DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	1	517

(2) BEE BRANCH - NORTH (S)

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

BEE BRANCH - NORTH (S)

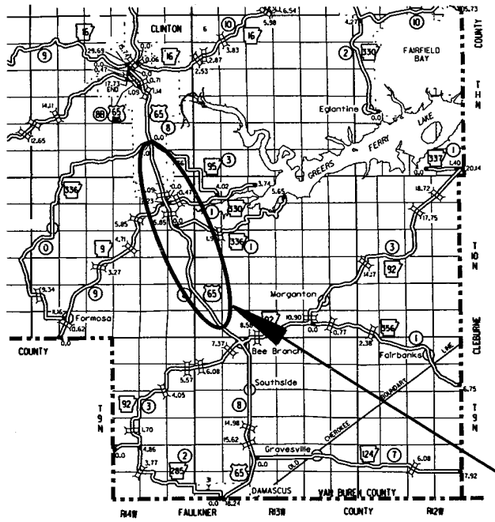
VAN BUREN COUNTY

ROUTE 65 SECTION 8

F.A.P. NHPP-0071(30)

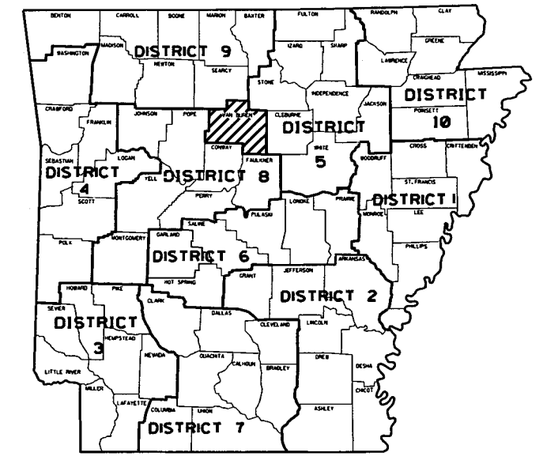
JOB 080423

NOT TO SCALE



PROJECT LOCATION

VICINITY MAP



ARKANSAS HWY. DIST. 8

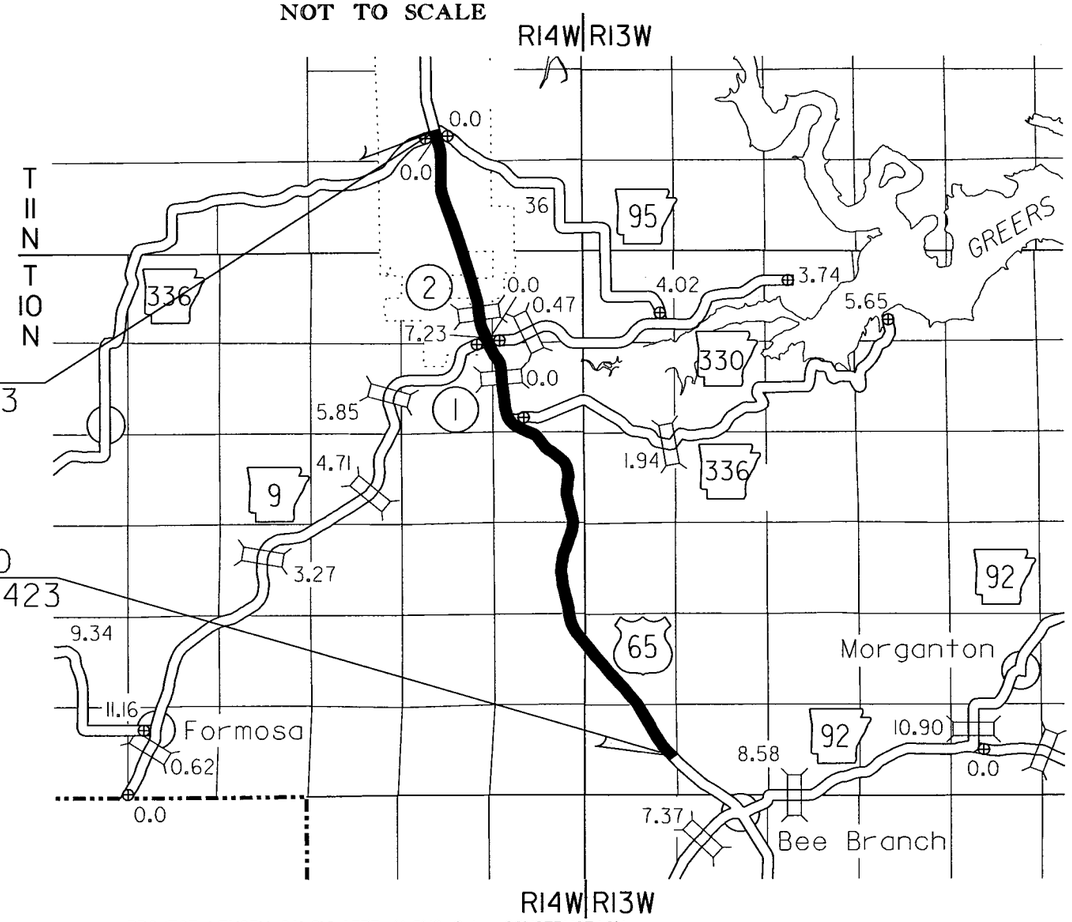
BRIDGE DATA

(1) STA. 777+15.63 BRIDGE END IN PLACE
BRIDGE NO. 06913
208'-0" CONT. COMP. W-BEAM UNIT (64'-80'-64')
WIDEN 9'-7" LT. & RT.
58'-0" CLEAR ROADWAY
210'-1¾" BRIDGE LENGTH
STA. 779+25.77 BRIDGE END

(2) STA. 817+65.82 BRIDGE END IN PLACE
BRIDGE NO. 06914
130'-0" CONT. COMP. W-BEAM UNIT (40'-50'-40')
WIDEN 9'-7" LT. & RT.
58'-0" CLEAR ROADWAY
132'-5½" BRIDGE LENGTH
STA. 818+98.28 BRIDGE END

STA. 928+92.71
END JOB 080423

STA. 500+00.00
BEGIN JOB 080423
LOG MILE 11.14



• DESIGN TRAFFIC DATA •

DESIGN YEAR	2037
2017 ADT	13,000
2037 ADT	18,500
2037 DHV	2035
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	12%
DESIGN SPEED (RURAL)	60 MPH
DESIGN SPEED (URBAN)	45 MPH

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N35°27'25"	N35°31'40"	N35°33'42"
LONGITUDE	W92°24'12"	W92°26'29"	W92°27'02"

PROJECT LENGTH CALCULATED ALONG C.L. CONSTRUCTION
GROSS LENGTH OF PROJECT 42892.71 FEET OR 8.124 MILES
NET LENGTH OF ROADWAY 42550.11 FEET OR 8.059 MILES
NET LENGTH OF BRIDGES 342.60 FEET OR 0.065 MILES
NET LENGTH OF PROJECT 42892.71 FEET OR 8.124 MILES

P.E. JOB 080423

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7636
M. E. BANKS

10-10-17

DEPUTY DIRECTOR
AND CHIEF ENGINEER

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) INDEX OF SHEETS & STANDARD DRAWINGS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TRINITY D. SMITH

10-10-17

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189	DETAILS OF END BENTS CHOCTAW CREEK (SHEET 2 OF 3)	06913	59039
190	DETAILS OF END BENTS CHOCTAW CREEK (SHEET 3 OF 3)	06913	59040
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193	DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT CHOCTAW CREEK (SHEET 2 OF 5)	06913	59043
194	DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT CHOCTAW CREEK (SHEET 3 OF 5)	06913	59044
195	DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT CHOCTAW CREEK (SHEET 4 OF 5)	06913	59045
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198	DETAILS OF ELASTOMERIC BEARINGS WITH SHEAR BLOCKS CHOCTAW CREEK	06913	59048
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BRIDGE STANDARD DRAWINGS

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55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55006	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	09-02-15
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	01-17-17
55013	STANDARD DETAILS FOR TRANSITION APPROACH RAILING	02-11-16
55014	STANDARD DETAILS FOR TYPE H RAILING	02-11-16
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
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CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	02-27-14
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9D	DETAILS OF DROP INLETS	08-22-02
FPC-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
FPC-9N	DETAILS OF DROP INLETS AND SPILLWAY OUTLET	07-02-98
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SD-4	LOOP DETECTOR INSTALLATION	09-12-13
SD-6	HEAVY DUTY PULL BOX	09-02-15
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-11	STEEL POLE WITH MAST ARM	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SI-1	DETAILS OF SPECIAL ITEMS	09-12-13
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
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R-100X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-08-63
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(2) GOVERNING SPECIFICATIONS & GENERAL NOTES

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

11-1-17

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 080423
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1_____	AGGREGATE BASE COURSE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
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
621-1_____	FILTER SOCKS
JOB 080423__	AIRPORT CLEARANCE REQUIREMENTS
JOB 080423__	ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC
JOB 080423__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 080423__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080423__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080423__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 080423__	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 080423__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 080423__	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 080423__	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 080423__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 080423__	ELASTOMERIC BEARINGS
JOB 080423__	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 080423__	EMBANKMENT CONSTRUCTION
JOB 080423__	EXTENSION FOR PIPE CULVERTS
JOB 080423__	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 080423__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080423__	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 080423__	LED TRAFFIC SIGNAL HEAD
JOB 080423__	MAINTENANCE OF TRAFFIC
JOB 080423__	MANDATORY ELECTRONIC CONTRACT
JOB 080423__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 080423__	NESTING SITES OF MIGRATORY BIRDS
JOB 080423__	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 080423__	PARTNERING REQUIREMENTS
JOB 080423__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 080423__	PLASTIC PIPE
JOB 080423__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 080423__	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB 080423__	PROTECTION OF WATER QUALITY AND WETLANDS
JOB 080423__	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 080423__	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 080423__	ROCK FILL
JOB 080423__	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 080423__	SHORING
JOB 080423__	SHORING FOR CULVERTS
JOB 080423__	SITE USE (A+B+C METHOD) - CALENDAR DAY CONTRACT
JOB 080423__	SOIL STABILIZATION
JOB 080423__	STORM WATER POLLUTION PREVENTION PLAN
JOB 080423__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080423__	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)
JOB 080423__	TRIANGULAR SILT DIKE
JOB 080423__	UTILITY ADJUSTMENTS
JOB 080423__	VALUE ENGINEERING
JOB 080423__	VIDEO DETECTOR (COLOR)
JOB 080423__	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. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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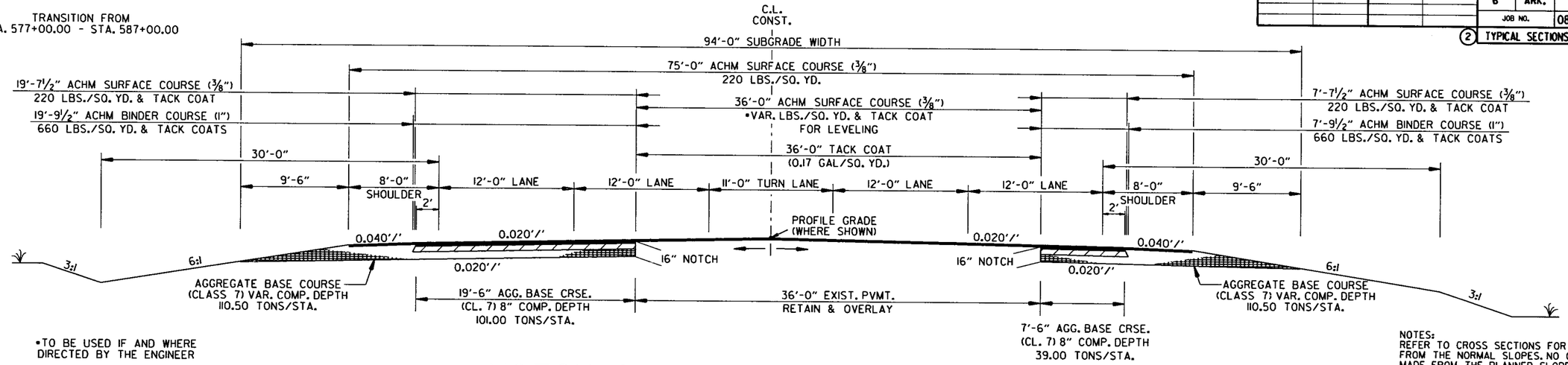
(2) TYPICAL SECTIONS OF IMPROVEMENT

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

10-10-17



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN OPEN SHOULDER
EXISTING NB PASSING LANE - TANGENT

(•REVERSE TYPICAL FOR SB PASSING LANE)

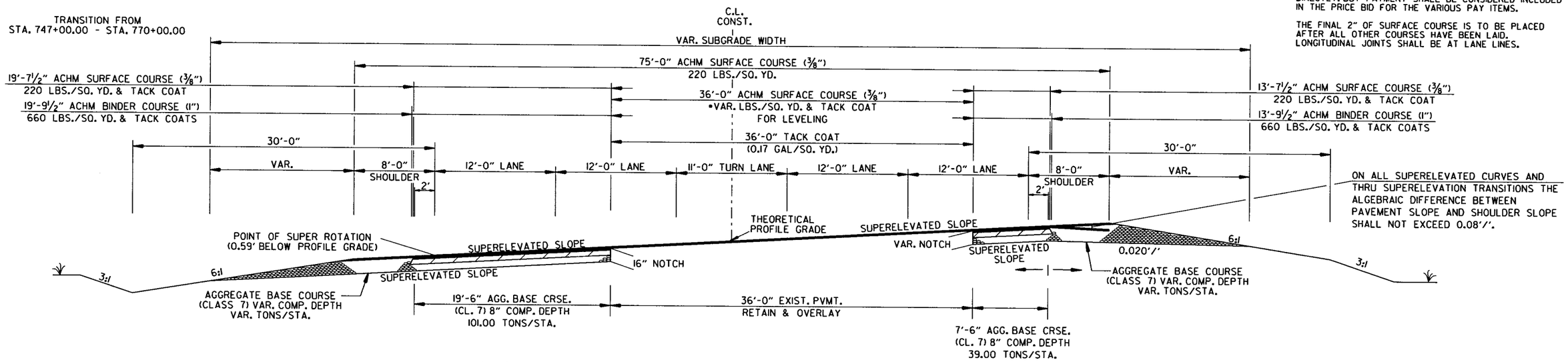
STA. 508+02.27 - STA. 513+60.25
STA. 537+44.89 - STA. 546+03.73
STA. 563+77.85 - STA. 577+00.00
STA. 577+00.00 - STA. 603+78.05•
STA. 624+68.01 - STA. 624+68.02•
STA. 635+92.88 - STA. 635+92.89•
STA. 659+34.34 - STA. 666+60.51•
STA. 684+42.21 - STA. 686+21.66•

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.

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

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



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

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN OPEN SHOULDER
EXISTING NB PASSING LANE- SUPERELEVATED

(•REVERSE TYPICAL FOR SB PASSING LANE)

STA. 500+00.00 - STA. 508+02.27
STA. 513+60.25 - STA. 537+44.89
STA. 546+03.73 - STA. 563+77.85
STA. 603+78.05 - STA. 624+68.01•
STA. 624+68.02 - STA. 635+92.88•
STA. 635+92.89 - STA. 659+34.34•
STA. 666+60.51 - STA. 684+42.21•
STA. 686+21.66 - STA. 702+60.53•
STA. 770+00.00 - STA. 772+92.00•

TYPICAL SECTIONS OF IMPROVEMENT

8/16/2017

R080423.DGN

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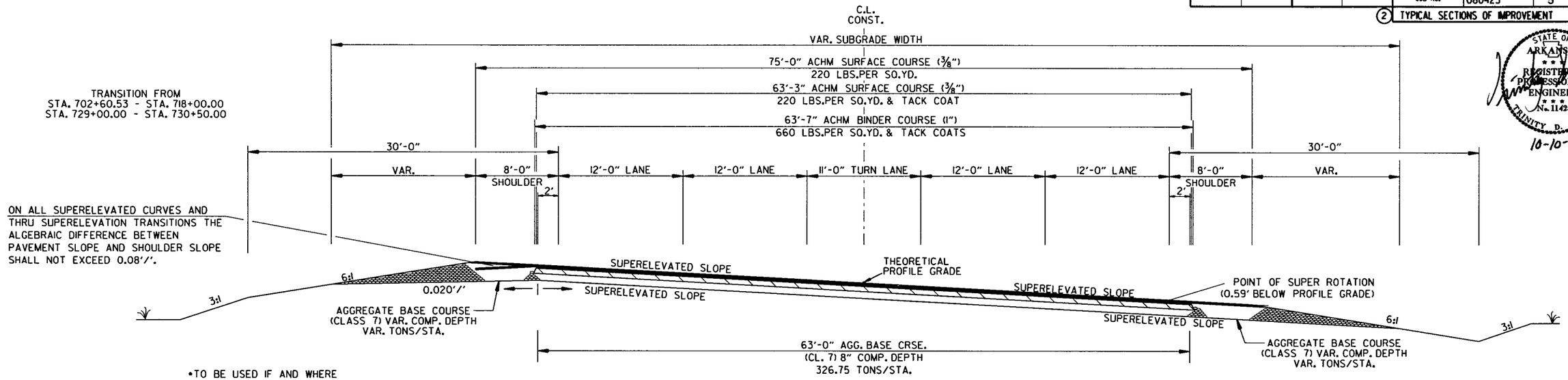
				JOB NO.		080423	5	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

FULL DEPTH OPEN SHOULDER SUPERELEVATED

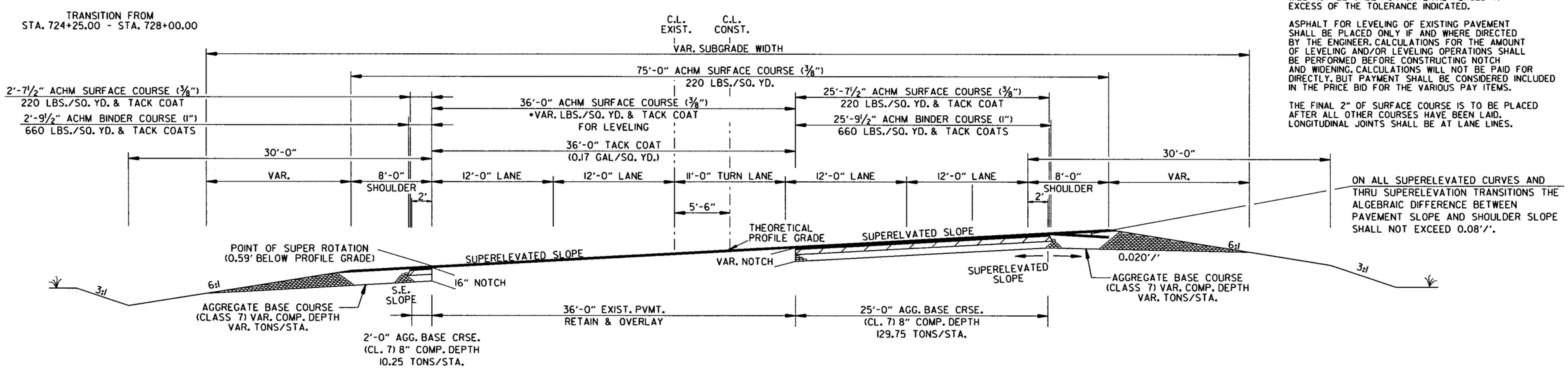
STA. 718+00.00 - STA. 724+25.00
STA. 730+50.00 - STA. 747+00.00

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

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.

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

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



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN OPEN SHOULDER TRANS. EXISTING PASSING LANE SECTION TO FULL DEPTH - SUPERELEVATED

STA. 728+00.00 - STA. 729+00.00

8/16/2017

R080423.DGN

TYPICAL SECTIONS OF IMPROVEMENT

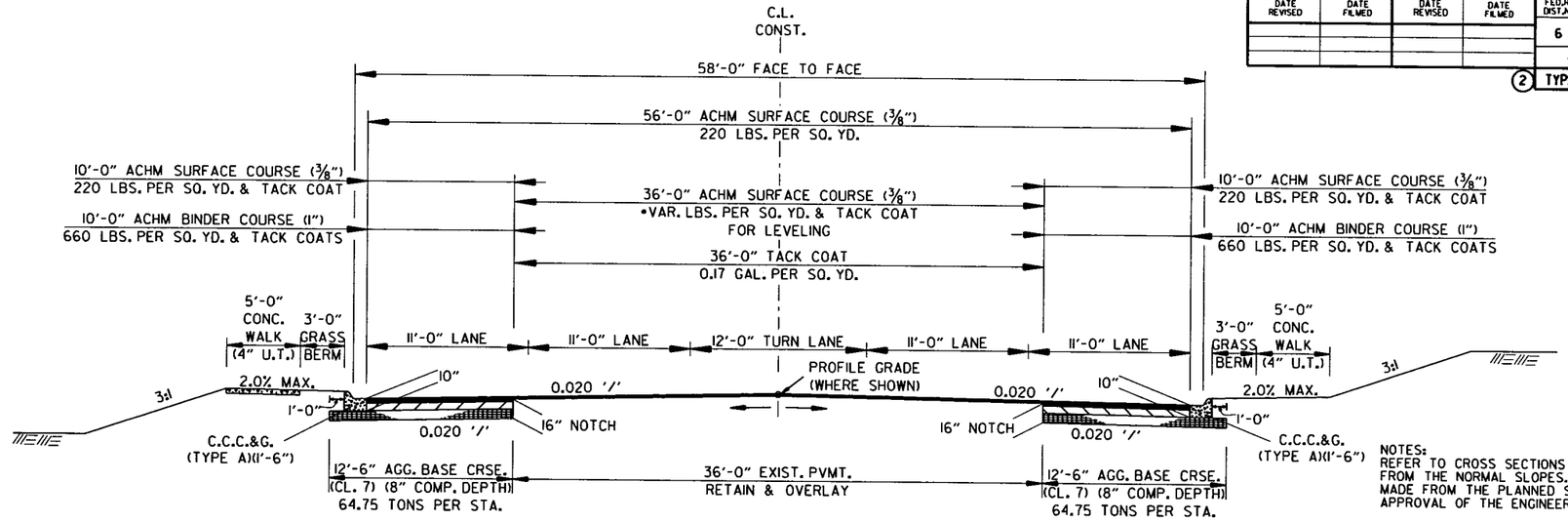
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	6	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

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

10-10-17

OPEN SHOULDER TO CURB & GUTTER TRANSITION
STA. 772+92.00 - STA. 776+00.00
(SEE SPECIAL DETAILS)



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 776+00.00 - STA. 777+15.63 B.E.
STA. 779+25.77 B.E. - STA. 779+80.00
STA. 801+81.47 - STA. 802+99.20
STA. 817+40.00 - STA. 817+65.82 B.E.
STA. 818+98.28 B.E. - STA. 819+80.66

NOTES:
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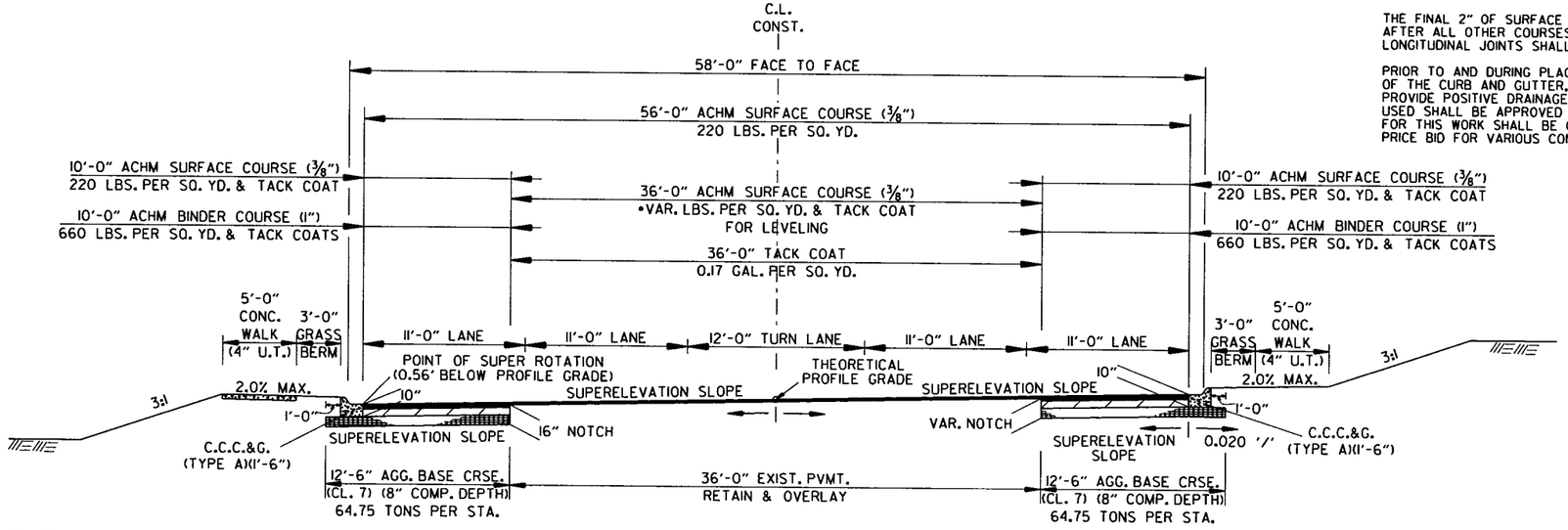
TRANSITION FROM
STA. 794+40.00 TO STA. 798+43.97
STA. 813+00.00 TO STA. 816+33.71



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER SUPERELEVATION

STA. 779+80.00 - STA. 782+54.81
STA. 798+43.97 - STA. 801+81.47
STA. 802+99.20 - STA. 805+17.68
STA. 816+33.71 - STA. 817+40.00
STA. 819+80.66 - STA. 823+18.16

TYPICAL SECTIONS OF IMPROVEMENT

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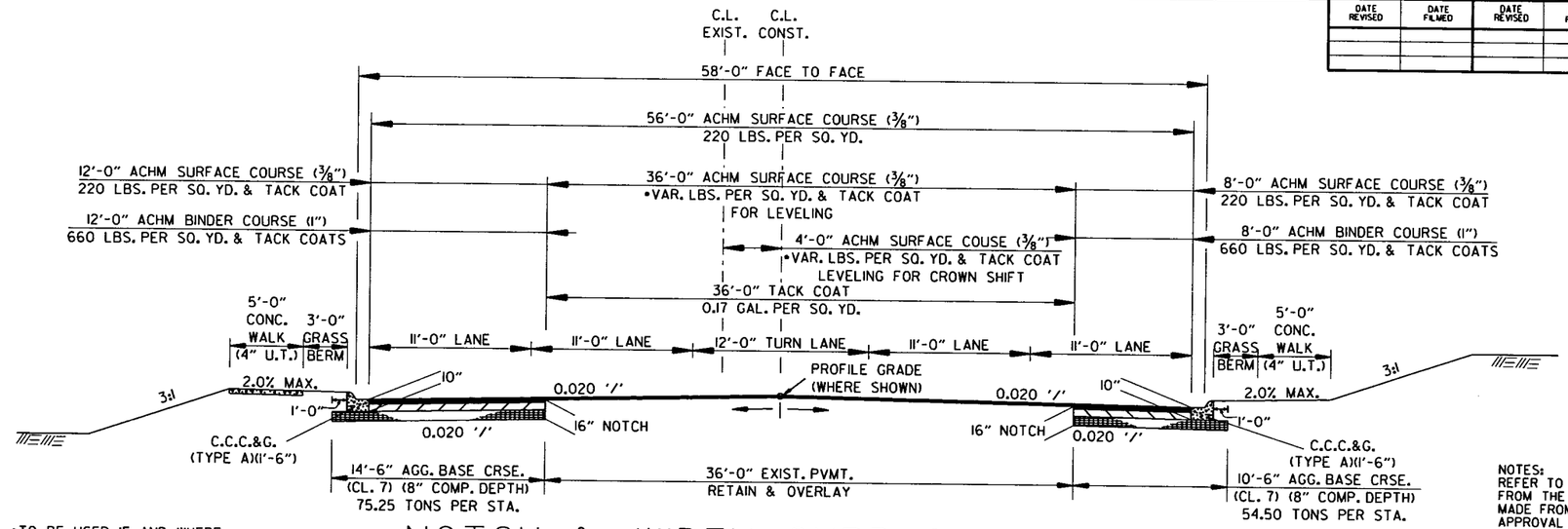
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	7	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 833+64.21 - STA. 839+00.00

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

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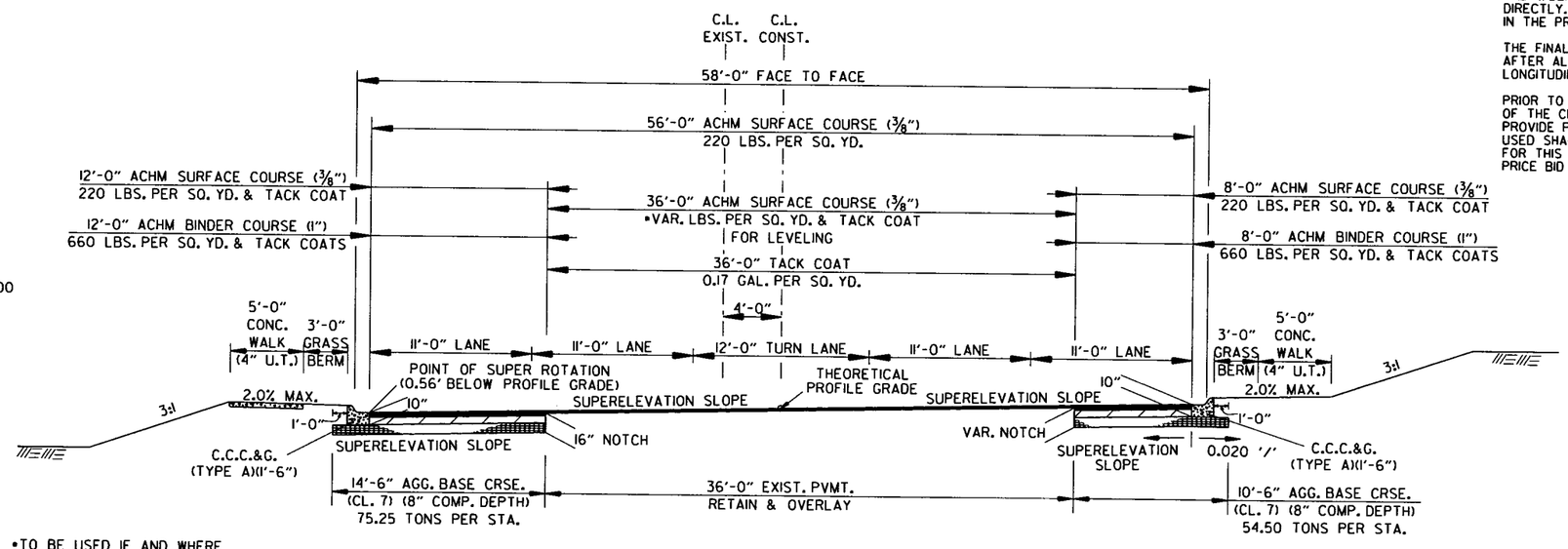
TRANSITION FROM STA. 823+18.16 TO STA. 829+00.00



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER SUPERELEVATION

STA. 829+00.00 - STA. 833+64.21

8/16/2017

R080423.DGN

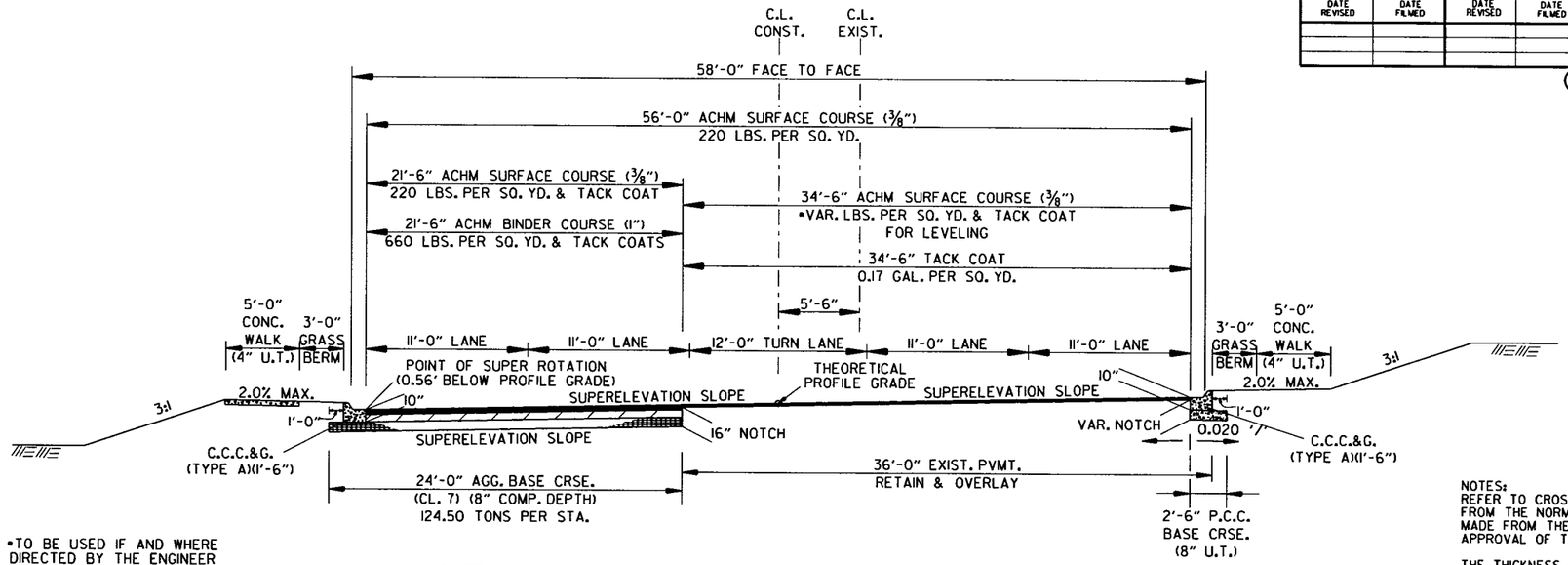
TYPICAL SECTIONS OF IMPROVEMENT

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.		080423	8	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

TRANSITION FROM
STA. 782+54.81 TO STA. 785+00.00
STA. 805+17.68 TO STA. 811+75.00



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER SUPERELEVATION

(•REVERSE TYPICAL)
STA. 785+00.00 - STA. 787+00.00
STA. 811+75.00 - STA. 813+00.00•

NOTES:
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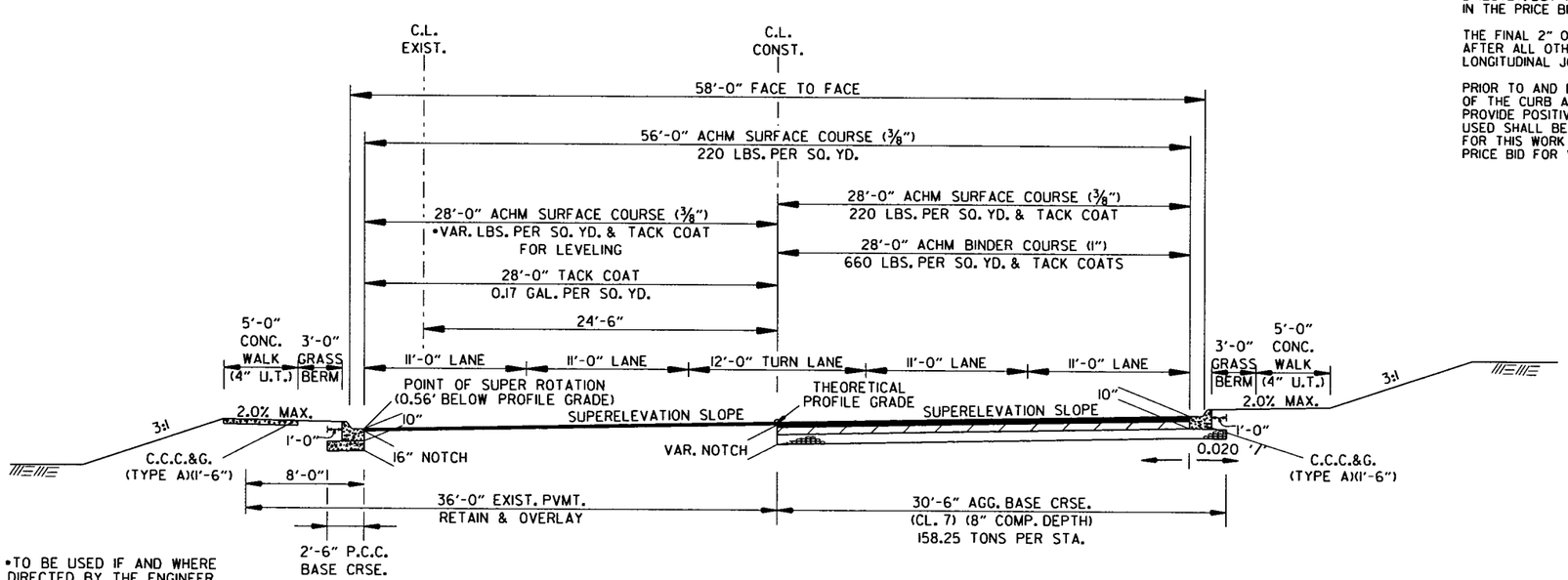
TRANSITION FROM
STA. 787+00.00 TO STA. 792+00.00



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER SUPERELEVATION

STA. 792+00.00 - STA. 794+40.00

8/16/2017

R080423.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.		080423	9	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

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

10-10-17

NOTES:
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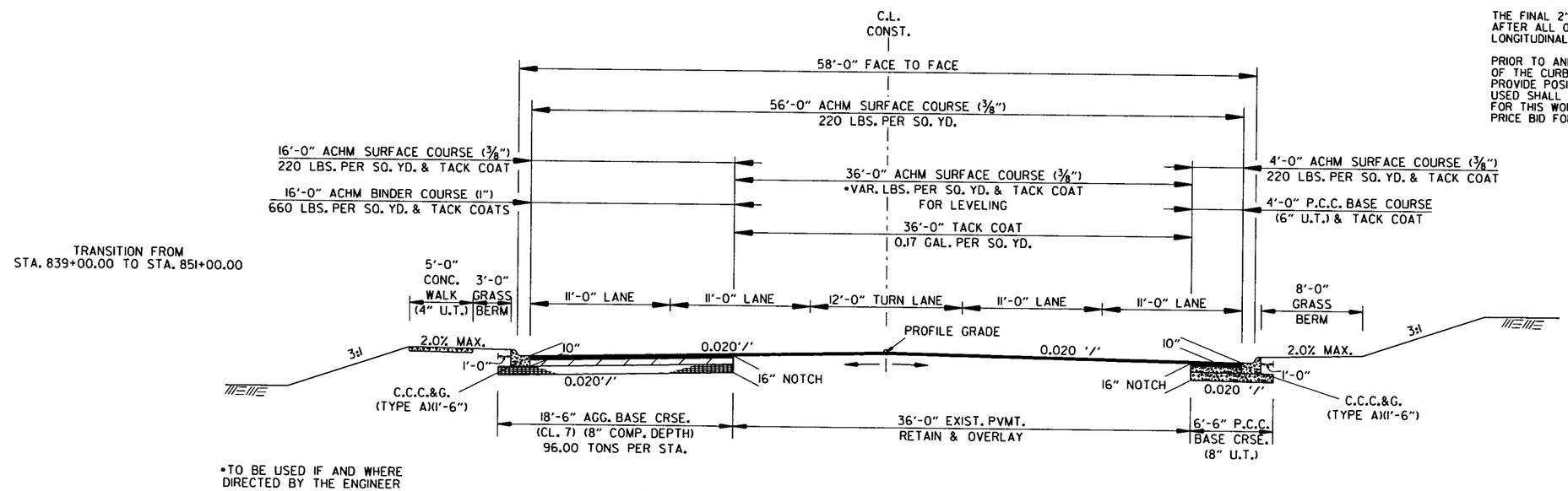


•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 851+00.00 - STA. 884+00.00

8/16/2017

R080423.DGN

TYPICAL SECTIONS OF IMPROVEMENT

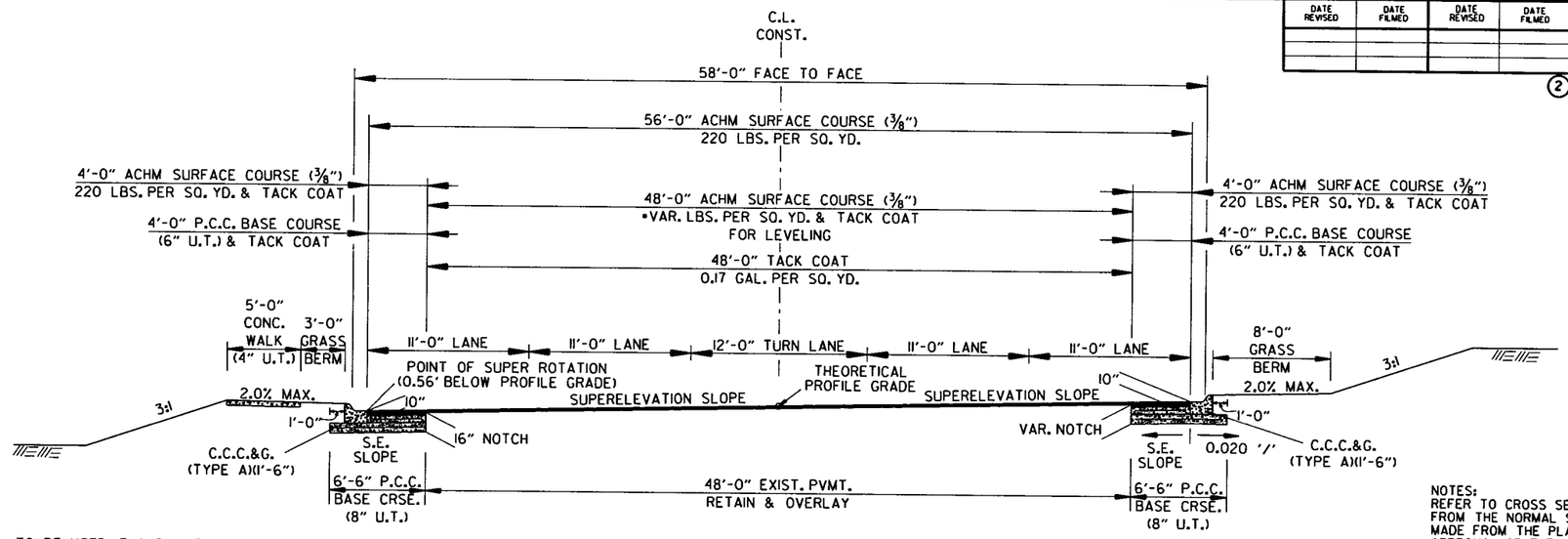
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	10	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

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

10-10-17

TRANSITION FROM
STA. 884+00.00 TO STA. 890+00.00



•TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER SUPERELEVATION

STA. 890+00.00 - STA. 899+01.85
STA. 908+11.78 - STA. 911+49.28

NOTES:
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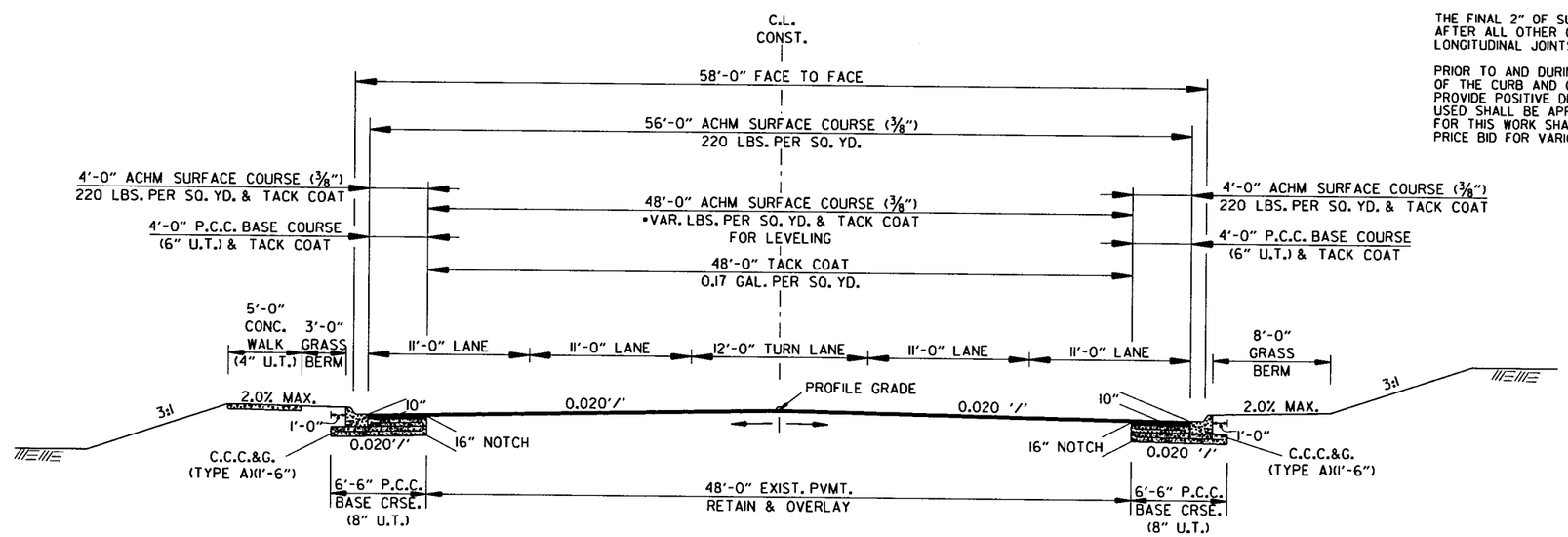


•TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 899+01.85 - STA. 908+11.78

8/16/2017

R080423.DGN

TYPICAL SECTIONS OF IMPROVEMENT

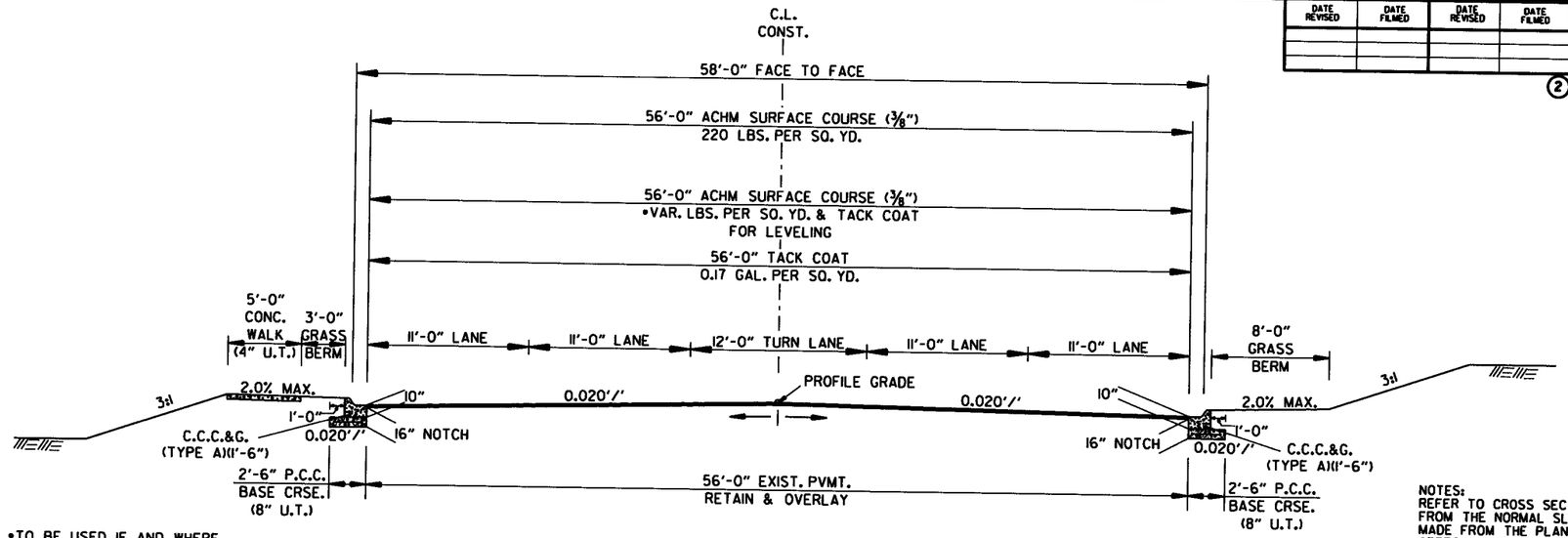
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	11	517

(2) TYPICAL SECTIONS OF IMPROVEMENT

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

10-10-17

TRANSITION FROM
STA. 911+49.28 TO STA. 922+50.00



•TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 922+50.00 - STA. 924+43.69

NOTES:
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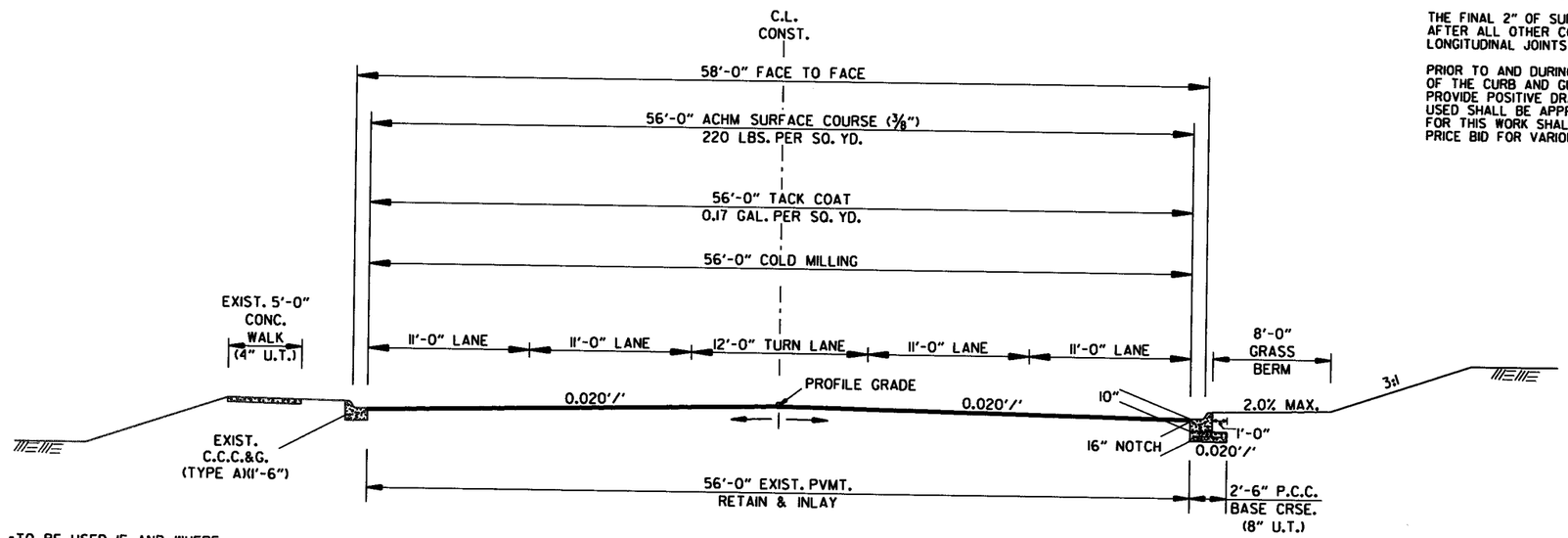


•TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER

NOTCH & WIDEN CURB & GUTTER TANGENT

STA. 924+43.69 - STA. 928+92.71

8/16/2017

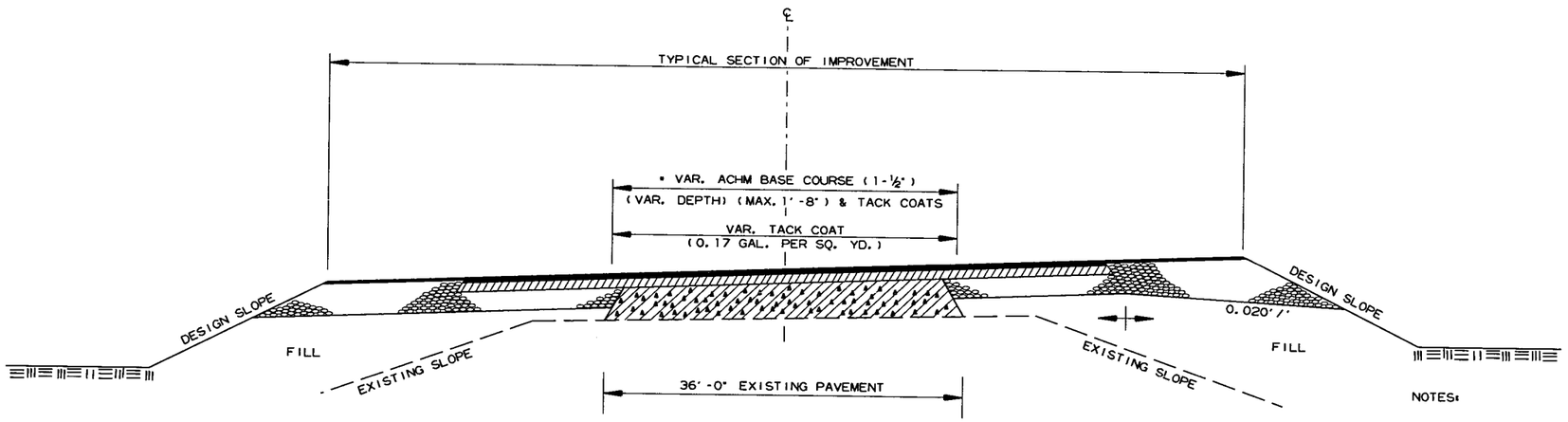
R080423.DGN

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.		080423	12	517

(2) SPECIAL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



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

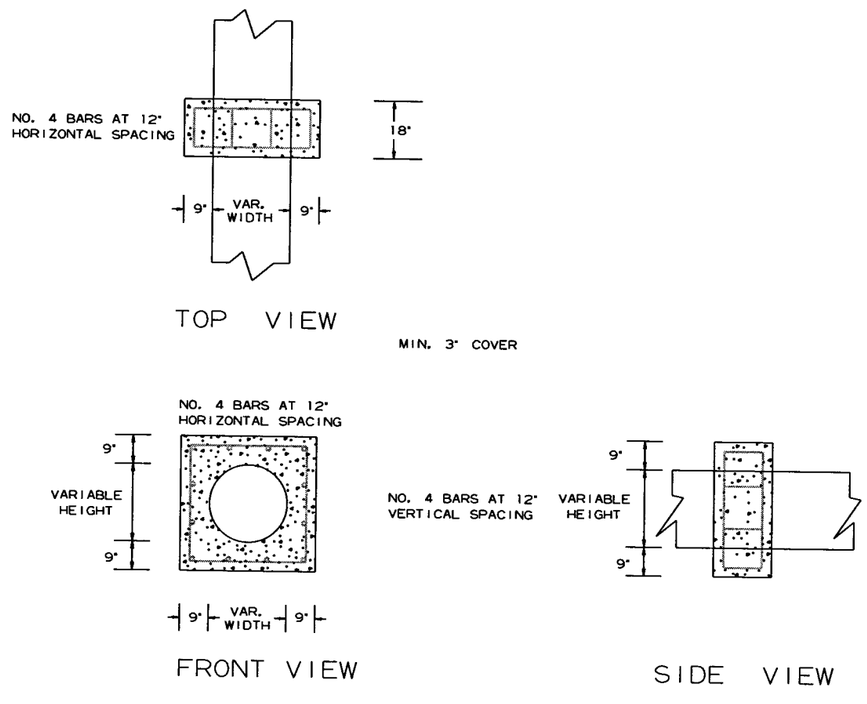
METHOD OF RAISING GRADE

NOTES:

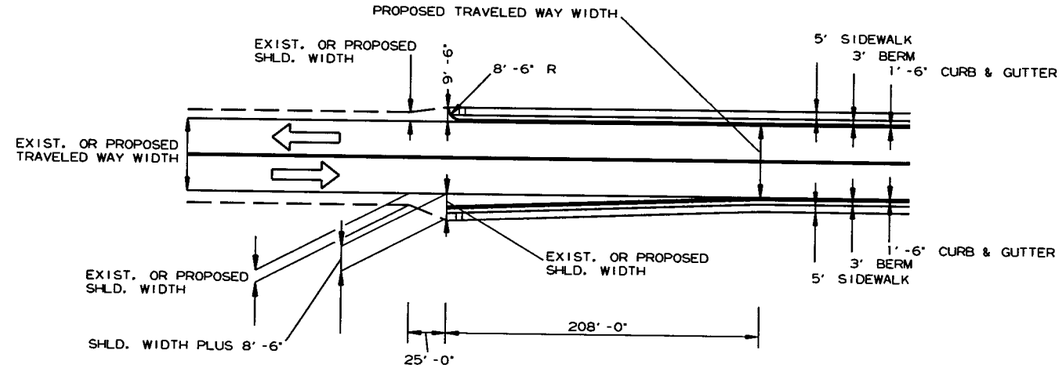
(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

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

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



PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

9/12/2016

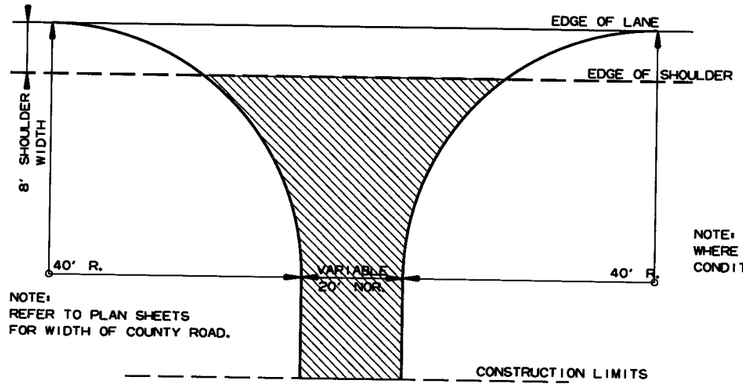
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	13	517

(2) SPECIAL DETAILS

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

10-10-17

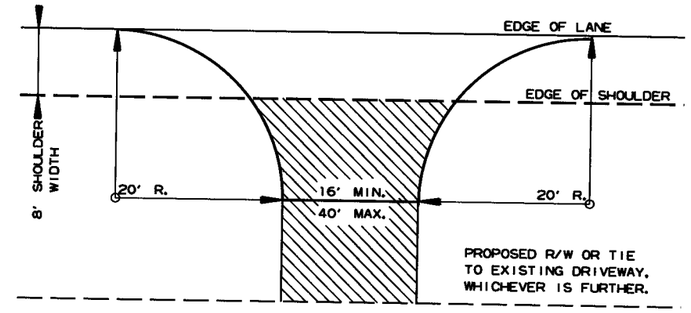


NOTE:
REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

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

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

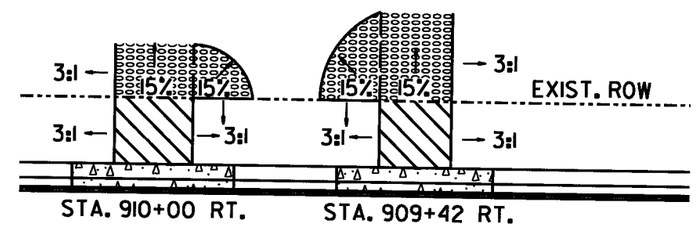
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

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

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)

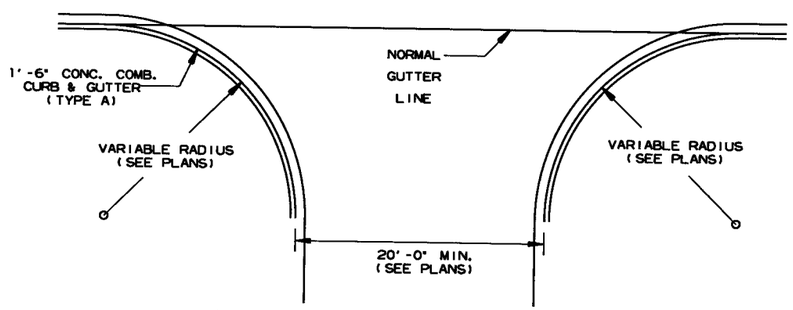


6" CONCRETE APRON

FULL DEPTH ASPHALT DRWY.

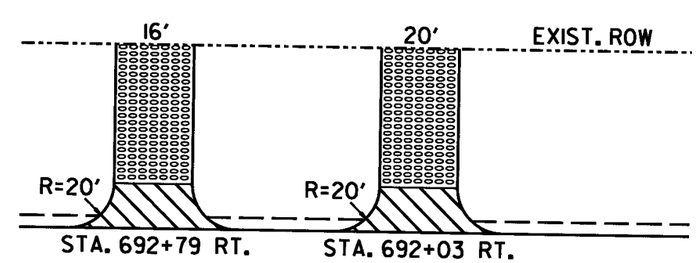
9" AGG. BASE COURSE (CLASS 7)

DETAIL FOR DRIVEWAY TURNOUTS TYPE SPECIAL



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

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



FULL DEPTH ASPHALT DRWY.

9" AGG. BASE COURSE (CLASS 7)

DETAIL FOR DRIVEWAY TURNOUTS TYPE SPECIAL

SPECIAL DETAILS

9/12/2016

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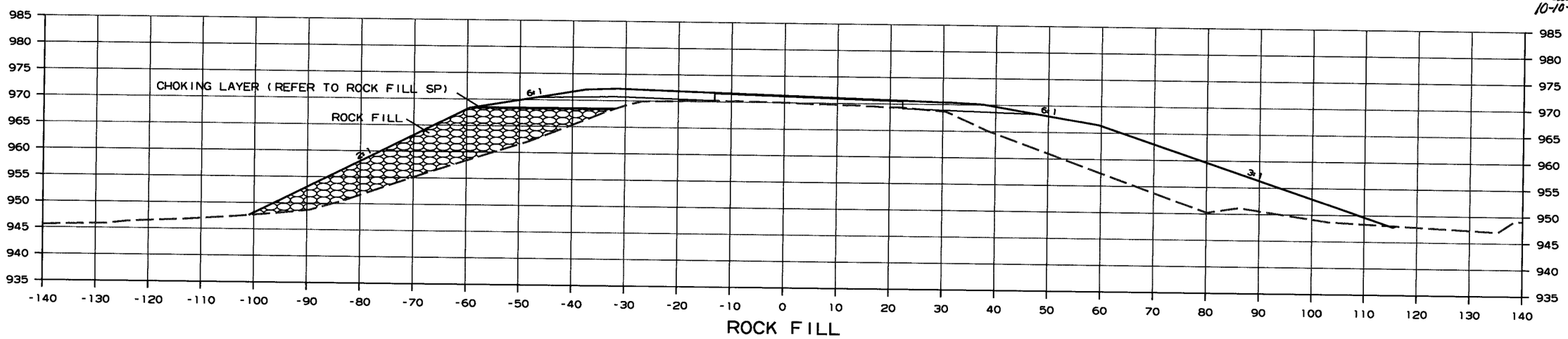
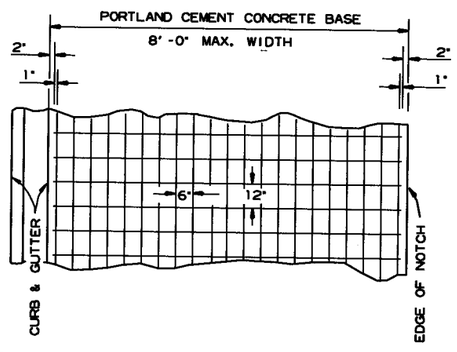
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	14	517

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



STA. 507+30 TO STA. 511+00
STA. 527+00 TO STA. 531+00
STA. 641+00 TO STA. 663+00
STA. 701+17 TO STA. 703+00
STA. 779+22 TO STA. 782+00

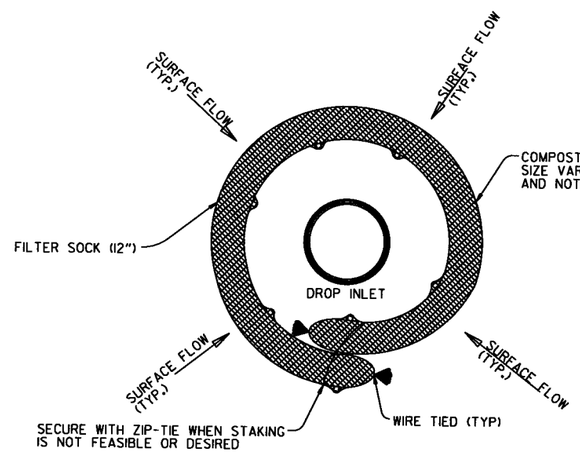


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (10" U.T.)

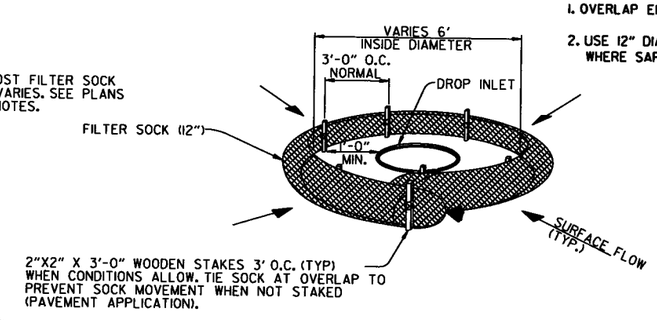
DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)



DROP INLET PLAN VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).
2. USE 12" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.



DROP INLET PERSPECTIVE VIEW
N.T.S.

FILTER SOCK DROP INLET PROTECTION (E-3)

9/12/2016

R080423.DGN

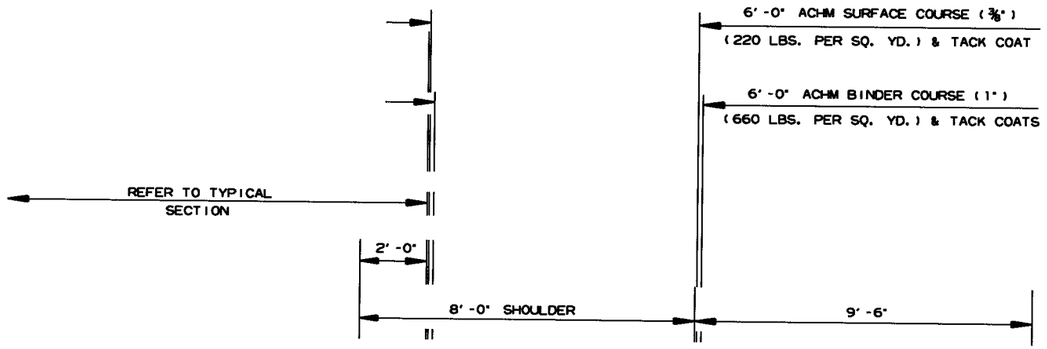
SPECIAL DETAILS

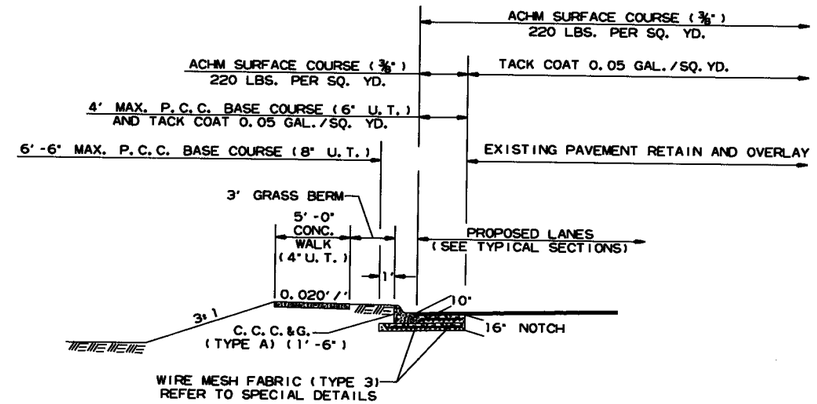
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	15	517

(2) SPECIAL DETAILS

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

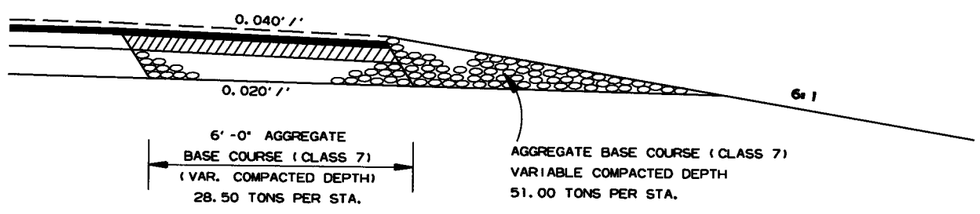
10-10-17





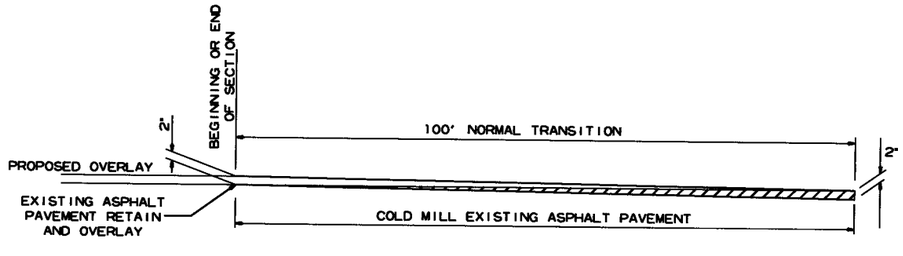
P.C.C. BASE WIDENING DETAIL

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

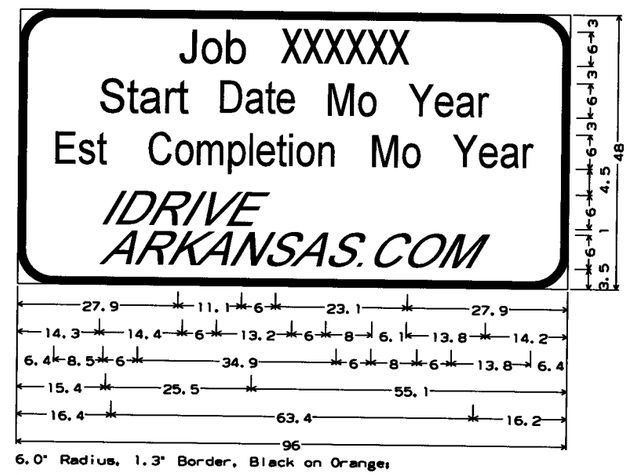


FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC

STA. 645+00 - STA. 651+00
STA. 689+00 - STA. 696+00



DETAIL FOR TRANSITIONS



6.0" Radius, 1.3" Border, Black on Orange;
"Job XXXXXX" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

9/12/2016

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SPECIAL DETAILS

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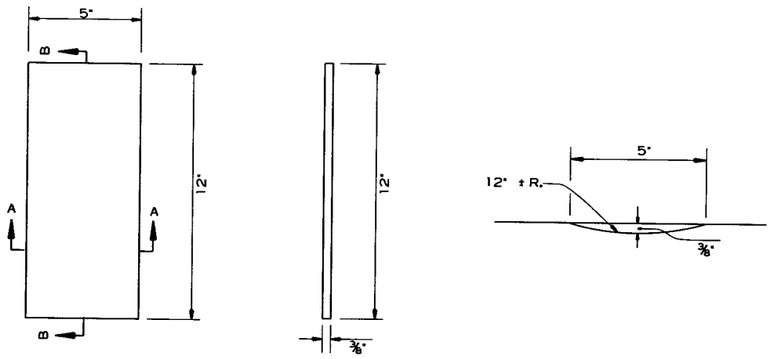
				6	ARK.			
				JOB NO.		080423	16	517

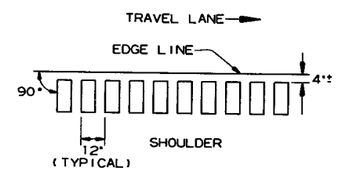
(2) SPECIAL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

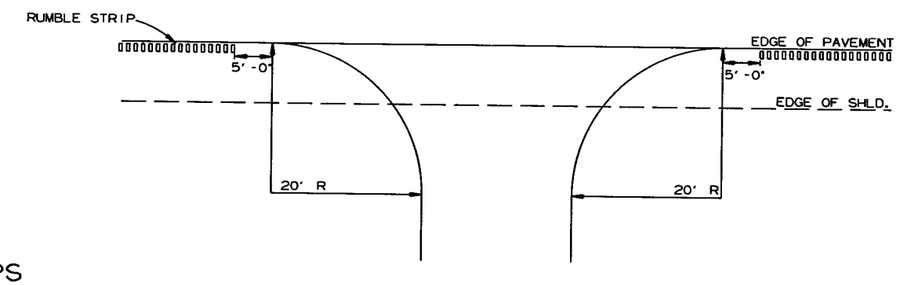


PLAN SECTION B-B SECTION A-A

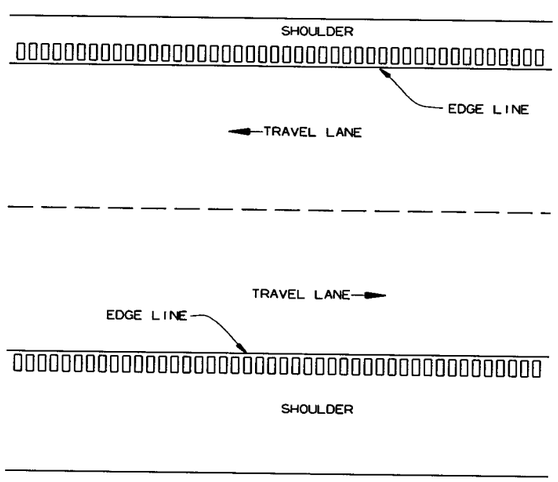
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



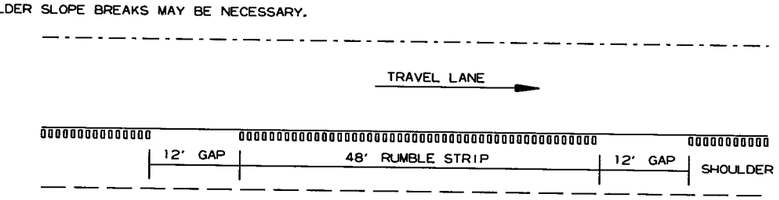
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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

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SPECIAL DETAILS

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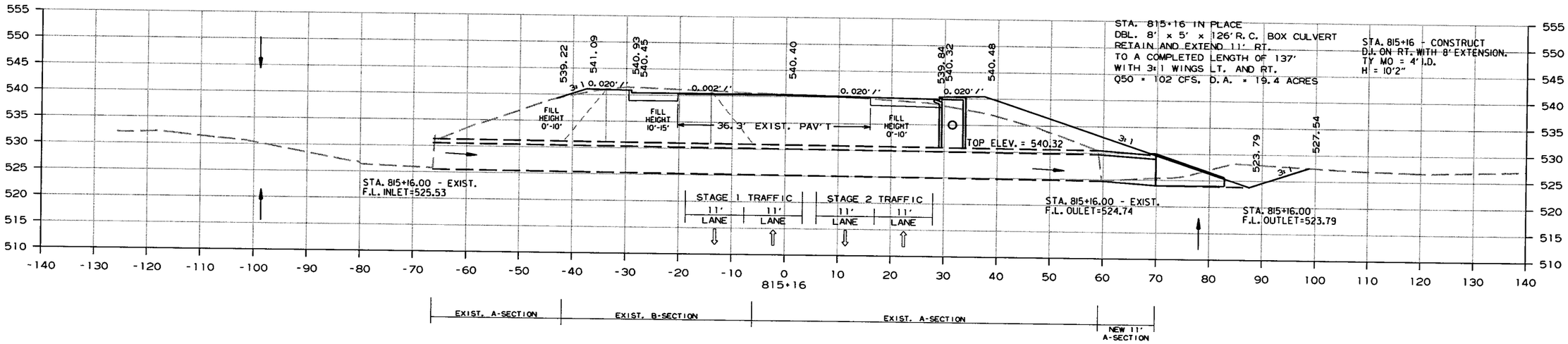
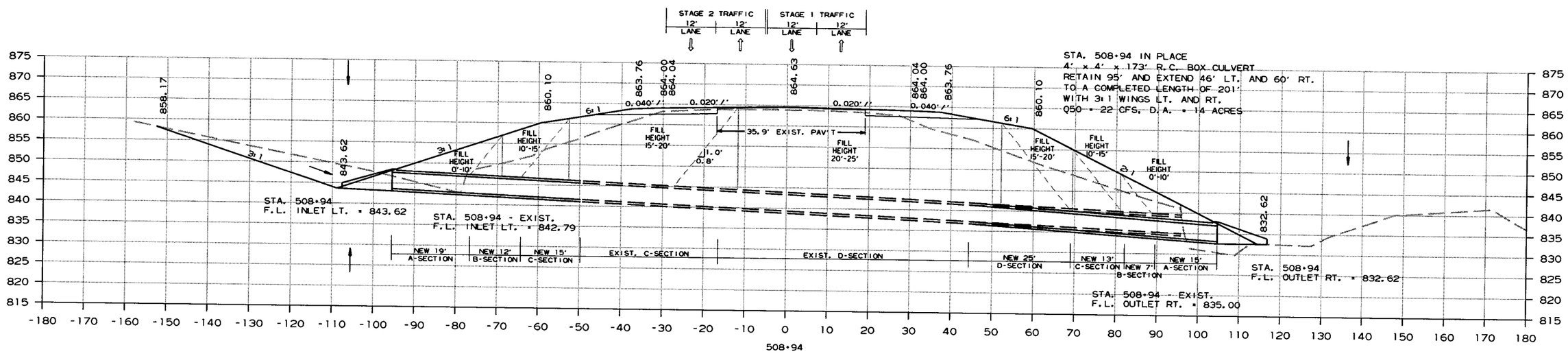
				6	ARK.			
				JOB NO.		080423	17	517

(2) SPECIAL DETAILS

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

10-10-17





9/12/2016

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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
				6	ARK.			
				JOB NO.		080423	18	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(13 LOCATIONS = 286 BAG)

ROCK DITCH CHECKS (E-6)
(13 LOCATIONS = 39 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 231 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 219 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

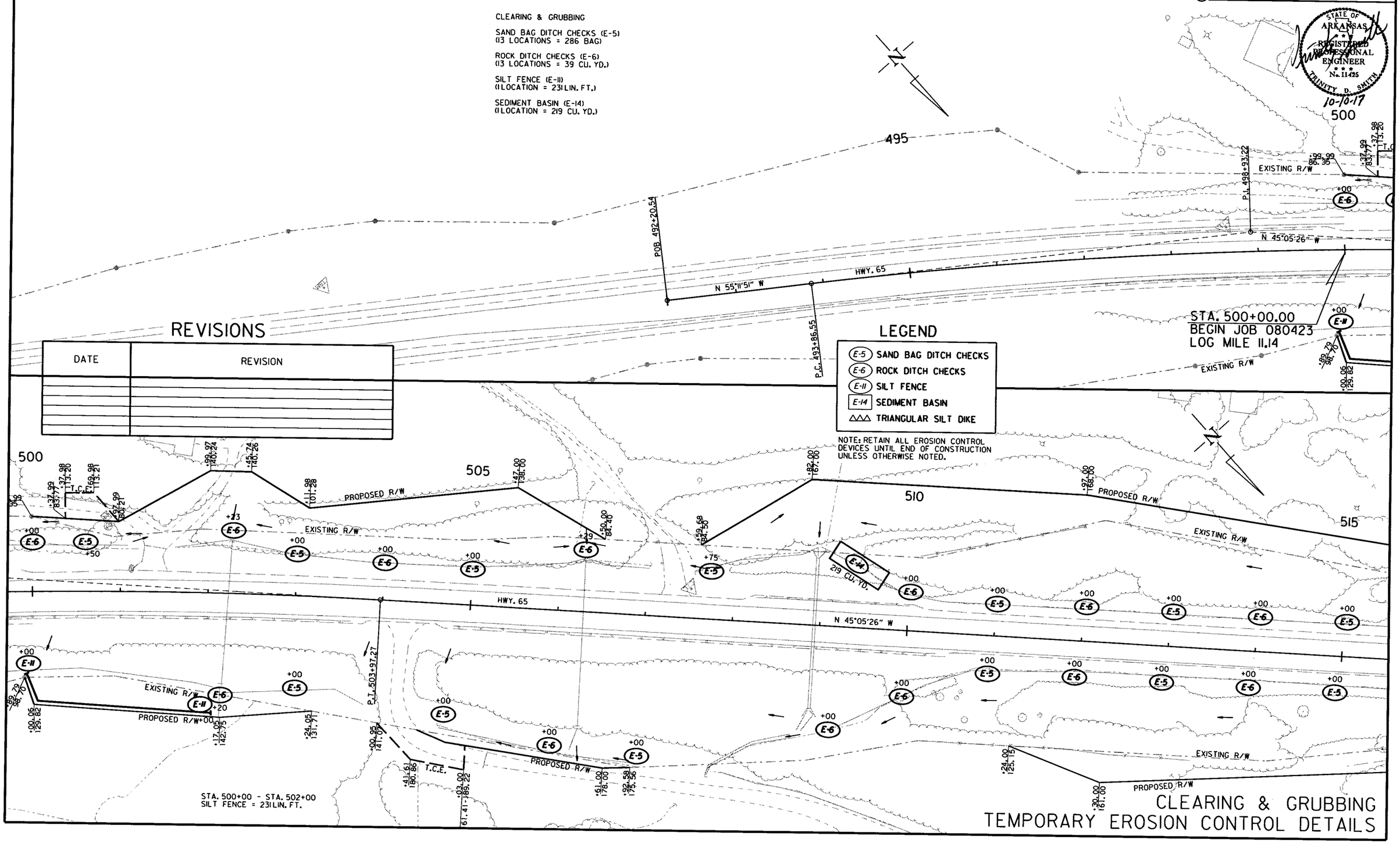
REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	19	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

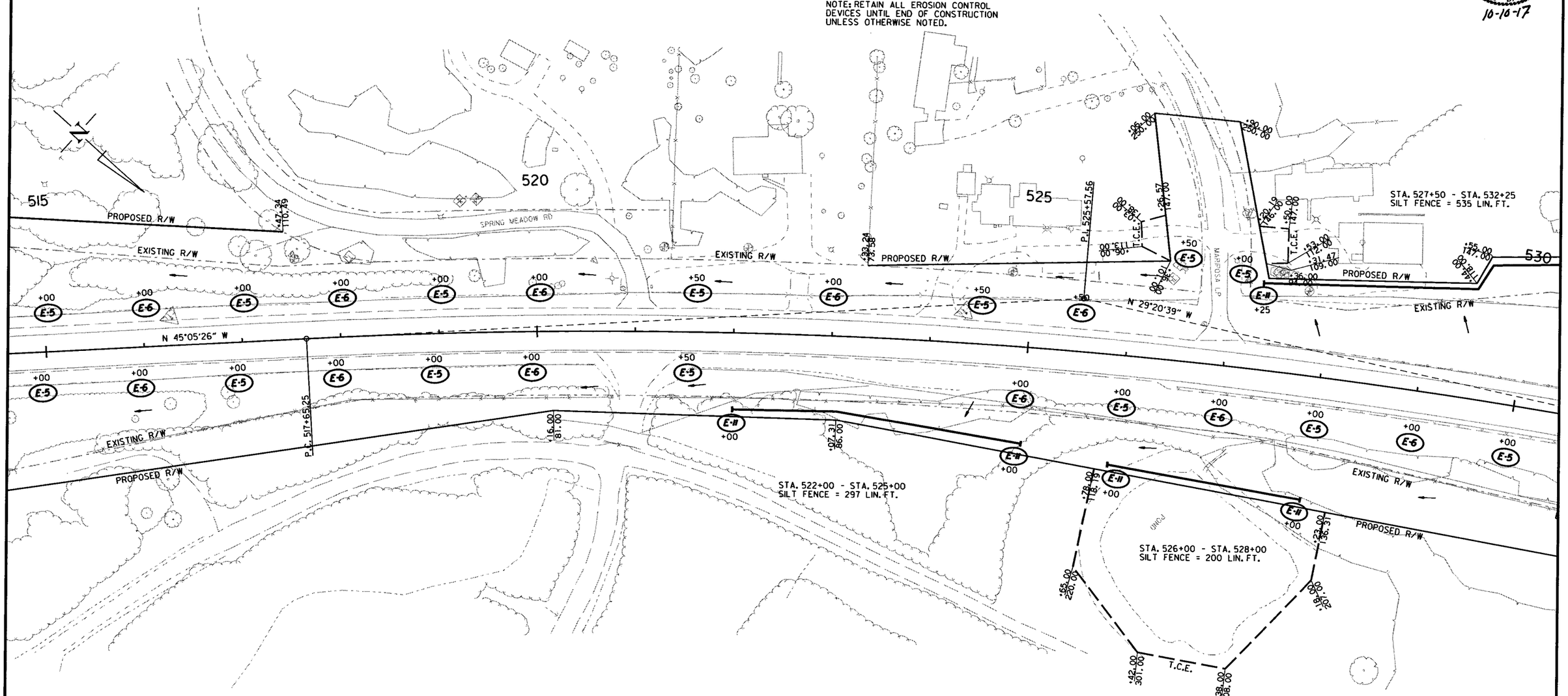
CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(14 LOCATIONS = 308 BAG)

ROCK DITCH CHECKS (E-6)
(11 LOCATIONS = 33 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 1032 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	20	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

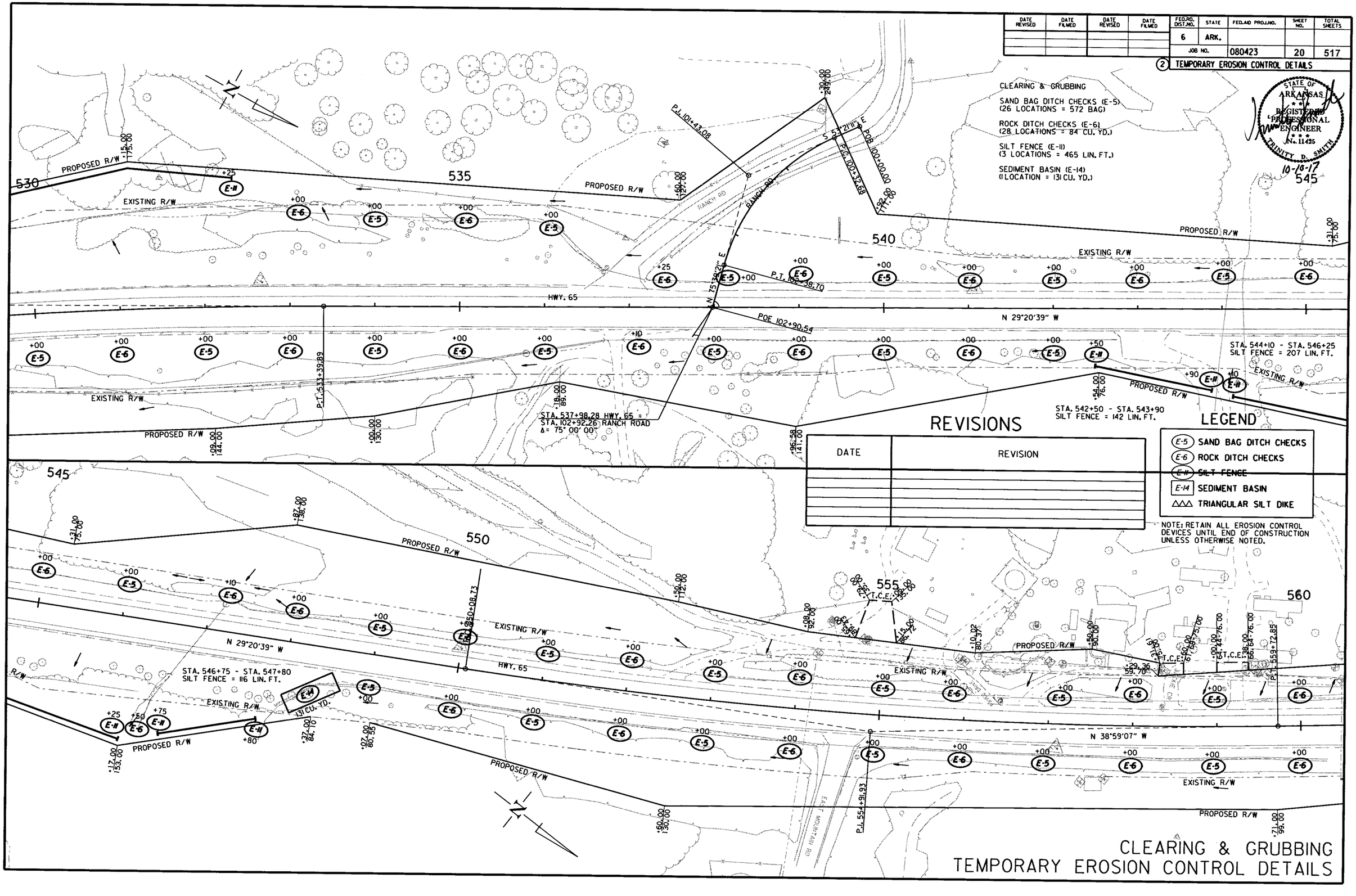
SAND BAG DITCH CHECKS (E-5)
(26 LOCATIONS = 572 BAG)

ROCK DITCH CHECKS (E-6)
(28 LOCATIONS = 84 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 465 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 131 CU. YD.)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	21	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

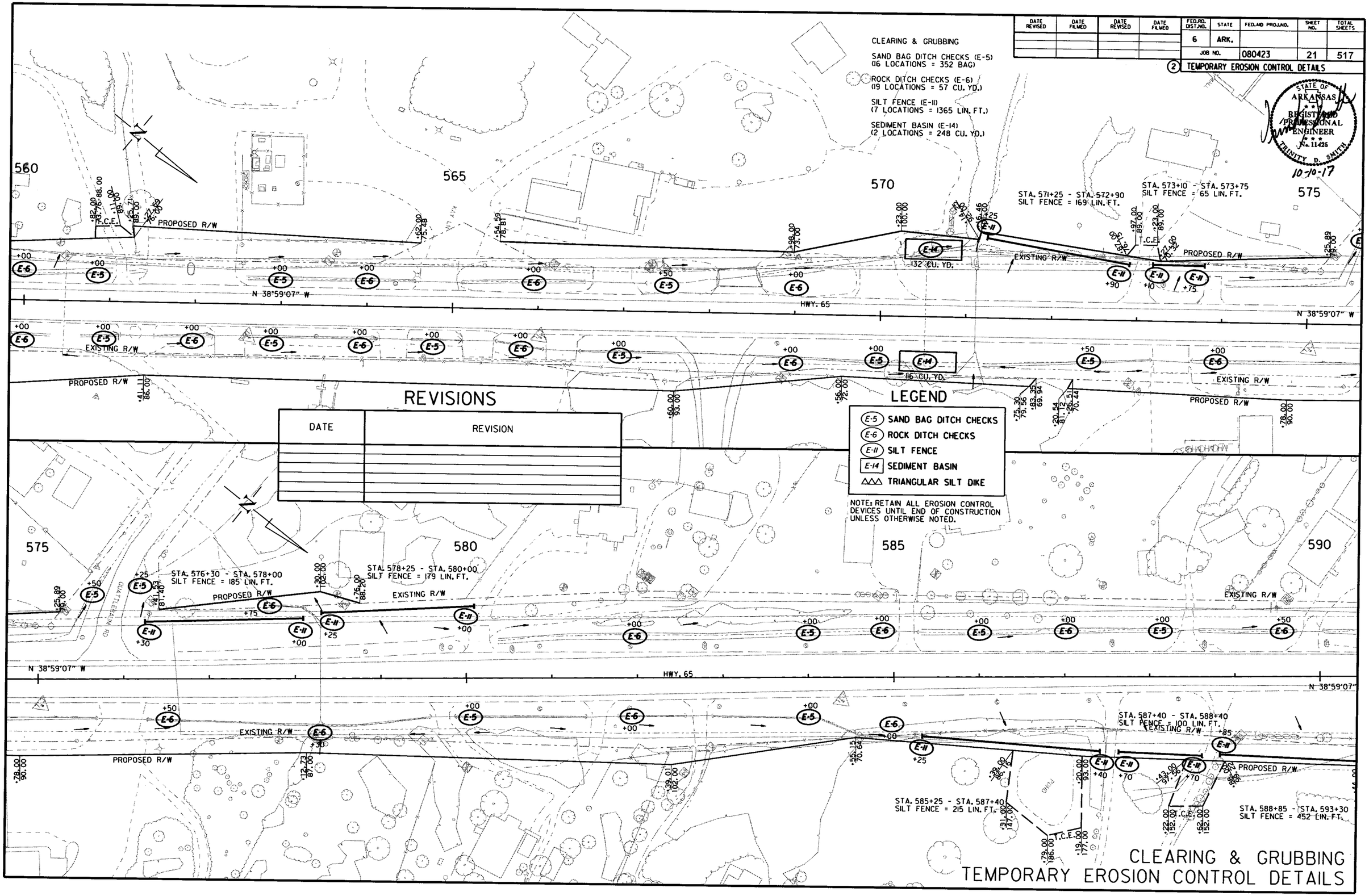
CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(16 LOCATIONS = 352 BAG)

ROCK DITCH CHECKS (E-6)
(19 LOCATIONS = 57 CU. YD.)

SILT FENCE (E-11)
(7 LOCATIONS = 1365 LIN. FT.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 248 CU. YD.)



REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	22	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(13 LOCATIONS = 308 BAG)

ROCK DITCH CHECKS (E-6)
(13 LOCATIONS = 42 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 860 LIN. FT.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 697 CU. YD.)

STATE OF ARKANSAS
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No. 11425
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10-10-17

STA. 604+75 - STA. 605+25
SILT FENCE = 62 LIN. FT.

STA. 601+00 - STA. 604+50
SILT FENCE = 351 LIN. FT.

STA. 617+40 - STA. 622+00
SILT FENCE = 447 LIN. FT.

313 CU. YD.

384 CU. YD.

HWY. 65

N 38°59'07" W

N 36°01'31" W

N 7°25'58" W

P.C. 591+60.22

P.I. 594+56.31

P.T. 597+52.27

P.C. 607+83.05

P.I. 615+13.07

T.C.E.

EXISTING R/W

PROPOSED R/W

590 595 600 605 610 615 620

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

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				6	ARK.			
				JOB NO.	080423		23	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(15 LOCATIONS = 330 BAG)

ROCK DITCH CHECKS (E-6)
(15 LOCATIONS = 45 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 2861 LIN. FT.)

SEDIMENT BASIN (E-14)
(3 LOCATIONS = 1023 CU. YD.)

620 625 630 635 640 645 650

PROPOSED R/W
EXISTING R/W
HWY. 65
N 7°25'58" W
N 13°25'46" W
N 19°54'09" E
P.C. 627+23.36
P.T. 633+23.03
P.T. 624+12.67
P.I. 630+23.47
P.I. 647+20.36
P.C. 638+62.74
T.C.E.
PUJARTU GPS #7100H

STA. 622+80 - STA. 629+00
SILT FENCE = 620 LIN. FT.

STA. 637+25 - STA. 640+00
SILT FENCE = 275 LIN. FT.

STA. 645+25 - STA. 664+00
SILT FENCE = 1966 LIN. FT.

536 CU. YD.
307 CU. YD.
180 CU. YD.

CLINTON QUARRY

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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6	ARK.			
JOB NO.		080423	24	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(14 LOCATIONS = 308 BAG)

ROCK DITCH CHECKS (E-6)
(14 LOCATIONS = 42 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 367 CU. YD.)

STATE OF ARKANSAS
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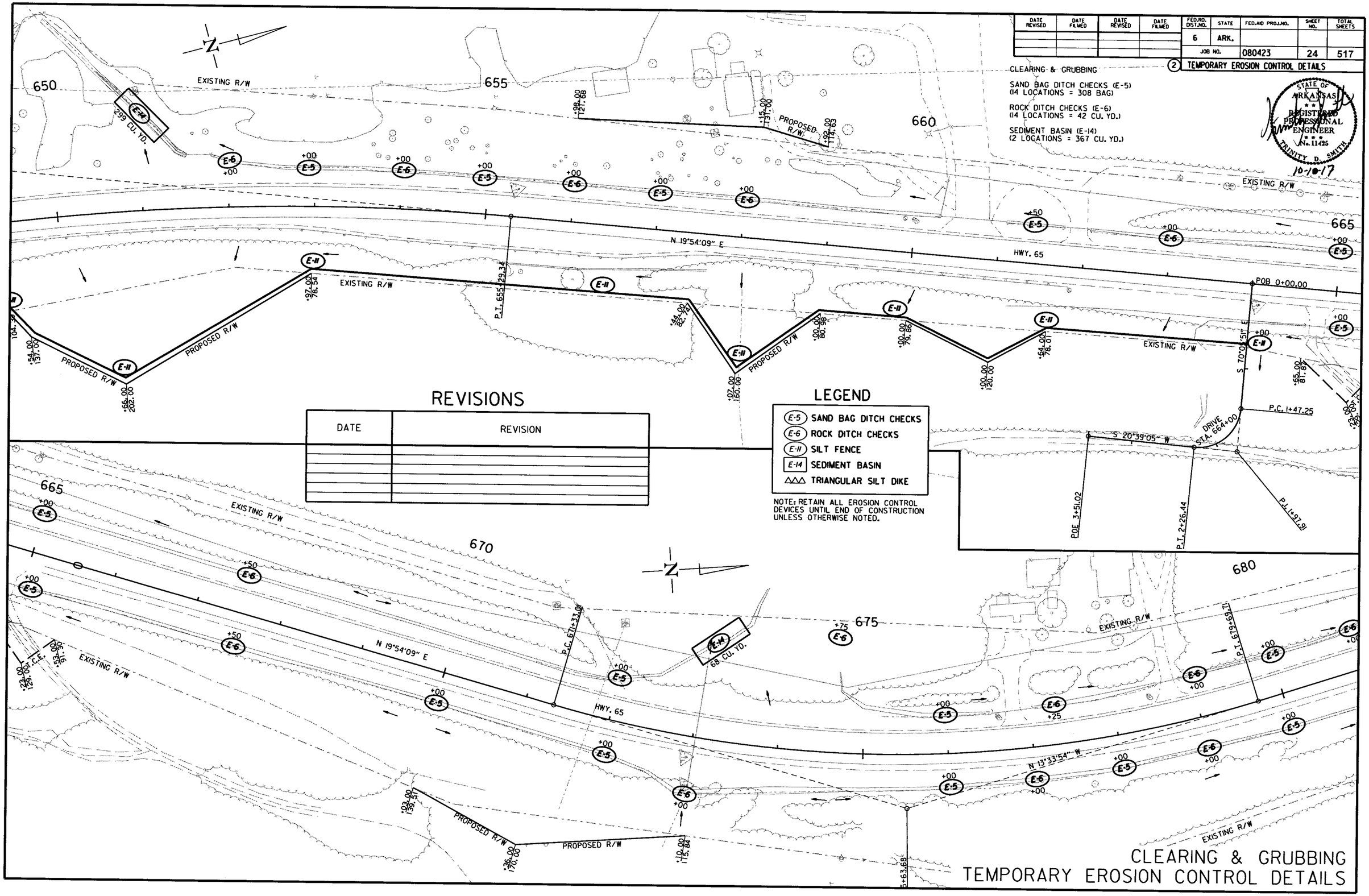
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	25	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

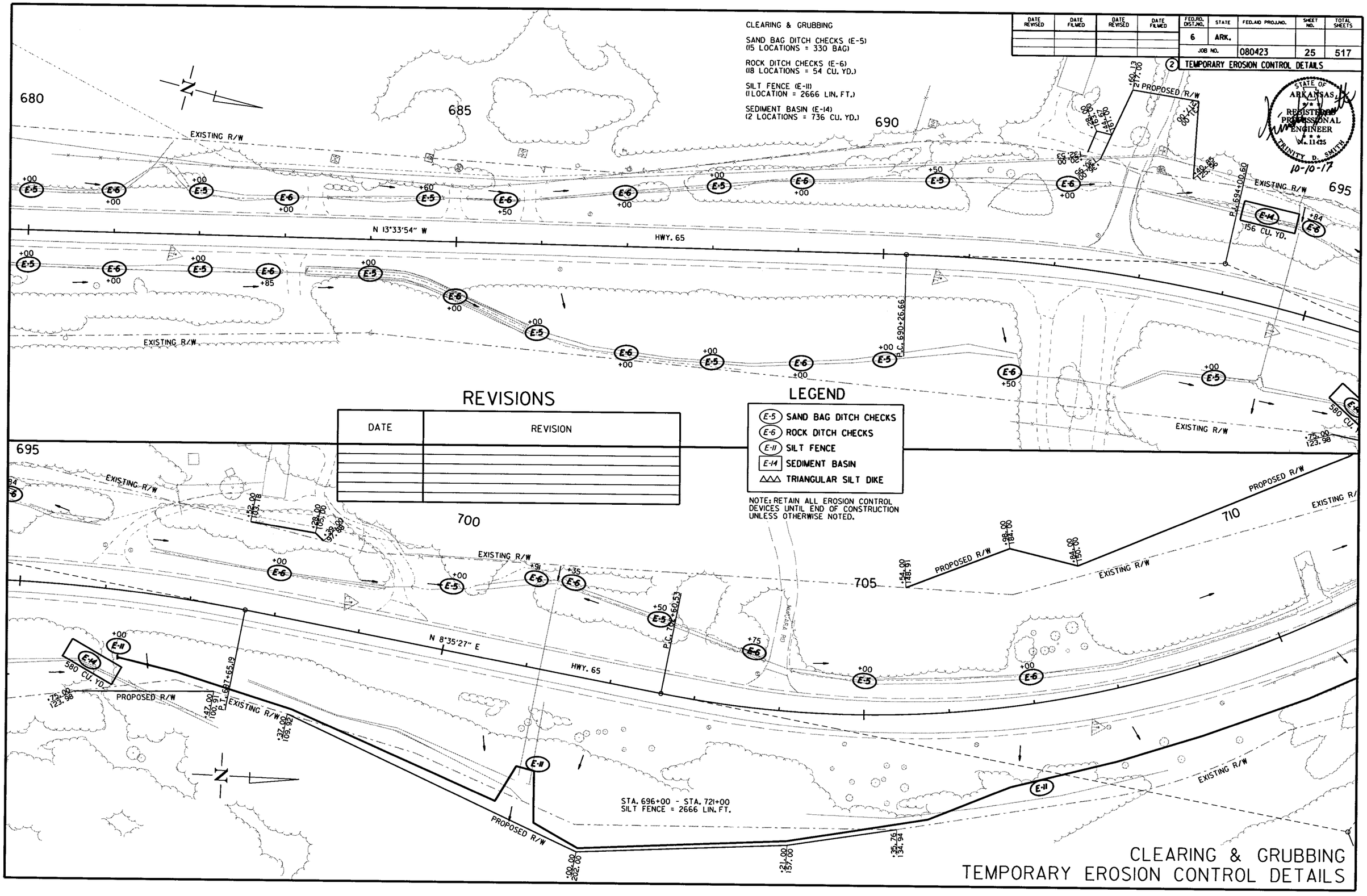
SAND BAG DITCH CHECKS (E-5)
(15 LOCATIONS = 330 BAG)

ROCK DITCH CHECKS (E-6)
(18 LOCATIONS = 54 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 2666 LIN. FT.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 736 CU. YD.)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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				6	ARK.			
				JOB NO.		080423	26	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(7 LOCATIONS = 154 BAG)

ROCK DITCH CHECKS (E-6)
(9 LOCATIONS = 27 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 177 CU. YD.)

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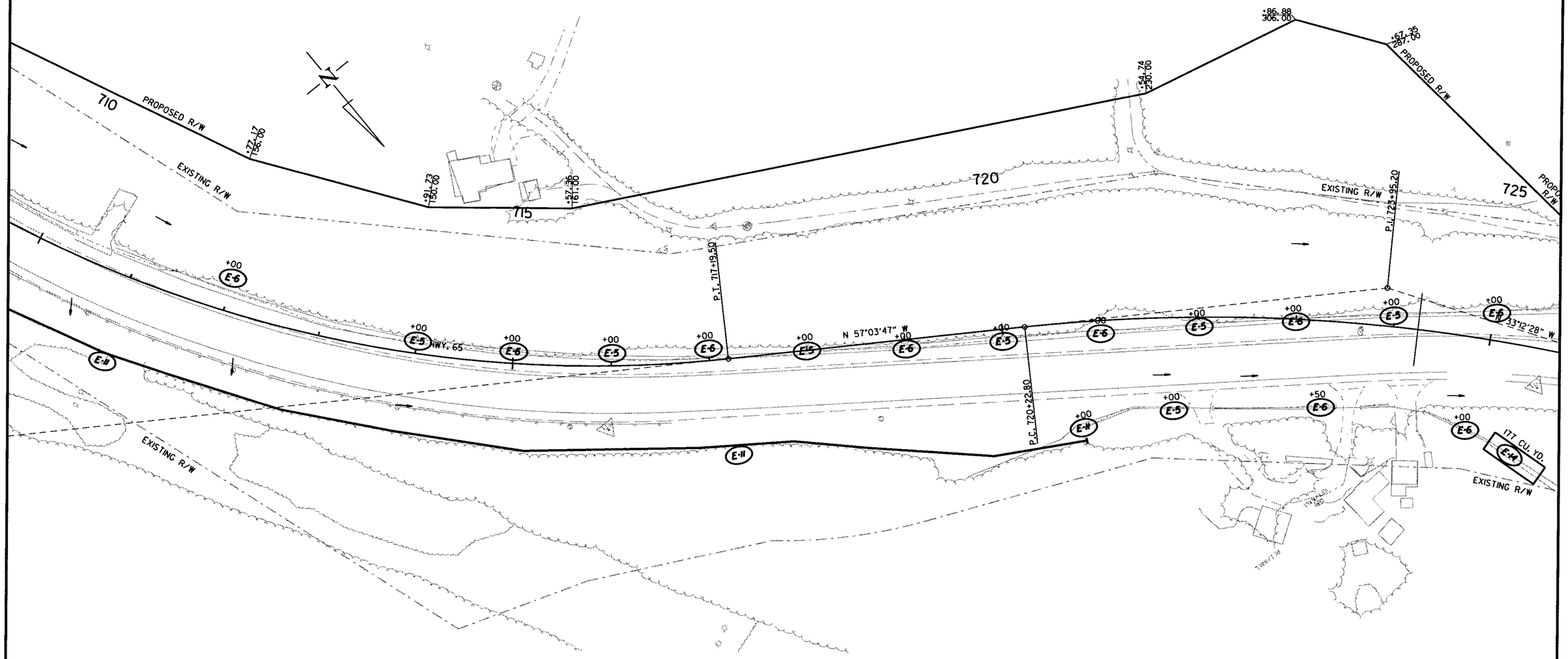
TRINITY D. SMITH
10-10-17



CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	27	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(10 LOCATIONS = 220 BAG)

ROCK DITCH CHECKS (E-6)
(10 LOCATIONS = 30 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 381 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 471 CU. YD.)

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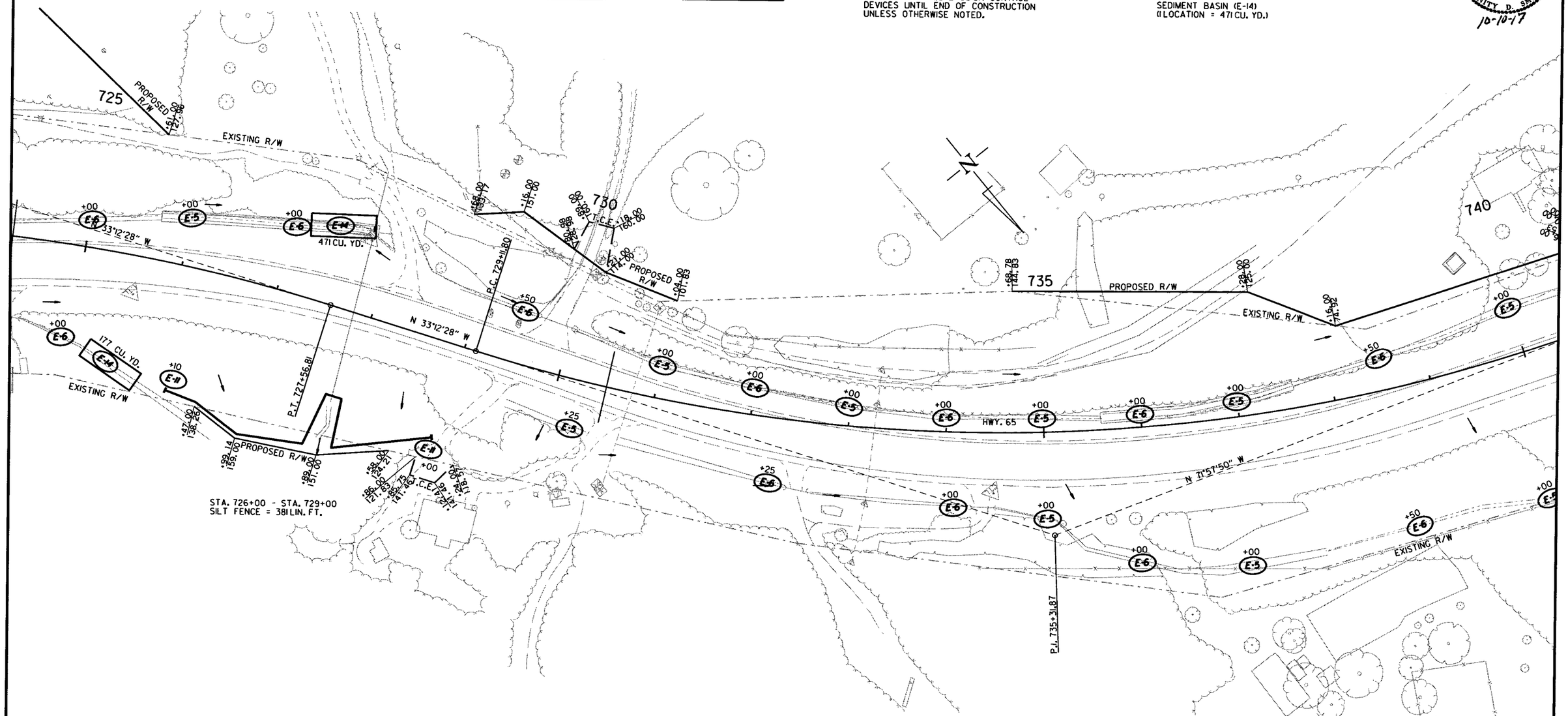

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CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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JOB NO.		080423	28	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING

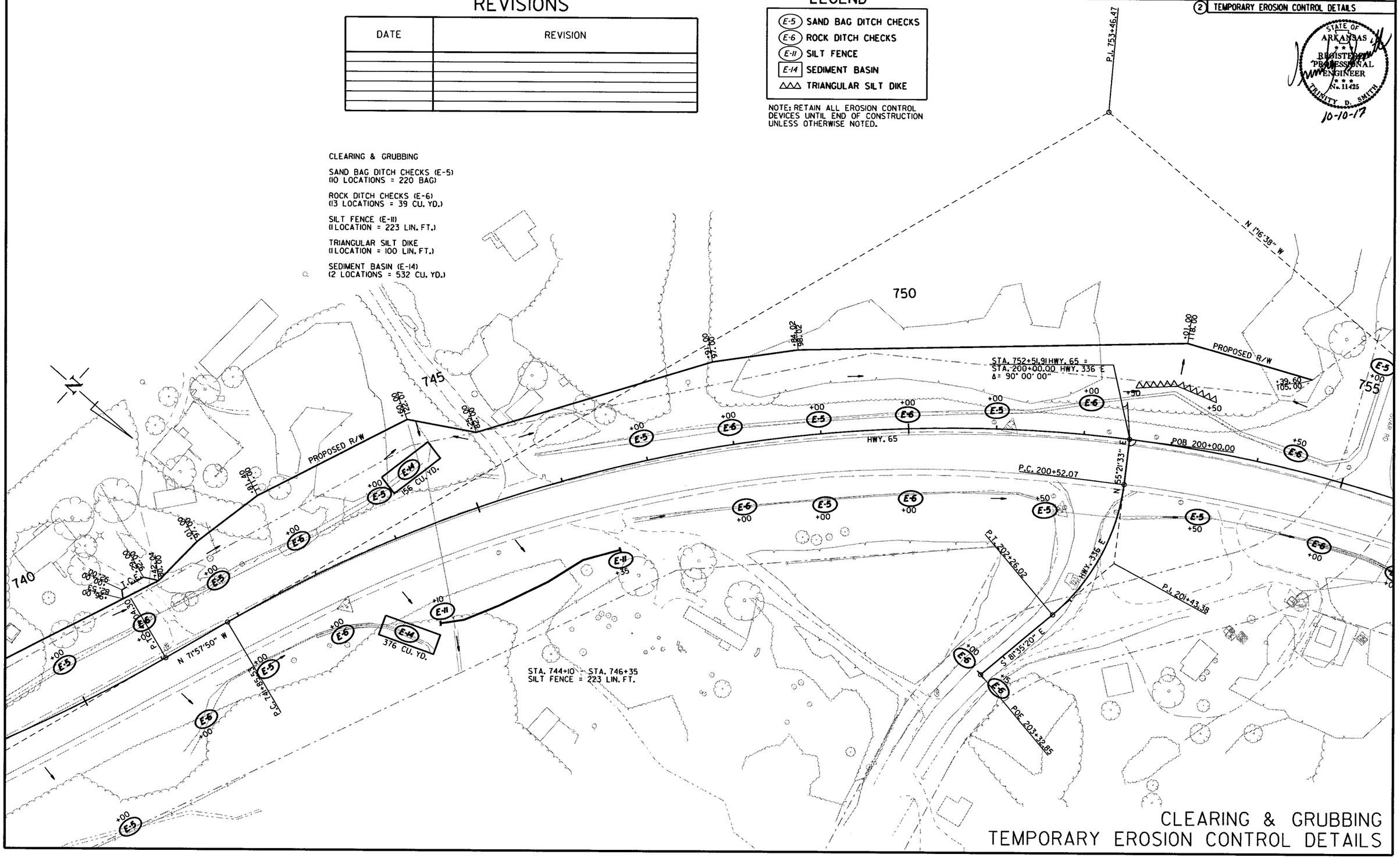
SAND BAG DITCH CHECKS (E-5)
(10 LOCATIONS = 220 BAG)

ROCK DITCH CHECKS (E-6)
(13 LOCATIONS = 39 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 223 LIN. FT.)

TRIANGULAR SILT DIKE
(1 LOCATION = 100 LIN. FT.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 532 CU. YD.)



CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

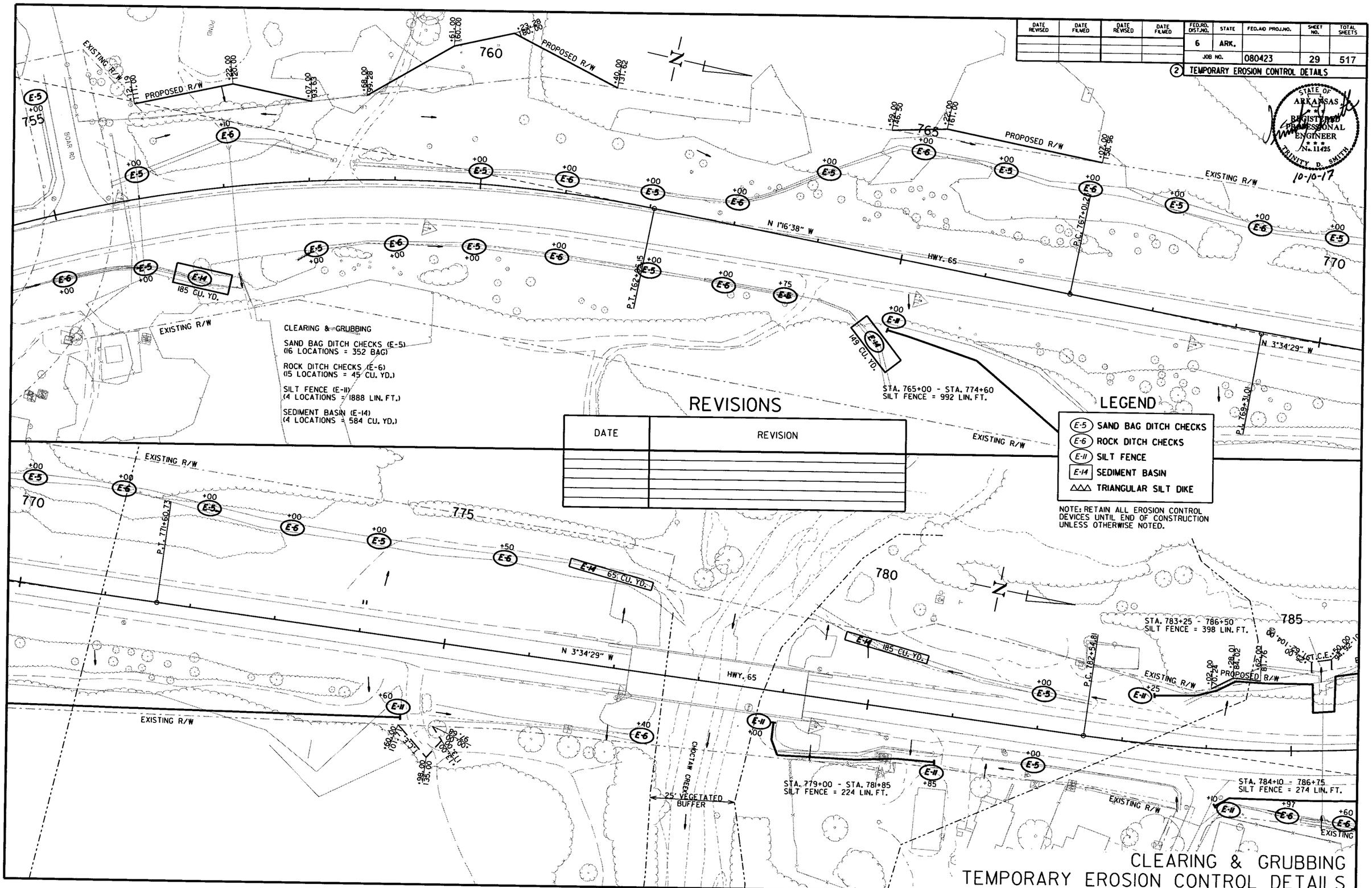
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	29	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



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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.		080423	30	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(18 LOCATIONS = 396 BAG)

ROCK DITCH CHECKS (E-6)
(17 LOCATIONS = 51 CU. YD.)

SILT FENCE (E-11)
(2 LOCATIONS = 599 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 205 CU. YD.)

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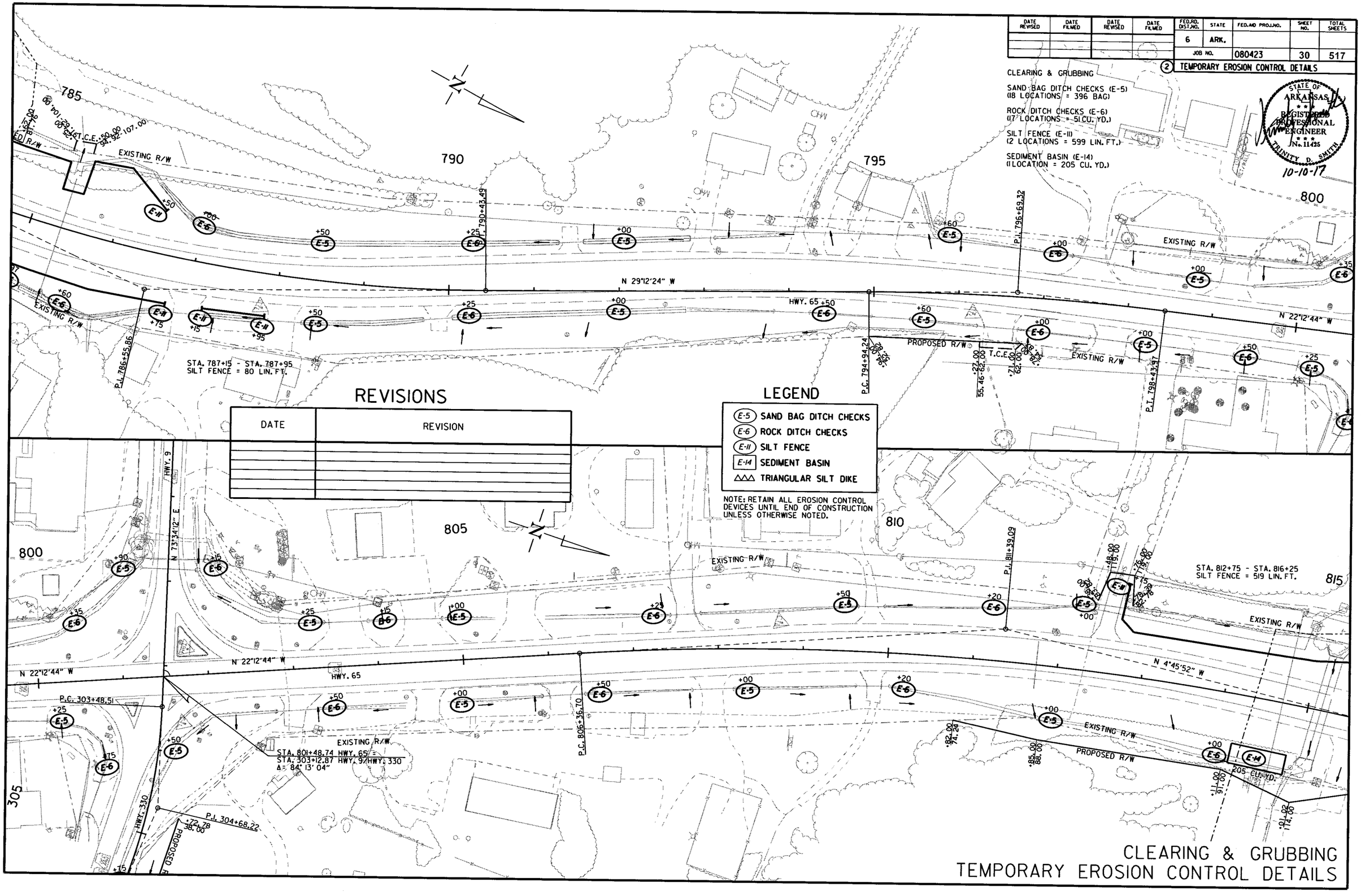

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	31	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(8 LOCATIONS = 24 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 334 CU. YD.)

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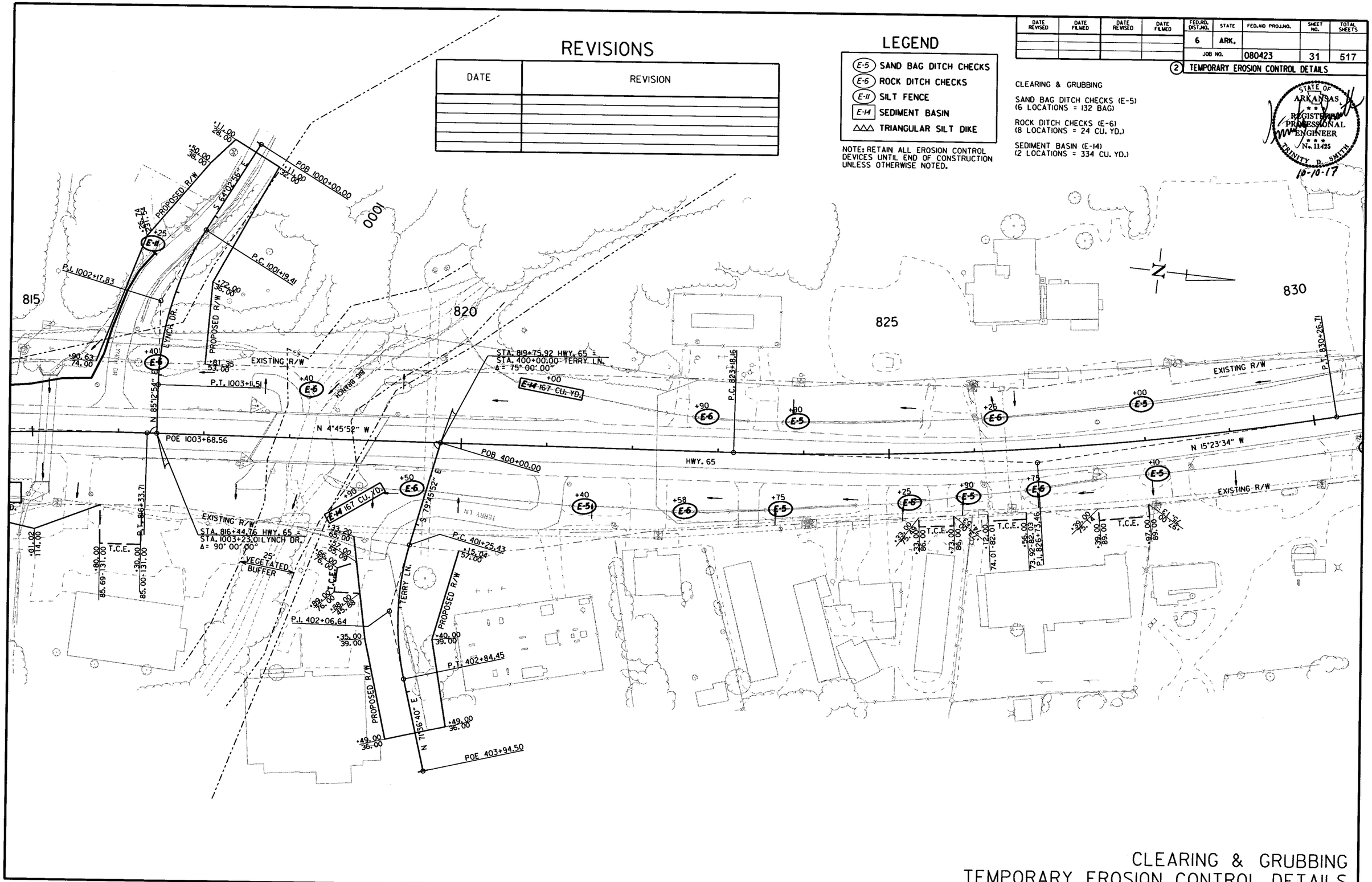

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CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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.		080423	32	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(17 LOCATIONS = 374 BAG)

ROCK DITCH CHECKS (E-6)
(19 LOCATIONS = 57 CU. YD.)

SILT FENCE (E-11)
(2 LOCATIONS = 1428 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 545 CU. YD.)

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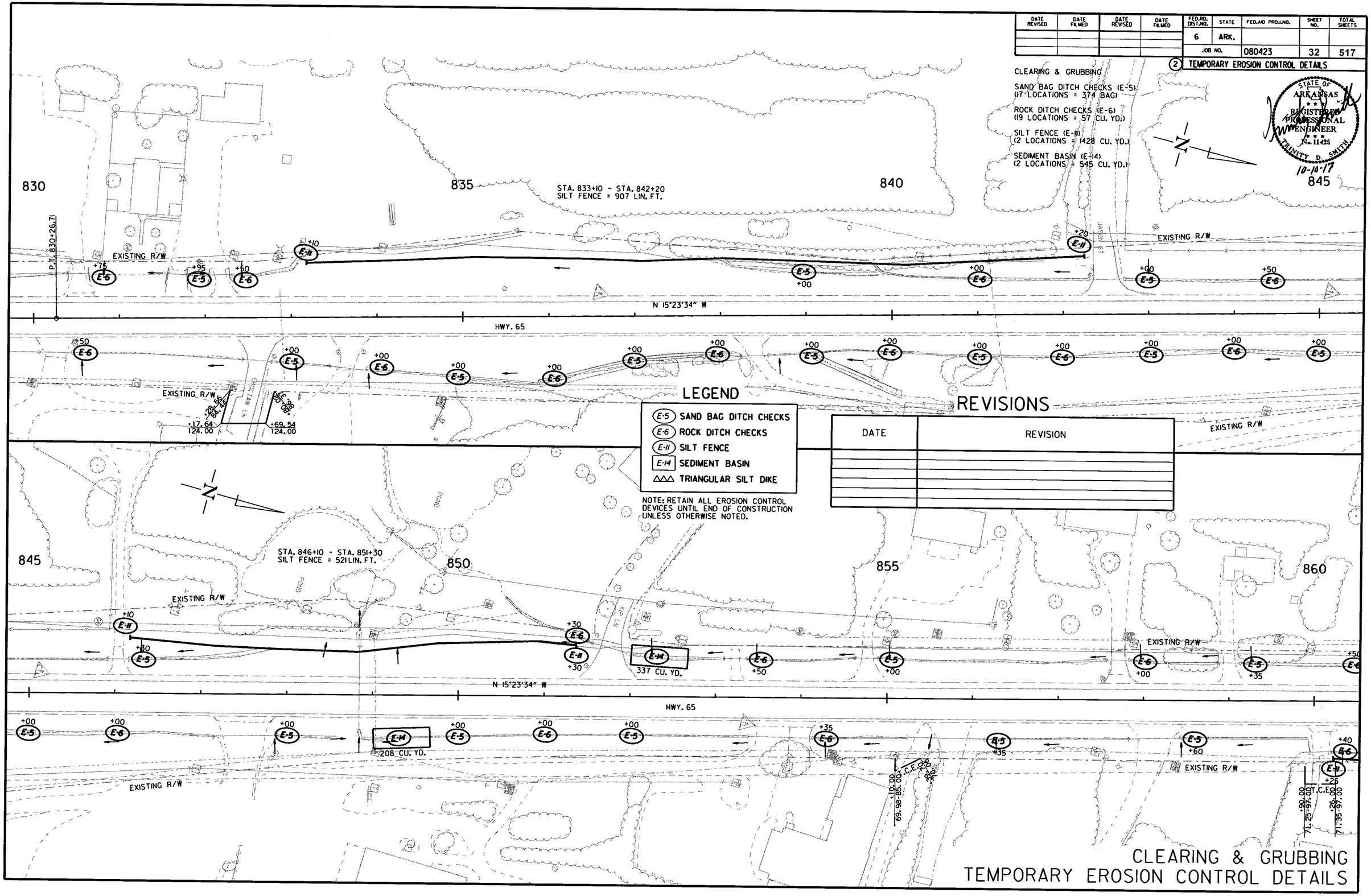

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	33	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(12 LOCATIONS = 264 BAG)

ROCK DITCH CHECKS (E-6)
(12 LOCATIONS = 36 CU. YD.)

SILT FENCE (E-11)
(7 LOCATIONS = 2763 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATIONS = 165 CU. YD.)

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STA. 860+25 - STA. 862+00
SILT FENCE = 176 LIN. FT.

STA. 862+25 - STA. 881+00
SILT FENCE = 1899 LIN. FT.

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STA. 883+50 - STA. 883+85
SILT FENCE = 39 LIN. FT.

STA. 884+20 - STA. 885+00
SILT FENCE = 87 LIN. FT.

STA. 882+40 - STA. 883+20
SILT FENCE = 83 LIN. FT.

STA. 885+30 - STA. 888+10
SILT FENCE = 289 LIN. FT.

STA. 888+60 - STA. 890+50
SILT FENCE = 190 LIN. FT.

REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

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6	ARK.			
JOB NO.		080423	34	517

(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

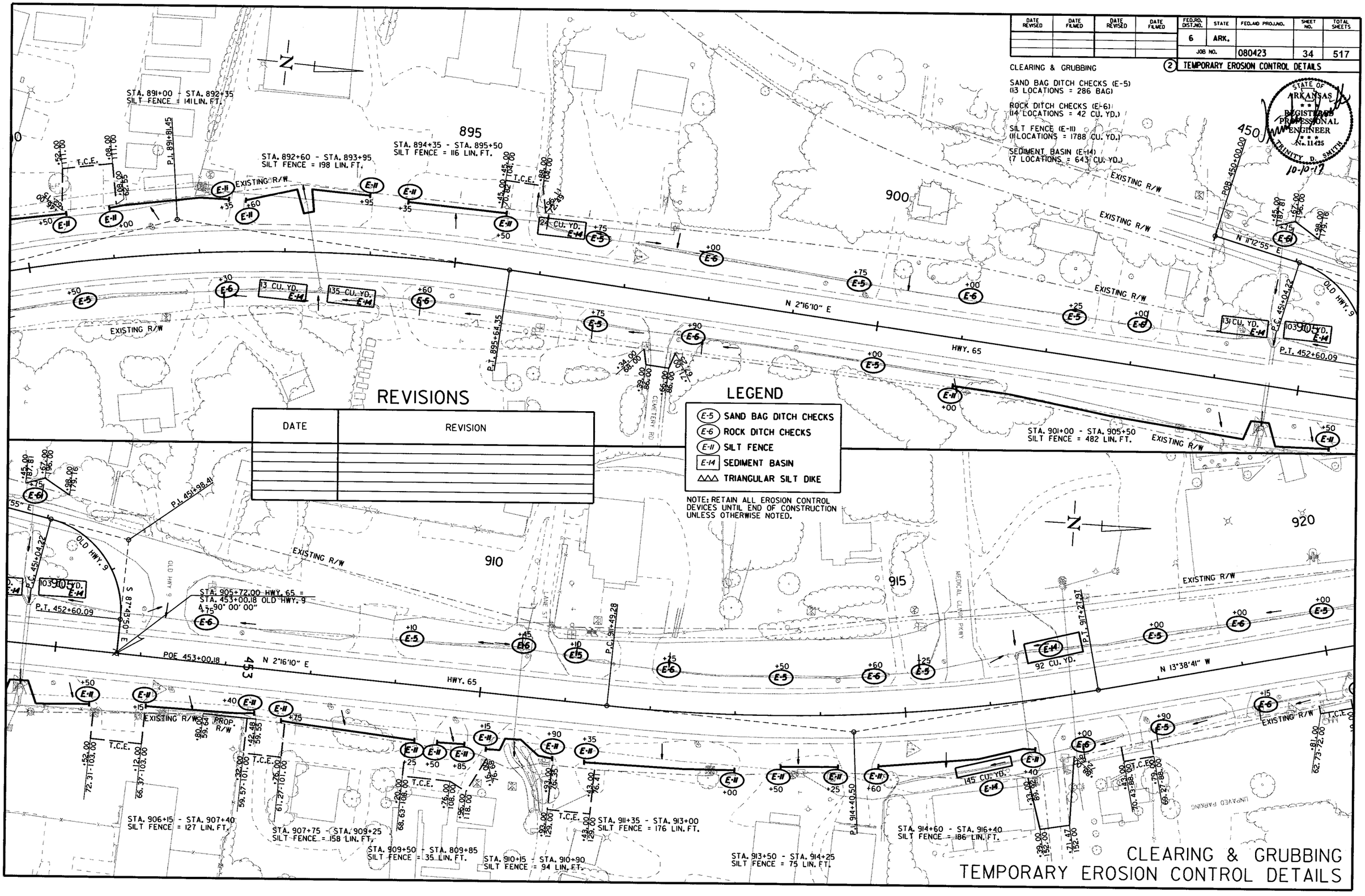
SAND BAG DITCH CHECKS (E-5)
(13 LOCATIONS = 286 BAG)

ROCK DITCH CHECKS (E-6)
(14 LOCATIONS = 42 CU. YD.)

SILT FENCE (E-11)
(11 LOCATIONS = 1788 CU. YD.)

SEDIMENT BASIN (E-14)
(7 LOCATIONS = 643 CU. YD.)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/16/2017

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(2) TEMPORARY EROSION CONTROL DETAILS

CLEARING & GRUBBING

SAND BAG DITCH CHECKS (E-5)
(14 LOCATIONS = 308 BAG)

ROCK DITCH CHECKS (E-6)
(15 LOCATIONS = 45 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 358 CU. YD.)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-10-17

920 925 930

EXISTING R/W

HWY. 65 N 13°38'41" W

POE 933+20.07

STA. 928+92.71
END JOB 080423

STA. 925+75 - STA. 926+50
SILT FENCE = 75 LIN. FT.

STA. 926+80 - STA. 928+15
SILT FENCE = 136 LIN. FT.

STA. 928+45 - STA. 928+50
SILT FENCE = 147 LIN. FT.

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE	REVISION

EXISTING R/W

HWY. 65 N 22°12'44" W

P.I. 304+68.22

PROPOSED R/W

HWY. 330 S 85°07'54" E

N 88°36'58" E

P.C. 308+06.53

P.T. 309+20.21

POE 312+36.65

P.T. 305+85.16

P.T. 308+63.42

P.C. 305+28.51

N 22°12'44" W

POB 298+30.80

HWY. 9 N 73°34'12" E

STA. 801+48.74 HWY. 65 =
STA. 303+12.87 HWY. 9/HWY. 330
Δ= 84° 13' 04"

800

N

CLEARING & GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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(2) TEMPORARY EROSION CONTROL DETAILS

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TRINITY D. SMITH
10-10-17

STAGE I

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 700 CU. YD.)

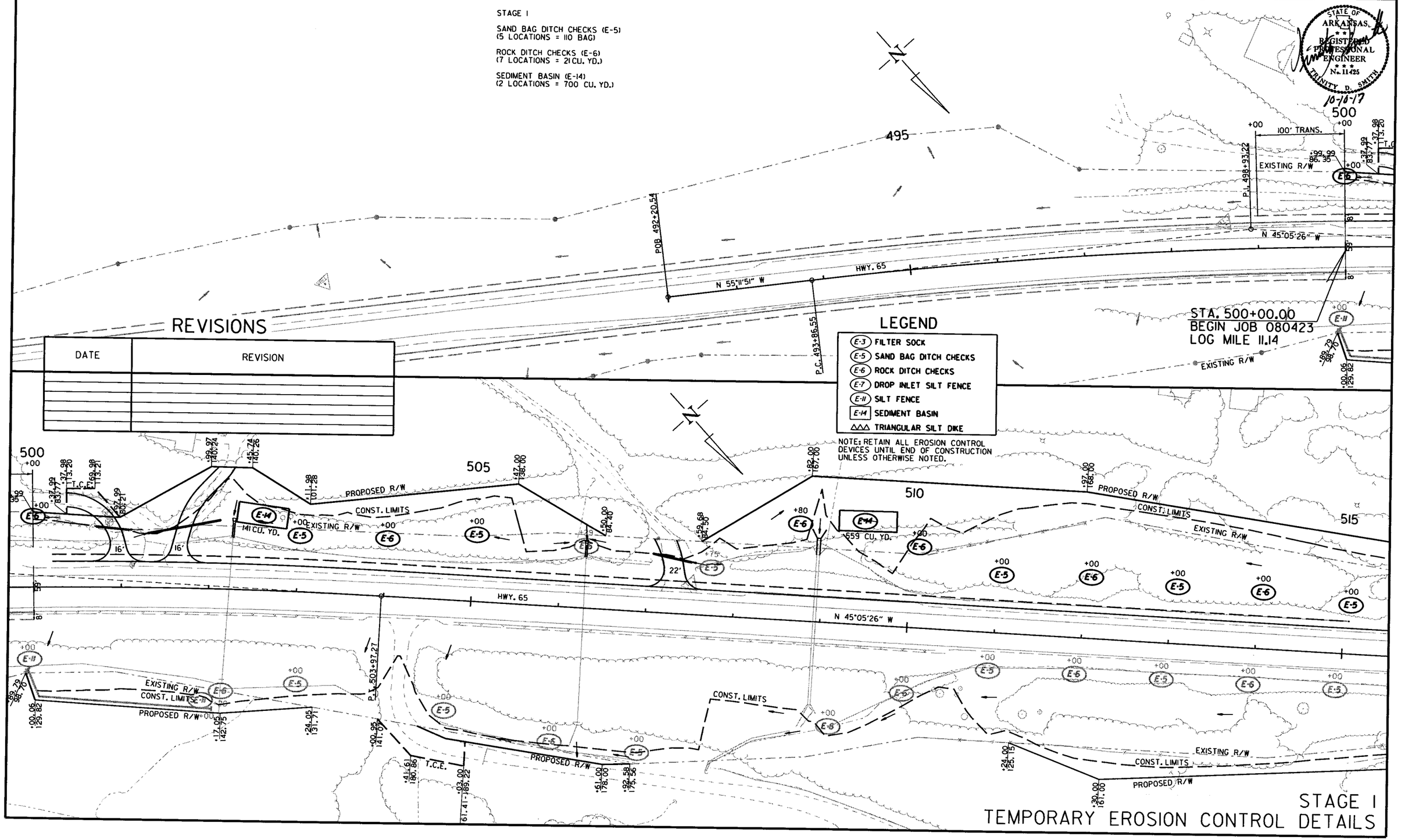
REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



STAGE I
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
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(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

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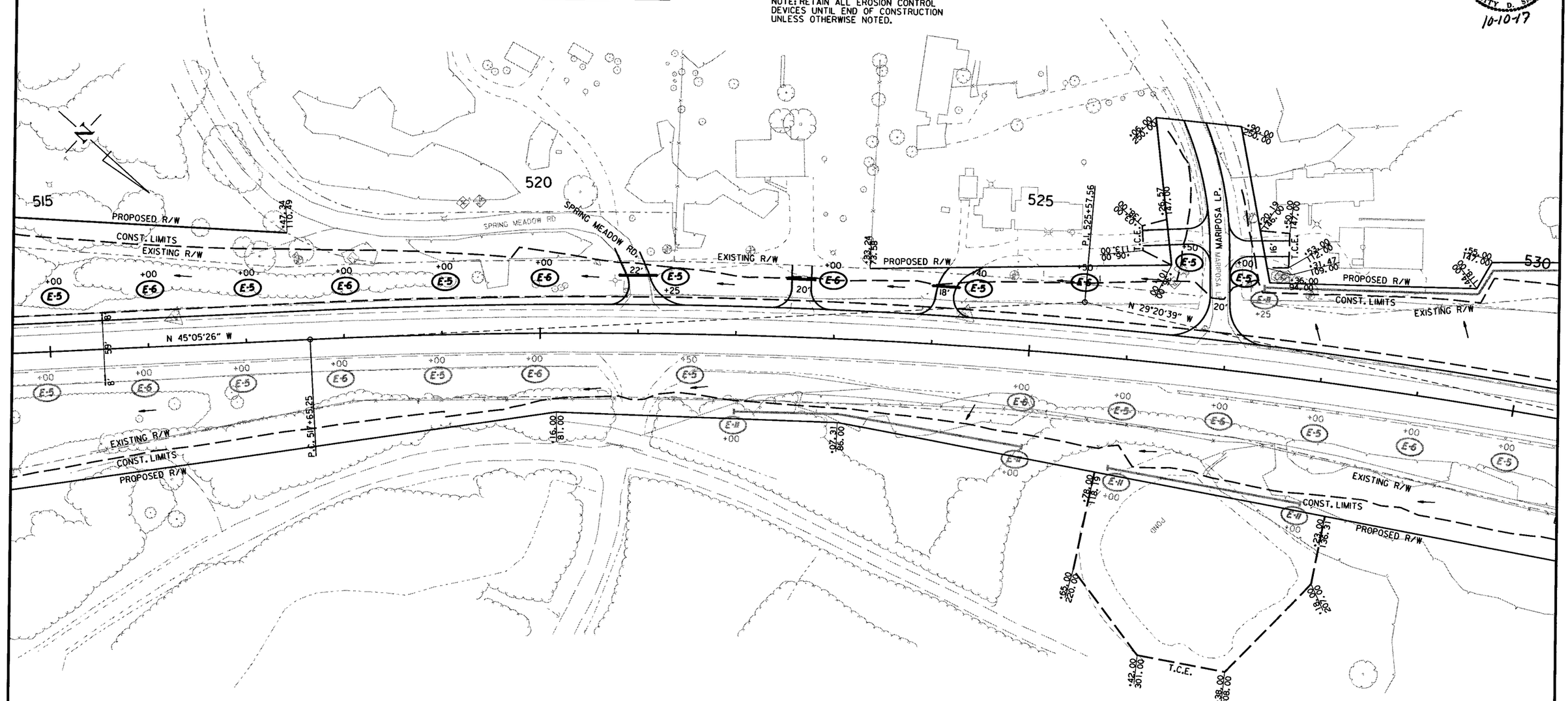

STAGE I
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	38	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

FILTER SOCK (E-3)
(7 LOCATIONS = 35 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAG)

ROCK DITCH CHECKS (E-6)
(9 LOCATIONS = 27 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 778 CU. YD.)

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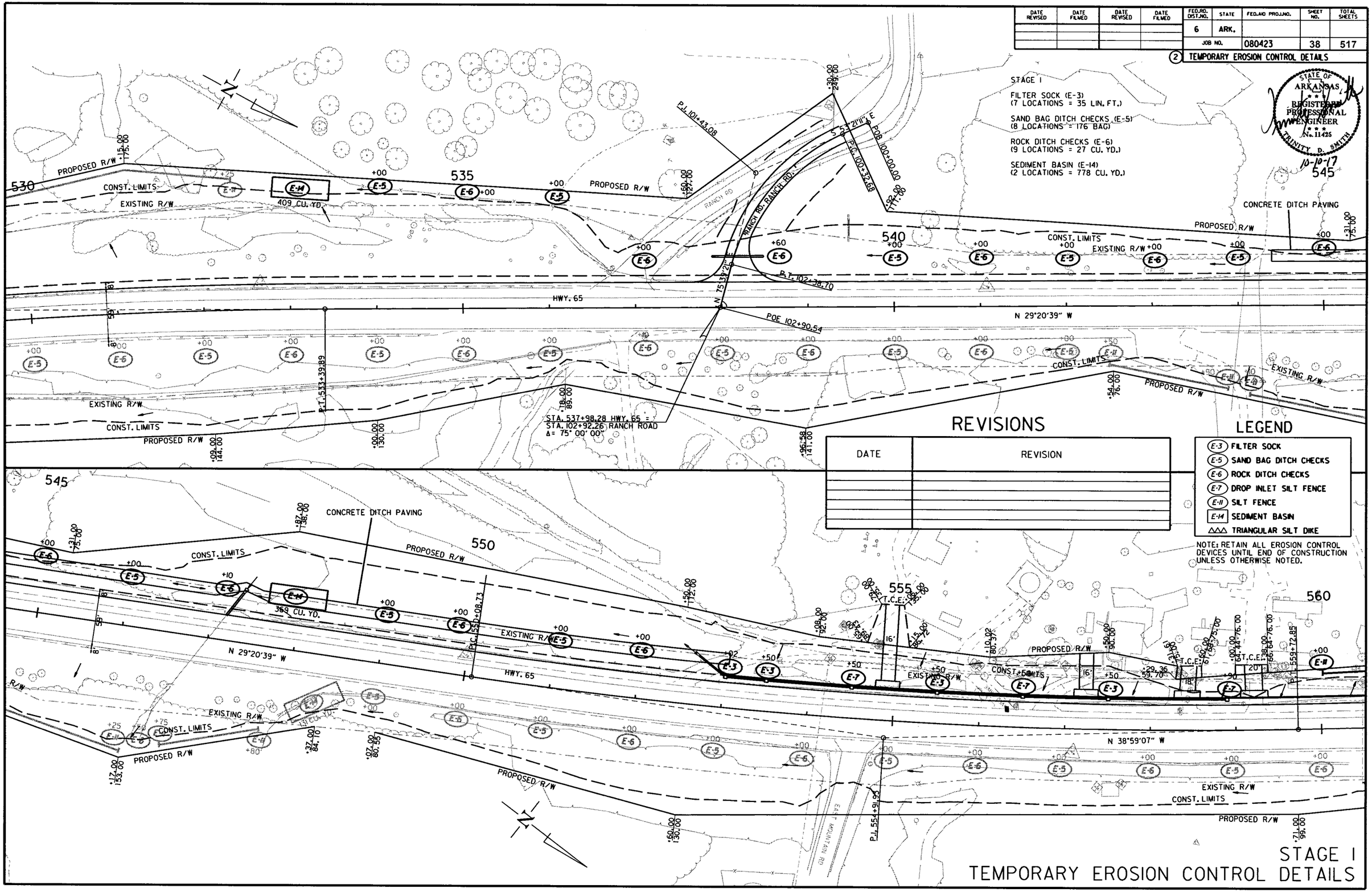

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	39	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 91 LIN. FT.)

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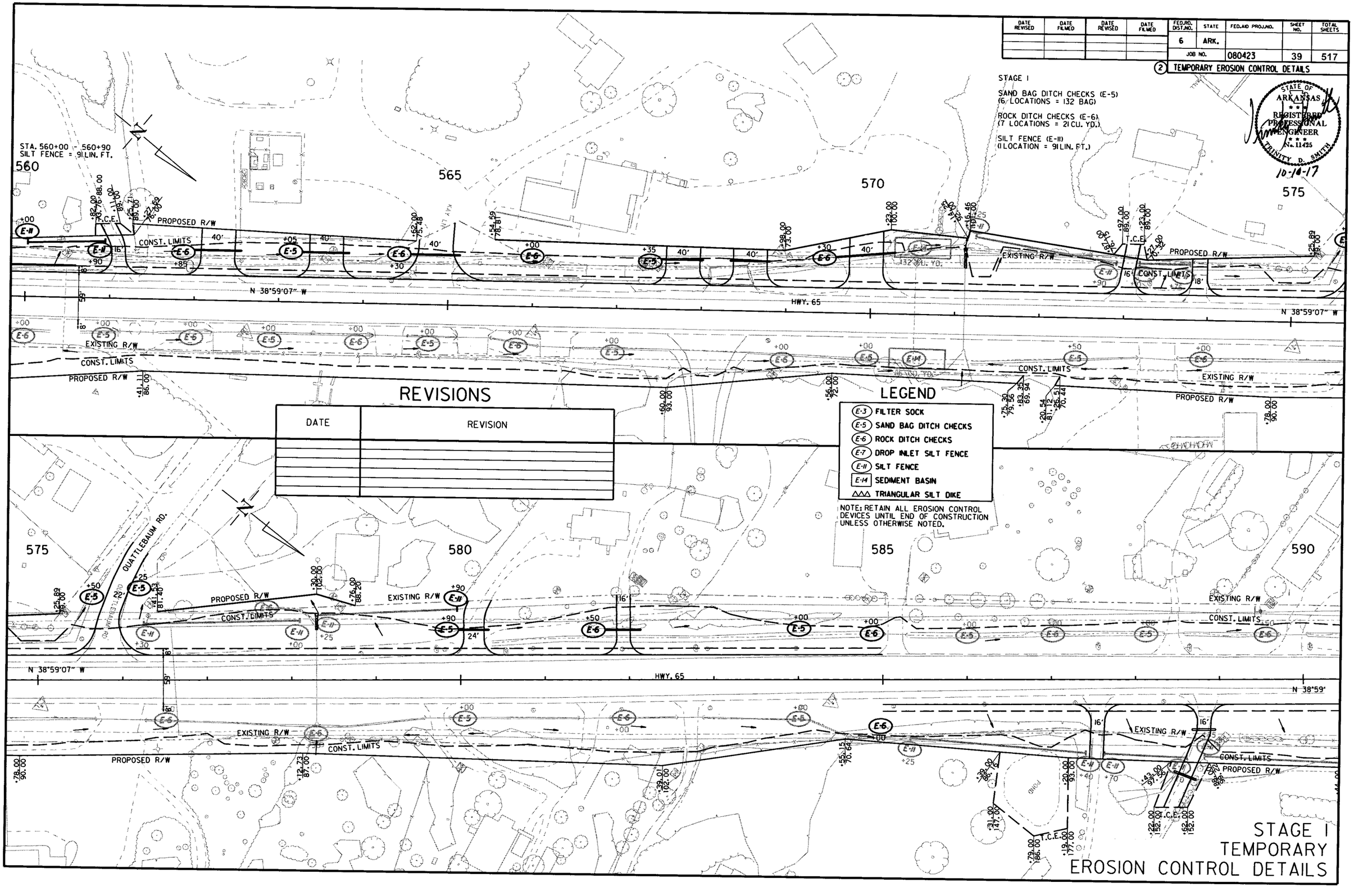
STA. 560+00 - 560+90
SILT FENCE = 91 LIN. FT.



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I
TEMPORARY
EROSION CONTROL DETAILS

8/17/2017

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	40	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(6 LOCATIONS = 18 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 384 CU. YD.)

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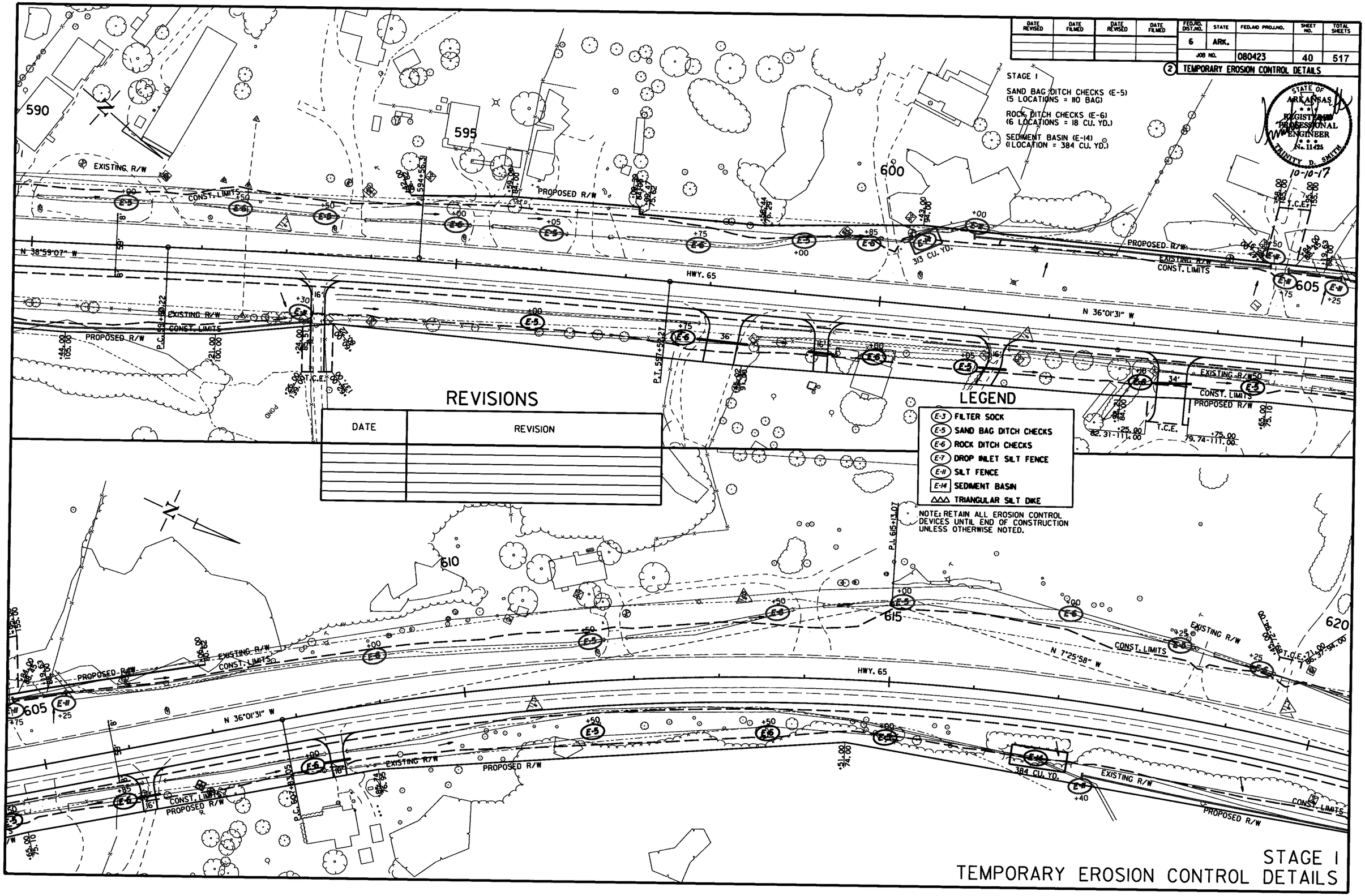
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- E-3 FILTER SOCK
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	41	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 307 CU. YD.)

STATE OF ARKANSAS
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No. 11425
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620 625 630 635 640 645 650

PROPOSED R/W
EXISTING R/W
CONST. LIMITS
HWY. 65
N 7°25'58" W
N 13°25'46" W
N 19°54'09" E
P.I. 627+23.36
P.T. 633+23.03
P.I. 630+23.47
P.I. 647+20.36
P.C. 638+62.74
S.T.C.E.
PI#04
PUANTO OPS "7100R"
CLINTON QUARRY
536 CU. YD.
307 CU. YD.
180 CU. YD.

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	42	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 176 CU. YD.)

STATE OF ARKANSAS
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10-10-17

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

650 655 660 665 670 675 680

EXISTING R/W
CONST. LIMITS
PROPOSED R/W
N 19°54'09" E
HWY. 65
N 13°33'54" W
S 20°39'05" W
S 10°05'31" E
POB 0+00.00
P.C. 1+47.25
P.I. 1+97.91
P.T. 2+26.44
POE 3+51.02
P.T. 655+29.14
P.C. 671+33.9
P.T. 673+69.7
176 CU. YD.
68 CU. YD.
DRIVE STA. 664+00

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	43	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAG)

ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 75 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 580 CU. YD.)

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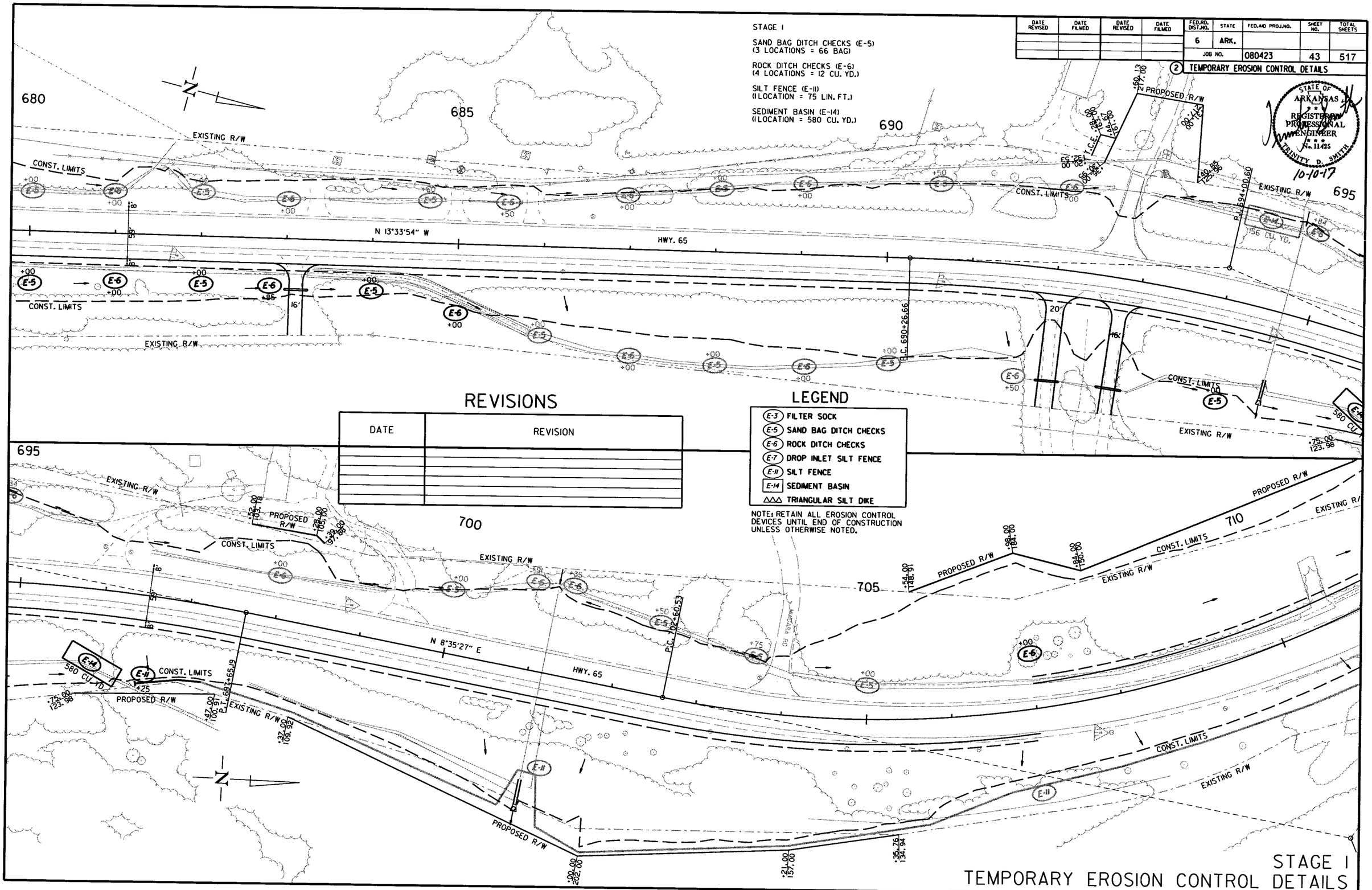
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	44	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YD.)

STATE OF ARKANSAS
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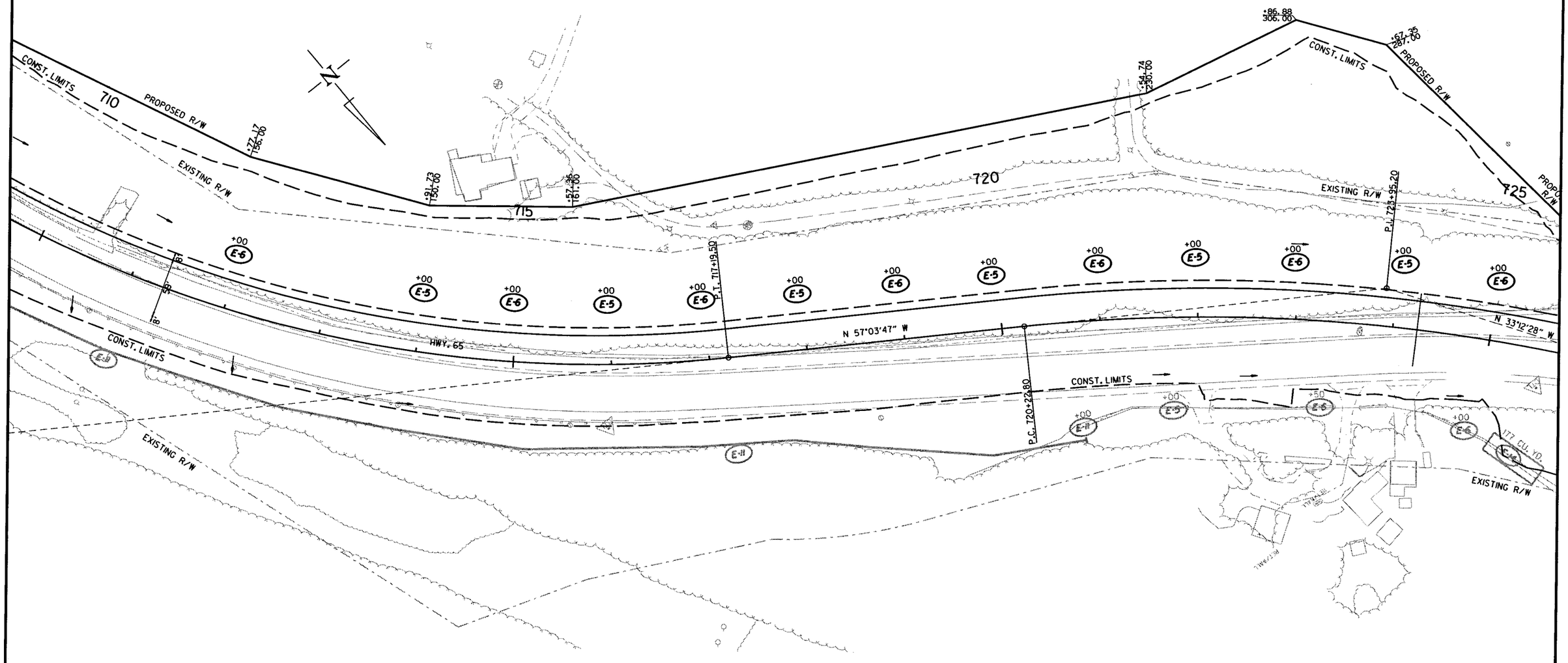
No. 11425
TRINITY D. SMITH
10-10-17



STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	45	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 1

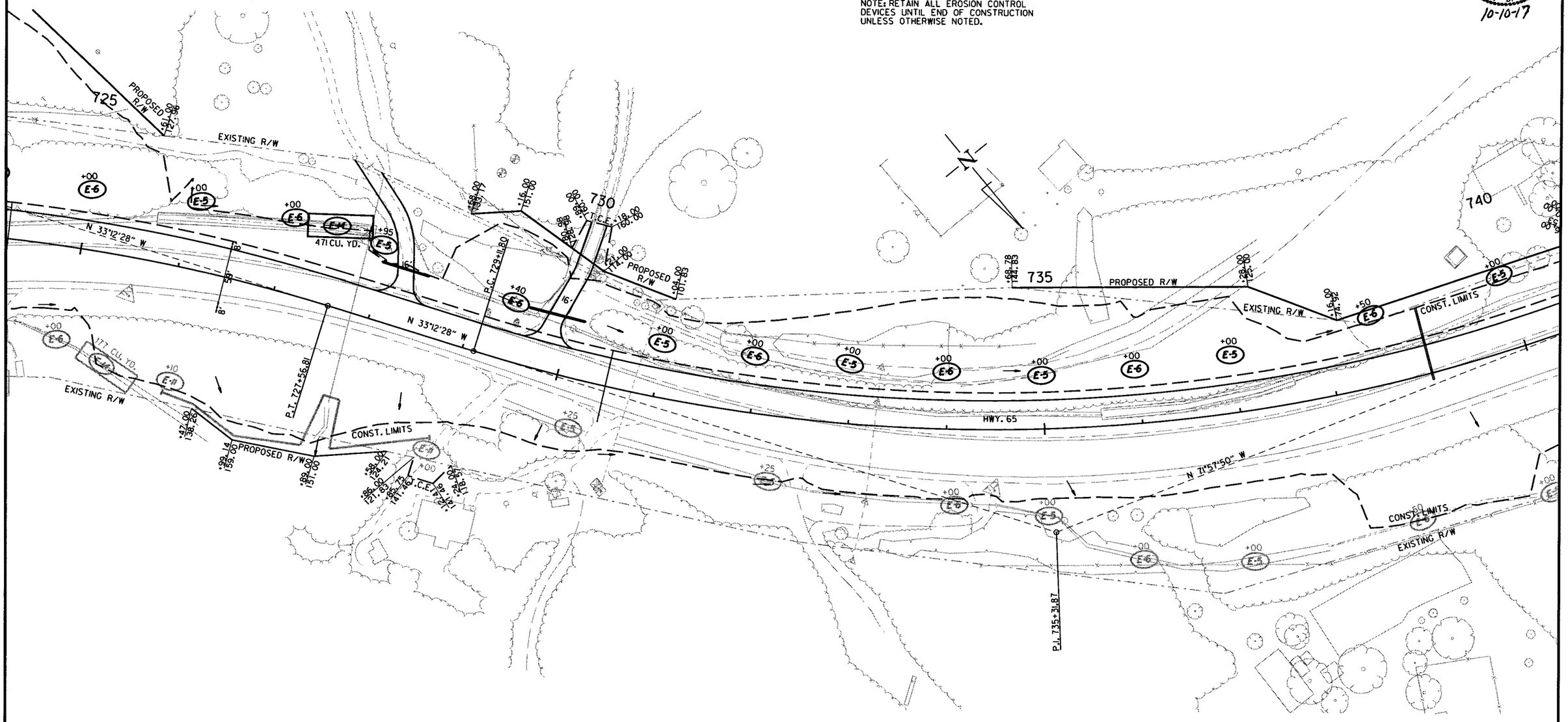
SAND BAG DITCH CHECKS (E-5)
(7 LOCATIONS = 154 BAG)

ROCK DITCH CHECKS (E-6)
(1 LOCATION = 471 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 471 CU. YD.)

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

10-10-17



STAGE 1
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	46	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

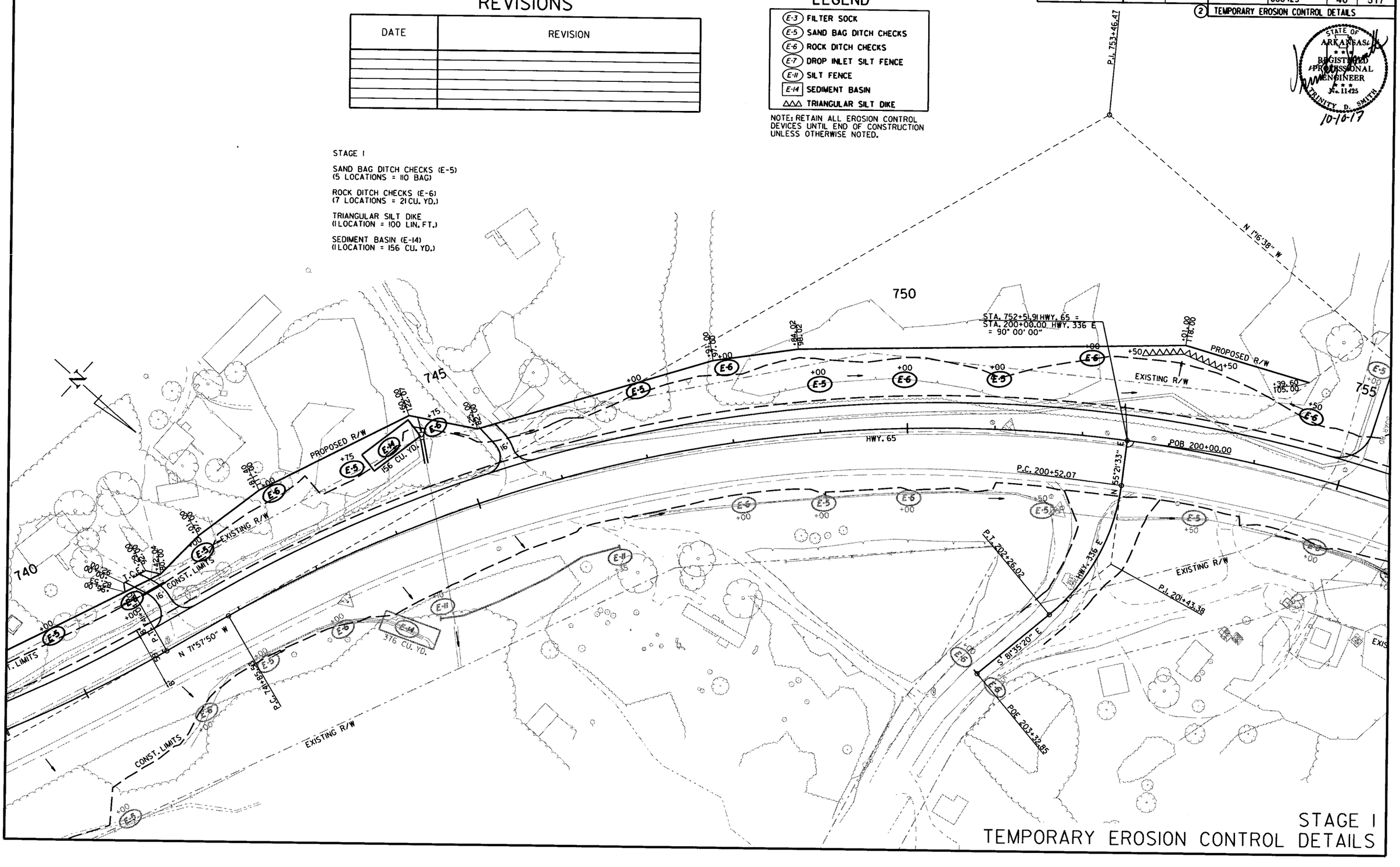
STAGE I

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(7 LOCATIONS = 21 CU. YD.)

TRIANGULAR SILT DIKE
(1 LOCATION = 100 LIN. FT.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 156 CU. YD.)



STAGE I
TEMPORARY EROSION CONTROL DETAILS

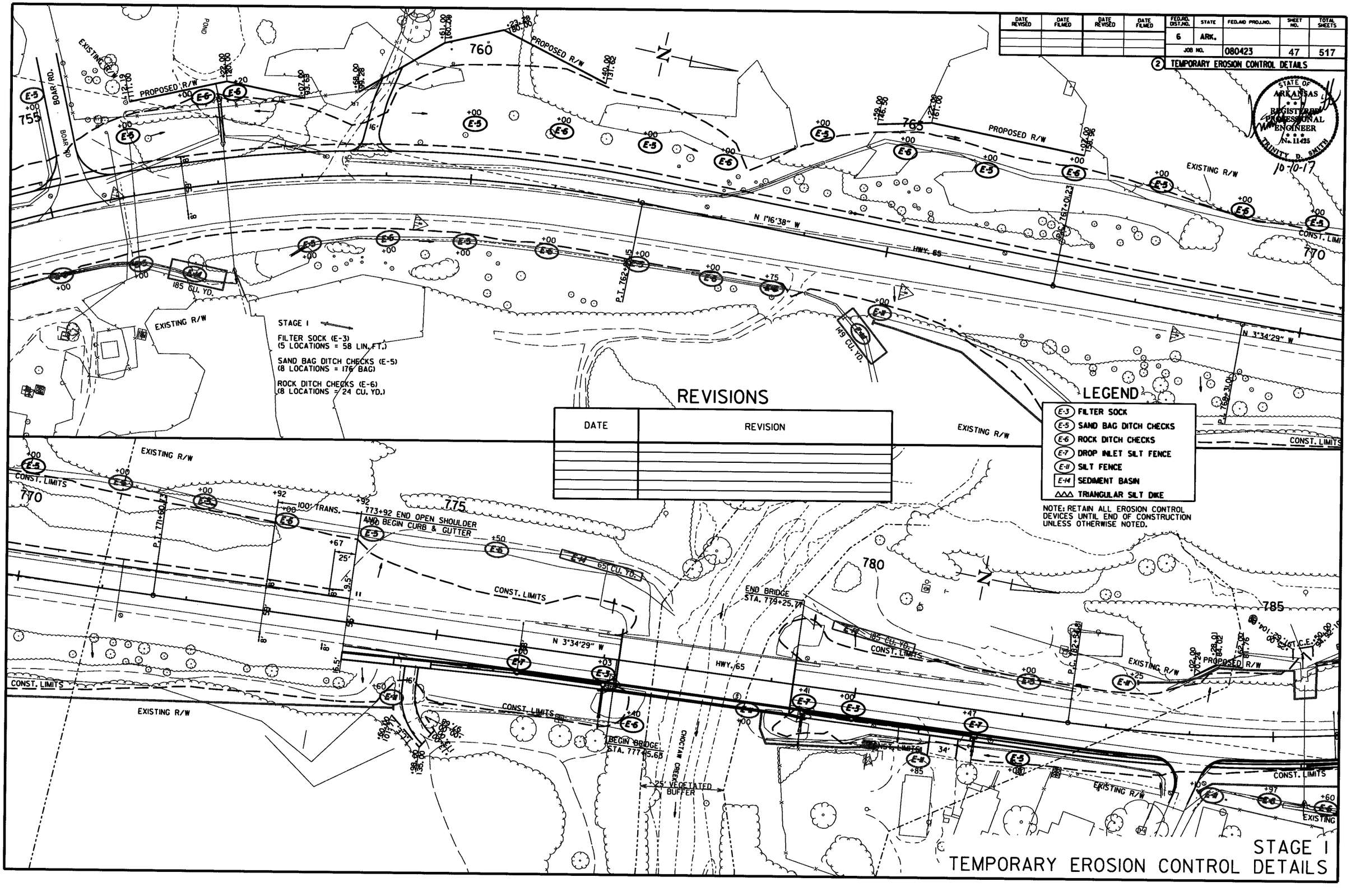
8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	47	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	48	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 1

FILTER SOCK (E-3)
(14 LOCATIONS = 172 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(9 LOCATIONS = 198 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

SILT FENCE (E-11)
(3 LOCATIONS = 920 LIN. FT.)

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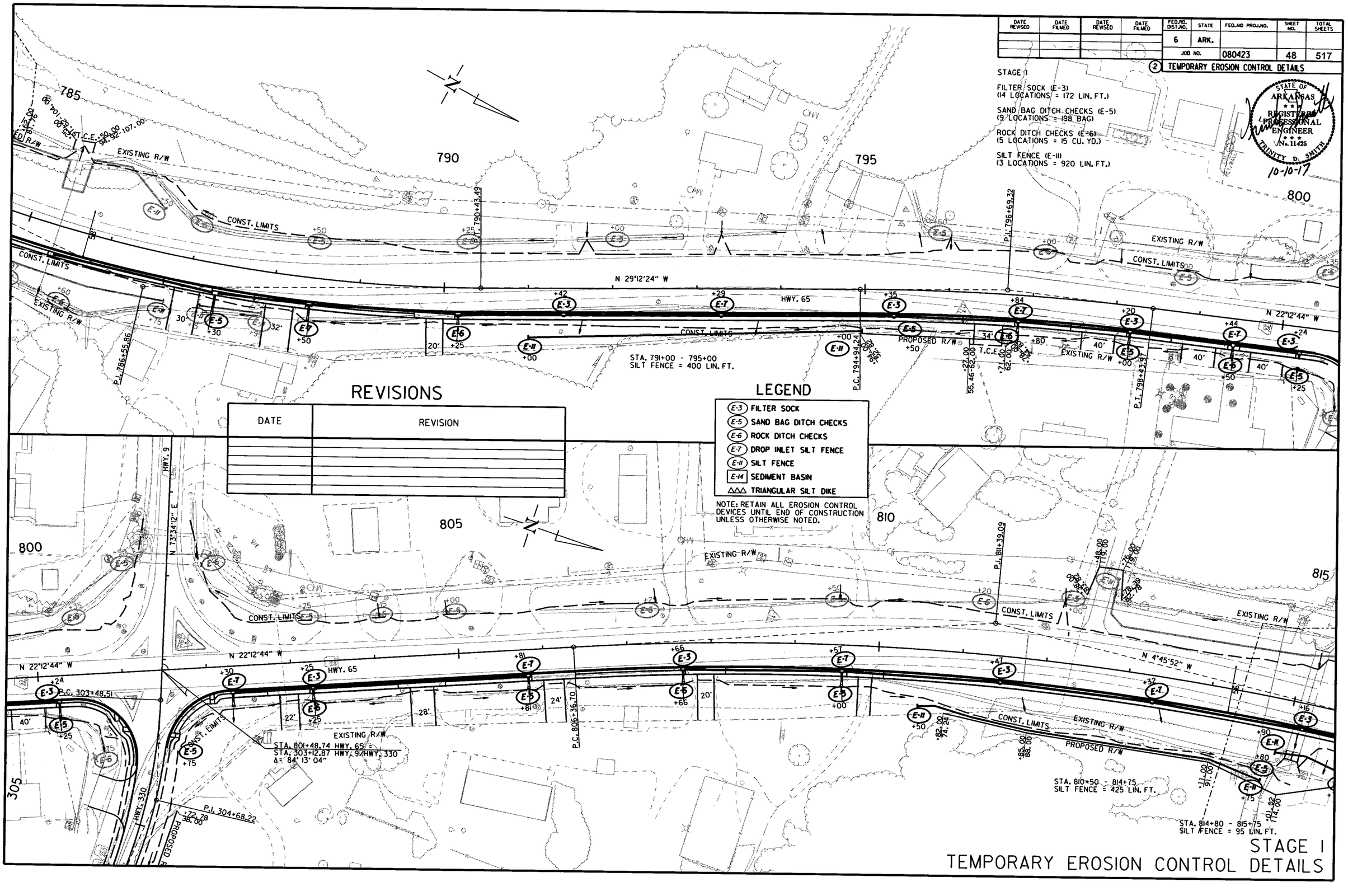
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	49	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I

FILTER SOCK (E-3)
(9 LOCATIONS = 94 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAG)

ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YD.)

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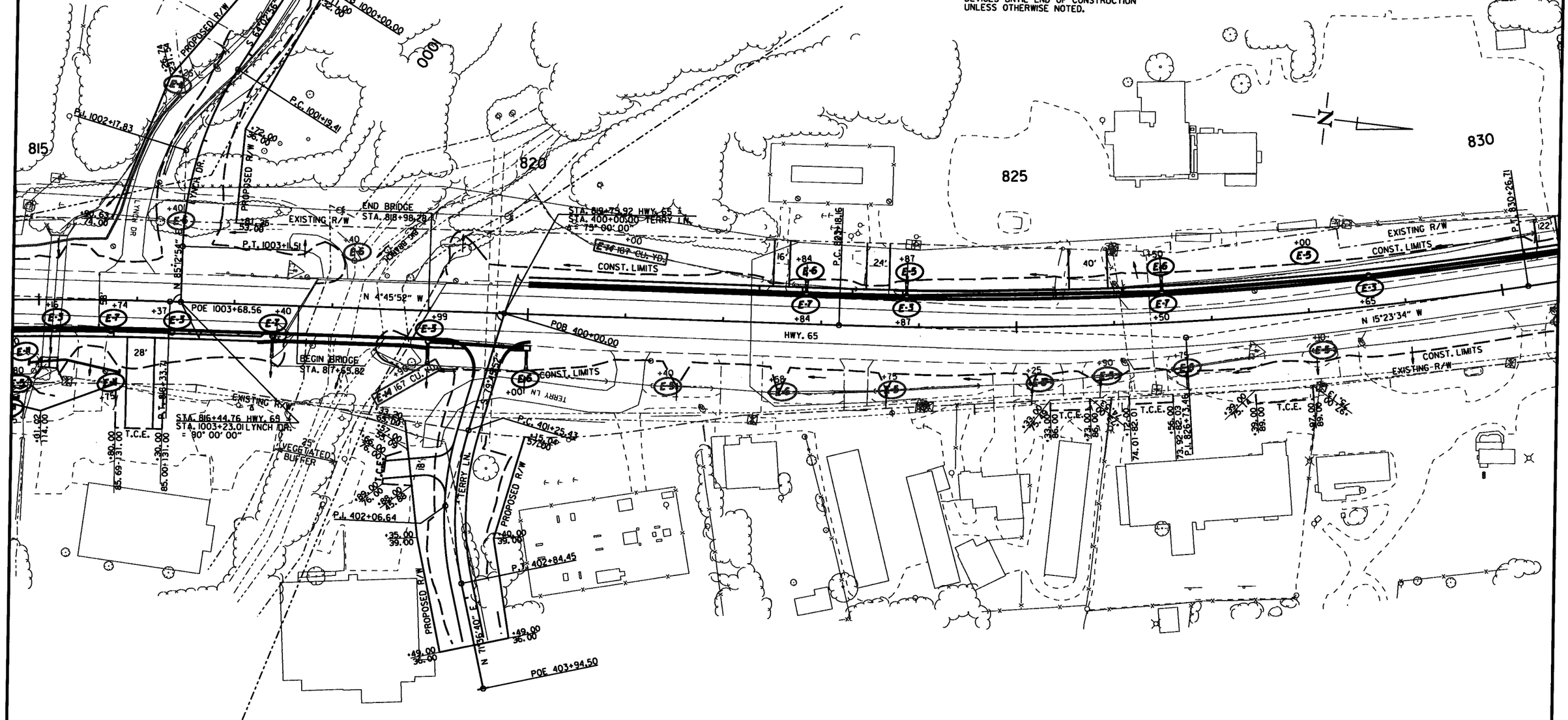
REGISTERED PROFESSIONAL ENGINEER
No. 11435
10-10-17
TRINITY D. SMITH



STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	50	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

FILTER SOCK (E-3)
(14 LOCATIONS = 176 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(7 LOCATIONS = 154 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

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TRINITY D. SMITH
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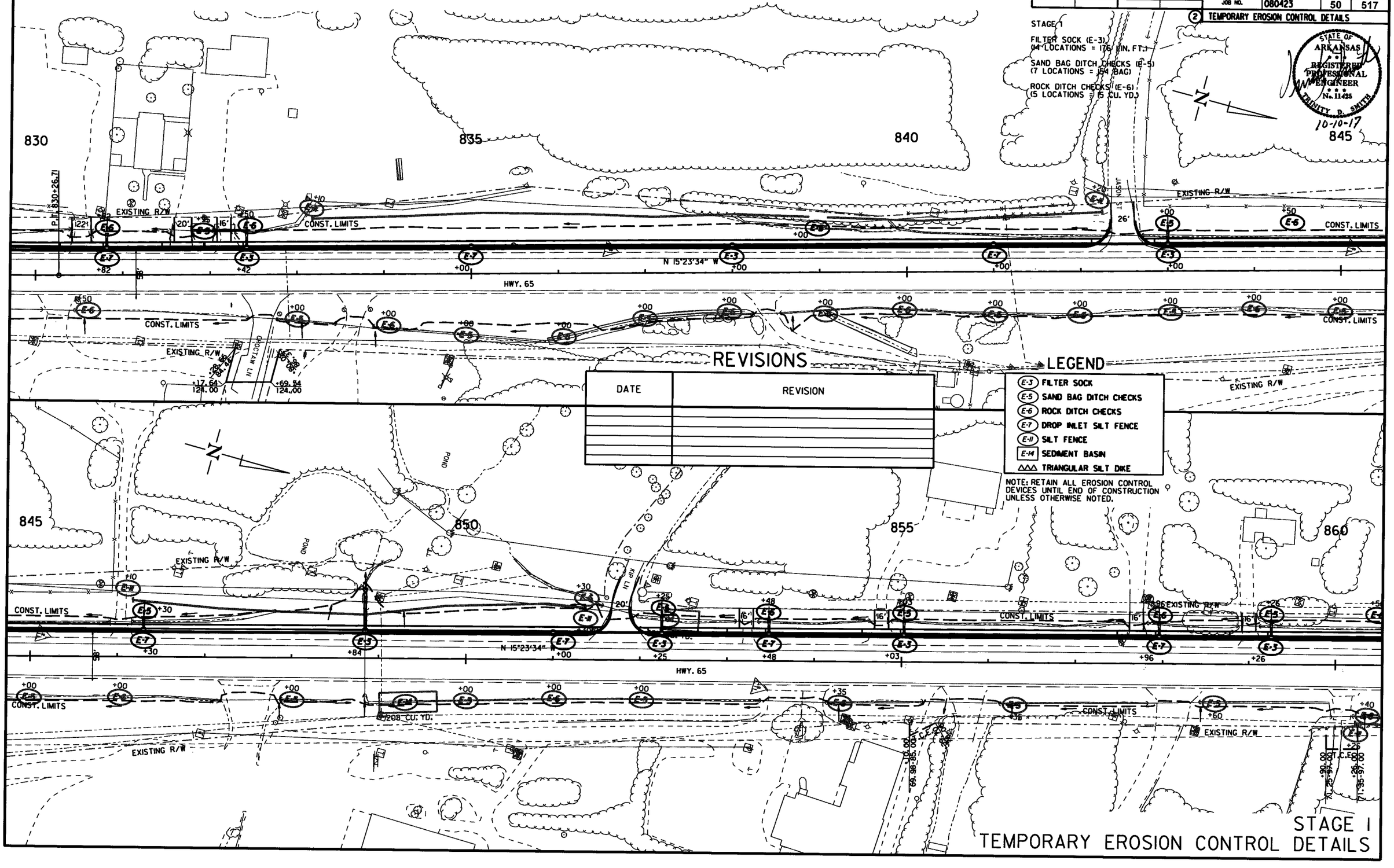

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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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.		080423	51	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

FILTER SOCK (E-3)
(18 LOCATIONS = 172 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAG)

ROCK DITCH CHECKS (E-6)
(9 LOCATIONS = 27 CU. YD.)

SILT FENCE (E-11)
(LOCATIONS = 107 CU. YD.)

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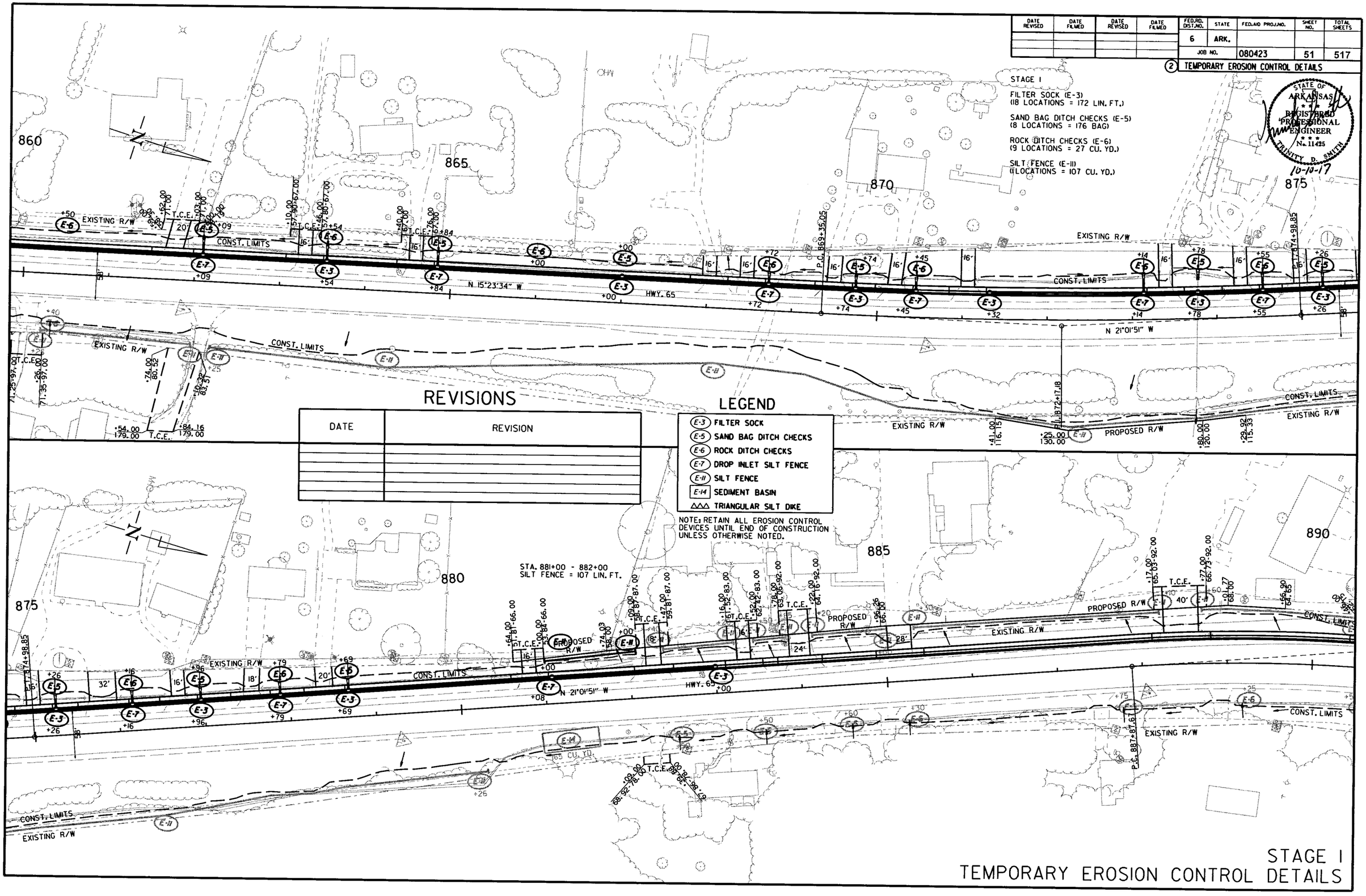

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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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.		080423	52	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

FILTER SOCK (E-3)
(13 LOCATIONS = 106 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(7 LOCATIONS = 154 BAG)

ROCK DITCH CHECKS (E-6)
(10 LOCATIONS = 30 CU. YD.)

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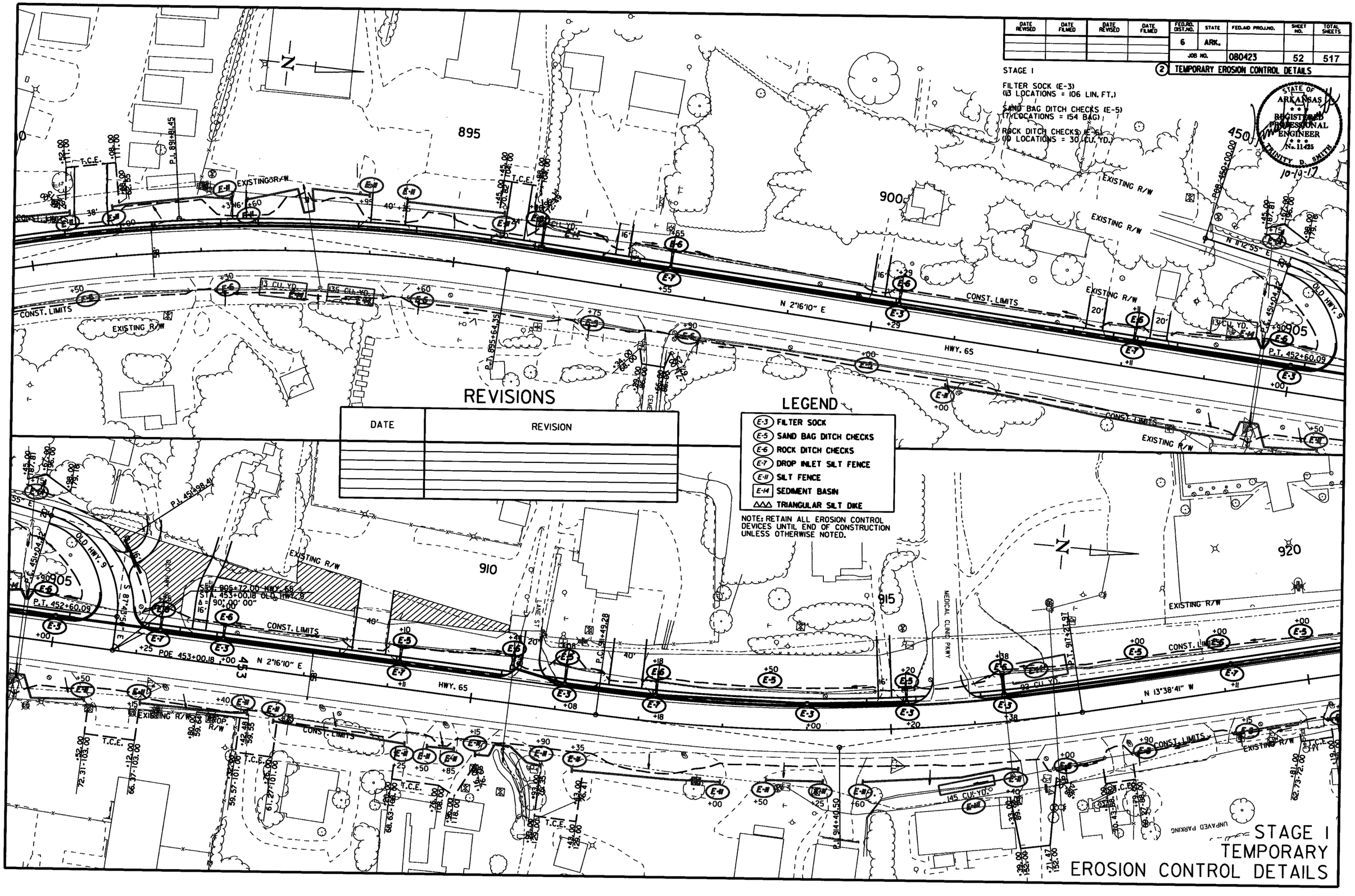

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE I TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	53	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE I

FILTER SOCK (E-3)
(2 LOCATIONS = 20 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(4 LOCATIONS = 88 BAG)

ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YD.)

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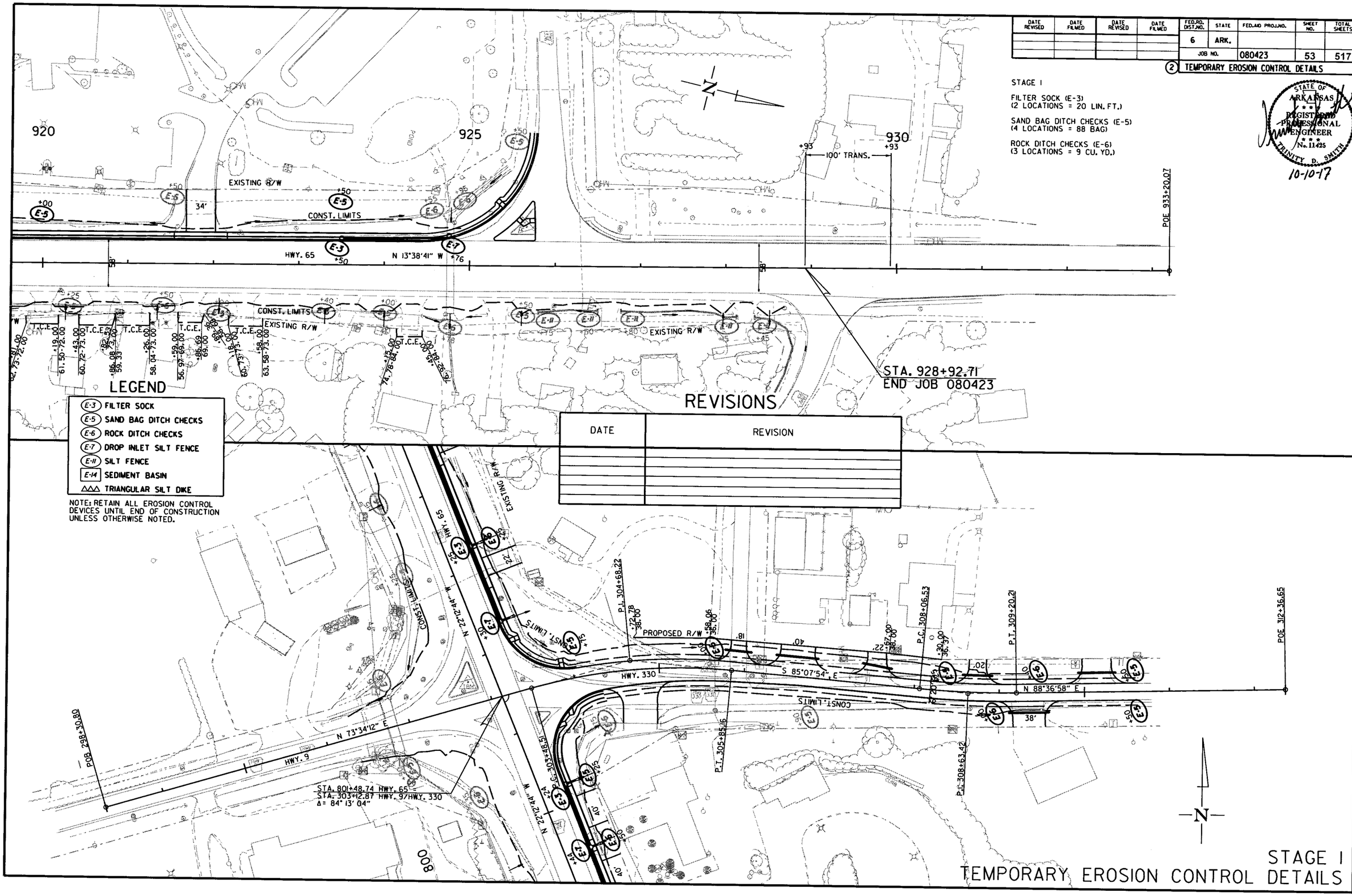


8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	54	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 559 CU. YD.)

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

10-10-17

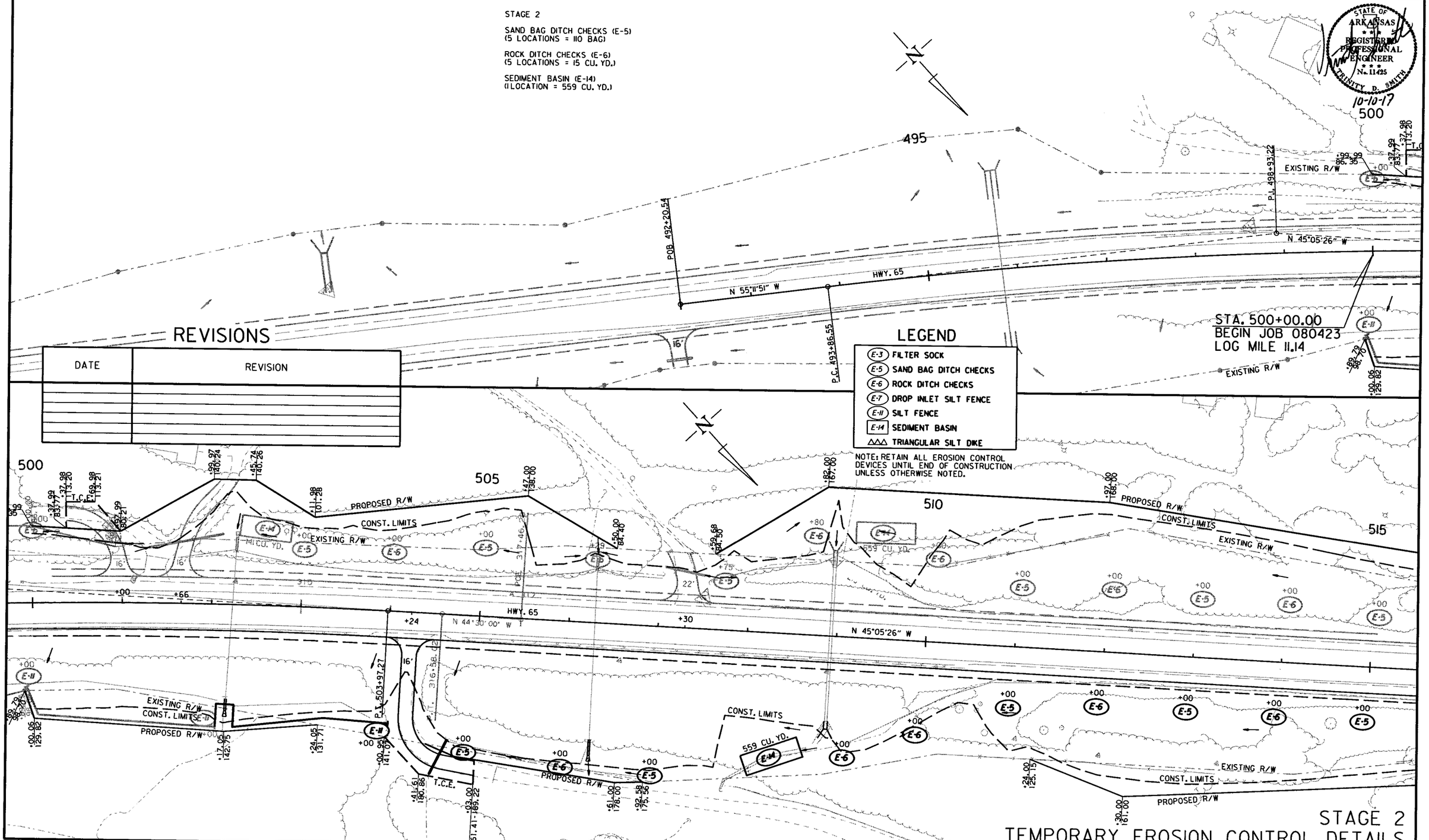
REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	55	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(6 LOCATIONS = 18 CU. YD.)

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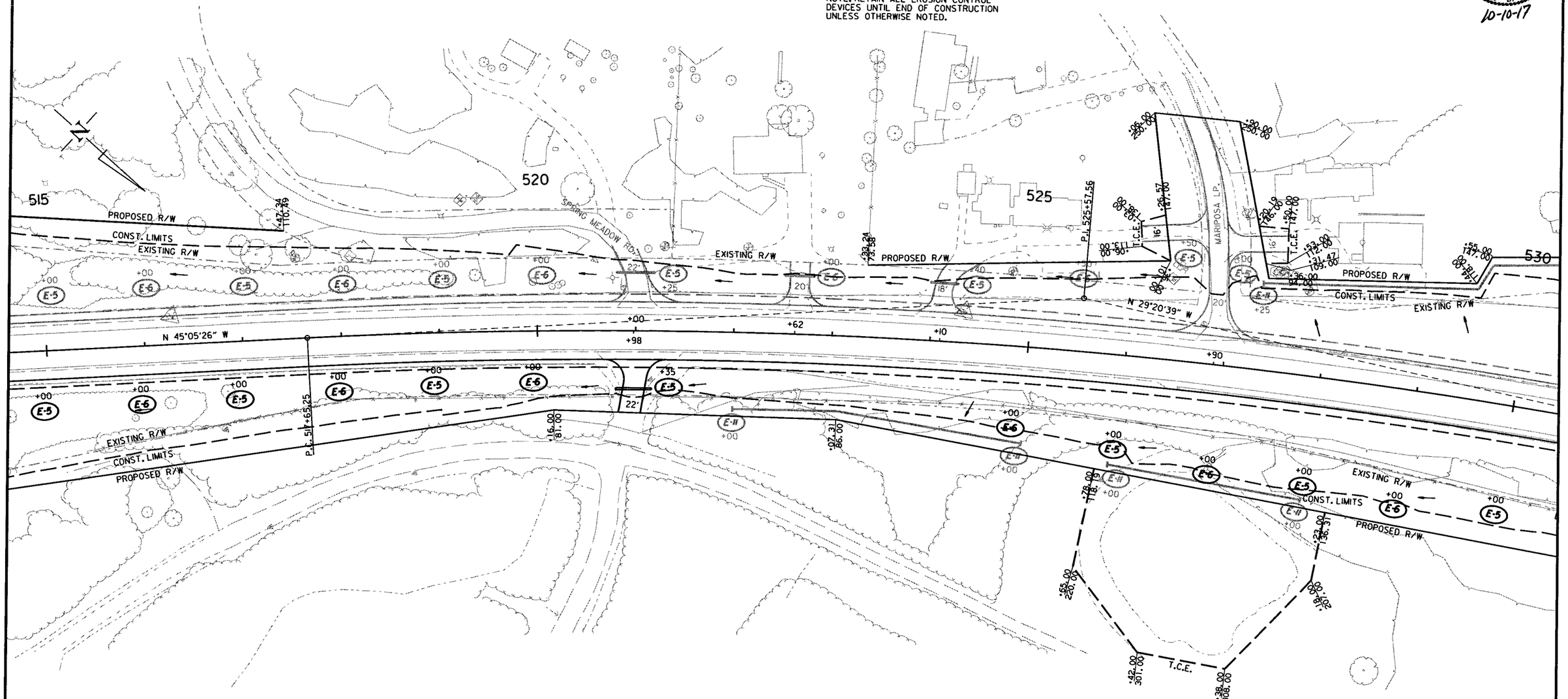

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	56	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(12 LOCATIONS = 264 BAG)

ROCK DITCH CHECKS (E-6)
(11 LOCATIONS = 33 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 131 CU. YD.)

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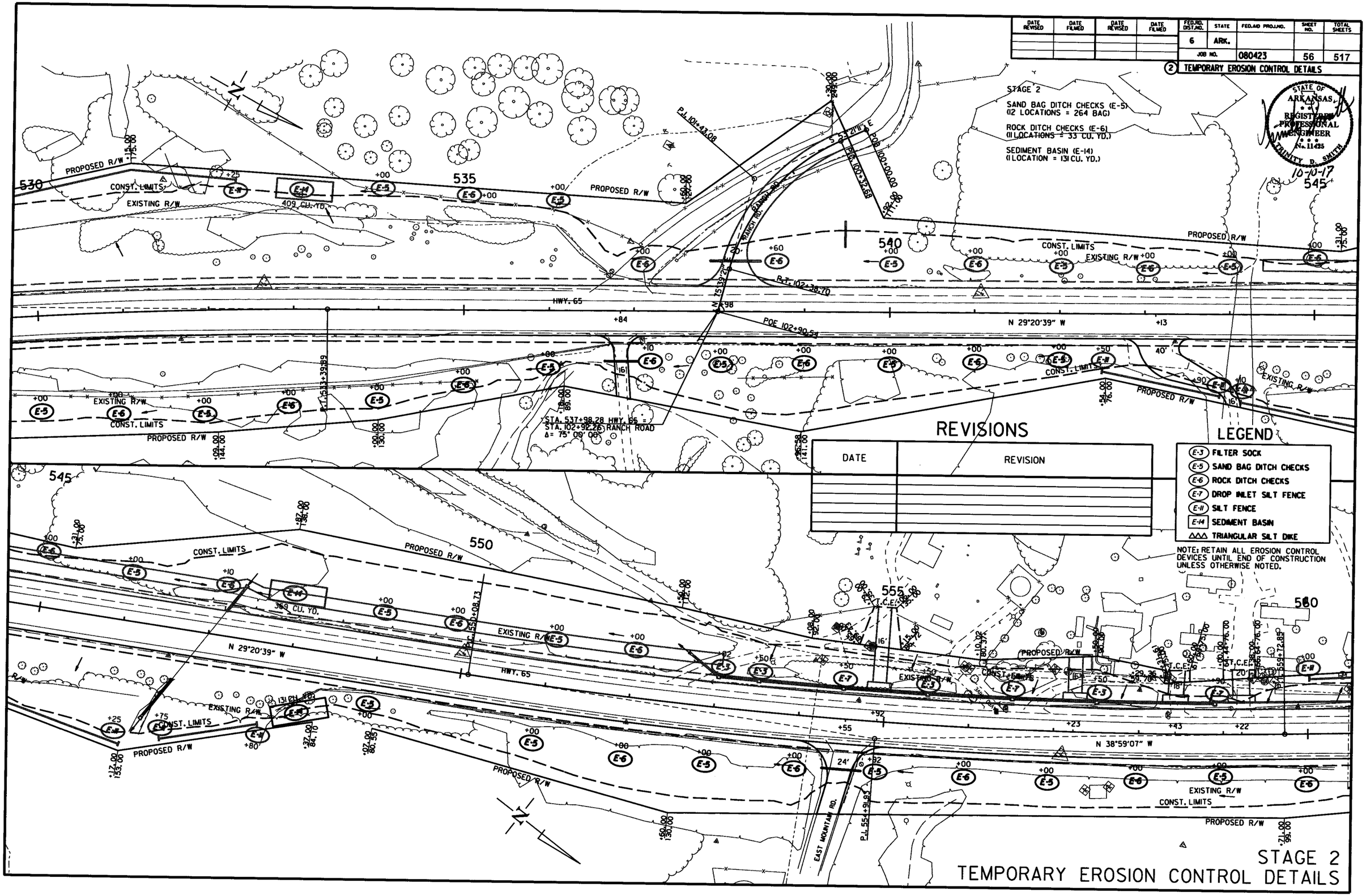
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	57	517

(2) TEMPORARY EROSION CONTROL DETAILS

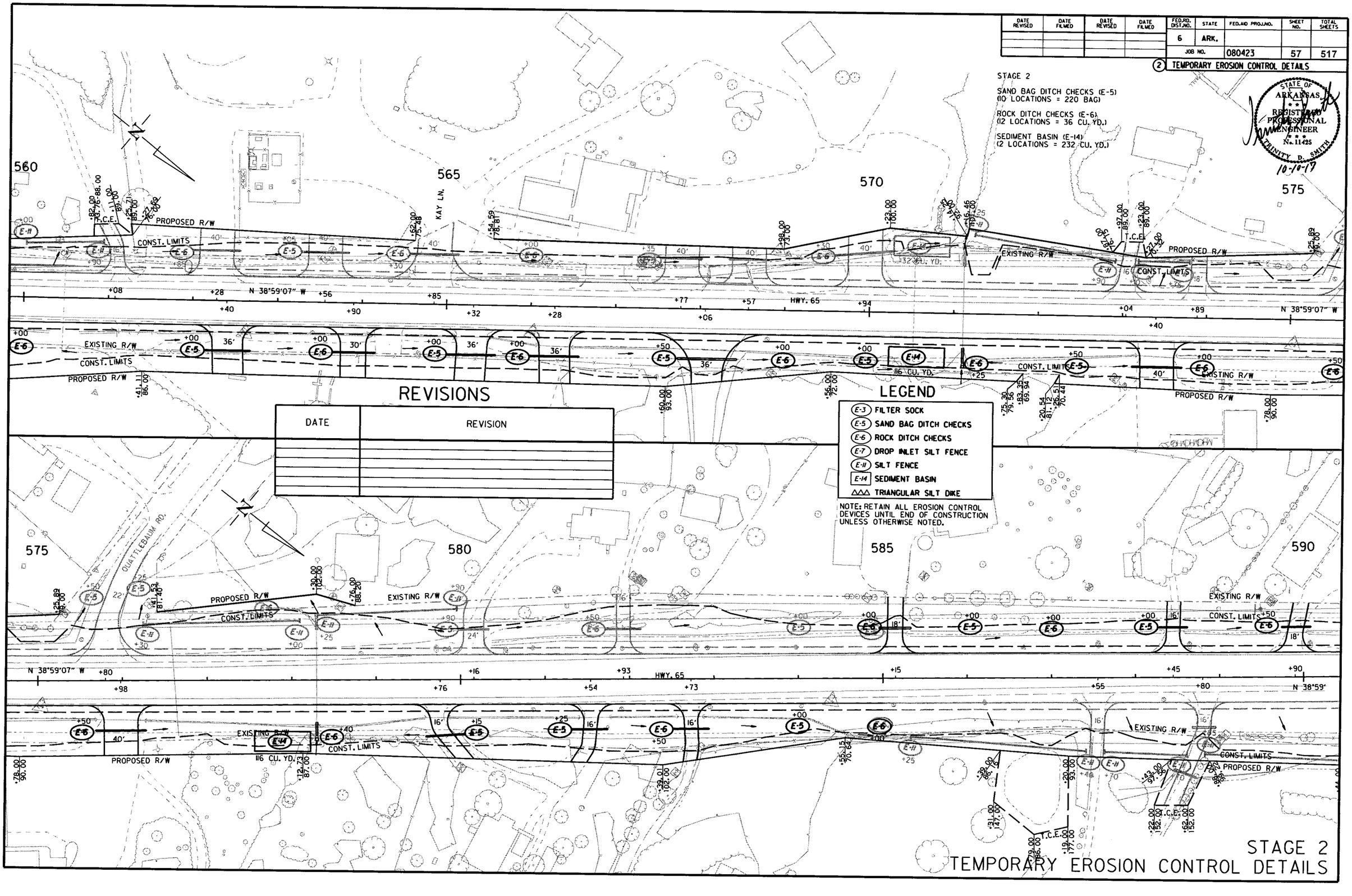
STAGE 2

SAND BAG DITCH CHECKS (E-5)
(10 LOCATIONS = 220 BAG)

ROCK DITCH CHECKS (E-6)
(12 LOCATIONS = 36 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 232 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

8/17/2017

R080423.DGN

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	58	517

(2) TEMPORARY EROSION CONTROL DETAILS

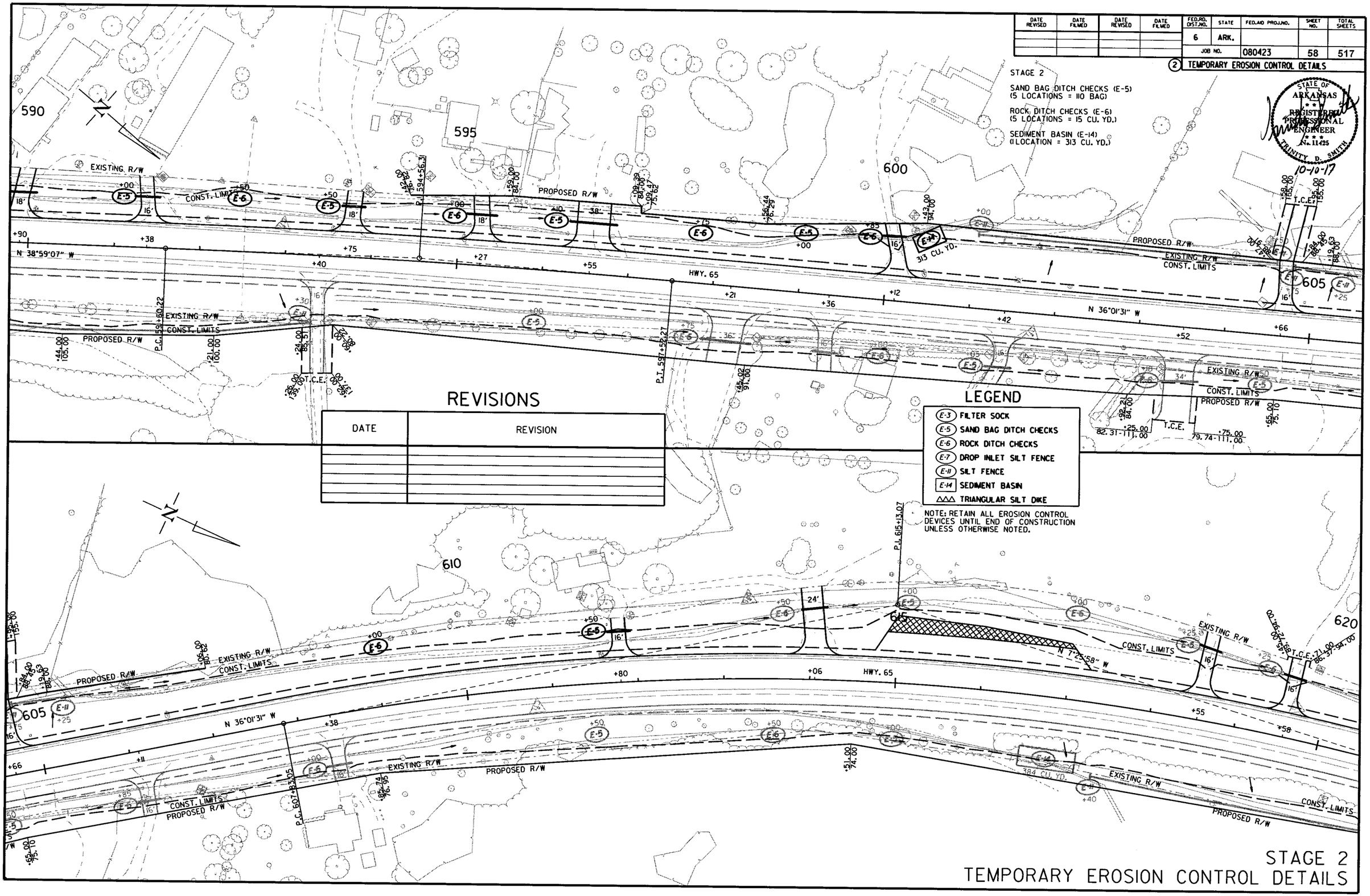
STAGE 2

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

SEDIMENT BASIN (E-14)
(1 LOCATION = 313 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

8/17/2017

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	59	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(9 LOCATIONS = 198 BAG)

ROCK DITCH CHECKS (E-6)
(9 LOCATIONS = 27 CU. YD.)

STATE OF ARKANSAS
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No. 11425
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10-10-17

620 625 630 635 640 645 650

PROPOSED R/W
EXISTING R/W
CONST. LIMITS
HWY. 65
N 7°25'58" W
N 13°25'46" W
N 19°54'09" E
P.I. 627+23.36
P.I. 633+73.03
P.I. 630+23.47
P.I. 647+20.36
P.C. 633+62.74
P.I. 62+12.67
PUARTU GPS #7100F
CLINTON QUARRY RD.
ST.C.E.
537 CU. YD.
180 CU. YD.
307 CU. YD.

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080423		60	517

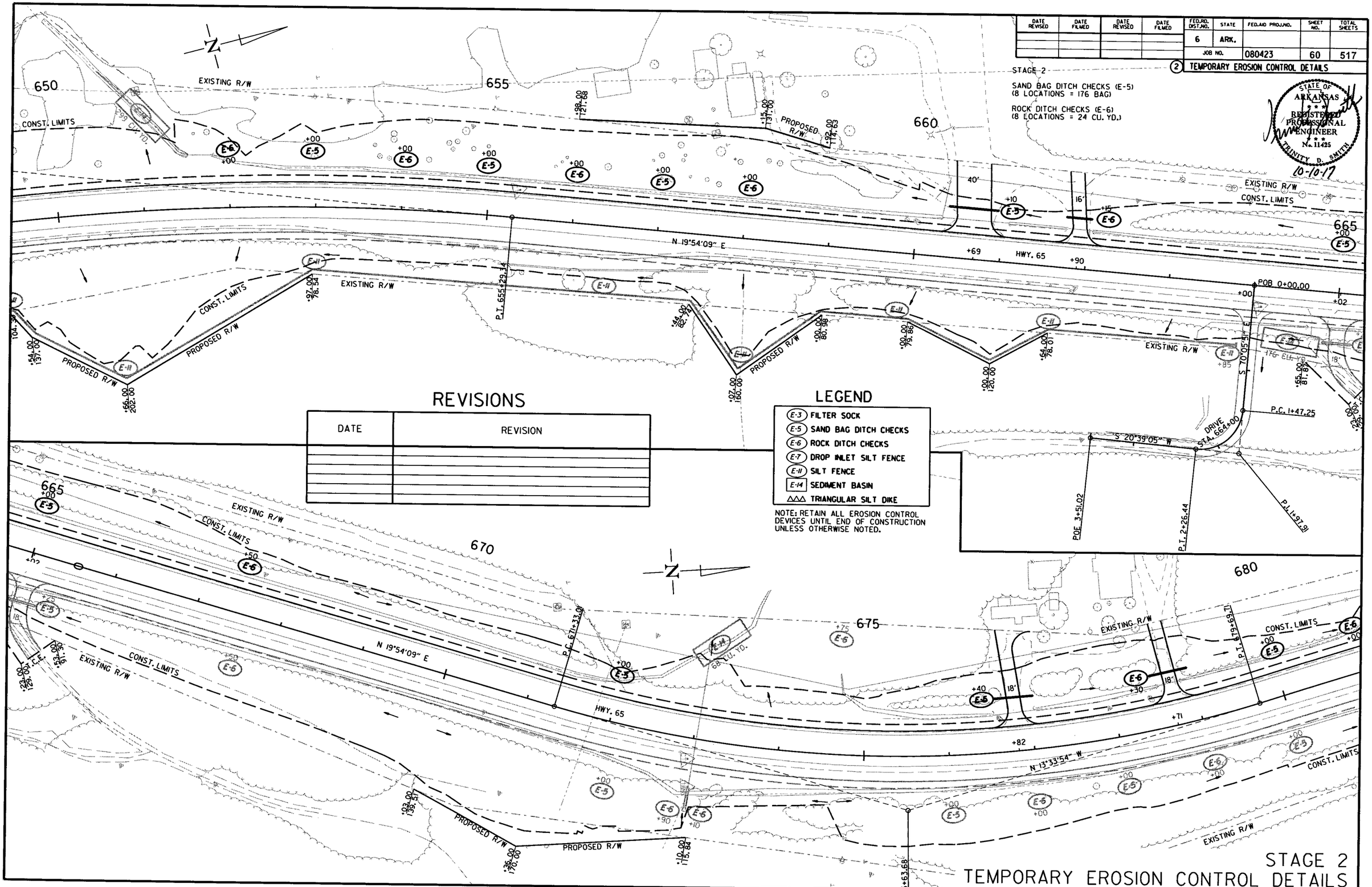
(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAG)

ROCK DITCH CHECKS (E-6)
(8 LOCATIONS = 24 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	61	517

(2) TEMPORARY EROSION CONTROL DETAILS

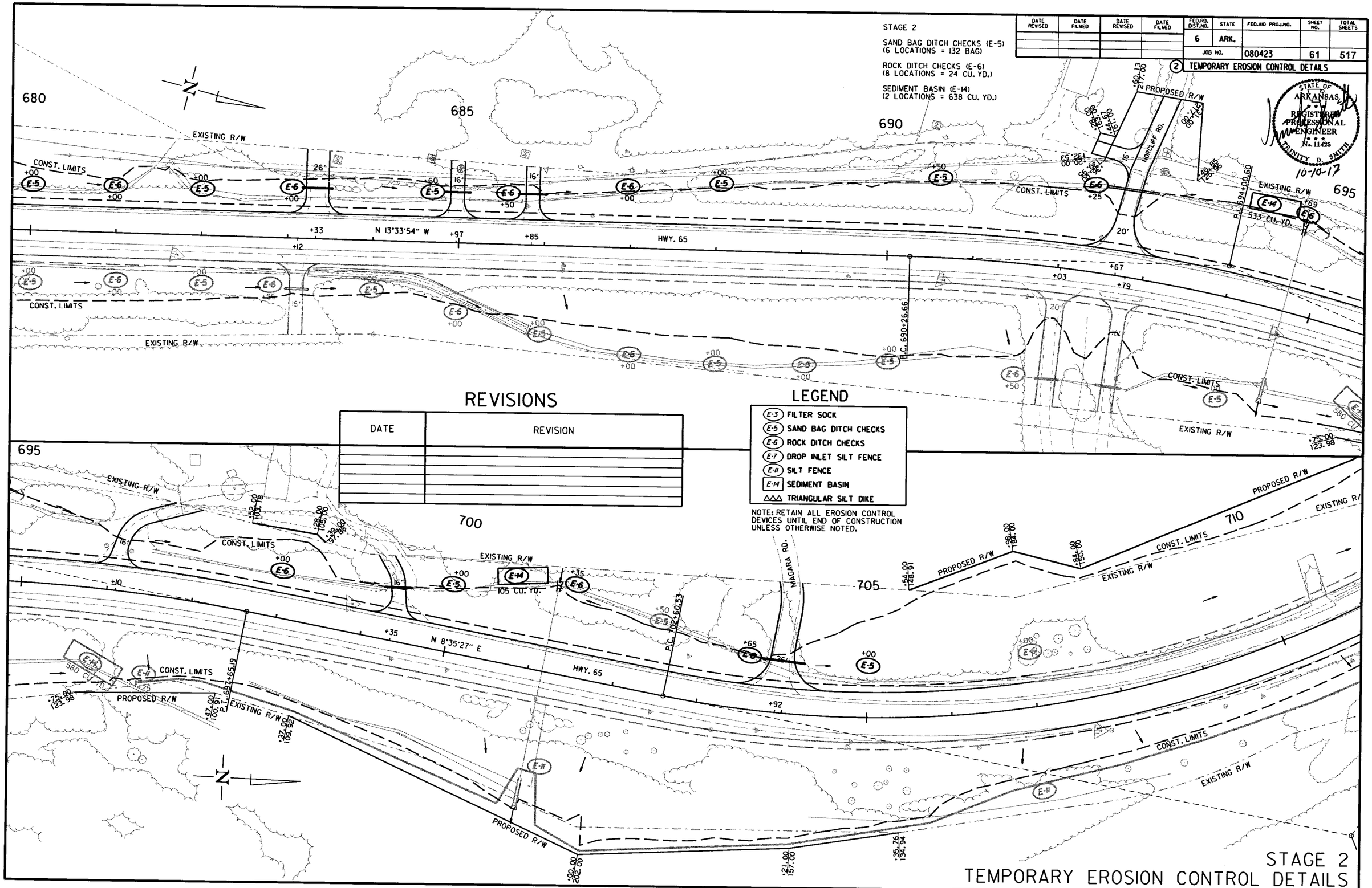
STAGE 2

SAND BAG DITCH CHECKS (E-5)
(6 LOCATIONS = 132 BAG)

ROCK DITCH CHECKS (E-6)
(8 LOCATIONS = 24 CU. YD.)

SEDIMENT BASIN (E-14)
(2 LOCATIONS = 638 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- E-3 FILTER SOCK
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	62	517

(2) TEMPORARY EROSION CONTROL DETAILS

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

10-10-17

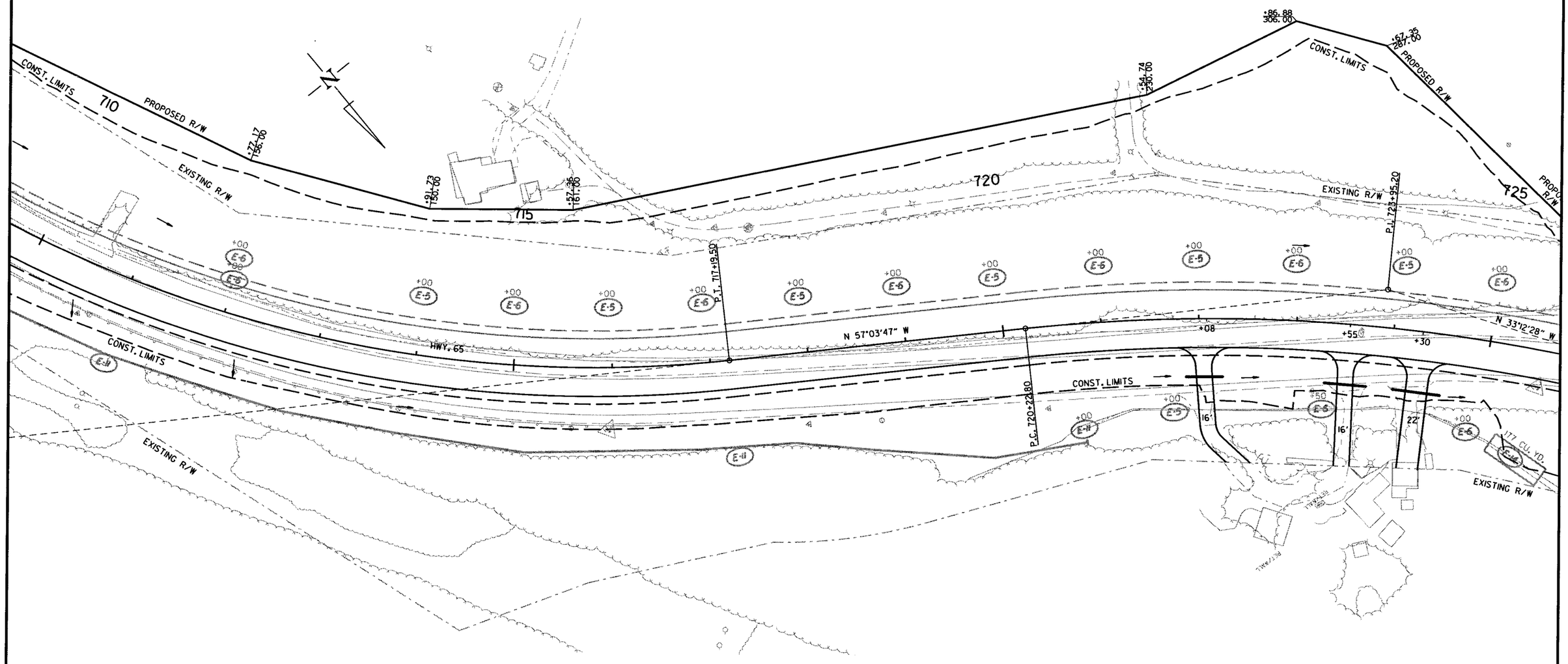
REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	63	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2

ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 85 LIN. FT.)

STATE OF ARKANSAS
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TRINITY D. SMITH
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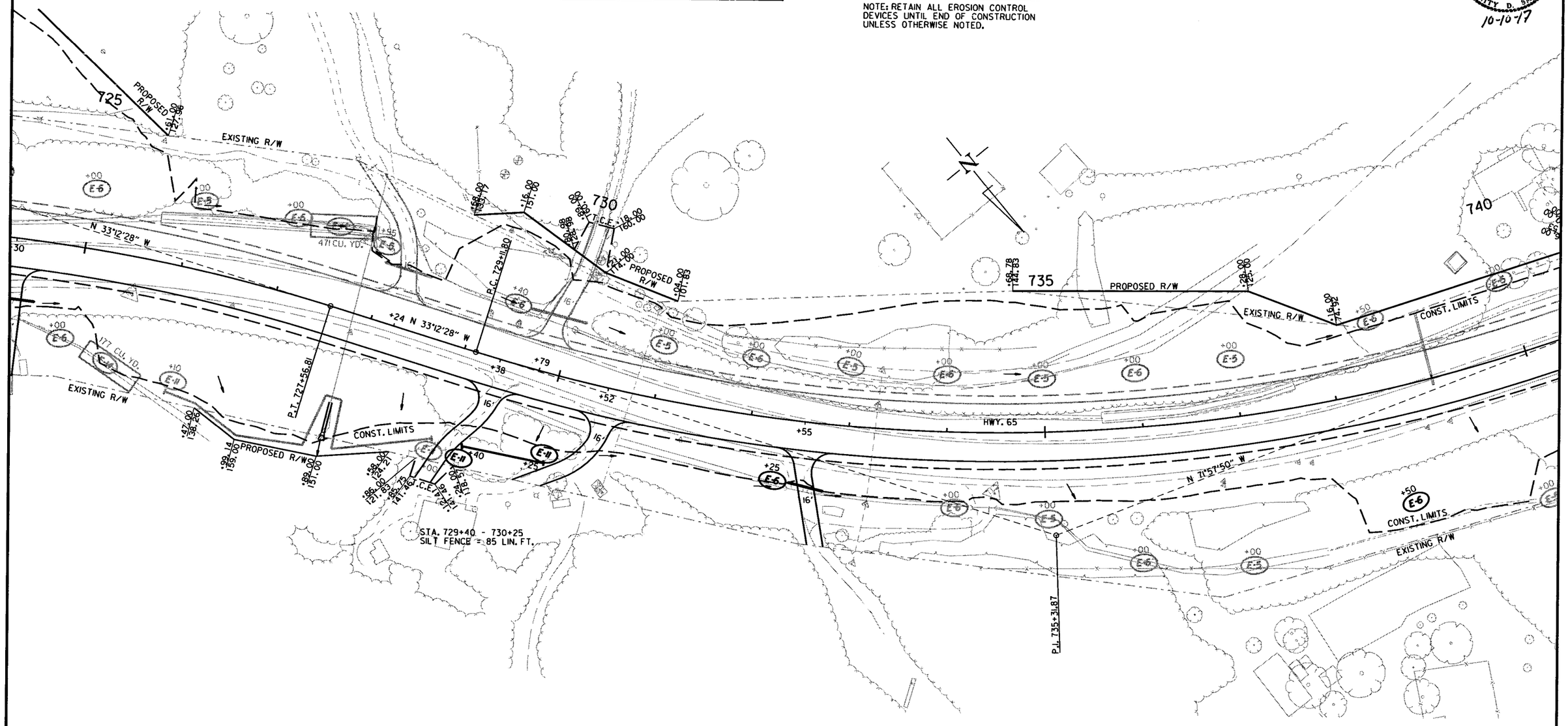


STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	64	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

SAND BAG DITCH CHECKS (E-5)
(2 LOCATIONS = 44 BAG)

ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YD.)

REVISIONS

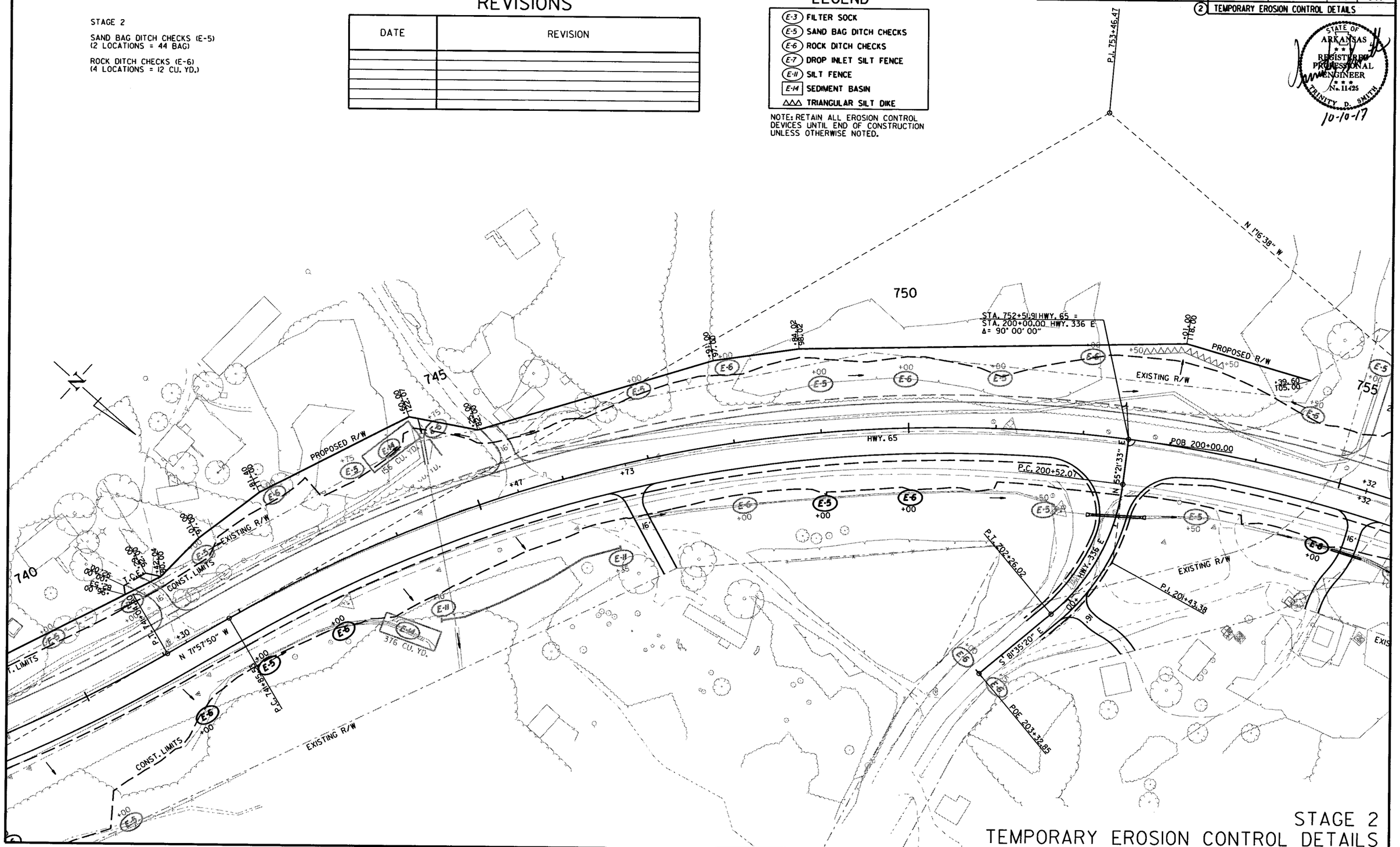
DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

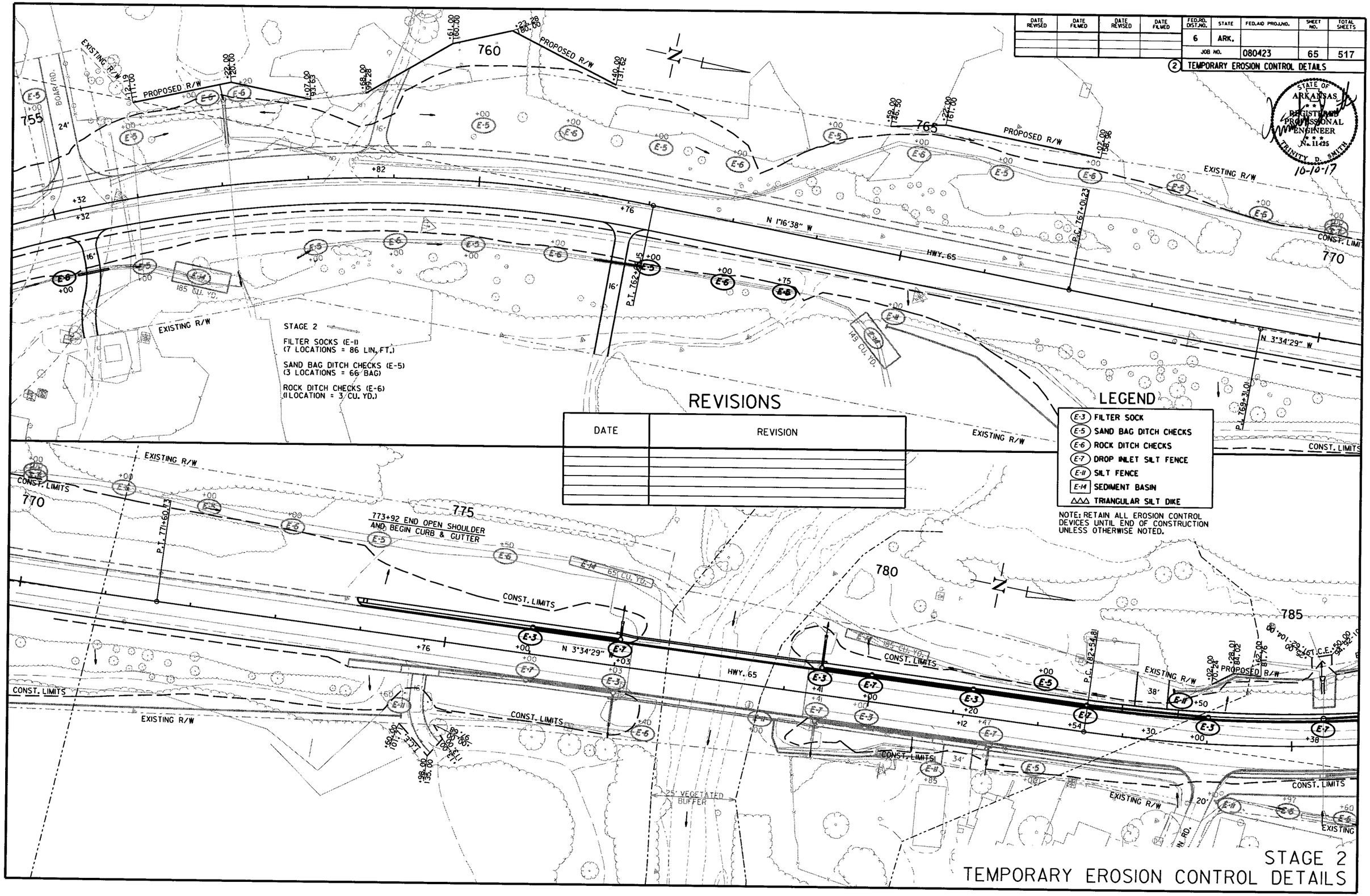
8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	65	517

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	66	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

FILTER SOCKS (E-1)
(9 LOCATIONS = 110 LIN. FT.)

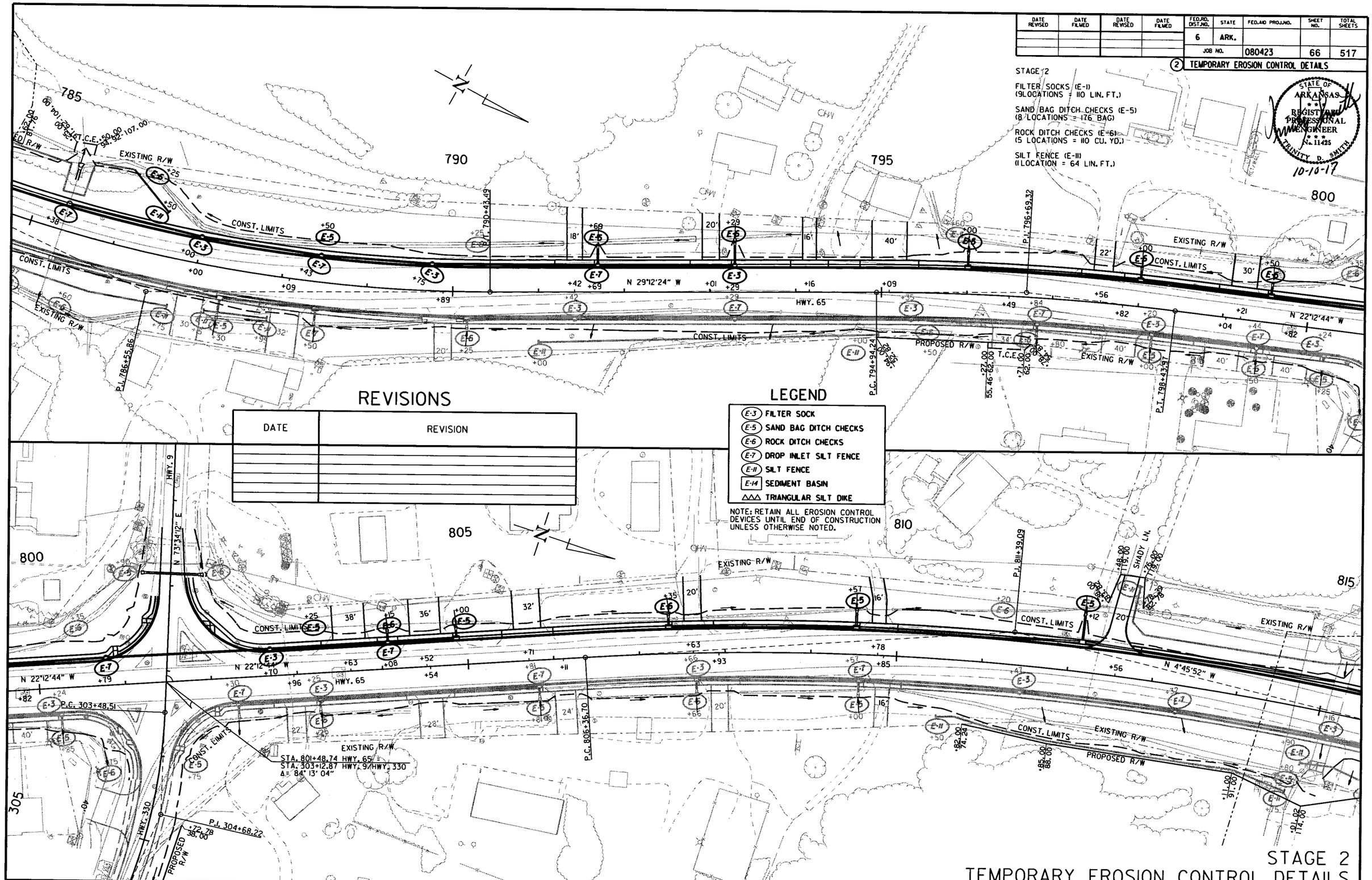
SAND BAG DITCH CHECKS (E-5)
(8 LOCATIONS = 176 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 110 CU. YD.)

SILT FENCE (E-11)
(1 LOCATION = 64 LIN. FT.)

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

10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	67	517

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2

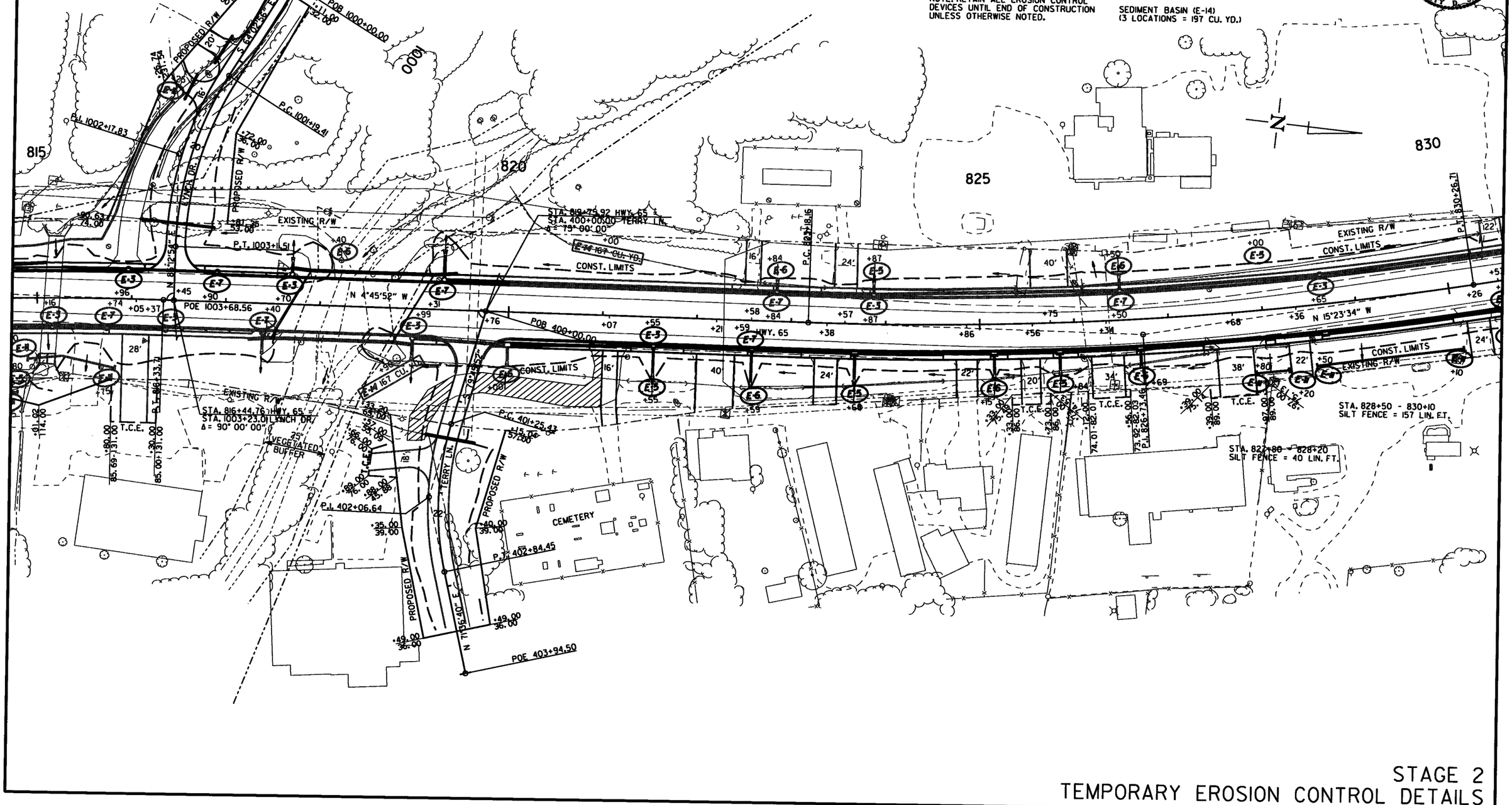
FILTER SOCKS (E-1)
(6 LOCATIONS = 56 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAG)

ROCK DITCH CHECKS (E-6)
(3 LOCATIONS = 9 CU. YD.)

SEDIMENT BASIN (E-14)
(3 LOCATIONS = 197 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-16-17
TRINITY R. SMITH



8/17/2017

R080423.DGN

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	68	517

(2) TEMPORARY EROSION CONTROL DETAILS

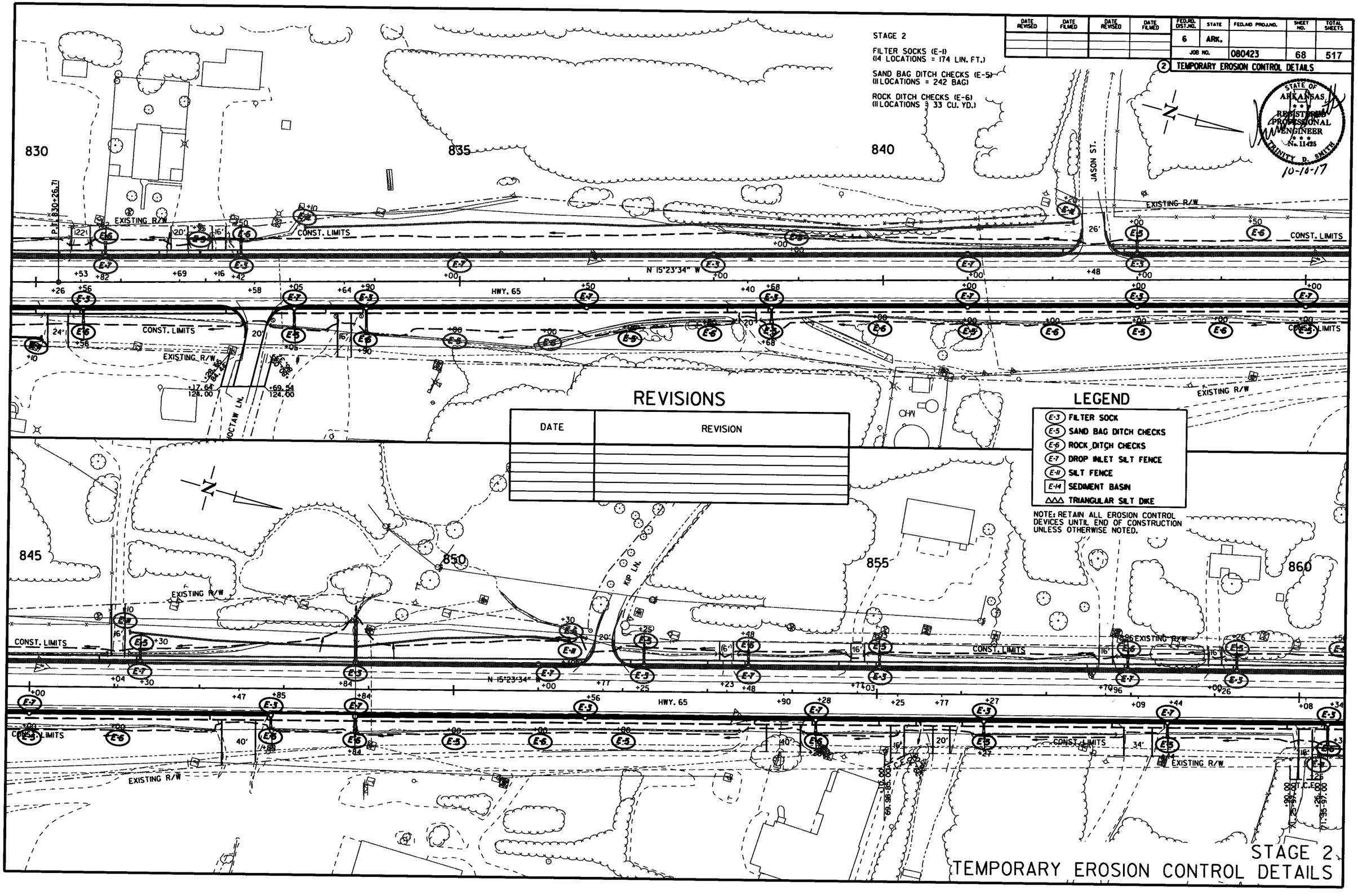
STAGE 2

FILTER SOCKS (E-1)
(14 LOCATIONS = 174 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(11 LOCATIONS = 242 BAG)

ROCK DITCH CHECKS (E-6)
(11 LOCATIONS = 33 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	69	517

(2) TEMPORARY EROSION CONTROL DETAILS

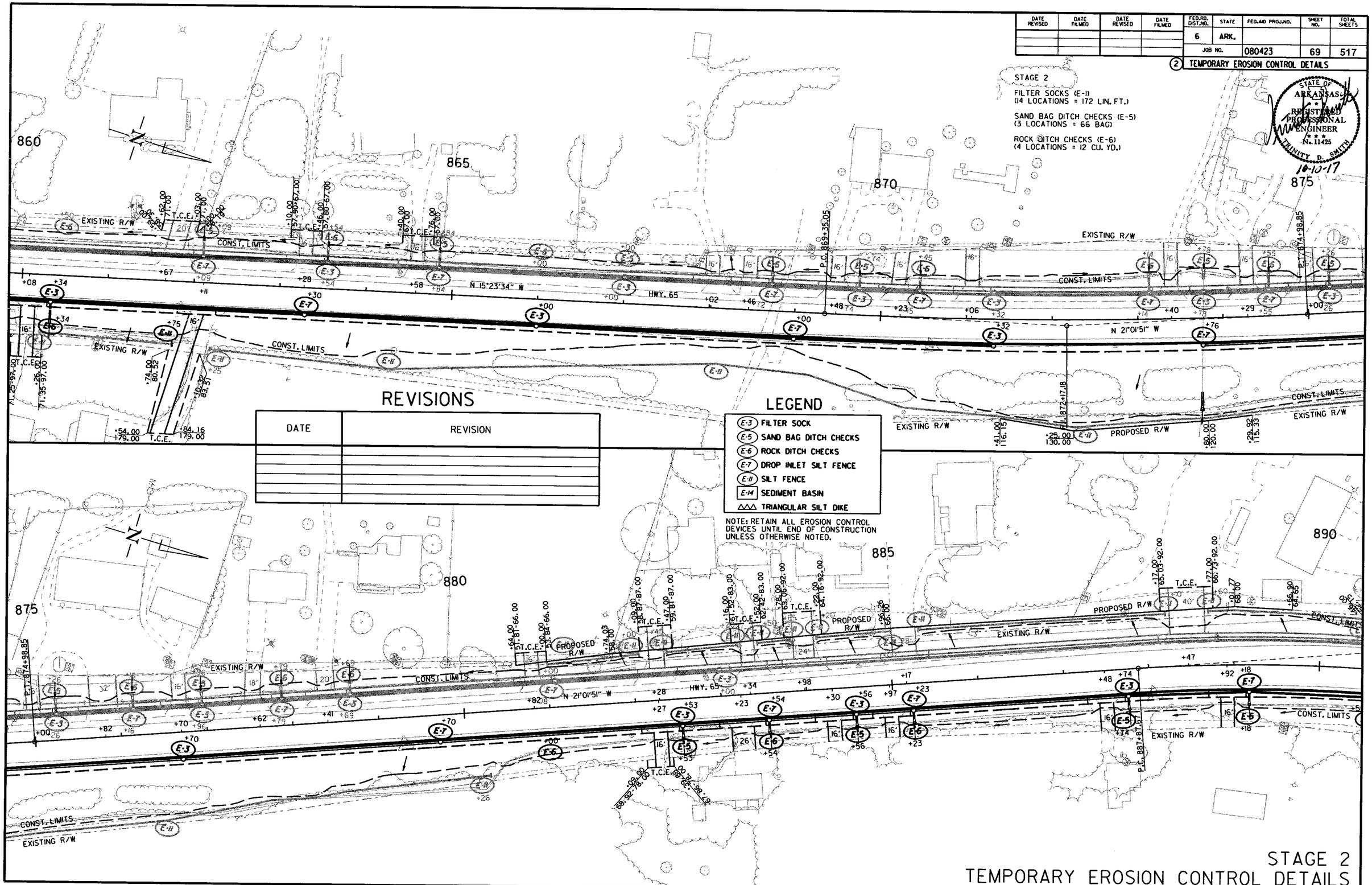
STAGE 2

FILTER SOCKS (E-1)
(14 LOCATIONS = 172 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAG)

ROCK DITCH CHECKS (E-6)
(4 LOCATIONS = 12 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

8/17/2017

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	70	517

(2) TEMPORARY EROSION CONTROL DETAILS

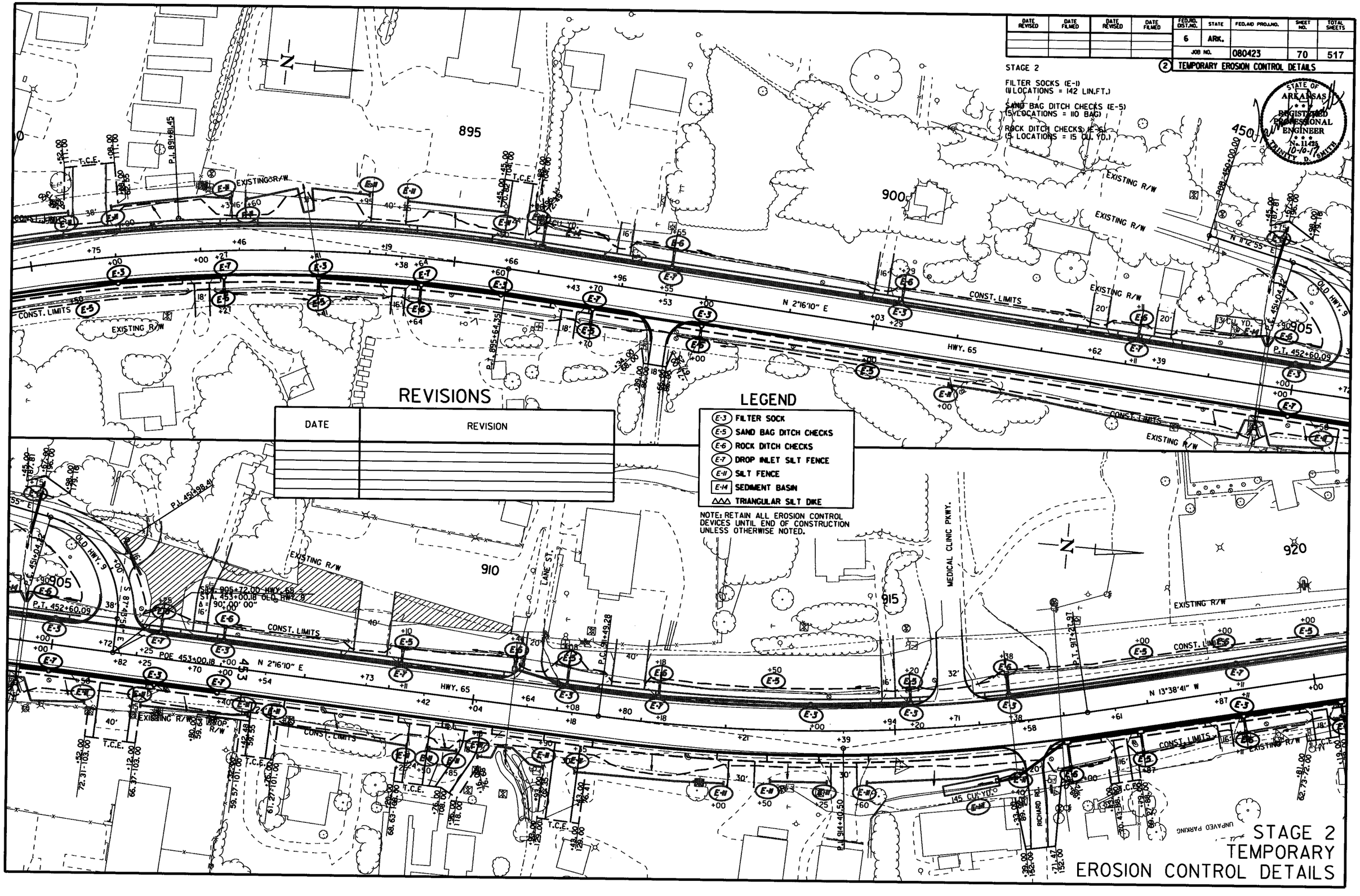
STAGE 2

FILTER SOCKS (E-1)
(11 LOCATIONS = 142 LIN.FT.)

SAND BAG DITCH CHECKS (E-5)
(5 LOCATIONS = 110 BAG)

ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YD.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 11425
10-10-17
TRINITY D. SMITH



REVISIONS

DATE	REVISION

LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- [E-14] SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2 TEMPORARY EROSION CONTROL DETAILS

8/17/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	71	517

(2) TEMPORARY EROSION CONTROL DETAILS

STAGE 2

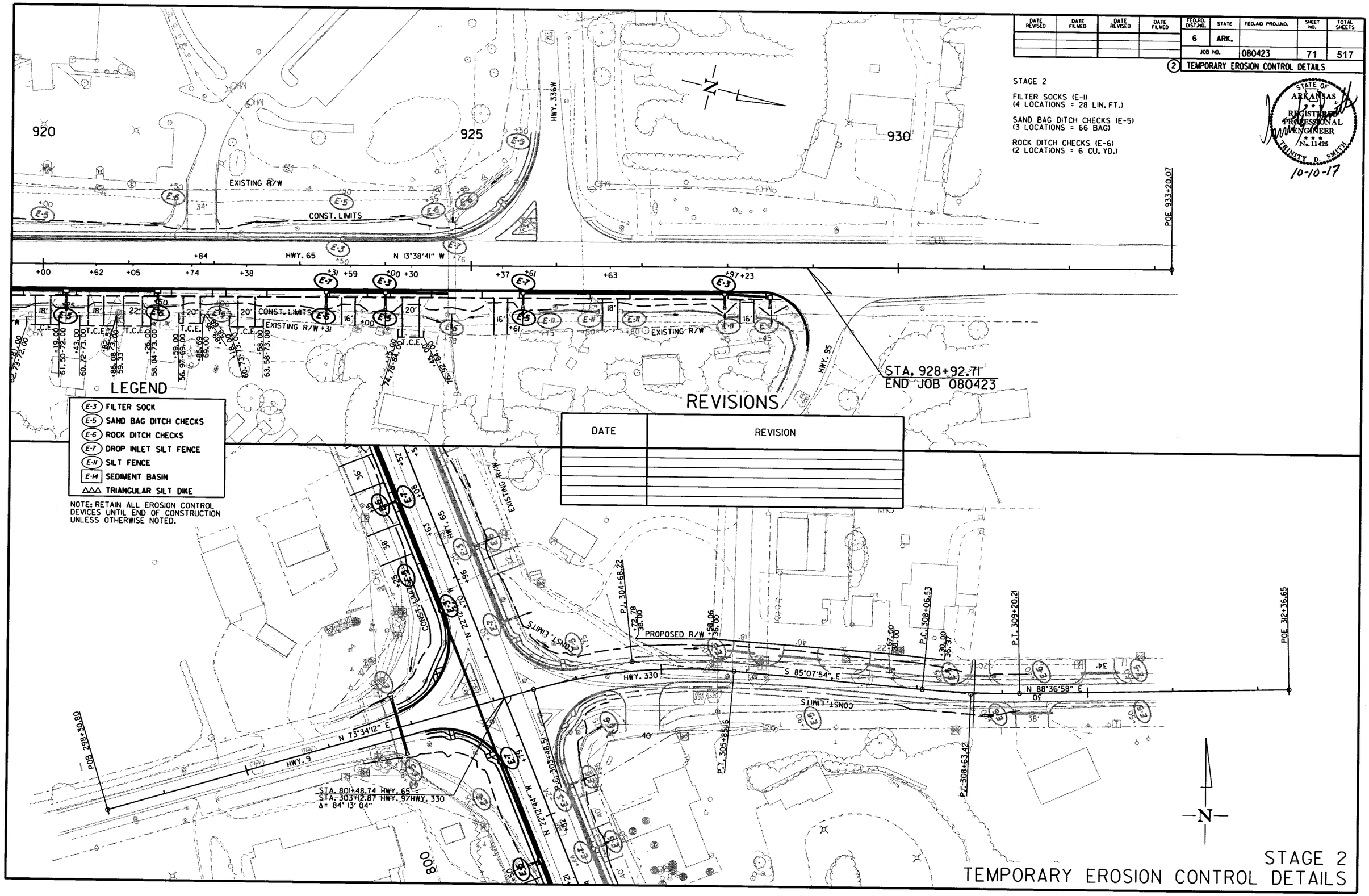
FILTER SOCKS (E-1)
(4 LOCATIONS = 28 LIN. FT.)

SAND BAG DITCH CHECKS (E-5)
(3 LOCATIONS = 66 BAG)

ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YD.)

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

10-10-17



LEGEND

- (E-3) FILTER SOCK
- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN
- △△△ TRIANGULAR SILT DIKE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE	REVISION

8/17/2017

R080423.DGN

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	72	517

(2) MAINTENANCE OF TRAFFIC DETAILS

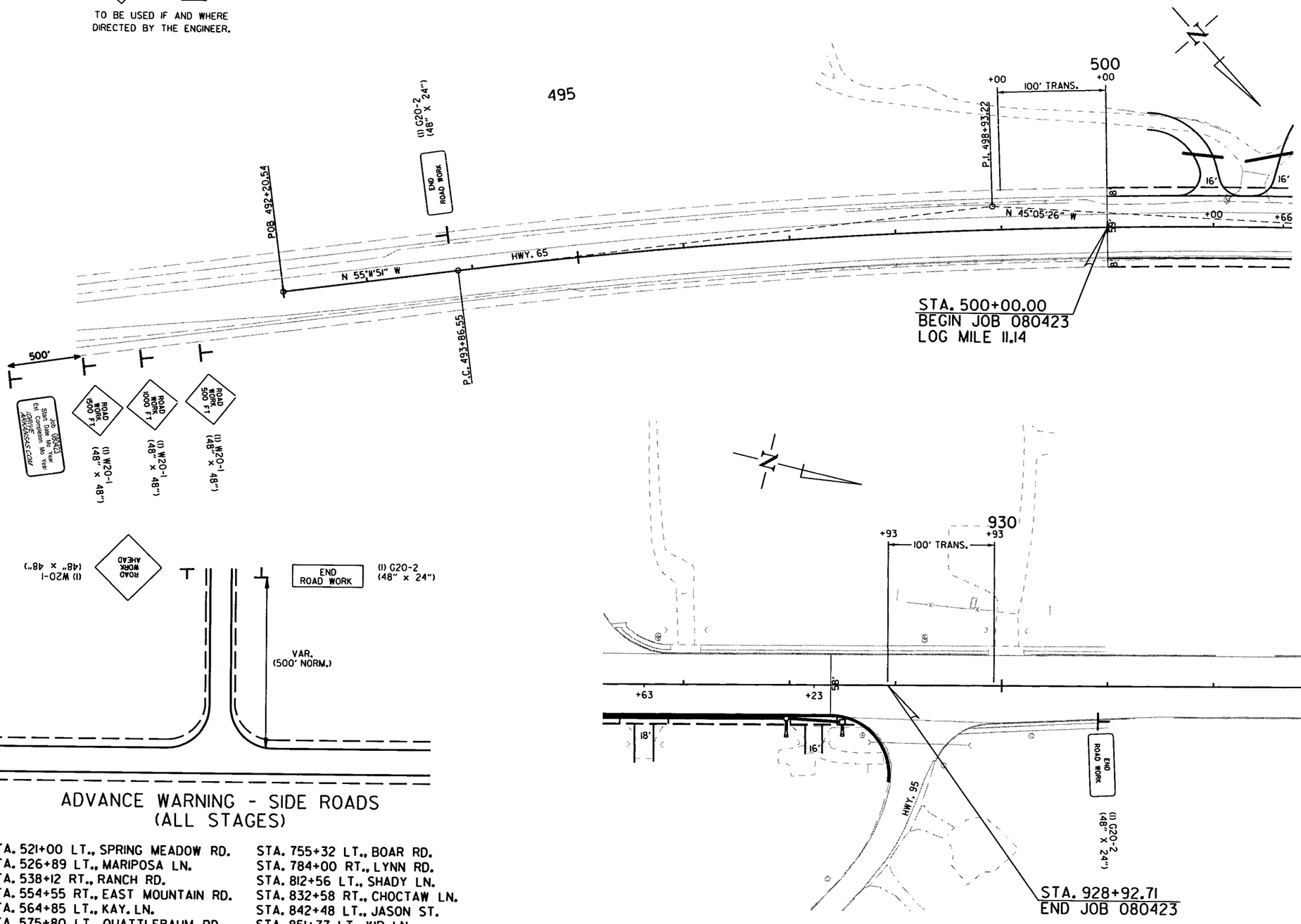
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

(1) W21-5a (48" X 48")

RIGHT SHOULDER CLOSED

DO NOT PASS (32) R4-1 (24" X 30")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.



ADVANCE WARNING - SIDE ROADS (ALL STAGES)

STA. 521+00 LT., SPRING MEADOW RD.
STA. 526+89 LT., MARIPOSA LN.
STA. 538+12 RT., RANCH RD.
STA. 554+55 RT., EAST MOUNTAIN RD.
STA. 564+85 LT., KAY. LN.
STA. 575+80 LT., OUATTLEBAUM RD.
STA. 636+11 LT., CLINTON QUARRY RD.
STA. 692+67 LT., NORCLIFF RD.
STA. 703+92 LT., NIAGARA RD.
STA. 752+52 RT., HWY. 336E
STA. 755+32 LT., BOAR RD.
STA. 784+00 RT., LYNN RD.
STA. 812+56 LT., SHADY LN.
STA. 832+58 RT., CHOCTAW LN.
STA. 842+48 LT., JASON ST.
STA. 851+77 LT., KIP LN.
STA. 897+53 RT., CEMETERY DR.
STA. 905+72 LT., OLD HWY. 9
STA. 910+64 LT., LANE ST.
STA. 916+58 RT., RICHARD RD.

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MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	73	517

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING ROADWAY

NARROW TO TWO LANES AS SHOWN ON DETAILS

CONSTRUCT WIDENING ON LT.
STA. 500+00 TO STA. 585+00
STA. 707+00 TO STA. 773+92
STA. 820+00 TO STA. 929+36
CONSTRUCT WIDENING ON RT.
STA. 585+00 TO STA. 707+00
STA. 773+92 TO STA. 820+00

STAGE 2:

SHIFT TRAFFIC TO WIDENING FROM STAGE 1

CONSTRUCT WIDENING ON RT.
STA. 500+00 TO STA. 585+00
STA. 707+00 TO STA. 773+92
STA. 820+00 TO STA. 929+36
CONSTRUCT WIDENING ON LT.
STA. 585+00 TO STA. 707+00
STA. 773+92 TO STA. 820+00

STAGE 1
TRAFFIC DRUMS:

STA. 500+00 - STA. 580+00 LT. = 160 EACH

CONSTRUCTION PAVEMENT MARKINGS:
STA. 494+25 - STA. 929+36 = 171744 LIN. FT.

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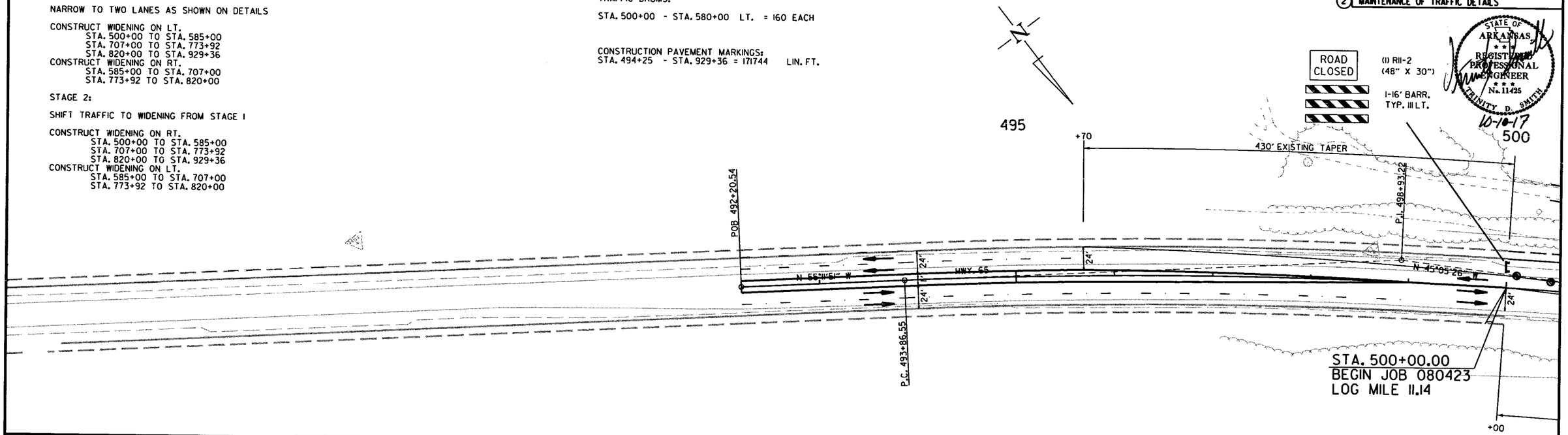

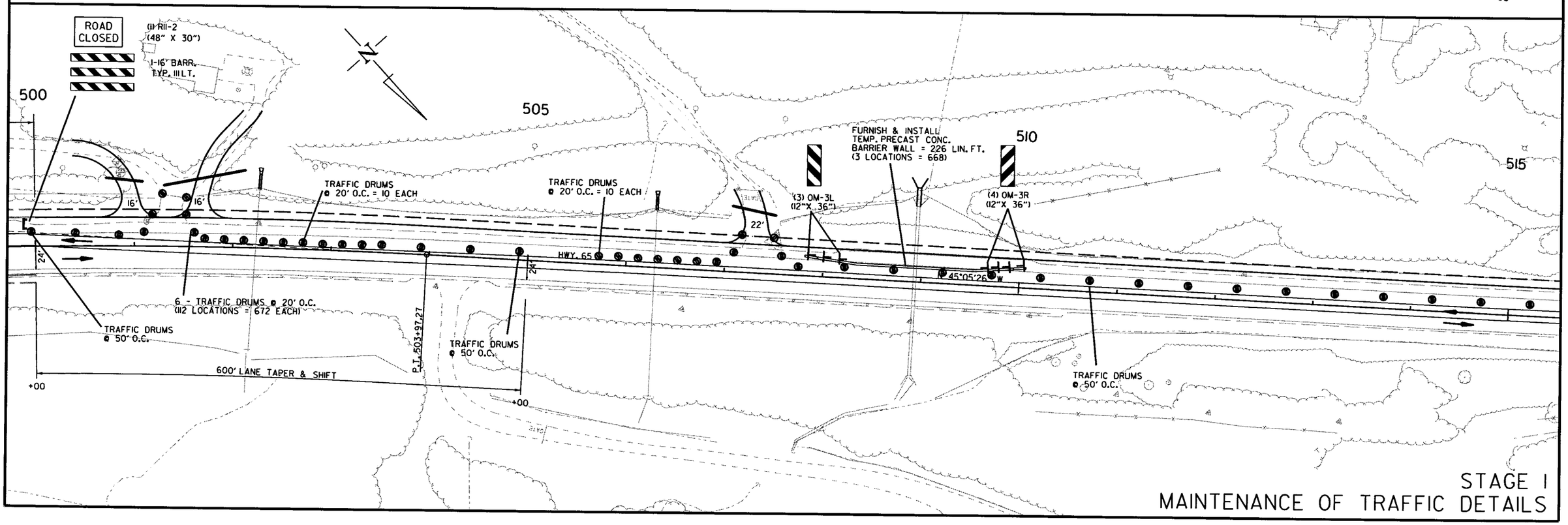

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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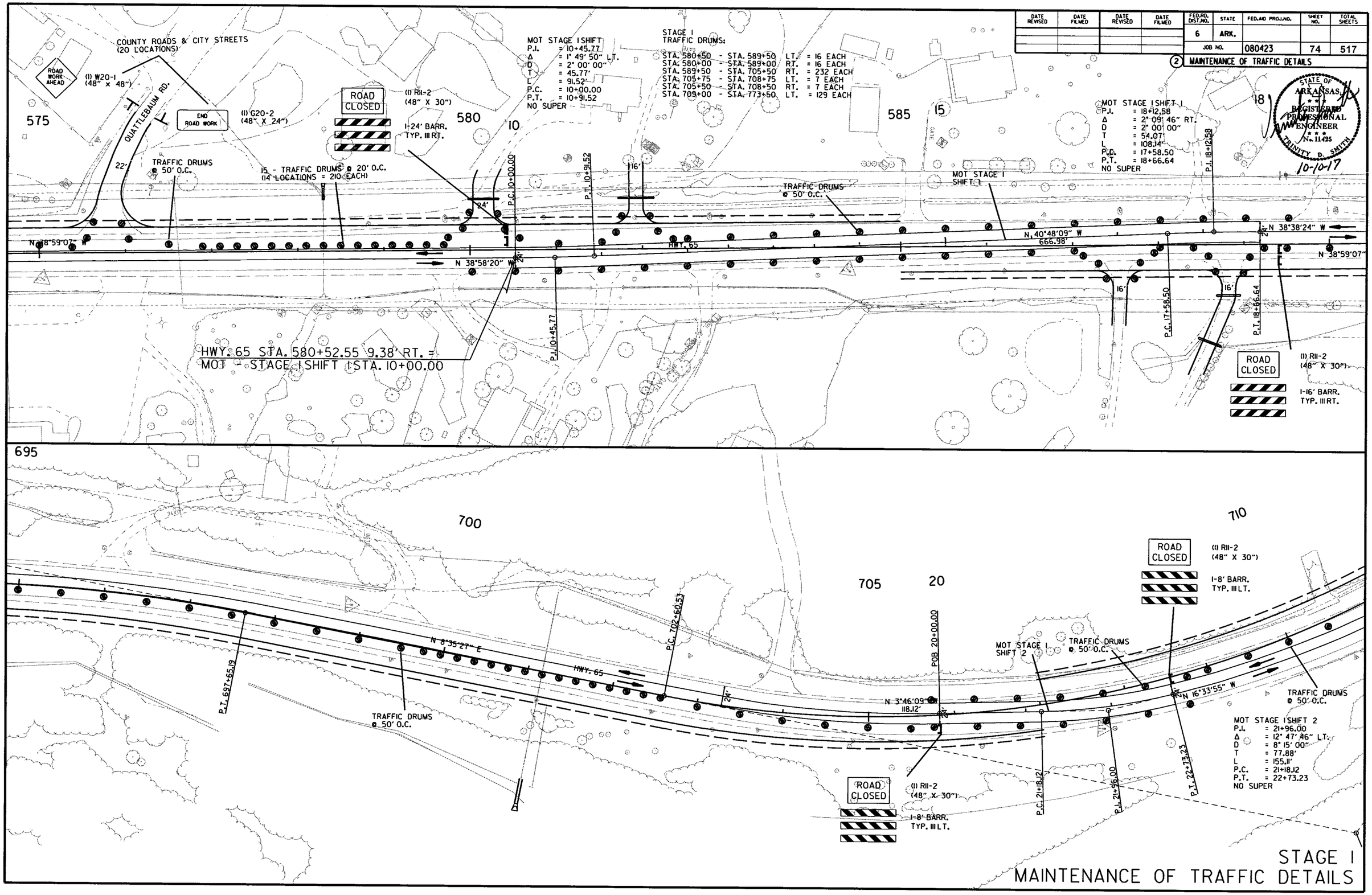
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	74	517

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I
MAINTENANCE OF TRAFFIC DETAILS

8/26/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	75	517

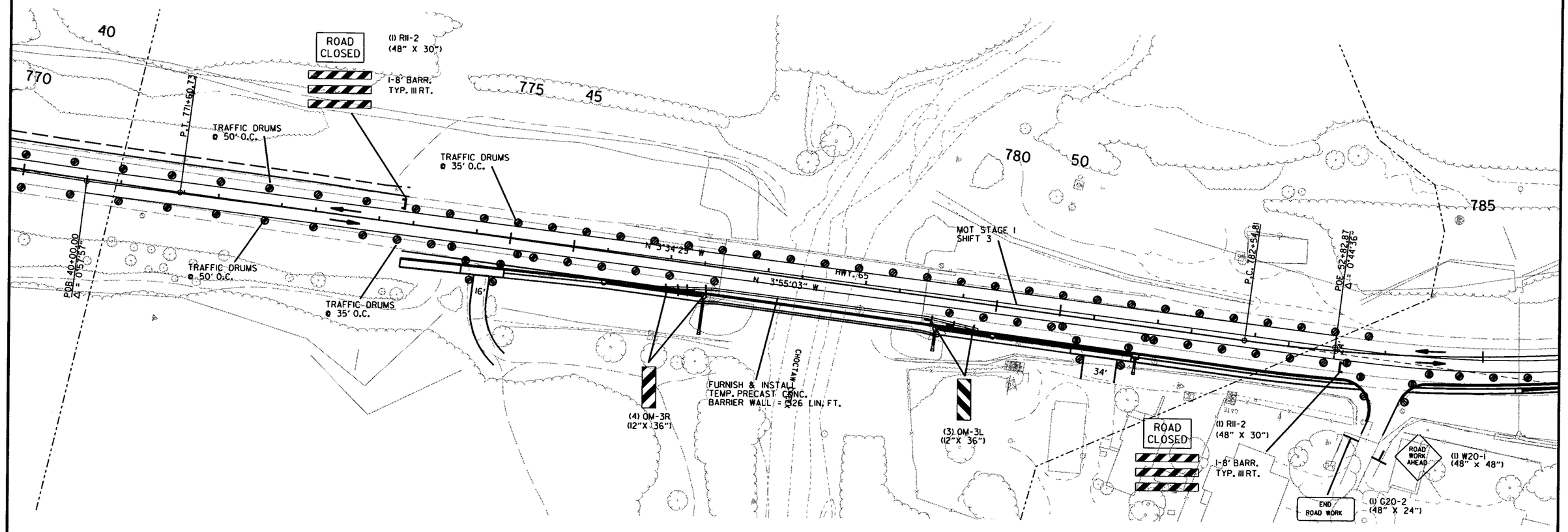
(2) MAINTENANCE OF TRAFFIC DETAILS

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

10-10-17

STAGE I
TRAFFIC DRUMS:

STA. 770+00 - STA. 773+00 RT. = 7 EACH
STA. 773+50 - STA. 795+00 RT. = 61 EACH
STA. 774+00 - STA. 784+00 LT. = 29 EACH



STAGE I
MAINTENANCE OF TRAFFIC DETAILS

8/26/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	76	517

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STAGE I
TRAFFIC DRUMS:

STA. 775+00 - STA. 798+00 RT. = 24 EACH
STA. 774+00 - STA. 784+00 LT. = 29 EACH
STA. 804+00 - STA. 817+50 RT. = 39 EACH

VERTICAL PANELS:

STA. 798+50 - STA. 804+00 RT. = 3 EACH

MOT - STAGE I SHIFT 4
P.I. = 60+22.36
Δ = 3° 41' 15" RT.
D = 8° 15' 00"
T = 22.36'
L = 44.70'
P.C. = 60+00.00
P.T. = 60+44.70
NO SUPER

HWY. 65 STA. 795+04.64 21.76' LT. =
MOT - STAGE I SHIFT 4 STA. 60+00.00

TRAFFIC DRUMS @ 35' O.C.

ROAD CLOSED

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

1-32' BARR. TYP. III LT.

VERTICAL PANELS @ 35' O.C.

250' TRANS.

HWY. 65

N 25°21'11" W

N 29°12'24" W

N 22°12'44" W

N 21°39'57" W

P.T. 790+43.49

P.C. 60+00.00

P.I. 60+22.36

P.I. 796+69.32

P.T. 60+44.70

P.C. 794+94.24

P.I. 786+55.86

P.T. 798+43.97

P.C. 303+48.51

MOT - STAGE I SHIFT 4
P.I. = 74+60.39
Δ = 3° 48' 33" RT.
D = 8° 15' 00"
T = 23.10'
L = 46.17'
P.C. = 74+37.29
P.T. = 74+83.46
NO SUPER

HWY. 65 STA. 809+85.56 12.61' LT. =
MOT - STAGE I SHIFT 4 STA. 74+83.46

ROAD WORK AHEAD

(1) W20-1 (48" x 48")

END ROAD WORK

(1) G20-2 (48" X 24")

N 73°34'12" E

HWY. 9

HWY. 330

N 22°12'44" W

N 21°39'57" W

N 22°21'57" W

N 18°33'24" W

N 4°45'52" W

P.C. 303+48.51

P.I. 304+68.22

P.I. 69+36.91

P.C. 69+01.91

P.T. 69+71.92

P.C. 806+36.70

P.I. 74+60.39

P.T. 74+83.46

P.I. 811+39.09

P.C. 74+37.29

STA. 801+48.74 HWY. 65 =
STA. 303+12.87 HWY. 9/HWY. 330
Δ = 84° 13' 04"

TRAFFIC DRUMS @ 35' O.C.

VERTICAL PANELS @ 35' O.C.

TRAFFIC DRUMS @ 35' O.C.

ROAD CLOSED

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

1-24' BARR. TYP. III RT.

MOT - STAGE I SHIFT 4
P.I. = 69+36.91
Δ = 0° 42' 00" LT.
D = 1° 00' 00"
T = 35.01'
L = 70.01
P.C. = 69+01.91
P.T. = 69+71.92
NO SUPER

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	77	517

(2) MAINTENANCE OF TRAFFIC DETAILS

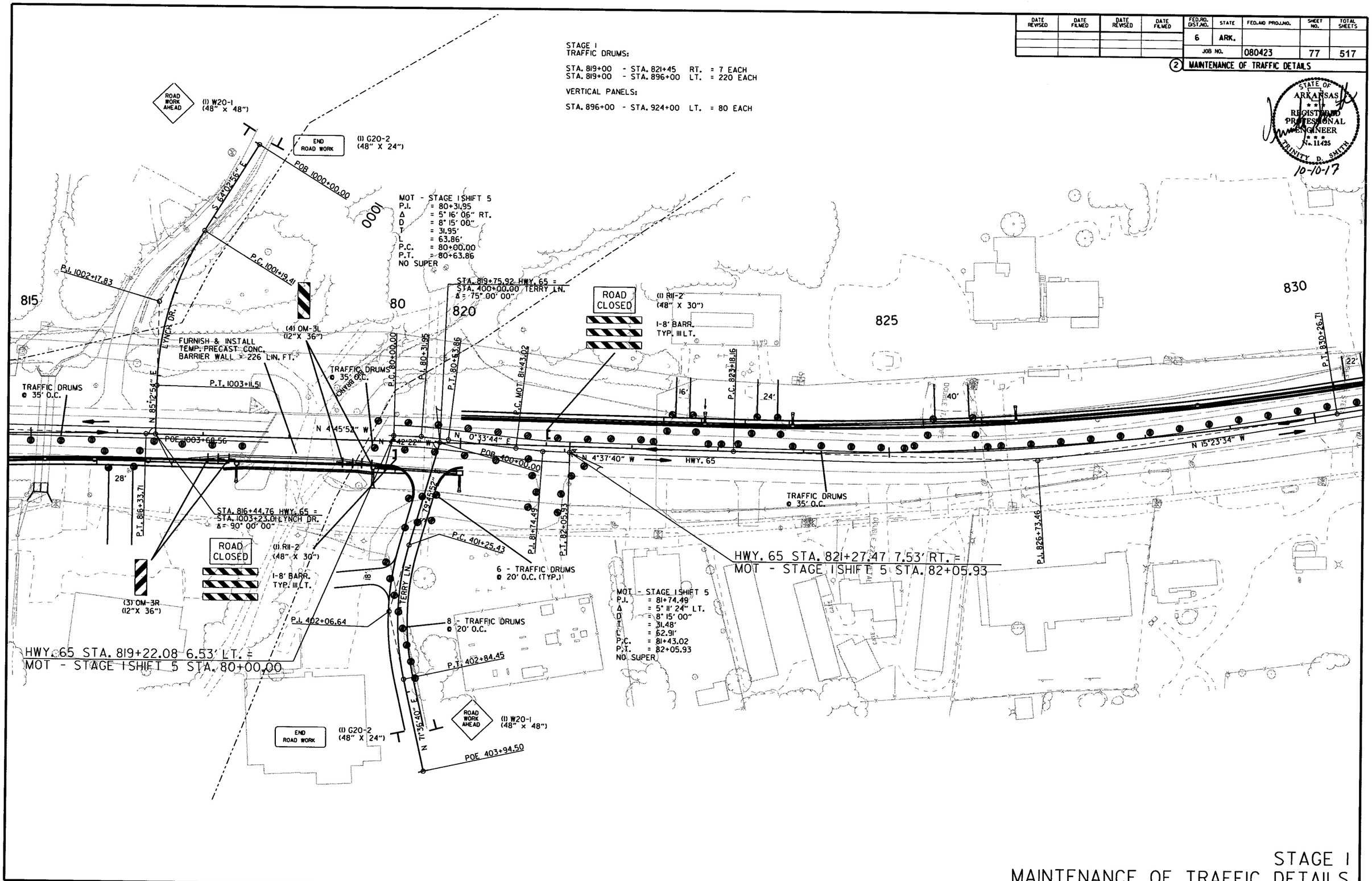
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STAGE I
TRAFFIC DRUMS:

STA. 819+00 - STA. 821+45 RT. = 7 EACH
STA. 819+00 - STA. 896+00 LT. = 220 EACH

VERTICAL PANELS:

STA. 896+00 - STA. 924+00 LT. = 80 EACH



STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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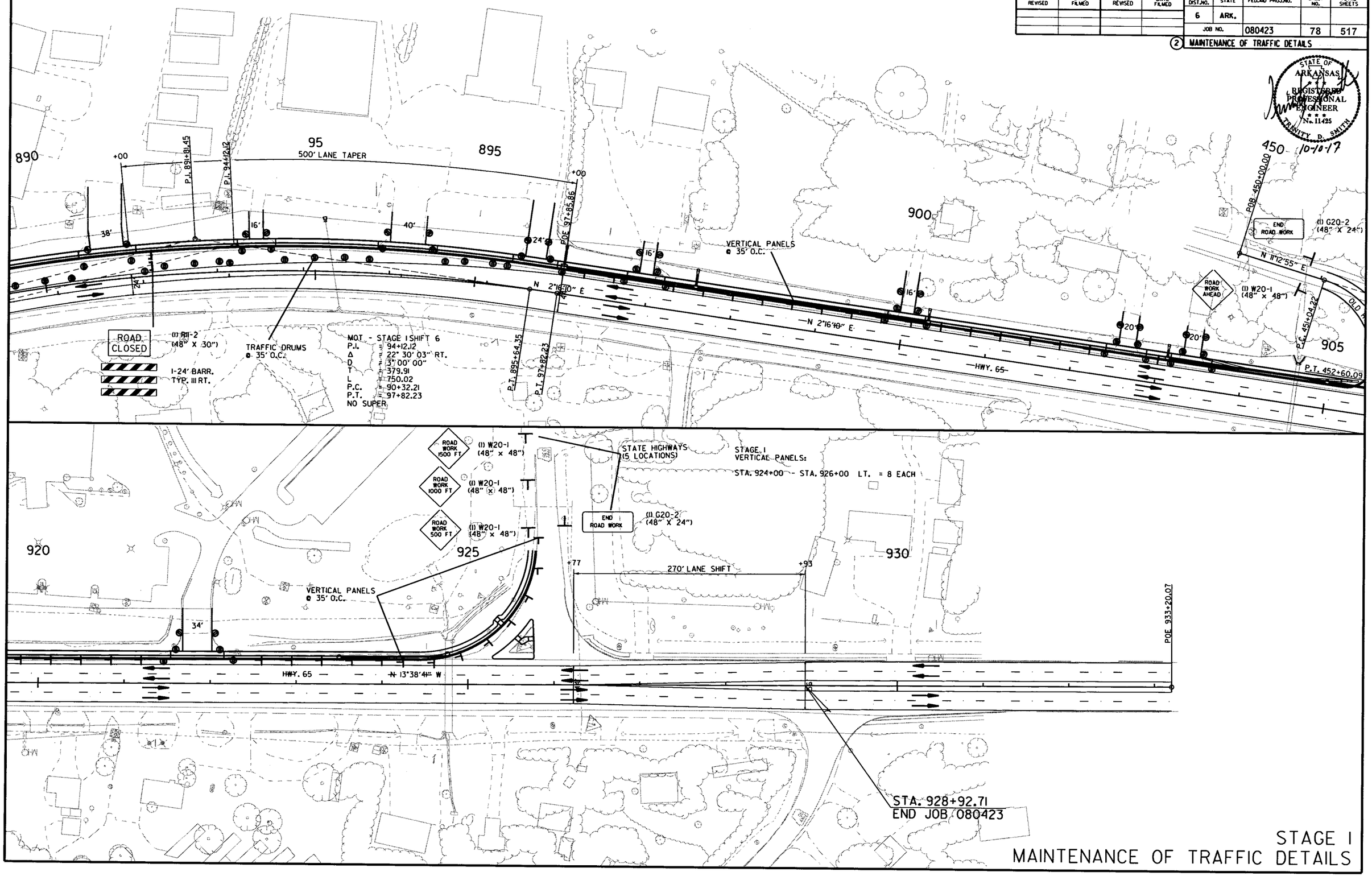
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	78	517

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	79	517

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION:

STAGE 1:
MAINTAIN TRAFFIC ON EXISTING ROADWAY
CLOSE PASSING LANE AND SHIFT SOUTHBOUND
TRAFFIC TO PASSING LANE
CONSTRUCT WIDENING ON LT.
STA. 500+00 TO STA. 585+00
STA. 707+00 TO STA. 773+92
STA. 820+00 TO STA. 929+36
CONSTRUCT WIDENING ON RT.
STA. 585+00 TO STA. 707+00
STA. 773+92 TO STA. 820+00

STAGE 2:
SHIFT TRAFFIC TO WIDENING FROM STAGE 1
CONSTRUCT WIDENING ON RT.
STA. 500+00 TO STA. 585+00
STA. 707+00 TO STA. 773+92
STA. 820+00 TO STA. 929+36
CONSTRUCT WIDENING ON LT.
STA. 585+00 TO STA. 707+00
STA. 773+92 TO STA. 820+00

STAGE 2
TRAFFIC DRUMS:

STA. 494+00 - STA. 583+00 RT. = 178 EACH

CONSTRUCTION PAVEMENT MARKINGS:
STA. 494+00 - STA. 929+36 = 174144LIN. FT.

