	#4	11½	22	3'-0"	1'-6"	
10'	#4	12½	24	3'-1"	1'-6½"	
11'	#4	12½	26	3'-2"	1'-7"	
12'	#4	12½	28	3'-3"	1'-7½"	



PART PLAN AT CULVERT END

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X152-1 or W-X152-2 ; W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

4',5',6',7',8',9',10',11'&12' SPANS SINGLES — 2:1, 3:1 OR 4:1 SLOPES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-115X-0

Designed By:- W.C.H. 1-23-63 Checked By:- R.M.S. 5-8-63
Drawn By:- W.C.H. 8-14-63 Checked By:- RWB 10-7-63
Quantities By:- W.C.H. 8-21-63 Checked By:- R. G. 12-10-63.

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 45° SKEWED ENDS.

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" bars STRAIGHT: In Top and Bottom Slabs 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 MAX.	LENGTH MIN.	"b" bars BENT - See Diagrams below: In Top and Bottom Slabs of Barrel - hooked. Alternate with "a" bars SIZE	SPACING	NO. REQ'D	LENGTH	X
0'-0 TO 5'-0 MAXIMUM	4' @ 1'	2'	#5	15"	104	4'-9"	#5	15"	8	3'-8"	2'-5"	#6	13"	104	5'-10"	4'-8"
		3'			104	4'-9"			8	"	"			104	5'-10"	"
		4'			104	4'-9"			8	"	"			104	5'-10"	"
		5'			104	4'-9"			8	"	"			104	5'-10"	"
		6'			109	4'-11"			8	3'-10"	2'-9"			104	6'-0"	4'-10"
	5' @ 1'	3'	#6	18"	102	5'-9"	#5	15"	12	4'-8"	2'-6"	#6	13"	102	6'-10"	5'-8"
		4'			102	5'-9"			12	"	"			102	6'-10"	"
		5'			102	5'-9"			12	"	"			102	6'-10"	"
		6'			102	5'-11"			12	4'-10"	2'-8"			102	7'-0"	5'-10"
		7'			102	6'-0"			12	4'-11"	2'-9"			102	7'-1"	5'-11"
	6' @ 1'	3'	#6	18"	110	6'-9"	#5	15"	16	5'-8"	2'-9"	#6	12"	108	7'-10"	6'-8"
		4'			110	6'-9"			16	"	"			108	7'-10"	"
		5'			110	6'-9"			16	"	"			108	7'-10"	"
		6'			108	6'-11"			16	5'-11"	2'-11"			108	8'-0"	6'-10"
		7'			108	7'-0"			16	6'-0"	3'-0"			108	8'-1"	6'-11"
		8'			108	7'-1"			16	6'-1"	3'-1"			108	8'-2"	7'-0"
	7' @ 1'	4'	#6	11"	116	7'-9"	#6	12"	24	6'-10"	2'-3"	#6	11"	116	8'-10"	7'-8"
		5'			116	7'-9"			24	"	"			116	8'-10"	"
		6'			116	7'-11"			24	7'-0"	2'-5"			116	9'-0"	7'-10"
		7'			116	8'-0"			24	7'-1"	2'-6"			116	9'-1"	7'-11"
		8'			116	8'-1"			24	7'-2"	2'-7"			116	9'-2"	8'-0"
		9'			116	8'-2"			24	7'-4"	2'-9"			116	9'-4"	8'-2"
	8' @ 1'	4'	#7	12"	106	8'-9"	#6	12"	28	6'-10"	2'-10"	#6	11"	104	9'-10"	8'-8"
		5'			106	8'-9"			28	6'-11"	2'-11"			104	10'-0"	8'-10"
		6'			106	8'-11"			28	7'-0"	3'-0"			104	10'-1"	8'-11"
		7'			106	9'-0"			28	7'-1"	3'-1"			104	10'-2"	9'-0"
		8'			106	9'-1"			28	7'-2"	3'-2"			104	10'-3"	9'-1"
		9'			106	9'-2"			28	7'-3"	3'-3"			104	10'-4"	9'-2"
