| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 1 | 242 |
| | | | | (2) HWY. 36-HWY. 16 (S) | | | | |

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

# HWY. 36-HWY. 16 (S)

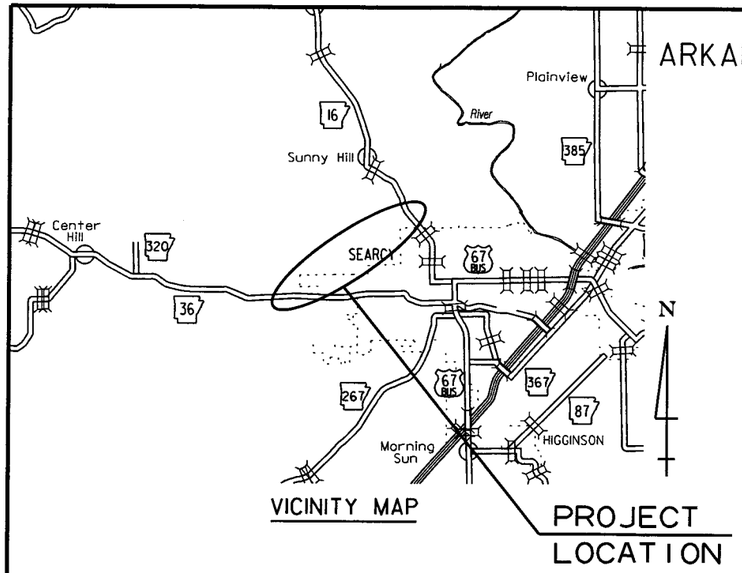
WHITE COUNTY

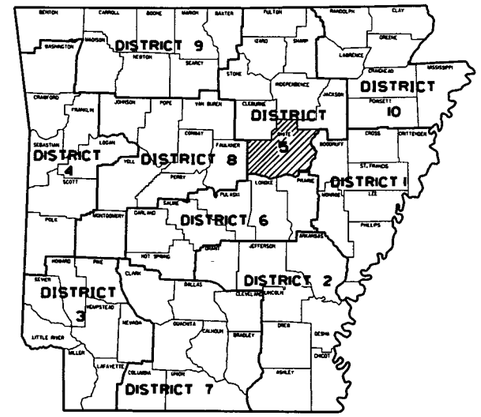
ROUTE 13

# JOB 050249

FED. AID PROJ. STP-0073(56)

NOT TO SCALE



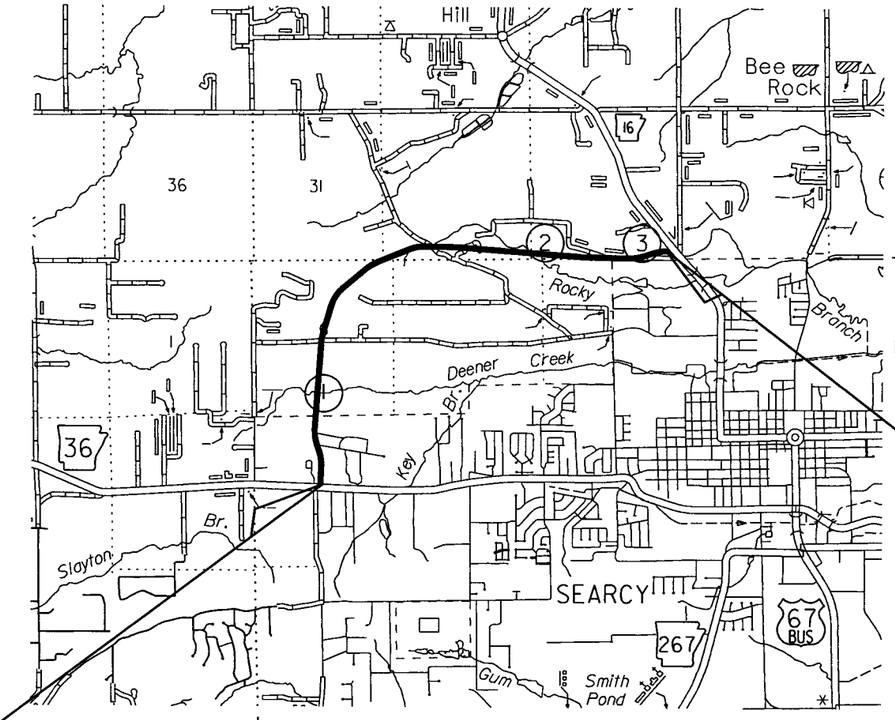

ARK. HWY. DIST. NO. 5

## STRUCTURES OVER 20'-0" DATA

(1) STA. 135+93 CONST.
DBL. 11' X 6' X 96' R.C. BOX
ON 30° RT. FWD SKEW
WITH 3:1 WINGS LT. AND RT.
Q25 = 840 CFS., D.A. = 653 ACRES
SPAN = 26'-2 1/8"

(2) STA. 252+20 CONST.
TRI. 9' X 6' X 145' R.C. BOX
WITH 3:1 WINGS LT. AND RT.
Q25 = 880 CFS., D.A. = 695 ACRES
SPAN = 30'-0"

(3) STA. 295+20 CONST.
DBL. 8' X 4' X 183' R.C. BOX
WITH 45° RT. FWD SKEW
WITH 3:1 WINGS LT. AND RT.
Q25 = 370 CFS., D.A. = 246 ACRES
SPAN = 23'- 6 7/8"




STA. 102+41.75
BEGIN JOB 050249

STA. 298+27.20
END JOB 050249

• DESIGN TRAFFIC DATA •

| | |
|---|---|
| DESIGN YEAR | 2036 |
| 2016 ADT | 5000 |
| 2036 ADT | 6500 |
| 2036 DHV | 715 |
| DIRECTIONAL DISTRIBUTION | 60% |
| TRUCKS | 7% |
| DESIGN SPEED | 55 MPH (RURAL) |
| | 45 MPH (URBAN) |

| | BEGIN PROJECT | MID-POINT OF PROJECT | END PROJECT |
|---|---|---|---|
| LATITUDE | N 35°14'50" | N 35°16'11" | N 35°16'10" |
| LONGITUDE | W 91°47'36" | W 91°46'54" | W 91°45'01" |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| GROSS LENGTH OF | PROJECT | 19585.45 | FEET | OR | 3.709 | MILES |
| NET | " " | ROADWAY | 19505.70 | " | " | 3.694 | " |
| NET | " " | BRIDGES | 79.75 | " | " | 0.015 | " |
| NET | " " | PROJECT | 19585.45 | " | " | 3.709 | " |

P.E. 050198

APPROVED

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

6-13-16

DEPUTY DIRECTOR
AND CHIEF ENGINEER

5/4/2016

R050249.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. | | 050249 | 2 | 242 |

(2) INDEX OF SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

# INDEX OF SHEETS

| SHEET NO. | TITLE | DRWG.NO. | DATE |
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| 2 | INDEX OF SHEETS | | |
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| 108 | DETAILS OF DROP INLET (TYPE MO) | FPC-9M | 8-22-02 |
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| 112 | METAL PIPE CULVERT FILL HEIGHTS & BEDDING | PCM-1 | 2-27-14 |
| 113 | PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | PCP-1 | 2-27-14 |
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| 115 | PAVEMENT MARKING DETAILS | PM-1 | 5-12-16 |
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| 118 | EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS | RCB-2 | 11-20-03 |
| 119 | LOOP DETECTOR INSTALLATION | SD-4 | 9-12-13 |
| 120 | HEAVY DUTY PULL BOX | SD-6 | 9-02-15 |
| 121 | SIGNAL HEAD PLACEMENT | SD-8 | 9-12-13 |
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| 125 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | TC-1 | 9-02-15 |
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| 128 | TEMPORARY EROSION CONTROL DEVICES | TEC-1 | 12-15-11 |
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| 131 | WIRE FENCE WATER GAPS | WF-2 | 4-20-79 |
| 132 | WIRE FENCE TYPE C AND D | WF-4 | 8-22-02 |
| 133 | WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS | WR-1 | 11-10-05 |
| 134 - 242 | CROSS SECTIONS | | |

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

4/8/2016

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(2) GOV. SPEC. & GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-27-16

## GOVERNING SPECIFICATIONS

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

| NUMBER | TITLE |
|---|---|
| ERRATA_____ | ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS |
| FHWA-1273__ | REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS |
| FHWA-1273__ | SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140) |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS |
| FHWA-1273__ | SUPPLEMENT - TRAINING PROGRAM - JOB 050249 |
| FHWA-1273__ | SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS |
| FHWA-1273__ | SUPPLEMENT - WAGE RATE DETERMINATION |
| 100-3_____ | CONTRACTOR'S LICENSE |
| 108-1_____ | LIQUIDATED DAMAGES |
| 108-2_____ | WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER |
| 303-1_____ | AGGREGATE BASE COURSE |
| 400-1_____ | TACK COATS |
| 410-1_____ | CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES |
| 604-1_____ | RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES |
| 606-1_____ | PIPE CULVERTS FOR SIDE DRAINS |
| 620-1_____ | MULCH COVER |
| JOB 050249__ | AIRPORT CLEARANCE REQUIREMENTS |
| JOB 050249__ | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 050249__ | BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT |
| JOB 050249__ | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB 050249__ | CARGO PREFERENCE ACT REQUIREMENTS |
| JOB 050249__ | CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS |
| JOB 050249__ | COORDINATION OF WORK |
| JOB 050249__ | DELAY IN RIGHT OF WAY OCCUPANCY |
| JOB 050249__ | DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES |
| JOB 050249__ | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION |
| JOB 050249__ | ISSUANCE OF PROPOSALS |
| JOB 050249__ | LED COUNTDOWN PEDESTRIAN SIGNAL HEAD |
| JOB 050249__ | LED TRAFFIC SIGNAL HEAD |
| JOB 050249__ | LOOP WIRING REVISION 1.4 |
| JOB 050249__ | MANDATORY ELECTRONIC CONTRACT |
| JOB 050249__ | NESTING SITES OF MIGRATORY BIRDS |
| JOB 050249__ | OFF-SITE RESTRAINING CONDITIONS FOR BATS |
| JOB 050249__ | PARTNERING REQUIREMENTS |
| JOB 050249__ | PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS |
| JOB 050249__ | PLASTIC PIPE |
| JOB 050249__ | PRICE ADJUSTMENT FOR ASPHALT BINDER |
| JOB 050249__ | SHORING FOR CULVERTS |
| JOB 050249__ | SOIL STABILIZATION |
| JOB 050249__ | SPECIAL SEEDING REQUIREMENTS |
| JOB 050249__ | STORM WATER POLLUTION PREVENTION PLAN |
| JOB 050249__ | SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB 050249__ | TRAFFIC SIGNAL CONTROLLER (MODIFICATION) |
| JOB 050249__ | UTILITY ADJUSTMENTS |
| JOB 050249__ | VALUE ENGINEERING |
| JOB 050249__ | VIDEO DETECTOR (COLOR) |
| JOB 050249__ | VIDEO DETECTOR ROTATION |
| JOB 050249__ | 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. THIS PROJECT IS COVERED UNDER A SECTION 404 STANDARD INDIVIDUAL PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

6/23/2016

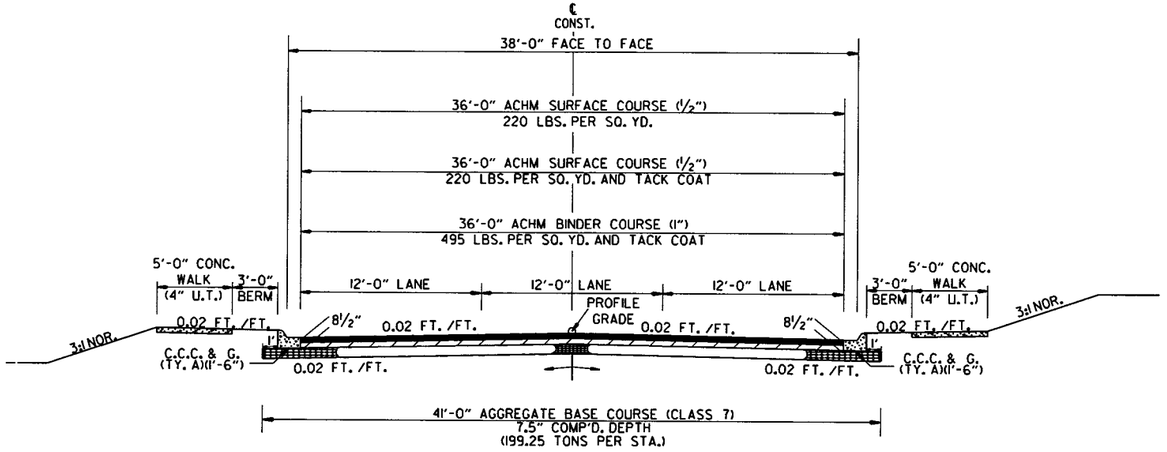
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GOVERNING SPECIFICATIONS & GENERAL NOTES

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| | | | | 6 | ARK. | | | |
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## (2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




### THREE LANE TANGENT SECTION
### CURB & GUTTER FULL DEPTH
### HWY. 13
### STA. 102+41.75 - STA. 103+82.00 (1)

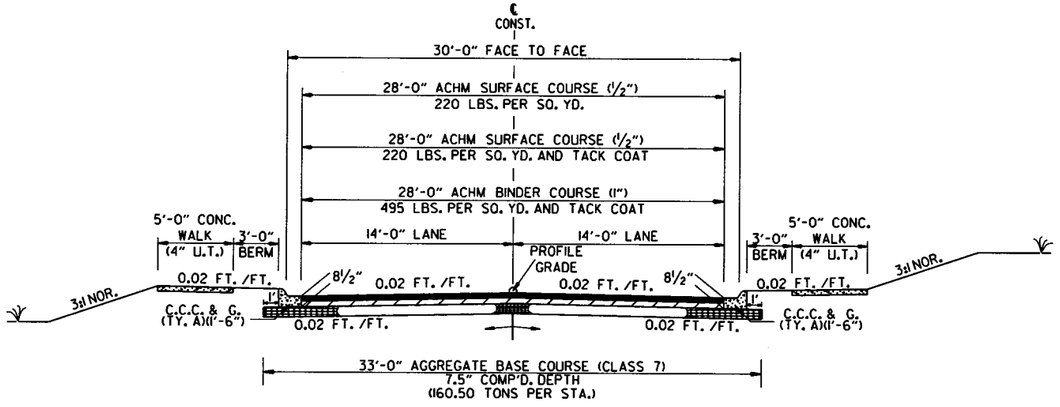
(1) STA. 103+82.00 - 108+07.00 TRANSITION FROM 3 LANE SECTION TO 2 LANE SECTION

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

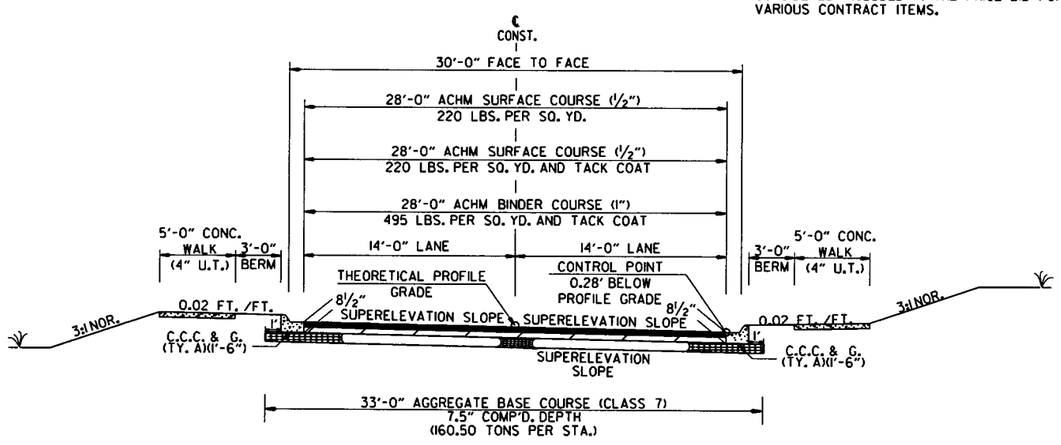
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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




### TANGENT SECTION
### CURB & GUTTER FULL DEPTH
### HWY. 13
### STA. (1) 108+07.00 - STA. 108+36.45
### STA. 123+26.84 - STA. 129+00.00




### SUPERELEVATION SECTION
### CURB & GUTTER FULL DEPTH
### HWY. 13
### STA. 108+36.45 - STA. 123+26.84

4/8/2016

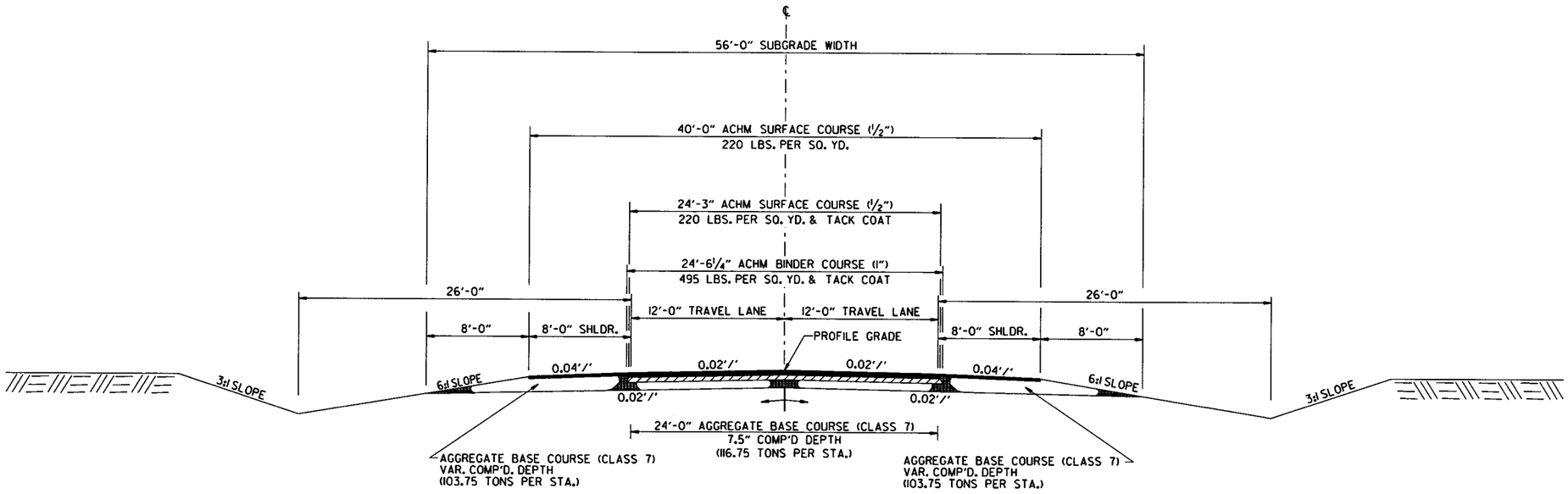
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




## TANGENT SECTION
## OPEN SHOULDER FULL DEPTH
## HWY. 13

STA. 129+00.00 - STA. 146+18.00
STA. 154+52.45 - STA. 160+47.37
STA. 173+57.40 - STA. 179+97.98
STA. 190+57.64 - STA. 199+10.63
STA. 208+74.25 - STA. 266+02.59
STA. 274+91.66 - STA. 282+30.29

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

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

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

4/8/2016

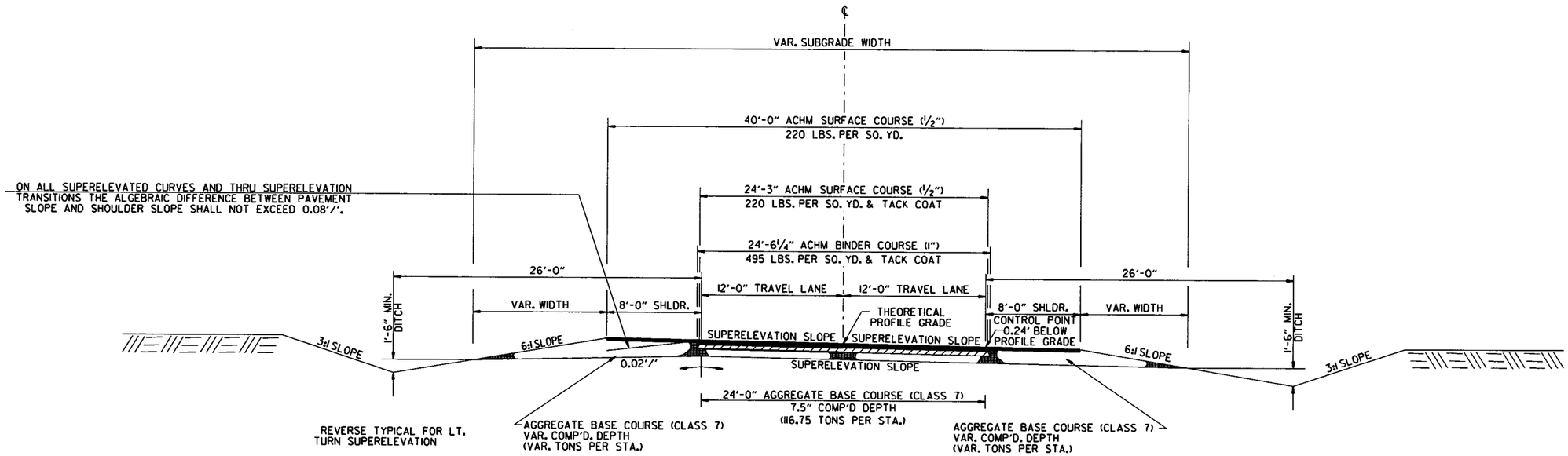
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




## SUPERELEVATION SECTION
## OPEN SHOULDER FULL DEPTH
## HWY. 13

STA. 146+18.00 - STA. 154+52.45
STA. 160+47.37 - STA. 173+57.40
STA. 179+97.98 - STA. 190+57.64
STA. 199+10.63 - STA. 208+74.25
STA. 266+02.59 - STA. 274+91.66
STA. 282+30.29 - STA. 293+16.61

NOTES:
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4/8/2016

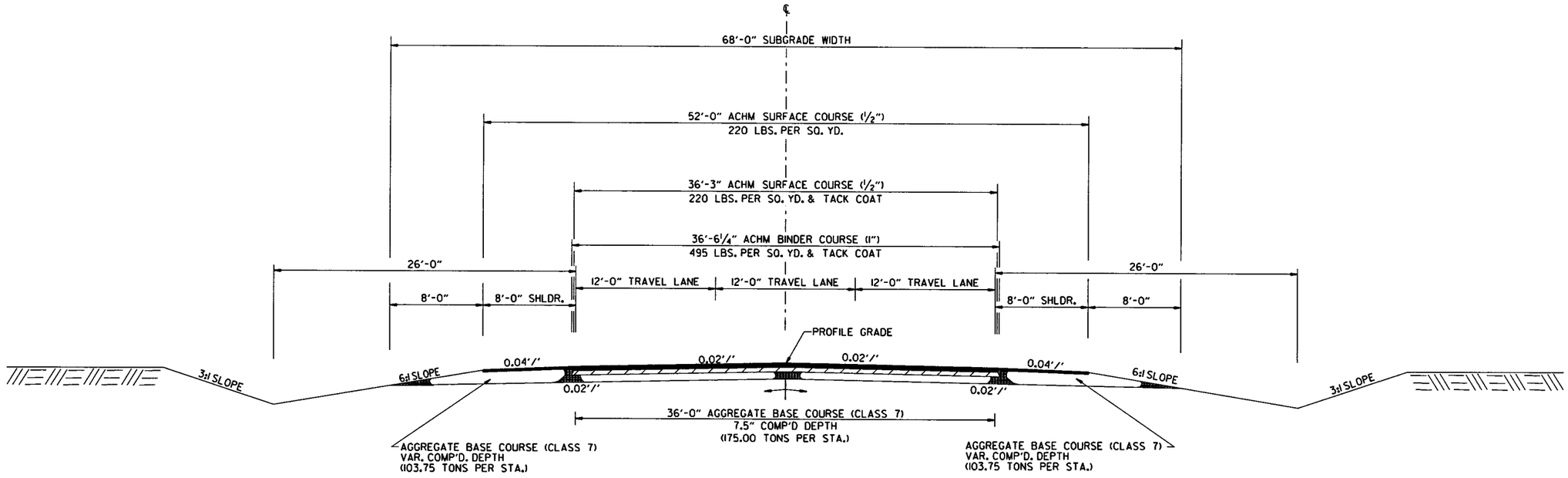
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




## THREE LANE TANGENT SECTION
## OPEN SHOULDER FULL DEPTH
## HWY. 13
## STA. 293+18.43 - STA. 293+68.46

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

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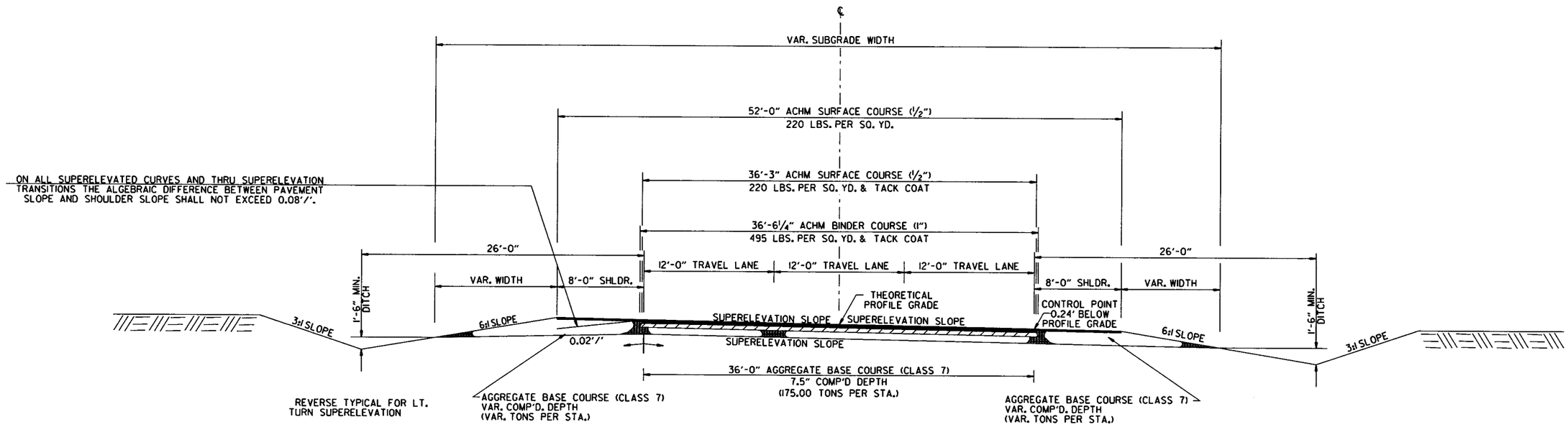
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




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

## THREE LANE SUPERELEVATION SECTION
## OPEN SHOULDER FULL DEPTH
## HWY. 13

STA. 293+16.61 - STA. 293+18.43
STA. 293+68.46 - STA. 298+27.20

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

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

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

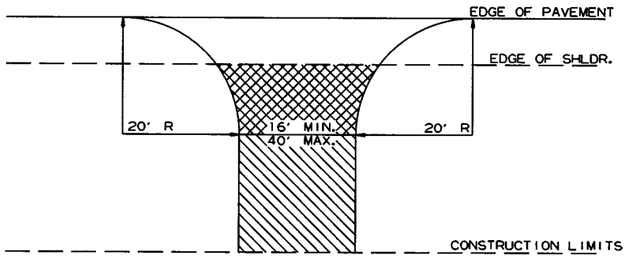
4/8/2016

R050249.DGN

TYPICAL SECTIONS OF IMPROVEMENT

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 9 | 242 |

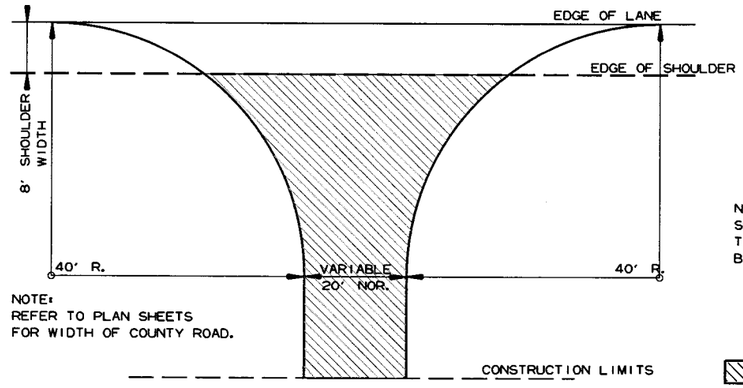
(2) SPECIAL DETAILS




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

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

## DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)



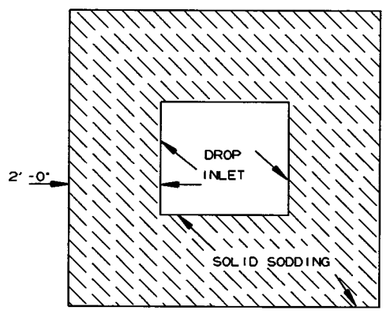

NOTE: REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

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

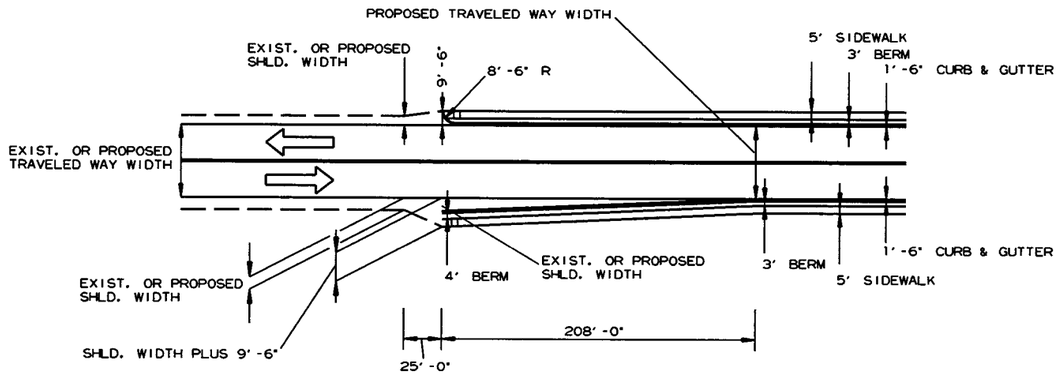
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

## DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 6-10-16




## DETAIL FOR SOLID SODDING AROUND DROP INLETS



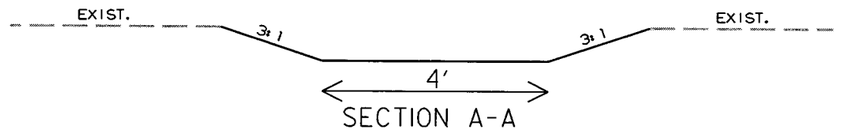

## TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

4/8/2016

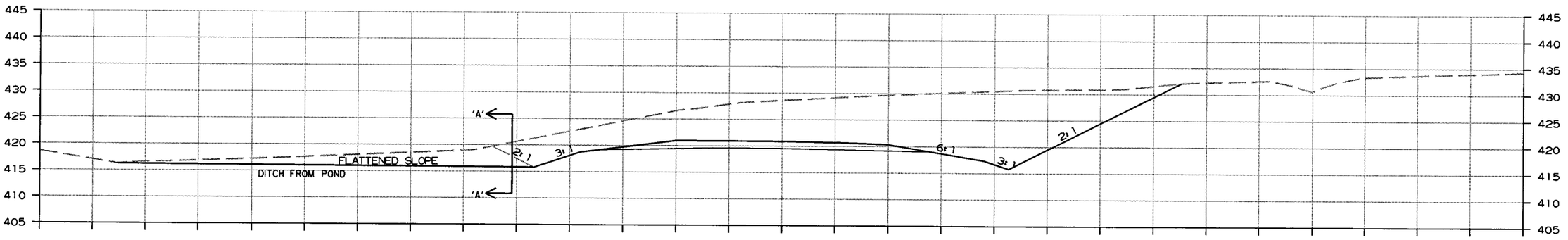
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SPECIAL DETAILS

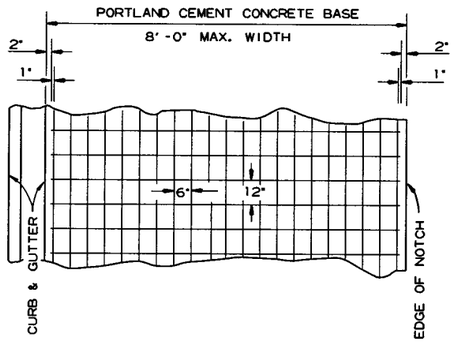
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
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| | | | | (2) SPECIAL DETAILS | | | | |




STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




DITCH BACKSLOPE DETAIL - STA. 180+50

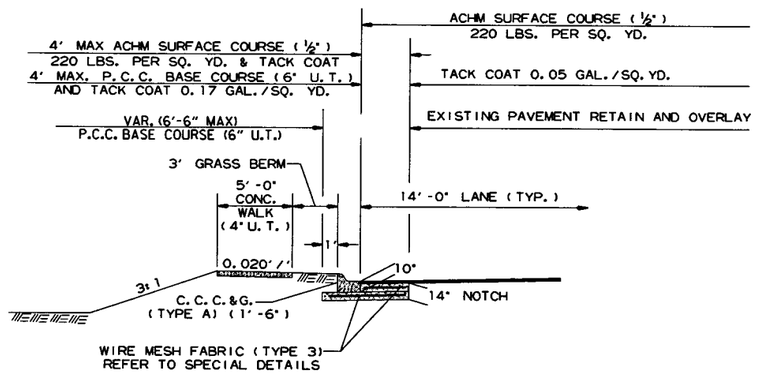



6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

NOTES:

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

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




## P.C.C. BASE WIDENING DETAIL

P.C.C. BASE WIDENING TO BE USED AS SHOWN ON THE PLANS.

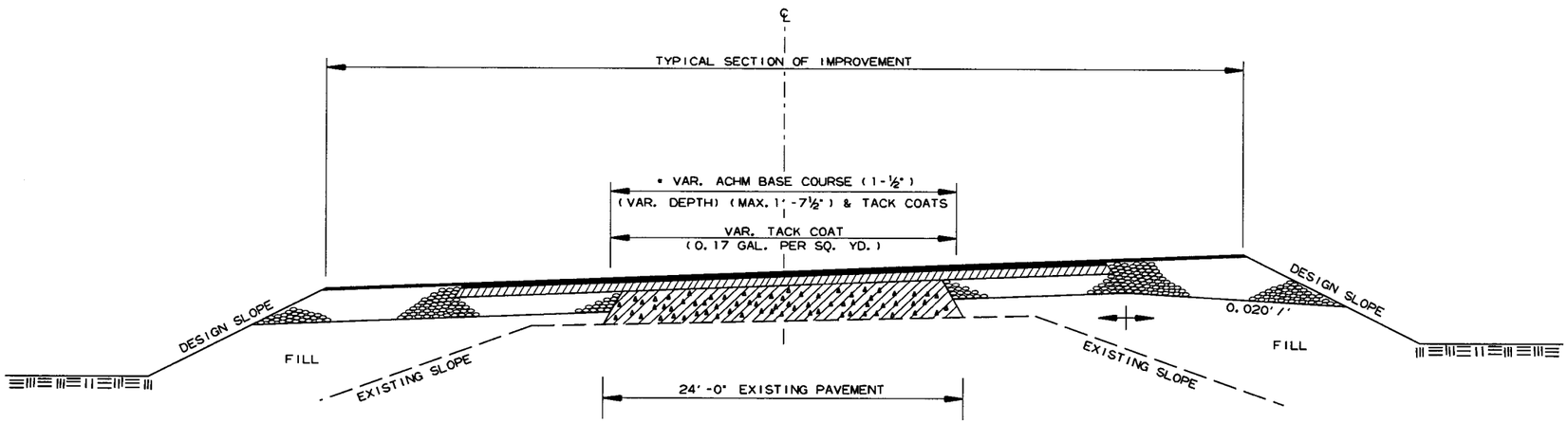
4/8/2016

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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. | | 050249 | 11 | 242 |

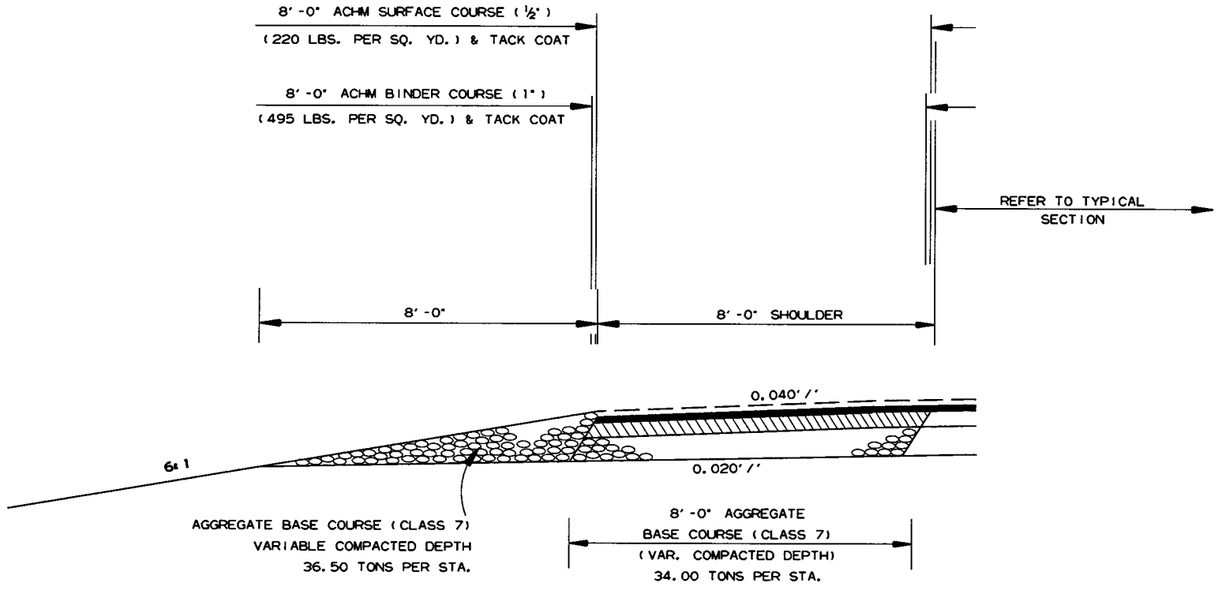
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




* 7½" AGGREGATE BASE COURSE ( CLASS 7)
TO BE REPLACED WITH ACHM BASE COURSE ( 1-½" )

## METHOD OF RAISING GRADE




## FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC

STA. 290+93.00 - STA. 291+35.00 LT.

NOTES:

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

(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

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

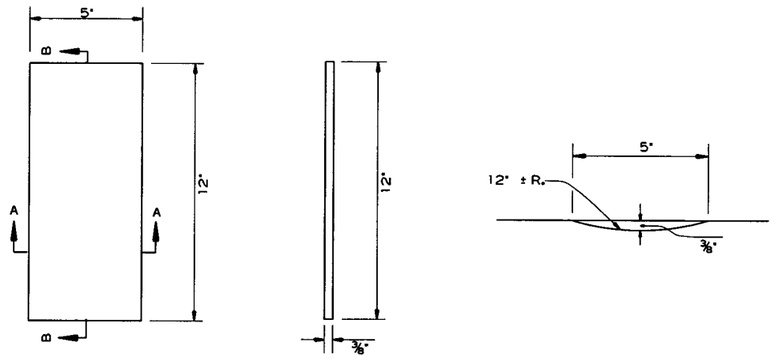
4/8/2016

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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. | | 050249 | 12 | 242 |

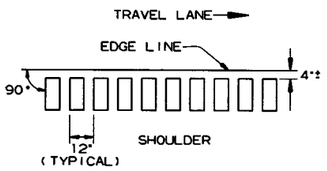
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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6-10-16

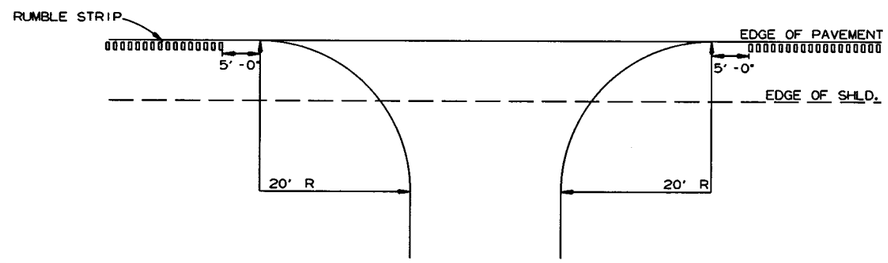



PLAN SECTION B-B SECTION A-A

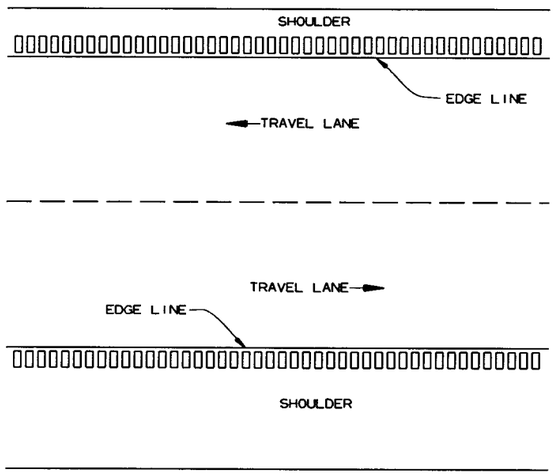
DETAILS OF RUMBLE STRIPS




LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



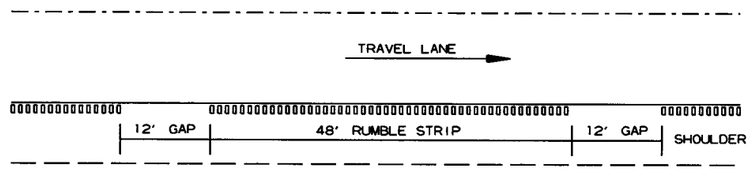

DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS




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

4/8/2016

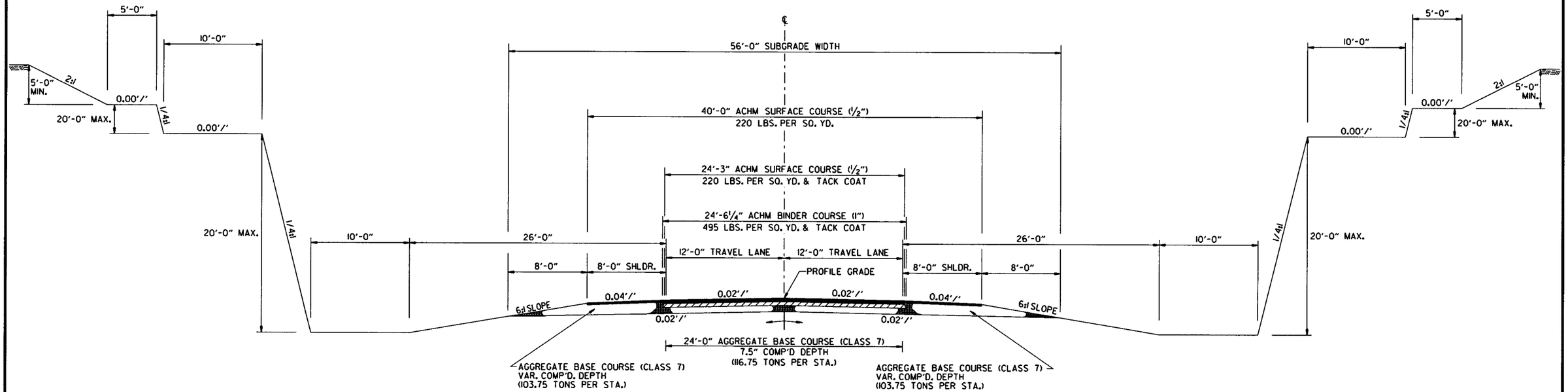
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SPECIAL DETAILS

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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




# DETAIL FOR PRESPLITTING

STA. 167+00.00 - STA. 177+00.00

4/8/2016

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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 14 | 242 |

① SPECIAL DETAILS

## INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AP1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 23'-9" | 6'-0" | 0'-9" | 0'-8" | 30 | 3:1 | 26'-2 1/8" | 2'-0" | 6'-10" | 2'-0" | 0 | 60 | 3'-2" | 3'-2" | 3'-9" | 0'-6" | 0'-5 1/8" | 14'-6" | 29'-0" | 18'-0 3/8" | 32'-6 3/8" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| INLET | INLET |
| CU.YD | LBS. |
| 11.79 | 1027 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 15 | L | Min | 3'-0" | - | - | - | L | - | | - | - | - | L | - | | 4 | 18 | 4 | Min |
| | | | | | Max | 7'-8" | | | | | | | | | | | | | | | | 4'-10" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | | X | - | | | | | Max |
| | | | | | Max | 0'-9" | | | | | | | | | | | | | | | | 9'-4" |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | | Y | - | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 29 | L | Min | 3'-0" | - | - | - | L | - | | - | - | - | L | - | | 4 | 18 | 4 | Min |
| | | | | | Max | 8'-3" | | | | | | | | | | | | | | | | 9'-10" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | | X | - | | | | | Max |
| | | | | | Max | 1'-4" | | | | | | | | | | | | | | | | 18'-10" |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | | Y | - | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |

| WING | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS VARY | | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 18 | 4 | 14'-2" | 4 | 18 | 10 | L | Min | 4'-9" | 4 | 8 | 18'-10" | 4 | 18 | 10 | Min | | - | - | - | Min | | 4 | 2 | 14'-10" | 4 | 2 | 15'-4" | 6 | 12 | 6 | L | 3'-4" | 364 |
| | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | - | | | | | | | | | | | | | |
| | | | | | | | | X | Min | 2'-4" | | | | | | | Max | | | | | Max | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | | Max | 2'-4" | | | | | | | | | | | | - | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 2'-6" | | | | | | | 2'-8" | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 18 | 4 | 28'-8" | 4 | 18 | 20 | L | Min | 4'-7" | 4 | 8 | 33'-4" | 4 | 18 | 20 | Min | | - | - | - | Min | | 4 | 2 | 28'-11" | 4 | 2 | 31'-9" | 6 | 12 | 6 | L | 3'-4" | 663 |
| | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | - | | | | | | | | | | | | |
| | | | | | | | | X | Min | 2'-4" | | | | | | | Max | | | | | Max | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | | Max | 2'-4" | | | | | | | | | | | | - | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 2'-4" | | | | | | | 3'-3" | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | |

## MID-SECTION BAR LAP TABLE

| # of Long. Laps Req'd. | SL = Section Length |
|---|---|
| 0 | < 40.0 ft |
| 1 | >40.0 ft - 78.0 ft |
| 2 | >78.0 ft - 116.0 ft |
| 3 | >116.0 ft - 154.0 ft |
| 4 | >154.0 ft - 192.0 ft |
| 5 | >192.0 ft - 230.0 ft |
| 6 | >230.0 ft - 268.0 ft |
| 7 | >268.0 ft - 306.0 ft |
| 8 | >306.0 ft -344.0 ft |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/7/16

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## INLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH |
| 30 | 3:1 | 5 | 11 | 6 | 8'-10" | 11 | 3 | 11 | 6.5 | 8 | 23'-9" | 7'-10" |

| TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D |
|---|---|---|---|---|---|---|---|
| 5 | 5 | Max 23'-5" / Min 3'-1" | 29 | 6 | 5 | Max 23'-5" / Min 3'-1" | 29 |
| | | 23'-5" | 5 | | | 23'-5" | 5 |

| BOTTOM SLAB REINFORCING STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D |
|---|---|---|---|---|---|---|---|
| 5 | 5 | Max 23'-5" / Min 3'-1" | 29 | 4 | 6 | Max 23'-5" / Min 3'-1" | 24 |
| | | 23'-5" | 5 | | | 23'-5" | 4 |

| SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH |
|---|---|---|---|
| 4 | 4 | 54 | 7'-6" |

| INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH |
|---|---|---|---|
| 4 | 12 | 18 | 7'-6" |

| TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY |
|---|---|---|---|
| 4 | 10 | 59 | Max 15'-7" / Min 1'-10" |

| BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY |
|---|---|---|---|
| 4 | 10 | 59 | Max 15'-7" / Min 1'-10" |

| SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH |
|---|---|---|---|
| 4 | 12 | 6 | LONG 15'-4" |
| | | 6 | SHORT 2'-1" |

| INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|
| 4 | 12 | 12 | 8'-8" |

| CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ① REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|
| 18.28 | 3512 |

| "k1" HDWL BARS SIZE | "k1" LENGTH | "k1" NO. REQ'D | "k2" HDWL BARS SIZE | "k2" LENGTH | "k2" NO. REQ'D |
|---|---|---|---|---|---|
| 4 | 27'-0" | 6 | 4 | 27'-0" | 6 |

| "h" HDWL BARS SIZE | "h" LENGTH | "h" Y | "h" NO. REQ'D |
|---|---|---|---|
| 4 | 1'-10" | 0'-10" | 29 |

## INLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | D | S | H | T | B | C | W | OW | OH | SL |
| | | | | | | | | | | |

| TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH |
|---|---|---|---|
| | | | |

| INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH |
|---|---|---|---|
| | | | |

| TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| | | |

| BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| | | |

| SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| | | |

| INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| | | |

| HDWL DEPTH HD | ADDITIONAL REINF. FOR HDWL LBS. | "h" HDWL BARS SIZE | "h" Y | "h" LENGTH | "h" NO. REQ'D |
|---|---|---|---|---|---|
| | | | | | |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| TOTAL | |
| | |

| Design Fill Depth | Range of Actual Fill Depth |
|---|---|
| 2 | 0.0 ft - 2.0 ft |
| 5 | >2.0 ft - 5.0 ft |
| 10 | >5.0 ft - 10.0 ft |
| 15 | >10.0 ft - 15.0 ft |
| 20 | >15.0 ft - 20.0 ft |
| 25 | >20.0 ft - 25.0 ft |
| 30 | >25.0 ft - 30.0 ft |
| 35 | >30.0 ft - 35.0 ft |
| 40 | >35.0 ft - 40.0 ft |

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

## MID-SECTION

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | D | S | H | T | B | C | W | OW | OH | SL |
| A | 5 | 11 | 6 | 11.0 | 11 | 6.5 | 8 | 23'-9" | 7'-10" | 78.3333 |

| TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|
| 4 | 23'-5" | 8 | 23'-9" | 7 | 23'-5" | 15 | 62 |

| BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|
| 4 | 23'-5" | 5 | 23'-8" | 5 | 23'-5" | 10 | 93 |

| SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH |
|---|---|---|---|
| 4 | 4 | 468 | 7'-6" |

| INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH |
|---|---|---|---|
| 4 | 12 | 156 | 7'-6" |

| TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| 4 | 10 | 59 |

| BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| 4 | 10 | 59 |

| SIDE WALL DISTRIBUTION STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| 4 | 12 | 12 |

| INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|
| 4 | 12 | 12 |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| 156.79 | 24942 |

# SHEET 1 OF 2
# DETAILS OF R.C. BOX CULVERT
## DOUBLE BARREL BOX CULVERT
## Sta. 135+93

# SPECIAL DETAILS

Ver. LJ14 050249_cl.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 15 | 242 |

① SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/3/16

## OUTLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 23'-9" | 6'-0" | 0'-9" | 0'-8" | 30 | 3:1 | 26'-2 1/8" | 2'-0" | 6'-10" | 2'-0" | 0 | 60 | 3'-2" | 3'-2" | 3'-9" | 0'-6" | 0'-5 1/8" | 14'-6" | 29'-0" | 18'-0 3/8" | 32'-6 3/8" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| OUTLET | OUTLET |
| CU.YD | LBS. |
| 12.94 | 1027 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F1 | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F6 | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 15 | L | Min 3'-0" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 14'-2" | 4 | 18 | 10 | L Min 4'-9" | 4 | 8 | 18'-10" | 4 | 18 | 10 | Min | - | - | - | Min | 4 | 2 | 14'-10" | 4 | 2 | 15'-4" | 6 | 12 | 6 | L 3'-4" | 364 |
| | | | | | Max 7'-8" | | | | | | | | | | | | 4'-10" | | | | | | | | Max 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | | X 1'-8" | |
| | | | | X | Min 0'-9" | | | | X - | | | | X - | | | | Max | | | | | | | | X Min 2'-4" | | | | | | | Max | | | | | | | | | | | | | |
| | | | | | Max 0'-9" | | | | | | | | | | | | 9'-4" | | | | | | | | Max 2'-4" | | | | | | | 2'-8" | | | | | | | | | | | | | |
| | | | | Y | Min 2'-4" | | | | Y - | | | | Y - | | | | | | | | | | | | Y Min 2'-6" | | | | | | | Max | | | | | | | | | | | | | |
| | | | | | Max 7'-0" | | | | | | | | | | | | | | | | | | | | Max 7'-0" | | | | | | | - | | | | | | | | | | | | | |
| WING B | 4 | 12 | 29 | L | Min 3'-0" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 28'-8" | 4 | 18 | 20 | L Min 4'-7" | 4 | 8 | 33'-4" | 4 | 18 | 20 | Min | - | - | - | Min | 4 | 2 | 28'-11" | 4 | 2 | 31'-9" | 6 | 12 | 6 | L 3'-4" | 663 |
| | | | | | Max 8'-3" | | | | | | | | | | | | 9'-10" | | | | | | | | Max 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | |
| | | | | X | Min 0'-9" | | | | X - | | | | X - | | | | Max | | | | | | | | X Min 2'-4" | | | | | | | Max | | | | | | | | | | | | | |
| | | | | | Max 1'-4" | | | | | | | | | | | | 18'-10" | | | | | | | | Max 2'-4" | | | | | | | 3'-3" | | | | | | | | | | | | | |
| | | | | Y | Min 2'-4" | | | | Y - | | | | Y - | | | | | | | | | | | | Y Min 2'-4" | | | | | | | - | | | | | | | | | | | | | |
| | | | | | Max 7'-0" | | | | | | | | | | | | | | | | | | | | Max 7'-0" | | | | | | | | | | | | | | | | | | | | | |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINF. STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINF. STEEL "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINF. STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINF. STEEL "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINF. STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | 5 | 5 | Max 23'-5" Min 3'-1" 23'-5" | 29 5 | 6 | 5 | Max 23'-5" Min 3'-1" 23'-5" | 29 5 | 5 | 5 | Max 23'-5" Min 3'-1" 23'-5" | 29 5 | 4 | 6 | Max 23'-5" Min 3'-1" 23'-5" | 24 4 | 4 | 4 | 54 | 7'-6" | 4 | 12 | 18 | 7'-6" | 4 | 10 | 59 | Max 15'-7" Min 1'-10" | 4 | 10 | 59 | Max 15'-7" Min 1'-10" | 4 | 12 | 6 | LONG 15'-4" SHORT 2'-1" | 4 | 12 | 12 | 8'-8" |
| 30 | 3:1 | 5 | 11 | 6 | 8'-10" | 11 | 3 | 11 | 6.5 | 8 | 23'-9" | 7'-10" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| CLASS "S" CONCRETE (Includes HDWL.) | ① REINFORCING STEEL (GR 60) (Includes HDWL.) |
|---|---|
| CU. YDS. | LBS. |
| 18.28 | 3512 |

| "k1" HDWL BARS SIZE | "k1" HDWL BARS LENGTH | "k1" HDWL BARS NO. REQ'D | "k2" HDWL BARS SIZE | "k2" HDWL BARS LENGTH | "k2" HDWL BARS NO. REQ'D | "h" HDWL BARS SIZE | "h" HDWL BARS LENGTH | "h" HDWL BARS Y | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 27'-0" | 6 | 4 | 27'-0" | 6 | 4 | 1'-10" | 0'-10" | 29 |

## OUTLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | "c" SPACING | "c" NO. REQ'D | BOTTOM SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | "f" SPACING | "f" NO. REQ'D | SIDE WALL REINF. STEEL "f0" LENGTH = OH - 4" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. STEEL "f1" LENGTH = OH - 4" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | "g" SPACING | "g" NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | "e" SPACING | "e" NO. REQ'D | SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | "d1" SPACING | "d1" NO. REQ'D | INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE | "d2" SPACING | "d2" NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | S | H | T | B | C | W | OW | OH | SL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| CLASS "S" CONCRETE | REINFORCING STEEL (GR. 60) |
|---|---|
| CU. YDS. | LBS. |
| TOTAL | |

| HDWL DEPTH | ADDITIONAL REINF. FOR HDWL | "h" HDWL BARS SIZE | "h" HDWL BARS Y | "h" HDWL BARS LENGTH | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|
| HD | LBS. | | | | |

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 135+93

SPECIAL DETAILS

Ver. 1.14 050249_ci.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 16 | 242 |

1 SPECIAL DETAILS

# INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 29'-5" | 6'-0" | 0'-9" | 0'-8" | 0 | 3:1 | 28'-4" | 2'-0" | 6'-10" | 2'-0" | 30 | 30 | 3'-2" | 3'-4 7/8" | 3'-4 7/8" | 0'-3 1/4" | 0'-3 1/4" | 16'-6" | 16'-6" | 20'-0 3/8" | 20'-0 3/8" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| INLET | INLET |
| CU.YD | LBS. |
| 9.41 | 812 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 17 | L | Min | 3'-0" | - | - | - | L | - | - | - | - | L | - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 16'-2" | 4 | 18 | 11 | L | Min | 4'-10" | 4 | 8 | 20'-10" | 4 | 18 | 11 | Min | - | - | - | Min | 4 | 2 | 16'-9" | 4 | 2 | 17'-9" | 6 | 12 | 6 | L | 3'-4" | 406 |
| | | | | | Max | 7'-11" | | | | | | | | | | | | | | 5'-6" | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | | | |
| | | | | X | Min | 0'-9" | | | | X | - | | | | X | - | | | | | | | | | | | | X | Min | 2'-4" | | | | | | | | | | | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 1'-0" | | | | | | | | | | | | | | Max | | | | | | | | | Max | 2'-4" | | | | | | | Max | | | | | | | | | | | | | | | |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | Y | - | | | | 10'-8" | | | | | | | | Y | Min | 2'-7" | | | | | | | 2'-11" | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 17 | L | Min | 3'-0" | - | - | - | L | - | - | - | - | L | - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 16'-2" | 4 | 18 | 11 | L | Min | 4'-10" | 4 | 8 | 20'-10" | 4 | 18 | 11 | Min | - | - | - | Min | 4 | 2 | 16'-9" | 4 | 2 | 17'-9" | 6 | 12 | 6 | L | 3'-4" | 406 |
| | | | | | Max | 7'-11" | | | | | | | | | | | | | | 5'-6" | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | | | |
| | | | | X | Min | 0'-9" | | | | X | - | | | | X | - | | | | | | | | | | | | X | Min | 2'-4" | | | | | | | | | | | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 1'-0" | | | | | | | | | | | | | | Max | | | | | | | | | Max | 2'-4" | | | | | | | Max | | | | | | | | | | | | | | | |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | Y | - | | | | 10'-8" | | | | | | | | Y | Min | 2'-7" | | | | | | | 2'-11" | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | |

## MID-SECTION BAR LAP TABLE

| # of Long. Laps Req'd. | SL = Section Length |
|---|---|
| 0 | < 40.0 ft |
| 1 | >40.0 ft - 78.0 ft |
| 2 | >78.0 ft - 116.0 ft |
| 3 | >116.0 ft - 154.0 ft |
| 4 | >154.0 ft - 192.0 ft |
| 5 | >192.0 ft - 230.0 ft |
| 6 | >230.0 ft - 268.0 ft |
| 7 | >268.0 ft - 306.0 ft |
| 8 | >306.0 ft - 344.0 ft |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/7/16

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

1 Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

# INLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINFORCING STEEL "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | SIZE | SPACING | Max / Min | NO. REQ'D | SIZE | SPACING | Max / Min | NO. REQ'D | SIZE | SPACING | Max / Min | NO. REQ'D | SIZE | SPACING | Max / Min | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | Max / Min | SIZE | SPACING | NO. REQ'D | Max / Min | SIZE | SPACING | NO. REQ'D | LONG / SHORT | SIZE | SPACING | NO. REQ'D | LONG / SHORT |
| | | | | | | | | | | | | | | | Max | | | | Max | | | | Max | | | | | | | | | | | | | | | Max | | | | Max | | | | | | | | | | | |
| | | | | | | | | | | | | | | | Min | | | | Min | | | | Min | | | | | | | | | | | | | | | Min | | | | | | | | | | | | | | |

| "k1" HDWL BARS SIZE | "k1" HDWL BARS LENGTH | "k1" HDWL BARS NO. REQ'D | "k2" HDWL BARS SIZE | "k2" HDWL BARS LENGTH | "k2" HDWL BARS NO. REQ'D | "h" HDWL BARS SIZE | "h" HDWL BARS LENGTH | "h" HDWL BARS Y | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | 1 REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|
| | |

# INLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D | BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D | S | H | T | B | C | W | OW | OH | SL | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D |
| A | 10 | 9 | 6 | 8.5 | 9.5 | 6.5 | 8 | 29'-5" | 7'-6" | 22 | 4 | 29'-1" | 6 | 29'-6" | 5 | 29'-1" | 13 | 20 | 4 | 29'-1" | 5 | 29'-7" | 5 | 29'-1" | 8 | 33 | 5 | 7 | 74 | 7'-2" | 4 | 12 | 88 | 7'-2" | 4 | 12 | 59 | 4 | 11 | 65 | 4 | 12 | 12 | 4 | 12 | 24 |
| B | 15 | 9 | 6 | 11 | 12 | 7 | 8 | 29'-6" | 7'-11" | 11 | 4 | 29'-2" | 8 | 29'-11" | 4 | 29'-2" | 13 | 10 | 4 | 29'-2" | 6 | 29'-11" | 6 | 29'-2" | 10 | 13 | 5 | 5 | 52 | 7'-7" | 4 | 12 | 44 | 7'-7" | 4 | 10 | 71 | 4 | 9 | 77 | 4 | 12 | 12 | 4 | 12 | 24 |

| HDWL DEPTH HD | ADDITIONAL REINF. FOR HDWL LBS. | "h" HDWL BARS SIZE | "h" HDWL BARS Y | "h" HDWL BARS LENGTH | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|
| 3" | 39 | 4 | 0'-7" | 1'-7" | 31 |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| 48.04 | 8166 |
| 29.15 | 4843 |
| TOTAL | |
| 77.19 | 13009 |

| Design Fill Depth | Range of Actual Fill Depth |
|---|---|
| 2 | 0.0 ft - 2.0 ft |
| 5 | >2.0 ft - 5.0 ft |
| 10 | >5.0 ft - 10.0 ft |
| 15 | >10.0 ft - 15.0 ft |
| 20 | >15.0 ft - 20.0 ft |
| 25 | >20.0 ft - 25.0 ft |
| 30 | >25.0 ft - 30.0 ft |
| 35 | >30.0 ft - 35.0 ft |
| 40 | >35.0 ft - 40.0 ft |

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

# MID-SECTION

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D | BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D | SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D | INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D | S | H | T | B | C | W | OW | OH | SL | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D |
| C | 20 | 9 | 6 | 13 | 14.5 | 10 | 8 | 30'-0" | 8'-3 1/2" | 79 | 4 | 29'-8" | 8 | 30'-6" | 8 | 29'-8" | 12 | 79 | 4 | 29'-8" | 7 | 30'-6" | 7 | 29'-8" | 11 | 86 | 4 | 4 | 474 | 7'-0" | 4 | 12 | 316 | 7'-0" | 4 | 8.5 | 83 | 4 | 7.5 | 95 | 4 | 11 | 14 | 4 | 12 | 24 |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| 253.82 | 42161 |

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 252+20

SPECIAL DETAILS

Ver. LJ14 050249_c2.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 17 | 242 |

① SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/7/16

## OUTLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 29'-5" | 6'-0" | 0'-9" | 0'-8" | 0 | 3:1 | 28'-4" | 2'-0" | 6'-10" | 2'-0" | 30 | 30 | 3'-2" | 3'-4 7/8" | 3'-4 7/8" | 0'-3 1/4" | 0'-3 1/4" | 16'-6" | 16'-6" | 20'-0 3/8" | 20'-0 3/8" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| OUTLET | OUTLET |
| CU.YD | LBS. |
| 10.48 | 812 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 17 | L | Min | 3'-0" | | | | L | - | | | | L | - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 16'-2" | 4 | 18 | 11 | L | Min | 4'-10" | 4 | 8 | 20'-10" | 4 | 18 | 11 | Min | | | | 4 | 2 | 16'-9" | 4 | 2 | 17'-9" | 6 | 12 | 6 | L | 3'-4" | 406 |
| | | | | | Max | 7'-11" | | | | | | | | | | | | | | 5'-6" | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | |
| | | | | X | Min | 0'-9" | - | - | - | X | - | - | - | - | X | - | | | | Max | | | | | | | | X | Min | 2'-4" | | | | | | | Max | | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 1'-0" | | | | | | | | | | | | | | 10'-8" | | | | | | | | | Max | 2'-4" | | | | | | | 2'-11" | | | | | | | | | | | | | |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | Y | - | | | | | | | | | | | | Y | Min | 2'-7" | | | | | | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 17 | L | Min | 3'-0" | | | | L | - | | | | L | - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 16'-2" | 4 | 18 | 11 | L | Min | 4'-10" | 4 | 8 | 20'-10" | 4 | 18 | 11 | Min | | | | 4 | 2 | 16'-9" | 4 | 2 | 17'-9" | 6 | 12 | 6 | L | 3'-4" | 406 |
| | | | | | Max | 7'-11" | | | | | | | | | | | | | | 5'-6" | | | | | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | | | | | | | | | | |
| | | | | X | Min | 0'-9" | - | - | - | X | - | - | - | - | X | - | | | | Max | | | | | | | | X | Min | 2'-4" | | | | | | | Max | | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 1'-0" | | | | | | | | | | | | | | 10'-8" | | | | | | | | | Max | 2'-4" | | | | | | | 2'-11" | | | | | | | | | | | | | |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | Y | - | | | | | | | | | | | | Y | Min | 2'-7" | | | | | | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINFORCING STEEL "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | Max | | | | Max | | | | Max | | | | | | | | | | | | | | | | | | |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 18 | 242 |

① SPECIAL DETAILS

## INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AP1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 17'-8" | 4'-0" | 0'-9" | 0'-8" | 45 | 3:1 | 23'-6 7/8" | 1'-0" | 4'-10" | 1'-4" | 0 | 60 | 2'-2" | 2'-3 3/4" | 2'-7 7/8" | 0'-7 3/4" | 0'-3" | 10'-6" | 21'-0" | 11'-5 1/2" | 25'-3 1/2" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| INLET | INLET |
| CU.YD | LBS. |
| 6.80 | 584 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 11 | L | Min | 2'-4" | - | - | - | L | - | - | - | - | L | - | 4 | 18 | 4 | Min |
| | | | | | Max | 5'-10" | | | | | | | | | | | | | | 3'-4" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | X | - | | | | Max |
| | | | | | Max | 0'-11" | | | | | | | | | | | | | | 7'-10" |
| | | | | Y | Min | 1'-8" | | | | Y | - | | | | Y | - | | | | |
| | | | | | Max | 5'-0" | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 21 | L | Min | 2'-4" | - | - | - | L | - | - | - | - | L | - | 4 | 18 | 4 | Min |
| | | | | | Max | 6'-2" | | | | | | | | | | | | | | 6'-10" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | X | - | | | | Max |
| | | | | | Max | 1'-3" | | | | | | | | | | | | | | 15'-10" |
| | | | | Y | Min | 1'-8" | | | | Y | - | | | | Y | - | | | | |
| | | | | | Max | 5'-0" | | | | | | | | | | | | | | |

| WING | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | | | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS VARY | | | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 18 | 2 | 10'-2" | 4 | 18 | 7 | L | Min | 3'-3" | 4 | 6 | 12'-4" | 4 | 18 | 7 | Min | | | - | - | - | Min | | | 4 | 2 | 10'-7" | 4 | 2 | 11'-4" | 6 | 12 | 4 | L | 3'-4" | 204 |
| | | | | | | | | | Max | 6'-3" | | | | | | | 1'-8" | | | | | | - | | | | | | | | | | | | | |
| | | | | | | | | X | Min | 1'-4" | | | | | | | Max | | | | | | Max | | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | | Max | 1'-4" | | | | | | | | | | | | | - | | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 2'-0" | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 5'-0" | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 18 | 2 | 20'-8" | 4 | 18 | 14 | L | Min | 3'-1" | 4 | 6 | 26'-2" | 4 | 18 | 14 | Min | | | - | - | - | Min | | | 4 | 2 | 20'-10" | 4 | 2 | 23'-7" | 6 | 12 | 4 | L | 3'-4" | 380 |
| | | | | | | | | | Max | 6'-3" | | | | | | | 1'-8" | | | | | | - | | | | | | | | | | | | | |
| | | | | | | | | X | Min | 1'-4" | | | | | | | Max | | | | | | Max | | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | | Max | 1'-4" | | | | | | | | | | | | | - | | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 1'-10" | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 5'-0" | | | | | | | | | | | | | | | | | | | | | | | | | | |

## MID-SECTION BAR LAP TABLE

| # of Long. Laps Req'd. | SL = Section Length |
|---|---|
| 0 | < 40.0 ft |
| 1 | >40.0 ft - 78.0 ft |
| 2 | >78.0 ft - 116.0 ft |
| 3 | >116.0 ft - 154.0 ft |
| 4 | >154.0 ft - 192.0 ft |
| 5 | >192.0 ft - 230.0 ft |
| 6 | >230.0 ft - 268.0 ft |
| 7 | >268.0 ft - 306.0 ft |
| 8 | >306.0 ft -344.0 ft |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/7/16

This drawing to be used in conjunction with SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE', SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT', SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## INLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINF. "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINF. "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINF. "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINF. "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINF. "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIB. REINF. "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIB. REINF. "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIB. REINF. "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIB. REINF. "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ② REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 19 | 242 |

① SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

TABULAR DATA BY: KWY DATE: 3/2/16
CHECKED BY: DHP DATE: 3/3/16

## OUTLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AP1 | AP2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 17'-8" | 4'-0" | 0'-9" | 0'-8" | 45 | 3:1 | 23'-6 7/8" | 1'-0" | 4'-10" | 1'-4" | 0 | 60 | 2'-2" | 2'-3 3/4" | 2'-7 7/8" | 0'-7 3/4" | 0'-3" | 10'-6" | 21'-0" | 11'-5 1/2" | 25'-3 1/2" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| OUTLET | OUTLET |
| CU.YD | LBS. |
| 7.74 | 584 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F1 LENGTHS | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F6 LENGTHS | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F8 LENGTHS | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 11 | L Min | 2'-4" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 2 | 10'-2" | 4 | 18 | 7 | L Min | 3'-3" | 4 | 6 | 12'-4" | 4 | 18 | 7 | Min | - | - | - | - | 4 | 2 | 10'-7" | 4 | 2 | 11'-4" | 6 | 12 | 4 | L 3'-4" | 204 |
| | | | | L Max | 5'-10" | | | | | | | | | | | | 3'-4" | | | | | | | | Max | 6'-3" | | | | | | | 1'-8" | | | | | | | | | | | | | | |
| | | | | X Min | 0'-9" | | | | X - | | | | X - | | | | Max | | | | | | | | X Min | 1'-4" | | | | | | | Max | | | | Max | | | | | | | X 1'-8" | | |
| | | | | X Max | 0'-11" | | | | | | | | | | | | 7'-10" | | | | | | | | X Max | 1'-4" | | | | | | | 1'-10" | | | | - | | | | | | | | | |
| | | | | Y Min | 1'-8" | | | | Y - | | | | Y - | | | | | | | | | | | | Y Min | 2'-0" | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y Max | 5'-0" | | | | | | | | | | | | | | | | | | | | Y Max | 5'-0" | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 21 | L Min | 2'-4" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 2 | 20'-8" | 4 | 18 | 14 | L Min | 3'-1" | 4 | 6 | 26'-2" | 4 | 18 | 14 | Min | - | - | - | - | 4 | 2 | 20'-10" | 4 | 2 | 23'-7" | 6 | 12 | 4 | L 3'-4" | 380 |
| | | | | L Max | 6'-2" | | | | | | | | | | | | 6'-10" | | | | | | | | L Max | 6'-3" | | | | | | | 1'-8" | | | | | | | | | | | | | | |
| | | | | X Min | 0'-9" | | | | X - | | | | X - | | | | Max | | | | | | | | X Min | 1'-4" | | | | | | | Max | | | | Max | | | | | | | X 1'-8" | | |
| | | | | X Max | 1'-3" | | | | | | | | | | | | 15'-10" | | | | | | | | X Max | 1'-4" | | | | | | | 2'-2" | | | | - | | | | | | | | | |
| | | | | Y Min | 1'-8" | | | | Y - | | | | Y - | | | | | | | | | | | | Y Min | 1'-10" | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y Max | 5'-0" | | | | | | | | | | | | | | | | | | | | Y Max | 5'-0" | | | | | | | | | | | | | | | | | | | | | |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

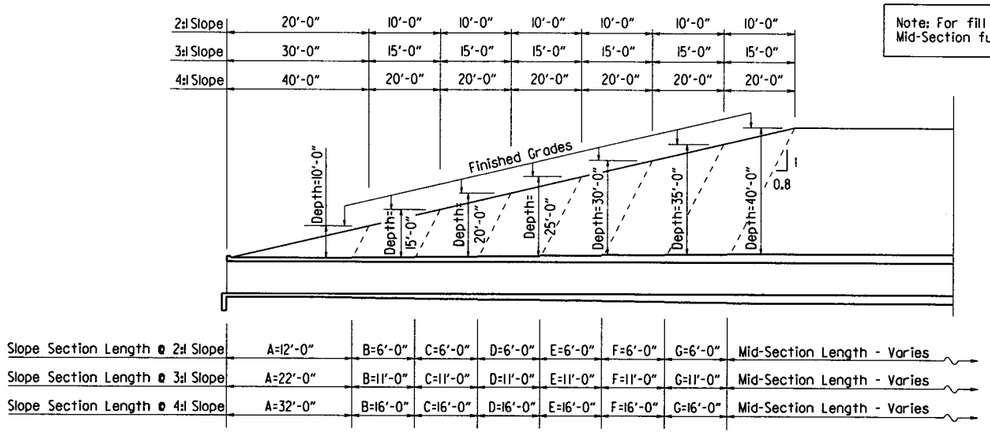
① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINF. "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" LENGTH | "a" NO. REQ'D | "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" LENGTH | "c" NO. REQ'D | BOTTOM SLAB REINF. "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" LENGTH | "d" NO. REQ'D | "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" LENGTH | "f" NO. REQ'D | SIDE WALL REINF. "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DIST. REINF. "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DIST. REINF. "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DIST. REINF. "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DIST. REINF. "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ① REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 20 | 242 |

(1) SPECIAL DETAILS

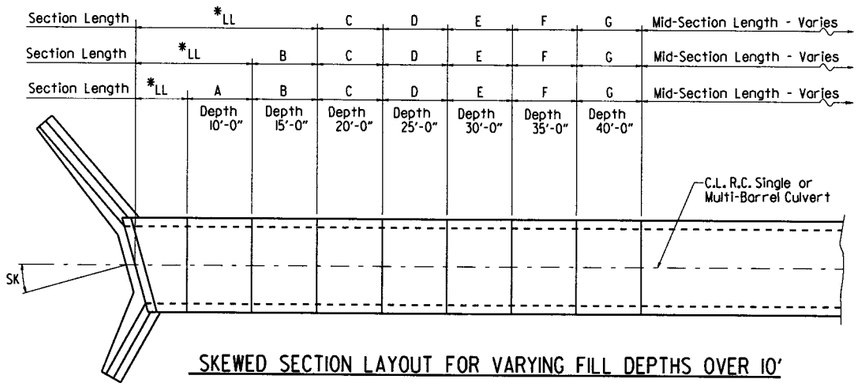



Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

## LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

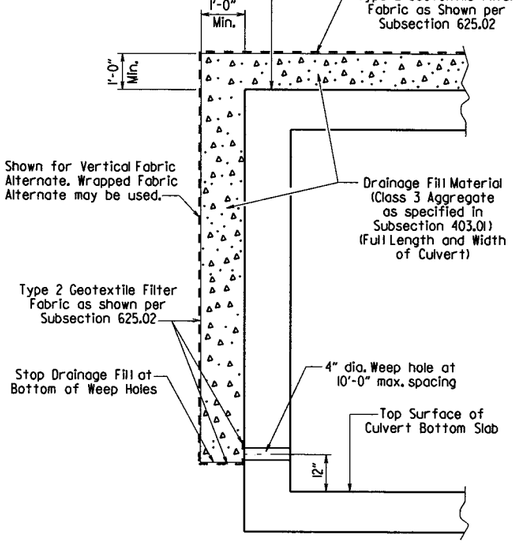
Lengths for Non-Skewed Boxes

*LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.



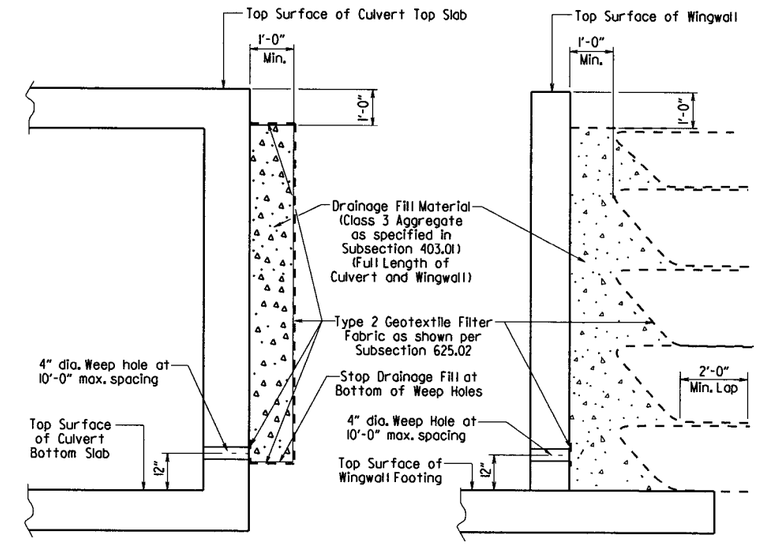

## SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS




## CULVERT DRAINAGE DETAIL FOR ROCK FILL

This detail shall be used when rock fill is specified for embankment construction.




VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)




WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

## WINGWALL & CULVERT DRAINAGE DETAIL

**GENERAL NOTES:**

**CONSTRUCTION SPECIFICATIONS:** Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

**DESIGN SPECIFICATIONS:** AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.

**LIVE LOADING:** HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall conform to the requirements of Section 815. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.

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 barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. All longitudinal construction joints shall be submitted to the Engineer for approval.

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class S Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4

# GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

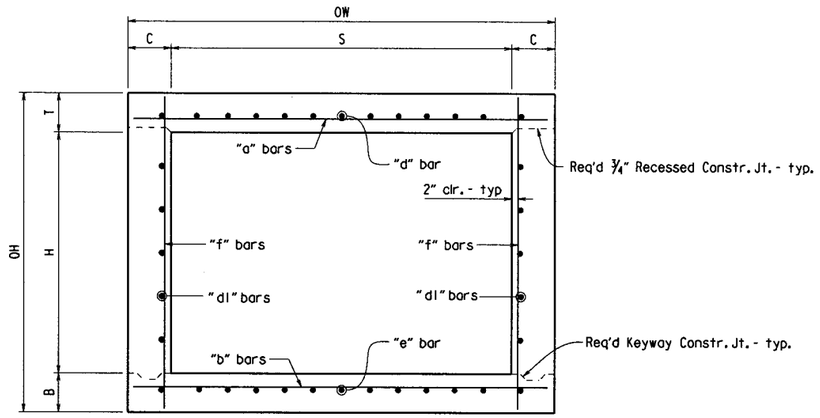
LRD

v 1.1.4 Culvert-General.dgn

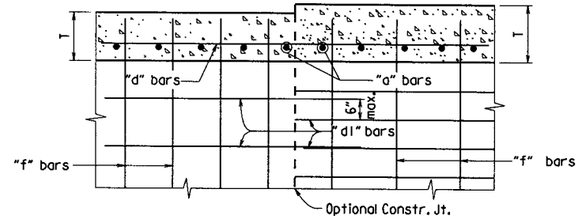
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 21 | 242 |

(1) SPECIAL DETAILS

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



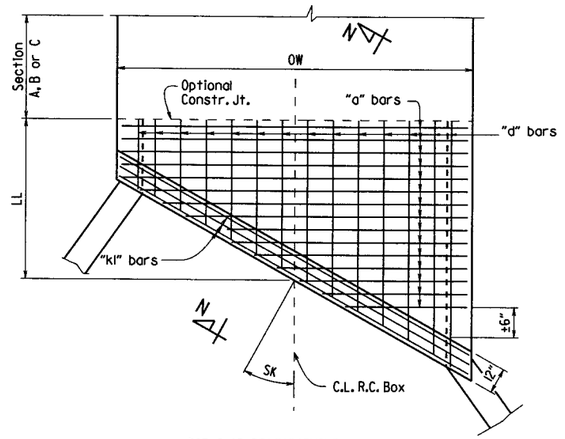

## TYPICAL SECTION M-M



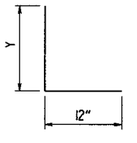

Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

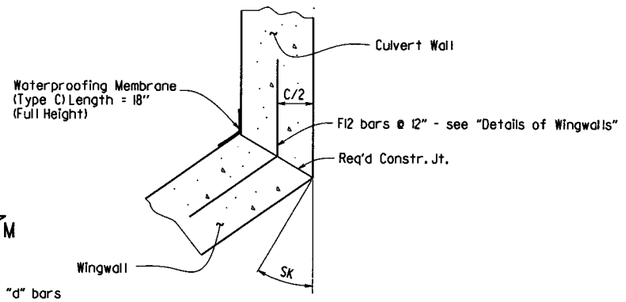
## LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR




TOP SLAB REINFORCEMENT




## WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.

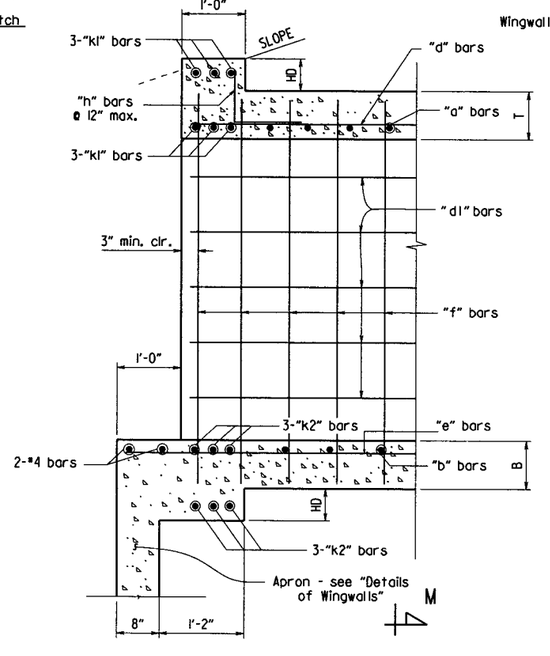



BOTTOM SLAB REINFORCEMENT



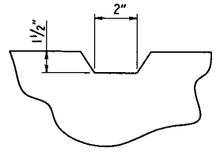

## PART LONGITUDINAL SECTION

(Non-Skewed Ends)




## PART LONGITUDINAL SECTION N-N

(Skewed Ends)




## TYPICAL KEYWAY DETAIL

(All Construction Joints)

## SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

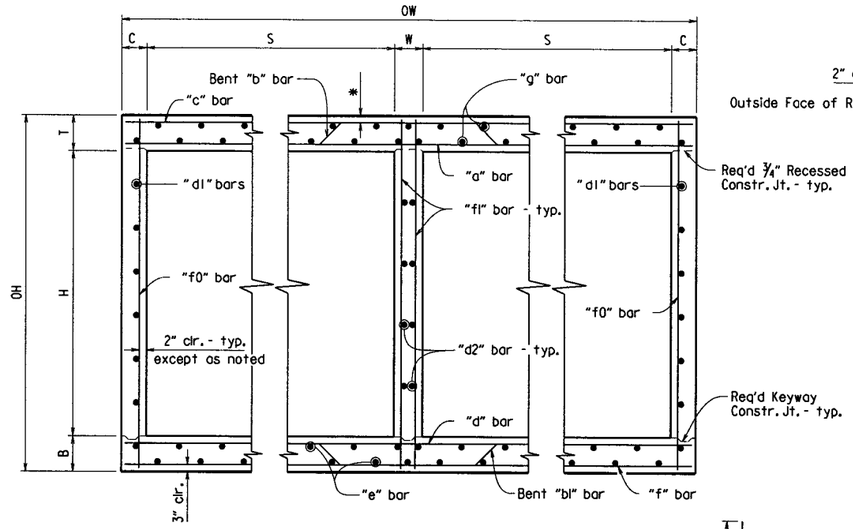
Culvert-General.dgn

| DATE REVISED | DATE FILMED | REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 22 | 242 |

1 SPECIAL DETAILS

*2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.

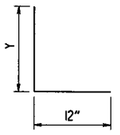
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



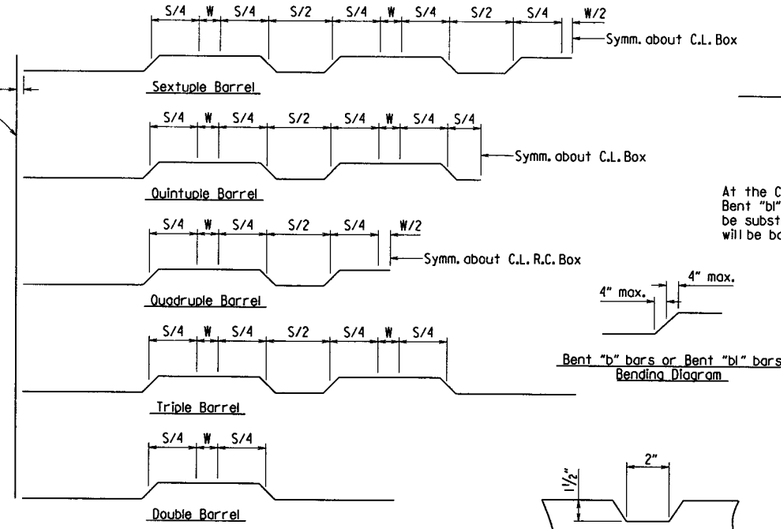

## TYPICAL SECTION M-M

Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

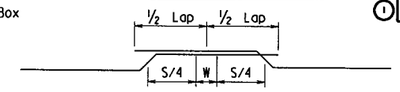
Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" bars in bottom.




"h" bars sketch




## Bent "b" bars or Bent "b1" bars sketch



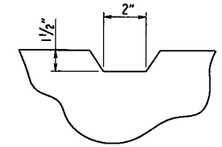

Lap Detail
For Bent "b" bars and Bent "b1" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "b1" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "b1" bar.

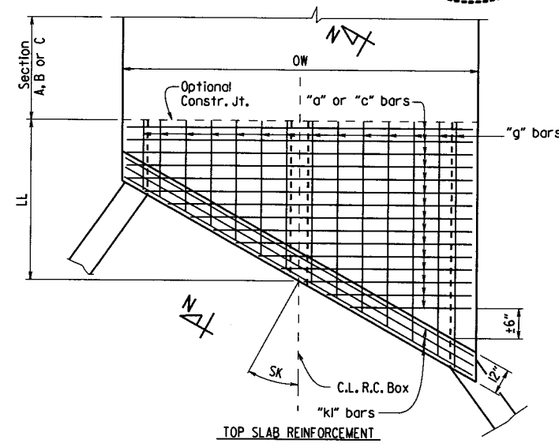



Bent "b" bars or Bent "b1" bars Bending Diagram

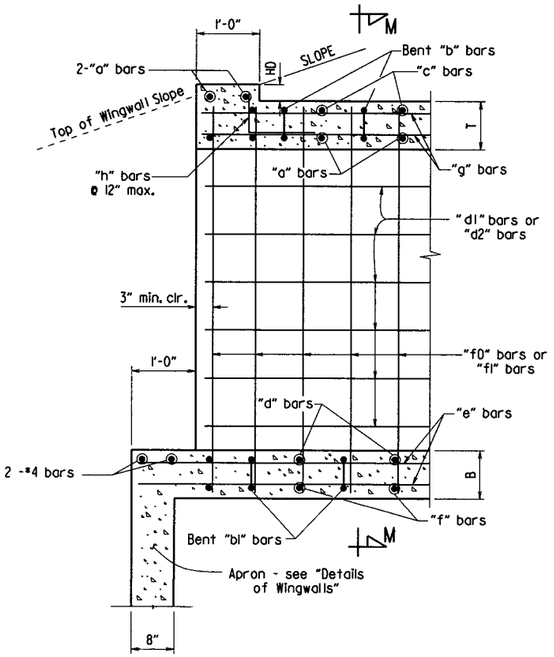
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS



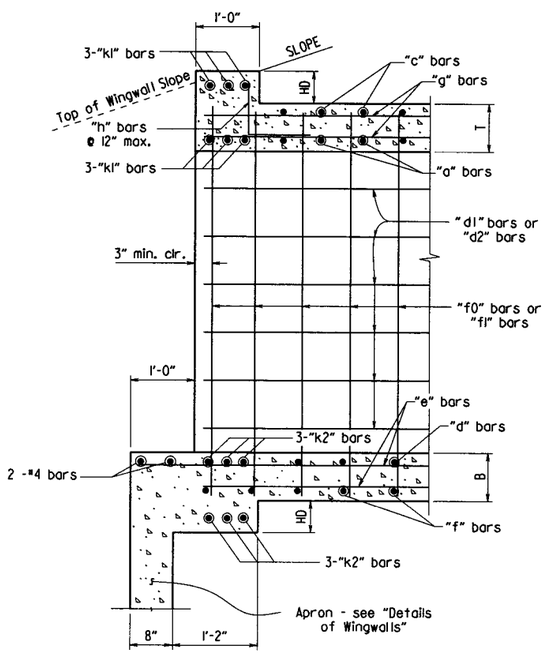

## TYPICAL KEYWAY DETAIL
(All Construction Joints)



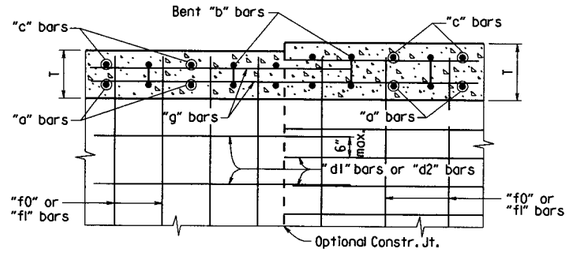

TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.




## PART LONGITUDINAL SECTION
(Non-Skewed Ends)

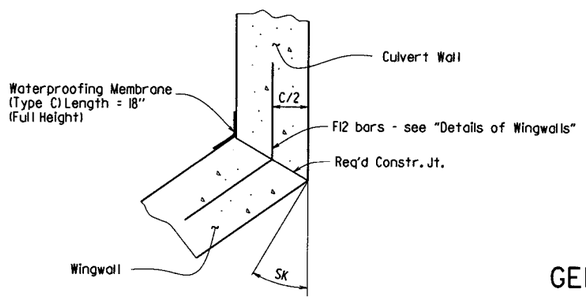



## PART LONGITUDINAL SECTION N-N
(Skewed Ends)

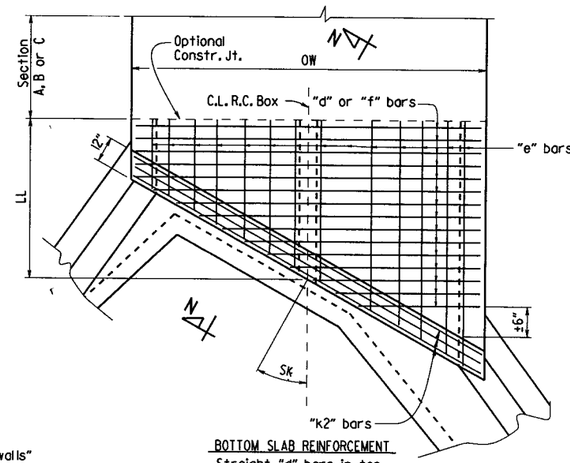



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

## LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR




## WINGWALL ATTACHMENT
See "Details of Wingwalls" for additional information and wingwall details.




BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

## SKEWED END SECTION DETAILS

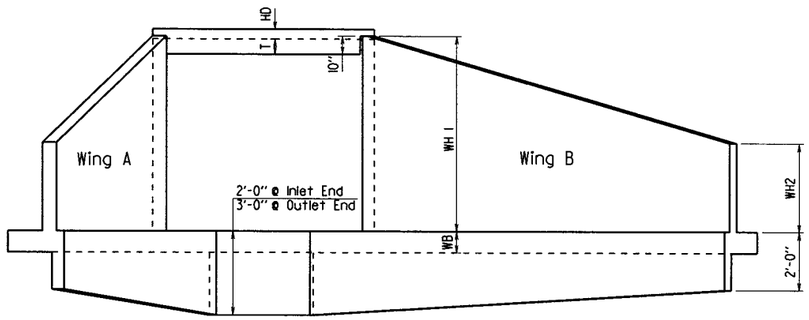
# SHEET 3 OF 4
# GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

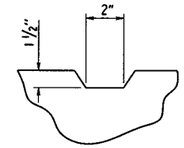
SPECIAL DETAILS

Culvert-General.dgn

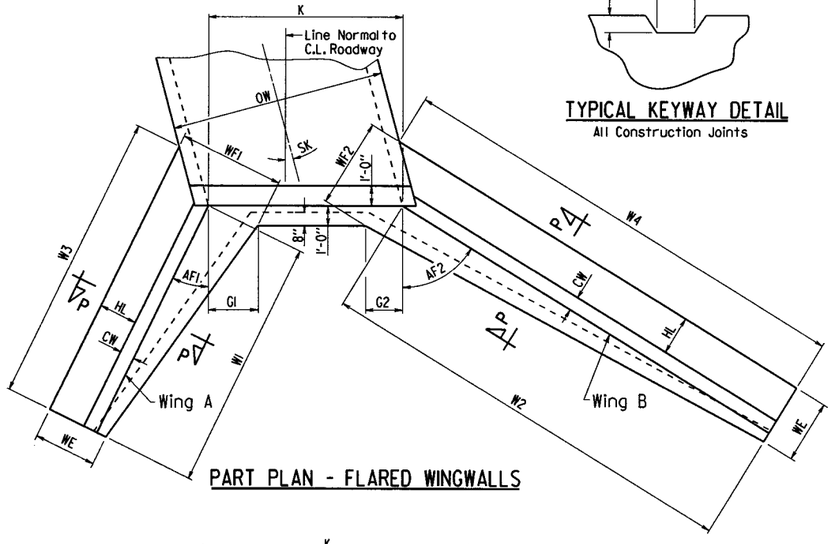
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 23 | 242 |
| | | | | ① | | SPECIAL DETAILS | | |



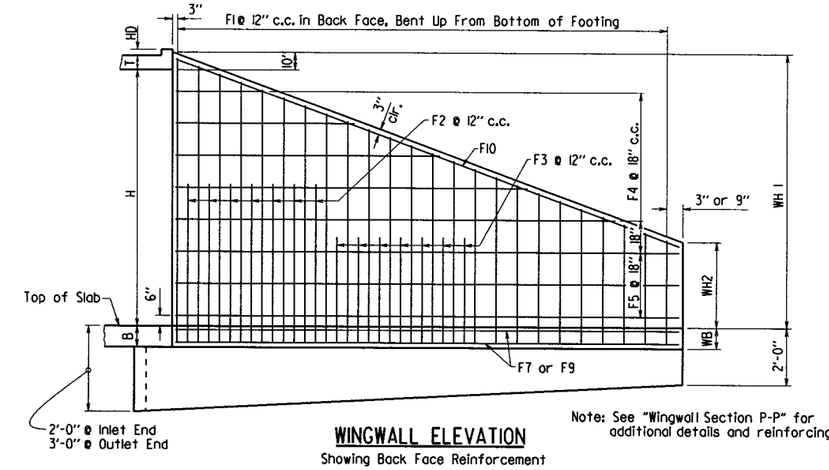

END ELEVATION
Flared Wingwalls Shown




TYPICAL KEYWAY DETAIL
All Construction Joints

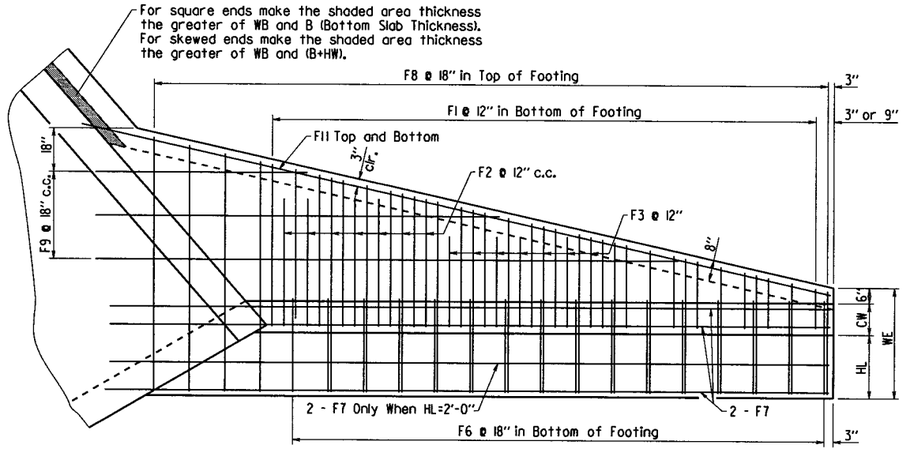



PART PLAN - FLARED WINGWALLS

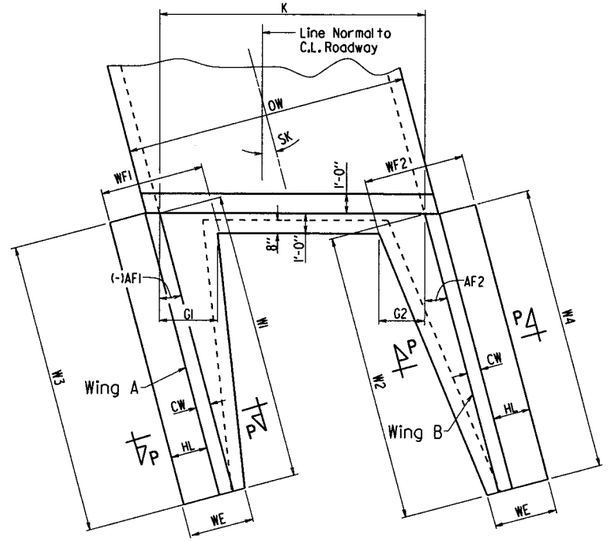



WINGWALL ELEVATION
Showing Back Face Reinforcement

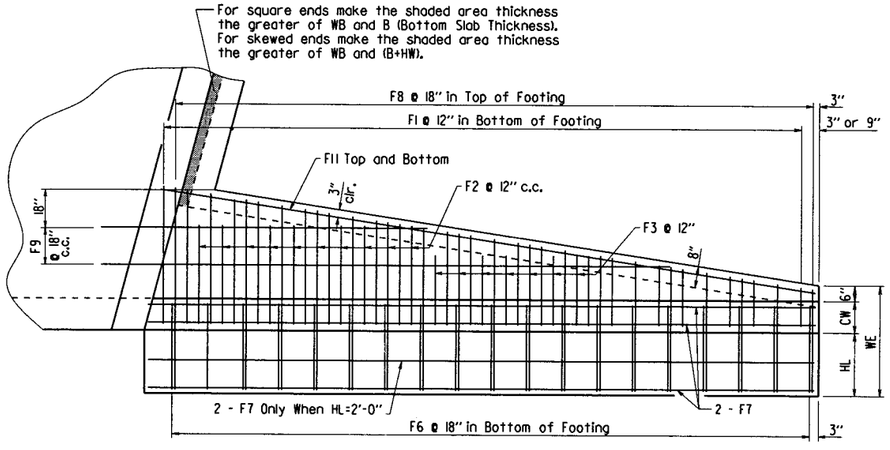
Note: See "Wingwall Section P-P" for additional details and reinforcing.



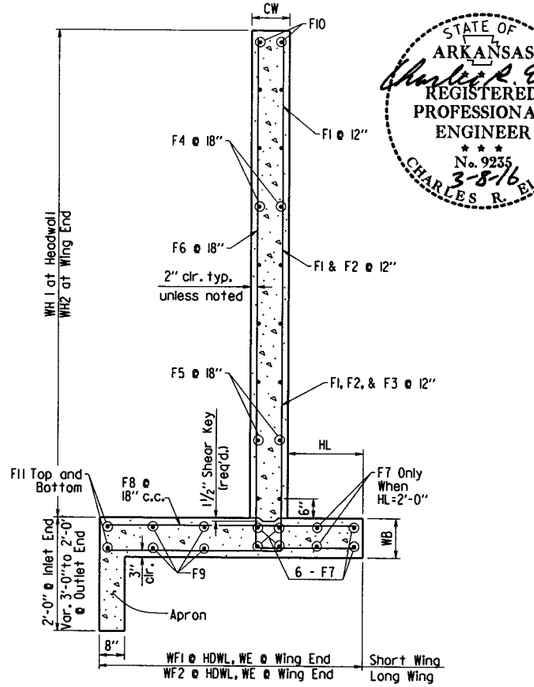

PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



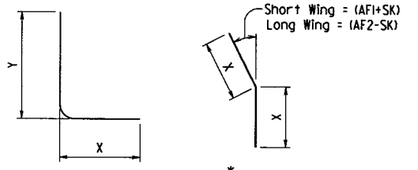

PART PLAN - PARALLEL WINGWALLS




PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



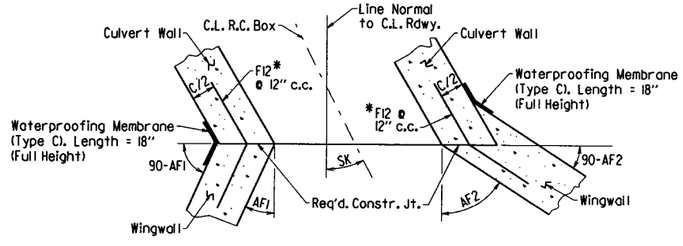

WINGWALL SECTION P-P




F1, F2, F3, & F6 BARS

*F12 BAR

*F12 is a straight bar for parallel wingwalls




CONSTRUCTION JOINTS
Flared Wingwalls Shown

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
3-8-16
CHARLES R. ELLIS

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

Culvert-General.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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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 24 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93° 17' 09"

STA. 102+41.75
BEGIN JOB 050249

STA. 102+88 - STA. 112+20 RT.
INSTALL E-II = 1112 LIN. FT.

STA. 113+20 - STA. 116+93 RT.
INSTALL E-II = 407 LIN. FT.

STA. 116+93 - STA. 136+15
INSTALL E-II = 2026 LIN. FT.

## REVISIONS

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LEGEND

E-II ··· E-II SILT FENCE

TEMPORARY EROSION CONTROL GENERAL NOTES:

1) THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

2) REFER TO SECT. 110 OF STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

3/2/2016

R050249.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 25 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 136+00 - STA. 145+00
INSTALL E-II = 995 LIN. FT.

N 0°00'00" W

REVISIONS

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LEGEND

E-II ··· E-II SILT FENCE

P.I. 503+45.79

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 71°15'35"

STA. 154+82 - STA. 158+80
INSTALL E-II = 567 LIN. FT.

STA. 159+40 - STA. 160+70
INSTALL E-II = 340 LIN. FT.

STA. 147+50 - STA. 154+23
INSTALL E-II = 745 LIN. FT.

P.C. 148+43.00

P.T. 152+27.46

P.T. 506+74.29

N 15°22'40" E

N 86°38'15" E

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 26 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 161+40 - STA. 179+50
INSTALL E-II = 1899 LIN. FT.

STA. 186+80 - STA. 194+65
INSTALL E-II = 949 LIN. FT.

REVISIONS

| DATE OF REVISION | REVISION |
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LEGEND

E-II ··· E-II SILT FENCE

N 15°22'40" E
N 49°46'44" E
N 68°04'08" E

P.I. 161+15.79
P.C. 162+72.30
P.T. 171+32.40
P.I. 185+30.43
P.C. 182+22.98
P.T. 188+32.64

T.C.E.

POND

WALL

3/2/2016

R050249.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 27 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11425
TRINITY D. SMITH
6-10-16

STA. 197+00 - STA. 204+40
INSTALL E-II = 1429 LIN. FT.

N 68°04'08" E

N 90°00'00" E

P.I. 203+95.16

P.I. 201+73.13

T.C.E.

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

LEGEND

E-II SILT FENCE

STA. 214+10 - STA. 223+30 LT.
INSTALL E-II = 948 LIN. FT.

P.I. 600+92.57

S 41°43'19" E

STA. 210+80 - STA. 212+00 LT.
INSTALL E-II = 121 LIN. FT.

P.T. 601+56.92

STA. 205+70 - STA. 210+40 LT.
INSTALL E-II = 476 LIN. FT.

S 10°00'00" E

N 90°00'00" E

S 85°48'38" E

P.C. 602+66.76

P.I. 217+99.66

P.T. 206+11.75

P.C. 213+80.53

P.T. 605+73.49

P.I. 604+45.40

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

CATTLE GUARD

STORM CELLAR

GAS PIPLINE

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 28 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 224+70 - STA. 251+90
INSTALL E-II = 2920 LIN. FT.

S 85°48'38" E

LEGEND

E-II ··· E-II SILT FENCE

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

3/2/2016

R050249.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 29 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 252+20 - STA. 257+50
INSTALL E-II = 769 LIN. FT.

STA. 257+70 - STA. 265+80 RT.
INSTALL E-II = 810 LIN. FT.

STA. 268+39 - STA. 272+80 LT.
INSTALL E-II = 461 LIN. FT.

HWY. 13 - STA. 273+00.00 =
COVINGTON RD. - STA. 705+67.58
Δ = 75°00'00"

STA. 269+00 - STA. 273+74 RT.
INSTALL E-II = 485 LIN. FT.

STA. 276+54 - STA. 286+00 RT.
INSTALL E-II = 967 LIN. FT.

LEGEND

E-II ··· E-II SILT FENCE

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 30 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 285+70 - STA. 295+90
INSTALL E-II = 1207 LIN. FT.

STA. 296+10 - STA. 296+86
INSTALL E-II = 433 LIN. FT.

LEGEND

E-II ··· E-II SILT FENCE

STA. 298+27.20
END JOB 050249

STA. 298+10.57
END FULL BUILD
& BEGIN PAVING

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59° 06' 23"

REVISIONS

| DATE OF REVISION | REVISION |
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CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 31 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93° 17' 09"

STA. 102+41.75
BEGIN JOB 050249

STA. 102+66 - STA. 108+29 LT.
INSTALL E-11 = 612 LIN. FT.

STA. 108+81 - STA. 113+89 LT.
INSTALL E-11 = 499 LIN. FT.

STA. 102+55 - STA. 113+37 RT.
INSTALL E-11 = 1161 LIN. FT.

STA. 113+48 - STA. 115+70 RT.
INSTALL E-11 = 223 LIN. FT.

STA. 117+00 - STA. 121+75 LT.
INSTALL E-11 = 385 LIN. FT.

STA. 122+35 - STA. 126+68 LT.
INSTALL E-11 = 431 LIN. FT.

STA. 122+43 - STA. 124+54 RT.
INSTALL E-11 = 212 LIN. FT.

STA. 127+11 - STA. 128+49 LT.
INSTALL E-11 = 138 LIN. FT.

REVISIONS

| DATE OF REVISION | REVISION |
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| | |

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES:

1) THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

2) REFER TO SECT. 110 OF STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

3/2/2016

R050249.DGN

STAGE I
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 32 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 131+71 - STA. 133+71 LT.
INSTALL E-11 = 201 LIN. FT.

STA. 136+55 - STA. 139+85 LT.
STA. 140+14 - STA. 141+00 LT.
INSTALL E-11 = 415 LIN. FT.

STA. 142+21 - STA. 145+19 LT.
INSTALL E-11 = 299 LIN. FT.

STA. 137+25 - STA. 139+89 RT.
STA. 140+12 - STA. 141+88 RT.
INSTALL E-11 = 441 LIN. FT.

STA. 503+47 - STA. 504+19 LT.
INSTALL E-11 = 72 LIN. FT.
(COLLINS RD.)

STA. 504+81 - STA. 505+70 LT.
INSTALL E-11 = 89 LIN. FT.
(COLLINS RD.)

STA. 503+02 - STA. 505+55 RT.
INSTALL E-11 = 253 LIN. FT.
(COLLINS RD.)

STA. 149+44 - STA. 154+00 LT.
INSTALL E-11 = 475 LIN. FT.

STA. 149+17 - STA. 147+36 RT.
INSTALL E-11 = 116 LIN. FT.

STA. 506+52 - STA. 507+70 RT.
INSTALL E-11 = 119 LIN. FT.
(COLLINS RD.)

STA. 506+70 - STA. 507+21 LT.
INSTALL E-11 = 53 LIN. FT.
(COLLINS RD.)

STA. 159+50 - STA. 159+89 RT.
INSTALL E-11 = 39 LIN. FT.

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 71° 15' 35"

N 0°00'00" W

N 15°22'40" E

N 86°38'15" E

HWY. 13

COLLINS RD.

P.I. 150+36.39

P.I. 503+45.79

P.C. 148+43.00

P.T. 152+27.46

P.T. 506+74.79

T.C.E.

76 CU. YD.

185 CU. YD.

91 CU. YD.

234 CU. YD.

95 CU. YD.

146 CU. YD.

469 CU. YD.

5000 CU. YD.

554 CU. YD.

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

LEGEND

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

3/2/2016

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STAGE I
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 33 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 162+09 - STA. 163+09 LT.
INSTALL E-11 = 100 LIN. FT.

STA. 160+11 - STA. 162+08 RT.
INSTALL E-11 = 198 LIN. FT.

STA. 186+31 - STA. 192+10 LT.
INSTALL E-11 = 590 LIN. FT.

STA. 184+00 - STA. 192+90 RT.
INSTALL E-11 = 881 LIN. FT.

HWY. 13

N 15°22'40" E

N 49°46'44" E

N 68°04'08" E

P.I. 16+15.79

P.C. 162+72.39

P.T. 177+32.40

P.I. 185+30.43

P.C. 182+22.98

P.T. 188+32.64

364 CU. YD.

PARKING

POND

T.C.E.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

## LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-8) DIVERSION DITCHES
- (E-11) SILT FENCE
- (E-12) SLOPE DRAINS
- (E-14) SEDIMENT BASIN

3/2/2016

R050249.DGN

# STAGE I
# TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 34 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 186+31 - STA. 192+10 LT.
INSTALL E-11 = 590 LIN. FT.

STA. 184+00 - STA. 192+90 RT.
INSTALL E-11 = 881 LIN. FT.

STA. 200+13 - STA. 202+41 RT.
INSTALL E-11 = 223 LIN. FT.

STA. 201+20 - STA. 204+50 LT.
INSTALL E-11 = 361 LIN. FT.

STA. 203+22 - STA. 202+95 RT.
INSTALL E-11 = 67 LIN. FT.

STA. 205+38 - STA. 210+67 LT.
INSTALL E-11 = 539 LIN. FT.

STA. 210+91 - STA. 212+60 LT.
INSTALL E-11 = 169 LIN. FT.

STA. 204+15 - STA. 206+68 LT.
INSTALL E-11 = 373 LIN. FT.

STA. 600+21 - STA. 600+89 LT.
INSTALL E-11 = 75 LIN. FT.

STA. 600+40 - STA. 601+82 RT.
INSTALL E-11 = 142 LIN. FT.
(HOLMES RD.)

STA. 603+30 - STA. 606+47 LT.
STA. 606+58 - STA. 607+46 LT.
INSTALL E-11 = 280 LIN. FT.
(HOLMES RD.)

STA. 603+26 - STA. 603+73 RT.
INSTALL E-11 = 54 LIN. FT.
(HOLMES RD.)

STA. 604+26 - STA. 607+70 RT.
INSTALL E-11 = 344 LIN. FT.
(HOLMES RD.)

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |

## LEGEND

| | |
|---|---|
| E-5 | SAND BAG DITCH CHECKS |
| E-6 | ROCK DITCH CHECKS |
| E-8 | DIVERSION DITCHES |
| E-11 | SILT FENCE |
| E-12 | SLOPE DRAINS |
| E-14 | SEDIMENT BASIN |

3/2/2016

R0502249.DGN

# STAGE I
# TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 35 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

N

HWY. 13 S 85°48'38" E

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-8 DIVERSION DITCHES
- E-11 SILT FENCE
- E-12 SLOPE DRAINS

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

STA. 237+10 - STA. 249+63 LT.
INSTALL E-11 = 1259 LIN. FT.

STA. 237+51 - STA. 241+96 RT.
INSTALL E-11 = 449 LIN. FT.

STA. 244+08 - STA. 251+95 RT.
INSTALL E-11 = 789 LIN. FT.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

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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. | | 050249 | 36 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-8) DIVERSION DITCHES
- (E-11) SILT FENCE
- (E-12) SLOPE DRAINS
- (E-14) SEDIMENT BASIN

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |

STA. 244+08 - STA. 251+95 RT.
INSTALL E-11 = 789 LIN. FT.

STA. 253+20 - STA. 263+67 RT.
INSTALL E-11 = 1048 LIN. FT.

STA. 263+11 - STA. 263+67 LT.
INSTALL E-11 = 55 LIN. FT.

STA. 258+00 - STA. 262+88 RT.
INSTALL E-11 = 493 LIN. FT.

STA. 264+40 - STA. 272+50 LT.
INSTALL E-11 = 818 LIN. FT.

STA. 264+45 - STA. 277+96 RT.
INSTALL E-11 = 1398 LIN. FT.

STA. 278+06 - STA. 279+80 RT.
INSTALL E-11 = 177 LIN. FT.

STA. 280+02 - STA. 282+27 RT.
INSTALL E-11 = 226 LIN. FT.

HWY. 13 - STA. 273+00.00 =
COVINGTON RD. - STA. 705+67.58
Δ = 75°00'00"

# STAGE I
# TEMPORARY EROSION CONTROL DETAILS

3/2/2016

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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. | | 050249 | 37 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

N

280

285

290

295

300

P.C. 284+55.29

P.T. 290+93.43

P.I. 301+60.88

P.T. 306+96.57

T.C.E.

HWY. 13

HWY. 16

S 88°41'51" E

N 72°09'30" E

S 74°44'54" E

S 31°47'03" E

STA. 280+02 - STA. 282+27 RT.
INSTALL E-II = 226 LIN. FT.

STA. 282+96 - STA. 285+15 RT.
INSTALL E-II = 231 LIN. FT.

STA. 285+40 - STA. 285+70 RT.
INSTALL E-II = 31 LIN. FT.

STA. 290+14 - STA. 294+64 LT.
INSTALL E-II = 351 LIN. FT.

STA. 293+23 - STA. 295+14 RT.
INSTALL E-II = 193 LIN. FT.

STA. 295+48 - STA. 299+11 LT.
INSTALL E-II = 329 LIN. FT.

STA. 296+28 - STA. 298+82 RT.
INSTALL E-II = 400 LIN. FT.

78 CU. YD.

52 CU. YD.

LEGEND

| | |
|---|---|
| E-5 | SAND BAG DITCH CHECKS |
| E-6 | ROCK DITCH CHECKS |
| E-11 | SILT FENCE |
| E-14 | SEDIMENT BASIN |

STA. 298+27.20
END JOB 050249

STA. 298+10.57
END FULL BUILD
& BEGIN PAVING

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59°06'23"

| REVISIONS | |
|---|---|
| DATE OF REVISION | REVISION |
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STAGE I
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 38 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-8 DIVERSION DITCHES
- E-11 SILT FENCE
- E-12 SLOPE DRAINS
- E-14 SEDIMENT BASIN

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

6-10-16

N

POB 600+00.00

600

P.C. 600+24.74

P.I. 600+92.57

P.T. 601+56.92

210

215

220

605

610

HWY. 13

N 90°00'00" E

S 85°48'38" E

P.C. 602+66.76

P.C. 213+80.53

P.T. 605+73.49

P.I. 217+99.63

T.C.E.

345 CU. YD.

887 CU. YD.

HORN CELLAR

CONCRETE

HOLMES RD.

S 83°36'50" E

P.I. 604+45.40

P.T. 206+11.75

POE 611+34.87

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

REVISIONS

| DATE OF REVISION | REVISION |
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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

3/2/2016

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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. | | 050249 | 39 | 242 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

POB 700+00.00
S 69°57'03" E
COVINGTON RD.
P.I. 704+26.65
P.C. 702+99.04
P.C. 268+27.59
S 84°18'24" E
HWY. 13
P.T. 705+33.42
S 15°41'51" E
POE 705+67.58
P.T. 272+66.66
S 88°41'51" E
P.I. 270+41.23
265
270
275
280
705
16' RET. WALL
BRICK POST
GRAVEL DRIVE

LEGEND

| | |
|---|---|
| E-5 | SAND BAG DITCH CHECKS |
| E-6 | ROCK DITCH CHECKS |
| E-8 | DIVERSION DITCHES |
| E-11 | SILT FENCE |
| E-12 | SLOPE DRAINS |
| E-14 | SEDIMENT BASIN |

REVISIONS

| DATE OF REVISION | REVISION |
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| | |

N

280
285
290
295
T.C.E.
P.C. 284+55.29
P.T. 290+93.43
S 88°41'51" E
HWY. 13
N 72°09'30" E
GARDEN
CONCRETE

3/2/2016

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 40 | 242 |

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:
STAGE 1:

MAINTENANCE OF TRAFFIC ON EXISTING ROADS

CONSTRUCT HWY. 13:
STA. 102+41.75 LT. - STA. 213+50 LT.
STA. 102+41.75 RT. - STA. 214+00 RT.
STA. 215+00 LT. - STA. 274+00 LT.
STA. 219+00 RT. - STA. 288+46 RT.
STA. 288+79 LT. - STA. 299+40.82 LT.
STA. 291+00 RT. - STA. 299+40.82 LT.

CONSTRUCT COLLINS RD. (GRADE RAISE)

CONSTRUCT HOLMES RD.

CONSTRUCT COVINGTON RD.

SEQUENCE OF CONSTRUCTION CONTINUED:
STAGE 2:

MOVE HOLMES RD. TRAFFIC TO HOLMES RD. NEW LOCATION

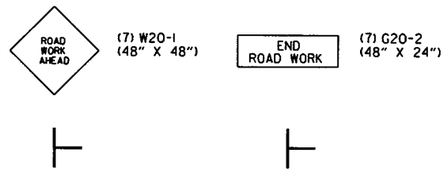
MOVE COVINGTON RD. TRAFFIC TO HWY. 13 STA. 273+00 - 299+40.82
AND TO COVINGTON RD. NEW LOCATION

CONSTRUCT HWY. 13:
STA. 213+50 LT. - STA. 215+00 LT.
STA. 214+00 RT. - STA. 219+00 RT.
STA. 288+64.19 - STA. 289+43.29

END OF JOB:

FINAL 2" ACHM SURFACE COURSE

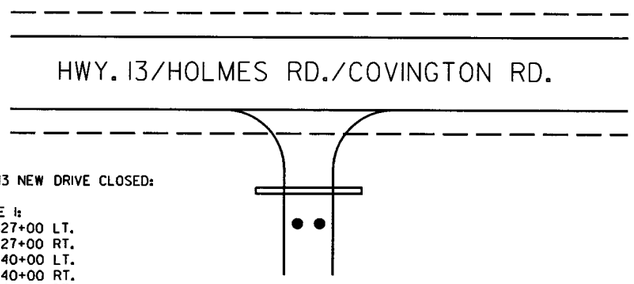
FINAL STRIPING




SIGN PLACEMENT ON ALL COUNTY ROADS
ALL STAGES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

ALL STAGES:
TRAFFIC DRUMS (2 PER LOCATION)




HWY 13 NEW DRIVE CLOSED:

STAGE 1:
STA. 127+00 LT.
STA. 127+00 RT.
STA. 140+00 LT.
STA. 140+00 RT.
STA. 148+00 RT.
STA. 160+00 LT.
STA. 160+00 RT.
STA. 181+82 LT.
STA. 194+00 LT.
STA. 194+00 RT.
STA. 196+50 LT.
STA. 197+50 LT.
STA. 201+00 LT.
STA. 207+00 RT.
STA. 210+22 RT
STA. 224+34 LT.
STA. 234+00 LT.
STA. 237+00 LT.
STA. 237+00 RT.

STA. 250+00 LT.
STA. 255+00 LT.
STA. 263+00 LT.
STA. 274+90 LT.
STA. 287+00 RT.
STA. 290+00 LT.

STAGE 1:
HOLMES RD.:

STA. 601+42 LT.
STA. 601+80 LT.
STA. 604+00 RT.

COVINGTON RD.:

STA. 704+60 LT.

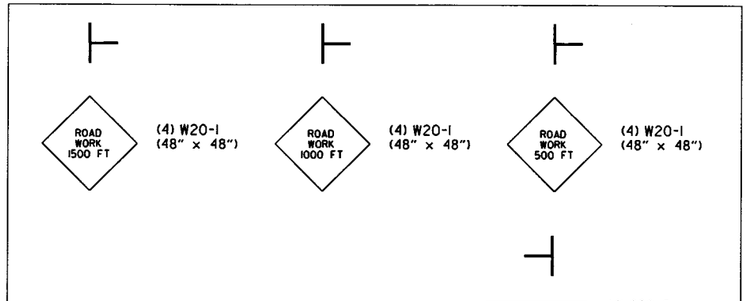
TRAFFIC DRUMS (2 PER LOCATION)
= 58 EACH

HWY 13. NEW DRIVE CLOSED:

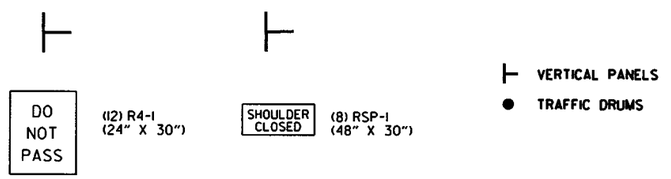
STAGE 2:
STA. 127+00 LT.
STA. 127+00 RT.
STA. 140+00 LT.
STA. 140+00 RT.
STA. 148+00 RT.
STA. 160+00 LT.
STA. 160+00 RT.
STA. 181+82 LT.
STA. 194+00 LT.
STA. 194+00 RT.
STA. 196+50 LT.
STA. 197+50 LT.
STA. 201+00 LT.
STA. 207+00 RT.
STA. 210+22 RT.
STA. 221+15 RT.
STA. 221+70 RT.
STA. 224+34 LT.
STA. 234+00 LT.
STA. 237+00 LT.
STA. 237+00 RT.

STA. 250+00 LT.
STA. 255+00 LT.
STA. 263+00 LT.
STA. 274+90 LT.