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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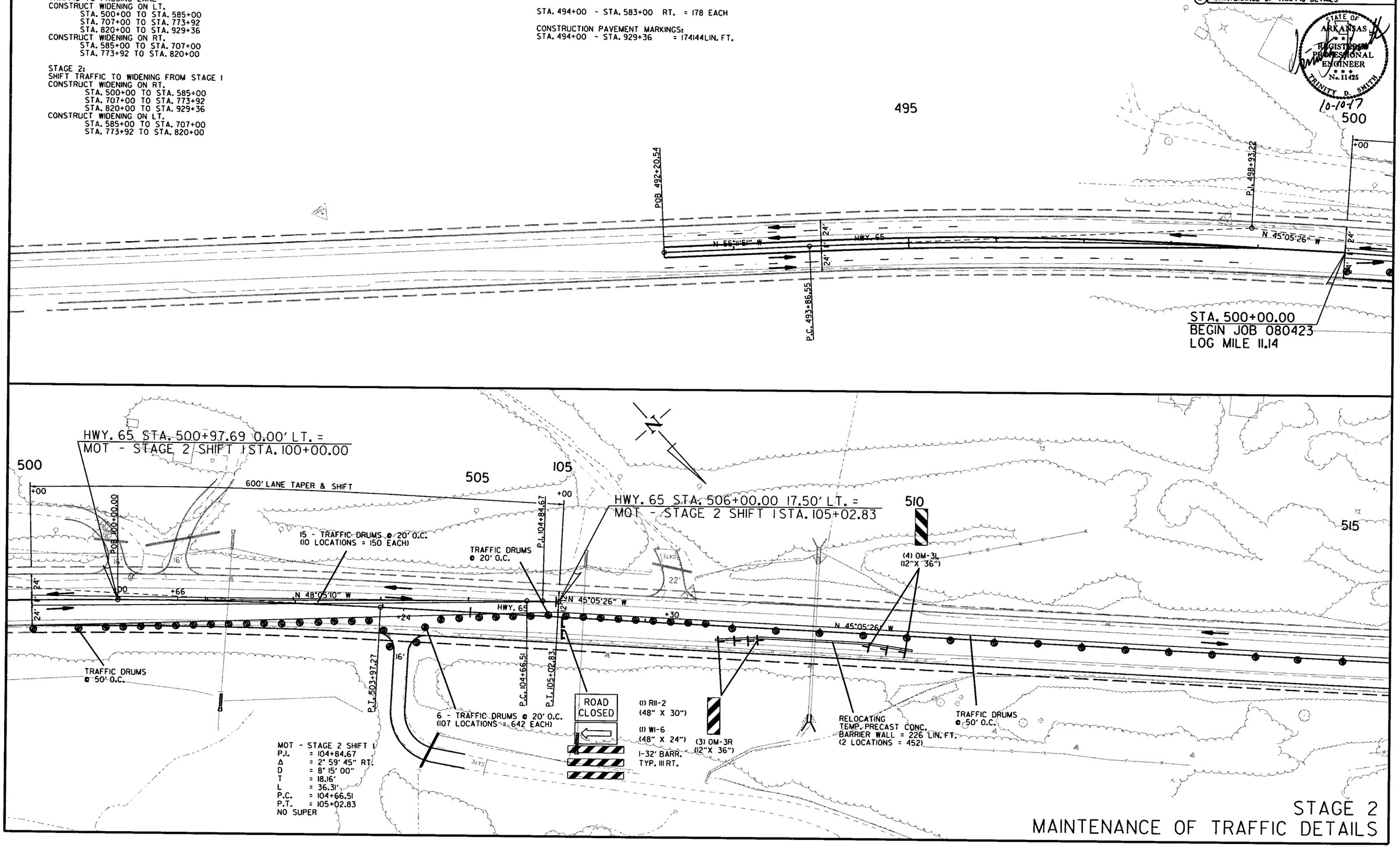

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	80	517

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STAGE 2
TRAFFIC DRUMS:

STA. 583+00	- STA. 587+00	LT.	= 7 EACH
STA. 583+50	- STA. 587+00	RT.	= 8 EACH
STA. 587+50	- STA. 704+75	LT.	= 235 EACH
STA. 705+00	- STA. 709+50	LT.	= 10 EACH
STA. 705+00	- STA. 709+50	RT.	= 10 EACH
STA. 709+75	- STA. 771+50	LT.	= 124 EACH

MOT - STAGE 2 SHIFT 2
P.I. = 110+37.23
Δ = 6° 08' 11" RT.
D = 8° 15' 00"
T = 37.23'
L = 74.38'
P.C. = 110+00.00
P.T. = 110+74.38
NO SUPER

575 580 585 110

ROAD WORK AHEAD (1) W20-1 (48" x 48")
END ROAD WORK (1) G20-2 (48" X 24")
OUATTLEBAUM RD.
TRAFFIC DRUMS @ 50' O.C.
ROAD CLOSED (1) R11-2 (48" X 30") (1) W1-6 (48" X 24") 1-32' BARR. TYP. III LT.
P.C. 110+00.00 P.I. 110+37.23 P.T. 110+74.38
N 38°59'07" W
HWY. 65
N 32°50'57" W 252.07'
P.C. 113+27.35 P.I. 113+64.58 P.T. 114+01.73

MOT - STAGE 2 SHIFT 2
P.I. = 113+64.58
Δ = 6° 08' 11" LT.
D = 8° 15' 00"
T = 37.23'
L = 74.38'
P.C. = 113+27.35
P.T. = 114+01.73
NO SUPER

HWY. 65 STA. 583+00.00 17.50' LT. =
MOT - STAGE 2 SHIFT 2 STA. 110+00.00

HWY. 65 STA. 587+00.00 17.50' RT. =
MOT - STAGE 2 SHIFT 2 STA. 114+01.73

695 700 705 120 710

HWY. 65 STA. 709+38.42 17.50' LT. =
MOT - STAGE 2 SHIFT 3 STA. 124+40.42

ROAD CLOSED (1) R11-2 (48" X 30") (1) W1-6 (48" X 24") 1-32' BARR. TYP. III RT.
P.T. 697+65.19
N 8°35'27" E
HWY. 65
P.C. 702+60.53
NIAGARA RD.
P.T. 122+39.14
POE 124+40.42
N 2°54'53" W 201.28'
N 2°11'08" W
P.C. 120+00.00
P.I. 121+20.77
TRAFFIC DRUMS @ 50' O.C.

MOT - STAGE 2 SHIFT 3
P.I. = 121+20.77
Δ = 19° 43' 45" LT.
D = 8° 15' 00"
T = 120.77'
L = 239.14'
P.C. = 120+00.00
P.T. = 122+39.14
NO SUPER

HWY. 65 STA. 705+00.00 17.50' RT. =
MOT - STAGE 2 SHIFT 3 STA. 120+00.00

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	81	517

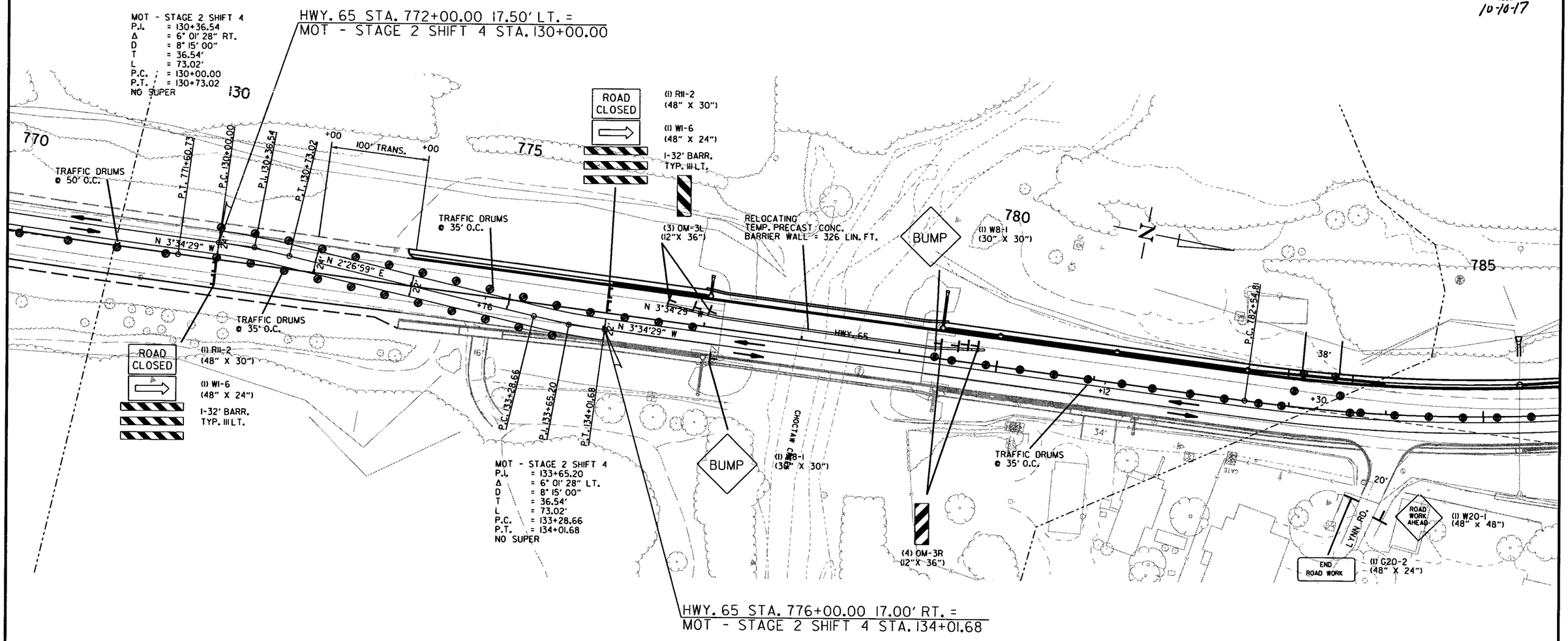
(2) MAINTENANCE OF TRAFFIC DETAILS

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

10-10-17

STAGE 2
TRAFFIC DRUMS:

STA. 772+00 - STA. 776+50 RT. = 11 EACH
STA. 772+00 - STA. 777+00 LT. = 15 EACH
STA. 779+50 - STA. 798+00 LT. = 59 EACH



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

8/26/2016

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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.		080423	82	517

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STAGE 2
TRAFFIC DRUMS:

STA. 804+50 - STA. 817+50 LT. = 22 EACH

VERTICAL PANELS:

STA. 798+00 - STA. 804+50 LT. = 19 EACH

HWY. 65 STA. 798+43.97 5.50' RT. =
MOT - STAGE 2 SHIFT 5 STA. 142+94.46

HWY. 65 STA. 795+48.55 17.00' RT. =
MOT - STAGE 2 SHIFT 5 STA. 140+00.00

TRAFFIC DRUMS @ 35' O.C.

VERTICAL PANELS @ 35' O.C.

200' TRANS.

P.T. 790+43.49 · P.I. 796+69.32 · P.C. 142+58.68 · P.T. 142+94.46 · P.I. 786+55.86 · P.C. 794+94.24 · POB 140+00.00 · P.C. 142+22.84 · P.T. 798+43.97

N 29°12'24" W · N 28°07'14" W · N 22°12'44" W · HWY. 65 · P.C. 303+

ROAD CLOSED

(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
1-32' BARR. TYP. III RT.

MOT - STAGE 2 SHIFT 5
P.I. = 142+58.68
Δ = 5° 54' 30" RT.
D = 8° 15' 00"
T = 35.84'
L = 71.62'
P.C. = 142+22.84
P.T. = 142+94.46
NO SUPER

HWY. 65 STA. 804+00.00 5.50' RT. =
MOT - STAGE 2 SHIFT 6 STA. 145+00.00

VERTICAL PANELS @ 35' O.C.

200' TRANS.

P.I. 145+27.50 · P.C. 145+00.00 · P.T. 145+56.96 · P.C. 146+45.44 · P.I. 146+72.93 · P.T. 147+00.40 · P.C. 806+36.70

N 78°34'12" E · HWY. 9 · HWY. 65 · N 22°12'44" W · N 17°40'40" W · 90.47' · N 4°45'52" W · P.C. 303+48.51 · HWY. 330 · P.I. 304+68.22

ROAD CLOSED

(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
1-32' BARR. TYP. III LT.

TRAFFIC DRUMS @ 35' O.C.

ROAD WORK AHEAD (1) W20-1 (48" X 48")

END ROAD WORK (1) G20-2 (48" X 24")

P.I. 811+39.09 · SHADY LN.

STA. 801+48.74 HWY. 65 =
STA. 303+12.87 HWY. 9/HWY. 330
Δ = 84° 13' 04"

MOT STAGE 2 SHIFT 6
P.I. = 145+27.20
Δ = 4° 32' 04" RT.
D = 8° 15' 00"
T = 27.50'
L = 54.96'
P.C. = 145+00.00
P.T. = 145+56.96
NO SUPER

MOT STAGE 2 SHIFT 6
P.I. = 146+72.93
Δ = 4° 32' 04" LT.
D = 8° 15' 00"
T = 27.50'
L = 54.96'
P.C. = 146+45.44
P.T. = 147+00.40
NO SUPER

HWY. 65 STA. 806+00.00 17.00' RT. =
MOT - STAGE 2 SHIFT 6 STA. 147+00.40

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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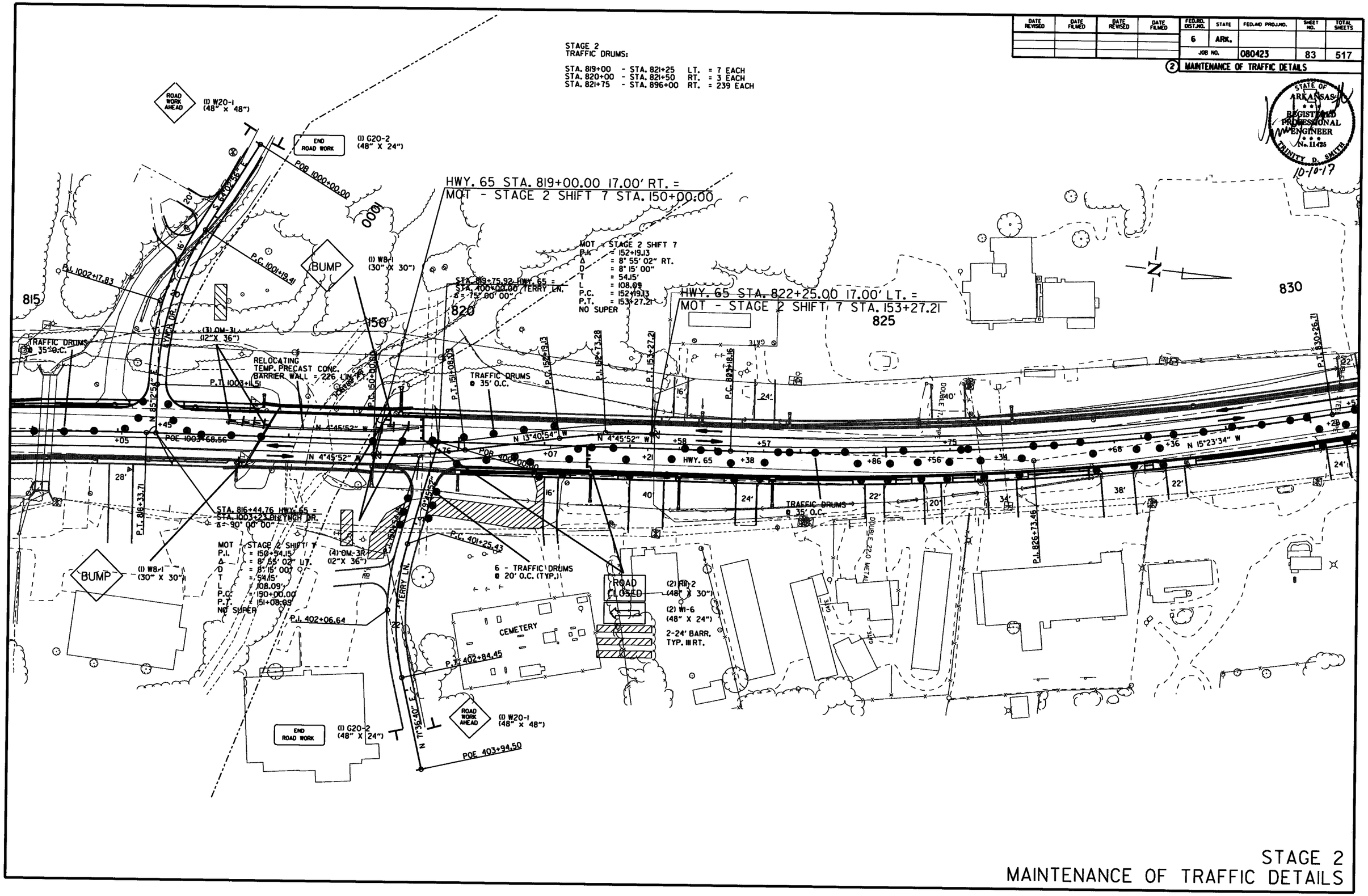
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	83	517

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	84	517

(2) MAINTENANCE OF TRAFFIC DETAILS

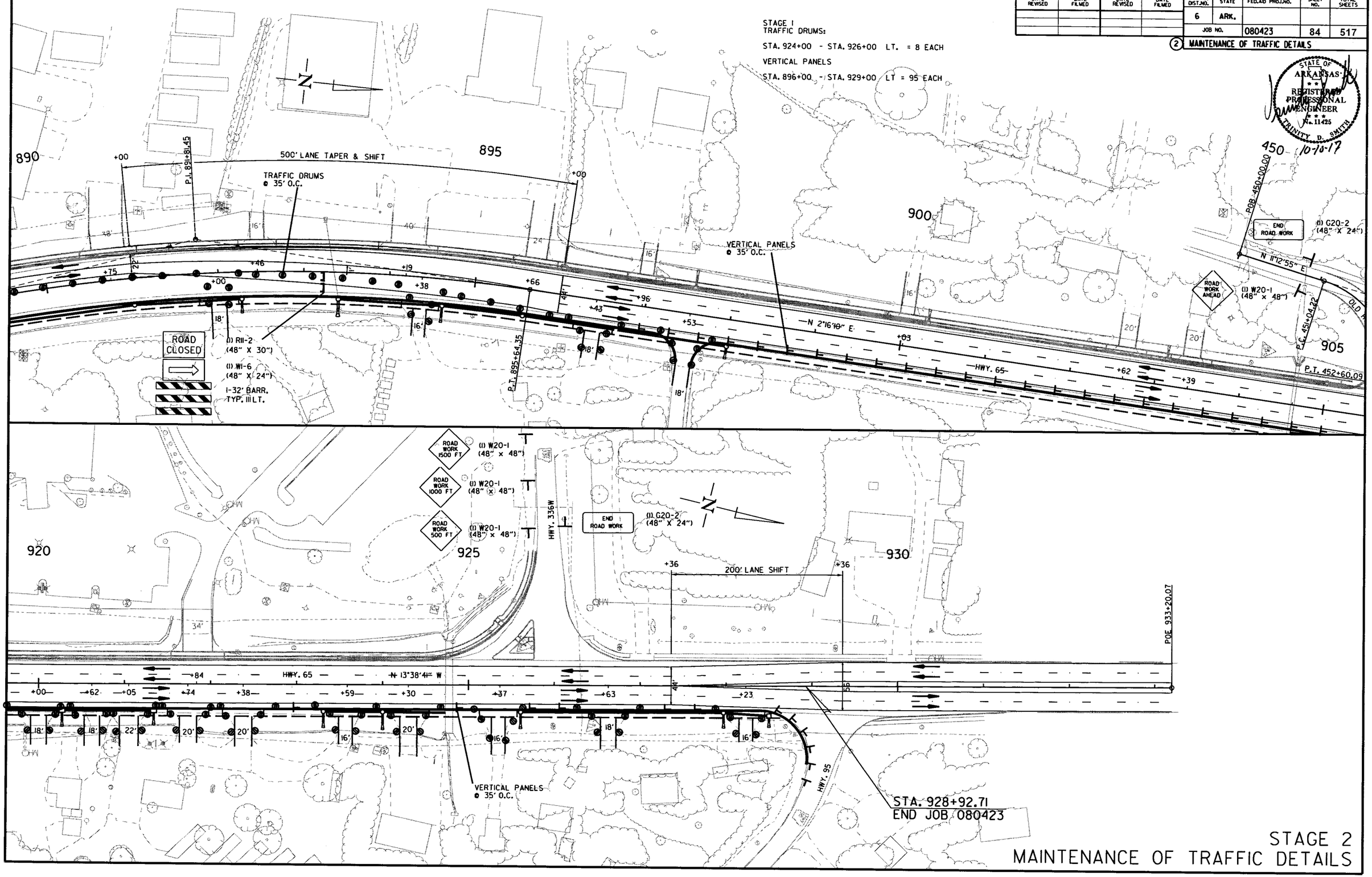
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STAGE I
TRAFFIC DRUMS:

STA. 924+00 - STA. 926+00 LT. = 8 EACH

VERTICAL PANELS

STA. 896+00 - STA. 929+00 LT = 95 EACH



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

8/26/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	85	517

(2) PERMANENT PAVEMENT MARKING DETAILS

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

10-10-17

THERMOPLASTIC PAVEMENT MARKING
6" YELLOW SKIP CENTER LANE

STA. 496+70	- 520+75	= 1203	LIN. FT.
STA. 521+25	- 526+65	= 270	LIN. FT.
STA. 527+15	- 537+73	= 529	LIN. FT.
STA. 538+23	- 554+30	= 804	LIN. FT.
STA. 554+80	- 564+60	= 490	LIN. FT.
STA. 565+10	- 575+55	= 523	LIN. FT.
STA. 576+05	- 634+86	= 2941	LIN. FT.
STA. 635+36	- 692+42	= 2853	LIN. FT.
STA. 692+92	- 703+67	= 538	LIN. FT.
STA. 704+17	- 752+27	= 2405	LIN. FT.
STA. 752+77	- 755+07	= 115	LIN. FT.
STA. 755+57	- 777+16	= 1080	LIN. FT.
STA. 779+26	- 783+75	= 225	LIN. FT.
STA. 784+25	- 798+82	= 729	LIN. FT.
STA. 804+14	- 812+31	= 409	LIN. FT.
STA. 812+81	- 816+20	= 170	LIN. FT.
STA. 816+70	- 817+66	= 48	LIN. FT.
STA. 818+98	- 819+51	= 27	LIN. FT.
STA. 820+01	- 832+33	= 616	LIN. FT.
STA. 832+83	- 842+23	= 470	LIN. FT.
STA. 842+73	- 851+52	= 440	LIN. FT.
STA. 852+02	- 897+28	= 2263	LIN. FT.
STA. 897+78	- 905+47	= 385	LIN. FT.
STA. 905+97	- 915+46	= 475	LIN. FT.
STA. 915+96	- 916+28	= 16	LIN. FT.
STA. 916+78	- 923+75	= 349	LIN. FT.
STA. 926+25	- 929+93	= 184	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" YELLOW SOLID CENTER LANE

STA. 496+70	- 520+75	= 4810	LIN. FT.
STA. 521+25	- 526+65	= 1080	LIN. FT.
STA. 527+15	- 537+73	= 2116	LIN. FT.
STA. 538+23	- 554+30	= 3214	LIN. FT.
STA. 554+80	- 564+60	= 1960	LIN. FT.
STA. 565+10	- 575+55	= 2090	LIN. FT.
STA. 576+05	- 634+86	= 11762	LIN. FT.
STA. 635+36	- 692+42	= 11412	LIN. FT.
STA. 692+92	- 703+67	= 2136	LIN. FT.
STA. 704+17	- 752+27	= 9620	LIN. FT.
STA. 752+77	- 755+07	= 460	LIN. FT.
STA. 755+57	- 777+16	= 4318	LIN. FT.
STA. 779+26	- 783+75	= 898	LIN. FT.
STA. 784+25	- 798+82	= 2934	LIN. FT.
STA. 804+14	- 812+31	= 1634	LIN. FT.
STA. 812+81	- 816+20	= 678	LIN. FT.
STA. 816+70	- 817+66	= 192	LIN. FT.
STA. 818+98	- 819+51	= 106	LIN. FT.
STA. 820+01	- 832+33	= 2464	LIN. FT.
STA. 832+83	- 842+23	= 1880	LIN. FT.
STA. 842+73	- 851+52	= 1758	LIN. FT.
STA. 852+02	- 897+28	= 9052	LIN. FT.
STA. 897+78	- 905+47	= 1538	LIN. FT.
STA. 905+97	- 915+46	= 1898	LIN. FT.
STA. 915+96	- 916+28	= 64	LIN. FT.
STA. 916+78	- 923+75	= 1394	LIN. FT.
STA. 926+25	- 929+93	= 736	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT.

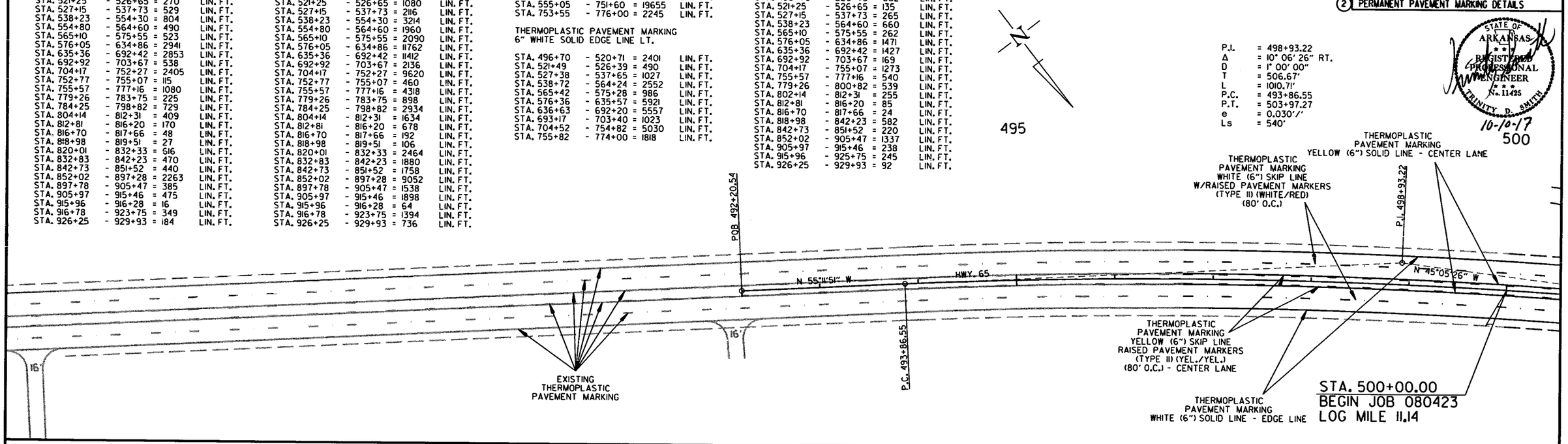
STA. 496+70	- 554+00	= 5730	LIN. FT.
STA. 555+05	- 751+60	= 19655	LIN. FT.
STA. 753+55	- 776+00	= 2245	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT.

STA. 496+70	- 520+71	= 2401	LIN. FT.
STA. 521+49	- 526+39	= 490	LIN. FT.
STA. 527+38	- 537+65	= 1027	LIN. FT.
STA. 538+72	- 564+24	= 2552	LIN. FT.
STA. 565+42	- 575+28	= 986	LIN. FT.
STA. 576+36	- 635+57	= 5921	LIN. FT.
STA. 636+63	- 692+20	= 5557	LIN. FT.
STA. 693+17	- 703+40	= 1023	LIN. FT.
STA. 704+52	- 754+82	= 5030	LIN. FT.
STA. 755+82	- 774+00	= 1818	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SKIP LANE LINE LT.

STA. 496+70	- 520+75	= 602	LIN. FT.
STA. 521+25	- 526+65	= 135	LIN. FT.
STA. 527+15	- 537+73	= 265	LIN. FT.
STA. 538+23	- 564+60	= 660	LIN. FT.
STA. 565+10	- 575+55	= 262	LIN. FT.
STA. 576+05	- 634+86	= 1471	LIN. FT.
STA. 635+36	- 692+42	= 1427	LIN. FT.
STA. 692+92	- 703+67	= 169	LIN. FT.
STA. 704+17	- 755+07	= 1273	LIN. FT.
STA. 755+57	- 777+16	= 540	LIN. FT.
STA. 779+26	- 800+82	= 539	LIN. FT.
STA. 802+14	- 812+31	= 255	LIN. FT.
STA. 812+81	- 816+20	= 85	LIN. FT.
STA. 816+70	- 817+66	= 24	LIN. FT.
STA. 818+98	- 842+23	= 582	LIN. FT.
STA. 842+73	- 851+52	= 220	LIN. FT.
STA. 852+02	- 905+47	= 1337	LIN. FT.
STA. 905+97	- 915+46	= 238	LIN. FT.
STA. 915+96	- 925+75	= 245	LIN. FT.
STA. 926+25	- 929+93	= 92	LIN. FT.



THERMOPLASTIC PAVEMENT MARKING
6" WHITE SKIP LANE LINE RT.

STA. 496+70	- 554+30	= 1440	LIN. FT.
STA. 554+80	- 752+27	= 4937	LIN. FT.
STA. 752+77	- 777+16	= 610	LIN. FT.
STA. 779+26	- 783+75	= 112	LIN. FT.
STA. 784+25	- 800+82	= 415	LIN. FT.
STA. 802+14	- 817+66	= 388	LIN. FT.
STA. 818+98	- 819+51	= 14	LIN. FT.
STA. 820+01	- 832+33	= 308	LIN. FT.
STA. 833+83	- 897+28	= 1587	LIN. FT.
STA. 897+78	- 916+28	= 463	LIN. FT.
STA. 916+78	- 929+93	= 329	LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
(WHITE/RED) SKIP LANE LINE RT.

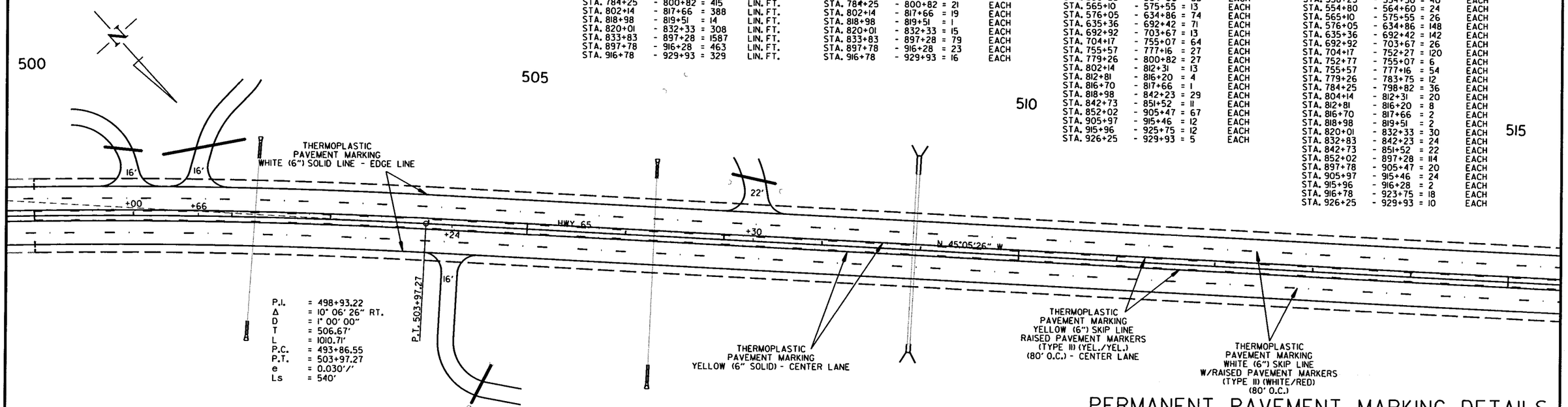
STA. 494+00	- 554+30	= 75	EACH
STA. 554+80	- 752+27	= 247	EACH
STA. 752+77	- 777+16	= 30	EACH
STA. 779+26	- 783+75	= 5	EACH
STA. 784+25	- 800+82	= 21	EACH
STA. 802+14	- 817+66	= 19	EACH
STA. 818+98	- 819+51	= 1	EACH
STA. 820+01	- 832+33	= 15	EACH
STA. 833+83	- 897+28	= 79	EACH
STA. 897+78	- 916+28	= 23	EACH
STA. 916+78	- 929+93	= 16	EACH

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
(WHITE/RED) SKIP LANE LINE LT.

STA. 494+00	- 520+75	= 33	EACH
STA. 521+25	- 526+65	= 7	EACH
STA. 527+15	- 537+73	= 13	EACH
STA. 538+23	- 564+60	= 33	EACH
STA. 565+10	- 575+55	= 13	EACH
STA. 576+05	- 634+86	= 74	EACH
STA. 635+36	- 692+42	= 71	EACH
STA. 692+92	- 703+67	= 13	EACH
STA. 704+17	- 755+07	= 64	EACH
STA. 755+57	- 777+16	= 27	EACH
STA. 779+26	- 800+82	= 27	EACH
STA. 802+14	- 812+31	= 13	EACH
STA. 812+81	- 816+20	= 4	EACH
STA. 816+70	- 817+66	= 1	EACH
STA. 818+98	- 842+23	= 29	EACH
STA. 842+73	- 851+52	= 11	EACH
STA. 852+02	- 905+47	= 67	EACH
STA. 905+97	- 915+46	= 12	EACH
STA. 915+96	- 925+75	= 12	EACH
STA. 926+25	- 929+93	= 5	EACH

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)
(YELLOW/YELLOW) SKIP CENTER LANE

STA. 494+00	- 520+75	= 66	EACH
STA. 521+25	- 526+65	= 14	EACH
STA. 527+15	- 537+73	= 26	EACH
STA. 538+23	- 554+30	= 40	EACH
STA. 554+80	- 564+60	= 24	EACH
STA. 565+10	- 575+55	= 26	EACH
STA. 576+05	- 634+86	= 148	EACH
STA. 635+36	- 692+42	= 142	EACH
STA. 692+92	- 703+67	= 26	EACH
STA. 704+17	- 752+27	= 120	EACH
STA. 752+77	- 755+07	= 6	EACH
STA. 755+57	- 777+16	= 54	EACH
STA. 779+26	- 783+75	= 12	EACH
STA. 784+25	- 798+82	= 36	EACH
STA. 804+14	- 812+31	= 20	EACH
STA. 812+81	- 816+20	= 8	EACH
STA. 816+70	- 817+66	= 2	EACH
STA. 818+98	- 819+51	= 2	EACH
STA. 820+01	- 832+33	= 30	EACH
STA. 832+83	- 842+23	= 24	EACH
STA. 842+73	- 851+52	= 22	EACH
STA. 852+02	- 897+28	= 114	EACH
STA. 897+78	- 905+47	= 20	EACH
STA. 905+97	- 915+46	= 24	EACH
STA. 915+96	- 916+28	= 2	EACH
STA. 916+78	- 923+75	= 18	EACH
STA. 926+25	- 929+93	= 10	EACH



PERMANENT PAVEMENT MARKING DETAILS

8/30/2016

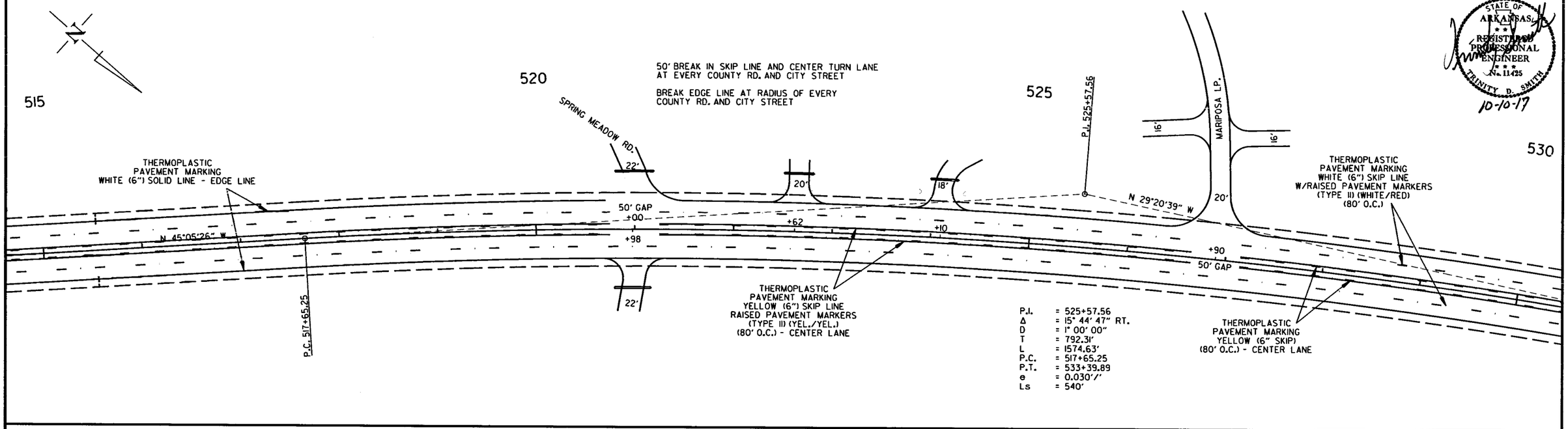
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	86	517

(2) PERMANENT PAVEMENT MARKING DETAILS

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

10-10-17



P.I.	= 525+57.56
Δ	= 15° 44' 47" RT.
D	= 1° 00' 00"
T	= 792.31'
L	= 1574.63'
P.C.	= 517+65.25
P.T.	= 533+39.89
e	= 0.030'/'
Ls	= 540'

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.) (WHITE/RED) SKIP LANE LINE RT. & LT.

STA. 777+16	- 779+26 = 6	EACH	
STA. 817+66	- 818+98 = 4	EACH	

(YELLOW/YELLOW) SKIP CENTER LANE (80' O.C.)

STA. 777+16	- 779+26 = 6	EACH	
STA. 817+66	- 818+98 = 4	EACH	

THERMOPLASTIC PAVEMENT MARKING 6" WHITE SKIP LANE LINE (80' O.C.) RT. & LT.

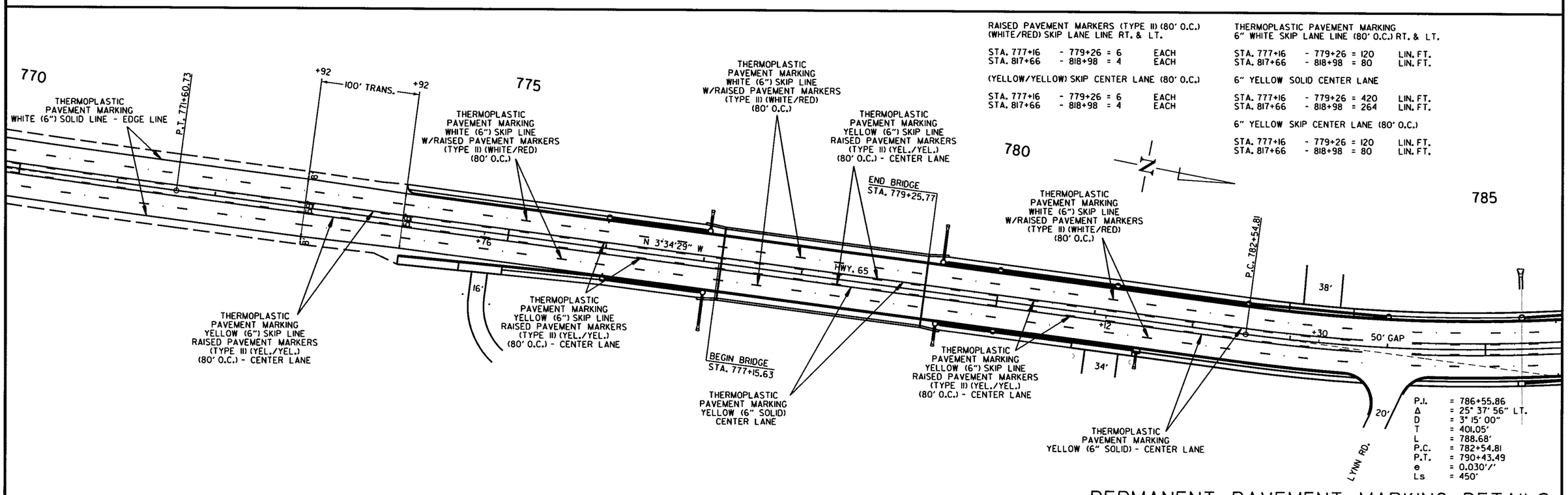
STA. 777+16	- 779+26 = 120	LIN. FT.	
STA. 817+66	- 818+98 = 80	LIN. FT.	

6" YELLOW SOLID CENTER LANE

STA. 777+16	- 779+26 = 420	LIN. FT.	
STA. 817+66	- 818+98 = 264	LIN. FT.	

6" YELLOW SKIP CENTER LANE (80' O.C.)

STA. 777+16	- 779+26 = 120	LIN. FT.	
STA. 817+66	- 818+98 = 80	LIN. FT.	



P.I.	= 786+55.86
Δ	= 25° 37' 56" LT.
D	= 3° 15' 00"
T	= 401.05'
L	= 788.68'
P.C.	= 782+54.81
P.T.	= 790+43.49
e	= 0.030'/'
Ls	= 450'

PERMANENT PAVEMENT MARKING DETAILS

8/30/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	87	517

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

THERMOPLASTIC PAVEMENT MARKINGS

6" WHITE SOLID EDGE LINES FOR
HWY. 65 = 200 LIN. FT.
HWY. 330 = 1290 LIN. FT.
HWY. 9 = 139 LIN. FT.

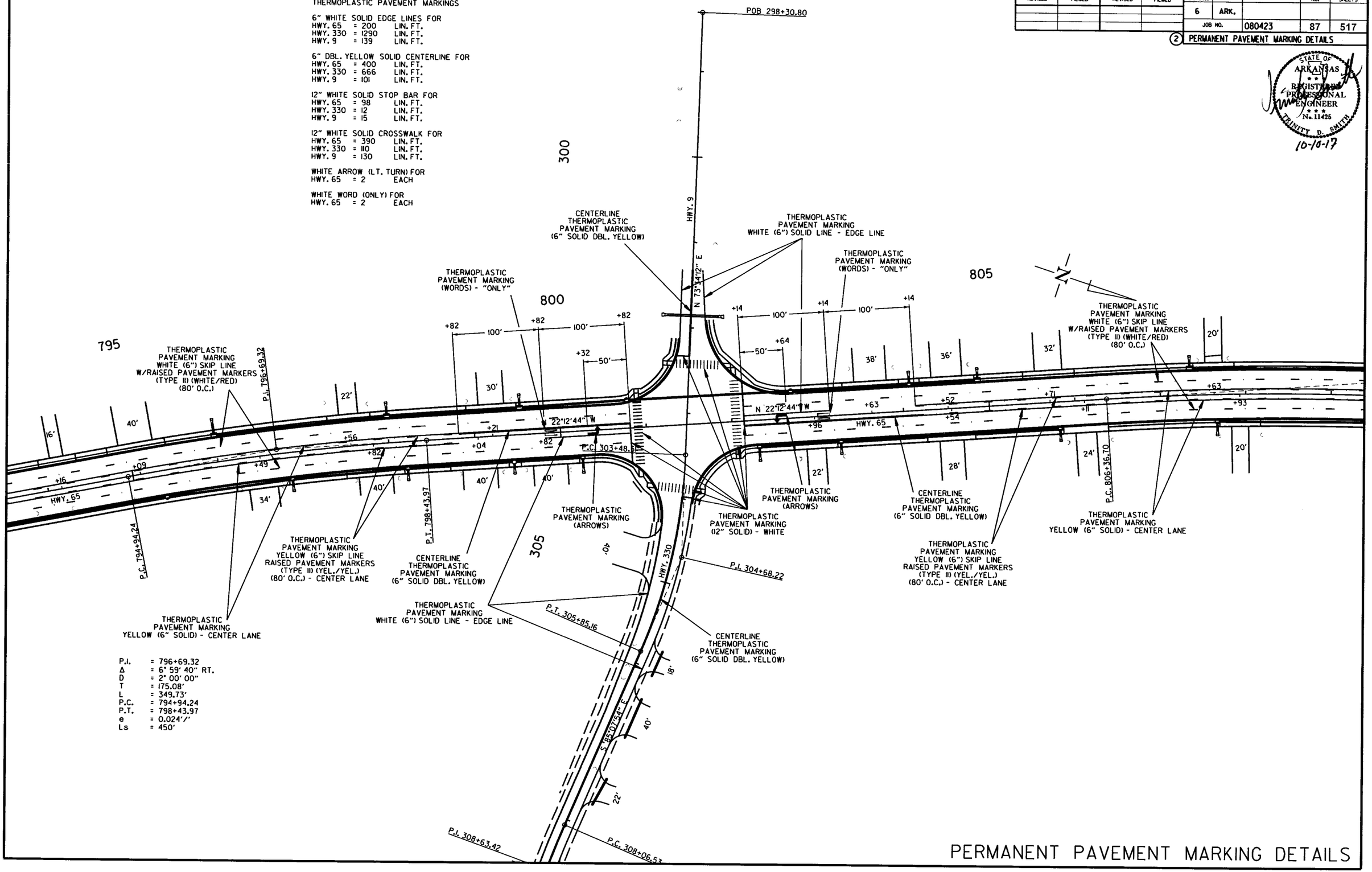
6" DBL. YELLOW SOLID CENTERLINE FOR
HWY. 65 = 400 LIN. FT.
HWY. 330 = 666 LIN. FT.
HWY. 9 = 101 LIN. FT.

12" WHITE SOLID STOP BAR FOR
HWY. 65 = 98 LIN. FT.
HWY. 330 = 12 LIN. FT.
HWY. 9 = 15 LIN. FT.

12" WHITE SOLID CROSSWALK FOR
HWY. 65 = 390 LIN. FT.
HWY. 330 = 110 LIN. FT.
HWY. 9 = 130 LIN. FT.

WHITE ARROW (LT. TURN) FOR
HWY. 65 = 2 EACH

WHITE WORD (ONLY) FOR
HWY. 65 = 2 EACH



P.I. = 796+69.32
Δ = 6° 59' 40" RT.
D = 2° 00' 00"
T = 175.08'
L = 349.73'
P.C. = 794+94.24
P.T. = 798+43.97
e = 0.024'/'
Ls = 450'

PERMANENT PAVEMENT MARKING DETAILS

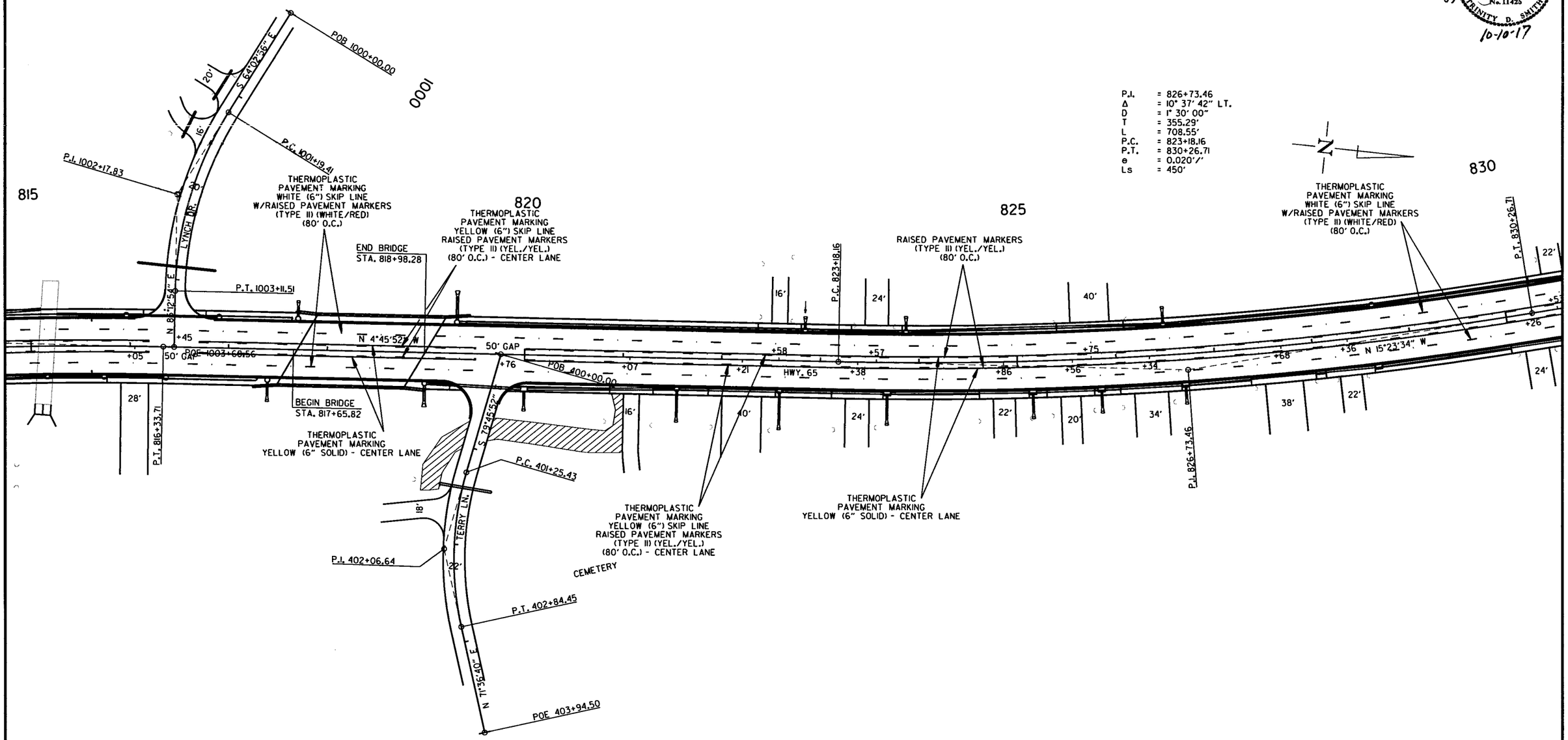
8/30/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	88	517

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



PERMANENT PAVEMENT MARKING DETAILS

8/30/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	89	517

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

THERMOPLASTIC PAVEMENT MARKINGS

6" WHITE SOLID EDGE LINES FOR
HWY. 65 = 100 LIN. FT.

6" DBL. YELLOW SOLID CENTERLINE FOR
HWY. 65 = 200 LIN. FT.
HWY. 336W = 93 LIN. FT.
HWY. 95 = 70 LIN. FT.

8" WHITE SOLID AROUND ISLAND FOR
HWY. 336W = 209 LIN. FT.

12" WHITE SOLID STOP LINE FOR
HWY. 336W = 16 LIN. FT.

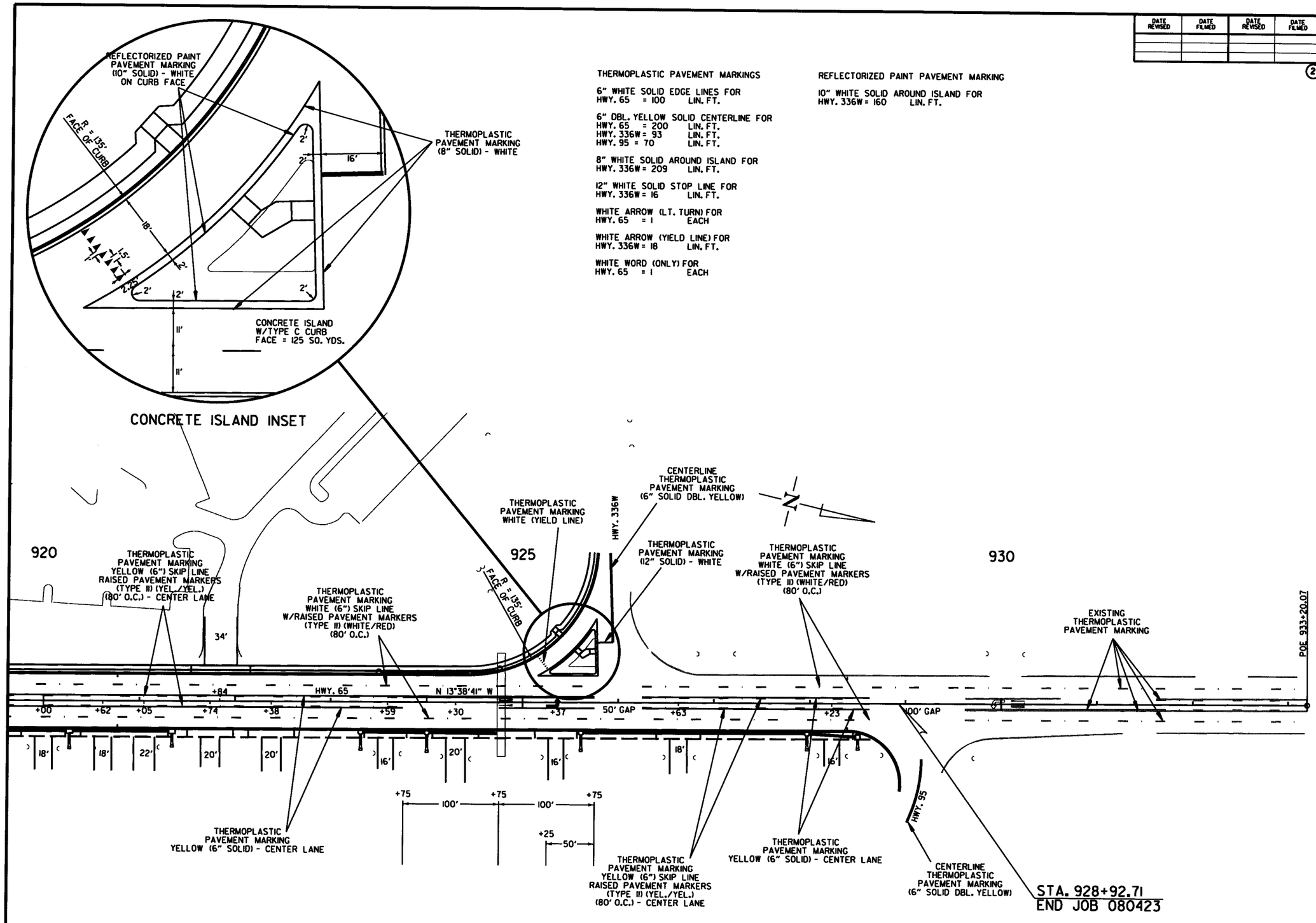
WHITE ARROW (LT. TURN) FOR
HWY. 65 = 1 EACH

WHITE ARROW (YIELD LINE) FOR
HWY. 336W = 18 LIN. FT.

WHITE WORD (ONLY) FOR
HWY. 65 = 1 EACH

REFLECTORIZED PAINT PAVEMENT MARKING

10" WHITE SOLID AROUND ISLAND FOR
HWY. 336W = 160 LIN. FT.



PERMANENT PAVEMENT MARKING DETAILS

8/30/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-31-17				6	ARK.			
				JOB NO.		080423	90	517

(2) QUANTITIES

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

11-1-17

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER
											RIGHT	LEFT		
			LIN. FT. - EACH			NO.	SQ. FT.	EACH			LIN. FT.			
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	32.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	32.0							
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	32.0							
W20-1	ROAD WORK AHEAD	48"x48"	25	25	25	25	400.0							
G20-2	END ROAD WORK	48"x24"	27	27	27	27	216.0							
R11-2	ROAD CLOSED	48"x30"	17	11	17	17	170.0							
OM-3L	OBJECT MARKER	12"x36"	6	9	9	9	27.0							
OM-3R	OBJECT MARKER	12"x36"	8	12	12	12	36.0							
W1-6	LARGE ARROW	48"x24"		11	11	11	88.0							
R4-1	DO NOT PASS	24"x30"	32	32	32	32	160.0							
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4		4	4	36.0							
W8-1	BUMP	30"x30"		3	3	3	18.8							
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2	64.0							
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE									10				
	VERTICAL PANELS		91	114	114			114						
	TRAFFIC DRUMS		983	923	983				983					
	TYPE III BARRICADE-RT. (8')		2		2						16			
	TYPE III BARRICADE-LT. (8')		4		4							32		
	TYPE III BARRICADE-LT. (16')		1	2	2							32		
	TYPE III BARRICADE-RT. (24')		2		2						48			
	TYPE III BARRICADE-RT. (32')		1	4	4						128			
	TYPE III BARRICADE-LT. (32')		1	6	6							192		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		778		778								778	
	RELOCATING PRECAST CONCRETE BARRIER			452	452									452
TOTALS:							1311.8	114	983	10	192	256	778	452

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

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING
							TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	6" WHITE	6" YELLOW	8" WHITE	12" WHITE	YIELD LINE	WORDS	ARROWS	10" WHITE
	LIN. FT. - EACH			LIN. FT.		LIN. FT.	EACH		LIN. FT.					EACH		LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS			1700	1700												
CONSTRUCTION PAVEMENT MARKINGS	174004	174144			348148											
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	174004	174144				348148										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			1070				1070									
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			1046					1046								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			77388						77388							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			105175							105175						
THERMOPLASTIC PAVEMENT MARKING WHITE (8")			209								209					
THERMOPLASTIC PAVEMENT MARKING WHITE (12")			771									771				
THERMOPLASTIC PAVEMENT MARKING (WORDS)			3											3		
THERMOPLASTIC PAVEMENT MARKING (ARROWS)			3												3	
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)			18										18			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")			160													160
TOTALS:				1700	348148	348148	1070	1046	77388	105175	209	771	18	3	3	160

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

9/9/2016

R080423.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.		080423	91	517

(2) QUANTITIES

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

10-10-17

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	TIRES	WELL	STEEL POSTS	ROCK WALLS	CONCRETE WALLS	CONCRETE ISLANDS	COLUMNS	CONCRETE DRIVEWAYS	SIGN FOUNDATIONS	STEPS	HOUSE FOUNDATION	GUARDRAIL	WOOD POLE	WELL HOUSE	BRICK COLUMNS	ROCK COLUMNS	SIGNS	SEPTIC SYSTEM	PLANTERS	ENTRANCE FRAMEWORK WITH FOUNDATION
			EACH	EACH	EACH	LIN. FT.	LIN. FT.	SQ. YD.	EACH	SQ. YD.	EACH	SQ. YD.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
501+65		HWY. 65 LT.																			2	
501+78		HWY. 65 LT.																			2	
501+90		HWY. 65 LT.			1																2	
502+20		HWY. 65 LT.																				
507+38		HWY. 65 LT.																1				
521+12		HWY. 65 LT.									2								1			
536+70		HWY. 65 RT.	1																			
537+00		HWY. 65 RT.	1																			
537+00		HWY. 65 LT.																1				
537+50		HWY. 65 LT.																1				
539+50		HWY. 65 LT.				40																
539+50		HWY. 65 LT.									1								1			
555+85		HWY. 65 LT.													1							
555+90		HWY. 65 LT.													1							
555+95		HWY. 65 LT.													1							
557+10		HWY. 65 RT.							2													
564+00		HWY. 65 RT.									2								1			
567+35		HWY. 65 LT.					18															
567+45		HWY. 65 LT.									1								1		1	
573+43		HWY. 65 RT.								142												
576+02		HWY. 65 RT.								163												
582+40	582+65	HWY. 65 RT.																3				
582+65		HWY. 65 RT.															1					
582+90		HWY. 65 RT.															1					
582+90	584+40	HWY. 65 RT.																5				
587+60		HWY. 65 RT.																				1
589+45		HWY. 65 LT.									2								1			
595+65		HWY. 65 LT.					3															
600+05		HWY. 65 RT.											180									
600+05		HWY. 65 RT.																		1		
601+45		HWY. 65 RT.										33										
605+20		HWY. 65 RT.									2								1			
622+15		HWY. 65 RT.																1				
622+23		HWY. 65 RT.																1				
622+30		HWY. 65 RT.																1				
622+40		HWY. 65 RT.																1				
622+50		HWY. 65 RT.																1				
626+20		HWY. 65 LT.									2								1			
626+90		HWY. 65 LT.									2								1			
636+30		HWY. 65 LT.									2								1			
660+67		HWY. 65 LT.								392												
686+10		HWY. 65 LT.									2								1			
696+95		HWY. 65 LT.									1								1			
698+00		HWY. 65 LT.									1											
775+14	777+08	HWY. 65 RT.												194								
776+14	777+08	HWY. 65 LT.												94								
779+37	780+31	HWY. 65 RT.												94								
779+37	781+56	HWY. 65 LT.												219								
815+72	817+41	HWY. 65 RT.												169								
816+80	817+74	HWY. 65 LT.												94								
818+93	819+87	HWY. 65 RT.												94								
819+26	821+20	HWY. 65 LT.												194								
831+52		HWY. 65 LT.				15																
831+80		HWY. 65 LT.				15																
832+05		HWY. 65 LT.				18																
832+33		HWY. 65 LT.				18																
853+97		HWY. 65 RT.								113												
861+78		HWY. 65 LT.								157												
882+65		HWY. 65 RT.		1																		
885+70		HWY. 65 LT.														1						
888+47		HWY. 65 LT.									2								1			
889+95		HWY. 65 LT.								253												
906+05		HWY. 65 RT.									2								1			
907+54		HWY. 65 RT.													1							
916+70		HWY. 65 RT.								165												
920+85		HWY. 65 RT.									1								1			
921+83		HWY. 65 LT.									2								1			
925+68		HWY. 65 LT.								156												
								48														
TOTALS:			2	1	1	106	21	48	2	1541	27	33	180	1152	4	1	2	16	15	1	7	1

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.

R080423.DGN 9/9/2016

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.		080423	92	517

(2) QUANTITIES

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

10-10-17

REMOVAL AND DISPOSAL OF CULVERTS (BOX 1 OF 3)

STATION	DESCRIPTION	PIPE CULVERTS EACH
507+30	HWY. 65 LT.	1
520+90	HWY. 65 LT.	1
522+63	HWY. 65 LT.	1
524+10	HWY. 65 LT.	1
536+84	HWY. 65 RT.	1
536+89	HWY. 65 LT.	1
552+64	HWY. 65 LT.	1
554+55	HWY. 65 RT.	1
556+20	HWY. 65 LT.	1
556+78	HWY. 65 LT.	1
558+43	HWY. 65 LT.	1
559+22	HWY. 65 LT.	1
561+36	HWY. 65 RT.	1
562+40	HWY. 65 RT.	1
563+90	HWY. 65 RT.	1
564+85	HWY. 65 LT.	1
565+32	HWY. 65 RT.	1
566+28	HWY. 65 RT.	1
567+77	HWY. 65 LT.	1
568+06	HWY. 65 RT.	1
568+57	HWY. 65 LT.	1
569+94	HWY. 65 LT.	1
573+40	HWY. 65 RT.	1
575+98	HWY. 65 RT.	1
579+76	HWY. 65 RT.	1
580+16	HWY. 65 LT.	1
581+54	HWY. 65 RT.	1
582+73	HWY. 65 RT.	1
585+15	HWY. 65 LT.	1
588+45	HWY. 65 LT.	1
588+80	HWY. 65 RT.	1
589+90	HWY. 65 LT.	1
591+38	HWY. 65 LT.	1
593+75	HWY. 65 LT.	1
595+27	HWY. 65 LT.	1
596+55	HWY. 65 LT.	1
598+21	HWY. 65 RT.	1
599+36	HWY. 65 RT.	1
600+12	HWY. 65 LT.	1
601+42	HWY. 65 RT.	1
604+88	HWY. 65 RT.	1
606+11	HWY. 65 RT.	1
608+38	HWY. 65 RT.	1
611+80	HWY. 65 LT.	1
614+06	HWY. 65 LT.	1
618+55	HWY. 65 LT.	1
619+58	HWY. 65 LT.	1
621+90	HWY. 65 LT.	1
622+59	HWY. 65 RT.	1
623+34	HWY. 65 LT.	1
623+86	HWY. 65 LT.	1
626+50	HWY. 65 LT.	1
636+11	HWY. 65 LT.	1
637+83	HWY. 65 RT.	1
651+66	HWY. 65 LT.	1
660+69	HWY. 65 LT.	1
661+90	HWY. 65 LT.	1
665+02	HWY. 65 RT.	1
676+82	HWY. 65 LT.	1
678+71	HWY. 65 LT.	1
683+12	HWY. 65 RT.	1
683+33	HWY. 65 LT.	1
684+97	HWY. 65 LT.	1
685+85	HWY. 65 LT.	1
692+03	HWY. 65 RT.	1
692+67	HWY. 65 LT.	1
692+79	HWY. 65 RT.	1
699+35	HWY. 65 LT.	1
703+92	HWY. 65 LT.	1
722+08	HWY. 65 RT.	1
723+55	HWY. 65 RT.	1
724+30	HWY. 65 RT.	1
728+24	HWY. 65 LT.	1
279+79	HWY. 65 LT.	1
732+55	HWY. 65 RT.	1
SUBTOTALS (BOX 1 OF 3):		**75**

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

REMOVAL AND DISPOSAL OF CULVERTS (BOX 2 OF 3)

STATION	DESCRIPTION	PIPE CULVERTS EACH
734+38	HWY. 65 LT.	1
741+30	HWY. 65 LT.	1
752+19	HWY. 65 RT.	1
753+97	HWY. 65 RT.	1
764+01	HWY. 65 RT.	1
781+12	HWY. 65 RT.	1
787+00	HWY. 65 RT.	1
788+09	HWY. 65 RT.	1
789+89	HWY. 65 RT.	1
791+42	HWY. 65 LT.	1
793+01	HWY. 65 LT.	1
796+49	HWY. 65 RT.	1
797+56	HWY. 65 LT.	1
797+82	HWY. 65 RT.	1
799+04	HWY. 65 RT.	1
799+21	HWY. 65 LT.	1
799+82	HWY. 65 RT.	1
802+96	HWY. 65 RT.	1
803+63	HWY. 65 LT.	1
804+52	HWY. 65 LT.	1
806+11	HWY. 65 RT.	1
807+63	HWY. 65 LT.	1
807+93	HWY. 65 RT.	1
809+78	HWY. 65 LT.	1
809+85	HWY. 65 RT.	1
812+56	HWY. 65 LT.	1
816+00	HWY. 65 LT.	1
819+76	HWY. 65 RT.	1
821+07	HWY. 65 RT.	1
822+21	HWY. 65 RT.	1
822+58	HWY. 65 LT.	1
823+38	HWY. 65 RT.	1
823+57	HWY. 65 LT.	1
824+86	HWY. 65 RT.	1
825+56	HWY. 65 RT.	1
825+75	HWY. 65 LT.	1
826+34	HWY. 65 RT.	1
827+68	HWY. 65 RT.	1
828+36	HWY. 65 RT.	1
830+26	HWY. 65 RT.	1
830+53	HWY. 65 LT.	1
831+69	HWY. 65 LT.	1
832+16	HWY. 65 LT.	1
832+58	HWY. 65 RT.	1
833+64	HWY. 65 RT.	1
838+40	HWY. 65 RT.	1
842+48	HWY. 65 LT.	1
846+04	HWY. 65 LT.	1
847+47	HWY. 65 RT.	1
851+77	HWY. 65 LT.	1
853+90	HWY. 65 RT.	1
853+23	HWY. 65 LT.	1
855+68	HWY. 65 RT.	1
854+77	HWY. 65 LT.	1
857+70	HWY. 65 LT.	1
858+09	HWY. 65 RT.	1
859+00	HWY. 65 LT.	1
806+08	HWY. 65 RT.	1
861+67	HWY. 65 LT.	1
863+28	HWY. 65 LT.	1
864+58	HWY. 65 LT.	1
868+02	HWY. 65 LT.	1
868+46	HWY. 65 LT.	1
869+48	HWY. 65 LT.	1
870+23	HWY. 65 LT.	1
871+06	HWY. 65 LT.	1
873+40	HWY. 65 LT.	1
874+29	HWY. 65 LT.	1
875+00	HWY. 65 LT.	1
875+82	HWY. 65 LT.	1
876+70	HWY. 65 LT.	1
877+62	HWY. 65 LT.	1
878+41	HWY. 65 LT.	1
880+82	HWY. 65 LT.	1
882+27	HWY. 65 RT.	1
SUBTOTALS (BOX 2 OF 3):		**75**

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

REMOVAL AND DISPOSAL OF CULVERTS (BOX 3 OF 3)

STATION	DESCRIPTION	PIPE CULVERTS EACH
883+23	HWY. 65 RT.	1
884+30	HWY. 65 RT.	1
884+97	HWY. 65 RT.	1
887+48	HWY. 65 RT.	1
888+92	HWY. 65 RT.	1
892+00	HWY. 65 RT.	1
894+38	HWY. 65 RT.	1
896+43	HWY. 65 RT.	1
896+96	HWY. 65 LT.	1
897+53	HWY. 65 RT.	1
900+03	HWY. 65 LT.	1
902+62	HWY. 65 LT.	1
903+39	HWY. 65 LT.	1
904+63	HWY. 65 LT.	1
905+50	HWY. 65 LT.	1
906+28	HWY. 65 LT.	1
908+73	HWY. 65 LT.	1
910+64	HWY. 65 LT.	1
911+80	HWY. 65 LT.	1
914+94	HWY. 65 LT.	1
915+71	HWY. 65 LT.	1
916+58	HWY. 65 RT.	1
917+61	HWY. 65 RT.	1
918+87	HWY. 65 RT.	1
920+00	HWY. 65 RT.	1
920+87	HWY. 65 RT.	1
923+59	HWY. 65 RT.	1
924+30	HWY. 65 RT.	1
925+37	HWY. 65 RT.	1
926+63	HWY. 65 RT.	1
928+23	HWY. 65 RT.	1
301+86	HWY. 9 LT.	1
		1
305+92	HWY. 330 LT.	1
306+63	HWY. 330 LT.	1
307+50	HWY. 330 LT.	1
308+73	HWY. 330 LT.	1
309+34	HWY. 330 RT.	1
310+15	HWY. 330 LT.	1
1000+99	LYNCH DR. RT.	1
1001+50	LYNCH DR. RT.	1
401+41	TERRY LN. LT.	1
450+97	OLD HWY. 9 LT.	1
SUBTOTALS (BOX 3 OF 3)		**43**
SUBTOTALS (BOX 1 OF 3);		**75**
SUBTOTALS (BOX 2 OF 3):		**75**
TOTALS:		**193**

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

R080423.DGN 9/9/2016

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.		080423	93	517

(2) QUANTITIES

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

10-10-17

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
507+20		HWY. 65 LT.		2
511+20	520+75	HWY. 65 RT.	955	
521+12	535+25	HWY. 65 RT.	1420	
533+60	539+50	HWY. 65 LT.	700	
537+00	539+65	HWY. 65 LT.	220	
553+10		HWY. 65 LT.		1
555+95		HWY. 65 LT.		1
557+25		HWY. 65 LT.		1
561+20	562+20	HWY. 65 RT.	100	
562+40		HWY. 65 RT.		2
562+50	564+49	HWY. 65 LT.	200	
562+60	564+15	HWY. 65 RT.	155	
564+30		HWY. 65 RT.		2
564+45	565+10	HWY. 65 RT.	55	
565+30		HWY. 65 RT.		2
565+50	566+10	HWY. 65 RT.	60	
566+25		HWY. 65 RT.		2
566+45	567+80	HWY. 65 RT.	135	
581+70	582+39	HWY. 65 RT.	85	
582+40	582+65	HWY. 65 RT.	25	
582+90	584+40	HWY. 65 RT.	150	
589+00	593+30	HWY. 65 RT.	430	
593+50	597+65	HWY. 65 RT.	415	
598+50	600+25	HWY. 65 RT.	175	
601+45		HWY. 65 RT.		1
605+05	605+80	HWY. 65 RT.	75	
622+05		HWY. 65 LT.	16	
622+50		HWY. 65 LT.		1
637+75		HWY. 65 RT.		1
660+25		HWY. 65 LT.		1
664+95		HWY. 65 RT.		1
678+95	684+85	HWY. 65 LT.	590	
685+00		HWY. 65 LT.		2
685+15	685+75	HWY. 65 LT.	70	
685+85		HWY. 65 LT.		1
686+00	687+04	HWY. 65 LT.	104	
729+00	729+70	HWY. 65 LT.	80	
729+80		HWY. 65 LT.		1
880+85		HWY. 65 LT.		2
880+92	881+70	HWY. 65 LT.	85	
905+80		HWY. 65 RT.		2
TOTALS:			6300	26

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
500+00	521+00	HWY. 65 LT. & RT.	21	21
525+00	562+00	HWY. 65 LT. & RT.	37	37
577+00	604+00	HWY. 65 LT. & RT.	27	27
610+00	777+25	HWY. 65 LT. & RT.	168	168
870+00	878+00	HWY. 65 LT. & RT.	8	8
TOTALS:			261	261

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL	* SOIL STABILIZATION
			CU. YD.			TON
ENTIRE	PROJECT	STAGE 1-MAIN LANES	253978	189279	28597	
ENTIRE	PROJECT	STAGE 2-MAIN LANES	71032	126834	6772	
ENTIRE	PROJECT	APPROACHES	1390	25400		
		RANCH RD.	705	17		
		HWY. 336E	240	44		
		HWY. 330	1002	136		
		HWY. 9	23	89		
		LYNCH DR.	491	1626		
		TERRY LN.	319	633		
		OLD HWY. 9	191	339		
		CHANNEL CHANGE	42			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE				500
		DIRECTED BY THE ENGINEER				
TOTALS:			329413	344397	35369	500

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

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
773+98.18	776+97.94	HWY. 65 ON RIGHT	300	142
774+00.63	776+97.94	HWY. 65 ON LEFT	297	165
776+97.94	777+17.77	HWY. 65 ON RIGHT	20	16
776+97.94	777+17.77	HWY. 65 ON LEFT	20	16
779+25.94	779+45.94	HWY. 65 ON RIGHT	20	16
779+25.94	779+45.94	HWY. 65 ON LEFT	20	16
779+45.94	783+65.51	HWY. 65 ON RIGHT	420	199
779+45.94	801+40.80	HWY. 65 ON LEFT	2195	1029
784+36.21	801+06.67	HWY. 65 ON RIGHT	1670	719
801+50.60	817+25.95	HWY. 65 ON RIGHT	1575	722
801+80.81	812+22.03	HWY. 65 ON LEFT	1041	447
812+83.03	816+13.19	HWY. 65 ON LEFT	330	183
816+76.69	817+67.42	HWY. 65 ON LEFT	91	51
817+25.95	817+49.91	HWY. 65 ON RIGHT	24	20
817+67.42	817+89.17	HWY. 65 ON LEFT	22	16
818+82.09	819+00.56	HWY. 65 ON RIGHT	18	16
819+00.56	819+24.69	HWY. 65 ON RIGHT	24	13
819+15.95	819+43.59	HWY. 65 ON LEFT	28	20
819+43.56	842+12.34	HWY. 65 ON LEFT	2269	1091
819+95.53	832+38.24	HWY. 65 ON RIGHT	1243	417
842+84.44	851+44.96	HWY. 65 ON LEFT	861	454
852+09.45	905+27.64	HWY. 65 ON LEFT	5318	2073
906+10.66	910+32.18	HWY. 65 ON LEFT	422	172
910+96.09	915+31.20	HWY. 65 ON LEFT	435	179
916+09.49	925+75.00	HWY. 65 ON LEFT	966	539
TOTAL:				8731

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")	TYPE B-1 (1' 6")
			LIN. FT.	
553+00.00	560+60.00	HWY. 65 ON LEFT		760
773+92.00	777+17.77	HWY. 65 ON RIGHT	302	
773+94.63	777+17.77	HWY. 65 ON LEFT	300	
779+25.95	783+85.50	HWY. 65 ON RIGHT	460	
779+25.95	801+45.27	HWY. 65 ON LEFT	2093	
784+16.41	801+11.08	HWY. 65 ON RIGHT	1670	
801+46.18	817+53.50	HWY. 65 ON RIGHT	1511	
801+76.31	812+43.22	HWY. 65 ON LEFT	1096	
812+61.81	816+34.74	HWY. 65 ON LEFT	395	
816+54.75	817+85.58	HWY. 65 ON LEFT	128	
818+82.38	819+46.57	HWY. 65 ON RIGHT	69	
819+15.66	842+35.26	HWY. 65 ON LEFT	2239	
819+73.64	832+47.32	HWY. 65 ON RIGHT	1245	
832+71.87	897+44.28	HWY. 65 ON RIGHT	6117	
842+61.53	851+67.07	HWY. 65 ON LEFT	875	
851+87.48	905+49.61	HWY. 65 ON LEFT	4204	
897+61.43	916+49.07	HWY. 65 ON RIGHT	1871	
905+89.97	910+54.11	HWY. 65 ON LEFT	453	
910+74.15	915+53.79	HWY. 65 ON LEFT	474	
915+86.89	925+79.50	HWY. 65 ON LEFT	1025	
916+68.52	928+94.37	HWY. 65 ON RIGHT	1216	
TOTALS:			27743	760

R080423.DGN 9/9/2016

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-7-17				6	ARK.			
				JOB NO.		080423	94	517

(2) QUANTITIES

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

11-8-17

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3 SQ.YD.
773+95	HWY. 65 ON RIGHT	3.3
773+97	HWY. 65 ON LEFT	3.9
783+70	HWY. 65 ON RIGHT	5.4
784+31	HWY. 65 ON RIGHT	5.4
800+91	HWY. 65 ON LEFT	3.8
800+91	HWY. 65 ON RIGHT	4.7
801+00	HWY. 65 ON RIGHT	4.5
801+32	HWY. 65 ON LEFT	3.9
801+55	HWY. 65 ON RIGHT	3.6
801+99	HWY. 65 ON LEFT	4.4
802+05	HWY. 65 ON LEFT	4.9
802+05	HWY. 65 ON RIGHT	3.7
812+27	HWY. 65 ON LEFT	5.5
812+87	HWY. 65 ON LEFT	5.5
816+18	HWY. 65 ON LEFT	5.4
816+72	HWY. 65 ON LEFT	5.4
819+29	HWY. 65 ON RIGHT	5.4
819+91	HWY. 65 ON RIGHT	5.4
832+30	HWY. 65 ON RIGHT	5.4
842+17	HWY. 65 ON LEFT	5.4
842+79	HWY. 65 ON LEFT	5.4
851+50	HWY. 65 ON LEFT	5.4
852+04	HWY. 65 ON LEFT	5.4
905+21	HWY. 65 ON LEFT	5.4
906+06	HWY. 65 ON LEFT	5.4
910+36	HWY. 65 ON LEFT	5.4
910+90	HWY. 65 ON LEFT	5.4
915+36	HWY. 65 ON LEFT	5.4
916+04	HWY. 65 ON LEFT	5.4
925+38	HWY. 65 ON LEFT	3.4
TOTAL:		146.9

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE			
				AVG. WID.	6" U.T.	AVG. WID.	8" U.T.
			FEET	FEET	SQ. YD.	FEET	SQ. YD.
784+34.57	784+92.81	HWY. 65 - RT.	58.24	VAR.	8.93	VAR.	25.11
784+92.81	787+00.00	HWY. 65 - RT.	207.19			2.50	57.55
787+00.00	787+87.47	HWY. 65 - RT.	87.47	VAR.	18.54	VAR.	42.84
789+22.28	789+76.43	HWY. 65 - LT.	54.15	VAR.	11.21	VAR.	26.25
789+76.43	796+00.07	HWY. 65 - LT.	623.64			2.50	173.23
796+00.07	796+66.77	HWY. 65 - LT.	66.70	VAR.	15.11	VAR.	33.64
805+17.68	807+61.06	HWY. 65 - RT.	243.38	VAR.	85.95	VAR.	153.25
809+76.45	810+86.02	HWY. 65 - LT.	109.57	VAR.	22.57	VAR.	53.01
810+86.02	813+30.48	HWY. 65 - LT.	244.46			2.50	67.91
813+30.48	814+28.60	HWY. 65 - LT.	98.12	VAR.	20.11	VAR.	47.37
825+09.79	827+69.32	HWY. 65 - RT.	259.53	VAR.	82.04	VAR.	154.13
851+00.00	911+49.28	HWY. 65 - RT.	6049.28	4.00	2688.57	6.50	4368.92
911+49.28	922+50.00	HWY. 65 - LT.	1100.72	VAR.	150.89	VAR.	458.44
911+49.28	922+50.00	HWY. 65 - RT.	1100.72	VAR.	209.56	VAR.	513.11
922+50.00	924+43.69	HWY. 65 - LT.	193.69			2.50	53.80
922+50.00	928+38.90	HWY. 65 - RT.	588.90			2.50	163.58
890+00.00	911+49.28	HWY. 65 - LT.	2149.28	4.00	955.24	6.50	1552.26
TOTALS:					4268.72		7944.40

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL													
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	FILTER SOCKS (12") (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	TRIANGULAR SILT DIKE	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	LIN. FT.	LIN. FT.	BAG	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING							159.80	159.80	3259.9			5478	789		18909	100	8077	8077	9298
ENTIRE	PROJECT	STAGE 1	45.15	90.30	45.15	4605.3	45.15		0.52	0.52	10.6		1668	2332	330	1668	1193	100	4552	4552	4858
ENTIRE	PROJECT	STAGE 2	42.15	84.30	42.15	4403.1	42.15	8240	0.23	0.23	4.7		1536	2178	398	1536	149		1873	1873	2117
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			21.83	43.66	21.83	2252.6	21.83	2060	40.14	40.14	818.9	2000	100	2497	379		5063	200	3626	3626	3814
TOTALS:			109.13	218.26	109.13	11261.0	109.13	10300	200.69	200.69	4094.1	2000	3304	12485	1896	3204	25314	400	18128	18128	20087

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
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

9/9/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	95	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-10-17

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	* 4' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.			EACH
511+20	520+75	HWY. 65 RT.		955		
521+12	535+25	HWY. 65 RT.		1420		
581+70	582+39	HWY. 65 RT.			85	
589+00	593+30	HWY. 65 RT.	430			1
593+50	597+65	HWY. 65 RT.	415			
598+50	600+25	HWY. 65 RT.	175			
678+95	684+85	HWY. 65 LT.	590			
685+15	685+75	HWY. 65 LT.	70			
686+00	687+04	HWY. 65 LT.	104			
729+00	729+70	HWY. 65 LT.	80			
TOTALS:			1864	2375	85	1

* DENOTES ALTERNATE BID ITEM.

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.
501+45.21	505+00.00	HWY. 65 LT.	354.79	6.33	249.54	157.68	1.99
507+20.00	507+80.00	HWY. 65 LT.	60.00	9.25	61.67	26.67	0.34
508+94.00	509+40.00	HWY. 65 LT.	46.00	6.33	32.35	20.44	0.26
509+98.00	522+00.00	HWY. 65 LT.	1202.00	8.32	1111.18	534.22	6.73
510+60.00	521+40.00	HWY. 65 RT.	1080.00	8.32	998.40	480.00	6.05
522+00.00	523+22.67	HWY. 65 RT.	122.67	6.33	86.28	54.52	0.69
526+92.00	543+00.00	HWY. 65 RT.	1608.00	6.33	1130.96	714.67	9.00
536+80.00	552+60.00	HWY. 65 LT.	1580.00	9.25	1623.89	702.22	8.85
548+80.00	560+00.00	HWY. 65 RT.	1120.00	9.25	1151.11	497.78	6.27
569+20.00	570+40.00	HWY. 65 LT.	120.00	6.33	84.40	53.33	0.67
581+00.00	596+66.97	HWY. 65 LT.	1566.97	9.25	1610.50	696.43	8.78
581+00.00	584+20.00	HWY. 65 RT.	320.00	9.25	328.89	142.22	1.79
587+55.00	587+80.00	HWY. 65 RT.	25.00	9.25	25.69	11.11	0.14
594+51.00	599+79.98	HWY. 65 RT.	528.98	6.33	372.05	235.10	2.96
628+95.17	636+60.00	HWY. 65 LT.	764.83	9.25	786.08	339.92	4.28
629+40.00	642+10.00	HWY. 65 RT.	1270.00	9.25	1305.28	564.44	7.11
640+40.00	647+60.00	HWY. 65 LT.	720.00	6.33	506.40	320.00	4.03
651+40.00	652+20.00	HWY. 65 LT.	80.00	6.33	56.27	35.56	0.45
669+75.00	673+03.00	HWY. 65 RT.	328.00	6.33	230.69	145.78	1.84
671+00.00	672+03.00	HWY. 65 LT.	103.00	9.25	105.86	45.78	0.58
675+00.00	686+20.00	HWY. 65 LT.	1120.00	6.33	787.73	497.78	6.27
675+00.00	684+40.00	HWY. 65 RT.	940.00	9.25	966.11	417.78	5.26
716+59.34	726+20.00	HWY. 65 LT.	960.66	8.32	888.08	426.96	5.38
716+59.34	725+03.00	HWY. 65 RT.	843.66	9.25	867.10	374.96	4.72
728+00.00	737+60.00	HWY. 65 LT.	960.00	9.25	986.67	426.67	5.38
742+00.00	745+00.00	HWY. 65 LT.	300.00	6.33	211.00	133.33	1.68
755+32.00	756+84.11	HWY. 65 LT.	152.11	9.25	156.34	67.60	0.85
761+50.00	763+02.00	HWY. 65 LT.	152.00	6.33	106.91	67.56	0.85
764+00.00	764+60.00	HWY. 65 RT.	60.00	11.18	74.53	26.67	0.34
785+30.00	785+56.41	HWY. 65 LT.	26.41	11.18	32.81	11.74	0.15
814+10.00	815+20.00	HWY. 65 RT.	110.00	6.33	77.37	48.89	0.62
100+32.68	102+55.00	RANCH RD. LT.	222.32	7.29	180.08	98.81	1.25
100+32.68	102+55.00	RANCH RD. RT.	222.32	7.29	180.08	98.81	1.25
401+35.00	403+43.15	TERRY LANE LT.	208.15	6.33	146.40	92.51	1.17
TOTALS:					17518.70	8567.94	107.98

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
504+42.26	507+20.00	HWY. 65 RT.	277.74	246.88
505+60.00	507+20.00	HWY. 65 LT.	160.00	142.22
508+62.00	508+94.00	HWY. 65 LT.	32.00	28.44
508+94.00	509+80.00	HWY. 65 RT.	86.00	76.44
523+20.00	524+60.00	HWY. 65 LT.	140.00	124.44
525+80.00	526+92.00	HWY. 65 RT.	112.00	99.56
532+40.00	536+60.00	HWY. 65 LT.	420.00	373.33
569+01.00	569+20.00	HWY. 65 LT.	19.00	16.89
569+60.00	570+20.00	HWY. 65 RT.	60.00	53.33
570+40.00	571+11.00	HWY. 65 LT.	71.00	63.11
577+00.00	578+30.00	HWY. 65 RT.	130.00	115.56
578+40.00	579+60.00	HWY. 65 LT.	120.00	106.67
584+20.00	586+00.00	HWY. 65 RT.	180.00	160.00
588+60.00	591+40.00	HWY. 65 RT.	280.00	248.89
599+36.00	599+80.00	HWY. 65 LT.	44.00	39.11
599+79.98	617+20.00	HWY. 65 RT.	1740.02	1546.68
600+20.00	600+40.00	HWY. 65 LT.	20.00	17.78
605+90.50	614+29.89	HWY. 65 LT.	839.39	746.12
619+77.73	628+95.17	HWY. 65 LT.	917.44	815.50
642+10.00	645+25.28	HWY. 65 RT.	315.28	280.25
652+40.00	656+64.25	HWY. 65 LT.	424.25	377.11
673+03.00	674+60.00	HWY. 65 RT.	157.00	139.56
685+20.00	685+85.00	HWY. 65 RT.	65.00	57.78
686+20.00	692+60.00	HWY. 65 LT.	640.00	568.89
696+38.48	697+00.00	HWY. 65 LT.	61.52	54.68
698+60.00	699+29.00	HWY. 65 LT.	69.00	61.33
726+20.00	727+40.00	HWY. 65 LT.	120.00	106.67
730+97.72	734+41.76	HWY. 65 RT.	344.04	305.81
737+60.00	741+80.00	HWY. 65 LT.	420.00	373.33
738+20.00	739+80.00	HWY. 65 RT.	160.00	142.22
738+90.00	742+00.00	HWY. 65 LT.	310.00	275.56
741+80.00	743+30.00	HWY. 65 RT.	150.00	133.33
746+40.00	748+20.00	HWY. 65 LT.	180.00	160.00
746+80.00	747+60.00	HWY. 65 RT.	80.00	71.11
759+02.00	761+50.00	HWY. 65 LT.	248.00	220.44
764+00.00	771+20.00	HWY. 65 LT.	720.00	640.00
776+00.00	777+70.00	HWY. 65 RT.	170.00	151.11
777+30.00	778+50.00	HWY. 65 LT.	120.00	106.67
781+00.00	783+00.00	HWY. 65 LT.	200.00	177.78
786+90.00	789+20.00	HWY. 65 LT.	230.00	204.44
788+40.00	789+80.00	HWY. 65 RT.	140.00	124.44
797+10.00	799+00.00	HWY. 65 LT.	190.00	168.89
797+10.00	798+90.00	HWY. 65 RT.	180.00	160.00
799+50.00	800+80.00	HWY. 65 LT.	130.00	115.56
803+30.00	804+50.00	HWY. 65 RT.	120.00	106.67
804+00.00	804+50.00	HWY. 65 LT.	50.00	44.44
806+50.00	811+00.00	HWY. 65 LT.	450.00	400.00
806+50.00	809+80.00	HWY. 65 RT.	330.00	293.33
822+00.00	825+40.00	HWY. 65 LT.	340.00	302.22
827+00.00	830+50.00	HWY. 65 LT.	350.00	311.11
836+50.00	847+40.00	HWY. 65 RT.	1090.00	968.89
840+80.00	847+40.00	HWY. 65 LT.	660.00	586.67
847+85.00	853+70.00	HWY. 65 RT.	585.00	520.00
852+00.00	854+70.00	HWY. 65 LT.	270.00	240.00
854+20.00	855+70.00	HWY. 65 RT.	150.00	133.33
856+40.00	857+70.00	HWY. 65 LT.	130.00	115.56
856+40.00	858+20.00	HWY. 65 RT.	180.00	160.00
862+00.00	875+80.00	HWY. 65 LT.	1380.00	1226.67
883+42.00	894+00.00	HWY. 65 RT.	1058.00	940.44
896+40.00	906+00.00	HWY. 65 LT.	960.00	853.33
897+90.00	901+00.00	HWY. 65 RT.	310.00	275.56
906+60.00	922+00.00	HWY. 65 LT.	1540.00	1368.89
919+20.00	920+60.00	HWY. 65 RT.	140.00	124.44
923+00.00	924+60.00	HWY. 65 LT.	160.00	142.22
927+50.00	928+92.71	HWY. 65 LT.	142.71	126.85
TOTAL:				19438.53

NOTE: AVERAGE WIDTH = 8'-0"

R080423.DGN 9/9/2016

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.		080423	96	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-10-17

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			500	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			500	10

* 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.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
508+91	HWY. 65 - RT.	1
777+16	HWY. 65 - LT.	1
815+16	HWY. 65 - RT.	1
817+66	HWY. 65 - RT.	1
904+65	HWY. 65 - LT.	1
TOTAL:		5

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
499+00.00	500+00.00	MAIN LANES	59.00	655.56
924+43.69	929+92.71	MAIN LANES	56.00	3416.12
TOTAL:				4071.68

NOTE: AVERAGE MILLING DEPTH 1".

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
500+00	520+71	HWY. 65 - LT.	1897
500+00	554+00	HWY. 65 - RT.	5146
521+49	526+39	HWY. 65 - LT.	372
538+72	564+24	HWY. 65 - LT.	2226
555+04	751+60	HWY. 65 - RT.	17630
565+42	575+28	HWY. 65 - LT.	632
576+36	635+57	HWY. 65 - LT.	4787
636+63	692+20	HWY. 65 - LT.	5127
693+17	703+40	HWY. 65 - LT.	911
704+52	754+82	HWY. 65 - LT.	4806
753+55	776+00	HWY. 65 - RT.	2189
755+82	774+00	HWY. 65 - LT.	1680
TOTAL:			47403

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	600
ENGINEER	
TOTAL:	600

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH		
ENTIRE PROJECT	47	43	2
TOTALS:	47	43	2

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
739+00	HWY. 65 - FILL & ABANDON	5
	TEMP. PIPE CULVERT	
TOTAL:		5

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
925+58	HWY. 65 ON LT.	C	86
TOTAL:			86

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
301+85	HWY. 9	8.50	26	24
TOTAL:				24

AVG. DEPTH = 18"

ACHM PATCHING OF EXISTING ROADWAY

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

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	205	410
DIRECTED BY THE ENGINEER		
TOTALS:	205	410

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	97	517

(2) QUANTITIES

SOIL LOG (BOX 1 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
502+00	35	27	27.00	92	24	14.10	15' RT	0-5	23	5	A-4 (1)	BROWN
502+00	35	27	27.10	92	24	14.10	23' RT	0-5	22	4	A-4 (0)	BROWN
510+00	35	27	32.20	92	24	21.10	06' RT	0-5	25	8	A-4 (2)	BROWN
510+00	35	27	32.10	92	24	21.10	14' LT	0-5	28	10	A-4 (4)	BROWN
518+00	35	27	37.70	92	24	27.60	15' RT	0-5	24	6	A-4 (3)	BROWN
518+00	35	27	37.70	92	24	27.50	25' RT	0-5	22	5	A-4 (0)	BROWN
518+00	35	27	37.80	92	24	27.40	36' RT	0-4Z	ND	NP	A-4 (0)	BROWN
526+00	35	27	43.20	92	24	33.60	6' LT	0-5	30	12	A-4 (6)	BROWN
526+00	35	27	43.20	92	24	33.70	15' LT	0-5	26	8	A-4 (1)	BROWN
526+00	35	27	43.10	92	24	33.90	27' LT	0-5	26	8	A-4 (3)	BROWN
534+00	35	27	49.80	92	24	38.50	15' RT	0-5	25	10	A-4 (2)	BROWN
534+00	35	27	49.90	92	24	38.40	26' RT	0-5	24	9	A-4 (2)	BROWN
542+00	35	27	56.10	92	24	43.20	6' LT	0-3.5Z	24	7	A-4 (1)	BROWN
542+00	35	27	56.10	92	24	43.30	15' LT	0-4Z	24	7	A-4 (0)	BROWN
542+00	35	27	56.10	92	24	43.40	25' LT	0-3.5Z	25	8	A-4 (0)	BROWN
550+00	35	28	3.00	92	24	47.70	18' RT	0-5	ND	NP	A-4 (2)	BROWN
550+00	35	28	3.00	92	24	47.60	25' RT	0-5	ND	NP	A-4 (0)	BROWN
550+00	35	28	3.10	92	24	47.50	32' RT	0-4Z	ND	NP	A-2-4 (0)	BROWN
558+00	35	28	10.40	92	24	53.90	6' LT	0-5	25	8	A-4 (2)	RD/BR
558+00	35	28	10.40	92	24	54.10	18' LT	0-5	25	9	A-4 (2)	BROWN
558+00	35	28	10.40	92	24	54.30	33' LT	0-5	24	6	A-4 (0)	BROWN
566+00	35	28	16.60	92	24	59.70	18' RT	0-5	ND	NP	A-4 (0)	RD/BR
566+00	35	28	16.70	92	24	59.60	26' RT	0-5	37	17	A-6 (8)	RD/BR
566+00	35	28	16.70	92	24	59.50	36' RT	0-5	27	9	A-4 (0)	RD/BR
574+00	35	28	22.60	92	25	60.00	6' LT	0-5	ND	NP	A-4 (0)	BROWN
574+00	35	28	22.50	92	25	6.20	15' LT	0-5	23	6	A-4 (1)	BROWN
574+00	35	28	22.40	92	25	6.40	32' LT	0-5	27	7	A-4 (2)	BROWN
582+00	35	28	28.20	92	25	12.10	12' RT	0-5	20	3	A-4 (0)	BROWN
582+00	35	28	28.90	92	25	11.90	27' RT	0-5	23	7	A-4 (1)	BROWN
582+00	35	28	29.00	92	25	11.80	40' RT	0-5	24	8	A-2-4 (0)	BROWN
590+00	35	28	34.70	92	25	18.40	18' LT	0-5	27	13	A-6 (2)	BROWN
590+00	35	28	34.70	92	25	18.50	26' LT	0-5	20	5	A-4 (0)	BROWN
590+00	35	28	34.60	92	25	18.60	40' LT	0-5	22	6	A-4 (0)	BROWN
598+00	35	28	40.50	92	25	23.50	6' RT	0-5	ND	NP	A-2-4 (0)	BR/RD
598+00	35	28	40.60	92	25	23.30	15' RT	0-5	19	4	A-4 (0)	BR/RD
598+00	35	28	40.60	92	25	23.30	26' RT	0-5	ND	NP	A-2-4 (0)	BROWN
606+00	35	28	47.30	92	25	30.00	18' LT	0-5	17	4	A-4 (0)	BROWN
606+00	35	28	47.30	92	25	30.10	25' LT	0-5	23	9	A-4 (1)	BROWN
606+00	35	28	47.20	92	25	30.20	35' LT	0-5	22	10	A-4 (1)	BROWN
614+00	35	28	53.80	92	25	34.70	6' RT	0-4Z	ND	NP	A-2-4 (0)	BROWN
614+00	35	28	53.90	92	25	34.50	15' RT	0-5	20	5	A-4 (0)	BROWN
614+00	35	28	53.90	92	25	34.40	25' RT	0-3Z	ND	NP	A-2-4 (0)	BROWN
622+00	35	29	1.90	92	25	37.80	15' LT	0-5	20	6	A-4 (0)	BROWN
622+00	35	29	1.90	92	25	37.90	25' LT	0-5	20	4	A-4 (0)	BROWN
622+00	35	29	1.90	92	25	38.00	35' LT	0-5	21	5	A-4 (0)	BROWN
630+00	35	29	9.40	92	25	38.80	6' RT	0-5	ND	NP	A-4 (0)	BROWN
630+00	35	29	9.40	92	25	38.70	15' RT	0-5	20	5	A-2-4 (0)	BROWN
630+00	35	29	9.40	92	25	38.60	25' RT	0-5	ND	NP	A-2-4 (0)	BROWN
638+00	35	29	17.20	92	25	41.30	15' LT	0-5	27	8	A-4 (3)	BROWN
638+00	35	29	17.20	92	25	41.40	25' LT	0-5	26	9	A-4 (3)	BROWN
638+00	35	29	17.20	92	25	41.50	35' LT	0-5	26	8	A-4 (3)	BROWN
646+00	35	29	24.80	92	25	42.20	6' RT	0-5	29	9	A-4 (5)	BROWN
646+00	35	29	24.80	92	25	42.10	18' RT	0-5	25	6	A-4 (2)	BROWN
646+00	35	29	32.60	92	25	41.10	18' LT	0-4.5Z	23	8	A-4 (2)	BROWN
654+00	35	29	32.60	92	25	41.20	25' LT	0-5	24	9	A-4 (1)	BROWN
654+00	35	29	32.70	92	25	41.30	35' LT	0-5	24	7	A-4 (1)	BROWN
654+00	35	29	40.30	92	25	37.50	6' RT	0-5	15	3	A-4 (0)	BROWN
662+00	35	29	40.20	92	25	37.40	18' RT	0-5	17	3	A-4 (0)	RD/BR
662+00	35	29	40.20	92	25	37.30	28' RT	0-5	23	6	A-4 (2)	BR/RD
662+00	35	29	47.60	92	25	34.60	18' LT	0-5	30	12	A-6 (6)	BROWN
670+00	35	29	47.60	92	25	34.70	25' LT	0-5	21	7	A-4 (1)	BROWN
670+00	35	29	47.60	92	25	34.80	35' LT	0-5	23	7	A-4 (2)	BROWN
678+00	35	29	55.30	92	25	32.80	6' RT	0-5	26	8	A-4 (2)	BROWN
678+00	35	29	55.30	92	25	32.60	18' RT	0- 4.5Z	22	6	A-4 (0)	BROWN
678+00	35	29	55.30	92	25	32.40	28' RT	0-3Z	21	4	A-4 (0)	BROWN
686+00	35	30	2.60	92	25	35.30	35' LT	0-3Z	23	5	A-2-4 (0)	BROWN
694+00	35	30	10.40	92	25	36.80	6' RT	0-5	29	8	A-4 (3)	BROWN
694+00	35	30	10.40	92	25	36.70	15' RT	0-5	28	8	A-4 (3)	BROWN
694+00	35	30	10.40	92	25	36.50	25' RT	0-5	28	7	A-4 (2)	BROWN
702+00	35	30	18.30	92	25	36.30	15' LT	0-5	ND	NP	A-4 (0)	BROWN
702+00	35	30	18.30	92	25	36.40	25' LT	0-5	18	3	A-4 (0)	BROWN
702+00	35	30	18.30	92	25	36.50	35' LT	0-5	ND	NP	A-2-4 (0)	BROWN
710+00	35	30	25.60	92	25	36.20	6' RT	0-5	24	9	A-4 (2)	BROWN
710+00	35	30	25.60	92	25	36.10	15' RT	0-5	22	6	A-4 (0)	BROWN
710+00	35	30	25.60	92	25	36.00	25' RT	0-5	25	7	A-4 (2)	BROWN
718+00	35	30	31.80	92	25	42.10	15' LT	0-5	24	6	A-4 (1)	BROWN
718+00	35	30	31.70	92	25	42.10	25' LT	0-5	28	8	A-4 (2)	BROWN
718+00	35	30	31.60	92	25	42.20	35' LT	0-5	22	4	A-1-B (0)	BROWN
726+00	35	30	36.50	92	25	49.50	6' RT	0-5	27	9	A-4 (3)	BROWN
726+00	35	30	36.60	92	25	49.50	15' RT	0-5	26	20	A-6 (5)	BROWN
726+00	35	30	36.70	92	25	49.50	25' RT	0-5	26	19	A-6 (7)	BROWN

SOIL LOG (BOX 2 OF 2)

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
734+00	35	30	42.50	92	25	55.60	18' LT	0-3Z	21	6	A-4 (0)	BROWN
734+00	35	30	42.40	92	25	55.70	25' LT	0-3Z	ND	NP	A-2-4 (0)	BROWN
734+00	35	30	42.30	92	25	55.80	35' LT	0-4Z	ND	NP	A-2-4 (0)	BROWN
742+00	35	30	47.20	92	26	4.70	6' RT	0-5	25	8	A-4 (3)	BROWN
742+00	35	30	47.30	92	26	4.70	15' RT	0-5	26	9	A-4 (4)	BROWN
742+00	35	30	47.40	92	26	4.60	25' RT	0-5	22	6	A-4 (2)	BROWN
750+00	35	30	51.10	92	26	13.00	18' LT	0-5	27	13	A-6 (7)	BROWN
750+00	35	30	51.00	92	26	13.10	25' LT	0-5	23	8	A-4 (2)	BROWN
750+00	35	30	50.90	92	26	13.20	35' LT	0-5	27	9	A-4 (4)	BROWN
758+00	35	30	58.00	92	26	17.80	6' RT	0-5	24	7	A-4 (1)	BROWN
758+00	35	30	58.00	92	26	17.70	15' RT	0-5	27	10	A-4 (4)	BROWN
758+00	35	30	58.00	92	26	17.60	25' RT	0-5	26	7	A-4 (2)	BROWN
766+00	35	31	5.70	92	26	19.30	18' LT	0-5	27	10	A-4 (4)	BROWN
766+00	35	31	5.70	92	26	19.40	25' LT	0-5	23	8	A-4 (1)	BROWN
766+00	35	31	5.70	92	26	19.50	35' LT	0-5	25	7	A-4 (1)	BROWN
774+00	35	31	13.60	92	26	19.60	6' RT	0-5	27	11	A-6 (7)	BROWN
774+00	35	31	13.60	92	26	19.40	15' RT	0-4Z	30	10	A-4 (5)	BROWN
774+00	35	31	13.60	92	26	19.30	25' RT	0-4Z	24	7	A-4 (1)	BROWN
782+00	35	31	21.50	92	26	20.60	12' LT	0-5	22	5	A-4 (0)	BROWN
782+00	35	31	21.50	92	26	20.60	27' LT	0-5	23	5	A-4 (0)	BROWN
782+00	35	31	21.50	92	26	20.80	40' LT	0-5	24	8	A-4 (2)	BROWN
790+00	35	31	29.40	92	26	22.90	6' RT	0-5	38	21	A-6 (17)	BROWN
790+00	35	31	29.50	92	26	22.80	25' RT	0-5	34	19	A-6 (13)	BROWN
790+00	35	31	29.50	92	26	22.70	35' RT	0-5	27	12	A-6 (3)	BROWN
798+00	35	31	36.20	92	26	27.50	15' LT	0-5	20	7	A-4 (0)	BROWN
798+00	35	31	36.10	92	26	27.60	25' LT	0.32	ND	NP	A-4 (0)	BROWN
798+00	35	31	36.10	92	26	27.80	35' LT	0-5	20	3	A-2-4 (0)	BROWN
806+00	35	31	43.60	92	26	30.90	15' RT	0-5	25	8	A-4 (2)	BROWN
806+00	35	31	43.60	92	26	30.80	25' RT	0-5	18	5	A-4 (0)	RD/BR
806+00	35	31	43.70	92	26	30.70	35' RT	0-5	26	11	A-6 (3)	BROWN
814+00	35	31	51.10	92	26	34.00	15' LT	0-5	30	15	A-6 (6)	BROWN
814+00	35	31	51.00	92	26	34.20	25' LT	0-5	30	13	A-6 (5)	BROWN
814+00	35	31	51.00	92	26	34.40	35' LT	0-5	29	12	A-6 (1)	BROWN
822+00	35	31	59.10	92	26	34.70	15' LT	0-5	34	20	A-6 (8)	BROWN
822+00	35	31	59.10	92	26	35.10	25' LT	0-5	31	17	A-6 (7)	BROWN
822+00	35	31	59.00	92	26	35.20	35' LT	0-5	28	12	A-6 (3)	BROWN
830+00	35	31	6.90	92	26	36.10	15' RT	0-5	21	5	A-4 (0)	RD/BR
830+00	35	31	6.90	92	26	36.10	25' RT	0-5	25	10	A-4 (1)	RD/BR
830+00	35	31	7.00	92	26	36.00	35' RT	0-5	24	10	A-4 (1)	RD/BR
838+00	35	32	14.50	92	26	39.10	6' LT	0-5	23	9	A-2-4 (0)	BROWN
838+00	35	32	14.40	92	26	39.20	15' LT	0-5	28	13	A-2-6 (0)	BROWN
838+00	35	32	14.30	92	26	39.30	25' LT	0-5	23	6	A-4 (0)	BROWN
846+00	35	32	22.10	92	26	41.30	18' RT	0-5	33	17	A-6 (10)	BROWN
846+00	35	32	22.10	92	26	41.30	25' RT	0-5	26	11	A-6 (3)	BROWN
846+00	35	32	22.20	92	26	41.20	36' RT	0-5	25	10	A-4 (4)	BROWN
854+00	35	32	29.30	92	26	44.10	6' LT	0-5	23	10	A-4 (2)	BR/RD
854+00	35	32	29.30	92	26	44.30	15' LT	0-5	23	9	A-4 (1)	BR/RD
854+00	35	32	29.30	92	26	44.40	25' LT	0-5	23	4	A-4 (0)	BR/RD
862+00	35	32	37.30	92	26	46.50	18' RT	0-5	21	8	A-4 (0)	BROWN
862+00	35	32	37.30	92	26	46.40	25' RT	0-5	ND	NP	A-4 (0)	BROWN
862+00	35	32	37.30	92	26	46.30	35' RT	0-5	22	5	A-4 (0)	BROWN
870+00	35	32	44.80	92	26	49.40	6' LT	0-5	19	5	A-4 (0)	RD/BR
870+00	35	32	44.80	92	26	49.60	15' LT	0-5	19	6	A-4 (0)	BROWN
870+00	35	32	44.80	92	26	49.70	25' LT	0-5	22	6	A-4 (0)	BROWN
878+00	35	32	52.30	92	26	52.40	15' RT	0-5	21	5	A-2-4 (0)	BROWN
878+00	35	32	52.30	92	26	52.30	25' RT	0-5	22	5	A-4 (0)	BROWN
878+00	35	32	52.30	92	26	52.20	35' RT	0-5	24	9	A-4 (1)	BR/RD
886+00	35	32	59.50	92	26	56.10	6' LT	0-5	18	4	A-4 (0)	RD/BR
886+00	35	32	59.40	92	26	56.30	15' LT	0-5	23	9	A-4 (1)	BROWN
886+00	35	32	59.40	92	26	56.40	25' LT	0-5	22	3	A-4 (0)	BROWN
894+00	35	33	7.40	92	26	58.30	15' RT	0-5	28	15	A-6 (3)	GRAY
894+00	35	33	7.40	92	26	58.20	25' RT	0-4.5Z	27	14	A-6 (3)	RD/BR
894+00	35	33	7.40	92	26	58.10	35' RT	0-4Z	ND	NP	A-4 (0)	RD/BR
902+00	35	33	15.20	92	26	58.50	15' LT	0-5	28	15	A-6 (4)	BR/GR
902+00	35	33	15.20	92	26	58.70	25' LT	0-5	27	10	A-4 (2)	BR/GR
902+00	35	33	15.20	92	26	58.80	35' LT	0-5	36	17	A-6 (10)	RD/BR
910+00	35	33	23.60	92	26	57.70	15' RT	0-5	23	9	A-4 (1)	BROWN
910+00	35	33	23.60	92	26	57.60	25' RT	0-5	22	8	A-4 (1)	RD/BR
910+00	35	33	23.60	92	26	57.50	35' RT	0-5	25	11	A-2-6 (0)	BROWN
918+00	35	33	31.40	92	26	59.20	21' LT	0-5	35	21	A-6 (10)	BROWN
918+00	35	33	31.40	92	26	59.30	30' LT	0-5	29	15	A-6 (3)	BROWN
918+00	35	33	31.40	92	26	59.40	40' LT	0-5	29	24	A-6 (5)	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

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

10-10-17

R080423.DGN 9/9/2016

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.		080423	98	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TRINITY D. SMITH 10-10-17

STRUCTURES (BOX 1 OF 3)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS III) 36"	(CLASS III) 42"	(CLASS IV) 30"	(CLASS IV) 36"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	TEMPORARY CULVERTS 18"	DROP INLETS TYPE C	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.										EACH					LIN. FT.	EACH							LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
502+23	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		38										2																		16	0.20	PCC-1, FES-1, FES-2
506+29	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		40										2																		16	0.20	PCC-1, FES-1, FES-2
508+94	EXTEND 4' x 4' R.C. BOX CULVERT ON LT. & RT.																								4	4	106	41.18	3939	25	10	0.13	RCB-1, RCB-2, RCB-3, W-X002-1, R-100X-X1
547+01	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		98										2																		16	0.20	PCC-1, FES-1, FES-2
553+02	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.	37										1								1											5	0.06	FPC-9S, PCC-1, FES-1, FES-2
553+50	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									45										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
554+50	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									96										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
555+50	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									96										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
556+50	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									96										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
557+50	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									96										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
558+90	CONSTRUCT 3' x 3' TYPE ST DROP INLET ON LT.									136										1													FPC-9S, PCC-1, PCM-1, FES-1, FES-2
571+11	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		44										2																		16	0.20	PCC-1, FES-1, FES-2
578+30	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		38										2																		16	0.20	PCC-1, FES-1, FES-2
673+03	EXTEND 30" R.C. PIPE CULVERT ON RT.			26										1																	13	0.16	PCC-1, FES-1, FES-2
694+69	EXTEND 36" R.C. PIPE CULVERT ON LT. & RT.				38										2																34	0.43	PCC-1, FES-1, FES-2
701+17	EXTEND 42" R.C. PIPE CULVERT ON LT. & RT.					36										2															46	0.58	PCC-1, FES-1, FES-2
727+81	EXTEND 36" R.C. PIPE CULVERT ON RT.				36										1		76														17	0.21	PCC-1, FES-1, FES-2
739+00	INSTALL 18" TEMPORARY PIPE CULVERT																																
744+48	EXTEND 30" R.C. PIPE CULVERT ON LT.						32							1																	13	0.16	PCC-1, FES-1, FES-2
752+52	CONSTRUCT 24" R.C. PIPE CULVERT ON RT.		54										2																		16	0.20	PCC-1, FES-1, FES-2
757+10	EXTEND 36" R.C. PIPE CULVERT ON LT.							50							1																17	0.21	PCC-1, FES-1, FES-2
776+00	CONSTRUCT DROP INLET ON LT.									99								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
776+00	CONSTRUCT DROP INLET ON RT.									99								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
777+03	CONSTRUCT DROP INLET ON LT.	13										1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
777+03	CONSTRUCT DROP INLET ON RT.	31										1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
779+41	CONSTRUCT DROP INLET ON LT.	30										1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
779+41	CONSTRUCT DROP INLET ON RT.	15										1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
780+00	CONSTRUCT DROP INLET ON LT.									55								1															FPC-9E, FPC-9M, PCC-1, PCM-1
780+00	CONSTRUCT DROP INLET ON RT.									55								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
781+20	CONSTRUCT DROP INLET ON LT.									116								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
781+47	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	11								142		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
782+54	CONSTRUCT DROP INLET ON LT.									130								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
784+00	CONSTRUCT DROP INLET ON LT.									139								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
785+36	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.																						1										FPC-9
785+38	CONSTRUCT DROP INLET ON LT.																	1			1												FPC-9E, FPC-9M
785+38	EXTEND 36" R.C. PIPE CULVERT ON LT.				18										1																17	0.21	PCC-1, FES-1, FES-2
787+00	CONSTRUCT DROP INLET ON LT.									155								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
787+33	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	17								195		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
788+43	CONSTRUCT DROP INLET ON LT.									136								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
788+43	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	12								106		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
789+75	CONSTRUCT DROP INLET ON LT.									126								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
790+17	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	5								171		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
791+42	CONSTRUCT DROP INLET ON RT.									120								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
791+69	CONSTRUCT DROP INLET ON LT.	17								189		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
793+29	CONSTRUCT DROP INLET ON LT.	20								156		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
793+29	CONSTRUCT DROP INLET ON RT.									183								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
795+35	CONSTRUCT DROP INLET ON RT.									202								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
796+00	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	12										1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
796+84	CONSTRUCT DROP INLET ON RT.	6								143		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
798+00	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	9								196		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
798+20	CONSTRUCT DROP INLET ON LT.	6								130		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
799+44	CONSTRUCT DROP INLET ON RT.	6								76		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
799+54	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	8								148		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
800+24	CONSTRUCT DROP INLET ON RT.	10								76		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
800+79	CONSTRUCT DROP INLET ON LT.									120								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
802+30	CONSTRUCT DROP INLET ON RT.	9										1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
802+70	CONSTRUCT DROP INLET ON LT.									187								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
803+25	CONSTRUCT DROP INLET ON RT.	7								91		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
804+08	CONSTRUCT DROP INLET ON LT.	7								134		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
804+88	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	6								75		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
805+81	CONSTRUCT DROP INLET ON RT.	7								252		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
807+35	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	7								213		1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
807+66	CONSTRUCT DROP INLET ON RT.	9								185		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
809+52	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	15									259	1											1								5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
809+57	CONSTRUCT DROP INLET ON RT.	10								184		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
811+47	CONSTRUCT DROP INLET ON RT.									179								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
812+14	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.		28							297			1										1								8	0.10	FPC-9, PCC-1, PCM-1, FES-1, FES-2
SUBTOTALS (BOX 1 OF 3):		342	340	26	92	36	32	50		5825	259	27	13	2	5	2	76	33	7	8	23		12					41.18	3939	25	406	5.01	

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.

9/9/2016

R080423.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.		080423	99	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STRUCTURES (BOX 2 OF 3)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	30"	36"	42"	(CLASS IV) 30"	36"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	TEMPORARY CULVERTS 18"	DROP INLETS TYPE C	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.										EACH					LIN. FT.	EACH							LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
813+32	CONSTRUCT DROP INLET ON RT.									178									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
815+16	EXTEND DBL. 8' x 5' R.C. BOX CULVERT ON RT.																	1				1			8	5	14	32.87	3053	22	28	0.35	RCB-1, RCB-2, RCB-3, W-X003-1, R-200X-X2
815+16	CONSTRUCT DROP INLET ON RT.																		1			1											FPC-9E
815+74	CONSTRUCT DROP INLET ON RT.									53									1														FPC-9E, FPC-9M, PCC-1, PCM-1
815+96	CONSTRUCT DROP INLET ON LT.									68									1														FPC-9E, FPC-9M, PCC-1, PCM-1
816+37	CONSTRUCT DROP INLET ON RT.									58									1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
816+90	CONSTRUCT DROP INLET ON LT.									90									1														FPC-9E, FPC-9M, PCC-1, PCM-1
817+40	CONSTRUCT DROP INLET ON RT.	14										1							1											5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
817+70	CONSTRUCT DROP INLET ON LT.	10										1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
818+99	CONSTRUCT DROP INLET ON RT.		13										1						1			1								8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
819+31	CONSTRUCT DROP INLET ON LT.		24										1						1			1								8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
820+00	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	14									96	1											1										FPC-9, PCC-1, PCM-1, FES-1, FES-2
821+55	CONSTRUCT DROP INLET ON RT.	26									150	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
822+59	CONSTRUCT DROP INLET ON RT.	31									100	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
822+84	CONSTRUCT DROP INLET ON LT.	5									349	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
823+68	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	25									105	1											1							5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
823+87	CONSTRUCT DROP INLET ON LT.	7									98	1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
825+15	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	19									144	1											1							5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
825+84	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	16									66	1											1							5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
826+50	CONSTRUCT DROP INLET ON LT.	10									257	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
826+69	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	12									82	1											1							5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
828+65	CONSTRUCT DROP INLET ON LT.										209								1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1
828+65	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.										194												1										FPC-9, PCC-1, PCM-1
830+56	CONSTRUCT DROP INLET ON RT.	10									188	1							1			1											FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
830+82	CONSTRUCT DROP INLET ON LT.	8									212	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
833+05	CONSTRUCT DROP INLET ON RT.	15									245	1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
832+42	CONSTRUCT DROP INLET ON LT.	9								156		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
833+90	CONSTRUCT DROP INLET ON RT.	20									81	1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
835+00	CONSTRUCT DROP INLET ON LT.									254									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
836+50	CONSTRUCT DROP INLET ON RT.										256								1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
838+00	CONSTRUCT DROP INLET ON LT.									296									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
838+68	CONSTRUCT DROP INLET ON RT.	11									214	1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
841+00	CONSTRUCT DROP INLET ON LT.									296									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
841+00	CONSTRUCT DROP INLET ON RT.									228									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
843+00	CONSTRUCT DROP INLET ON LT.	6								196		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
843+00	CONSTRUCT DROP INLET ON RT.									196									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
845+00	CONSTRUCT DROP INLET ON RT.									196									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
846+30	CONSTRUCT DROP INLET ON LT.	5								326		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
847+85	CONSTRUCT DROP INLET ON RT.	8								281		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
848+84	CONSTRUCT DROP INLET ON LT.			41										1					1			1								13	0.16	FPC-9M, PCC-1, PCM-1, FES-1, FES-2
848+84	CONSTRUCT DROP INLET ON RT.			12										1					1			1								13	0.16	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
851+00	CONSTRUCT DROP INLET ON LT.									212									1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
851+56	CONSTRUCT DROP INLET ON RT.									268									1			1											FPC-9E, FPC-9M, PCC-1, PCM-1
852+25	CONSTRUCT DROP INLET ON LT.	11								121		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
853+48	CONSTRUCT DROP INLET ON LT.	7								119		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
854+28	CONSTRUCT DROP INLET ON RT.	8								268		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
855+03	CONSTRUCT DROP INLET ON LT.	7								151		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
856+27	CONSTRUCT DROP INLET ON RT.	8								195		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
857+96	CONSTRUCT DROP INLET ON LT.	7								289		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
858+44	CONSTRUCT DROP INLET ON RT.	9								213		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
859+26	CONSTRUCT DROP INLET ON LT.	9								126		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
860+34	CONSTRUCT DROP INLET ON RT.	16								186		1							1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
862+09	CONSTRUCT DROP INLET ON LT.	12								279		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
863+30	CONSTRUCT DROP INLET ON RT.									292									1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
863+54	CONSTRUCT DROP INLET ON LT.	12								141		1							1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
864+84	CONSTRUCT DROP INLET ON LT.	11								126		1							1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
866+00	CONSTRUCT DROP INLET ON RT.									266									1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
867+00	CONSTRUCT DROP INLET ON LT.									212									1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
868+72	CONSTRUCT DROP INLET ON LT.	6								168		1							1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
869+00	CONSTRUCT DROP INLET ON RT.									296									1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
869+74	CONSTRUCT DROP INLET ON LT.	7								98		1							1														FPC-9E, FPC-9M, PCC-1, PCM-1
870+45	CONSTRUCT DROP INLET ON LT.	8								67		1							1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
871+32	CONSTRUCT DROP INLET ON LT.									177									1		1									5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
871+32	CONSTRUCT DROP INLET ON RT.									229									1		1												FPC-9E, FPC-9M, PCC-1, PCM-1
873+14	CONSTRUCT DROP INLET ON LT.	14								60		1							1														FPC-9E, FPC-9M, PCC-1, PCM-1
873+76	CONSTRUCT DROP INLET ON RT.		69										1						1			1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
																			1			1								8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
SUBTOTALS (BOX 2 OF 3):		433	106	53						7431	3046	37	3	2				1	58		22	30	6					32.87	3053	22	263	3.19	

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.

9/9/2016

R080423.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.		080423	100	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STRUCTURES (BOX 3 OF 3)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS III) 36"	(CLASS III) 42"	(CLASS IV) 30"	(CLASS IV) 36"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	TEMPORARY CULVERTS 18"	DROP INLETS TYPE C	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.										EACH					LIN. FT.	EACH							LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
873+77	EXTEND 24" R.C. PIPE CULVERT ON LT. & RT.		32										2																				
873+78	CONSTRUCT DROP INLET ON LT.																	1		1											16	0.20	PCC-1, FES-1, FES-2
874+55	CONSTRUCT DROP INLET ON LT.	12								73		1						1															FPC-9E, FPC-9M
875+26	CONSTRUCT DROP INLET ON LT.	9								67		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
876+16	CONSTRUCT DROP INLET ON LT.	8								86		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
876+70	CONSTRUCT DROP INLET ON RT.										291							1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
876+96	CONSTRUCT DROP INLET ON LT.	7								76		1						1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
877+89	CONSTRUCT DROP INLET ON LT.	8								89		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
878+69	CONSTRUCT DROP INLET ON LT.	6								76		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
879+70	CONSTRUCT DROP INLET ON RT.										296							1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
881+08	CONSTRUCT DROP INLET ON LT.									235								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
882+53	CONSTRUCT DROP INLET ON RT.	8									279	1						1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
883+00	CONSTRUCT DROP INLET ON LT.									188								1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
883+54	CONSTRUCT DROP INLET ON RT.	7									97	1						1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
884+56	CONSTRUCT DROP INLET ON RT.	7									98	1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
885+23	CONSTRUCT DROP INLET ON RT.	7									63	1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
887+74	CONSTRUCT DROP INLET ON RT.	7									247	1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
889+18	CONSTRUCT DROP INLET ON RT.	8									138	1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
891+00	CONSTRUCT DROP INLET ON LT.									175								1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
892+27	CONSTRUCT DROP INLET ON RT.	8								121		1						1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
893+35	IN PLACE 24' R.C. PIPE CULVERT INSTALL FES. ON LT.												1																		5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
893+41	CONSTRUCT DROP INLET ON RT.		12										1					1			1										5	0.06	FES-1, FES-2
894+64	CONSTRUCT DROP INLET ON RT.	11								117		1						1			1										8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
895+60	CONSTRUCT DROP INLET ON RT.									90								1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
896+00	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.	17										1										1											FPC-9E, FPC-9M, PCC-1, PCM-1
896+70	CONSTRUCT DROP INLET ON RT.	9								106		1						1		1											5	0.06	FPC-9, PCC-1, FES-1, FES-2
897+55	CONSTRUCT DROP INLET ON LT.	13								150		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
898+00	CONSTRUCT DROP INLET ON RT.	7								126		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
900+29	CONSTRUCT DROP INLET ON LT.	7								270		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
903+11	CONSTRUCT DROP INLET ON LT.	8								148		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
904+63	EXTEND 4' x 3' R.C. BOX CULVERT ON LT. & RT.																								4	3	15	11.05	770	11	14	0.18	RCB-1, RCB-2, RCB-3, W-X003-1, R-100X-0
905+00	CONSTRUCT DROP INLET ON LT.									148								1															FPC-9E, FPC-9M, PCC-1, PCM-1
905+00	CONSTRUCT DROP INLET ON RT.									33								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
906+25	CONSTRUCT DROP INLET ON LT.	7								121		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
906+25	CONSTRUCT DROP INLET ON RT.									121								1															FPC-9E, FPC-9M, PCC-1, PCM-1
907+00	CONSTRUCT DROP INLET ON LT.	7								71		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
907+00	CONSTRUCT DROP INLET ON RT.									71								1			1												FPC-9E, FPC-9M, PCC-1, PCM-1
909+11	CONSTRUCT DROP INLET ON LT.	8								207		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
910+44	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON LT.			6										1								1									13	0.16	FPC-9, PCC-1, FES-1, FES-2
911+08	CONSTRUCT DROP INLET ON LT.	14								61		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
912+18	CONSTRUCT DROP INLET ON LT.	11								105		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
914+00	CONSTRUCT DROP INLET ON LT.									175								1															FPC-9E, FPC-9M, PCC-1, PCM-1
915+20	CONSTRUCT DROP INLET ON LT.									114								1															FPC-9E, FPC-9M, PCC-1, PCM-1
916+38	CONSTRUCT DROP INLET ON LT.			19										1				1			1										13	0.16	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
916+38	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.				16										1							1									17	0.21	FPC-9
917+00	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	22								58		1										1									5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
917+87	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	17								81		1										1									5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
919+11	CONSTRUCT DROP INLET ON LT.									267								1			1												FPC-9, PCC-1, FES-1, FES-2
919+11	CONSTRUCT DROP INLET ON RT.	11								119		1						1			1										5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
920+27	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	11								111		1										1									5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
921+34	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	9								101		1										1									5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2
923+31	CONSTRUCT DROP INLET ON RT.	11								65		1						1		1											5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
923+50	CONSTRUCT DROP INLET ON LT.									121								1		1													FPC-9E, FPC-9M, PCC-1, PCM-1
924+00	CONSTRUCT DROP INLET ON RT.	11								71		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
924+76	CONSTRUCT DROP INLET ON LT.																	1		1													FPC-9E, FPC-9M
925+61	CONSTRUCT DROP INLET ON RT.	11								232		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
927+97	CONSTRUCT DROP INLET ON RT.	10								48		1						1													5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
928+50	CONSTRUCT 4' x 3' TYPE E JUNCTION BOX ON RT.	10										1										1									5	0.06	FPC-9, PCC-1, FES-1, FES-2
*	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER								1200														12										
SUBTOTALS (BOX 3 OF 3):		344	44	25	16				1200	4694	1509	35	4	2	1			47		13	19	8	12					11.05	770	11	261	3.17	
SUBTOTALS (BOX 1 OF 3):		342	340	26	92	36	32	50		5825	259	27	13	2	5	2	76	33	7	8	23	12						41.18	3939	25	406	5.01	
SUBTOTALS (BOX 2 OF 3):		433	106	53						7431	3046	37	3	2				1 58		22	30	6						32.87	3053	22	263	3.19	
TOTALS:		1119	490	104	108	36	32	50	1200	17950	4814	99	20	6	6	2	76	1 138	7	43	72	26	12					85.10	7762	58	930	11.37	

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.

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

9/9/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	101	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

DRIVEWAYS & TURNOUTS (BOX 1 OF 4)

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	18" LIN. FT.	24" LIN. FT.	
202+00	LT.	DRIVE OFF HWY. 336E	16				140.60	15.47	57.41			
304+81	RT.	DRIVE OFF HWY. 330	40				209.90	23.09	85.71		38	PCC-1, PCM-1, PCP-1, PCP-2
305+92	LT.	DRIVE OFF HWY. 330	18				45.50	5.01	18.58	28		PCC-1, PCM-1, PCP-1, PCP-2
306+63	LT.	DRIVE OFF HWY. 330	40				96.60	10.63	39.45	48		PCC-1, PCM-1, PCP-1, PCP-2
307+50	LT.	DRIVE OFF HWY. 330	22				59.40	6.53	24.26	30		PCC-1, PCM-1, PCP-1, PCP-2
308+73	LT.	DRIVE OFF HWY. 330	20				55.80	6.14	22.79			PCC-1, PCM-1, PCP-1, PCP-2
309+34	RT.	DRIVE OFF HWY. 330	38			64.60	45.60	5.02	18.62	46		PCC-1, PCM-1, PCP-1, PCP-2
310+15	LT.	DRIVE OFF HWY. 330	34				93.90	10.33	38.34			
401+70	RT.	DRIVE OFF TERRY LN.	16				120.60	13.27	49.25	28		PCC-1, PCM-1, PCP-1, PCP-2
452+00	LT.	DRIVE OFF OF OLD HWY. 9	16				179.20	19.71	73.17	28		PCC-1, PCM-1, PCP-1, PCP-2
501+00	LT.	MAIN LANES	16				179.40	19.73	73.26	38		PCC-1, PCM-1, PCP-1, PCP-2
501+66	LT.	MAIN LANES	16				222.00	24.42	90.65	84		PCC-1, PCM-1, PCP-1, PCP-2
504+24	RT.	MAIN LANES	16				337.60	37.14	137.85	44		PCC-1, PCM-1, PCP-1, PCP-2
507+30	LT.	MAIN LANES	22				32.70	3.60	13.35			
520+98	RT.	MAIN LANES	22				118.30	13.01	48.31	44		PCC-1, PCM-1, PCP-1, PCP-2
521+00	LT.	SPRING MEADOW RD.	22				183.30	20.16	74.85	36		PCC-1, PCM-1, PCP-1, PCP-2
522+62	LT.	MAIN LANES	20				84.50	9.30	34.50	30		PCC-1, PCM-1, PCP-1, PCP-2
524+10	LT.	MAIN LANES	18				99.40	10.93	40.59	28		PCC-1, PCM-1, PCP-1, PCP-2
526+71	LT.	MAIN LANES	16				111.80	12.30	45.65			
526+89	LT.	MARIPOSA LN.	20				523.10	57.54	213.60			
526+92	LT.	MAIN LANES	16				102.90	11.32	42.02			
536+84	RT.	MAIN LANES	16				118.00	12.98	48.18	40		PCC-1, PCM-1, PCP-1, PCP-2
538+12	LT.	RANCH RD.	20				536.40	59.00	219.03	44		PCC-1, PCM-1, PCP-1, PCP-2
543+13	RT.	MAIN LANES	40				870.00	95.70	355.25	56		PCC-1, PCM-1, PCP-1, PCP-2
554+55	RT.	EAST MOUNTAIN RD.	24				239.50	26.35	97.80	46		PCC-1, PCM-1, PCP-1, PCP-2
554+92	LT.	MAIN LANES	16	554+70	555+14	24.90	158.20	17.40	64.60			DR-1
557+23	LT.	MAIN LANES	16	557+01	557+45	24.90	74.70	8.22	30.50			DR-1
558+43	LT.	MAIN LANES	18	558+20	558+66	26.70	58.00	6.38	23.68			DR-1
559+22	LT.	MAIN LANES	16	559+00	559+44	24.90	53.30	5.86	21.76			DR-1
561+08	LT.	MAIN LANES	16				99.40	10.93	40.59	28		PCC-1, PCM-1, PCP-1, PCP-2
562+28	LT.	MAIN LANES	40				207.80	22.86	84.85	56		PCC-1, PCM-1, PCP-1, PCP-2
562+40	RT.	MAIN LANES	36				199.40	21.93	81.42	54		PCC-1, PCM-1, PCP-1, PCP-2
563+56	LT.	MAIN LANES	40				194.50	21.40	79.42	56		PCC-1, PCM-1, PCP-1, PCP-2
563+90	RT.	MAIN LANES	30				176.70	19.44	72.15	54		PCC-1, PCM-1, PCP-1, PCP-2
564+85	LT.	KAY LN.	40				260.70	28.68	106.45	54		PCC-1, PCM-1, PCP-1, PCP-2
565+32	RT.	MAIN LANES	36				215.40	23.69	87.96	60		PCC-1, PCM-1, PCP-1, PCP-2
566+28	RT.	MAIN LANES	36				219.40	24.13	89.59	62		PCC-1, PCM-1, PCP-1, PCP-2
567+77	LT.	MAIN LANES	40				176.70	19.44	72.15	48		PCC-1, PCM-1, PCP-1, PCP-2
568+06	RT.	MAIN LANES	36				83.40	9.17	34.06	60		PCC-1, PCM-1, PCP-1, PCP-2
568+57	LT.	MAIN LANES	40				163.40	17.97	66.72	48		PCC-1, PCM-1, PCP-1, PCP-2
569+94	LT.	MAIN LANES	40				256.70	28.24	104.82	70		PCC-1, PCM-1, PCP-1, PCP-2
573+04	LT.	MAIN LANES	16				95.80	10.54	39.12			
573+40	RT.	MAIN LANES	40				214.50	23.60	87.59	64		PCC-1, PCM-1, PCP-1, PCP-2
573+89	LT.	MAIN LANES	18				76.40	8.40	31.20	28		PCC-1, PCM-1, PCP-1, PCP-2
575+80	LT.	QUATTLEBAUM RD.	22				339.70	37.37	138.71	34		PCC-1, PCM-1, PCP-1, PCP-2
575+98	RT.	MAIN LANES	40				232.30	25.55	94.86	60		PCC-1, PCM-1, PCP-1, PCP-2
579+76	RT.	MAIN LANES	16				113.60	12.50	46.39	42		PCC-1, PCM-1, PCP-1, PCP-2
580+16	LT.	MAIN LANES	24				156.70	17.24	63.99	36		PCC-1, PCM-1, PCP-1, PCP-2
581+54	RT.	MAIN LANES	16				103.80	11.42	42.39	40		PCC-1, PCM-1, PCP-1, PCP-2
581+93	LT.	MAIN LANES	16				118.90	13.08	48.55	40		PCC-1, PCM-1, PCP-1, PCP-2
582+73	RT.	MAIN LANES	16				110.90	12.20	45.28	38		PCC-1, PCM-1, PCP-1, PCP-2
585+15	LT.	MAIN LANES	18				120.40	13.24	49.16	40		PCC-1, PCM-1, PCP-1, PCP-2
587+55	RT.	MAIN LANES	16				105.60	11.62	43.12	30		PCC-1, PCM-1, PCP-1, PCP-2
588+45	LT.	MAIN LANES	16				97.60	10.74	39.85	34		PCC-1, PCM-1, PCP-1, PCP-2
588+80	RT.	MAIN LANES	16				222.00	24.42	90.65		52	PCC-1, PCM-1, PCP-1, PCP-2
589+90	LT.	MAIN LANES	18				107.40	11.81	43.86	36		PCC-1, PCM-1, PCP-1, PCP-2
591+38	LT.	MAIN LANES	16				86.90	9.56	35.48	30		PCC-1, PCM-1, PCP-1, PCP-2
593+40	RT.	MAIN LANES	16				182.90	20.12	74.68	34		PCC-1, PCM-1, PCP-1, PCP-2
593+75	LT.	MAIN LANES	18				85.40	9.39	34.87	28		PCC-1, PCM-1, PCP-1, PCP-2
595+27	LT.	MAIN LANES	18				93.40	10.27	38.14			PCC-1, PCM-1, PCP-1, PCP-2
596+55	LT.	MAIN LANES	38				199.70	21.97	81.54	58		PCC-1, PCM-1, PCP-1, PCP-2
598+21	RT.	MAIN LANES	36				215.40	23.69	87.96	60		PCC-1, PCM-1, PCP-1, PCP-2
SUBTOTALS (BOX 1 OF 4):						**166.00**	**10483.00**	**1153.15**	**4280.58**	**2080**	**90**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% 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.

** 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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	102	517

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

DRIVEWAYS & TURNOUTS (BOX 2 OF 4)

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
										18"	24"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.		
599+36	RT.	MAIN LANES	16				95.80	10.54	39.12	30		PCC-1, PCM-1, PCP-1, PCP-2
600+12	LT.	MAIN LANES	16				97.60	10.74	39.85	28		PCC-1, PCM-1, PCP-1, PCP-2
601+42	RT.	MAIN LANES	16				94.00	10.34	38.38	30		PCC-1, PCM-1, PCP-1, PCP-2
603+52	RT.	MAIN LANES	34				279.10	30.70	113.97	50		PCC-1, PCM-1, PCP-1, PCP-2
604+66	LT.	MAIN LANES	16				213.10	23.44	87.02			
606+11	RT.	MAIN LANES	16				71.80	7.90	29.32	28		PCC-1, PCM-1, PCP-1, PCP-2
608+38	RT.	MAIN LANES	16				75.40	8.29	30.79			
611+80	LT.	MAIN LANES	16				71.80	7.90	29.32	28		PCC-1, PCM-1, PCP-1, PCP-2
614+06	LT.	MAIN LANES	24				194.10	21.35	79.26	42		PCC-1, PCM-1, PCP-1, PCP-2
618+55	LT.	MAIN LANES	16				119.80	13.18	48.92	32		PCC-1, PCM-1, PCP-1, PCP-2
619+58	LT.	MAIN LANES	16				104.70	11.52	42.75	28		PCC-1, PCM-1, PCP-1, PCP-2
621+90	RT.	MAIN LANES	16				83.40	9.17	34.06	34		PCC-1, PCM-1, PCP-1, PCP-2
622+59	RT.	MAIN LANES	16				193.60	21.30	79.05	30		PCC-1, PCM-1, PCP-1, PCP-2
623+34	LT.	MAIN LANES	16				85.10	9.36	34.75	34		PCC-1, PCM-1, PCP-1, PCP-2
623+86	LT.	MAIN LANES	16				86.90	9.56	35.48			
626+50	LT.	MAIN LANES	83				388.70	42.76	158.72		98	PCC-1, PCM-1, PCP-1, PCP-2
636+11	LT.	CLINTON QUARRY RD.	22				227.30	25.00	92.81		32	PCC-1, PCM-1, PCP-1, PCP-2
637+83	RT.	MAIN LANES	18				163.40	17.97	66.72			
660+69	LT.	MAIN LANES	40				345.60	38.02	141.12	58		PCC-1, PCM-1, PCP-1, PCP-2
661+90	LT.	MAIN LANES	16				139.40	15.33	56.92	30		PCC-1, PCM-1, PCP-1, PCP-2
665+02	RT.	MAIN LANES	18				181.40	19.95	74.07			
676+82	LT.	MAIN LANES	18				213.40	23.47	87.14	52		PCC-1, PCM-1, PCP-1, PCP-2
678+71	LT.	MAIN LANES	18				175.40	19.29	71.62	54		PCC-1, PCM-1, PCP-1, PCP-2
683+12	RT.	MAIN LANES	16				138.50	15.24	56.55	30		PCC-1, PCM-1, PCP-1, PCP-2
683+33	LT.	MAIN LANES	26				196.90	21.66	80.40	38		PCC-1, PCM-1, PCP-1, PCP-2
684+97	LT.	MAIN LANES	16				108.30	11.91	44.22	32		PCC-1, PCM-1, PCP-1, PCP-2
685+85	LT.	MAIN LANES	16				100.30	11.03	40.96			PCC-1, PCM-1, PCP-1, PCP-2
692+03	RT.	MAIN LANES	20				283.40	31.17	115.72	30		PCC-1, PCM-1, PCP-1, PCP-2
692+50	LT.	DRIVE OFF NORCLIFF RD.	16				79.80	8.78	32.59			
692+67	LT.	NORCLIFF RD.	20				440.90	48.50	180.03	58		PCC-1, PCM-1, PCP-1, PCP-2
692+79	RT.	MAIN LANES	16				222.90	24.52	91.02	34		PCC-1, PCM-1, PCP-1, PCP-2
696+10	LT.	MAIN LANES	16				204.30	22.47	83.42	36		PCC-1, PCM-1, PCP-1, PCP-2
699+35	LT.	MAIN LANES	16				120.70	13.28	49.29	32		PCC-1, PCM-1, PCP-1, PCP-2
703+92	LT.	NIAGARA RD.	26				283.60	31.20	115.80	50		PCC-1, PCM-1, PCP-1, PCP-2
722+08	RT.	MAIN LANES	16				218.50	24.04	89.22	34		PCC-1, PCM-1, PCP-1, PCP-2
723+55	RT.	MAIN LANES	16				195.40	21.49	79.79			
724+30	RT.	MAIN LANES	22				257.60	28.34	105.19			
728+24	LT.	MAIN LANES	16				246.90	27.16	100.82	52		PCC-1, PCM-1, PCP-1, PCP-2
729+38	RT.	MAIN LANES	16				202.50	22.28	82.69	50		PCC-1, PCM-1, PCP-1, PCP-2
729+79	LT.	MAIN LANES	16				225.60	24.82	92.12			
730+52	RT.	MAIN LANES	16				182.90	20.12	74.68			
732+55	RT.	MAIN LANES	16				163.40	17.97	66.72	36		PCC-1, PCM-1, PCP-1, PCP-2
741+30	LT.	MAIN LANES	16				110.00	12.10	44.92	32		PCC-1, PCM-1, PCP-1, PCP-2
745+47	LT.	MAIN LANES	16				88.70	9.76	36.22	34		PCC-1, PCM-1, PCP-1, PCP-2
746+73	RT.	MAIN LANES	16				175.80	19.34	71.79	38		PCC-1, PCM-1, PCP-1, PCP-2
752+52	RT.	HWY. 336E	24							38		PCC-1, PCM-1, PCP-1, PCP-2
755+32	RT.	MAIN LANES	16				129.60	14.26	52.92	36		PCC-1, PCM-1, PCP-1, PCP-2
755+32	LT.	BOAR RD.	24				426.20	46.88	174.03	52		PCC-1, PCM-1, PCP-1, PCP-2
758+82	LT.	MAIN LANES	16				159.80	17.58	65.25	40		PCC-1, PCM-1, PCP-1, PCP-2
761+76	RT.	MAIN LANES	16				263.80	29.02	107.72	48		PCC-1, PCM-1, PCP-1, PCP-2
774+76	RT.	MAIN LANES	16	774+54	774+98	24.90	163.60	18.00	66.80	38		PCC-1, PCM-1, PCP-1, PCP-2, DR-1
781+12	RT.	MAIN LANES	34	780+81	781+43	40.90	90.70	9.98	37.04			DR-1
783+30	LT.	MAIN LANES	38	782+97	783+63	44.40						DR-1
784+00	RT.	LYNN RD.	20				141.80	15.60	57.90			
787+00	RT.	MAIN LANES	30	786+71	787+29	37.30	173.30	19.06	70.76			DR-1
788+09	RT.	MAIN LANES	32	787+79	788+39	39.10	192.00	21.12	78.40			DR-1
789+89	RT.	MAIN LANES	20	789+65	790+13	28.40	100.00	11.00	40.83			DR-1
791+42	LT.	MAIN LANES	18	791+19	791+65	26.70	124.00	13.64	50.63			DR-1
793+01	LT.	MAIN LANES	20	792+77	793+25	28.40	122.20	13.44	49.90			DR-1
794+16	LT.	MAIN LANES	16	793+94	794+38	24.90	88.90	9.78	36.30			DR-1
795+09	LT.	MAIN LANES	40	794+75	795+43	46.20	204.40	22.48	83.46			DR-1
796+49	RT.	MAIN LANES	34	796+18	796+80	40.90	94.40	10.38	38.55			DR-1
SUBTOTALS (BOX 2 OF 4):						**382.10**	**10422.40**	**1146.48**	**4255.81**	**1456**	**130**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% 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.

** 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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	103	517

(2) QUANTITIES

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

10-10-17

DRIVEWAYS & TURNOUTS (BOX 3 OF 4)

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	18" LIN. FT.	24" LIN. FT.	
797+56	LT.	MAIN LANES	22	797+31	797+81	30.20	88.00	9.68	35.93			DR-1
797+82	RT.	MAIN LANES	40	797+48	798+16	46.20	97.80	10.76	39.94			DR-1
799+04	RT.	MAIN LANES	40	798+70	799+38	46.20	105.30	11.58	43.00			DR-1
799+21	LT.	MAIN LANES	30	798+92	799+50	37.30	126.70	13.94	51.74			DR-1
799+82	RT.	MAIN LANES	40	799+48	800+16	46.20	106.70	11.74	43.57			DR-1
802+96	RT.	MAIN LANES	22	802+71	803+21	30.20	105.10	11.56	42.92			DR-1
803+63	LT.	MAIN LANES	38	803+30	803+96	44.40	173.10	19.04	70.68			DR-1
804+52	LT.	MAIN LANES	36	804+20	804+84	42.70	168.00	18.48	68.60			DR-1
804+54	RT.	MAIN LANES	28	804+26	804+82	35.60	146.20	16.08	59.70			DR-1
805+71	LT.	MAIN LANES	32	805+41	806+01	39.10	163.60	18.00	66.80			DR-1
806+11	RT.	MAIN LANES	24	805+85	806+37	32.00	138.70	15.26	56.64			DR-1
807+63	LT.	MAIN LANES	20	807+39	807+87	28.40	115.60	12.72	47.20			DR-1
807+93	RT.	MAIN LANES	20	807+69	808+17	28.40						DR-1
809+78	LT.	MAIN LANES	16	809+56	810+00	24.90	96.00	10.56	39.20			DR-1
809+85	RT.	MAIN LANES	16	809+63	810+07	24.90	83.60	9.20	34.14			DR-1
812+56	LT.	SHADY LN.	20				218.50	24.04	89.22			
816+03	RT.	MAIN LANES	28	815+75	816+31	35.60	292.40	32.16	119.40			DR-1
821+07	RT.	MAIN LANES	16	820+85	821+29	24.90	140.40	15.44	57.33			DR-1
822+21	RT.	MAIN LANES	40	821+87	822+55	46.20	262.20	28.84	107.07			DR-1
822+58	LT.	MAIN LANES	16	822+36	822+80	24.90	85.30	9.38	34.83			DR-1
823+38	RT.	MAIN LANES	24	823+12	823+64	32.00	130.70	14.38	53.37			DR-1
823+57	LT.	MAIN LANES	24	823+31	823+83	32.00	128.00	14.08	52.27			DR-1
824+86	RT.	MAIN LANES	22	824+61	825+11	30.20	95.30	10.48	38.91			DR-1
825+56	RT.	MAIN LANES	20	825+32	825+80	28.40	108.90	11.98	44.47			DR-1
825+75	LT.	MAIN LANES	40	825+41	826+09	46.20	186.70	20.54	76.24			DR-1
826+34	RT.	MAIN LANES	34	826+03	826+65	40.90	170.00	18.70	69.42			DR-1
827+68	RT.	MAIN LANES	38	827+35	828+01	44.40	215.30	23.68	87.91			DR-1
828+36	RT.	MAIN LANES	22	828+11	828+61	30.20	90.40	9.94	36.91			DR-1
830+26	RT.	MAIN LANES	24	830+00	830+52	32.00	106.70	11.74	43.57			DR-1
830+53	LT.	MAIN LANES	22	830+28	830+78	30.20	70.90	7.80	28.95			DR-1
831+69	LT.	MAIN LANES	20	831+45	831+93	28.40	64.40	7.08	26.30			DR-1
832+16	LT.	MAIN LANES	16	831+94	832+38	24.90	51.60	5.68	21.07			DR-1
832+58	RT.	CHOCTAW LN.	20				231.80	25.50	94.65			
833+64	RT.	MAIN LANES	16	833+42	833+86	24.90	92.40	10.16	37.73			DR-1
838+40	RT.	MAIN LANES	20	838+16	838+64	28.40	28.90	3.18	11.80			DR-1
842+48	LT.	JASON ST.	26				158.10	17.39	64.56			
846+04	LT.	MAIN LANES	16	845+82	846+26	24.90	106.70	11.74	43.57			DR-1
847+47	RT.	MAIN LANES	40	847+13	847+81	46.20						DR-1
851+77	LT.	KIP LN.	20				156.20	17.18	63.78			
853+23	LT.	MAIN LANES	16	853+01	853+45	24.90	40.90	4.50	16.70			DR-1
853+90	RT.	MAIN LANES	40	853+56	854+24	46.20	142.20	15.64	58.07			DR-1
854+77	LT.	MAIN LANES	16	854+55	854+99	24.90	40.90	4.50	16.70			DR-1
855+25	RT.	MAIN LANES	16	855+03	855+47	24.90	71.10	7.82	29.03			DR-1
855+77	RT.	MAIN LANES	20	855+53	856+01	28.40	75.60	8.32	30.87			DR-1
857+70	LT.	MAIN LANES	16	857+48	857+92	24.90	39.10	4.30	15.97			DR-1
858+09	RT.	MAIN LANES	34	857+78	858+40	40.90	124.70	13.72	50.92			DR-1
859+00	LT.	MAIN LANES	16	858+78	859+22	24.90	37.30	4.10	15.23			DR-1
860+08	RT.	MAIN LANES	16	859+86	860+30	24.90						DR-1
861+67	LT.	MAIN LANES	20	861+43	861+91	104.00						DR-1
862+11	RT.	MAIN LANES	16	861+89	862+33	24.90	261.30	28.74	106.70			DR-1
863+28	LT.	MAIN LANES	16	863+06	863+50	24.90						DR-1
864+58	LT.	MAIN LANES	16	864+36	864+80	24.90	53.30	5.86	21.76			DR-1
868+02	LT.	MAIN LANES	16	867+80	868+24	24.90	42.70	4.70	17.44			DR-1
868+46	LT.	MAIN LANES	16	868+24	868+68	24.90						DR-1
869+48	LT.	MAIN LANES	16	869+26	869+70	24.90	56.90	6.26	23.23			DR-1
870+23	LT.	MAIN LANES	16	870+01	870+45	24.90	69.30	7.62	28.30			DR-1
871+06	LT.	MAIN LANES	16	870+84	871+28	24.90	56.90	6.26	23.23			DR-1
873+40	LT.	MAIN LANES	16	873+18	873+62	24.90	92.40	10.16	37.73			DR-1
874+29	LT.	MAIN LANES	16	874+07	874+51	24.90	81.80	9.00	33.40			DR-1
875+00	LT.	MAIN LANES	16	874+78	875+22	24.90	74.70	8.22	30.50			DR-1
875+82	LT.	MAIN LANES	32	875+52	876+12	39.10	120.90	13.30	49.37			DR-1
876+70	LT.	MAIN LANES	16	876+48	876+92	24.90	55.10	6.06	22.50			DR-1
SUBTOTALS (BOX 3 OF 4):						**1899.30**	**6443.30**	**708.77**	**2631.04**			

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% 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.

** 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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	104	517

(2) QUANTITIES

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

10-10-17

DRIVEWAYS & TURNOUTS (BOX 4 OF 4)

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	18" LIN. FT.	24" LIN. FT.	
877+62	LT.	MAIN LANES	18	877+39	877+85	26.70	62.00	6.82	25.32			DR-1
878+41	LT.	MAIN LANES	20	878+17	878+65	28.40	68.90	7.58	28.13			DR-1
880+82	LT.	MAIN LANES	16	880+60	881+04	24.90	51.60	5.68	21.07			DR-1
882+27	RT.	MAIN LANES	16	882+05	882+49	24.90	72.90	8.02	29.77			DR-1
882+28	LT.	MAIN LANES	18	882+05	882+51	26.70	100.00	11.00	40.83			DR-1
883+23	RT.	MAIN LANES	26	882+96	883+50	33.80	80.90	8.90	33.03			DR-1
883+34	LT.	MAIN LANES	16	883+12	883+56	24.90	81.80	9.00	33.40			DR-1
883+98	LT.	MAIN LANES	24	883+72	884+24	32.00	146.70	16.14	59.90			DR-1
884+30	RT.	MAIN LANES	23	884+05	884+56	31.10	40.90	4.50	16.70			DR-1
884+97	RT.	MAIN LANES	23	884+72	885+23	31.10	40.90	4.50	16.70			DR-1
885+17	LT.	MAIN LANES	28	884+89	885+45	35.60	87.10	9.58	35.57			DR-1
887+48	RT.	MAIN LANES	16	887+26	887+70	24.90	58.70	6.46	23.97			DR-1
888+47	LT.	MAIN LANES	40	888+13	888+81	286.20						DR-1
888+92	RT.	MAIN LANES	16	888+70	889+14	24.90	64.00	7.04	26.13			DR-1
890+75	LT.	MAIN LANES	38	890+42	891+08	44.40	312.40	34.36	127.56			DR-1
892+00	RT.	MAIN LANES	18	891+77	892+23	26.70	80.00	8.80	32.67			DR-1
892+46	LT.	MAIN LANES	16	892+24	892+68	24.90	58.70	6.46	23.97			DR-1
894+19	LT.	MAIN LANES	40	893+85	894+53	46.20	155.60	17.12	63.54			DR-1
894+38	RT.	MAIN LANES	16	894+16	894+60	24.90	56.90	6.26	23.23			DR-1
895+66	LT.	MAIN LANES	24	895+40	895+92	32.00	176.00	19.36	71.87			DR-1
896+43	RT.	MAIN LANES	18	896+20	896+66	26.70	66.00	7.26	26.95			DR-1
896+96	LT.	MAIN LANES	16	896+74	897+18	24.90	67.60	7.44	27.60			DR-1
897+53	RT.	CEMETERY DR.	18				72.00	7.92	29.40			
900+03	LT.	MAIN LANES	16	899+81	900+25	24.90	87.10	9.58	35.57			DR-1
902+62	LT.	MAIN LANES	20	902+38	902+86	28.40	88.90	9.78	36.30			DR-1
903+39	LT.	MAIN LANES	20	903+15	903+63	28.40	77.80	8.56	31.77			DR-1
905+82	RT.	MAIN LANES	40	905+48	906+16	46.20	293.30	32.26	119.76			DR-1
906+70	LT.	MAIN LANES	16	906+48	906+92	24.90	101.30	11.14	41.36			DR-1
907+54	RT.	MAIN LANES	24	907+28	907+80	32.00	170.70	18.78	69.70			DR-1
908+73	LT.	MAIN LANES	40	908+39	909+07	46.20	373.30	41.06	152.43			DR-1
909+42	RT.	MAIN LANES	24	909+16	909+68	32.00	189.30	20.82	77.30			DR-1
910+04	RT.	MAIN LANES	18	909+81	910+27	26.70	156.00	17.16	63.70			DR-1
910+64	LT.	LANE ST.	20				82.20	9.04	33.57			
911+18	RT.	MAIN LANES	30	910+89	911+47	37.30	306.70	33.74	125.24			DR-1
911+80	LT.	MAIN LANES	40	911+46	912+14	46.20	253.30	27.86	103.43			DR-1
913+21	RT.	MAIN LANES	30	912+92	913+50	37.30	110.00	12.10	44.92			DR-1
914+39	RT.	MAIN LANES	30	914+10	914+68	37.30	103.30	11.36	42.18			DR-1
914+94	LT.	MAIN LANES	16	914+72	915+16	24.90	131.60	14.48	53.74			DR-1
915+71	LT.	MAIN LANES	32				225.80	24.84	92.20			DR-1
916+58	RT.	RICHARD RD.	20				227.80	25.06	93.02			
917+61	RT.	MAIN LANES	16	917+39	917+83	24.90	90.70	9.98	37.04			DR-1
918+87	RT.	MAIN LANES	16	918+65	919+09	24.90	51.60	5.68	21.07			DR-1
920+00	RT.	MAIN LANES	18	919+77	920+23	26.70	70.00	7.70	28.58			DR-1
920+62	RT.	MAIN LANES	18	920+39	920+85	26.70	72.00	7.92	29.40			DR-1
921+05	RT.	MAIN LANES	22	920+80	921+30	30.20	88.00	9.68	35.93			DR-1
921+74	RT.	MAIN LANES	20	921+50	921+98	28.40	71.10	7.82	29.03			DR-1
921+84	LT.	MAIN LANES	34	921+53	922+15	40.90	192.70	21.20	78.69			DR-1
922+38	RT.	MAIN LANES	20	922+14	922+62	28.40	80.00	8.80	32.67			DR-1
923+59	RT.	MAIN LANES	16	923+37	923+81	24.90	58.70	6.46	23.97			DR-1
924+30	RT.	MAIN LANES	20	924+06	924+54	28.40	104.40	11.48	42.63			DR-1
925+37	RT.	MAIN LANES	16	925+15	925+59	24.90	106.70	11.74	43.57			DR-1
926+63	RT.	MAIN LANES	18	926+40	926+86	26.70	74.00	8.14	30.22			DR-1
928+23	RT.	MAIN LANES	16	928+01	928+45	24.90	49.80	5.48	20.34			DR-1
1000+99	RT.	DRIVE OFF OF LYNCH DR.	20				78.00	8.58	31.85	30		DR-1
1001+50	RT.	DRIVE OFF OF LYNCH DR.	16				76.60	8.43	31.28	28		DR-1
SUBTOTALS (BOX 4 OF 4):						**1740.40**	**6244.30**	**686.91**	**2549.77**	**58**		
SUBTOTALS (BOX 1 OF 4):						**166.00**	**10483.00**	**1153.15**	**4280.58**	**2080**	**90**	
SUBTOTALS (BOX 2 OF 4):						**382.10**	**10422.40**	**1146.48**	**4255.81**	**1456**	**130**	
SUBTOTALS (BOX 3 OF 4):						**1899.30**	**6443.30**	**708.77**	**2631.04**			
* ENTIRE PROJECT TEMPORARY DRIVES									2410.00			
TOTALS:						**4187.80**	**33593.00**	**3695.31**	**16127.20**	**3594**	**220**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% 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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	105	517

(2) QUANTITES

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

10-10-17

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7) TON / STATION	AGGREGATE BASE COURSE (CLASS 7) TON	TACK COAT AVG. WID. FEET	TACK COAT SQ.YD.	TACK COAT GALLONS / SQ.YD.	TACK COAT GALLON	ACHM BASE COURSE (1 1/2") AVG. WID. FEET	ACHM BASE COURSE (1 1/2") SQ.YD.	ACHM BASE COURSE (1 1/2") POUND / SQ.YD.	ACHM BASE COURSE (1 1/2") PG 70-22 TON	ACHM BINDER COURSE (1") AVG. WID. FEET	ACHM BINDER COURSE (1") SQ.YD.	ACHM BINDER COURSE (1") POUND / SQ.YD.	ACHM BINDER COURSE (1") PG 70-22 TON	ACHM SURFACE COURSE (3/8") AVG. WID. FEET	ACHM SURFACE COURSE (3/8") SQ.YD.	ACHM SURFACE COURSE (3/8") POUND / SQ.YD.	ACHM SURFACE COURSE (3/8") PG 70-22 TON	ACHM SURFACE COURSE (3/8") PG 76-22 TON	ACHM SURFACE COURSE (3/8") AVG. WID. FEET	ACHM SURFACE COURSE (3/8") SQ.YD.	ACHM SURFACE COURSE (3/8") POUND / SQ.YD.	ACHM SURFACE COURSE (3/8") PG 70-22 TON	ACHM SURFACE COURSE (3/8") PG 76-22 TON	TOTAL PG 70-22 TON	TOTAL PG 76-22 TON
MAIN LANES																													
499+00.00	500+00.00	HWY. 65 - BEGIN JOB TRANS.	100.00			75.00	833.33	0.17	141.67																				
500+00.00	702+60.53	HWY. 65 - OPEN SHLD. NOTCH & WIDEN	20260.53	361.00	73140.51	118.41	266561.04	0.05	13328.05					27.58	62087.27	660.00	20488.80	27.25	61344.38	220.00	6747.88		75.00	833.33	220.00	91.67		91.67	
702+60.53	718+00.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN TRANS. TO FULL DEPTH	1539.47	VAR	6004.17	VAR.	11151.28	0.05	557.56					VAR.	5306.38	660.00	1751.11	VAR.	5269.29	220.00	579.62		75.00	12828.92	220.00	1411.18		1990.80	
718+00.00	724+25.00	HWY. 65 - OPEN SHLD. FULL DEPTH	625.00	547.75	3423.44	190.41	13222.92	0.05	661.15					63.58	4415.28	660.00	1457.04	63.25	4392.36	220.00	483.16		75.00	5208.33	220.00	572.92		1056.08	
724+25.00	728+00.00	HWY. 65 - OPEN SHLD. FULL DEPTH TRANS. TO NOTCH & WIDEN	375.00	VAR.	1372.87	VAR.	2331.92	0.05	116.60					VAR.	1043.61	660.00	344.39	VAR.	1031.94	220.00	113.51		75.00	3125.00	220.00	343.75		457.26	
728+00.00	729+00.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN	100.00	361.00	361.00	118.41	1315.87	0.05	65.78					27.58	306.44	660.00	101.13	27.25	302.78	220.00	33.31		75.00	833.33	220.00	91.67		124.98	
729+00.00	730+50.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN TRANS. TO FULL DEPTH	150.00	VAR.	535.06	VAR.	1744.88	0.05	87.24					VAR.	445.88	660.00	147.14	VAR.	440.38	220.00	48.44		75.00	1250.00	220.00	137.50		185.94	
730+50.00	747+00.00	HWY. 65 - OPEN SHLD. FULL DEPTH	1650.00	547.75	9037.88	190.41	34908.50	0.05	1745.43					63.58	11656.33	660.00	3846.59	63.25	11595.83	220.00	1275.54		75.00	13750.00	220.00	1512.50		2788.04	
747+00.00	770+00.00	HWY. 65 - OPEN SHLD. FULL DEPTH TRANS. TO NOTCH & WIDEN	2300.00	VAR.	9284.06	VAR.	18004.56	0.05	900.23					VAR.	9094.72	660.00	3001.26	VAR.	9042.09	220.00	994.63		75.00	19166.67	220.00	2108.33		3102.96	
770+00.00	772+92.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN	292.00	361.00	1054.12	118.41	3941.75	0.05	192.09					27.58	894.82	660.00	295.29	27.25	884.11	220.00	97.25		75.00	2433.33	220.00	267.67		364.92	
772+92.00	773+67.00	HWY. 65 - NOTCH & WIDEN TRANS. OPEN SHLDR. TO C&G	75.00	355.13	266.35	115.04	958.67	0.05	47.93					26.46	220.50	660.00	72.77	26.12	217.67	220.00	23.94		73.87	615.58	220.00	67.71		91.65	
773+67.00	773+92.00	HWY. 65 - NOTCH & WIDEN TRANS. OPEN SHLDR. TO C&G	25.00	384.88	96.22	110.54	307.06	0.05	15.35					24.96	69.33	660.00	22.88	24.62	68.39	220.00	7.52		77.37	214.92	220.00	23.64		31.16	
773+92.00	776+00.00	HWY. 65 - C&G NOTCH & WIDEN TRANS.	208.00	147.63	307.07	106.50	2461.33	0.05	123.07					23.50	543.11	660.00	179.23	23.50	543.11	220.00		59.74	59.50	1375.11	220.00		151.26		211.00
776+00.00	777+15.63	HWY. 65 - C&G NOTCH & WIDEN	115.63	129.50	149.74	96.00	1233.39	0.05	61.67					20.00	256.96	660.00	84.80	20.00	256.96	220.00		28.27	56.00	719.48	220.00		79.14		107.41
779+25.77	782+54.81	HWY. 65 - C&G NOTCH & WIDEN	329.04	129.50	426.11	96.00	3509.76	0.05	175.49					20.00	731.20	660.00	241.30	20.00	731.20	220.00		80.43	56.00	2047.36	220.00		225.21		305.64
782+54.81	785+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	245.19	VAR.	311.07	VAR.	1554.42	0.05	77.72					VAR.	511.97	660.00	168.95	VAR.	530.48	220.00		58.35	56.00	1525.63	220.00		167.82		226.17
785+00.00	787+00.00	HWY. 65 - C&G NOTCH & WIDEN	200.00	124.50	249.00	99.00	2200.00	0.05	110.00					21.50	477.78	660.00	157.67	21.50	477.78	220.00		52.56	56.00	1244.44	220.00		136.89		189.45
787+00.00	792+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	500.00	VAR.	654.36	VAR.	3480.44	0.05	174.02					VAR.	1150.23	660.00	379.58	VAR.	1179.98	220.00		129.80	56.00	3111.11	220.00		342.22		472.02
792+00.00	794+40.00	HWY. 65 - C&G NOTCH & WIDEN	240.00	158.25	379.80	112.00	2986.67	0.05	149.33					28.00	746.67	660.00	246.40	28.00	746.67	220.00		82.13	56.00	1493.33	220.00		164.27		246.40
794+40.00	798+43.97	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	403.97	VAR.	530.77	VAR.	2824.85	0.05	141.24					VAR.	936.58	660.00	309.07	VAR.	951.69	220.00		104.69	56.00	2513.59	220.00		276.49		381.18
798+43.97	805+17.68	HWY. 65 - C&G NOTCH & WIDEN	673.71	129.50	872.45	96.00	7186.24	0.05	359.31					20.00	1497.13	660.00	494.05	20.00	1497.13	220.00		164.88	56.00	4191.97	220.00		461.12		625.80
805+17.68	811+75.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	657.32	VAR.	823.40	VAR.	3318.24	0.05	165.91					VAR.	1084.86	660.00	358.00	VAR.	1148.52	220.00		126.34	56.00	4089.99	220.00		449.90		576.24
811+75.00	813+00.00	HWY. 65 - C&G NOTCH & WIDEN	125.00	124.50	155.63	99.00	1375.00	0.05	68.75					21.50	298.61	660.00	98.54	21.50	298.61	220.00		32.85	56.00	777.78	220.00		85.56		118.41
813+00.00	816+33.71	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	333.71	VAR.	426.28	VAR.	2147.44	0.05	107.37					VAR.	709.11	660.00	234.01	VAR.	729.22	220.00		80.21	56.00	2076.42	220.00		228.41		308.62
816+33.71	817+65.82	HWY. 65 - C&G NOTCH & WIDEN	132.11	129.50	171.08	96.00	1409.17	0.05	70.46					20.00	293.58	660.00	96.88	20.00	293.58	220.00		32.29	56.00	822.02	220.00		90.42		122.71
818+98.28	823+18.16	HWY. 65 - C&G NOTCH & WIDEN	419.88	129.50	543.74	96.00	4478.72	0.05	223.94					20.00	933.07	660.00	307.91	20.00	933.07	220.00		102.64	56.00	2612.59	220.00		287.38		390.02
823+18.16	829+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	581.84	VAR.	729.53	VAR.	4689.87	0.05	234.49					VAR.	1563.29	660.00	515.89	VAR.	1563.29	220.00		171.96	56.00	3620.34	220.00		398.24		570.20
829+00.00	839+00.00	HWY. 65 - C&G NOTCH & WIDEN	1000.00	129.50	1295.00	96.00	10666.67	0.05	533.33					20.00	2222.22	660.00	733.33	20.00	2222.22	220.00		244.44	56.00	6222.22	220.00		684.44		928.88
839+00.00	851+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	1200.00	129.50	1554.00	96.00	23904.13	0.05	1195.21					20.00	10618.73	660.00	3504.18	20.00	2666.67	220.00		293.33	56.00	7466.67	220.00		821.33		1114.66
851+00.00	884+00.00	HWY. 65 - C&G NOTCH & WIDEN	3300.00	96.00	3168.00	92.00	33733.33	0.05	1686.67					16.00	5866.67	660.00	1936.00	16.00	5866.67	220.00		645.33	56.00	20533.33	220.00		2258.67		2904.00
884+00.00	890+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	600.00	VAR.	553.77	VAR.	2020.23	0.05	101.01					VAR.	583.46	660.00	192.54	VAR.	853.31	220.00		93.86	56.00	3733.33	220.00		410.67		504.53
890+00.00	911+49.28	HWY. 65 - C&G NOTCH & WIDEN	2149.28			64.00	15283.77	0.05	764.19									8.00	1910.47	220.00		210.15	56.00	13373.30	220.00		1471.06		1881.21
911+49.28	922+50.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	1100.72			VAR.	360.47	0.05	18.02									VAR.	360.47	220.00		39.65	56.00	6848.92	220.00		753.38		793.03
922+50.00	924+43.69	HWY. 65 - ADD C&G BOTH SIDES	193.69			112.00	2410.36	0.05	120.52														56.00	1205.18	220.00		132.57		132.57
924+43.69	928+92.71	HWY. 65 - ADD C&G ON RT.	449.02			112.00	5587.80	0.17	949.93														56.00	2793.90	220.00		307.33		307.33
928+92.71	929+92.71	HWY. 65 - END JOB TRANS.	100.00			56.00	622.22	0.17	105.78														56.00	622.22	220.00		68.44		68.44
ADDITIONAL FOR LEVELING																													
500+00.00	702+60.53	HWY. 65 - OPEN SHLD. NOTCH & WIDEN	20260.53			36.00	81042.12	0.17	13777.16									36.00	81042.12	220.00	8914.63							8914.63	
702+60.53	718+00.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN TRANS. TO FULL DEPTH	1539.47			18.00	3078.94	0.17	523.42									18.00	3078.94	220.00	338.68							338.68	
724+25.00	728+00.00	HWY. 65 - OPEN SHLD. FULL DEPTH TRANS. TO NOTCH & WIDEN	375.00			18.00	750.00	0.17	127.50									18.00	750.00	220.00	82.50							82.50	
728+00.00	729+00.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN	100.00			36.00	400.00	0.17	68.00									36.00	400.00	220.00	44.00							44.00	
729+00.00	730+50.00	HWY. 65 - OPEN SHLD. NOTCH & WIDEN TRANS. TO FULL DEPTH	150.00			18.00	300.00	0.17	51.00									18.00	300.00	220.00	33.00							33.00	
747+00.00	772+92.00	HWY. 65 - OPEN SHLD. FULL DEPTH TRANS. TO NOTCH & WIDEN	2592.00			18.00	5184.00	0.17	881.28									18.00	5184.00	220.00	570.24							570.24	
772+92.00	773+92.00	HWY. 65 - NOTCH & WIDEN TRANS. OPEN SHLDR. TO C&G	100.00			36.00	400.00	0.17	68.00									36.00	400.00	220.00	44.00							44.00	
773+92.00	787+00.00	HWY. 65 - C&G NOTCH & WIDEN	1308.00			36.00	5232.00	0.17	889.44									36.00	5232.00	220.00	575.52							575.52	
787+00.00	792+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	500.00			32.00	1777.78	0.17	302.22									32.00	1777.78	220.00	195.56							195.56	
792+00.00	794+40.00	HWY. 65 - C&G NOTCH & WIDEN	240.00			28.00	746.67	0.17	126.93									28.00	746.67	220.00	82.13							82.13	
794+40.00	798+43.97	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	403.97			32.00	1436.34	0.17	244.18									32.00	1436.34	220.00	158.00							158.00	
798+43.97	884+00.00	HWY. 65 - C&G NOTCH & WIDEN	8556.03			36.00	34224.12	0.17	5818.10									36.00	34224.12	220.00	3764.65							3764.65	
884+00.00	890+00.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	600.00			42.00	2800.00	0.17	476.00									42.00	2800.00	220.00	308.00							308.00	
890+00.00	911+49.28	HWY. 65 - C&G NOTCH & WIDEN	2149.28			48.00	11462.83	0.17	1948.68									48.00	11462.83	220.00	1260.91							1260.91	
911+49.28	922+50.00	HWY. 65 - C&G NOTCH & WIDEN - TRANS.	1100.72			52.00	6359.72	0.17	1081.15									52.00	6359.72	220.00	699.57							699.57	
922+50.00	924+43.69	HWY. 65 - ADD C&G BOTH SIDES	193.69			56.00	1205.18	0.17	204.88									56.00	1205.18	220.00	132.57							132.57	
ADDITIONAL FOR SUPERELEVATION																													
603+78.05	609+18.05		540.00	79.63	430.00																								
609+18.05	619+28.01		1009.96	159.25	1608.36																								
619+28.01	624+68.01		540.00	79.63	430.00																								
635+92.89	641+32.89		540.00	79.63	430.00																								
641+32.89	653+94.34		1261.45	159.25	2008.86																								
653+94.34	659+34.34		540.00	79.63	430.00																								
666+60.51	672+90.51		630.00	204.38	1287.59																								
672+90.51	678+12.21		521.70	408.75	2132.45																								
678+12.21	684+42.21		630.00	204.38	1287.59																								
686+21.66	691+61.66		540.00	138.63	748.60																								
691+61.66	694+72.86		311.20	277.25	862.80																								
694+72.86	700+12.86		540.00	138.63	748.60																								
700+12.86	706+42.86		630.00	220.50	1389.15																								
706+42.86	712+41.15		598.29	441.00	2638.46																								
712+41.15	718+71.15		630.00	220.50	1389.15																								
718+71.15	723+15.65		444.50	218.38	970.70																								
723+15.65	723+89.81		74.16	436.75	323.89																								
723+89.81	728+34.31		444.50	218.38	970.70																								
728+34.31	733+74.31		540.00	156.25	843.75																								
733+74.31	736+04.92		230.61	312.50	720.66																								
736+04.92	741+44.92		540.00	156.25	843.75																								
741+44.92	747+74.92		630.00	172.88	1089.14																								
747+74.92	760+47.65		1272.73	345.75	4400.46																								
760+47.65	766+77.65		630.00	172.88	1089.14																								
ADDITIONAL FOR GRADE RAISE																													
ENTIRE	PROJECT									VAR.	VAR.	VAR.	40126.70	VAR.	VAR.	VAR.	16541.02												
ADDITIONAL FOR SIDE ROADS																													
100+32.68	101+95.00	RANCH RD.	162.32	179.75	291.77	61.41	1107.56	0.05	55.38					20.58	371.17	660.00	122.49	20.25	365.22	220.00	40.17		20.00	360.71	220.00	39.68		79.85	
200+52.07	202+53.00	HWY. 338E	200.93	VAR.	279.72	VAR.	1798.20	0.05	89.91					VAR.	599.40	660.00	197.80	VAR.	599.40	220.00	65.93		VAR.	599.40	220.00	65.93		131.86	
303+48.51	310+63.00	HWY. 330	714.49	VAR.	479.11	VAR.	5804.01	0.05	290.20					VAR.	1934.67	660.00	638.44	VAR.	1934.67	220.00	212.81		VAR.	1934.67	220.00	212.81		425.62	
301+32.00	302+97.00	HWY. 9	165.00			VAR.	3368.55	0.05	168.43					VAR.	1122.85	660.00	370.54	VAR.	1122.85	220.00	123.51		VAR.	1122.85	220.00	123.51		247.02	
1000+11.00	1003+40.25	LYNCH DR.	329.25	VAR.	250.92	VAR.	2317.89	0.05	115.89					VAR.	772.63	660.00	254.97	VAR.	772.63	220.00	84.99		VAR.	772.63	220.00	84.99		169.98	
400+30.00	403+25.00	TERRY LN.	295.00	VAR.	383.28	VAR.	2463.96	0.05	123.20					VAR.	821.32	660.00	271.04	VAR.	821.32	220.00	90.35		VAR.	821.32	220.00	90.35		180.70	
451+04.22	452+70.00	HWY. 9	165.78	VAR.	279.53	VAR.	1797.03	0.05	89.85					VAR.	599.01	660.00	197.67	VAR.	599.01	220.00	65.89		VAR.	599.01	220.00	65.89		131.78	
TOTALS:					148914.61		669682.98		53097.31				40126.70		132786.84		60360.70		282965.12		28292.41	2833.70		330327.98		25883.85	10452.22	54176.26	13285.92

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

9/9/2016

R080423.DGN

QUANTITIES

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.		080423	106	517
				(1) 06913 & 06914 - QUANTITIES - 59031				

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 080423

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	801	802	SP & 802	803	804	804	805	806	806	SP & 807	SP & 808	809	812	816	816	821
			ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	(3) CLASS S(AE) CONCRETE-BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	(2) STEEL PILING (HP 12X53)	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	MODIFICATION OF EXISTING STRUCTURE (BRIDGE NO._____)
			UNIT	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	EA.	LB.	CU. IN.	LIN. FT.	EACH	SQ. YD.	CU. YD.	LUMP SUM
06913	CHOCTAW CREEK	BENT NO. 1		14	17.55		0.2	2,360		54		2	256	1,015.0			81	45	
		BENT NO. 2		39	25.45			5,714						1,631.5				7	
		BENT NO. 3		37	23.75			5,406						1,631.5				7	
		BENT NO. 4		14	17.55		0.2	3,360		30		2	256	1,015.0			41	25	
		208'-0" CONT. COMP. W-BEAM UNIT				210.90	11.0		56,380		404		79,548		39	1			
		EXISTING BR. NO. 06913																	1
TOTALS FOR BRIDGE NO. 06913				104	84.30	210.90	11.4	16,840	56,380	84	404	4	80,060	5,293.0	39	1	122	84	
06914	BIG BRANCH	BENT NO. 1		11	17.35		0.2	2,370		50		2	294	848.5			55	31	
		BENT NO. 2		85	27.88			6,025						1,080.0				7	
		BENT NO. 3		66	25.29			5,545						1,080.0				7	
		BENT NO. 4		13	17.48		0.2	2,370		56		2	294	848.5			57	33	
		130'-0" CONT. COMP. W-BEAM UNIT				128.60	6.9		36,190		248		33,352		44	1			
		EXISTING BR. NO. 06914																	1
TOTALS FOR BRIDGE NO. 06914				175	88.00	128.60	7.3	16,310	36,190	106	248	4	33,940	3,857.0	44	1	112	78	
TOTALS FOR JOB NO. 080423				279 (1)	172.30	339.50	18.7	33,150	92,570	190	652	8	114,000	9,150.0	83	2	234	162	

(1) Includes approx. 30 cu. yds. of rock excavation.

(2) All steel piling shall be Grade 50 and are required to have approved driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)". All piles shall conform to Standard Drawing No. 55020.

(3) Class S(AE) Concrete Nominal Maximum Coarse Aggregate Size shall be according to Standard Gradation AHTD, see Subsection 802.02(c).

KYLE YEARY
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
10-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
BEE BRANCH - NORTH (S)
VAN BUREN COUNTY

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.q01.dgn
CHECKED BY: DHP DATE: 10/5/17 SCALE: No Scale
DESIGNED BY: DATE:

BRIDGE NO. 06913 & 06914 DRAWING NO. 59031

PRINT DATE: 10/5/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-31-17			
11-7-17			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	107	517

(2) SUMMARY OF QUANTITIES

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

11-8-17

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	261	STATION
201	GRUBBING	261	STATION
202	REMOVAL AND DISPOSAL OF BRICK COLUMNS	2	EACH
202	REMOVAL AND DISPOSAL OF WELL	1	EACH
202	REMOVAL AND DISPOSAL OF FENCE	6300	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	26	EACH
202	REMOVAL AND DISPOSAL OF STEEL POSTS	1	EACH
202	REMOVAL AND DISPOSAL OF ROCK WALLS	106	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE WALLS	21	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	48	SQ. YD.
202	REMOVAL AND DISPOSAL OF COLUMNS	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	1541	SQ. YD.
202	REMOVAL AND DISPOSAL OF STEPS	33	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	27	EACH
202	REMOVAL AND DISPOSAL OF HOUSE FOUNDATION	180	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	193	EACH
202	REMOVAL AND DISPOSAL OF WOOD POLE	4	EACH
202	REMOVAL AND DISPOSAL OF WELL HOUSE	1	EACH
202	REMOVAL AND DISPOSAL OF ROCK COLUMNS	16	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	15	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS	7	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM	1	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL	1152	LIN. FT.
202	REMOVAL AND DISPOSAL OF ENTRANCE FRAMEWORK WITH FOUNDATION	1	EACH
202	REMOVAL AND DISPOSAL OF TIRES	2	EACH
206	FLOWABLE SELECT MATERIAL	5	CU. YD.
210	UNCLASSIFIED EXCAVATION	329413	CU. YD.
SP & 210	COMPACTED EMBANKMENT	344397	CU. YD.
SP & 210	ROCK FILL	35369	CU. YD.
SP & 210	SOIL STABILIZATION	500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	165042	TON
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)	4269	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (8" UNIFORM THICKNESS)	7944	SQ. YD.
SS & 401	TACK COAT	53507	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	38442	TON
SP, SS, & 404	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")	1685	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	57645	TON
SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")	2716	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")	67314	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")	200	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (3/8")	2926	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (3/8")	717	TON
412	COLD MILLING ASPHALT PAVEMENT	4072	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	205	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY	4187.80	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	76	LIN. FT.
SS & 604	SIGNS	1312	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	10	EACH
SS & 604	BARRICADES	448	LIN. FT.
SS & 604	TRAFFIC DRUMS	983	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	778	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	452	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	348148	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	348148	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1700	LIN. FT.
SS & 604	VERTICAL PANELS	114	EACH
605	CONCRETE DITCH PAVING (TYPE B)	17519	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	1119	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	17950	LIN. FT.
* 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 2)	17950	LIN. FT.
606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	490	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	4814	LIN. FT.
* 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	4814	LIN. FT.
* 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	4814	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	104	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	32	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	108	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	50	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	36	LIN. FT.
SS & 606	12" SIDE DRAIN	1200	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	3594	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	220	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	99	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	20	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	6	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	6	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	600	CU. YD.
609	DROP INLETS (TYPE C)	1	EACH
609	DROP INLETS (TYPE MO)	138	EACH
609	DROP INLETS (TYPE ST)	7	EACH
609	JUNCTION BOXES (TYPE E)	26	EACH
609	DROP INLET EXTENSIONS (4')	43	EACH
609	DROP INLET EXTENSIONS (8')	72	EACH
609	YARD DRAINS	12	EACH
611	UNDERDRAIN OUTLET PROTECTORS	10	EACH
611	4" PIPE UNDERDRAINS	500	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	24	TON
619	WIRE FENCE (TYPE D)	1864	LIN. FT.
619	WIRE FENCE (TYPE D-1)	2375	LIN. FT.
* 619	4' STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)	85	LIN. FT.
* 619	4' ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)	85	LIN. FT.
* 619	16' STEEL GATES (ALTERNATE NO. 1)	1	EACH
* 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	EACH
620	LIME	218	TON
620	SEEDING	109.13	ACRE
SS & 620	MULCH COVER	309.82	ACRE
620	WATER	15474.5	M.GAL.
621	TEMPORARY SEEDING	200.69	ACRE
621	SILT FENCE	25314	LIN. FT.
621	SAND BAG DITCH CHECKS	12485	BAG
621	DROP INLET SILT FENCE	3204	LIN. FT.
621	SEDIMENT BASIN	18128	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	18128	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

R080423.DGN 9/9/2016

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

621	OBLITERATION OF SEDIMENT BASIN	18128	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	20087	CU. YD.
621	ROCK DITCH CHECKS	1896	CU. YD.
SS & 621	FILTER SOCK (12")	3304	LIN. FT.
621	WATTLE (20")	2000	LIN. FT.
SP & 621	TRIANGULAR SILT DIKE	400	LIN. FT.
623	SECOND SEEDING APPLICATION	109.13	ACRE
624	SOLID SODDING	19798	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	19439	SQ. YD.
632	CONCRETE ISLAND	86	SQ. YD.
633	CONCRETE WALKS	8731	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	27743	LIN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE B-1) (1' 6")	760	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	47	EACH
637	MAILBOX SUPPORTS (SINGLE)	43	EACH
637	MAILBOX SUPPORTS (DOUBLE)	2	EACH
641	WHEELCHAIR RAMPS (TYPE 3)	147	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	47403	LIN. FT.
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	10	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2233	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	83	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	122	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	640	LIN. FT.
710	NON-METALLIC CONDUIT (3")	249	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1 HD)	3	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	5	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	160	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	77388	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	209	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	771	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	105175	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	18	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	3	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	2116	EACH
SP & 733	VIDEO DETECTOR (CLR)	8	EACH
733	VIDEO CABLE	394	LIN. FT.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	58	CU. YD.
802	CLASS S CONCRETE-ROADWAY	85.10	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	7762	POUND
	STRUCTURES OVER 20' SPAN		
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	279	CU. YD.
802	CLASS S CONCRETE-BRIDGE	172.30	CU. YD.
SP & 802	CLASS S(AE) CONCRETE-BRIDGE	339.50	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	18.7	GAL.
804	REINFORCING STEEL-BRIDGE (GRADE 60)	33150	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	92570	POUND
805	STEEL PILING (HP 12X53)	190	LIN. FT.
806	METAL BRIDGE RAILING (TYPE H)	652	LIN. FT.
806	TRANSITIONAL APPROACH RAILING	8	EACH
SP & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)	114000	POUND
SP & 808	ELASTOMERIC BEARINGS	9150.0	CU. IN.
809	SILICONE JOINT SEALANT	83	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	2	EACH
816	FILTER BLANKET	234	SQ. YD.
816	DUMPED RIPRAP	162	CU. YD.
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 06913)	1.00	LUMP SUM
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 06914)	1.00	LUMP SUM

REVISIONS

DATE	REVISION	SHEET NUMBER
10/19/2017	ADDED AIRPORT CLEARANCE REQUIREMENTS SPECIAL PROVISION; CORRECTED ITEM NUMBER FOR THERMOPLASTIC PAVEMENT MARKING YELLOW (6"); LINED UP PLAN WITH PROFILE	3, 108, 170, 171, & 173-176
10/26/2017	REVISED MAINTENANCE OF TRAFFIC SPECIAL PROVISION	108
10/30/2017	REVISED EMBANKMENT CONSTRUCTION SPECIAL PROVISION	108
10/31/2017	ADDED PAY ITEM "CONSTRUCTION PROJECT INFORMATION SIGN UPDATE"; CONSTRUCTION PROJECT INFORMATION SIGN SPECIAL PROVISION	3, 90, 107, & 108
11/7/2017	REMOVED CONCRETE DITCH PAVING DRAWING & NOTE FROM PLAN & PROFILE SHEETS & REVISED QUANTITY FOR PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS) & PORTLAND CEMENT CONCRETE BASE (8" UNIFORM THICKNESS)	94, 107, 108, 132, &133
11/8/2017	REVISED BIDDING REQUIREMENTS AND CONDITIONS & MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS	108
11/9/2017	REVISED MAINTENANCE OF TRAFFIC SPECIAL PROVISION	108

SUMMARY OF QUANTITIES & REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-19-17		10-31-17		11-9-17	
10-26-17		11-7-17			
10-30-17		11-8-17			

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11485 CLINTON D. SMITH

11-9-17

② SUMMARY OF QUANTITIES & REVISIONS

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		108	517

JOB NO. 080423

APPROX. MIDPOINT:
LT: 35-31-39.9
LG: 092-26-28.5

SURVEY CONTROL COORDINATES

Project Name: s080423
Date: 4/20/2012
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL.
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	409140.1817	1192443.6628	801.83	CTL	*5/8" Rebar with 2" Aluminum Cap
2	409747.0661	1191792.9575	854.09	CTL	*5/8" Rebar with 2" Aluminum Cap
3	410371.6568	1191174.8148	902.99	CTL	*5/8" Rebar with 2" Aluminum Cap
4	410967.2843	1190628.8230	940.70	CTL	*5/8" Rebar with 2" Aluminum Cap
5	411659.3813	1190160.2459	990.84	CTL	*5/8" Rebar with 2" Aluminum Cap
6	412396.4812	1189752.7251	1041.02	CTL	*5/8" Rebar with 2" Aluminum Cap
7	413173.4438	1189314.9254	1094.98	CTL	*5/8" Rebar with 2" Aluminum Cap
8	413798.5358	1188973.6342	1128.56	CTL	*5/8" Rebar with 2" Aluminum Cap
9	414499.6469	1188419.2564	1131.50	CTL	*5/8" Rebar with 2" Aluminum Cap
10	415199.2435	1187850.8752	1127.91	CTL	*5/8" Rebar with 2" Aluminum Cap
11	415924.3956	1187259.7039	1114.37	CTL	*5/8" Rebar with 2" Aluminum Cap
12	416553.3677	1186674.6774	1082.19	CTL	*5/8" Rebar with 2" Aluminum Cap
13	417293.9865	1186195.6176	1056.81	CTL	*5/8" Rebar with 2" Aluminum Cap
14	418031.5783	1185676.1184	1034.50	CTL	*5/8" Rebar with 2" Aluminum Cap
15	418835.1970	1185300.1893	1015.77	CTL	*5/8" Rebar with 2" Aluminum Cap
16	419727.6686	1185232.1607	991.48	CTL	*5/8" Rebar with 2" Aluminum Cap
17	420606.6760	1185045.5700	944.64	CTL	*5/8" Rebar with 2" Aluminum Cap
18	421477.8354	1184885.7495	899.84	CTL	*5/8" Rebar with 2" Aluminum Cap
19	422362.4635	1185058.9392	901.63	CTL	*5/8" Rebar with 2" Aluminum Cap
20	423165.1535	1185410.2417	910.37	CTL	*5/8" Rebar with 2" Aluminum Cap
21	424004.2527	1185704.3944	911.11	CTL	*5/8" Rebar with 2" Aluminum Cap
22	424879.1578	1185654.6828	870.73	CTL	*5/8" Rebar with 2" Aluminum Cap
23	425749.7081	1185447.7965	816.62	CTL	*5/8" Rebar with 2" Aluminum Cap
24	426560.2389	1185384.2460	786.18	CTL	*5/8" Rebar with 2" Aluminum Cap
25	427440.1132	1185487.8350	789.09	CTL	*5/8" Rebar with 2" Aluminum Cap
26	428165.2551	1185047.1289	780.29	CTL	*5/8" Rebar with 2" Aluminum Cap
27	428728.7262	1184285.1286	729.90	CTL	*5/8" Rebar with 2" Aluminum Cap
28	429440.1839	1183732.6156	677.96	CTL	*5/8" Rebar with 2" Aluminum Cap
29	429820.3760	1182940.7966	623.02	CTL	*5/8" Rebar with 2" Aluminum Cap
30	430248.4185	1182284.2829	584.49	CTL	*5/8" Rebar with 2" Aluminum Cap
31	430999.9407	1181996.2833	564.77	CTL	*5/8" Rebar with 2" Aluminum Cap
32	431903.2250	1181928.3068	517.96	CTL	*5/8" Rebar with 2" Aluminum Cap
33	432989.2060	1181869.9413	495.22	CTL	*5/8" Rebar with 2" Aluminum Cap
34	433828.4132	1181742.1249	510.11	CTL	*5/8" Rebar with 2" Aluminum Cap
35	434562.1494	1181337.2612	536.50	CTL	*5/8" Rebar with 2" Aluminum Cap
36	435078.5972	1181153.4998	551.96	CTL	*5/8" Rebar with 2" Aluminum Cap
37	435703.7393	1180812.5617	555.27	CTL	*5/8" Rebar with 2" Aluminum Cap
38	436580.2457	1180645.6721	540.52	CTL	*5/8" Rebar with 2" Aluminum Cap
39	437565.8918	1180611.0017	562.71	CTL	*5/8" Rebar with 2" Aluminum Cap
40	438438.9756	1180317.7546	591.69	CTL	*5/8" Rebar with 2" Aluminum Cap
41	439263.2132	1180092.8183	630.70	CTL	*5/8" Rebar with 2" Aluminum Cap
42	440070.3181	1179927.8224	667.42	CTL	*5/8" Rebar with 2" Aluminum Cap
43	440893.1918	1179705.1051	700.36	CTL	*5/8" Rebar with 2" Aluminum Cap
44	441734.1361	1179472.1307	718.74	CTL	*5/8" Rebar with 2" Aluminum Cap
45	442552.5209	1179173.2353	729.76	CTL	*5/8" Rebar with 2" Aluminum Cap
46	443370.2482	1178859.2189	741.52	CTL	*5/8" Rebar with 2" Aluminum Cap
47	444253.3477	1178676.6834	759.63	CTL	*5/8" Rebar with 2" Aluminum Cap
48	445161.2491	1178788.0864	762.03	CTL	*5/8" Rebar with 2" Aluminum Cap
49	446047.6675	1178799.6456	782.31	CTL	*5/8" Rebar with 2" Aluminum Cap
50	447163.5987	1178543.7696	783.83	CTL	*5/8" Rebar with 2" Aluminum Cap
100	405186.3846	1192051.5449	710.94	GPS	*AHTD GPS #710006
101	403833.0632	1191179.6690	-99999.00	GPS	*AHTD GPS #710006A
102	408075.9781	1196863.2338	754.20	GPS	*AHTD GPS #710009
103	408091.4094	1198764.9137	742.61	GPS	*AHTD GPS #710009A
104	419593.6371	1185148.0699	996.02	GPS	*AHTD GPS #710011
105	418201.0958	1185456.3007	1031.76	GPS	*AHTD GPS #710011A
106	435075.8875	1181350.5195	-99999.00	GPS	*AHTD GPS #710005
107	434748.8058	1180034.3758	557.60	GPS	*AHTD GPS #710005A
108	444965.5764	1178685.4003	760.53	GPS	*AHTD GPS #710007
109	446491.7617	1178725.1054	785.23	GPS	*AHTD GPS #710007A
734	434841.4700	1181124.0706	548.45	HPT	*5/8" Rebar with 2" Aluminum Cap
900	408508.2440	1193262.3033	753.77	TBM	*
901	414238.8287	1188638.4373	1132.86	TBM	*
902	420896.9759	1184981.4169	924.93	TBM	*
903	424002.3837	1185737.1596	904.32	TBM	*
904	428839.9567	1184060.9894	710.04	TBM	*
905	430354.2485	1182317.3680	578.71	TBM	*
906	432762.6686	1181878.3874	498.32	TBM	*
907	435052.7021	1181068.9082	554.96	TBM	*
908	436575.3811	1180711.6071	543.96	TBM	*
910	447063.2566	1178472.4061	786.36	TBM	*5/8" Rebar with 2" Aluminum Cap

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999047538 HAS BEEN USED TO COMPUTE THE GROUND COORDINATES LISTED ABOVE.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME S080423G1.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS:
710005 - 710005A
710006 - 710006A
710007 - 710007A
710009 - 710009A
710011 - 710011A
CONVERGENCE ANGLE: 0-14-56.7 LEFT AT LT: 35-30-31.7 LG: 095-25-41
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS REGISTERED PROFESSIONAL LAND SURVEYOR No. 1425 KENNETH D. SMITH
10-10-17

DATE REVISED	DATE PLANED	DATE REVISED	DATE PLANED	FEDERAL DISTRICT	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	080423	109	517

2 SURVEY CONTROL DETAILS

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.		080423	110	517

(2) SURVEY CONTROL DETAILS

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

10-10-17

HWY. 65

POINT NAME	TYPE	STATION	NORTHING	EASTING
8000	POB	492+20.54	408779.2506	1192978.4911
8001	P.C.	493+86.55	408874.0016	1192842.1744
8003	P.T.	503+97.27	409520.8860	1192067.2993
8004	P.C.	517+65.25	410486.6705	1191098.4589
8006	P.T.	533+39.89	411736.6806	1190149.0530
8007	P.C.	550+08.73	413191.3983	1189331.2275
8009	P.T.	559+72.85	413988.1969	1188790.4390
8010	P.C.	591+60.22	416465.7578	1186785.1939
8012	P.T.	597+52.27	416935.3774	1186424.7733
8013	P.C.	607+83.05	417769.0258	1185818.5327
8015	P.T.	622+12.67	419083.3281	1185294.7387
8016	P.C.	627+23.36	419589.7302	1185228.6742
8018	P.T.	633+23.03	420179.2204	1185120.1517
8019	P.C.	638+62.74	420704.1702	1184994.8058
8021	P.T.	655+29.34	422344.7491	1185087.5789
8022	P.C.	671+33.01	423852.6410	1185633.5055
8024	P.T.	679+69.71	424676.2279	1185679.1006
8025	P.C.	690+26.66	425703.7018	1185431.1910
8027	P.T.	697+65.19	426436.9451	1185399.3412
8028	P.C.	702+60.53	426926.7211	1185473.3318
8030	P.T.	717+19.50	428185.5016	1184906.6593
8031	P.C.	720+22.80	428350.4137	1184652.1049
8033	P.T.	727+56.81	428864.4735	1184135.6099
8034	P.C.	729+11.80	428994.1546	1184050.7236
8036	P.T.	741+04.30	429704.9475	1183121.5193
8037	P.C.	741+85.53	429730.0991	1183044.2760
8039	P.T.	762+05.15	431250.1940	1181914.5072
8040	P.C.	767+01.23	431746.1509	1181903.4502
8042	P.T.	771+60.73	432205.2009	1181884.0024
8043	P.C.	782+54.81	433297.1568	1181815.7879
8045	P.T.	790+43.49	434047.4907	1181595.0853
8046	P.C.	794+94.24	434440.9378	1181375.1347
8048	P.T.	798+43.97	434755.8467	1181223.5152
8049	P.C.	806+36.70	435489.7458	1180923.8342
8051	P.T.	816+33.71	436455.5123	1180692.1812
8052	P.C.	823+18.16	437137.6036	1180635.3293
8054	P.T.	830+26.71	437834.2190	1180511.5107
8055	P.C.	869+35.05	441602.3616	1179474.1010
8057	P.T.	874+98.85	442137.7026	1179297.9677
8058	P.C.	887+87.67	443340.6746	1178835.4483
8060	P.T.	895+64.35	444101.6923	1178709.7262
8061	P.C.	911+49.28	445685.3839	1178772.4870
8063	P.T.	917+27.97	446259.3768	1178715.3205
8064	POE	933+20.07	447806.5405	1178339.7475

RANCH RD.

POINT NAME	TYPE	STATION	NORTHING	EASTING
8100	POB	100+00.00	412181.4634	1189652.4434
8101	P.C.	100+32.68	412161.9573	1189678.6635
8103	P.T.	102+38.70	412123.4137	1189874.1935
8104	POE	102+90.54	412136.2565	1189924.4160

DRIVE @ STA. 664+00

POINT NAME	TYPE	STATION	NORTHING	EASTING
8200	POB	0+00.00	423163.4081	1185383.9713
8201	P.C.	1+47.25	423113.2813	1185522.4255
8203	P.T.	2+26.44	423048.6336	1185552.1915
8204	POE	3+51.02	422932.0602	1185508.2548

HWY. 336 E

POINT NAME	TYPE	STATION	NORTHING	EASTING
8300	POB	200+00.00	430356.1503	1182204.2918
8301	P.C.	200+52.07	430385.7485	1182247.1316
8303	P.T.	202+26.02	430424.2956	1182412.5845
8304	POE	203+32.85	430408.6684	1182518.2688

HWY. 9 / 330

POINT NAME	TYPE	STATION	NORTHING	EASTING
8400	POB	298+30.80	434900.1530	1180646.5225
8401	P.C.	303+48.51	435046.5835	1181143.0947
8403	P.T.	305+85.16	435070.2821	1181377.1857
8404	P.C.	308+06.53	435051.4951	1181597.7547
8406	P.T.	309+20.21	435048.0406	1181711.3240
8407	POE	312+36.65	435055.6830	1182027.6739

LYNCH DR.

POINT NAME	TYPE	STATION	NORTHING	EASTING
8500	POB	1000+00.00	436548.8826	1180340.4643
8501	P.C.	1001+19.41	436496.6291	1180447.8322
8503	P.T.	1003+11.51	436461.7691	1180634.4084
8504	POE	1003+68.56	436466.5282	1180691.2631

TERRY LN.

POINT NAME	TYPE	STATION	NORTHING	EASTING
8600	POB	400+00.00	436796.5401	1180663.7568
8601	P.C.	401+25.43	436774.2525	1180787.1880
8603	P.T.	402+84.45	436785.4406	1180944.1652
8604	POE	403+94.50	436820.1565	1181048.5927

OLD HWY. 9

POINT NAME	TYPE	STATION	NORTHING	EASTING
8700	POB	450+00.00	444919.2471	1178576.8605
8705	P.C.	451+04.22	445021.4754	1178597.1306
8707	P.T.	452+60.09	445110.1428	1178705.2107
8708	POE	453+00.18	445108.5555	1178749.6276

R080423.DGN 3/13/2017

SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		080423	111	517

(2) SURVEY CONTROL DETAILS

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

10-10-17

MOT - STAGE 1 SHIFT 1

POINT NAME	TYPE	STATION	NORTHING	EASTING
8810	P.C.	10+00.00	415610.6572	1187489.3456
8812	P.T.	10+91.52	415680.8802	1187430.6564
8813	P.C.	17+58.50	416185.7613	1186994.8151
8815	P.T.	18+66.64	416268.9301	1186925.7150

MOT - STAGE 1 SHIFT 2

POINT NAME	TYPE	STATION	NORTHING	EASTING
8830	POB	20+00.00	427247.7790	1185479.0573
8831	P.C.	21+18.12	427365.6469	1185471.2923
8833	P.T.	22+73.23	427518.0000	1185443.9694

MOT - STAGE 1 SHIFT 3

POINT NAME	TYPE	STATION	NORTHING	EASTING
8920	POB	40+00.00	432109.7360	1181891.7592
8921	POE	52+82.87	433389.6083	1181804.1161

MOT - STAGE 1 SHIFT 4

POINT NAME	TYPE	STATION	NORTHING	EASTING
8860	P.C.	60+00.00	434439.4754	1181351.0430
8862	P.T.	60+44.70	434480.4540	1181333.2170
8863	P.C.	69+01.91	435277.1066	1180116.7412
8865	P.T.	69+71.92	435342.0142	1180990.4959
8866	P.C.	74+37.29	435772.3761	1180813.4129
8868	P.T.	74+83.46	435815.6280	1180797.2750

MOT - STAGE 1 SHIFT 5

POINT NAME	TYPE	STATION	NORTHING	EASTING
8890	P.C.	80+00.00	436742.3431	1180661.7196
8892	P.T.	80+63.86	436806.1389	1180659.4115
8893	P.C.	81+43.02	436885.2927	1180660.1882
8895	P.T.	82+05.93	436948.1396	1880657.9576

MOT - STAGE 2 SHIFT 1

POINT NAME	TYPE	STATION	NORTHING	EASTING
8800	POB	100+00.00	409315.0321	1192284.8952
8802	P.C.	104+66.51	409626.6681	1191937.7389
8803	P.T.	105+02.83	409651.6202	1191911.3635

MOT - STAGE 2 SHIFT 2

POINT NAME	TYPE	STATION	NORTHING	EASTING
8820	P.C.	110+00.00	415786.0939	1187312.7748
8822	P.T.	110+74.38	415846.3027	1187269.1632
8823	P.C.	113+27.35	416058.8267	1187131.9431
8825	P.T.	114+01.73	416119.0356	1187088.3315

MOT - STAGE 2 SHIFT 3

POINT NAME	TYPE	STATION	NORTHING	EASTING
8840	P.C.	120+00.00	427166.1366	1185504.1778
8842	P.T.	122+39.14	427398.8538	1185454.4993
8843	POE	124+40.42	427585.5861	1185379.3777

MOT - STAGE 2 SHIFT 4

POINT NAME	TYPE	STATION	NORTHING	EASTING
8850	P.C.	130+00.00	432243.3070	1181864.0878
8852	P.T.	130+73.02	432316.2919	1181863.3713
8853	P.C.	133+28.66	432571.6948	1181874.2978
8855	P.T.	134+01.68	432644.6798	1181873.5813

MOT - STAGE 2 SHIFT 5

POINT NAME	TYPE	STATION	NORTHING	EASTING
8870	POB	140+00.00	434496.6001	1181364.0798
8871	P.C.	142+22.84	434693.1357	1181259.0486
8873	P.T.	142+94.46	434757.9259	1181228.6070

MOT - STAGE 2 SHIFT 6

POINT NAME	TYPE	STATION	NORTHING	EASTING
8880	P.C.	145+00.00	435272.6932	1181018.4065
8882	P.T.	145+54.96	435324.3452	1180999.6628
8883	P.C.	146+45.44	435410.5467	1180972.1891
8885	P.T.	147+00.40	435462.1987	1180953.4455

MOT - STAGE 2 SHIFT 7

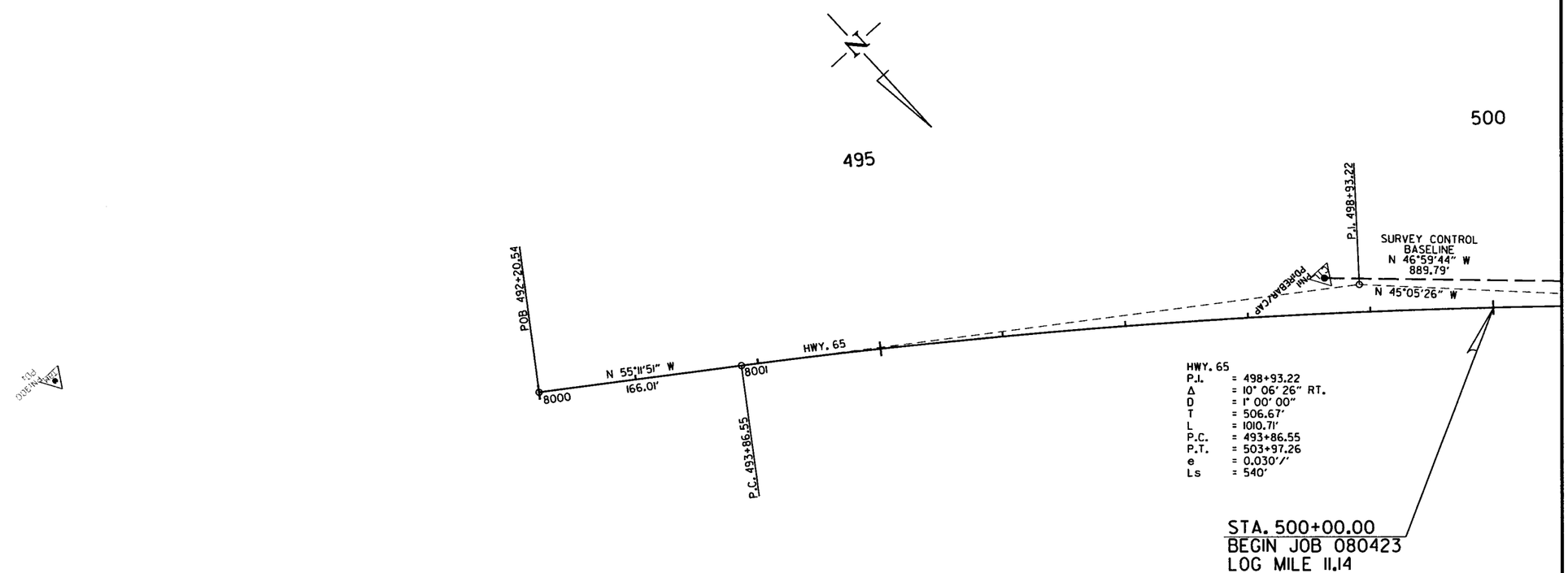
POINT NAME	TYPE	STATION	NORTHING	EASTING
8900	P.C.	150+00.00	436722.2987	1180687.0037
8902	P.T.	151+08.09	436828.8807	1180669.6970
8903	P.C.	152+19.13	436936.7695	1180643.4329
8905	P.T.	153+27.21	437043.3515	1180626.1262

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.		080423	112	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



SURVEY CONTROL DETAILS

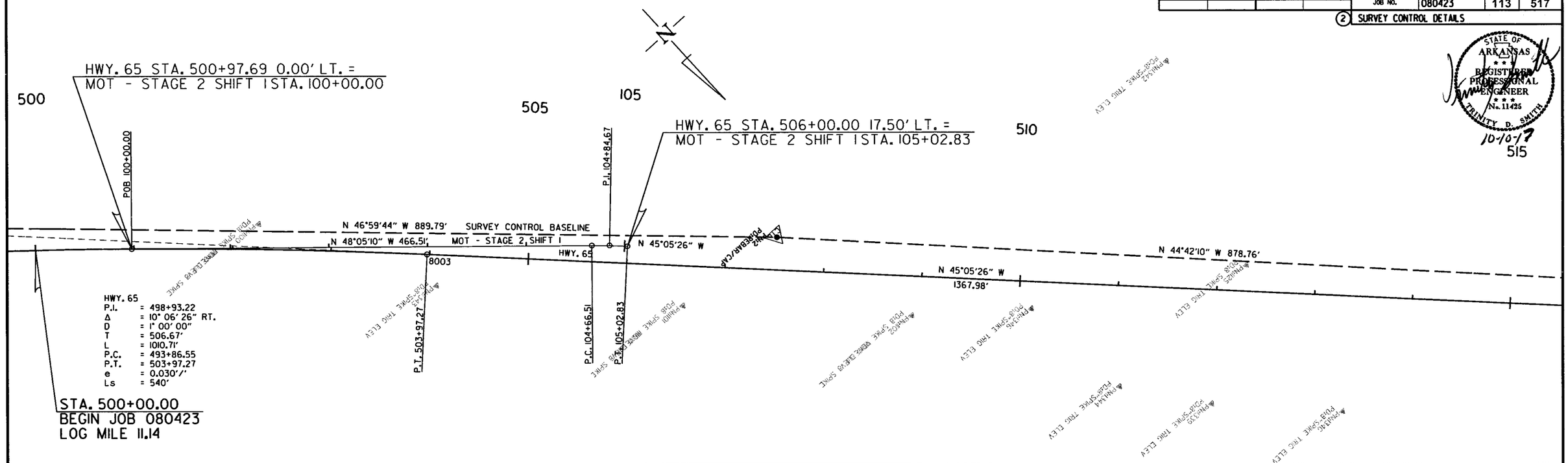
3/13/2017

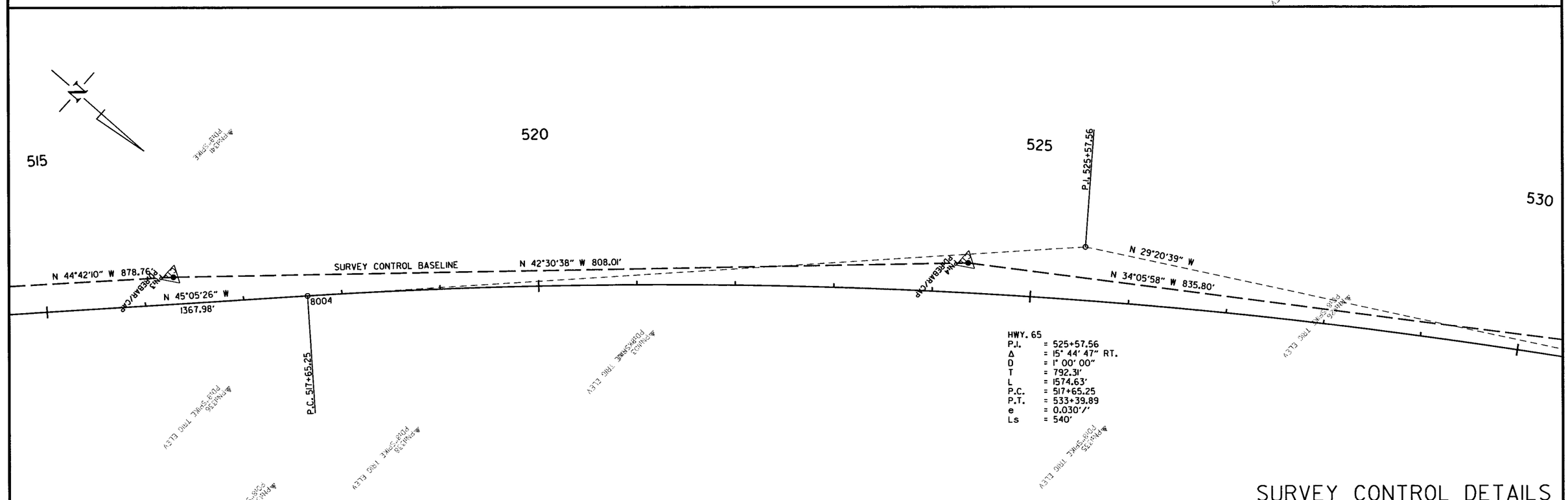
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	113	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17





SURVEY CONTROL DETAILS

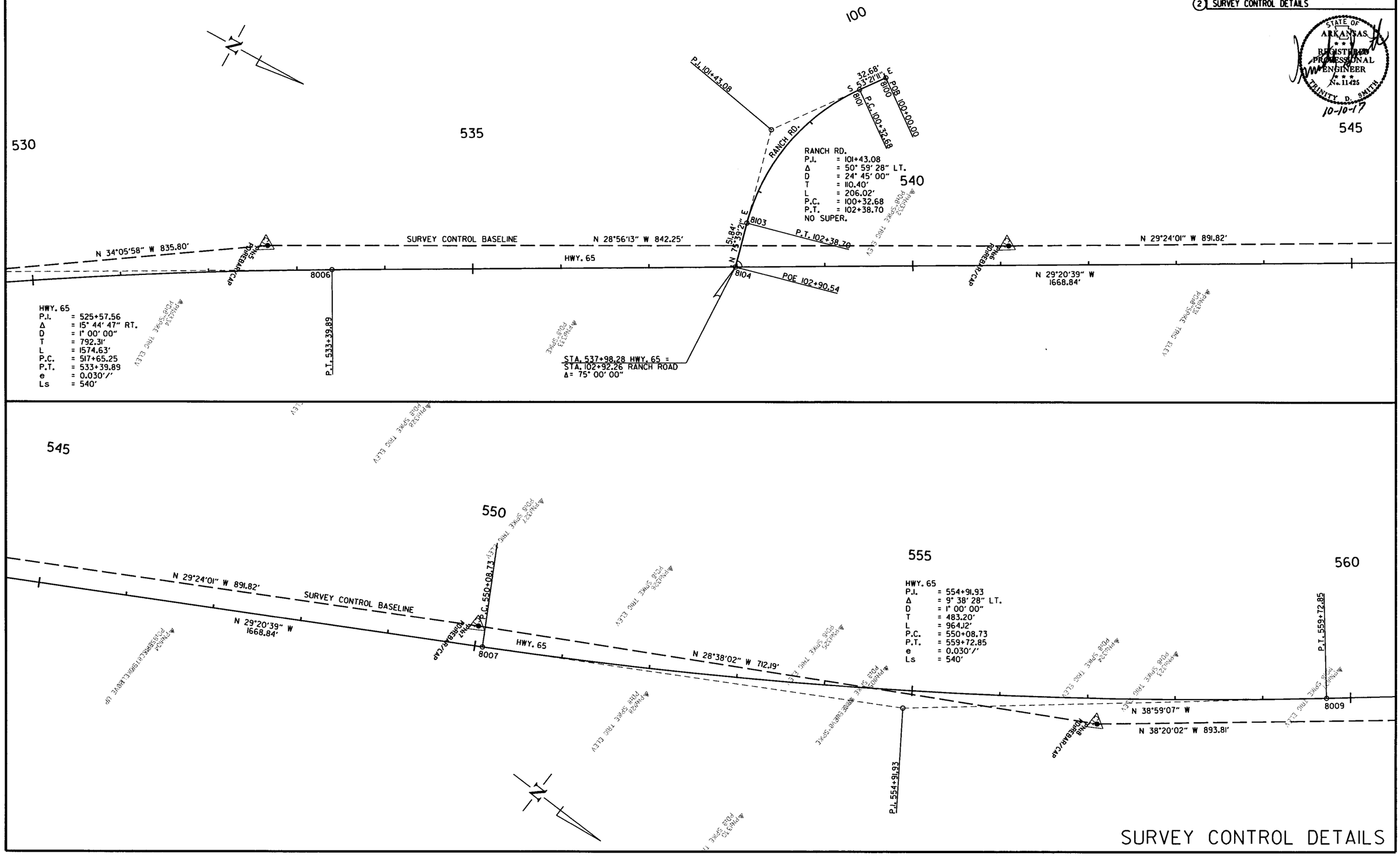
3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	114	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



SURVEY CONTROL DETAILS

3/13/2017

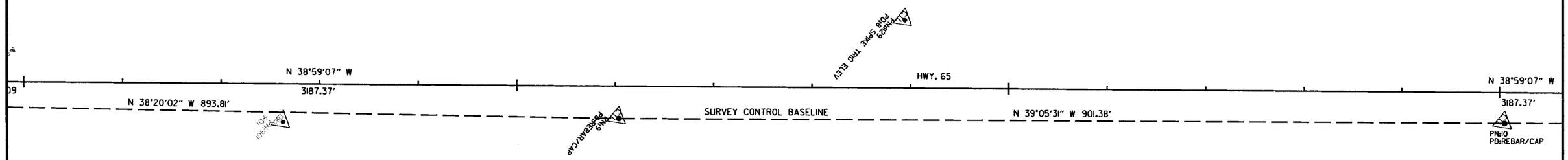
R080423.DGN

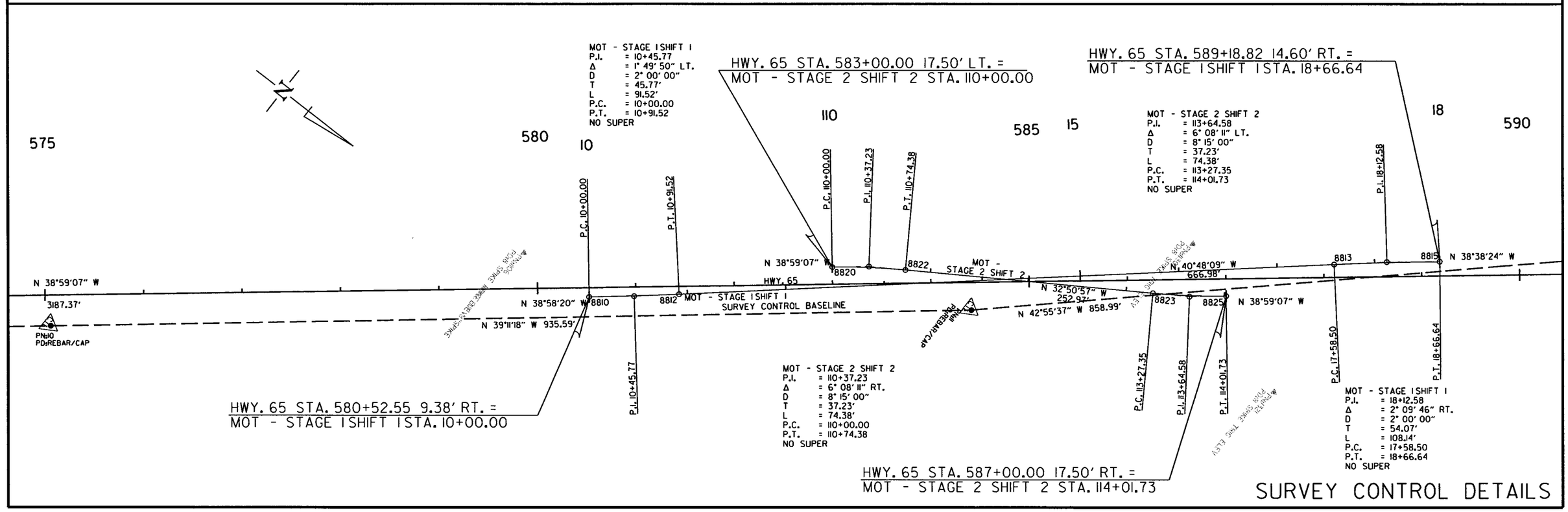
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	115	517

(2) SURVEY CONTROL DETAILS

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

10-10-17





SURVEY CONTROL DETAILS

3/13/2017

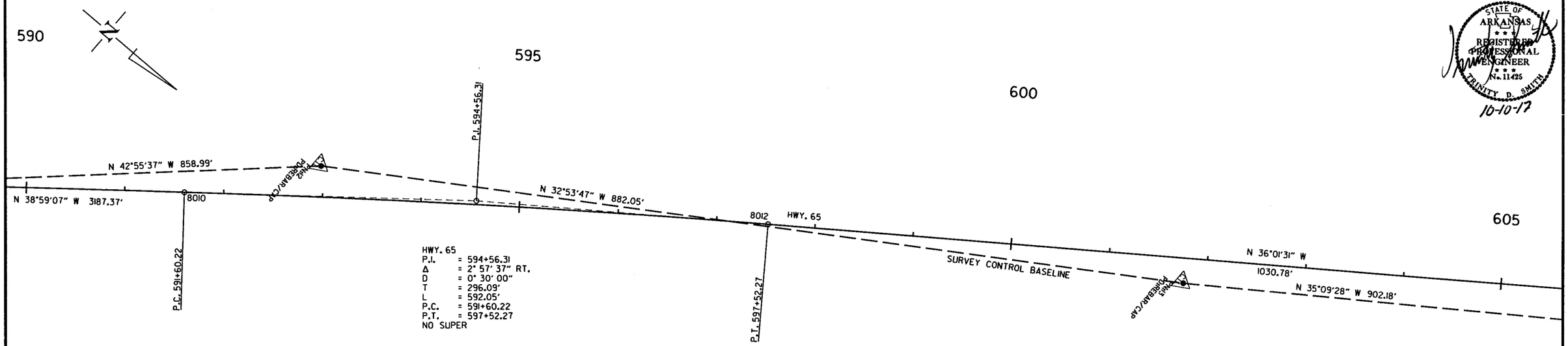
R080423.DGN

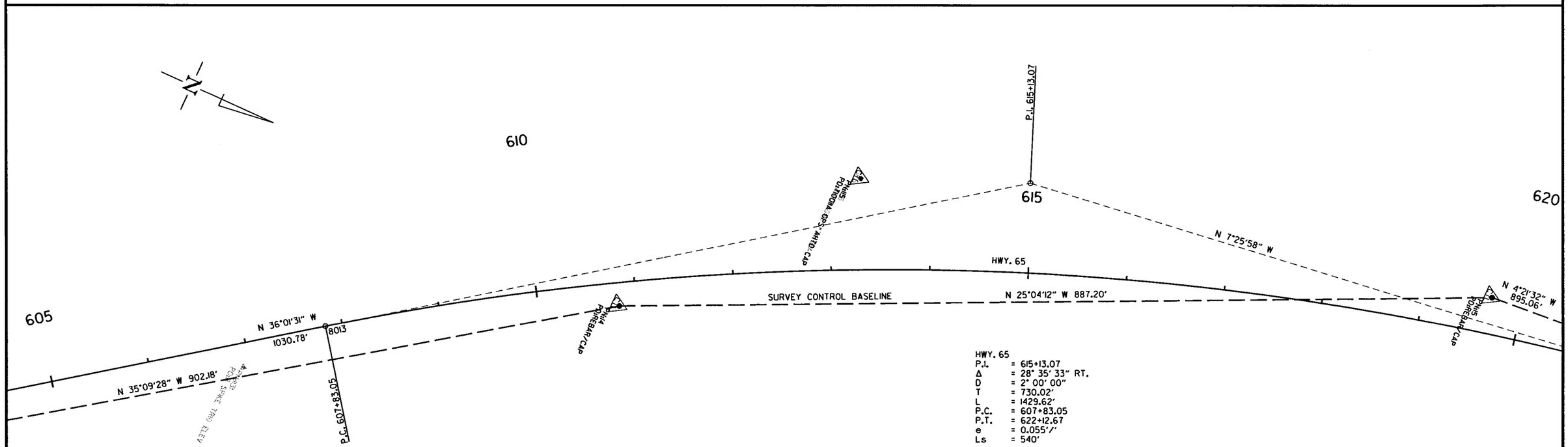
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	116	517

(2) SURVEY CONTROL DETAILS

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

10-10-17





SURVEY CONTROL DETAILS

3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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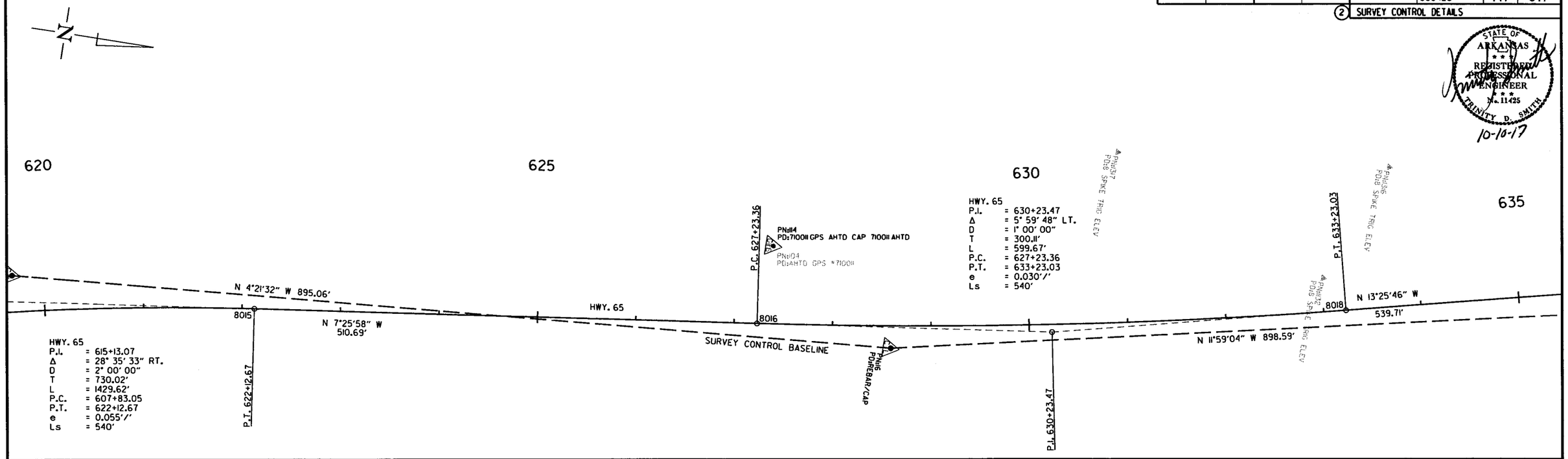
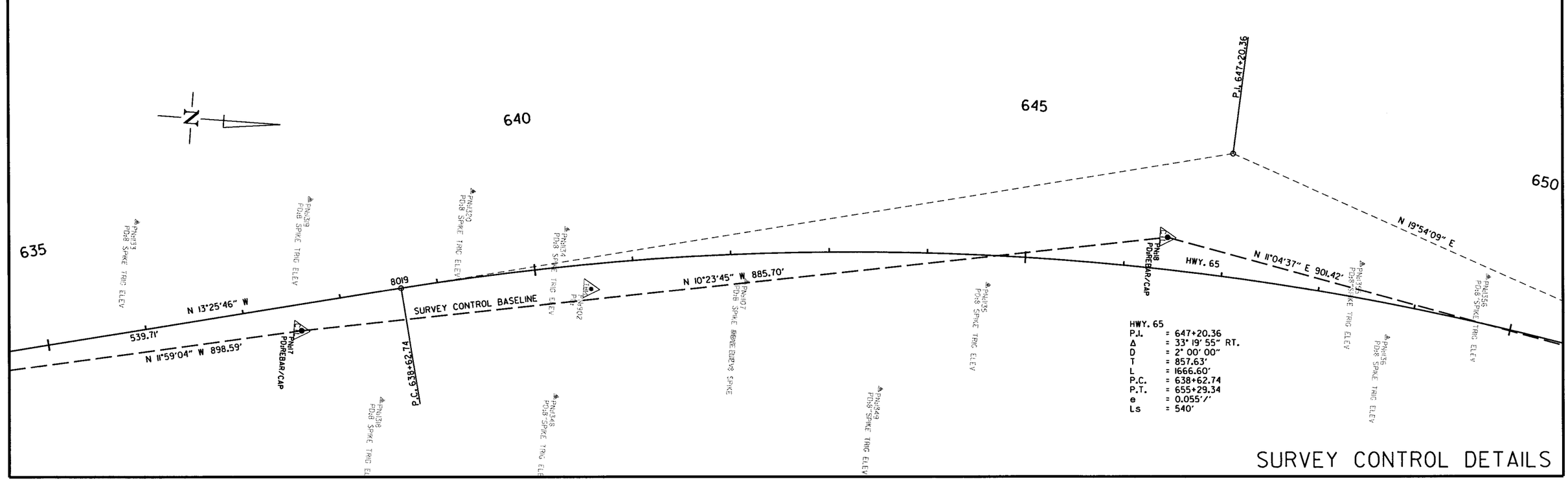
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17





SURVEY CONTROL DETAILS

3/13/2017

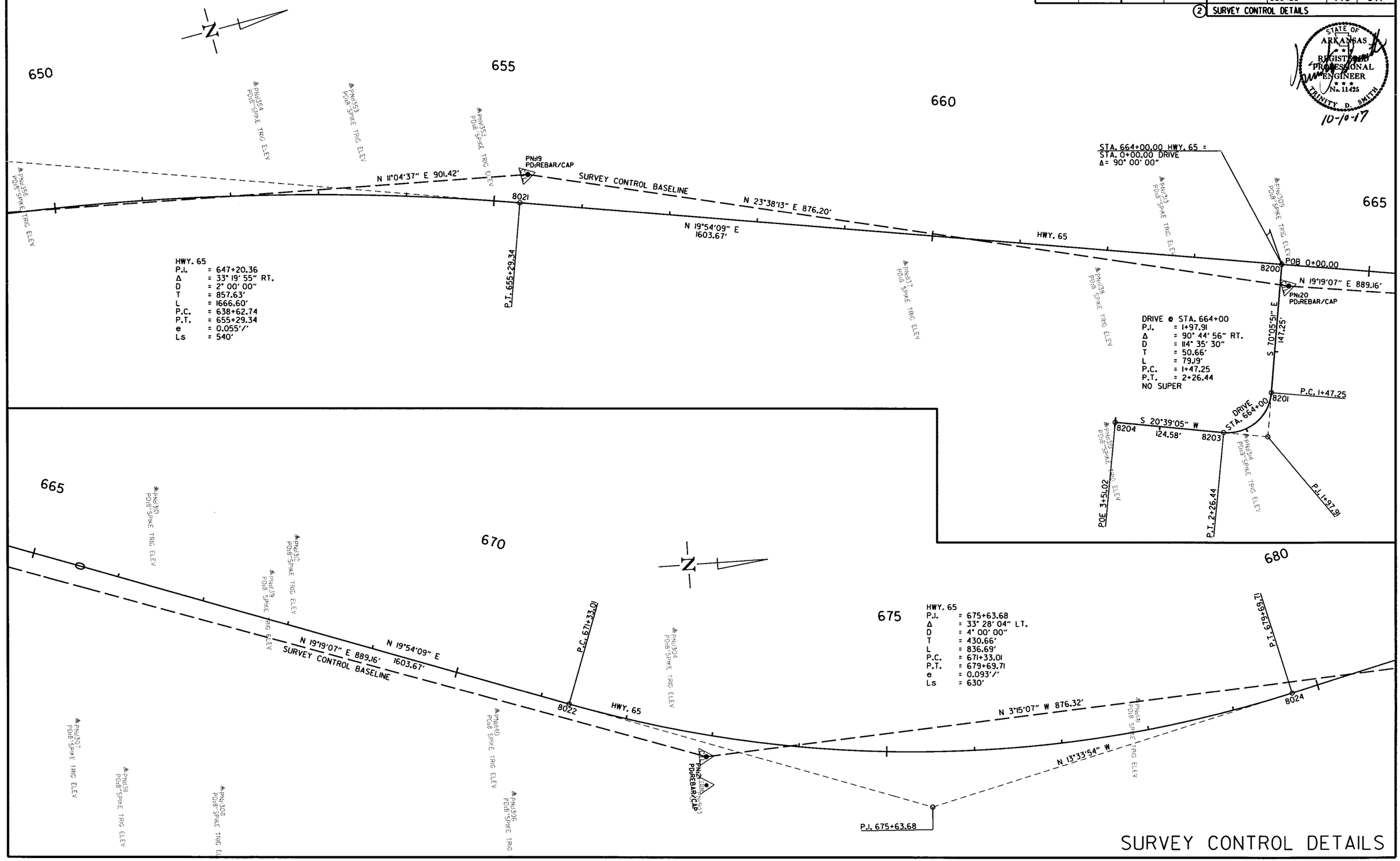
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	118	517

(2) SURVEY CONTROL DETAILS

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

10-10-17



SURVEY CONTROL DETAILS

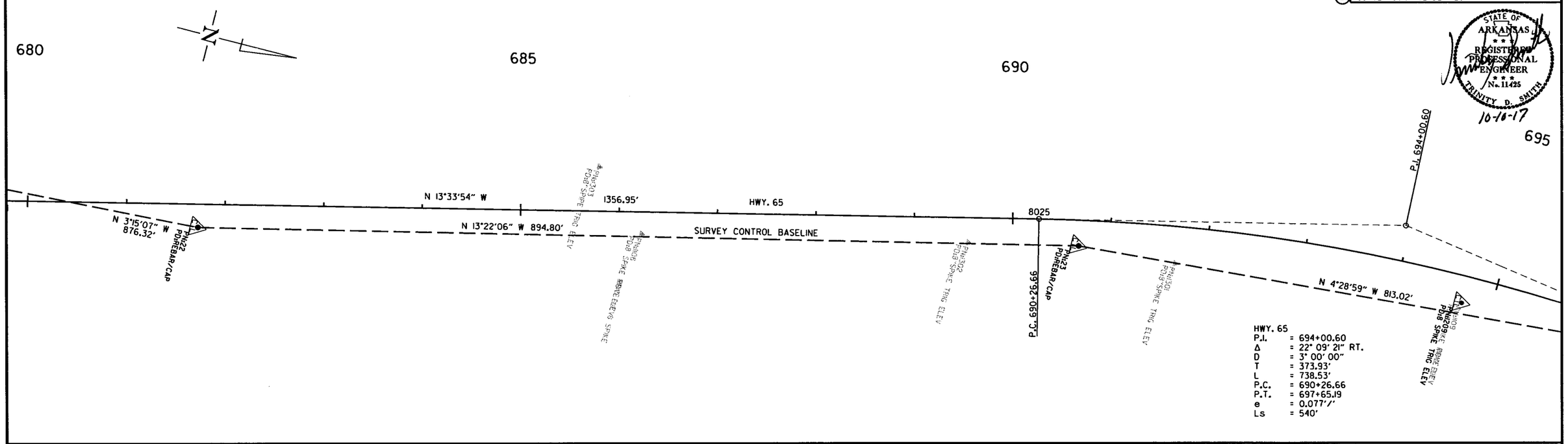
3/13/2017

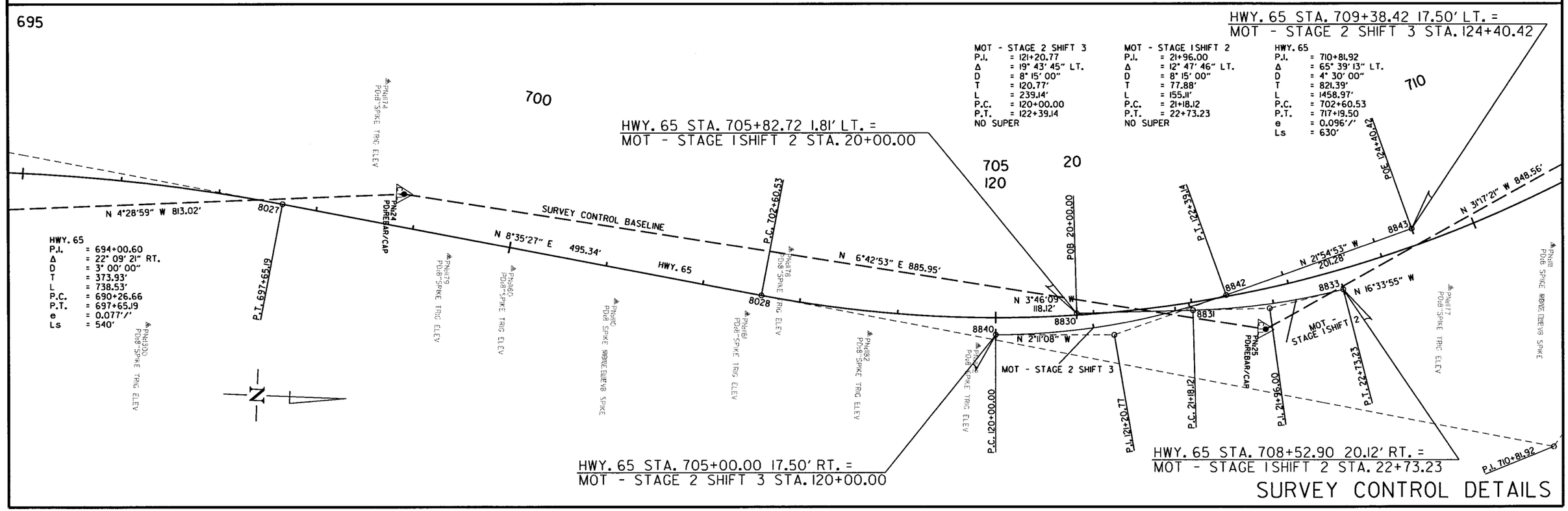
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	119	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-16-17





SURVEY CONTROL DETAILS

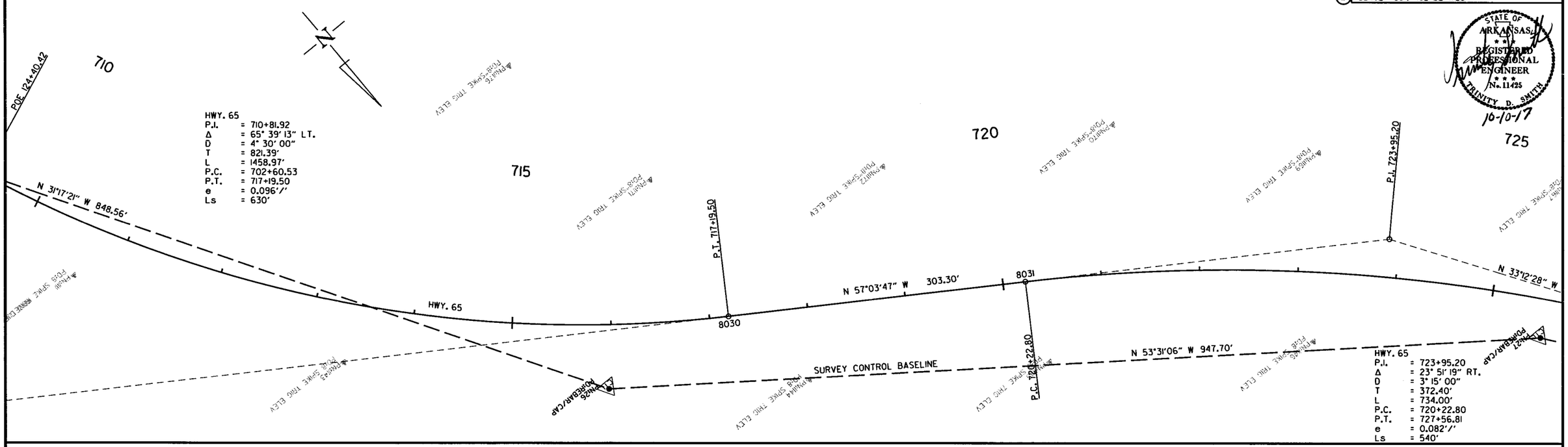
3/13/2017

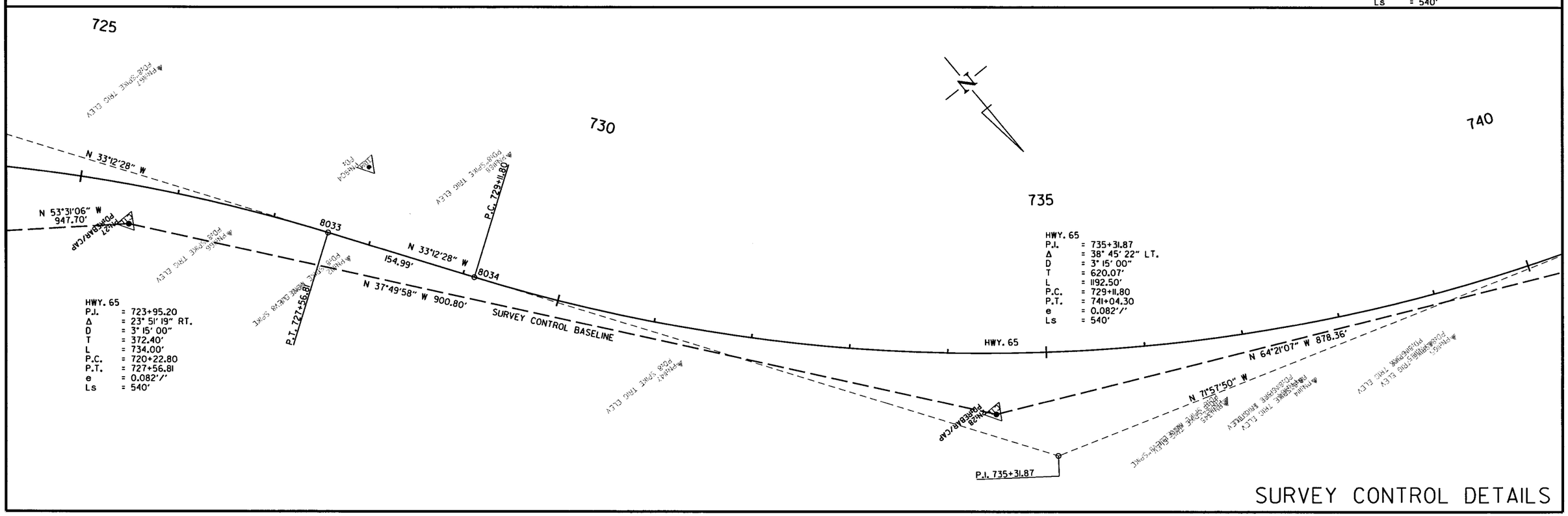
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	120	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17





SURVEY CONTROL DETAILS

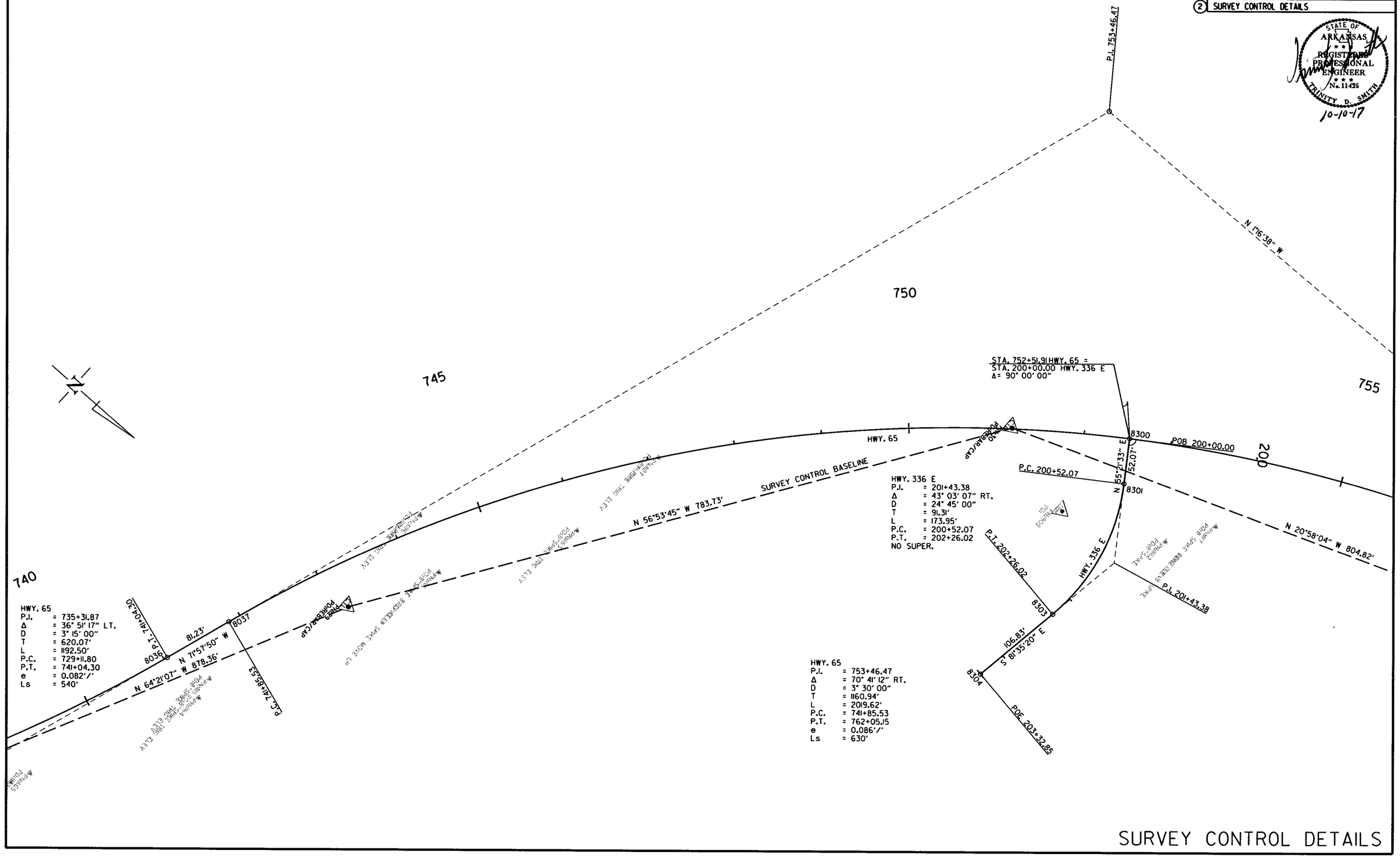
3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	121	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



SURVEY CONTROL DETAILS

3/13/2017

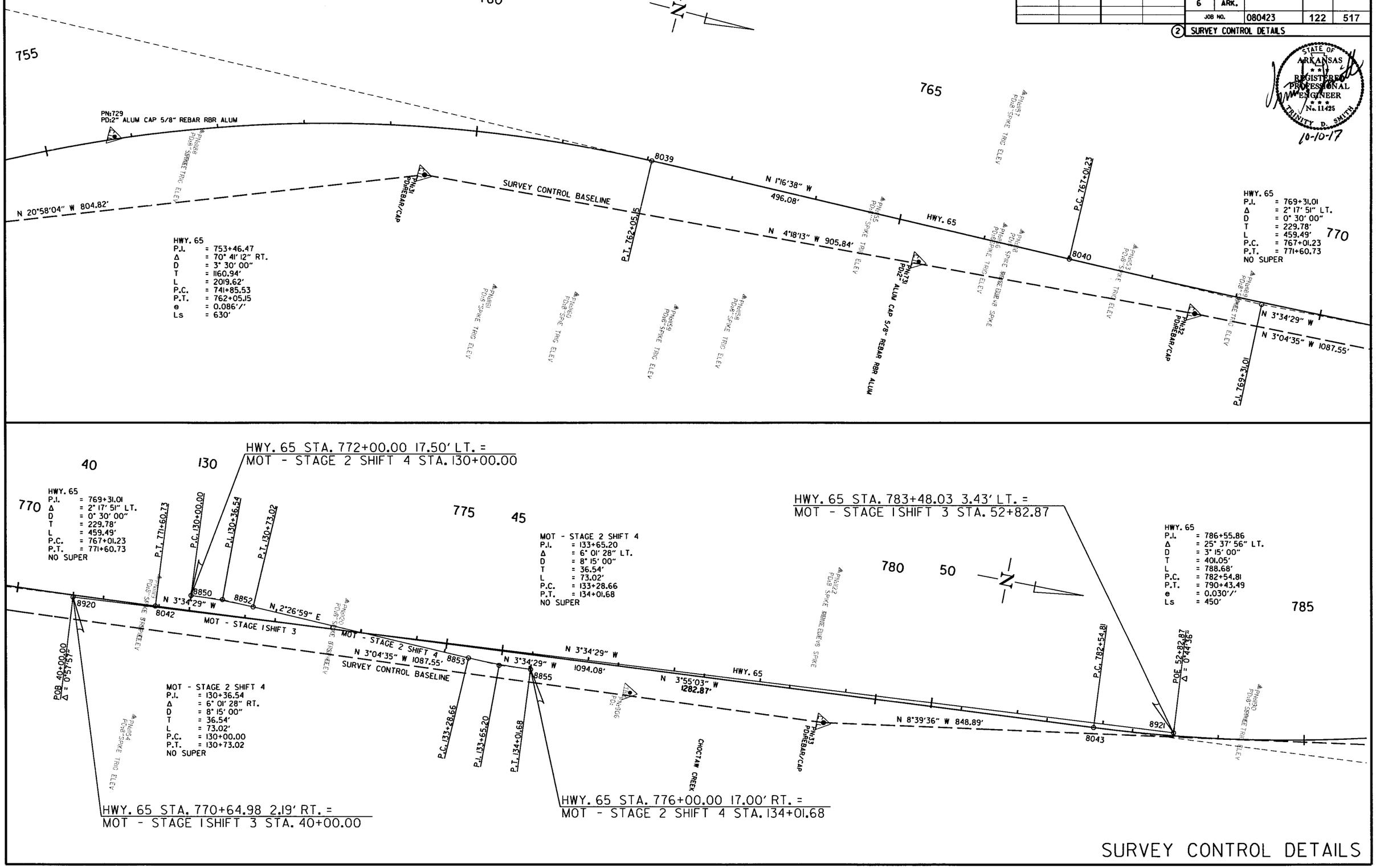
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	122	517

(2) SURVEY CONTROL DETAILS

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

10-10-17



SURVEY CONTROL DETAILS

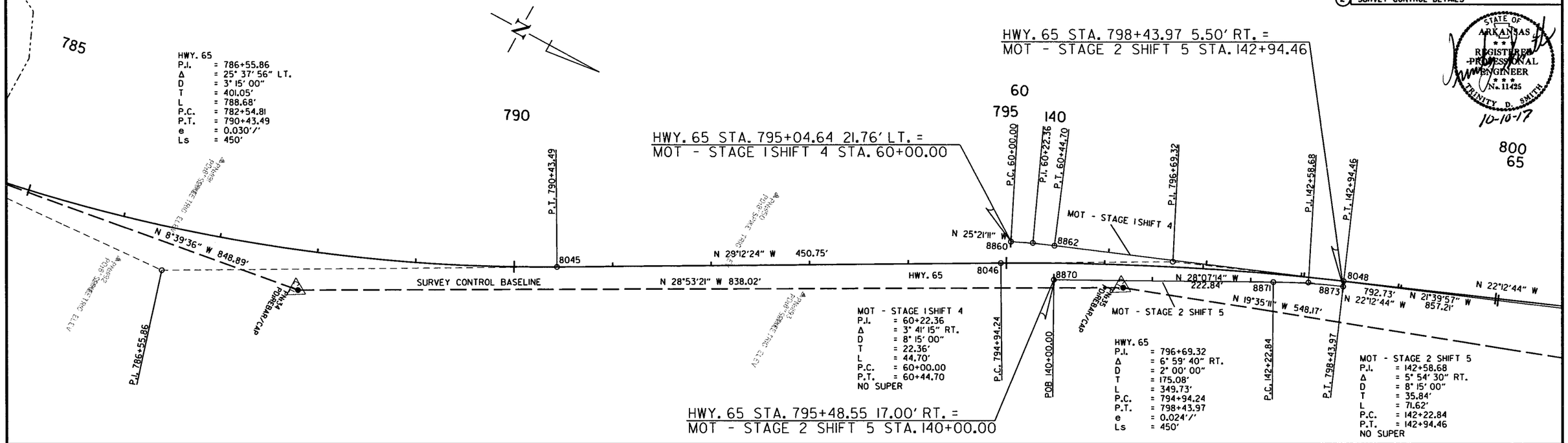
3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	123	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



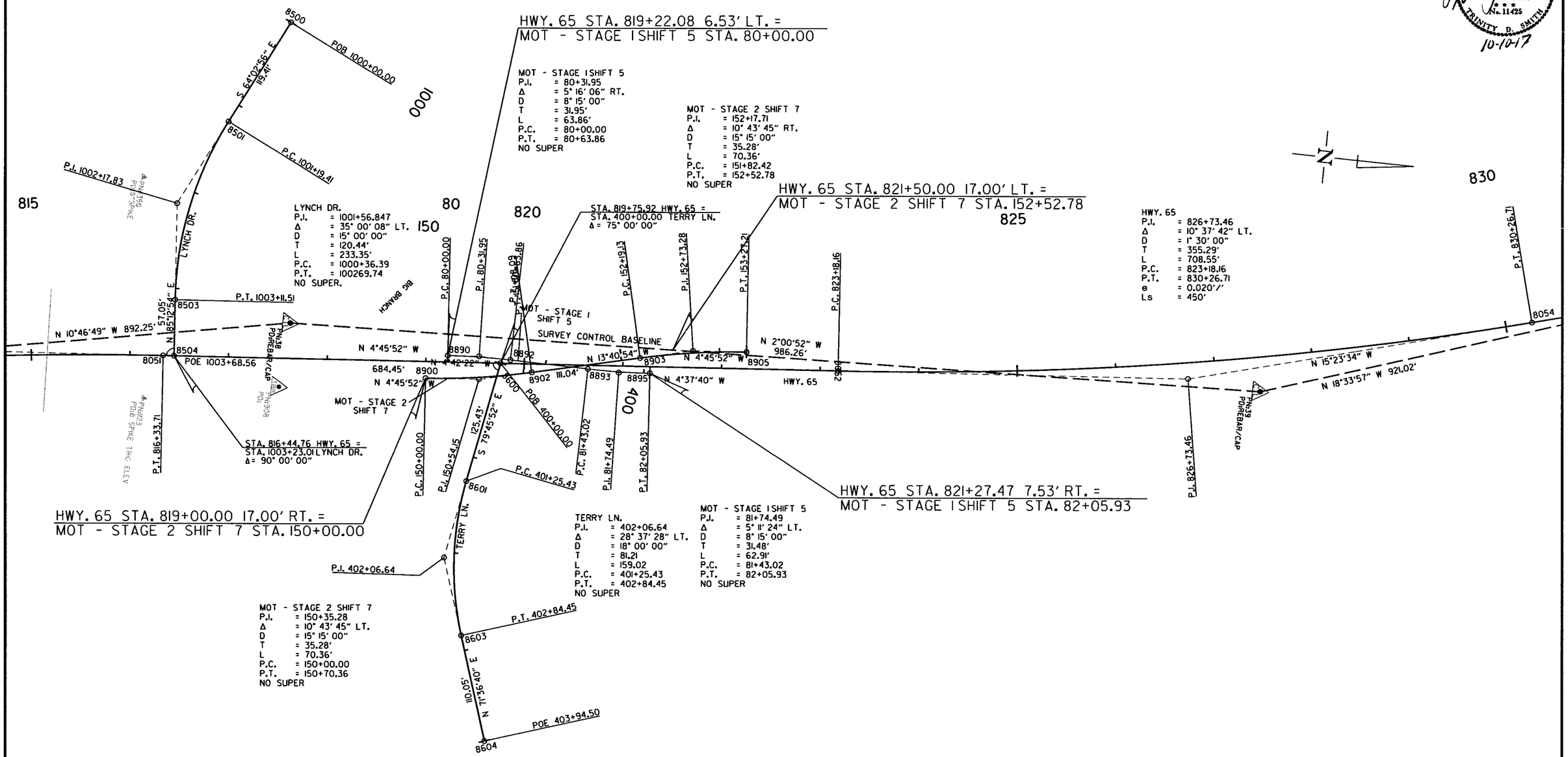
3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	124	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



SURVEY CONTROL DETAILS

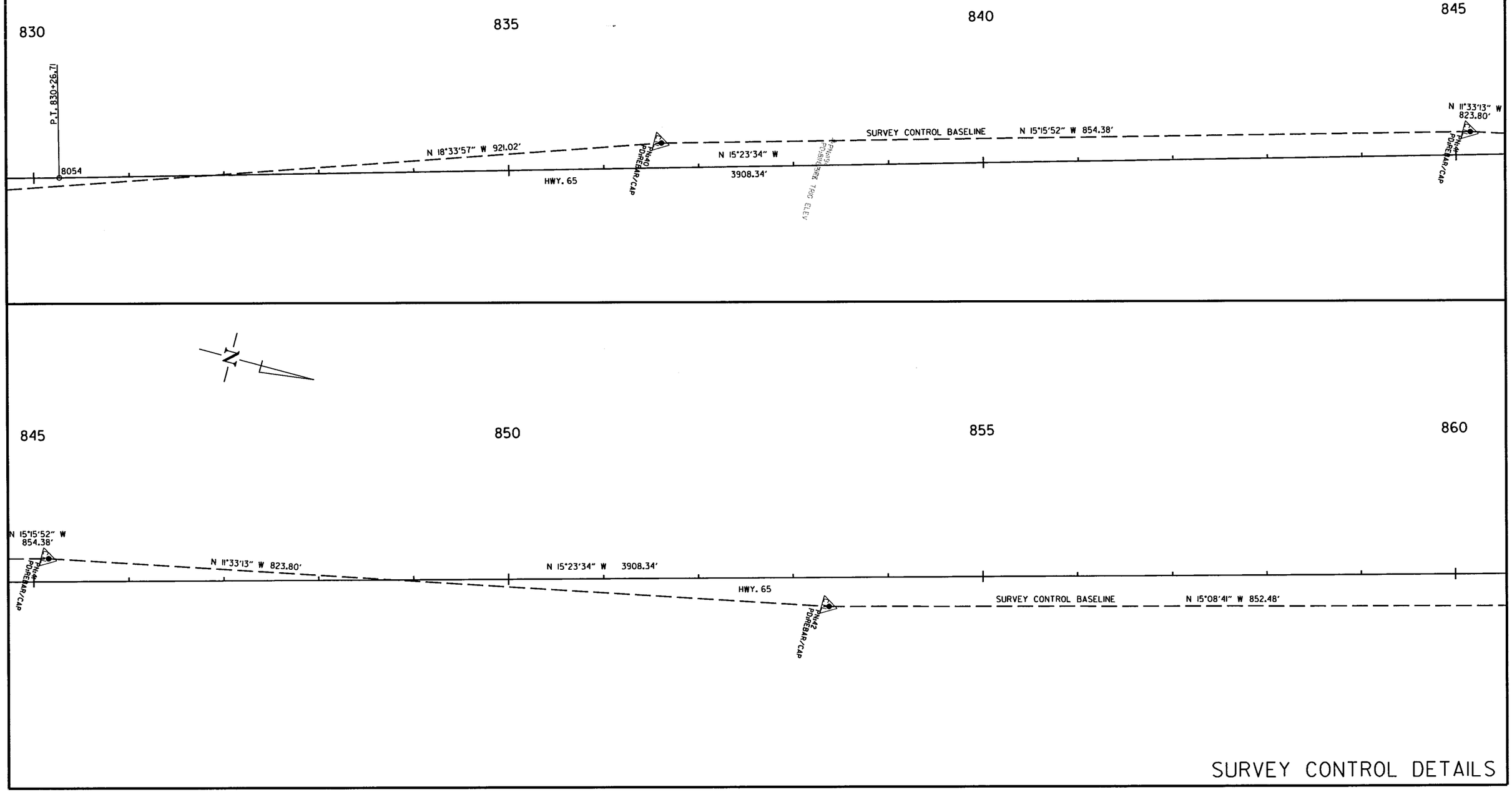
3/13/2017

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	125	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



SURVEY CONTROL DETAILS

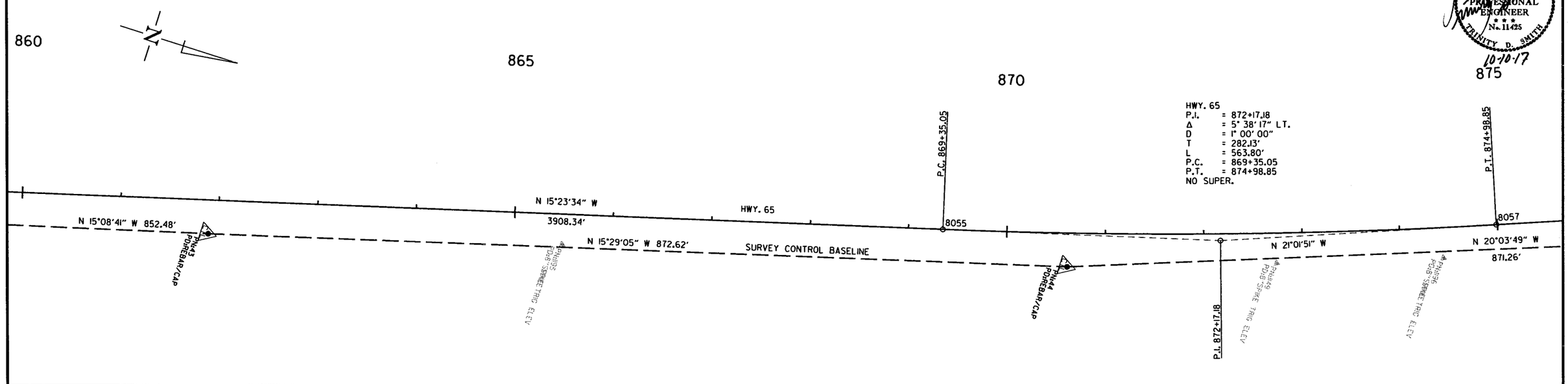
3/13/2017

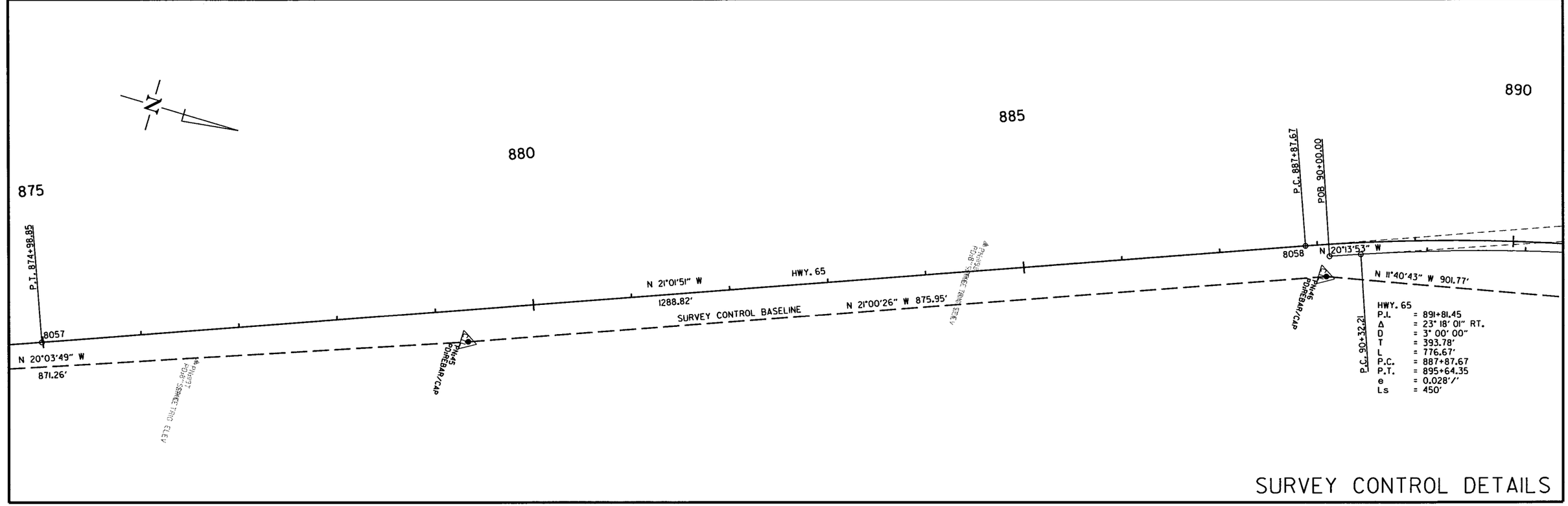
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	126	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17





SURVEY CONTROL DETAILS

3/13/2017

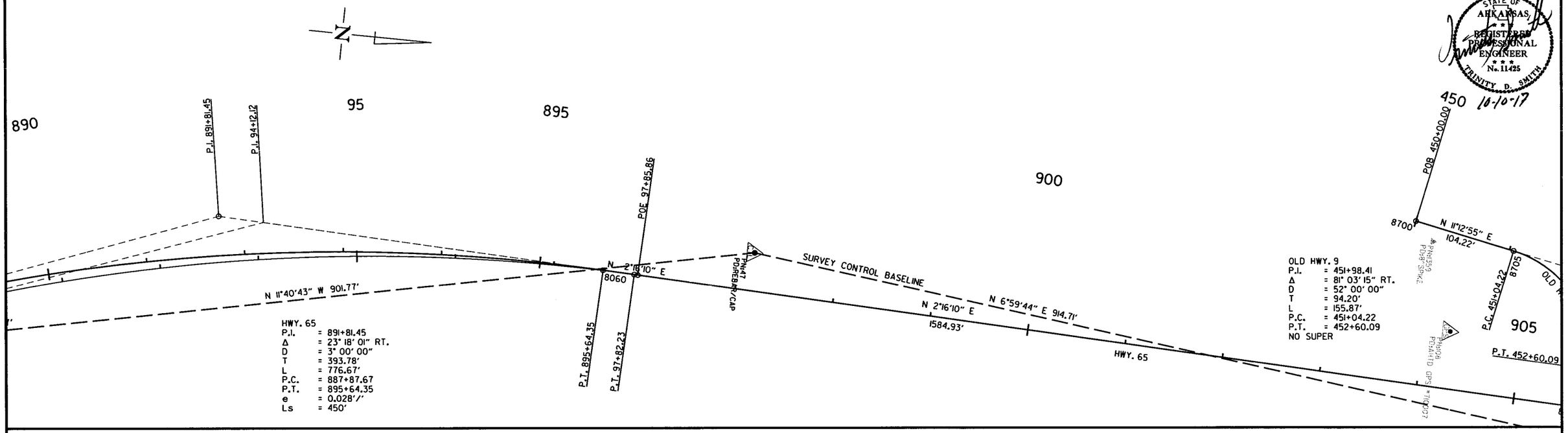
R080423.DGN

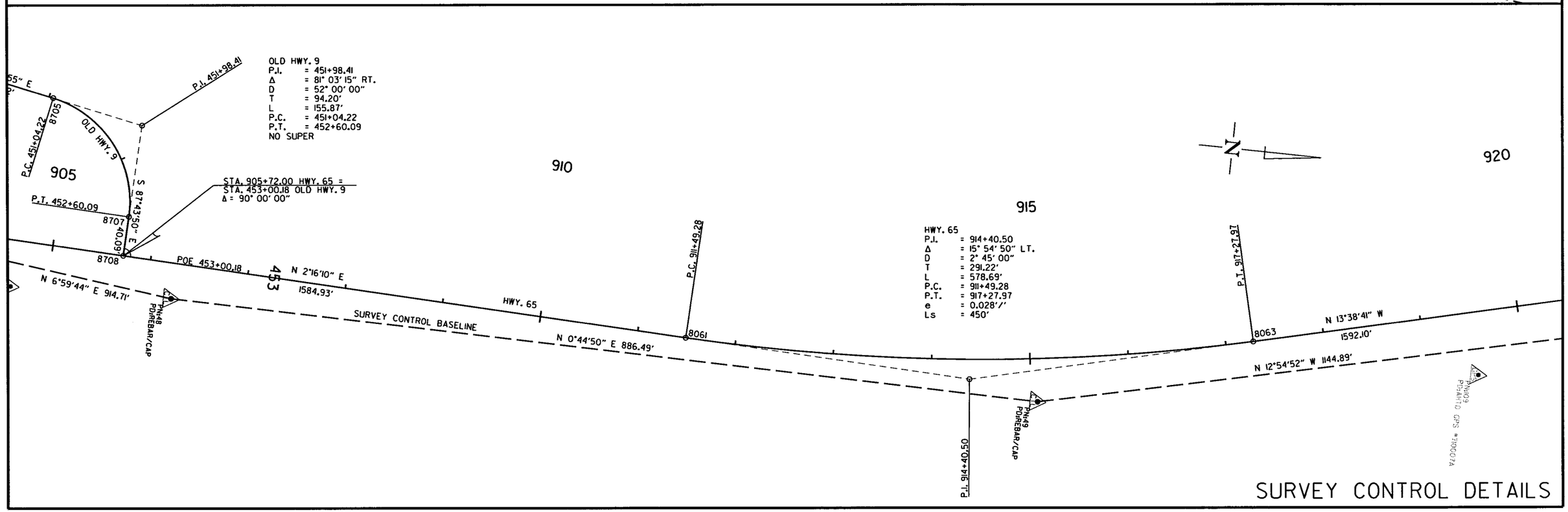
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	127	517

(2) SURVEY CONTROL DETAILS

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

10-10-17





SURVEY CONTROL DETAILS

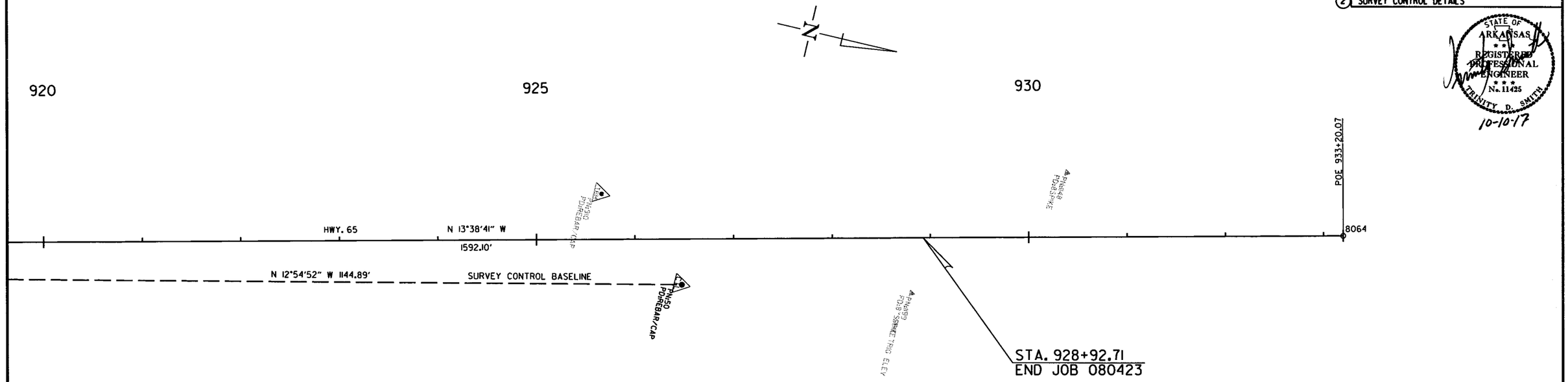
3/13/2017

R080423.DGN

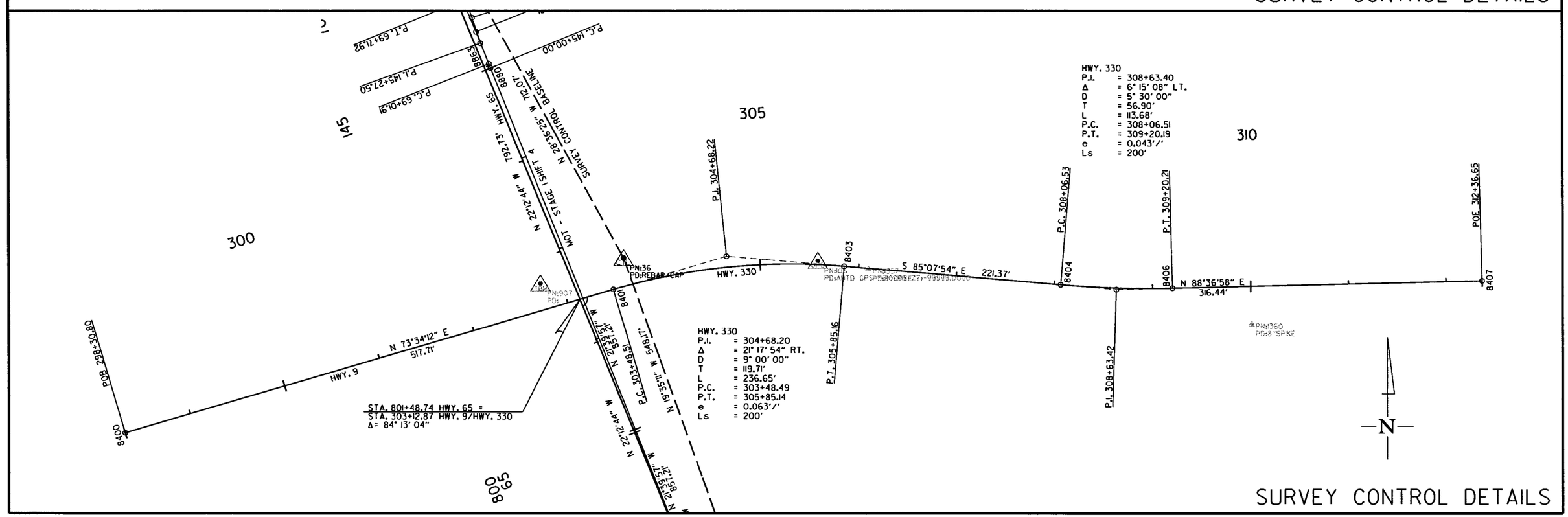
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	128	517

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

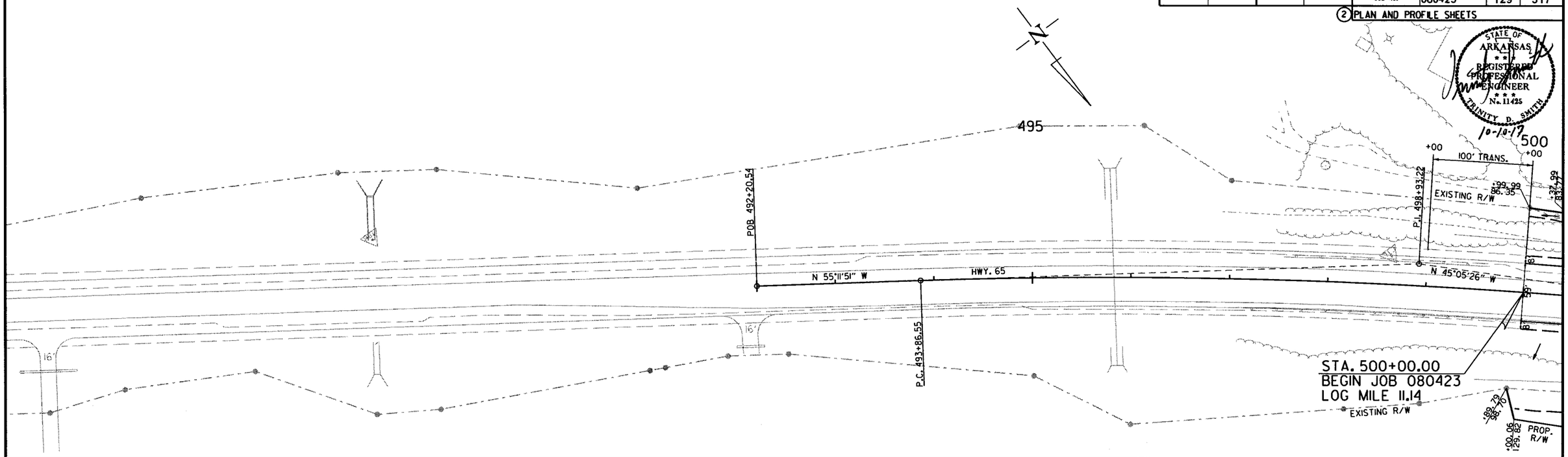
3/13/2017

R080423.DGN

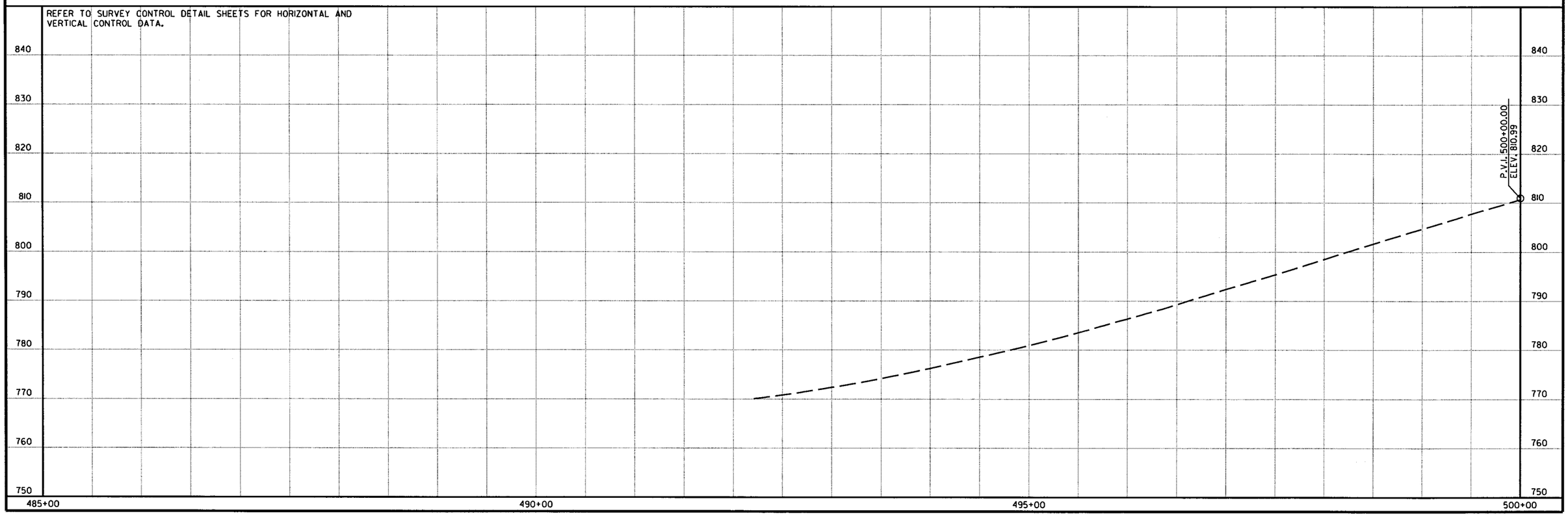
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	129	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



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

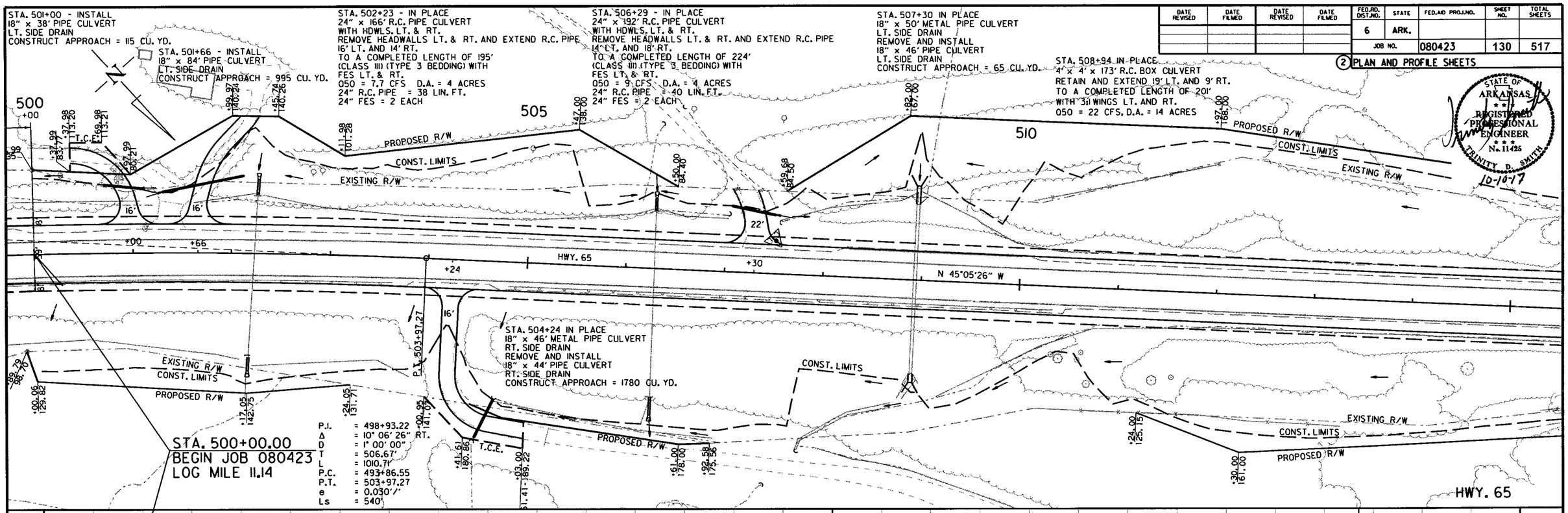


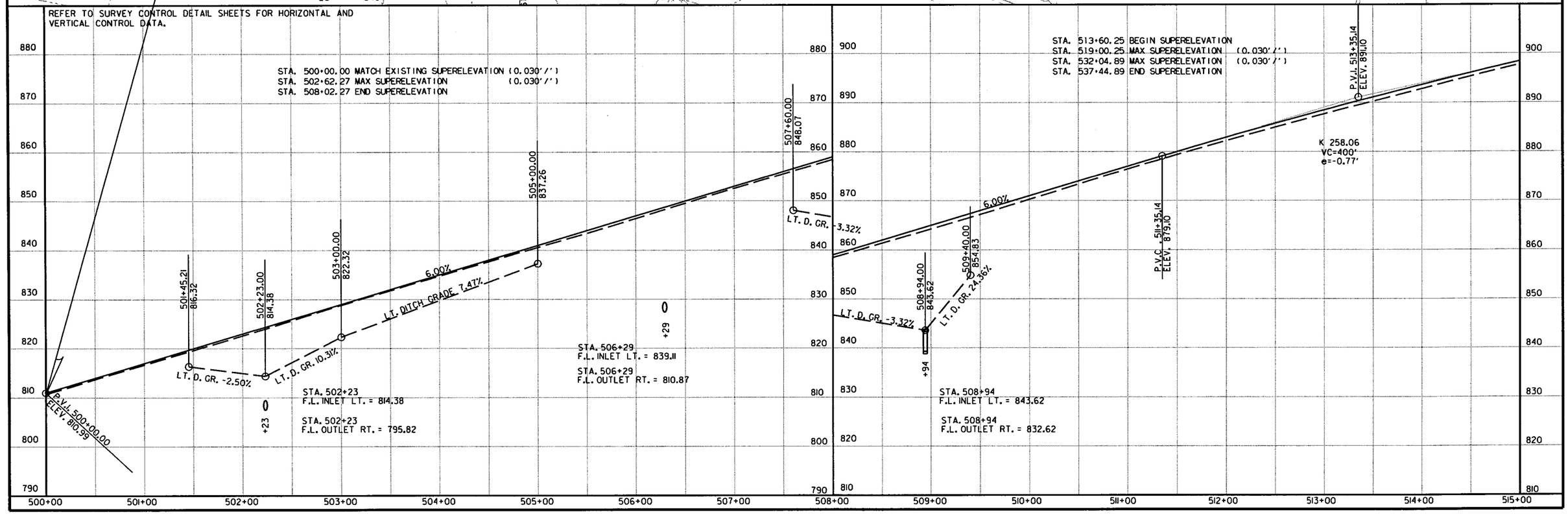
R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	130	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17





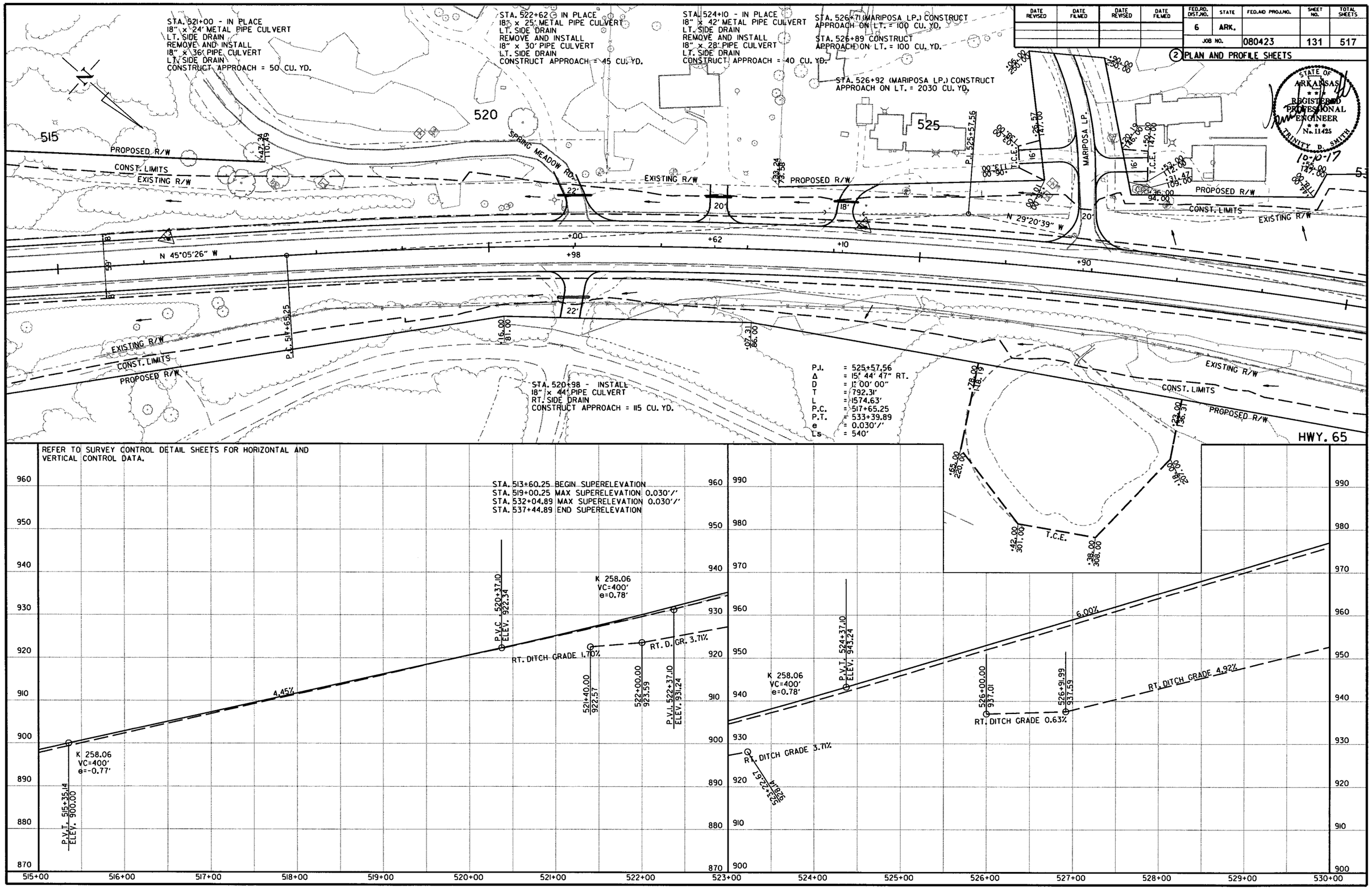
1/4/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	131	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



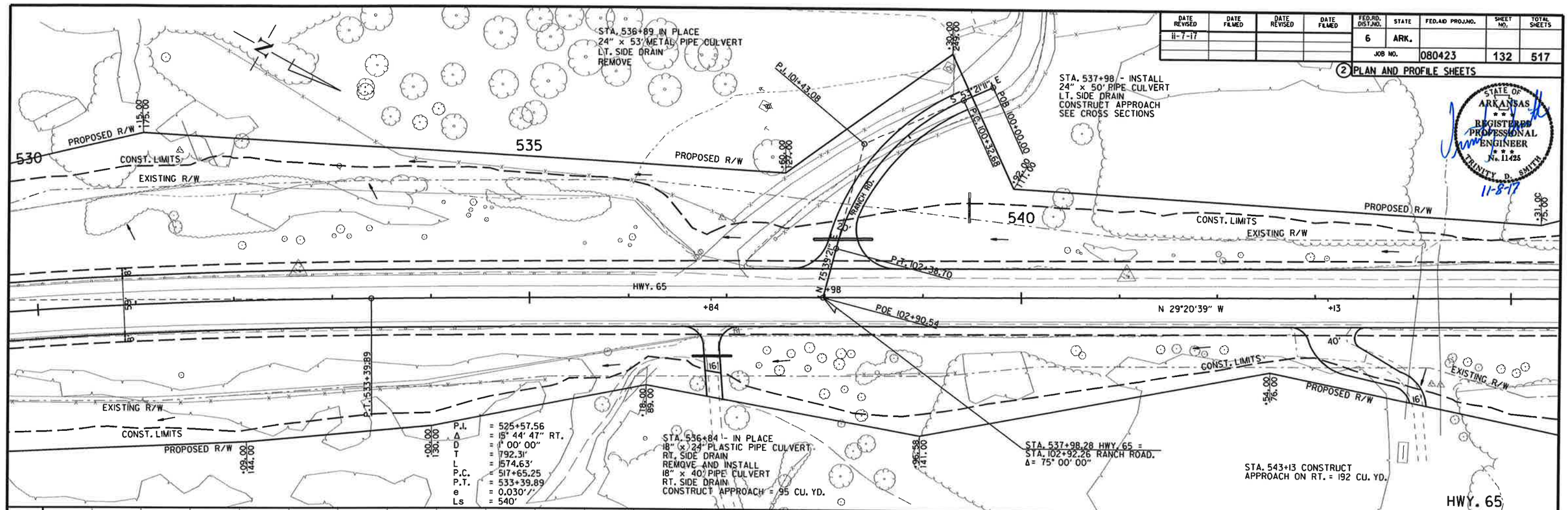
1/4/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-7-17				6	ARK.			
				JOB NO.		080423	132	517

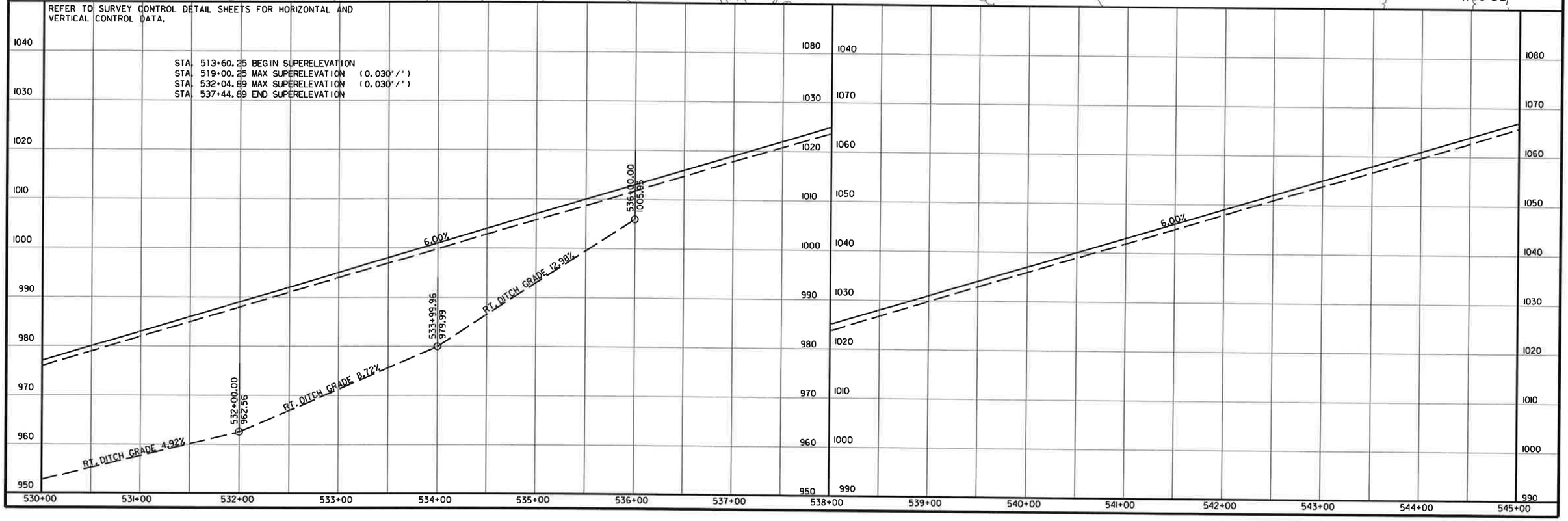
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-8-17



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

STA. 513+60.25 BEGIN SUPERELEVATION
STA. 519+00.25 MAX SUPERELEVATION (0.030'/')
STA. 532+04.89 MAX SUPERELEVATION (0.030'/')
STA. 537+44.89 END SUPERELEVATION

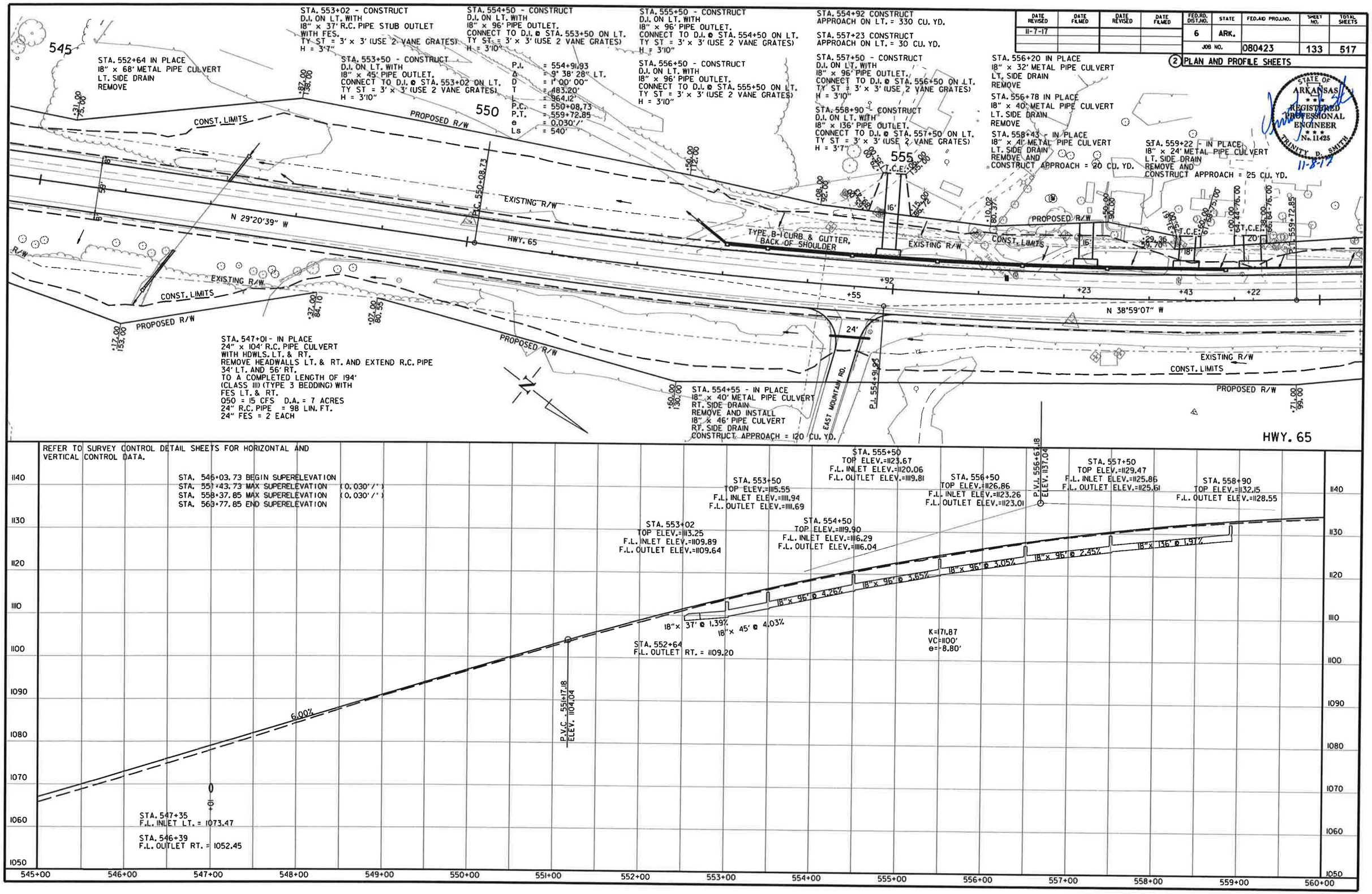


R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-7-17				6	ARK.			
				JOB NO.		080423	133	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 11-8-17



R080423.DGN 1/4/2013

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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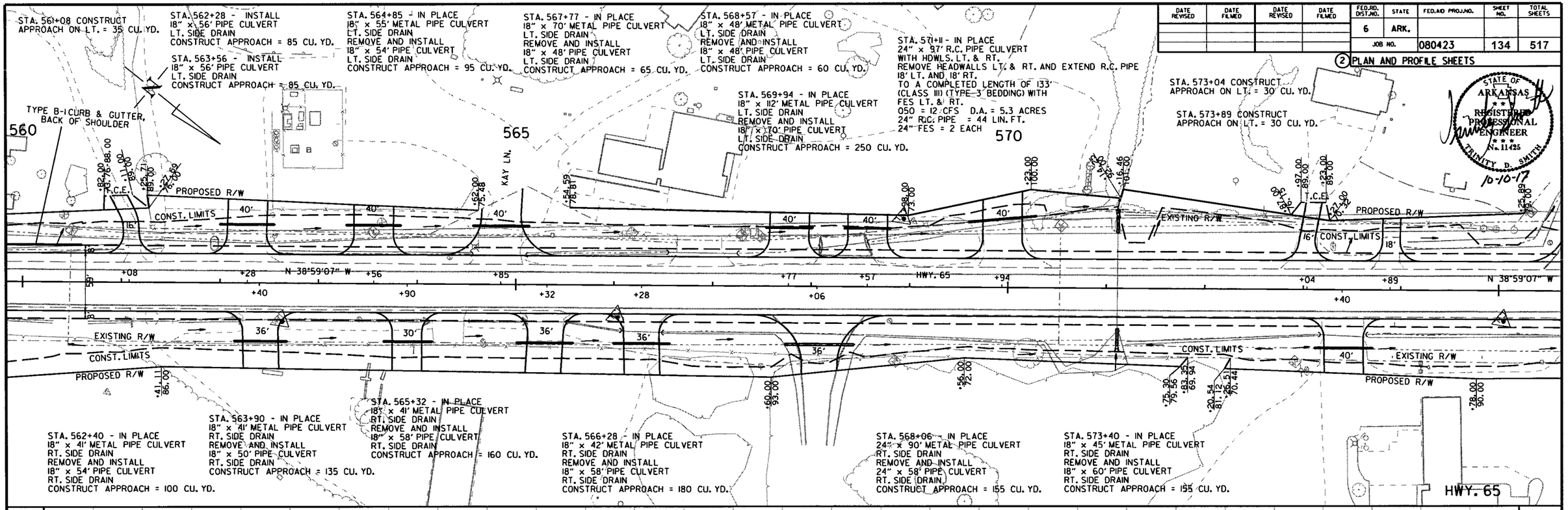
				JOB NO.		080423	134	517

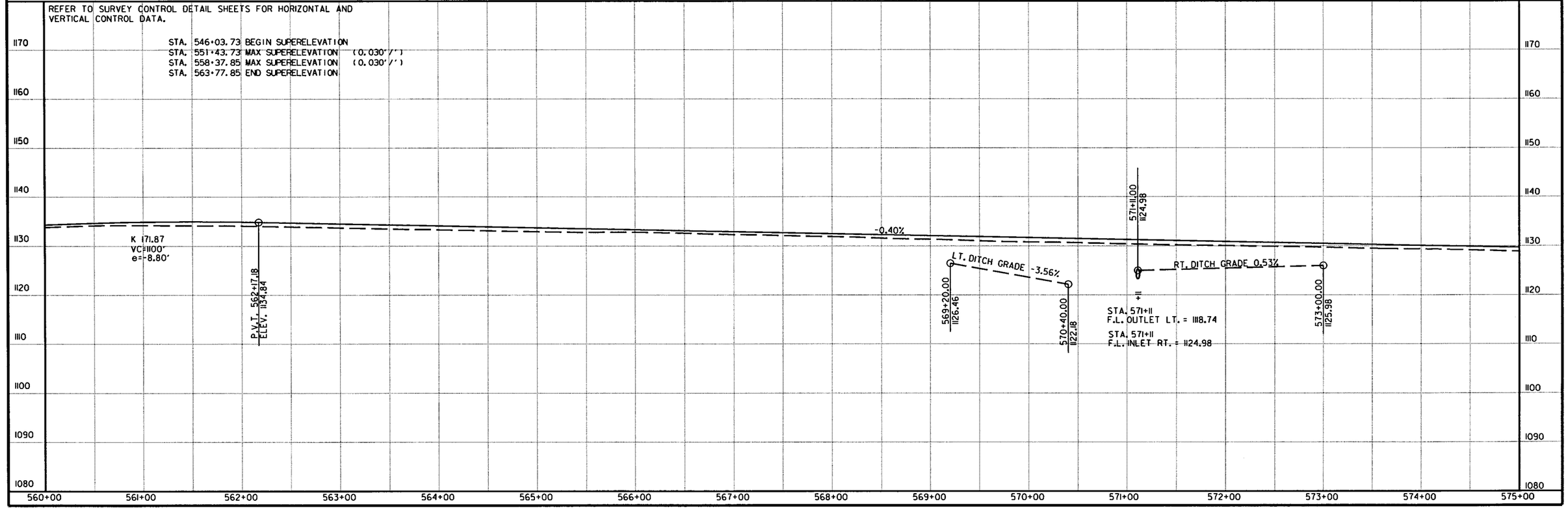
2 PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



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

STA. 546+03.73 BEGIN SUPERELEVATION
STA. 551+43.73 MAX SUPERELEVATION (0.030'/')
STA. 558+37.85 MAX SUPERELEVATION (0.030'/')
STA. 563+77.85 END SUPERELEVATION



R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	080423		135	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 575+80 CONSTRUCT
APPROACH ON LT. = 185 CU. YD.