	9' @ 1'	5'	#7	12"	110	9'-7"	#6	12"	32	7'-4"	3'-4"	#6	11"	110	11'-0"	9'-10"
		6'			110	9'-8"			32	7'-5"	3'-5"			110	11'-1"	9'-11"
		7'			110	9'-9"			32	"	"			110	11'-2"	10'-0"
		8'			110	9'-10"			32	7'-6"	3'-6"			110	11'-3"	10'-1"
		9'			110	9'-11"			32	7'-7"	3'-7"			110	11'-4"	10'-2"
		10'			110	10'-0"			32	7'-8"	3'-8"			110	11'-5"	10'-3"
		11'			110	10'-1"			32	7'-9"	3'-9"			110	11'-6"	10'-4"
	10' @ 1'	5'	#7	12"	100	10'-1"	#7	12"	32	8'-0"	3'-10"	#6	11"	100	12'-2"	10'-10"
		6'			100	10'-2"			32	8'-1"	3'-11"			100	12'-3"	10'-11"
		7'			100	10'-3"			32	8'-2"	3'-12"			100	12'-4"	11'-0"
		8'			100	10'-4"			32	8'-3"	4'-1"			100	12'-5"	11'-1"
		9'			100	10'-5"			32	8'-4"	4'-2"			100	12'-6"	11'-2"
		10'			100	10'-6"			32	8'-5"	4'-3"			100	12'-7"	11'-3"
		11'			100	10'-7"			32	8'-6"	4'-4"			100	12'-8"	11'-4"
	12' @ 1'	6'	#7	12"	108	12'-1"	#7	12"	40	11'-2"	2'-11"	#7	11"	106	13'-6"	12'-0"
		7'			106	12'-1"			40	"	"			106	13'-5"	"
		8'			106	12'-1"			40	"	"			106	13'-6"	"
		9'			106	12'-3"			40	11'-3"	3'-1"			106	13'-8"	12'-2"
		10'			106	12'-5"			40	11'-4"	3'-2"			106	13'-9"	12'-3"
		11'			106	12'-7"			40	11'-5"	3'-3"			106	13'-10"	12'-5"
		12'			106	12'-9"			40	11'-6"	3'-4"			104	14'-0"	12'-8"
	1' @ 12'	8'	#8	12"	96	13'-1"	#7	11"	40	12'-1"	3'-1"	#7	11"	96	14'-4"	13'-0"
		9'			96	13'-1"			40	"	"			96	14'-5"	"
		10'			96	13'-2"			40	"	"			96	14'-6"	13'-1"
		11'			96	13'-3"			40	12'-3"	3'-3"	#8	12"	96	14'-7"	13'-2"
		12'			96	13'-4"			40	12'-4"	3'-4"			96	14'-8"	13'-3"
		13'			96	13'-5"			44	12'-5"	3'-5"			96	14'-9"	13'-4"
		14'			96	13'-7"			44	12'-6"	3'-6"			96	14'-10"	13'-6"
		15'			96	13'-8"			44	12'-7"	3'-7"			96	14'-11"	13'-7"
		16'			96	13'-9"			44	12'-8"	3'-8"			96	15'-0"	13'-8"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"d" bars STRAIGHT: Longitudinal in Top Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars STRAIGHT: Longitudinal in Sidewalls. SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars STRAIGHT: Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT: Verticals in Sidewalls. SIZE	SPACING	NO. REQ'D	LENGTH	"h1" bars STRAIGHT: In Bottom of Headwall. NO. REQ'D	LENGTH	"h2" bars STRAIGHT: In Top of Headwall and Apron. (2 Each) SIZE	NO. REQ'D	LENGTH
0'-0 TO 5'-0 MAXIMUM	4' @ 1'	2'	#5	10½"	6		#4	12"	9		#4	12"	5		#4	12"	120	2'-1"	6	6'-9"	#5	8	
		3'			6				8				5				120	3'-1"	6	"		8	
		4'			6				8				5				120	4'-1"	6	"		8	
		5'			6				8				5				120	5'-1"	6	"		8	
		6'			6				8				5				120	6'-1"	6	6'-1"		8	
	5' @ 1'	3'	#5	10½"	7		#4	12"	6		#4	12"	6		#4	12"	120	4'-0"	6	6'-1"	#5	8	8'-10"