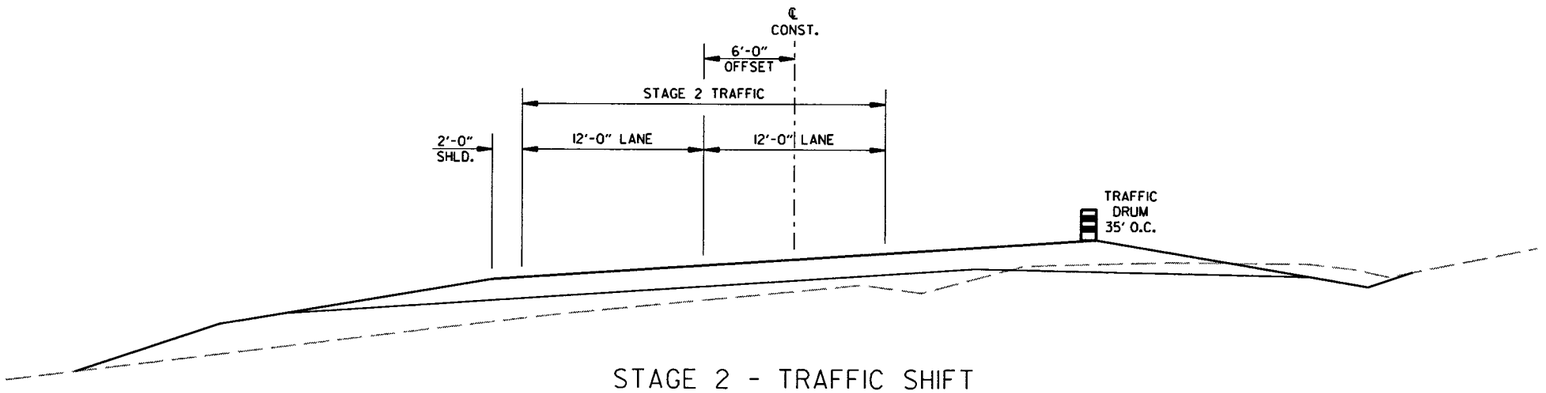
TRAFFIC DRUMS (2 PER LOCATION)
= 50 EACH




ALL STAGES INSTALL ADVANCE WARNING SIGNS:
HWY. 16 - BEFORE & AFTER INTERSECTION
HWY. 36 - BEFORE & AFTER INTERSECTION




TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
ALL STAGES




STAGE 2 - TRAFFIC SHIFT
STA. 289+93.00 - STA. 292+35.00

ALL STAGES
MAINTENANCE OF TRAFFIC

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 41 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

POB 0+00.00
EXIST. R/W
HWY. 36
135' TAPER
TRAFFIC DRUMS @ 20' O.C. ON TURNOUTS = 8 EACH
ROAD CLOSED
(2) RII-2 (48" X 30")
(2) 16' BARR. TYP. III RT.
(2) 16' BARR. TYP. III LT.
P.I. 102+11.94
Δ = 3°29'47" LT.
POB 100+00.00
N 4°22'19" E
JOB 050189
+82
425' TAPER
+07
N 10°52'32" E
370'
HWY. 13
P.C. 110+23.95
P.T. 114+03.48
N 18°06'03" W
E-II
-20
+64
350' TAPER
+14
VERTICAL PANELS (@ 45' O.C.) = 17 EACH
S 85°50'20" E
35' TAPER
ROAD CLOSED
(1) RII-2 (48" X 30")
(1) 24' BARR. TYP. III RT.
(1) 24' BARR. TYP. III LT.
P.I. 112+15.41
STA. 102+41.75
BEGIN JOB 050249
HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93°17'09"
POE 6+30.03
EXIST. R/W
CONCRETE
DECK
105
110
115

3/2/2016
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STAGE I
MAINTENANCE OF TRAFFIC

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 42 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

CONSTRUCTION PAVEMENT MARKINGS
(COLLINS RD.)
STA. 503+00 - 508+00 = 2000 LIN. FT.

N

TRAFFIC DRUMS (@ 35' O.C.) = 32 EACH

500

POB 500+00.00

P.C. 500+17.11

N 89°55'24" E

COLLINS RD.

155

505

N 15°22'40" E

P.I. 506+74.29

151.82' 98 N

POE 509+05.94

WOOD POST

PDI:STD.AHTD MON. STAMPED PN:78

MIX POST

PDI:STD.AHTD MON. STAMPED PN:79

P.I. 503+45.79

ROAD CLOSED

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

(2) 16' BARR. TYP. III RT.

(2) 16' BARR. TYP. III LT.

HWY. 13

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 108° 44' 25"

P.T. 152+27.45

P.I. 150+36.39

150

STAGE I
MAINTENANCE OF TRAFFIC

3/2/2016

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 43 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

TRAFFIC DRUMS
@ 35' O.C.) = 10 EACH

STA. 601+42 INSTALL
30" x 55' TEMP. PIPE
ON LT.

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
(4 PER LOCATION FOR 2
LOCATIONS) = 8 EACH

STA. 215+00 INSTALL
18" x 50' TEMP. PIPE
FILL & ABANDON

TRAFFIC DRUMS (@ 35'
O.C.) = 10 EACH

VERTICAL PANELS
(@ 35' O.C.) = 10 EACH

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

TRAFFIC DRUMS
(@ 20' O.C.) = 6 EACH

TRAFFIC DRUMS
@ 10' O.C. ON TURNOUTS
= 18 EACH

(1) R11-2 (48" X 30")
(1) 16' BARR. TYP. III LT.
ROAD CLOSED

ROAD CLOSED
(2) R11-2 (48" X 30")
(2) 16' BARR. TYP. III RT.
(2) 16' BARR. TYP. III LT.

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

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
= 22 EACH

NOTE: MAINTAIN TRAFFIC ON EXIST. DRIVE UNTIL HWY. 13 CAN BE USED AS TEMP. DRIVE.

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

# STAGE I
# MAINTENANCE OF TRAFFIC

3/2/2016

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 44 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
(4 PER LOCATION FOR 2 LOCATIONS) = 8 EACH

TRAFFIC DRUMS
(@ 35' O.C.) = 21 EACH

TRAFFIC DRUMS
@ 35' O.C.
= 15 EACH

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
= 8 EACH

POB 700+00.00

S 69°57'03" E

P.I. 704+26.65

P.C. 702+99.04

P.C. 268+27.59

S 84°18'24" E

HWY. 13

P.T. 705+33.42

POE 705+67.58

S 88°41'51" E

P.T. 272+66.66

P.I. 270+47.23

COVINGTON RD.

LAKE RIDGE DR.

ROCKY BRANCH CT.

ROAD CLOSED

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

(1) 16' BARR.
TYP. IIRT.

ROAD CLOSED

(2) RII-2
(48" X 30")

(2) 8' BARR.
TYP. IIRT.
(2) 8' BARR.
TYP. IIILT.

HWY. 13 - STA. 273+00.00 =
COVINGTON RD. - STA. 705+67.58
Δ = 75°00'00"

STAGE I
MAINTENANCE OF TRAFFIC

3/2/2016

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 45 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

TRAFFIC DRUMS
(@ 35' O.C.) = 22 EACH

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
(6 PER LOCATION FOR 2 LOCATIONS) = 12 EACH

VERTICAL PANELS
(@ 35' O.C.) = 10 EACH

TRAFFIC DRUMS
(@ 35' O.C.) = 4 EACH

VERTICAL PANELS
(@ 45' O.C.) = 12 EACH

STA. 284+00 INSTALL
18" x 95' TEMP. PIPE
FILL & ABANDON

STA. 298+10.57
END FULL BUILD
& BEGIN PAVING

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59°06'23"

STA. 298+27.20
END JOB 050249

ROAD CLOSED

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

(2) 24' BARR. TYP. III RT.
(2) 24' BARR. TYP. III LT.

P.C. 284+55.29
P.I. 287+17.36
P.I. 290+93.43
P.I. 301+60.88
P.C. 295+93.96
P.I. 306+96.51
514+70.46

S 88°41'51" E
N 72°09'30" E
S 74°44'54" E
S 74°41'03" E

HWY. 13
HWY. 16
COVINGTON RD.
LOWEST UTILITY LINE
SURFACE SHOT APROX LOCATION
SURVEY BASELINE S 89°30'41" E 4642.55'

280 285 290 295 300 305 310

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STAGE I
MAINTENANCE OF TRAFFIC

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 46 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

POB 0+00.00

ROAD CLOSED — (2) R11-2 (48" X 30")

(2) 16' BARR. TYP. III RT.
(2) 16' BARR. TYP. III LT.

POB 100+00

N 4°22'19" E
JOB 050189

P.I. 102+11.94
Δ = 3°29'47" LT.

S 85°50'20" E

POE 6+30.03

N 0°52'32" E
370
HWY. 13

P.C. 110+23.95

P.T. 114+03.48

N 18°06'03" W

P.I. 112+15.47

ROAD CLOSED — (1) R11-2 (48" X 30")

(1) 24' BARR. TYP. III RT.
(1) 24' BARR. TYP. III LT.

STA. 102+41.75
BEGIN JOB 050249

HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93° 17' 09"

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STAGE 2
MAINTENANCE OF TRAFFIC

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 47 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

N

500

POB 500+00.00

P.C. 500+17.11

N 89°55'24" E

100

COLLINS RD.

155

505

N 15°22'40" E

P.I. 506+74.29

151.98 N

POE 509+05.94

WOOD POST

MIX POST

P.I. 503+45.79

(2) RII-2
(48" X 30")

ROAD CLOSED

(2) 16' BARR. TYP. III RT.
(2) 16' BARR. TYP. III LT.

HWY. 13

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 108° 44' 25"

P.T. 152+27.45

P.T. 150+36.39

150

STAGE 2
MAINTENANCE OF TRAFFIC

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 48 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

ROAD CLOSED
(1) RII-2 (48" X 30")
(1) WI-6 (48" X 24")
(1) 16' BARR. TYP. III LT.

TRAFFIC DRUMS @ 20' O.C. ON TURNOUTS (6 PER LOCATION FOR 2 LOCATIONS) = 12 EACH

REMOVAL OF EXIST. PAVEMENT

TRAFFIC DRUMS @ 20' O.C. FOR STA. 224+34 DRIVE TRAFFIC = 8 EACH

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

ROAD CLOSED
(1) RII-2 (48" X 30")
(1) 16' BARR. TYP. III RT.
(1) 16' BARR. TYP. III LT.

ROAD CLOSED TO THRU TRAFFIC
(1) RII-4 (48" X 30")
(1) 16' BARR. TYP. III RT.
(1) 16' BARR. TYP. III LT.

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

ROAD CLOSED
(1) RII-2 (48" X 30")
(1) 16' BARR. TYP. III RT.
(1) 16' BARR. TYP. III LT.

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

STAGE 2
MAINTENANCE OF TRAFFIC

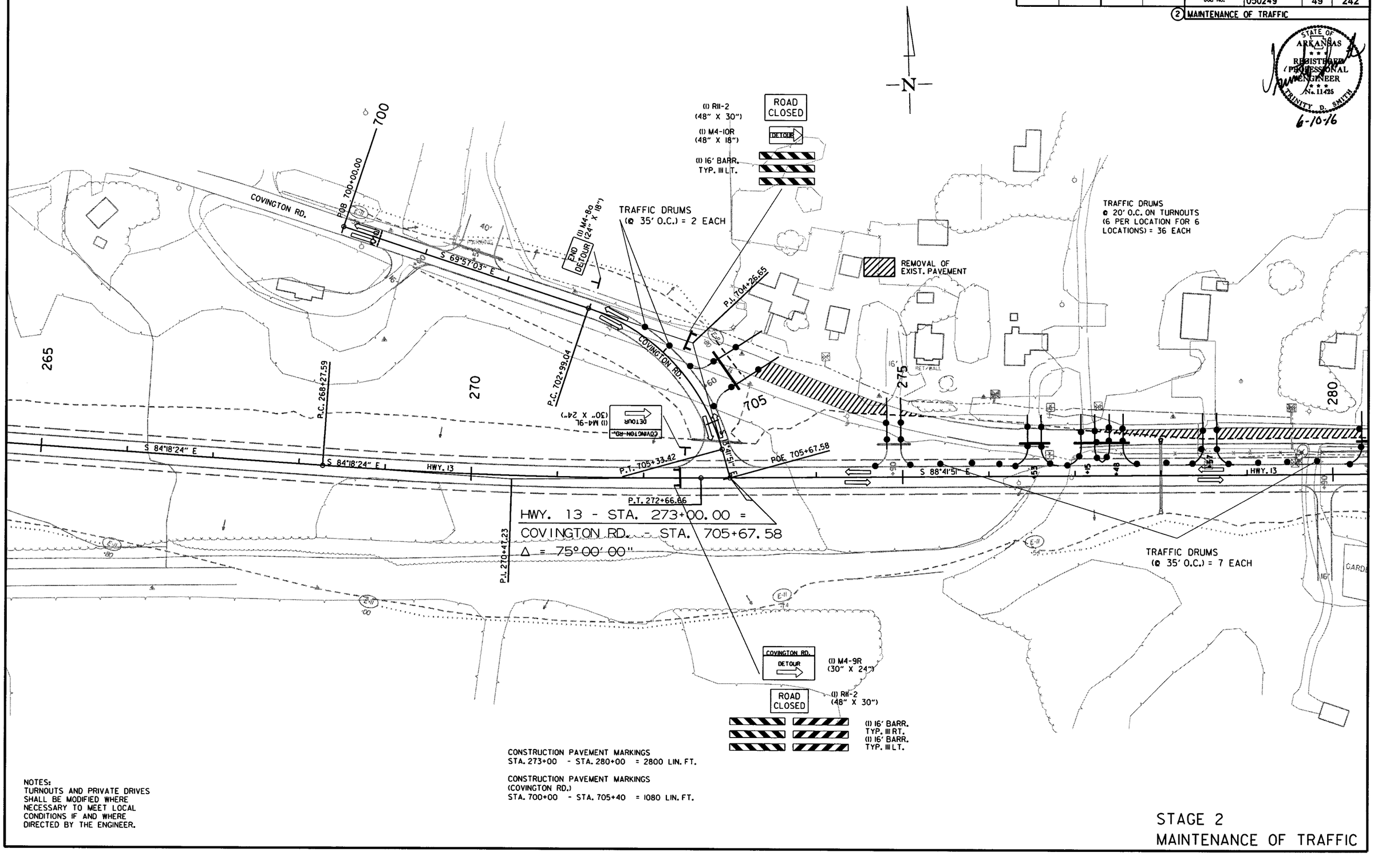
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 49 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




CONSTRUCTION PAVEMENT MARKINGS
STA. 273+00 - STA. 280+00 = 2800 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
(COVINGTON RD.)
STA. 700+00 - STA. 705+40 = 1080 LIN. FT.

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

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STAGE 2
MAINTENANCE OF TRAFFIC

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 50 | 242 |

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-76

CONSTRUCTION PAVEMENT MARKINGS
STA. 280+00 - STA. 295+00 = 6000 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
(TRAFFIC SHIFT)
STA. 288+93 - STA. 291+35 = 968 LIN. FT.

TRAFFIC DRUMS
@ 20' O.C. ON TURNOUTS
(6 PER LOCATION FOR 5 LOCATIONS) = 30 EACH

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

REMOVAL OF EXIST. PAVEMENT

TRAFFIC DRUMS
(@ 35' O.C.) = 16 EACH

VERTICAL PANELS
(@ 35' O.C.) = 3 EACH

STA. 289+93 - STA. 290+35
OFFSET = 6' LT.

TRAFFIC DRUMS
(@ 35' O.C.) = 3 EACH

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

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

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59°06'23"

CONSTRUCTION PAVEMENT MARKINGS
STA. 295+00 - STA. 299+40.82 = 1764 LIN. FT.

STA. 298+27.20
END JOB 050249

STAGE 2
MAINTENANCE OF TRAFFIC

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 51 | 242 |

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

POB 0+00.00

STA. 102+41.75
BEGIN JOB 050249

4" YELLOW EDGE LINE
THERMOPLASTIC PAVEMENT MARKING
4" YELLOW SKIP LINE
THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW)
SPACED 80' ON CENTER

HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93° 17' 09"

100

4" WHITE SKIP LINE
THERMOPLASTIC
PAVEMENT MARKING

HWY. 36

P.C. 102+41.94

S 89°30'43" E

N 41°22'19" E

24" SOLID WHITE

•4" SOLID DBL. YELLOW CENTERLINE
WITH RAISED PAVEMENT
MARKERS (TYPE II) (40' O.C.)
(YELLOW/YELLOW)

S 0°56'20" E

105

+82 100' +82

4" SOLID WHITE WITH
RAISED PAVEMENT
MARKERS (TYPE II)
(WHITE/RED) (40' O.C.)

+82 425' TAPER +07

WORD AND ARROW

ARROW

42'-0"

12" SOLID WHITE

+64 350' TAPER +14

•4" SOLID DBL. YELLOW CENTERLINE
WITH RAISED PAVEMENT
MARKERS (TYPE II) (40' O.C.)
(YELLOW/YELLOW)

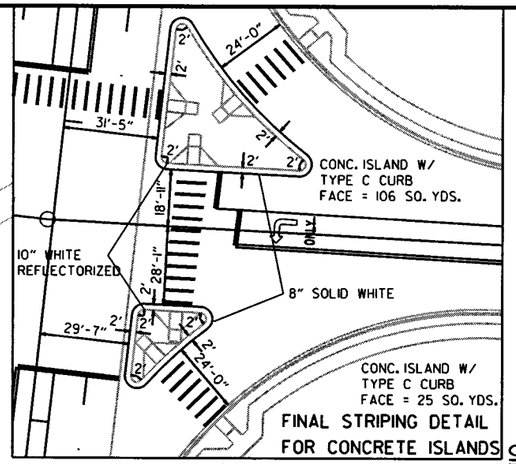
130' LT. TURN LANE
+54 +82

5

4" YELLOW EDGE LINE
THERMOPLASTIC PAVEMENT MARKING
4" YELLOW SKIP LINE
THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW)
SPACED 80' ON CENTER

POE 6+30.03

120




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

110

P.C. 110+23.95

P.T. 114+03.48

N 18°06'03" W

370

N 0°52'32" E

15'-0"
15'-0"

HWY. 13

•4" SOLID DBL. YELLOW CENTERLINE
WITH RAISED PAVEMENT
MARKERS (TYPE II) (40' O.C.)
(YELLOW/YELLOW)

115

N

PERMANENT PAVEMENT MARKING DETAILS QUANTITIES

HWY. 13:
THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 32238 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 39398 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 674 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") = 554 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 390 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (24") = 100 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (YELD LINE) = 22 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (ARROW) = 5 EACH
THERMOPLASTIC PAVEMENT MARKING (WORD) = 3 EACH
RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW) = 492 EACH
RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) = 11 EACH

HWY. 36:
THERMOPLASTIC PAVEMENT MARKING WHITE SKIP LINE (4") = 1132 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 978 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW SKIP LINE (4") = 456 LIN. FT.
THERMOPLASTIC PAVMENT MARKING WHITE (24") = 72 LIN. FT.
RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW) = 9 EACH

COLLINS RD.:
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 934 LIN. FT.

COVINGTON RD.:
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 1086 LIN. FT.

125

+92 208' TAPER +00 +25 25'

•4" SOLID DBL. YELLOW CENTERLINE
WITH RAISED PAVEMENT
MARKERS (TYPE II) (40' O.C.)
(YELLOW/YELLOW)

130

4" SOLID WHITE EDGE LINE

16'
15'-0"
15'-0"
16'

HWY. 13

N 0°00'00" W

12'-0"
12'-0"

P.T. 121+39.34

•4" SOLID DBL. YELLOW CENTERLINE
WITH RAISED PAVEMENT
MARKERS (TYPE II) (40' O.C.)
(YELLOW/YELLOW)

4" SOLID WHITE EDGE LINES

N 0°00'00" W

135

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PERMANENT PAVEMENT MARKING DETAILS

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 52 | 242 |

(2) PERMANENT PAVEMENT MARKING DETAILS

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 71° 15' 35"

P.I. 503+45.79
P.I. 150+36.39
P.C. 148+43.00
P.T. 152+27.45
P.T. 506+74.29
N 0°00'00" W
N 15°22'40" E
IN 86°38'15" E
•4" SOLID DBL. YELLOW CENTERLINE WITH RAISED PAVEMENT MARKERS (TYPE II) (40' O.C.) (YELLOW/YELLOW)
24" SOLID WHITE
4" SOLID WHITE EDGE LINES
HWY. 13
145
150
155
160
505
12'-0"
10'-0"
50'
16'

S 41°43'19" E
P.C. 600+24.74
P.I. 600+92.57
P.T. 601+56.92
S 00°00'00" E
P.C. 602+66.76
P.C. 213+80.53
P.I. 217+99.65
P.T. 605+73.49
P.T. 222+18.40
P.I. 604+45.40
POE 611+34.87
S 85°48'38" E
S 83°36'50" E
HOLMES RD.
HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80° 00' 00"
•4" SOLID DBL. YELLOW CENTERLINE WITH RAISED PAVEMENT MARKERS (TYPE II) (40' O.C.) (YELLOW/YELLOW)
4" SOLID WHITE EDGE LINES
210
215
220
225
605
610
42'
80'

3/2/2016

R050249.DGN

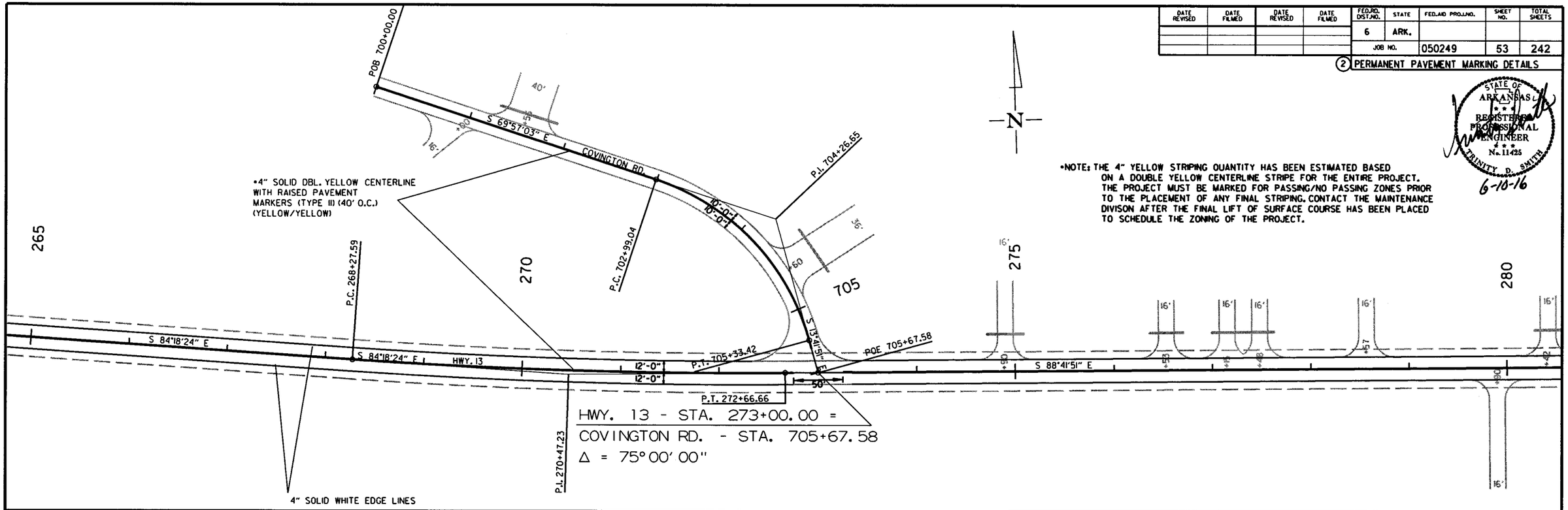
PERMANENT PAVEMENT MARKING DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 53 | 242 |

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

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



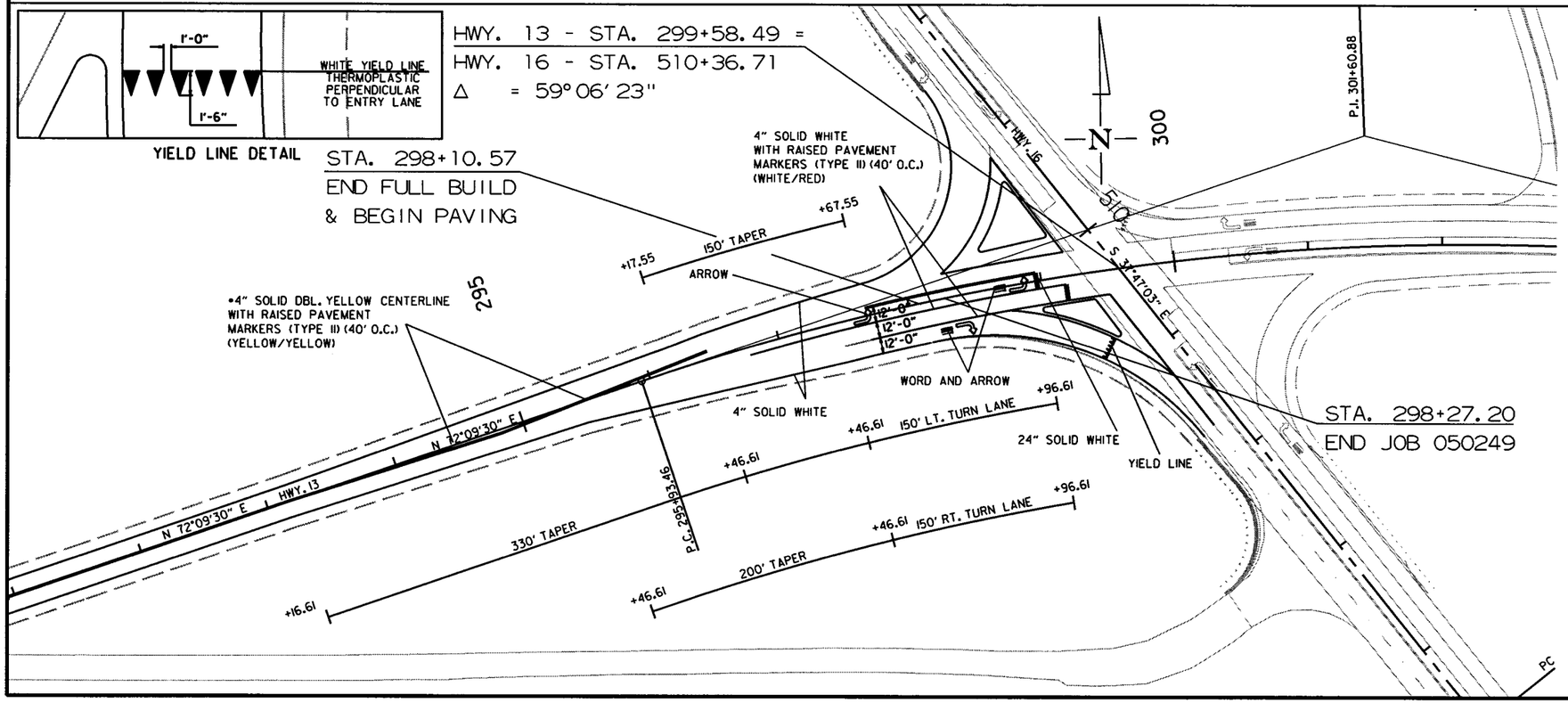




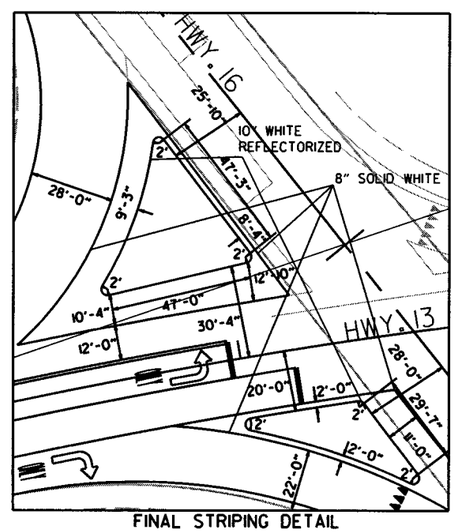
YIELD LINE DETAIL

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59°06'23"

STA. 298+10.57
END FULL BUILD
& BEGIN PAVING




STA. 298+27.20
END JOB 050249




FINAL STRIPING DETAIL FOR ISLANDS

# PERMANENT PAVEMENT MARKING DETAILS

3/2/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 54 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## ADVANCE WARNING SIGNS AND DEVICES

| SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1 | STAGE 2 | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | | VERTICAL PANELS | TRAFFIC DRUMS | BARRICADES (TYPE III) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | RIGHT | LEFT |
| | | | LIN. FT. - EACH | | | NO. | SQ. FT. | EACH | | LIN. FT. | |
| W20-1 | ROAD WORK 1500 FT. | 48"x48" | 4 | 4 | 4 | 4 | 64.0 | | | | |
| W20-1 | ROAD WORK 1000 FT. | 48"x48" | 4 | 4 | 4 | 4 | 64.0 | | | | |
| W20-1 | ROAD WORK 500 FT. | 48"x48" | 4 | 4 | 4 | 4 | 64.0 | | | | |
| W20-1 | ROAD WORK AHEAD | 48"x48" | 7 | 7 | 7 | 7 | 112.0 | | | | |
| G20-2 | END ROAD WORK | 48"x24" | 11 | 11 | 11 | 11 | 88.0 | | | | |
| R11-2 | ROAD CLOSED | 48"x30" | 14 | 14 | 14 | 14 | 140.0 | | | | |
| W1-6 | LARGE ARROW | 48"x24" | | 4 | 4 | 4 | 32.0 | | | | |
| R11-4 | ROAD CLOSED TO THRU TRAFFIC | 60"x30" | | 2 | 2 | 2 | 25.0 | | | | |
| R4-1 | DO NOT PASS | 24"x30" | 12 | 12 | 12 | 12 | 60.0 | | | | |
| RSP-1 | SHOULDER CLOSED | 48"x30" | 8 | 8 | 8 | 8 | 80.0 | | | | |
| M4-8A | END DETOUR | 24'x18" | | 2 | 2 | 2 | 6.0 | | | | |
| M4-9L | DETOUR | 30"x24" | | 2 | 2 | 2 | 10.0 | | | | |
| M4-9R | DETOUR | 30"x24" | | 3 | 3 | 3 | 15.0 | | | | |
| M4-10R | DETOUR | 48"x18" | | 1 | 1 | 1 | 6.0 | | | | |
| | | | | | | | | | | | |
| | VERTICAL PANELS | | 49 | 3 | 49 | | | 49 | | | |
| | TRAFFIC DRUMS | | 262 | 164 | 262 | | | | 262 | | |
| | | | | | | | | | | | |
| | TYPE III BARRICADE-RT. (24') | | 3 | 1 | 3 | | | | | 72 | |
| | TYPE III BARRICADE-LT. (24') | | 3 | 1 | 3 | | | | | | 72 |
| | TYPE III BARRICADE-RT. (16') | | 7 | 11 | 11 | | | | | 176 | |
| | TYPE III BARRICADE-LT. (16') | | 8 | 10 | 10 | | | | | | 160 |
| | TYPE III BARRICADE-RT. (8') | | 2 | 1 | 2 | | | | | 16 | |
| | TYPE III BARRICADE-LT. (8') | | 2 | 1 | 2 | | | | | | 16 |
| | | | | | | | | | | | |
| **TOTALS:** | | | | | | | **766.0** | **49** | **262** | **264** | **248** |

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

## FLOWABLE SELECT MATERIAL

| STATION | LOCATION | CU. YD. |
|---|---|---|
| 215+00 | HWY. 13 - FILL TEMP. PIPE | 8.29 |
| 284+00 | HWY. 13 - FILL TEMP. PIPE | 4.36 |
| | | |
| | | |
| | | |
| TOTAL: | | 12.65 |

## CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | STAGE 2 | END OF JOB | CONSTRUCTION PAVEMENT MARKINGS | REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | | THERMOPLASTIC PAVEMENT MARKING | | | | | | | | REFLECTORIZED PAINT PAVEMENT MARKING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | TYPE II (WHITE/RED) | TYPE II (YEL/YEL) | 4" WHITE | 4" YELLOW | 8" WHITE | 12" WHITE | 24" WHITE | YIELD LINE | WORDS | ARROWS | 10" WHITE |
| | LIN. FT. - EACH | | LIN. FT. | LIN. FT. | EACH | | LIN. FT. | | | | | | EACH | | LIN. FT. |
| CONSTRUCTION PAVEMENT MARKINGS | 12612 | | 12612 | | | | | | | | | | | | |
| REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | | 12612 | | 12612 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) | | 11 | | | 11 | | | | | | | | | | |
| RAISED PAVEMENT MARKERS TYPE II (YEL/YEL) | | 501 | | | | 501 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (4") | | 32814 | | | | | 32814 | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | | 40832 | | | | | | 40832 | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (8") | | 674 | | | | | | | 674 | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (12") | | 230 | | | | | | | | 230 | | | | | |
| THERMOPLASTIC PAVEMENT MARKIGN WHITE (24") | | 172 | | | | | | | | | 172 | | | | |
| THERMOPLASTIC PAVEMENT MARKING (WORDS) | | 3 | | | | | | | | | | | 3 | | |
| THERMOPLASTIC PAVEMENT MARKING (ARROWS) | | 5 | | | | | | | | | | | | 5 | |
| THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) | | 22 | | | | | | | | | | 22 | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | | 554 | | | | | | | | | | | | | 554 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| **TOTALS:** | | | **12612** | **12612** | **11** | **501** | **32814** | **40832** | **674** | **230** | **172** | **22** | **3** | **5** | **554** |

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

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

## MAILBOXES

| LOCATION | MAILBOXES | MAILBOX SUPPORTS (SINGLE) | MAILBOX SUPPORTS (DOUBLE) |
|---|---|---|---|
| | EACH | EACH | EACH |
| ENTIRE PROJECT | 14 | 6 | 4 |
| | | | |
| | | | |
| **TOTALS:** | **14** | **6** | **4** |

4/27/2016

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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. | | 050249 | 55 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-27-16

## SOIL LOG

| STATION | LATITUDE | | | LONGITUDE | | | LOCATION | DEPTH | LIQUID LIMIT | PLASTICITY INDEX | AASHTO CLASSIFICATION | COLOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DEG | MIN | SEC | DEG | MIN | SEC | | FEET | | | | |
| 102+50 | 35 | 14 | 49.50 | 91 | 47 | 36.30 | 20' LT. | 0-5 | 34 | 15 | A-6 (7) | BR/GR |
| 154+70 | 35 | 15 | 41.00 | 91 | 47 | 37.30 | CL | 0-3.5Z | 27 | 10 | A-4 (4) | BR/GR |
| 174+00 | 35 | 15 | 57.40 | 91 | 47 | 26.30 | CL | 0-2Z | ND | NP | A-4 (0) | BR/GR |
| 181+50 | 35 | 16 | 2.50 | 91 | 47 | 19.40 | CL | 0-5 | 34 | 14 | A-6 (10) | BR/GR |
| 190+00 | 35 | 16 | 6.40 | 91 | 47 | 11.00 | CL | 0-4.5Z | 79 | 52 | A-7-6 (52) | BR/GR |
| 214+35 | 35 | 16 | 11.50 | 91 | 46 | 43.00 | CL | 0-5 | 40 | 25 | A-6 (14) | BR/GR |
| 222+00 | 35 | 16 | 10.60 | 91 | 46 | 33.60 | CL | 0-5 | 26 | 11 | A-6 (3) | BR/GR |
| 254+00 | 35 | 16 | 8.80 | 91 | 45 | 55.10 | CL | 0-5 | 31 | 13 | A-6 (9) | BR/GR |
| 262+00 | 35 | 16 | 8.20 | 91 | 45 | 45.50 | CL | 0-5 | 30 | 11 | A-6 (5) | BR/GR |
| 278+00 | 35 | 16 | 7.50 | 91 | 45 | 26.20 | CL | 0-2.5Z | ND | NP | A-4 (0) | BR/GR |
| 286+00 | 35 | 16 | 7.30 | 91 | 45 | 16.60 | CL | 0-4Z | 25 | 8 | A-4 (5) | BR/GR |
| 294+00 | 35 | 16 | 8.70 | 91 | 45 | 7.10 | CL | 0-5 | 27 | 8 | A-4 (4) | BR/GR |
| 299+00 | 35 | 16 | 9.90 | 91 | 45 | 0.90 | CL | 0-5 | 23 | 5 | A-4 (1) | BR/GR |
| 102+50 | 35 | 14 | 49.50 | 91 | 47 | 36.30 | 20' LT. | 0-5 | 28 | 10 | A-4 (3) | BR/GR |
| 181+50 | 35 | 16 | 2.50 | 91 | 47 | 19.40 | CL | 0-5 | 34 | 15 | A-6 (11) | BR/GR |
| 299+00 | 35 | 16 | 9.90 | 91 | 45 | 0.90 | CL | 0-5 | 21 | 2 | A-4 (0) | BR/GR |

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

## EARTHWORK

| | STATION | STATION | LOCATION / DESCRIPTION | UNCLASSIFIED EXCAVATION | | | COMPACTED EMBANKMENT | | | PRESPLITTING | * SOIL STABILIZATION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NORMAL | *UNDERCUT | TOTAL | NORMAL | *UNDERCUT | TOTAL | | |
| | | | | CU. YD. | | | CU. YD. | | | SQ. YDS. | TON |
| | ENTIRE | PROJECT | STAGE 1-MAIN LANES | 577041 | 10659 | 587700 | 464490 | 10659 | 475149 | 6613 | |
| | ENTIRE | PROJECT | STAGE 2-MAIN LANES | 6602 | | 6602 | 722 | | 722 | | |
| | ENTIRE | PROJECT | APPROACHES | 830 | | 830 | 5920 | | 5920 | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | COLLINS RD. | 150 | | 150 | 448 | | 448 | | |
| | | | HOLMES RD. | 2368 | | 2368 | 5846 | | 5846 | | |
| | | | COVINGTON RD. | 8475 | | 8475 | | | | | |
| | | | | | | | | | | | |
| * | ENTIRE | PROJECT | TO BE USED IF AND WHERE | | | | | | | | 500 |
| | | | DIRECTED BY THE ENGINEER | | | | | | | | |
| | | | | | | | | | | | |
| | TOTALS: | | | 595466 | 10659 | 606125 | 477426 | 10659 | 488085 | 6613 | 500 |

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

## EROSION CONTROL MATTING

| STATION | STATION | LOCATION | LENGTH | CLASS 3 |
|---|---|---|---|---|
| | | | LIN. FT. | SQ. YD. |
| 103+63.88 | 107+40.00 | HWY. 13 RT. | 376.12 | 334.33 |
| 103+90.00 | 107+40.00 | HWY. 13 LT. | 350.00 | 311.11 |
| 118+10.00 | 118+50.00 | HWY. 13 LT. | 40.00 | 35.56 |
| 122+40.00 | 124+60.00 | HWY. 13 RT. | 220.00 | 195.56 |
| 134+60.00 | 135+70.00 | HWY. 13 LT. | 110.00 | 97.78 |
| 136+20.00 | 136+70.00 | HWY. 13 RT. | 50.00 | 44.44 |
| 142+20.00 | 154+00.00 | HWY. 13 LT. | 1180.00 | 1048.89 |
| 142+60.00 | 143+00.00 | HWY. 13 RT. | 40.00 | 35.56 |
| 145+00.00 | 154+00.00 | HWY. 13 RT. | 900.00 | 800.00 |
| 158+90.00 | 159+60.00 | HWY. 13 LT. | 70.00 | 62.22 |
| 181+00.00 | 183+55.00 | HWY. 13 RT. | 255.00 | 226.67 |
| 183+60.00 | 183+90.00 | HWY. 13 LT. | 30.00 | 26.67 |
| 186+10.00 | 192+10.00 | HWY. 13 LT. | 600.00 | 533.33 |
| 198+70.00 | 199+00.00 | HWY. 13 RT. | 30.00 | 26.67 |
| 200+10.00 | 202+30.00 | HWY. 13 RT. | 220.00 | 195.56 |
| 201+00.00 | 204+50.00 | HYW. 13 LT. | 350.00 | 311.11 |
| 204+50.00 | 208+00.00 | HWY. 13 RT. | 350.00 | 311.11 |
| 237+70.00 | 242+10.00 | HWY. 13 RT. | 440.00 | 391.11 |
| 244+00.00 | 250+70.00 | HWY. 13 RT. | 670.00 | 595.56 |
| 250+00.00 | 252+00.00 | HWY. 13 LT. | 200.00 | 177.78 |
| 258+00.00 | 275+00.00 | HWY. 13 LT. | 1700.00 | 1511.11 |
| 261+00.00 | 275+00.00 | HWY. 13 RT. | 1400.00 | 1244.44 |
| 293+18.43 | 296+40.00 | HWY 13 RT. | 321.57 | 285.84 |
| 294+40.00 | 298+60.00 | HWY. 13 LT. | 420.00 | 373.33 |
| | | | | |
| 503+60.00 | 508+00.00 | COLLINS RD. LT. | 440.00 | 391.11 |
| 503+00.00 | 508+00.00 | COLLINS RD. RT. | 500.00 | 444.44 |
| | | | | |
| 601+50.00 | 604+50.00 | HOLMES RD. LT. | 300.00 | 266.67 |
| 602+70.00 | 607+20.00 | HOLMES RD. RT. | 450.00 | 400.00 |
| | | | | |
| 705+20.00 | 705+55.00 | COVINGTON RD. LT. | 35.00 | 31.11 |
| | | | | |
| | | | | |
| TOTAL: | | | | 10709.07 |

NOTE: AVERAGE WIDTH = 8'-0"

## EROSION CONTROL

| STATION | STATION | LOCATION | PERMANENT EROSION CONTROL | | | | | | TEMPORARY EROSION CONTROL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SPECIAL SEEDING | LIME | MULCH COVER | WATER | SECOND SEEDING APPLICATION | SOLID SODDING | TEMPORARY SEEDING | MULCH COVER | WATER | WATTLE (20") | SAND BAG DITCH CHECKS | ROCK DITCH CHECKS | DROP INLET SILT FENCE | SILT FENCE | DIVERSION DITCH | SLOPE DRAIN (E-12) | | SEDIMENT BASIN | OBLITERATION OF SEDIMENT BASIN | *SEDIMENT REMOVAL & DISPOSAL |
| | | | | | | | | | | | | (E-1) | (E-5) | (E-6) | (E-7) | (E-11) | (E-8) | PIPE FOR SLOPE DRAINS | DUMPED RIPRAP | (E-14) | | |
| | | | ACRE | TON | ACRE | M.GAL. | ACRE | SQ.YD. | ACRE | ACRE | M.GAL. | LIN. FT. | BAG | CU.YD. | LIN. FT. | LIN. FT. | LIN. FT. | LIN. FT. | CU.YD. | CU.YD. | CU.YD. | CU. YD. |
| ENTIRE | PROJECT | ENTIRE JOB | 35.55 | 71.10 | 35.55 | 3650.0 | 35.55 | 1893 | | | | | | | | | | | | | | |
| ENTIRE | PROJECT | CLEARING AND GRUBBING | | | | | | | | | | | | | | 20066 | | | | | | |
| ENTIRE | PROJECT | STAGE 1 | | | | | | | 0.89 | 0.89 | 18.2 | | 1694 | 333 | 720 | 17823 | 11296 | 2655 | 70 | 11111 | 11111 | 11986 |
| ENTIRE | PROJECT | STAGE 2 | | | | | | | | | | | 110 | 12 | | | | | | 1232 | 1232 | 1241 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| *ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | | 9.00 | 18.00 | 9.00 | 923.9 | 9.00 | 470 | 80.26 | 80.26 | 1637.3 | 225 | 528 | 90 | 194 | 4730 | 2860 | 664 | 18 | 3250 | 3250 | 3511 |
| | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | | 44.55 | 89.10 | 44.55 | 4573.9 | 44.55 | 2363 | 81.15 | 81.15 | 1655.5 | 225 | 2332 | 435 | 914 | 42619 | 14156 | 3319 | 88 | 15593 | 15593 | 16738 |

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

*QUANTITIES ESTIMATED.

6/22/2016

R050249.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. | | 050249 | 56 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## 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. |
| 116+50.00 | 117+85.00 | HWY. 13 RT. | 135.00 | 6.00 | 90.00 | 60.00 | 0.76 |
| 121+22.00 | 122+30.00 | HWY. 13 RT. | 108.00 | 6.00 | 72.00 | 48.00 | 0.60 |
| 134+00.00 | 136+16.00 | HWY. 13 RT. | 216.00 | 6.00 | 144.00 | 96.00 | 1.21 |
| 154+00.00 | 156+00.00 | HWY. 13 RT. | 200.00 | 6.00 | 133.33 | 88.89 | 1.12 |
| 162+00.00 | 163+50.00 | HWY. 13 RT. | 150.00 | 6.00 | 100.00 | 66.67 | 0.84 |
| 163+00.00 | 164+50.00 | HWY. 13 LT. | 150.00 | 6.00 | 100.00 | 66.67 | 0.84 |
| 163+50.00 | 165+00.00 | HWY. 13 RT. | 150.00 | 6.00 | 100.00 | 66.67 | 0.84 |
| 164+50.00 | 174+00.00 | HWY. 13 LT. | 950.00 | 6.00 | 633.33 | 422.22 | 5.32 |
| 165+00.00 | 173+00.00 | HWY. 13 RT. | 800.00 | 9.00 | 800.00 | 355.56 | 4.48 |
| 192+10.00 | 201+00.00 | HWY. 13 LT. | 890.00 | 6.00 | 593.33 | 395.56 | 4.98 |
| 192+90.00 | 198+70.00 | HWY. 13 RT. | 580.00 | 6.00 | 386.67 | 257.78 | 3.25 |
| 208+10.00 | 210+80.00 | HWY. 13 RT. | 270.00 | 6.00 | 180.00 | 120.00 | 1.51 |
| 230+00.00 | 236+70.00 | HWY. 13 LT. | 670.00 | 6.00 | 446.67 | 297.78 | 3.75 |
| 230+00.00 | 237+70.00 | HWY. 13 RT. | 770.00 | 6.00 | 513.33 | 342.22 | 4.31 |
| 285+00.00 | 290+00.00 | HWY. 13 LT. | 500.00 | 6.00 | 333.33 | 222.22 | 2.80 |
| 290+77.00 | 293+18.43 | HWY. 13 RT. | 241.43 | 6.00 | 160.95 | 107.30 | 1.35 |
| | | | | | | | |
| 600+21.00 | 600+40.00 | HOLMES RD. LT. | 19.00 | 6.00 | 12.67 | 8.44 | 0.11 |
| 600+21.00 | 600+40.00 | HOLMES RD. RT. | 19.00 | 6.00 | 12.67 | 8.44 | 0.11 |
| 607+50.00 | 610+60.00 | HOLMES RD. LT. | 310.00 | 6.00 | 206.67 | 137.78 | 1.74 |
| 607+50.00 | 610+70.00 | HOLMES RD. RT. | 320.00 | 6.00 | 213.33 | 142.22 | 1.79 |
| | | | | | | | |
| 700+00.00 | 705+20.00 | COVINGTON RD. LT. | 520.00 | 6.00 | 346.67 | 231.11 | 2.91 |
| 700+90.00 | 705+10.00 | COVINGTON RD. RT. | 420.00 | 6.00 | 280.00 | 186.67 | 2.35 |
| | | | | | | | |
| | | | | | | | |
| **TOTALS:** | | | | | **5858.95** | **3728.20** | **46.97** |

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

## REMOVAL AND DISPOSAL OF FENCE

| STATION | STATION | LOCATION | FENCE |
|---|---|---|---|
| | | | LIN. FT. |
| 102+88 | 103+10 | LT. | 22 |
| 114+19 | 114+73 | RT. | 82 |
| 137+33 | 137+48 | LT. & RT. | 117 |
| 154+60 | 154+60 | LT. & RT. | 530 |
| 165+05 | 165+46 | LT. & RT. | 151 |
| 195+92 | 198+68 | LT. & RT. | 502 |
| 207+97 | 207+99 | RT. | 69 |
| 209+16 | 210+81 | RT. | 190 |
| 212+05 | 212+72 | LT. | 171 |
| 212+87 | 218+12 | LT. & RT. | 672 |
| 214+13 | 214+66 | RT. | 153 |
| 214+34 | 261+36 | LT. & RT. | 241 |
| 216+50 | 216+36 | LT. & RT. | 109 |
| 217+75 | 221+28 | LT. | 362 |
| 220+06 | 220+83 | LT. & RT. | 203 |
| 221+45 | 221+58 | LT. & RT. | 242 |
| 224+65 | 229+30 | LT. | 560 |
| 229+76 | 231+67 | RT. | 417 |
| 234+70 | 234+77 | LT. & RT. | 199 |
| 248+03 | 249+03 | LT. & RT. | 131 |
| 250+58 | 250+68 | LT. & RT. | 233 |
| 277+19 | 283+45 | LT. & RT. | 1184 |
| 284+58 | 285+19 | LT. | 44 |
| | | | |
| | | | |
| | | | |
| **TOTAL:** | | | **6584** |

## SELECTED PIPE BEDDING

| LOCATION | SELECTED PIPE BEDDING |
|---|---|
| | CU.YD. |
| ENTIRE PROJECT TO BE USED IF | |
| AND WHERE DIRECTED BY THE | 500 |
| ENGINEER | |
| | |
| | |
| **TOTAL:** | **500** |

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

## REMOVAL AND DISPOSAL OF ITEMS

| STATION | STATION | LOCATION | RETAINING WALLS | CONCRETE DEBRIS | POLE & FOUNDATION | SIGN FOUNDATIONS | FOOT BRIDGE | STORM CELLAR | SEPTIC SYSTEM | BUILDINGS | CATTLE GUARD | SIGNS | PLANTERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LIN. FT. | CU. YD. | EACH | EACH | EACH | EACH | EACH | EACH | EACH | EACH | EACH |
| 109+20 | | HWY. 13 LT. | | 40 | | | | | | | | | |
| 174+90 | | HWY. 13 RT. | | | | | | | | 1 | | | |
| 175+10 | | HWY. 13 RT. | | | | | | | 1 | 1 | | | |
| 208+00 | | HWY. 13 CL | | | | | | | | 1 | | | |
| 212+90 | | HWY. 13 LT. | | | | | | | | | 1 | | |
| 213+00 | | HWY. 13 RT. | | | | | 1 | | | | | | |
| 214+10 | | HWY. 13 LT. | | | | 2 | | | | | | 1 | |
| 216+47 | | HWY. 13 LT. | | | | | | | 1 | 1 | | | |
| 217+30 | | HWY. 13 LT. | | | | | | | | 1 | | | |
| 218+00 | | HWY. 13 LT. | | | | | | | 1 | 1 | | | |
| 221+00 | | HWY. 13 CL | | | | | | | 1 | 1 | | | |
| 222+80 | 223+80 | HWY. 13 RT. | 100 | | | | | | | | | | |
| 223+10 | | HWY. 13 RT. | | | 1 | | | | | | | | |
| 223+45 | | HWY. 13 RT. | | | | | | | | 1 | | | |
| 223+80 | | HWY. 13 RT. | | | | | | 1 | | | | | |
| 230+00 | | HWY. 13 RT. | | | | | | | | 1 | | | |
| 230+80 | | HWY. 13 LT. | | | | | | | 1 | 1 | | | |
| 230+80 | | HWY. 13 LT. | | | | | | | | 1 | | | |
| 231+05 | | HWY. 13 LT. | | | | | | | | 1 | | | |
| 231+45 | | HWY. 13 LT. | | | | | | | | 1 | | | |
| 279+65 | | HWY. 13 LT. | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **TOTALS:** | | | **100** | **40** | **1** | **2** | **1** | **1** | **5** | **13** | **1** | **1** | **1** |

## CLEARING AND GRUBBING

| STATION | STATION | LOCATION | CLEARING | GRUBBING |
|---|---|---|---|---|
| | | | STATION | |
| 102+00 | 138+00 | HWY. 13 | 36 | 36 |
| 141+00 | 152+00 | HWY. 13 | 11 | 11 |
| 155+00 | 162+00 | HWY. 13 | 7 | 7 |
| 164+00 | 244+00 | HWY. 13 | 80 | 80 |
| 248+00 | 298+00 | HWY. 13 | 50 | 50 |
| | | | | |
| | | | | |
| **TOTALS:** | | | **184** | **184** |

## BENCH MARKS

| STATION | LOCATION | BENCH MARKS |
|---|---|---|
| | | EACH |
| 135+70 | HDWL. OF R.C. BOX CULVERT ON LT. | 1 |
| 252+20 | HDWL. OF R.C. BOX CULVERT ON RT. | 1 |
| 294+60 | HDWL. OF R.C. BOX CULVERT ON LT. | 1 |
| | | |
| | | |
| | | |
| **TOTAL:** | | **3** |

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

4/27/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 57 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 11425 TRINITY D. SMITH
6-10-16

## REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

| STATION | DESCRIPTION | PIPE CULVERTS | DROP INLETS |
|---|---|---|---|
| | | EACH | EACH |
| 181+75 | 24" x 31' CMP CROSS DRAIN - HWY. 13 | 1 | |
| 218+23 | 12" x 20' CPP SIDE DRAIN - HWY. 13 | 1 | |
| 224+04 | 12" x 20' CPP SIDE DRAIN - HWY. 13 | 1 | |
| 277+16 | 12" x 20' CPP SIDE DRAIN - HWY. 13 | 1 | |
| 278+43 | 12" x 35' PLASTIC PIPE CROSS DRAIN - HWY. 13 | 1 | |
| 280+30 | 12" x 16' STEEL PIPE SIDE DRAIN - HWY. 13 | 1 | |
| 280+82 | 12" x 12' STEEL PIPE SIDE DRAIN - HWY. 13 | 1 | |
| 281+29 | 6" x 20' PVC SIDE DRAIN - HWY. 13 | 1 | |
| 282+92 | 18" x 24' CMP CROSS DRAIN - HWY. 13 | 1 | |
| 289+11 | 12" x 17' RCP SIDE DRAIN - HWY. 13 | 1 | |
| | | | |
| 1+87 | D.I. ON LT. - HWY. 36 | | 1 |
| 5+44 | D.I. ON LT. - HWY. 36 | | 1 |
| | | | |
| | | | |
| TOTALS: | | 10 | 2 |

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

## CONCRETE WALKS

| STATION | STATION | LOCATION | LENGTH | CONCRETE WALKS |
|---|---|---|---|---|
| | | | LIN. FT. | SQ.YD. |
| 102+30 | 103+64 | HWY. 13/HWY. 36 NE RADIUS | 134 | 176 |
| 102+63 | 103+82 | HWY. 13/HWY. 36 NW RADIUS | 119 | 151 |
| 103+64 | 126+78 | HWY. 13 ON RT. | 2314 | 1286 |
| 103+82 | 126+78 | HWY. 13 ON LT. | 2296 | 1276 |
| 127+22 | 128+92 | HWY. 13 ON RT. | 170 | 94 |
| 127+22 | 128+94 | HWY. 13 ON LT. | 172 | 96 |
| | | | | |
| | | | | |
| TOTAL: | | | | 3079 |

## COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH | COLD MILLING ASPHALT PAVEMENT |
|---|---|---|---|---|
| | | | FEET | SQ. YD. |
| 00+38.85 | 06+06.53 | HWY. 36 | 56.00 | 3532.23 |
| | | | | |
| | | | | |
| TOTAL: | | | | 3532.23 |

NOTE: AVERAGE MILLING DEPTH 2".

## WHEELCHAIR RAMPS

| STATION | LOCATION | TYPE 3 | TYPE 4 |
|---|---|---|---|
| | | SQ.YD. | |
| 102+52 | HWY. 13-ISLAND ON RT. | | 2.7 |
| 102+52 | HWY. 13-ISLAND ON RT. | | 2.7 |
| 102+66 | HWY. 13-ISLAND ON LT. | | 2.7 |
| 102+66 | HWY. 13-ISLAND ON LT. | | 2.7 |
| 102+66 | HWY. 13-ISLAND ON LT. | | 2.7 |
| 102+76 | HWY. 13 ON RT. | 2.4 | |
| 102+97 | HWY. 13 ON LT. | 2.4 | |
| 128+95 | HWY. 13 ON RT. | 3.9 | |
| 128+97 | HWY. 13 ON LT. | 3.3 | |
| | | | |
| 0+42 | HWY. 36 ON LT. | 3.3 | |
| 1+07 | HWY. 36 ON LT. | 5.4 | |
| 1+64 | HWY. 36 ON LT. | 5.4 | |
| 6+04 | HWY. 36 ON LT. | 3.3 | |
| | | | |
| | | | |
| TOTALS: | | 29.4 | 13.5 |

## CONCRETE COMBINATION CURB AND GUTTER

| STATION | STATION | LOCATION | TYPE A (1' 6") |
|---|---|---|---|
| | | | LIN. FT. |
| 102+30 | 103+64 | HWY. 13/HWY. 36 NE RADIUS | 324 |
| 102+63 | 103+82 | HWY. 13/HWY. 36 NW RADIUS | 351 |
| 103+64 | 126+78 | HWY. 13 ON RT. | 2314 |
| 103+82 | 126+78 | HWY. 13 ON LT. | 2296 |
| 127+22 | 128+92 | HWY. 13 ON RT. | 170 |
| 127+22 | 128+94 | HWY. 13 ON LT. | 172 |
| | | | |
| | | | |
| TOTAL: | | | 5627 |

## CONCRETE ISLAND

| STATION | LOCATION | CURB FACE TYPE | CONCRETE ISLAND |
|---|---|---|---|
| | | | SQ.YD. |
| 102+50 | HWY. 13 ON RT. | C | 25 |
| 102+62 | HWY. 13 ON LT. | C | 106 |
| | | | |
| | | | |
| TOTAL: | | | 131 |

## FENCING

| STATION | STATION | LOCATION | WIRE FENCE (TYPE C) | WIRE FENCE (TYPE D) | * 16'-0" GATES |
|---|---|---|---|---|---|
| | | | LIN. FT. | | EACH |
| 195+92 | 197+22 | HWY. 13 LT. | 130 | | 1 |
| 197+22 | 198+14 | HWY. 13 LT. | 92 | | 1 |
| 198+14 | 207+99 | HWY. 13 LT. | 985 | | 1 |
| 209+15 | 210+14 | HWY. 13 RT. | 99 | | |
| 217+75 | 219+14 | HWY. 13 LT. | | 139 | |
| 219+14 | 221+29 | HWY. 13 LT. | | 215 | |
| 224+65 | 227+99 | HWY. 13 LT. | 334 | | |
| 227+99 | 228+20 | HWY. 13 LT. | 21 | | |
| 228+20 | 229+22 | HWY. 13 LT. | 102 | | |
| 229+22 | 229+57 | HWY. 13 LT. | 35 | | |
| 277+17 | 279+66 | HWY. 13 RT. | | 249 | |
| 279+66 | 281+92 | HWY. 13 RT. | | 226 | 1 |
| 281+92 | 283+45 | HWY. 13 RT. | | 153 | |
| | | | | | |
| | | | | | |
| TOTALS: | | | 1798 | 982 | 4 |

* DENOTES ALTERNATE BID ITEM.

## 4" PIPE UNDERDRAIN

| STATION | STATION | LOCATIONS | 4" PIPE UNDERDRAINS | UNDERDRAIN OUTLET PROTECTORS |
|---|---|---|---|---|
| | | | LIN. FT. | EACH |
| 133+00 | 136+00 | HWY. 13 | 300 | 3 |
| 213+00 | 218+00 | HWY. 13 | 500 | 3 |
| 251+00 | 257+00 | HWY. 13 | 600 | 4 |
| 295+00 | 299+00 | HWY. 13 | 400 | 3 |
| | | | | |
| | | | | |
| * ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | 500 | 4 |
| | | | | |
| | | | | |
| TOTALS: | | | 2300 | 17 |

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

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAIN.

## RUMBLE STRIPS IN ASPHALT SHOULDERS

| STATION | STATION | LOCATION | * RUMBLE STRIPS IN ASPHALT SHOULDERS |
|---|---|---|---|
| | | | LIN.FT. |
| 129+00 | 139+67 | HWY. 13 LT. | 1067 |
| 129+00 | 139+67 | HWY. 13 RT. | 1067 |
| 140+33 | 154+02 | HWY. 13 LT. | 1369 |
| 140+33 | 147+67 | HWY. 13 RT. | 734 |
| 148+33 | 154+37 | HWY. 13 RT. | 604 |
| 155+17 | 159+67 | HWY. 13 LT. | 450 |
| 155+52 | 159+67 | HWY. 13 RT. | 415 |
| 160+33 | 181+49 | HWY. 13 LT. | 2116 |
| 160+33 | 193+67 | HWY. 13 RT. | 3334 |
| 182+15 | 193+67 | HWY. 13 LT. | 1152 |
| 194+33 | 197+27 | HWY. 13 LT. | 294 |
| 194+33 | 206+77 | HWY. 13 RT. | 1244 |
| 197+83 | 200+77 | HWY. 13 LT. | 294 |
| 201+33 | 212+35 | HWY. 13 LT. | 1102 |
| 207+33 | 209+77 | HWY. 13 RT. | 244 |
| 210+47 | 212+65 | HWY. 13 RT. | 218 |
| 213+47 | 224+01 | HWY. 13 LT. | 1054 |
| 213+71 | 236+67 | HWY. 13 RT. | 2296 |
| 224+67 | 233+67 | HWY. 13 LT. | 900 |
| 234+33 | 236+67 | HWY. 13 LT. | 234 |
| 237+33 | 249+67 | HWY. 13 LT. | 1234 |
| 237+33 | 279+57 | HWY. 13 RT. | 4224 |
| 250+33 | 254+67 | HWY. 13 LT. | 434 |
| 255+33 | 272+26 | HWY. 13 LT. | 1693 |
| 273+43 | 274+57 | HWY. 13 LT. | 114 |
| 275+23 | 276+20 | HWY. 13 LT. | 97 |
| 277+38 | 278+24 | HWY. 13 LT. | 86 |
| 278+80 | 280+09 | HWY. 13 LT. | 129 |
| 280+23 | 284+95 | HWY. 13 RT. | 472 |
| 280+65 | 281+67 | HWY. 13 LT. | 102 |
| 282+33 | 283+47 | HWY. 13 LT. | 114 |
| 284+13 | 285+19 | HWY. 13 LT. | 106 |
| 285+61 | 288+59 | HWY. 13 RT. | 298 |
| 285+86 | 287+79 | HWY. 13 LT. | 193 |
| 288+49 | 289+67 | HWY. 13 LT. | 118 |
| 289+25 | 298+07 | HWY. 13 RT. | 882 |
| 290+33 | 297+63 | HWY. 13 LT. | 730 |
| | | | |
| | | | |
| TOTAL: | | | 31214 |

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

## DUMPED RIPRAP AND FILTER BLANKET

| STATION | LOCATION | DUMPED RIPRAP | FILTER BLANKET |
|---|---|---|---|
| | | CU. YDS. | SQ. YDS. |
| 121+88 | OUTLET OF PIPE CULVERT | 17 | 33 |
| 128+95 | OUTLET OF PIPE CULVERT | 9 | 17 |
| 182+82 | OUTLET OF PIPE CULVERT | 78 | 155 |
| | | | |
| | | | |
| * | TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 25 | 50 |
| | | | |
| TOTALS: | | 129 | 255 |

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

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

4/27/2016

R050249.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. | | 050249 | 58 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## STRUCTURES (OPEN SHOULDER SECTION)

| STATION | DESCRIPTION | PIPE CULVERT ALTERNATES | | | | | | | | | | | | FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES | | | | SOLID SODDING | WATER | STD. DWG. NOS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALT. 1 (CLASS III) | | ALT. 2, 3, 4, 5, AND 6 (WITH CLASS III ALT. 1) | | ALT. 1 (CLASS IV) | | ALT. 2, 3, 4, 5, AND 6 (WITH CLASS IV ALT. 1) | | ALT. 1 (CLASS V) | | ALT. 2-6 (WITH CLASS V ALT. 1) | ALT. 2-5 | | | | | | | |
| | | 24" | 36" | 24" | 36" | 24" | 30" | 24" | 30" | 36" | 42" | 36" | 42" | 24" | 30" | 36" | 42" | | | |
| | | LIN. FT. | | | | | | | | | | | | EACH | | | | SQ.YD. | M.GAL. | |
| 145+14 | DBL. 36" x 95' | | 190 | | 204 | | | | | | | | | | 4 | | | 36 | 0.45 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 158+75 | DBL. 36" x 72' | | | | | | | | | 144 | | 156 | | | | 4 | | 36 | 0.45 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 182+82 | QUAD. 36" x 178' | | 712 | | 740 | | | | | | | | | | | 4 | | 40 | 0.50 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 204+72 | 42" x 228' | | | | | | | | | | 228 | | 234 | | | 8 | | 46 | 0.58 | FES-1, FES-2, PCC-1, PCM-1, PCP-1 |
| 210+75 | 24" x 114' | 114 | | 120 | | | | | | | | | | | | | 2 | 16 | 0.20 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 213+88 | DBL. 30" x 78' | | | | | | 156 | | 164 | | | | | | 4 | | | 28 | 0.35 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 263+72 | 24" x 120' | 120 | | 126 | | | | | | | | | | 2 | | | | 16 | 0.20 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 278+00 | 24" x 74' | | | | | 74 | | 80 | | | | | | 2 | | | | 16 | 0.20 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| 282+92 | 24" x 109' | 109 | | 116 | | | | | | | | | | 2 | | | | 16 | 0.20 | FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2 |
| | | | | | | | | | | | | | | 2 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | 343 | 902 | 362 | 944 | 74 | 156 | 80 | 164 | 144 | 228 | 156 | 234 | 8 | 8 | 16 | 2 | 250 | 3.13 | |

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

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

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

## STRUCTURES (CURB & GUTTER SECTION)

| STATION | DESCRIPTION | REINFORCED CONCRETE PIPE CULVERT | | | | PIPE CULVERT ALTERNATES | | | | PIPE CULVERT STORM DRAIN ALTERNATES 1, 2, 3, AND 4 | | | | SIDE DRAIN | FLARED END SECTIONS FOR R.C. PIPE CULVERTS | | | | DROP INLETS | | | YARD DRAINS | SOLID SODDING | WATER | STD. DWG. NOS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (CLASS III) | | | (CLASS IV) | ALT. 1 (CLASS V) | | ALT. 2, 3, 4, 5, AND 6 (WITH CLASS V ALT. 1) | | | | | | | | | | | TYPE | | EXT. | | | | |
| | | 18" | 24" | 30" | 36" | 24" | 30" | 24" | 30" | 18" | 24" | 30" | 36" | 12" | 18" | 24" | 30" | 36" | C | MO | 4' | | | | |
| | | LIN. FT. | | | | | | | | | | | | | EACH | | | | EACH | | | EACH | SQ.YD. | M.GAL. | |
| 103+10 | D.I. ON LT. | | | | | | | | | 45 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 103+25 | D.I. ON RT. | | | | | | | | | 171 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 103+55 | D.I. ON LT. | | | | | | | | | 141 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 105+00 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | 245 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 105+00 | D.I. ON RT. | 5 | | | | | | | | 246 | | | | | 1 | | | | | 1 | 1 | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 107+50 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | 76 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 107+50 | D.I. ON RT. | 3 | | | | | | | | 146 | | | | | 1 | | | | | 1 | 1 | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 108+30 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | 66 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 109+00 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | | 170 | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 109+00 | D.I. ON RT. | 2 | | | | 31 | | 31 | | | | | | | 1 | | | | | 1 | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 110+75 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | | | 69 | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 111+50 | D.I. ON LT. | | | | | | | | | | | 143 | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 113+00 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | | | 84 | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 113+90 | D.I. ON LT. W/ OPENING IN BACK | | | | | | | | | | | 105 | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 115+00 | D.I. ON LT. | | | | | | | | | | | 145 | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 116+50 | D.I. ON LT. | | | | | | 31 | | 31 | | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 116+50 | D.I. ON RT. | 30 | | | | | | | | | | | 129 | | 1 | | | | | 1 | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 117+84 | D.I. ON RT. | 6 | | | | | | | | | | | 77 | | 1 | | | | | 1 | 1 | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 118+67 | D.I. ON RT. | | | | | | | | | | | | 77 | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 119+50 | D.I. ON RT. | | | | | | | | | | | | 118 | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 120+75 | D.I. ON RT. | | | | | | | | | | | | 49 | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 121+30 | D.I. ON RT. | | | | | | | | | | | | 49 | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 121+88 | D.I. ON RT. | | | 4 | 120 | | | | | | | | | | | | 1 | 2 | 1 | | | | 31 | 0.39 | FES-1, FES-2, FPC-9E, PCC-1 |
| 123+50 | D.I. ON RT. W/ OPENING IN BACK | | | | | | | | | 100 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 124+54 | D.I. ON RT. W/ OPENING IN BACK | | | | | | | | | 42 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 125+00 | D.I. ON LT. | | | | | | | | | 246 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 125+00 | D.I. ON RT. | | | | | | | | | 96 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 126+00 | D.I. ON RT. | | | | | | | | | 146 | | | | | | | | | | 1 | | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 127+50 | D.I. ON LT. | | | | | | | | | 141 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 127+50 | D.I. ON RT. | | | | | | | | | 134 | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 128+88 | D.I. ON RT. | | | | | 36 | | 36 | | | | | | | | | | | | 1 | 1 | | | | FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2 |
| 128+95 | D.I. ON LT. | | 48 | | | | | | | | | | | | | 1 | | | | 1 | | | 8 | 0.10 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1 |
| * | TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | | | | | | | | | | | 200 | | | | | | | | 2 | | | FPC-9, PCC-1 ,PCM-1, PCP-1, PCP-2 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | 46 | 48 | 4 | 120 | 67 | 31 | 67 | 31 | 2041 | 170 | 546 | 499 | 200 | 5 | 1 | 1 | 2 | 1 | 31 | 19 | 2 | 64 | 0.79 | |

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

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

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

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

4/27/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 59 | 242 |

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## STRUCTURES OVER 20'-0" SPAN

| STATION | DESCRIPTION | 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. | | | CU.YD. | POUND | CU.YD. | SQ.YD. | M.GAL. | |
| 135+93 | DBL. 11' x 6' x 96' R.C. BOX CULVERT | 11 | 6 | 96 | 218.08 | 34020 | 111 | 32 | 0.40 | RCB-1, RCB-2, SPECIAL DETAILS |
| 252+20 | TRI. 9' x 6' x 145' R.C. BOX CULVERT | 9 | 6 | 145 | 428.09 | 69803 | 154 | 28 | 0.35 | RCB-1, RCB-2, SPECIAL DETAILS |
| 295+20 | DBL. 8' x 4' x 183' R.C. BOX CULVERT | 8 | 4 | 183 | 248.54 | 35409 | 114 | 25 | 0.32 | RCB-1, RCB-2, SPECIAL DETAILS |
| **TOTALS:** | | | | | **894.71** | **139232** | **379** | **85** | **1.07** | |

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

## DRIVEWAYS & TURNOUTS

| STATION | SIDE | LOCATION | WIDTH | **MODIFIED CURB | | PORTLAND CEMENT CONCRETE DRIVEWAY | ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22) | | AGGREGATE BASE COURSE (CLASS 7) | SIDE DRAINS | | | | STANDARD DRAWINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 18" | 30" | 36" | 21"X15" | |
| | | | FEET | STATION | STATION | SQ. YD. | SQ. YD. | TON | TON | LIN. FT. | | | | |
| 127+00 | LT. | HWY. 13 | 16 | 126+78 | 127+22 | 39.11 | 46.77 | 5.14 | 19.10 | | | | | DR-1 |
| 127+00 | RT. | HWY. 13 | 16 | 126+78 | 127+22 | 39.11 | 29.33 | 3.23 | 11.98 | | | | | DR-1 |
| 140+00 | LT. | HWY. 13 | 16 | | | | 92.29 | 10.15 | 37.69 | 28 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 140+00 | RT. | HWY. 13 | 16 | | | | 74.51 | 8.20 | 30.42 | | | | | |
| 148+00 | RT. | HWY. 13 | 16 | | | | 92.29 | 10.15 | 37.69 | 30 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 154+77 | LT. | HWY. 13 - COLLINS RD. | 20 | | | | 666.28 | 73.29 | 272.06 | | | | | |
| 154+77 | RT. | HWY. 13 - COLLINS RD. | 20 | | | | 412.17 | 45.34 | 168.30 | 64 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 154+98 | RT. | HWY. 13 | | | | | | | | 111 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 160+00 | LT. | HWY. 13 | 16 | | | | 110.06 | 12.11 | 44.94 | 38 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 160+00 | RT. | HWY. 13 | 16 | | | | 92.29 | 10.15 | 37.69 | 30 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 181+82 | LT. | HWY. 13 | 16 | | | | 143.75 | 15.81 | 58.70 | | | 264 | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 194+00 | LT. | HWY. 13 | 16 | | | | 89.03 | 9.79 | 36.35 | 34 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 194+00 | RT. | HWY. 13 | 16 | | | | 76.91 | 8.46 | 31.40 | 28 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 196+50 | LT. | HWY. 13 | 16 | | | | 89.58 | 9.85 | 36.58 | 34 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 197+50 | LT. | HWY. 13 | 16 | | | | 99.77 | 10.97 | 40.74 | 36 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 201+00 | LT. | HWY. 13 | 16 | | | | 118.95 | 13.08 | 48.57 | 40 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 213+00 | LT. | HWY. 13 - HOLMES RD. | 20 | | | | 549.02 | 60.39 | 224.18 | | | | | |
| 213+00 | RT. | HWY. 13 - HOLMES RD. | 20 | | | | 1795.48 | 197.50 | 733.15 | | 52 | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 213+20 | RT. | HWY. 13 | | | | | | | | | 104 | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 224+34 | LT. | HWY. 13 | 16 | | | | 166.95 | 18.36 | 68.17 | 38 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 234+00 | LT. | HWY. 13 | 16 | | | | 95.56 | 10.51 | 39.02 | 34 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 237+00 | LT. | HWY. 13 | 16 | | | | 95.84 | 10.54 | 39.13 | | | | | |
| 237+00 | RT. | HWY. 13 | 16 | | | | 78.17 | 8.60 | 31.92 | 32 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 250+00 | LT. | HWY. 13 | 16 | | | | 216.73 | 23.84 | 88.50 | 66 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 255+00 | LT. | HWY. 13 | 16 | | | | 182.06 | 20.03 | 74.34 | 90 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 263+00 | LT. | HWY. 13 | 16 | | | | 73.19 | 8.05 | 29.89 | | | | | |
| 272+85 | LT. | HWY. 13 | | | | | | | | 58 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 273+00 | LT. | HWY. 13 - COVINGTON RD. | 20 | | | | 1241.95 | 136.61 | 507.13 | 58 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 274+90 | LT. | HWY. 13 | 16 | | | | 131.40 | 14.45 | 53.66 | 38 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 276+53 | LT. | HWY. 13 | 16 | | | | 94.29 | 10.37 | 38.50 | 36 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 277+15 | LT. | HWY. 13 | 16 | | | | 94.81 | 10.43 | 38.71 | | | | | |
| 277+31 | LT. | HWY. 13 | | | | | | | | 64 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 277+48 | LT. | HWY. 13 | 16 | | | | 95.49 | 10.50 | 38.99 | 64 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 278+57 | LT. | HWY. 13 | 16 | | | | 95.98 | 10.56 | 39.19 | | | | | |
| 279+90 | RT. | HWY. 13 | 16 | | | | 186.51 | 20.52 | 76.16 | | | | | |
| 280+42 | LT. | HWY. 13 | 16 | | | | 97.53 | 10.73 | 39.82 | 28 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 282+00 | LT. | HWY. 13 | 16 | | | | 98.85 | 10.87 | 40.36 | 28 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 285+28 | RT. | HWY. 13 | 16 | | | | 135.20 | 14.87 | 55.21 | | | | | |
| 285+50 | LT. | HWY. 13 | 16 | | | | 105.53 | 11.61 | 43.09 | 44 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 287+00 | RT. | HWY. 13 | 16 | | | | 92.11 | 10.13 | 37.61 | 32 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 288+12 | LT. | HWY. 13 | 16 | | | | 101.53 | 11.17 | 41.46 | 38 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 288+92 | RT. | HWY. 13 | 16 | | | | 73.69 | 8.11 | 30.09 | 34 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 289+70 | RT. | HWY. 13 | 16 | | | | 95.89 | 10.55 | 39.16 | 36 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 290+00 | LT. | HWY. 13 | 16 | | | | 180.84 | 19.89 | 73.84 | | | | | |
| 601+42 | LT. | HOLMES RD. | 16 | | | | 92.01 | 10.12 | 37.57 | | 176 | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 601+80 | LT. | HOLMES RD. | 16 | | | | 177.45 | 19.52 | 72.46 | | | | | |
| 604+00 | RT. | HOLMES RD. | 16 | | | | 37.01 | 4.07 | 267.09 | 56 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 701+00 | RT. | COVINGTON RD. | 16 | | | | 71.39 | 7.85 | 29.15 | 28 | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 701+55 | LT. | COVINGTON RD. | 40 | | | | 213.91 | 23.53 | 87.35 | | | | 50 | PCC-1, PCM-1, PCP-1, PCP-2 |
| 704+60 | LT. | COVINGTON RD. | 36 | | | | 372.40 | 40.96 | 152.06 | | | | 46 | PCC-1, PCM-1, PCP-1, PCP-2 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| * | | ENTIRE PROJECT TEMPORARY DRIVES | | | | | | | 12.69 | | | | | |
| | | | | | | | | | | | | | | |
| **TOTALS:** | | | | | | **78.22** | **9372.75** | **1030.96** | **4091.86** | **1375** | **332** | **264** | **96** | |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

** FOR INFORMATION ONLY

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

4/27/2016

R050249.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. | | 050249 | 60 | 242 |

(2) QUANTITIES

## CONCRETE BASE

| STATION | STATION | LOCATION | LENGTH | PORTLAND CEMENT CONCRETE BASE | |
|---|---|---|---|---|---|
| | | | | AVG. WID. | 6" U.T. |
| | | | FEET | FEET | SQ. YD. |
| 0+38.82 | 1+72.46 | HWY. 36 - IN FRONT OF CURB | 133.64 | VAR. | 35.87 |
| 0+38.82 | 1+72.46 | HWY. 36 - UNDER CURB | 133.64 | VAR. | 73.02 |
| 4+63.91 | 6+06.38 | HWY. 36 - IN FRONT OF CURB | 142.47 | VAR. | 38.73 |
| 4+63.91 | 6+06.38 | HWY. 36 - UNDER CURB | 142.47 | VAR. | 78.32 |
| TOTAL: | | | | | 225.94 |

## ACHM PATCHING OF EXISTING ROADWAY

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

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

## ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

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

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

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
6-10-16

## BASE AND SURFACING

| STATION | STATION | LOCATION | LENGTH | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | ACHM BASE COURSE (1 1/2") | | | | ACHM BINDER COURSE (1") | | | | ACHM SURFACE COURSE (1/2") | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | TON / STATION | TON | AVG. WID. | SQ.YD. | GALLONS / SQ.YD. | GALLON | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 64-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 64-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 64-22 | PG 70-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 64-22 | PG 70-22 | TOTAL PG 64-22 | TOTAL PG 70-22 |
| | | | FEET | | | FEET | | | | FEET | | | TON | FEET | | | TON | FEET | | | TON | TON | FEET | | | TON | TON | TON | TON |
| MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102+34.79 | 103+82.03 | HWY. 13 - FULL DEPTH C&G (INTERSECTION RADII) | 147.24 | VAR. | 735.81 | VAR. | 3139.84 | 0.05 | 156.99 | | | | | VAR. | 1569.92 | 495.00 | 388.56 | VAR. | 1569.92 | 220.00 | | 172.69 | VAR. | 1410.29 | 220.00 | | 155.13 | | 327.82 |
| 103+82.03 | 108+07.00 | HWY. 13 - FULL DEPTH C&G (TRANSITION INTERSECTION) | 424.97 | 200.75 | 853.13 | 72.62 | 3429.04 | 0.05 | 171.45 | | | | | 36.31 | 1714.52 | 495.00 | 424.34 | 36.31 | 1714.52 | 220.00 | | 188.60 | 36.31 | 1714.52 | 220.00 | | 188.60 | | 377.20 |
| 108+07.00 | 126+92.00 | HWY. 13 - FULL DEPTH C&G | 1885.00 | 160.50 | 3025.43 | 56.00 | 11728.89 | 0.05 | 586.44 | | | | | 28.00 | 5864.44 | 495.00 | 1451.45 | 28.00 | 5864.44 | 220.00 | | 645.09 | 28.00 | 5864.44 | 220.00 | | 645.09 | | 1290.18 |
| 126+92.00 | 129+00.00 | HWY. 13 - FULL DEPTH TRANSITION FROM C&G | 208.00 | 172.50 | 358.80 | 61.00 | 1409.78 | 0.05 | 70.49 | | | | | 30.50 | 704.89 | 495.00 | 174.46 | 30.50 | 704.89 | 220.00 | | 77.54 | 30.50 | 704.89 | 220.00 | | 77.54 | | 155.08 |
| 129+00.00 | 129+25.00 | HWY. 13 - FULL DEPTH TRANSITION TO O.S. | 25.00 | 364.00 | 91.00 | 48.77 | 135.47 | 0.05 | 6.77 | | | | | 24.52 | 68.11 | 495.00 | 16.86 | 24.25 | 67.36 | 220.00 | 7.41 | | 24.25 | 128.47 | 220.00 | 14.13 | | 21.54 | |
| 129+25.00 | 287+98.32 | HWY. 13 - FULL DEPTH O.S. | 15873.32 | 324.25 | 51469.24 | 48.77 | 86015.76 | 0.05 | 4300.79 | | | | | 24.52 | 43245.98 | 495.00 | 10703.38 | 24.25 | 42769.78 | 220.00 | 4704.68 | | 40.00 | 70548.09 | 220.00 | 7760.29 | | 12464.97 | |
| 287+98.32 | 289+88.73 | HWY. 13 - N&W | 190.41 | VAR. | 318.34 | VAR. | 595.51 | 0.05 | 29.78 | | | | | VAR. | 299.38 | 495.00 | 74.10 | VAR. | 296.13 | 220.00 | 32.57 | | 40.00 | 846.27 | 220.00 | 93.09 | | 125.66 | |
| 289+88.73 | 293+16.61 | HWY. 13 - FULL DEPTH O.S. | 327.88 | 324.25 | 1014.51 | 48.77 | 1776.75 | 0.05 | 88.84 | | | | | 24.52 | 893.29 | 495.00 | 221.09 | 24.25 | 883.45 | 220.00 | 97.18 | | 40.00 | 1457.24 | 220.00 | 160.30 | | 257.48 | |
| 293+16.61 | 298+27.20 | HWY. 13 - FULL DEPTH O.S. - TAPER & RADII | 510.59 | VAR. | 2257.72 | VAR. | 5653.33 | 0.05 | 282.67 | | | | | VAR. | 2834.14 | 495.00 | 701.45 | VAR. | 2819.20 | 220.00 | 310.11 | | VAR. | 3521.72 | 220.00 | 387.39 | | 697.50 | |
| 0+38.82 | 1+72.46 | HWY. 36 - N&W W/ INLAY | 133.64 | | | VAR. | 873.71 | 0.17 | 148.53 | | | | | | | | | VAR. | 35.87 | 220.00 | | 3.95 | VAR. | 873.71 | 220.00 | | 96.11 | | 100.06 |
| 1+72.46 | 4+63.91 | HWY. 36 - INLAY | 291.45 | | | 56.00 | 1813.47 | 0.17 | 308.29 | | | | | | | | | | | | | | 56.00 | 1813.47 | 220.00 | | 199.48 | | 199.48 |
| 4+63.91 | 6+06.38 | HWY. 36 N&W W/ INLAY | 142.47 | | | VAR. | 921.68 | 0.17 | 156.69 | | | | | | | | | VAR. | 38.73 | 220.00 | | 4.26 | VAR. | 921.68 | 220.00 | | 101.38 | | 105.64 |
| 1+33.73 | | MARCUS SHANE LANE (TURNOUT) | | VAR. | 58.65 | VAR. | 218.82 | 0.05 | 10.94 | | | | | VAR. | 109.41 | 495.00 | 27.08 | VAR. | 109.44 | 220.00 | | 12.04 | VAR. | 109.41 | 220.00 | | 12.04 | | 24.08 |
| ADDITIONAL FOR LEVELING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 288+91.96 | 291+35.83 | HWY. 13 - TO BE USED IF AND WHERE DIRECTED | 243.87 | | | VAR. | 1321.50 | 0.17 | 224.66 | | | | | | | | | | | | | | VAR. | 1083.87 | VAR. | 119.23 | | 119.23 | |
| ADDITIONAL FOR SUPERELEVATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 146+18.00 | 149+18.00 | SUPER TRANSITION | 300.00 | 85.00 | 255.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 149+18.00 | 151+52.45 | FULL SUPER (0.083 '/') | 234.45 | 170.00 | 398.57 | | | | | | | | | | | | | | | | | | | | | | | | |
| 151+52.45 | 154+52.45 | SUPER TRANSITION | 300.00 | 85.00 | 255.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 160+47.37 | 163+47.37 | SUPER TRANSITION | 300.00 | 85.00 | 255.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 163+47.37 | 170+57.40 | FULL SUPER (0.083 '/') | 710.03 | 170.00 | 1207.05 | | | | | | | | | | | | | | | | | | | | | | | | |
| 170+57.40 | 173+57.40 | SUPER TRANSITION | 300.00 | 85.00 | 255.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 179+97.98 | 182+97.98 | SUPER TRANSITION | 300.00 | 68.99 | 206.97 | | | | | | | | | | | | | | | | | | | | | | | | |
| 182+97.98 | 187+57.64 | FULL SUPER (0.067 '/') | 459.66 | 137.75 | 633.18 | | | | | | | | | | | | | | | | | | | | | | | | |
| 187+57.64 | 190+57.64 | SUPER TRANSITION | 300.00 | 68.88 | 206.64 | | | | | | | | | | | | | | | | | | | | | | | | |
| 199+10.63 | 202+60.63 | SUPER TRANSITION | 350.00 | 137.75 | 482.13 | | | | | | | | | | | | | | | | | | | | | | | | |
| 202+60.63 | 205+24.25 | FULL SUPER (0.091 '/') | 263.62 | 187.75 | 494.95 | | | | | | | | | | | | | | | | | | | | | | | | |
| 205+24.25 | 208+74.25 | SUPER TRANSITION | 350.00 | 93.88 | 328.58 | | | | | | | | | | | | | | | | | | | | | | | | |
| 282+30.29 | 285+30.29 | SUPER TRANSITION | 300.00 | 68.88 | 206.64 | | | | | | | | | | | | | | | | | | | | | | | | |
| 285+30.29 | 290+18.43 | FULL SUPER (0.067 '/') | 488.14 | 137.75 | 672.41 | | | | | | | | | | | | | | | | | | | | | | | | |
| 290+18.43 | 293+18.43 | SUPER TRANSITION | 300.00 | 68.88 | 206.64 | | | | | | | | | | | | | | | | | | | | | | | | |
| 293+68.46 | 296+68.46 | SUPER TRANSITION | 300.00 | 68.88 | 206.64 | | | | | | | | | | | | | | | | | | | | | | | | |
| 296+68.46 | 298+23.43 | FULL SUPER (0.067 '/') | 154.97 | 137.75 | 213.47 | | | | | | | | | | | | | | | | | | | | | | | | |
| 298+23.43 | 298+27.20 | SUPER TRANSITION - MATCH HWY. 16 GRADE (0.0429 '/') | 3.77 | 118.00 | 4.45 | | | | | | | | | | | | | | | | | | | | | | | | |
| ADDITIONAL FOR GRADE RAISE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 288+91.96 | 291+35.83 | HWY. 13 | 243.87 | | | VAR. | 1517.41 | 0.05 | 75.87 | | | | | VAR. | 738.23 | 129.15 | 47.67 | | | | | | | | | | | | |
| 503+00.00 | 508+00.00 | COLLINS RD. | 500.00 | | | VAR. | 1922.40 | 0.05 | 96.12 | VAR. | 640.00 | 628.22 | 201.03 | VAR. | 636.85 | 495.00 | 157.62 | VAR. | 645.55 | 220.00 | 71.01 | | | | | | | 71.01 | |
| ADDITIONAL FOR MOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 288+93.00 | 291+35.00 | FULL DEPTH SHOULDER LT. SIDE | 242.00 | | | 16.00 | 430.22 | 0.05 | 21.51 | | | | | 8.00 | 215.11 | 495.00 | 53.24 | 8.00 | 215.11 | 220.00 | 23.66 | | | | | | | 23.66 | |
| TOTALS: | | | | | 66670.95 | | 122903.58 | | 6736.83 | | 640.00 | | 201.03 | | 58894.27 | | 14441.30 | | 57734.39 | | 5246.62 | 1104.17 | | 90998.07 | | 8534.43 | 1475.37 | 13781.05 | 2579.54 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

4/27/2016

R050249.DGN

## SUMMARY OF QUANTITIES (BOX 1 OF 2)

| ITEM NUMBER | ITEM | | QUANTITY | UNIT |
|---|---|---|---|---|
| 201 | CLEARING | | 184 | STATION |
| 201 | GRUBBING | | 184 | STATION |
| 202 | REMOVAL AND DISPOSAL OF FENCE | | 6584 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF RETAINING WALLS | | 100 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE DEBRIS | | 40 | CU. YD. |
| 202 | REMOVAL AND DISPOSAL OF POLE AND FOUNDATION | | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS | | 2 | EACH |
| 202 | REMOVAL AND DISPOSAL OF DROP INLETS | | 2 | EACH |
| 202 | REMOVAL AND DISPOSAL OF PIPE CULVERTS | | 10 | EACH |
| 202 | REMOVAL AND DISPOSAL OF FOOT BRIDGE | | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF STORM CELLAR | | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SEPTIC SYSTEM | | 5 | EACH |
| 202 | REMOVAL AND DISPOSAL OF BUILDINGS | | 13 | EACH |
| 202 | REMOVAL AND DISPOSAL OF CATTLE GUARD | | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SIGNS | | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF PLANTERS | | 1 | EACH |
| 206 | FLOWABLE SELECT MATERIAL | | 13 | CU. YD. |
| 210 | UNCLASSIFIED EXCAVATION | | 606125 | CU. YD. |
| 210 | PRESPLITTING | | 6613 | SQ. YD. |
| 210 | COMPACTED EMBANKMENT | | 488085 | CU. YD. |
| SP & 210 | SOIL STABILIZATION | | 500 | TON |
| SS & 303 | AGGREGATE BASE COURSE (CLASS 7) | | 70763 | TON |
| 309 | PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS) | | 226 | SQ. YD. |
| SS & 401 | TACK COAT | | 6937 | GAL. |
| SP & 405 | MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2") | | 193 | TON |
| SP & 405 | ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2") | | 8 | TON |
| SP, SS, & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | | 13806 | TON |
| SP, SS, & 406 | ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1") | | 635 | TON |
| SP, SS, & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") | | 16470 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") | | 785 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2") | | 137 | TON |
| 412 | COLD MILLING ASPHALT PAVEMENT | | 3532 | SQ. YD. |
| SP & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | | 100 | TON |
| SP & 415 | ACHM PATCHING OF EXISTING ROADWAY | | 50 | TON |
| 505 | PORTLAND CEMENT CONCRETE DRIVEWAY | | 78.22 | SQ. YD. |
| 601 | MOBILIZATION | | 1.00 | LUMP SUM |
| SP & 602 | FURNISHING FIELD OFFICE | | 1 | EACH |
| 603 | MAINTENANCE OF TRAFFIC | | 1.00 | LUMP SUM |
| SS & 604 | SIGNS | | 766 | SQ. FT. |
| SS & 604 | BARRICADES | | 512 | LIN. FT. |
| SS & 604 | TRAFFIC DRUMS | | 262 | EACH |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | | 12612 | LIN. FT. |
| 604 | REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | | 12612 | LIN. FT. |
| SS & 604 | VERTICAL PANELS | | 49 | EACH |
| 605 | CONCRETE DITCH PAVING (TYPE B) | | 5859 | SQ. YD. |
| 606 | 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 46 | LIN. FT. |
| * 606 | 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 2041 | LIN. FT. |
| * 606 | 18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE | (ALTERNATE NO. 2) | 2041 | LIN. FT. |
| * SP & 606 | 18" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 3) | 2041 | LIN. FT. |
| * SP & 606 | 18" PVC PIPE | (ALTERNATE NO. 4) | 2041 | LIN. FT. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 48 | LIN. FT. |
| * 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 343 | LIN. FT. |
| * 606 | 24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 2) | 362 | LIN. FT. |
| * 606 | 24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 3) | 362 | LIN. FT. |
| * 606 | 24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 4) | 362 | LIN. FT. |
| * SP & 606 | 24" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 362 | LIN. FT. |
| * SP & 606 | 24" PVC PIPE | (ALTERNATE NO. 6) | 362 | LIN. FT. |
| * 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | (ALTERNATE NO. 1) | 74 | LIN. FT. |
| * 606 | 24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 2) | 80 | LIN. FT. |
| * 606 | 24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 3) | 80 | LIN. FT. |
| * 606 | 24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 4) | 80 | LIN. FT. |
| * SP & 606 | 24" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 80 | LIN. FT. |
| * SP & 606 | 24" PVC PIPE | (ALTERNATE NO. 6) | 80 | LIN. FT. |
| * 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | (ALTERNATE NO. 1) | 67 | LIN. FT. |
| * 606 | 24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 2) | 67 | LIN. FT. |
| * 606 | 24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 3) | 67 | LIN. FT. |
| * 606 | 24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 4) | 67 | LIN. FT. |
| * SP & 606 | 24" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 67 | LIN. FT. |
| * SP & 606 | 24" PVC PIPE | (ALTERNATE NO. 6) | 67 | LIN. FT. |
| * 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 170 | LIN. FT. |
| * 606 | 24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE | (ALTERNATE NO. 2) | 170 | LIN. FT. |
| * SP & 606 | 24" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 3) | 170 | LIN. FT. |
| * SP & 606 | 24" PVC PIPE | (ALTERNATE NO. 4) | 170 | LIN. FT. |
| 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 4 | LIN. FT. |
| * 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 546 | LIN. FT. |
| * 606 | 30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE | (ALTERNATE NO. 2) | 546 | LIN. FT. |
| * SP & 606 | 30" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 3) | 546 | LIN. FT. |
| * SP & 606 | 30" PVC PIPE | (ALTERNATE NO. 4) | 546 | LIN. FT. |
| * 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | (ALTERNATE NO. 1) | 156 | LIN. FT. |
| * 606 | 30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 2) | 164 | LIN. FT. |
| * 606 | 30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 3) | 164 | LIN. FT. |
| * 606 | 30" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE) | (ALTERNATE NO. 4) | 164 | LIN. FT. |
| * SP & 606 | 30" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 164 | LIN. FT. |
| * SP & 606 | 30" PVC PIPE | (ALTERNATE NO. 6) | 164 | LIN. FT. |
| * 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | (ALTERNATE NO. 1) | 31 | LIN. FT. |
| * 606 | 30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 2) | 31 | LIN. FT. |
| * 606 | 30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | (ALTERNATE NO. 3) | 31 | LIN. FT. |
| * 606 | 30" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE) | (ALTERNATE NO. 4) | 31 | LIN. FT. |
| * SP & 606 | 30" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 31 | LIN. FT. |
| * SP & 606 | 30" PVC PIPE | (ALTERNATE NO. 6) | 31 | LIN. FT. |
| * 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 902 | LIN. FT. |
| * 606 | 36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 2) | 944 | LIN. FT. |
| * 606 | 36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 3) | 944 | LIN. FT. |
| * 606 | 36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE) | (ALTERNATE NO. 4) | 944 | LIN. FT. |
| * SP & 606 | 36" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 944 | LIN. FT. |
| * SP & 606 | 36" PVC PIPE | (ALTERNATE NO. 6) | 944 | LIN. FT. |
| * 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 499 | LIN. FT. |
| * 606 | 36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE | (ALTERNATE NO. 2) | 499 | LIN. FT. |
| * SP & 606 | 36" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 3) | 499 | LIN. FT. |
| * SP & 606 | 36" PVC PIPE | (ALTERNATE NO. 4) | 499 | LIN. FT. |
| 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 120 | LIN. FT. |
| * 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | (ALTERNATE NO. 1) | 144 | LIN. FT. |
| * 606 | 36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 2) | 156 | LIN. FT. |
| * 606 | 36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 3) | 156 | LIN. FT. |
| * 606 | 36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE) | (ALTERNATE NO. 4) | 156 | LIN. FT. |
| * SP & 606 | 36" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 156 | LIN. FT. |
| * SP & 606 | 36" PVC PIPE | (ALTERNATE NO. 6) | 156 | LIN. FT. |

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES




| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.ROL. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | 050249 | 61 | 242 |

(2) SUMMARY OF QUANTITIES

## SUMMARY OF QUANTITIES (BOX 2 OF 2)

| ITEM NUMBER | ITEM | | QUANTITY | UNIT |
|---|---|---|---|---|
| * 606 | 42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | (ALTERNATE NO. 1) | 228 | LIN. FT. |
| * 606 | 42" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 2) | 234 | LIN. FT. |
| * 606 | 42" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) | (ALTERNATE NO. 3) | 234 | LIN. FT. |
| * 606 | 42" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE) | (ALTERNATE NO. 4) | 234 | LIN. FT. |
| * SP & 606 | 42" HIGH DENSITY POLYETHYLENE PIPE | (ALTERNATE NO. 5) | 234 | LIN. FT. |
| SS & 606 | 12" SIDE DRAIN | | 200 | LIN. FT. |
| SP, SS, & 606 | 18" SIDE DRAIN | | 1375 | LIN. FT. |
| SP, SS, & 606 | 30" SIDE DRAIN | | 332 | LIN. FT. |
| SP, SS, & 606 | 36" SIDE DRAIN | | 264 | LIN. FT. |
| SS & 606 | 21" X 15" SIDE DRAIN | | 96 | LIN. FT. |
| 606 | 18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 5 | EACH |
| 606 | 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 1 | EACH |
| * 606 | 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | (ALTERNATE NO. 1) | 8 | EACH |
| * 606 | 24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS | (ALTERNATE NO. 2) | 8 | EACH |
| 606 | 30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 1 | EACH |
| * 606 | 30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | (ALTERNATE NO. 1) | 8 | EACH |
| * 606 | 30" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS | (ALTERNATE NO. 2) | 8 | EACH |
| 606 | 36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 2 | EACH |
| * 606 | 36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | (ALTERNATE NO. 1) | 16 | EACH |
| * 606 | 36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS | (ALTERNATE NO. 2) | 16 | EACH |
| * 606 | 42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | (ALTERNATE NO. 1) | 2 | EACH |
| * 606 | 42" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS | (ALTERNATE NO. 2) | 2 | EACH |
| 606 | SELECTED PIPE BEDDING | | 500 | CU. YD. |
| 609 | DROP INLETS (TYPE C) | | 1 | EACH |
| 609 | DROP INLETS (TYPE MO) | | 31 | EACH |
| 609 | DROP INLET EXTENSIONS (4') | | 19 | EACH |
| 609 | YARD DRAINS | | 2 | EACH |
| 611 | UNDERDRAIN OUTLET PROTECTORS | | 17 | EACH |
| 611 | 4" PIPE UNDERDRAINS | | 2300 | LIN. FT. |
| 619 | WIRE FENCE (TYPE C) | | 1798 | LIN. FT. |
| 619 | WIRE FENCE (TYPE D) | | 982 | LIN. FT. |
| * 619 | 16' STEEL GATES | (ALTERNATE NO. 1) | 4 | EACH |
| * 619 | 16' ALUMINUM GATES | (ALTERNATE NO. 2) | 4 | EACH |
| 620 | LIME | | 89 | TON |
| SP & 620 | SPECIAL SEEDING | | 44.55 | ACRE |
| SS & 620 | MULCH COVER | | 125.70 | ACRE |
| 620 | WATER | | 6281.4 | M.GAL. |
| 621 | TEMPORARY SEEDING | | 81.15 | ACRE |
| 621 | SILT FENCE | | 42619 | LIN. FT. |
| 621 | SAND BAG DITCH CHECKS | | 2332 | BAG |
| 621 | DIVERSION DITCH | | 14156 | LIN. FT. |
| 621 | DROP INLET SILT FENCE | | 914 | LIN. FT. |
| 621 | SEDIMENT BASIN | | 15593 | CU. YD. |
| 621 | OBLITERATION OF SEDIMENT BASIN | | 15593 | CU. YD. |
| 621 | SEDIMENT REMOVAL AND DISPOSAL | | 16738 | CU. YD. |
| 621 | PIPE FOR SLOPE DRAINS | | 3319 | LIN. FT. |
| 621 | ROCK DITCH CHECKS | | 435 | CU. YD. |
| 621 | WATTLE (20") | | 225 | LIN. FT. |
| 623 | SECOND SEEDING APPLICATION | | 44.55 | ACRE |
| 624 | SOLID SODDING | | 6490 | SQ. YD. |
| 626 | EROSION CONTROL MATTING (CLASS 3) | | 10709 | SQ. YD. |
| 632 | CONCRETE ISLAND | | 131 | SQ. YD. |
| 633 | CONCRETE WALKS | | 3079 | SQ. YD. |
| 634 | CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6") | | 5627 | LIN. FT. |
| 635 | ROADWAY CONSTRUCTION CONTROL | | 1.00 | LUMP SUM |
| 637 | MAILBOXES | | 14 | EACH |
| 637 | MAILBOX SUPPORTS (SINGLE) | | 6 | EACH |
| 637 | MAILBOX SUPPORTS (DOUBLE) | | 4 | EACH |
| 641 | WHEELCHAIR RAMPS (TYPE 3) | | 29 | SQ. YD. |
| 641 | WHEELCHAIR RAMPS (TYPE 4) | | 14 | SQ. YD. |
| 642 | RUMBLE STRIPS IN ASPHALT SHOULDERS | | 31214 | LIN. FT. |
| SP | LOOP WIRING CLASS III (1C/16 A.W.G.) | | 264 | LIN. FT. |
| 704 | FEEDER WIRE | | 828 | LIN. FT. |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | | 2 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) | | 3 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | | 4 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) | | 52 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1") | | 166 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1.25") | | 34 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | | 188 | LIN. FT. |
| 711 | CONCRETE PULL BOX (TYPE 1 HD) | | 2 | EACH |
| SP | TRAFFIC SIGNAL CONTROLLER (MODIFICATION) | | 2 | EACH |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | | 554 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (4") | | 32814 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (8") | | 674 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (12") | | 230 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (24") | | 172 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | | 40832 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) | | 22 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING (WORDS) | | 3 | EACH |
| 719 | THERMOPLASTIC PAVEMENT MARKING (ARROWS) | | 5 | EACH |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | | 512 | EACH |
| SP | VIDEO DETECTOR ROTATION | | 2 | EACH |
| SP & 733 | VIDEO DETECTOR (CLR) | | 3 | EACH |
| 816 | FILTER BLANKET | | 255 | SQ. YD. |
| 816 | DUMPED RIPRAP | | 217 | CU. YD. |
| | | | | |
| | | | | |
| | **STRUCTURES OVER 20' SPAN** | | | |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY | | 379 | CU. YD. |
| 802 | CLASS S CONCRETE-ROADWAY | | 894.71 | CU. YD. |
| 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | | 139232 | POUND |
| | | | | |
| | | | | |

* DENOTES ALTERNATE BID ITEMS.

## REVISIONS

| DATE | REVISION | SHEET NUMBER |
|---|---|---|
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SUMMARY OF QUANTITIES & REVISIONS

| DATE RC'D/SD | DATE FC'D/SD | DATE RC'D/SD | DATE FC'D/SD | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 62 | 242 |

(2) SUMMARY OF QUANTITIES & REVISIONS

JOB NO. 050249

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11,251 TIMOTHY D. SMITH 6-22-16

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 63 | 242 |

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES
Project Name: 050198
Date: 6/9/2015
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *730027A, 730028-730028A*
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 | 340055.7510 | 0.0040 | 1391727.4617 | 0.0030 | 224.61 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:1 |
| 2 | 340227.9041 | 0.0185 | 1392143.4231 | 0.0105 | 251.94 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:2 |
| 3 | 340444.1909 | 0.0323 | 1392720.3877 | 0.0151 | 261.58 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:3 |
| 4 | 340419.1265 | 0.0443 | 1393395.4740 | 0.0167 | 261.19 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:4 |
| 5 | 340417.7890 | 0.0502 | 1394338.2004 | 0.0175 | 242.36 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:5 |
| 6 | 340354.9514 | 0.0486 | 1395097.7970 | 0.0158 | 269.33 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:6 |
| 7 | 340362.3454 | 0.0473 | 1395688.3225 | 0.0150 | 257.73 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:7 |
| 8 | 340317.4265 | 0.0328 | 1396542.5488 | 0.0125 | 227.42 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:8 |
| 9 | 340502.8656 | 0.0193 | 1397245.3621 | 0.0101 | 221.00 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:9 |
| 10 | 340595.7041 | 0.0050 | 1397844.0621 | 0.0050 | 213.93 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:10 |
| 11 | 340903.0248 | 0.0238 | 1398338.2994 | 0.0180 | 213.75 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:11 |
| 12 | 340917.1386 | 0.0455 | 1398879.3461 | 0.0208 | 213.55 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:12 |
| 13 | 340991.9364 | 0.0693 | 1399524.0274 | 0.0242 | 223.35 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:13 |
| 14 | 341256.6966 | 0.0843 | 1400066.6524 | 0.0283 | 221.92 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:14 |
| 15 | 341414.7504 | 0.0912 | 1400454.0394 | 0.0304 | 218.34 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:15 |
| 16 | 341557.8378 | 0.1028 | 1401432.9772 | 0.0311 | 216.98 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:16 |
| 17 | 341631.0757 | 0.1087 | 1402163.5717 | 0.0308 | 228.14 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:17 |
| 18 | 341762.6534 | 0.1136 | 1403180.5060 | 0.0294 | 225.76 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:18 |
| 19 | 341666.6968 | 0.1213 | 1404341.1807 | 0.0305 | 227.17 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:19 |
| 20 | 341602.9390 | 0.1234 | 1404903.7770 | 0.0313 | 215.69 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:20 |
| 21 | 341569.0046 | 0.1205 | 1405674.8284 | 0.0312 | 243.28 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:21 |
| 22 | 341462.7668 | 0.1096 | 1406492.6246 | 0.0306 | 251.39 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:22 |
| 23 | 341283.6487 | 0.0957 | 1407253.8420 | 0.0287 | 249.49 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:23 |
| 24 | 341062.5052 | 0.0738 | 1408102.1264 | 0.0245 | 246.52 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:24 |
| 25 | 340912.7534 | 0.0415 | 1409047.3942 | 0.0186 | 246.96 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:25 |
| 26 | 340690.8208 | 0.0136 | 1409734.8957 | 0.0104 | 257.68 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:26 |
| 27 | 340506.7280 | 0.0010 | 1410667.5681 | 0.0010 | 241.78 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:27 |
| 28 | 340352.8177 | 0.0020 | 1411683.5071 | 0.0010 | 238.21 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:28 |
| 29 | 340179.5300 | 0.0020 | 1412569.6498 | 0.0020 | 234.27 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:29 |
| 30 | 339953.0638 | 0.0010 | 1413116.4359 | 0.0010 | 231.03 | 0.008 | CTL | PD:STD.AHTD MON STAMPED PN:30 |
| 31 | 340275.1012 | 0.0100 | 1391662.6134 | 0.0060 | 228.77 | 0.002 | CTL | PD:STD.AHTD MON STAMPED PN:31 |
| 32 | 340280.0685 | 0.0160 | 1391406.6621 | 0.0110 | 235.40 | 0.003 | CTL | PD:STD.AHTD MON STAMPED PN:32 |
| 33 | 340367.2463 | 0.0180 | 1390782.9754 | 0.0120 | 235.66 | 0.004 | CTL | PD:STD.AHTD MON STAMPED PN:33 |
| 34 | 340466.2838 | 0.0200 | 1390185.0811 | 0.0120 | 249.26 | 0.004 | CTL | PD:STD.AHTD MON STAMPED PN:34 |
| 35 | 340499.5357 | 0.0170 | 1389732.6029 | 0.0110 | 273.79 | 0.005 | CTL | PD:STD.AHTD MON STAMPED PN:35 |
| 36 | 340549.1684 | 0.0150 | 1389046.6747 | 0.0100 | 282.86 | 0.005 | CTL | PD:STD.AHTD MON STAMPED PN:36 |
| 37 | 340548.1164 | 0.0210 | 1388345.6077 | 0.0110 | 289.90 | 0.005 | CTL | PD:STD.AHTD MON STAMPED PN:37 |
| 38 | 340555.3058 | 0.0160 | 1387794.6470 | 0.0090 | 306.53 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:38 |
| 39 | 339056.8953 | 0.0060 | 1388485.9035 | 0.0040 | 297.41 | 0.007 | CTL | PD:STD.AHTD MON STAMPED PN:39 |
| 40 | 340032.7467 | 0.0060 | 1387598.3951 | 0.0040 | 296.85 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:40 |
| 41 | 340548.3954 | 0.0130 | 1387157.2435 | 0.0070 | 300.17 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:41 |
| 42 | 341338.8474 | 0.0140 | 1386638.7207 | 0.0120 | 326.59 | 0.006 | CTL | PD:STD.AHTD MON STAMPED PN:42 |
| 43 | 340577.1312 | 0.0650 | 1386380.9621 | 0.0460 | 320.34 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:43 |
| 44 | 340554.6083 | 0.0500 | 1385575.2358 | 0.0400 | 343.23 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:44 |
| 45 | 340597.9615 | 0.0470 | 1385034.0840 | 0.0370 | 347.48 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:45 |
| 46 | 340572.4600 | 0.0520 | 1384725.1024 | 0.0410 | 356.45 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:46 |
| 47 | 340716.3381 | 0.0510 | 1384241.7745 | 0.0400 | 368.30 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:47 |
| 48 | 340907.2824 | 0.0480 | 1383818.2837 | 0.0410 | 389.22 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:48 |
| 49 | 340425.3643 | 0.0590 | 1384598.7116 | 0.0510 | 325.61 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:49 |
| 50 | 340429.8267 | 0.0550 | 1384078.1570 | 0.0440 | 305.21 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:50 |
| 51 | 340444.7392 | 0.0510 | 1383372.1251 | 0.0440 | 303.40 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:51 |
| 52 | 340459.9768 | 0.0690 | 1382705.8183 | 0.0540 | 296.46 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:52 |
| 53 | 340577.6333 | 0.0480 | 1382272.3949 | 0.0440 | 295.10 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:53 |
| 54 | 340783.8160 | 0.0480 | 1381854.0871 | 0.0470 | 303.13 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:54 |
| 55 | 340782.1816 | 0.0510 | 1381347.1111 | 0.0470 | 317.34 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:55 |
| 56 | 340765.3304 | 0.0197 | 1380940.4940 | 0.0145 | 338.72 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:56 |
| 57 | 340811.0055 | 0.0560 | 1380546.6792 | 0.0480 | 372.25 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:57 |
| 58 | 340856.5122 | 0.0730 | 1380357.4334 | 0.0520 | 382.95 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:58 |
| 59 | 340940.9896 | 0.0500 | 1380083.7083 | 0.0390 | 392.37 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:59 |
| 60 | 340986.2193 | 0.0460 | 1379604.9412 | 0.0420 | 389.50 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:60 |
| 61 | 340549.4747 | 0.0510 | 1379510.5748 | 0.0450 | 432.13 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:61 |
| 62 | 340788.8636 | 0.0390 | 1378963.8460 | 0.0370 | 400.99 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:62 |
| 63 | 340925.0217 | 0.0550 | 1378546.7093 | 0.0430 | 366.03 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:63 |
| 64 | 341270.1036 | 0.0450 | 1378225.1268 | 0.0400 | 354.19 | 0.006 | CTL | PD:STD.AHTD MON. STAMPED PN:64 |
| 65 | 341518.6826 | 0.0360 | 1377701.1394 | 0.0320 | 382.55 | 0.006 | CTL | PD:STD.AHTD MON. STAMPED PN:65 |
| 66 | 341000.2401 | 0.0540 | 1377852.7137 | 0.0480 | 359.14 | 0.006 | CTL | PD:STD.AHTD MON. STAMPED PN:66 |
| 67 | 340719.3547 | 0.0550 | 1377792.6278 | 0.0500 | 369.40 | 0.006 | CTL | PD:STD.AHTD MON. STAMPED PN:67 |
| 68 | 340792.3287 | 0.0258 | 1377021.4345 | 0.0195 | 409.85 | 0.006 | CTL | PD:STD.AHTD MON. STAMPED PN:68 |
| 69 | 340767.4535 | 0.0610 | 1376632.8444 | 0.0480 | 425.24 | 0.005 | CTL | PD:STD.AHTD MON. STAMPED PN:69 |
| 70 | 340562.6088 | 0.0267 | 1376791.7677 | 0.0185 | 420.09 | 0.005 | CTL | PD:STD.AHTD MON. STAMPED PN:70 |
| 71 | 340369.3161 | 0.0650 | 1376404.7296 | 0.0510 | 414.99 | 0.005 | CTL | PD:STD.AHTD MON. STAMPED PN:71 |
| 72 | 340180.2408 | 0.0640 | 1376165.2058 | 0.0460 | 406.34 | 0.004 | CTL | PD:STD.AHTD MON. STAMPED PN:72 |
| 73 | 339862.8387 | 0.0410 | 1375605.7100 | 0.0350 | 429.24 | 0.002 | CTL | PD:STD.AHTD MON. STAMPED PN:73 |
| 74 | 340317.6954 | 0.0510 | 1375564.3181 | 0.0450 | 423.58 | 0.002 | CTL | PD:STD.AHTD MON. STAMPED PN:74 |
| 75 | 339499.4628 | 0.0510 | 1374967.8142 | 0.0380 | 441.81 | 0.003 | CTL | PD:STD.AHTD MON. STAMPED PN:75 |
| 76 | 339176.0525 | 0.0520 | 1374382.5598 | 0.0400 | 405.05 | 0.004 | CTL | PD:STD.AHTD MON. STAMPED PN:76 |
| 77 | 338688.0081 | 0.0470 | 1374057.6671 | 0.0410 | 334.54 | 0.005 | CTL | PD:STD.AHTD MON. STAMPED PN:77 |
| 78 | 337921.5380 | 0.0430 | 1374479.0851 | 0.0380 | 308.63 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:78 |
| 79 | 337874.0368 | 0.0420 | 1373970.7601 | 0.0360 | 306.48 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:79 |
| 80 | 337851.5035 | 0.0460 | 1372934.7963 | 0.0400 | 313.73 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:80 |
| 81 | 337176.6631 | 0.0580 | 1373964.6632 | 0.0500 | 285.14 | 0.007 | CTL | PD:STD.AHTD MON. STAMPED PN:81 |
| 82 | 336222.5624 | 0.0540 | 1373791.6760 | 0.0500 | 272.73 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:82 |
| 83 | 335686.6571 | 0.0600 | 1373767.9656 | 0.0440 | 274.94 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:83 |
| 84 | 335234.3631 | 0.0610 | 1373944.9963 | 0.0630 | 285.20 | 0.008 | CTL | PD:STD.AHTD MON. STAMPED PN:84 |
| 85 | 334598.3592 | 0.0490 | 1373910.1634 | 0.0460 | 288.61 | 0.009 | CTL | PD:STD.AHTD MON. STAMPED PN:85 |
| 86 | 334192.0324 | 0.0154 | 1373947.0089 | 0.0222 | 297.94 | 0.009 | CTL | PD:STD.AHTD MON. STAMPED PN:86 |
| 87 | 333688.9879 | 0.0153 | 1374074.6280 | 0.0195 | 302.12 | 0.009 | CTL | PD:STD.AHTD MON. STAMPED PN:87 |
| 88 | 333321.2749 | 0.0340 | 1374142.3761 | 0.0330 | 309.55 | 0.010 | CTL | PD:STD.AHTD MON. STAMPED PN:88 |
| 89 | 332698.5727 | 0.0580 | 1374128.9457 | 0.0530 | 321.36 | 0.010 | CTL | PD:STD.AHTD MON. STAMPED PN:89 |
| 100 | 336040.5584 | 0.0000 | 1388587.1431 | 0.0000 | 227.91 | 0.000 | GPS | PD:AHTD GPS MON. 730026 |
| 101 | 337795.0062 | 0.0000 | 1388545.8481 | 0.0000 | 230.06 | 0.000 | GPS | PD:AHTD GPS MON.730026A |
| 103 | 340312.2341 | 0.0001 | 1397794.1728 | 0.0001 | 212.65 | 0.008 | GPS | PD:AHTD GPS 730027A |
| 104 | 341625.4675 | 0.0001 | 1410523.1275 | 0.0001 | 249.80 | 0.008 | GPS | PD:AHTD GPS 730028 |
| 105 | 340623.4747 | 0.0001 | 1410074.9466 | 0.0001 | 259.11 | 0.007 | GPS | PD:AHTD GPS 730028A |
| 106 | 339625.4950 | 0.0000 | 1375347.9597 | 0.0000 | 437.08 | 0.000 | GPS | PD:AHTD GPS MON.730036 |
| 107 | 340566.3757 | 0.0000 | 1375216.6048 | 0.0000 | 435.37 | 0.000 | GPS | PD:AHTD GPS MON.730036A |
| 108 | 332616.2482 | 0.0000 | 1379087.0577 | 0.0000 | 295.42 | 0.000 | GPS | PD:AHTD GPS MON.730014 |
| 109 | 332862.9517 | 0.0000 | 1380896.9718 | 0.0000 | 288.80 | 0.000 | GPS | PD:AHTD GPS MON.730014A |
| 900 | 331949.3346 | 30.0000 | 1389961.5847 | 30.0000 | 251.49 | 0.000 | BM | |
| 901 | 333973.2833 | 30.0000 | 1390619.7773 | 30.0000 | 264.28 | 0.004 | BM | PD:NGS MARK H 8 |
| 902 | 336805.9020 | 30.0000 | 1391192.7762 | 30.0000 | 211.91 | 0.005 | TBM | PD:BRIDGE ABUTTMENT |
| 903 | 339537.1991 | 30.0000 | 1391683.0095 | 30.0000 | 223.49 | 0.006 | TBM | PD:CHISELED SQ.WEST CON.HW |
| 904 | 340346.0761 | 30.0000 | 1391680.8284 | 30.0000 | 224.51 | 0.006 | TBM | PD:DRAINAGE AREA |
| 905 | 340355.6757 | 30.0000 | 1395163.5873 | 30.0000 | 273.03 | 0.007 | TBM | PD:GROUND |
| 906 | 340258.5693 | 30.0000 | 1396573.5638 | 30.0000 | 227.38 | 0.008 | TBM | PD:AT SEWAGE TREATMENT PLANT |
| 907 | 340565.9684 | 30.0000 | 1397982.3733 | 30.0000 | 214.65 | 0.007 | TBM | PD:CON.SEWER MH |
| 908 | 341076.1458 | 30.0000 | 1399556.3959 | 30.0000 | 223.79 | 0.007 | TBM | PD:CHISELED SQ.NW CON.BR.COR |
| 909 | 341178.4875 | 30.0000 | 1399970.6990 | 30.0000 | 223.88 | 0.007 | TBM | PD:BR.CORNER STAMPED "22366" |
| 910 | 341589.4274 | 30.0000 | 1402125.3969 | 30.0000 | 229.44 | 0.008 | TBM | PD:CATTLE GUARD |
| 911 | 341697.7154 | 30.0000 | 1404446.8212 | 30.0000 | 224.62 | 0.007 | TBM | PD:FH PAINTED WHITE |
| 912 | 341302.5094 | 30.0000 | 1407350.2929 | 30.0000 | 249.98 | 0.007 | TBM | PD:CPS IN N EP |
| 913 | 340703.7180 | 30.0000 | 1409756.9859 | 30.0000 | 259.56 | 0.007 | TBM | PD:BR AT HWY 67 |
| 914 | 340106.5338 | 30.0000 | 1412578.3950 | 30.0000 | 234.77 | 0.007 | TBM | PD:HWY 367/385 |
| 915 | 342833.9567 | 30.0000 | 1411822.8489 | 30.0000 | 263.24 | 0.006 | TBM | PD:SIGN BASE |
| 916 | 345165.1314 | 30.0000 | 1413473.1678 | 30.0000 | 291.43 | 0.006 | TBM | PD:CPS IN E ASP SH HWY 67 |
| 917 | 346581.5213 | 30.0000 | 1413717.0153 | 30.0000 | 340.74 | 0.005 | TBM | PD:AND CEDAR CREST RD |
| 918 | 349513.6996 | 30.0000 | 1413706.9068 | 30.0000 | 373.77 | 0.004 | TBM | PD:CPS IN S EDGE ASP DW |
| 919 | 352041.7263 | 30.0000 | 1413781.0829 | 30.0000 | 417.62 | 0.004 | TBM | PD:MISSILE BASE RD |
| 920 | 354873.0840 | 30.0000 | 1413854.1960 | 30.0000 | 410.47 | 0.002 | TBM | PD:RR SPIKE IN E EP |
| 921 | 356187.5112 | 30.0000 | 1413849.6577 | 30.0000 | 410.75 | 0.000 | BM | PD:NGS MARK Q 205 |
| 922 | 340605.3666 | 30.0000 | 1410586.5410 | 30.0000 | 246.78 | 0.007 | TBM | PD:HWY 67\385 OVERPASS |
| 923 | 340299.7554 | 0.0710 | 1391729.2335 | 0.0630 | 224.51 | 0.001 | TBM | PD:CHISELED SQ.SE BRIDGE CORNER |
| 929 | 340373.6169 | 0.0850 | 1390724.0079 | 0.0850 | 237.16 | 0.004 | TBM | PD:CPS IN PP 15'N OF CREEK ON PWRLINE RW |
| 930 | 340549.4899 | 0.0710 | 1389026.3845 | 0.0660 | 283.93 | 0.005 | TBM | PD:CPS IN PP 6'E OF 4 BARB FE ON PWR LINE RW |
| 931 | 340608.2273 | 0.0760 | 1387214.5864 | 0.0850 | 297.68 | 0.005 | TBM | PD:ALUM DISK SET IN N END OF HW |
| 932 | 339959.5635 | 0.0810 | 1387739.0554 | 0.0650 | 288.99 | 0.006 | TBM | PD:CHISELED SQ. S END DI |
| 933 | 341346.6209 | 0.0710 | 1386644.8408 | 0.0710 | 329.73 | 0.006 | TBM | PD:BOLT HEAD IN FH WITH FILED "X" |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

3/2/2016

R050249.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. | | 050249 | 64 | 242 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

| Point No. | Northing | SY | Easting | SX | Elevation | SZ | Feature Code | Point Description |
|---|---|---|---|---|---|---|---|---|
| 934 | 340573.9423 | 0.0920 | 1385937.0968 | 0.0490 | 334.81 | 0.006 | TBM | PD:CPS IN PP |
| 935 | 340536.7627 | 0.0760 | 1384753.8491 | 0.0770 | 353.40 | 0.006 | TBM | PD:CPS IN PP E SIDE GRAVEL RD |
| 936 | 340902.9471 | 0.0750 | 1383730.5639 | 0.0720 | 388.98 | 0.007 | TBM | PD:CPS IN CP E SIDE GRAVEL RD |
| 937 | 340493.1573 | 0.0810 | 1383712.6240 | 0.0790 | 311.12 | 0.006 | TBM | PD:BOLT HEAD ON FH WITH FILED "X" |
| 938 | 340566.6315 | 0.0910 | 1382257.8191 | 0.0930 | 296.94 | 0.006 | TBM | PD: |
| 939 | 340754.5603 | 0.0730 | 1381389.0413 | 0.0590 | 314.35 | 0.007 | TBM | PD: |
| 940 | 340810.7168 | 0.0730 | 1380552.0824 | 0.0590 | 372.72 | 0.007 | TBM | PD: |
| 941 | 340937.8933 | 0.1050 | 1380083.7853 | 0.0880 | 393.61 | 0.006 | TBM | PD: |
| 942 | 340723.8878 | 0.0880 | 1379199.0143 | 0.0820 | 409.66 | 0.007 | TBM | PD: |
| 943 | 341340.8372 | 0.0650 | 1378031.7451 | 0.0580 | 359.05 | 0.005 | TBM | PD: |
| 944 | 340743.4649 | 0.0890 | 1376862.4982 | 0.0620 | 418.02 | 0.005 | TBM | PD: |
| 945 | 339625.1315 | 0.0860 | 1375400.6212 | 0.0700 | 440.78 | 0.001 | TBM | PD: |
| 946 | 338831.2440 | 0.0630 | 1374248.3181 | 0.0720 | 348.72 | 0.004 | TBM | PD: |
| 947 | 337850.8576 | 0.0960 | 1373466.2722 | 0.0660 | 305.34 | 0.006 | TBM | PD: |
| 948 | 337884.5120 | 0.1100 | 1374465.0458 | 0.0630 | 309.11 | 0.005 | TBM | PD: |
| 949 | 335844.6409 | 30.0000 | 1373770.5586 | 30.0000 | 274.39 | 0.007 | BM | PD:CPS IN OAK |
| 950 | 334600.4721 | 0.0800 | 1374078.6391 | 0.0750 | 292.62 | 0.007 | TBM | PD: |
| 951 | 332690.4266 | 0.0980 | 1374308.6409 | 0.0980 | 320.08 | 0.008 | TBM | PD: |

*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: 100-109*
- Horizontal - Primary (2.0cm± 20PPM): — *PN:1-89*
- Horizontal - Secondary (3 cm ± 50PPM): — *PN:N/A*
- Vertical - NGS 1st Order (±4mm x √dist in km) — *PN:900-901*
- Vertical - NGS 2nd Order (±6mm x √dist in km) — *PN:N/A*
- Vertical - NGS 3rd Order (±8mm x √dist in km) — *PN:902-951*

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: 0.999944321 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:
A project Elevation Factor of: 0.9999855772 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 301.53 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-89, 100-109 From NGS BM: SEARCY RM 1 -Q 205

Basis of Bearing: Grid Bearings based on AHTD GPS points: *730027A, 730028-730028A*
Convergence Angle is: 00 10 37.0 RIGHT at PN: 18
LT: 35-09-42.7 N LG: 091-24-52.3 W
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.***

3/2/2016

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## HWY. 13

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8000 | POB | 100+00.00 | 332425.1199 | 1374079.6148 |
| 8001 | PI | 102+11.94 | 332665.4423 | 1374095.7714 |
| 8003 | PC | 110+23.95 | 333477.3557 | 1374108.1797 |
| 8006 | PT | 114+03.48 | 333850.8918 | 1374051.6033 |
| 8007 | PC | 117+77.32 | 334206.2382 | 1373935.4522 |
| 8010 | PT | 121+39.34 | 334562.2637 | 1373878.7420 |
| 8012 | PC | 148+43.00 | 337265.9275 | 1373878.7420 |
| 8015 | PT | 152+27.45 | 337645.7718 | 1373930.0238 |
| 8016 | PC | 162+72.37 | 338653.2876 | 1374207.1185 |
| 8019 | PT | 171+32.40 | 339367.1608 | 1374663.2793 |
| 8021 | PC | 182+22.98 | 340071.3870 | 1375495.9977 |
| 8024 | PT | 188+32.64 | 340384.7465 | 1376015.9502 |
| 8025 | PC | 201+73.13 | 340885.4073 | 1377259.4306 |
| 8028 | PT | 206+11.75 | 340968.3333 | 1377687.4207 |
| 8030 | PC | 213+80.53 | 340968.3333 | 1378456.2014 |
| 8033 | PT | 222+18.40 | 340937.7157 | 1379293.3186 |
| 8034 | PC | 257+26.92 | 340681.4106 | 1382792.4619 |
| 8037 | PT | 260+27.71 | 340655.5025 | 1383092.1281 |
| 8039 | PC | 268+27.59 | 340576.1517 | 1383888.0654 |
| 8042 | PT | 272+66.66 | 340549.3695 | 1384326.2106 |
| 8043 | PC | 284+55.29 | 340522.3492 | 1385514.5337 |
| 8046 | PT | 290+93.43 | 340613.7057 | 1386143.1029 |
| 8048 | PC | 295+93.46 | 340766.9088 | 1386619.0883 |
| 8051 | PT | 306+96.57 | 340791.4931 | 1387706.6476 |
| 8052 | POE | 309+87.06 | 340715.0761 | 1387986.9102 |

## HWY. 36

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8054 | POB | 0+00.00 | 332691.4757 | 1373763.5760 |
| 8055 | POE | 6+30.03 | 332645.7582 | 1374391.9494 |

## COLLINS RD.

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8056 | POB | 500+00.00 | 337870.2349 | 1373389.2755 |
| 8058 | PC | 500+17.11 | 337870.2578 | 1373406.3848 |
| 8061 | PT | 506+74.29 | 337889.9766 | 1374063.1817 |
| 8062 | POE | 509+05.94 | 337903.5640 | 1374294.4336 |

## HOLMES RD.

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8064 | POB | 600+00.00 | 341198.3486 | 1378285.6843 |
| 8065 | PC | 600+24.74 | 341179.8803 | 1378302.1517 |
| 8068 | PT | 601+56.92 | 341062.4554 | 1378359.0713 |
| 8070 | PC | 602+66.76 | 340954.2791 | 1378378.1457 |
| 8073 | PT | 605+73.49 | 340758.4836 | 1378586.6971 |
| 8074 | POE | 611+34.87 | 340696.0410 | 1379144.5972 |

## COVINGTON RD.

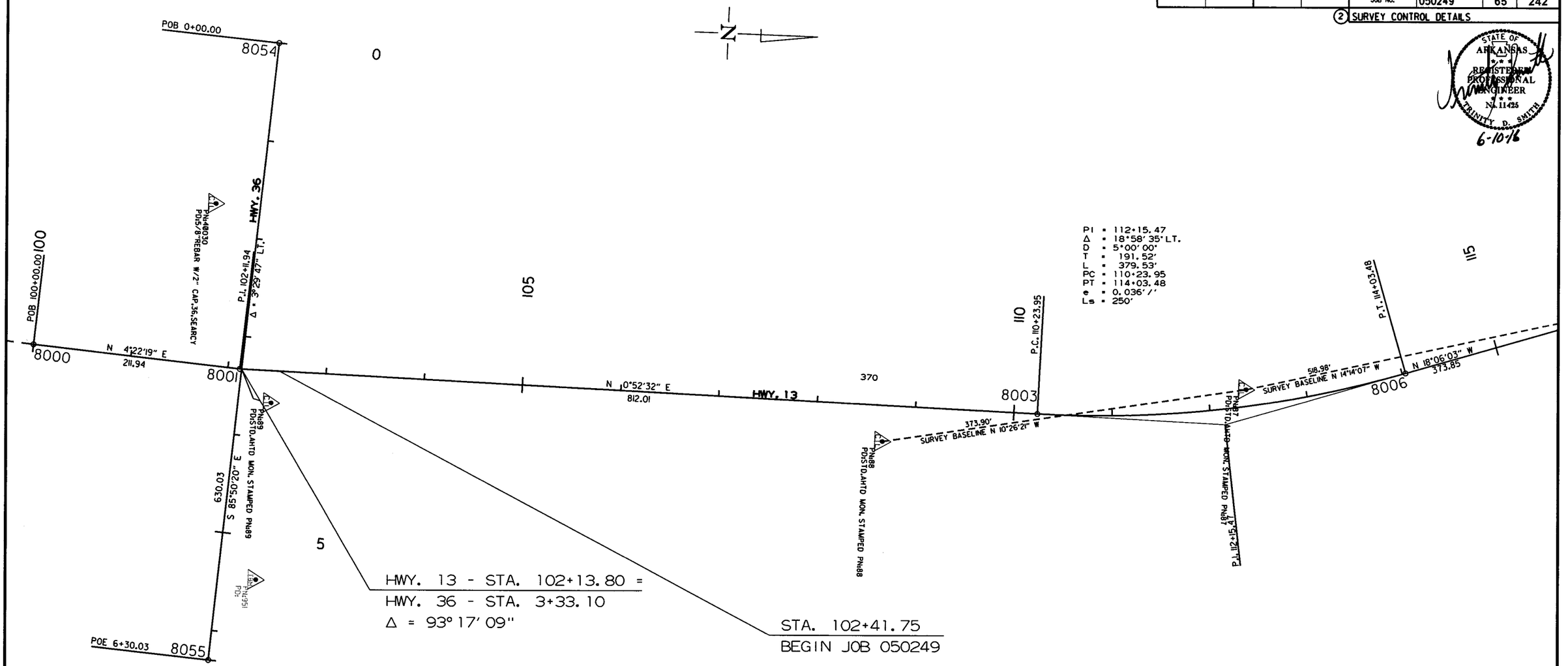
| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8076 | POB | 700+00.00 | 340852.0460 | 1383920.4413 |
| 8077 | PC | 702+99.04 | 340749.5280 | 1384201.3550 |
| 8080 | PT | 705+33.42 | 340581.7937 | 1384351.4535 |
| 8082 | POE | 705+67.58 | 340548.6116 | 1384359.5409 |

SURVEY CONTROL DETAILS

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| | | | | 6 | ARK. | | | |
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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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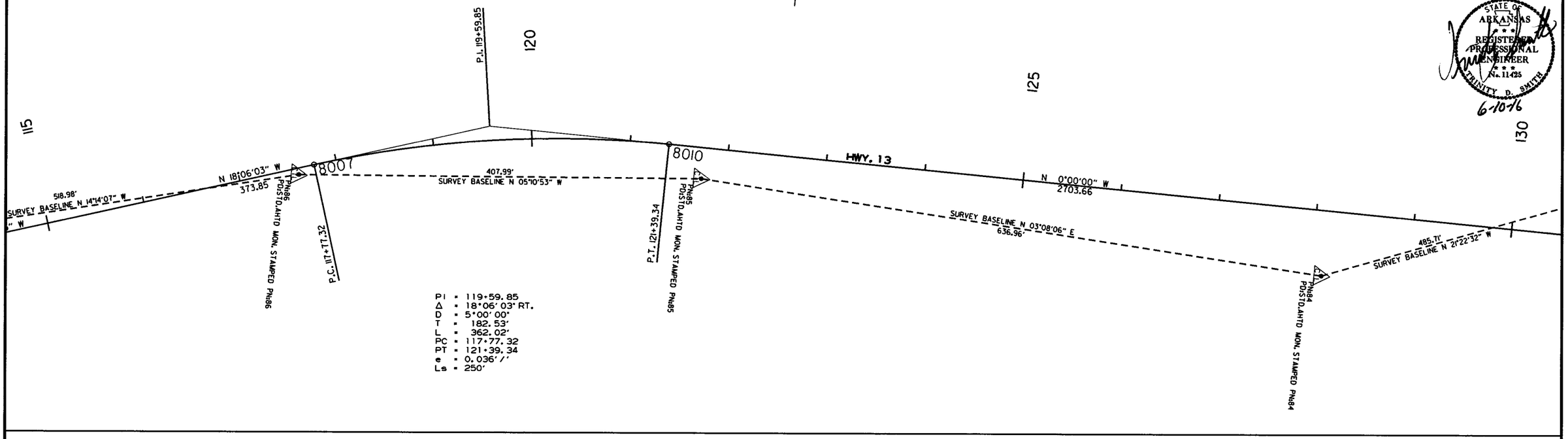
R050249.DGN

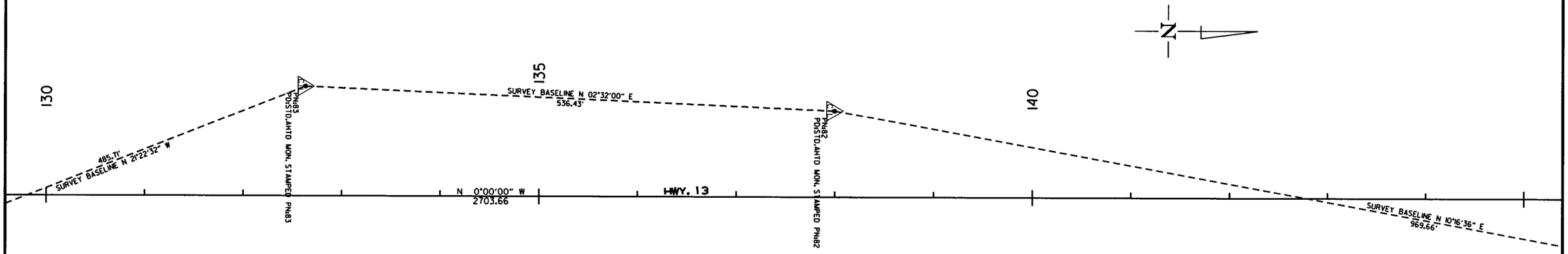
SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

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No. 11425
TRINITY D. SMITH
6-10-16

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 71°15'35"

145 150 155 505

P.I. 150+36.39

N 0°00'00" W 2703.66

8012

8015

SURVEY BASELINE N 06°05'40" E 818.60'

SURVEY BASELINE N 00°30'03" E 697.40'

SURVEY BASELINE N 10°16'36" E 969.66'

PN81 PDS51D.AHTD MON. STAMPED PN81

P.C. 148+43.00

P.T. 152+27.45

PI = 150+36.39
Δ = 15°22'40" RT.
D = 4°00'00"
T = 193.38'
L = 384.44'
PC = 148+43.00
PT = 152+27.45
e = 0.083'/'
Ls = 300'

COLLINS RD.