STA. 578+30 - IN PLACE
24" x 109' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. & RT. AND EXTEND R.C. PIPE
14' LT. AND 16' RT.
TO A COMPLETED LENGTH OF 139'
(CLASS III (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50 = 12 CFS D.A. = 5.5 ACRES
24" R.C. PIPE = 38 LIN. FT.
24" FES = 2 EACH

STA. 581+93 - INSTALL
18" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 110 CU. YD.

STA. 585+15 - IN PLACE
24" x 27' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YD.

STA. 588+45 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YD.

STA. 580+16 - INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YD.

STA. 589+90 - IN PLACE
18" x 31' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YD.

575 580 585

QUATTLEBAUM RD.

PROPOSED R/W
EXISTING R/W
CONST. LIMITS

N 38°59'07" W

HWY. 65

STA. 575+98 - IN PLACE
18" x 57' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 60' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 115 CU. YD.

STA. 579+76 - IN PLACE
18" x 29' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 110 CU. YD.

STA. 581+54 - IN PLACE
18" x 37' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 110 CU. YD.

STA. 582+73 - IN PLACE
18" x 31' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 105 CU. YD.

STA. 587+55 CONSTRUCT
APPROACH ON RT. = 50 CU. YD.

STA. 588+80 - IN PLACE
24" x 24' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 665 CU. YD.

T.C.E.

HWY. 65

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

-0.40%

RT. DITCH GRADE -2.83%

RT. DITCH GRADE 0.82%

-3.85%

577+00.00 1123.02

578+30.00 1119.34

+30

P.V.C. 578+55.27 ELEV. 1128.29

580+80.00 1121.40

P.V.I. 581+55.27 ELEV. 1127.09

K 173.91
VC=600'
e=-2.59'

P.V.T. 584+55.27 ELEV. 1115.54

P.V.C. 585+54.47 ELEV. 1111.72

K 1435.48
VC=2225'
e=4.31'

STA. 578+30
F.L. INLET RT. = 1119.34

STA. 578+30
F.L. OUTLET LT. = 1116.20

1160 1150 1140 1130 1120 1110 1100 1090 1080 1070

575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00 583+00 584+00 585+00 586+00 587+00 588+00 589+00 590+00

R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	136	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 591+38 - IN PLACE
18" x 50' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YD.

STA. 593+75 - IN PLACE
18" x 30' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YD.

STA. 595+27 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YD.

STA. 596+55 - IN PLACE
18" x 69' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 110 CU. YD.

STA. 600+12 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YD.

STA. 604+66 CONSTRUCT
APPROACH ON LT. = 320 CU. YD.

590 595 600 605

EXISTING R/W
CONST. LIMITS
PROPOSED R/W
N 38°59'07" W
HWY. 65
N 36°01'31" W
P.C. 591+60.22
P.T. 597+52.27
T.C.E.

P.I. = 594+56.31
Δ = 2° 57' 37" RT.
D = 0° 30' 00"
T = 296.09'
L = 592.05'
P.C. = 591+60.22
P.T. = 597+52.27
NO SUPER

STA. 593+40 CONSTRUCT
APPROACH ON RT. = 205 CU. YD.

STA. 598+21 - IN PLACE
18" x 72' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 60' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 150 CU. YD.

STA. 599+36 - IN PLACE
18" x 24' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YD.

STA. 601+42 - IN PLACE
18" x 25' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YD.

STA. 604+88 - IN PLACE
18" x 41' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL @ STA. 603+52
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 170 CU. YD.

HWY. 65

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

STA. 603+78.05 BEGIN SUPERELEVATION
STA. 609+18.05 MAX SUPERELEVATION (0.055'/')
STA. 619+28.01 MAX SUPERELEVATION (0.055'/')
STA. 624+68.01 END SUPERELEVATION

LT. DITCH GRADE -9.13%
LT. DITCH GRADE -0.63%
RT. DITCH GRADE -2.29%
-3.85%
-2.30%
RT. DITCH GRADE -3.61%
RT. DITCH GRADE -2.40%
RT. DITCH GRADE -0.51%

591+40.76 1087.61
592+34.90 1079.02
594+00.00 1073.44
594+95.42 1077.39
P.V.I. 596+66.97 ELEV. 1068.89
597+00.00 1066.56
599+79.98 1056.45
604+39.70 1045.41
604+66.00 1045.27

K 1435.48
VC=2225'
e=4.31'

1100 1090 1080 1070 1060 1050 1040 1030 1020

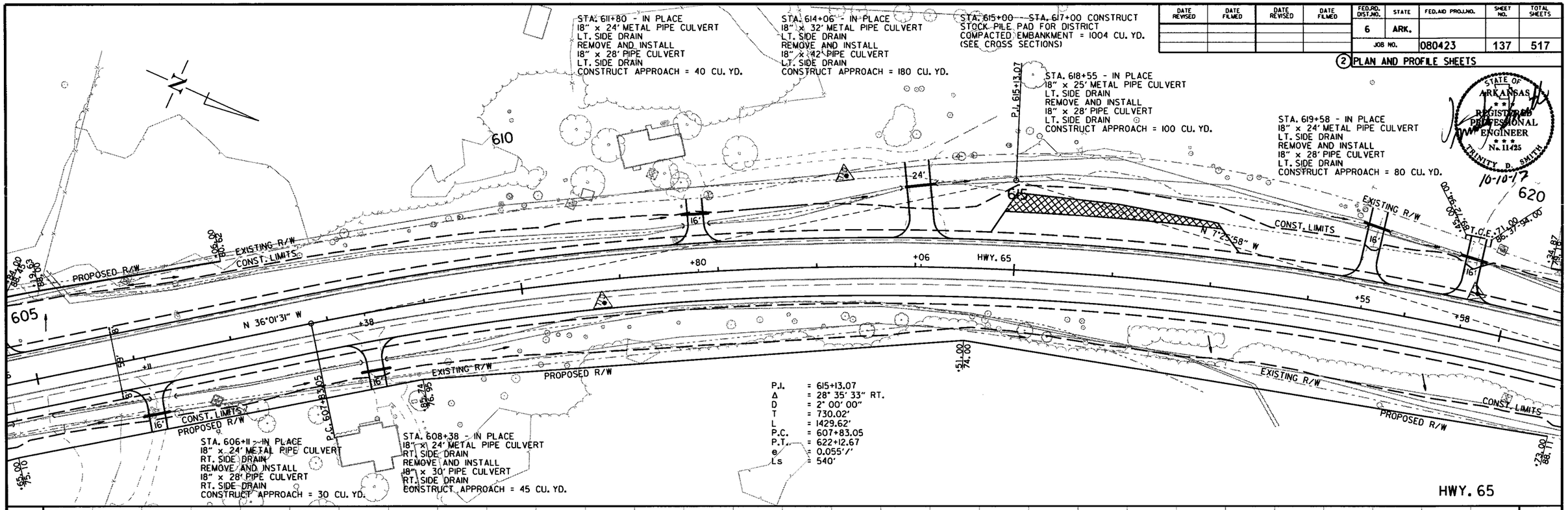
590+00 591+00 592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00 601+00 602+00 603+00 604+00 605+00

R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	137	517

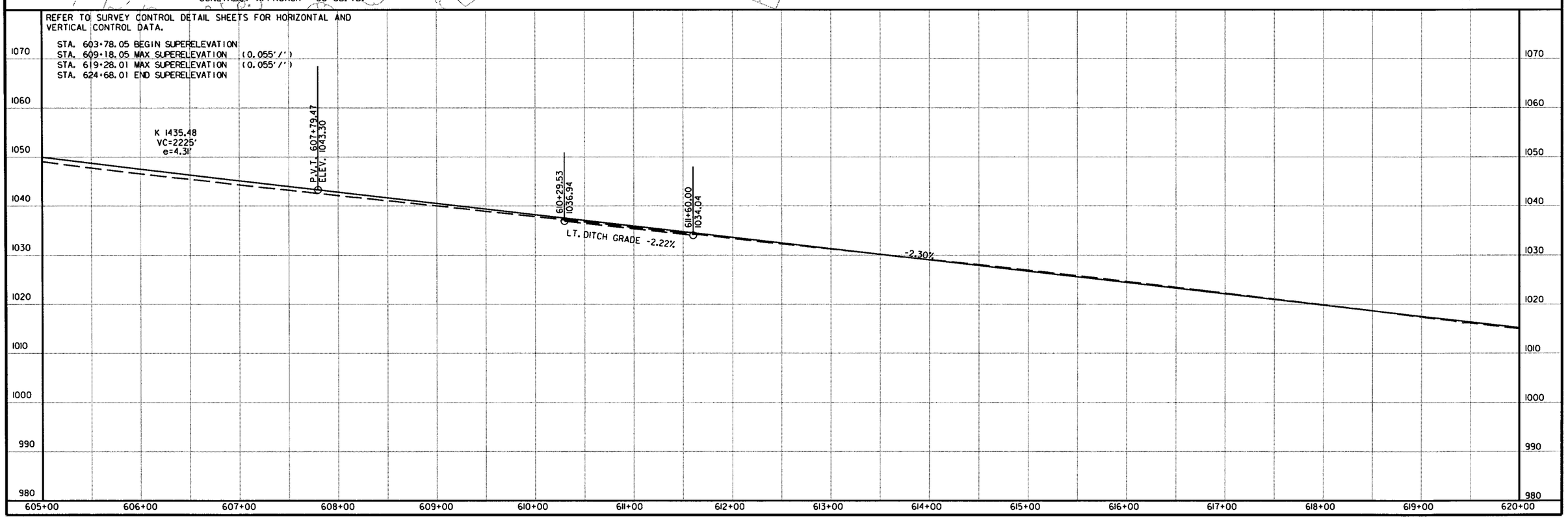
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



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

STA. 603+78.05 BEGIN SUPERELEVATION
STA. 609+18.05 MAX SUPERELEVATION (0.055'/')
STA. 619+28.01 MAX SUPERELEVATION (0.055'/')
STA. 624+68.01 END SUPERELEVATION



1/4/2013

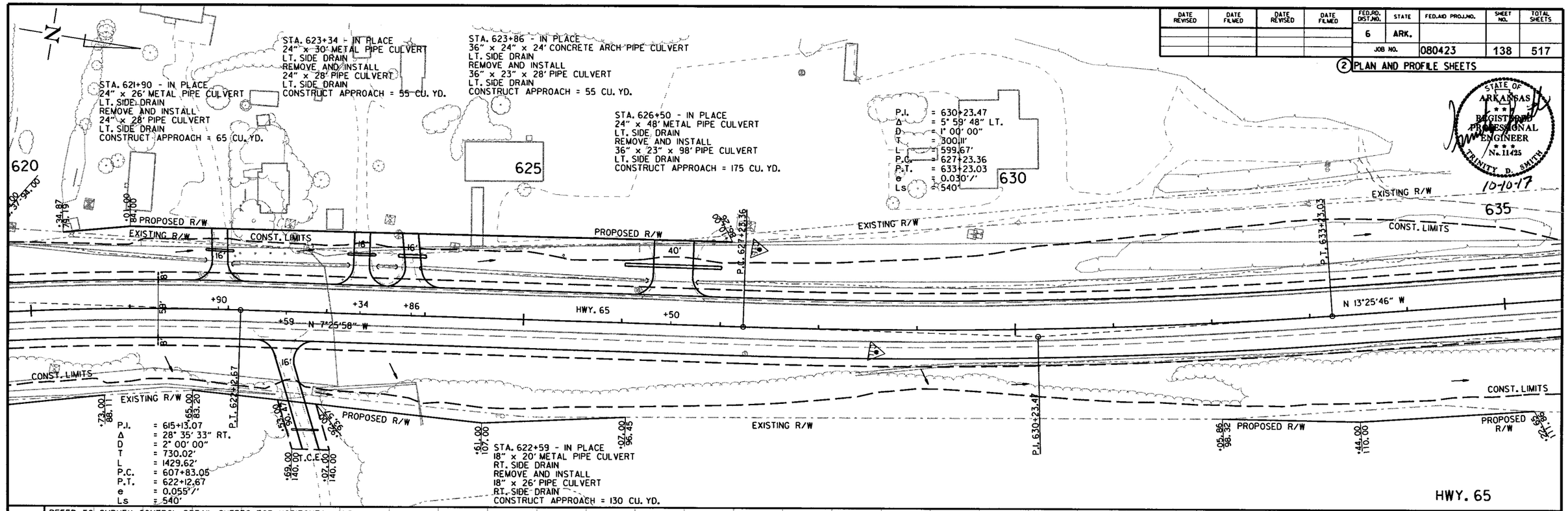
R080423.DGN

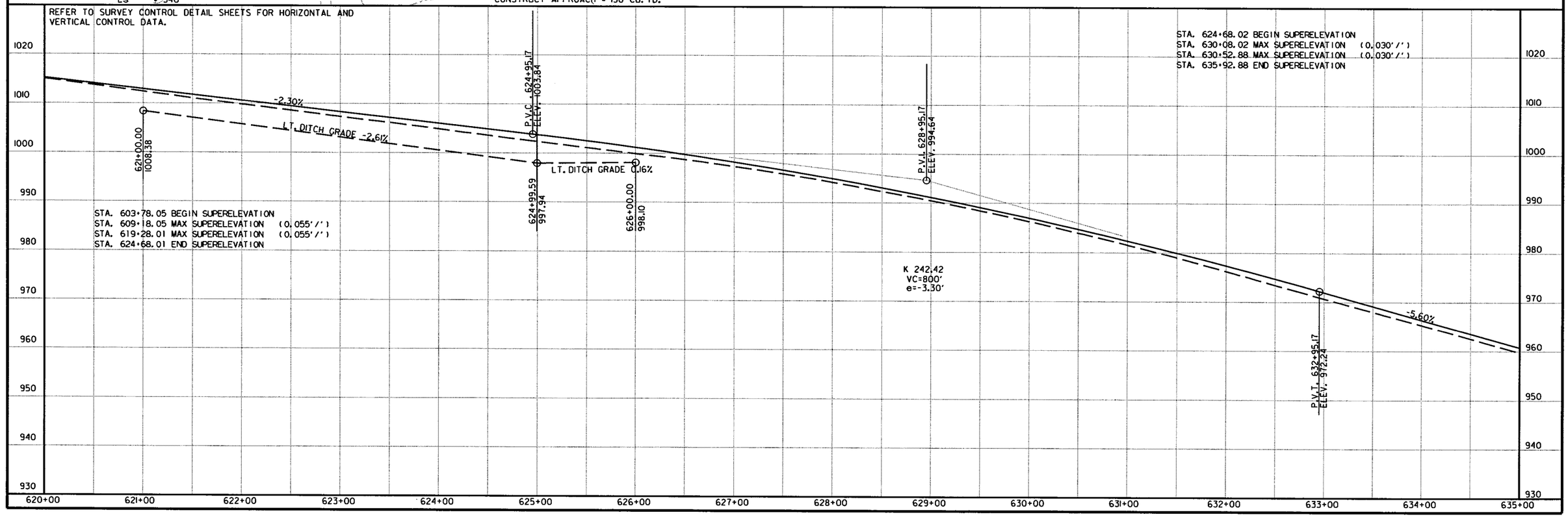
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	138	517

(2) PLAN AND PROFILE SHEETS

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

10-10-17





R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	139	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

STA. 636+11 - IN PLACE
24" x 60' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
36" x 23" x 39' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YD.

CLINTON QUARRY RD.

EXISTING R/W
CONST. LIMITS
N 13°25'46" W
+11
+83
22'
18'
P.C. 638+62.74
EXISTING R/W
PROPOSED R/W
CONST. LIMITS
EXISTING R/W
PROPOSED R/W

STA. 637+83 - IN PLACE
24" x 50' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 90 CU. YD.

P.I. 647+20.36
EXISTING R/W
CONST. LIMITS
N 19°54'09" E
HWY. 65
CONST. LIMITS
EXISTING R/W
PROPOSED R/W

P.I.	= 647+20.36
Δ	= 33° 19' 55" RT.
D	= 2° 00' 00"
T	= 857.63'
L	= 1666.60'
P.C.	= 638+62.74
P.T.	= 655+29.34
e	= 0.055'/'
Ls	= 540'

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

STA. 635+92.89 BEGIN SUPERELEVATION
STA. 641+32.89 MAX SUPERELEVATION (0.055'/')
STA. 653+94.34 MAX SUPERELEVATION (0.055'/')
STA. 659+34.34 END SUPERELEVATION

STA. 624+68.02 BEGIN SUPERELEVATION
STA. 630+08.02 MAX SUPERELEVATION (0.030'/')
STA. 630+52.88 MAX SUPERELEVATION (0.030'/')
STA. 635+92.88 END SUPERELEVATION

-5.60%
K 136.77
VC=1060'
e=10.27'
640+23.01
929.65
640+80.00
922.38
LT. DITCH GRADE -5.78%
RT. DITCH GRADE -15.01%
642+00.00
904.37
643+00.00
913.65
LT. DITCH GRADE -4.96%
645+00.00
903.73
LT. DITCH GRADE -3.98%
K 136.77
VC=1060'
e=10.27'
-5.60%
2.15%
647+61.92
893.29
P.V.I. 648+15.38
ELEV. 887.11
HWY. 65

960 950 940 930 920 910 900 890 880 870
960 940 930 920 910 900 890 880 870 860 850
910 900 890 880 870 860 850
635+00 636+00 637+00 638+00 639+00 640+00 641+00 642+00 643+00 644+00 645+00 646+00 647+00 648+00 649+00 650+00

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				6	ARK.			
				JOB NO.		080423	140	517

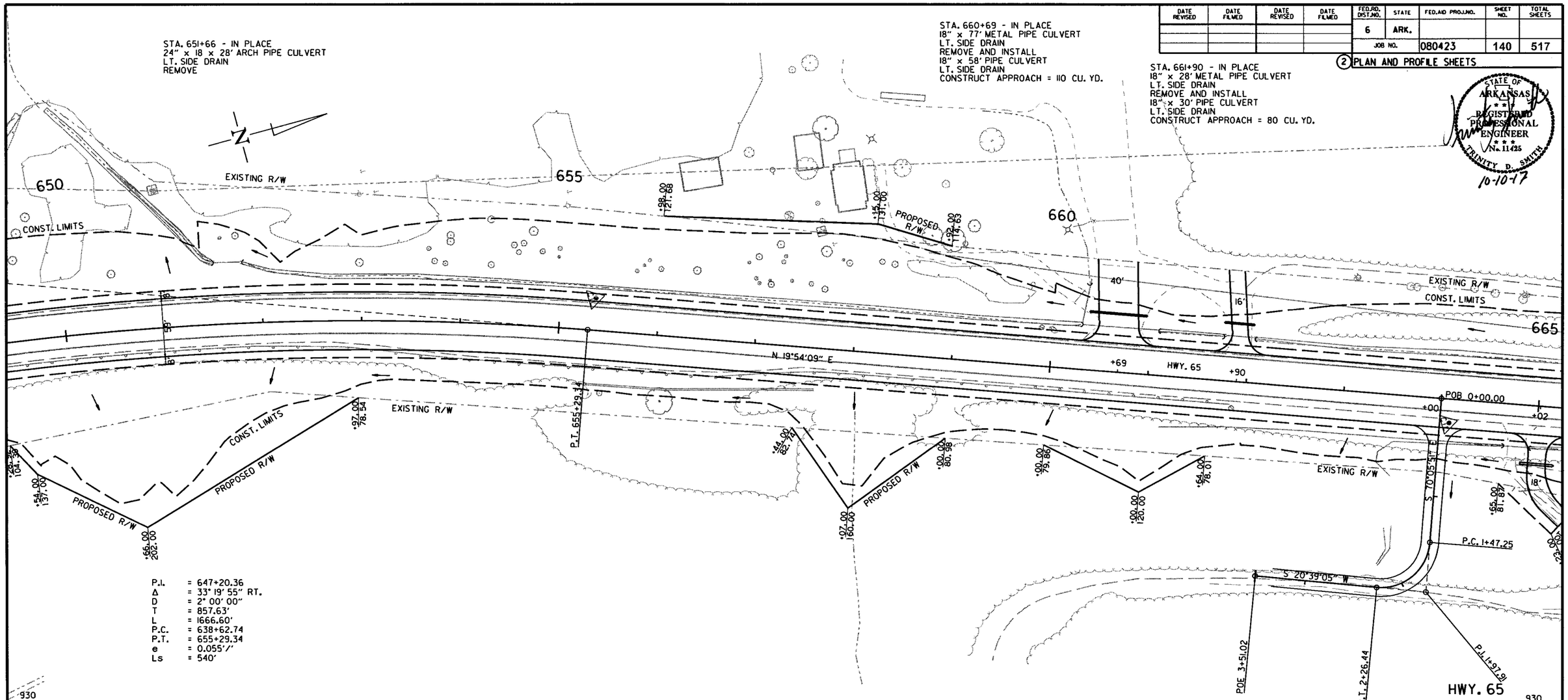
(2) PLAN AND PROFILE SHEETS

STA. 651+66 - IN PLACE
24" x 18 x 28' ARCH PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 660+69 - IN PLACE
18" x 77' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 58' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 110 CU. YD.

STA. 661+90 - IN PLACE
18" x 28' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YD.

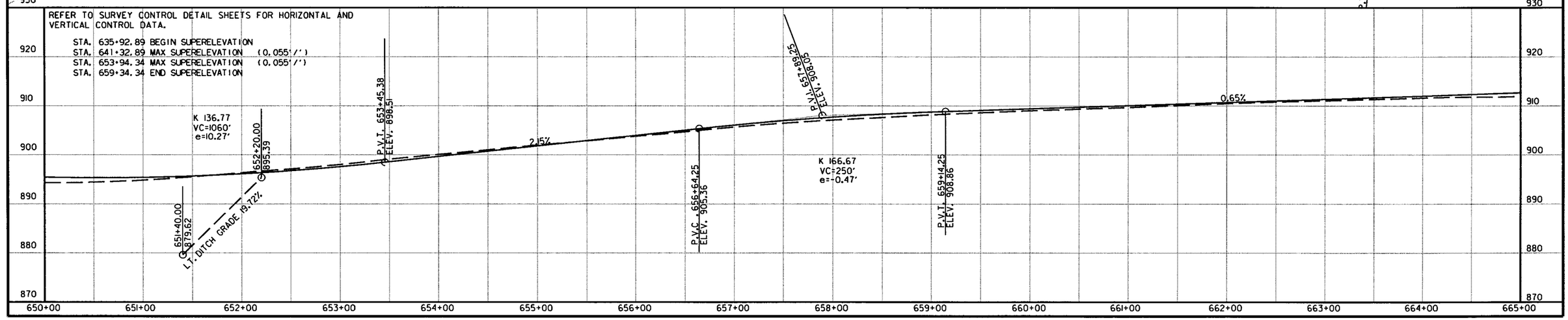
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17



P.I. = 647+20.36
Δ = 33° 19' 55" RT.
D = 2° 00' 00"
T = 857.63'
L = 1666.60'
P.C. = 638+62.74
P.T. = 655+29.34
e = 0.055'/'
Ls = 540'

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

STA. 635+92.89 BEGIN SUPERELEVATION
STA. 641+32.89 MAX SUPERELEVATION (0.055'/')
STA. 653+94.34 MAX SUPERELEVATION (0.055'/')
STA. 659+34.34 END SUPERELEVATION



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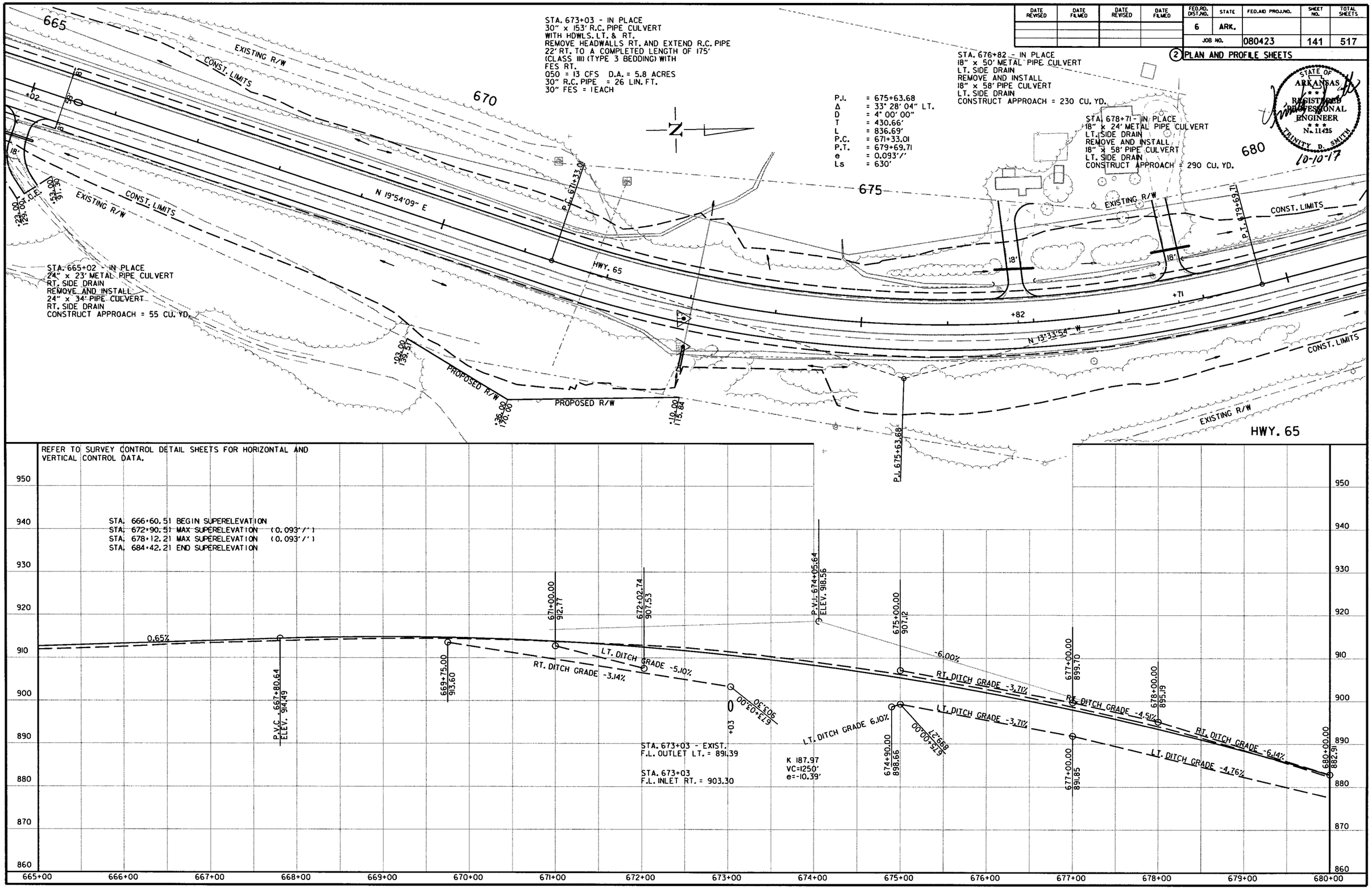
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	141	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17



R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	142	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 683+33 - IN PLACE
18" x 26' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YD.

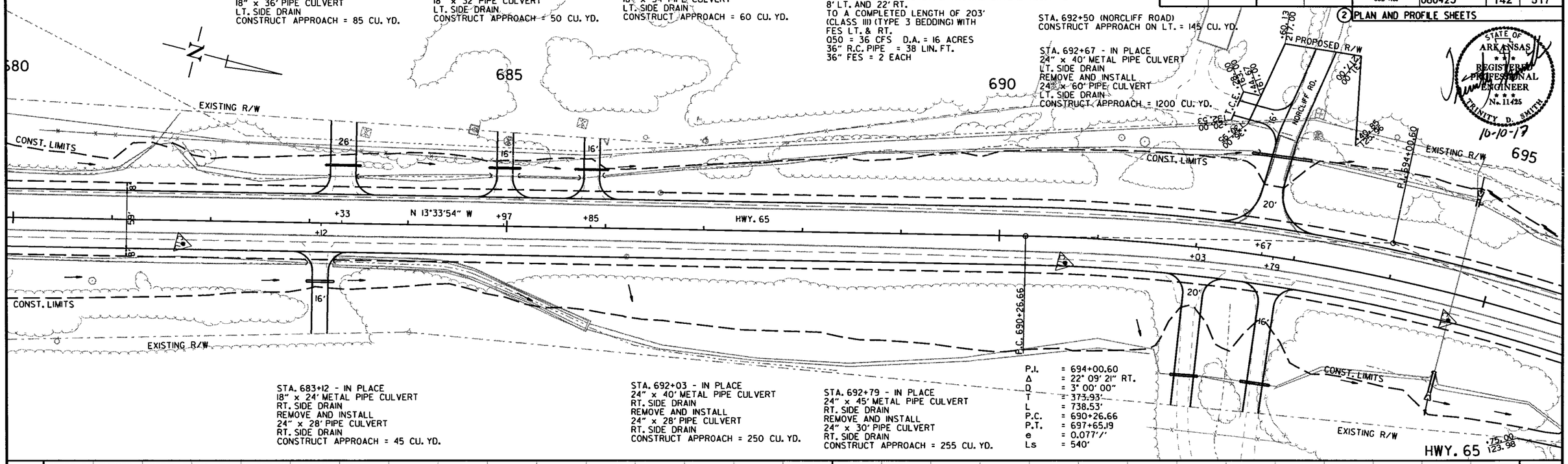
STA. 684+97 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YD.

STA. 685+85 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YD.

STA. 694+69 - IN PLACE
36" x 173' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. & RT. AND EXTEND R.C. PIPE
8' LT. AND 22' RT.
TO A COMPLETED LENGTH OF 203'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50 = 36 CFS D.A. = 16 ACRES
36" R.C. PIPE = 38 LIN. FT.
36" FES = 2 EACH

STA. 692+50 (NORCLIFF ROAD)
CONSTRUCT APPROACH ON LT. = 145 CU. YD.

STA. 692+67 - IN PLACE
24" x 40' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 60' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 1200 CU. YD.



STA. 683+12 - IN PLACE
18" x 24' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YD.

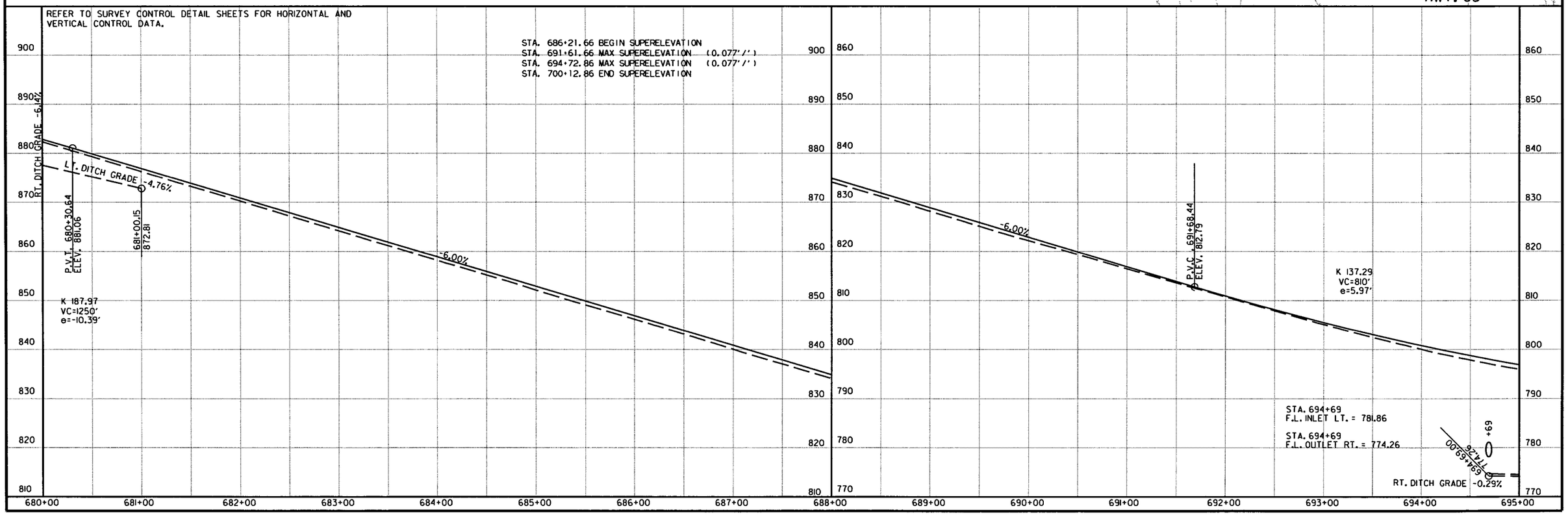
STA. 692+03 - IN PLACE
24" x 40' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 250 CU. YD.

STA. 692+79 - IN PLACE
24" x 45' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 255 CU. YD.

P.I.	=	694+00.60
Δ	=	22° 09' 21" RT.
D	=	3° 00' 00"
T	=	373.93'
L	=	738.53'
P.C.	=	690+26.66
P.T.	=	697+65.19
e	=	0.077'/'
Ls	=	540'

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

STA. 686+21.66 BEGIN SUPERELEVATION
STA. 691+61.66 MAX SUPERELEVATION (0.077'/')
STA. 694+72.86 MAX SUPERELEVATION (0.077'/')
STA. 700+12.86 END SUPERELEVATION



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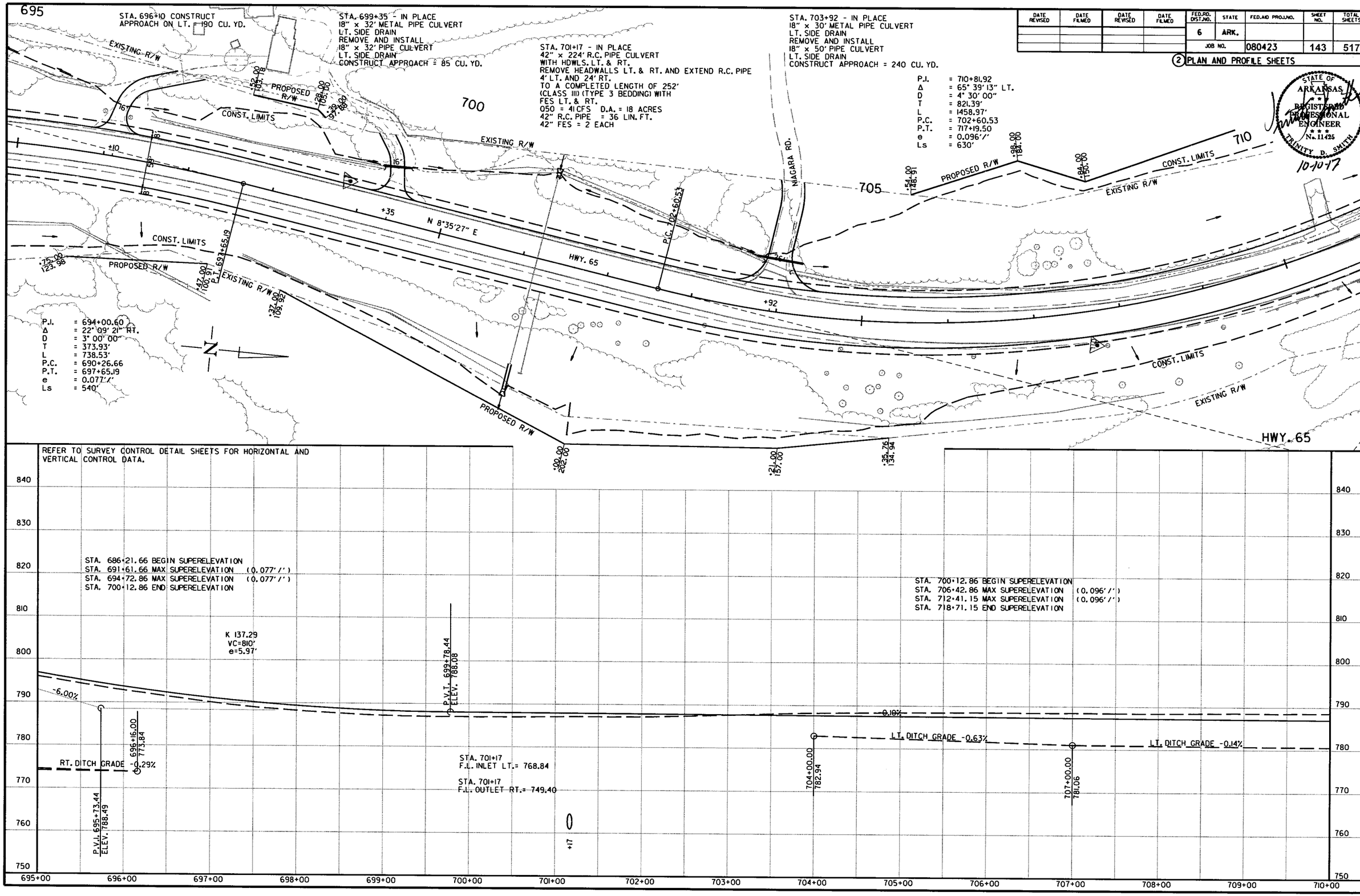
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	143	517

(2) PLAN AND PROFILE SHEETS



R080423.DGN 1/4/2013

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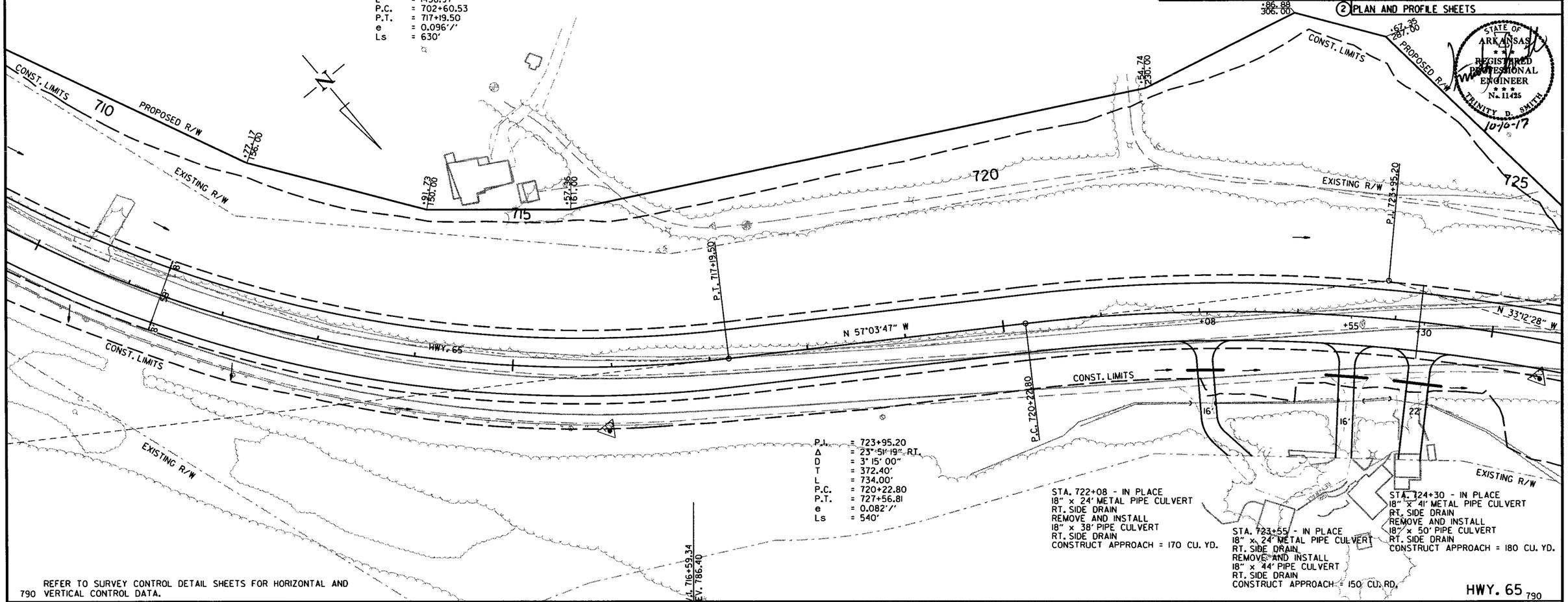
				6	ARK.			
				JOB NO.		080423	144	517

(2) PLAN AND PROFILE SHEETS

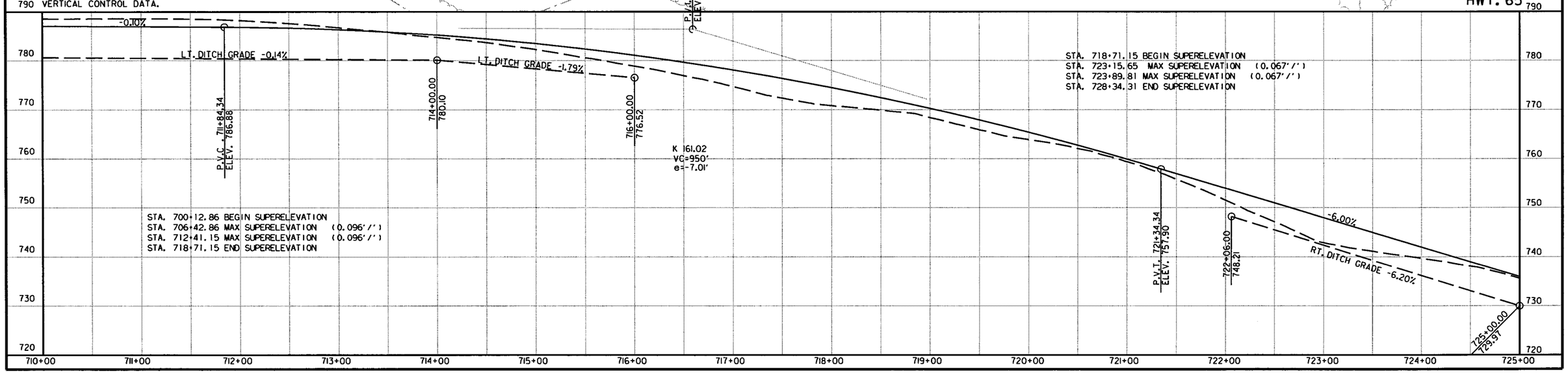
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

P.I. = 710+81.92
Δ = 65° 39′ 13″ LT.
D = 4° 30′ 00″
T = 821.39′
L = 1458.97′
P.C. = 702+60.53
P.T. = 717+19.50
e = 0.096′/′
Ls = 630′



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

HWY. 65



1/4/2013

R080423.DGN

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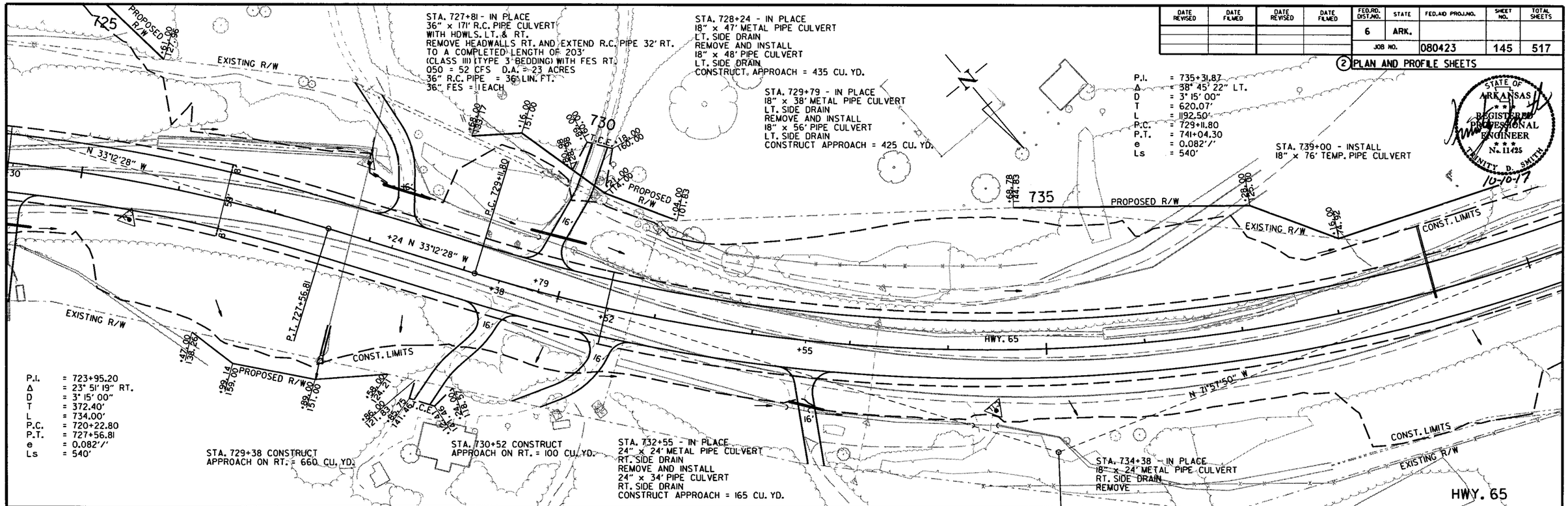
				6	ARK.			
				JOB NO.		080423	145	517

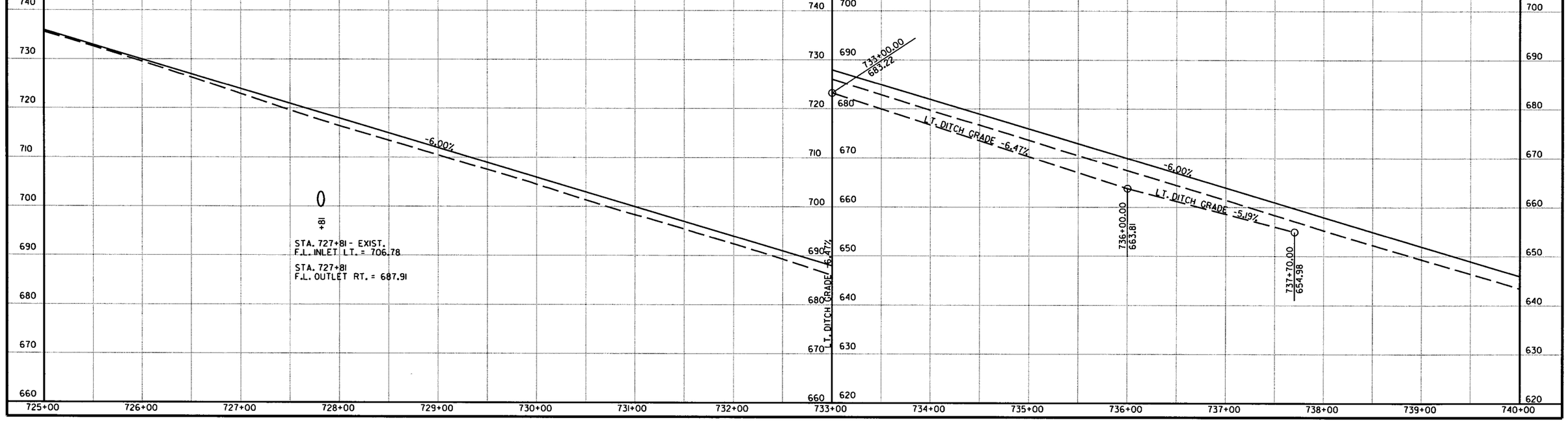
(2) PLAN AND PROFILE SHEETS



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

STA. 718+71.15 BEGIN SUPERELEVATION
STA. 723+15.65 MAX SUPERELEVATION (0.067'/')
STA. 723+89.81 MAX SUPERELEVATION (0.067'/')
STA. 728+34.31 END SUPERELEVATION

STA. 728+34.31 BEGIN SUPERELEVATION
STA. 733+74.31 MAX SUPERELEVATION (0.082'/')
STA. 736+04.92 MAX SUPERELEVATION (0.082'/')
STA. 741+44.92 END SUPERELEVATION



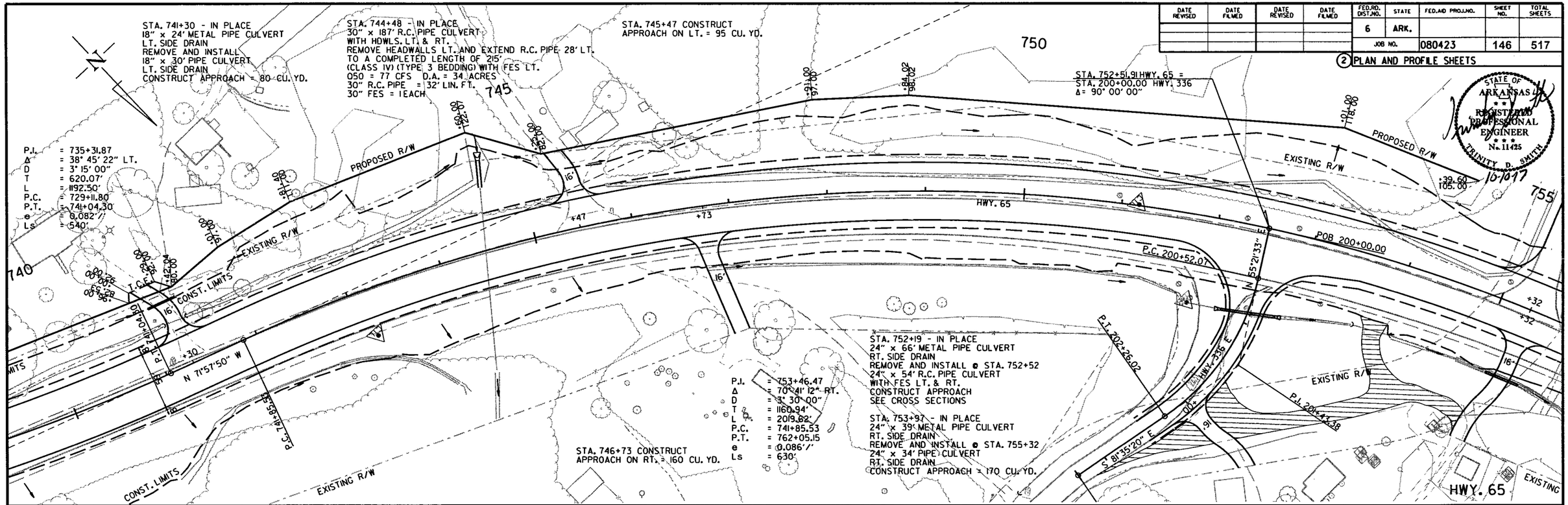
R080423.DGN 1/4/2013

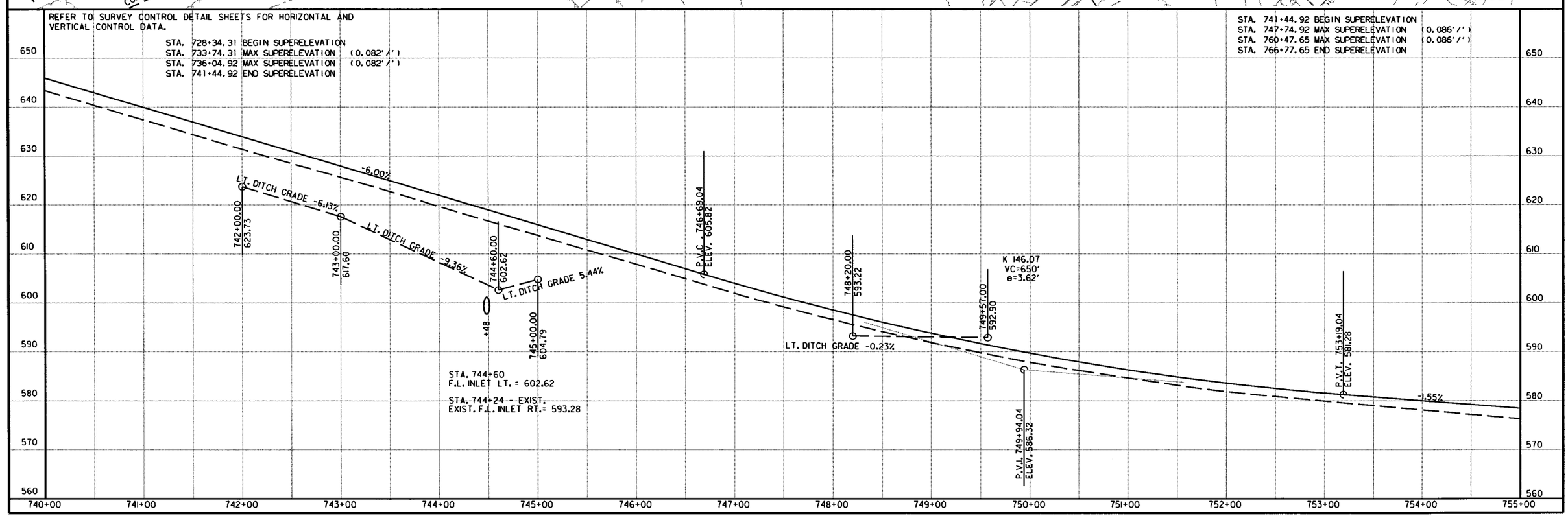
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	146	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-7-17





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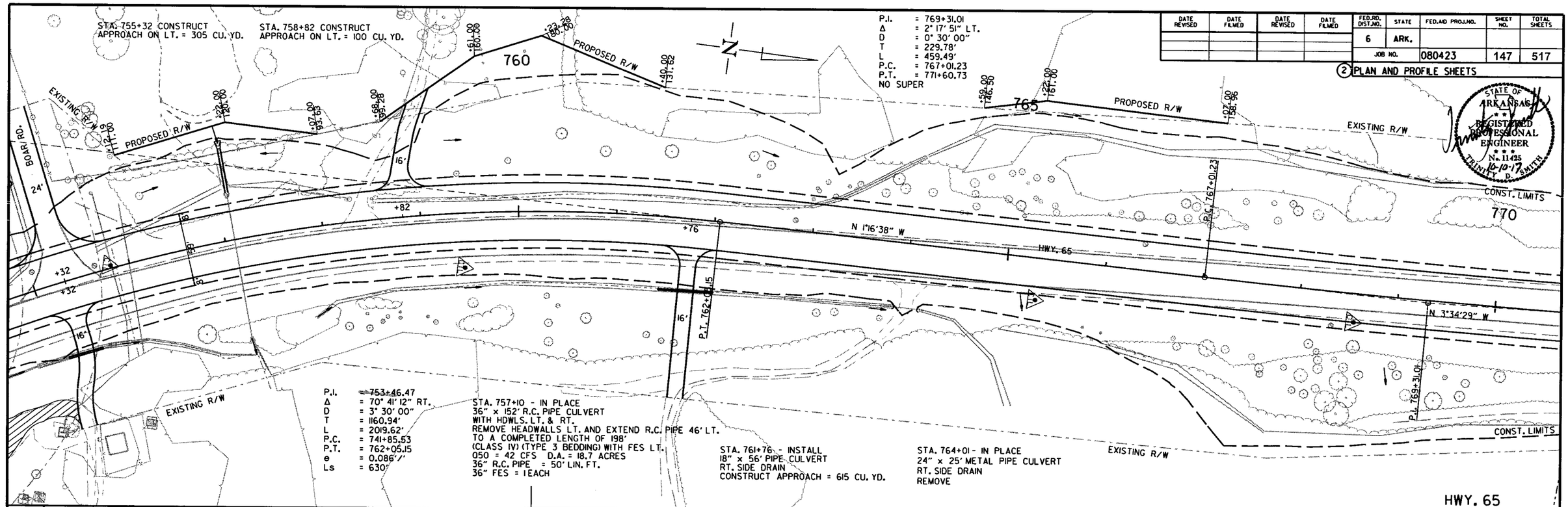
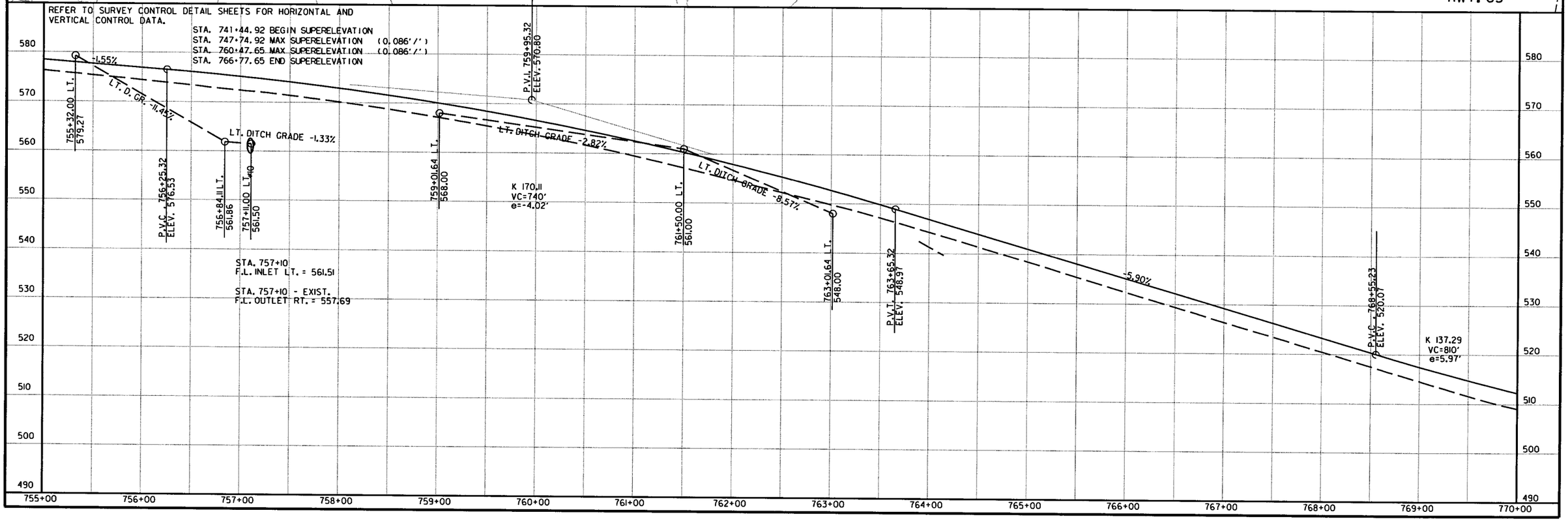
				6	ARK.			
				JOB NO.		080423	147	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-10-12
TRINITY D. SMITH





R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	148	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 773+97 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.9 SQ. YDS.

P.I. = 769+31.01
Δ = 2° 17' 51" LT.
D = 0° 30' 00"
T = 229.78'
L = 459.49'
P.C. = 767+01.23
P.T. = 771+60.73
NO SUPER

STA. 776+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 99' PIPE OUTLET
CONNECT TO D.I. @ STA. 777+03 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3'11"

STA. 777+03 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 13' R.C. PIPE STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 1"

STA. 779+41 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 30' R.C. PIPE STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 6' 8"

STA. 777+15.63 - STA. 779+25.77 IN PLACE
BRIDGE NO. 06913
208'-0" CONT. COMP. W-BEAM UNIT (64'-80'-64')
59'-2" OUT TO OUT
210'-1¾" BRIDGE LENGTH
RETAIN AND WIDEN TO 74'-2" OUT TO OUT

STA. 780+00 - CONSTRUCT
D.I. ON LT. WITH
18" x 55' PIPE OUTLET
CONNECT TO D.I. @ STA. 779+41 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'11"

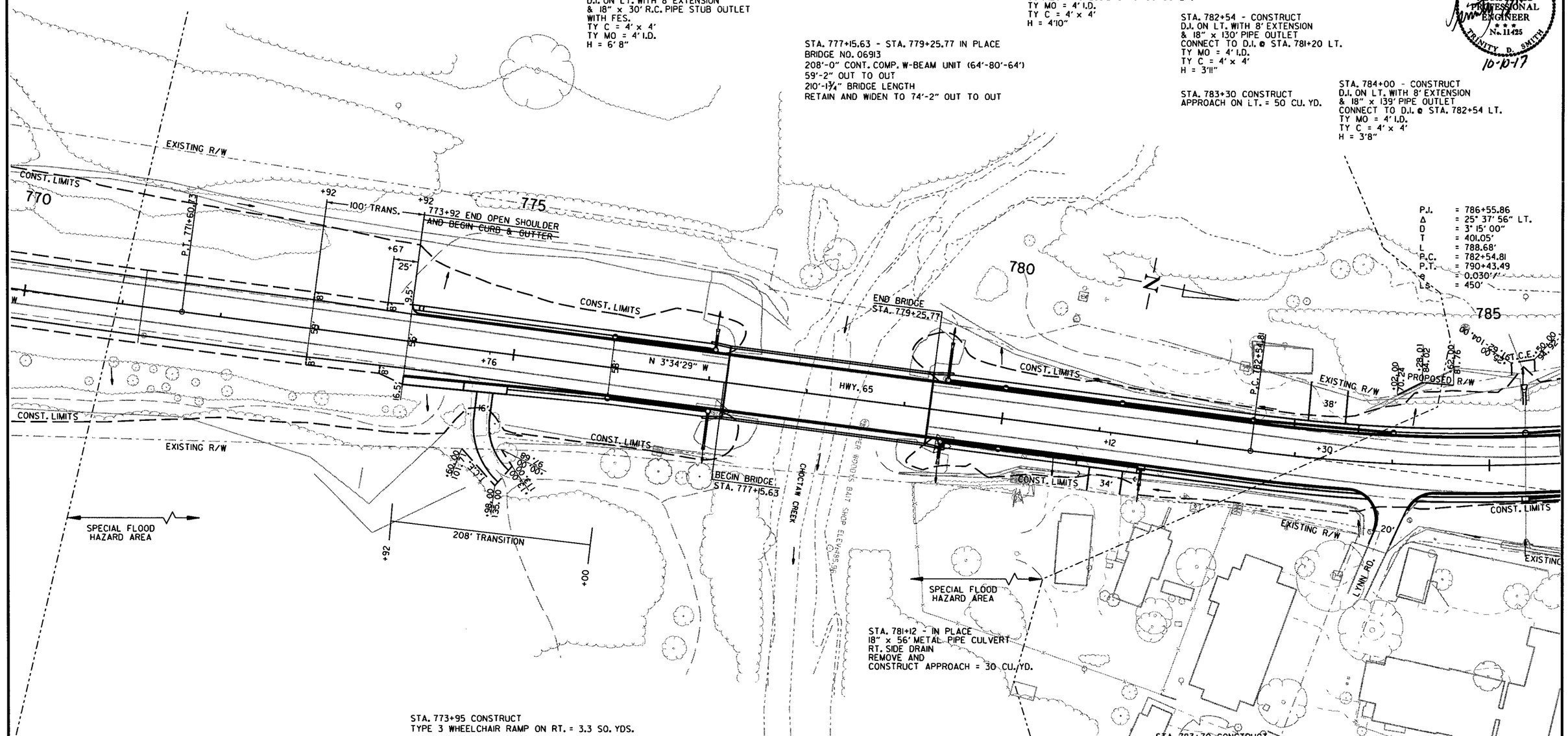
STA. 781+20 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 116' PIPE OUTLET
CONNECT TO D.I. @ STA. 780+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'10"

STA. 782+54 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 130' PIPE OUTLET
CONNECT TO D.I. @ STA. 781+20 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 783+30 CONSTRUCT
APPROACH ON LT. = 50 CU. YD.

STA. 784+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 139' PIPE OUTLET
CONNECT TO D.I. @ STA. 782+54 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

P.I. = 786+55.86
Δ = 25° 37' 56" LT.
D = 3° 15' 00"
T = 401.05'
L = 788.68'
P.C. = 782+54.81
P.T. = 790+43.49
e = 0.030'/'
L_s = 450'



STA. 781+12 - IN PLACE
18" x 56' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 773+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 3.3 SQ. YDS.

STA. 774+76 CONSTRUCT
APPROACH ON RT. = 185 CU. YD.

STA. 776+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 99' PIPE OUTLET
CONNECT TO D.I. @ STA. 777+03 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3'11"

STA. 777+03 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 31' R.C. PIPE STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 1"

STA. 779+41 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 15' R.C. PIPE STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 6' 4"

STA. 780+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 55' PIPE OUTLET
CONNECT TO D.I. @ STA. 779+41 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'8"

STA. 781+47 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 11' R.C. PIPE STUB INLET WITH FES.
& 18" x 142' PIPE OUTLET
CONNECT TO D.I. @ STA. 780+00 RT.
TY E = 4' x 3'
H = 5'0"

STA. 783+70 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

STA. 784+00 CONSTRUCT
APPROACH ON RT. = 30 CU. YD.

STA. 784+31 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

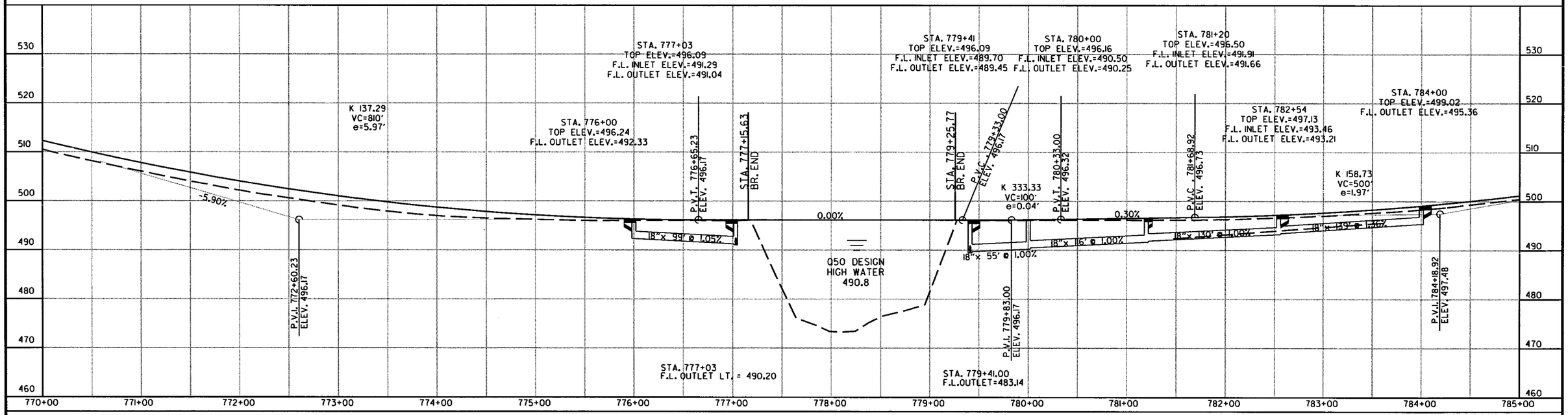
HWY. 65

R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	149	517

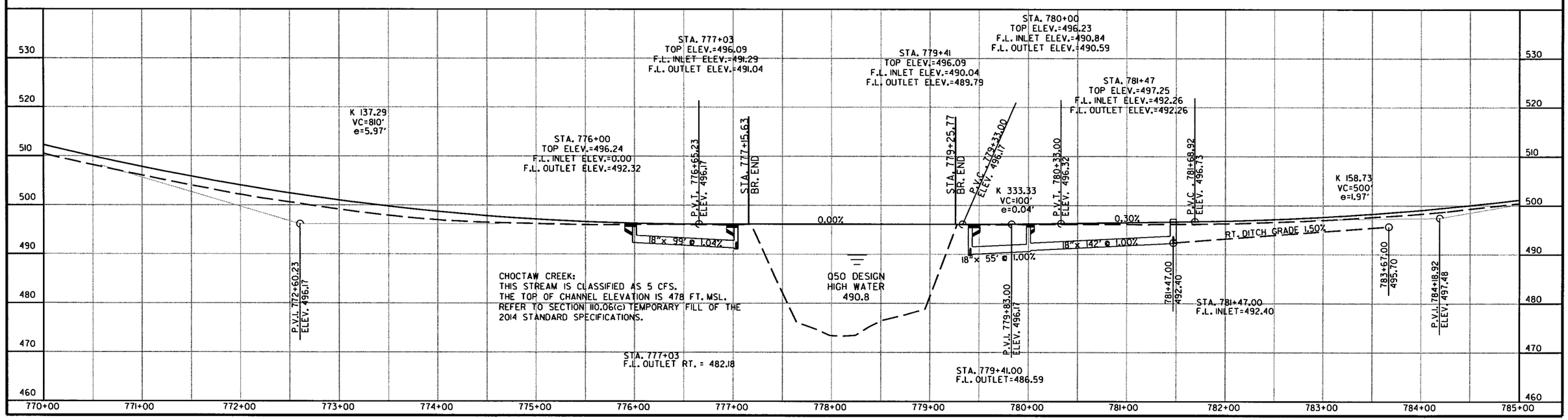
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 11425
10-10-12
TRINITY D. SMITH

2 PROFILE SHEET



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

STA. 779+80.00 BEGIN SUPERELEVATION
STA. 784+30.00 MAX SUPERELEVATION (0.030'/')
STA. 787+69.10 MAX SUPERELEVATION (0.030'/')
STA. 792+19.10 END SUPERELEVATION



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	150	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-12 TRINITY D. SMITH

STA. 785+38 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& EXISTING 36" x 62' R.C. PIPE STUB INLET
CONNECT TO EXISTING PIPE.
TY MO = 4' I.D.
H = 15'0"

STA. 787+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 155' PIPE OUTLET
CONNECT TO D.I. @ STA. 785+38 LT.
TY MO = 4' I.D.
H = 11'9"

STA. 788+43 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 136' PIPE OUTLET
CONNECT TO D.I. @ STA. 787+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 9'10"

STA. 789+75 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 126' PIPE OUTLET
CONNECT TO D.I. @ STA. 788+43 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 8'2"

STA. 791+69 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 17' R.C. PIPE STUB INLET WITH FES.
& 18" x 189' PIPE OUTLET
CONNECT TO D.I. @ STA. 789+75 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'6"

STA. 793+29 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 20' R.C. PIPE STUB INLET WITH FES.
& 18" x 156' PIPE OUTLET
CONNECT TO D.I. @ STA. 791+69 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'4"

STA. 796+00 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 12' R.C. PIPE STUB OUTLET
WITH FES.
TY E = 4' x 3'
H = 3'9"

STA. 785+38 - IN PLACE
36" x 138' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. AND EXTEND R.C. PIPE 14' LT.
TO A COMPLETED LENGTH OF 152'
(CLASS III) (TYPE 3 BEDDING) WITH FES LT.
Q50 = 43 CFS D.A. = 20.7 ACRES
36" R.C. PIPE = 18' LIN. FT.
36" FES = 1EACH

STA. 791+42 - IN PLACE
18" x 28' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 793+01 - IN PLACE
18" x 28' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 794+16 CONSTRUCT
APPROACH ON LT. = 10 CU. YD.

STA. 795+09 CONSTRUCT
APPROACH ON LT. = 35 CU. YD.

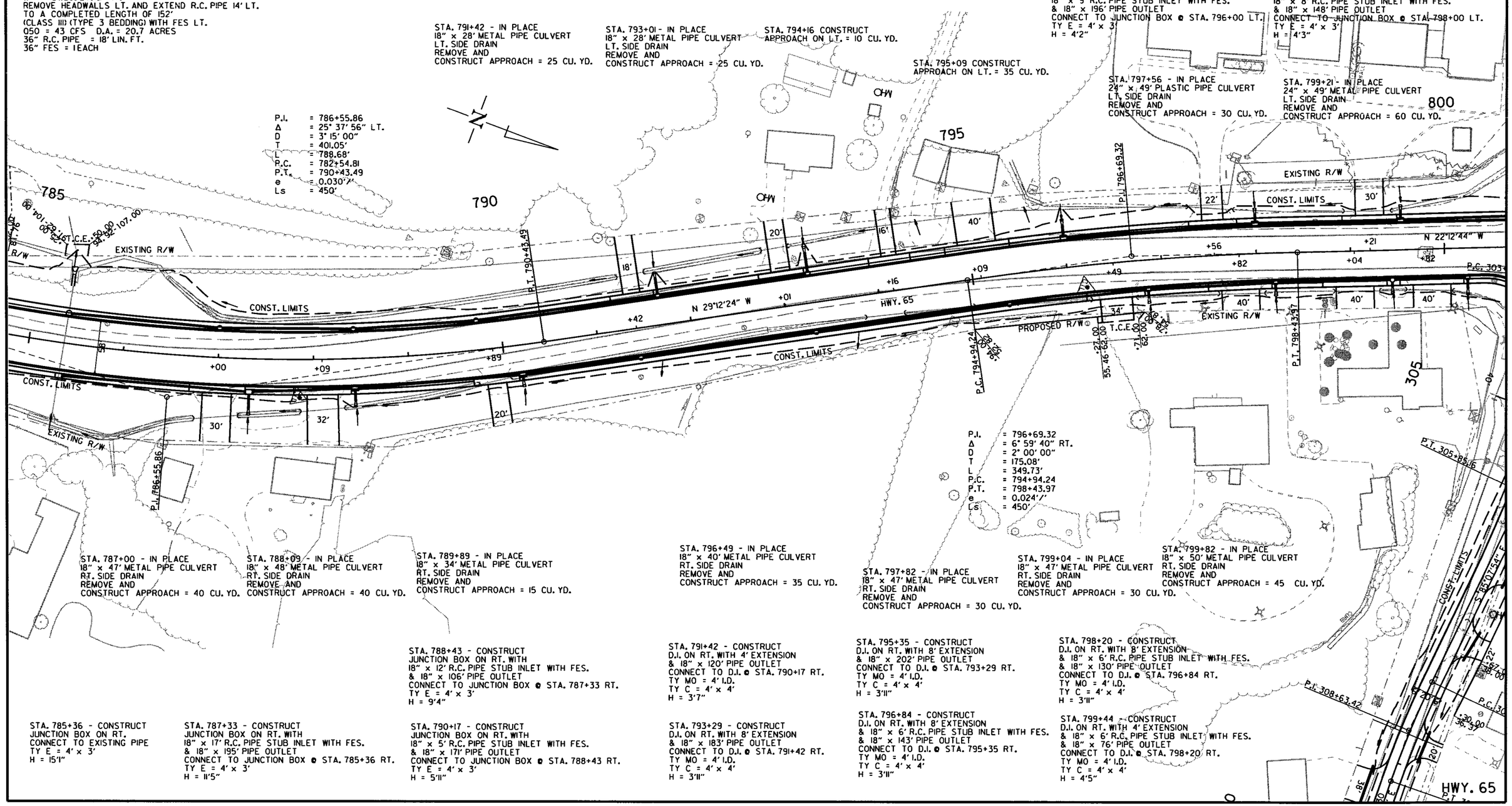
STA. 798+00 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 196' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 796+00 LT.
TY E = 4' x 3'
H = 4'2"

STA. 799+54 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 148' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 798+00 LT.
TY E = 4' x 3'
H = 4'3"

P.I. = 786+55.86
Δ = 25° 37' 56" LT.
D = 3° 15' 00"
T = 401.05'
L = 788.68'
P.C. = 782+54.81
P.T. = 790+43.49
e = 0.030'/'
Ls = 450'

STA. 797+56 - IN PLACE
24" x 49' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 799+21 - IN PLACE
24" x 49' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 60 CU. YD.



P.I. = 796+69.32
Δ = 6° 59' 40" RT.
D = 2° 00' 00"
T = 175.08'
L = 349.73'
P.C. = 794+94.24
P.T. = 798+43.97
e = 0.024'/'
Ls = 450'

STA. 787+00 - IN PLACE
18" x 47' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YD.

STA. 788+09 - IN PLACE
18" x 48' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YD.

STA. 789+89 - IN PLACE
18" x 34' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 796+49 - IN PLACE
18" x 40' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 797+82 - IN PLACE
18" x 47' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 799+04 - IN PLACE
18" x 47' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 799+82 - IN PLACE
18" x 50' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YD.

STA. 788+43 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 12' R.C. PIPE STUB INLET WITH FES.
& 18" x 106' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 787+33 RT.
TY E = 4' x 3'
H = 9'4"

STA. 791+42 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 120' PIPE OUTLET
CONNECT TO D.I. @ STA. 790+17 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'7"

STA. 795+35 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 202' PIPE OUTLET
CONNECT TO D.I. @ STA. 793+29 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 798+20 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 130' PIPE OUTLET
CONNECT TO D.I. @ STA. 796+84 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 785+36 - CONSTRUCT
JUNCTION BOX ON RT.
CONNECT TO EXISTING PIPE
TY E = 4' x 3'
H = 15'1"

STA. 787+33 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 17' R.C. PIPE STUB INLET WITH FES.
& 18" x 195' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 785+36 RT.
TY E = 4' x 3'
H = 11'5"

STA. 790+17 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 5' R.C. PIPE STUB INLET WITH FES.
& 18" x 171' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 788+43 RT.
TY E = 4' x 3'
H = 5'11"

STA. 793+29 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 183' PIPE OUTLET
CONNECT TO D.I. @ STA. 791+42 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 796+84 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 143' PIPE OUTLET
CONNECT TO D.I. @ STA. 795+35 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 799+44 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 76' PIPE OUTLET
CONNECT TO D.I. @ STA. 798+20 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

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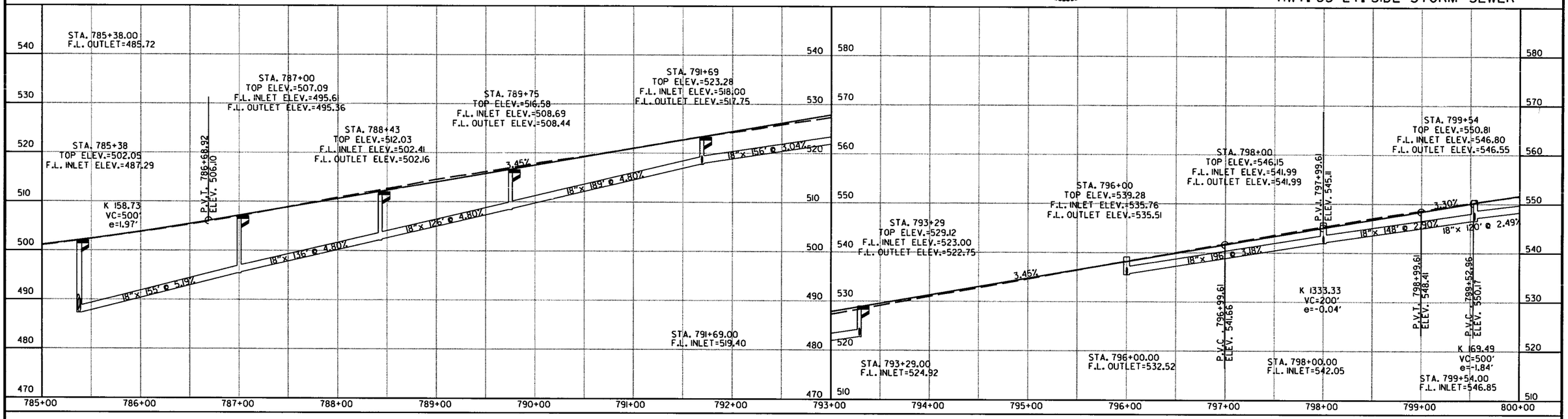
				6	ARK.			
				JOB NO.		080423	151	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-17 TRINITY D. SMITH

(2) PROFILE SHEET

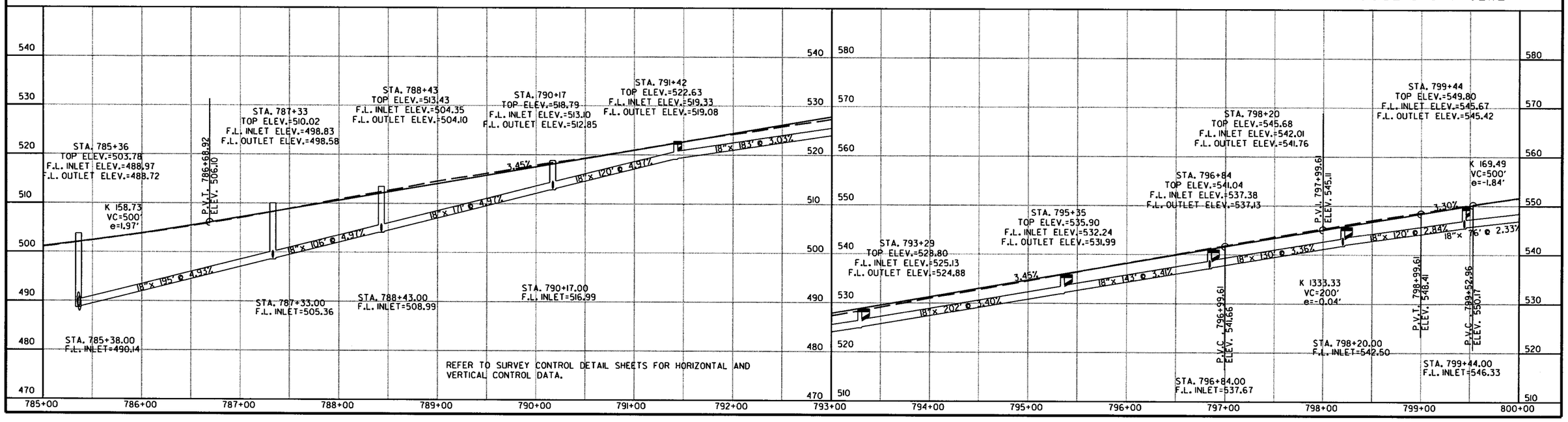
HWY. 65 LT. SIDE STORM SEWER



STA. 779+80.00 BEGIN SUPERELEVATION
STA. 784+30.00 MAX SUPERELEVATION (0.030'/')
STA. 787+69.10 MAX SUPERELEVATION (0.030'/')
STA. 792+19.10 END SUPERELEVATION

STA. 792+19.10 BEGIN SUPERELEVATION
STA. 796+69.10 MAX SUPERELEVATION (0.024'/')
STA. 797+31.47 MAX SUPERELEVATION (0.024'/')
STA. 801+81.47 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER



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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.		080423	152	517

(2) PLAN SHEET

STA. 800+79 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 120' PIPE OUTLET
CONNECT TO D.I. @ STA. 799+54 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 802+70 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 187' PIPE OUTLET
CONNECT TO D.I. @ STA. 800+79 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'1"

STA. 804+88 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 75' PIPE OUTLET
CONNECT TO D.I. @ STA. 804+08 LT.
TY E = 4' x 3'
H = 4'0"

STA. 807+35 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 213' PIPE OUTLET
CONNECT TO D.I. @ STA. 809+52 LT.
TY E = 4' x 3'
H = 3'11"

STA. 809+52 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 15' R.C. PIPE STUB INLET WITH FES.
& 24" x 259' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 812+14 LT.
TY E = 4' x 3'
H = 9'4"

STA. 812+14 - CONSTRUCT
JUNCTION BOX ON LT. WITH
24" x 28' R.C. PIPE STUB INLET WITH FES.
& 18" x 297' PIPE OUTLET.
CONNECT TO R.C. BOX CULVERT @ STA. 815+16.
TY E = 4' x 3'
H = 11'0"

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
10-10-17

STA. 800+91 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.8 SQ. YDS.

STA. 801+32 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.9 SQ. YDS.

STA. 801+99 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 4.4 SQ. YDS.

STA. 802+05 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 4.9 SQ. YDS.

STA. 804+08 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 134' PIPE OUTLET
CONNECT TO D.I. @ STA. 802+70 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 804+52 - IN PLACE
18" x 55' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 805+71 CONSTRUCT
APPROACH ON LT. = 60 CU. YD.

STA. 809+78 - IN PLACE
18" x 28' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 85 CU. YD.

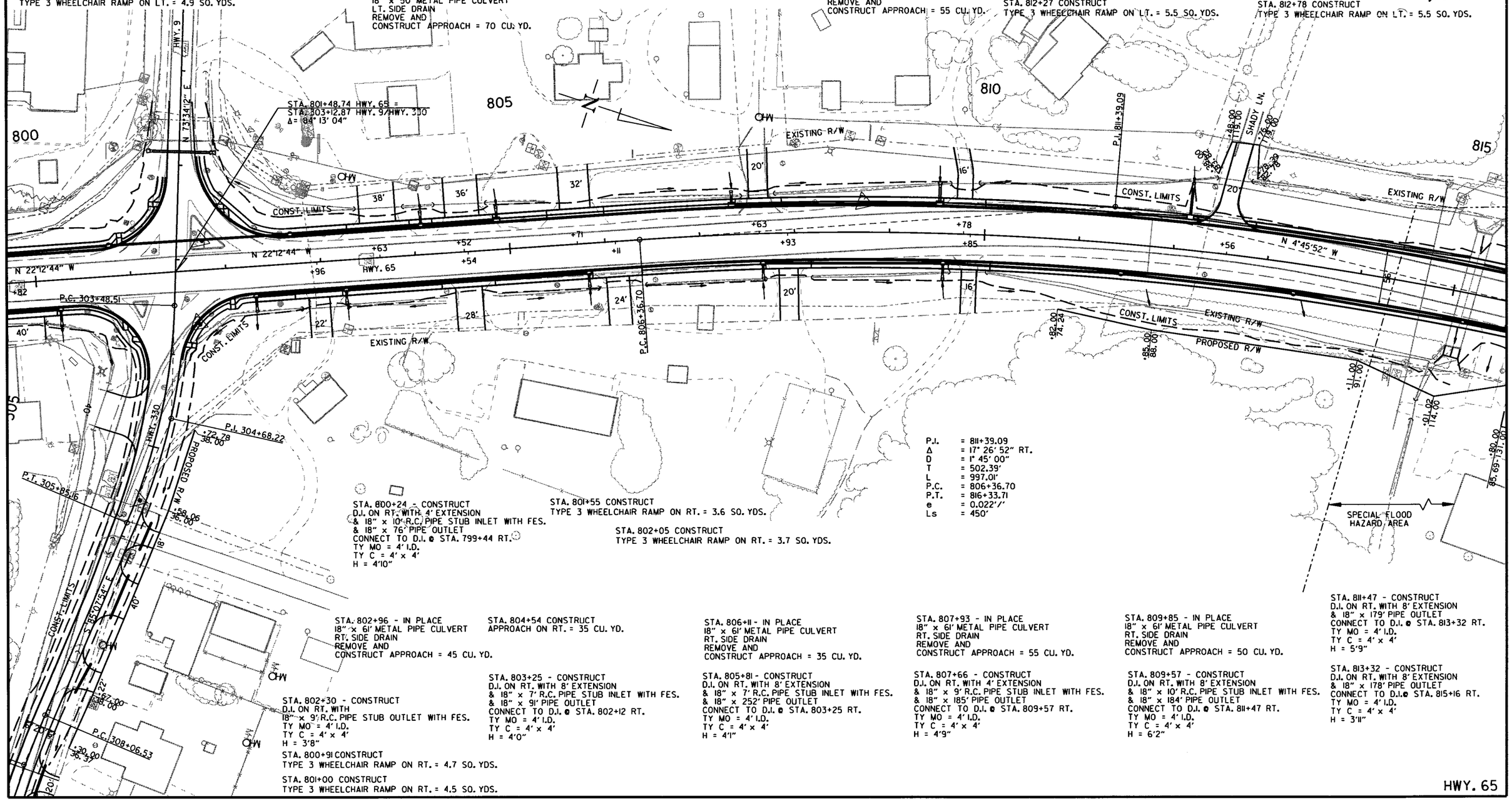
STA. 812+56 - IN PLACE
18" x 33' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 145 CU. YD.

STA. 803+63 - IN PLACE
18" x 50' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 70 CU. YD.

STA. 807+63 - IN PLACE
18" x 34' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 55 CU. YD.

STA. 812+27 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.5 SQ. YDS.

STA. 812+78 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.5 SQ. YDS.



P.I. = 811+39.09
Δ = 17° 26' 52" RT.
D = 1° 45' 00"
T = 502.39'
L = 997.01'
P.C. = 806+36.70
P.T. = 816+33.71
e = 0.022'/'
Ls = 450'

STA. 800+24 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 10' R.C. PIPE STUB INLET WITH FES.
& 18" x 76' PIPE OUTLET
CONNECT TO D.I. @ STA. 799+44 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'10"

STA. 801+55 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 3.6 SQ. YDS.

STA. 802+05 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 3.7 SQ. YDS.

STA. 802+96 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YD.

STA. 804+54 CONSTRUCT
APPROACH ON RT. = 35 CU. YD.

STA. 806+11 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 807+93 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 55 CU. YD.

STA. 809+85 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 50 CU. YD.

STA. 811+47 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 179' PIPE OUTLET
CONNECT TO D.I. @ STA. 813+32 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'9"

STA. 803+25 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 91' PIPE OUTLET
CONNECT TO D.I. @ STA. 802+12 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 805+81 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 252' PIPE OUTLET
CONNECT TO D.I. @ STA. 803+25 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'1"

STA. 807+66 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 185' PIPE OUTLET
CONNECT TO D.I. @ STA. 809+57 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'9"

STA. 809+57 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 10' R.C. PIPE STUB INLET WITH FES.
& 18" x 184' PIPE OUTLET
CONNECT TO D.I. @ STA. 811+47 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'2"

STA. 813+32 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 178' PIPE OUTLET
CONNECT TO D.I. @ STA. 815+16 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 802+30 - CONSTRUCT
D.I. ON RT. WITH
18" x 9' R.C. PIPE STUB OUTLET WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 800+91 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 4.7 SQ. YDS.

STA. 801+00 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 4.5 SQ. YDS.

HWY. 65

1/3/2013

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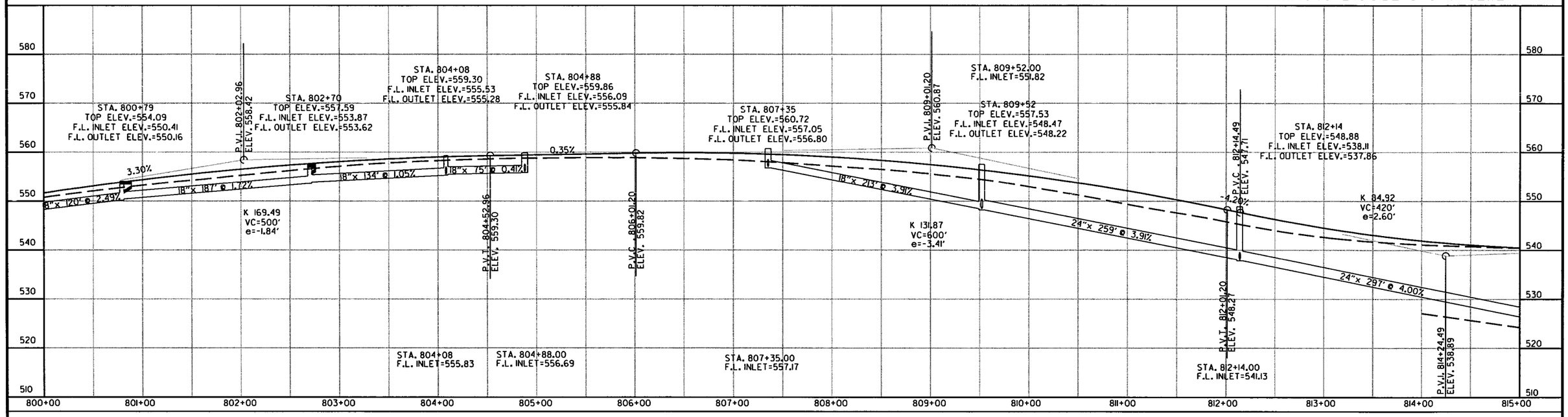
				6	ARK.			
				JOB NO.		080423	153	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-12 TRINITY D. SMITH

(2) PROFILE SHEET

HWY. 65 LT. SIDE STORM SEWER

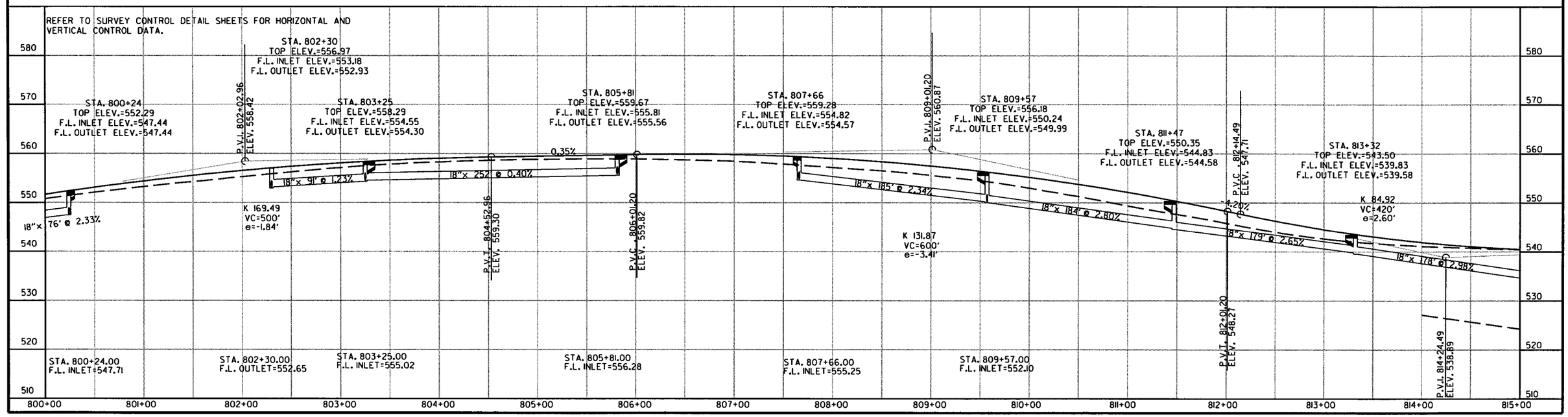


STA. 792+19.10 BEGIN SUPERELEVATION
STA. 796+69.10 MAX SUPERELEVATION (0.024'/')
STA. 797+31.47 MAX SUPERELEVATION (0.024'/')
STA. 801+81.47 END SUPERELEVATION

STA. 802+99.20 BEGIN SUPERELEVATION
STA. 807+49.20 MAX SUPERELEVATION (0.022'/')
STA. 812+90.00 MAX SUPERELEVATION (0.022'/')
STA. 817+40.00 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER

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



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	154	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 815+16 IN PLACE
DBL. 8' x 5' x 126'R.C. BOX CULVERT
RETAIN AND EXTEND 11' RT.
TO A COMPLETED LENGTH OF 137'
WITH 3:1 WINGS LT. AND RT.
Q50 = 102 CFS, D.A. = 19.4 ACRES

STA. 816+18 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 816+72 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 816+90 - CONSTRUCT
D.I. ON LT. WITH
18" x 90' PIPE OUTLET.
CONNECT TO D.I. @ STA. 815+96 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'7"

STA. 817+70 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 10' R.C. PIPE STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 819+31 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 24" x 24' R.C. PIPE STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 823+87 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 24" x 98' PIPE OUTLET.
CONNECT TO D.I. @ STA. 822+84 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'7"

STA. 828+65 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 209' PIPE OUTLET.
CONNECT TO D.I. @ STA. 826+50 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 815+96 - CONSTRUCT
D.I. ON LT. WITH
18" x 68' RC. PIPE OUTLET.
CONNECT TO R.C. BOX CULVERT @ STA. 815+16.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'7"

STA. 816+00 - IN PLACE
18" x 58' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 816+45 - INSTALL
18" x 80' METAL PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
SEE CROSS SECTIONS

STA. 822+84 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. PIPE STUB INLET WITH FES.
& 24" x 349' PIPE OUTLET.
CONNECT TO D.I. @ STA. 819+31 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

STA. 826+50 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 10' R.C. PIPE STUB INLET WITH FES.
& 24" x 257' PIPE OUTLET.
CONNECT TO D.I. @ STA. 823+87 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'11"

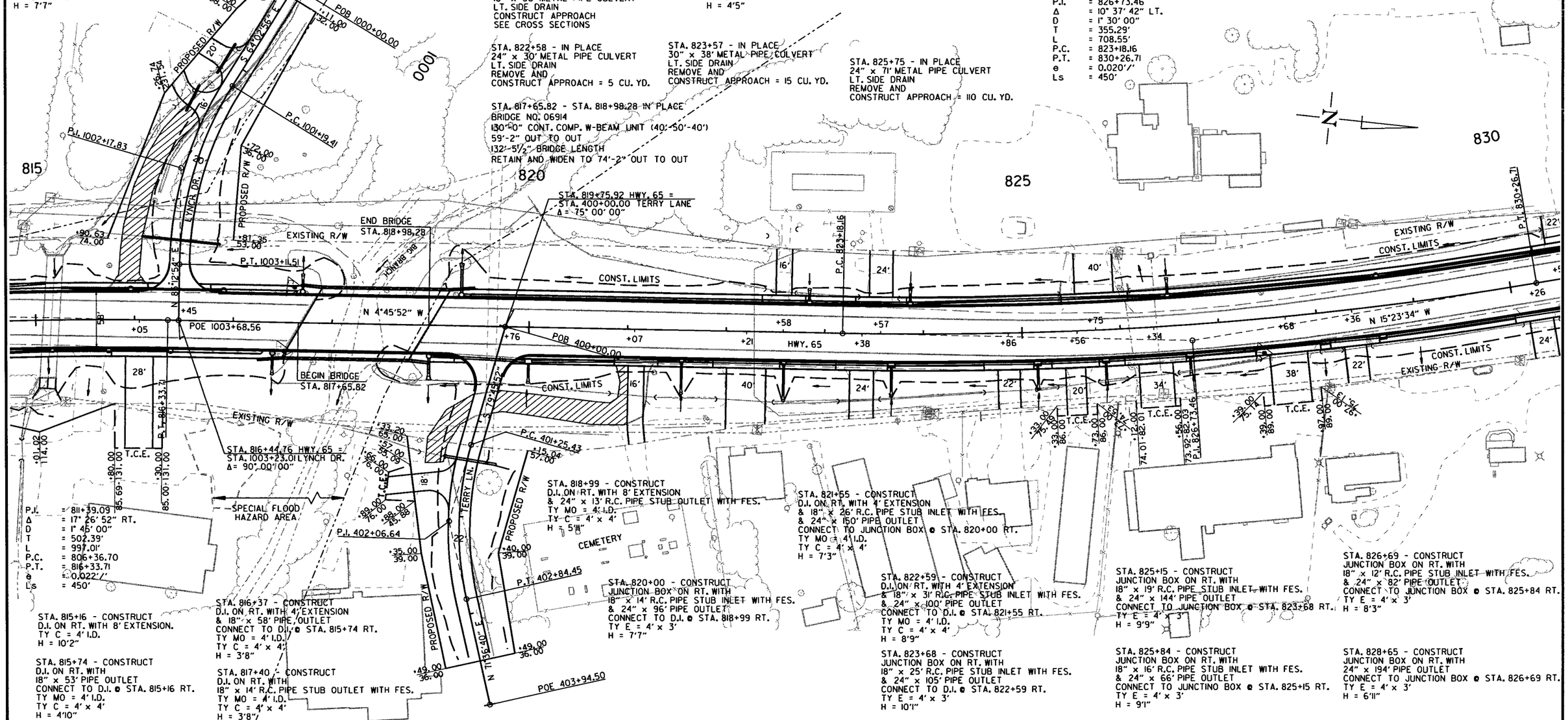
P.I. = 826+73.46
Δ = 10° 37' 42" LT.
D = 1° 30' 00"
T = 355.29'
L = 708.55'
P.C. = 823+18.16
P.T. = 830+26.71
e = 0.020'/'
Ls = 450'

STA. 822+58 - IN PLACE
24" x 30' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YD.

STA. 823+57 - IN PLACE
30" x 38' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 825+75 - IN PLACE
24" x 71' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 110 CU. YD.

STA. 817+65.82 - STA. 818+98.28 IN PLACE
BRIDGE NO. 06914
130'-0" CONT. COMP. W-BEAM UNIT (40'-50'-40')
59'-2" OUT TO OUT
132'-5½" BRIDGE LENGTH
RETAIN AND WIDEN TO 74'-2" OUT TO OUT



P.I. = 811+39.09
Δ = 17° 26' 52" RT.
D = 1° 45' 00"
T = 502.39'
L = 997.01'
P.C. = 806+36.70
P.T. = 816+33.71
e = 0.022'/'
Ls = 450'

STA. 818+99 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 13' R.C. PIPE STUB OUTLET WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'11"

STA. 821+55 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 26' R.C. PIPE STUB INLET WITH FES.
& 24" x 150' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 820+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'3"

STA. 815+16 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION.
TY C = 4' I.D.
H = 10'2"

STA. 816+37 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 58' PIPE OUTLET
CONNECT TO D.I. @ STA. 815+74 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 820+00 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 14' R.C. PIPE STUB INLET WITH FES.
& 24" x 96' PIPE OUTLET
CONNECT TO D.I. @ STA. 818+99 RT.
TY E = 4' x 3'
H = 7'7"

STA. 822+59 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 31' R.C. PIPE STUB INLET WITH FES.
& 24" x 100' PIPE OUTLET
CONNECT TO D.I. @ STA. 821+55 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 8'9"

STA. 825+15 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 19' R.C. PIPE STUB INLET WITH FES.
& 24" x 144' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 823+68 RT.
TY E = 4' x 3'
H = 9'9"

STA. 826+69 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 12' R.C. PIPE STUB INLET WITH FES.
& 24" x 82' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 825+84 RT.
TY E = 4' x 3'
H = 8'3"

STA. 815+74 - CONSTRUCT
D.I. ON RT. WITH
18" x 53' PIPE OUTLET
CONNECT TO D.I. @ STA. 815+16 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'10"

STA. 817+40 - CONSTRUCT
D.I. ON RT. WITH
18" x 14' R.C. PIPE STUB OUTLET WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 823+68 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 25' R.C. PIPE STUB INLET WITH FES.
& 24" x 105' PIPE OUTLET
CONNECT TO D.I. @ STA. 822+59 RT.
TY E = 4' x 3'
H = 10'1"

STA. 825+84 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 16' R.C. PIPE STUB INLET WITH FES.
& 24" x 66' PIPE OUTLET
CONNECT TO JUNCTINO BOX @ STA. 825+15 RT.
TY E = 4' x 3'
H = 9'1"

STA. 828+65 - CONSTRUCT
JUNCTION BOX ON RT. WITH
24" x 194' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 826+69 RT.
TY E = 4' x 3'
H = 6'11"

STA. 816+05 CONSTRUCT
APPROACH ON RT. = 603 CU. YD.

STA. 819+29 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

STA. 819+91 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

STA. 819+76 - IN PLACE
24" x 28' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH
SEE CROSS SECTIONS

STA. 821+07 - IN PLACE
24" x 46' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 55 CU. YD.

STA. 822+21 - IN PLACE
24" x 56' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 85 CU. YD.

STA. 823+38 - IN PLACE
24" x 41' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 105 CU. YD.

STA. 824+86 - IN PLACE
24" x 51' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YD.

STA. 825+56 - IN PLACE
18" x 40' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 75 CU. YD.

STA. 826+34 - IN PLACE
18" x 51' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 95 CU. YD.

STA. 827+68 - IN PLACE
24" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 140 CU. YD.

STA. 828+36 - IN PLACE
24" x 30' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YD.

HWY. 65

1/3/2013

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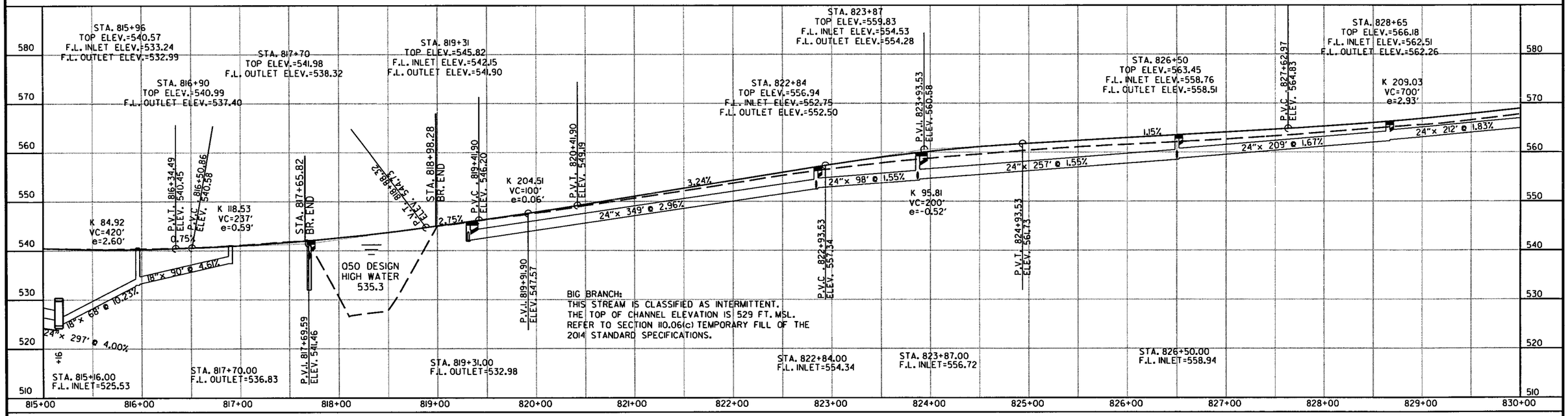
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	155	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER N. 11425 TRINITY D. SMITH 10-10-12

(2) PROFILE SHEET

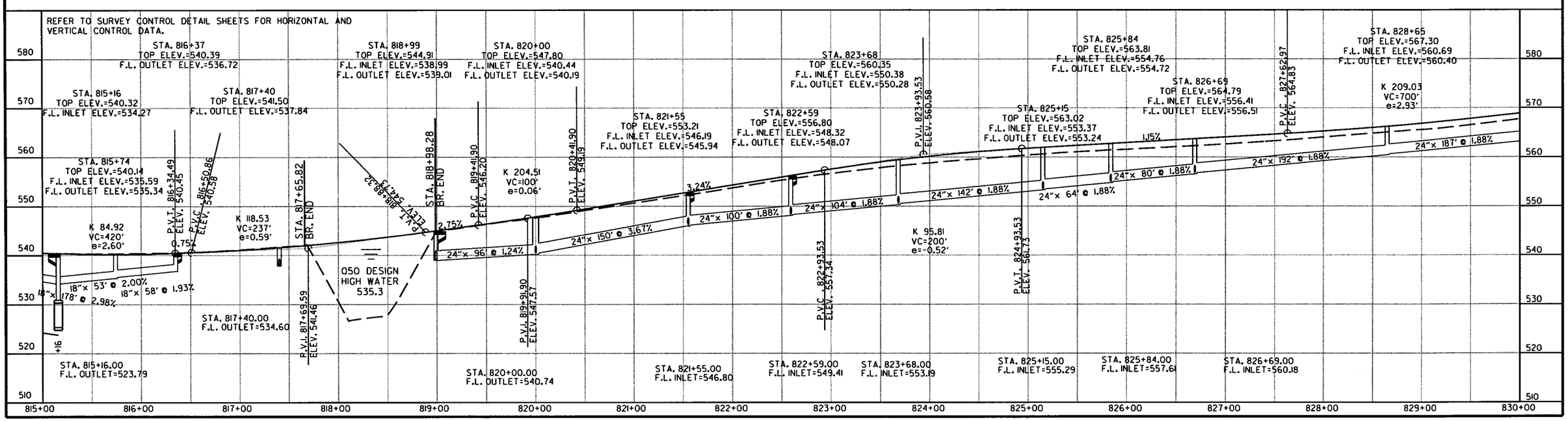
HWY. 65 LT. SIDE STORM SEWER



STA. 802+99.20 BEGIN SUPERELEVATION
STA. 807+49.20 MAX SUPERELEVATION (0.022'/')
STA. 812+90.00 MAX SUPERELEVATION (0.022'/')
STA. 817+40.00 END SUPERELEVATION

STA. 819+80.66 BEGIN SUPERELEVATION
STA. 824+30.66 MAX SUPERELEVATION (0.020'/')
STA. 829+14.21 MAX SUPERELEVATION (0.020'/')
STA. 833+64.21 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	156	517

(2) PLAN SHEET

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

10-10-17

STA. 842+17 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 842+79 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 830+82 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 24" x 212' PIPE OUTLET.
CONNECT TO D.I. @ STA. 828+65 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 832+42 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 156' PIPE OUTLET.
CONNECT TO D.I. @ STA. 830+82 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'9"

STA. 835+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 254' PIPE OUTLET.
CONNECT TO D.I. @ STA. 832+42 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 838+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 296' PIPE OUTLET.
CONNECT TO D.I. @ STA. 835+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 841+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 296' PIPE OUTLET.
CONNECT TO D.I. @ STA. 838+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 843+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 196' PIPE OUTLET.
CONNECT TO D.I. @ STA. 841+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

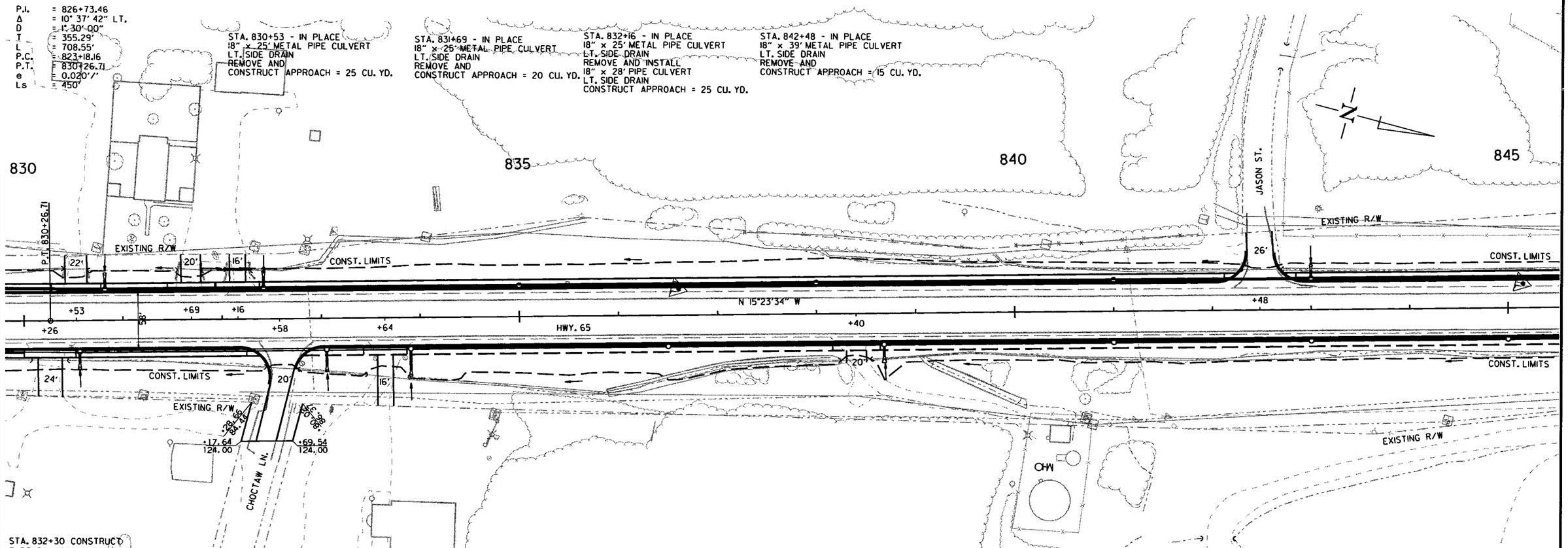
P.I. = 826+73.46
Δ = 10° 37' 42" LT.
D = 1° 30' 00"
T = 355.29'
L = 708.55'
P.C. = 823+18.16
P.T. = 830+26.71
e = 0.020'/'
Ls = 450'

STA. 830+53 - IN PLACE
18" x 25' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 831+69 - IN PLACE
18" x 25' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 832+16 - IN PLACE
18" x 25' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YD.

STA. 842+48 - IN PLACE
18" x 39' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.



STA. 832+30 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

STA. 830+56 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 10' R.C. PIPE STUB INLET WITH FES.
& 24" x 188' PIPE OUTLET
CONNECT TO D.I. @ STA. 828+65 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'9"

STA. 833+05 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 15' R.C. PIPE STUB INLET WITH FES.
& 24" x 245' PIPE OUTLET
CONNECT TO D.I. @ STA. 830+56 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'7"

STA. 833+90 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 20' R.C. PIPE STUB INLET WITH FES.
& 24" x 81' PIPE OUTLET
CONNECT TO D.I. @ STA. 833+05 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 8'5"

STA. 836+50 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 256' PIPE OUTLET
CONNECT TO D.I. @ STA. 833+90 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'2"

STA. 838+68 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 11' R.C. PIPE STUB INLET WITH FES.
& 24" x 214' PIPE OUTLET
CONNECT TO D.I. @ STA. 836+50 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'6"

STA. 841+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 228' PIPE OUTLET
CONNECT TO D.I. @ STA. 838+68 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 843+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 841+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 830+26 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 80 CU. YD.

STA. 832+58 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 175 CU. YD.

STA. 833+64 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 65 CU. YD.

STA. 838+40 - IN PLACE
18" x 61' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YD.

1/3/2013

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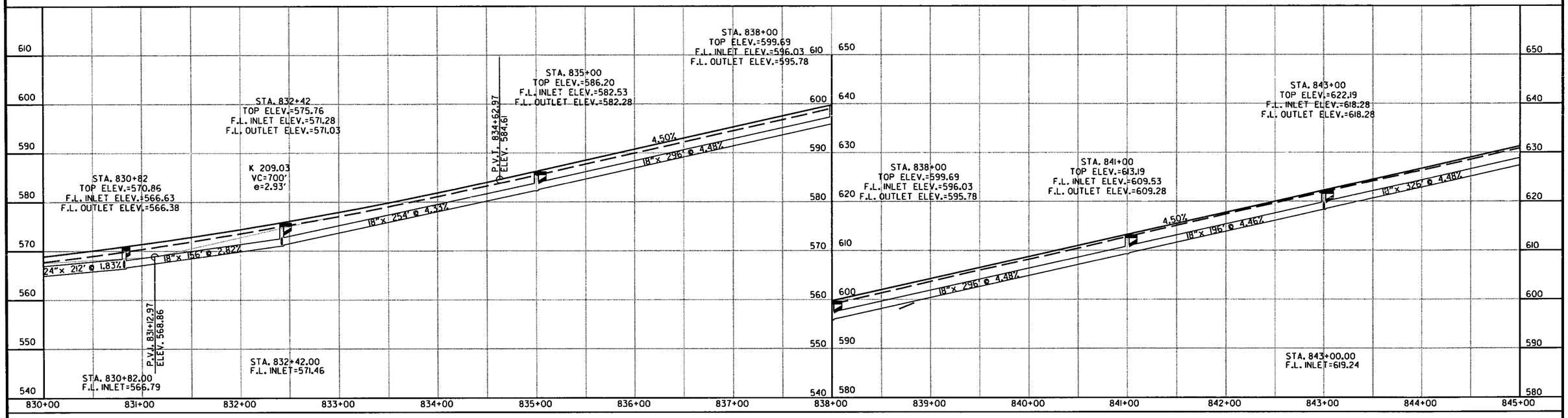
HWY. 65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	157	517

(2) PROFILE SHEET

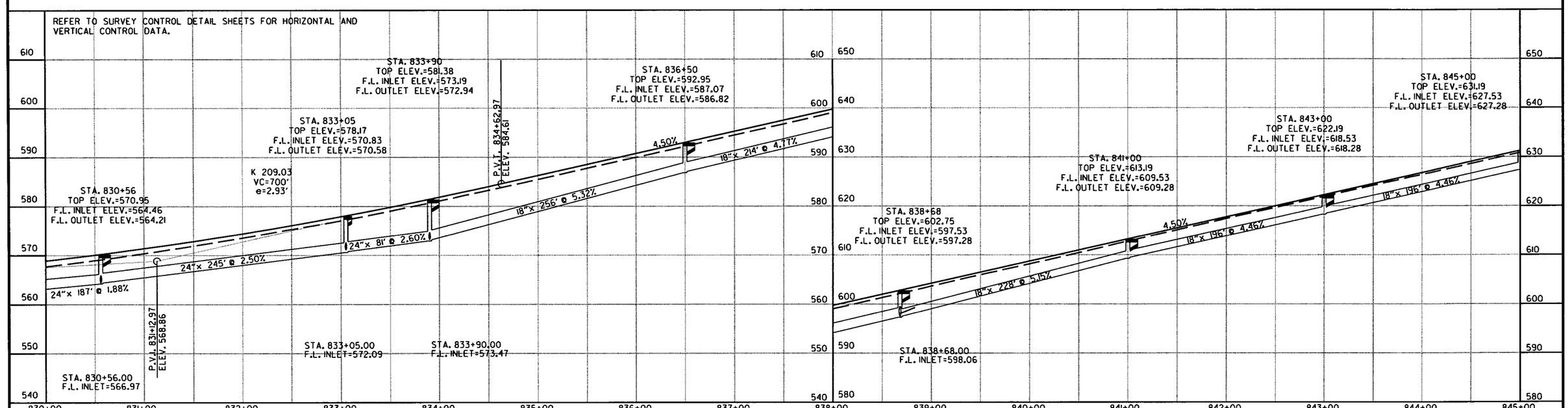
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-12

HWY. 65 LT. SIDE STORM SEWER



STA. 819+80.66 BEGIN SUPERELEVATION
STA. 824+30.66 MAX SUPERELEVATION (0.020'/')
STA. 829+14.21 MAX SUPERELEVATION (0.020'/')
STA. 833+64.21 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	158	517

(2) PLAN SHEET

STA. 851+50 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 852+04 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

STA. 846+30 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 5' R.C. PIPE STUB INLET
& 18" x 326' PIPE OUTLET.
CONNECT TO D.I. @ STA. 843+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 848+84 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& EXISTING 30" x 59' R.C. PIPE STUB INLET
& 30" x 41' R.C. PIPE STUB OUTLET
WITH FES.
TY MO = 5' I.D.
H = 11'0"

STA. 851+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 212' PIPE OUTLET.
CONNECT TO D.I. @ STA. 848+84 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'1"

STA. 852+25 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 11' R.C. PIPE STUB INLET
& 18" x 121' PIPE OUTLET.
CONNECT TO D.I. @ STA. 851+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'5"

STA. 853+48 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 119' PIPE OUTLET.
CONNECT TO D.I. @ STA. 852+25 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 855+03 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 151' PIPE OUTLET.
CONNECT TO D.I. @ STA. 853+48 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 857+96 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 289' PIPE OUTLET.
CONNECT TO D.I. @ STA. 855+03 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 846+04 - IN PLACE
18" x 23' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 851+77 - IN PLACE
24" x 41' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 70 CU. YD.

STA. 853+23 - IN PLACE
24" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

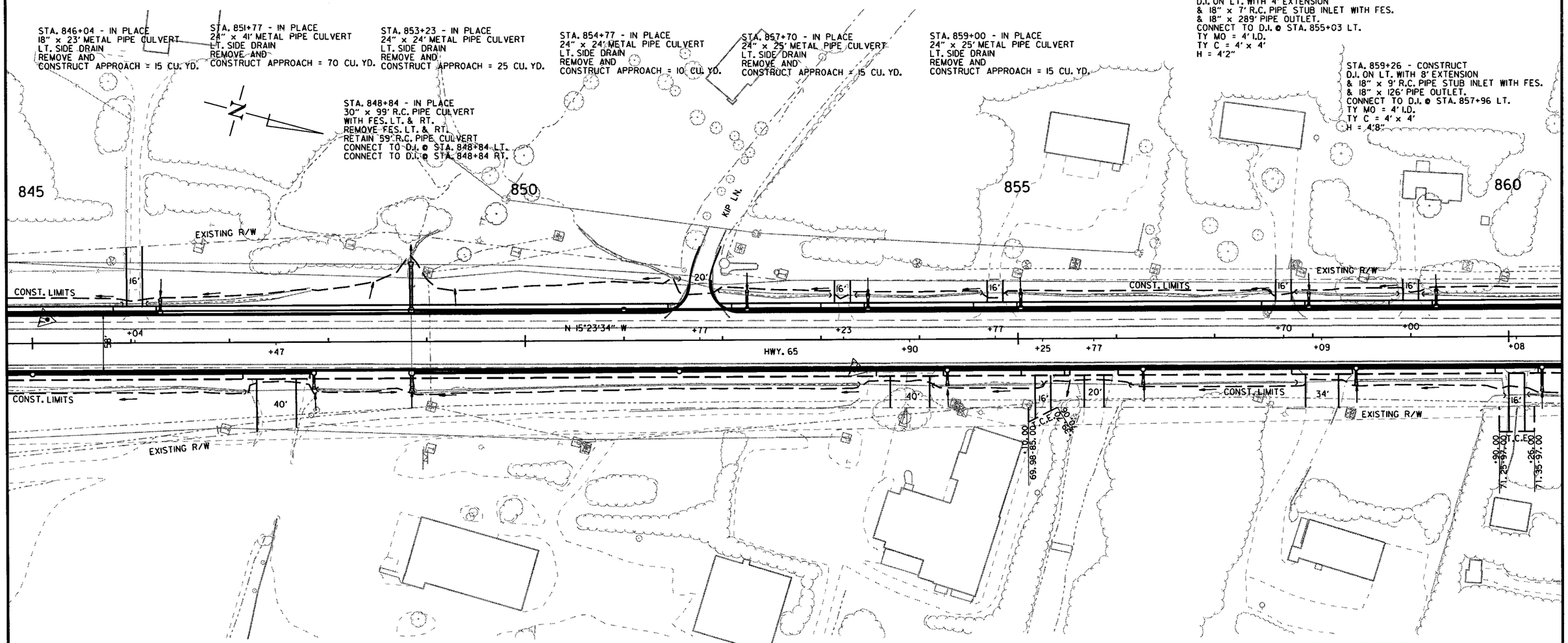
STA. 854+77 - IN PLACE
24" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YD.

STA. 857+70 - IN PLACE
24" x 25' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 859+00 - IN PLACE
24" x 25' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 859+26 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 126' PIPE OUTLET.
CONNECT TO D.I. @ STA. 857+96 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'8"

STA. 848+84 - IN PLACE
30" x 99' R.C. PIPE CULVERT
WITH FES. LT. & RT.
REMOVE FES. LT. & RT.
RETAIN 59' R.C. PIPE CULVERT
CONNECT TO D.I. @ STA. 848+84 LT.
CONNECT TO D.I. @ STA. 848+84 RT.



STA. 845+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 843+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 847+85 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 281' PIPE OUTLET
CONNECT TO D.I. @ STA. 845+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 848+84 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 30" x 12' R.C. PIPE STUB INLET
WITH FES.
CONNECT TO EXISTING PIPE.
TY MO = 5' I.D.
TY C = 4' x 5'
H = 7'8"

STA. 851+56 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 268' PIPE OUTLET
CONNECT TO D.I. @ STA. 848+84 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 854+28 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 268' PIPE OUTLET
CONNECT TO D.I. @ STA. 851+56 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'1"

STA. 856+27 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 195' PIPE OUTLET
CONNECT TO D.I. @ STA. 854+28 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 858+44 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 213' PIPE OUTLET
CONNECT TO D.I. @ STA. 856+27 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'11"

STA. 847+47 - IN PLACE
18" x 68' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 853+90 - IN PLACE
24" x 74' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 855+25 CONSTRUCT
APPROACH ON RT. = 35 CU. YD.

STA. 855+68 - IN PLACE
24" x 86' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 855+77 CONSTRUCT
APPROACH ON RT. = 15 CU. YD.

STA. 858+09 - IN PLACE
18" x 60' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YD.

1/3/2013

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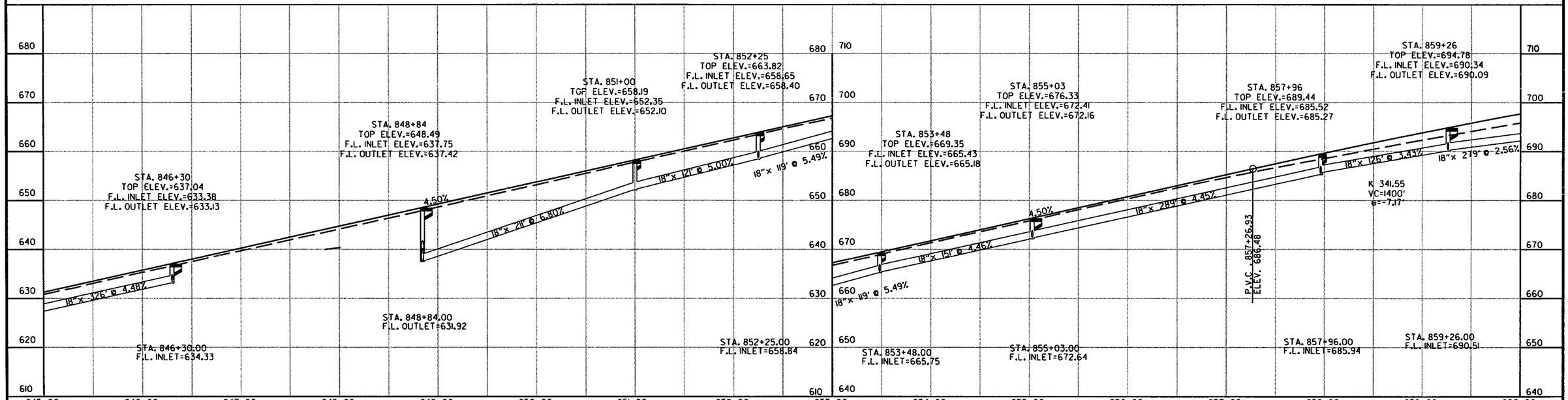
HWY. 65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	159	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-17 TIMMY D. SMITH

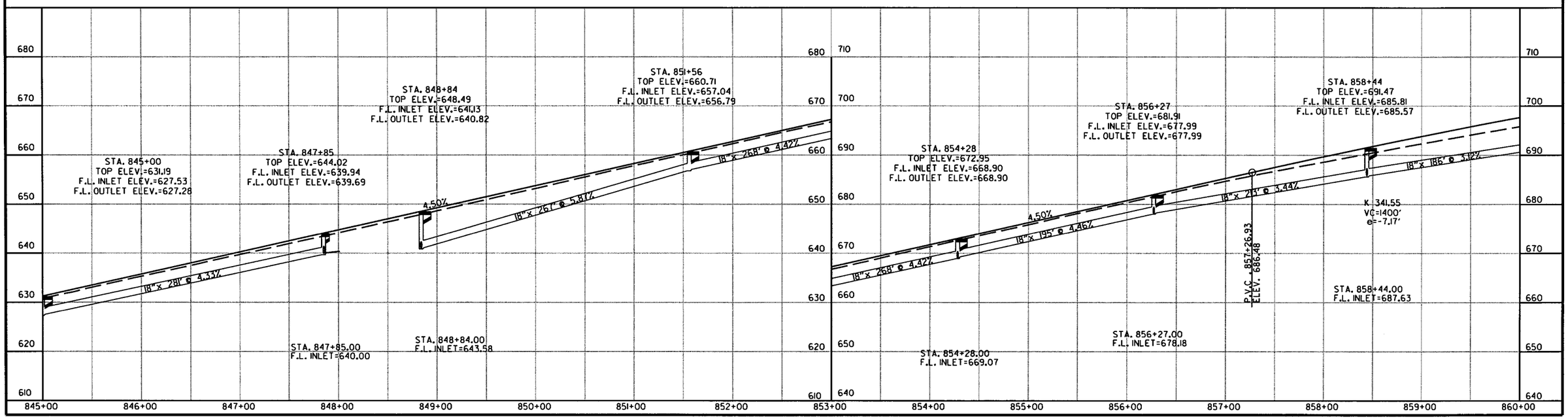
(2) PROFILE SHEET

HWY. 65 LT. SIDE STORM SEWER



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

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	160	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 863+54 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 12' R.C. PIPE STUB INLET WITH FES.
& 18" x 141' PIPE OUTLET.
CONNECT TO D.I. @ STA. 862+09 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'9"

STA. 862+09 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 12' R.C. PIPE STUB INLET WITH FES.
& 18" x 279' PIPE OUTLET.
CONNECT TO D.I. @ STA. 859+26 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'3"

STA. 864+84 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 11' R.C. PIPE STUB INLET WITH FES.
& 18" x 126' PIPE OUTLET.
CONNECT TO D.I. @ STA. 863+54 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'8"

STA. 867+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 212' PIPE OUTLET.
CONNECT TO D.I. @ STA. 864+84 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'7"

STA. 868+72 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 168' PIPE OUTLET.
CONNECT TO D.I. @ STA. 867+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'9"

STA. 870+45 - CONSTRUCT
D.I. ON LT. WITH
18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 67' PIPE OUTLET.
CONNECT TO D.I. @ STA. 869+74 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 873+40 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 50 CU. YD.

STA. 861+67 - IN PLACE
18" x 86' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YD.

STA. 863+28 - IN PLACE
18" x 21' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 120 CU. YD.

STA. 864+58 - IN PLACE
18" x 21' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 868+02 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YD.

STA. 868+46 - IN PLACE
18" x 23' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 869+48 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 869+74 - CONSTRUCT
D.I. ON LT. WITH
18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 98' PIPE OUTLET.
CONNECT TO D.I. @ STA. 868+72 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 870+23 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 871+06 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 871+32 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 177' PIPE OUTLET.
CONNECT TO D.I. @ STA. 873+14 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

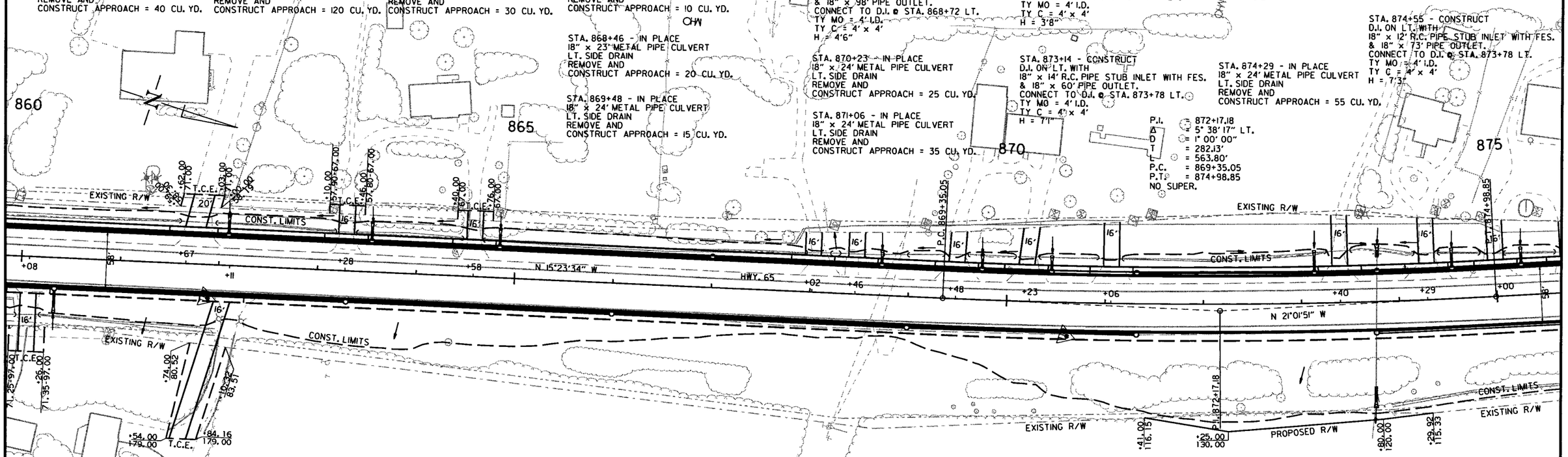
STA. 873+14 - CONSTRUCT
D.I. ON LT. WITH
18" x 14' R.C. PIPE STUB INLET WITH FES.
& 18" x 60' PIPE OUTLET.
CONNECT TO D.I. @ STA. 873+78 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'1"

STA. 873+78 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
CONNECT TO EXISTING PIPE.
TY MO = 4' I.D.
H = 10'2"

STA. 874+29 - IN PLACE
18" x 24' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 55 CU. YD.

STA. 874+55 - CONSTRUCT
D.I. ON LT. WITH
18" x 12' R.C. PIPE STUB INLET WITH FES.
& 18" x 73' PIPE OUTLET.
CONNECT TO D.I. @ STA. 873+78 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'3"

P.I. = 872+17.18
Δ = 5° 38' 17" LT.
D = 1° 00' 00"
T = 282.13'
L = 563.80'
P.C. = 869+35.05
P.T. = 874+98.85
NO SUPER.



STA. 860+34 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 16' R.C. PIPE STUB INLET WITH FES.
& 18" x 186' PIPE OUTLET
CONNECT TO D.I. @ STA. 858+44 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'3"

STA. 863+30 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 292' PIPE OUTLET
CONNECT TO D.I. @ STA. 860+34 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'3"

STA. 866+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 266' PIPE OUTLET
CONNECT TO D.I. @ STA. 863+40 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'11"

STA. 869+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 296' PIPE OUTLET
CONNECT TO D.I. @ STA. 866+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'11"

STA. 871+32 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 229' PIPE OUTLET
CONNECT TO D.I. @ STA. 869+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'1"

STA. 873+76 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& EXISTING 24" x 59' R.C. PIPE STUB INLET
& 24" x 69' R.C. PIPE STUB OUTLET
WITH FES.
CONNECT TO EXISTING PIPE
TY MO = 4' I.D.
H = 16'2"

STA. 873+77 - IN PLACE
24" x 132' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. & RT. AND EXTEND R.C. PIPE
8' LT. AND 16' RT.
TO A COMPLETED LENGTH OF 156'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050 = -- CFS D.A. = -- ACRES
24" R.C. PIPE = 32 LIN. FT.
24" FES = 2 EACH

STA. 860+08 - IN PLACE
18" x 23' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 80 CU. YD.

STA. 862+11 CONSTRUCT
APPROACH ON RT. = 315 CU. YD.

1/3/2013

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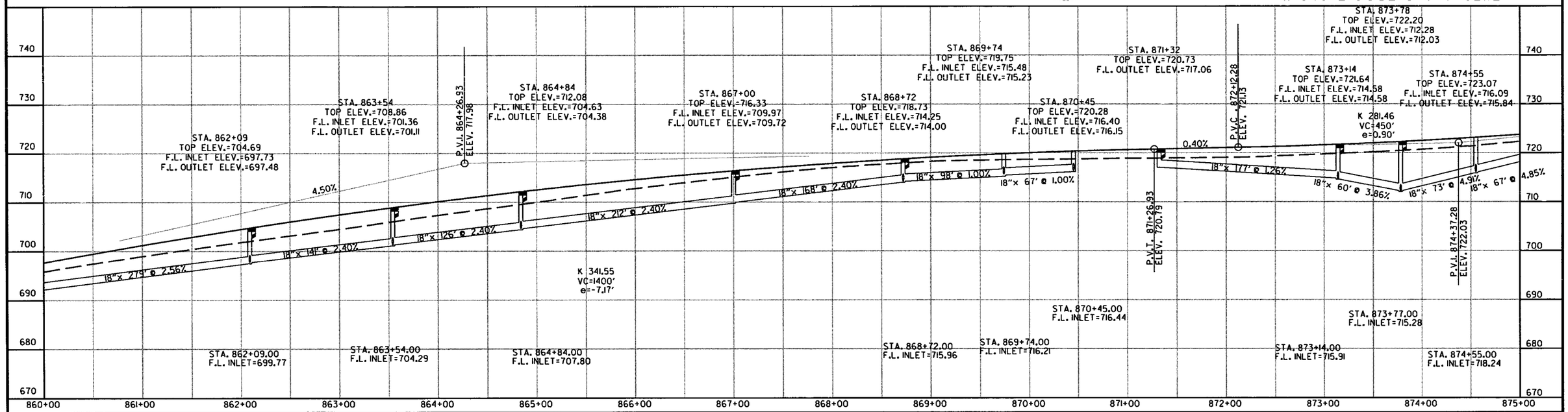
HWY. 65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	161	517

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-10-12
TRINITY D. SMITH

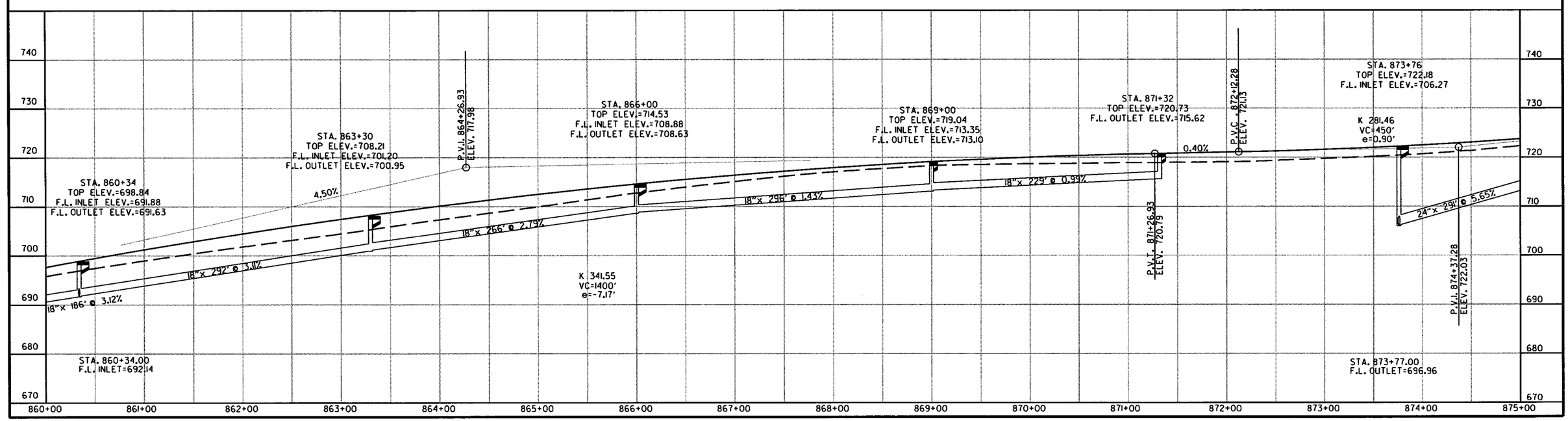
(2) PROFILE SHEET

HWY. 65 LT. SIDE STORM SEWER



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

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	162	517

(2) PLAN SHEET

STA. 875+00 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 875+82 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YD.

STA. 876+70 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 877+62 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 878+41 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 880+82 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 875+26 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 67' PIPE OUTLET.
CONNECT TO D.I. @ STA. 874+55 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'9"

STA. 876+96 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 76' PIPE OUTLET.
CONNECT TO D.I. @ STA. 876+16 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 878+69 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 6' R.C. PIPE STUB INLET WITH FES.
& 18" x 76' PIPE OUTLET.
CONNECT TO D.I. @ STA. 877+89 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 882+28 CONSTRUCT
APPROACH ON LT. = 65 CU. YD.

STA. 883+34 CONSTRUCT
APPROACH ON LT. = 55 CU. YD.

STA. 883+98 CONSTRUCT
APPROACH ON LT. = 150 CU. YD.

STA. 885+17 CONSTRUCT
APPROACH ON LT. = 15 CU. YD.

STA. 888+47 CONSTRUCT
APPROACH ON LT. = 95 CU. YD.

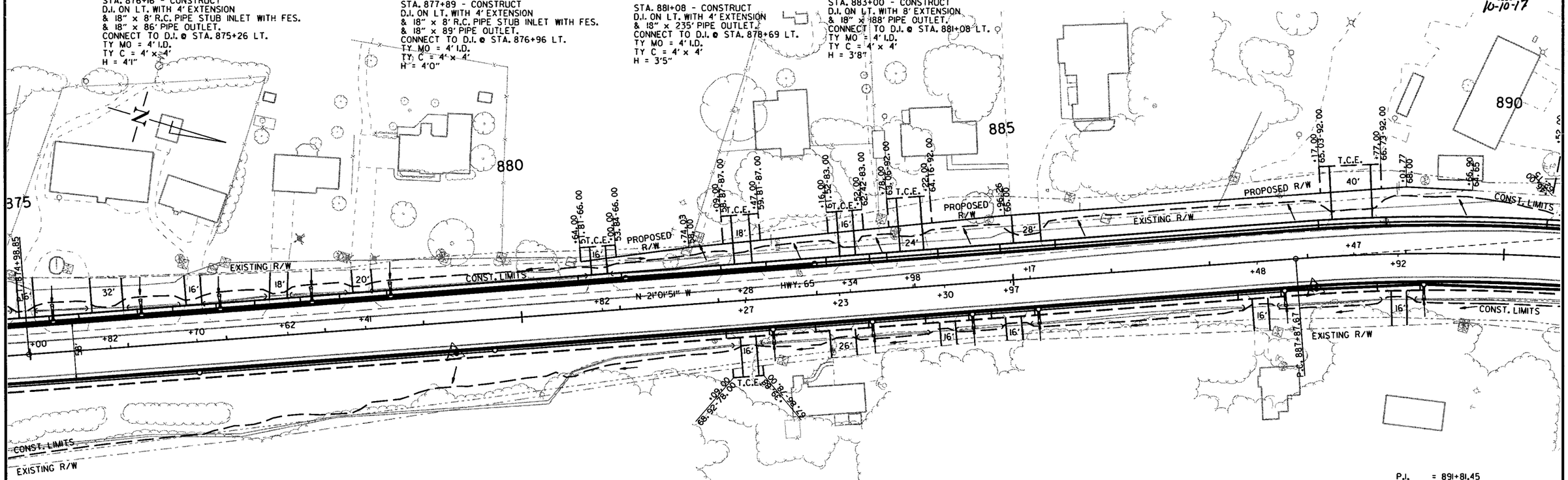
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-10-17

STA. 876+16 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 86' PIPE OUTLET.
CONNECT TO D.I. @ STA. 875+26 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'1"

STA. 877+89 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 89' PIPE OUTLET.
CONNECT TO D.I. @ STA. 876+96 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 881+08 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 235' PIPE OUTLET.
CONNECT TO D.I. @ STA. 878+69 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'5"

STA. 883+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 188' PIPE OUTLET.
CONNECT TO D.I. @ STA. 881+08 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"



P.I. = 891+81.45
Δ = 23° 18' 01" RT.
D = 3° 00' 00"
T = 393.78'
L = 776.67'
P.C. = 887+87.67
P.T. = 895+64.35
e = 0.028'/'
Ls = 450'

STA. 884+56 - CONSTRUCT
D.I. ON RT. WITH
18" x 7' R.C. PIPE STUB INLET WITH FES.
& 24" x 98' PIPE OUTLET
CONNECT TO D.I. @ STA. 883+54 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 876+70 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 291' PIPE OUTLET
CONNECT TO D.I. @ STA. 873+76 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 879+70 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 296' PIPE OUTLET
CONNECT TO D.I. @ STA. 876+70 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 882+53 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 24" x 279' PIPE OUTLET.
CONNECT TO D.I. @ STA. 879+70 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 883+54 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 24" x 97' PIPE OUTLET.
CONNECT TO D.I. @ STA. 882+53 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 885+23 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 63' PIPE OUTLET
CONNECT TO D.I. @ STA. 884+56 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 887+74 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 24" x 247' PIPE OUTLET
CONNECT TO D.I. @ STA. 885+23 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 889+18 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 138' PIPE OUTLET
CONNECT TO D.I. @ STA. 887+74 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 882+27 - IN PLACE
18" x 30' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 883+23 - IN PLACE
18" x 28' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

STA. 884+30 - IN PLACE
18" x 27' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 884+97 - IN PLACE
18" x 28' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 887+48 - IN PLACE
18" x 35' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

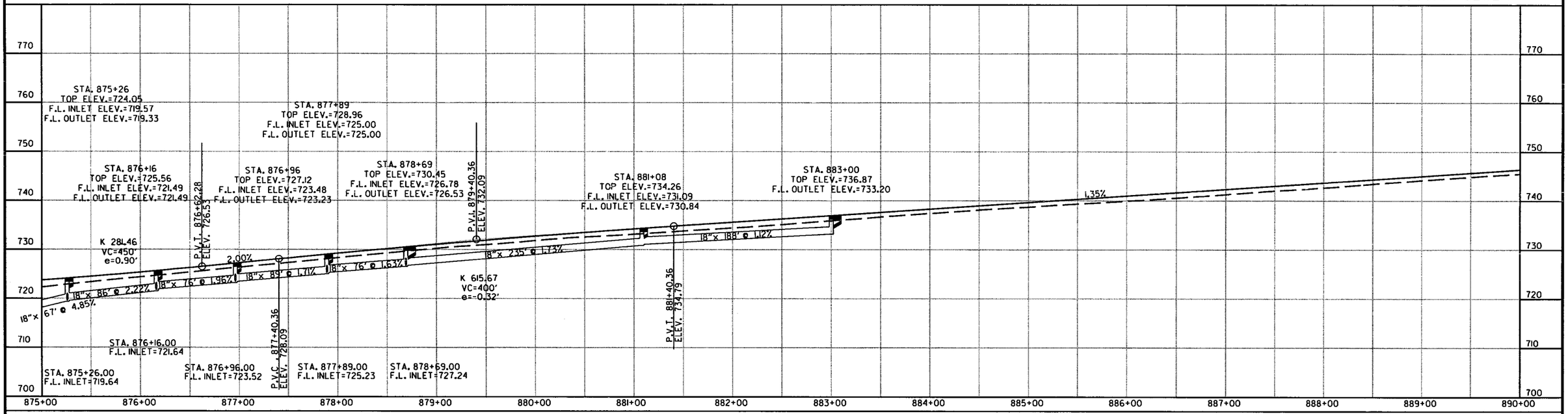
STA. 888+92 - IN PLACE
18" x 34' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	163	517

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N-11425
10-13-17
TRINITY D. SMITH

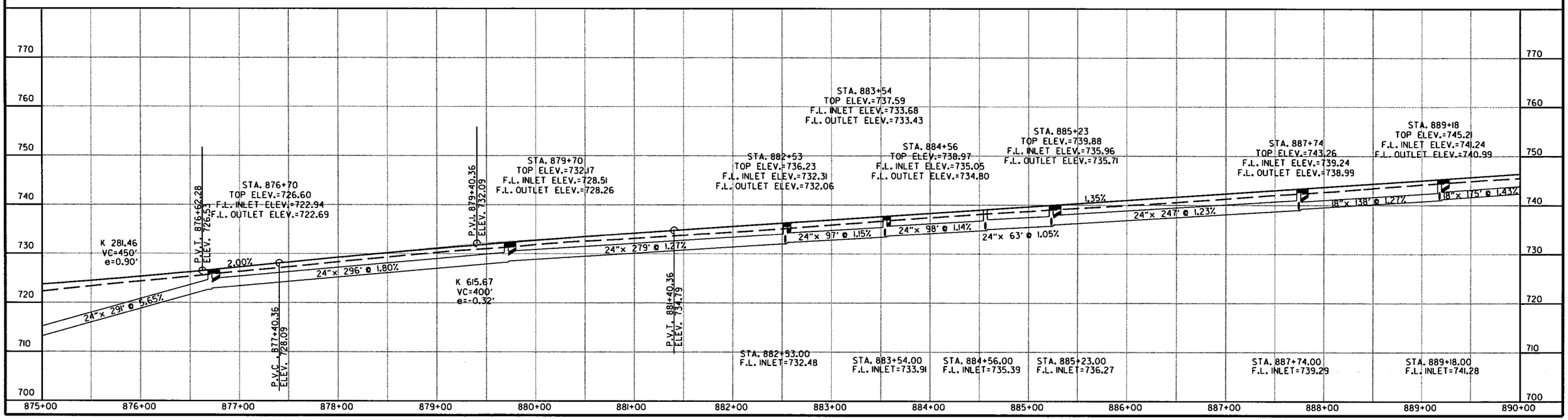
HWY. 65 LT. SIDE STORM SEWER



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

STA. 884+50.17 BEGIN SUPERELEVATION
STA. 889+00.17 MAX SUPERELEVATION (0.028'/')
STA. 894+51.85 MAX SUPERELEVATION (0.028'/')
STA. 899+01.85 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	164	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 890+75 CONSTRUCT
APPROACH ON LT. = 90 CU. YD.

STA. 892+46 CONSTRUCT
APPROACH ON LT. = 5 CU. YD.

STA. 895+66 CONSTRUCT
APPROACH ON LT. = 35 CU. YD.

STA. 896+96 - IN PLACE
18" x 32' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 900+03 - IN PLACE
18" x 33' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 902+62 - IN PLACE
18" x 34' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 894+19 CONSTRUCT
APPROACH ON LT. = 10 CU. YD.

STA. 903+39 - IN PLACE
18" x 31' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YD.

STA. 893+35 - IN PLACE
24" x 103' R.C. PIPE CULVERT
WITH FES. LT. & RT.
REMOVE FES. LT. & RT.
INSTALL FES. LT.
CONNECT TO D.I. @ STA. 893+41 RT.

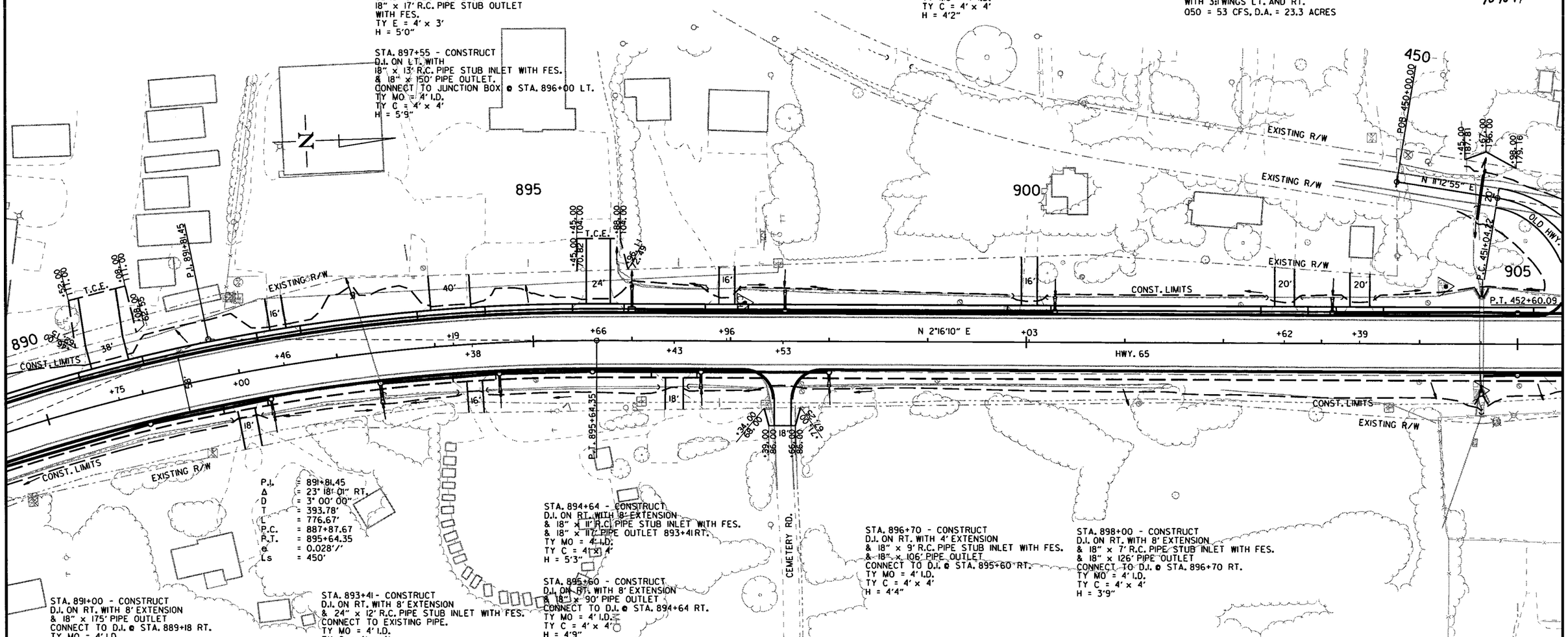
STA. 900+29 - CONSTRUCT
D.I. ON LT. WITH
18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 270' PIPE OUTLET.
CONNECT TO D.I. @ STA. 897+55 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 903+11 - CONSTRUCT
D.I. ON LT. WITH
18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 148' PIPE OUTLET.
CONNECT TO R.C. BOX CULVERT @ STA. 904+63.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 904+63 IN PLACE
4' x 3' x 95' R.C. BOX CULVERT
RETAIN AND EXTEND 2' LT. AND 9' RT.
TO A COMPLETED LENGTH OF 106'
WITH 3:1 WINGS LT. AND RT.
050 = 53 CFS, D.A. = 23.3 ACRES

STA. 896+00 - CONSTRUCT
JUNCTION BOX ON LT. WITH
18" x 17' R.C. PIPE STUB OUTLET
WITH FES.
TY E = 4' x 3'
H = 5'0"

STA. 897+55 - CONSTRUCT
D.I. ON LT. WITH
18" x 13' R.C. PIPE STUB INLET WITH FES.
& 18" x 150' PIPE OUTLET.
CONNECT TO JUNCTION BOX @ STA. 896+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'9"



P.I. = 891+81.45
Δ = 23° 18' 01" RT.
D = 3° 00' 00"
T = 393.78'
L = 776.67'
P.C. = 887+87.67
P.T. = 895+64.35
e = 0.028'/'
Ls = 450'

STA. 894+64 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 11' R.C. PIPE STUB INLET WITH FES.
& 18" x 117' PIPE OUTLET 893+41 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'3"

STA. 895+60 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 90' PIPE OUTLET
CONNECT TO D.I. @ STA. 894+64 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'9"

STA. 896+70 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 9' R.C. PIPE STUB INLET WITH FES.
& 18" x 106' PIPE OUTLET
CONNECT TO D.I. @ STA. 895+60 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 898+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 126' PIPE OUTLET
CONNECT TO D.I. @ STA. 896+70 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'9"

STA. 891+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 175' PIPE OUTLET
CONNECT TO D.I. @ STA. 889+18 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 893+41 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 12' R.C. PIPE STUB INLET WITH FES.
CONNECT TO EXISTING PIPE.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'2"

STA. 892+27 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 121' PIPE OUTLET
CONNECT TO D.I. @ STA. 891+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 896+43 - IN PLACE
18" x 28' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 892+00 - IN PLACE
18" x 30' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

STA. 894+38 - IN PLACE
18" x 28' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YD.

STA. 897+53 - IN PLACE
18" x 26' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YD.

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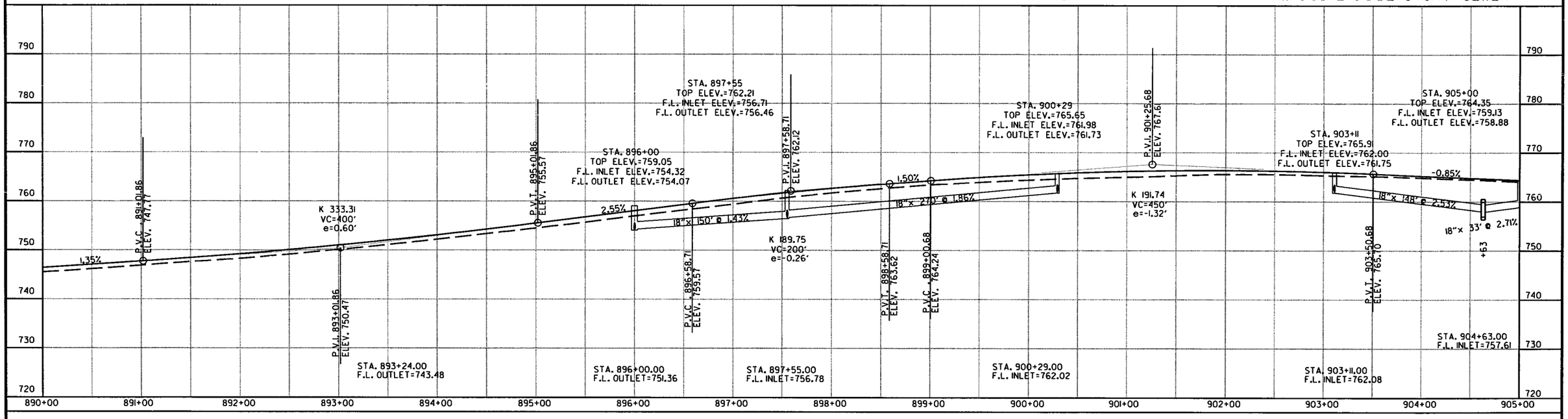
HWY. 65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	165	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-17 TRINITY D. SMITH

(2) PROFILE SHEET

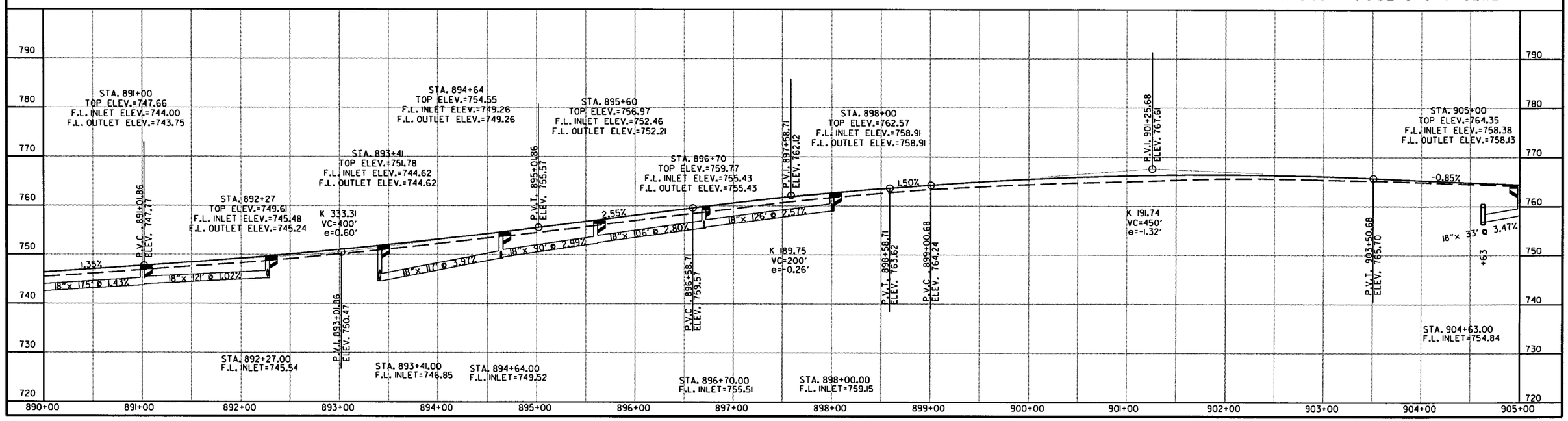
HWY. 65 LT. SIDE STORM SEWER



STA. 884+50.17 BEGIN SUPERELEVATION
STA. 889+00.17 MAX SUPERELEVATION (0.028'/')
STA. 894+51.85 MAX SUPERELEVATION (0.028'/')
STA. 899+01.85 END SUPERELEVATION

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

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	166	517

(2) PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17

STA. 906+28 - IN PLACE
24" x 56' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND @ STA 905+83
CONSTRUCT APPROACH
SEE CROSS SECTIONS

STA. 908+73 - IN PLACE
18" x 49' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 50 CU. YD.

STA. 910+64 - IN PLACE
18" x 42' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 911+80 - IN PLACE
18" x 49' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 85 CU. YD.

STA. 914+94 - IN PLACE
18" x 30' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 100 CU. YD.

STA. 915+36 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 916+04 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 906+70 CONSTRUCT
APPROACH ON LT. = 70 CU. YD.

STA. 915+71 - IN PLACE
18" x 96' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 145 CU. YD.

STA. 905+21 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 906+06 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 905+00 - CONSTRUCT
D.I. ON LT. WITH
& 18" x 148' PIPE OUTLET.
CONNECT TO R.C. BOX CULVERT @ STA. 904+63.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'6"

STA. 906+25 - CONSTRUCT
D.I. ON LT. WITH
18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 121' PIPE OUTLET.
CONNECT TO D.I. @ STA. 905+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 907+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. PIPE STUB INLET WITH FES.
& 18" x 71' PIPE OUTLET.
CONNECT TO D.I. @ STA. 906+25 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 909+11 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 8' R.C. PIPE STUB INLET WITH FES.
& 18" x 207' PIPE OUTLET.
CONNECT TO D.I. @ STA. 907+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

STA. 910+44 - CONSTRUCT
JUNCTION BOX ON LT. WITH
30" x 6' R.C. PIPE STUB INLET
WITH FES.
CONNECT TO EXISTING PIPE
TY E = 4' x 3'
H = 7'10"

STA. 910+44 - IN PLACE
30" x 104' PIPE CULVERT
RETAIN 95'
CONNECT TO JUNCTION BOX @
STA. 910+44 LT.

STA. 911+08 - CONSTRUCT
D.I. ON LT. WITH
18" x 14' R.C. PIPE STUB INLET WITH FES.
& 18" x 61' PIPE OUTLET.
CONNECT TO JUNCTION BOX @ STA. 910+44 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'9"

STA. 912+18 - CONSTRUCT
D.I. ON LT. WITH
18" x 11' R.C. PIPE STUB INLET WITH FES.
& 18" x 105' PIPE OUTLET.
CONNECT TO D.I. @ STA. 911+08 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'1"

STA. 914+00 - CONSTRUCT
D.I. ON LT. WITH
18" x 175' PIPE OUTLET.
CONNECT TO D.I. @ STA. 912+18 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 915+20 - CONSTRUCT
D.I. ON LT. WITH
18" x 114' PIPE OUTLET.
CONNECT TO D.I. @ STA. 914+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 916+38 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 30" x 19' R.C. PIPE STUB INLET.
CONNECT TO EXISTING PIPE.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 9'4"

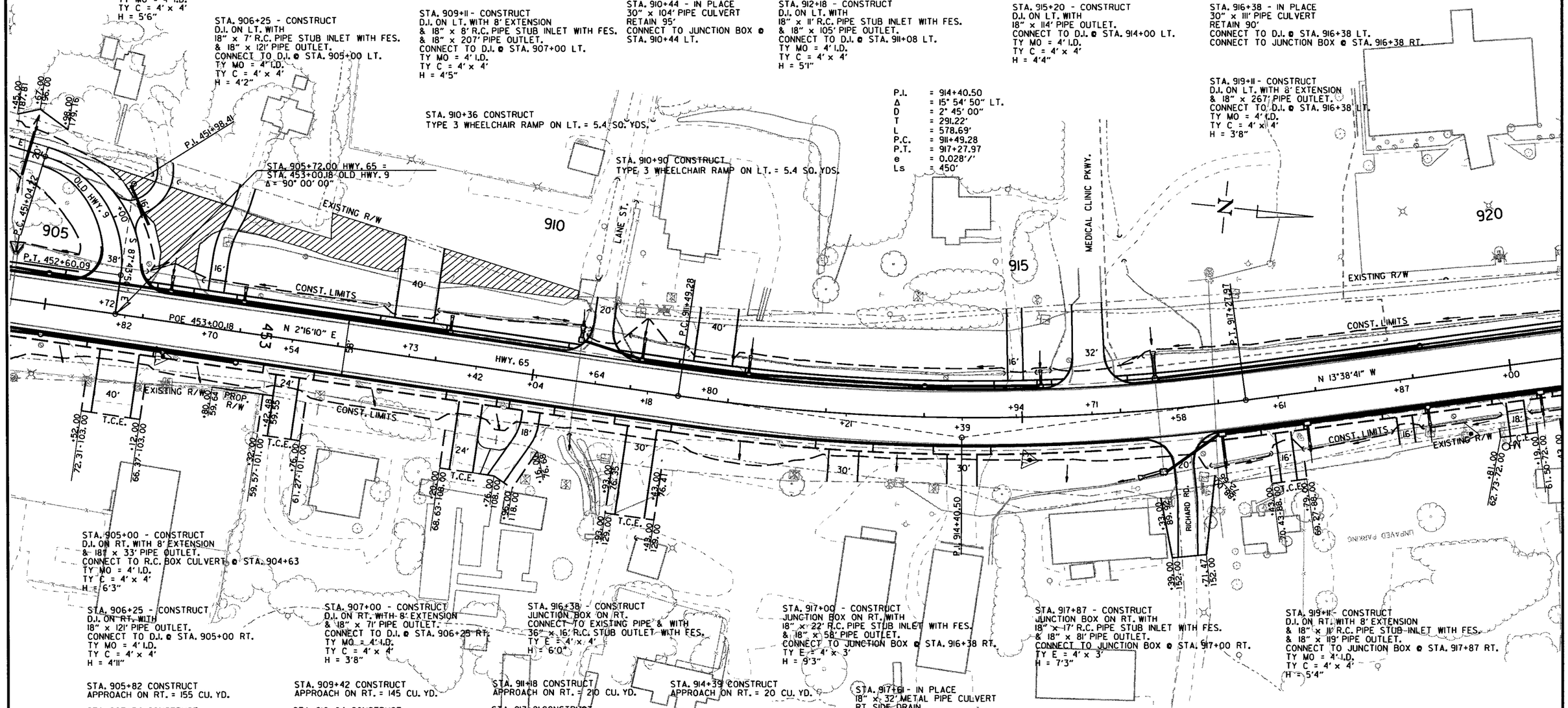
STA. 916+38 - IN PLACE
30" x 111' PIPE CULVERT
RETAIN 90'
CONNECT TO D.I. @ STA. 916+38 LT.
CONNECT TO JUNCTION BOX @ STA. 916+38 RT.

STA. 919+11 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 267' PIPE OUTLET.
CONNECT TO D.I. @ STA. 916+38 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 910+36 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 910+90 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

P.I. = 914+40.50
Δ = 15° 54' 50" LT.
D = 2° 45' 00"
T = 291.22'
L = 578.69'
P.C. = 911+49.28
P.T. = 917+27.97
e = 0.028'/'
Ls = 450'



STA. 905+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 33' PIPE OUTLET.
CONNECT TO R.C. BOX CULVERT @ STA. 904+63
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'3"

STA. 906+25 - CONSTRUCT
D.I. ON RT. WITH
18" x 121' PIPE OUTLET.
CONNECT TO D.I. @ STA. 905+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'11"

STA. 907+00 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 71' PIPE OUTLET.
CONNECT TO D.I. @ STA. 906+25 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 916+38 - CONSTRUCT
JUNCTION BOX ON RT.
CONNECT TO EXISTING PIPE & WITH
36" x 16' R.C. STUB OUTLET WITH FES.
TY E = 4' x 4'
H = 6'0"

STA. 917+00 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 22' R.C. PIPE STUB INLET WITH FES.
& 18" x 58' PIPE OUTLET.
CONNECT TO JUNCTION BOX @ STA. 916+38 RT.
TY E = 4' x 3'
H = 9'3"

STA. 917+87 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 17' R.C. PIPE STUB INLET WITH FES.
& 18" x 81' PIPE OUTLET.
CONNECT TO JUNCTION BOX @ STA. 917+00 RT.
TY E = 4' x 3'
H = 7'3"

STA. 919+11 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 11' R.C. PIPE STUB INLET WITH FES.
& 18" x 119' PIPE OUTLET.
CONNECT TO JUNCTION BOX @ STA. 917+87 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'4"

STA. 905+82 CONSTRUCT
APPROACH ON RT. = 155 CU. YD.

STA. 907+54 CONSTRUCT
APPROACH ON RT. = 205 CU. YD.

STA. 909+42 CONSTRUCT
APPROACH ON RT. = 145 CU. YD.

STA. 910+04 CONSTRUCT
APPROACH ON RT. = 95 CU. YD.

STA. 911+18 CONSTRUCT
APPROACH ON RT. = 210 CU. YD.

STA. 913+21 CONSTRUCT
APPROACH ON RT. = 25 CU. YD.

STA. 914+39 CONSTRUCT
APPROACH ON RT. = 20 CU. YD.

STA. 916+58 - IN PLACE
18" x 45' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 340 CU. YD.

STA. 917+61 - IN PLACE
18" x 32' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 50 CU. YD.

STA. 918+87 - IN PLACE
18" x 30' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YD.

STA. 920+00 - IN PLACE
18" x 30' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YD.

HWY. 65

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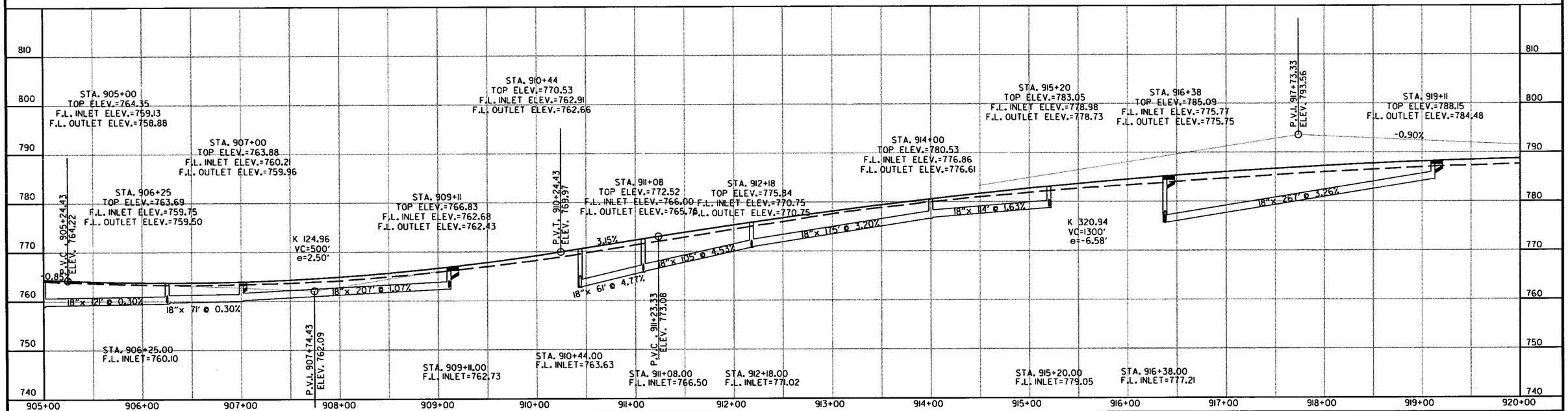
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	167	517

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-17 TRINITY D. SMITH

(2) PROFILE SHEET

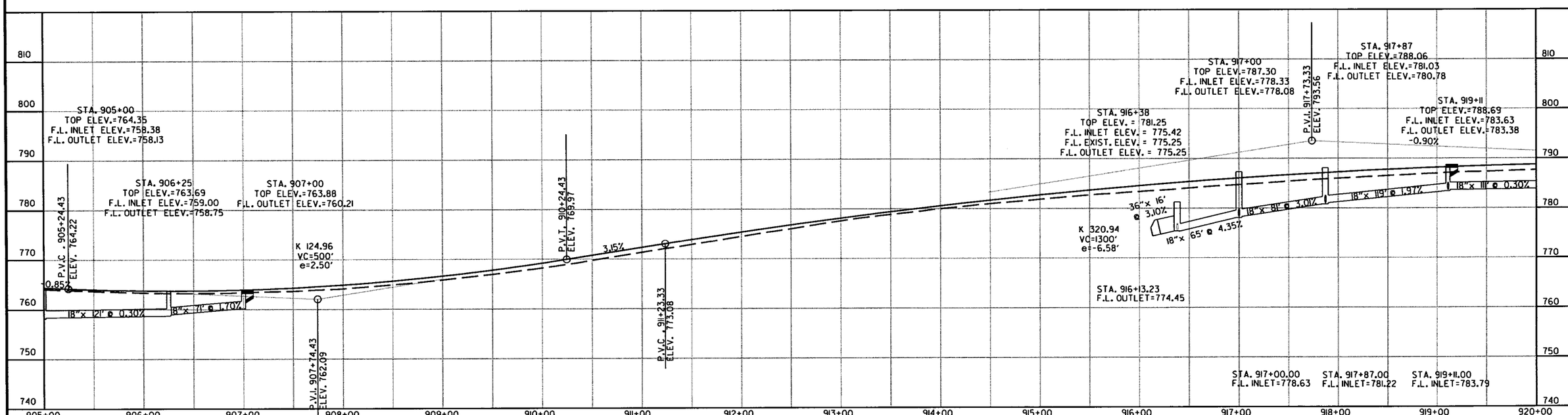
HWY. 65 LT. SIDE STORM SEWER



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

STA. 908+11.78 BEGIN SUPERELEVATION
STA. 912+61.78 MAX SUPERELEVATION (0.028'/')
STA. 916+15.47 MAX SUPERELEVATION (0.028'/')
STA. 920+65.47 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER



R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	168	517

(2) PLAN SHEET

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

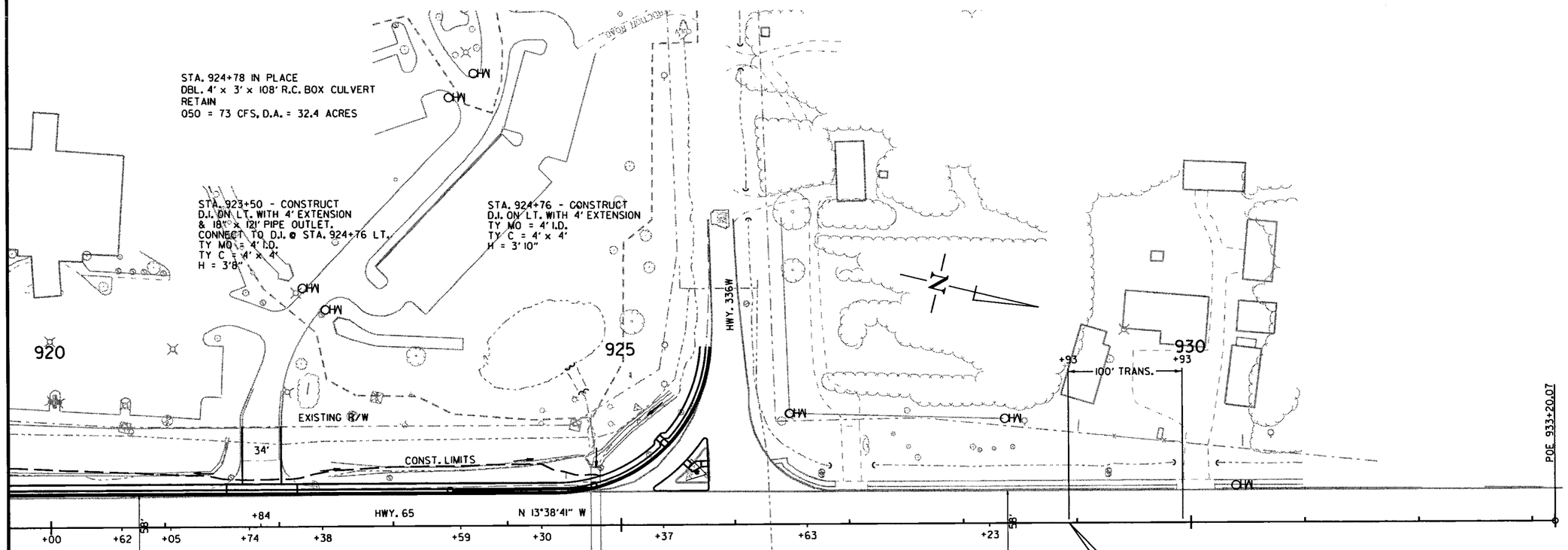
10-10-17

STA. 921+84 CONSTRUCT
APPROACH ON LT. = 35 CU. YD.

STA. 925+38 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.4 SQ. YDS.

STA. 925+59 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.4 SQ. YDS.

STA. 925+72 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 3.4 SQ. YDS.



1/3/2013

R080423.DGN

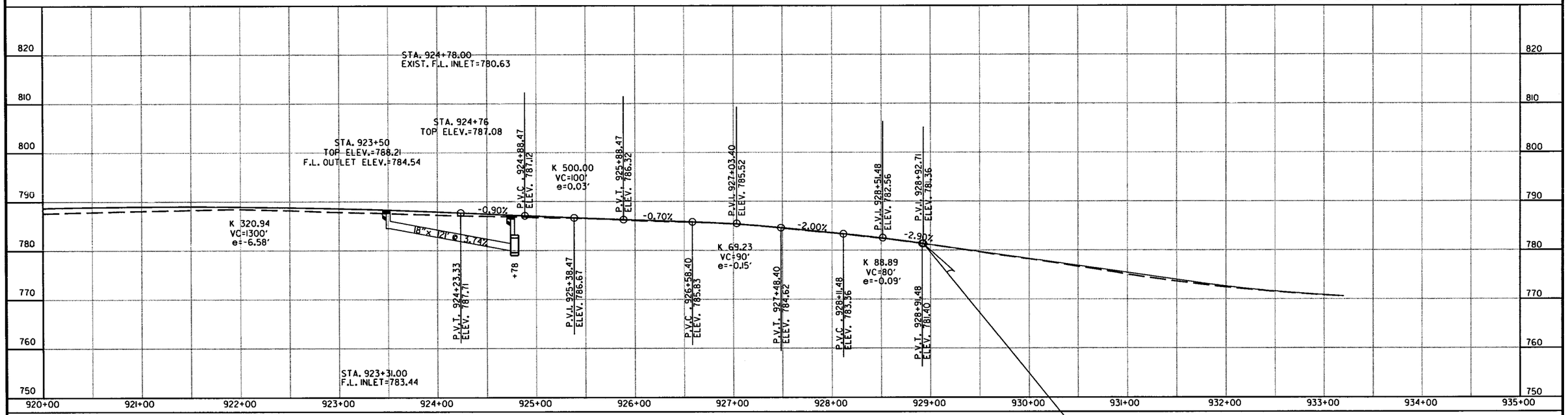
HWY. 65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	169	517

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N-11425
10-10-12
TRINITY D. SMITH

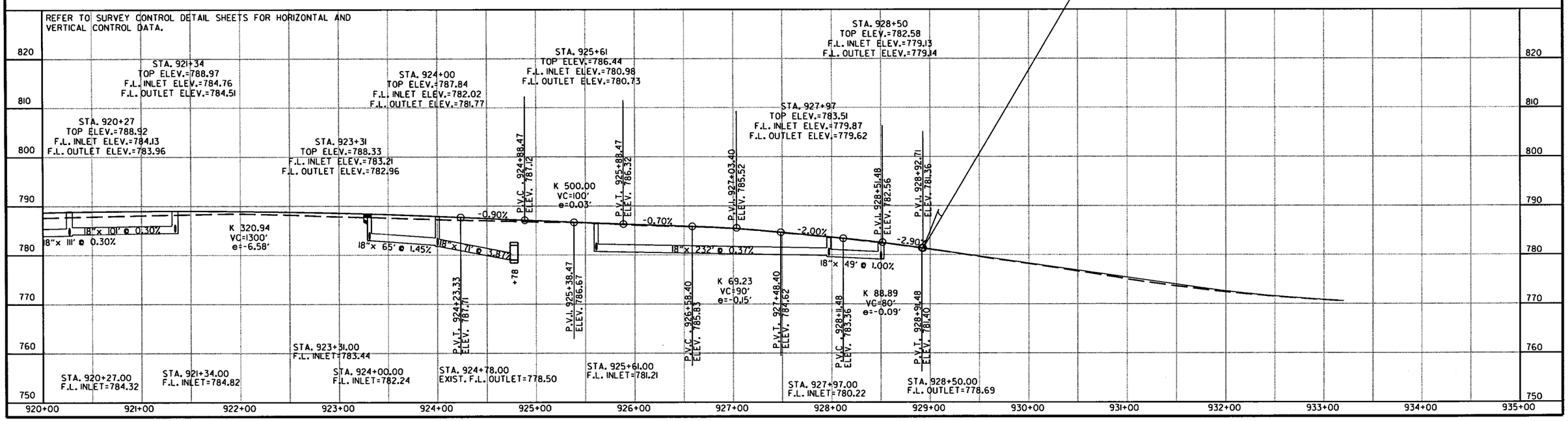
(2) PROFILE SHEET

HWY. 65 LT. SIDE STORM SEWER



STA. 908+11.78 BEGIN SUPERELEVATION
STA. 912+61.78 MAX SUPERELEVATION (0.028'/')
STA. 916+15.47 MAX SUPERELEVATION (0.028'/')
STA. 920+65.47 END SUPERELEVATION

HWY. 65 RT. SIDE STORM SEWER

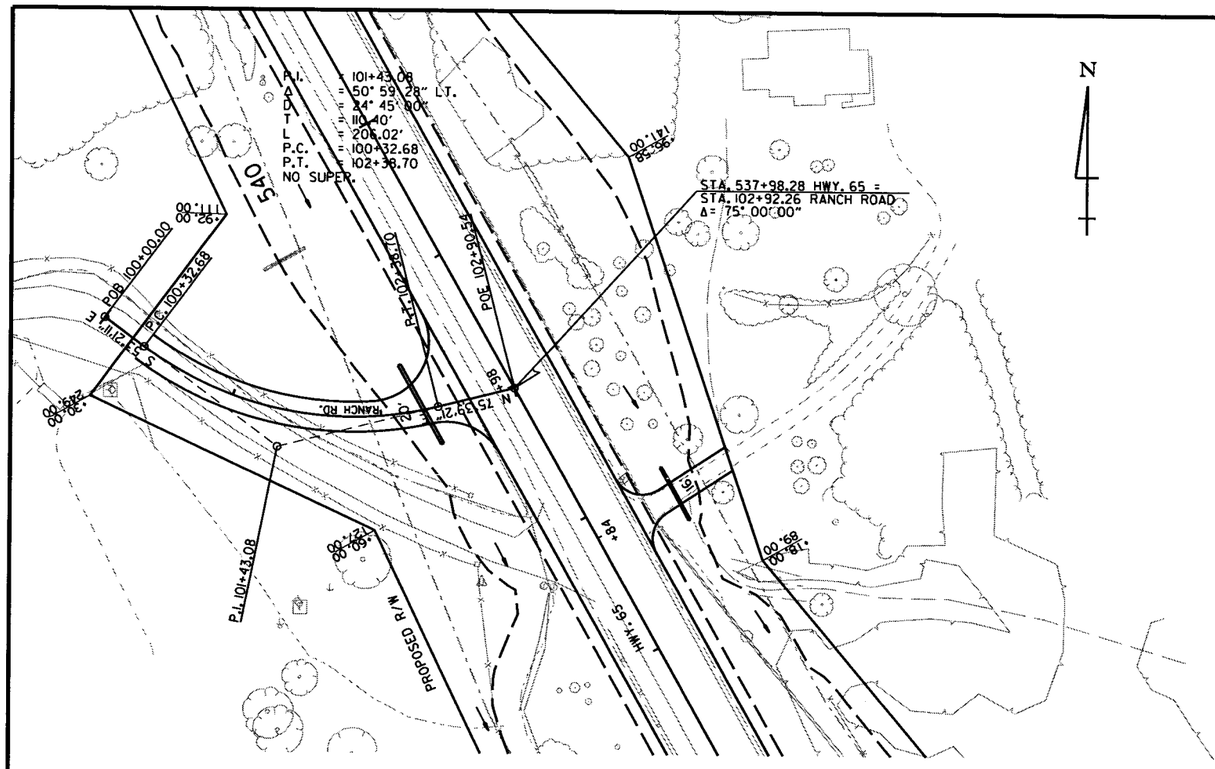


R080423.DGN 1/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-19-17				6	ARK.			
				JOB NO.		080423	170	517

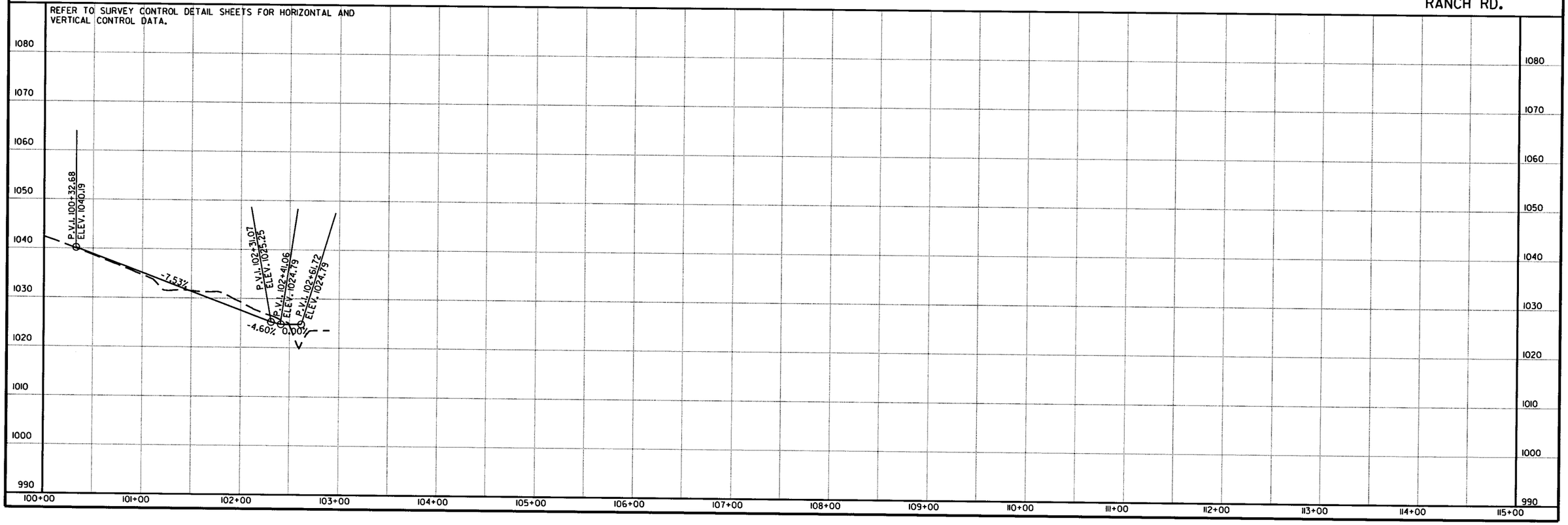
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-19-17



RANCH RD.

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

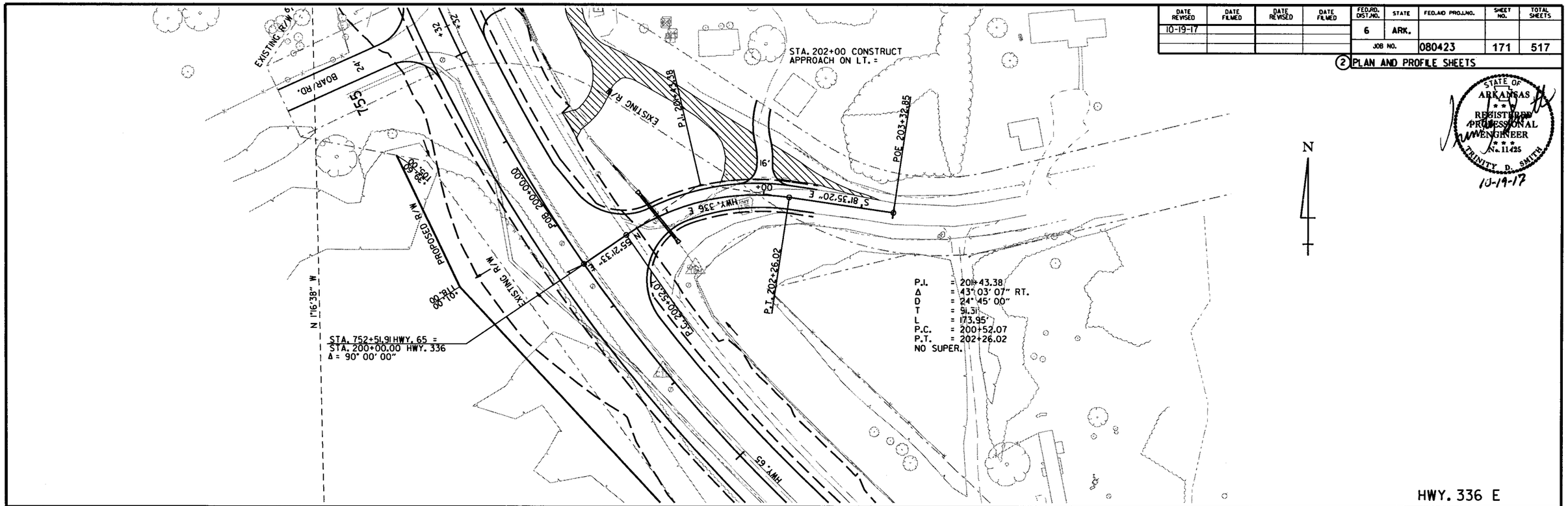


R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-19-17				6	ARK.			
				JOB NO.		080423	171	517

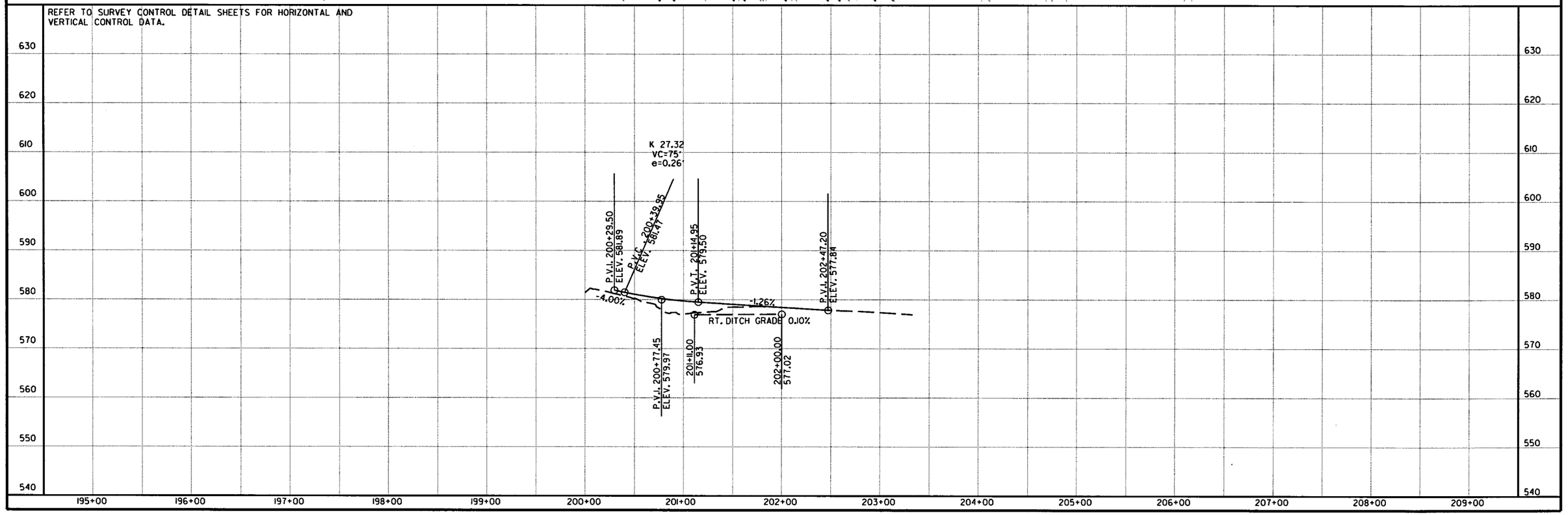
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-19-17



HWY. 336 E

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



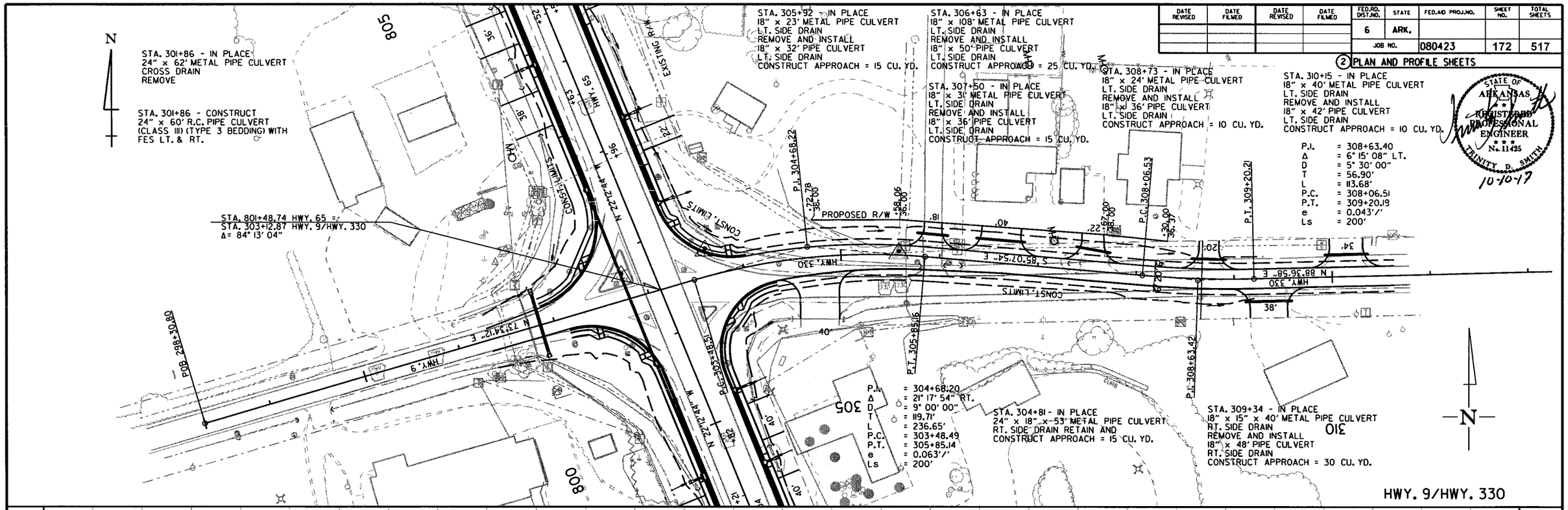
1/4/2013

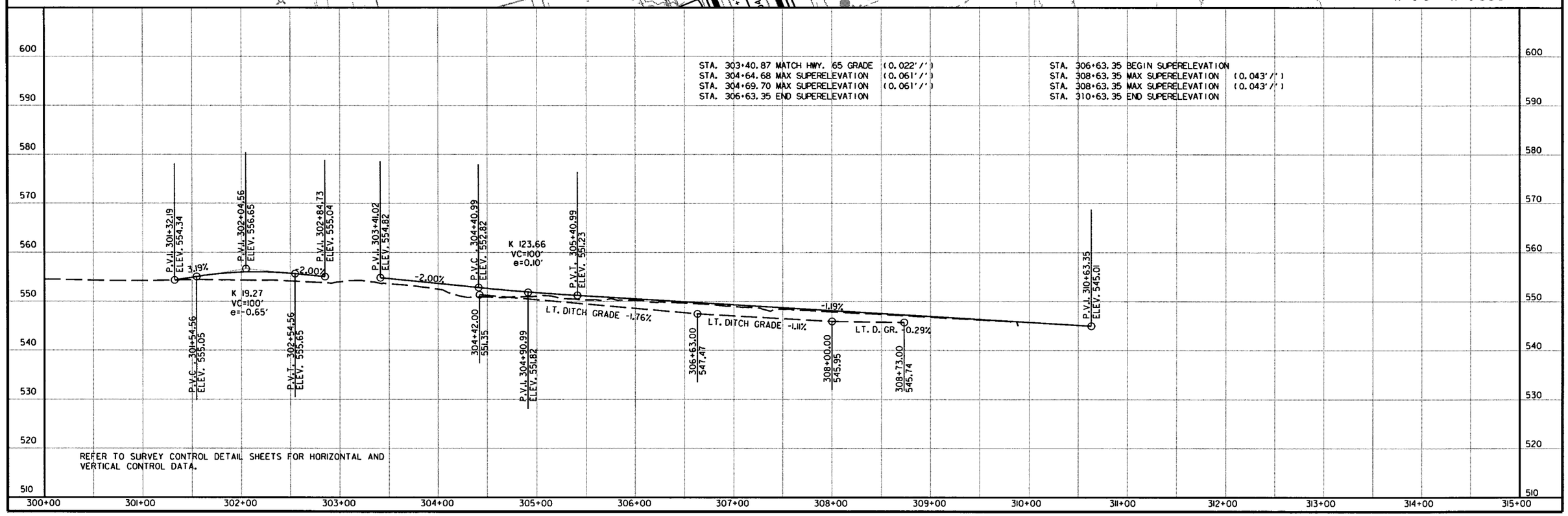
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	172	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-10-17





1/4/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-19-17				6	ARK.			
				JOB NO.		080423	173	517

(2) PLAN AND PROFILE SHEETS

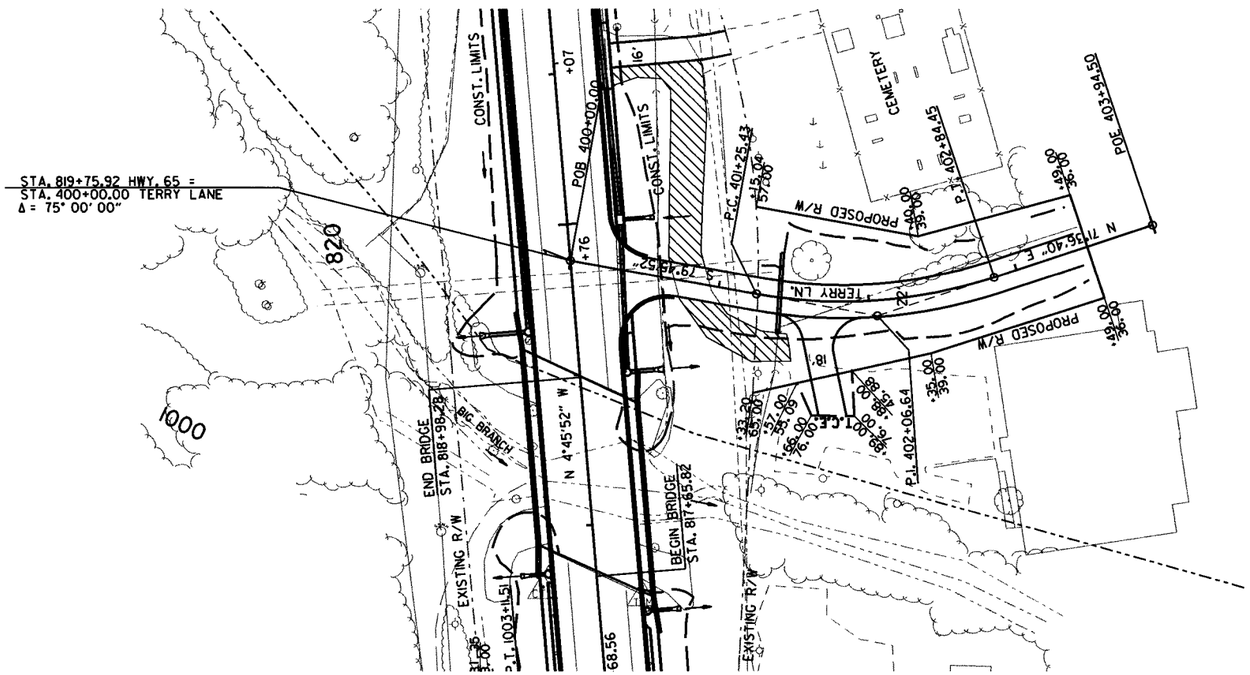
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-19-17

P.I. = 402+06.64
Δ = 28° 37' 28" LT.
D = 18° 00' 00"
T = 81.21
L = 159.02
P.C. = 401+25.43
P.T. = 402+84.45
NO SUPER.

STA. 401+41 - IN PLACE
24" x 28' METAL PIPE CULVERT
REMOVE

STA. 401+41 - INSTALL
24" x 55' R.C. PIPE CULVERT
WITH FES. LT. & RT.

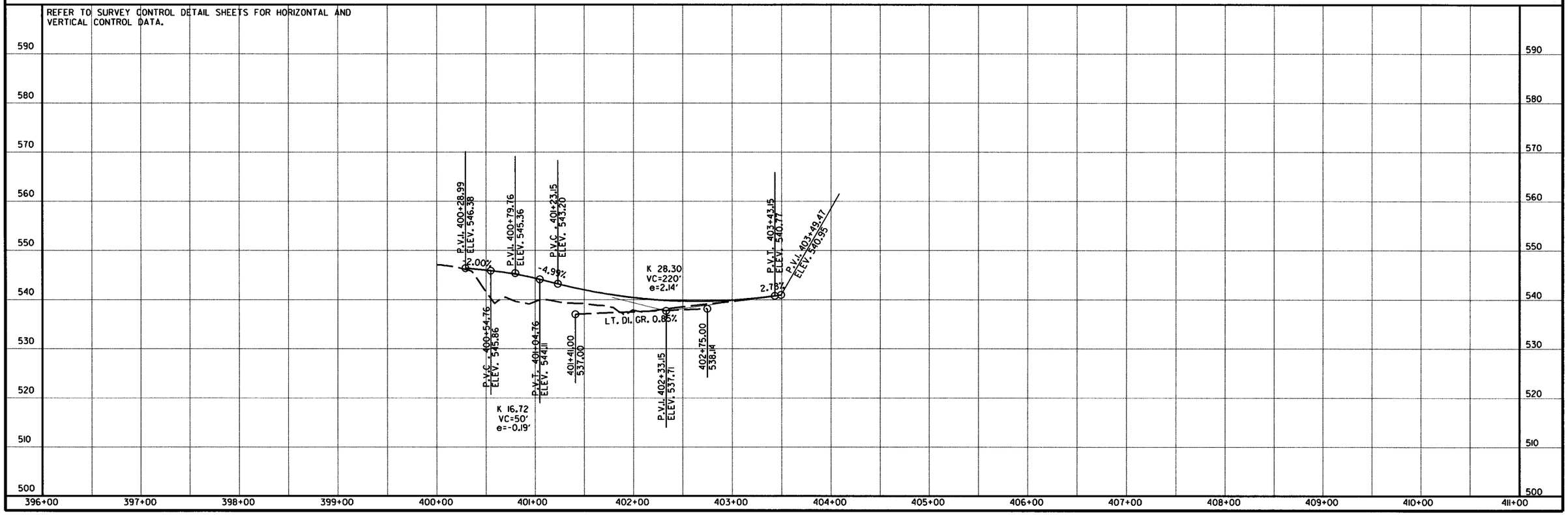
STA. 401+70 CONSTRUCT
APPROACH ON RT. = 65 CU. YDS.



N

TERRY LN.

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



1/4/2013

R080423.DGN

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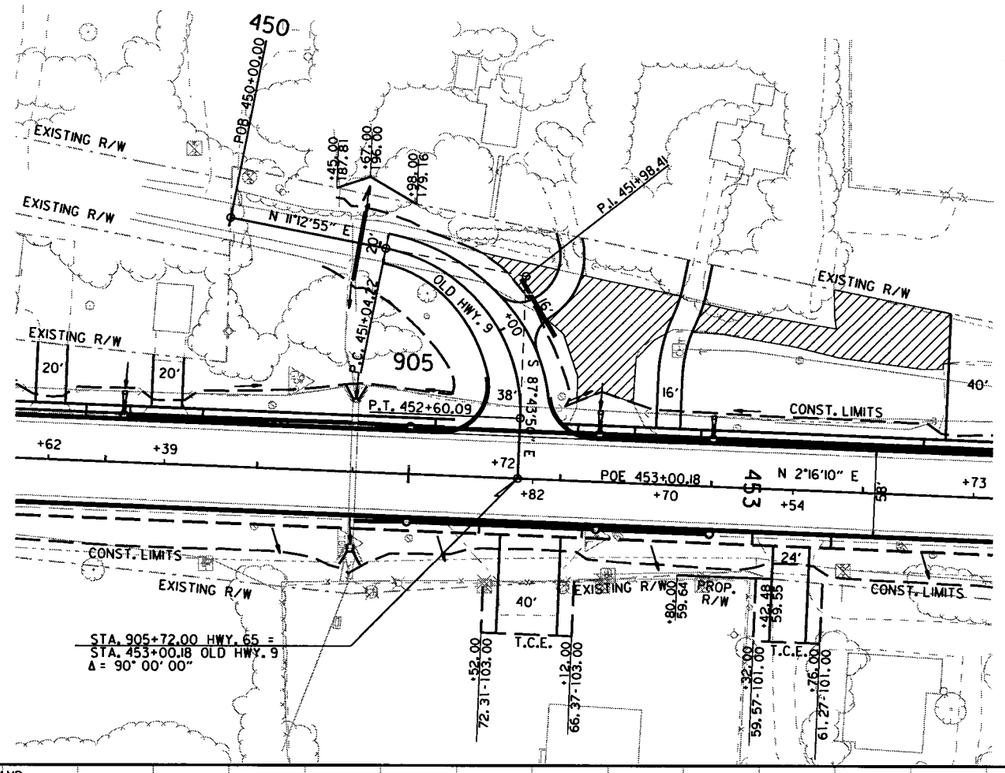
10-19-17				6	ARK.			
				JOB NO.		080423	174	517

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-19-17

P.I. = 451+98.41
Δ = 81° 03' 15" RT.
D = 52° 00' 00"
T = 94.20'
L = 155.87'
P.C. = 451+04.22
P.T. = 452+60.09
NO SUPER

STA. 905+50 - IN PLACE
18" x 61' METAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YD.

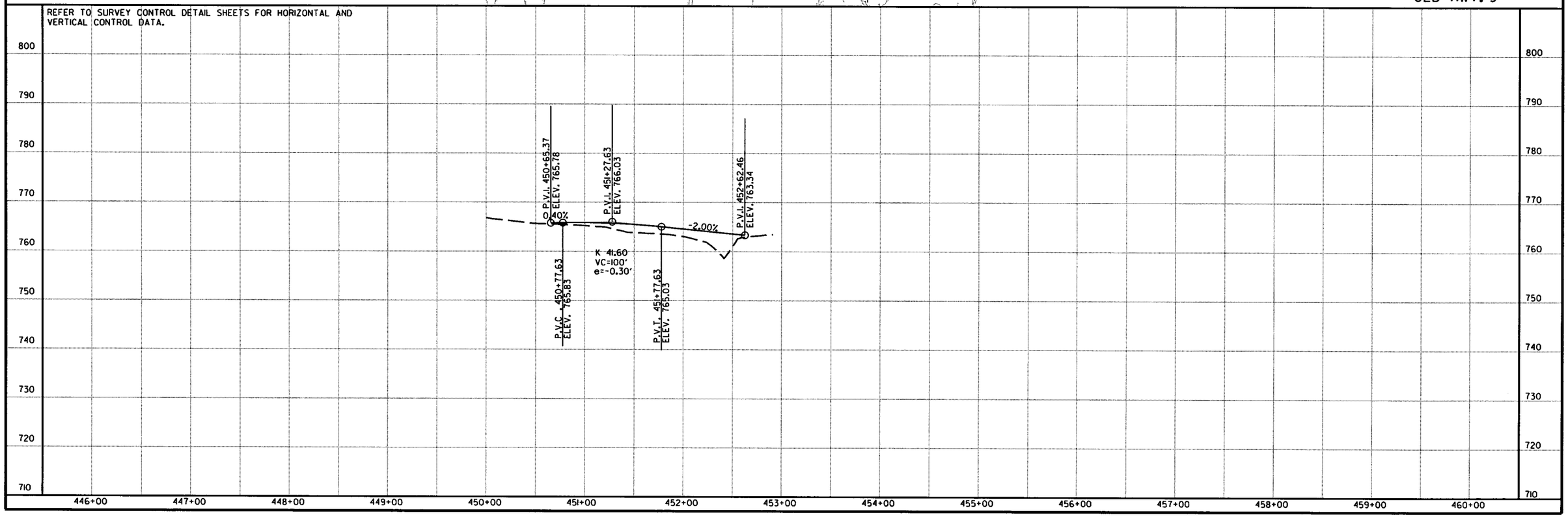


STA. 452+00 - INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =

STA. 450+97 - IN PLACE
18" x 24' PIPE CULVERT
LT. SIDE DRAIN
REMOVE

OLD HWY. 9

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



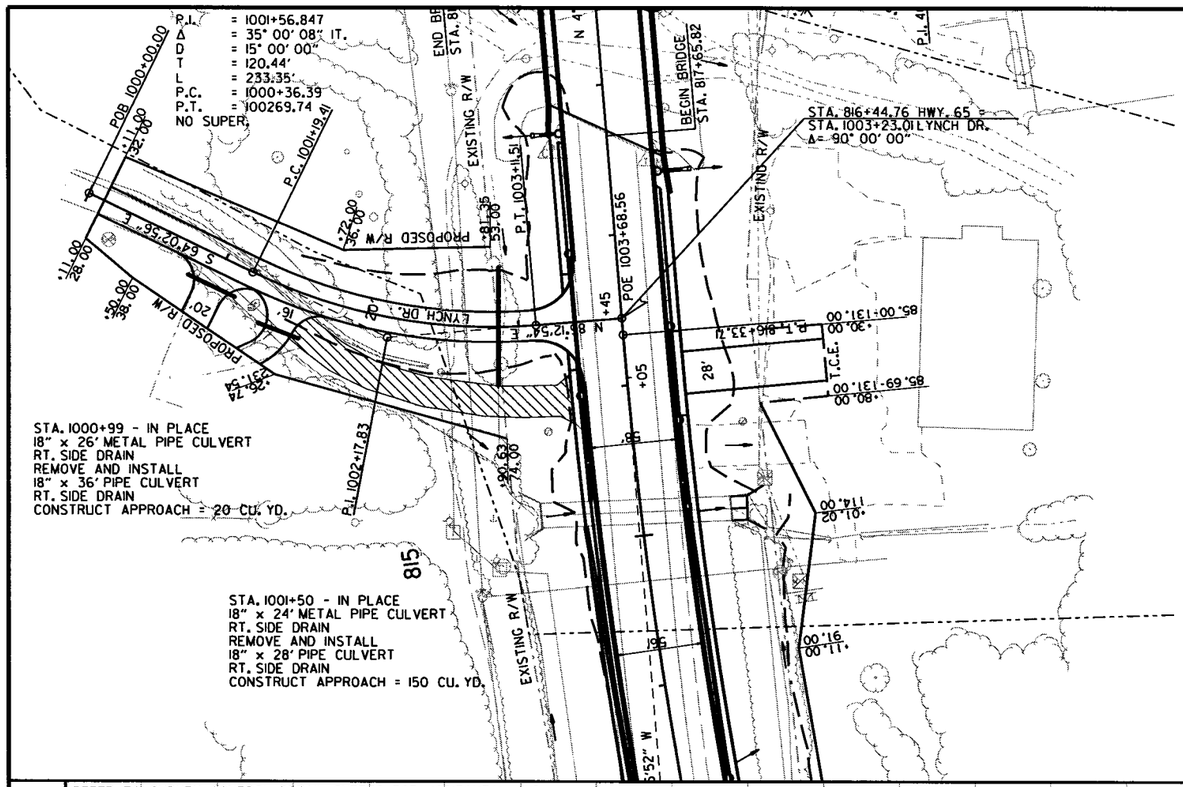
R080423.DGN 1/4/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-19-17			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	175	517

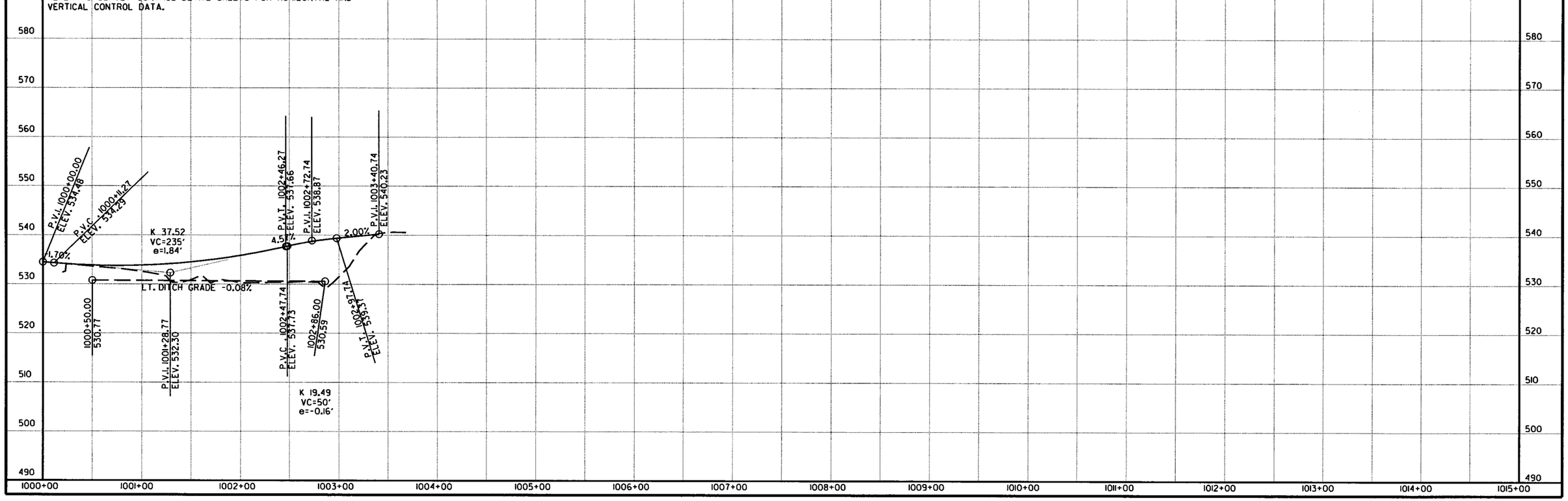
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-19-17



LYNCH DR.

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



R080423.DGN 1/4/2013

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10-19-17			

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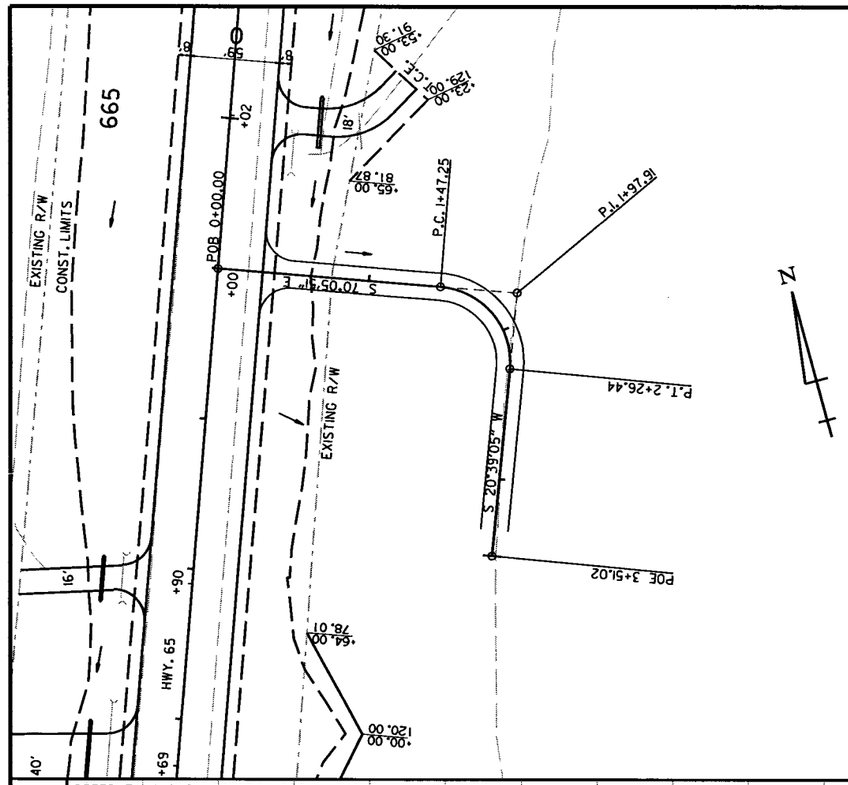
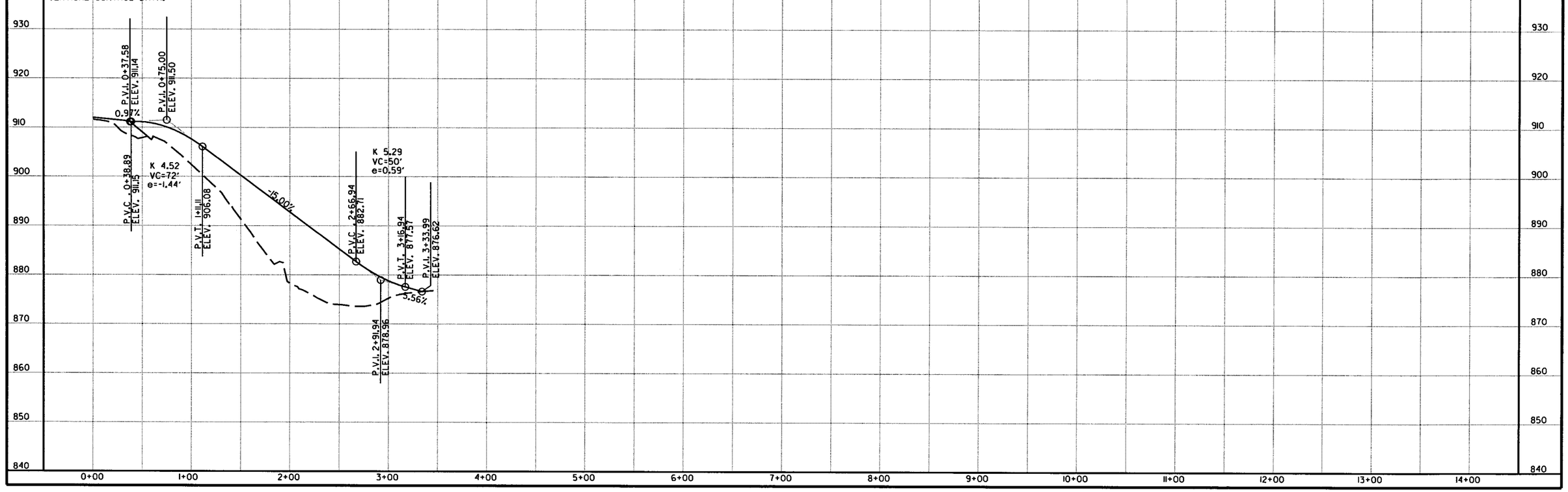
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-19-17



DRIVE @ STA. 664+00

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



1/4/2013

R080423.DGN

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

10-10-17

TRAFFIC SIGNAL QUANTITIES

	ITEM NUMBER	ITEM	QUANTITY	UNIT
	SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	10	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2233	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	83	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	122	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	640	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	249	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 1 HD)	3	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	5	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
*	SP & 733	VIDEO DETECTOR (CLR)	8	EACH
	733	VIDEO CABLE	394	LIN. FT.

* ONE SPARE VIDEO DETECTOR SHALL BE SUPPLIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) TRAFFIC SIGNAL NOTES

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

10-10-17

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 (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. 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/COUNTY 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. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL 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/ COUNTY'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, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. 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 TO 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 AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS 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 AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.

9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.

10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

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 STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

12. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS.

13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

14. 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.

15. TO DETERMINE UTILITY CLEARANCES 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, THIRTY-EIGTH (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 TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

16. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

17. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.

18. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

19. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

20. ONE VIDEO PROGRAMMNG 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.

21. 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.

22. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.

23. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODFICATION.

24. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

DATE: 10-06-17 FILE NAME: t080423.dgn

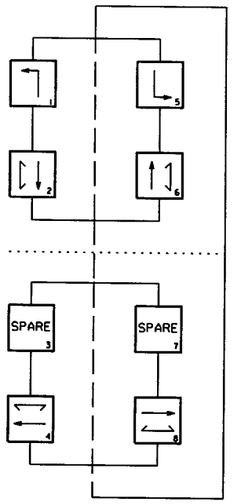
LOCATION: HWY. 65/HWYS. 9 & 330
CITY: N/A
COUNTY: VAN BUREN
DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	179	517

(2) SIGNALIZATION PLAN SHEET

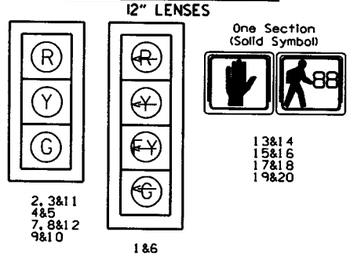
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-10-17

(NEW) PHASING DIAGRAM



SIGNAL FACES

12" LENSES



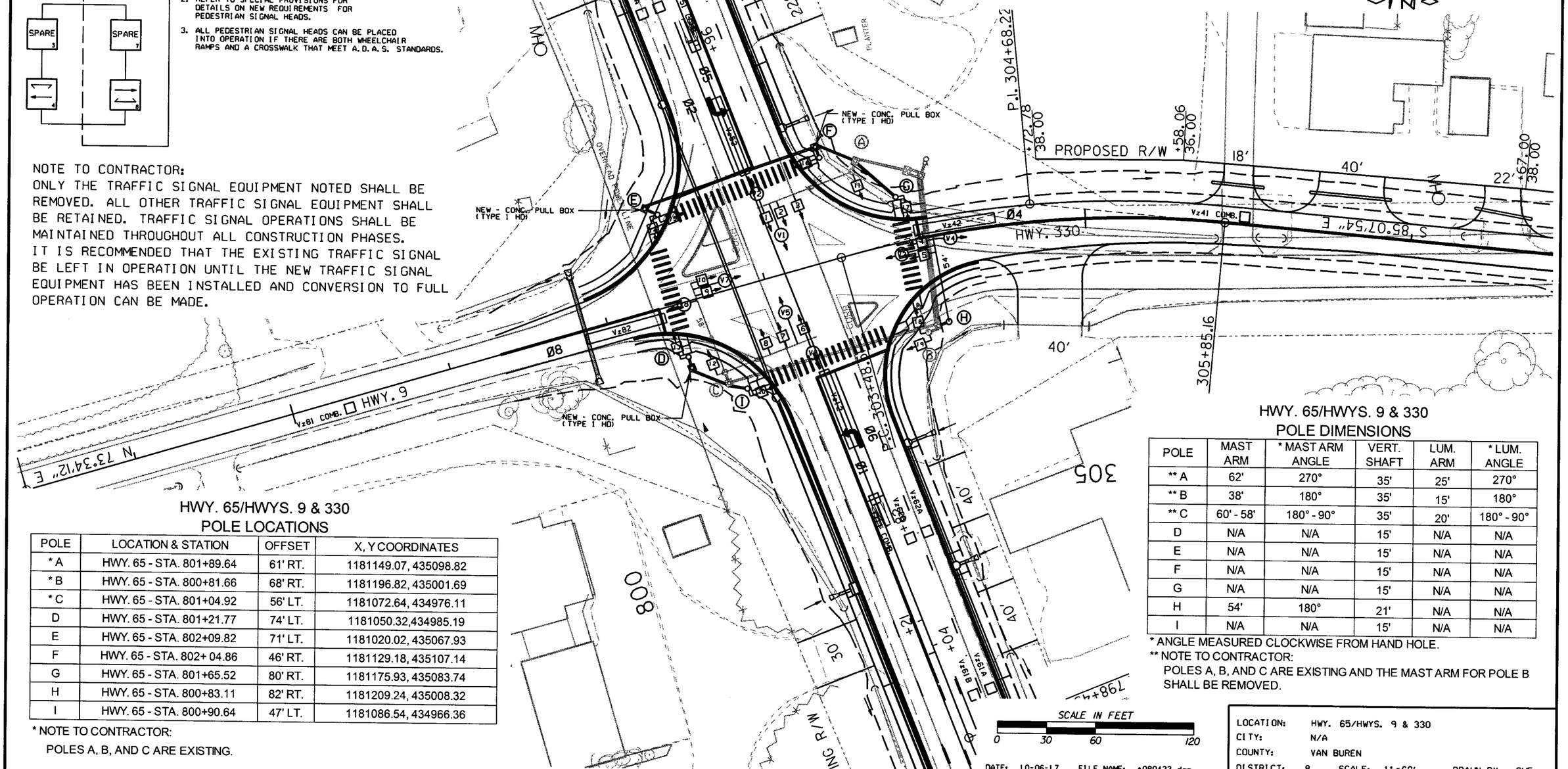
One Section (Solid Symbol)

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.

NOTE TO CONTRACTOR:
ONLY THE TRAFFIC SIGNAL EQUIPMENT NOTED SHALL BE REMOVED. ALL OTHER TRAFFIC SIGNAL EQUIPMENT SHALL BE RETAINED. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
IT IS RECOMMENDED THAT THE EXISTING TRAFFIC SIGNAL BE LEFT IN OPERATION UNTIL THE NEW TRAFFIC SIGNAL EQUIPMENT HAS BEEN INSTALLED AND CONVERSION TO FULL OPERATION CAN BE MADE.

DETECTOR SPACING CHART

AHTD HWY. 65 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 9/ HWY. 330 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
35 MPH	200'	N/A



HWY. 65/HWYS. 9 & 330 POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
*A	HWY. 65 - STA. 801+89.64	61' RT.	1181149.07, 435098.82
*B	HWY. 65 - STA. 800+81.66	68' RT.	1181196.82, 435001.69
*C	HWY. 65 - STA. 801+04.92	56' LT.	1181072.64, 434976.11
D	HWY. 65 - STA. 801+21.77	74' LT.	1181050.32,434985.19
E	HWY. 65 - STA. 802+09.82	71' LT.	1181020.02, 435067.93
F	HWY. 65 - STA. 802+ 04.86	46' RT.	1181129.18, 435107.14
G	HWY. 65 - STA. 801+65.52	80' RT.	1181175.93, 435083.74
H	HWY. 65 - STA. 800+83.11	82' RT.	1181209.24, 435008.32
I	HWY. 65 - STA. 800+90.64	47' LT.	1181086.54, 434966.36

* NOTE TO CONTRACTOR:
POLES A, B, AND C ARE EXISTING.

HWY. 65/HWYS. 9 & 330 POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
** A	62'	270°	35'	25'	270°
** B	38'	180°	35'	15'	180°
** C	60' - 58'	180° - 90°	35'	20'	180° - 90°
D	N/A	N/A	15'	N/A	N/A
E	N/A	N/A	15'	N/A	N/A
F	N/A	N/A	15'	N/A	N/A
G	N/A	N/A	15'	N/A	N/A
H	54'	180°	21'	N/A	N/A
I	N/A	N/A	15'	N/A	N/A

* ANGLE MEASURED CLOCKWISE FROM HAND HOLE.
** NOTE TO CONTRACTOR:
POLES A, B, AND C ARE EXISTING AND THE MAST ARM FOR POLE B SHALL BE REMOVED.

LOCATION: HWY. 65/HWYS. 9 & 330
CITY: N/A
COUNTY: VAN BUREN
DISTRICT: 8 SCALE: 1"=60' DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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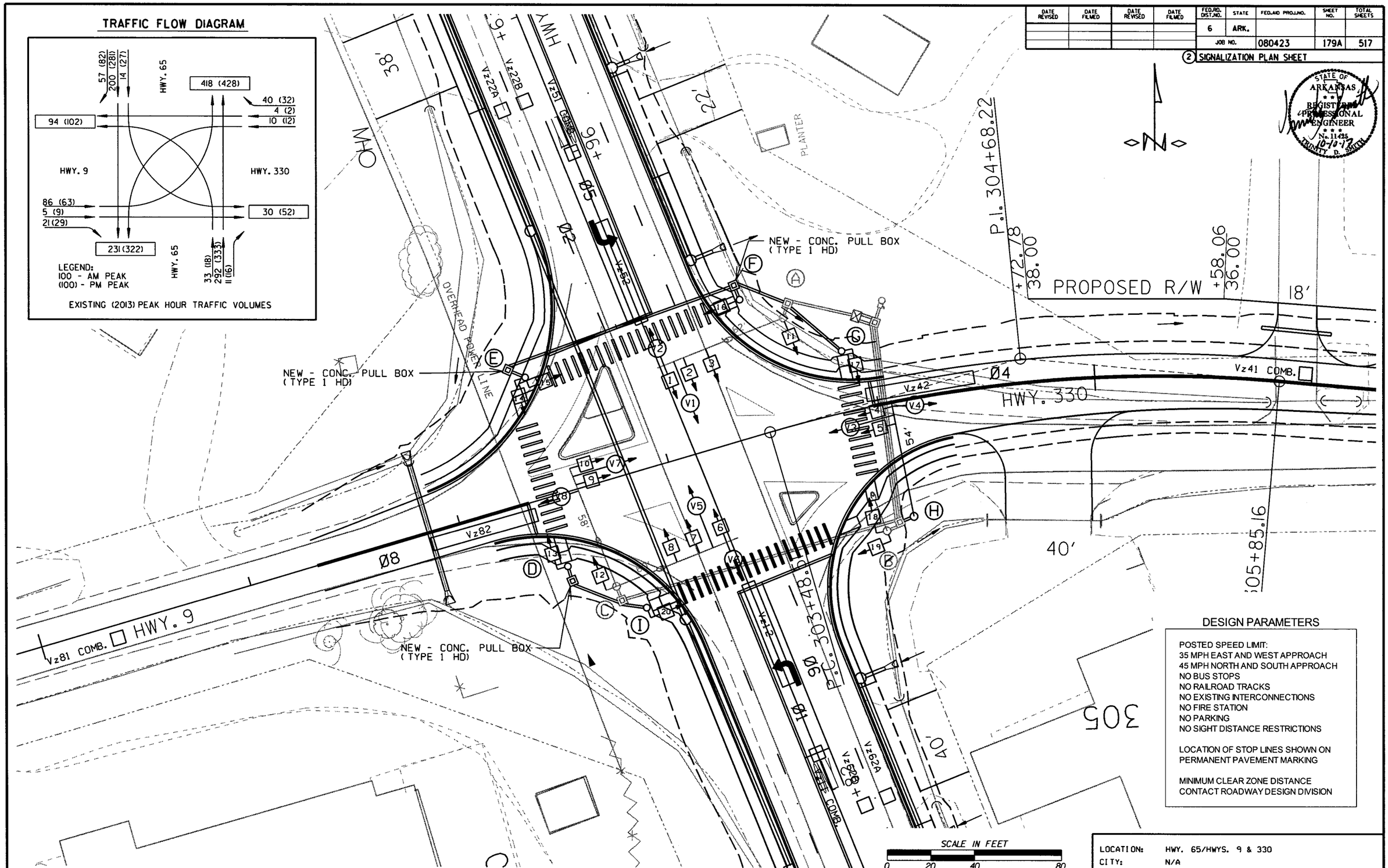
(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 10-10-17 TRINITY D. SMITH



DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
45 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING

MINIMUM CLEAR ZONE DISTANCE CONTACT ROADWAY DESIGN DIVISION

DATE: 10-06-17 FILE NAME: t080423.dgn

LOCATION: HWY. 65/HWYS. 9 & 330
CITY: N/A
COUNTY: VAN BUREN
DISTRICT: 8 SCALE: 1" = 40' DRAWN BY: GWE

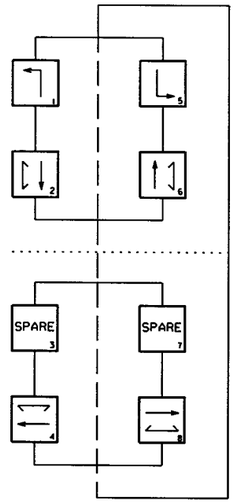
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	180	517

(2) SIGNALIZATION PLAN SHEET

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

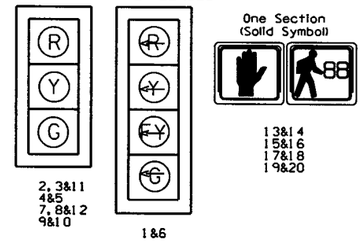
10-10-17

(NEW) PHASING DIAGRAM



(NEW) 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.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 080423

HWY. 65/HWYS. 9 & 330 DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TPYE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	23"
Vz22 A&B	WB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz41	WB ADVANCE	COMB.			9	V12	4	4		CAMERA V4	23"
Vz42	WB NEAR	LOCAL			10	V4	4			CAMERA V7	23"
Vz51	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V6	23"
Vz62 A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz81	EB ADVANCE	COMB.			13	V16	8			CAMERA V8	23"
Vz82	EB NEAR	LOCAL			14	V8	8	8		CAMERA V3	23"
PB2 A&B	HWY. 9 W. LEG	PED.				P2	2				
PB4 A&B	HWY. 65 N. LEG	PED.				P4	4				
PB6 A&B	HWY. 330 E. LEG	PED.				P6	6				
PB8 A&B	HWY. 65 S. LEG	PED.				P8	8				
					SPARE 11, 12, 15 & 16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE 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

(NEW) INTERVAL CHART

SIGNAL FACES	HWY. 65/HWYS. 9 & 330											FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	4+8	CLR.		
1	~~G~~	•	~~G~~	•	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~		~~R~~
2,3&13	R	R	G	••	R	R	G	••	R	R		R
4&5	R	R	R	R	R	R	R	G	••			R
6	~~G~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~		~~R~~
7,8&12	R	R	R	R	G	••	G	••	R	R		R
9&10	R	R	R	R	R	R	R	R	G	••		R
13&14	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW		BLK
15&16	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW		BLK
17&18	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW		BLK
19&20	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW		BLK

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

DATE: 10-06-17 FILE NAME: t080423.dgn

LOCATION: HWY. 65/HWYS. 9 & 330
CITY: N/A
COUNTY: VAN BUREN
DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

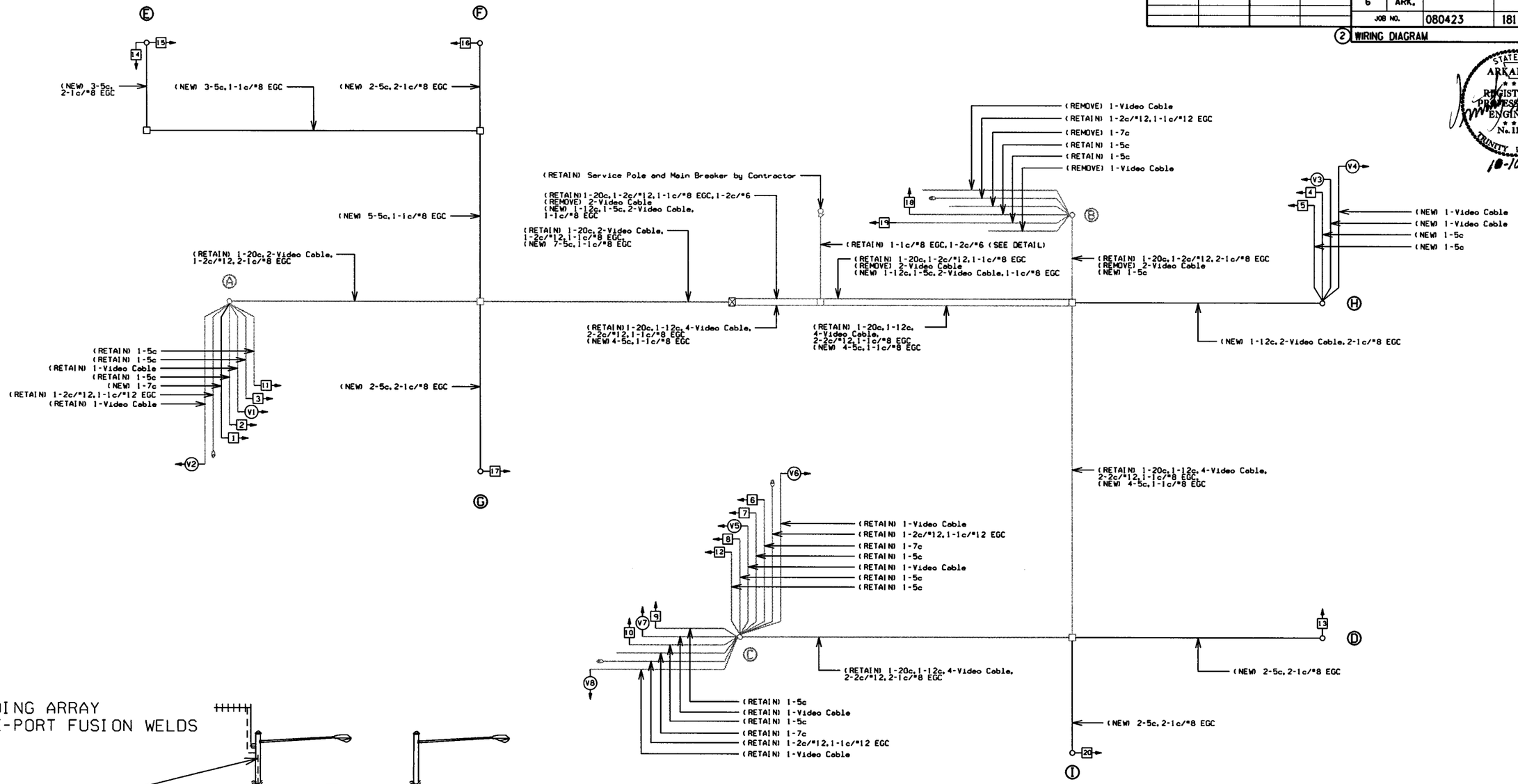
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	181	517

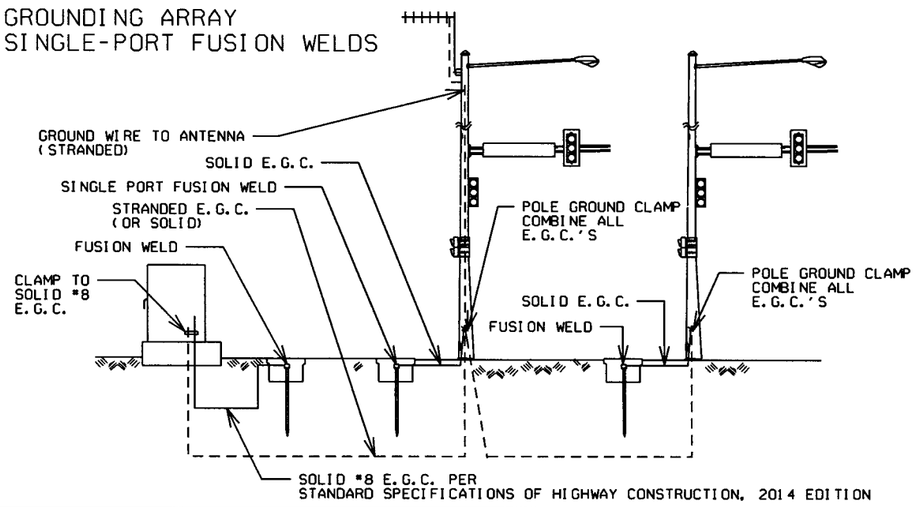
2 WIRING DIAGRAM

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

10-10-17



GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



WIRING DIAGRAM

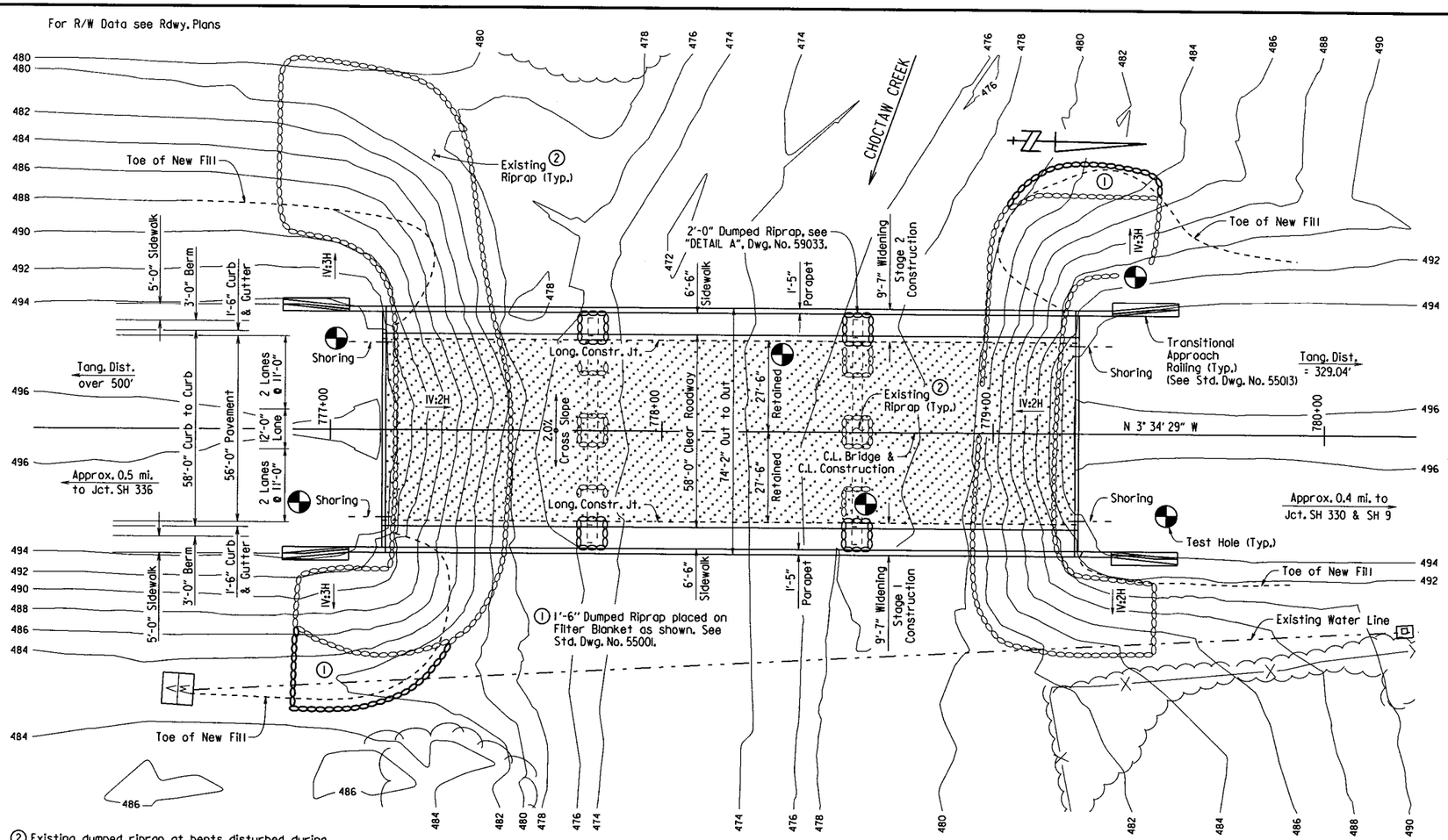
NOTES TO CONTRACTOR:

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.

DATE: 10-06-17 FILE NAME: t080423.dgn

LOCATION: HWY. 65/HWYS. 9 & 330
CITY: N/A
COUNTY: VAN BUREN
DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

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.		080423	182	519
				06913	-	LAYOUT	-	59032

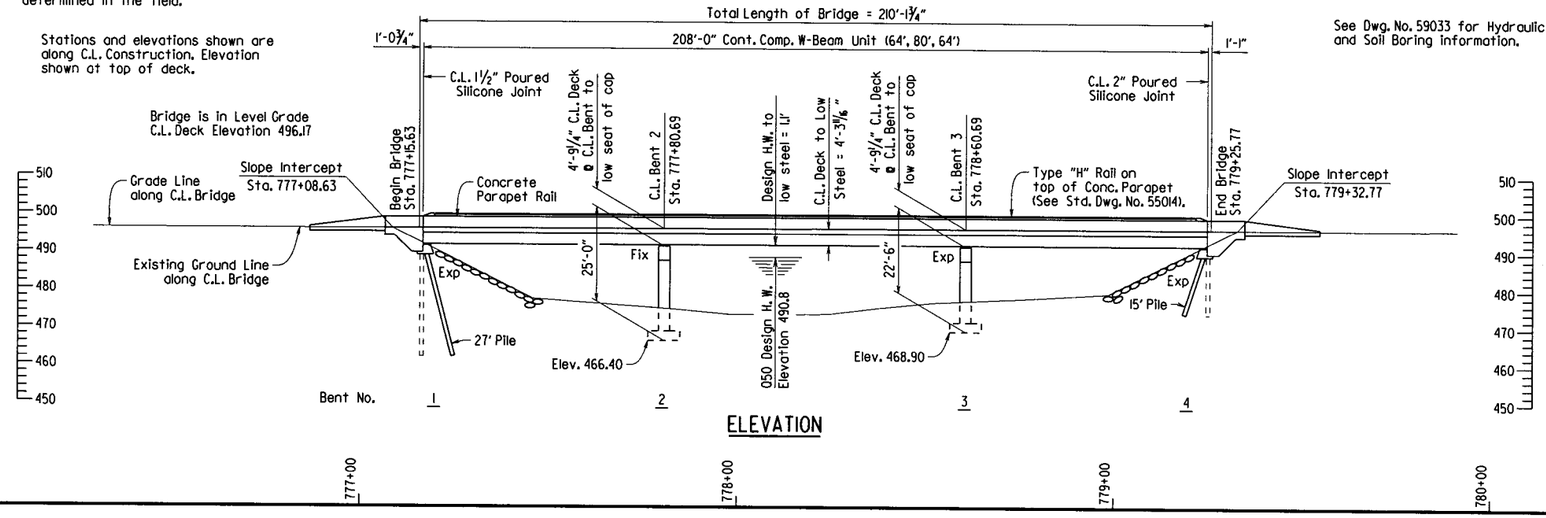


PLAN

② Existing dumped riprap at bents disturbed during construction or regrading of embankment slopes shall be replaced as directed by the Engineer. This work shall be paid for at the unit price bid for "Dumped Riprap". Filter Blanket disturbed shall be replaced and paid for under the item "Filter Blanket". Quantities of dumped riprap and filter blanket are estimated. Actual quantities shall be determined in the field.

Stations and elevations shown are along C.L. Construction. Elevation shown at top of deck.

See Dwg. No. 59033 for Hydraulic Data and Soil Boring Information.



ELEVATION

GENERAL NOTES

BENCH MARK: Horizontal and Vertical Control Data are shown on Survey Control Details.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (1996 edition), with 2002 interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: LOAD FACTOR

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	Fy = 36,000 psi
Structural Steel (AASHTO M270, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: All new piling in Bents 1 and 4 shall be HP 12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile and into material designated as hard sandstone or hard shale on the boring legend. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

FOOTINGS: Footings shall be set a minimum of 4'-6" into material designated as hard sandstone or hard shale on the boring legend. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete footings shall be poured directly against excavated surfaces of rock.

BRIDGE DECK: The concrete bridge deck, except sidewalks, shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class S Tined Bridge Roadway Surface Finish. Sidewalks shall be given a Class 6 Broomed Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the new roadway surface, face of curb, sidewalk surface and to the roadway face and top of the concrete parapet rail.

DETAIL DRAWINGS:	DRAWING NO.
Stage Construction	59034 - 59037
End Bents	59038 - 59040
Intermediate Bents	59041
Details of 208' Cont. Comp. W-Beam Unit	59042 - 59046
Elastomeric Bearings	59047 & 59048
Steel Piling	55020
Transitional Approach Railing	55013
Details for Type H Railing	55014
Standard General Notes	55006

SHORING: Shoring will be required to retain existing and/or new embankments to maintain traffic during the widening of Bridge No. 06914. Shoring shall be constructed in accordance with Special Provision Job. No. 080423 "Shoring".

EXISTING BRIDGE: Existing Bridge No. 06913 (Log Mile 5.88) is 59'-2" wide and 210'-1¾" long and consists of a 3 span continuous composite W-Beam unit supported by three column concrete intermediate bents with spread footings and steel H-Pile end bents. Plans of the existing structure may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

THE PROPOSED WORK CONSISTS OF: Widening the existing bridge by modifying the existing substructure, concrete deck, dumped riprap and joints as shown in the plans.

VERIFICATION: Except as noted, components of the existing bridge are to be retained and joined to the proposed work. Information and dimensions shown are based on the existing bridge plans. The Contractor is to adhere strictly to the requirements for verification of the geometry of the existing bridge and its relationship to the proposed work described in Subsection 821.02 and make necessary adjustments to fit the proposed work to the existing structure. Payment for this work shall be considered subsidiary to the pay item "Modification of Existing Bridge Structure (Br. No. 06913)".

REMOVAL AND SALVAGE: All material removed from the existing bridge under item 821 shall be disposed of according to Section 205. All components from the guardrail systems including rails, spacer blocks, bolts, posts and end terminals as determined by the Engineer shall remain the property of the Department. The Contractor shall coordinate with the Engineer to provide temporary storage and on site loading onto Department equipment for removal of all salvaged items. All remaining material removed from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE OVER CHOCTAW CREEK
BEE BRANCH - NORTH (S)
VAN BUREN COUNTY

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

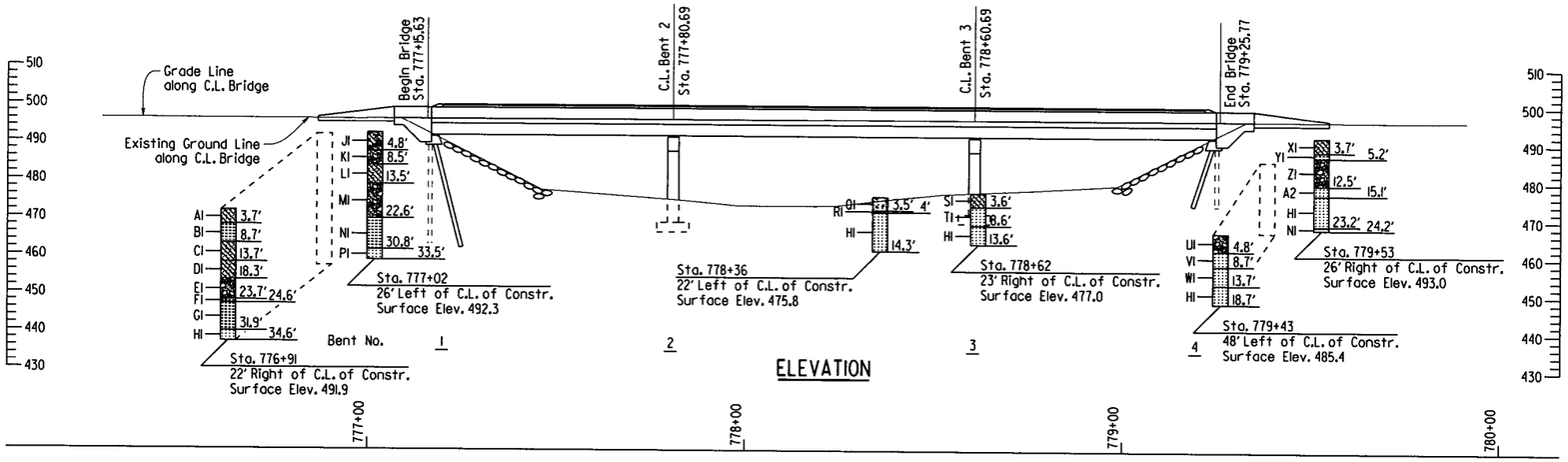
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 10/24/14
CHECKED BY: BHS DATE: 9/13/16
DESIGNED BY: CMW DATE: 10/14
FILENAME: b080423xl.11.dgn
SCALE: 1"=20'

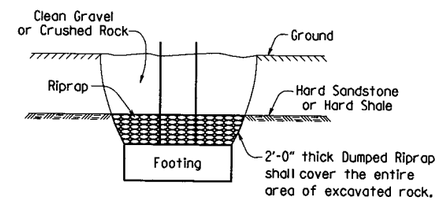
BRIDGE NO. 06913 DRAWING NO. 59032

PRINT DATE: 9/13/2016

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.		080423	183	517
				① 06913	-	LAYOUT	-	59033



ELEVATION



Plan quantities for Dumped Riprap are based on vertical planes parallel to and 4" outside the lines of the footing to top of rock. Clean Gravel or Crushed Rock will be considered subsidiary to the item Dumped Riprap.

DETAIL A

No Scale

BORING LEGEND

A1-Moist, Stiff, Gray Sandy Clay with some Organic Matter
B1-Soft, Gray and Brown Highly Weathered Shale
C1-Moist, Stiff, Brown Sandy Clay
D1-Moist, Medium Stiff, Brown Sandy Clay with Traces of Organic Matter
E1-Moist, Very Stiff, Brown Sandy Clay with Sandstone Fragments and Cobbles
F1-Medium Hard, Gray Weathered Shale
G1-Hard, Dark Gray Shale with some Medium Hard, Weathered Shale Seams
H1-Hard, Gray Sandstone with some Thin Dark Gray Shale Seams
J1-Moist, Stiff, Gray Sandy, Silty Clay with Shale Fragments
K1-Moist, Medium Stiff, Brown Sandy Clay with Sandstone Fragments and Cobbles
L1-Moist, Medium Stiff, Brown Sandy Clay
M1-Moist, Stiff, Brown Sandy Clay with Sandstone Fragments and Cobbles
N1-Hard, Dark Gray Shale
P1-Hard, Gray Sandstone with some Thin Dark Gray Shale and Calcareous Seams
Q1-Moist, Dense, Brown Sand and Gravel
R1-Moist, Soft, Brown and Gray Sandy, Silty Clay
S1-Moist, Hard, Brown Sandy Clay
T1-Hard, Gray Sandstone
U1-Moist, Medium Stiff, Brown Sandy Clay with Sandstone Fragments, Cobbles and some Organic Matter
V1-Hard, Brown Sandstone
W1-Hard, Gray Sandstone with some Thin Calcareous Seams
X1-Moist, Medium Stiff, Brown Sandy Clay with some Organic Matter
Y1-Soft, Gray Highly Weathered Shale
Z1-Moist, Medium Stiff to Stiff, Brown Sandy Clay with Sandstone Fragments and Cobbles
A2-Hard, Brown Sandstone with some Fractured Seams

"N" VALUES

Sta. 776+91 - 22' Right of Center Line of Construction
4.2- 5.2, N=10
9.2- 10.2, N=9
14.2- 15.2, N=8
19.2- 20.2, N=23
24.2- 24.2, N=60(0.5')

Sta. 777+02 - 26' Left of Center Line of Construction
4.0- 5.0, N=9
9.0- 10.0, N=5
14.0- 15.0, N=14
19.0- 20.0, N=11

Sta. 778+36 - 22' Left of Center Line of Construction
4.0- 4.3, N=60(0.3')

Sta. 778+62 - 23' Right of Center Line of Construction

Sta. 779+43 - 48' Left of Center Line of Construction
3.8- 4.8, N=5

Sta. 779+53 - 26' Right of Center Line of Construction
4.2- 5.2, N=8
9.2- 10.2, N=13

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	① NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	28320	490.5	493.0
Base	100	31540	491.1	493.9
Extreme	500	37800	492.2	496.5
Overtopping	>500	-	-	-

① Unconstricted water surface without structure or roadway approaches.
Drainage area = 29.9 square miles.
Historical H.W. Elev. = N/A
0100 Backwater Elev. for existing structure = 493.9 ft.
Proposed Low Bridge Chord Elev. = 491.86 ft.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE OVER CHOCTAW CREEK
BEE BRANCH - NORTH (S)
VAN BUREN COUNTY

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

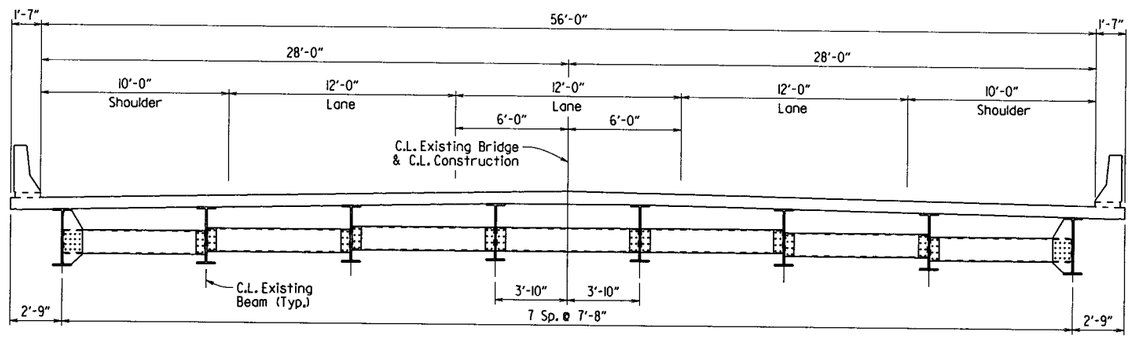
DRAWN BY: CMW DATE: 10/24/14 FILENAME: b080423xl.ll.dgn
CHECKED BY: BTH DATE: 9/16/16 SCALE: 1"=20'
DESIGNED BY: CMW DATE: 10/14

BRIDGE NO. 06913 DRAWING NO. 59033

PRINT DATE: 9/16/2016

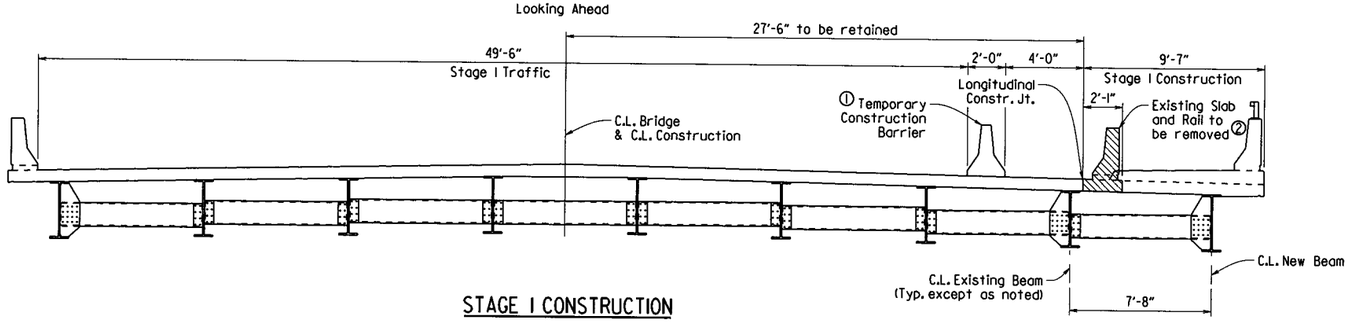
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	184	517

① 06913 & 06914 - STAGE CONSTR. - 59034



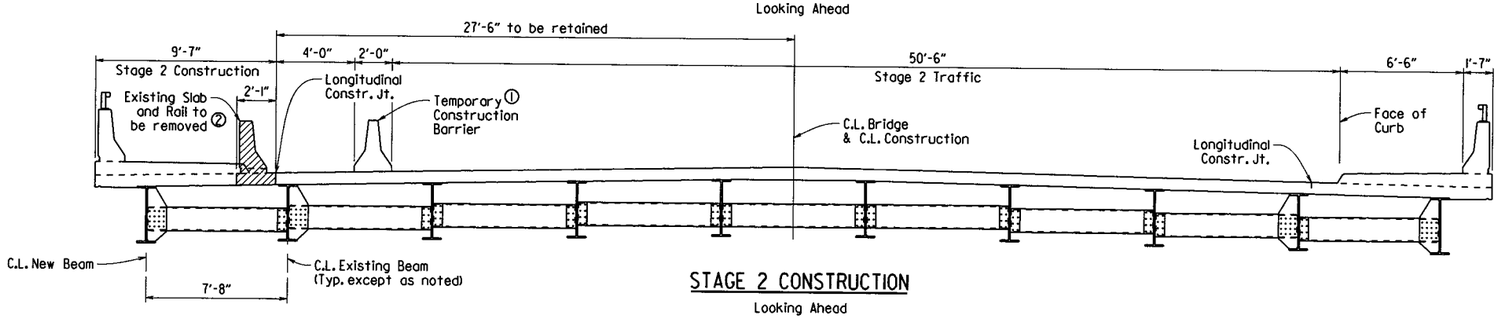
EXISTING CONDITION

Looking Ahead



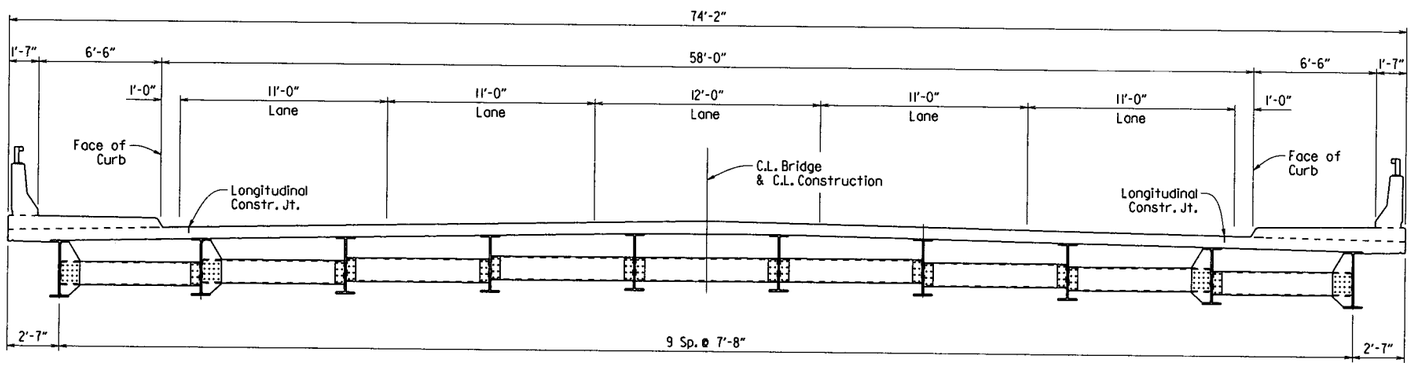
STAGE I CONSTRUCTION

Looking Ahead



STAGE 2 CONSTRUCTION

Looking Ahead



FINAL CONDITION

Looking Ahead

NOTES:

See Roadway Plans for maintenance of traffic details.

① For details of Temporary Precast Barrier, See Dwg. No. TC-4. The Temporary Precast Barrier shall not be attached to the bridge deck.

② Retain all transverse slab reinforcing steel.

See Layout and Substructure details for additional Stage Construction information.

Bridge No. 06913 Shown
Bridge No. 06914 Similar

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF STAGE CONSTRUCTION
CHOCTAW CREEK & BIG BRANCH

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 12/1/14
CHECKED BY: KMW DATE: 9/14/16
DESIGNED BY: CMW DATE: 1/5/14
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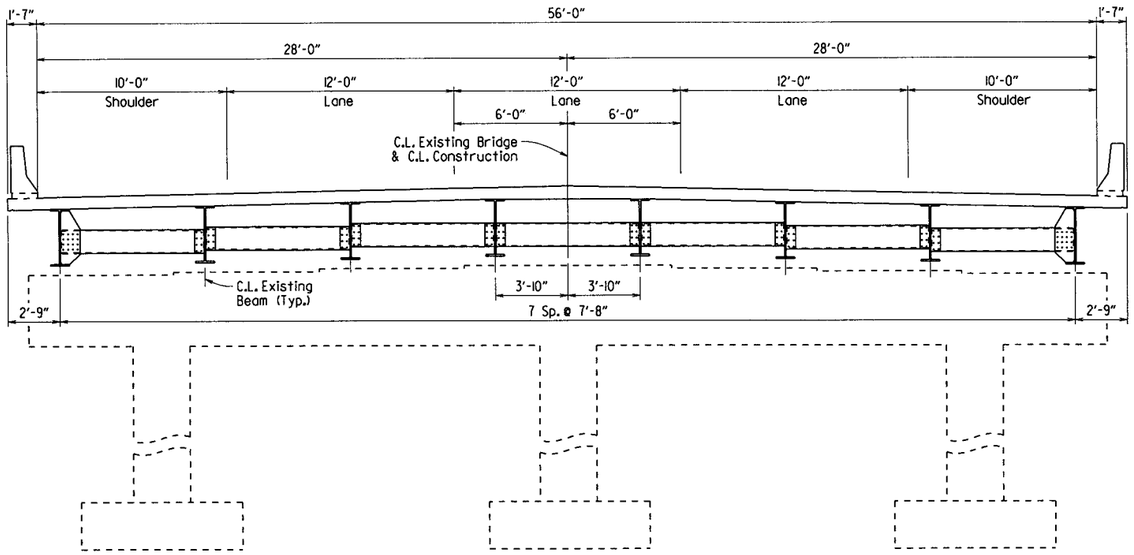
SCALE: No Scale

BRIDGE NO. 06913 & 06914 DRAWING NO. 59034

PRINT DATE: 9/14/2016

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.		080423	185	517

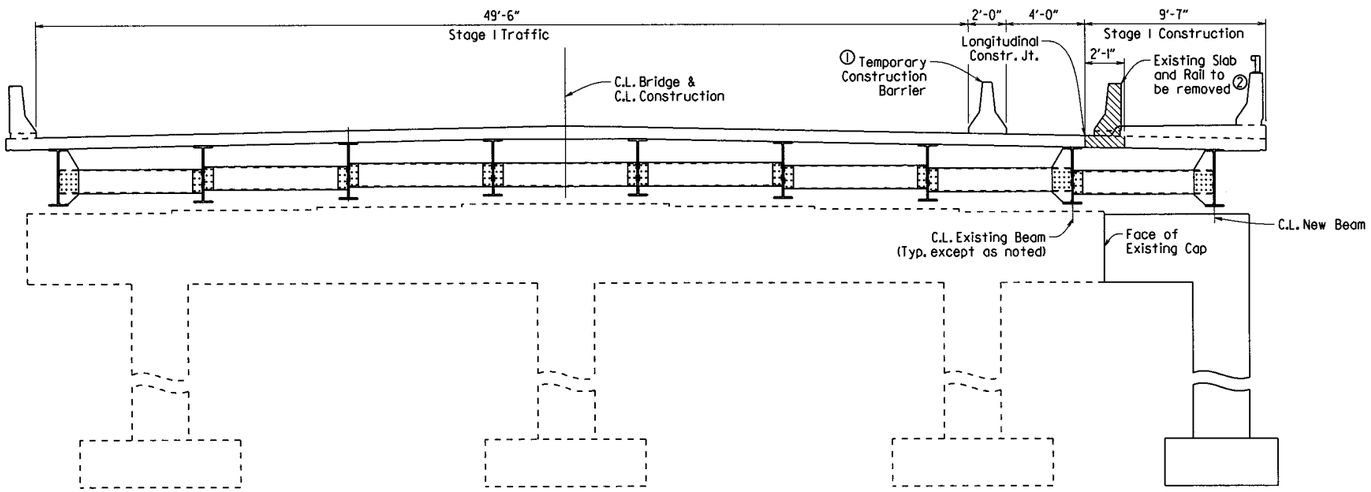
① 06913 & 06914 - STAGE CONSTR. - 59035



EXISTING CONDITION

Looking Ahead

Bridge No. 06913 Shown
Bridge No. 06914 Similar



STAGE I CONSTRUCTION

Looking Ahead

NOTES:

See Roadway Plans for maintenance of traffic details.

① For details of Temporary Precast Barrier, See Dwg. No. TC-4. The Temporary Precast Barrier shall not be attached to the bridge deck.

② Retain all transverse slab reinforcing steel.

See Layout and Substructure details for additional Stage Construction information.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF STAGE CONSTRUCTION
CHOCTAW CREEK & BIG BRANCH

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 12/11/14 FILENAME: b080423_sc.dgn
CHECKED BY: KWY DATE: 9/14/16 SCALE: No Scale
DESIGNED BY: CMW DATE: 12/14

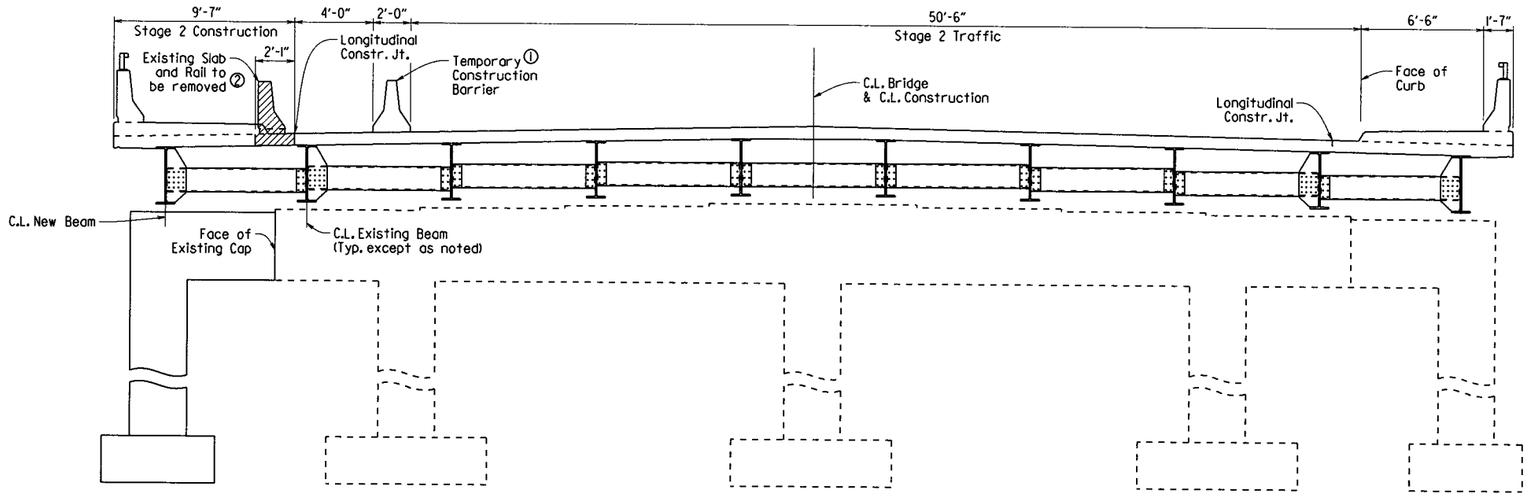
BRIDGE NO. 06913 & 06914 DRAWING NO. 59035

PRINT DATE: 9/13/2016

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.		080423	186	517

(1) 06913 & 06914 - STAGE CONSTR. - 59036

(1) For details of Temporary Precast Barrier, See Dwg. No. TC-4. The Temporary Precast Barrier shall not be attached to the bridge deck.



STAGE 2 CONSTRUCTION

Looking Ahead

NOTES:

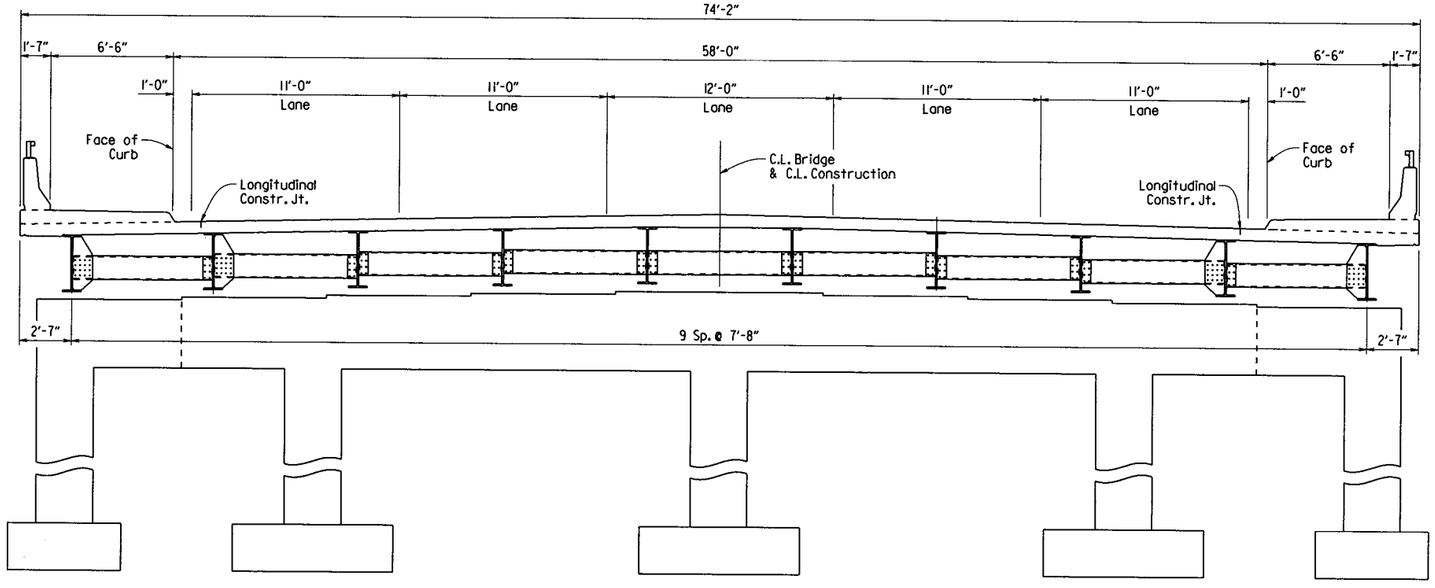
See Roadway Plans for maintenance of traffic details.

(1) For details of Temporary Precast Barrier, See Dwg. No. TC-4. The Temporary Precast Barrier shall not be attached to the bridge deck.

(2) Retain all transverse slab reinforcing steel.

See Layout and Substructure details for additional Stage Construction information.

Bridge No. 06913 Shown
Bridge No. 06914 Similar



FINAL CONDITION

Looking Ahead

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-14-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF STAGE CONSTRUCTION
CHOCTAW CREEK & BIG BRANCH

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 12/11/14
CHECKED BY: DWY DATE: 9/14/16
DESIGNED BY: DWW DATE: 10/14

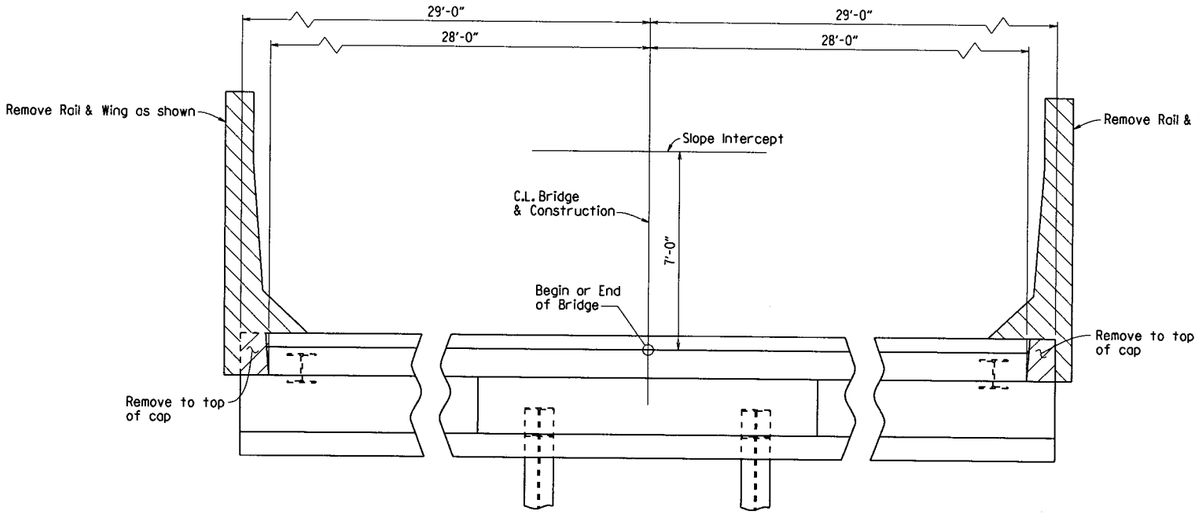
FILENAME: b080423_sc.dgn
SCALE: No Scale

BRIDGE NO. 06913 & 06914 DRAWING NO. 59036

PRINT DATE: 9/14/2016

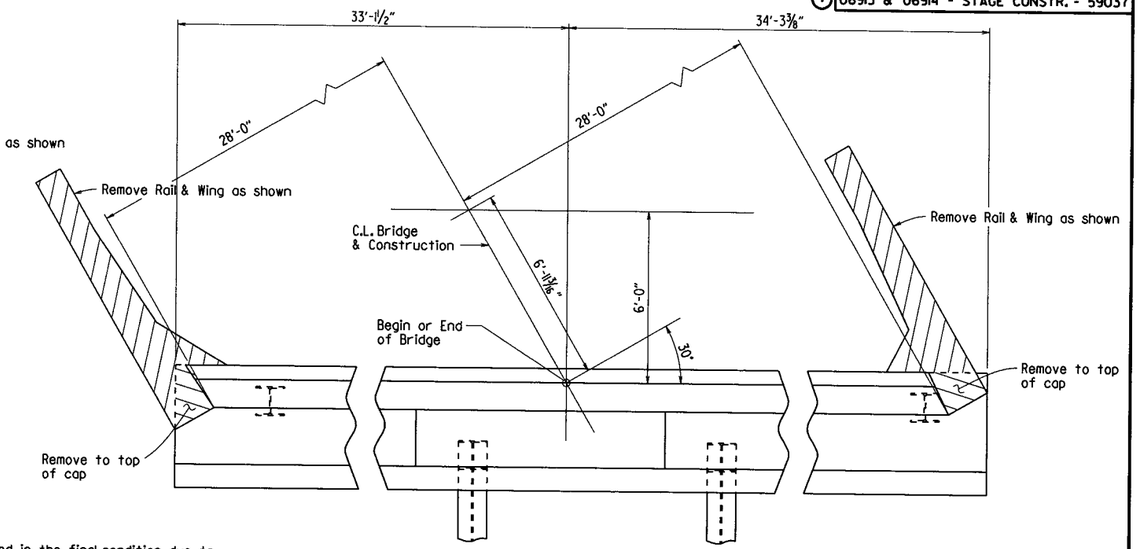
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	187	197

(1) 06913 & 06914 - STAGE CONSTR. - 59037



PLAN OF EXISTING END BENTS - BR. NO. 06913

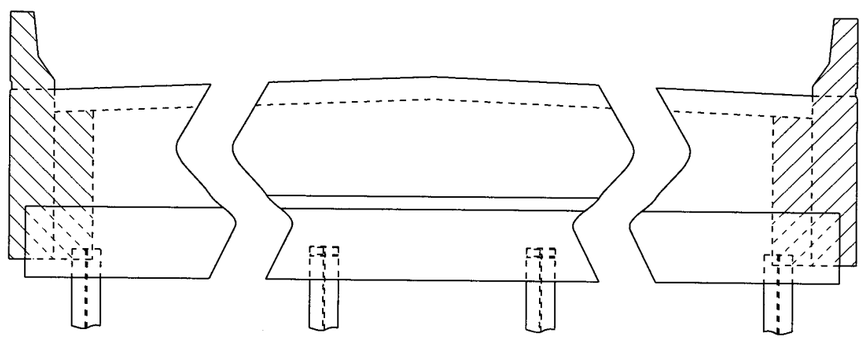
3/8" = 1'-0"



PLAN OF EXISTING END BENTS - BR. NO. 06914

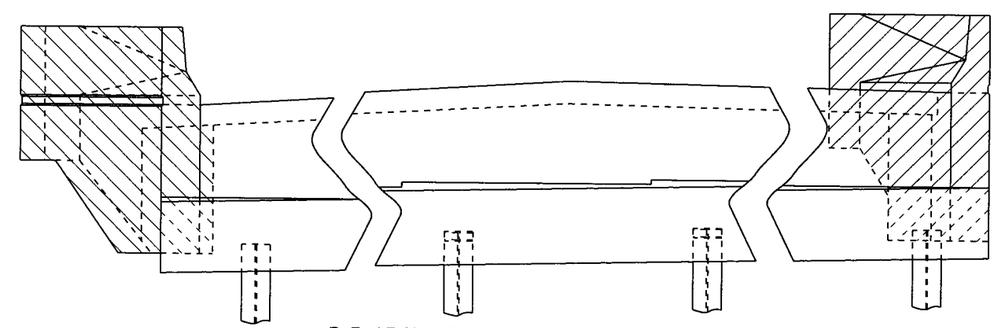
3/8" = 1'-0"

All rebar left exposed in the final condition due to partial removal of the existing structure shall be drilled down 2" below the concrete surface and filled with a QPL approved non-shrink grout. This work shall be included in the item "Modification of Existing Bridge Structure (Bridge No. 06913)" or "Modification of Existing Bridge Structure (Bridge No. 06914)".



ELEVATION OF EXISTING END BENTS - BR. NO. 06913

Bent 1 - Looking Back
Bent 4 - Looking Ahead
3/8" = 1'-0"



ELEVATION OF EXISTING END BENTS - BR. NO. 06914

Bent 1 - Looking Back
Bent 4 - Looking Ahead
3/8" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF STAGE CONSTRUCTION
CHOCTAW CREEK & BIG BRANCH

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

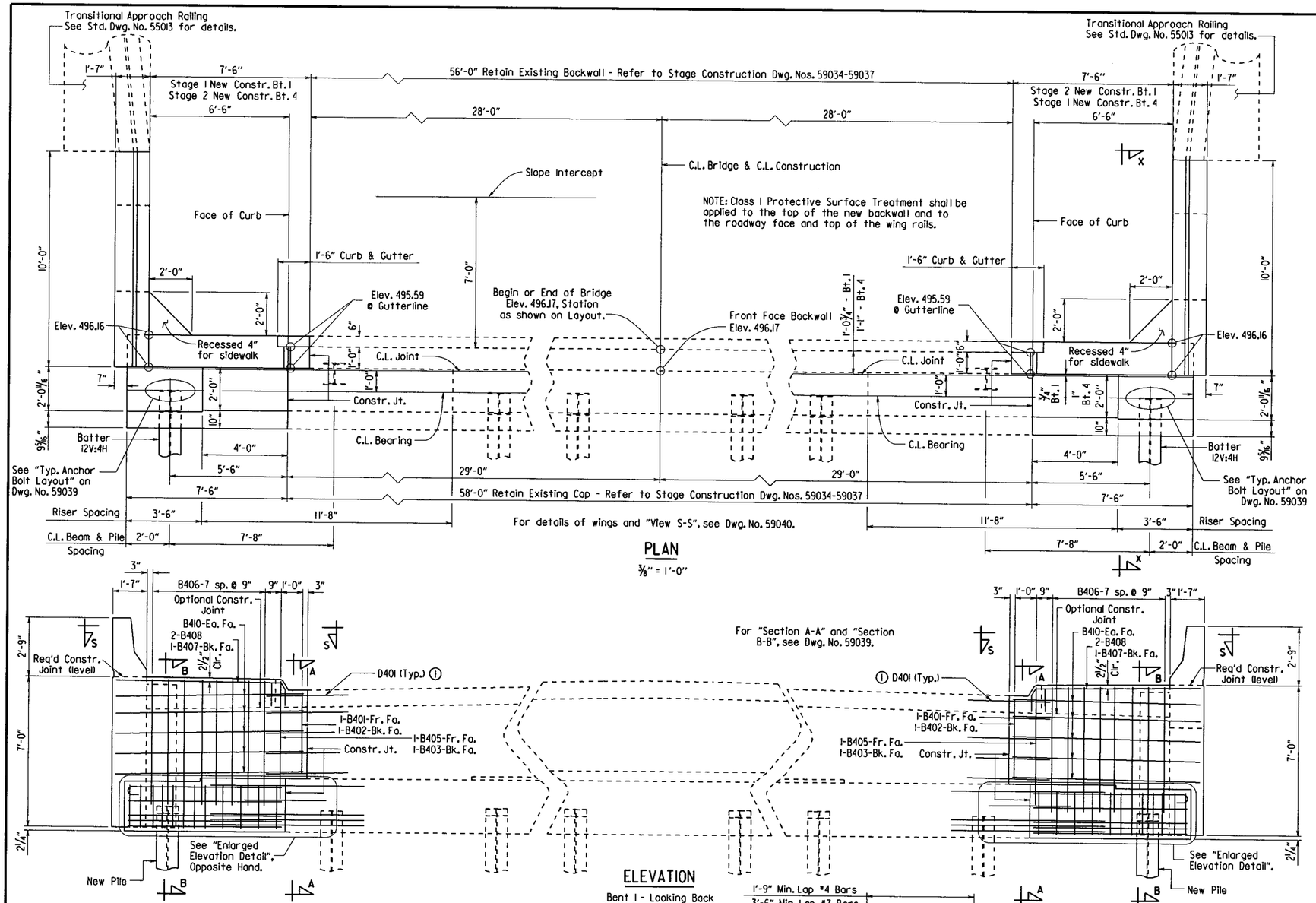
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 12/11/14 FILENAME: b080423_sc.dgn
CHECKED BY: KWY DATE: 9/14/16 SCALE: As Shown
DESIGNED BY: CMW DATE: 10/14

BRIDGE NO. 06913 & 06914 DRAWING NO. 59037

PRINT DATE: 9/14/2016

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.		080423	188	517
				1	06913 - END BENTS - 59038			

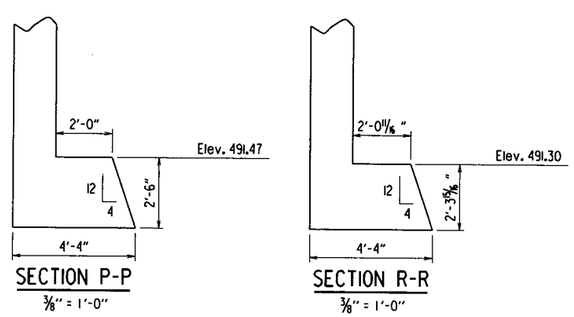


PLAN

3/8" = 1'-0"

ELEVATION

Bent 1 - Looking Back
Bent 4 - Looking Ahead
3/8" = 1'-0"

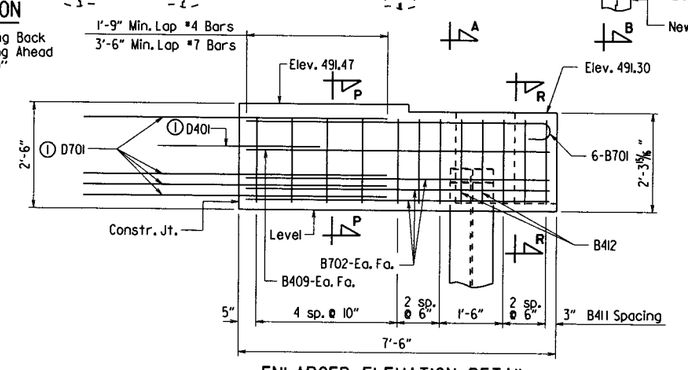


SECTION P-P

3/8" = 1'-0"

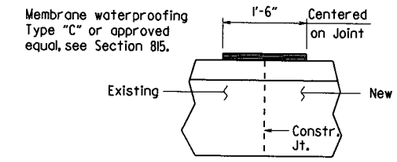
SECTION R-R

3/8" = 1'-0"



ENLARGED ELEVATION DETAIL

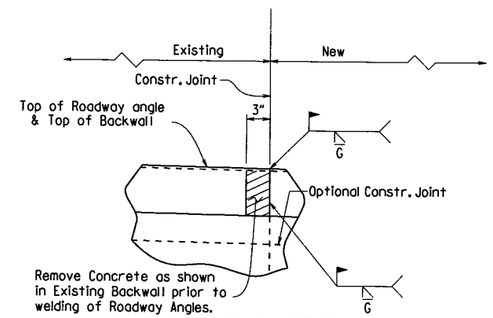
No Scale



Payment for membrane to be considered subsidiary to Class "S" Concrete - Bridge.

CONSTRUCTION JOINT DETAIL

No Scale



DETAIL OF WELD FOR EXPANSION DEVICE

No Scale

1 Dowel into Existing Bent using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on a Class C lap splice length plus 2"):
1'-11" for D401 Bars
3'-8" for D701 Bars
Care shall be exercised not to damage existing reinforcing during drilling.

STATE OF ARKANSAS
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9-19-16
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SHEET 1 OF 3
DETAILS OF END BENTS
CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

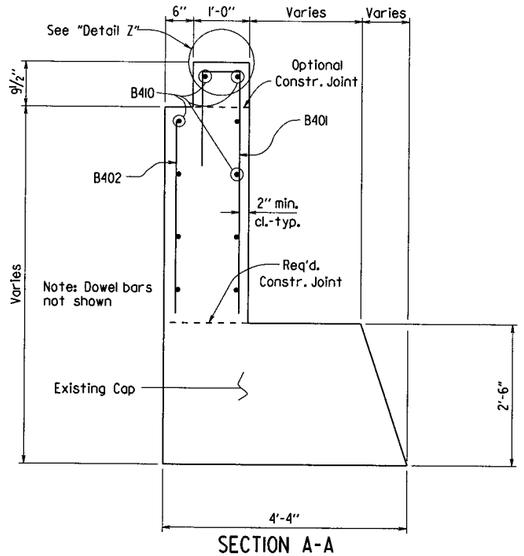
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x1.bll.dgn
CHECKED BY: DHP DATE: 9/13/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/18/16

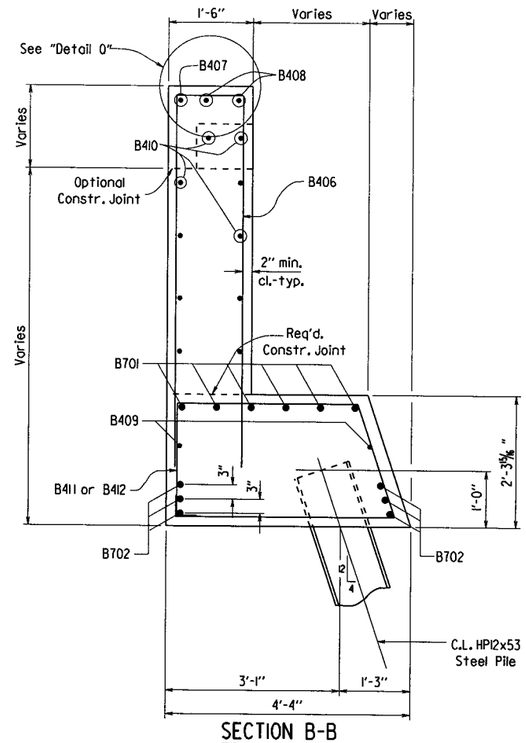
BRIDGE NO. 06913 DRAWING NO. 59038

PRINT DATE: 9/14/2016

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.		080423	189	517
				1	06913 - END BENTS - 59039			



SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"

GENERAL NOTES

For Standard General Notes, See Std. Dwg. No. 55006.

Work required to remove and dispose portions of the existing bridge and work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06913)".

No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "Expansion Device Installation" note on Dwg. No. 59046.

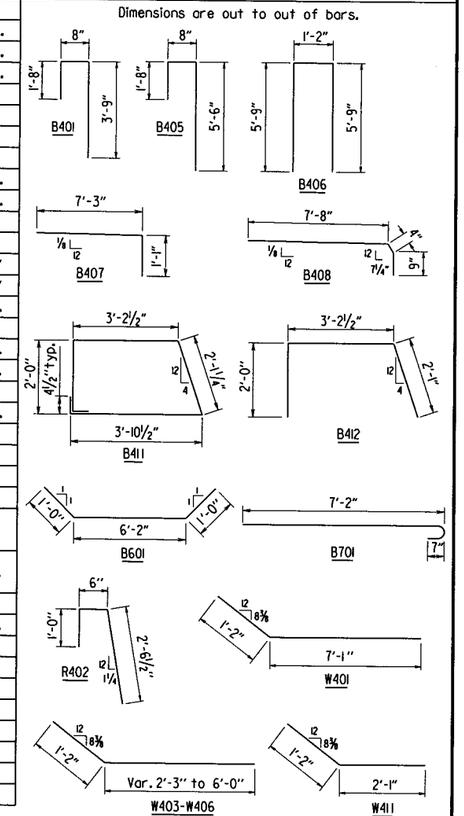
For additional information, see Layout.

BAR LIST - PER BENT

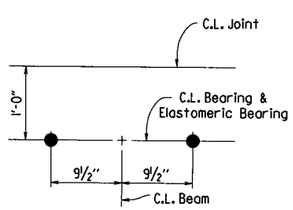
MARK	NO. REQ'D.	LENGTH	P.D.
B401	2	5'-11"	2"
B402	2	3'-0"	Str.
B403	2	4'-8"	Str.
B404	6	6'-4"	Str.
B405	2	7'-8"	2"
B406	16	12'-6"	2"
B407	2	8'-3"	2"
B408	4	8'-9"	2"
B409	4	7'-2"	Str.
B410	20	8'-9"	Str.
B411	20	11'-7"	2"
B412	4	7'-3"	2"
B601	10	8'-2"	4½"
B701	12	8'-0"	5¼"
B702	12	7'-2"	Str.
D401	24	3'-10"	Str.
D701	24	7'-4"	Str.
R401	12	9'-8"	Str.
R402	22	3'-11"	2"
W401	8	8'-3"	2"
W402	8	9'-5"	Str.
W403-W406	2 each	Var. 3'-5" to 7'-2"	2"
W407-W410	2 each	Var. 4'-8" to 8'-4"	Str.
W411	6	3'-3"	2"
W412	6	4'-5"	Str.
W413	6	8'-4"	2"
W701	12	9'-8"	Str.
W702	4	6'-7"	Str.
W703	4	6'-1"	Str.
W704	4	5'-6"	Str.
W705	4	4'-11"	Str.
W706	4	4'-1"	Str.
W707	4	11'-8"	5¼"

BENDING DIAGRAMS

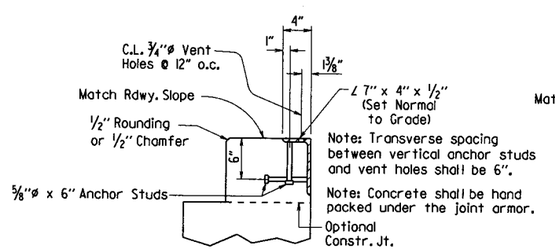
Dimensions are out to out of bars.



For details of Elastomeric Bearings, See Dwg. Nos. 59047.

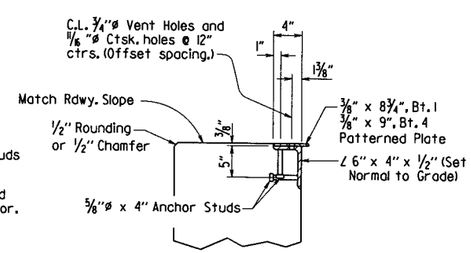


TYP. ANCHOR BOLT LAYOUT
No Scale



For additional joint details, see Dwg. No. 59046.

DETAIL Z
No Scale



For additional joint details, see Dwg. No. 59046.

DETAIL Q
No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

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SHEET 2 OF 3
DETAILS OF END BENTS
CHOCTAW CREEK

ROUTE SEC.