		4'			7				8				6				120	5'-0"	6	"		8	"
		5'			7				8				6				120	6'-0"	6	"		8	"
		6'			7				10				6				120	7'-0"	6	8'-2"		8	10'-5"
		7'			7				12				6				120	8'-0"	6	8'-5"		8	10'-7"
	6' @ 1'	3'	#6	12"	8		#4	12"	7		#4	12"	7		#4	12"	120	4'-1"	6	9'-6"	#5	8	11'-7"
		4'			8				8				7				120	5'-1"	6	"		8	"
		5'			8				10				7				120	6'-1"	6	"		8	"
		6'			8				12				7				120	7'-1"	6	9'-9"		8	11'-10"
		7'			8				14				7				120	8'-1"	6	9'-10"		8	12'-0"
		8'			8				16				7		#5	12"	120	9'-1"	6	10'-0"		8	12'-1"
	7' @ 1'	4'	#5	10½"	9		#4	12"	8		#4	12"	8		#4	12"	120	5'-2"	6	10'-4"	#5	8	12'-6"
		5'			9				10				8				120	6'-2"	6	"		8	"
		6'			9				12				8				120	7'-2"	6	11'-2"		8	13'-1"
		7'			9				14				8				120	8'-2"	6	11'-3"		8	13'-2"
		8'			9				16				8				120	9'-2"	6	11'-4"		8	13'-3"
		9'			9				18				8				120	10'-2"	6	11'-7"		8	13'-5"
	8' @ 1'	4'	#6	11"	11		#4	12"	8		#4	12"	9		#4	12"	120	5'-3"	6	12'-2"	#5	8	14'-5"
		5'			11				10				9				120	6'-3"	6	12'-5"		8	14'-6"
		6'			11				12				9				120	7'-3"	6	"		8	"
		7'			11				14				9				120	8'-3"	6	12'-8"		8	14'-10"
		8'			11				16				9				120	9'-3"	6	12'-9"		8	14'-11"
		9'			11				18				9				120	10'-3"	6	13'-0"		8	15'-0"
		10'			11				20				9				120	11'-3"	6	13'-3"		8	15'-5"
	9' @ 1'	5'	#6	11"	12		#4	12"	10		#4	12"	10		#4	12"	120	6'-4"	6	13'-8"	#5	8	15'-11"
		6'			12				12				10				120	7'-4"	6	14'-1"		8	16'-4"
		7'			12				14				10				120	8'-4"	6	14'-2"		8	16'-5"
		8'			12				16				10				120	9'-4"	6	14'-3"		8	16'-6"
		9'			12				18				10				120	10'-4"	6	14'-4"		8	16'-7"
		10'			12				20				10				120	11'-4"	6	14'-5"		8	16'-8"
		11'			12				22				10				120	12'-4"	6	14'-6"		8	16'-9"
	10' @ 1'	5'	#7	12"	13		#4	12"	11		#4	12"	11		#4	12"	120	6'-5"	6	15'-3"	#5	8	16'-11"
		6'			13				12				11				120	7'-5"	6	15'-4"		8	17'-0"
		7'			13				14				11				120	8'-5"	6	15'-5"		8	17'-1"
		8'			13				16				11				120	9'-5"	6	15'-6"		8	17'-2"
		9'			13				18				11				120	10'-5"	6	15'-7"		8	17'-3"
		10'			13				20				11				120	11'-5"	6	15'-8"		8	17'-4"
		11'			13				22				11				120	12'-5"	6	15'-9"		8	17'-5"
	12' @ 1'	6'	#7	12"	14		#4	12"	12		#4	12"	12		#4	12"	120	6'-6"	6	16'-3"	#5	8	17'-10"
		7'			14				14				12				120	7'-6"	6	16'-4"		8	17'-11"
		8'			14				16				12				120	8'-6"	6	16'-5"		8	18'-0"
		9'			14				18				12				120	9'-6"	6	16'-6"		8	18'-1"
		10'			14				20				12				120	10'-6"	6	16'-7"		8	18'-2"
		11'			14				22				12				120	11'-6"	6	16'-8"		8	18'-3"
		12'			14				24				12				120	12'-6"	6	16'-9"		8	18'-4"