PN79 PDS51D.AHTD MON. STAMPED PN79

8061

N 15°22'40" E 1044.93

HWY. 13

P.T. 506+74.29

S 15°15'39" E 591.22'

N 1,585,398

8062

POE 509+05.94

P.I. 167+15.79

165 170 175

SURVEY BASELINE N 33°39'07" E 586.30'

PN77 PDS51D.AHTD MON. STAMPED PN77

PN76 PDS51D.AHTD MON. STAMPED PN76

HWY. 13

160

SURVEY BASELINE N 06°05'40" E 818.60'

8016

N 15°22'40" E 1044.93

P.C. 162+72.37

8019

N 49°46'44" E 1090.58

SURVEY BASELINE N 61°04'30" E 668.67'

P.T. 171+32.40

PI = 167+15.79
Δ = 34°24'04" RT.
D = 4°00'00"
T = 443.42'
L = 860.03'
PC = 162+72.37
PT = 171+32.40
e = 0.083'/'
Ls = 300'

PN75 PDS51D.AHTD MON. STAMPED PN75

SURVEY BASELINE N 71°39'28" E 400.48'

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SURVEY CONTROL DETAILS

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| | | | | 6 | ARK. | | | |
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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
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175 180 185 190 195 200 205

N

HWY. 13

N 49°46'44" E
1090.58

8021

P.C. 182+22.98

PN:74 PD:STD.AHTD MON. STAMPED PN:74

P.I. 185+30.43

PI = 185+30.43
Δ = 18°17'24" RT.
D = 3°00'00"
T = 307.45'
L = 609.66'
PC = 182+22.98
PT = 188+32.64
e = 0.067'/'
Ls = 300'

8024

P.T. 188+32.64

N 68°04'08" E
1340.49

SURVEY BASELINE N 71°39'28" E
400.49'

PN:06 PD:AHTD GPS MON.730036

SURVEY BASELINE N 47°21'37" E
350.38'

PN:73 PD:STD.AHTD MON. STAMPED PN:73

SURVEY BASELINE N 60°26'01" E
643.26'

PN:72 PD:STD.AHTD MON. STAMPED PN:72

SURVEY BASELINE N 51°42'47" E
305.16'

N

PN:69 PD:STD.AHTD MON. STAMPED PN:69

HWY. 13

N 68°04'08" E
1340.49

SURVEY BASELINE N 44°59'36" E
324.84'

PN:92 PD:STD.AHTD MON. STAMPED PN:68

8025

P.I. 203+95.16

N 90°00'00" E

SURVEY BASELINE N 75°57'28" E
856.89'

P.C. 201+73.13

PI = 203+95.16
Δ = 21°55'52" RT.
D = 5°00'00"
T = 222.03'
L = 438.62'
PC = 201+73.13
PT = 206+11.75
e = 0.091'/'
Ls = 350'

SURVEY BASELINE N 63°27'42" E
432.62'

PN:70 PD:STD.AHTD MON. STAMPED PN:70

SURVEY BASELINE N 51°42'47" E
305.16'

PN:71 PD:STD.AHTD MON. STAMPED PN:71 WOODS

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
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HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80° 00' 00.00"

PI = 600+92.57
Δ = 31°43'19" RT.
D = 24°00'00"
T = 67.83'
L = 132.17'
PC = 600+24.74
PT = 601+56.92
e = 0.100'/'
Ls = 250'

8064 — POB 600+00.00 — P.C. 600+24.74 — S 41°43'19" E 24.74 — 8065 — P.I. 600+92.57 — P.T. 601+56.92 — 8068 — S 10°00'00" E 109.85 — 8070

PI = 203+95.16
Δ = 21°55'52" RT.
D = 5°00'00"
T = 222.03'
L = 438.62'
PC = 201+73.13
PT = 206+11.75
e = 0.091'/'
Ls = 350'

8028 — P.T. 206+11.75 — SURVEY BASELINE N 75°57'28" E 856.89' — PN:66 PD:STD.AHTD MON. STAMPED PN:66 — N 90°00'00" E 768.78 — SURVEY BASELINE S 83°48'51" E 698.06' — P.C. 602+66.76

8030 — HWY. 13 — S 85°48'38" E — P.I. 217+99.65

PI = 217+99.65
Δ = 4°11'22" RT.
D = 0°30'00"
T = 419.12'
L = 837.86'
PC = 213+80.53
PT = 222+18.40
NO SUPER

P.C. 213+80.53 — PN:63 PD:STD.AHTD MON. STAMPED PN:63 — SURVEY BASELINE S 71°55'22" E 438.80'

PI = 604+45.40
Δ = 73°36'50" LT.
D = 24°00'00"
T = 178.64'
L = 306.72'
PC = 602+66.76
PT = 605+73.49
e = 0.100'/'
Ls = 250'

P.T. 605+73.49 — 8073 — HOLMES RD. — S 83°36'50" E 561.38 — P.I. 604+45.40

SURVEY BASELINE N 72°53'22" E 610.78' — PN:62 PD:STD.AHTD MON. STAMPED PN:62

PN:67 PD:STD.AHTD MON. STAMPED PN:67

205 210 215 220 225 230 605 610

N

8033 — P.T. 222+18.40 — SURVEY BASELINE N 72°53'22" E 670.78' — PN:60 PD:STD.AHTD MON. STAMPED PN:60 — SURVEY BASELINE S 84°36'12" E 480.90' — PN:59 PD:STD.AHTD MON. STAMPED PN:59 — SURVEY BASELINE S 72°50'55" E 286.46' — PN:58 PD:STD.AHTD MON. STAMPED PN:58 — SURVEY BASELINE S 76°28'45" E 194.64' — SURVEY BASELINE S 83°23'04" E 396.45' — PN:57 PD:STD.AHTD MON. STAMPED PN:57

S 85°48'38" E 3508.52 — HWY. 13

PI = 217+99.65
Δ = 4°11'22" RT.
D = 0°30'00"
T = 419.12'
L = 837.86'
PC = 213+80.53
PT = 222+18.40
NO SUPER

POE 611+34.87 — HOLMES RD. S 83°36'50" E 561.38 — 8074

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

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No. 11425
TRINITY D. SMITH
6-10-16

235 240 245

S 85°48'38" E 3508.52 HWY. 13

PN:57 PD:STD.AHTD MON. STAMPED PN:57

SURVEY BASELINE S 83°23'04" E 396.45'

PN:91 PD:STD.AHTD MON. STAMPED PN:56

SURVEY BASELINE N 87°37'37" E 406.97'

PN:55 PD:STD.AHTD MON. STAMPED PN:55

SURVEY BASELINE N 89°48'55" E 506.98'

PN:54 PD:STD.AHTD MON. STAMPED PN:54

SURVEY BASELINE S 63°45'41" E 466.36'

250 255 260 265

P.I. 258+77.32

S 85°48'38" E 3508.52 HWY. 13

8034

8037

S 84°18'24" E 799.88

P.C. 257+26.92

P.T. 260+27.71

PI = 258+77.32
Δ = 1°30'14" RT.
D = 0°30'00"
T = 150.41'
L = 300.79'
PC = 257+26.92
PT = 260+27.71
NO SUPER

SURVEY BASELINE S 63°45'41" E 466.36'

PN:90 PD:STD.AHTD MON. STAMPED PN:53

SURVEY BASELINE S 74°48'45" E 449.11'

PN:52 PD:STD.AHTD MON. STAMPED PN:52

SURVEY BASELINE S 88°41'24" E 666.48'

SURVEY BASELINE S 88°47'24" E 706.19'

PN:51 PD:STD.AHTD MON. STAMPED PN:51

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

8076
POB 700+00.00
S 69°57'03" E
299.04
COVINGTON RD.
8077
P.I. 704+26.65
PI = 270+47.23
Δ = 4°23'26.53" LT.
D = 1°00'00"
T = 219.64'
L = 439.07'
PC = 268+27.59
PT = 272+66.66
e = 0.026'/'
Ls = 300'
PI = 704+26.65
Δ = 56°15'12" RT.
D = 24°00'00"
T = 127.61'
L = 234.39'
PC = 702+99.04
PT = 705+33.42
e = 0.100'/'
Ls = 250'
PN:47
PD:STD.AHTD MON. STAMPED PN:47
265
270
275
705
2806
P.C. 268+27.59
P.C. 702+99.04
S 84°18'24" E
799.88
HWY. 13
S 84°18'24" E
8039
8080
8081
8082
S 13°41'51" E
34.15
P.T. 705+33.42
POE 705+67.58
8042
P.T. 272+66.66
S 88°41'51" E
1188.63
SURVEY BASELINE N 85°16'55" E
310.03'
PN:45
PD:STD.AHTD MON. STAMPED PN:45
PN:46
PD:STD.AHTD MON. STAMPED PN:46
HWY. 13 - STA. 273+00.00 =
COVINGTON RD. - STA. 705+67.58
Δ = 75°00'00"
P.I. 270+47.23
SURVEY BASELINE S 88°47'24" E
706.19'
SURVEY BASELINE S 89°30'32" E
520.57'
SURVEY BASELINE N 40°40'14" E
193.54'
PN:50
PD:STD.AHTD MON. STAMPED PN:50
PN:49
PD:STD.AHTD MON. STAMPED PN:49

N

280
285
290
PI = 287+77.36
Δ = 19°08'39" LT.
D = 3°00'00"
T = 322.07'
L = 638.14'
PC = 284+55.29
PT = 290+93.43
e = 0.067'/'
Ls = 300'
PN:45
PD:STD.AHTD MON. STAMPED PN:45
SURVEY BASELINE S 85°25'11" E
542.89'
S 88°41'51" E
1188.63
HWY. 13
P.C. 284+55.29
8043
PN:44
PD:STD.AHTD MON. STAMPED PN:44
P.I. 287+77.36
P.T. 290+93.43
8046
N 72°09'30" E
500.03
SURVEY BASELINE N 88°23'56" E
806.04'
SURVEY BASELINE N 80°18'54" E
760.10'
PN:43
PD:STD.AHTD MON. STAMPED PN:43

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SURVEY CONTROL DETAILS

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 72 | 242 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

505
PC 505+22.33
PT 506+39.16
PI 505+80.75
HWY. 16
510
S 31°47'03" E
P.I. 301+60.88
300
305
HWY. 13
295
8048
N 72°09'30" E
500.03
P.C. 295+93.46
SURVEY BASELINE N 80°18'54" E
760.10'
STA. 298+10.57
END FULL BUILD
& BEGIN PAVING
PI = 301+60.88
Δ = 33°05'36" RT.
D = 3°00'00"
T = 567.42'
L = 1103.11'
PC = 295+93.46
PT = 306+96.57
e = 0.067'/'
Ls = 300'
8051
S 74°44'54" E
290.49
POE 309+87.06
8052
P.T. 306+96.57
PN:801
PD:CAP/REBAR
STA. 298+27.20
END JOB 050249
SURVEY BASELINE S 81°57'41" E
4642.85'
PN:38
PD:STD.AHTD MON STAMPED PN:38 SEARCY
ON. STAMPED PN:43
PN:41
PD:STD.AHTD MON STAMPED PN:41 SEARCY
PC 514+70.46
515
PI 515+97.58
PT 517+24.66
S 40°19'34" E

3/2/2016
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SURVEY CONTROL DETAILS

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 73 | 242 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

PI = 503+45.79
Δ = 3°17'09" LT.
D = 0°30'00"
T = 328.68'
L = 657.18'
PC = 500+17.11
PT = 506+74.29
NO SUPER

500
POB 500+00.00
P.C. 500+17.11
117.11'
8056
8058
N 89°55'24" E
COLLINS RD.
155
505
SURVEY BASELINE N 05°05'40" E
818.60'
N 15°22'40" E
1044.93
P.I. 506+74.29
231.65
N 86°38'15" E
8061
8062
POE 509+05.94
P.I. 503+45.79
PN#79
PD:STD.AHTD MON. STAMPED PN#79
PN#78
PD:STD.AHTD MON. STAMPED PN#78
SURVEY BASELINE N 00°30'03" E
697.60'

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 108°44'25"

COLLINS RD.

PN#64
PD:STD.AHTD MON. STAMPED PN#64
POB 600+00.00
8064
S 24.74
S 41°43'19" E
8065
P.I. 600+92.57
P.C. 600+24.74
PI = 600+92.57
Δ = 31°43'19" RT.
D = 24°00'00"
T = 67.83'
L = 132.17'
PC = 600+24.74
PT = 601+56.92
e = 0.100'/'
Ls = 250'
215
HWY. 13
S 85°48'38" E
SURVEY BASELINE N 72°53'22" E
670.78'
PN#62
PD:STD.AHTD MON. STAMPED PN#62
POE 611+96.87
619
8074
P.T. 601+56.92
S 10°00'00" E
109.88'
8068
PN#63
PD:STD.AHTD MON. STAMPED PN#63
SURVEY BASELINE S 71°55'22" E
438.80'
8030
HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"
210
SURVEY BASELINE S 83°48'51" E
596.06'
P.C. 602+66.76
8070
P.C. 602+12.73
605
P.T. 605+73.49
HOLMES RD.
S 83°36'50" E
561.38'
8073
PN#66
PD:STD.AHTD MON. STAMPED PN#66
N 90°00'00" E
768.78'
PI = 604+45.40
Δ = 73°36'50" LT.
D = 24°00'00"
T = 178.64'
L = 306.72'
PC = 602+66.76
PT = 605+73.49
e = 0.100'/'
Ls = 250'
P.I. 604+45.40

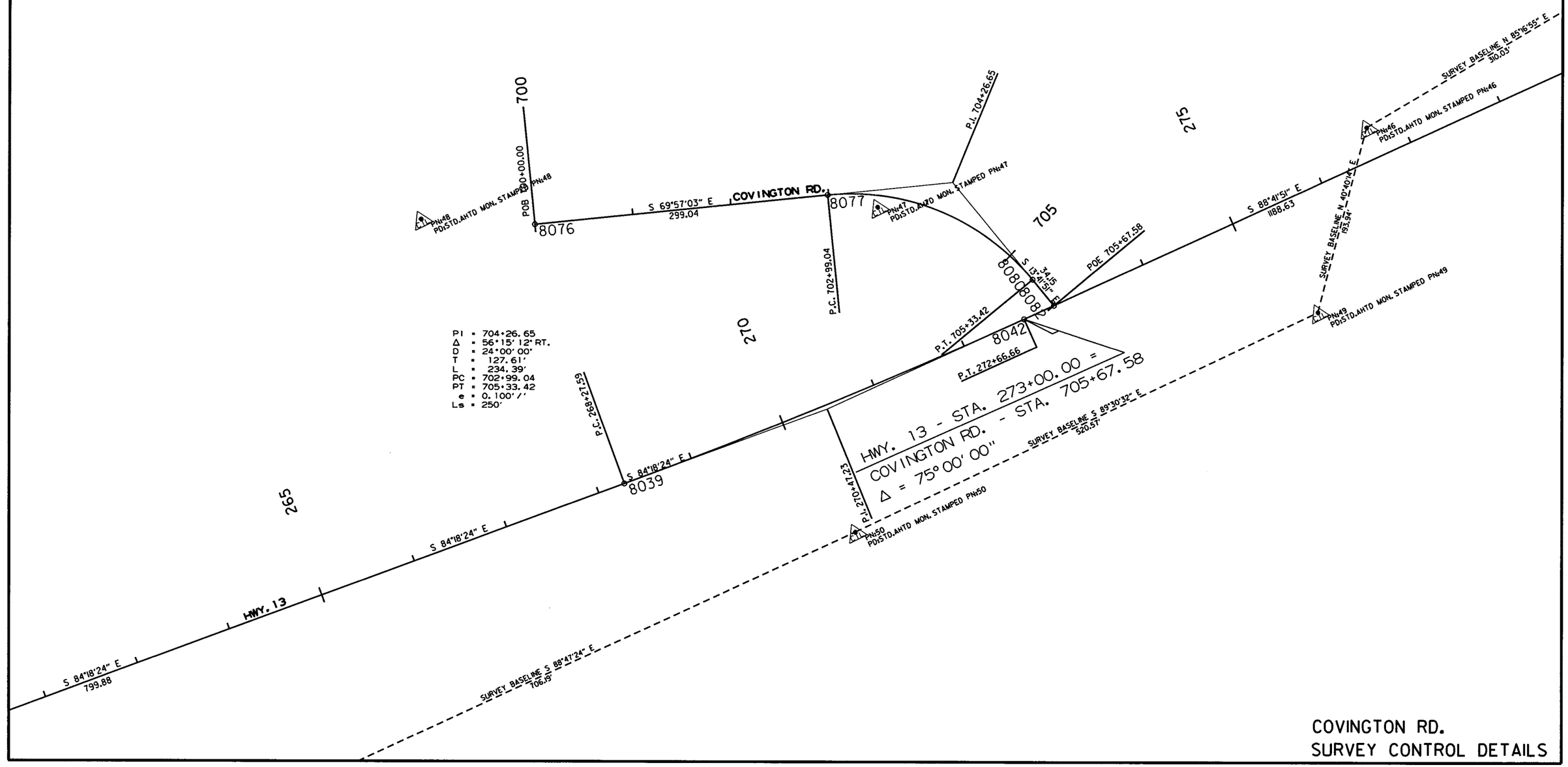
HOLMES RD.
SURVEY CONTROL DETAILS

3/2/2016
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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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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 74 | 242 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




COVINGTON RD.
SURVEY CONTROL DETAILS

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 75 | 242 |

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY D. SMITH
6-10-16

STA. 0+42 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
HWY. 36 ON LT. = 3.3 SQ. YDS.

STA. 1+07 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
HWY. 36 ON LT. = 5.4 SQ. YDS.

STA. 1+64 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
HWY. 36 ON LT. = 5.4 SQ. YDS.

POB 0+00.00

EXIST. R/W

135' TAPER

HWY. 36

P.I. 102+11.94
Δ = 3°29'47" LT.

HONEY HILL RD.

EXIST. R/W

N 4°22'19" E
JOB 050189

EXIST. R/W

S 85°50'20" E

POF 6+30.03

EXIST. R/W

EXIST. R/W

STA. 103+10 CONSTRUCT
D.I. ON LT. WITH
18" x 45' PIPE OUTLET
CONNECT TO D.I. @ 103+55 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 102+66 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP
ISLAND ON LT. = 2.7 SQ. YDS.

STA. 102+66 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP
ISLAND ON LT. = 2.7 SQ. YDS.

STA. 102+66 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP
ISLAND ON LT. = 2.7 SQ. YDS.

STA. 103+55 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 141' PIPE OUTLET
CONNECT TO D.I. @ 105+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 102+97 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
ON LT. = 2.4 SQ. YDS.

STA. 105+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 245' PIPE OUTLET
CONNECT TO D.I. @ 107+50 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 107+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 76' PIPE OUTLET
CONNECT TO D.I. @ 108+30 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

STA. 108+30 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 66' PIPE OUTLET
CONNECT TO D.I. @ 109+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 109+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 170' PIPE OUTLET
CONNECT TO D.I. @ 110+75 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 110+75 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 30" x 69' PIPE OUTLET
CONNECT TO D.I. @ 111+50 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 111+50 CONSTRUCT
D.I. ON LT. WITH
30" x 143' PIPE OUTLET
CONNECT TO D.I. @ 113+00 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 113+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 30" x 84' PIPE OUTLET
CONNECT TO D.I. @ 113+90 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 113+90 CONSTRUCT
D.I. ON LT. WITH OPENING IN BACK
& 30" x 105' PIPE OUTLET
CONNECT TO D.I. @ 115+00 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 115+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 145' PIPE OUTLET
CONNECT TO D.I. @ 116+50 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

MARCUS SHANE LN.

125' R

PROP. R/W

STA. 1+87 IN PLACE
D.I. ON LT.
REMOVE

CONST. LIMITS

425' TAPER

PROP. R/W

N 10°52'32" E

HWY. 13

15'-0"

CONST. LIMITS

PROP. R/W

350' TAPER

125' R

PROP. R/W

135' TAPER

STA. 5+44 IN PLACE
D.I. ON LT.
REMOVE

HWY. 13 - STA. 102+13.80 =
HWY. 36 - STA. 3+33.10
Δ = 93°17'09"

STA. 102+41.75
BEGIN JOB 050249

PI = 112+15.47
Δ = 18°58'35" LT.
D = 5°00'00"
T = 191.52'
L = 379.53'
PC = 110+23.95
PT = 114+03.48
e = 0.036'/'
Ls = 250'

P.C. 110+23.95

P.T. 114+03.48

N 18°06'03" W

PROP. R/W

CONST. LIMITS

PROP. R/W

STA. 102+52 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP
ISLAND ON RT. = 2.7 SQ. YDS.

STA. 102+52 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP
ISLAND ON RT. = 2.7 SQ. YDS.

STA. 102+76 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
ON RT. = 2.4 SQ. YDS.

STA. 6+04 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
HWY. 36 ON LT. = 3.3 SQ. YDS.

STA. 103+25 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 171' PIPE OUTLET
CONNECT TO D.I. @ 105+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 105+00 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' R.C. PIPE CULVERT
WITH FES
& 18" x 246' PIPE OUTLET
CONNECT TO D.I. @ 107+50 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

STA. 107+50 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 3' R.C. PIPE CULVERT
WITH FES
& 18" x 146' PIPE OUTLET
CONNECT TO D.I. @ 109+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

STA. 109+00 CONSTRUCT
D.I. ON RT. WITH
18" x 2' R.C. PIPE CULVERT
WITH FES
& 24" x 31' PIPE OUTLET (CLASS V)
CONNECT TO D.I. @ 109+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 102+88 | 103+10 | LT. | 22 |
| 114+19 | 114+73 | RT. | 82 |

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING

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HWY. 13

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 76 | 242 |

(2) PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 103+10 TOP ELEV.=321.07 F.L. ELEV.=316.07
STA. 103+55 TOP ELEV.=319.82 F.L. ELEV.=314.82
P.V.I. 102+13.84 ELEV. 321.97
P.V.I. 102+41.75 ELEV. 321.49
P.V.C. 103+07.01 ELEV. 320.57
P.V.I. 103+82.01 ELEV. 319.52
P.V.T. 104+57.01 ELEV. 318.06
-1.40%
18"x 45' @ 1.26%
18"x 141' @ 1.29%
K=277.49
VC=150'
e=-0.10'
STA. 105+00 TOP ELEV.=317.31 F.L. ELEV.=312.32
STA. 108+30 TOP ELEV.=311.04 F.L. ELEV.=306.05
STA. 109+00 TOP ELEV.=309.68 F.L. ELEV.=304.69
18"x 246' @ 1.35%
18"x 76' @ 1.42%
18"x 66' @ 1.60%
24"x 170' @ 1.58%
-1.94%
STA. 111+50 TOP ELEV.=304.83 F.L. ELEV.=299.83
30"x 69' @ 1.14%
STA. 113+00 TOP ELEV.=301.92 F.L. ELEV.=296.92
30"x 143' @ 1.63%
STA. 113+90 TOP ELEV.=300.17 F.L. ELEV.=295.17
30"x 84' @ 1.69%
STA. 115+00 TOP ELEV.=298.04 F.L. ELEV.=293.03
30"x 105' @ 1.11%
ELEV. 297.82
STA. 102+41.75
BEGIN JOB 050249
STA. 108+36.45 BEGIN SUPERELEVATION
STA. 110+86.45 MAX. SUPERELEVATION (0.036 '/')
STA. 113+40.00 MAX. SUPERELEVATION (0.036 '/')
STA. 115+90.00 END SUPERELEVATION
UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

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

RIGHT SIDE OF HWY. 13

STA. 103+25 TOP ELEV.=320.09 F.L. ELEV.=315.08
P.V.I. 102+13.84 ELEV. 321.97
P.V.I. 102+41.75 ELEV. 321.49
P.V.C. 103+07.01 ELEV. 320.57
P.V.I. 103+82.01 ELEV. 319.52
P.V.T. 104+57.01 ELEV. 318.06
-1.40%
18"x 171' @ 0.63%
K=277.49
VC=150'
e=-0.10'
STA. 105+00 TOP ELEV.=317.36 F.L. ELEV.=313.36
F.L. INLET = 315.23
18"x 246' @ 1.37%
STA. 107+50 TOP ELEV.=312.60 F.L. ELEV.=308.60
F.L. INLET = 311.11
18"x 146' @ 1.44%
STA. 109+00 TOP ELEV.=309.94 F.L. ELEV.=305.94
F.L. INLET = 309.06
-1.94%
ELEV. 297.82
STA. 102+41.75
BEGIN JOB 050249
UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

350 340 330 320 310 300 290 280 270

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00

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| | | | | JOB NO. | | 050249 | 77 | 242 |

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-76

STA. 116+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 31' PIPE OUTLET (CLASS V)
CONNECT TO D.I. @ 116+50 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"
025 = 33.05 CFS D.A. = 10.09 ACRES

STA. 125+00 CONSTRUCT
D.I. ON LT. WITH
18" x 246' PIPE OUTLET
CONNECT TO D.I. @ 127+50 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 127+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 141' PIPE OUTLET
CONNECT TO D.I. @ 128+95 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 127+00 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 128+95 CONSTRUCT
D.I. ON LT. WITH
24" x 48' R.C. PIPE OUTLET
WITH FES
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 128+97 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
ON LT. = 3.3 SQ. YDS.

+92 208' TAPER +00 +25 25'

115 120 125 130

P.I. 119+59.85

CONST. LIMITS PROP. R/W

N 18°06'03" W

HWY. 13

N 0°00'00" W

PI = 119+59.85
Δ = 18°06'03" RT.
D = 5°00'00"
T = 182.53'
L = 362.02'
PC = 117+77.32
PT = 121+39.34
e = 0.036'/'
Ls = 250'

P.C. 117+77.32

P.T. 121+39.34

SPIKE-IN-DISTURBED MON. STAMPED PK#86

PK#84 PUSH DISTURBED MON. STAMPED PK#84

15'-0" 15'-0" 20'-0" 8'-0" 12'-0" 15'-0" 12'-0" 8'-0"

T.C.E.

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 116+50 | 117+85 | RT. | 6" | 89.33 |
| 121+22 | 122+30 | RT. | 6' | 72.00 |

STA. 102+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP
ON RT. = 3.9 SQ. YDS.

STA. 127+00 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 116+50 CONSTRUCT
D.I. ON RT. WITH
18" x 30' R.C. PIPE CULVERT
WITH FES
& 36" x 129' PIPE OUTLET
CONNECT TO D.I. @ 117+84 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 6'-0"

STA. 117+84 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 6' R.C. PIPE CULVERT
WITH FES
& 36" x 77' PIPE OUTLET
CONNECT TO D.I. @ 118+67 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 118+67 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 36" x 77' PIPE OUTLET
CONNECT TO D.I. @ 119+50 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 119+50 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 118' PIPE OUTLET
CONNECT TO D.I. @ 120+75 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-0"

STA. 120+75 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 36" x 49' PIPE OUTLET
CONNECT TO D.I. @ 121+30 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 4'-6"

STA. 121+30 CONSTRUCT
D.I. ON RT. WITH
36" x 49' PIPE OUTLET
CONNECT TO D.I. @ 121+88 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5'-6"

STA. 121+88 CONSTRUCT
D.I. ON RT. WITH
30" x 4' R.C. PIPE CULVERT
WITH FES
DBL. 36" x 60' R.C. PIPE OUTLET (CLASS IV)
WITH FES
TY C = 12' x 5'
H = 5'-9"
025 = 32 CFS D.A. = 10.72 ACRES

STA. 123+50 CONSTRUCT
D.I. ON RT. WITH OPENING IN BACK
& 18" x 100' PIPE OUTLET
CONNECT TO D.I. @ 124+54 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 124+54 CONSTRUCT
D.I. ON RT. WITH OPENING IN BACK
& 18" x 42' PIPE OUTLET
CONNECT TO D.I. @ 125+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 125+00 CONSTRUCT
D.I. ON RT. WITH
18" x 96' PIPE OUTLET
CONNECT TO D.I. @ 126+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 126+00 CONSTRUCT
D.I. ON RT. WITH
18" x 146' PIPE OUTLET
CONNECT TO D.I. @ 127+50 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 127+50 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 134' PIPE OUTLET
CONNECT TO D.I. @ 128+88 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 128+88 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 36' PIPE OUTLET (CLASS V)
CONNECT TO D.I. @ 128+95 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING

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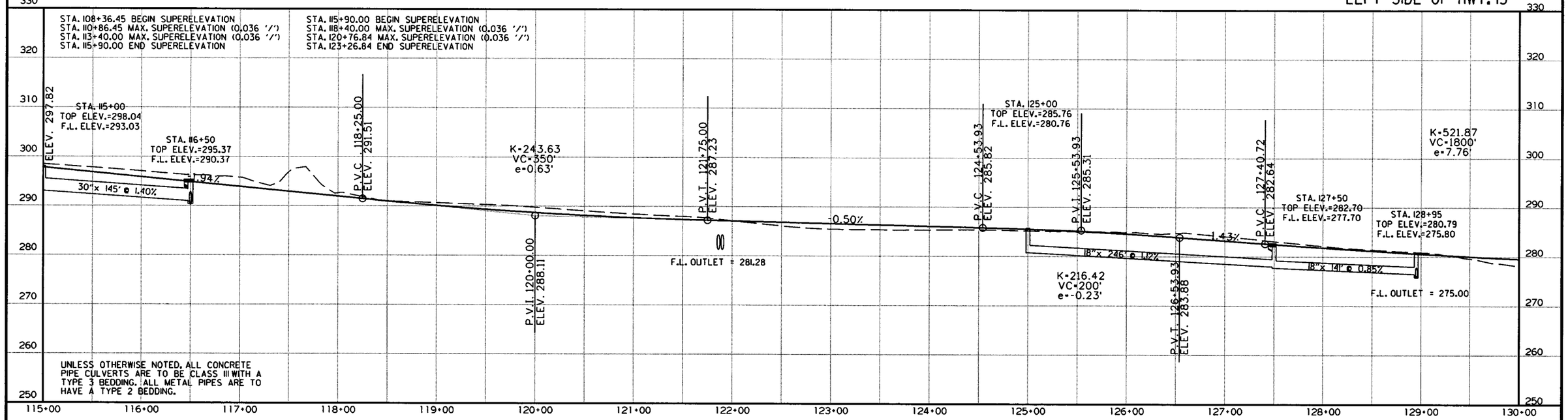
HWY. 13

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 78 | 242 |

(2) PROFILE SHEETS

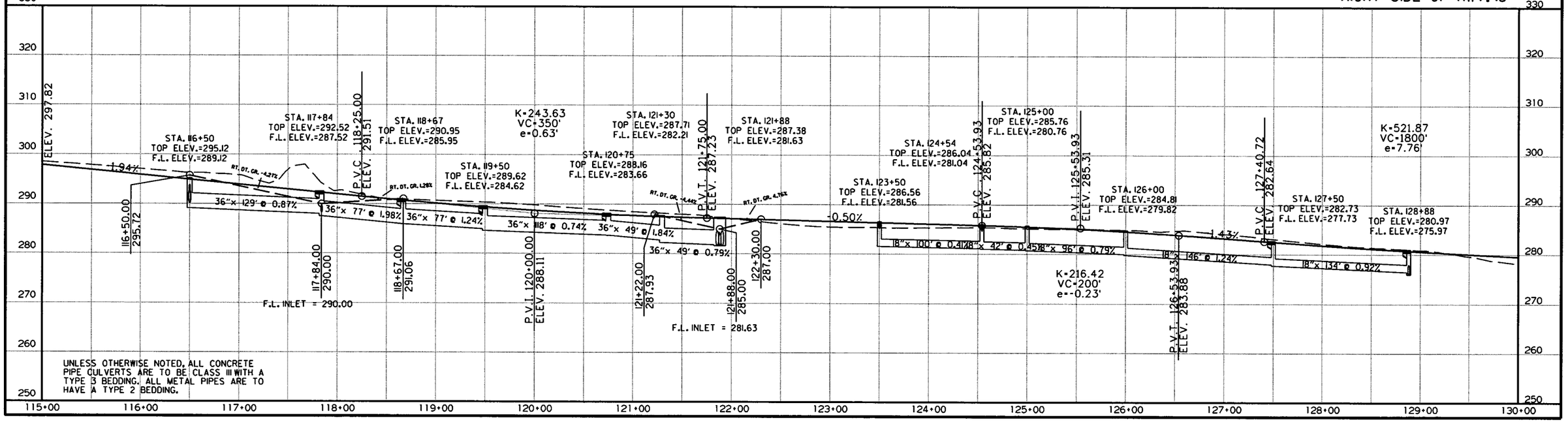
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## LEFT SIDE OF HWY. 13




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

## RIGHT SIDE OF HWY. 13




6/9/2016

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 79 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 135+93 CONSTRUCT
DBL. 11' x 6' x 96' R.C. BOX
ON 30° RT. FWD SKEW
WITH 3:1 WINGS LT. AND RT.
Q25 = 840 CFS, D.A. = 653 ACRES
SPAN = 26'-2 1/8"

STA. 140+00 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 45 CU. YDS.

130 135 140

PROP. R/W
CONST. LIMITS
8'-0"
12'-0"
12'-0"
8'-0"
N 0°00'00" W
HWY. 13
T.C.E.
16'
DEENER CREEK

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 134+00 | 136+16 | RT. | 6' | 144.00 |

REMOVAL AND DISPOSAL OF FENCE

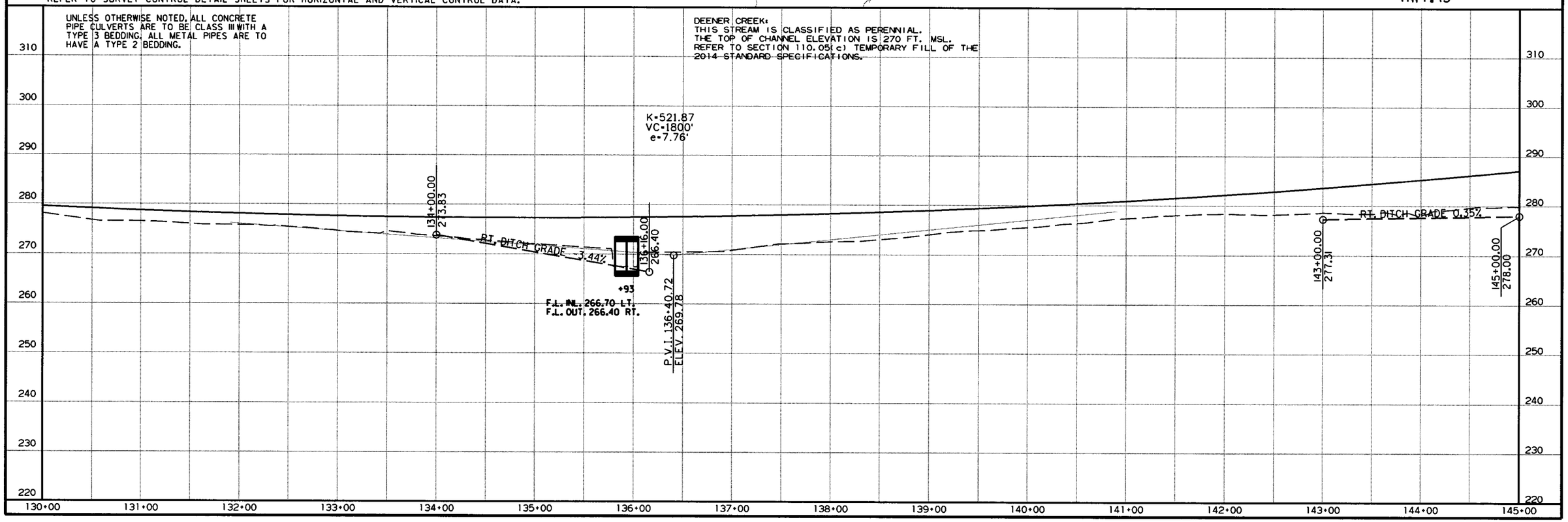
| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 137+33 | 137+48 | RT. & LT. | 117 |

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

HWY. 13

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

DEENER CREEK:
THIS STREAM IS CLASSIFIED AS PERENNIAL.
THE TOP OF CHANNEL ELEVATION IS 270 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.




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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 80 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 145+14 CONSTRUCT
DBL. 36" X 95' PIPE CULVERT
ON 18° LT. FWD SKEW
WITH FES LT. & RT.
025 = 101 CFS D.A. = 72.81 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 190 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 204 LIN. FT.
PLASTIC PIPE = 204 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 154+60 | 154+60 | RT. & LT. | 530 |

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 71° 15' 35"

P.I. 503+45.79

STA. 158+75 CONSTRUCT
DBL. 36" X 72' CULVERT
ON 22° LT. FWD SKEW
WITH FES LT. & RT.
025 = 57.4 CFS D.A. = 32.4 ACRES
R.C. PIPE (CLASS V) (TYPE 3 BEDDING) = 144 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 156 LIN. FT.
PLASTIC PIPE = 156 LIN. FT.

STA. 158+84 CONSTRUCT
DITCH BLOCK ON LT.

STA. 160+00 INSTALL
18" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 95 CU. YDS.

PI = 150+36.39
Δ = 15°22'40" RT.
D = 4°00'00"
T = 193.38'
L = 384.44'
PC = 148+43.00
PT = 152+27.45
e = 0.083'/'
Ls = 300'

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 154+50 | 156+00 | RT. | 6' | 133.33 |

STA. 148+00 INSTALL
18" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 65 CU. YDS.

STA. 154+98 INSTALL
18" x 64' PIPE CULVERT
RT. SIDE DRAIN

STA. 158+55 CONSTRUCT
DITCH BLOCK ON RT.

STA. 160+00 INSTALL
18" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 60 CU. YDS.

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

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 146+18.00 BEGIN SUPERELEVATION
STA. 149+18.00 MAX. SUPERELEVATION (0.083 '/')
STA. 151+52.45 MAX. SUPERELEVATION (0.083 '/')
STA. 154+52.45 END SUPERELEVATION

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 280 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

K-521.87
VC-1800'
e-7.76'

K-602.64
VC-1700'
e-5.99'

2.02%
LT. DITCH GRADE 1.13%
RT. DITCH GRADE 2.33%
RT. DITCH GRADE 2.65%
GR. 4.70%
GR. 1.27%
GR. 5.16%

P.V.T. 145+40.72
ELEV. 287.96
145+00.00
278.00
145+14.00
279.66
148+00.00
282.88
P.V.C. 149+07.37
ELEV. 295.37
149+00.00
289.46
152+00.00
296.45
154+00.00
301.76
154+69.00
305.00
155+20.00
305.65
156+00.00
309.78
P.V.T. 157+57.37
ELEV. 312.54
160+00.00
320.96

+14
F.L. INL. 279.66 LT.
F.L. OUT. 278.00 RT.

+75
F.L. INL. 317.50 LT.
F.L. OUT. 317.40 RT.

340 330 320 310 300 290 280 270 260 250

145+00 146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 81 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 162+00 | 163+50 | RT. | 6' | 100.00 |
| 163+00 | 164+50 | LT. | 6' | 100.00 |
| 163+50 | 165+00 | RT. | 6' | 100.00 |
| 164+50 | 174+00 | LT. | 6' | 633.33 |
| 165+00 | 173+00 | RT. | 9' | 800.00 |

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 165+05 | 165+46 | LT. & RT. | 151 |

PI = 167+15.79
Δ = 34°24'04" RT.
D = 4°00'00"
T = 443.42'
L = 860.03'
PC = 162+72.37
PT = 171+32.40
e = 0.083'/'
Ls = 300'

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

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 160+47.37 BEGIN SUPERELEVATION
STA. 163+47.37 MAX. SUPERELEVATION (0.083 '/')
STA. 170+57.40 MAX. SUPERELEVATION (0.083 '/')
STA. 173+57.40 END SUPERELEVATION

K-602.64
VC-1700'
e-5.99'

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 82 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

N

T.C.E.

STA. 181+75 IN PLACE
24" x 31' C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

POND

STA. 181+82 INSTALL
QUAD. 36" x 66' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 662 CU. YDS.

STA. 182+82 CONSTRUCT
QUADRUPLE 36" X 178' PIPE CULVERT
ON 45° RT. FWD SKEW
WITH FES LT. & RT.
Q25 = 83.7 CFS D.A. = 54.4 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 712 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 740 LIN. FT.
PLASTIC PIPE = 740 LIN. FT.

PROP. R/W
CONST. LIMITS
HWY. 13
8'-0"
12'-0"
12'-0"
8'-0"
N 49°46'44" E
N 68°04'08" E
16°
82°

P.I. = 185+30.43
Δ = 18°17'24" RT.
D = 3°00'00"
T = 307.45'
L = 609.66'
P.C. = 182+22.98
P.T. = 188+32.64
e = 0.067'/'
Ls = 300'

P.C. 182+22.98

P.I. 185+30.43

P.T. 188+32.64

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 179+97.98 BEGIN SUPERELEVATION
STA. 182+97.98 MAX. SUPERELEVATION (0.067 '/')
STA. 187+57.64 MAX. SUPERELEVATION (0.067 '/')
STA. 190+57.64 END SUPERELEVATION

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 418 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

ELEV. 396.91
4.84%
P.V.C. 177+00.00
ELEV. 406.59
LT. DITCH GRADE -1.48%
RT. DITCH GRADE -2.05%
RT. DT. GR. -1.00%
LT. DITCH GRADE 0.82%
LT. DITCH GRADE -0.33%
P.V.I. 187+00.00
ELEV. 455.00
187+00.00
417.90
180+00.00
416.56
181+00.00
418.98
181+46.90
414.38
182+09.89
414.17
182+45.93
414.17
183+55.00
413.76
184+00.00
413.31
+82
F.L. IN. 414.17 LT.
F.L. OUT. 413.76 RT.
K=234.35
VC=2000'
e=-21.34'

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

450 440 430 420 410 400 390

175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00 190+00

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 83 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 194+00 INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 50 CU. YDS.

STA. 196+50 INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 60 CU. YDS.

STA. 197+50 INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 50 CU. YDS.

STA. 201+00 INSTALL
18" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 150 CU. YDS.

WIRE FENCE

| STA. | STA. | SIDE | TYPE | LIN. FT. | 16'-0" GATE EACH |
|---|---|---|---|---|---|
| 195+92 | 197+22 | LT. | C | 130 | 1 |
| 197+22 | 198+14 | LT. | C | 92 | 1 |
| 198+14 | 207+99 | LT. | C | 985 | 1 |

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 195+92 | 198+68 | LT. & RT. | 502 |

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 192+10 | 201+00 | LT. | 6' | 593.33 |
| 192+90 | 198+70 | RT. | 6' | 386.67 |

STA. 194+00 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 25 CU. YDS.

PI = 203+95.16
Δ = 21°55'52" RT.
D = 5°00'00"
T = 222.03'
L = 438.62'
PC = 201+73.13
PT = 206+11.75
e = 0.091'/'
Ls = 350'

STA. 204+72 CONSTRUCT
42" X 228' PIPE CULVERT
WITH FES LT. & RT.
025 = 205 CFS D.A. = 118.22 ACRES
R.C. PIPE (CLASS V) (TYPE 3 BEDDING) = 228 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 234 LIN. FT.
PLASTIC PIPE = 234 LIN. FT.

HWY. 13

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

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 199+10.63 BEGIN SUPERELEVATION
STA. 202+60.63 MAX. SUPERELEVATION (0.091'/')
STA. 205+24.25 MAX. SUPERELEVATION (0.091'/')
STA. 208+74.25 END SUPERELEVATION

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 365 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

K=234.35
VC=2000'
e=-21.34'

P.V.T. 197+00.00
ELEV. 418.07

-3.69%

ELEV. 388.53

+72

F.L. IN. 366.40 RT.
F.L. OUT. 360.68 LT.

440 430 420 410 400 390 380 370 360 350

190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00

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

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| | | | | JOB NO. | | 050249 | 84 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

| CONCRETE DITCH PAVING | | | | |
|---|---|---|---|---|
| STA. | STA. | SIDE | "W" | SQ. YDS. |
| 208+10 | 210+80 | RT. | 6' | 180.00 |

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

REMOVAL OF EXIST. PAVEMENT

WIRE FENCE

| STA. | STA. | SIDE | TYPE | LIN. FT. |
|---|---|---|---|---|
| 209+15 | 197+22 | RT. | C | 99 |
| 210+14 | 219+14 | LT. | D | 139 |
| 219+14 | 221+29 | LT. | D | 215 |

PROP. R/W
CONST. LIMITS
EXIST. R/W
8'-0"
12'-0"
12'-0"
8'-0"
HWY. 13
N 90°00'00" E
S 85°48'38" E
P.C. 600+24.74
P.I. 600+92.57
P.T. 601+56.92
P.C. 602+66.76
P.I. 217+99.65
P.T. 206+11.75
P.C. 213+80.53
P.T. 605+73.49
P.I. 217+99.65
HOLMES RD.
S 83°36'50" E
CONST. LIMITS
T.C.E.
205
210
215
605
610

P.I. = 203+95.16
Δ = 21°55'52" RT.
D = 5°00'00"
T = 222.03'
L = 438.62'
PC = 201+73.13
PT = 206+11.75
e = 0.091'/'
Ls = 350'

P.I. = 217+99.65
Δ = 4°11'22" RT.
D = 0°30'00"
T = 419.12'
L = 837.86'
PC = 213+80.53
PT = 222+18.40
NO SUPER

STA. 213+20 INSTALL
DBL. 30" x 52' PIPE CULVERT
RT. SIDE DRAIN

STA. 213+38 CONSTRUCT
DBL. 30" X 78' PIPE CULVERT
ON 14° RT. FWD SKEW
WITH FES LT. & RT.
Q25 = 41.00 CFS D.A. = 36.72 ACRES
R.C. PIPE (CLASS IV) (TYPE 3 BEDDING) = 156 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 164 LIN. FT.
PLASTIC PIPE = 164 LIN. FT.

STA. 210+75 CONSTRUCT
24" X 114' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 22.4 CFS D.A. = 12.13 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 114 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 120 LIN. FT.
PLASTIC PIPE = 120 LIN. FT.

STA. 218+23 IN PLACE
12" X 20' C.P. PIPE CULVERT
SIDE DRAIN
REMOVE

| REMOVAL AND DISPOSAL OF FENCE | | | |
|---|---|---|---|
| STA. | STA. | SIDE | LIN. FT. |
| 207+97 | 207+99 | RT. | 69 |
| 209+16 | 210+81 | RT. | 190 |
| 212+05 | 212+72 | LT. | 171 |
| 212+87 | 218+12 | LT. & RT. | 672 |
| 214+13 | 214+66 | RT. | 153 |
| 214+34 | 216+36 | LT. & RT. | 241 |
| 216+50 | 216+70 | RT. & LT. | 109 |
| 217+75 | 221+28 | LT. | 362 |

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

STA. 199+10.63 BEGIN SUPERELEVATION
STA. 202+60.63 MAX. SUPERELEVATION (0.091'/')
STA. 205+24.25 MAX. SUPERELEVATION (0.091'/')
STA. 208+74.25 END SUPERELEVATION

ELEV. 388.53
-3.69%
P.V.C. 207+94.64
ELEV. 377.65
K-216.95
VC-1200'
e-8.30'
RT. DITCH GRADE -0.96%
RT. DITCH GRADE -0.83%
RT. DITCH GRADE 0.12%
LT. DITCH
GRADE 0.29%
1.84%
P.V.I. 213+94.64
ELEV. 355.49
P.V.T. 219+94.64
ELEV. 366.52
ELEV. 366.62

208+00.00 362.77
210+75.00 360.12
211+00.00 361.06
213+48.00 359.00
215+00.00 359.00
216+00.00 359.29
216+00.00 359.29

+75
F.I. INL. 360.12 RT.
F.I. OUT. 357.44 LT.

+38
F.I. INL. 359.00 RT.
F.I. OUT. 358.44 LT.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

410 400 390 380 370 360 350 340 330 320

205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 85 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 224+04 IN PLACE
12" x 20' C.P. PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 224+34 INSTALL
18" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 50 CU. YDS.

STA. 234+00 INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.

220 · 225 · 230

+28.75 / 165.00 PROP. R/W

+18.00 / 96.35-112.00 T.C.E. 16'

+50.00 / 96.43-112.00

+40.00 / 90.00 PROP. R/W

+38.56 / 80.00 PROP. R/W

+30.00 / 100.00 PROP. R/W

CONST. LIMITS

HWY. 13 S 85°48'38" E

8'-0"
12'-0"
12'-0"
8'-0"

PI = 217+99.65
Δ = 4°11'22" RT.
D = 0°30'00"
T = 419.12'
L = 837.86'
PC = 213+80.53
PT = 222+18.40
NO SUPER

P.T. 222+18.40

+80.00 / 225.89 PROP. R/W

CONST. LIMITS

+80.00 / 226.00 EXIST. R/W

T30.00' POE 611+34.67

+20.00 / 125.00 PROP. R/W

+09.28 / 110.00 PROP. R/W

+00.00 / 126.00 PROP. R/W

+95.00 / 107.00 PROP. R/W

+00.00 / 90.00 PROP. R/W

+76.70 / 160.00 PROP. R/W

CONST. LIMITS

CONST. LIMITS

CONST. LIMITS

16'

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

HWY. 13

WIRE FENCE

| STA. | STA. | SIDE | TYPE | LIN. FT. |
|---|---|---|---|---|
| 224+65 | 227+99 | LT. | C | 334 |
| 227+99 | 228+20 | LT. | C | 21 |
| 228+20 | 229+22 | LT. | C | 102 |
| 229+22 | 229+57 | LT. | C | 35 |

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 220+06 | 220+83 | LT. & RT. | 203 |
| 221+45 | 221+58 | RT. & LT. | 242 |
| 224+65 | 229+30 | LT. | 560 |
| 229+76 | 231+67 | RT. | 417 |
| 234+70 | 234+77 | LT. & RT. | 199 |

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 230+00 | 236+70 | LT. | 6' | 446.67 |
| 230+00 | 237+70 | RT. | 6' | 513.33 |

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

410 · 400 · 390 · 380 · 370 · 360 · 350 · 340 · 330 · 320

ELEV. 366.62

1.84%

P.V.C. 224+00.00
ELEV. 373.97

P.V.I. 230+00.00
ELEV. 385.00

K=203.88
VC=1200'
e=-8.83'

220+00 · 221+00 · 222+00 · 223+00 · 224+00 · 225+00 · 226+00 · 227+00 · 228+00 · 229+00 · 230+00 · 231+00 · 232+00 · 233+00 · 234+00 · 235+00

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 86 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 237+00 CONSTRUCT
APPROACH ON LT. = 65 CU. YDS.

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 248+03 | 248+03 | LT. & RT. | 131 |

N

235 240 245

+60.00 152.05
+84.00 156.79
72.00
16.00 163.11
72.00
+18.00 103.00
+27.00 125.00
+92.18 196.00
+99.72 203.54

T.C.E. 16'
PROP. R/W
CONST. LIMITS
FLOOD HAZARD AREA
+00

8'-0"
12'-0"
12'-0"
8'-0"

S 85°48'38" E
HWY. 13

CONST. LIMITS
16'
+52.00 150.00
PROP. R/W
CONST. LIMITS
PROP. R/W
+14.00 82.00
+76.70 100.00
+38.00 110.00
+20.00 73.50

STA. 237+00 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.

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

HWY. 13

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

370 360 350 340 330 320 310 300 290 280

K 203.88
VC=1200'
e=-8.83'

P.V.T. 236+00.00
ELEV. 360.71

-4.05%

P.V.C. 241+00.00
ELEV. 340.48

K=315.49
VC=2000'
e=15.85'

+20 FLOOD HAZARD AREA

RT. DITCH GRADE -0.83%

242+00.00
315.49

244+00.00
313.83

250+00.00
297.85

235+00 236+00 237+00 238+00 239+00 240+00 241+00 242+00 243+00 244+00 245+00 246+00 247+00 248+00 249+00 250+00

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 250+00 INSTALL
18" x 66' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 1015 CU. YDS.

STA. 252+20 CONSTRUCT
TRI. 9' x 6' x 145' R.C. BOX
WITH 3:1 WINGS LT. AND RT.
Q25 = 880 CFS, D.A. = 695 ACRES
SPAN = 30'-0"

STA. 255+00 INSTALL
18" x 90' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 1115 CU. YDS.

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 250+58 | 250+68 | LT. & RT. | 233 |

STA. 263+72 CONSTRUCT
24" X 120' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 17.2 CFS D.A. = 8.1 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 120 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 126 LIN. FT.
PLASTIC PIPE = 126 LIN. FT.

STA. 263+00
CONST. APPROACH ON LT. = 40 CU. YDS.

PI = 258+77.32
Δ = 1°30'14" RT.
D = 0°30'00"
T = 150.41'
L = 300.79'
PC = 257+26.92
PT = 260+27.71
NO SUPER

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

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

FLOOD HAZARD AREA

ROCKY BRANCH:
THIS STREAM IS CLASSIFIED AS PERENNIAL.
THE TOP OF CHANNEL ELEVATION IS 295 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

K=315.49
VC=2000'
e=15.85'

2.29%

L T. DITCH GRADE 2.17%

L T. DITCH GRADE 1.91%

P.V.I. 251+00.00
ELEV. 300.00

P.V.T. 261+00.00
ELEV. 322.92

ELEV. 332.08

250+00.00
297.85

252+00.00
293.50

252+20.00
293.20

258+00.00
304.25

+20
F.L. INL. 293.20 LT.
F.L. OUT. 292.10 RT.

+72
F.L. INL. 321.00 LT.
F.L. OUT. 309.57 RT.

+65

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

WIRE FENCE

| STA. | STA. | SIDE | TYPE | LIN. FT. |
|---|---|---|---|---|
| 277+17 | 279+66 | RT. | D | 249 |
| 279+66 | 281+92 | RT. | D | 226 |
| 281+92 | 283+45 | RT. | D | 153 |

16'-0" GATE EACH

PI = 270+47.23
Δ = 4°29'27" LT.
D = 1°00'00"
T = 219.64'
L = 439.07'
PC = 268+27.59
PT = 272+66.66
e = 0.026'/'
Ls = 300'

STA. 272+85 INSTALL
18" x 58' PIPE CULVERT
LT. SIDE DRAIN

STA. 274+90 INSTALL
18" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 75 CU. YDS.

STA. 276+53 INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 75 CU. YDS.

STA. 277+16 IN PLACE
12" x 20' C.P. PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 277+15
CONST. APPROACH ON LT. = 55 CU. YDS.

STA. 277+31 INSTALL
18" x 64' PIPE CULVERT
LT. SIDE DRAIN

STA. 277+48
CONST. APPROACH ON LT. = 40 CU. YDS.

STA. 278+00 INSTALL
24" x 74' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 2.52 CFS D.A. = 0.85 ACRES
R.C. PIPE (TYPE IV) (TYPE 3 BEDDING) = 74 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 80 LIN. FT.
PLASTIC PIPE = 80 LIN. FT.

STA. 278+57 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

COVINGTON RD.
S 69°57'03" E
PROP. R/W
CONST. LIMITS
T.C.E.
P.I. 704+26.65
P.C. 702+99.0
R.C. 268+27.59
P.T. 272+66.66
P.T. 705+33.42
P.I. 270+41.23
S 84°18'24" E
HWY. 13
S 88°41'51" E
ROF 705+67.58
8'-0"
12'-0"
12'-0"
8'-0"
265
270
275
280
105
N
HWY. 13 - STA. 273+00.00 =
COVINGTON RD. - STA. 705+67.58
Δ = 75°00'00"
LAKE RIDGE DR.
ROCKY BRANCH CT.
REMOVAL OF EXIST. PAVEMENT

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 277+19 | 283+45 | LT. & RT. | 1184 |

STA. 278+43 IN PLACE
12" x 35' PLASTIC PIPE CULVERT
CROSS DRAIN
REMOVE

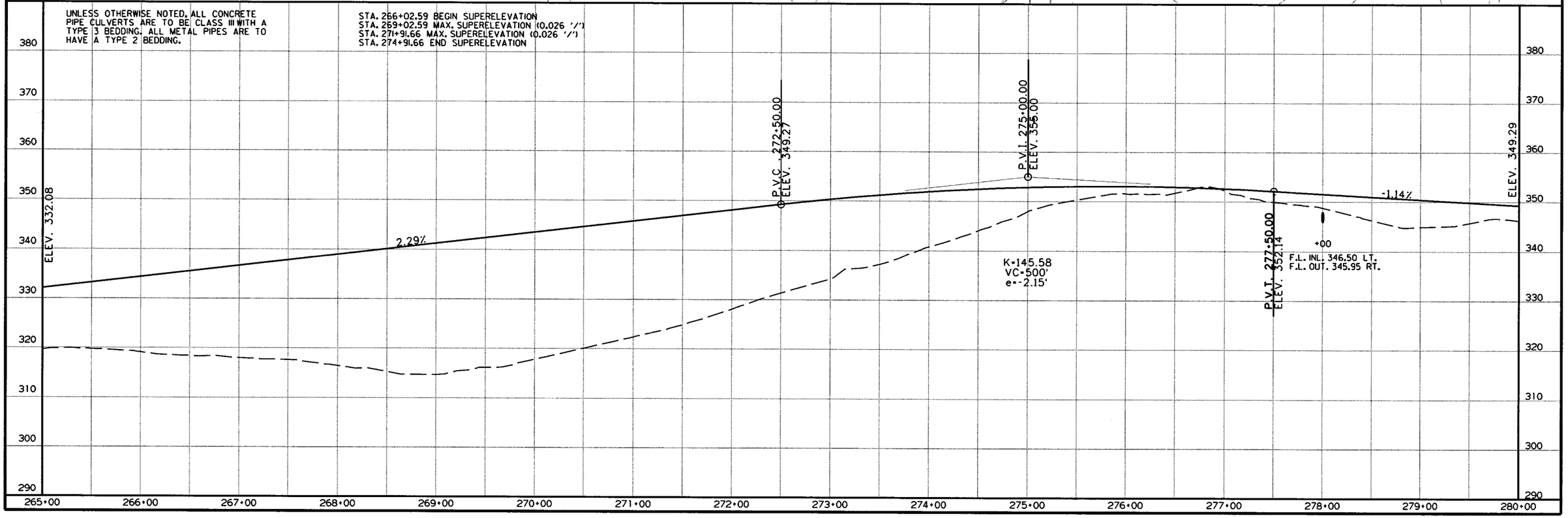
STA. 279+90 CONSTRUCT
APPROACH ON RT. = 90 CU. YDS.

HWY. 13

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

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 266+02.59 BEGIN SUPERELEVATION
STA. 269+02.59 MAX. SUPERELEVATION (0.026 '/')
STA. 271+91.66 MAX. SUPERELEVATION (0.026 '/')
STA. 274+91.66 END SUPERELEVATION




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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 280+30 IN PLACE
12" x 16' STEEL PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 280+42 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 45 CU. YDS.

STA. 280+82 IN PLACE
12" x 12' STEEL PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 281+29 IN PLACE
6" x 20' PVC PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 282+00 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 80 CU. YDS.

STA. 282+92 IN PLACE
18" x 24' C.M.P.
CROSS DRAIN
REMOVE AND INSTALL
24" x 109' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 6.4 CFS D.A. = 3.8 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 109 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 116 LIN. FT.
PLASTIC PIPE = 116 LIN. FT.

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 285+00 | 290+00 | LT. | 6' | 333.33 |
| 290+77 | 293+18 | RT. | 6' | 160.95 |

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 284+58 | 285+19 | LT. | 44 |

STA. 285+50 INSTALL
18" x 44' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 135 CU. YDS.

STA. 288+12 INSTALL
18" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 75 CU. YDS.

STA. 290+00 CONSTRUCT
APPROACH ON LT. = 125 CU. YDS.

PI = 287+77.36
Δ = 19°08' 39" LT.
D = 3°00' 00"
T = 322.07'
L = 638.14'
PC = 284+55.29
PT = 290+93.43
e = 0.067'/'
Ls = 300'

STA. 287+00 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 50 CU. YDS.

STA. 285+28 CONSTRUCT
APPROACH ON RT. = 135 CU. YDS.

STA. 288+92 INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 55 CU. YDS.

STA. 289+11 IN PLACE
12" x 17' R.C. PIPE CULVERT
SIDE DRAIN
REMOVE

STA. 289+70 INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 70 CU. YDS.

PROP. R/W
CONST. LIMITS
EXIST. R/W
330' TAPER
S 88°41'51" E
N 72°09'30" E
HWY. 13
COVINGTON RD.
REMOVAL OF EXIST. PAVEMENT

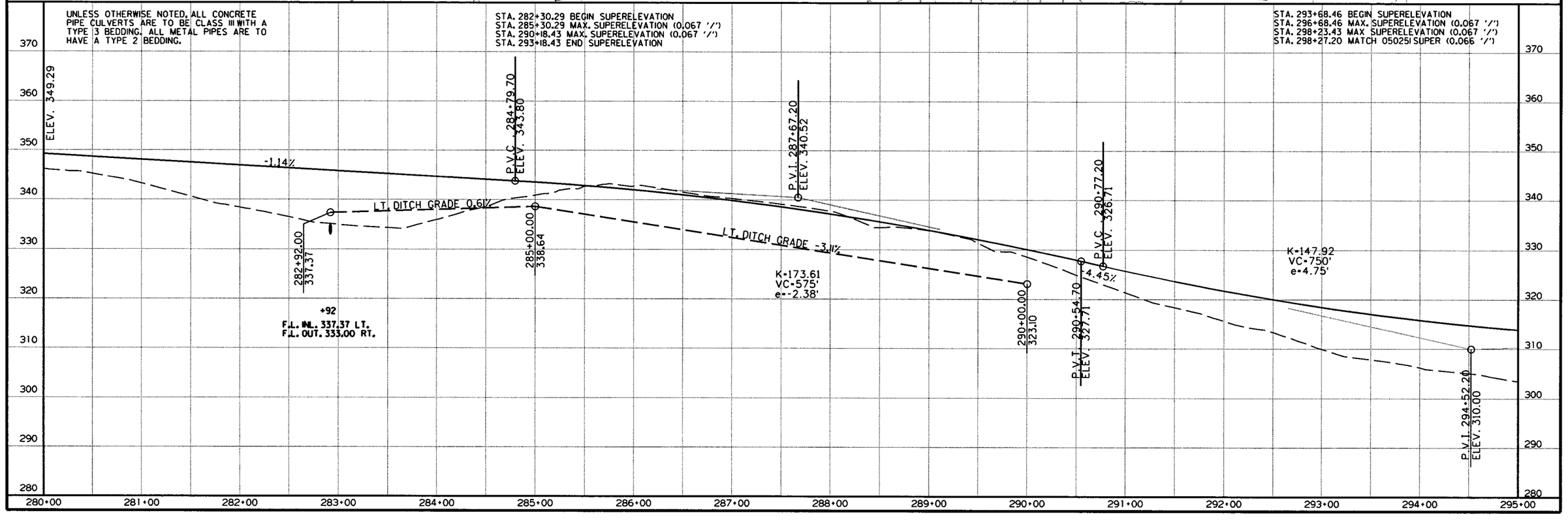
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 13

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 282+30.29 BEGIN SUPERELEVATION
STA. 285+30.29 MAX. SUPERELEVATION (0.067 '/')
STA. 290+18.43 MAX. SUPERELEVATION (0.067 '/')
STA. 293+18.43 END SUPERELEVATION

STA. 293+68.46 BEGIN SUPERELEVATION
STA. 296+68.46 MAX. SUPERELEVATION (0.067 '/')
STA. 298+23.43 MAX SUPERELEVATION (0.067 '/')
STA. 298+27.20 MATCH 05025I SUPER (0.066 '/')




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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 295+20 CONSTRUCT
DBL. 8' x 4' x 183' R.C. BOX
WITH 45° RT. FWD SKEW
WITH 3#1 WINGS LT. AND RT.
Q25 = 370 CFS, D.A. = 246 ACRES
SPAN = 23'-6 1/8"

HWY. 13 - STA. 299+58.49 =
HWY. 16 - STA. 510+36.71
Δ = 59°06'23"

JOB 050251

PI = 301+60.88
Δ = 33°05'36"RT.
D = 3°00'00"
T = 567.42'
L = 1103.11'
PC = 295+93.46
PT = 306+96.57
e = 0.067'/'
Ls = 300'

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

STA. 293+68.46 BEGIN SUPERELEVATION
STA. 296+68.46 MAX. SUPERELEVATION (0.067 '/')
STA. 298+23.43 MAX SUPERELEVATION (0.067 '/')
STA. 298+27.20 MATCH 05025I SUPER (0.066 '/')

STA. 298+10.57
END FULL BUILD
& BEGIN PAVING
& BEGIN JOB 050251

STA. 298+27.20
END JOB 050249

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 303 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

K=147.92
VC=750'
e=4.75'

P.V.T. 298+27.20
ELEV. 312.31

P.V.I. 299+40.82
ELEV. 313.01

0.62%

6:1

+20
F.I. INL. 300.40 LT.
F.I. OUT. 297.70 RT.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

350 340 330 320 310 300 290 280 270 260

295+00 296+00 297+00 298+00 299+00 300+00 301+00 302+00 303+00 304+00 305+00 306+00 307+00 308+00 309+00 310+00

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 91 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

PI = 503+45.79
Δ = 3°17'09" LT.
D = 0°30'00"
T = 328.68'
L = 657.18'
PC = 500+17.11
PT = 506+74.29
NO SUPER

500
POB 500+00.00
P.C. 500+17.11
505
P.I. 503+45.79
P.I. 506+74.29
POE 509+05.94
N 89°55'24" E
COLLINS RD.
PROP. R/W
CONST. LIMITS
HWY. 13
N 15°22'40" E
S 86°38'15" E
21.18
210.00

HWY. 13 - STA. 154+76.84 =
COLLINS RD. - STA. 506+07.16
Δ = 108°44'25"

REMOVAL AND DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. | 16'-0" GATE EACH |
|---|---|---|---|---|
| 503+00 | 508+16 | COLLINS RD. LT. | 151 | |
| 503+01 | 508+47 | COLLINS RD. RT. | | 1 |

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

COLLINS RD.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 154+72.86 HWY. 13 12.00' RT. =
STA. 505+94.55 COLLINS RD.
ELEV. 309.21

STA. 154+80.86 HWY. 13 12.00' LT. =
STA. 506+19.86 COLLINS RD.
ELEV. 309.45

P.V.I. 503+00.00
ELEV. 305.09
P.V.I. 505+94.55
ELEV. 309.21
P.V.I. 506+19.86
ELEV. 309.45
P.V.I. 508+00.00
ELEV. 306.85
1.40%
-1.45%
F.I. INL. 305.65 LT.
F.I. OUT. 305.00 RT.

340 330 320 310 300 290 280 270 260 250

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+00 511+00 512+00 513+00

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 92 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

STA. 601+42 INSTALL
DBL. 30" x 88' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 145 CU. YDS.
STA. 601+80
CONST. APPROACH = 465 CU. YDS.

P.I. = 600+92.57
Δ = 31°43'19" RT.
D = 24°00'00"
T = 67.83'
L = 132.17'
P.C. = 600+24.74
P.T. = 601+56.92
e = 0.100'/'
Ls = 250'

HWY. 13 - STA. 213+00.00 =
HOLMES RD. - STA. 602+52.49
Δ = 80°00'00"

P.I. = 604+45.40
Δ = 79°36'50" LT.
D = 24°00'00"
T = 178.64'
L = 306.72'
P.C. = 602+66.76
P.T. = 605+73.49
e = 0.100'/'
Ls = 250'

STA. 604+00 INSTALL
18" x 56' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 460 CU. YDS.

| CONCRETE DITCH PAVING | | | | |
|---|---|---|---|---|
| STA. | STA. | SIDE | "W" | SQ. YDS. |
| 600+21 | 600+40 | LT. | 6' | 12.67 |
| 600+21 | 600+40 | RT. | 6' | 12.67 |
| 607+50 | 610+60 | LT. | 6' | 206.67 |
| 607+50 | 610+70 | RT. | 6' | 213.33 |

▨ REMOVAL OF EXIST. PAVEMENT

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

HOLMES RD.

STA. 600+00.00 BEGIN SUPERELEVATION
STA. 600+90.75 MAX. SUPERELEVATION (0.0363 '/')
STA. 601+49.25 MAX. SUPERELEVATION (0.0363 '/')
STA. 602+40.00 END SUPERELEVATION

STA. 602+70.00 BEGIN SUPERELEVATION
STA. 604+20.00 MAX. SUPERELEVATION (0.060 '/')
STA. 605+35.99 MAX. SUPERELEVATION (0.060 '/')
STA. 606+85.99 END SUPERELEVATION

STA. 212+98.43 HWY. 13 12.00' RT. =
STA. 602+43.46 HOLMES RD.
ELEV. 364.63

STA. 213+02.48 HWY. 13 14.74' LT. =
STA. 602+67.46 HOLMES RD.
ELEV. 364.63

P.V.I. 600+21.08 ELEV. 354.24
P.V.I. 601+00.00 ELEV. 353.37
P.V.I. 602+00.00 ELEV. 355.00
P.V.I. 602+23.56 ELEV. 364.23
P.V.I. 602+43.46 ELEV. 364.63
P.V.I. 602+67.46 ELEV. 364.63
P.V.I. 602+87.46 ELEV. 364.63
P.V.C. 603+75.00 ELEV. 368.66
K 40.18 VC-150' e-0.70'
P.V.I. 604+50.00 ELEV. 372.11
P.V.T. 605+25.00 ELEV. 378.36
P.V.C. 606+25.00 ELEV. 386.69
K 35.81 VC-150' e-0.79'
P.V.I. 607+00.00 ELEV. 392.94
P.V.T. 607+75.00 ELEV. 396.05
P.V.I. 611+00.00 ELEV. 409.52

4.94% 4.60% 8.33% 4.14%

F.I. INL. 360.55 RT.
F.I. OUT. 360.29 LT.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

420 410 400 390 380 370 360 350 340 330

598+00 599+00 600+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

6/9/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 93 | 242 |

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

CONCRETE DITCH PAVING

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 700+00 | 705+20 | LT. | 6' | 346.67 |
| 700+90 | 705+10 | RT. | 6' | 280.00 |

STA. 701+55 CONSTRUCT
21" x 15" x 50' ARCH PIPE CULVERT
LT. SIDE DRAIN
APPROACH ON LT. = 30 CU. YDS.

STA. 704+60 CONSTRUCT
21" x 15" x 46' ARCH PIPE CULVERT
LT. SIDE DRAIN
APPROACH ON LT. = 25 CU. YDS.

REMOVAL OF EXIST. PAVEMENT

STA. 701+00 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

PI = 704+26.65
Δ = 56°15'12" RT.
D = 24°00'00"
T = 127.61'
L = 234.39'
PC = 702+99.04
PT = 705+33.42
e = 0.100'/'
Ls = 250'

HWY. 13 - STA. 273+00.00 =
COVINGTON RD. STA. 705+67.58
Δ = 75°00'00"

STA. 272+97.11 HWY. 13 12.00' LT. =
STA. 705+55.15 COVINGTON RD.
ELEV. 350.03

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

COVINGTON RD.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 701+94.85 BEGIN SUPERELEVATION
STA. 703+33.77 MAX. SUPERELEVATION (0.056 '/')
STA. 704+16.23 MAX. SUPERELEVATION (0.056 '/')
STA. 705+55.15 END SUPERELEVATION

P.V.I. 700+00.00 ELEV. 382.55
P.V.C. 700+54.52 ELEV. 378.73
P.V.I. 700+84.52 ELEV. 376.63
P.V.T. 701+14.52 ELEV. 373.63
V.C. 701+63.00 ELEV. 368.78
701+00.00 LT. 367.58
701+55.00 LT. 363.81
702+00.00 LT.
P.V.I. 703+50.50 ELEV. 350.03
704+00.00 LT. 352.24
704+60.00 LT. 350.00
705+00.00 LT. 349.45
P.V.T. 705+38.00 ELEV. 350.03
P.V.I. 705+55.15 ELEV. 350.03

-7.01%
-10.89%
-10.00%
L.T.D.G. -8.38%
L.T.D.G. -3.73%
L.T.D.G. -1.38%
0.00%

K 20.03
VC=60'
e=-0.22'

K 37.50
VC=375'
e=4.69'

695+00 696+00 697+00 698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00 706+00 707+00 708+00 709+00 710+00

390 380 370 360 350 340 330 320 310 300

6/9/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 94 | 242 |

(2) SUMMARY OF TRAFFIC SIGNAL QUANTITIES & NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

## TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101(2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. THE SERVICE POINT SHALL NOT BE MORE THAN 10 FEET FROM THE CONTROLLER. THE CONTRACTOR SHALL PROVIDE AND INSTALL A TWO CIRCUIT BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS OT THE CONTROLLER.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.
11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDIATION SYSTEM IN THE CITY.
17. TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY AVOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF RAODWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY THE FACE OF A NON-BREAKWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVEING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND THE HAND-HOLE COVER AT THE BASE OF THE POLE. THE TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT THE POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGN, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.
25. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

## SUMMARY OF TRAFFIC SIGNAL QUANTITIES

| ITEM NO. | ITEM | HWY. 13-HWY. 36 | HWY. 13-HWY. 16 | TOTAL JOB QUANTITY | UNIT |
|---|---|---|---|---|---|
| 704 | FEEDER WIRE | 0 | 828 | 828 | LIN. FT. |
| SP&706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY) | 2 | 0 | 2 | EACH |
| SP&706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY) | 3 | 0 | 3 | EACH |
| SP&707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 4 | 0 | 4 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) | 52 | 0 | 52 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1") | 0 | 166 | 166 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (1.25") | 0 | 34 | 34 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 0 | 188 | 188 | LIN. FT. |
| 711 | CONCRETE PULL BOX (TYPE 1HD) | 0 | 2 | 2 | EACH |
| SP&733 | VIDEO DETECTOR (CLR) | 3 | 0 | 3 | EACH |
| SP | LOOP WIRING CLASS III(IC/16 A.W.G.) | 0 | 264 | 264 | LIN. FT. |
| SP | TRAFFIC SIGNAL CONTROLLER MODIFICATION | 1 | 1 | 2 | EACH |
| SP | VIDEO DETECTOR ROTATION | 2 | 0 | 2 | EACH |

6-7-16

1050249.dgn

DATE: 6-7-16 FILE NAME: t050249.dgn

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: N/A DRAWN BY: CJS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 95 | 242 |

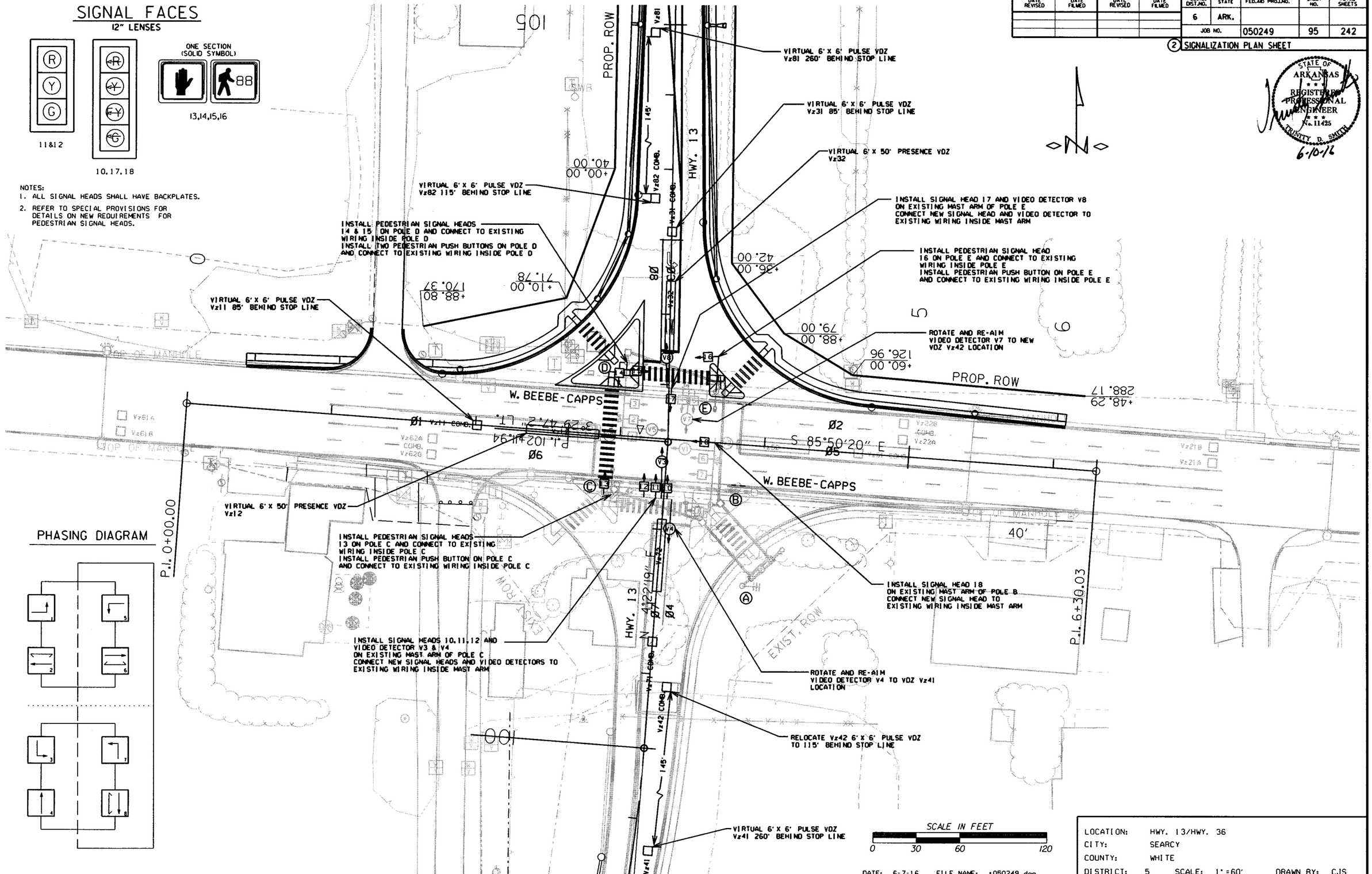
(2) SIGNALIZATION PLAN SHEET

# SIGNAL FACES

12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.




## PHASING DIAGRAM



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

| | |
|---|---|
| LOCATION: | HWY. 13/HWY. 36 |
| CITY: | SEARCY |
| COUNTY: | WHITE |
| DISTRICT: | 5 SCALE: 1"=60' DRAWN BY: CJS |

DATE: 6-7-16 FILE NAME: t050249.dgn

t050249.dgn 6-7-16

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 96 | 242 |

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

INSTALL PEDESTRIAN SIGNAL HEADS
14 & 15 ON POLE D AND CONNECT TO EXISTING
WIRING INSIDE POLE D
INSTALL TWO PEDESTRIAN PUSH BUTTONS ON POLE D
AND CONNECT TO EXISTING WIRING INSIDE POLE D

INSTALL SIGNAL HEAD 17 AND VIDEO DETECTOR V8
ON EXISTING MAST ARM OF POLE E
CONNECT NEW SIGNAL HEAD AND VIDEO DETECTOR TO
EXISTING WIRING INSIDE MAST ARM

INSTALL PEDESTRIAN SIGNAL HEAD
16 ON POLE E AND CONNECT TO EXISTING
WIRING INSIDE POLE E
INSTALL PEDESTRIAN PUSH BUTTON ON POLE E
AND CONNECT TO EXISTING WIRING INSIDE POLE E

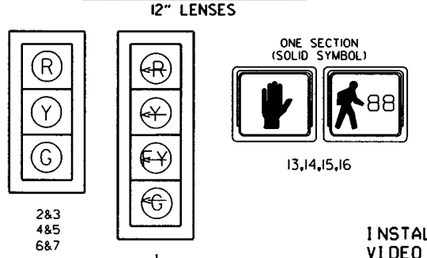
INSTALL PEDESTRIAN SIGNAL HEADS
13 ON POLE C AND CONNECT TO EXISTING
WIRING INSIDE POLE C
INSTALL PEDESTRIAN PUSH BUTTON ON POLE C
AND CONNECT TO EXISTING WIRING INSIDE POLE C

INSTALL SIGNAL HEAD 18
ON EXISTING MAST ARM OF POLE B
CONNECT NEW SIGNAL HEAD TO
EXISTING WIRING INSIDE MAST ARM

INSTALL SIGNAL HEADS 10,11,12 AND
VIDEO DETECTOR V3 & V4
ON EXISTING MAST ARM OF POLE C
CONNECT NEW SIGNAL HEADS AND VIDEO DETECTORS TO
EXISTING WIRING INSIDE MAST ARM

## SIGNAL FACES

12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS

SCALE IN FEET
0 20 40 80

DATE: 6-7-16 FILE NAME: t050249.dgn

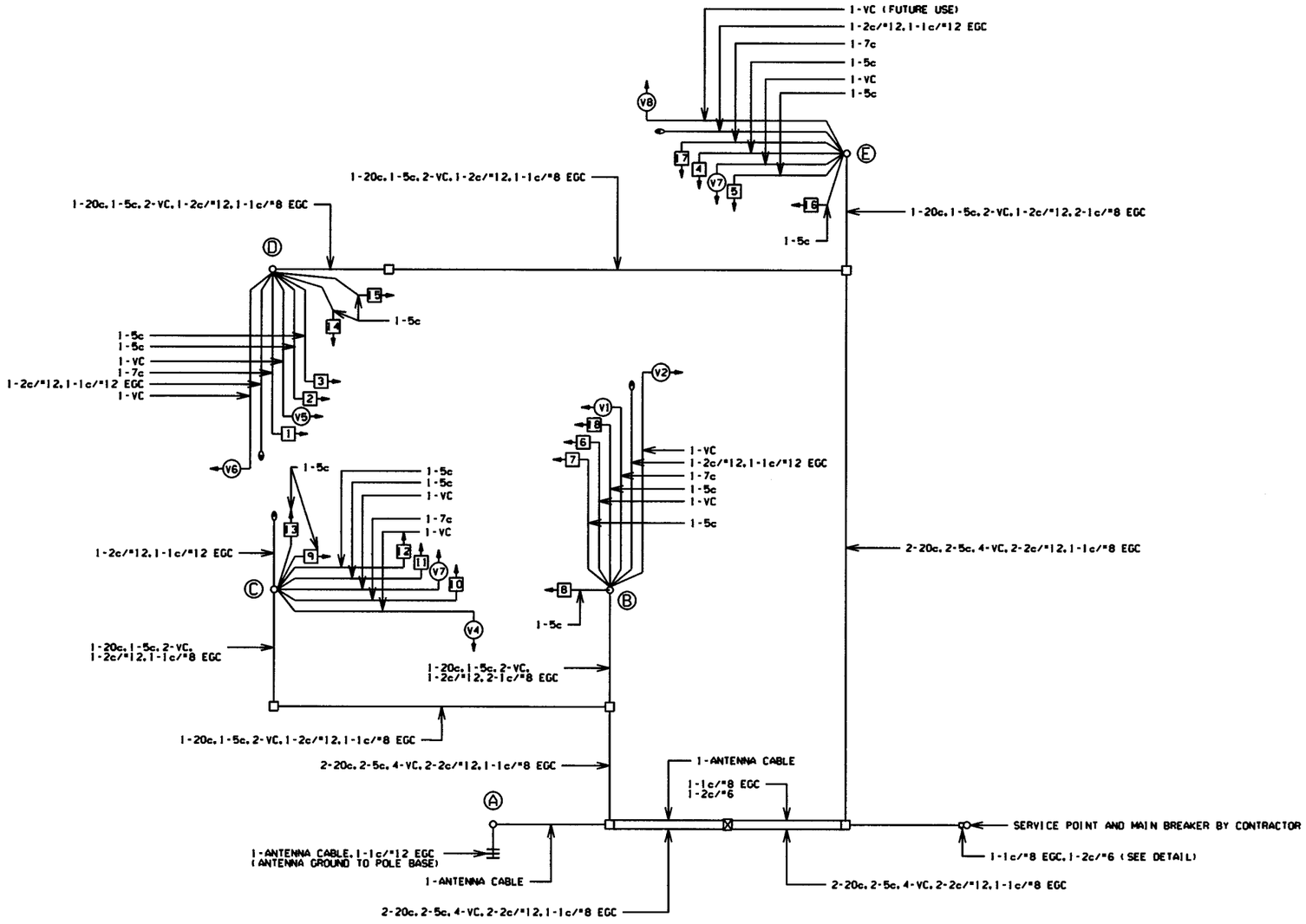
| | |
|---|---|
| LOCATION: | HWY. 13/HWY. 36 |
| CITY: | SEARCY |
| COUNTY: | WHITE |
| DISTRICT: 5 | SCALE: 1"=40' DRAWN BY: CJS |

6-7-16
1050249.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 97 | 242 |

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16




## WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

t050249.dgn 6-7-16

DATE: 6-7-16 FILE NAME: t050249.dgn

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: N/A DRAWN BY: CJS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 98 | 242 |

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

| SYSTEM DESCRIPTION: JOB 050249 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SEARCY - HWY. 13/HWY. 36 DETECTOR ASSIGNMENTS | | | | HARDWARE INPUTS BY SUPPLIER | | | PROGRAM ASSIGNMENTS LOCAL | | | COMMENTS | TUBE LENGTH |
| DET. ID# | LOCATION DIRECTION | TYPE | DET. # | CAB. TRM # | AMP CHN. # | CON. INP.# | PHS | SYSTEM DET. # | MASTER SYSTEM DETECTOR NUMBERS | | |
| Vz11 | EB LEFT TURN FAR | COMB. | | | 1 | V9 | 1 | 1 | | CAMERA V1 | 23' |
| Vz12 | EB LEFT TURN NEAR | LOCAL | | | 2 | V1 | 1 | | | CAMERA V1 | 23' |
| | | | | | | | | | | | |
| Vz21A&B | WB ADVANCE | LOCAL | | | 5 | V2 | 2 | | | CAMERA V2 | 74' |
| Vz22A&B | WB NEAR | COMB. | | | 6 | V10 | 2 | 2 | | CAMERA V5 | 23' |
| | | | | | | | | | | | |
| Vz31 | SB LEFT TURN FAR | LOCAL | | | 9 | V3 | 3 | | | CAMERA V3 | 23' |
| Vz32 | SB LEFT TURN NEAR | COMB. | | | 10 | V11 | 3 | 3 | | CAMERA V3 | 23' |
| | | | | | | | | | | | |
| Vz41 | NB FAR | LOCAL | | | 13 | V4 | 4 | | | CAMERA V4 | 74' |
| Vz42 | NB NEAR | COMB. | | | 14 | V12 | 4 | 4 | | CAMERA V7 | 23' |
| | | | | | | | | | | | |
| Vz51 | WB LT. TURN FAR | COMB. | | | 7 | V13 | 5 | 5 | | CAMERA V5 | 23' |
| Vz52 | WB LEFT TURN NEAR | LOCAL | | | 8 | V5 | 5 | | | CAMERA V5 | 23' |
| | | | | | | | | | | | |
| Vz61A&B | EB ADVANCE | LOCAL | | | 3 | V6 | 6 | | | CAMERA V6 | 74' |
| Vz62A&B | EB NEAR | COMB. | | | 4 | V14 | 6 | 6 | | CAMERA V1 | 23' |
| | | | | | | | | | | | |
| Vz71 | NB LEFT TURN FAR | LOCAL | | | 15 | V7 | 7 | | | CAMERA V7 | 23' |
| Vz72 | NB LEFT TURN NEAR | COMB. | | | 16 | V15 | 7 | 7 | | CAMERA V7 | 23' |
| | | | | | | | | | | | |
| Vz81 | SB FAR | LOCAL | | | 11 | V8 | 8 | | | CAMERA V8 | 74' |
| Vz82 | SB NEAR | COMB. | | | 12 | V16 | 8 | 8 | | CAMERA V3 | 23' |
| | | | | | | | | | | | |
| PB2A&B | EAST TO WEST | PED. | | | | | 2 | | | | |
| PB6A&B | WEST TO EAST | PED. | | | | | 6 | | | | |
| PB8A&B | NORTH TO SOUTH | PED. | | | | | 8 | | | | |
| | | | | | | | | | | | |
| | | | | | SPARE AMP. CHN. #: | | | | | | |

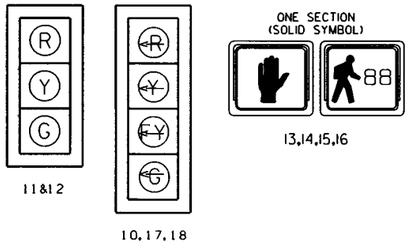
CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT
NOTE: 'AMP CHN#' REFERS TO TOE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.

## INTERVAL CHART

| SIGNAL FACES | HWY. 13/HWY. 36 | | | | | | | | | | | | | | | | | FLASH SEQ. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1+5 | CLR. | 1+6 | CLR. | 2+5 | CLR. | 2+6 | CLR. | 3+7 | CLR. | 3+8 | CLR. | 4+7 | CLR. | 4+8 | CLR. | | |
| 1 | ~~G~~ | • | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~FY~~ | ••• | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | | ~~R~~ |
| 2&3 | R | R | R | R | G | •• | G | •• | R | R | R | R | R | R | R | R | | R |
| 4&5 | R | R | R | R | R | R | R | R | R | R | R | R | G | •• | G | •• | | R |
| 6&7 | R | R | G | •• | R | R | G | •• | R | R | R | R | R | R | R | R | | R |
| 8&9 | DW | DW | W | FDW | DW | DW | W | FDW | DW | DW | DW | DW | DW | DW | DW | DW | | BLK |
| 10 | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~G~~ | • | ~~R~~ | ~~R~~ | ~~FY~~ | ••• | | ~~R~~ |
| 11&12 | R | R | R | R | R | R | R | R | R | R | G | •• | R | R | G | •• | | R |
| 13&14 | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | W | FDW | DW | DW | W | FDW | | BLK |
| 15&16 | DW | DW | DW | DW | W | FDW | W | FDW | DW | DW | DW | DW | DW | DW | DW | DW | | BLK |
| 17 | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~FY~~ | ••• | | ~~R~~ |
| 18 | ~~G~~ | • | ~~G~~ | • | ~~R~~ | ~~R~~ | ~~FY~~ | ••• | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | | ~~R~~ |

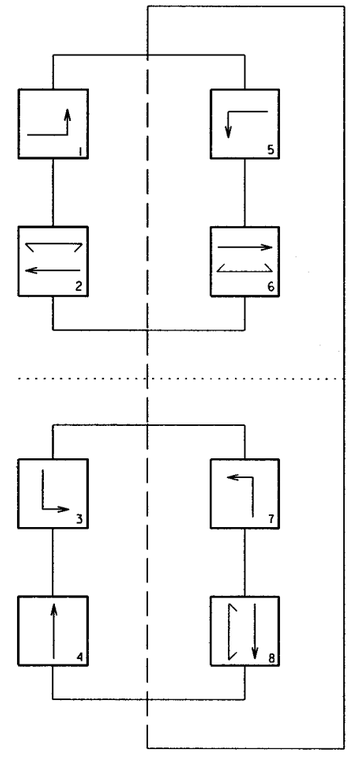
• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

## SIGNAL FACES
12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.

## PHASING DIAGRAM




DATE: 6-7-16 FILE NAME: t050249.dgn

| | | | |
|---|---|---|---|
| LOCATION: | HWY. 13/HWY. 36 | | |
| CITY: | SEARCY | | |
| COUNTY: | WHITE | | |
| DISTRICT: | 5 | SCALE: N/A | DRAWN BY: CJS |

6-7-16
1050249.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 99 | 242 |

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

RUN NEW FEEDER WIRE TO EXISTING CONTROLLER CABINET AND CONNECT TO EXISTING RACK-MOUNTED VEHICLE DETECTOR UNIT.

1.25" NMC INTO CONC. PULL BOX FOR ALL LEAD WIRE (TYP.)

INSTALL LOOPS L41 AND L42 WITH ASSOCIATED PULL BOXES, CONDUIT, AND WIRING

L41

L42

TYPE 1 HD PULL BOX

1" NMC

2" NMC

TYPE 1 HD PULL BOX

RUN NEW CONDUIT AND FEEDER WIRE INTO EXISTING TYPE 2 HD PULL BOX

HWY. 16

HWY. 13

EXIST. ROW

P.C. 104+57.47

P.I. 110+24.86

SCALE IN FEET
0 30 60 120

DATE: 6-7-16 FILE NAME: t050249.dgn

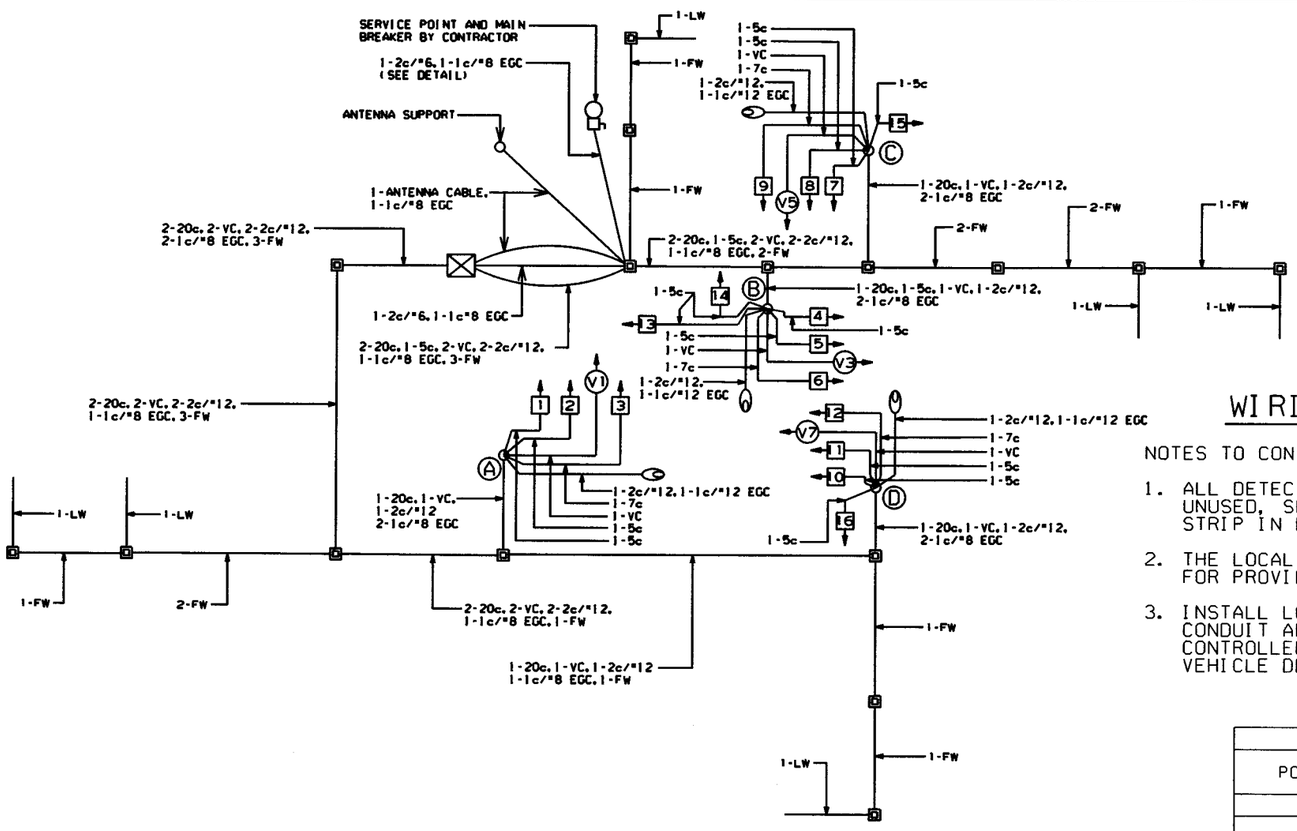
| | | | |
|---|---|---|---|
| LOCATION: | HWY. 13/HWY. 36 | | |
| CITY: | SEARCY | | |
| COUNTY: | WHITE | | |
| DISTRICT: | 5 | SCALE: 1"=60' | DRAWN BY: CJS |

6-7-16

t050249.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 100 | 242 |

(2) SIGNALIZATION PLAN SHEET



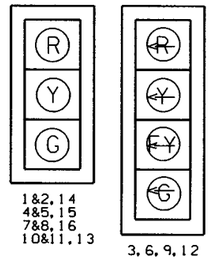

## WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
3. INSTALL LOOPS L41 AND L42 WITH ASSOCIATED PULL BOXES, CONDUIT AND WIRING. RUN NEW FEEDER WIRE TO EXISTING CONTROLLER CABINET, AND CONNECT TO EXISTING RACK-MOUNTED VEHICLE DETECTOR UNIT.

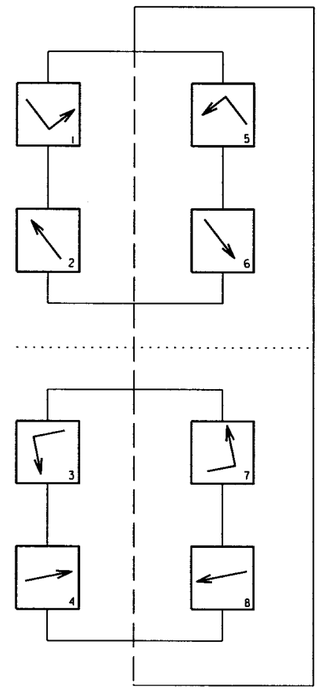
## SIGNAL FACES

12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

## PHASING DIAGRAM




## DETECTOR SPACING CHART

| HWY. 13 | | |
|---|---|---|
| POSTED SPEED | DISTANCE FROM STOP BAR | |
| | LEAD LOOP | LAG VDZ |
| 55 MPH | 405'/245' | 100' |
| HWY. 16 | | |
| POSTED SPEED | DISTANCE FROM STOP BAR | |
| | LEAD LOOP | LAG LOOP |
| 45 MPH | 260' | 115' |

## INTERVAL CHART

| SIGNAL FACES | HWY. 16/HWY. 13 | | | | | | | | | | | | | | | | FLASH SEQ. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1+5 | CLR. | 1+6 | CLR. | 2+5 | CLR. | 2+6 | CLR. | 3+7 | CLR. | 3+8 | CLR. | 4+7 | CLR. | 4+8 | CLR. | |
| 1&2 | R | R | G | •• | R | R | G | •• | R | R | R | R | R | R | R | R | R |
| 3 | ~~G~~ | • | ~~G~~ | • | ~~FY~~ | ••• | ~~FY~~ | ••• | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ |
| 4&5 | R | R | R | R | R | R | R | R | R | R | G | •• | R | R | G | •• | R |
| 6 | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~G~~ | • | ~~FY~~ | ••• | ~~FY~~ | ••• | ~~R~~ |
| 7&8 | R | R | R | R | G | •• | G | •• | R | R | R | R | R | R | R | R | R |
| 9 | ~~G~~ | • | ~~FY~~ | ••• | ~~G~~ | • | ~~FY~~ | ••• | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ |
| 10&11 | R | R | R | R | R | R | R | R | R | R | R | R | G | •• | G | •• | R |
| 12 | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~G~~ | • | ~~FY~~ | ••• | ~~G~~ | • | ~~FY~~ | ••• | ~~R~~ |
| 13 | R | R | R | R | R | R | R | R | R | R | R | R | G | •• | G | •• | R |
| 14 | R | R | G | •• | R | R | G | •• | R | R | R | R | R | R | R | R | R |
| 15 | R | R | R | R | R | R | R | R | R | R | G | •• | R | R | G | •• | R |
| 16 | R | R | R | R | G | •• | G | •• | R | R | R | R | R | R | R | R | R |

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

DETECTOR SYSTEM DESCRIPTION: JOB 050249

| HWY. 16/HWY. 13 DETECTOR ASSIGNMENTS | | | | HARDWARE INPUTS BY SUPPLIER | | | PROGRAM ASSIGNMENTS LOCAL | | MASTER SYSTEM DETECTOR NUMBERS | COMMENTS | TUBE LENGTHS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DET. ID* | LOCATION DIRECTION | TYPE | DET. # | CAB. TRM # | AMP CHN. * | CON. INP.* | PHS | SYSTEM DET. * | | | |
| Vz11 | SB LEFT TURN FAR | COMB. | | | 1 | V9 | 1 | 1 | | CAMERA V1 | 74' |
| Vz12 | SB LEFT TURN NEAR | LOCAL | | | 2 | V1 | 1 | | | CAMERA V1 | 74' |
| | | | | | | | | | | | |
| L21 | NB FAR | LOCAL | 2 | | | V2 | 2 | | | | |
| Vz22 | NB NEAR | COMB. | | | 6 | V10 | 2 | 2 | | CAMERA V5 | 74' |
| | | | | | | | | | | | |
| Vz31 | WB LEFT TURN FAR | COMB. | | | 9 | V11 | 3 | 3 | | CAMERA V3 | 74' |
| Vz32 | WB LEFT TURN NEAR | LOCAL | | | 10 | V3 | 3 | | | CAMERA V3 | 74' |
| | | | | | | | | | | | |
| L41 | EB FAR | LOCAL | 4 | | | V4 | 4 | | | | |
| L42 | EB INTERMEDIATE | LOCAL | 28 | | | V4 | 4 | | | | |
| Vz43 | EB NEAR | COMB. | | | 14 | V12 | 4 | 4 | | CAMERA V7 | 74' |
| | | | | | | | | | | | |
| Vz51 | NB LEFT TURN FAR | COMB. | | | 7 | V13 | 5 | 5 | | CAMERA V5 | 74' |
| Vz52 | NB LEFT TURN NEAR | LOCAL | | | 8 | V5 | 5 | | | CAMERA V5 | 74' |
| | | | | | | | | | | | |
| L61 | SB FAR | LOCAL | 6 | | | V6 | 6 | | | | |
| Vz62 | SB NEAR | COMB. | | | 4 | V14 | 6 | 6 | | CAMERA V1 | 74' |
| | | | | | | | | | | | |
| Vz71 | EB LEFT TURN FAR | COMB. | | | 15 | V15 | 7 | 7 | | CAMERA V7 | 74' |
| Vz72 | EB LEFT TURN NEAR | LOCAL | | | 16 | V7 | 7 | | | CAMERA V7 | 74' |
| | | | | | | | | | | | |
| L81 | WB FAR | LOCAL | 8 | | | V8 | 8 | | | | |
| L82 | WB INTERMEDIATE | LOCAL | 32 | | | V8 | 8 | | | | |
| Vz83 | WB NEAR | COMB. | | | 12 | V16 | 8 | 8 | | CAMERA V3 | 74' |
| | | | | | SPARE AMP. CHN. * = 3, 5, 11, 13 | | | | | | |

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN:' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

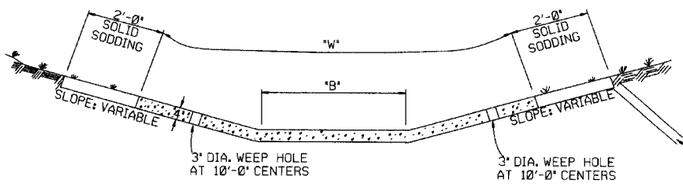
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-10-16

DATE: 6-7-16 FILE NAME: t050249.dgn

LOCATION: HWY. 16/HWY. 13
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: N/A DRAWN BY: CJS

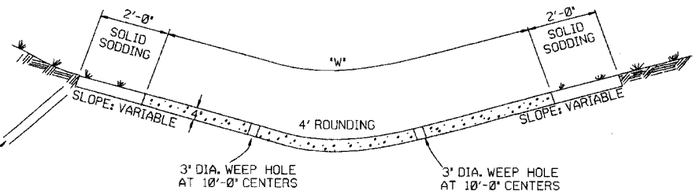
6-7-16
1050249.dgn

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




TYPE A

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS

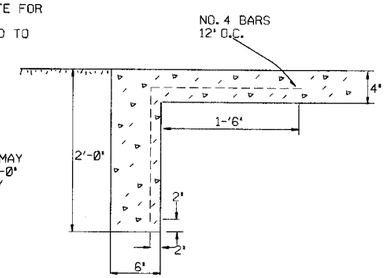



EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

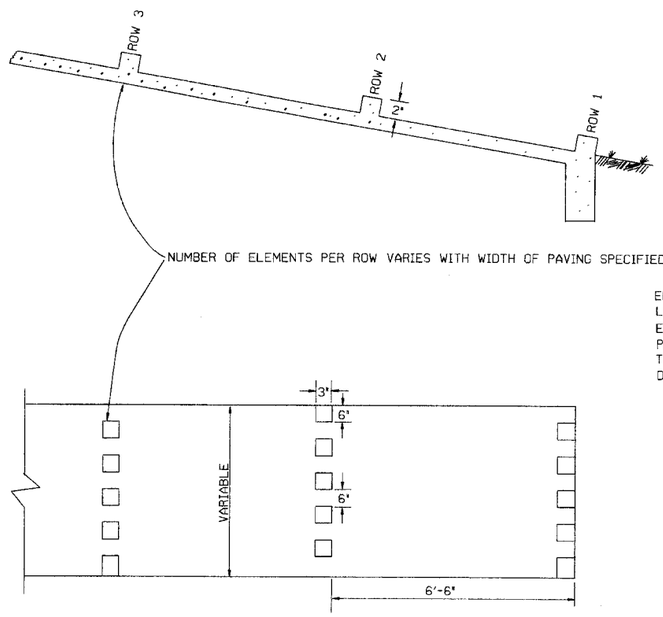
TYPE B

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

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




TOE WALL DETAIL FOR CONCRETE DITCH PAVING




ENERGY DISSIPATORS
(NO SCALE)

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

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

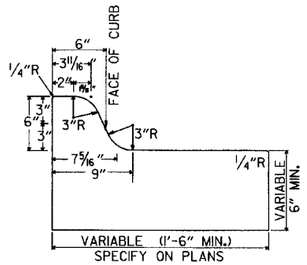
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

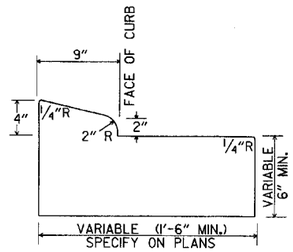
ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE DITCH PAVING

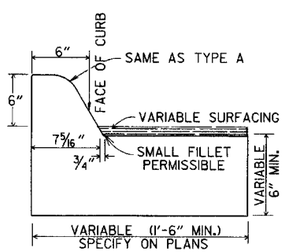
STANDARD DRAWING CDP-1



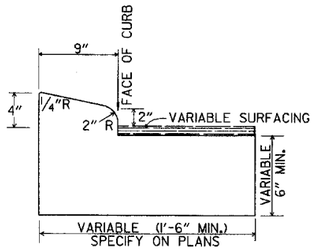

TYPE A



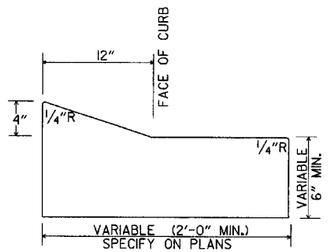

TYPE B-1



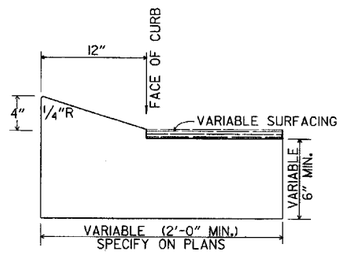

TYPE C




TYPE B-2

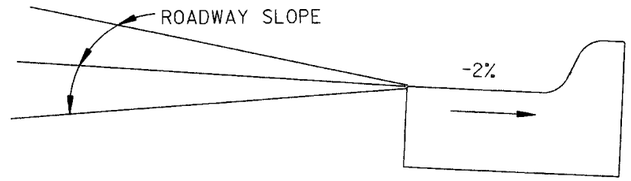



TYPE E-1



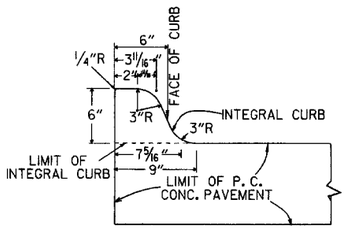

TYPE E-2

# CONCRETE COMBINATION CURB AND GUTTER

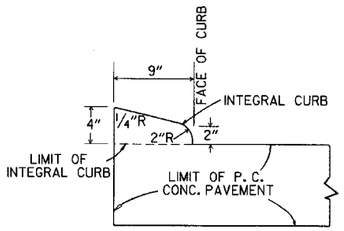



## DETAIL OF GUTTER SLOPE

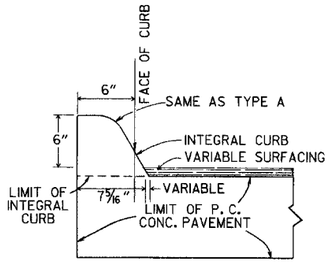
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.




TYPE A

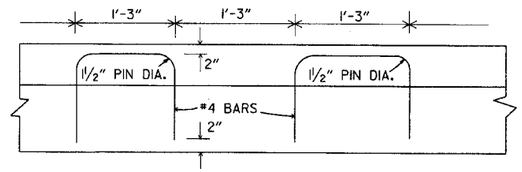



TYPE B

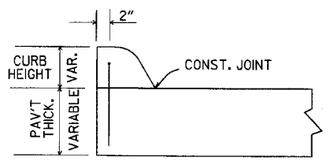



TYPE C

# INTEGRAL CURB

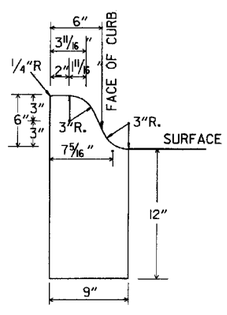



LONGITUDINAL SECTION

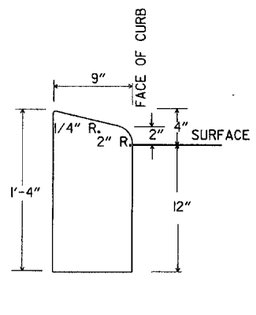



ELEVATION

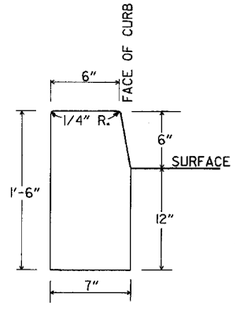
## ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



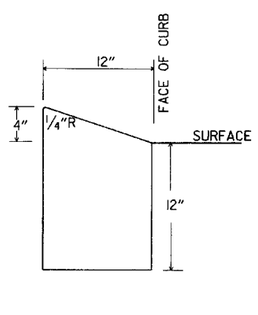

TYPE A




TYPE B

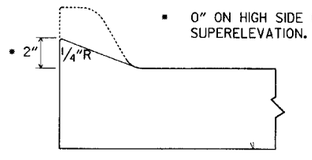



TYPE D




TYPE E

# CONCRETE CURB




NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

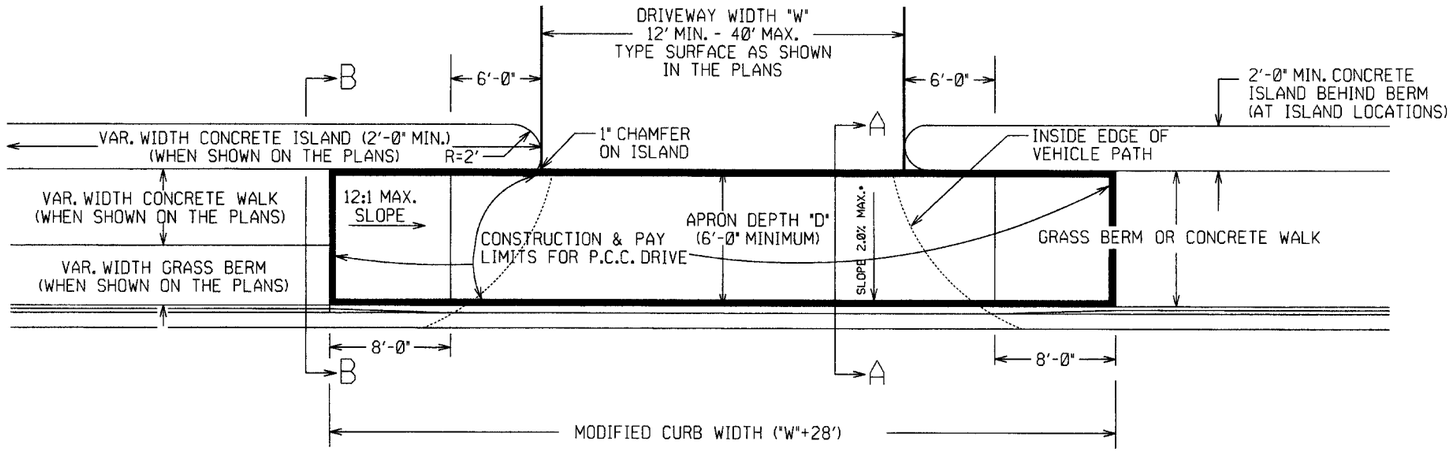
## DETAILS OF MODIFIED CURB

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 11-29-07 | REVISED GUTTER SLOPE & MODIFIED CURB DETAILS | |
| 11-10-05 | ADDED DETAILS OF TYPE E CURBS | |
| 11-16-01 | REVISED CONCRETE CURB TYPE B | |
| 11-18-98 | REVISED MODIFIED CURB | |
| 6-2-94 | ADDED NOTE TO SPECIAL MODIFIED CURB | |
| 8-5-93 | CORRECTED GUTTER SLOPE | 8-5-93 |
| 10-1-92 | ADDED DETAILS OF GUTTER SLOPE | 10-1-92 |
| 5-24-90 | ADDED DETAILS OF MODIFIED CURB | 5-24-90 |
| 11-30-89 | VARIBLE DEPTH TYPE A & B | 11-30-89 |
| 7-15-88 | REVISED MODIFIED CURB | 630-7-15-88 |
| 11-1-73 | REVISED MODIFIED CURB | 500-11-1-73 |
| 10-2-72 | REVISED AND REDRAWN | 512-10-2-72 |

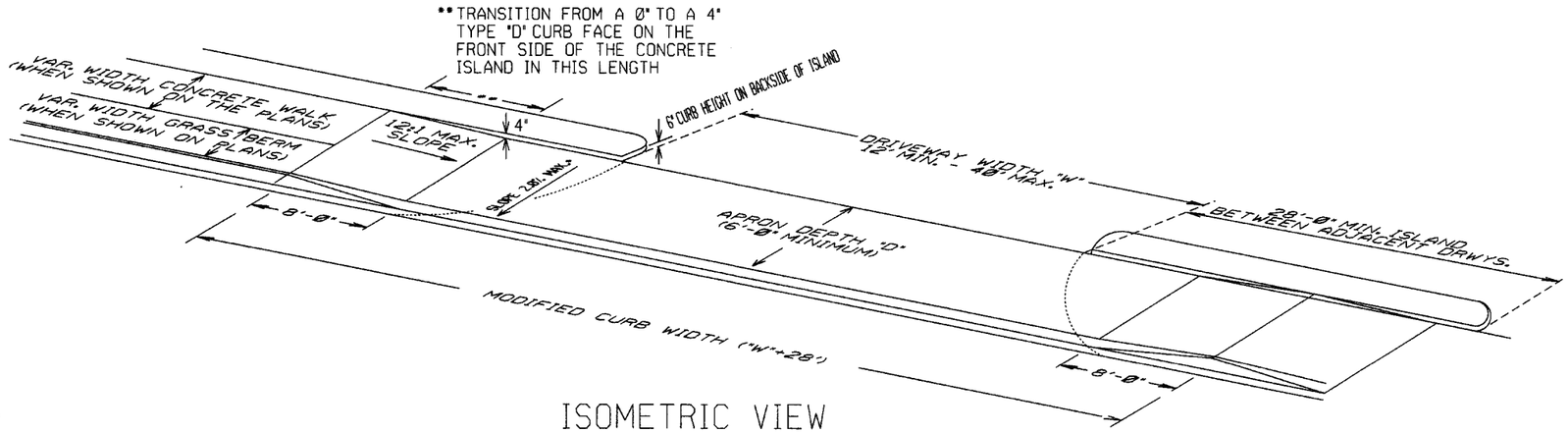
ARKANSAS STATE HIGHWAY COMMISSION

# CURBING DETAILS

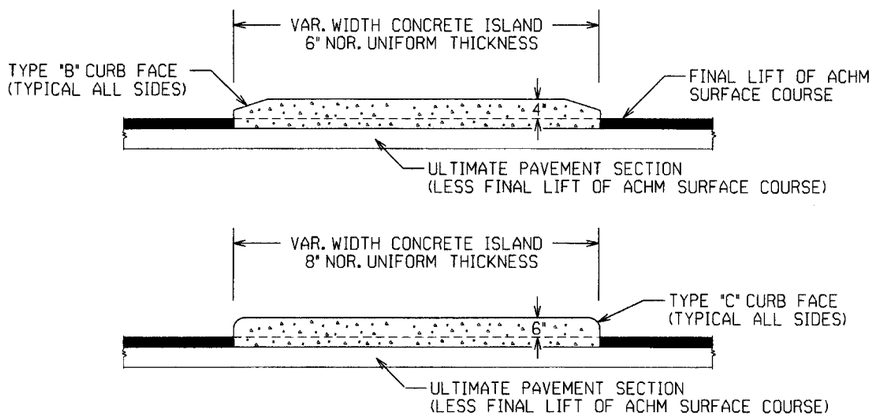
STANDARD DRAWING CG-1




PLAN VIEW

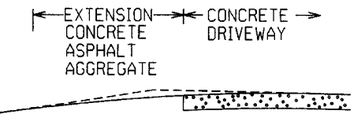



ISOMETRIC VIEW




CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".




EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

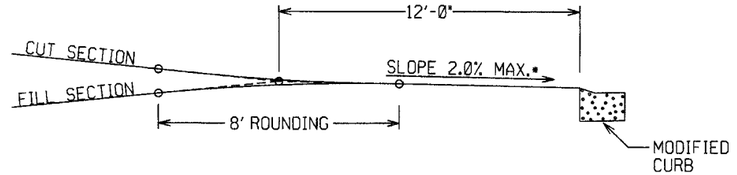
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

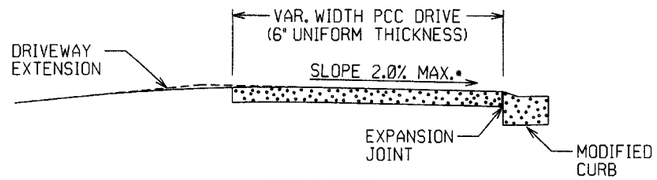
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

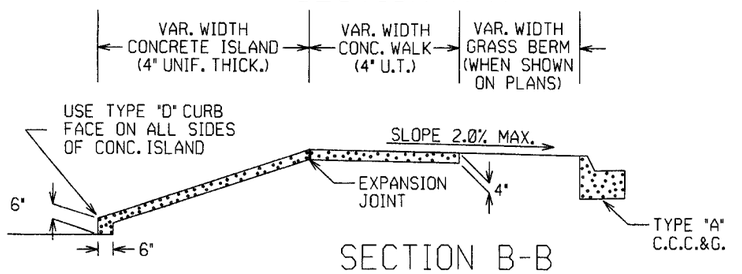



DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



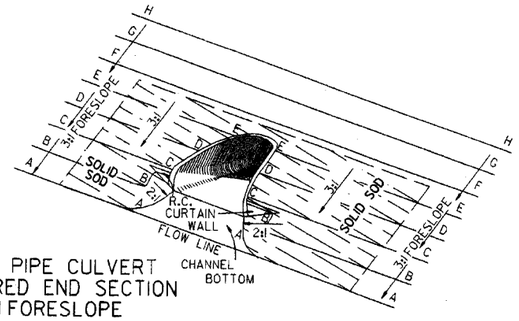

SECTION A-A



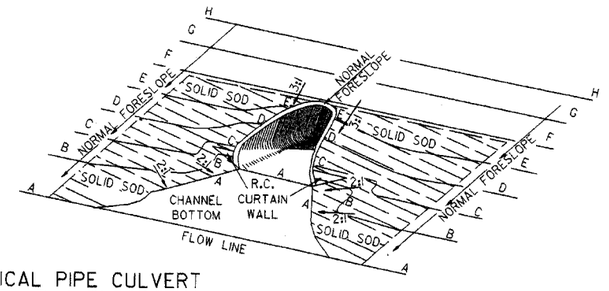

SECTION B-B
CURBED ISLAND BEHIND WALK

| DATE REV | DATE FILMED | DESCRIPTION |
|---|---|---|
| 2-27-14 | | REVISED PLAN & ISOMETRIC VIEW |
| 11-29-07 | | ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL |
| 11-10-05 | | REV. APRON SLOPE & DEPTH OF AGG. BASE. |
| 8-22-02 | | ADDED ISLAND DETAILS & NOTES |
| 3-30-00 | | REV. MOD. CURB WIDTH & TRANS. NOTE |
| 11-19-98 | | REVISED NOTES |
| 11-18-98 | | REDRAWN AND REISSUED |

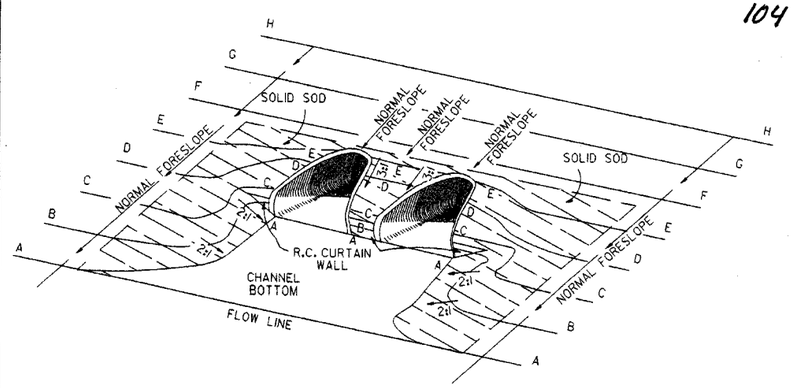
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



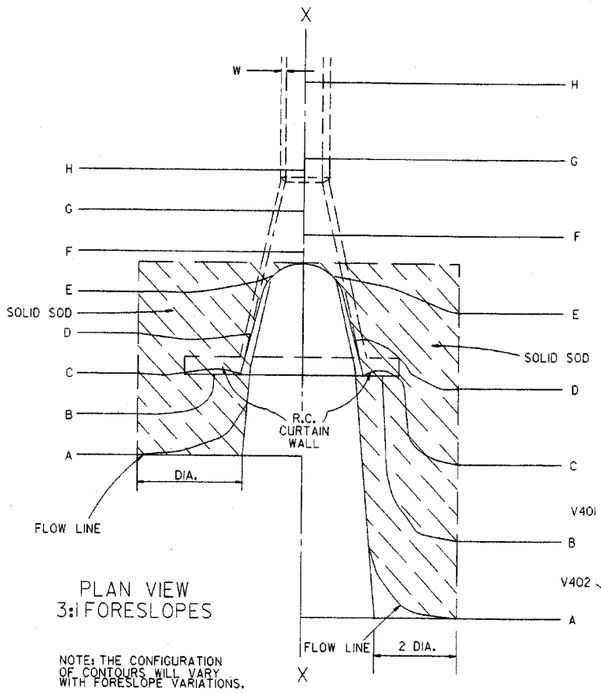

TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE




TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES




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




PLAN VIEW
3:1 FORESLOPES

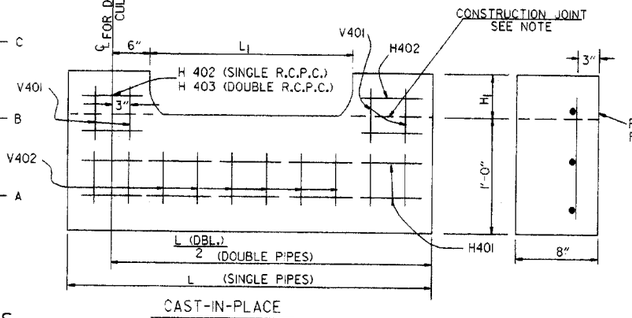
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

## R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

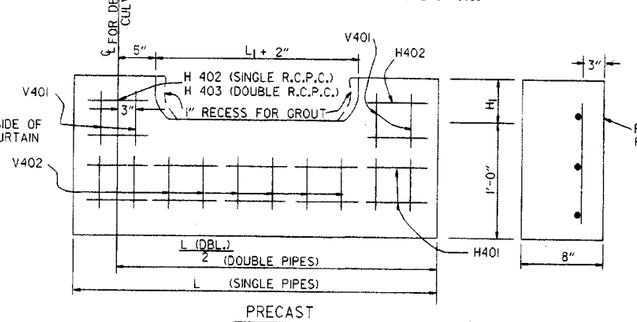
| PIPE DIA. | $H_1$ | $L_1$ | L | L (DBL.)/2 | SINGLE R.C.P.C. CONC. | SINGLE R.C.P.C. REINF. STEEL | DOUBLE R.C.P.C. CONC. | DOUBLE R.C.P.C. REINF. STEEL |
|---|---|---|---|---|---|---|---|---|
| | | | | | CU. YDS. | LBS. | CU. YDS. | LBS. |
| 18" | 1 1/2" | 3'-5" | 8'-0" | 6'-3" | 0.31 | 27.7 | 0.45 | 39.5 |
| 24" | 1'-0 1/2" | 4'-6" | 9'-6" | 7'-6" | 0.37 | 33.4 | 0.53 | 48.0 |
| 30" | 1'-3 1/2" | 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'-1 1/2" | 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'-9 1/2" | 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 | H401 NO. | H402 L | H402 NO. | V401 L | V401 NO. | V402 L | V402 NO. | DOUBLE R.C. PIPE CULVERT H401 L | H401 NO. | H402 L | H402 NO. | H403 L | H403 NO. | V401 L | V401 NO. | V402 L | V402 NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 7'-8" | 2 | 1'-11 1/2" | 4 | 1'-7 1/2" | 8 | 8" | 8 | 12'-2" | 2 | 1'-11 1/2" | 4 | 8" | 2 | 1'-7 1/2" | 10 | 8" | 14 |
| 24" | 9'-2" | 2 | 2'-2" | 4 | 1'-8 1/2" | 10 | 8" | 9 | 14'-8" | 2 | 2'-2" | 4 | 8" | 2 | 1'-8 1/2" | 12 | 8" | 18 |
| 30" | 10'-8" | 2 | 2'-4 1/2" | 4 | 1'-11 1/2" | 10 | 8" | 12 | 17'-8" | 2 | 2'-4 1/2" | 4 | 8" | 2 | 1'-11 1/2" | 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'-9 1/2" | 8 | 2'-9 1/2" | 16 | 8" | 15 | 23'-8" | 2 | 3'-9 1/2" | 8 | 8" | 4 | 2'-9 1/2" | 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'-8 1/2" | 12 | 3'-5 1/2" | 20 | 8" | 17 | 27'-8" | 2 | 4'-9" | 12 | 8" | 6 | 3'-5 1/2" | 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.

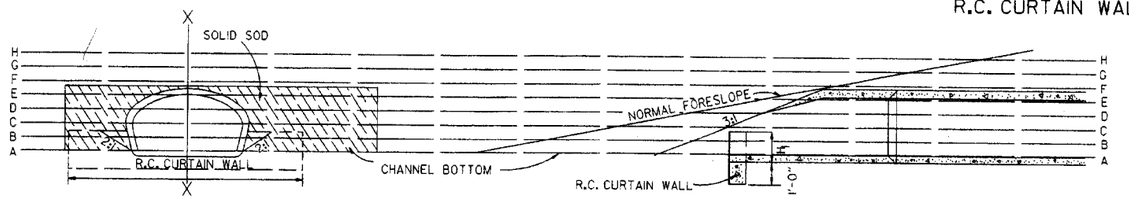
## SOLID SODDING

| 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 | 20 | 30 |
| 36" | 17 | 26 | 41 | 18 | 28 | 43 |
| 42" | 23 | 35 | 55 | 25 | 37 | 57 |
| 48" | 29 | 46 | 68 | 31 | 48 | 70 |
| 54" | 36 | 57 | 85 | 37 | 59 | 87 |
| 60" | 45 | 62 | 104 | 48 | 65 | 107 |
| 72" | 64 | 92 | 156 | 67 | 95 | 159 |

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

GENERAL NOTES

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




END VIEW

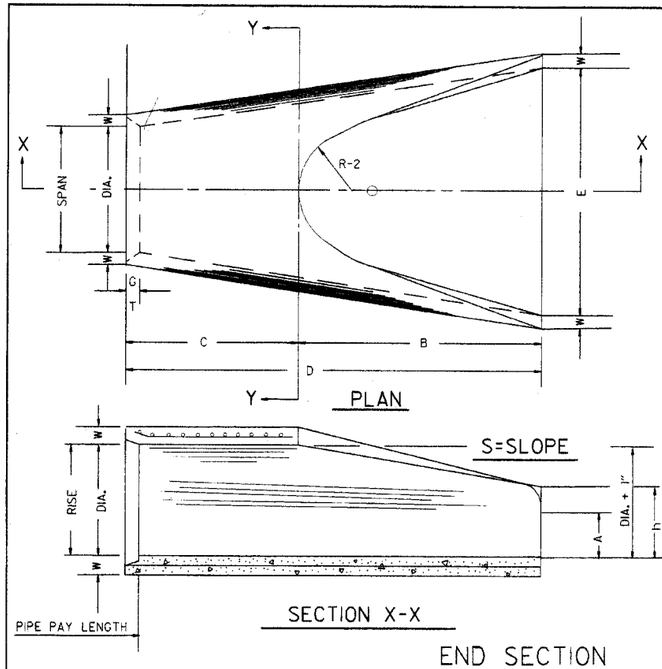
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

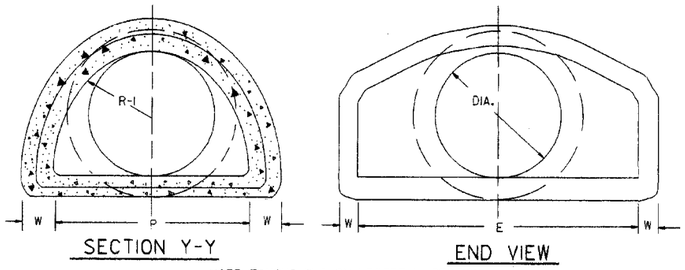
FLARED END SECTION

STANDARD DRAWING FES-1




## TABLE OF DIMENSIONS

| DIA. | WALL | A | B | C | D | E | S | DIA. + 1" | P | R-1 | R-2 | G-T | WT. | h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 2½" | 9" | 2'-3" | 3'-10" | 6'-1" | 3'-0" | 3:1 | 19" | 29" | 15½" | 12" | 2" | 1000 | 1'-0½" |
| 24" | 3" | 9½" | 3'-7½" | 2'-6" | 6'-1½" | 4'-0" | 3:1 | 25" | 33⅜" | 16⅛" | 14" | 2½" | 1600 | 1'-1½" |
| 30" | 3½" | 1'-0" | 4'-6" | 1'-7¾" | 6'-1¾" | 5'-0" | 3:1 | 31" | 37" | 18½" | 15" | 3¼" | 1940 | 1'-4⅝" |
| 36" | 4" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 6'-0" | 3:1 | 37" | 47⅛" | 24⅝" | 20" | 3½" | 4100 | 1'-8" |
| 42" | 4½" | 1'-9" | 5'-3" | 2'-11" | 8'-2" | 6'-6" | 3:1 | 43" | 53⅛" | 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" | 36⅛" | 24" | 4" | 9270 | 3'-5" |
| 72" | 7" | 3'-10" | 6'-6" | 1'-10" | 8'-4" | 9'-0" | 3:1 | 73" | 77⅛" | 38⅝" | 24" | 5" | 13250 | 4'-6" |

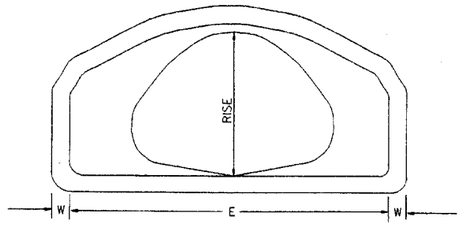



NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

## ARCH PIPE

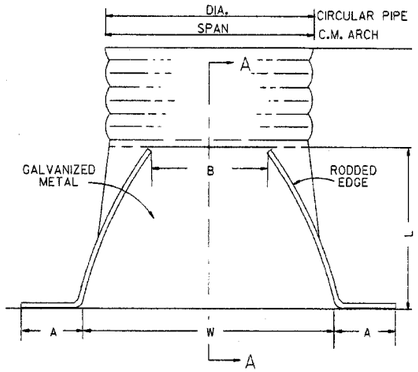
| EQUIV. DIA. | • SPAN AASHTO M 206 | • SPAN AHD NOMINAL | • RISE AASHTO M 206 | • RISE AHD NOMINAL | W | A | B | C | D | E | P | R2 | G-T | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | INCHES | | | | | | | | | | | | | |
| 15 | 18 | 18 | 11 | 11 | 2" | 4" | 2'-0" | 4'-0" | 6'-0" | 3'-0" | 29" | 12" | 1½" | 2½:1 |
| 18 | 22 | 22 | 13½ | 14 | 2½" | 5" | 2'-0" | 4'-1" | 6'-1" | 3'-6" | 32⅓" | 13" | 2½" | 2½:1 |
| 21 | 26 | 26 | 15½ | 16 | 2¾" | 7" | 2'-3" | 3'-10" | 6'-1" | 4'-0" | 34⅛" | 14" | 2½" | 2½:1 |
| 24 | 28½ | 29 | 18 | 18 | 3" | 9" | 2'-3" | 3'-10" | 6'-1" | 5'-0" | 36⅛" | 15" | 2½" | 2½:1 |
| 30 | 36¼ | 36 | 22½ | 23 | 3½" | 10" | 3'-1" | 3'-0½" | 6'-1½" | 6'-0" | 47⅛" | 20" | 3" | 2½:1 |
| 36 | 43¾ | 44 | 26⅝ | 27 | 4" | 10½" | 4'-0" | 2'-1½" | 6'-1½" | 6'-6" | 54⅛" | 22" | 3½" | 2½:1 |
| 42 | 51⅛ | 51 | 31⅝ | 31 | 4½" | 11½" | 4'-7" | 1-10¼" | 6'-5¼" | 7'-2" | 59½" | 23" | 3¾" | 2½:1 |
| 48 | 58½ | 59 | 36 | 36 | 5" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 7'-10" | 70⅝" | 24" | 4¼" | 2½:1 |
| 54 | 65 | 65 | 40 | 40 | 5½" | 1'-7" | 5'-3" | 2'-11" | 8'-2" | 8'-6" | 72⅛" | 24" | 4¾" | 2½:1 |
| 60 | 73 | 73 | 45 | 45 | 6" | 1'-10" | 5'-6" | 2'-8" | 8'-2" | 9'-0" | 77⅛" | 24" | 5" | 2½:1 |

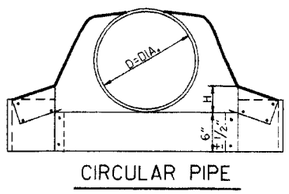
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

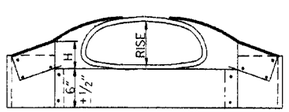



END VIEW
CONCRETE ARCH PIPE

# END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS




## CIRCULAR PIPE

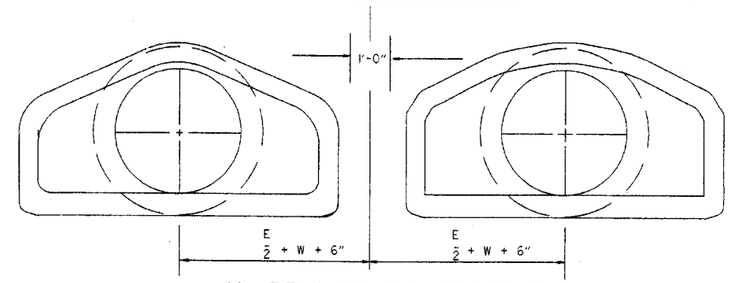
| D. DIA. | GAUGE | A 1" ± | B. MAX. | H 1" ± | L 1½" ± | W 2" ± | S |
|---|---|---|---|---|---|---|---|
| | | INCHES | | | | | |
| 12 | 16 | 6 | 6 | 6 | 21 | 24 | 2½:1 |
| 15 | 16 | 7 | 8 | 6 | 26 | 30 | 2½:1 |
| 18 | 16 | 8 | 10 | 6 | 31 | 36 | 2½:1 |
| 21 | 16 | 9 | 12 | 6 | 36 | 42 | 2½:1 |
| 24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

## C.M. ARCH PIPE

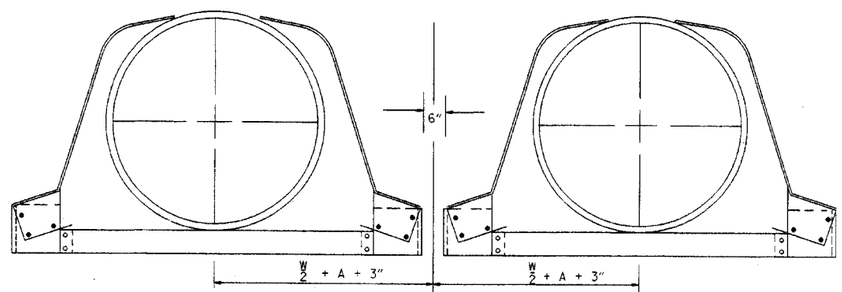
| EQUIV. DIA. | SPAN | RISE | A 1" ± | B MAX. | H 1" ± | L 1½" ± | W 2" ± | S | GAUGE |
|---|---|---|---|---|---|---|---|---|---|
| | INCHES | | | | | | | | |
| 15" | 17 | 13 | 7 | 9 | 6 | 19 | 30 | 2½:1 | 16 |
| 18" | 21 | 15 | 7 | 10 | 6 | 23 | 36 | 2½:1 | 16 |
| 21" | 24 | 18 | 8 | 12 | 6 | 28 | 42 | 2½:1 | 16 |
| 24" | 28 | 20 | 9 | 14 | 6 | 32 | 48 | 2½:1 | 16 |
| 30" | 35 | 24 | 10 | 16 | 6 | 39 | 60 | 2½:1 | 14 |
| 36" | 42 | 29 | 12 | 18 | 8 | 46 | 75 | 2½:1 | 14 |
| 42" | 49 | 33 | 13 | 21 | 9 | 53 | 85 | 2½:1 | 12 |
| 48" | 57 | 38 | 18 | 26 | 12 | 63 | 90 | 2½:1 | 12 |
| 54" | 64 | 43 | 18 | 30 | 12 | 70 | 102 | 2¼:1 | 12 |
| 60" | 71 | 47 | 18 | 33 | 12 | 77 | 114 | 2¼:1 | 12 |

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

# END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



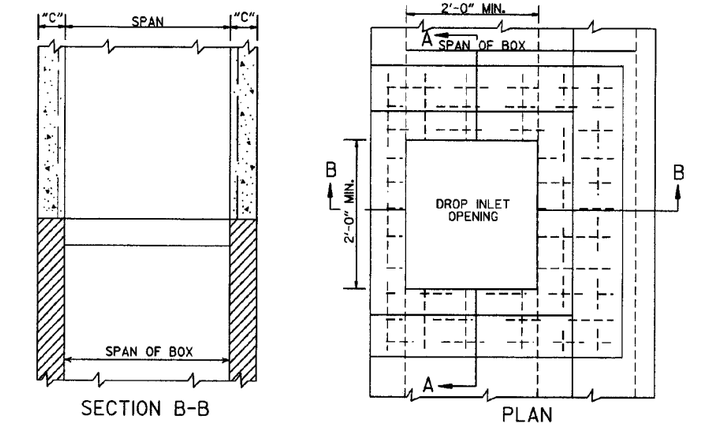

MULTIPLE R.C. PIPE CULVERTS



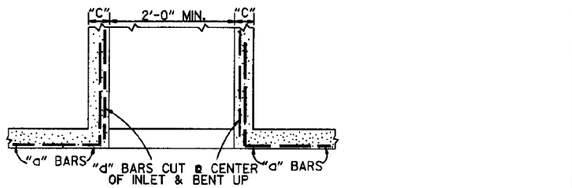

MULTIPLE C.M. PIPE CULVERTS

| DATE | REVISION | FILMED | |
|---|---|---|---|
| 10-18-96 | REVISED ASTM REF. TO AASHTO | 10-18-96 | ARKANSAS STATE HIGHWAY COMMISION |
| 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 | FLARED END SECTION |
| 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 | STANDARD DRAWING FES-2 |
| 10-2-72 | REVISED AND REDRAWN | 760-10-2-72 | |

stdfes2.dgn

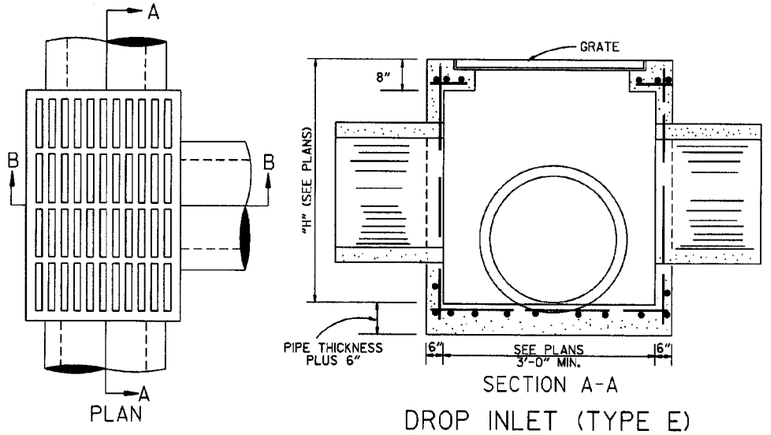



## METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT

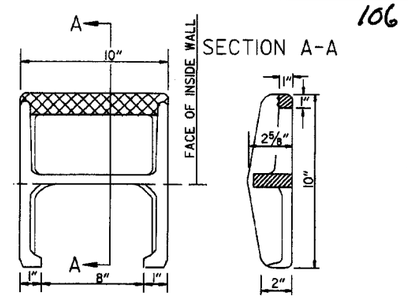



## METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.




## DROP INLET (TYPE E)

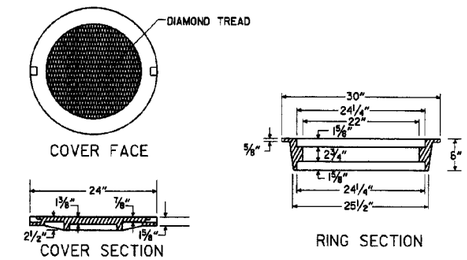



APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

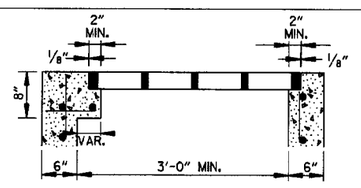
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

## DETAIL OF STEP FOR DROP INLET



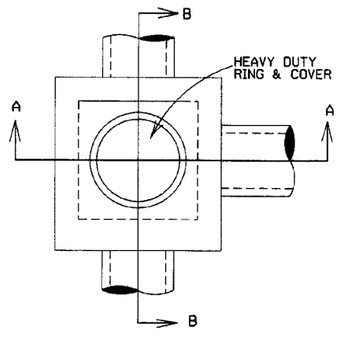

APPROXIMATE TOTAL WEIGHT = 333 LBS.

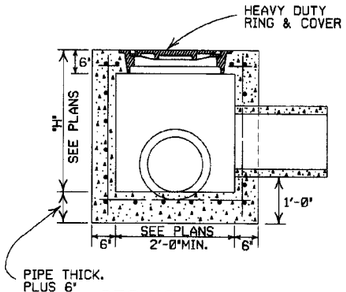
## HEAVY DUTY RING & COVER



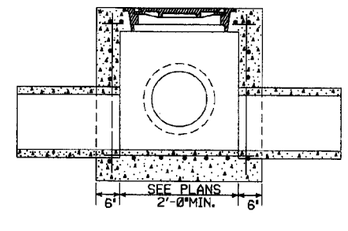

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

## GRATE FOR TYPE E DROP INLET

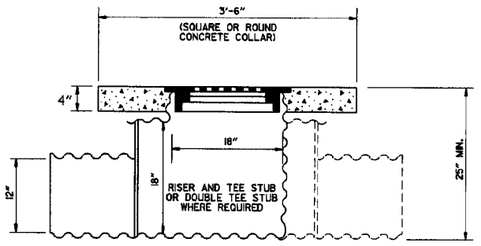


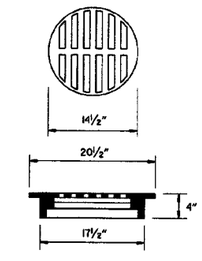

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.




## JUNCTION BOX (TYPE E)




NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".




USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

## DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

| DATE REV. | REVISION | DATE FILMED |
|---|---|---|
| 11-16-01 | ADDED NOTE 10 | |
| 1-12-00 | REVISED HEAVY DUTY RING & COVER | |
| 7-02-98 | CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E) | |
| 6-26-97 | ADDED DIMENSION TO TYPE IV-A | |
| 10-18-96 | ADDED DETAIL OF YARD DRAIN | |
| 8-15-91 | DELETE TYPE IV GRATE | |
| 7-15-88 | REVISED STEP DETAIL | |
| 5-20-83 | REVISED DETAILS OF GRATES (TYPE IV & IV-A) | |
| 2-4-83 | ADDED GENERAL NOTE NO. 4 | |
| 3-2-81 | ADDED TYPE IV-A GRATE | |
| 5-22-74 | DELETED INLET (TYPE F) & GRATE (TYPE III) | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

## 4'-0" LENGTH DROP INLET

| PIPE SIZE | MIN. WIDTH | HEIGHT 5'-0" CLASS A CONC. | HEIGHT 5'-0" REINF. STEEL | PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. | PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL |
|---|---|---|---|---|---|
| | | CU. YDS. | POUNDS | CU. YDS. | POUNDS |
| 18" | 2'-6" | 1.77 | 156 | 0.28 | 22 |
| 24" | 2'-6" | 1.79 | 156 | 0.28 | 22 |
| 30" | 3'-2" | 2.39 | 205 | 0.30 | 26 |
| 36" | 3'-8" | 2.63 | 236 | 0.32 | 28 |
| 42" | 4'-4" | 2.95 | 250 | 0.34 | 30 |
| 48" | 4'-10" | 3.21 | 265 | 0.36 | 32 |

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

## DROP INLET EXTENSION

| 4'-0" CLASS A CONC. | 4'-0" REINF. STEEL | 8'-0" CLASS A CONC. | 8'-0" REINF. STEEL |
|---|---|---|---|
| CU. YDS. | POUNDS | CU. YDS. | POUNDS |
| 0.58 | 38 | 0.87 | 72 |

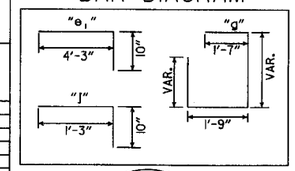
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.

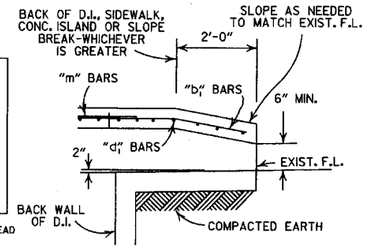
| | | | |
|---|---|---|---|
| 0.04 | 3 | | |

## DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

| INSIDE DIA. PIPE | CLASS A CONC. | REINF. STEEL |
|---|---|---|
| INCHES | CU. YDS. | POUNDS |
| 18 | 0.05 | 2 |
| 24 | 0.09 | 3 |
| 30 | 0.13 | 4 |
| 42 | 0.24 | 8 |

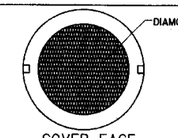
## BAR DIAGRAM

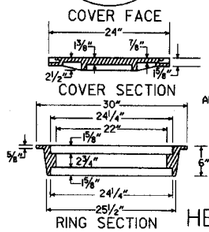



## BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

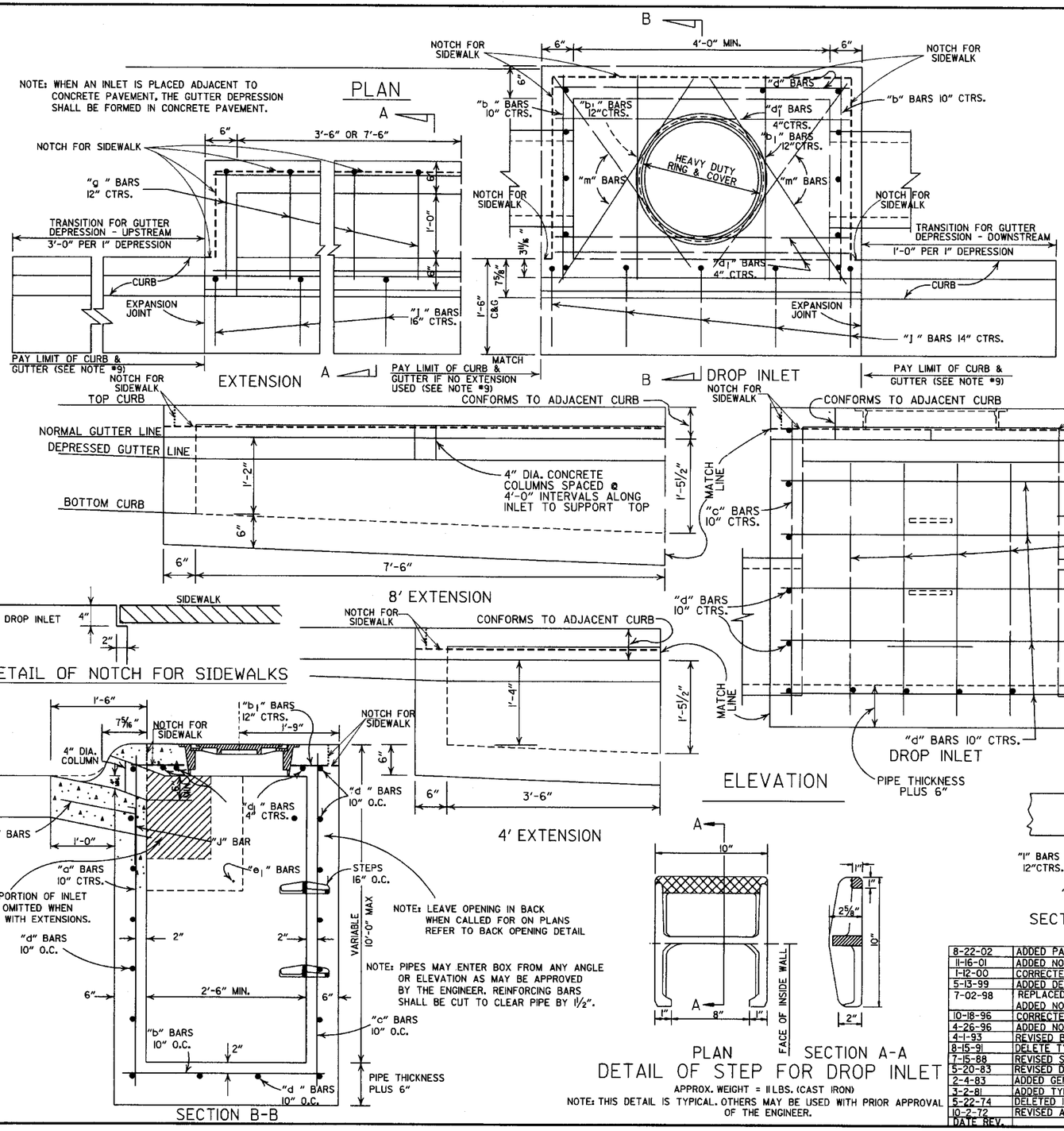



APPROXIMATE TOTAL WEIGHT = 333 LBS.

## HEAVY DUTY RING & COVER

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

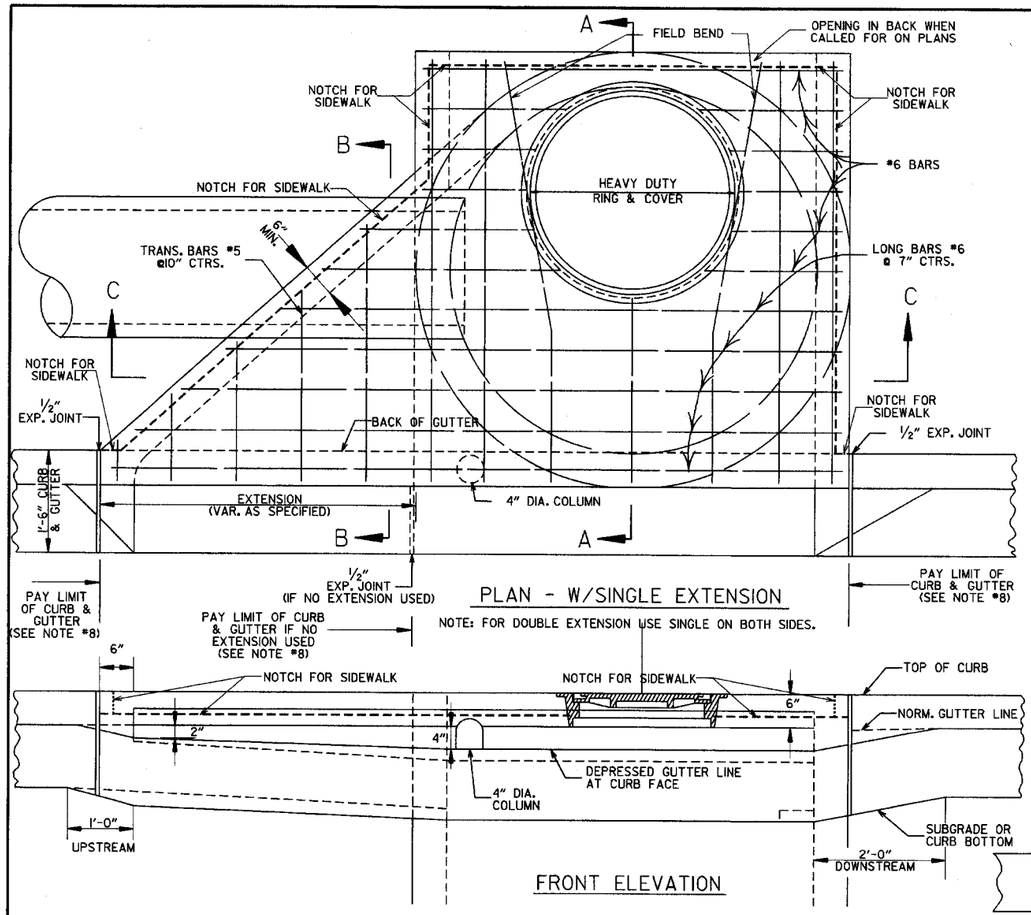



| DATE REV. | REVISION | DATE FILMED |
|---|---|---|
| 8-22-02 | ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B | |
| 11-16-01 | ADDED NOTE 13; REVISED SECTION B-B | |
| 1-12-00 | CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER | |
| 5-13-99 | ADDED DETAIL OF NOTCH FOR SIDEWALKS | |
| 7-02-98 | REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11 | |
| 10-18-96 | CORRECTED SPELLING | |
| 4-26-96 | ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES | 10-18-96 |
| 4-1-93 | REVISED BACK OPENING & NOTE | |
| 8-15-91 | DELETE TYPE IV GRATE | |
| 7-15-88 | REVISED STEP DETAIL | |
| 5-20-83 | REVISED DETAILS OF GRATES (TYPE IV & IV-A) | |
| 2-4-83 | ADDED GENERAL NOTE NO. 4 | |
| 3-2-81 | ADDED TYPE IV-A GRATE | |
| 5-22-74 | DELETED INLET (TYPE F) & GRATE (TYPE III) | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS (TYPE C)

STANDARD DRAWING FPC-9E

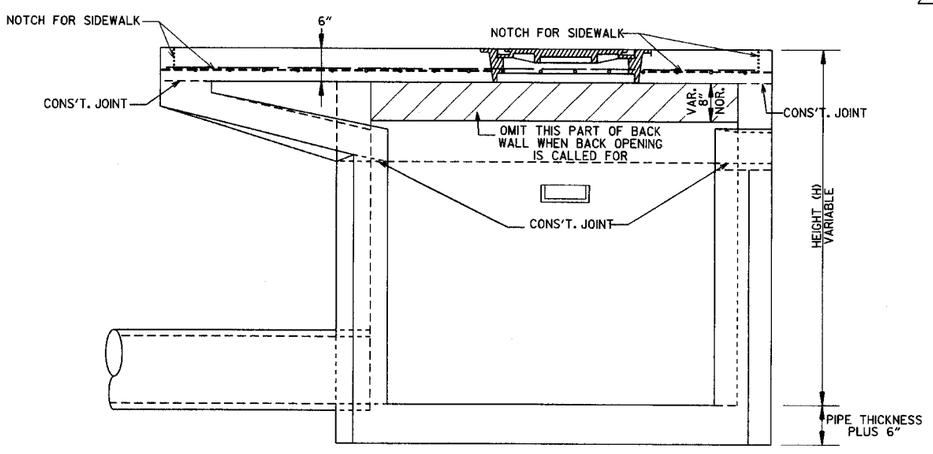



PLAN - W/SINGLE EXTENSION

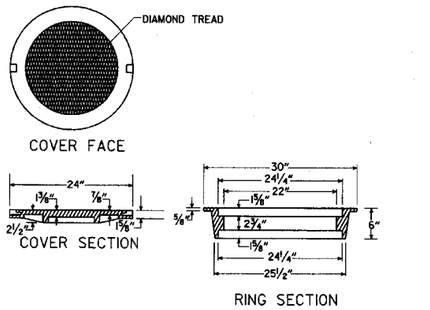
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.




FRONT ELEVATION



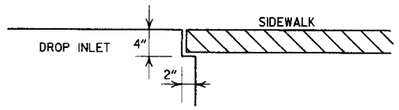

SECTION C-C



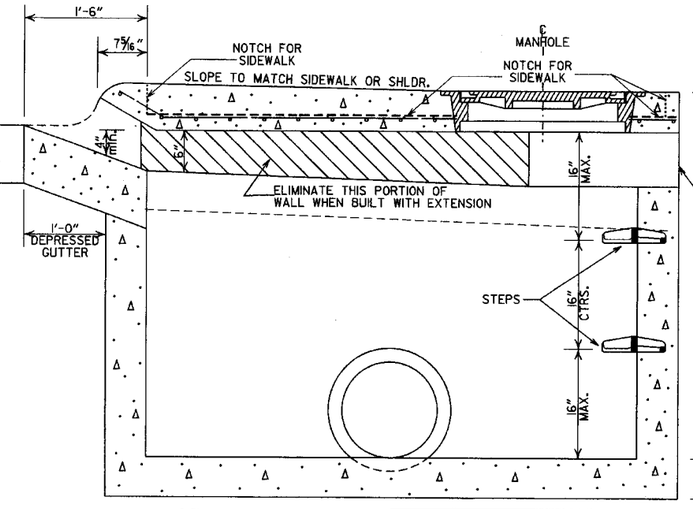

APPROXIMATE TOTAL WEIGHT = 333 LBS.

## HEAVY DUTY RING & COVER

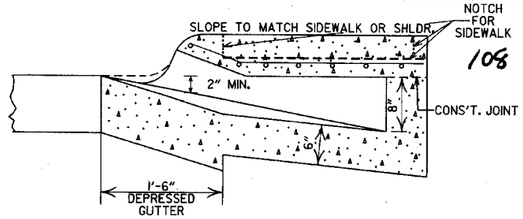
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



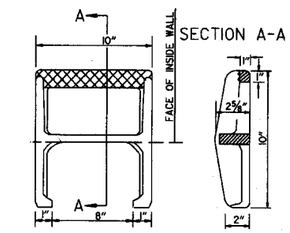

## DETAIL OF NOTCH FOR SIDEWALKS




SECTION A-A




SECTION B-B

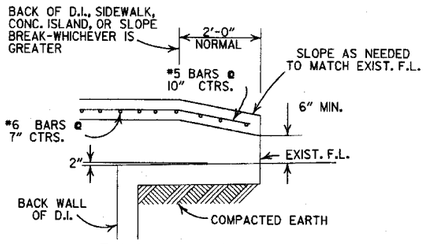



APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

## DETAIL OF STEP FOR DROP INLET




## BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

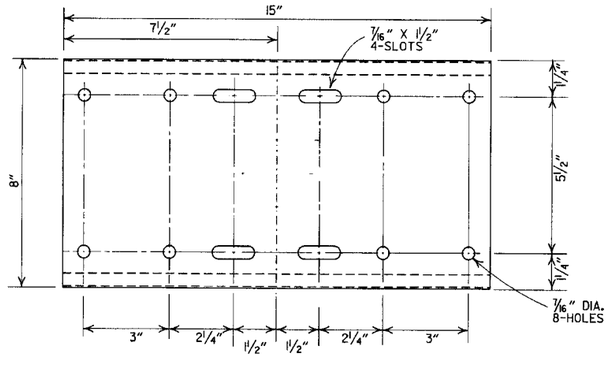
| DIA. OF D.I. | DIA. OF OUTLET PIPE | MINIMUM WALL THICKNESS | |
|---|---|---|---|
| | | CAST IN PLACE | PRECAST |
| 4' I.D. | 12" THRU 27" | 6" | 5" |
| 5' I.D. | 30" THRU 42" | 8" | 6" |
| 6' I.D. | 48" THRU 54" | 8" | 7" |

| DATE | REVISIONS | DATE FILMED |
|---|---|---|
| 8-22-02 | ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B | |
| 11-16-01 | ADDED NOTE 13 | |
| 1-12-00 | REVISED HEAVY DUTY RING & COVER | |
| 5-13-99 | ADDED NOTCH DETAIL FOR SIDEWALKS | |
| 7-02-98 | REF. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET | |
| 4-26-96 | ADDED NOTE "CLEAR OPENING DIMENSION" | |
| 10-6-95 | CORRECTED *6 BAR SPACING | |
| 7-20-95 | CORRECTED DIAMETER OF D.I. IN BOX | |
| 2-27-95 | TYPE C TO MO (OPEN BACK DETAIL) | |
| 11-2-94 | REVISED GENERAL NOTES | 11-3-94 |
| 4-1-93 | REV. BACK OPEN. DETAIL & NOTE | 4-1-93 |
| 8-15-91 | REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL | 8-16-91 |
| 11-30-89 | ADDED NOTE NO. 12 | 11-30-89 |
| 4-21-89 | ADDED NOTE & MINIMUM WALL THICKNESS | 513-1-24-89 |
| 7-5-88 | ADDED EXTEND NOTE TO SECTION A-A | 639-7-15-88 |
| 11-12-87 | MODIFIED WALL THICKNESS | 705-11-12-87 |
| 6-12-87 | ISSUED | 4-6-12-87 |

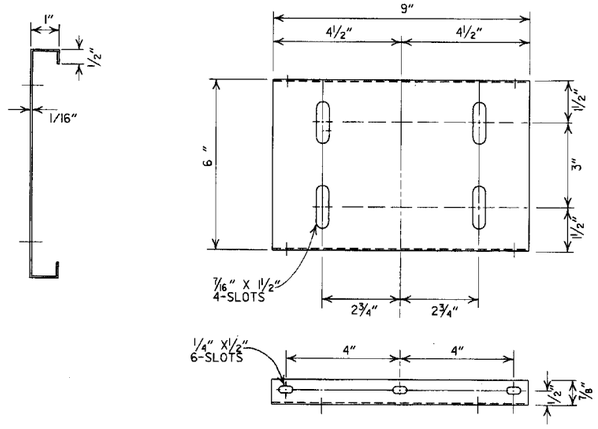
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DETAILS OF DROP INLET (TYPE MO)

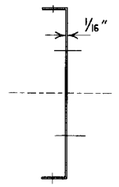
STANDARD DRAWING FPC-9M

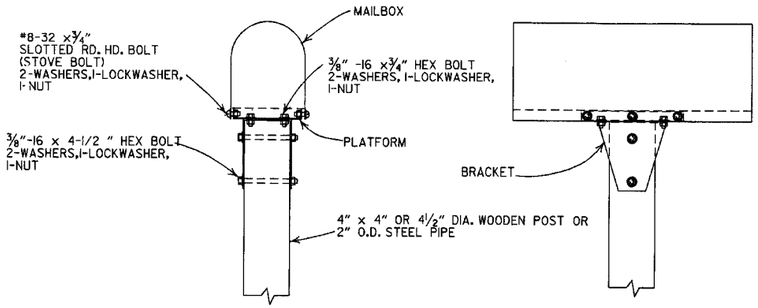



SHELF

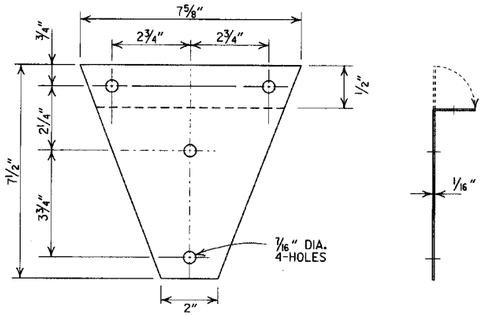



PLATFORM



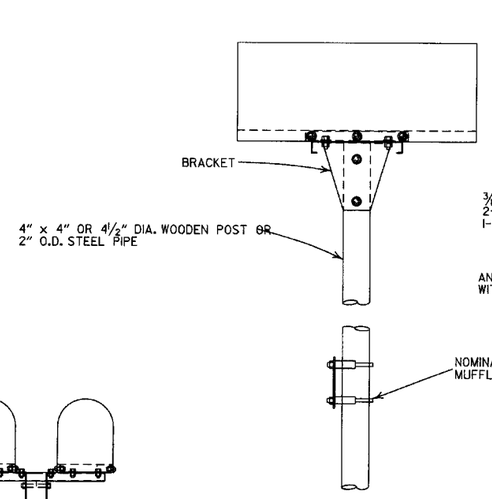

SINGLE INSTALLATION



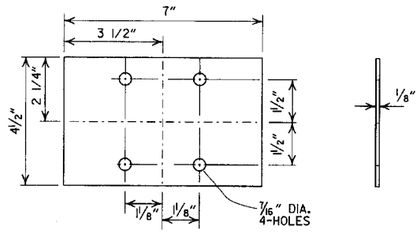

BRACKET

GENERAL NOTES

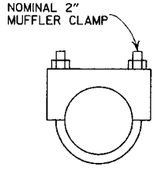
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED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



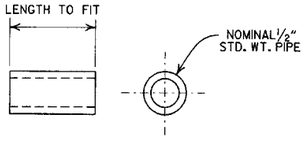

DOUBLE INSTALLATION



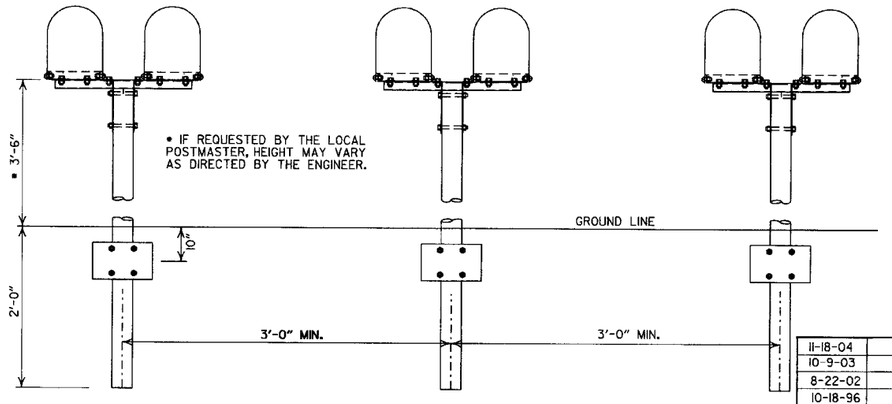

ANTI-TWIST PLATE




CLAMP




SPACER



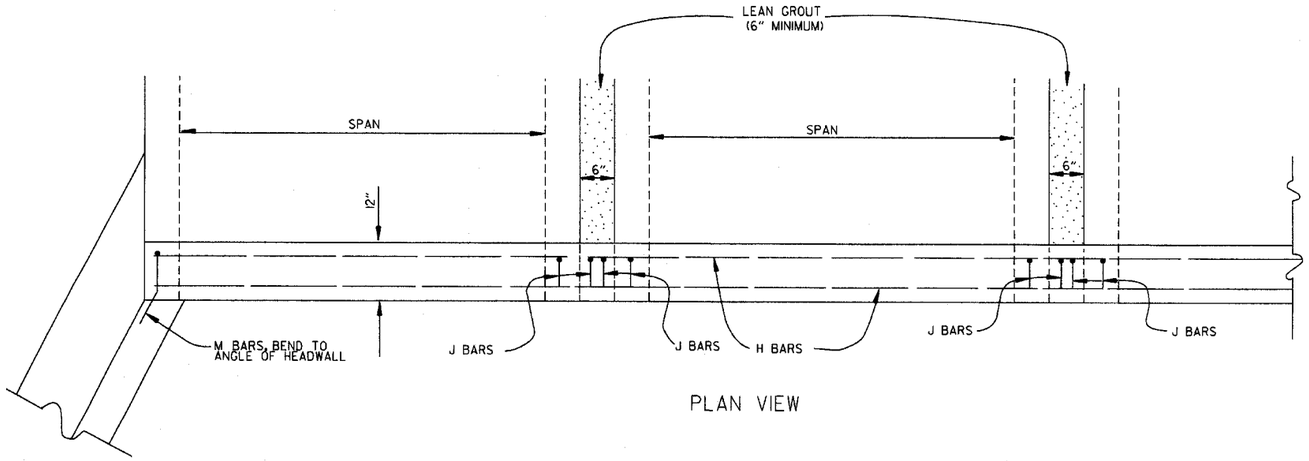

SPACING FOR MULTIPLE POST INSTALLATION

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

ARKANSAS STATE HIGHWAY COMMISSION

# MAILBOX DETAILS

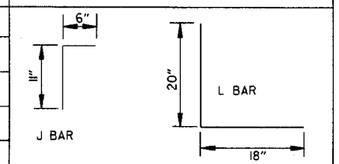
STANDARD DRAWING MB-1




PLAN VIEW

## BAR LIST

| BAR | NO. | SIZE | LENGTH | BAR BENDING DIAGRAM |
|---|---|---|---|---|
| H | 2 | #4 | • | |
| I | • | #4 | • | |
| J | • | #4 | 1'-5" | |
| L | • | #4 | 3'-2" | |
| M | • | #4 | 1'-8" | |




• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

### GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING, STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

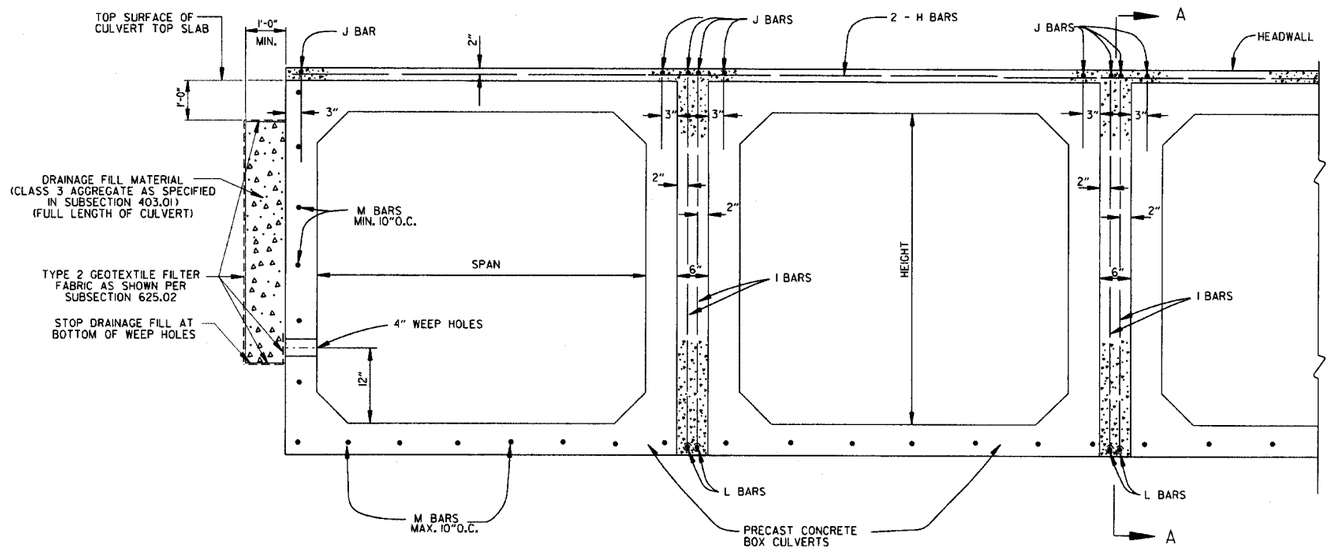
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

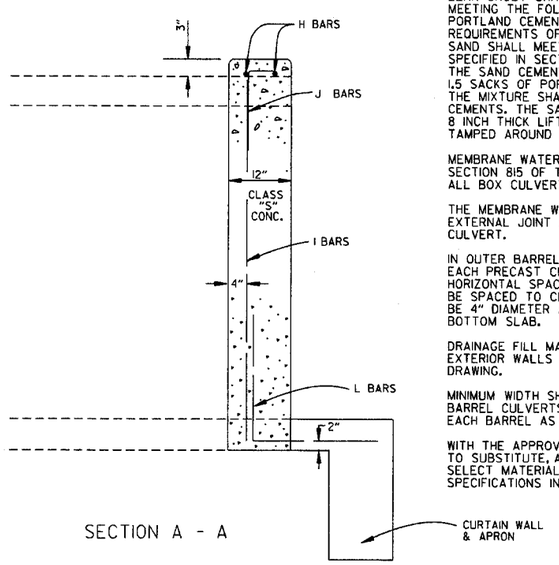
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.




END VIEW




SECTION A - A

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 1-28-15 | REVISED GEOTEXTILE FABRIC PLACEMENT | |
| 12-15-11 | ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL | |
| 10-15-09 | ADDED GENERAL NOTE | |
| 11-10-05 | REVISED SPACING OF "M" BARS | |
| 4-10-03 | REVISED GENERAL NOTES | |
| 10-18-96 | CORRECTED AASHTO REF. | |
| 10-1-92 | ADDED NOTE FOR MEMBRANE WATERPROOFING | |
| 8-15-91 | ADDED NOTE FOR LEAN GROUT | |
| 11- 8-90 | REVISED FOR 1991 SPECS | |
| 11-30-89 | ISSUED; JABE | |

ARKANSAS STATE HIGHWAY COMMISSION

# PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

## REINFORCED CONCRETE ARCH PIPE DIMENSIONS

| EQUIV. DIA. | SPAN | | RISE | |
|---|---|---|---|---|
| | AASHTO M 206 | AHTD NOMINAL | AASHTO M 206 | AHTD NOMINAL |
| INCHES | INCHES | | | |
| 15 | 18 | 18 | 11 | 11 |
| 18 | 22 | 22 | 13½ | 14 |
| 21 | 26 | 26 | 15½ | 16 |
| 24 | 28½ | 29 | 18 | 18 |
| 30 | 36¼ | 36 | 22½ | 23 |
| 36 | 43⅜ | 44 | 26⅝ | 27 |
| 42 | 51⅛ | 51 | 31⅝ | 31 |
| 48 | 58½ | 59 | 36 | 36 |
| 54 | 65 | 65 | 40 | 40 |
| 60 | 73 | 73 | 45 | 45 |
| 72 | 88 | 88 | 54 | 54 |
| 84 | 102 | 102 | 62 | 62 |
| 90 | 115 | 115 | 72 | 72 |
| 96 | 122 | 122 | 77½ | 77 |
| 108 | 138 | 138 | 87⅛ | 87 |
| 120 | 154 | 154 | 96⅞ | 97 |
| 132 | 168¾ | 169 | 106½ | 107 |

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

## REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

## CONSTRUCTION SEQUENCE

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

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

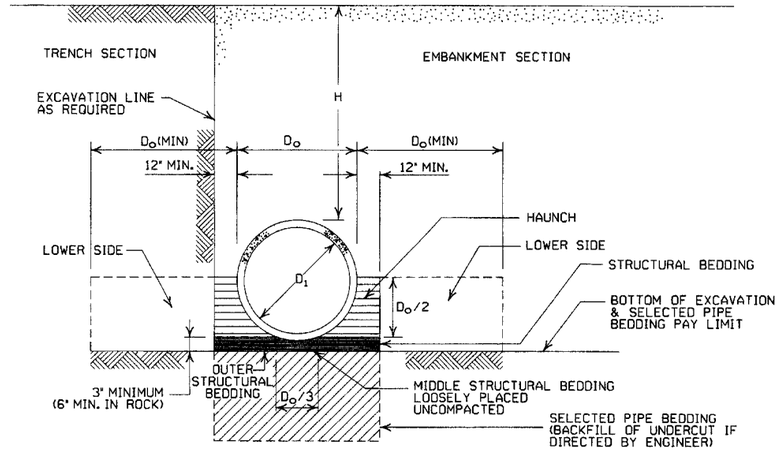
## - LEGEND -

$D_1$ = 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 STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

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

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

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

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

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

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

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

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

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

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

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

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

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECIFICATIONS | |
| 5-18-00 | REVISED TYPE 3 BEDDING & ADDED NOTE | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

## CORRUGATED STEEL PIPE (ROUND)

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

## CORRUGATED ALUMINUM PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS IN INCHES 0.060 | 0.075 | 0.105 | 0.135 | 0.164 |
|---|---|---|---|---|---|---|
| | | 2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | | | |
| 12 | 1 | 45 | 45 | | | |
| 18 | 2 | 30 | 30 | 52 | | |
| 24 | 2 | 22 | 22 | 39 | 41 | |
| 30 | 2 | | 18 | 31 | 32 | 34 |
| 36 | 2.5 | | 15 | 26 | 27 | 28 |
| 42 | 2 | | | 43 | 43 | 44 |
| 48 | 2 | | | 40 | 41 | 43 |
| 54 | 2 | | | 35 | 37 | 38 |
| 60 | 2 | | | | 33 | 34 |
| 66 | 2 | | | | | 31 |
| 72 | 2 | | | | | 29 |

## CORRUGATED METAL PIPE ARCHES

| EQUIV. DIA. (INCHES) | PIPE DIMENSION SPAN X RISE (INCHES) | MINUMUM CORNER RADIUS (INCHES) | STEEL MIN. THICKNESS REQUIRED INCHES | ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | ALUMINUM MIN. THICKNESS REQUIRED INCHES | ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 |
|---|---|---|---|---|---|---|---|---|
| | | | 2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | 2⅔ 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 | | | |
| 36 | 40x31 | 5 | 0.079 | 3 | 2 | 12 | 15 | |
| 42 | 46x36 | 6 | 0.079 | 3 | 2 | 13 | 15 | |
| 48 | 53x41 | 7 | 0.079 | 3 | 2 | 13 | 15 | |
| 54 | 60x46 | 8 | 0.079 | 3 | 2 | 13 | 15 | |
| 60 | 66x51 | 9 | 0.079 | 3 | 2 | 13 | 15 | |
| 66 | 73x55 | 12 | 0.079 | 3 | 2 | 15 | 15 | |
| 72 | 81x59 | 14 | 0.079 | 3 | 2 | 15 | 15 | |
| 78 | 87x63 | 14 | 0.079 | 3 | 2 | 15 | 15 | |
| 84 | 95x67 | 16 | 0.109 | 3 | 2 | 15 | 15 | |
| 90 | 103x71 | 16 | 0.109 | 3 | 2 | 15 | 15 | |
| 96 | 112x75 | 18 | 0.109 | 3 | 2 | 15 | 15 | |
| 102 | 117x79 | 18 | 0.109 | 3 | 2 | 15 | 15 | |
| 108 | 128x83 | 18 | 0.138 | 3 | 2 | 15 | 15 | |

## CONSTRUCTION SEQUENCE

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

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

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

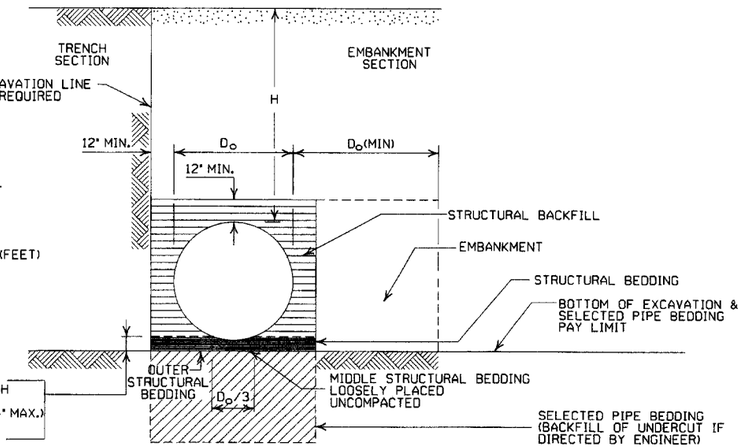
③ SM-3 WILL NOT BE ALLOWED.

## EQUIVALENT METAL THICKNESSES AND GAUGES

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

- LEGEND -

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




## EMBANKMENT AND TRENCH INSTALLATIONS

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

## GENERAL NOTES

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

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

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

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECS | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

## MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

## MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

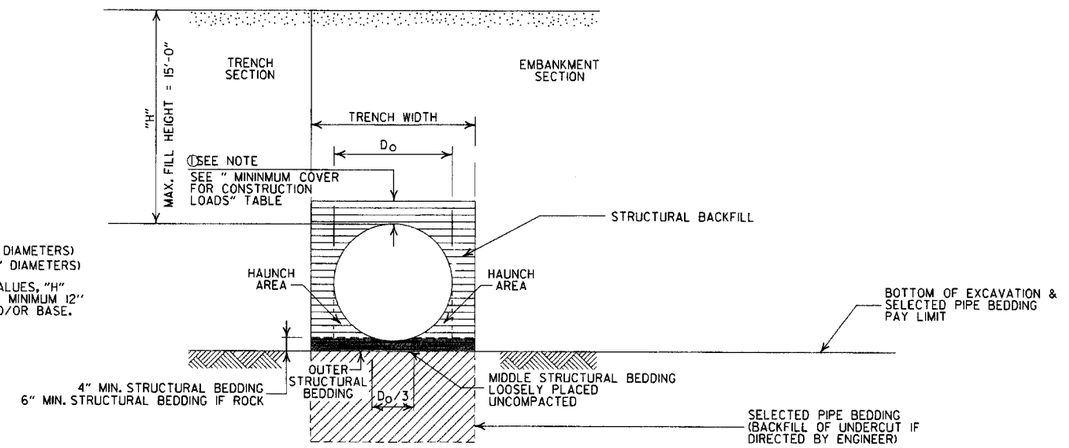
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

## MINIMUM COVER FOR CONSTRUCTION LOADS

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

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




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

## CONSTRUCTION SEQUENCE

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

## GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (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" | TRENCH WIDTH (FEET) "H" >OR= 10'-0" |
|---|---|---|
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |

## MULTIPLE INSTALLATION OF PVC PIPES

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

## MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

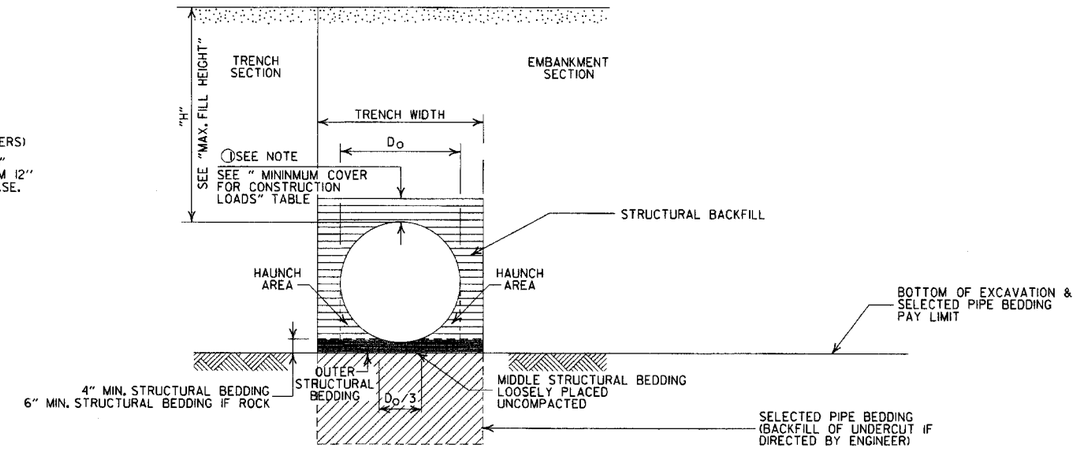
| PIPE DIAMETER | "H" |
|---|---|
| 18" | 45'-0" |
| 24" | 45'-0" |
| 30" | 40'-0" |
| 36" | 40'-0" |

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

## MINIMUM COVER FOR CONSTRUCTION LOADS

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

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




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

## CONSTRUCTION SEQUENCE

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

## GENERAL NOTES

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

## - LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

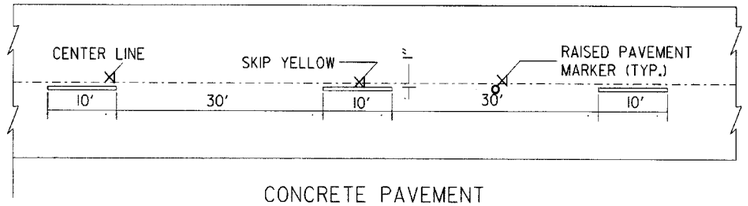
| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL | |
| 11-17-10 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

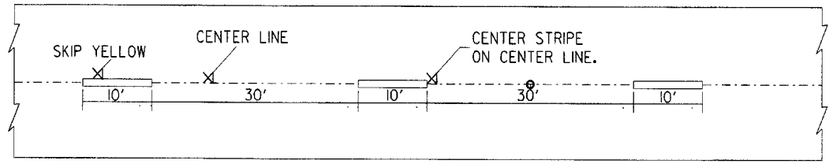
# PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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.

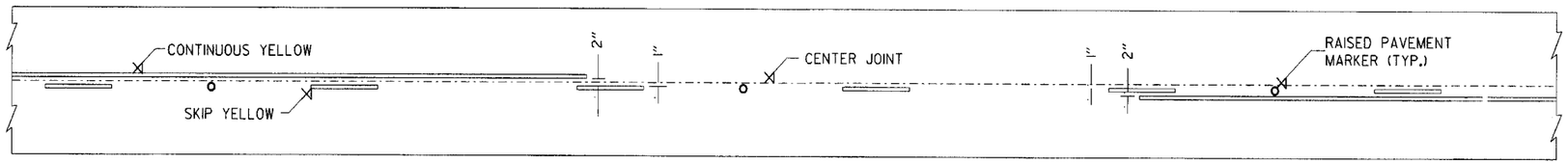



CONCRETE PAVEMENT

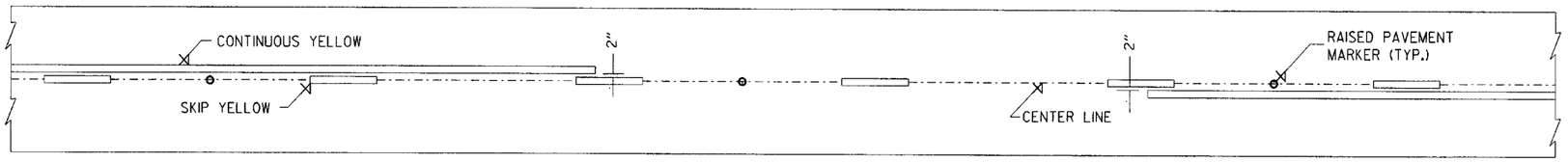



ASPHALT PAVEMENT

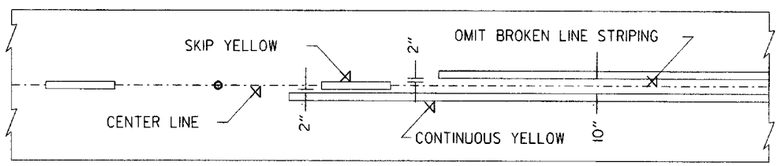
## BROKEN LINE STRIPING



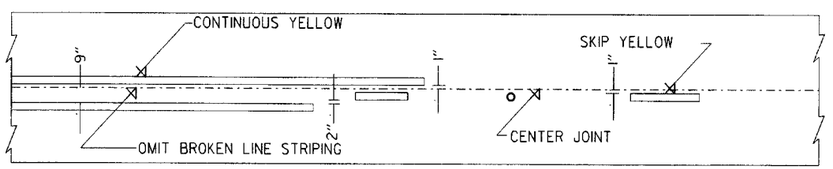

## SOLID LINE STRIPING ON CONCRETE PAVEMENT




## SOLID LINE STRIPING ON ASPHALT PAVEMENT

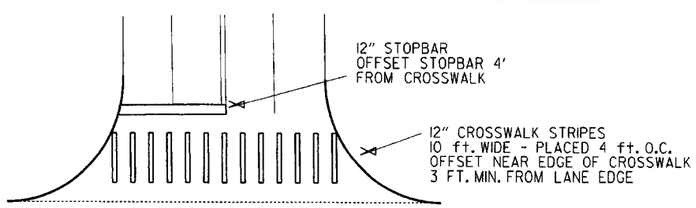



ASPHALT PAVEMENT



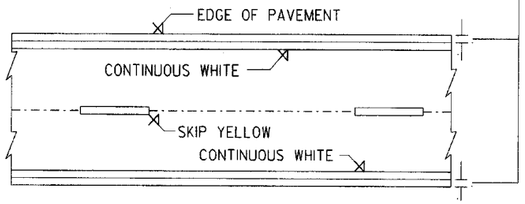

CONCRETE PAVEMENT

## STRIPING AT ADJACENT NO PASSING LANES

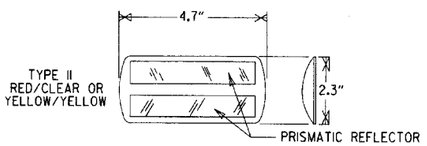



## CROSSWALK AND STOPBAR DETAILS

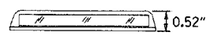
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT




PAVEMENT EDGE LINE MARKING




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




DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

| DATE | REVISION | FILMED |
|---|---|---|
| 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 |

ARKANSAS STATE HIGHWAY COMMISSION

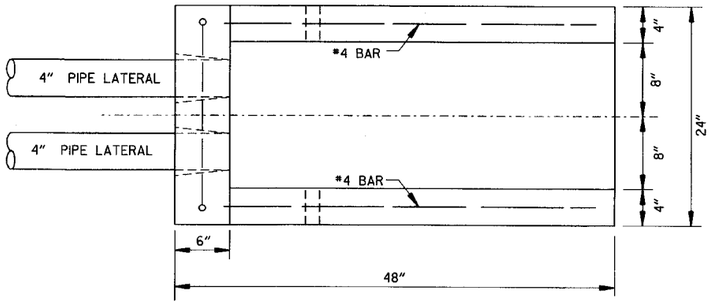
# PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

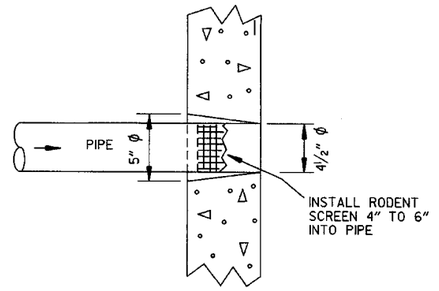
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

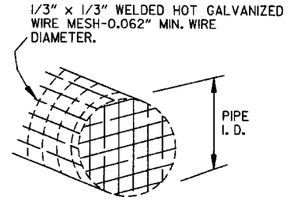
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



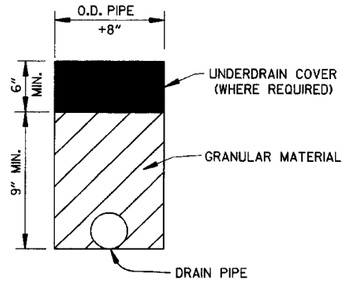

PLAN VIEW

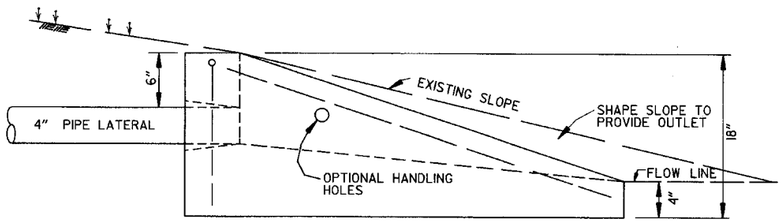



DETAIL OF HOLE FOR 4" PIPE

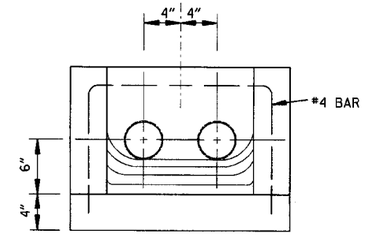



DETAIL OF RODENT SCREEN

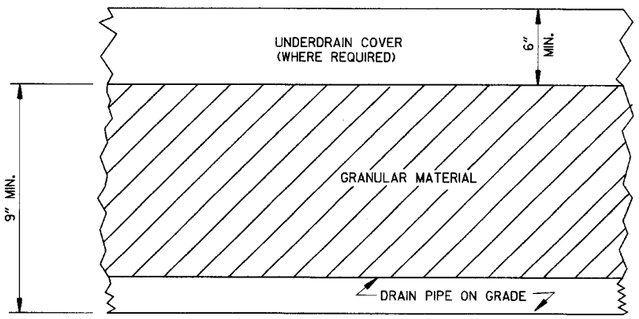



SIDE VIEW

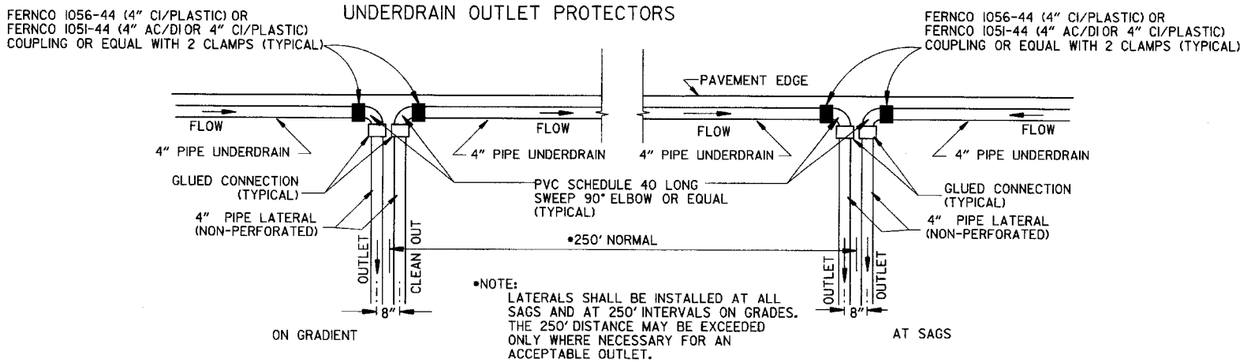



FRONT VIEW




DETAILS OF PIPE UNDERDRAIN

## UNDERDRAIN OUTLET PROTECTORS




## DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

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# DETAILS OF PIPE UNDERDRAIN

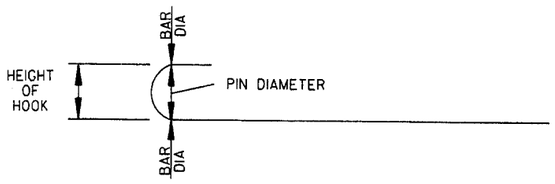
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

| BAR SIZE | PIN DIAMETER | HOOK EXTENSION "K" |
|---|---|---|
| 3 | 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

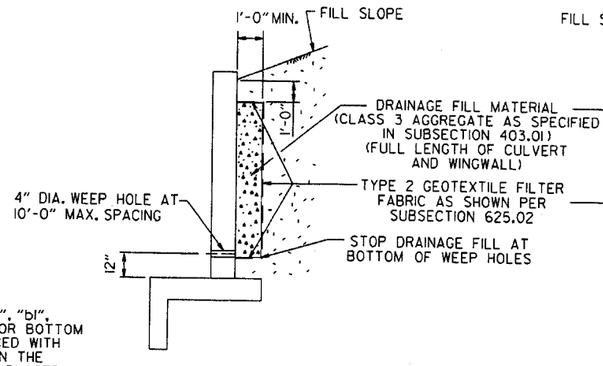
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

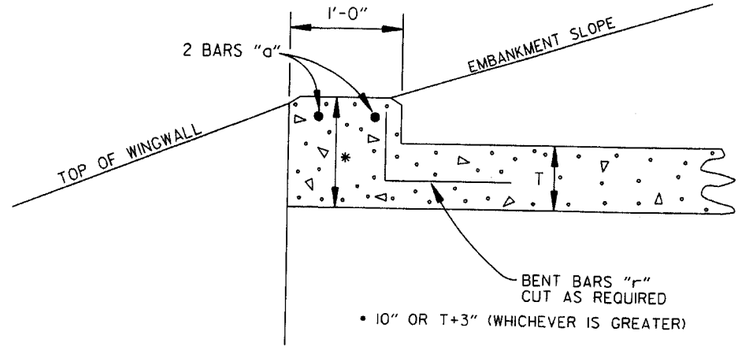
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

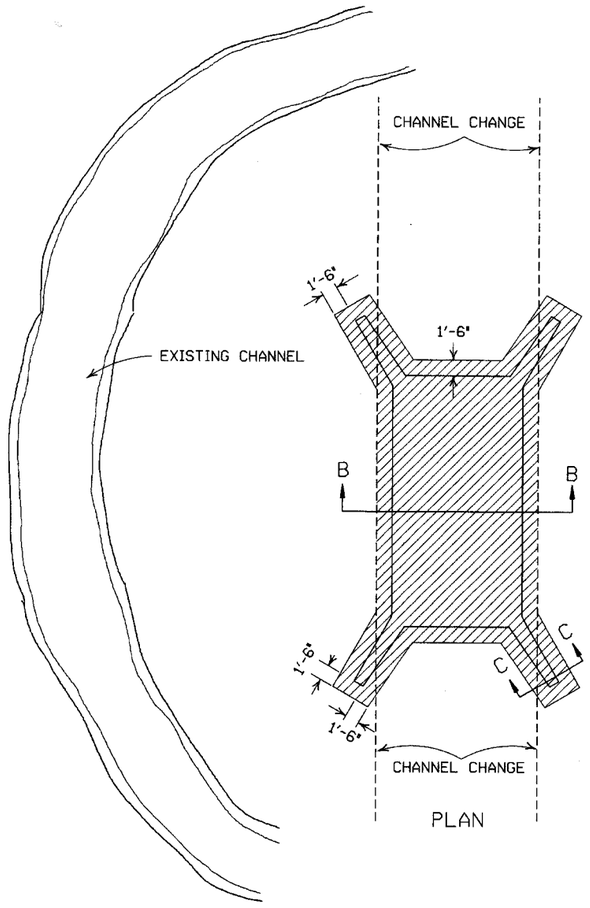
R.C. BOX CULVERT HEADWALL MODIFICATIONS

| 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

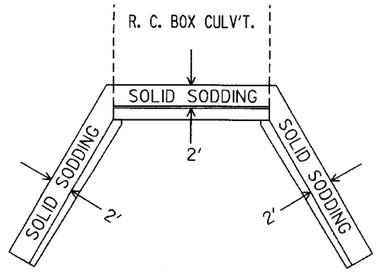
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1




PLAN

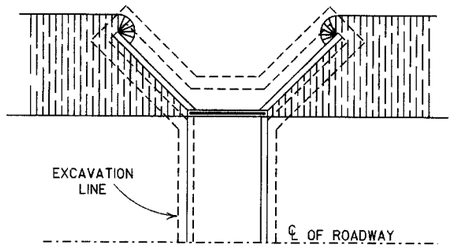
## SOLID SODDING



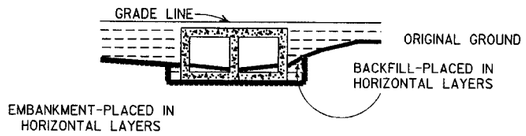

PLAN

## PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

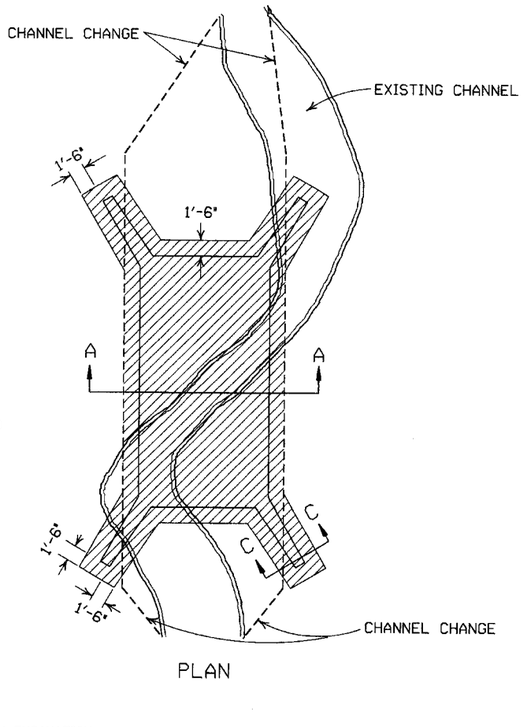



PLAN

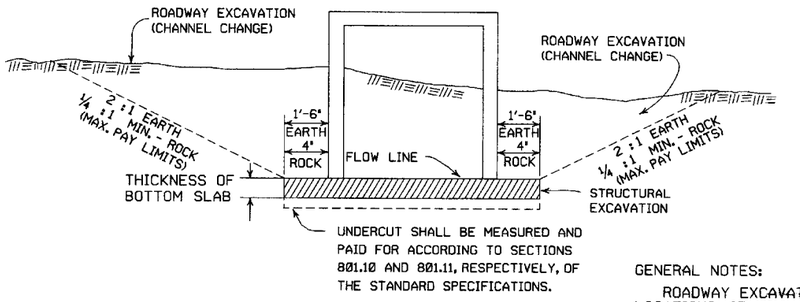



LONGITUDINAL SECTION

## BACKFILL DETAILS FOR BOX CULVERT

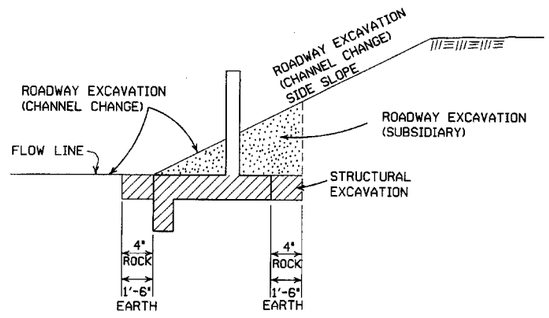



PLAN

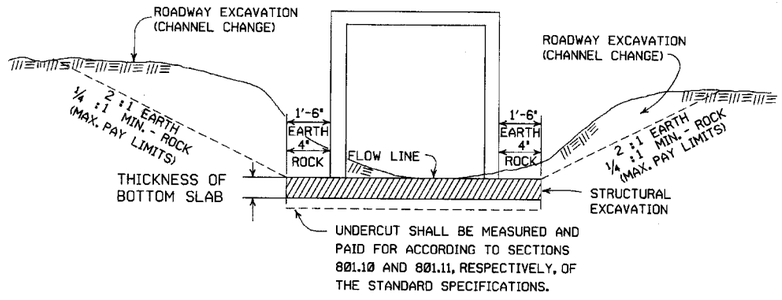



SECTION B-B

## 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 AND ADDED MAXIMUM PAY LIMIT NOTES. | 674-1-4-83 |
| 2-2-76 | EXCAV. PAY LIMITS | 917-2-2-76 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |

ARKANSAS STATE HIGHWAY COMMISSION

# EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

# LOOP DETECTOR INSTALLATION AND TESTING

NOTES:

1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"O) CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

## TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

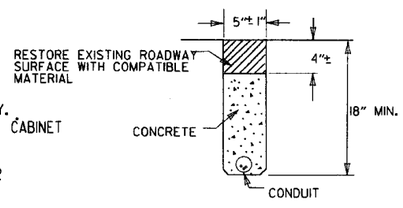
1. DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
2. TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM)

   IF TESTS 1& 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1& 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
3. OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1& 2 IF TEST 3 IS BAD, GO TO TEST 4
4. BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1& 2 SEPARATELY FOR FEEDER AND FOR LOOP

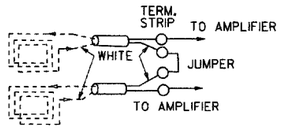
FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.

## TRENCHING DETAIL

(FOR SAW CUT TRENCH IN ROADWAY)

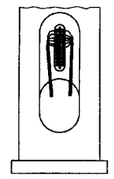



## SERIES CONNECTED LOOPS

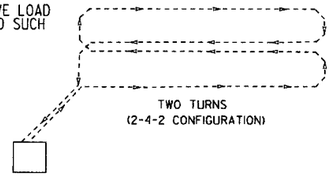



WIND LOOPS COUNTERCLOCKWISE: TAG WIRE EXITING SLOT AND TIE TO WHITE LEAD OF FEEDER WIRE, WHEN LOOPS ARE TIED TO SAME VEHICLE DETECTOR. SERIES CONNECT IN CABINET AS SHOWN.

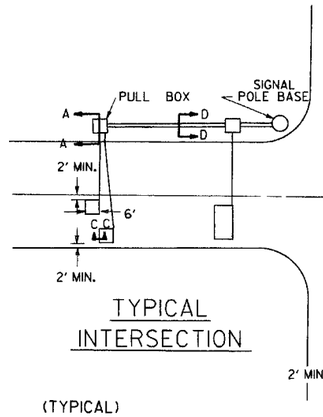
## HANDHOLE TERMINAL



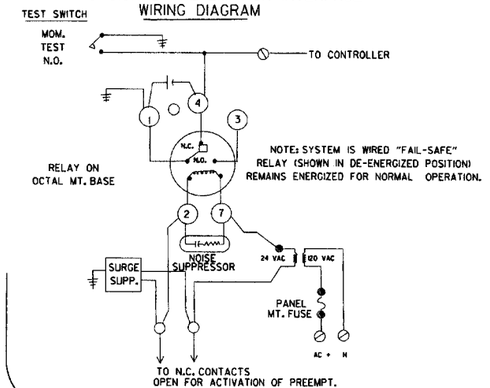
## QUADRUPOLE LOOP

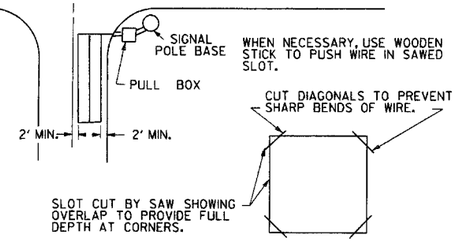


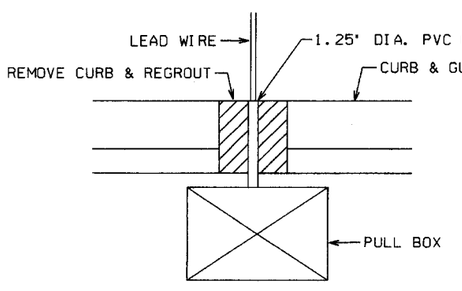

## TYPICAL INTERSECTION

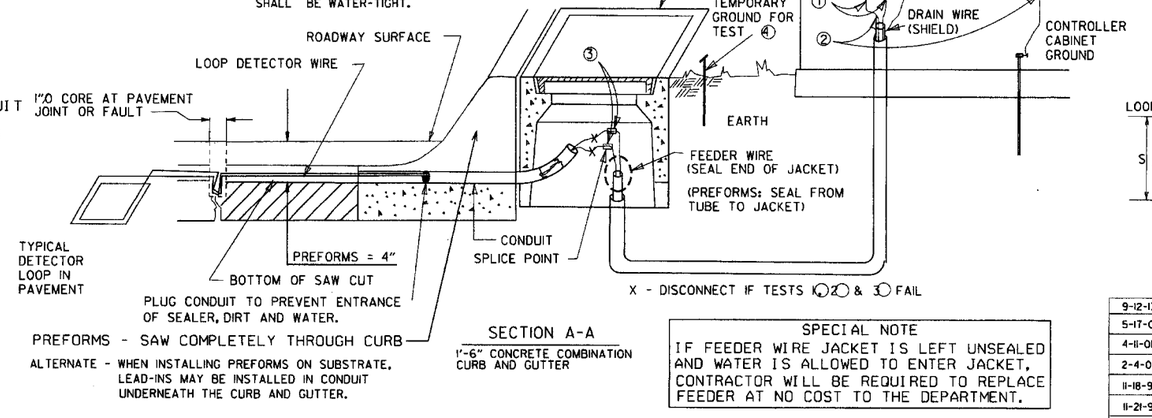



## TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM



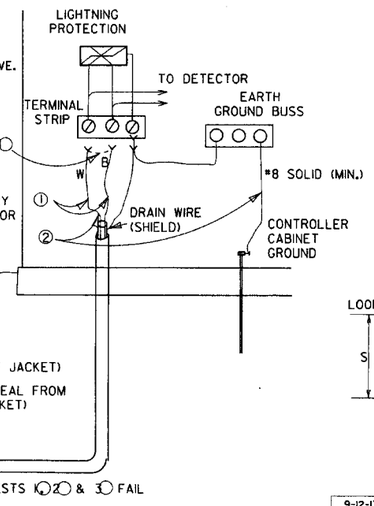




## SECTION A-A

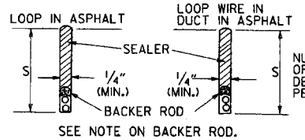
1'-6" CONCRETE COMBINATION CURB AND GUTTER




## SPECIAL NOTE

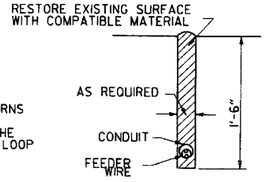
IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

## TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS




SECTION C-C

S=2 ½" IN ASPHALT
S=1½" IN CONCRETE




SECTION D-D

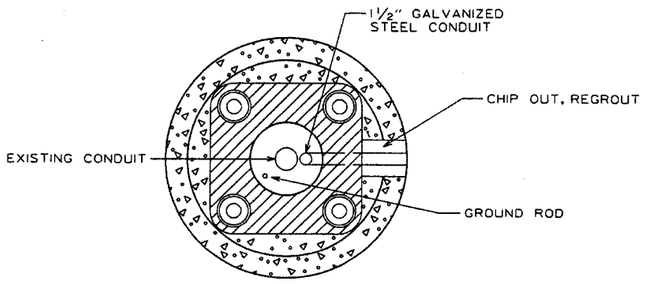
| DATE | REVISION | DATE FILM |
|---|---|---|
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 5-17-01 | REVISED | |
| 4-11-01 | REVISED | |
| 2-4-00 | REVISED PRE-EMPTION TEST SWITCH | |
| 11-18-98 | REVISED NOTES | |
| 11-21-95 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

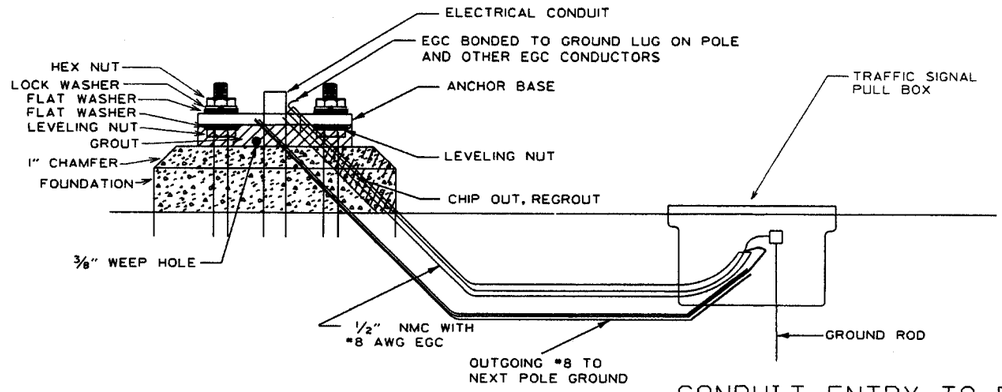
LOOP DETECTOR INSTALLATION

STANDARD DRAWING SD-4

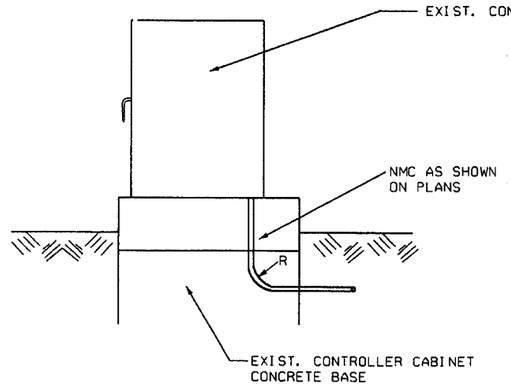
## CONDUIT ENTRY TO EXISTING POLE BASE



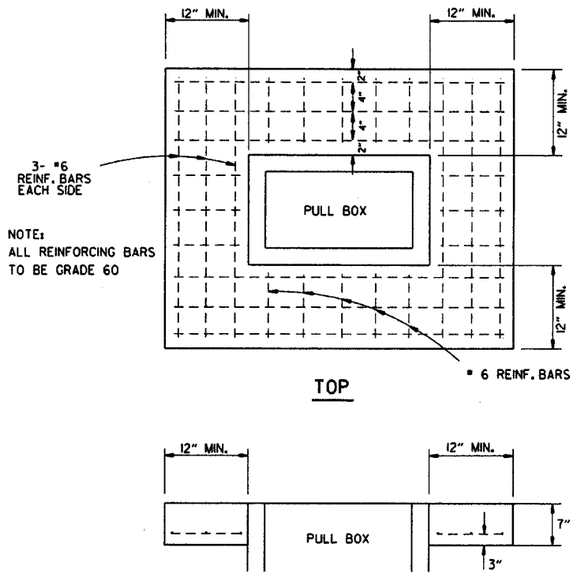

## ANCHOR BASE




## CONDUIT ENTRY TO EXISTING CONTROLLER CABINET




NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

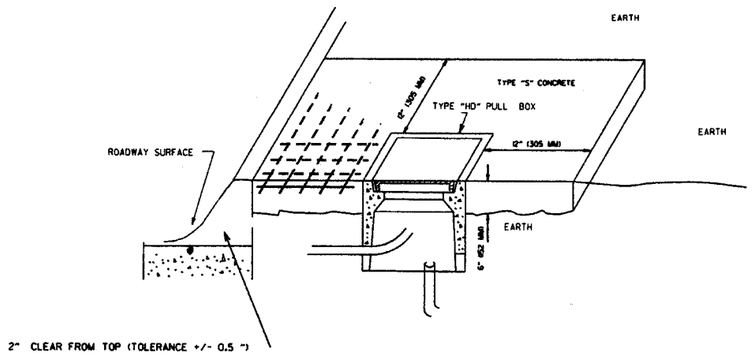



TOP




ELEVATION

## TYPE "HD" CONCRETE PULL BOX DETAIL




NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 7" (178 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

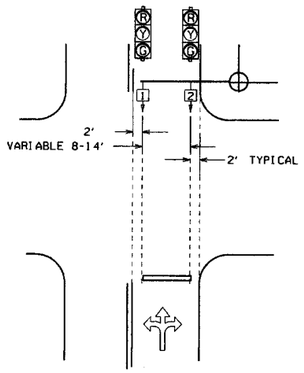
| DATE | REVISION | DATE FILM |
|---|---|---|
| 9-2-15 | REVISED PULL BOX DEPTH | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 5-21-09 | REVISED GROUNDING | |
| 7-31-08 | ADDED & REVISED CONDUIT ENTRY | |
| 6-23-04 | REVISED CLEARANCE AT CURB ENTRY | |
| 1-4-02 | ADDED REINFORCING TO BOX APRON | |
| 7-2-01 | REVISED | |
| 12-27-99 | REVISED NOTES | |
| 11-18-98 | ISSUED | |

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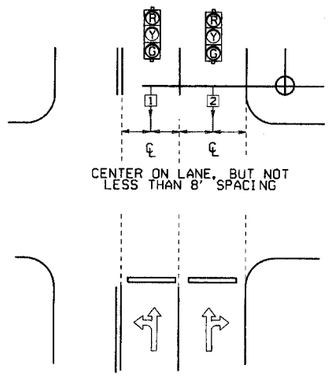
**HEAVY DUTY PULL BOX**

STANDARD DRAWING SD-6

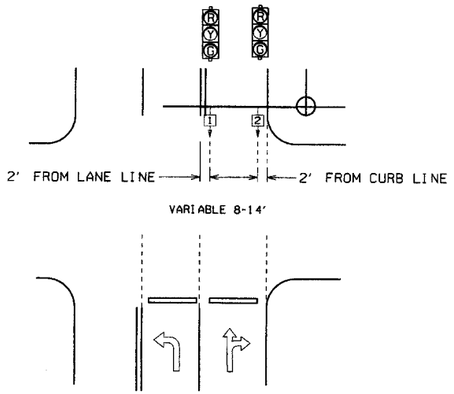
( A )



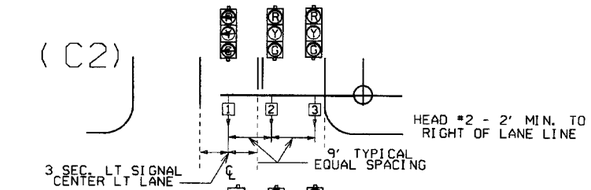

( B )



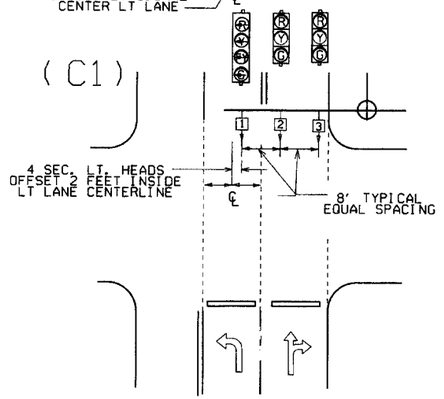

( C )



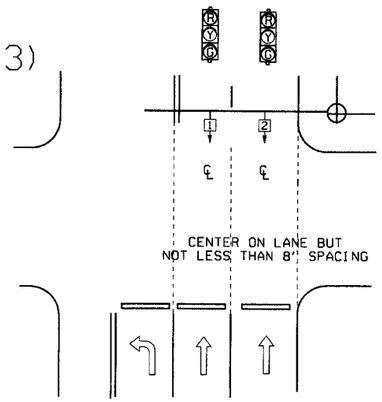

( C2 )



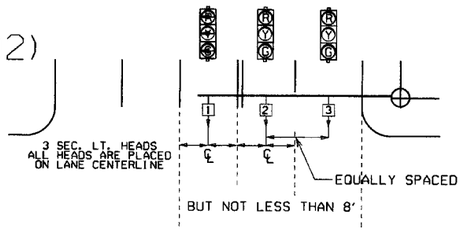

( C1 )



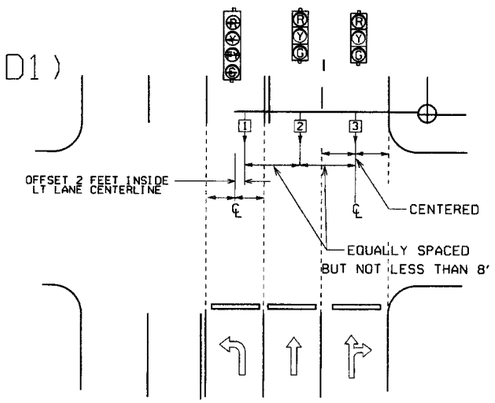

( C3 )




( D2 )

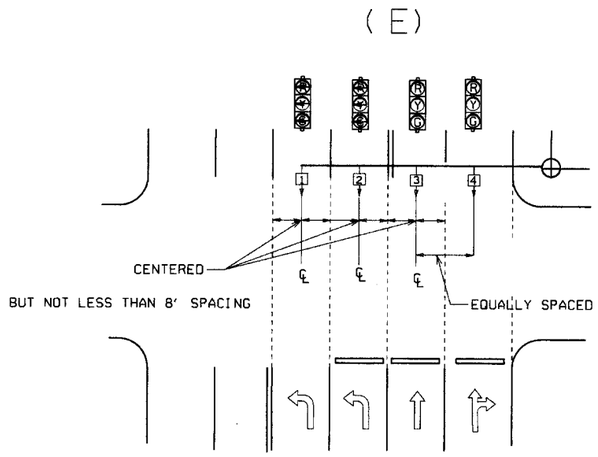



( D1 )




NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

( E )




℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

| | | |
|---|---|---|
| | | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 3-11-10 | 2009 MUTCD | |
| 12-9-99 | ISSUED | |
| DATE | REVISION | DATE FILM |

ARKANSAS STATE HIGHWAY COMMISSION

# SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES.

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL = 2' X 0" X 2' = 6"; 20 LB. REMAINING HEADS SPACED A 8 FT. = 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT.; INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) = VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

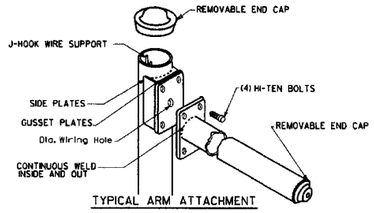
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES, MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

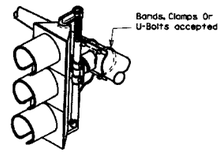
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

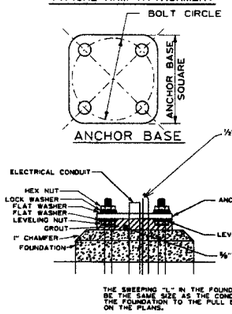
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



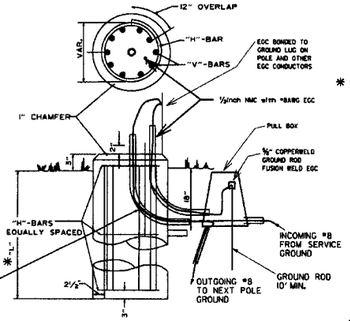
TYPICAL ARM ATTACHMENT



NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE

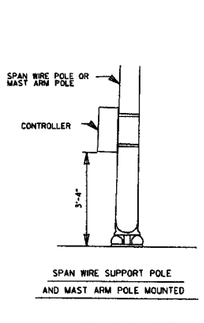


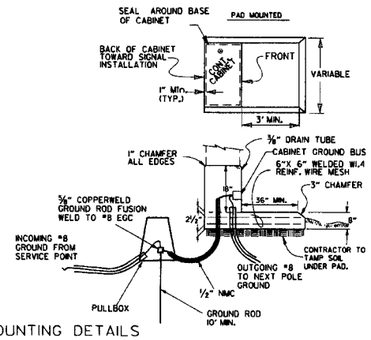

THE GROUND ROD SHALL BE FUSION WELDED TO A IC/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

## TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

| ARM LENGTH | FDN. DIAMETER | DEPTH "L" * | STEEL VERT. | STEEL HORZ. | STEEL O/C. |
|---|---|---|---|---|---|
| PED | 30" | 7'-0" | 12-#7 (6'-6") | 10-#4 | 8.44" |
| 2' to 12' | 30" | 10'-6" | 12-#7 (10'-0") | 15-#4 | 8.42" |
| over 12' to 20' | 30" | 11'-6" | 12-#7 (11'-0") | 16-#4 | 8.66" |
| over 20' to 35' | 36" | 12'-6" | 13-#8 (12'-0") | 17-#4 | 8.88" |
| over 35' to 50' | 36" | 13'-6" | 13-#8 (13'-0") | 19-#4 | 8.56" |
| over 50' to 72' | 42" | 14'-6" | 18-#8 (14'-0") | 20-#4 | 8.74" |
| Twins to 20' | 30" | 16'-0" | 12-#6 (15'-6") | 22-#4 | 8.76" |
| Twins over 20' to 44' | 36" | 16'-0" | 13-#8 (15'-6") | 22-#4 | 8.76" |
| Twins over 44' to 50' | 42" | 16'-0" | 18-#8 (15'-6") | 22-#4 | 8.76" |
| Twins over 50' to 72' | 42" | 16'-6" | 18-#8 (16'-0") | 23-#4 | 8.64" |




## CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

### SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

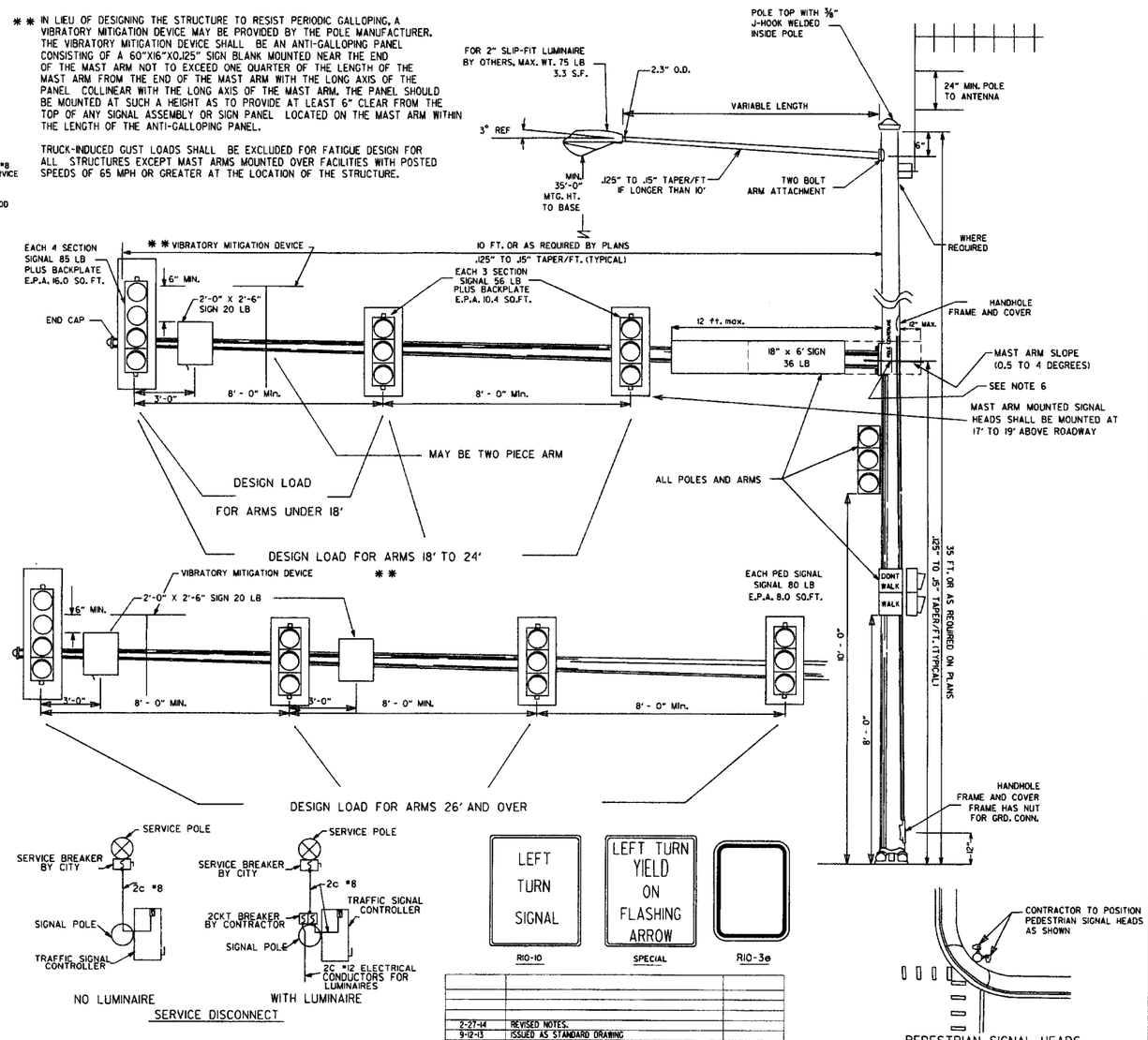
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.






SERVICE DISCONNECT




| DATE | REVISION | DATE FILM |
|---|---|---|
| 2-27-14 | REVISED NOTES. | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 7-21-11 | REVISED VMD, SIGNAL HEADS | |
| 5-21-09 | REVISED GROUNDING | |
| 7-31-08 | REVISED GROUNDING | |
| 4-25-08 | ADDED VIBRATORY MITIGATION DEVICE & NOTES | |
| 4-18-08 | REVISED AASHTO NOTES | |
| 4-17-08 | REVISED TO 2001 AASHTO STANDARDS | |
| 10-12-04 | REVISED CABINET ORIENTATION | |
| 6-23-04 | REVISED | |
| 5-4-04 | REV. NOTE 3/AASHTO REQUIREMENTS | |
| 6-4-01 | REV. NOTES & POLE MAST ARM SLOPE | |
| 4-8-01 | REVISED POLE TAPERS | |
| 4-25-00 | REV. NOTES & SIGNAL HEAD PLACEMENT | |
| 6-22-99 | REVISED FOUNDATION DETAILS | |
| 6-17-98 | REVISED DETAILS AND NOTES | |
| 11-21-95 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# STEEL POLE WITH MAST ARM

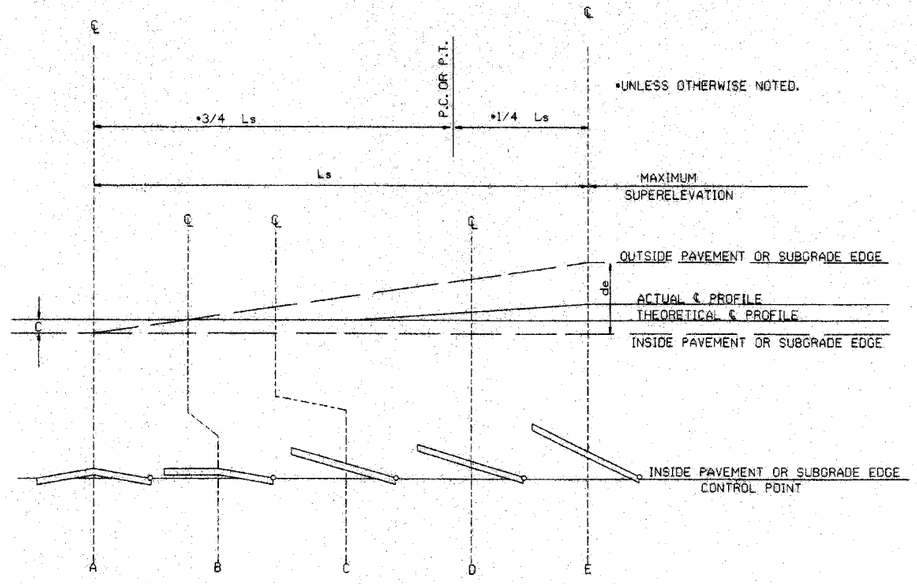
STANDARD DRAWING SD-11

## SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

| DEGREE OF CURVE | 30 MPH e | 30 MPH Ls (FT) MINIMUM | 30 MPH Ls (FT) DESIRABLE | 40 MPH e | 40 MPH Ls (FT) MINIMUM | 40 MPH Ls (FT) DESIRABLE | 50 MPH e | 50 MPH Ls (FT) MINIMUM | 50 MPH Ls (FT) DESIRABLE | 55 MPH e | 55 MPH Ls (FT) MINIMUM | 55 MPH Ls (FT) DESIRABLE | 60 MPH e | 60 MPH Ls (FT) MINIMUM | 60 MPH Ls (FT) DESIRABLE | 70 MPH e | 70 MPH Ls (FT) MINIMUM | 70 MPH Ls (FT) DESIRABLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° 15' | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | |
| 0° 30' | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | |
| 0° 45' | N.C. | | | N.C. | | | R.C. | | | R.C. | | | R.C. | | | R.C. | | |
| 1° 00' | N.C. | | | N.C. | | | 0.021 | | | 0.022 | | | 0.023 | | | 0.028 | | |
| 1° 15' | N.C. | | | R.C. | | | 0.026 | | | 0.026 | | | 0.030 | | | 0.037 | 275 | 300 |
| 1° 30' | N.C. | | | 0.021 | | | 0.031 | 200 | | 0.032 | | | 0.037 | | | 0.046 | | |
| 1° 45' | N.C. | | | 0.025 | 175 | | 0.036 | | | 0.037 | 225 | | 0.043 | 250 | | 0.054 | | |
| 2° 00' | R.C. | | | 0.028 | | | 0.040 | | | 0.043 | | 300 | 0.048 | | 300 | 0.062 | | |
| 2° 15' | R.C. | | | 0.031 | | | 0.045 | | 250 | 0.048 | | | 0.053 | | | 0.070 | | |
| 2° 30' | 0.021 | | | 0.034 | | | 0.049 | | | 0.053 | | | 0.058 | | | 0.078 | 300 | 350 |
| 2° 45' | 0.023 | | | 0.037 | | 200 | 0.053 | | | 0.057 | | | 0.063 | | | 0.085 | 315 | |
| 3° 00' | 0.025 | | | 0.040 | | | 0.057 | | | 0.061 | 230 | | 0.067 | | | 0.091 | 335 | |
| 3° 15' | 0.027 | 150 | | 0.043 | | | 0.061 | | | 0.065 | 245 | | 0.072 | 260 | | 0.096 | 350 | |
| 3° 30' | 0.029 | | | 0.045 | | | 0.065 | 205 | | 0.069 | 255 | | 0.077 | 275 | | 0.098 | 360 | 400 |
| 3° 45' | 0.031 | | 200 | 0.049 | | | 0.069 | 215 | | 0.074 | 265 | | 0.082 | 285 | | 0.100 | 380 | |
| 4° 00' | 0.033 | | | 0.051 | | | 0.072 | 225 | | 0.078 | 270 | | 0.086 | 295 | 350 | | | |
| 4° 30' | 0.037 | | | 0.056 | | | 0.078 | 240 | | 0.083 | 280 | | 0.093 | 305 | | | | |
| 5° 00' | 0.040 | | | 0.061 | | | 0.083 | 250 | | 0.087 | 290 | | 0.096 | 315 | | | | |
| 5° 30' | 0.043 | | | 0.066 | 185 | | 0.088 | 260 | | 0.091 | 295 | 350 | 0.098 | 320 | | | | |
| 6° 00' | 0.046 | | | 0.070 | 190 | | 0.092 | 270 | | 0.094 | 300 | | | | | | | |
| 6° 30' | 0.050 | | | 0.074 | 200 | | 0.095 | 280 | 300 | 0.096 | 305 | | | | | | | |
| 7° 00' | 0.053 | | | 0.078 | 210 | | 0.098 | 285 | | 0.100 | 315 | | | | | | | |
| 7° 30' | 0.056 | | | 0.081 | 215 | | 0.099 | 290 | | | | | | | | | | |
| 8° 00' | 0.058 | | | 0.084 | 220 | | 0.100 | 230 | | | | | | | | | | |
| 8° 30' | 0.061 | | | 0.087 | 225 | 250 | | | | | | | | | | | | |
| 9° 00' | 0.063 | | | 0.089 | 230 | | | | | | | | | | | | | |
| 10° 00' | 0.068 | 160 | | 0.094 | 235 | | | | | | | | | | | | | |
| 11° 00' | 0.072 | 170 | | 0.097 | 250 | | | | | | | | | | | | | |
| 12° 00' | 0.076 | 175 | | 0.099 | 250 | | | | | | | | | | | | | |
| 13° 00' | 0.080 | 180 | | 0.100 | 250 | | | | | | | | | | | | | |
| 14° 00' | 0.083 | 190 | | | | | | | | | | | | | | | | |
| 15° 00' | 0.086 | 195 | | | | | | | | | | | | | | | | |
| 16° 00' | 0.089 | 200 | | | | | | | | | | | | | | | | |
| 17° 00' | 0.091 | 200 | | | | | | | | | | | | | | | | |
| 18° 00' | 0.093 | 205 | | | | | | | | | | | | | | | | |
| 19° 00' | 0.095 | 210 | | | | | | | | | | | | | | | | |
| 20° 00' | 0.097 | 215 | 250 | | | | | | | | | | | | | | | |
| 21° 00' | 0.098 | 215 | | | | | | | | | | | | | | | | |
| 22° 00' | 0.099 | 215 | | | | | | | | | | | | | | | | |
| 23° 00' | 0.099 | 215 | | | | | | | | | | | | | | | | |
| 24° 00' | 0.100 | 220 | | | | | | | | | | | | | | | | |
| | D MAX = 24° 45' | | | D MAX = 13° 15' | | | D MAX = 8° 15' | | | D MAX = 6° 30' | | | D MAX = 5° 15' | | | D MAX = 3° 30' | | |

ABBREVIATIONS

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




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

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

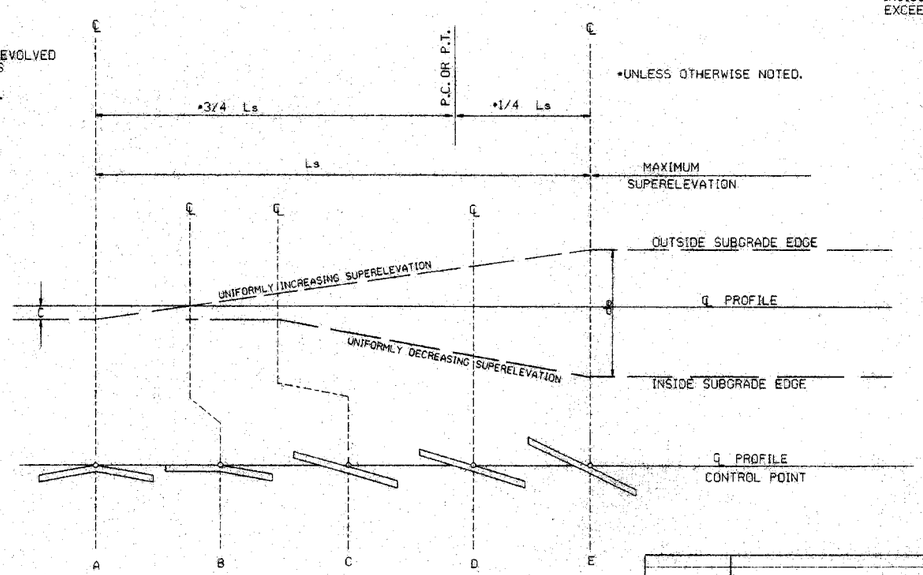
GENERAL NOTES

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

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

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

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




STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

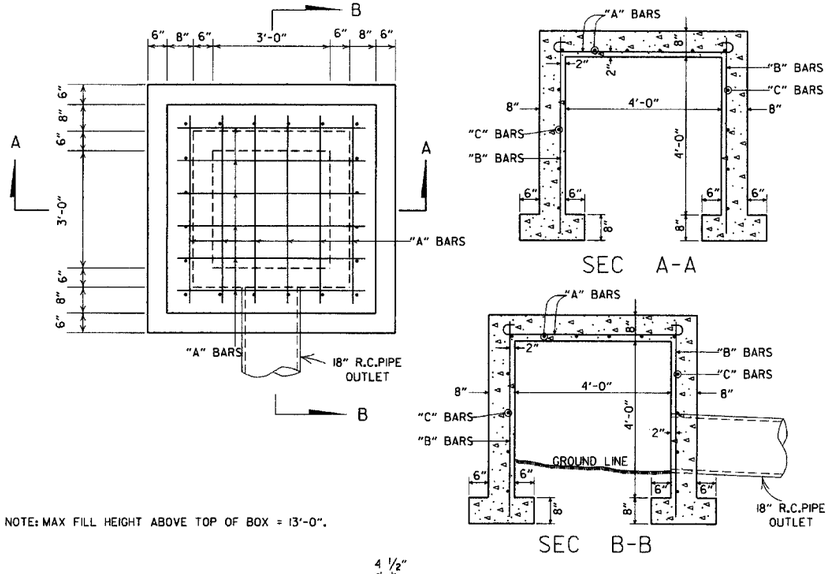
| DATE | REVISION | DATE FILMED |
|---|---|---|
| 10-18-96 | ADDED FORMULA | 10-18-96 |
| 01-09-87 | ISSUED | 534-1-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

# TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

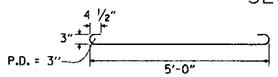



NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

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

ALL STEEL TO BE #4 BARS



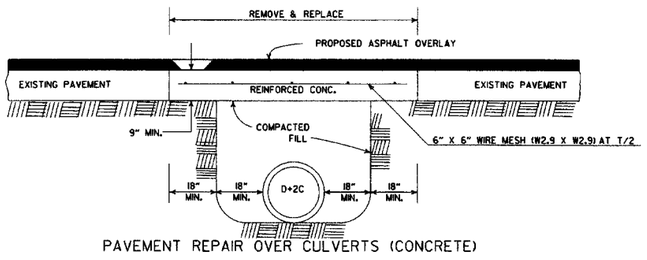

"A" BARS

QUANTITIES

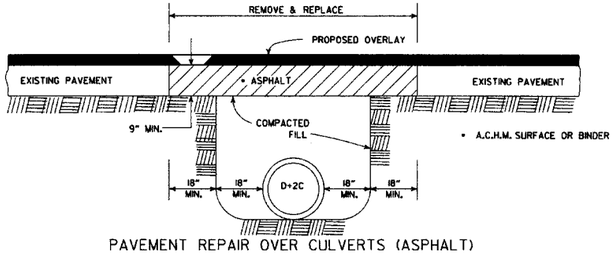
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

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

## REINFORCED CONCRETE SPRING BOX



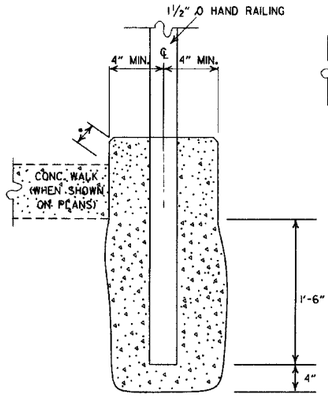

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



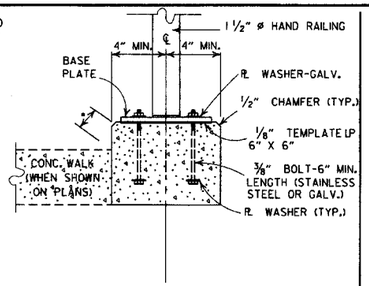

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

## DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

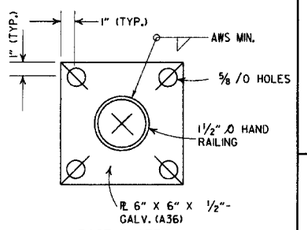
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.