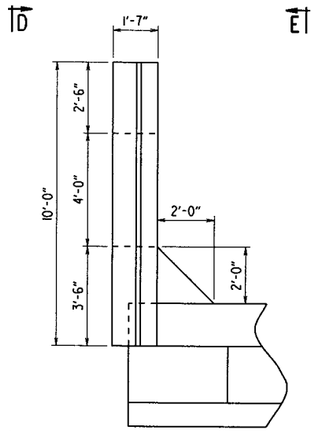
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
CHECKED BY: DHP DATE: 9/6/16
DESIGNED BY: DHP DATE: 5/18/16
FILENAME: b080423x1.bl2.dgn
SCALE: As Shown

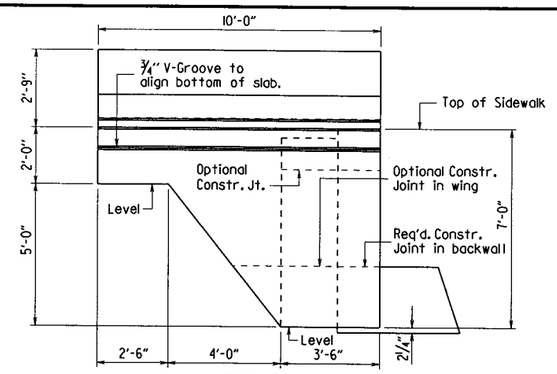
BRIDGE NO. 06913
DRAWING NO. 59039

PRINT DATE: 9/14/2016

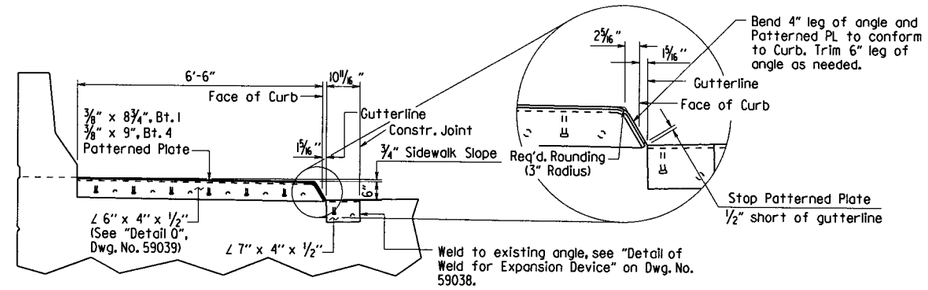
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	190	517
				1	06913 - END BENTS - 59040			



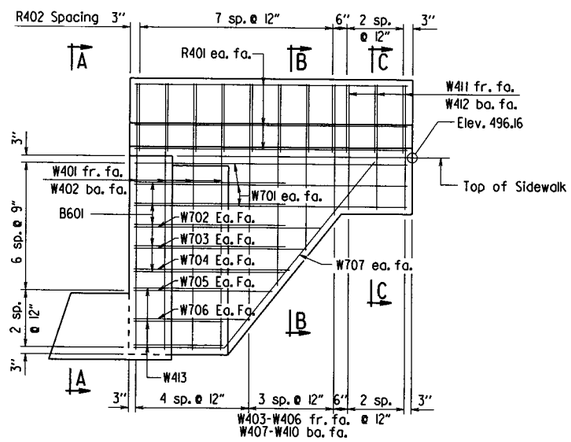
PLAN OF RAIL
3/8" = 1'-0"



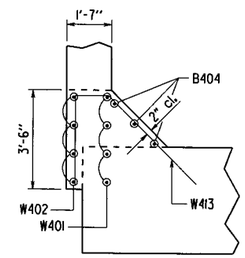
VIEW D-D
3/8" = 1'-0"



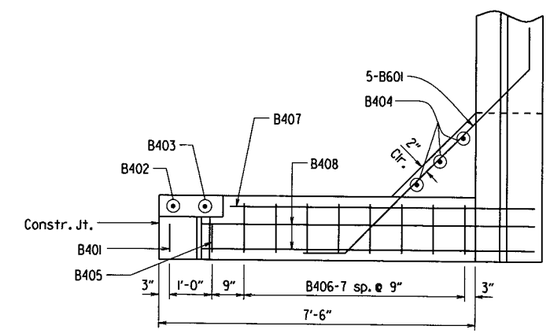
SIDEWALK AND CURB DETAIL
No Scale



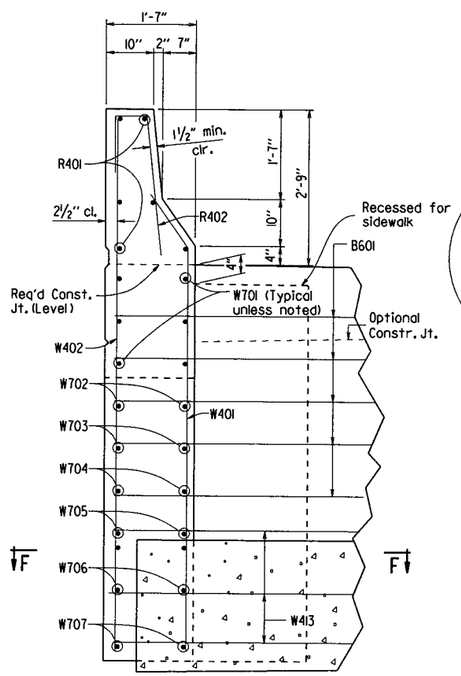
VIEW E-E
3/8" = 1'-0"



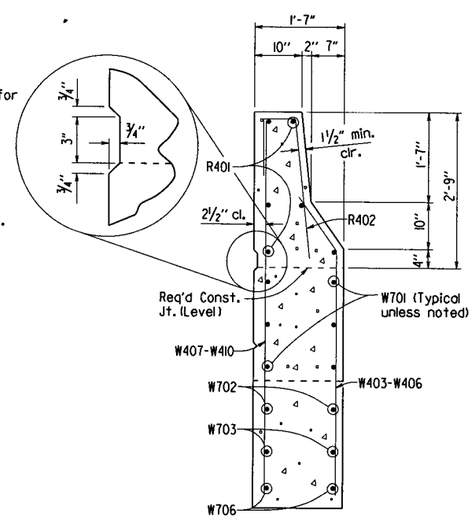
SECTION F-F
3/8" = 1'-0"



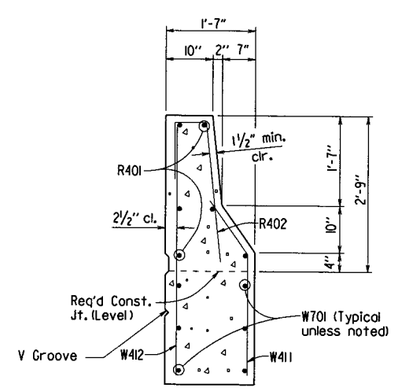
VIEW S-S
No Scale



VIEW A-A
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"

STATE OF ARKANSAS
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SHEET 3 OF 3
DETAILS OF END BENTS
CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

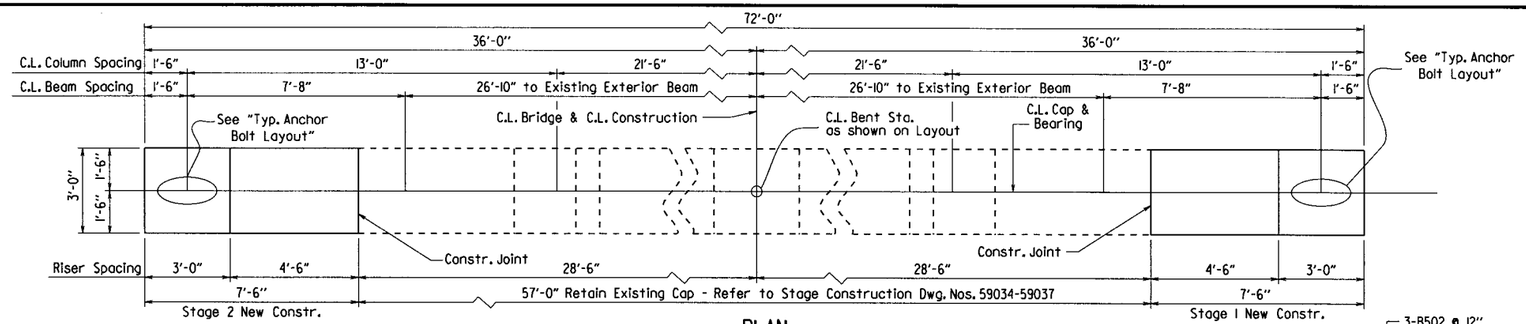
DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.bl3.dgn
CHECKED BY: DHP DATE: 9/6/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/18/16
BRIDGE NO. 06913 DRAWING NO. 59040

PRINT DATE: 9/13/2016

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.		080423	191	517

① 06913 - INTERMEDIATE BENTS - 59041



PLAN

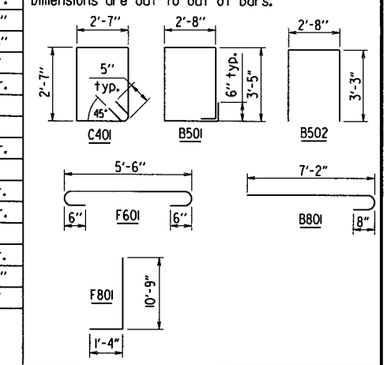
3/8" = 1'-0"

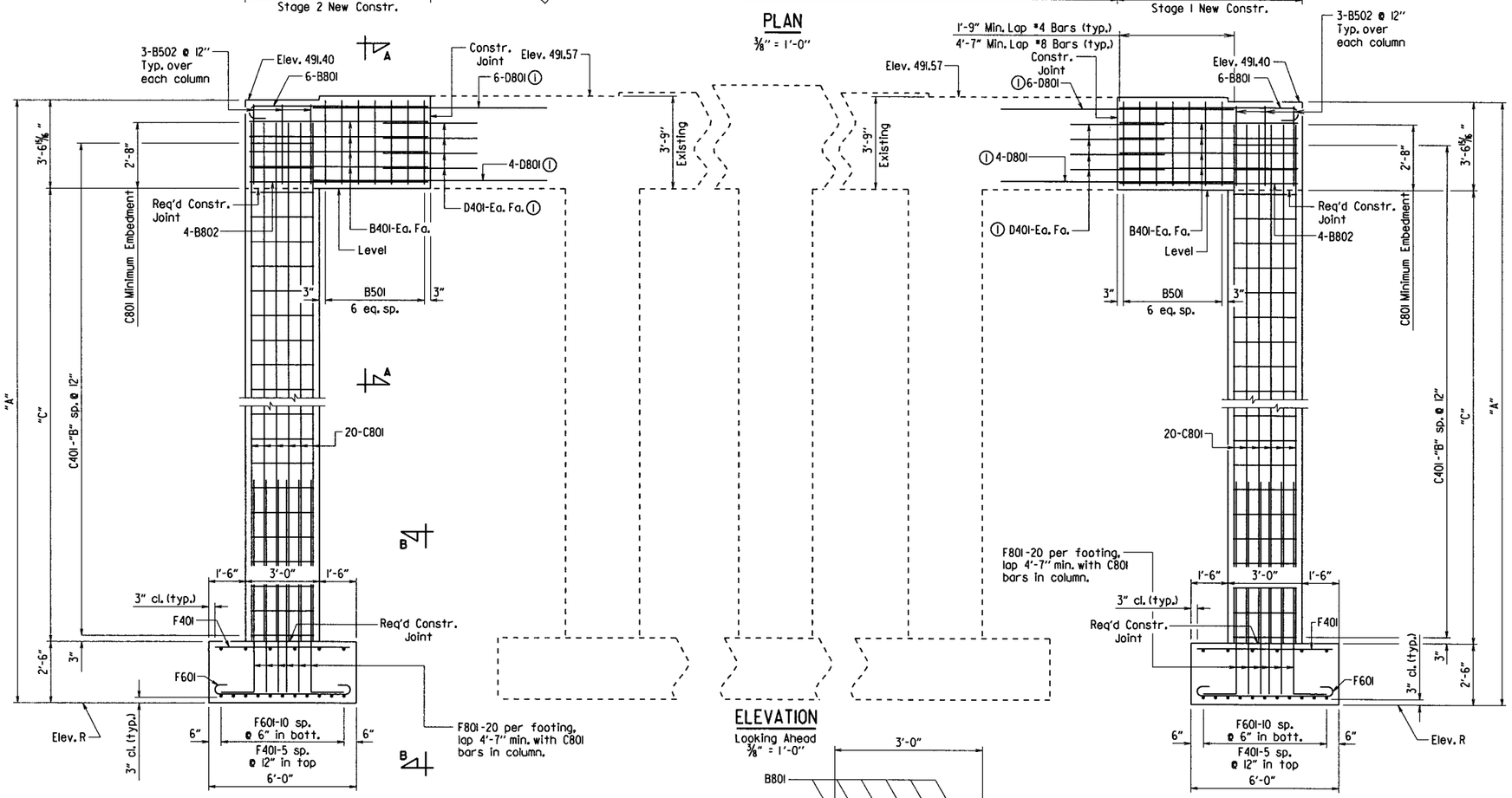
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	16	7'-2"	Str.
B501	14	12'-8"	2½"
B502	6	9'-0"	2½"
B801	12	8'-1"	6"
B802	8	7'-2"	Str.
C401	"D"	10'-10"	3"
C801	40	"E"	Str.
D401	16	3'-10"	Str.
D801	20	9'-6"	Str.
F401	24	5'-6"	Str.
F601	44	6'-10"	4½"
F801	40	11'-11"	6"

BENDING DIAGRAMS

Dimensions are out to out of bars.





ELEVATION

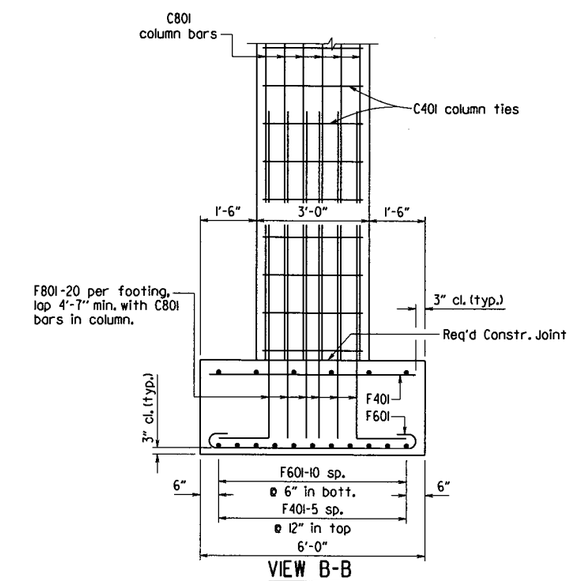
Looking Ahead
3/8" = 1'-0"

GENERAL NOTES

For Standard General Notes, see Std. Dwg. No. 55006.

Work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06913)".

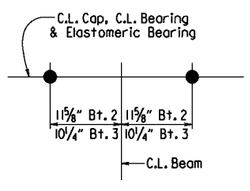
For additional information, see Layout.



VIEW B-B

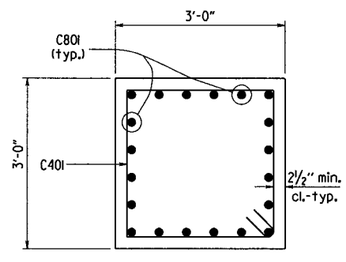
½" = 1'-0"

For details of Elastomeric Bearings, see Dwg. Nos. 59047 & 59048.



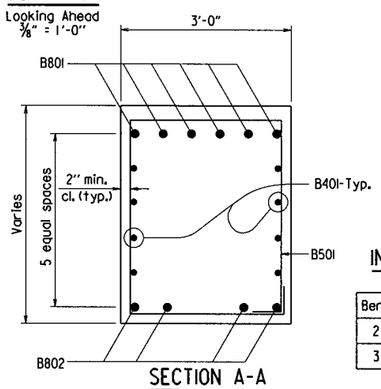
TYP. ANCHOR BOLT LAYOUT

No Scale



TYP. SECTION THRU COLUMN

¾" = 1'-0"



SECTION A-A

¾" = 1'-0"

① Dowel into Existing Bent using a QPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on a Class C lap splice length plus 2"):
1'-11" for D401 Bars
4'-9" for D801 Bars
Care shall be exercised not to damage existing reinforcing during drilling.

INTERMEDIATE BENT TABLE OF VARIABLES

Bent	"A"	"B"	"C"	"D"	"E"	Elev. R
2	25'-0"	21	18'-11 1/16"	44	21'-7"	466.40
3	22'-6"	18	16'-5 1/16"	38	19'-1"	468.90

STATE OF ARKANSAS
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DETAILS OF INTERMEDIATE BENTS CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

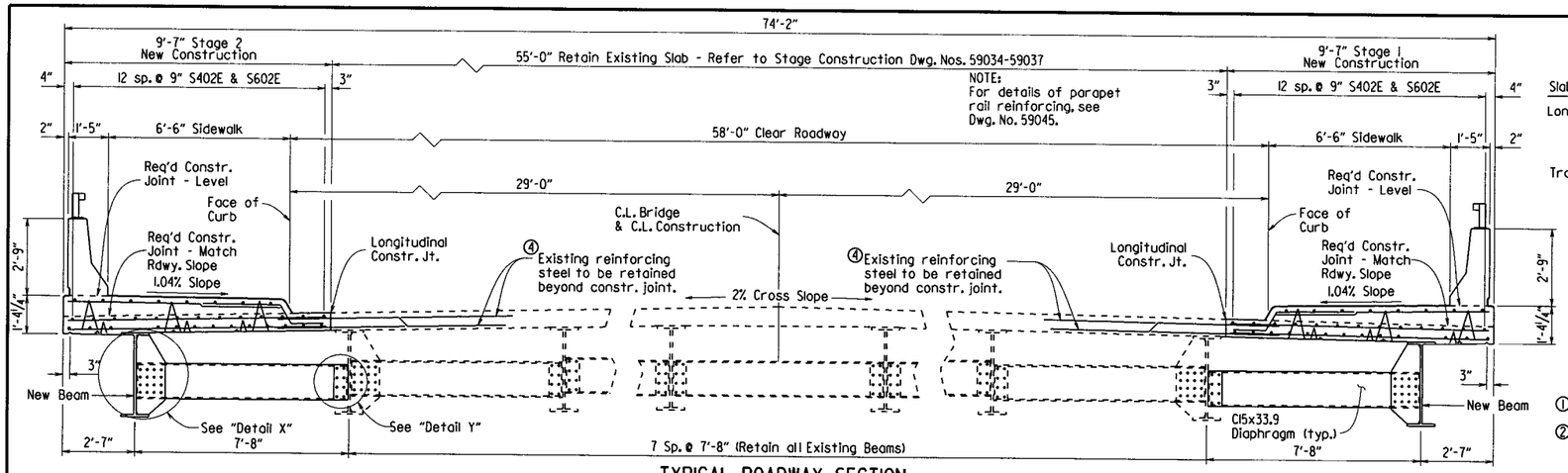
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.b2l.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/18/16

BRIDGE NO. 06913 DRAWING NO. 59041

PRINT DATE: 9/16/2016

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.		080423	192	517
				(1) 06913 - 208' W-BEAM UNIT - 59042				

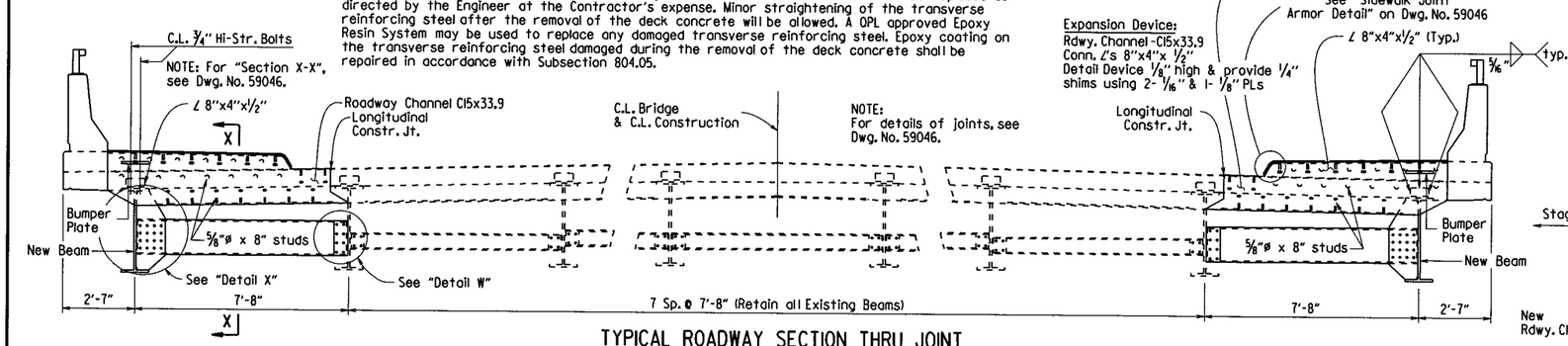


TYPICAL ROADWAY SECTION

Looking Ahead
⅜" x 1'-0"

NOTE: For "Detail W", "Detail X" & "Detail Y", see Dwg. No. 59045.

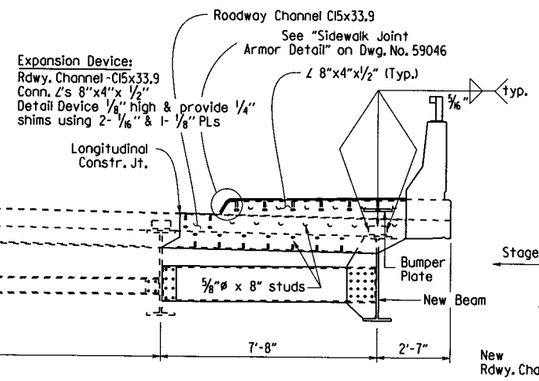
(4) Care shall be exercised during the partial removal of the existing deck concrete to ensure that the existing transverse reinforcing steel is not damaged beyond repair. Any transverse reinforcing steel damaged beyond repair during removal of the deck concrete shall be replaced as directed by the Engineer at the Contractor's expense. Minor straightening of the transverse reinforcing steel after the removal of the deck concrete will be allowed. A OPL approved Epoxy Resin System may be used to replace any damaged transverse reinforcing steel. Epoxy coating on the transverse reinforcing steel damaged during the removal of the deck concrete shall be repaired in accordance with Subsection 804.05.



TYPICAL ROADWAY SECTION THRU JOINT

Looking Ahead
⅜" x 1'-0"

Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 7/16" & 1- ⅛" PLs



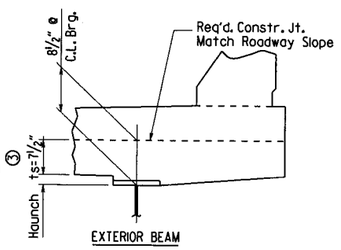
Slab Reinforcing:

Longitudinal: K401E in top of sidewalk
S402E in top of slab
S602E in top of slab
S401E in bottom of slab

Transverse: K402E @ 12" o.c. in top of sidewalk
K403E @ 12" o.c.
K404E @ 12" o.c. near drains in sidewalk
S601E @ 14" o.c. in top of slab
S501E @ 14" o.c. in bottom of slab
S502E @ 14" o.c. in top of slab
S503E @ 14" o.c. in bottom of slab
S403E @ 7" o.c. in bottom of slab
S603E @ 7" o.c. in top of slab
(Alternate)

(1) See "Adjustment for Slab Thickness Tolerance".

(2) Tolerance: Minus = ¼";
Plus = to the amount of slab thickening used to meet slab thickness tolerance.



(3) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note: ts = slab thickness as shown in "TYPICAL ROADWAY SECTION"

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

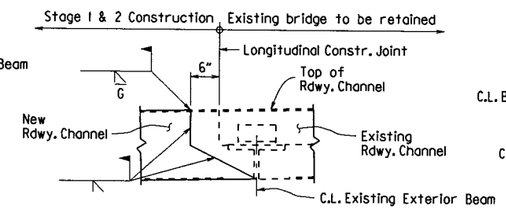
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

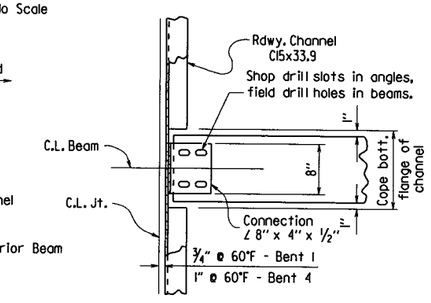
Class I Protective Surface Treatment shall be applied to the new roadway surface, roadway face of curb, sidewalk surface, and face & top of the concrete parapet rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction. See Subsection 804.06.



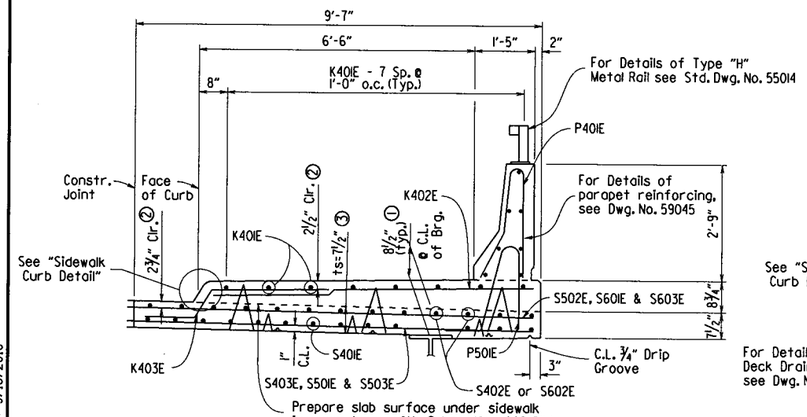
DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

No Scale



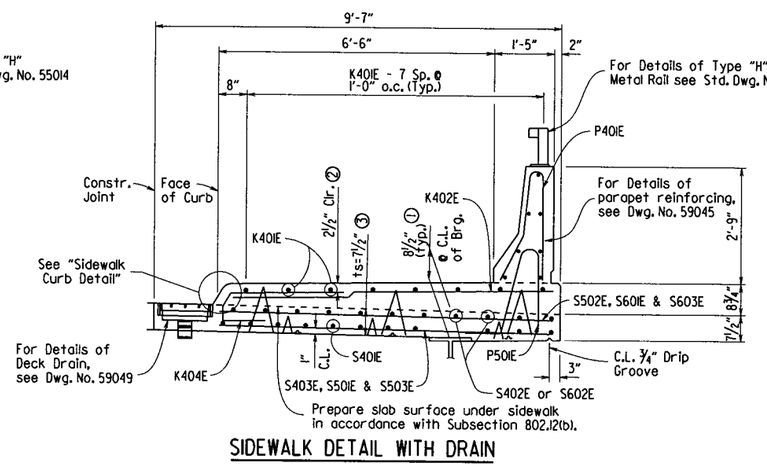
CHANNEL CONNECTION DETAIL

No Scale



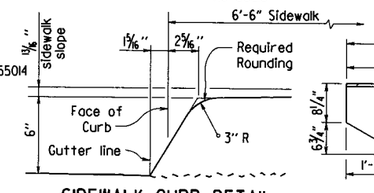
SIDEWALK DETAIL

No Scale



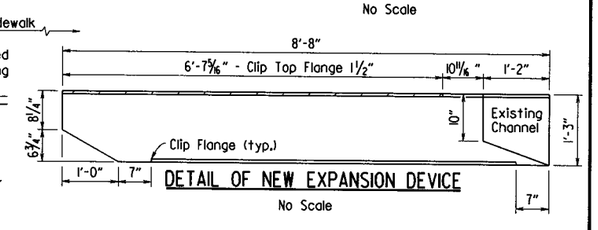
SIDEWALK DETAIL WITH DRAIN

No Scale



SIDEWALK CURB DETAIL

No Scale



DETAIL OF NEW EXPANSION DEVICE

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT
CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.s01.dgn
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BRIDGE NO. 06913 DRAWING NO. 59042

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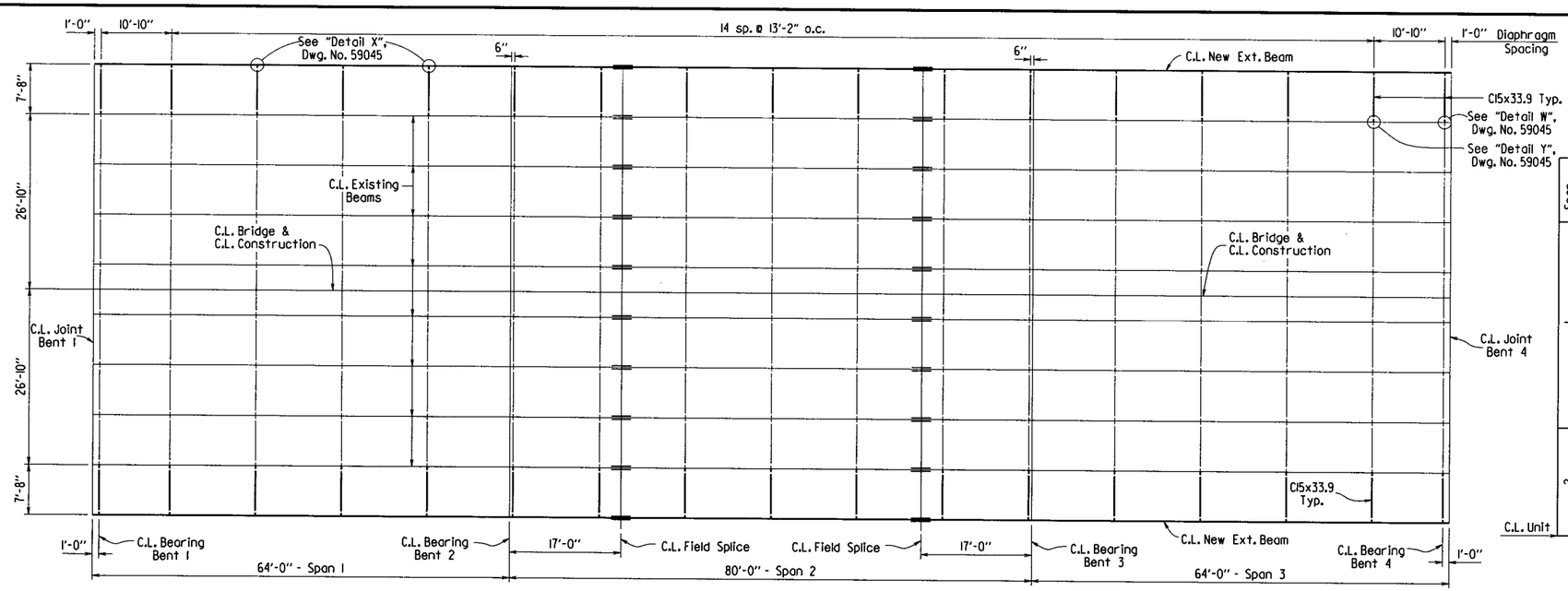
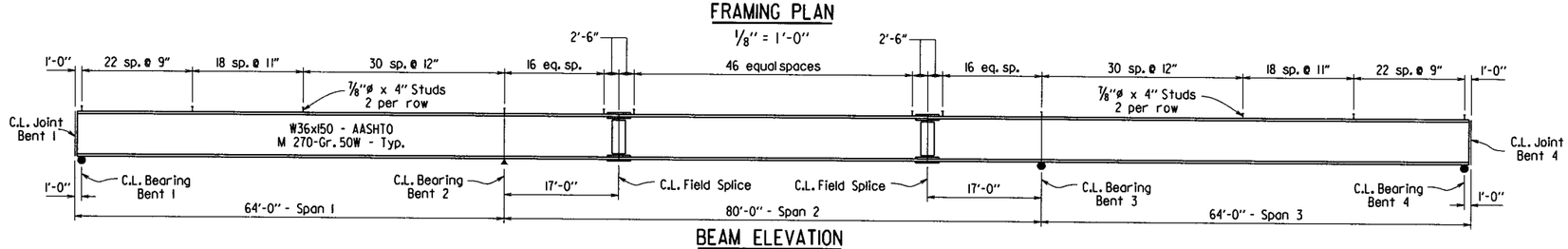
				6	ARK.			
				JOB NO.		080423	193	511

(1) 06913 - 208' W-BEAM UNIT - 59043

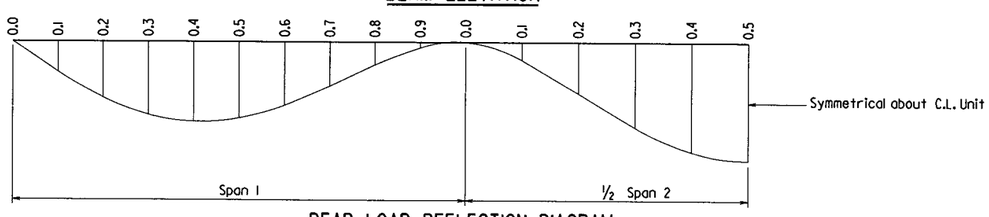


FRAMING PLAN

1/8" = 1'-0"



BEAM ELEVATION



DEAD LOAD DEFLECTION DIAGRAM

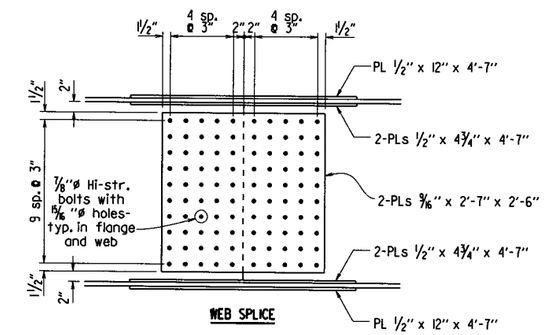
No Scale

Camber for Dead Load Deflection plus Vertical curve ±1/4" tolerance. Deflections shown are from a C.L. chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

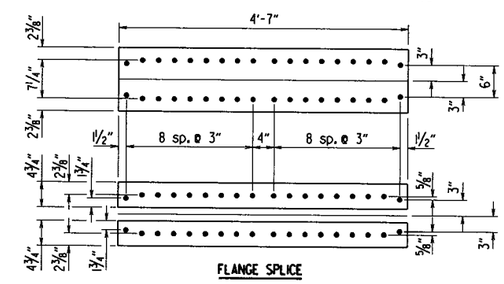
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Sidewalk
		New Exterior	New Exterior	New Exterior
1	0	0	0	0
	0.1	0.033	0.168	0.237
	0.2	0.062	0.311	0.438
	0.3	0.08	0.405	0.572
	0.4	0.088	0.443	0.627
	0.5	0.084	0.423	0.6
	0.6	0.07	0.352	0.501
	0.7	0.048	0.244	0.349
	0.8	0.025	0.126	0.181
	0.9	0.006	0.031	0.043
2	0	0	0	0
	0.1	0.019	0.097	0.148
	0.2	0.055	0.278	0.417
	0.3	0.092	0.465	0.69
	0.4	0.119	0.6	0.885
C.L. Unit	0.5	0.129	0.649	0.955

Note: This table is symmetrical about C.L. Unit



WEB SPLICE



FLANGE SPLICE

FIELD SPLICE

No Scale

All Structural Steel shall be AASHTO M 270, Gr. 50W unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W shall not be painted.

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

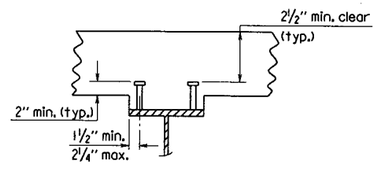
For Standard General Notes, See Std. Dwg. No. 55006.

For additional information, See layout.

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



Stud Shear Connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT
CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.s02.dgn
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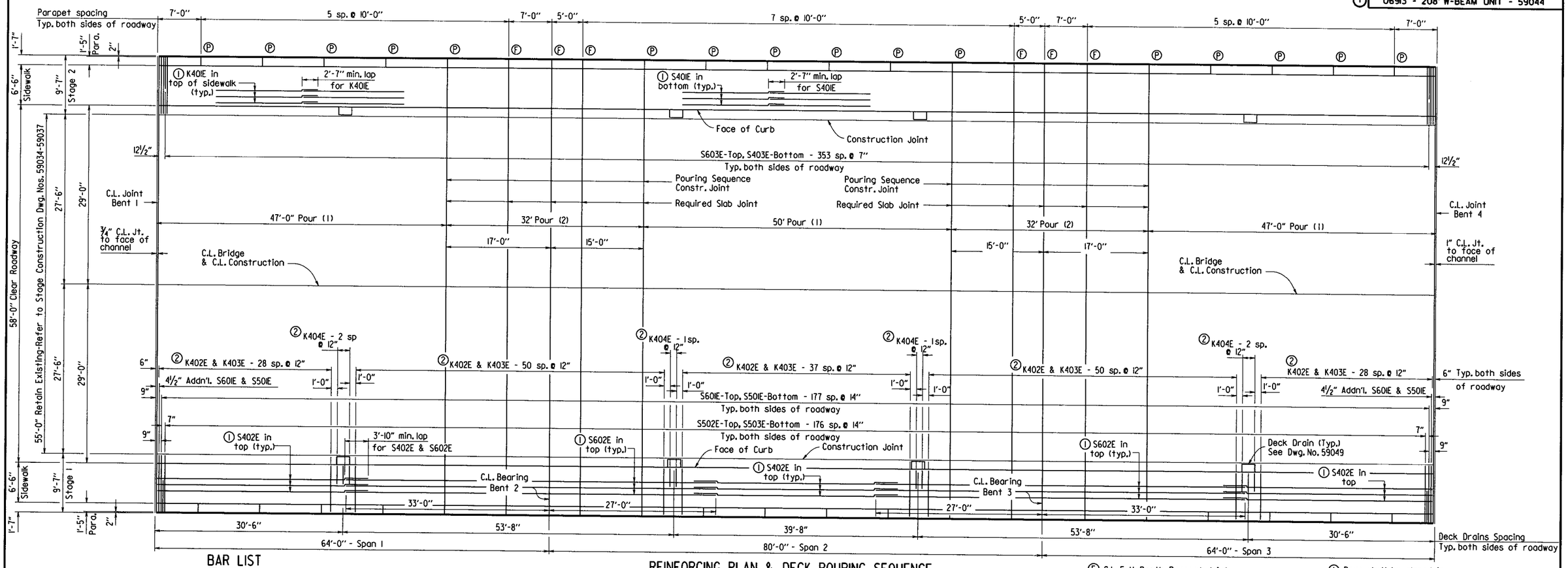
				6	ARK.			
				JOB NO.		080423	194	517

(1) 06913 - 208' W-BEAM UNIT - 59044

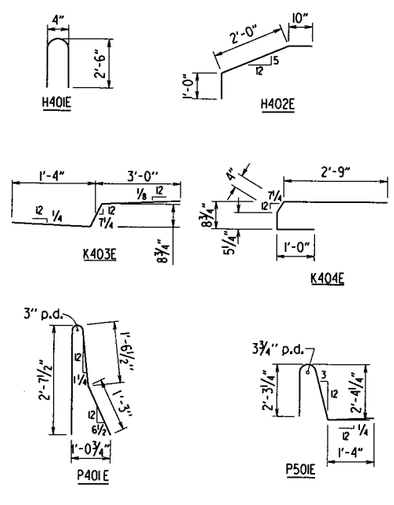


BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
H401E	12	5'-4"	3"
H402E	4	3'-9"	3"
K401E	96	36'-10"	Str.
K402E	396	7'-6"	Str.
K403E	396	4'-9"	2"
K404E	20	4'-6"	2"
P401E	832	5'-6"	3"
P402E	28	4'-8"	Str.
P403E	56	6'-8"	Str.
P404E	238	9'-8"	Str.
P405E	128	5'-6"	Str.
P501E	832	6'-1"	3¾"
S401E	156	36'-10"	Str.
S402E	78	35'-0"	Str.
S403E	708	9'-3"	Str.
S501E	360	9'-3"	Str.
S502E	354	9'-3"	Str.
S503E	354	9'-3"	Str.
S601E	360	9'-3"	Str.
S602E	52	60'-0"	Str.
S603E	708	9'-3"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Note: Bars designated with an "E" suffix to be Epoxy Coated.

REINFORCING PLAN & DECK POURING SEQUENCE

⅛" = 1'-0"

For each stage of construction, pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing or sidewalk pours made before the entire slab unit of that stage has been placed must be approved by the Engineer. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk, and a minimum of 72 hours shall elapse between the completion of the sidewalk and the pouring of the parapet railing. Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its intial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

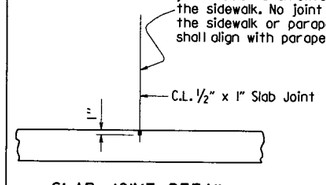
(F) C.L. Full-Depth Parapet Joint (¼" to 1" max.) Stop 4" from top of sidewalk.

(P) C.L. Partial-Depth Parapet Joint (¼" to 1" max.) Stop 1'-2" from top of sidewalk.

(1) Bars shall be placed in Stage 1 & 2 as shown in "Typ. Roadway Section", Dwg. No. 59042.

(2) Bars shall be placed in Stage 1 & 2 as shown in "Sidewalk Detail", Dwg. No. 59042.

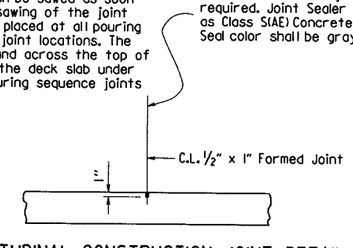
½" x 1" Type 3 or 4 Joint Sealer. See Sections 501.02 (h) and 501.05 (j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall be installed before the sidewalk is poured. The slab joints in the sidewalk shall extend to the outside of the sidewalk and shall be installed before parapet railing is to be poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck slab and across the top of the sidewalk. No joint sealer shall be placed on the deck slab under the sidewalk or parapet rail. Slab joints and pouring sequence joints shall align with parapet open joints.



SLAB JOINT DETAIL

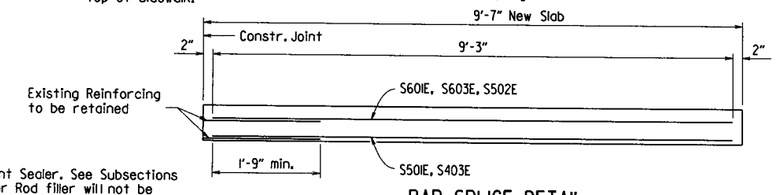
No Scale

Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.



LONGITUDINAL CONSTRUCTION JOINT DETAIL

No Scale



BAR SPLICE DETAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.s03.dgn
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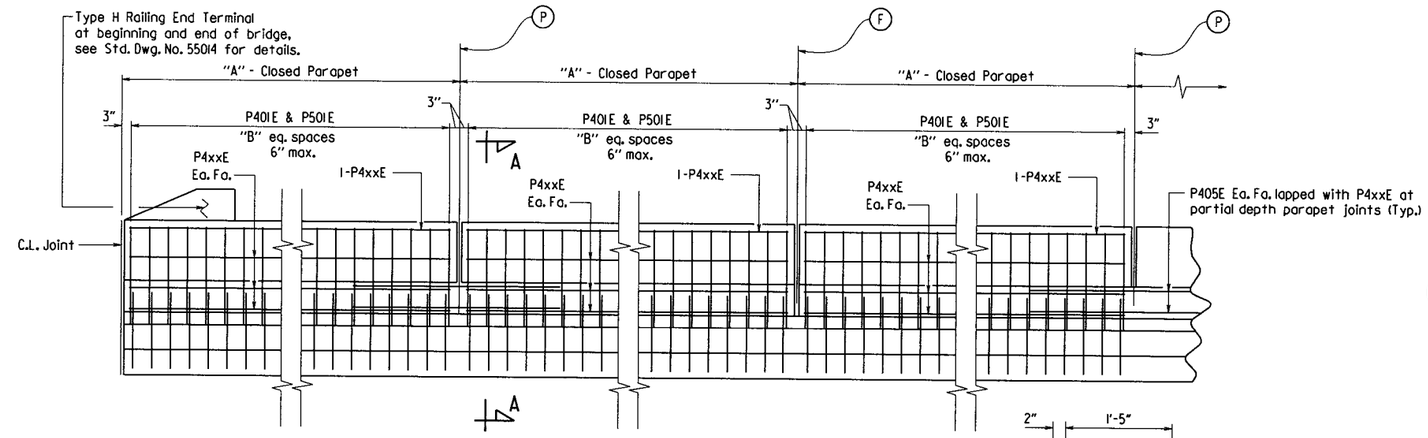
				6	ARK.			
				JOB NO.		080423	195	517
				① 06913 - 208' W-BEAM UNIT - 59045				



DETAILS OF PARAPET RAIL

½" = 1'-0"

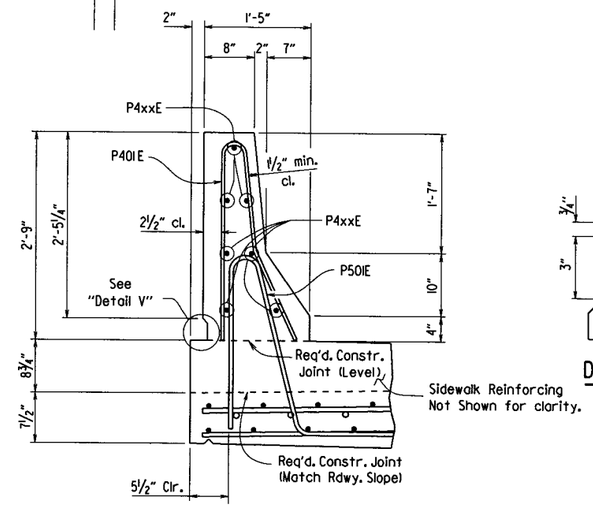
Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence", Dwg. No. 59044. Stop 4" from top of sidewalk.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence", Dwg. No. 59044. Stop 1'-2" from top of sidewalk.

TABLE OF PARAPET RAIL VARIABLES

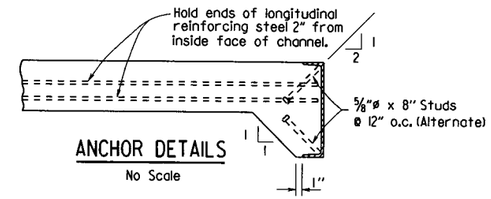
"A" Closed Parapet	"B"	P4xxE Bar
5'-0"	9	P402E
7'-0"	13	P403E
10'-0"	19	P404E

For location of Open and Closed Parapet Panels, see "Reinforcing Plan & Deck Pouring Sequence", Dwg. No. 59044.



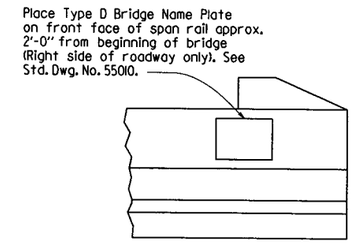
SECTION B-B

1" = 1'-0"



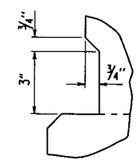
ANCHOR DETAILS

No Scale



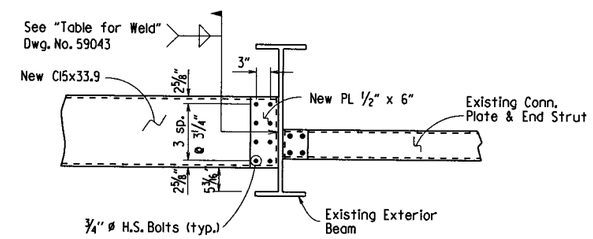
NAME PLATE DETAIL

No Scale



DETAIL V

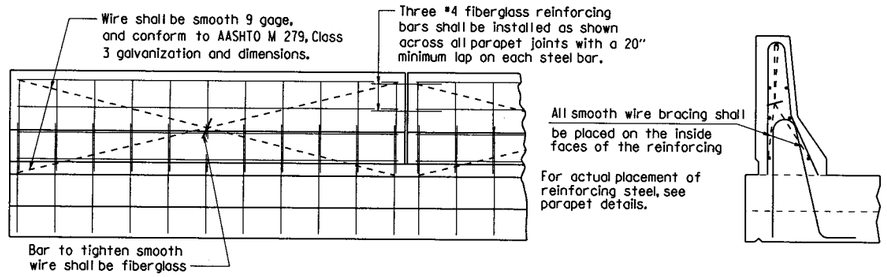
No Scale



DETAIL W

No Scale

NOTE: Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.71.



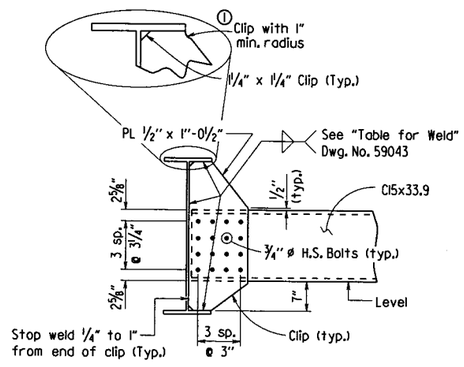
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surface may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

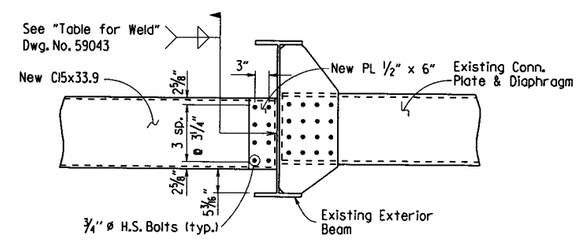
No Scale

① If permanent steel bridge deck forms are used, the Fabricator shall clip plates as necessary to accommodate the deck form supports.



DETAIL X

No Scale



DETAIL Y

No Scale

STATE OF ARKANSAS
Charles R. Ellis
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9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT
CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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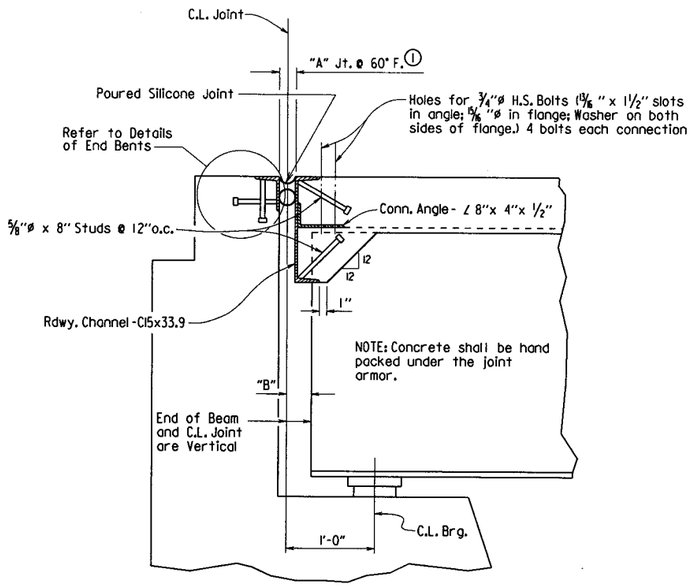
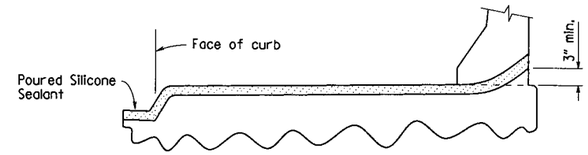
				6	ARK.			
				JOB NO.		080423	96	57

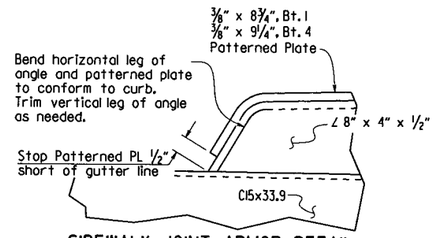
① 06913 - 208' W-BEAM UNIT - 59046



SECTION THRU JOINT AT BENTS 1 & 4



JOINT SEAL PLACEMENT AT SIDEWALK



SIDEWALK JOINT ARMOR DETAIL

The top surface of the ⅜" pattern PL shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but shall be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50W)". Pattern Plate and angle shall be M 270, Gr. 36 or as approved by the Engineer and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ① Of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1	1⅝"	1½"	1⅜"	2" ±	1" x ¾"	4"
4	2¼"	2"	1¾"	2¼" ±	1" x 1"	4½"

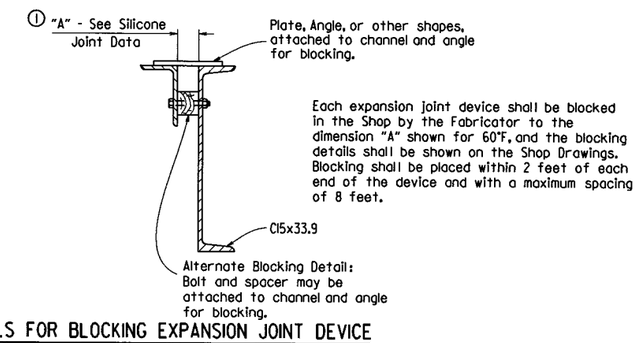
① Silicone joint material and installation shall conform to Section 809. The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

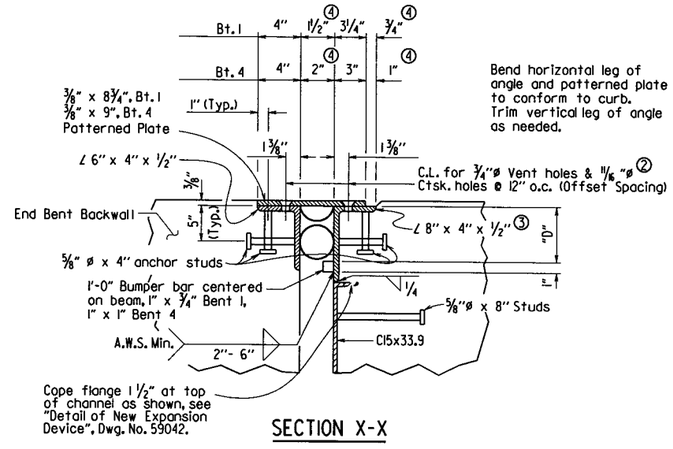
BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

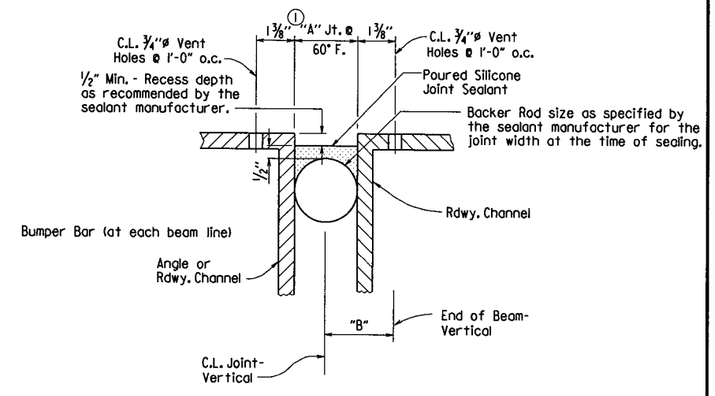


DETAILS FOR BLOCKING EXPANSION JOINT DEVICE



SECTION X-X

NOTE: Concrete shall be hand packed under the joint armor in the sidewalk. For expansion joint detail see "Detail of Poured Silicone Joint Seal".



DETAIL OF POURED SILICONE JOINT SEAL

EXPANSION DEVICE INSTALLATION:

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

② Countersink 11/16"ø holes in ⅜" Patterned PL. Top 4" leg of angles for ASTM A449 ⅝"ø screw @ 12" o.c. Install screws in the shop and ship as a unit. Screws on span side to be removed. Screws on backwall side to remain in place after erection. See "Expansion Device Installation" note.

③ Trim vertical leg of ∠ 8" x 4" x ½" as needed.

④ Dimensions shown @ 60° F

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SHEET 5 OF 5
DETAILS OF 208' CONTINUOUS COMPOSITE W-BEAM UNIT
CHOCTAW CREEK

ROUTE SEC.

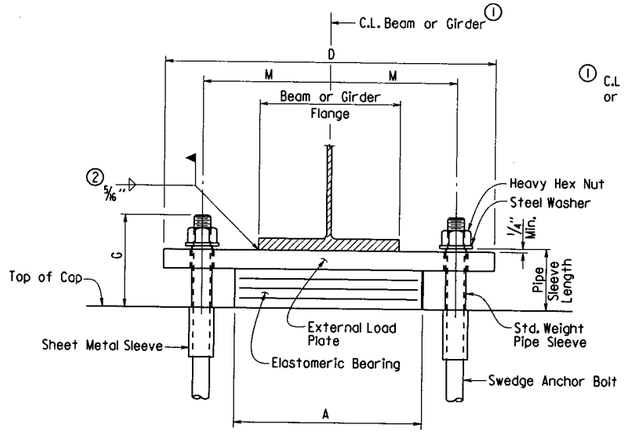
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
CHECKED BY: DHP DATE: 9/15/16
DESIGNED BY: DHP DATE: 5/18/16
FILENAME: b080423xl.s05.dgn
SCALE: No Scale

BRIDGE NO. 06913 DRAWING NO. 59046

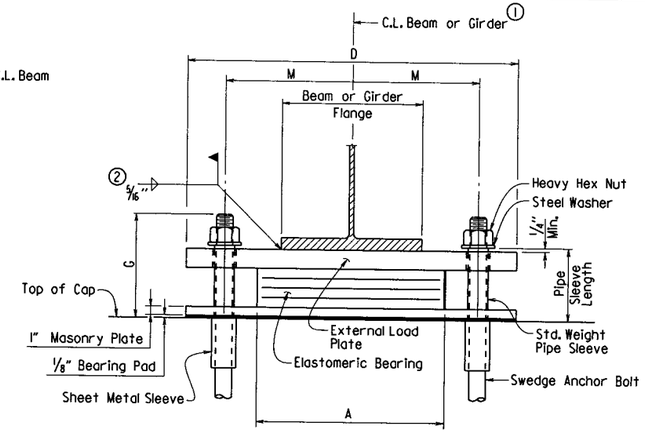
PRINT DATE: 9/15/2016

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.		080423	197	517
				① 06913 - ELASTOMERIC BRGS. - 59047				

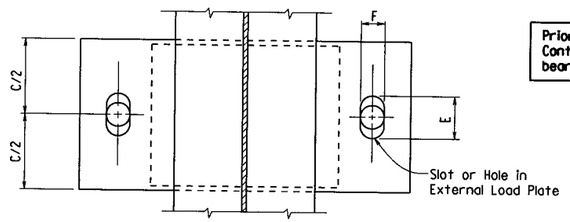


① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.

FRONT VIEW - AT BENT NO. 3

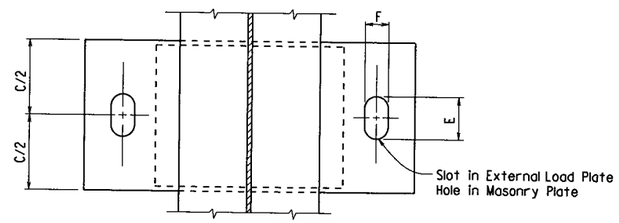


FRONT VIEW - AT BENT NOS. 1 & 4



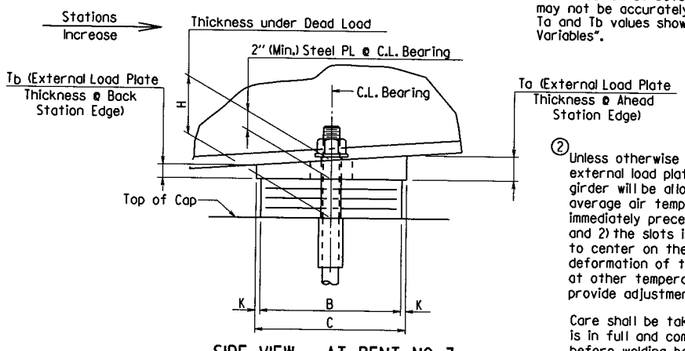
PLAN VIEW - AT BENT NO. 3

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.



PLAN VIEW - AT BENT NOS. 1 & 4

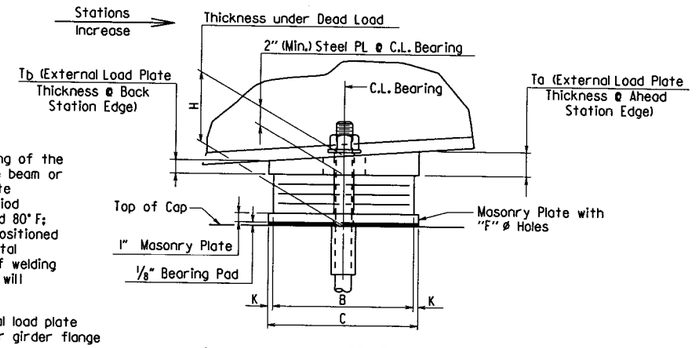
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".



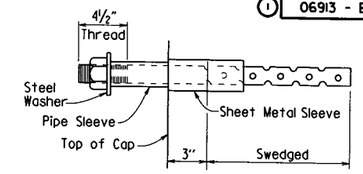
SIDE VIEW - AT BENT NO. 3

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



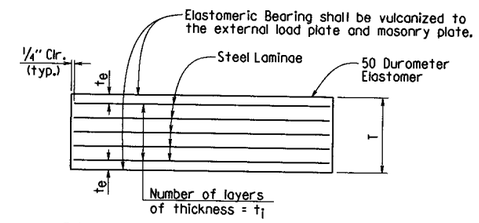
SIDE VIEW - AT BENT NOS. 1 & 4



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)"



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and Special Provision Job No. 080423 "Elastomeric Bearings" and shall be paid for at the unit price bid for "Elastomeric Bearings". Long-duration testing of random lot samples specified in Subsection 808.05 is not required.

External load plates and masonry plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and masonry plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)". External load plates, masonry plates and 1/8" bearing pads will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08.
This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

③ Maximum Design Load = Service Load

④ Dimension "E" applies to External Load Plates only. "F" ø Holes shall be used in Masonry Plates.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	④ E	F	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
06913	1	ALL	Exp.	2	75.8	9 3/4"	6 11/16"	14"	10"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	11"	25"	3 3/4"	2 5/8"	1/2"	9 1/2"	2"	2"	1 3/4"ø x 27"	55	2"ø x 7"	4"ø x 9"	3 3/8"
	3	ALL	Exp.	2	159.5	9 1/4"	5 5/16"	15"	15"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	16"	27"	4 1/4"	3 1/8"	1/2"	10 1/4"	2"	2"	2 1/4"ø x 36"	55	2 1/2"ø x 6"	4"ø x 12"	4"
	4	ALL	Exp.	2	75.8	9 3/4"	6 11/16"	14"	10"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	11"	25"	4 3/4"	2 5/8"	1/2"	9 1/2"	2"	2"	1 3/4"ø x 27"	55	2"ø x 7"	4"ø x 9"	3 3/8"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.e01.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: No Scale
DESIGNED BY: DHP DATE: 5/13/16

BRIDGE NO. 06913 DRAWING NO. 59047

PRINT DATE: 9/15/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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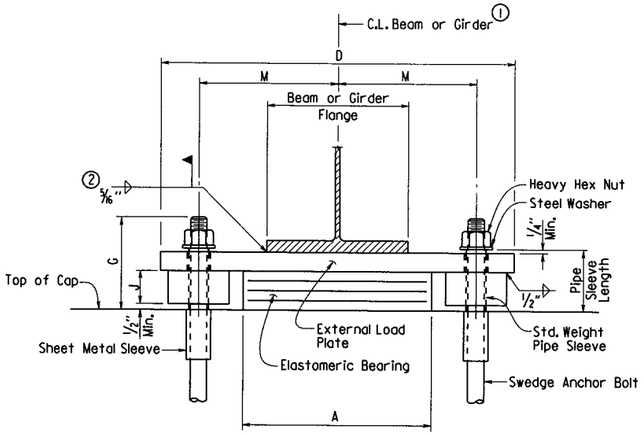
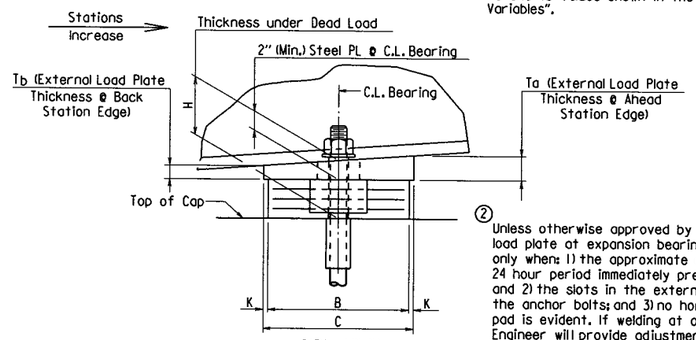
				① 06913 - ELASTOMERIC BRGS. - 59048				



FRONT VIEW

① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.

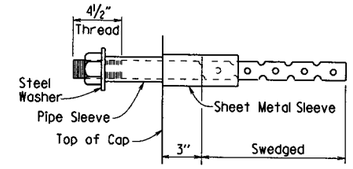


SIDE VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

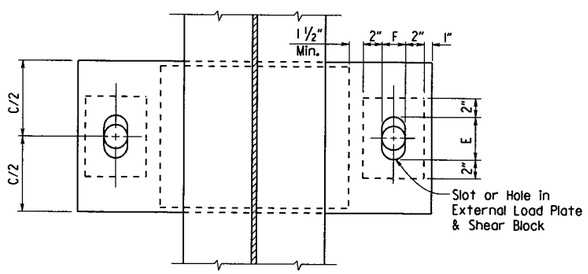
Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



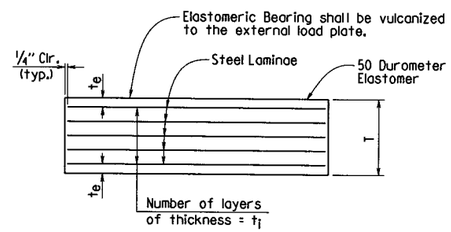
ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)"



PLAN VIEW



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and Special Provision Job No. 080423 "Elastomeric Bearings" and shall be paid for at the unit price bid for "Elastomeric Bearings". Long-duration testing of random lot samples specified in Subsection 808.05 is not required.

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

④ Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.

TABLE OF FABRICATOR VARIABLES

③ Maximum Design Load = Service Load

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	④ J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
06913	2	All	Fixed	2	159.5	8 1/2"	5 9/16"	15"	15"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	16"	31 1/2"	2 1/4"	2 1/4"	3"	1/2"	11 5/8"	2"	2"	1 1/2"ø x 27"	55	1 1/2"ø x 6"	3 3/4"ø x 12"	3"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS WITH SHEAR BLOCKS CHOCTAW CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423xl.e02.dgn

CHECKED BY: DHP DATE: 9/15/16 SCALE: No Scale

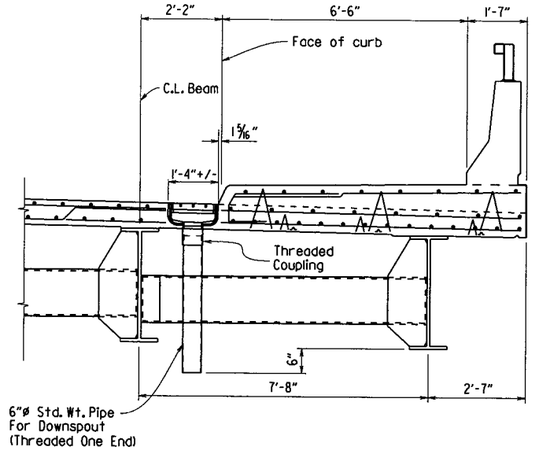
DESIGNED BY: DHP DATE: 9/15/16

BRIDGE NO. 06913 DRAWING NO. 59048

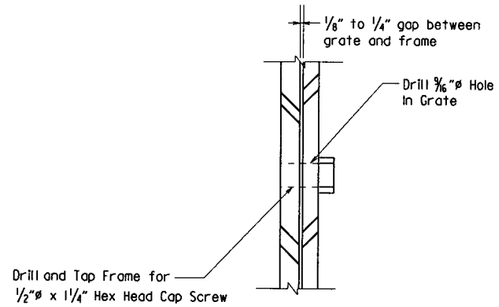
PRINT DATE: 9/15/2016

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.		080423	199	517

(1) 06913 & 06914 - DECK DRAINS - 59049



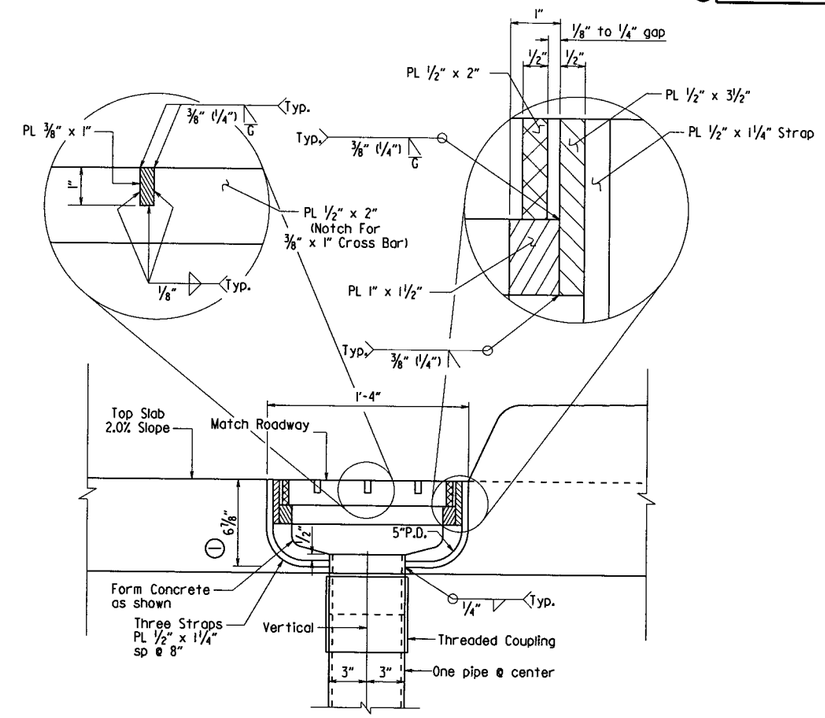
SECTION AT DECK DRAIN



DETAIL A

(1) Build to fit to top of deck pan.

NOTE: A Pre-Manufactured Grate or Grate and Frame may be submitted for approval of the Engineer in place of the steel fabrication shown in the Plans. Grate shall have an AASHTO-AGC-ARTBA Type 5 or 6 Configuration and shall be designed for a 16,000 lb. wheel load.



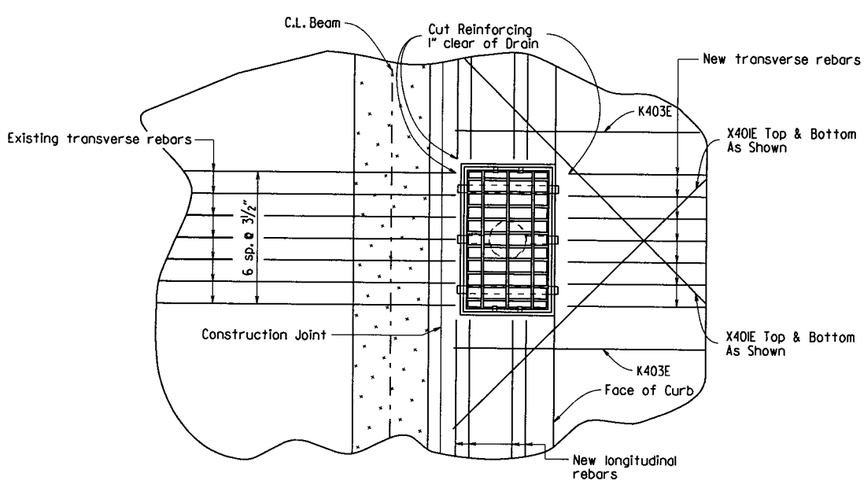
SECTION A-A

BAR LIST FOR ONE DRAIN

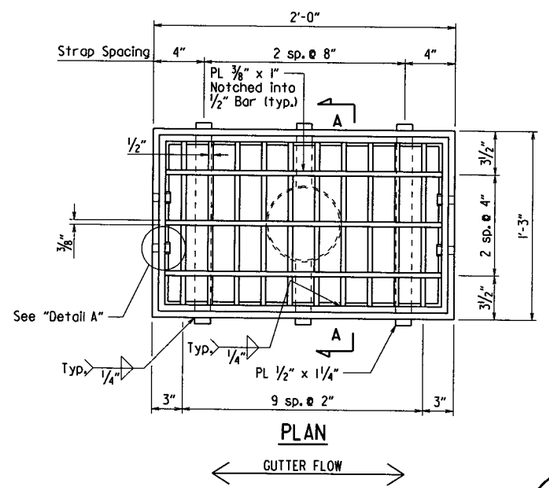
(FOR INFORMATION ONLY)

Mark	No. Req'd.	Length
X401E	4	5'-6"

Bars designated with an "E" suffix are to be epoxy coated.



PLAN OF REINFORCING AT DECK DRAINS



PLAN

GENERAL NOTES:

For Location of Deck Drains, see Superstructure Details.

Drain location may be adjusted to clear diaphragm connections.

Standard Weight Pipe for Deck Drains shall conform to ASTM A500 or A501. All other structural steel shall be AASHTO M 270, Grade 36. After fabrication, all structural steel in drains shall be Galvanized in accordance with AASHTO M 111. Steel Fasteners shall be Galvanized in accordance with AASHTO M 232, Class C, or ASTM B695, Class 50.

Structural Steel in Deck Drains shall not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Grade 50W)".

Reinforcing steel in the slab shall be cut as shown to install the deck drains. Two additional No. 4 x 5'-6" straight bars shall be placed as shown.

Repair all cut or damaged epoxy bars in accordance with the Standard Specifications.

All additional Reinforcing Steel placed around deck drains shall be epoxy-coated and shall be paid for at the unit price bid for "Epoxy Coated Reinforcing Steel (Grade 60)".

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF DECK DRAINS
CHOCTAW CREEK AND BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

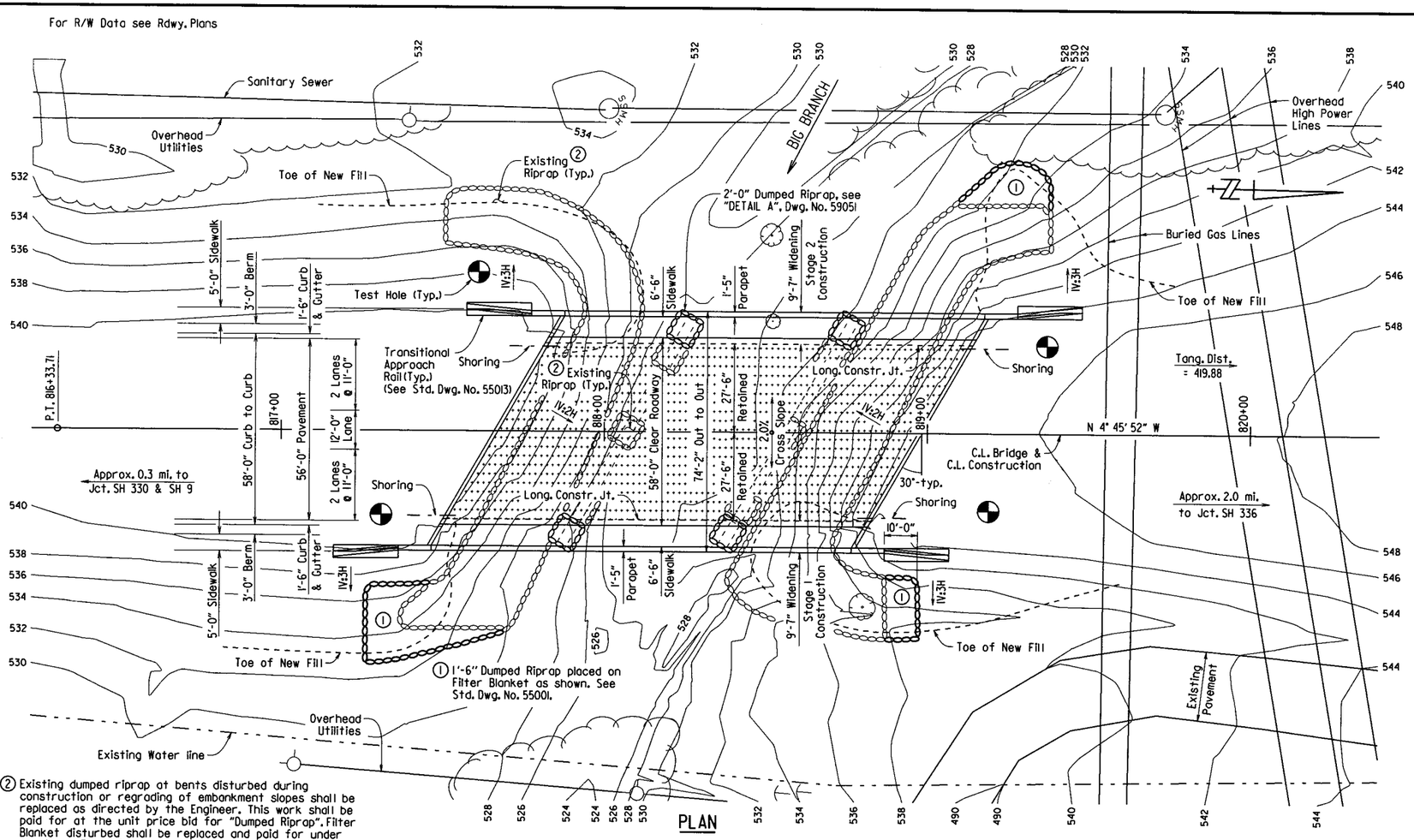
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
CHECKED BY: DHP DATE: 9/15/16
DESIGNED BY: DHP DATE: 5/18/16
FILENAME: b080423xl.dr01.dgn
SCALE: No Scale

BRIDGE NO. 06913 & 06914 DRAWING NO. 59049

PRINT DATE: 9/16/2016

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.		080423	200	517
				06914	-	LAYOUT	-	59050



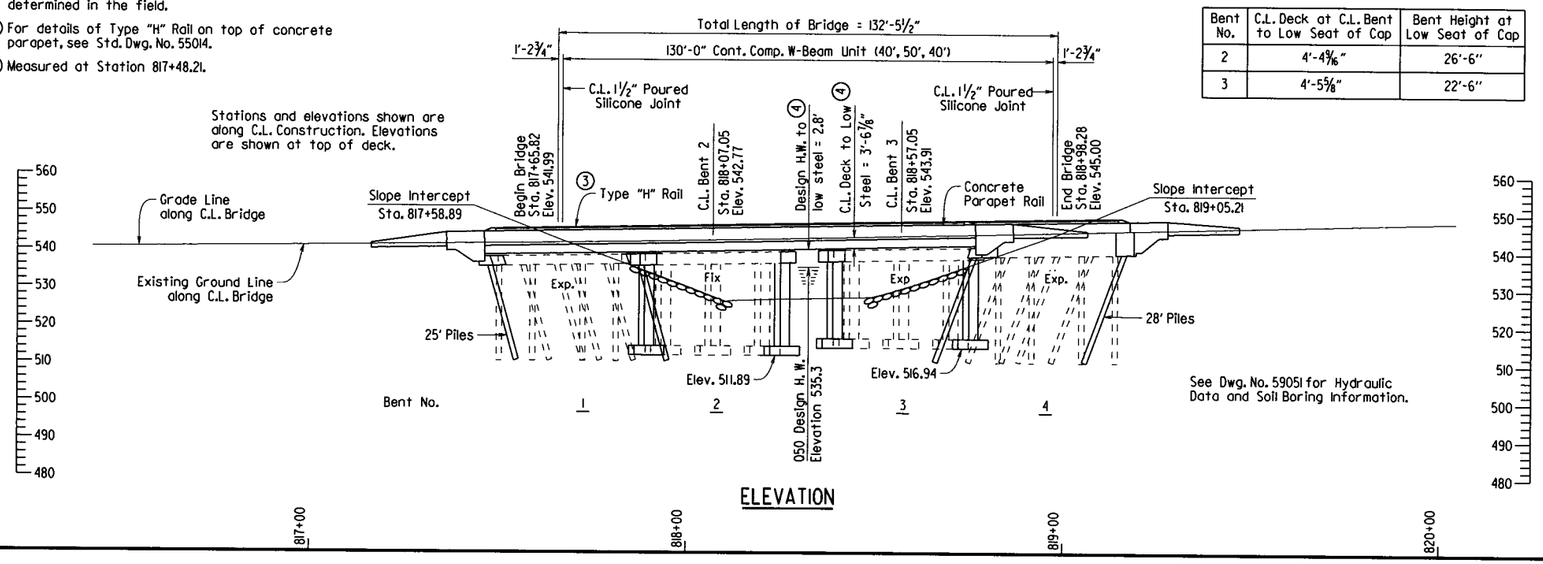
PLAN

② Existing dumped riprap at bents disturbed during construction or regrading of embankment slopes shall be replaced as directed by the Engineer. This work shall be paid for at the unit price bid for "Dumped Riprap". Filter Blanket disturbed shall be replaced and paid for under the item "Filter Blanket". Quantities of dumped riprap and filter blanket are estimated. Actual quantities shall be determined in the field.

③ For details of Type "H" Rail on top of concrete parapet, see Std. Dwg. No. 55014.

④ Measured at Station 817+48.21.

Bent No.	C.L. Deck at C.L. Bent to Low Seat of Cap	Bent Height at Low Seat of Cap
2	4'-4 9/16"	26'-6"
3	4'-5 5/8"	22'-6"



ELEVATION

GENERAL NOTES

BENCH MARK: Horizontal and Vertical Control Data are shown on Survey Control Details.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (1996 edition), with 2002 interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: LOAD FACTOR

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	Fy = 36,000 psi
Structural Steel (AASHTO M270, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: All new piling in Bents 1 and 4 shall be HP 12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile and into material designated as hard sandstone or hard shale on the boring legend. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

FOOTINGS: Footings shall be set a minimum of 4'-6" into material designated as hard sandstone or hard shale on the boring legend. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete footings shall be poured directly against excavated surfaces of rock.

BRIDGE DECK: The concrete bridge deck, except sidewalks, shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Sidewalks shall be given a Class 6 Broomed Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the new roadway surface, face of curb, sidewalk surface and the the roadway face and top of the concrete parapet rail.

DETAIL DRAWINGS:	DRAWING NO.
Stage Construction	59034-59037
End Bents	59052 - 59054, 59057 - 59059
Intermediate Bents	59055 & 59056
Details of 130'-0" Cont. Comp. W-Beam Unit	59060 - 59065
Elastomeric Bearings	59066
Steel Piling	55020
Transitional Approach Railing	55013
Details for Type H Railing	55014
General Notes	55006

SHORING: Shoring will be required to retain existing and/or new embankments to maintain traffic during the widening of Bridge No. 06914. Shoring shall be constructed in accordance with Special Provision Job No. 080423 "Shoring".

EXISTING BRIDGE: Existing Bridge No. 06914 (Log Mile 5.09) is 59'-2" wide and 132'-5½" long and consists of a 3 span continuous composite W-Beam unit supported by three column concrete intermediate bents with spread footings and steel H-Pile end bents. Plans of the existing structure may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

THE PROPOSED WORK CONSISTS OF: Widening the existing bridge by modifying the existing substructure, concrete deck, dumped riprap and joints as shown in the plans.

VERIFICATION: Except as noted, components of the existing bridge are to be retained and joined to the proposed work. Information and dimensions shown are based on the existing bridge plans. The Contractor is to adhere strictly to the requirements for verification of the geometry of the existing bridge and its relationship to the proposed work described in Subsection 821.02 and make necessary adjustments to fit the proposed work to the existing structure. Payment for this work shall be considered subsidiary to the pay item "Modification of Existing Bridge Structure (Br. No. 06914)".

REMOVAL AND SALVAGE: All material removed from the existing bridge under item 821 shall be disposed of according to Section 205. All components from the guardrail systems including rails, spacer blocks, bolts, posts and end terminals as determined by the Engineer shall remain the property of the Department. The Contractor shall coordinate with the Engineer to provide temporary storage and on site loading onto Department equipment for removal of all salvaged items. All material removed from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

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No. 9235
9-19-16
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BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE OVER BIG BRANCH
BEE BRANCH - NORTH (S)
VAN BUREN COUNTY

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

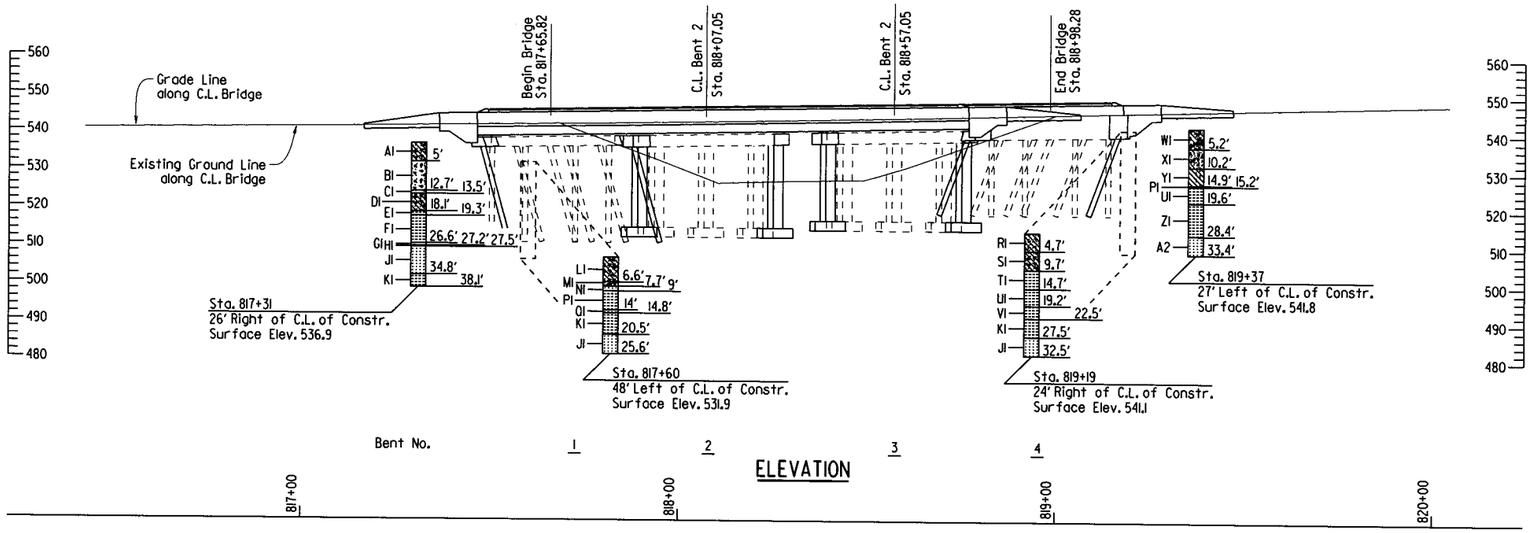
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 10/24/14
CHECKED BY: BHS DATE: 9/13/16
DESIGNED BY: CMW DATE: 10/14
FILENAME: b080423x2.11.dgn
SCALE: 1"=20'

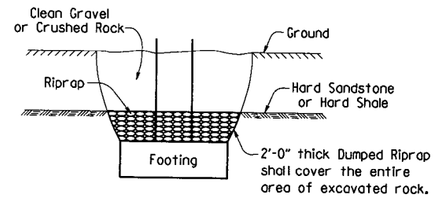
BRIDGE NO. 06914 DRAWING NO. 59050

PRINT DATE: 9/13/2016

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.		080423	201	517
				(1) 06914	-	LAYOUT	-	59051



ELEVATION



Plan quantities for Dumped Riprap are based on vertical planes parallel to and 4" outside the lines of the footing to top of rock. Clean Gravel or Crushed Rock will be considered subsidiary to the item Dumped Riprap.

DETAIL A

No Scale

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	3975	534.2	535.3
Base	100	4365	534.5	535.8
Extreme	500	5145	535.0	536.6
Overtopping	>500	-	-	-

(1) Unconstricted water surface without structure or roadway approaches.
Drainage area = 2.1 square miles.
Historical H.W. Elev. = N/A
0100 Backwater Elev. for existing structure = 535.8 ft.
Proposed Low Bridge Chord Elev. = 538.12 ft. @ Sta. 817+48.21

BORING LEGEND

A1-Moist, Medium Stiff, Brown Sandy Clay with Sandstone Fragments and some Organic Matter
B1-Moist, Medium Dense, Brown Sand, Gravel and Sandstone Fragments
C1-Wet, Dense, Brown Sand and Sandstone Fragments
D1-Wet, Hard, Brown Sandy Clay with Sandstone Fragments
E1-Medium Hard, Dark Gray Weathered Shale
F1-Hard, Dark Gray Shale with some Thin Medium Hard, Weathered Shale Seams
G1-Soft, Dark Gray Weathered Shale
H1-Hard, Dark Gray Shale
J1-Hard, Gray Sandstone with some Calcareous Seams
K1-Hard, Dark Gray Shale with Medium Hard, Weathered Shale Seams
L1-Moist, Very Stiff, Reddish Brown Clay with Sand Seams, Sandstone Fragments and some Organic Matter
M1-Moist, Hard, Brown Sandstone Fragments and Cobbles
N1-Hard, Brown Sandstone
P1-Soft, Brown and Gray Highly Weathered Shale
Q1-Medium Hard, Gray Weathered Shale
R1-Moist, Medium Stiff, Reddish Brown Sandy, Silty Clay with Traces of Gravel and some Organic Matter
S1-Moist, Very Stiff, Reddish Brown and Gray Clay with Sand Seams and Sandstone Fragments
T1-Soft, Gray and Brown Highly Weathered Shale
U1-Medium Hard, Gray and Brown Weathered Shale
V1-Hard, Dark Gray Shale with Medium Hard Weathered Shale and some Thin Gray Sandstone Seams
W1-Moist, Very Stiff, Reddish Brown Sandy, Silty Clay with Sandstone Fragments and some Organic Matter
X1-Moist, Medium Dense to Loose, Brown Sand with Clay Seams and Sandstone Fragments
Y1-Moist, Very Stiff, Brown Silty Clay with some Sand Seams
Z1-Hard, Dark Gray and Brown Shale with Medium Hard, Weathered Shale Seams
A2-Hard, Gray Sandstone with some Calcareous Seams Seams

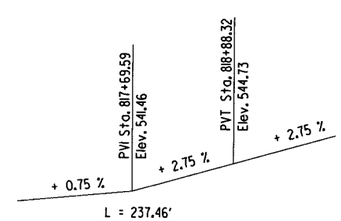
"N" VALUES

Sta. 817+31 - 26' Right of Center Line of Construction
4.0- 5.0, N=6
9.0- 10.0, N=26
14.0- 15.0, N=31
19.0- 19.0, N=60 (0.5')

Sta. 817+60 - 48' Left of Center Line of Construction
4.5- 5.5, N=26
9.5- 10.5, N=50
14.5- 14.8, N=60 (0.3')

Sta. 819+19 - 24' Right of Center Line of Construction
3.7- 4.7, N=7
8.7- 9.7, N=22
13.7- 14.7, N=27
18.7- 19.1, N=60 (0.4')

Sta. 819+37 - 27' Left of Center Line of Construction
4.2- 5.2, N=23
9.2- 10.2, N=10
14.2- 15.2, N=30
19.2- 19.6, N=60 (0.4')



VERTICAL ALIGNMENT DATA AT C.L. BRIDGE

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE OVER BIG BRANCH
BEE BRANCH - NORTH (S)
VAN BUREN COUNTY

ROUTE 65 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 10/24/14
CHECKED BY: BHS DATE: 9/13/16
DESIGNED BY: CMW DATE: 10/14
FILENAME: b080423x2_11.dgn
SCALE: 1"=20'

BRIDGE NO. 06914 DRAWING NO. 59051

PRINT DATE: 9/13/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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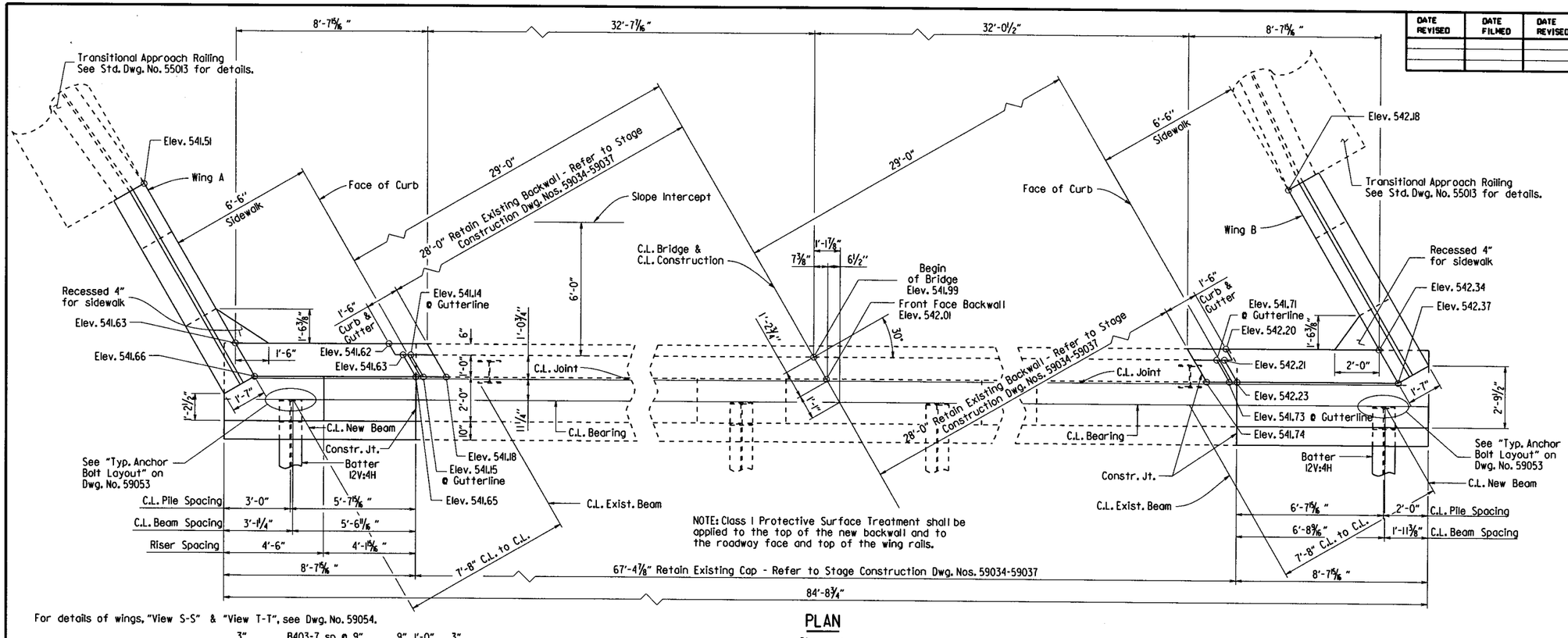
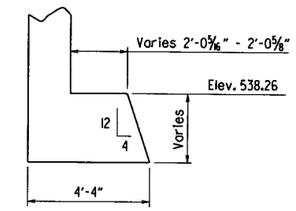
				JOB NO.		080423	202	517
				① 06914 - END BENT - 59052				



For details of wings, "View S-S" & "View T-T", see Dwg. No. 59054.

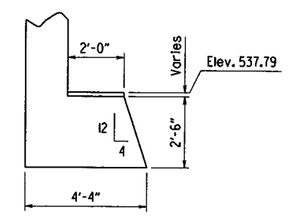
PLAN

3/8" = 1'-0"



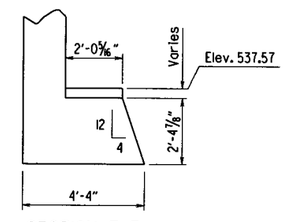
SECTION C-C

3/8" = 1'-0"



SECTION D-D

3/8" = 1'-0"

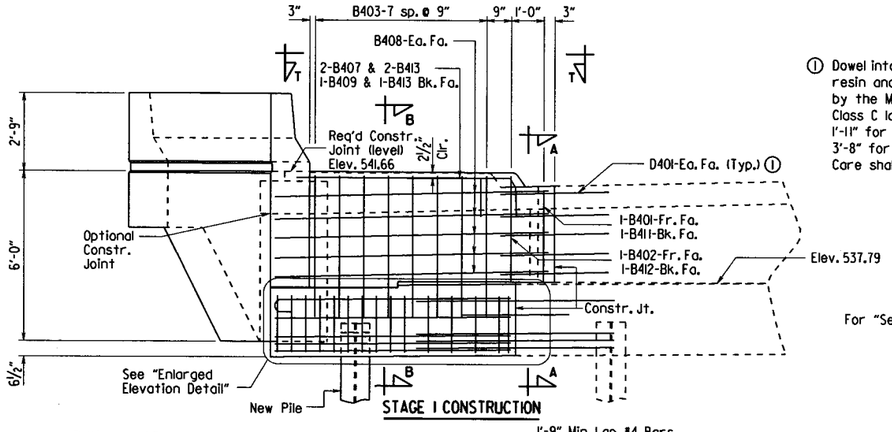


SECTION E-E

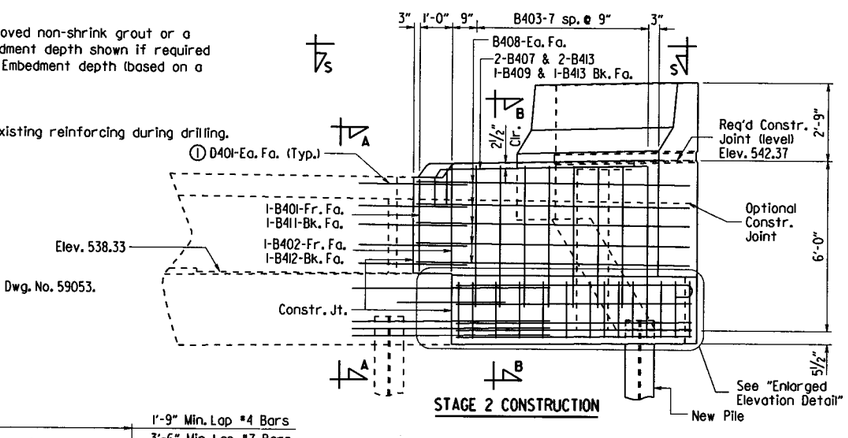
3/8" = 1'-0"

① Dowel into Existing Bent using a QPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on a Class C lap splice length plus 2"):
1'-11" for D401 Bars
3'-8" for D701 Bars
Care shall be exercised not to damage existing reinforcing during drilling.

For "Sections A-A" & "Section B-B", see Dwg. No. 59053.



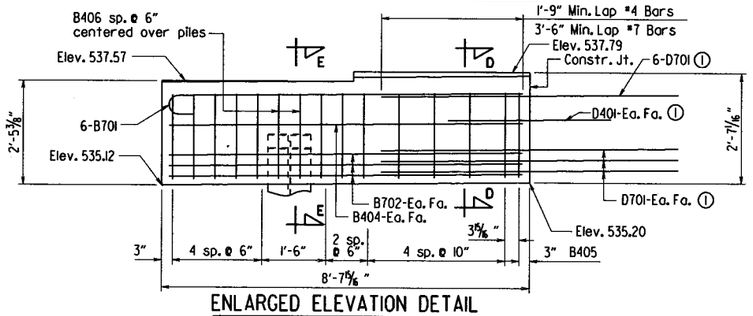
STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION

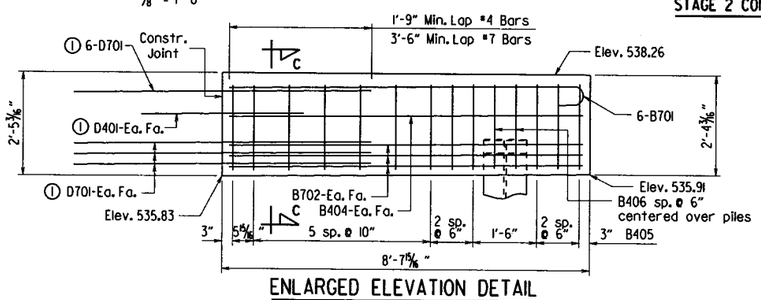
ELEVATION

Looking Back
3/8" = 1'-0"



ENLARGED ELEVATION DETAIL

No Scale



ENLARGED ELEVATION DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-17-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENT 1
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP	DATE: 7/25/16	FILENAME: b080423x2.bll.dgn			
CHECKED BY: DHP	DATE: 9/15/16	SCALE: As Shown			
DESIGNED BY: DHP	DATE: 5/10/16				
BRIDGE NO. 06914	DRAWING NO. 59052				

PRINT DATE: 3/13/2017

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.		080423	203	517
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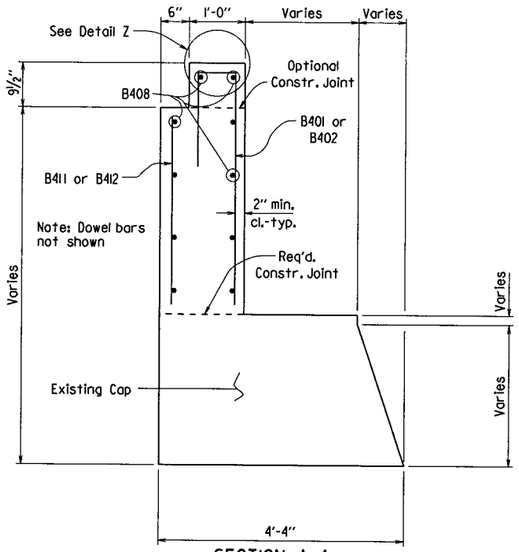
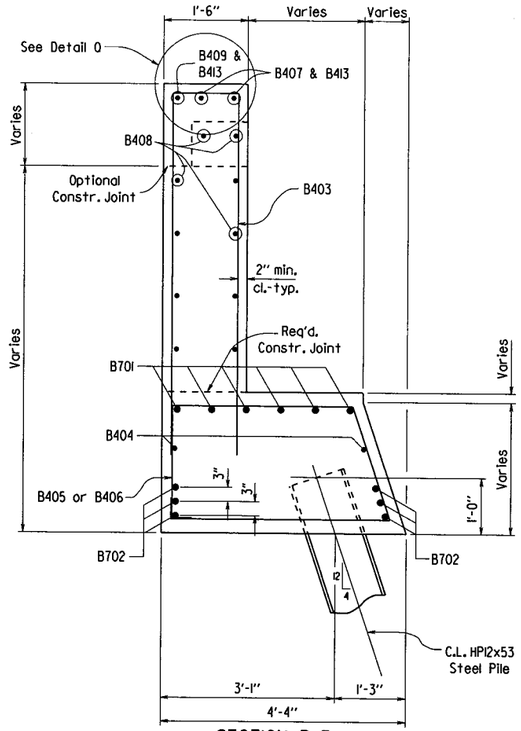


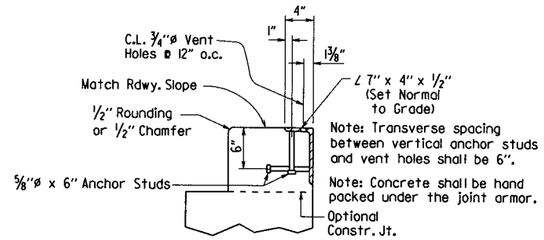
SECTION A-A

¾" = 1'-0"



SECTION B-B

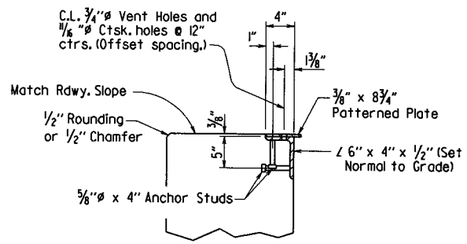
¾" = 1'-0"



For additional joint details, see Dwg. No. 59065.

DETAIL Z

No Scale



For additional joint details, see Dwg. No. 59065.

DETAIL Q

No Scale

GENERAL NOTES

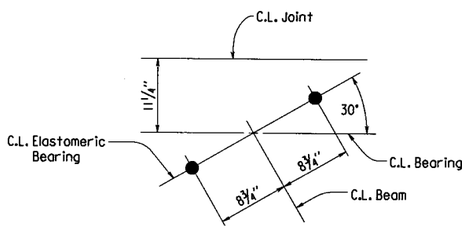
For Standard General Notes, See Std. Dwg. No. 55006.

Work required to remove and dispose portions of the existing bridge and work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06914)".

No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "Expansion Device Installation" note on Dwg. No. 59046.

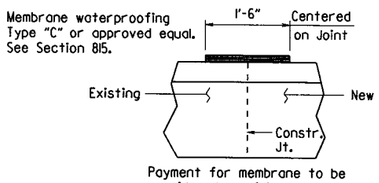
For additional information, see Layout.

For details of Elastomeric Bearings, See Dwg. No. 59066.



TYP. ANCHOR BOLT LAYOUT

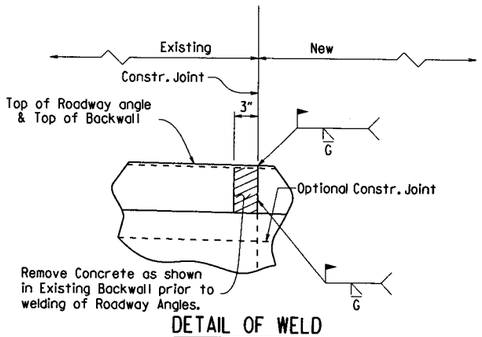
No Scale



Payment for membrane to be considered subsidiary to Class "S" Concrete - Bridge.

CONSTRUCTION JOINT DETAIL

No Scale



DETAIL OF WELD FOR EXPANSION DEVICE

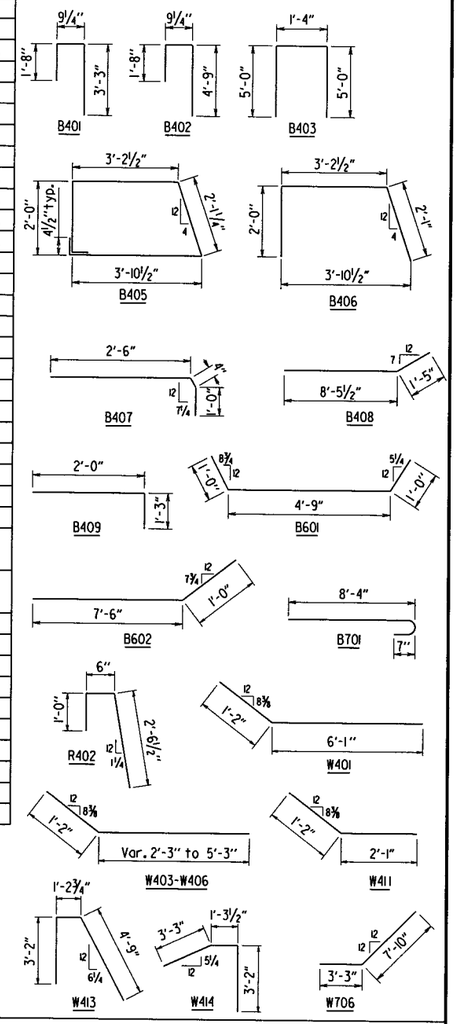
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	2	5'-7"	2"
B402	2	7'-1"	2"
B403	16	11'-2"	2"
B404	4	8'-4"	Str.
B405	25	11'-7"	2"
B406	4	7'-3"	2"
B407	4	3'-10"	2"
B408	20	9'-11"	2"
B409	2	3'-2"	2"
B410	6	5'-4"	Str.
B411	2	2'-5"	Str.
B412	2	3'-11"	Str.
B413	6	6'-6"	Str.
B601	4	6'-9"	4½"
B602	4	8'-6"	4½"
B701	12	9'-2"	5¼"
B702	12	8'-4"	Str.
D401	24	3'-10"	Str.
D701	24	7'-4"	Str.
R401	12	9'-8"	Str.
R402	22	3'-11"	2"
W401	8	7'-3"	2"
W402	8	8'-5"	Str.
W403-W406	2 each	Var. 3'-5" to 6'-5"	2"
W407-W410	2 each	Var. 4'-7" to 7'-7"	Str.
W411	6	3'-3"	2"
W412	6	4'-5"	Str.
W413	3	9'-1"	2"
W414	3	7'-8"	2"
W701	12	9'-8"	Str.
W702	4	6'-7"	Str.
W703	4	5'-10"	Str.
W704	4	5'-1"	Str.
W705	4	4'-4"	Str.
W706	4	11'-1"	5¼"

BENDING DIAGRAMS

Dimensions are out to out of bars.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT 1
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.bl2.dgn
CHECKED BY: DHP DATE: 9/13/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/13/16

BRIDGE NO. 06914 DRAWING NO. 59053

PRINT DATE: 9/14/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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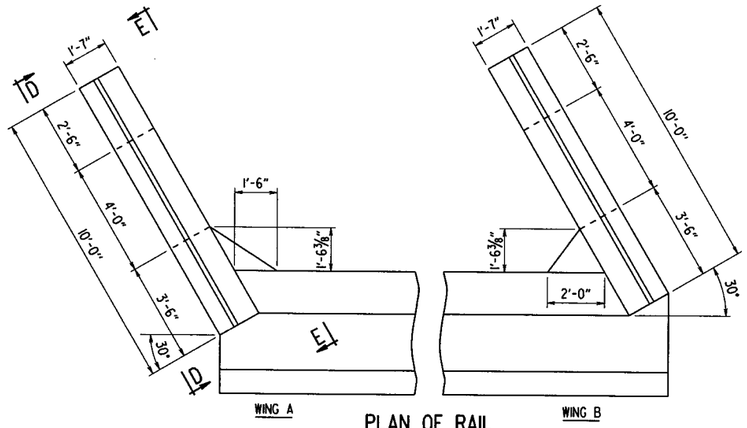
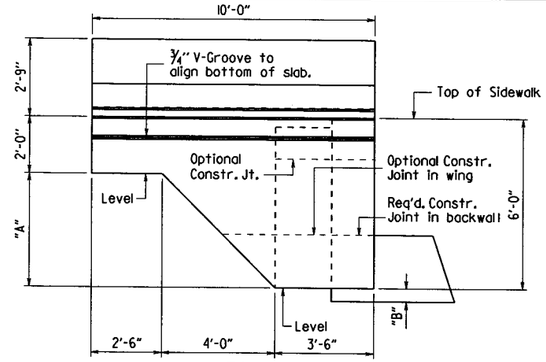
				JOB NO.		080423	204	517
				06914 - END BENT - 59054				



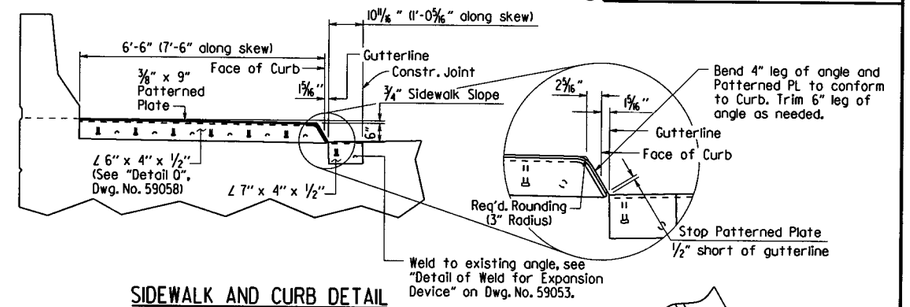
PLAN OF RAIL

⅜" = 1'-0"



VIEW D-D

No Scale

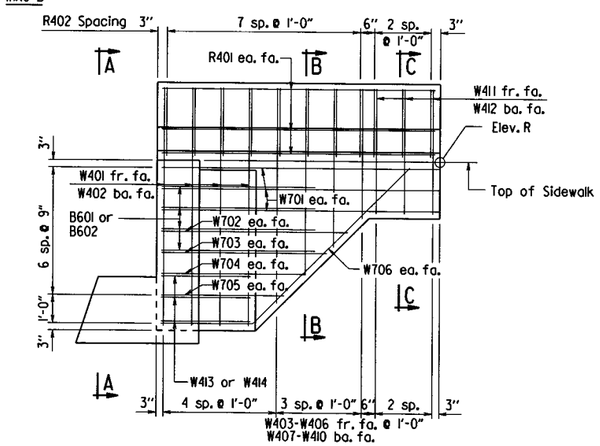


SIDEWALK AND CURB DETAIL

Looking Back
No Scale

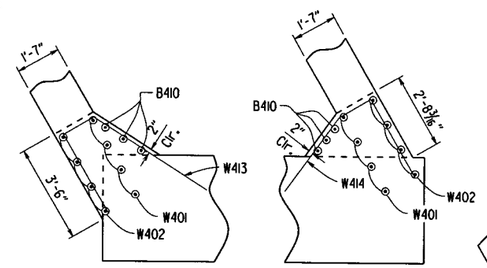
TABLE OF VARIABLES

Bent	Wing	"A"	"B"	Elev. R
1	A	4'-0"	6½"	541.51
	B	4'-0"	5½"	542.18



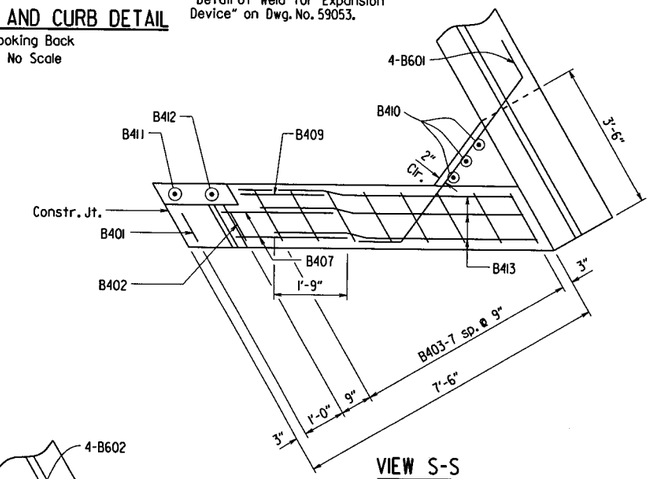
VIEW E-E

No Scale



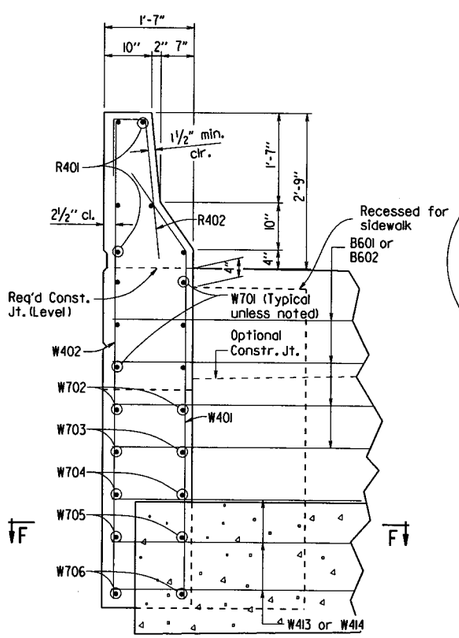
SECTION F-F

⅜" = 1'-0"



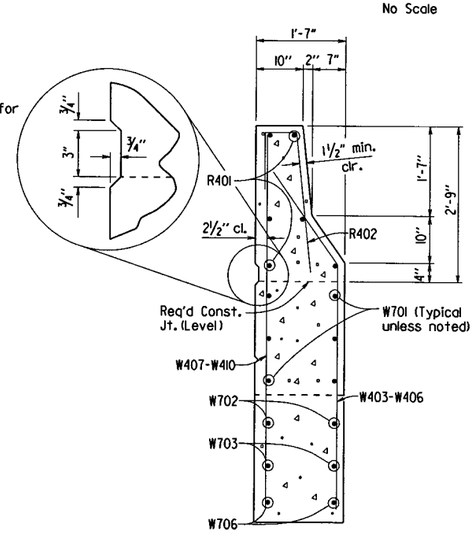
VIEW S-S

No Scale



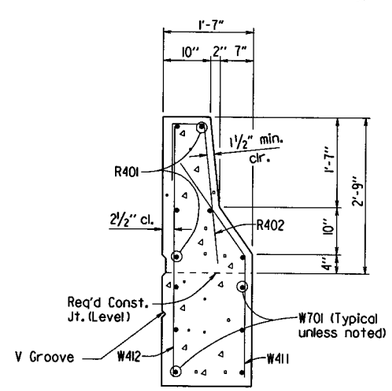
VIEW A-A

No Scale



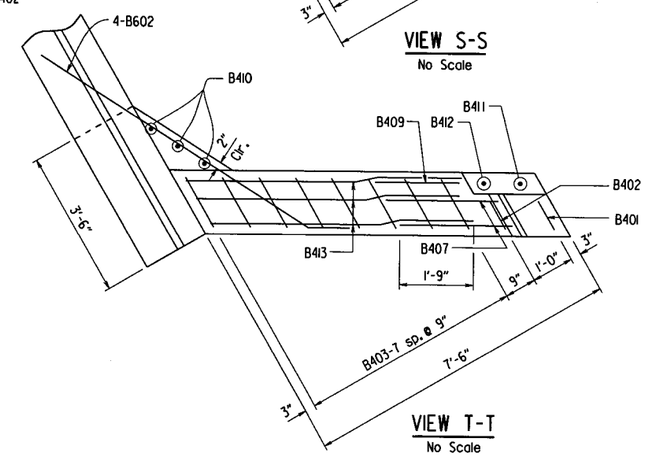
SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"



VIEW T-T

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENT 1
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.bl3.dgn
CHECKED BY: DHP DATE: 9/16/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/18/16

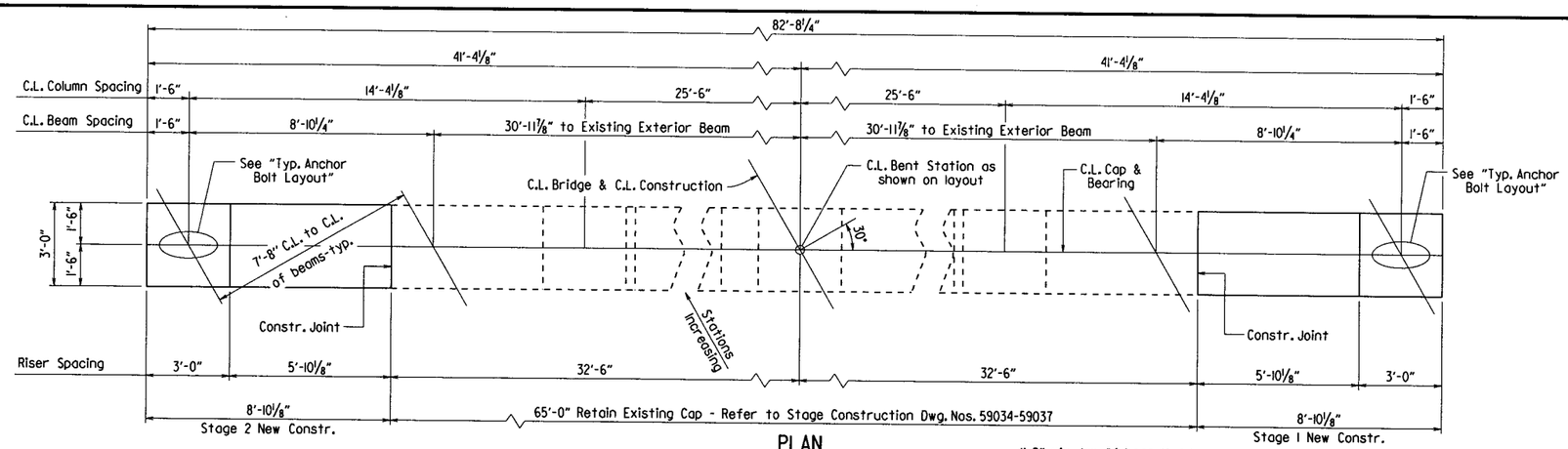
BRIDGE NO. 06914 DRAWING NO. 59054

PRINT DATE: 3/14/2017

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.		080423	205	517

(1) 06913 - INTERMEDIATE BENTS - 59055



PLAN

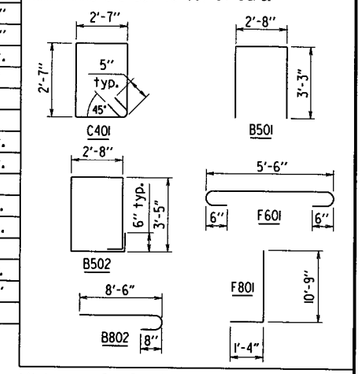
⅜"=1'-0"

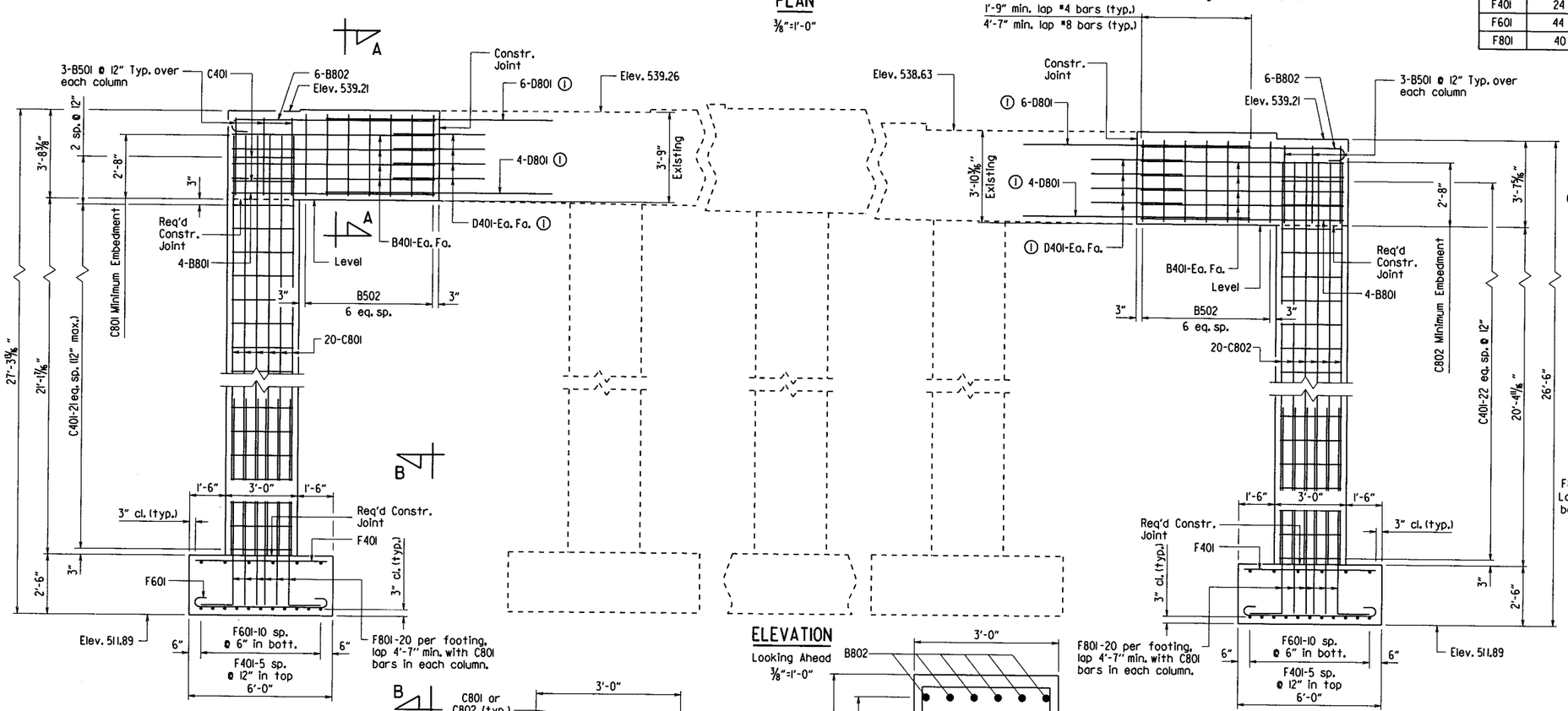
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	16	8'-6"	Str.
B501	6	9'-0"	2½"
B502	14	12'-8"	2½"
B801	8	8'-6"	Str.
B802	12	9'-5"	6"
C401	47	10'-10"	3"
C801	20	23'-10"	Str.
C802	20	23'-1"	Str.
D401	16	3'-10"	Str.
D801	20	9'-6"	Str.
F401	24	5'-6"	Str.
F601	44	6'-10"	4½"
F801	40	11'-11"	6"

BENDING DIAGRAMS

Dimensions are out to out of bars.





ELEVATION

Looking Ahead

⅜"=1'-0"

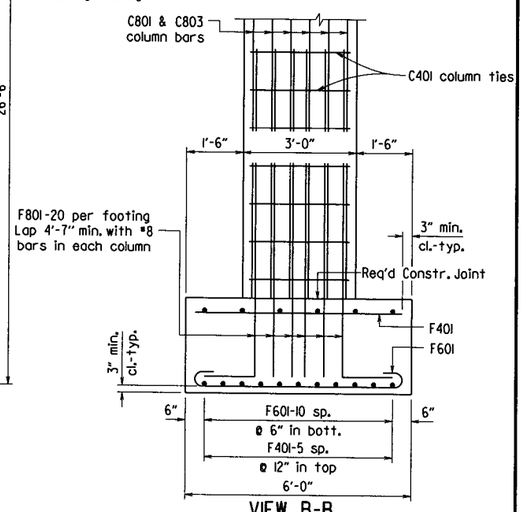
GENERAL NOTES

For Standard General Notes, see Std. Dwg. No. 55006.

Work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06914)".

For additional information, see Layout.

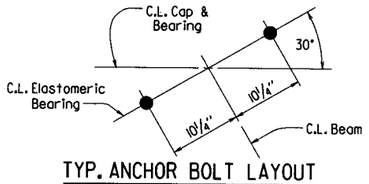
(1) Dowel into Existing Bent using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on a Class C lap splice length plus 2"):
1'-11" for D401 Bars
4'-9" for D801 Bars
Care shall be exercised not to damage existing reinforcing during drilling.



VIEW B-B

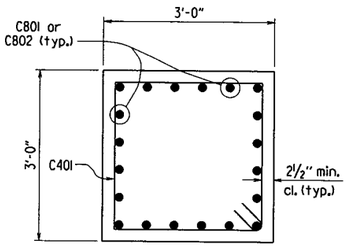
½" = 1'-0"

For details of Elastomeric Bearings, see Dwg. No. 59066.



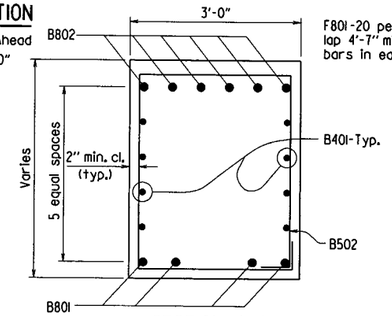
TYP. ANCHOR BOLT LAYOUT

No Scale



TYP. SECTION THRU COLUMN

¾" = 1'-0"



SECTION A-A

¾" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 2
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.b21.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/18/16

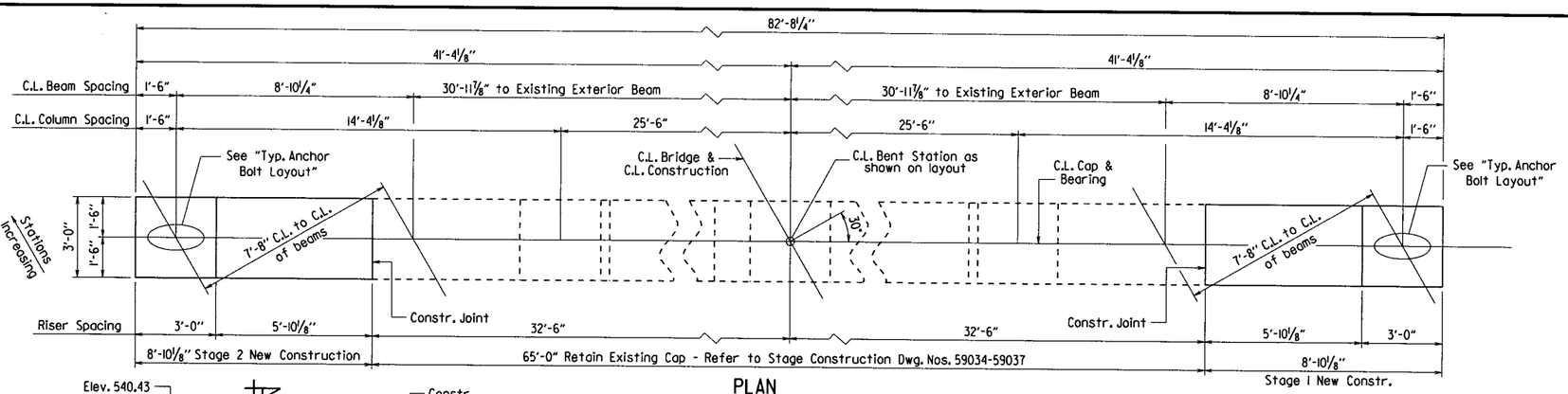
BRIDGE NO. 06914 DRAWING NO. 59055

PRINT DATE: 9/16/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

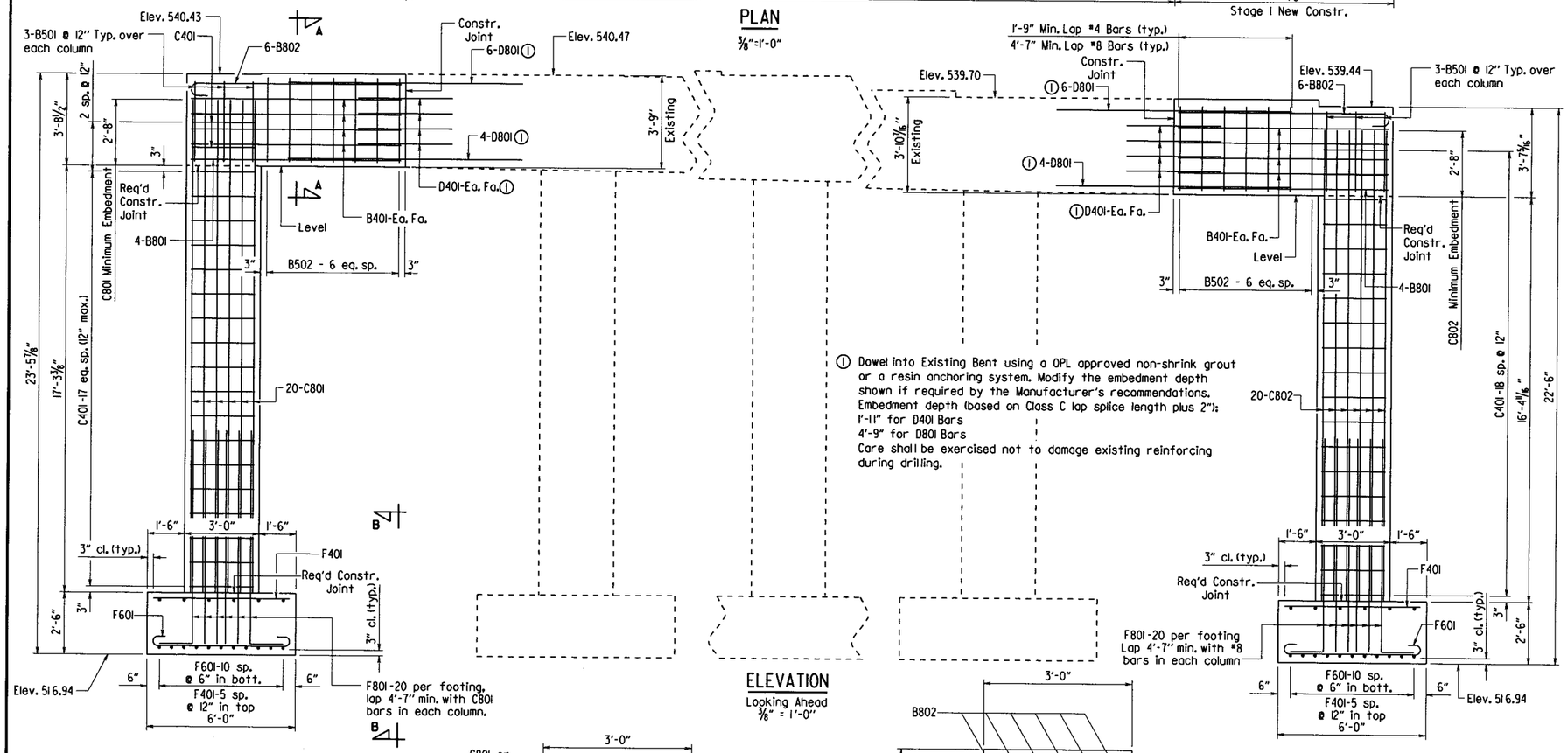
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080423	206	517

(1) 06914 - INTERMEDIATE BENT - 59056



PLAN

⅜"=1'-0"



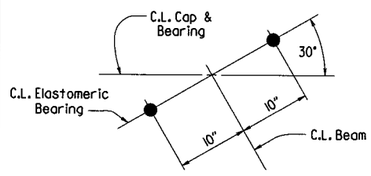
(1) Dowel into Existing Bent using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on Class C lap splice length plus 2"):
1'-11" for D401 Bars
4'-9" for D801 Bars
Care shall be exercised not to damage existing reinforcing during drilling.

ELEVATION

Looking Ahead

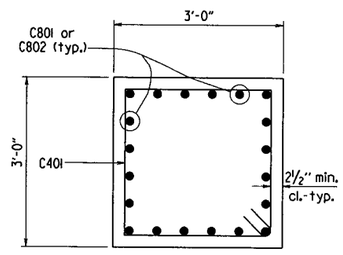
⅜" = 1'-0"

For details of Elastomeric Bearings, see Dwg. No. 59066.



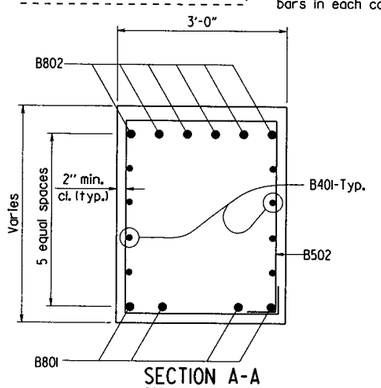
TYP. ANCHOR BOLT LAYOUT

No Scale



TYP. SECTION THRU COLUMN

¾" = 1'-0"



SECTION A-A

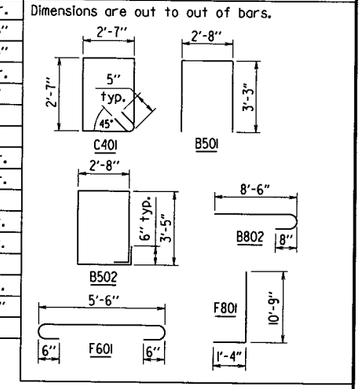
¾" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	16	8'-6"	Str.
B501	6	9'-0"	2½"
B502	14	12'-8"	2½"
B801	8	8'-6"	Str.
B802	12	9'-5"	6"
C401	39	10'-10"	3"
C801	20	20'-0"	Str.
C802	20	19'-1"	Str.
D401	16	3'-10"	Str.
D801	20	9'-6"	Str.
F401	24	5'-6"	Str.
F601	44	6'-10"	4½"
F801	40	11'-11"	6"

BENDING DIAGRAMS

Dimensions are out to out of bars.

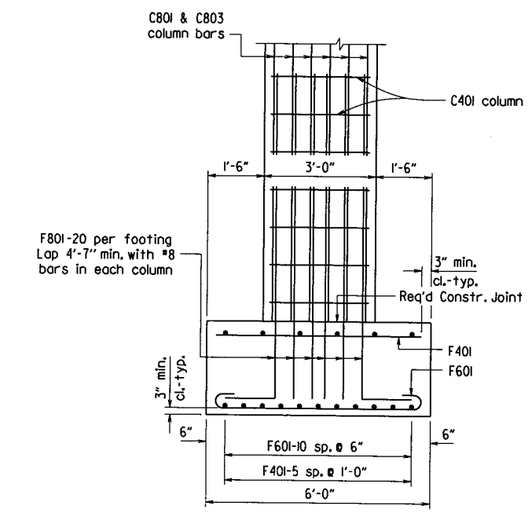


GENERAL NOTES

For Standard General Notes, see Std. Dwg. No. 55006.

Work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06914)".

For additional information, see Layout.



VIEW B-B

½" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 3
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

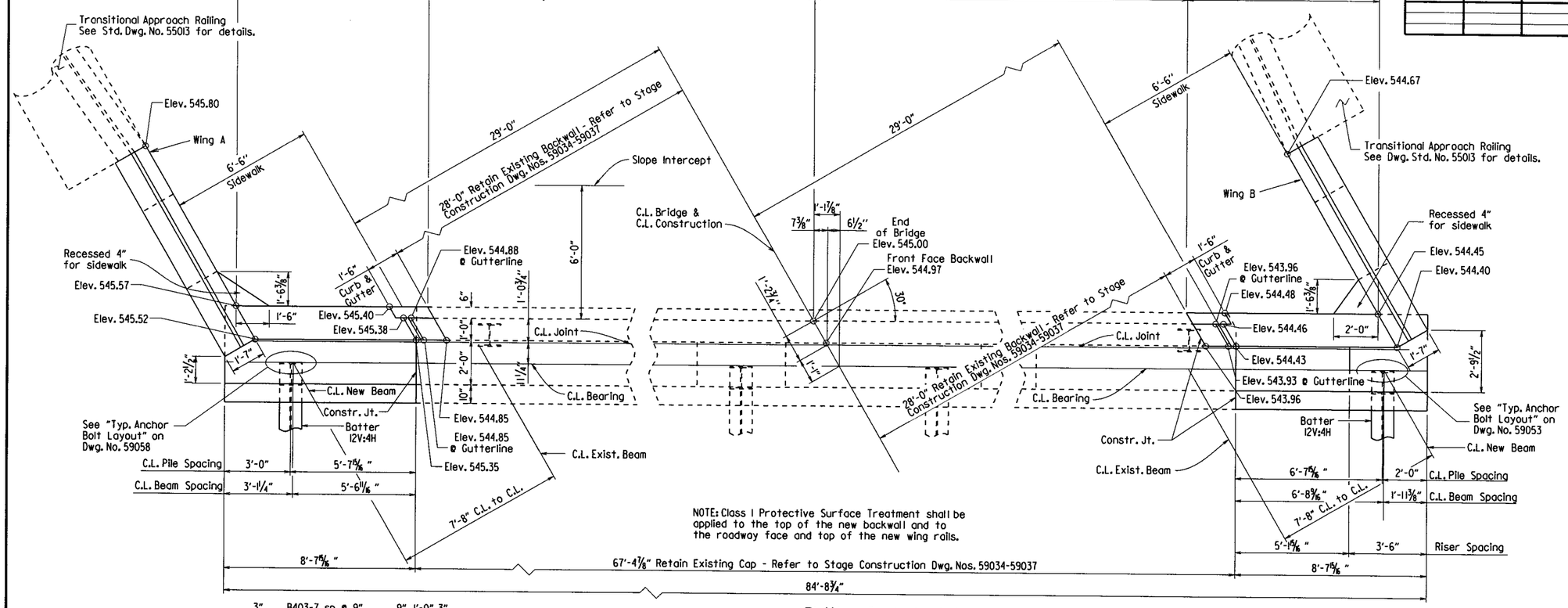
DRAWN BY: CGP	DATE: 7/25/16	FILENAME: b080423x2.b31.dgn
CHECKED BY: DHP	DATE: 9/15/16	SCALE: As Shown
DESIGNED BY: DHP	DATE: 5/18/16	

BRIDGE NO. 06914

DRAWING NO. 59056

PRINT DATE: 9/16/2016

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.		080423	207	517
				1	06914 - END BENT - 59057			

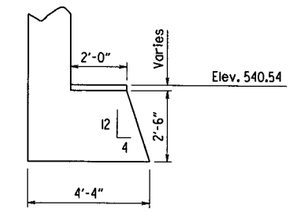


PLAN

3/8" = 1'-0"

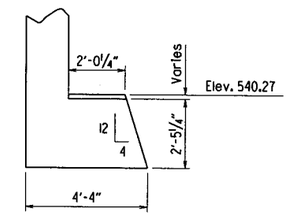
For details of wings, "View S-S" & "View T-T", see Dwg. No. 59059.

(1) Dowel into Existing Bent using a QPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations. Embedment depth (based on a Class C lap splice length plus 2"):
1'-11" for D401 Bars
3'-8" for D701 Bars
Care shall be exercised not to damage existing reinforcing during drilling.



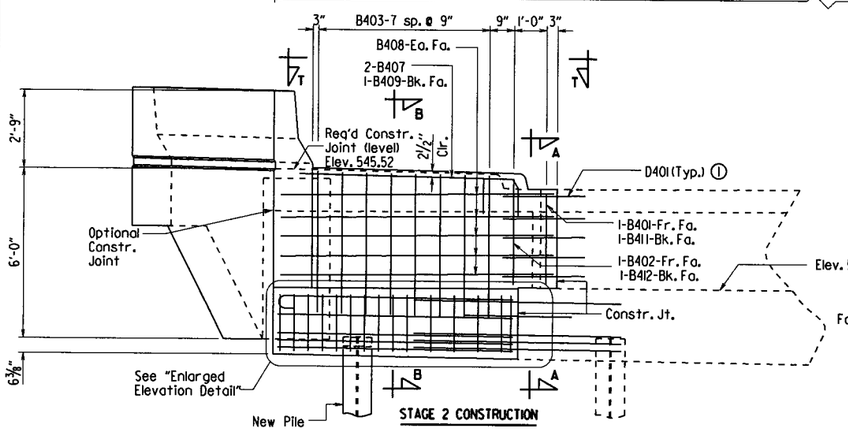
SECTION C-C

3/8" = 1'-0"

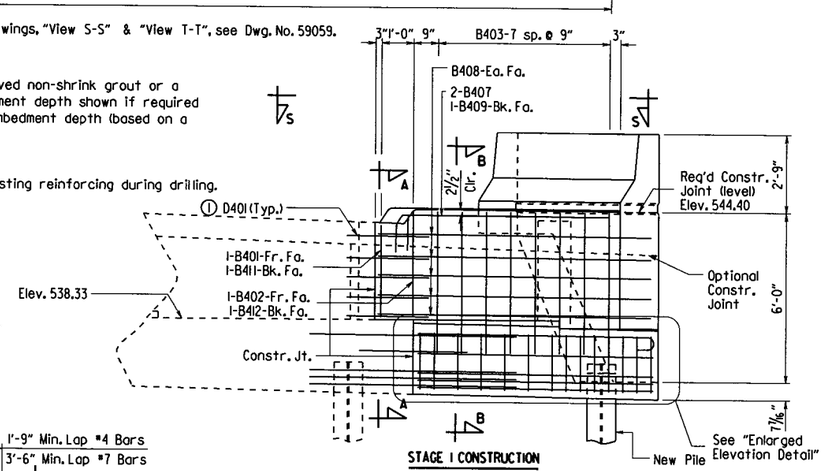


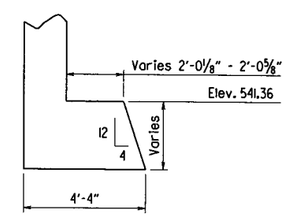
SECTION D-D

3/8" = 1'-0"



For "Sections A-A" & "Section B-B", see Dwg. No. 59058.



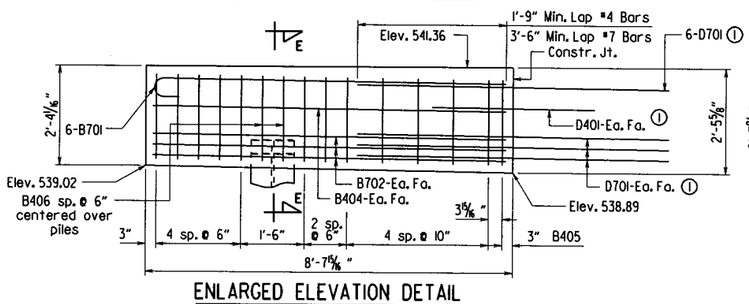


SECTION E-E

3/8" = 1'-0"

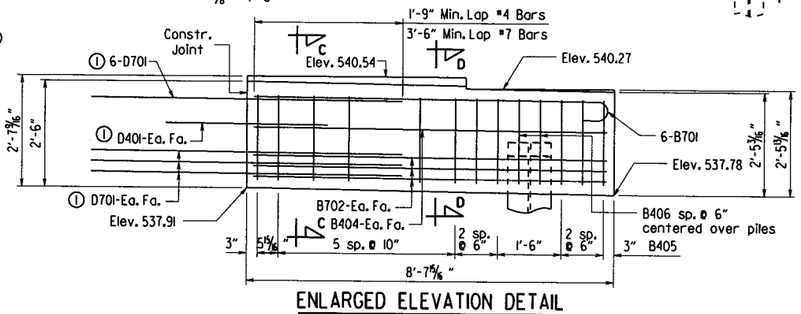
ELEVATION

Looking Ahead
3/8" = 1'-0"



ENLARGED ELEVATION DETAIL

No Scale



ENLARGED ELEVATION DETAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENT 4
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

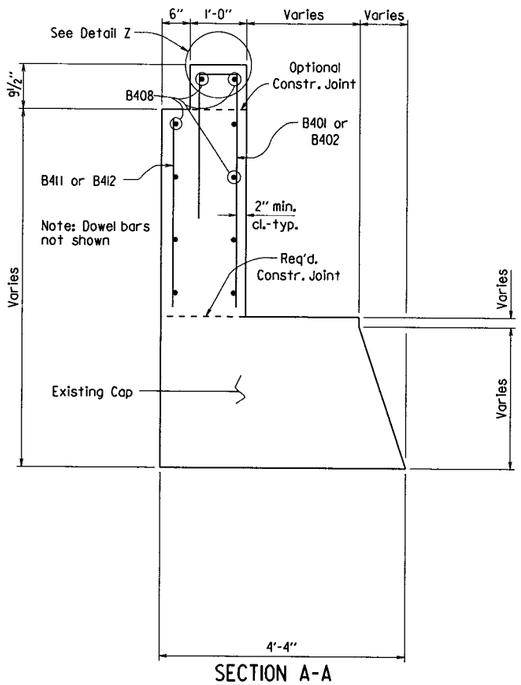
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
CHECKED BY: DHP DATE: 9/15/16
DESIGNED BY: DHP DATE: 5/18/16
FILENAME: b080423x2.b41.dgn
SCALE: As Shown

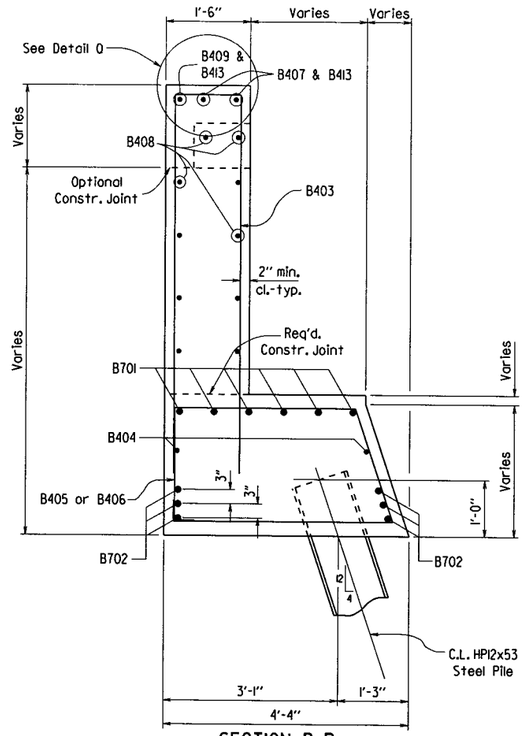
BRIDGE NO. 06914 DRAWING NO. 59057

PRINT DATE: 9/14/2016

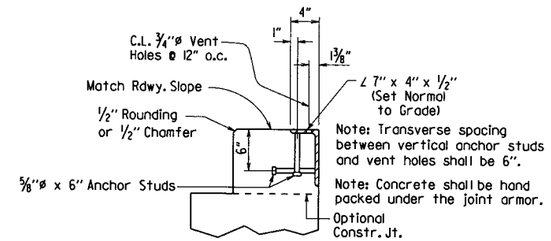
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	208	517
				1	06914 - END BENT - 59058			



SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"

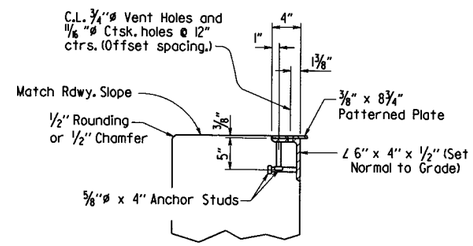


Note: Transverse spacing between vertical anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.

For additional joint details, see Dwg. No. 59065.

DETAIL Z
No Scale



For additional joint details, see Dwg. No. 59065.

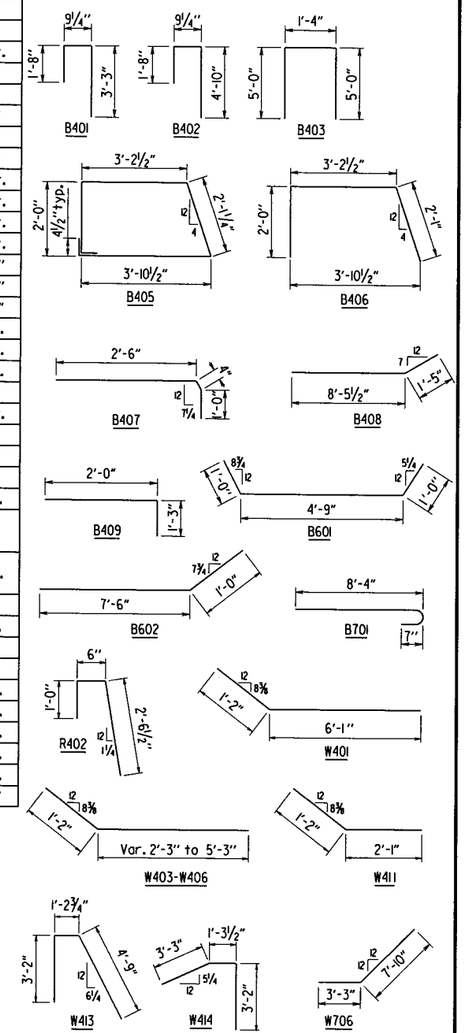
DETAIL Q
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	2	5'-7"	2"
B402	2	7'-2"	2"
B403	16	11'-2"	2"
B404	4	8'-4"	Str.
B405	25	11'-7"	2"
B406	4	7'-3"	2"
B407	4	3'-10"	2"
B408	20	9'-11"	2"
B409	2	3'-2"	2"
B410	6	5'-4"	Str.
B411	2	2'-5"	Str.
B412	2	3'-11"	Str.
B413	6	6'-6"	Str.
B601	4	6'-9"	4½"
B602	4	8'-6"	4½"
B701	12	9'-2"	5¼"
B702	12	8'-4"	Str.
D401	24	3'-10"	Str.
D701	24	7'-4"	Str.
R401	12	9'-8"	Str.
R402	22	3'-11"	2"
W401	8	7'-3"	2"
W402	8	8'-5"	Str.
W403-W406	2 each	Var. 3'-5" to 6'-5"	2"
W407-W410	2 each	Var. 4'-7" to 7'-7"	Str.
W411	6	3'-3"	2"
W412	6	4'-5"	Str.
W413	3	9'-1"	2"
W414	3	7'-8"	2"
W701	12	9'-8"	Str.
W702	4	6'-7"	Str.
W703	4	5'-10"	Str.
W704	4	5'-1"	Str.
W705	4	4'-4"	Str.
W706	4	11'-1"	5¼"

BENDING DIAGRAMS

Dimensions are out to out of bars.



GENERAL NOTES

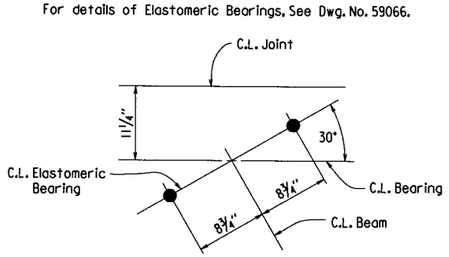
For Standard General Notes, See Std. Dwg. No. 55006.

Work required to remove and dispose portions of the existing bridge and work and material required for doweling will not be paid for directly but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 06914)".

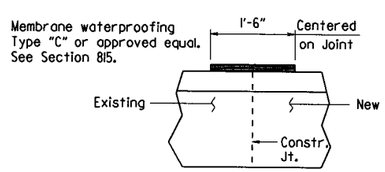
No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "Expansion Device Installation" note on Dwg. No. 59046.

For additional information, see Layout.

For details of Elastomeric Bearings, See Dwg. No. 59066.

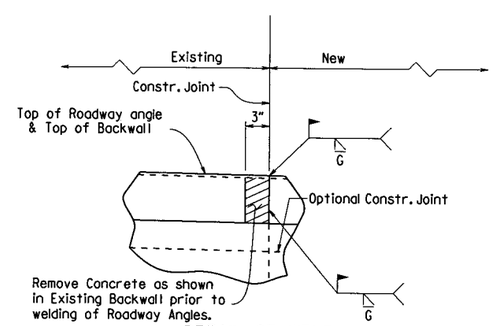


TYP. ANCHOR BOLT LAYOUT
No Scale



Payment for membrane to be considered subsidiary to Class "S" Concrete - Bridge.

CONSTRUCTION JOINT DETAIL
No Scale



DETAIL OF WELD FOR EXPANSION DEVICE
No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT 4
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
CHECKED BY: DHP DATE: 9/13/16
DESIGNED BY: DHP DATE: 5/18/16
FILENAME: b080423x2.b42.dgn
SCALE: As Shown

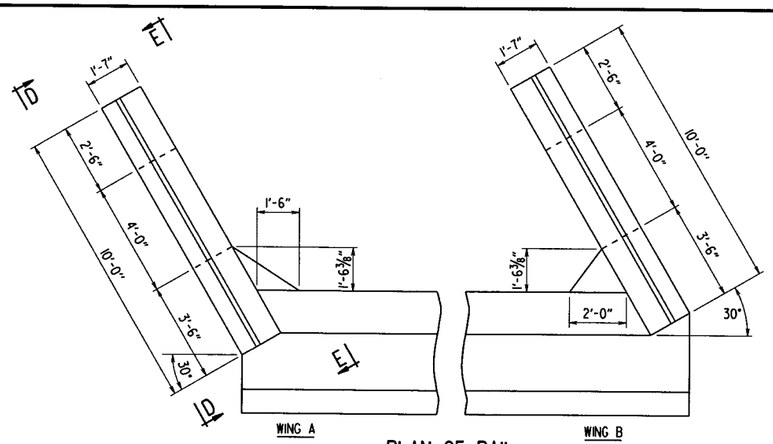
BRIDGE NO. 06914

DRAWING NO. 59058

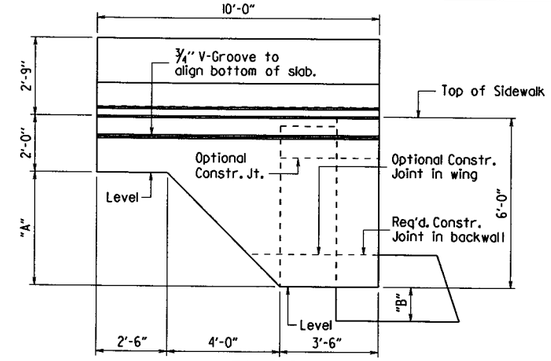
PRINT DATE: 9/14/2016

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.		080423	209	517

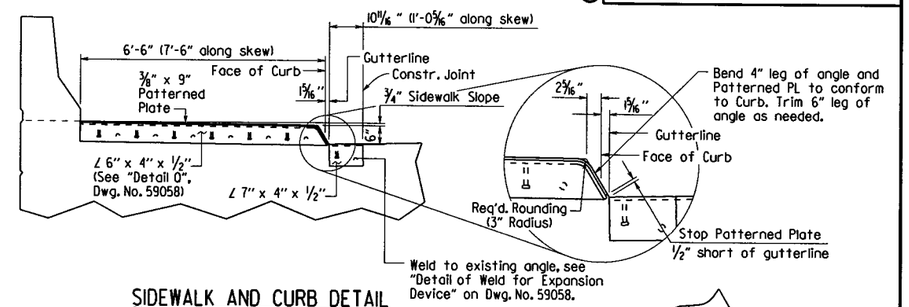
1 06914 - END BENT - 59059



PLAN OF RAIL
⅜" = 1'-0"



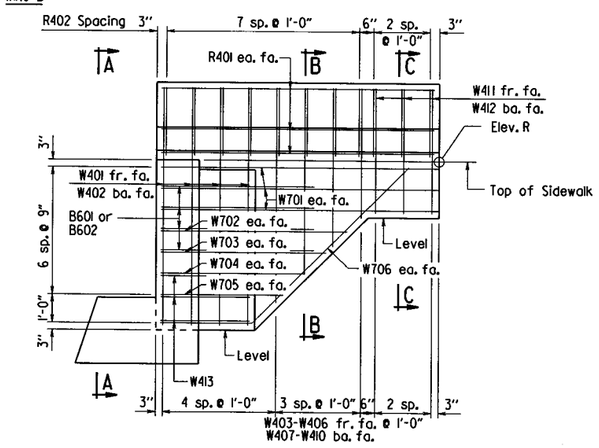
VIEW D-D
⅜" = 1'-0"



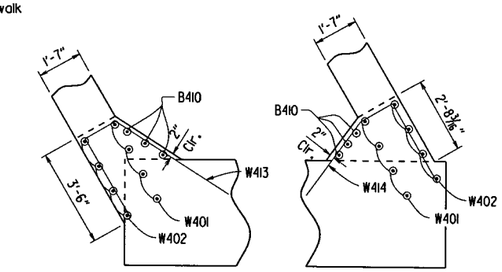
SIDEWALK AND CURB DETAIL
Looking Ahead
No Scale

TABLE OF VARIABLES

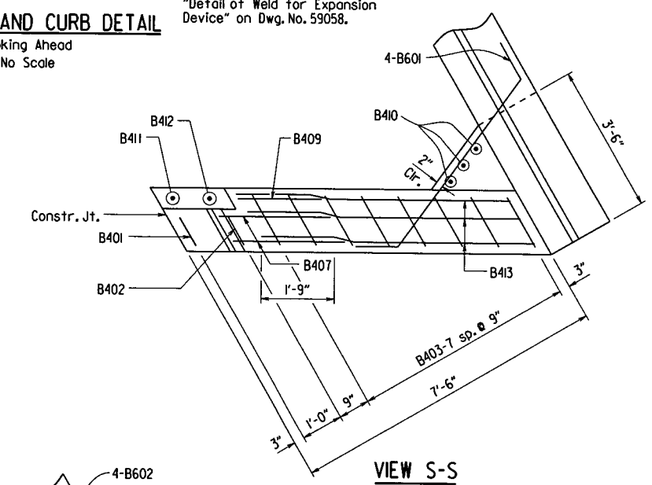
Bent	Wing	"A"	"B"	Elev. R
4	A	4'-0"	6⅜"	545.80
	B	4'-0"	7 7/16"	544.67



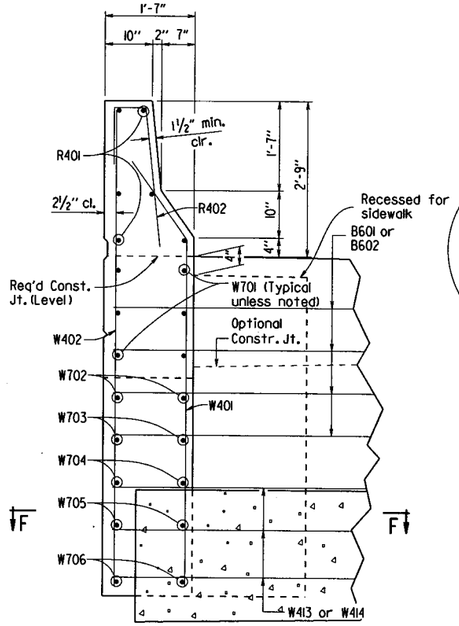
VIEW E-E
⅜" = 1'-0"



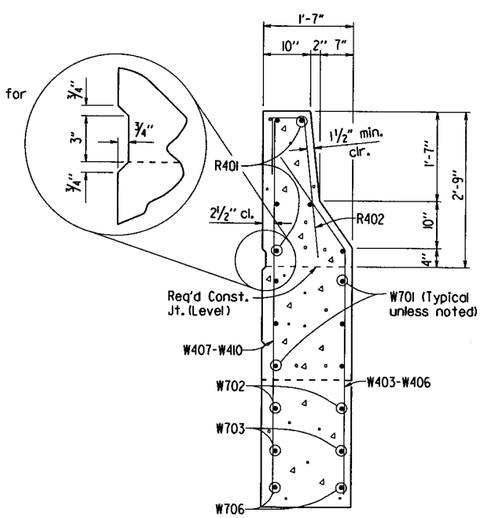
SECTION F-F
⅜" = 1'-0"



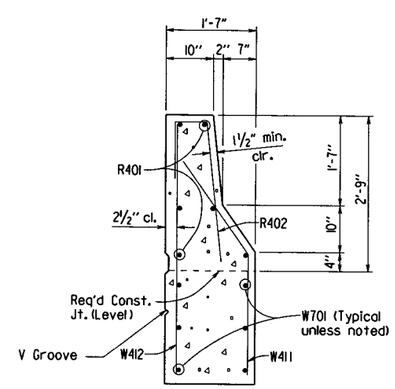
VIEW S-S
No Scale



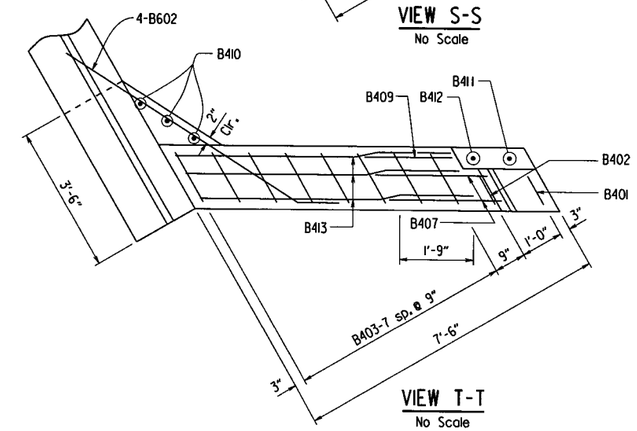
VIEW A-A
No Scale



SECTION B-B
¾" = 1'-0"



SECTION C-C
¾" = 1'-0"



VIEW T-T
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENT 4
BIG BRANCH

ROUTE SEC.

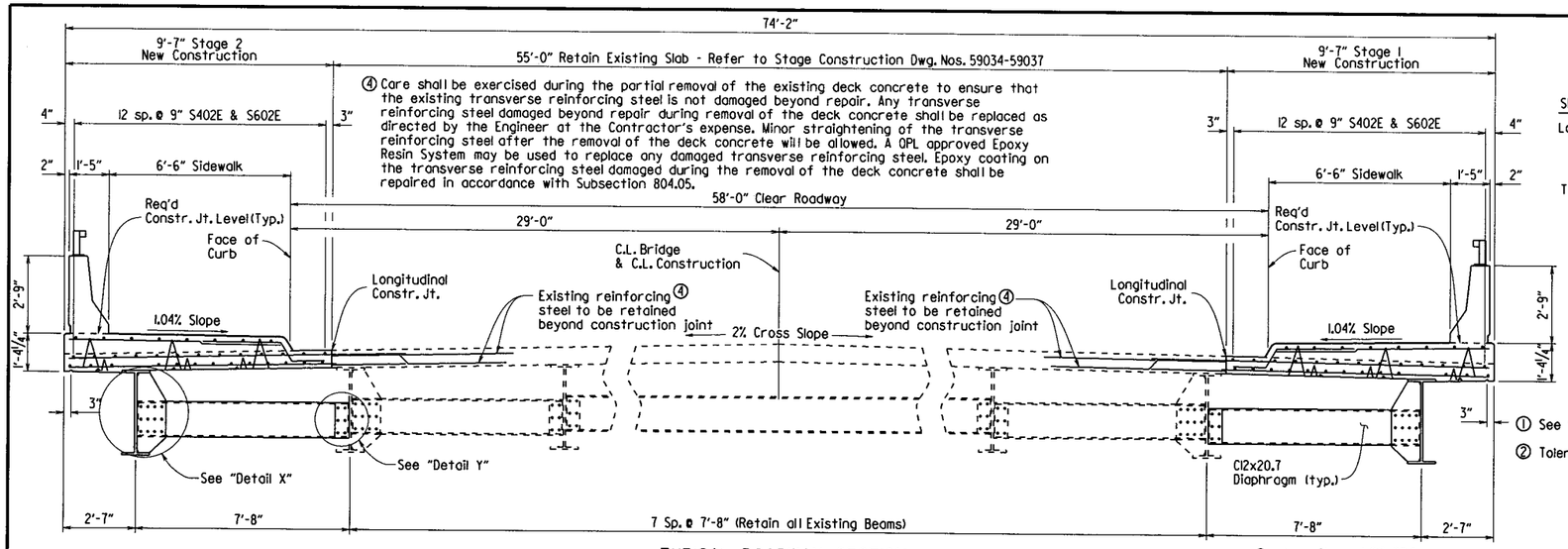
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.b43.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/8/16
BRIDGE NO. 06914 DRAWING NO. 59059

PRINT DATE: 3/13/2017

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.		080423	210	517
				① 06914 - 130' W-BEAM UNIT - 59060				



TYPICAL ROADWAY SECTION

Looking Ahead
3/8" x 1'-0"

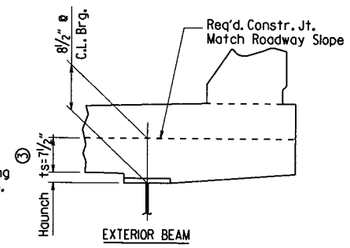
Slab Reinforcing:

Longitudinal: K401E in top of sidewalk
S402E in top of slab
S602E in top of slab
S401E in bottom of slab

Transverse: K410E @ 12" o.c. near drains at sidewalk
K402E @ 12" o.c. in top of sidewalk
K403E @ 12" o.c. in sidewalk
S502E @ 14" o.c. in top of slab
S503E @ 14" o.c. in bottom of slab
S601E @ 14" o.c. in top of slab
S501E @ 14" o.c. in bottom of slab
(S502E, S503E, S601E, S501E: Alternate)
S603E @ 7" in top of slab
S403E @ 7" o.c. in bottom of slab

① See "Adjustment for Slab Thickness Tolerance".

② Tolerance: Minus = 1/4";
Plus = to the amount of slab thickening used to meet slab thickness tolerance.



EXTERIOR BEAM

③ Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note: ts = slab thickness as shown in "TYPICAL ROADWAY SECTION"

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 3/4". No increase in concrete and structural steel quantities will be made to maintain tolerances.

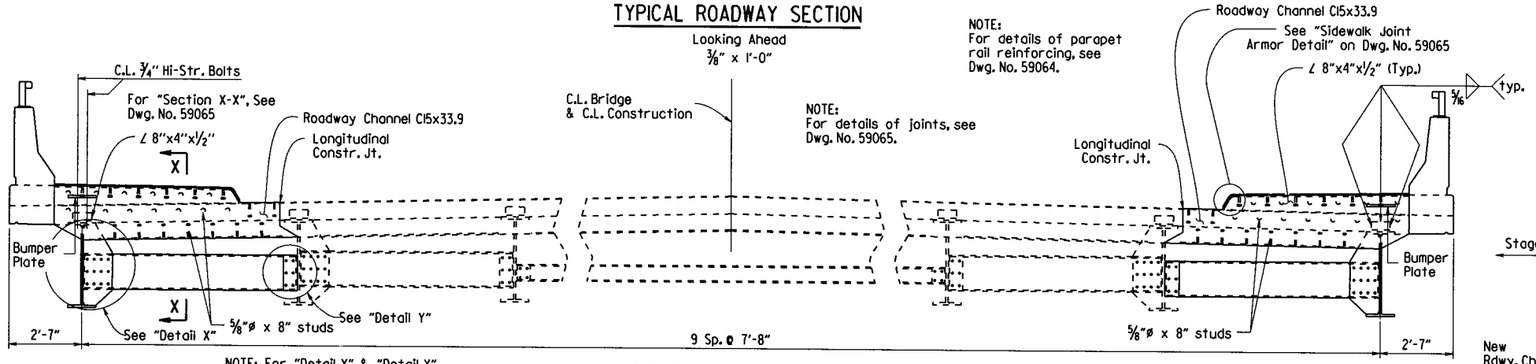
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

NOTE:
For details of parapet rail reinforcing, see Dwg. No. 59064.

NOTE:
For details of joints, see Dwg. No. 59065.



NOTE: For "Detail X" & "Detail Y", see Dwg. No. 59064.

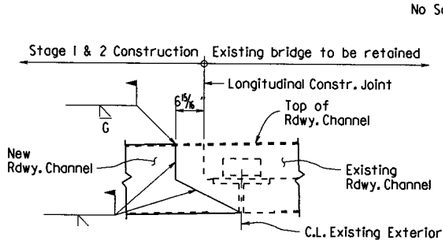
TYPICAL ROADWAY SECTION THRU JOINT

Looking Ahead
3/8" x 1'-0"

Class I Protective Surface Treatment shall be applied to the new roadway surface, roadway face of curb, sidewalk surface, and face & top of the concrete parapet rail.

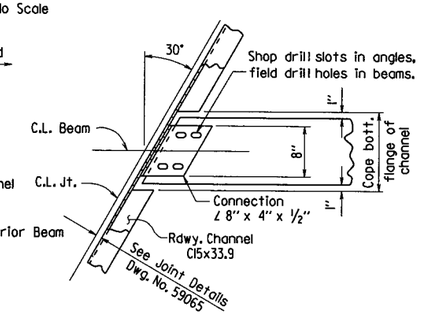
Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction. See Subsection 804.06.

Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 8"x4"x 1/2"
Detail Device 1/8" high & provide 1/4" shims using 2- 1/16" & 1- 1/8" PLs



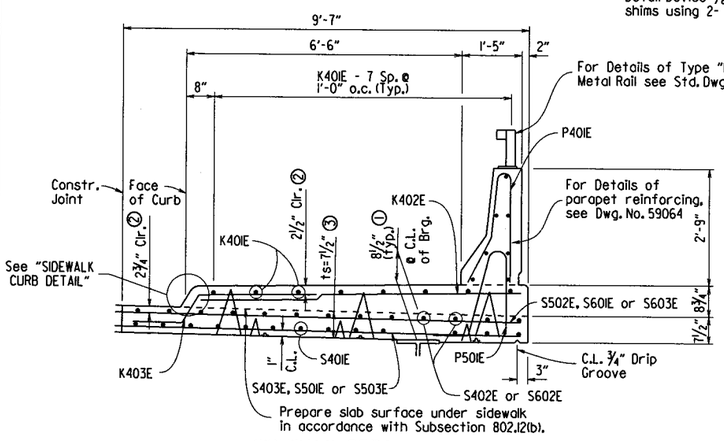
DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

No Scale



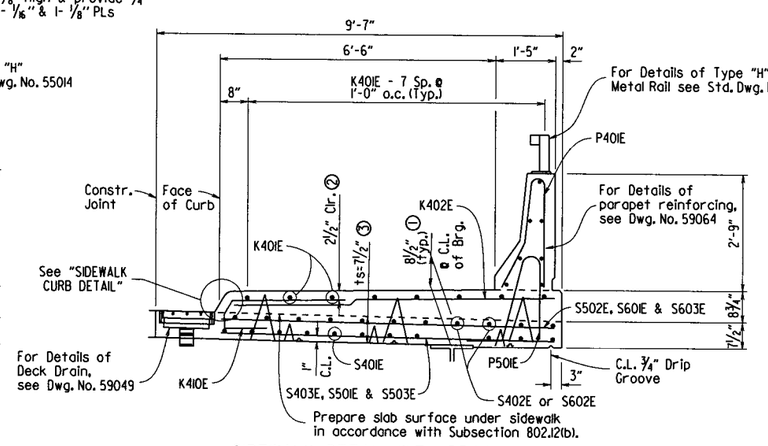
CHANNEL CONNECTION DETAIL

No Scale



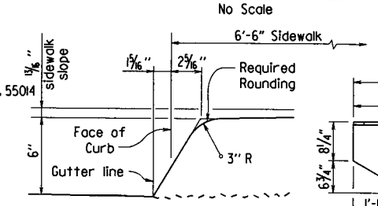
SIDEWALK DETAIL

No Scale



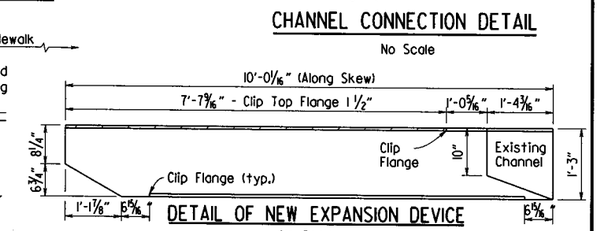
SIDEWALK DETAIL WITH DRAIN

No Scale



SIDEWALK CURB DETAIL

No Scale



DETAIL OF NEW EXPANSION DEVICE

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

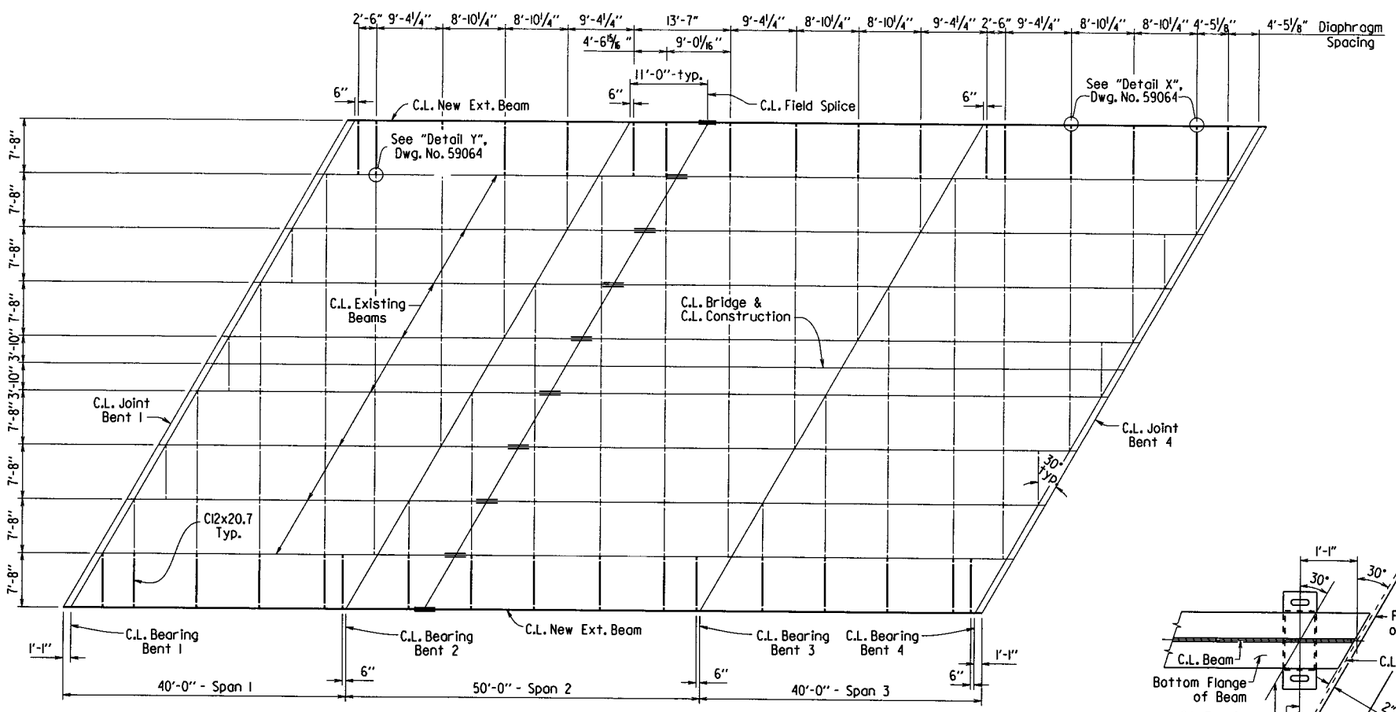
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.s01.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: As Shown
DESIGNED BY: DHP DATE: 5/13/16
BRIDGE NO. 06914 DRAWING NO. 59060

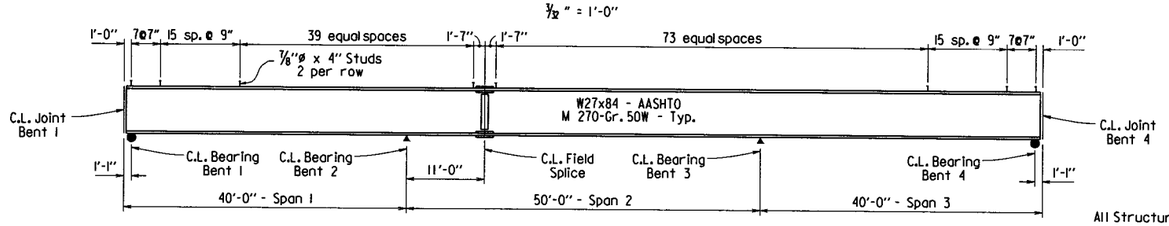
PRINT DATE: 9/14/2016

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.		080423	211	517
				1	06914 - 130' W-BEAM UNIT - 59061			



FRAMING PLAN

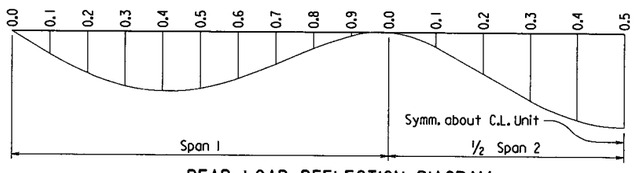
3/32" = 1'-0"



BEAM ELEVATION

No Scale

Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Bridge Engineer. Payment will be made on the basis of plan quantities.



DEAD LOAD DEFLECTION DIAGRAM

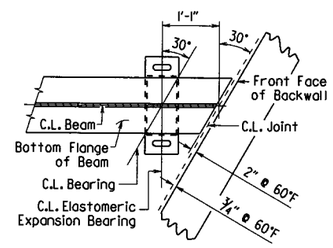
No Scale

Camber for Dead Load Deflection plus Vertical curve ±¼" tolerance. Deflections shown are from a C.L. chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
		New Exterior	New Exterior	New Exterior
1	0	0	0	0
	0.1	0.009	0.071	0.094
	0.2	0.017	0.13	0.172
	0.3	0.023	0.17	0.225
	0.4	0.025	0.186	0.246
	0.5	0.024	0.177	0.234
	0.6	0.019	0.145	0.192
	0.7	0.013	0.1	0.132
	0.8	0.007	0.051	0.067
	0.9	0.001	0.01	0.014
2	0	0	0	0
	0.1	0.006	0.046	0.061
	0.2	0.017	0.13	0.172
	0.3	0.029	0.216	0.286
	0.4	0.037	0.277	0.366
C.L. Unit	0.5	0.04	0.299	0.396

Note: This table is symmetrical about C.L. Unit



PLAN OF BEARING AT END BENTS

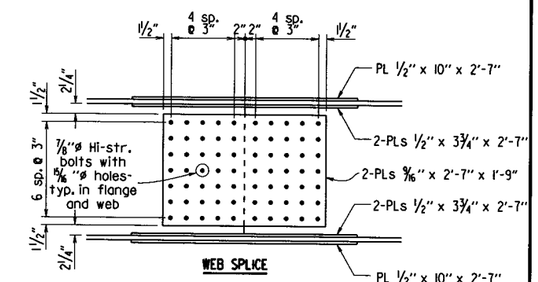
No Scale

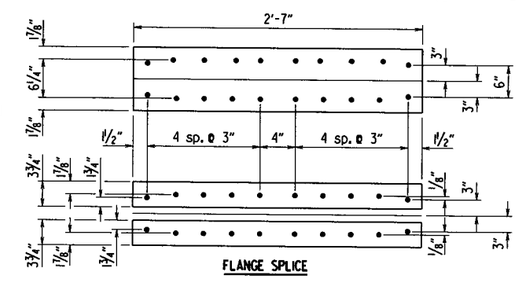
All Structural Steel shall be AASHTO M 270, Gr. 50W unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W shall not be painted.

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Bridge Engineer. Payment will be made on the basis of plan quantities.

For Standard General Notes, See Std. Dwg. No. 55006.

For additional information, See layout.





FIELD SPLICE

No Scale

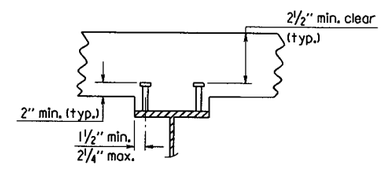
TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

SHEAR CONNECTOR DETAIL

No Scale



Stud Shear Connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.s02.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: As Shown
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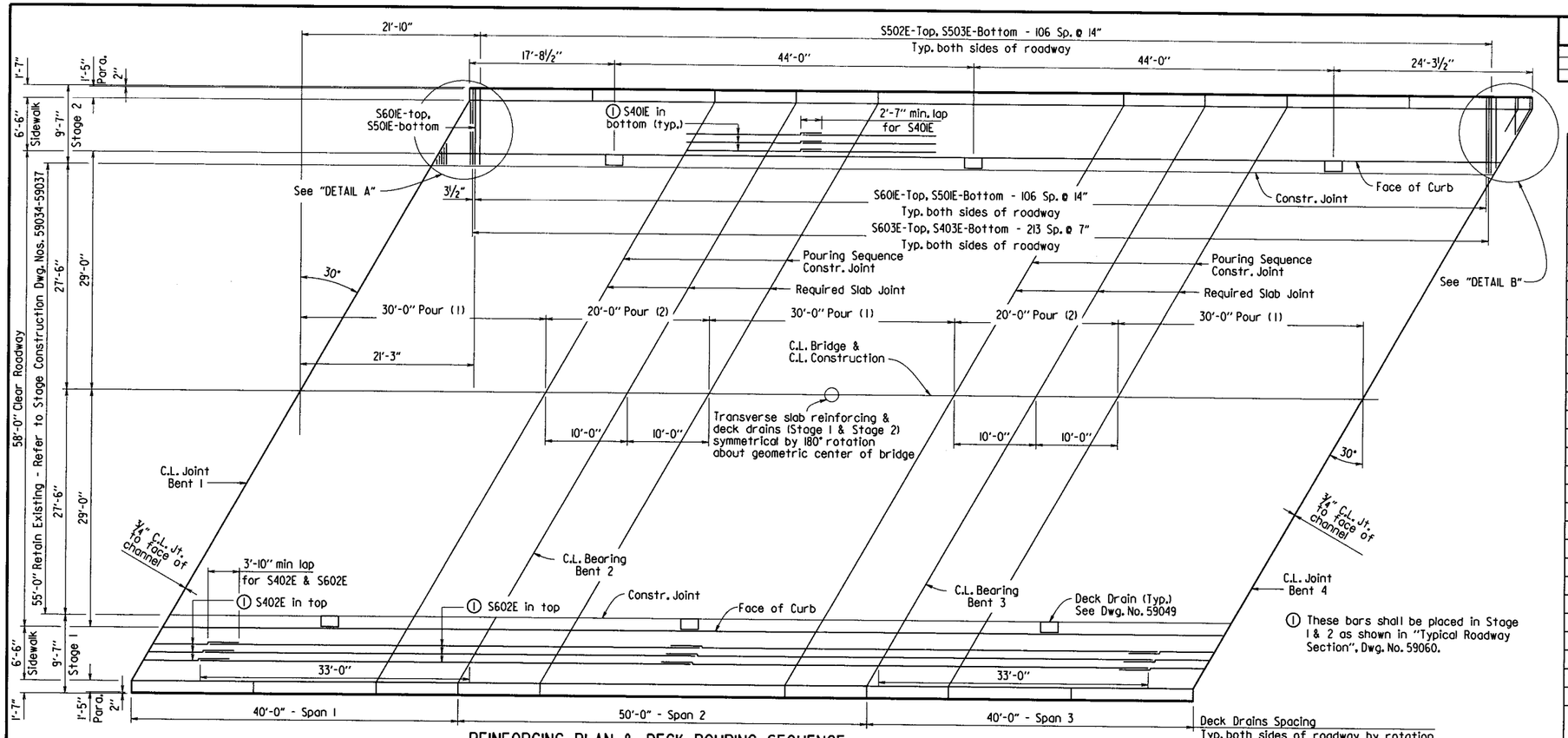
BRIDGE NO. 06914 DRAWING NO. 59061

PRINT DATE: 9/14/2016

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.		080423	212	517

(1) 06914 - 130' W-BEAM UNIT - 59062



(1) These bars shall be placed in Stage 1 & 2 as shown in "Typical Roadway Section", Dwg. No. 59060.

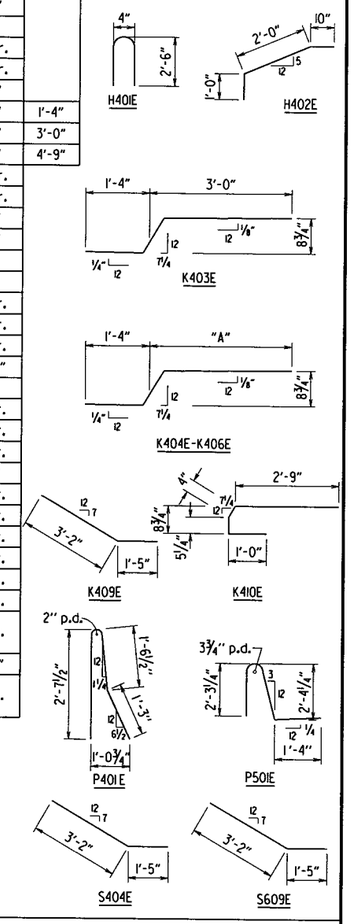
REINFORCING PLAN & DECK POURING SEQUENCE

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	"A"
H401E	12	5'-2"	3"	
H402E	4	3'-9"	3"	
K401E	64	34'-5"	Str.	
K402E	254	7'-6"	Str.	
K403E	240	4'-9"	2"	
K404E	2	3'-1"	2"	1'-4"
K405E	2	4'-9"	2"	3'-0"
K406E	2	6'-6"	2"	4'-9"
K407E	2	4'-2"	Str.	
K408E	2	5'-11"	Str.	
K409E	6	4'-7"	3"	
K410E	12	4'-6"	2"	
P401E	520	5'-6"	2"	
P402E	56	9'-8"	Str.	
P403E	84	14'-8"	Str.	
P404E	56	5'-6"	Str.	
P501E	520	6'-1"	3¾"	
S401E	104	34'-5"	Str.	
S402E	52	10'-8"	Str.	
S403E	428	9'-3"	Str.	
S404E	12	4'-7"	3"	
S501E	214	9'-3"	Str.	
S502E	214	9'-3"	Str.	
S503E	214	9'-3"	Str.	
S601E	214	9'-3"	Str.	
S602E	52	60'-0"	Str.	
S603E	428	9'-3"	Str.	
S604E-S608E	4 each	4'-6" to 8'-7"	Str.	
S609E	12	4'-7"	4½"	
S610E-S620E	4 each	2'-7" to 7'-8"	Str.	

BENDING DIAGRAMS

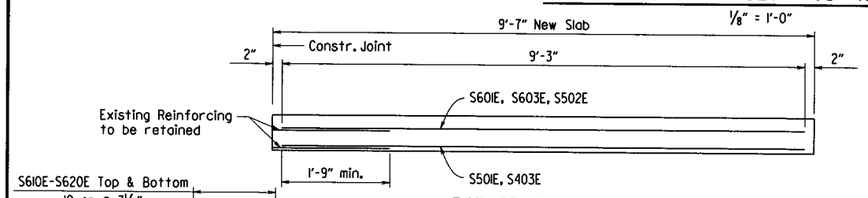
Dimensions are out to out of bars



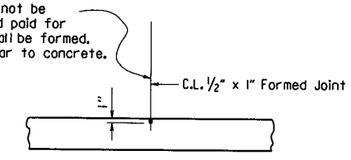
Bars designated with an "E" suffix are epoxy coated.

BAR SPLICE DETAIL

No Scale

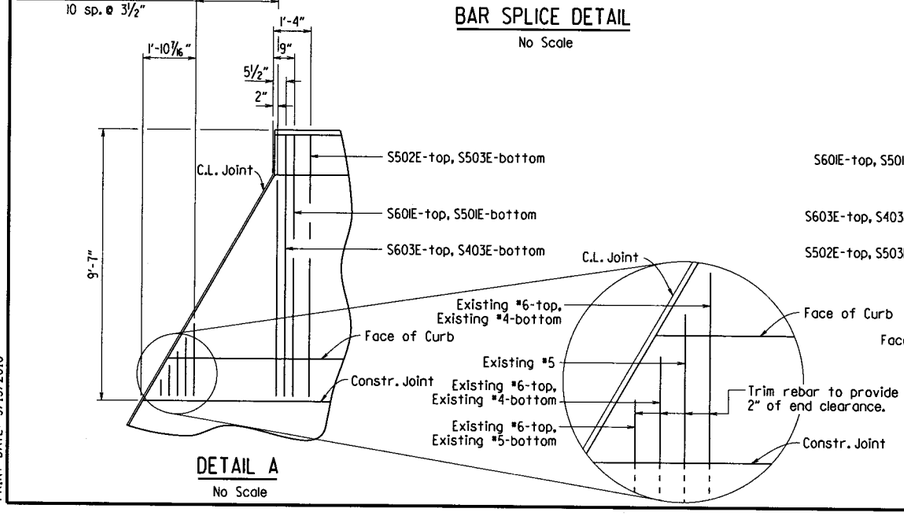


Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.



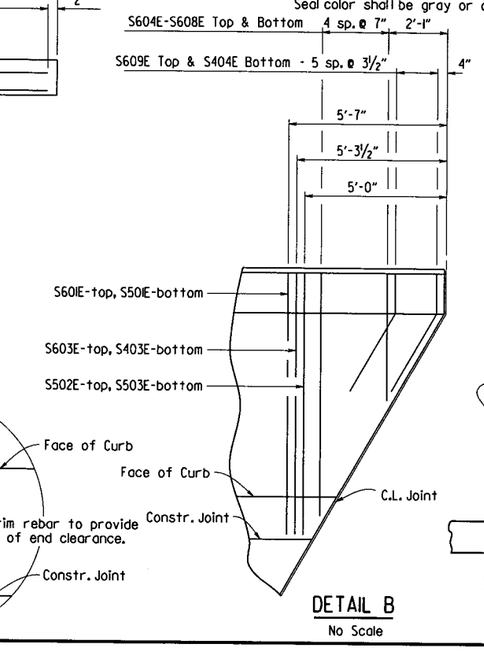
LONGITUDINAL CONSTRUCTION JOINT DETAIL

No Scale



DETAIL A

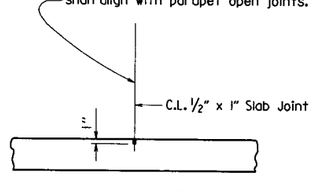
No Scale



DETAIL B

No Scale

½" x 1" Type 3 or 4 Joint Sealer. See Sections 501.02 (h) and 501.05 (j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall be installed before the sidewalk is poured. The slab joints in the sidewalk shall extend to the outside of the sidewalk and shall be installed before parapet railing is to be poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck slab and across the top of the sidewalk. No joint sealer shall be placed on the deck slab under the sidewalk or parapet rail. Slab joints and pouring sequence joints shall align with parapet open joints.



SLAB JOINT DETAIL

No Scale

Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing or sidewalk pours made before the entire slab unit has been placed must be approved by the Engineer. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk, and a minimum of 72 hours shall elapse between the completion of the sidewalk and the pouring of the parapet railing. Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its intial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP	DATE: 7/25/16	FILENAME: b080423x2.s03.dgn	
CHECKED BY: DHP	DATE: 9/19/16	SCALE: As Shown	
DESIGNED BY: DHP	DATE: 5/18/16		

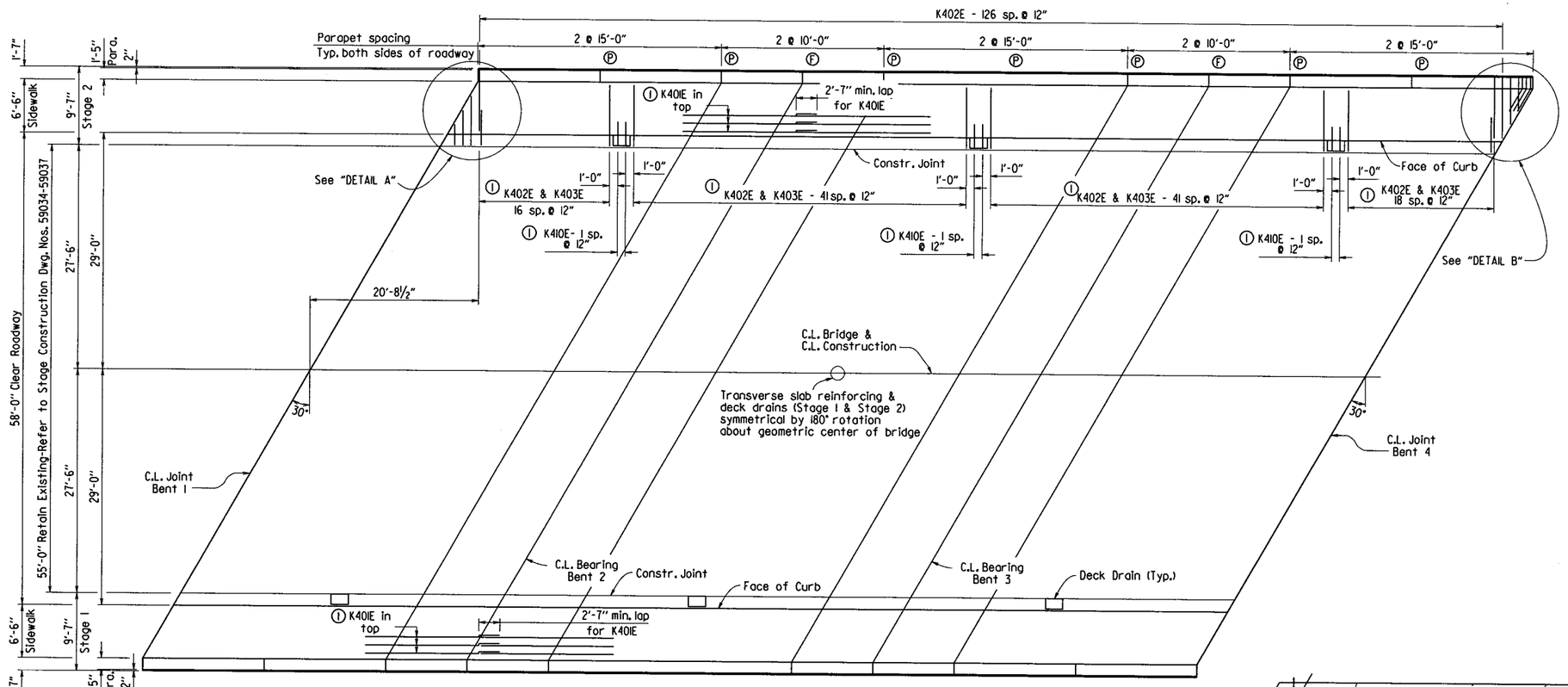
BRIDGE NO. 06914

DRAWING NO. 59062

PRINT DATE: 9/19/2016

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.		080423	213	517

(1) 06914 - 130' W-BEAM UNIT - 59063



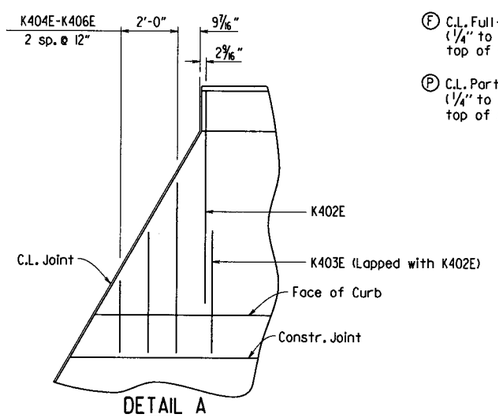
REINFORCING PLAN-SIDEWALK

1/8" = 1'-0"

(1) Bars shall be placed in Stage 1 & 2 as shown in "Sidewalk Detail", Dwg. No. 59060.

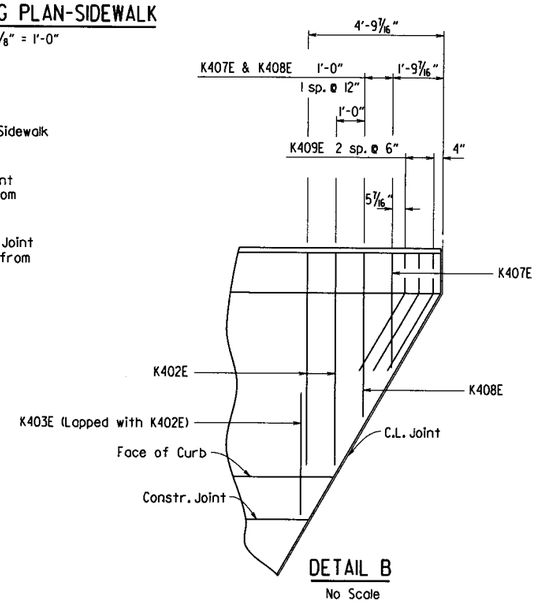
(F) C.L. Full-Depth Parapet Joint (1/4" to 1" max.) Stop 4" from top of sidewalk.

(P) C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) Stop 1'-2" from top of sidewalk.



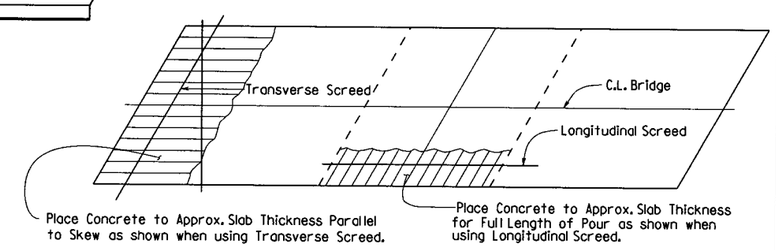
DETAIL A

No Scale



DETAIL B

No Scale



Note: At the Contractor's Option, the Transverse Screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

CONCRETE PLACEMENT PROCEDURE

No Scale

STATE OF ARKANSAS
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REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
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BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16
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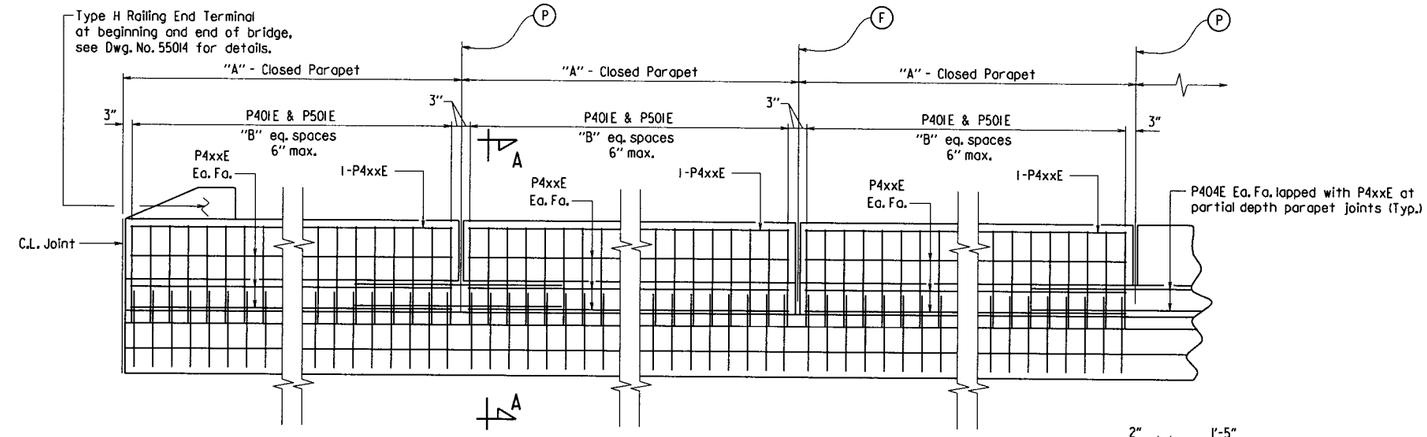
SCALE: As Shown

BRIDGE NO. 06914 DRAWING NO. 59063

PRINT DATE: 9/19/2016

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.		080423	214	517
				(1)	06914 - 130' W-BEAM UNIT - 59064			

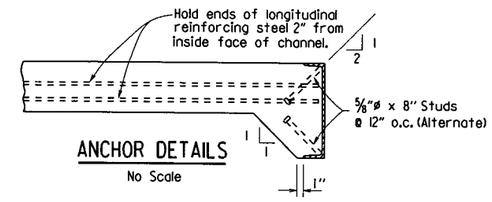


DETAILS OF PARAPET RAIL

1/2" = 1'-0"

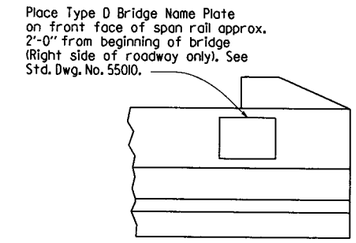
(F) C.L. Full-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan Sidewalk", Dwg. No. 59063, Stop 4" from top of sidewalk.

(P) C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan Sidewalk", Dwg. No. 59063, Stop 1'-2" from top of sidewalk.



ANCHOR DETAILS

No Scale



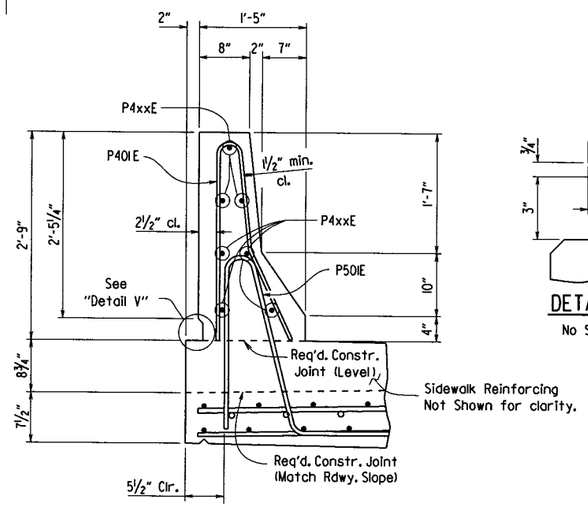
NAME PLATE DETAIL

No Scale

TABLE OF PARAPET RAIL VARIABLES

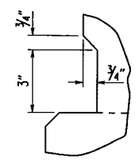
"A" Closed Parapet	"B"	P4xxE Bar
10'-0"	19	P402E
15'-0"	29	P403E

For location of Open and Closed Parapet Panels, see "Reinforcing Plan Sidewalk", Dwg. No. 59063.



SECTION A-A

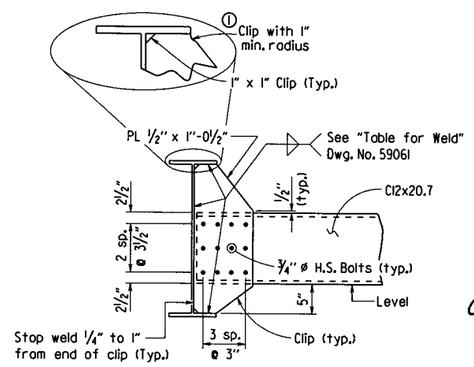
1" = 1'-0"



DETAIL V

No Scale

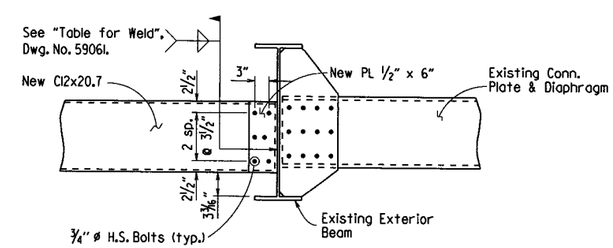
(1) If permanent steel bridge deck forms are used, the Fabricator shall clip plates as necessary to accommodate the deck form supports.



Note: Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.71.

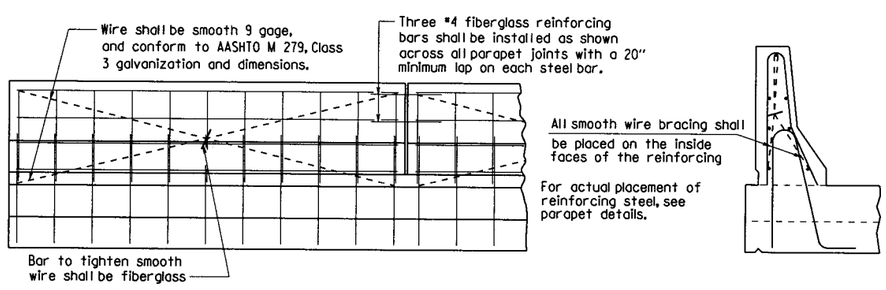
DETAIL X

No Scale



DETAIL Y

No Scale



All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surface may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
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SHEET 5 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.s04.dgn
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BRIDGE NO. 06914 DRAWING NO. 59064

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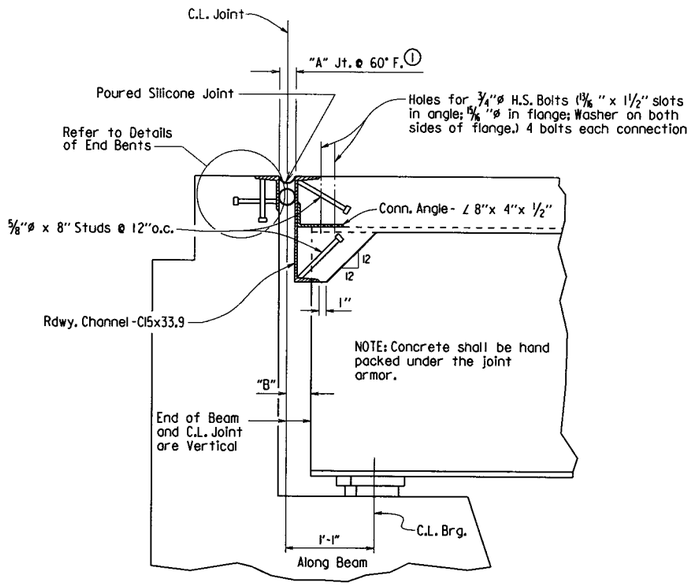
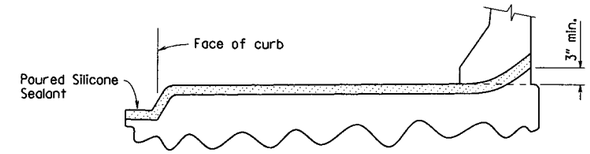
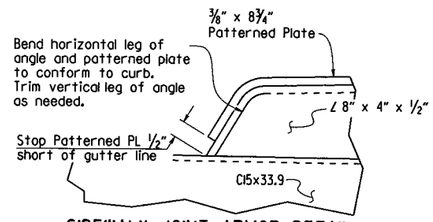
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	215	517
				(1) 06914 - 130' W-BEAM UNIT - 59065				



SECTION THRU JOINT AT BENTS 1 & 4



JOINT SEAL PLACEMENT AT SIDEWALK



SIDEWALK JOINT ARMOR DETAIL

The top surface of the ⅜" pattern PL shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but shall be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50W)". Pattern Plate and angle shall be M 270, Gr. 36 or as approved by the Engineer and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature (1) Of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1	1⅝"	1½"	1⅜"	2" ±	1" x ¾"	4"
4	1⅝"	1½"	1⅜"	2" ±	1" x ¾"	4"

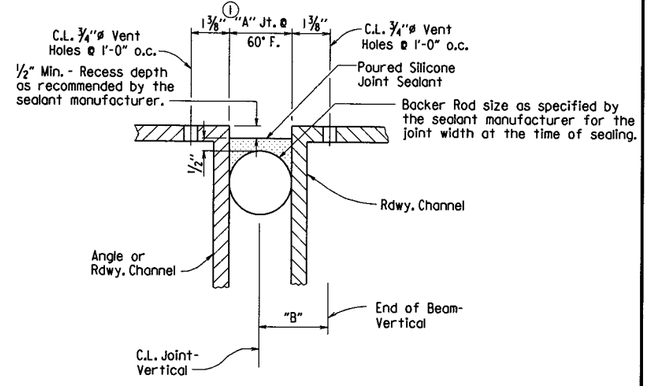
(1) Silicone joint material and installation shall conform to Section 809. The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

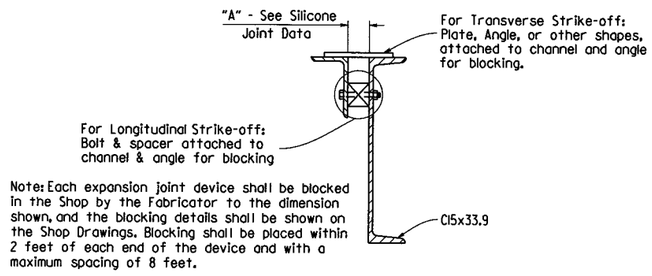
BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

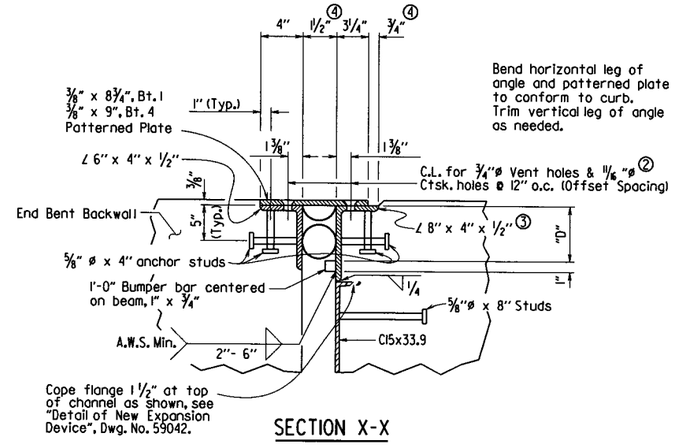


DETAIL OF POURED SILICONE JOINT SEAL



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension shown, and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE



SECTION X-X

NOTE: Concrete shall be hand packed under the joint armor in the sidewalk. For expansion joint detail see "Detail of Poured Silicone Joint Seal".

EXPANSION DEVICE INSTALLATION:

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

(2) Countersink 11/16"ø holes in ⅜" Patterned PL. Tap 4" leg of angles for ASTM A449 ⅝"ø screw @ 12" o.c. Install screws in the shop and ship as a unit. Screws on span side to be removed. Screws on backwall side to remain in place after erection. See "Expansion Device Installation" note.

(3) Trim vertical leg of ∠ 8" x 4" x ½" as needed.

(4) Dimensions shown @ 60° F

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SHEET 6 OF 6
DETAILS OF 130' CONTINUOUS COMPOSITE W-BEAM UNIT
BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

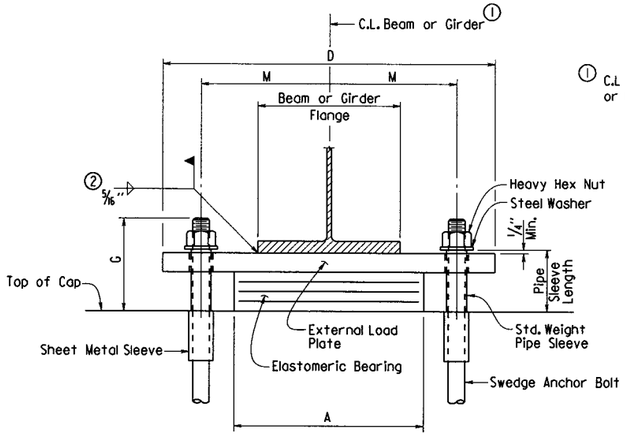
DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.s05.dgn
CHECKED BY: DHP DATE: 9/15/16 SCALE: No Scale
DESIGNED BY: DHP DATE: 5/18/16

BRIDGE NO. 06914 DRAWING NO. 59065

PRINT DATE: 9/15/2016

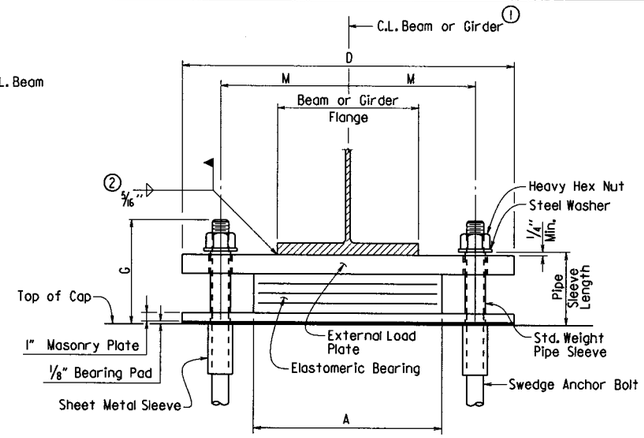
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	216	517

① 06914 - ELASTOMERIC BRGS. - 59066

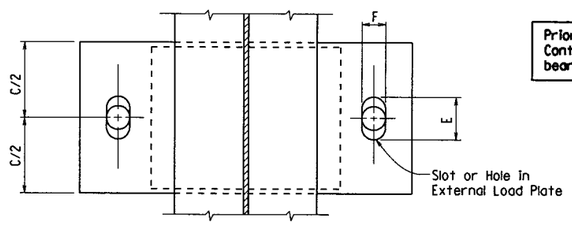


FRONT VIEW - AT BENT NOS. 2 & 3

① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.

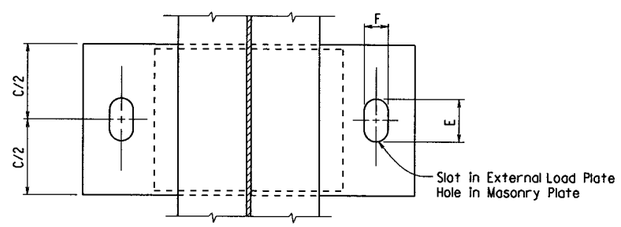


FRONT VIEW - AT BENT NOS. 1 & 4

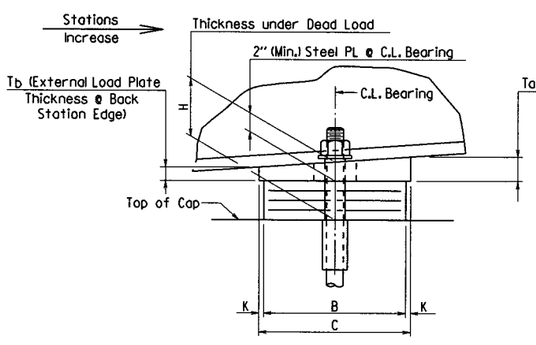


PLAN VIEW - AT BENT NOS. 2 & 3

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.



PLAN VIEW - AT BENT NOS. 1 & 4

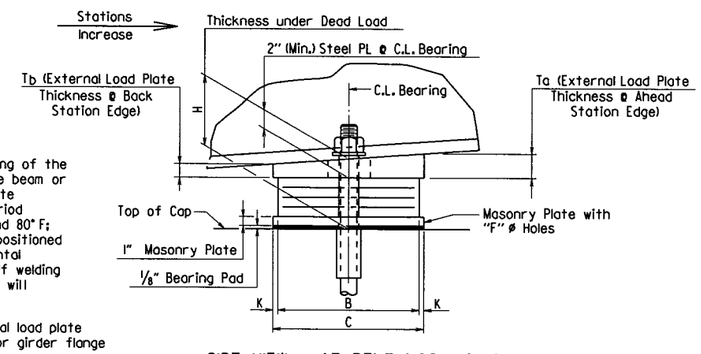


SIDE VIEW - AT BENT NOS. 2 & 3

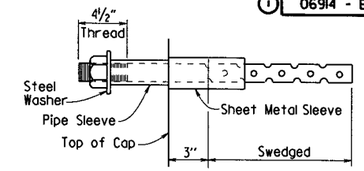
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



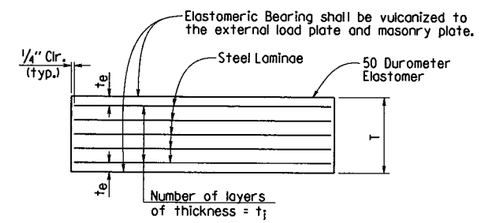
SIDE VIEW - AT BENT NOS. 1 & 4



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)"



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and Special Provision Job 080423 "Elastomeric Bearings" and shall be paid for at the unit price bid for "Elastomeric Bearings". Long-duration testing of random lot samples specified in Subsection 808.05 is not required.

External load plates and masonry plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and masonry plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)". External load plates, masonry plates and 1/8" bearing pads will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08.
This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

③ Maximum Design Load = Service Load

④ Dimension "E" applies to External Load Plates only. "F" ø Holes shall be used in Masonry Plates.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	④ E	F	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
06914	1	All	Exp.	2	58.9	9 1/2"	6 11/16"	13"	9"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	10"	23"	2 3/4"	2 1/4"	1/2"	8 3/4"	2.09"	1.91"	1 1/2"ø x 27"	55	1 1/2"ø x 7"	3"ø x 9"	3"
	2	All	Fixed	2	110.4	8 1/2"	5"	15"	12"	4	1/2"	1/4"	5 @ 12 ga.	3"	13"	27"	3 1/8"	3 1/8"	1/2"	10 1/4"	2.14"	1.86"	2 1/4"ø x 36"	55	2 1/2"ø x 5 1/4"	4"ø x 12"	4"
	3	All	Exp.	2	110.4	8"	5"	15"	12"	4	1/2"	1/4"	5 @ 12 ga.	3"	13"	26"	3 1/4"	2 5/8"	1/2"	10"	2.16"	1.84"	1 3/4"ø x 30"	55	2"ø x 5 1/4"	4"ø x 12"	3 3/8"
	4	All	Exp.	2	58.9	9 1/2"	6 11/16"	13"	9"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	10"	23"	3 3/4"	2 1/4"	1/2"	8 3/4"	2.14"	1.86"	1 1/2"ø x 27"	55	1 1/2"ø x 7"	3"ø x 9"	3"

PRINT DATE: 9/15/2016

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-19-16
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS BIG BRANCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 7/25/16 FILENAME: b080423x2.e01.dgn

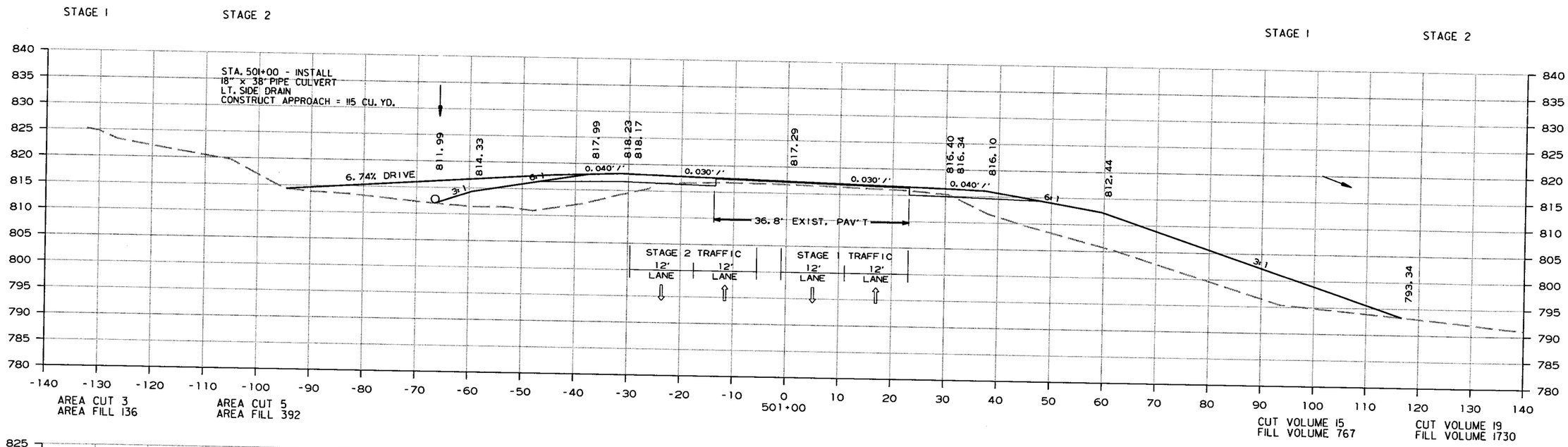
CHECKED BY: DHP DATE: 9/15/16 SCALE: No Scale

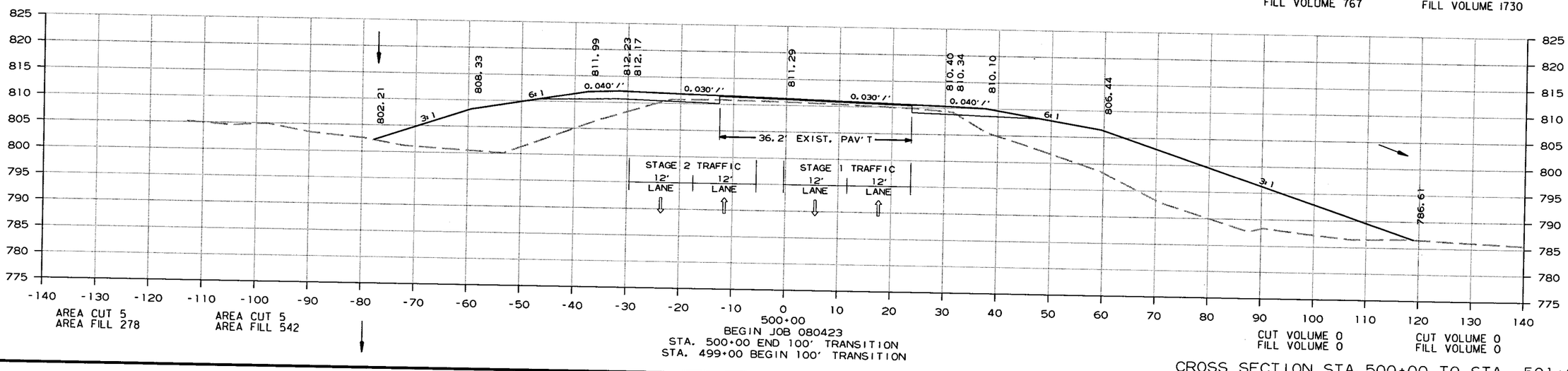
DESIGNED BY: DHP DATE: 5/18/16

BRIDGE NO. 06914 DRAWING NO. 59066

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	217	517

(2) CROSS SECTIONS





CROSS SECTION STA. 500+00 TO STA. 501+00

6/15/2015

R080423.DGN

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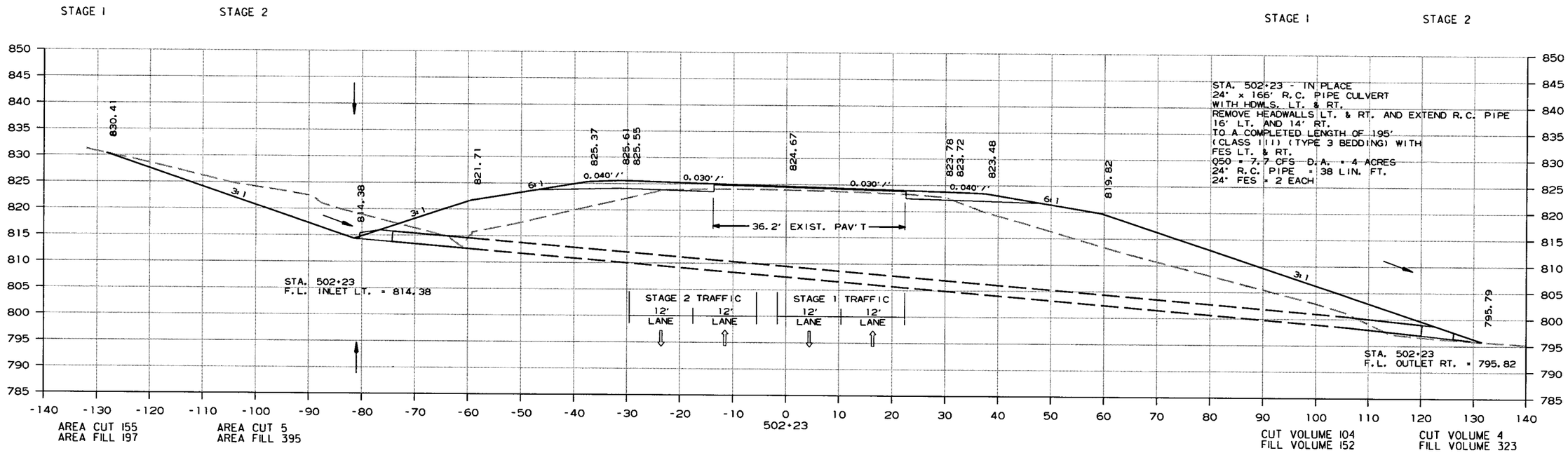
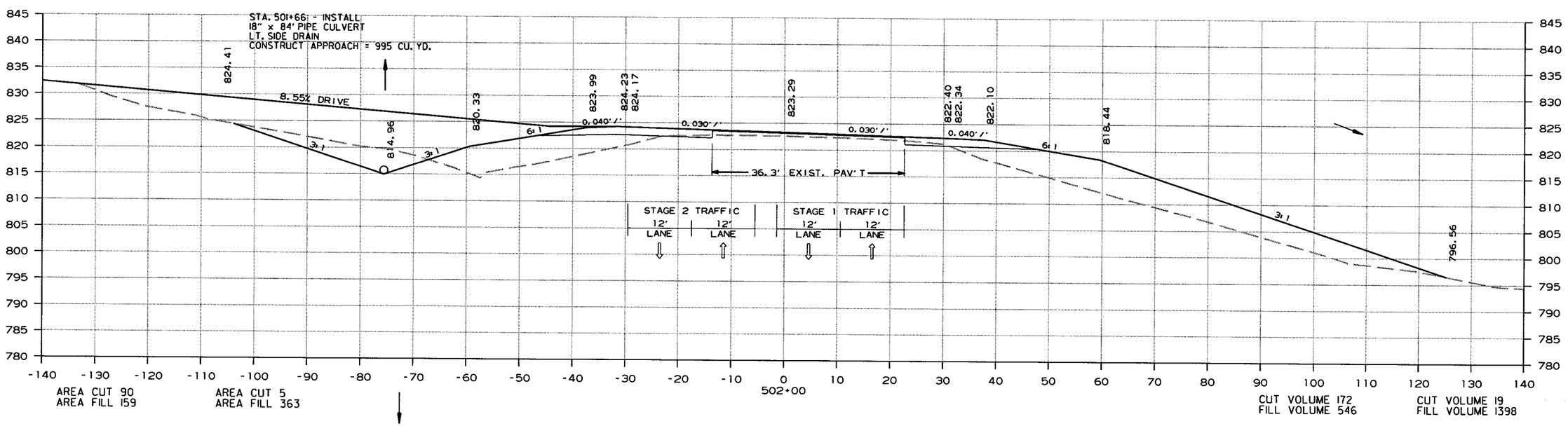
(2) CROSS SECTIONS





CROSS SECTION STA. 502+00 TO STA. 502+23

6/15/2015

R080423.DGN

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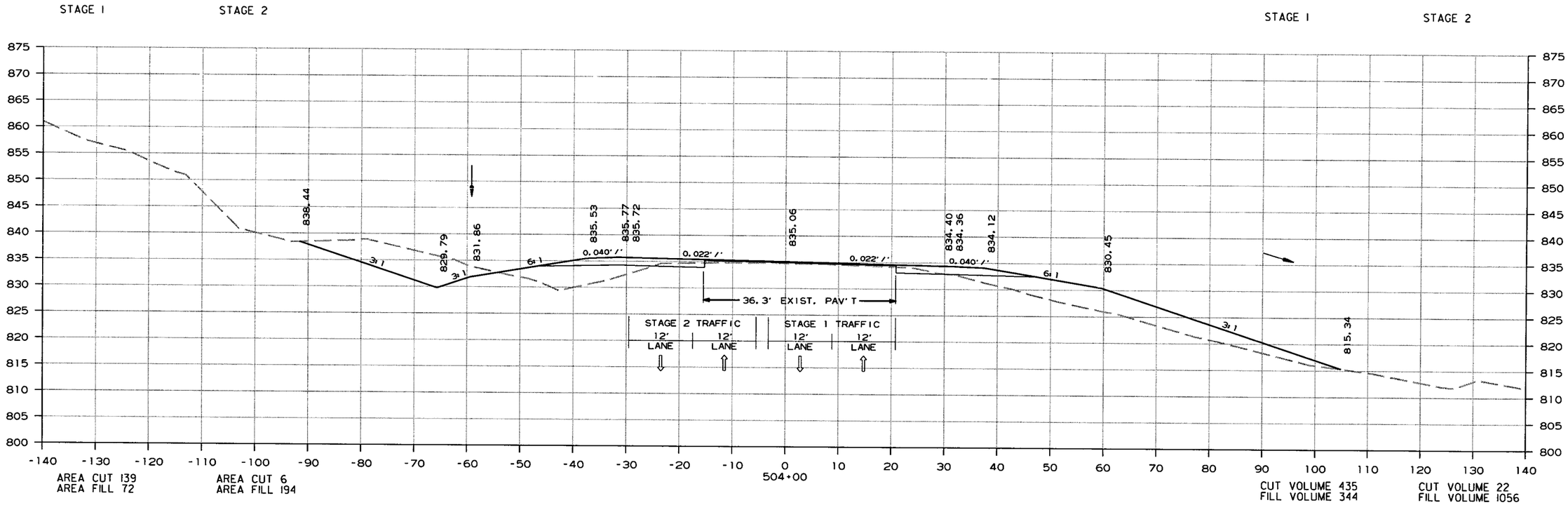

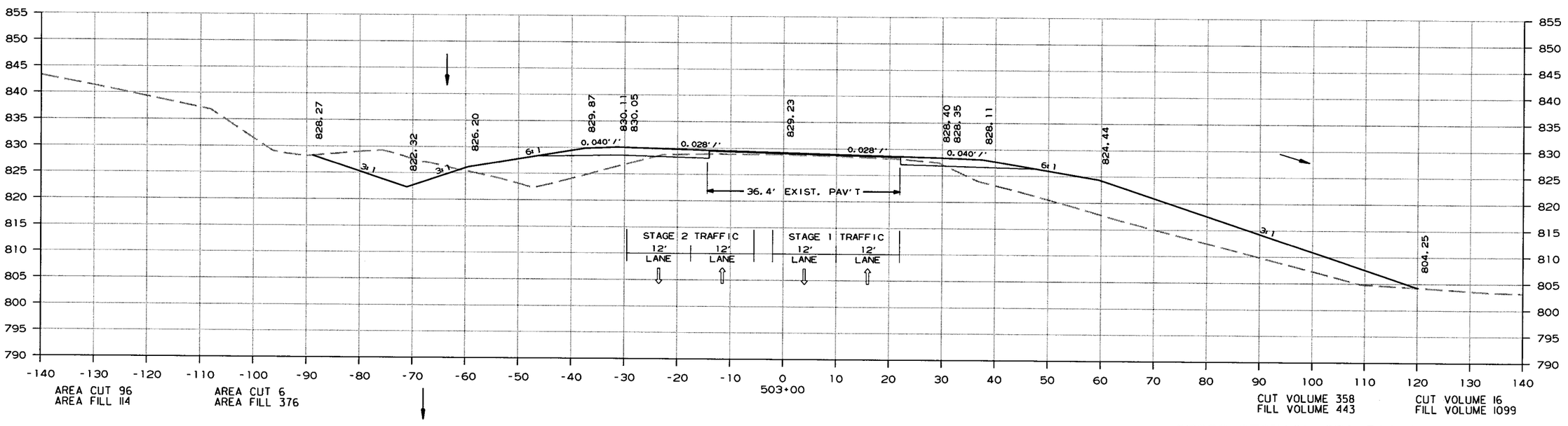

CROSS SECTION STA. 503+00 TO STA. 504+00

6/15/2015

R080423.DGN

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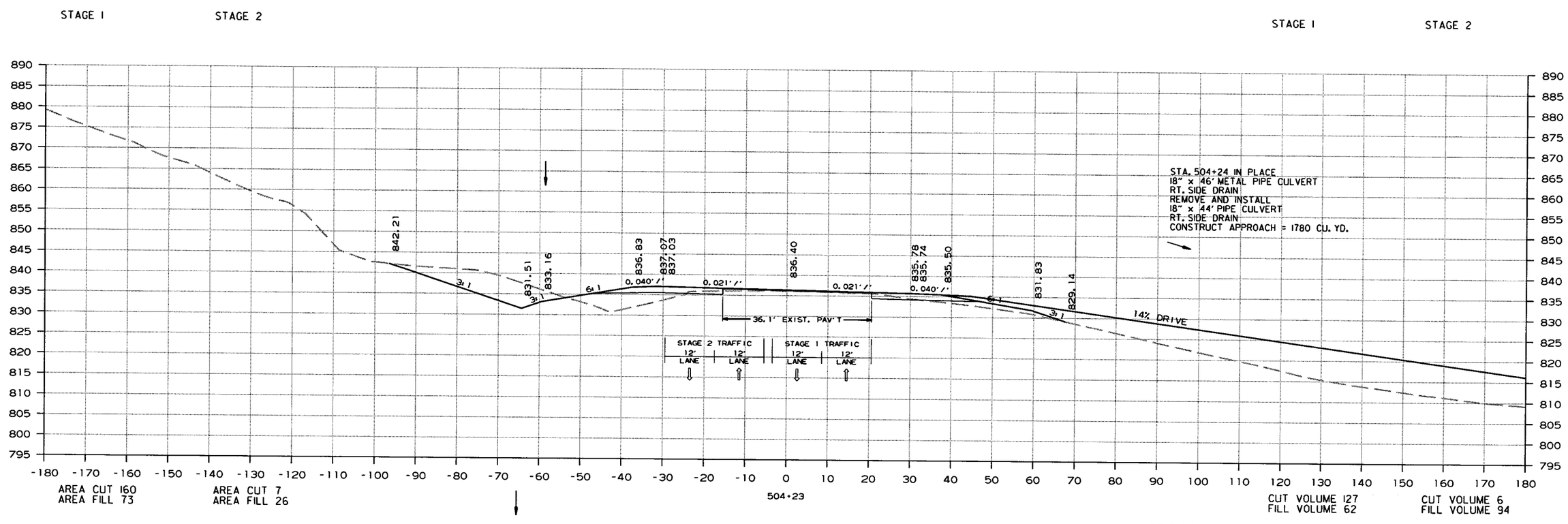

CROSS SECTION STA. 504+23 TO STA. 504+23

6/15/2015

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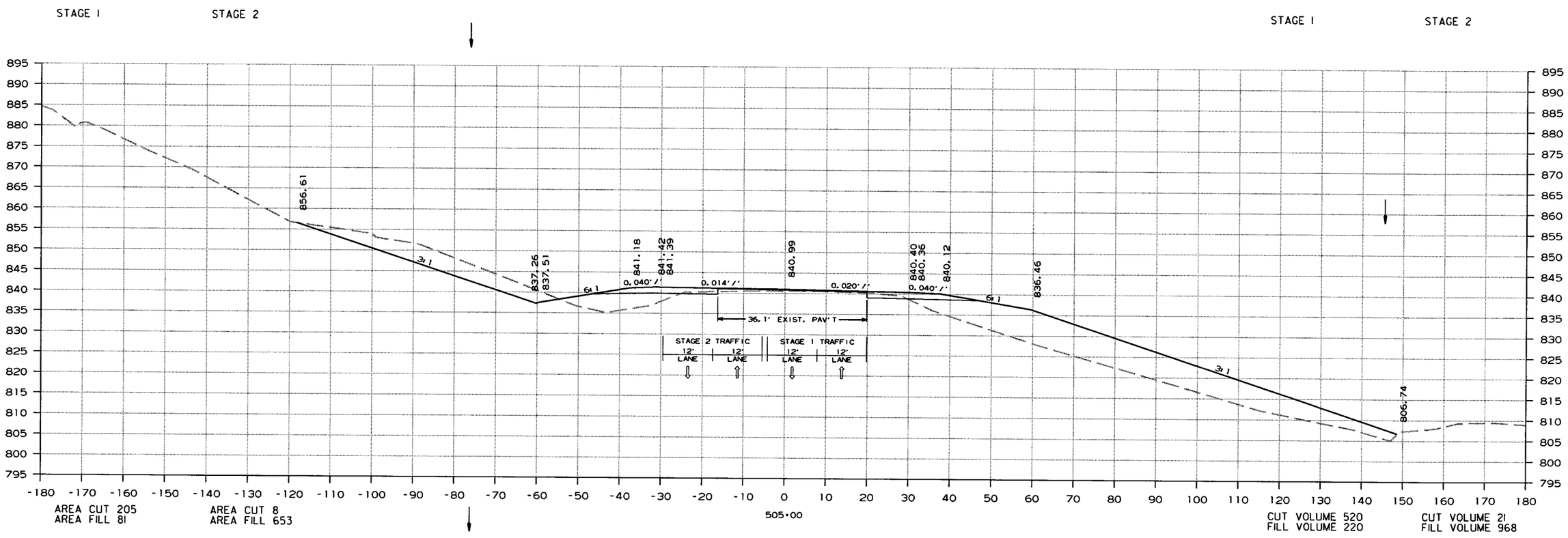

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6/15/2015

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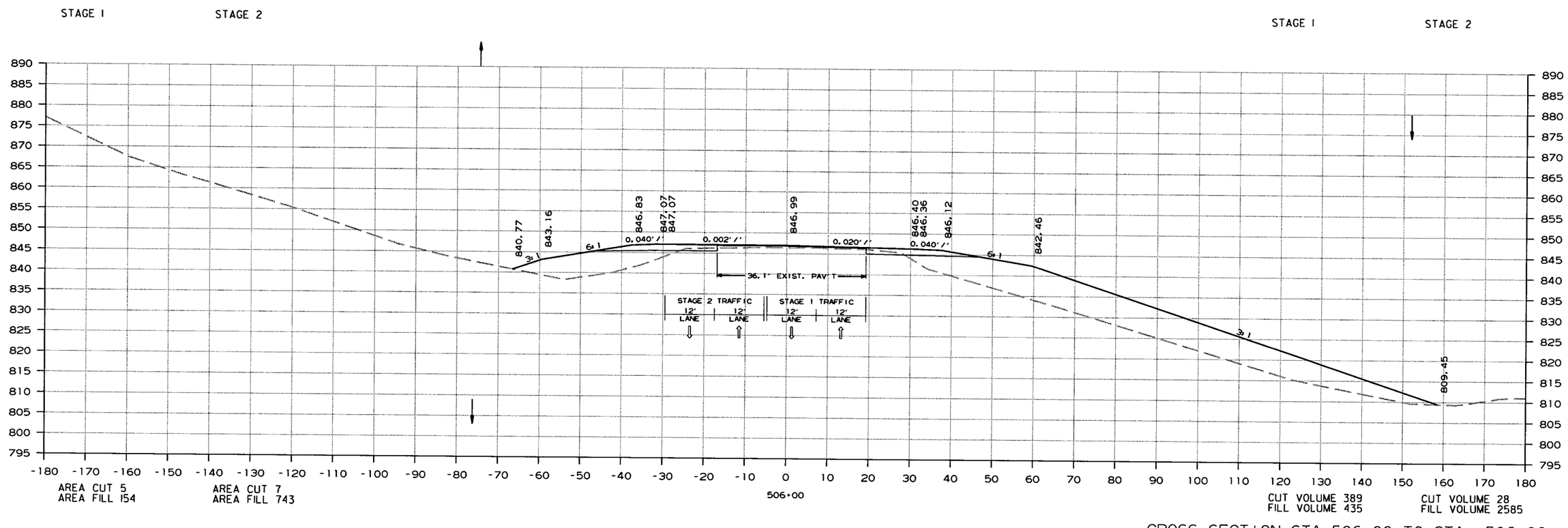

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6/15/2015

R080423.DGN

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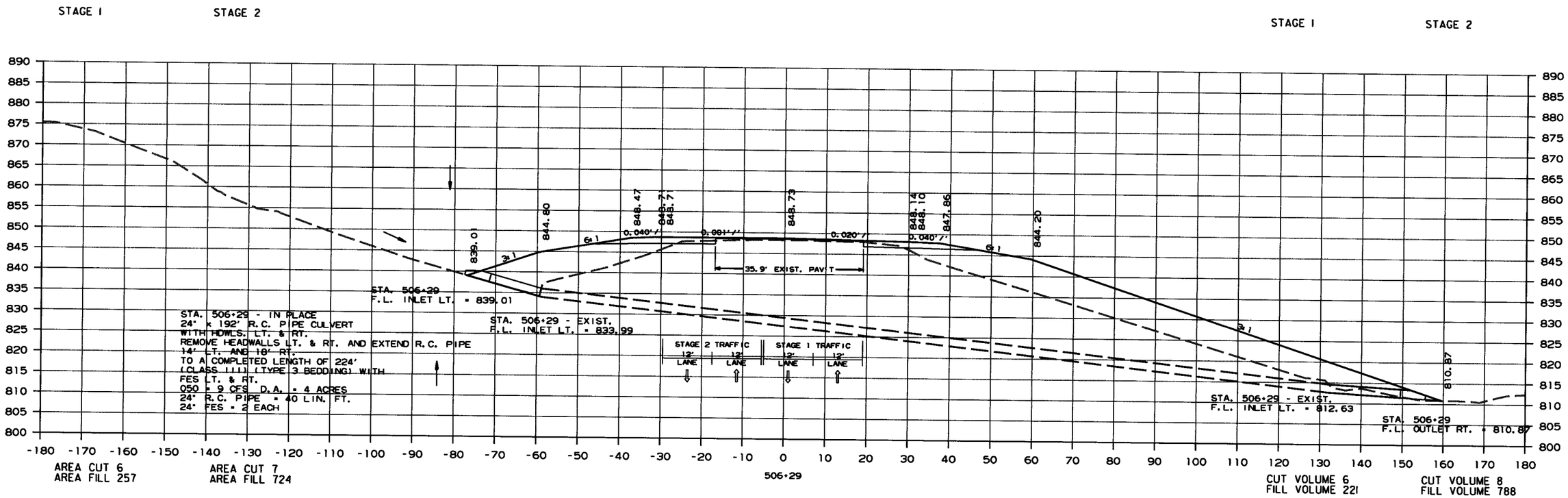

CROSS SECTION STA. 506+29 TO STA. 506+29

R080423.DGN 6/15/2015

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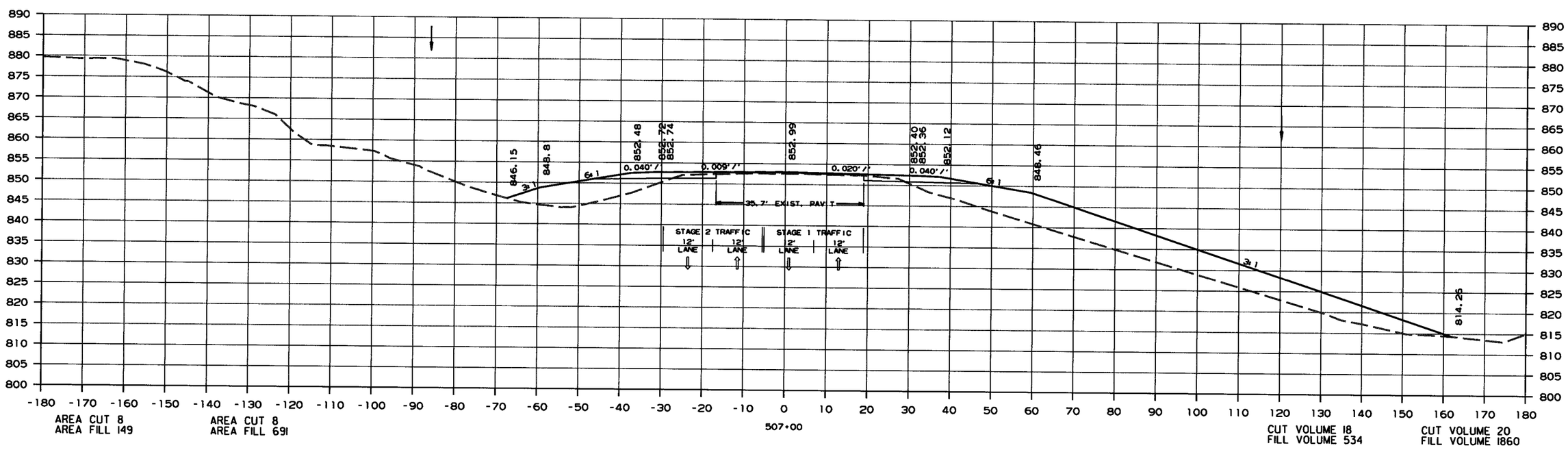

CROSS SECTION STA. 507+00 TO STA. 507+00

R080423.DGN 6/15/2015

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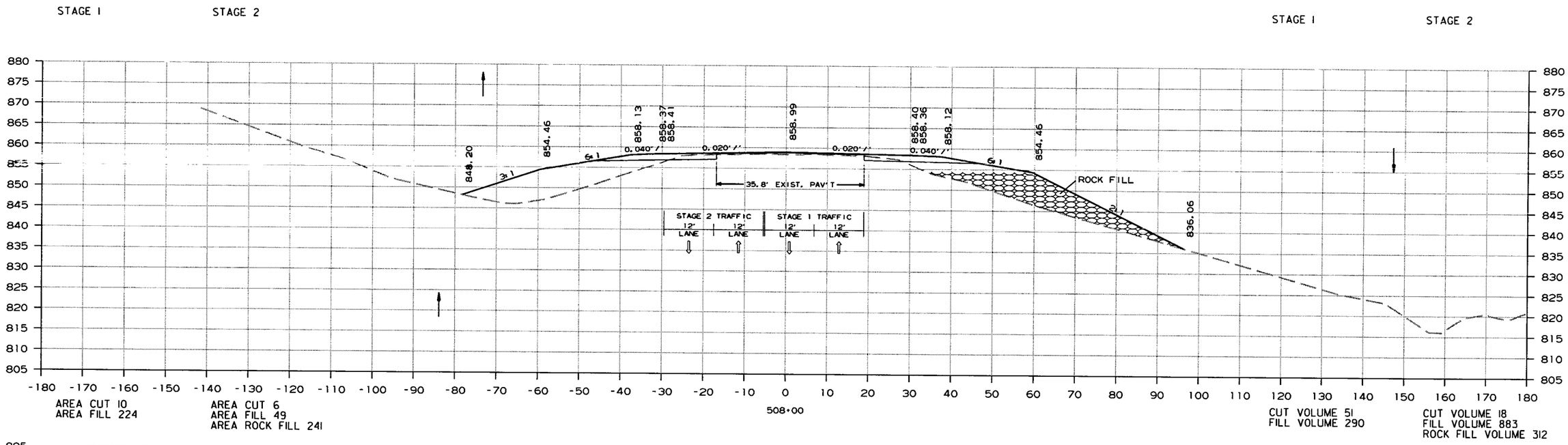

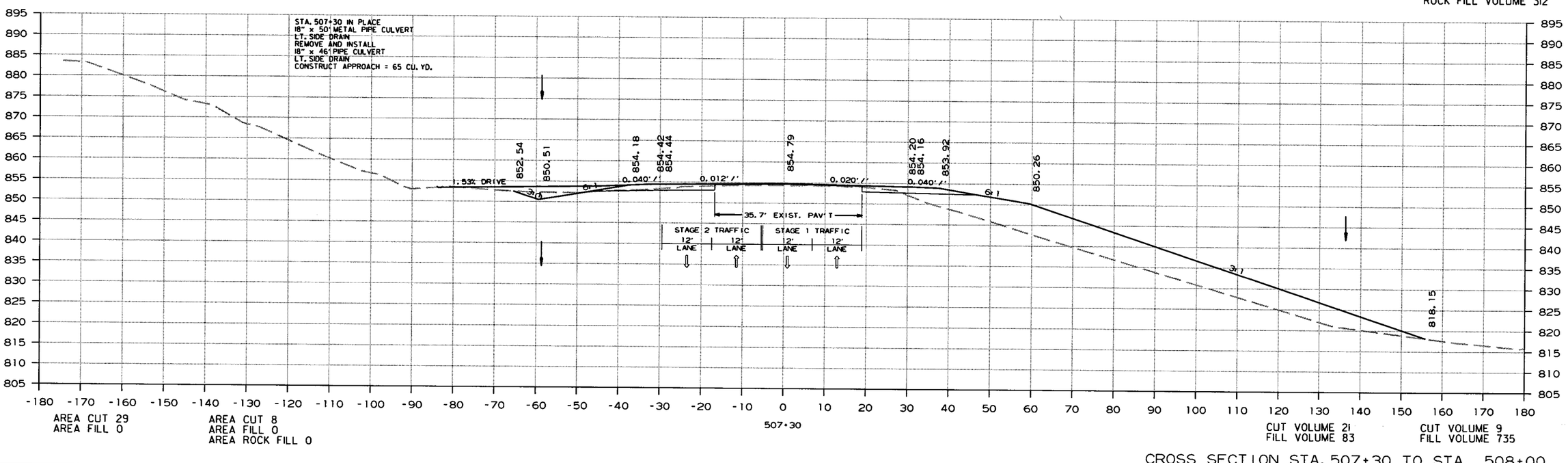

CROSS SECTION STA. 507+30 TO STA. 508+00

6/15/2015

R080423.DGN

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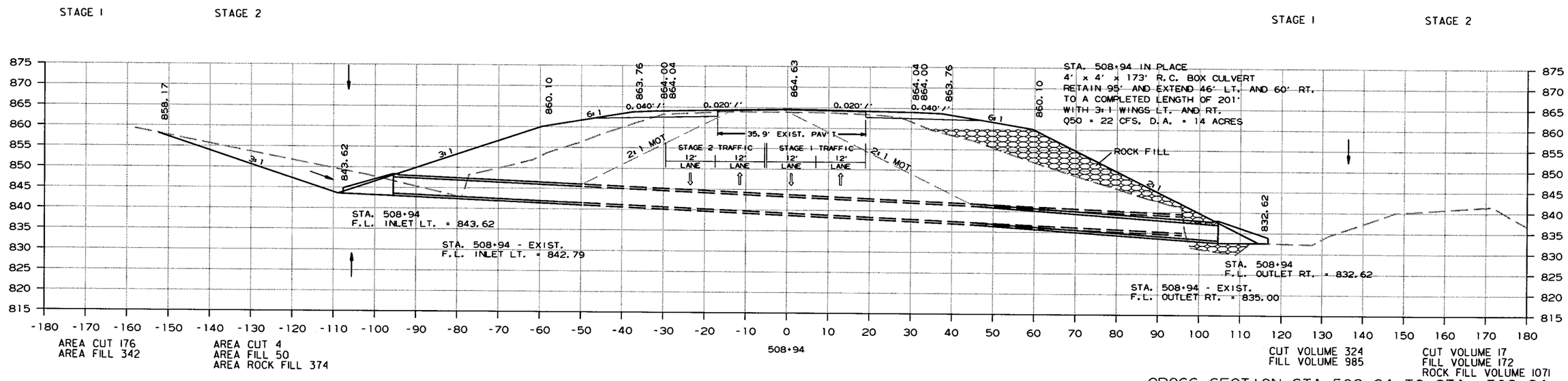

CROSS SECTION STA. 508+94 TO STA. 508+94

6/15/2015

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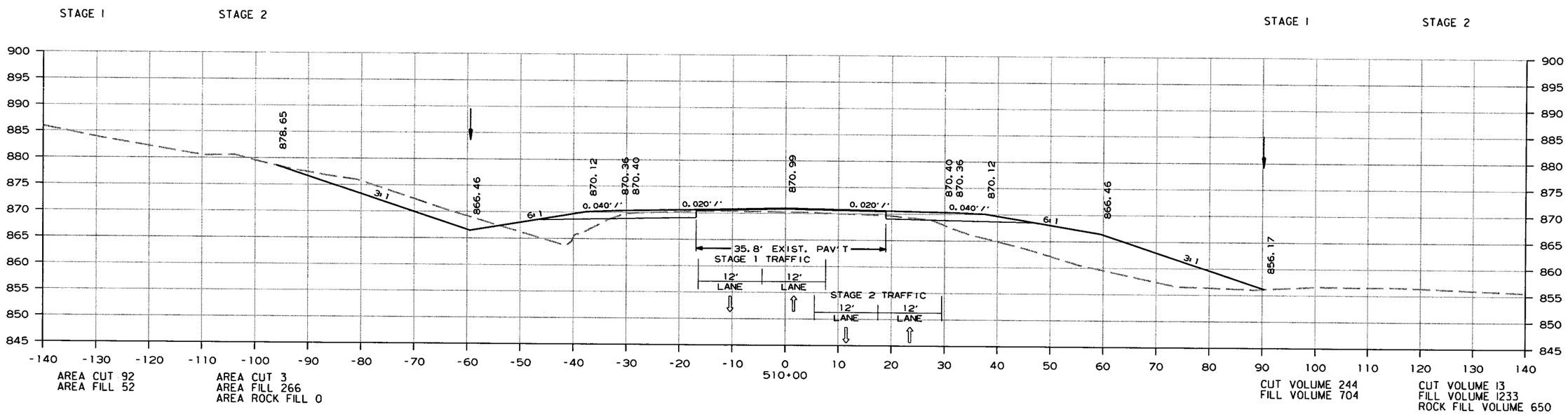

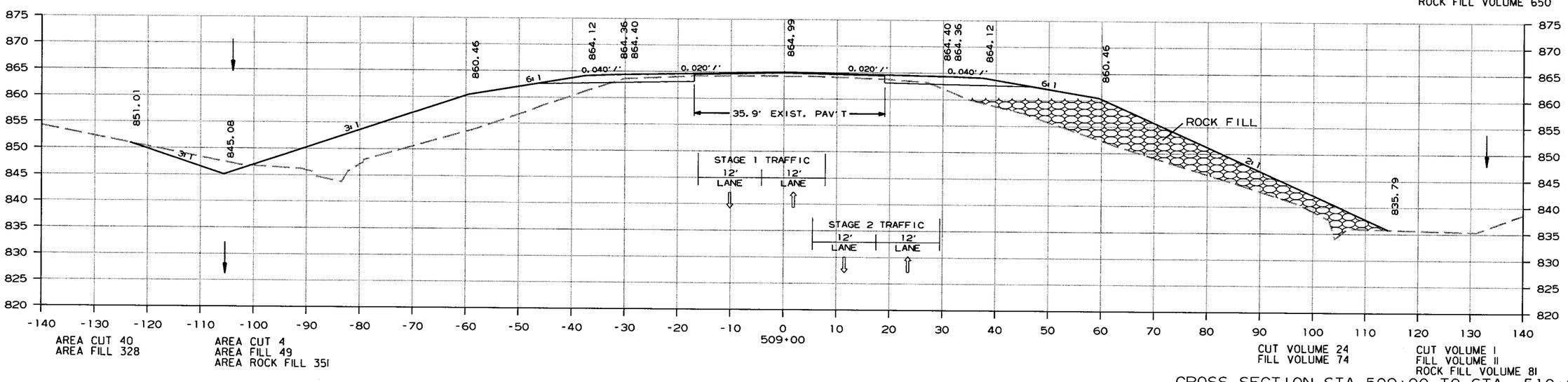

CROSS SECTION STA. 509+00 TO STA. 510+00

6/15/2015

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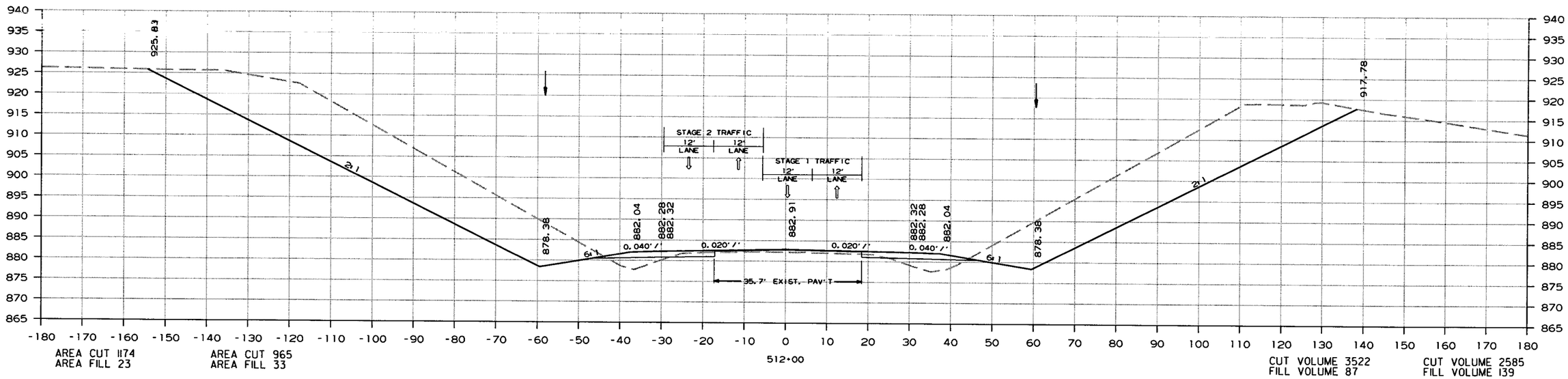

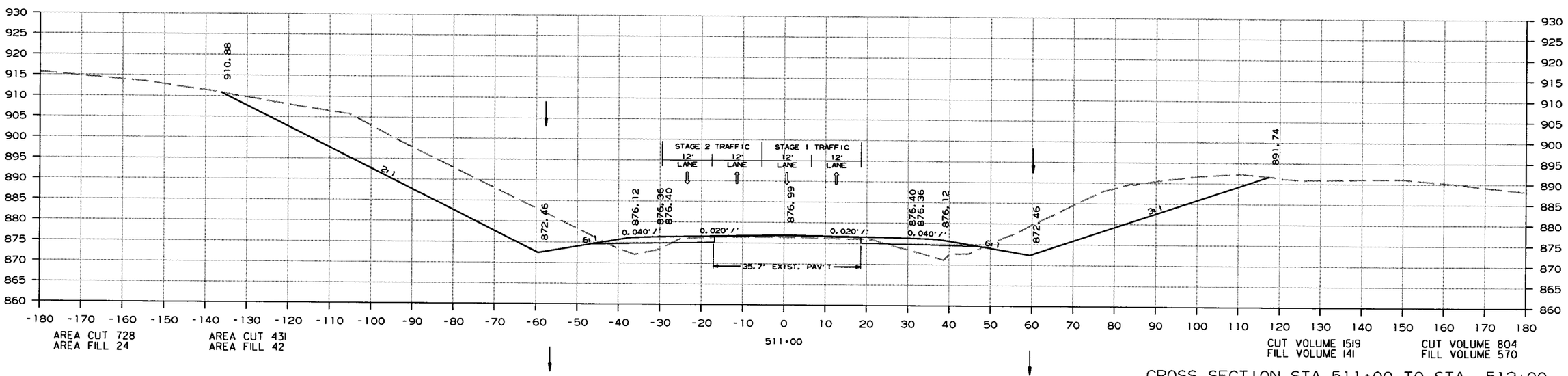

CROSS SECTION STA. 511+00 TO STA. 512+00

6/15/2015

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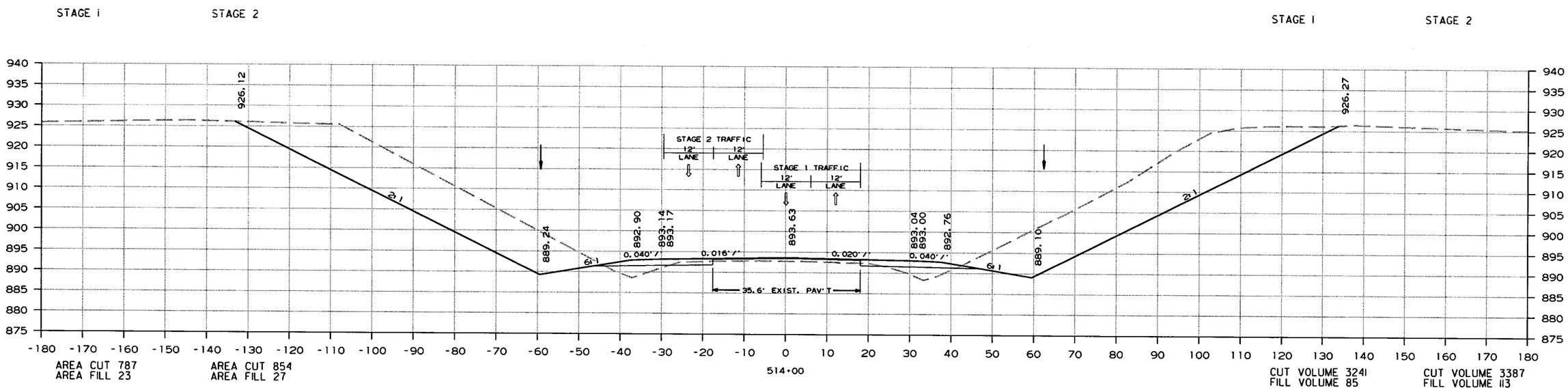

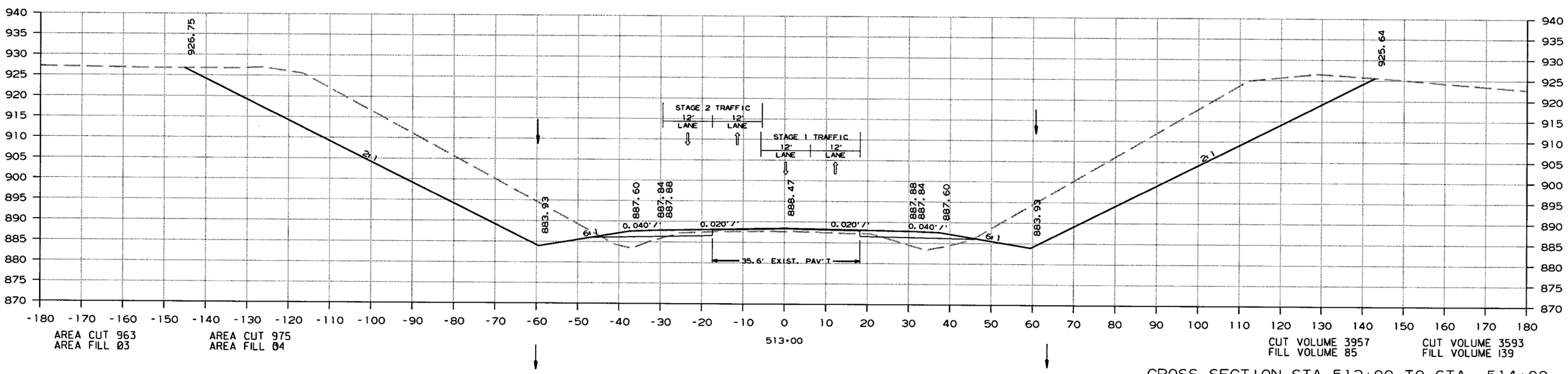

CROSS SECTION STA. 513+00 TO STA. 514+00

6/15/2015

R080423.DGN

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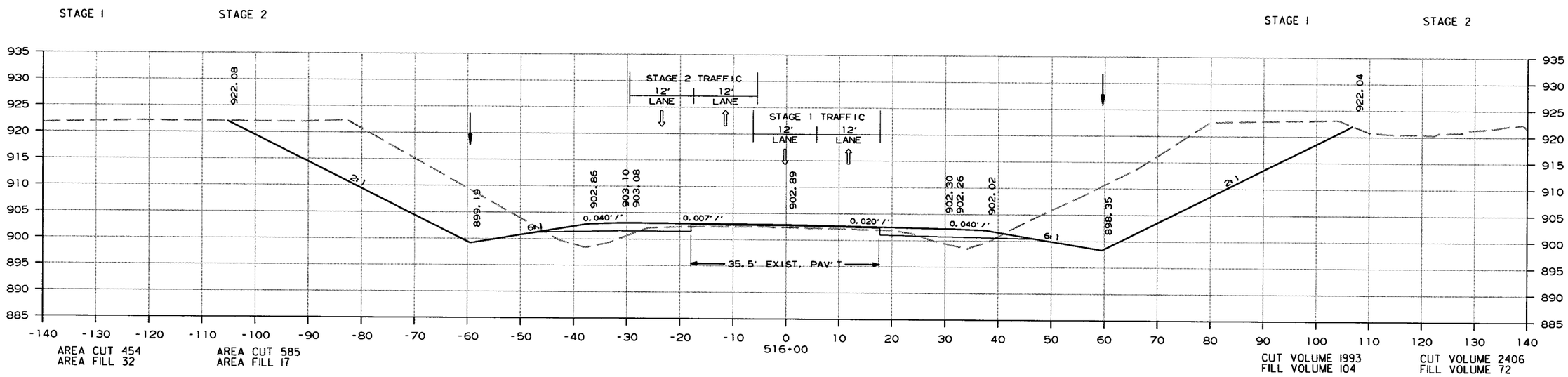
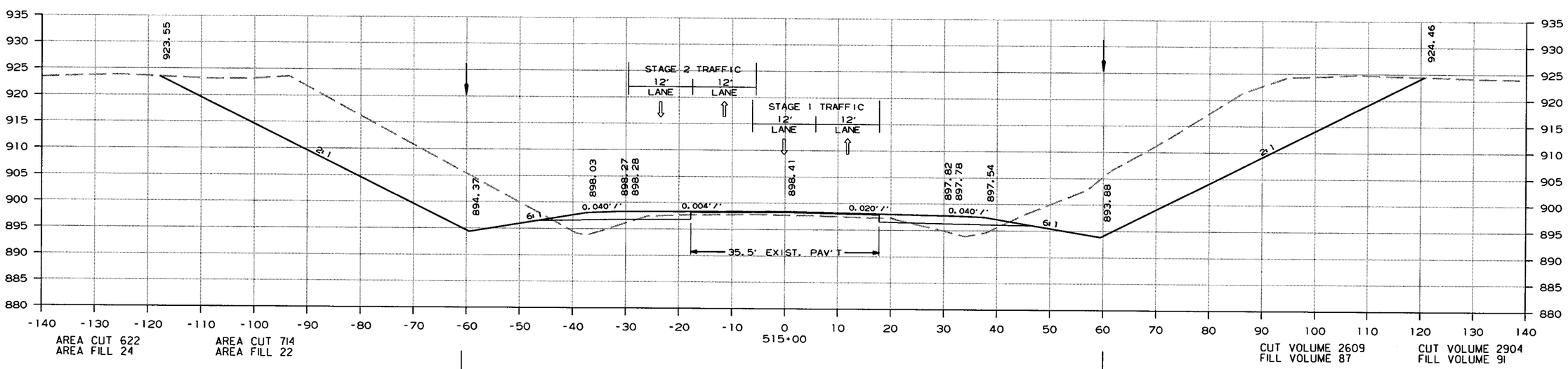
(2) CROSS SECTIONS





CROSS SECTION STA. 515+00 TO STA. 516+00

6/15/2015

R080423.DGN

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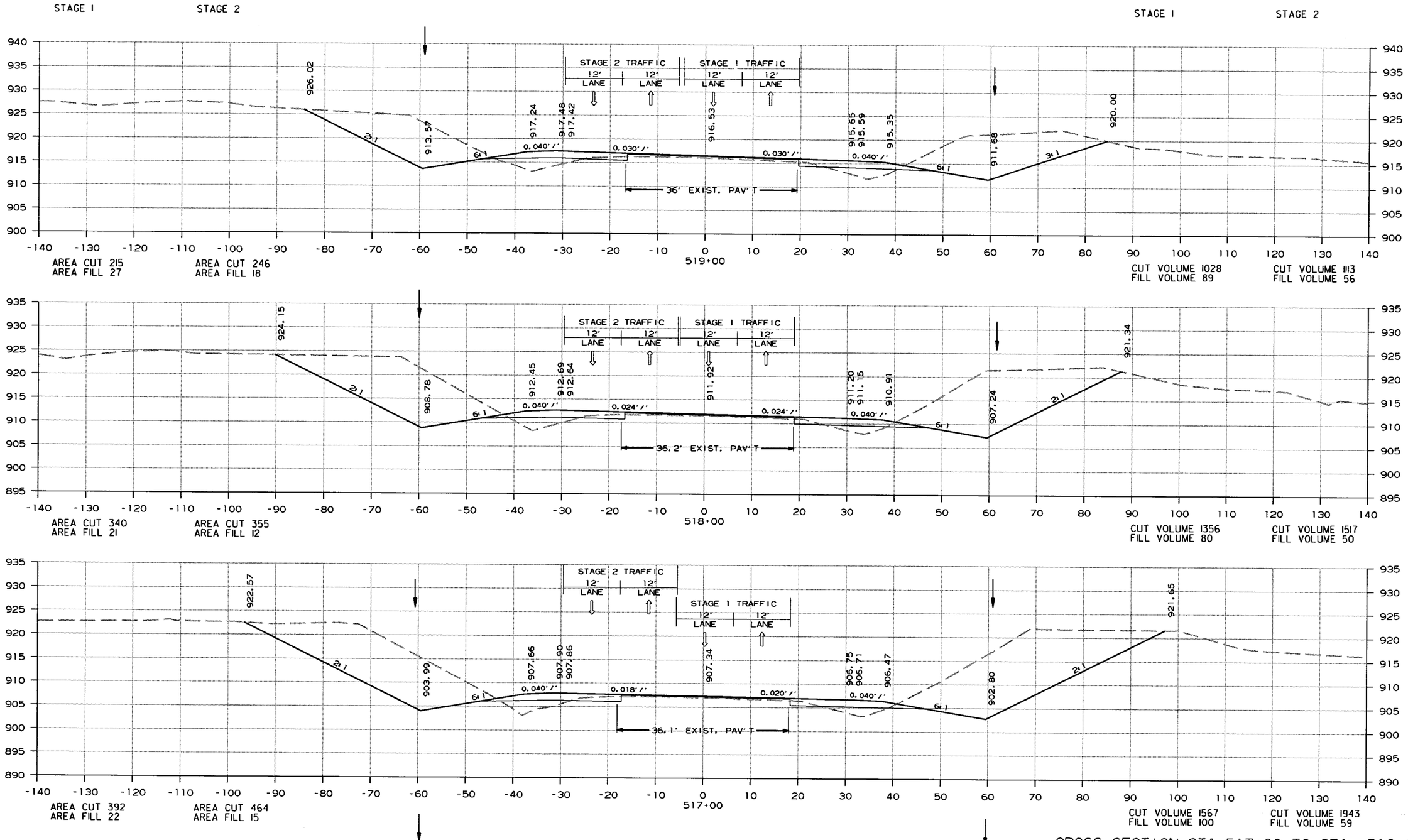

CROSS SECTION STA. 517+00 TO STA. 519+00

6/15/2015

R080423.DGN

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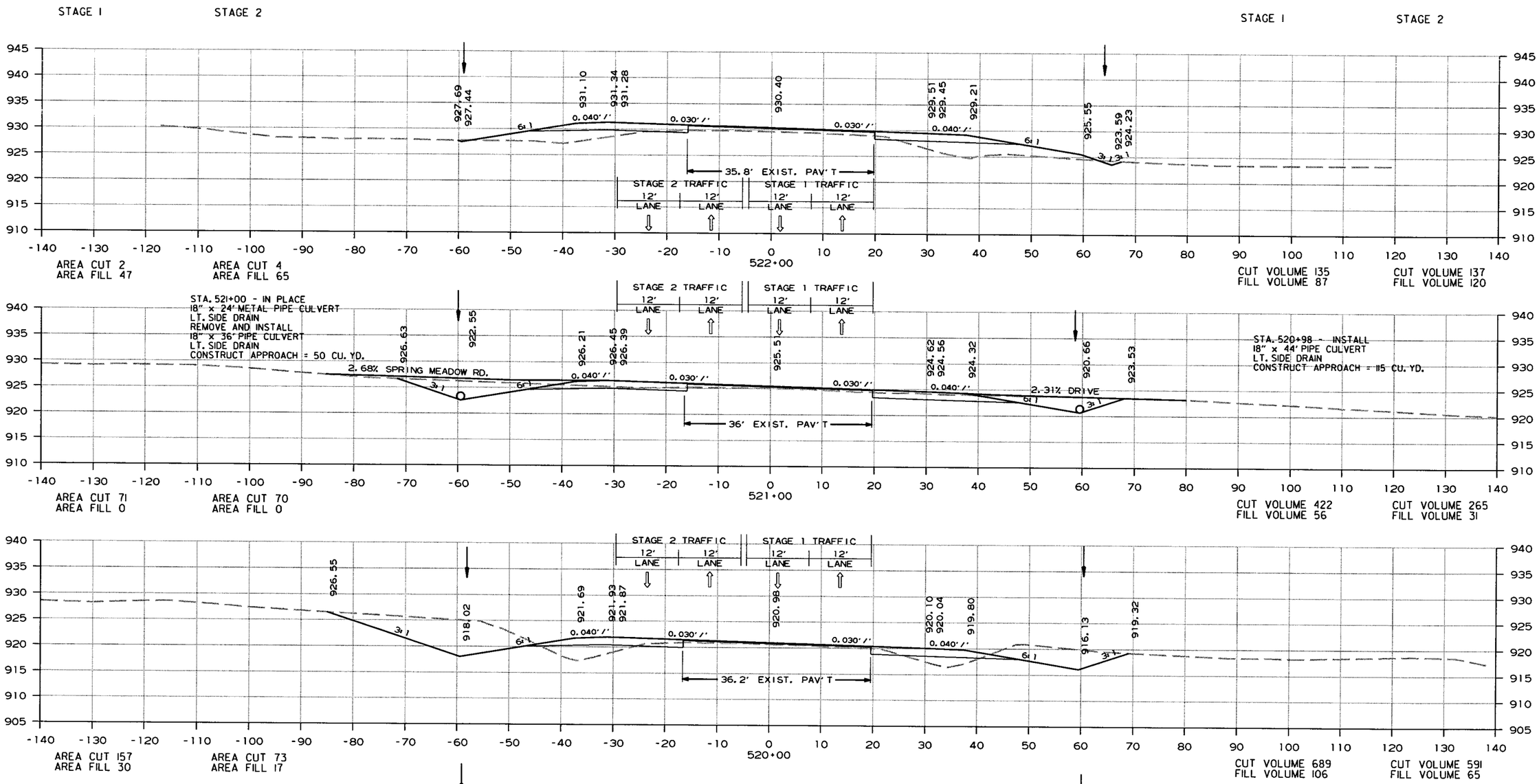

CROSS SECTION STA. 520+00 TO STA. 522+00

6/15/2015

R080423.DGN

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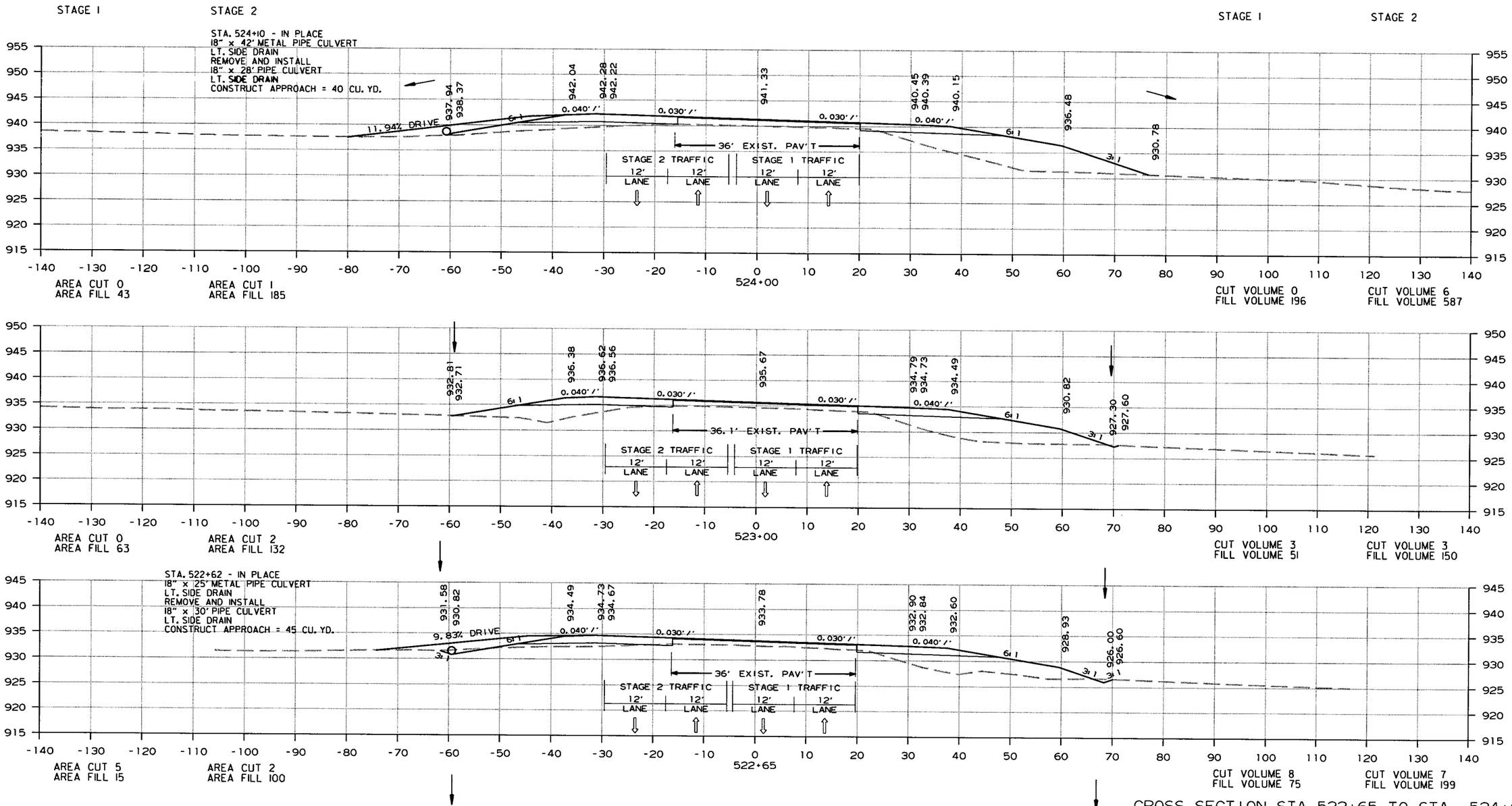

CROSS SECTION STA. 522+65 TO STA. 524+00

6/15/2015

R080423.DGN

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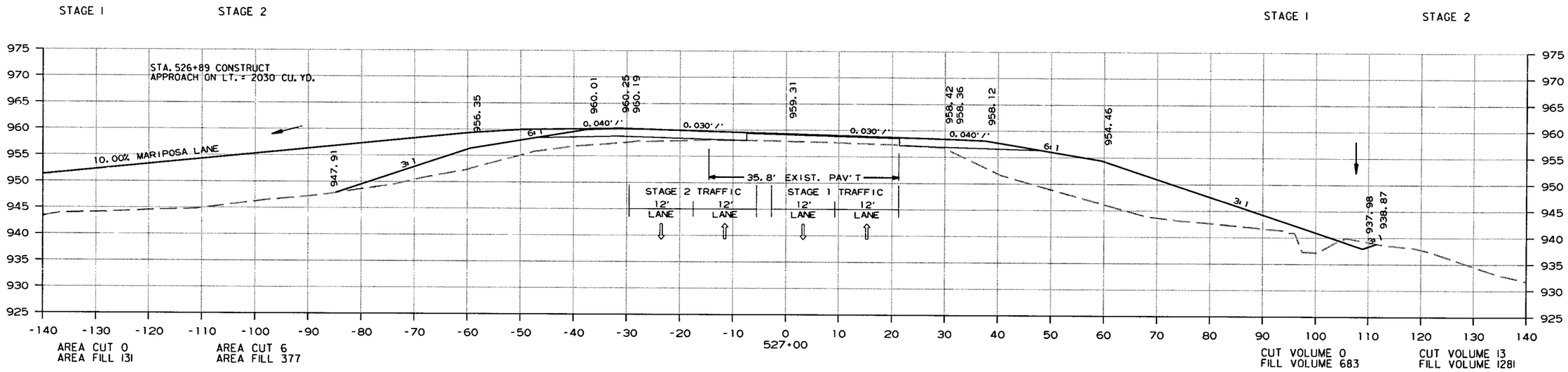

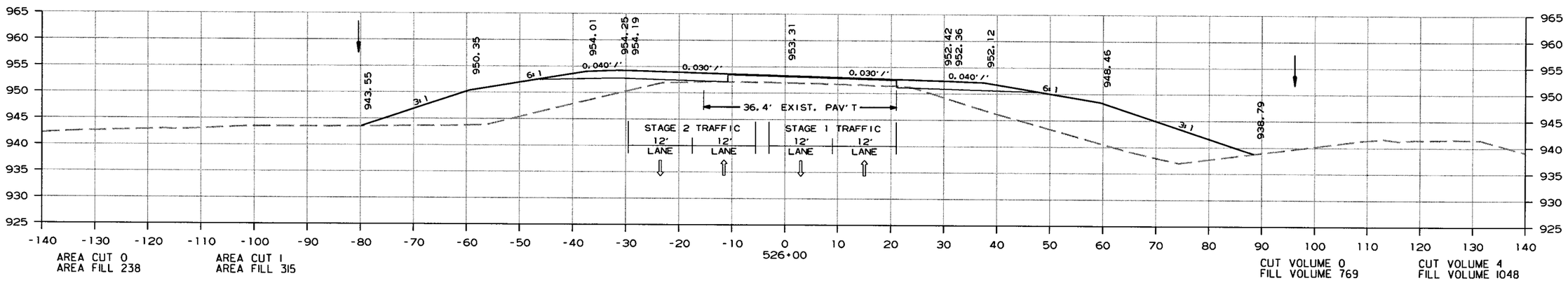

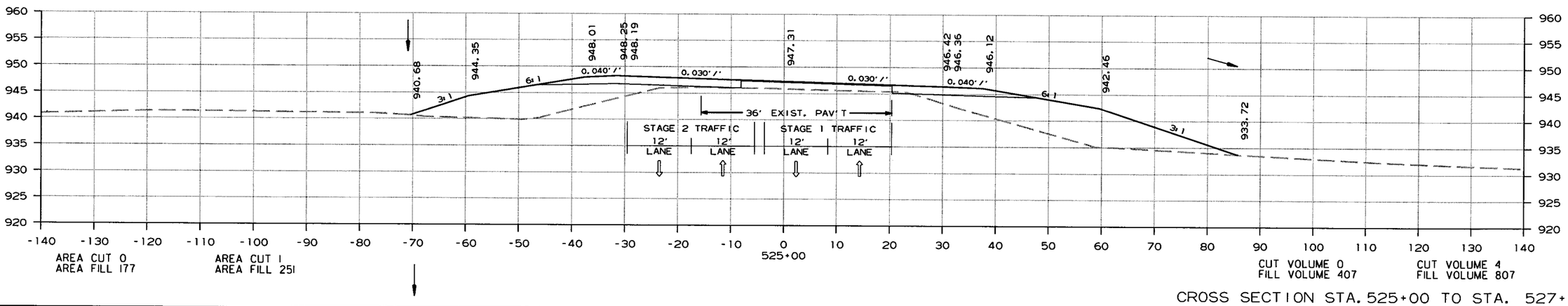

CROSS SECTION STA. 525+00 TO STA. 527+00

6/15/2015

R080423.DGN

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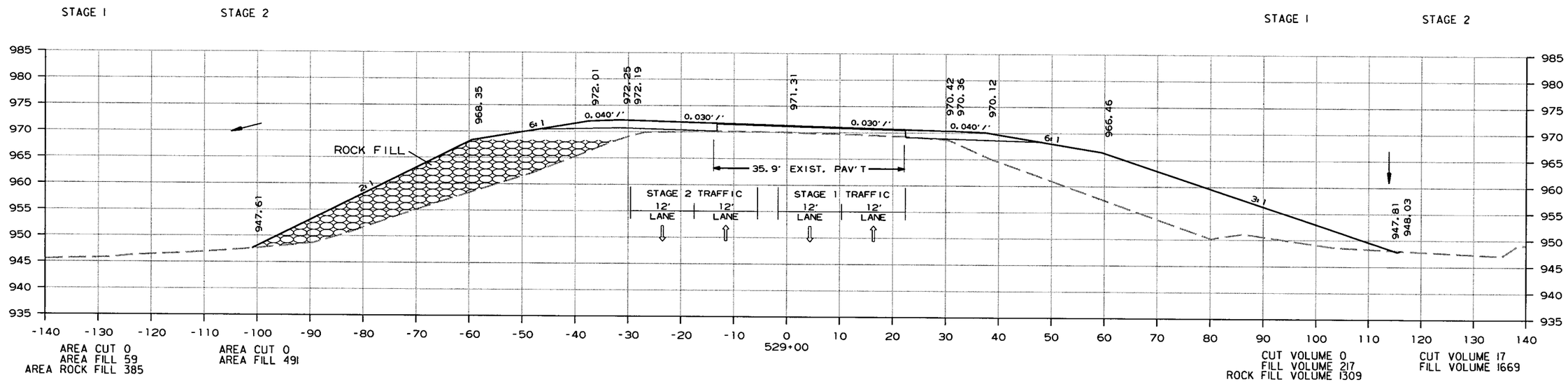

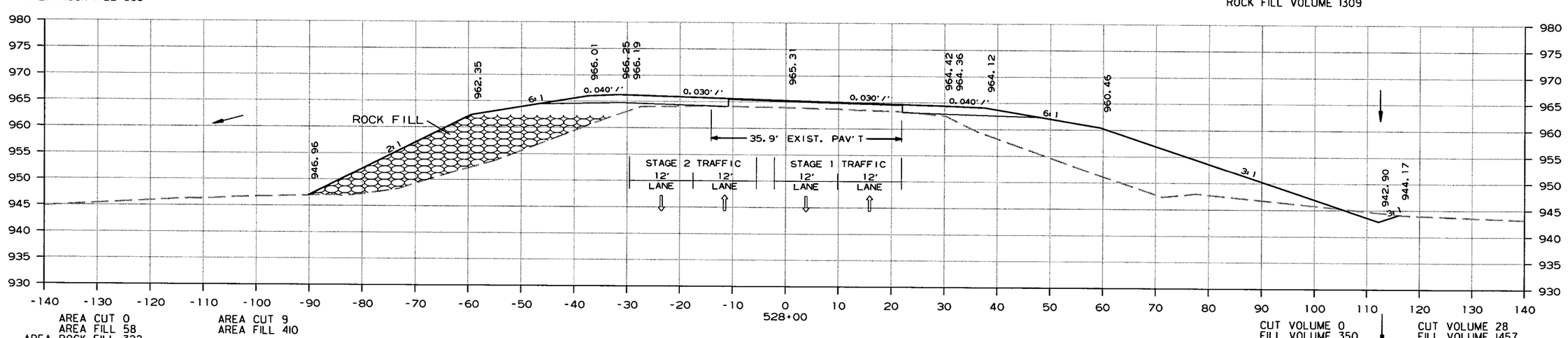

CROSS SECTION STA. 528+00 TO STA. 529+00

6/15/2015

R080423.DGN

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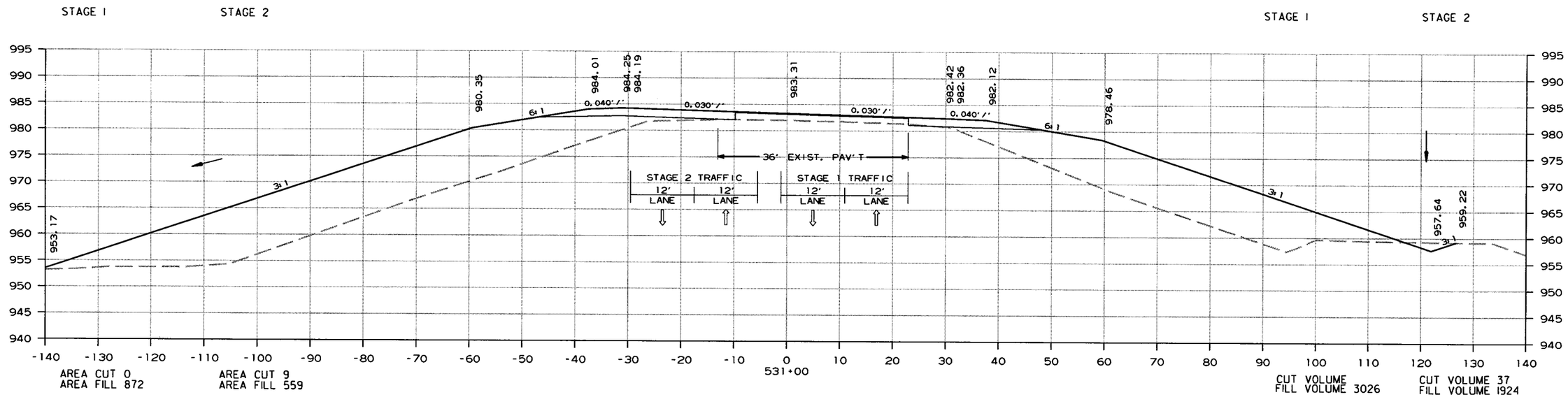

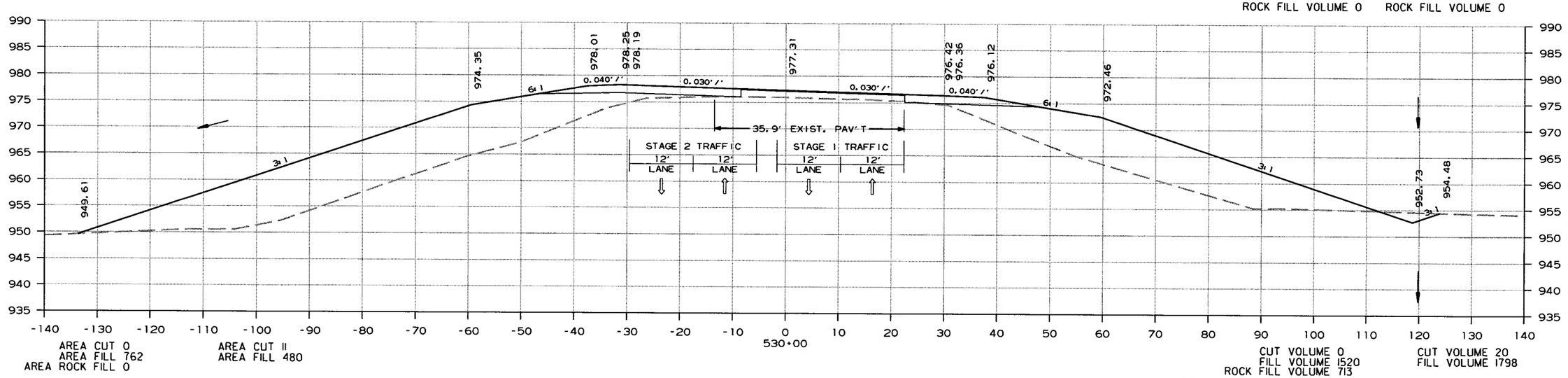

CROSS SECTION STA. 530+00 TO STA. 531+00

6/15/2015

R080423.DGN

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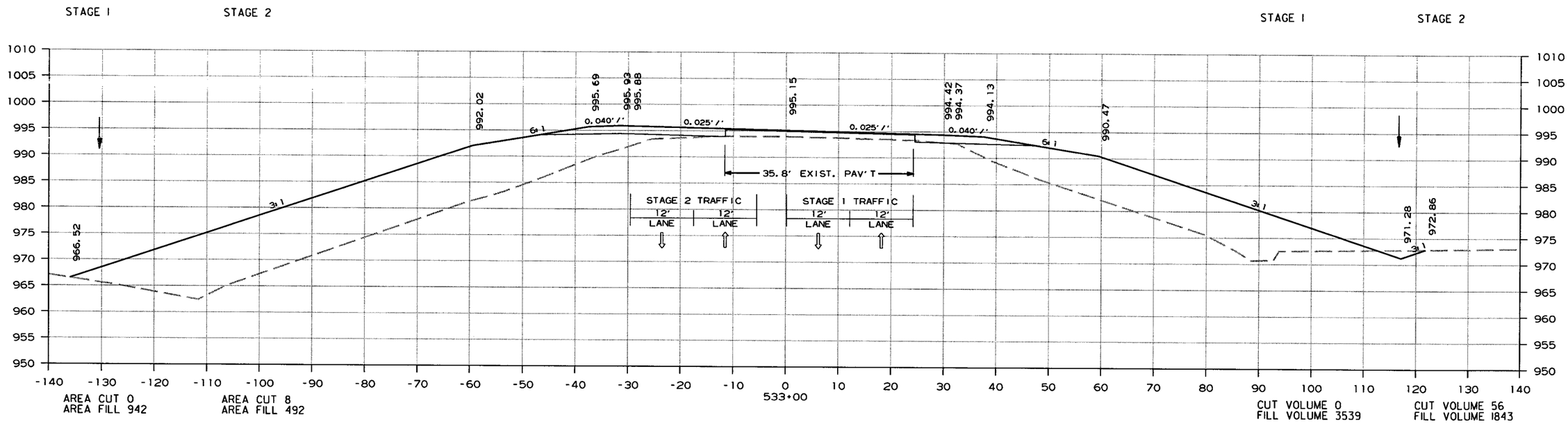

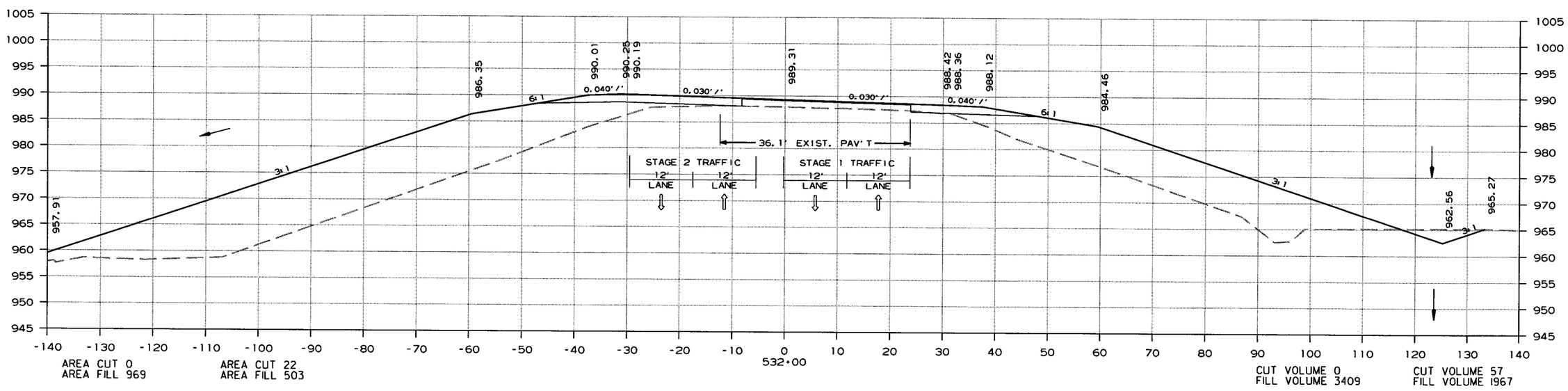

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6/15/2015

R080423.DGN

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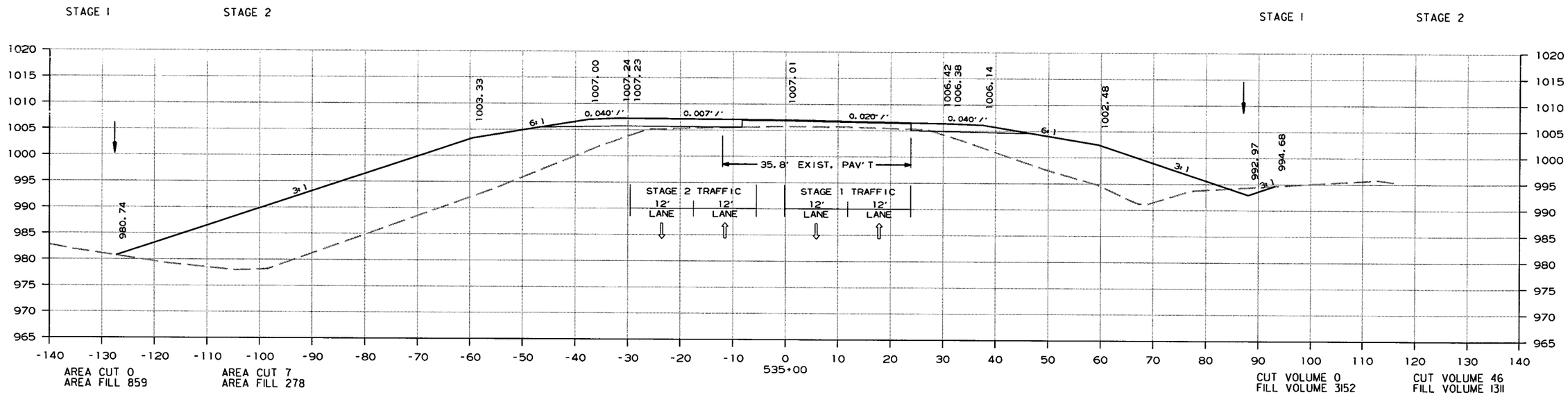
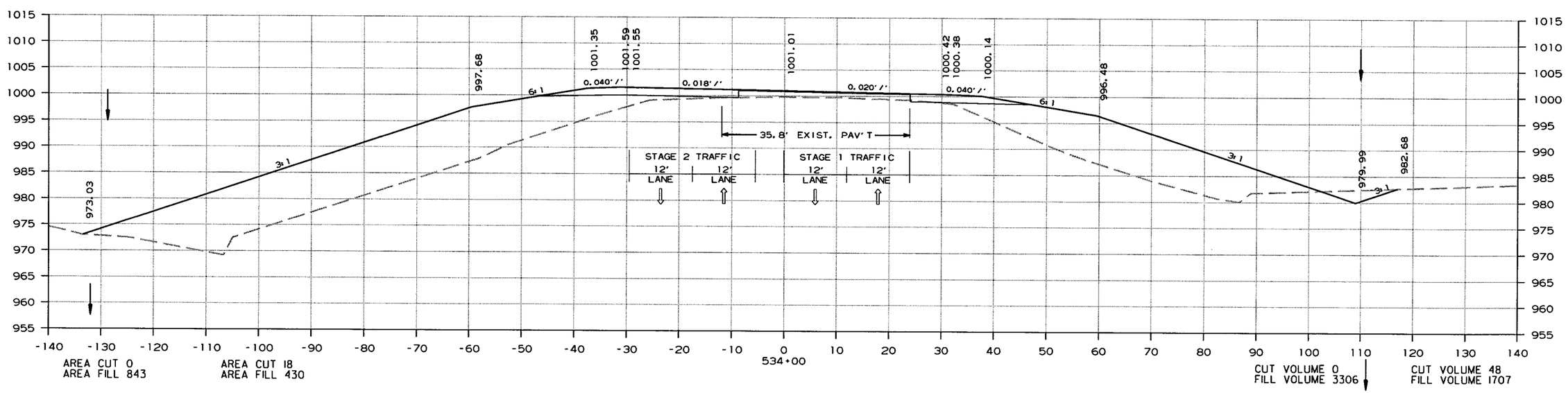
(2) CROSS SECTIONS