2 @ 30'-6", for 60'-0" Length Barrel. (1'-6" Lap)
2 @ 30'-6", for 60'-0" Length Barrel. (1'-3" Lap)
2 @ 31'-10", for 60'-0" Length Barrel. (1'-3" Lap)

These bars are in the skewed portion of barrel only. The length of "a1" bars and overall length X of "b" bars vary by 1'-1" for 18" spacing, 1'-0" for 12" spacing and 0'-11" for 11" spacing.

BAR SIZE	PIN DIAM	K	ADD FOR HOOKS	BENDING DIAGRAMS FOR BARS "b" & "b1"
#6	3"	5"	1'-2"	2 HOOKS: "b" bars — Pin diam. — X
#7	3½"	5¾"	1'-4"	
#6	3"	5"	0'-7"	1 HOOK: "b1" bars — Pin diam. — X
#7	3½"	5¾"	0'-8"	

NOTE:- Dimensions are to centers of bars. ("b" and "b1")

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X	Dowel bars "f" in Two Headwalls
4'	#4	12"	16	2'-6"	1'-3"	
5'	#4	12"	18	2'-7"	1'-3½"	
6'	#4	12"	22	2'-8"	1'-4"	
7'	#4	12"	24	2'-9"	1'-4½"	
8'	#4	12"	28	2'-11"	1'-5½"	
9'	#4	12"	30	3'-0"	1'-6"	
10'	#4	12"	34	3'-1"	1'-6½"	
11'	#4	12"	36	3'-2"	1'-7"	
12'	#4	12"	40	3'-3"	1'-7½"	

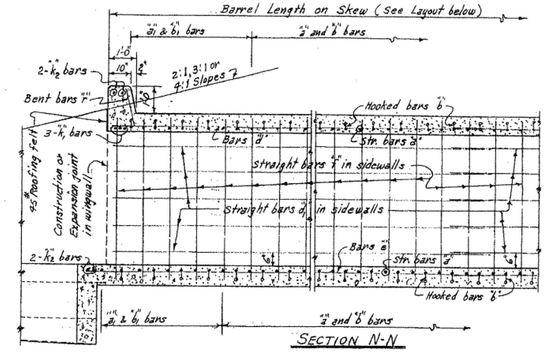
"a" bars, in bottom of top slab - straight.
"b" bars, in bottom of top slab - hooked.
"a1" bars, in bottom - straight.
"b1" bars, in bottom - bent.
"a" bars, in bottom - straight.
2-#5 in bottom of headwall
2-#5 in top of headwall

TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT

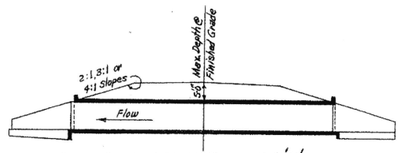
"a" bars, in top of bottom slab - straight.
"b" bars, in top of bottom slab - hooked.
"e" bars, in top - str.
"d1" bars, in sidewalls
"f" bars
"h2" bars, in top - bent.
"a1" bars, in top - str.
2-#5 in top of apron

BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

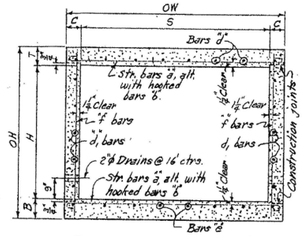
Note:- For Details of Standard Wings and bar lists, see Drawing No. W-X452-1 or W-X452-2; W-X453-1 or W-X453-2, and W-X454-1 or W-X454-2. Also W-X45.



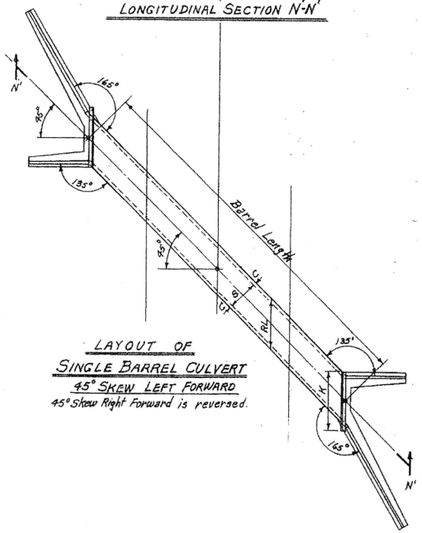
SECTION N-N



LONGITUDINAL SECTION N'-N'



TYPICAL SECTION M-M



LAYOUT OF
SINGLE BARREL CULVERT
45° SKEW LEFT FORWARD
45° Skew Right Forward is reversed.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.
UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/in²
Reinforcing Steel 20,000 #/in²

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X452-1 or W-X452-2, W-X453-1 or W-X453-2, and W-X454-1 or W-X454-2. Also W-X45.