DETAIL OF HAND RAILING SET IN CONCRETE

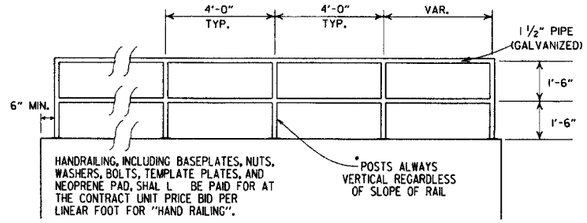



POST CONNECTION TO WALL

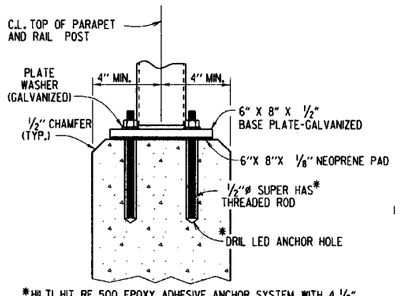



BASE PLATE

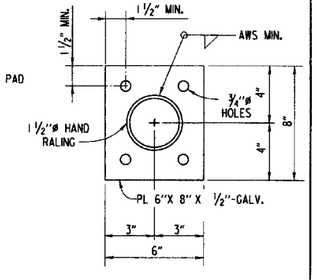
POST CONNECTION DETAILS




HAND RAILING SHALL CONFORM TO SECTION 633.



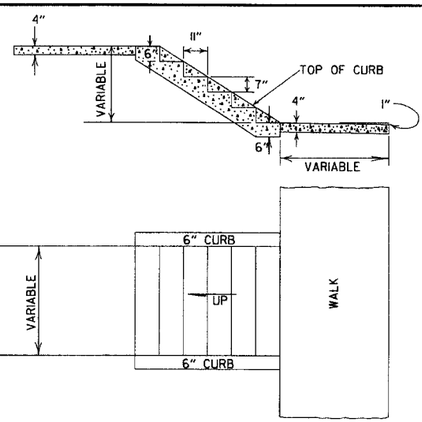

POST CONNECTION TO WALL




BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

## HAND RAILING DETAILS




GENERAL NOTES

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

## DETAILS OF CONCRETE STEPS & WALKS

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 9-12-13 | REVISED REINFORCED CONCRETE SPRING BOX | |
| 7-26-12 | REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS | |
| 4-17-08 | REV. JOINT & FOOTING STEP DETAILS | |
| 11-29-07 | REVISED RETAINING WALL DRAINAGE | |
| 5-25-06 | REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX | |
| 10-9-03 | REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS | |
| 4-10-03 | REVISED RETAINING WALL DRAWING | |
| 8-22-02 | ADDED HAND RAILING DETAIL | |
| 11-16-01 | REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES | |
| 11-18-98 | ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS | |
| 7-02-98 | ENLARGED PIPE | |
| 4-03-97 | ADDED NOTE TO STEEL BAR SCHED. | |
| 10-18-96 | CORRECTED SPELLING | |
| 4-26-96 | ADD WEEP HOLES;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

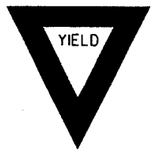
STANDARD DRAWING SI-1

R1-1



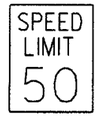

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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



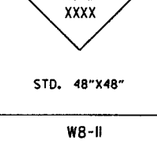

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



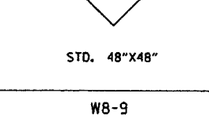

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



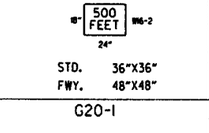

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



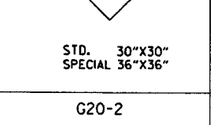

48"X30"

RII-3A



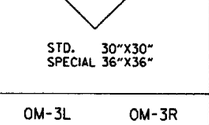

60"X30"

RII-4



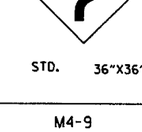

60"X30"

RSP-1



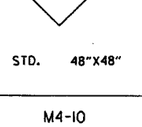

48"X30"

WI-1



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

WI-2



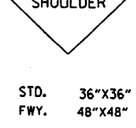
STD. 36"X36"
FWY. 48"X48"

WI-3



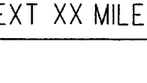
STD. 48"X48"

WI-4



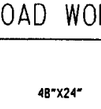
STD. 48"X48"

WI-6



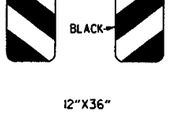
STD. 48"X24"
SPECIAL 60"X30"

WI-8



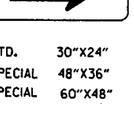
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

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



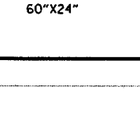

STD. 36"X36"
SPECIAL 48"X48"

W6-3



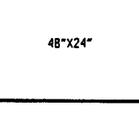
EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7




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

W9-2



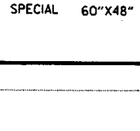

STD. 36"X36"
FWY. 48"X48"

WI3-1




STD. 24"X24"

W20-1



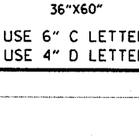

STD. 48"X48"

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.

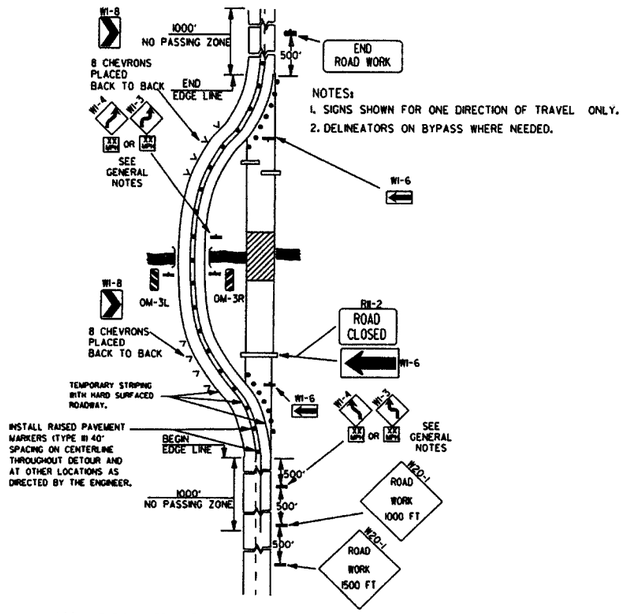
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

| DATE | REVISION | FILMED |
|---|---|---|
| 9-2-15 | REVISED REDUCED SPEED LIMIT AHEAD SIGNS<br>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

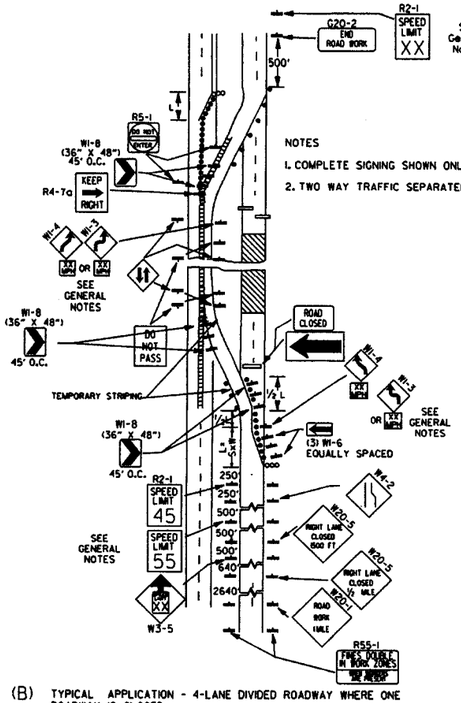
# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



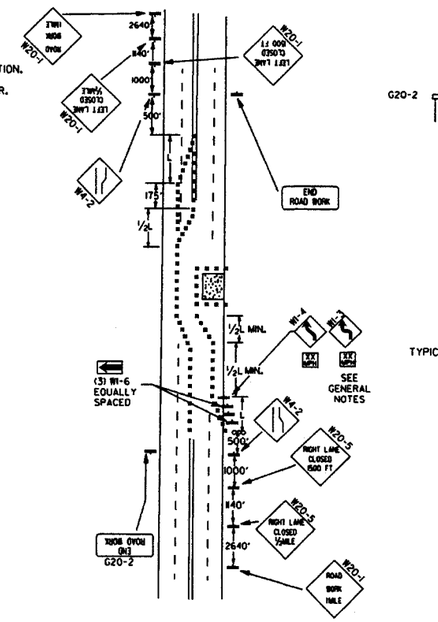

NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

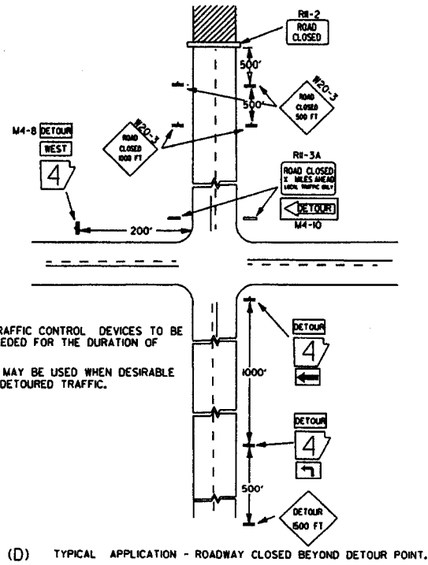



NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

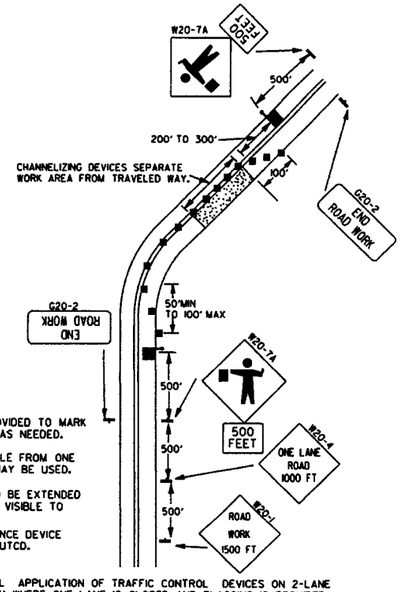



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



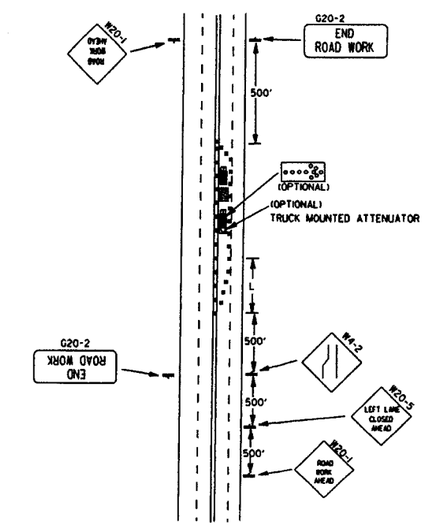

NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

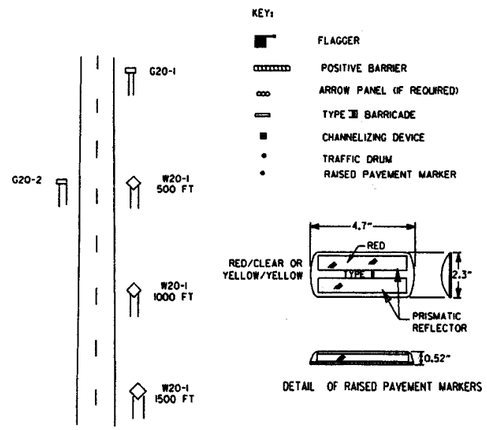



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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




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.

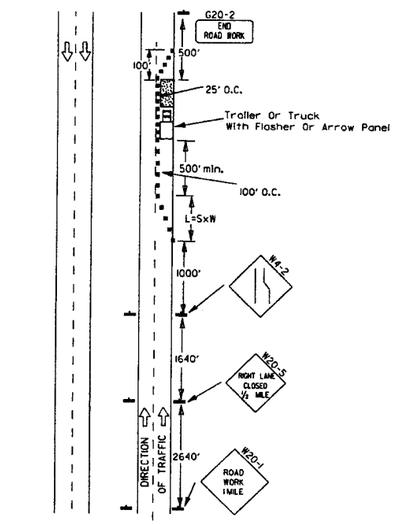
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

| DATE | REVISION | FILMED |
|---|---|---|
| 9-2-15 | REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5 | |
| 9-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKERS | |
| 3-8-10 | ADDED (AFAD) | |
| 8-20-08 | REVISED SIGN DESIGNATIONS | |
| 8-18-04 | ADDED GENERAL NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 4-26-96 | CORRECTED (a) BEHIND G20-2 | |
| 6-8-95 | CORRECTED SIGN IDENT. ON W1-4A | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |

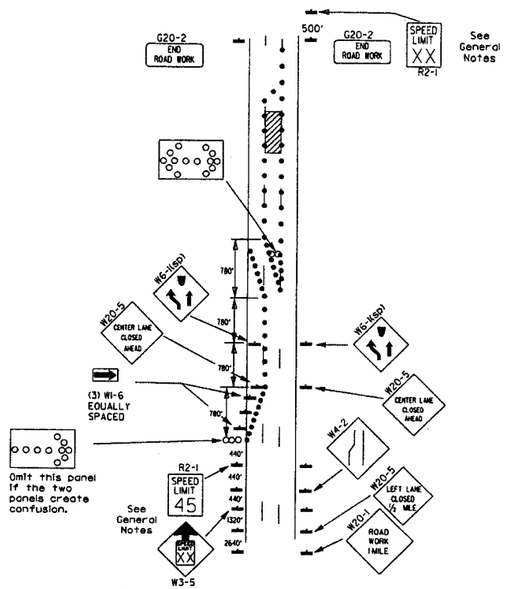
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2




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



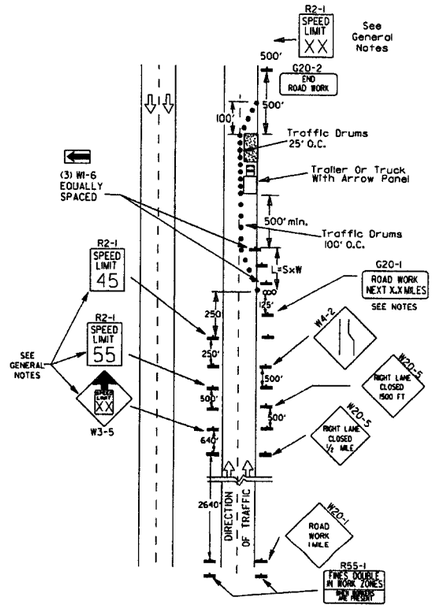

(B) Typical application - 3-lane oneway roadway where center lane is closed.

KEY:

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

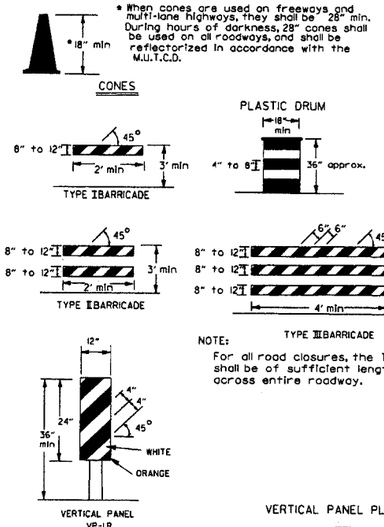
GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1(45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1(55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.




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

Channelizing devices



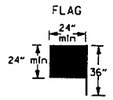

NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

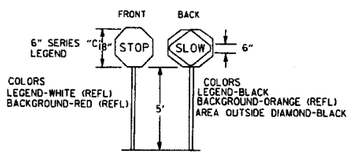
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

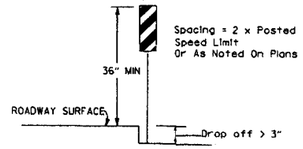



Flag shall be of good grade red material

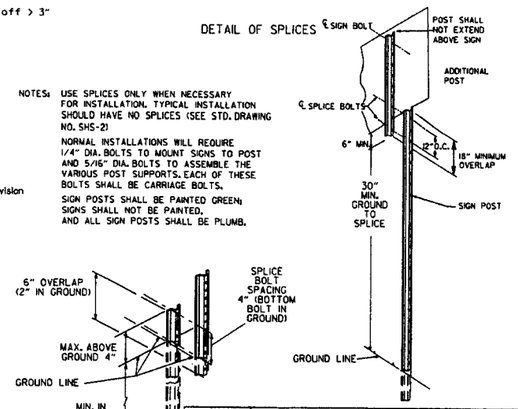
STOP SLOW PADDLE




VERTICAL PANEL PLACEMENT



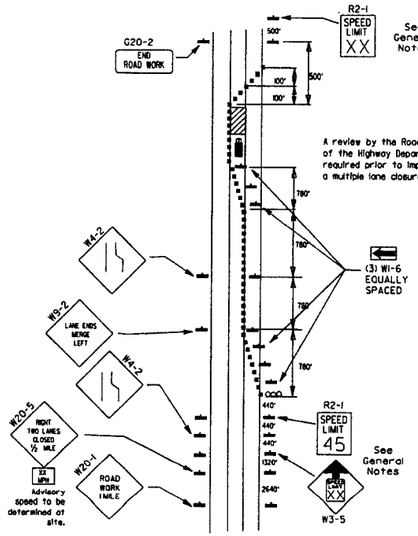

DETAIL OF SPLICES




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 |
|---|---|---|
| 8-15-91 | DRAWN AND PLACED IN USE | |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 6-8-95 | REVISED SPLICE DETAIL, TEXT | 6-8-95 |
| 10-12-95 | MOVED UPPER SPLICE | |
| 10-18-96 | ADDED R55-1 | |
| 4-03-97 | ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE | |
| 10-1-98 | ADDED NOTE | |
| 11-18-04 | ADDED NOTE | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 9-2-15 | REVISED NOTE 2 & REPLACED R2-5A WITH W3-5 | |

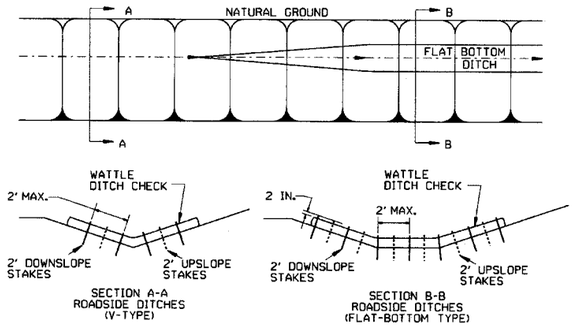
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

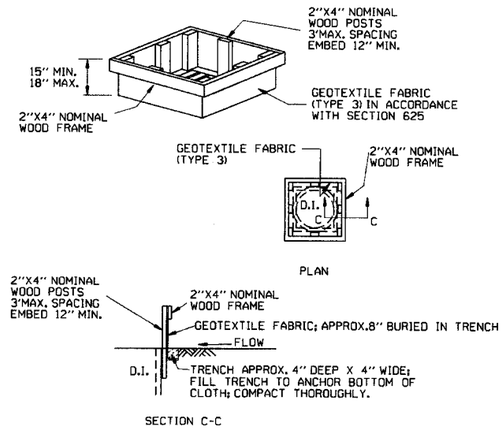
STANDARD DRAWING TC-3

GENERAL NOTES

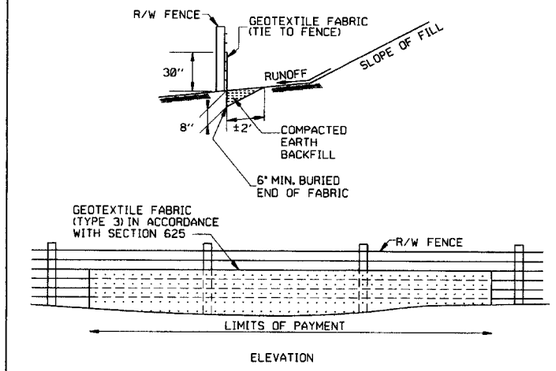
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.




WATTLE DITCH CHECK (E-1)




DROP INLET SILT FENCE (E-7)



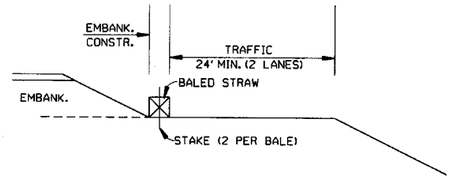

SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

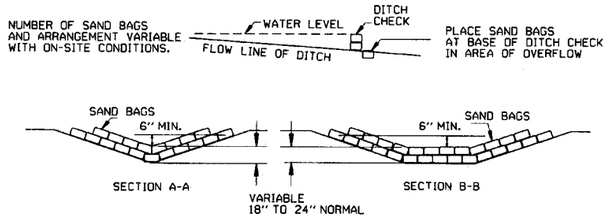
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

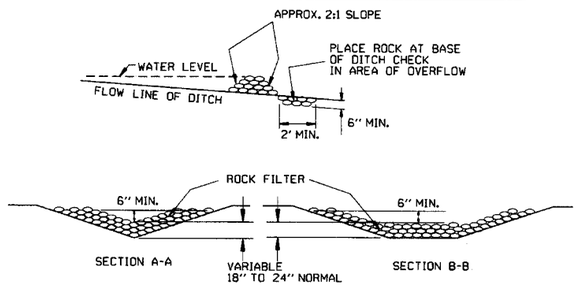
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED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



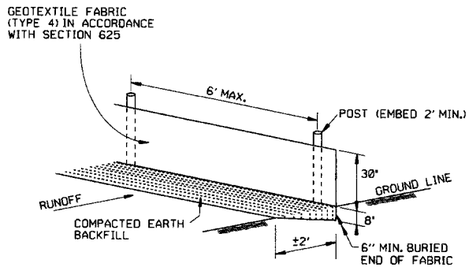

BALED STRAW FILTER BARRIER (E-2)




SAND BAG DITCH CHECK (E-5)




ROCK DITCH CHECK (E-6)




SILT FENCE (E-11)

GENERAL NOTES

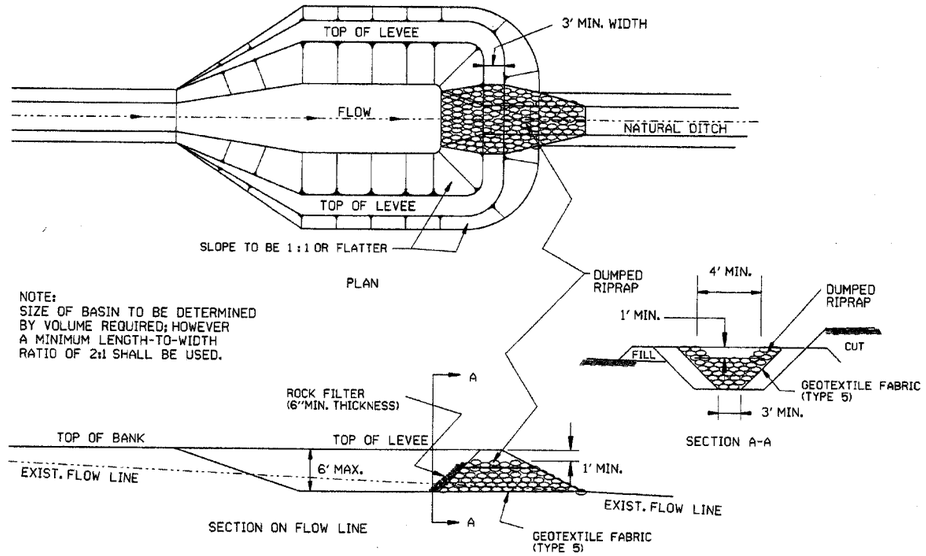
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

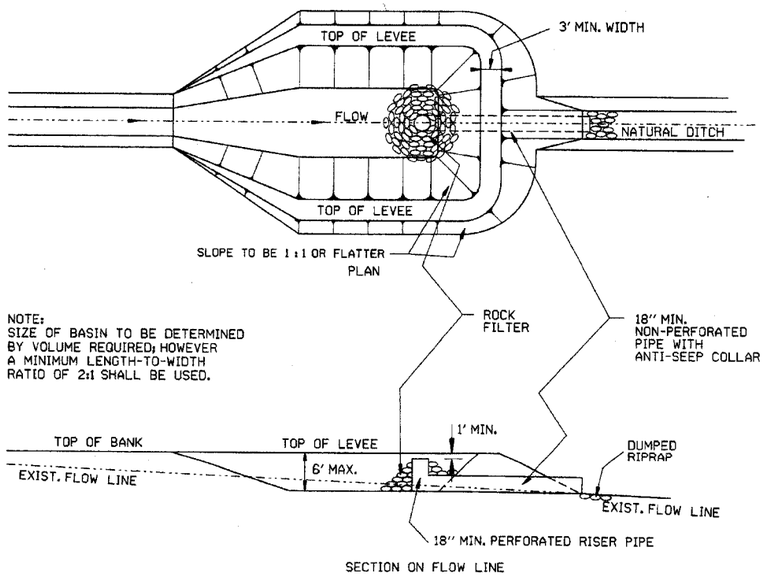
ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

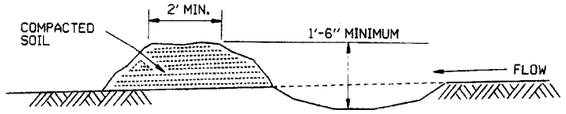
STANDARD DRAWING TEC-1



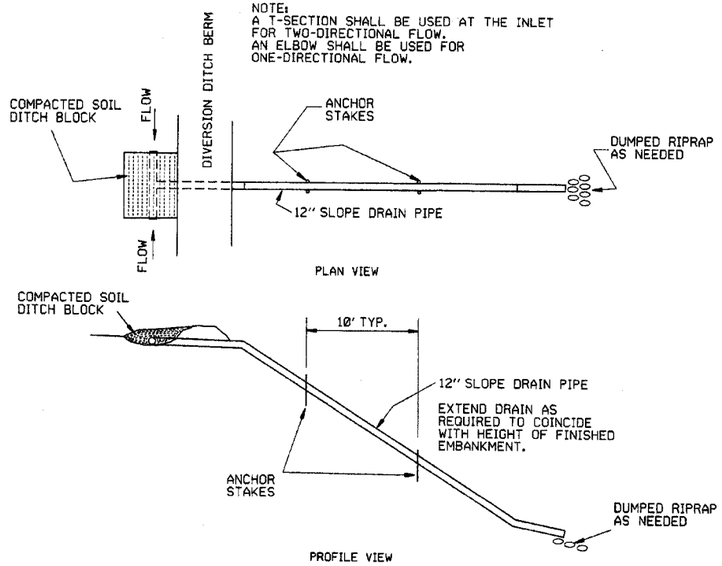

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



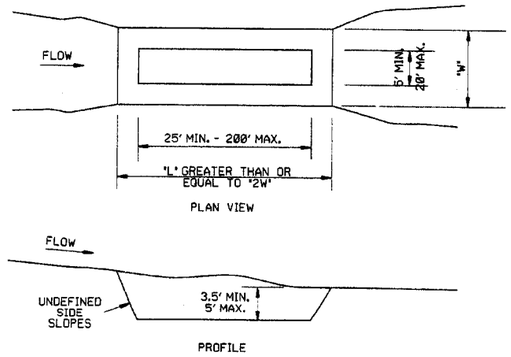

SEDIMENT BASIN WITH PIPE OUTLET (E-10)




DIVERSION DITCH (E-8)




SLOPE DRAIN (E-12)




SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

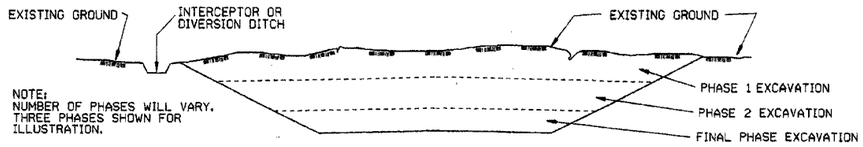
STANDARD DRAWING TEC-2

# CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

# EXCAVATION



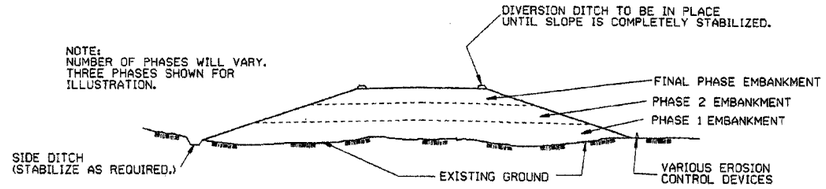

GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

# EMBANKMENT




GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

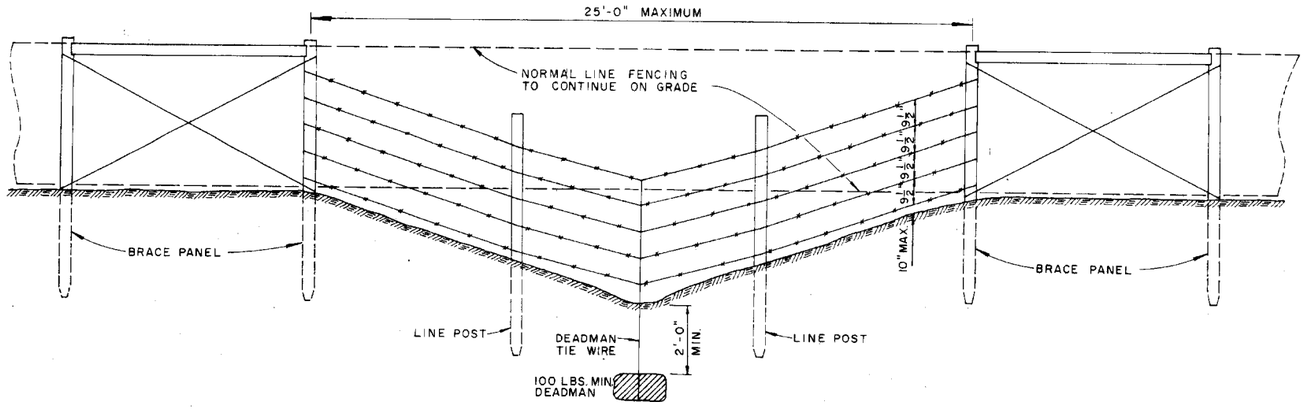
| DATE | REVISION | FILMED |
|---|---|---|
| 11-03-94 | CORRECTED SPELLING | |
| 6-2-94 | Drawn & Issued | 6-2-94 |

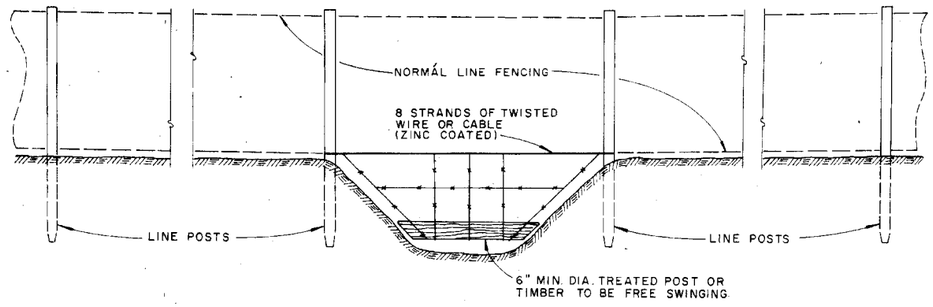
ARKANSAS STATE HIGHWAY COMMISSION

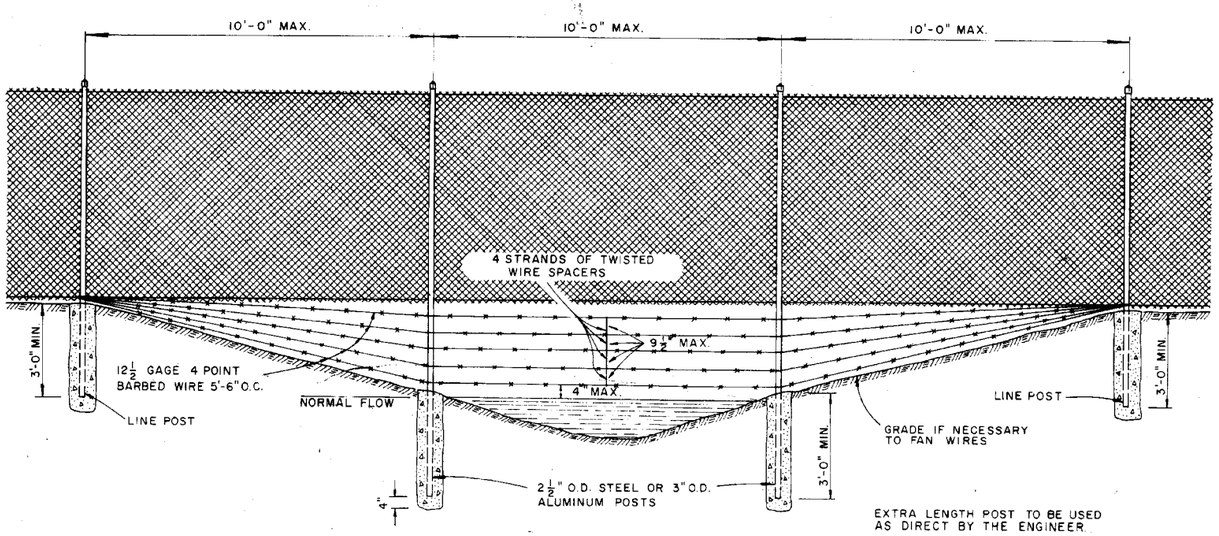
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

stdtec3.dgn




GENERAL NOTES:

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

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

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

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

| DATE | REVISION | DATE FILM'D |
|---|---|---|
| 4-20-79 | REVISED TOP RAIL & TENSION WIRE | 696 4-20-79 |
| 10-2-72 | REVISED & REDRAWN | 529 10-2-72 |

ARKANSAS STATE HIGHWAY COMMISSION

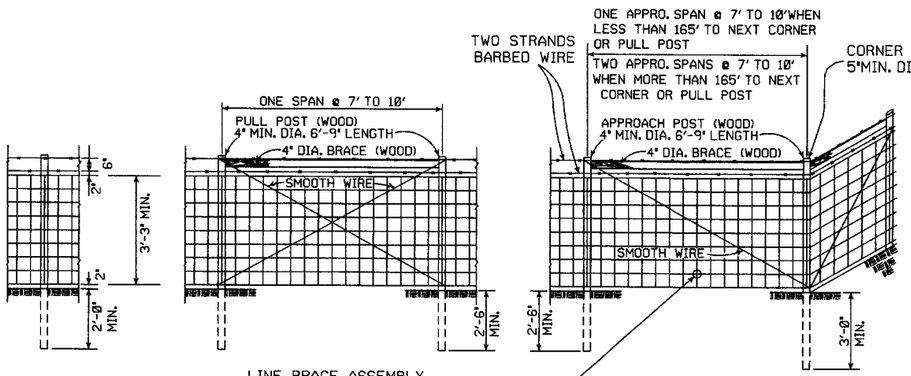
WIRE FENCE WATER GAPS

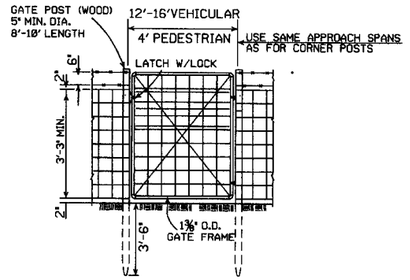
STANDARD DRAWING

WF-2

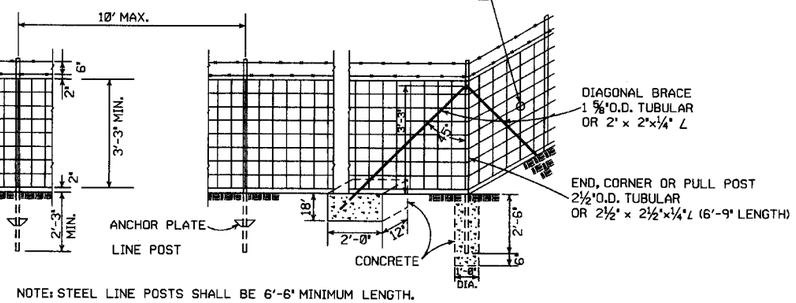


1M—11-71—67001—PPABC

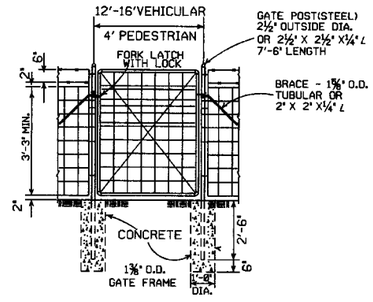


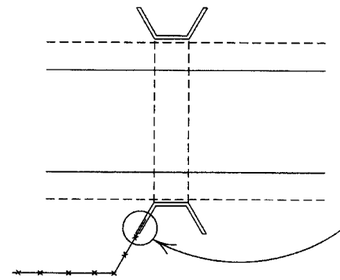



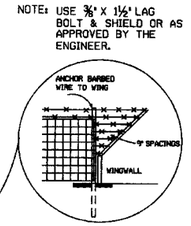

## TYPE C FENCE (WOOD POSTS)




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



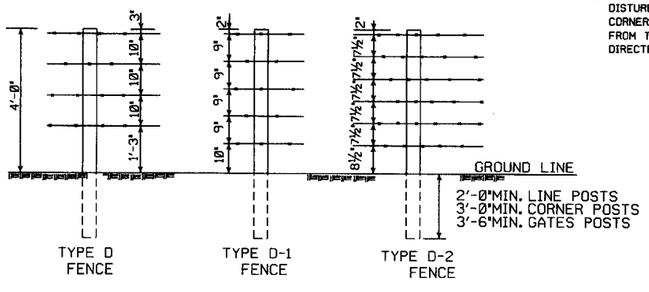





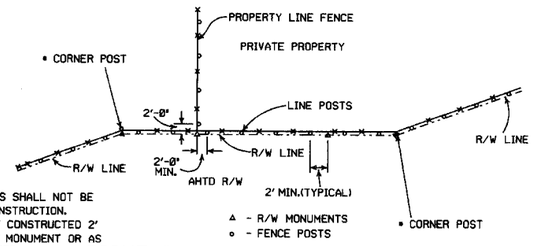

DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

## TYPE C FENCE (STEEL POSTS)

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

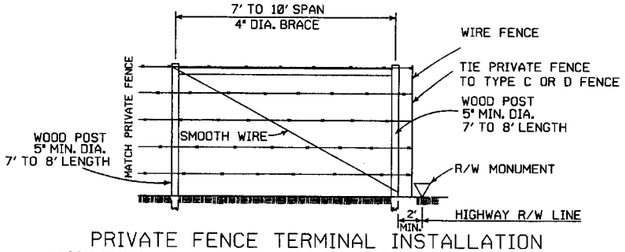



NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



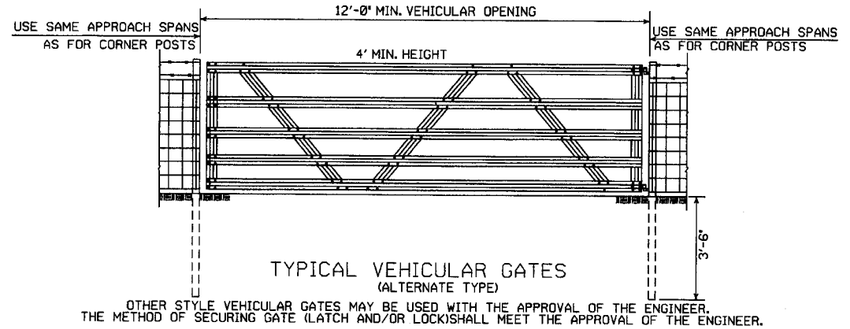

• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION




PRIVATE FENCE TERMINAL INSTALLATION

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




TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

### GENERAL NOTES:

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

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

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

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

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

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

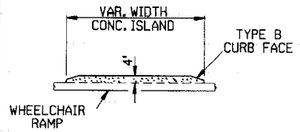
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

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

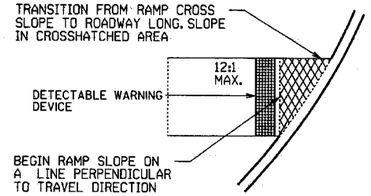
ARKANSAS STATE HIGHWAY COMMISSION

# WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4




CONCRETE ISLAND DETAIL



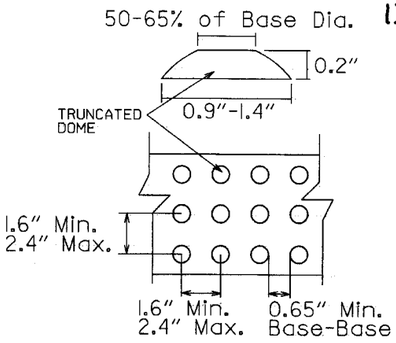

SLOPE TRANSITION DETAILS

## TYPE 1 RAMP DIMENSIONS AND QUANTITIES

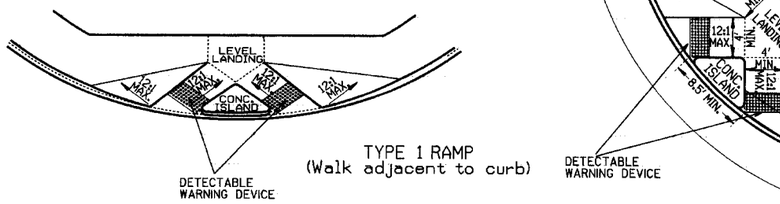
| RADIUS "R" | DISTANCE "X" | DISTANCE "Y" | LENGTH "L" | RAMP AREA "A" |
|---|---|---|---|---|
| FEET | FEET | FEET | FEET | SQ. YD. |
| 15 | 11.67 | 18.82 | 32.18 | 26.21 |
| 20 | 11.52 | 22.28 | 35.46 | 30.07 |
| 25 | 11.43 | 26.60 | 38.77 | 33.80 |
| 30 | 11.37 | 30.26 | 40.93 | 36.90 |
| 35 | 11.33 | 33.51 | 43.11 | 39.77 |
| 40 | 11.30 | 36.45 | 45.26 | 42.45 |
| 45 | 11.27 | 39.16 | 47.34 | 44.97 |
| 50 | 11.25 | 41.69 | 49.36 | 47.35 |
| 55 | 11.24 | 44.07 | 51.31 | 49.63 |
| 60 | 11.22 | 46.33 | 53.21 | 51.80 |

## GENERAL NOTES FOR DETECTABLE WARNING DEVICES

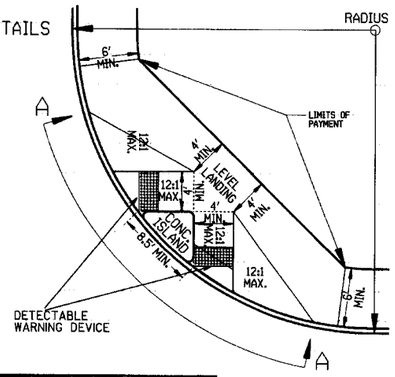
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

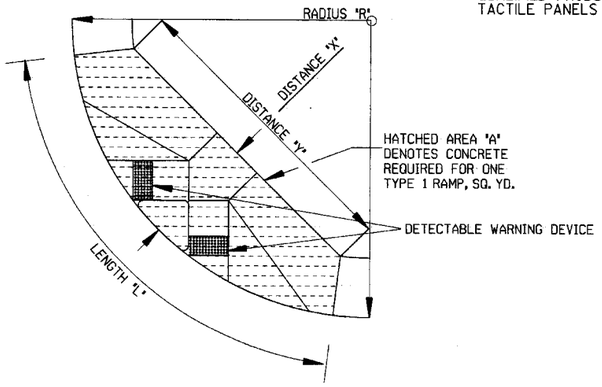


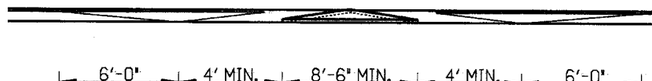

DETECTABLE WARNING DEVICE DETAIL




TYPE 1 RAMP
(Walk adjacent to curb)



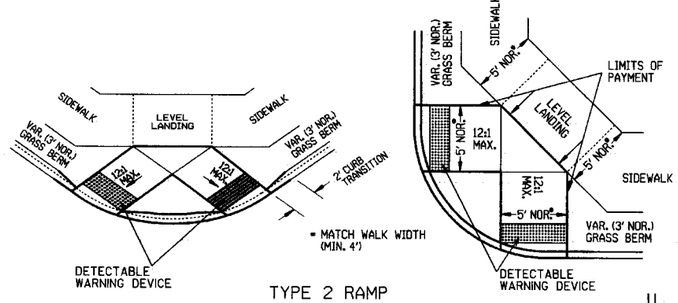




SECTION A-A

NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

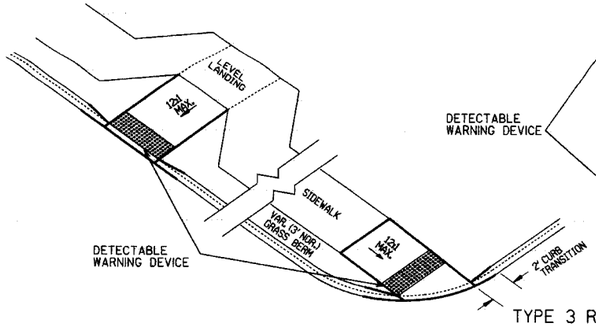
## GENERAL NOTES:

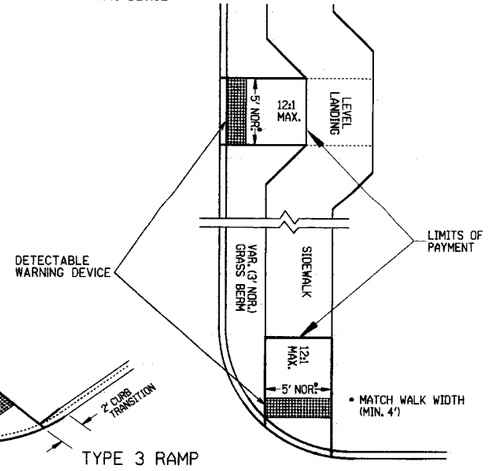
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



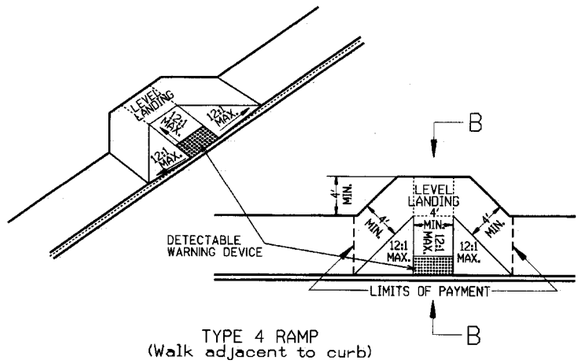

TYPE 2 RAMP



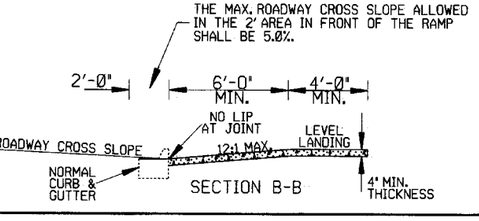




TYPE 3 RAMP




TYPE 4 RAMP
(Walk adjacent to curb)




SECTION B-B

## RAMP SELECTION CRITERIA

| | | |
|---|---|---|
| FIRST CHOICE | TYPE 1 | CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 2 | CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 3 | CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 4 | TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| SECOND CHOICE | TYPE 5 | TANGENT LOCATIONS (ALTERATIONS ONLY). |
| THIRD CHOICE | TYPE 6 | CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS. |
| FOURTH CHOICE | | IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES. |

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| | | |
| 11-10-05 | REVISED TO NEW SIDEWALK POLICY | |
| 10-9-03 | REVISED GEN. NOTES & ADDED NOTE | |
| 4-10-03 | REV. DETECTABLE WARNING DEVICES | |
| 8-22-02 | ADD DETECTABLE WARNING DEVICES | |
| 3-30-00 | ADD.SLOPE TRANS. & REV. ISL. DIMS. | |
| 11-18-98 | REVISED NOTES | |
| 8-12-98 | REVISED TEXTURE | |
| 7-02-98 | REDRAWN & REISSUED | |
| 10-18-96 | CORRECTED DIMENSIONS | 10-18-96 |
| 5-24-90 | FROM8:1TO12:1MAX.SLOPES | 5-24-90 |
| 7-15-88 | ADJUSTED MAX. SLOPE | 652-7-15-88 |
| 7-14-88 | INCLUD."CONC. ISLD."IN PAY ITEM | |
| 6-02-76 | ISSUED-P.H.D. | 299-7-28-76 |

ARKANSAS STATE HIGHWAY COMMISSION

# WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 134 | 242 |

(2) CROSS SECTIONS

STAGE 1

STA. 103+55 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 141' PIPE OUTLET
CONNECT TO D.I. @ 105+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 103+55.00
TOP 319.82
F.L. 314.82

320.64 / 320.02 | 319.82 / 319.31 | EXIST. 320.67 / 319.86 | 319.24 / 319.74 | 319.91 / 320.35

0.024' | 0.021' | 0.028' | 0.021'

CUT AREA 103 SQ.FT.
FILL AREA 0 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

103+55

CUT VOLUME 132 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 103+25.00
TOP 320.09
F.L. 315.08

STA. 103+25 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 171' PIPE OUTLET
CONNECT TO D.I. @ 105+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

321.43 / 320.85 | 320.57 / 320.05 | EXIST. 320.69 / 320.31 | 319.58 / 320.09 | 320.28 / 320.71

0.031' | 0.007' | 0.026' | 0.022'

CUT AREA 134 SQ.FT.
FILL AREA 0 SQ.FT.

103+25

CUT VOLUME 81 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 103+10 CONSTRUCT
D.I. ON LT. WITH
18" x 45' PIPE OUTLET
CONNECT TO D.I. @ 103+55 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 103+10.00
TOP 321.07
F.L. 316.07

321.76 / 321.43 | 321.07 / 320.54 | EXIST. 320.89 / 320.53 | 319.74 / 320.24 | 320.44 / 321.16

0.035' | 0.000' | 0.023' | 0.022'

CUT AREA 156 SQ.FT.
FILL AREA 0 SQ.FT.

103+10

CUT VOLUME 63 CU.YD.
FILL VOLUME 0 CU.YD.

322.11 / 321.90 | 321.48 / 320.94 | EXIST. 321.18 / 320.67 | 319.84 / 320.34 | 320.55 / 321.37

0.039' | 0.005' | 0.021' | 0.021'

CUT AREA 182 SQ.FT.
FILL AREA 0 SQ.FT.

103+00

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

STA. 102+41.75
BEGIN JOB 050249

STA. 103+00.00 TO STA. 103+55.00

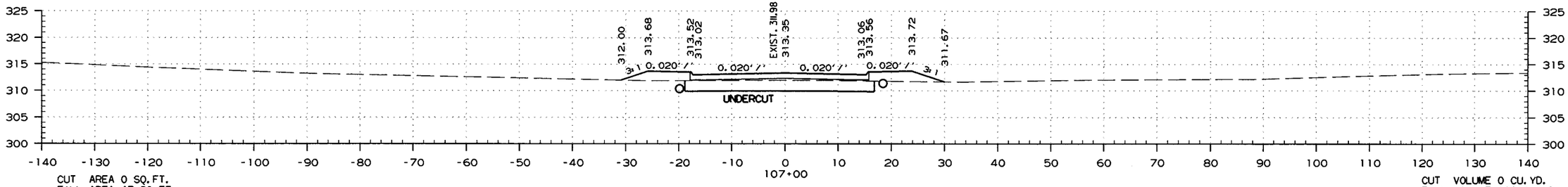
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 135 | 242 |

(2) CROSS SECTIONS

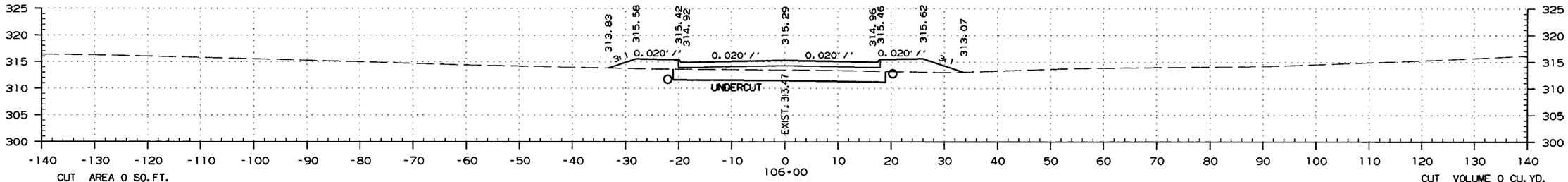
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 47 SQ.FT.
CUT AREA (UNDERCUT) 71 SQ.FT.
FILL AREA (BACKFILL) 71 SQ.FT.

STAGE 1

CUT VOLUME 0 CU.YD.
FILL VOLUME 222 CU.YD.
CUT VOLUME (UNDERCUT) 280 CU.YD.
FILL VOLUME (BACKFILL) 280 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 73 SQ.FT.
CUT AREA (UNDERCUT) 80 SQ.FT.
FILL AREA (BACKFILL) 80 SQ.FT.

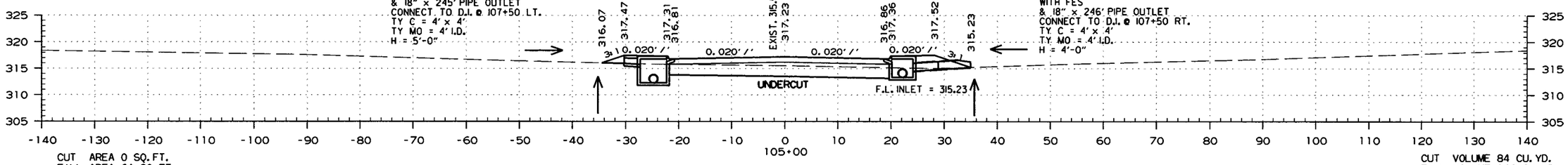
CUT VOLUME 0 CU.YD.
FILL VOLUME 254 CU.YD.
CUT VOLUME (UNDERCUT) 302 CU.YD.
FILL VOLUME (BACKFILL) 302 CU.YD.

STA. 105+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 245' PIPE OUTLET
CONNECT TO D.I. @ 107+50 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 105+00.00
TOP 317.31
F.L. 312.31

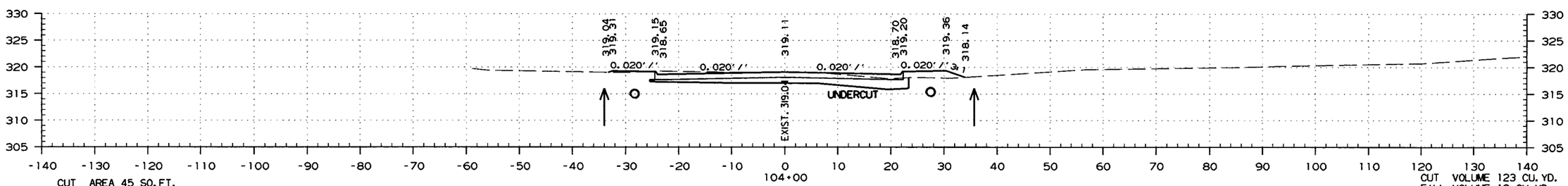
STA. 105+00.00
TOP 317.36
F.L. 313.36

STA. 105+00 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' PIPE CULVERT
WITH FES
& 18" x 246' PIPE OUTLET
CONNECT TO D.I. @ 107+50 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"




CUT AREA 0 SQ.FT.
FILL AREA 64 SQ.FT.
CUT AREA (UNDERCUT) 83 SQ.FT.
FILL AREA (BACKFILL) 83 SQ.FT.

CUT VOLUME 84 CU.YD.
FILL VOLUME 144 CU.YD.
CUT VOLUME (UNDERCUT) 248 CU.YD.
FILL VOLUME (BACKFILL) 248 CU.YD.




CUT AREA 45 SQ.FT.
FILL AREA 14 SQ.FT.
CUT AREA (UNDERCUT) 51 SQ.FT.
FILL AREA (BACKFILL) 51 SQ.FT.

CUT VOLUME 123 CU.YD.
FILL VOLUME 12 CU.YD.
CUT VOLUME (UNDERCUT) 43 CU.YD.
FILL VOLUME (BACKFILL) 43 CU.YD.

STA. 104+00.00 TO STA. 107+00.00

4/8/2016

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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. | | 050249 | 136 | 242 |

(2) CROSS SECTIONS

STAGE 1

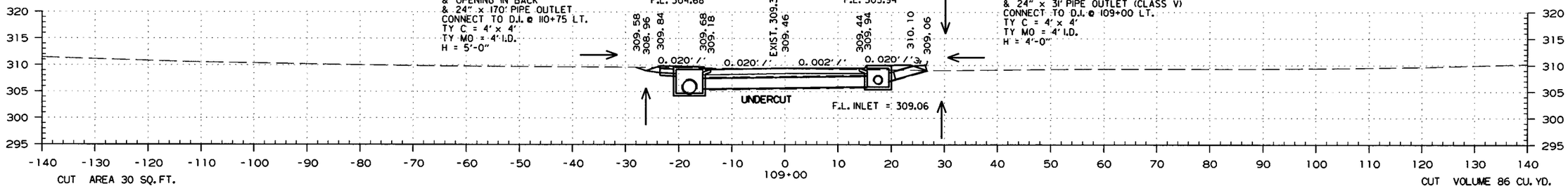
STA. 109+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 170' PIPE OUTLET
CONNECT TO D.I. @ 110+75 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 109+00.00
TOP 309.68
F.L. 304.68

STA. 109+00.00
TOP 309.94
F.L. 305.94

STA. 109+00 CONSTRUCT
D.I. ON RT. WITH
18" x 2' R.C. PIPE CULVERT
WITH FES
& 24" x 31' PIPE OUTLET (CLASS V)
CONNECT TO D.I. @ 109+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

STAGE 1

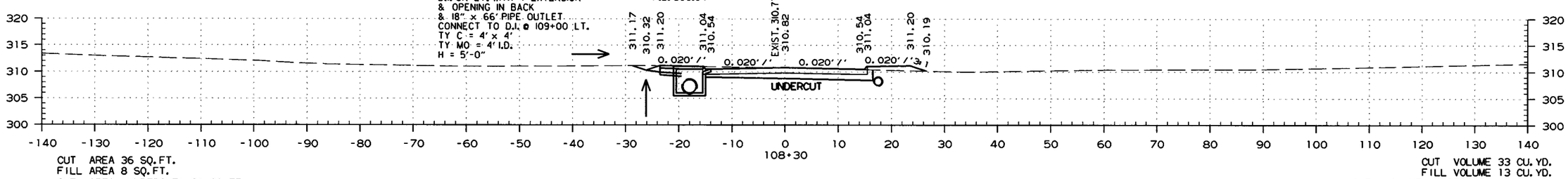



CUT AREA 30 SQ.FT.
FILL AREA 11 SQ.FT.
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 86 CU.YD.
FILL VOLUME 24 CU.YD.
CUT VOLUME (UNDERCUT) 39 CU.YD.
FILL VOLUME (BACKFILL) 39 CU.YD.

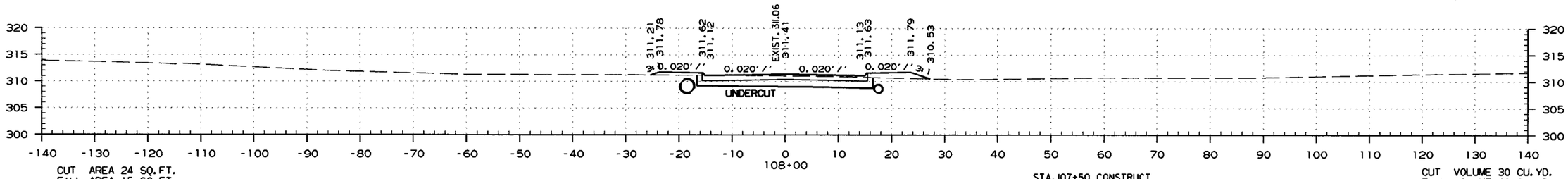
STA. 108+30 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 66' PIPE OUTLET
CONNECT TO D.I. @ 109+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 108+30.00
TOP 311.04
F.L. 306.04




CUT AREA 36 SQ.FT.
FILL AREA 8 SQ.FT.
CUT AREA (UNDERCUT) 30 SQ.FT.
FILL AREA (BACKFILL) 30 SQ.FT.

CUT VOLUME 33 CU.YD.
FILL VOLUME 13 CU.YD.
CUT VOLUME (UNDERCUT) 40 CU.YD.
FILL VOLUME (BACKFILL) 40 CU.YD.




CUT AREA 24 SQ.FT.
FILL AREA 15 SQ.FT.
CUT AREA (UNDERCUT) 42 SQ.FT.
FILL AREA (BACKFILL) 42 SQ.FT.

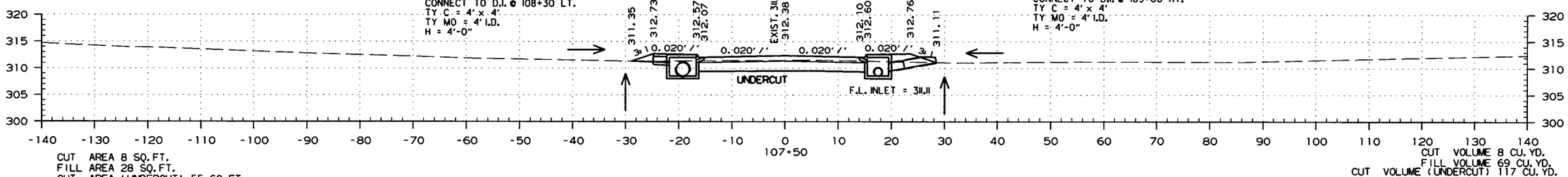
CUT VOLUME 30 CU.YD.
FILL VOLUME 40 CU.YD.
CUT VOLUME (UNDERCUT) 90 CU.YD.
FILL VOLUME (BACKFILL) 90 CU.YD.

STA. 107+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 76' PIPE OUTLET
CONNECT TO D.I. @ 108+30 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"

STA. 107+50.00
TOP 312.57
F.L. 308.57

STA. 107+50.00
TOP 312.60
F.L. 308.60

STA. 107+50 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 3' R.C. PIPE CULVERT
WITH FES
& 18" x 146' PIPE OUTLET
CONNECT TO D.I. @ 109+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4'-0"




CUT AREA 8 SQ.FT.
FILL AREA 28 SQ.FT.
CUT AREA (UNDERCUT) 55 SQ.FT.
FILL AREA (BACKFILL) 55 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 69 CU.YD.
CUT VOLUME (UNDERCUT) 117 CU.YD.
FILL VOLUME (BACKFILL) 117 CU.YD.

STA. 107+50.00 TO STA. 109+00.00

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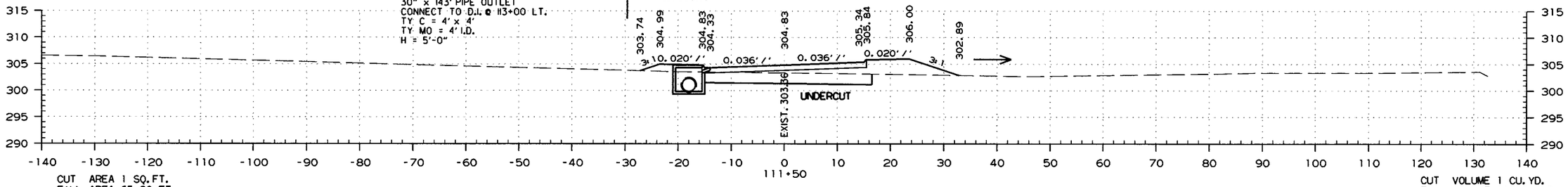
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 137 | 242 |

(2) CROSS SECTIONS

STAGE 1

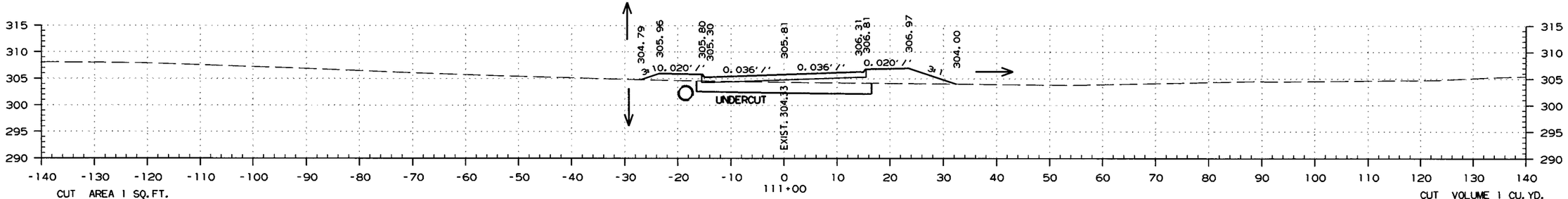
STA. 111+50 CONSTRUCT
D.I. ON LT. WITH
30" x 143' PIPE OUTLET
CONNECT TO D.I. @ 113+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 111+50.00
TOP 304.83
F.L. 299.83




CUT AREA 1 SQ.FT.
FILL AREA 65 SQ.FT.
CUT AREA (UNDERCUT) 63 SQ.FT.
FILL AREA (BACKFILL) 63 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 118 CU.YD.
CUT VOLUME (UNDERCUT) 119 CU.YD.
FILL VOLUME (BACKFILL) 119 CU.YD.

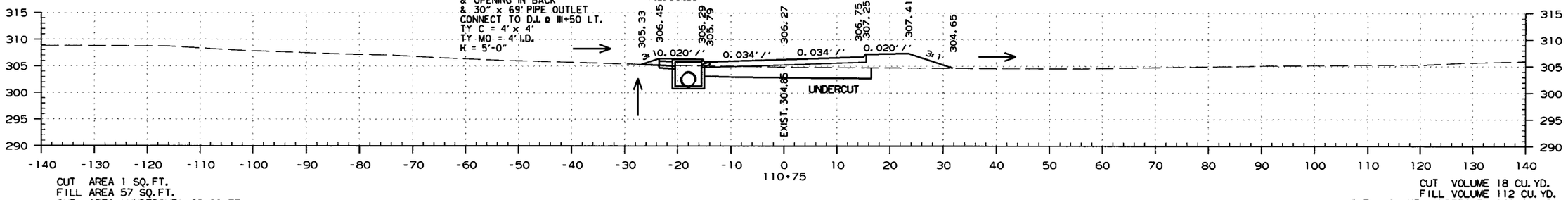



CUT AREA 1 SQ.FT.
FILL AREA 63 SQ.FT.
CUT AREA 1 SQ.FT.
FILL AREA 63 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 55 CU.YD.
CUT VOLUME (UNDERCUT) 59 CU.YD.
FILL VOLUME (BACKFILL) 59 CU.YD.

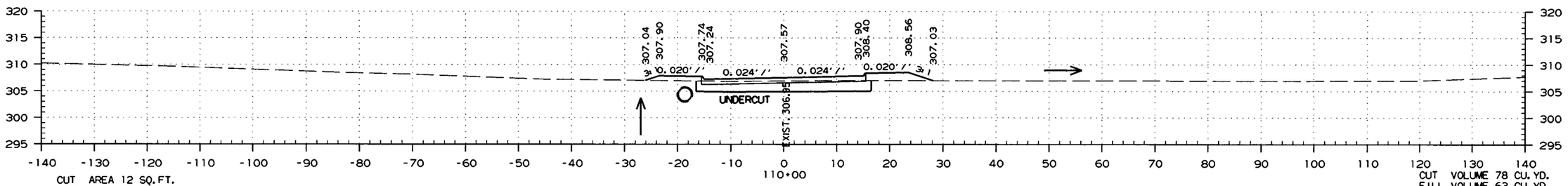
STA. 110+75 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 30" x 69' PIPE OUTLET
CONNECT TO D.I. @ 111+50 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 110+75.00
TOP 306.29
F.L. 301.29




CUT AREA 1 SQ.FT.
FILL AREA 57 SQ.FT.
CUT AREA (UNDERCUT) 62 SQ.FT.
FILL AREA (BACKFILL) 62 SQ.FT.

CUT VOLUME 18 CU.YD.
FILL VOLUME 112 CU.YD.
CUT VOLUME (UNDERCUT) 161 CU.YD.
FILL VOLUME (BACKFILL) 161 CU.YD.




CUT AREA 12 SQ.FT.
FILL AREA 23 SQ.FT.
CUT AREA (UNDERCUT) 54 SQ.FT.
FILL AREA (BACKFILL) 54 SQ.FT.

CUT VOLUME 78 CU.YD.
FILL VOLUME 63 CU.YD.
CUT VOLUME (UNDERCUT) 100 CU.YD.
FILL VOLUME (BACKFILL) 100 CU.YD.

STA. 110+00.00 TO STA. 111+50.00

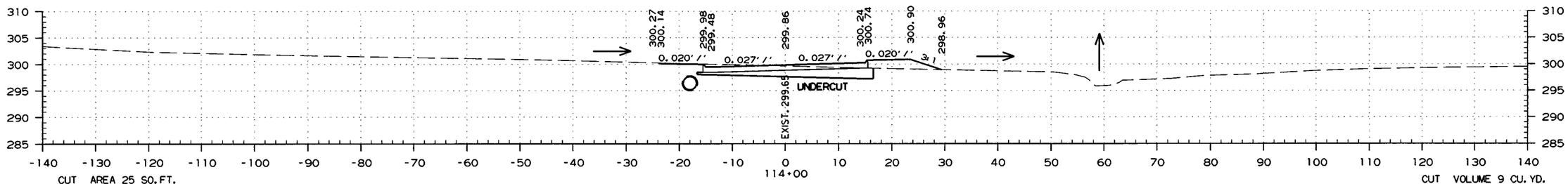
4/8/2016

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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 138 | 242 |

(2) CROSS SECTIONS

STAGE 1



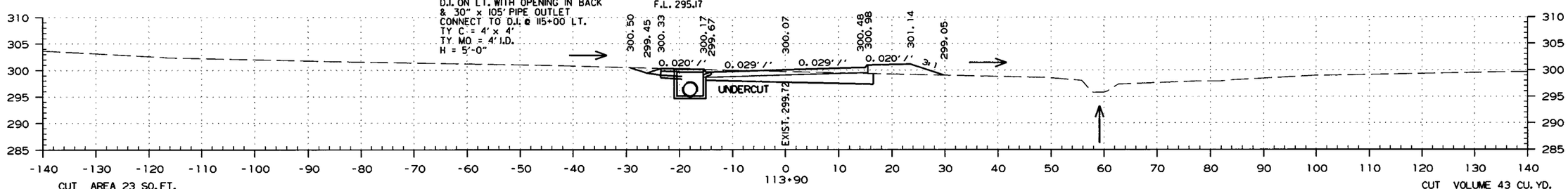

114+00

CUT AREA 25 SQ.FT.
FILL AREA 19 SQ.FT.
CUT AREA (UNDERCUT) 40 SQ.FT.
FILL AREA (BACKFILL) 40 SQ.FT.

CUT VOLUME 9 CU.YD.
FILL VOLUME 7 CU.YD.
CUT VOLUME (UNDERCUT) 15 CU.YD.
FILL VOLUME (BACKFILL) 15 CU.YD.

STA. 113+90 CONSTRUCT
D.I. ON LT. WITH OPENING IN BACK
& 30" x 105' PIPE OUTLET
CONNECT TO D.I. @ 115+00 LT.
TY C = 4' x 4'
TY M0 = 4' I.D.
H = 5'-0"

STA. 113+90.00
TOP 300.17
F.L. 295.17



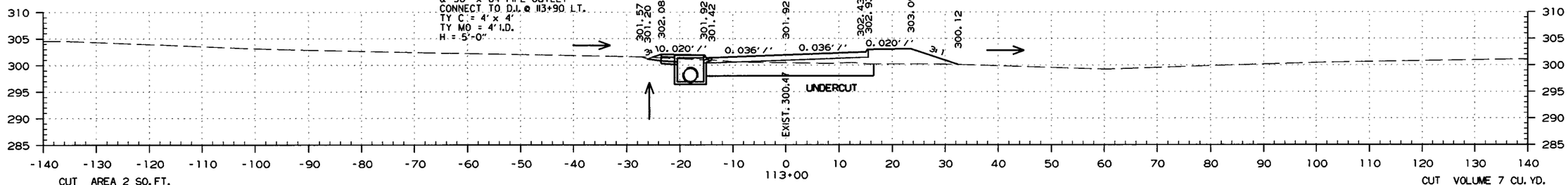

113+90

CUT AREA 23 SQ.FT.
FILL AREA 21 SQ.FT.
CUT AREA (UNDERCUT) 43 SQ.FT.
FILL AREA (BACKFILL) 43 SQ.FT.

CUT VOLUME 43 CU.YD.
FILL VOLUME 128 CU.YD.
CUT VOLUME (UNDERCUT) 200 CU.YD.
FILL VOLUME (BACKFILL) 200 CU.YD.

STA. 113+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 30" x 84' PIPE OUTLET
CONNECT TO D.I. @ 113+90 LT.
TY C = 4' x 4'
TY M0 = 4' I.D.
H = 5'-0"

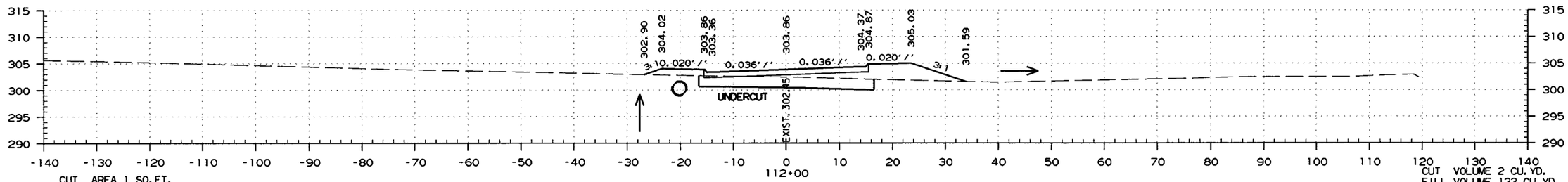
STA. 113+00.00
TOP 301.92
F.L. 296.92




113+00

CUT AREA 2 SQ.FT.
FILL AREA 56 SQ.FT.
CUT AREA (UNDERCUT) 77 SQ.FT.
FILL AREA (BACKFILL) 77 SQ.FT.

CUT VOLUME 7 CU.YD.
FILL VOLUME 229 CU.YD.
CUT VOLUME (UNDERCUT) 263 CU.YD.
FILL VOLUME (BACKFILL) 263 CU.YD.




112+00

CUT AREA 1 SQ.FT.
FILL AREA 67 SQ.FT.
CUT AREA (UNDERCUT) 65 SQ.FT.
FILL AREA (BACKFILL) 65 SQ.FT.

CUT VOLUME 2 CU.YD.
FILL VOLUME 122 CU.YD.
CUT VOLUME (UNDERCUT) 119 CU.YD.
FILL VOLUME (BACKFILL) 119 CU.YD.

STA. 112+00.00 TO STA. 114+00.00

4/8/2016

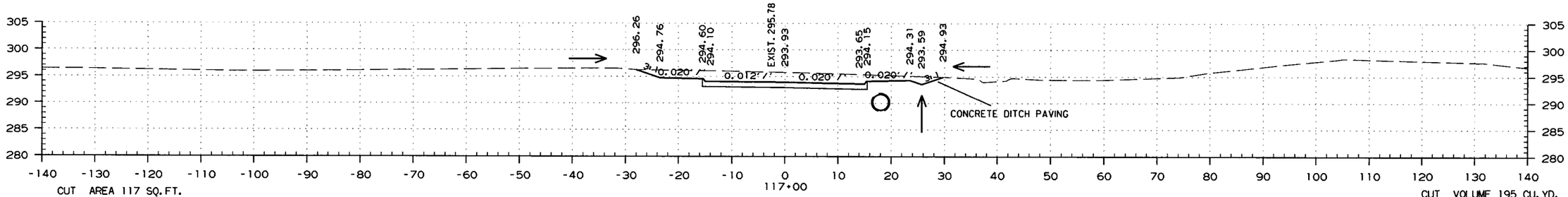
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 139 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




CUT AREA 117 SQ.FT.
FILL AREA 0 SQ.FT.

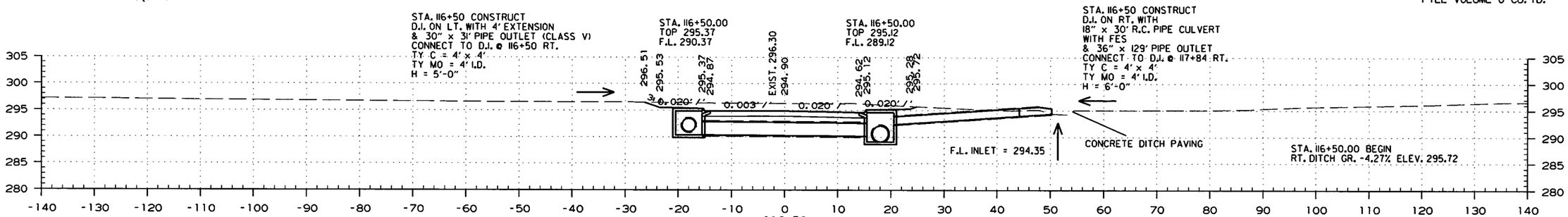
CUT VOLUME 195 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 116+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 31' PIPE OUTLET (CLASS V)
CONNECT TO D.I. @ 116+50 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 116+50.00
TOP 295.37
F.L. 290.37

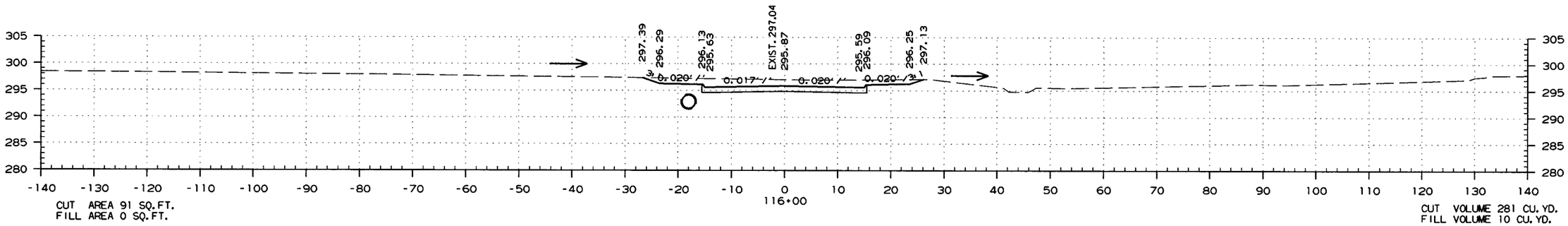
STA. 116+50.00
TOP 295.12
F.L. 289.12

STA. 116+50 CONSTRUCT
D.I. ON RT. WITH
18" x 30' R.C. PIPE CULVERT
WITH FES
& 36" x 129' PIPE OUTLET
CONNECT TO D.I. @ 117+84 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 6'-0"




CUT AREA 93 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 171 CU.YD.
FILL VOLUME 0 CU.YD.

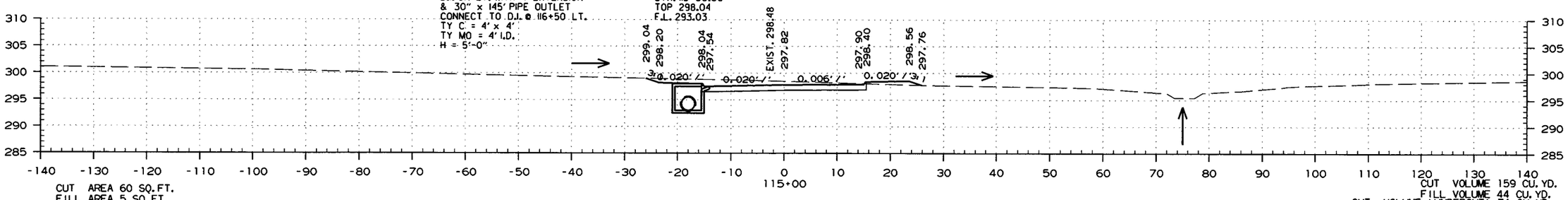



CUT AREA 91 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 281 CU.YD.
FILL VOLUME 10 CU.YD.

STA. 115+00 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 145' PIPE OUTLET
CONNECT TO D.I. @ 116+50 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 115+00.00
TOP 298.04
F.L. 293.03




CUT AREA 60 SQ.FT.
FILL AREA 5 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 159 CU.YD.
FILL VOLUME 44 CU.YD.
CUT VOLUME (UNDERCUT) 74 CU.YD.
FILL VOLUME (BACKFILL) 74 CU.YD.

STA. 115+00.00 TO STA. 117+00.00

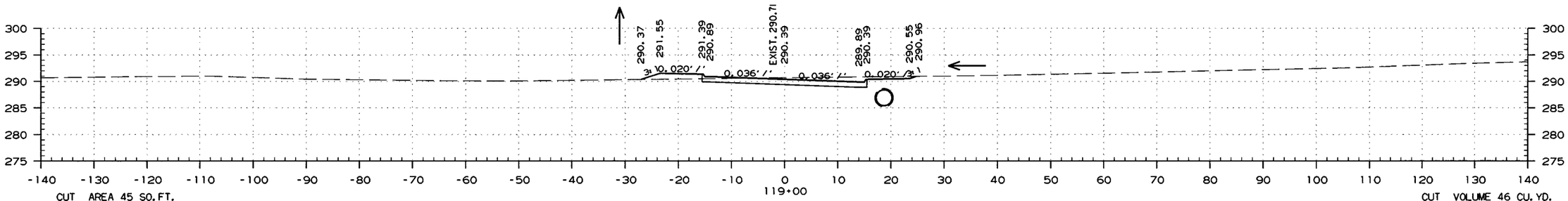
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 140 | 242 |

(2) CROSS SECTIONS

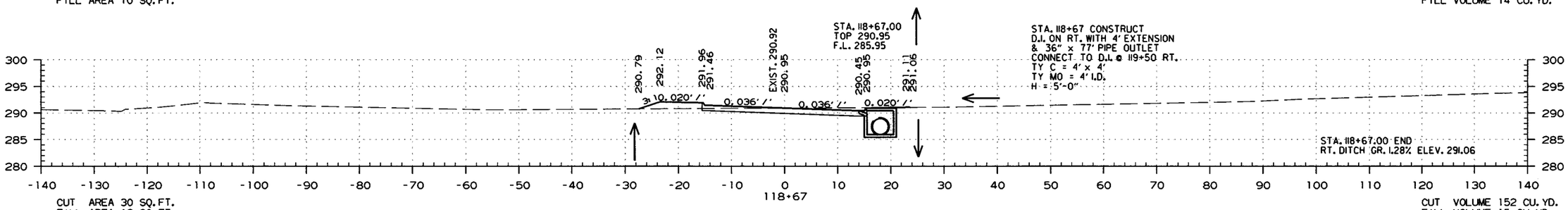
STAGE 1




CUT AREA 45 SQ.FT.
FILL AREA 10 SQ.FT.

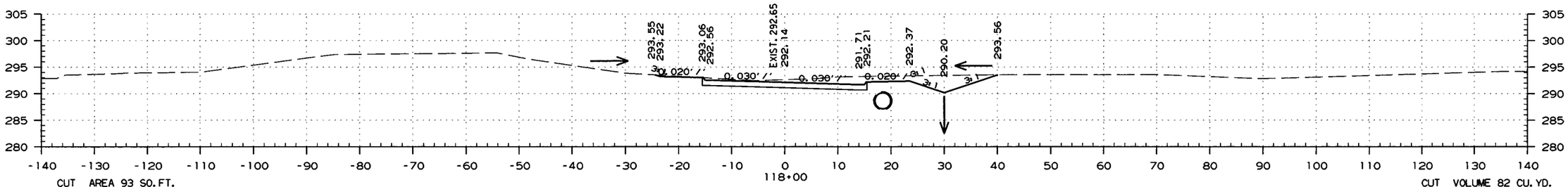
STAGE 1

CUT VOLUME 46 CU.YD.
FILL VOLUME 14 CU.YD.



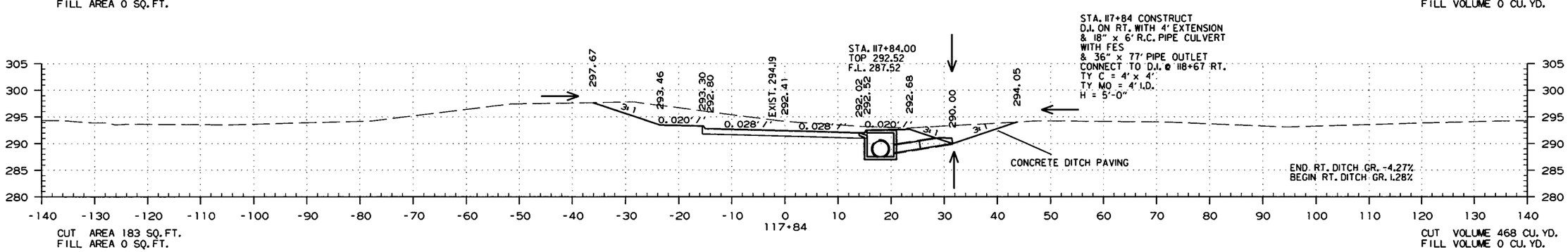

CUT AREA 30 SQ.FT.
FILL AREA 12 SQ.FT.

CUT VOLUME 152 CU.YD.
FILL VOLUME 15 CU.YD.




CUT AREA 93 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 82 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 183 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 468 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 117+84.00 TO STA. 119+00.00

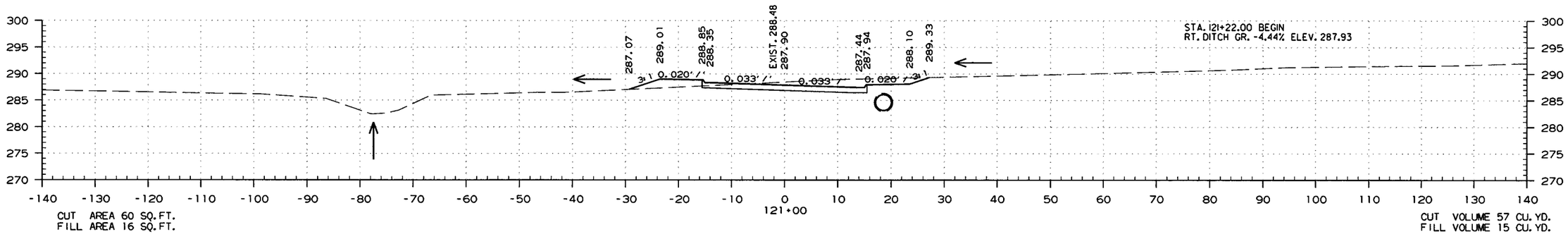
4/8/2016

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| | | | | JOB NO. | | 050249 | 141 | 242 |

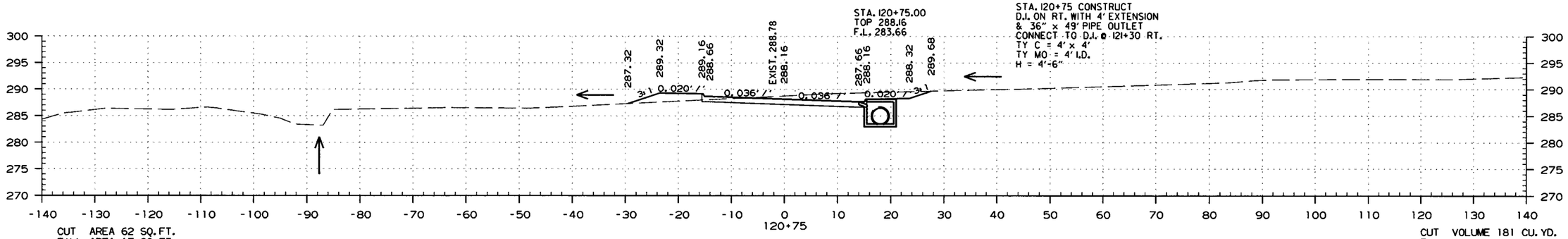
25 CROSS SECTIONS

STAGE 1



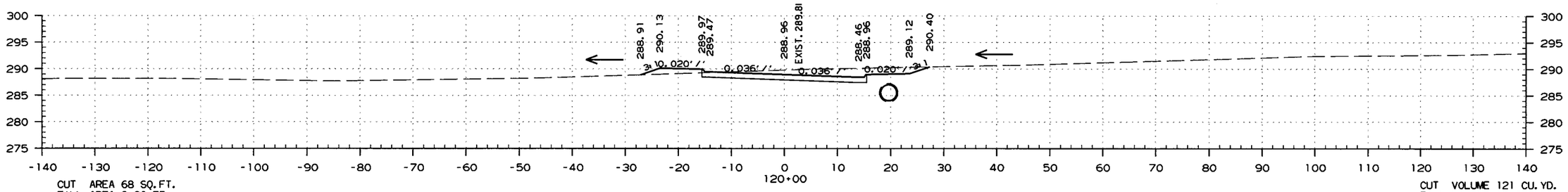

CUT AREA 60 SQ.FT.
FILL AREA 16 SQ.FT.

CUT VOLUME 57 CU.YD.
FILL VOLUME 15 CU.YD.



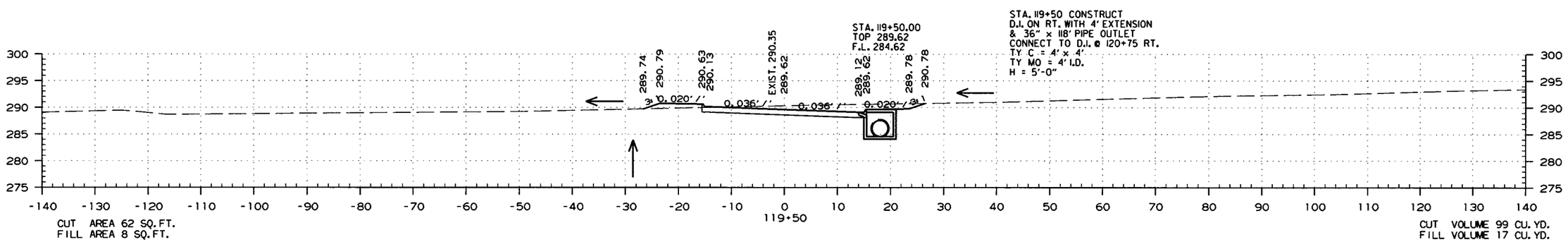

CUT AREA 62 SQ.FT.
FILL AREA 17 SQ.FT.

CUT VOLUME 181 CU.YD.
FILL VOLUME 36 CU.YD.




CUT AREA 68 SQ.FT.
FILL AREA 9 SQ.FT.

CUT VOLUME 121 CU.YD.
FILL VOLUME 16 CU.YD.




CUT AREA 62 SQ.FT.
FILL AREA 8 SQ.FT.

CUT VOLUME 99 CU.YD.
FILL VOLUME 17 CU.YD.

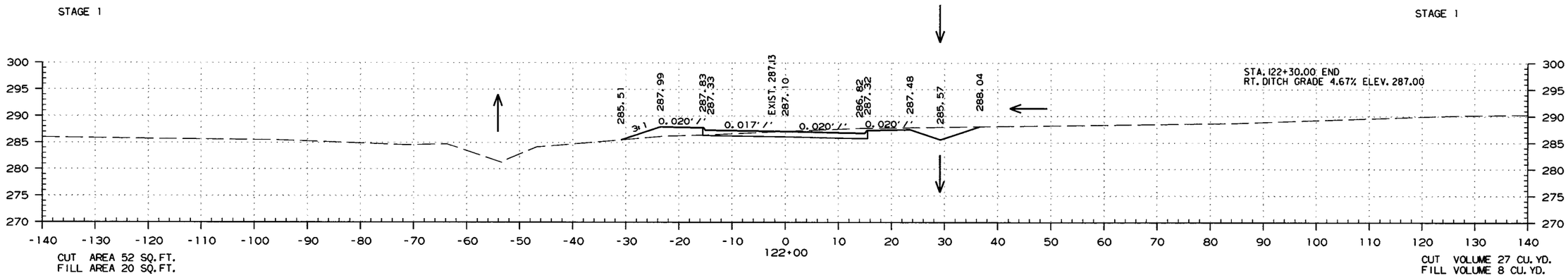
STA. 119+50.00 TO STA. 121+00.00

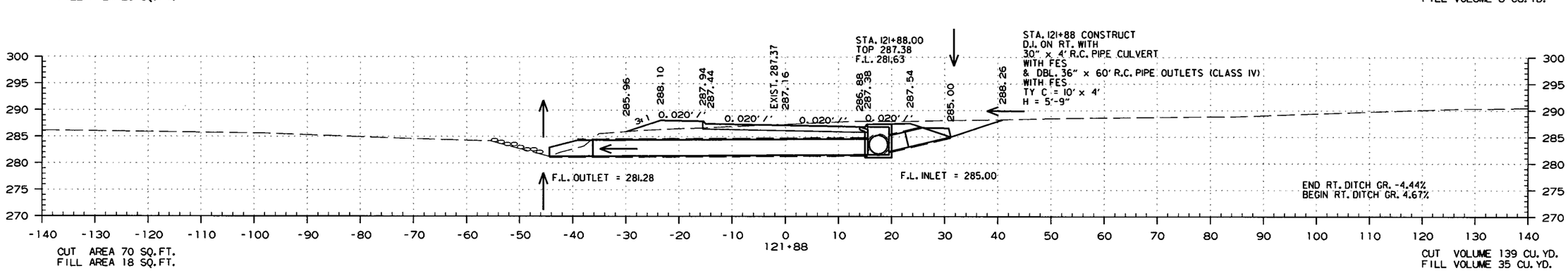
4/8/2016

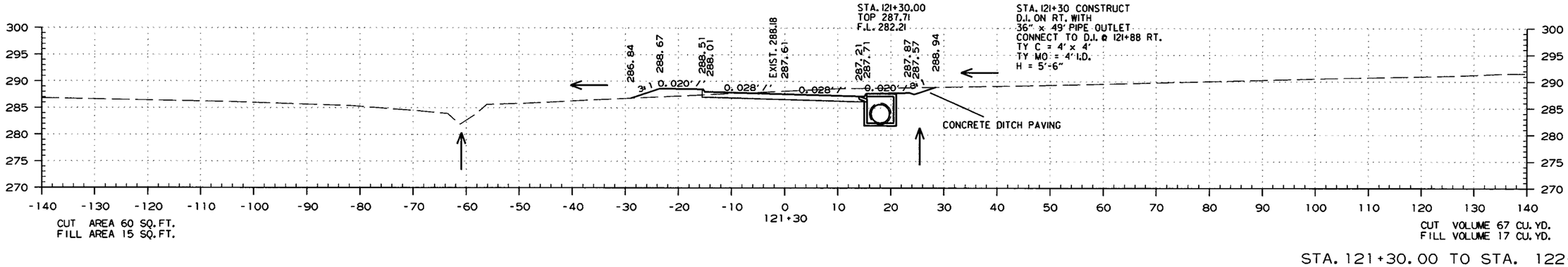
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 142 | 242 |

(2) CROSS SECTIONS




STA. 121+30.00 TO STA. 122+00.00

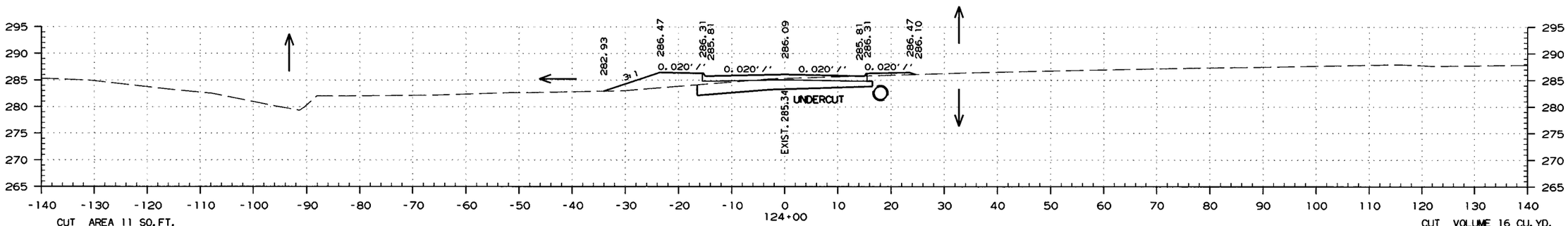
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 143 | 242 |

(2) CROSS SECTIONS

STAGE 1

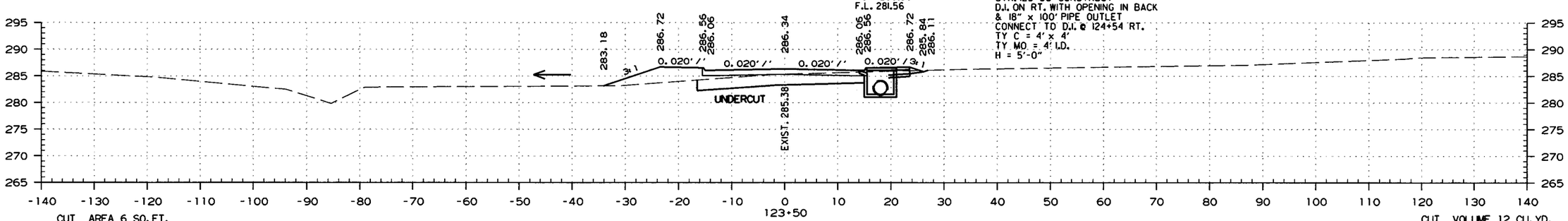



CUT AREA 11 SQ.FT.
FILL AREA 42 SQ.FT.
CUT AREA (UNDERCUT) 54 SQ.FT.
FILL AREA (BACKFILL) 54 SQ.FT.

CUT VOLUME 16 CU.YD.
FILL VOLUME 84 CU.YD.
CUT VOLUME (UNDERCUT) 103 CU.YD.
FILL VOLUME (BACKFILL) 103 CU.YD.

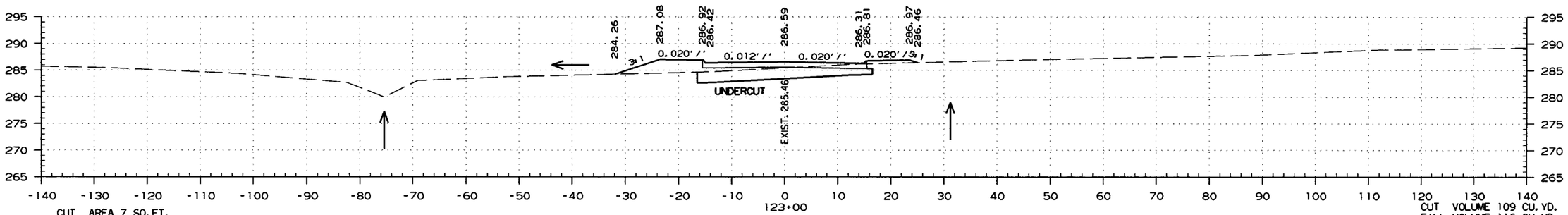
STA.123+50.00
TOP 286.56
F.L. 281.56

STA.123+50 CONSTRUCT
D.I. ON RT. WITH OPENING IN BACK
& 18" x 100' PIPE OUTLET
CONNECT TO D.I. @ 124+54 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"




CUT AREA 6 SQ.FT.
FILL AREA 49 SQ.FT.
CUT AREA (UNDERCUT) 57 SQ.FT.
FILL AREA (BACKFILL) 57 SQ.FT.

CUT VOLUME 12 CU.YD.
FILL VOLUME 85 CU.YD.
CUT VOLUME (UNDERCUT) 106 CU.YD.
FILL VOLUME (BACKFILL) 106 CU.YD.




CUT AREA 7 SQ.FT.
FILL AREA 43 SQ.FT.
CUT AREA (UNDERCUT) 58 SQ.FT.
FILL AREA (BACKFILL) 58 SQ.FT.

CUT VOLUME 109 CU.YD.
FILL VOLUME 116 CU.YD.
CUT VOLUME (UNDERCUT) 0 CU.YD.
FILL VOLUME (BACKFILL) 0 CU.YD.

STA. 123+00.00 TO STA. 124+00.00

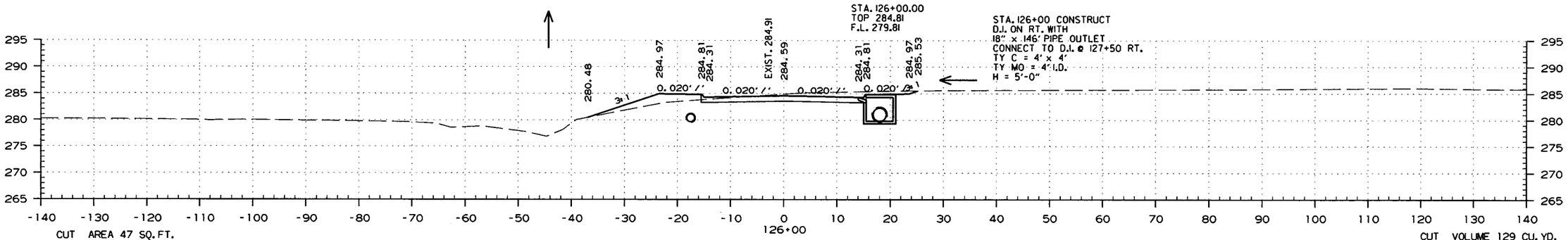
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 144 | 242 |

(2) CROSS SECTIONS

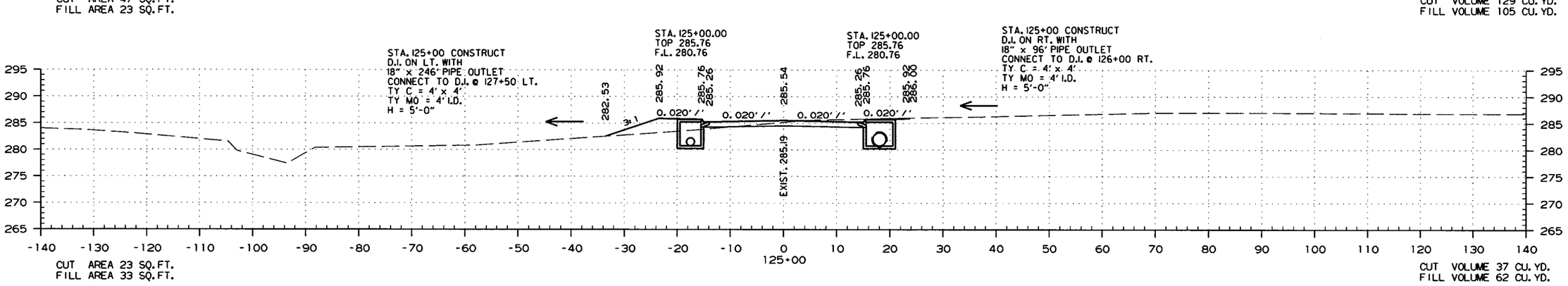
STAGE 1




CUT AREA 47 SQ.FT.
FILL AREA 23 SQ.FT.

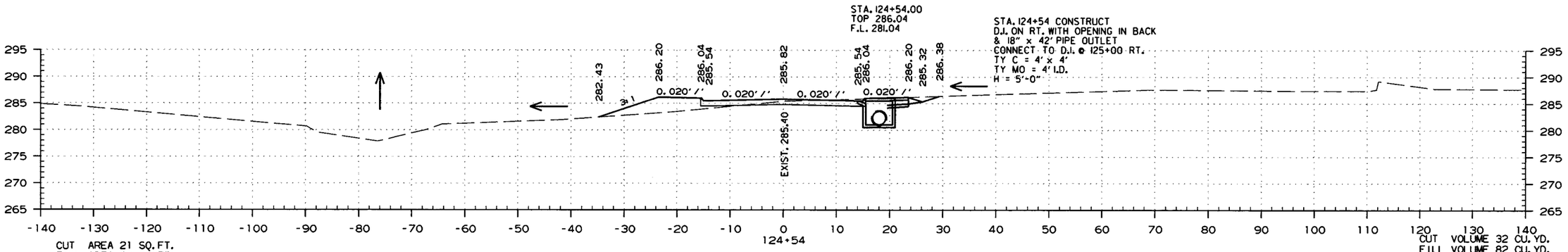
CUT VOLUME 129 CU.YD.
FILL VOLUME 105 CU.YD.

STAGE 1




CUT AREA 23 SQ.FT.
FILL AREA 33 SQ.FT.

CUT VOLUME 37 CU.YD.
FILL VOLUME 62 CU.YD.




CUT AREA 21 SQ.FT.
FILL AREA 40 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 32 CU.YD.
FILL VOLUME 82 CU.YD.
CUT VOLUME (UNDERCUT) 54 CU.YD.
FILL VOLUME (BACKFILL) 54 CU.YD.

STA. 124+54.00 TO STA. 126+00.00

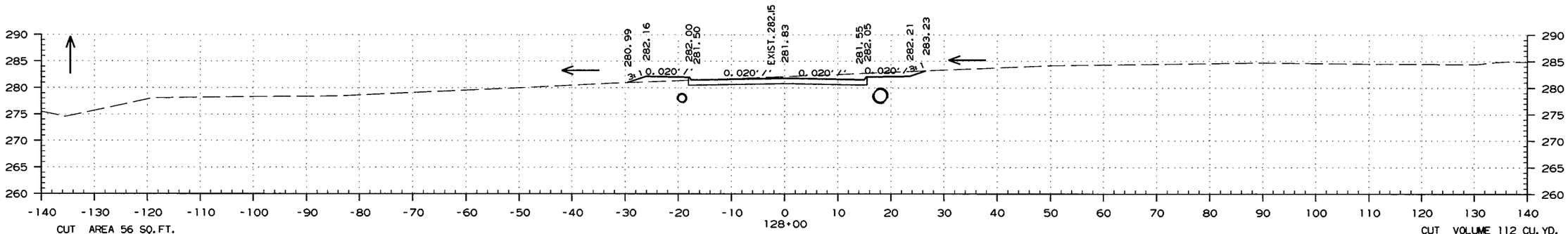
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 145 | 242 |

(2) CROSS SECTIONS

STAGE 1




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

CUT VOLUME 112 CU.YD.
FILL VOLUME 11 CU.YD.

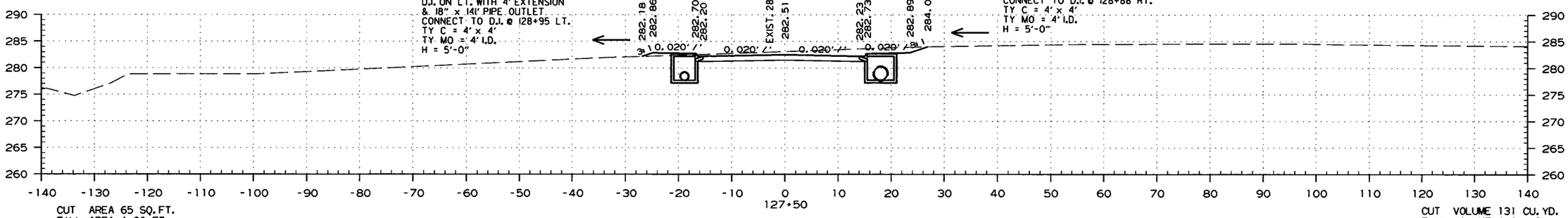
STAGE 1

STA. 127+50 CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 141' PIPE OUTLET
CONNECT TO D.I. @ 128+95 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

STA. 127+50.00
TOP 282.70
F.L. 277.70

STA. 127+50.00
TOP 282.73
F.L. 277.73

STA. 127+50 CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 134' PIPE OUTLET
CONNECT TO D.I. @ 128+88 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5'-0"

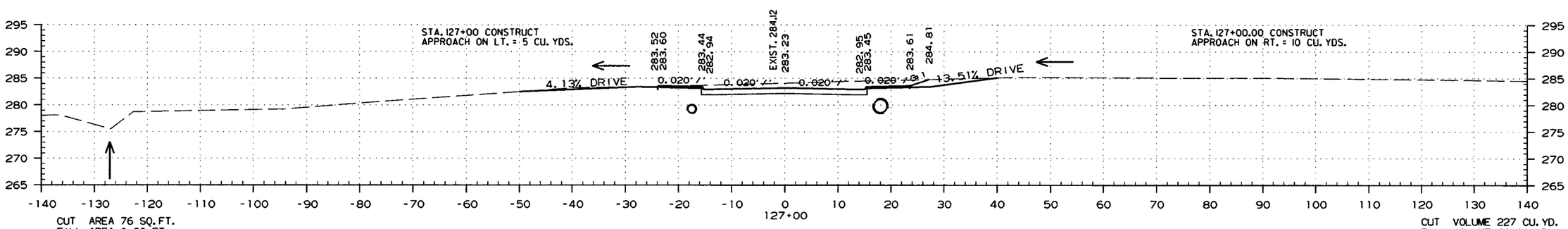



CUT AREA 65 SQ.FT.
FILL AREA 4 SQ.FT.

CUT VOLUME 131 CU.YD.
FILL VOLUME 4 CU.YD.

STA. 127+00 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 127+00.00 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.




CUT AREA 76 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 227 CU.YD.
FILL VOLUME 44 CU.YD.

STA. 127+00.00 TO STA. 128+00.00

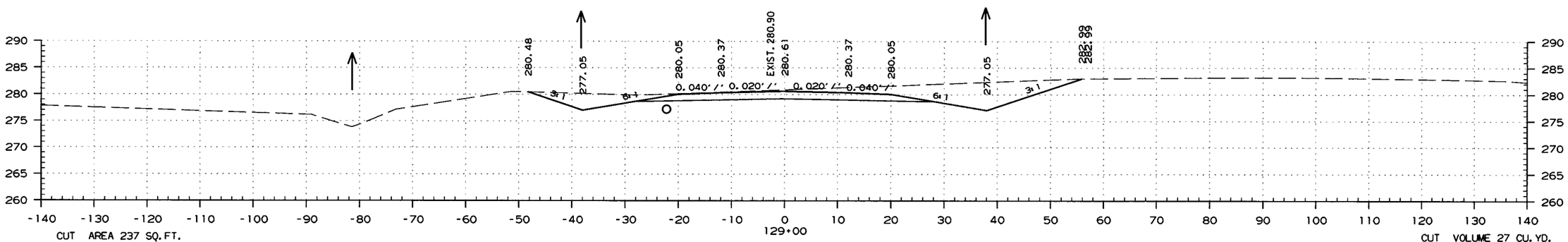
4/8/2016

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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. | | 050249 | 146 | 242 |

(2) CROSS SECTIONS

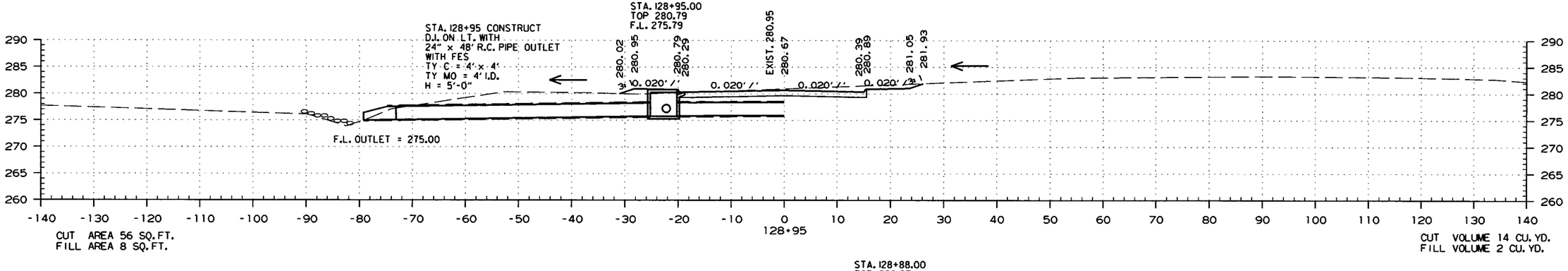
STAGE 1




CUT AREA 237 SQ.FT.
FILL AREA 0 SQ.FT.

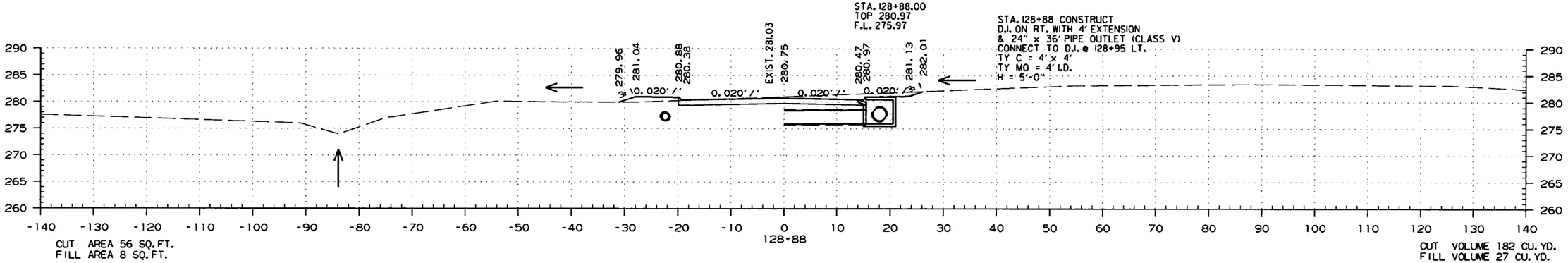
STAGE 1

CUT VOLUME 27 CU.YD.
FILL VOLUME 1 CU.YD.




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

CUT VOLUME 14 CU.YD.
FILL VOLUME 2 CU.YD.




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

CUT VOLUME 182 CU.YD.
FILL VOLUME 27 CU.YD.

STA. 128+88.00 TO STA. 129+00.00

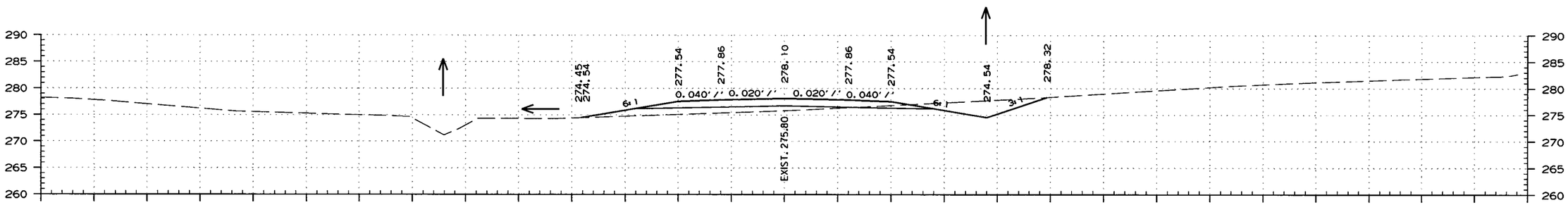
4/8/2016

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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. | | 050249 | 147 | 242 |

(2) CROSS SECTIONS

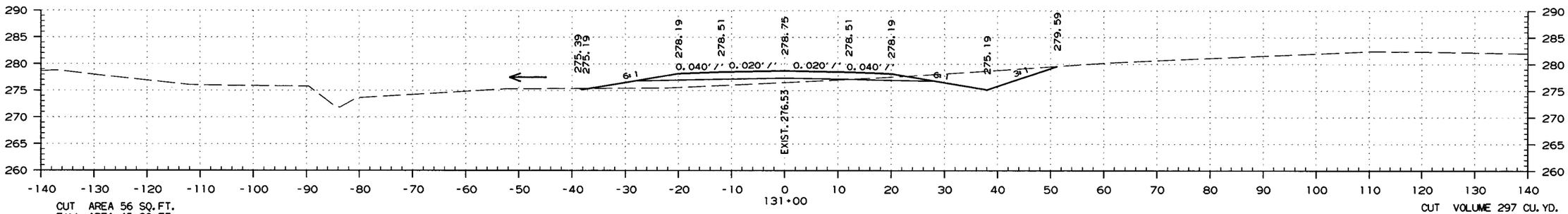
STAGE 1




CUT AREA 47 SQ.FT.
FILL AREA 46 SQ.FT.

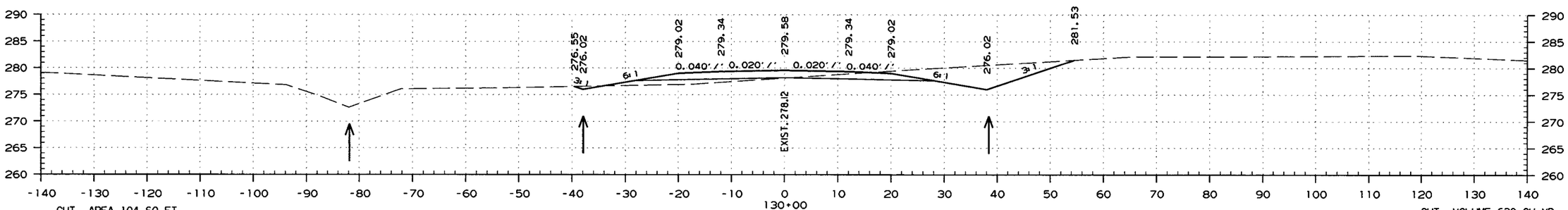
CUT VOLUME 191 CU.YD.
FILL VOLUME 168 CU.YD.

STAGE 1




CUT AREA 56 SQ.FT.
FILL AREA 45 SQ.FT.

CUT VOLUME 297 CU.YD.
FILL VOLUME 122 CU.YD.




CUT AREA 104 SQ.FT.
FILL AREA 21 SQ.FT.

CUT VOLUME 630 CU.YD.
FILL VOLUME 38 CU.YD.

STA. 130+00.00 TO STA. 132+00.00

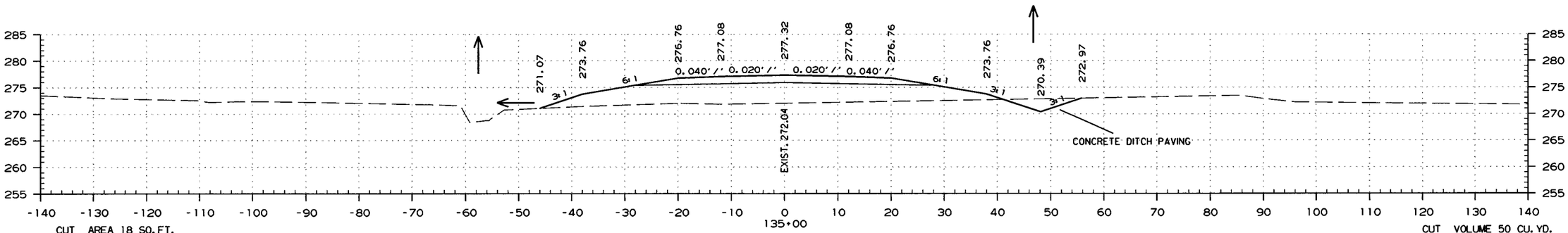
4/8/2016

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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. | | 050249 | 148 | 242 |

(2) CROSS SECTIONS

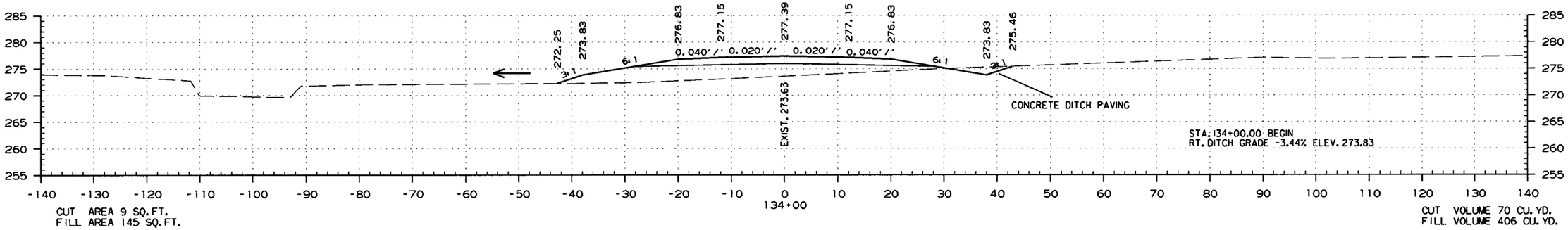
STAGE 1




CUT AREA 18 SQ.FT.
FILL AREA 261 SQ.FT.