CROSS SECTION STA. 534+00 TO STA. 535+00

6/15/2015

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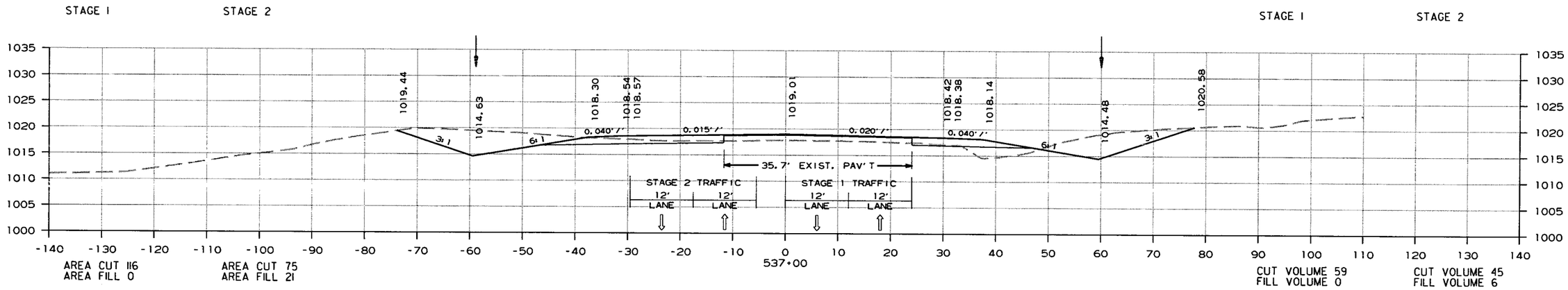
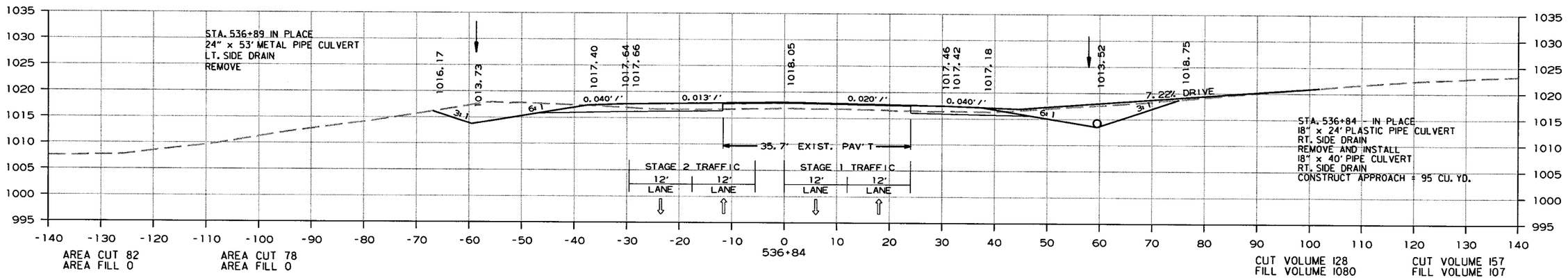
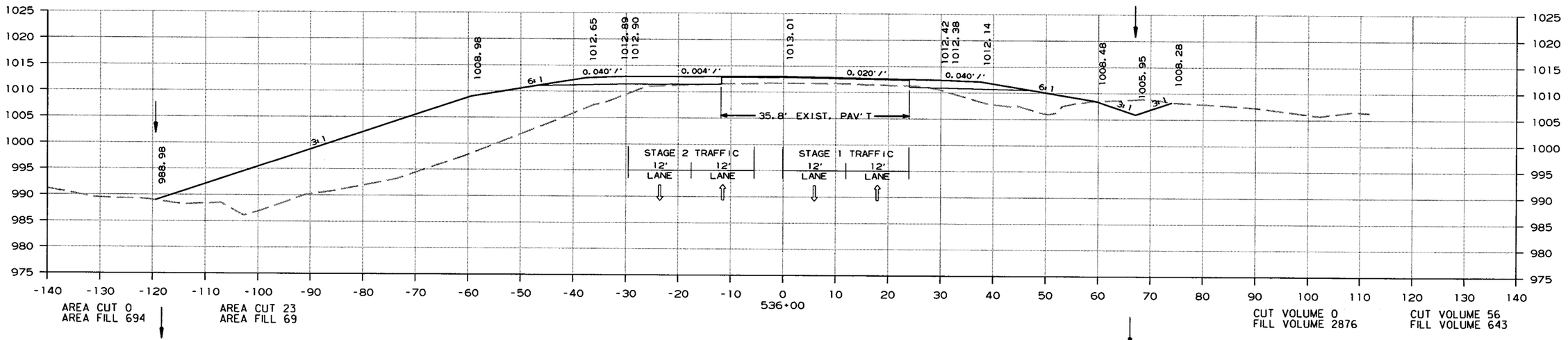
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	239	517

(2) CROSS SECTIONS







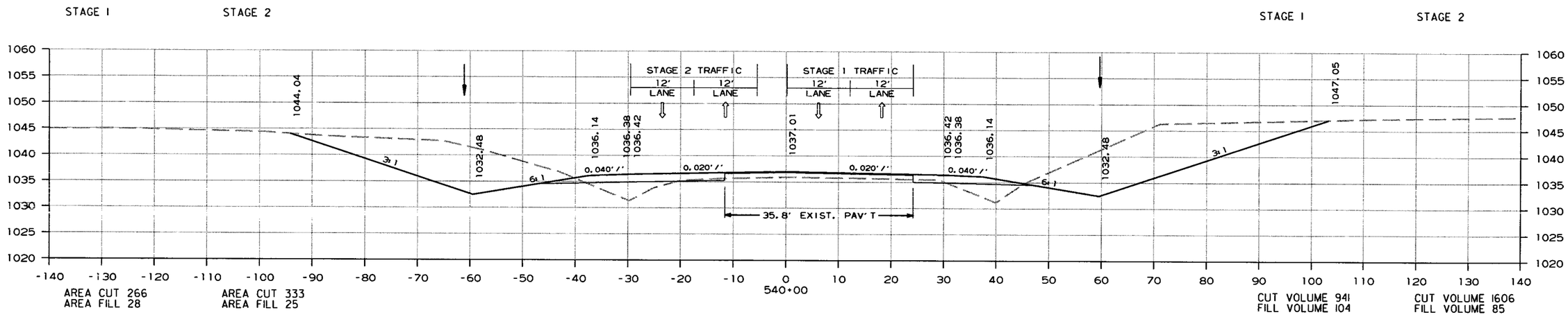
CROSS SECTION STA. 536+00 TO STA. 537+00

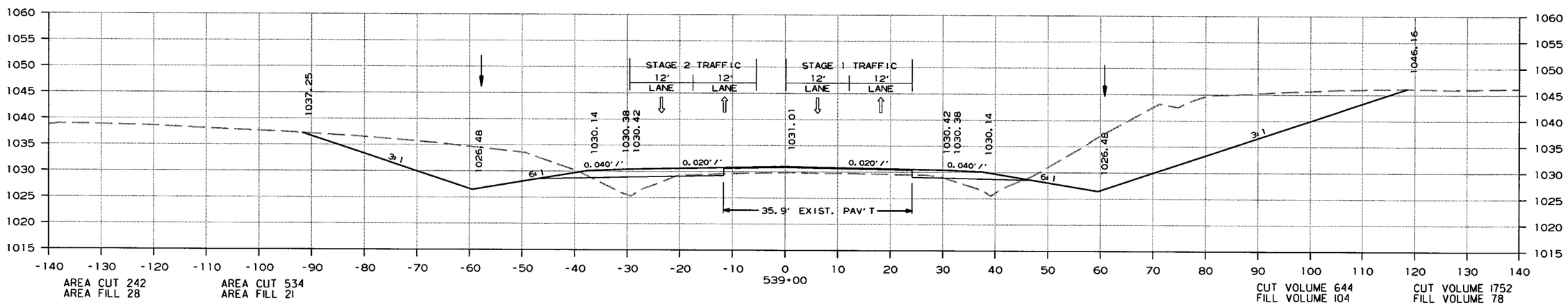
6/15/2015

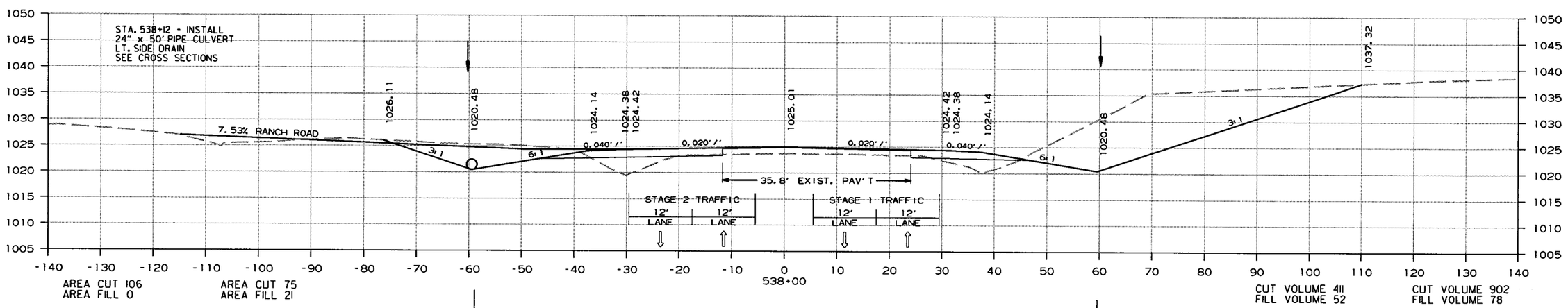
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	240	517

(2) CROSS SECTIONS







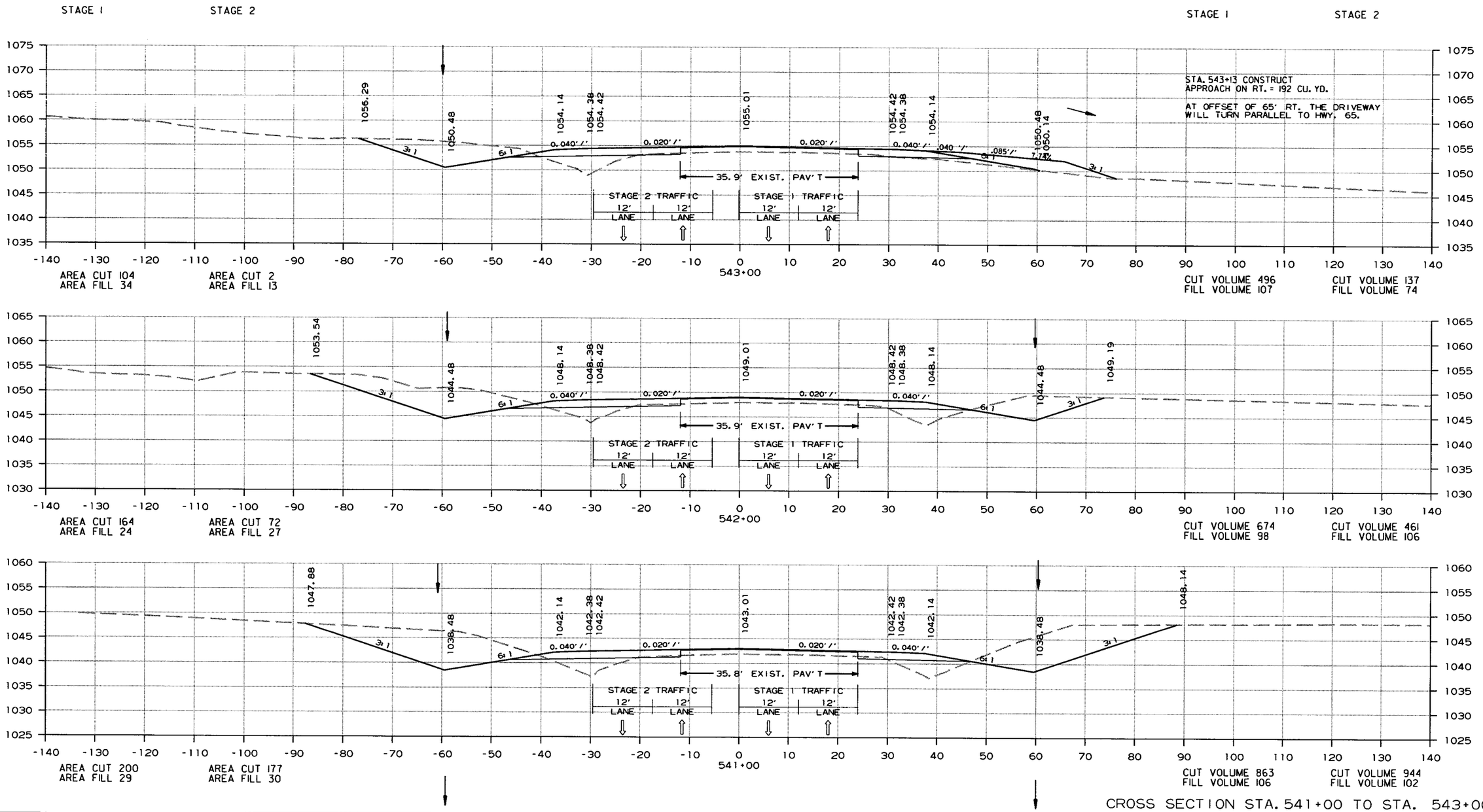
CROSS SECTION STA. 538+00 TO STA. 540+00

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	241	517

(2) CROSS SECTIONS



CROSS SECTION STA. 541+00 TO STA. 543+00

6/15/2015

R080423.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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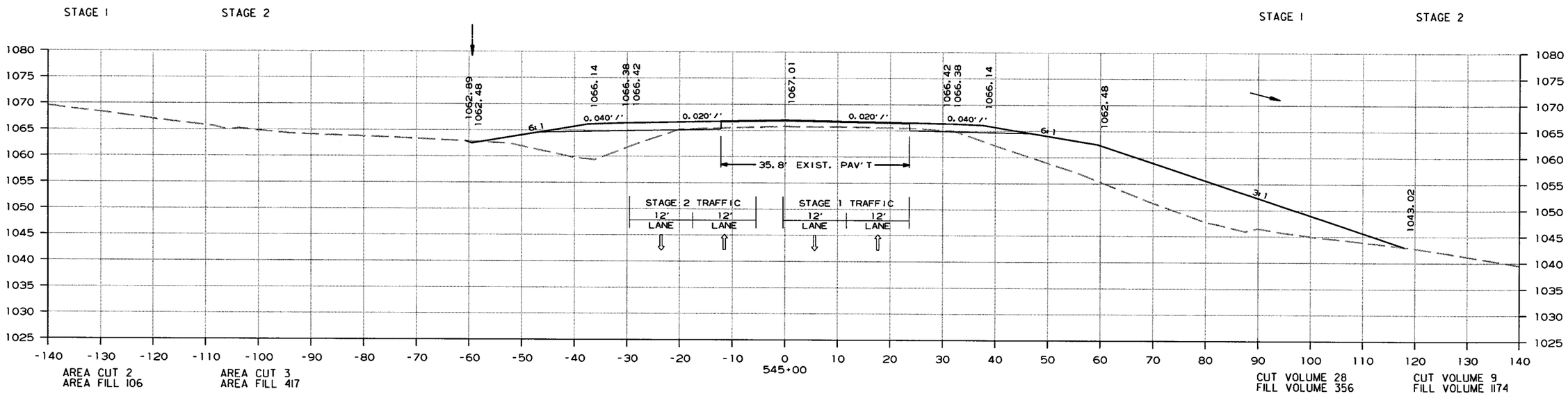
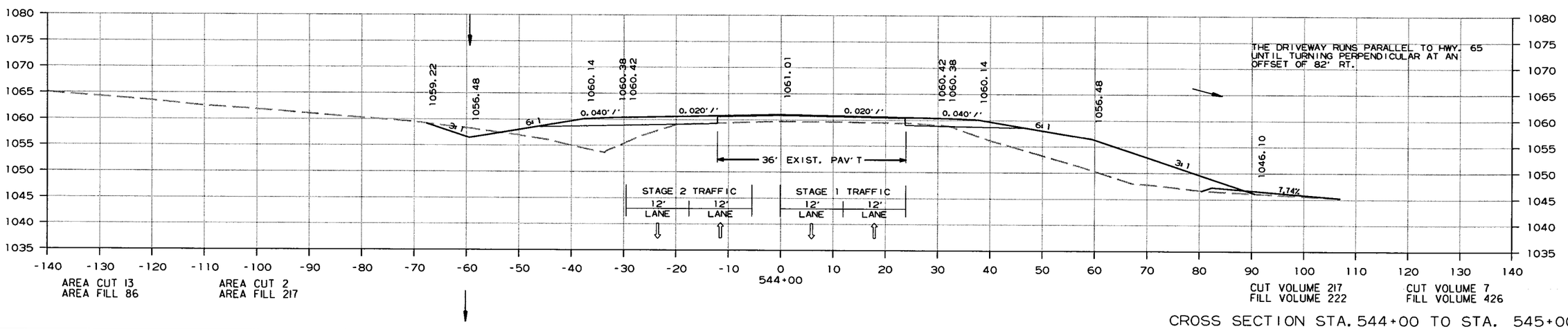
				JOB NO.		080423	242	517

(2) CROSS SECTIONS





CROSS SECTION STA. 544+00 TO STA. 545+00

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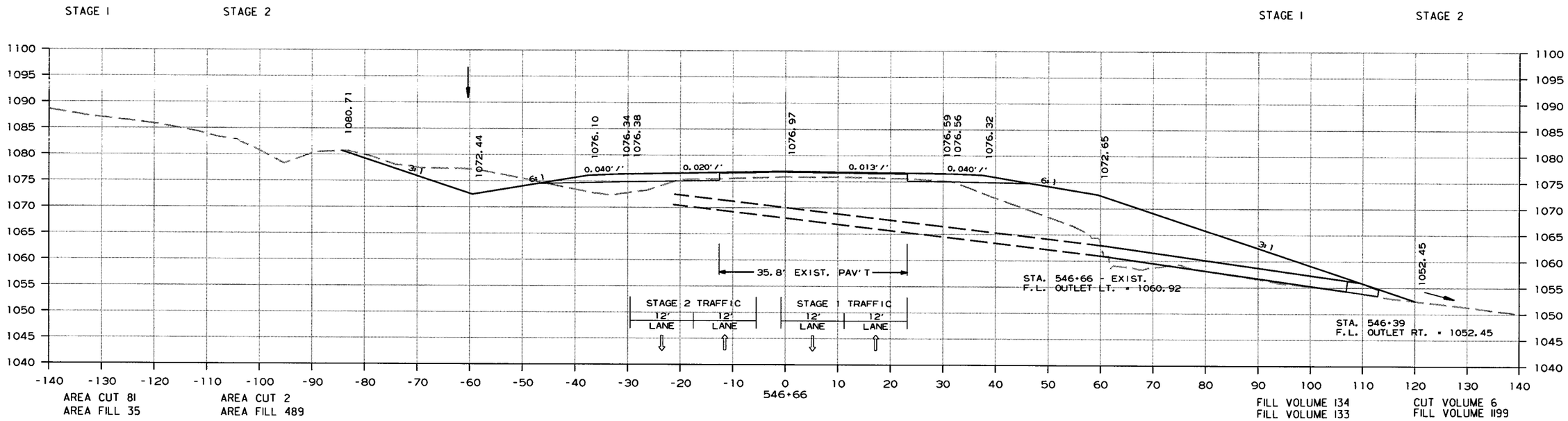
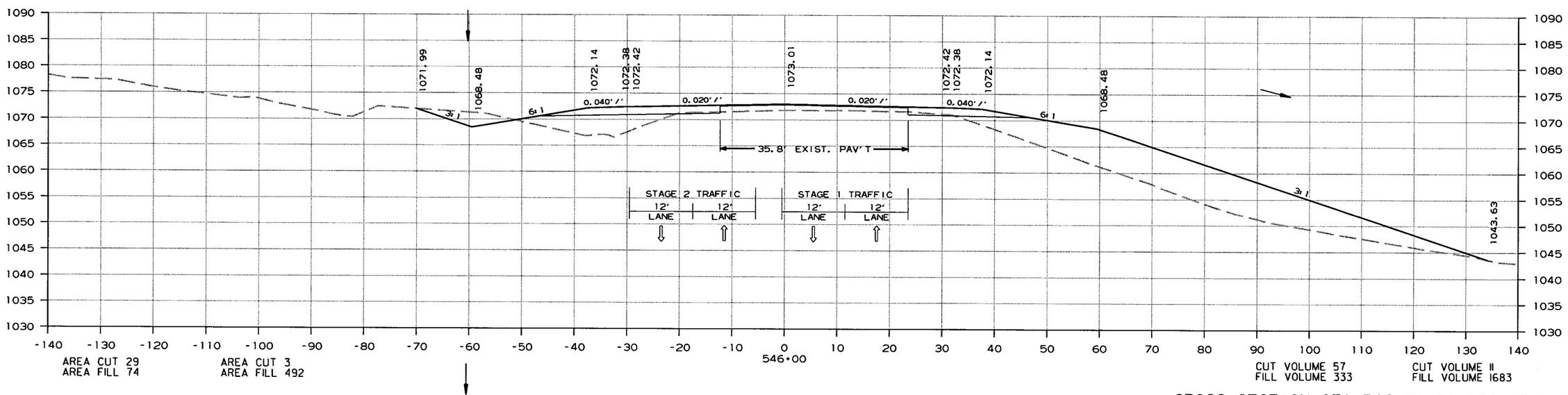
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	243	517

(2) CROSS SECTIONS





CROSS SECTION STA. 546+00 TO STA. 546+66

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R080423.DGN

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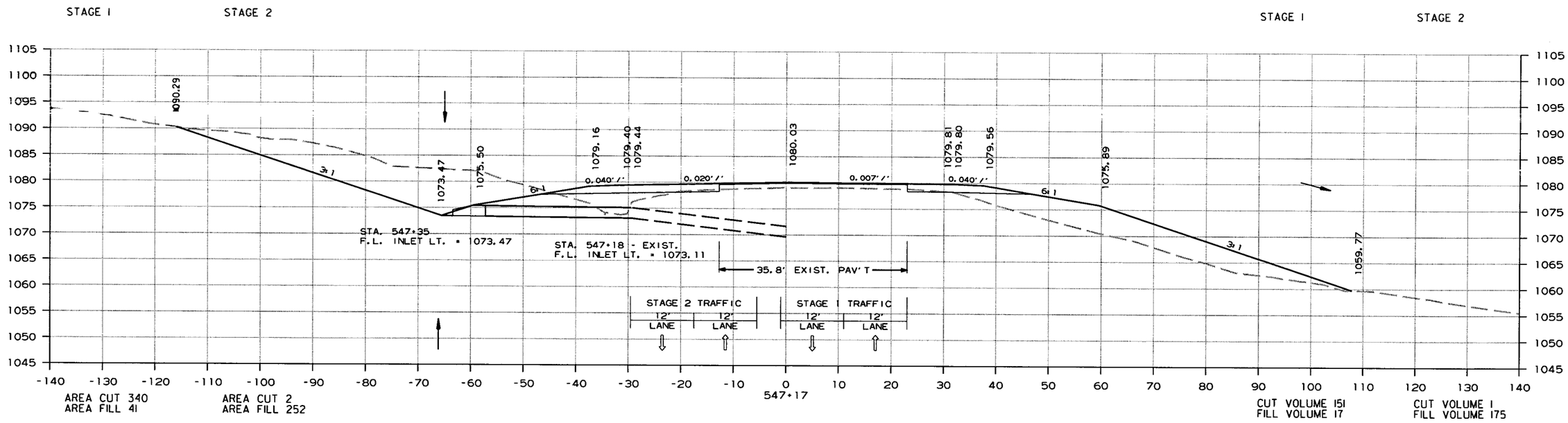
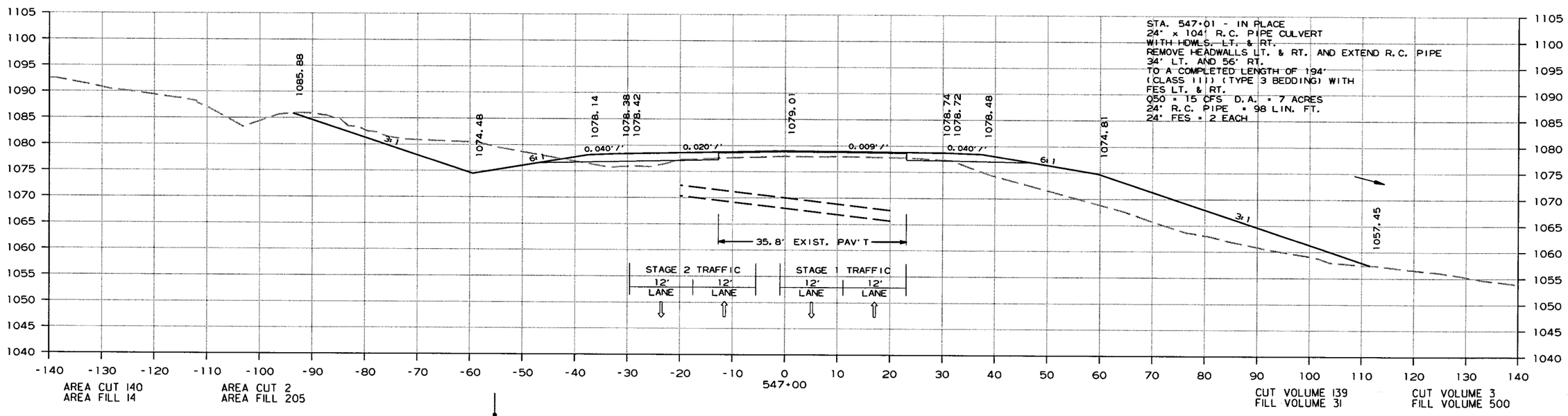
(2) CROSS SECTIONS





CROSS SECTION STA. 547+00 TO STA. 547+17

6/15/2015

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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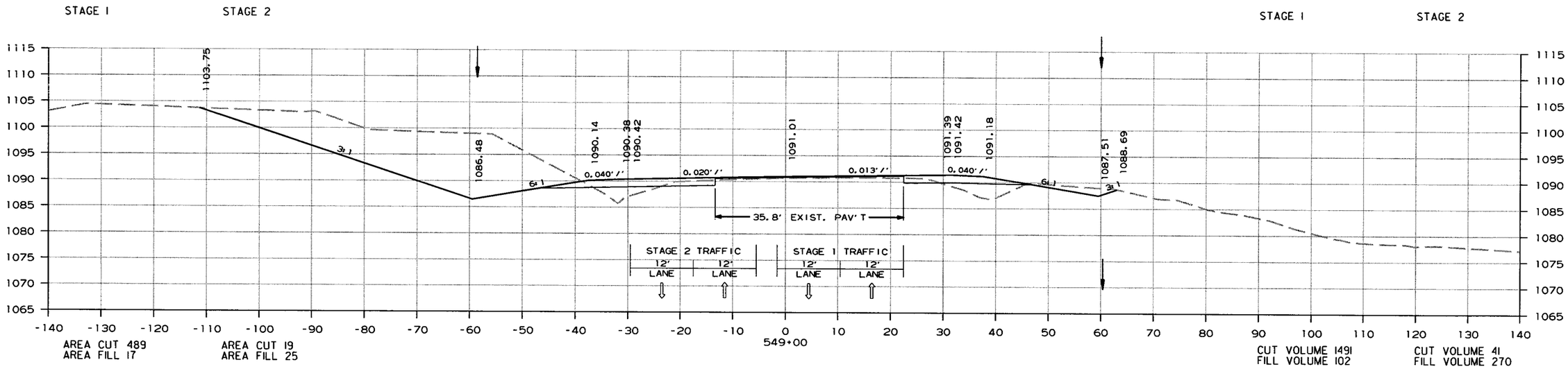
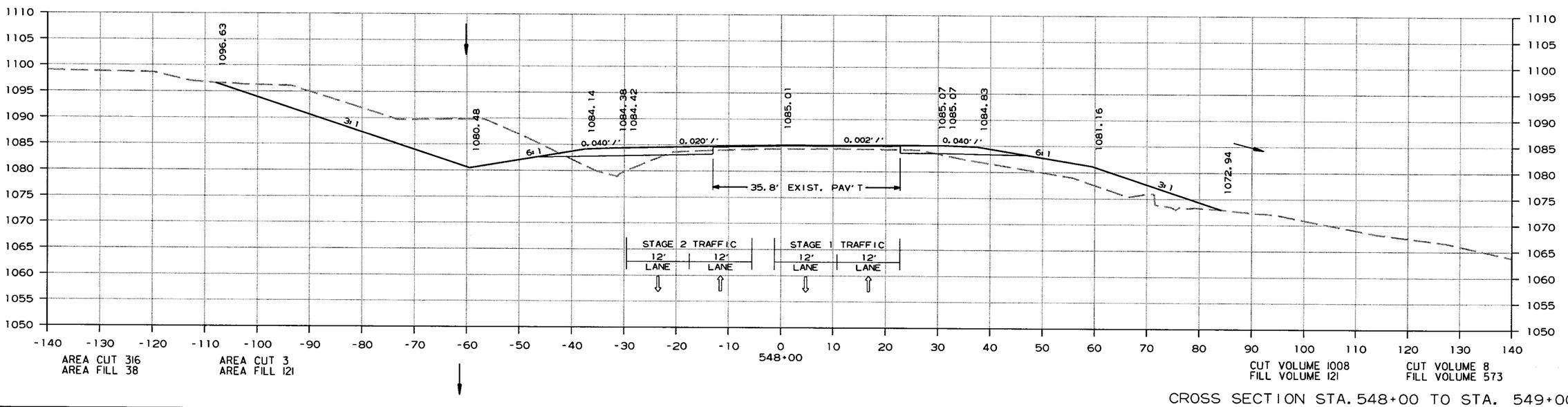
				JOB NO.		080423	245	517

(2) CROSS SECTIONS





CROSS SECTION STA. 548+00 TO STA. 549+00

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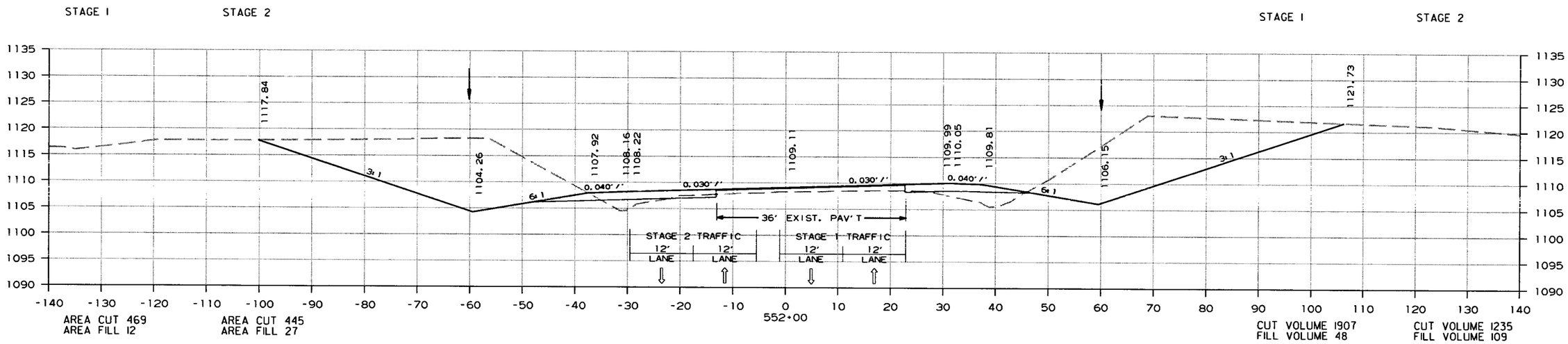
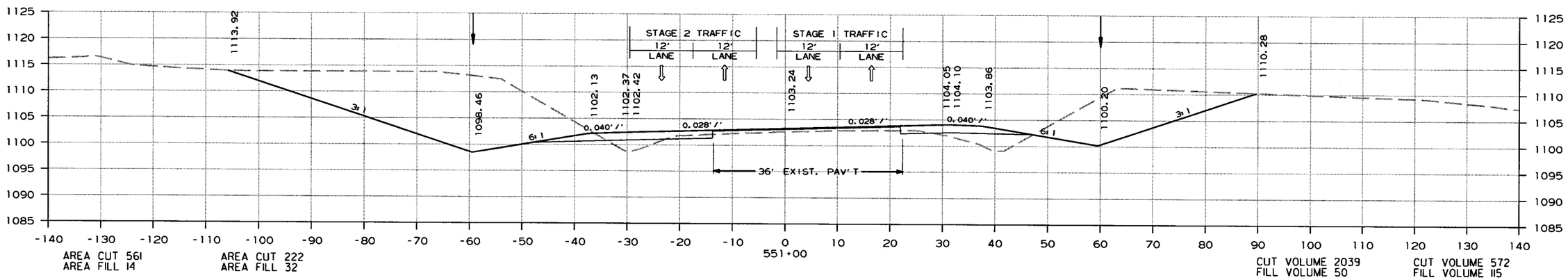
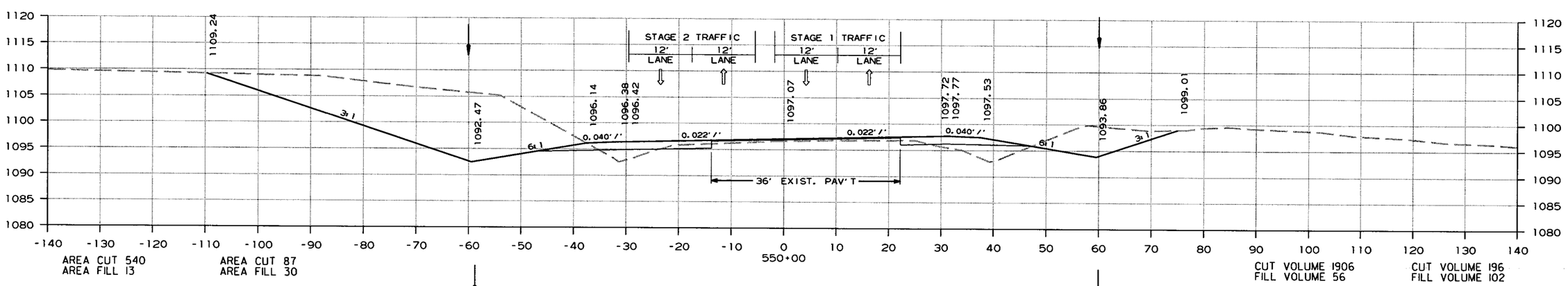
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	246	517

(2) CROSS SECTIONS







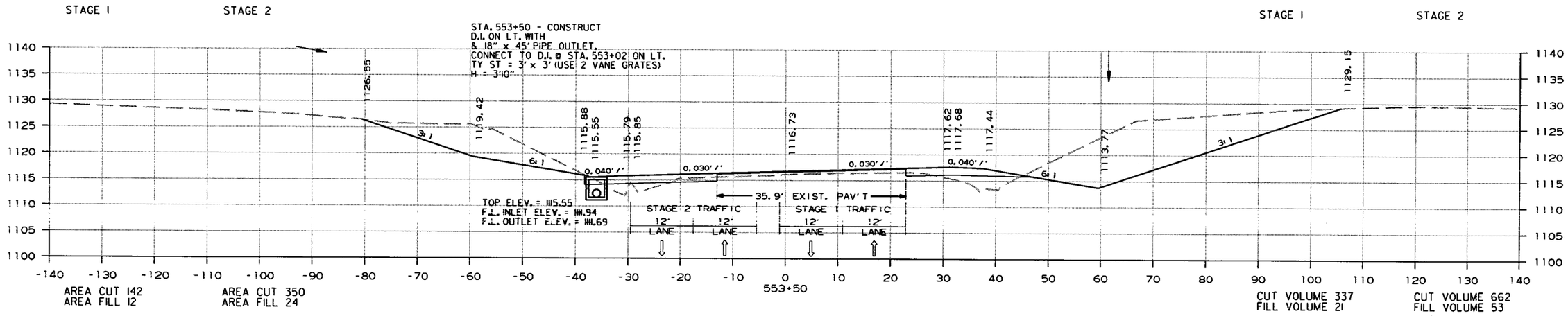
CROSS SECTION STA. 550+00 TO STA. 552+00

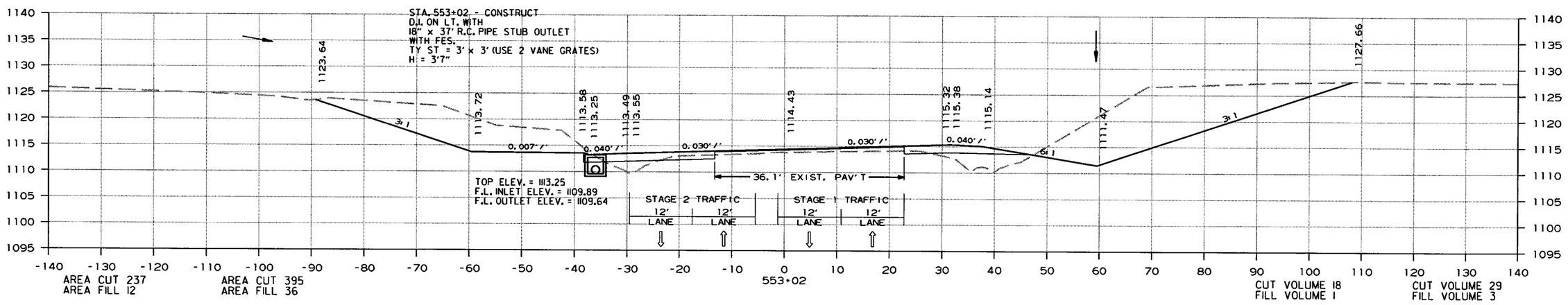
6/15/2015

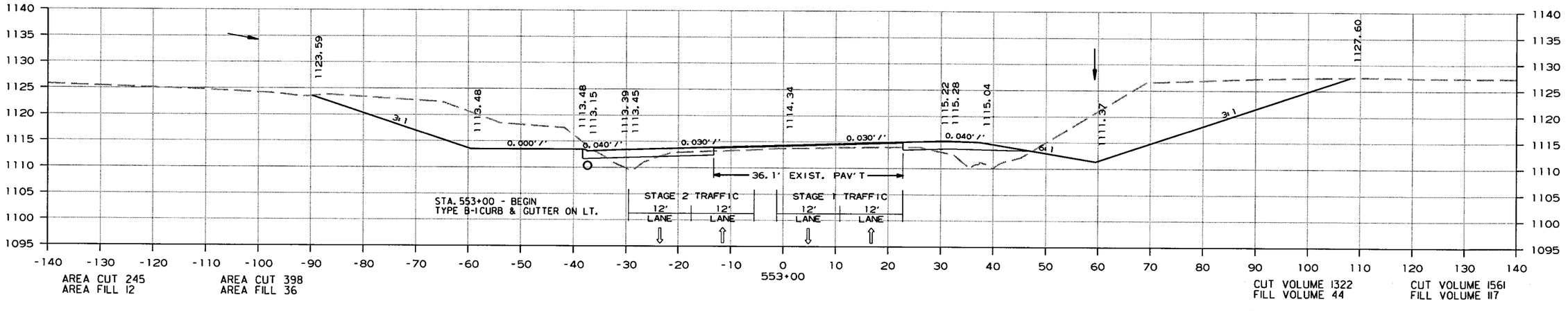
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	247	517

(2) CROSS SECTIONS







CROSS SECTION STA. 553+00 TO STA. 553+50

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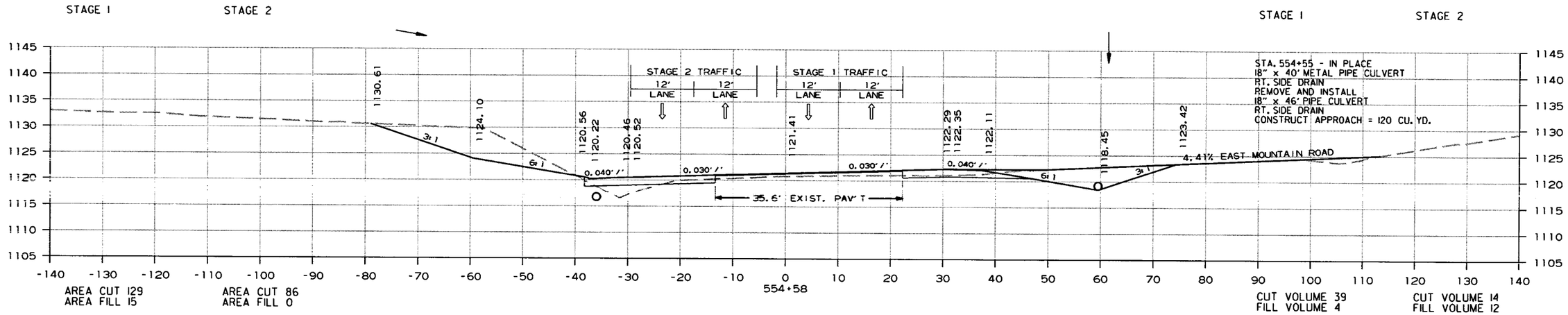
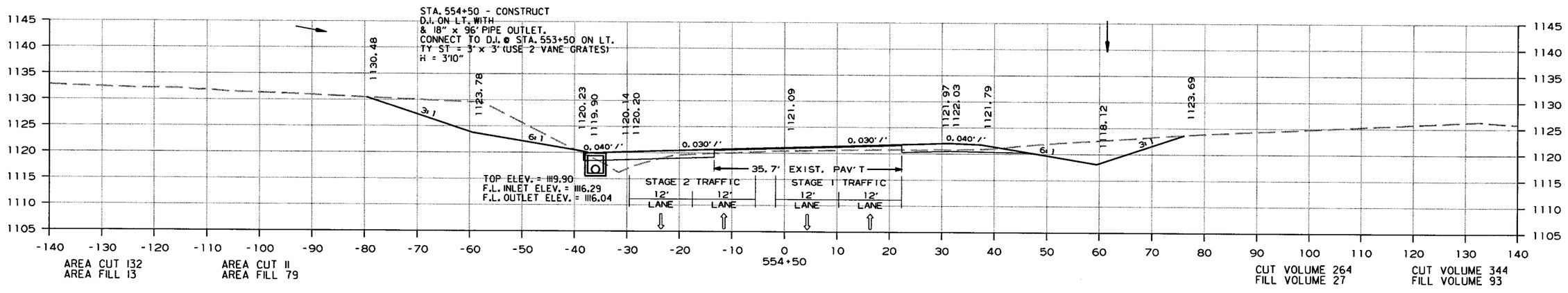
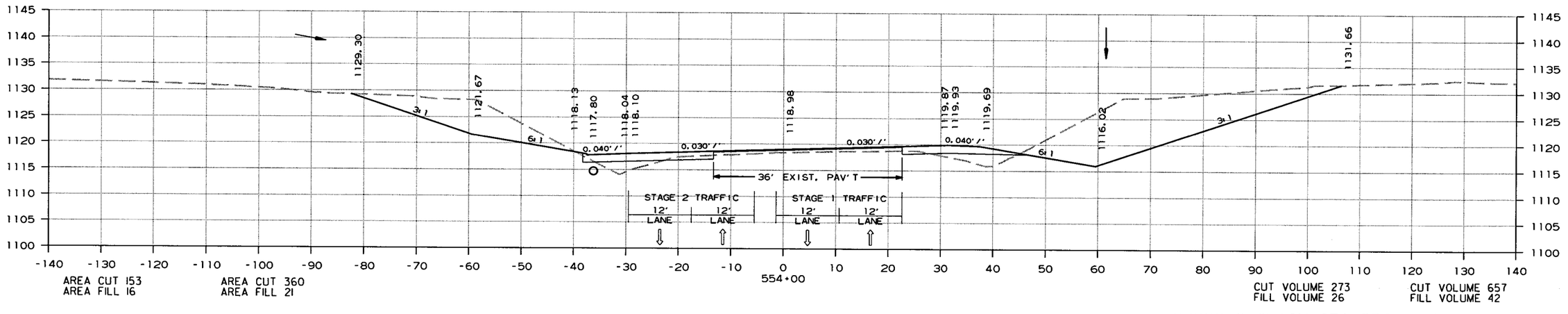
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	248	517

(2) CROSS SECTIONS







CROSS SECTION STA. 554+00 TO STA. 554+58

6/15/2015

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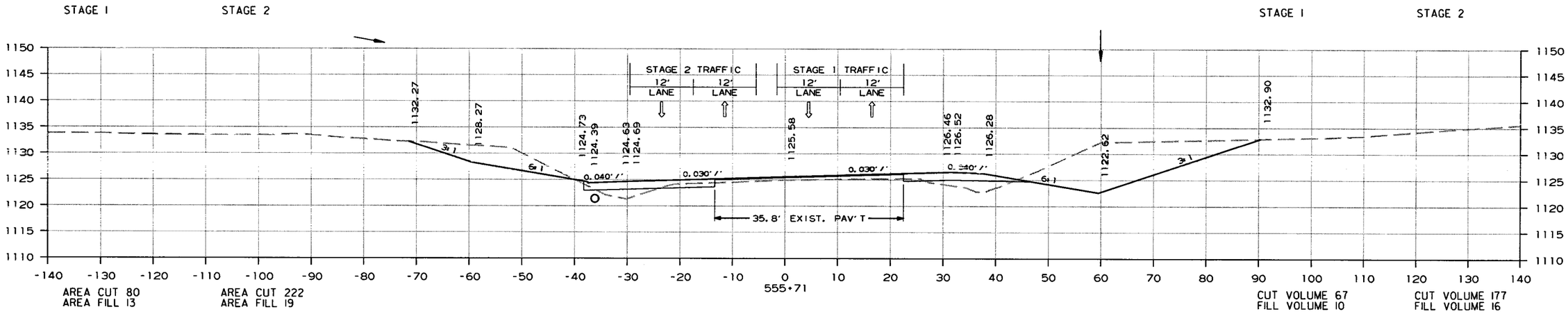
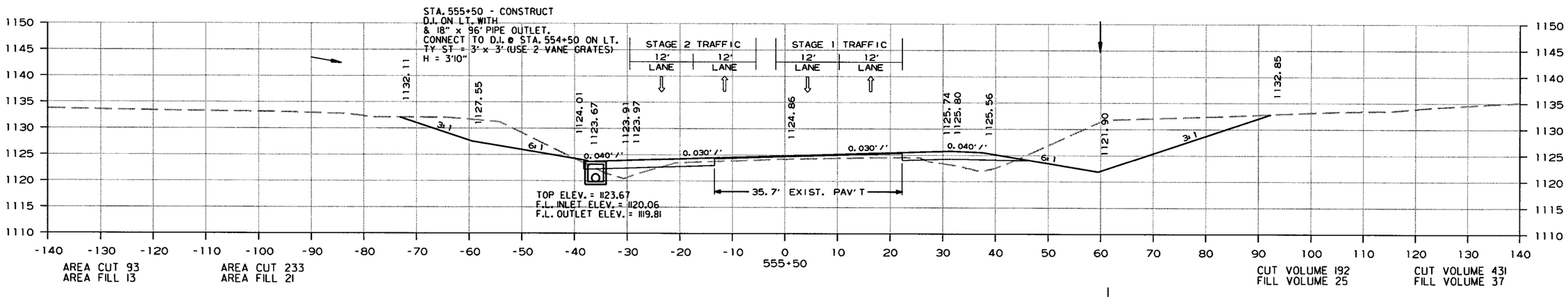
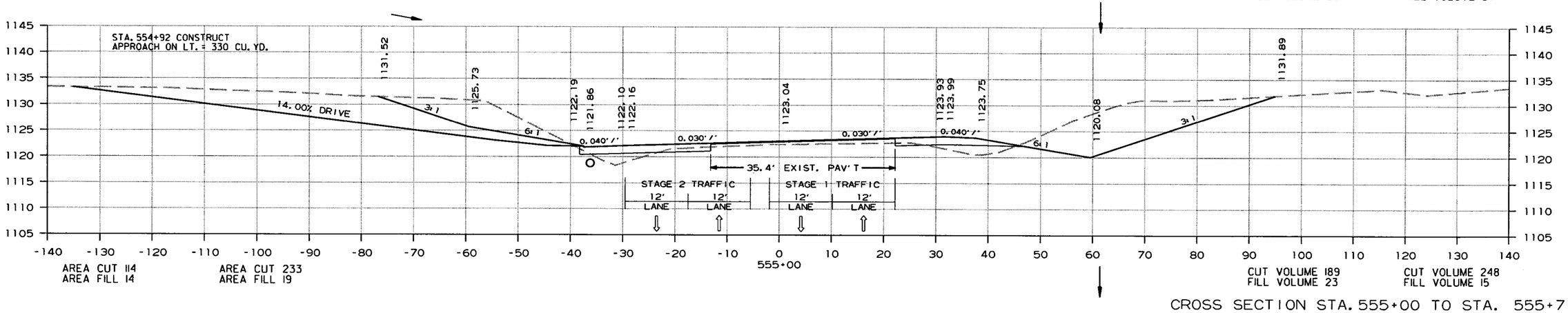
(2) CROSS SECTIONS







CROSS SECTION STA. 555+00 TO STA. 555+71

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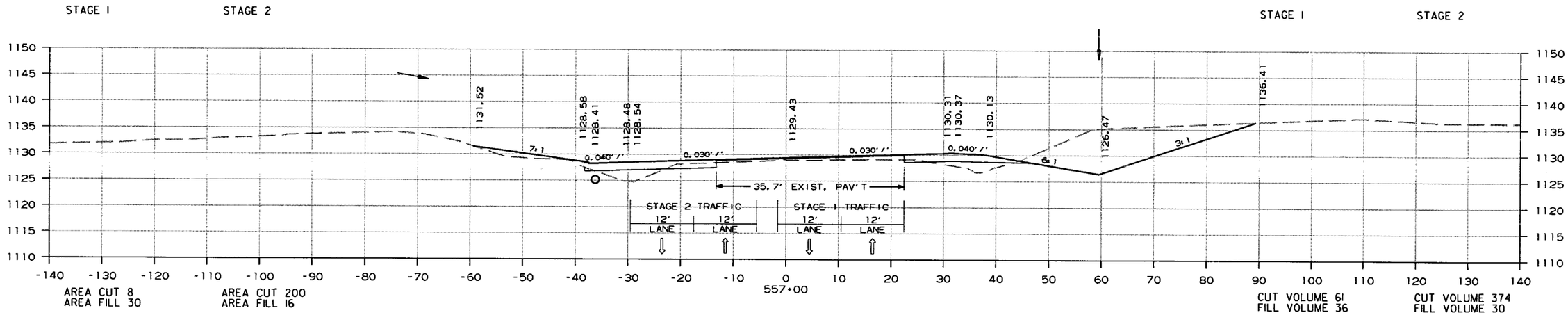
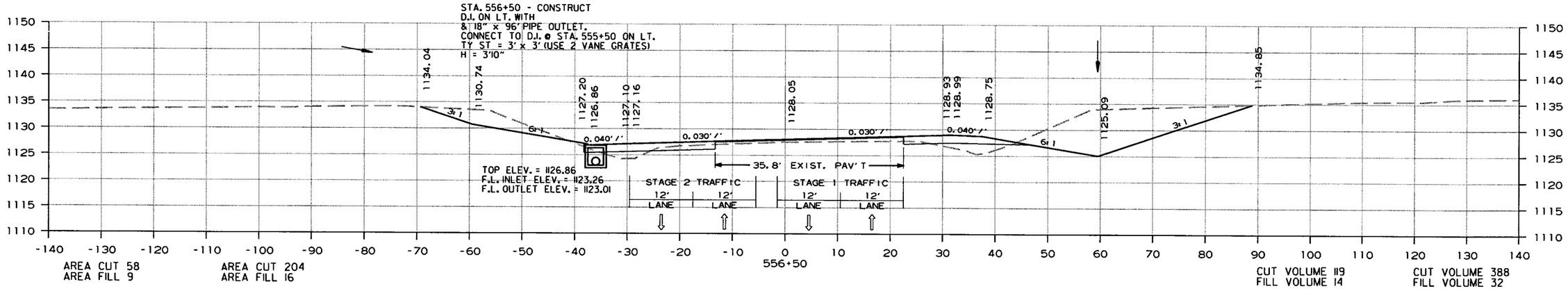
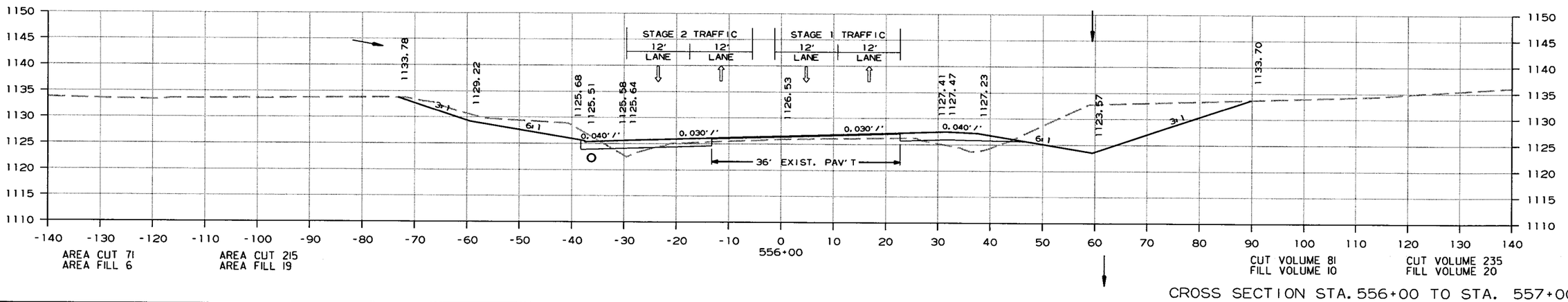
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	250	517

(2) CROSS SECTIONS







CROSS SECTION STA. 556+00 TO STA. 557+00

6/15/2015

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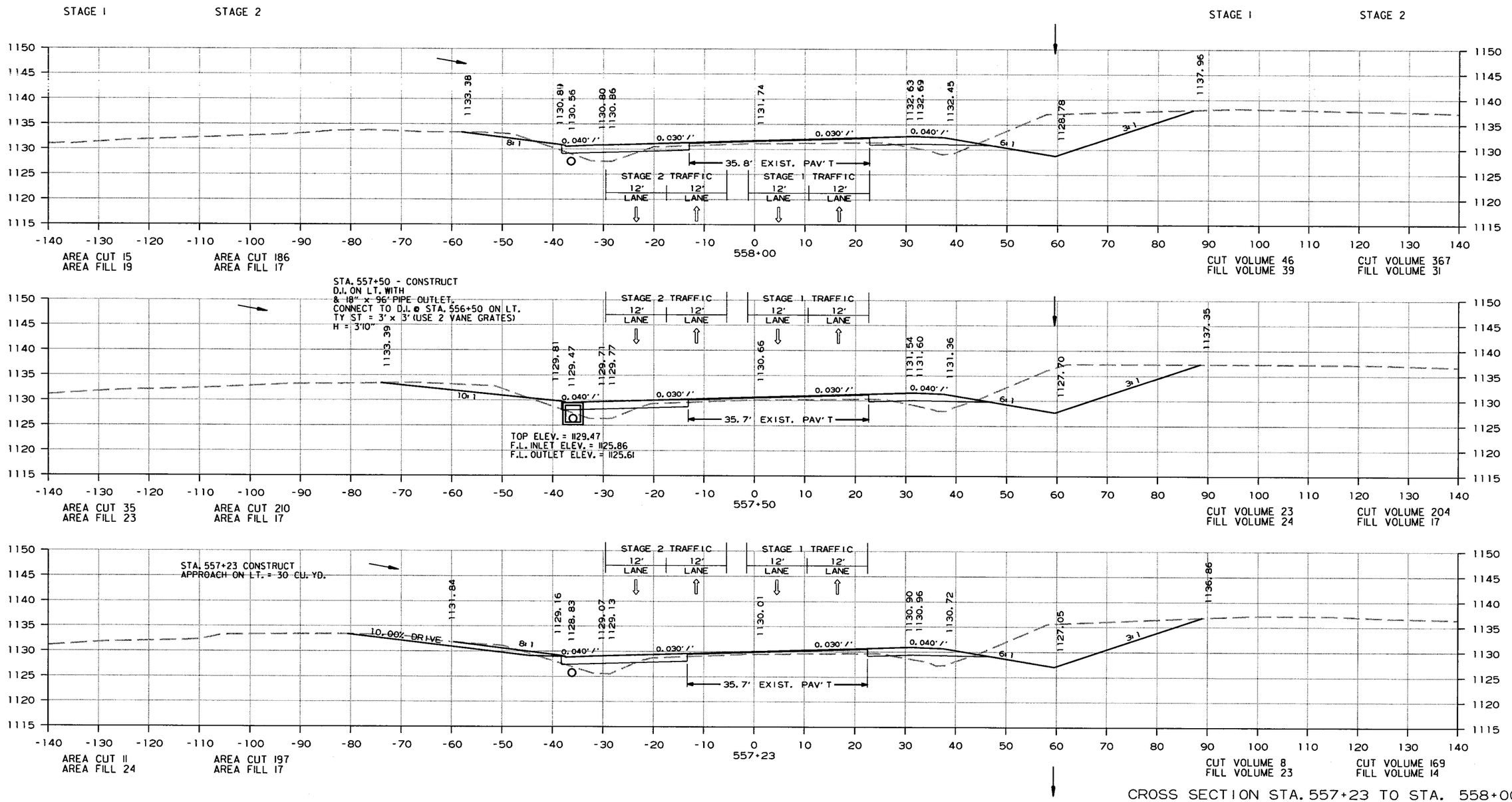
(2) CROSS SECTIONS



CROSS SECTION STA. 557+23 TO STA. 558+00

6/15/2015

R080423.DGN

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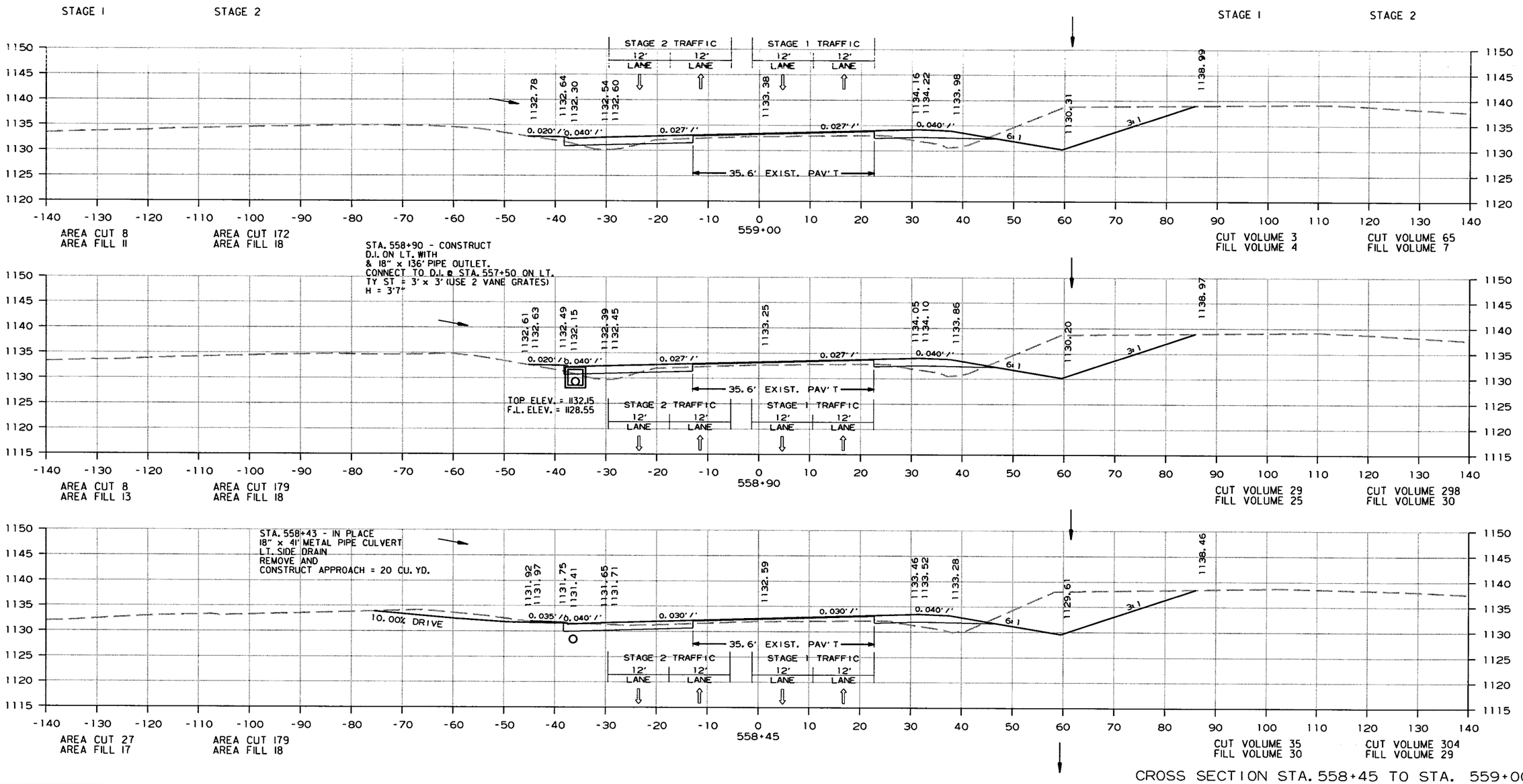
(2) CROSS SECTIONS



CROSS SECTION STA. 558+45 TO STA. 559+00

6/15/2015

R080423.DGN

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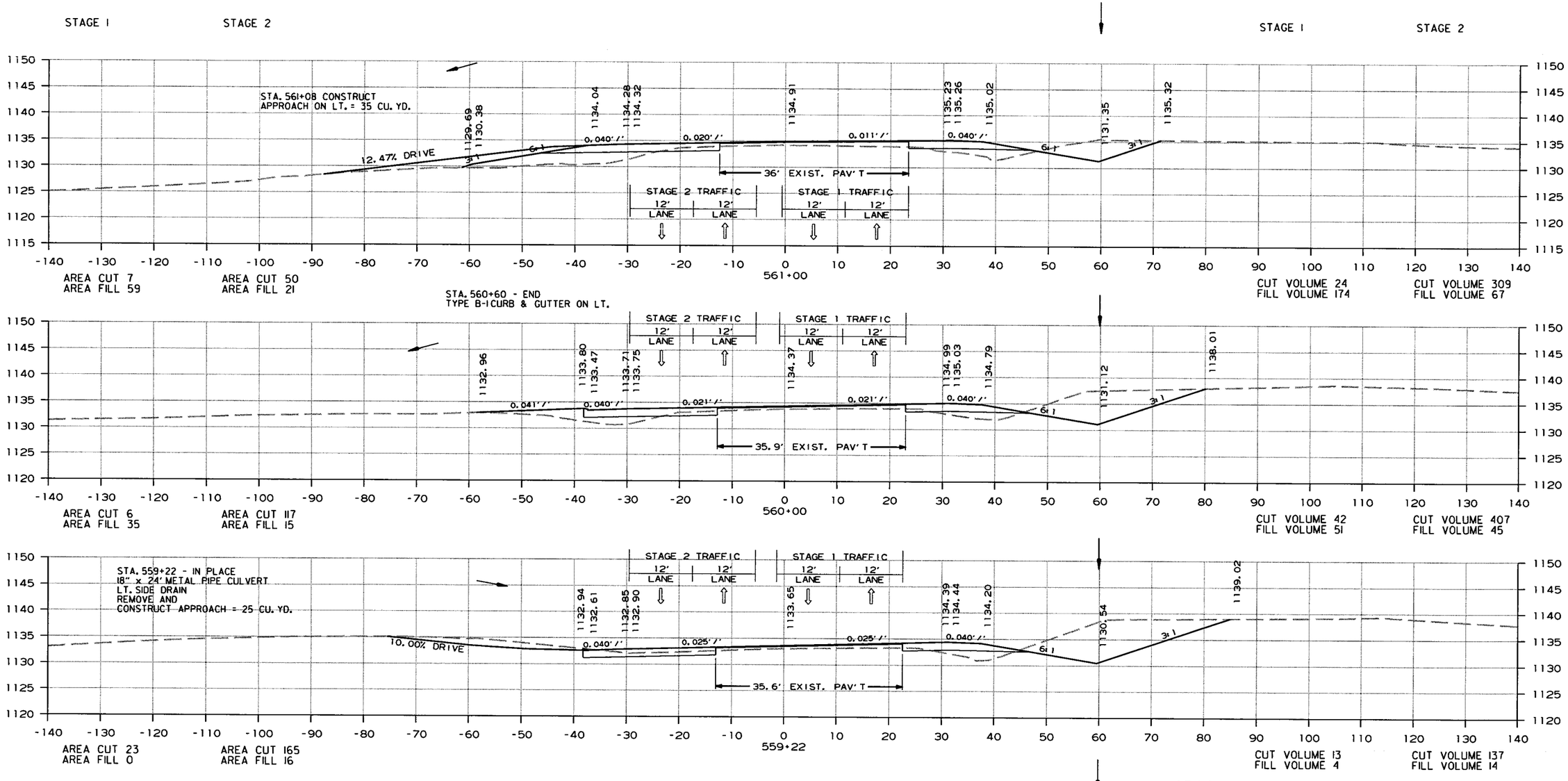
(2) CROSS SECTIONS



CROSS SECTION STA. 559+22 TO STA. 561+00

6/15/2015

R080423.DGN

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				6	ARK.			
				JOB NO.		080423	254	517

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 1 STAGE 2

STA. 563+56 - INSTALL
18" x 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YD.

1.57% DRIVE

1133.35 1129.76 1133.43 1133.67 1133.71 1134.30 1133.79 1133.75 1133.51 1129.84 1134.67

0.040'/' 0.020'/' 0.017'/' 0.040'/'

36.1' EXIST. PAV'T

STAGE 2 TRAFFIC: 12' LANE, 12' LANE
STAGE 1 TRAFFIC: 12' LANE, 12' LANE

563+54

AREA CUT 86
AREA FILL 9

AREA CUT 81
AREA FILL 11

CUT VOLUME 182
FILL VOLUME 14

CUT VOLUME 146
FILL VOLUME 26

1133.39 1129.98 1133.64 1133.88 1133.92 1134.51 1134.18 1134.16 1133.92 1130.25 1134.31

0.040'/' 0.020'/' 0.011'/' 0.040'/'

36.1' EXIST. PAV'T

STAGE 2 TRAFFIC: 12' LANE, 12' LANE
STAGE 1 TRAFFIC: 12' LANE, 12' LANE

563+00

AREA CUT 96
AREA FILL 5

AREA CUT 65
AREA FILL 15

CUT VOLUME 179
FILL VOLUME 6

CUT VOLUME 148
FILL VOLUME 19

STA. 562+28 - INSTALL
18" x 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YD.

STAGE 2 TRAFFIC: 12' LANE, 12' LANE
STAGE 1 TRAFFIC: 12' LANE, 12' LANE

1.96% DRIVE

1133.11 1130.24 1133.91 1134.15 1134.19 1134.78 1134.67 1134.66 1134.42 1130.75 1134.01

0.040'/' 0.020'/' 0.004'/' 0.040'/'

0.44% DRIVE

STA. 562+40 - IN PLACE
18" x 41' METAL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 54' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YD.

36.1' EXIST. PAV'T

562+33

AREA CUT 48
AREA FILL 0

AREA CUT 54
AREA FILL 0

CUT VOLUME 43
FILL VOLUME 2

CUT VOLUME 56
FILL VOLUME 14

STAGE 2 TRAFFIC: 12' LANE, 12' LANE
STAGE 1 TRAFFIC: 12' LANE, 12' LANE

1132.31 1130.37 1134.03 1134.27 1134.31 1134.90 1134.90 1134.90 1134.66 1130.99 1133.98

0.040'/' 0.020'/' 0.000'/' 0.040'/'

36.1' EXIST. PAV'T

562+00

AREA CUT 23
AREA FILL 4

AREA CUT 38
AREA FILL 23

CUT VOLUME 56
FILL VOLUME 117

CUT VOLUME 163
FILL VOLUME 81

CROSS SECTION STA. 562+00 TO STA. 563+54

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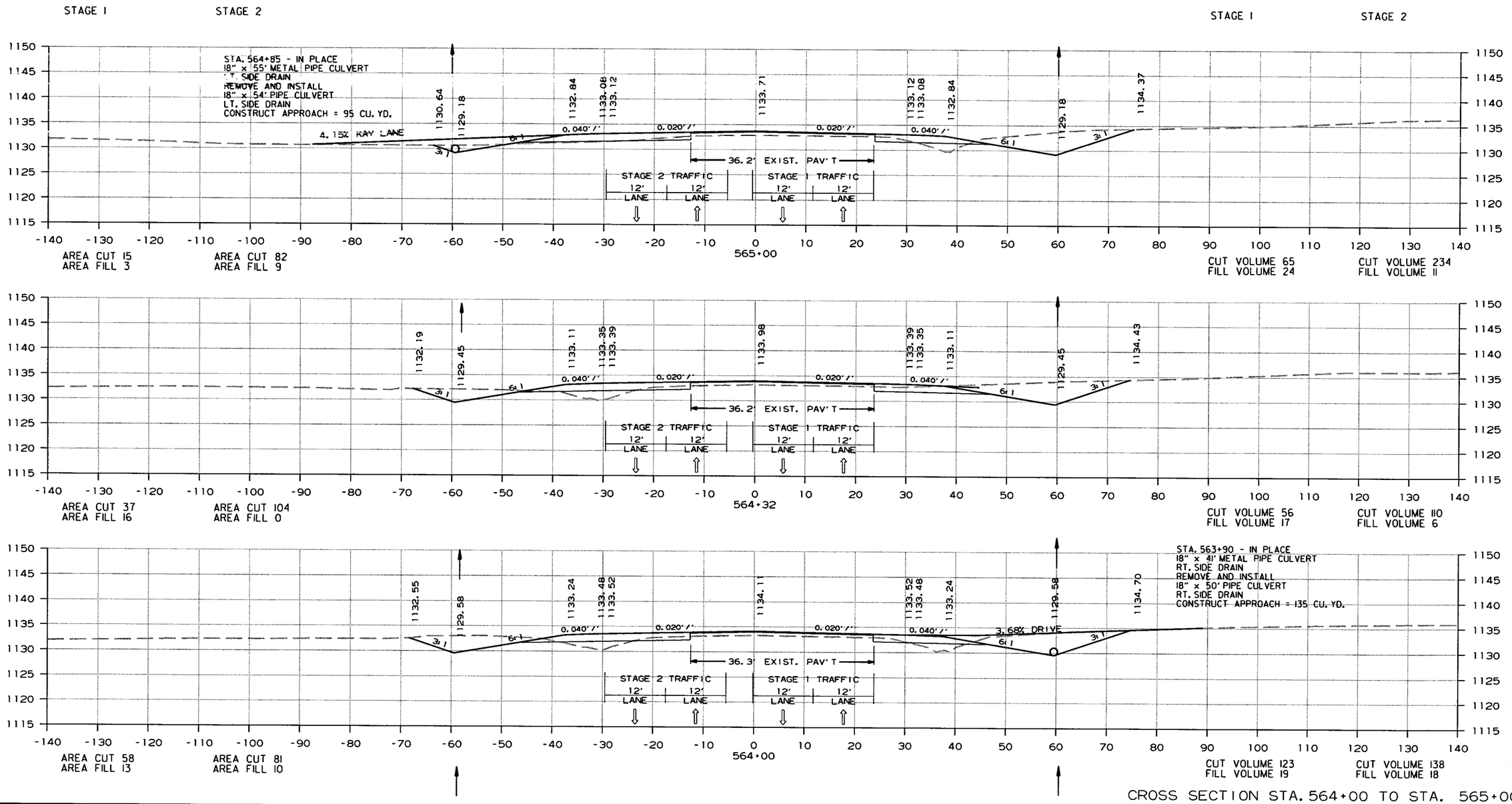
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	255	517

(2) CROSS SECTIONS



CROSS SECTION STA. 564+00 TO STA. 565+00

6/15/2015

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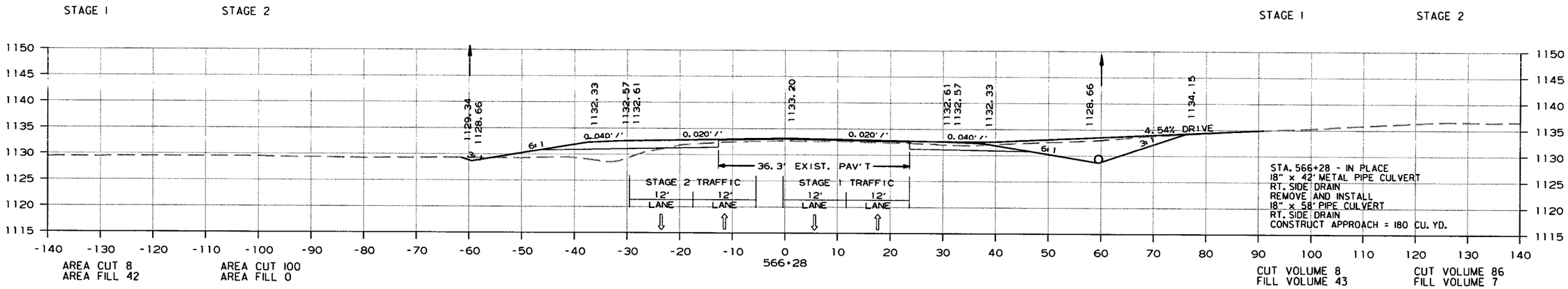
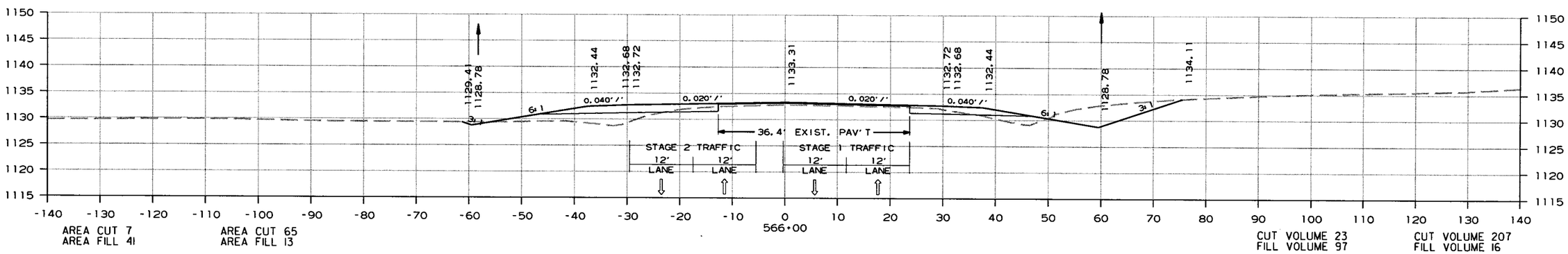
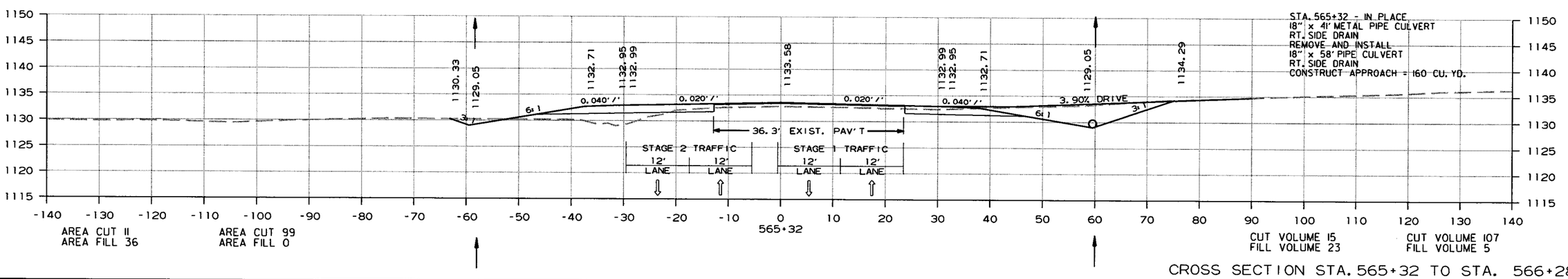
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	256	517

(2) CROSS SECTIONS







CROSS SECTION STA. 565+32 TO STA. 566+28

6/15/2015

R080423.DGN

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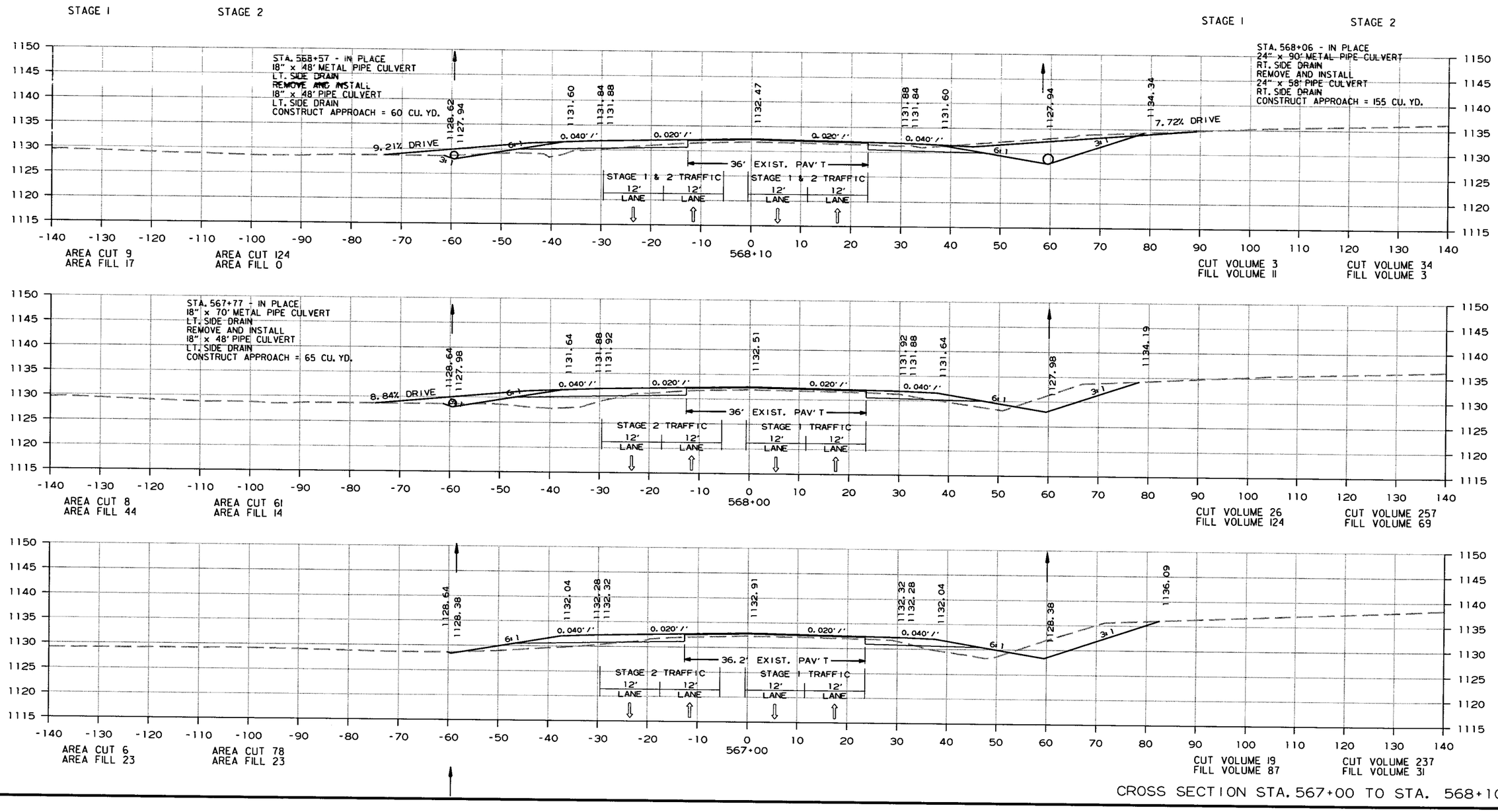
(2) CROSS SECTIONS



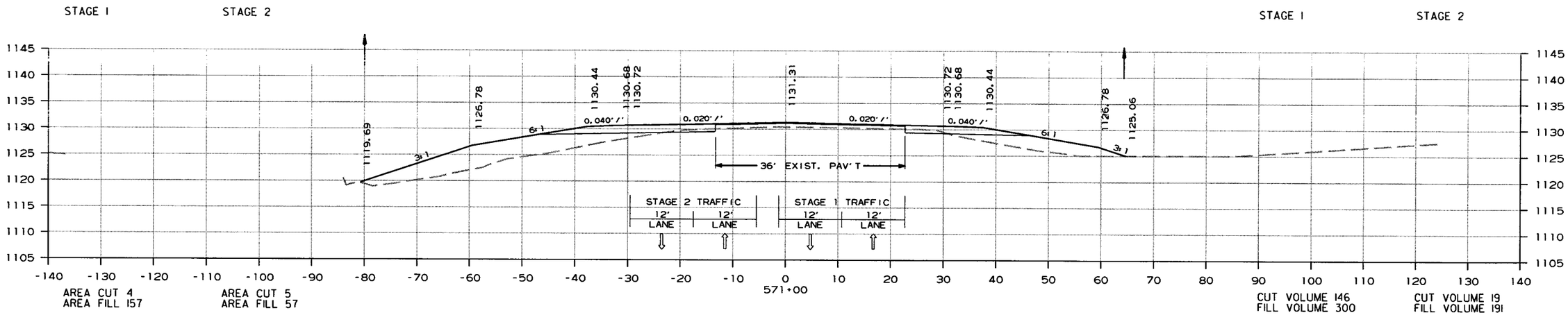
CROSS SECTION STA. 567+00 TO STA. 568+10

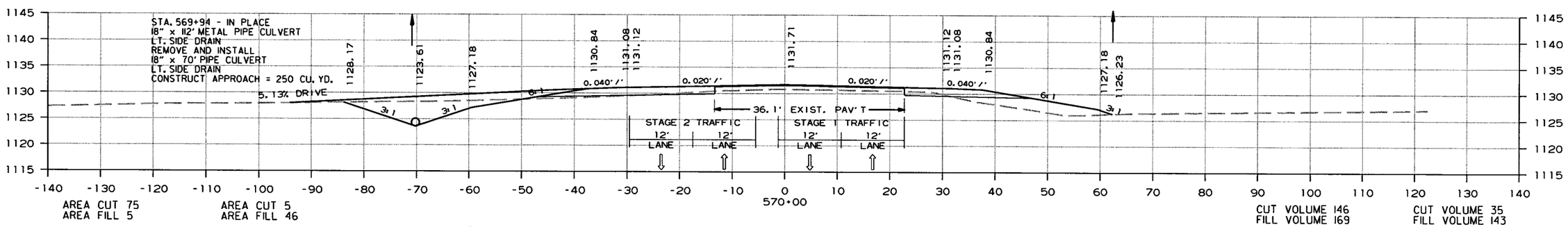
6/15/2015

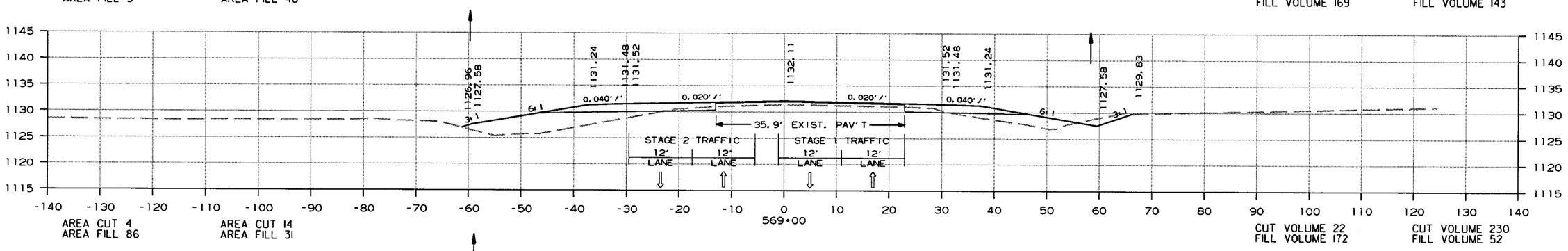
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	258	517

(2) CROSS SECTIONS







CROSS SECTION STA. 569+00 TO STA. 571+00

6/15/2015

R080423.DGN

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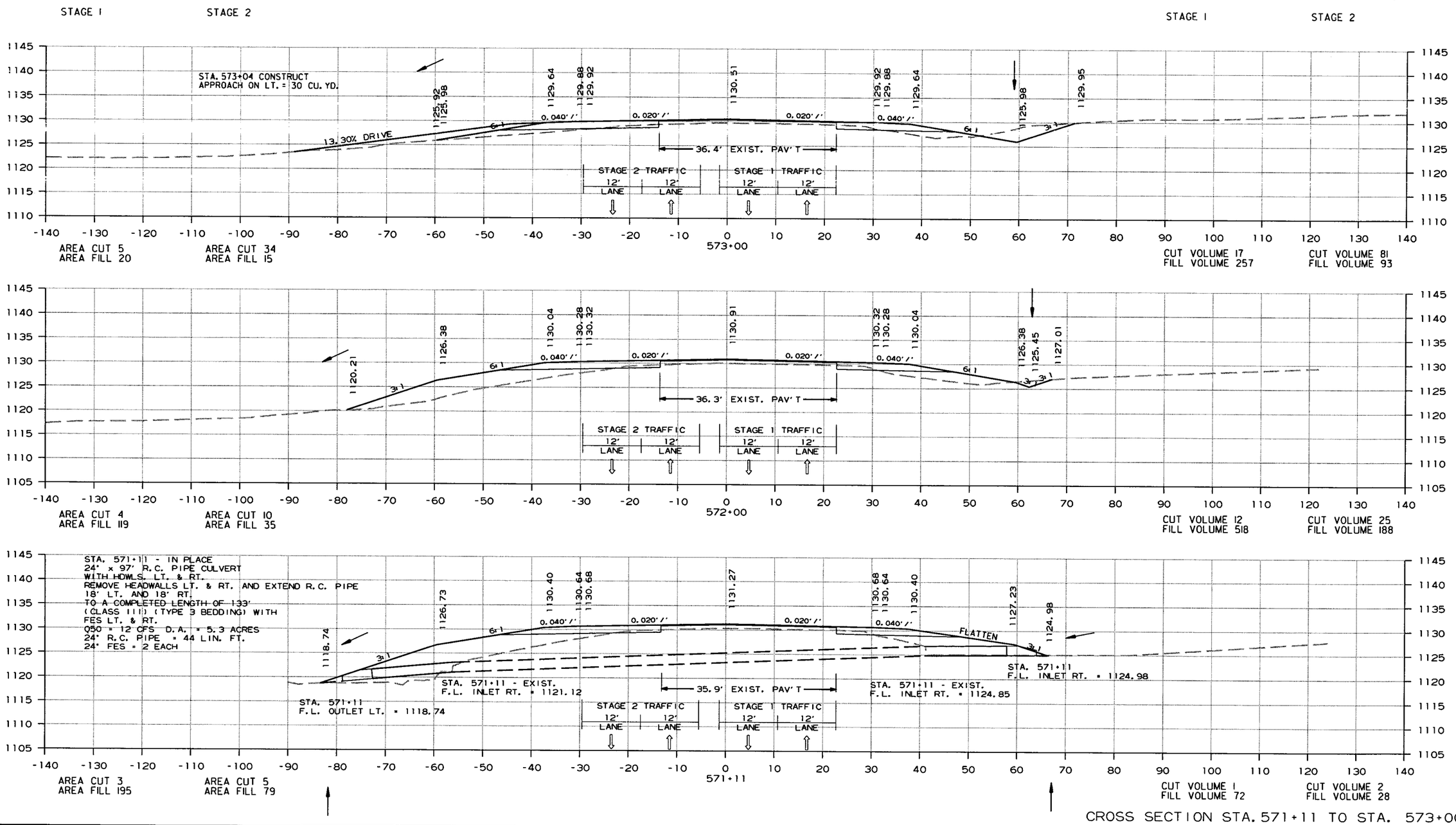
(2) CROSS SECTIONS



CROSS SECTION STA. 571+11 TO STA. 573+00

6/15/2015

R080423.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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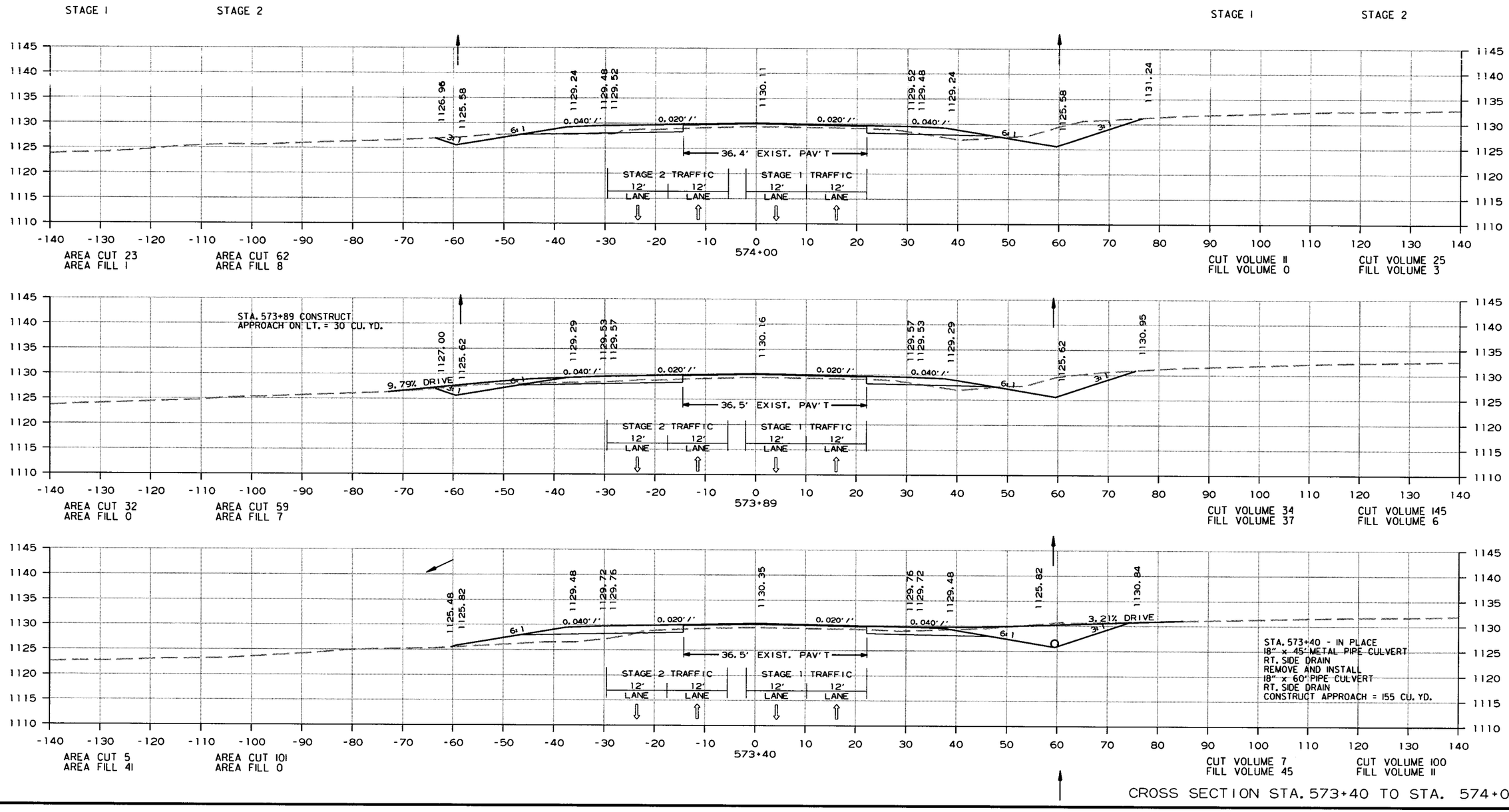
				JOB NO.		080423	260	517

(2) CROSS SECTIONS



CROSS SECTION STA. 573+40 TO STA. 574+00

6/15/2015

R080423.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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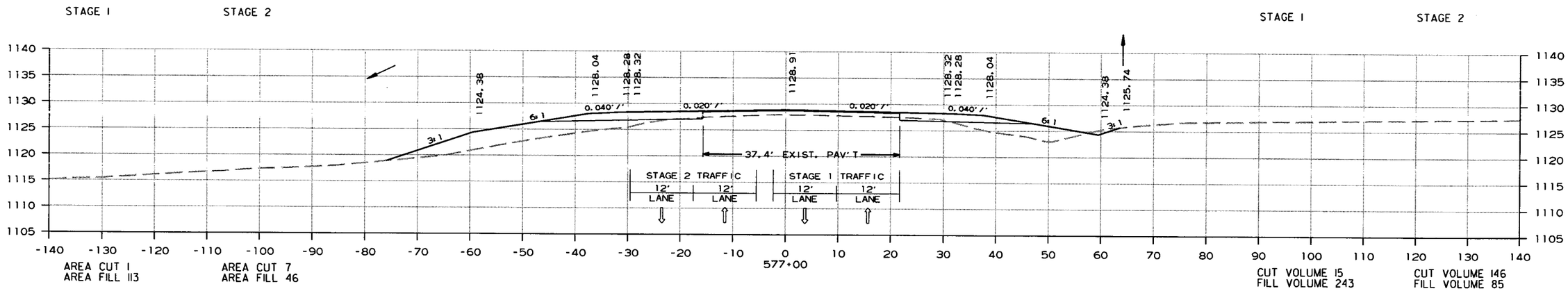
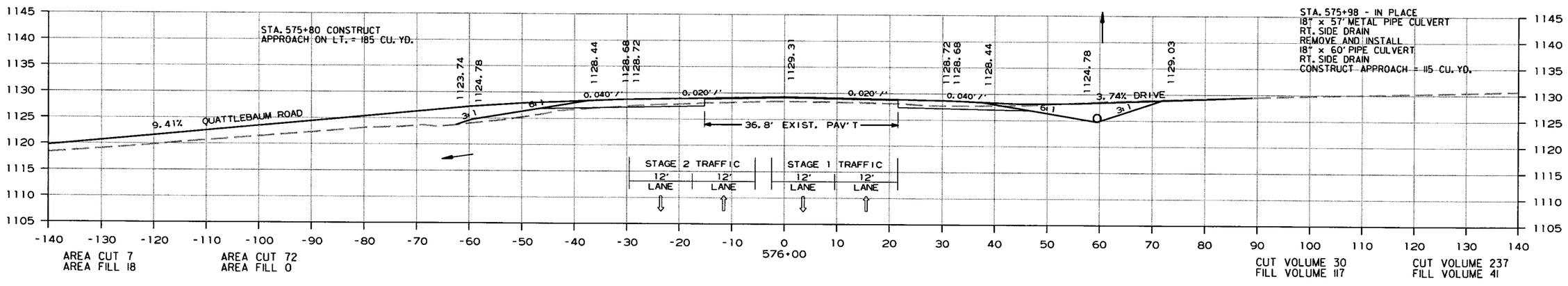
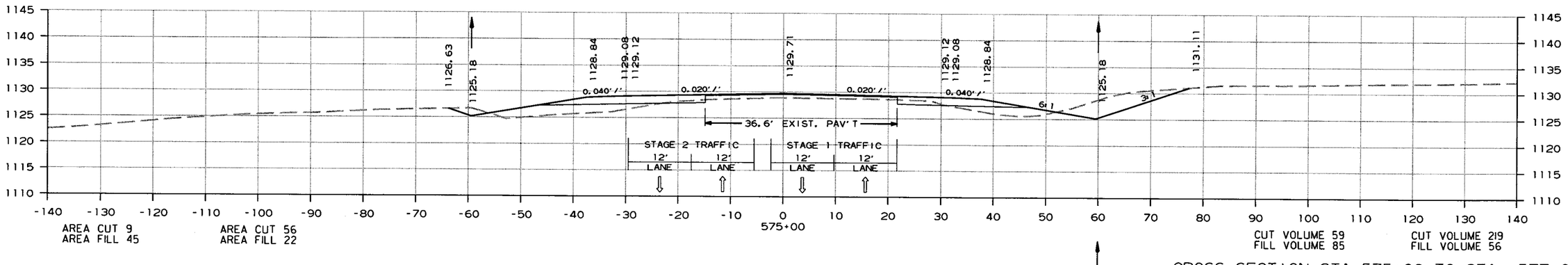
				JOB NO.		080423	261	517

(2) CROSS SECTIONS







CROSS SECTION STA. 575+00 TO STA. 577+00

6/15/2015

R080423.DGN

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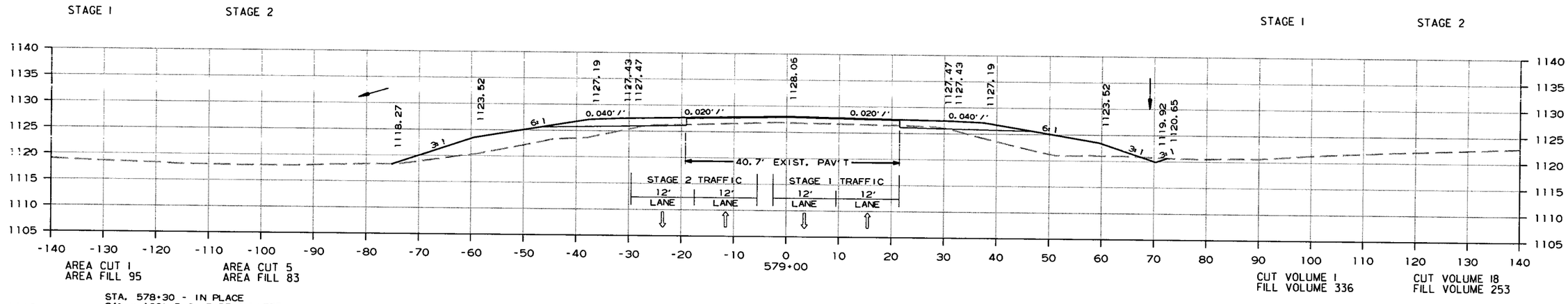
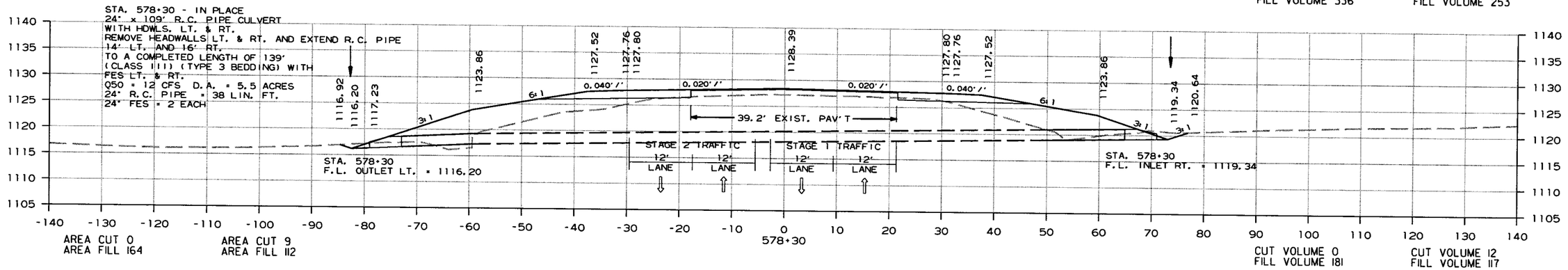
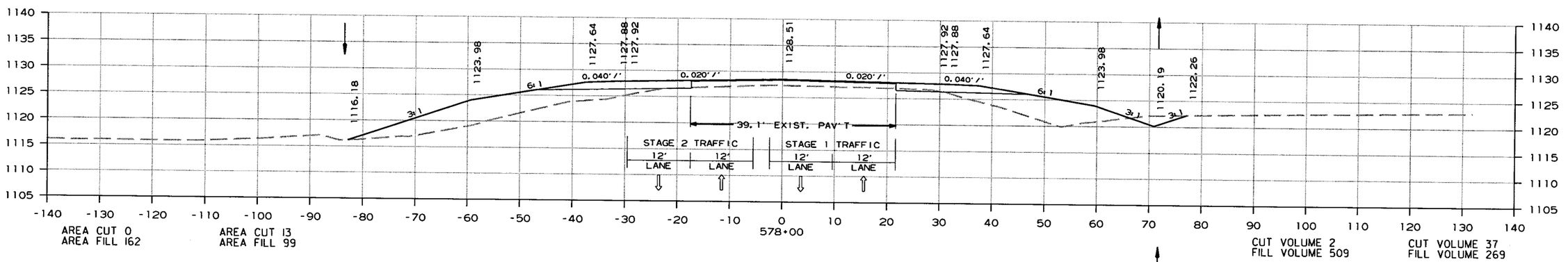
(2) CROSS SECTIONS







CROSS SECTION STA. 578+00 TO STA. 579+00

6/15/2015

R080423.DGN

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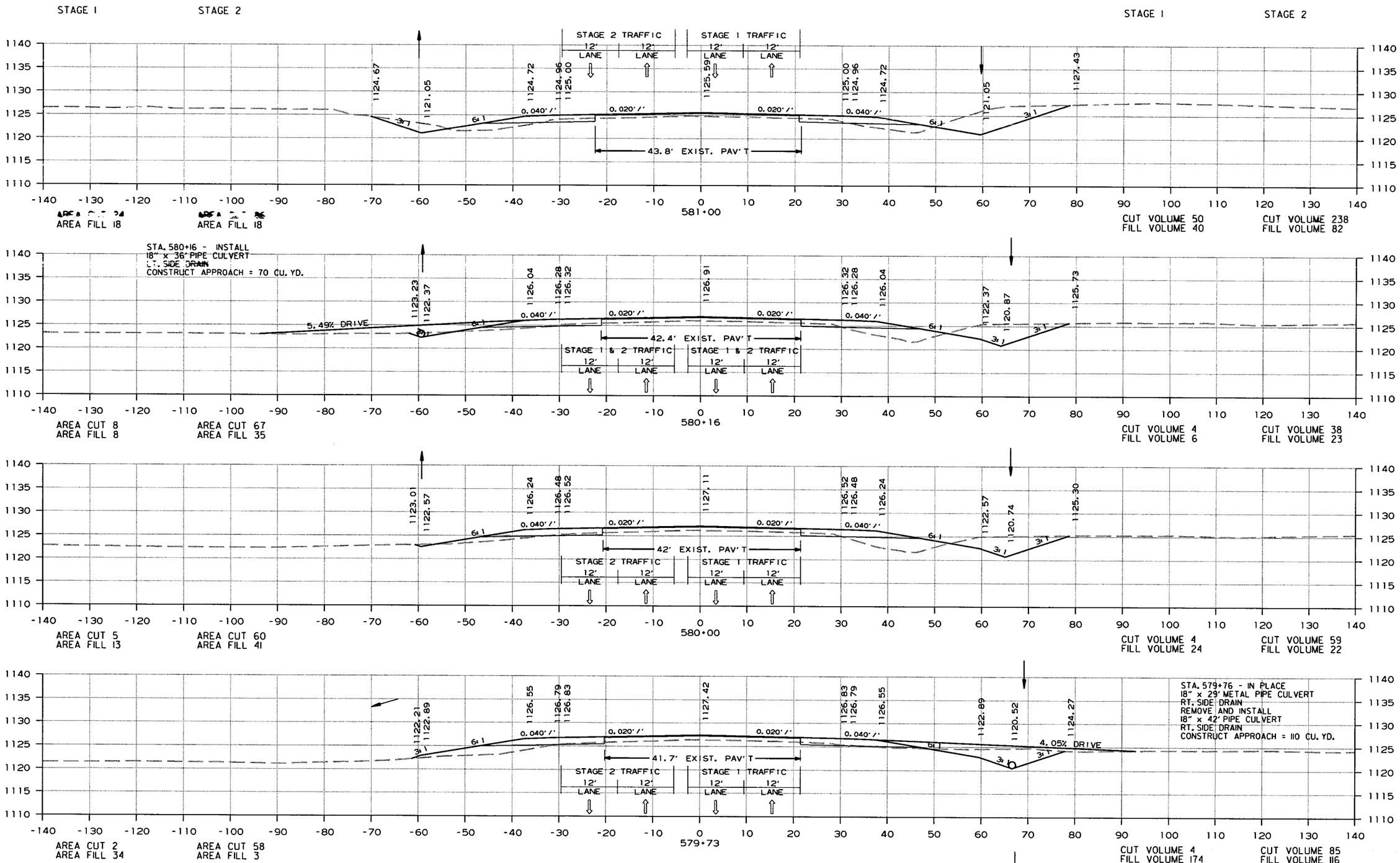
(2) CROSS SECTIONS



CROSS SECTION STA. 579+73 TO STA. 581+00

6/15/2015

R080423.DGN

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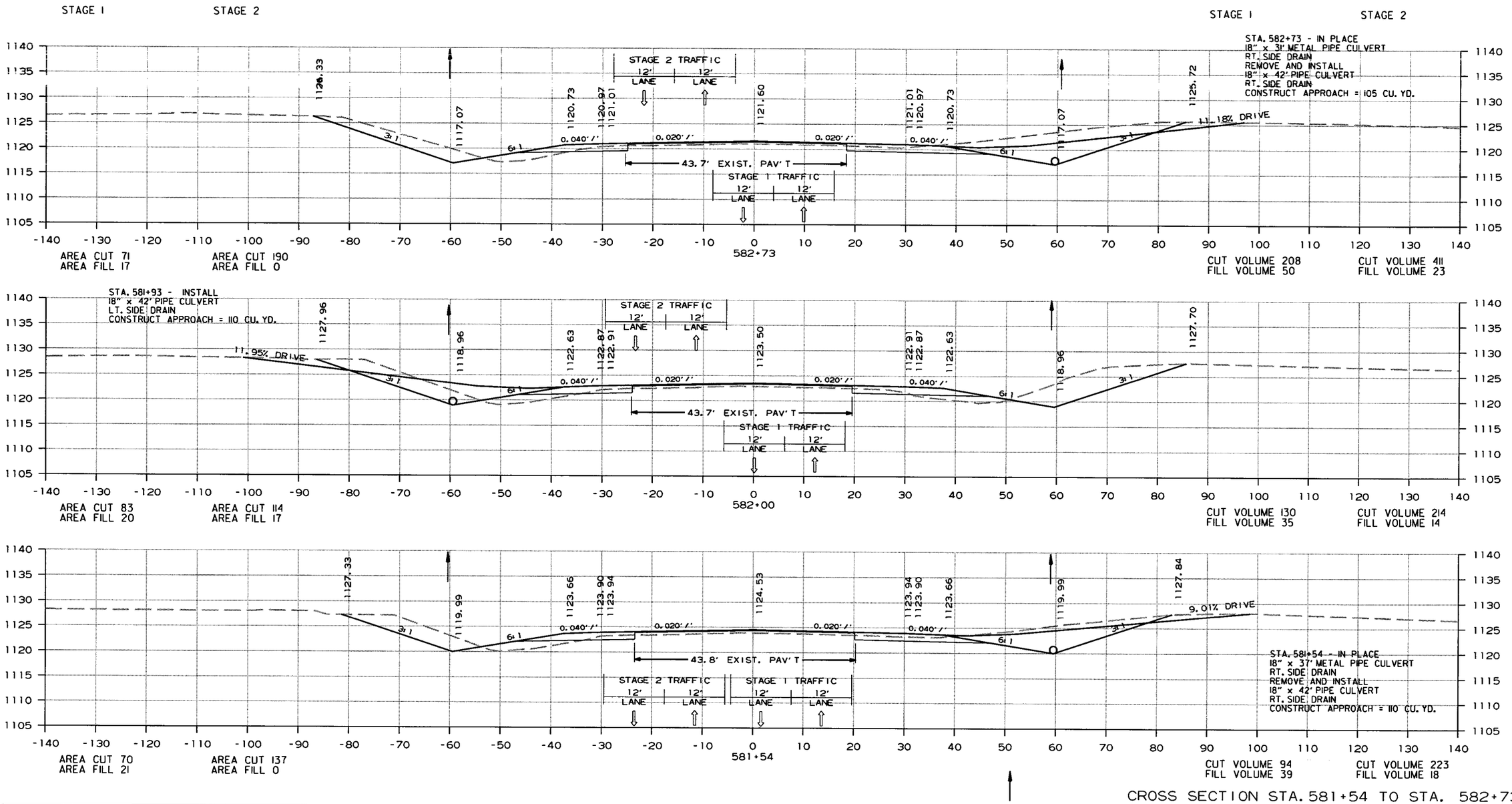
(2) CROSS SECTIONS



CROSS SECTION STA. 581+54 TO STA. 582+73

6/15/2015

R080423.DGN

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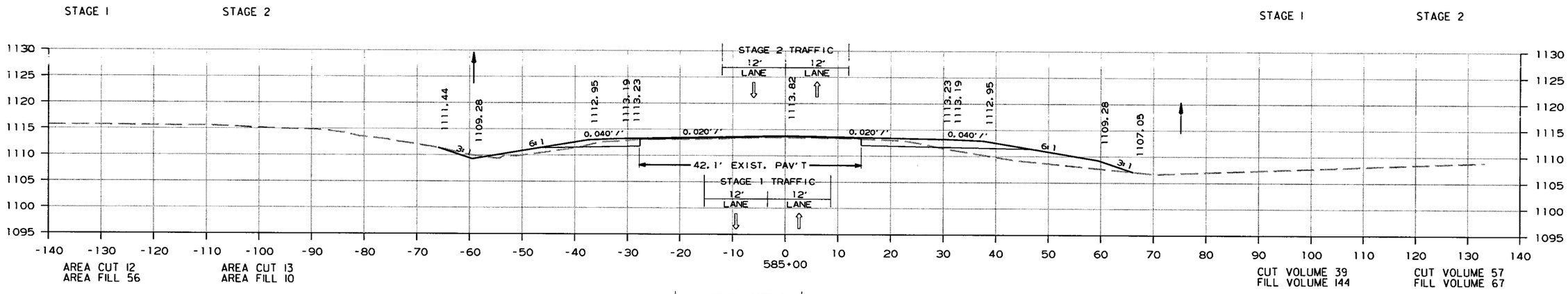
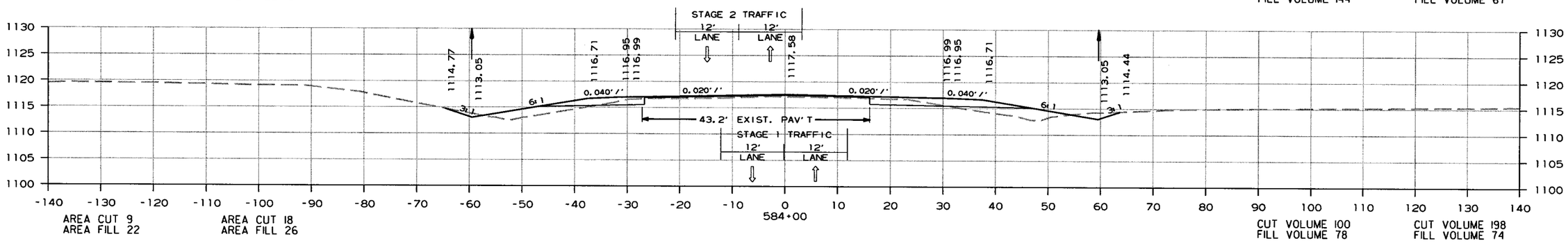
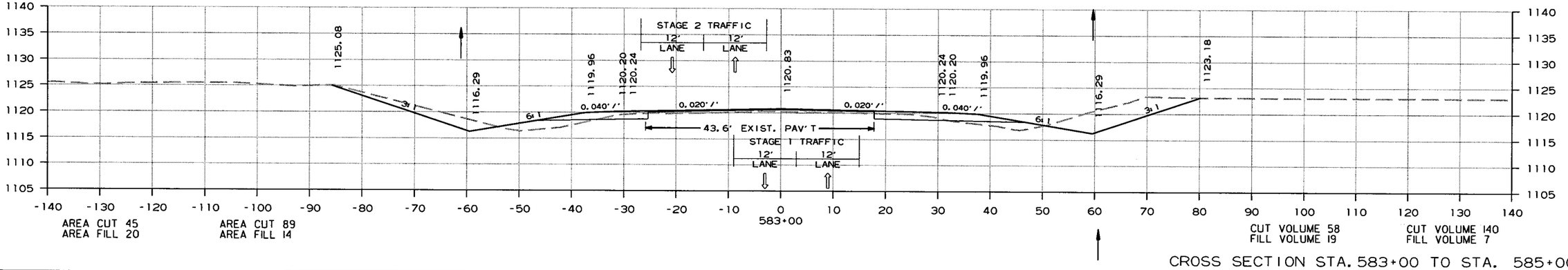
(2) CROSS SECTIONS







CROSS SECTION STA. 583+00 TO STA. 585+00

6/15/2015

R080423.DGN

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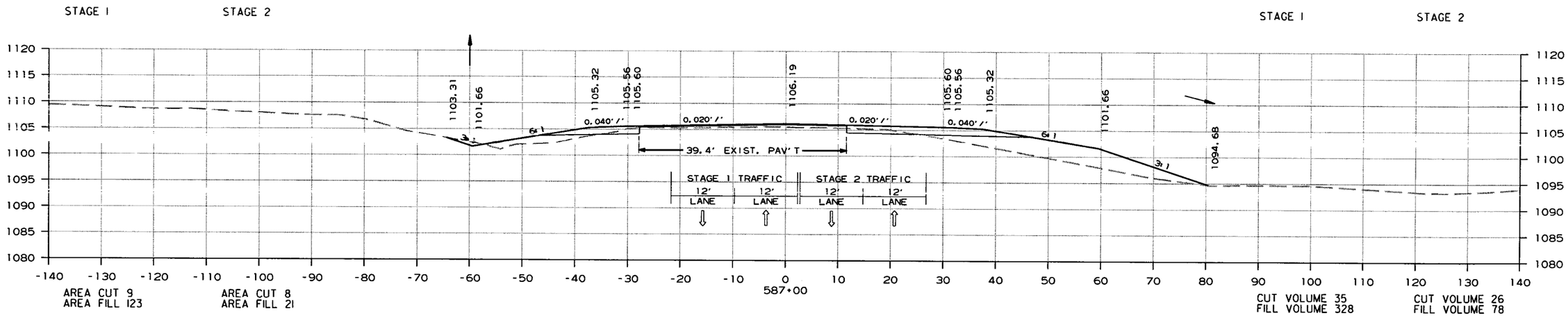
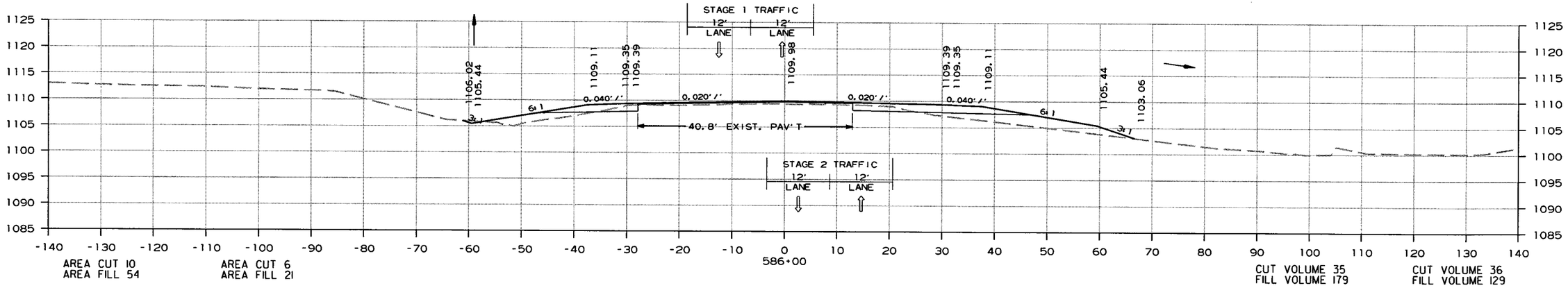
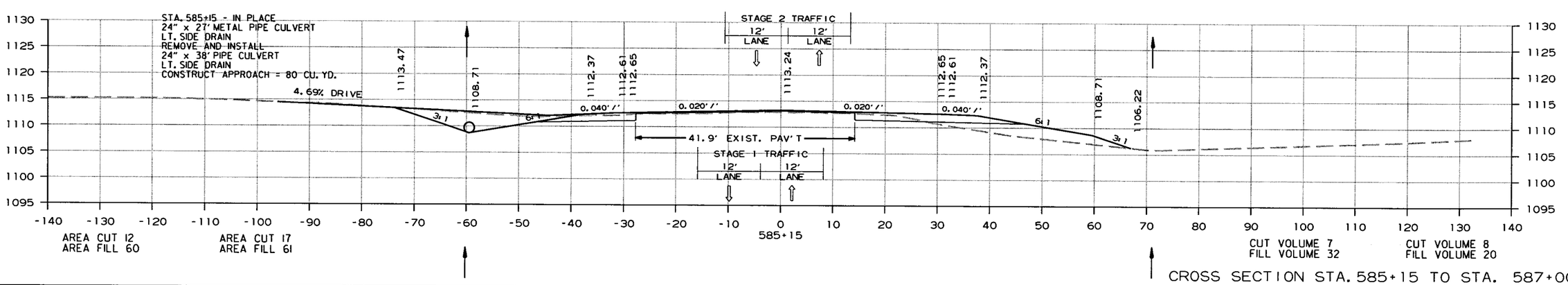
(2) CROSS SECTIONS







CROSS SECTION STA. 585+15 TO STA. 587+00

6/15/2015

R080423.DGN

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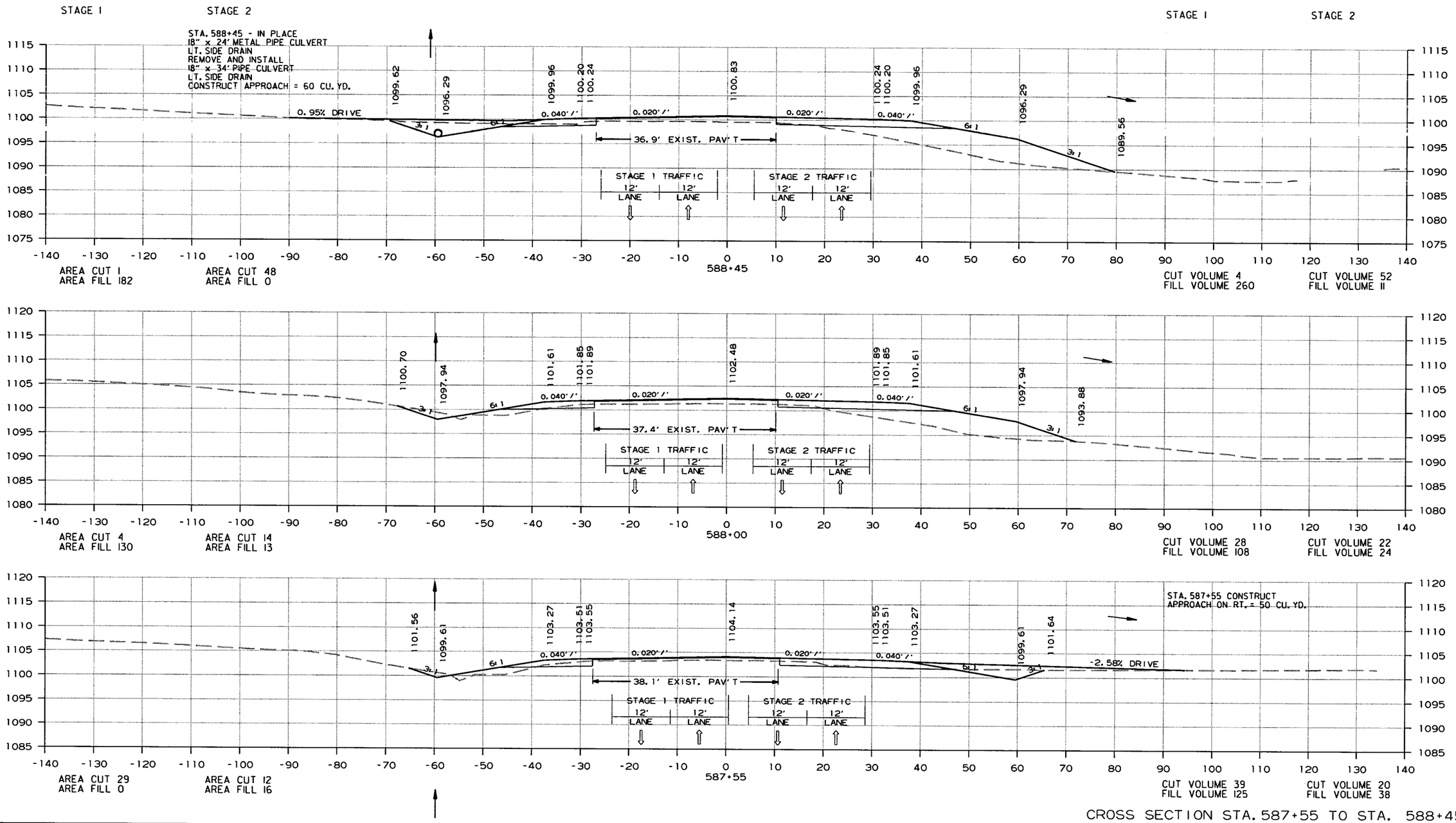
(2) CROSS SECTIONS



CROSS SECTION STA. 587+55 TO STA. 588+45

6/15/2015

R080423.DGN

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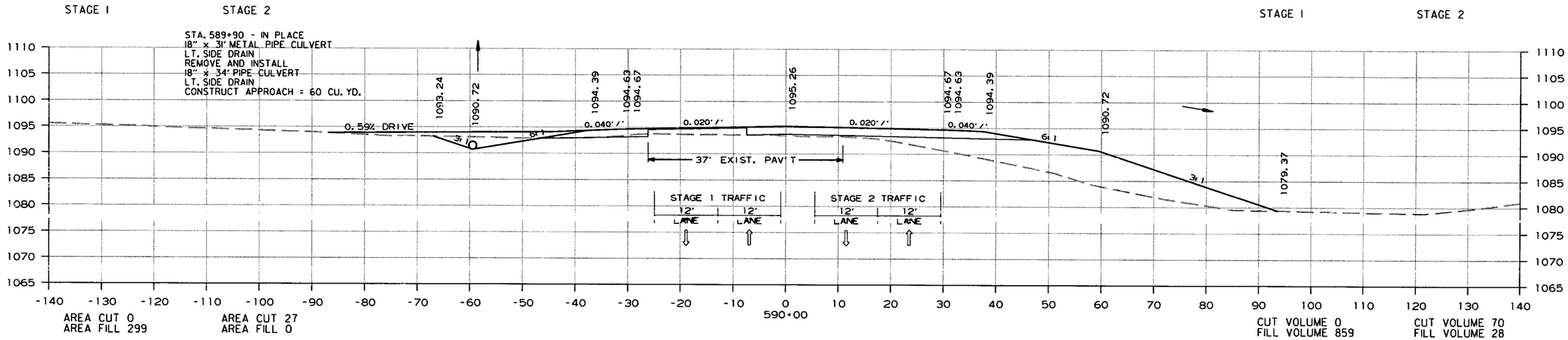
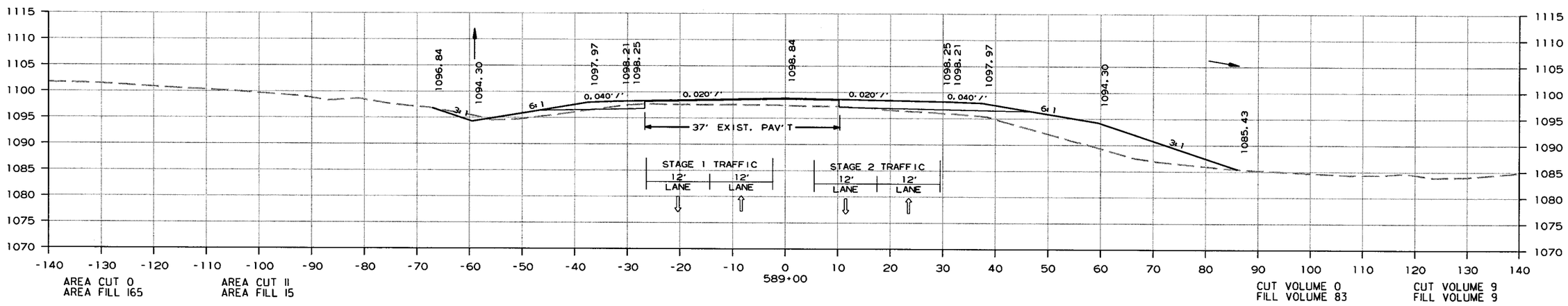
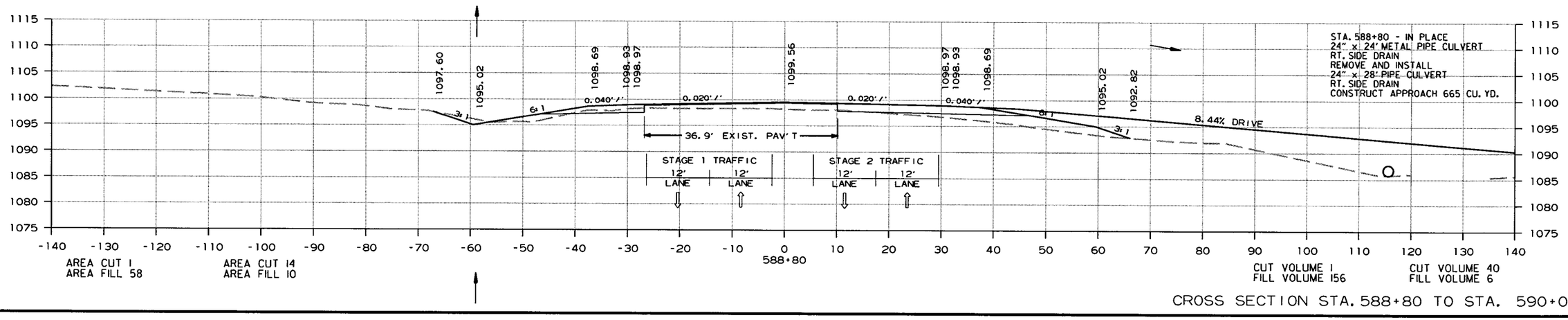
(2) CROSS SECTIONS







CROSS SECTION STA. 588+80 TO STA. 590+00

6/15/2015

R080423.DGN

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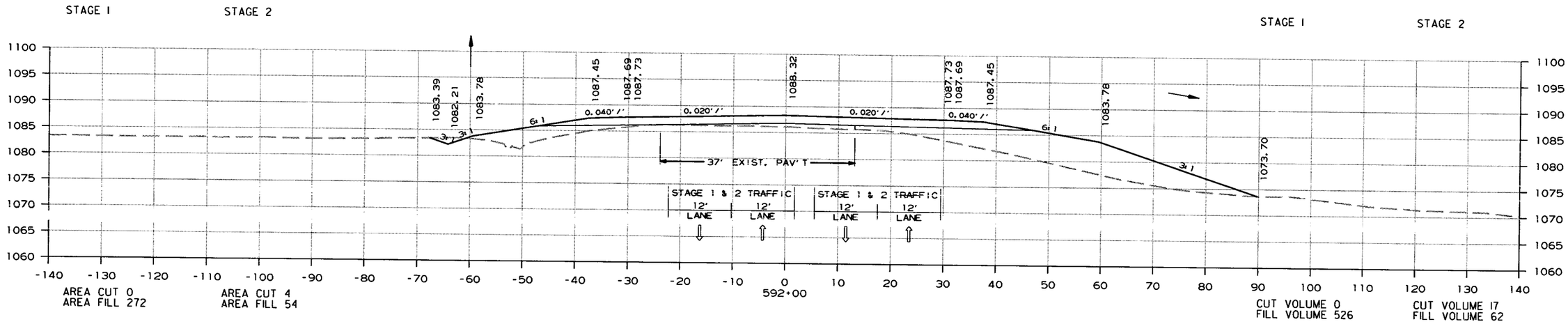
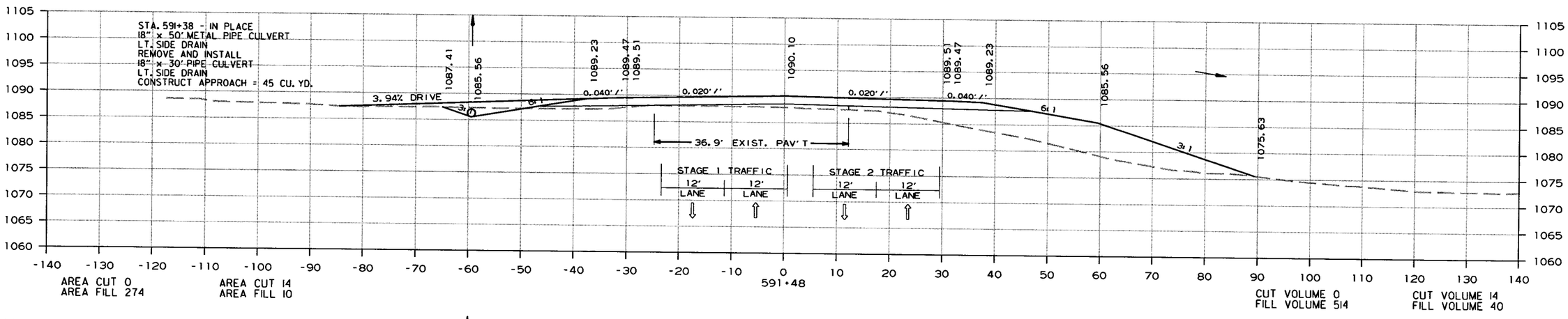
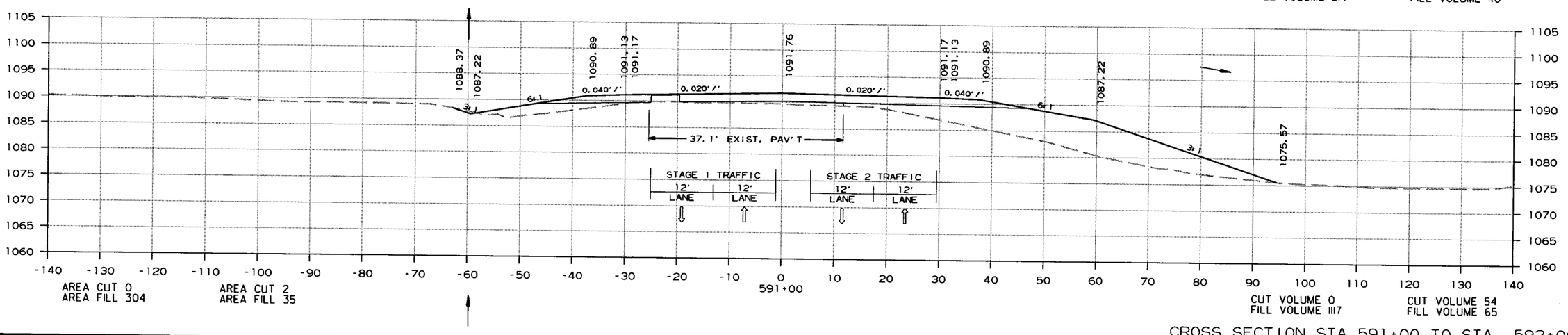
(2) CROSS SECTIONS







CROSS SECTION STA. 591+00 TO STA. 592+00

6/15/2015

R080423.DGN

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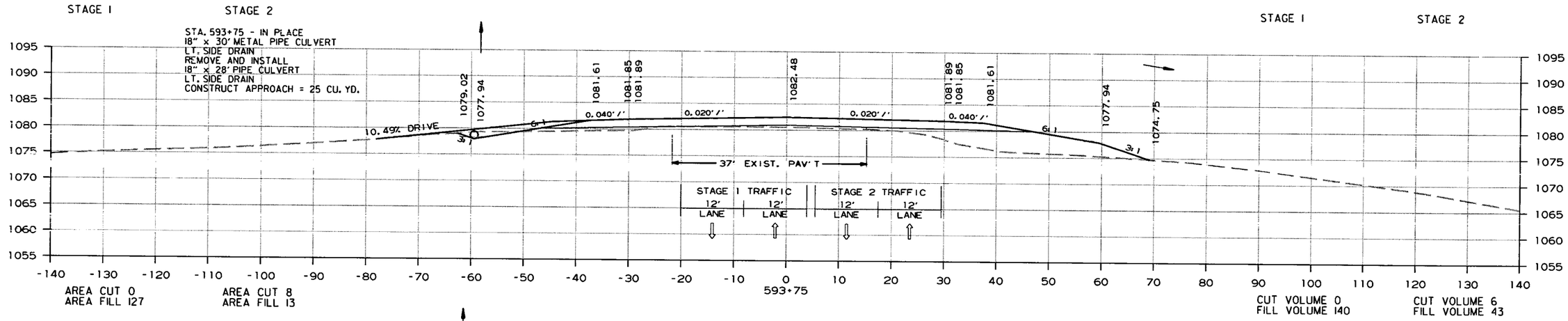
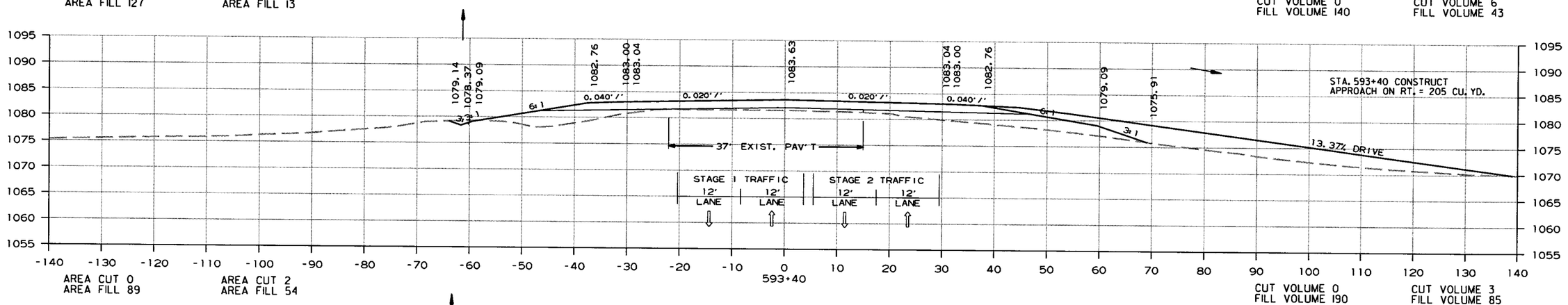
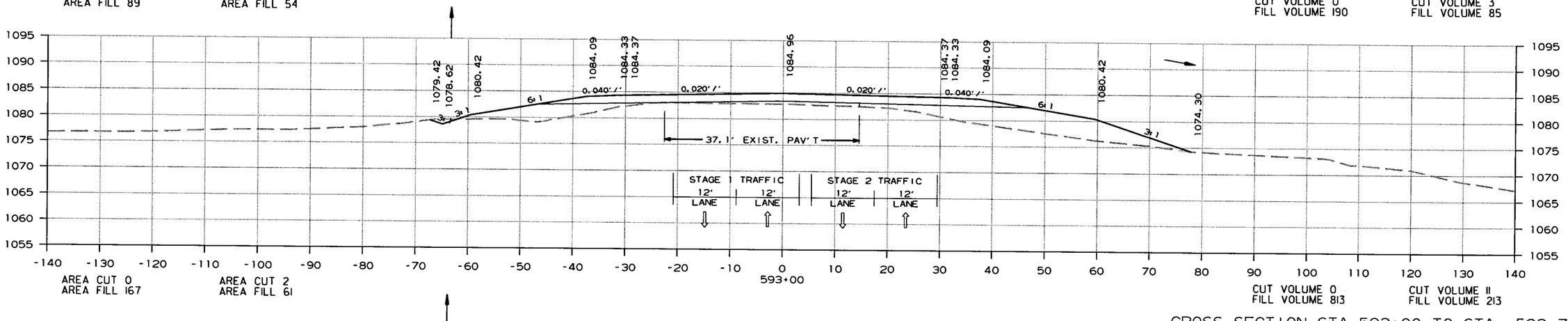
(2) CROSS SECTIONS







CROSS SECTION STA. 593+00 TO STA. 593+75

6/15/2015

R080423.DGN

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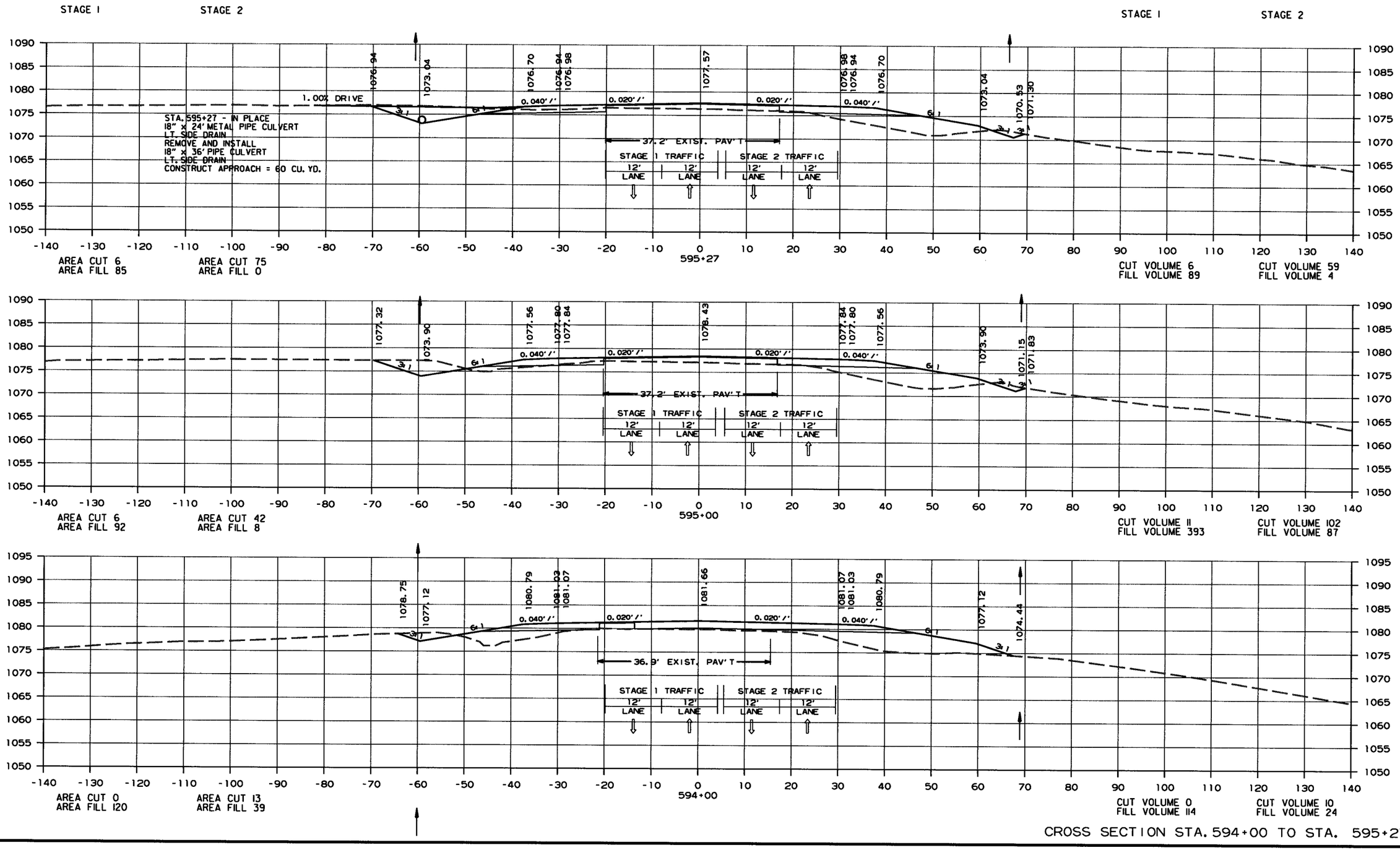
(2) CROSS SECTIONS



CROSS SECTION STA. 594+00 TO STA. 595+27

R080423.DGN 6/15/2015

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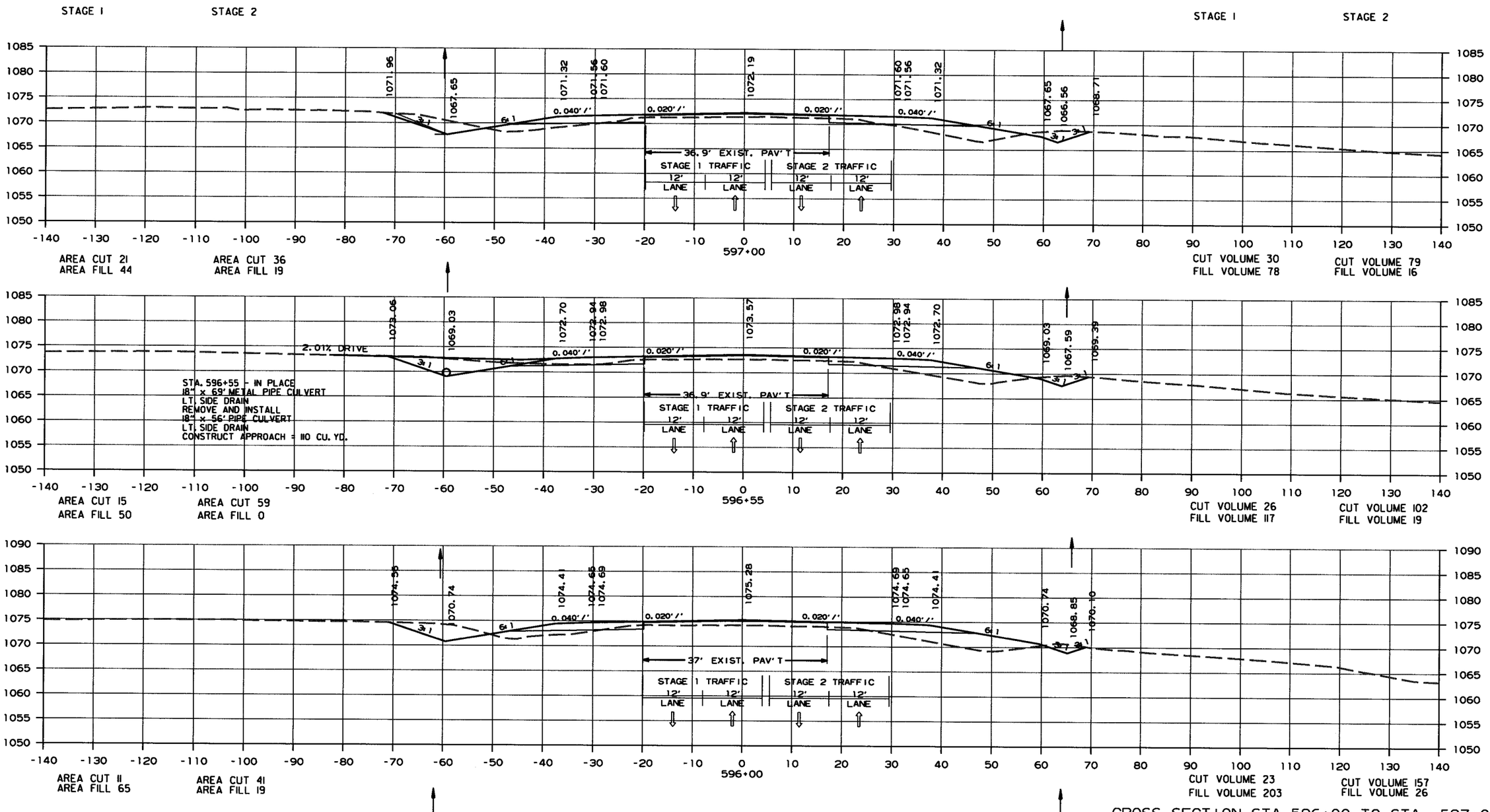
(2) CROSS SECTIONS



CROSS SECTION STA. 596+00 TO STA. 597+00

6/15/2015

R080423.DGN

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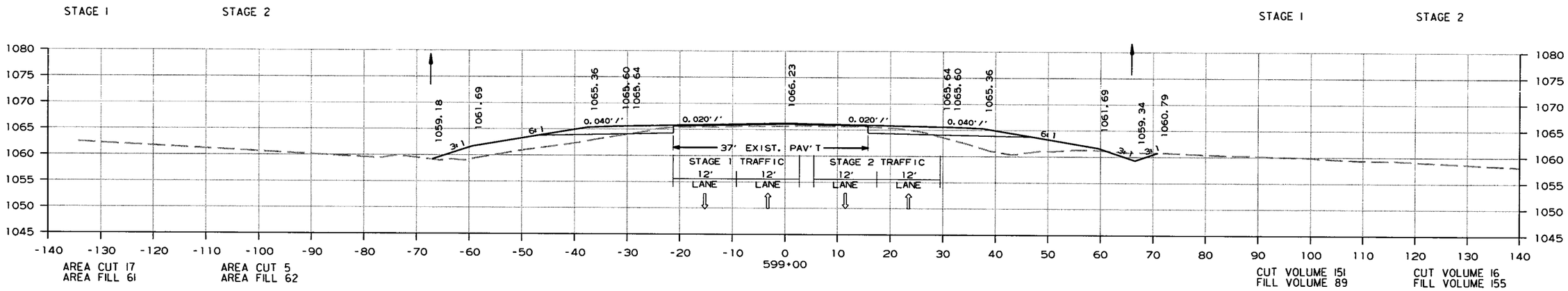
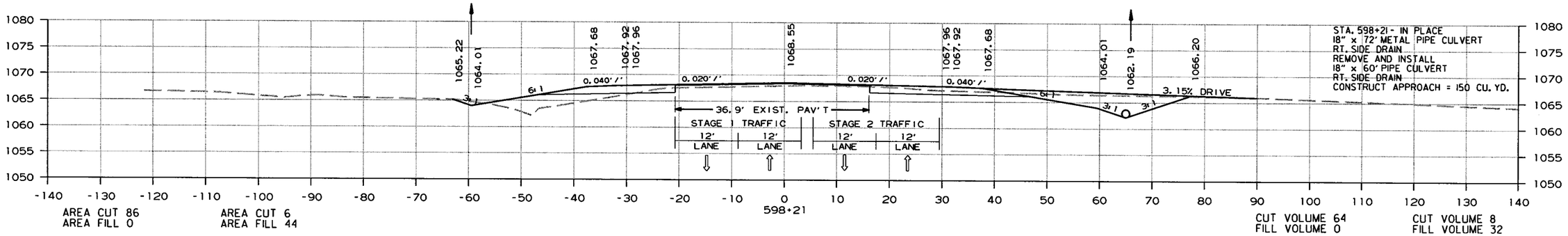
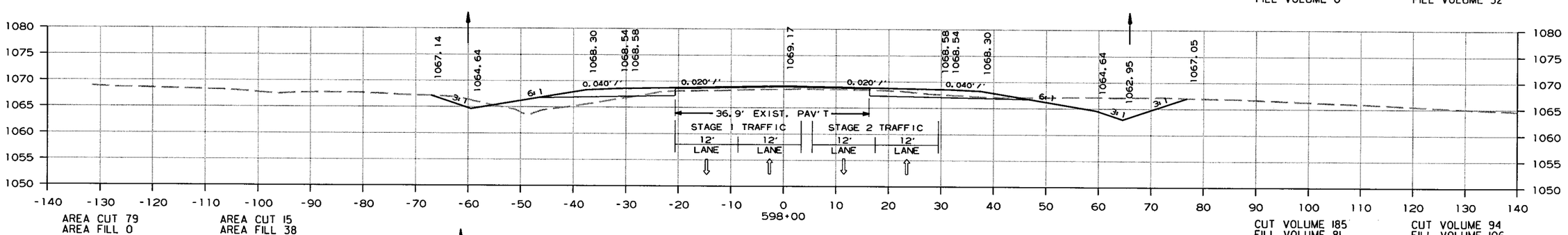
(2) CROSS SECTIONS







CROSS SECTION STA. 598+00 TO STA. 599+00

6/15/2015

R080423.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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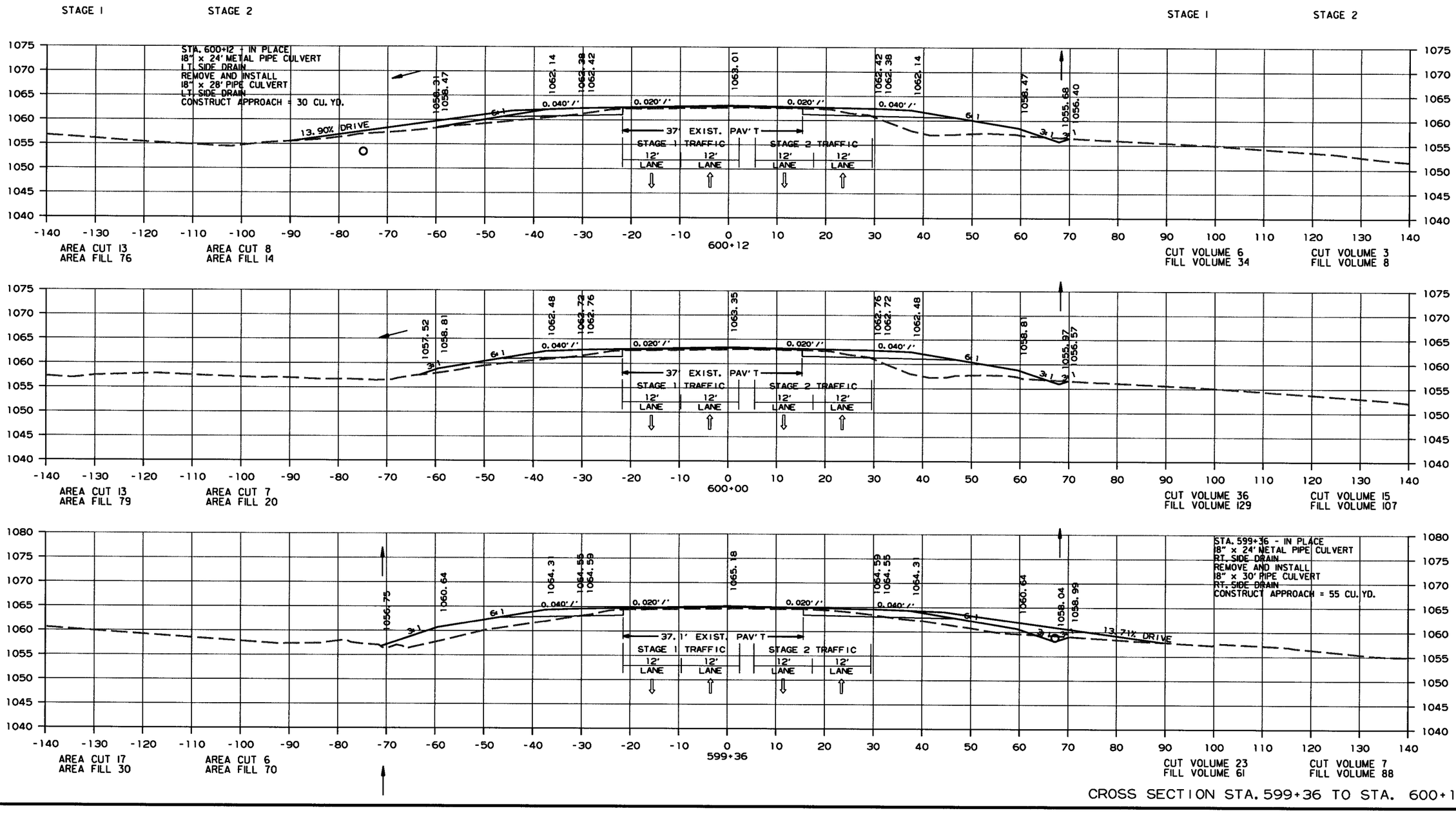
				JOB NO.		080423	274	517

(2) CROSS SECTIONS



CROSS SECTION STA. 599+36 TO STA. 600+12

6/15/2015

R080423.DGN

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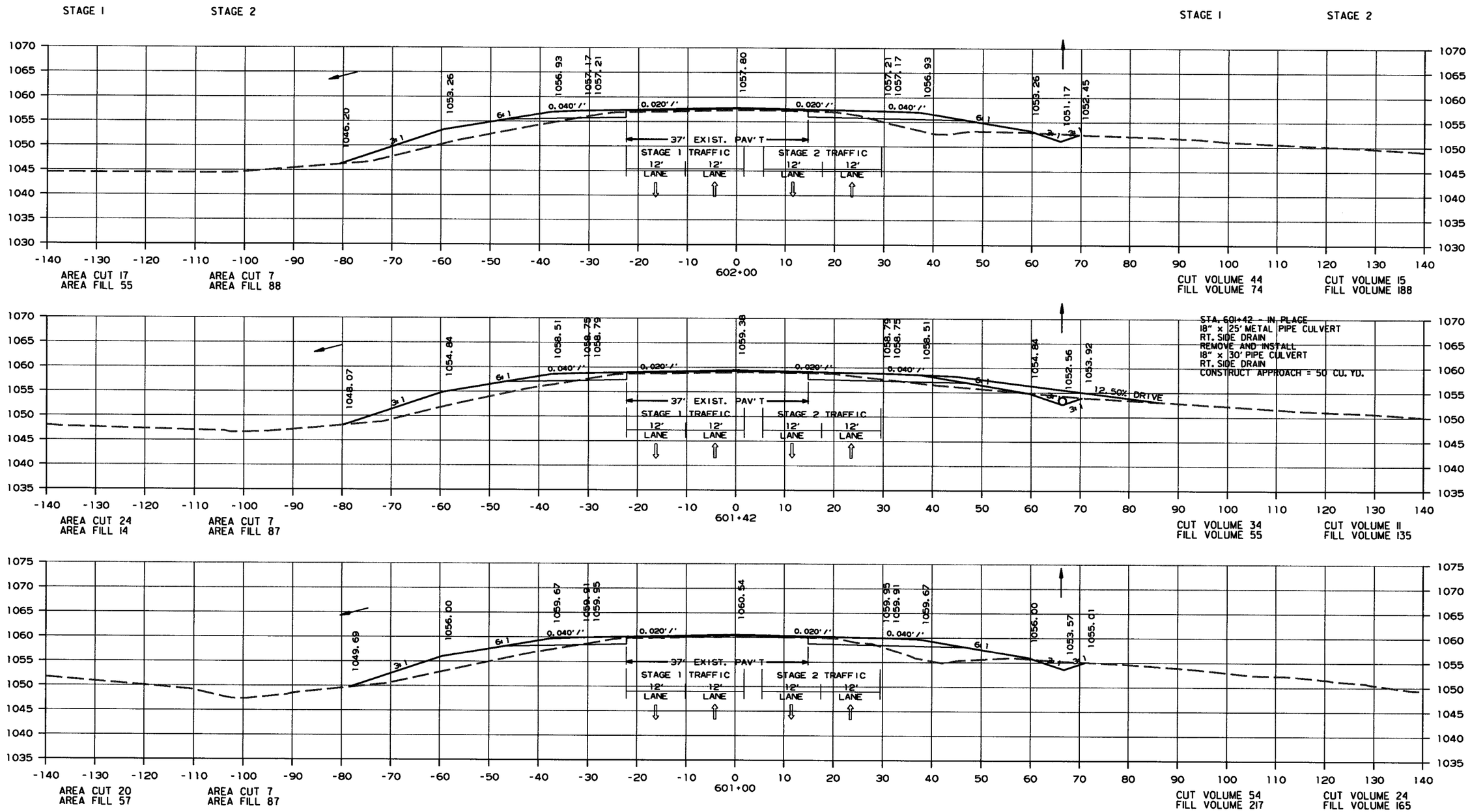
(2) CROSS SECTIONS



CROSS SECTION STA. 601+00 TO STA. 602+00

6/15/2015

R080423.DGN

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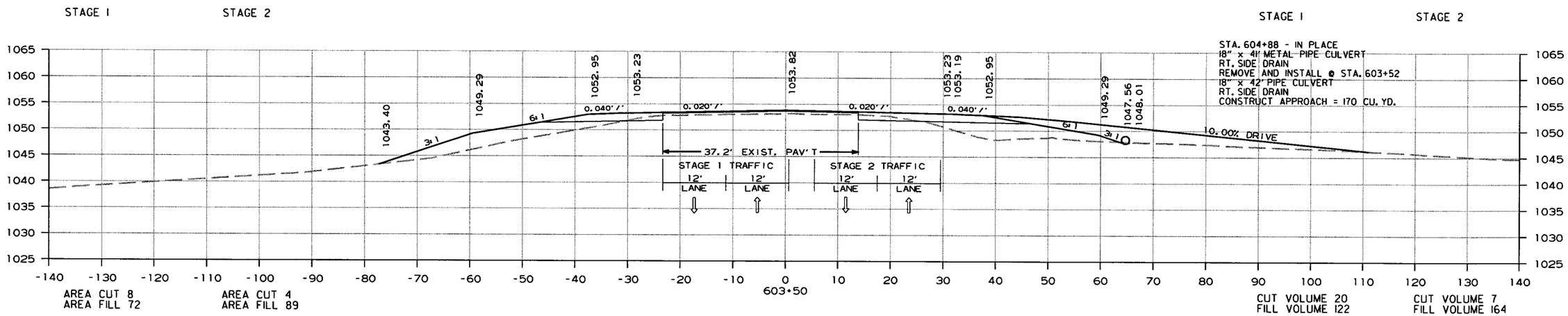
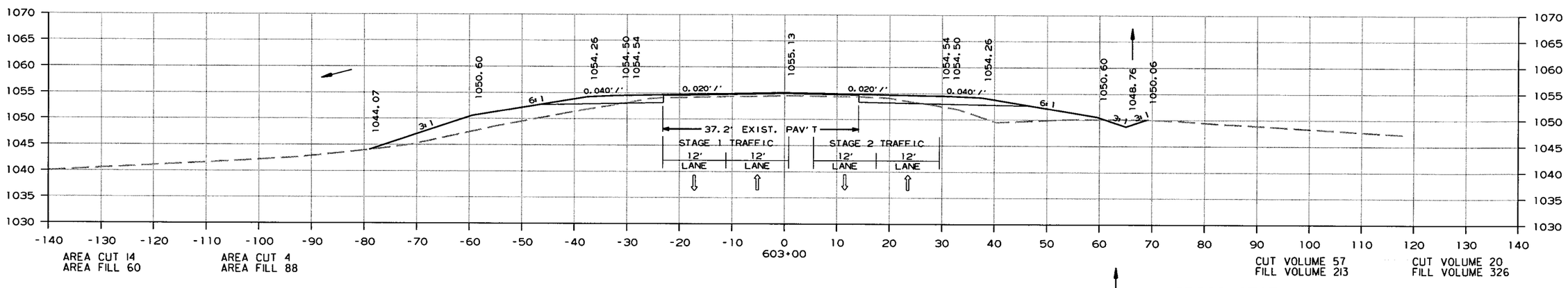
(2) CROSS SECTIONS





CROSS SECTION STA. 603+00 TO STA. 603+50

6/15/2015

R080423.DGN

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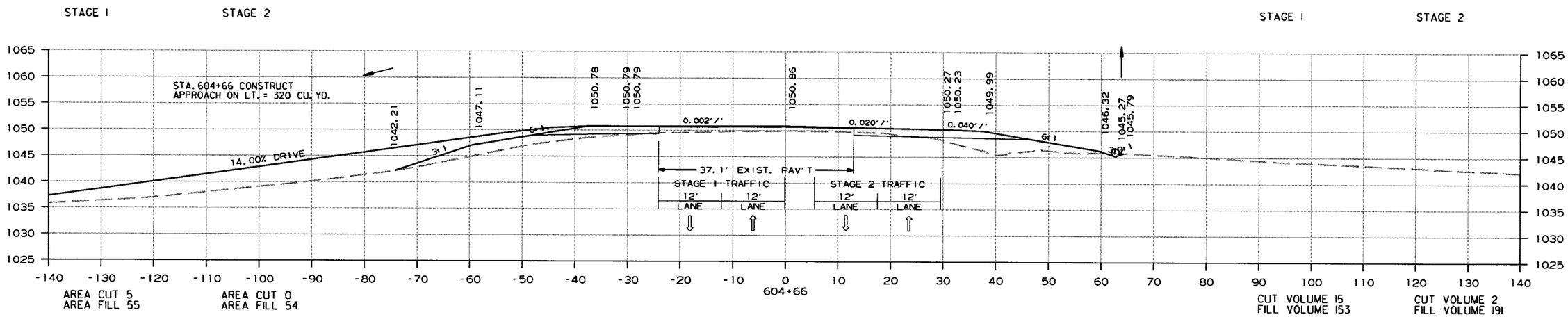
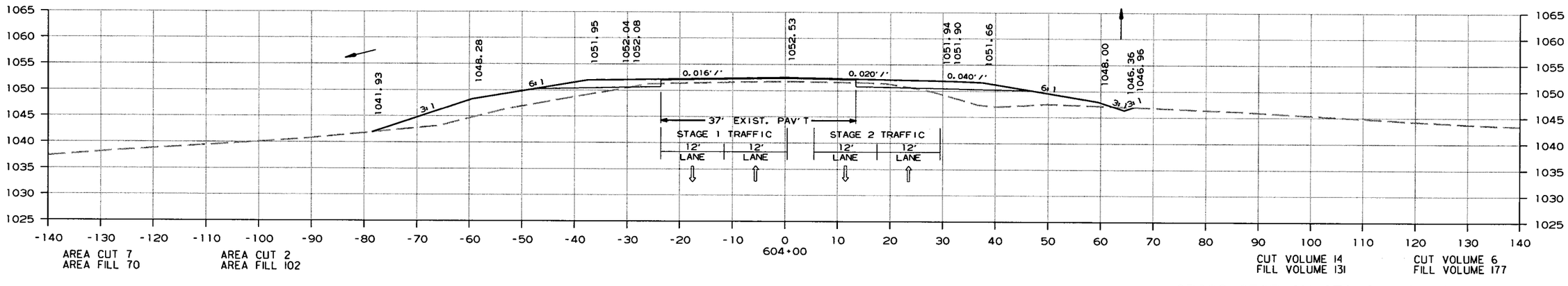
(2) CROSS SECTIONS





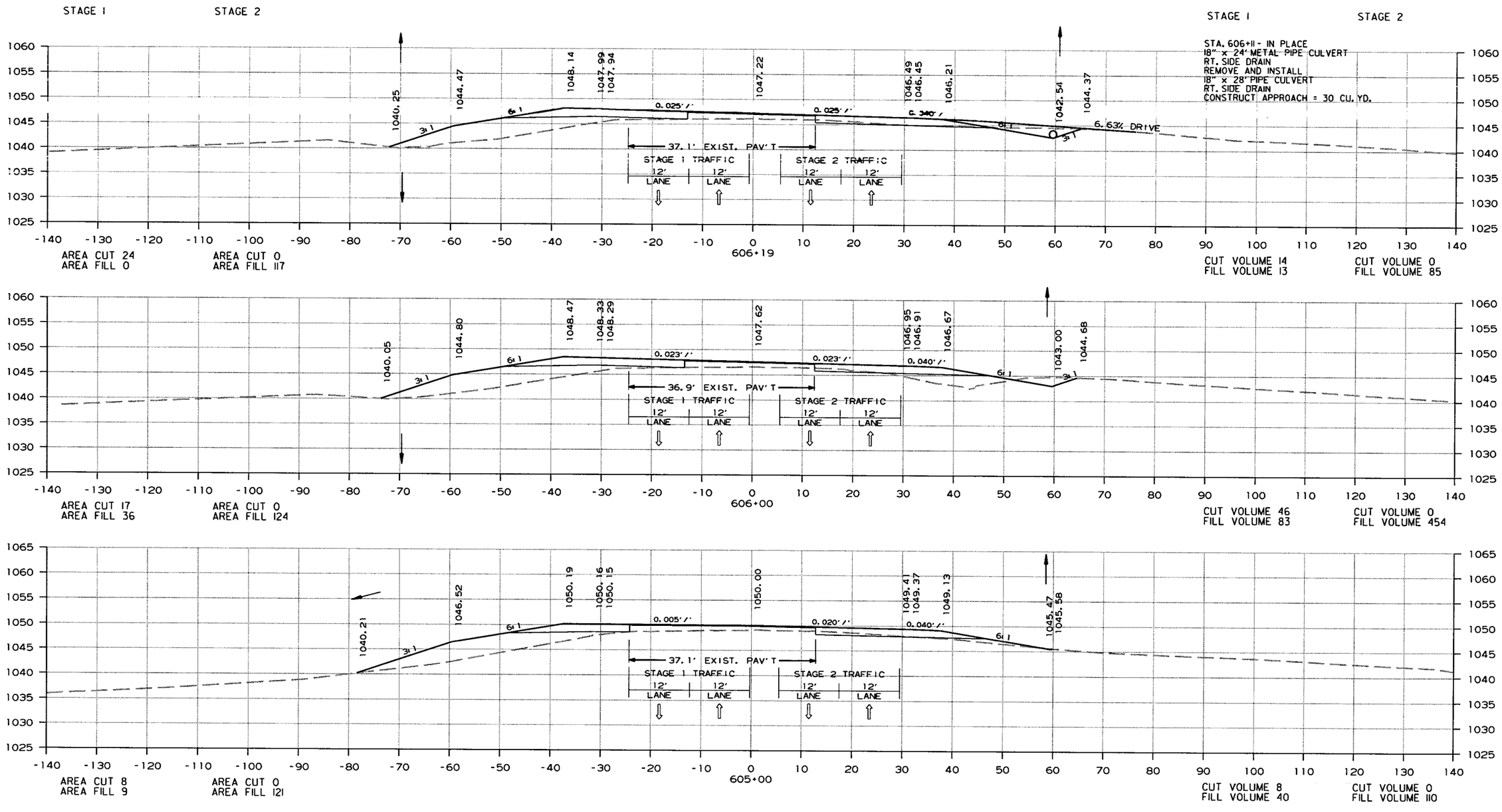
CROSS SECTION STA. 604+00 TO STA. 604+66

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	278	517

(2) CROSS SECTIONS



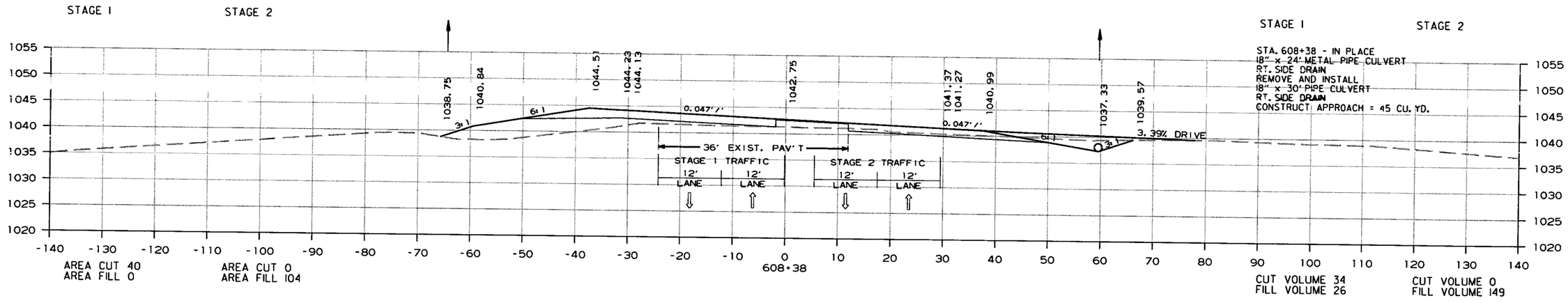
CROSS SECTION STA. 605+00 TO STA. 606+19

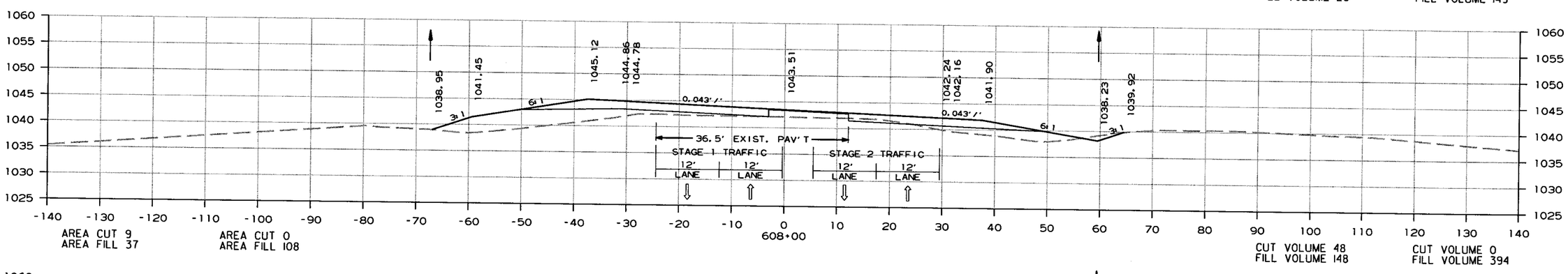
6/15/2015

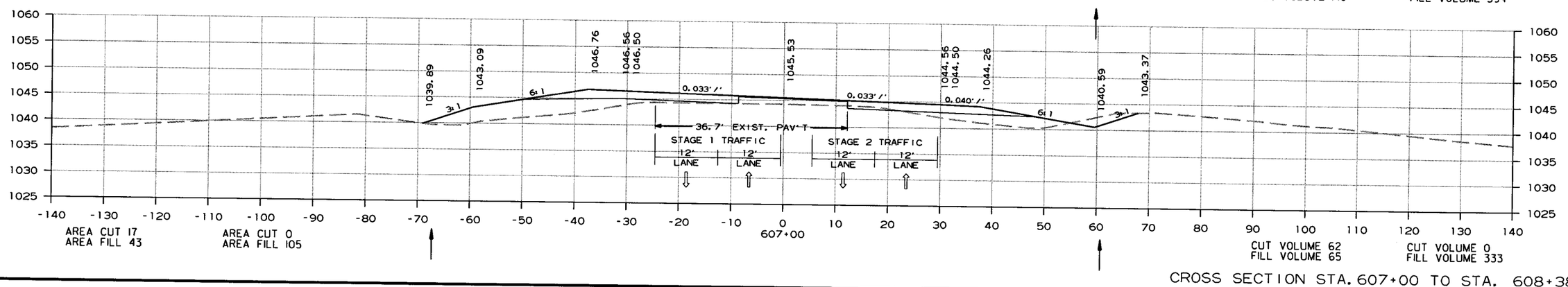
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	279	517

(2) CROSS SECTIONS







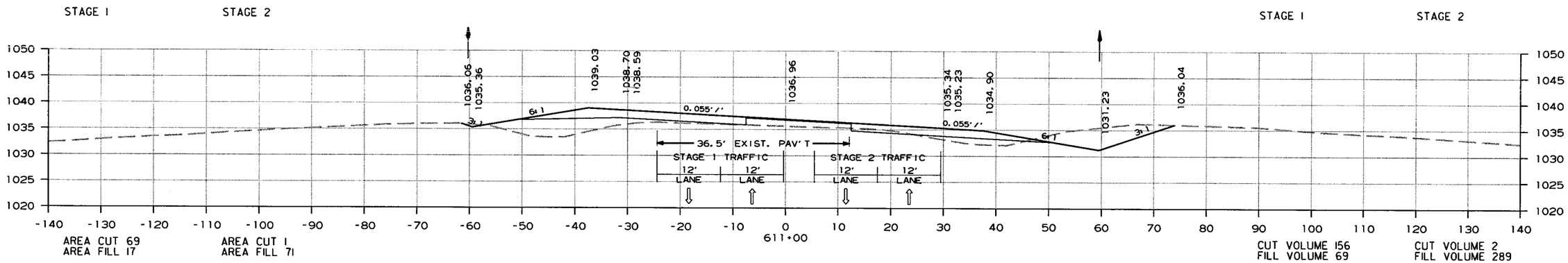
CROSS SECTION STA. 607+00 TO STA. 608+38

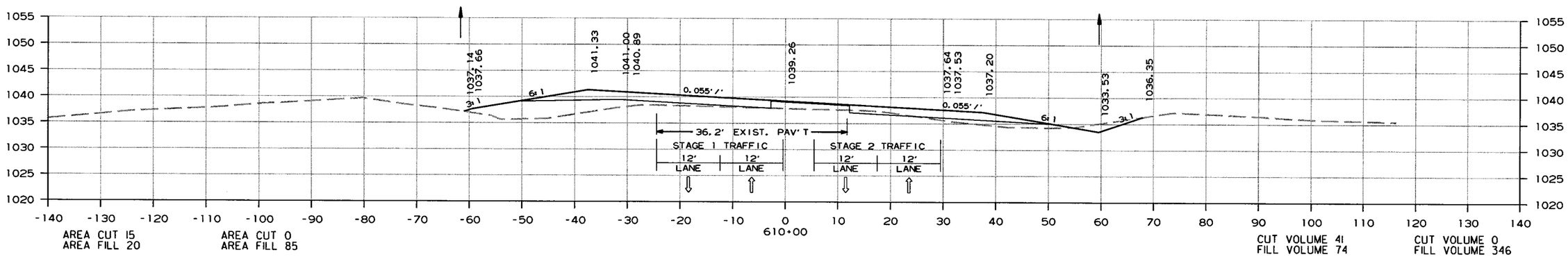
6/15/2015

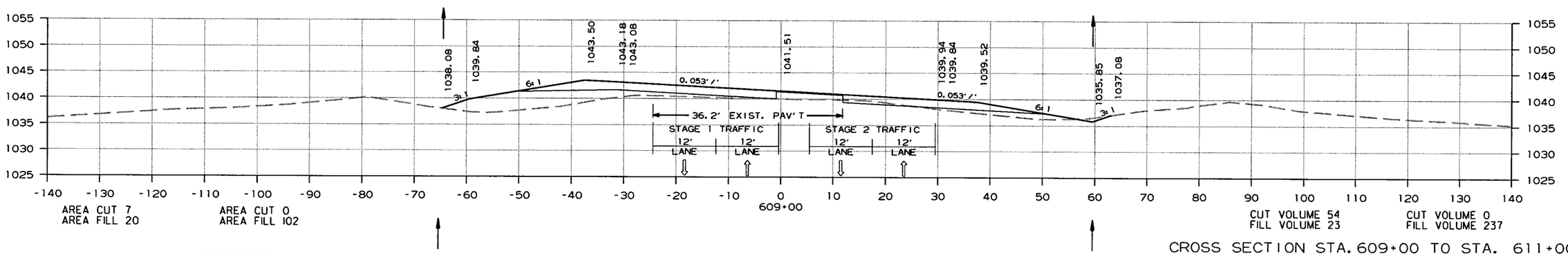
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	280	517

(2) CROSS SECTIONS







CROSS SECTION STA. 609+00 TO STA. 611+00

6/15/2015

R080423.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.		080423	281	517

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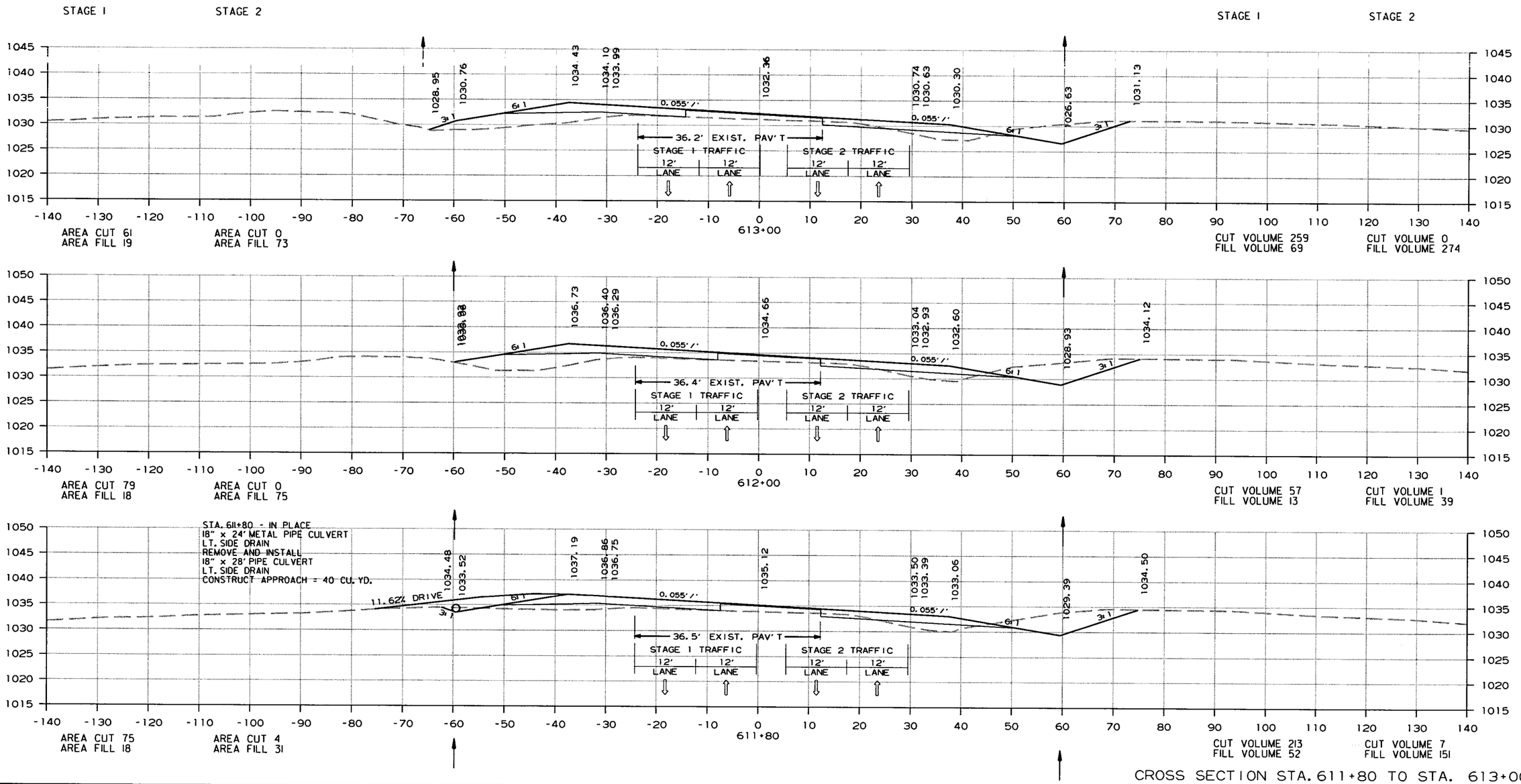

CROSS SECTION STA. 611+80 TO STA. 613+00

6/15/2015

R080423.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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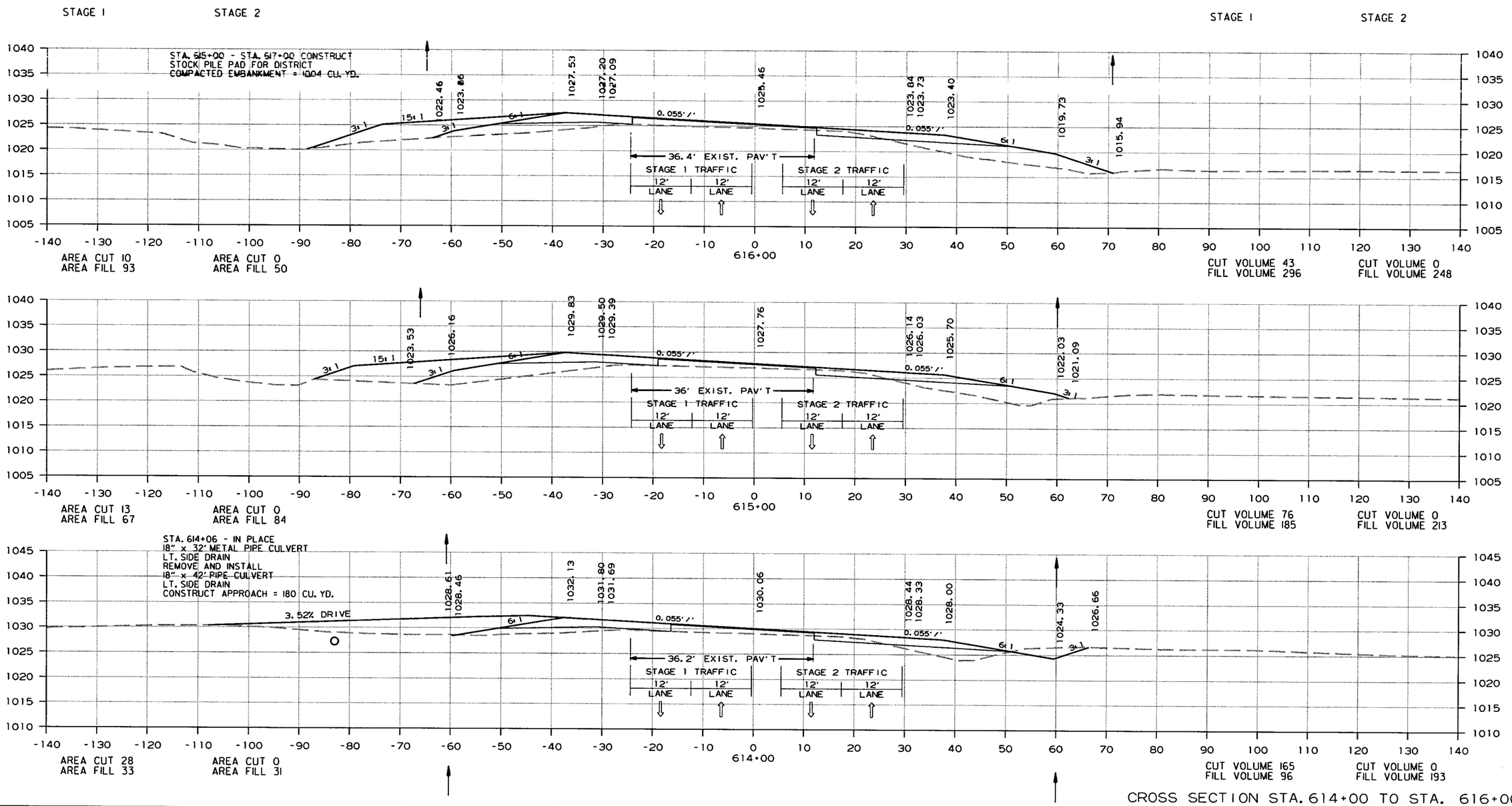
				JOB NO.		080423	282	517

(2) CROSS SECTIONS



CROSS SECTION STA. 614+00 TO STA. 616+00

6/15/2015

R080423.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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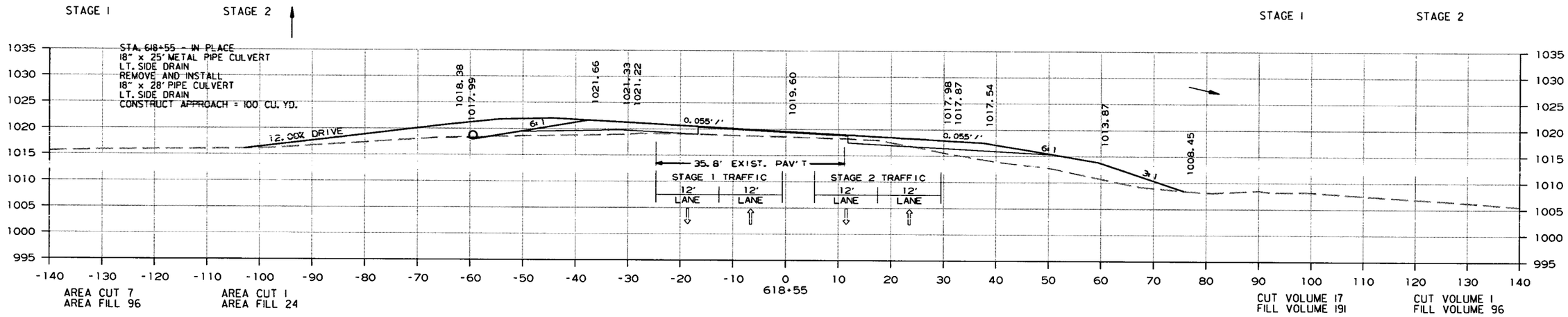
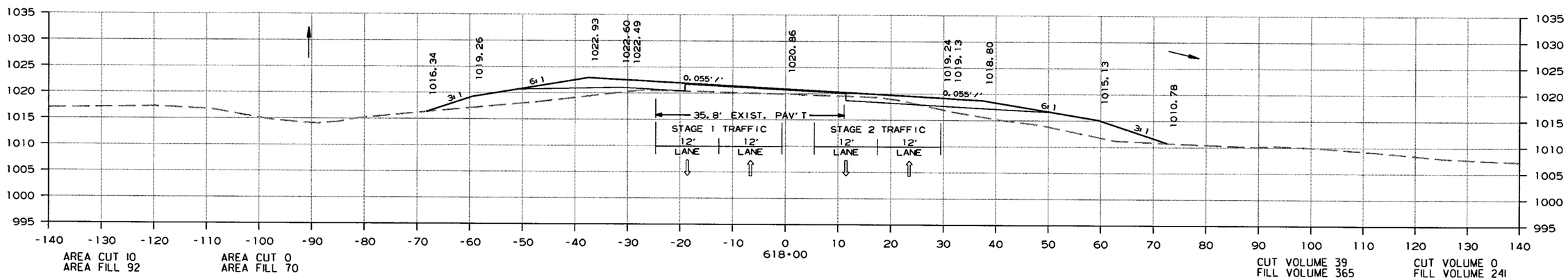
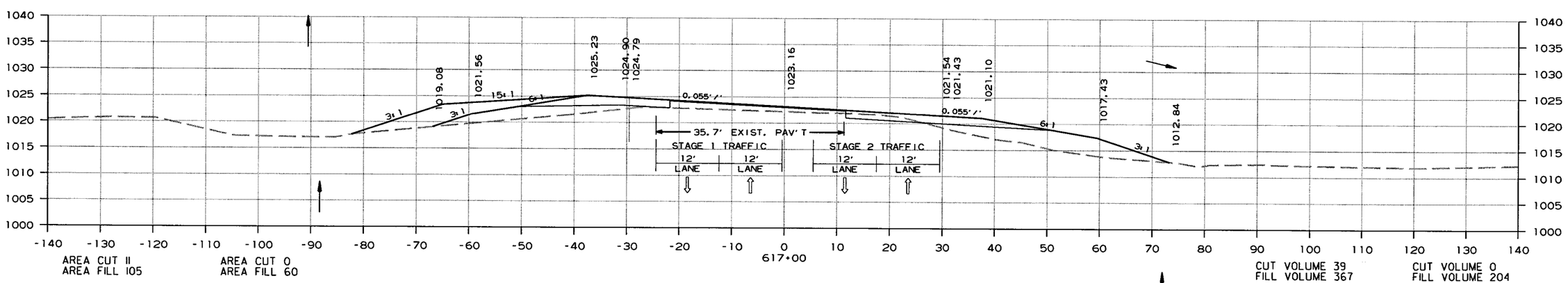






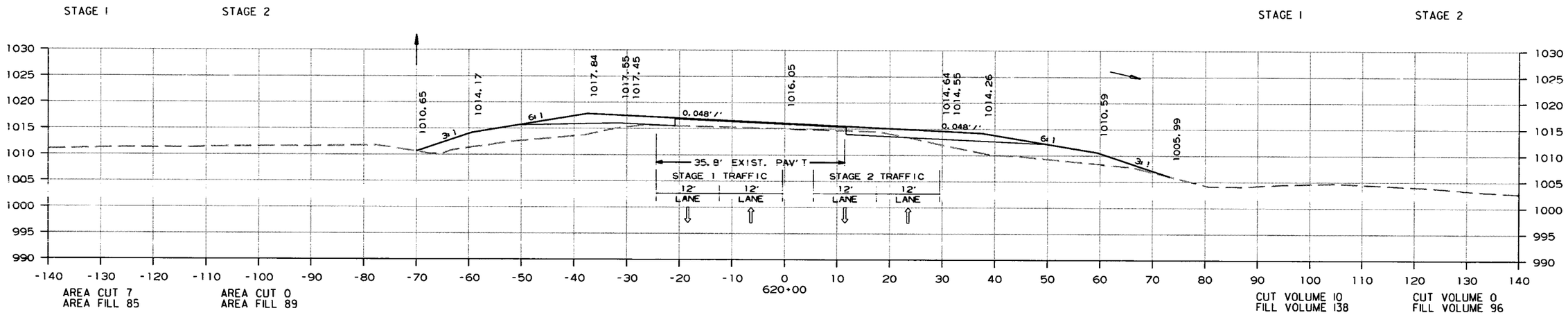
CROSS SECTION STA. 617+00 TO STA. 618+55

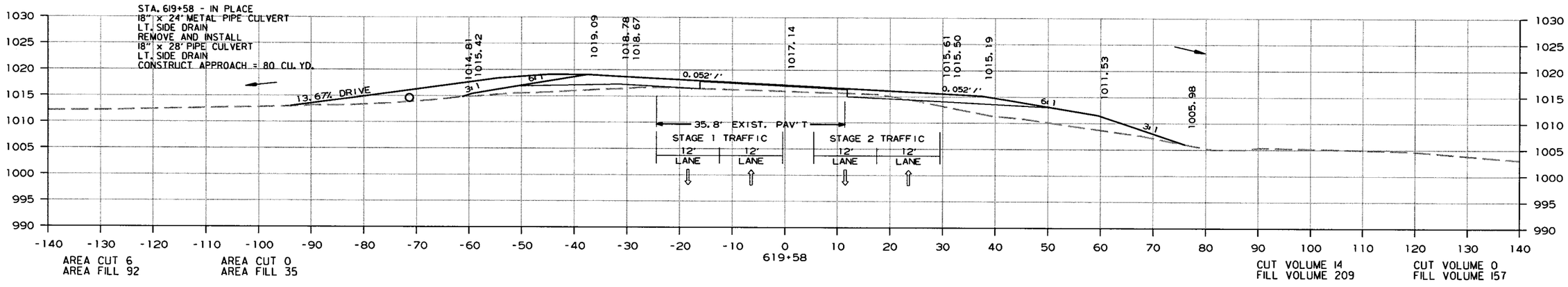
6/15/2015

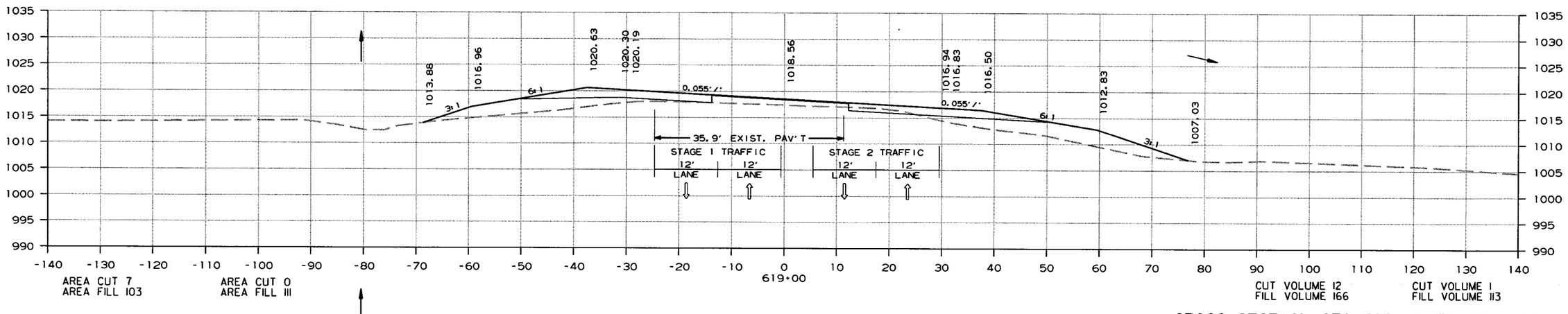
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	284	517

(2) CROSS SECTIONS







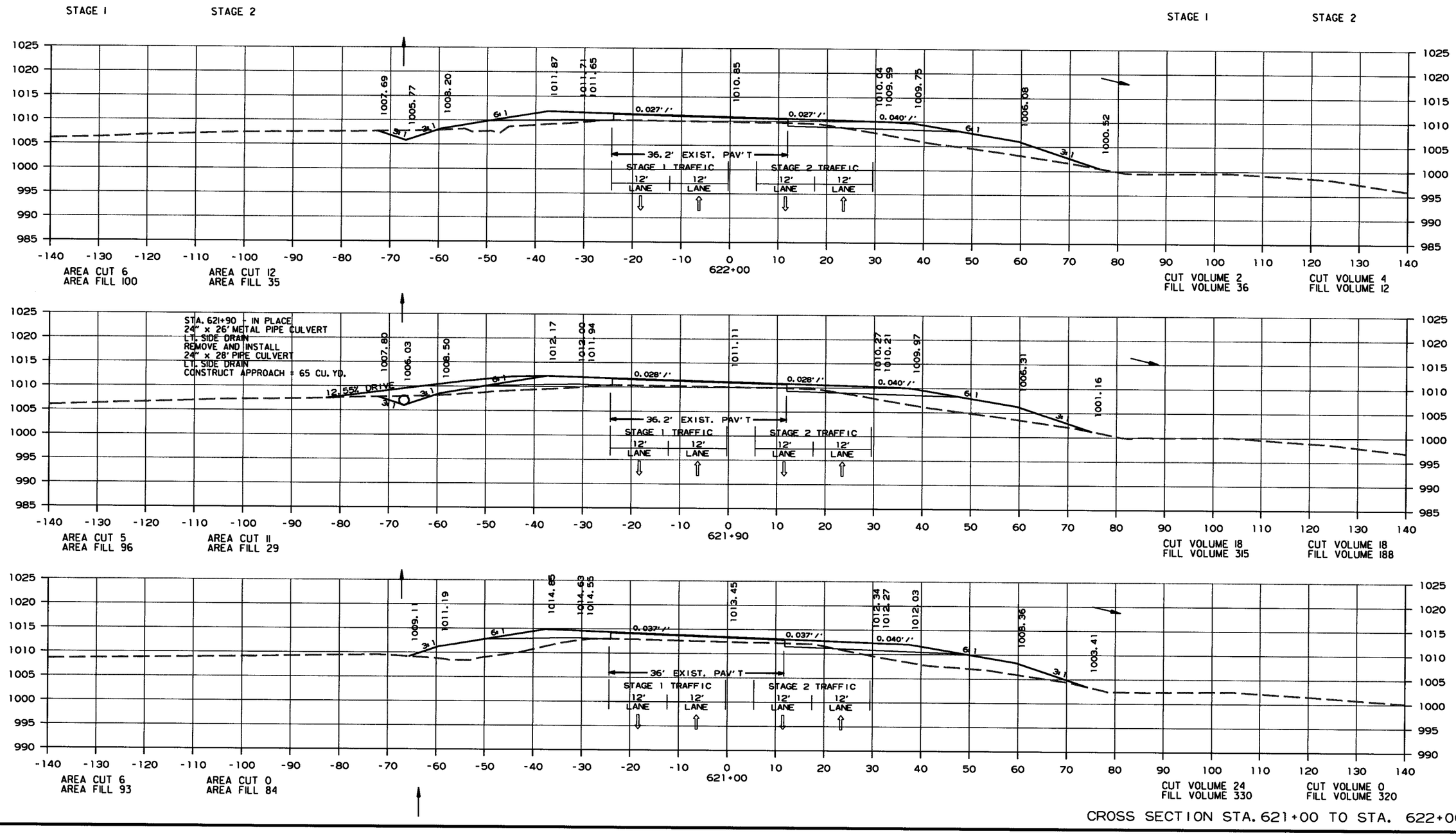
CROSS SECTION STA. 619+00 TO STA. 620+00

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	285	517

(2) CROSS SECTIONS



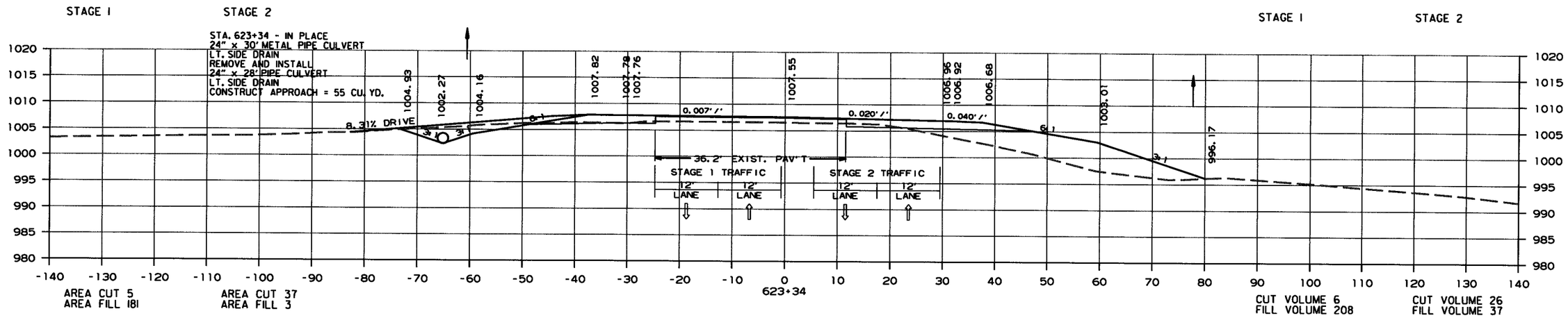
CROSS SECTION STA. 621+00 TO STA. 622+00

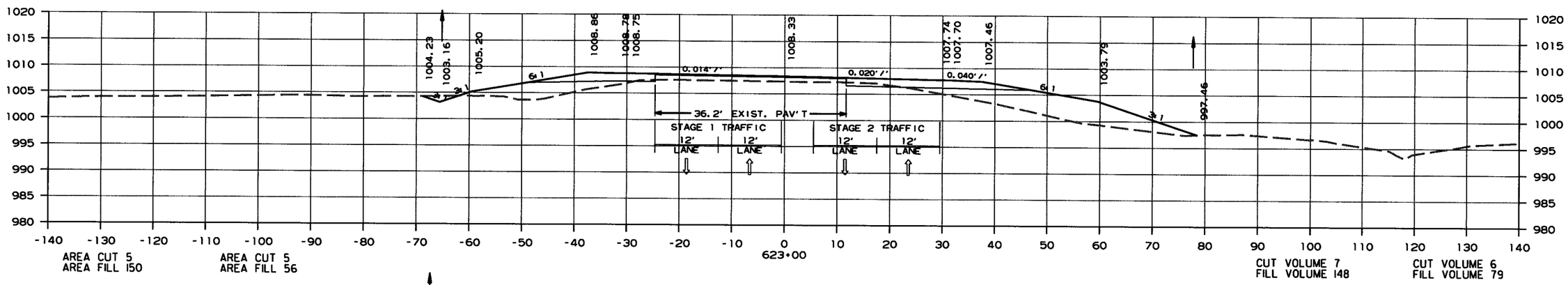
6/15/2015

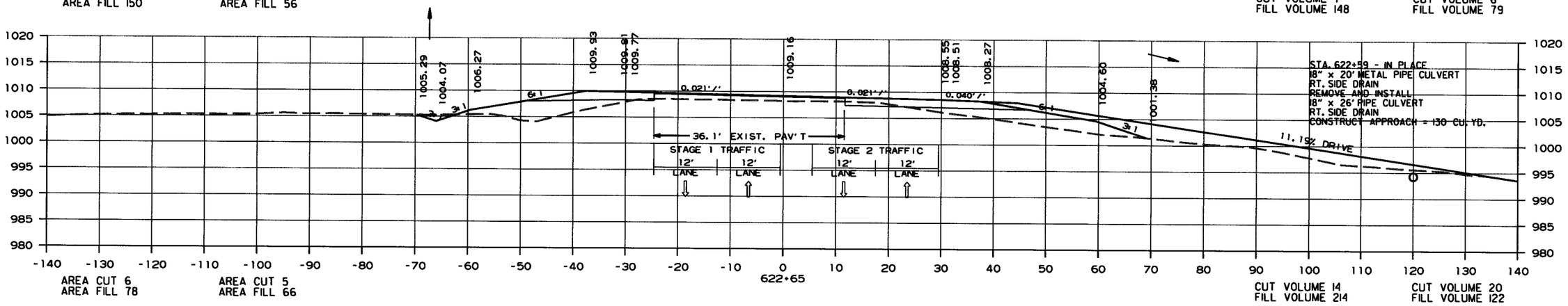
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	286	517

(2) CROSS SECTIONS







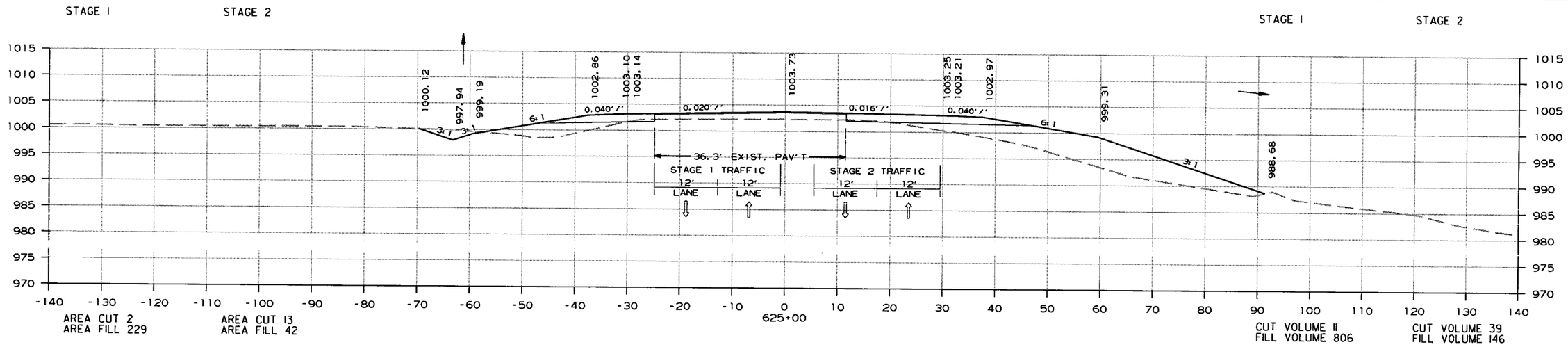
CROSS SECTION STA. 622+65 TO STA. 623+34

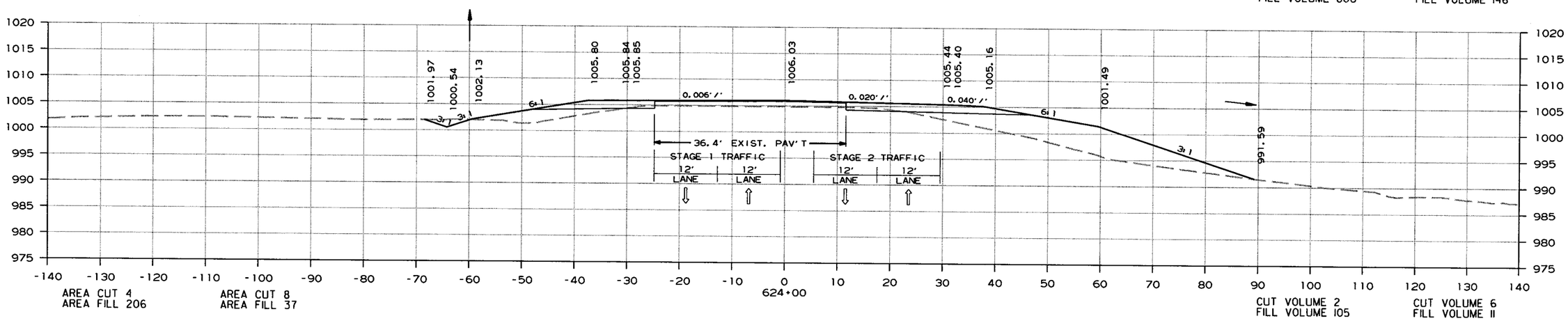
6/15/2015

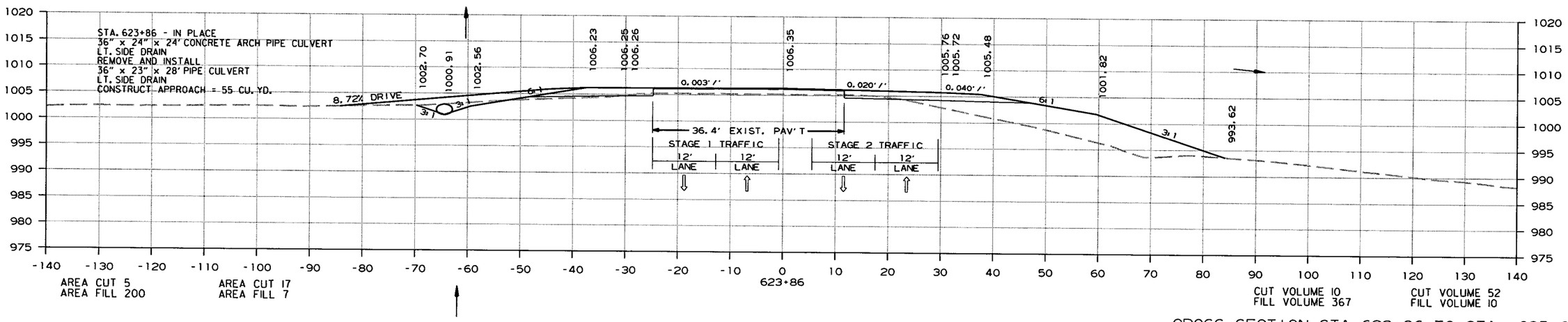
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	287	517

(2) CROSS SECTIONS







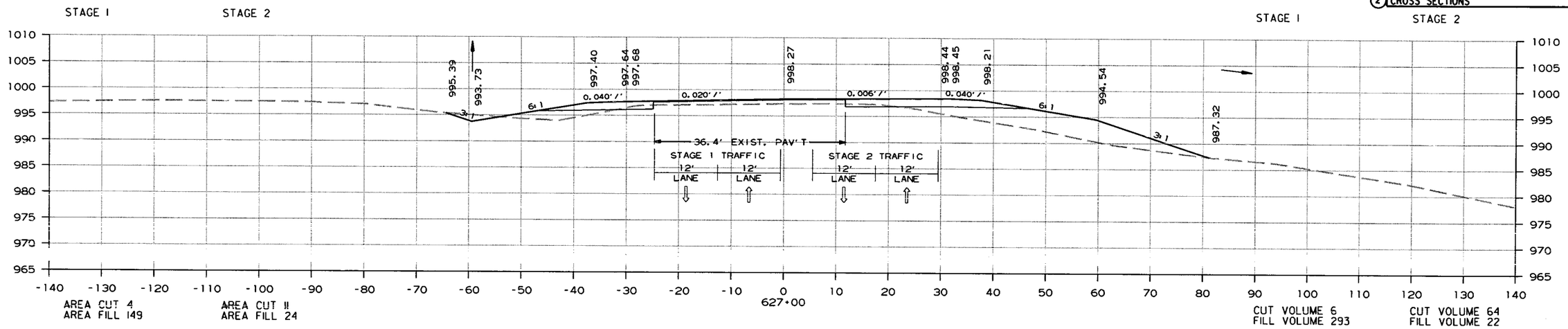
CROSS SECTION STA. 623+86 TO STA. 625+00

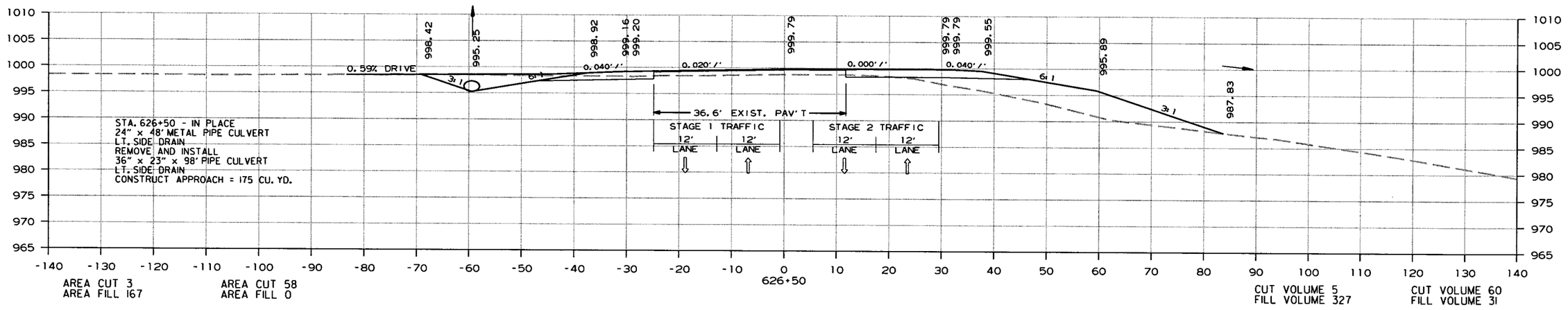
6/15/2015

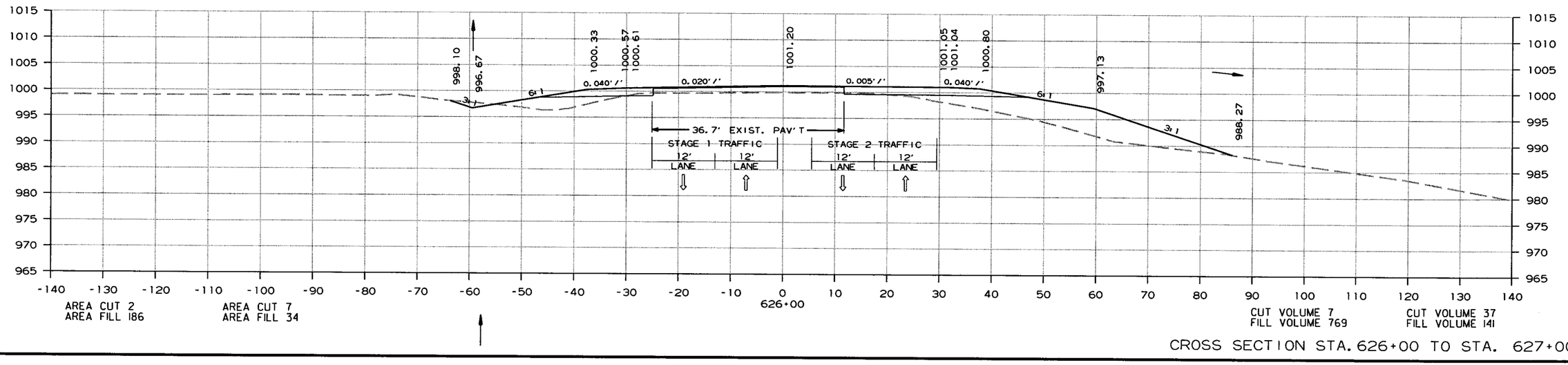
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	288	517

(2) CROSS SECTIONS







CROSS SECTION STA. 626+00 TO STA. 627+00

6/15/2015

R080423.DGN

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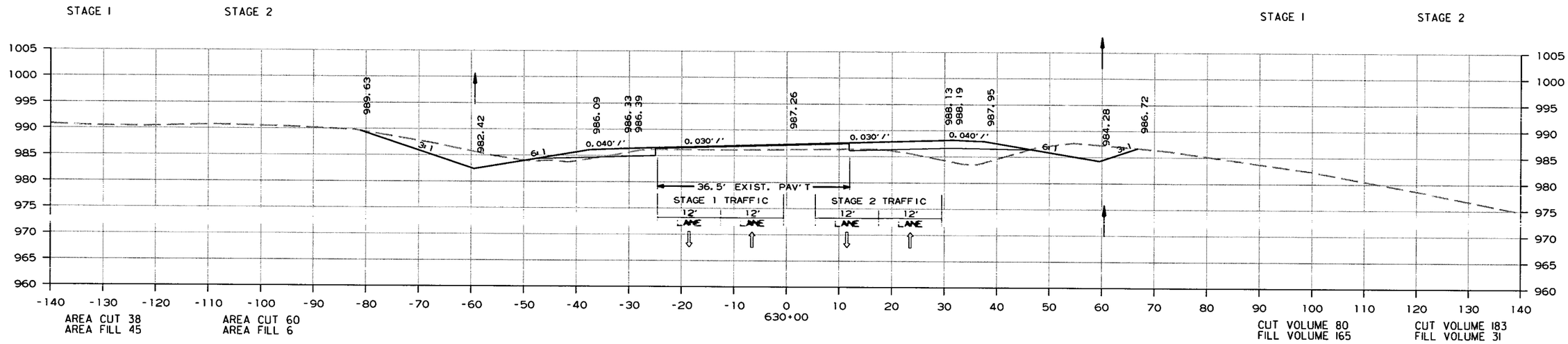
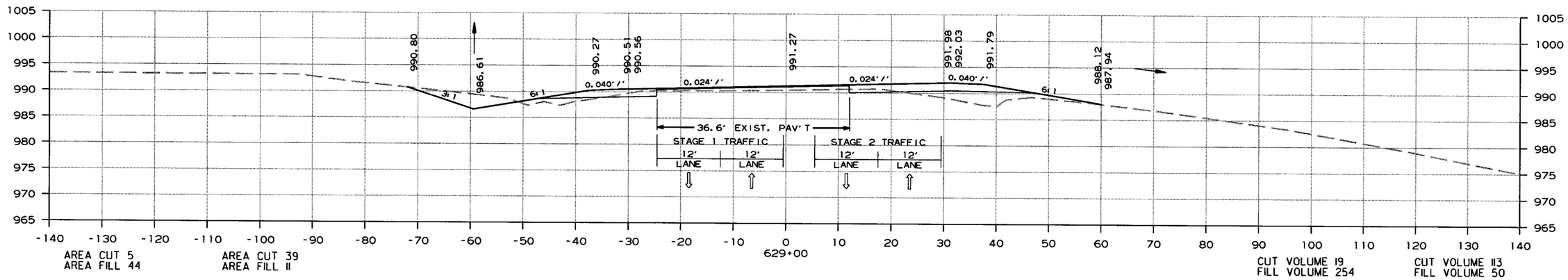
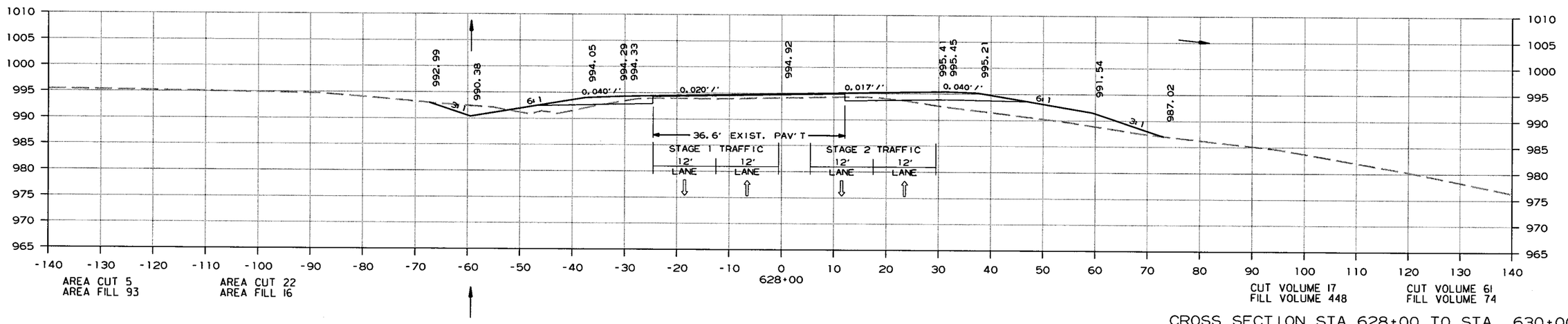
(2) CROSS SECTIONS







CROSS SECTION STA. 628+00 TO STA. 630+00

6/15/2015

R080423.DGN

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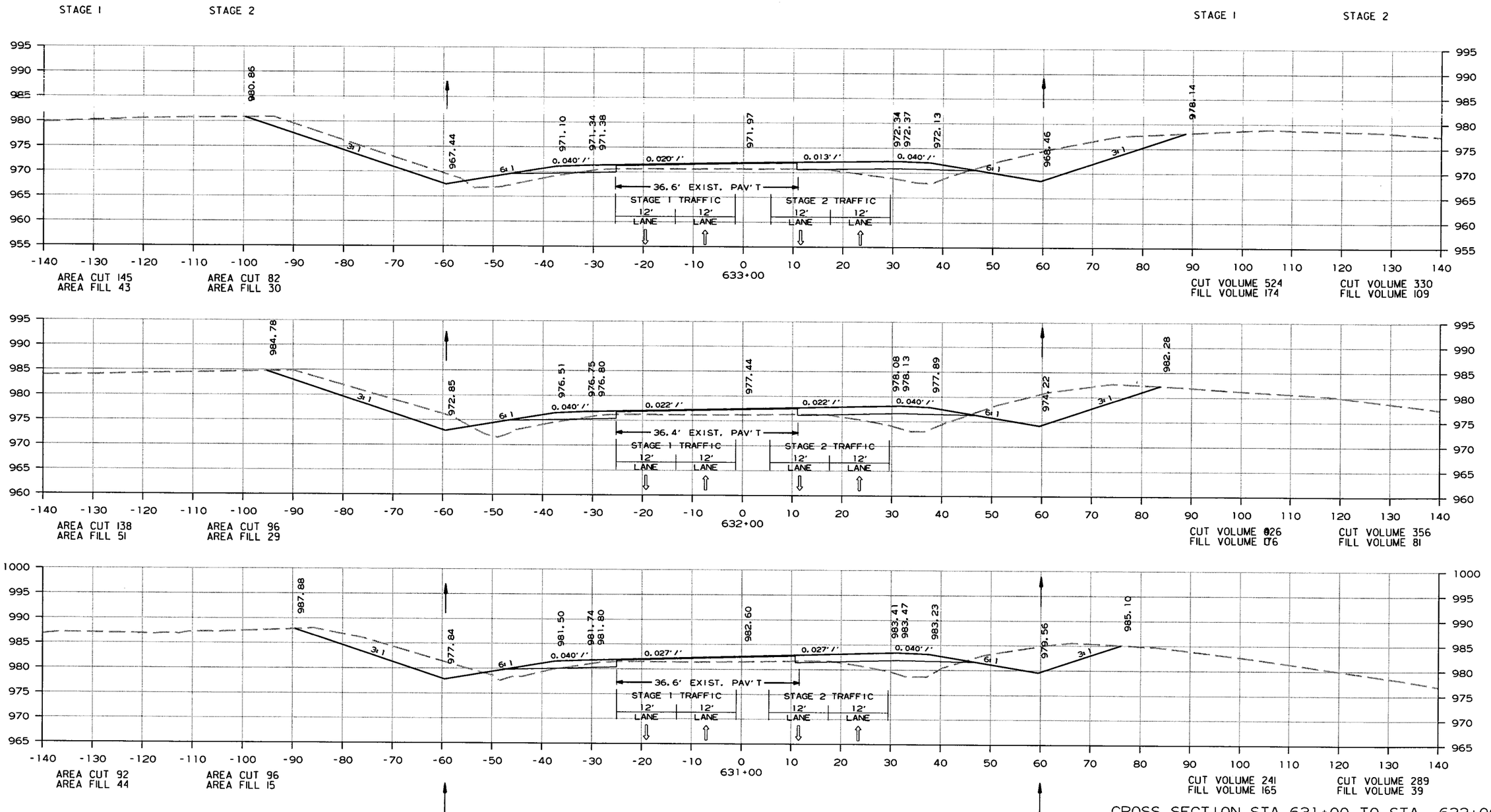

CROSS SECTION STA. 631+00 TO STA. 633+00

6/15/2015

R080423.DGN

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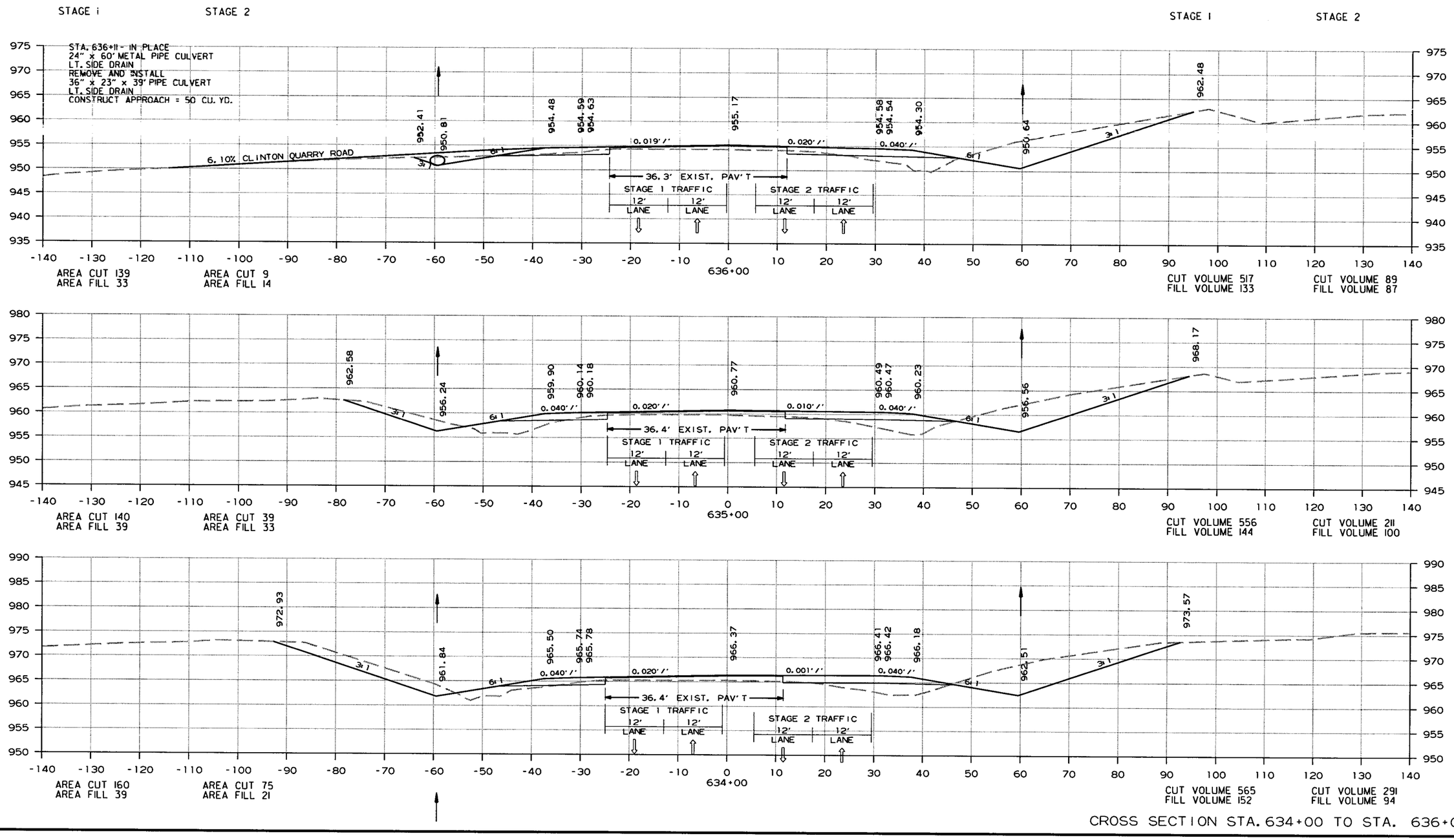

CROSS SECTION STA. 634+00 TO STA. 636+00

6/15/2015

R080423.DGN

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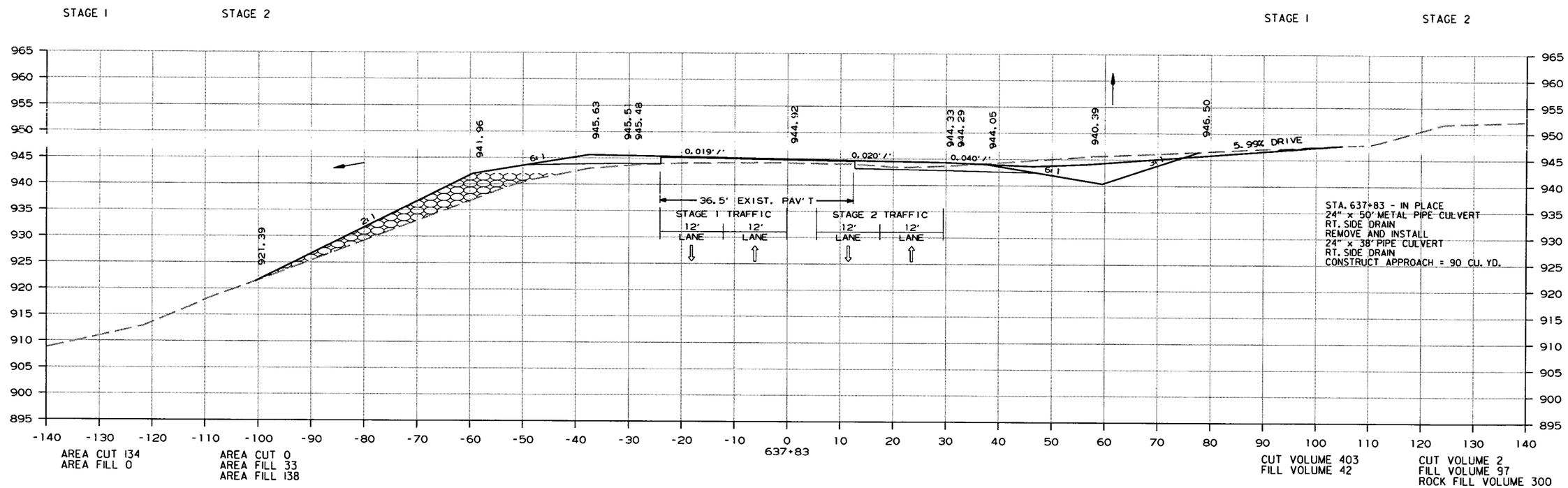

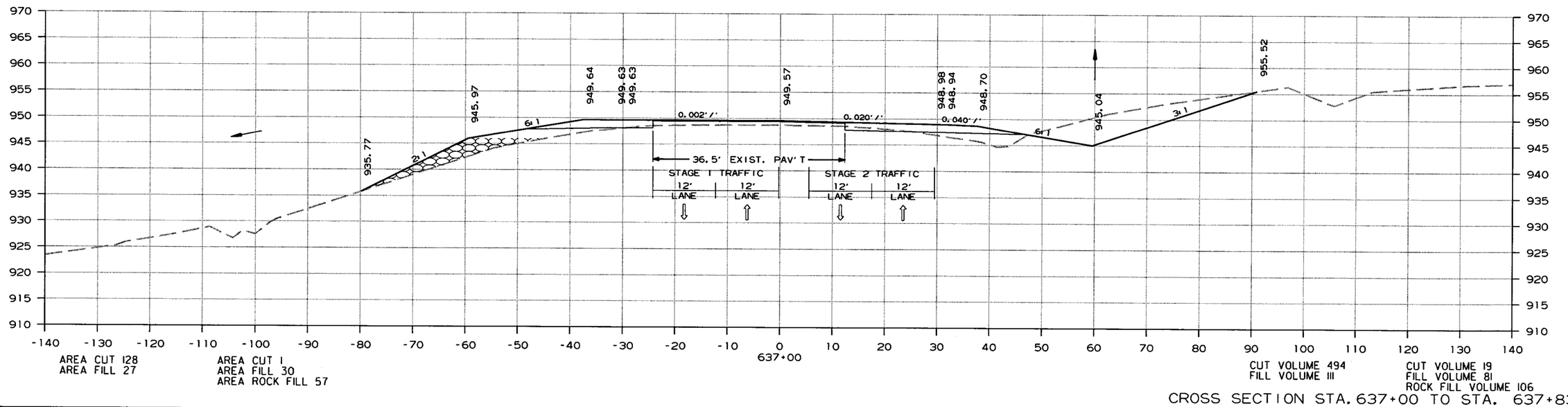

CROSS SECTION STA. 637+00 TO STA. 637+83

6/15/2015

R080423.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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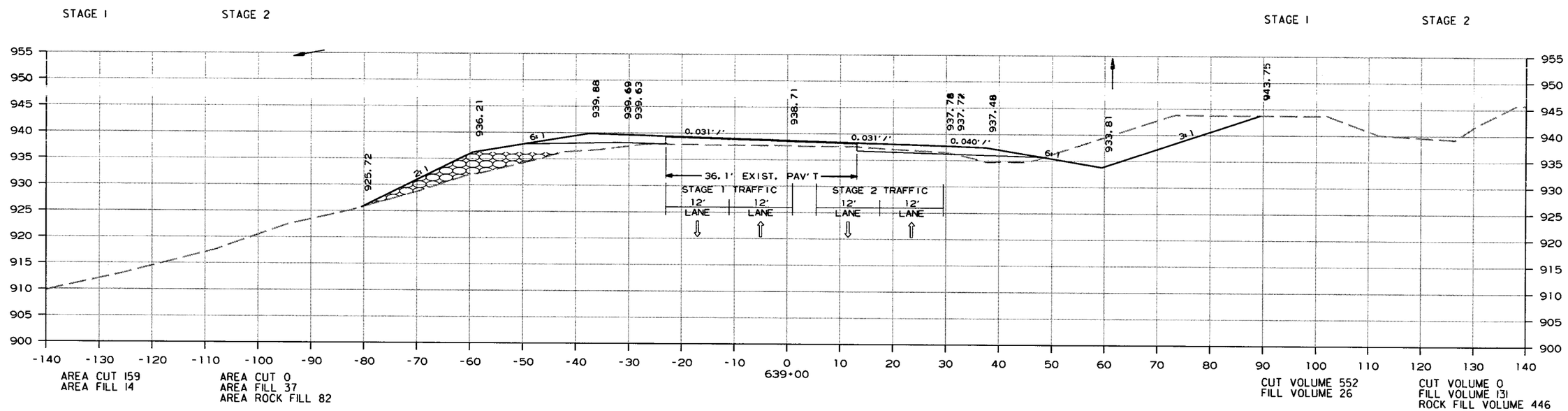

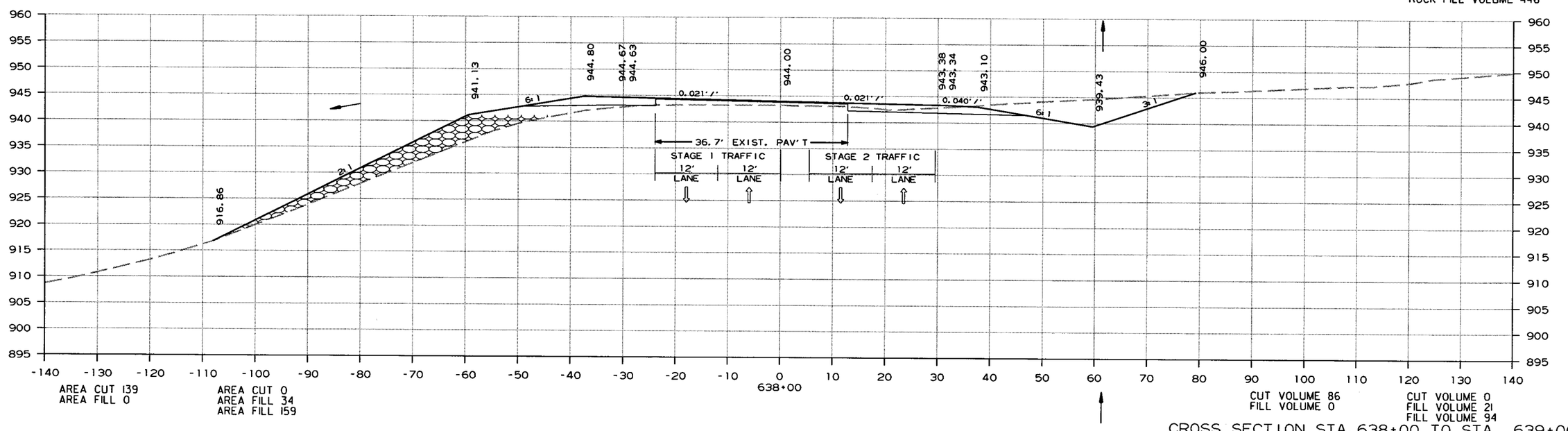

CROSS SECTION STA. 638+00 TO STA. 639+00

6/15/2015

R080423.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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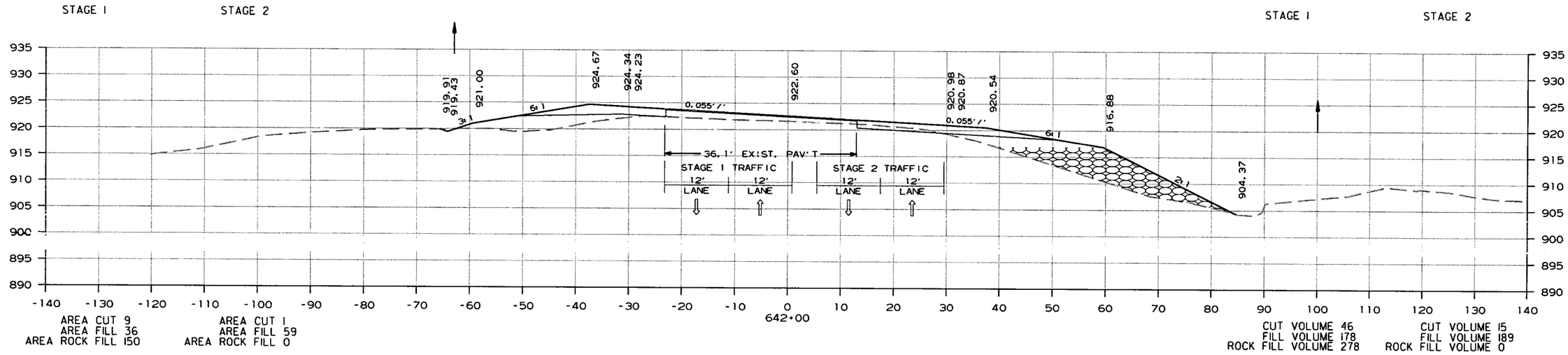

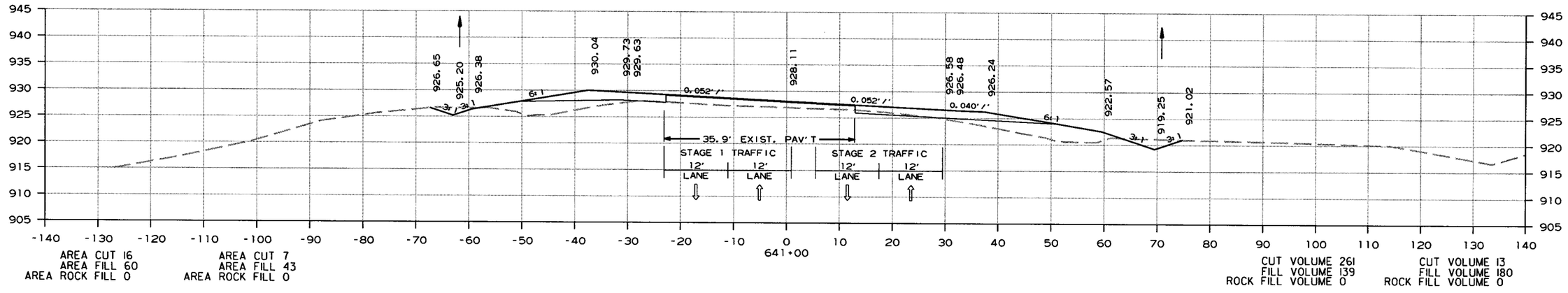

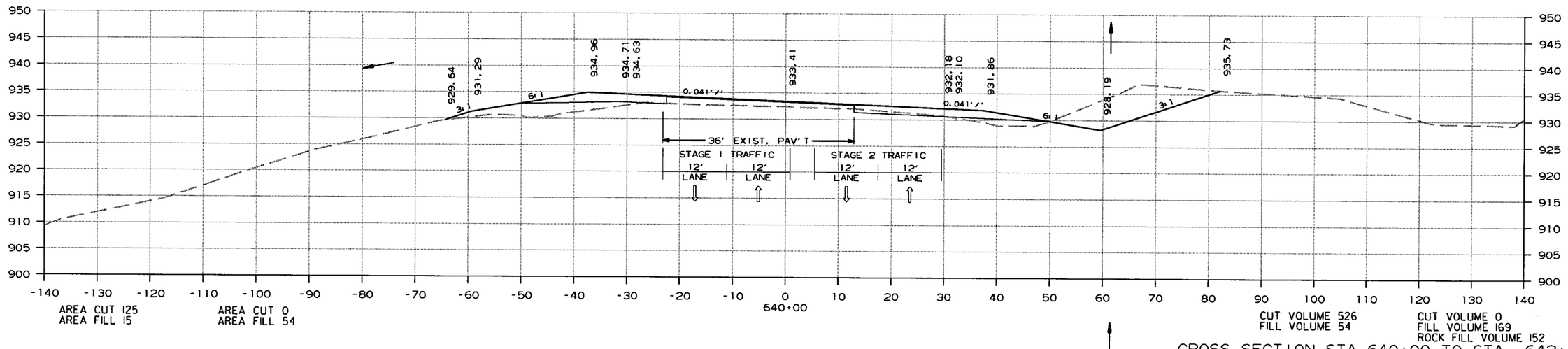

CROSS SECTION STA. 640+00 TO STA. 642+00

6/15/2015

R080423.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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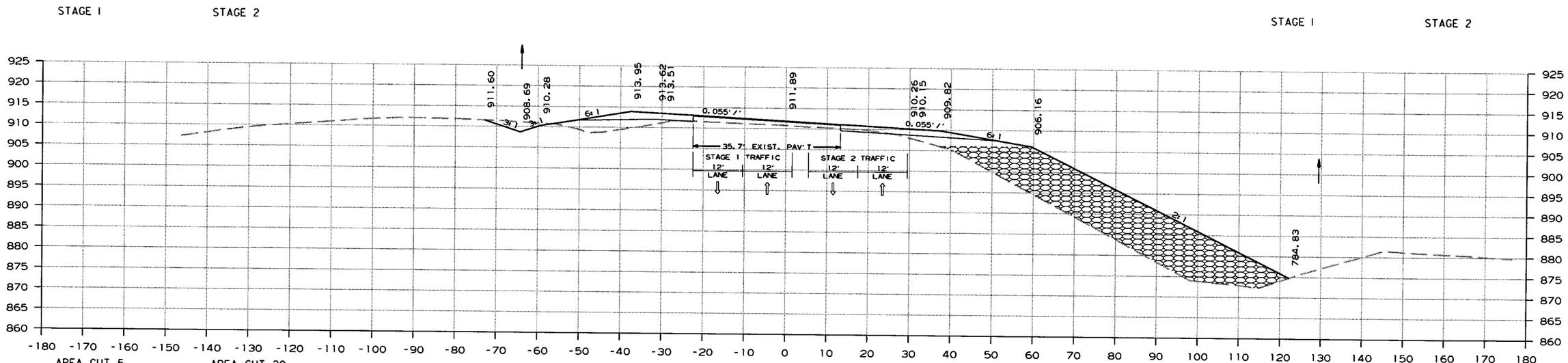
				JOB NO.		080423	295	517

(2) CROSS SECTIONS

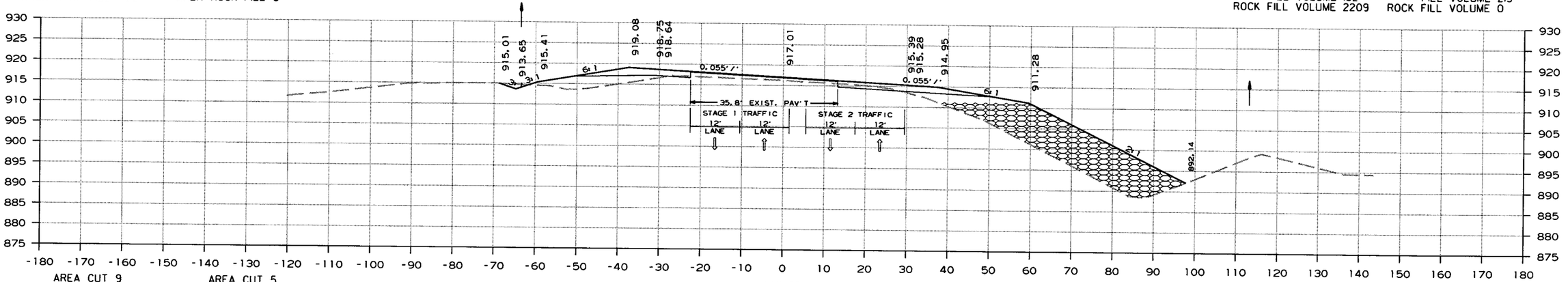


AREA CUT 5
AREA FILL 03
AREA ROCK FILL 766

AREA CUT 20
AREA FILL 54
AREA ROCK FILL 0

CUT VOLUME 26
FILL VOLUME 152
ROCK FILL VOLUME 2209

CUT VOLUME 46
FILL VOLUME 213
ROCK FILL VOLUME 0



AREA CUT 9
AREA FILL 39
AREA ROCK FILL 427

AREA CUT 5
AREA FILL 61
AREA ROCK FILL 0

CUT VOLUME 33
FILL VOLUME 139
ROCK FILL VOLUME 1069

CUT VOLUME 11
FILL VOLUME 222
ROCK FILL VOLUME 0

CROSS SECTION STA. 643+00 TO STA. 644+00

R080423.DGN 6/15/2015

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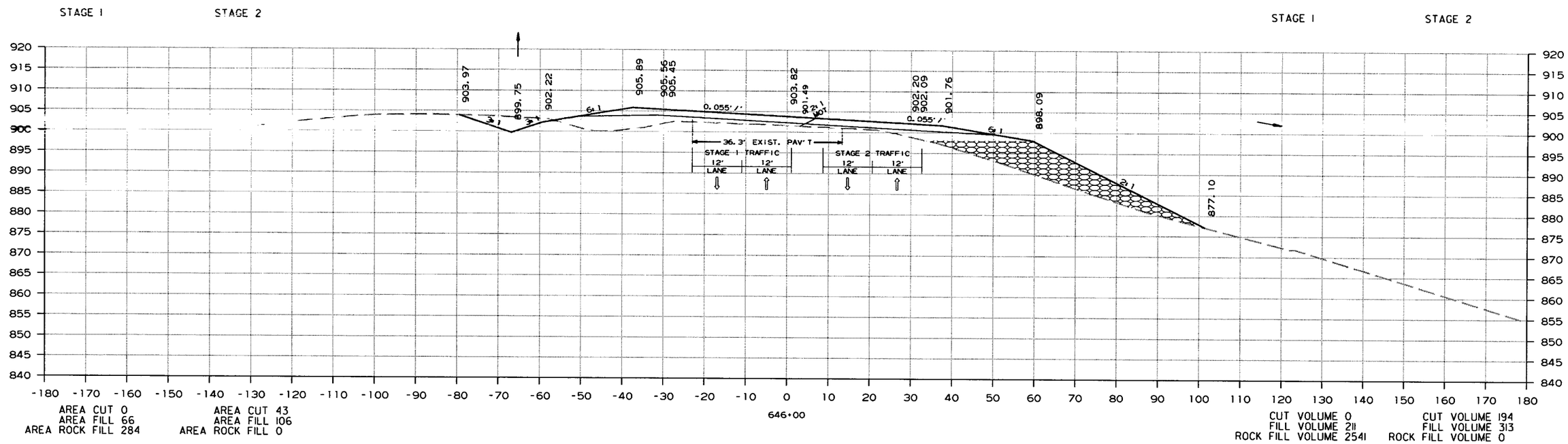
(2) CROSS SECTIONS

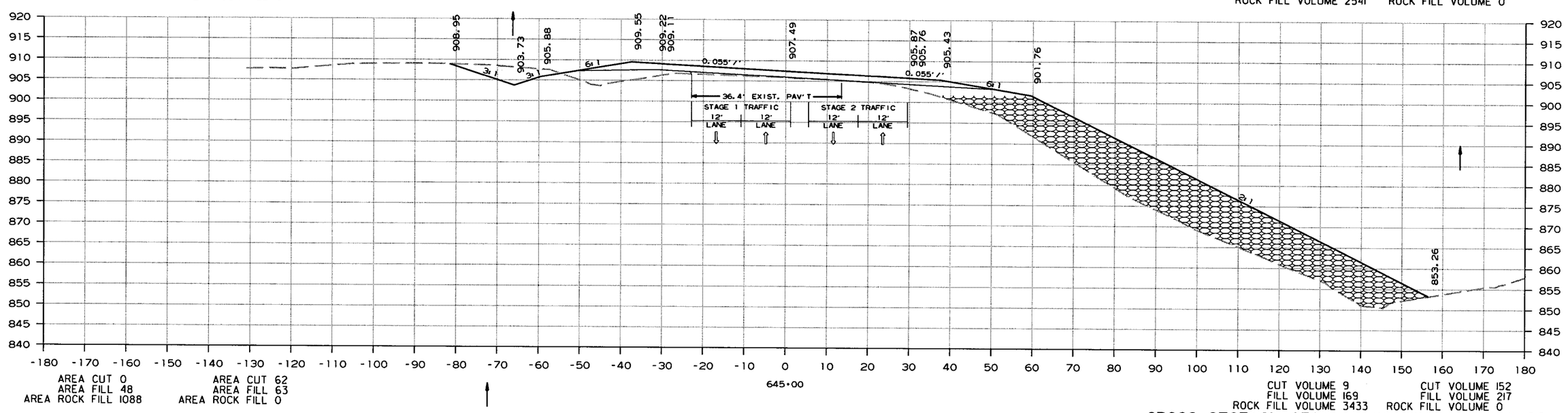


AREA CUT 0
AREA FILL 66
AREA ROCK FILL 284

AREA CUT 43
AREA FILL 106
AREA ROCK FILL 0

CUT VOLUME 0
FILL VOLUME 211
ROCK FILL VOLUME 2541

CUT VOLUME 194
FILL VOLUME 313
ROCK FILL VOLUME 0



AREA CUT 0
AREA FILL 48
AREA ROCK FILL 1088

AREA CUT 62
AREA FILL 63
AREA ROCK FILL 0

CUT VOLUME 9
FILL VOLUME 169
ROCK FILL VOLUME 3433

CUT VOLUME 152
FILL VOLUME 217
ROCK FILL VOLUME 0

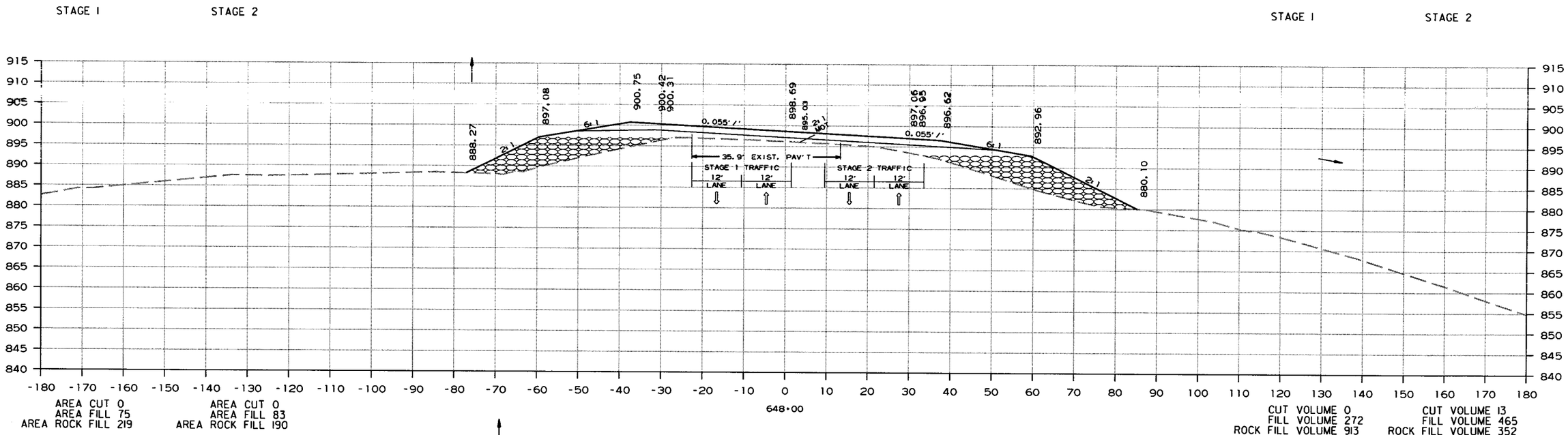
CROSS SECTION STA. 645+00 TO STA. 646+00

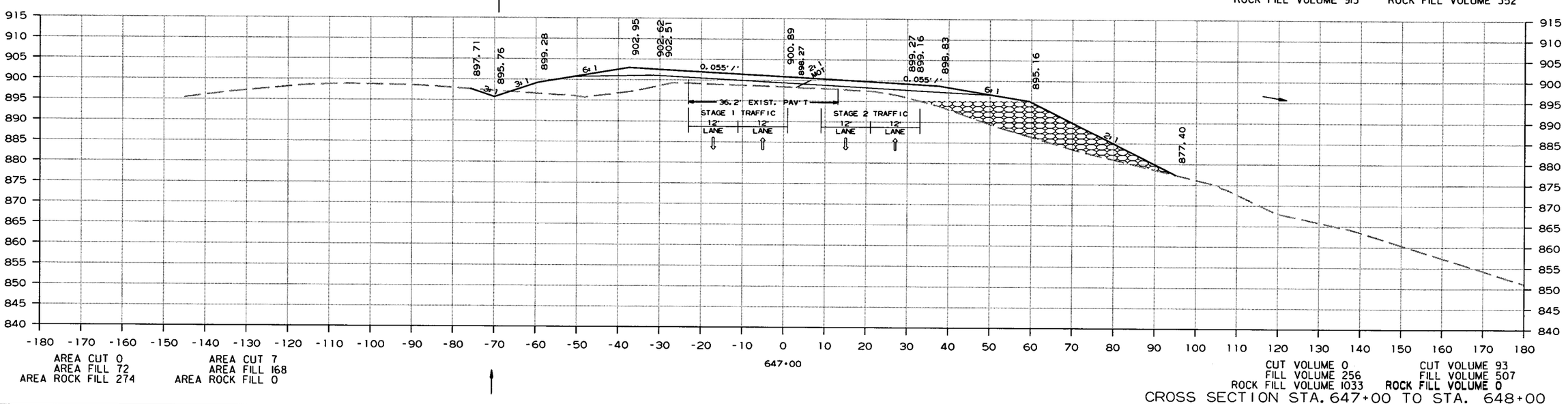
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	297	517

(2) CROSS SECTIONS





CROSS SECTION STA. 647+00 TO STA. 648+00

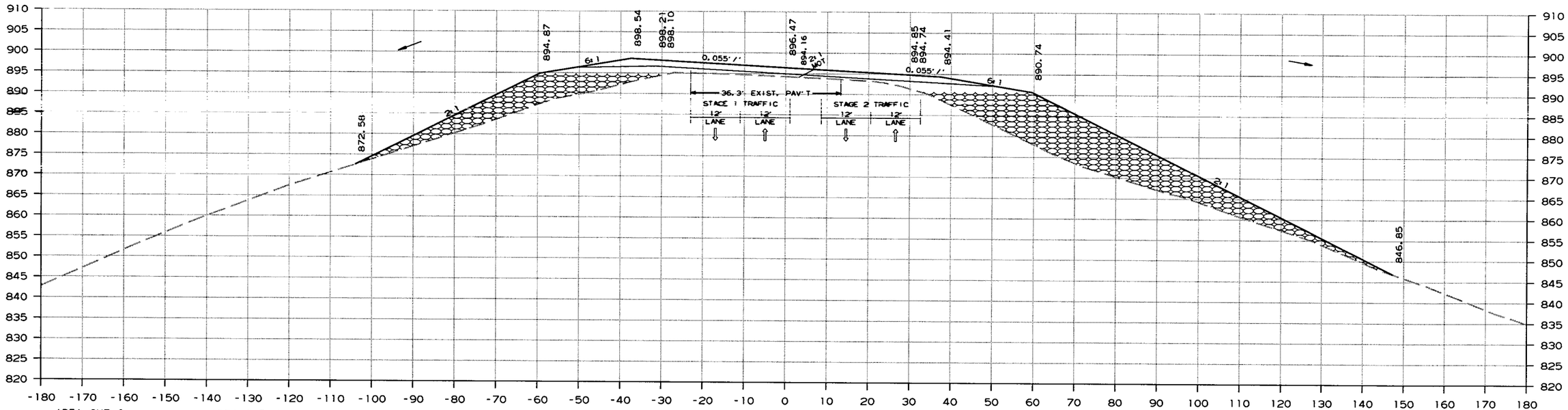
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	298	517

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 1 STAGE 2

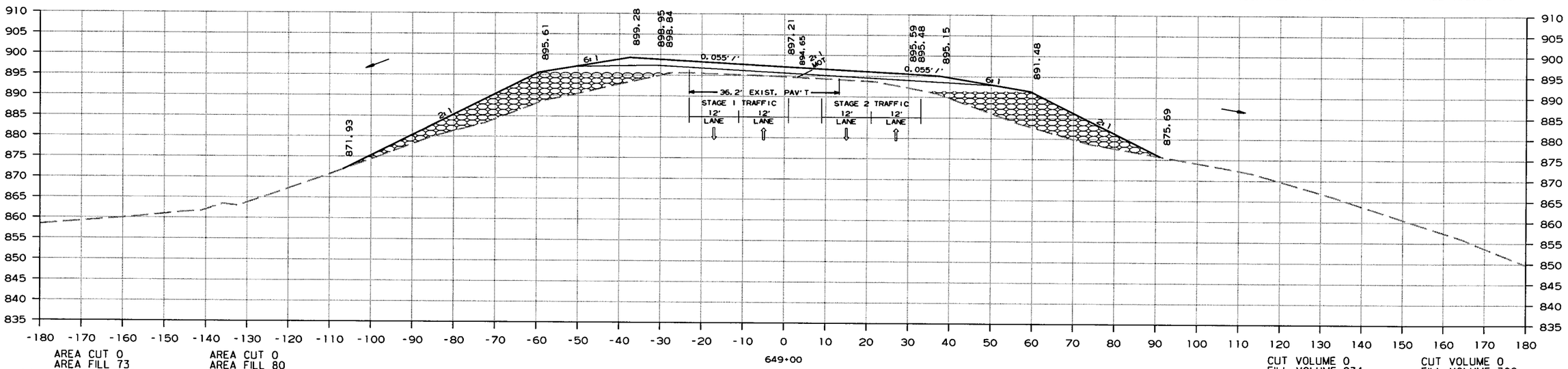


AREA CUT 0
AREA FILL 67
AREA ROCK FILL 706

AREA CUT 0
AREA FILL 73
AREA ROCK FILL 285

CUT VOLUME 0
FILL VOLUME 259
ROCK FILL VOLUME 1787

CUT VOLUME 0
FILL VOLUME 0
ROCK FILL VOLUME 1337



AREA CUT 0
AREA FILL 73
AREA ROCK FILL 259

AREA CUT 0
AREA FILL 80
AREA ROCK FILL 284

CUT VOLUME 0
FILL VOLUME 274
ROCK FILL VOLUME 885

CUT VOLUME 0
FILL VOLUME 302
ROCK FILL VOLUME 878

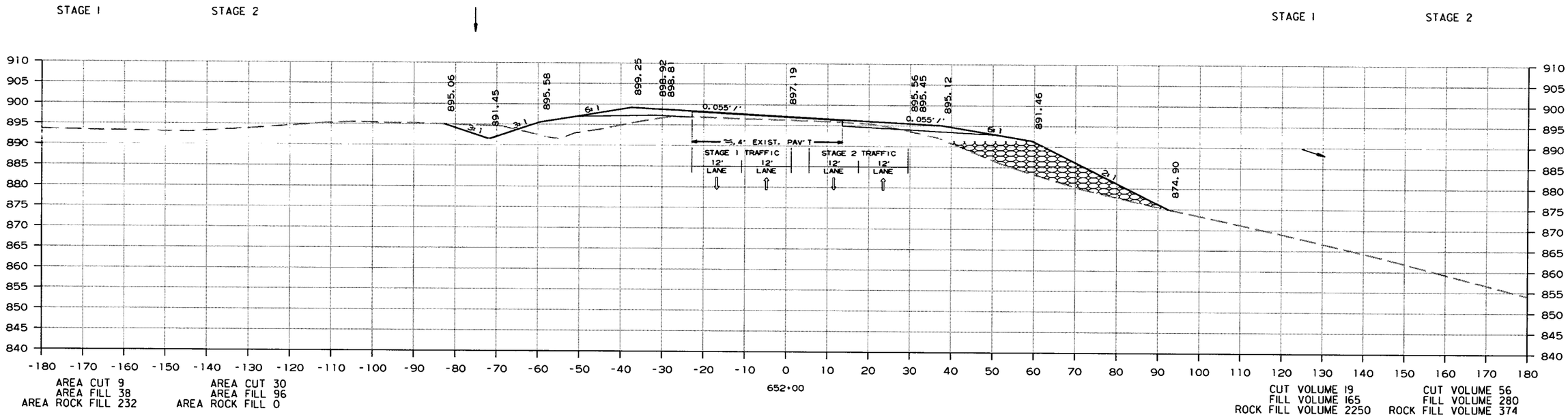
CROSS SECTION STA. 649+00 TO STA. 650+00

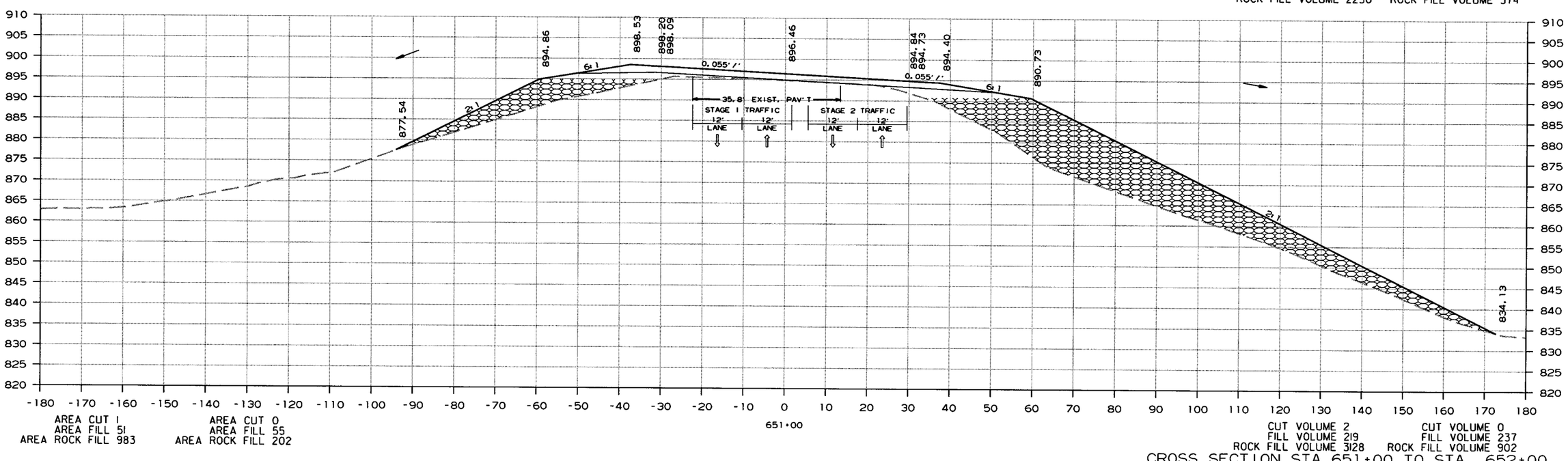
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	299	517

(2) CROSS SECTIONS





CROSS SECTION STA. 651+00 TO STA. 652+00

6/15/2015

R080423.DGN

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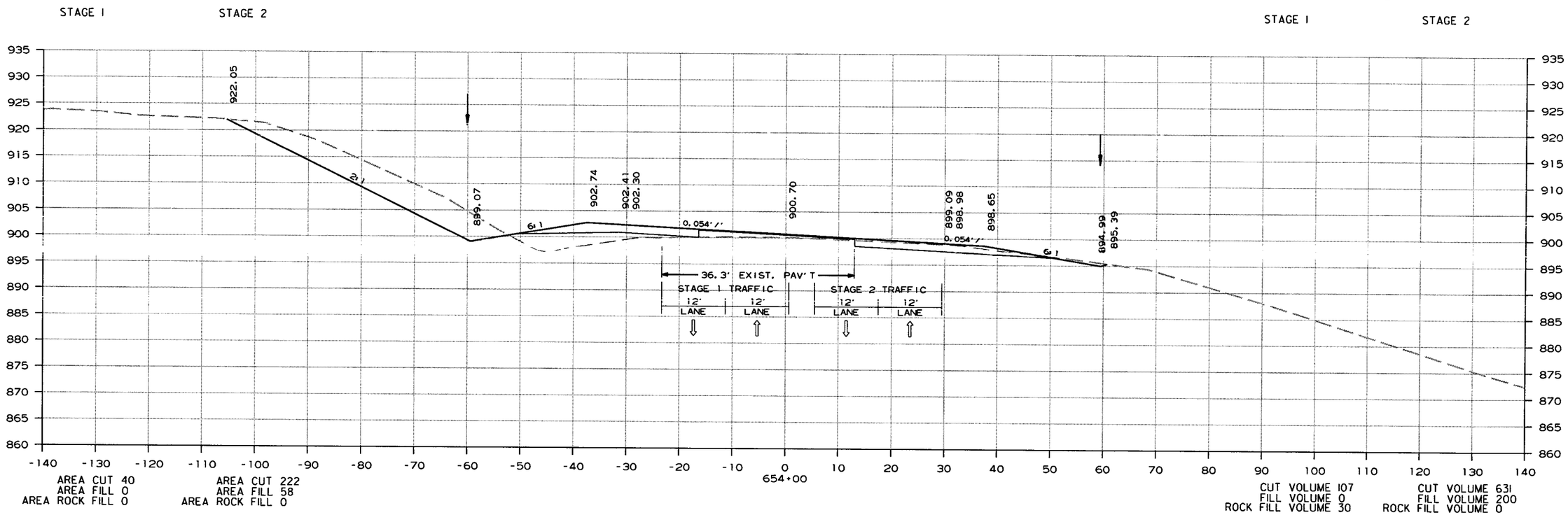
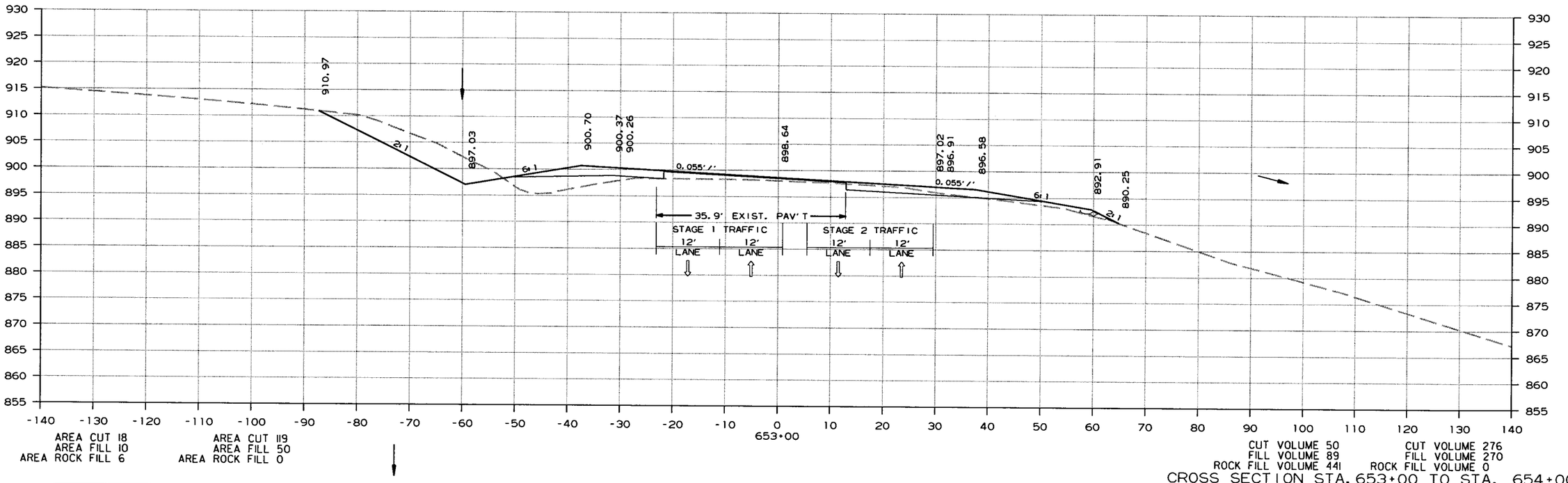
(2) CROSS SECTIONS





CROSS SECTION STA. 653+00 TO STA. 654+00

6/15/2015

R080423.DGN

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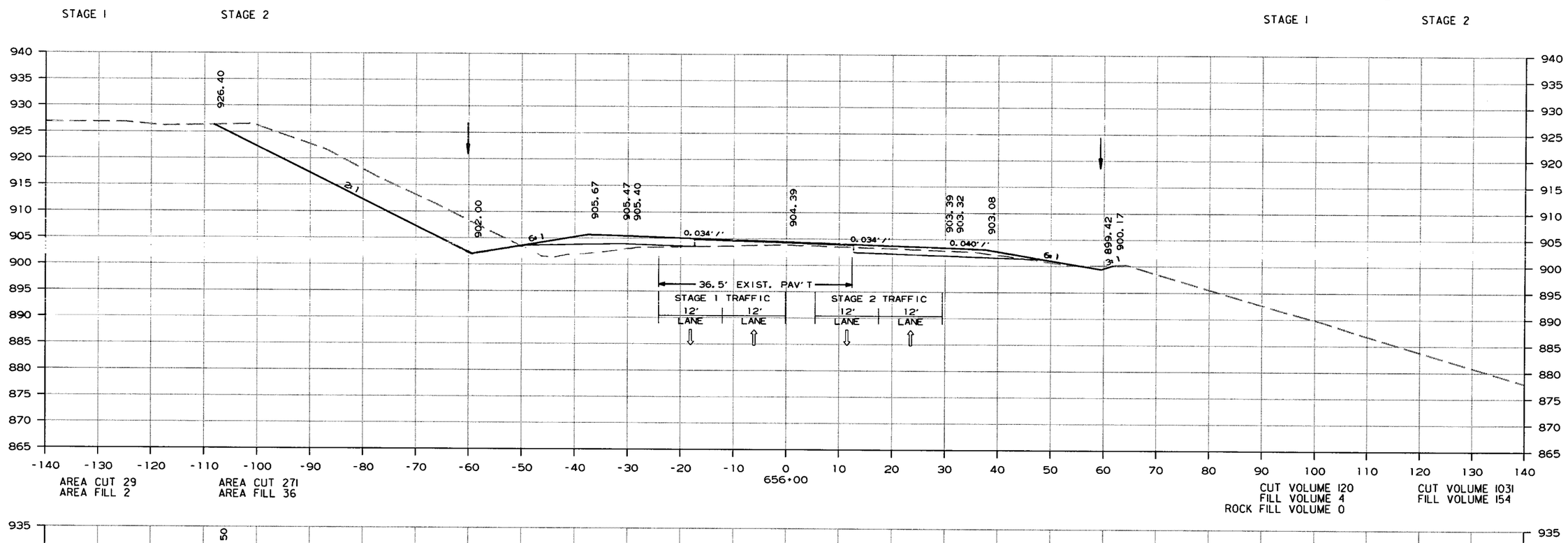
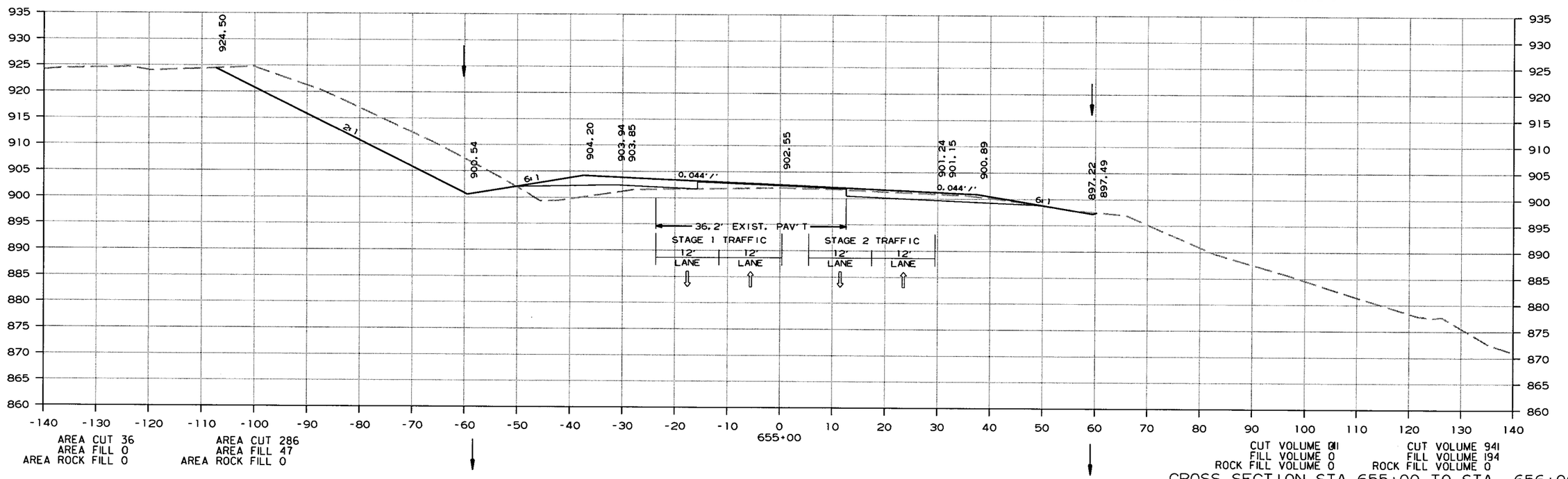
(2) CROSS SECTIONS





CROSS SECTION STA. 655+00 TO STA. 656+00

6/15/2015

R080423.DGN

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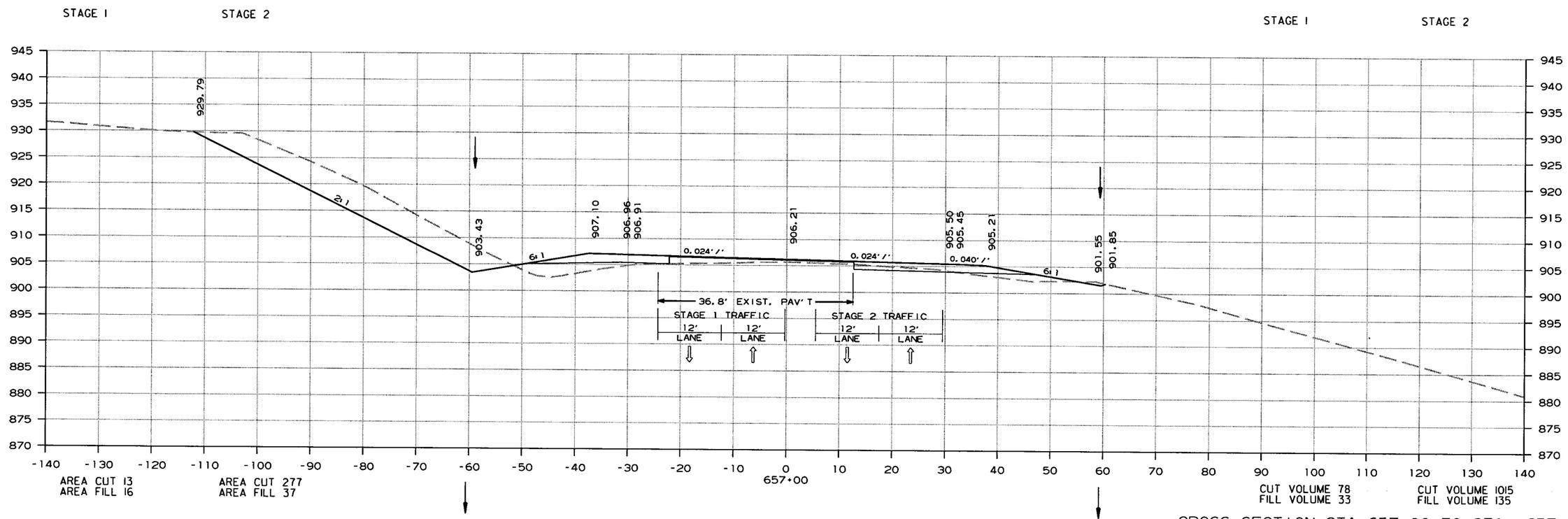
(2) CROSS SECTIONS



CROSS SECTION STA. 657+00 TO STA. 657+00

6/15/2015

R080423.DGN

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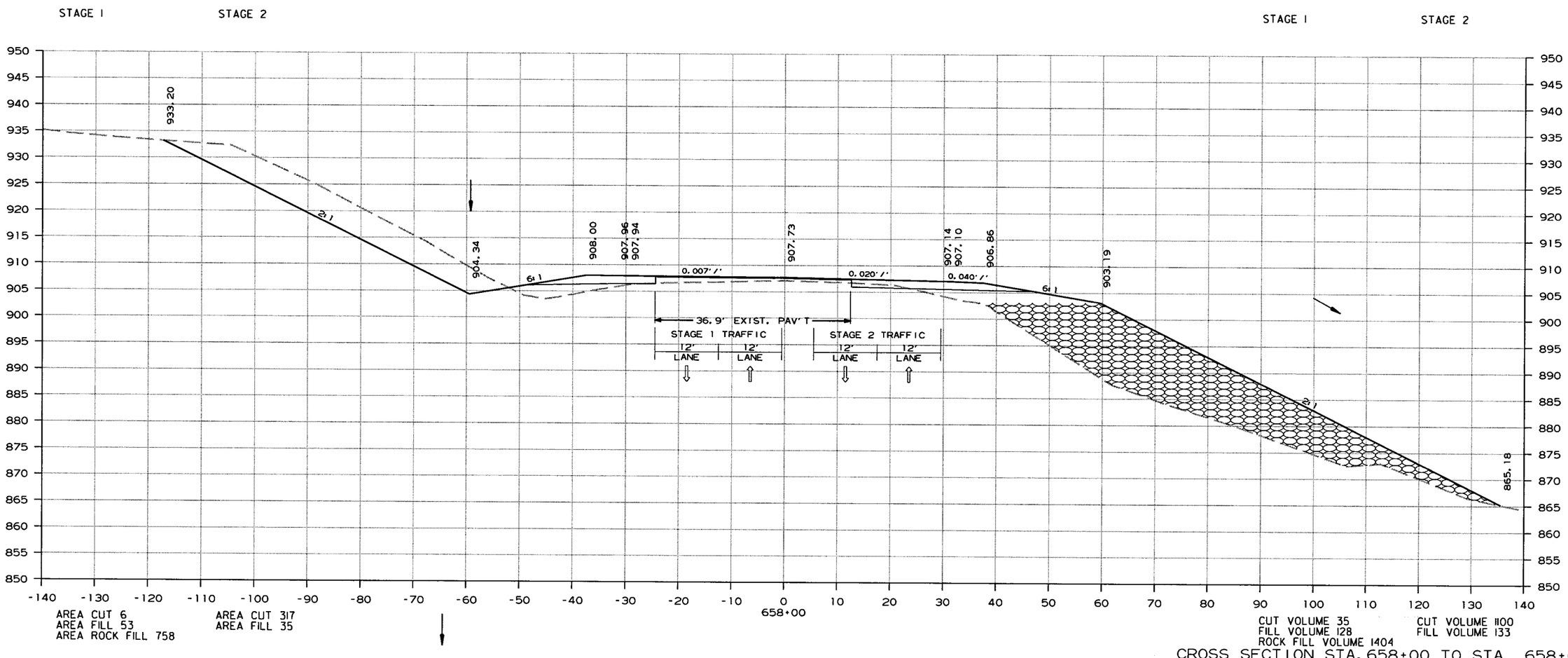
(2) CROSS SECTIONS



CROSS SECTION STA. 658+00 TO STA. 658+00

6/15/2015

R080423.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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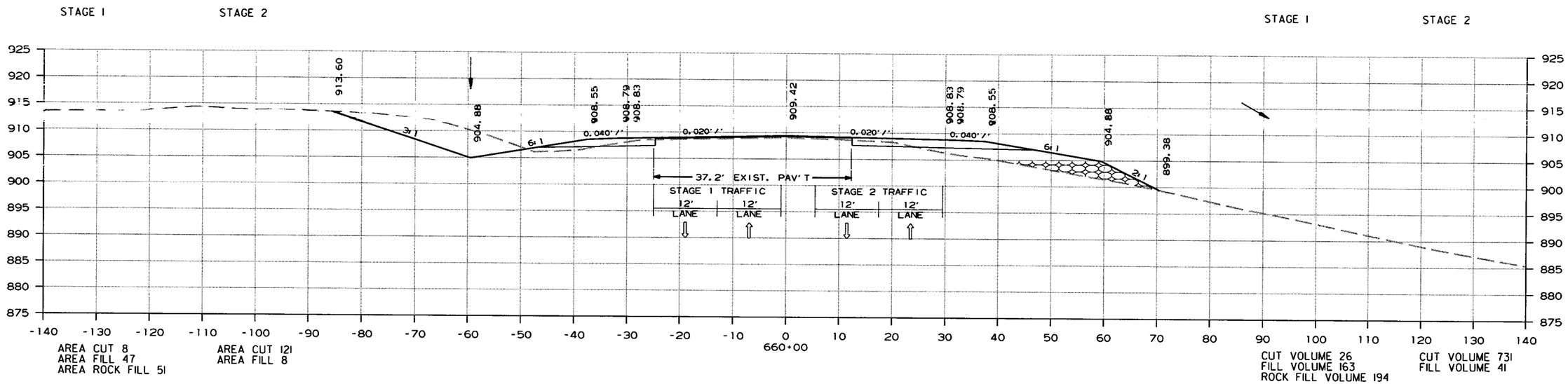
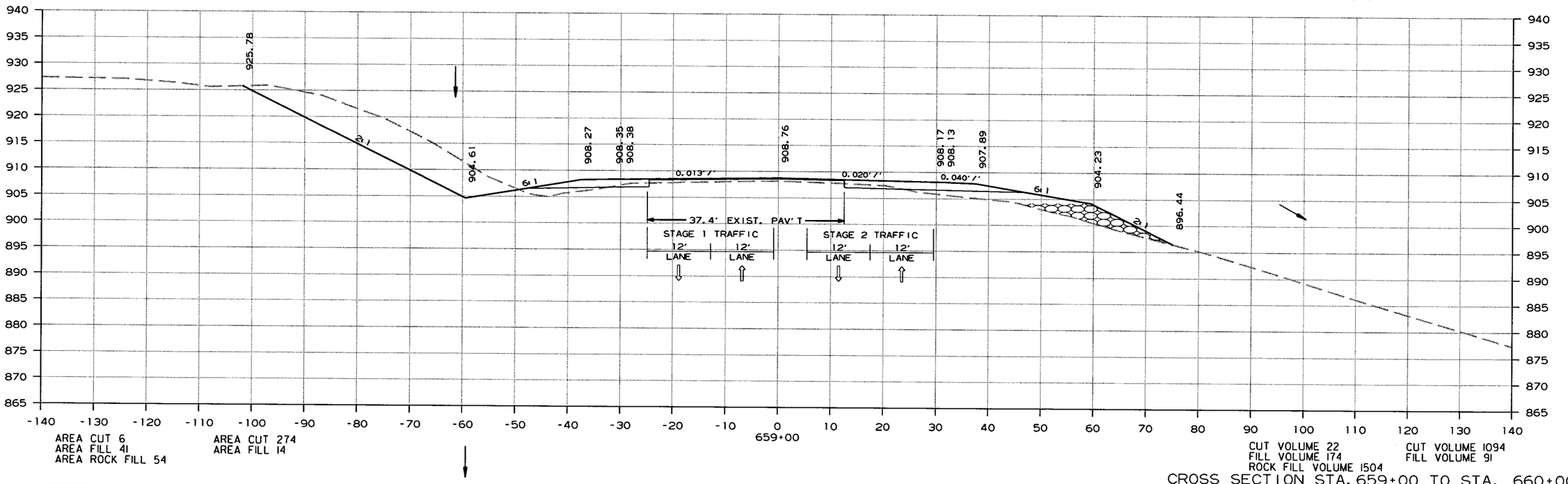
				JOB NO.		080423	304	517

(2) CROSS SECTIONS





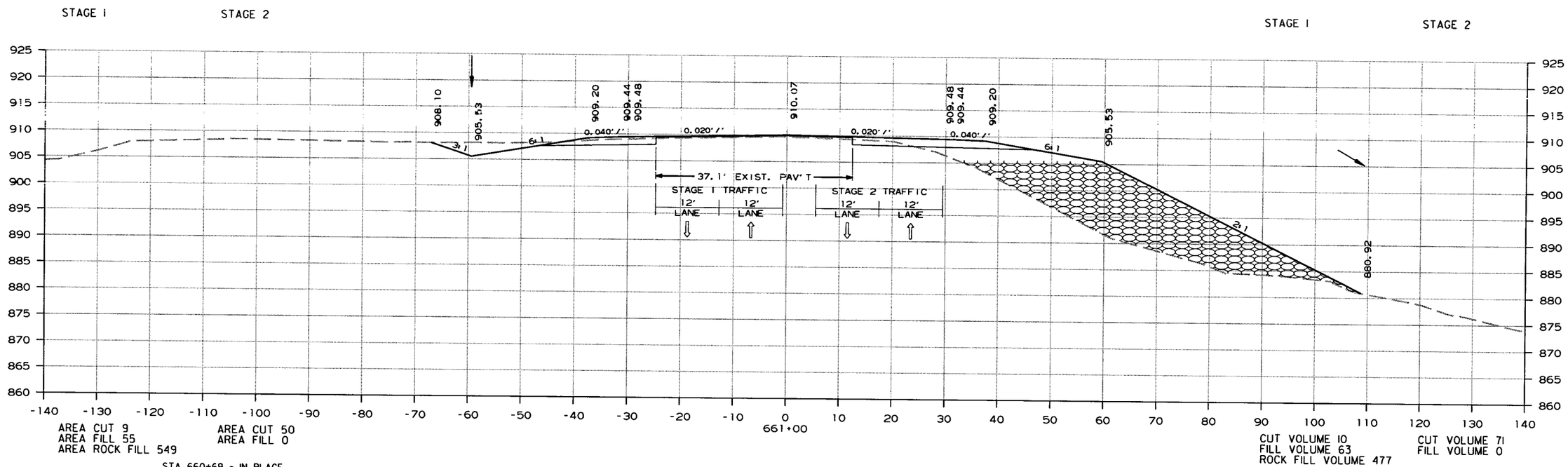
CROSS SECTION STA. 659+00 TO STA. 660+00

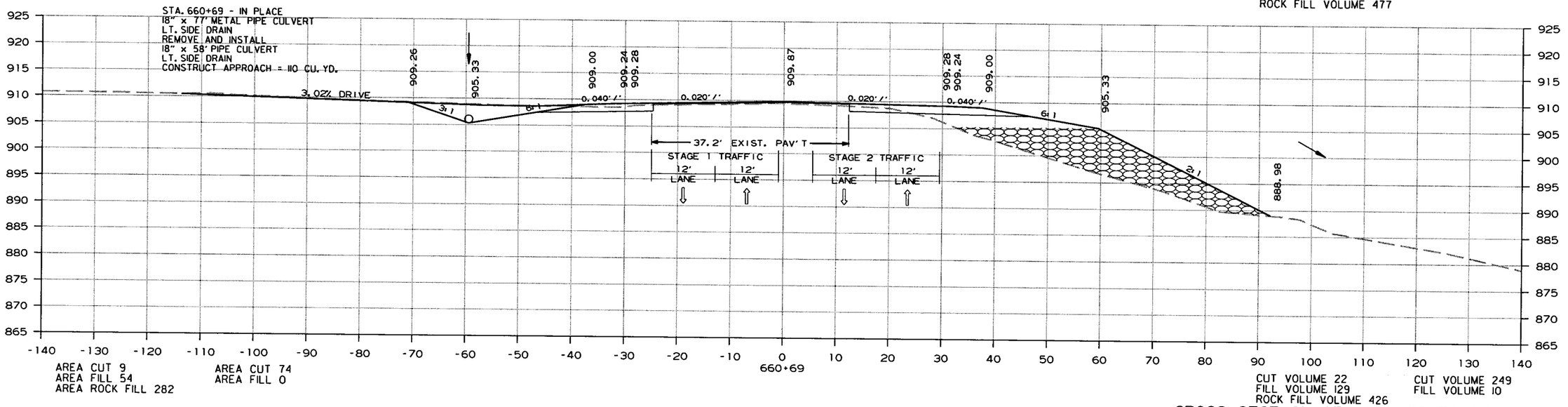
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	305	517

(2) CROSS SECTIONS





CROSS SECTION STA. 660+69 TO STA. 661+00

6/15/2015

R080423.DGN

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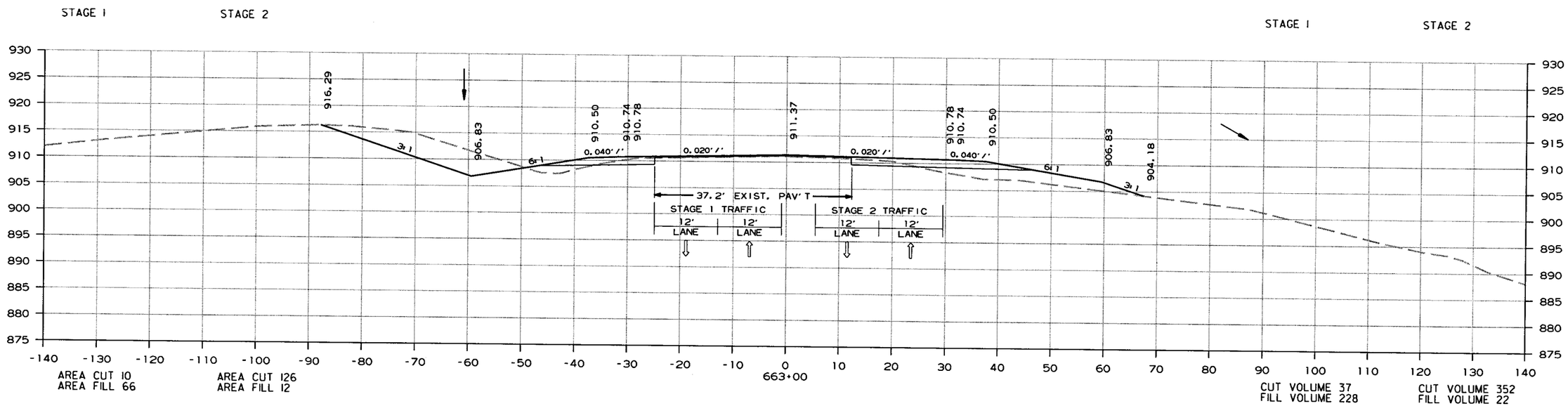
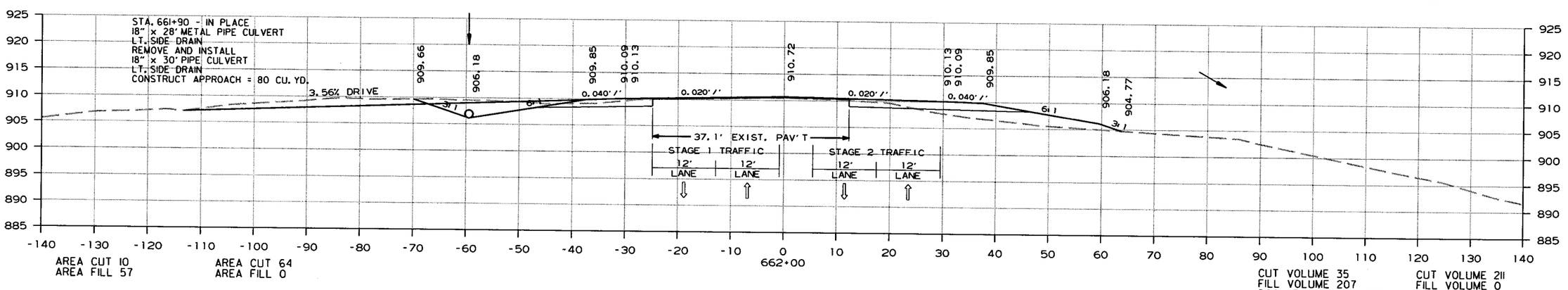
(2) CROSS SECTIONS





CROSS SECTION STA. 662+00 TO STA. 663+00

6/15/2015

R080423.DGN

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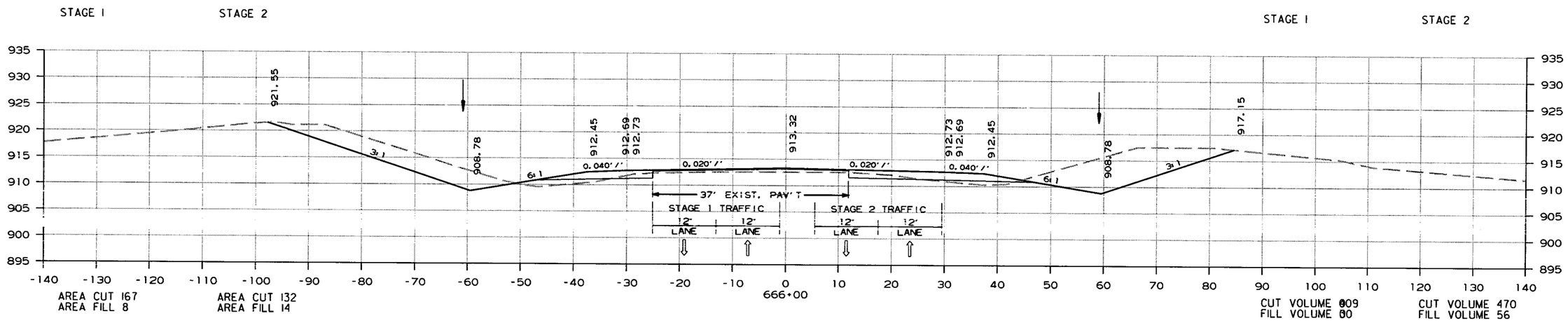
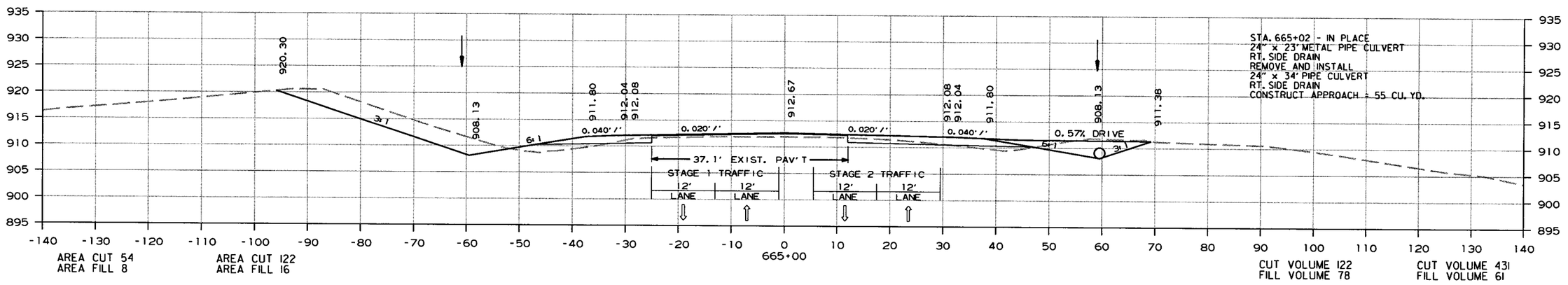
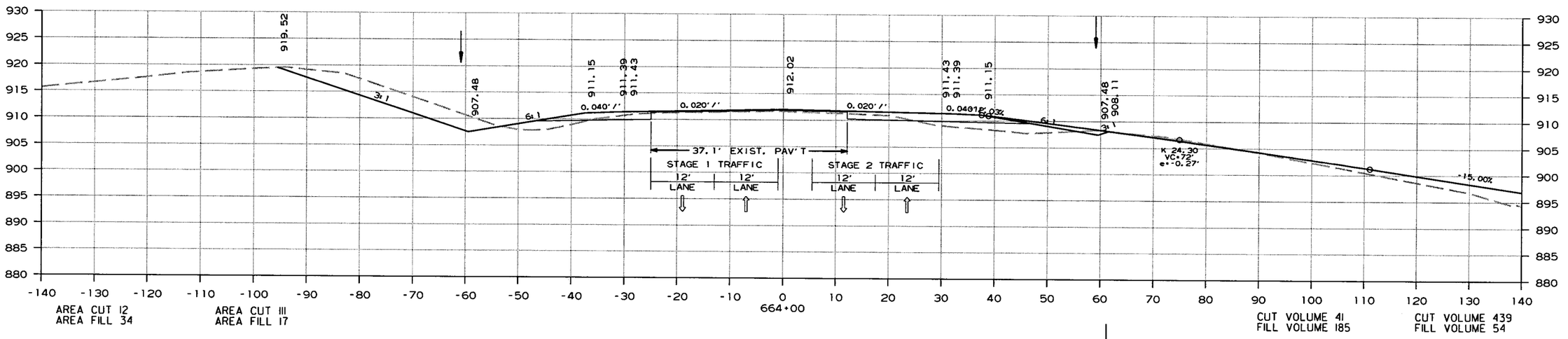
(2) CROSS SECTIONS







CROSS SECTION STA. 664+00 TO STA. 666+00

6/15/2015

R080423.DGN

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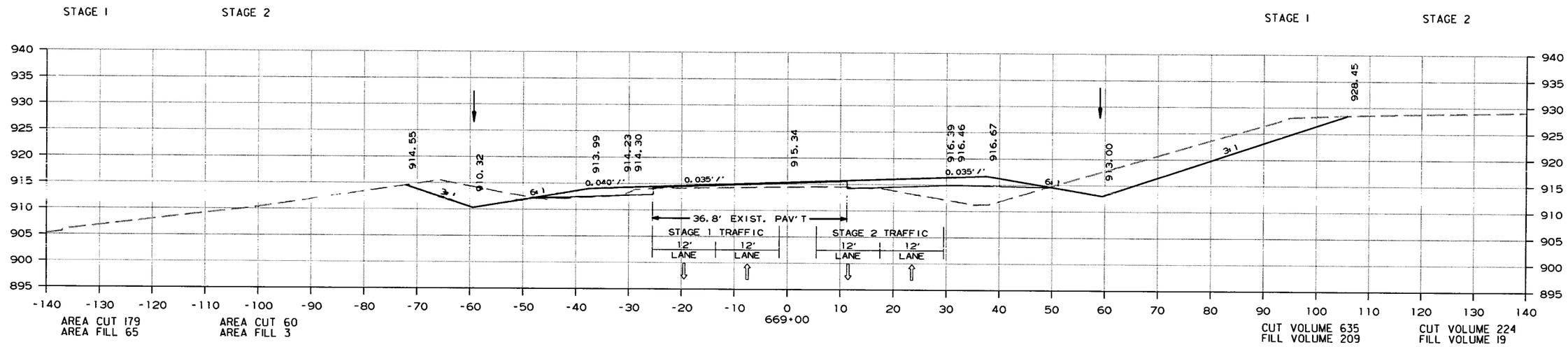
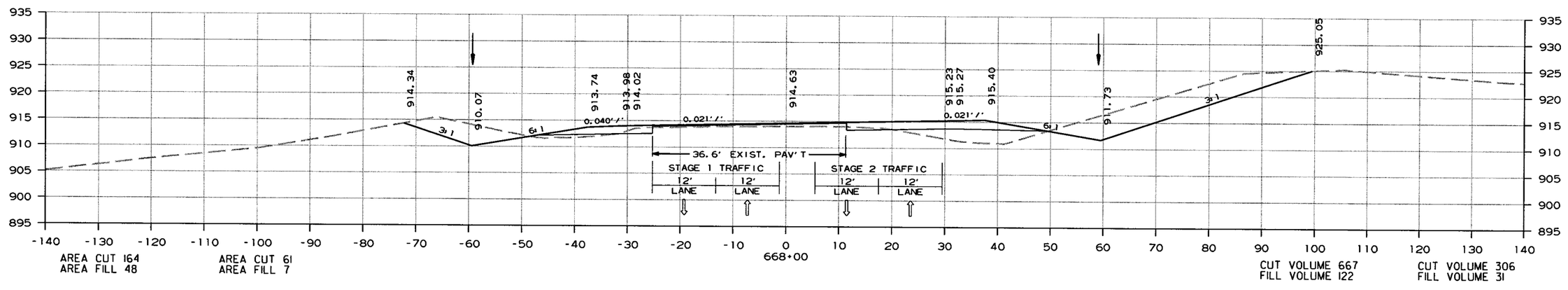
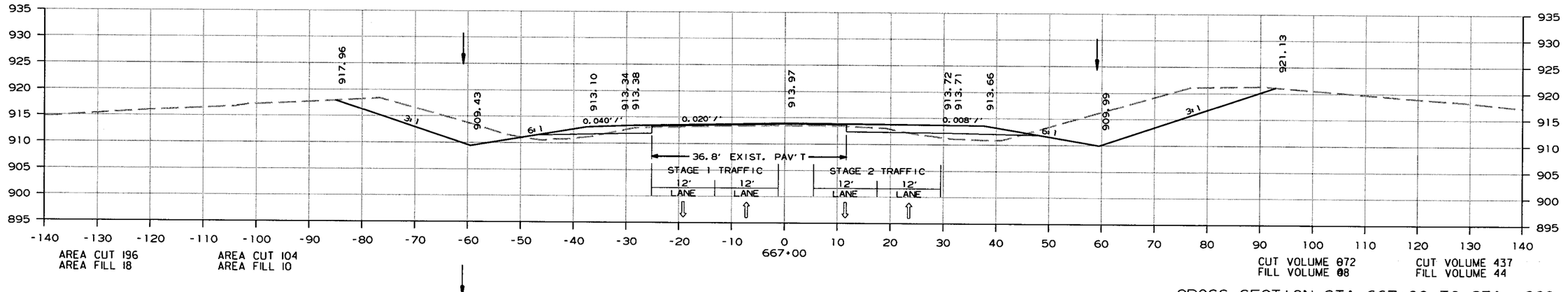
(2) CROSS SECTIONS