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 additional 38'-0" length of barrel over 92'-0". Lap longitudinal bars 30 diameters min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

BARREL DIMENSIONS & QUANTITIES

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 SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	ROADWAY LENGTH RL	LENGTH OF HEADWALL K	CLASS S CONC. PER LIN. FT. OF BARREL TOTAL FOR 60'-0" LENGTH OF BARREL CU.YD.	REINFORCING STEEL PER LIN. FT. OF BARREL LB.	REINFORCING STEEL ADDITIONAL PER LAP LB.
5'-0"	4' @ 1'	2'	8	5'-0"	7"	6"	8½"	3'-1½"	7'-0⅝"	9'-0⅝"	0.282	2.635	41.99	17.95
		3'	12	5'-0"		6"		4'-1½"	"	"	0.319	2.797	44.16	19.62
		4'	16	5'-0"		6"		5'-1½"	"	"	0.356	2.958	46.83	21.29
		5'	20	5'-0"		6"		6'-1½"	"	"	0.394	3.120	49.50	22.96
		6'	24	5'-2"		7"		7'-1½"	7'-3⅝"	9'-3⅝"	0.474	3.336	52.96	24.63
	5' @ 1'	3'	15	6'-0"	7"	6"	8½"	4'-2½"	8'-5⅛"	10'-5⅛"	0.390	3.572	55.55	22.19
		4'	20	6'-0"		6"		5'-2½"	"	"	0.417	3.733	58.23	23.86
		5'	25	6'-0"		6"		6'-2½"	"	"	0.454	3.895	60.90	25.53
		6'	30	6'-2"		7"		7'-2½"	8'-1⅝"	10'-1⅝"	0.535	4.115	64.99	27.20
		7'	35	6'-3"		7½"		8'-2½"	8'-10⅝"	10'-10⅝"	0.604	4.308	67.63	28.87
	6' @ 1'	3'	18	7'-0"	7½"	6"	8½"	4'-3½"	9'-10⅝"	11'-10⅝"	0.496	4.260	66.29	29.76
		4'	24	7'-0"		6"		5'-3½"	"	"	0.983	4.921	68.96	26.43
		5'	30	7'-0"		6"		6'-3½"	"	"	0.520	4.583	71.64	28.10
		6'	36	7'-2"		7"		7'-3½"	10'-1⅝"	12'-1⅝"	0.602	4.813	75.31	29.77
		7'	42	7'-3"		7½"		8'-3½"	10'-3"	12'-3"	0.671	5.008	78.96	31.44
		8'	48	7'-4"		8"		9'-3½"	10'-4⅝"	12'-4⅝"	0.746	5.610	88.97	33.11
	7' @ 1'	4'	28	8'-0"	8"	6"	9"	5'-5"	11'-3⅝"	13'-3⅝"	0.568	5303	81.32	29.01
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	5464	84.00	30.68
		6'	42	8'-2"		7"		7'-5"	11'-6⅝"	13'-6⅝"	0.688	5700	87.76	32.35
		7'	49	8'-3"		7½"		8'-5"	11'-8"	13'-8"	0.757	5901	90.88	34.02
		8'	56	8'-4"		8"		9'-5"	11'-9⅝"	13'-9⅝"	0.832	6219	96.65	35.69
		9'	63	8'-6"		9"		10'-5"	12'-0⅛"	14'-0⅛"	0.996	6976	105.59	37.36
	8' @ 1'	4'	32	9'-0"	8½"	6"	9½"	5'-7"	12'-0⅝"	14'-0⅝"	0.676	6196	95.26	33.32
		5'	40	9'-2"		7"		6'-7"	12'-1⅝"	14'-1⅝"	0.754	6923	99.12	34.99
		6'	48	9'-2"		7"		7'-7"	"	"	0.797	6584	101.79	36.66
		7'	56	9'-3"		7½"		8'-7"	13'-1"	15'-1"	0.867	6788	105.05	38.33
		8'	64	9'-4"		8"		9'-7"	13'-2⅝"	15'-2⅝"	0.942	7141	110.81	40.00
		9'	72	9'-6"		9"		10'-7"	13'-5⅛"	15'-5⅛"	1.057	7701	119.92	41.67
		10'	80	9'-8"		10"		11'-7"	13'-8"	15'-8"	1.184	8121	126.67	43.34