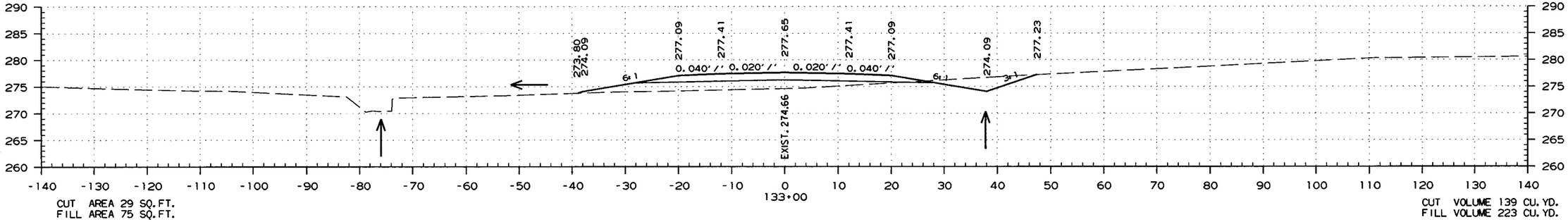
STAGE 1

CUT VOLUME 50 CU.YD.
FILL VOLUME 751 CU.YD.




CUT AREA 9 SQ.FT.
FILL AREA 145 SQ.FT.

CUT VOLUME 70 CU.YD.
FILL VOLUME 406 CU.YD.




CUT AREA 29 SQ.FT.
FILL AREA 75 SQ.FT.

CUT VOLUME 139 CU.YD.
FILL VOLUME 223 CU.YD.

STA. 133+00.00 TO STA. 135+00.00

4/8/2016

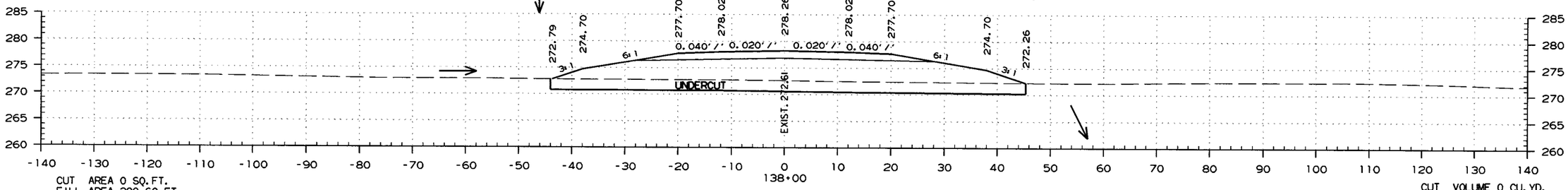
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 149 | 242 |

## (2) CROSS SECTIONS

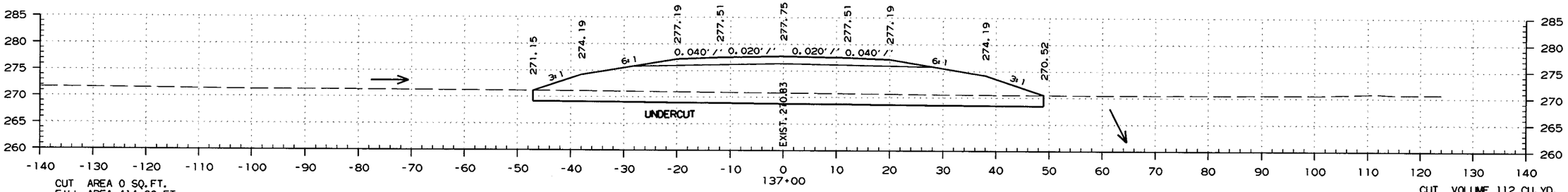
STAGE 1

STAGE 1



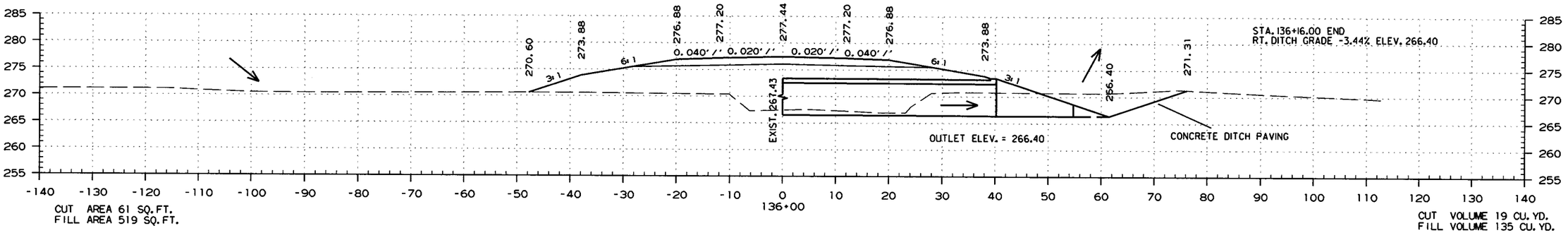

CUT AREA 0 SQ.FT.
FILL AREA 299 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 1319 CU. YD.
CUT VOLUME (UNDERCUT) 711 CU. YD.
FILL VOLUME (BACKFILL) 711 CU. YD.



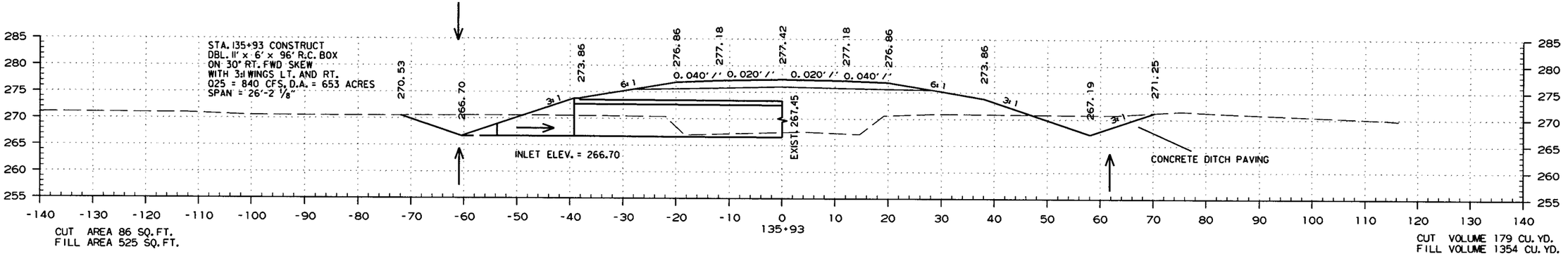

CUT AREA 0 SQ.FT.
FILL AREA 414 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 112 CU. YD.
FILL VOLUME 1727 CU. YD.
CUT VOLUME (UNDERCUT) 0 CU. YD.
FILL VOLUME (BACKFILL) 0 CU. YD.




CUT AREA 61 SQ.FT.
FILL AREA 519 SQ.FT.

CUT VOLUME 19 CU. YD.
FILL VOLUME 135 CU. YD.




CUT AREA 86 SQ.FT.
FILL AREA 525 SQ.FT.

CUT VOLUME 179 CU. YD.
FILL VOLUME 1354 CU. YD.

STA. 135+93.00 TO STA. 138+00.00

4/8/2016

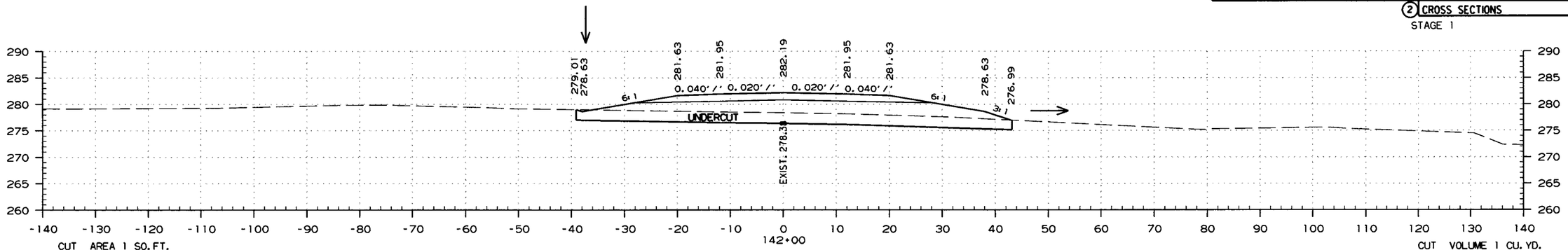
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 150 | 242 |

(2) CROSS SECTIONS

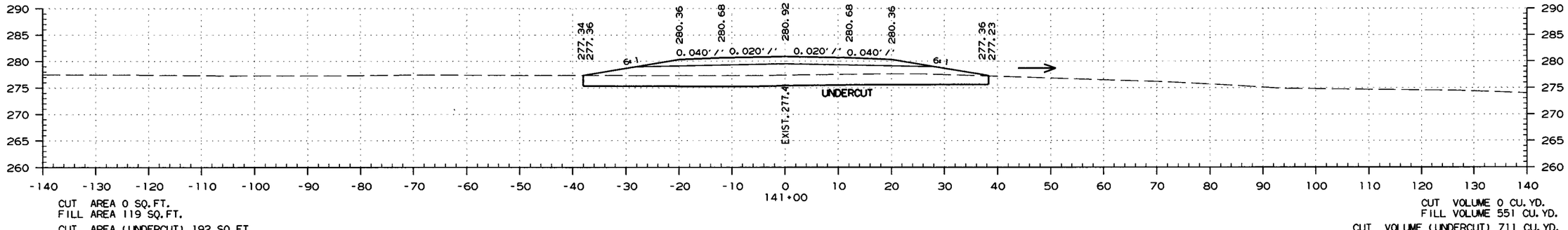
STAGE 1

STAGE 1



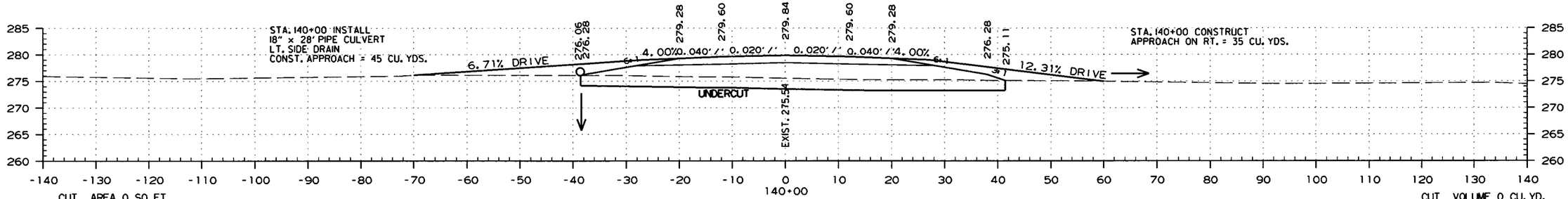

CUT AREA 1 SQ.FT.
FILL AREA 153 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 504 CU.YD.
CUT VOLUME (UNDERCUT) 711 CU.YD.
FILL VOLUME (BACKFILL) 711 CU.YD.



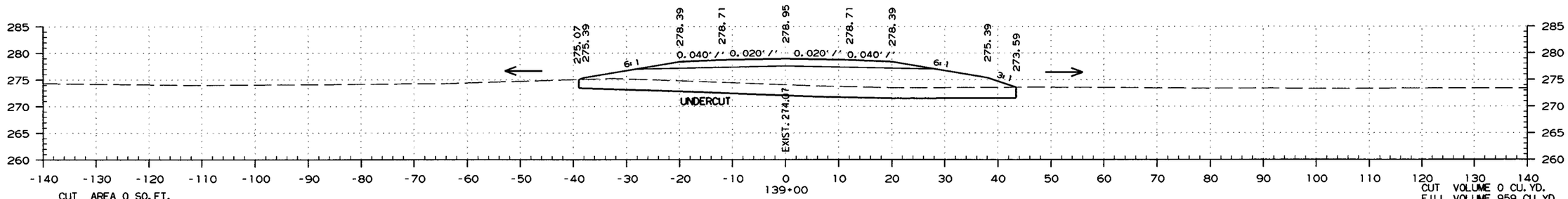

CUT AREA 0 SQ.FT.
FILL AREA 119 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 551 CU.YD.
CUT VOLUME (UNDERCUT) 711 CU.YD.
FILL VOLUME (BACKFILL) 711 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 178 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 736 CU.YD.
CUT VOLUME (UNDERCUT) 711 CU.YD.
FILL VOLUME (BACKFILL) 711 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 219 SQ.FT.
CUT AREA (UNDERCUT) 192 SQ.FT.
FILL AREA (BACKFILL) 192 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 959 CU.YD.
CUT VOLUME (UNDERCUT) 711 CU.YD.
FILL VOLUME (BACKFILL) 711 CU.YD.

STA. 139+00.00 TO STA. 142+00.00

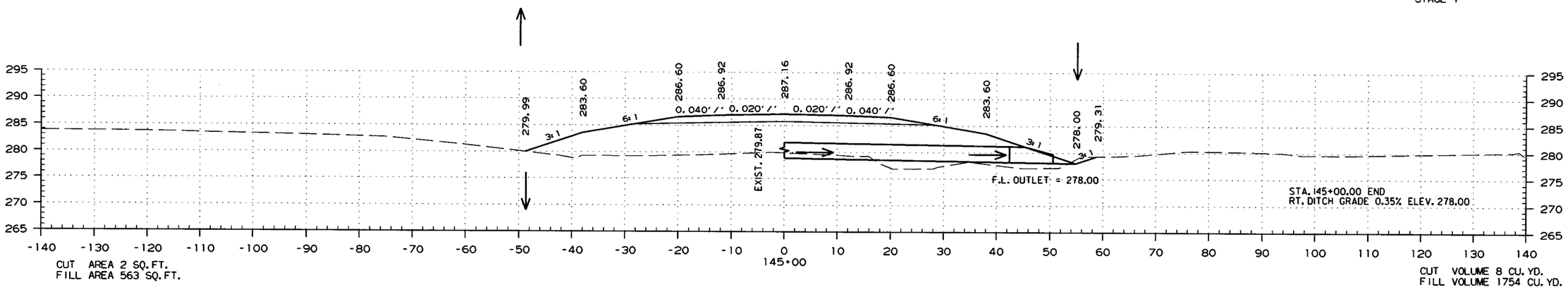
4/8/2016

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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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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 151 | 242 |

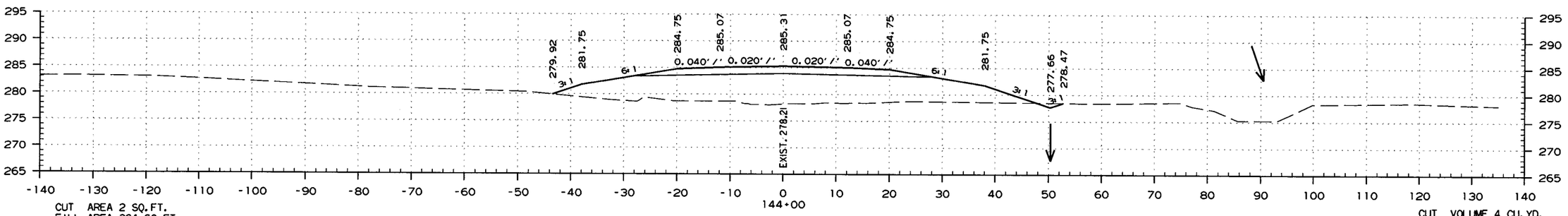
(2) CROSS SECTIONS

STAGE 1



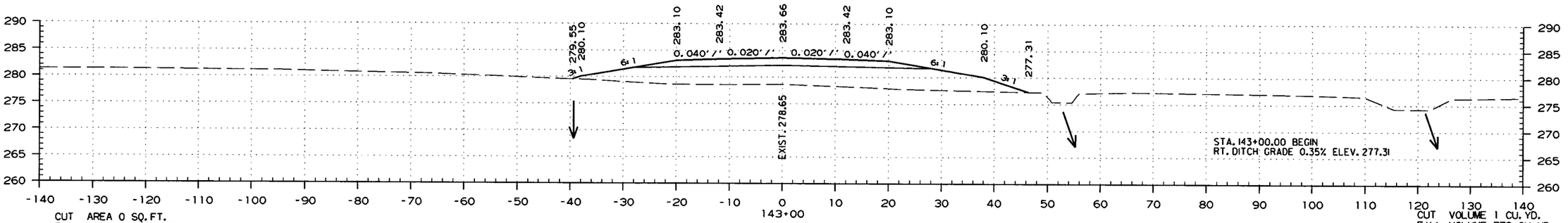

CUT AREA 2 SQ.FT.
FILL AREA 563 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 1754 CU.YD.




CUT AREA 2 SQ.FT.
FILL AREA 384 SQ.FT.

CUT VOLUME 4 CU.YD.
FILL VOLUME 1199 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 264 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 772 CU.YD.
CUT VOLUME (UNDERCUT) 356 CU.YD.
FILL VOLUME (BACKFILL) 356 CU.YD.

STA. 143+00.00 TO STA. 145+00.00

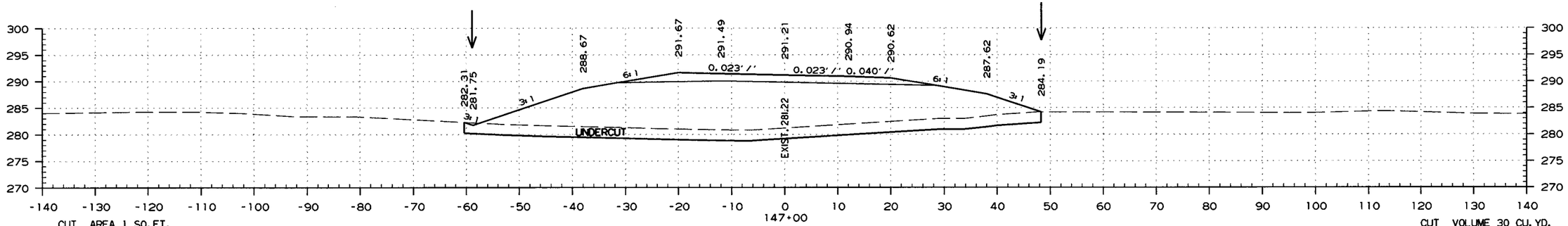
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 152 | 242 |

(2) CROSS SECTIONS

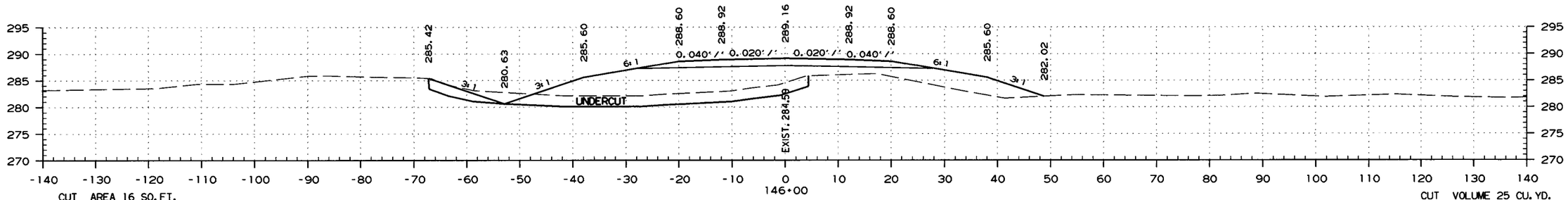
STAGE 1




CUT AREA 1 SQ.FT.
FILL AREA 685 SQ.FT.
CUT AREA (UNDERCUT) 217 SQ.FT.
FILL AREA (BACKFILL) 217 SQ.FT.

STAGE 1

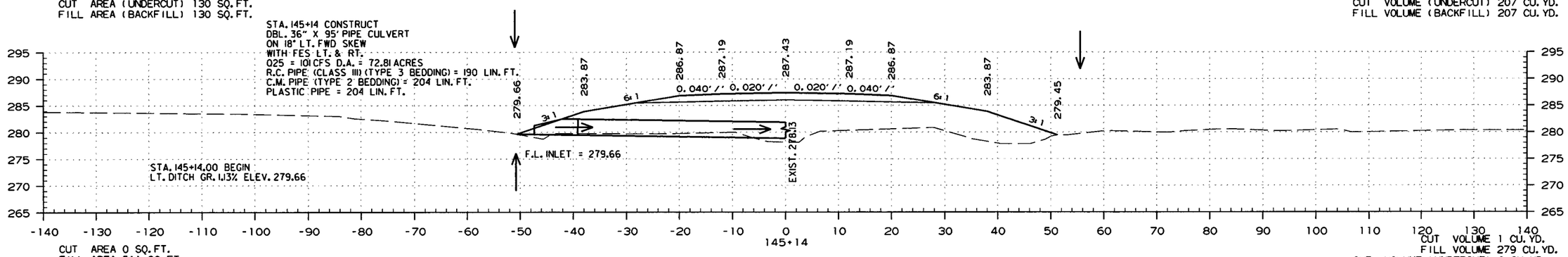
CUT VOLUME 30 CU.YD.
FILL VOLUME 1812 CU.YD.
CUT VOLUME (UNDERCUT) 643 CU.YD.
FILL VOLUME (BACKFILL) 643 CU.YD.




CUT AREA 16 SQ.FT.
FILL AREA 293 SQ.FT.
CUT AREA (UNDERCUT) 130 SQ.FT.
FILL AREA (BACKFILL) 130 SQ.FT.

CUT VOLUME 25 CU.YD.
FILL VOLUME 1282 CU.YD.
CUT VOLUME (UNDERCUT) 207 CU.YD.
FILL VOLUME (BACKFILL) 207 CU.YD.

STA. 145+14 CONSTRUCT
DBL. 36" X 95' PIPE CULVERT
ON 18° LT. FWD SKEW
WITH FES LT. & RT.
Q25 = 101 CFS D.A. = 72.81 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 190 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 204 LIN. FT.
PLASTIC PIPE = 204 LIN. FT.




CUT AREA 0 SQ.FT.
FILL AREA 511 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 1 CU.YD.
FILL VOLUME 279 CU.YD.
CUT VOLUME (UNDERCUT) 0 CU.YD.
FILL VOLUME (BACKFILL) 0 CU.YD.

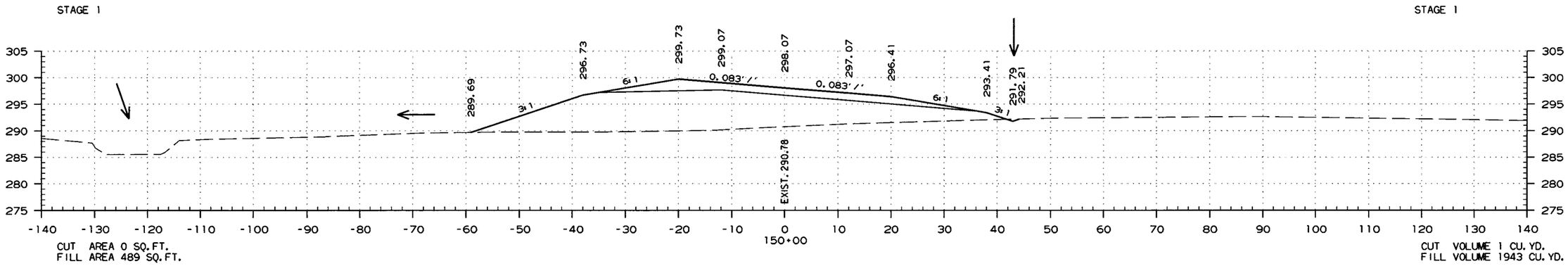
STA. 145+14.00 TO STA. 147+00.00

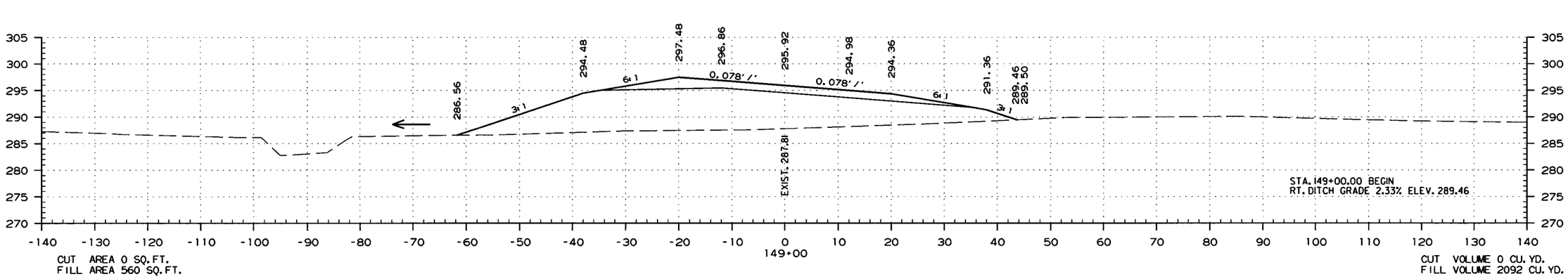
4/8/2016

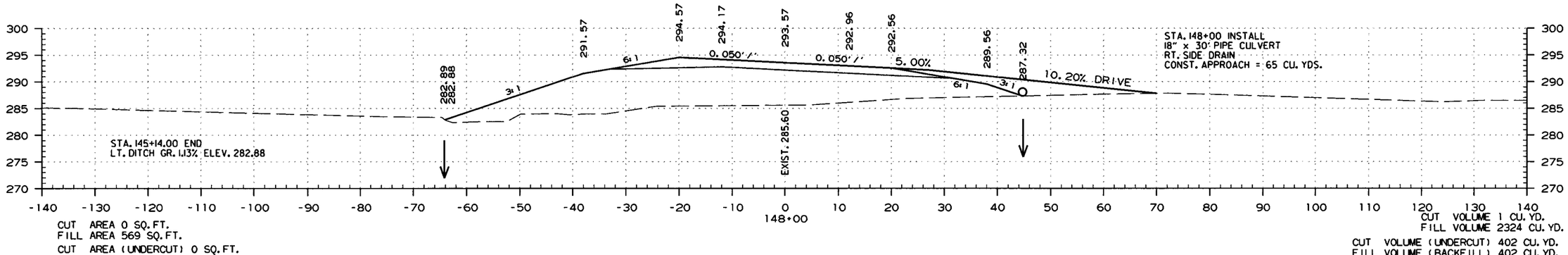
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 153 | 242 |

(2) CROSS SECTIONS




STA. 148+00.00 TO STA. 150+00.00

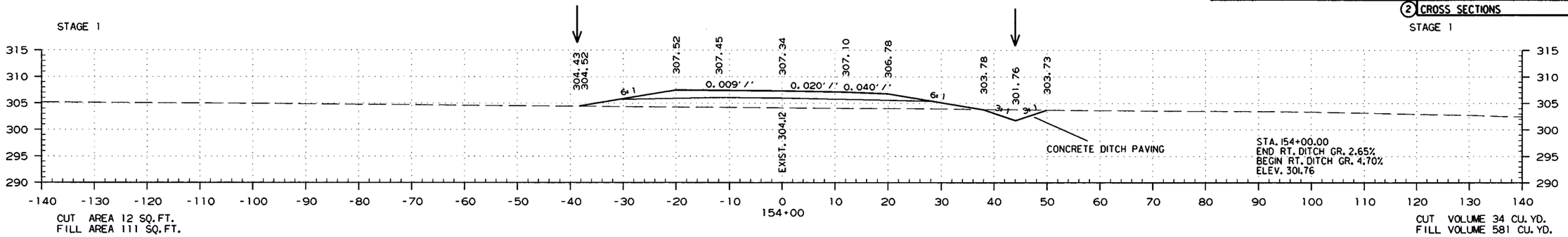
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 154 | 242 |

## (2) CROSS SECTIONS

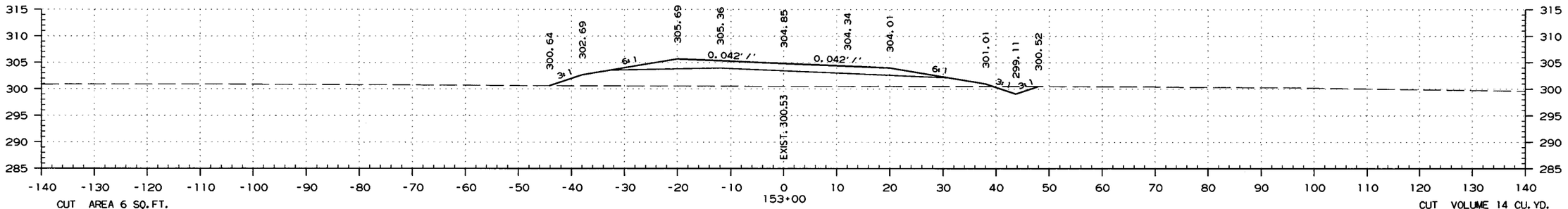
STAGE 1




CUT AREA 12 SQ.FT.
FILL AREA 111 SQ.FT.

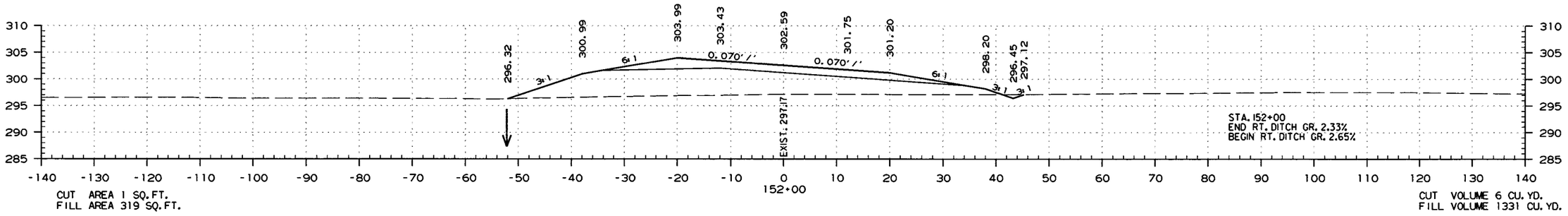
CUT VOLUME 34 CU.YD.
FILL VOLUME 581 CU.YD.

STAGE 1



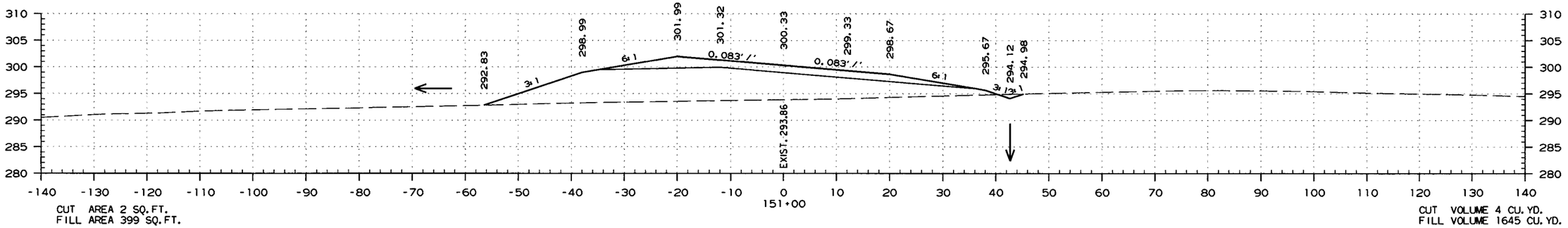

CUT AREA 6 SQ.FT.
FILL AREA 203 SQ.FT.

CUT VOLUME 14 CU.YD.
FILL VOLUME 967 CU.YD.




CUT AREA 1 SQ.FT.
FILL AREA 319 SQ.FT.

CUT VOLUME 6 CU.YD.
FILL VOLUME 1331 CU.YD.




CUT AREA 2 SQ.FT.
FILL AREA 399 SQ.FT.

CUT VOLUME 4 CU.YD.
FILL VOLUME 1645 CU.YD.

STA. 151+00.00 TO STA. 154+00.00

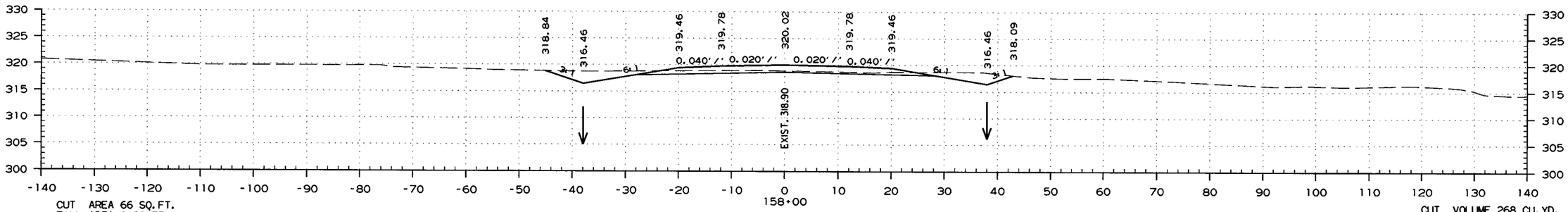
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 155 | 242 |

(2) CROSS SECTIONS

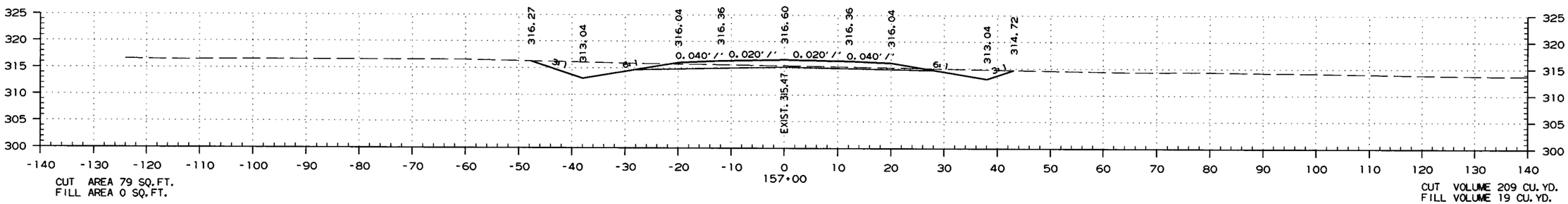
STAGE 1




CUT AREA 66 SQ.FT.
FILL AREA 0 SQ.FT.

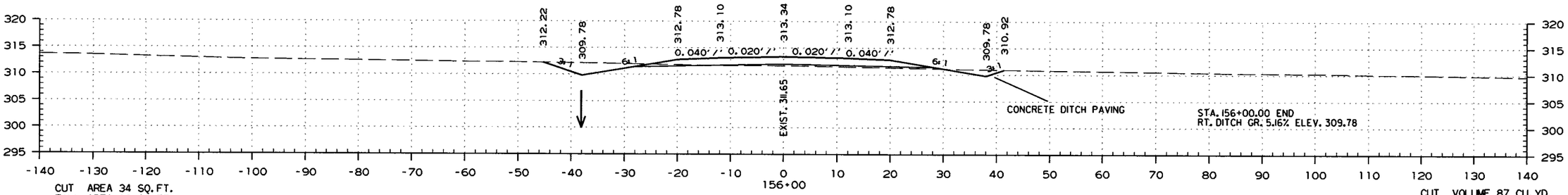
STAGE 1

CUT VOLUME 268 CU.YD.
FILL VOLUME 0 CU.YD.



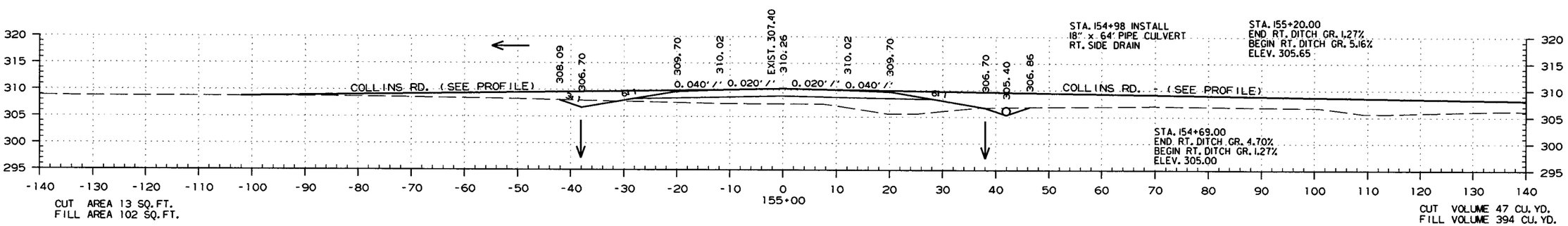

CUT AREA 79 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 209 CU.YD.
FILL VOLUME 19 CU.YD.




CUT AREA 34 SQ.FT.
FILL AREA 10 SQ.FT.

CUT VOLUME 87 CU.YD.
FILL VOLUME 208 CU.YD.




CUT AREA 13 SQ.FT.
FILL AREA 102 SQ.FT.

CUT VOLUME 47 CU.YD.
FILL VOLUME 394 CU.YD.

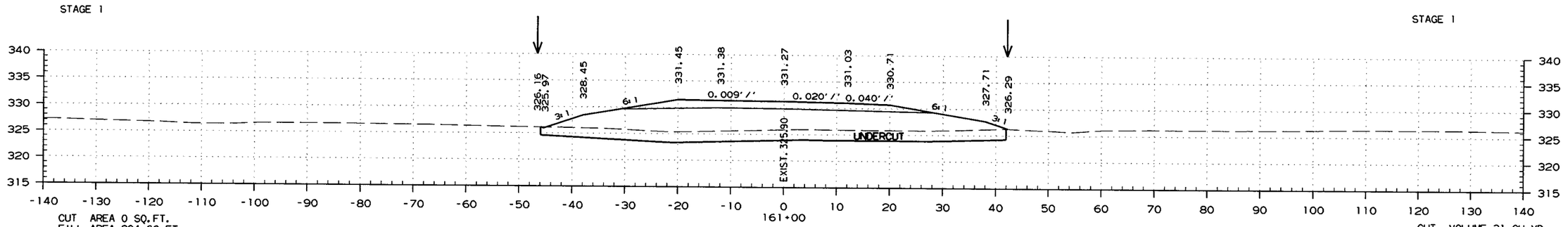
STA. 155+00.00 TO STA. 158+00.00

4/8/2016

R050249.DGN

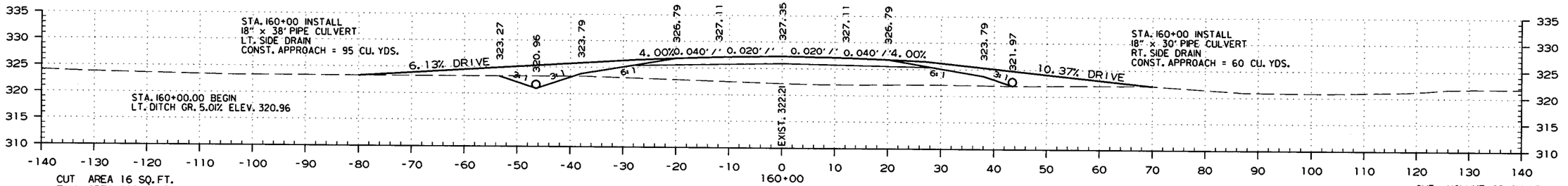
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 156 | 242 |

(2) CROSS SECTIONS



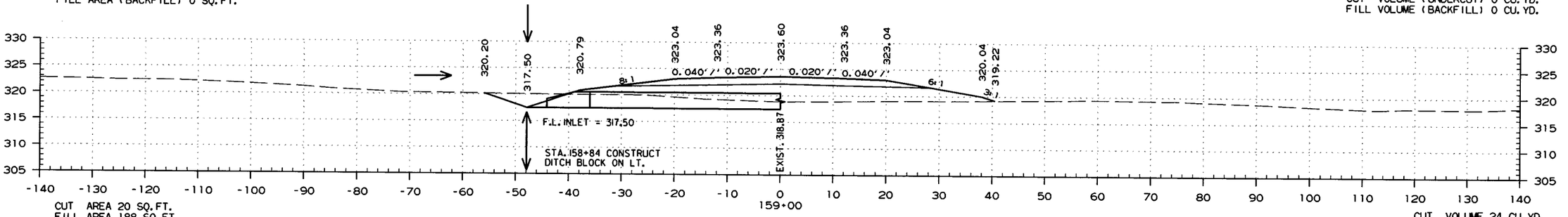

CUT AREA 0 SQ.FT.
FILL AREA 294 SQ.FT.
CUT AREA (UNDERCUT) 173 SQ.FT.
FILL AREA (BACKFILL) 173 SQ.FT.

CUT VOLUME 31 CU.YD.
FILL VOLUME 976 CU.YD.
CUT VOLUME (UNDERCUT) 320 CU.YD.
FILL VOLUME (BACKFILL) 320 CU.YD.



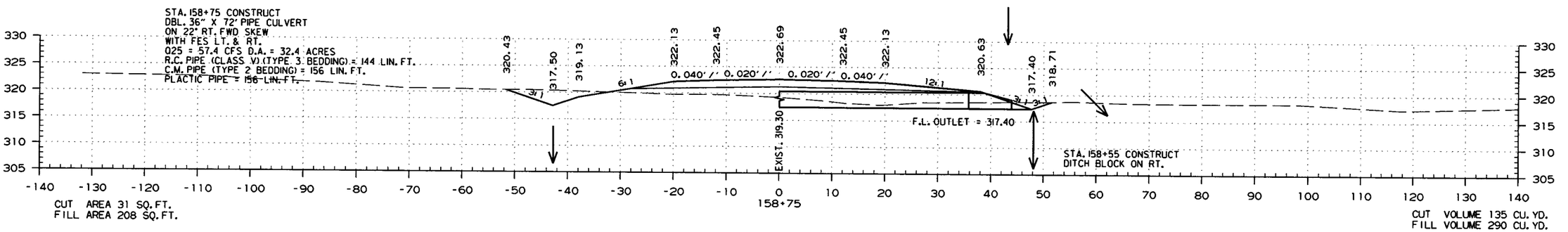

CUT AREA 16 SQ.FT.
FILL AREA 233 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 68 CU.YD.
FILL VOLUME 779 CU.YD.
CUT VOLUME (UNDERCUT) 0 CU.YD.
FILL VOLUME (BACKFILL) 0 CU.YD.




CUT AREA 20 SQ.FT.
FILL AREA 188 SQ.FT.

CUT VOLUME 24 CU.YD.
FILL VOLUME 184 CU.YD.




CUT AREA 31 SQ.FT.
FILL AREA 208 SQ.FT.

CUT VOLUME 135 CU.YD.
FILL VOLUME 290 CU.YD.

STA. 158+75.00 TO STA. 161+00.00

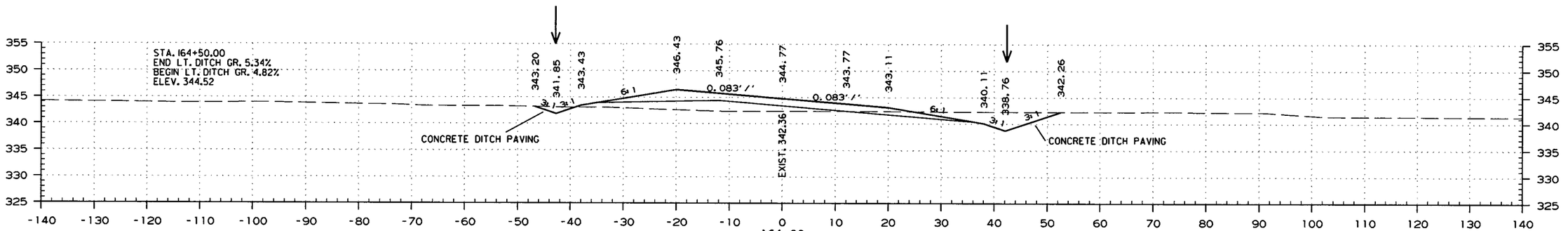
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 157 | 242 |

(2) CROSS SECTIONS

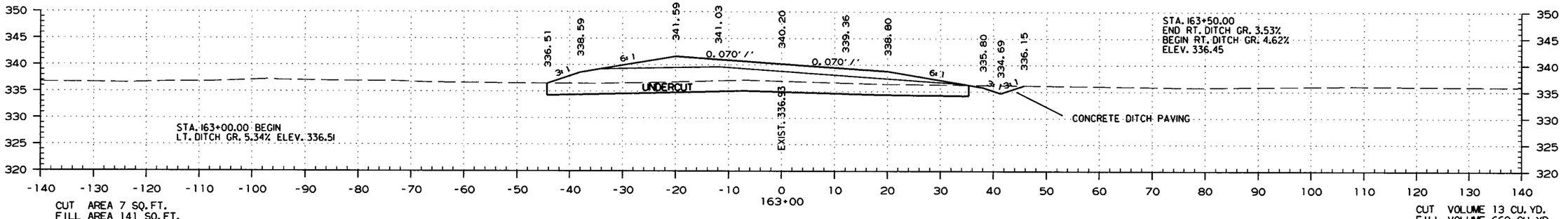
STAGE 1




CUT AREA 61 SQ.FT.
FILL AREA 60 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

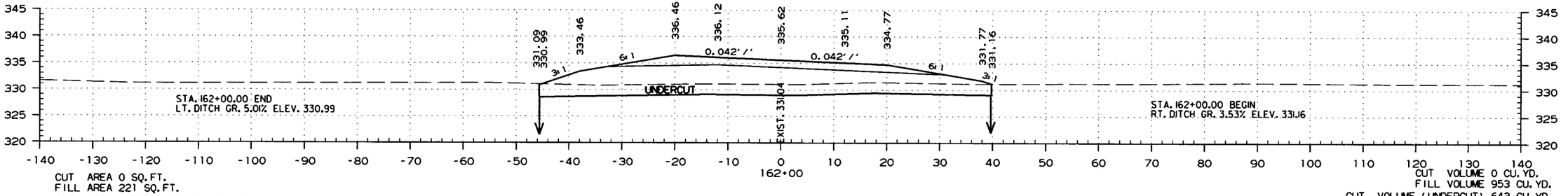
STAGE 1

CUT VOLUME 126 CU.YD.
FILL VOLUME 371 CU.YD.
CUT VOLUME (UNDERCUT) 296 CU.YD.
FILL VOLUME (BACKFILL) 296 CU.YD.




CUT AREA 7 SQ.FT.
FILL AREA 141 SQ.FT.
CUT AREA (UNDERCUT) 160 SQ.FT.
FILL AREA (BACKFILL) 160 SQ.FT.

CUT VOLUME 13 CU.YD.
FILL VOLUME 669 CU.YD.
CUT VOLUME (UNDERCUT) 619 CU.YD.
FILL VOLUME (BACKFILL) 619 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 221 SQ.FT.
CUT AREA (UNDERCUT) 174 SQ.FT.
FILL AREA (BACKFILL) 174 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 953 CU.YD.
CUT VOLUME (UNDERCUT) 643 CU.YD.
FILL VOLUME (BACKFILL) 643 CU.YD.

STA. 162+00.00 TO STA. 164+00.00

4/8/2016

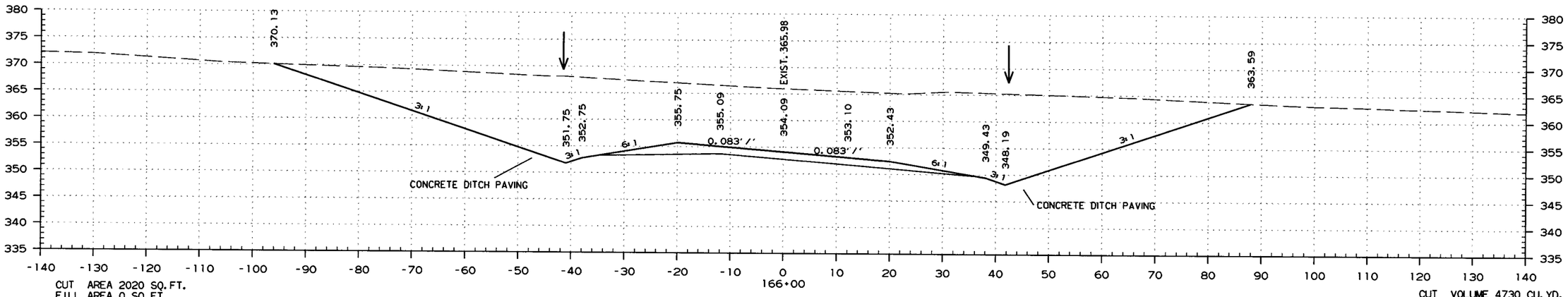
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
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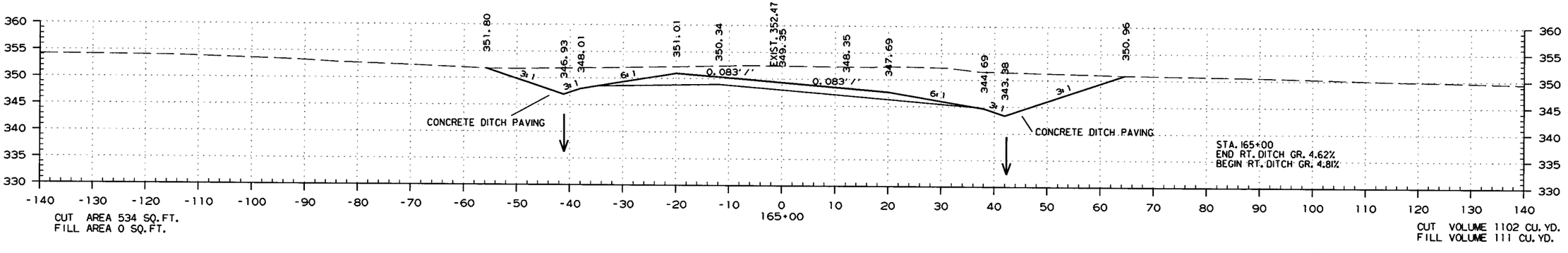
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 050249 | 158 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




STA. 165+00.00 TO STA. 166+00.00

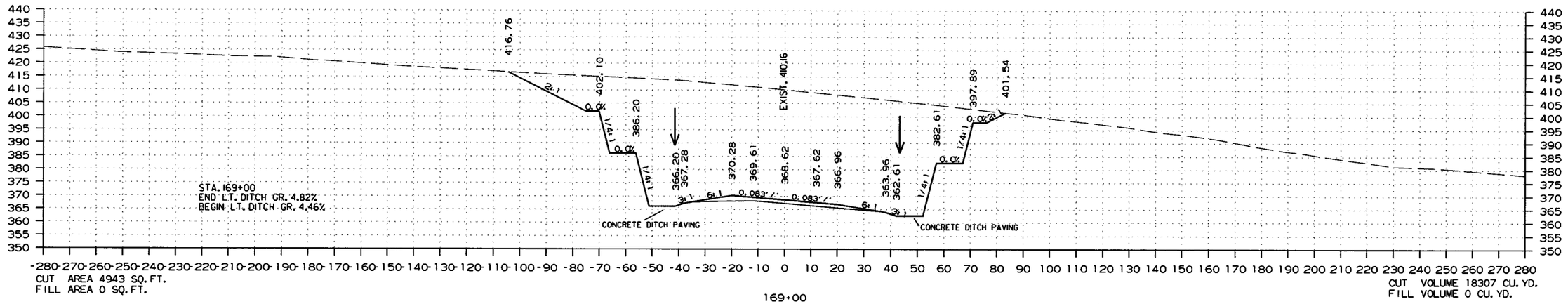
4/8/2016

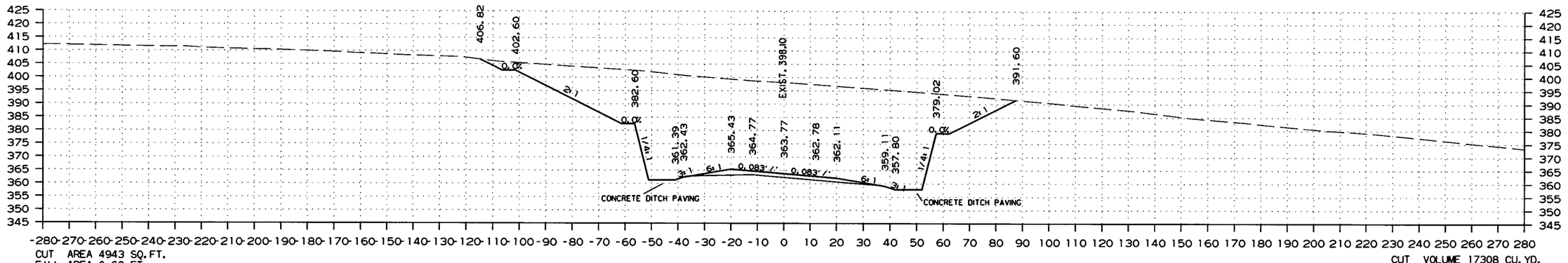
R050249.DGN

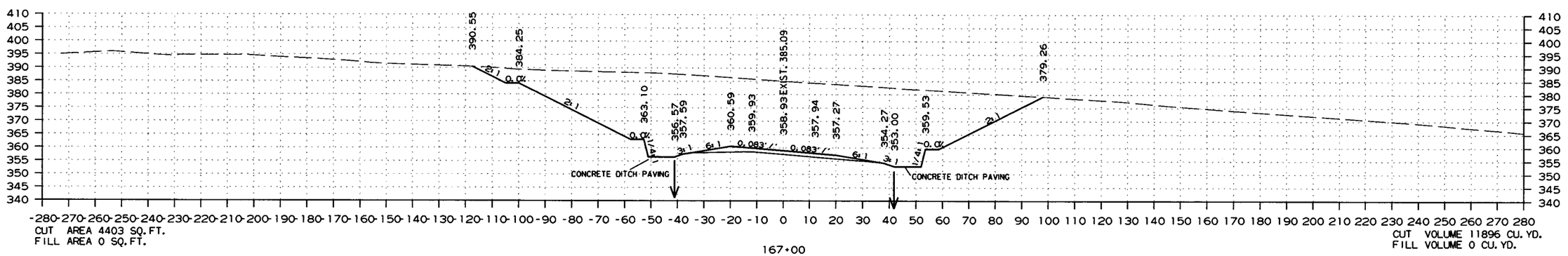
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 159 | 242 |

(2) CROSS SECTIONS

STAGE 1




STA. 167+00.00 TO STA. 169+00.00

4/8/2016

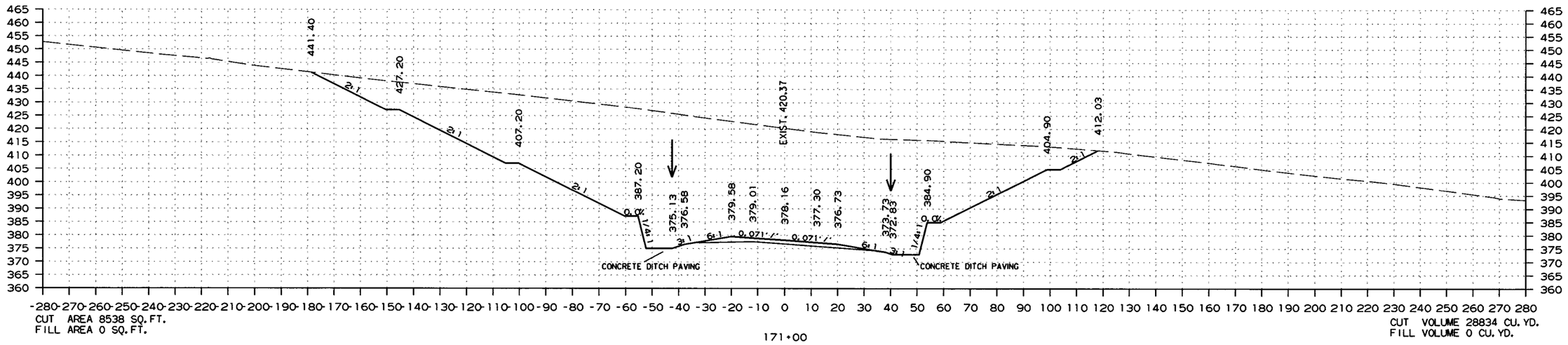
R050249.DGN

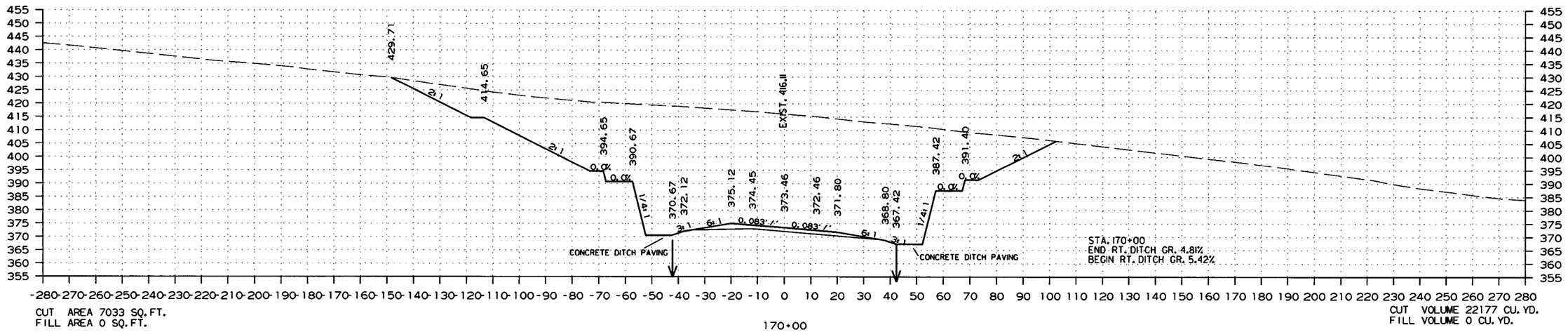
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 160 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




STA. 170+00.00 TO STA. 171+00.00

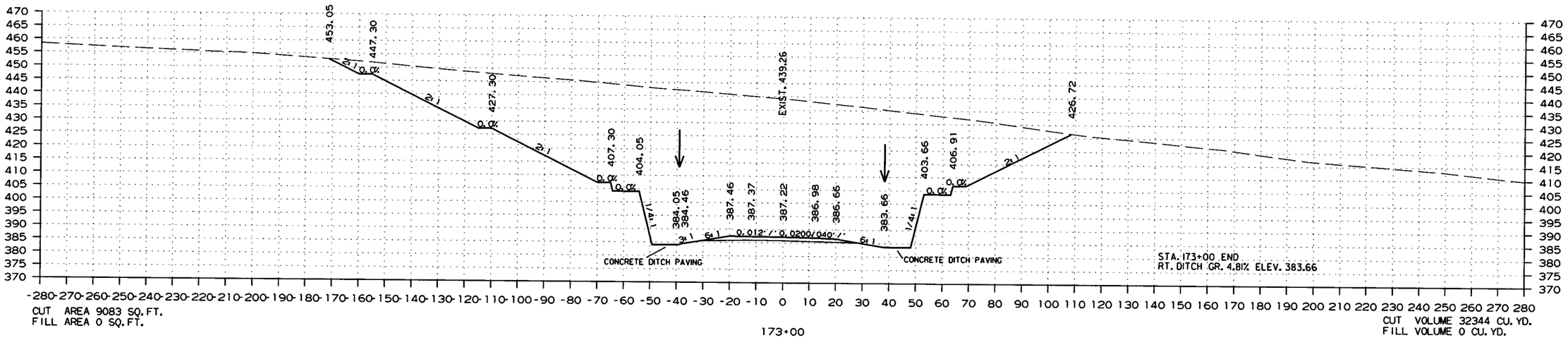
4/8/2016

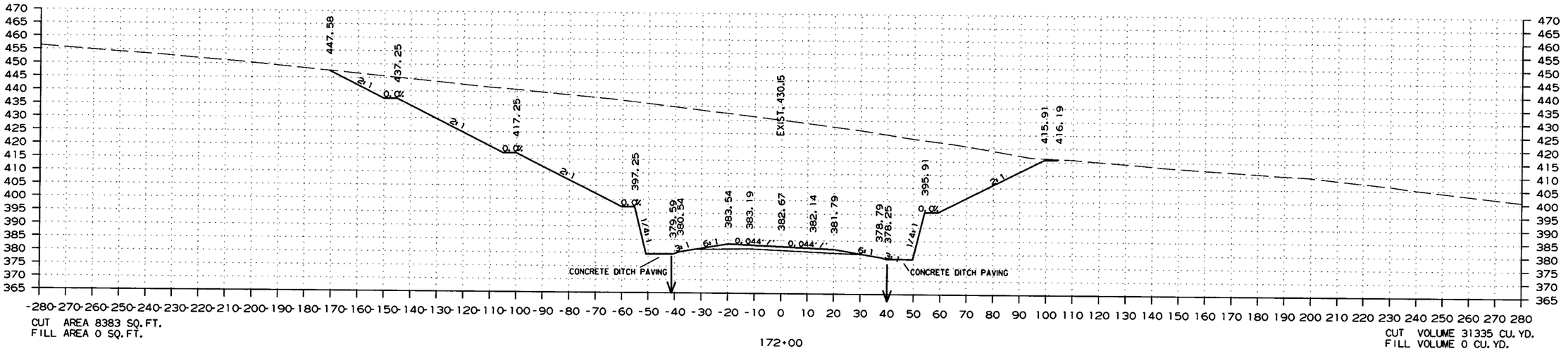
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 161 | 242 |
| | | | | (2) CROSS SECTIONS | | | | |

STAGE 1

STAGE 1




STA. 172+00.00 TO STA. 173+00.00

4/8/2016

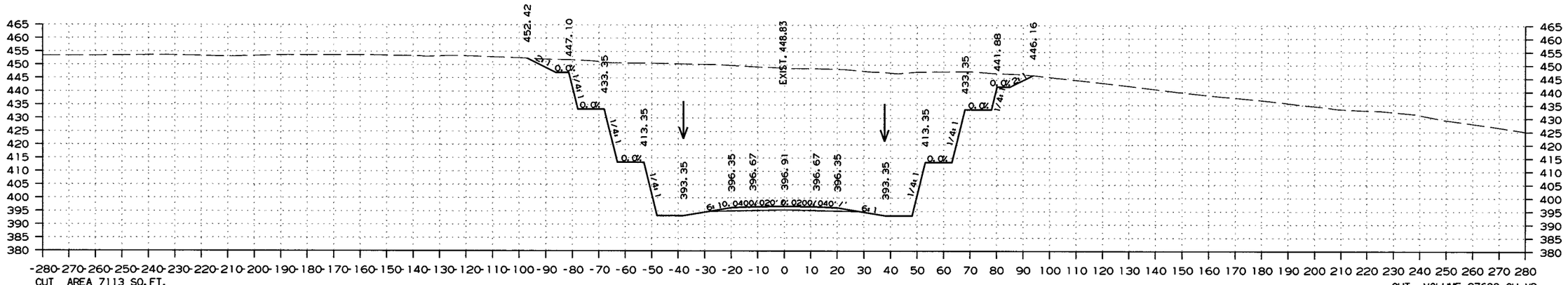
R050249.DGN

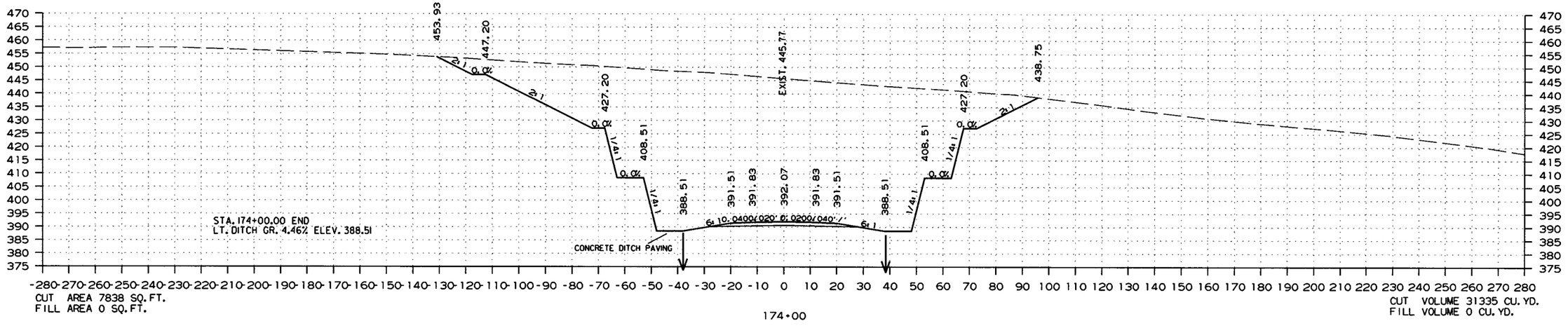
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 162 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




STA. 174+00.00 TO STA. 175+00.00

4/8/2016

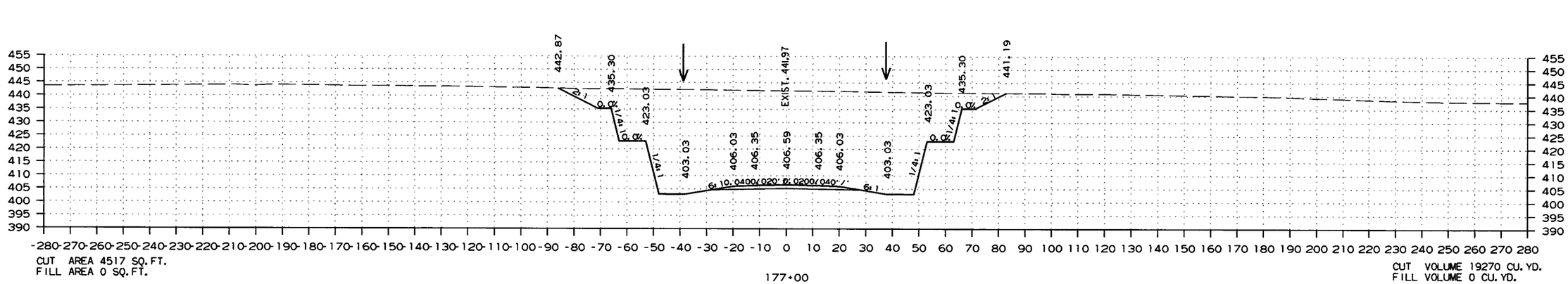
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 163 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1



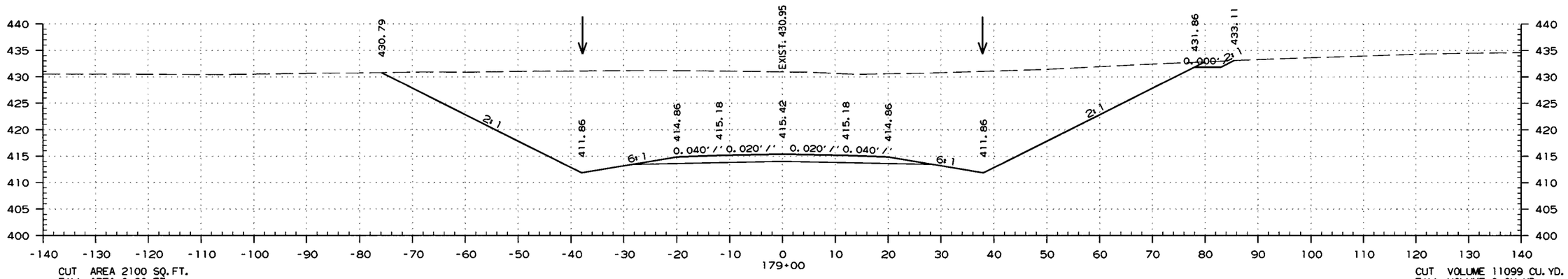

CROSS SECTION STA. 176+00.00 TO STA. 177+00.00

4/8/2016

R050249.DGN

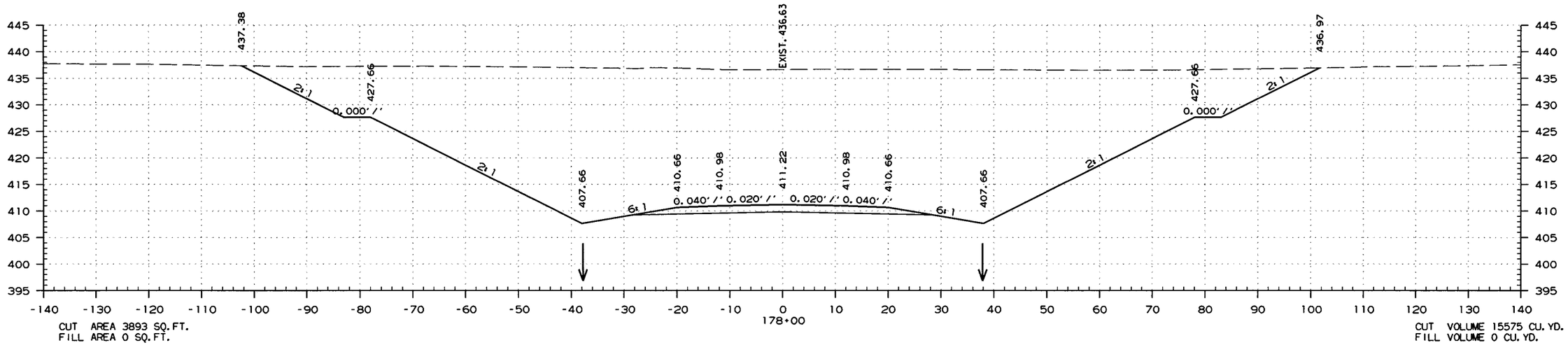
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 164 | 242 |

(2) CROSS SECTIONS




CUT AREA 2100 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 11099 CU. YD.
FILL VOLUME 0 CU. YD.




CUT AREA 3893 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 15575 CU. YD.
FILL VOLUME 0 CU. YD.

STA. 178+00.00 TO STA. 179+00.00

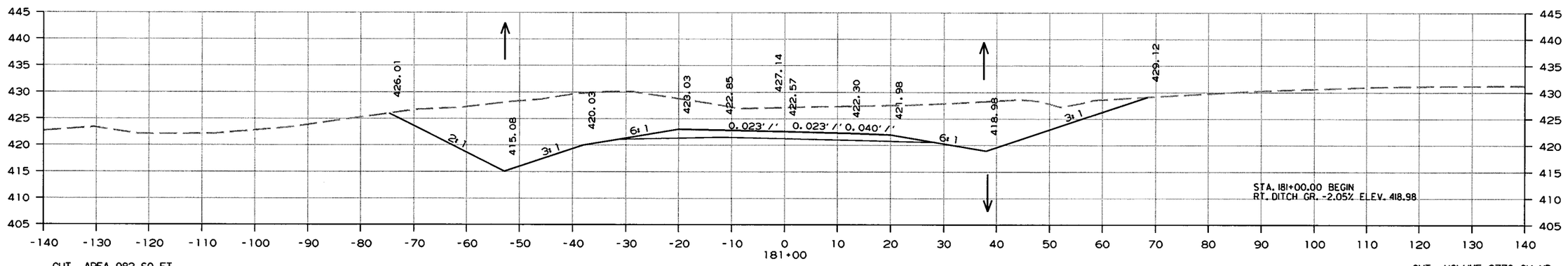
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 165 | 242 |

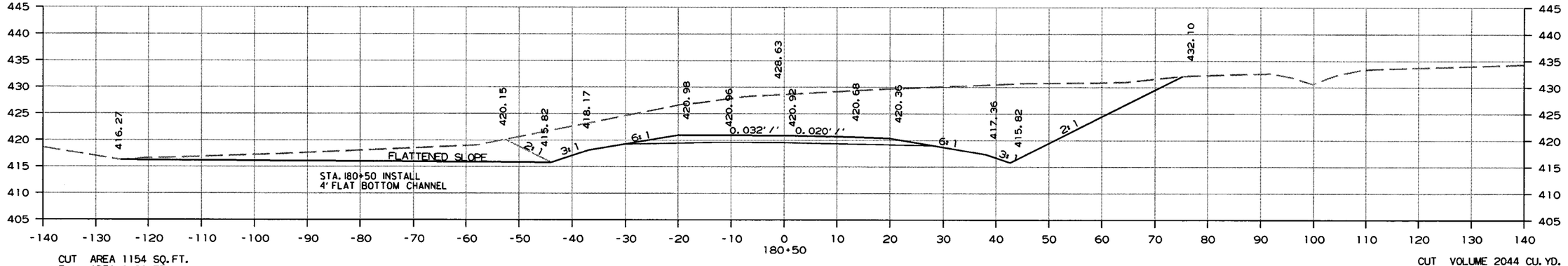
(2) CROSS SECTIONS

STAGE 1



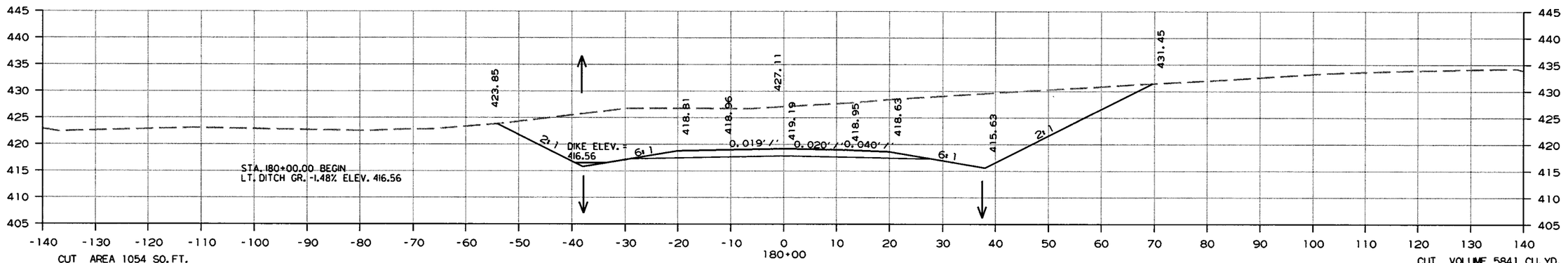

CUT AREA 982 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 3770 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 1154 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 2044 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 1054 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 5841 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 180+00.00 TO STA. 181+00.00

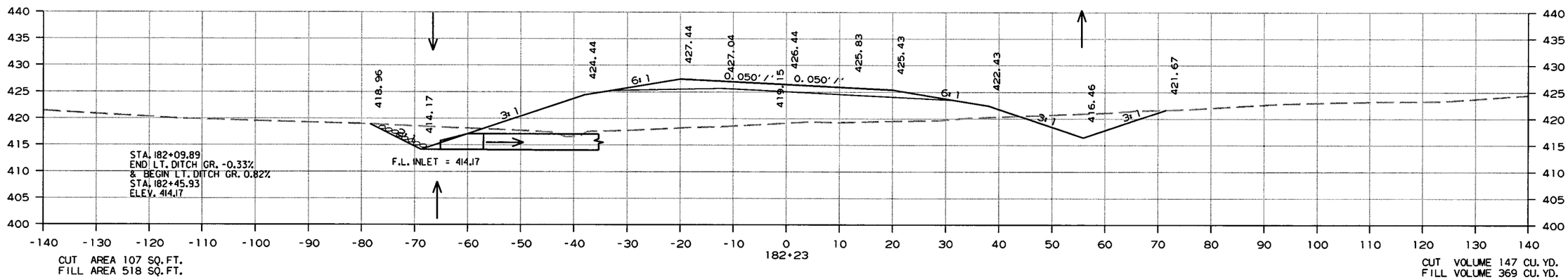
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 166 | 242 |

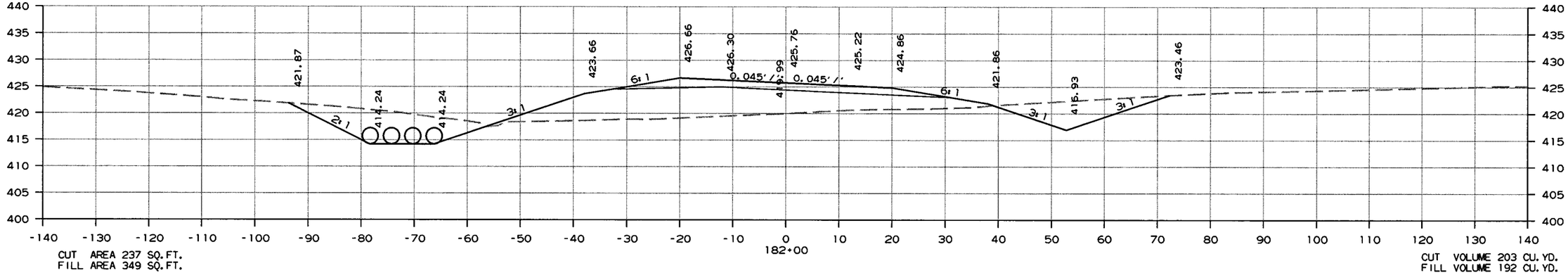
(2) CROSS SECTIONS

STAGE 1



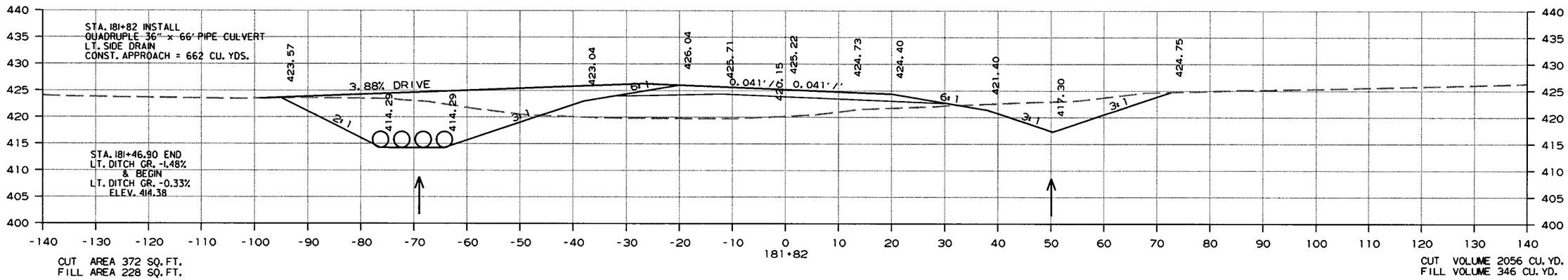

CUT AREA 107 SQ.FT.
FILL AREA 518 SQ.FT.

CUT VOLUME 147 CU.YD.
FILL VOLUME 369 CU.YD.




CUT AREA 237 SQ.FT.
FILL AREA 349 SQ.FT.

CUT VOLUME 203 CU.YD.
FILL VOLUME 192 CU.YD.




CUT AREA 372 SQ.FT.
FILL AREA 228 SQ.FT.

CUT VOLUME 2056 CU.YD.
FILL VOLUME 346 CU.YD.

STA. 181+82.00 TO STA. 182+23.00

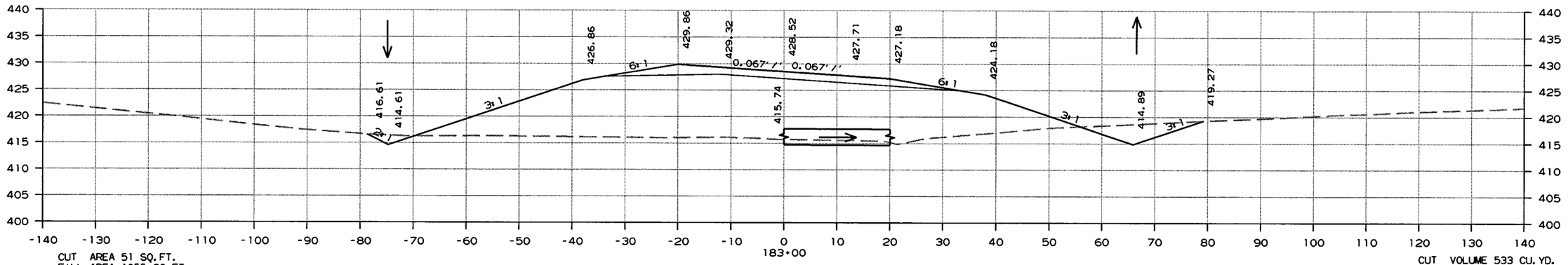
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 167 | 242 |

(2) CROSS SECTIONS

STAGE 1

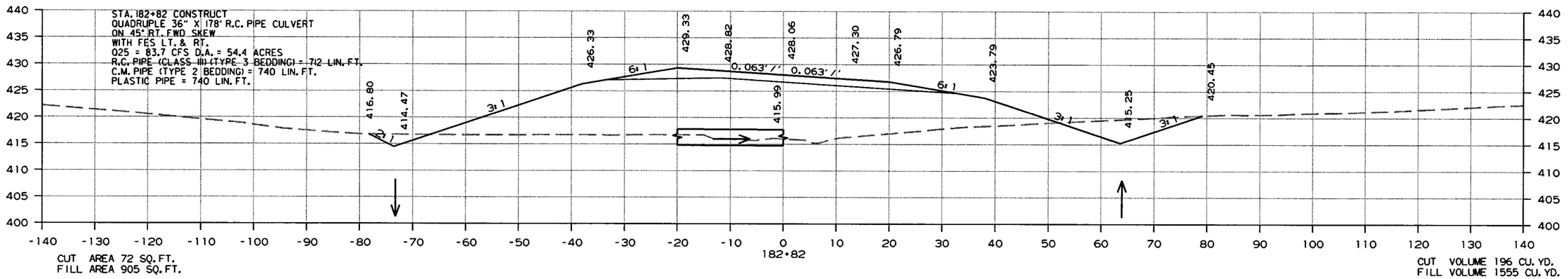



CUT AREA 51 SQ. FT.
FILL AREA 1055 SQ. FT.

CUT VOLUME 533 CU. YD.
FILL VOLUME 653 CU. YD.

STAGE 1

STA. 182+82 CONSTRUCT
QUADRUPLE 36" X 178' R.C. PIPE CULVERT
ON 45° RT. FWD SKEW
WITH FES LT. & RT.
Q25 = 83.7 CFS D.A. = 54.4 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 712 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 740 LIN. FT.
PLASTIC PIPE = 740 LIN. FT.




CUT AREA 72 SQ. FT.
FILL AREA 905 SQ. FT.

CUT VOLUME 196 CU. YD.
FILL VOLUME 1555 CU. YD.

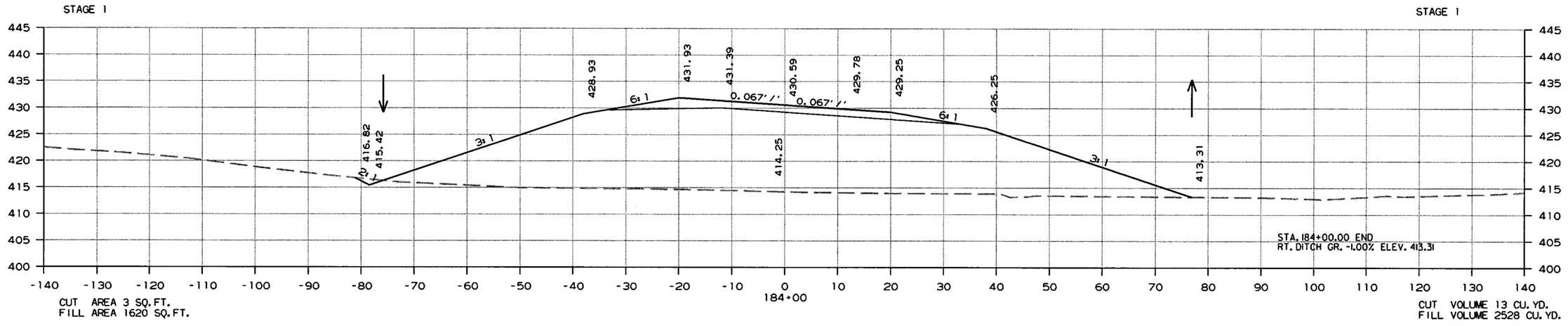
STA. 182+82.00 TO STA. 183+00.00

4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 168 | 242 |

(2) CROSS SECTIONS




STA. 183+55.00 TO STA. 184+00.00

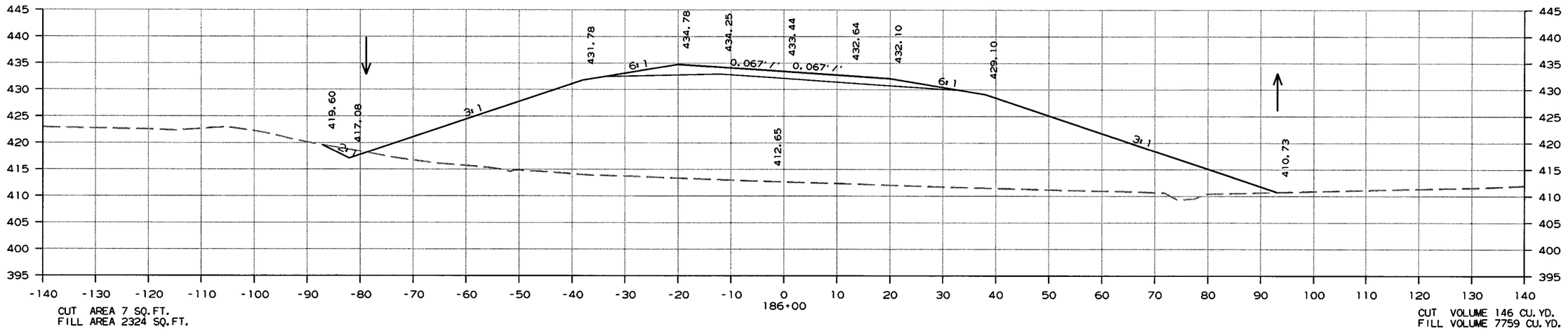
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 169 | 242 |

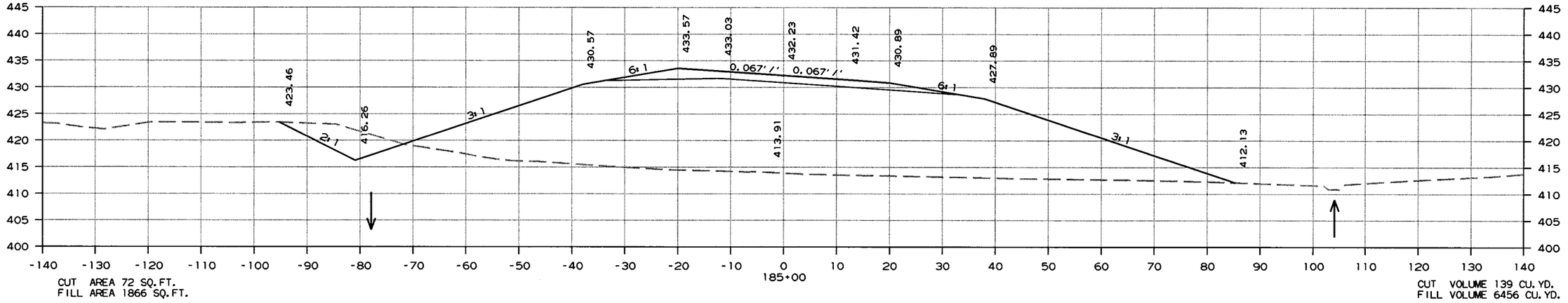
(2) CROSS SECTIONS

STAGE 1




CUT AREA 7 SQ.FT.
FILL AREA 2324 SQ.FT.

CUT VOLUME 146 CU.YD.
FILL VOLUME 7759 CU.YD.




CUT AREA 72 SQ.FT.
FILL AREA 1866 SQ.FT.

CUT VOLUME 139 CU.YD.
FILL VOLUME 6456 CU.YD.

STA. 185+00.00 TO STA. 186+00.00

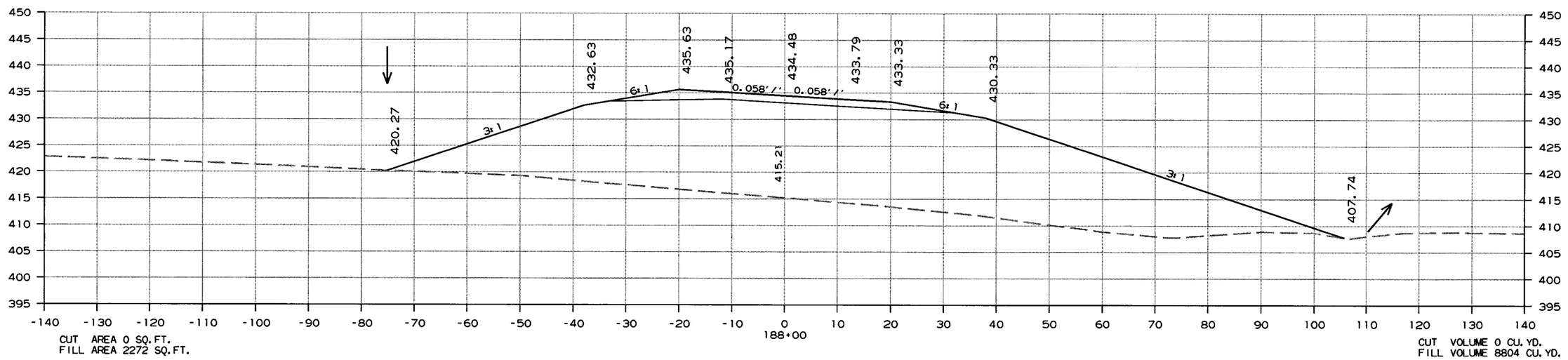
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 170 | 242 |

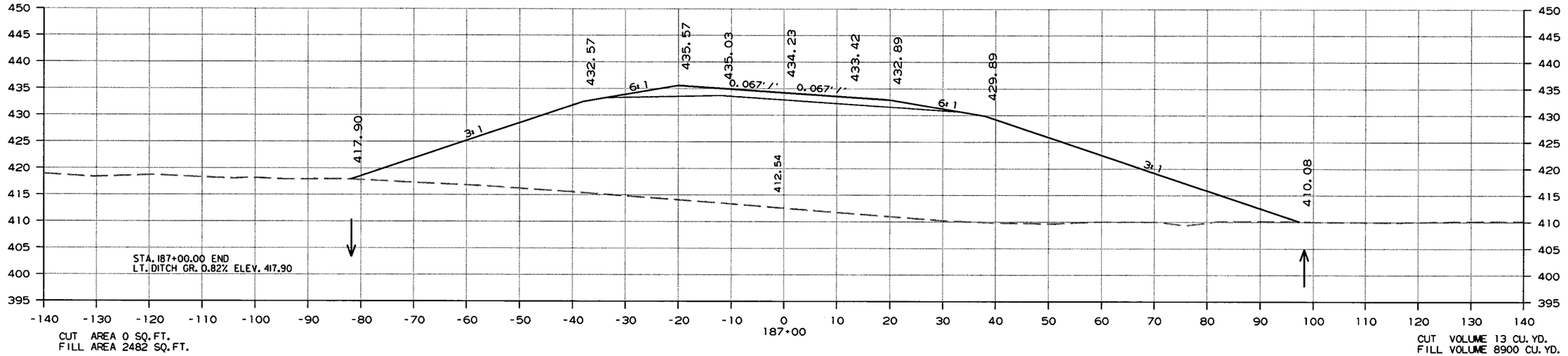
(2) CROSS SECTIONS

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2272 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 8804 CU.YD.




STA. 187+00.00 END
LT. DITCH GR. 0.82% ELEV. 417.90

CUT AREA 0 SQ.FT.
FILL AREA 2482 SQ.FT.

CUT VOLUME 13 CU.YD.
FILL VOLUME 8900 CU.YD.

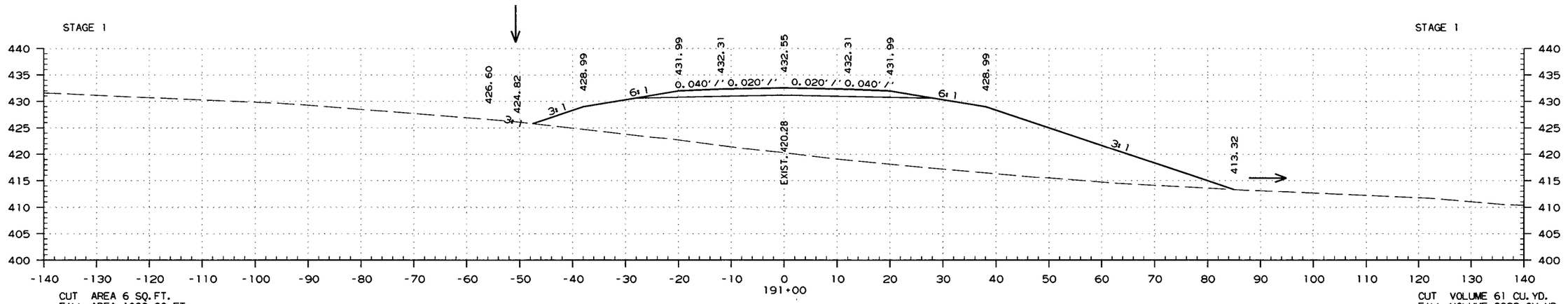
STA. 187+00.00 TO STA. 188+00.00

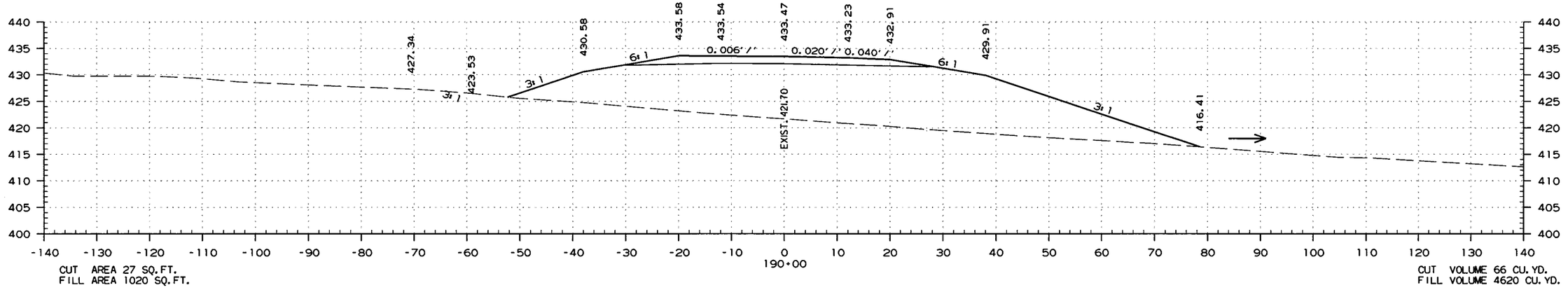
4/8/2016

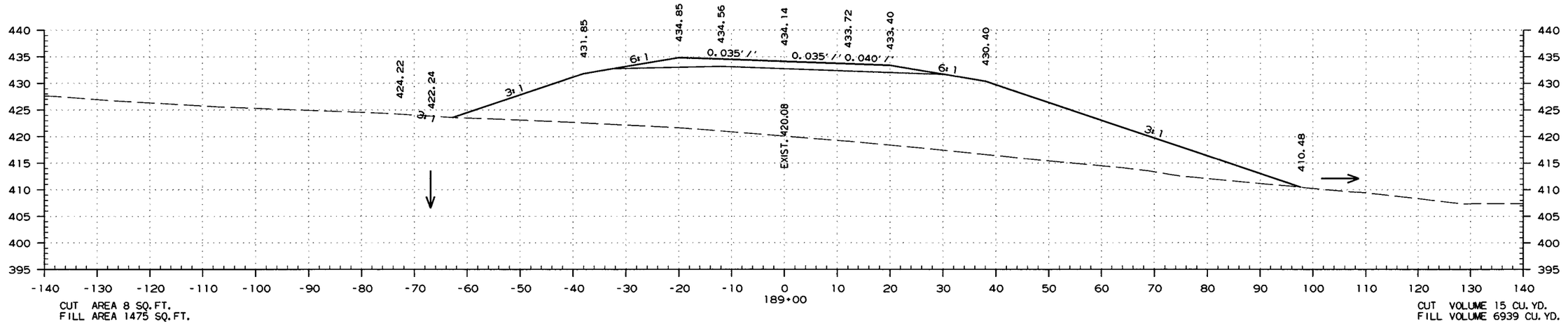
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 171 | 242 |

(2) CROSS SECTIONS




STA. 189+00.00 TO STA. 191+00.00

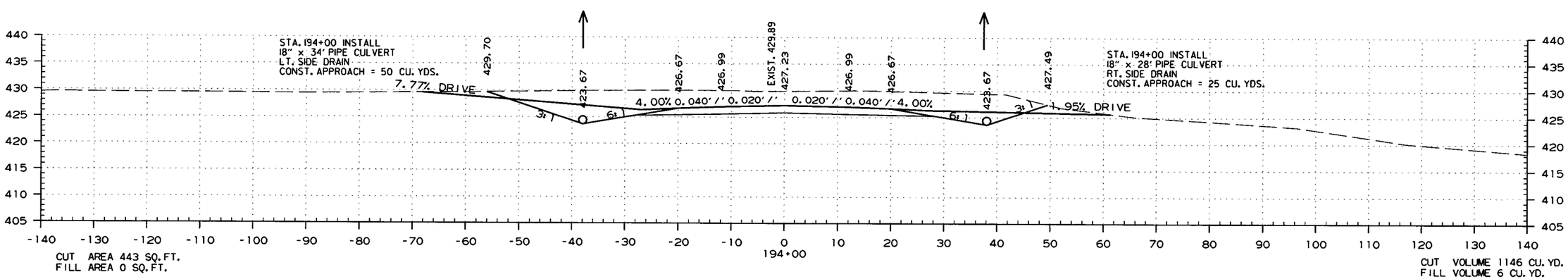
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 172 | 242 |

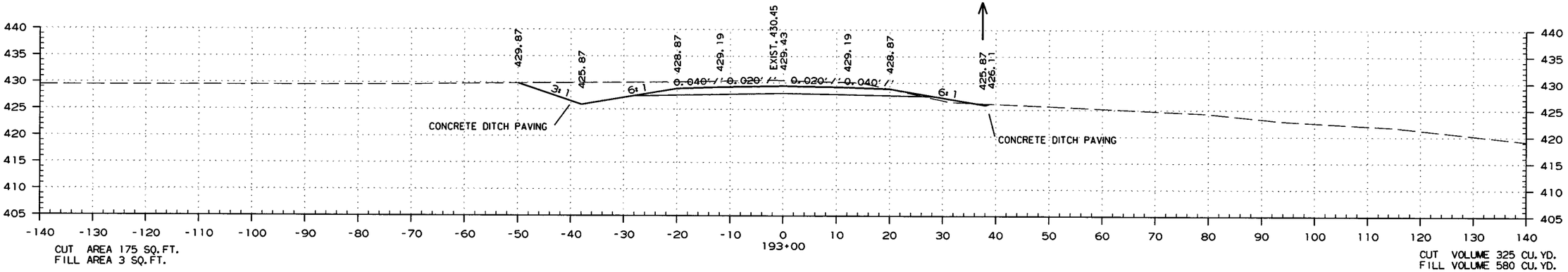
(2) CROSS SECTIONS

STAGE 1



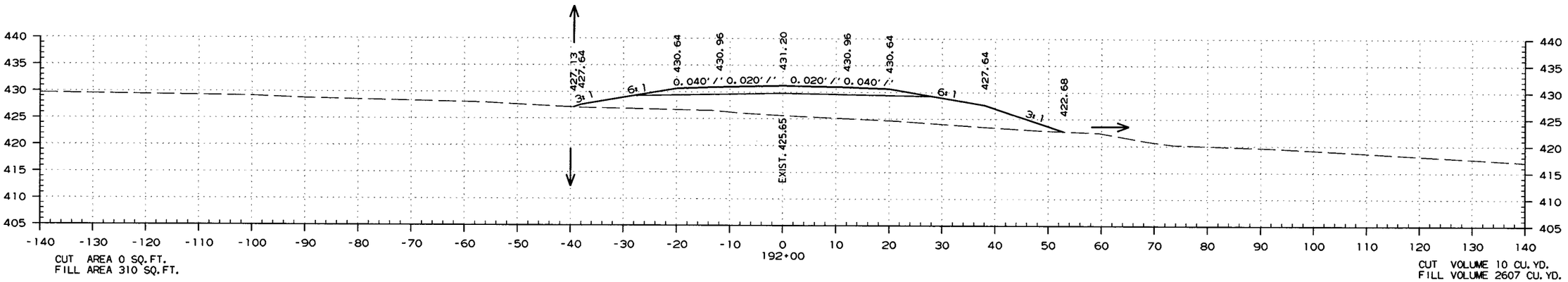

CUT AREA 443 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 1146 CU.YD.
FILL VOLUME 6 CU.YD.




CUT AREA 175 SQ.FT.
FILL AREA 3 SQ.FT.

CUT VOLUME 325 CU.YD.
FILL VOLUME 580 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 310 SQ.FT.

CUT VOLUME 10 CU.YD.
FILL VOLUME 2607 CU.YD.

STA. 192+00.00 TO STA. 194+00.00

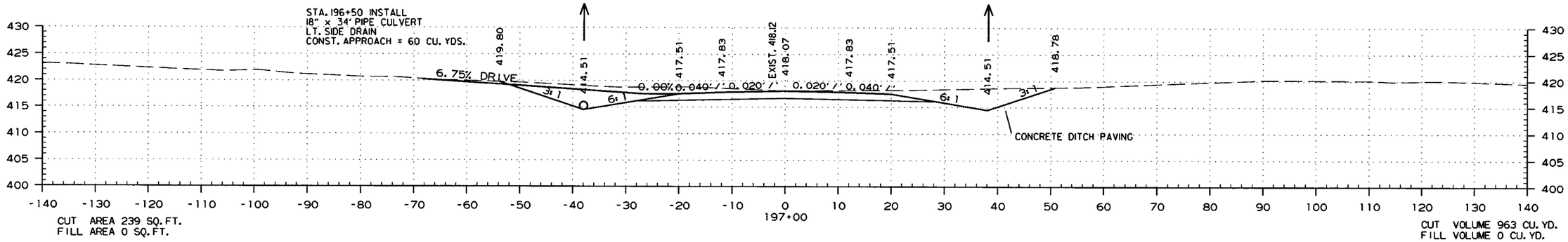
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 173 | 242 |

(2) CROSS SECTIONS

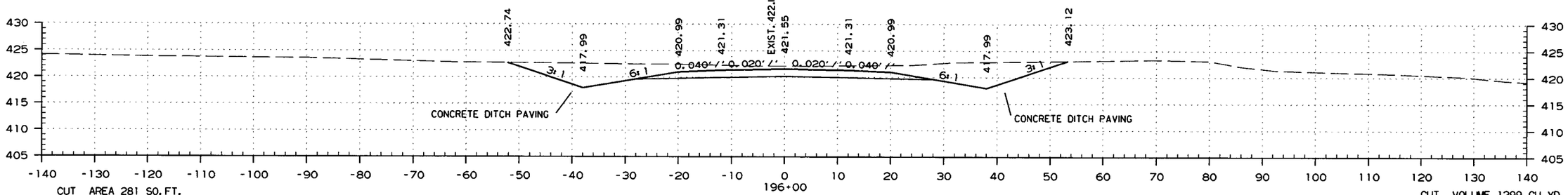
STAGE 1




CUT AREA 239 SQ.FT.
FILL AREA 0 SQ.FT.

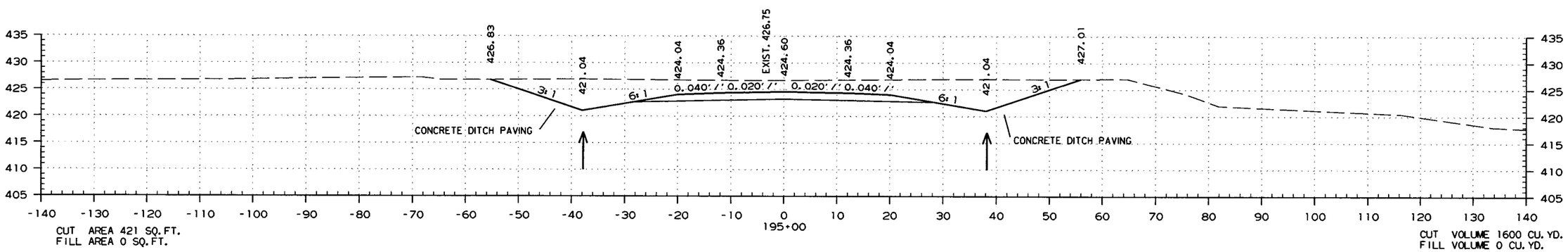
CUT VOLUME 963 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 281 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 1299 CU.YD.
FILL VOLUME 0 CU.YD.




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

CUT VOLUME 1600 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 195+00.00 TO STA. 197+00.00

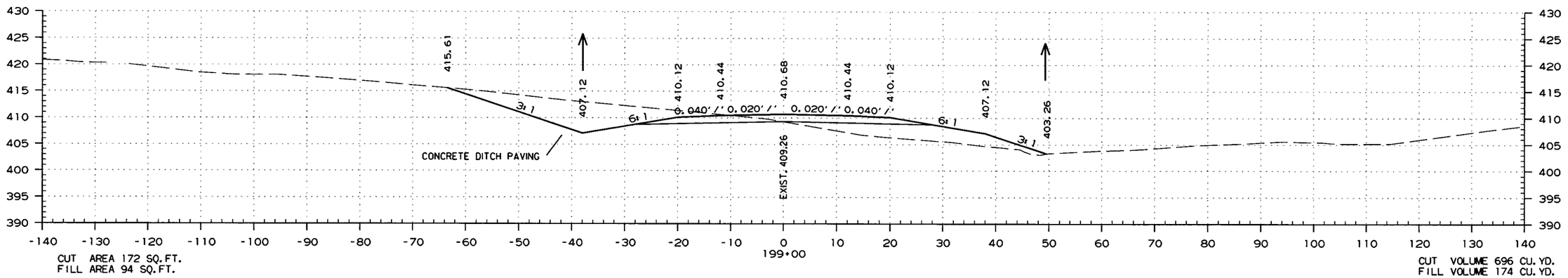
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 174 | 242 |

(2) CROSS SECTIONS

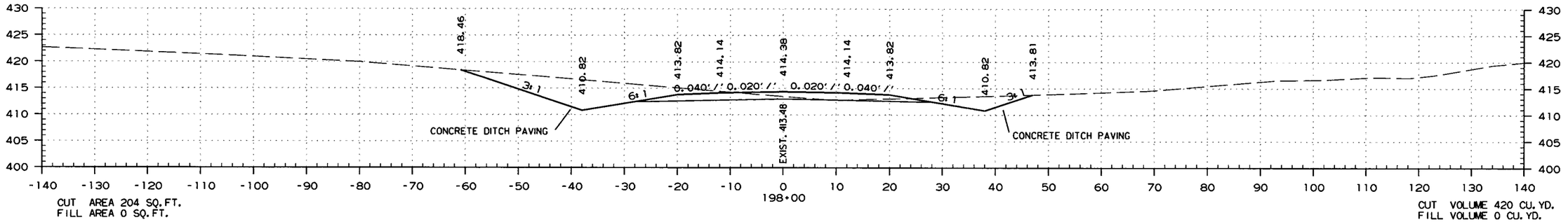
STAGE 1




CUT AREA 172 SQ.FT.
FILL AREA 94 SQ.FT.

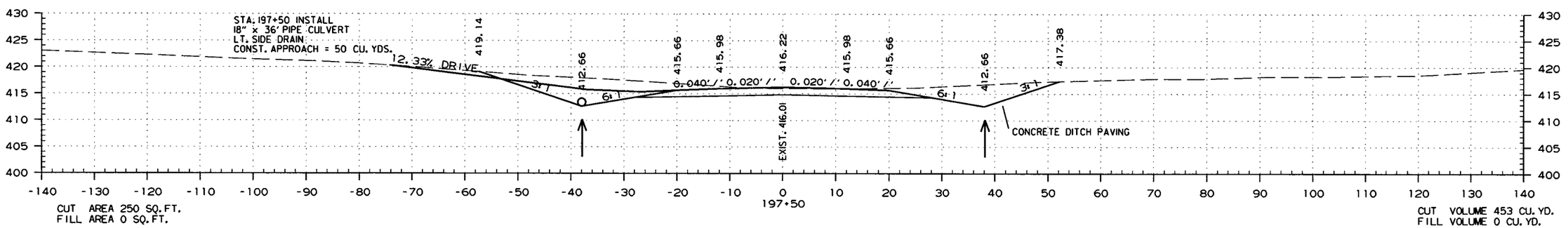
STAGE 1

CUT VOLUME 696 CU.YD.
FILL VOLUME 174 CU.YD.




CUT AREA 204 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 420 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 250 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 453 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 197+50.00 TO STA. 199+00.00

4/8/2016

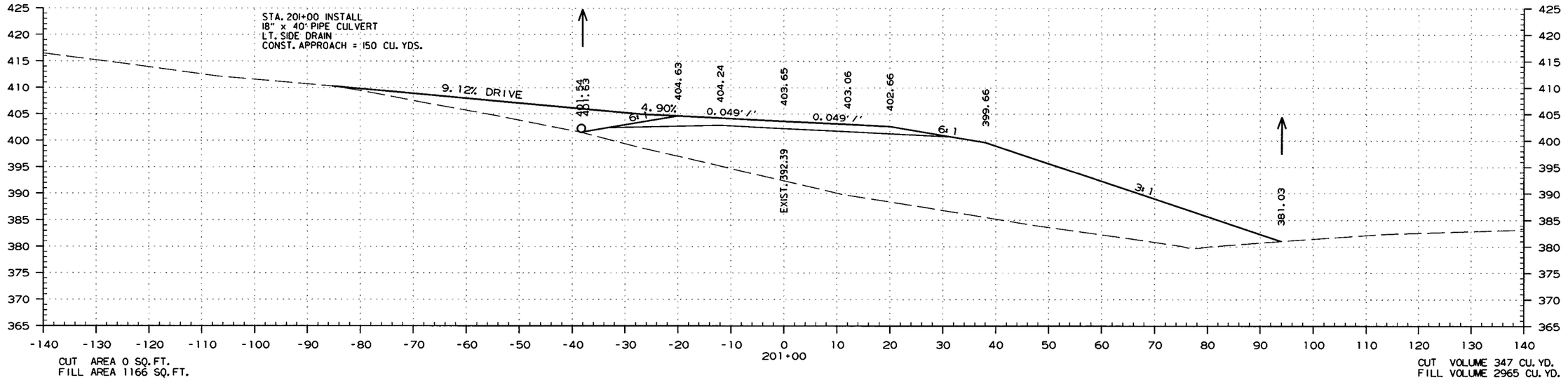
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 175 | 242 |

(2) CROSS SECTIONS

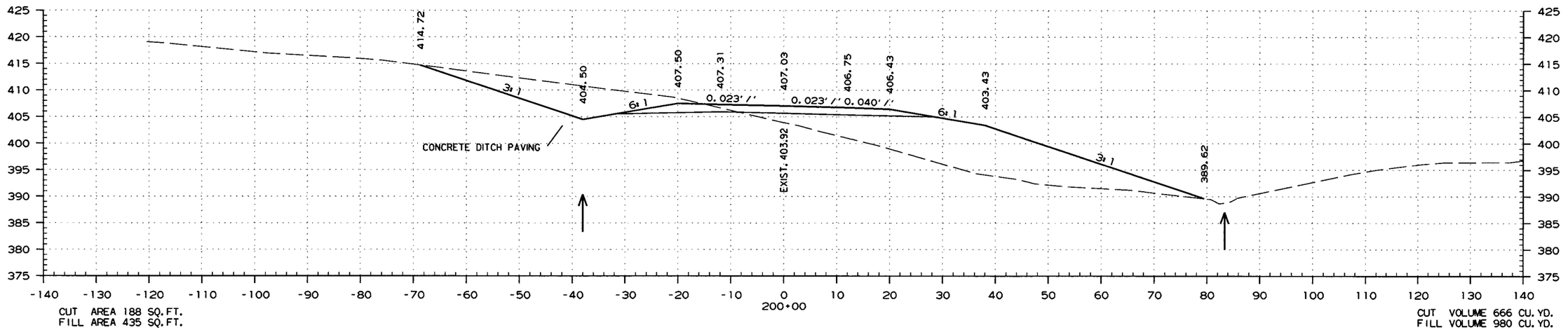
STAGE 1

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 1166 SQ.FT.

CUT VOLUME 347 CU.YD.
FILL VOLUME 2965 CU.YD.




CUT AREA 188 SQ.FT.
FILL AREA 435 SQ.FT.

CUT VOLUME 666 CU.YD.
FILL VOLUME 980 CU.YD.

STA. 200+00.00 TO STA. 201+00.00

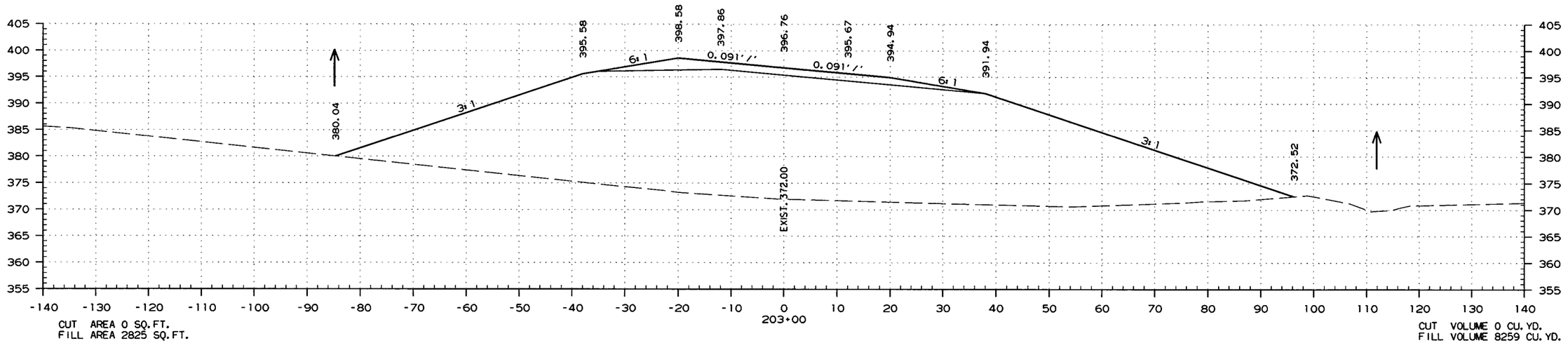
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 176 | 242 |

(2) CROSS SECTIONS

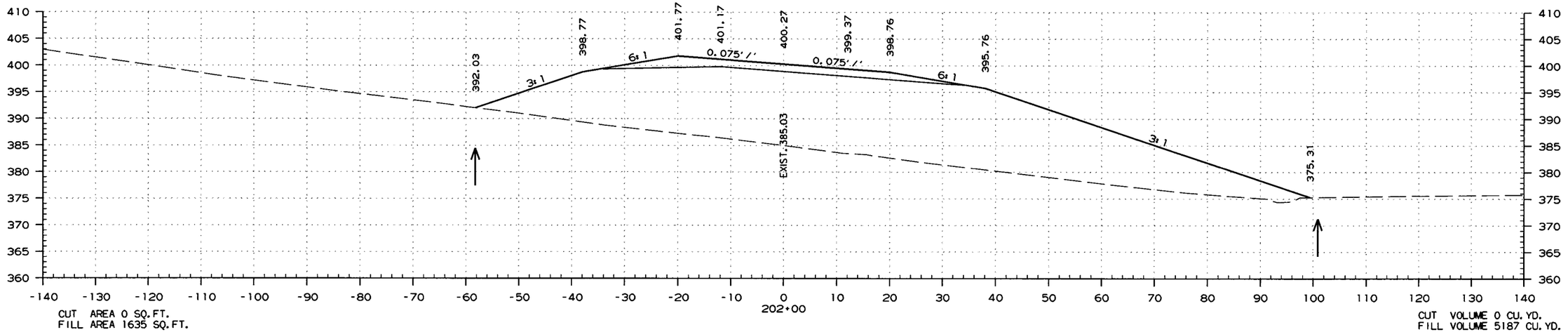
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2825 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 8259 CU. YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 1635 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 5187 CU. YD.

STA. 202+00.00 TO STA. 203+00.00

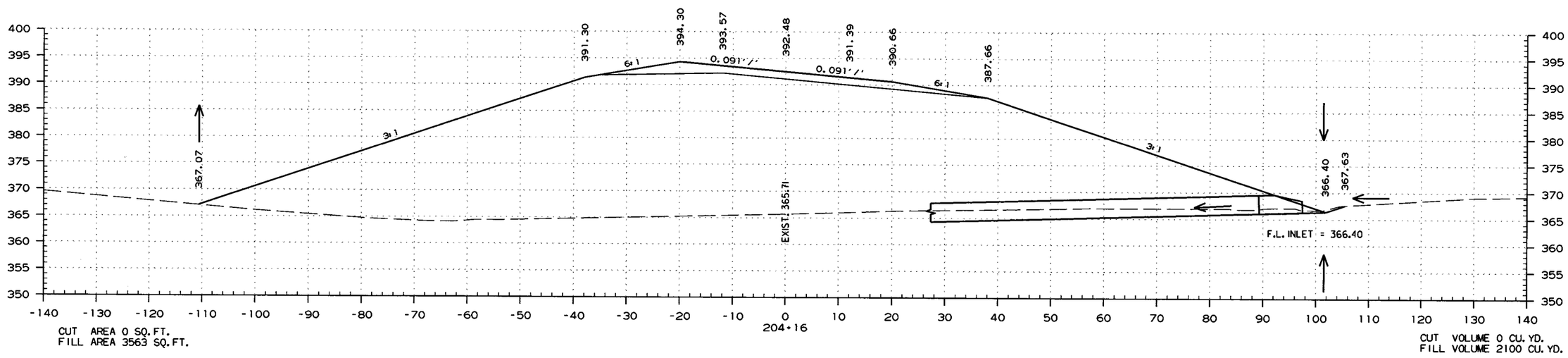
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 177 | 242 |

(2) CROSS SECTIONS

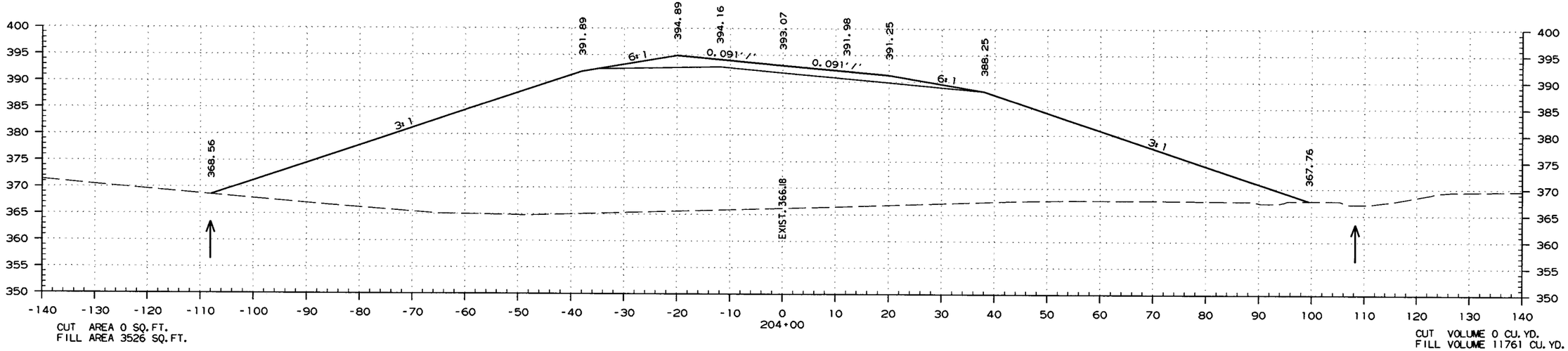
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 3563 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2100 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 3526 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 11761 CU.YD.

STA. 204+00.00 TO STA. 204+16.00

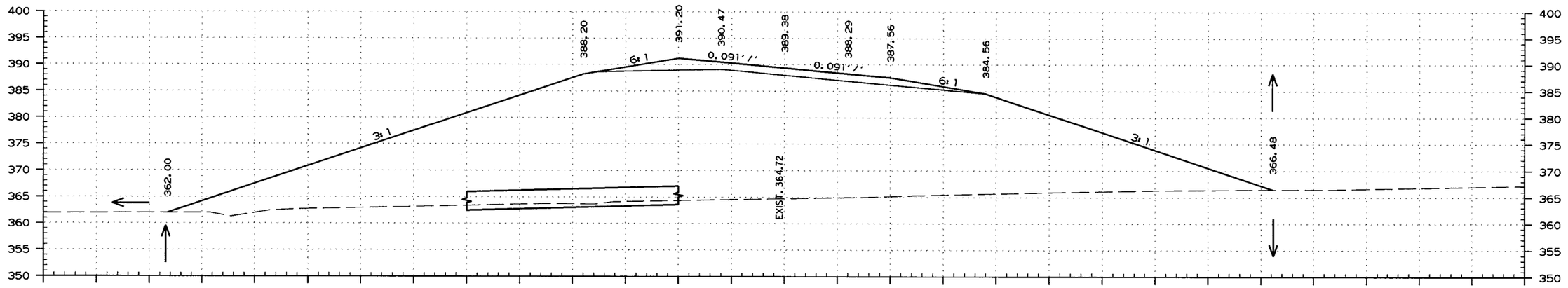
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 178 | 242 |

(2) CROSS SECTIONS

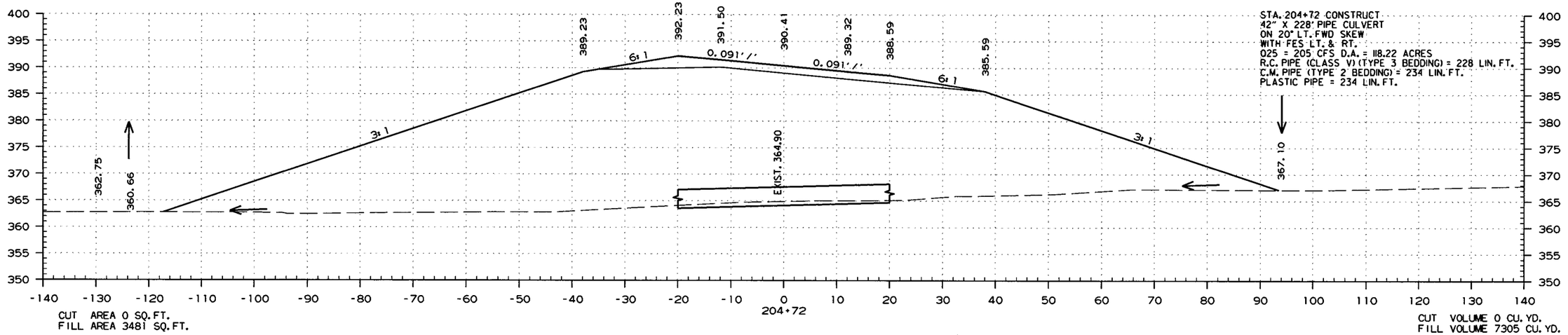
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 3197 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 3463 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 3481 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 7305 CU.YD.

STA. 204+72.00 TO STA. 205+00.00

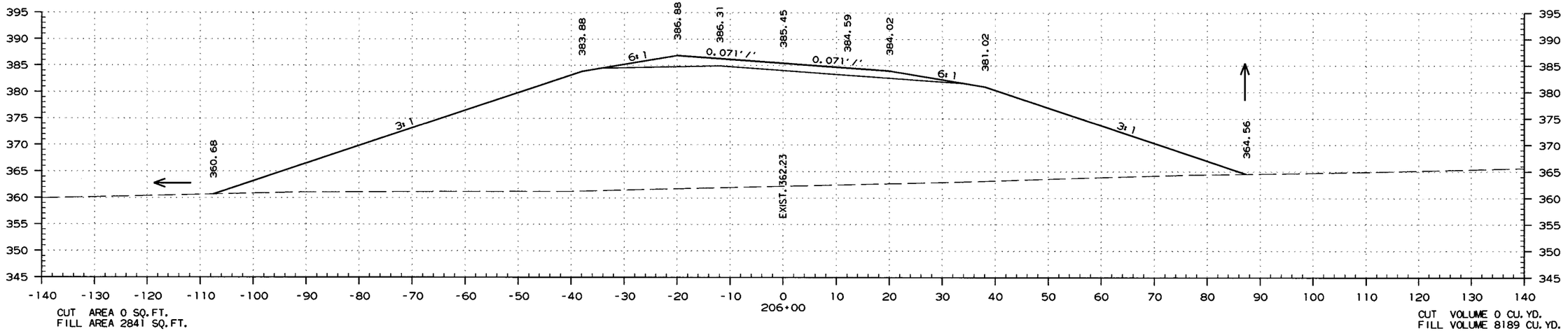
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 179 | 242 |

(2) CROSS SECTIONS

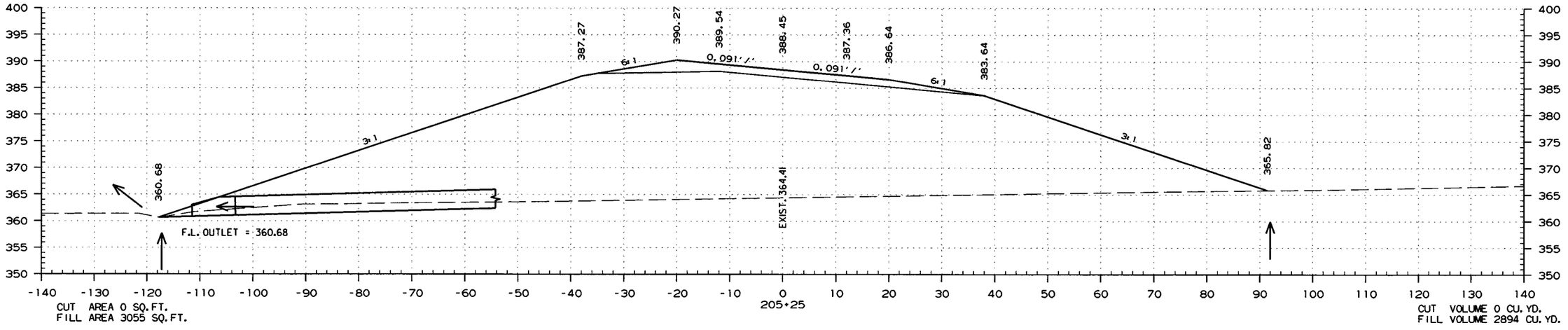
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2841 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 8189 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 3055 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2894 CU.YD.