CROSS SECTION STA. 667+00 TO STA. 669+00

6/15/2015

R080423.DGN

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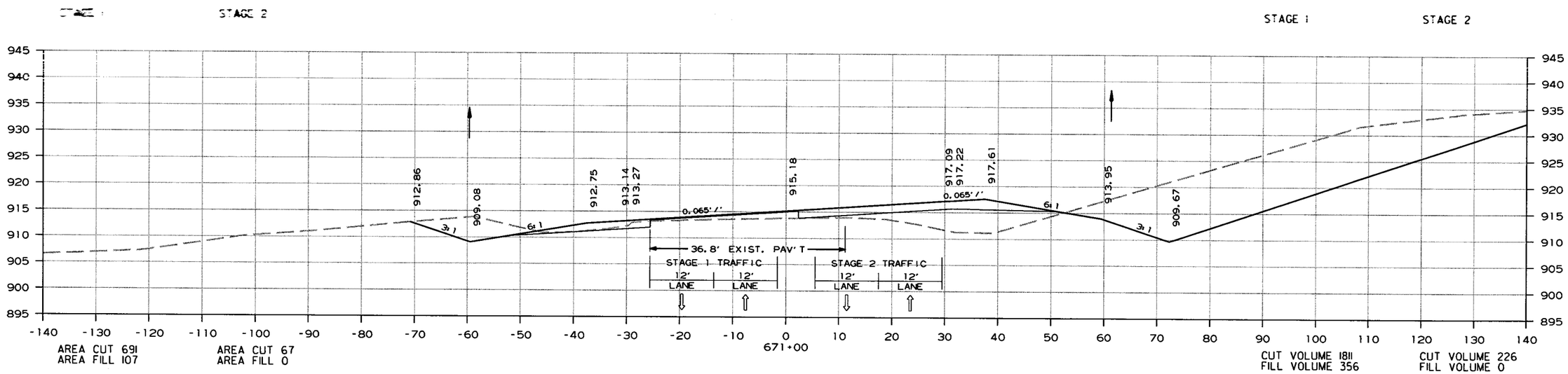
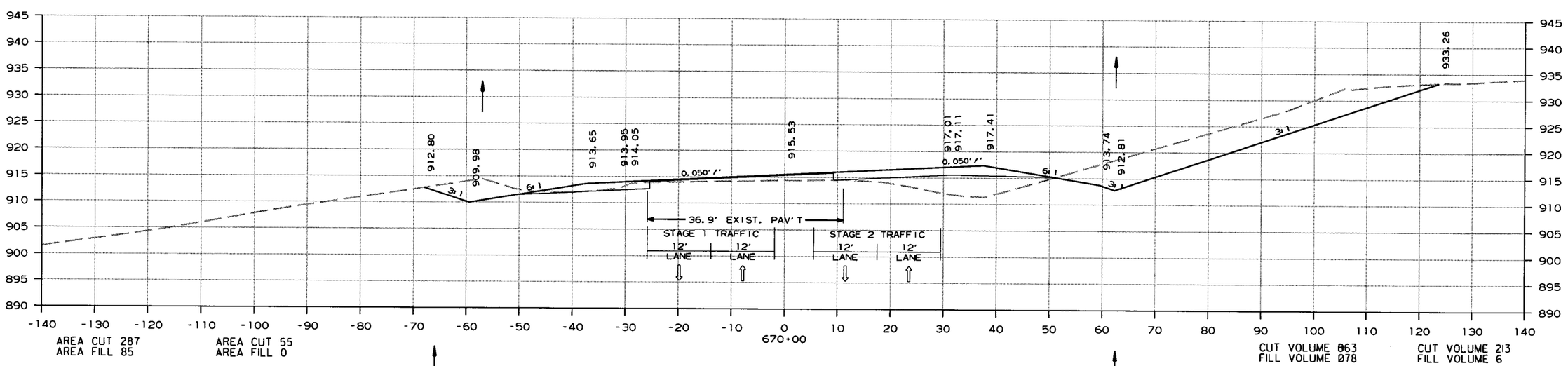
(2) CROSS SECTIONS





CROSS SECTION STA. 670+00 TO STA. 671+00

6/15/2015

R080423.DGN

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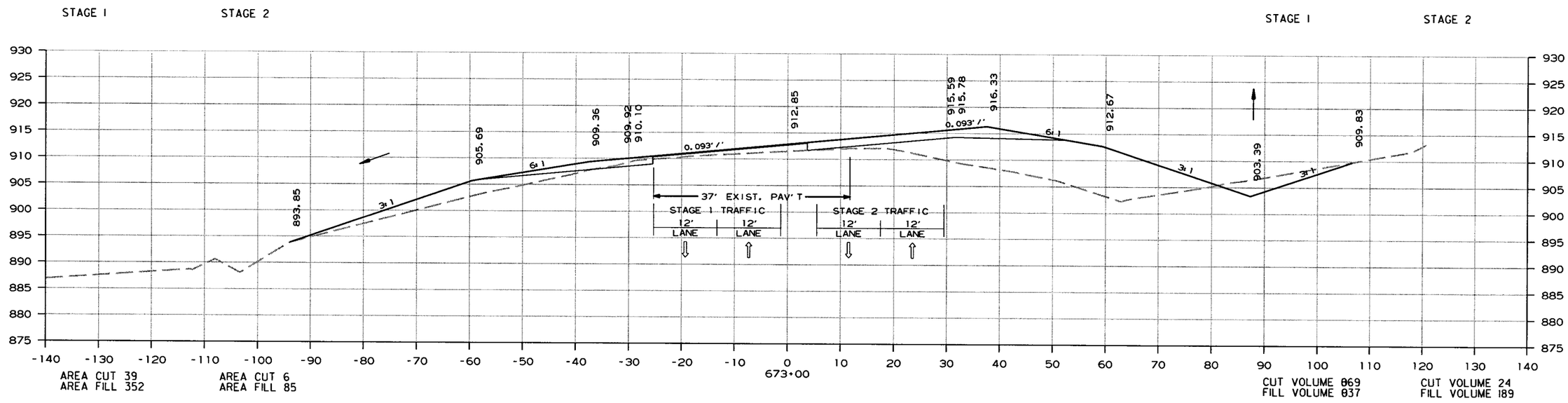
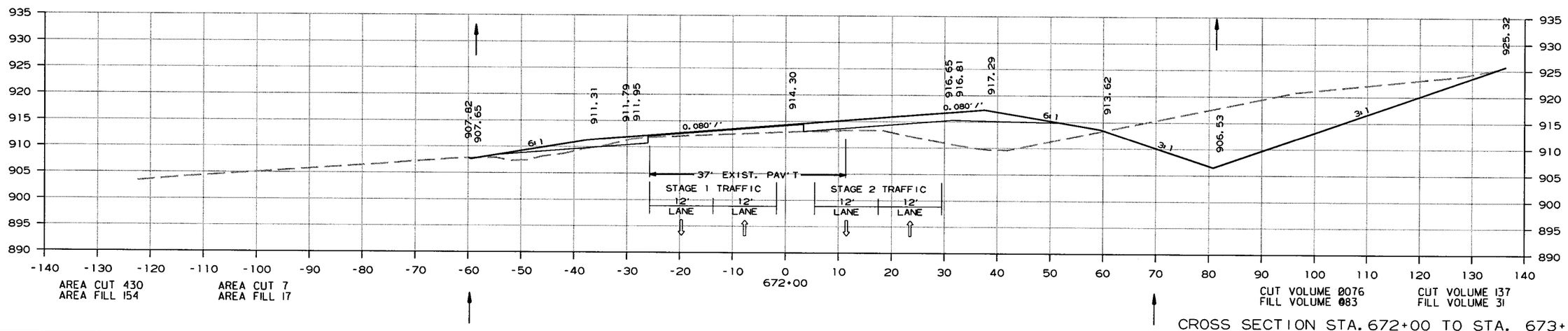
(2) CROSS SECTIONS





CROSS SECTION STA. 672+00 TO STA. 673+00

6/15/2015

R080423.DGN

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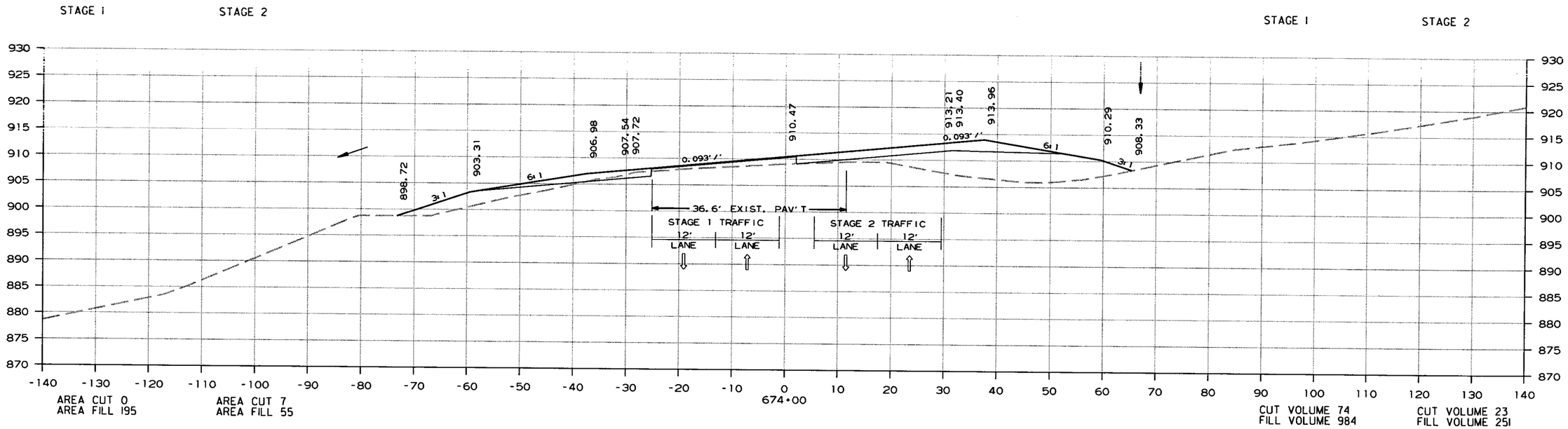
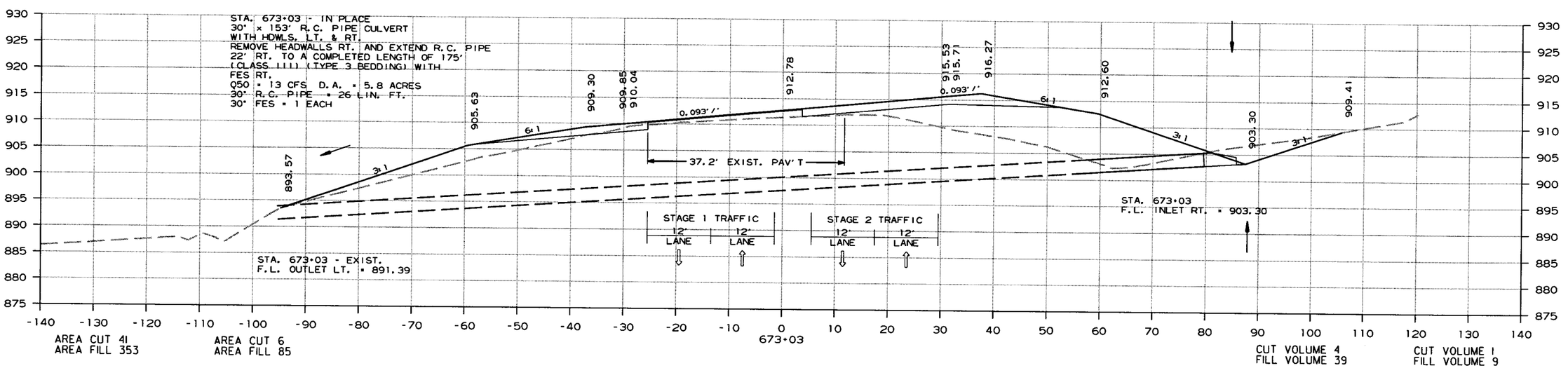
(2) CROSS SECTIONS





CROSS SECTION STA. 673+03 TO STA. 674+00

6/15/2015

R080423.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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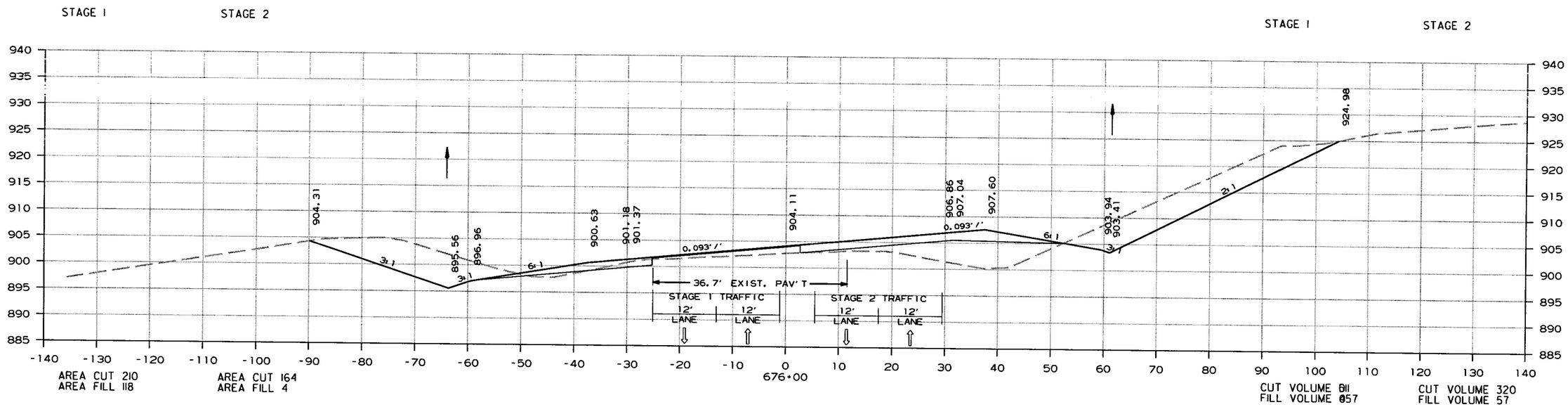

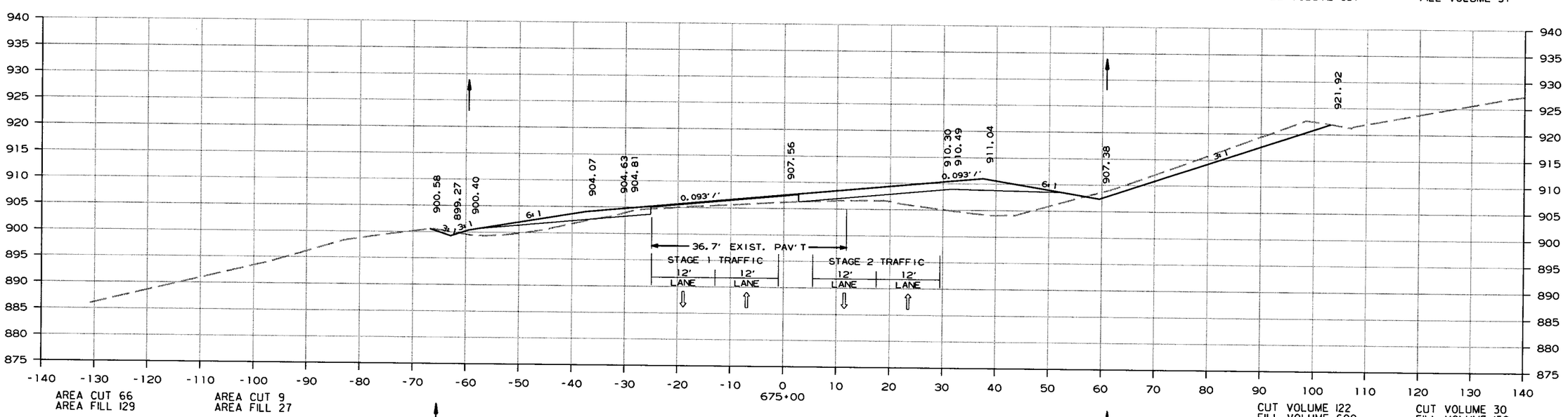

CROSS SECTION STA. 675+00 TO STA. 676+00

6/15/2015

R080423.DGN

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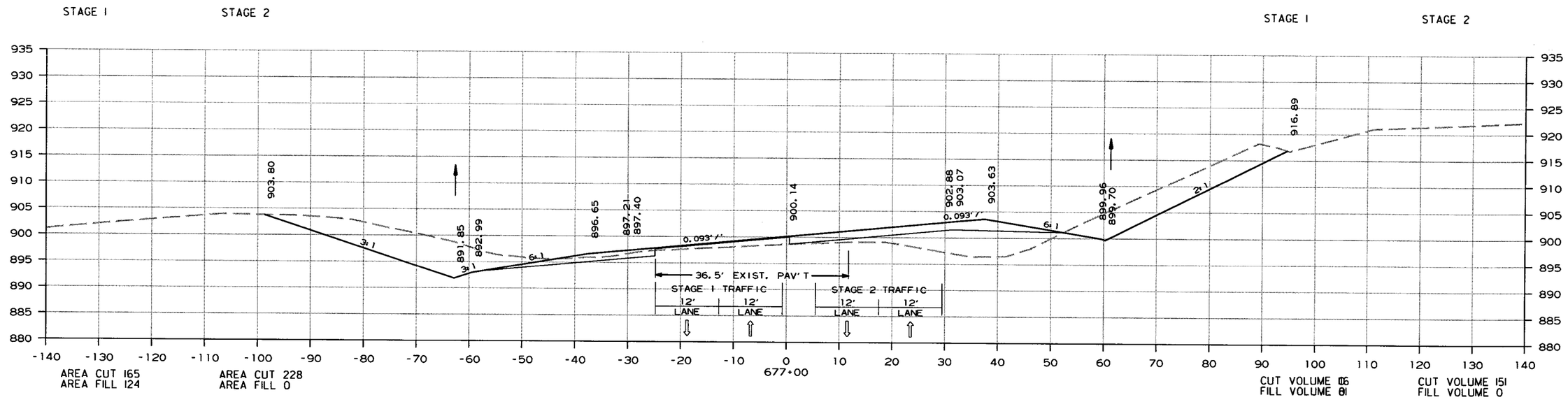
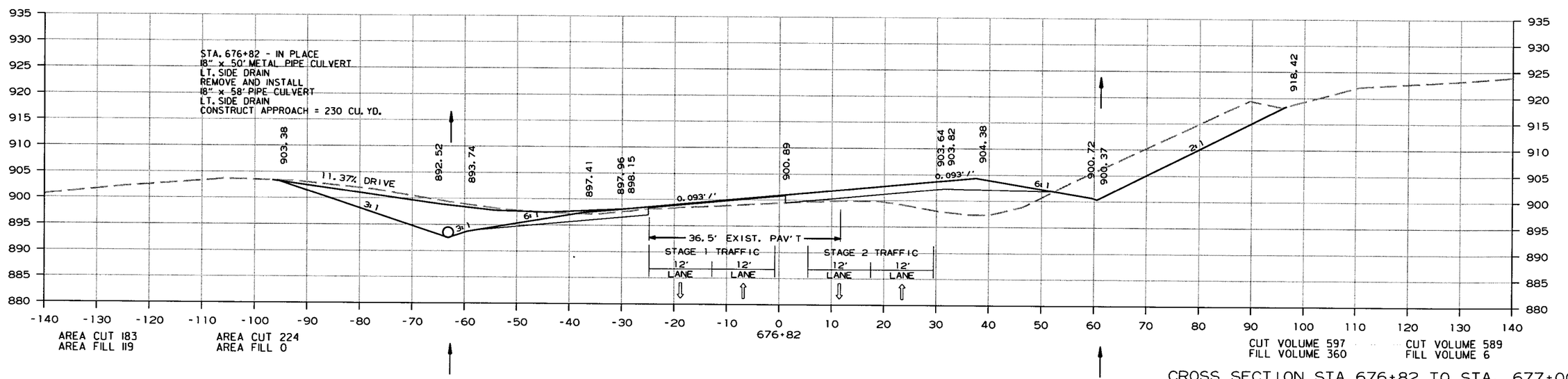
(2) CROSS SECTIONS





CROSS SECTION STA. 676+82 TO STA. 677+00

6/15/2015

R080423.DGN

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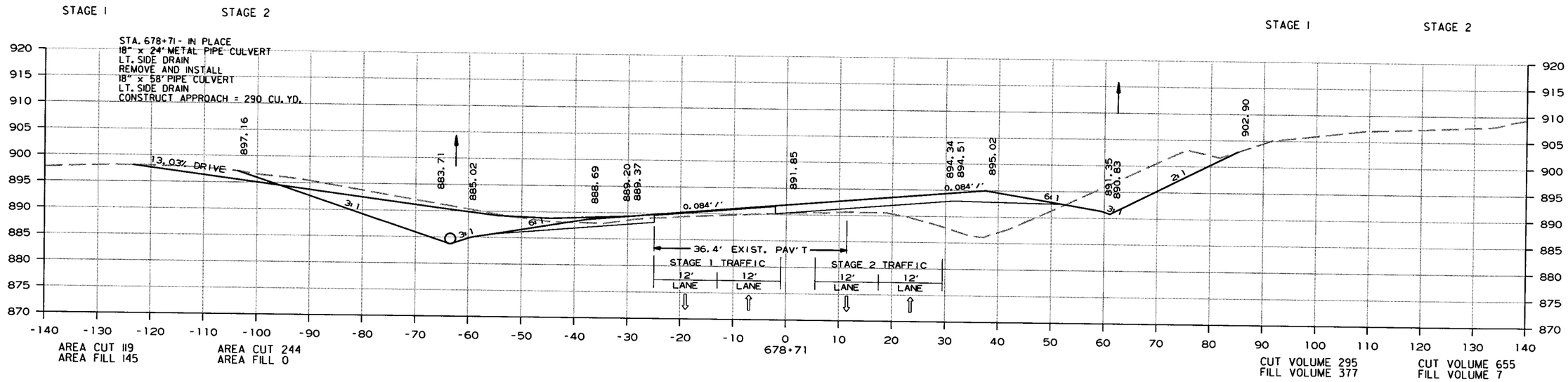
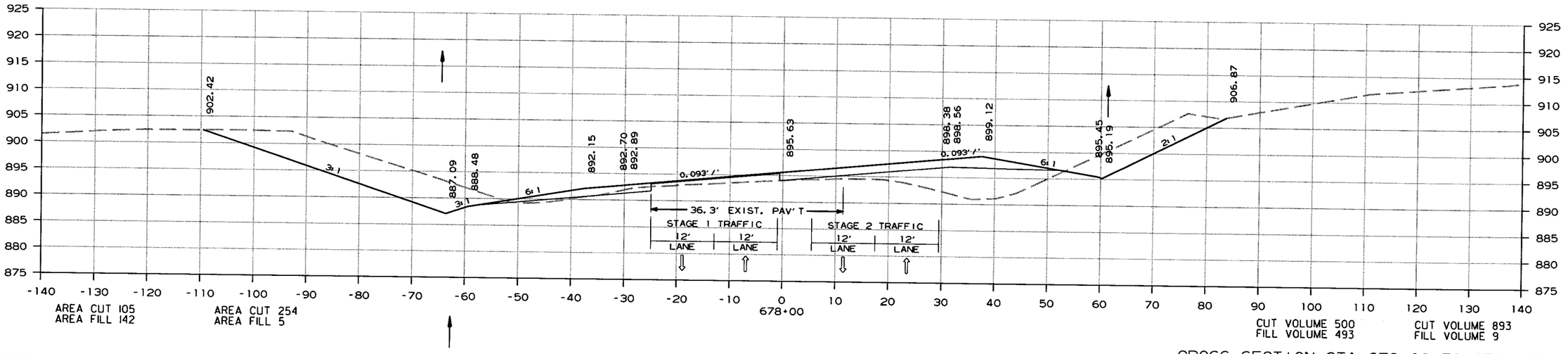
(2) CROSS SECTIONS





CROSS SECTION STA. 678+00 TO STA. 678+71

6/15/2015

R080423.DGN

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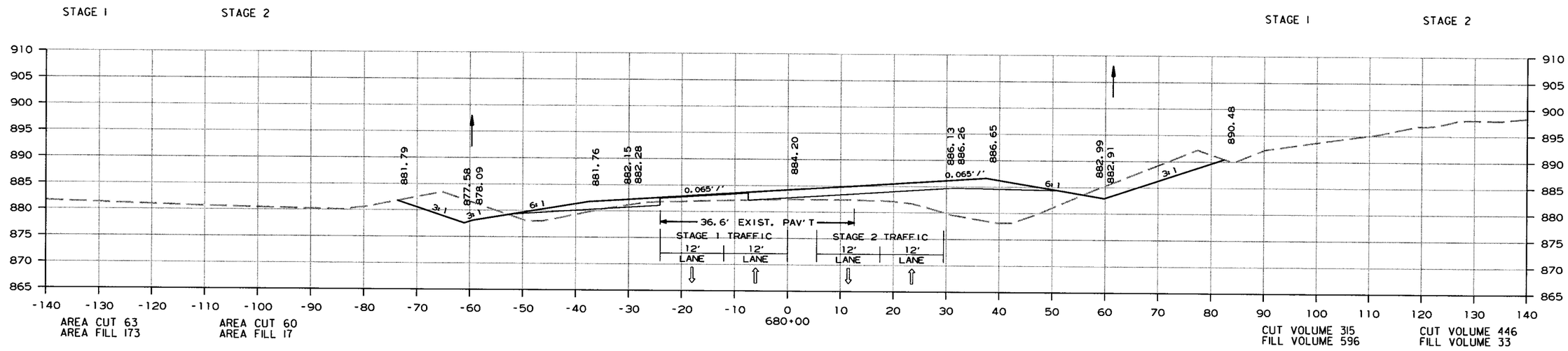
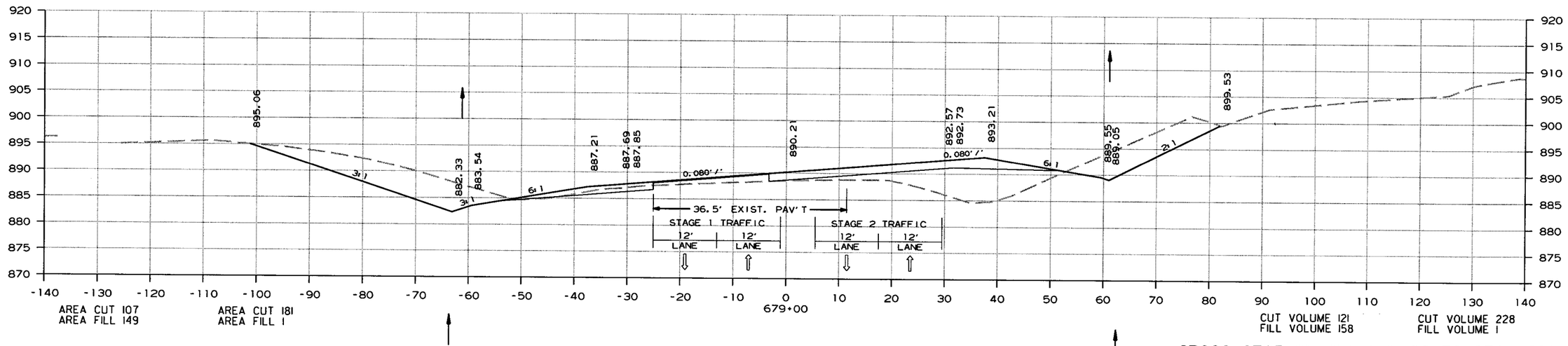
(2) CROSS SECTIONS





CROSS SECTION STA. 679+00 TO STA. 680+00

6/15/2015

R080423.DGN

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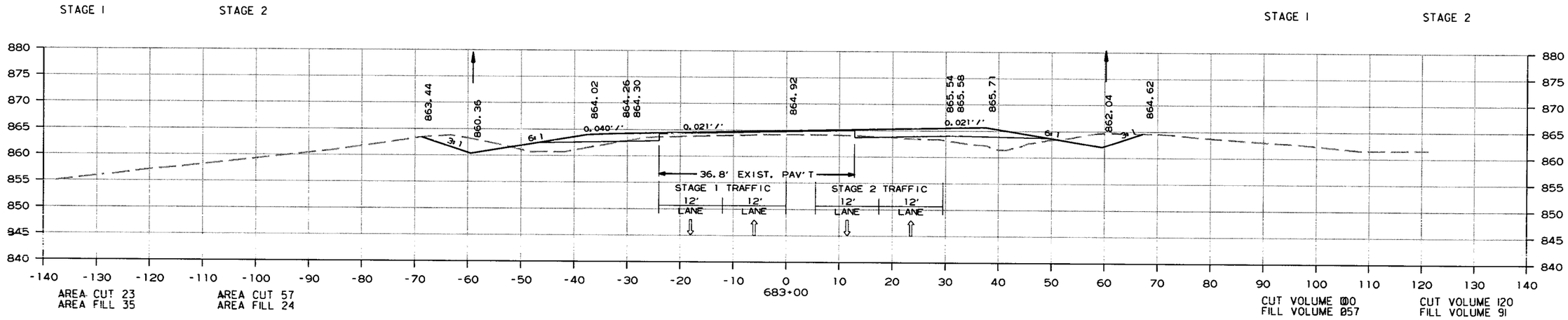
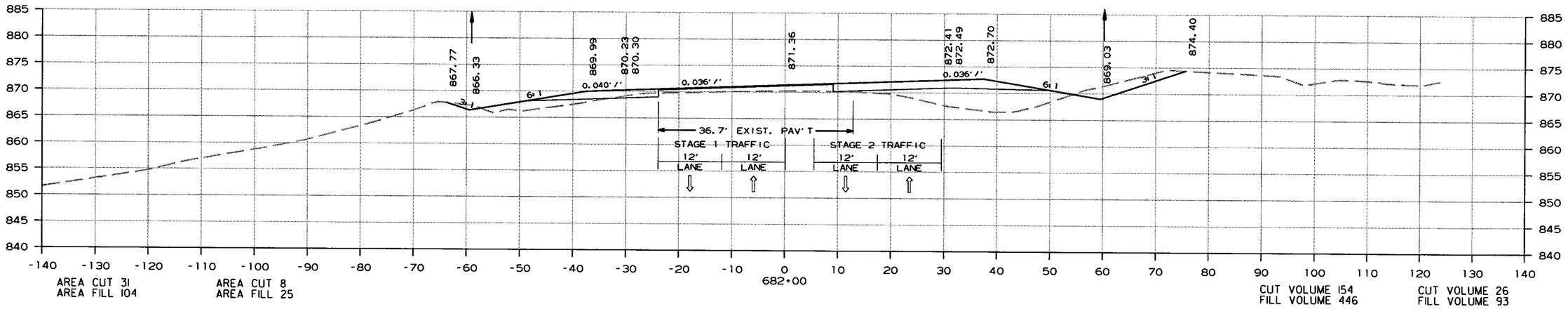
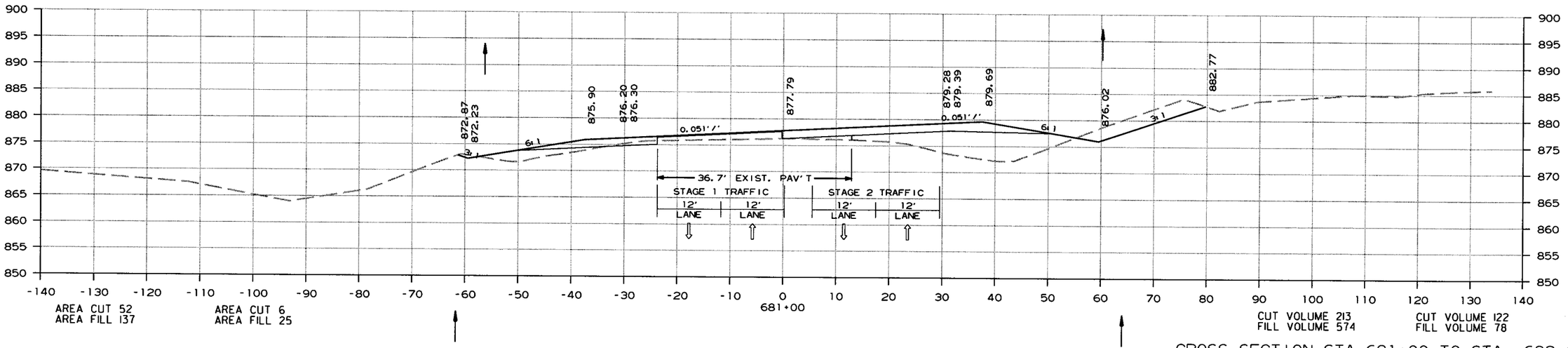
(2) CROSS SECTIONS







CROSS SECTION STA. 681+00 TO STA. 683+00

6/15/2015

R080423.DGN

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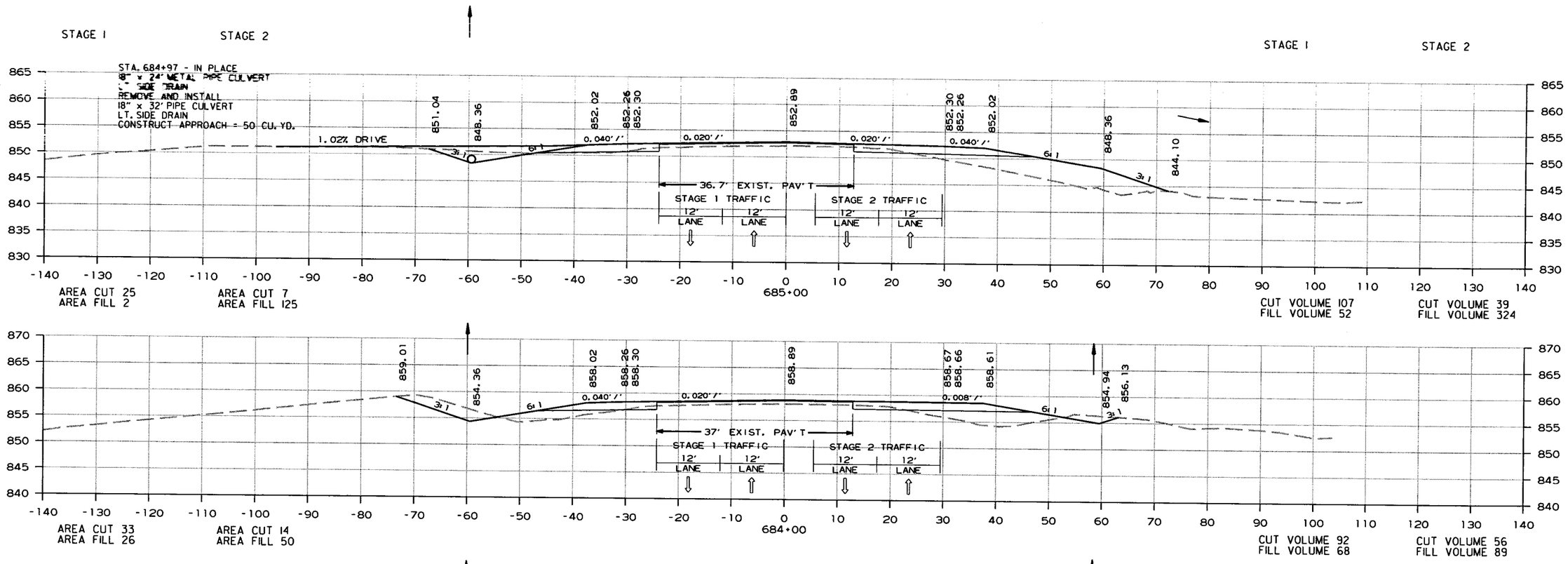
(2) CROSS SECTIONS



CROSS SECTION STA. 683+20 TO STA. 685+00

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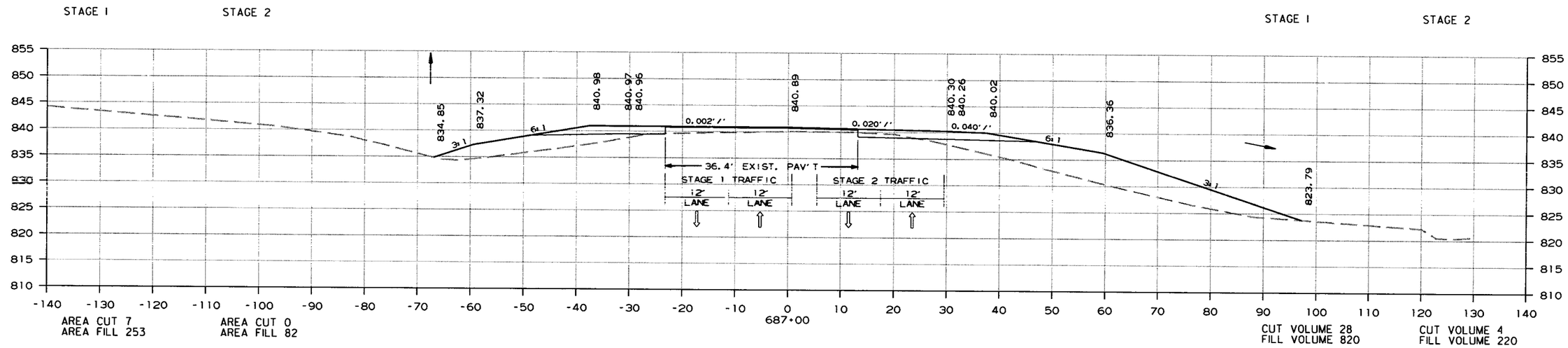
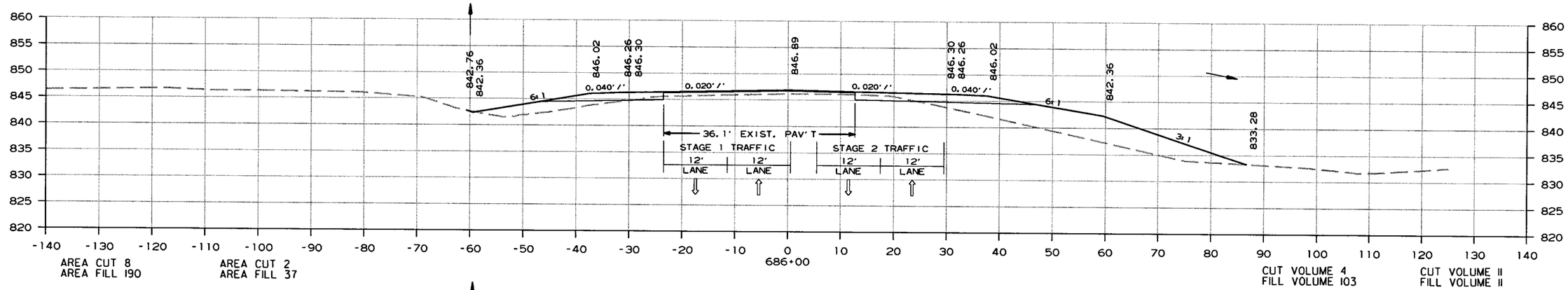
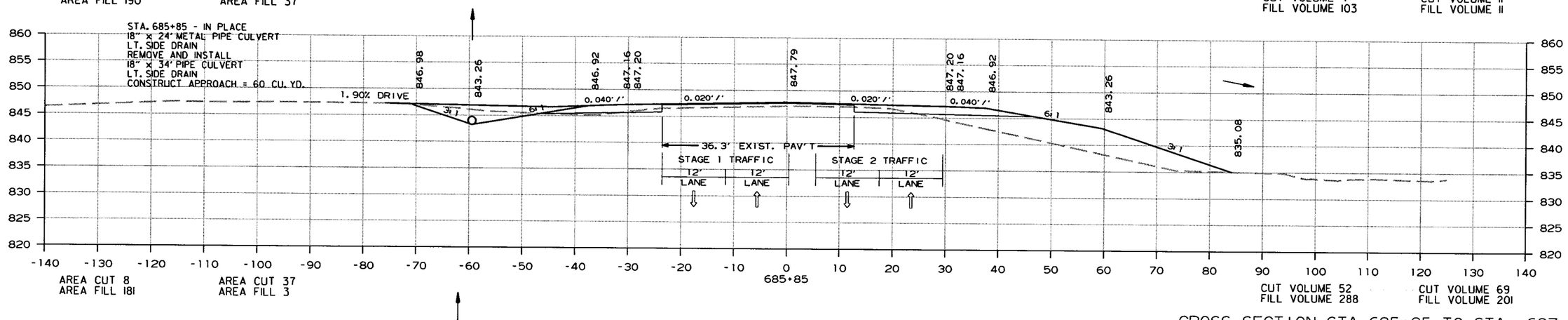
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	318	517

(2) CROSS SECTIONS







CROSS SECTION STA. 685+85 TO STA. 687+00

6/15/2015

R080423.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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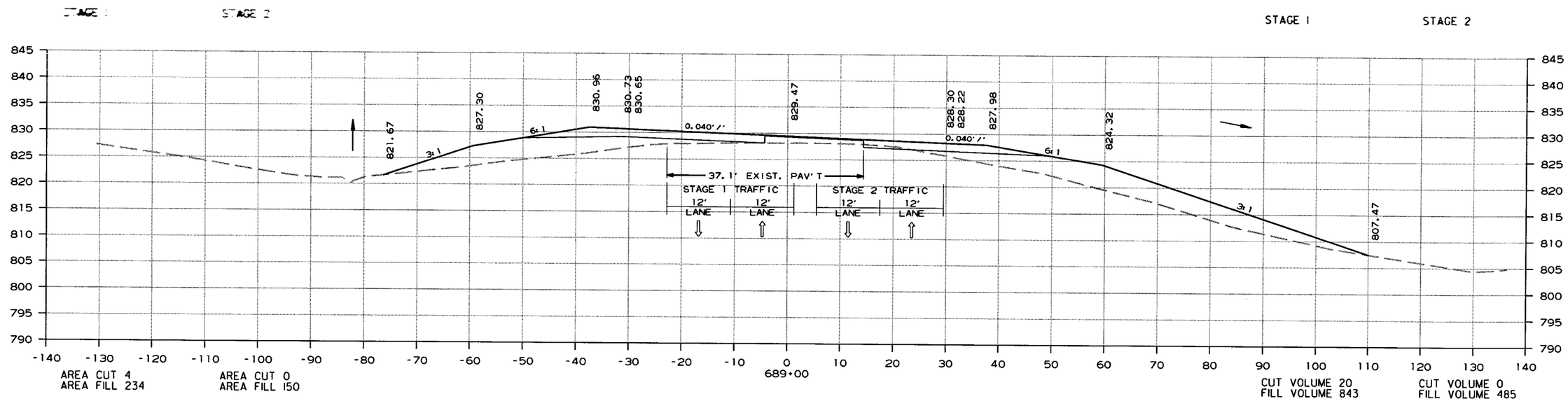
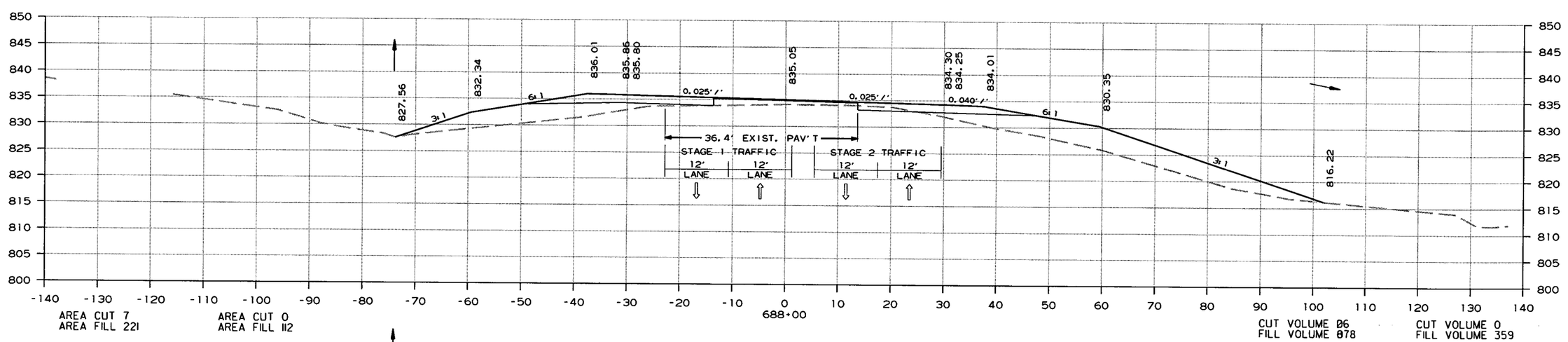
				JOB NO.		080423	319	517

(2) CROSS SECTIONS





CROSS SECTION STA. 688+00 TO STA. 689+00

6/15/2015

R080423.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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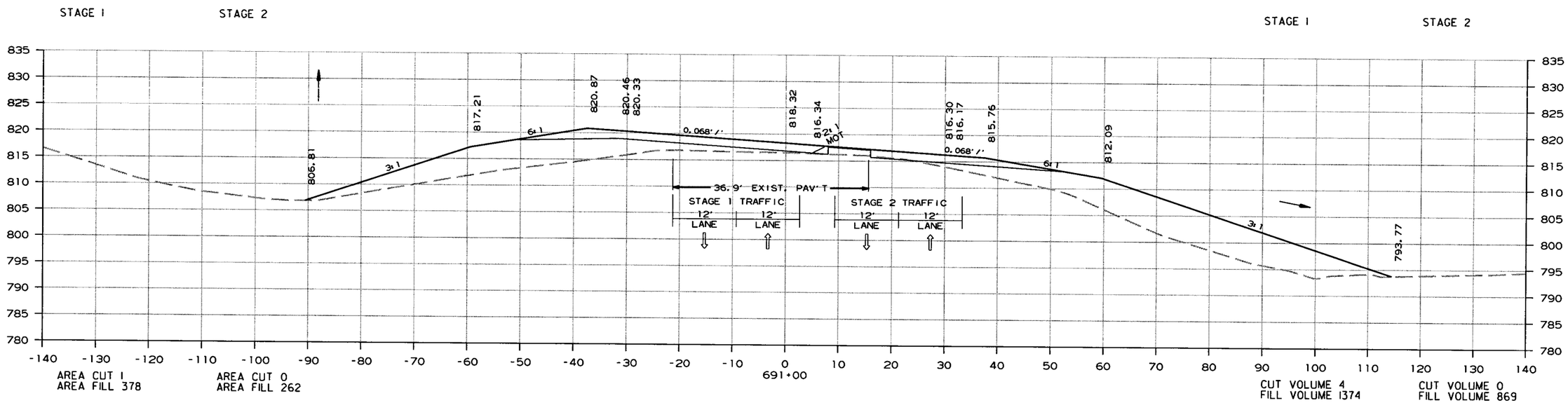

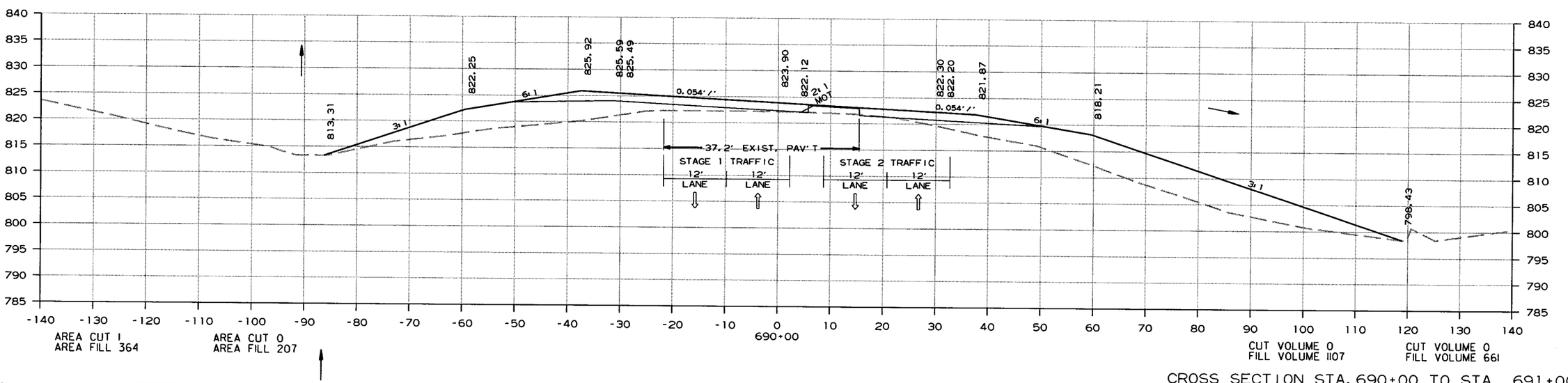

CROSS SECTION STA. 690+00 TO STA. 691+00

6/15/2015

R080423.DGN

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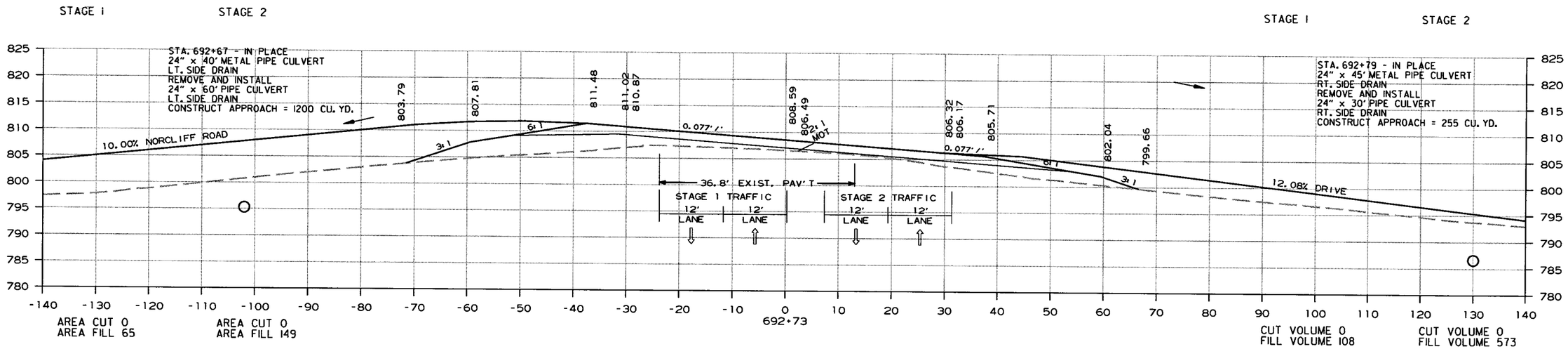
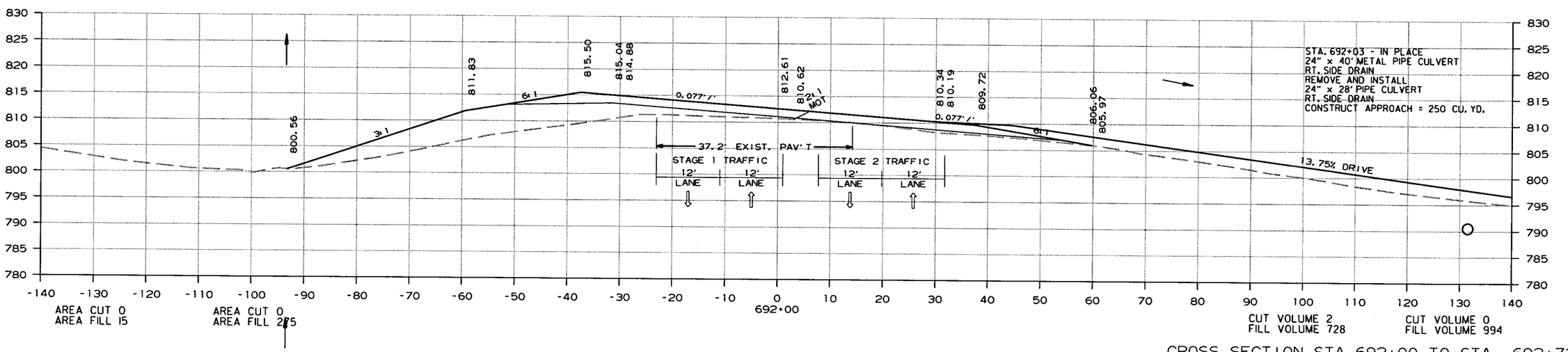
(2) CROSS SECTIONS





CROSS SECTION STA. 692+00 TO STA. 692+73

6/15/2015

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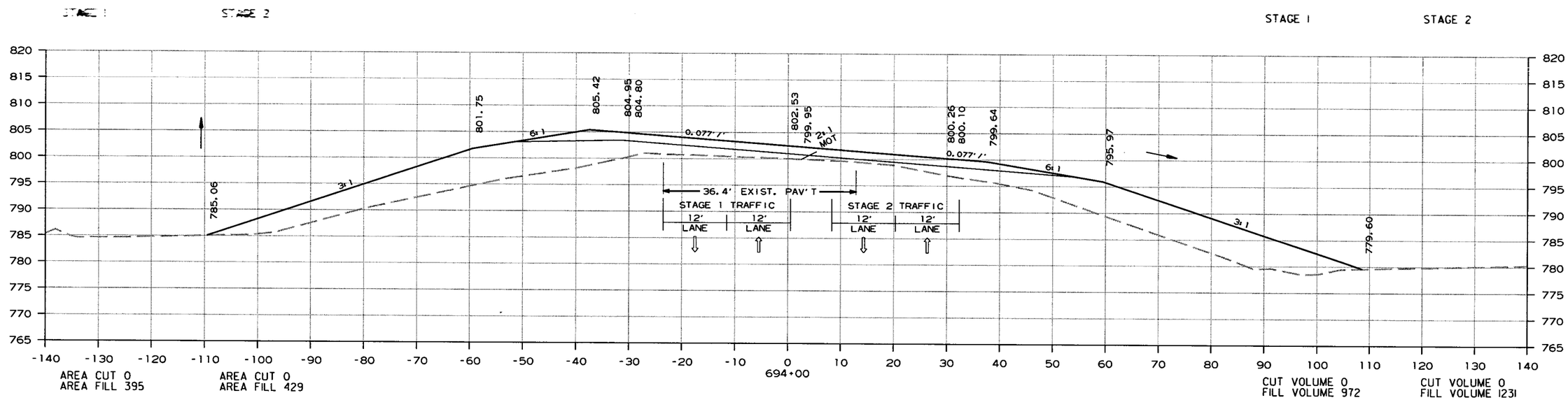
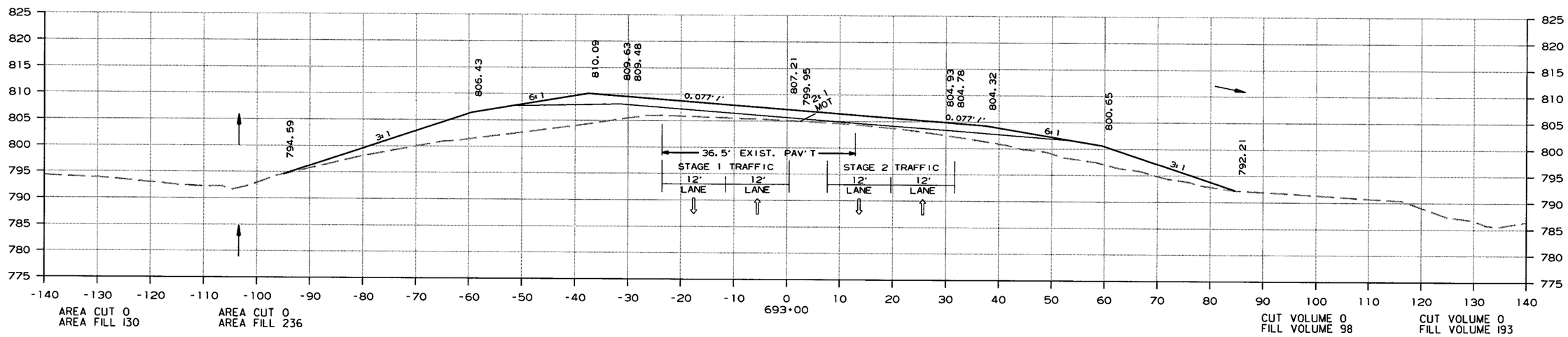
(2) CROSS SECTIONS





CROSS SECTION STA. 693+00 TO STA. 694+00

6/15/2015

R080423.DGN

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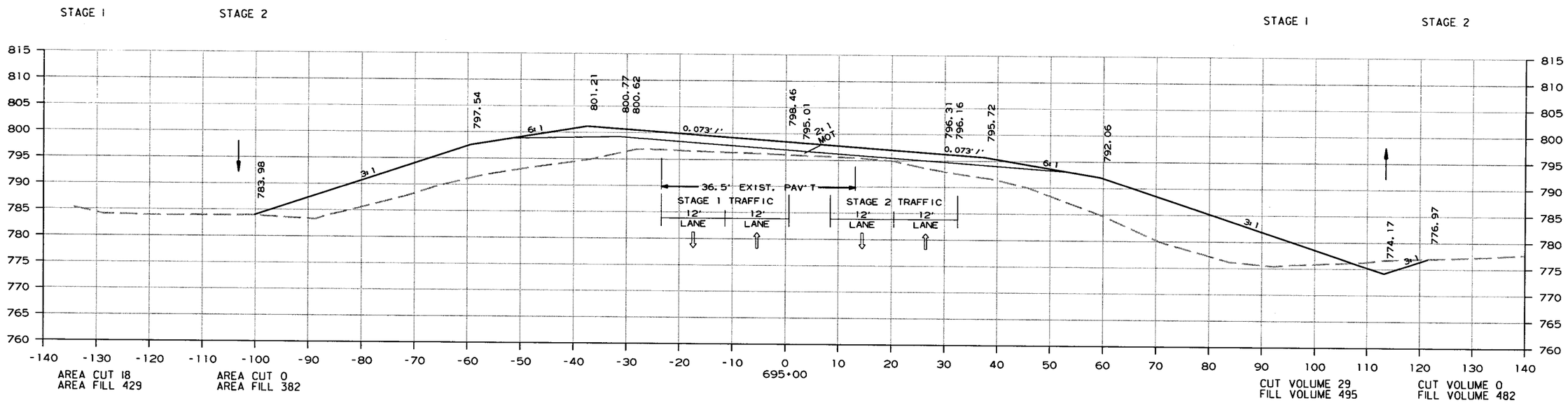
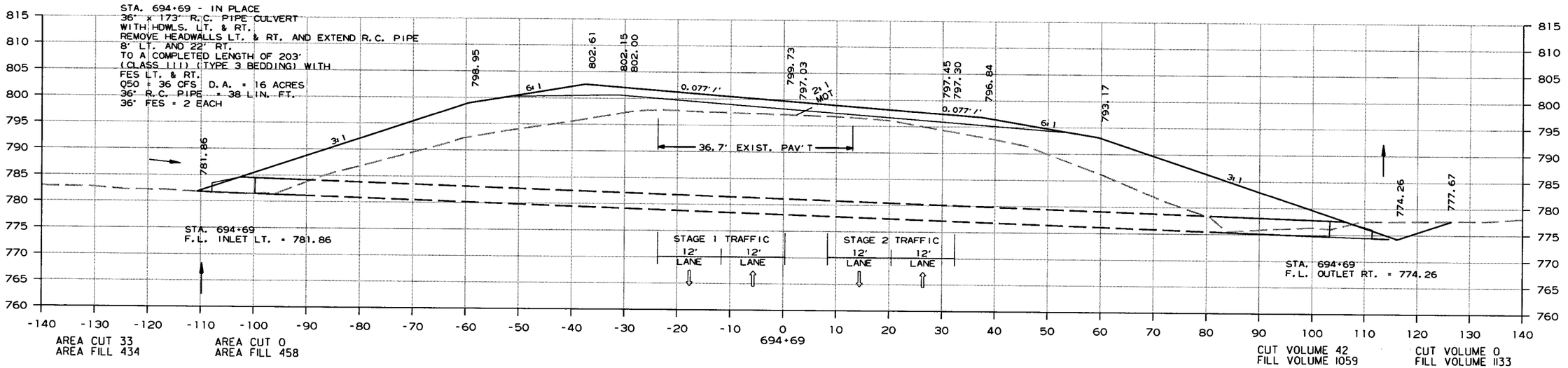
(2) CROSS SECTIONS





CROSS SECTION STA. 694+69 TO STA. 695+00

6/15/2015

R080423.DGN

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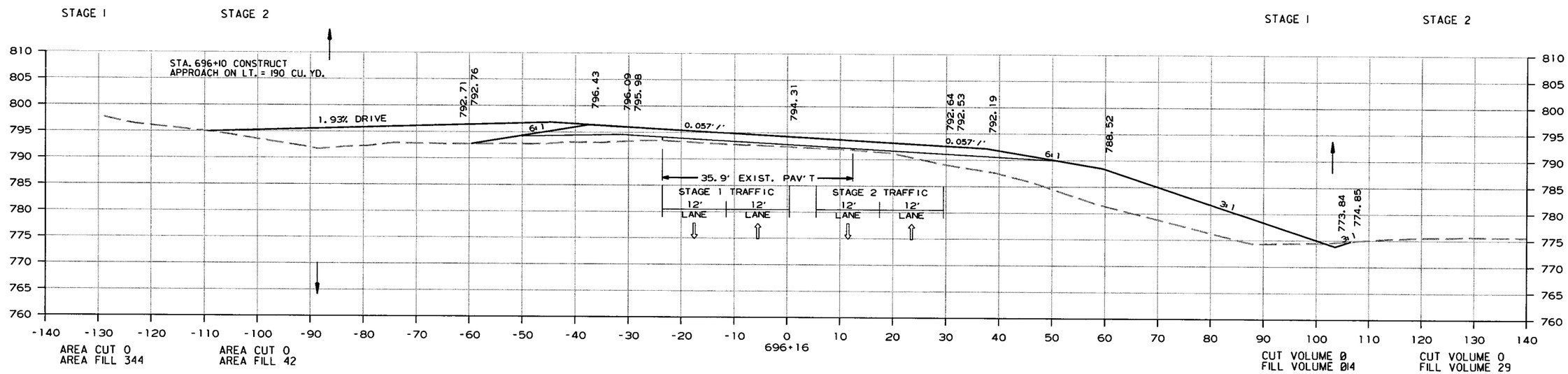
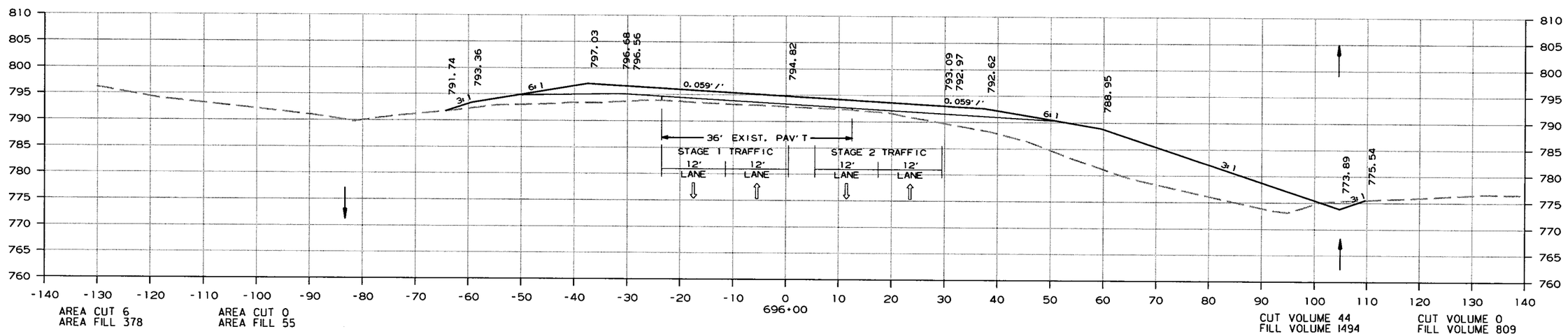
(2) CROSS SECTIONS





CROSS SECTION STA. 696+00 TO STA. 696+16

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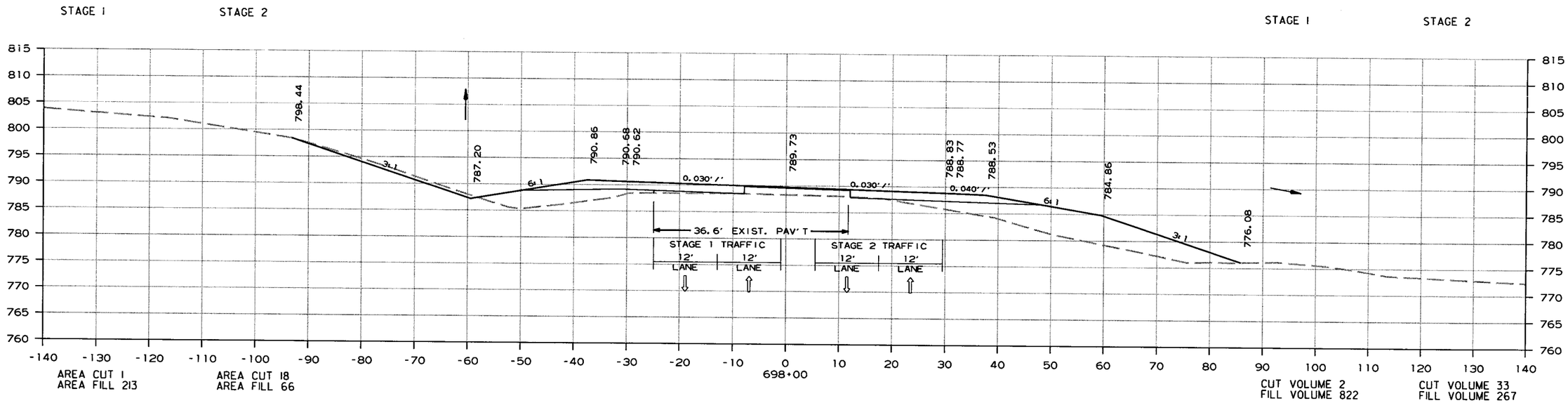
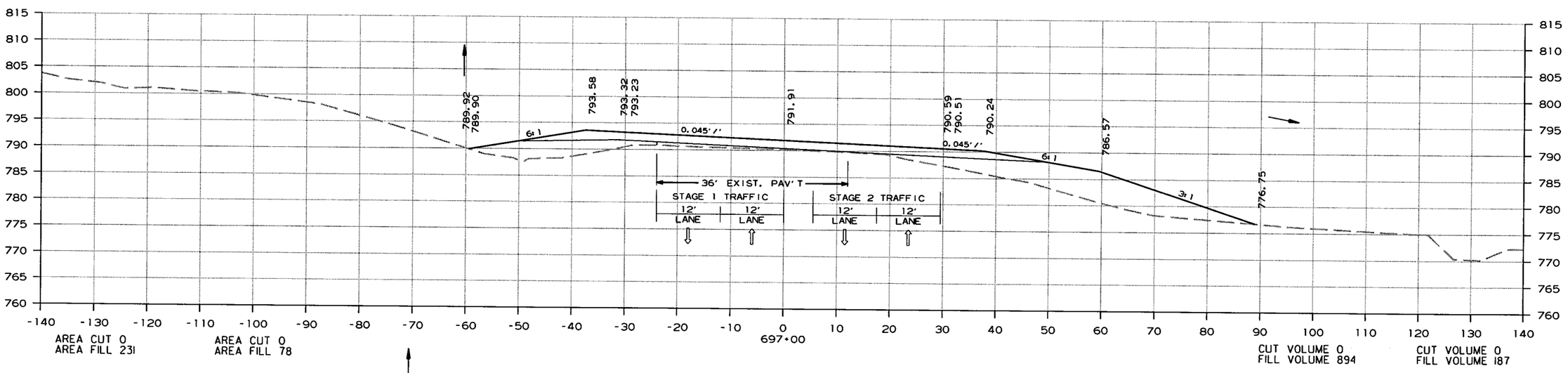
(2) CROSS SECTIONS





CROSS SECTION STA. 697+00 TO STA. 698+00

6/15/2015

R080423.DGN

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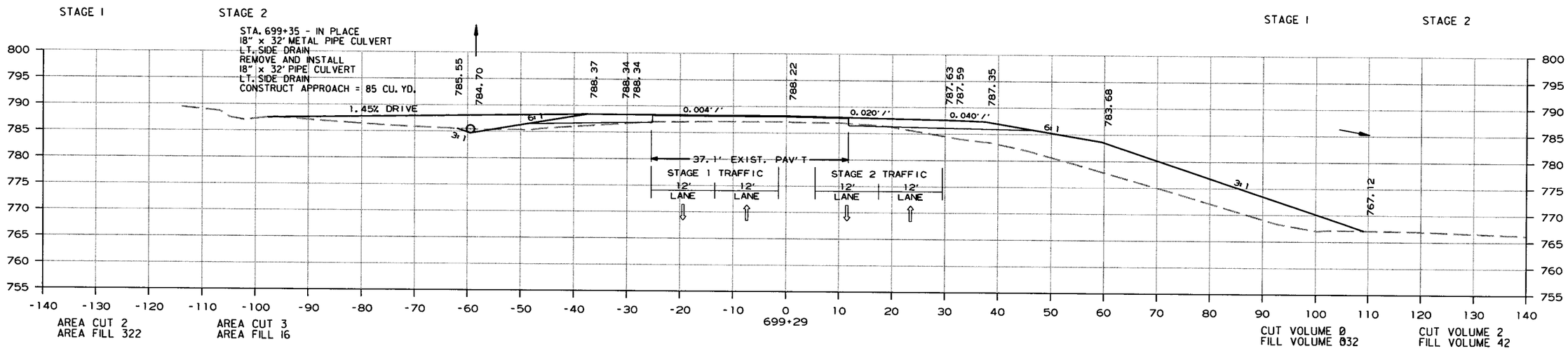
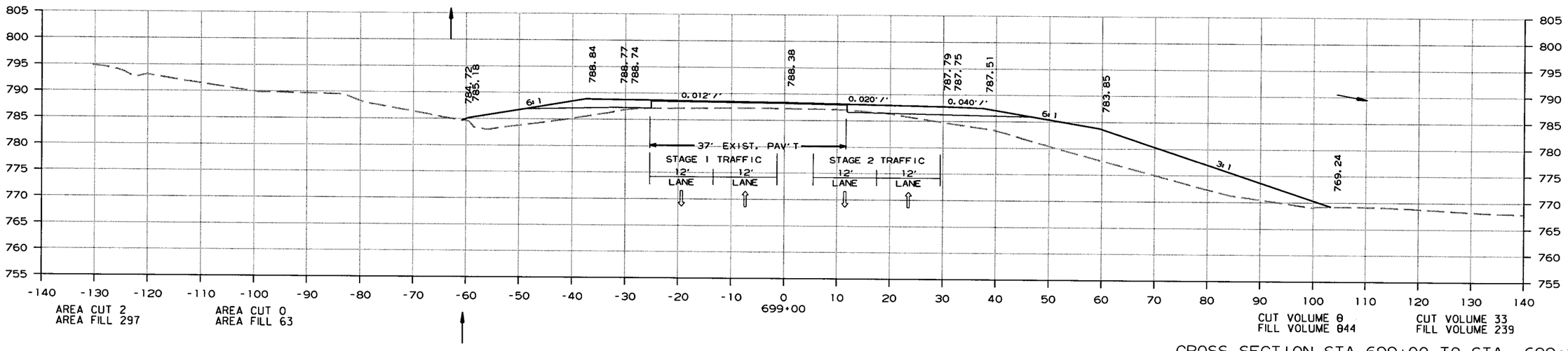
(2) CROSS SECTIONS





CROSS SECTION STA. 699+00 TO STA. 699+29

6/15/2015

R080423.DGN

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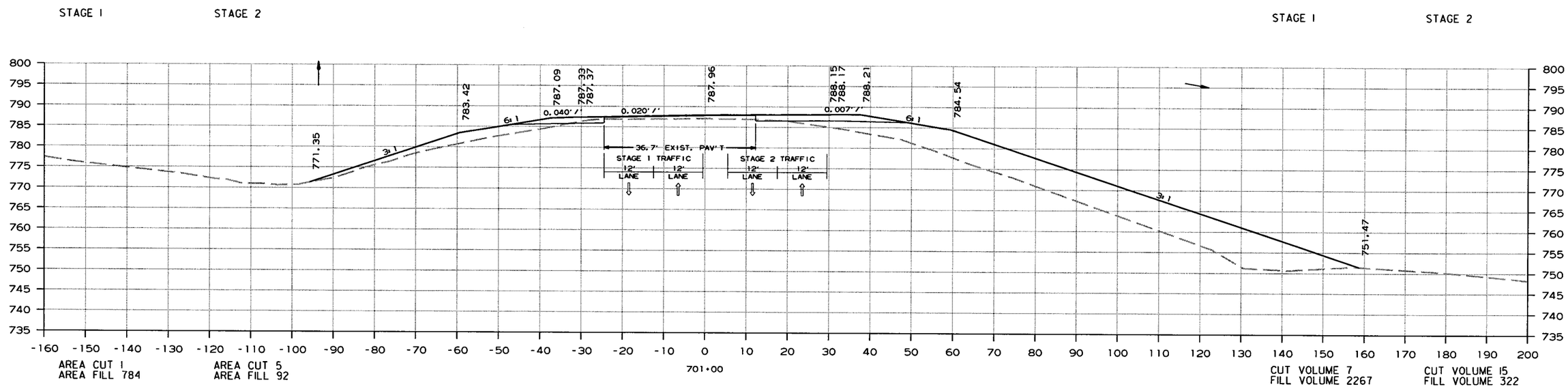
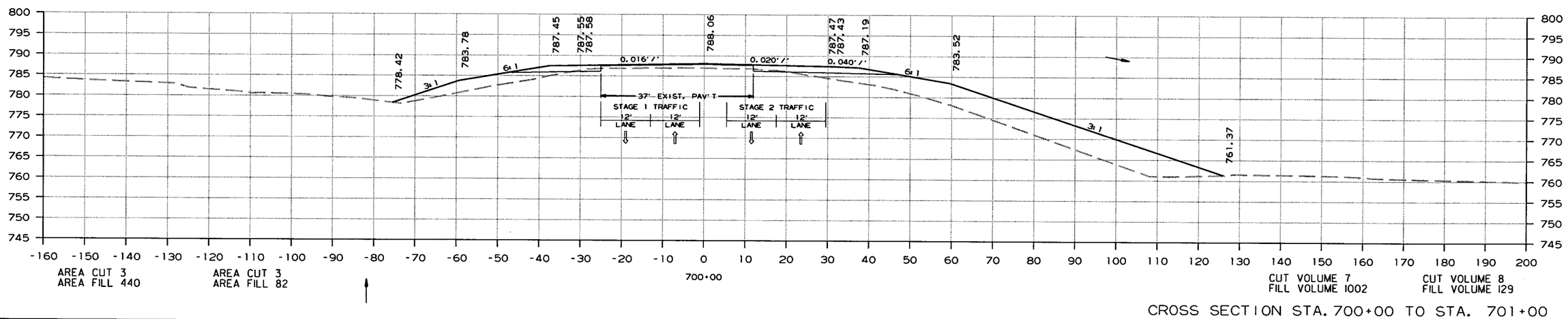
(2) CROSS SECTIONS





CROSS SECTION STA. 700+00 TO STA. 701+00

6/15/2015

R080423.DGN

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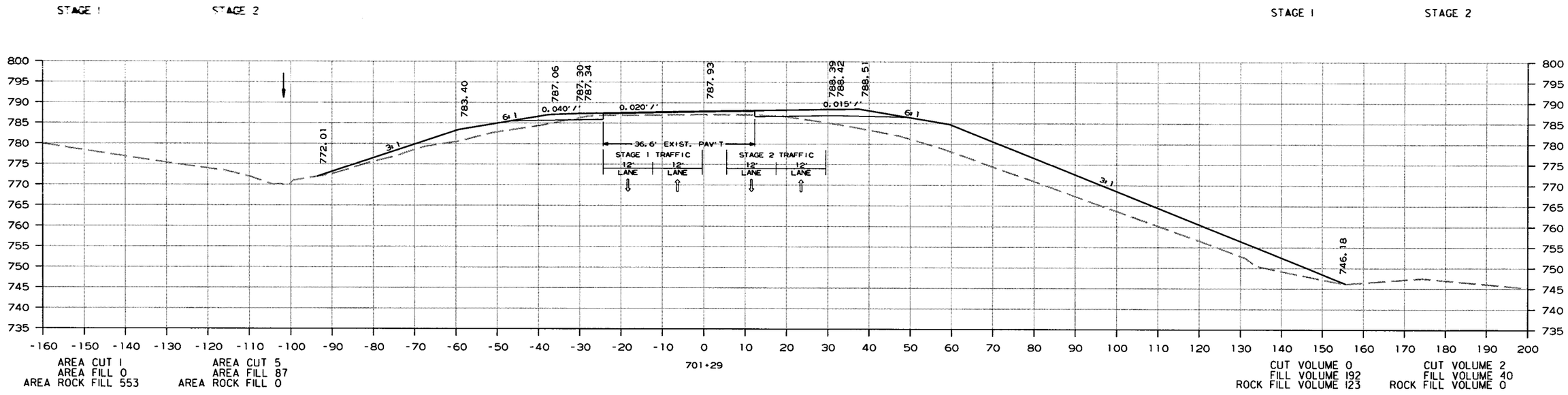
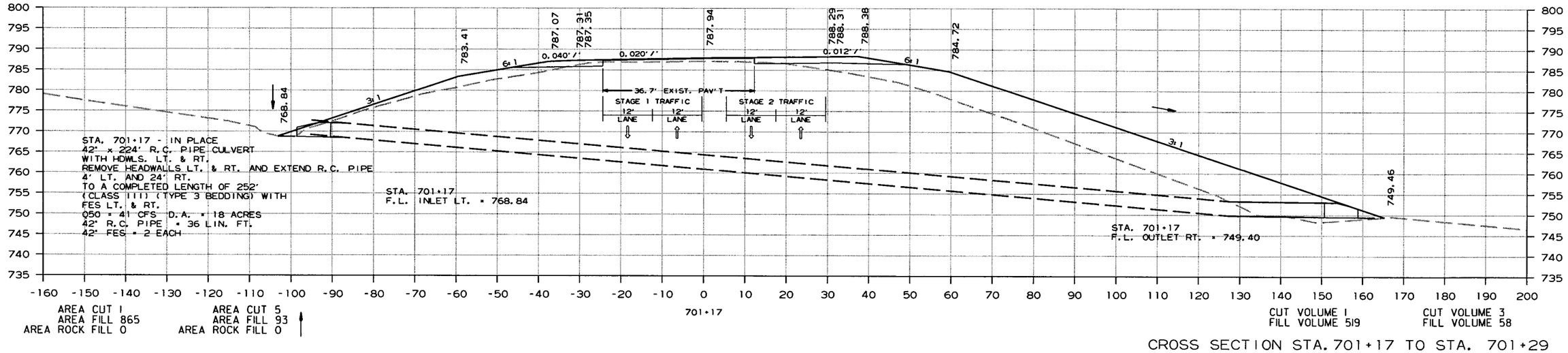
(2) CROSS SECTIONS





CROSS SECTION STA. 701+17 TO STA. 701+29

6/15/2015

R080423.DGN

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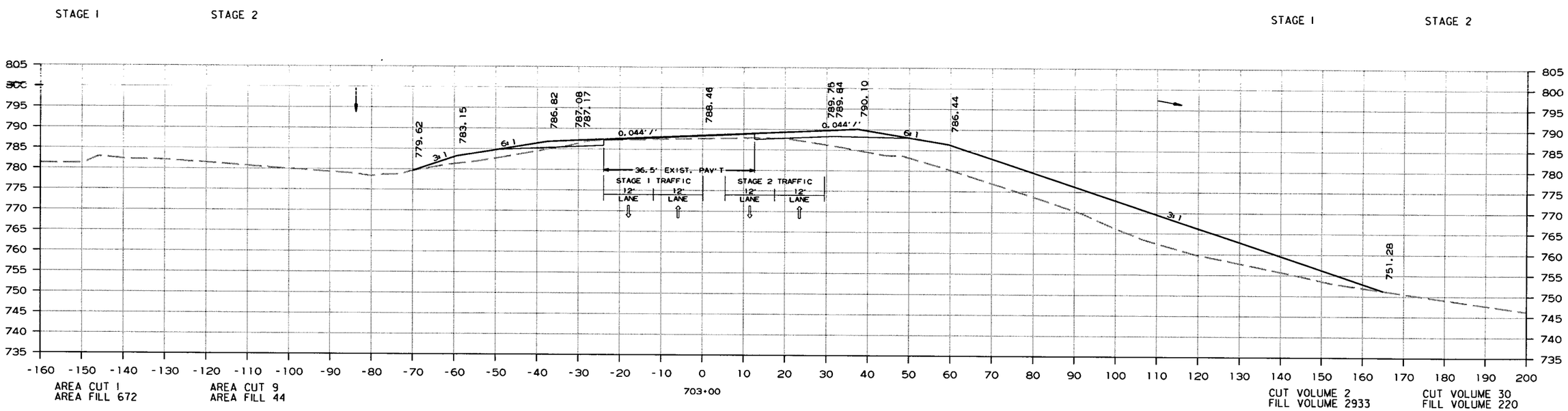
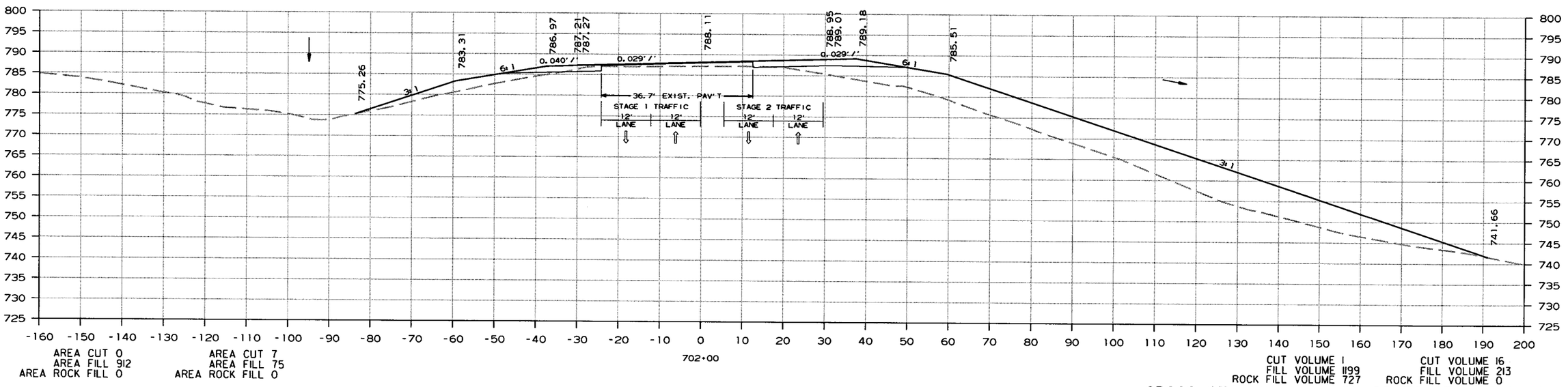
(2) CROSS SECTIONS





CROSS SECTION STA. 702+00 TO STA. 703+00

6/15/2015

R080423.DGN

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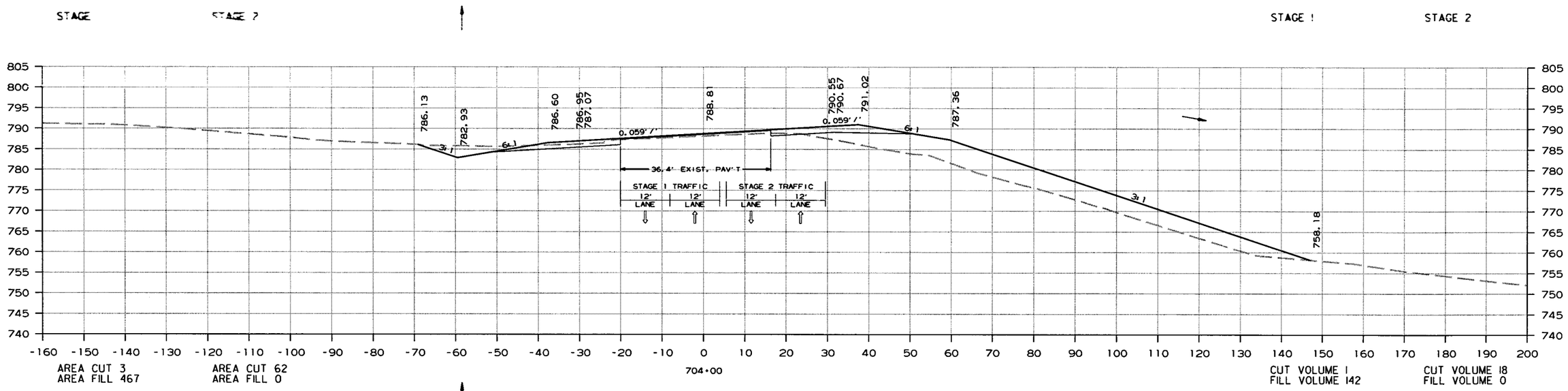
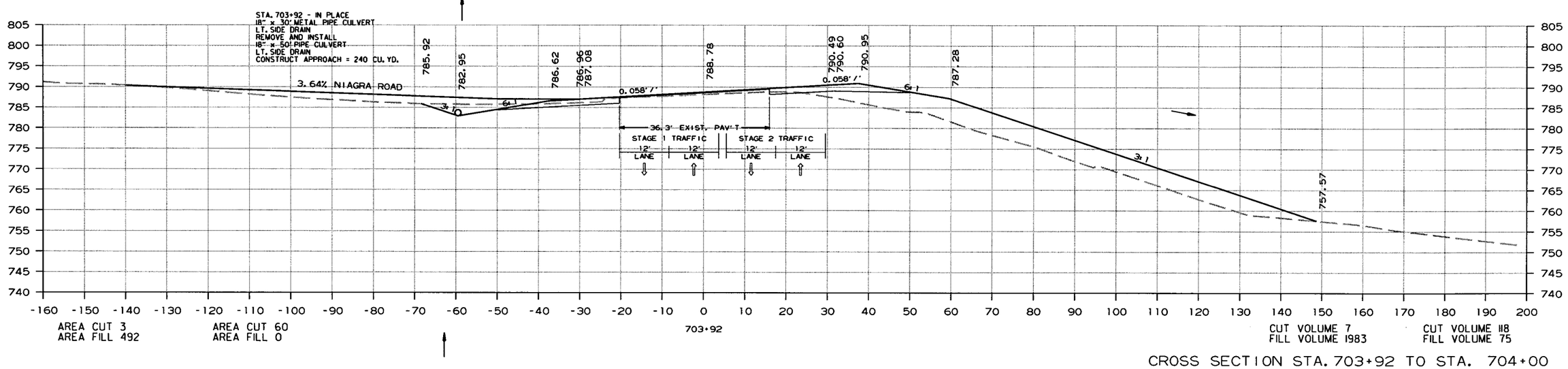
(2) CROSS SECTIONS





CROSS SECTION STA. 703+92 TO STA. 704+00

6/15/2015

R080423.DGN

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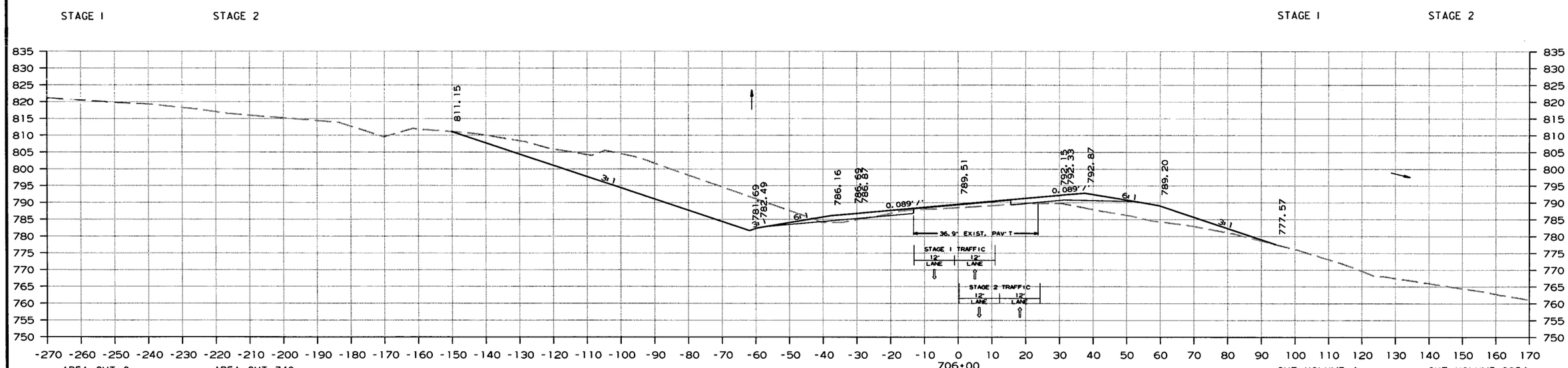
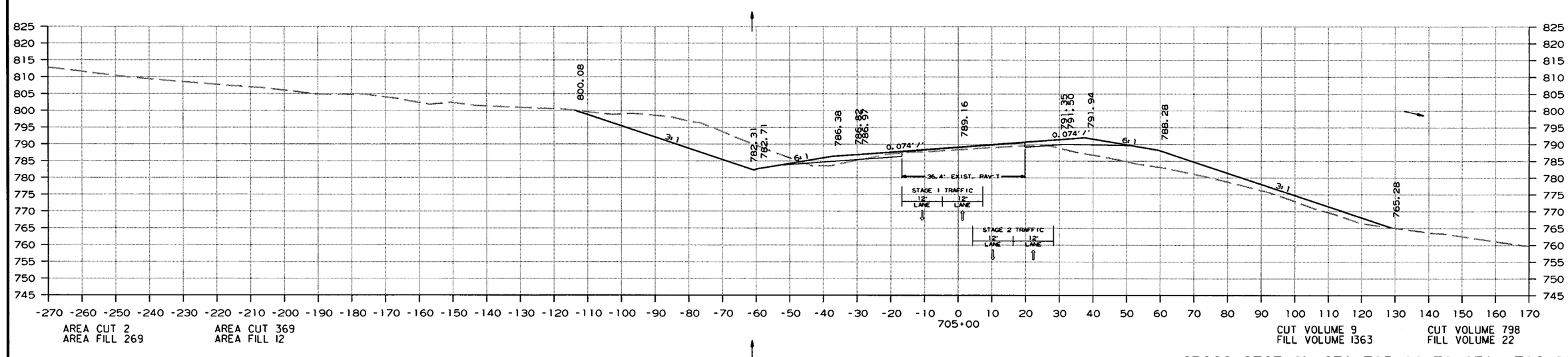
(2) CROSS SECTIONS





CROSS SECTION STA. 705+00 TO STA. 706+00

6/15/2015

R080423.DGN

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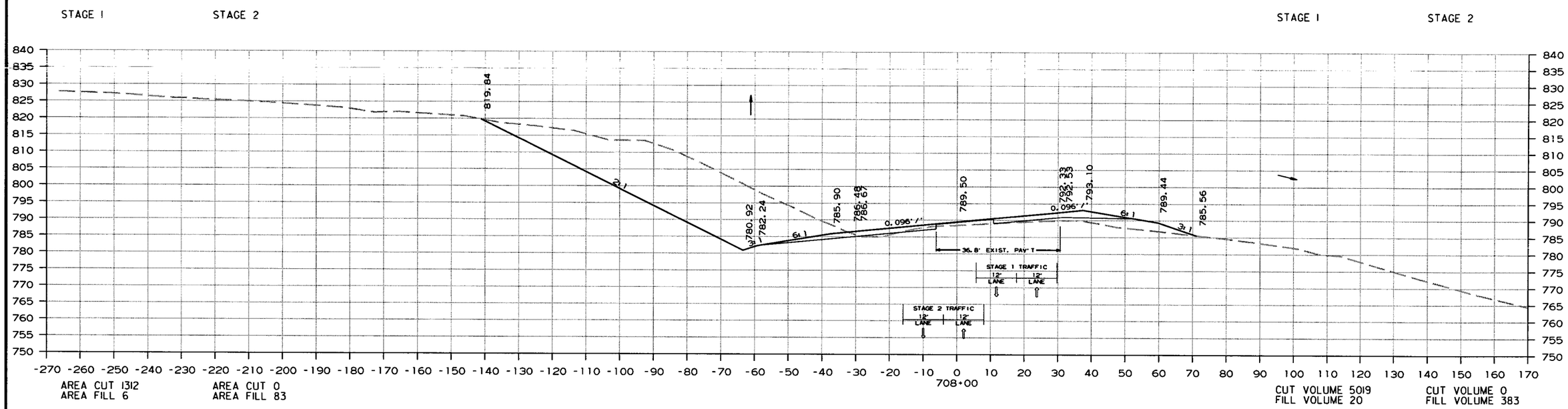
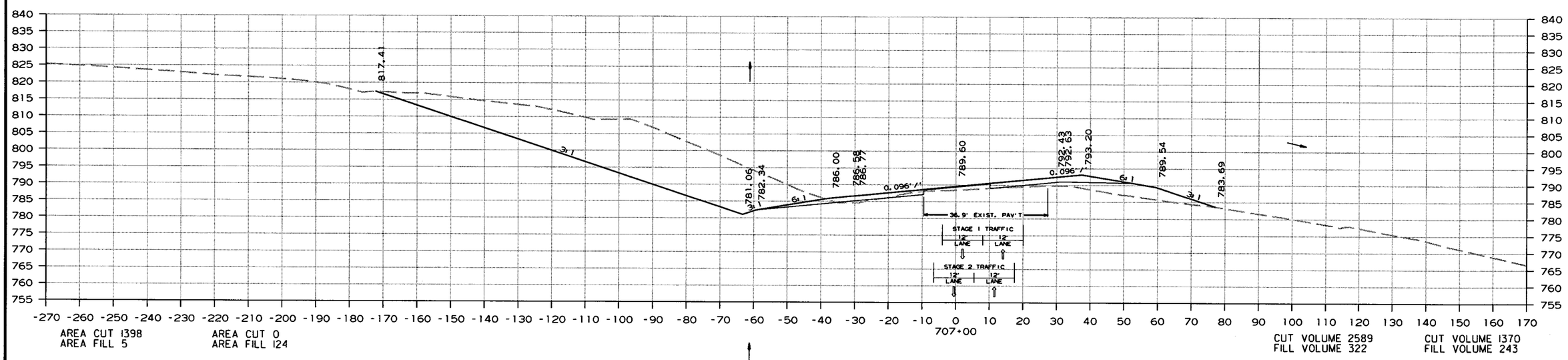
(2) CROSS SECTIONS





CROSS SECTION STA. 707+00 TO STA. 708+00

6/15/2015

R080423.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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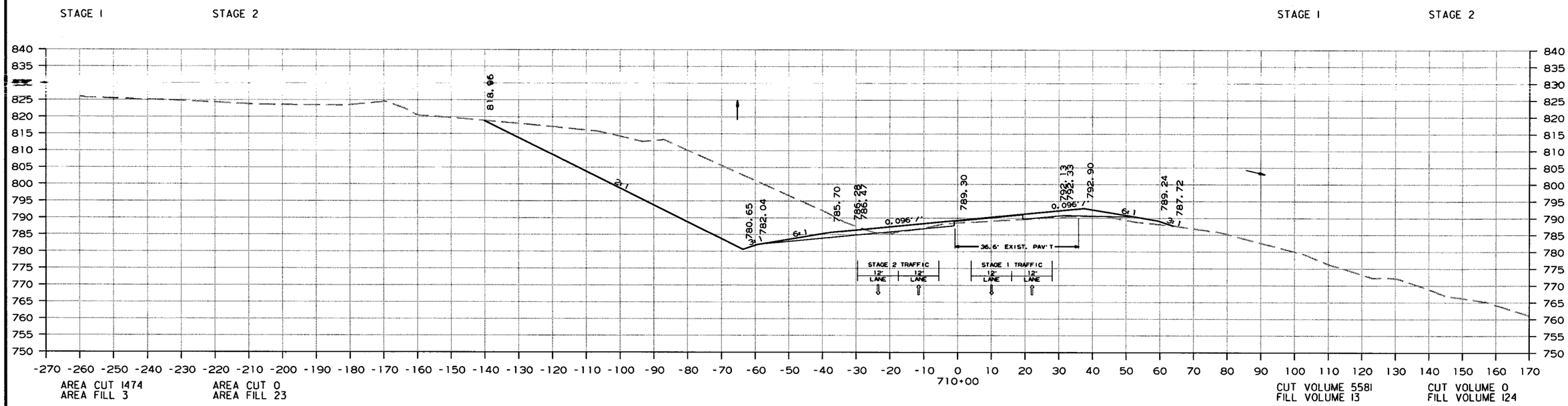

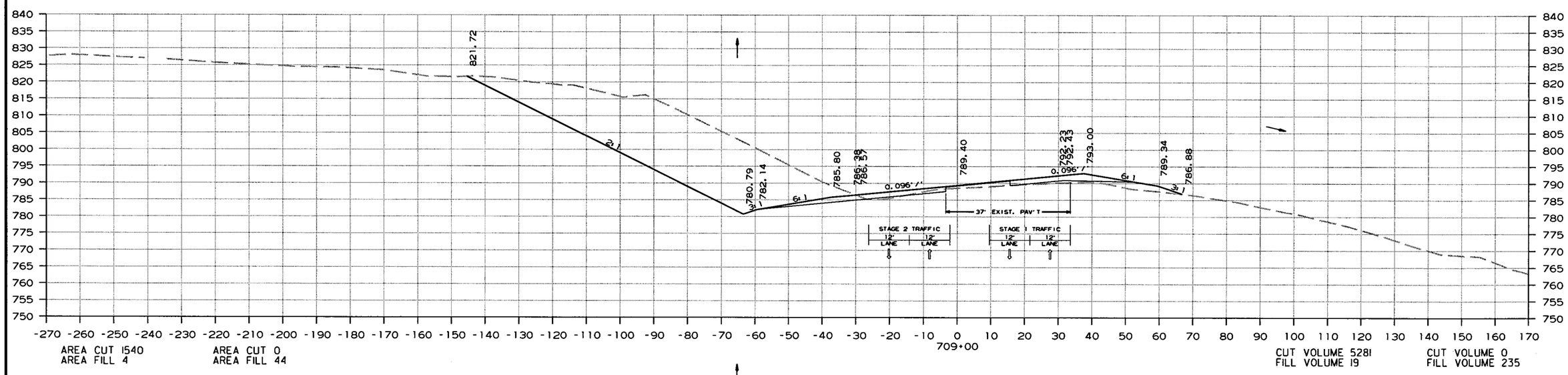

CROSS SECTION STA. 709+00 TO STA. 710+00

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R080423.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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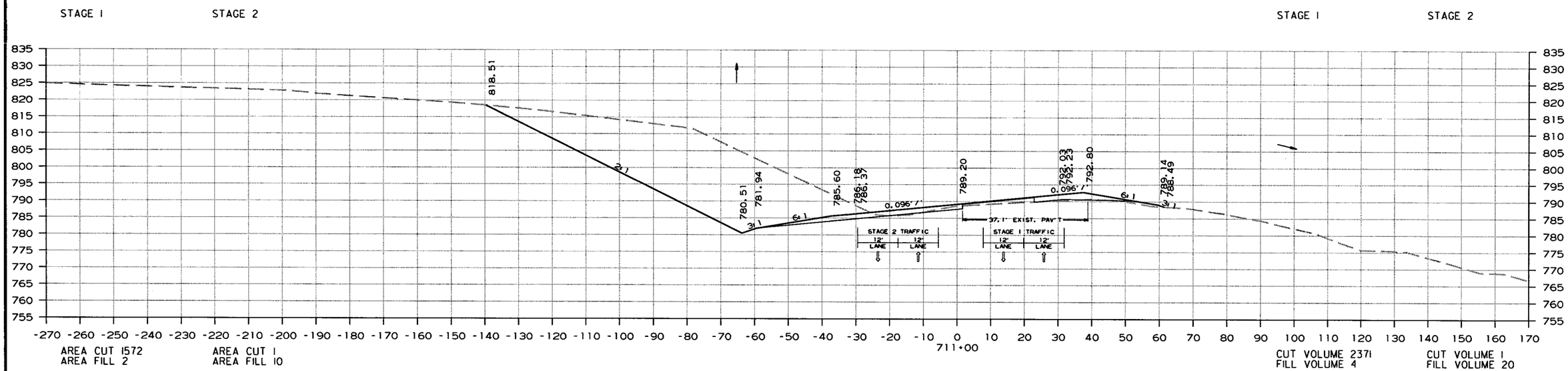

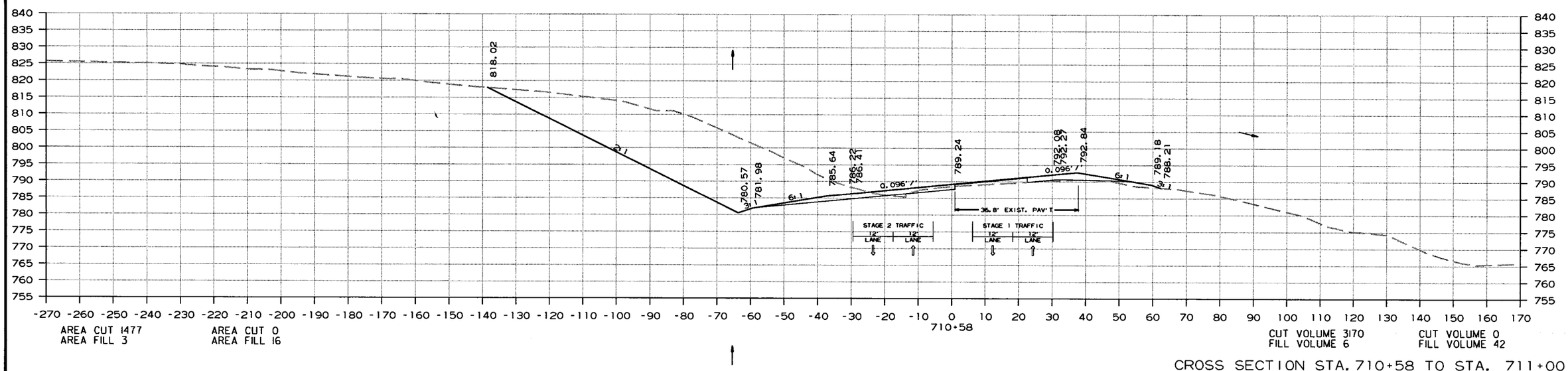

CROSS SECTION STA. 710+58 TO STA. 711+00

6/15/2015

R080423.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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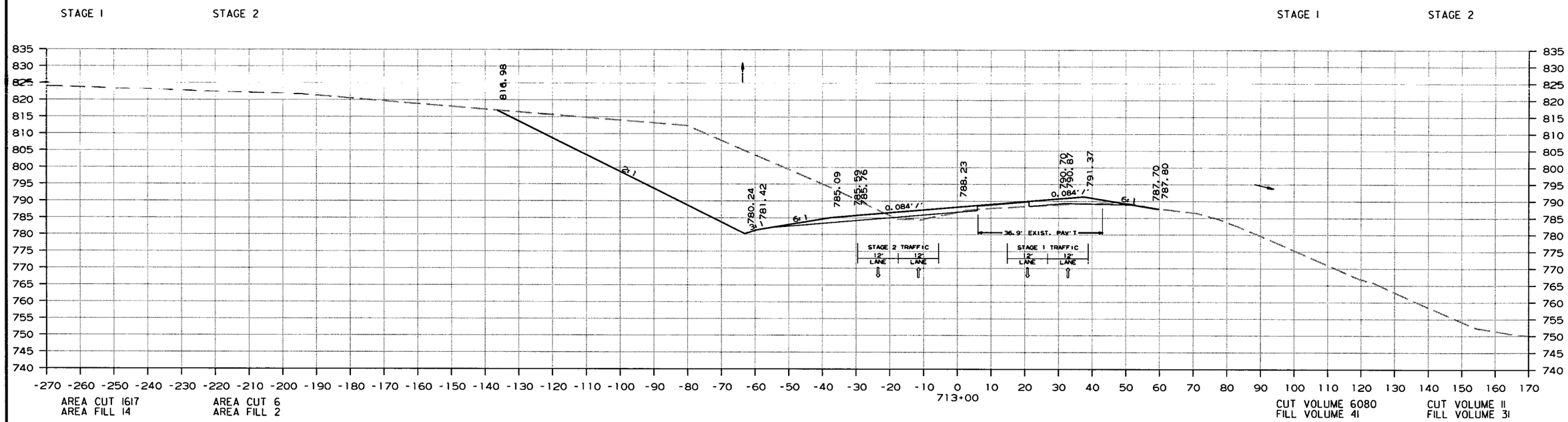

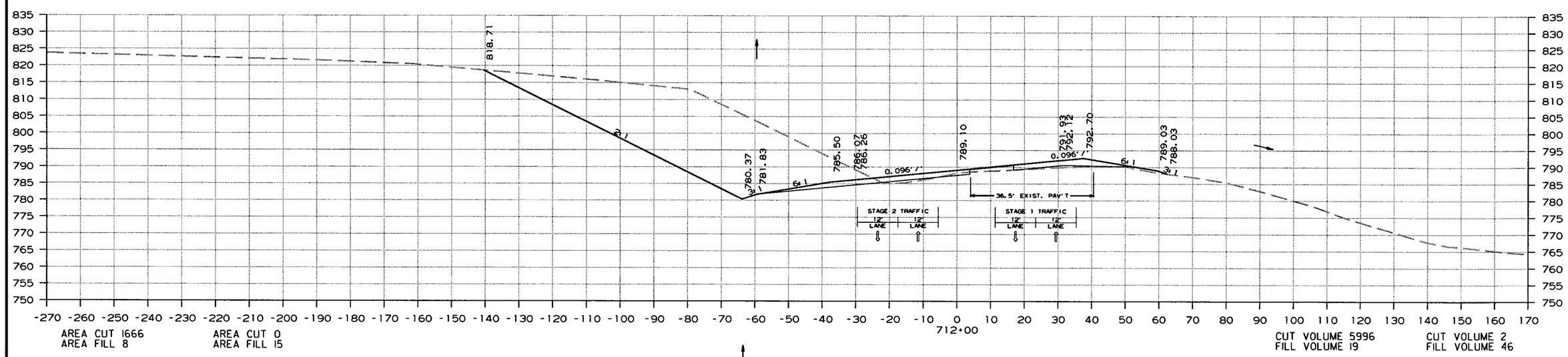

CROSS SECTION STA. 712+00 TO STA. 713+00

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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
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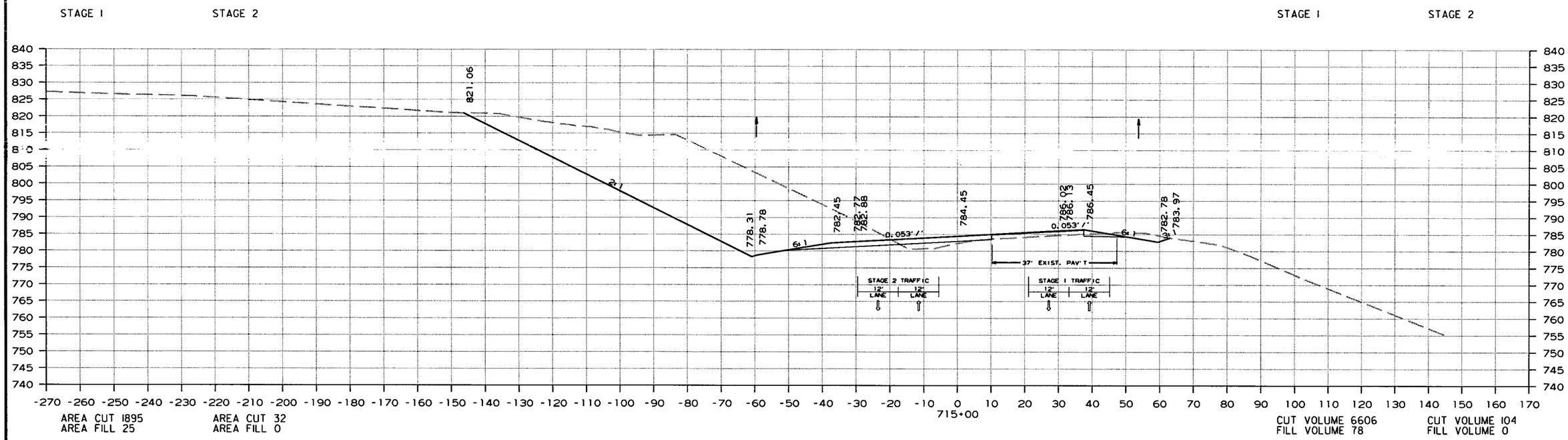

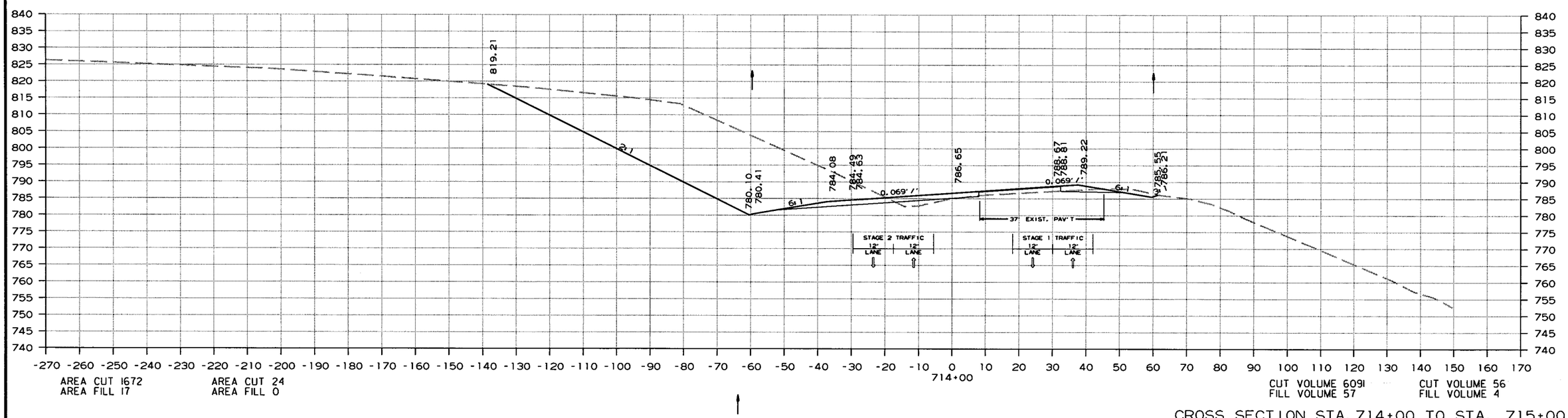

CROSS SECTION STA. 714+00 TO STA. 715+00

6/15/2015

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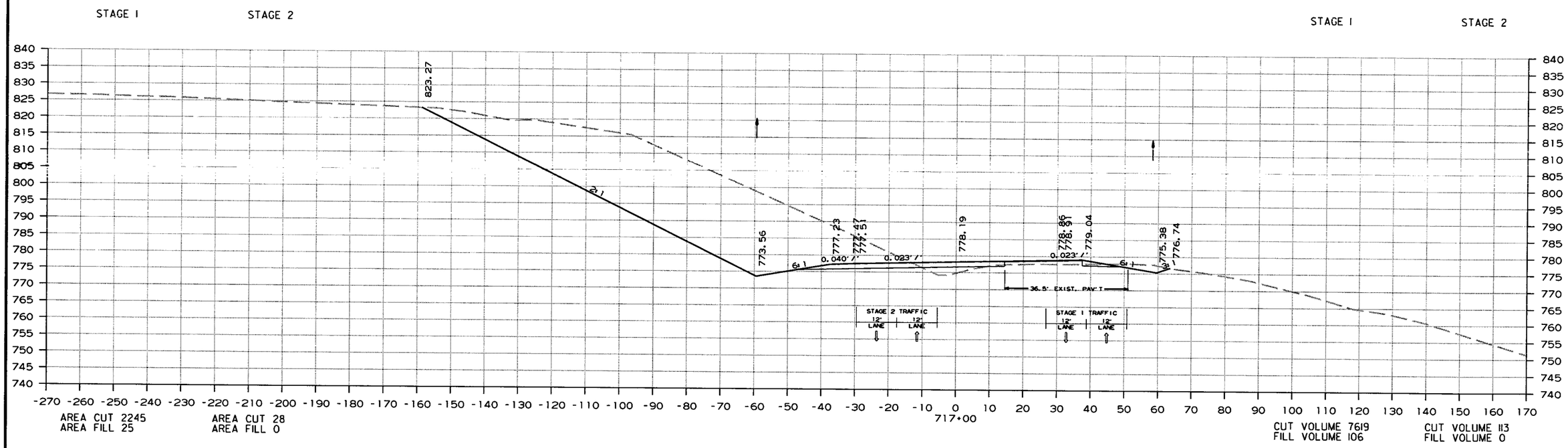
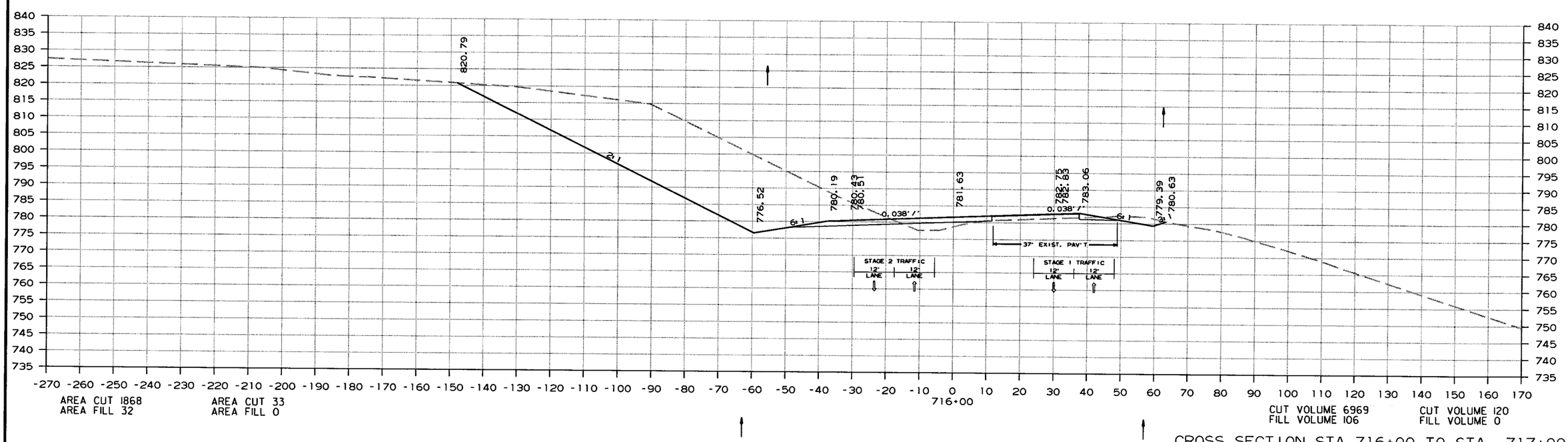
(2) CROSS SECTIONS





CROSS SECTION STA. 716+00 TO STA. 717+00

6/15/2015

R080423.DGN

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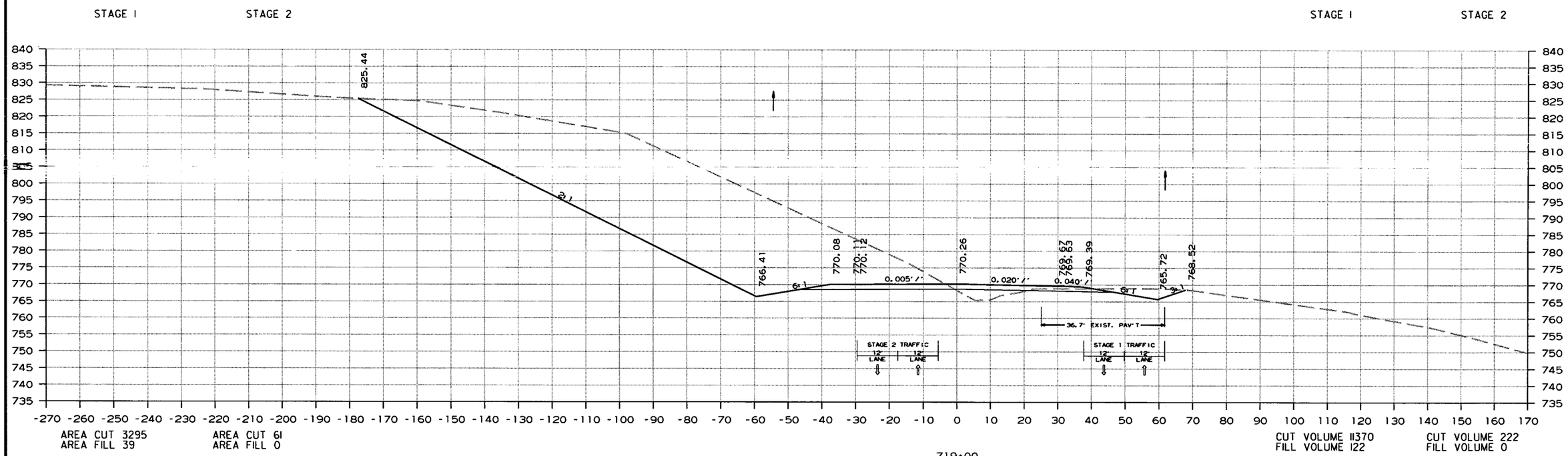
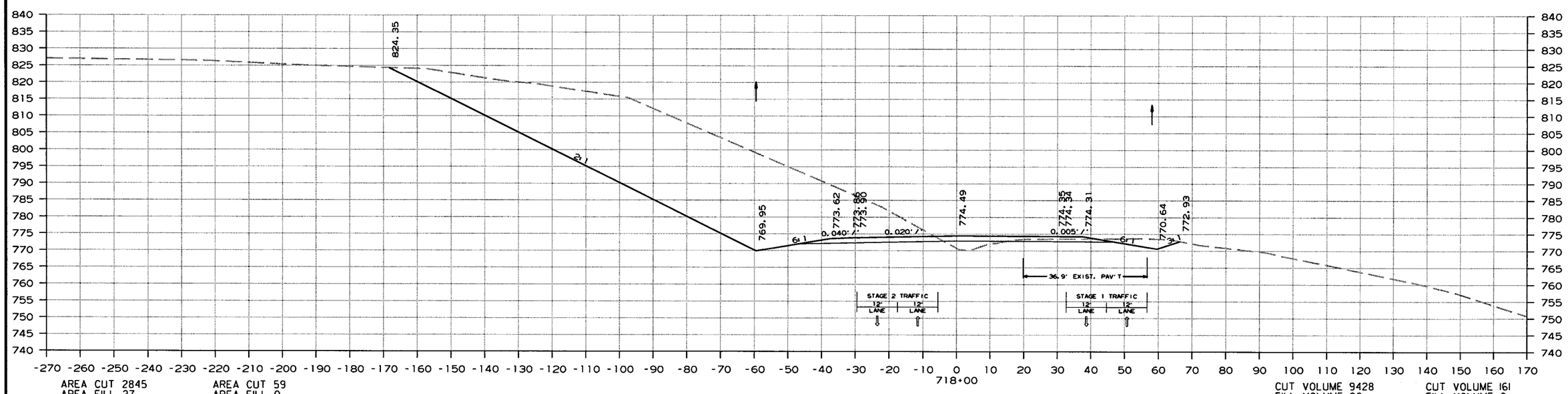
(2) CROSS SECTIONS





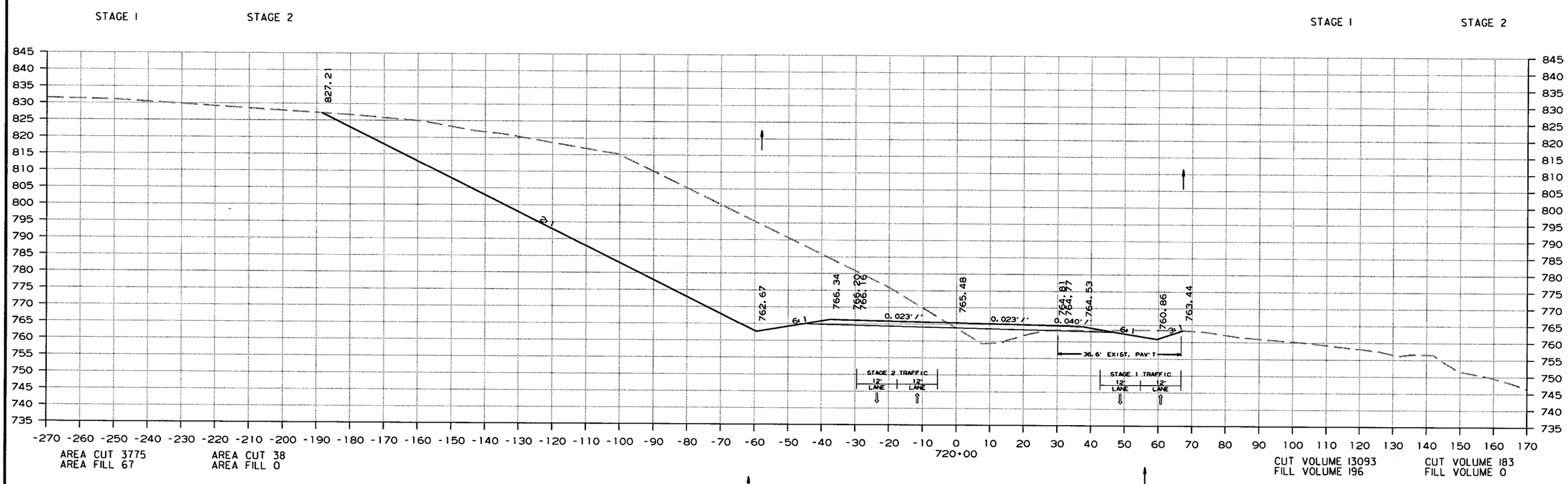
CROSS SECTION STA. 718+00 TO STA. 719+00

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	339	517

(2) CROSS SECTIONS



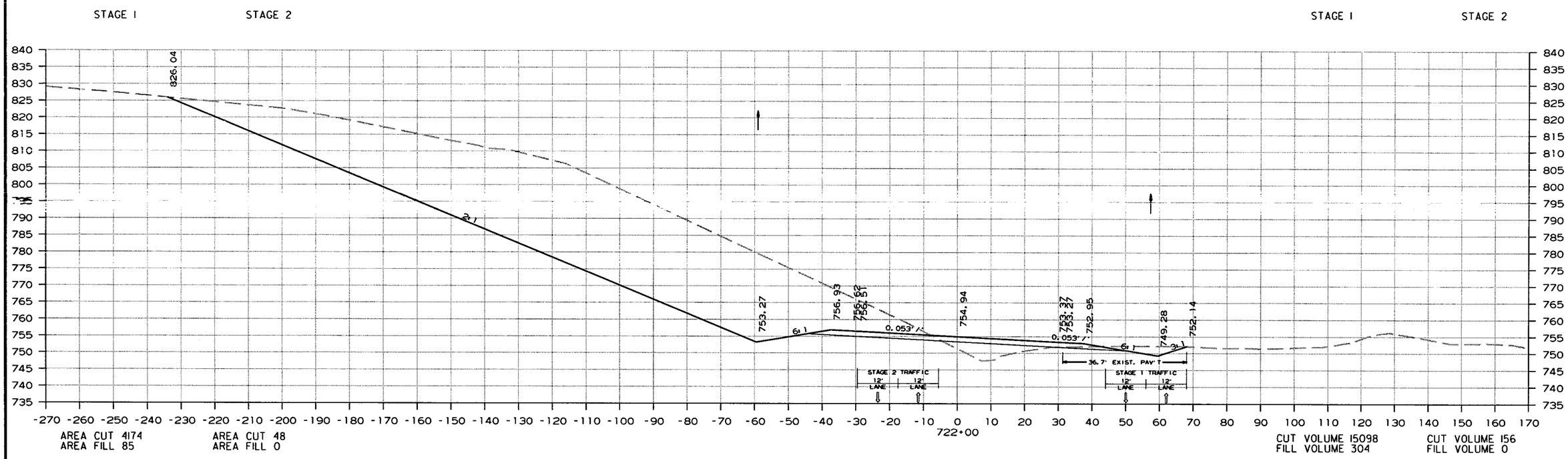
CROSS SECTION STA. 720+00 TO STA. 720+00

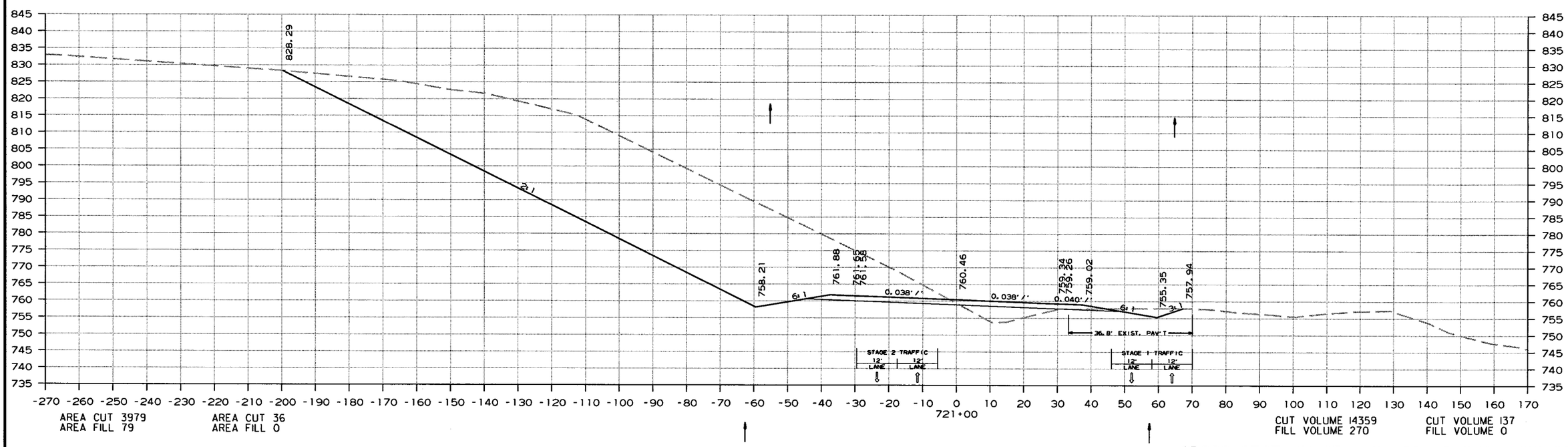
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	340	517

(2) CROSS SECTIONS





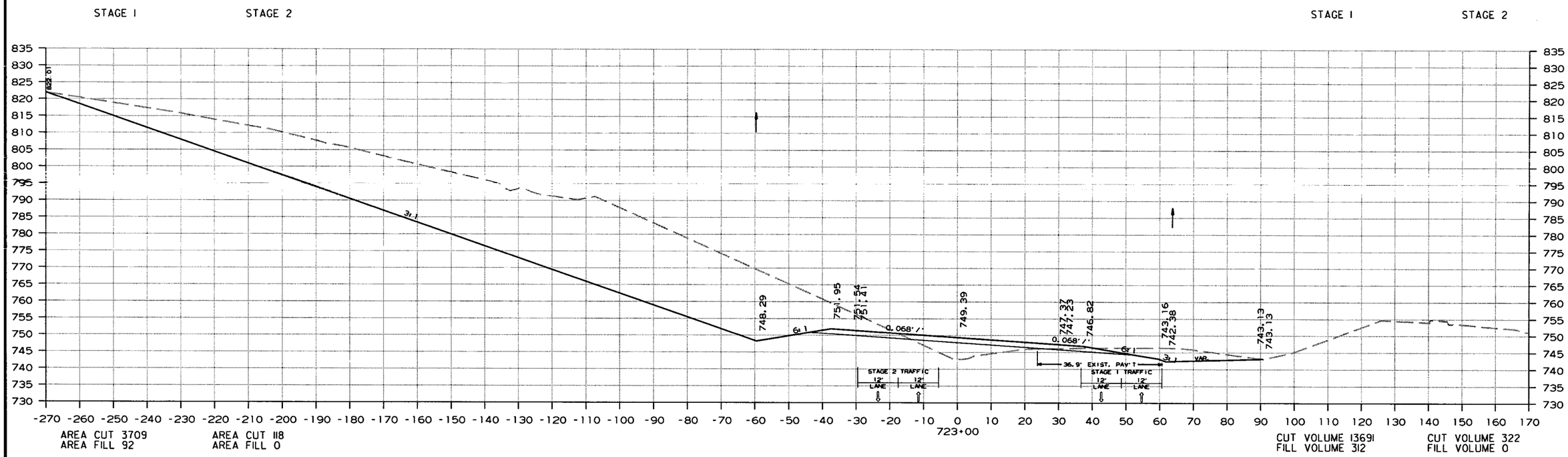
CROSS SECTION STA. 721+00 TO STA. 722+00

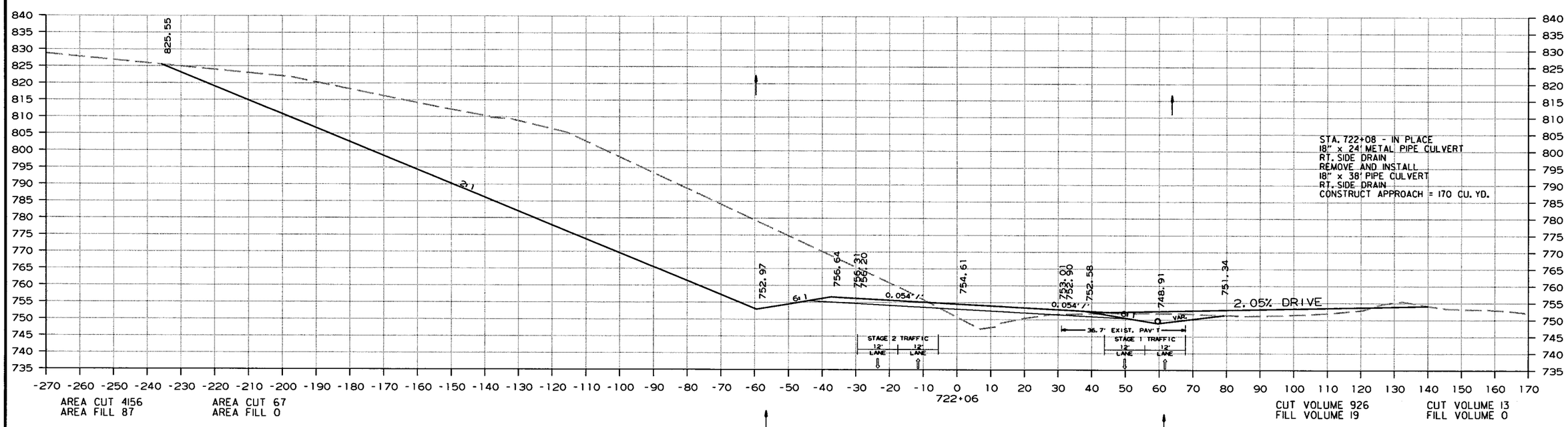
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	341	517

(2) CROSS SECTIONS





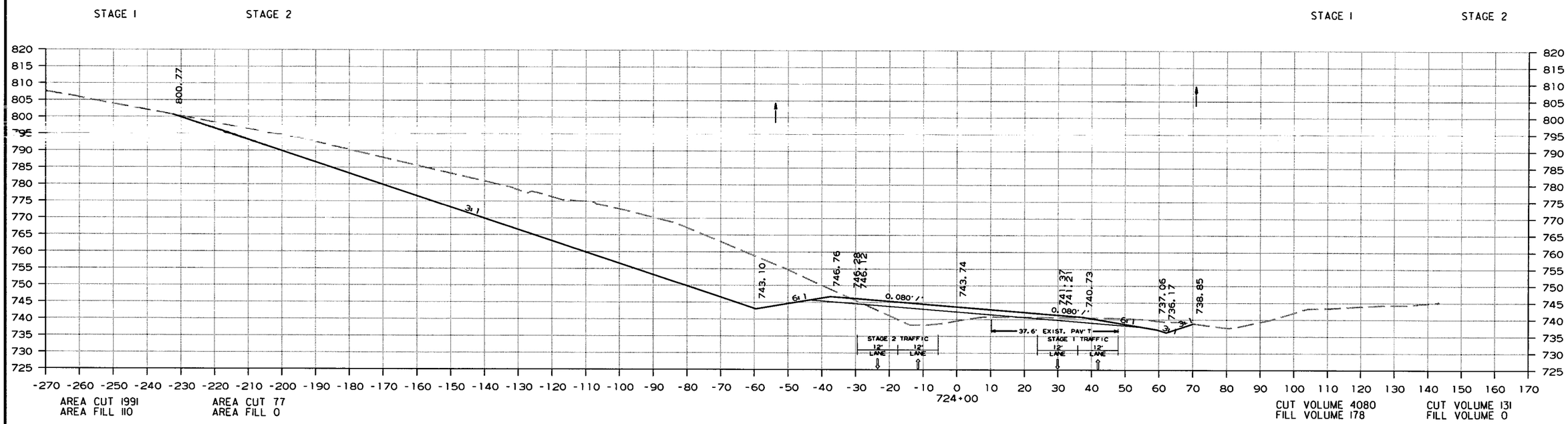
CROSS SECTION STA. 722+06 TO STA. 723+00

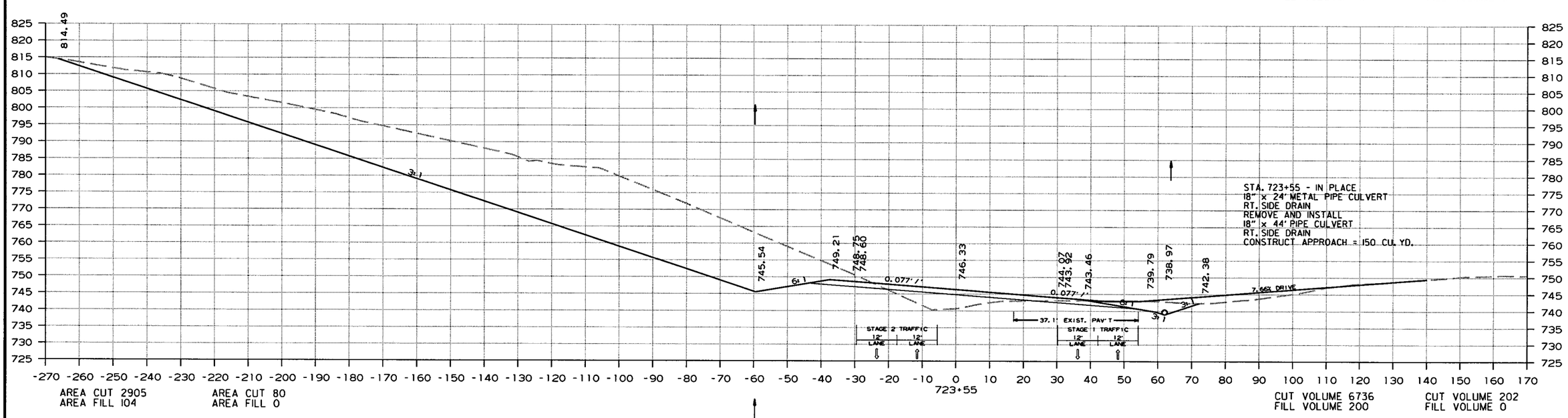
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	342	517

(2) CROSS SECTIONS





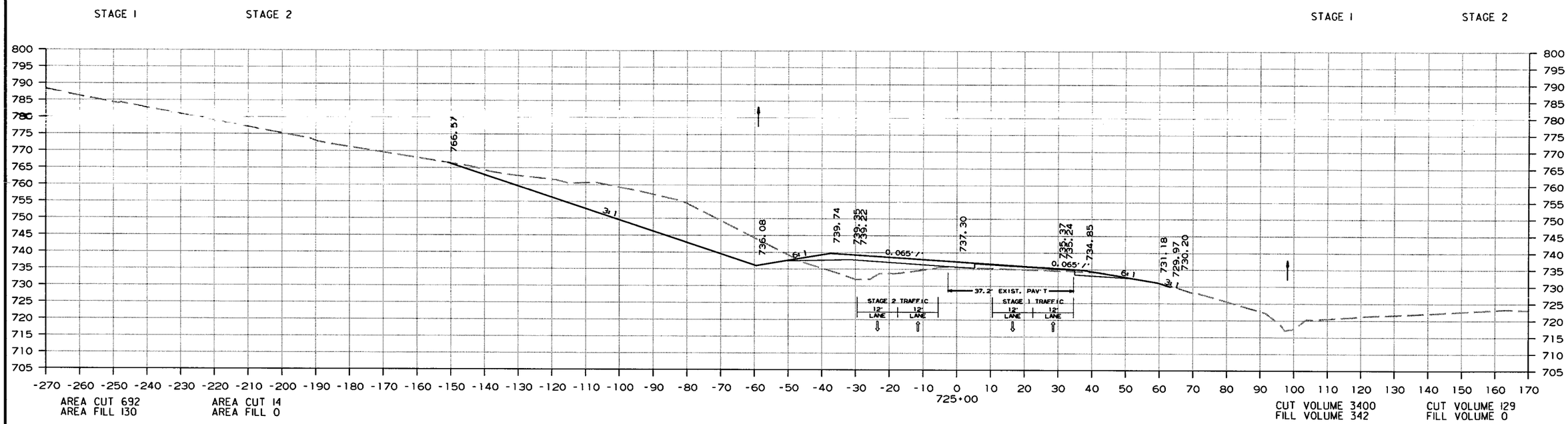
CROSS SECTION STA. 723+55 TO STA. 724+00

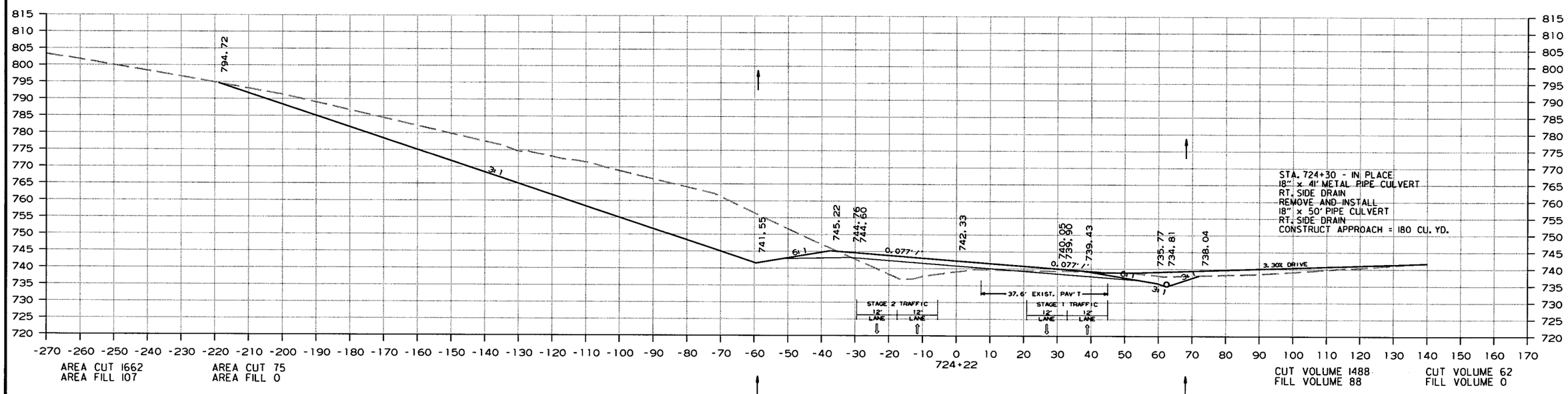
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	343	517

(2) CROSS SECTIONS





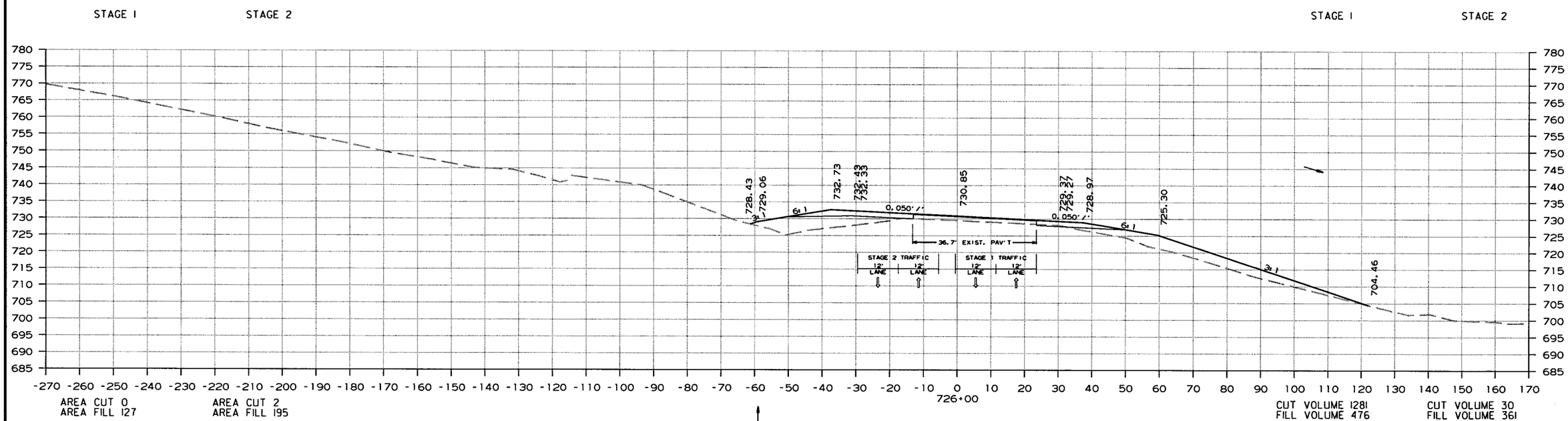
CROSS SECTION STA. 724+22 TO STA. 725+00

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	344	517

(2) CROSS SECTIONS



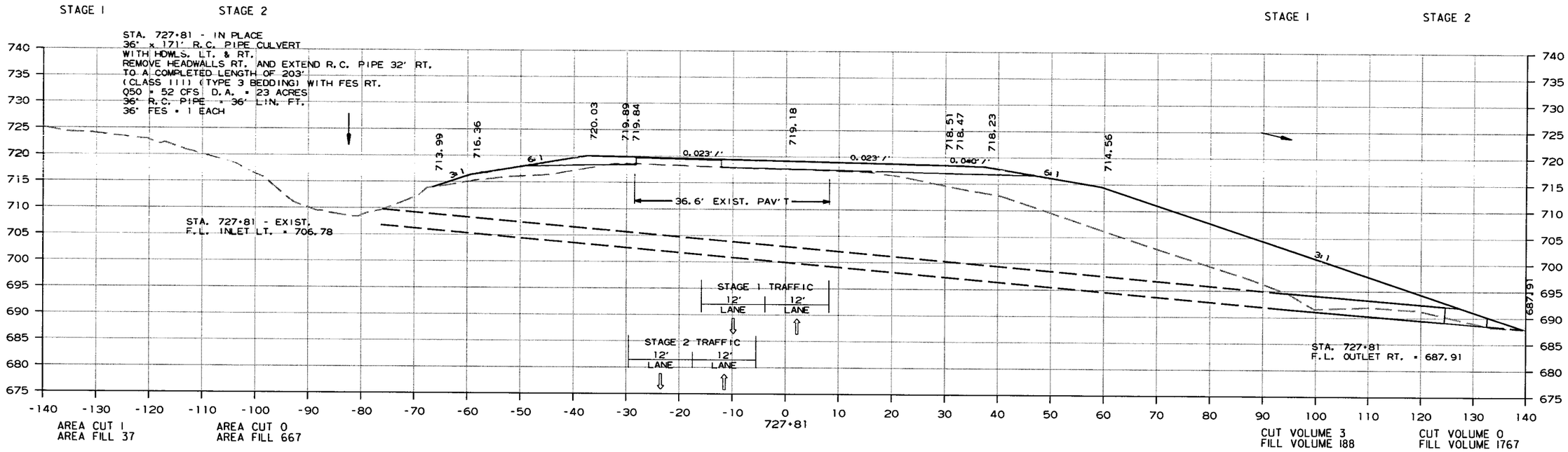
CROSS SECTION STA. 726+00 TO STA. 726+00

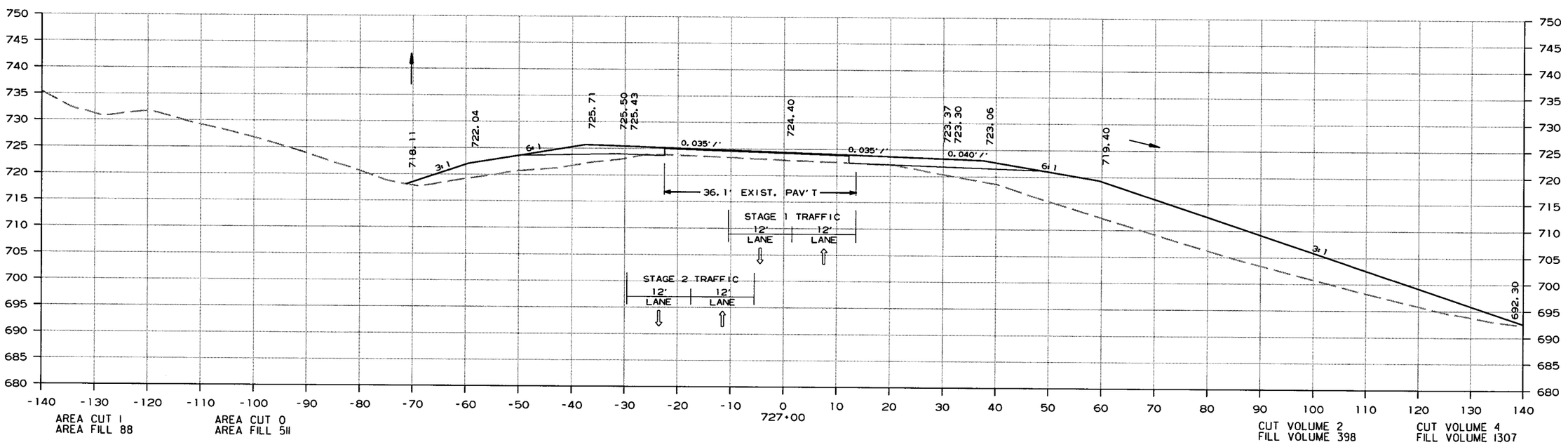
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	345	517

(2) CROSS SECTIONS





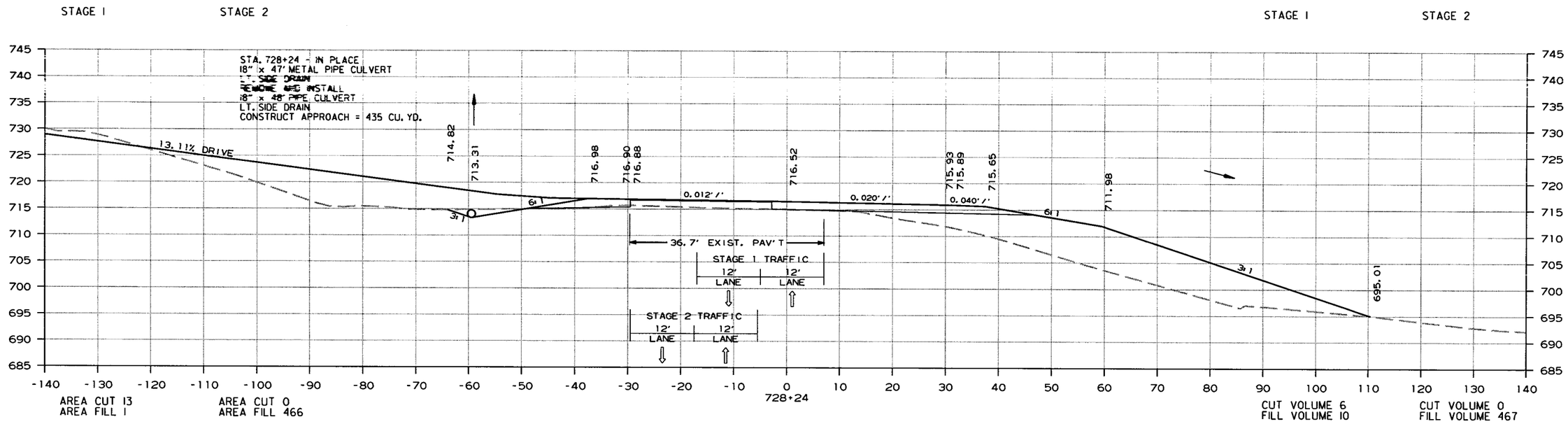
CROSS SECTION STA. 727+00 TO STA. 727+81

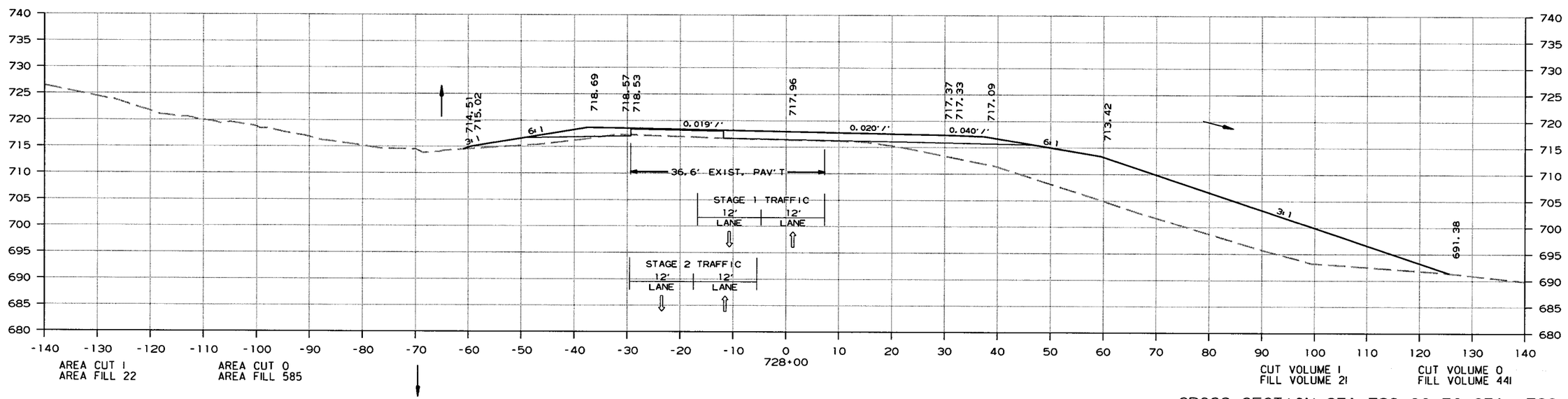
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	346	517

(2) CROSS SECTIONS





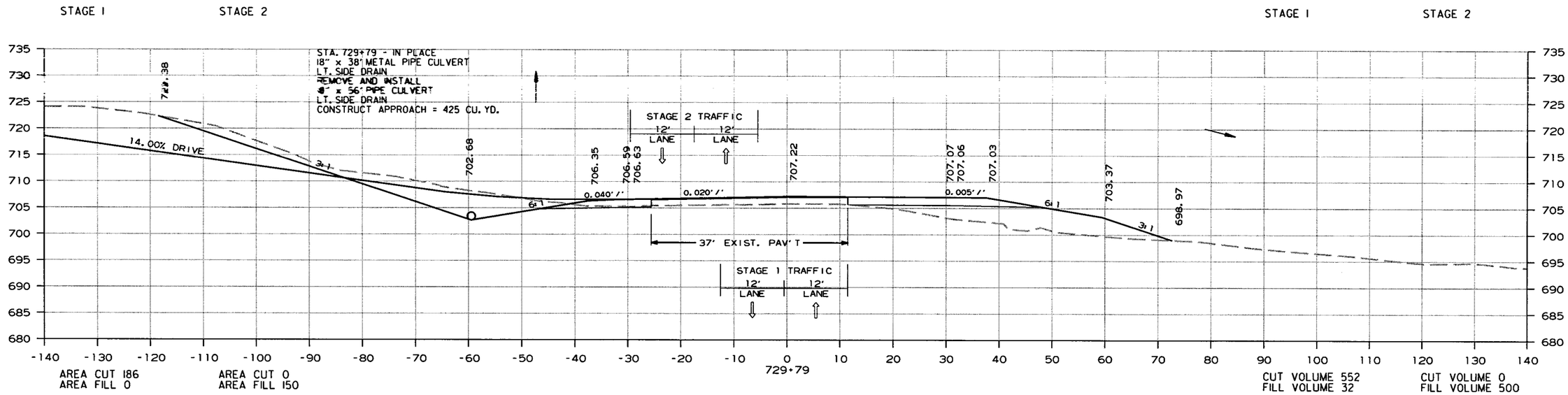
CROSS SECTION STA. 728+00 TO STA. 728+24

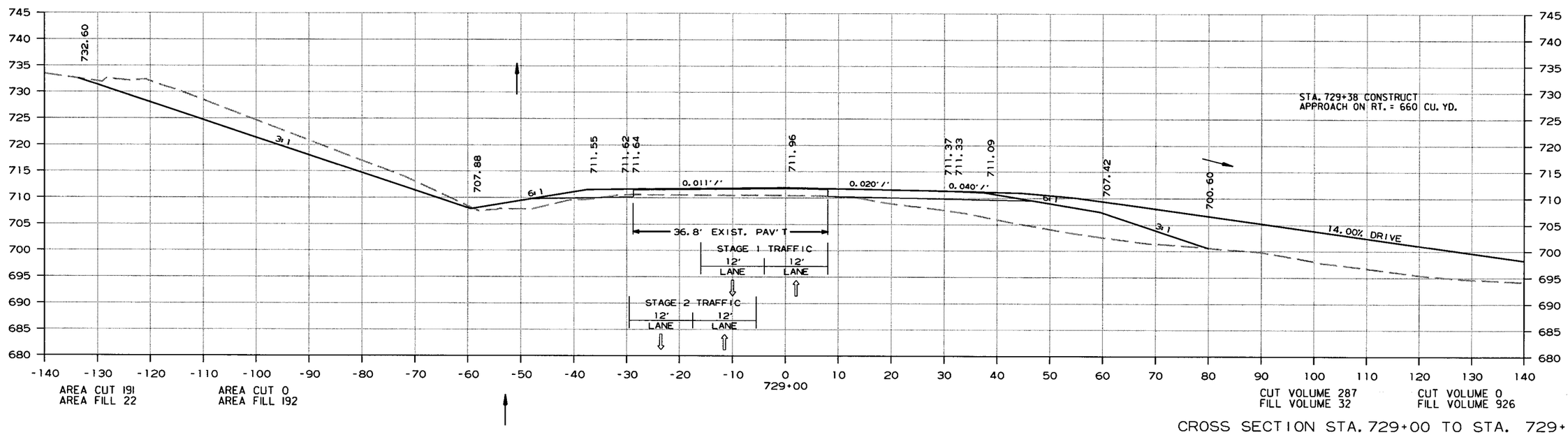
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	347	517

(2) CROSS SECTIONS





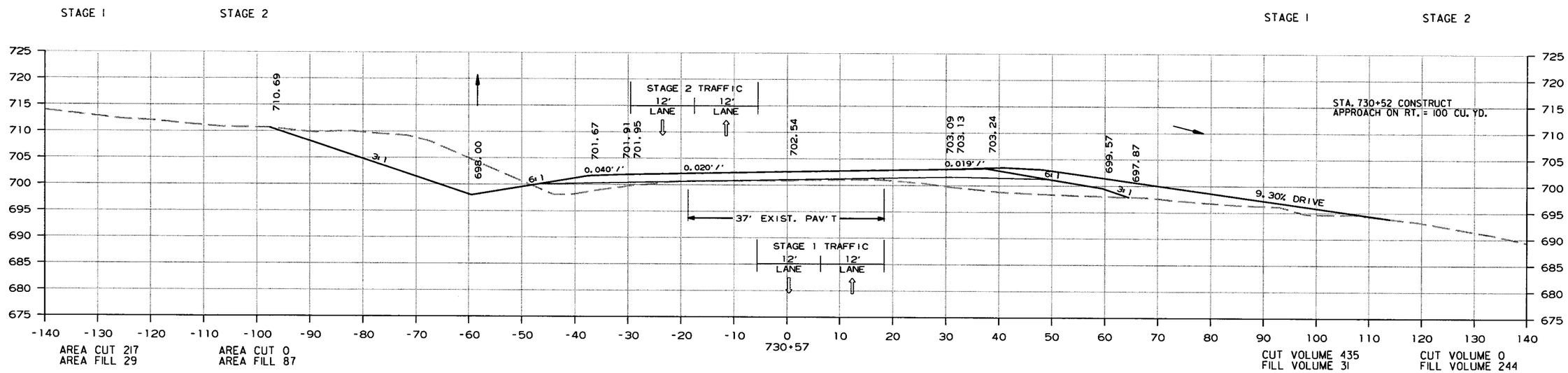
CROSS SECTION STA. 729+00 TO STA. 729+79

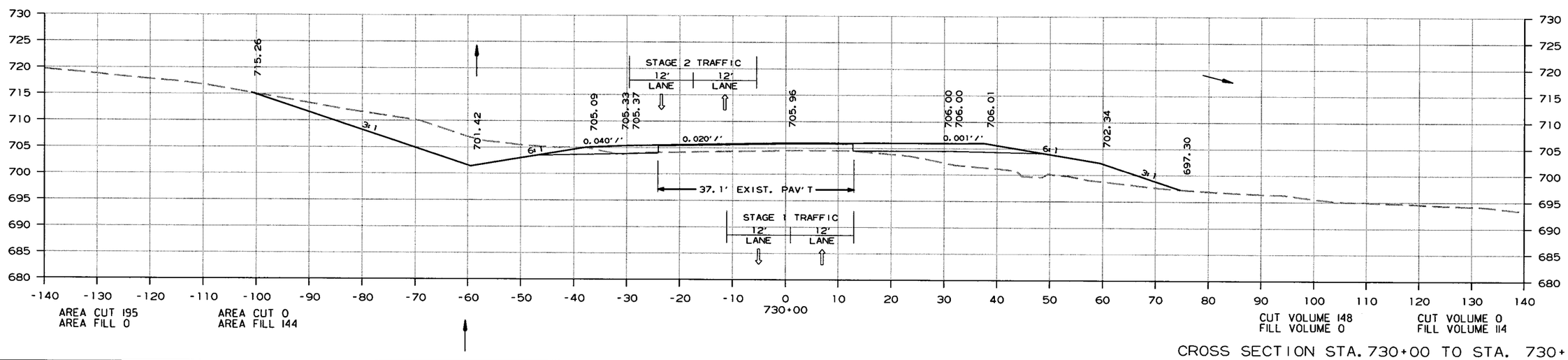
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	348	517

(2) CROSS SECTIONS





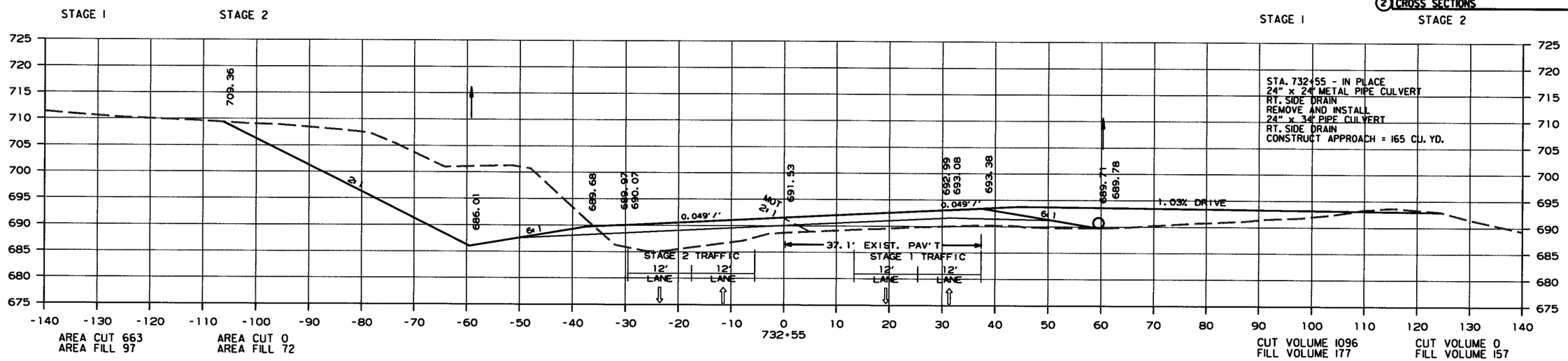
CROSS SECTION STA. 730+00 TO STA. 730+57

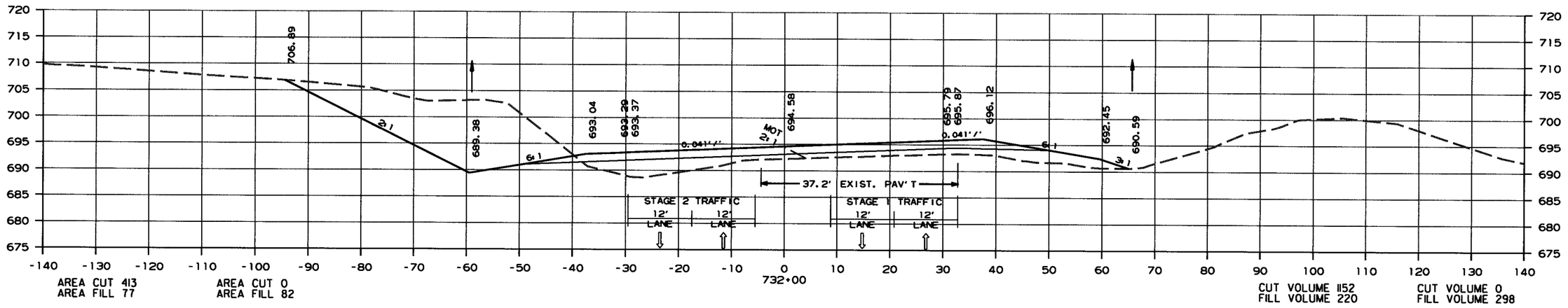
6/15/2015

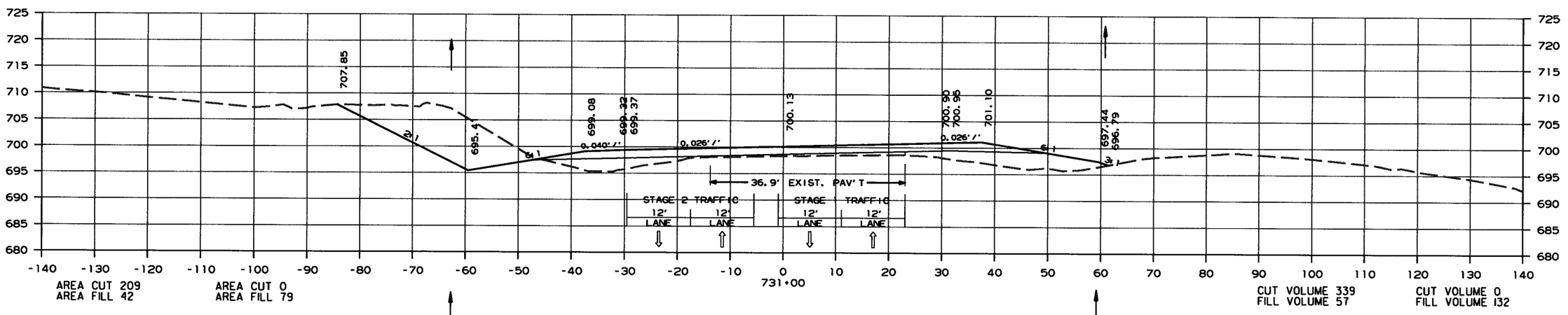
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	349	517

(2) CROSS SECTIONS







CROSS SECTION STA. 731+00 TO STA. 732+55

6/15/2015

R080423.DGN

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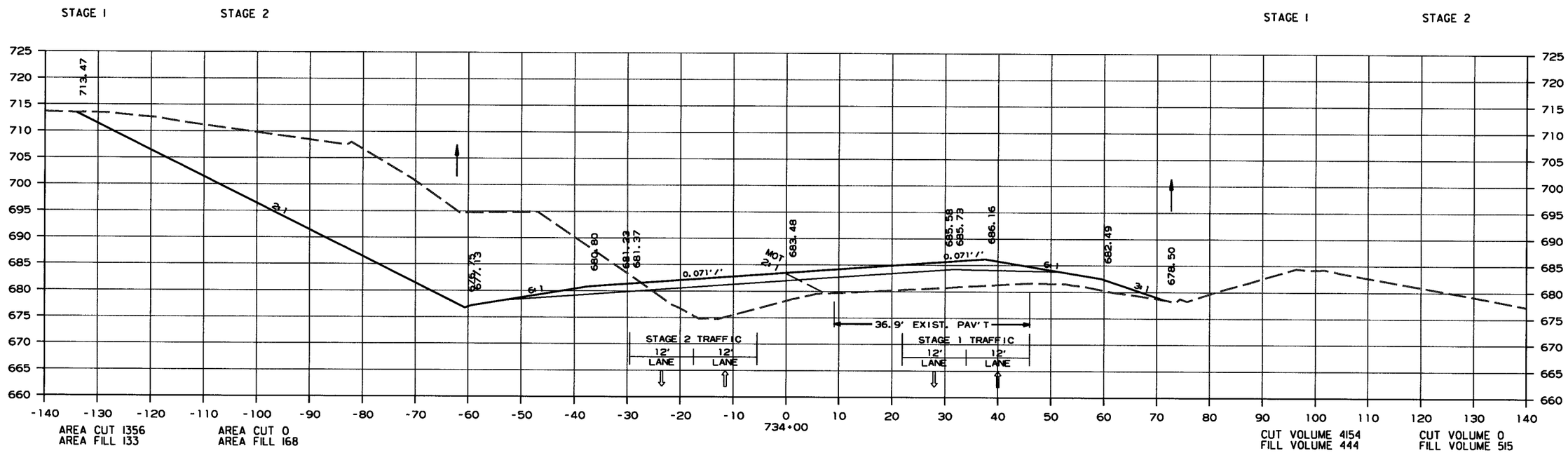
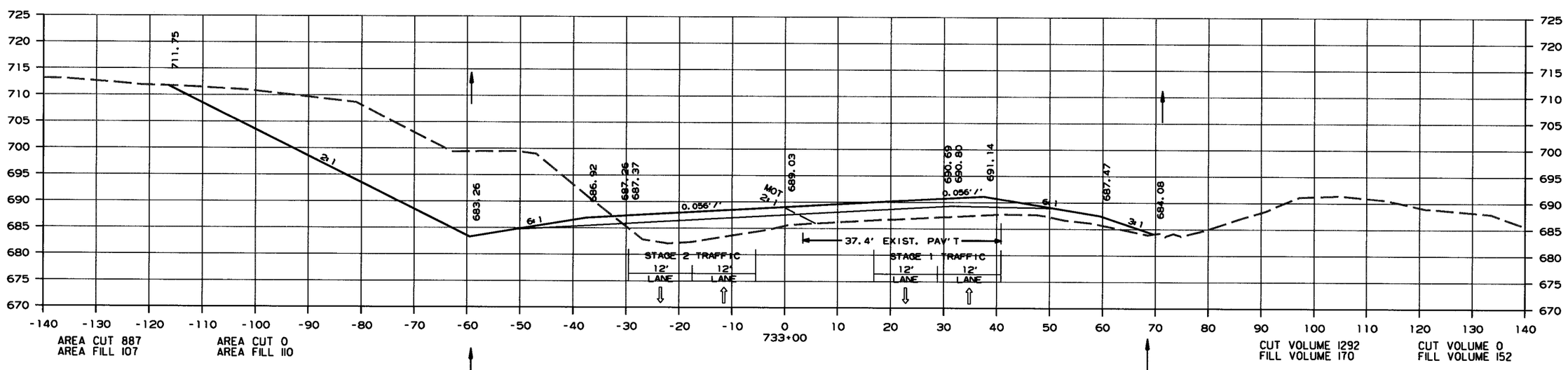
(2) CROSS SECTIONS





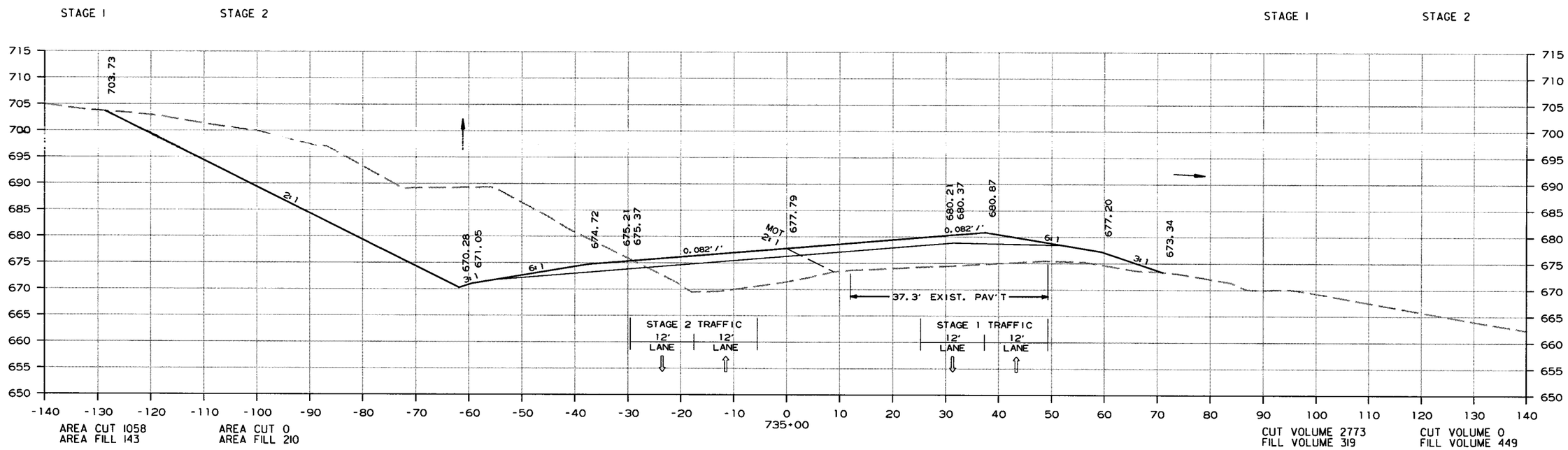
CROSS SECTION STA. 733+00 TO STA. 734+00

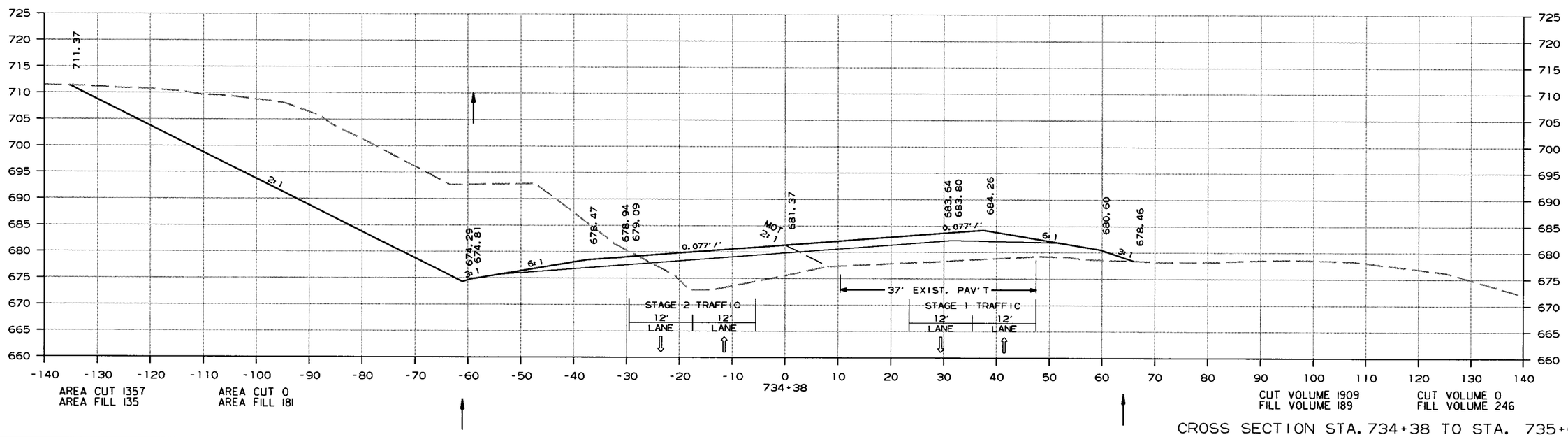
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	351	517

(2) CROSS SECTIONS





CROSS SECTION STA. 734+38 TO STA. 735+00

6/15/2015

R080423.DGN

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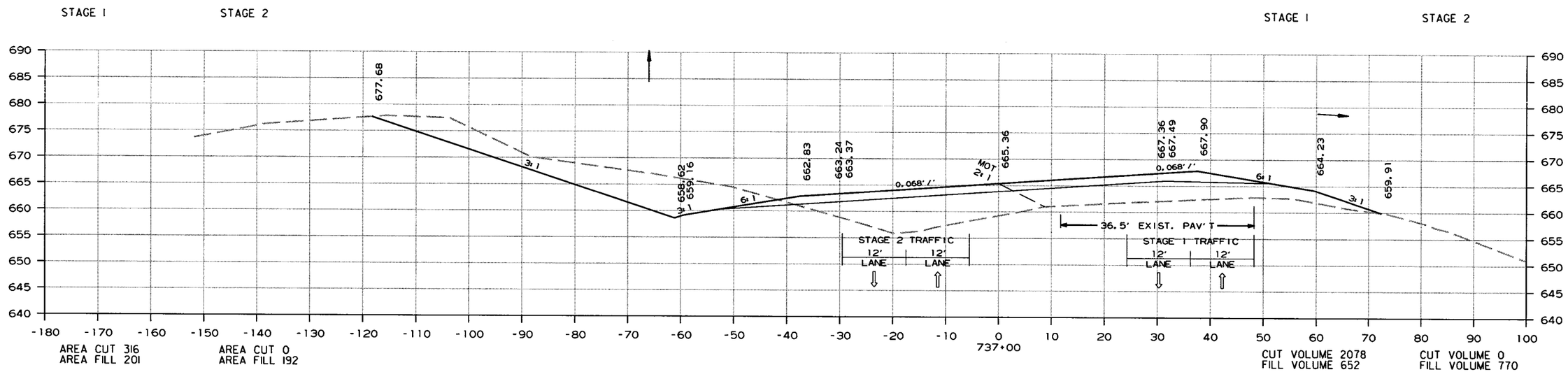
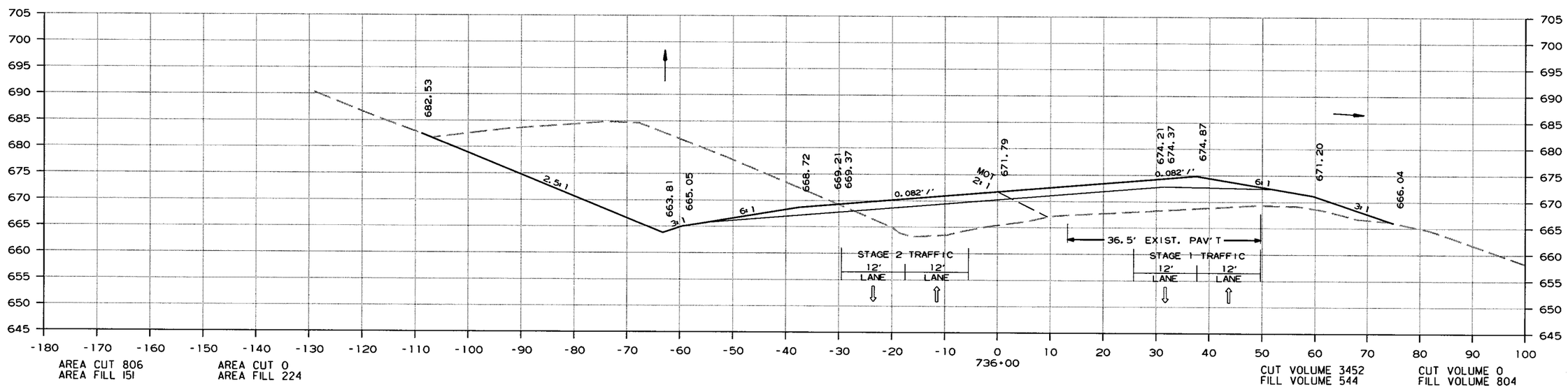
(2) CROSS SECTIONS





CROSS SECTION STA. 736+00 TO STA. 737+00

6/15/2015

R080423.DGN

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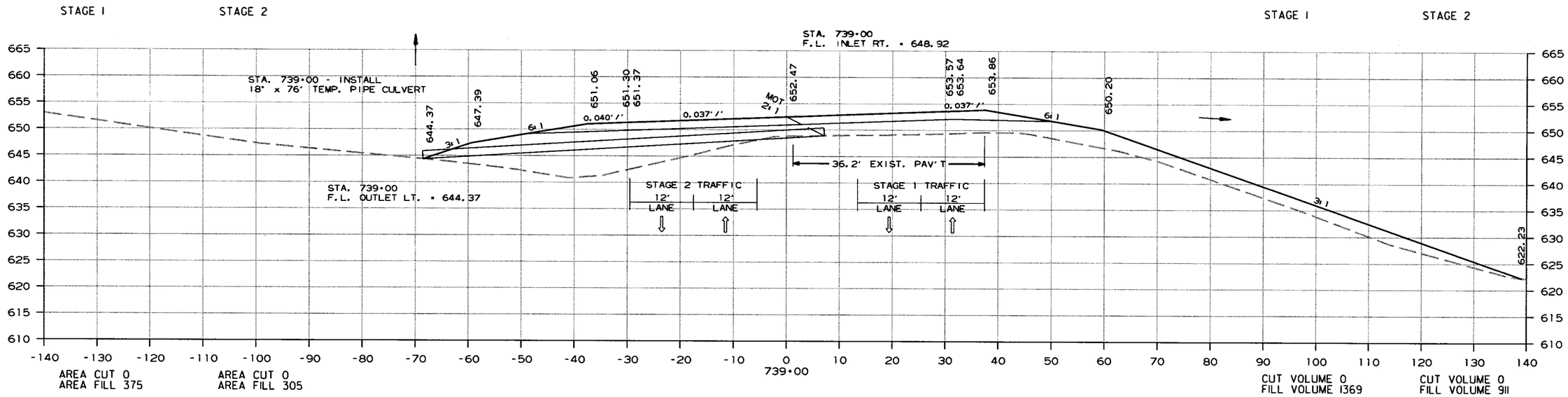
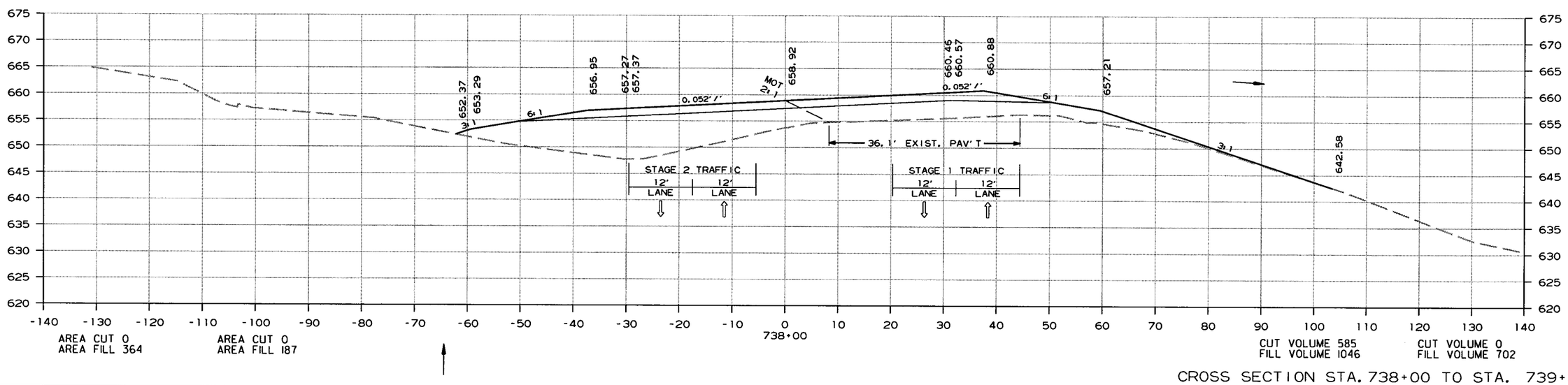
(2) CROSS SECTIONS





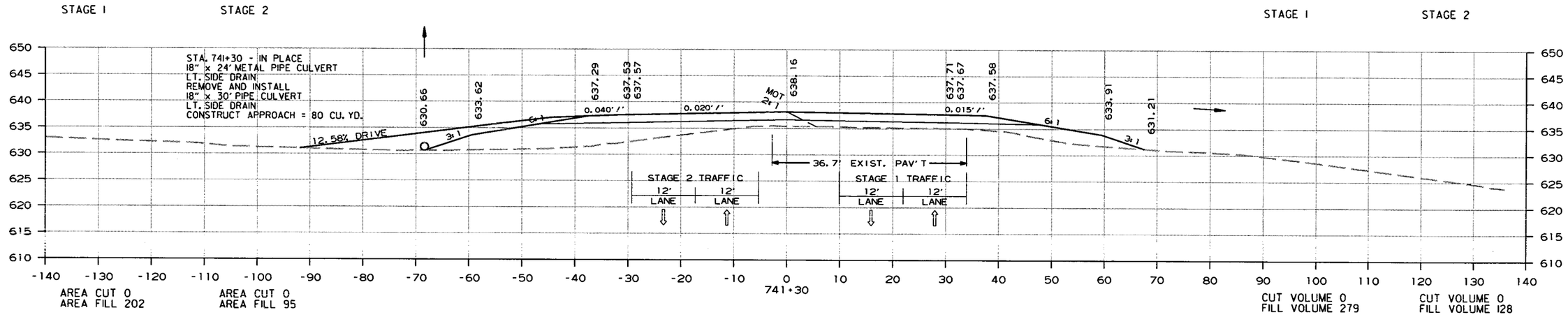
CROSS SECTION STA. 738+00 TO STA. 739+00

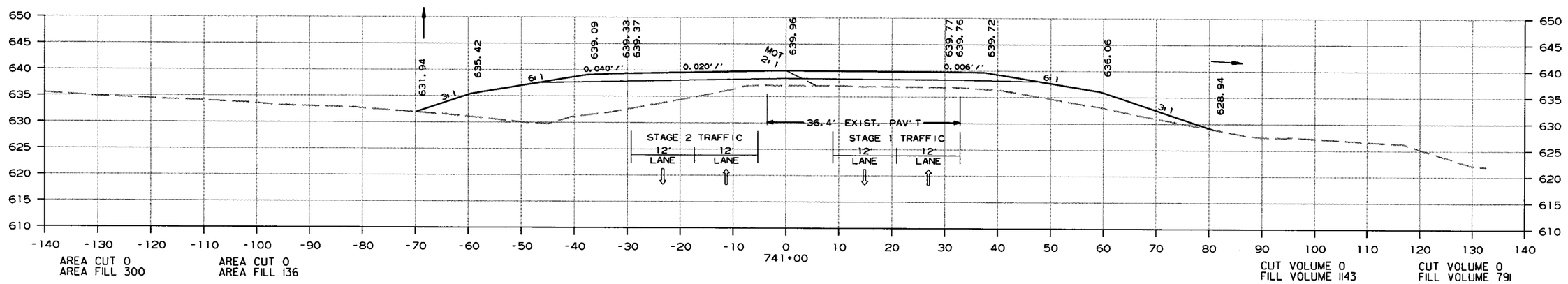
6/15/2015

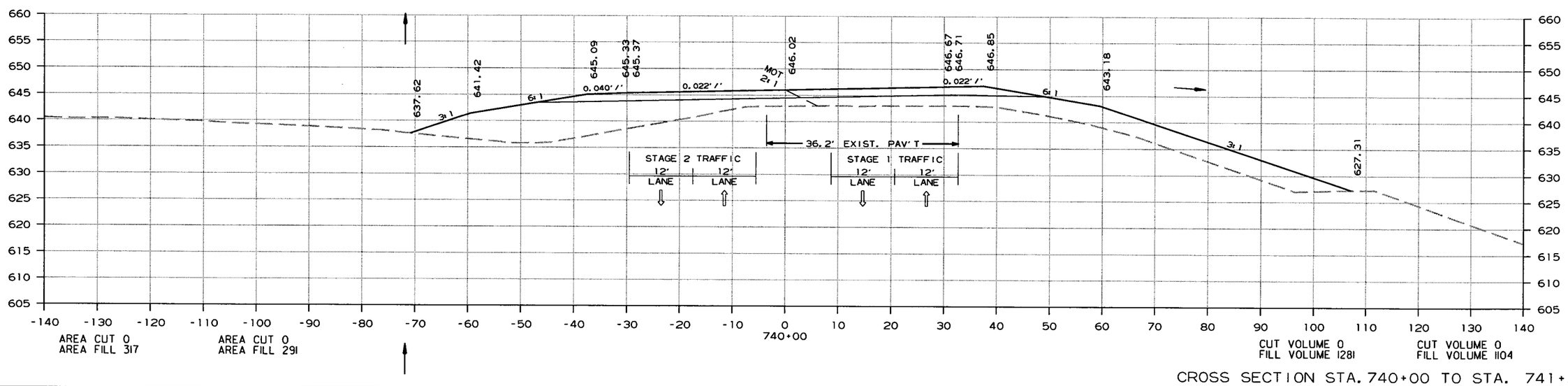
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	354	517

(2) CROSS SECTIONS







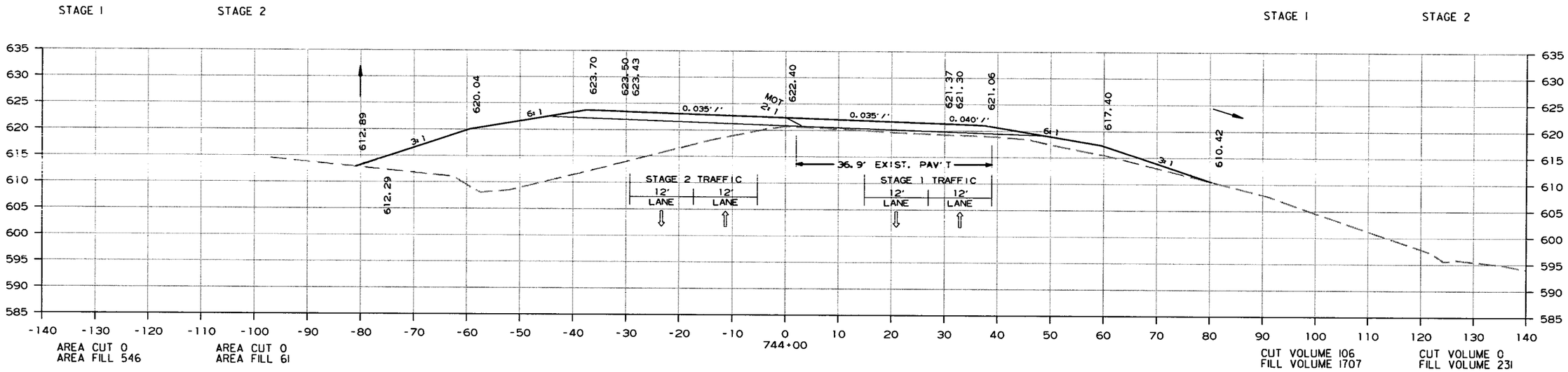
CROSS SECTION STA. 740+00 TO STA. 741+30

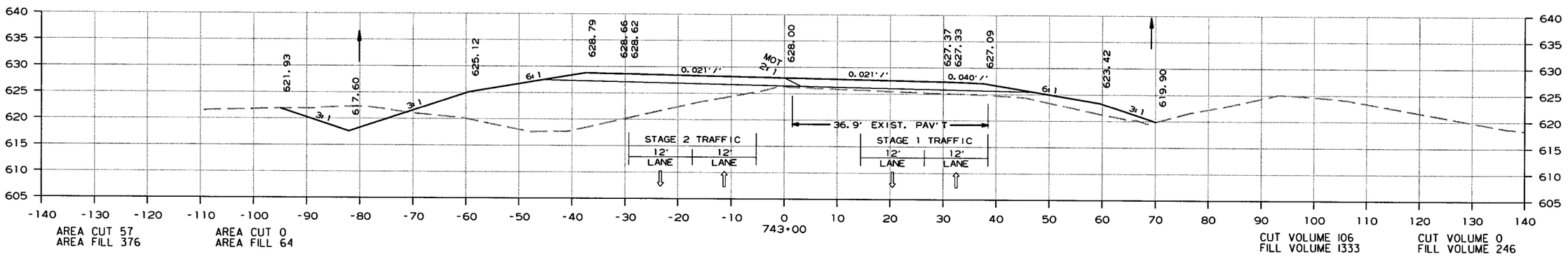
6/15/2015

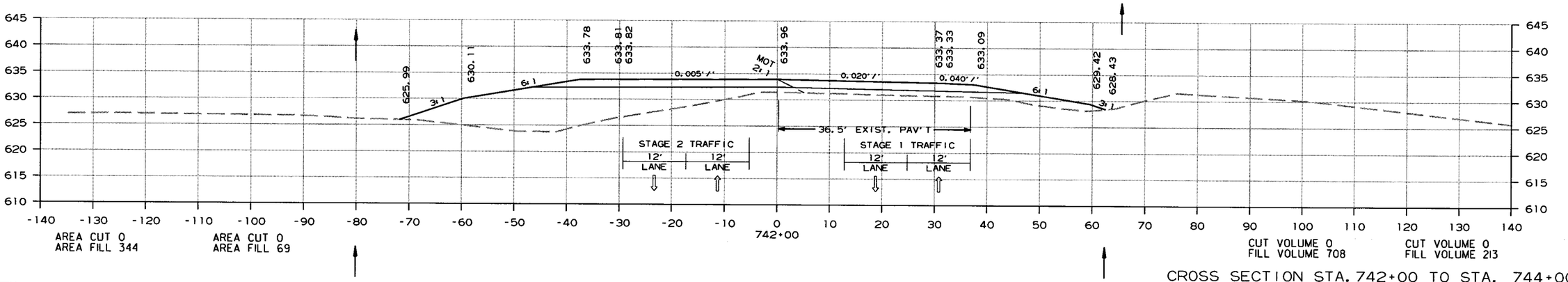
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	355	517

(2) CROSS SECTIONS







CROSS SECTION STA. 742+00 TO STA. 744+00

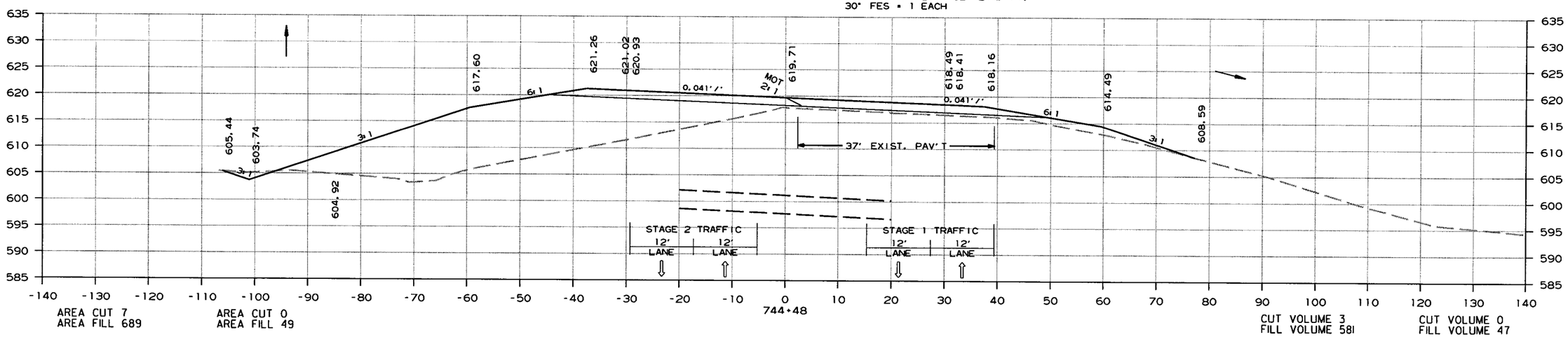
6/15/2015

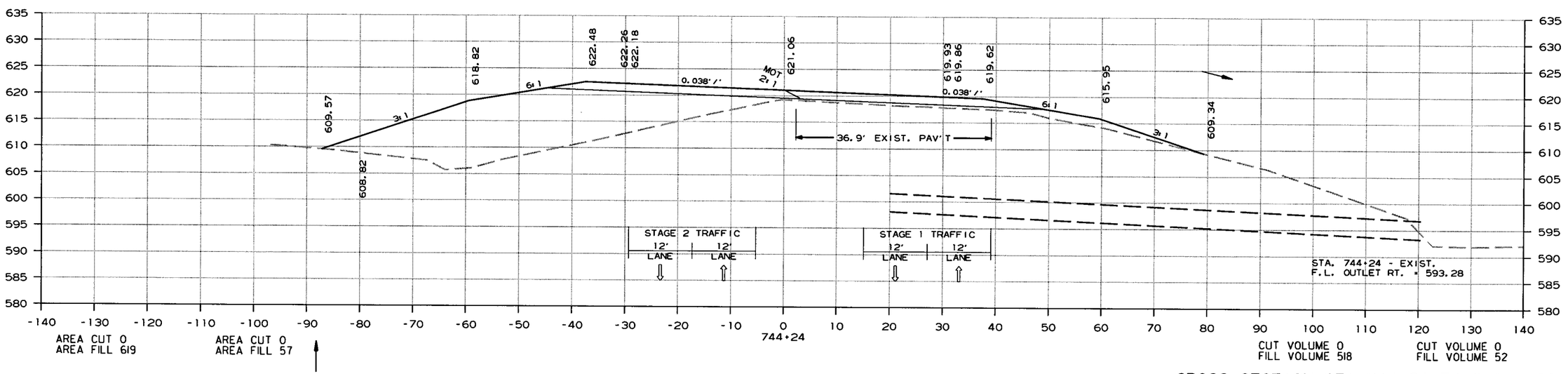
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	356	517

(2) CROSS SECTIONS

STA. 744+48 - IN PLACE
30" x 187' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. AND EXTEND R.C. PIPE 28' LT.
TO A COMPLETED LENGTH OF 215'
(CLASS IV) (TYPE 3 BEDDING) WITH FES LT.
Q50 = 77 CFS D.A. = 34 ACRES
30" R.C. PIPE = 32' LIN. FT.
30" FES = 1 EACH





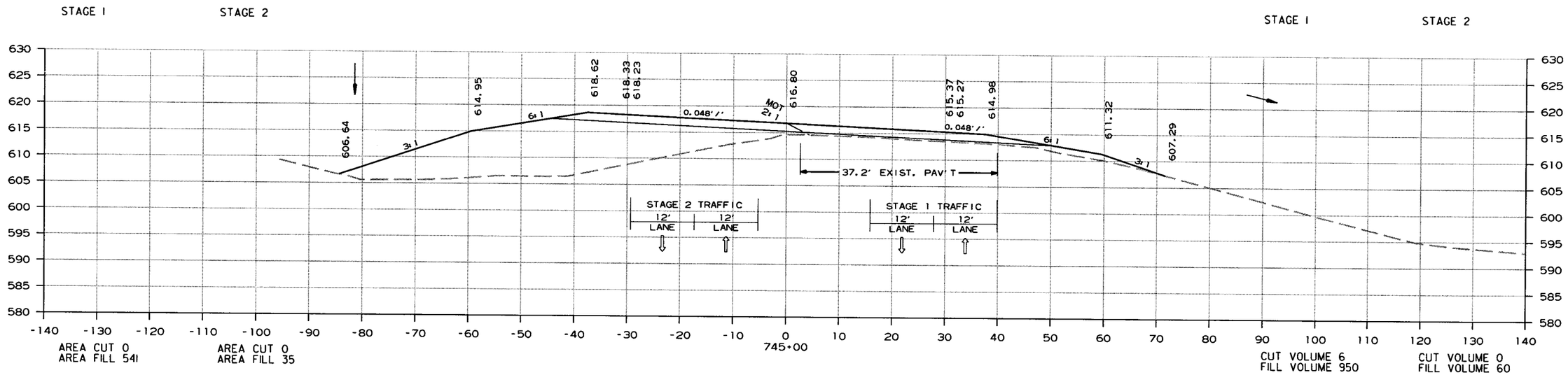
CROSS SECTION STA. 744+24 TO STA. 744+48

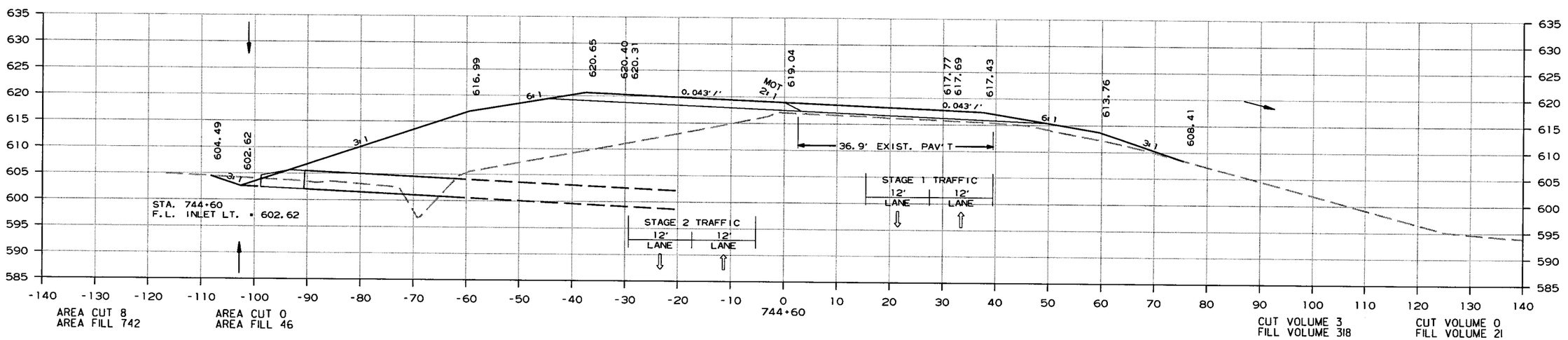
6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	357	517

(2) CROSS SECTIONS





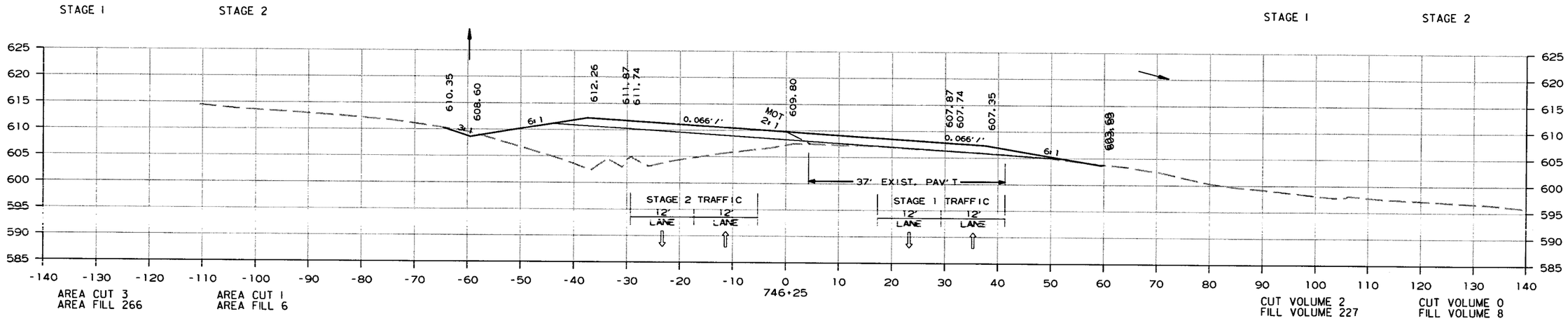
CROSS SECTION STA. 744+60 TO STA. 745+00

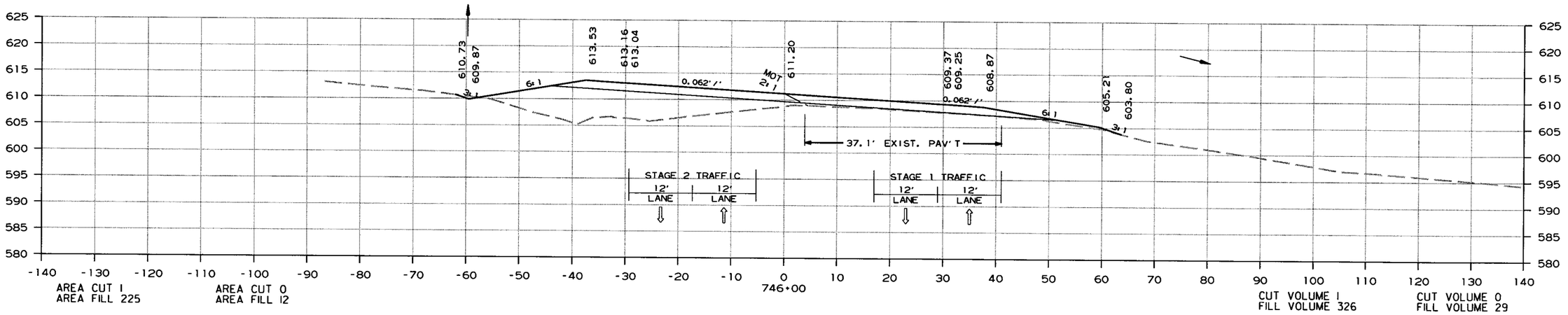
6/15/2015

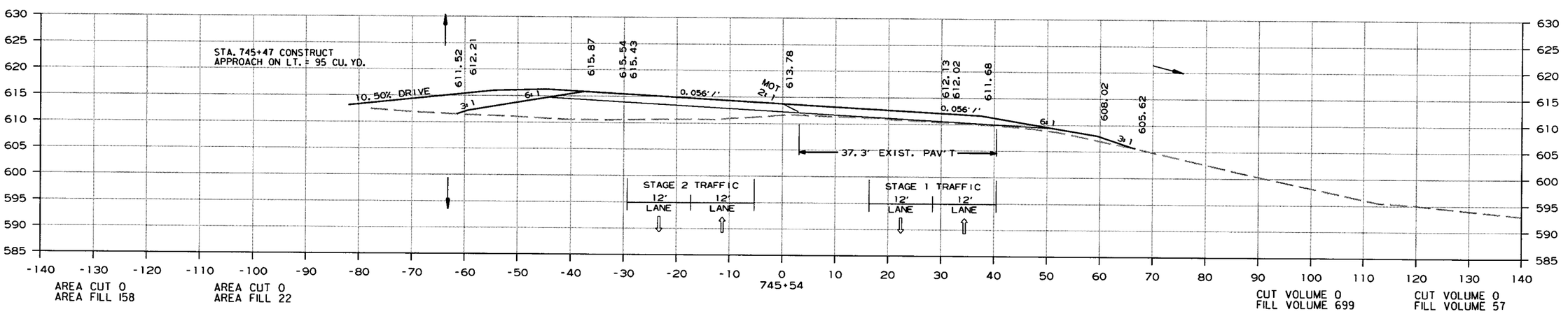
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	358	517

(2) CROSS SECTIONS







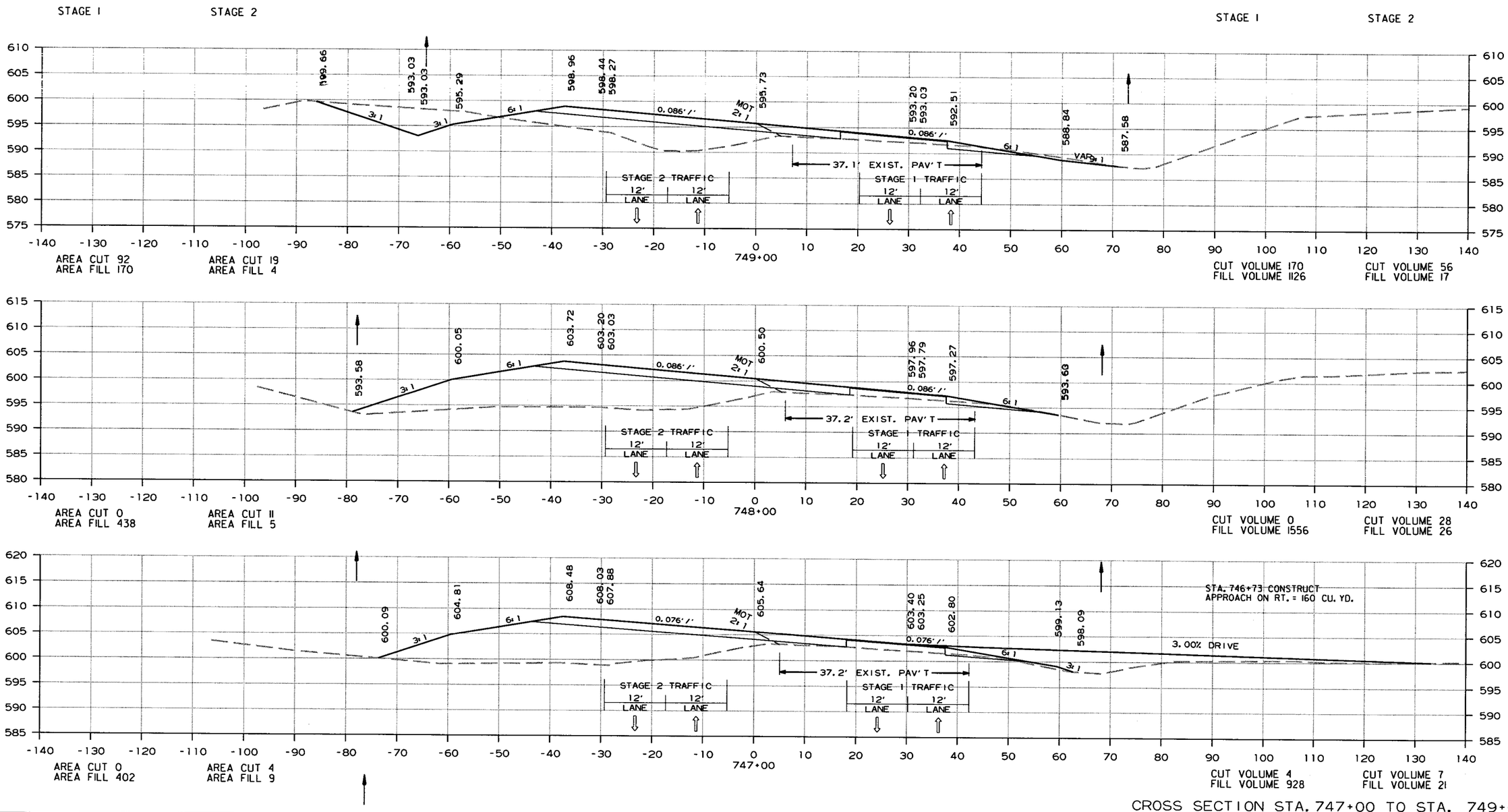
CROSS SECTION STA. 745+54 TO STA. 746+25

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	359	517

(2) CROSS SECTIONS



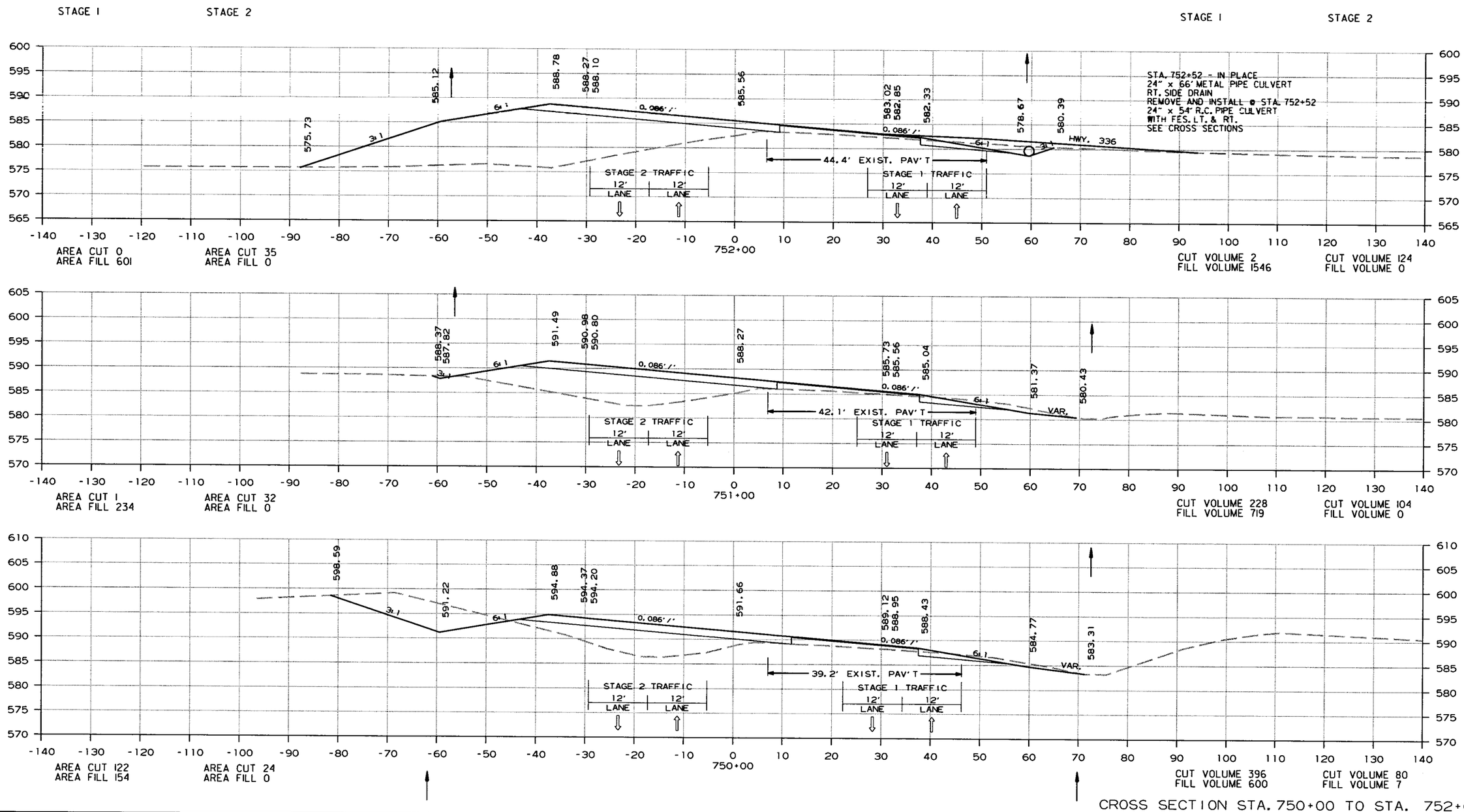
CROSS SECTION STA. 747+00 TO STA. 749+00

6/15/2015

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	360	517

(2) CROSS SECTIONS



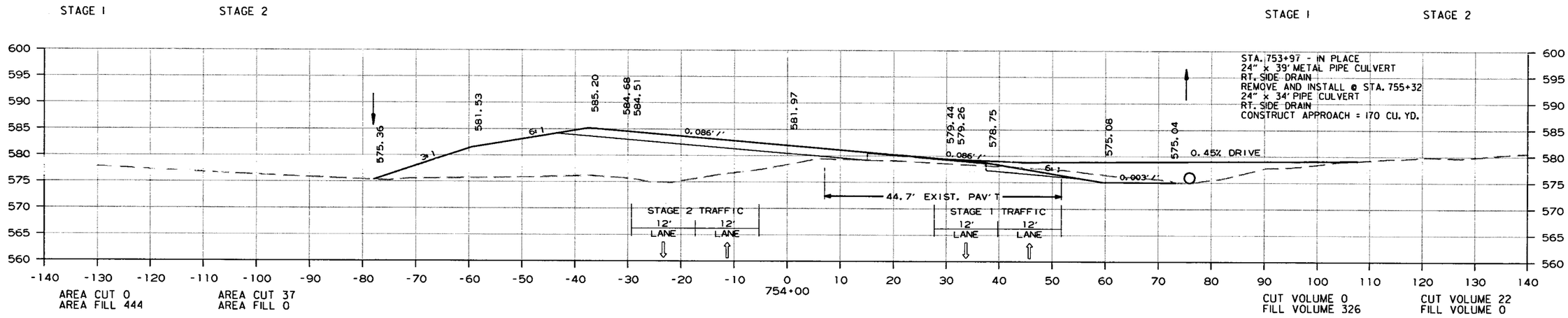
CROSS SECTION STA. 750+00 TO STA. 752+00

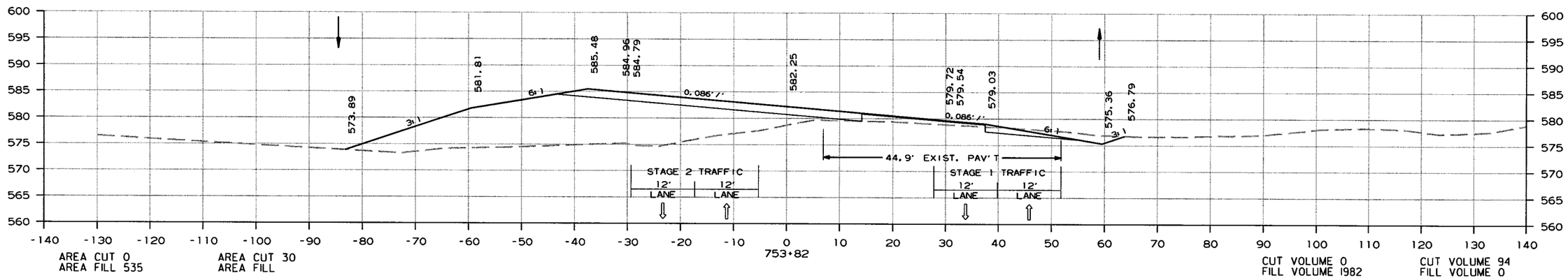
6/15/2015

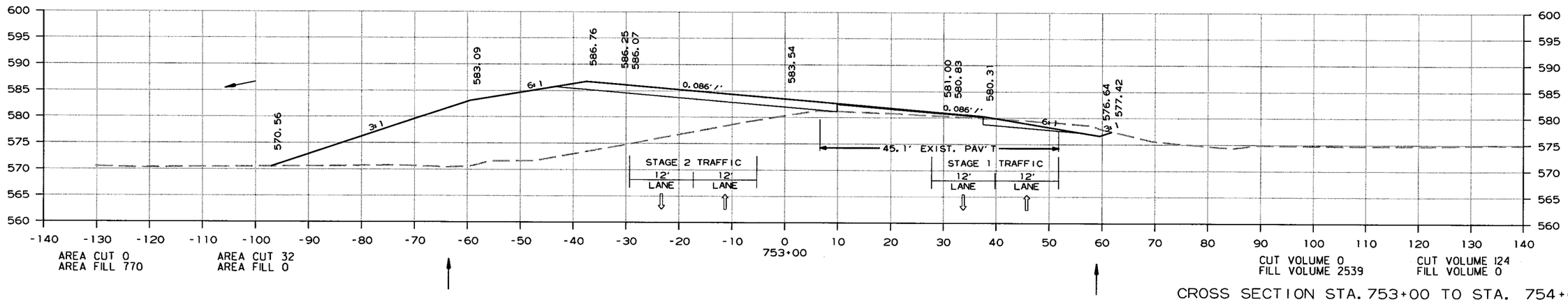
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	361	517

(2) CROSS SECTIONS







CROSS SECTION STA. 753+00 TO STA. 754+00

6/15/2015

R080423.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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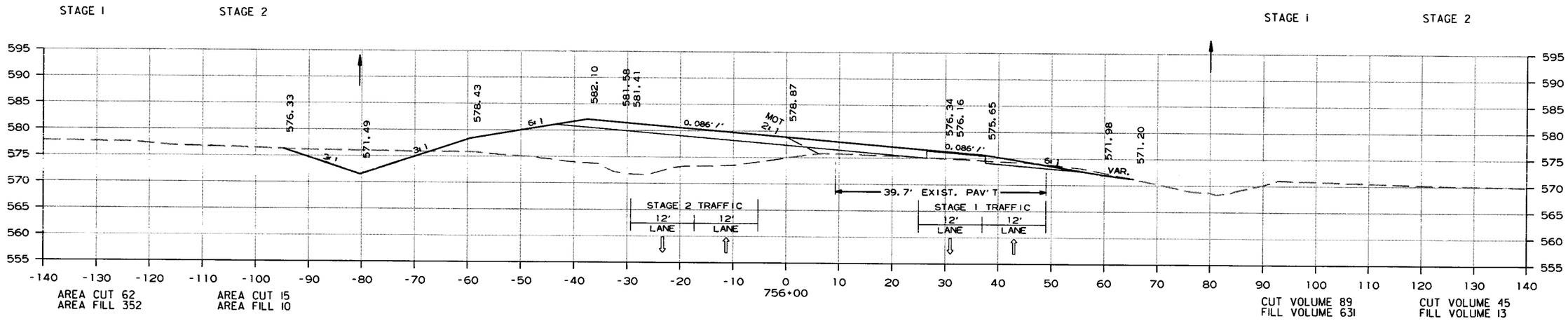
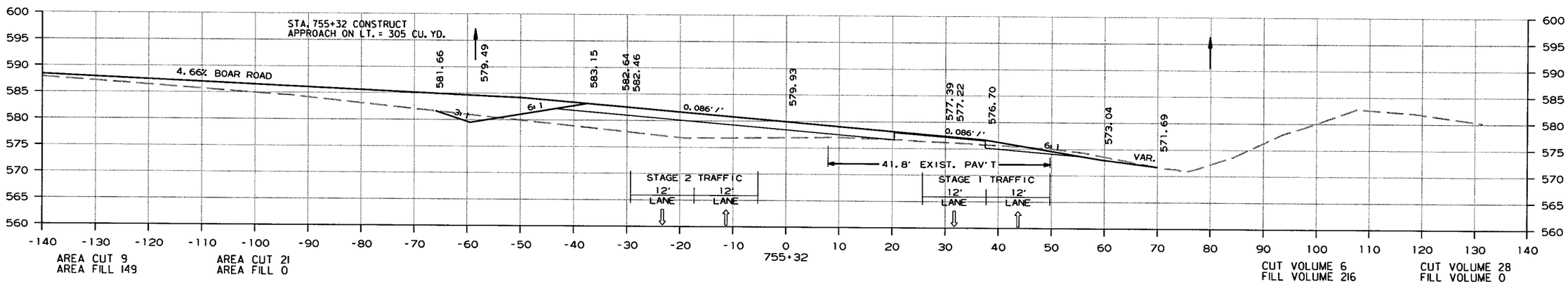
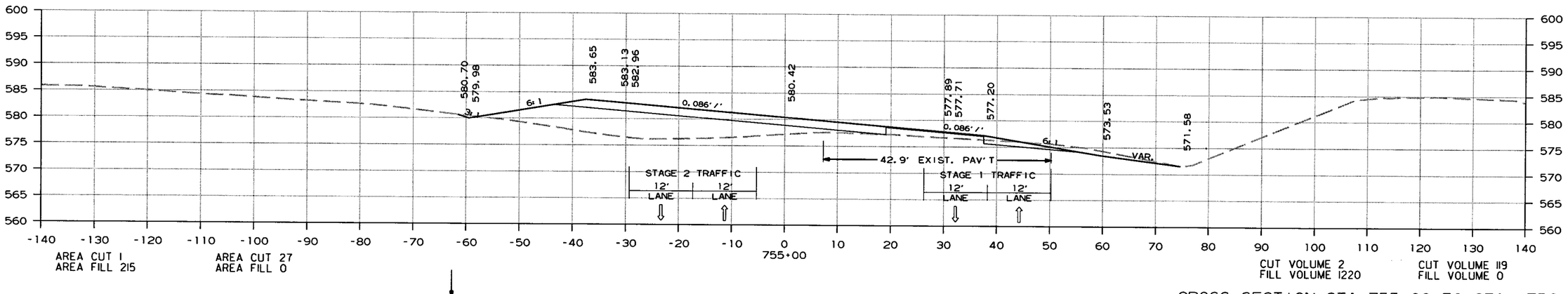
				JOB NO.		080423	362	517

(2) CROSS SECTIONS







CROSS SECTION STA. 755+00 TO STA. 756+00

6/15/2015

R080423.DGN

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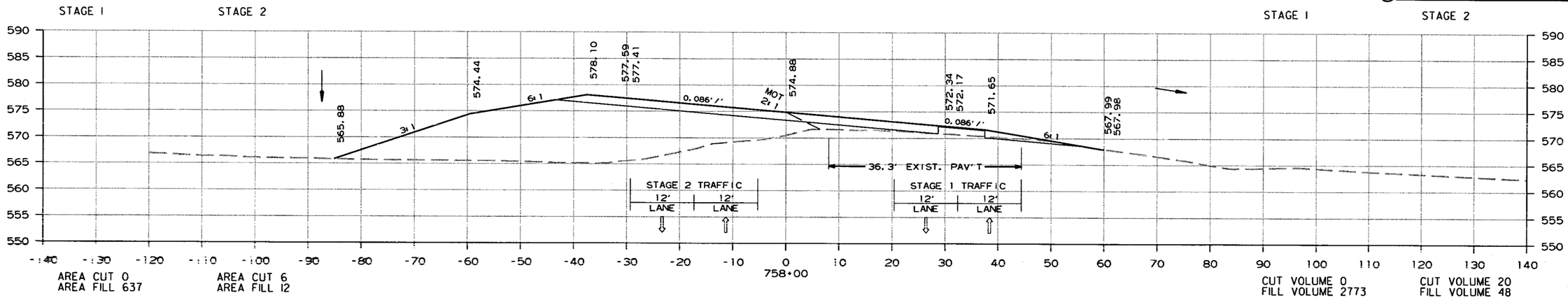
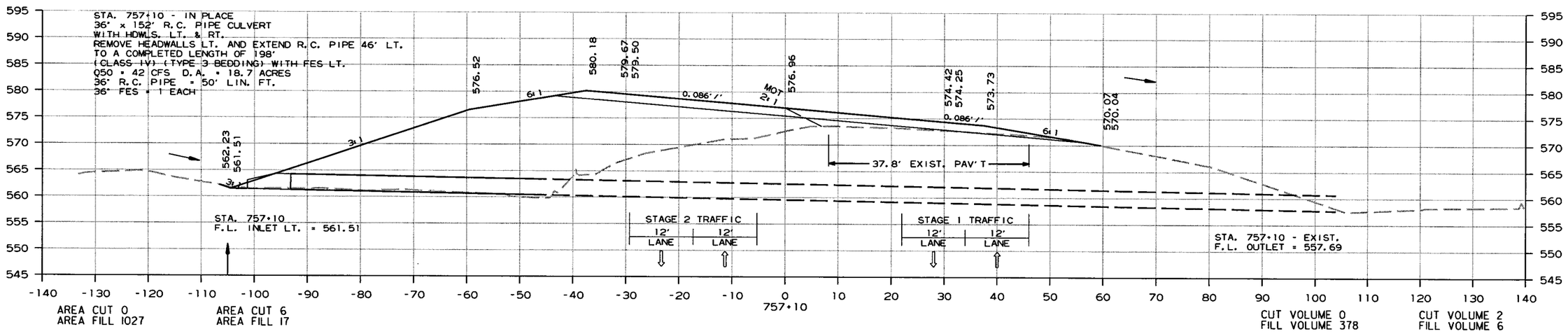
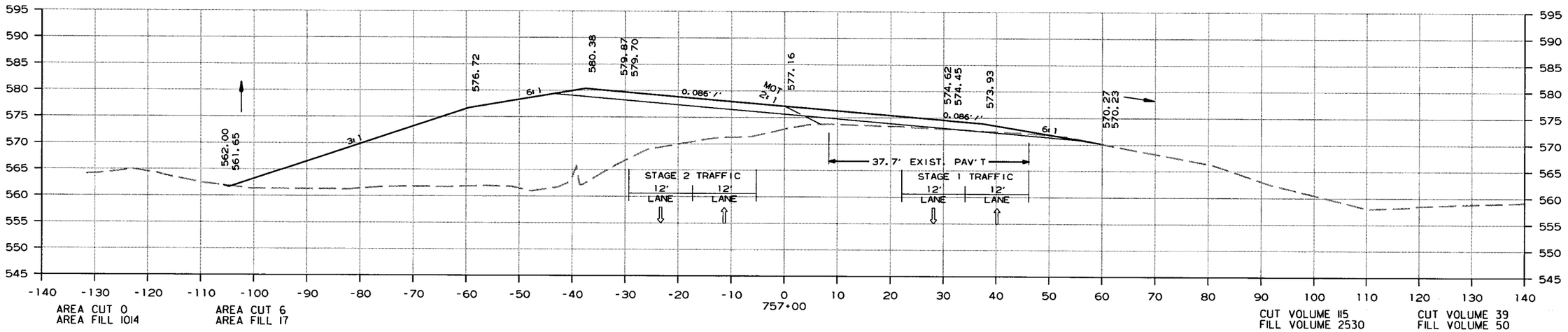
(2) CROSS SECTIONS







CROSS SECTION STA. 757+00 TO STA. 758+00

6/15/2015

R080423.DGN

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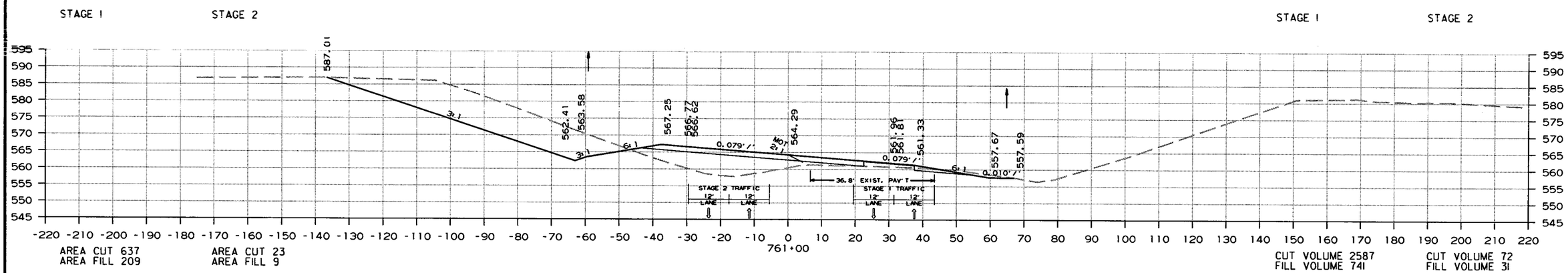
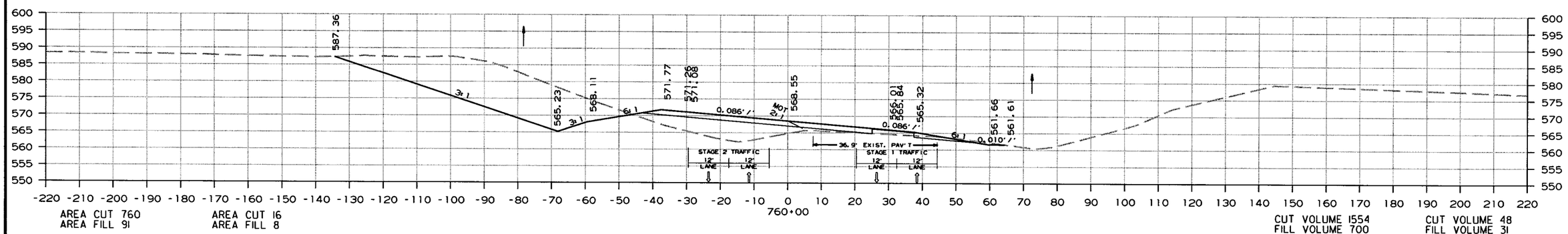
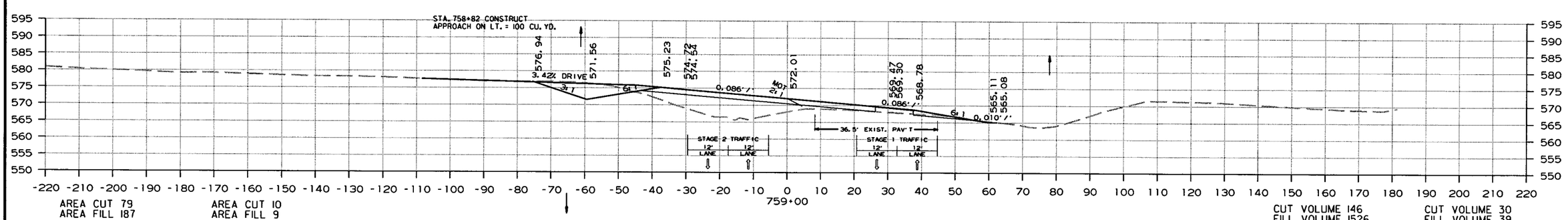
(2) CROSS SECTIONS







CROSS SECTION STA. 759+00 TO STA. 761+00

6/15/2015

R080423.DGN

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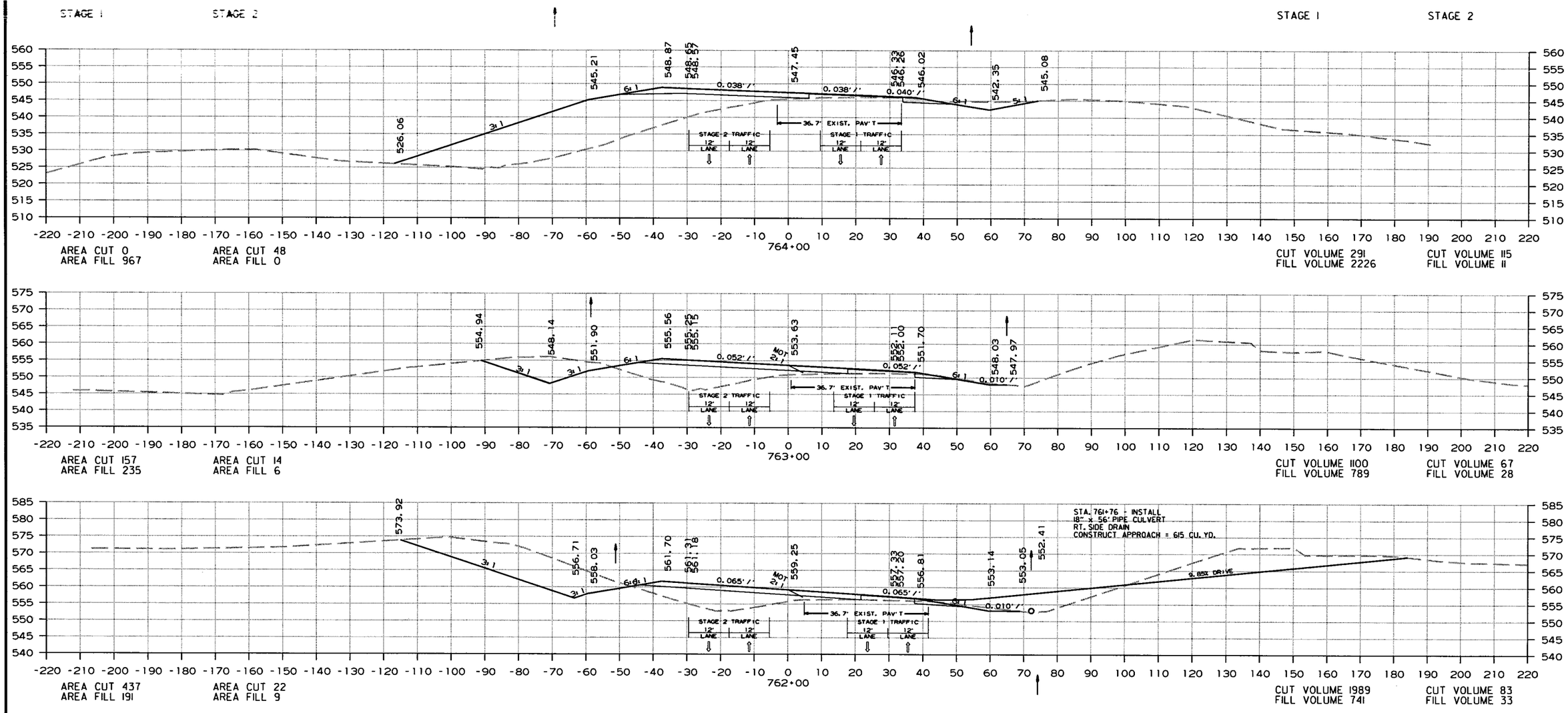
(2) CROSS SECTIONS



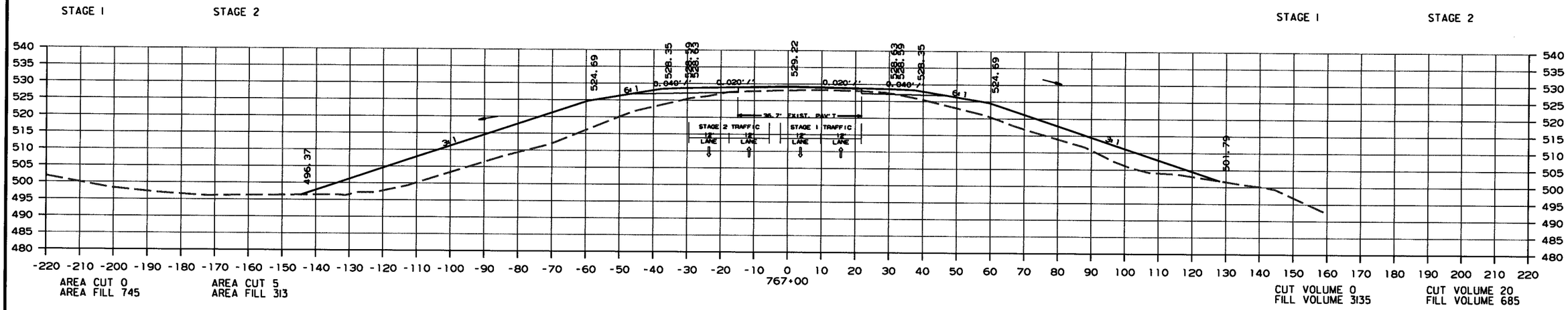
CROSS SECTION STA. 762+00 TO STA. 764+00

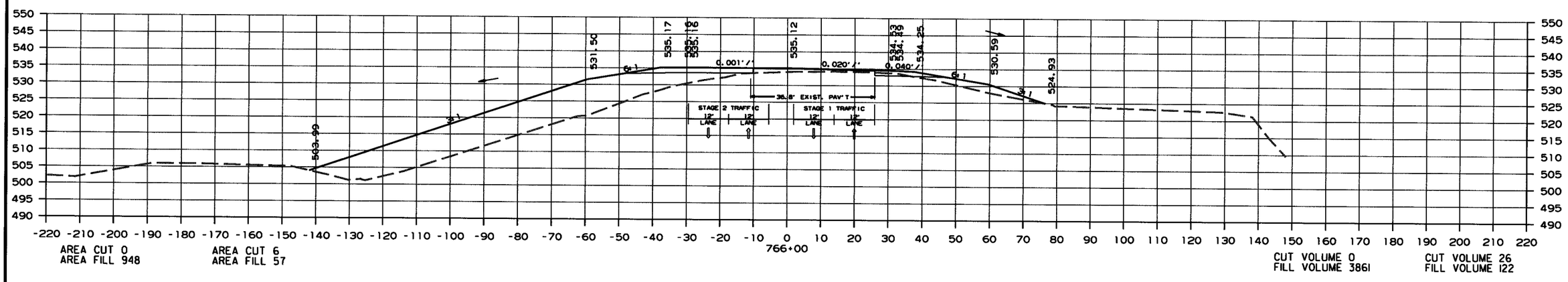
6/15/2015

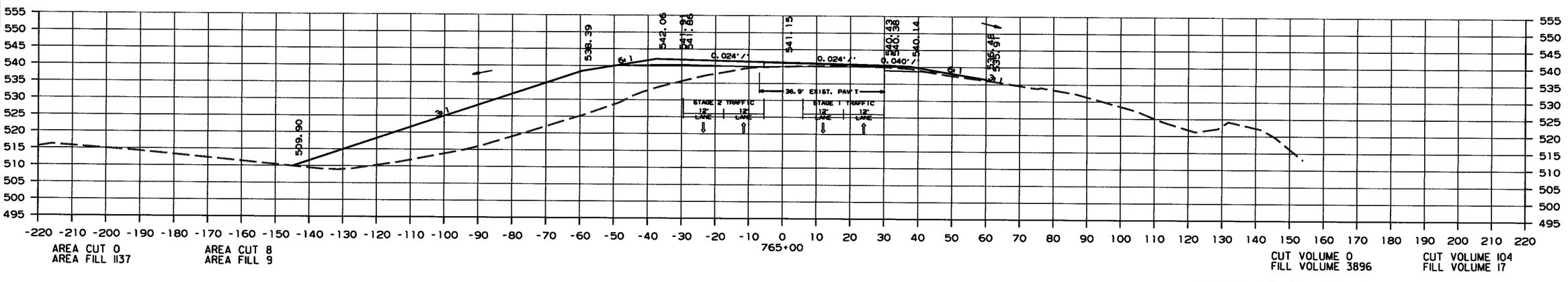
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	366	517

(2) CROSS SECTIONS







CROSS SECTION STA. 765+00 TO STA. 767+00

6/15/2015

R080423.DGN

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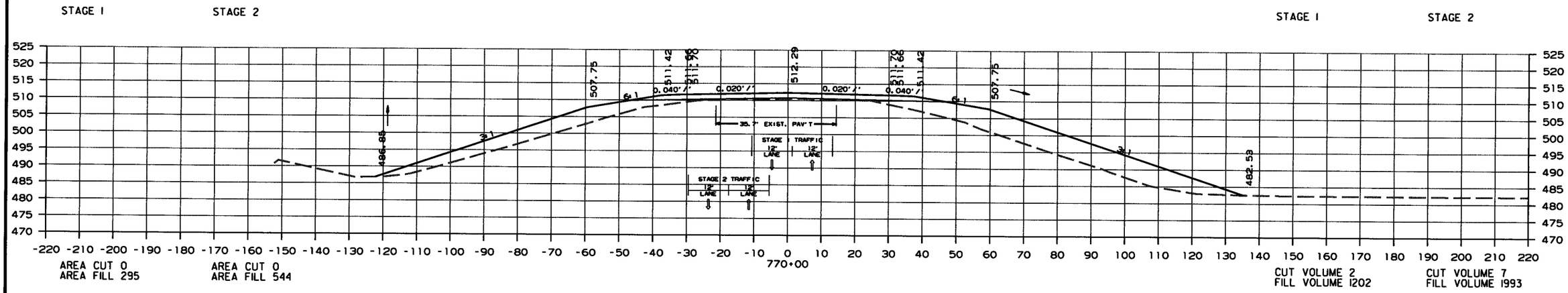
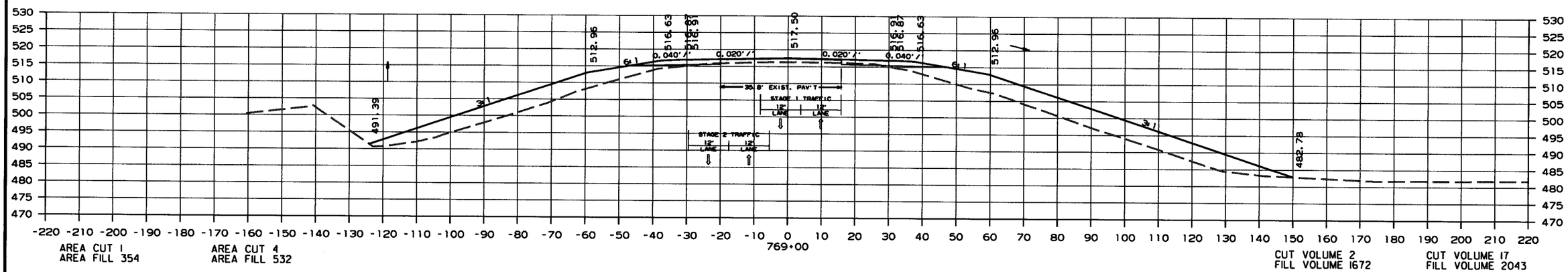
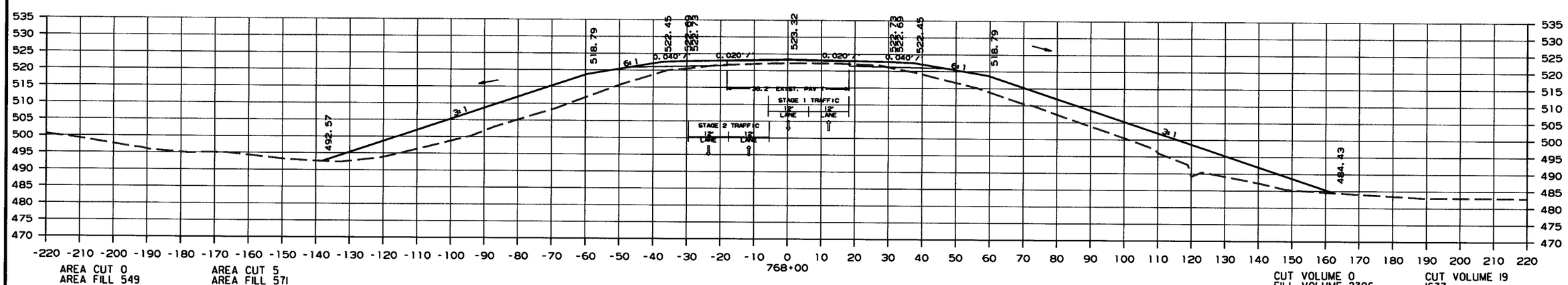
(2) CROSS SECTIONS







CROSS SECTION STA. 768+00 TO STA. 770+00

6/15/2015

R080423.DGN

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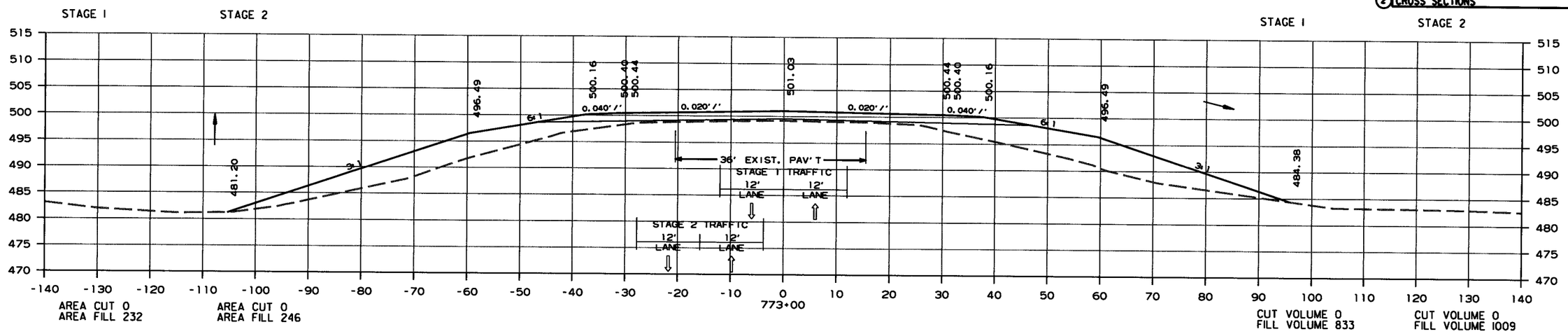
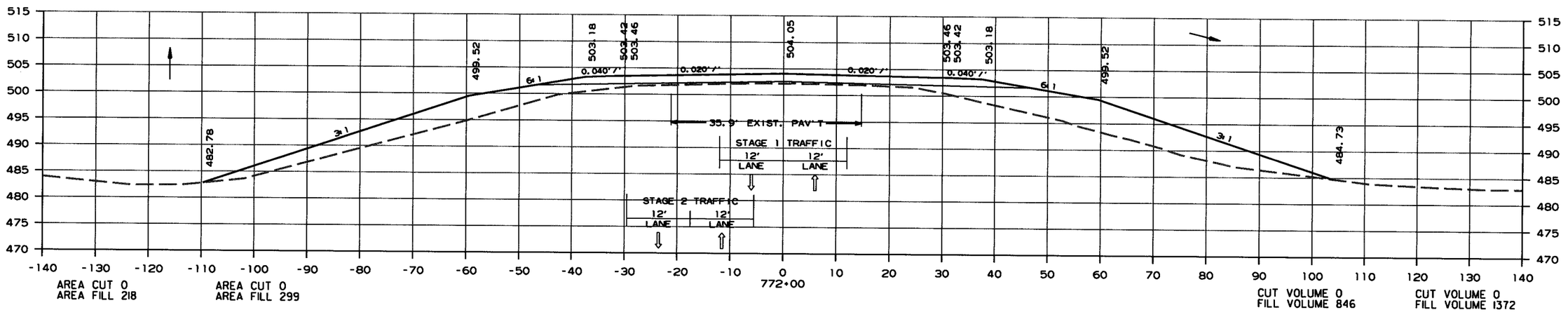
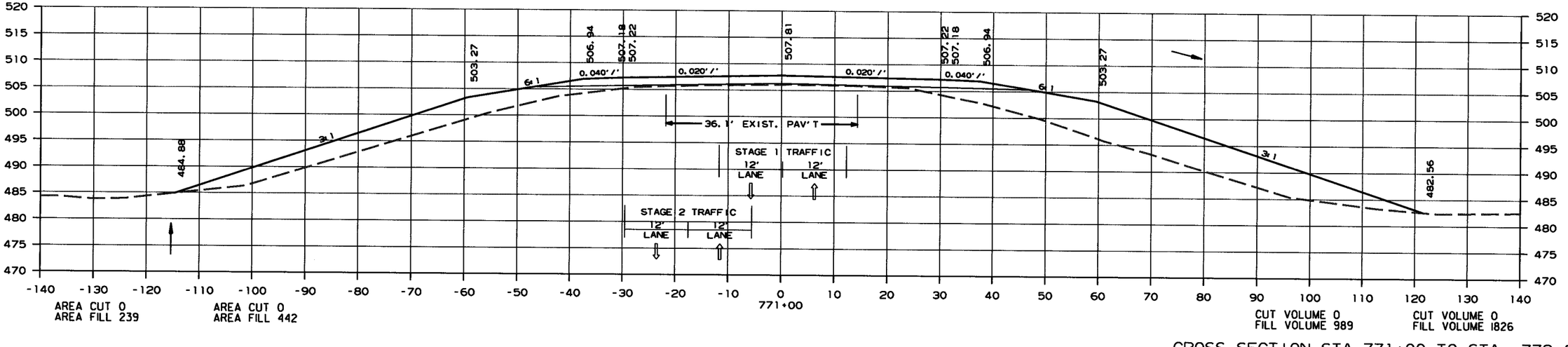
(2) CROSS SECTIONS







CROSS SECTION STA. 771+00 TO STA. 773+00

6/15/2015

R080423.DGN

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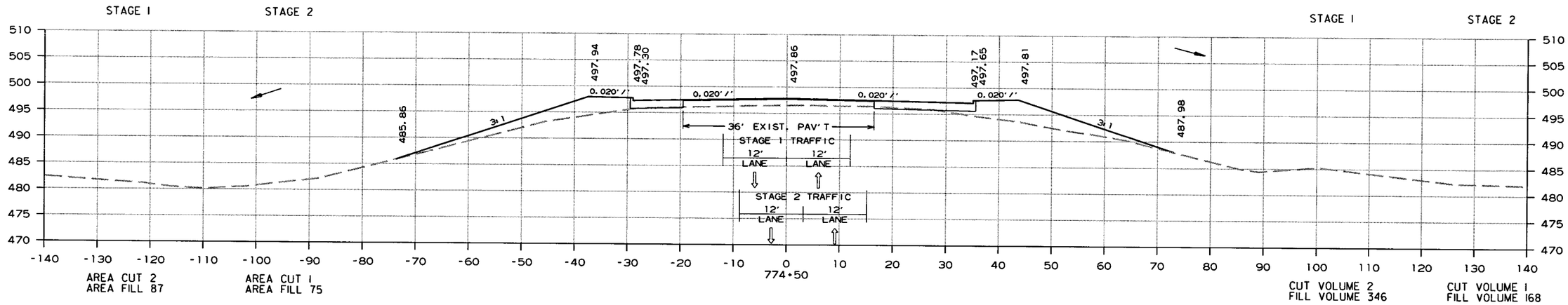
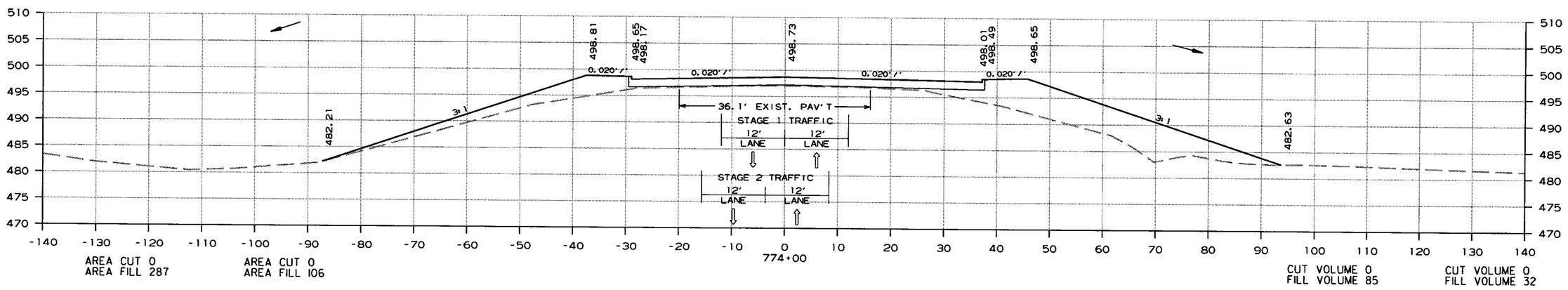
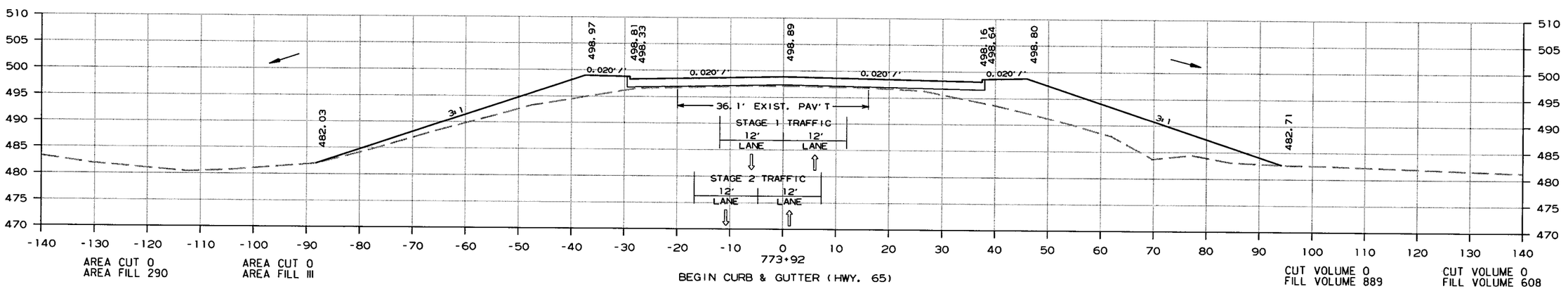
(2) CROSS SECTIONS







CROSS SECTION STA. 773+92 TO STA. 774+50

10/9/2017

R080423.DGN

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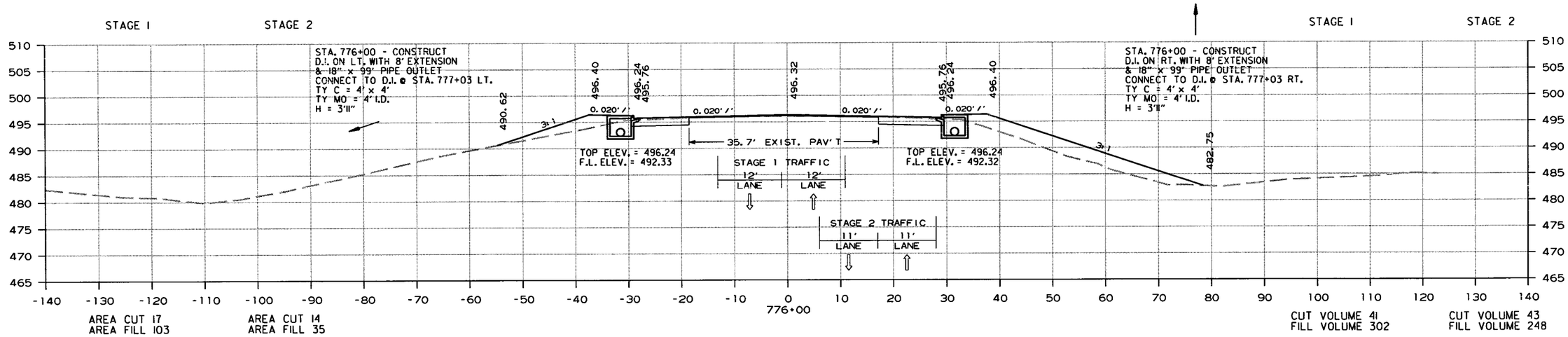
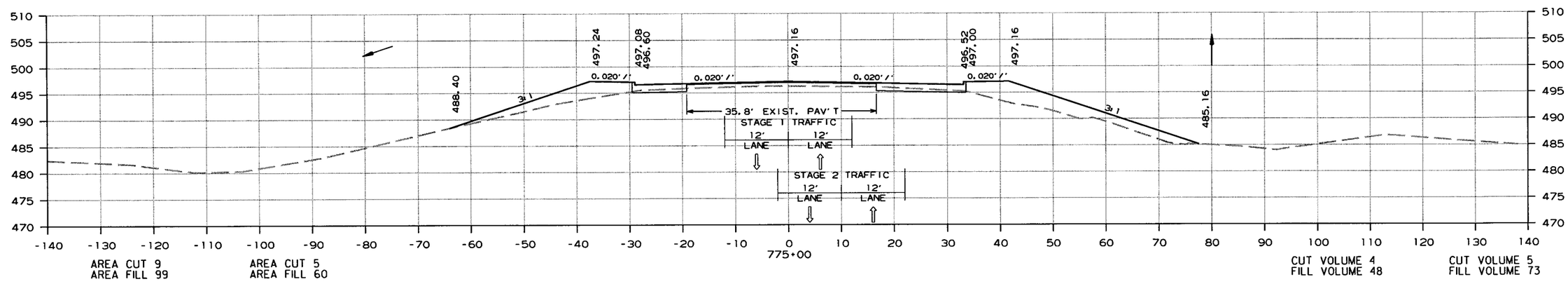
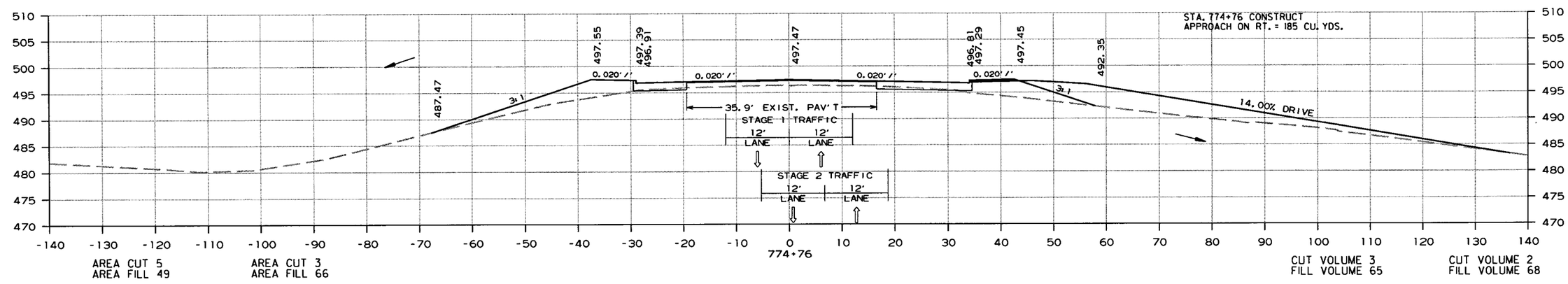
(2) CROSS SECTIONS







CROSS SECTION STA. 774+76 TO STA. 776+00

10/9/2017

RD80423.DGN

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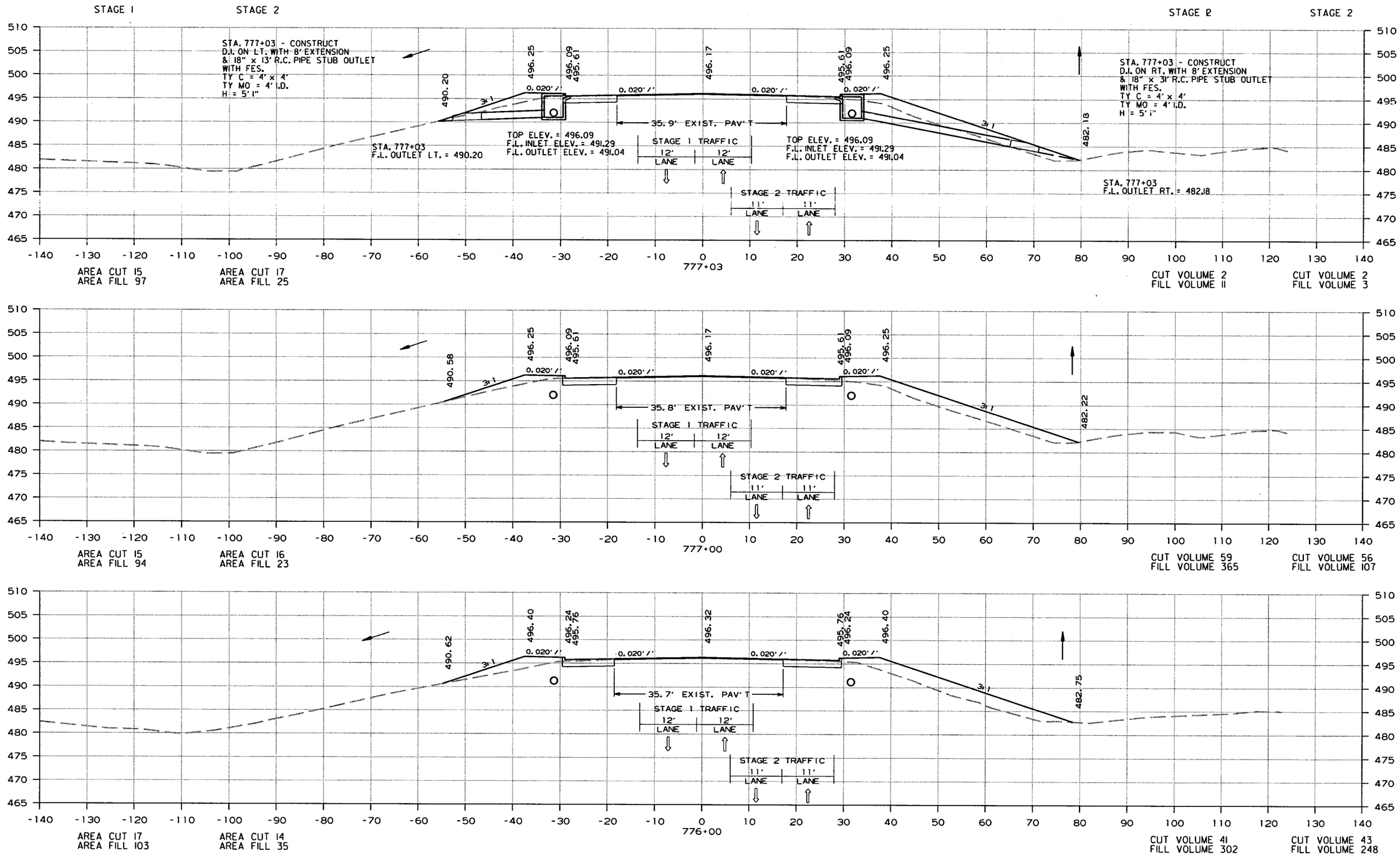
(2) CROSS SECTIONS



CROSS SECTION STA. 776+00 TO STA. 777+03

10/22/2013

R080423.DGN

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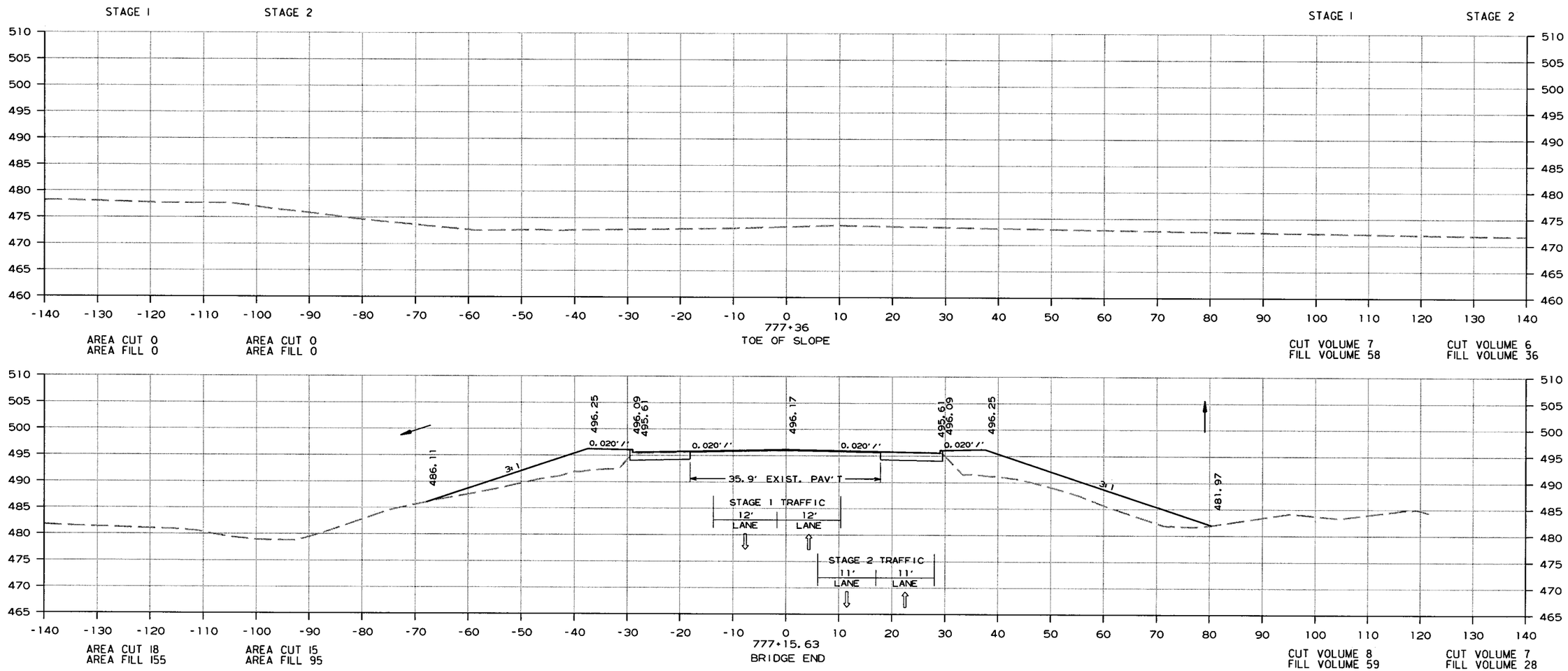
(2) CROSS SECTIONS



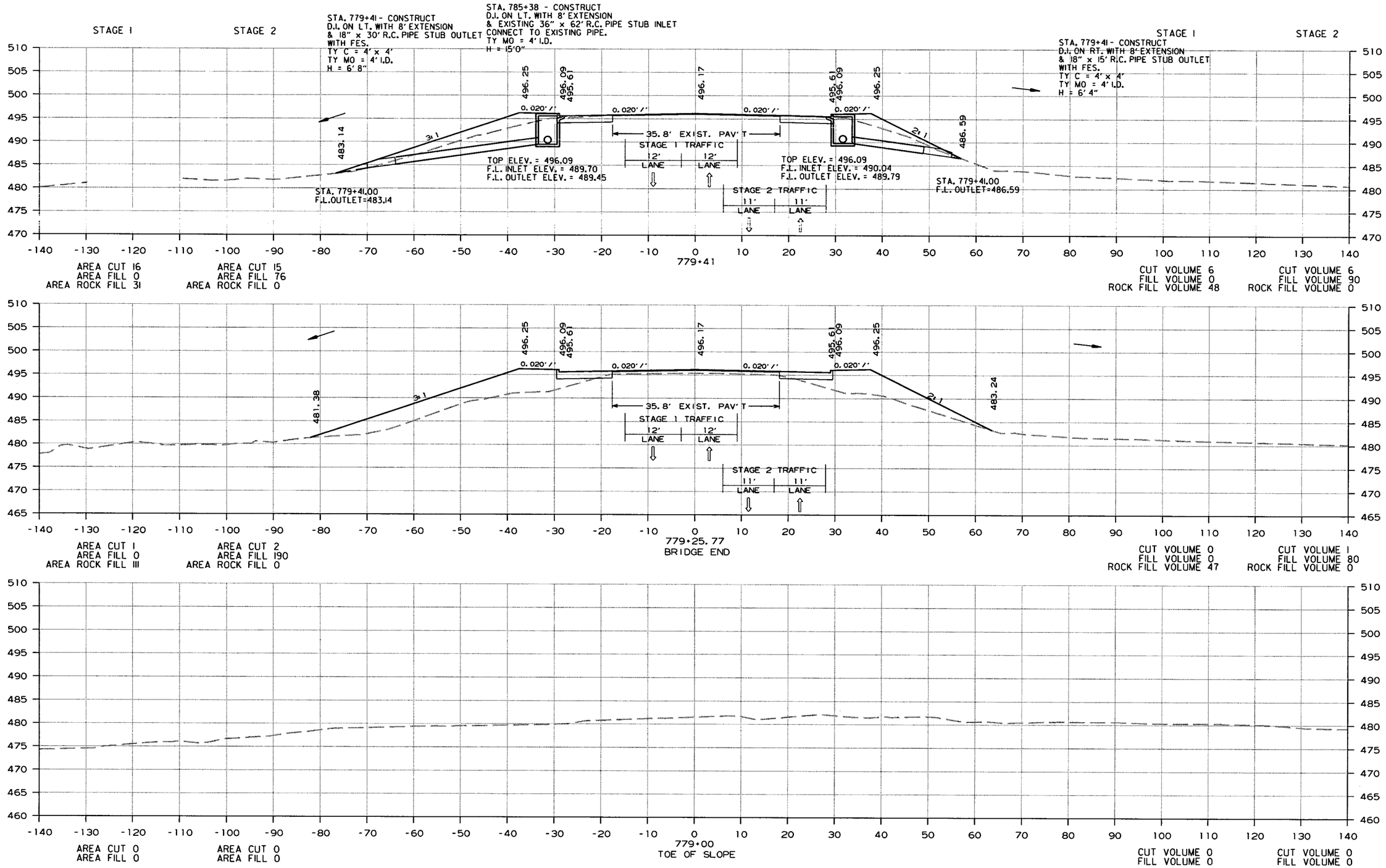
CROSS SECTION STA. 777+18 TO STA. 778+00

10/22/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	373	517

(2) CROSS SECTIONS



CROSS SECTION STA. 779+00 TO STA. 779+41

10/22/2013

R080423.DGN

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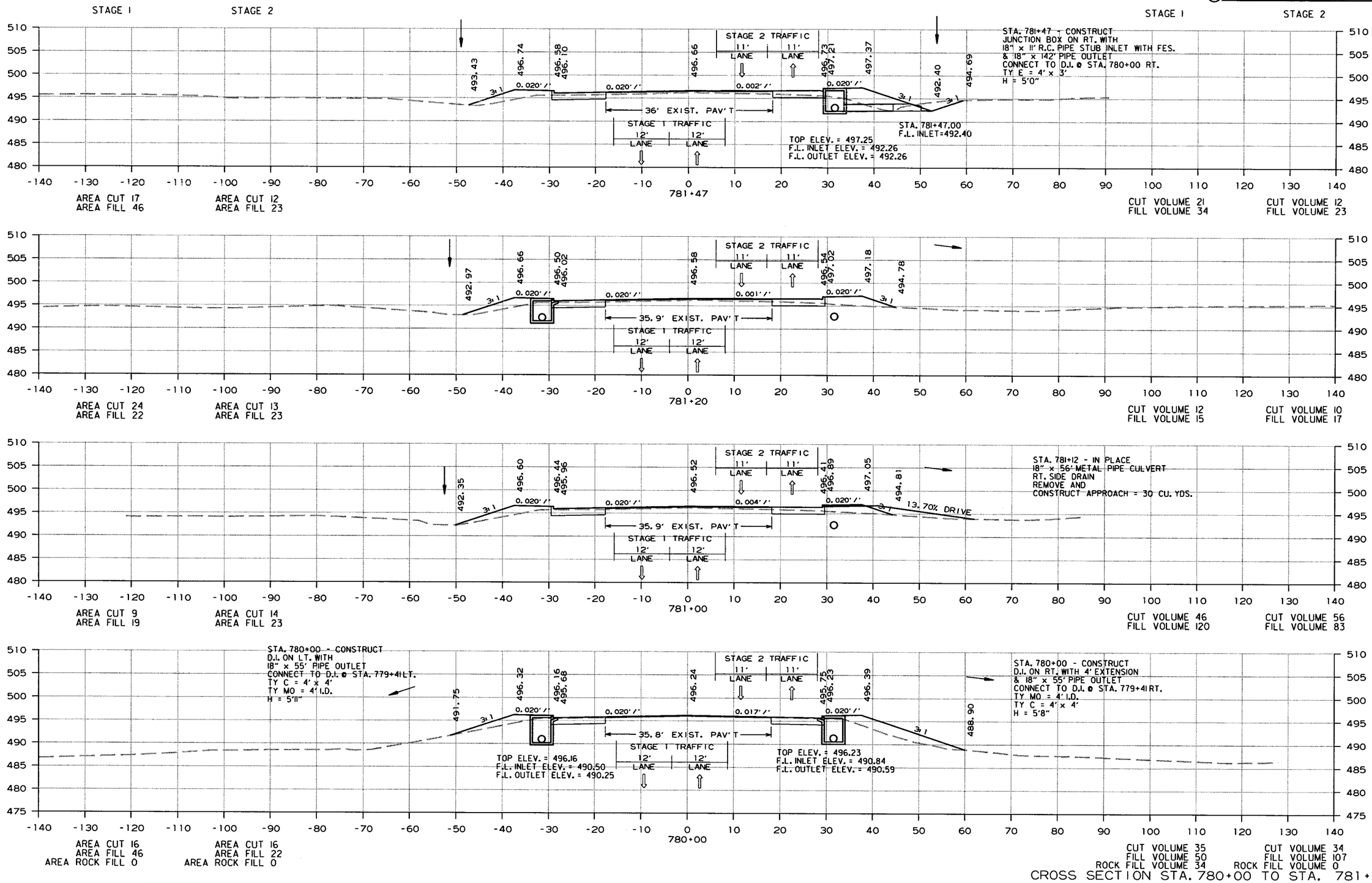
(2) CROSS SECTIONS



CROSS SECTION STA. 780+00 TO STA. 781+47

10/22/2013

R080423.DGN

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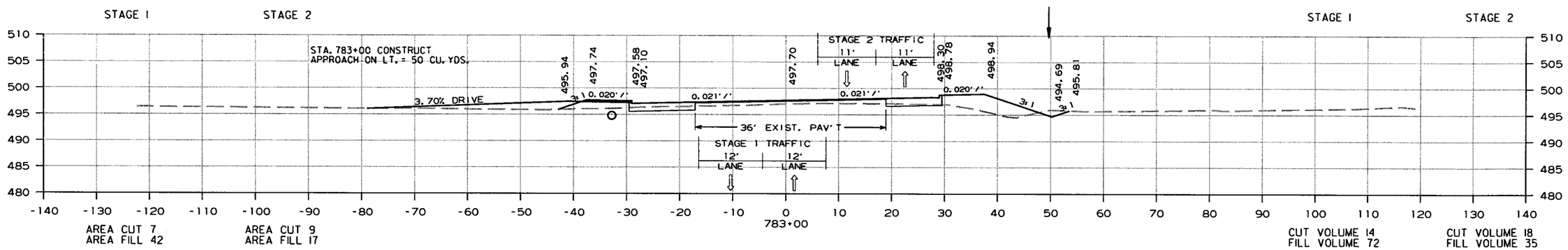
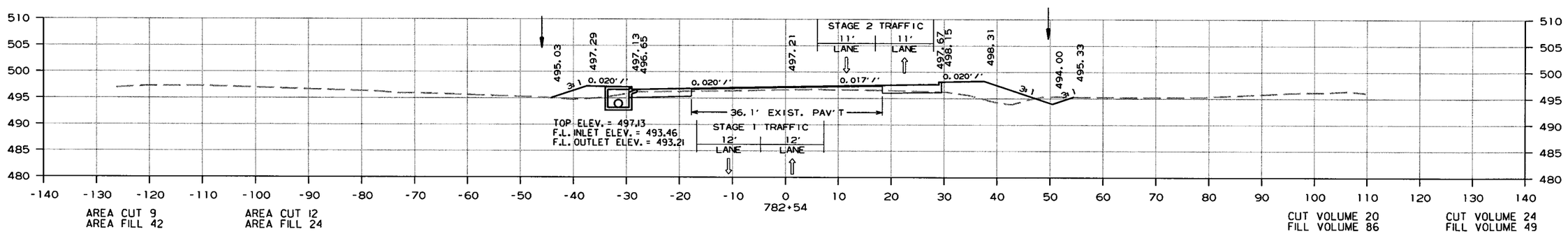
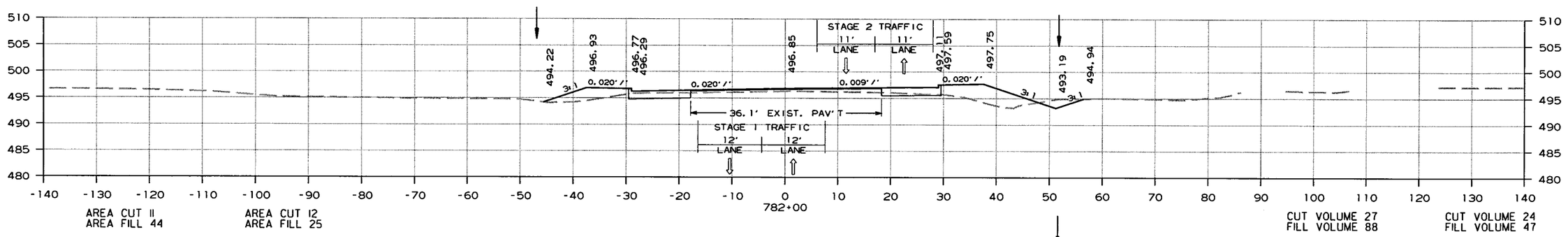
(2) CROSS SECTIONS







CROSS SECTION STA. 782+00 TO STA. 783+00

10/22/2013

R080423.DGN

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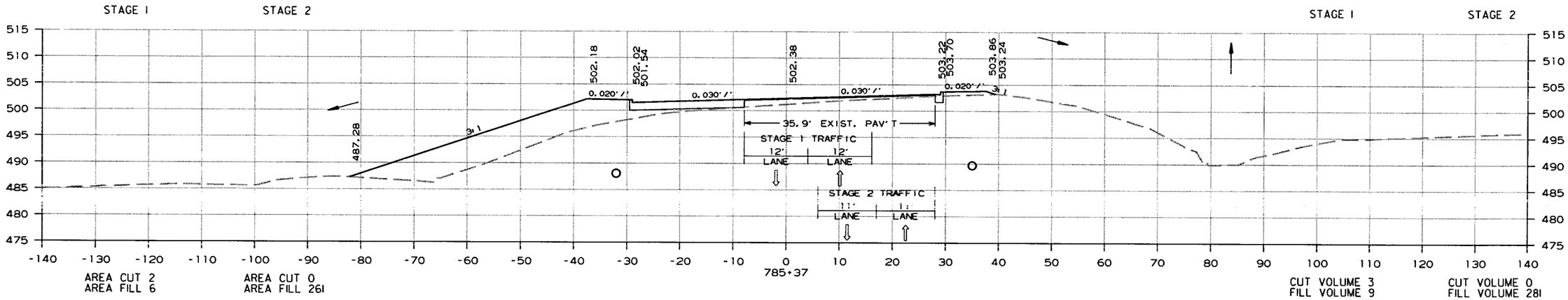
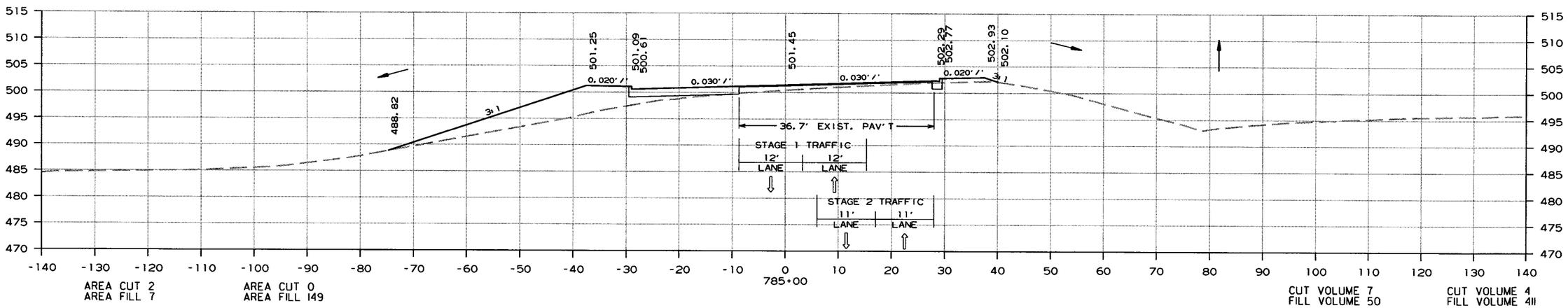
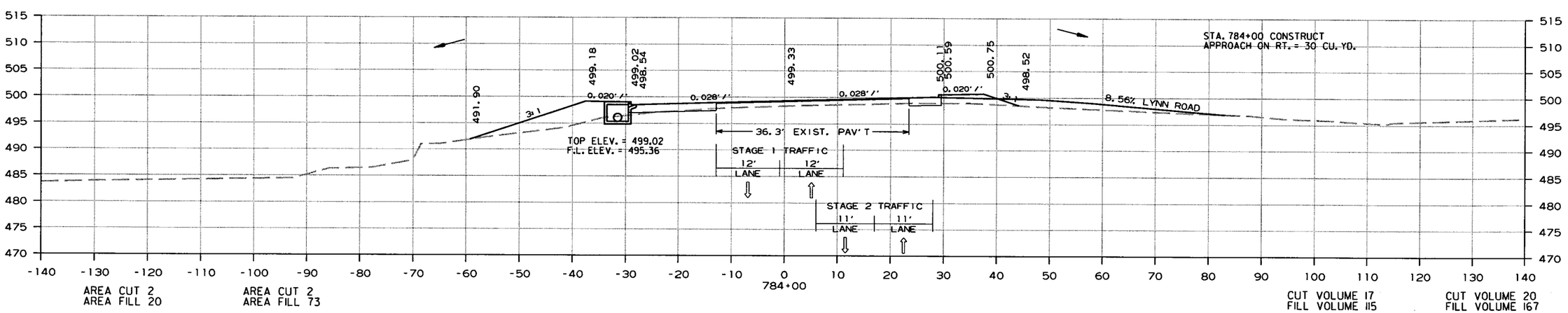
(2) CROSS SECTIONS







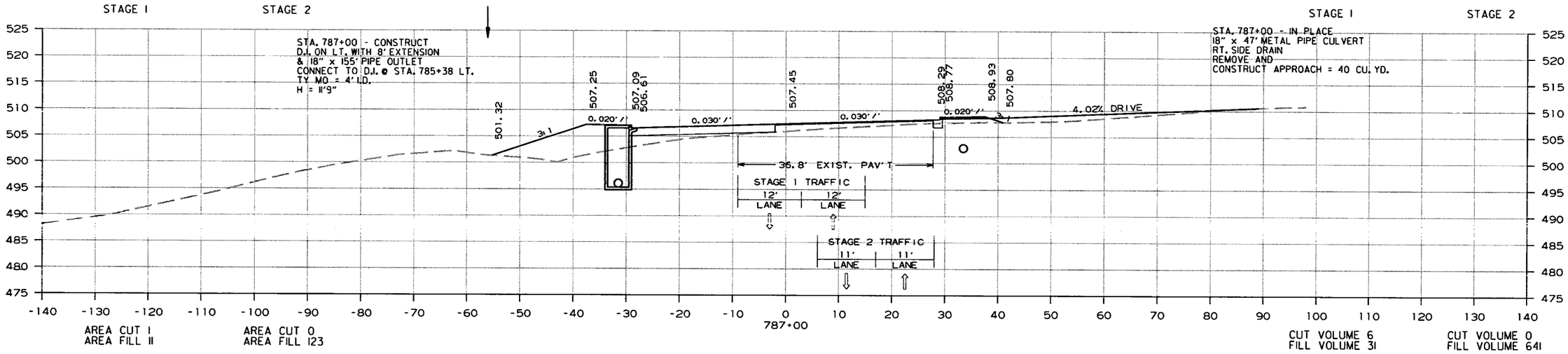
CROSS SECTION STA. 784+00 TO STA. 785+37

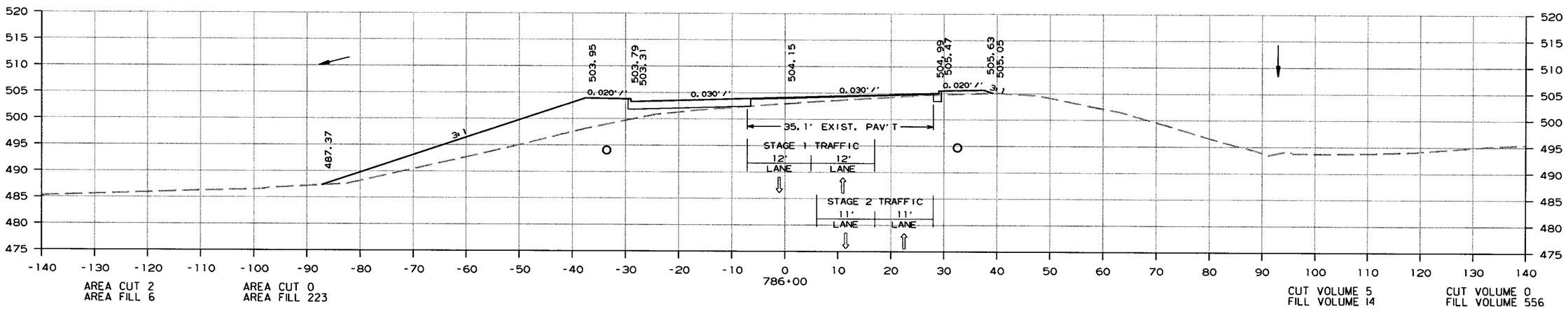
10/22/2013

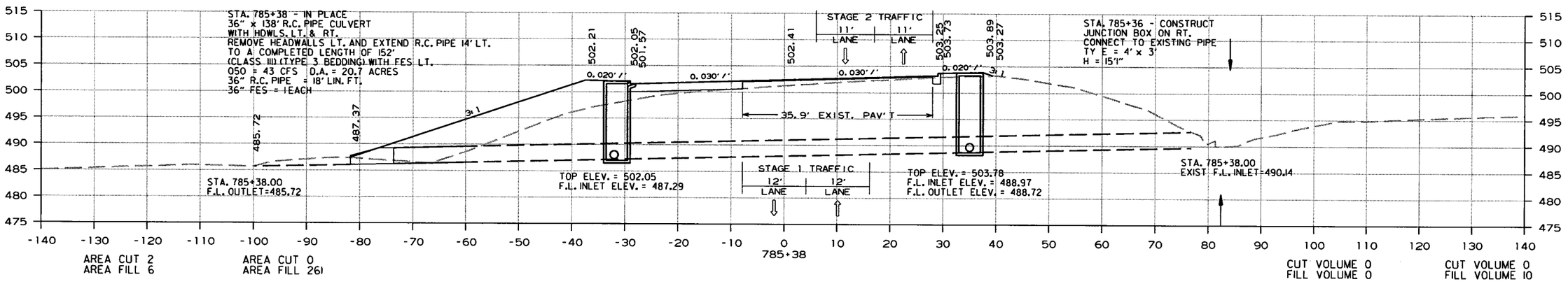
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	377	517

(2) CROSS SECTIONS







CROSS SECTION STA. 785+38 TO STA. 787+00

10/22/2013

R080423.DGN

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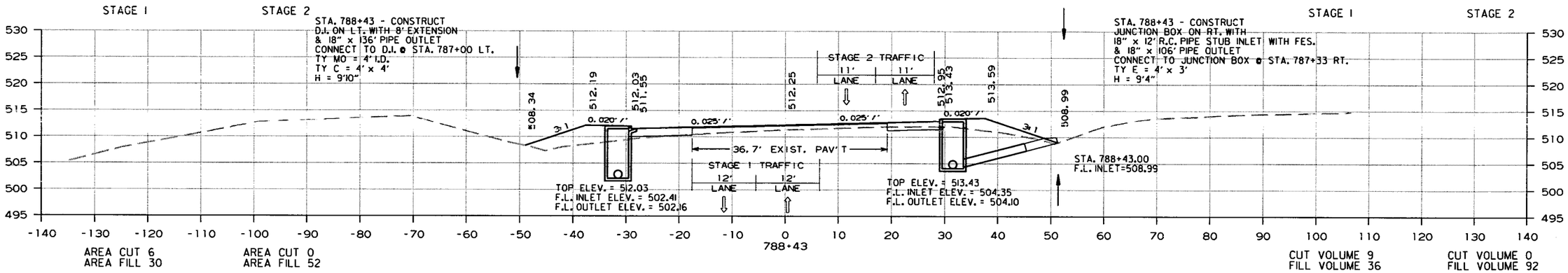
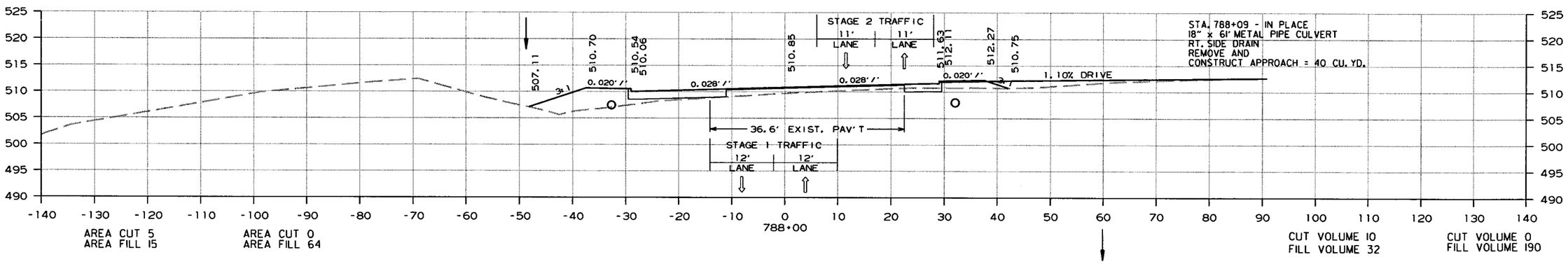
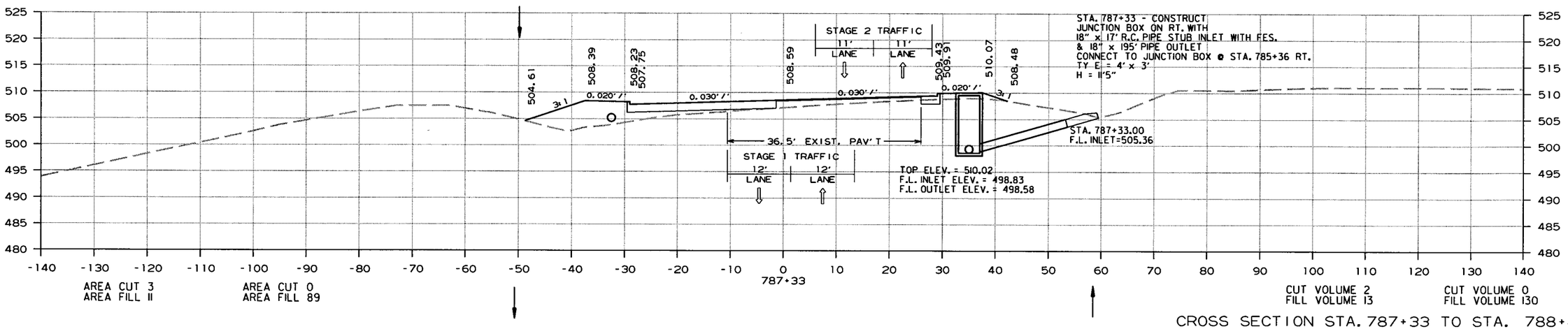
(2) CROSS SECTIONS







CROSS SECTION STA. 787+33 TO STA. 788+43

10/22/2013

R080423.DGN

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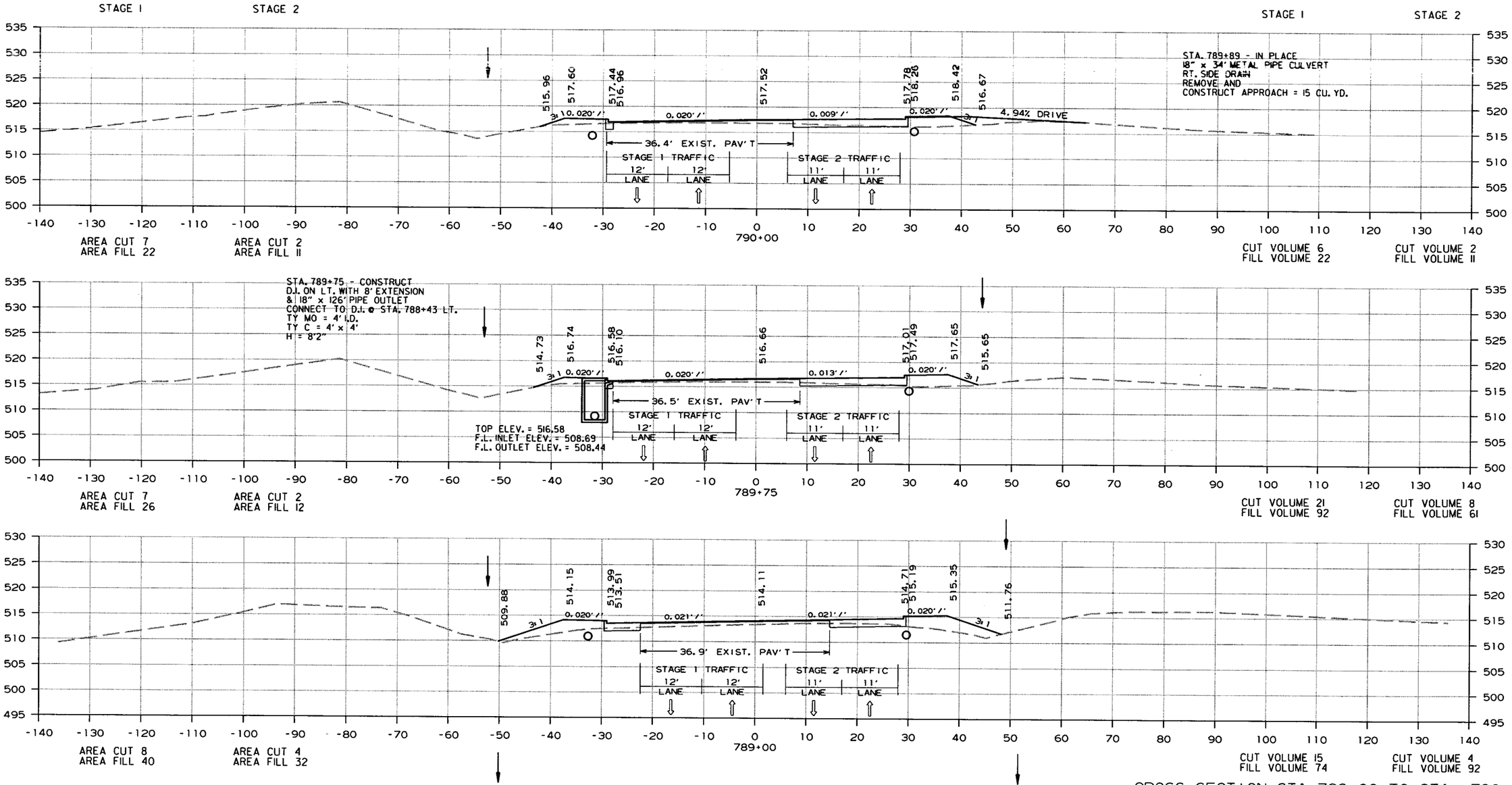
(2) CROSS SECTIONS



CROSS SECTION STA. 789+00 TO STA. 790+00

10/22/2013

R080423.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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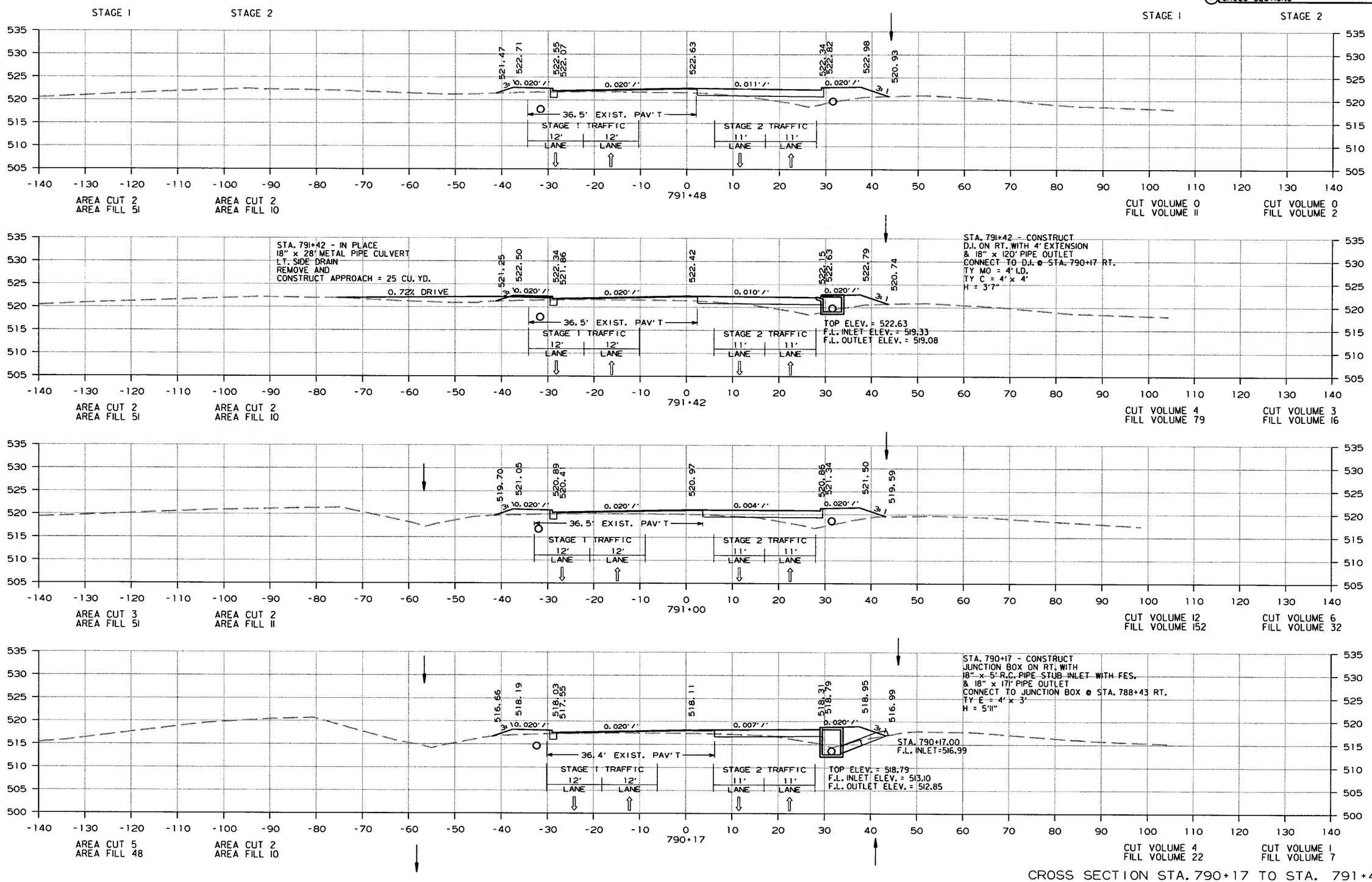

CROSS SECTION STA. 790+17 TO STA. 791+48

10/22/2013

R080423.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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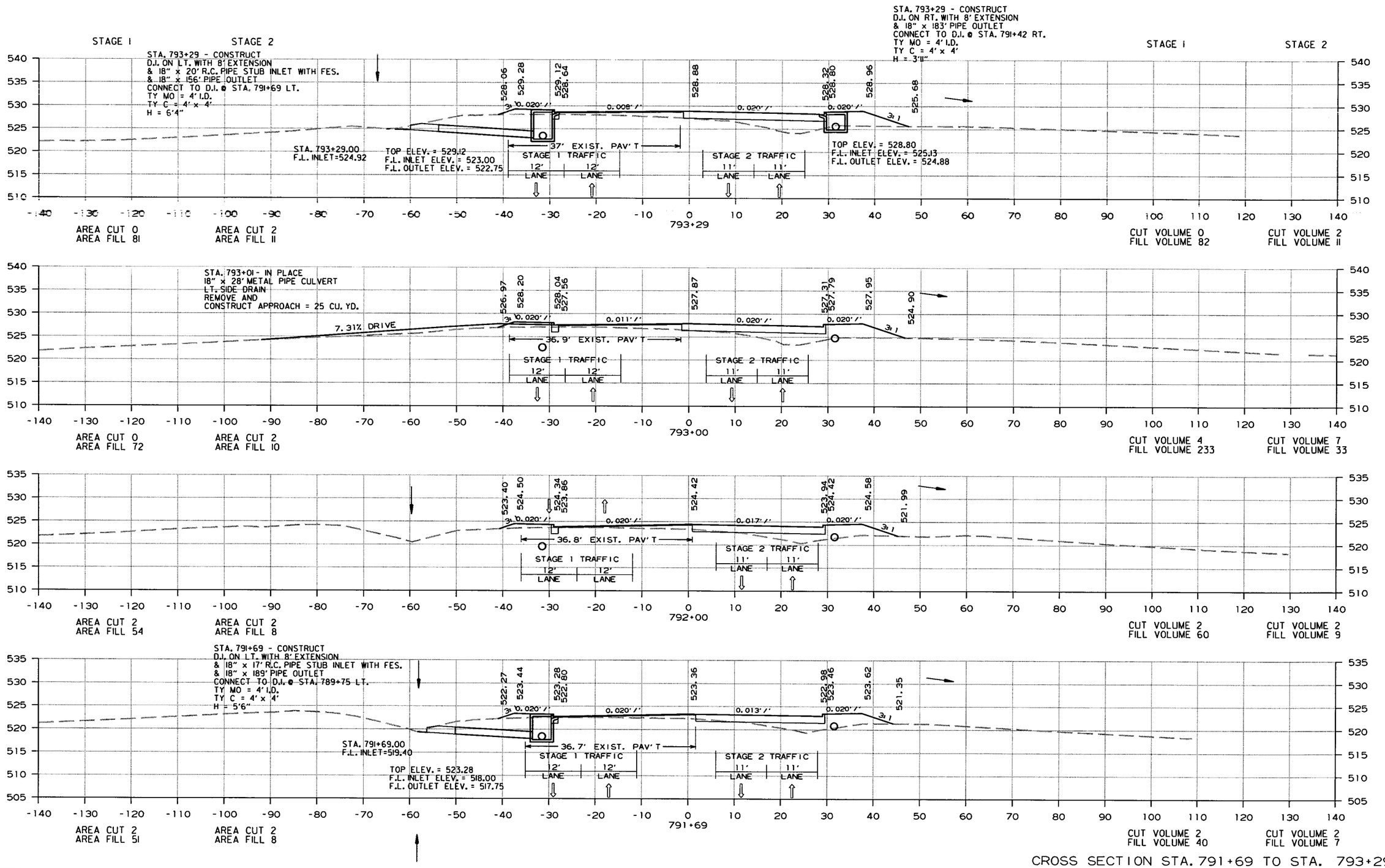