	9' @ 1'	5'	45	10'-2"	9½"	7"	10"	6'-8"	12'-6⅝"	14'-6⅝"	0.844	7535	119.72	37.56
		6'	54	10'-3"		7"		7'-8"	12'-8"	14'-8"	0.910	7795	118.04	39.23
		7'	63	10'-3"		7½"		8'-8"	"	"	0.957	7906	120.71	40.90
		8'	72	10'-4"		8"		9'-8"	14'-2⅝"	16'-2⅝"	1.033	8269	126.59	42.57
		9'	81	10'-6"		9"		10'-8"	14'-4⅝"	16'-4⅝"	1.198	8856	135.80	44.24
		10'	90	10'-8"		10"		11'-8"	15'-1"	17'-1"	1.276	9248	142.68	45.91
		11'	99	10'-10"		11"		12'-8"	15'-3⅜"	17'-3⅜"	1.346	9717	150.90	47.58
	10' @ 1'	5'	50	11'-2"	10½"	7"	11"	6'-10⅝"	15'-9⅝"	17'-9⅝"	0.957	8572	130.64	40.13
		6'	60	11'-3"		7½"		7'-9⅝"	15'-11"	17'-11"	1.026	8784	133.93	41.80
		7'	70	11'-3"		7½"		8'-9⅝"	"	"	1.071	8946	136.66	43.47
		8'	80	11'-4"		8"		9'-9⅝"	16'-0⅝"	18'-0⅝"	1.147	9308	142.55	45.14
		9'	90	11'-6"		9"		10'-9⅝"	16'-3⅝"	18'-3⅝"	1.263	9891	151.32	46.81
		10'	100	11'-8"		10"		11'-9⅝"	16'-6"	18'-6"	1.391	10,310	158.89	48.48
		11'	110	11'-10"		11"		12'-9⅝"	16'-8⅝"	18'-8⅝"	1.532	10,785	166.71	50.15
		12'	120	12'-0"		12"		13'-9⅝"	16'-11⅝"	19'-11⅝"	1.685	11,524	178.67	51.82
	12' @ 1'	6'	66	12'-6"	11"	8"	12½"	7'-10⅝"	17'-5⅝"	19'-5⅝"	1.153	10,378	155.16	46.12
		7'	77	12'-6"		8"		8'-10⅝"	"	"	1.202	10,539	157.83	47.79
		8'	88	12'-6"		8"		9'-10⅝"	"	"	1.252	10,855	163.06	49.46
		9'	99	12'-6"		9"		10'-10⅝"	17'-8⅝"	19'-8⅝"	1.368	11,498	172.60	51.13
		10'	110	12'-8"		10"		11'-10⅝"	17'-11"	19'-11"	1.497	11,886	179.70	52.80
		11'	121	12'-10"		11"		12'-10⅝"	18'-1⅜"	20'-1⅜"	1.638	12,379	187.67	54.47
		12'	132	13'-0"		12"		13'-10⅝"	18'-4⅜"	20'-4⅜"	1.792	13,071	199.79	56.14
	1' @ 12'	6'	72	13'-4"	12½"	8"	13"	8'-0"	18'-10⅝"	20'-10⅝"	1.284	11,920	192.20	48.69
		7'	84	13'-4"		8"		9'-0"	"	"	1.333	11,581	174.87	50.36
		8'	96	13'-5"		9"		10'-0"	"	"	1.383	11,899	180.15	52.03
		9'	108	13'-6"		9"		11'-0"	19'-1½"	21'-1"	1.500	12,500	189.85	53.70
		10'	120	13'-8"		10"		12'-0"	19'-3⅜"	21'-3"	1.630	12,948	197.07	55.37
		11'	132	13'-10"		11"		13'-0"	19'-6⅜"	21'-6⅜"	1.772	13,496	205.16	57.04
		12'	144	14'-0"		12"		14'-0"	19'-9⅜"	21'-9⅜"	1.926	14,212	217.95	58.71

* For remainder of quantities see Std. Wing Drawings listed at left. Total steel quantities listed above include one lap of longitudinal bars.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-145X-0

Designed by:- W.C.H. 1-23-63.
Drawn by:- W.C.H. 7-10-64
Quantities by:- W.C.H. 9-30-64
Checked by:- R.H.S. 5-8-63
Checked by:-
Checked by:-