STA. 205+25.00 TO STA. 206+00.00

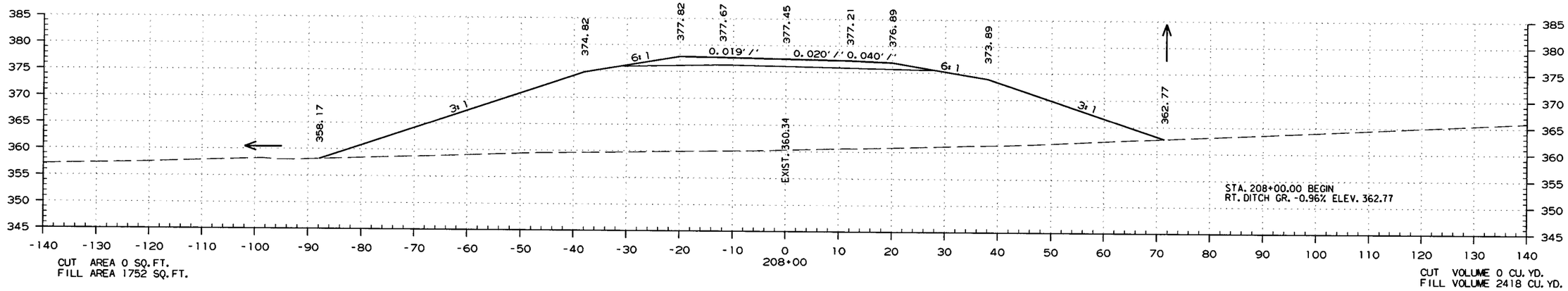
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 180 | 242 |

(2) CROSS SECTIONS

STAGE 1

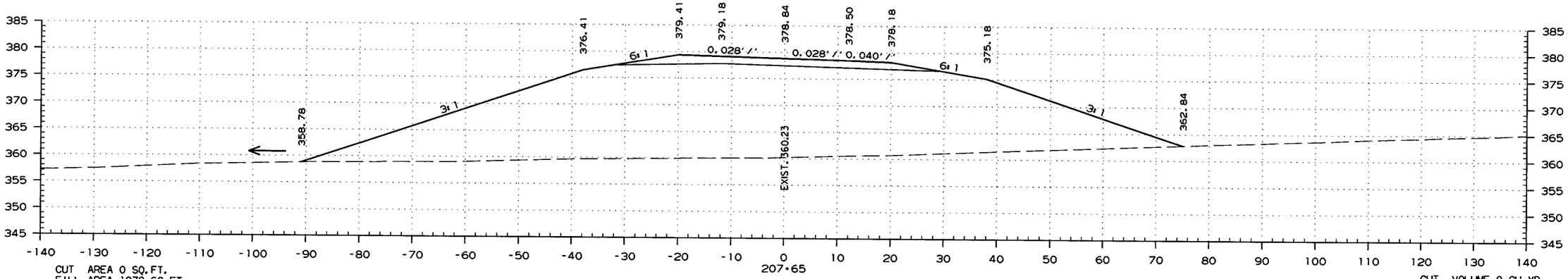



STA. 208+00.00 BEGIN
RT. DITCH GR. -0.96% ELEV. 362.77

CUT AREA 0 SQ.FT.
FILL AREA 1752 SQ.FT.

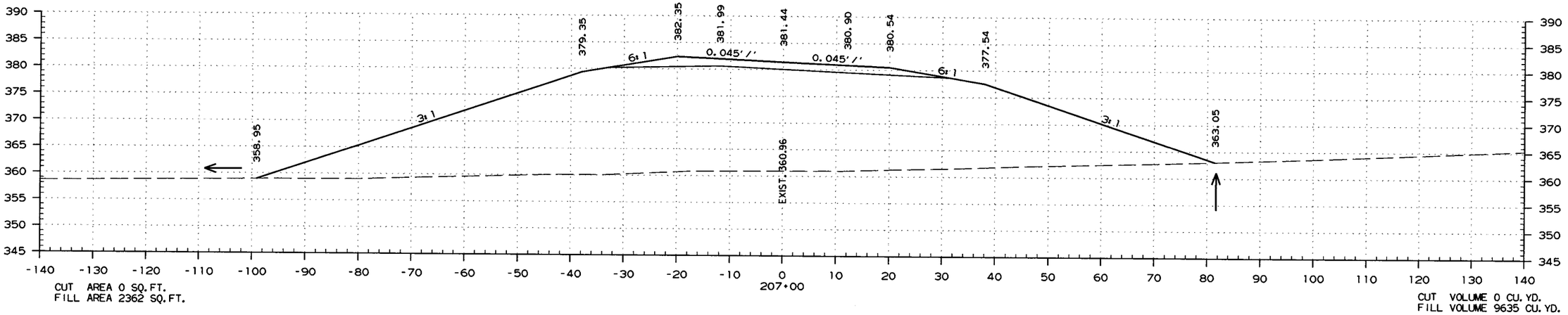
CUT VOLUME 0 CU. YD.
FILL VOLUME 2418 CU. YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 1978 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 5224 CU. YD.




CUT AREA 0 SQ.FT.
FILL AREA 2362 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 9635 CU. YD.

STA. 207+00.00 TO STA. 208+00.00

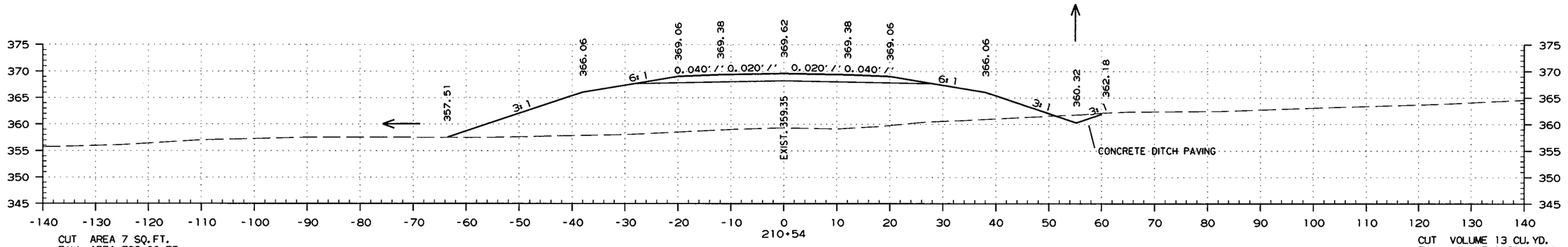
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 181 | 242 |

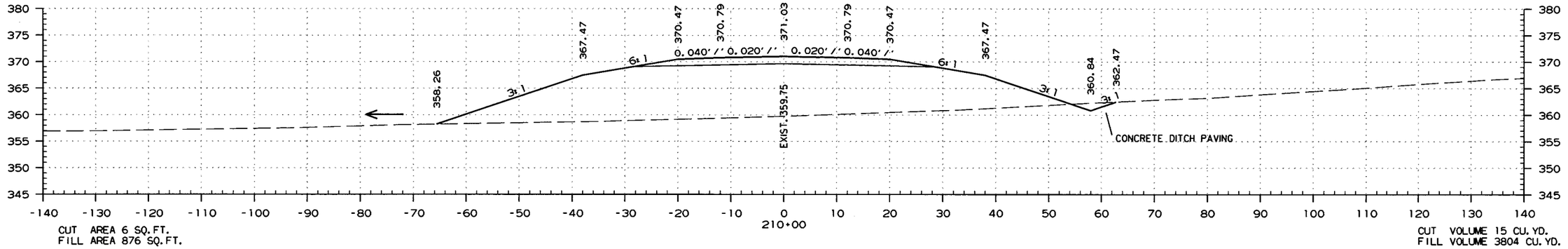
(2) CROSS SECTIONS

STAGE 1



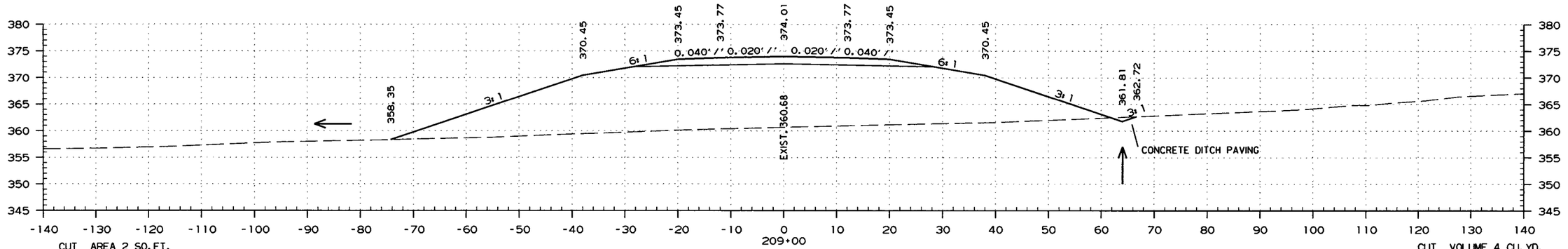

CUT AREA 7 SQ.FT.
FILL AREA 782 SQ.FT.

CUT VOLUME 13 CU.YD.
FILL VOLUME 1658 CU.YD.




CUT AREA 6 SQ.FT.
FILL AREA 876 SQ.FT.

CUT VOLUME 15 CU.YD.
FILL VOLUME 3804 CU.YD.




CUT AREA 2 SQ.FT.
FILL AREA 1178 SQ.FT.

CUT VOLUME 4 CU.YD.
FILL VOLUME 5426 CU.YD.

STA. 209+00.00 TO STA. 210+54.00

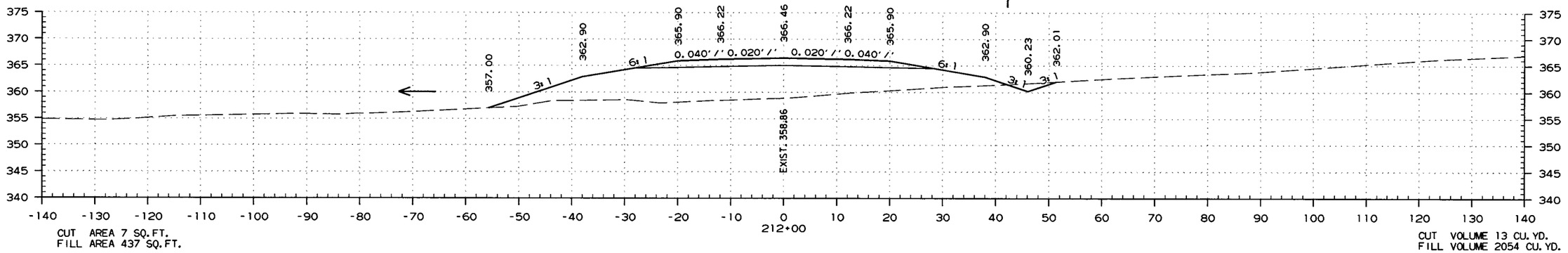
4/8/2016

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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. | | 050249 | 182 | 242 |

(2) CROSS SECTIONS

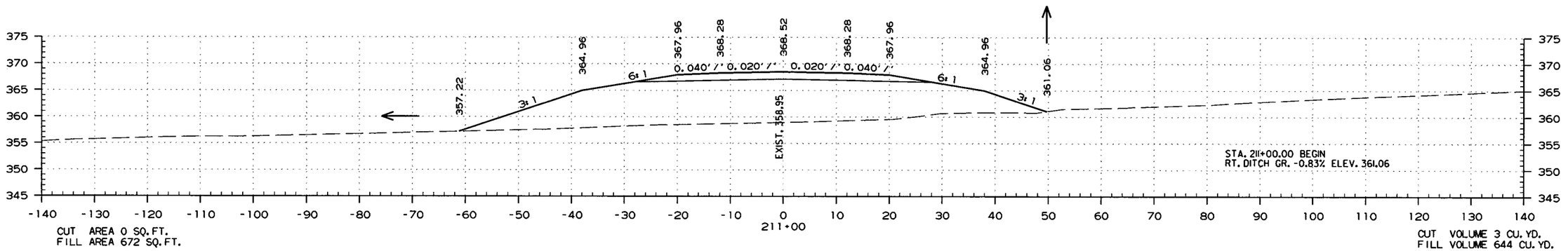
STAGE 1




CUT AREA 7 SQ.FT.
FILL AREA 437 SQ.FT.

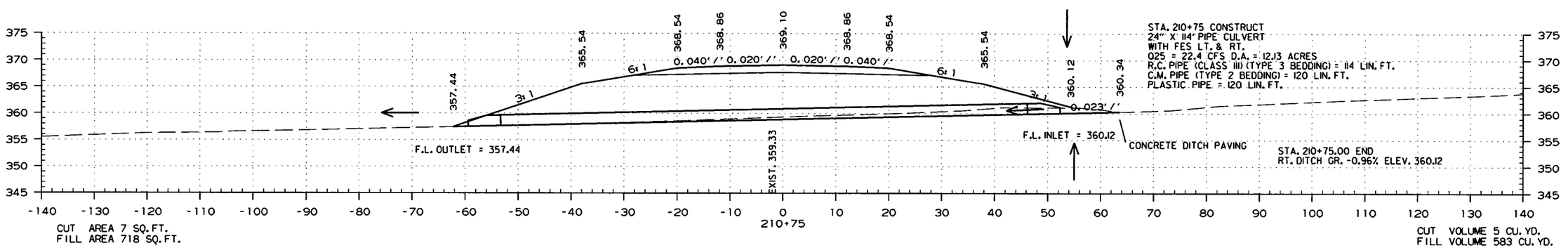
CUT VOLUME 13 CU.YD.
FILL VOLUME 2054 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 672 SQ.FT.

CUT VOLUME 3 CU.YD.
FILL VOLUME 644 CU.YD.




CUT AREA 7 SQ.FT.
FILL AREA 718 SQ.FT.

CUT VOLUME 5 CU.YD.
FILL VOLUME 583 CU.YD.

STA. 210+75.00 TO STA. 212+00.00

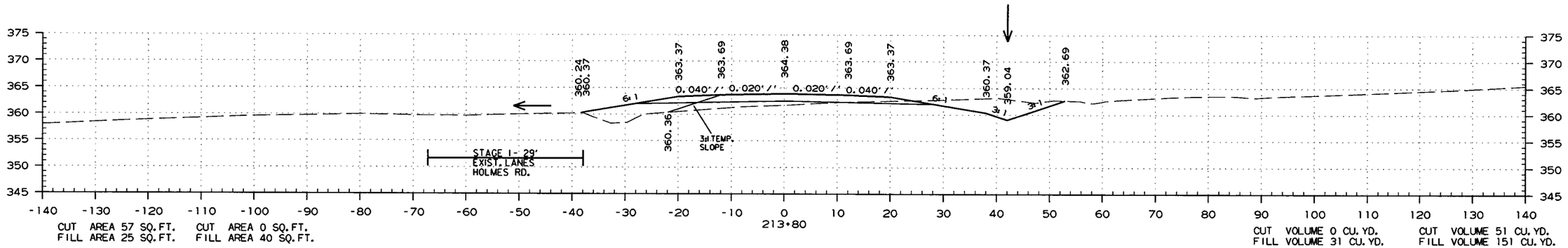
4/8/2016

R050249.DGN

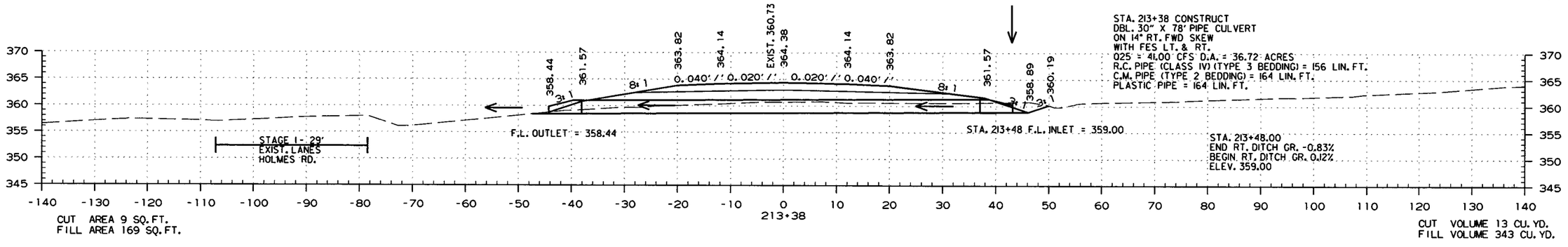
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 183 | 242 |

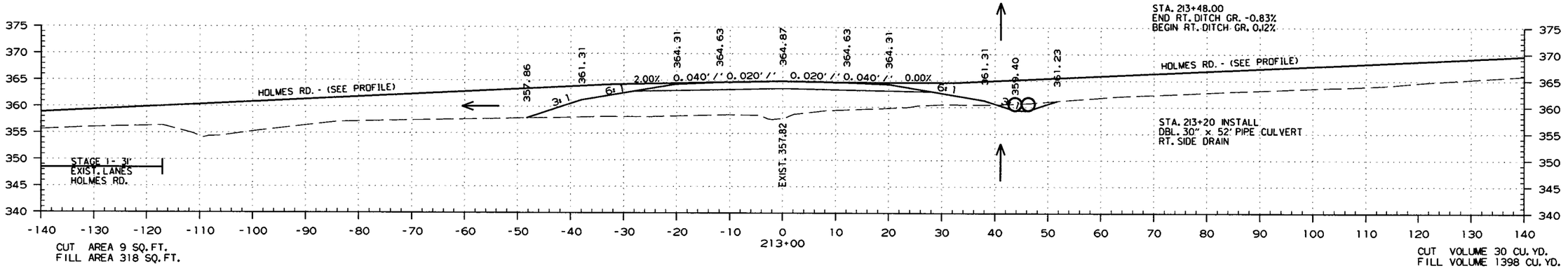
(2) CROSS SECTIONS

STAGE 1 STAGE 2




STAGE 2 STAGE 1




STA. 213+00.00 TO STA. 213+80.00

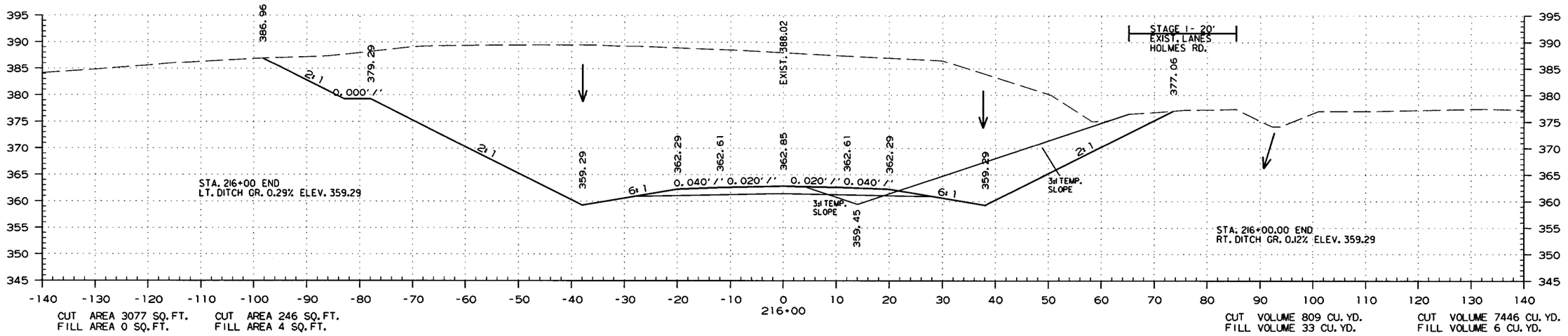
4/8/2016

R050249.DGN

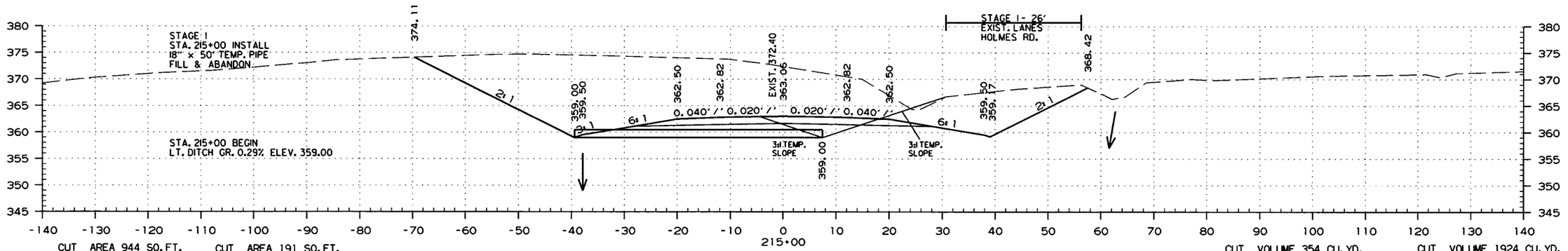
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 184 | 242 |

(2) CROSS SECTIONS

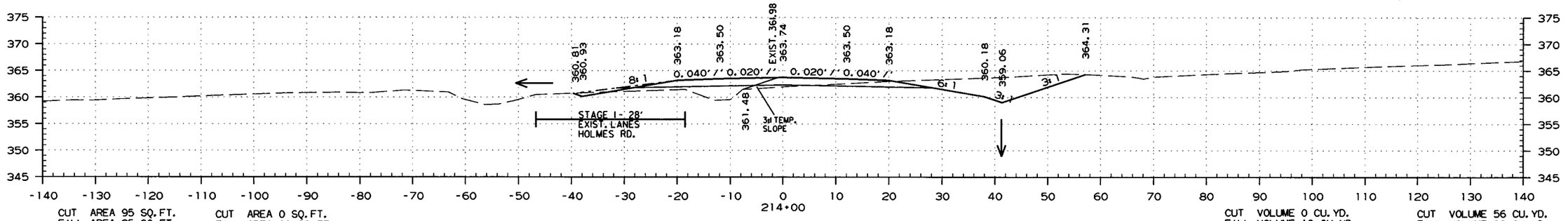
STAGE 1 STAGE 2 STAGE 2 STAGE 1




CUT AREA 3077 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA 246 SQ.FT. FILL AREA 4 SQ.FT.
CUT VOLUME 809 CU.YD. FILL VOLUME 33 CU.YD.
CUT VOLUME 7446 CU.YD. FILL VOLUME 6 CU.YD.




CUT AREA 944 SQ.FT. FILL AREA 3 SQ.FT.
CUT AREA 191 SQ.FT. FILL AREA 14 SQ.FT.
CUT VOLUME 354 CU.YD. FILL VOLUME 46 CU.YD.
CUT VOLUME 1924 CU.YD. FILL VOLUME 52 CU.YD.




CUT AREA 95 SQ.FT. FILL AREA 25 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 11 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 19 CU.YD.
CUT VOLUME 56 CU.YD. FILL VOLUME 19 CU.YD.

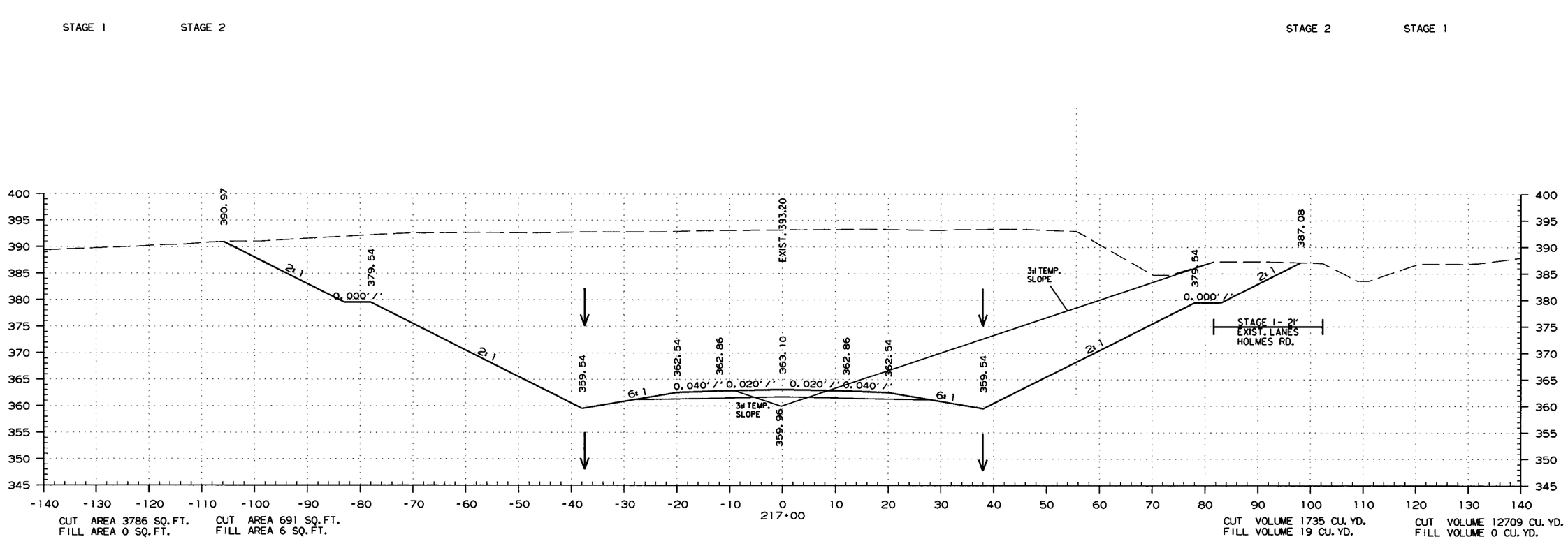
STA. 214+00.00 TO STA. 216+00.00

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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 185 | 242 |

(2) CROSS SECTIONS



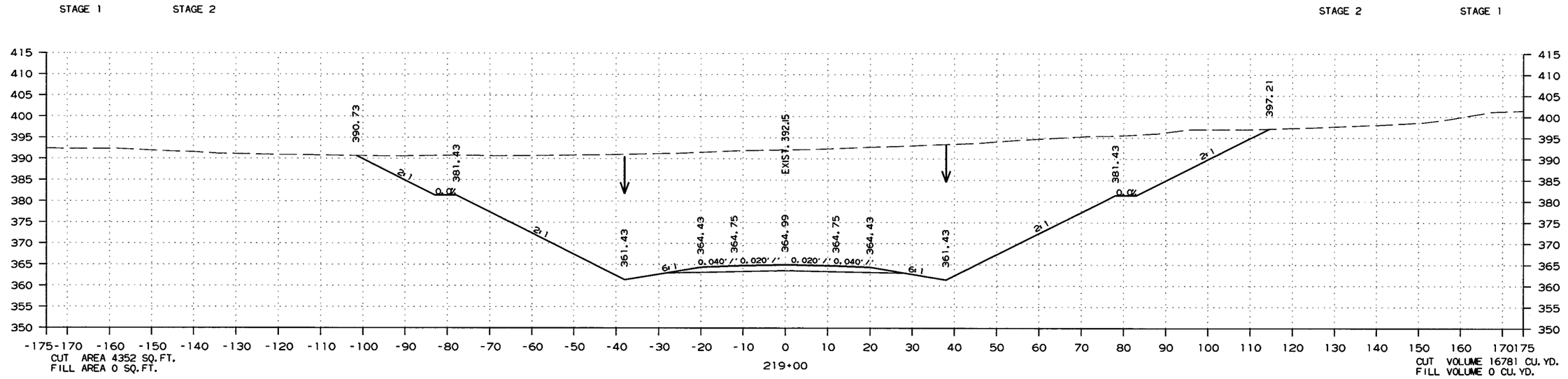

STA. 217+00.00 TO STA. 217+00.00

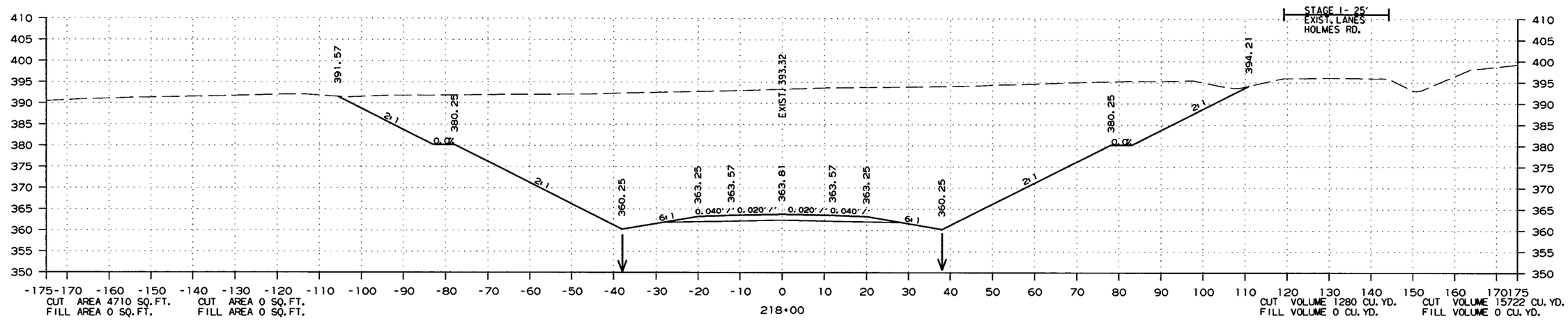
4/8/2016

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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. | | 050249 | 186 | 242 |

(2) CROSS SECTIONS




STA. 218+00.00 TO STA. 219+00.00

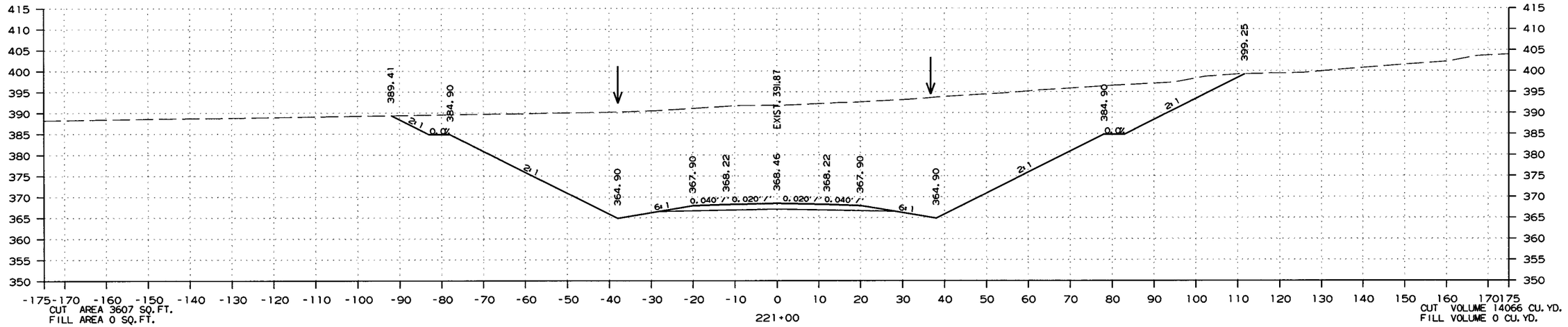
4/8/2016

R050249.DGN

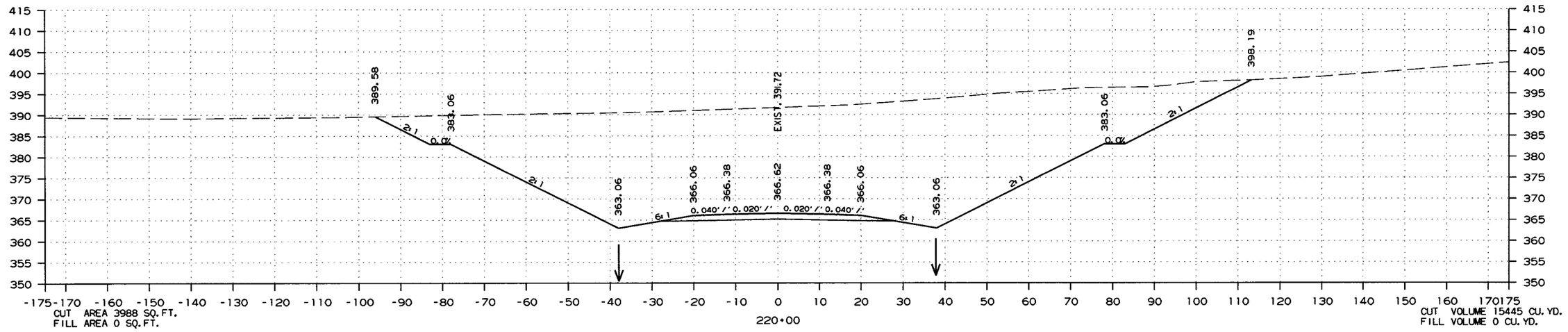
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 187 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




STA. 220+00.00 TO STA. 221+00.00

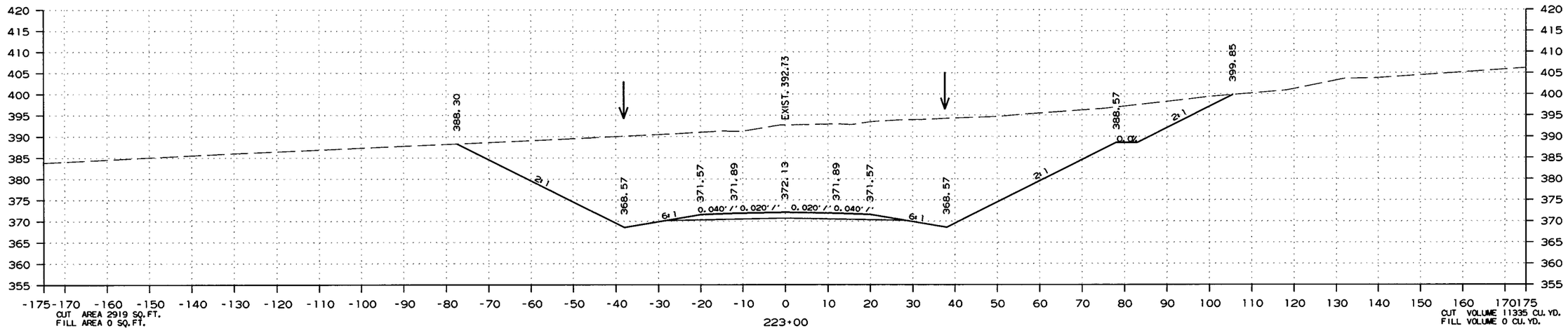
4/8/2016

R050249.DGN

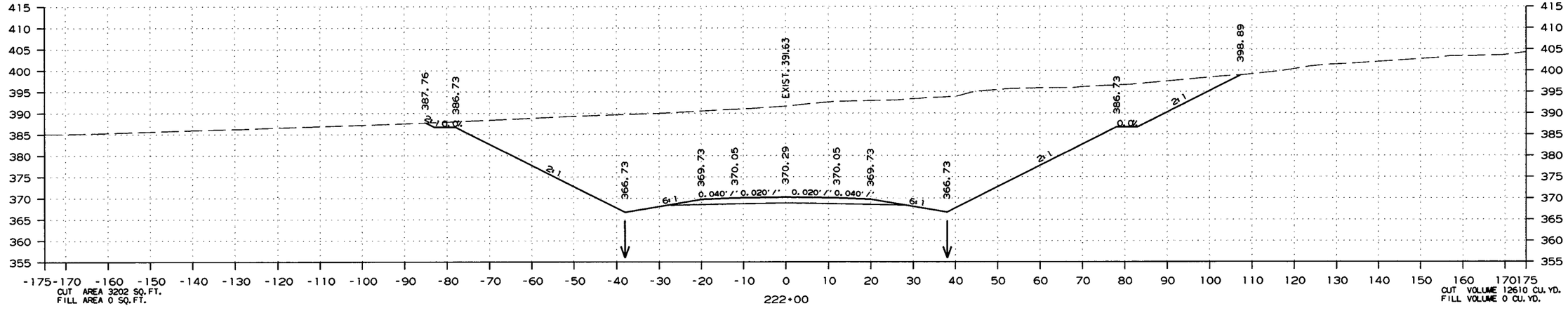
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 188 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




STA. 222+00.00 TO STA. 223+00.00

4/8/2016

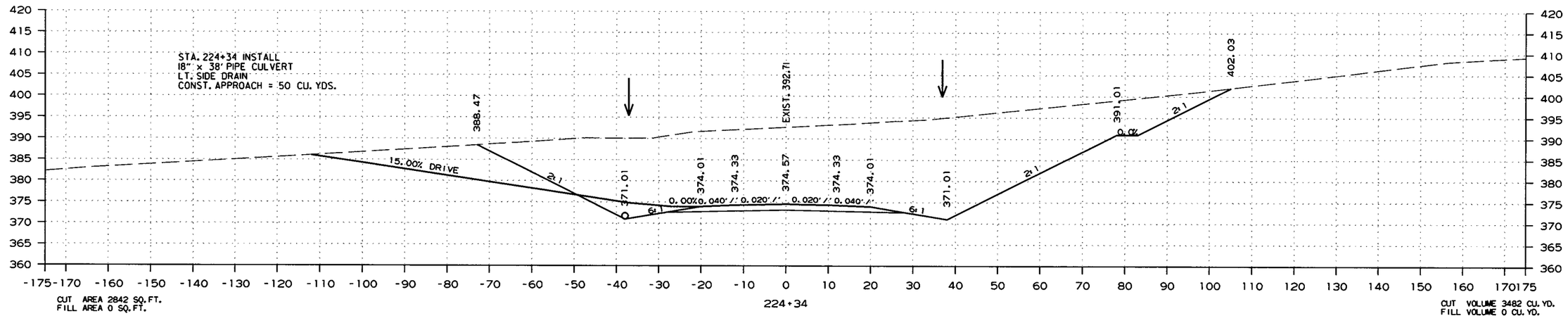
R050249.DGN

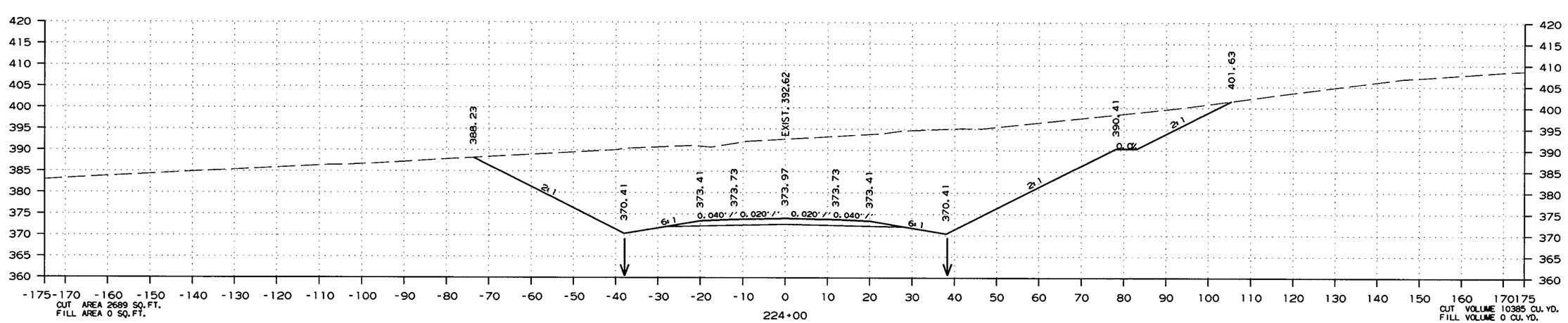
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 189 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




4/8/2016

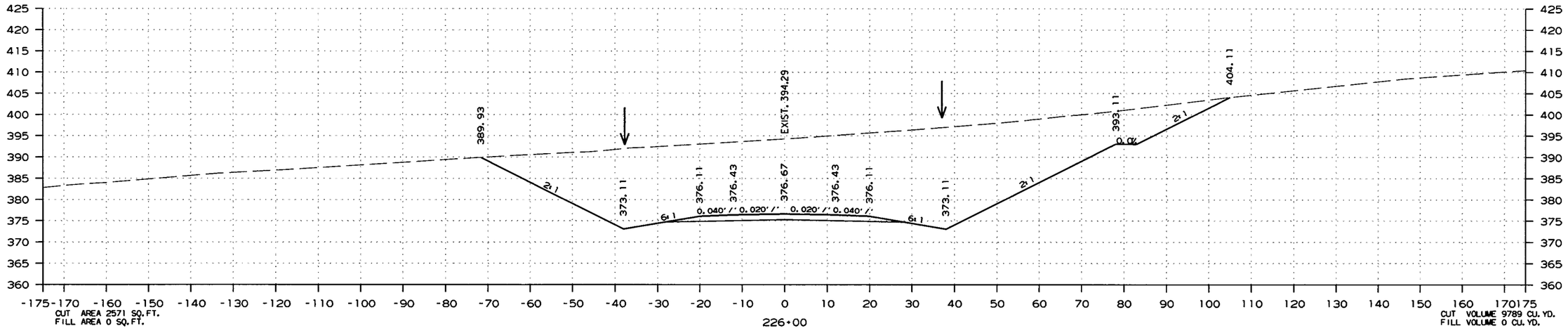
R050249.DGN

STA. 224+00.00 TO STA. 224+34.00

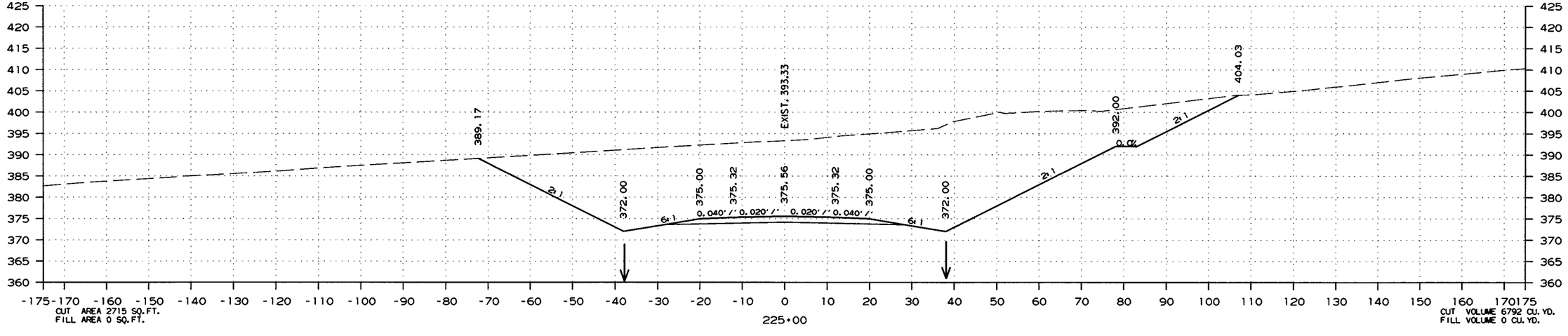
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 190 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




STA. 225+00.00 TO STA. 226+00.00

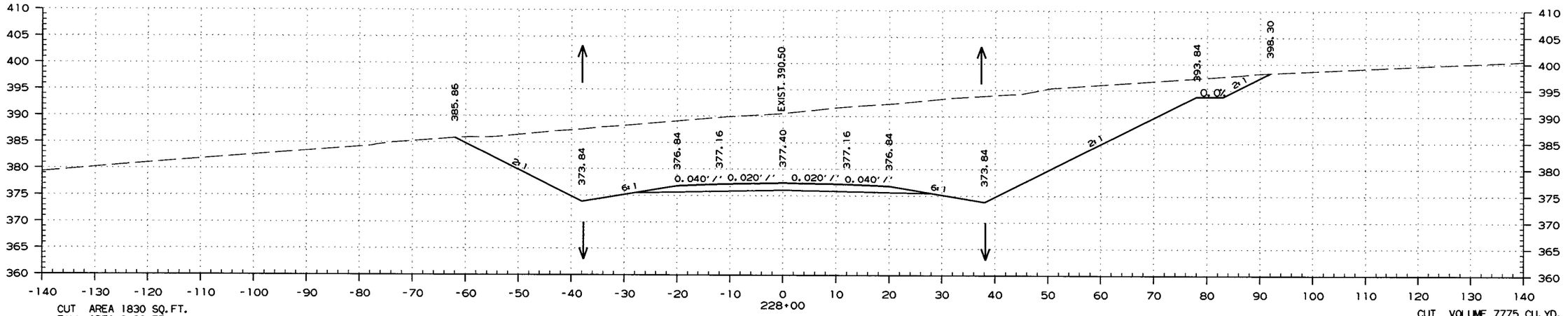
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 191 | 242 |

(2) CROSS SECTIONS

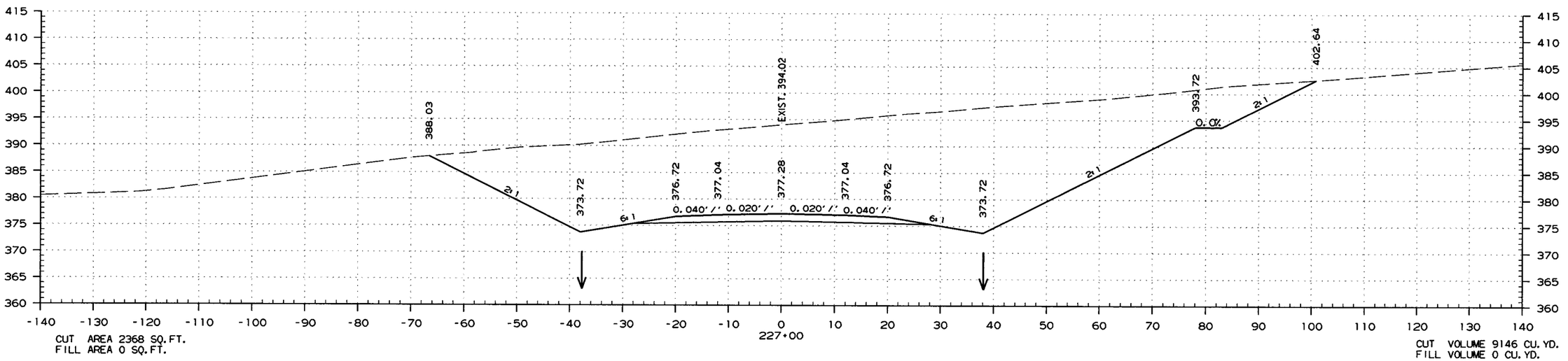
STAGE 1




CUT AREA 1830 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 7775 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 2368 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 9146 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 227+00.00 TO STA. 228+00.00

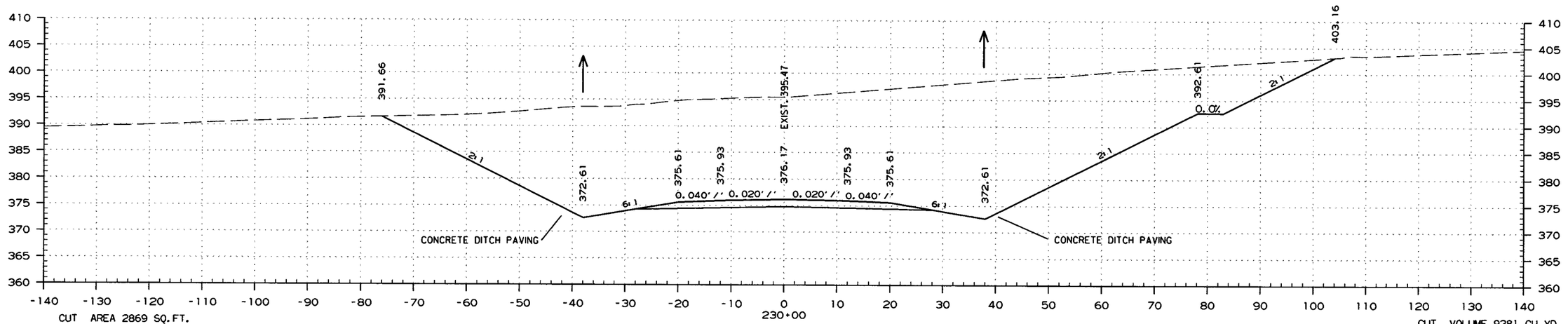
4/8/2016

R050249.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. | | 050249 | 192 | 242 |

(2) CROSS SECTIONS

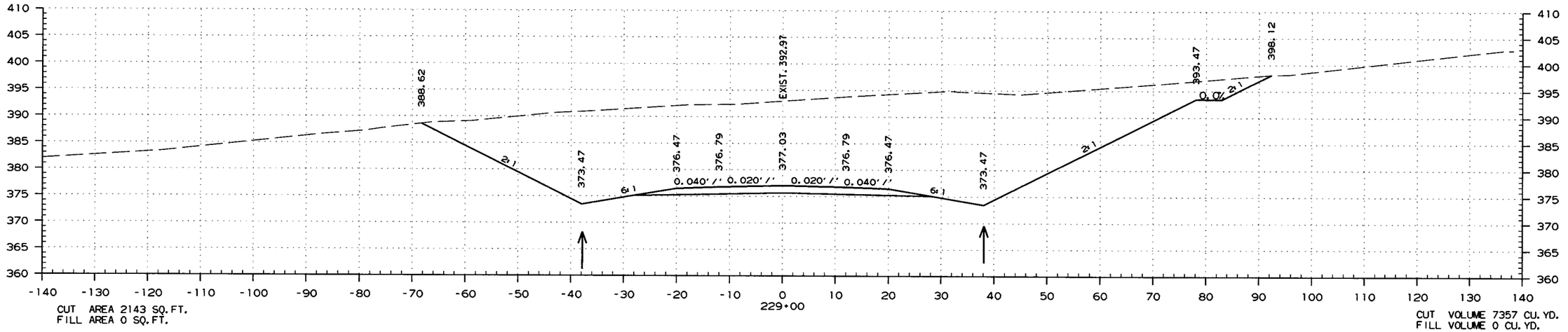
STAGE 1




CUT AREA 2869 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 9281 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 2143 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 7357 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 229+00.00 TO STA. 230+00.00

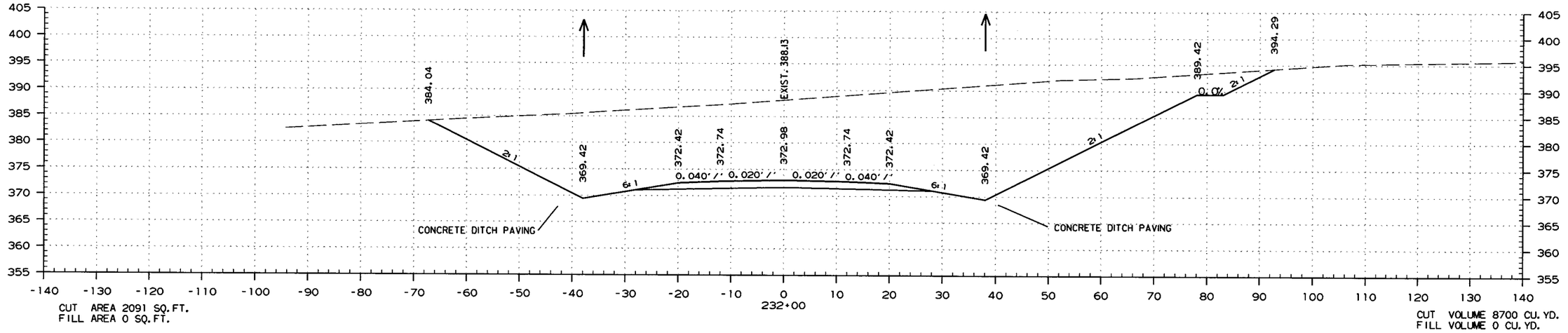
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 193 | 242 |

(2) CROSS SECTIONS

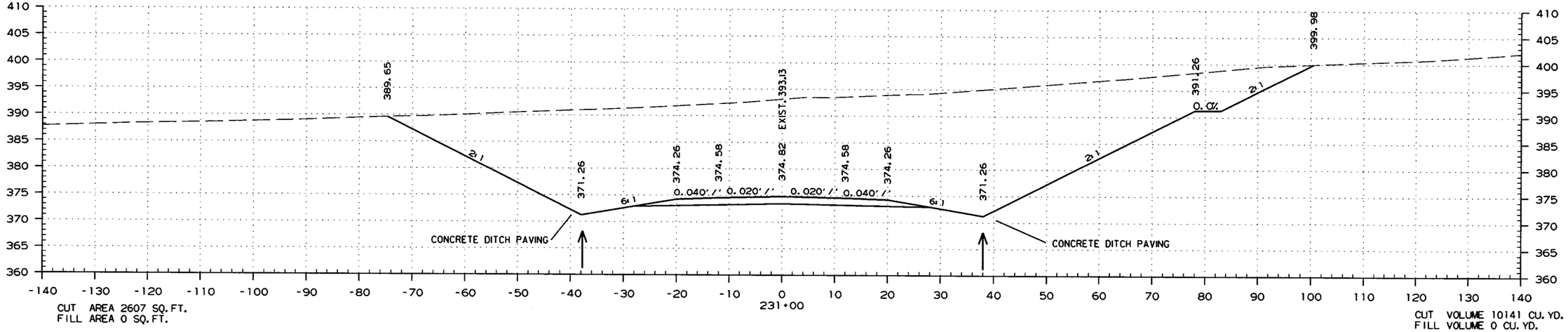
STAGE 1




CUT AREA 2091 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 8700 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 2607 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 10141 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 231+00.00 TO STA. 232+00.00

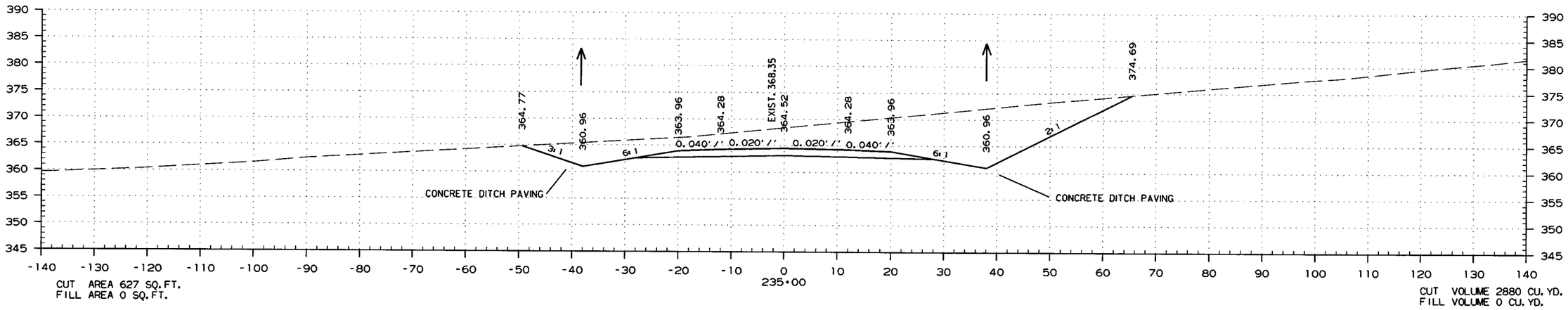
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 194 | 242 |

(2) CROSS SECTIONS

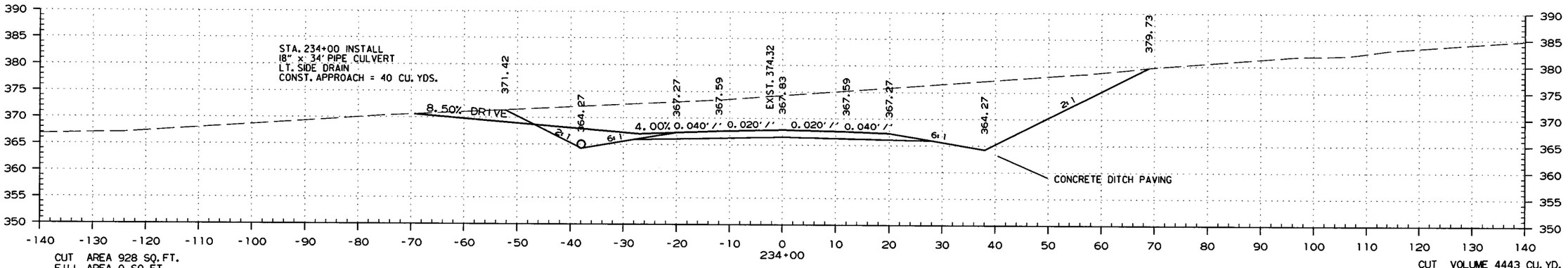
STAGE 1




CUT AREA 627 SQ.FT.
FILL AREA 0 SQ.FT.

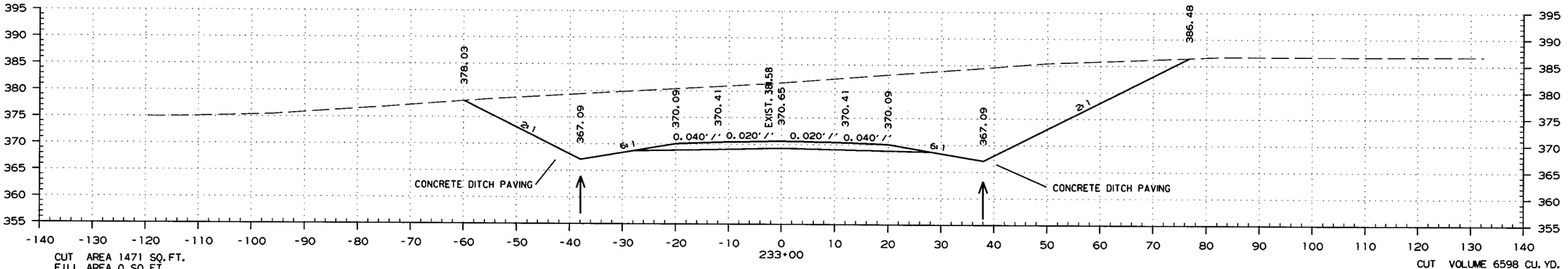
STAGE 1

CUT VOLUME 2880 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 928 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 4443 CU.YD.
FILL VOLUME 0 CU.YD.




CUT AREA 1471 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 6598 CU.YD.
FILL VOLUME 0 CU.YD.

STA. 233+00.00 TO STA. 235+00.00

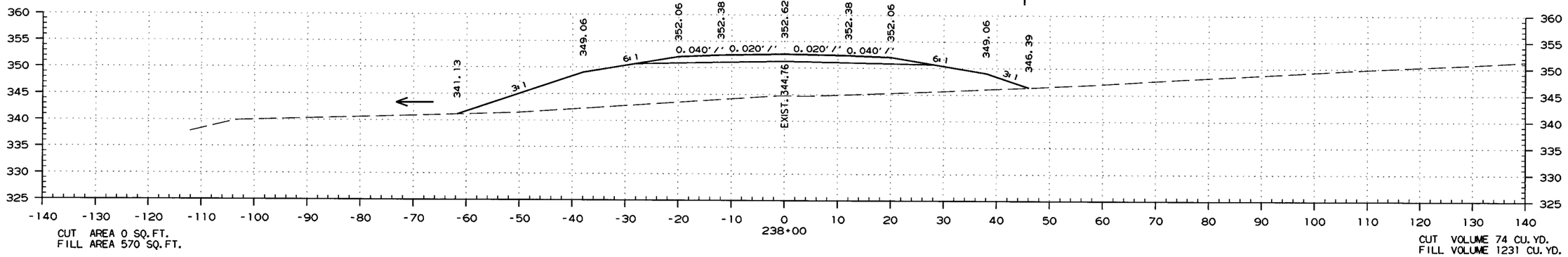
4/8/2016

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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. | | 050249 | 195 | 242 |

(2) CROSS SECTIONS

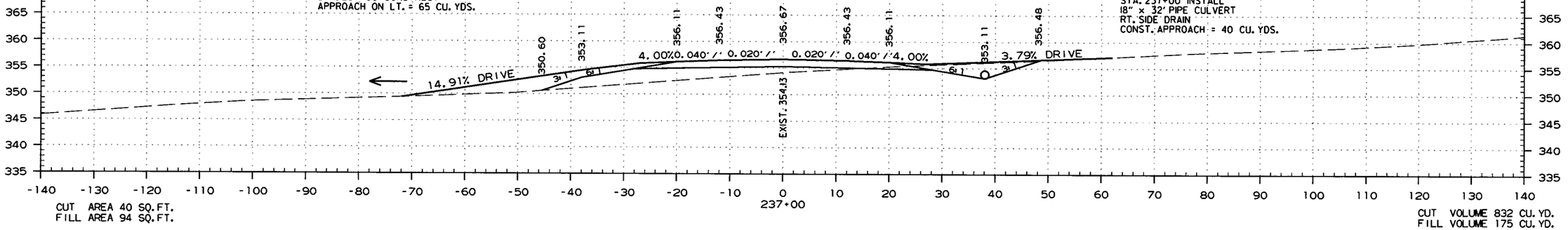
STAGE 1

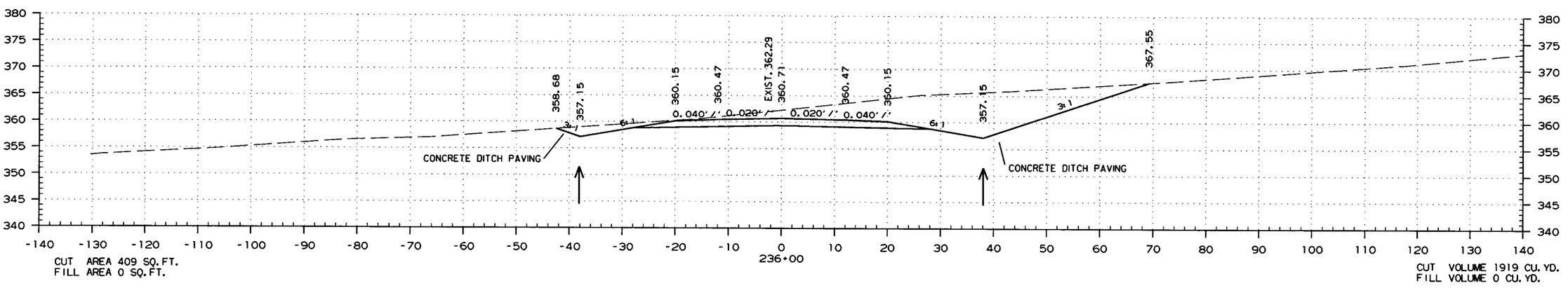



STAGE 1

STA. 237+00 CONSTRUCT
APPROACH ON LT. = 65 CU. YDS.

STA. 237+00 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.




STA. 236+00.00 TO STA. 238+00.00

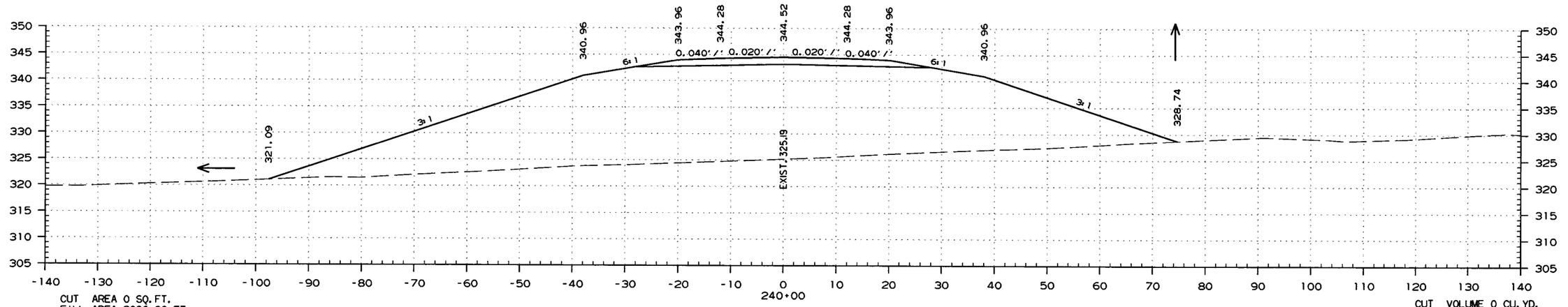
4/8/2016

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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. | | 050249 | 196 | 242 |

(2) CROSS SECTIONS

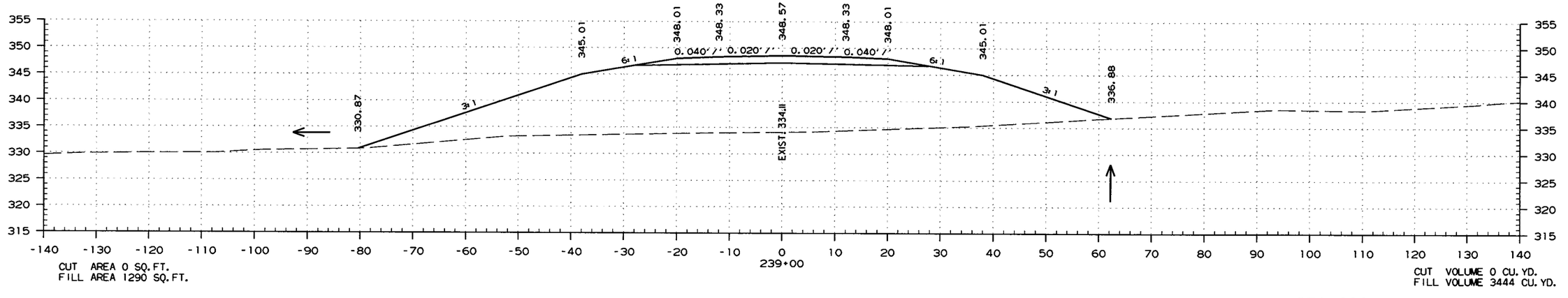
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2096 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

STAGE 1

CUT VOLUME 0 CU. YD.
FILL VOLUME 6270 CU. YD.
CUT VOLUME (UNDERCUT) 0 CU. YD.
FILL VOLUME (BACKFILL) 0 CU. YD.




CUT AREA 0 SQ.FT.
FILL AREA 1290 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 3444 CU. YD.

STA. 239+00.00 TO STA. 240+00.00

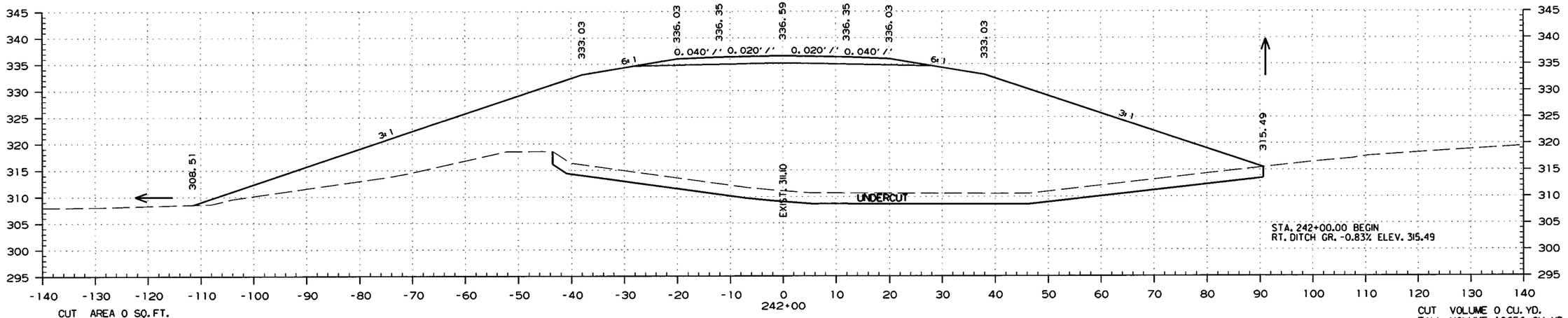
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 197 | 242 |

(2) CROSS SECTIONS

STAGE 1

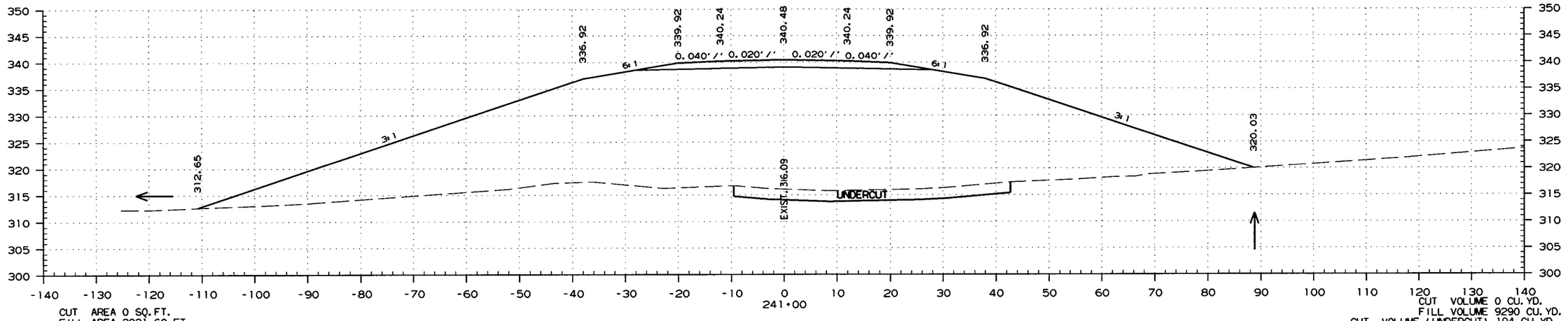



CUT AREA 0 SQ.FT.
FILL AREA 2833 SQ.FT.
CUT AREA (UNDERCUT) 271 SQ.FT.
FILL AREA (BACKFILL) 271 SQ.FT.

STA. 242+00.00 BEGIN
RT. DITCH GR. -0.83% ELEV. 315.49

CUT VOLUME 0 CU.YD.
FILL VOLUME 10656 CU.YD.
CUT VOLUME (UNDERCUT) 696 CU.YD.
FILL VOLUME (BACKFILL) 696 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2921 SQ.FT.
CUT AREA (UNDERCUT) 105 SQ.FT.
FILL AREA (BACKFILL) 105 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 9290 CU.YD.
CUT VOLUME (UNDERCUT) 194 CU.YD.
FILL VOLUME (BACKFILL) 194 CU.YD.

STA. 241+00.00 TO STA. 242+00.00

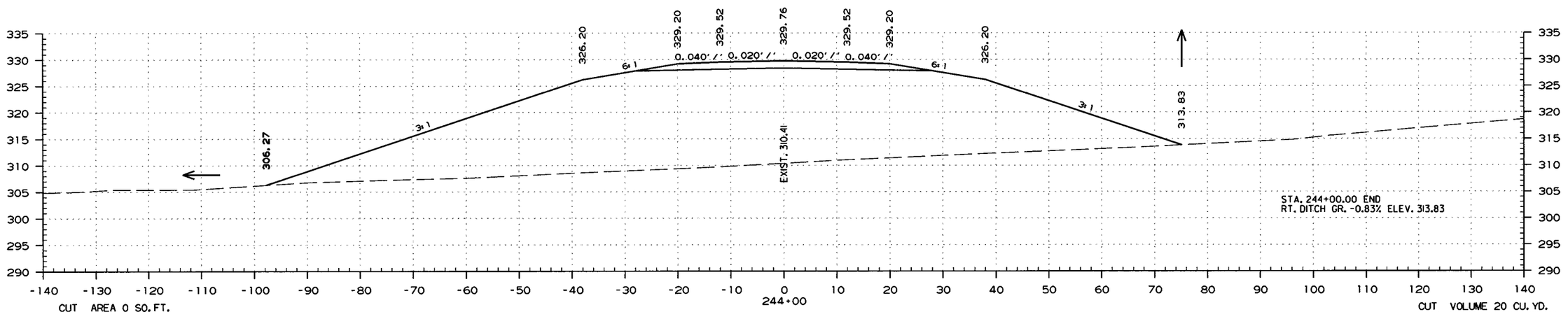
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 198 | 242 |

(2) CROSS SECTIONS

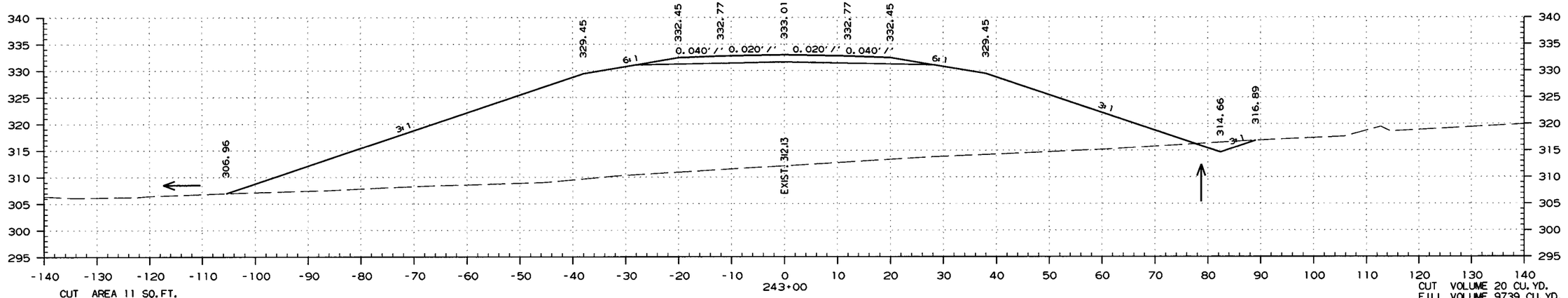
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2110 SQ.FT.

CUT VOLUME 20 CU.YD.
FILL VOLUME 8400 CU.YD.

STAGE 1




CUT AREA 11 SQ.FT.
FILL AREA 2426 SQ.FT.
CUT AREA (UNDERCUT) 0 SQ.FT.
FILL AREA (BACKFILL) 0 SQ.FT.

CUT VOLUME 20 CU.YD.
FILL VOLUME 9739 CU.YD.
CUT VOLUME (UNDERCUT) 502 CU.YD.
FILL VOLUME (BACKFILL) 502 CU.YD.

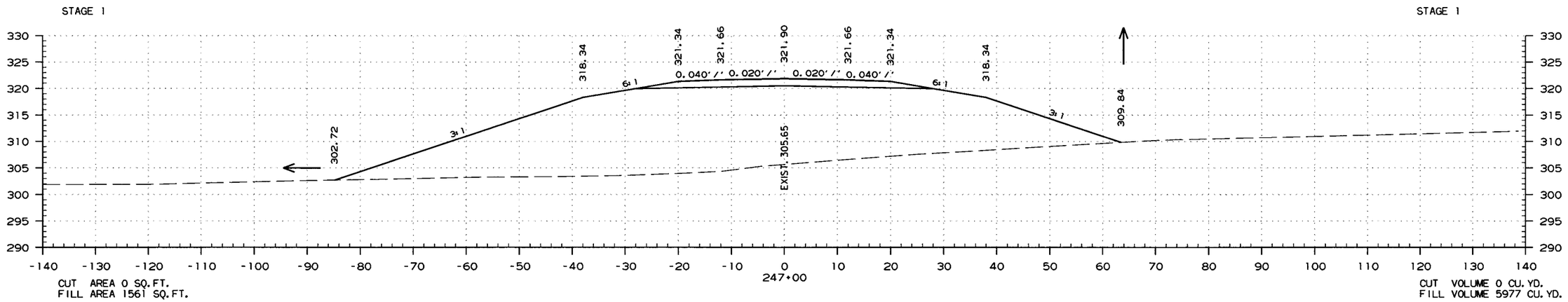
STA. 243+00.00 TO STA. 244+00.00

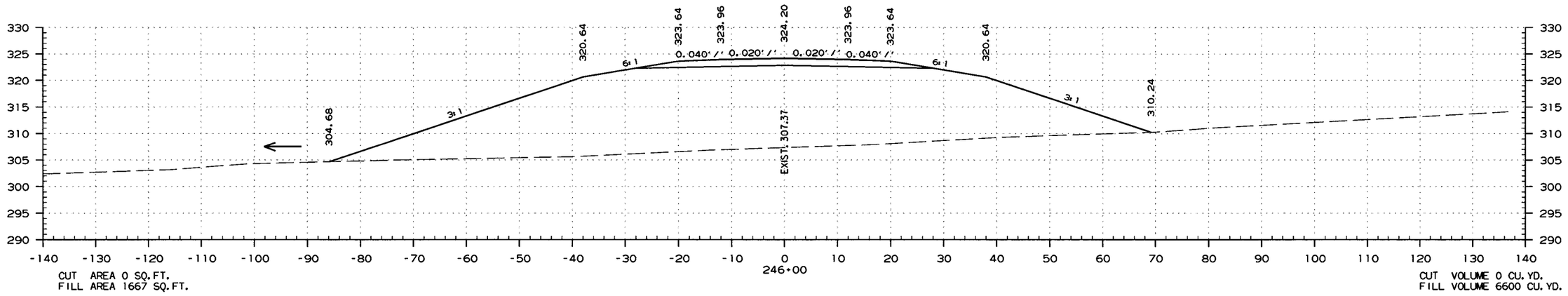
4/8/2016

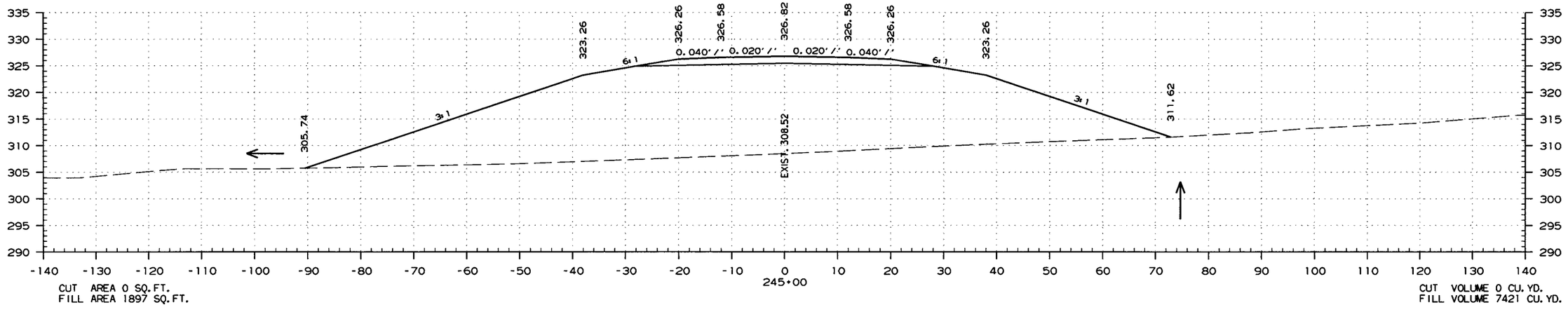
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 199 | 242 |

(2) CROSS SECTIONS



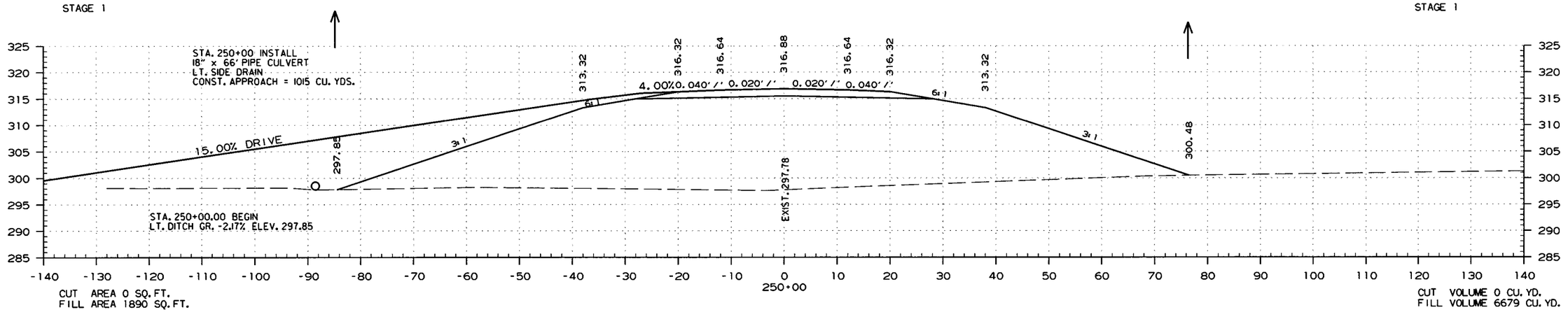

STA. 245+00.00 TO STA. 247+00.00

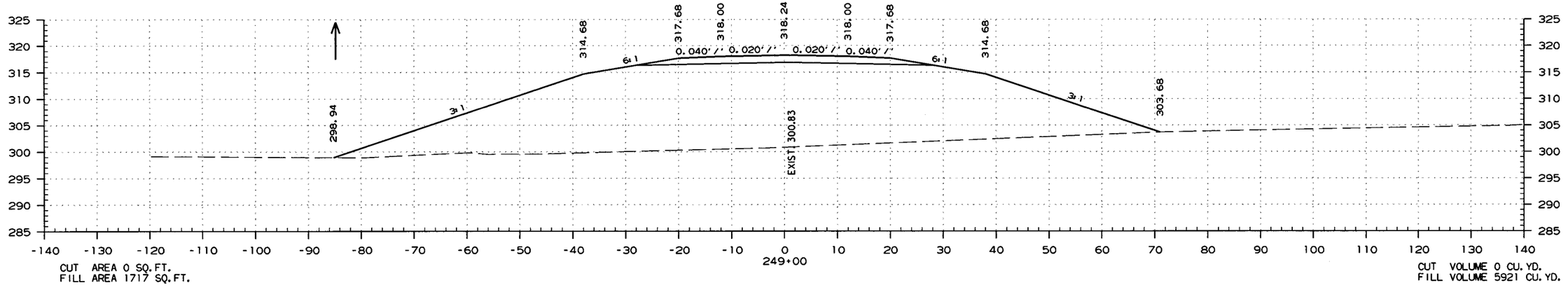
4/8/2016

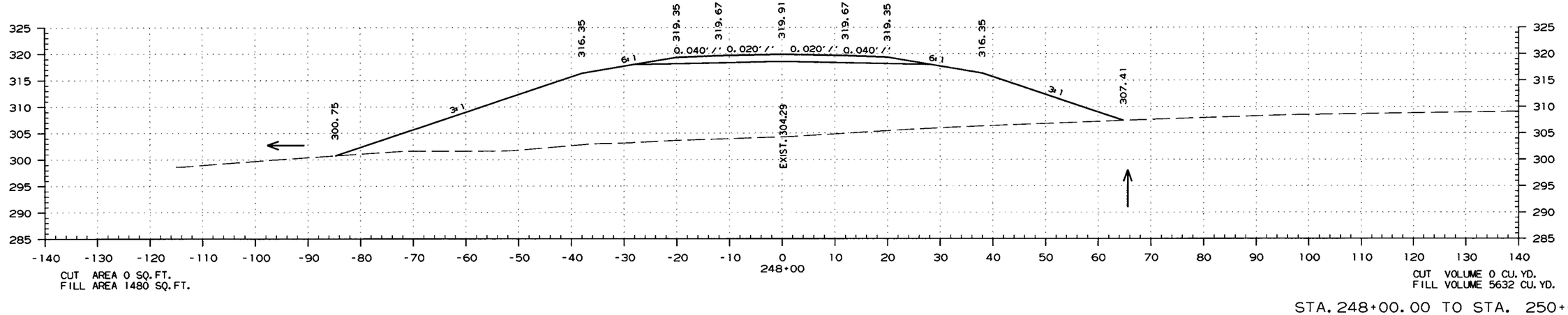
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 200 | 242 |

(2) CROSS SECTIONS



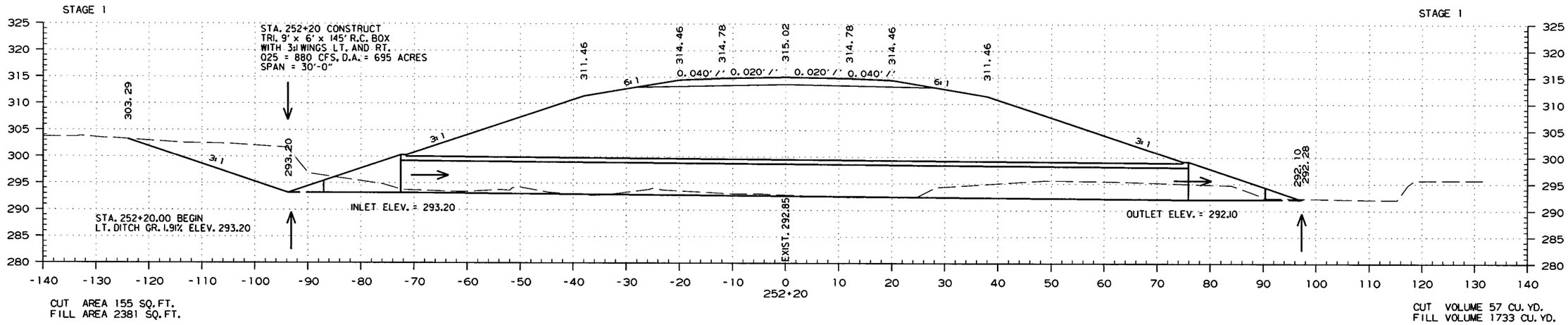

STA. 248+00.00 TO STA. 250+00.00

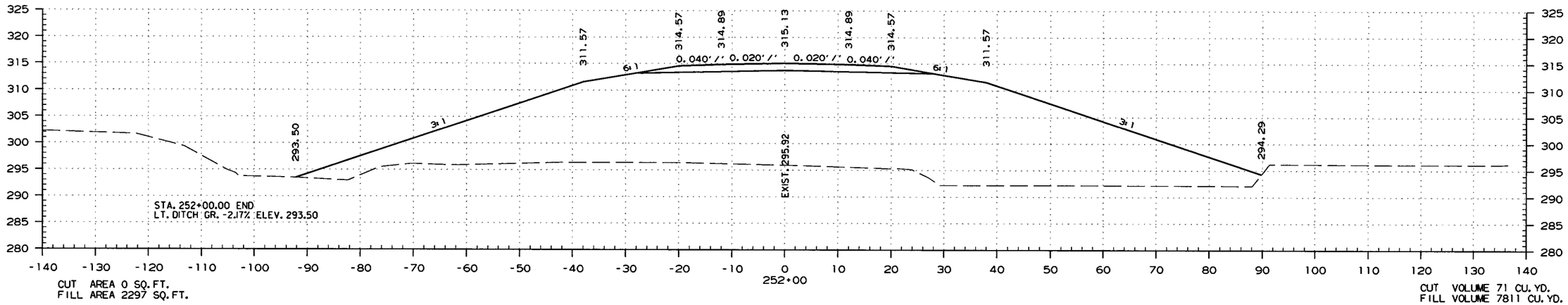
4/8/2016

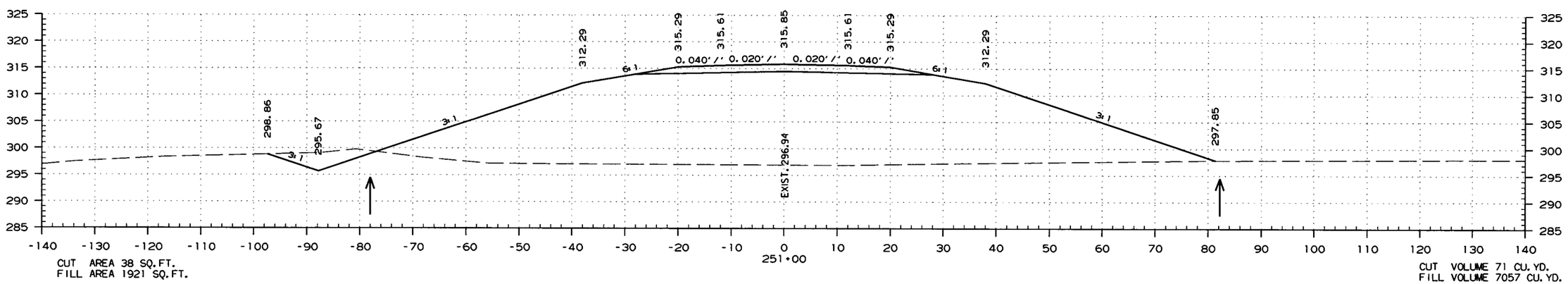
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 201 | 242 |

(2) CROSS SECTIONS



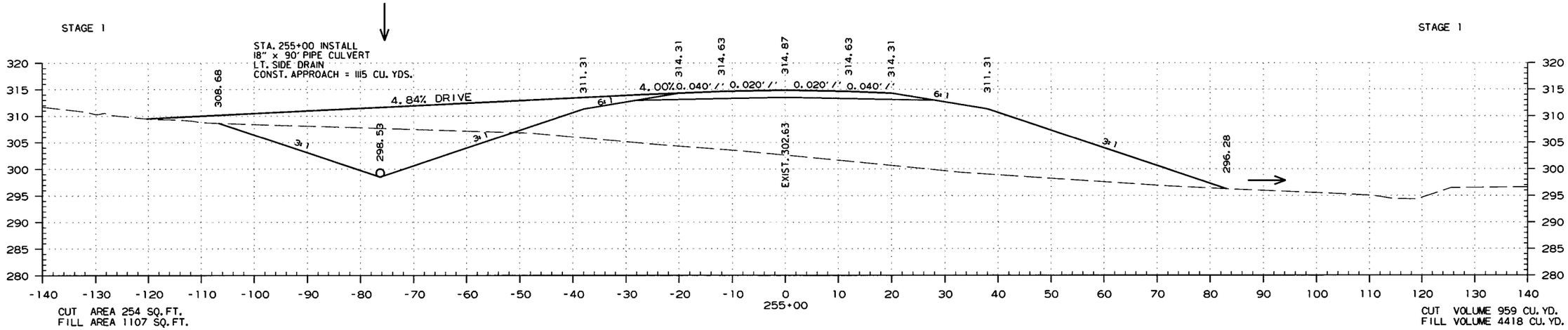

STA. 251+00.00 TO STA. 252+20.00

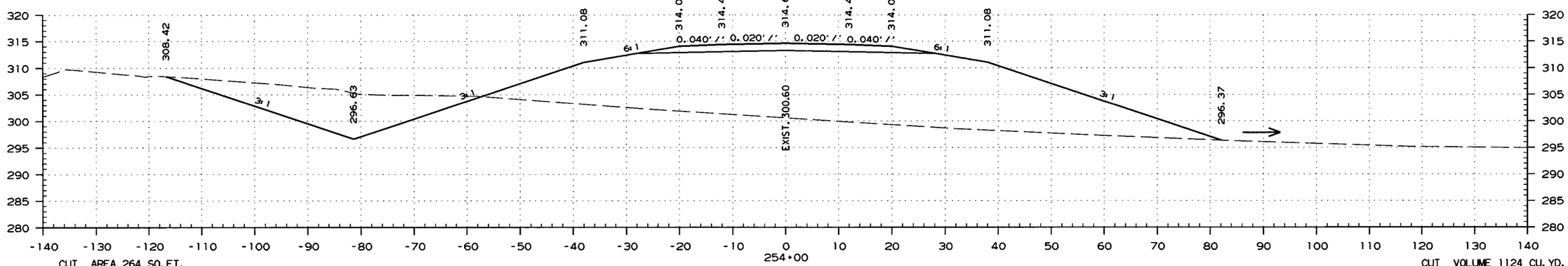
4/8/2016

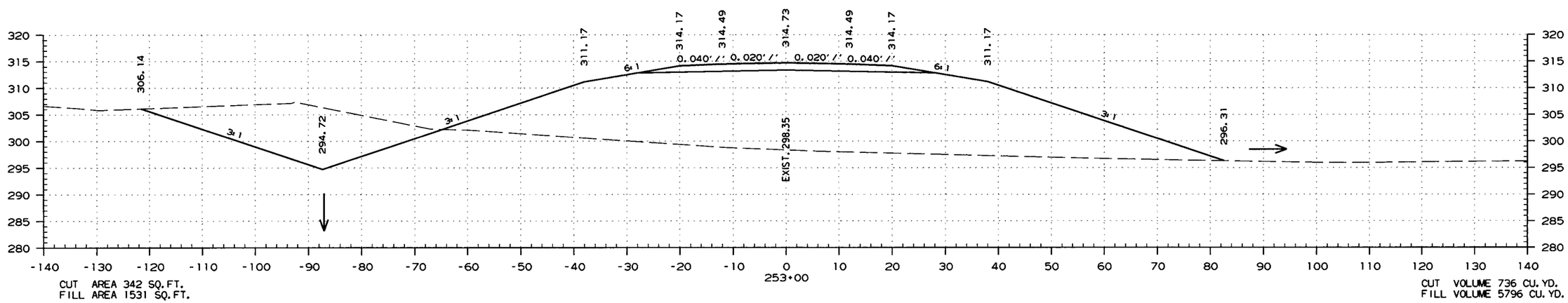
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 202 | 242 |

(2) CROSS SECTIONS




STA. 253+00.00 TO STA. 255+00.00

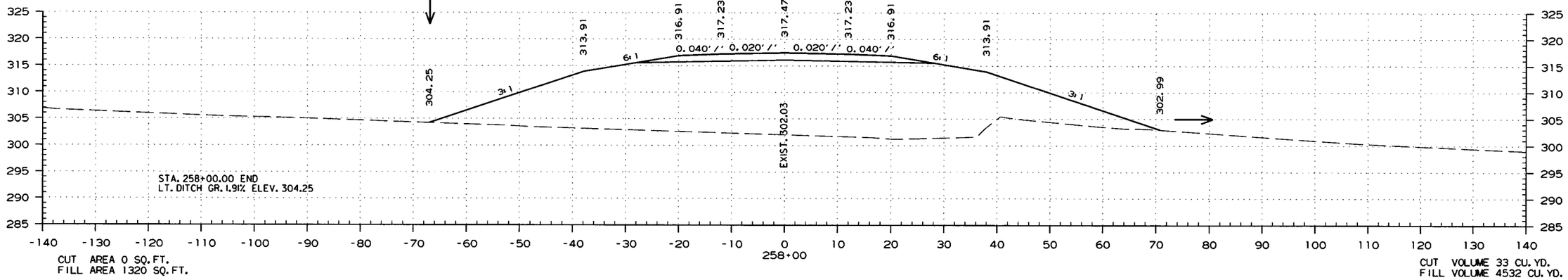
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 203 | 242 |

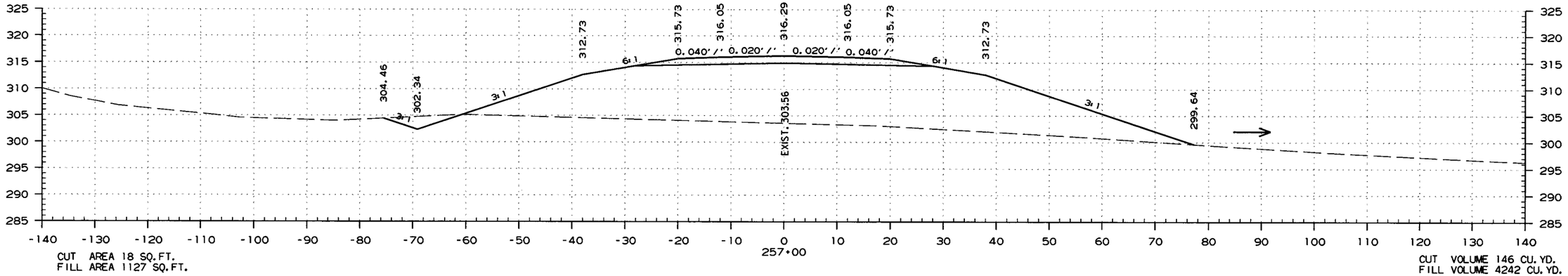
(2) CROSS SECTIONS

STAGE 1



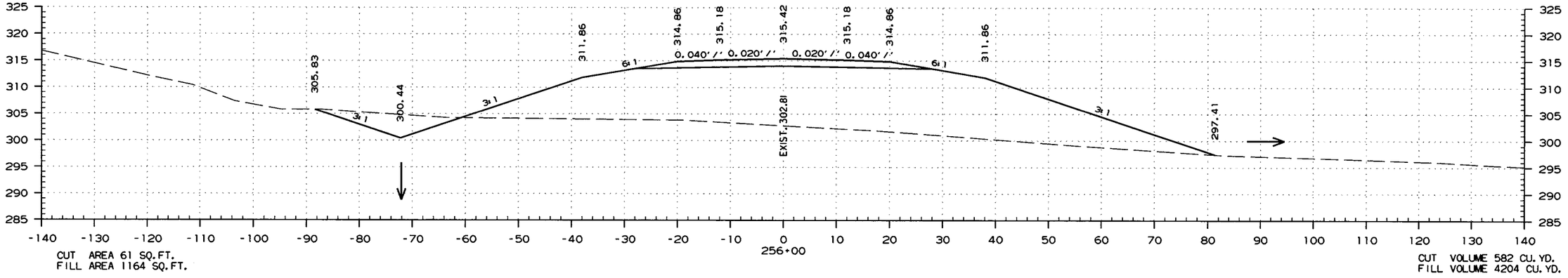

CUT AREA 0 SQ.FT.
FILL AREA 1320 SQ.FT.

CUT VOLUME 33 CU.YD.
FILL VOLUME 4532 CU.YD.




CUT AREA 18 SQ.FT.
FILL AREA 1127 SQ.FT.

CUT VOLUME 146 CU.YD.
FILL VOLUME 4242 CU.YD.




CUT AREA 61 SQ.FT.
FILL AREA 1164 SQ.FT.

CUT VOLUME 582 CU.YD.
FILL VOLUME 4204 CU.YD.

STA. 256+00.00 TO STA. 258+00.00

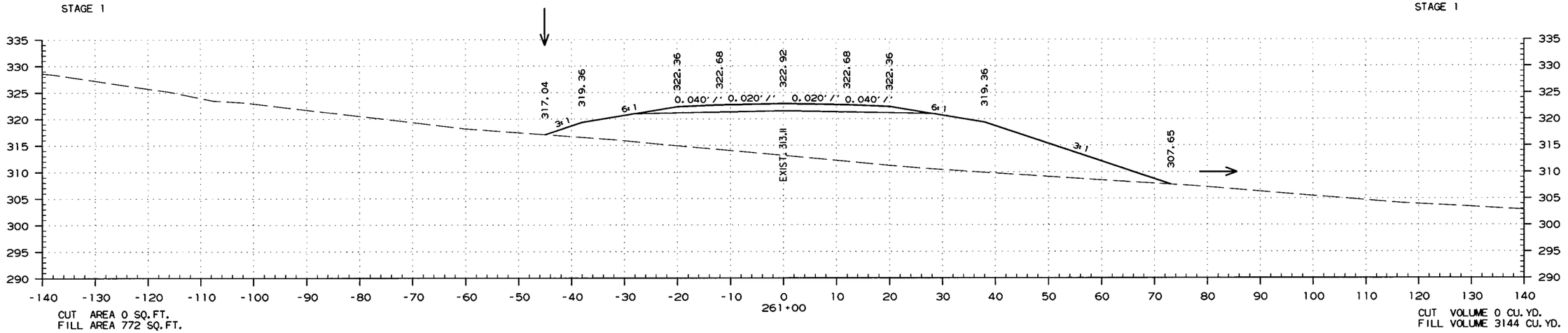
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 204 | 242 |

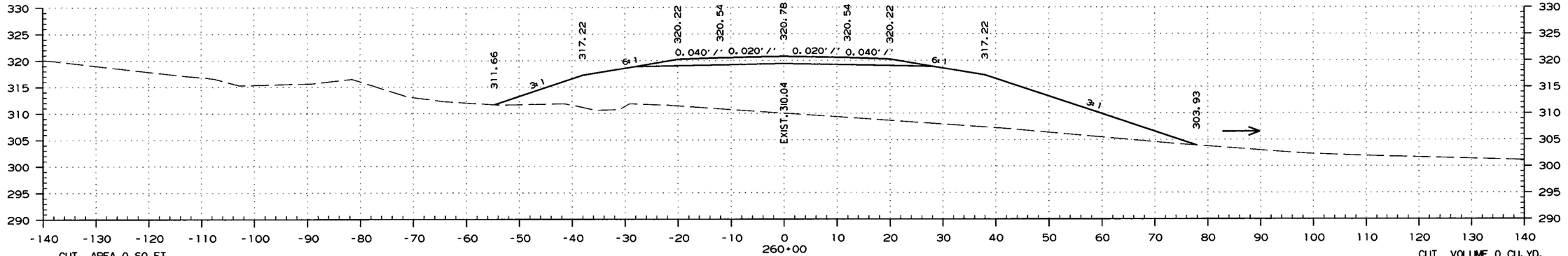
(2) CROSS SECTIONS

STAGE 1



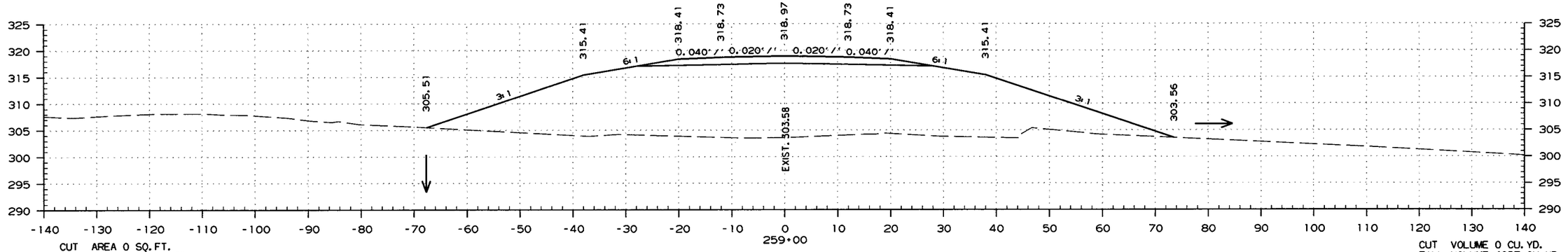

CUT AREA 0 SQ.FT.
FILL AREA 772 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 3144 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 926 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 4226 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 1356 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 4957 CU.YD.

STA. 259+00.00 TO STA. 261+00.00

4/8/2016

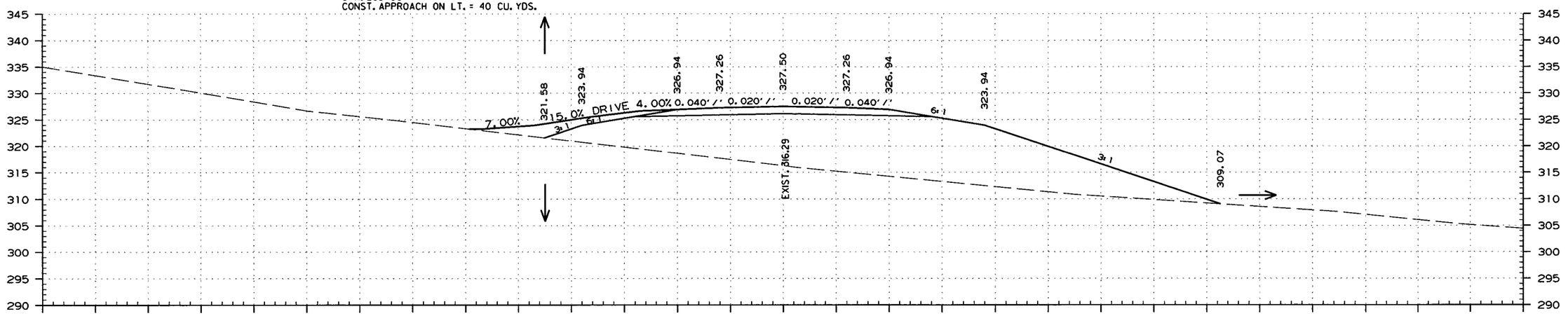
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 205 | 242 |

(2) CROSS SECTIONS

STAGE 1

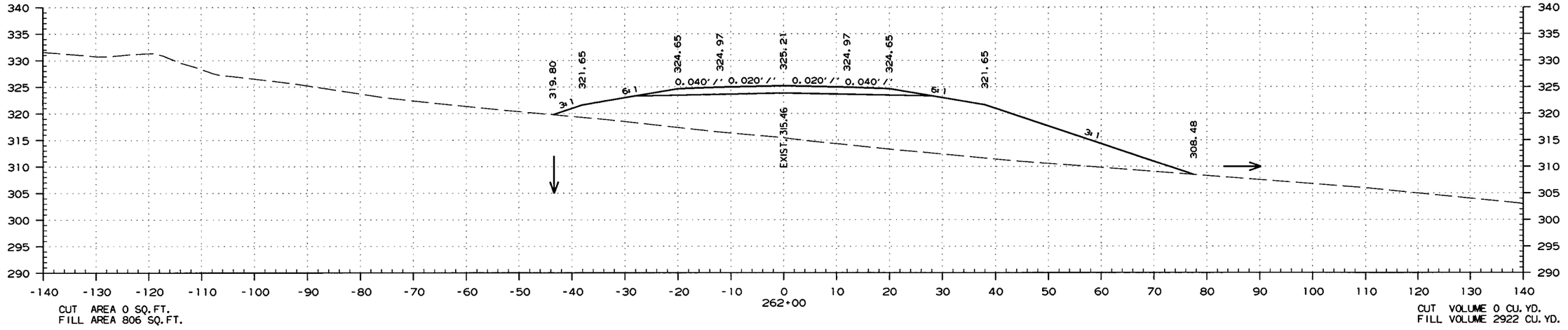
STA. 263+00
CONST. APPROACH ON LT. = 40 CU. YDS.




CUT AREA 0 SQ.FT.
FILL AREA 966 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 3281 CU. YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 806 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 2922 CU. YD.

STA. 262+00.00 TO STA. 263+00.00

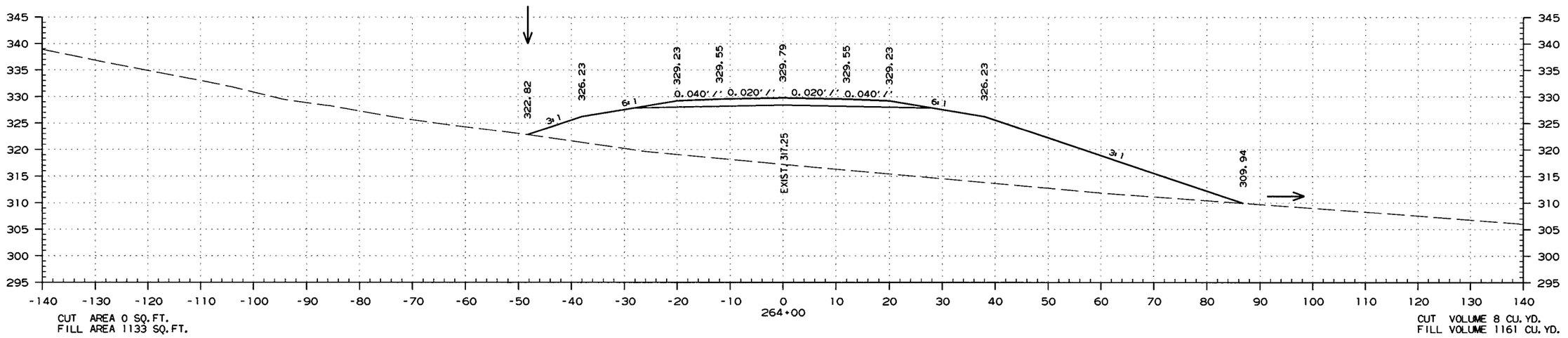
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 206 | 242 |

(2) CROSS SECTIONS

STAGE 1

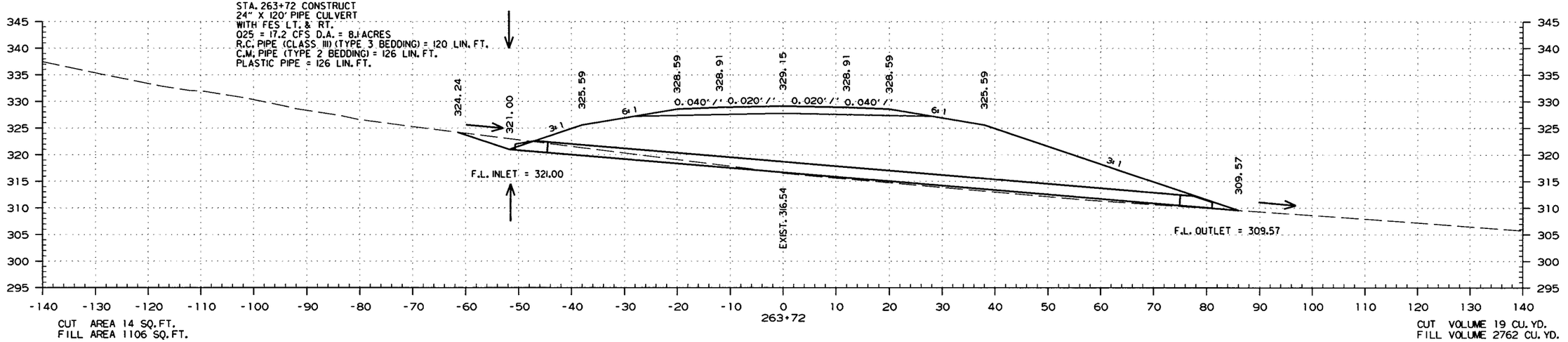



CUT AREA 0 SQ.FT.
FILL AREA 1133 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 1161 CU.YD.

STAGE 1

STA. 263+72 CONSTRUCT
24" X 120' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 17.2 CFS D.A. = 8.1 ACRES
R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 120 LIN. FT.
C.M. PIPE (TYPE 2 BEDDING) = 126 LIN. FT.
PLASTIC PIPE = 126 LIN. FT.




CUT AREA 14 SQ.FT.
FILL AREA 1106 SQ.FT.

CUT VOLUME 19 CU.YD.
FILL VOLUME 2762 CU.YD.

STA. 263+72.00 TO STA. 264+00.00

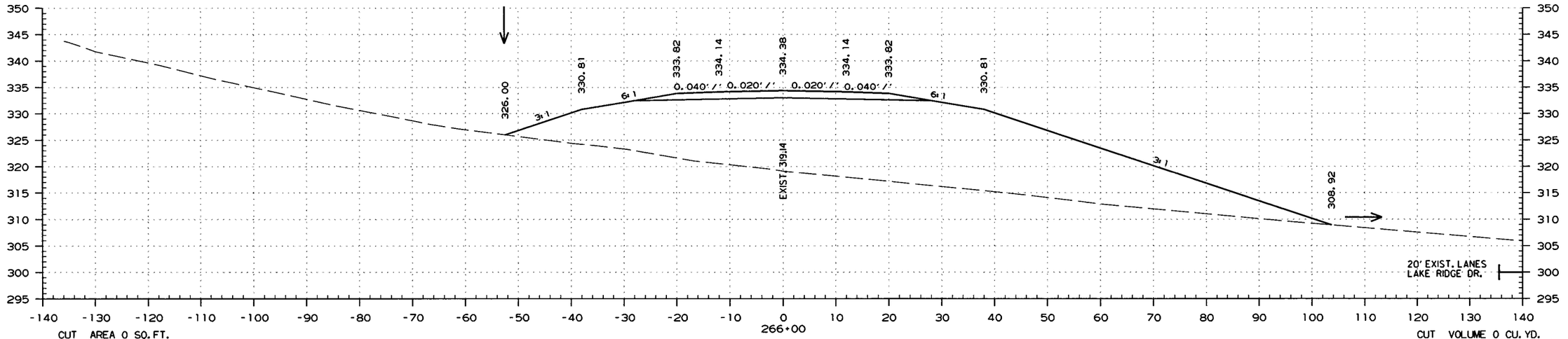
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 207 | 242 |

(2) CROSS SECTIONS

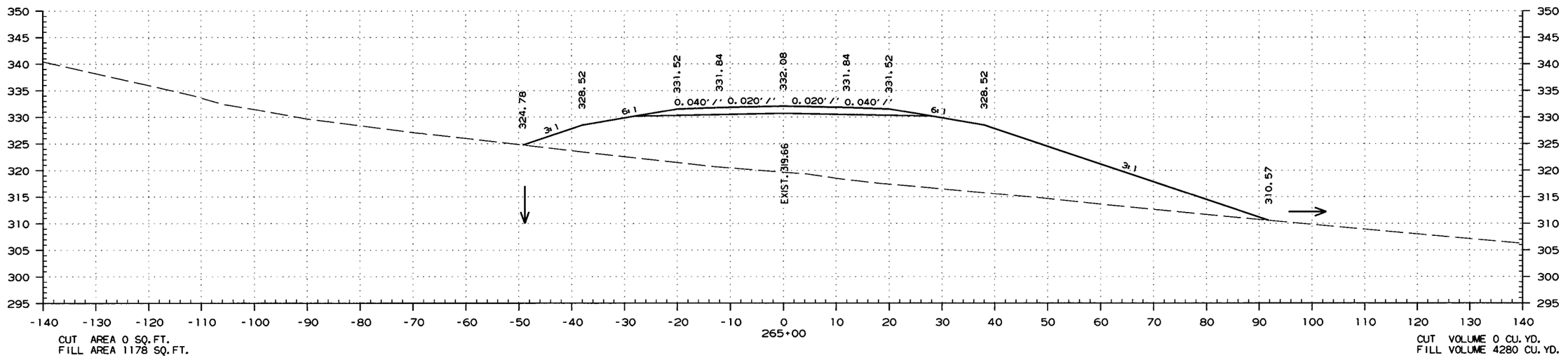
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 1552 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 5055 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 1178 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 4280 CU.YD.

STA. 265+00.00 TO STA. 266+00.00

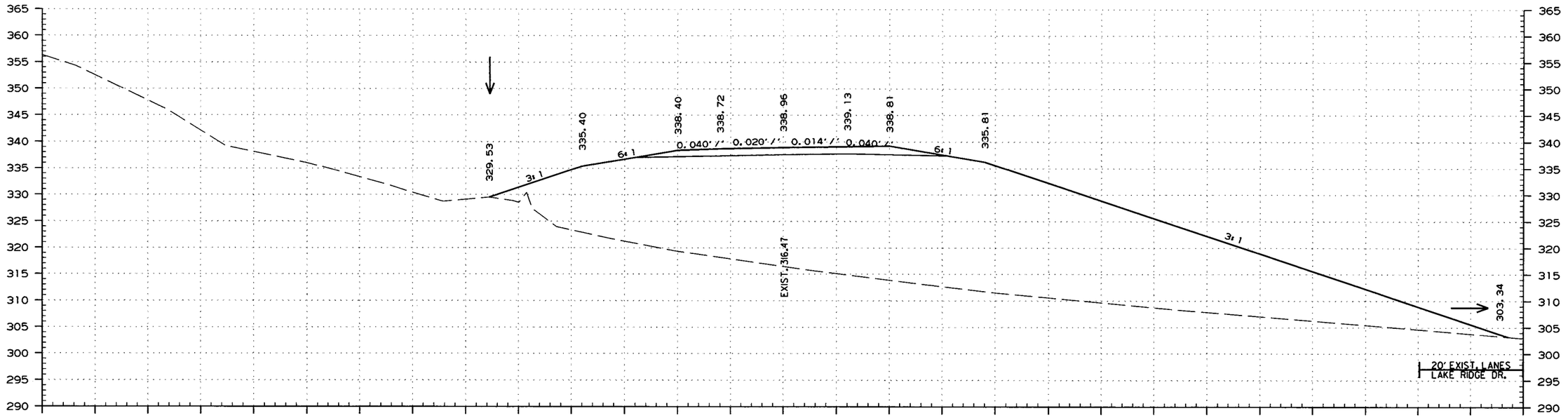
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 208 | 242 |

(2) CROSS SECTIONS

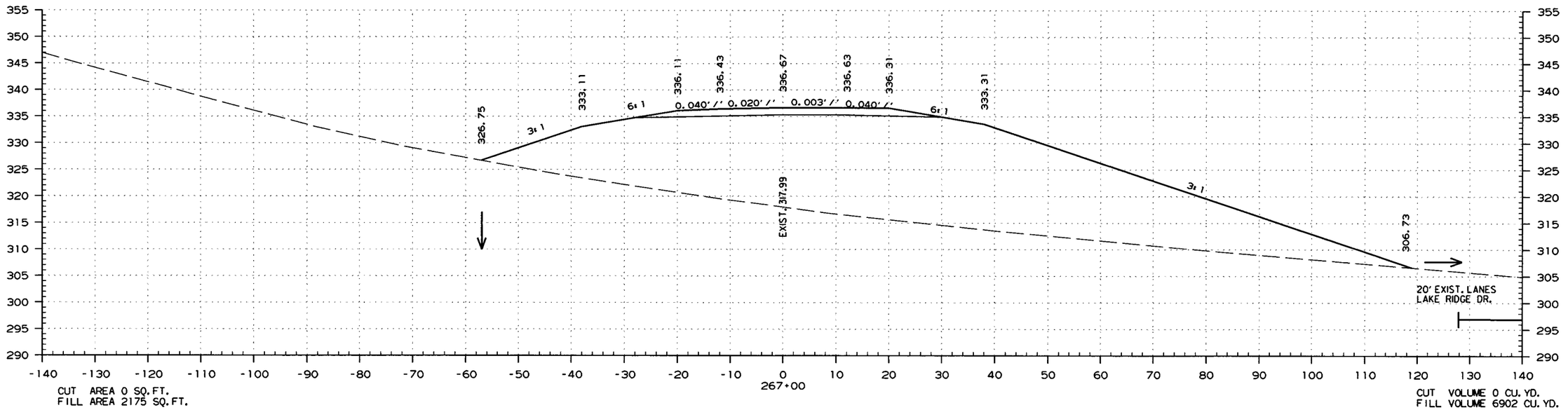
STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2892 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 9383 CU.YD.

STAGE 1




CUT AREA 0 SQ.FT.
FILL AREA 2175 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 6902 CU.YD.