CROSS SECTION STA. 791+69 TO STA. 793+29

10/22/2013

R080423.DGN

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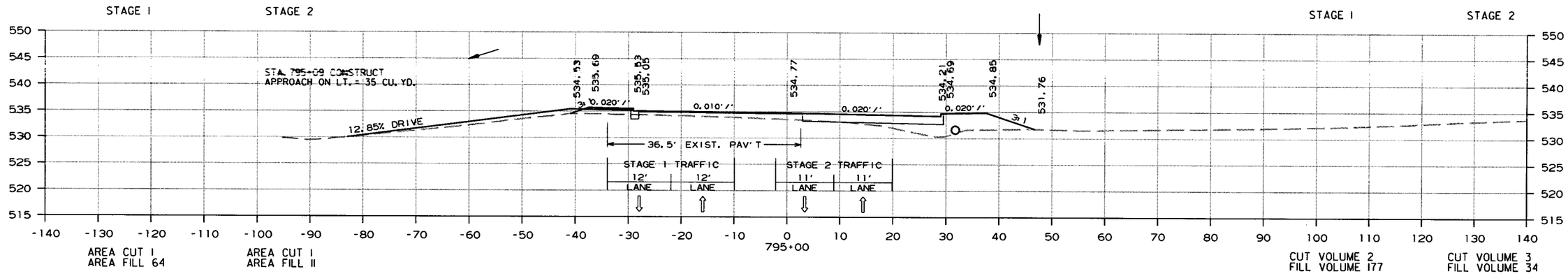
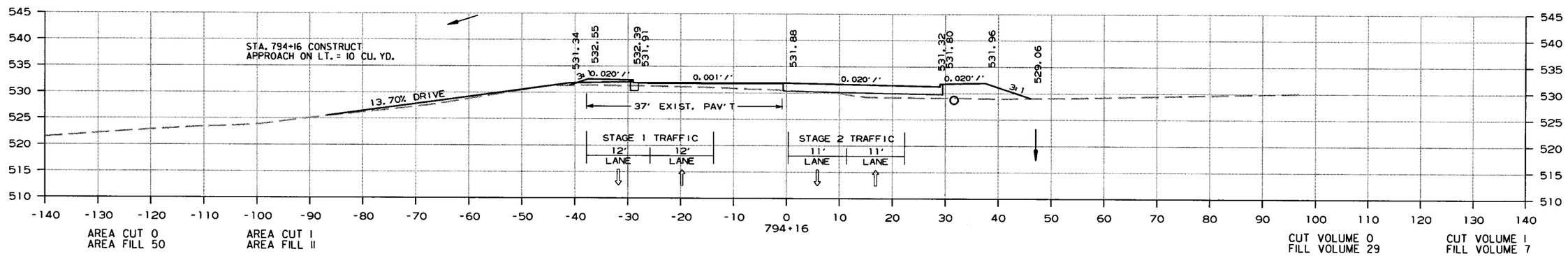
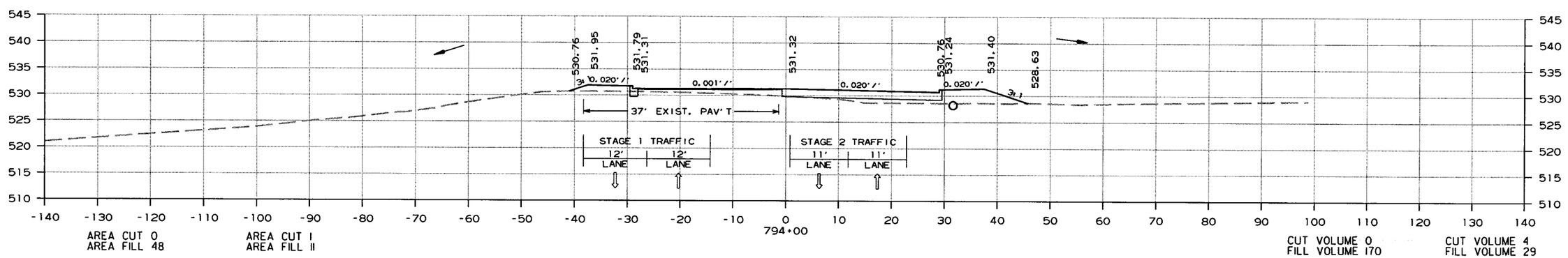
(2) CROSS SECTIONS







CROSS SECTION STA. 794+00 TO STA. 795+00

10/22/2013

R080423.DGN

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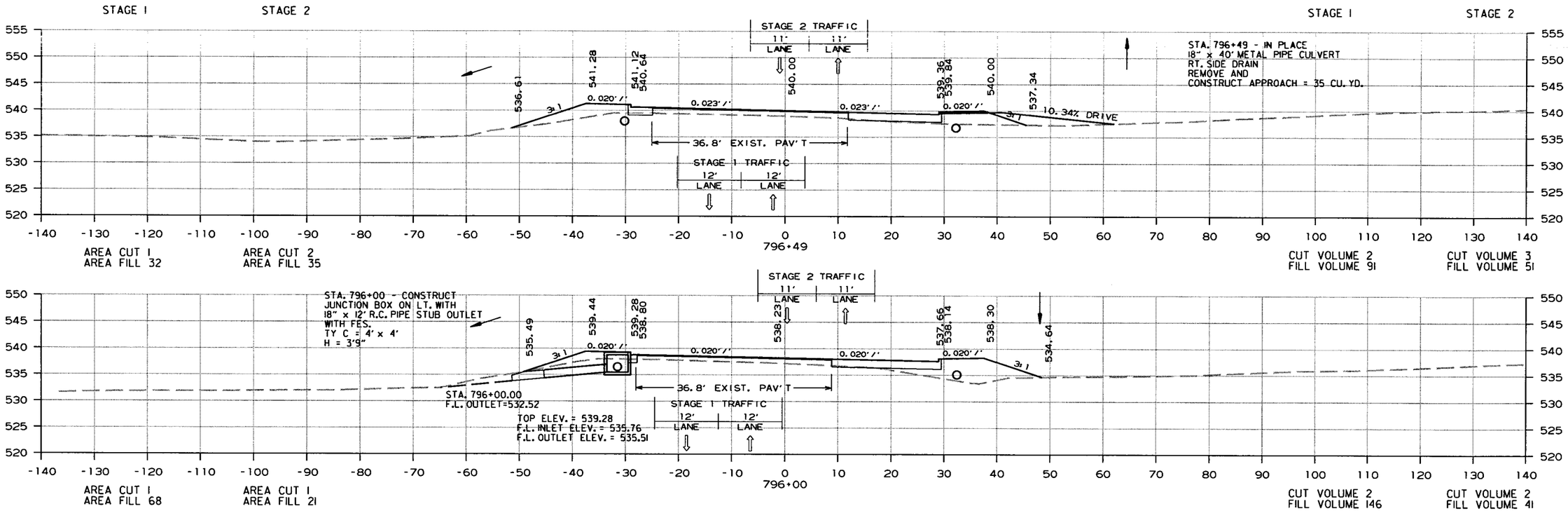
(2) CROSS SECTIONS



CROSS SECTION STA. 795+35 TO STA. 796+49

10/22/2013

R080423.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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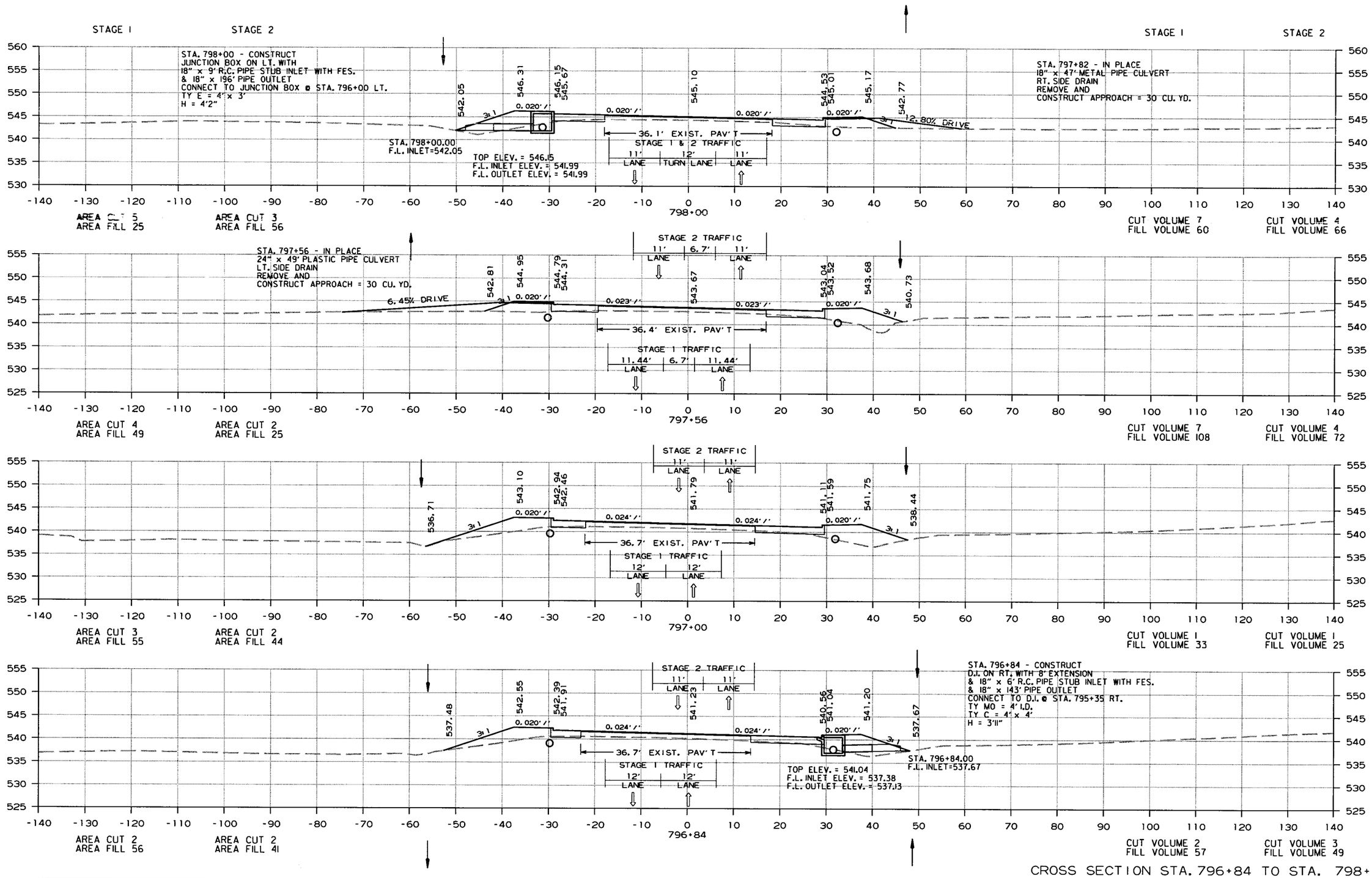

CROSS SECTION STA. 796+84 TO STA. 798+00

10/22/2013

R080423.DGN

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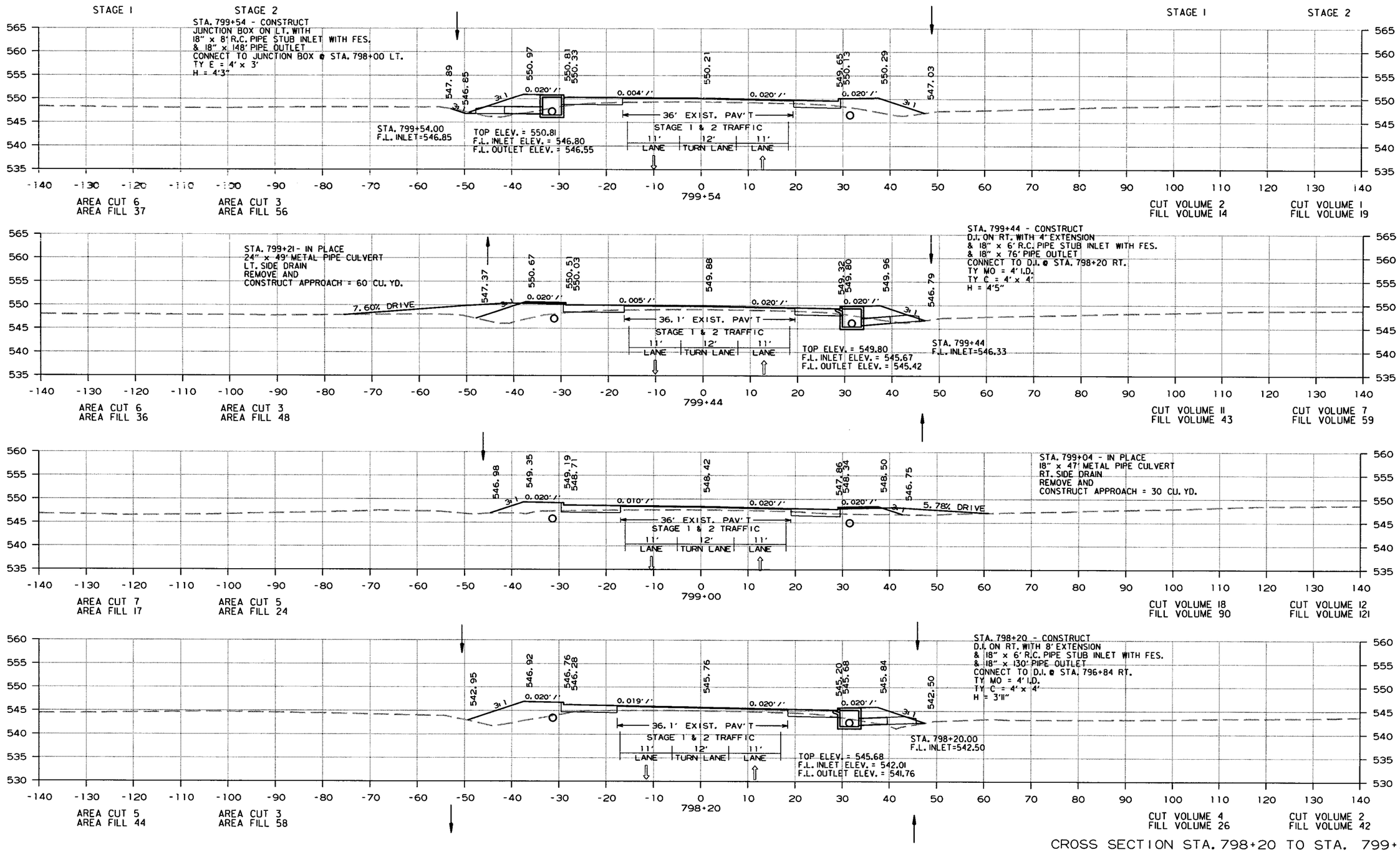
(2) CROSS SECTIONS



CROSS SECTION STA. 798+20 TO STA. 799+54

10/22/2013

R080423.DGN

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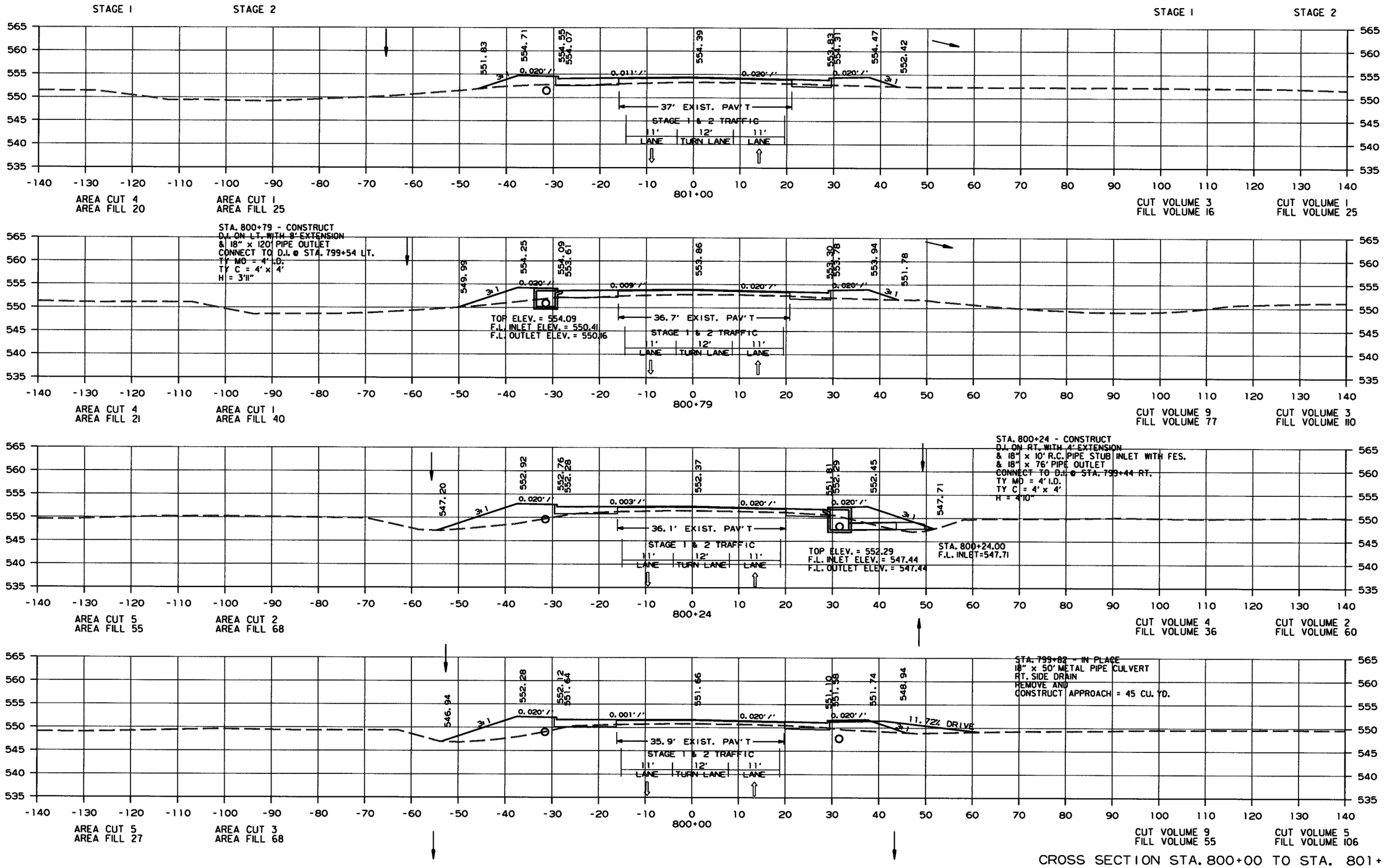
(2) CROSS SECTIONS CG



CROSS SECTION STA. 800+00 TO STA. 801+00

10/9/2017

R080423.DGN

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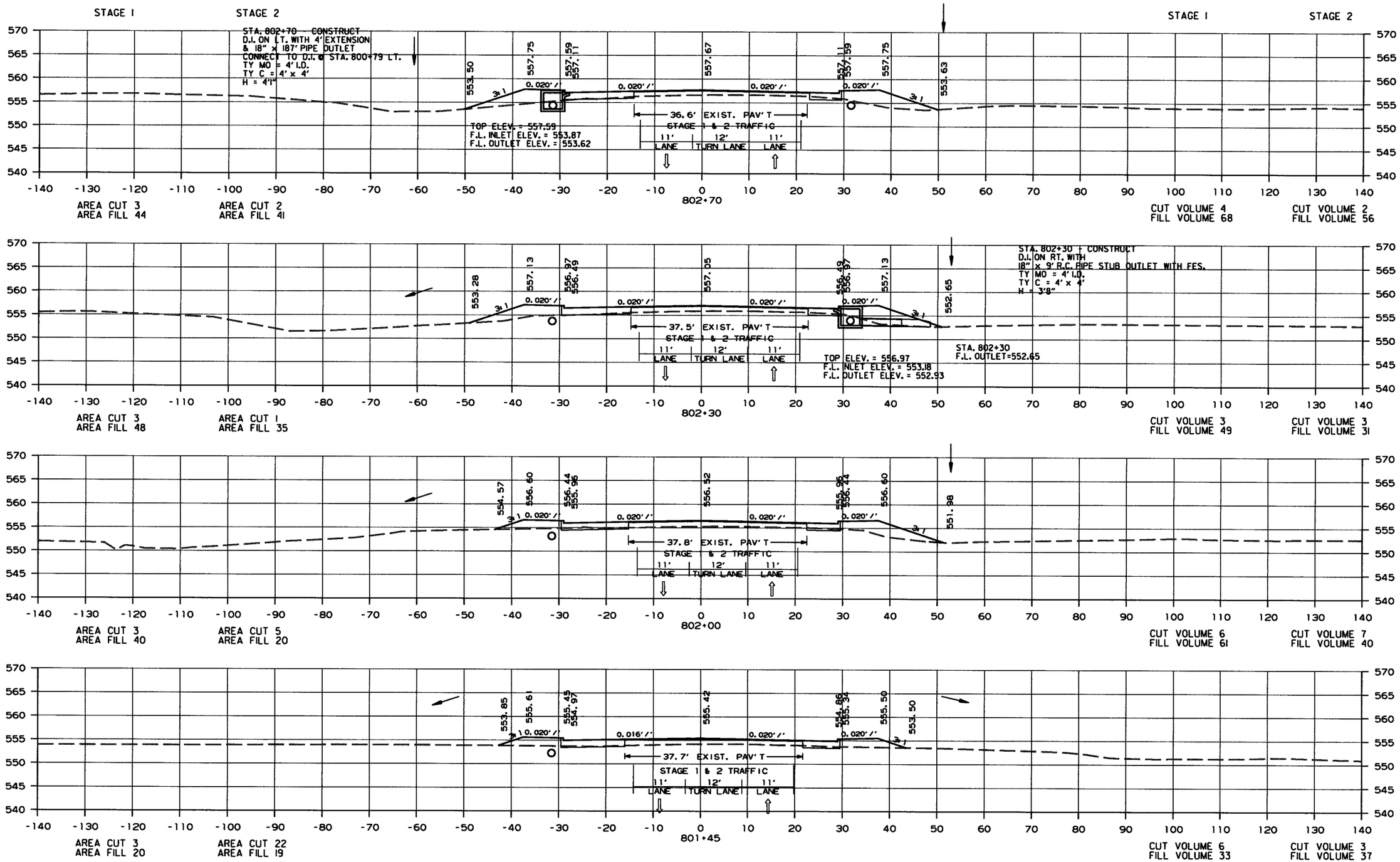
(2) CROSS SECTIONS CG



CROSS SECTION STA. 801+45 TO STA. 802+70

10/9/2017

R080423.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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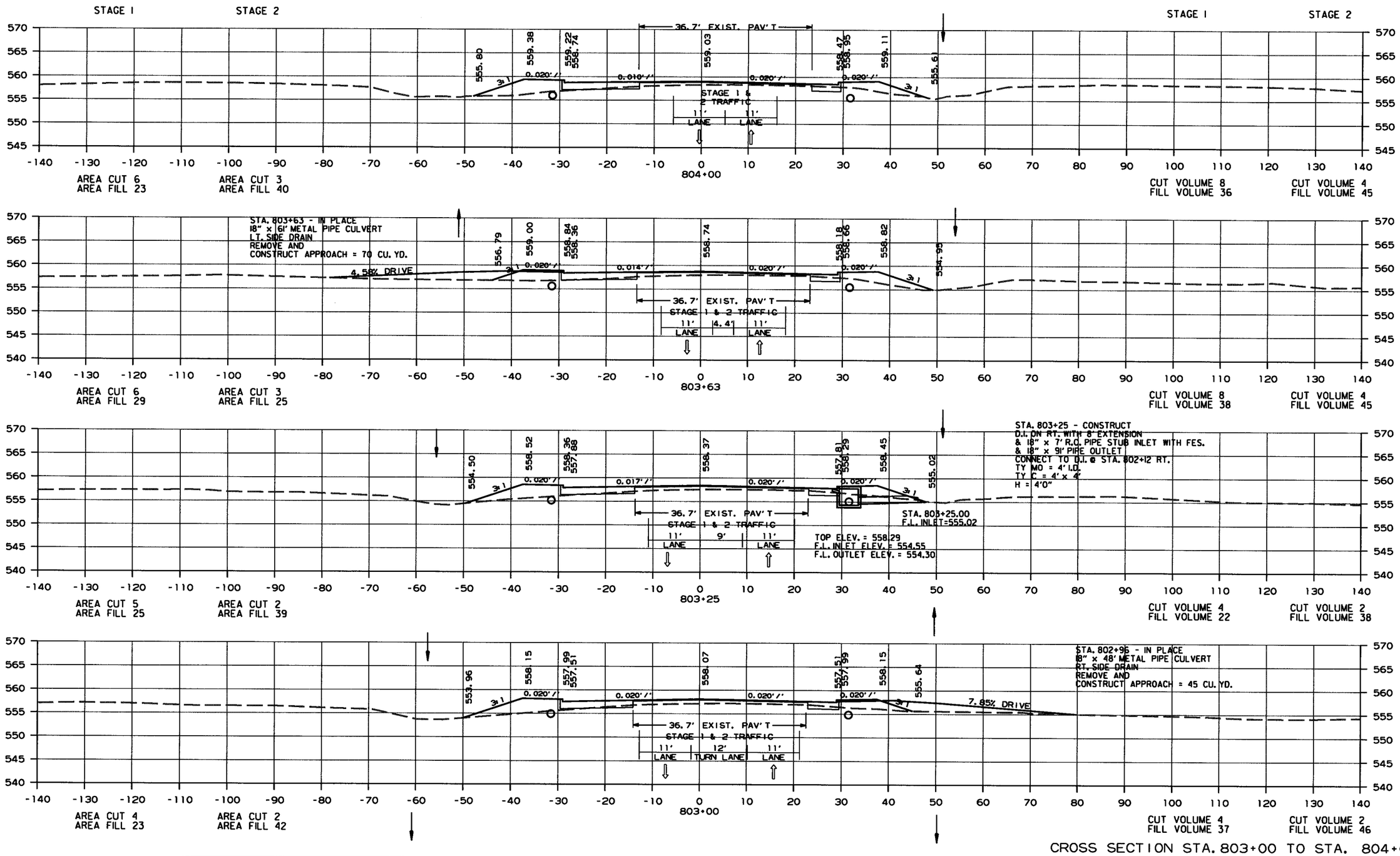

CROSS SECTION STA. 803+00 TO STA. 804+00

10/9/2017

R080423.DGN

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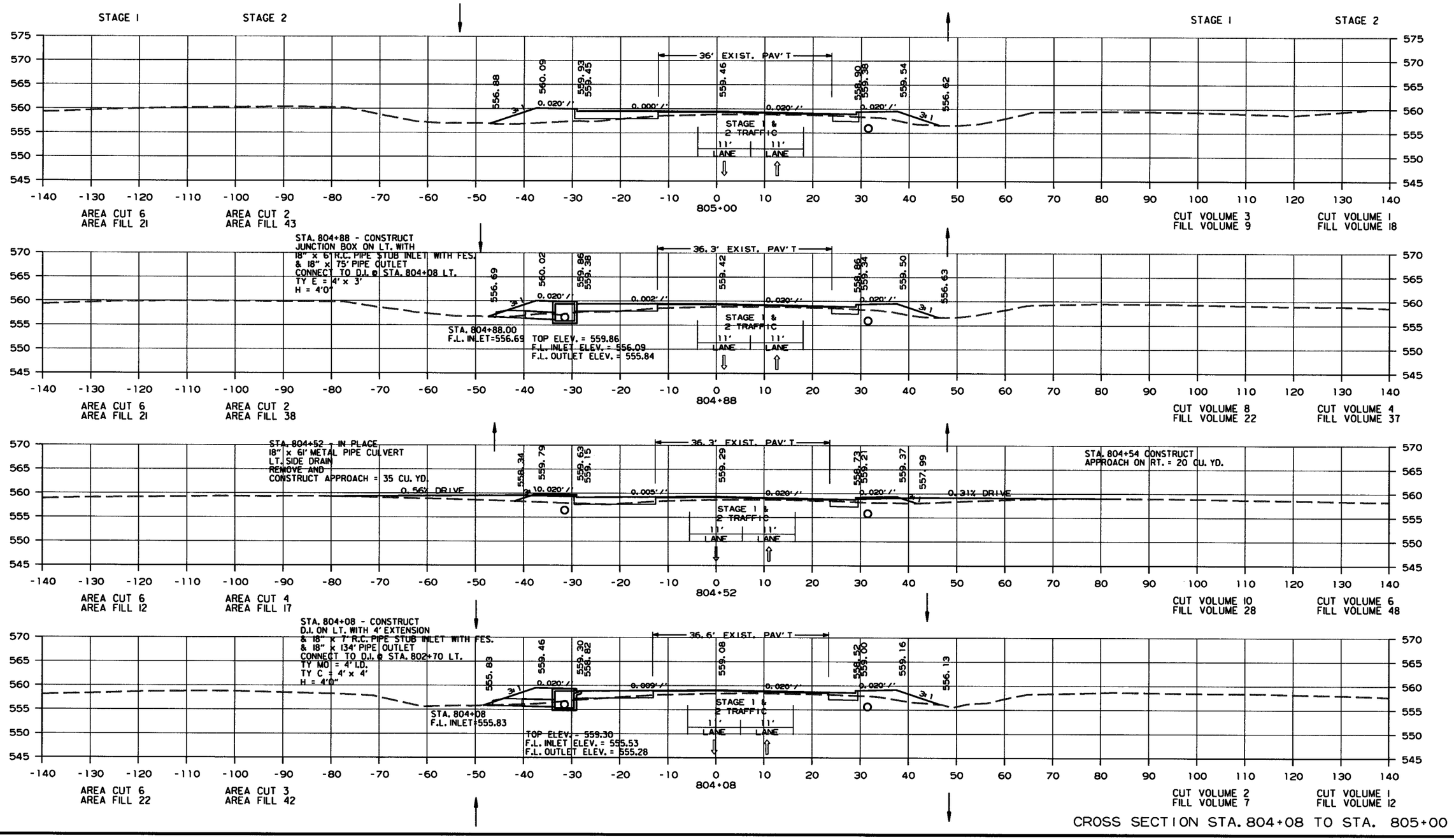
(2) CROSS SECTIONS CG



CROSS SECTION STA. 804+08 TO STA. 805+00

10/9/2017

R080423.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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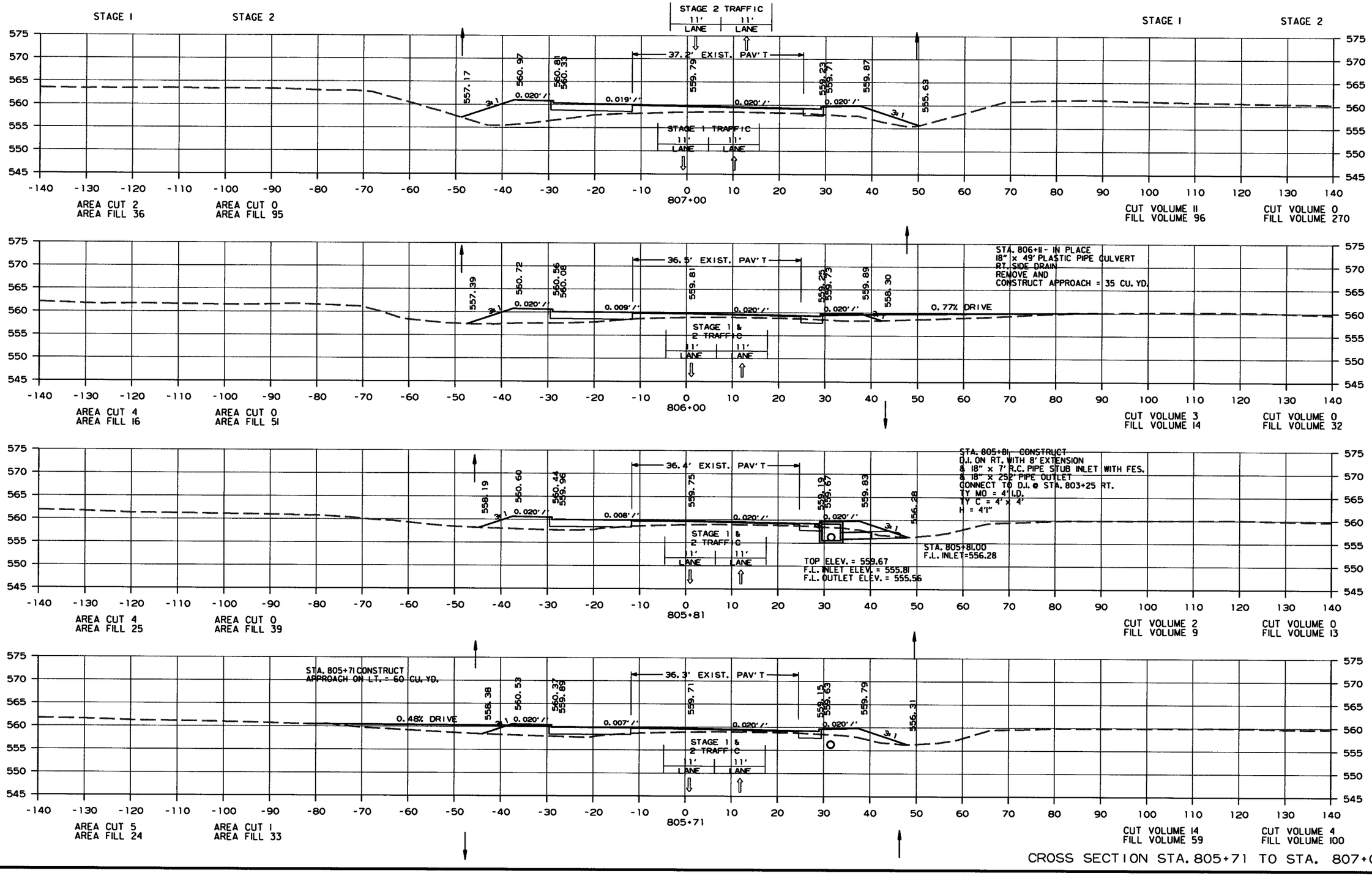

CROSS SECTION STA. 805+71 TO STA. 807+00

10/9/2017

R080423.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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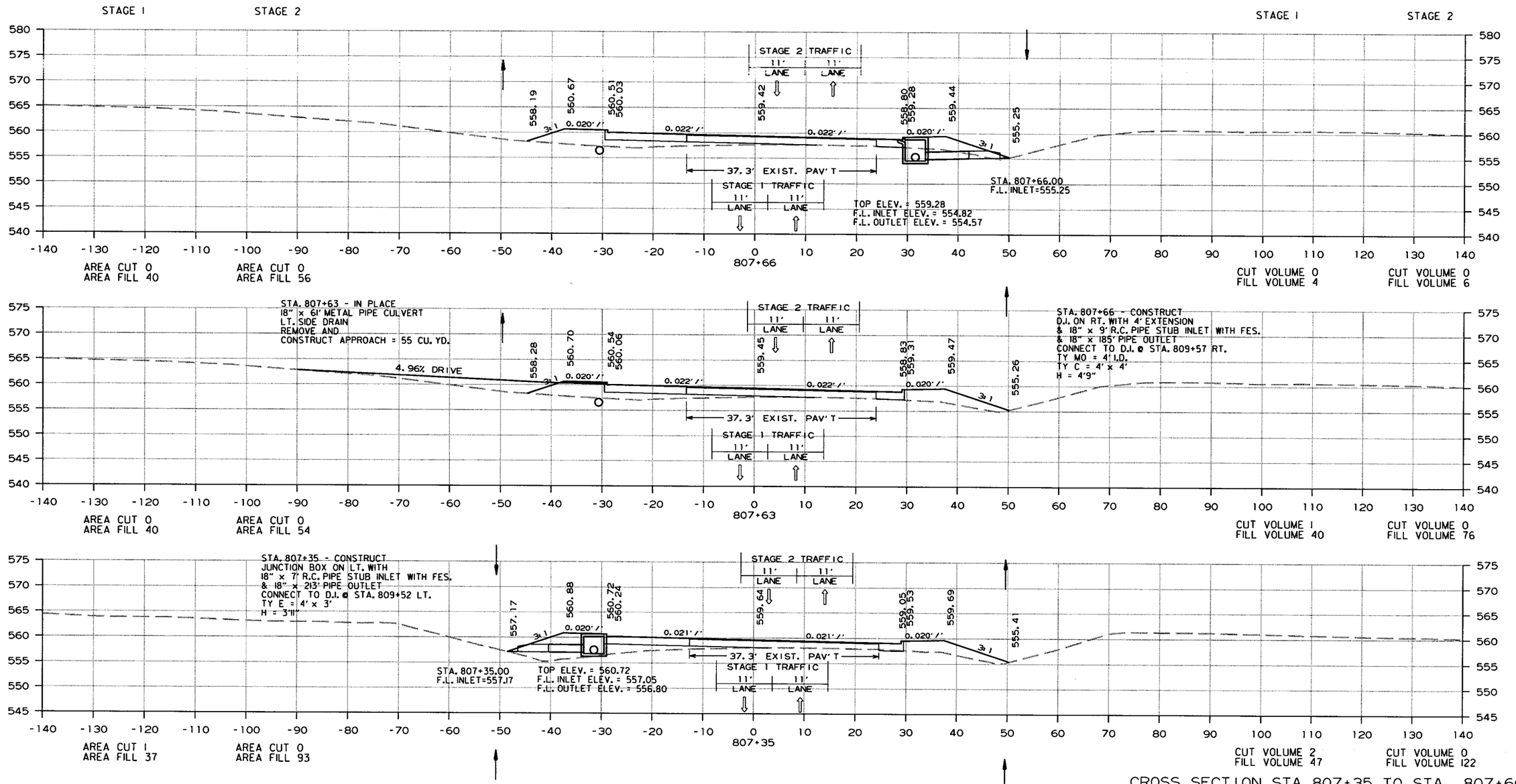

CROSS SECTION STA. 807+35 TO STA. 807+66

10/22/2013

R080423.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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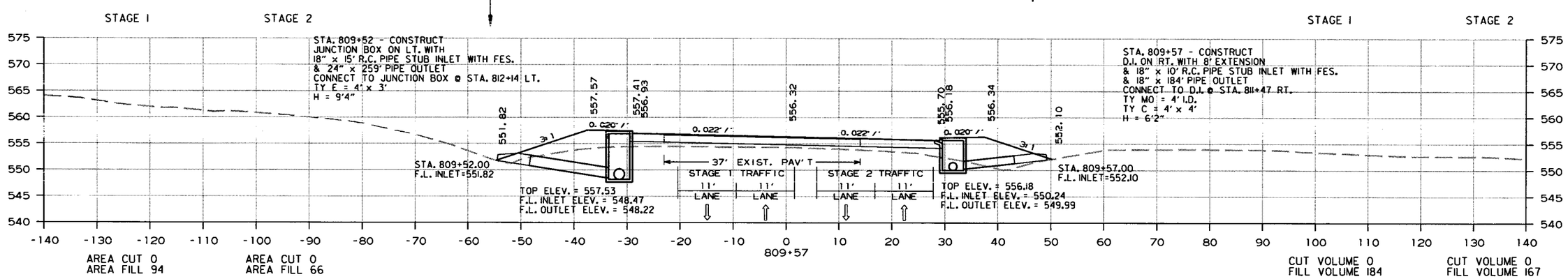

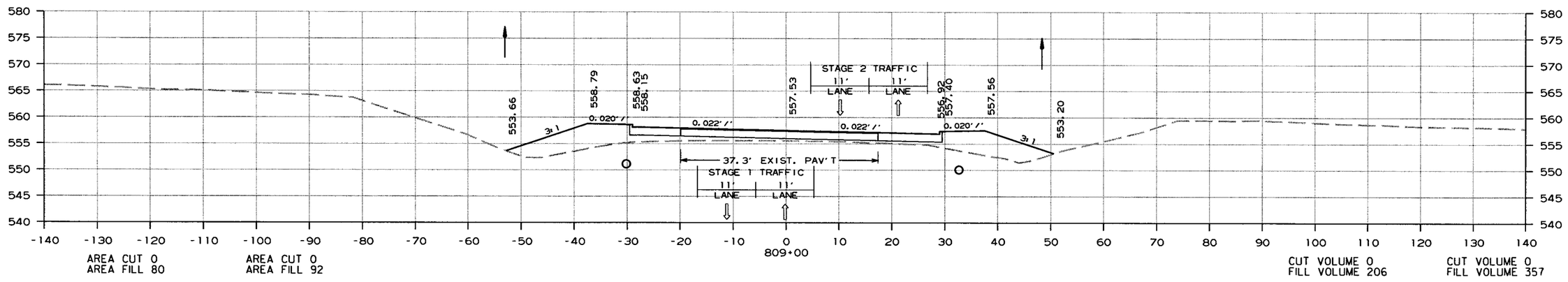

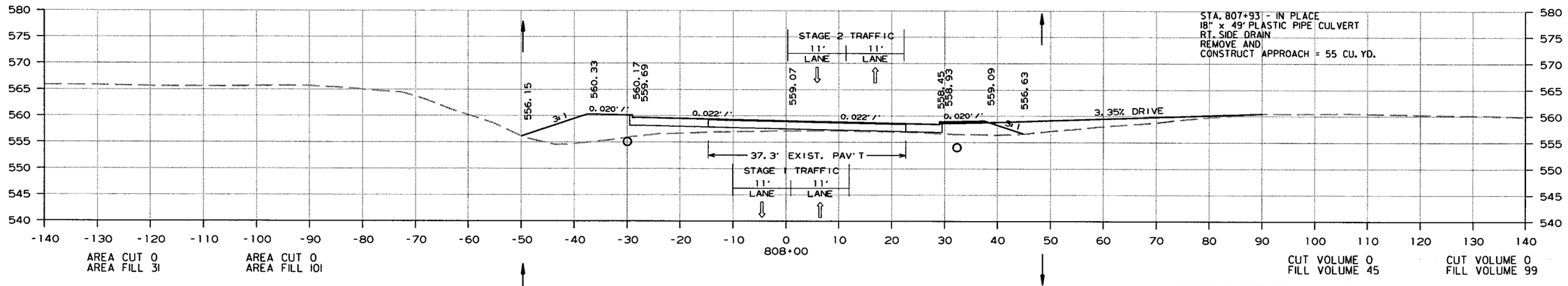

CROSS SECTION STA. 808+00 TO STA. 809+57

10/22/2013

R080423.DGN

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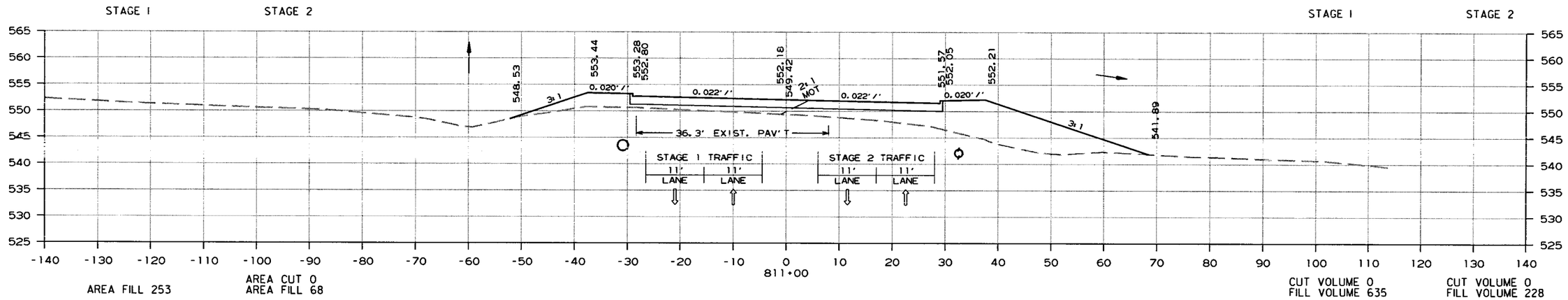
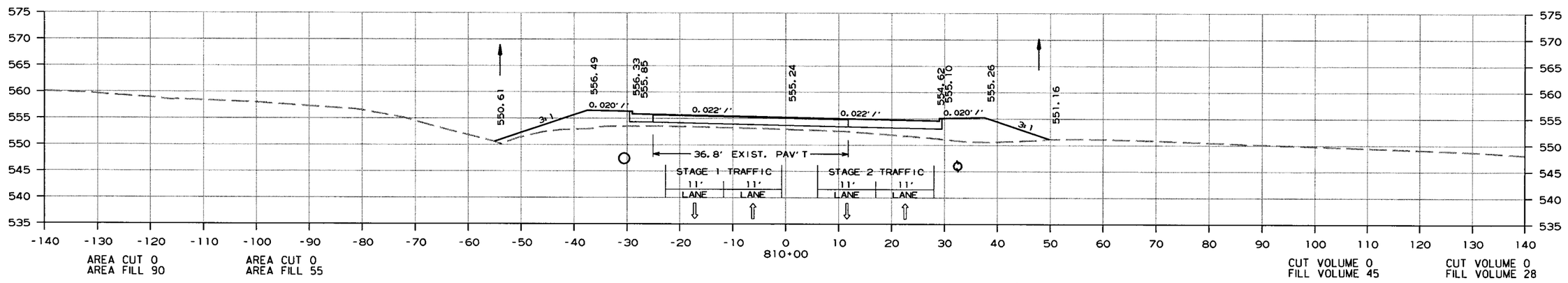
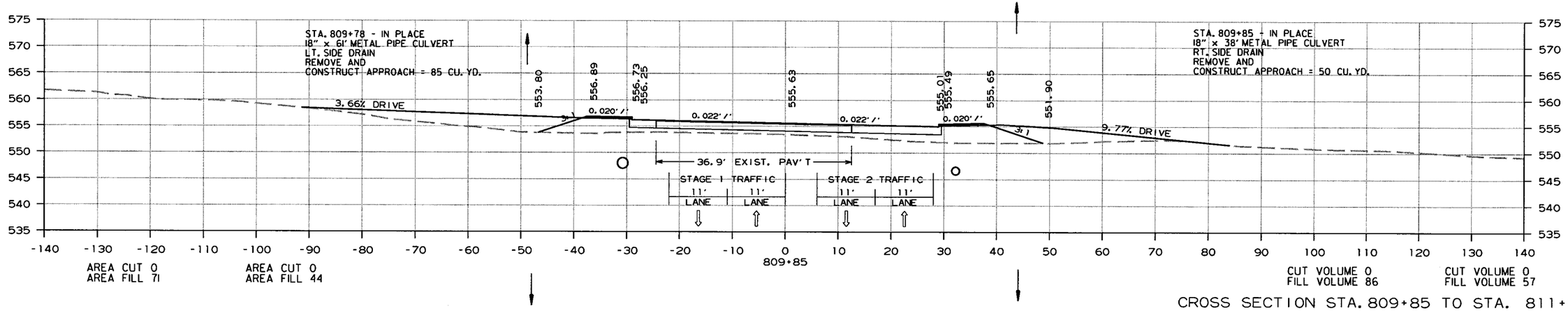
(2) CROSS SECTIONS







CROSS SECTION STA. 809+85 TO STA. 811+00

10/22/2013

R080423.DGN

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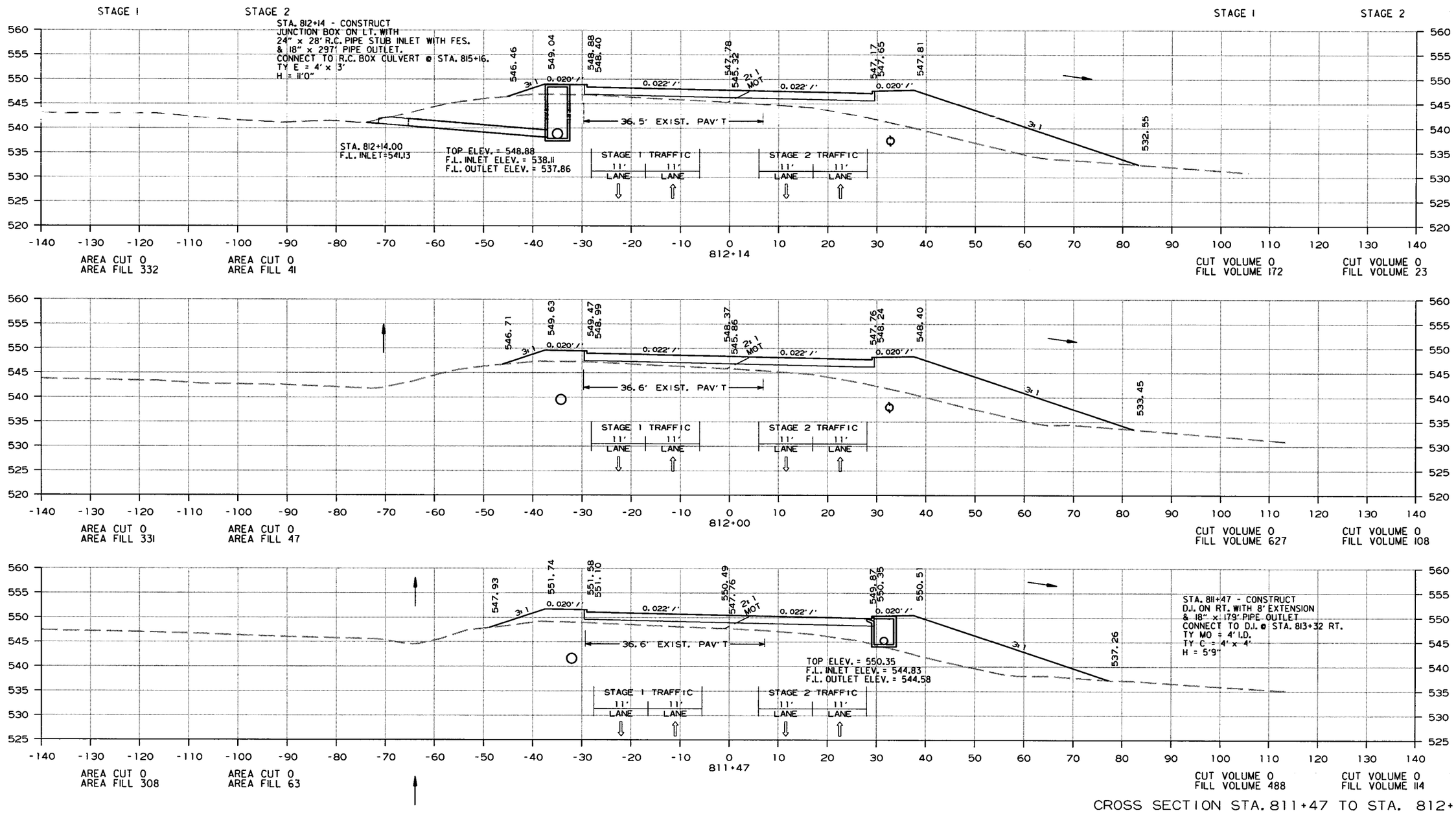
(2) CROSS SECTIONS



CROSS SECTION STA. 811+47 TO STA. 812+14

10/22/2013

R080423.DGN

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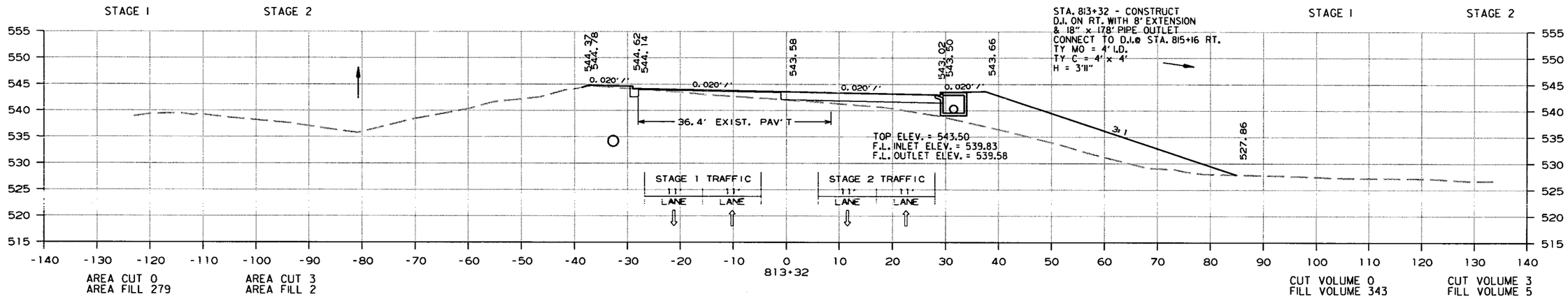
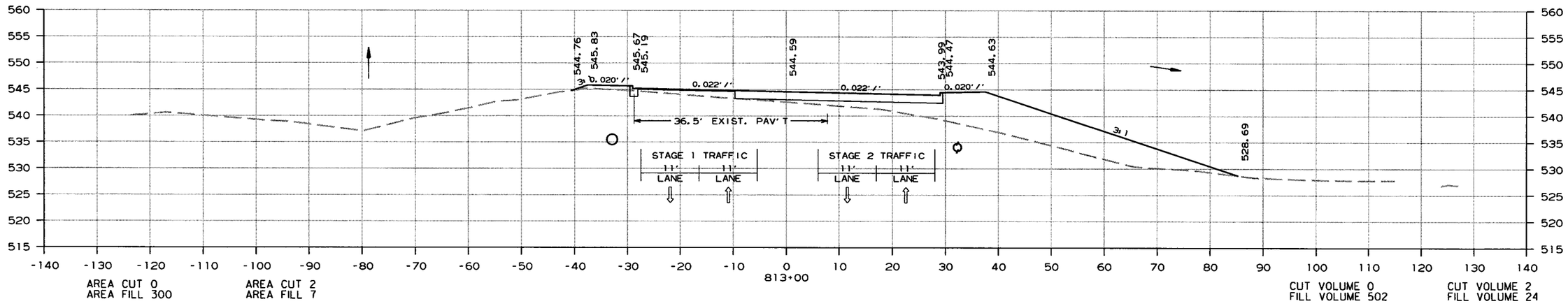
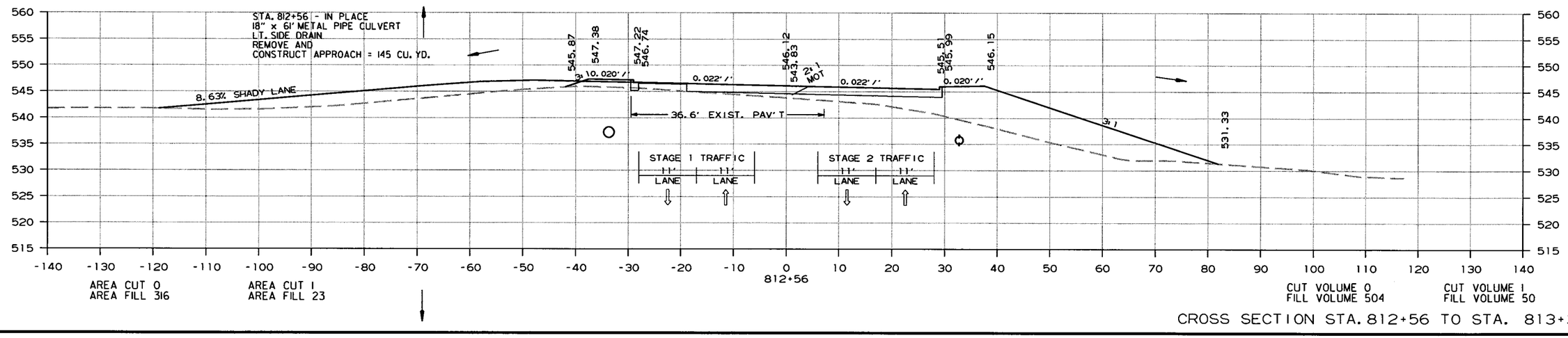
(2) CROSS SECTIONS







CROSS SECTION STA. 812+56 TO STA. 813+32

10/22/2013

R080423.DGN

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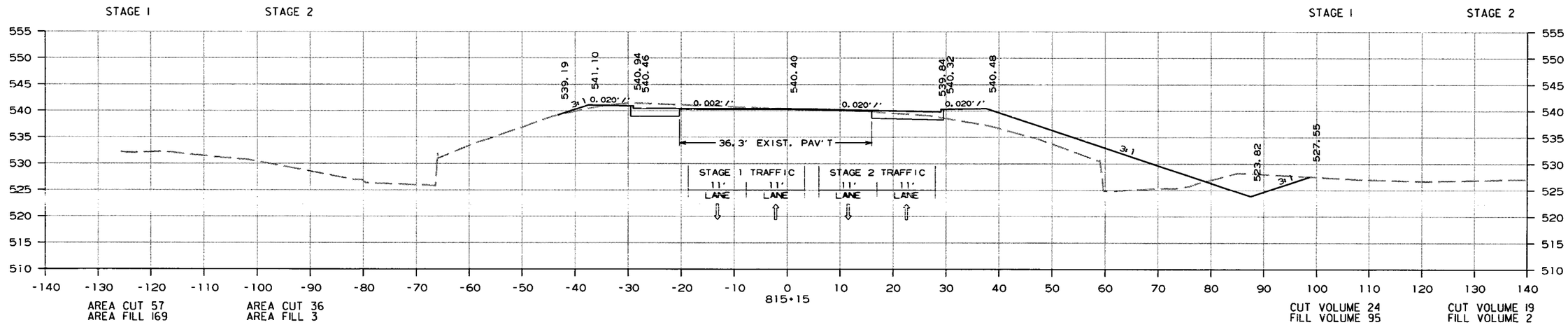
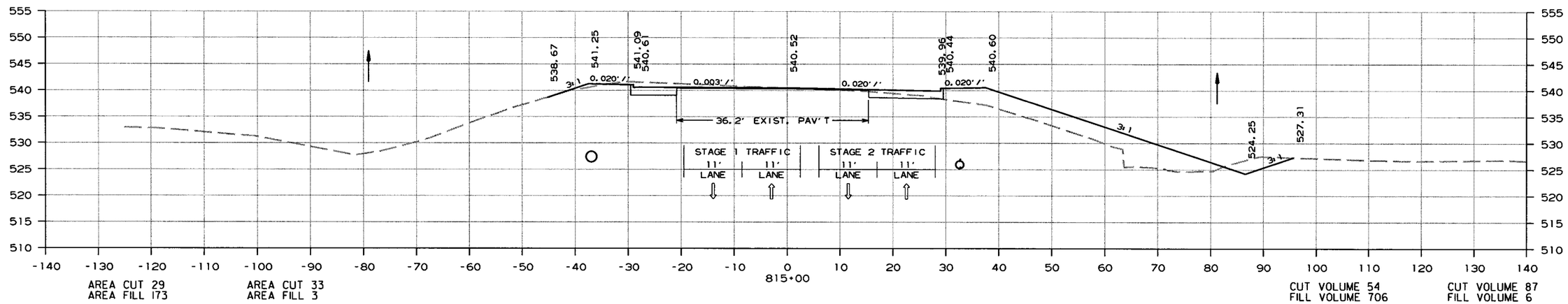
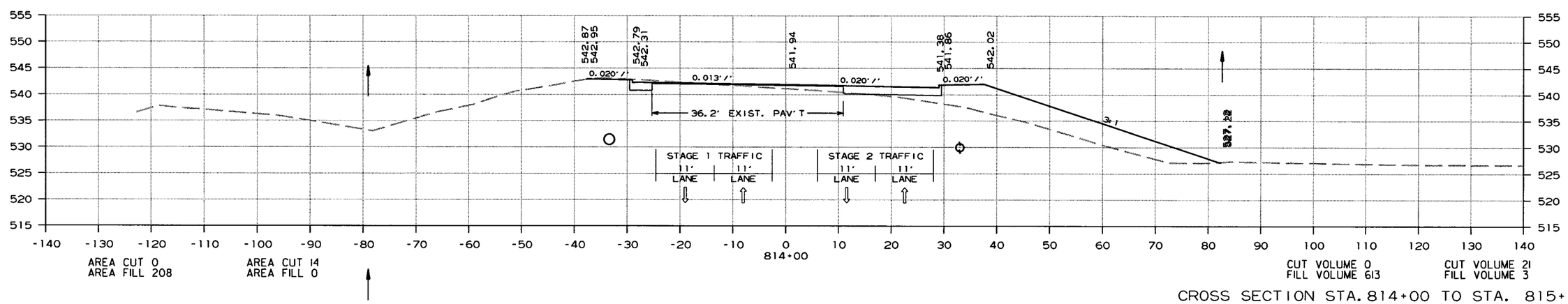
(2) CROSS SECTIONS







CROSS SECTION STA. 814+00 TO STA. 815+15

10/22/2013

R080423.DGN

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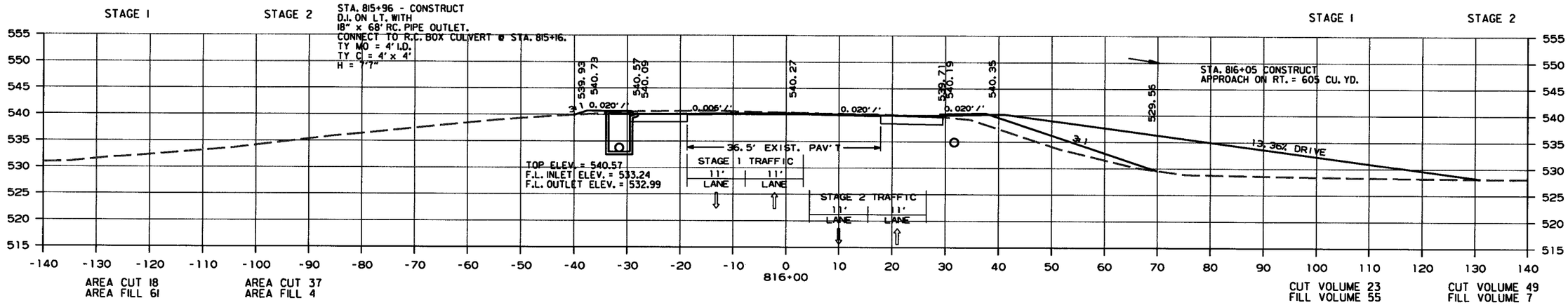
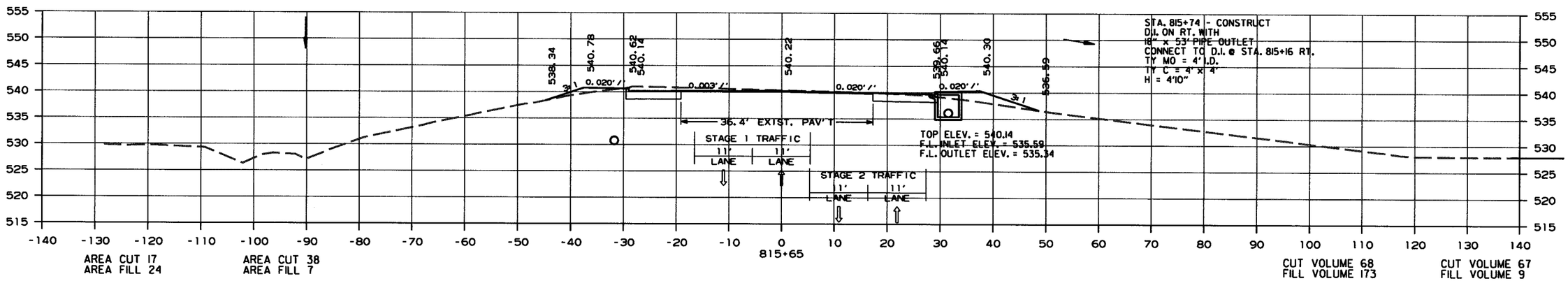
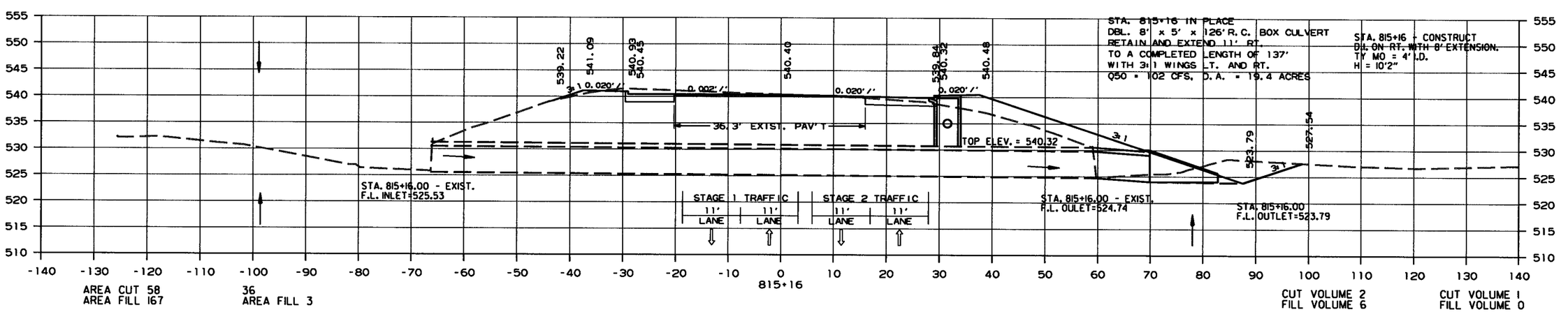
(2) CROSS SECTIONS CG







CROSS SECTION STA. 815+16 TO STA. 816+00

10/9/2017

R080423.DGN

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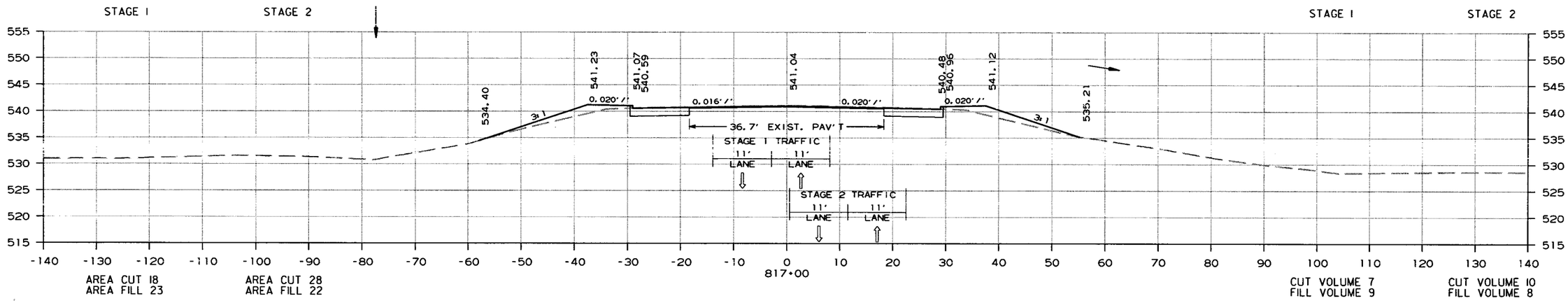
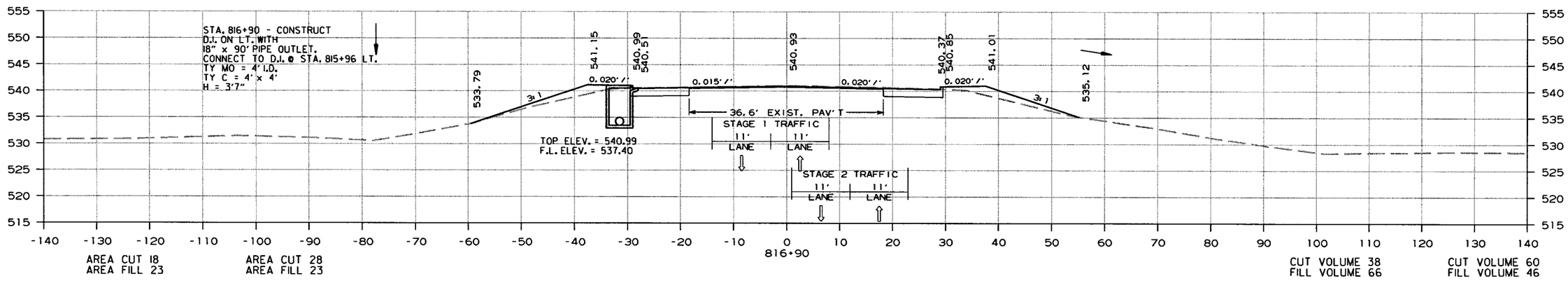
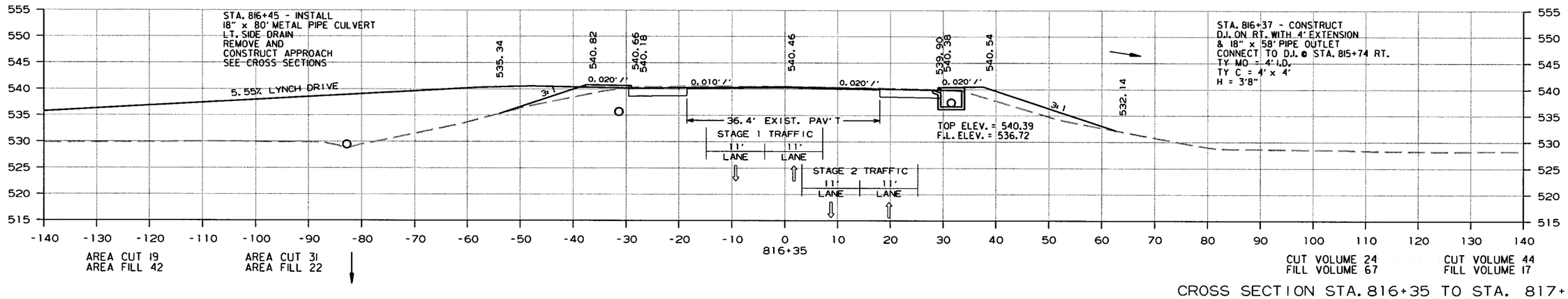
(2) CROSS SECTIONS







CROSS SECTION STA. 816+35 TO STA. 817+00

10/22/2013

R080423.DGN

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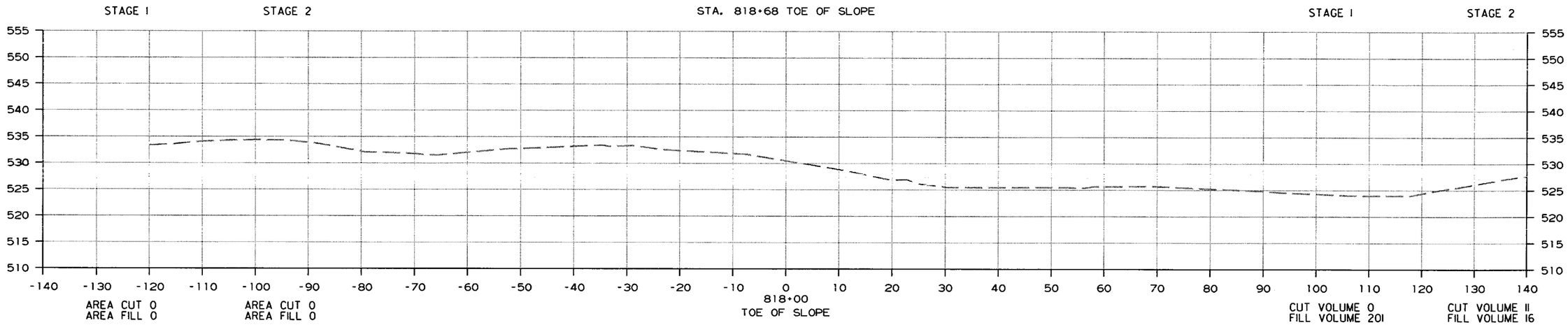
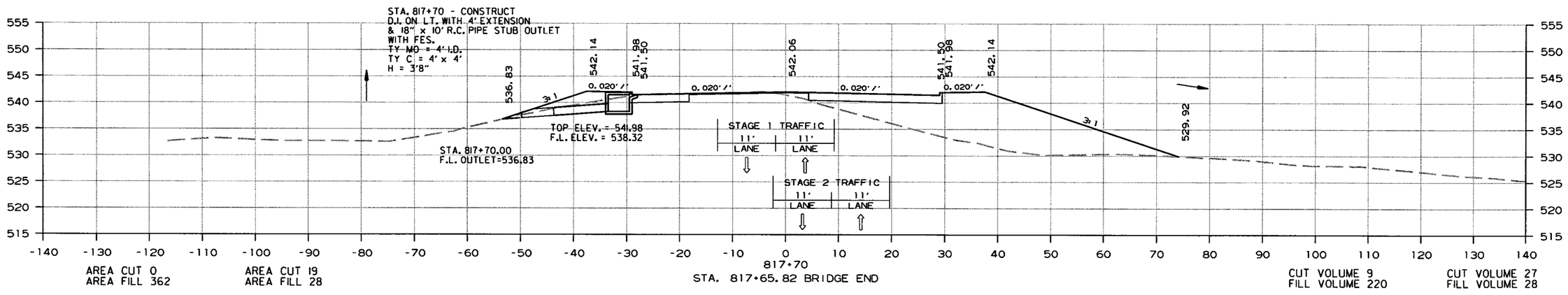
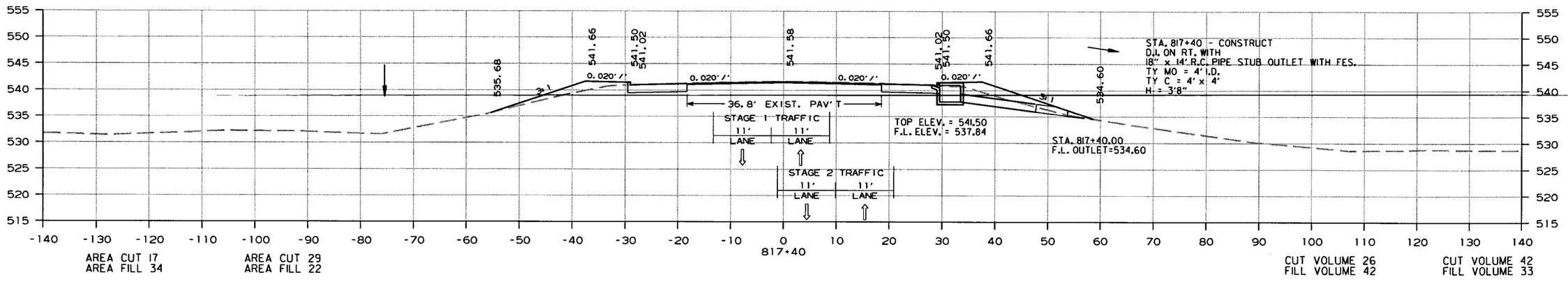
(2) CROSS SECTIONS







CROSS SECTION STA. 817+40 TO STA. 818+00

10/22/2013

R080423.DGN

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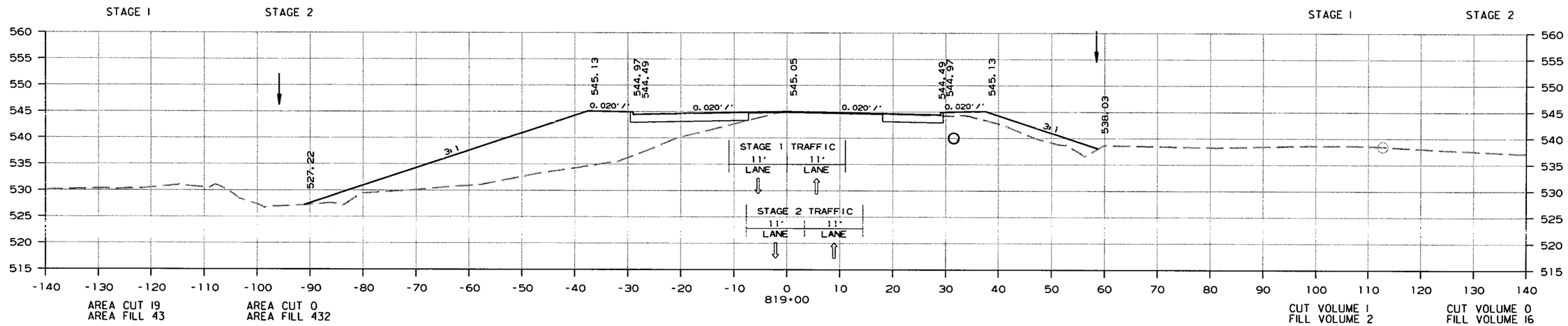
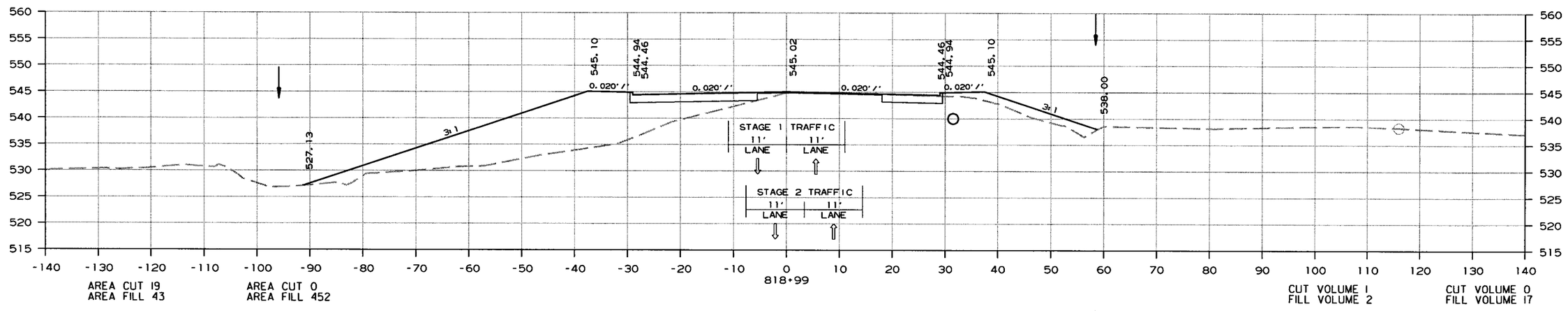
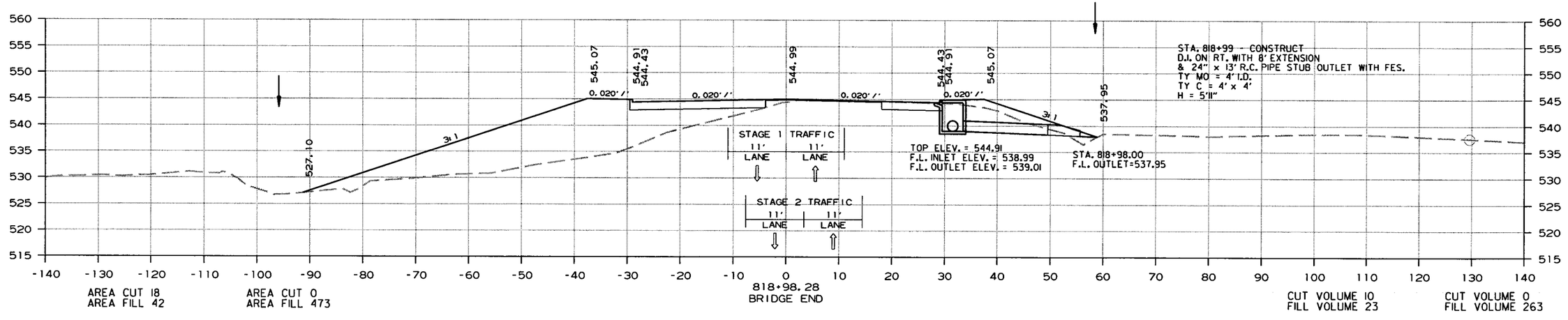
(2) CROSS SECTIONS







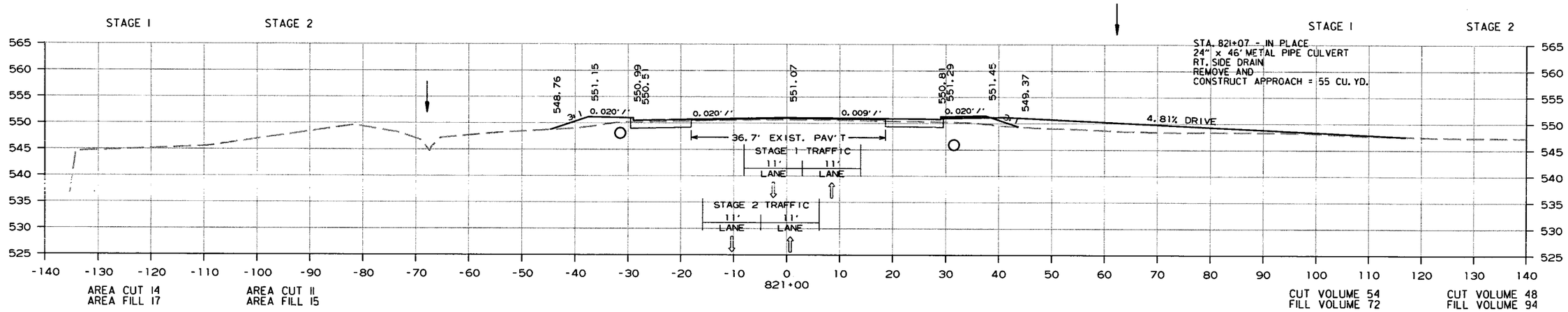
CROSS SECTION STA. 818+98 TO STA. 819+00

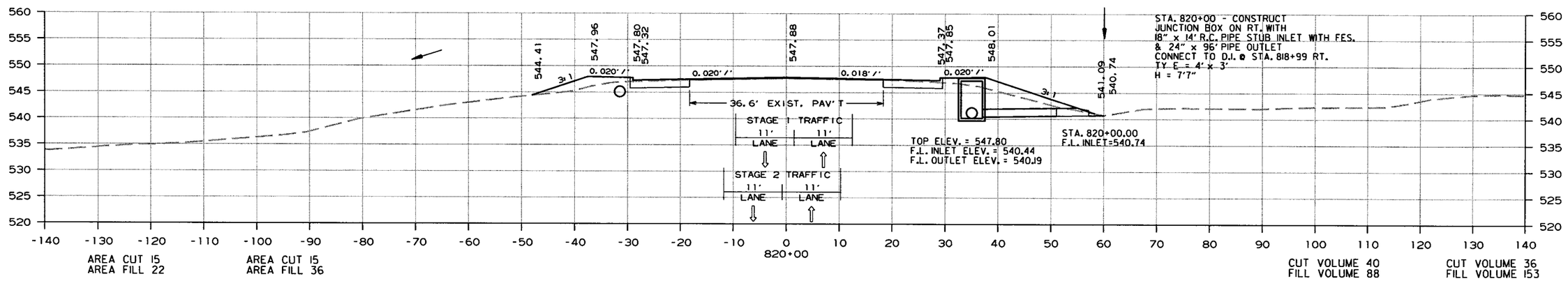
10/22/2013

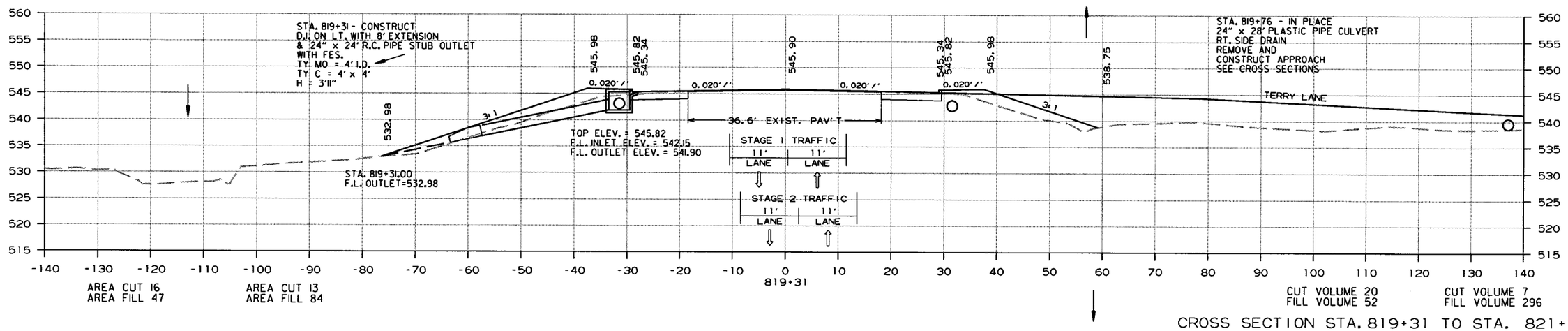
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	401	517

(2) CROSS SECTIONS







CROSS SECTION STA. 819+31 TO STA. 821+00

10/22/2013

R080423.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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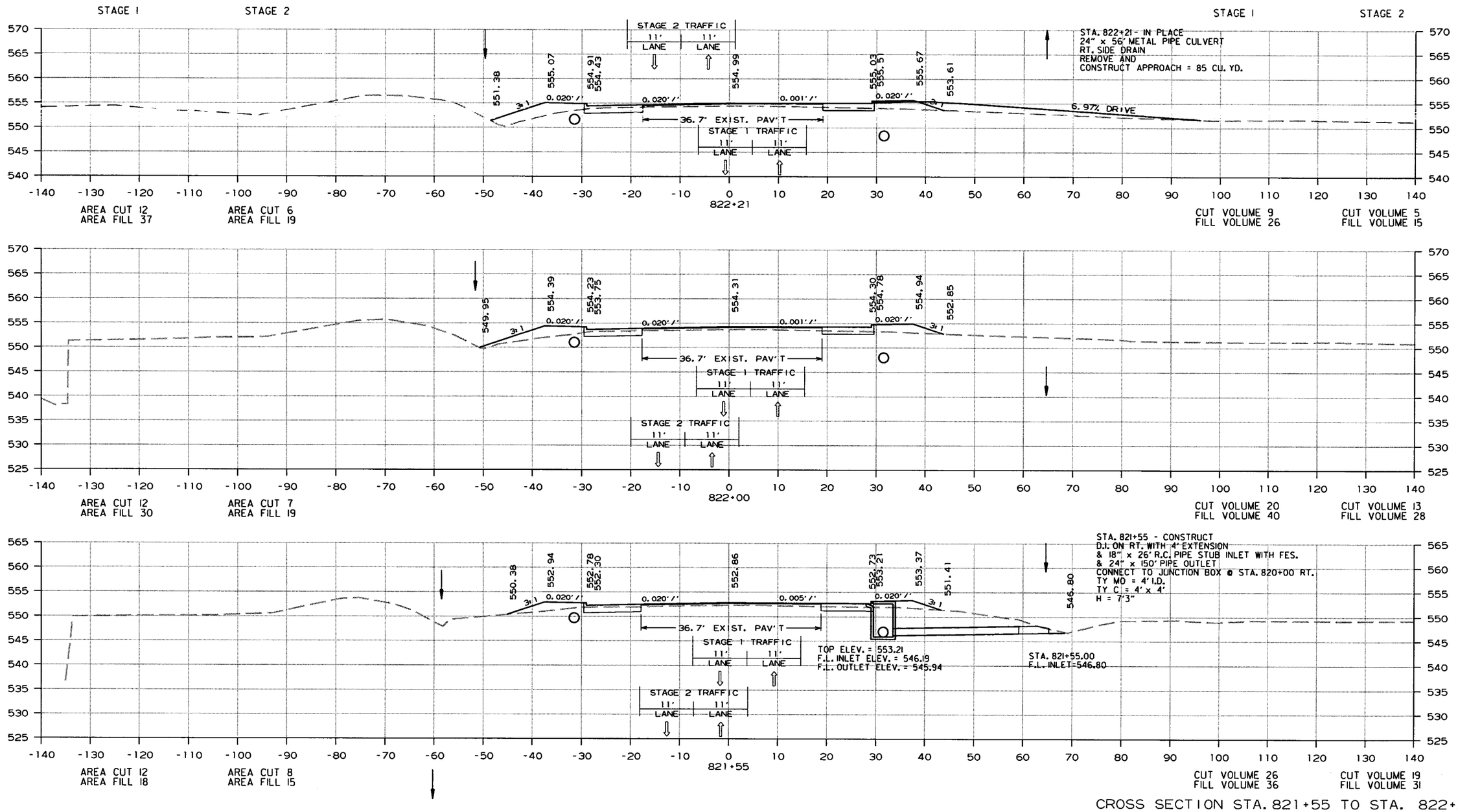
				JOB NO.		080423	402	517

(2) CROSS SECTIONS



CROSS SECTION STA. 821+55 TO STA. 822+21

10/22/2013

R080423.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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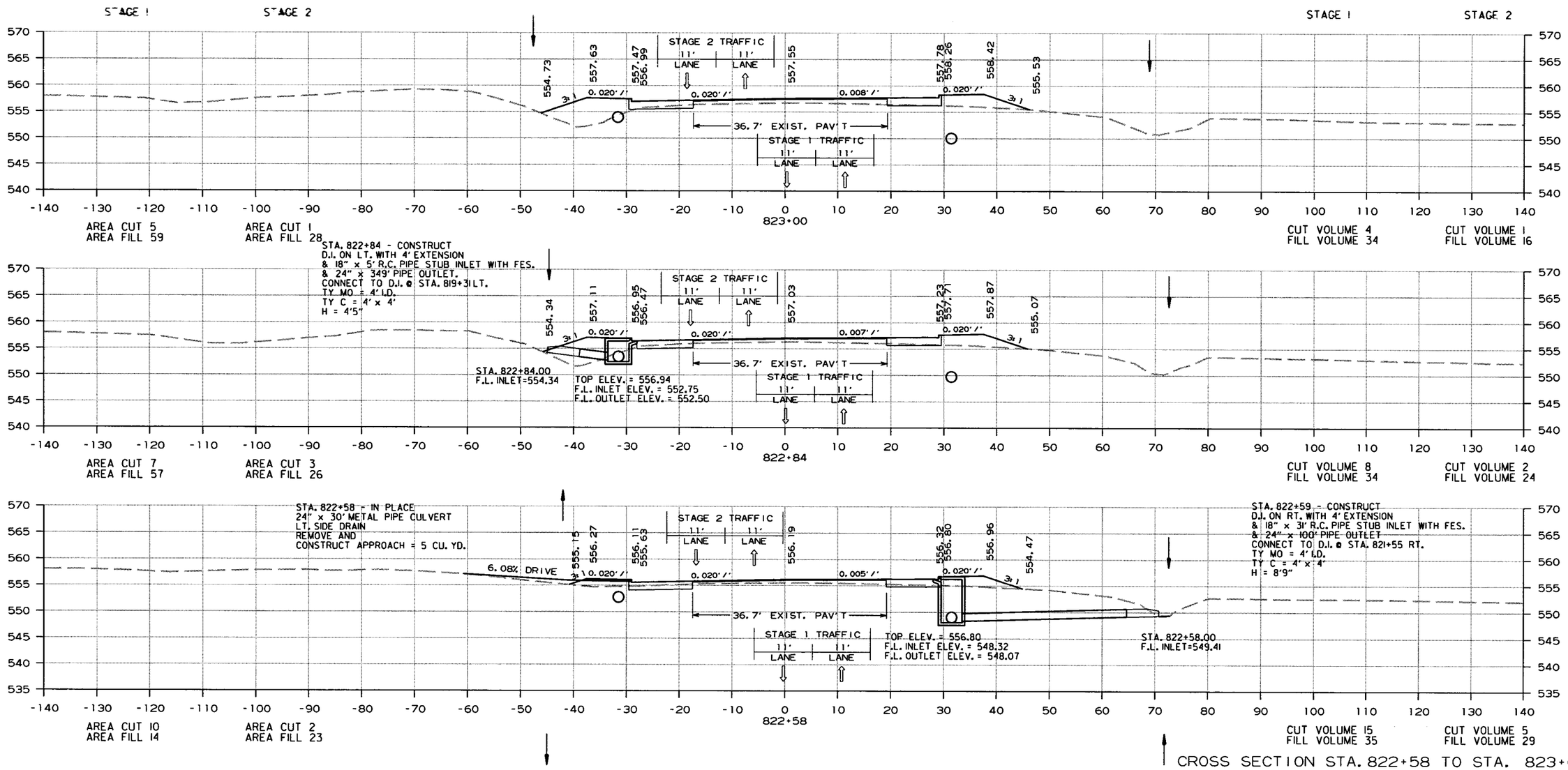

CROSS SECTION STA. 822+58 TO STA. 823+00

10/22/2013

R080423.DGN

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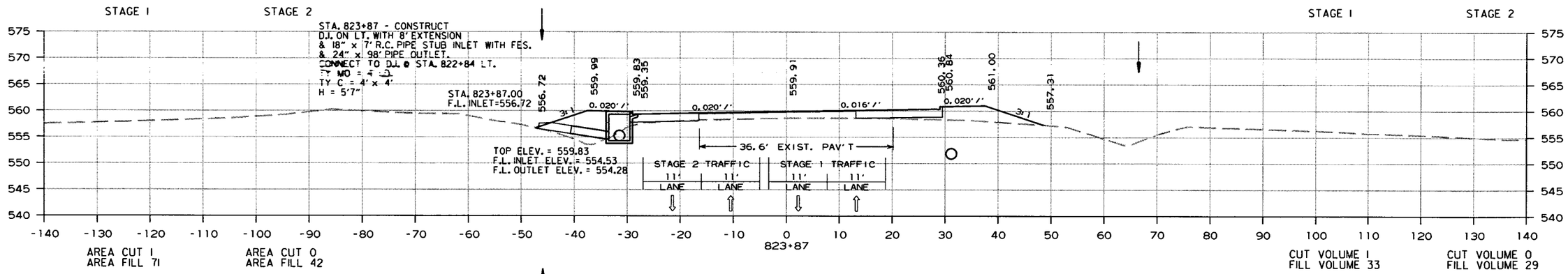
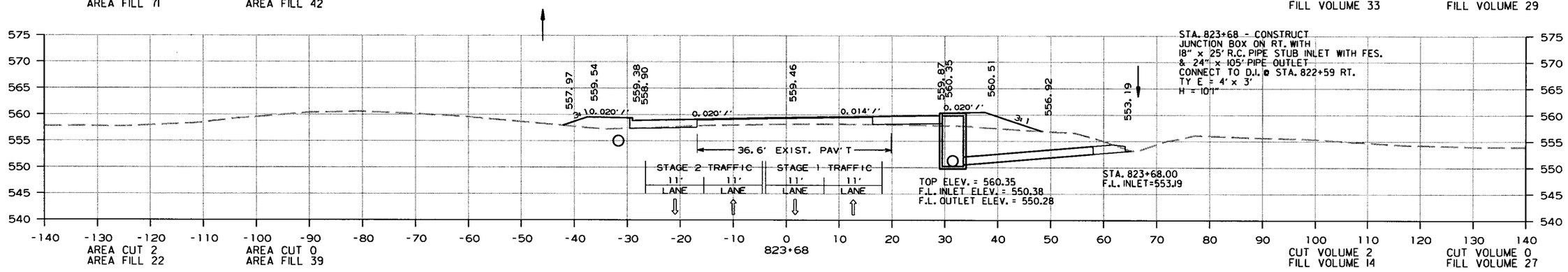
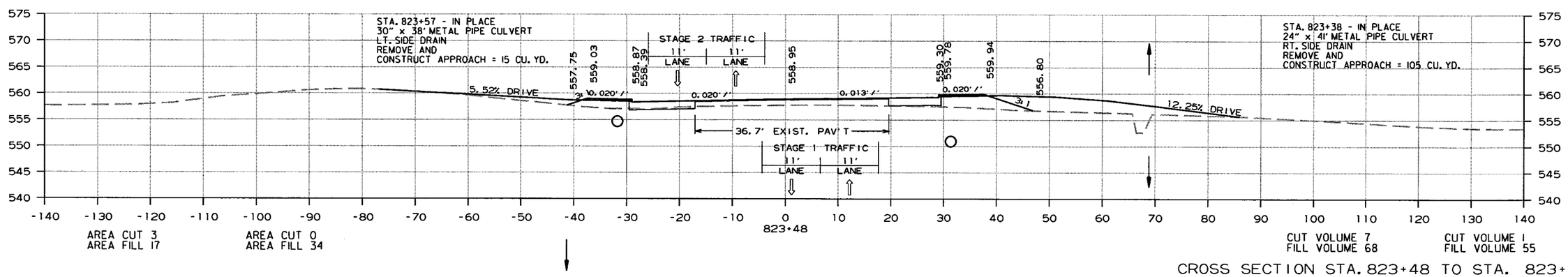
(2) CROSS SECTIONS







CROSS SECTION STA. 823+48 TO STA. 823+87

10/22/2013

R080423.DGN

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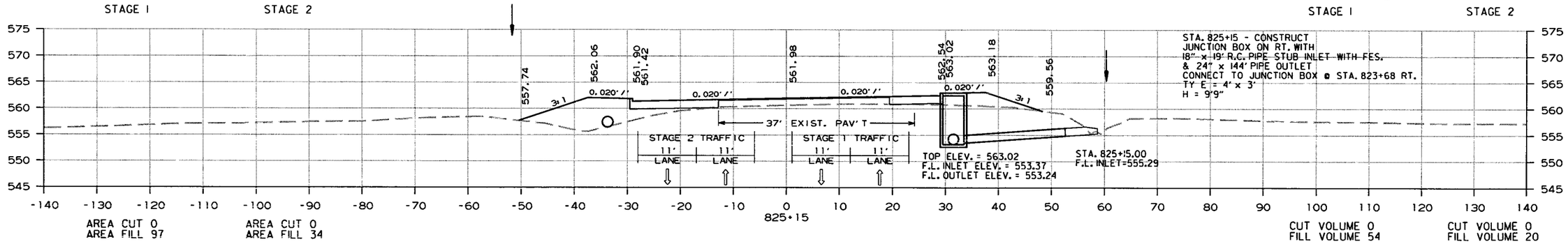
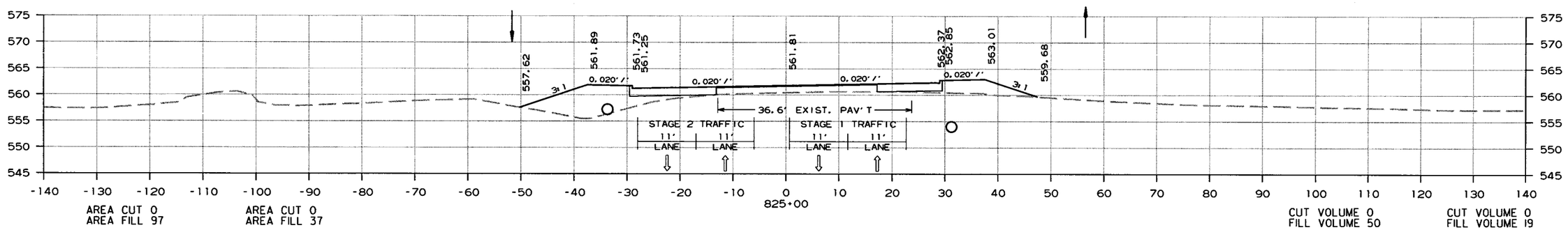
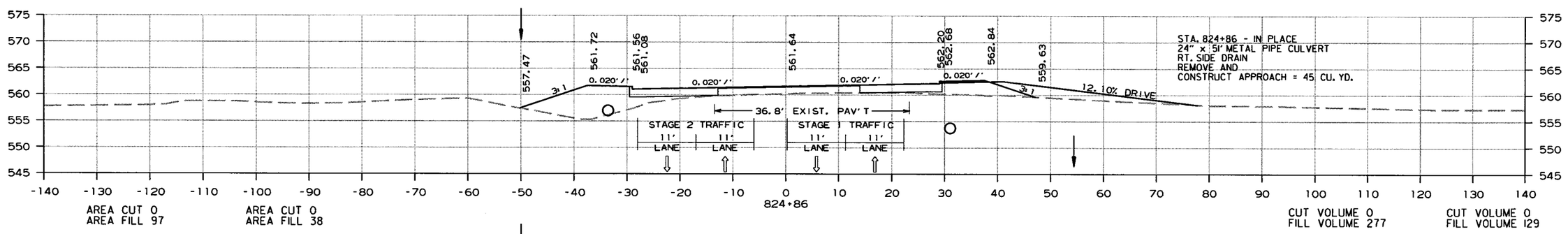
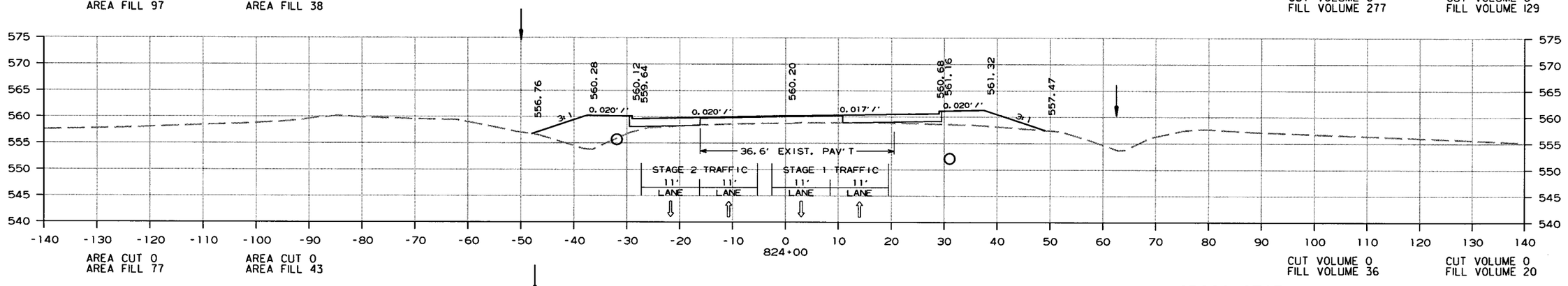
(2) CROSS SECTIONS









CROSS SECTION STA. 824+00 TO STA. 825+15

10/22/2013

R080423.DGN

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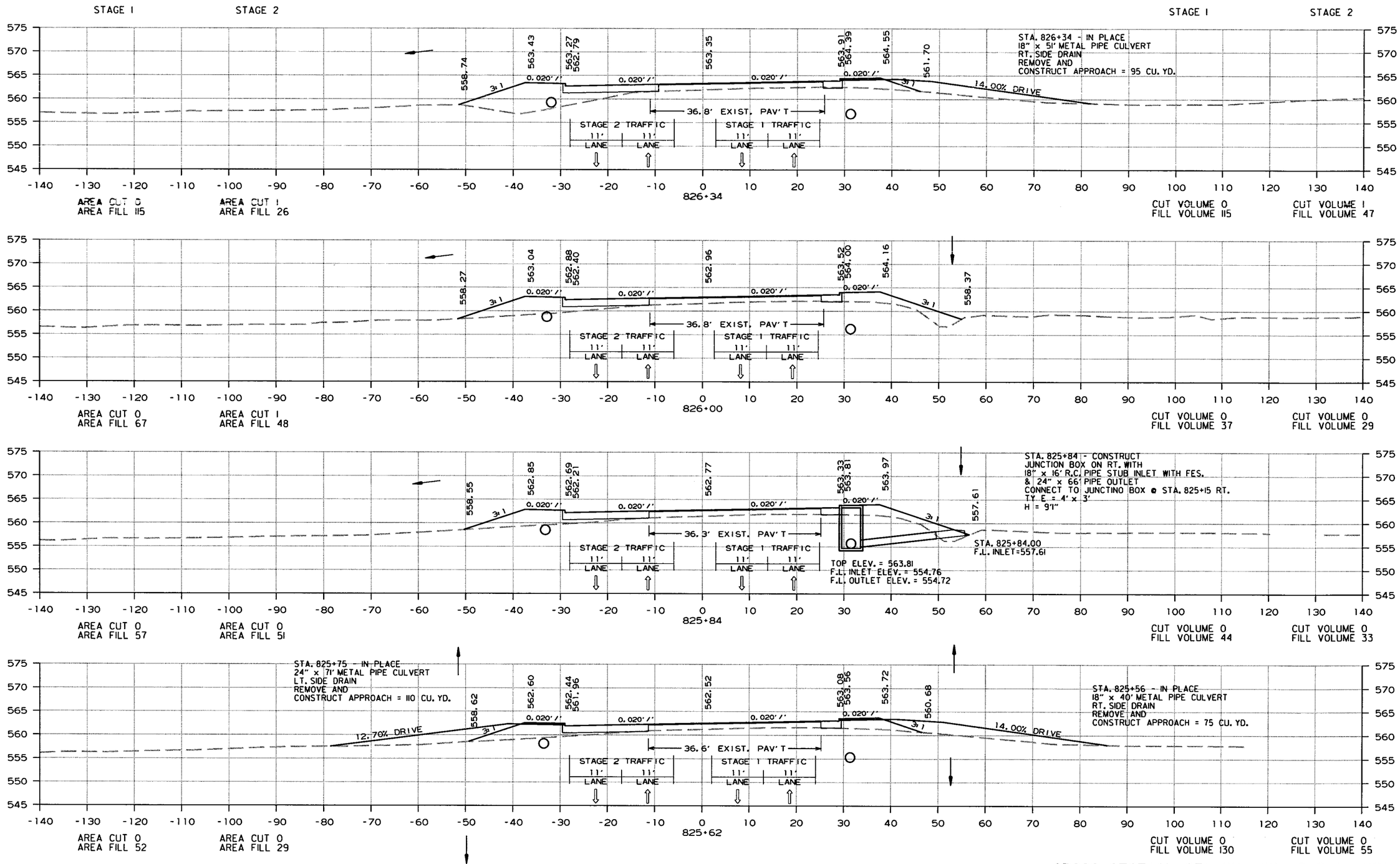
(2) CROSS SECTIONS



CROSS SECTION STA. 825+62 TO STA. 826+34

10/22/2013

R080423.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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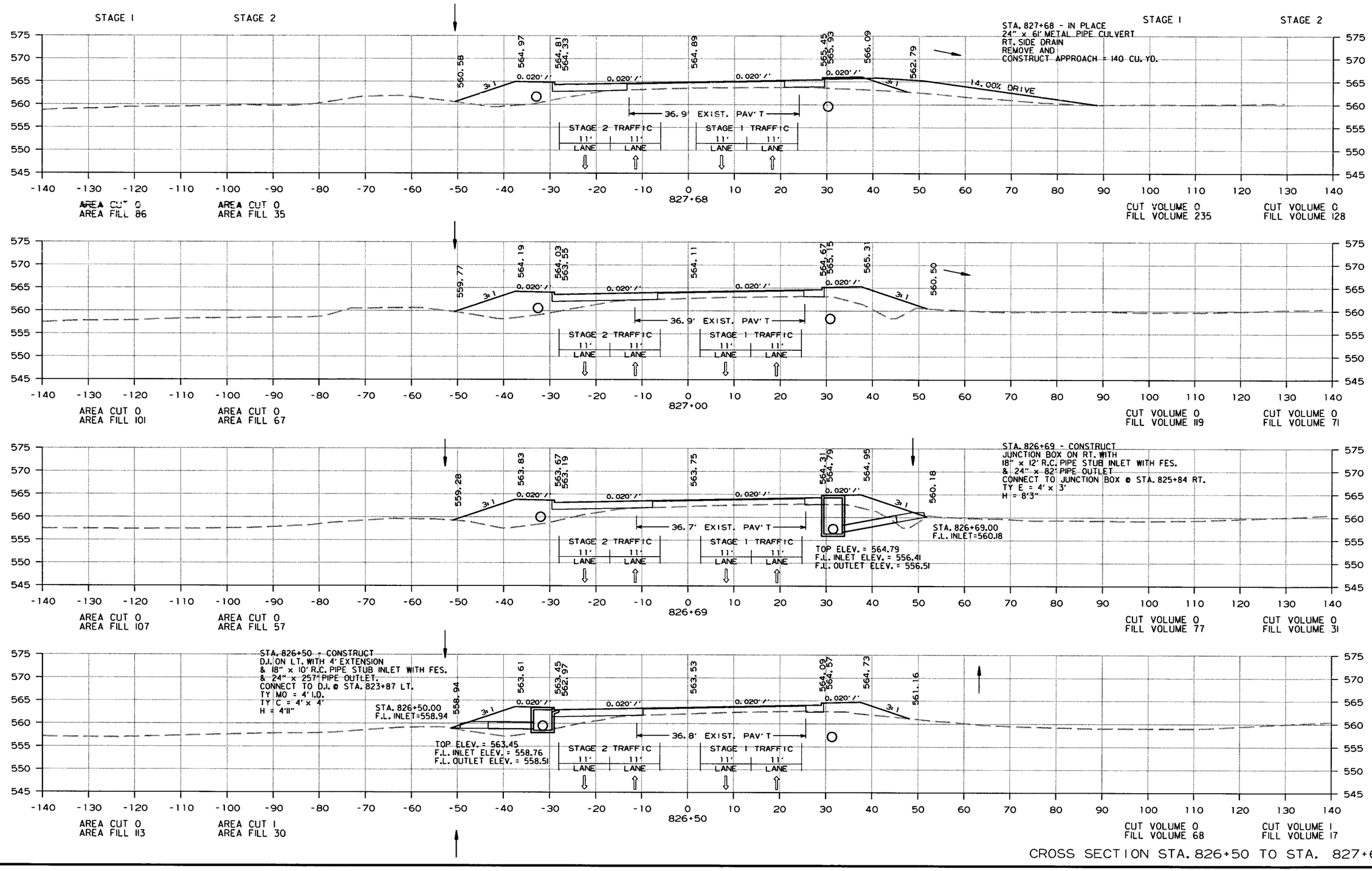
				JOB NO.		080423	407	517

(2) CROSS SECTIONS



CROSS SECTION STA. 826+50 TO STA. 827+68

10/22/2013

R080423.DGN

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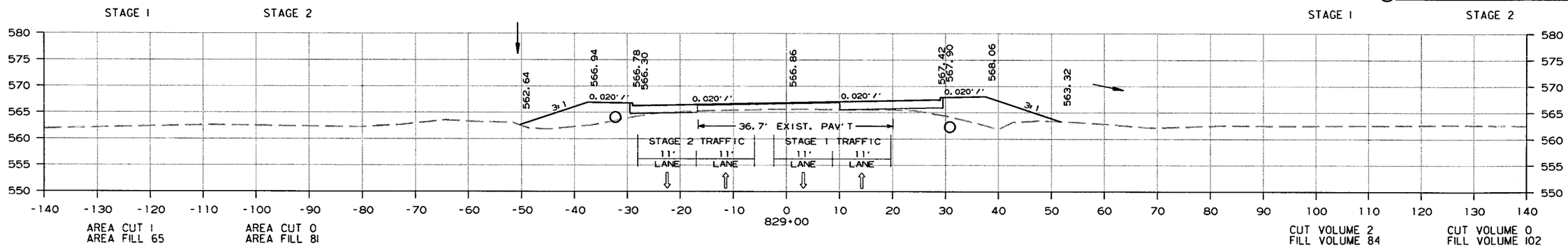
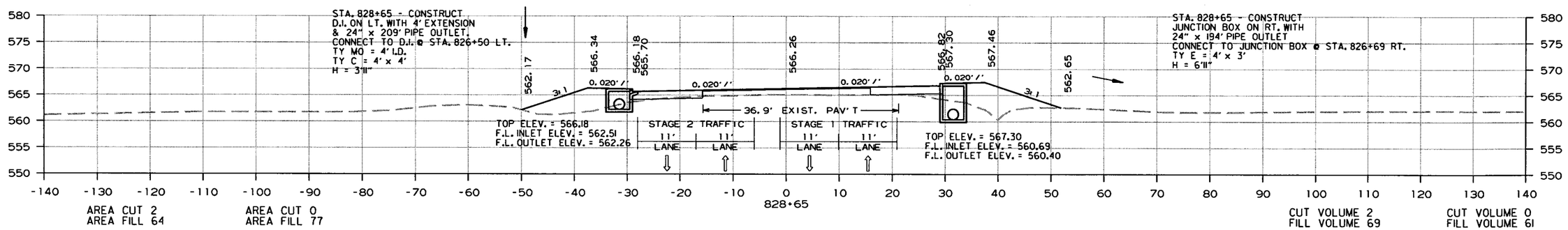
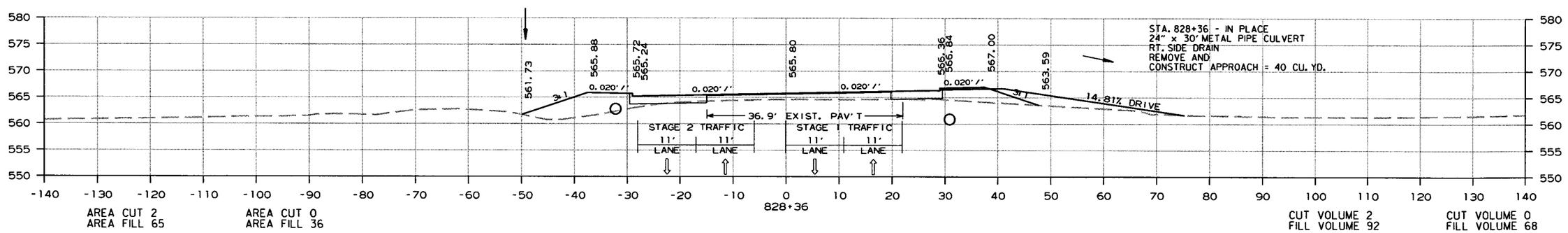
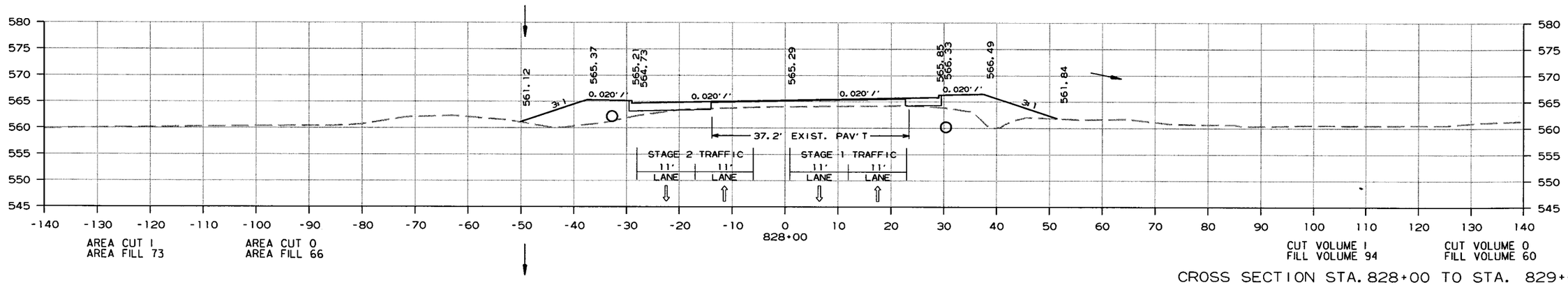
2 CROSS SECTIONS









CROSS SECTION STA. 828+00 TO STA. 829+00

10/22/2013

R080423.DGN

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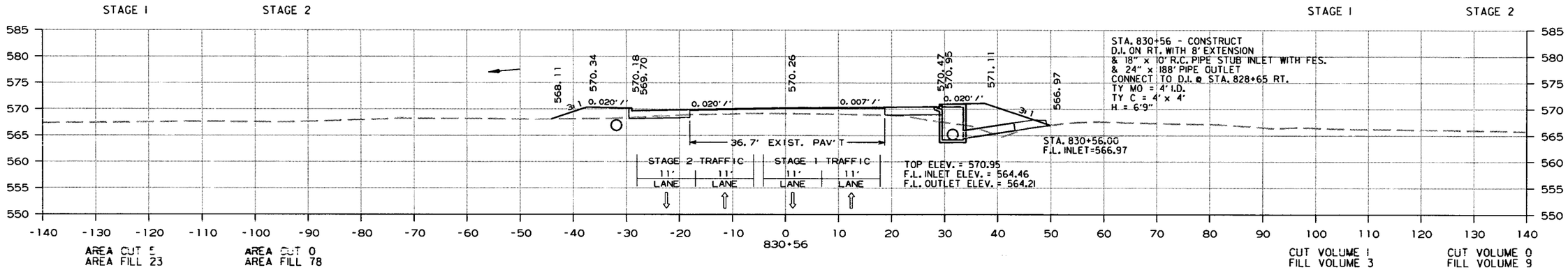
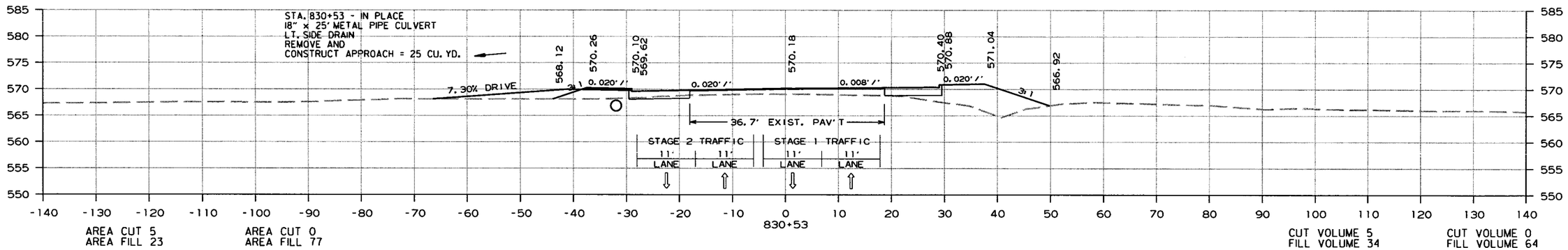
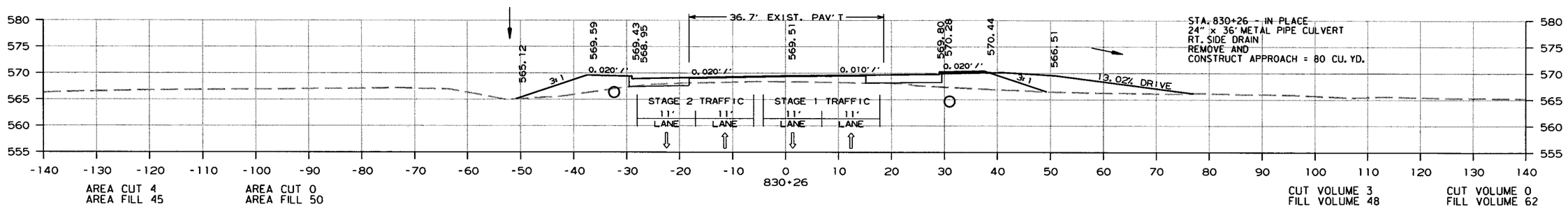
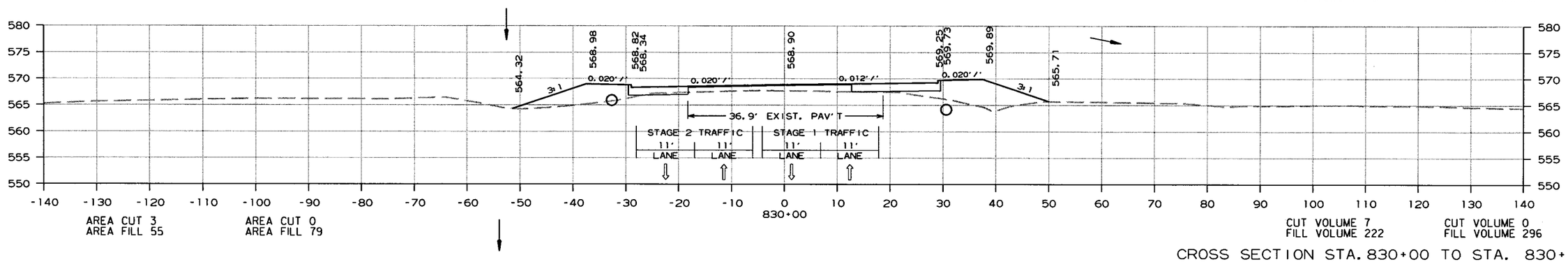
(2) CROSS SECTIONS









CROSS SECTION STA. 830+00 TO STA. 830+56

10/22/2013

R080423.DGN

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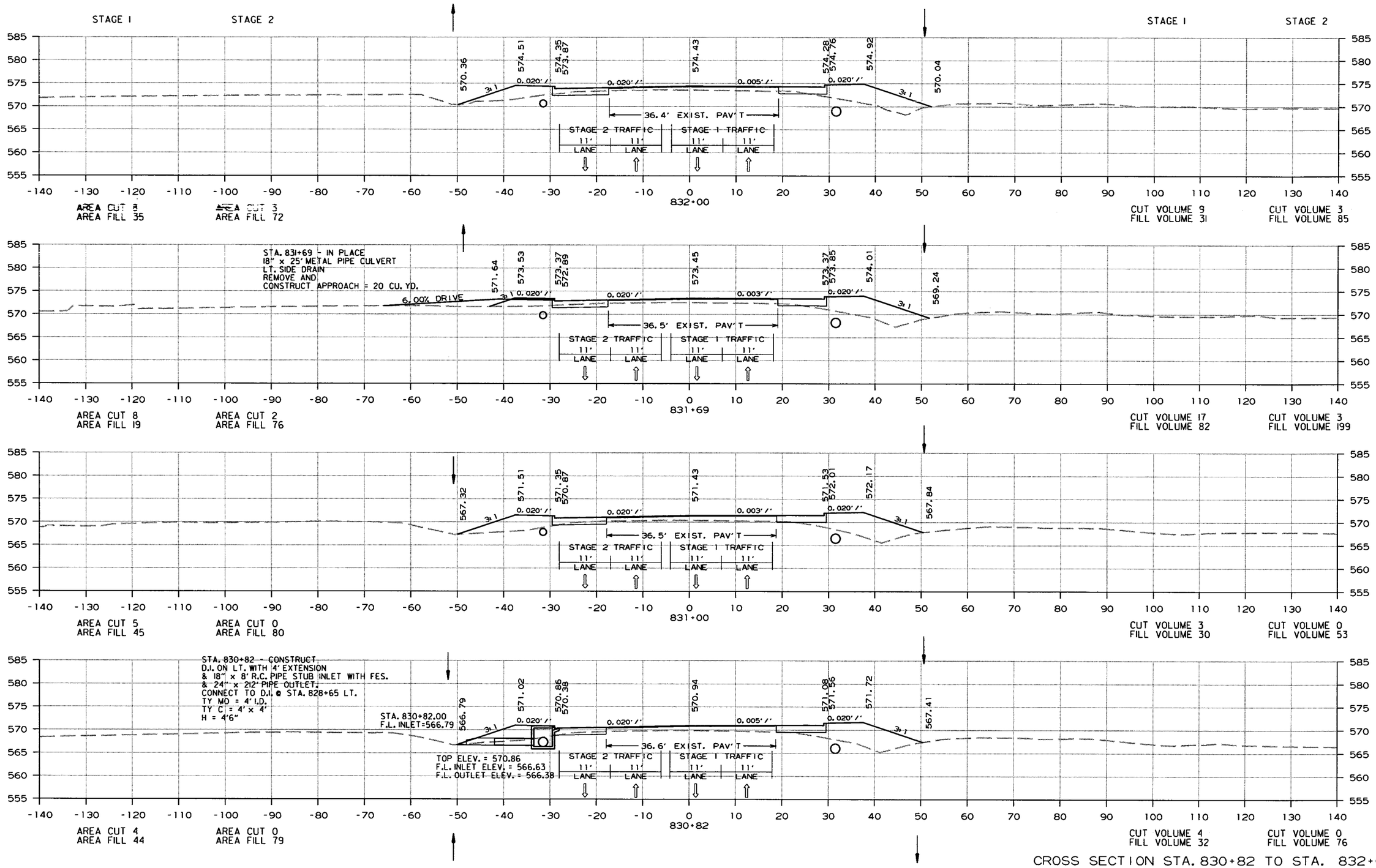
(2) CROSS SECTIONS



CROSS SECTION STA. 830+82 TO STA. 832+00

10/22/2013

R080423.DGN

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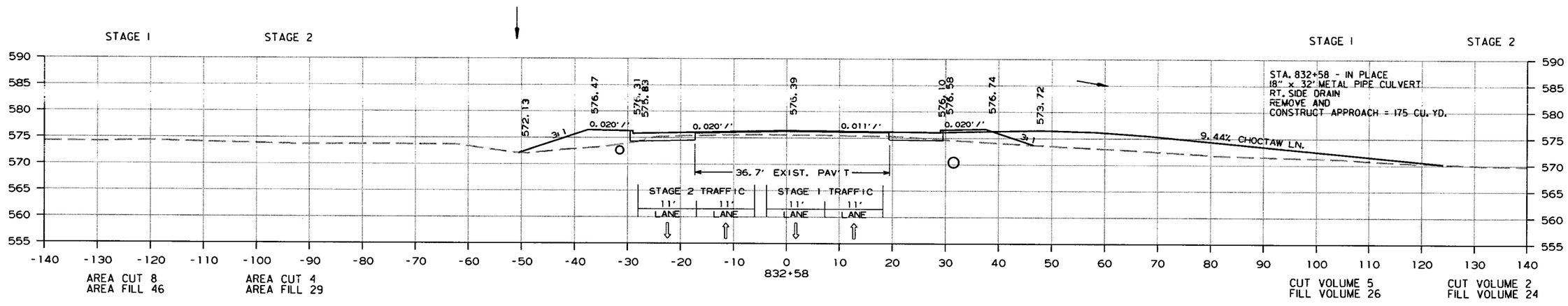
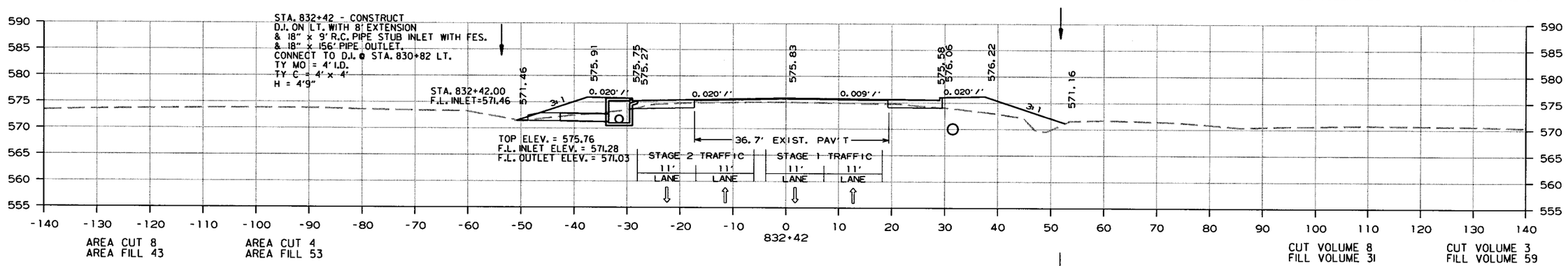
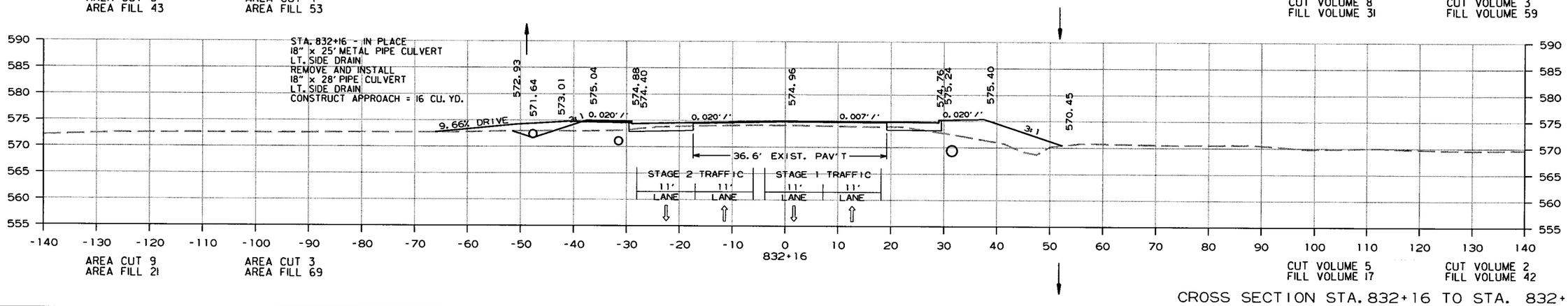
(2) CROSS SECTIONS







CROSS SECTION STA. 832+16 TO STA. 832+58

10/22/2013

R080423.DGN

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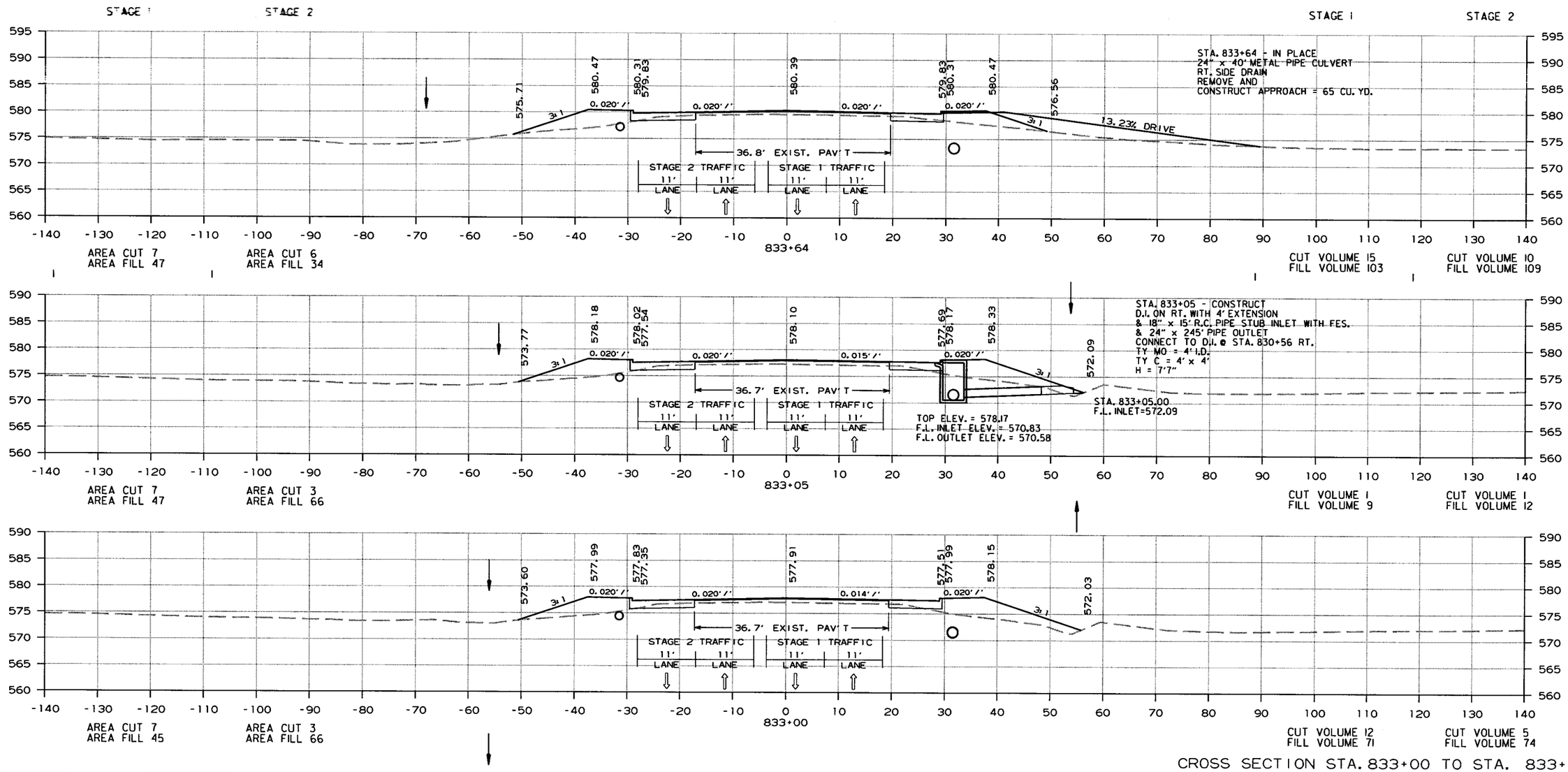
(2) CROSS SECTIONS



CROSS SECTION STA. 833+00 TO STA. 833+64

10/22/2013

R080423.DGN

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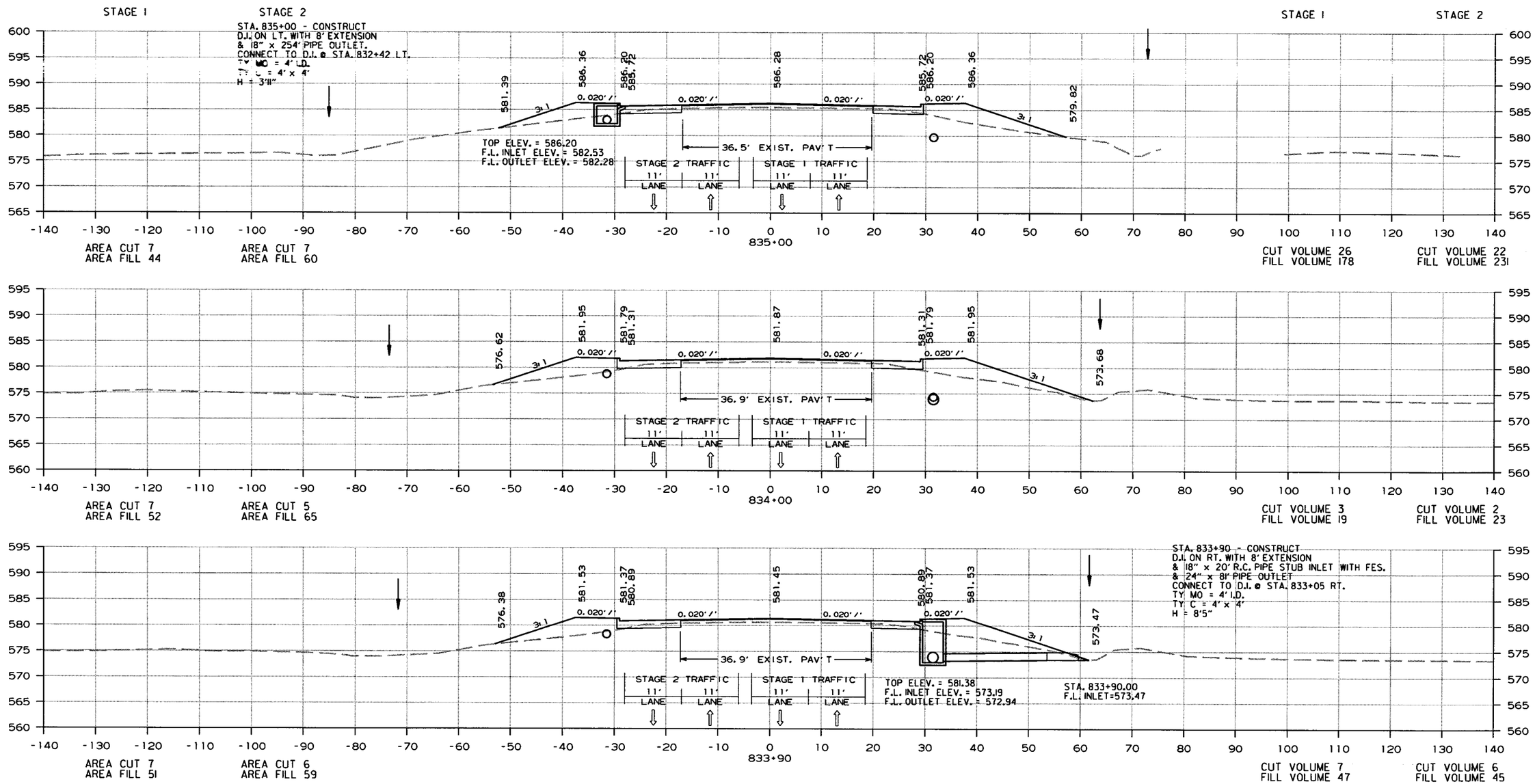
(2) CROSS SECTIONS



CROSS SECTION STA. 833+90 TO STA. 835+00

10/22/2013

R080423.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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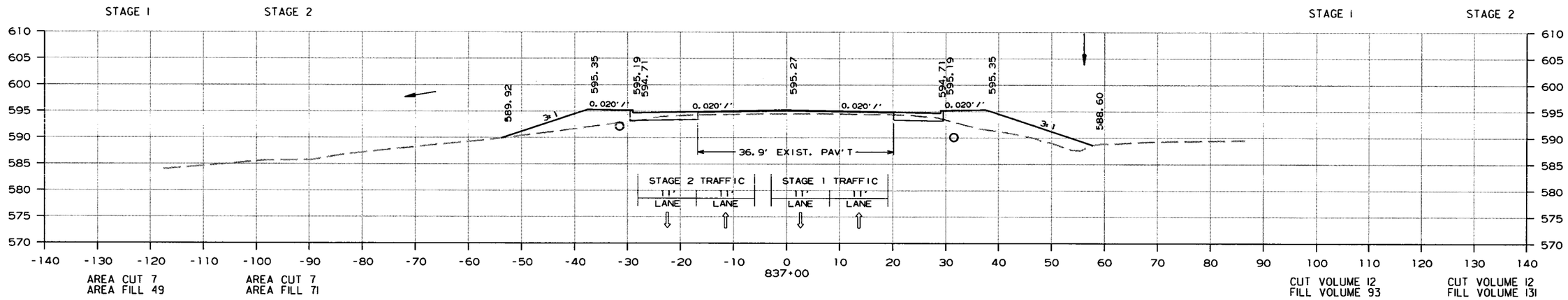

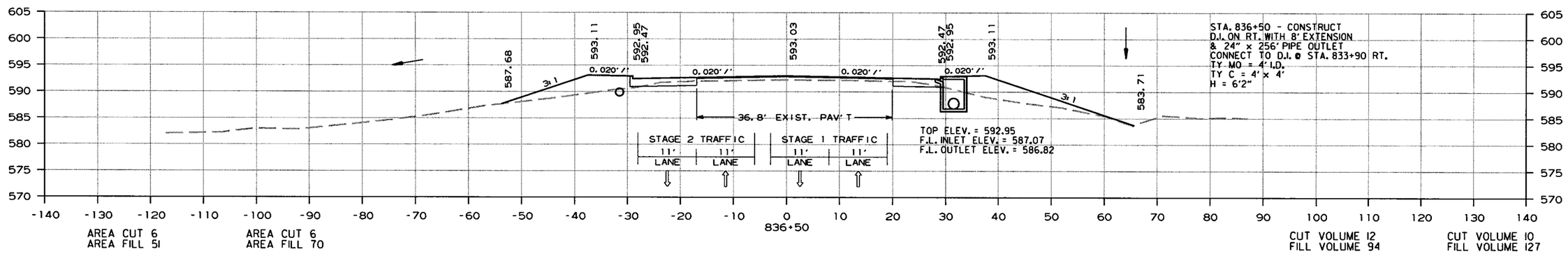

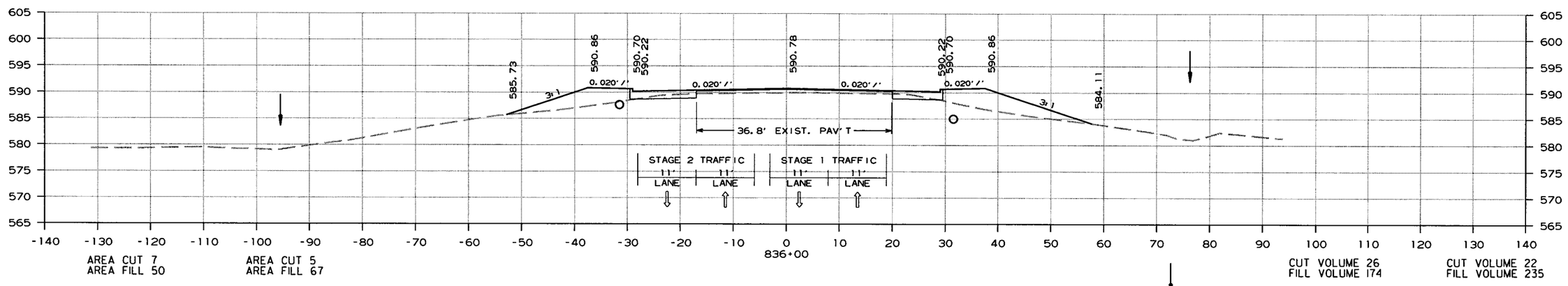

CROSS SECTION STA. 836+00 TO STA. 837+00

10/22/2013

R080423.DGN

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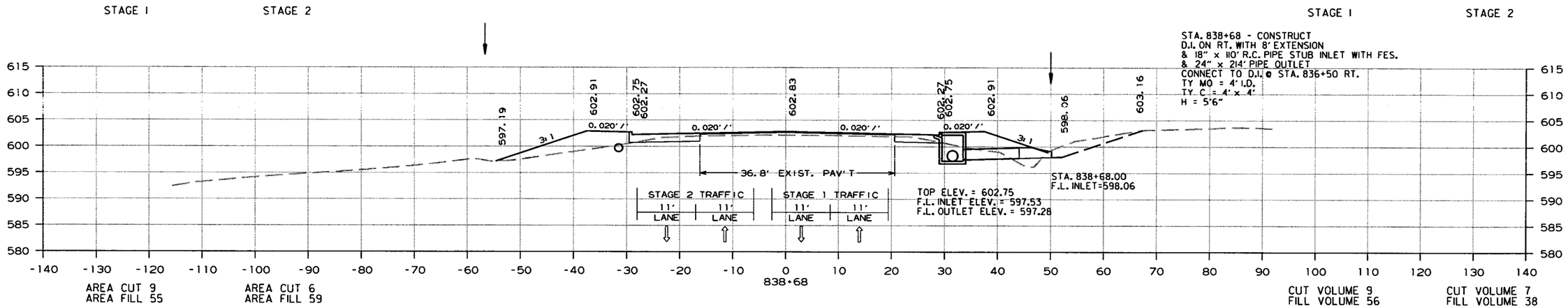
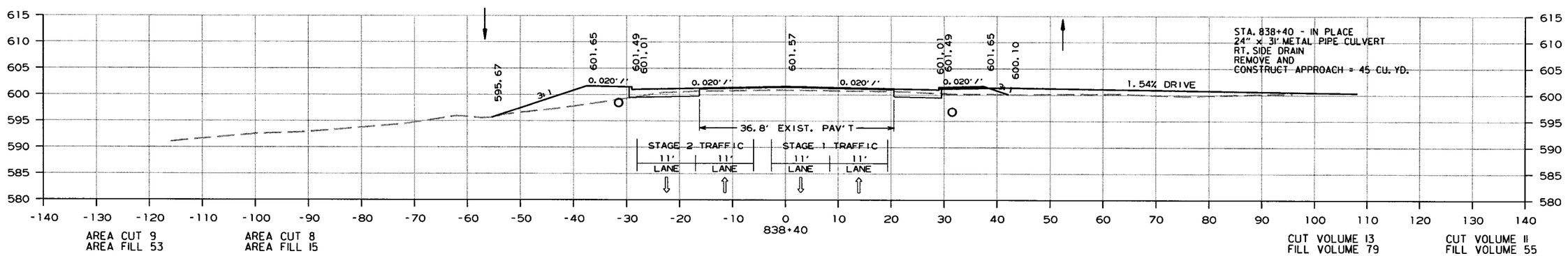
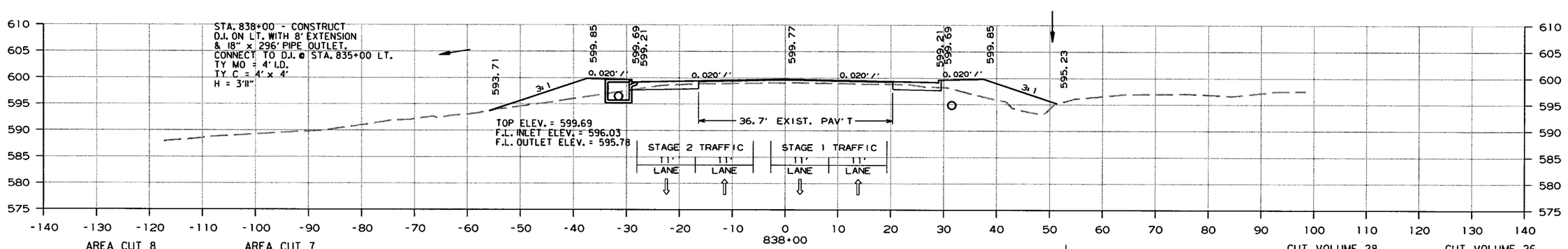
(2) CROSS SECTIONS







CROSS SECTION STA. 838+00 TO STA. 838+68

10/22/2013

R080423.DGN

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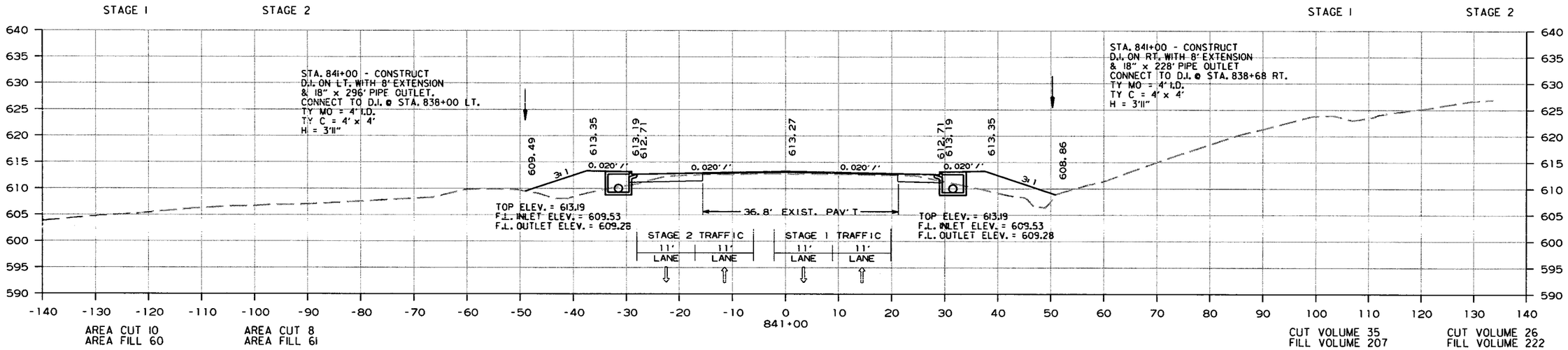
(2) CROSS SECTIONS



CROSS SECTION STA. 839+00 TO STA. 841+00

10/22/2013

R080423.DGN

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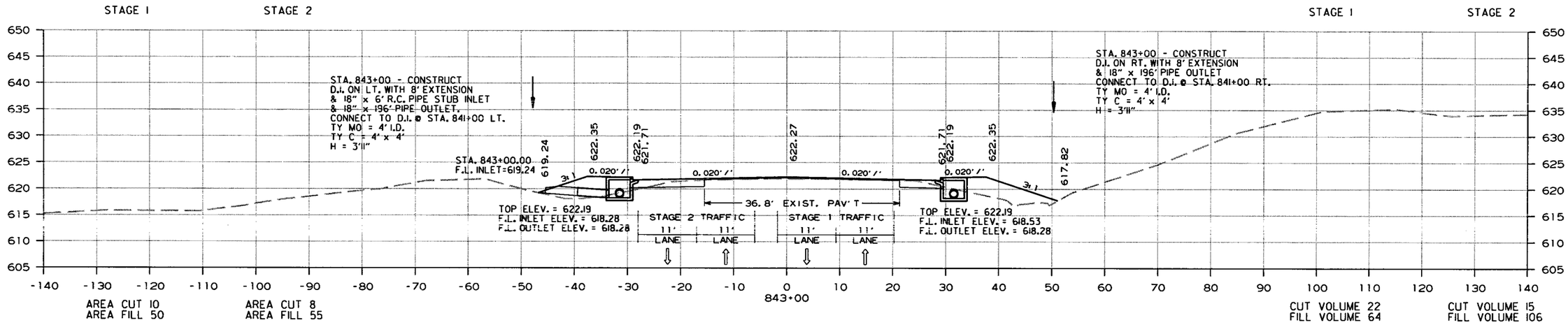
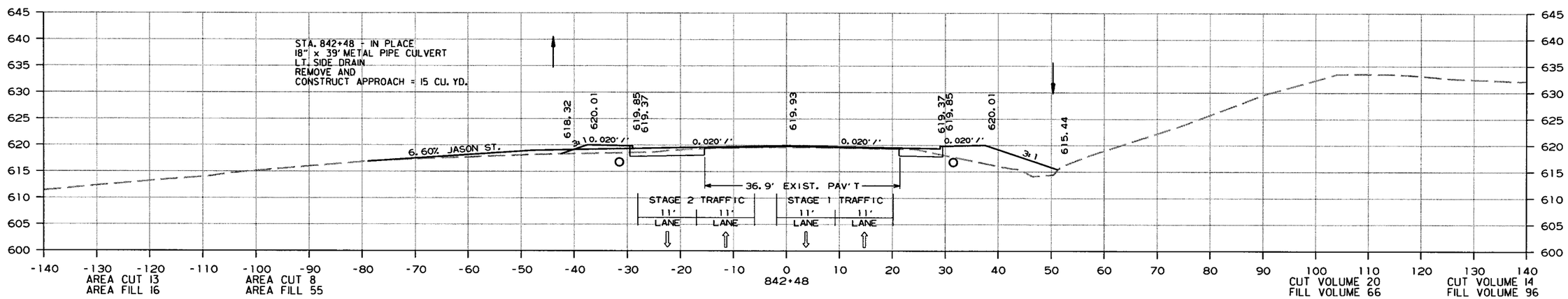
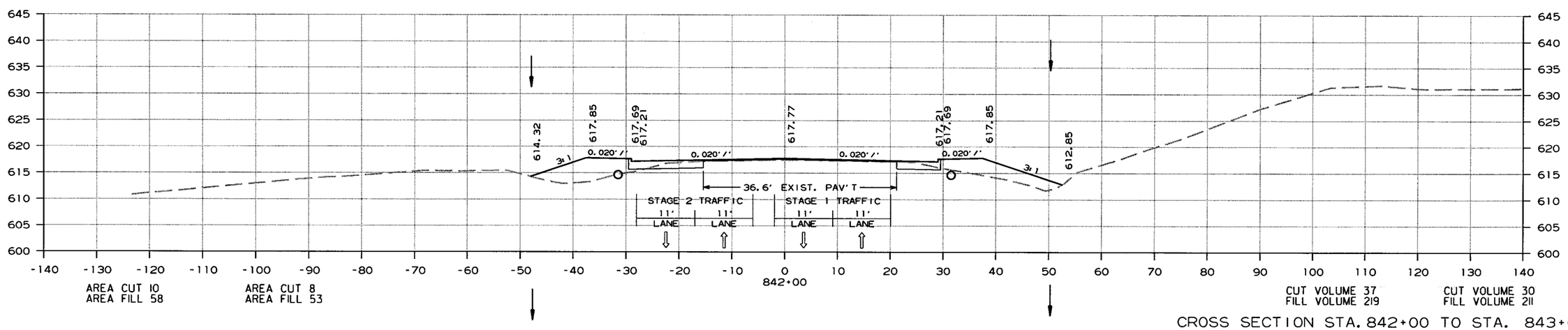
(2) CROSS SECTIONS







CROSS SECTION STA. 842+00 TO STA. 843+00

10/22/2013

R080423.DGN

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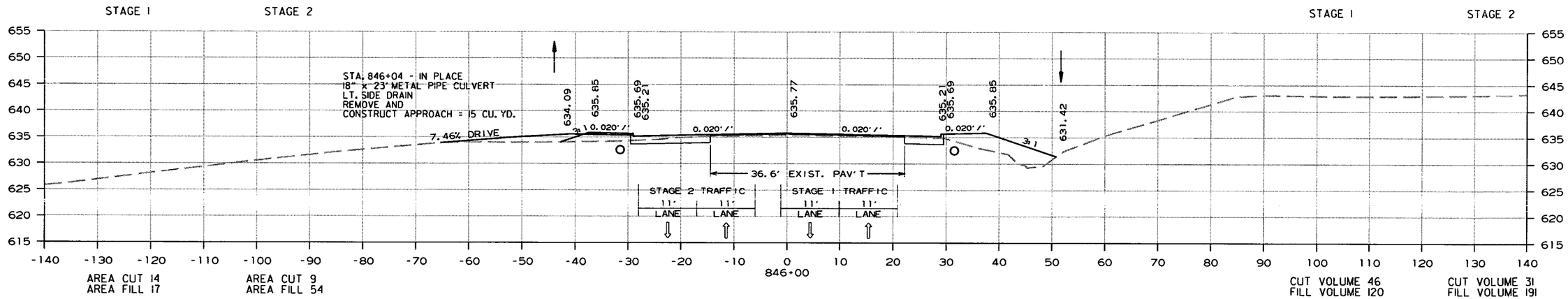
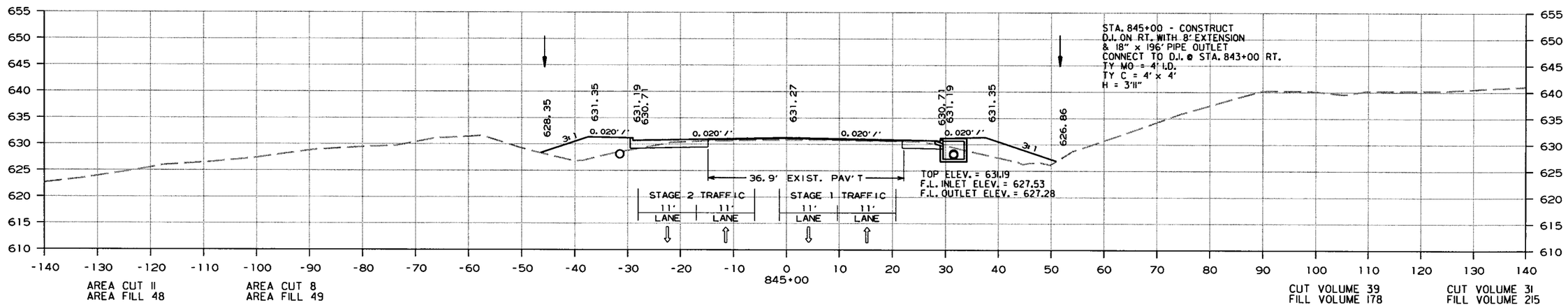
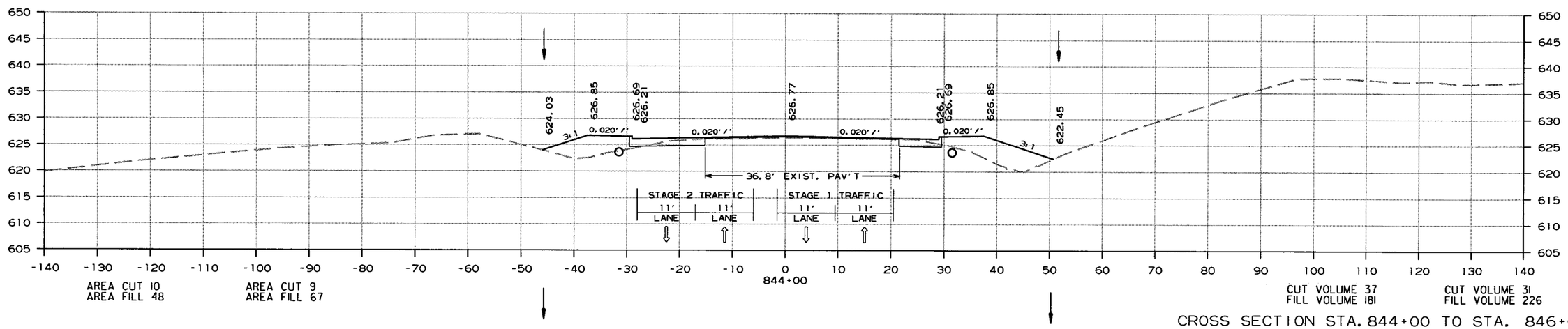
(2) CROSS SECTIONS







CROSS SECTION STA. 844+00 TO STA. 846+00

10/22/2013

R080423.DGN

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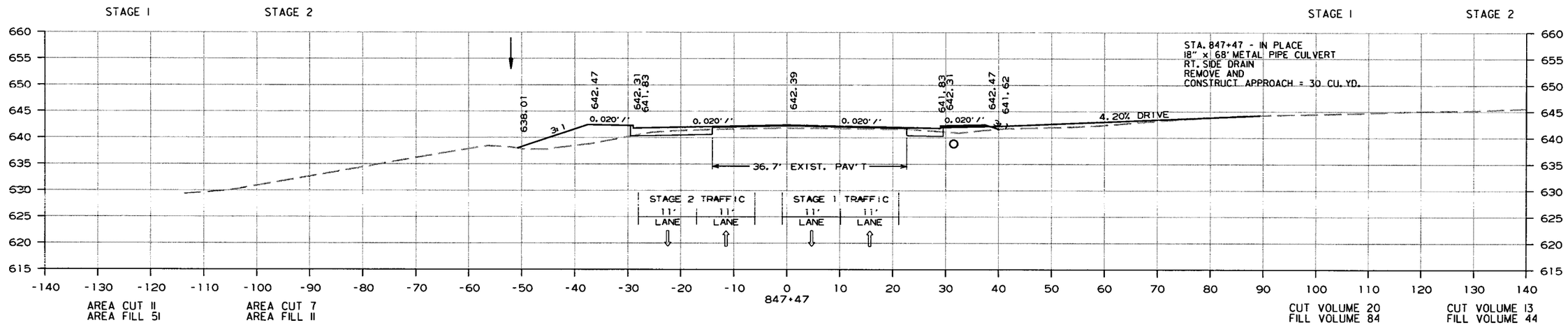
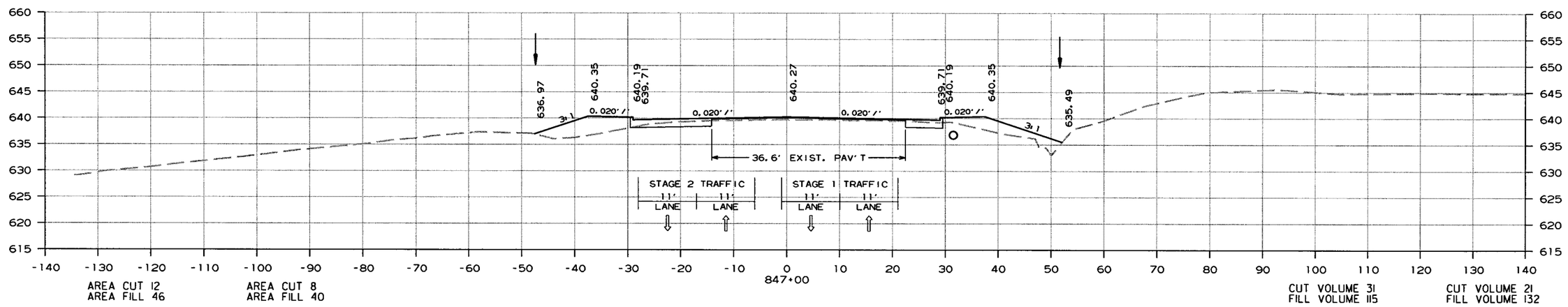
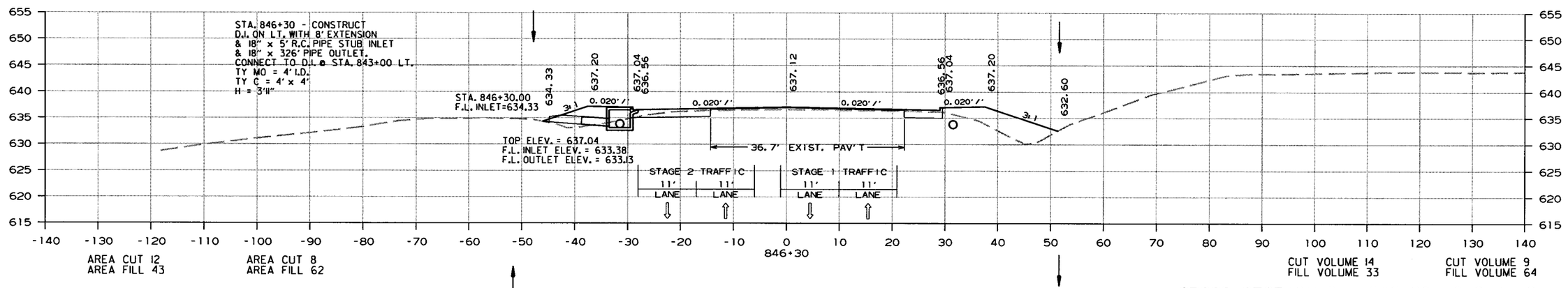
(2) CROSS SECTIONS







CROSS SECTION STA. 846+30 TO STA. 847+47

10/22/2013

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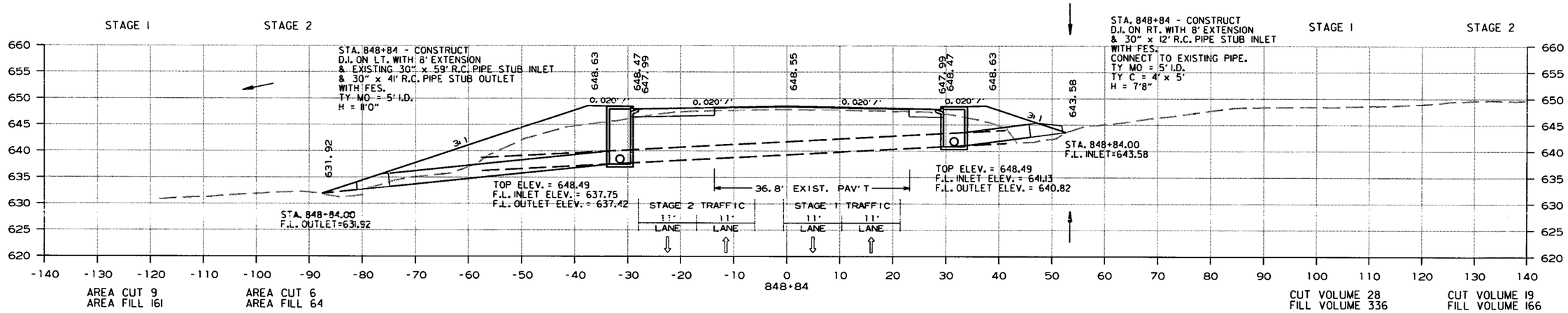
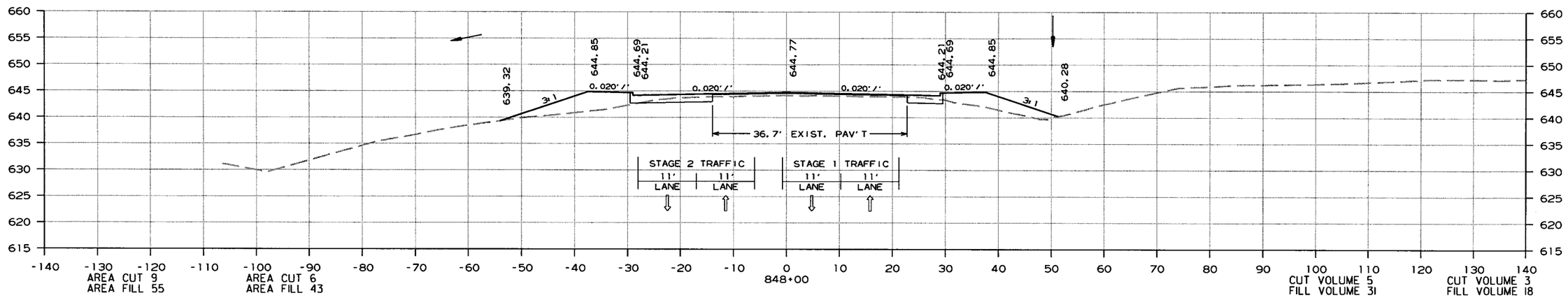
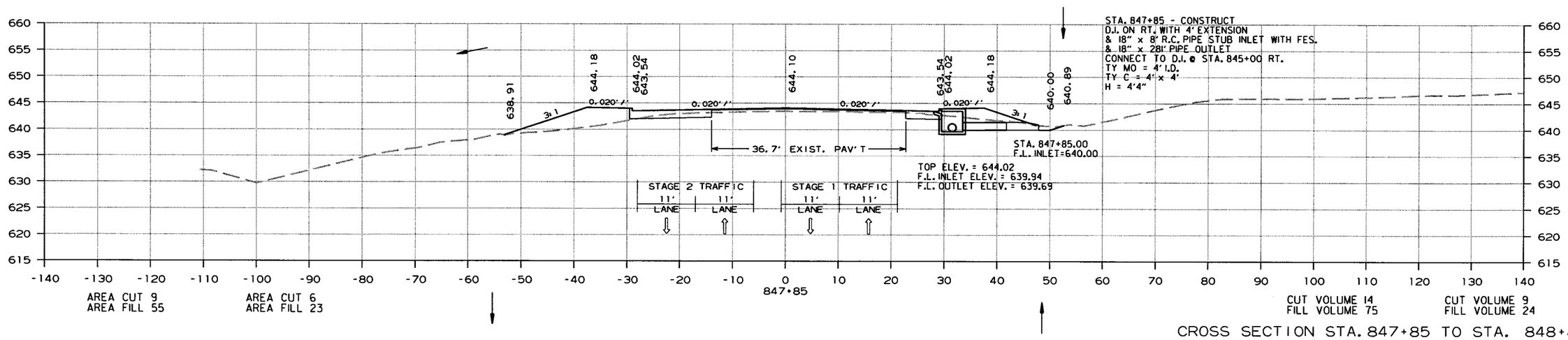
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	420	517

(2) CROSS SECTIONS







CROSS SECTION STA. 847+85 TO STA. 848+84

10/22/2013

R080423.DGN

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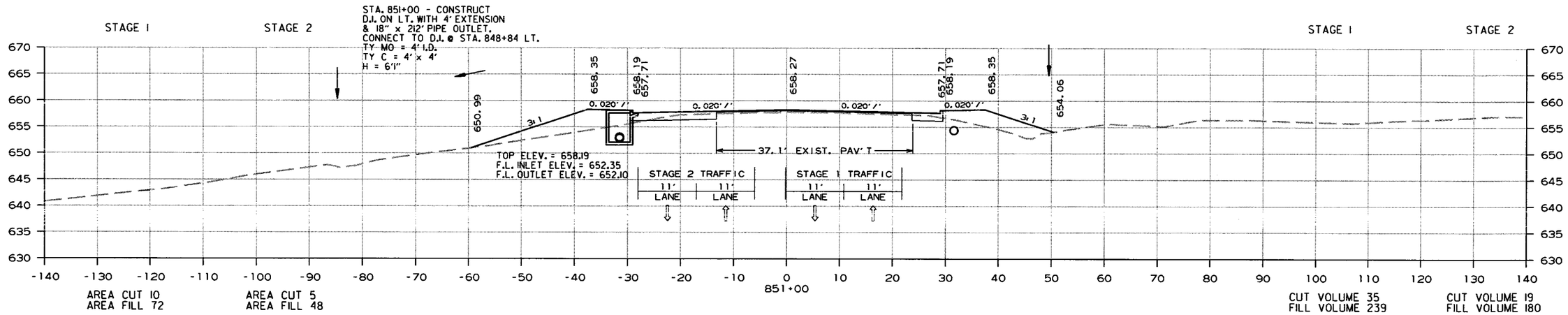
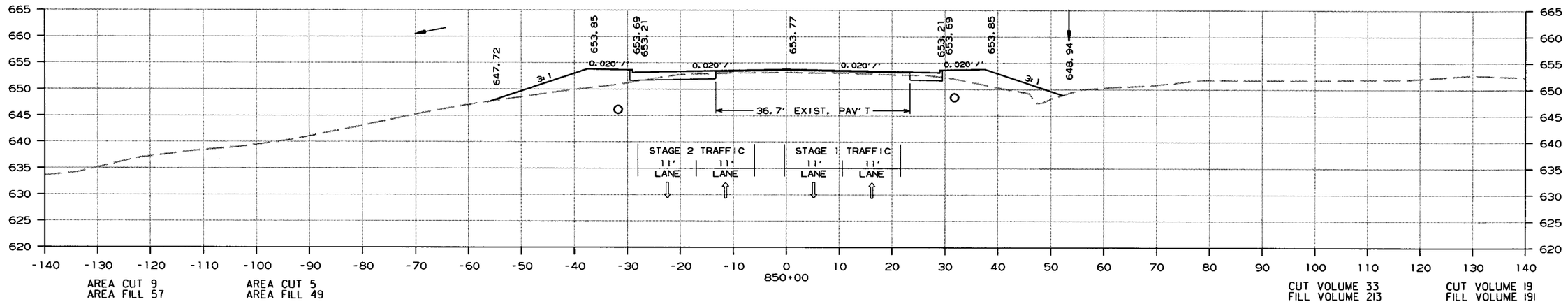
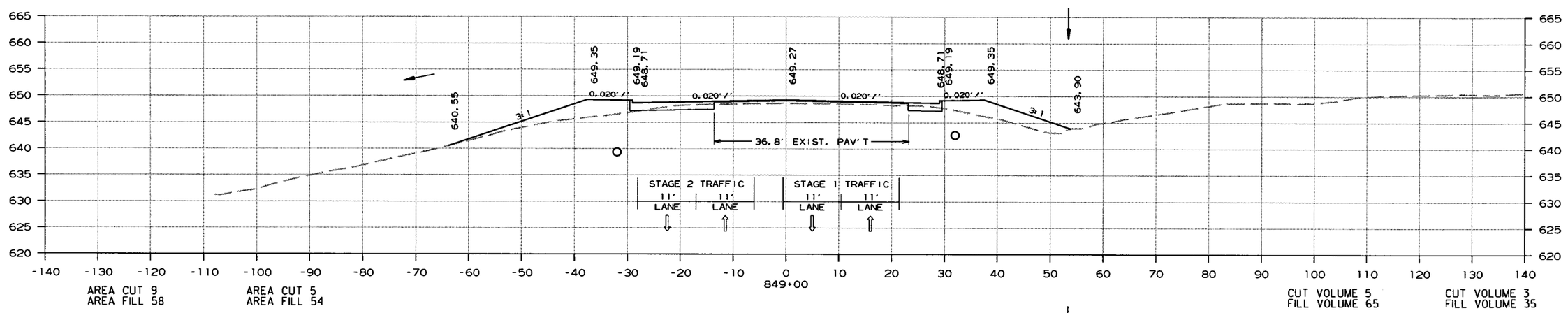
(2) CROSS SECTIONS







CROSS SECTION STA. 849+00 TO STA. 851+00

10/22/2013

R080423.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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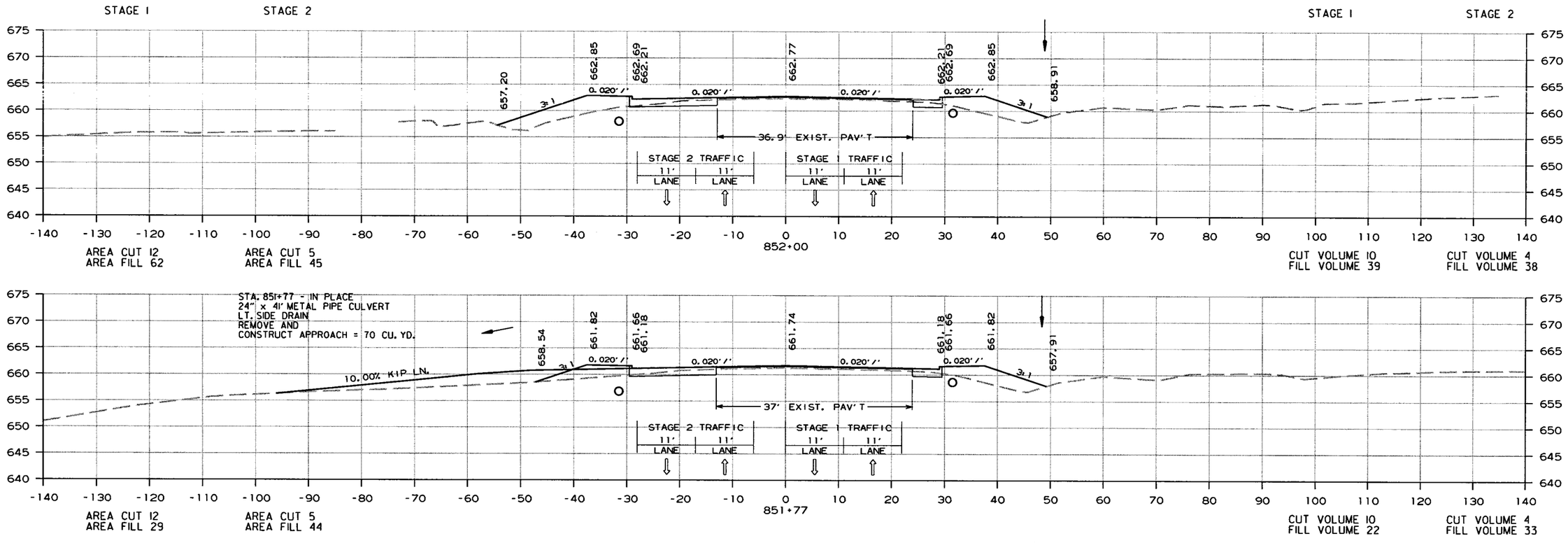
				JOB NO.		080423	422	517

(2) CROSS SECTIONS



CROSS SECTION STA. 851+56 TO STA. 852+00

10/22/2013

R080423.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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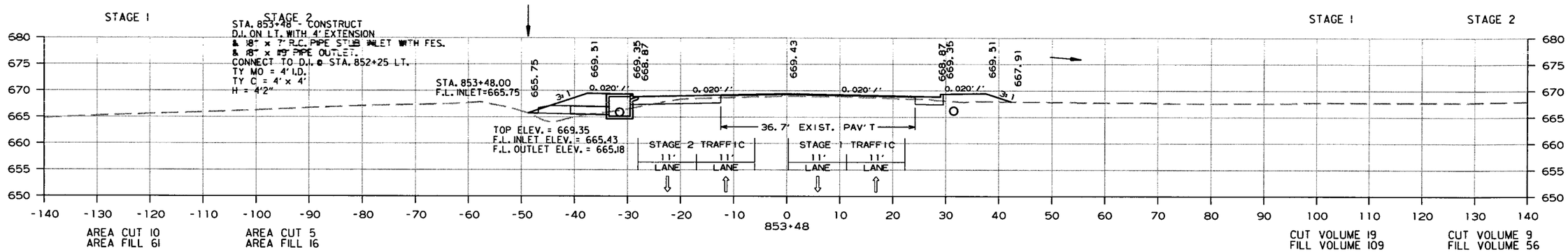
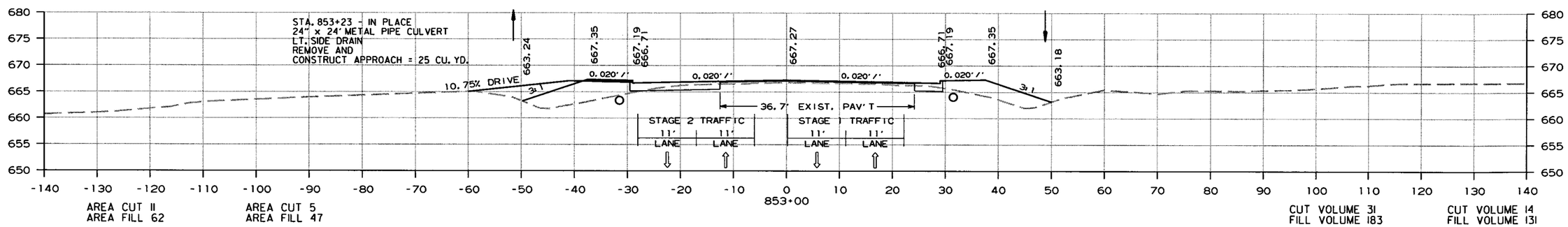
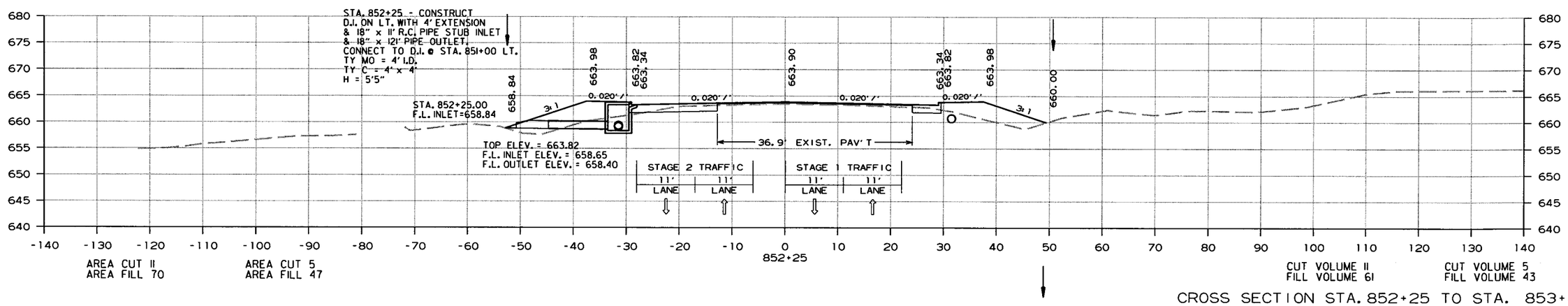
				JOB NO.		080423	423	517

(2) CROSS SECTIONS







CROSS SECTION STA. 852+25 TO STA. 853+48

10/22/2013

R080423.DGN

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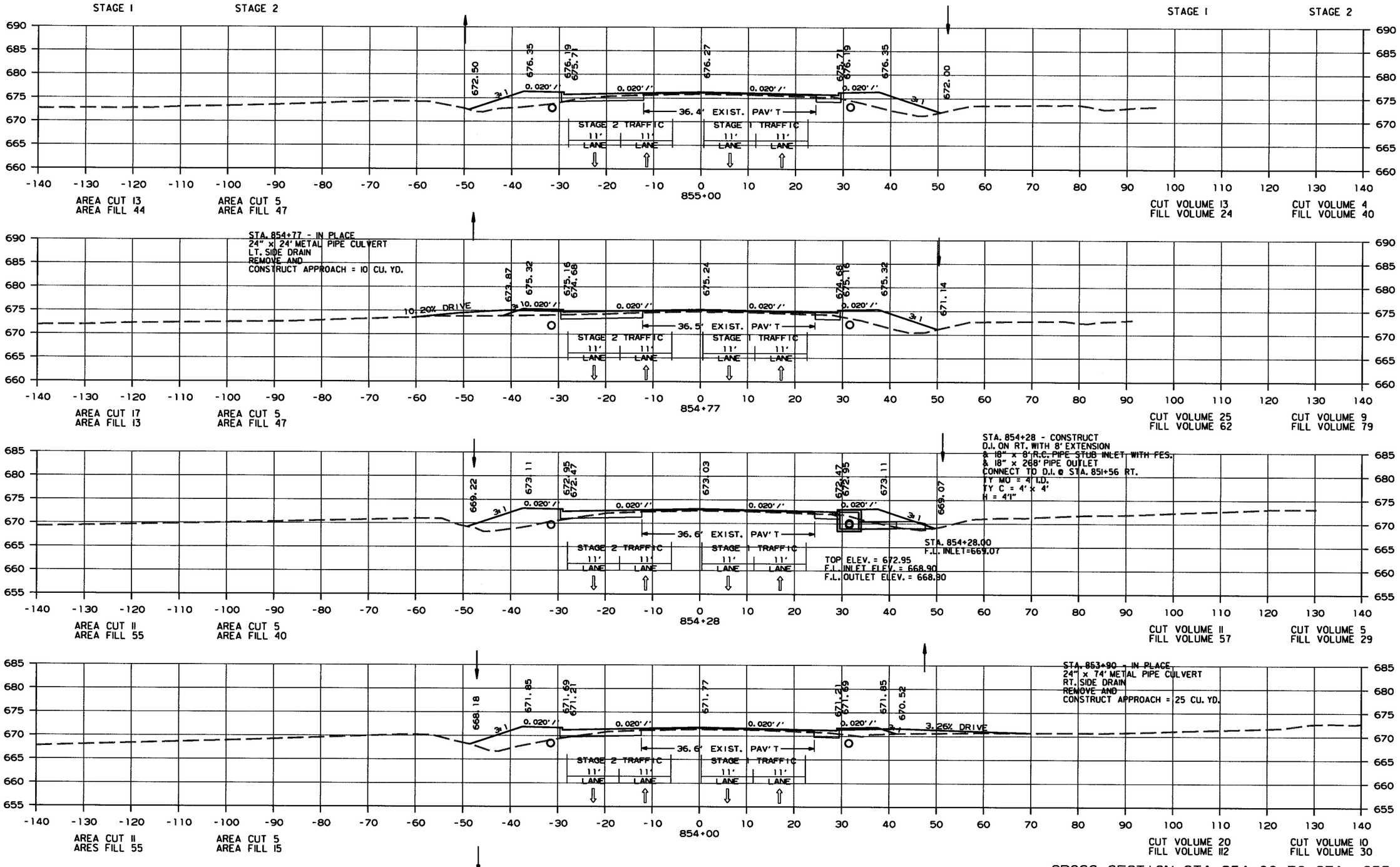
(2) CROSS SECTIONS CG



CROSS SECTION STA. 854+00 TO STA. 855+00

10/9/2017

R080423.DGN

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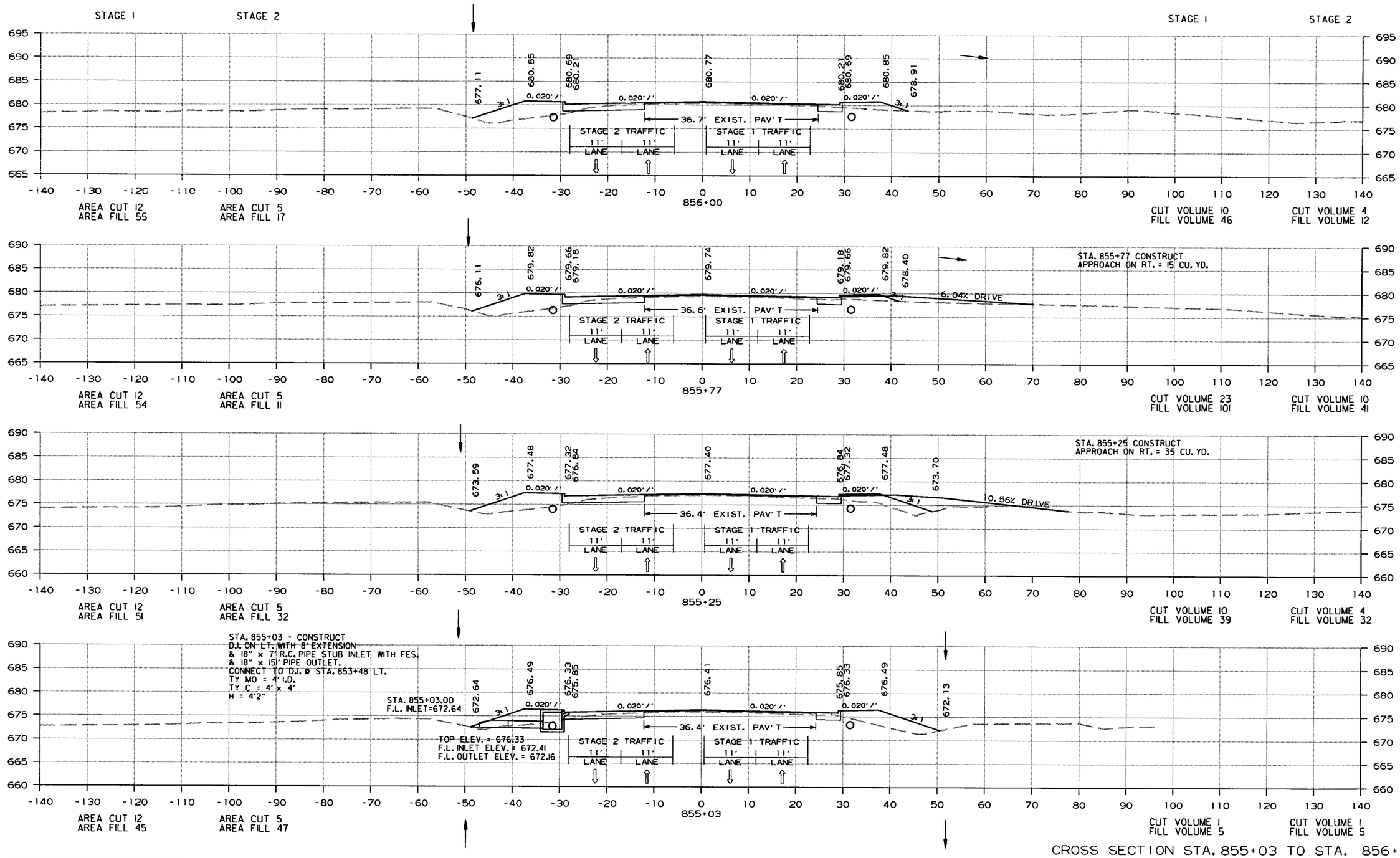
(2) CROSS SECTIONS



CROSS SECTION STA. 855+03 TO STA. 856+00

10/22/2013

R080423.DGN

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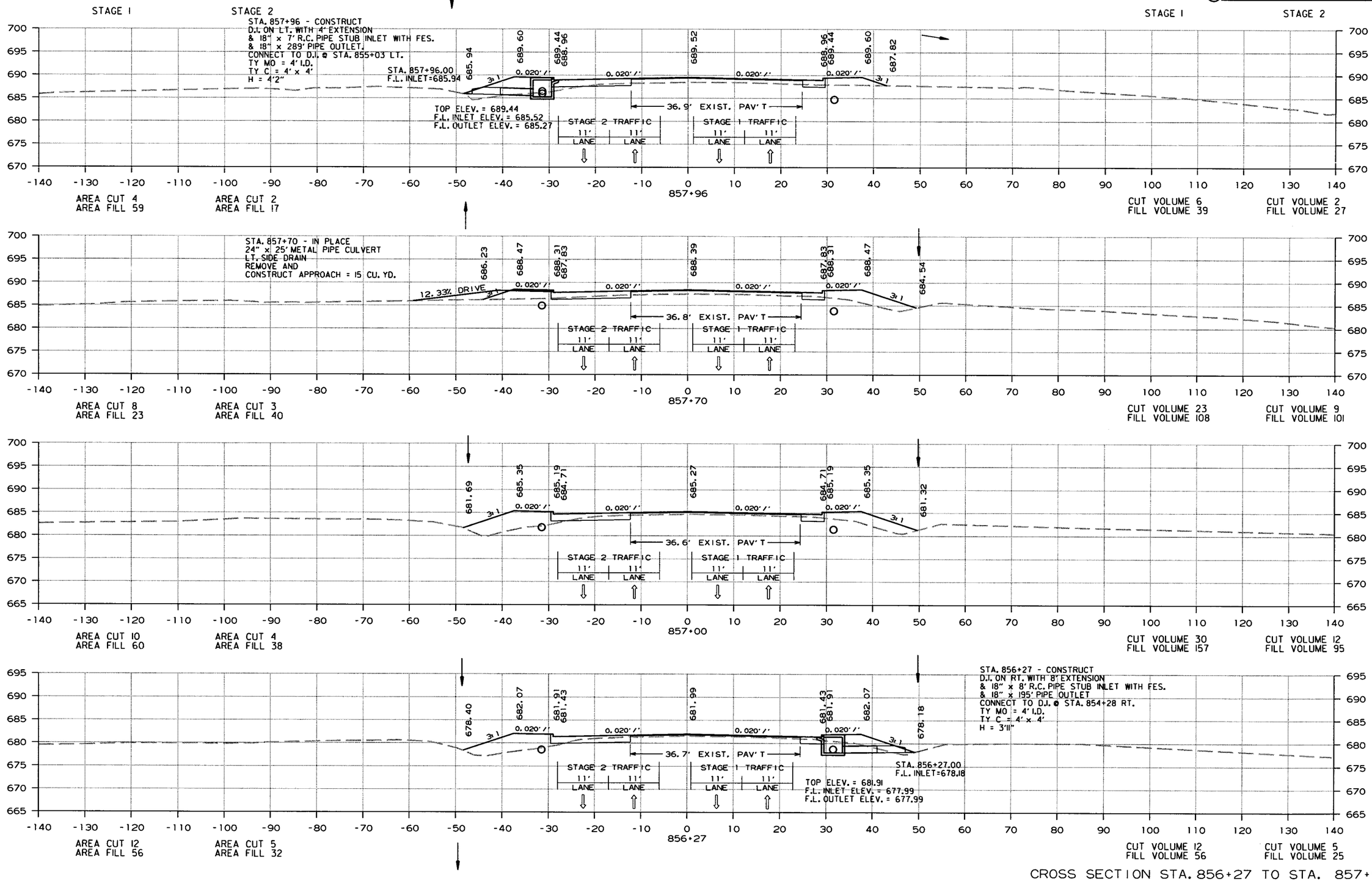
(2) CROSS SECTIONS



CROSS SECTION STA. 856+27 TO STA. 857+96

10/22/2013

R080423.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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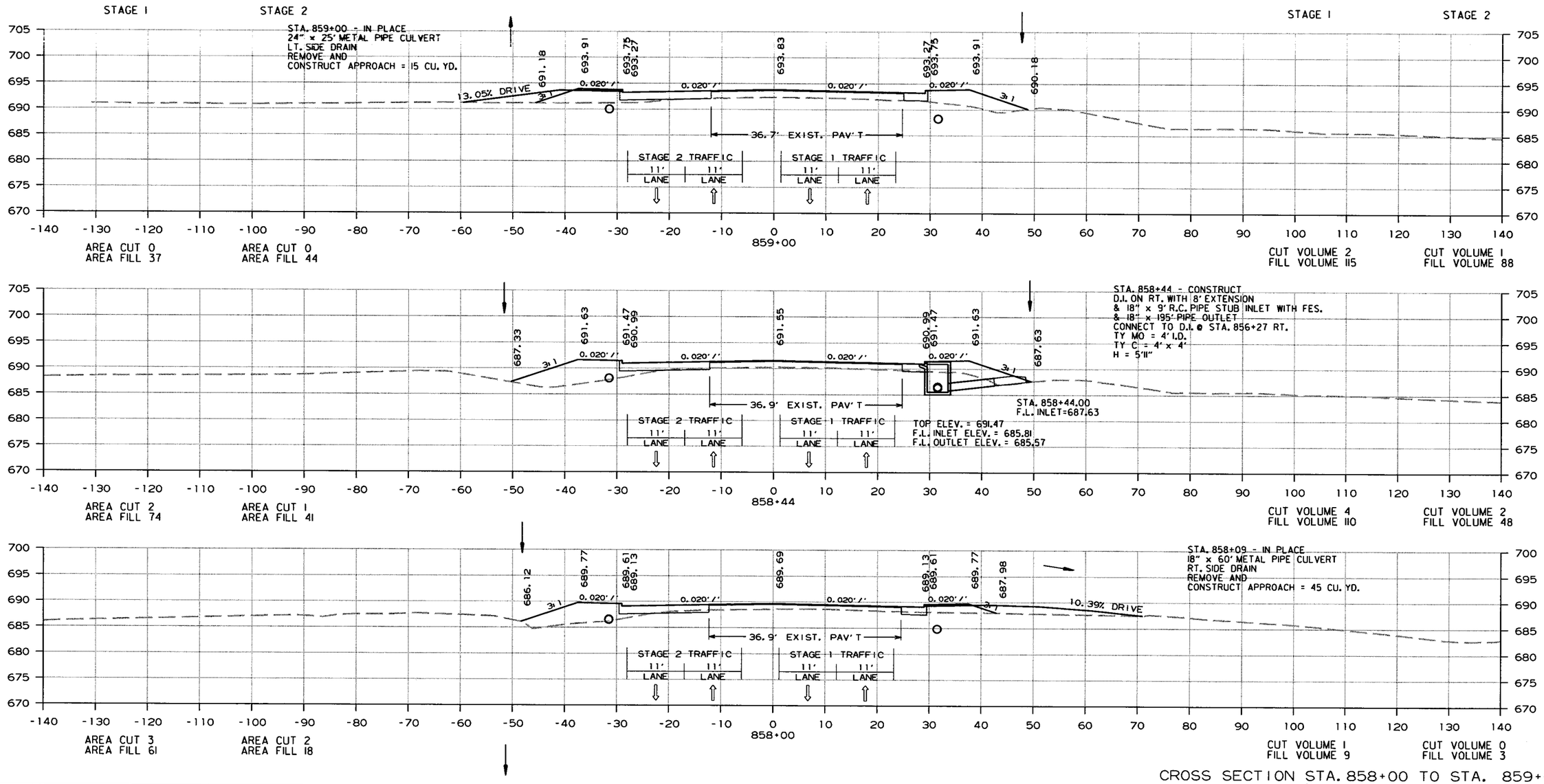
				JOB NO.		080423	427	517

(2) CROSS SECTIONS



CROSS SECTION STA. 858+00 TO STA. 859+00

10/22/2013

R080423.DGN

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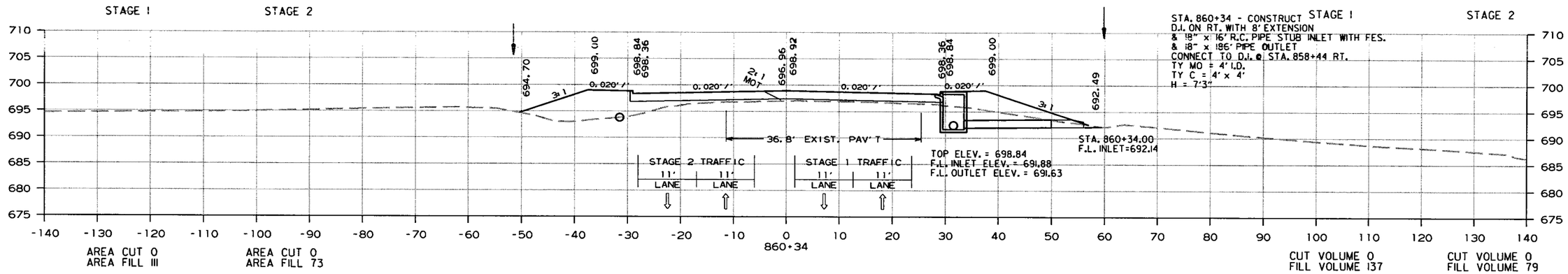
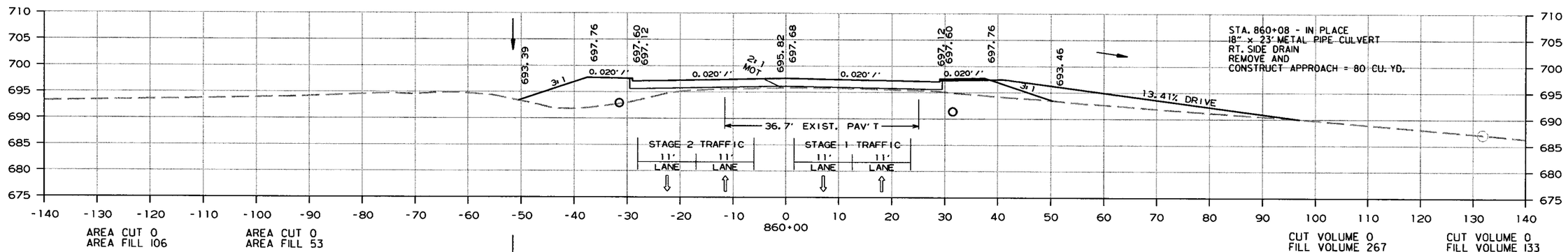
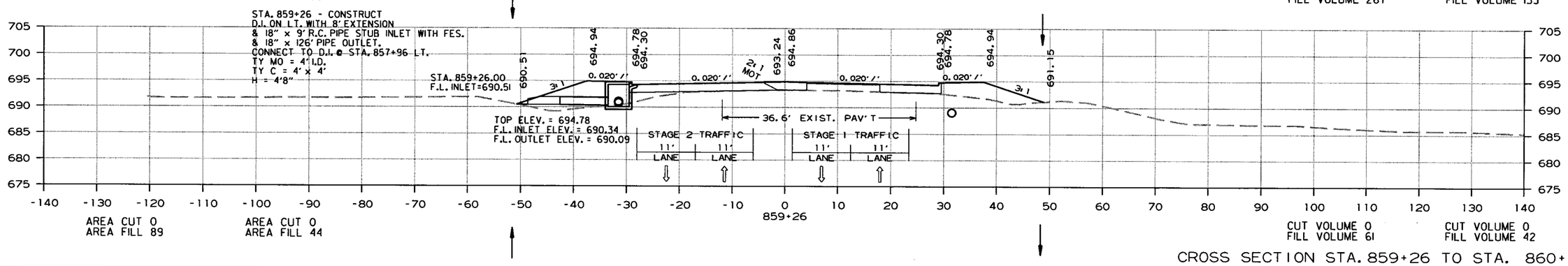
(2) CROSS SECTIONS







CROSS SECTION STA. 859+26 TO STA. 860+34

10/22/2013

R080423.DGN

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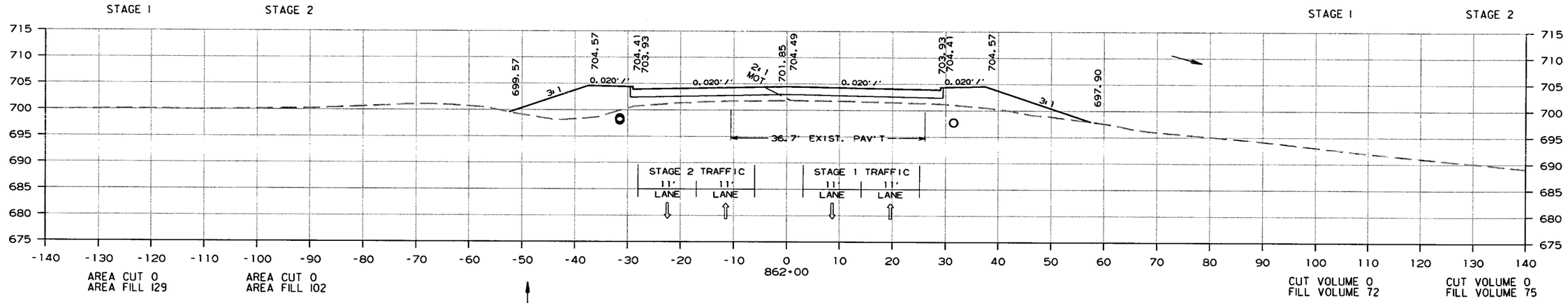
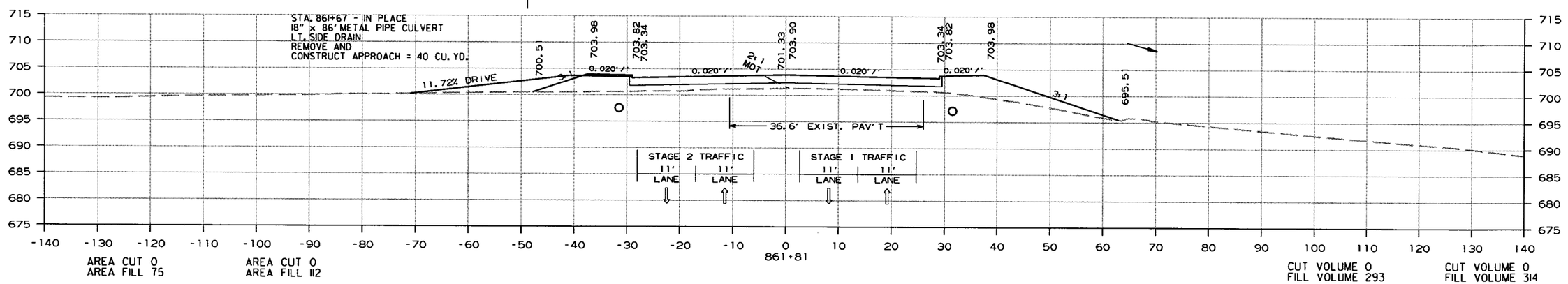
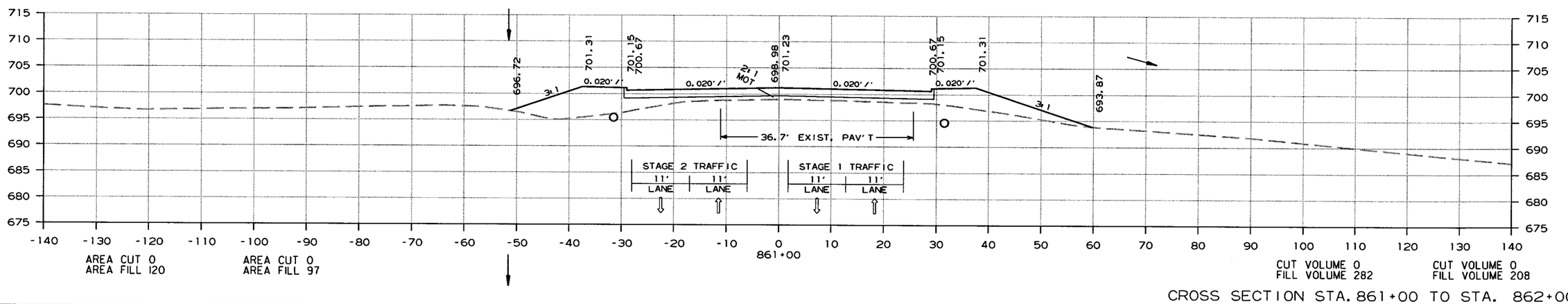
(2) CROSS SECTIONS







CROSS SECTION STA. 861+00 TO STA. 862+00

10/22/2013

R080423.DGN

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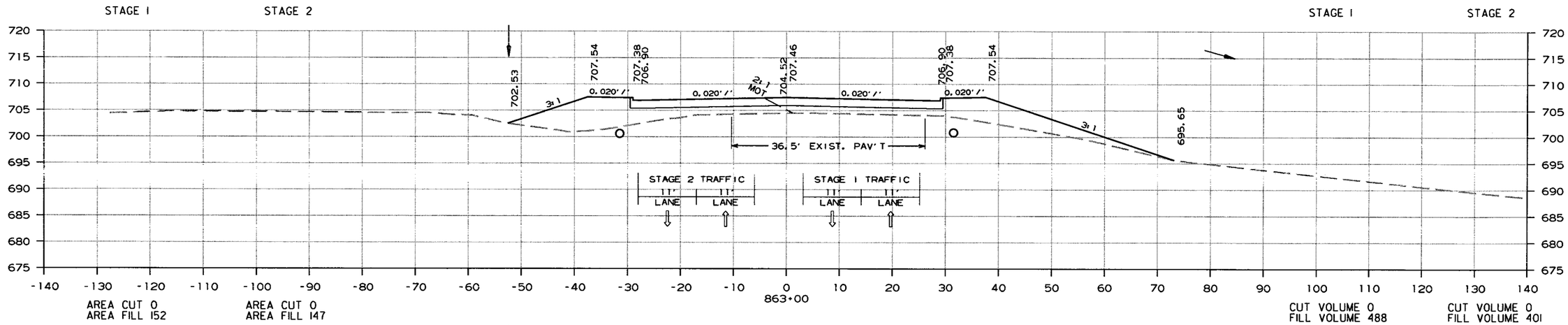
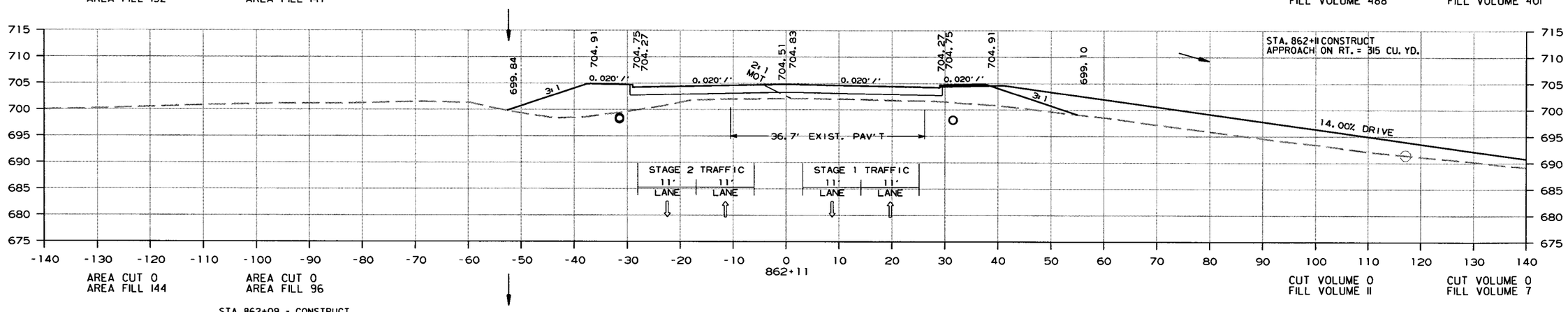
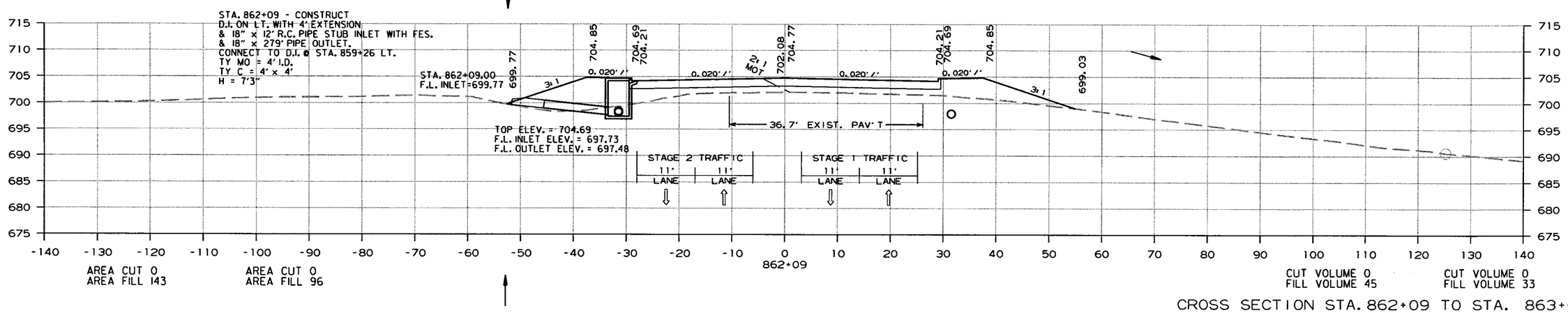
(2) CROSS SECTIONS







CROSS SECTION STA. 862+09 TO STA. 863+00

10/22/2013

R080423.DGN

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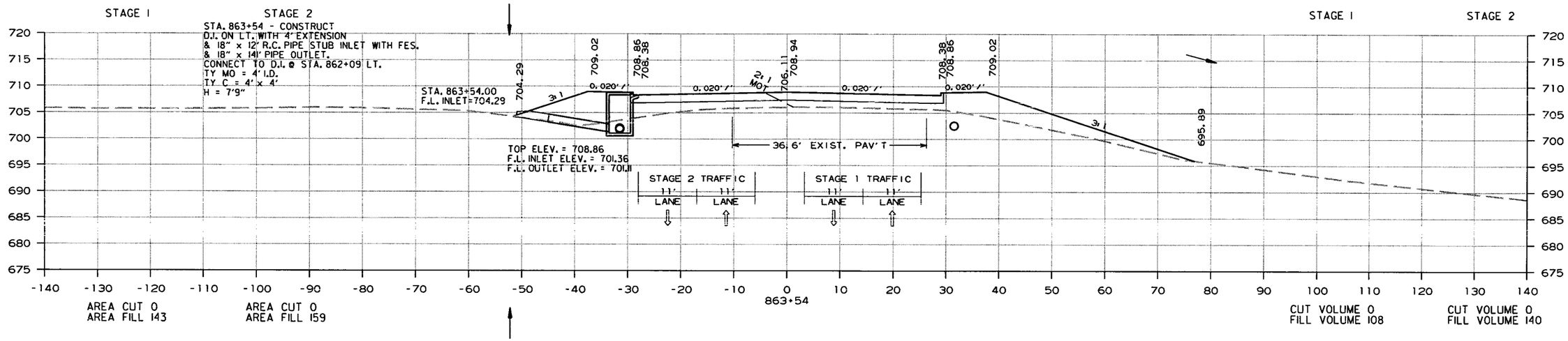
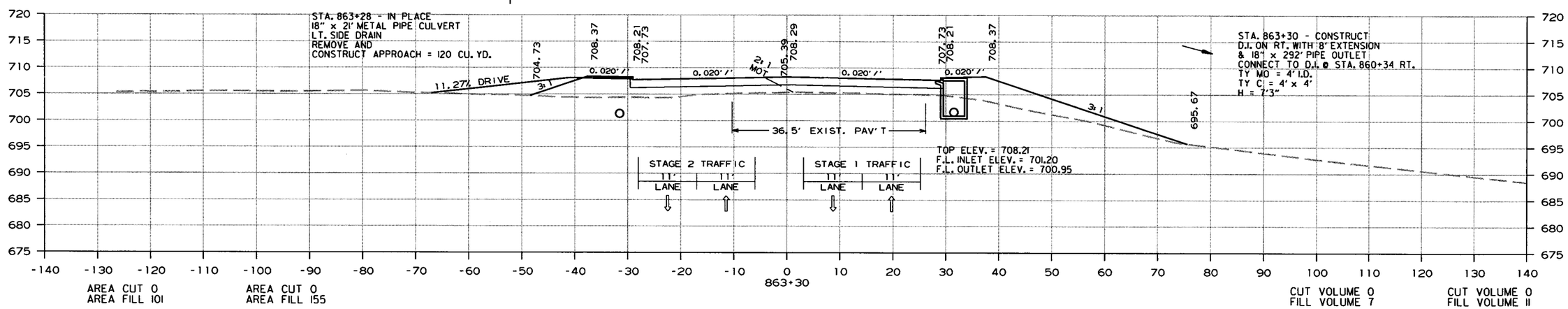
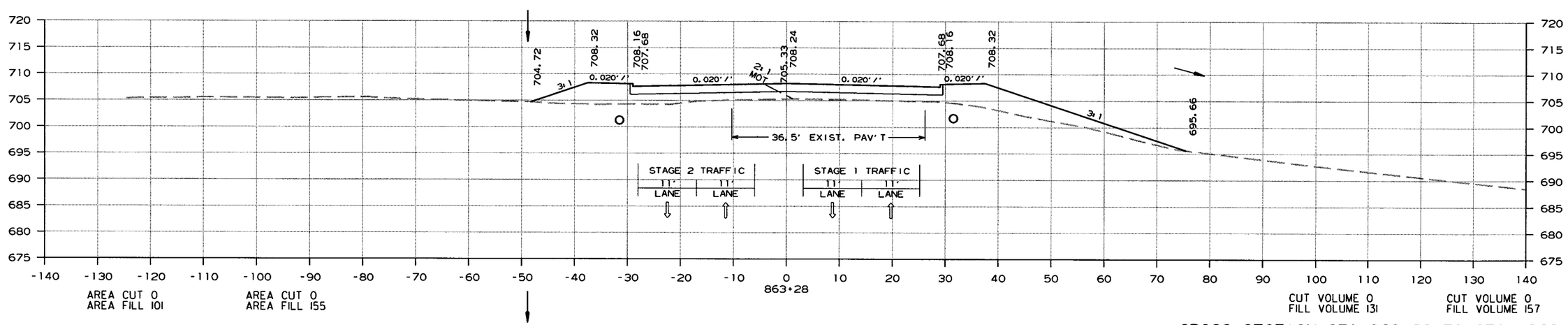
(2) CROSS SECTIONS







CROSS SECTION STA. 863+28 TO STA. 863+54

10/22/2013

R080423.DGN

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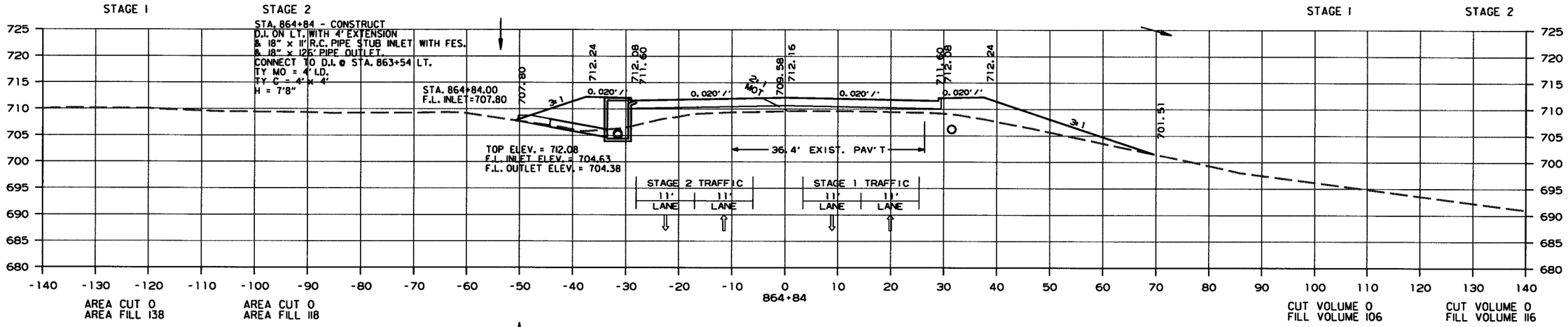
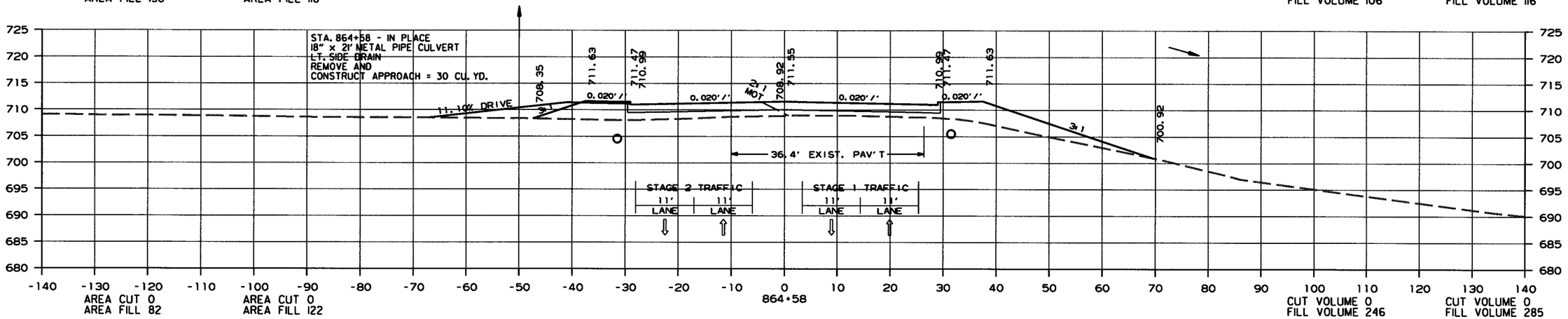
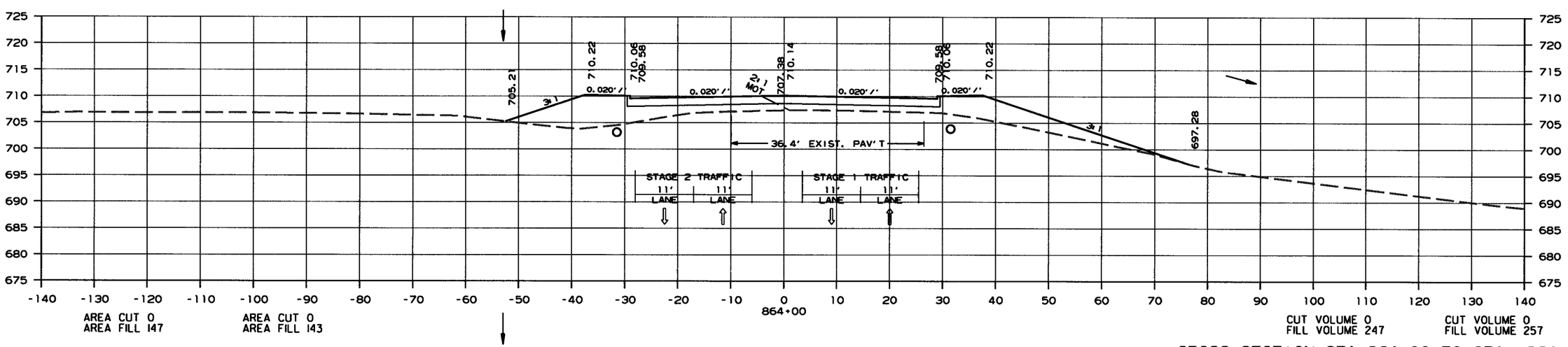
(2) CROSS SECTIONS CG







CROSS SECTION STA. 864+00 TO STA. 864+84

10/9/2017

R080423.DGN

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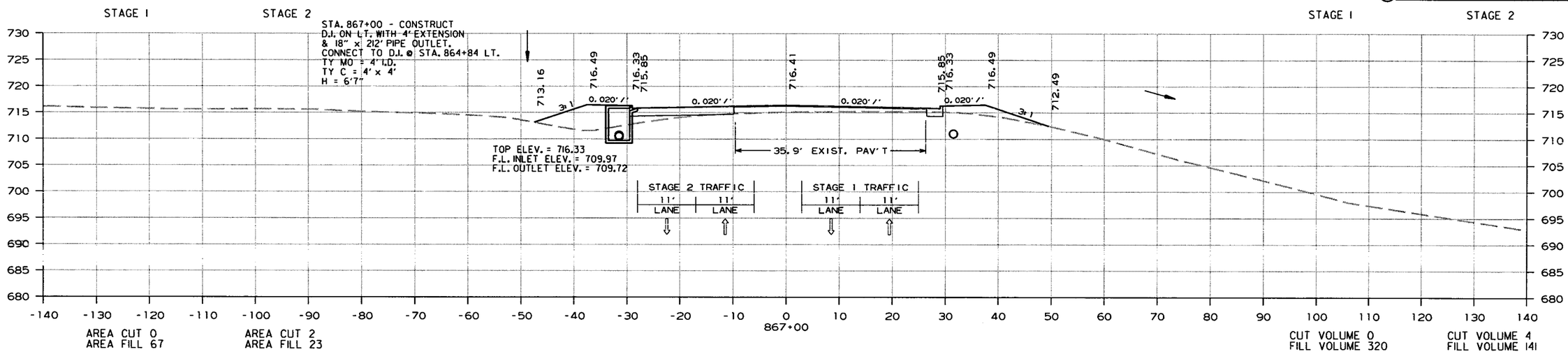
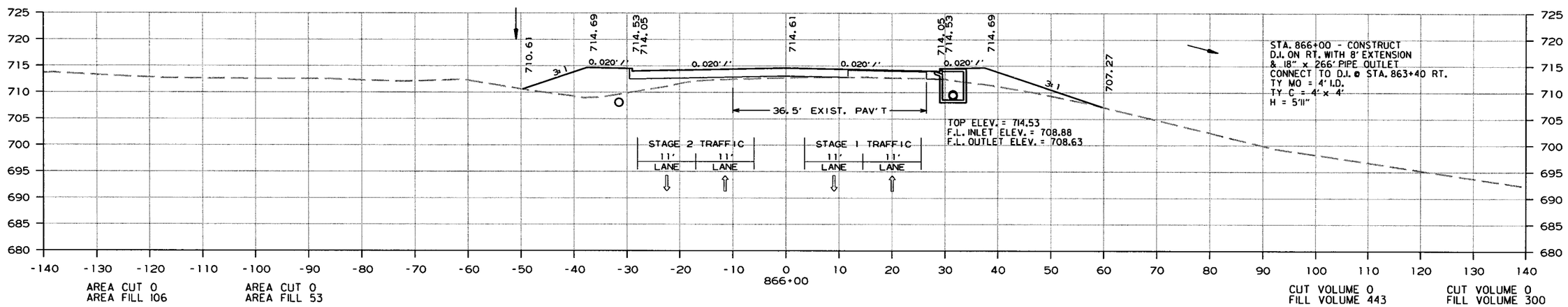
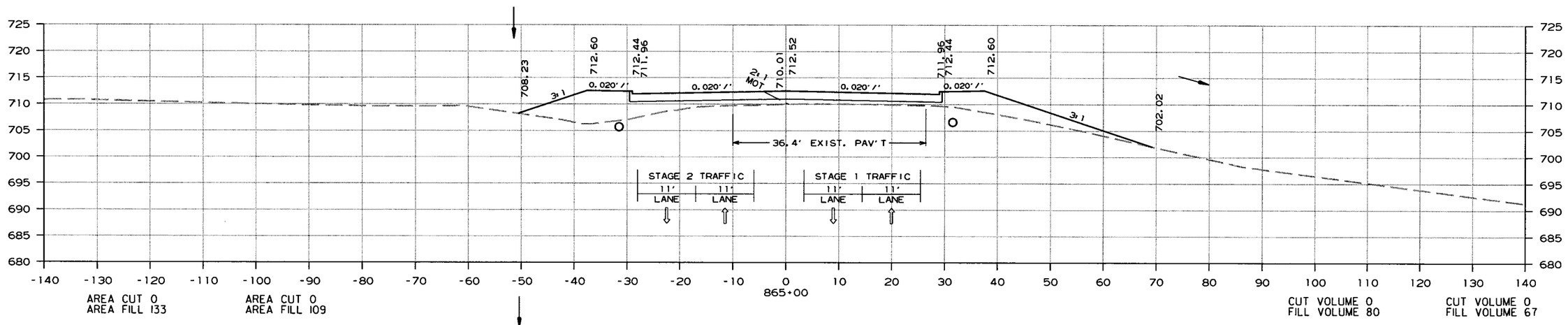
(2) CROSS SECTIONS







CROSS SECTION STA. 865+00 TO STA. 867+00

10/22/2013

R080423.DGN

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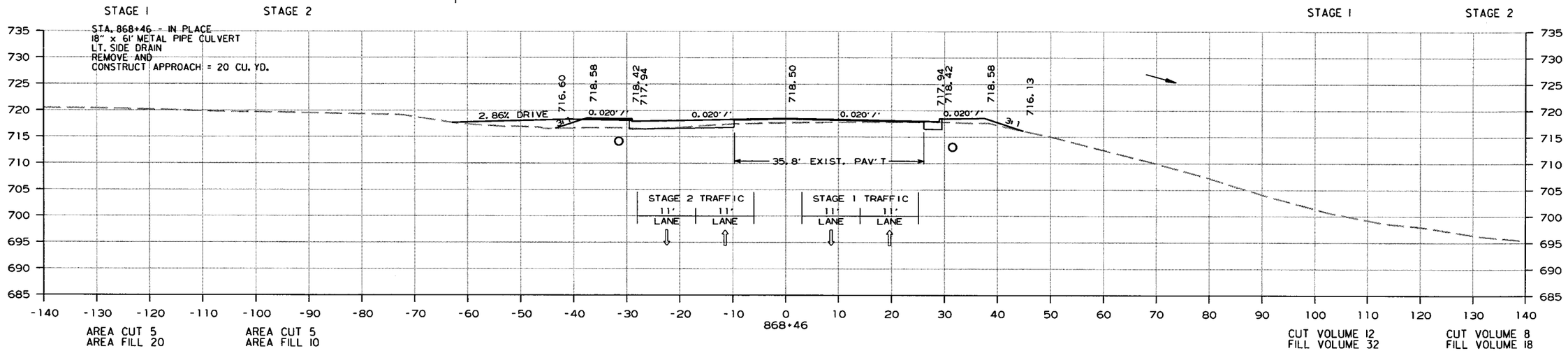
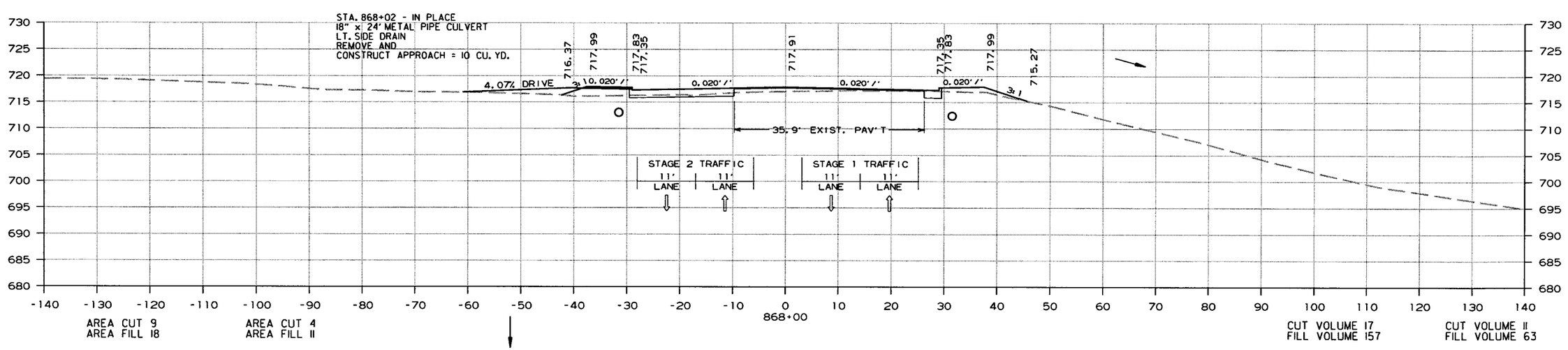
(2) CROSS SECTIONS





CROSS SECTION STA. 868+00 TO STA. 868+46

10/22/2013

R080423.DGN

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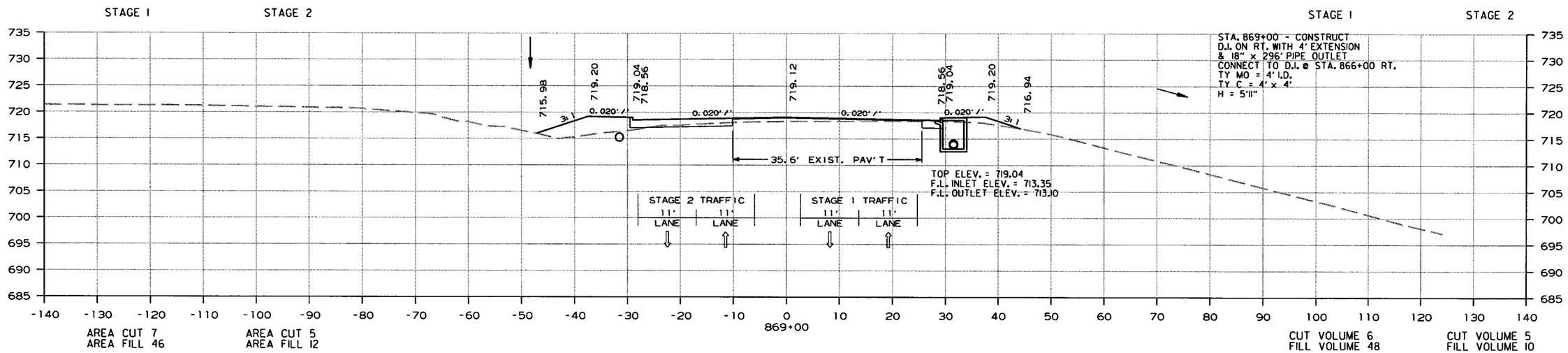
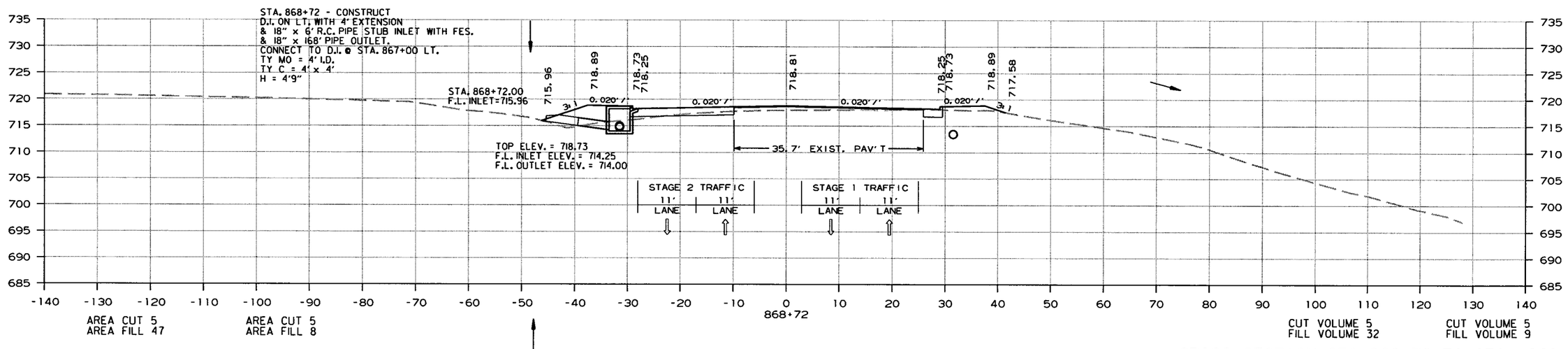
(2) CROSS SECTIONS





CROSS SECTION STA. 868+72 TO STA. 869+00

10/22/2013

R080423.DGN

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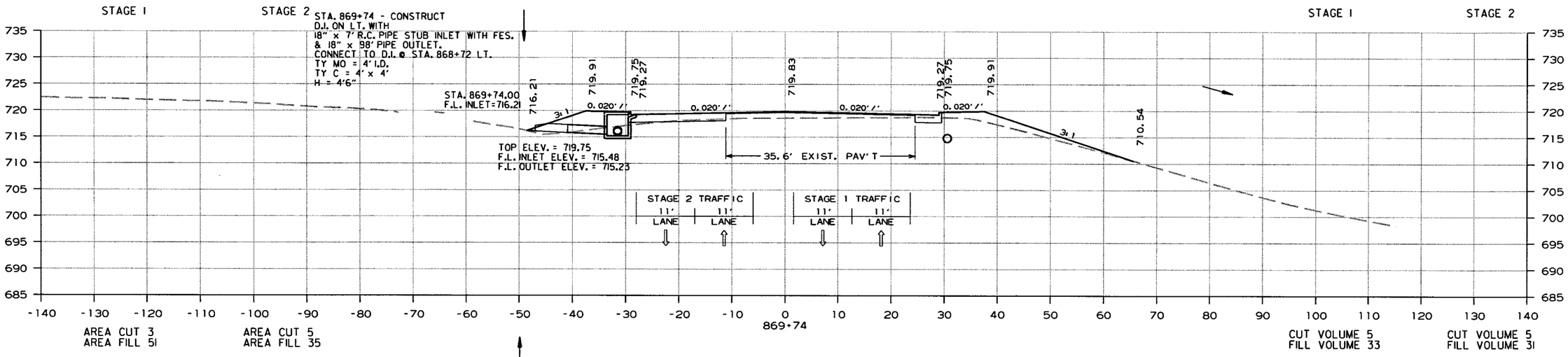
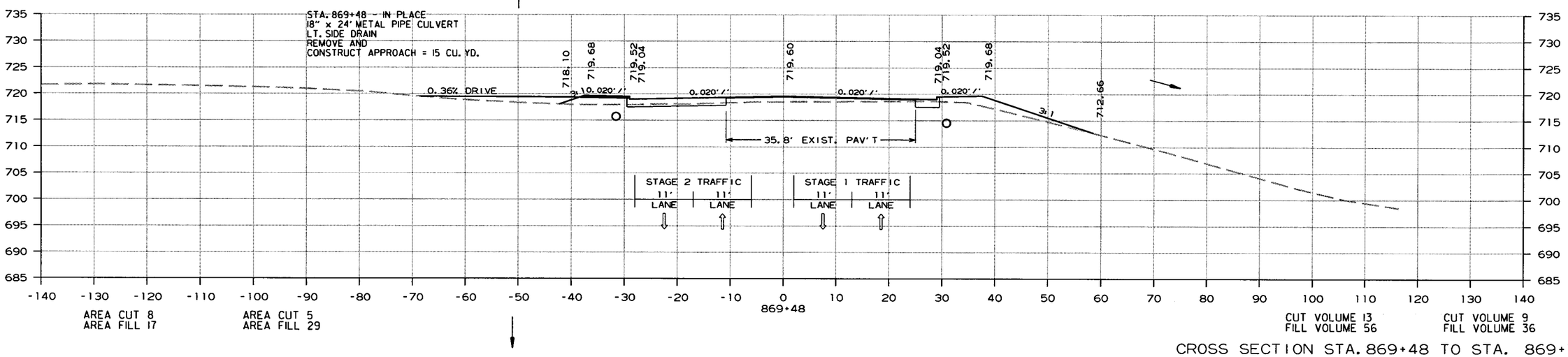
(2) CROSS SECTIONS





CROSS SECTION STA. 869+48 TO STA. 869+74

10/22/2013

R080423.DGN

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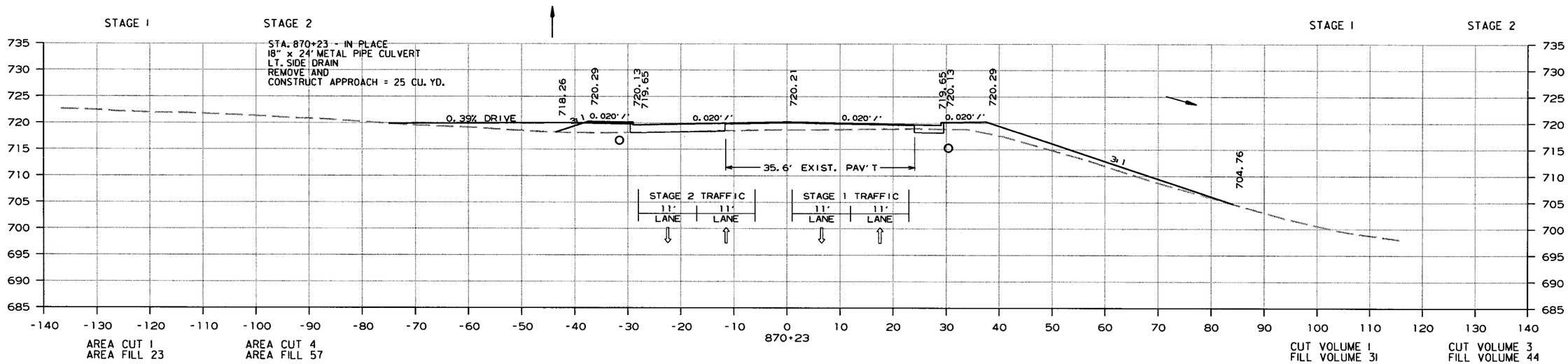
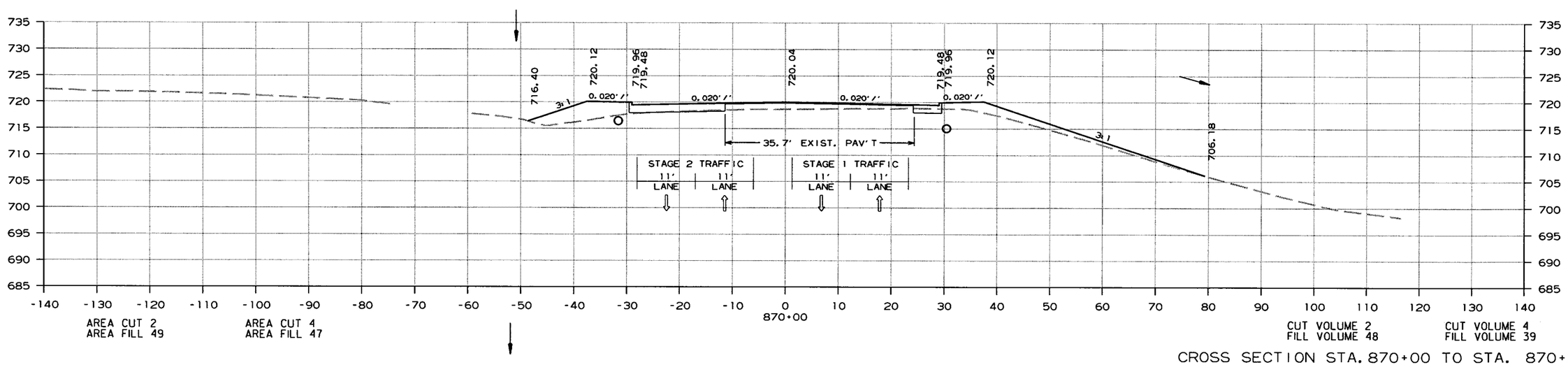
(2) CROSS SECTIONS





CROSS SECTION STA. 870+00 TO STA. 870+23

10/22/2013

R080423.DGN

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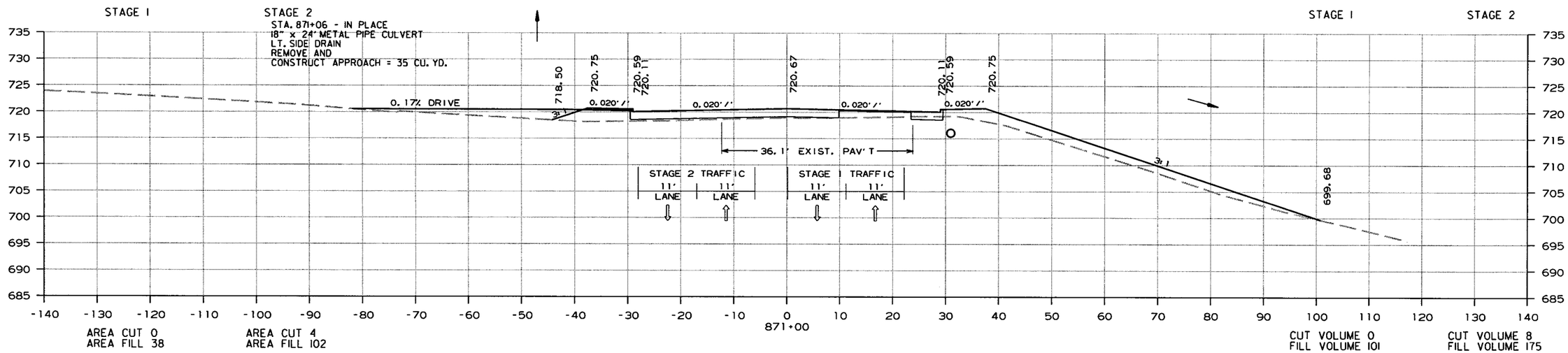
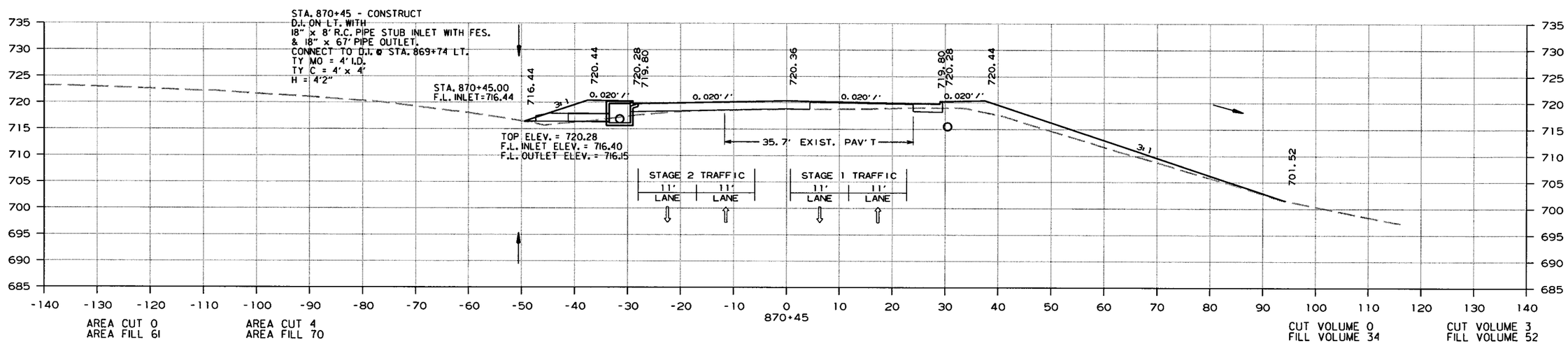
2 CROSS SECTIONS





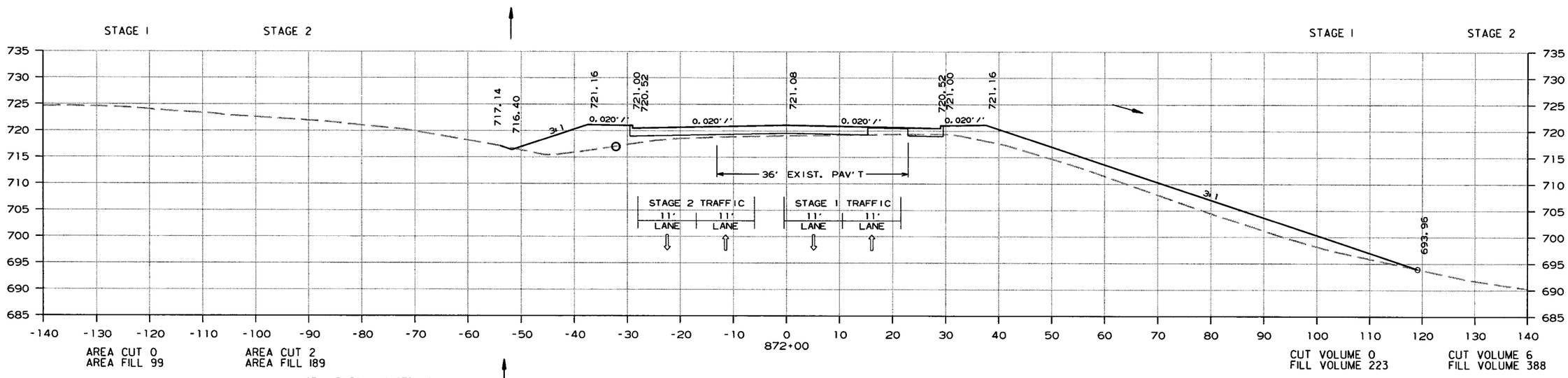
CROSS SECTION STA. 870+45 TO STA. 871+00

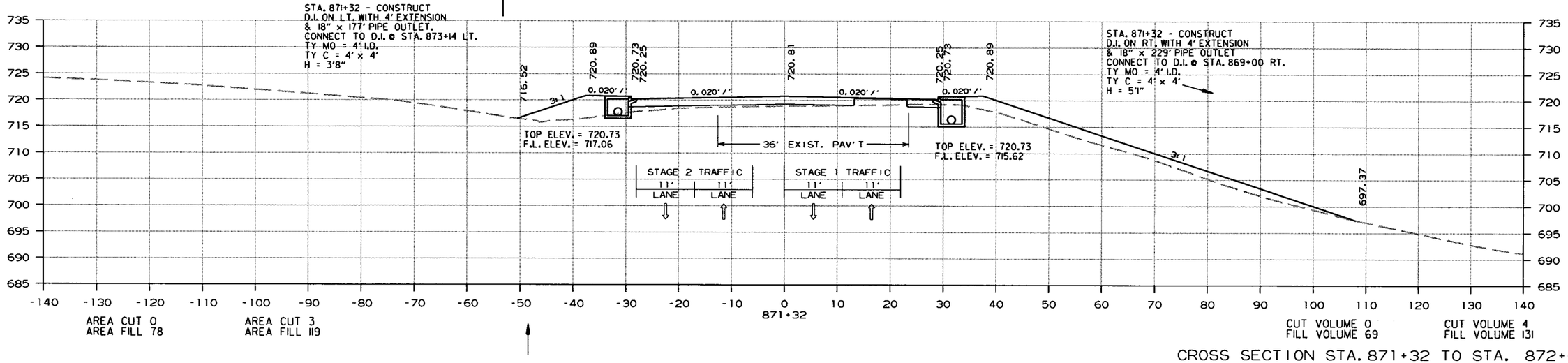
10/22/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	439	517

(2) CROSS SECTIONS





CROSS SECTION STA. 871+32 TO STA. 872+00

10/22/2013

R080423.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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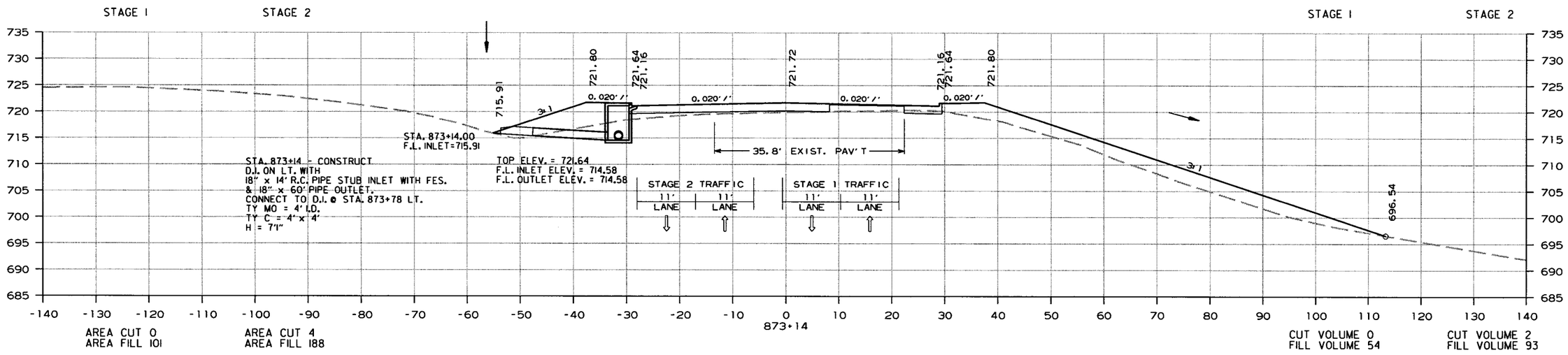
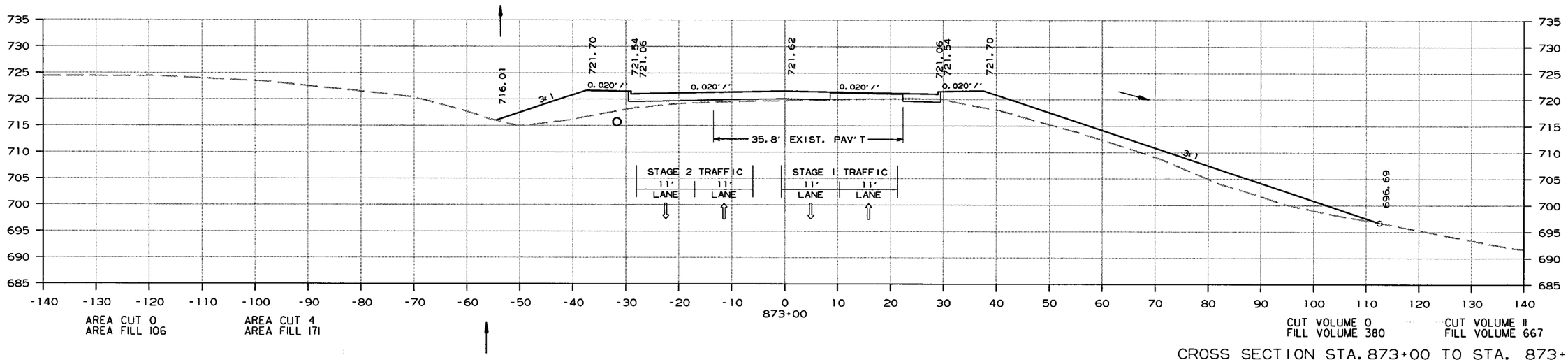
				JOB NO.		080423	440	517

(2) CROSS SECTIONS





CROSS SECTION STA. 873+00 TO STA. 873+14

10/22/2013

R080423.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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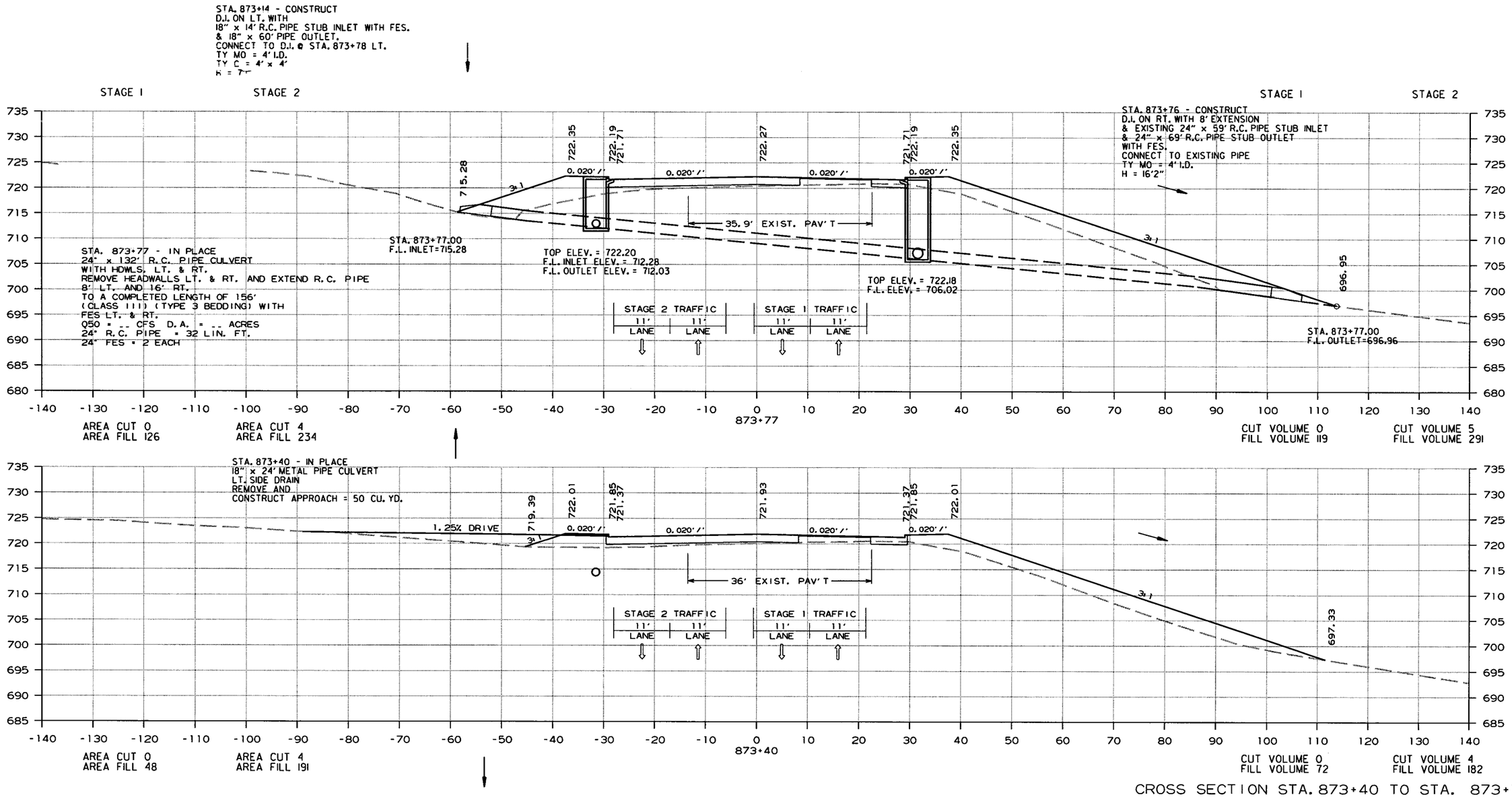
				JOB NO.		080423	441	517

(2) CROSS SECTIONS



CROSS SECTION STA. 873+40 TO STA. 873+77

10/22/2013

R080423.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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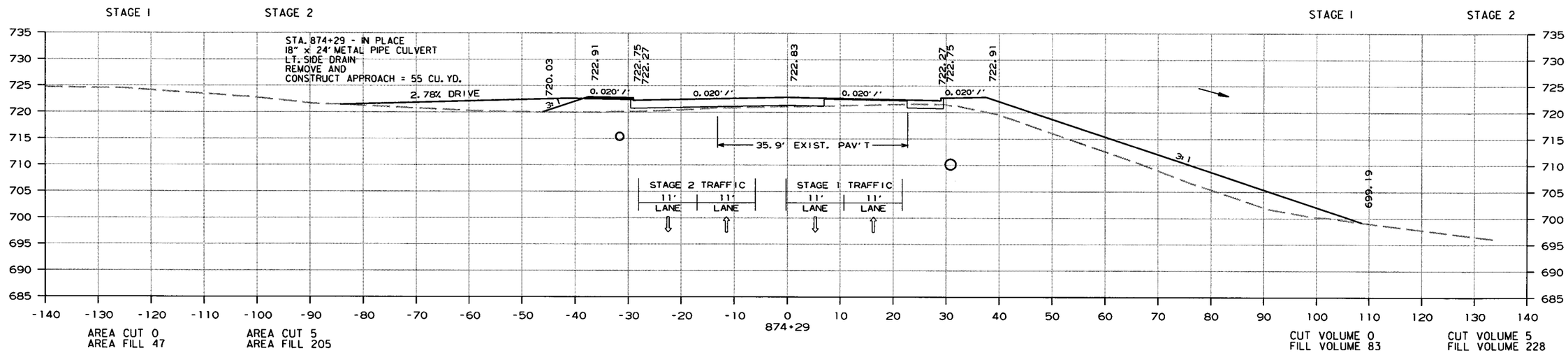
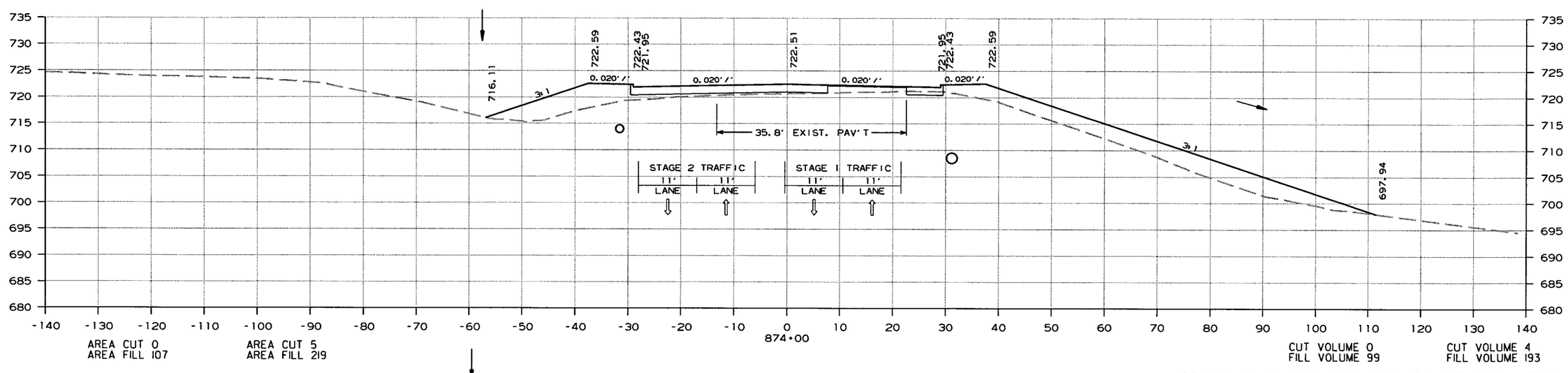
				JOB NO.		080423	442	517

(2) CROSS SECTIONS





CROSS SECTION STA. 874+00 TO STA. 874+29

10/22/2013

R080423.DGN

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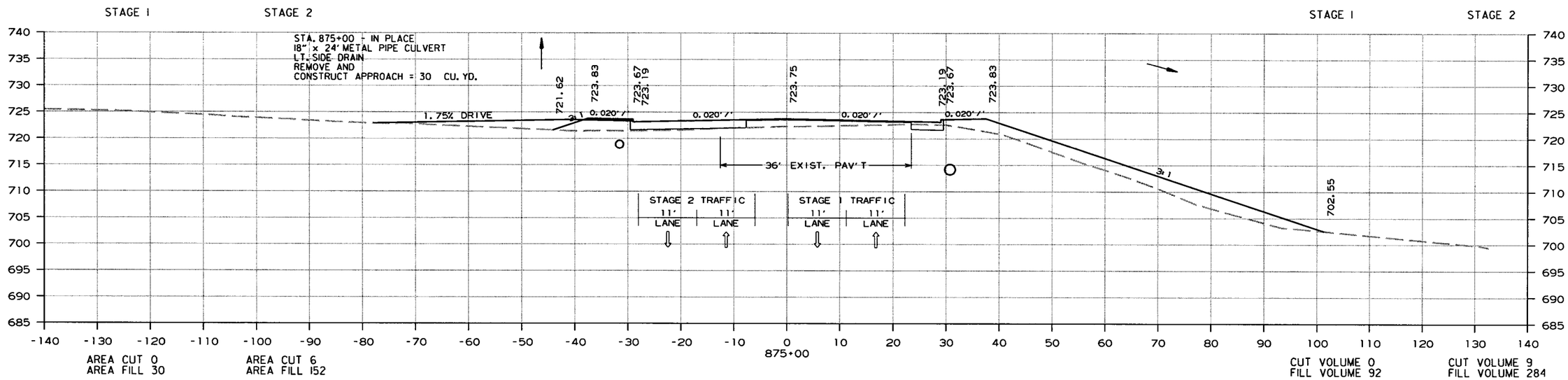
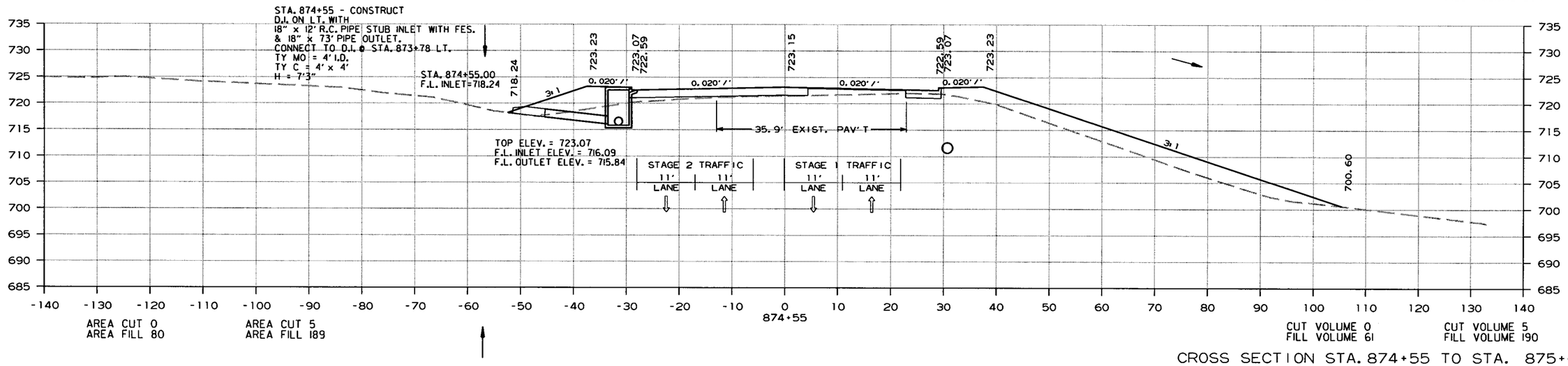
(2) CROSS SECTIONS





CROSS SECTION STA. 874+55 TO STA. 875+00

10/22/2013

R080423.DGN

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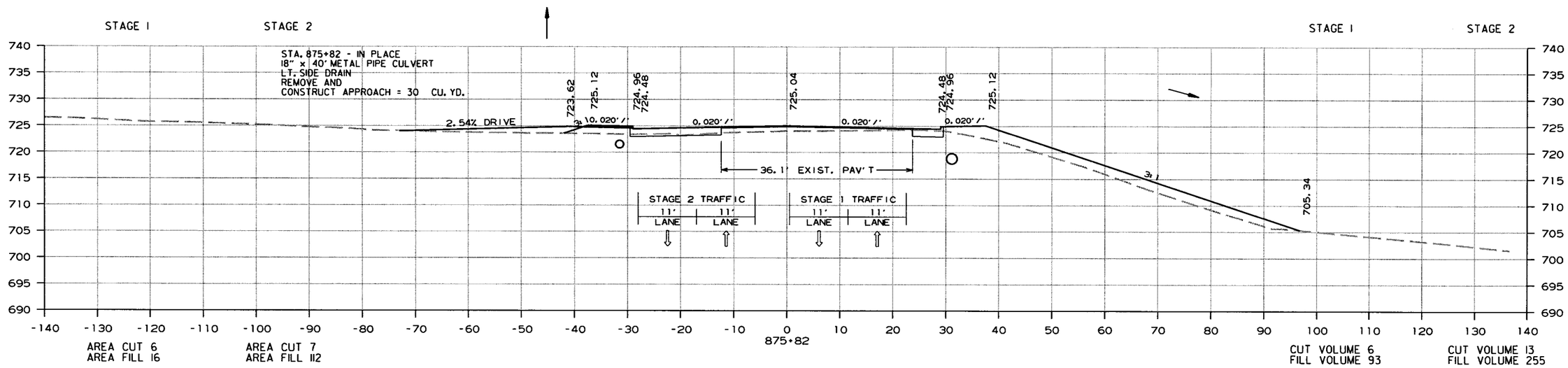
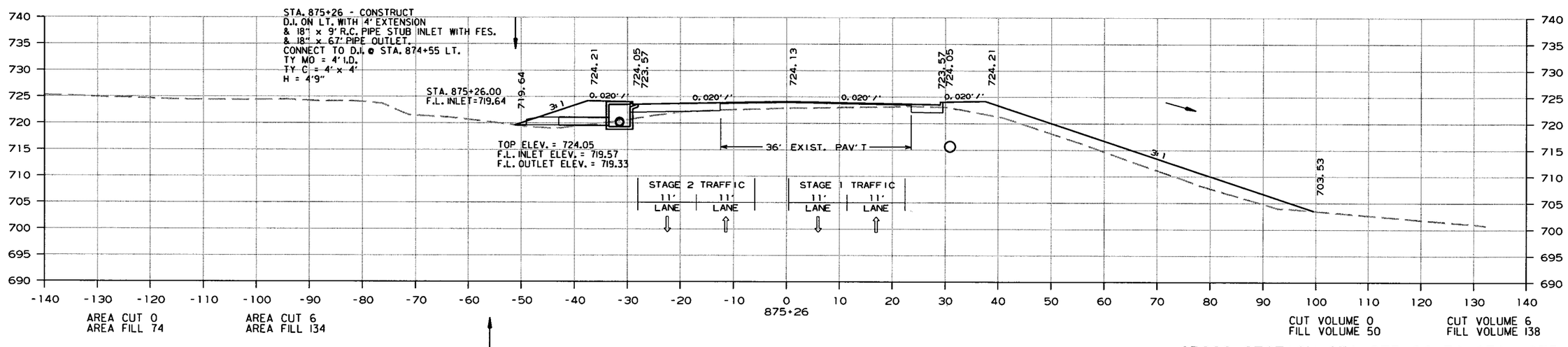
(2) CROSS SECTIONS





CROSS SECTION STA. 875+26 TO STA. 875+82

10/22/2013

R080423.DGN

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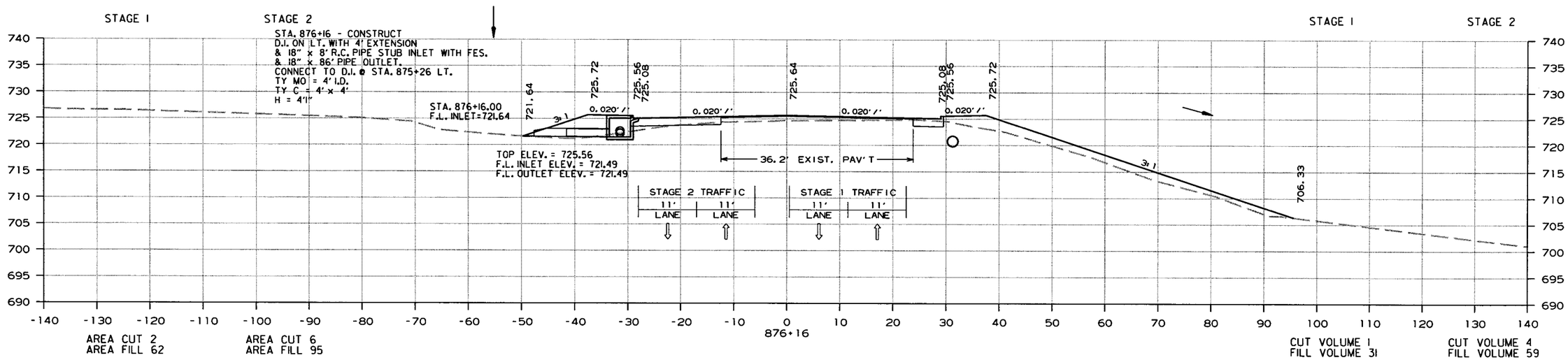
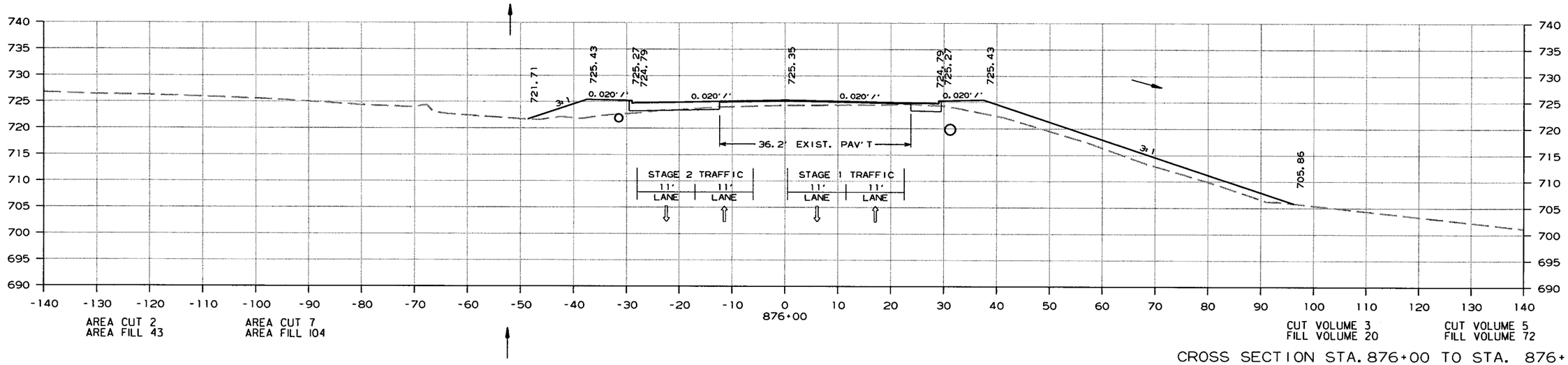
(2) CROSS SECTIONS





CROSS SECTION STA. 876+00 TO STA. 876+16

10/22/2013

R080423.DGN

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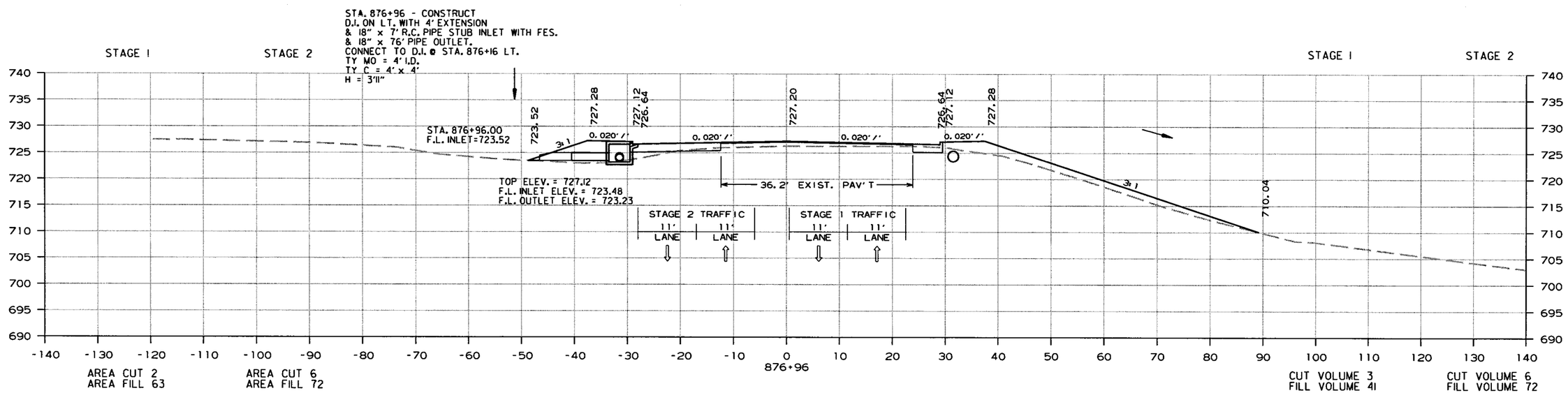
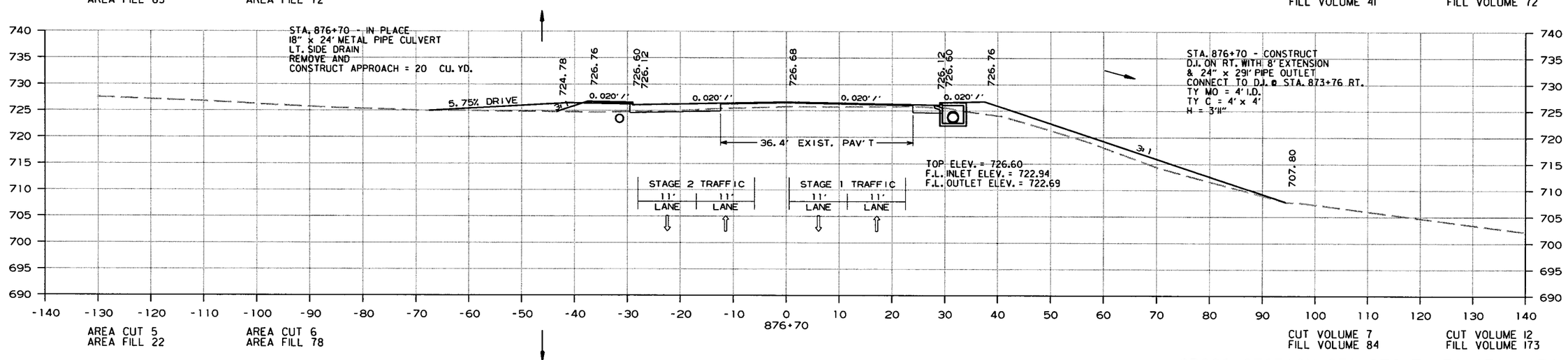
(2) CROSS SECTIONS





CROSS SECTION STA. 876+70 TO STA. 876+96

10/22/2013

R080423.DGN

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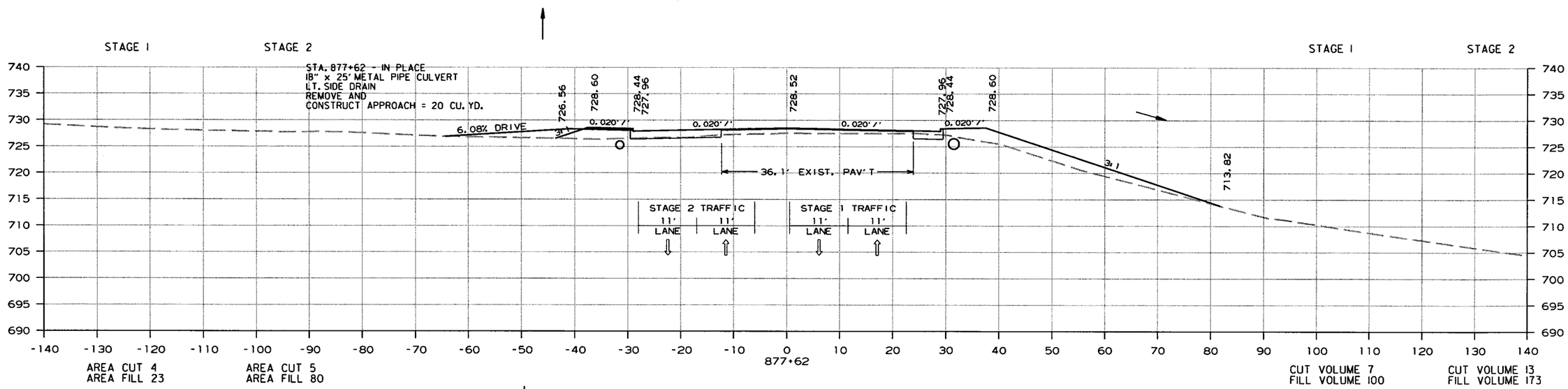
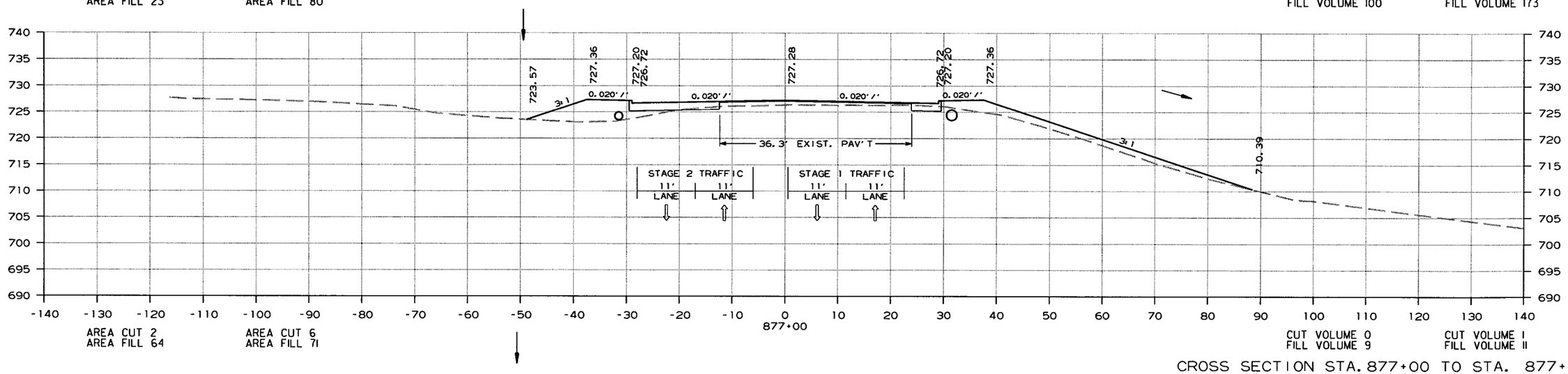
(2) CROSS SECTIONS





CROSS SECTION STA. 877+00 TO STA. 877+62

10/22/2013

R080423.DGN

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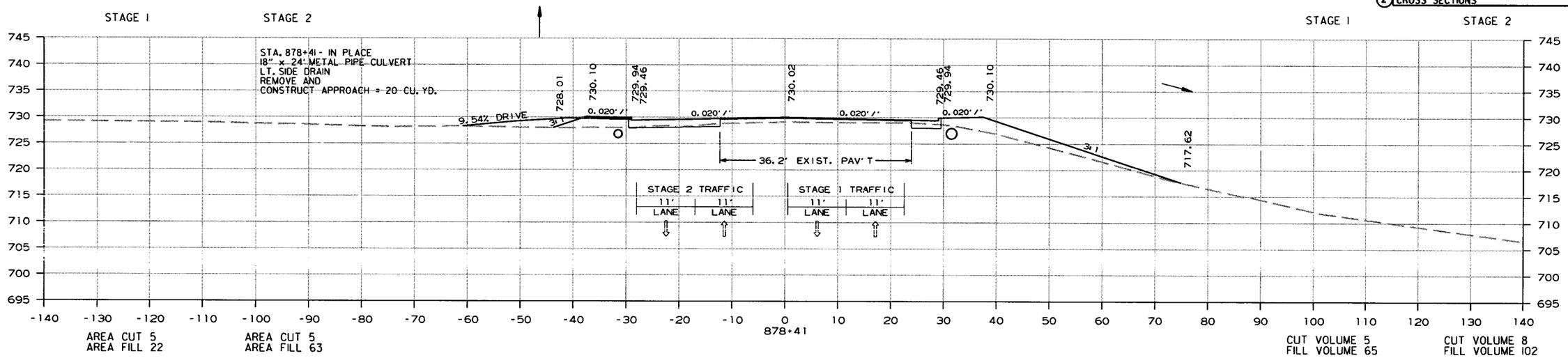
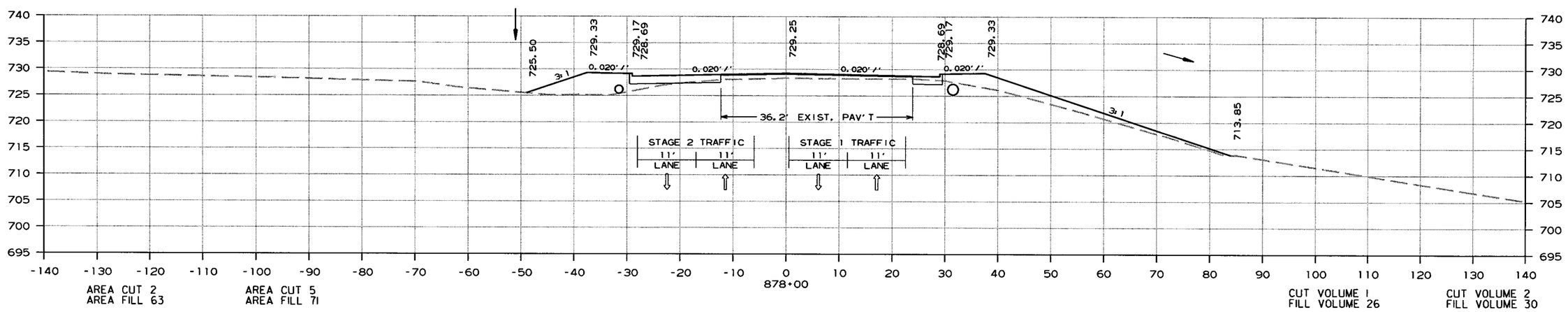
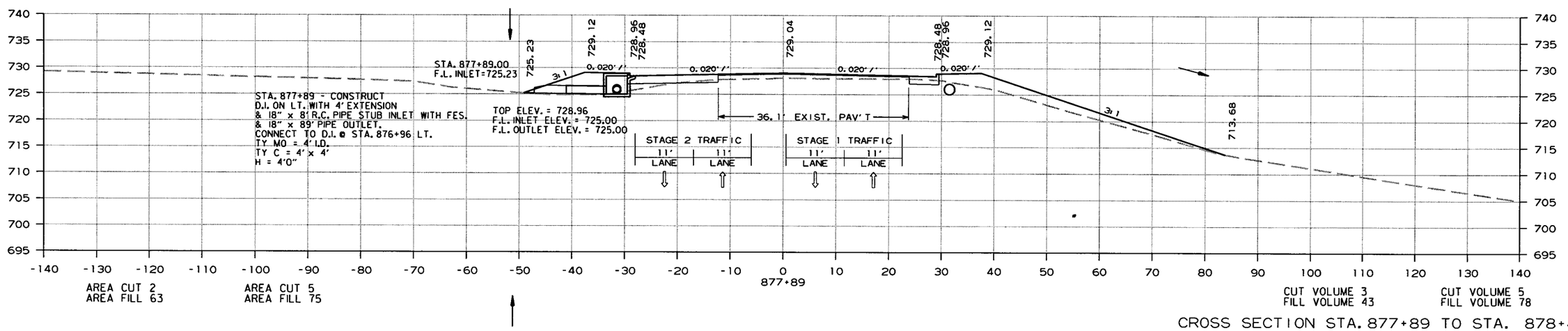
(2) CROSS SECTIONS







CROSS SECTION STA. 877+89 TO STA. 878+41

10/22/2013

R080423.DGN

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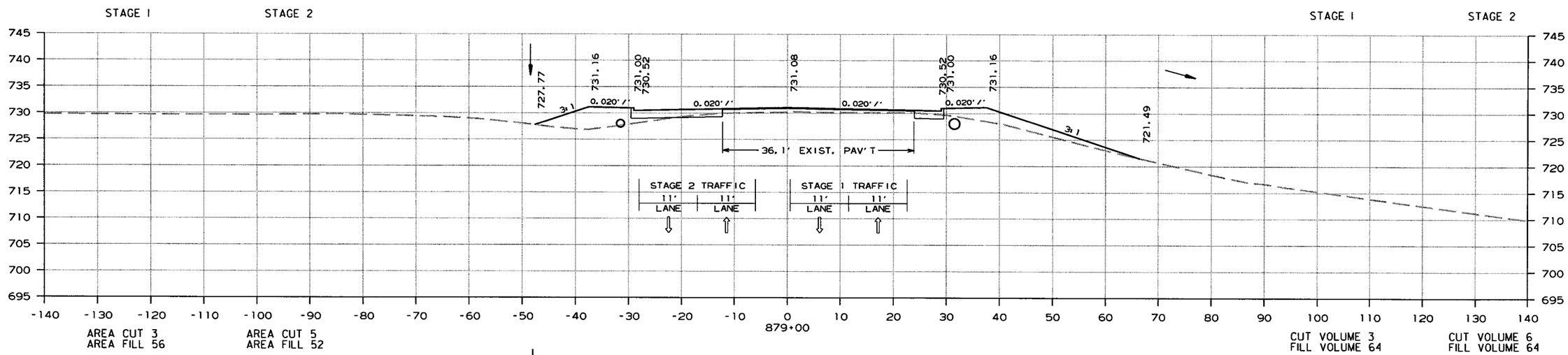
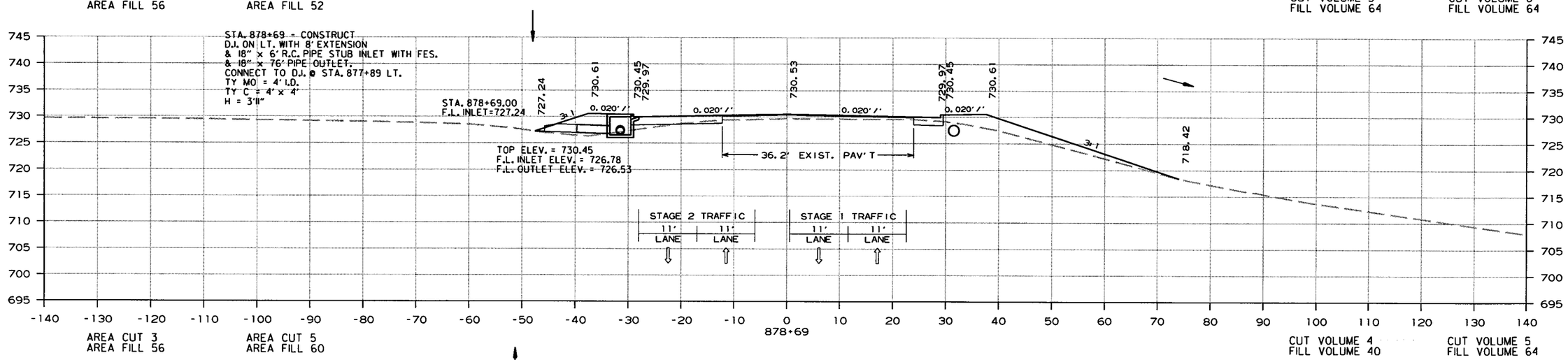
(2) CROSS SECTIONS





CROSS SECTION STA. 878+69 TO STA. 879+00

R080423.DGN 10/22/2013

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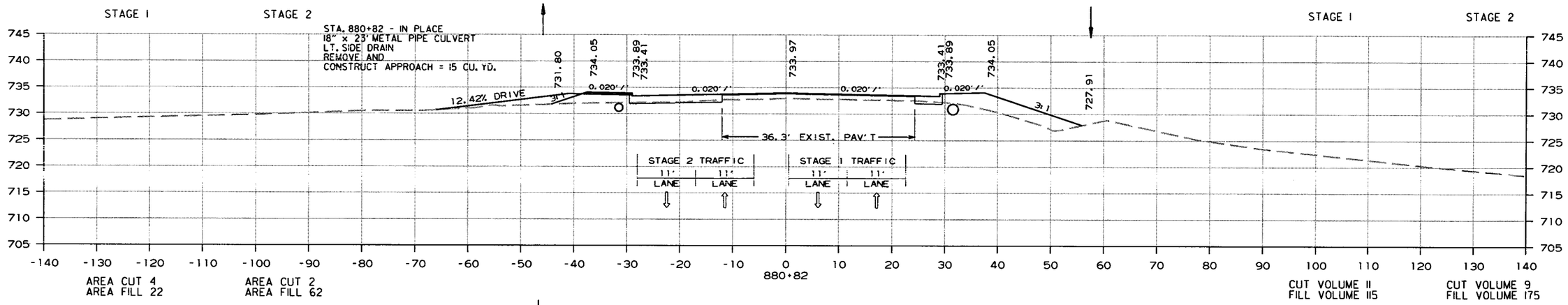
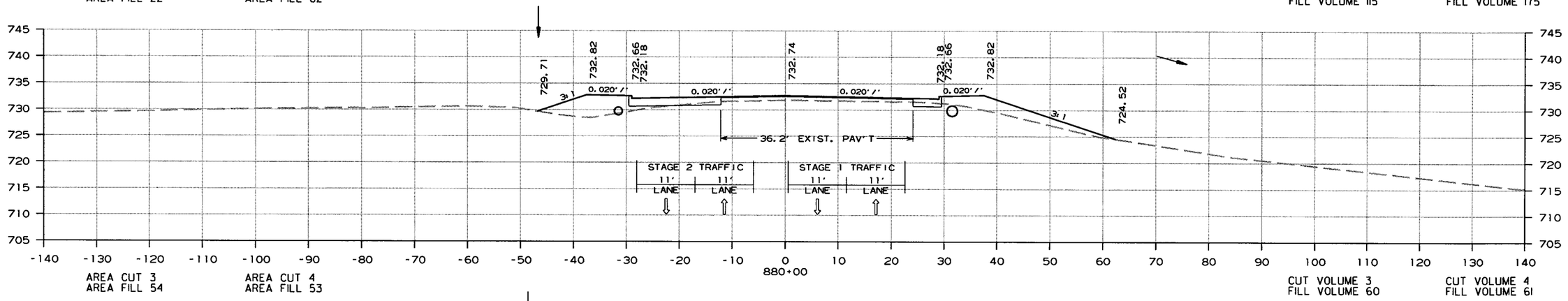
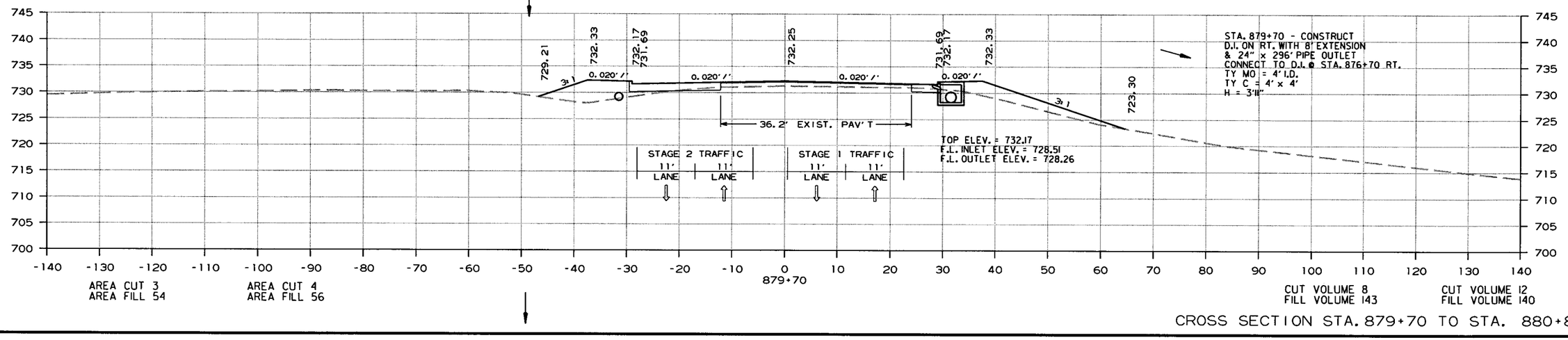
(2) CROSS SECTIONS







CROSS SECTION STA. 879+70 TO STA. 880+82

10/22/2013

R080423.DGN

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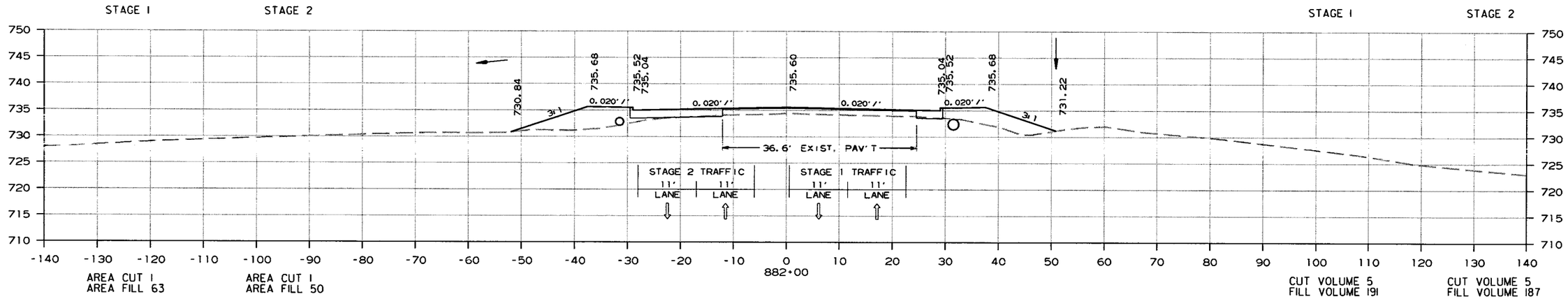
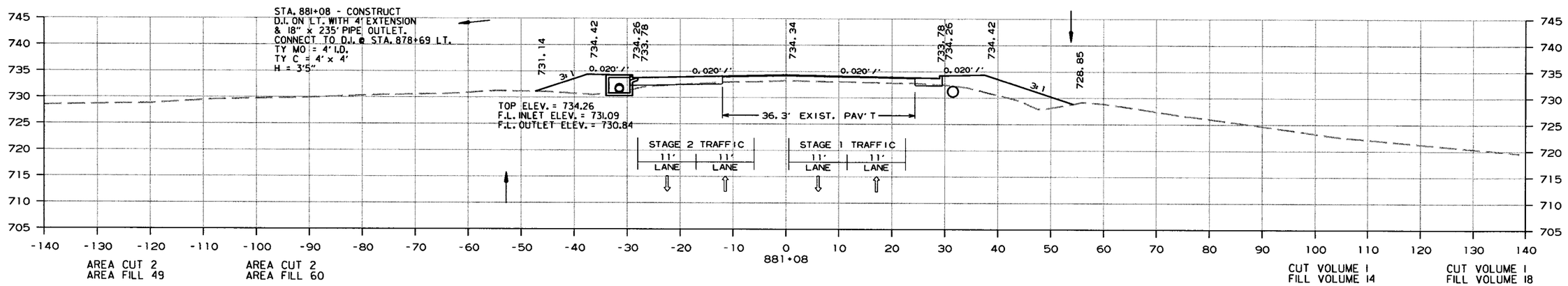
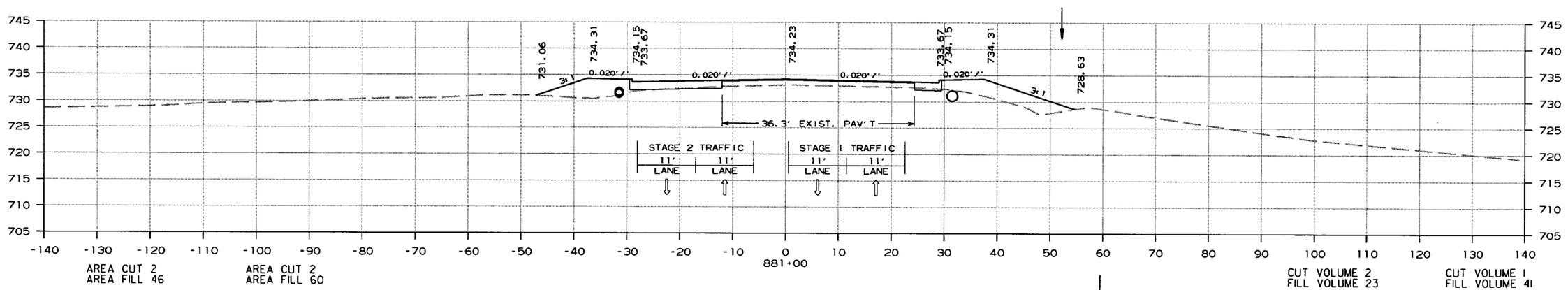
(2) CROSS SECTIONS







CROSS SECTION STA. 881+00 TO STA. 882+00

10/22/2013

R080423.DGN

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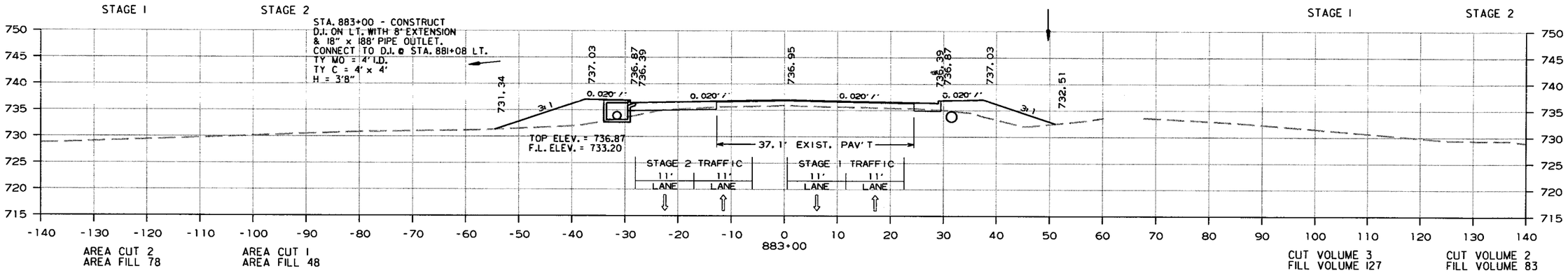
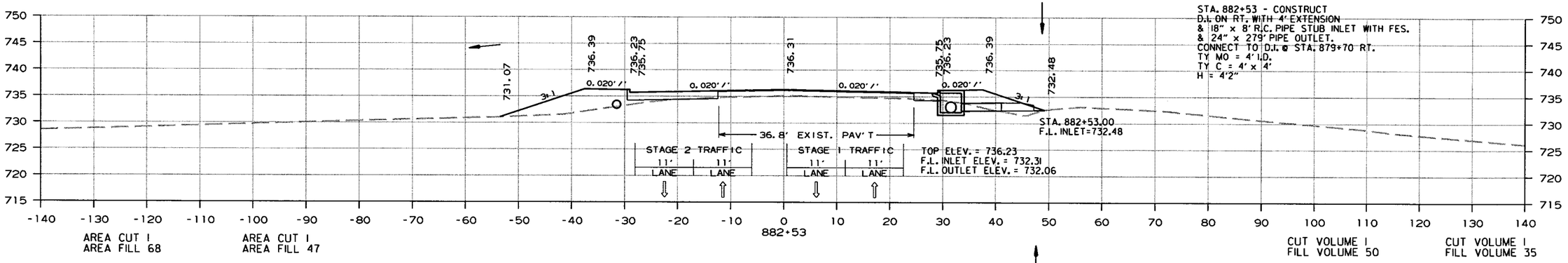
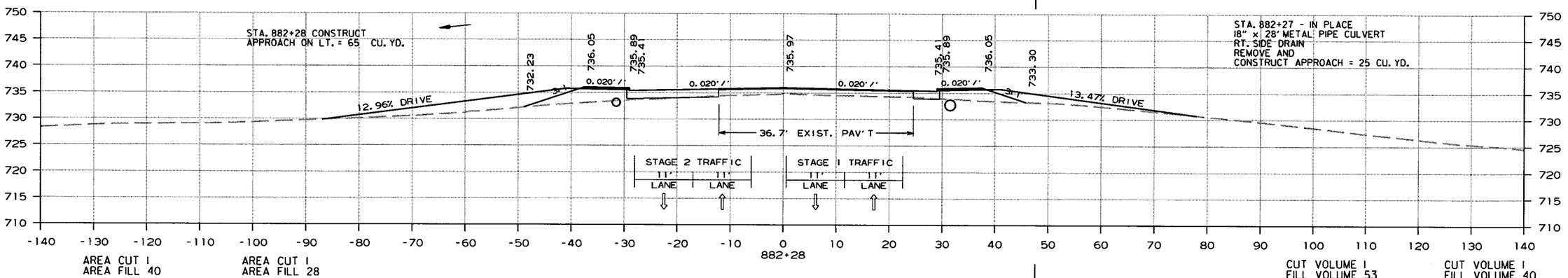
(2) CROSS SECTIONS