STA. 267+00.00 TO STA. 268+00.00

4/8/2016

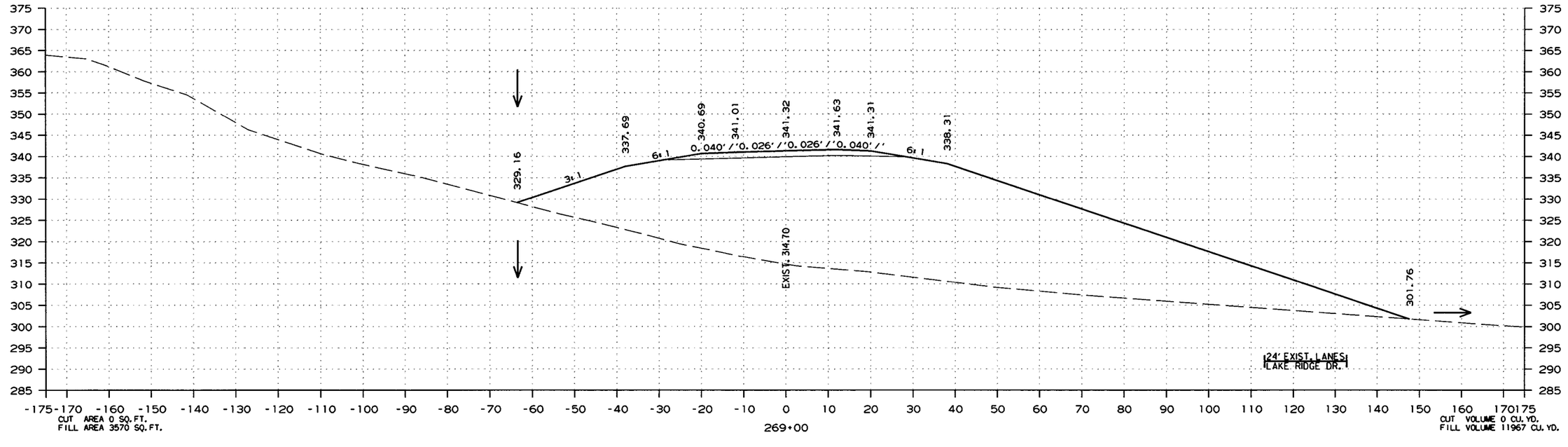
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 209 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




STA. 269+00.00 TO STA. 269+00.00

4/8/2016

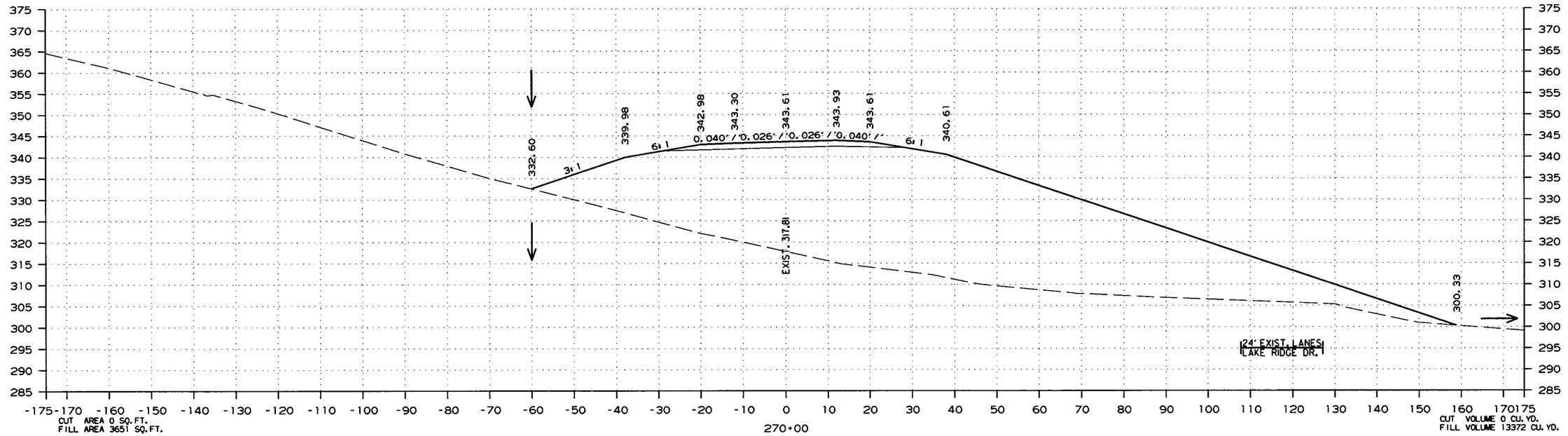
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 210 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




STA. 270+00.00 TO STA. 270+00.00

4/8/2016

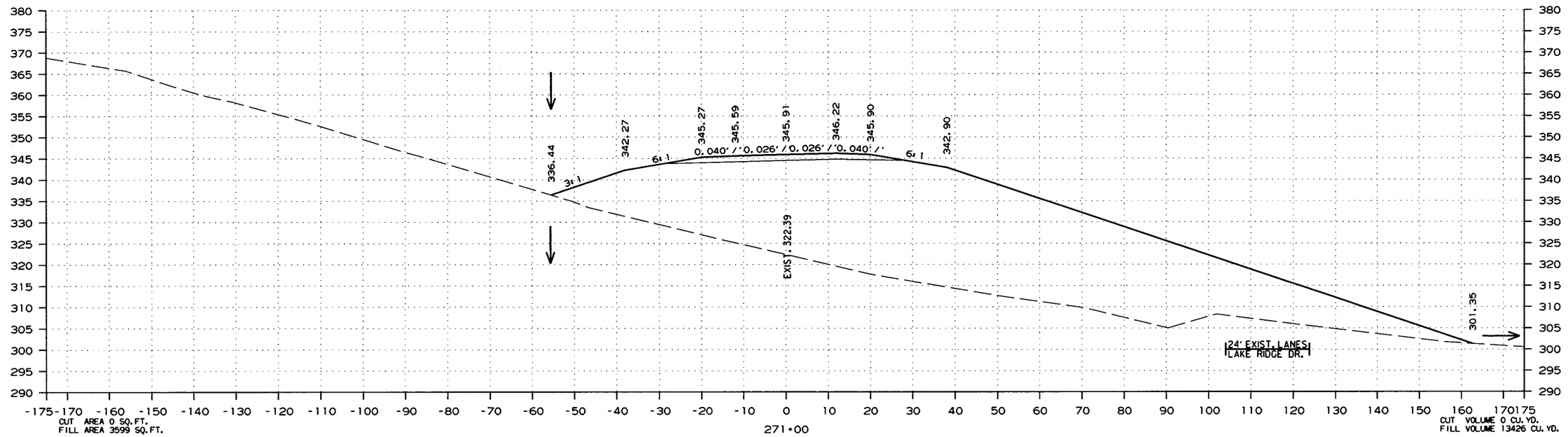
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 211 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




STA. 271+00.00 TO STA. 271+00.00

4/8/2016

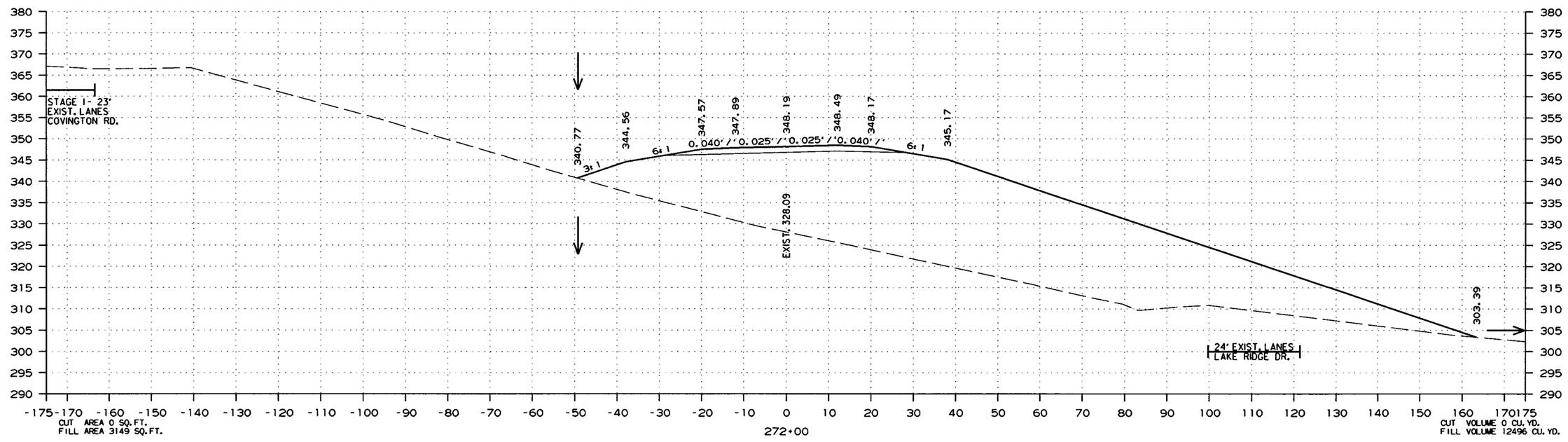
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 212 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1



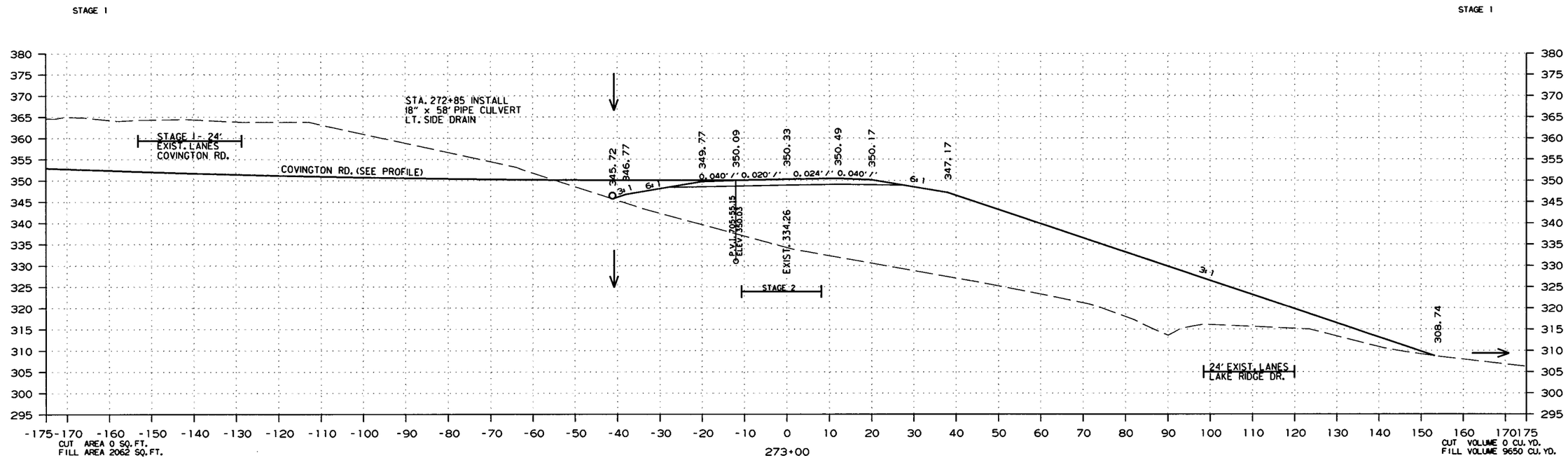

STA. 272+00.00 TO STA. 272+00.00

4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 213 | 242 |

(2) CROSS SECTIONS




STA. 273+00.00 TO STA. 273+00.00

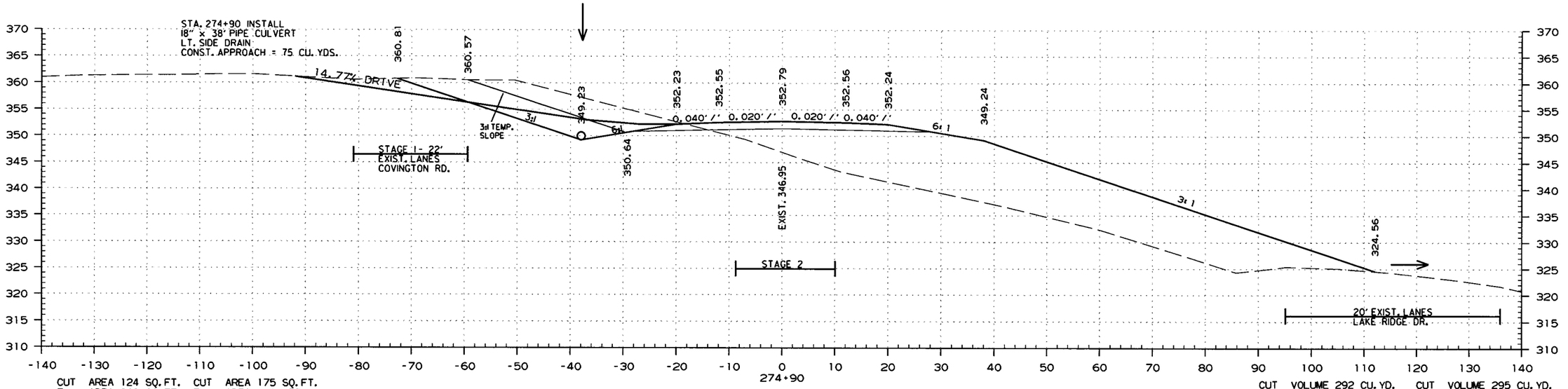
4/8/2016

R050249.DGN

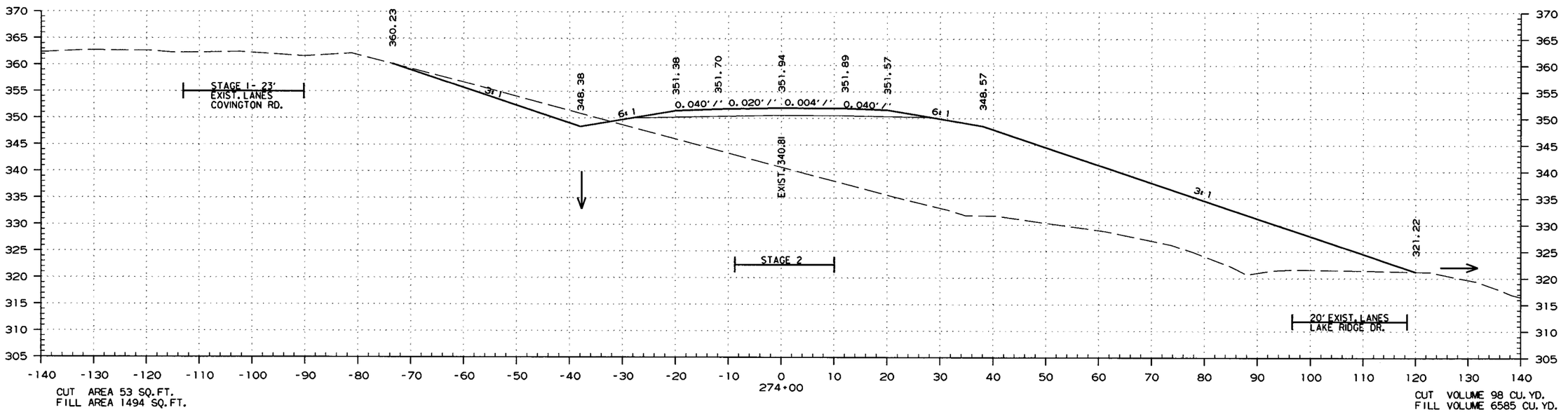
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 214 | 242 |

(2) CROSS SECTIONS

STAGE 1 STAGE 2




STAGE 2 STAGE 1



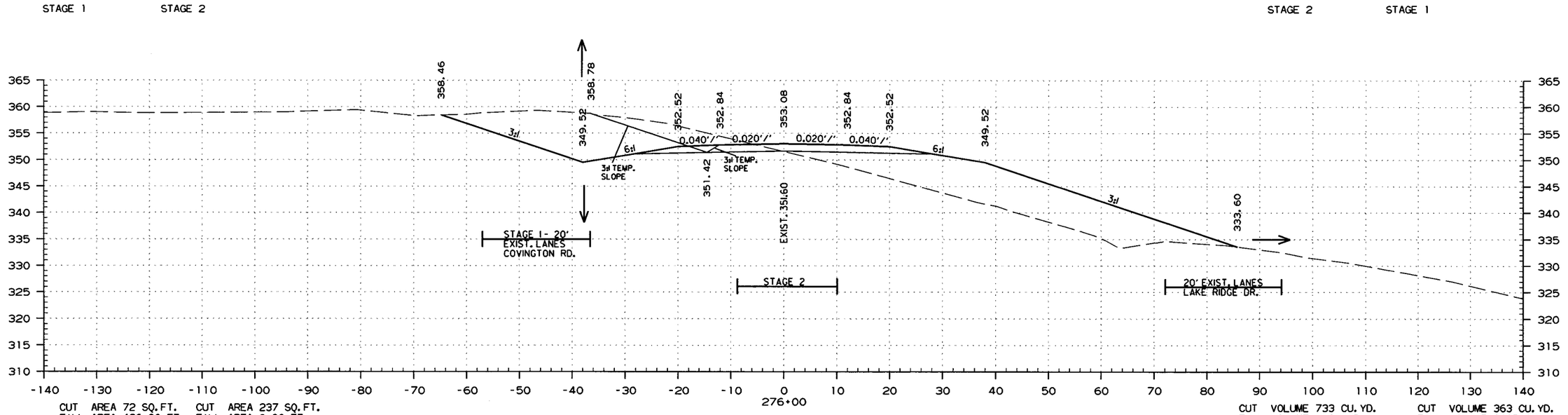

STA. 274+00.00 TO STA. 274+90.00

4/8/2016

R050249.DGN

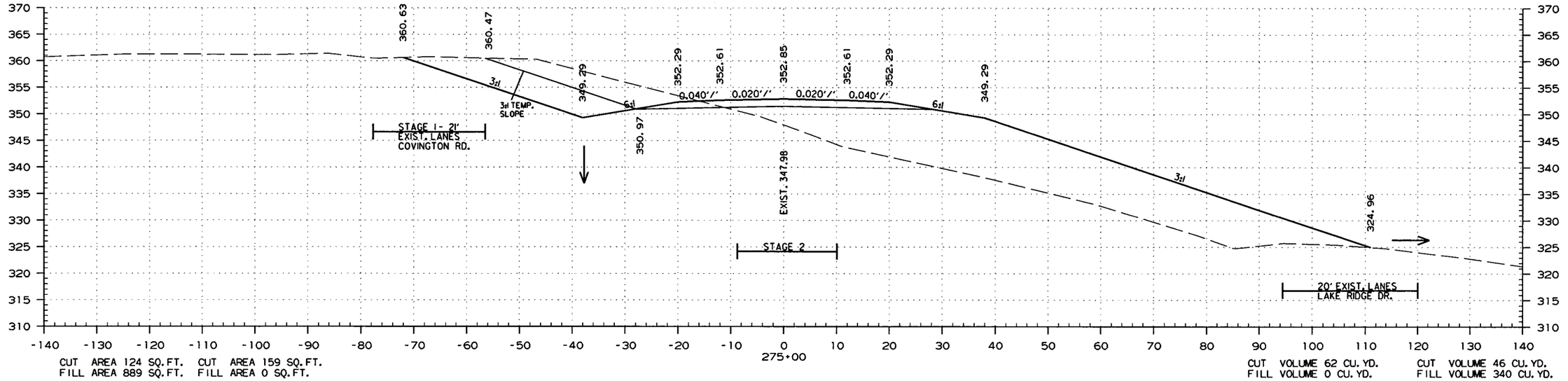
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 215 | 242 |

(2) CROSS SECTIONS




CUT AREA 72 SQ.FT. CUT AREA 237 SQ.FT.
FILL AREA 426 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 733 CU.YD. CUT VOLUME 363 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 2435 CU.YD.




CUT AREA 124 SQ.FT. CUT AREA 159 SQ.FT.
FILL AREA 889 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 62 CU.YD. CUT VOLUME 46 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 340 CU.YD.

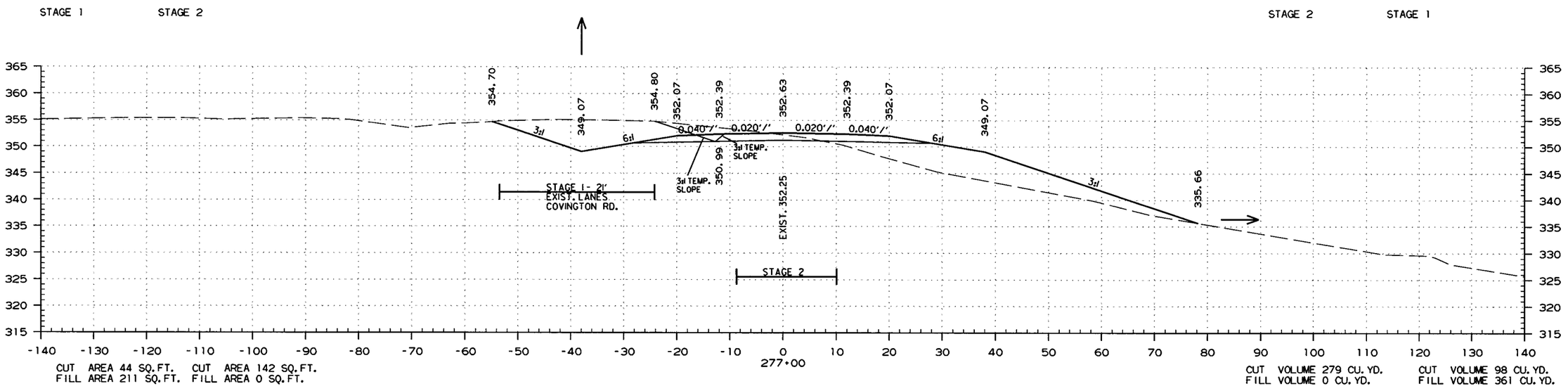
STA. 275+00.00 TO STA. 276+00.00

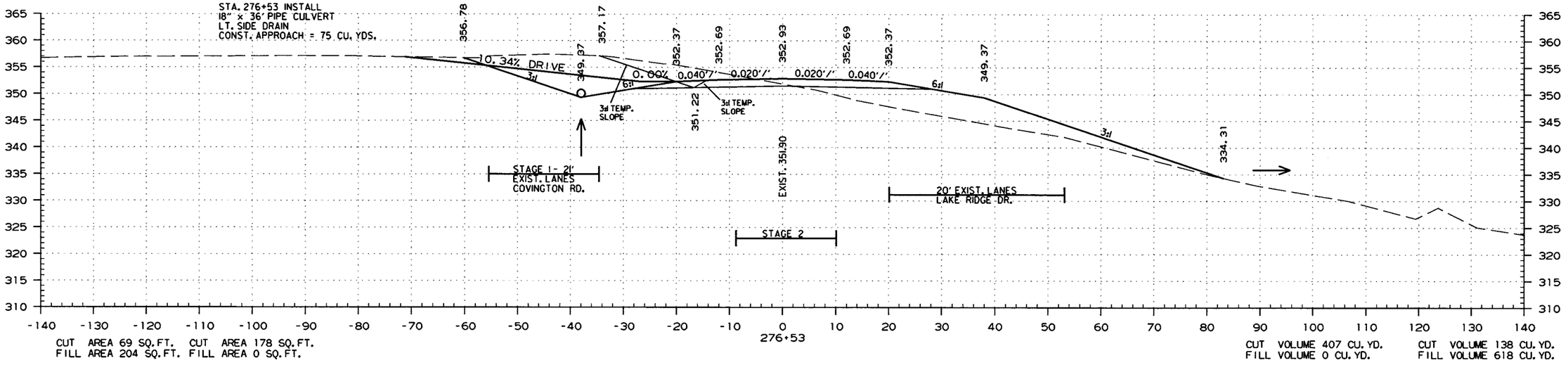
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 216 | 242 |

(2) CROSS SECTIONS



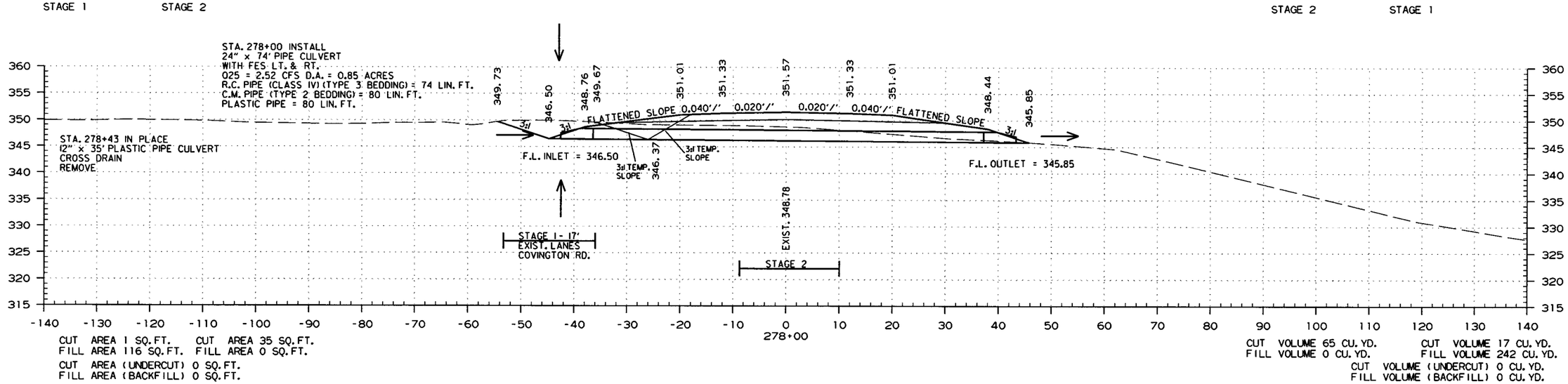

STA. 276+53.00 TO STA. 277+00.00

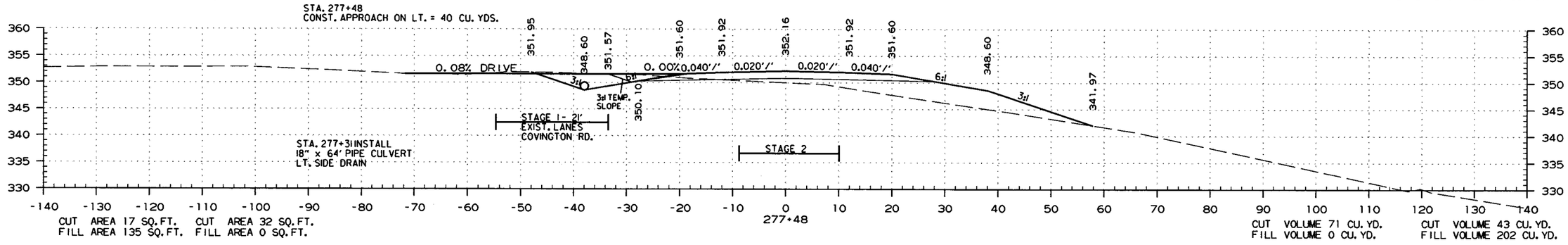
4/8/2016

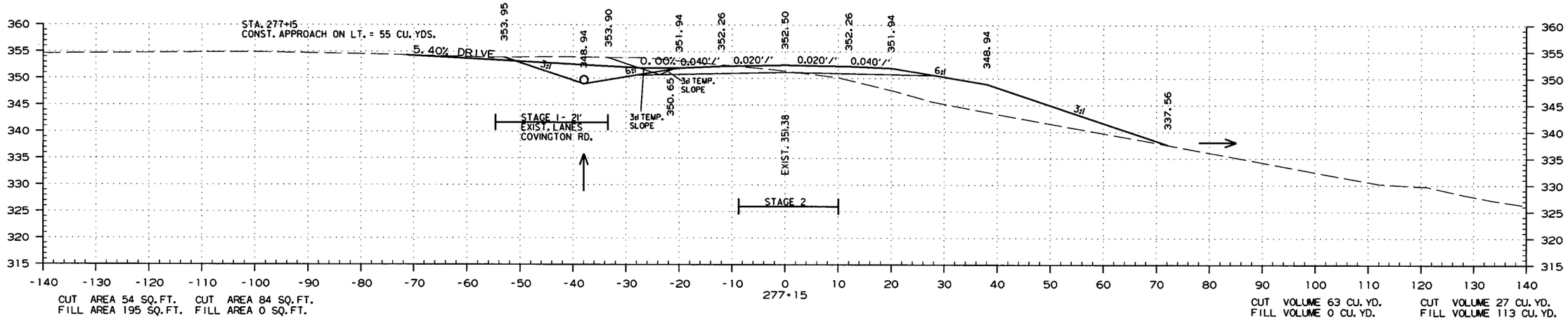
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 217 | 242 |

(2) CROSS SECTIONS



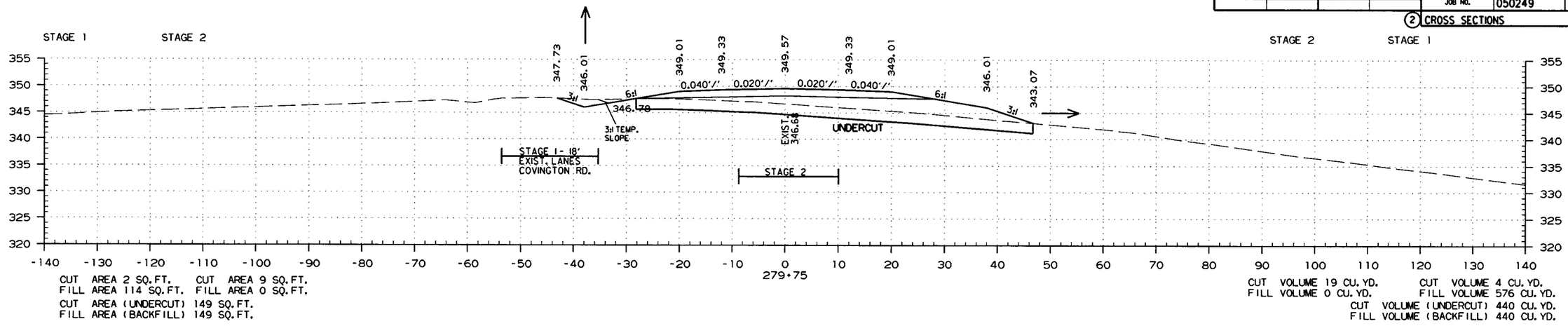

STA. 277+15.00 TO STA. 278+00.00

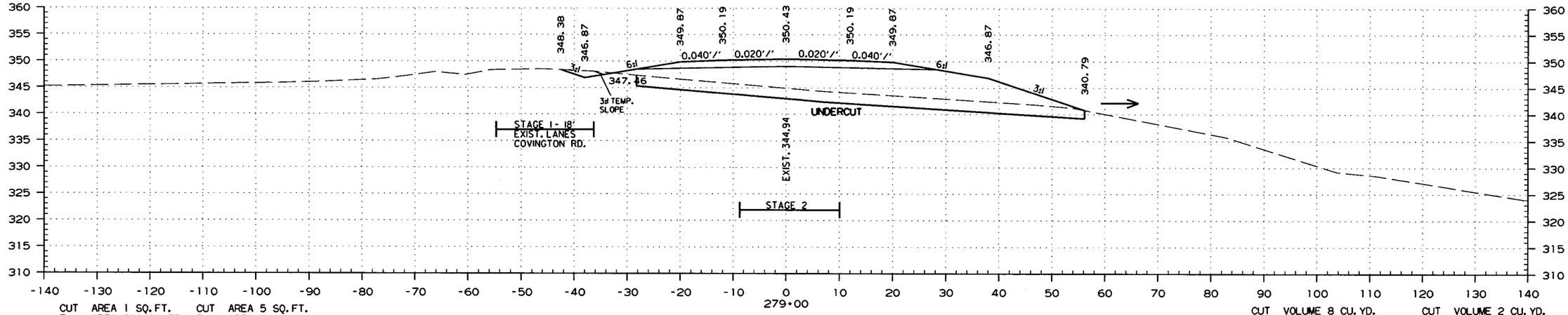
4/8/2016

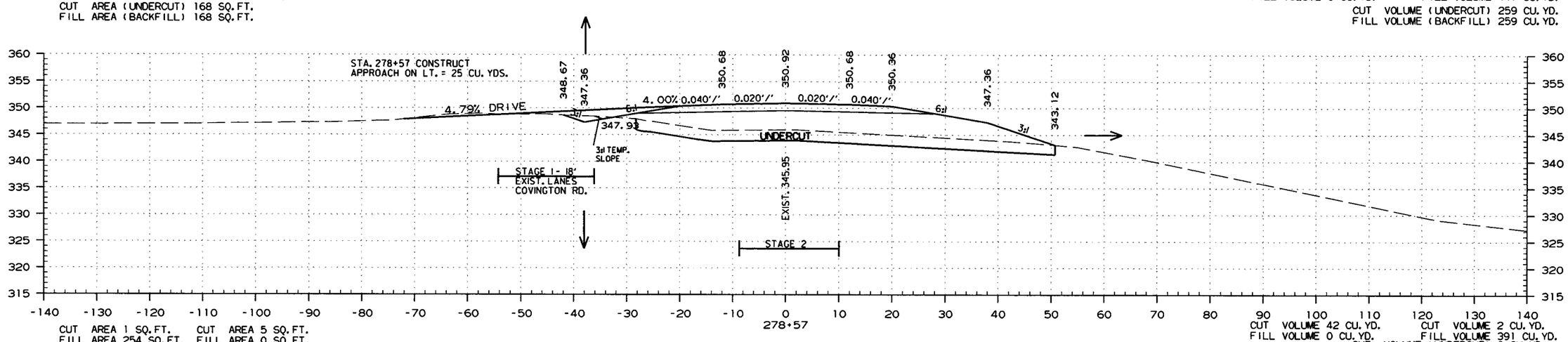
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 218 | 242 |

(2) CROSS SECTIONS




STA. 278+57.00 TO STA. 279+75.00

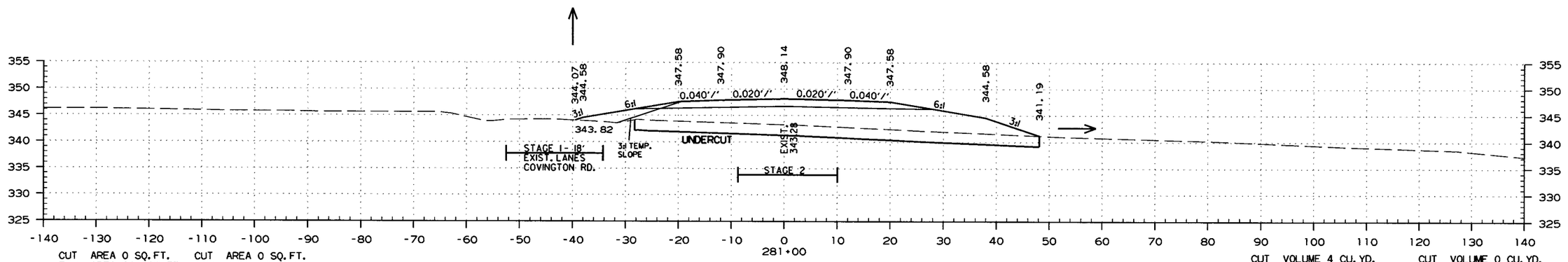
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 219 | 242 |

(2) CROSS SECTIONS

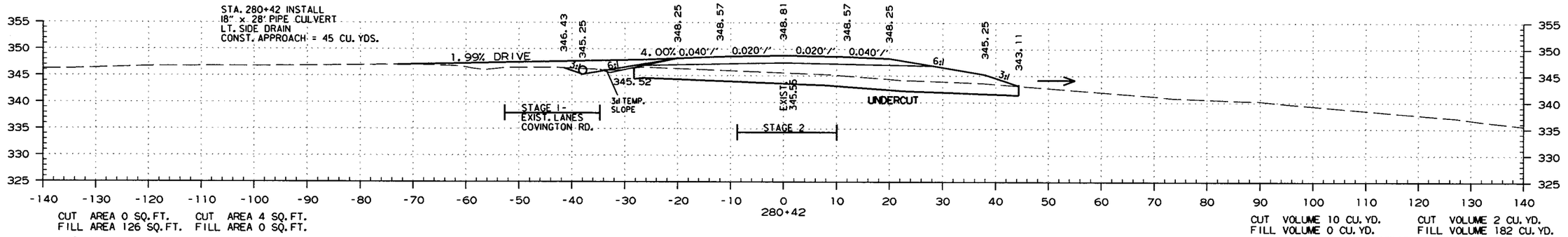
STAGE 1 STAGE 2




CUT AREA 0 SQ.FT. CUT AREA 0 SQ.FT.
FILL AREA 241 SQ.FT. FILL AREA 10 SQ.FT.
CUT AREA (UNDERCUT) 153 SQ.FT.
FILL AREA (BACKFILL) 153 SQ.FT.

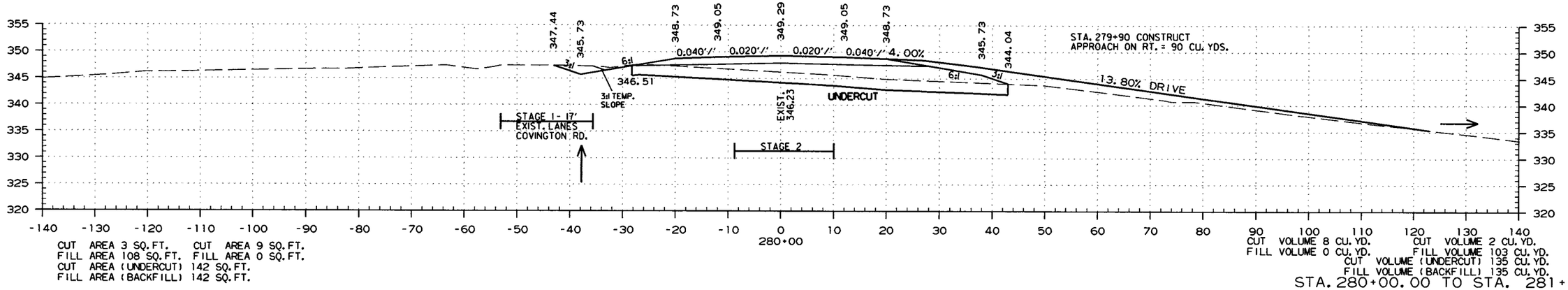
CUT VOLUME 4 CU.YD. CUT VOLUME 0 CU.YD.
FILL VOLUME 11 CU.YD. FILL VOLUME 394 CU.YD.
CUT VOLUME (UNDERCUT) 319 CU.YD.
FILL VOLUME (BACKFILL) 319 CU.YD.

STAGE 2 STAGE 1




CUT AREA 0 SQ.FT. CUT AREA 4 SQ.FT.
FILL AREA 126 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA (UNDERCUT) 144 SQ.FT.
FILL AREA (BACKFILL) 144 SQ.FT.

CUT VOLUME 10 CU.YD. CUT VOLUME 2 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 182 CU.YD.
CUT VOLUME (UNDERCUT) 222 CU.YD.
FILL VOLUME (BACKFILL) 222 CU.YD.




CUT AREA 3 SQ.FT. CUT AREA 9 SQ.FT.
FILL AREA 108 SQ.FT. FILL AREA 0 SQ.FT.
CUT AREA (UNDERCUT) 142 SQ.FT.
FILL AREA (BACKFILL) 142 SQ.FT.

CUT VOLUME 8 CU.YD. CUT VOLUME 2 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 103 CU.YD.
CUT VOLUME (UNDERCUT) 135 CU.YD.
FILL VOLUME (BACKFILL) 135 CU.YD.

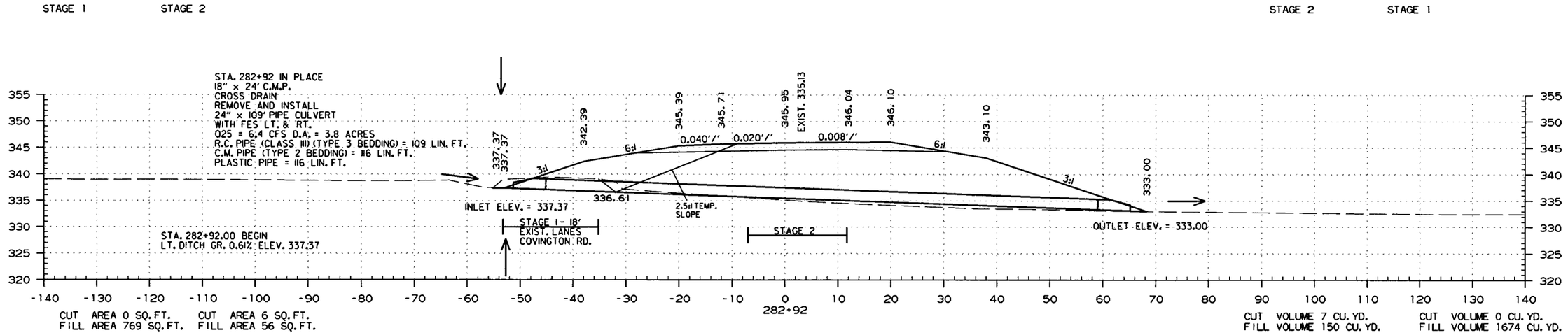
STA. 280+00.00 TO STA. 281+00.00

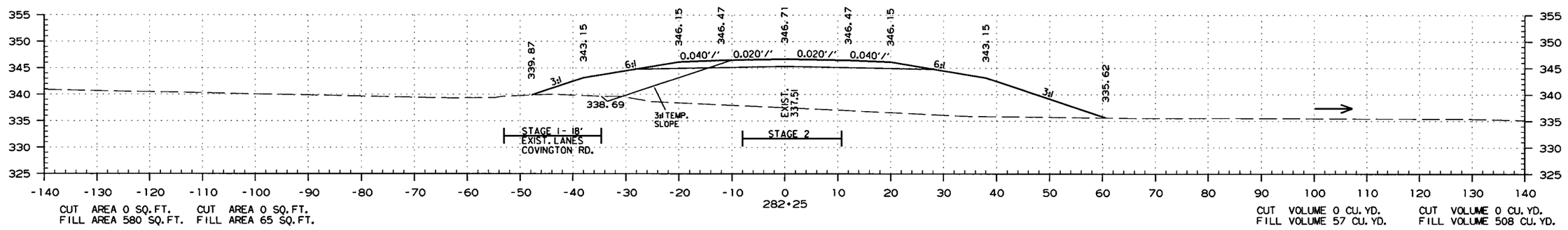
4/8/2016

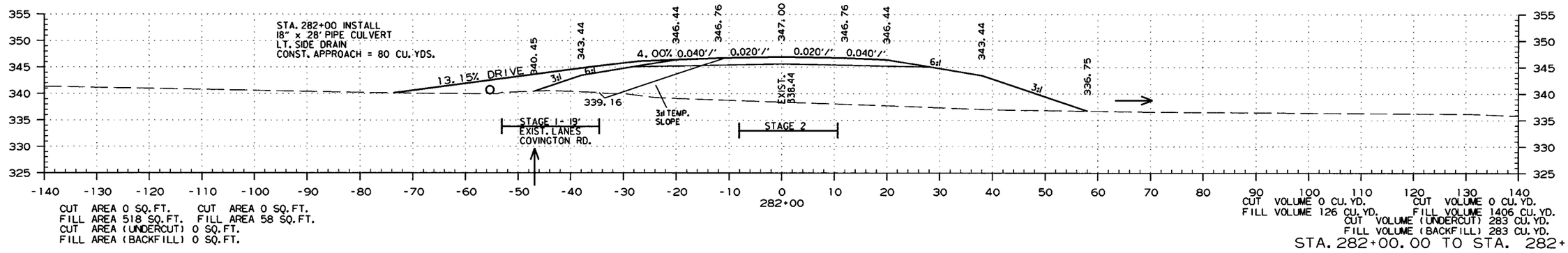
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 220 | 242 |

(2) CROSS SECTIONS



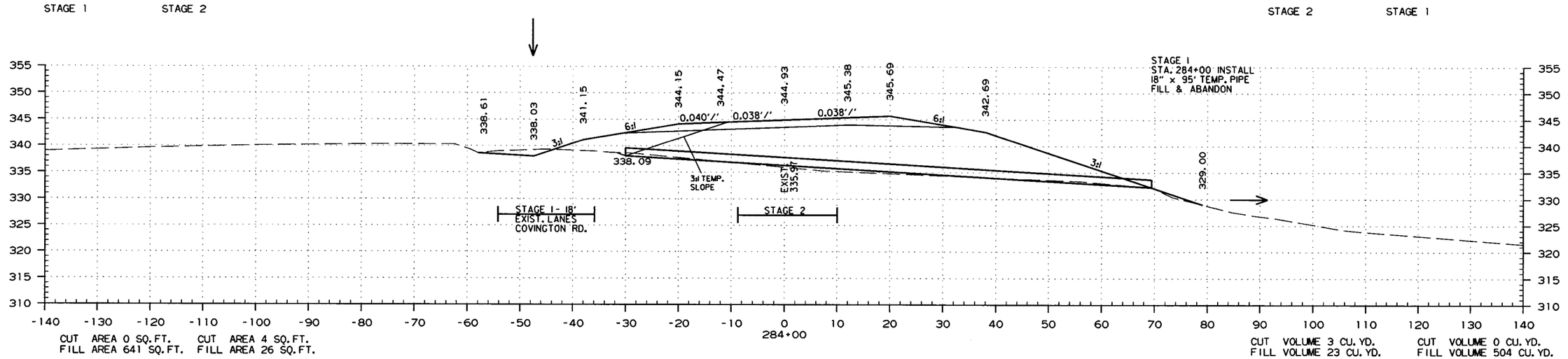

STA. 282+00.00 TO STA. 282+92.00

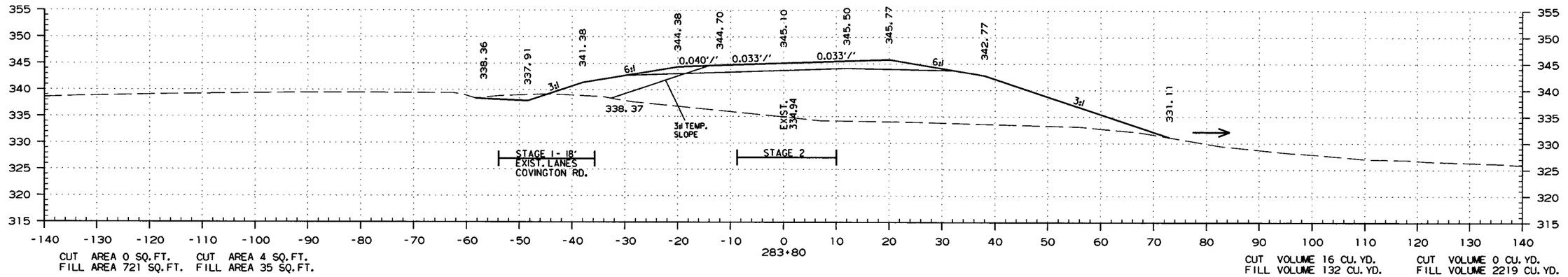
4/8/2016

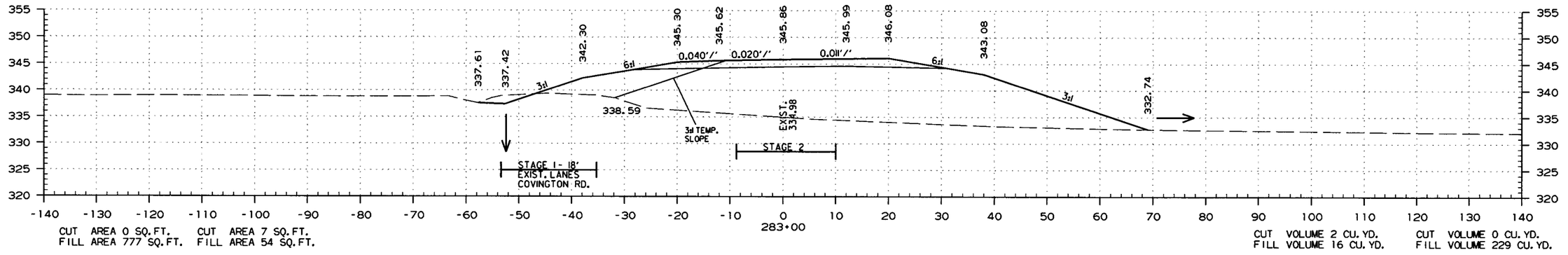
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 221 | 242 |

(2) CROSS SECTIONS




STA. 283+00.00 TO STA. 284+00.00

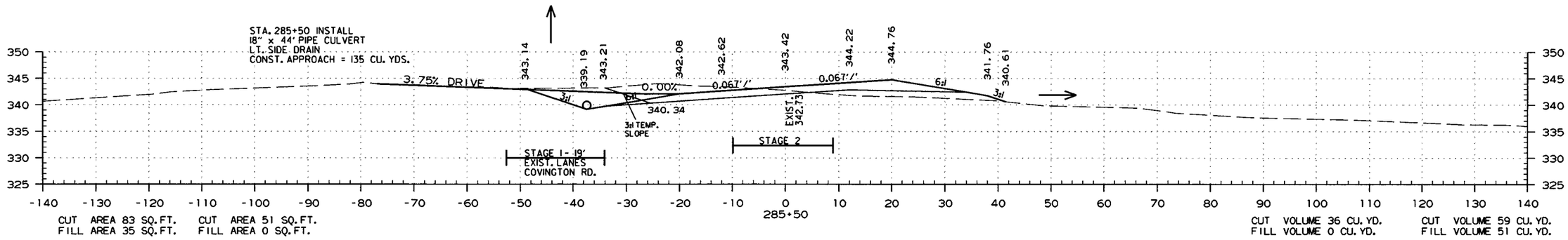
4/8/2016

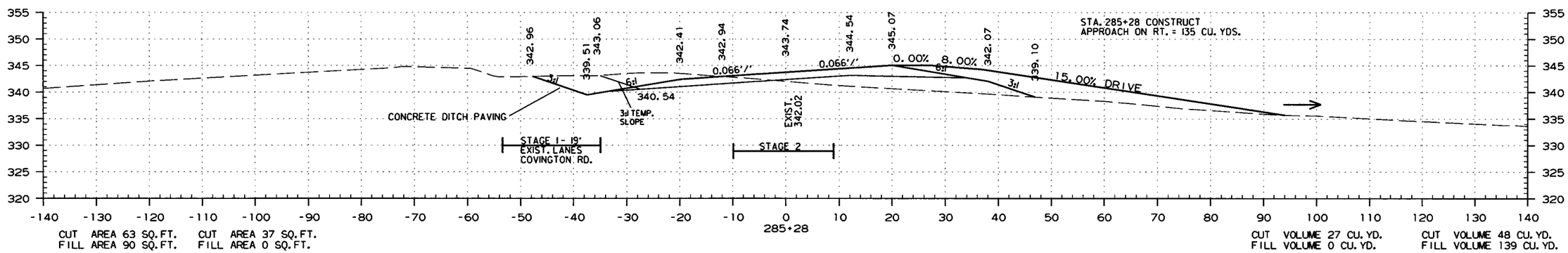
R050249.DGN

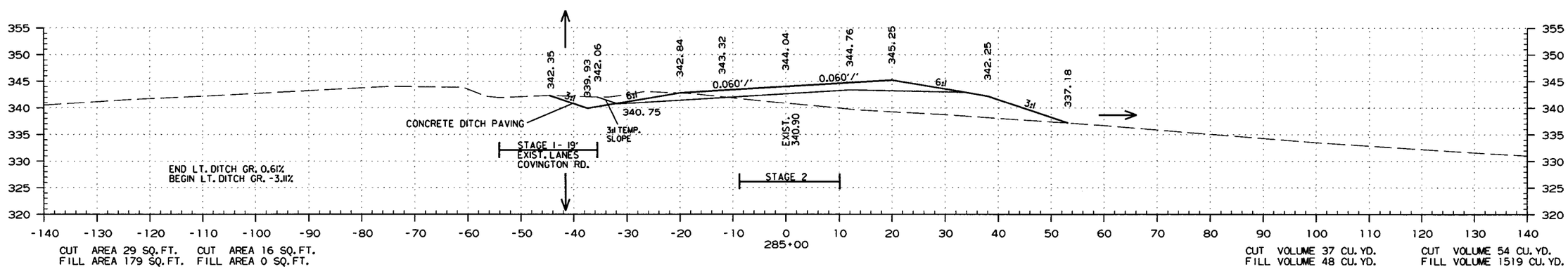
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 222 | 242 |

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 2 STAGE 1




STA. 285+00.00 TO STA. 285+50.00

4/8/2016

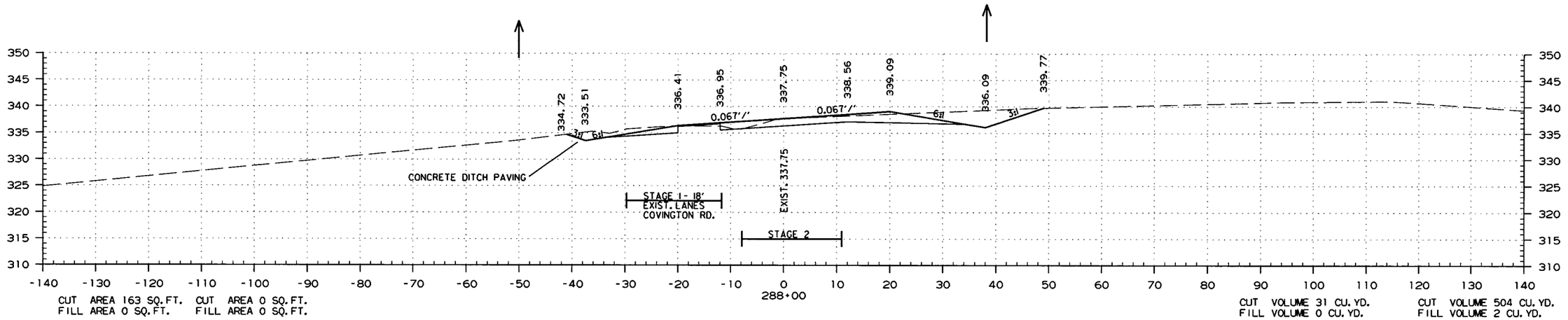
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 223 | 242 |

(2) CROSS SECTIONS

STAGE 1 STAGE 2

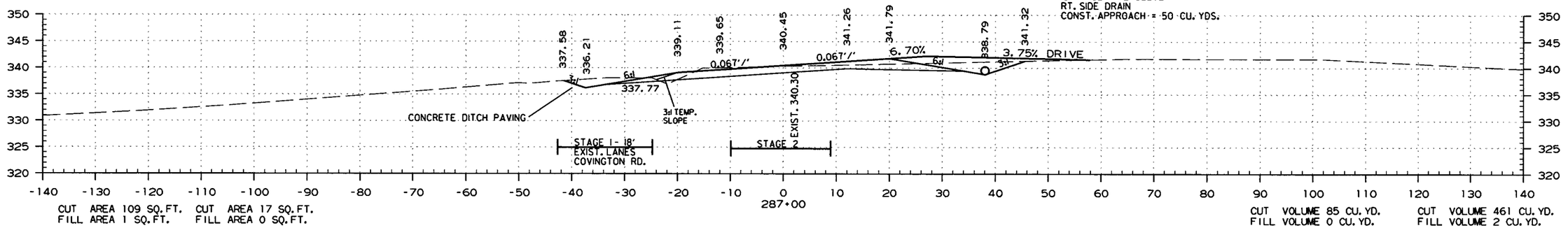
STAGE 2 STAGE 1




CUT AREA 163 SQ.FT. CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT. FILL AREA 0 SQ.FT.

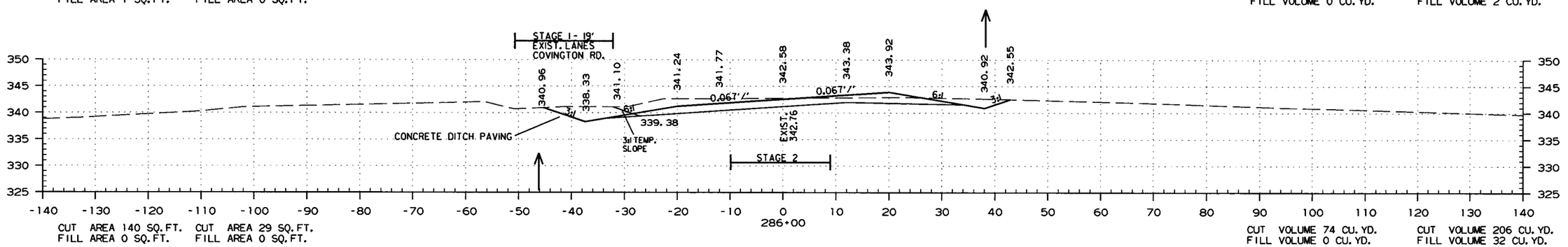
CUT VOLUME 31 CU.YD. CUT VOLUME 504 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 2 CU.YD.

STA. 287+00 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 50 CU. YDS.




CUT AREA 109 SQ.FT. CUT AREA 17 SQ.FT.
FILL AREA 1 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 85 CU.YD. CUT VOLUME 461 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 2 CU.YD.




CUT AREA 140 SQ.FT. CUT AREA 29 SQ.FT.
FILL AREA 0 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 74 CU.YD. CUT VOLUME 206 CU.YD.
FILL VOLUME 0 CU.YD. FILL VOLUME 32 CU.YD.

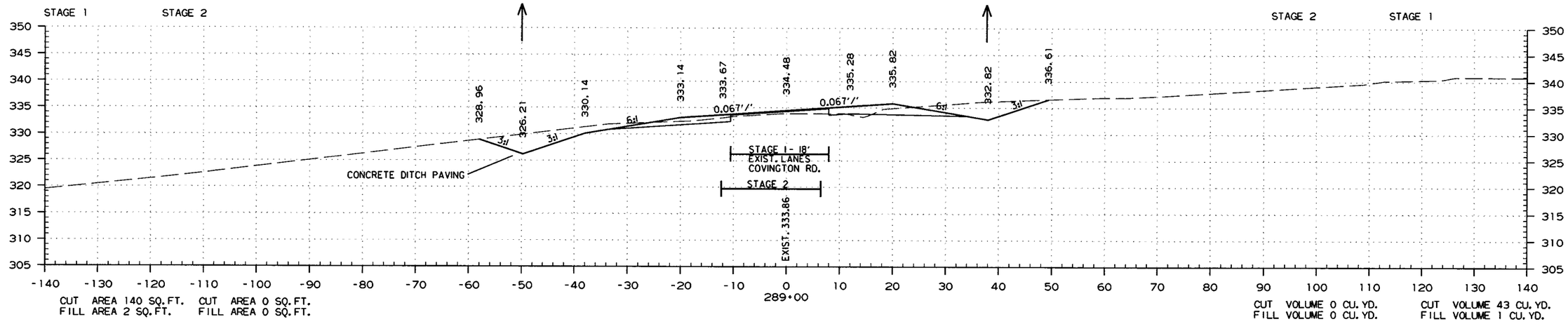
STA. 286+00.00 TO STA. 288+00.00

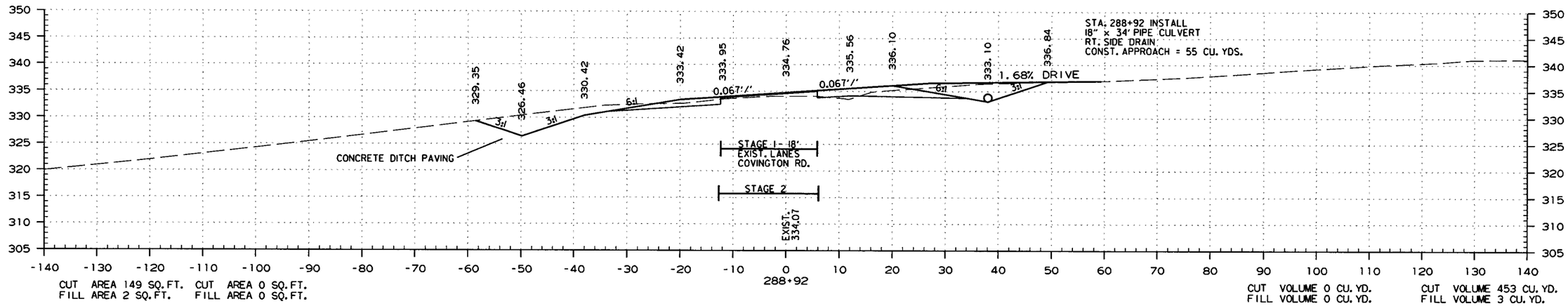
4/8/2016

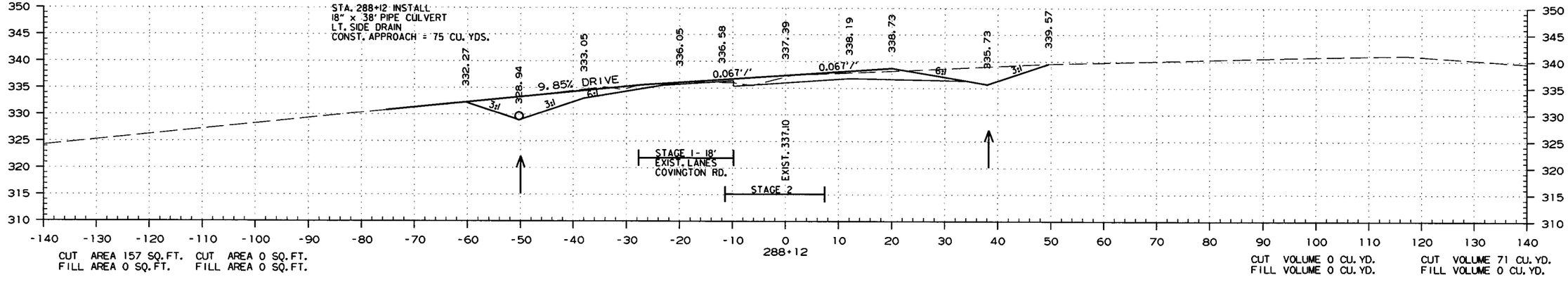
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 224 | 242 |

(2) CROSS SECTIONS



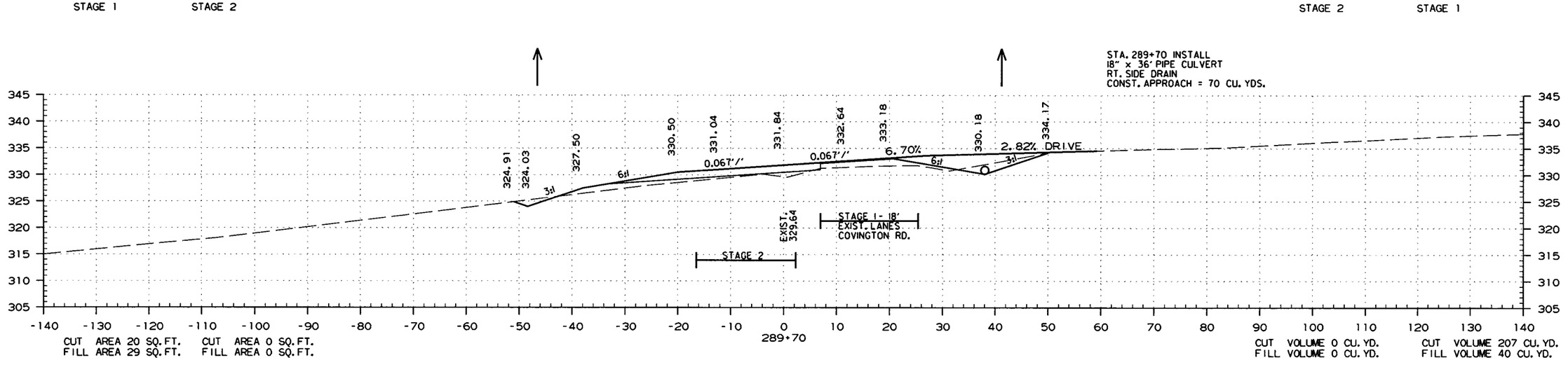

STA. 288+12.00 TO STA. 289+00.00

4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 225 | 242 |

(2) CROSS SECTIONS



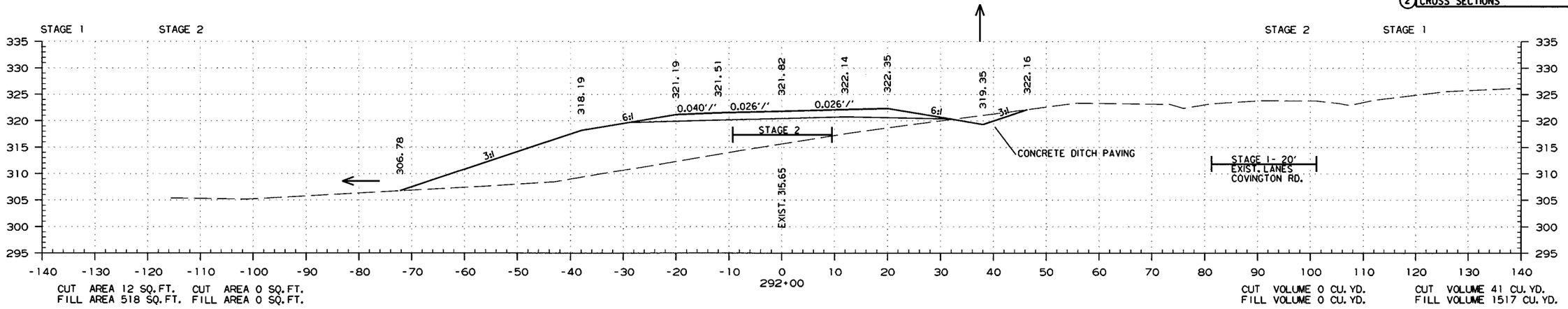

STA. 289+70.00 TO STA. 289+70.00

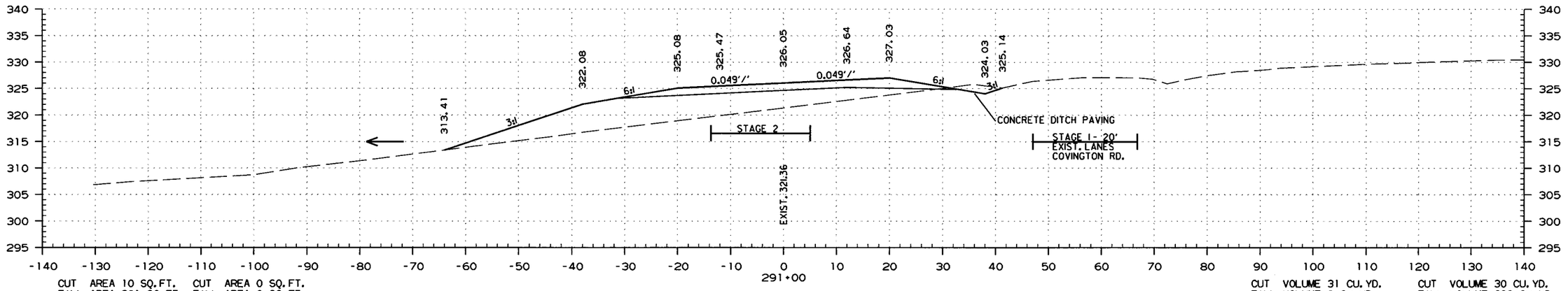
4/8/2016

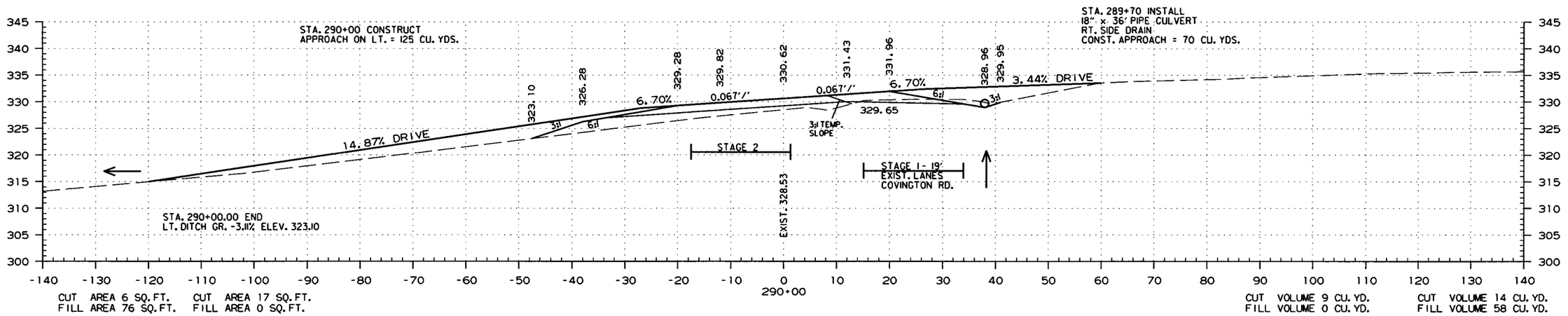
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 226 | 242 |

(2) CROSS SECTIONS



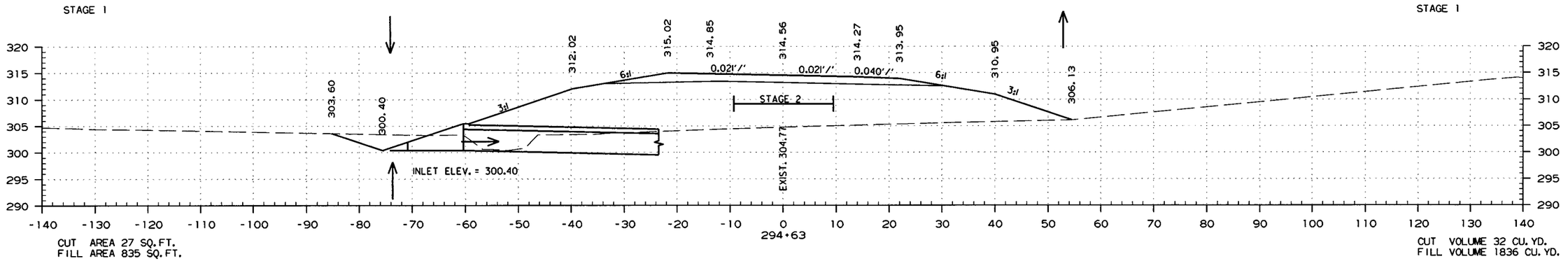

STA. 290+00.00 TO STA. 292+00.00

4/8/2016

R050249.DGN

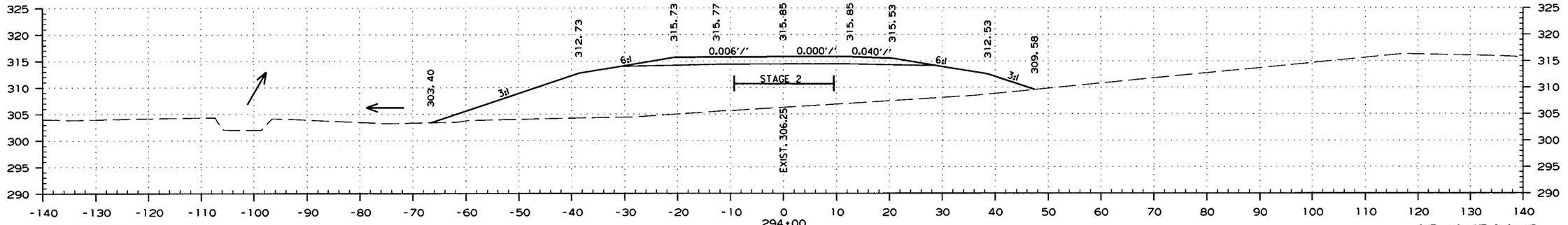
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 227 | 242 |

(2) CROSS SECTIONS



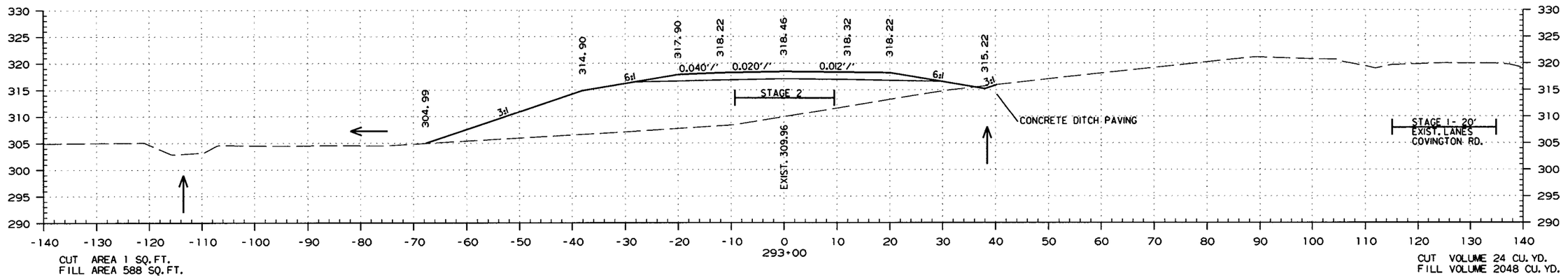

CUT AREA 27 SQ.FT.
FILL AREA 835 SQ.FT.

CUT VOLUME 32 CU. YD.
FILL VOLUME 1836 CU. YD.




CUT AREA 0 SQ.FT.
FILL AREA 739 SQ.FT.

CUT VOLUME 2 CU. YD.
FILL VOLUME 2457 CU. YD.




CUT AREA 1 SQ.FT.
FILL AREA 588 SQ.FT.

CUT VOLUME 24 CU. YD.
FILL VOLUME 2048 CU. YD.

STA. 293+00.00 TO STA. 294+63.00

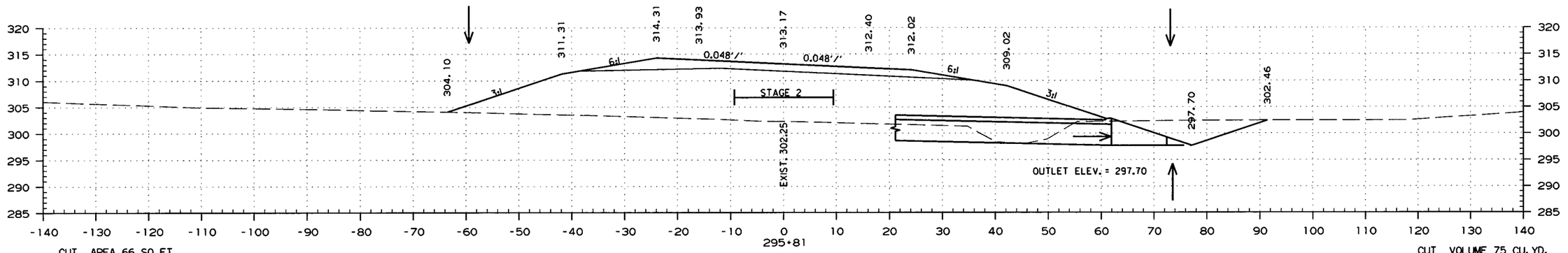
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 228 | 242 |

(2) CROSS SECTIONS

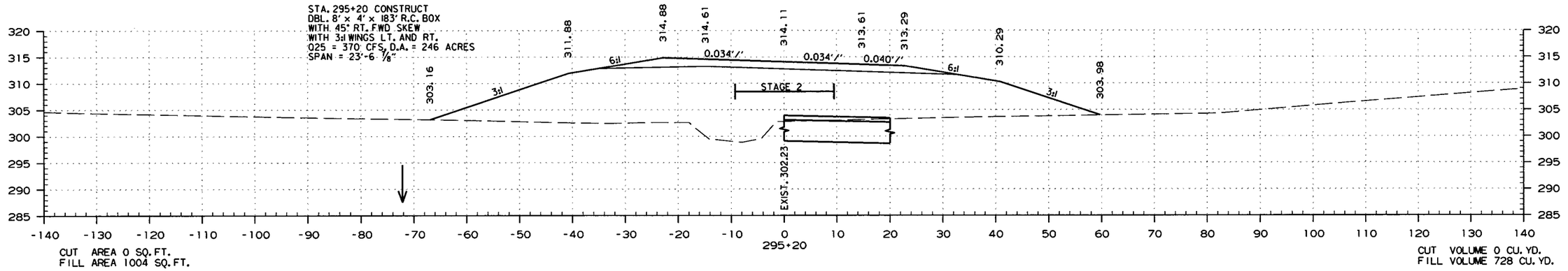
STAGE 1




CUT AREA 66 SQ.FT.
FILL AREA 969 SQ.FT.

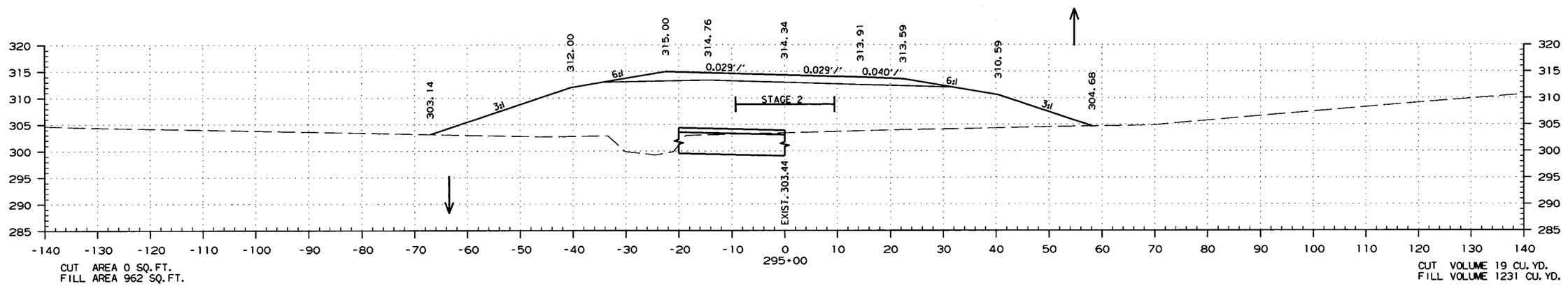
CUT VOLUME 75 CU.YD.
FILL VOLUME 2229 CU.YD.

STA. 295+20 CONSTRUCT
DBL. 8' x 4' x 183' R.C. BOX
WITH 45° RT. FWD SKEW
WITH 3:1 WINGS LT. AND RT.
Q25 = 370 CFS, D.A. = 246 ACRES
SPAN = 23'-6 1/8"




CUT AREA 0 SQ.FT.
FILL AREA 1004 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 728 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 962 SQ.FT.

CUT VOLUME 19 CU.YD.
FILL VOLUME 1231 CU.YD.

STA. 295+00.00 TO STA. 295+81.00

4/8/2016

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 229 | 242 |
| | | | | (2) CROSS SECTIONS | | | | |

STAGE 1

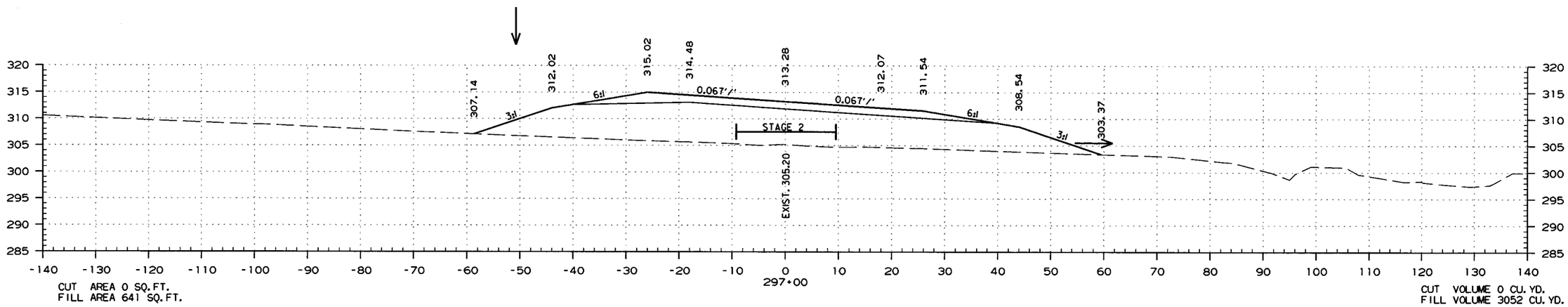
STAGE 1

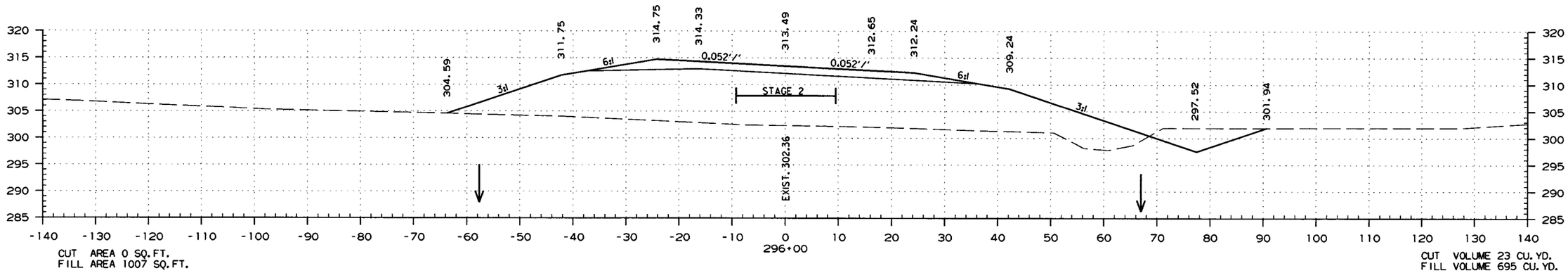
STA. 298+27.20 END JOB 050249

STA. 298+10.57 END FULL BUILD & BEGIN PAVING & BEGIN JOB 050251

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

CUT VOLUME 0 CU.YD.
FILL VOLUME 1313 CU.YD.




STA. 296+00.00 TO STA. 297+00.00

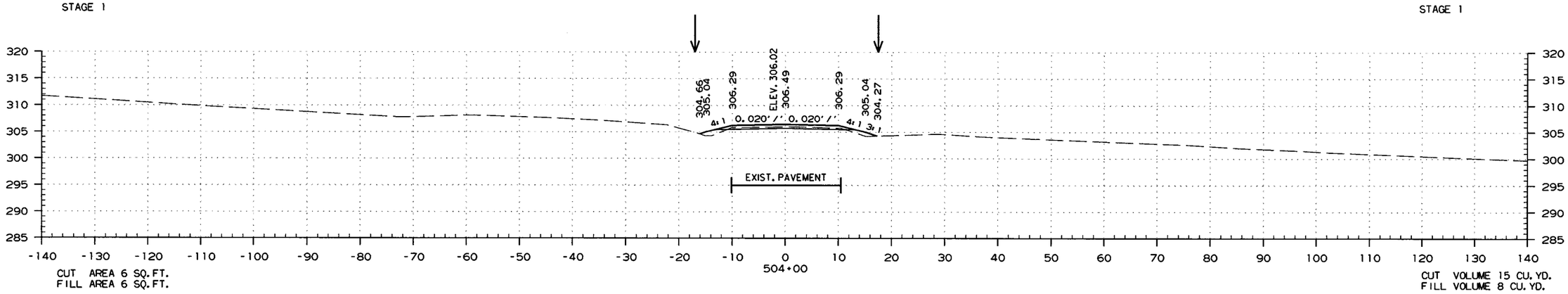
4/8/2016

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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. | | 050249 | 230 | 242 |

(2) CROSS SECTIONS

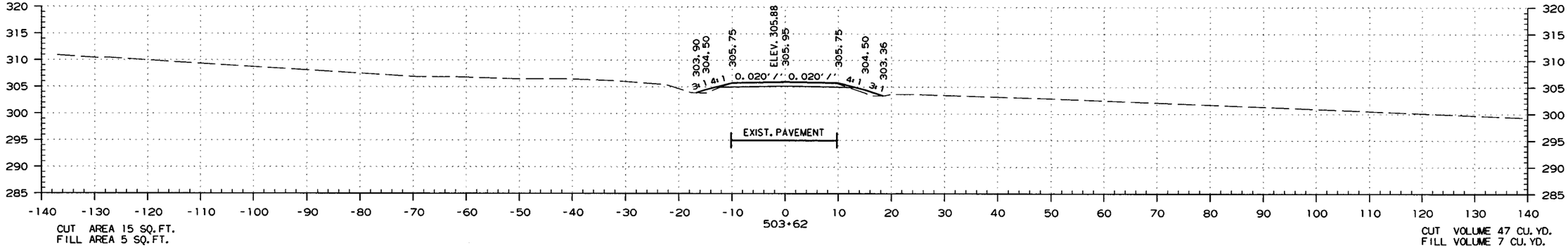
STAGE 1




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

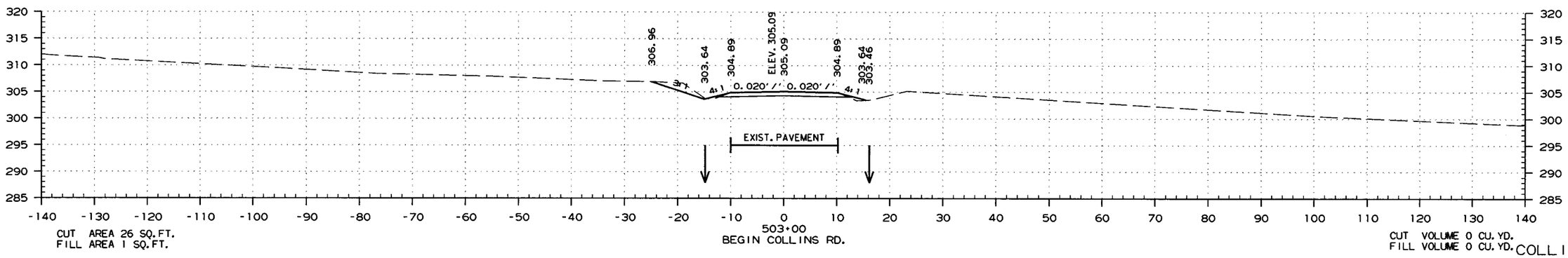
STAGE 1

CUT VOLUME 15 CU.YD.
FILL VOLUME 8 CU.YD.




CUT AREA 15 SQ.FT.
FILL AREA 5 SQ.FT.

CUT VOLUME 47 CU.YD.
FILL VOLUME 7 CU.YD.




CUT AREA 26 SQ.FT.
FILL AREA 1 SQ.FT.

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

COLLINS RD.
STA. 503+00.00 TO STA. 504+00.00

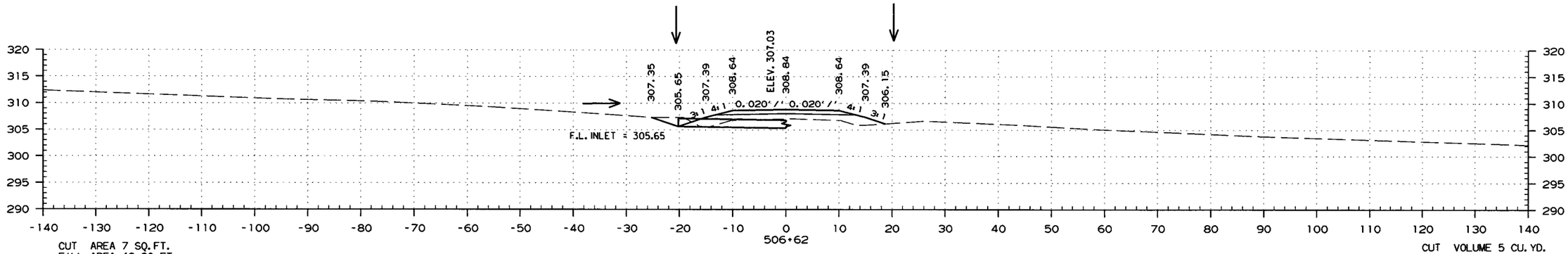
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 231 | 242 |

(2) CROSS SECTIONS

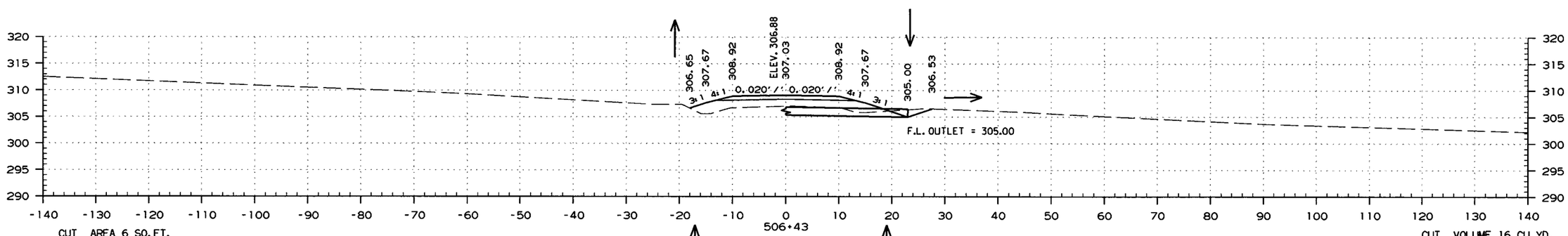
STAGE 1




CUT AREA 7 SQ.FT.
FILL AREA 43 SQ.FT.

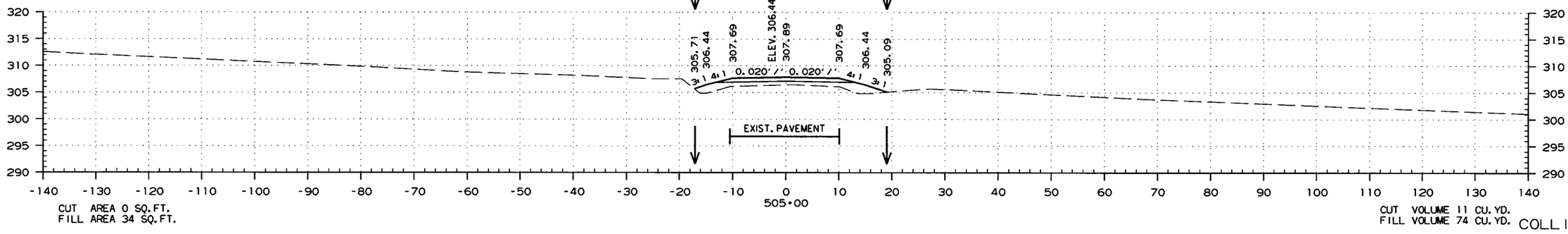
STAGE 1

CUT VOLUME 5 CU.YD.
FILL VOLUME 34 CU.YD.




CUT AREA 6 SQ.FT.
FILL AREA 55 SQ.FT.

CUT VOLUME 16 CU.YD.
FILL VOLUME 236 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 34 SQ.FT.

CUT VOLUME 11 CU.YD.
FILL VOLUME 74 CU.YD.

COLLINS RD.
STA. 505+00.00 TO STA. 506+62.00

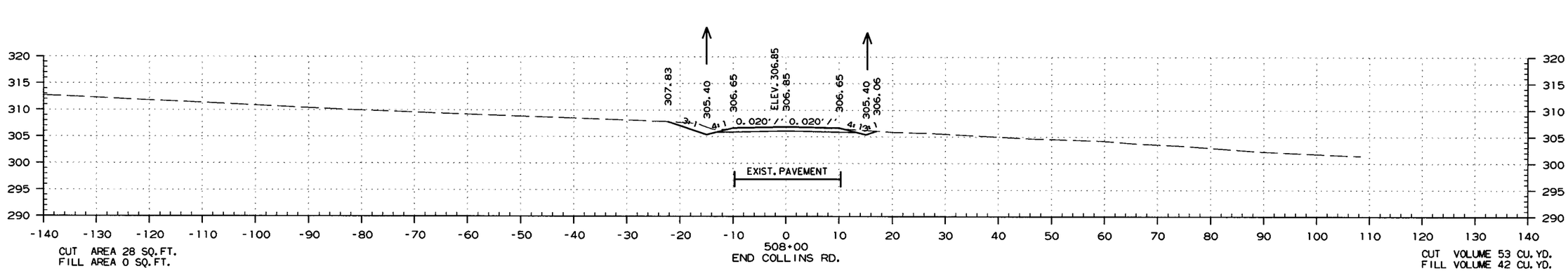
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 232 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




COLLINS RD.

STA. 507+00.00 TO STA. 508+00.00

4/8/2016

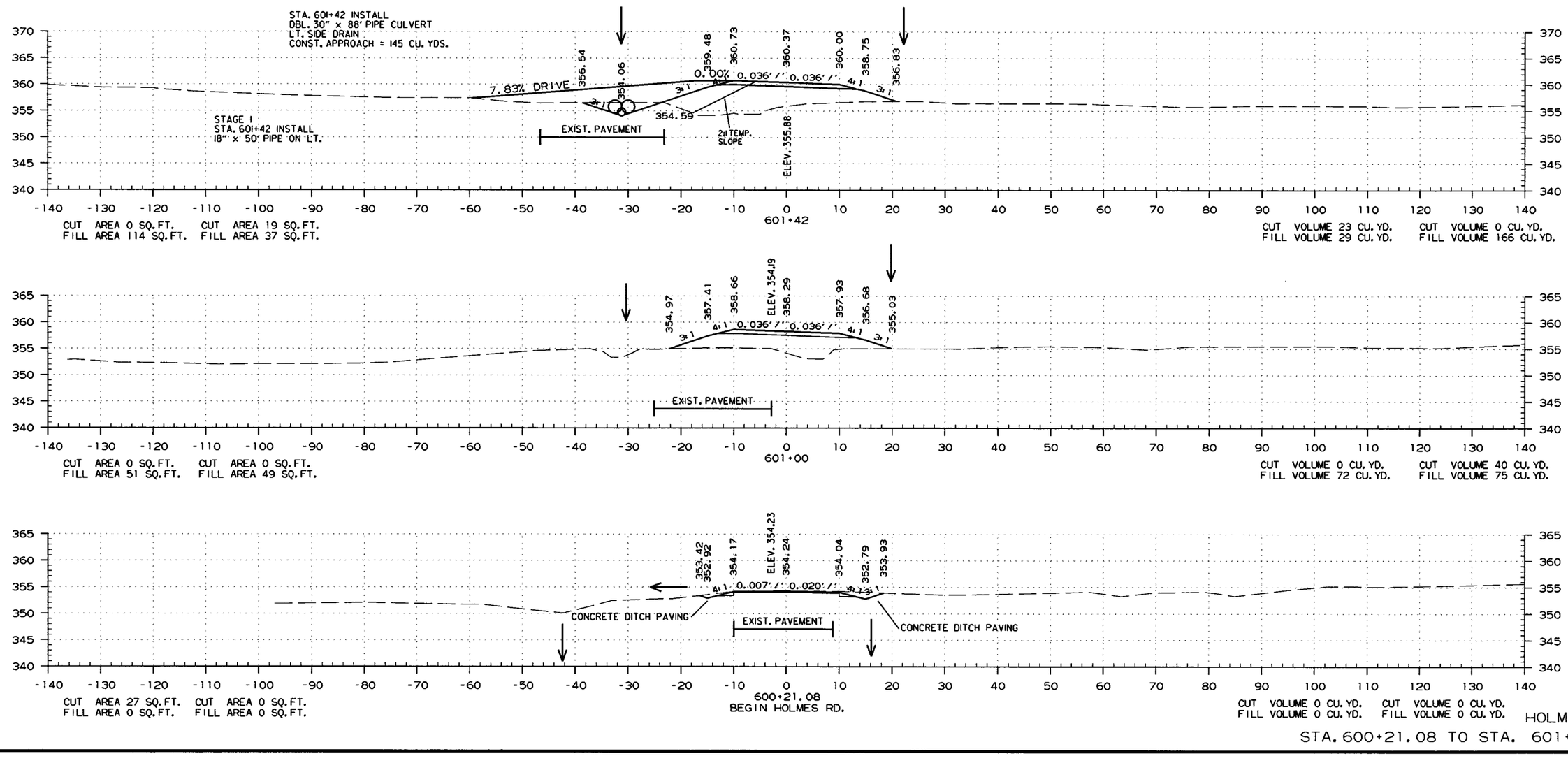
R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 233 | 242 |

(2) CROSS SECTIONS

STAGE 1 STAGE 2

STAGE 2 STAGE 1




HOLMES RD.

STA. 600+21.08 TO STA. 601+60.00

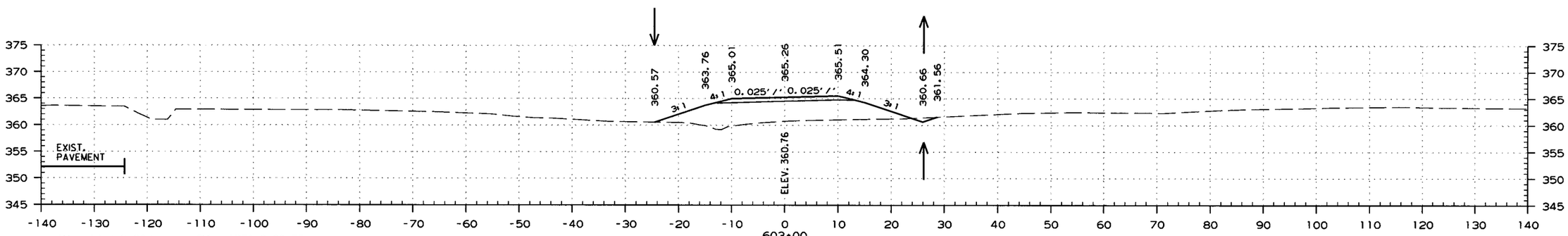
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 234 | 242 |

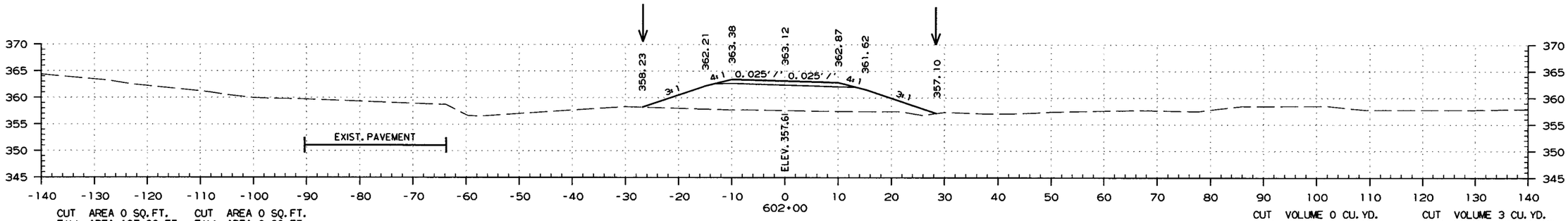
(2) CROSS SECTIONS

STAGE 1 STAGE 2



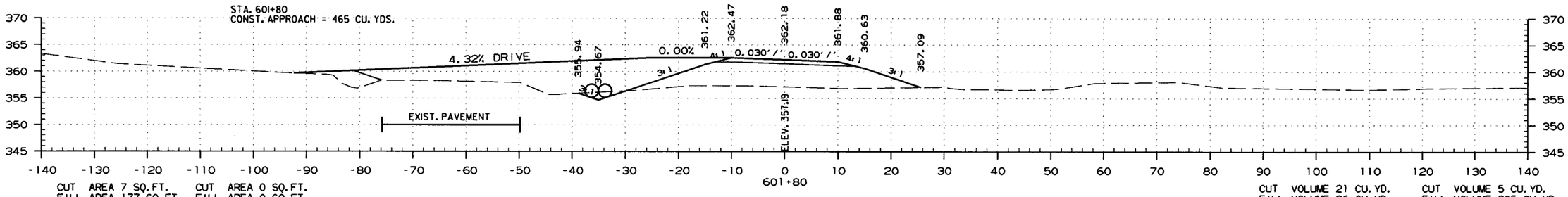

CUT AREA 2 SQ.FT. FILL AREA 149 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 4 CU.YD. FILL VOLUME 641 CU.YD.




CUT AREA 0 SQ.FT. FILL AREA 197 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
CUT VOLUME 3 CU.YD. FILL VOLUME 139 CU.YD.




CUT AREA 7 SQ.FT. FILL AREA 177 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT.

CUT VOLUME 21 CU.YD. FILL VOLUME 26 CU.YD.
CUT VOLUME 5 CU.YD. FILL VOLUME 205 CU.YD.

HOLMES RD.
STA. 601+80.00 TO STA. 603+00.00

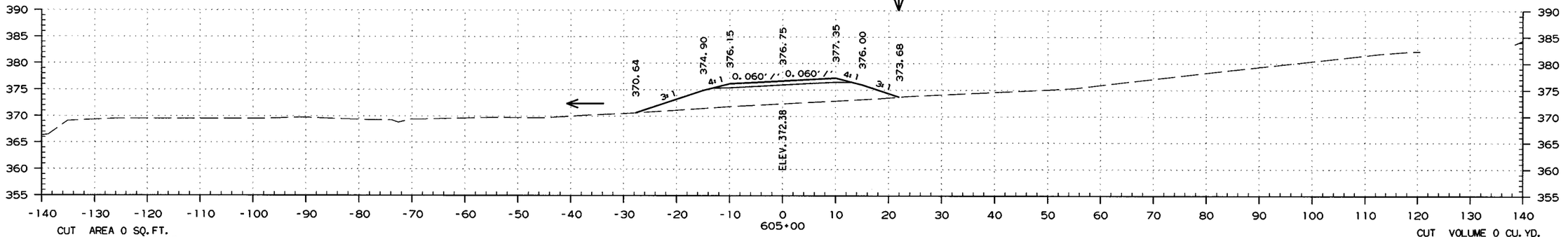
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 235 | 242 |

(2) CROSS SECTIONS

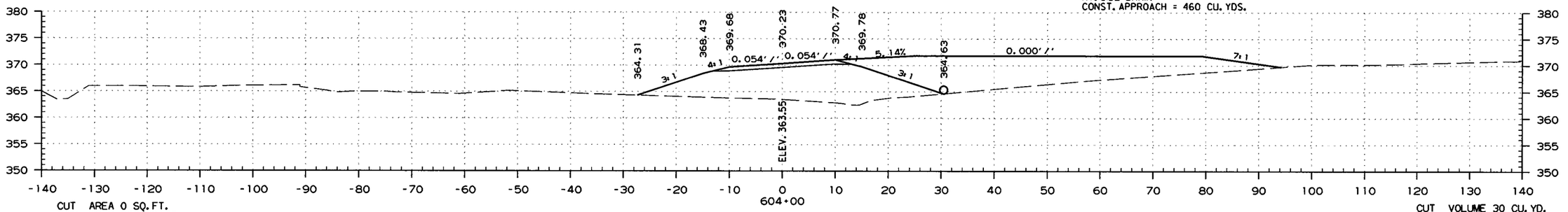
STAGE 1




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

CUT VOLUME 0 CU.YD.
FILL VOLUME 743 CU.YD.

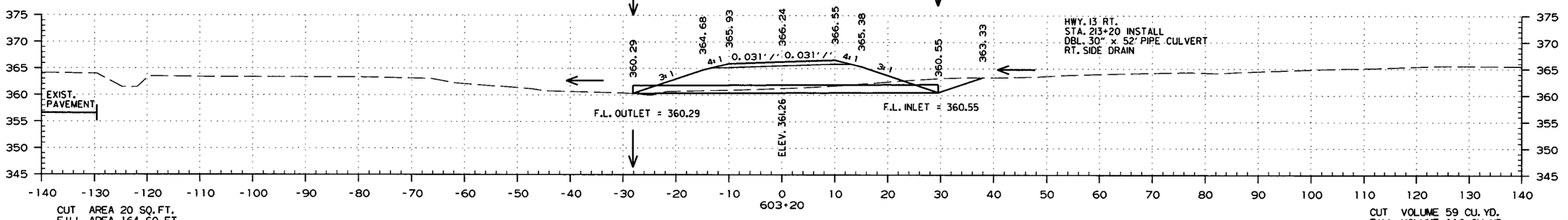
STA. 604+00 INSTALL
18" x 56' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 460 CU.YDS.




CUT AREA 0 SQ.FT.
FILL AREA 264 SQ.FT.

CUT VOLUME 30 CU.YD.
FILL VOLUME 634 CU.YD.

HWY. 13 RT.
STA. 213+20 INSTALL
DBL. 30" x 52' PIPE CULVERT
RT. SIDE DRAIN




CUT AREA 20 SQ.FT.
FILL AREA 164 SQ.FT.

CUT VOLUME 59 CU.YD.
FILL VOLUME 116 CU.YD.

HOLMES RD.
STA. 603+20.00 TO STA. 605+00.00

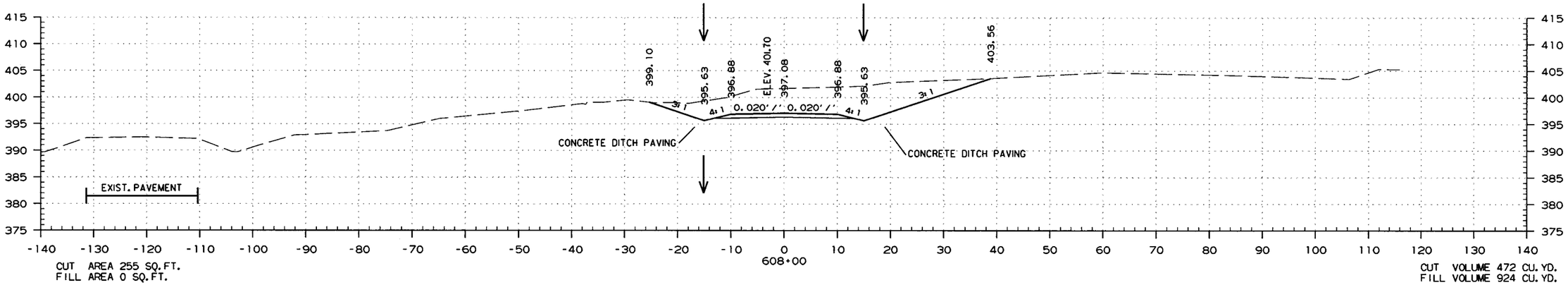
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 236 | 242 |

(2) CROSS SECTIONS

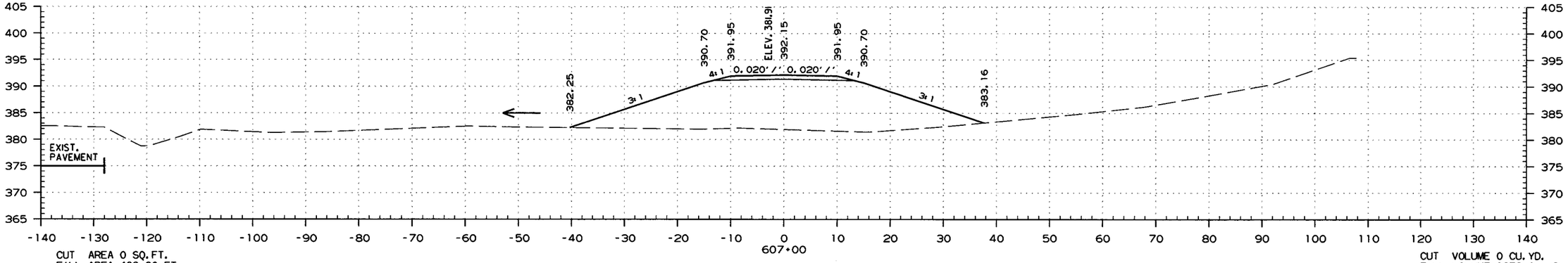
STAGE 1




CUT AREA 255 SQ.FT.
FILL AREA 0 SQ.FT.

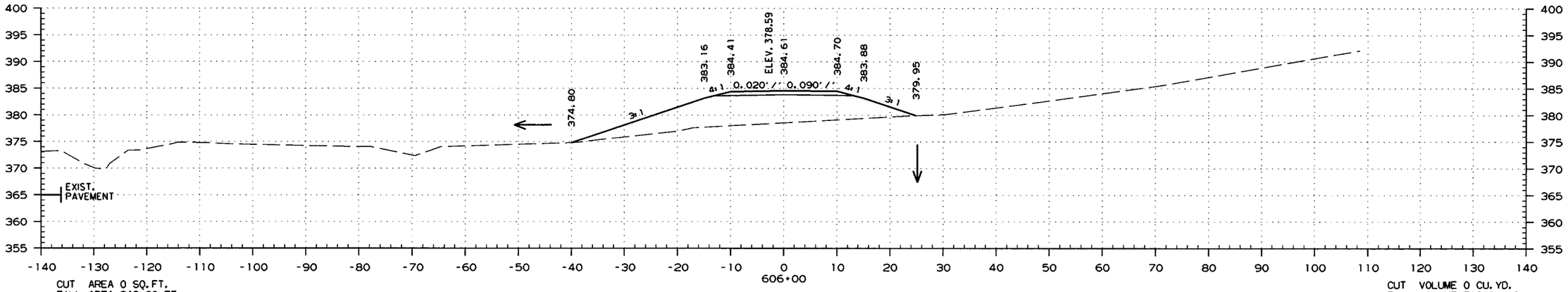
STAGE 1

CUT VOLUME 472 CU.YD.
FILL VOLUME 924 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 499 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 1372 CU.YD.




CUT AREA 0 SQ.FT.
FILL AREA 242 SQ.FT.

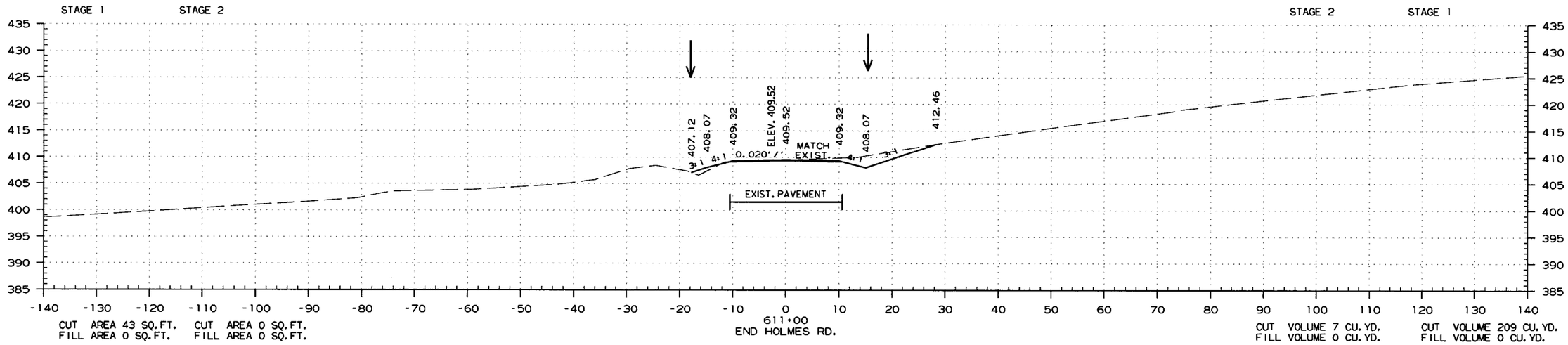
CUT VOLUME 0 CU.YD.
FILL VOLUME 703 CU.YD.

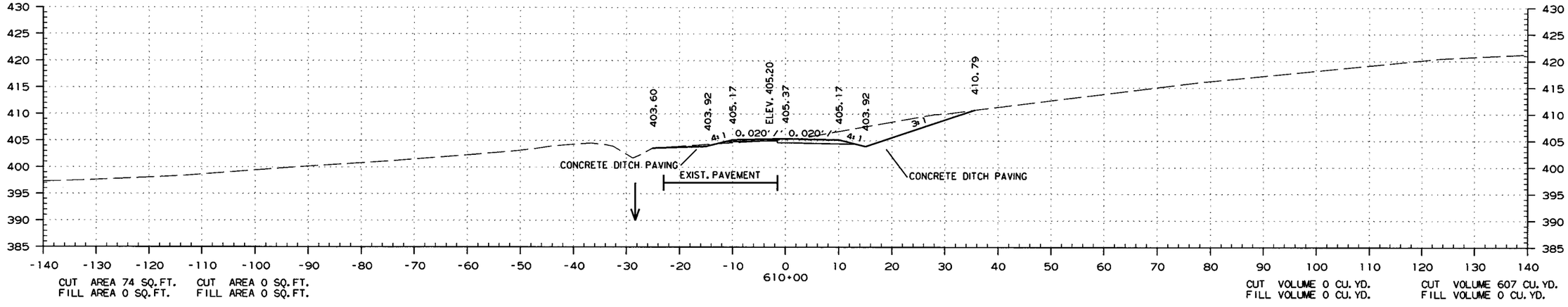
HOLMES RD.
STA. 606+00.00 TO STA. 608+00.00

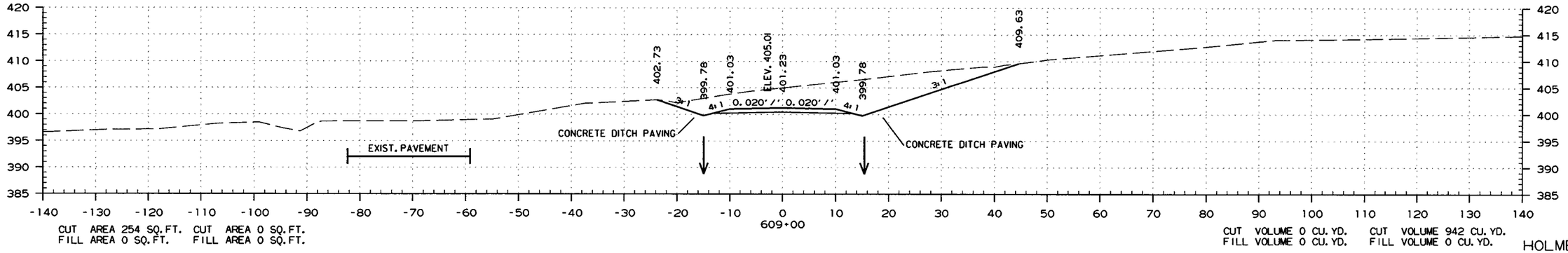
R050249.DGN — 4/8/2016

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 237 | 242 |

(2) CROSS SECTIONS




HOLMES RD.

STA. 609+00.00 TO STA. 611+00.00

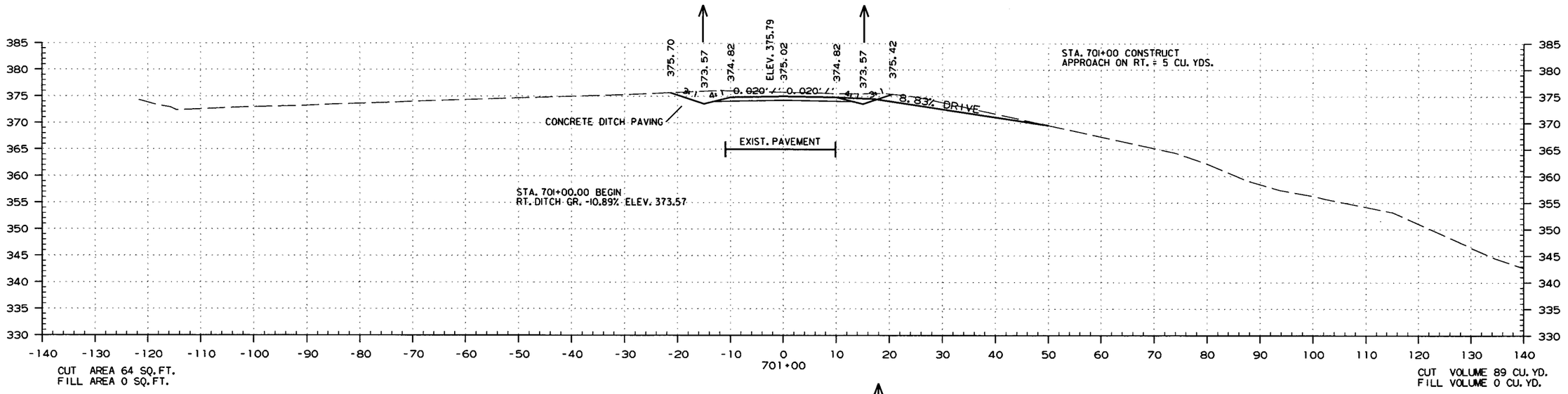
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 238 | 242 |

(2) CROSS SECTIONS

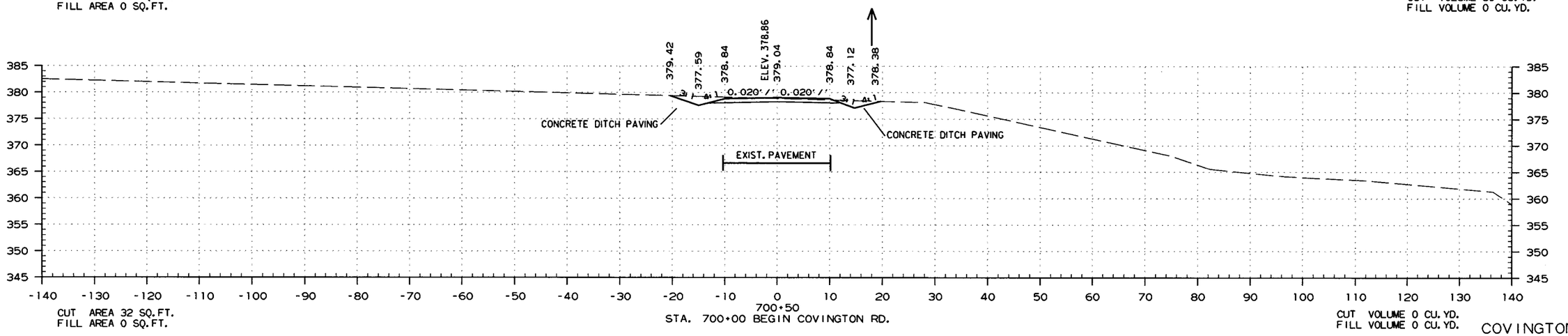
STAGE 1




CUT AREA 64 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 89 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 32 SQ.FT.
FILL AREA 0 SQ.FT.

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

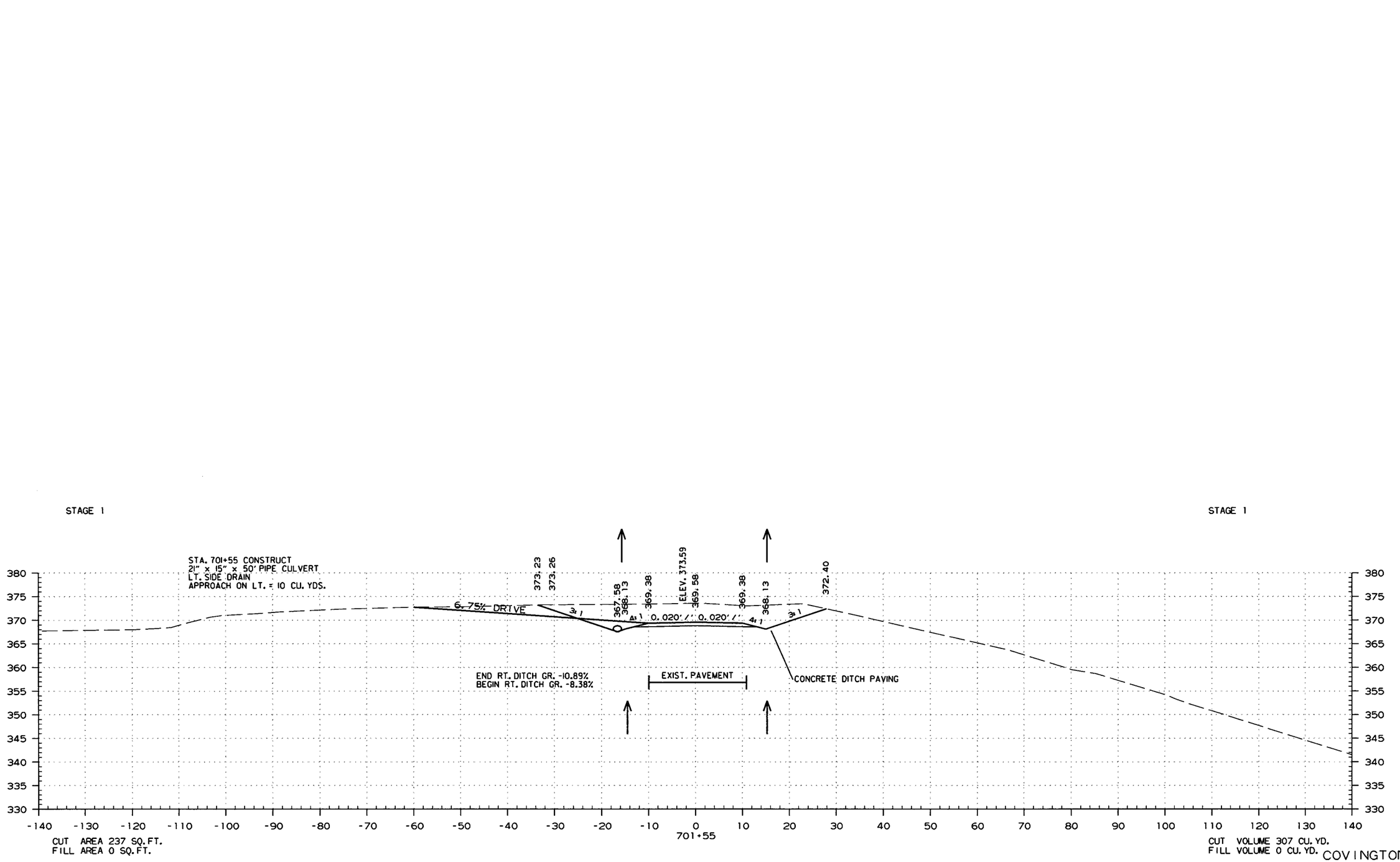
COVINGTON RD.
STA. 700+50.00 TO STA. 701+00.00

4/8/2016

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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. | | 050249 | 239 | 242 |

(2) CROSS SECTIONS




COVINGTON RD.
STA. 701+55.00 TO STA. 701+55.00

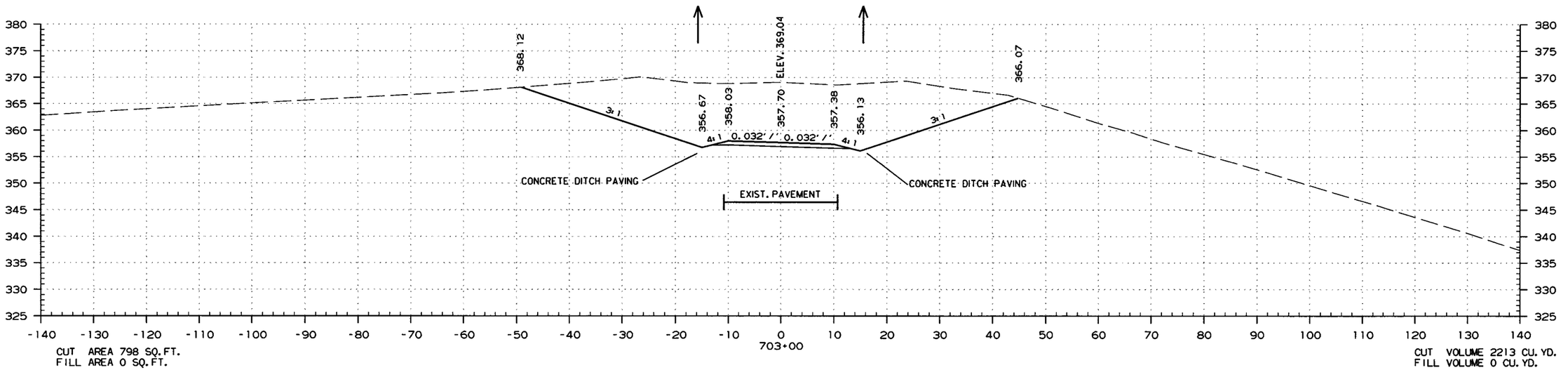
4/8/2016

R050249.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 240 | 242 |

(2) CROSS SECTIONS

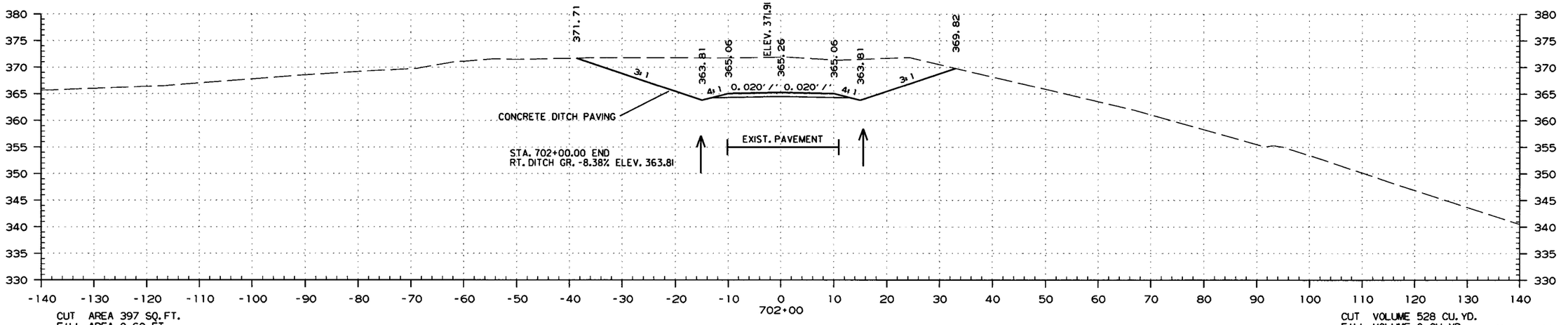
STAGE 1




CUT AREA 798 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 2213 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 1




CUT AREA 397 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 528 CU.YD.
FILL VOLUME 0 CU.YD.

COVINGTON RD.
STA. 702+00.00 TO STA. 703+00.00

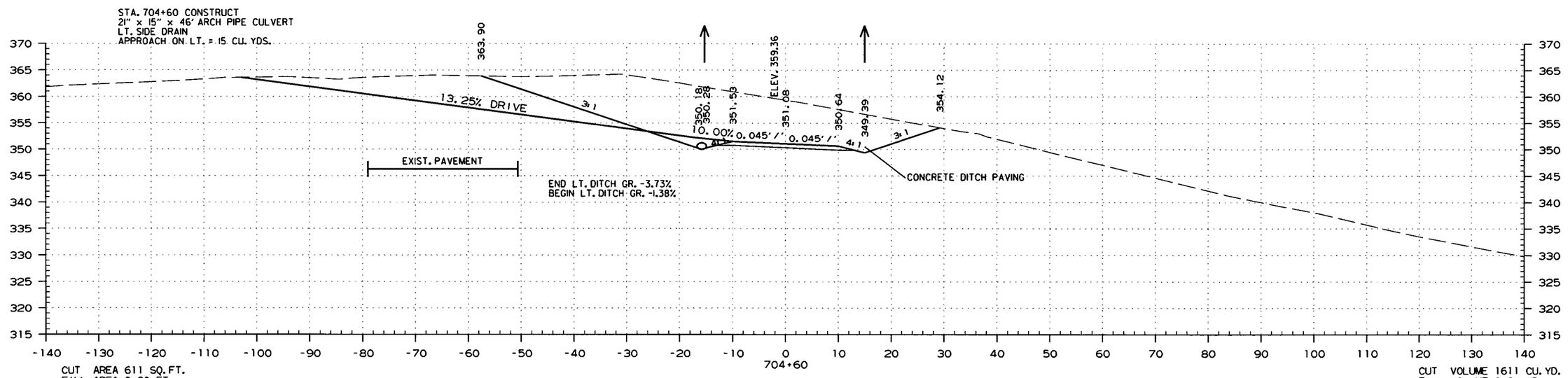
4/8/2016

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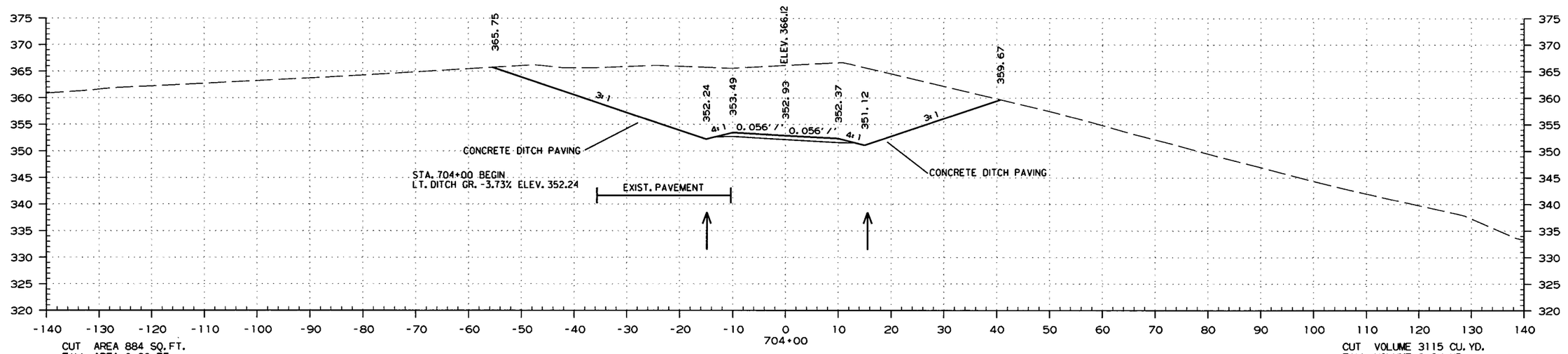
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 241 | 242 |

(2) CROSS SECTIONS

STAGE 1




STAGE 1




COVINGTON RD.

STA. 704+00.00 TO STA. 704+60.00

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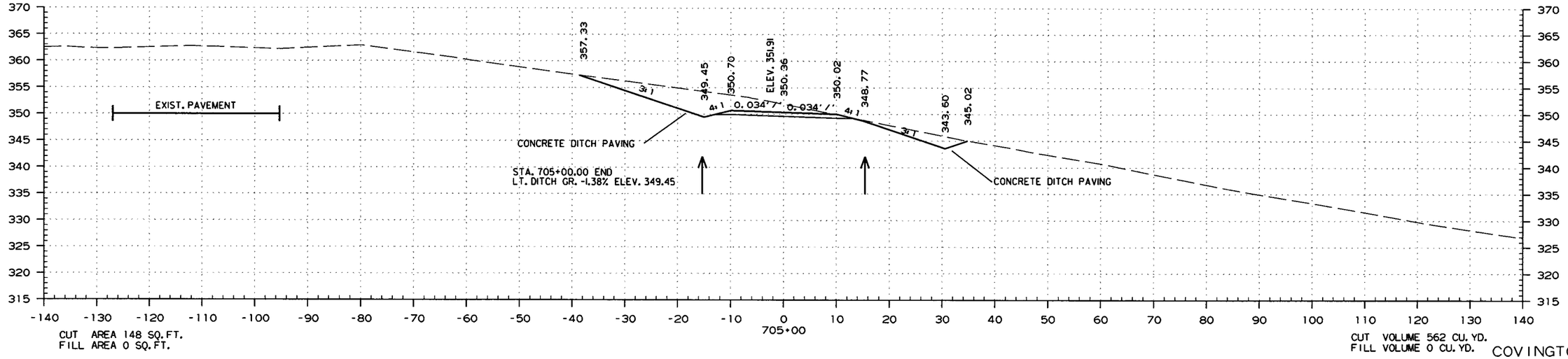
R050249.DGN

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 050249 | 242 | 242 |

(2) CROSS SECTIONS

STAGE 1

STAGE 1




COVINGTON RD.
STA. 705+00.00

4/8/2016

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