CROSS SECTION STA. 882+28 TO STA. 883+00

10/22/2013

R080423.DGN

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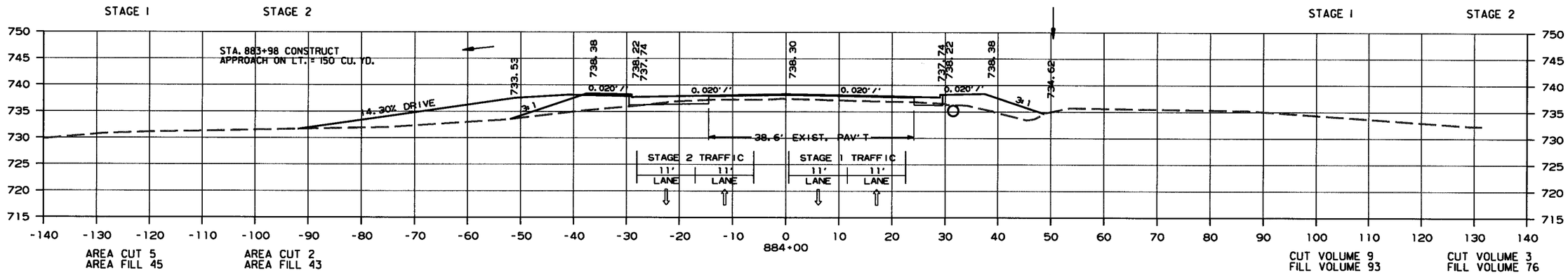
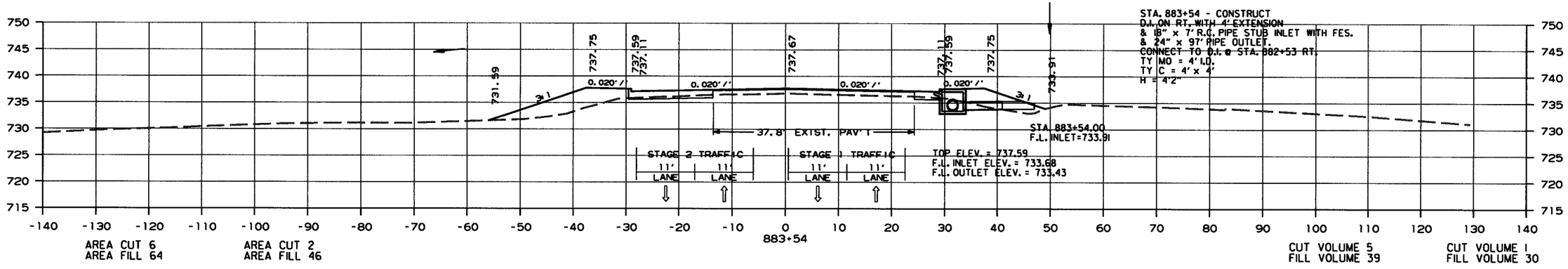
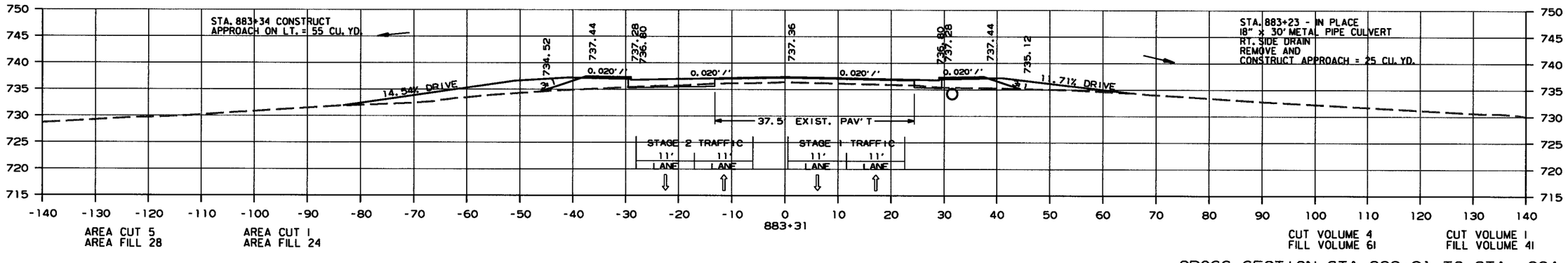
(2) CROSS SECTIONS CG







CROSS SECTION STA. 883+31 TO STA. 884+00

10/9/2017

R080423.DGN

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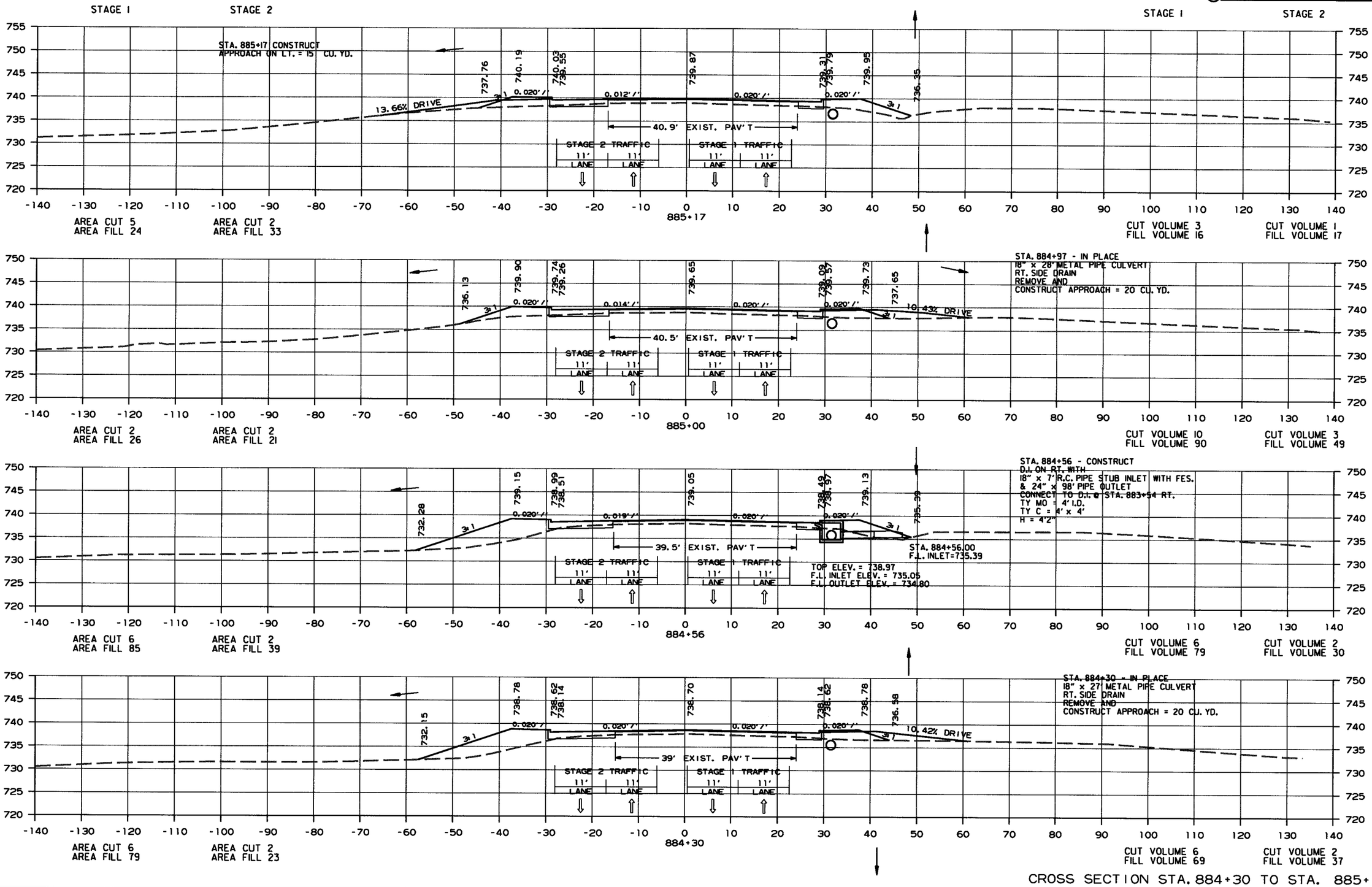
(2) CROSS SECTIONS CG



CROSS SECTION STA. 884+30 TO STA. 885+17

10/9/2017

R080423.DGN

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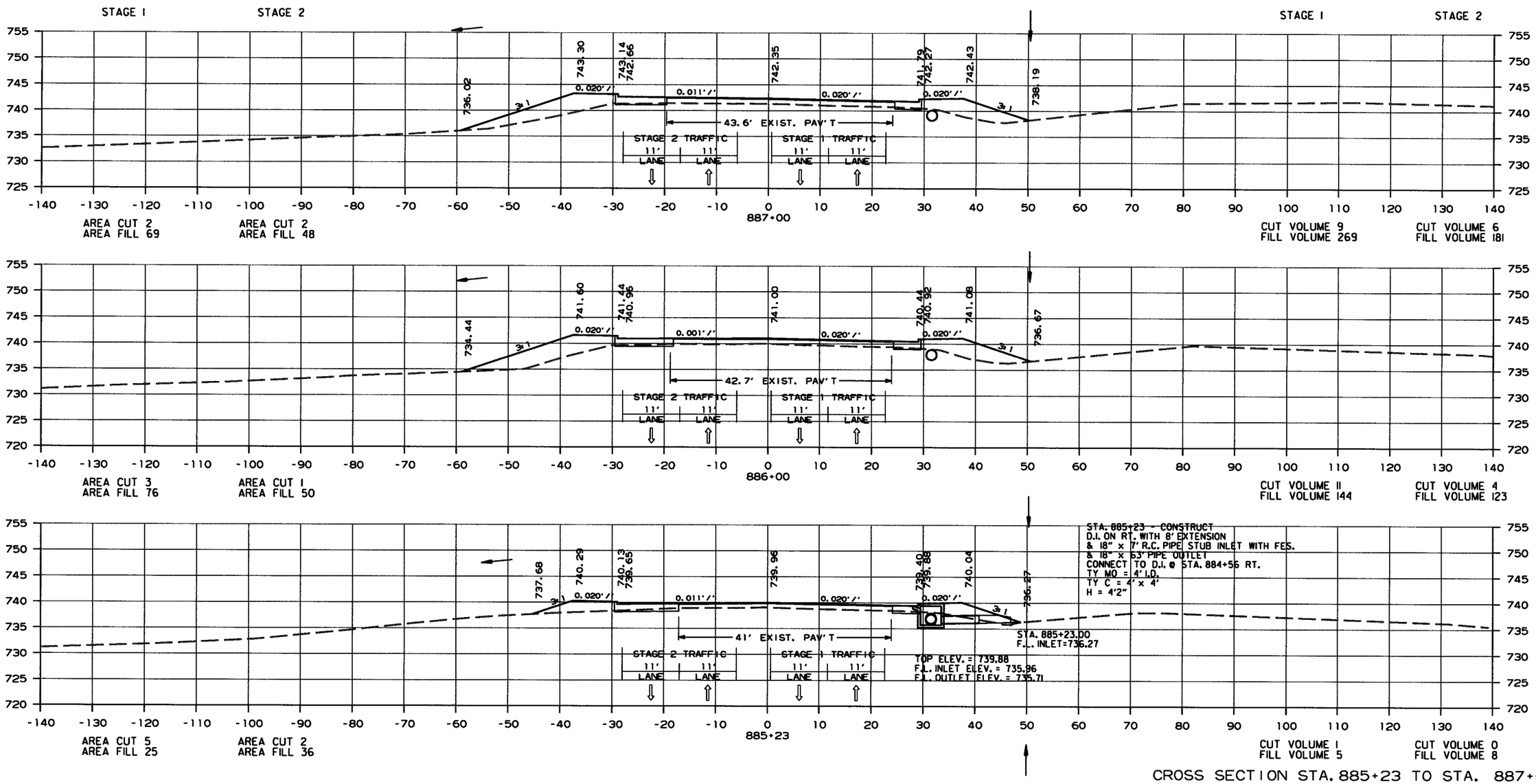
(2) CROSS SECTIONS CG



CROSS SECTION STA. 885+23 TO STA. 887+00

10/9/2017

R080423.DGN

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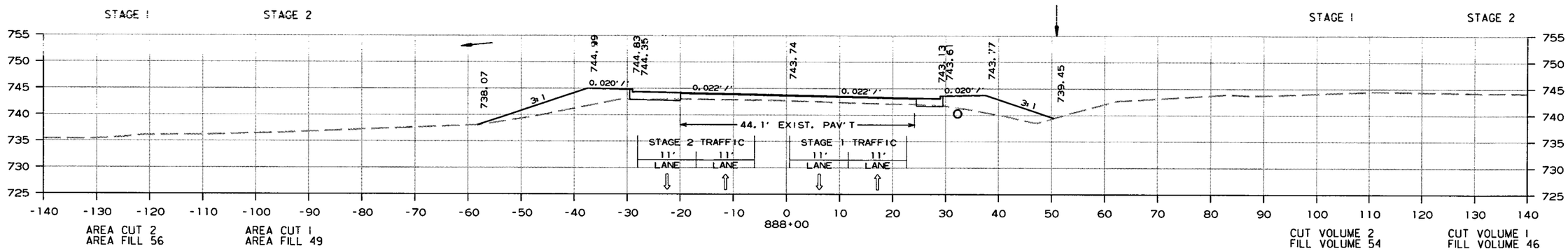
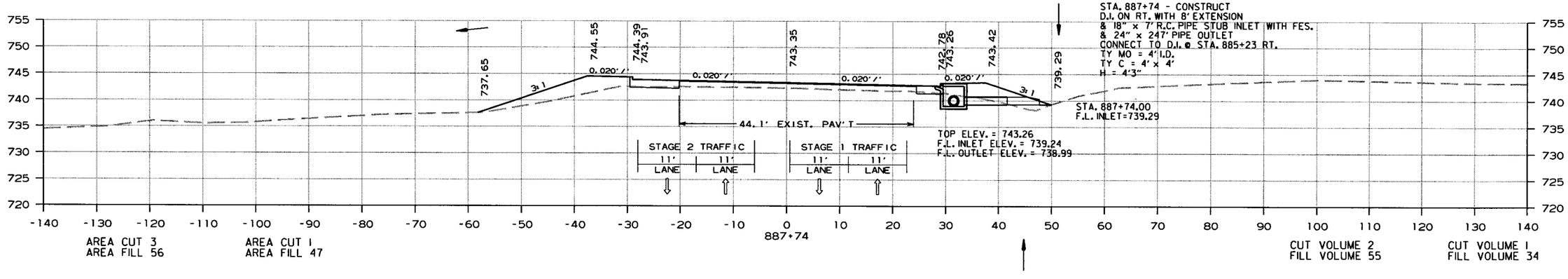
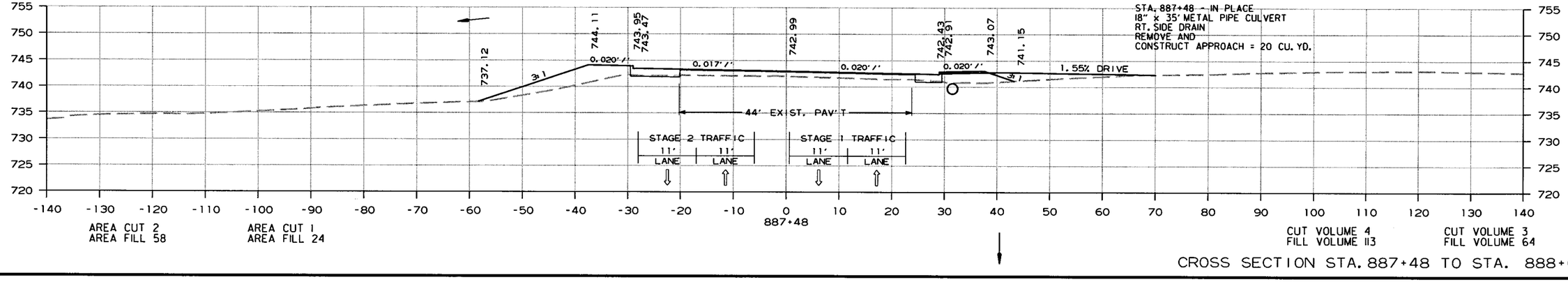
(2) CROSS SECTIONS







CROSS SECTION STA. 887+48 TO STA. 888+00

10/22/2013

R080423.DGN

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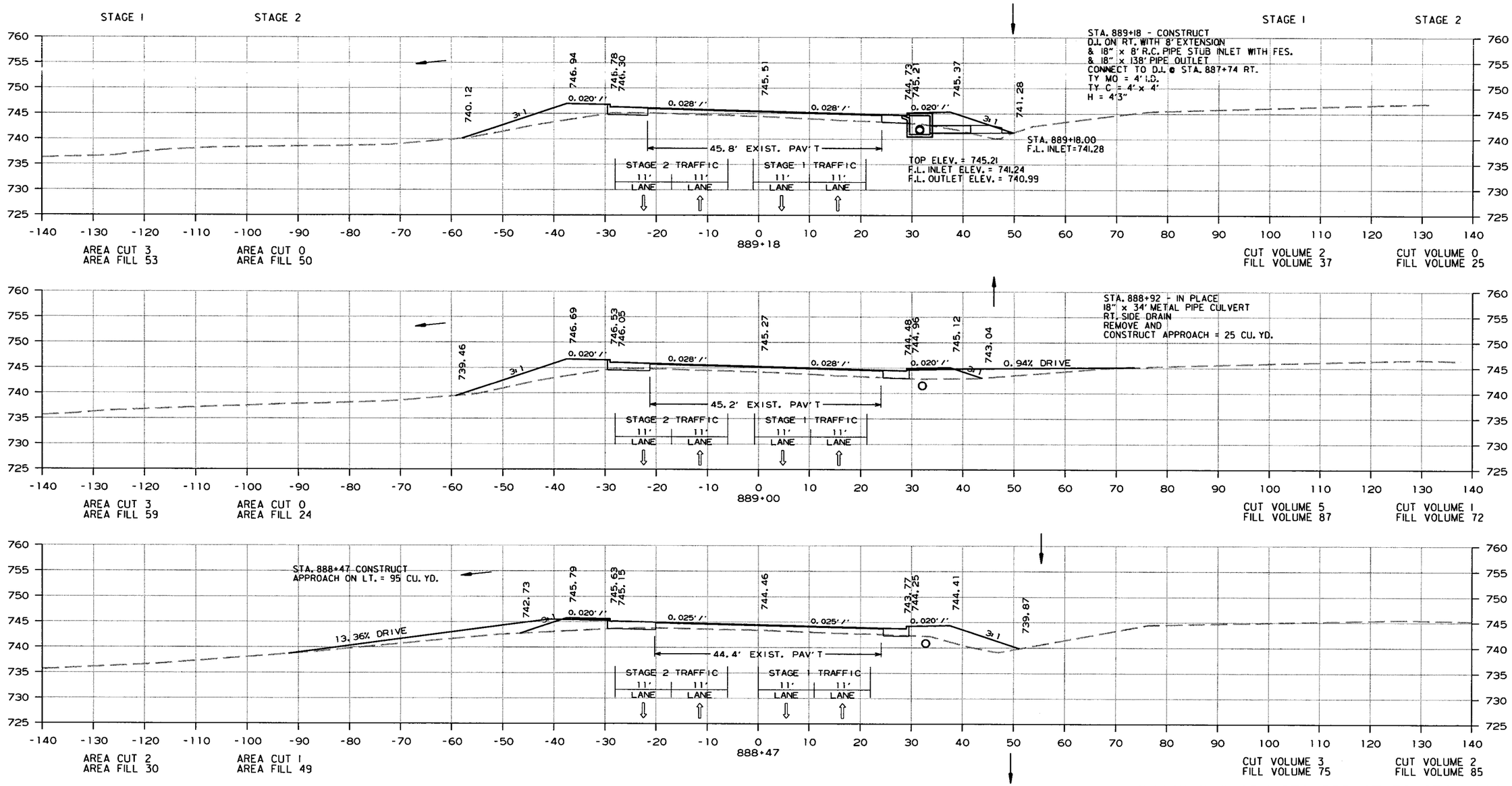
(2) CROSS SECTIONS



CROSS SECTION STA. 888+47 TO STA. 889+18

10/22/2013

R080423.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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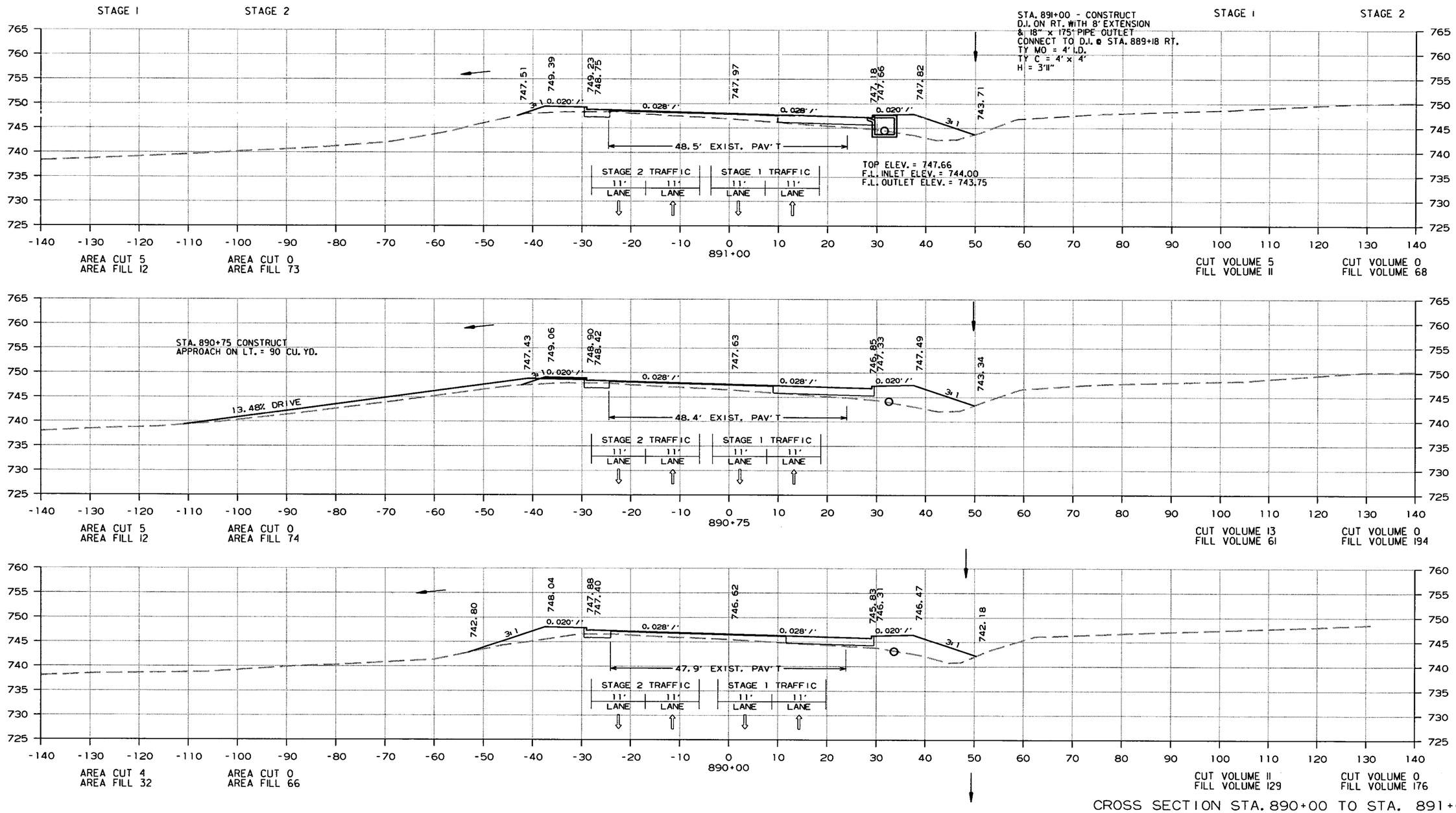

CROSS SECTION STA. 890+00 TO STA. 891+00

10/22/2013

R080423.DGN

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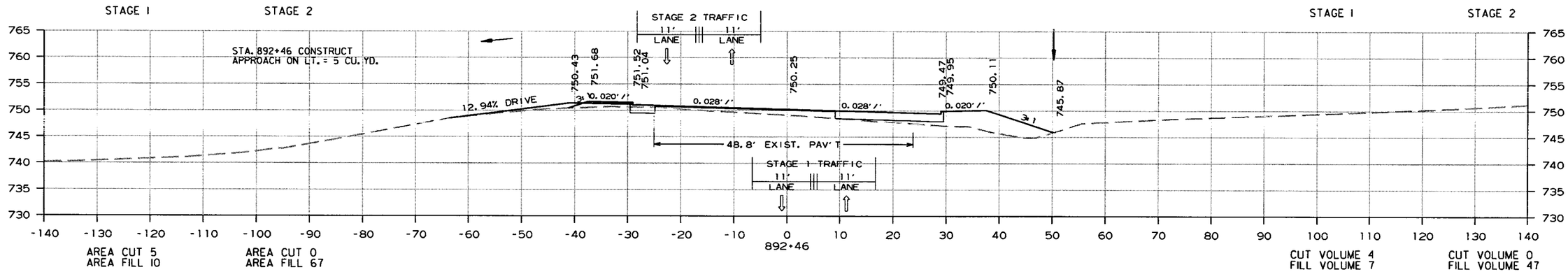
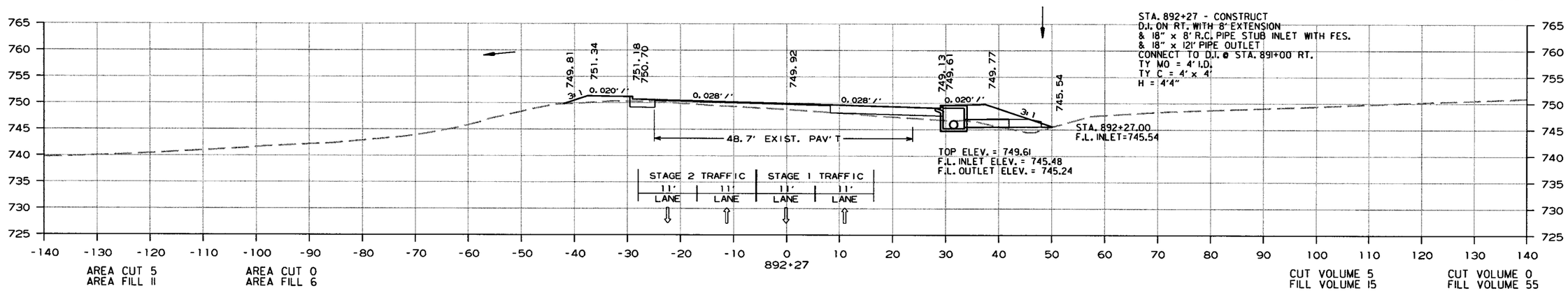
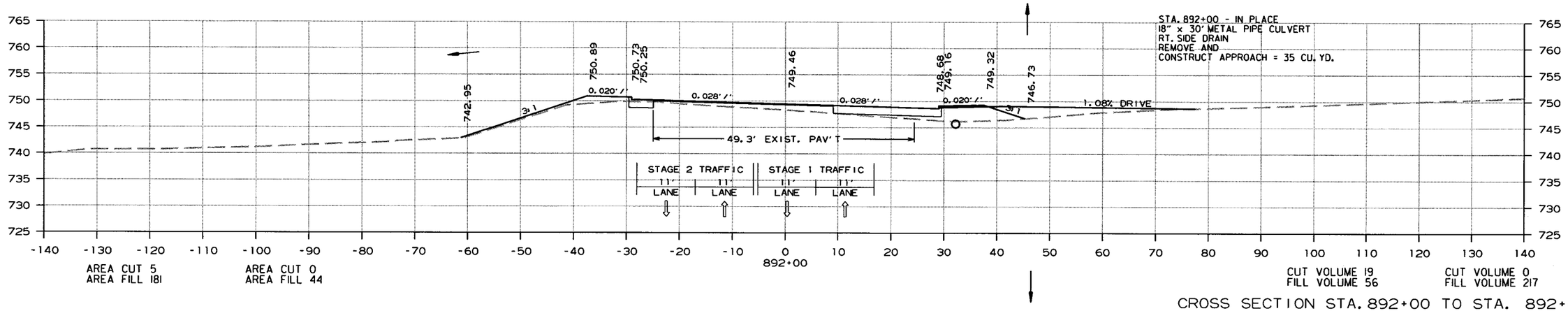
(2) CROSS SECTIONS







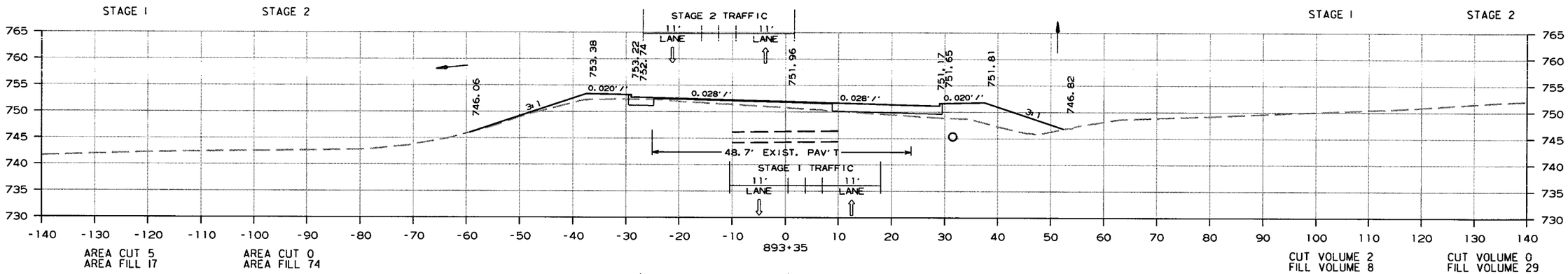
CROSS SECTION STA. 892+00 TO STA. 892+46

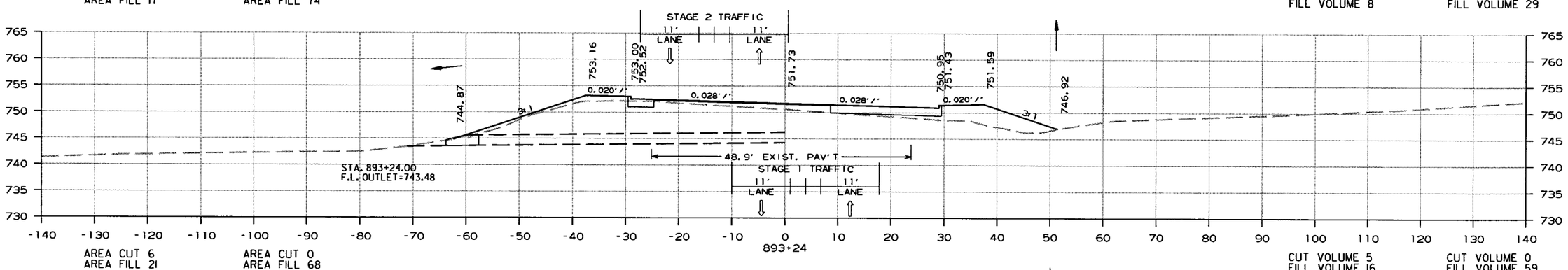
10/22/2013

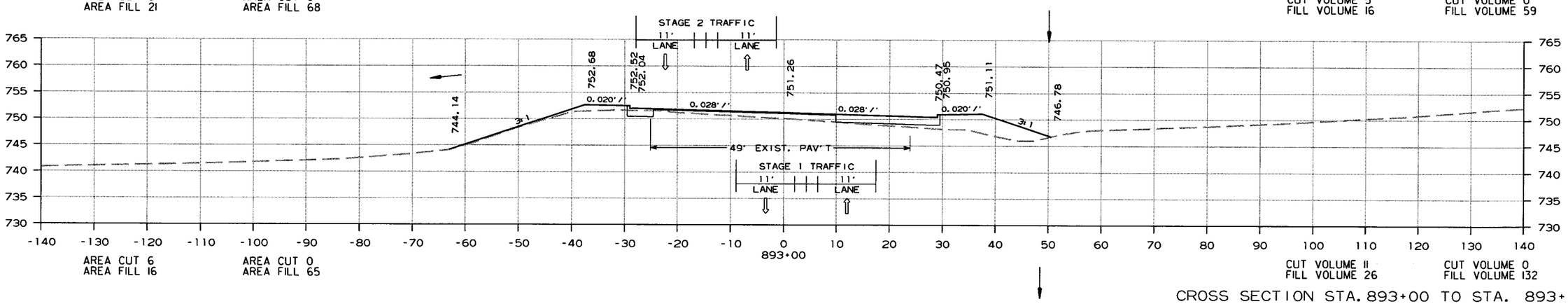
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	460	517

(2) CROSS SECTIONS







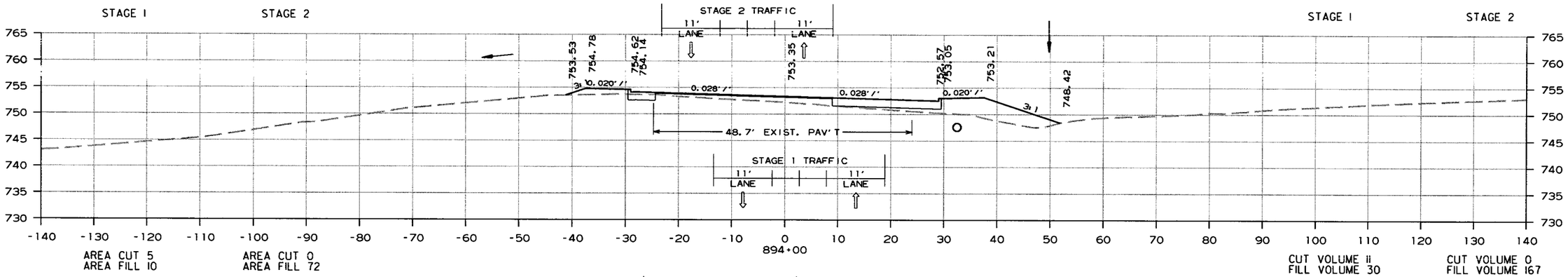
CROSS SECTION STA. 893+00 TO STA. 893+35

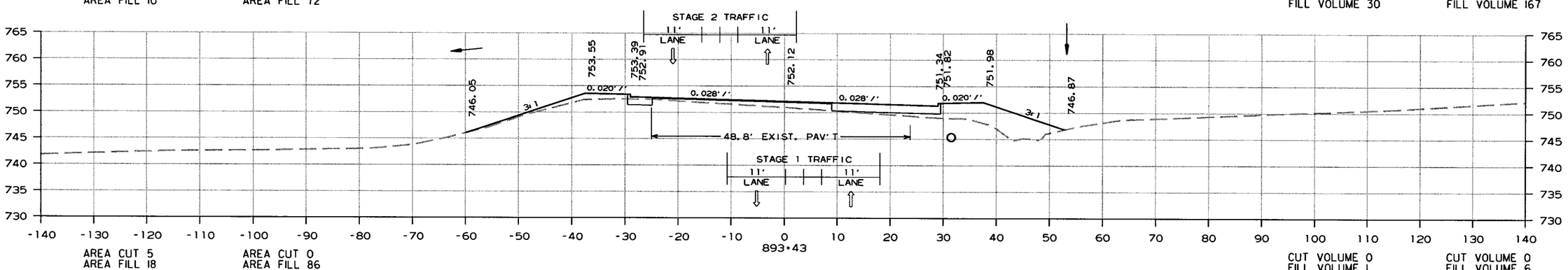
10/22/2013

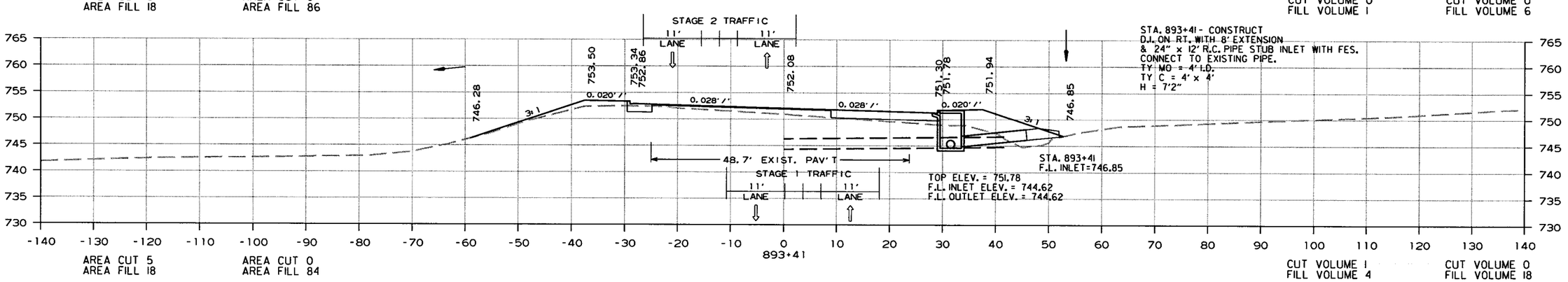
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	461	517

(2) CROSS SECTIONS







STA. 893+41 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 12' R.C. PIPE STUB INLET WITH FES.
CONNECT TO EXISTING PIPE.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'2"

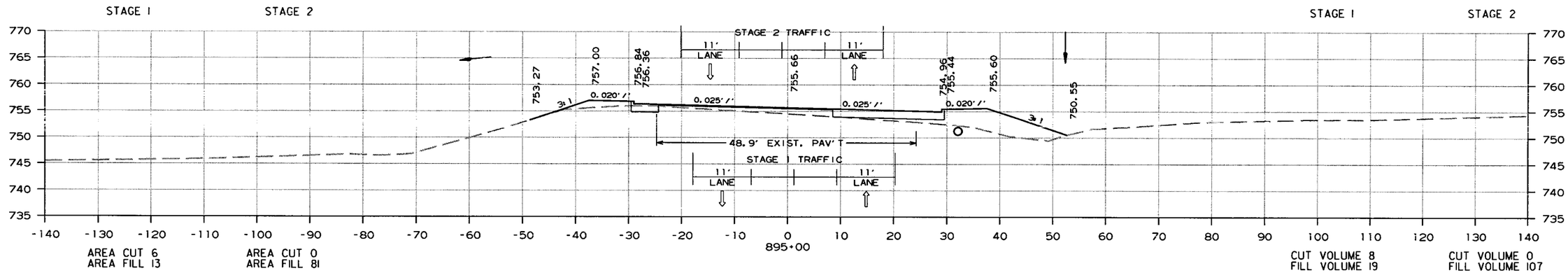
CROSS SECTION STA. 893+41 TO STA. 894+00

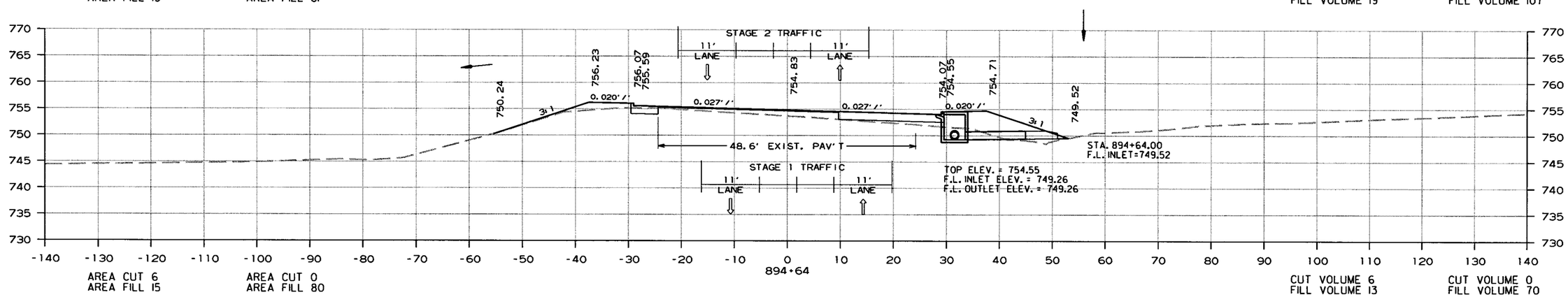
10/22/2013

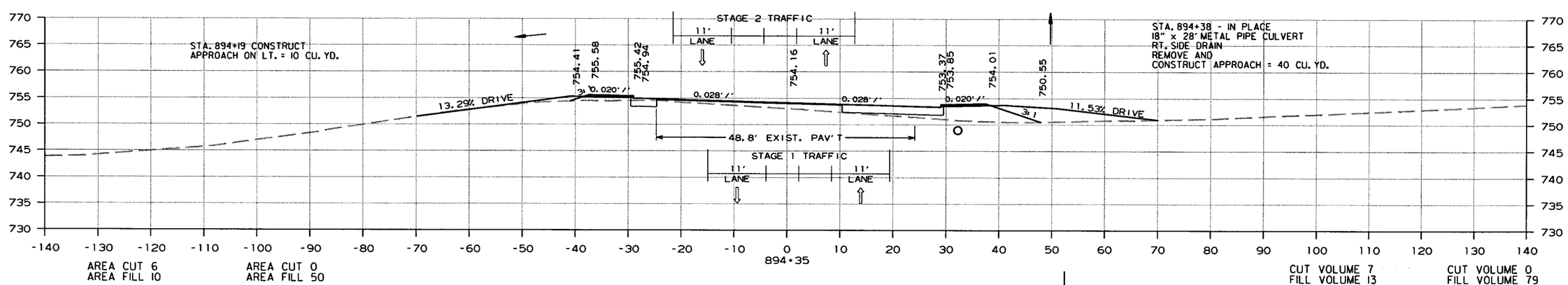
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	462	517

(2) CROSS SECTIONS







CROSS SECTION STA. 894+35 TO STA. 895+00

10/22/2013

R080423.DGN

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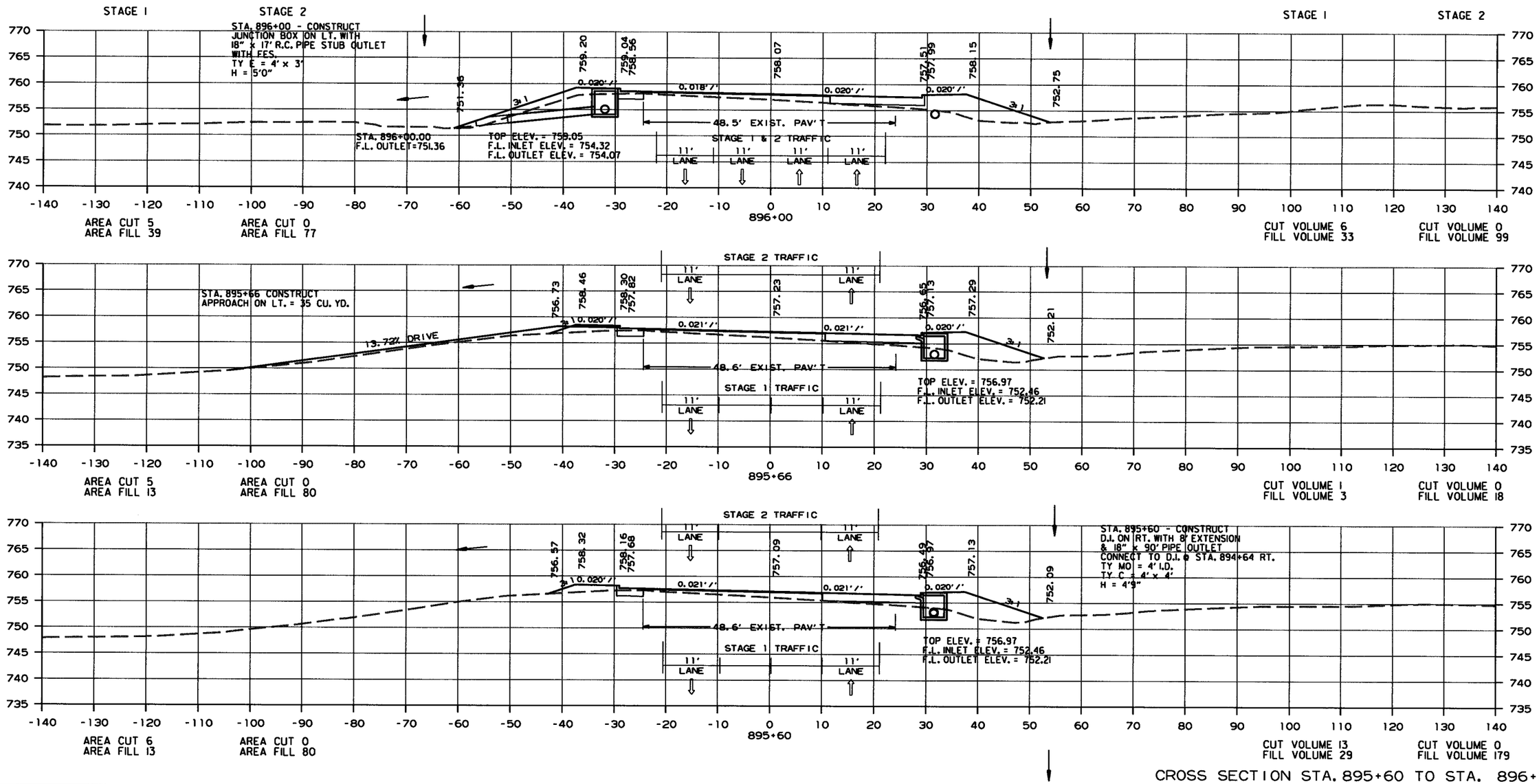
(2) CROSS SECTIONS CG



CROSS SECTION STA. 895+60 TO STA. 896+00

10/9/2017

R080423.DGN

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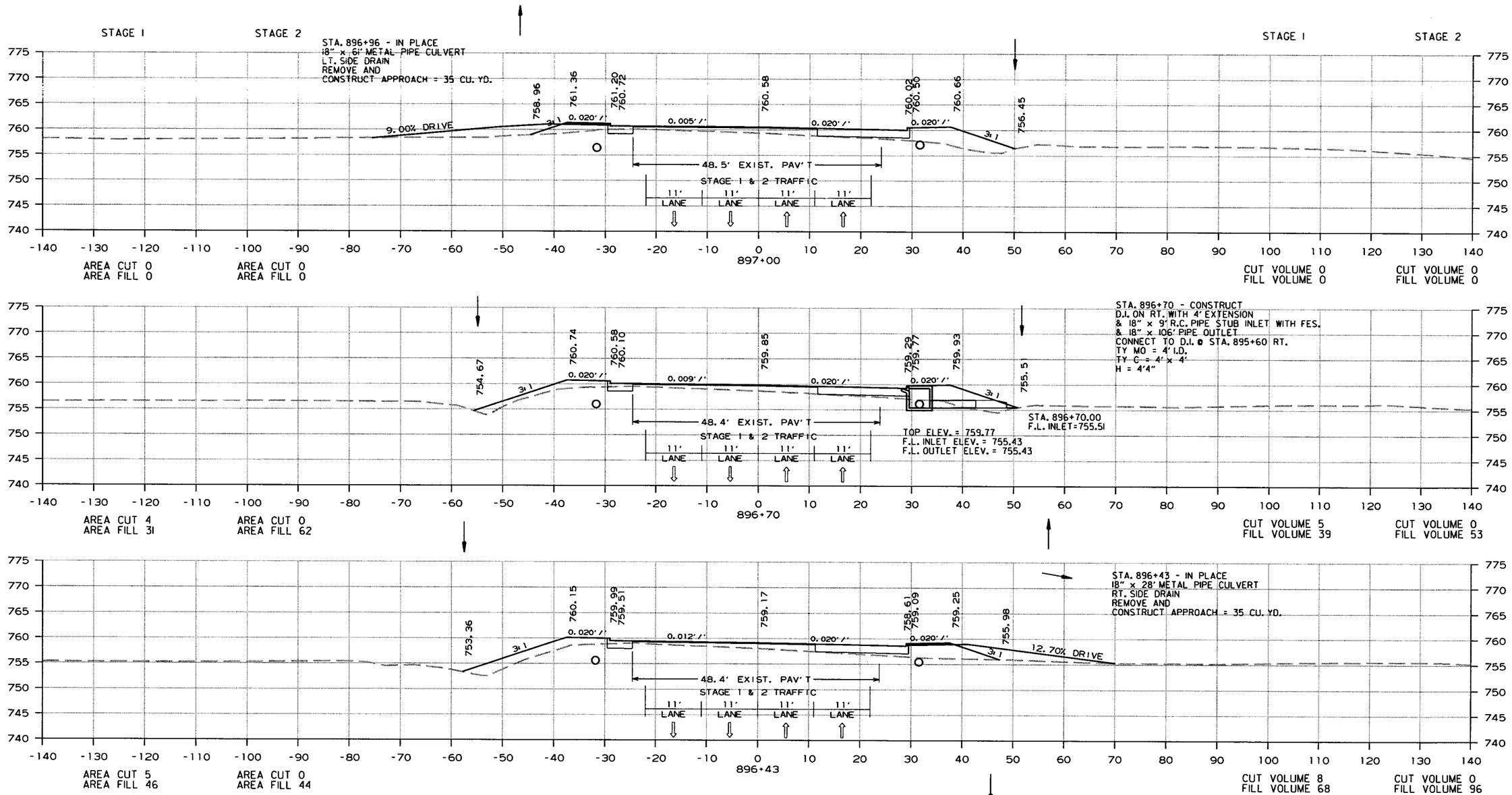
(2) CROSS SECTIONS



CROSS SECTION STA. 896+43 TO STA. 897+00

10/22/2013

R080423.DGN

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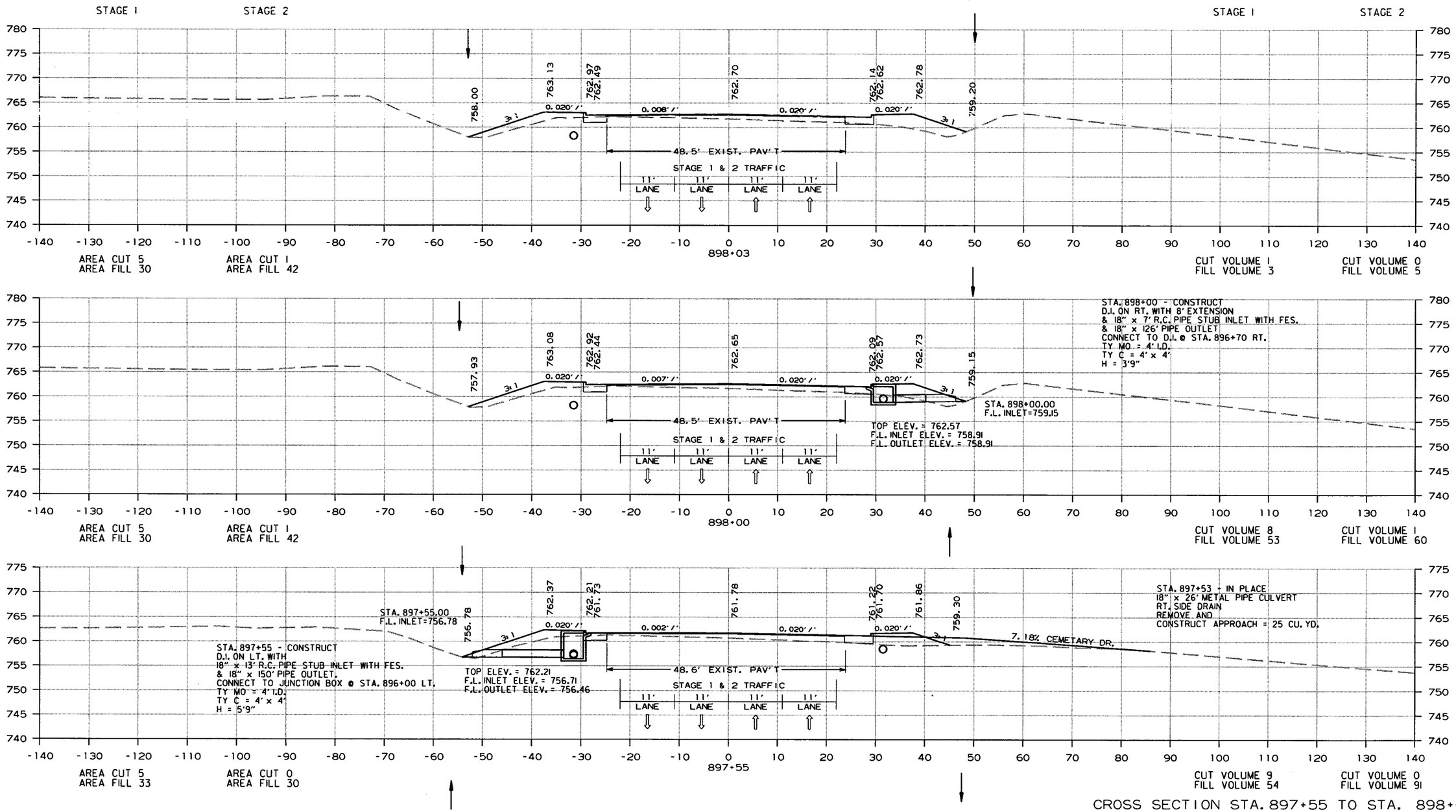
(2) CROSS SECTIONS



CROSS SECTION STA. 897+55 TO STA. 898+03

10/22/2013

R080423.DGN

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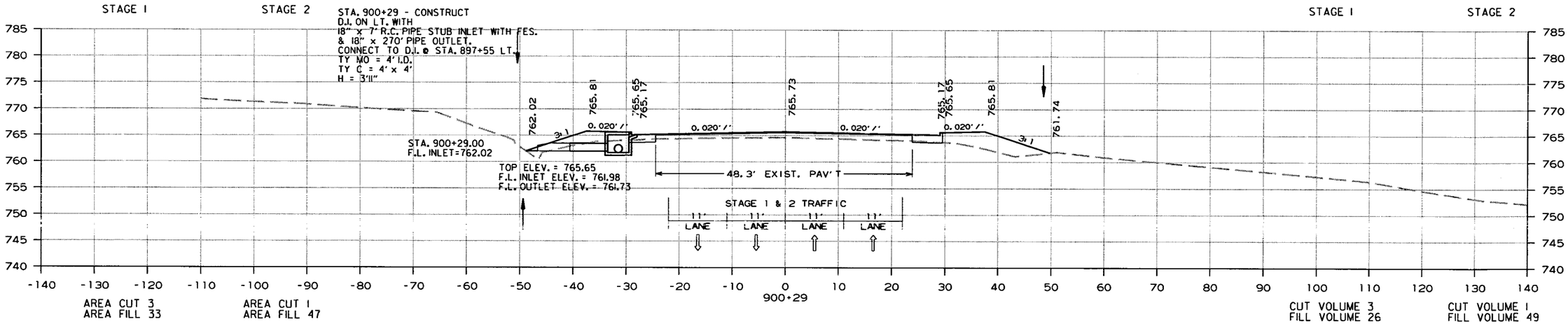
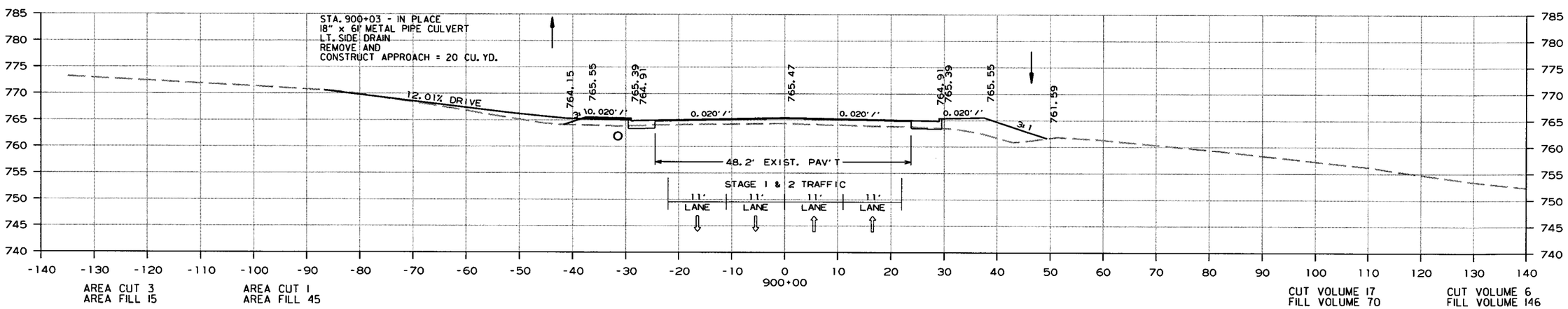
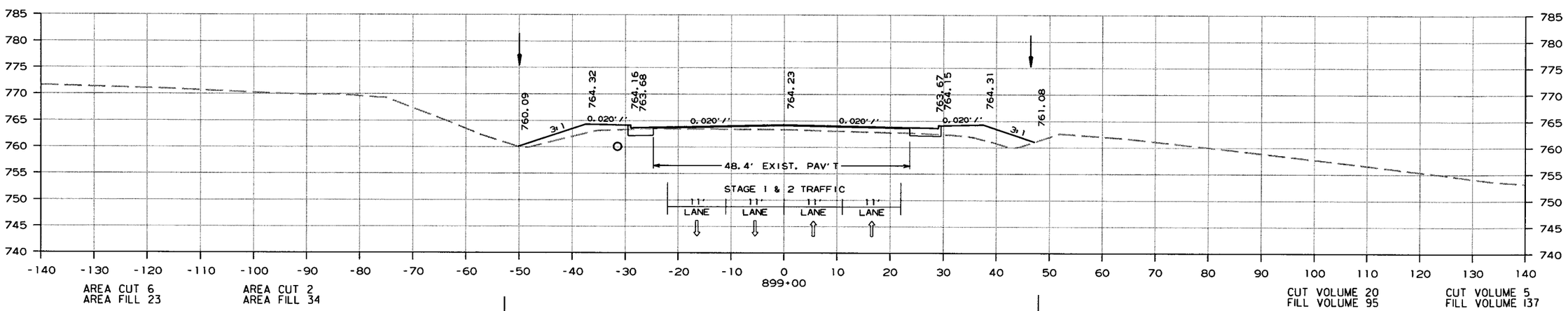
(2) CROSS SECTIONS







CROSS SECTION STA. 899+00 TO STA. 900+29

10/22/2013

R080423.DGN

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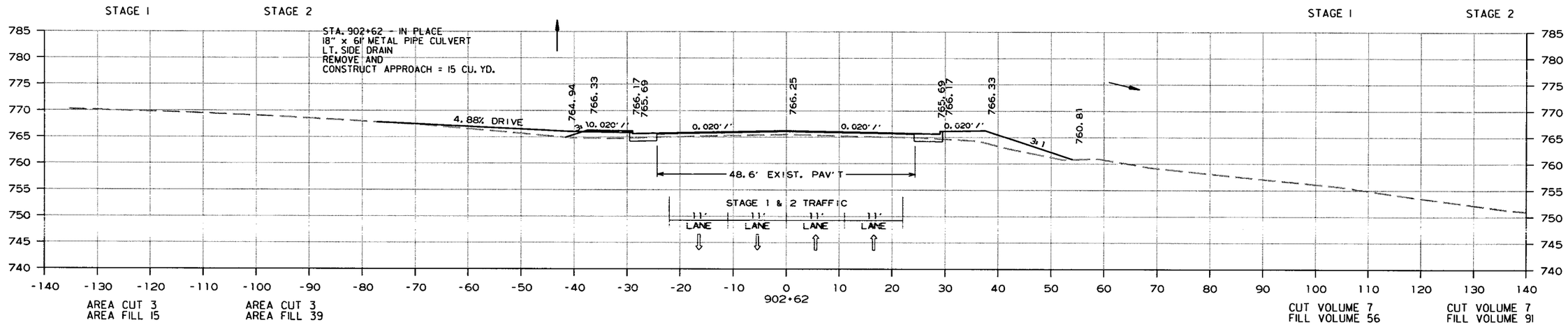
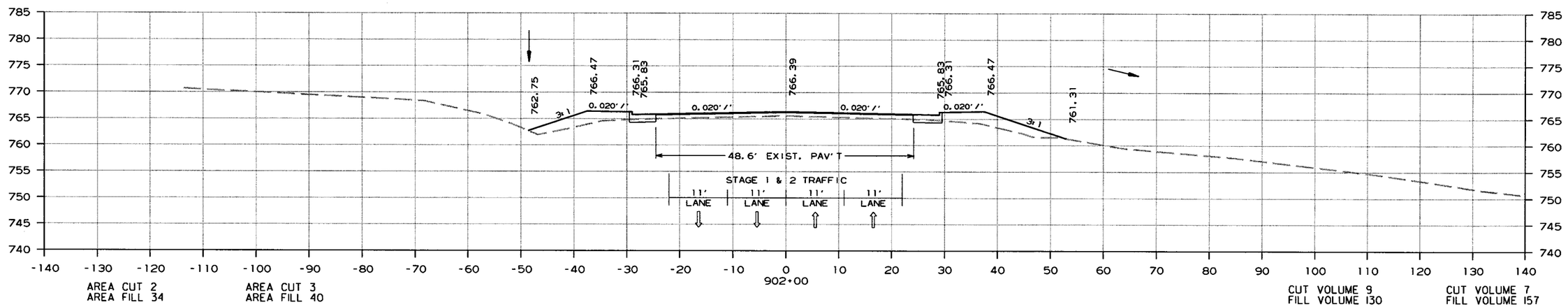
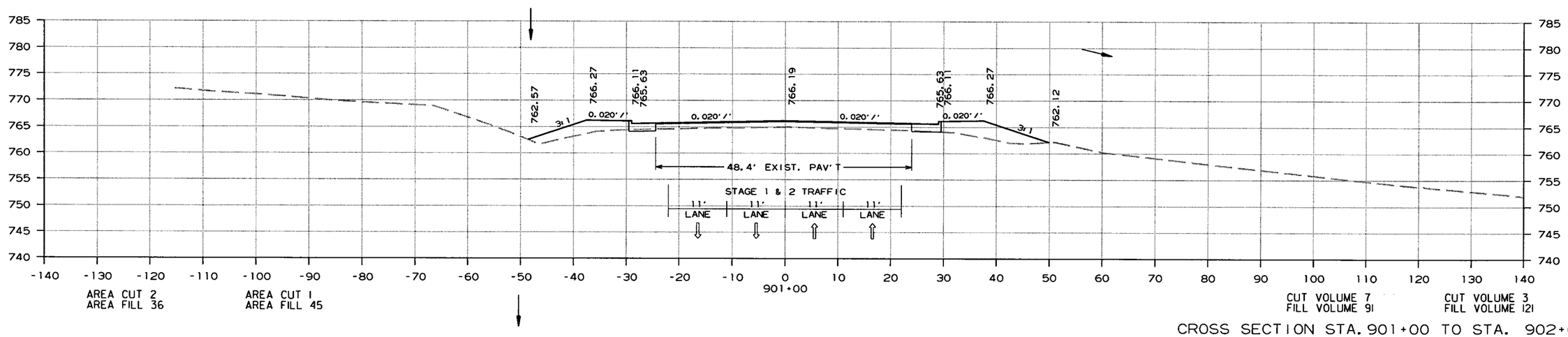
(2) CROSS SECTIONS







CROSS SECTION STA. 901+00 TO STA. 902+62

10/22/2013

R080423.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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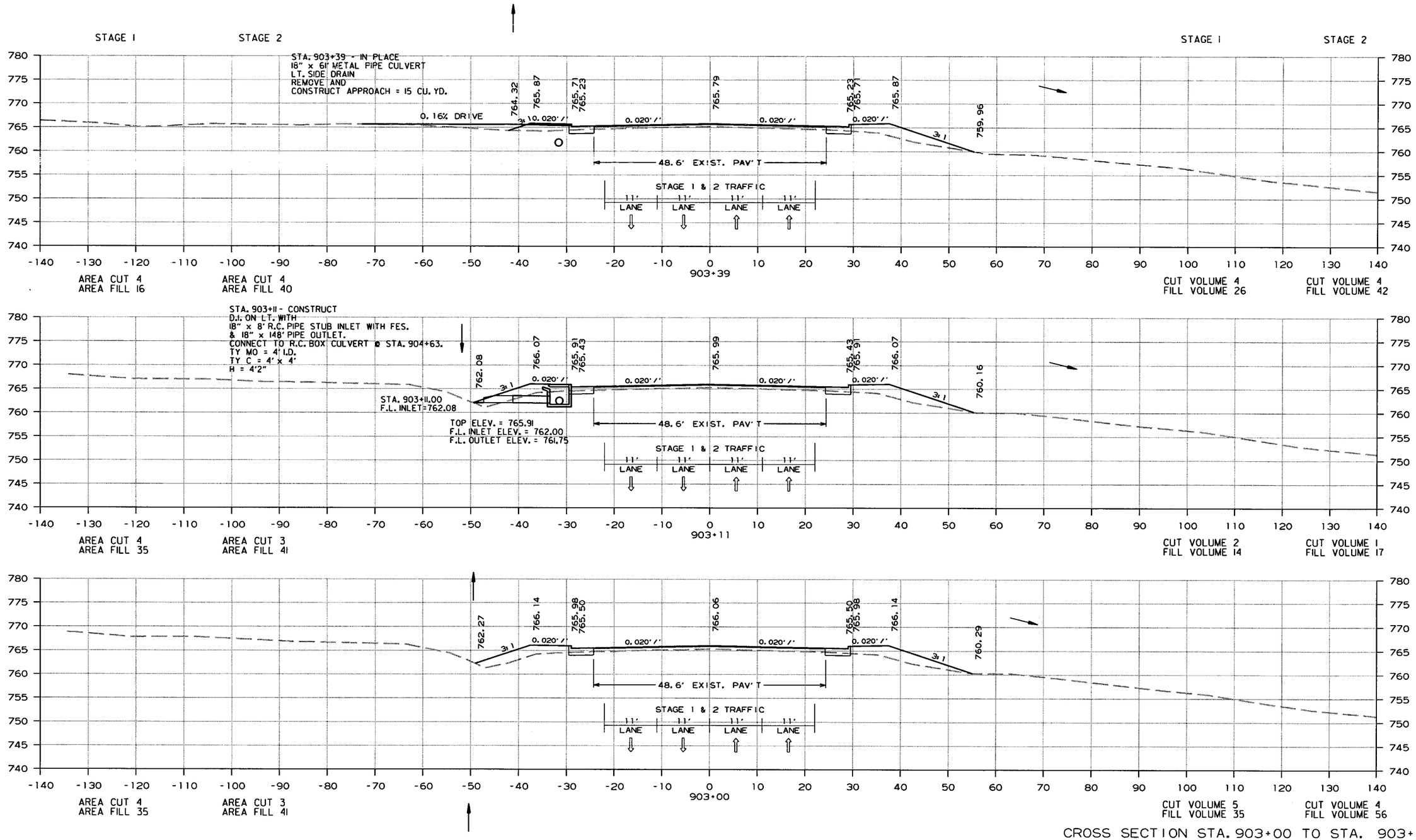

CROSS SECTION STA. 903+00 TO STA. 903+39

10/22/2013

R080423.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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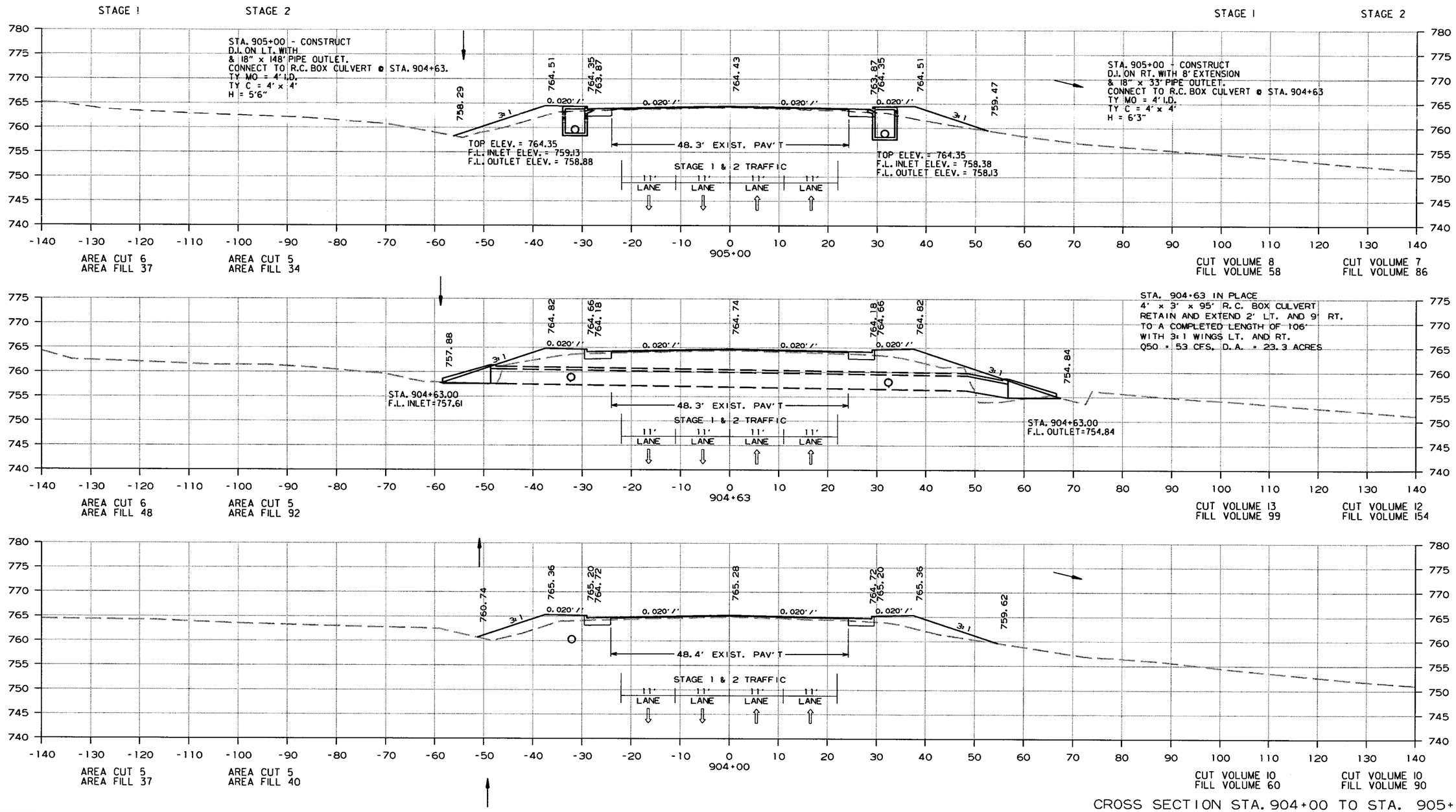

CROSS SECTION STA. 904+00 TO STA. 905+00

10/22/2013

R080423.DGN

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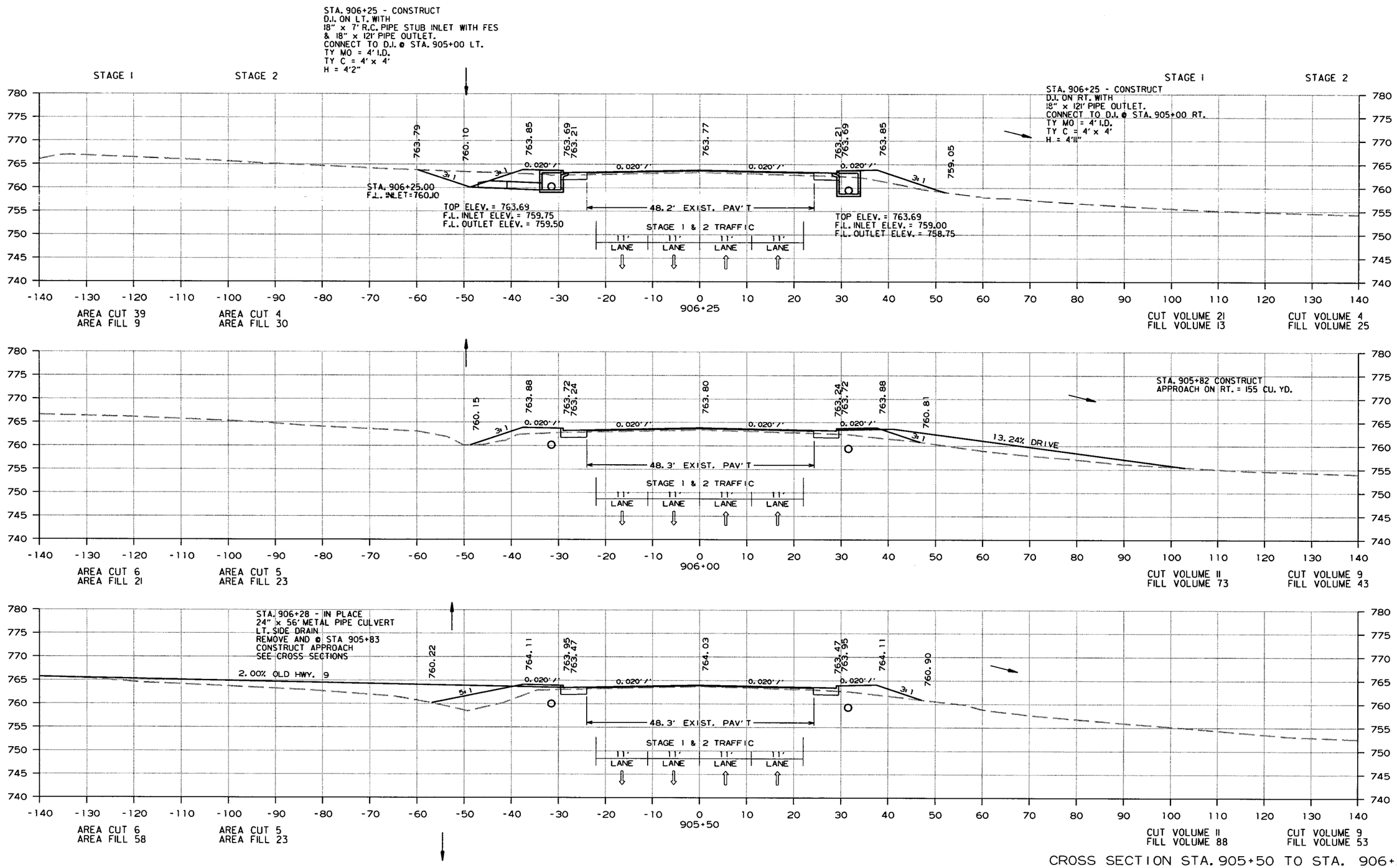
(2) CROSS SECTIONS



CROSS SECTION STA. 905+50 TO STA. 906+25

10/22/2013

R080423.DGN

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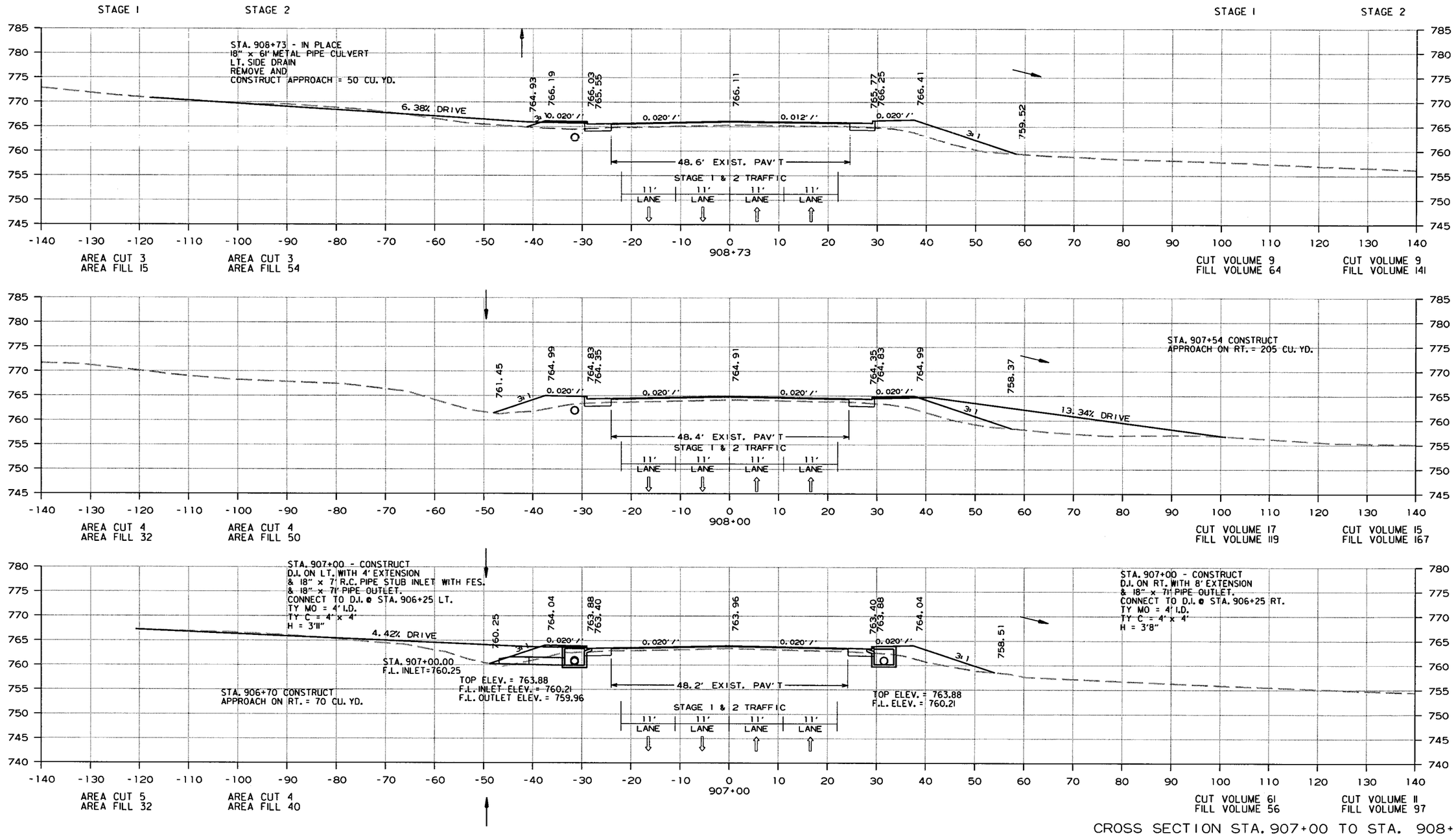
(2) CROSS SECTIONS



CROSS SECTION STA. 907+00 TO STA. 908+73

10/22/2013

R080423.DGN

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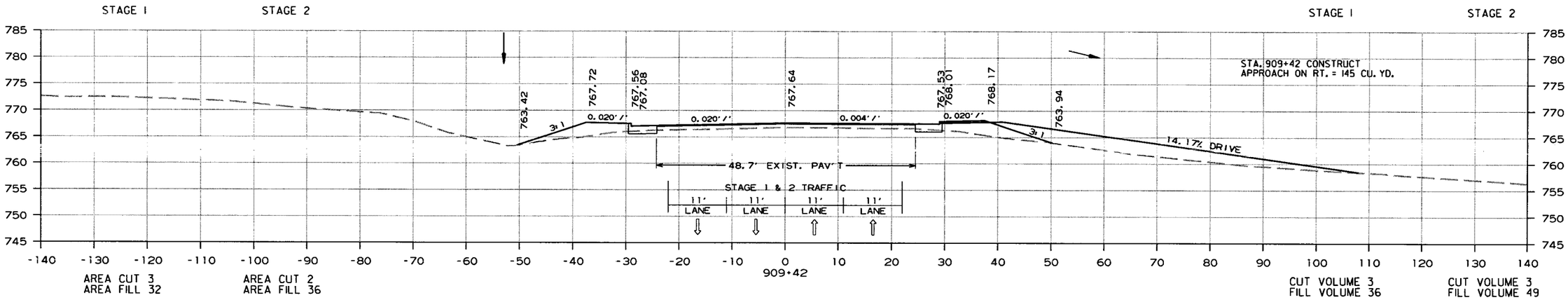
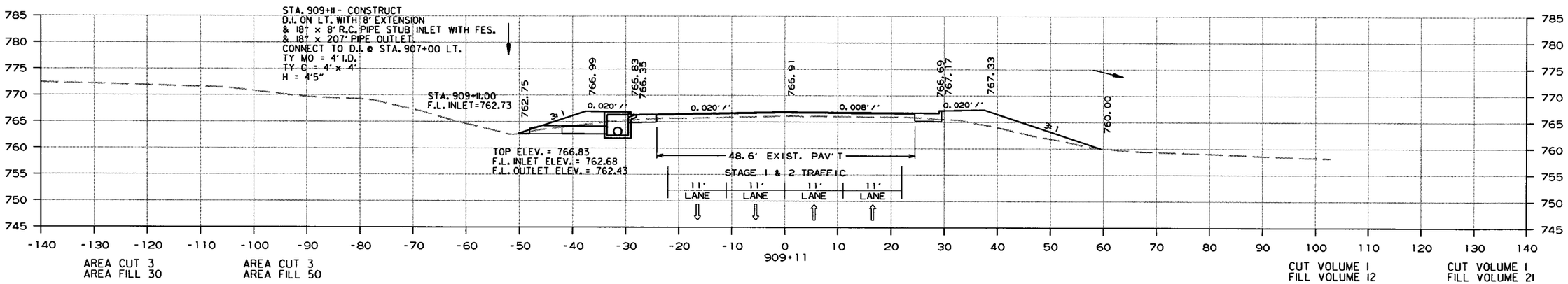
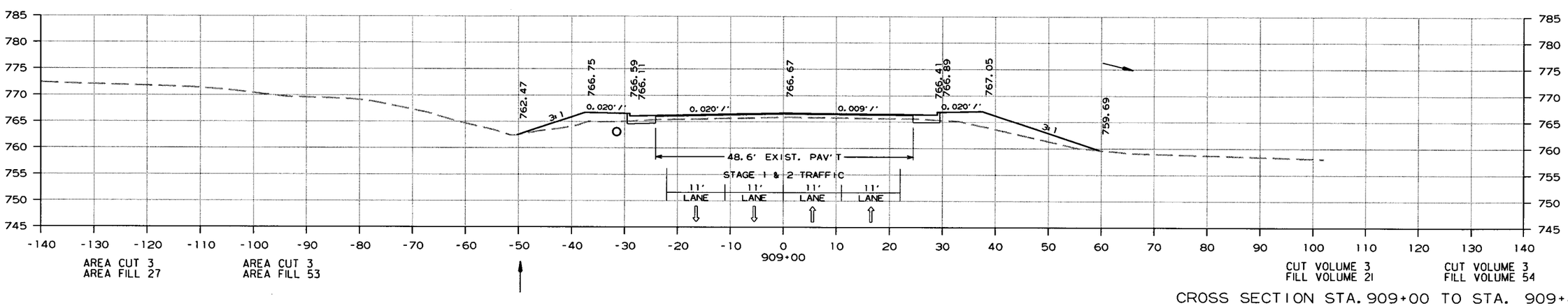
(2) CROSS SECTIONS







CROSS SECTION STA. 909+00 TO STA. 909+42

10/22/2013

R080423.DGN

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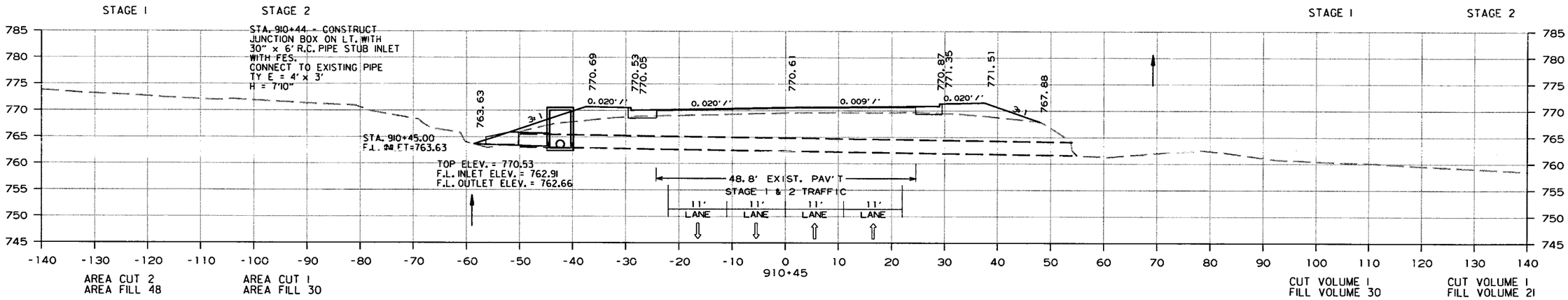
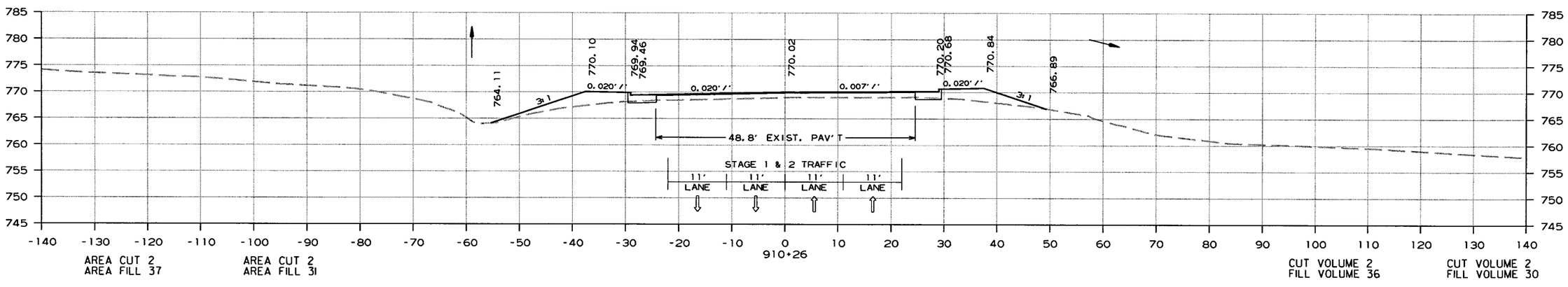
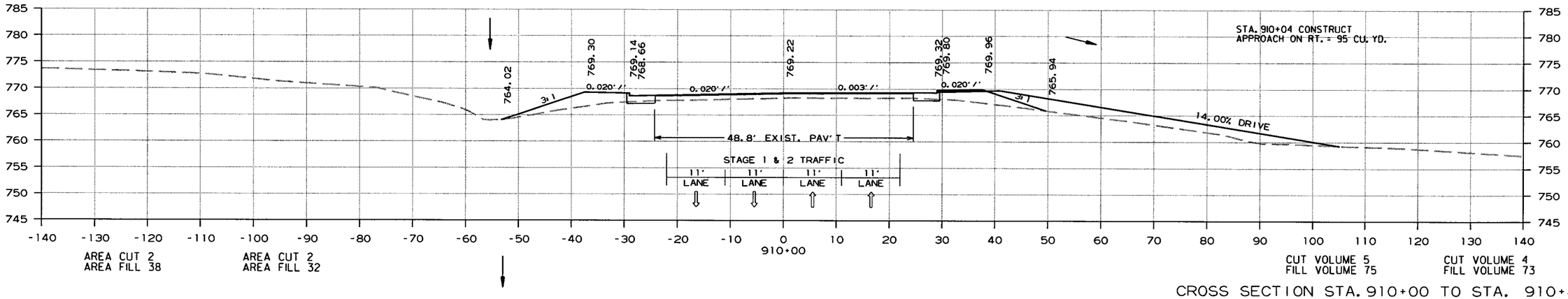
(2) CROSS SECTIONS







CROSS SECTION STA. 910+00 TO STA. 910+45

10/22/2013

R080423.DGN

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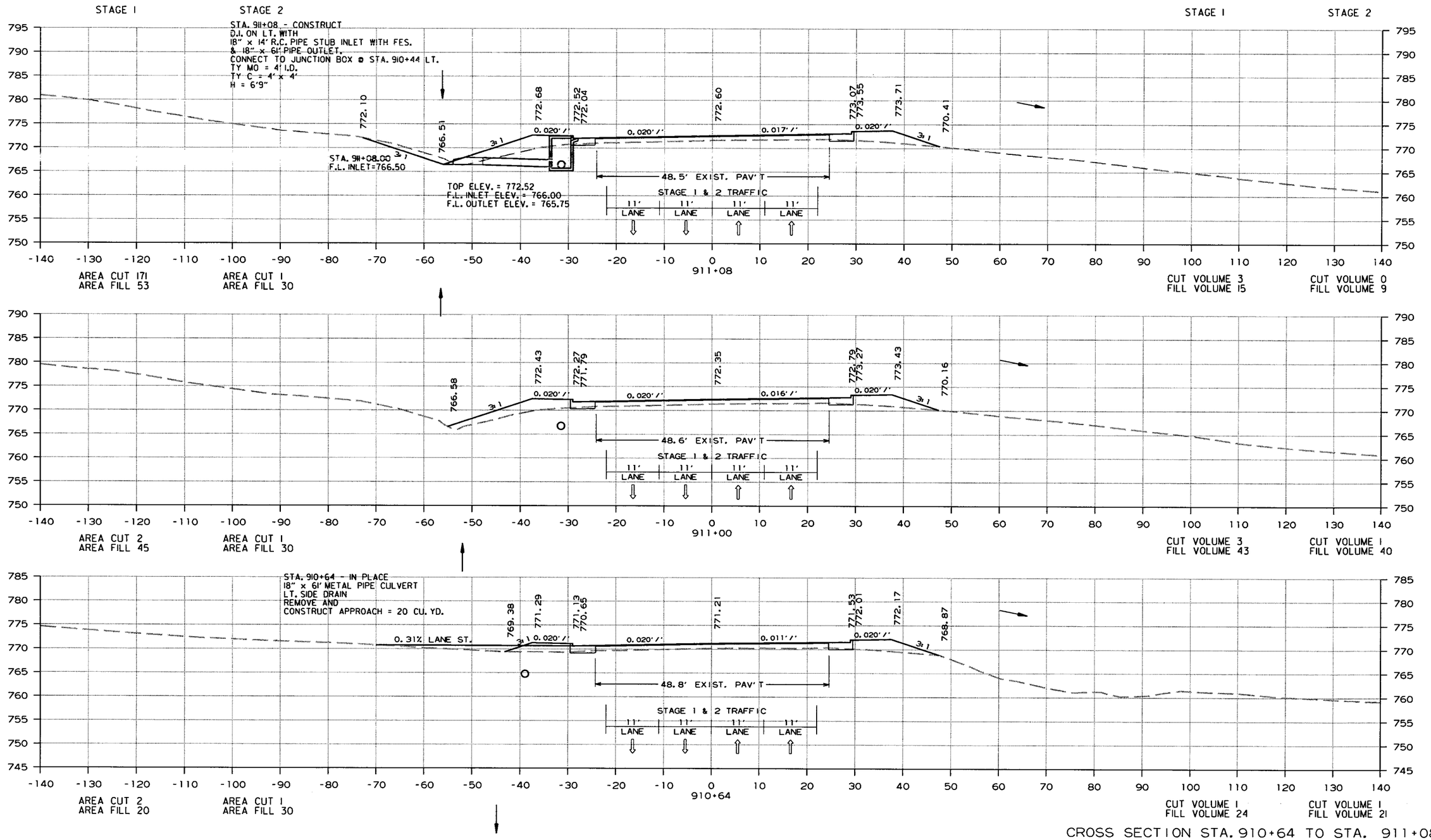
(2) CROSS SECTIONS



CROSS SECTION STA. 910+64 TO STA. 911+08

10/22/2013

R080423.DGN

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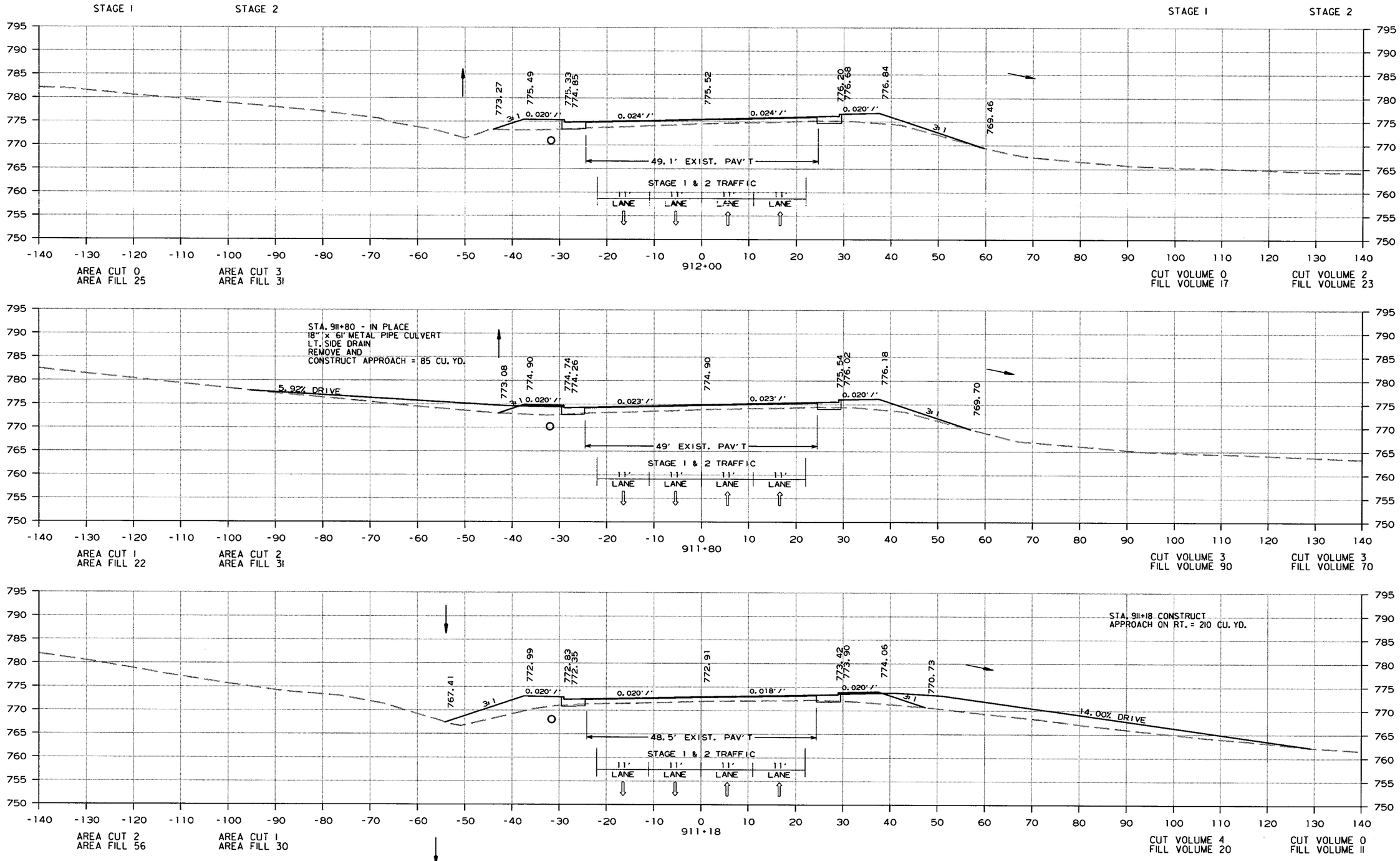
(2) CROSS SECTIONS



CROSS SECTION STA. 911+18 TO STA. 912+00

10/22/2013

R080423.DGN

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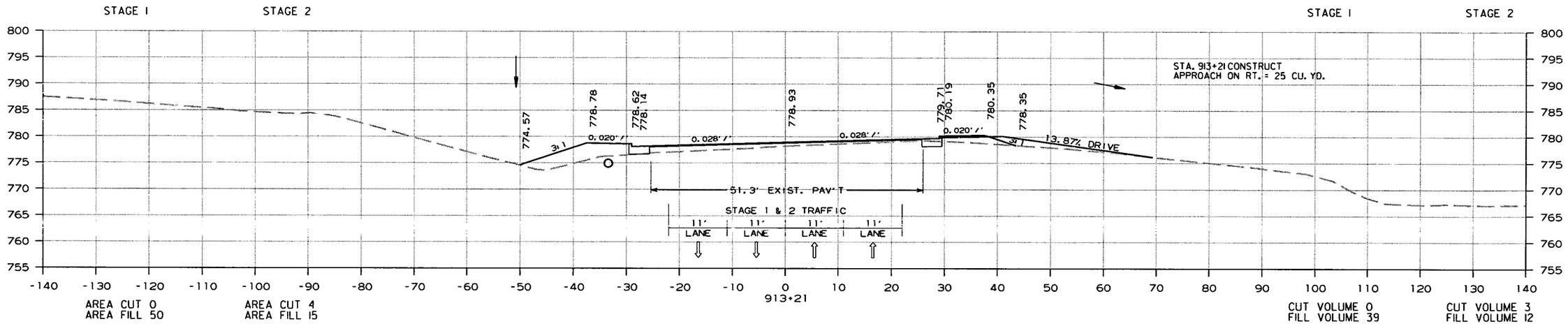
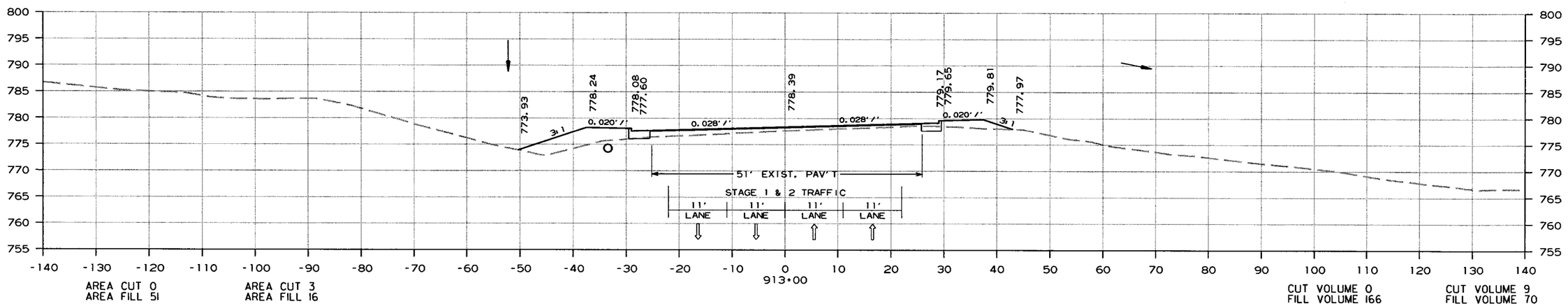
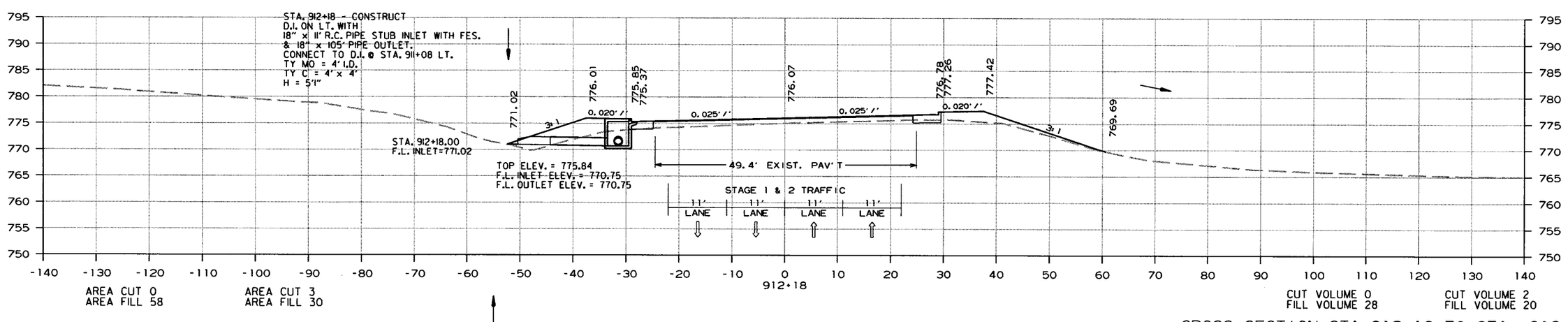
(2) CROSS SECTIONS







CROSS SECTION STA. 912+18 TO STA. 913+21

10/22/2013

R080423.DGN

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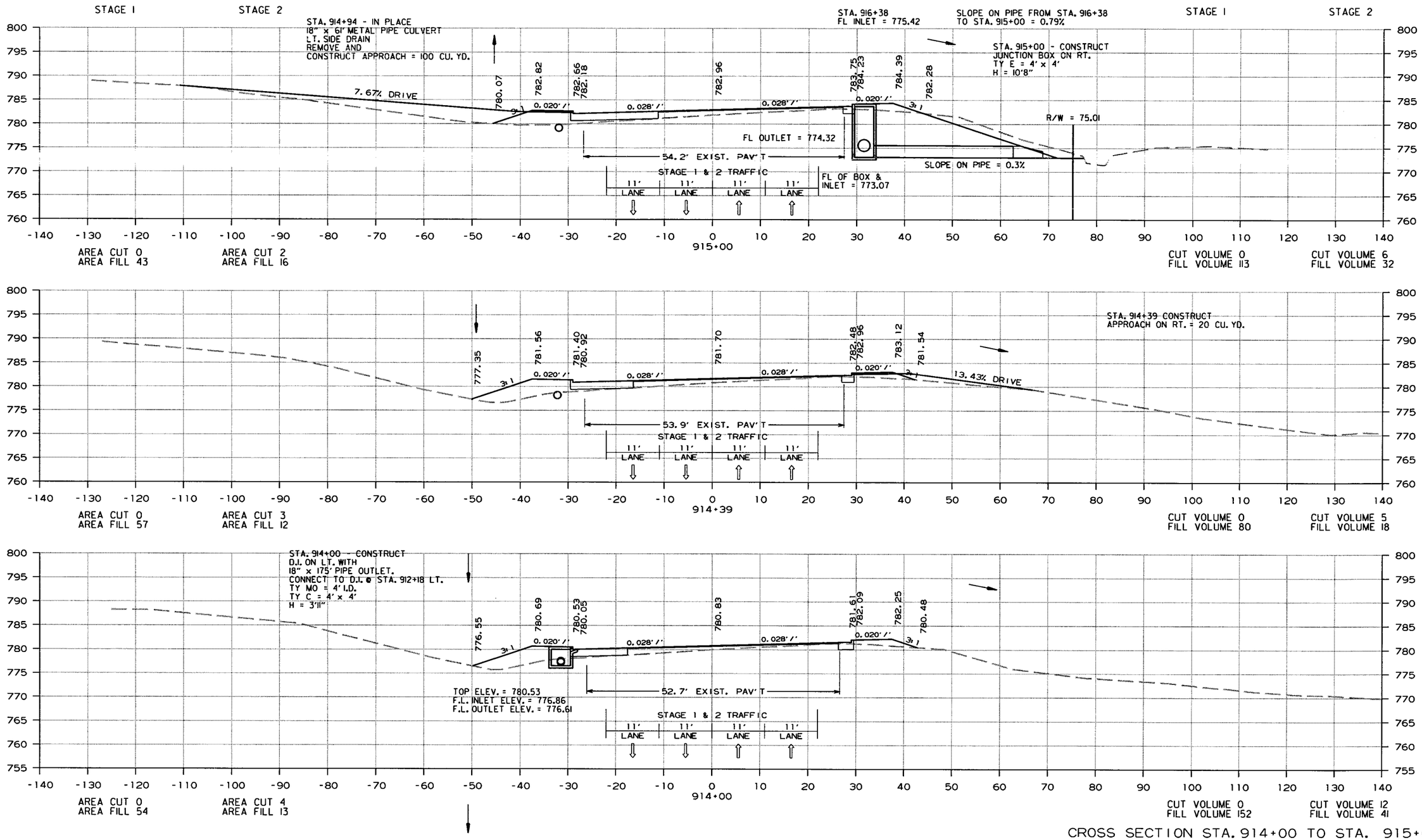
(2) CROSS SECTIONS



CROSS SECTION STA. 914+00 TO STA. 915+00

10/22/2013

R080423.DGN

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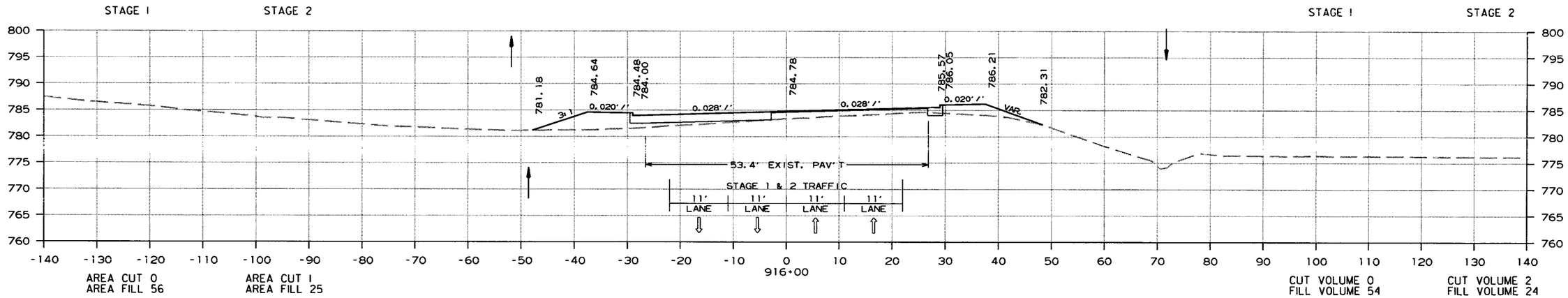
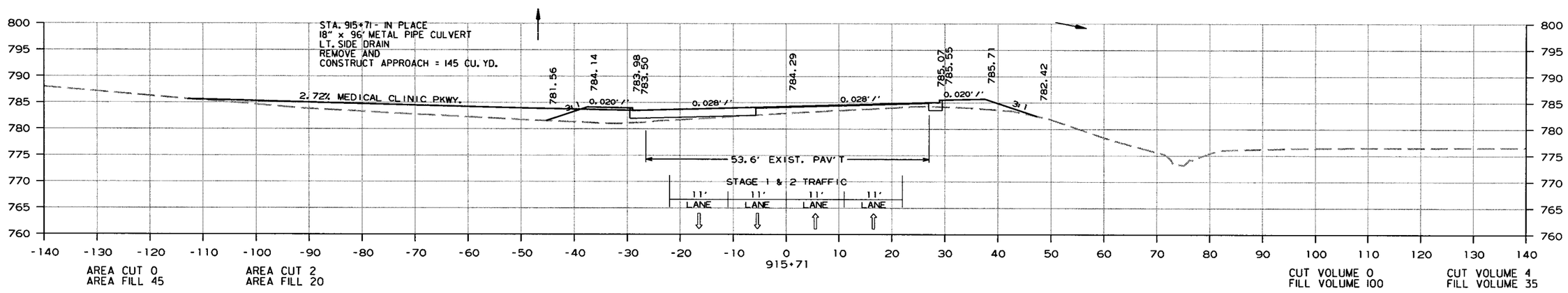
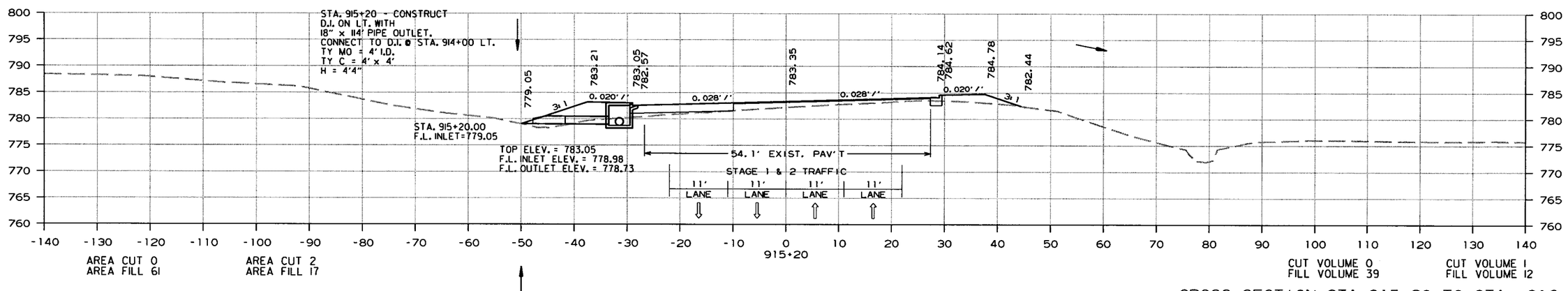
(2) CROSS SECTIONS







CROSS SECTION STA. 915+20 TO STA. 916+00

10/22/2013

R080423.DGN

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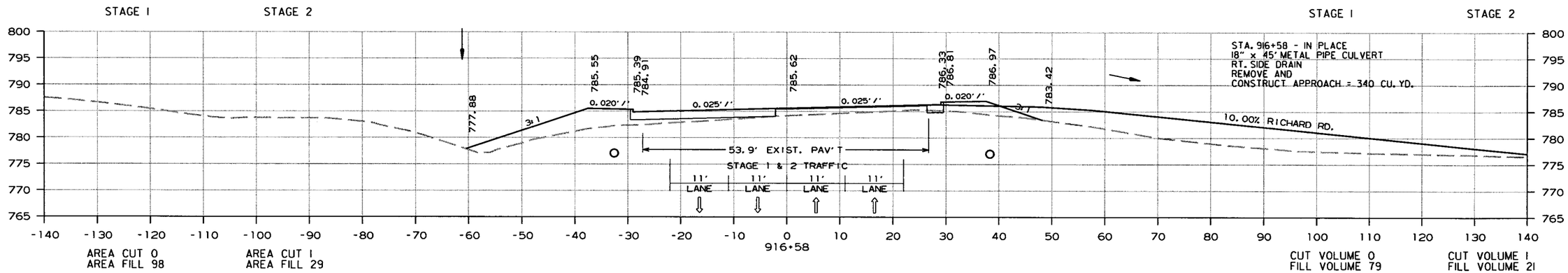
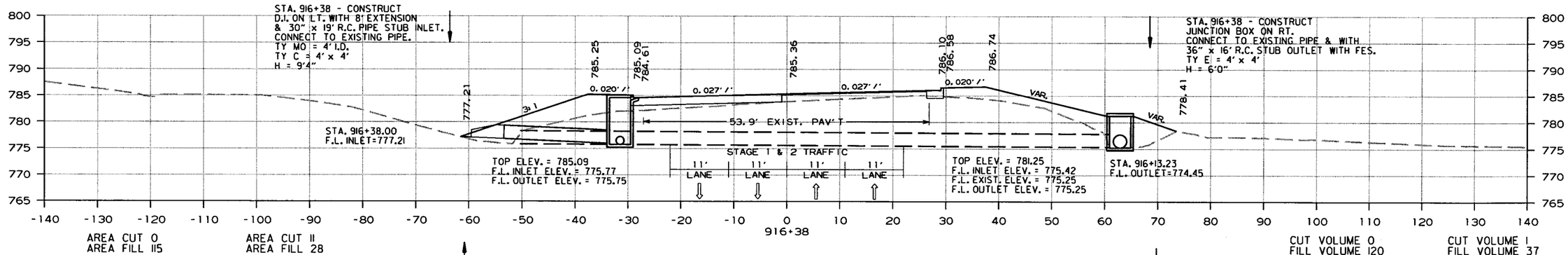
(2) CROSS SECTIONS





CROSS SECTION STA. 916+38 TO STA. 916+58

10/22/2013

R080423.DGN

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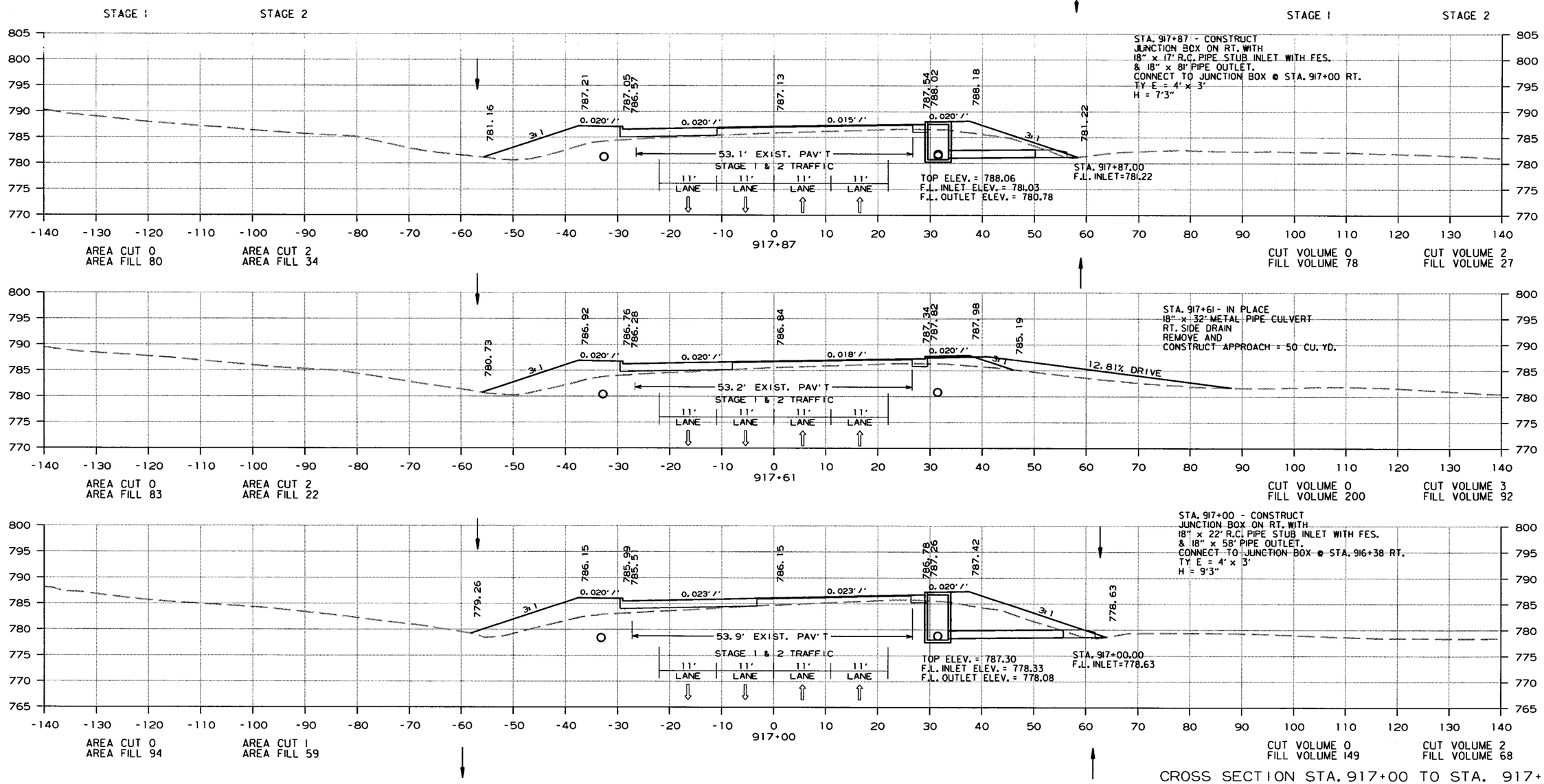
(2) CROSS SECTIONS



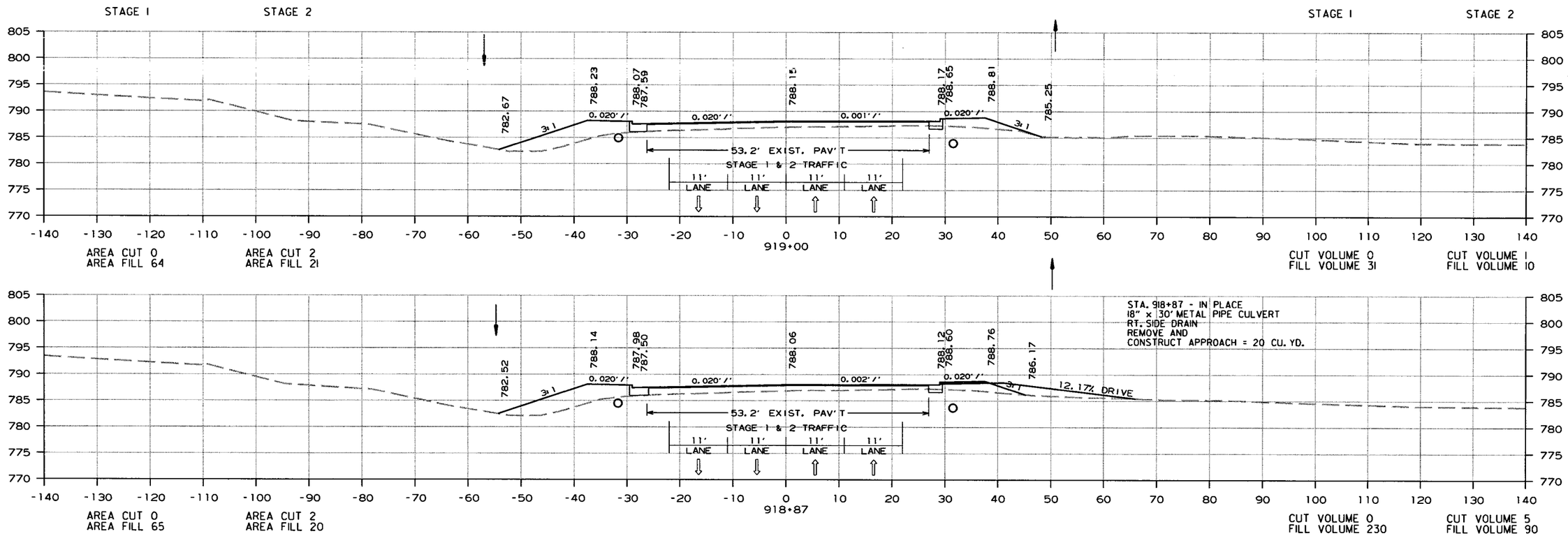
CROSS SECTION STA. 917+00 TO STA. 917+87

10/22/2013

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	481	517

(2) CROSS SECTIONS



CROSS SECTION STA. 918+00 TO STA. 919+00

10/22/2013

R080423.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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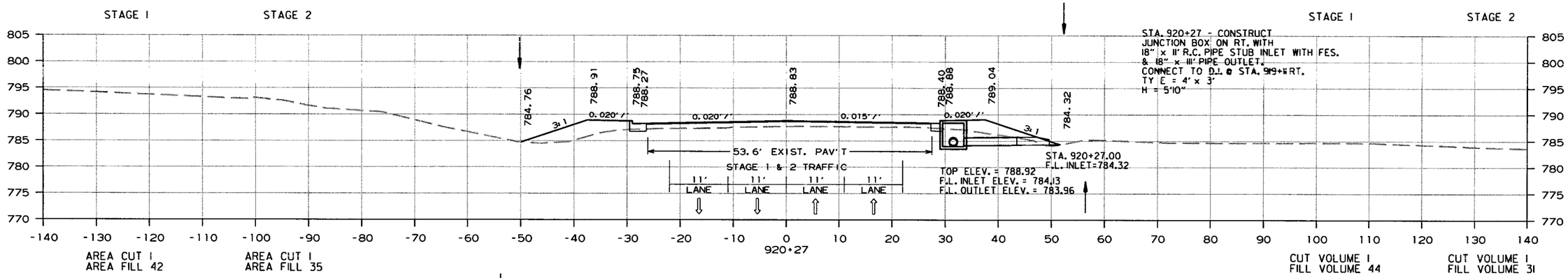
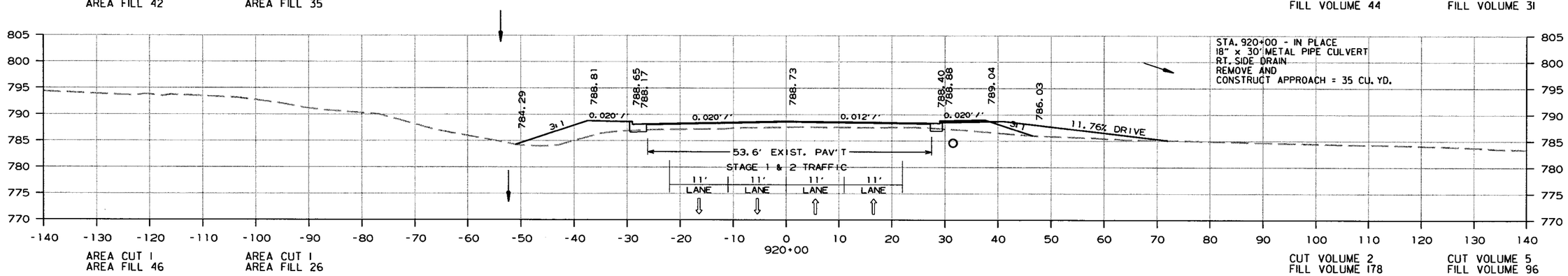
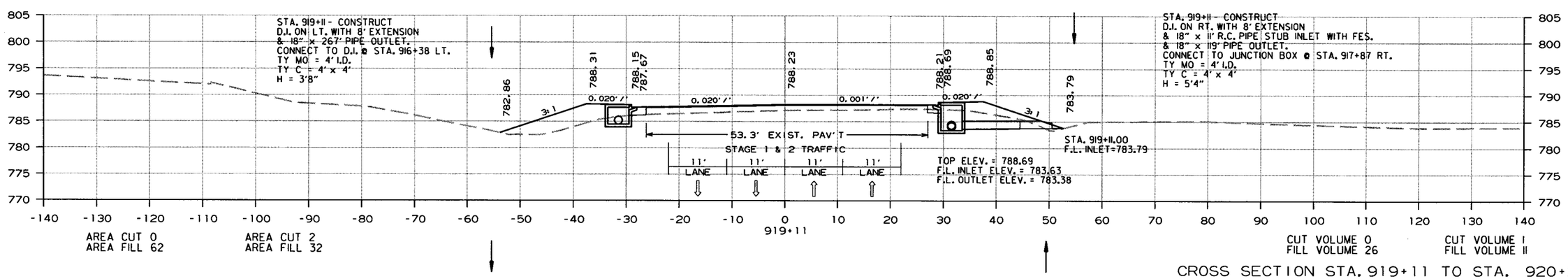
				JOB NO.		080423	482	517

2 CROSS SECTIONS







CROSS SECTION STA. 919+11 TO STA. 920+27

10/22/2013

R080423.DGN

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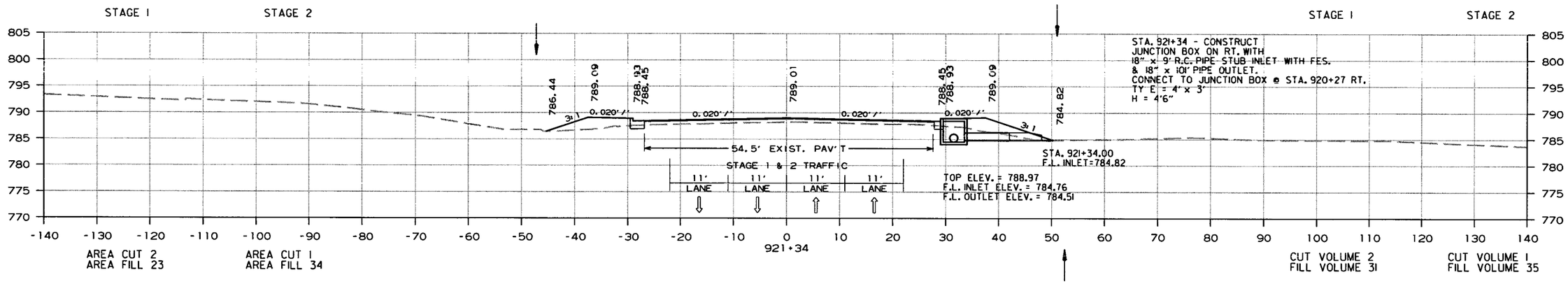
2 CROSS SECTIONS



CROSS SECTION STA. 920+62 TO STA. 921+34

10/22/2013

R080423.DGN

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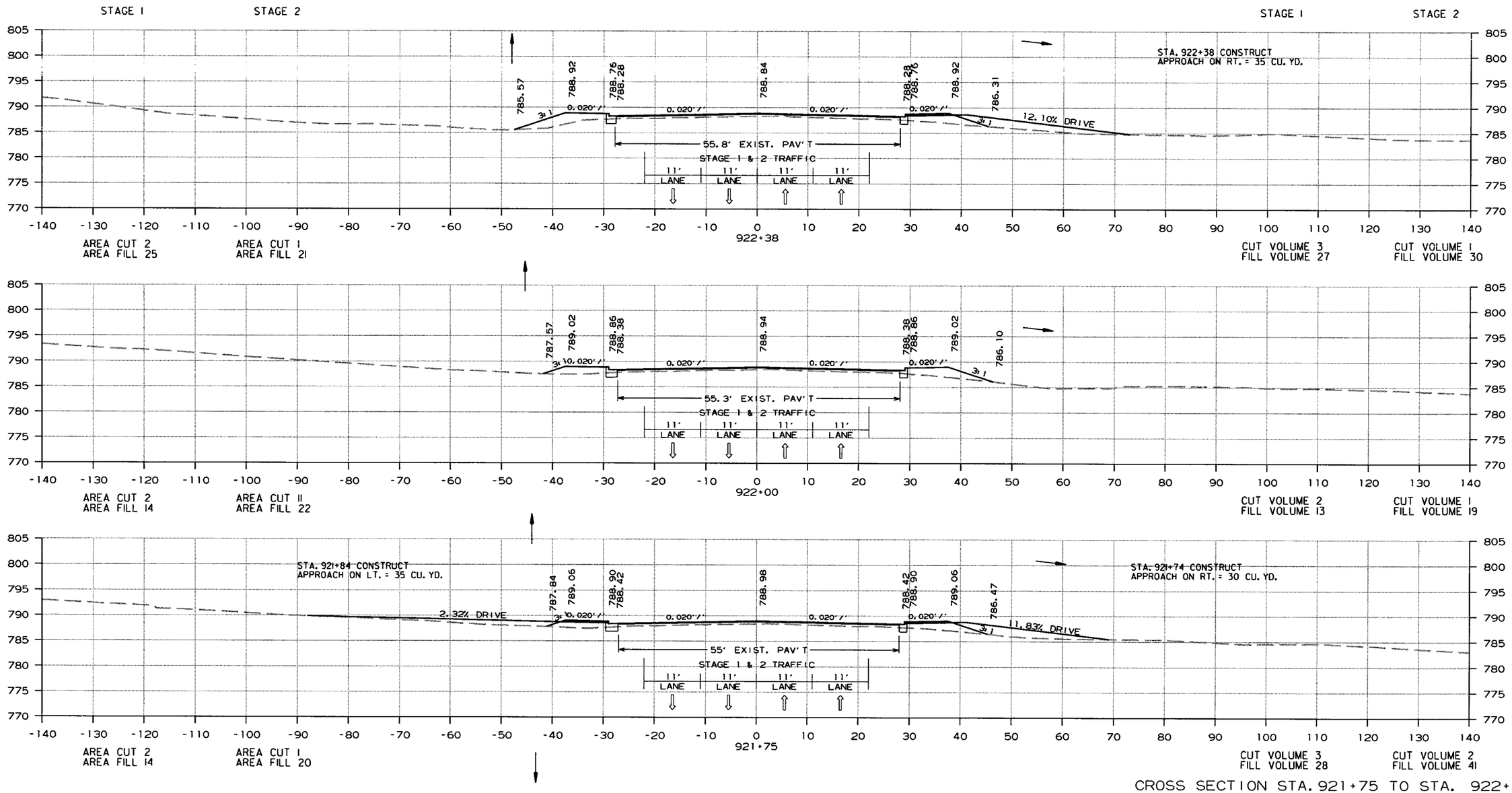
(2) CROSS SECTIONS



CROSS SECTION STA. 921+75 TO STA. 922+38

10/22/2013

R080423.DGN

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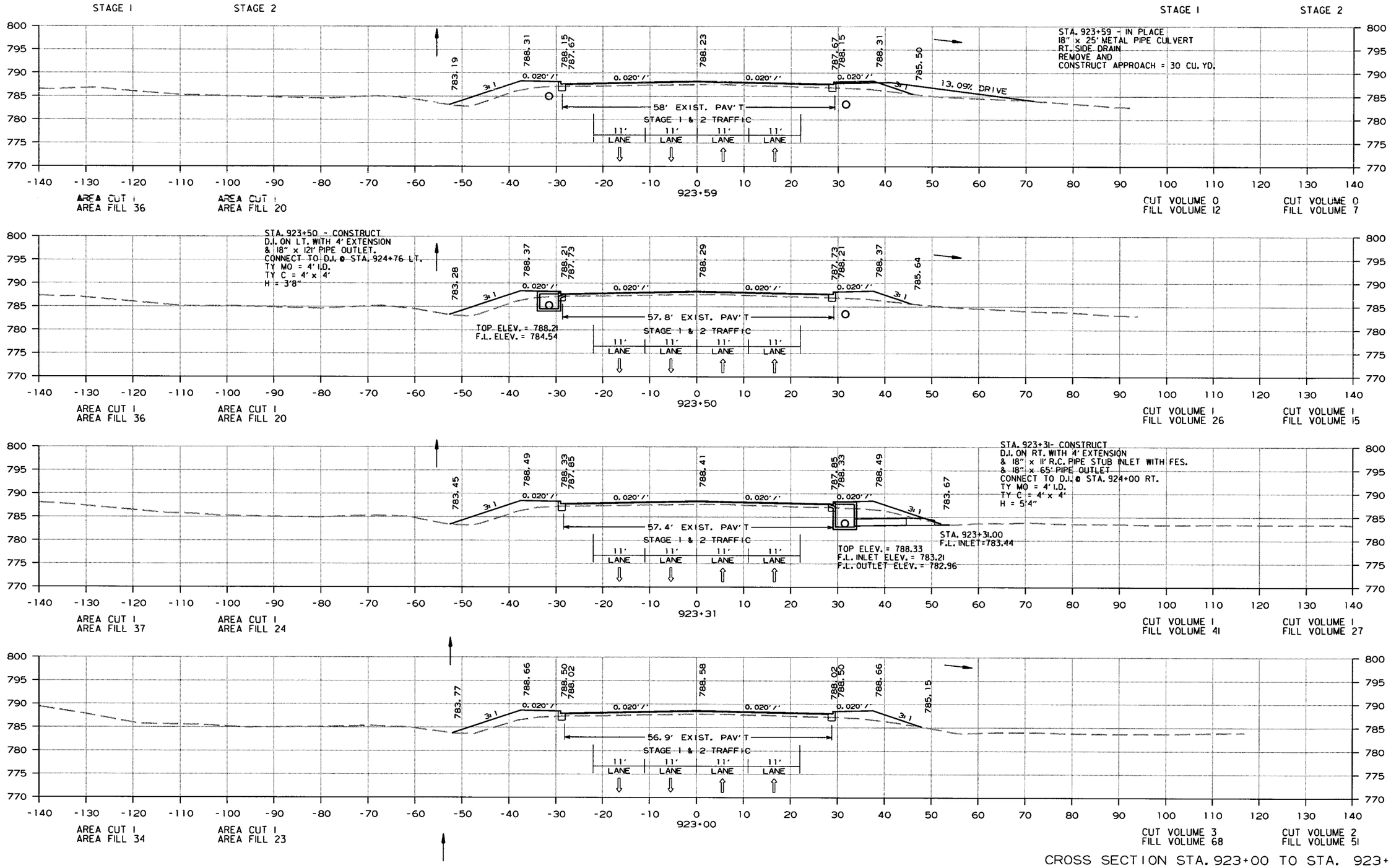
(2) CROSS SECTIONS



CROSS SECTION STA. 923+00 TO STA. 923+59

10/22/2013

R080423.DGN

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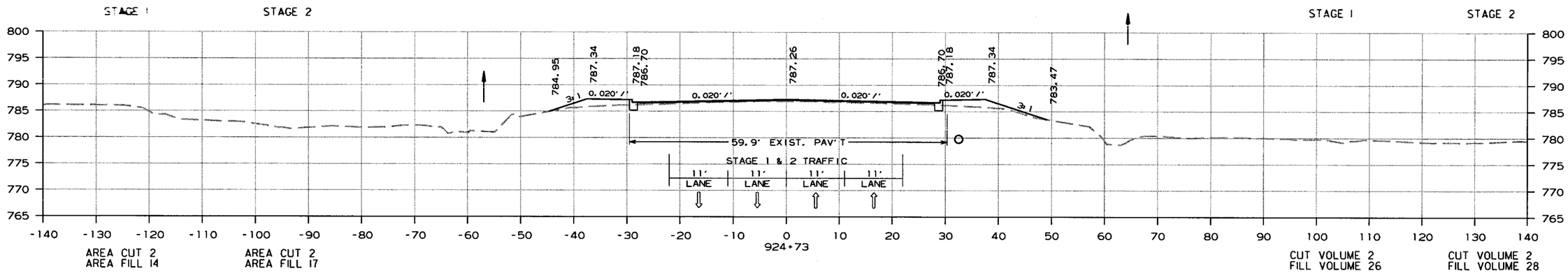
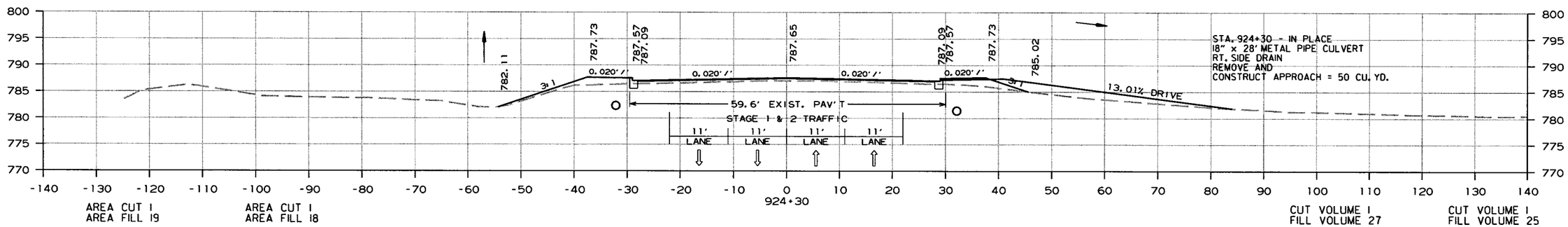
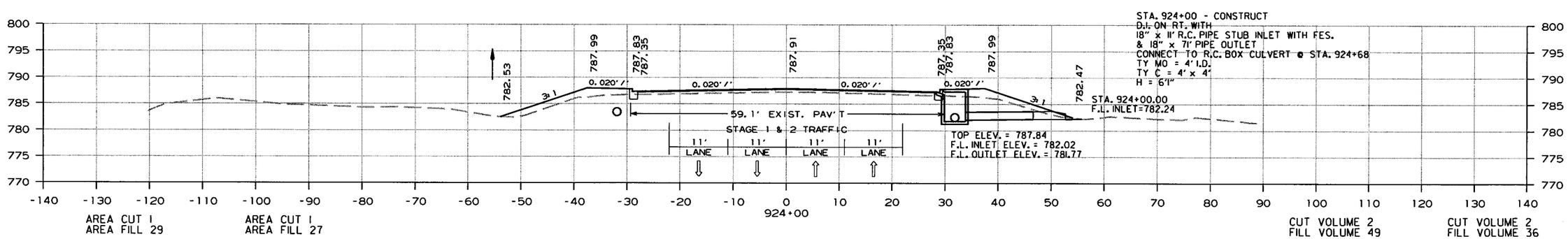
(2) CROSS SECTIONS







CROSS SECTION STA. 924+00 TO STA. 924+73

10/22/2013

R080423.DGN

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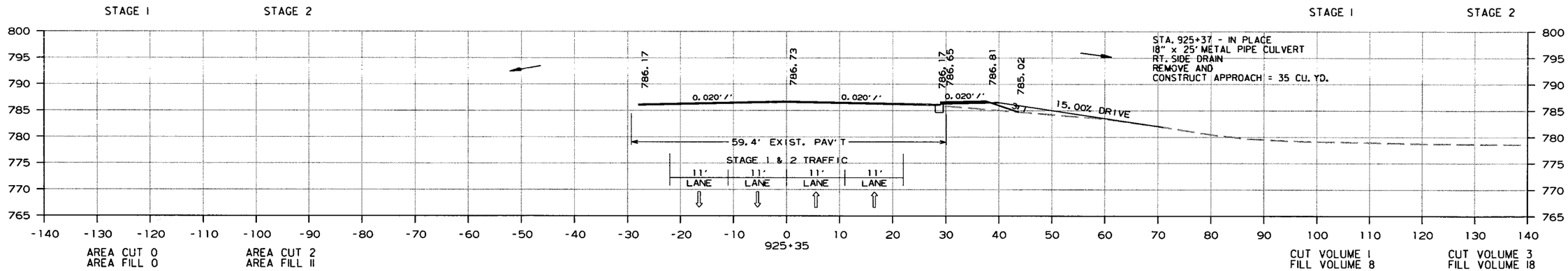
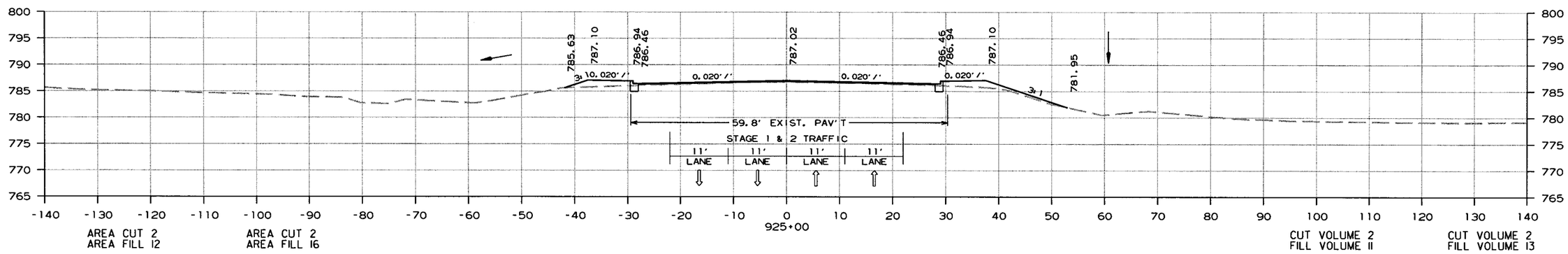
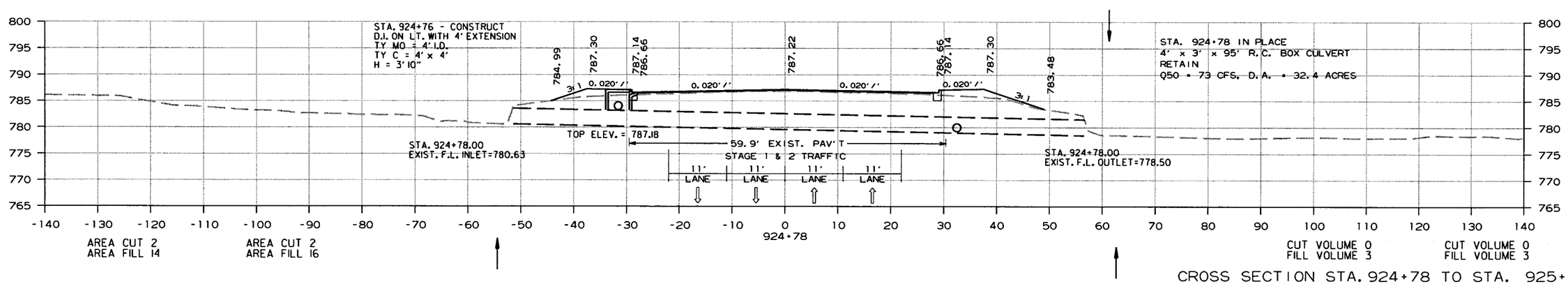
(2) CROSS SECTIONS







CROSS SECTION STA. 924+78 TO STA. 925+35

10/22/2013

R080423.DGN

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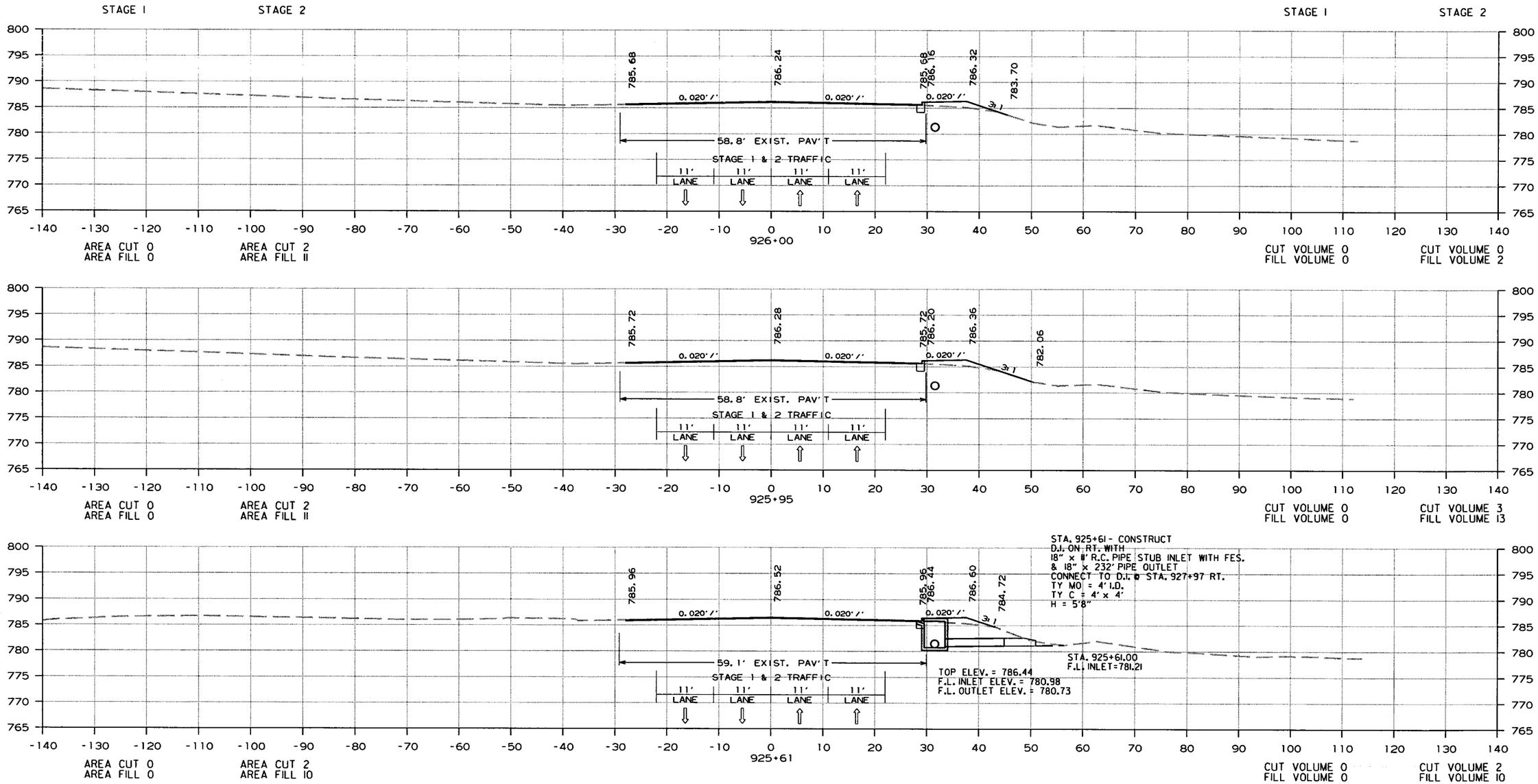
(2) CROSS SECTIONS



CROSS SECTION STA. 925+61 TO STA. 926+00

10/22/2013

R080423.DGN

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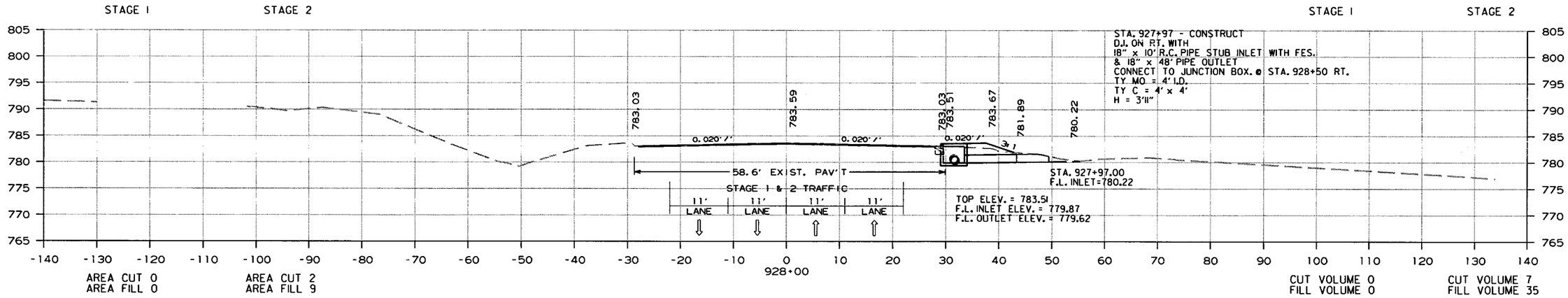
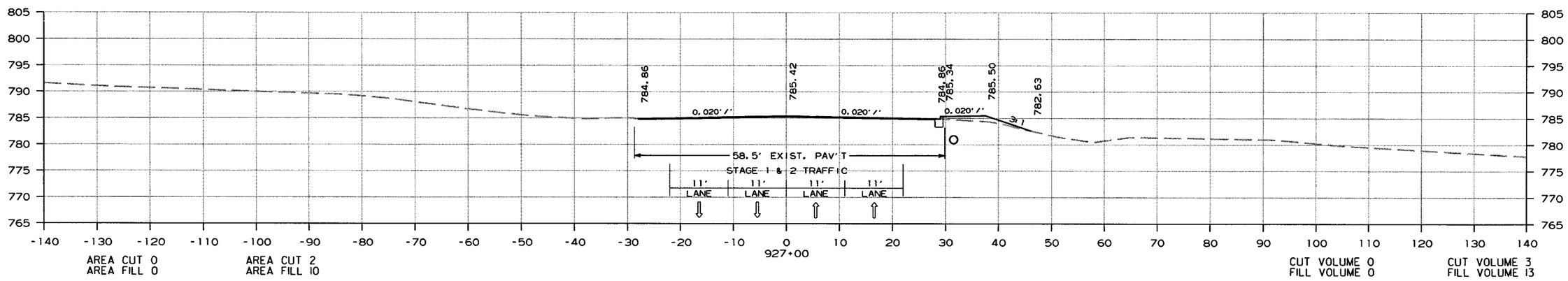
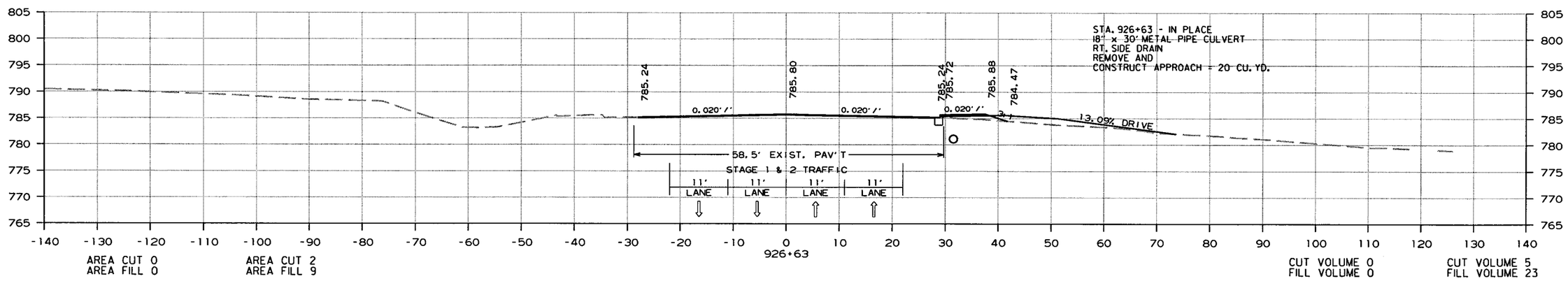
(2) CROSS SECTIONS







CROSS SECTION STA. 926+63 TO STA. 928+00

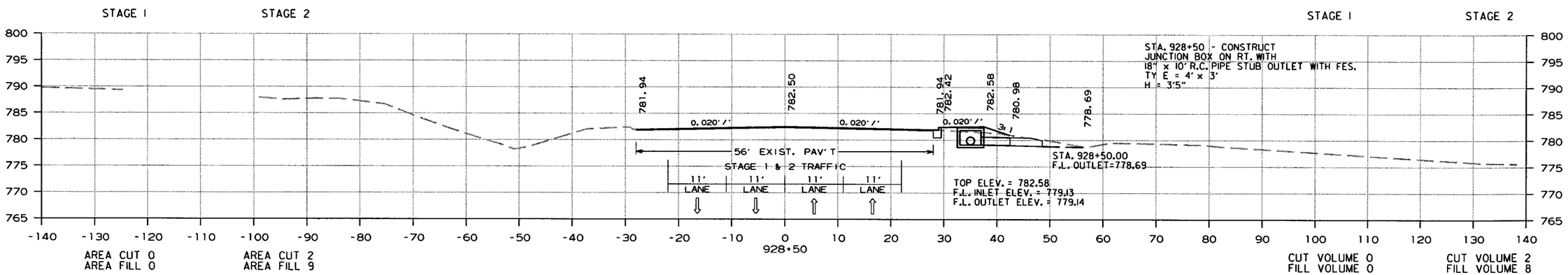
10/22/2013

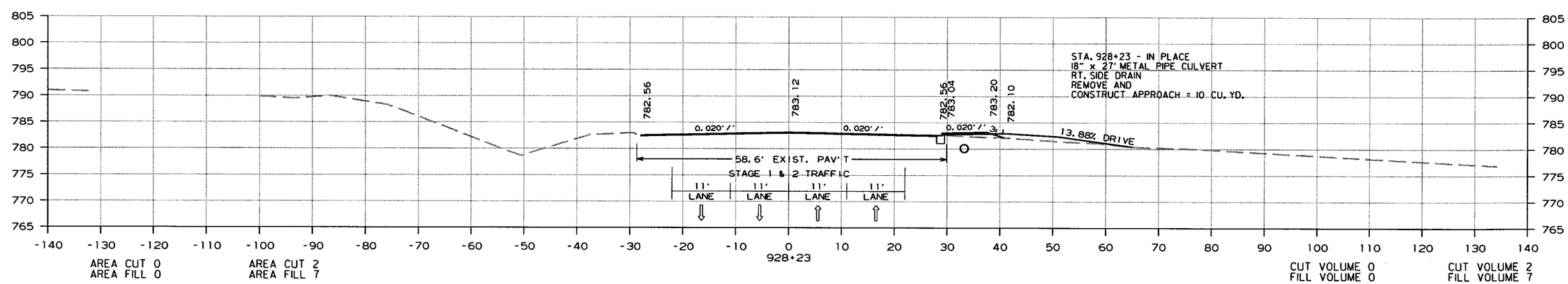
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	490	517

(2) CROSS SECTIONS

STA. 928+92.71 BEGIN 100' TRANSITION
STA. 928+92.71 END JOB 080423





CROSS SECTION STA. 928+23 TO STA. 928+50

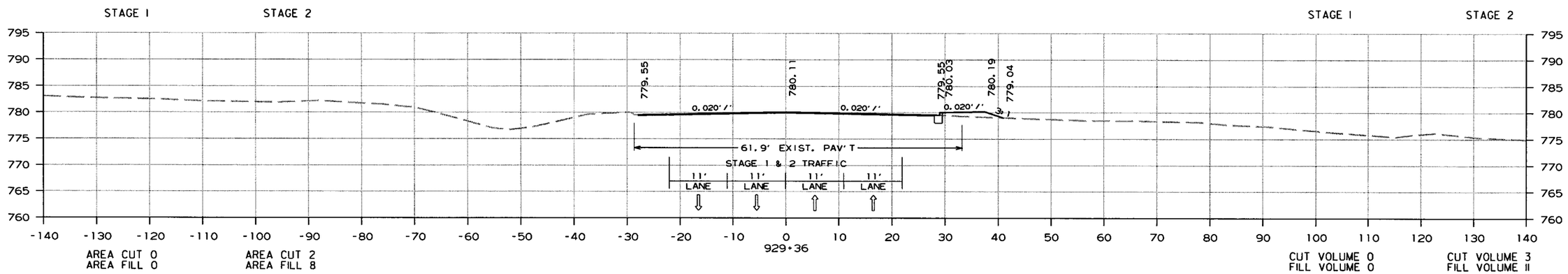
10/22/2013

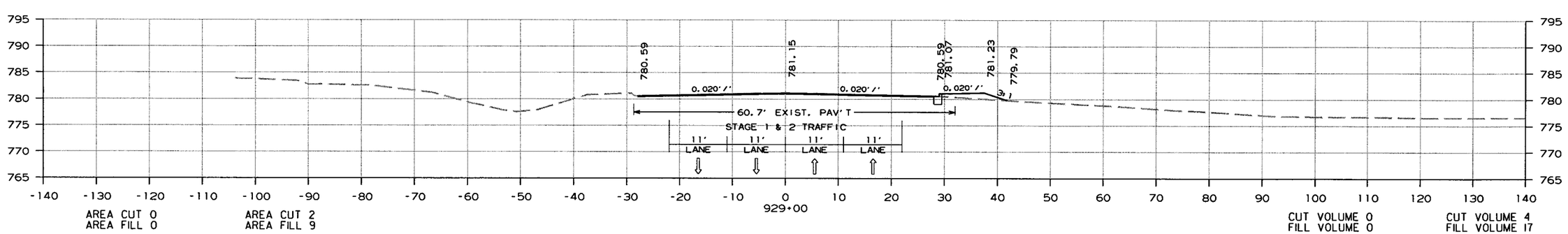
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	491	517

(2) CROSS SECTIONS

STA. 929+92.71 END 100' TRANSITON





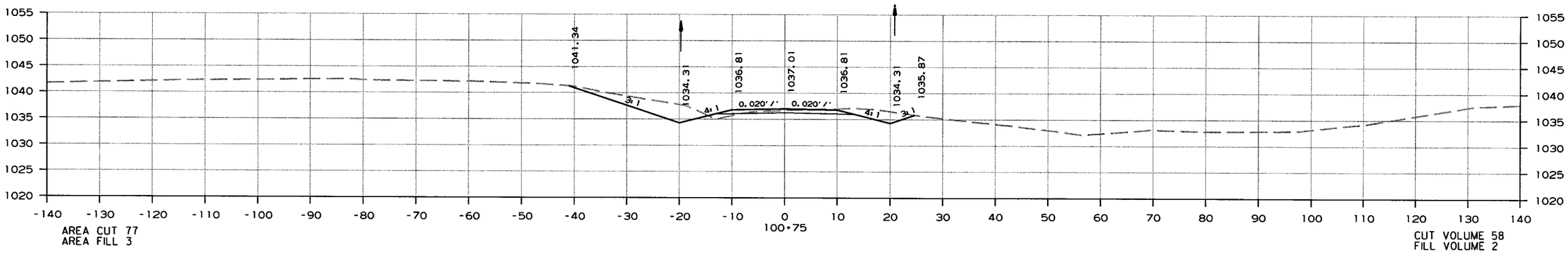
CROSS SECTION STA. 929+36 TO STA. 928+50

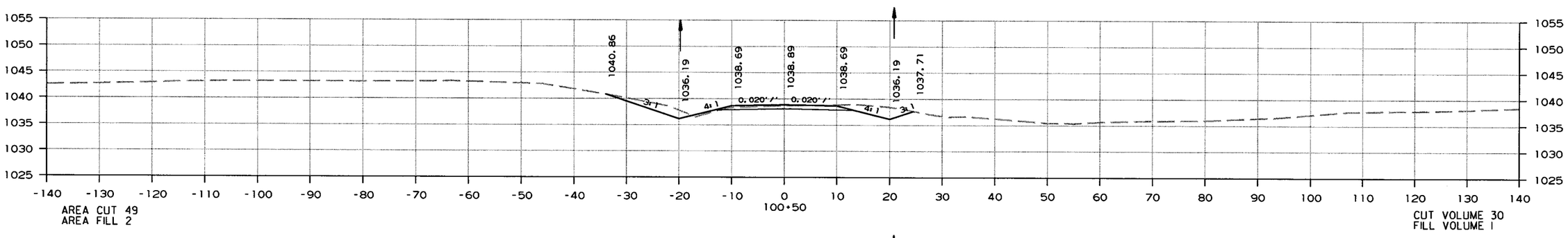
10/22/2013

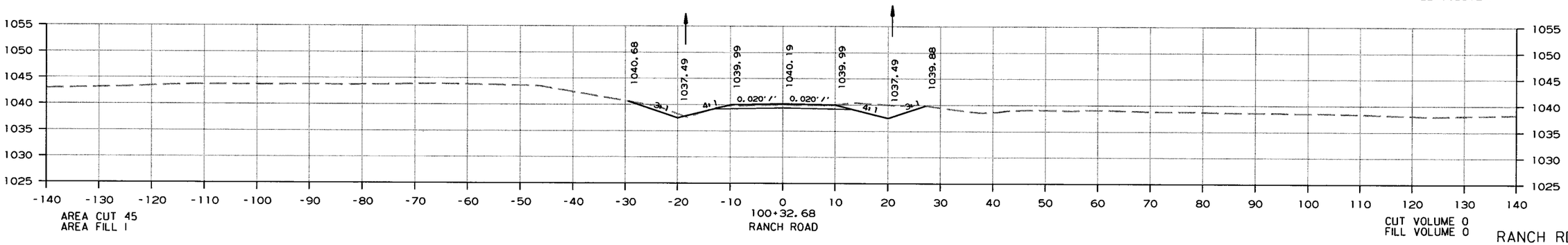
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	492	517

(2) CROSS SECTIONS SR







RANCH RD.

CROSS SECTION STA. 100+33 TO STA. 100+75

8/12/2016

R080423.DGN

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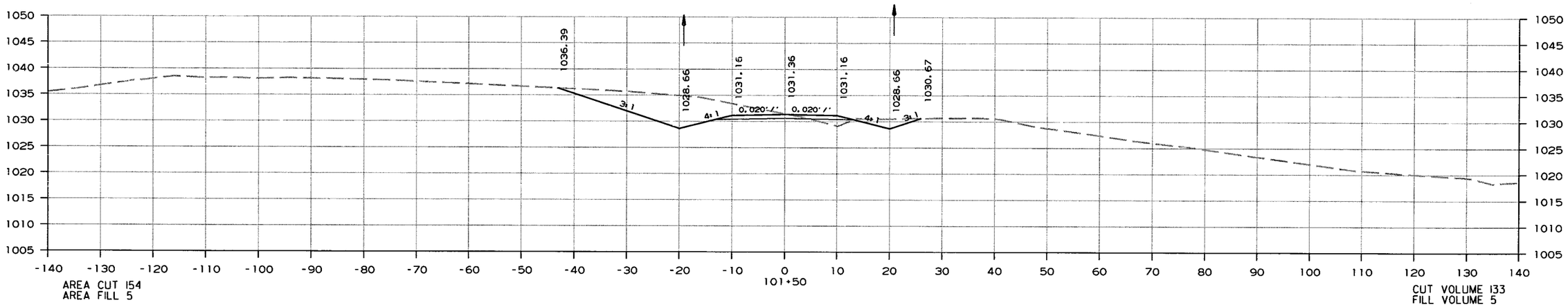
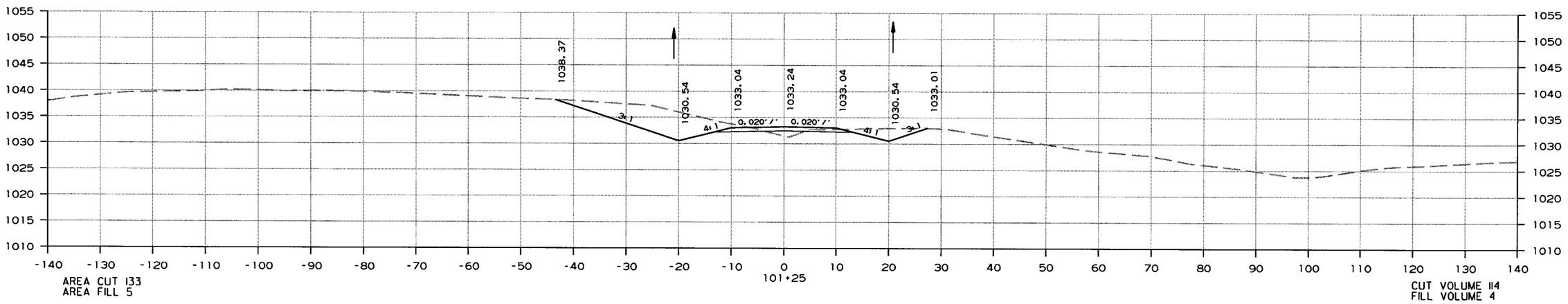
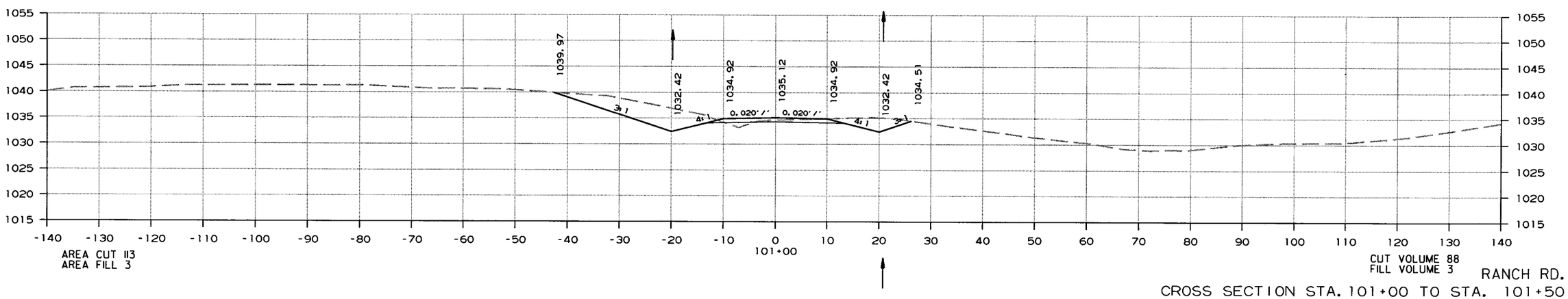
(2) CROSS SECTIONS SR







RANCH RD.

CROSS SECTION STA. 101+00 TO STA. 101+50

8/12/2016

R080423.DGN

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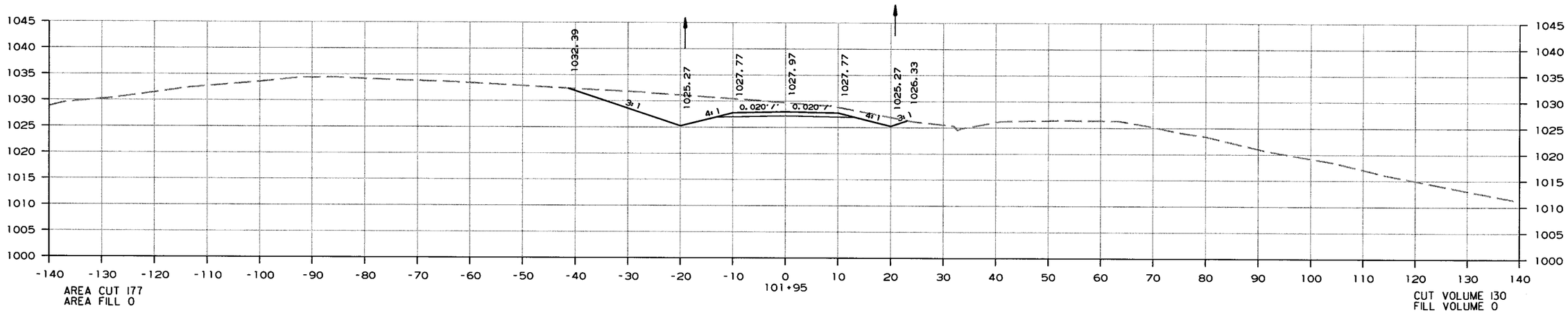
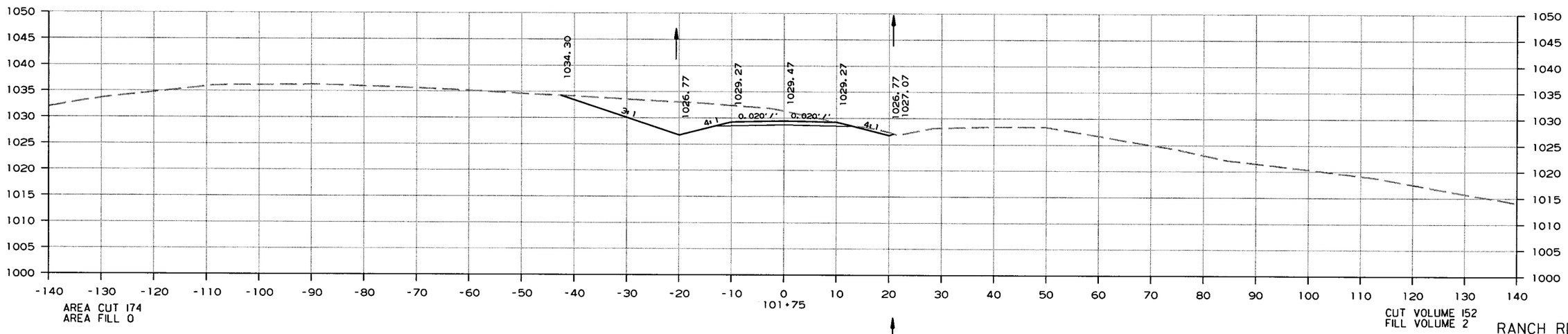
(2) CROSS SECTIONS SR





RANCH RD.

CROSS SECTION STA. 101+75 TO STA. 101+95

8/12/2016

R080423.DGN

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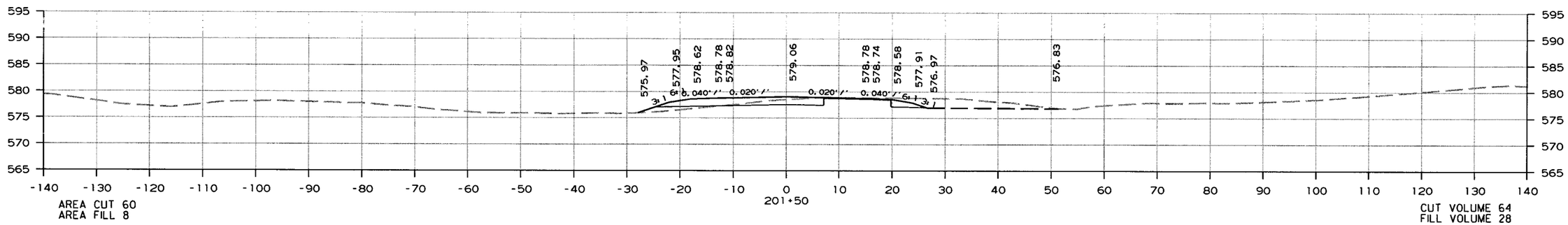
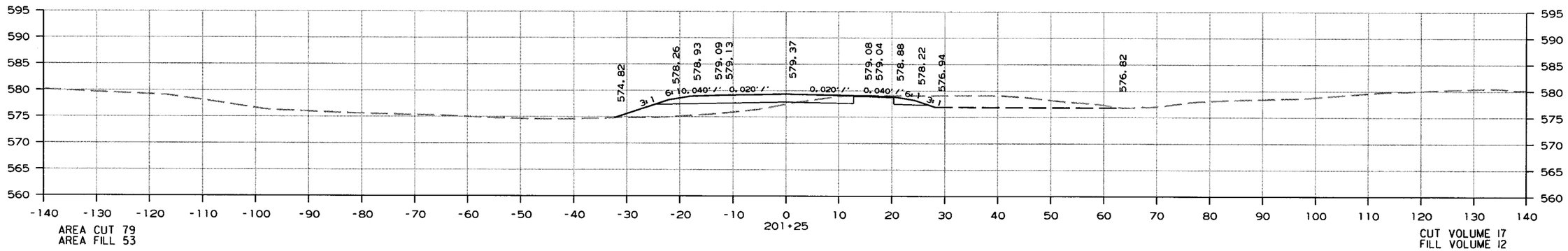
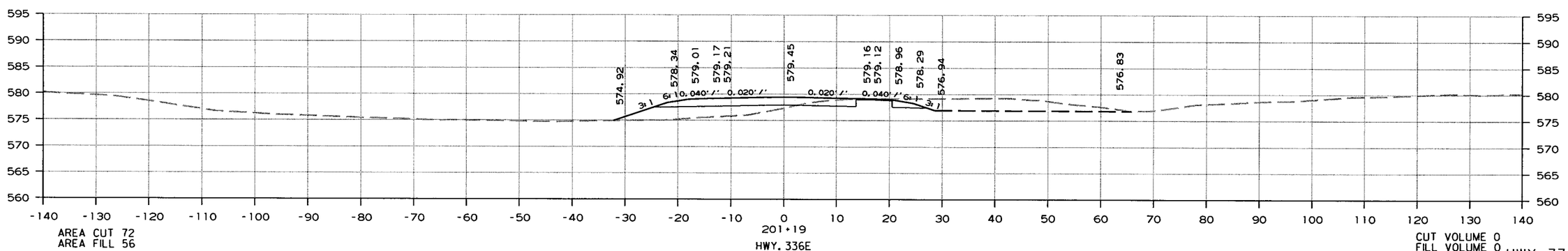
(2) CROSS SECTIONS SR







HWY. 336E

CROSS SECTION STA. 201+19 TO STA. 201+50

8/12/2016

R080423.DGN

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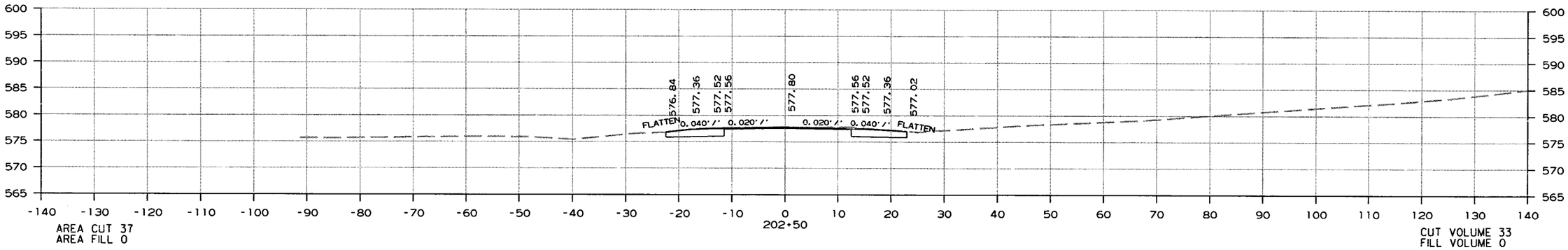
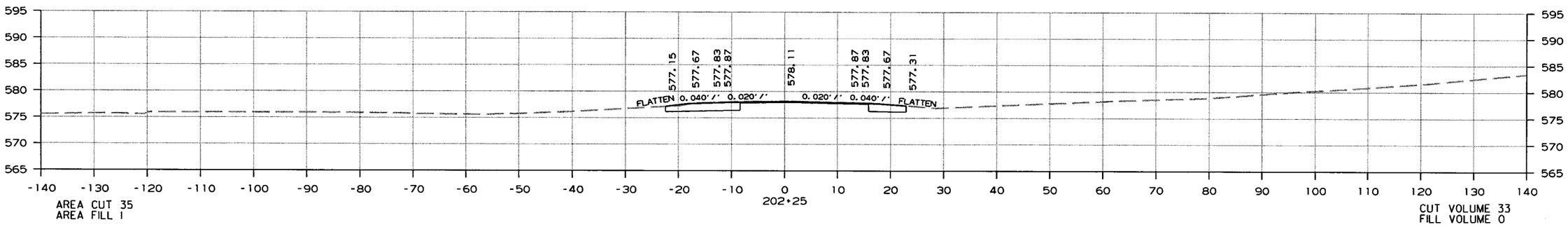
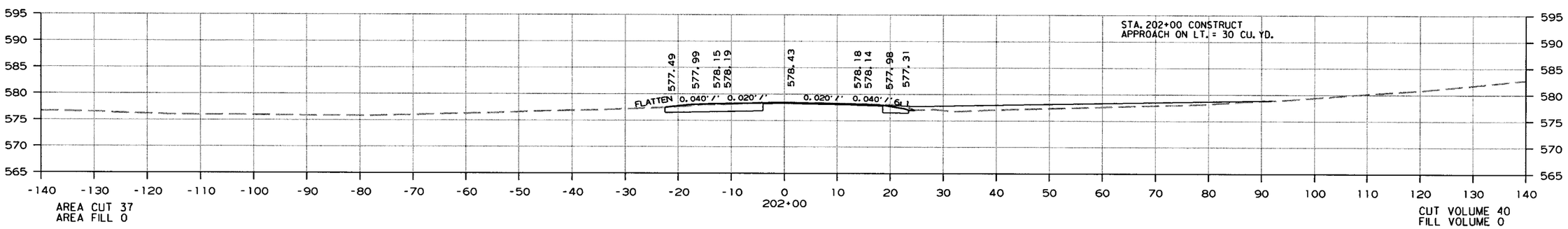
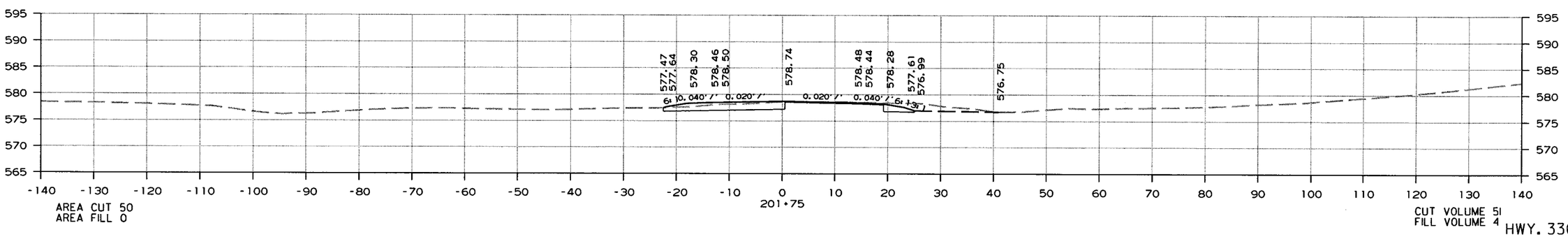
(2) CROSS SECTIONS SR









HWY. 336E

CROSS SECTION STA. 201+75 TO STA. 202+50

8/12/2016

R080423.DGN

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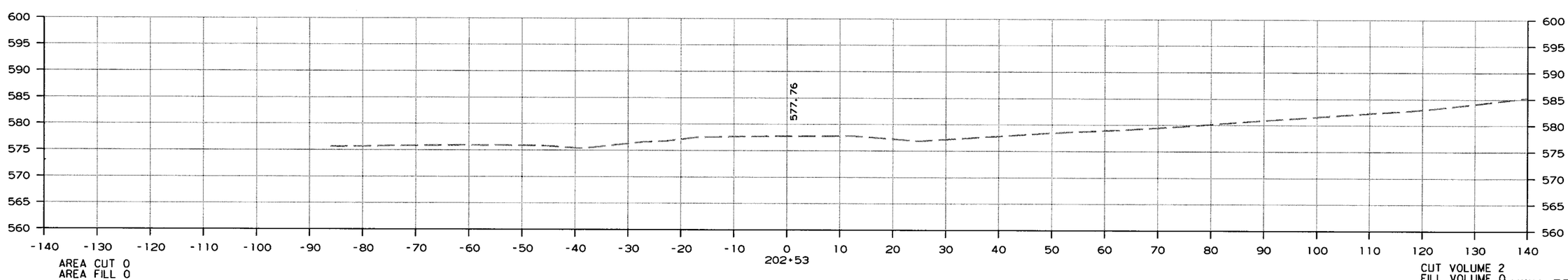
(2) CROSS SECTIONS SR



HWY. 336E

CROSS SECTION STA. 202+53 TO STA. 202+53

8/12/2016

R080423.DGN

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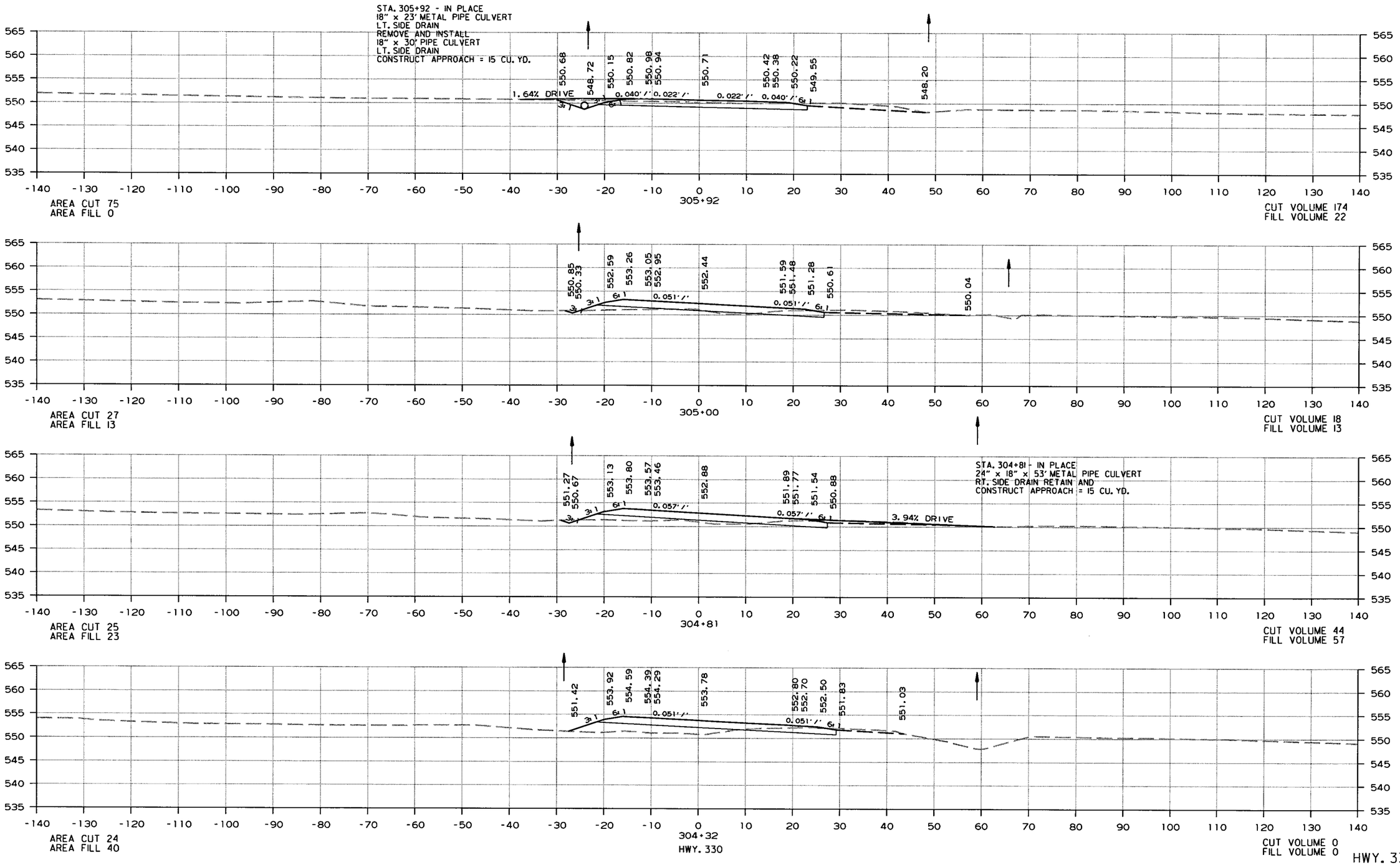
(2) CROSS SECTIONS SR



HWY. 330

CROSS SECTION STA. 304+32 TO STA. 305+92

8/12/2016

R080423.DGN

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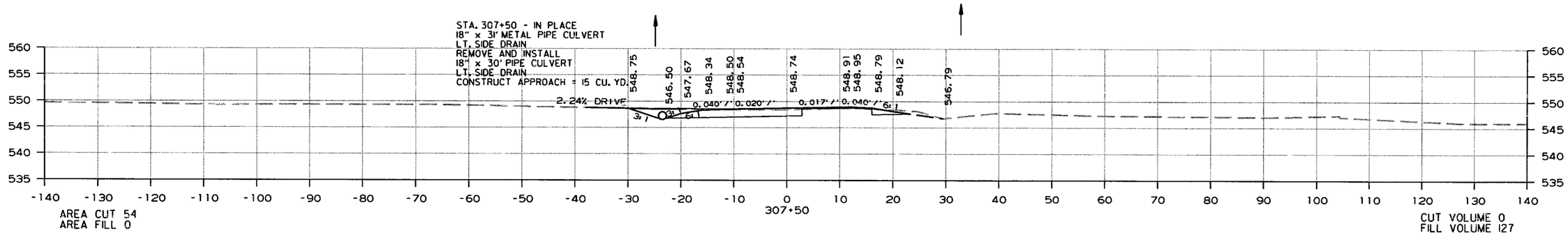
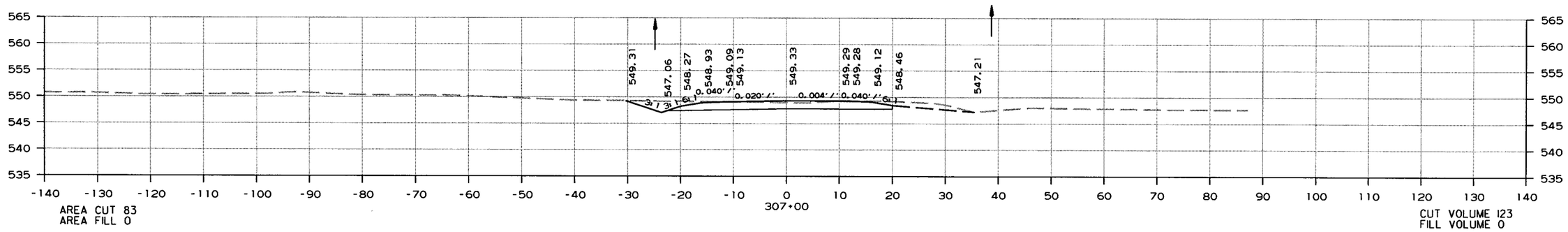
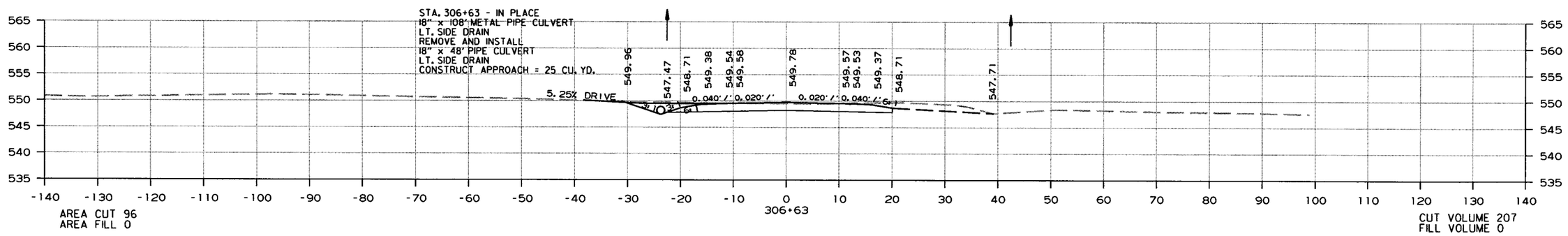
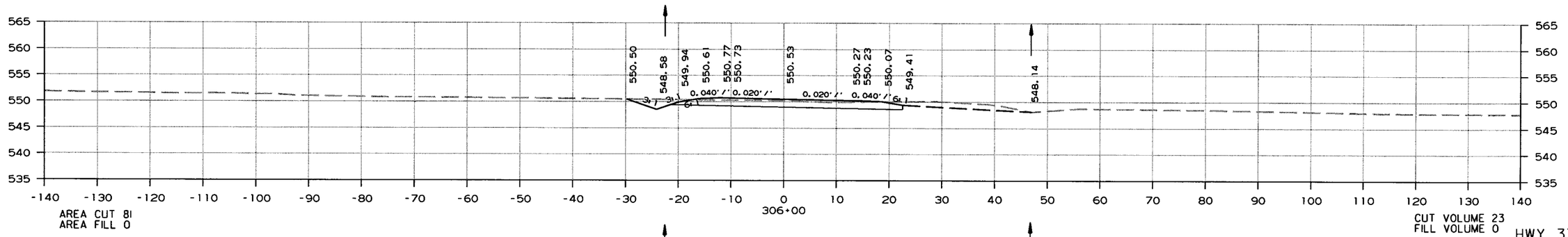
(2) CROSS SECTIONS SR









HWY. 330

CROSS SECTION STA. 306+00 TO STA. 307+50

8/12/2016

R080423.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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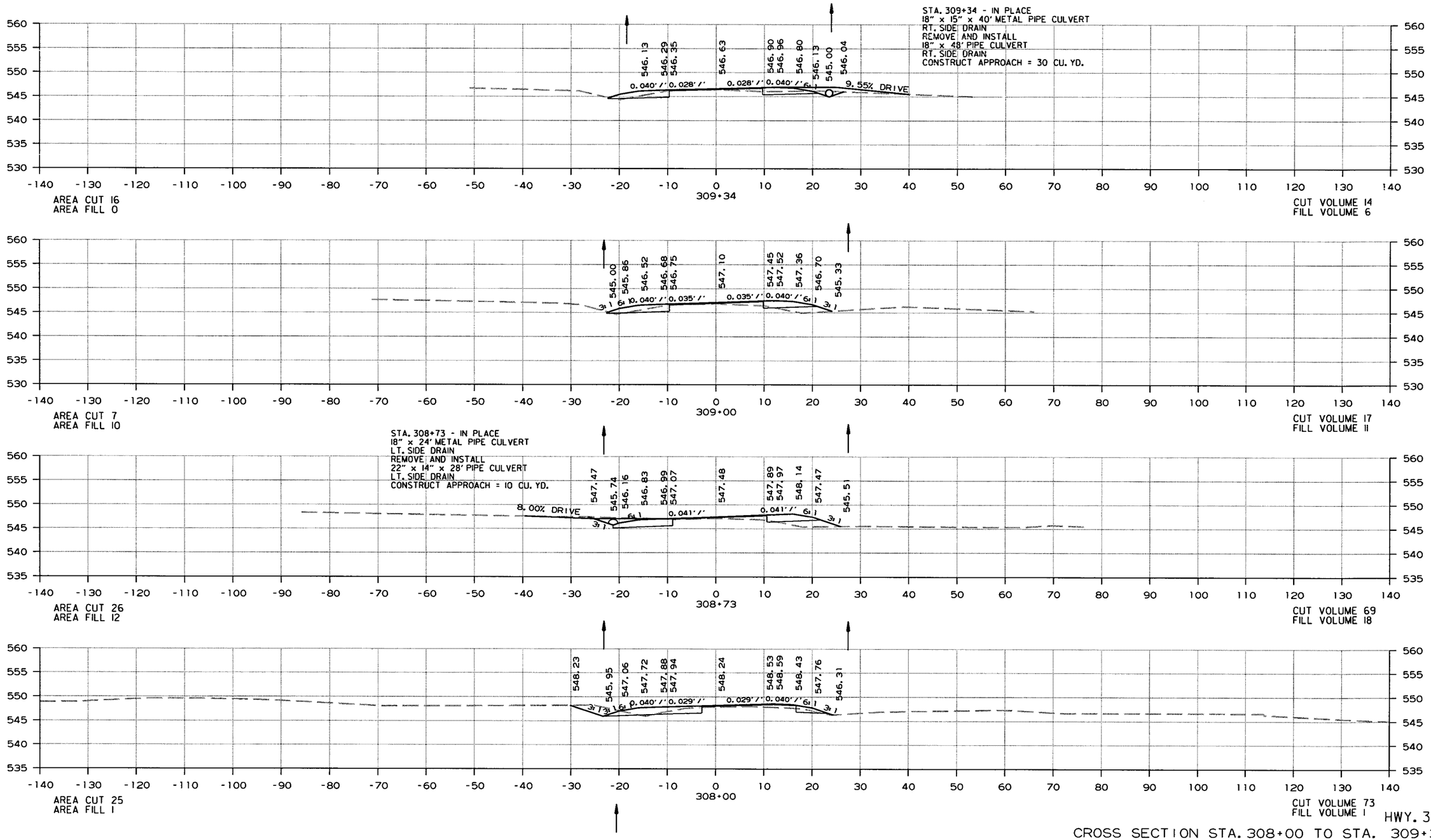
				JOB NO.		080423	500	517

(2) CROSS SECTIONS SR



HWY. 330

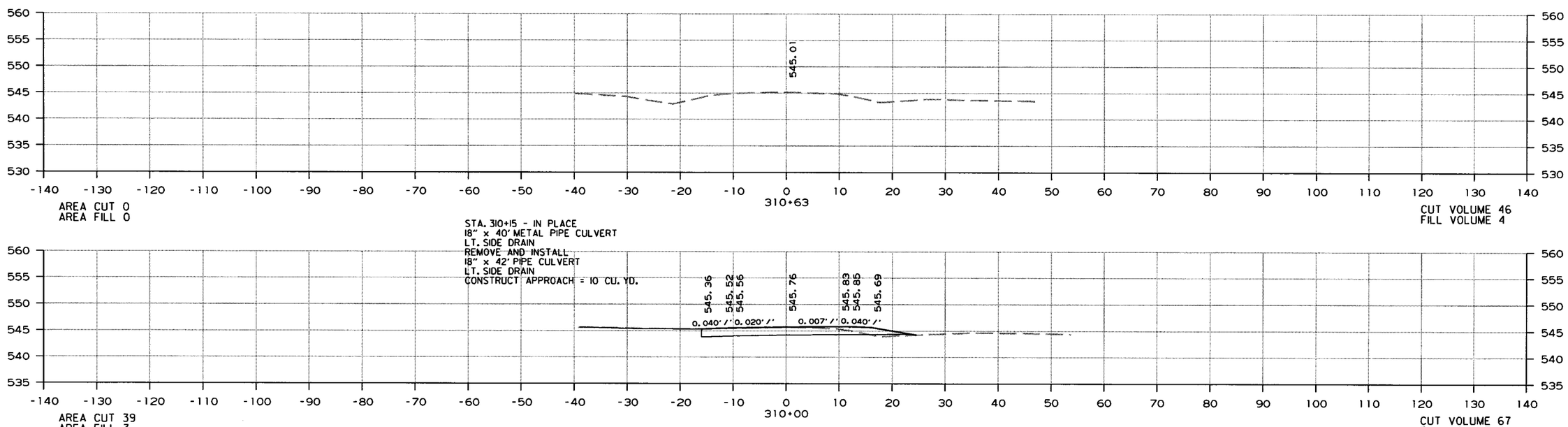
CROSS SECTION STA. 308+00 TO STA. 309+34

8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	501	517

(2) CROSS SECTIONS SR



HWY. 330

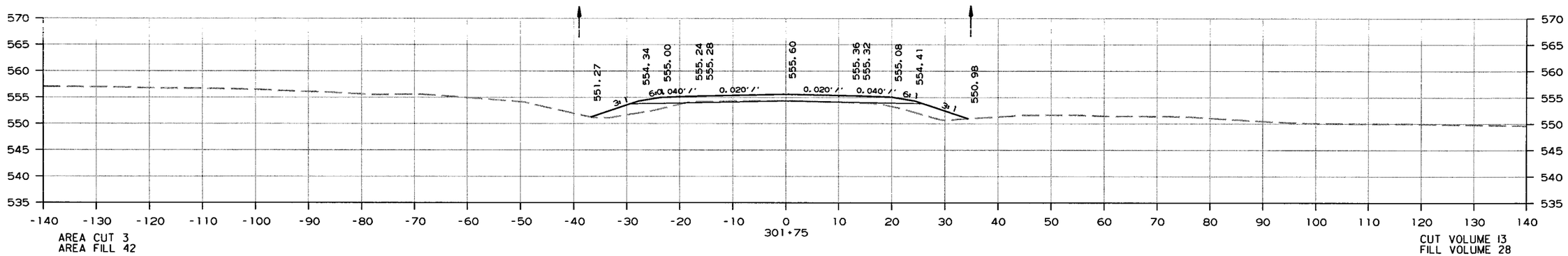
CROSS SECTION STA. 310+00 TO STA. 310+63

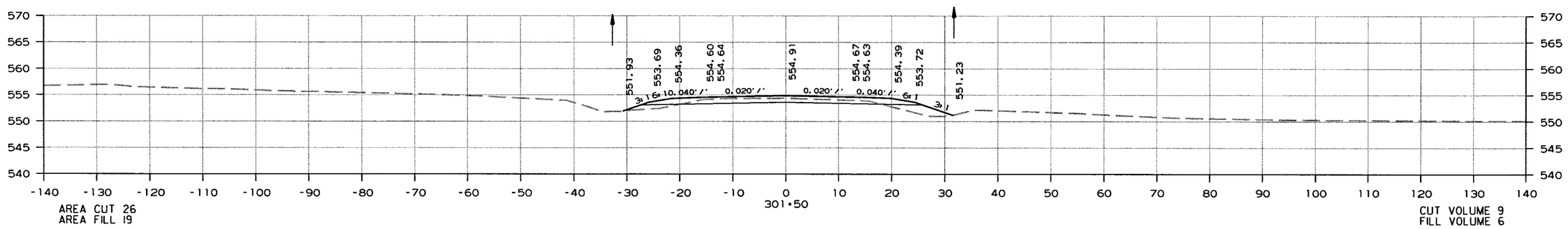
8/12/2016

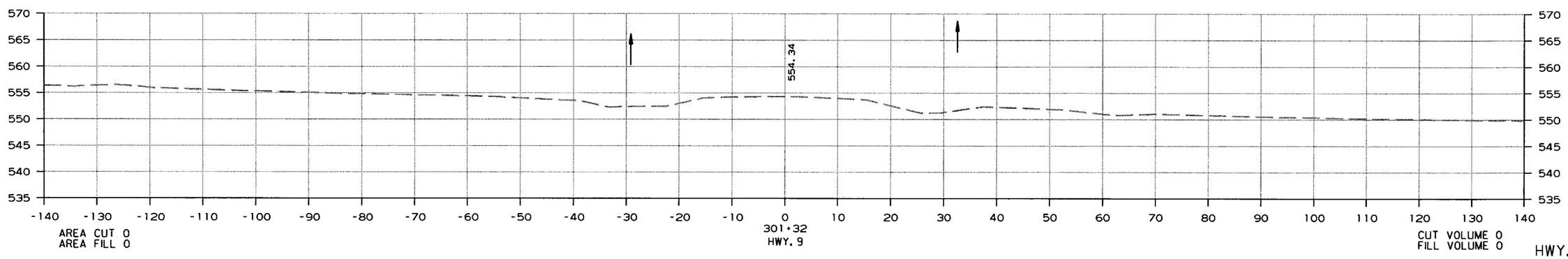
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	502	517

(2) CROSS SECTIONS







HWY. 9

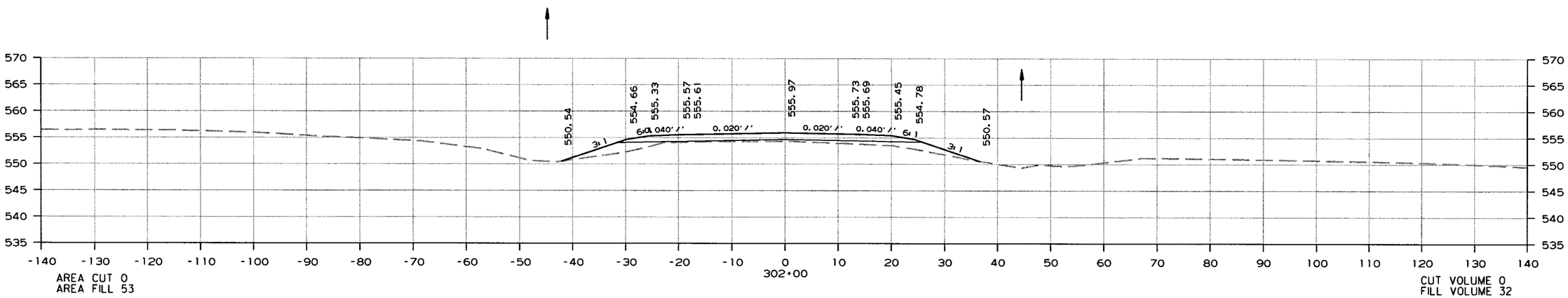
CROSS SECTION STA. 301+32 TO STA. 301+75

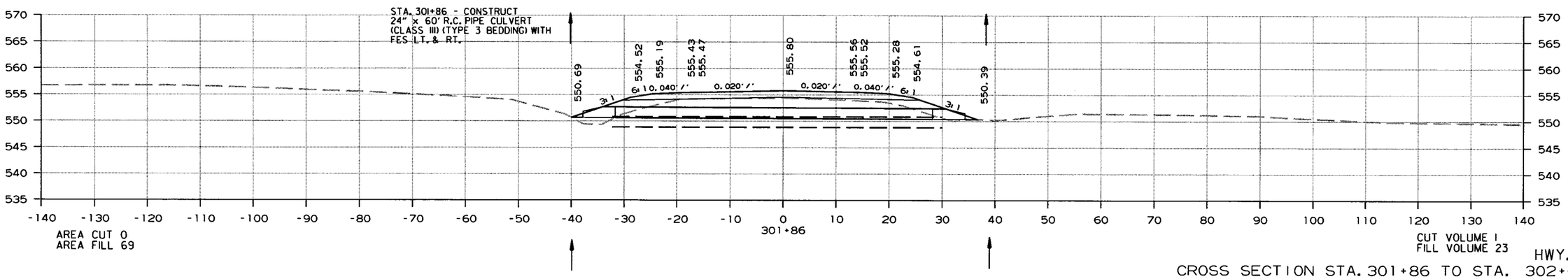
8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	503	517

(2) CROSS SECTIONS





HWY. 9

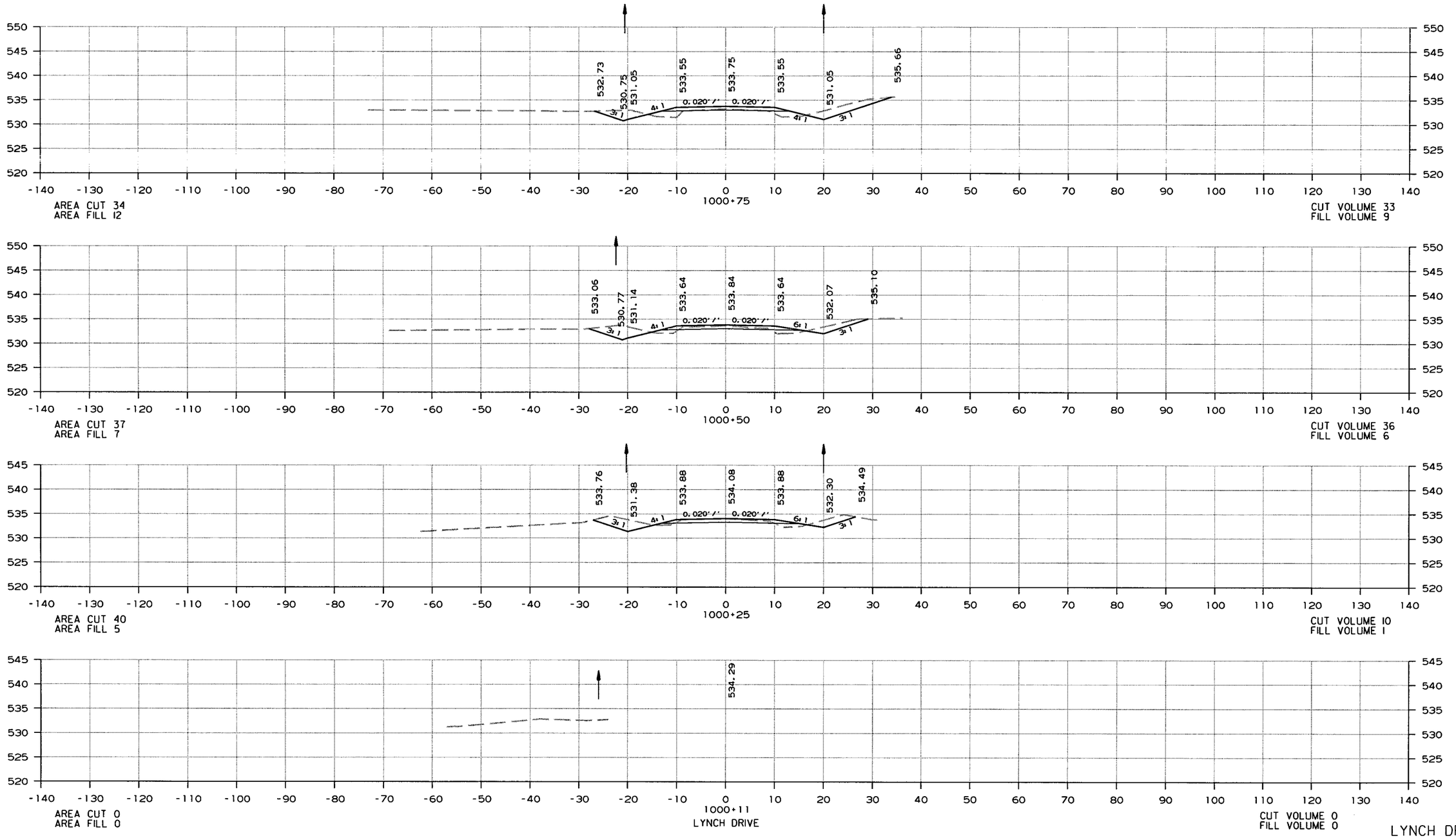
CROSS SECTION STA. 301+86 TO STA. 302+00

8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	504	517

(2) CROSS SECTIONS



LYNCH DR.

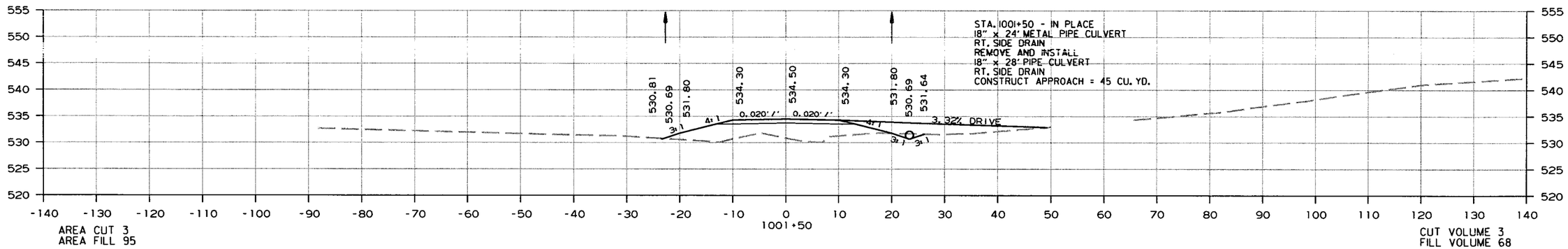
CROSS SECTION STA. 1000+11 TO STA. 1000+75

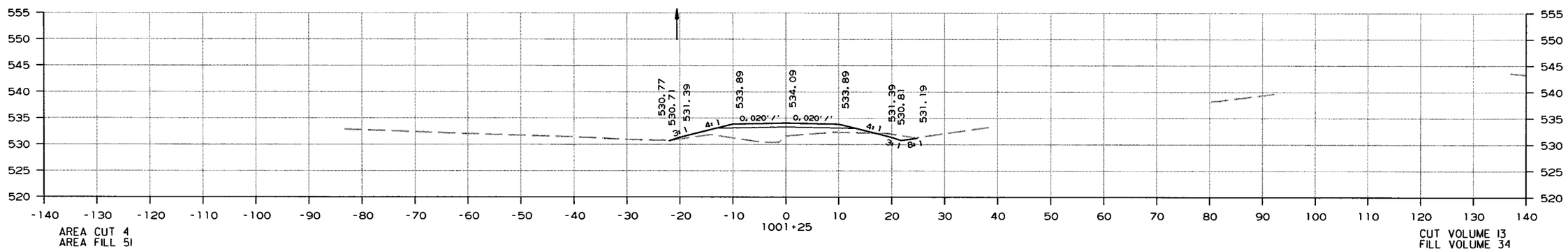
8/12/2016

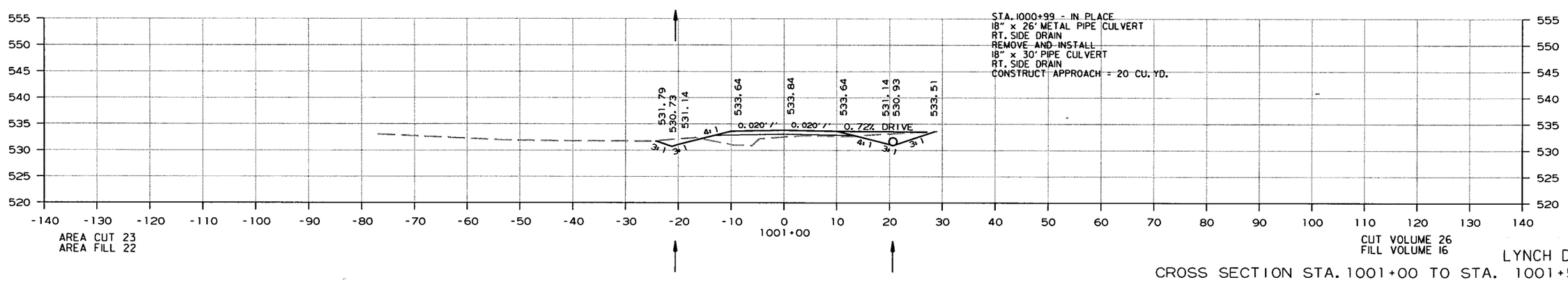
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	505	517

(2) CROSS SECTIONS







LYNCH DR.

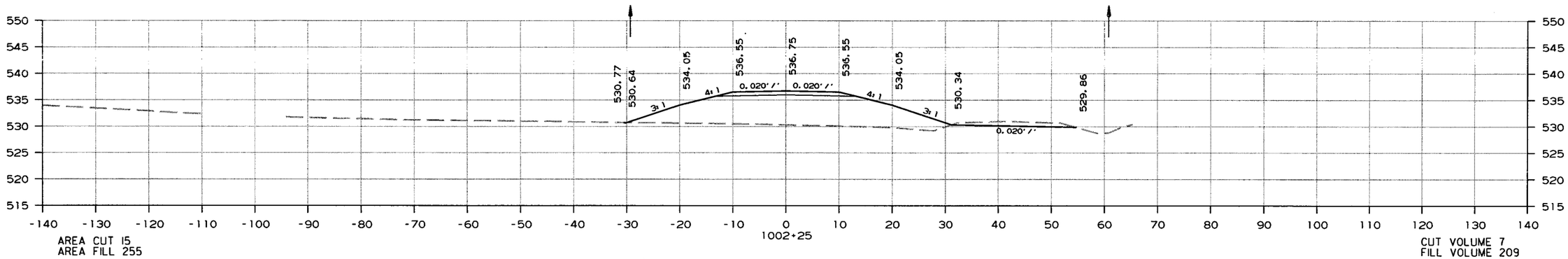
CROSS SECTION STA. 1001+00 TO STA. 1001+50

8/12/2016

R080423.DGN

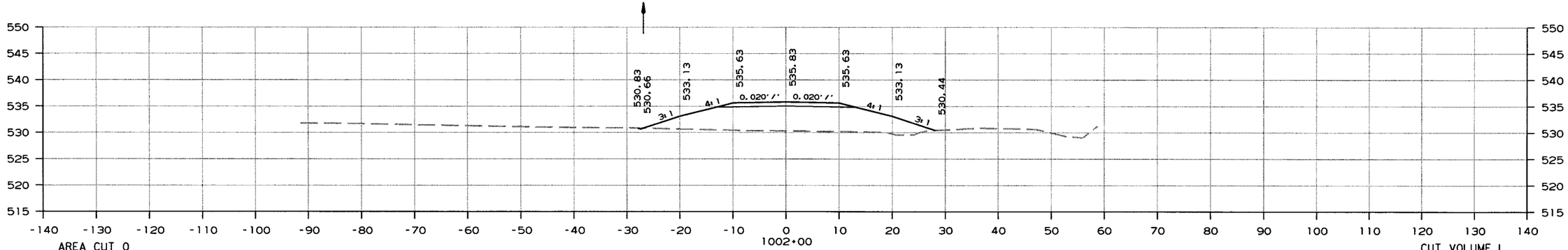
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	506	517

(2) CROSS SECTIONS



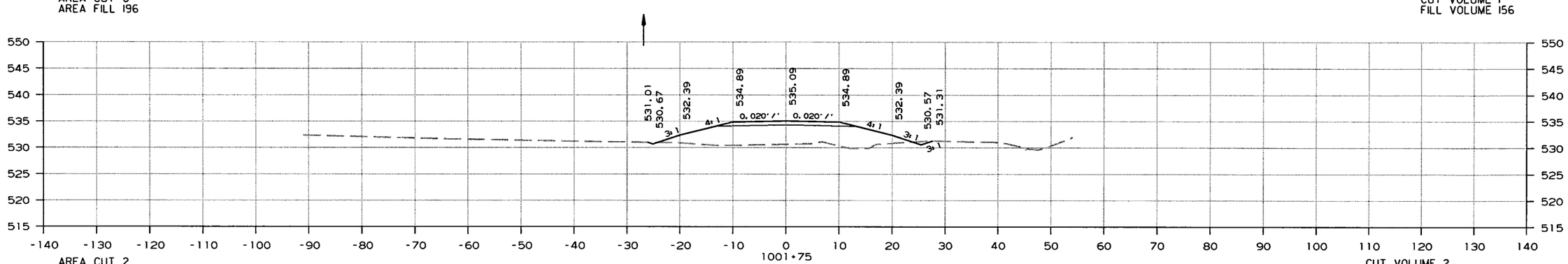
AREA CUT 15
AREA FILL 255

CUT VOLUME 7
FILL VOLUME 209



AREA CUT 0
AREA FILL 196

CUT VOLUME 1
FILL VOLUME 156



AREA CUT 2
AREA FILL 140

CUT VOLUME 2
FILL VOLUME 109

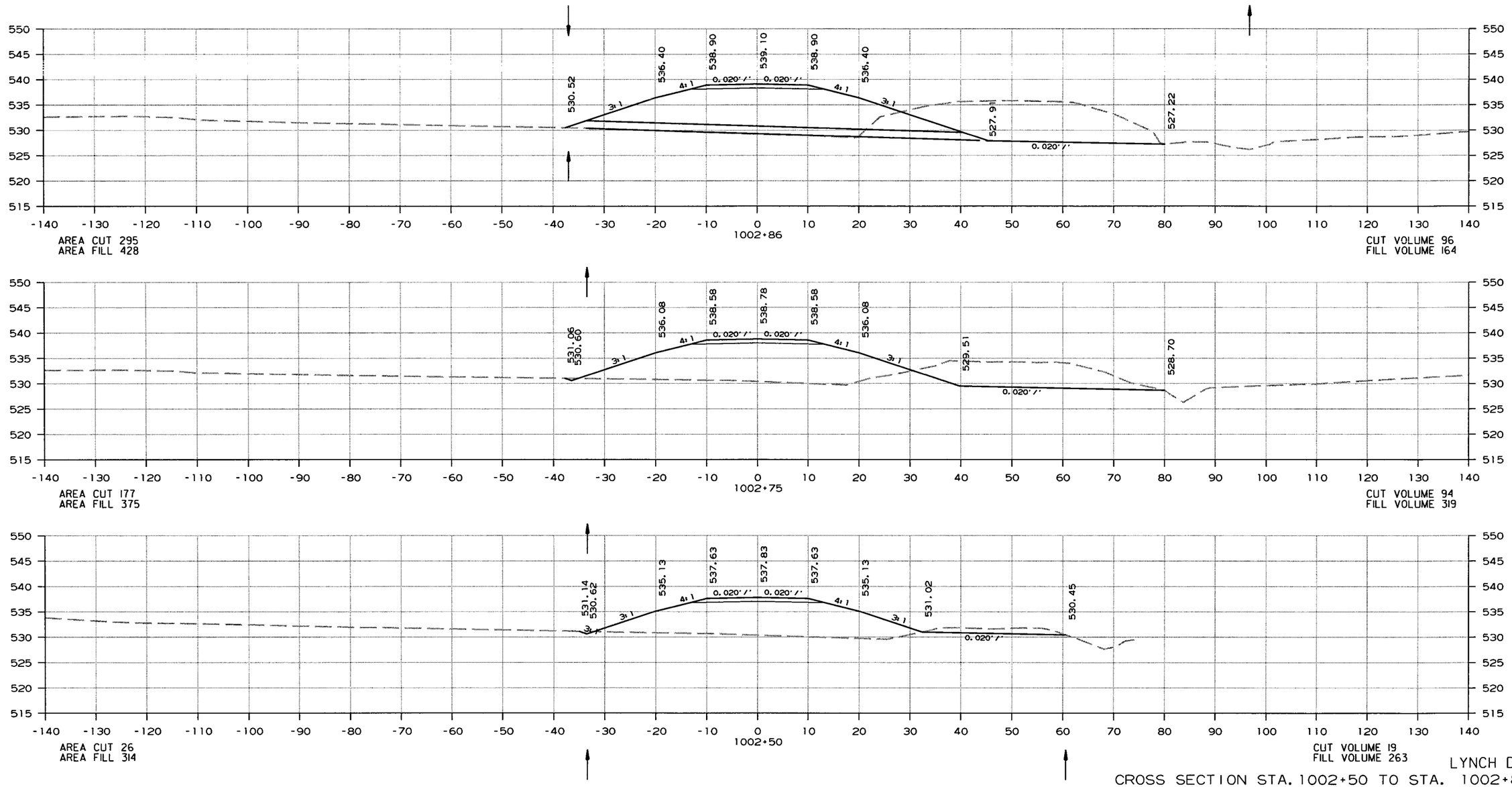
LYNCH DR.
CROSS SECTION STA. 1001+75 TO STA. 1002+25

8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	507	517

(2) CROSS SECTIONS



LYNCH DR.

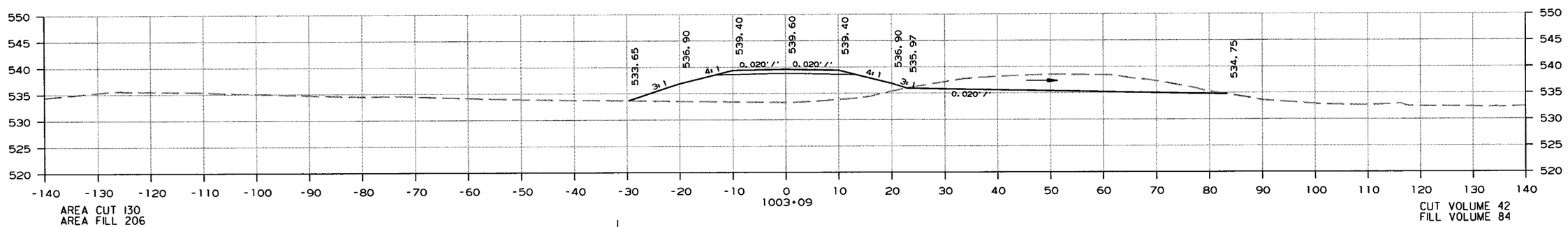
CROSS SECTION STA. 1002+50 TO STA. 1002+86

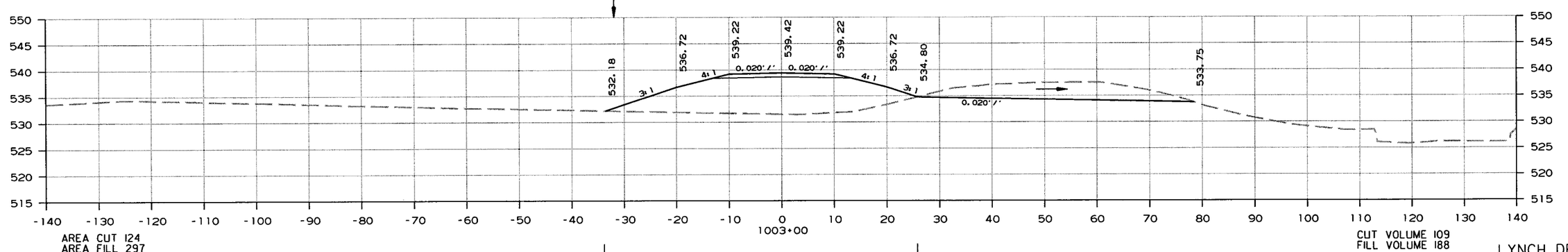
8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	508	517

(2) CROSS SECTIONS





LYNCH DR.

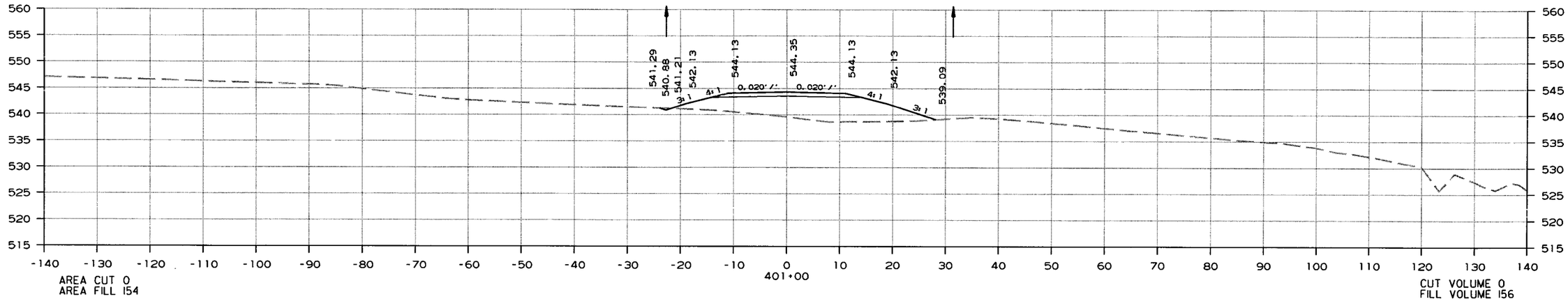
CROSS SECTION STA. 1003+00 TO STA. 1003+09

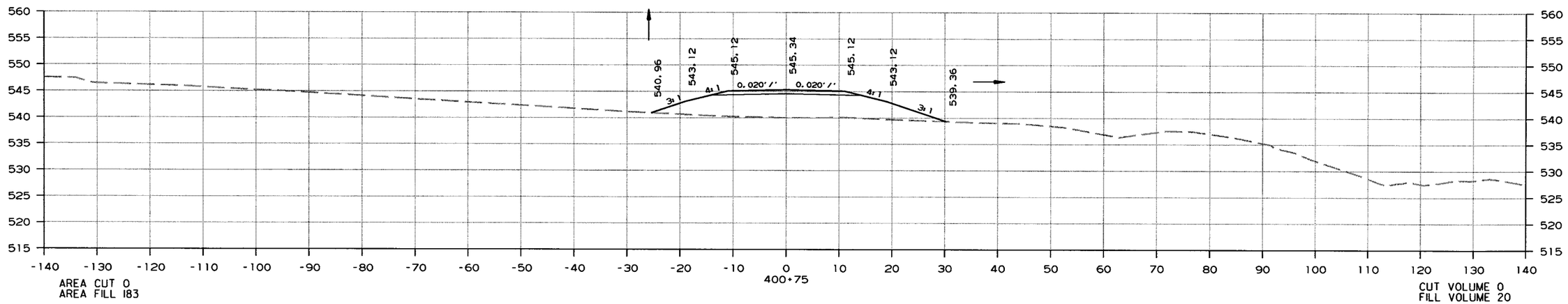
8/12/2016

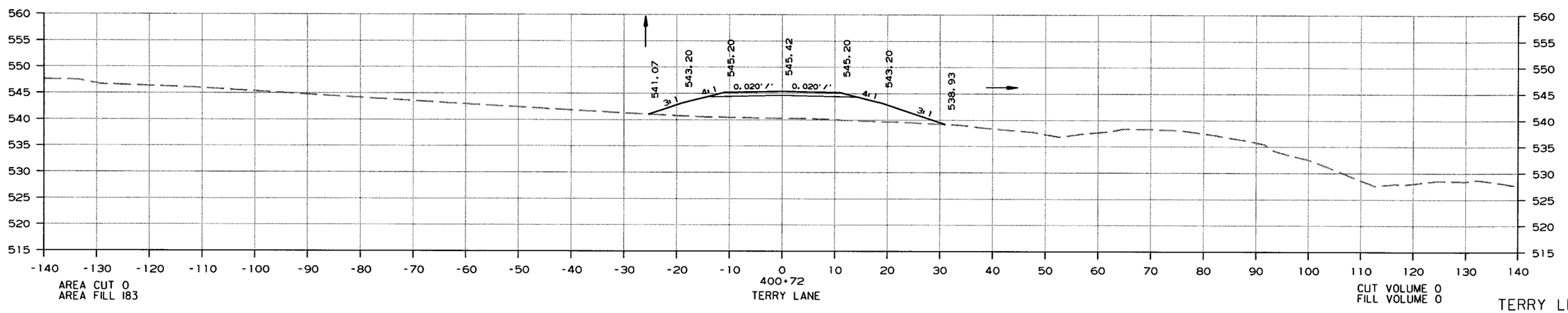
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	509	517

(2) CROSS SECTIONS SR







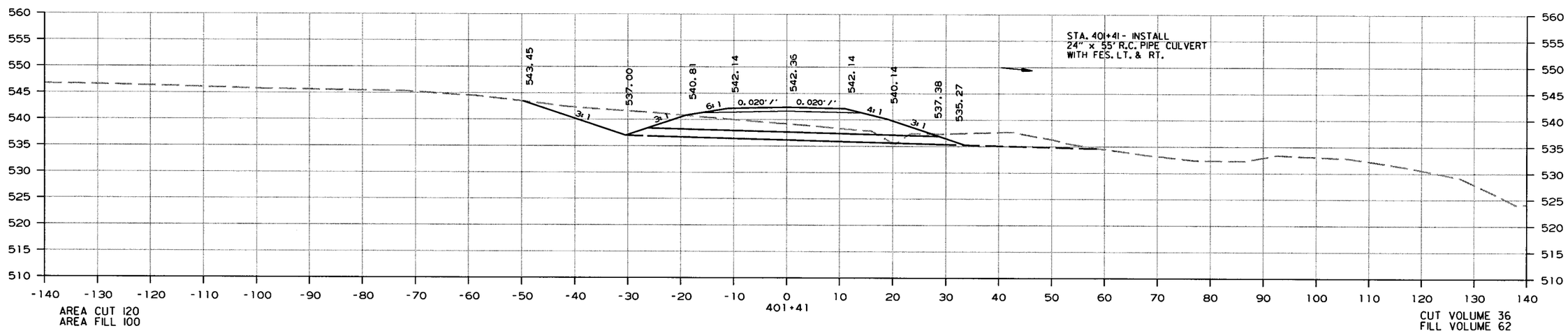
TERRY LN.
CROSS SECTION STA. 400+72 TO STA. 401+00

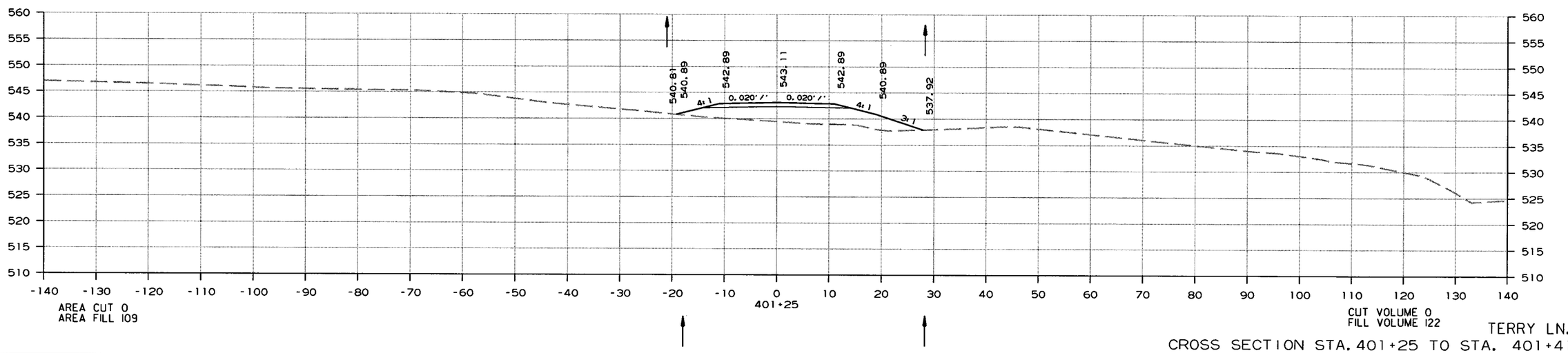
8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	510	517

(2) CROSS SECTIONS SR





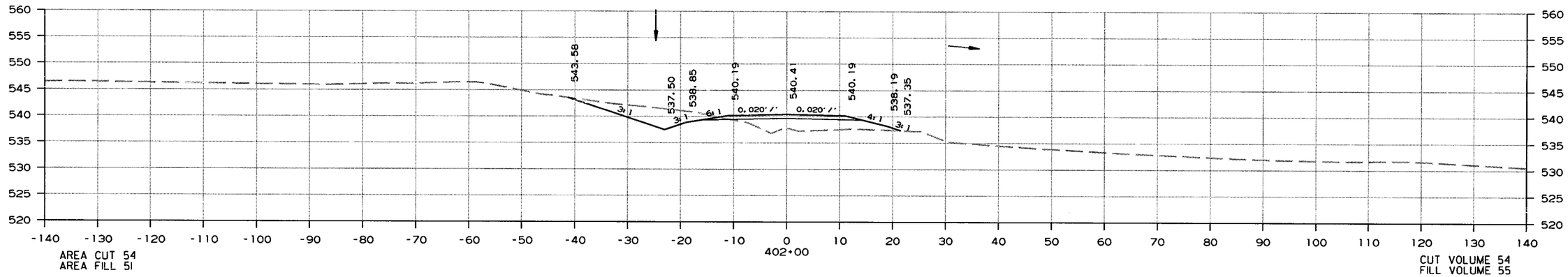
TERRY LN.
CROSS SECTION STA. 401+25 TO STA. 401+41

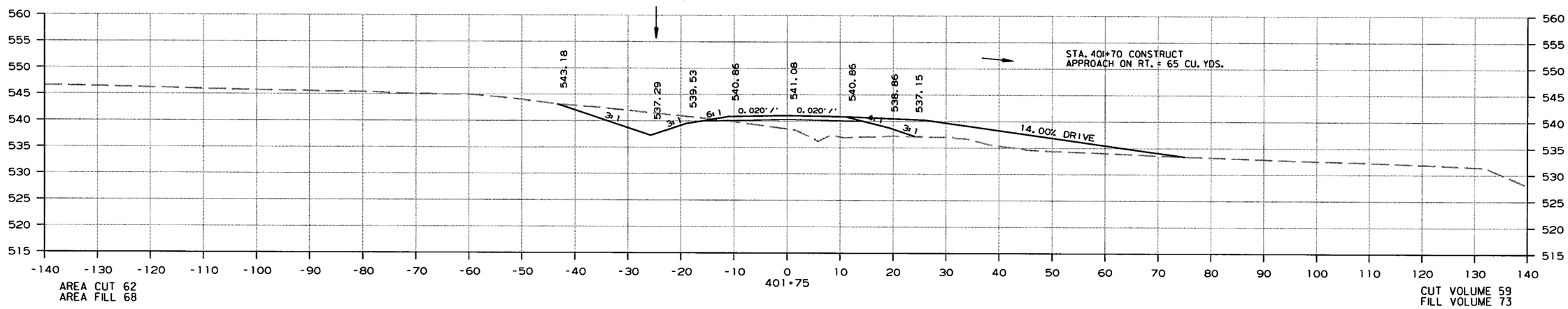
8/12/2016

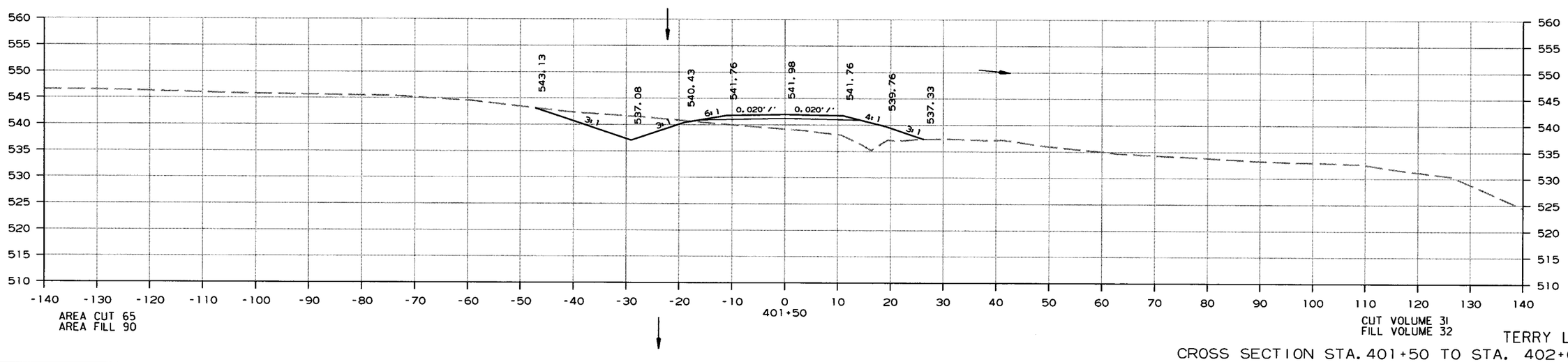
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	511	517

(2) CROSS SECTIONS SR







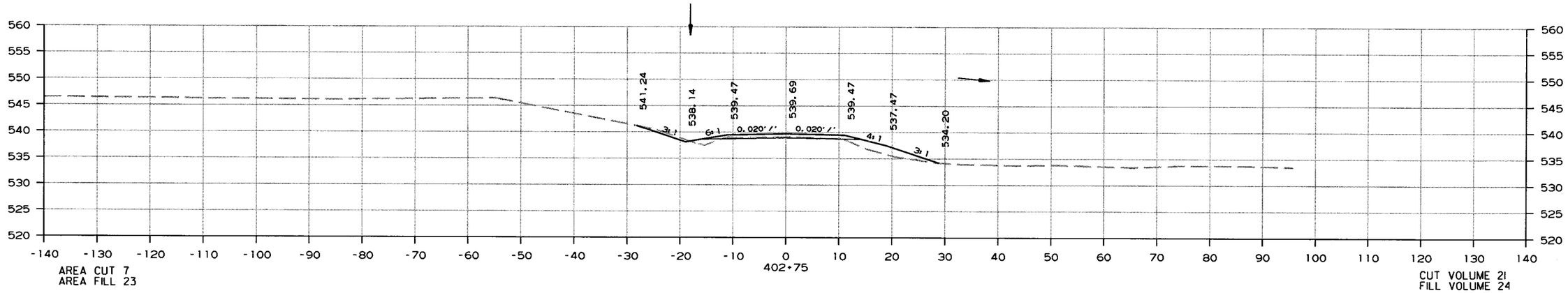
TERRY LN.
CROSS SECTION STA. 401+50 TO STA. 402+00

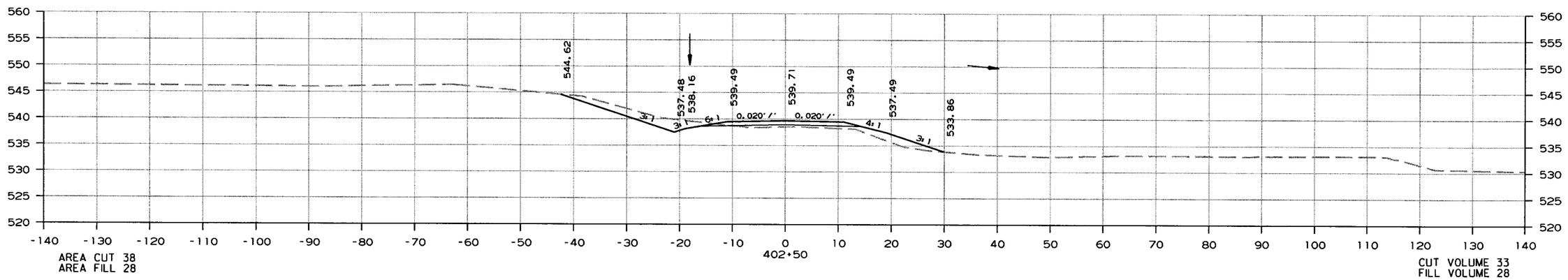
8/12/2016

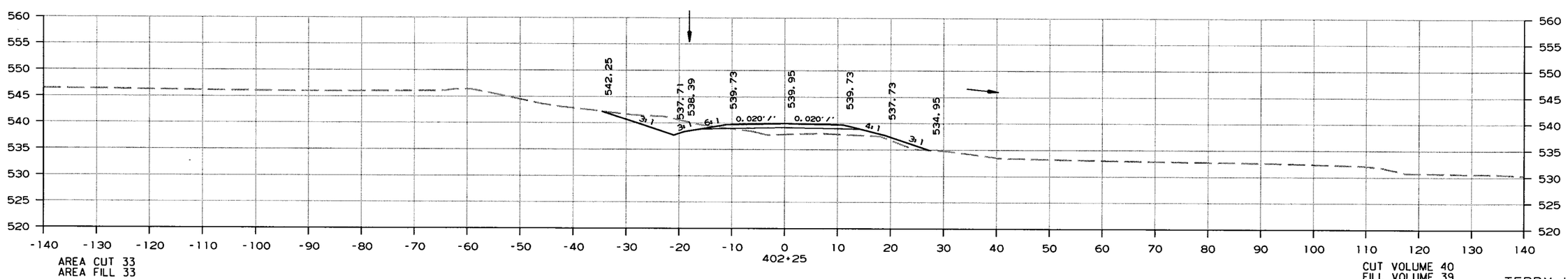
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	512	517

(2) CROSS SECTIONS SR







TERRY LN.

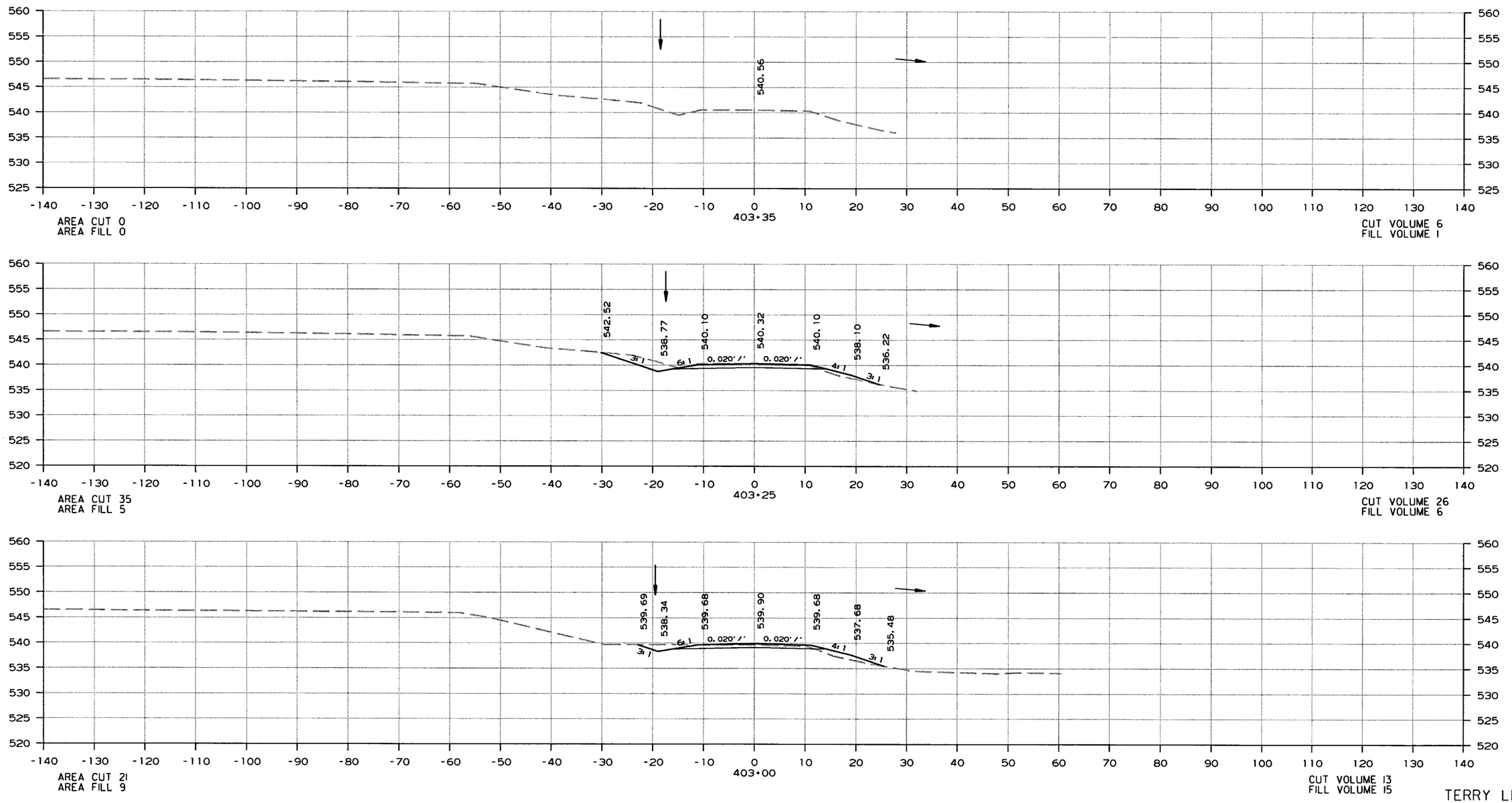
CROSS SECTION STA. 402+25 TO STA. 402+75

8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	513	517

(2) CROSS SECTIONS SR



TERRY LN.

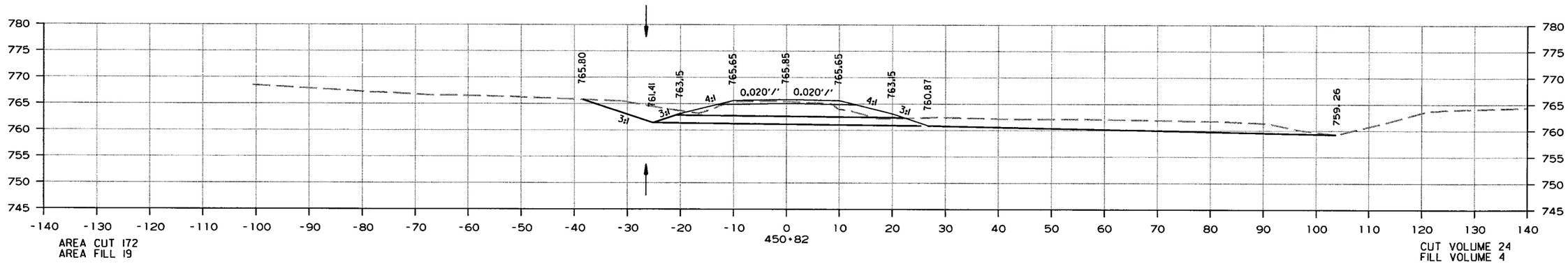
CROSS SECTION STA. 403+00 TO STA. 403+35

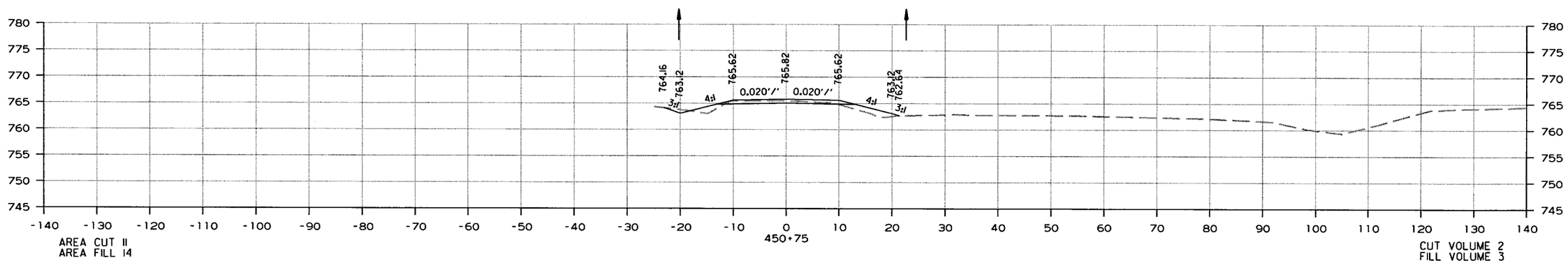
8/12/2016

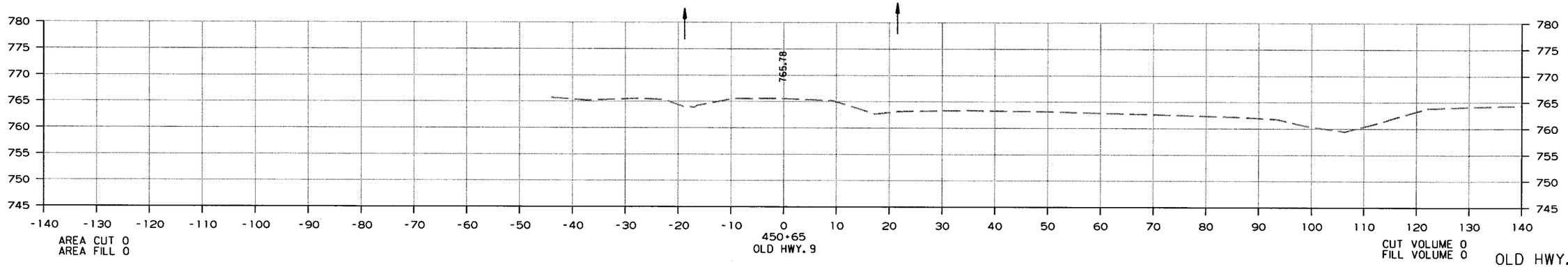
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	514	517

(2) CROSS SECTIONS SR







OLD HWY. 9

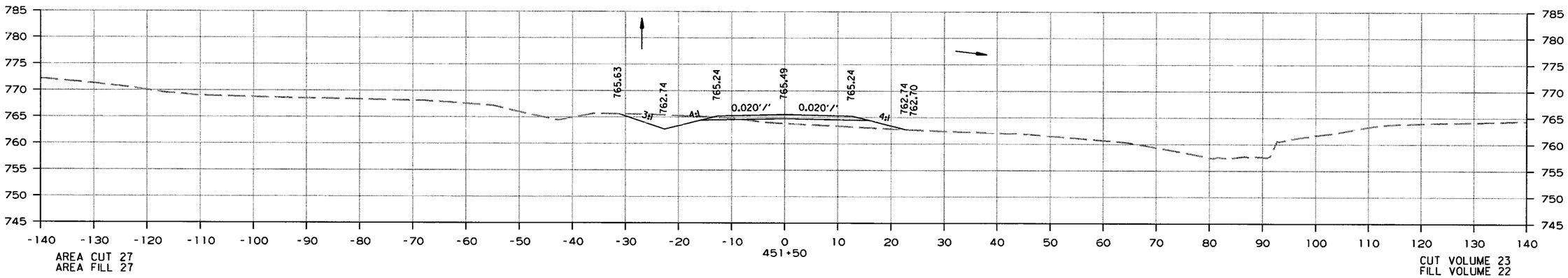
CROSS SECTION STA. 450+65 TO STA. 450+82

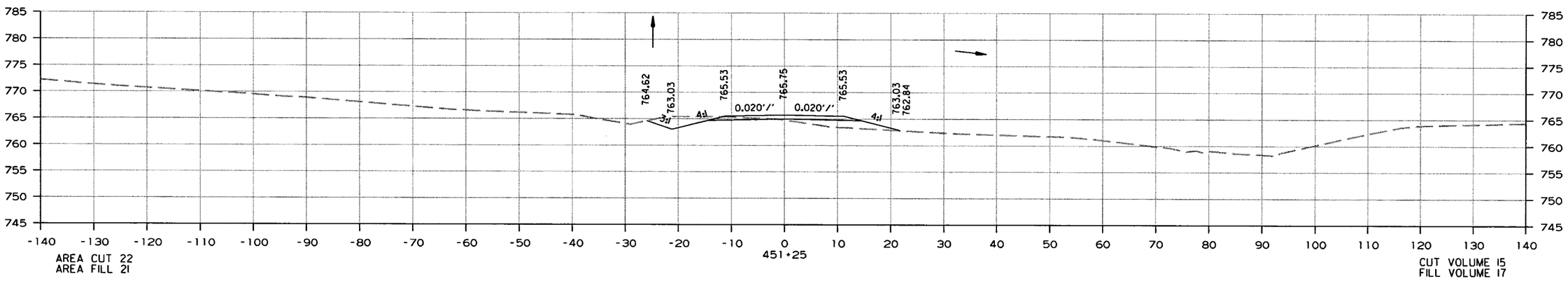
8/12/2016

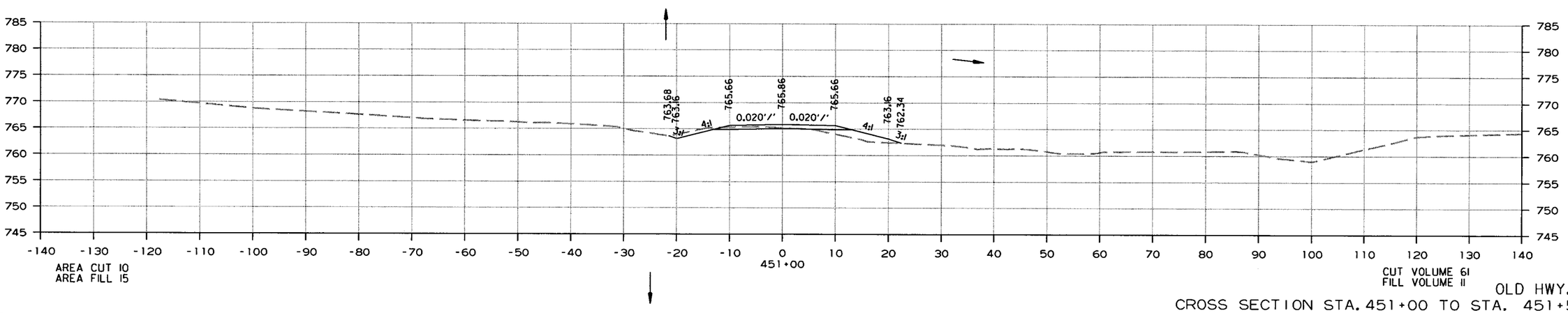
R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	515	517

(2) CROSS SECTIONS SR







OLD HWY. 9

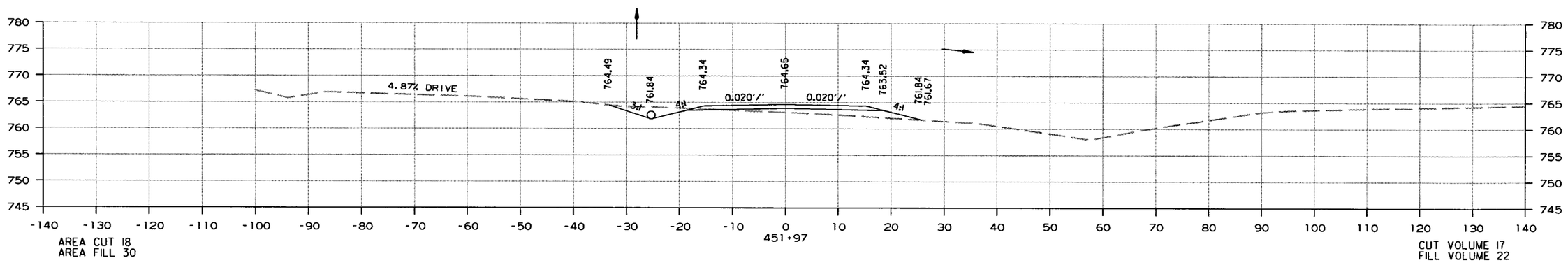
CROSS SECTION STA. 451+00 TO STA. 451+50

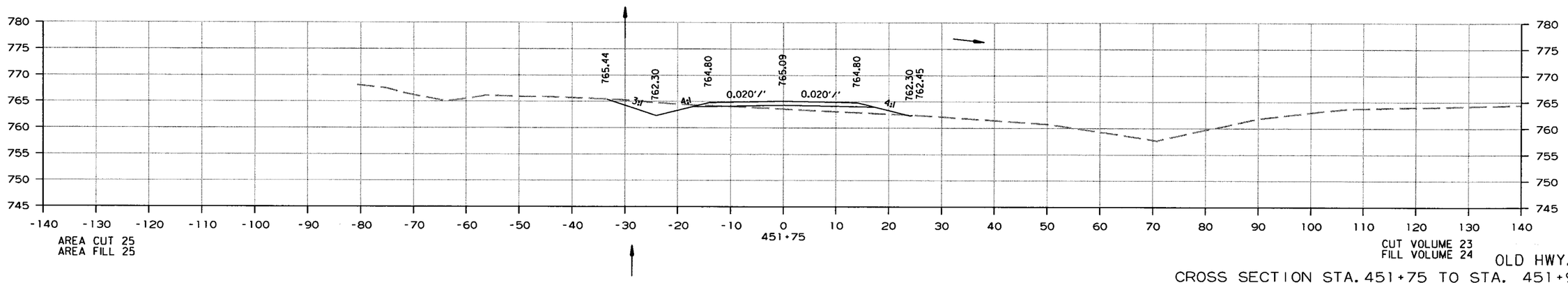
8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	516	517

(2) CROSS SECTIONS SR





OLD HWY. 9

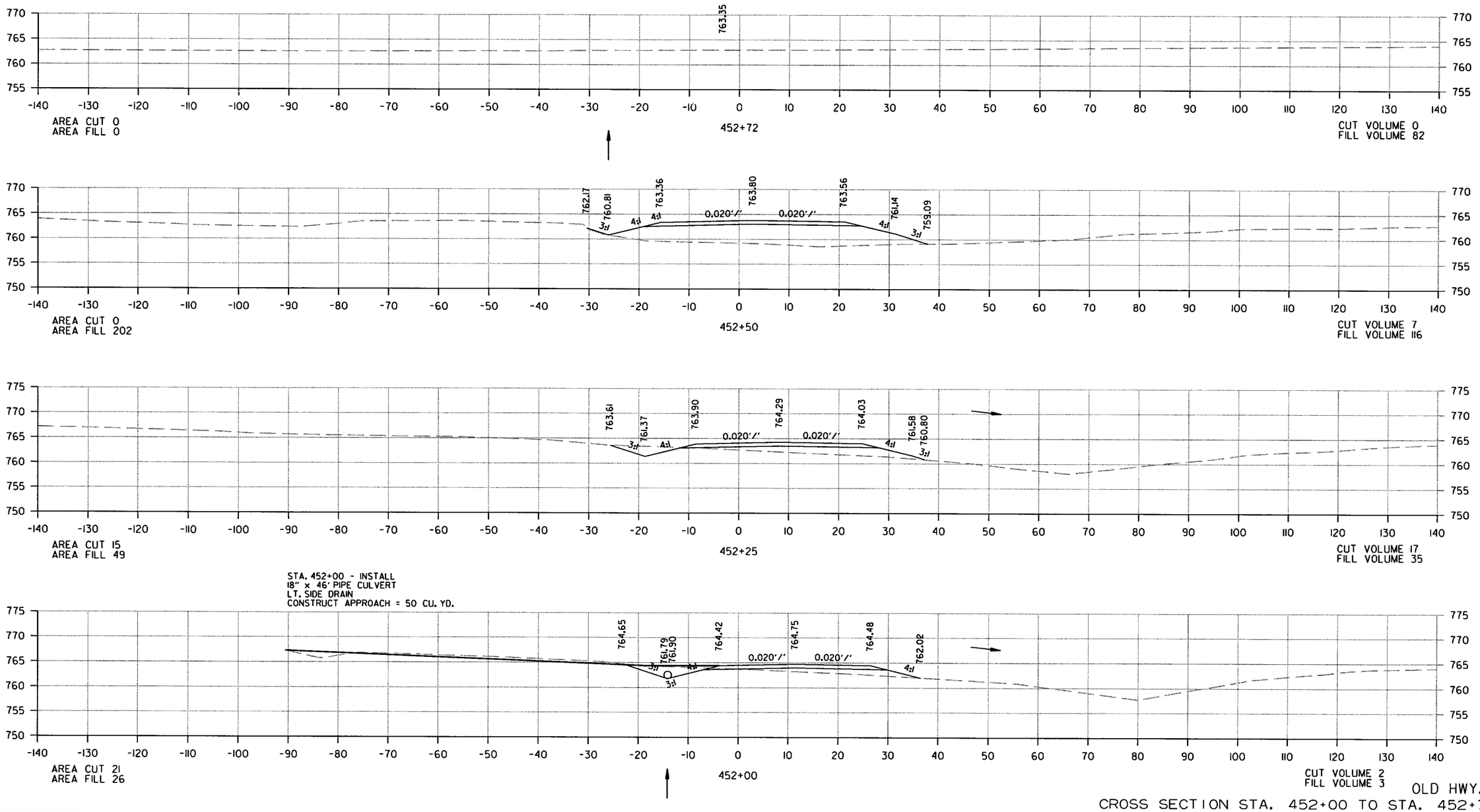
CROSS SECTION STA. 451+75 TO STA. 451+97

8/12/2016

R080423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080423	517	517

(2) CROSS SECTIONS SR



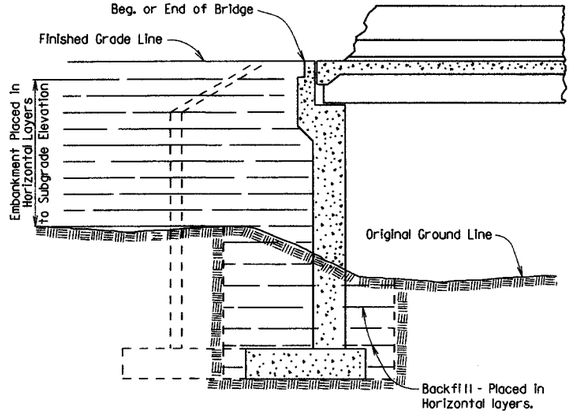
OLD HWY. 9

CROSS SECTION STA. 452+00 TO STA. 452+72

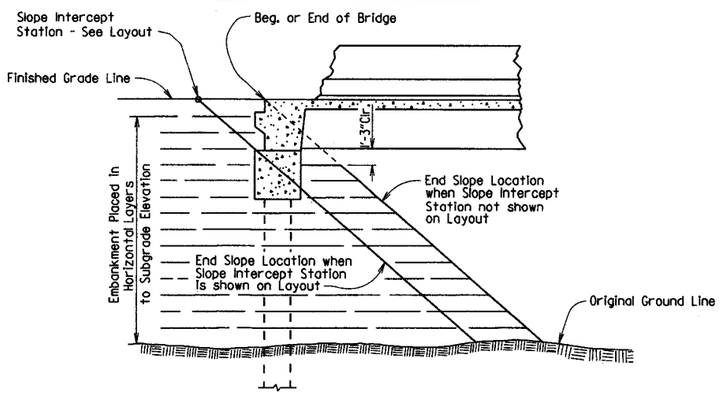
8/12/2016

R080423.DGN

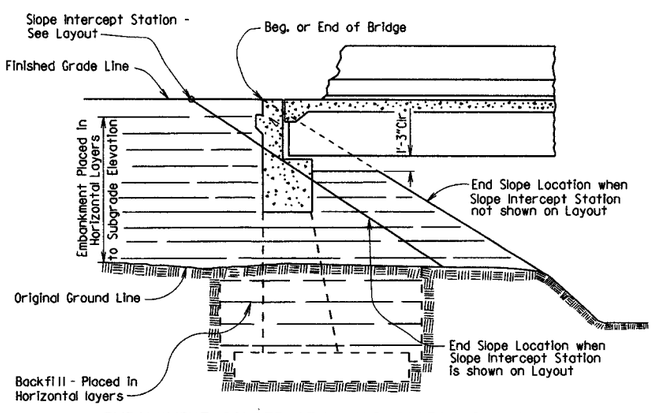
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				① EMBANKMENT & BACKFILL 55000				



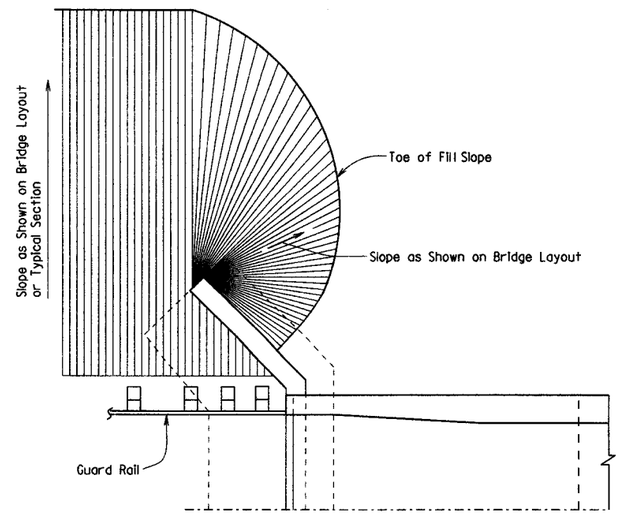
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



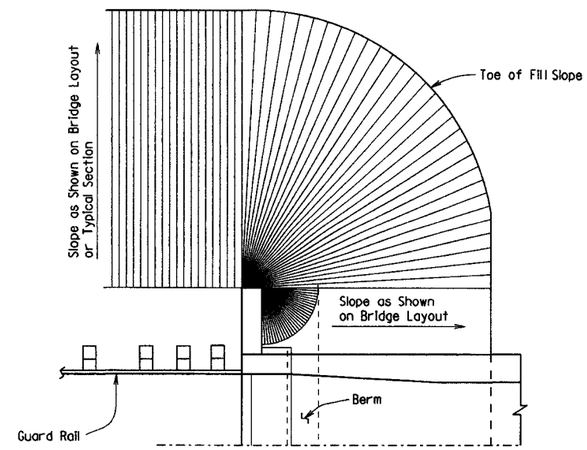
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



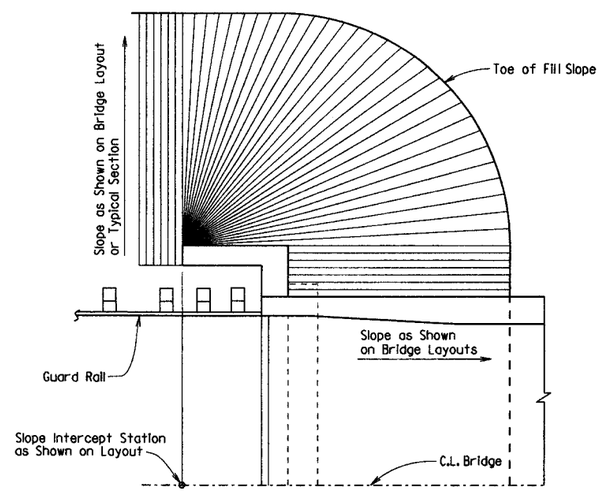
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



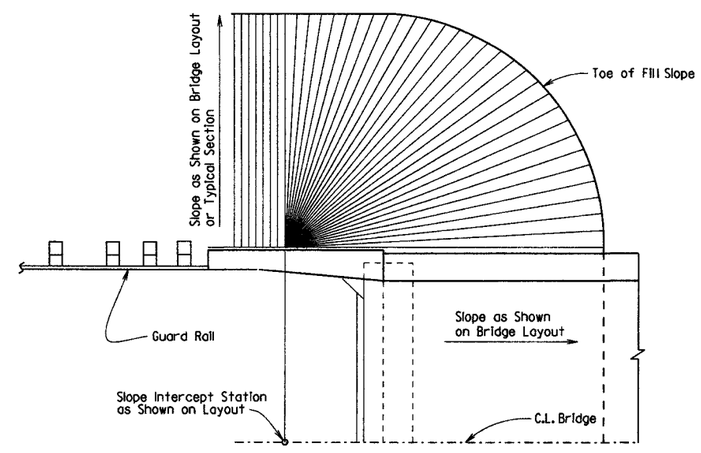
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

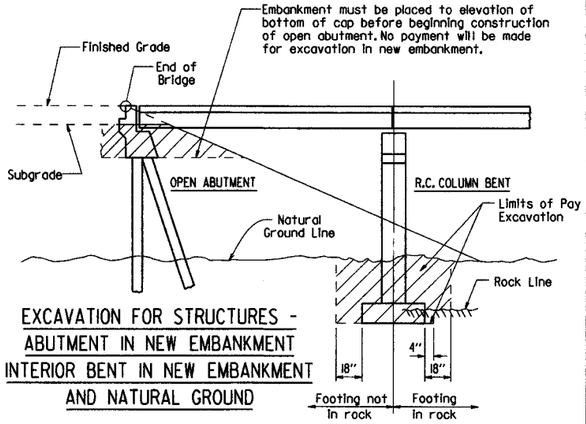
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

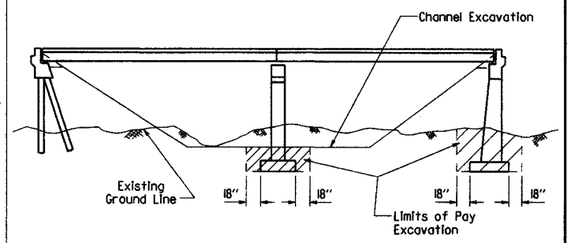
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000

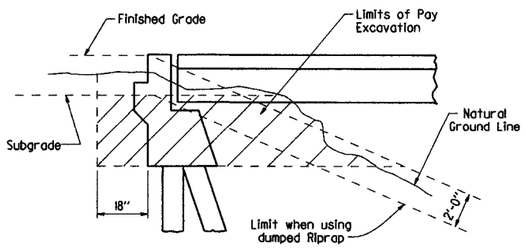
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				1	RIPRAP & EXCAV. 55001			



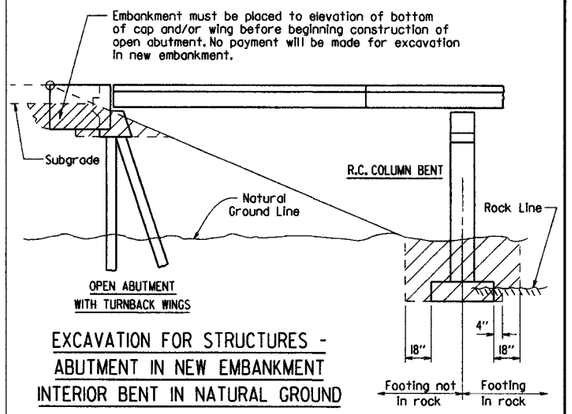
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



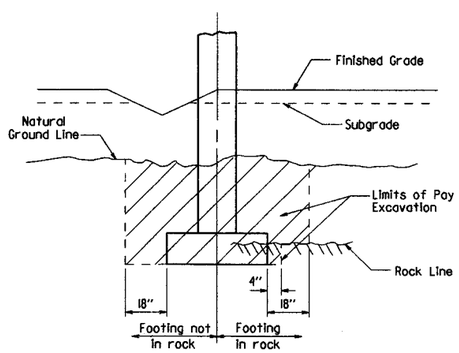
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



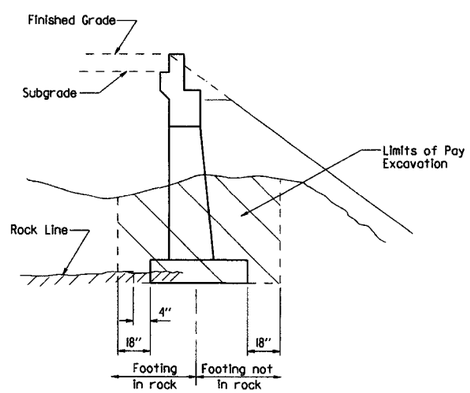
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



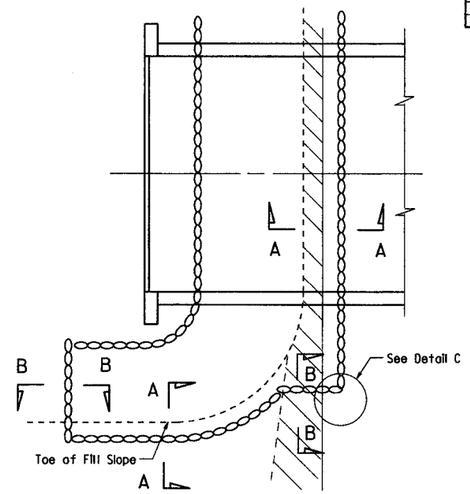
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



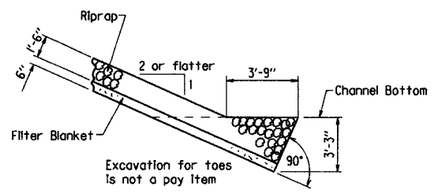
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

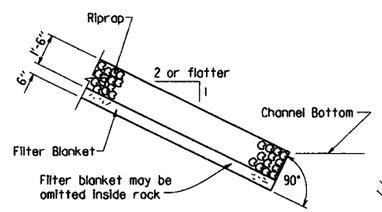


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



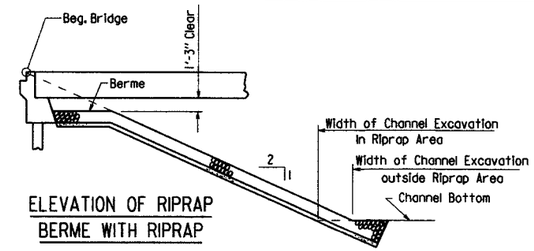
SECTION A-A

(Toe Excavation in Rock)

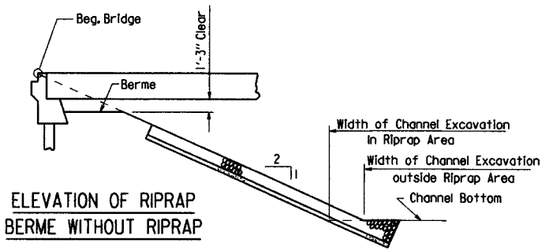
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

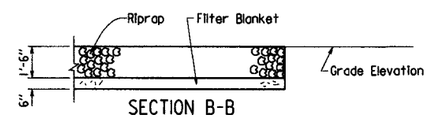
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



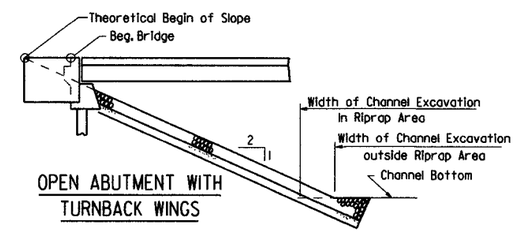
ELEVATION OF RIPRAP BERME WITH RIPRAP



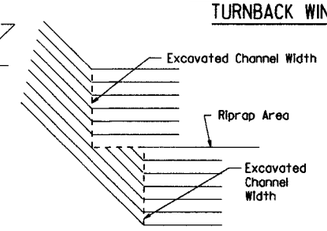
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

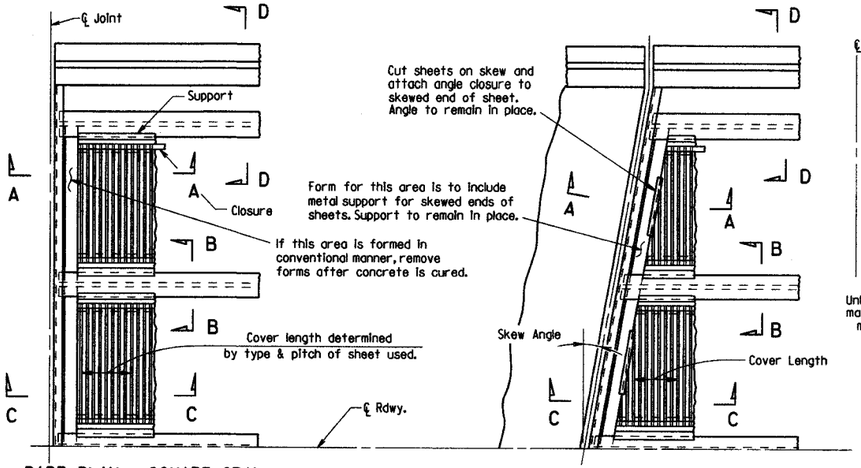
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH	DATE: 2-27-2014	FILENAME: b55001.dgn	
CHECKED BY: BEF	DATE: 2-27-2014	SCALE: NO SCALE	
DESIGNED BY: STD.	DATE:		

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①	BRIDGE DECK FORMS	55005		

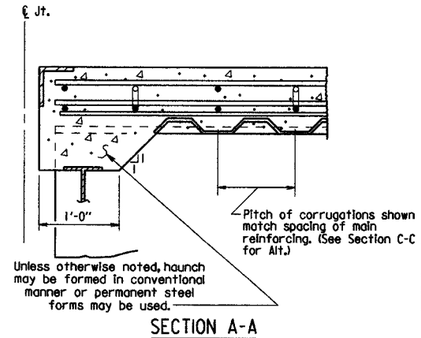


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

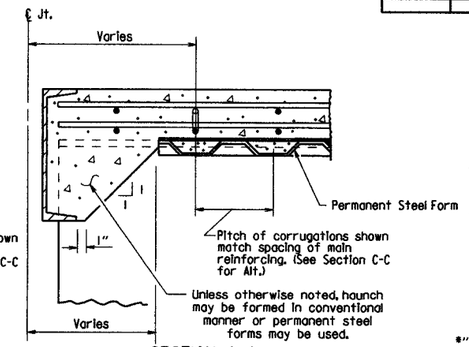
3/8" = 1'-0"



SECTION A-A

N.T.S.

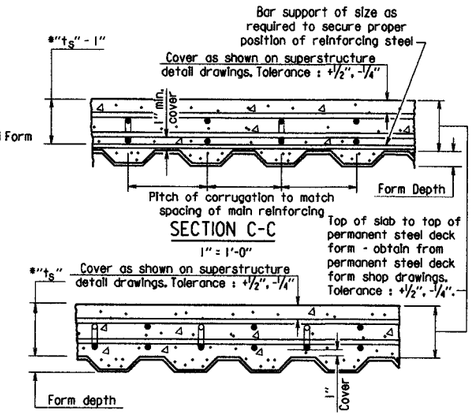
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



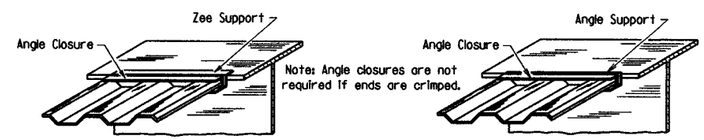
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)

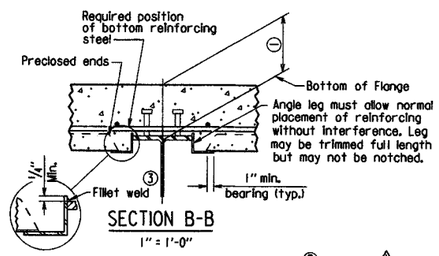


Note: Angle closures are not required if ends are crimped.

SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

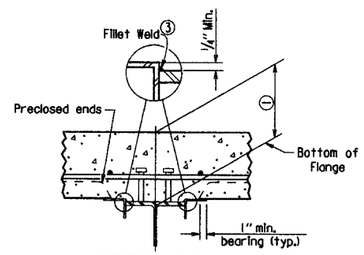


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

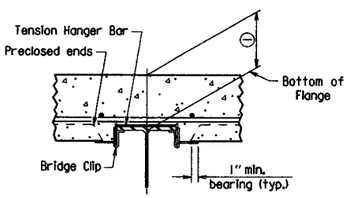
③ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

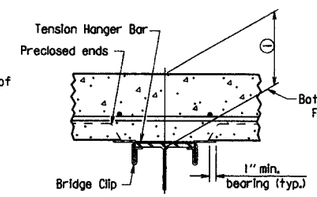
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

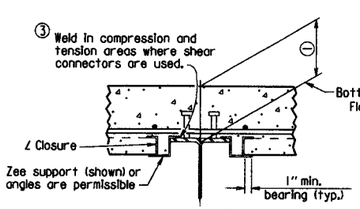
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

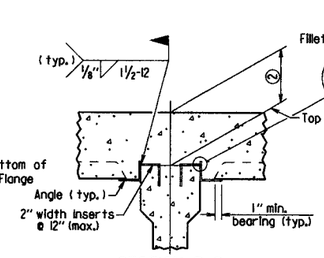
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

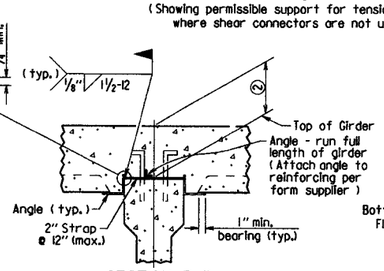


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

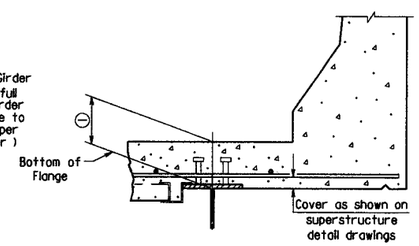


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH	DATE: 2-27-2014	FILENAME: b55005.dgn	
CHECKED BY: BEF	DATE: 2-27-2014	SCALE: NONE	
DESIGNED BY: STD.	DATE: —		

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				1		GENERAL NOTES	55006	

GENERAL NOTES

These GENERAL NOTES are applicable unless otherwise shown in the Plan Details, Special Provisions, or Supplemental Specifications.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Specifications.

DESIGN SPECIFICATIONS: See Bridge Layout(s).

SUPERSTRUCTURE NOTES:

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy =	36,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. HPS70W)	Fy =	70,000 psi

See Plan Details for Grade(s) of Structural Steel required.

CONCRETE:

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Use of a longitudinal screed is not permitted on any span of a bridge deck with horizontal curvature.

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam or girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings, median barrier, and sidewalks.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL (COMMON TO W-BEAMS AND PLATE GIRDERS):

Structural steel shall be AASHTO M 270 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 15/16" ø open holes. Holes for ¾" ø high-strength bolts may be 15/16" ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam or girder webs and on the bottom of the beam or girder flanges.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

When painting is required, all structural steel except galvanized steel and steel completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall be as specified in the plans.

STRUCTURAL STEEL (W-BEAMS):

All beams and field splice plates, and all diaphragms and connection plates attached to horizontally curved beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. ___)".

All beams in continuous units and simple spans with field splices shall be blocked in their true position in the shop in groups as specified in Subsection 807.54(b)(2) with the webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All beams in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Bent plate diaphragms for horizontally curved beams shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight beams may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved beams.

Unless otherwise noted, diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

STRUCTURAL STEEL (PLATE GIRDERS):

All references to cross-frames shall include "X" or "K" types.

All girder web and flange plates, all field splice plates, and all diaphragms, cross-frames and connection plates attached to horizontally curved girders are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

All girders in continuous units and simple spans with field splices shall be assembled in the shop as specified in Subsection 807.54(b)(2) and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All girders in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment will be made for shop welded splices.

All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Q.C. testing shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

Bent plate diaphragms for horizontally curved girders shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight girders may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved girders.

Unless otherwise noted, cross-frames and diaphragms shall be installed as girders are erected. All bolts in cross-frames, diaphragms, and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

SUBSTRUCTURE NOTES:

CONCRETE:

Unless otherwise noted, concrete in caps, columns and footings (except seal footings) shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. Seal Concrete for footings shall have a minimum 28 day compressive strength f'c = 2,100 psi.

Concrete in drilled shafts shall be Class "S" as modified by Job SP "Drilled Shaft Foundations".

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

STRUCTURAL STEEL:

Structural steel in end bents shall be AASHTO M 270 with grade and payment as specified in the plans.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	A.M.S.	DATE:	9-2-2015	FILENAME:	b55006.dgn
CHECKED BY:	B.E.F.	DATE:	9-2-2015	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:			

DRAWING NO. 55006

PRINT DATE: 9/10/2015

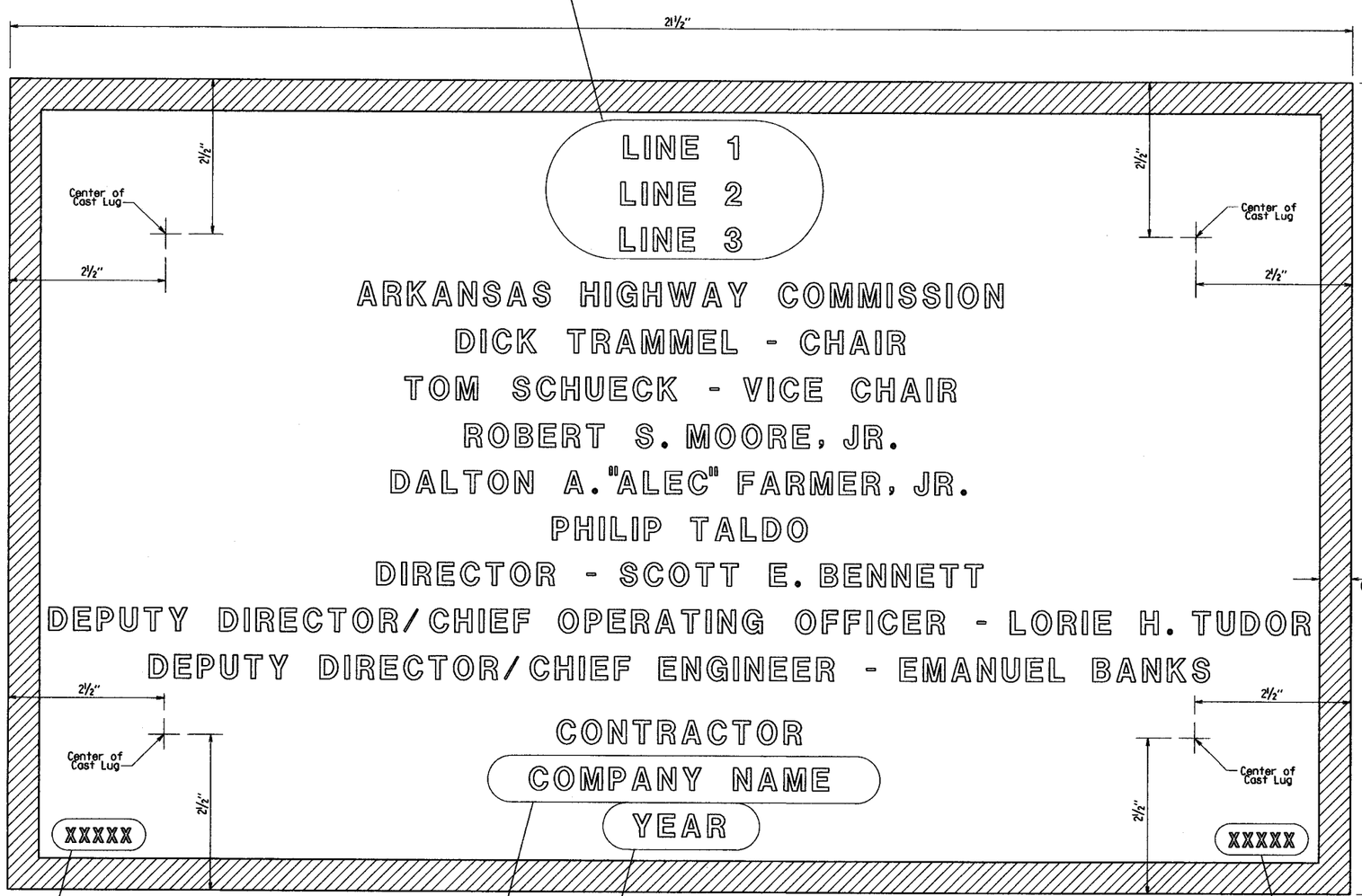
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14			
1-14-15			
1-17-17			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.				

1 TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



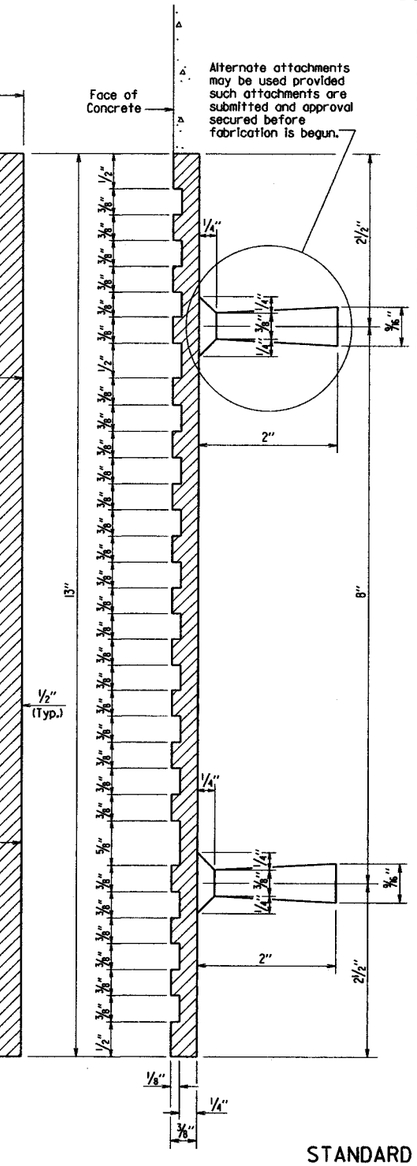
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : A1234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 3/8"x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

3 Added New Commissioner
1-17-17 KDH Checked By: CRE

2 Revised Chair and Vice Chair
Added New Commissioner
1-14-15 KDH Checked By: CRE

1 Revised Deputy Director/ Chief Engineer
Added Deputy Director/ Chief Operating Officer
12-1-14 KDH Checked By: CRE

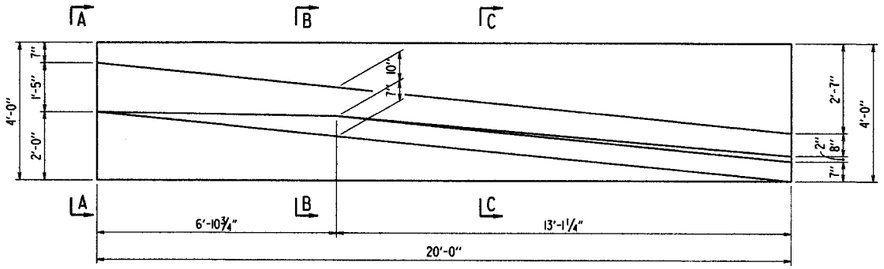
STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	TRANSITIONAL RAIL		55013	



PLAN OF TRANSITIONAL APPROACH RAILING

(RAILINGS ON EACH SIDE OF ROADWAY ARE OPPOSITE HAND TO EACH OTHER)

½" = 1'-0"

GENERAL NOTES

Transitional Approach Railing shall be placed at locations shown in the plans.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Construction. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Construction.

Unless otherwise required in the plans, curing and finishing shall be in accordance with Subsection 806.05(c) and the surface finish type and areas of application shall match that used on the adjacent bridge railing or concrete barrier wall. See Subsection 802.19(3) for Class 3 Textured Coating Finish or Subsections 803.03(a) or 803.03(b) for Class 1 or 2 Protective Surface Treatment, respectively. Payment for surface finishes shall not be paid for directly, but shall be considered incidental to the unit price bid for "Transitional Approach Railing".

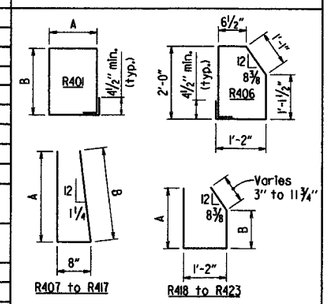
When alternate surface and/or architectural finishes are specified in the plans, no direct payment will be made, and the alternate finish shall be considered incidental to the unit price bid for "Transitional Approach Railing". See plan details for additional information when architectural finishes are specified.

Transitional Approach Railing shall be paid for at the contract unit price bid for "Transitional Approach Railing". See Section 806 for additional information.

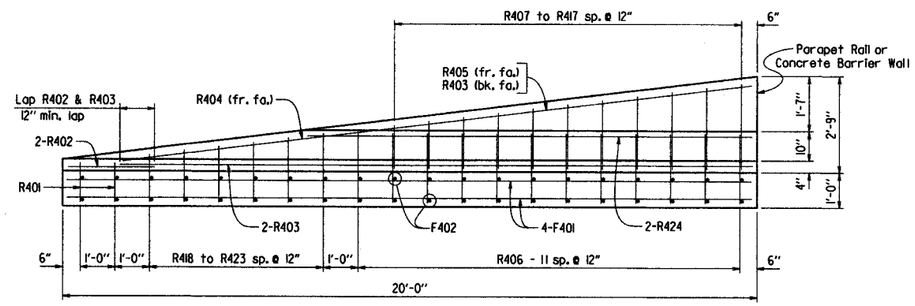
BAR LIST - ONE TRANSITIONAL RAIL

Mark	No. Req'd	Length	A	B	Pin Dia.
F401	8	19'-8"			Str.
F402	40	3'-8"			Str.
R401	2	4'-10"	1'-2"	1'-1"	2"
R402	2	3'-0"			Str.
R403	3	17'-9"			Str.
R404	1	5'-0"			Str.
R405	1	12'-9"			Str.
R406	12	6'-3"			2"
R407 to R417	1 ea.	3'-0" to 5'-5"	1'-3" to 2'-5½"	1'-3" to 2'-5½"	2"
R418 to R423	1 ea.	3'-9" to 5'-1"	1'-4" to 1'-11¼"	1'-1½"	2"
R424	2	12'-0"			Str.

Bending Diagrams



Dimensions are out to out of bars.



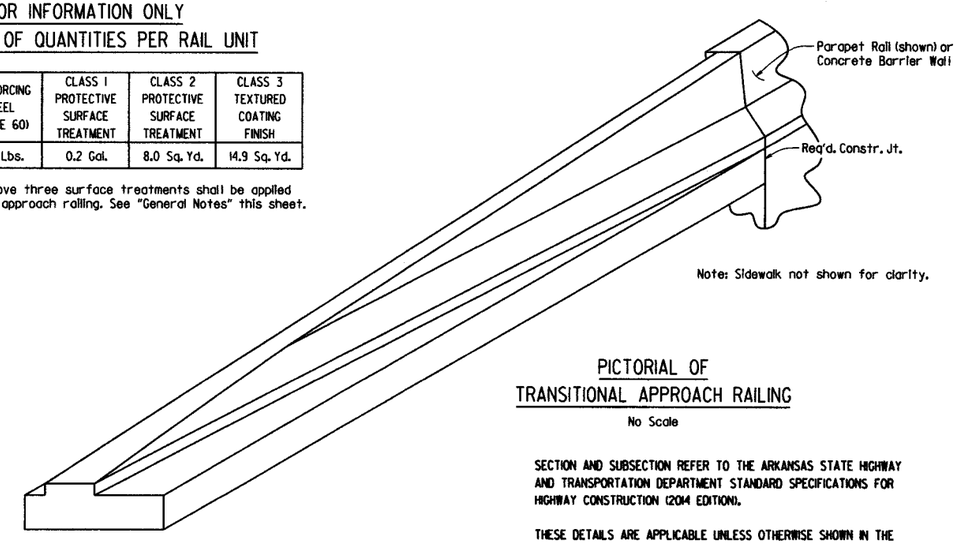
ELEVATION OF TRANSITIONAL APPROACH RAILING

½" = 1'-0"

FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS 1 PROTECTIVE SURFACE TREATMENT	CLASS 2 PROTECTIVE SURFACE TREATMENT	CLASS 3 TEXTURED COATING FINISH
4.20 Cu. Yds.	376 Lbs.	0.2 Gal.	8.0 Sq. Yd.	14.9 Sq. Yd.

Only one of the above three surface treatments shall be applied to the transitional approach railing. See "General Notes" this sheet.

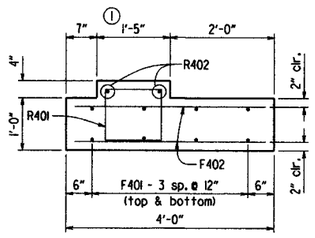


Note: Sidewalk not shown for clarity.

PICTORIAL OF TRANSITIONAL APPROACH RAILING

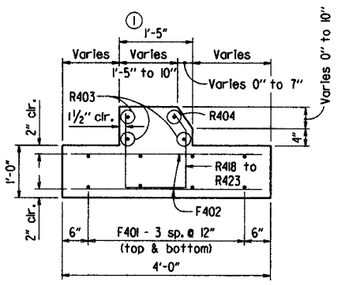
No Scale

① Dimension shall be increased to maintain 1½" clearance if architectural finish is specified.



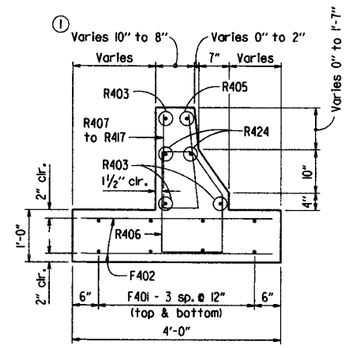
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR TRANSITIONAL APPROACH RAILING

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

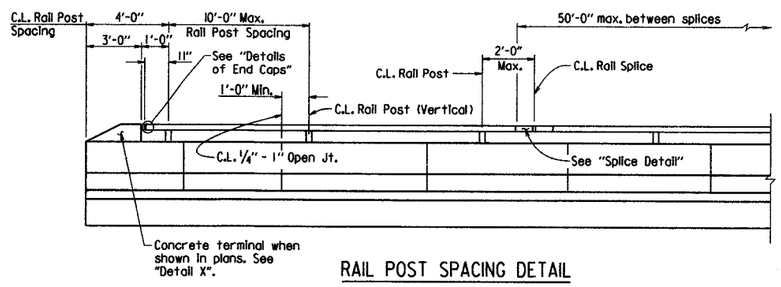
DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55013.dgn

CHECKED BY: AMS DATE: 2/11/2016 SCALE: As Noted

DESIGNED BY: STD. DATE: —

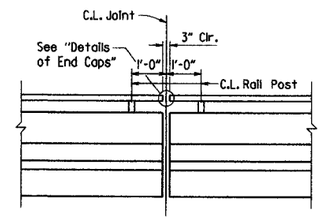
DRAWING NO. 55013

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.				
				1	TYPE H RAILING		55014	

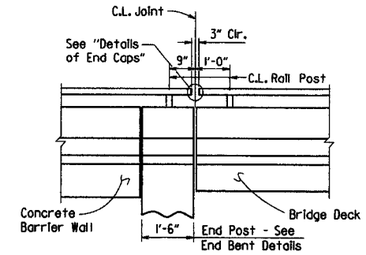


RAIL POST SPACING DETAIL

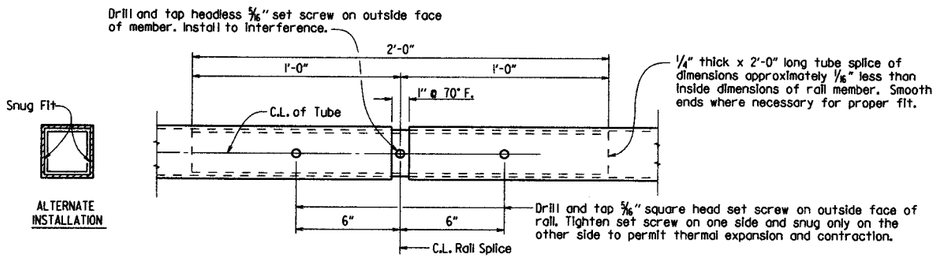
(Horizontal dimensions are along face of rail)



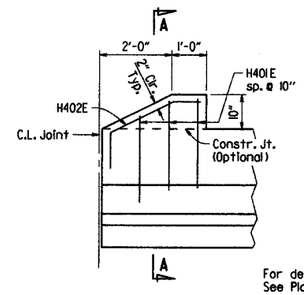
RAIL POST SPACING AT EXPANSION JOINTS



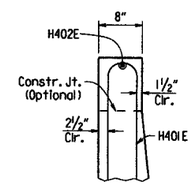
RAIL POST SPACING AT BRIDGE ENDS WITH CONCRETE BARRIER WALL



SPLICE DETAIL

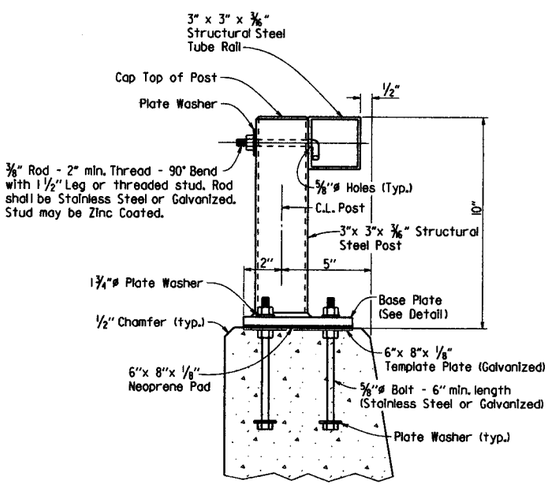


DETAIL X



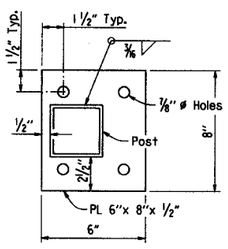
For details of reinforcing steel, See Plan Details.

SECTION A-A

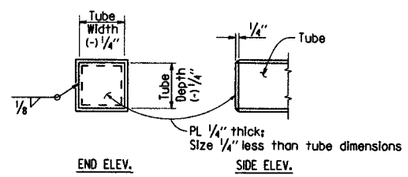


DETAILS OF POST ANCHOR SYSTEM

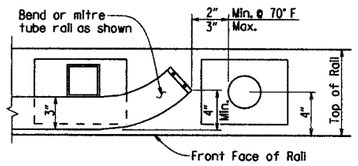
(CAST-IN-PLACE BOLTS)



BASE PLATE

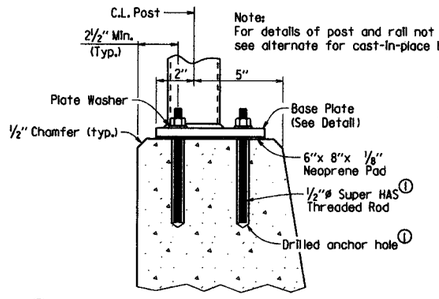


DETAILS OF END CAPS

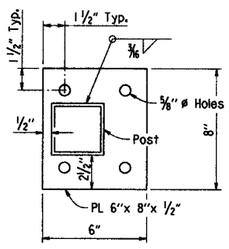


DETAILS OF RAIL TERMINUS AT FENCE POST

(When Chain Link Fence is required)



Note:
For details of post and rail not shown, see alternate for cast-in-place bolts.



BASE PLATE

HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System (or approved equal) shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(EPOXY ADHESIVE ANCHORS)

MATERIALS:

Rail tubing, posts, end caps, and base plates shall conform to AASHTO M 270, Gr. 36 or ASTM A 500-Grade B, and shall be galvanized after fabrication in accordance with Subsection 806.02(c). When required elsewhere in the plans, steel rail members shall receive a powder coating process after galvanizing. Galvanized surfaces shall be prepared in accordance with Subsection 807.87 and the manufacturer's recommendations prior to application of the powder coating process.

The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2 to 4 mils. The top coat shall be tough polyester powder with a minimum thickness of 2 to 4 mils. The color shall be as shown in the plans. Coated galvanized framework shall have a salt spray resistance of 3000 hours using ASTM B 117 without loss of adhesion. The powder coating process shall be in accordance with manufacturer's recommendations. Any damage to the powder coated finish shal l be repaired with a compatible touch-up system in accordance with manufacturer's recommendations and to the satisfaction of the Engineer at the Contractor's expense.

Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized fasteners and stainless steel will not be permitted.

High-Strength Steel:
Cast-in-place anchor bolts shall conform to ASTM A325, Type 1.
Nuts shall conform to ASTM A563, Grade DH or AASHTO M 292, Grade 2H.
Washers shall conform to ASTM F436.
Plate Washers shall conform to AASHTO M 270, Gr. 36.
Splice Set Screws shall conform to AASHTO M 270, Grade 36.
Anchor bolts, nuts, washers, plate washers, and set screws shall be galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50.

Stainless Steel:
Cast-in-place anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi.
Nuts shall conform to AASHTO M 292, Grade 8 or ASTM A563.
Washers shall conform to ASTM A240, Type 302.
Plate Washers shall conform to ASTM A240, Type 302.
Splice Set Screws shall conform to ASTM A193 or A320-Grade B8.

Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series). Neoprene pads shall conform to the requirements of Subsection 807.15(b).

GENERAL NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge. All posts shall be vertical.

Maximum post spacing = 10'-0". Minimum distance from centerline post to centerline open or contraction joints in parapet rail = 1'-0".

Splices in rail tubing shall be at 50' maximum spacing. The centerline of splices shall be located a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Bridge railing, including posts, template and base plates, fasteners, and neoprene pads shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)". When required elsewhere in the plans, powdered coating finish and repair of powdered coating finish shall be considered subsidiary to the item "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured prior to fabrication.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR TYPE H RAILING

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.C.P.	DATE: 2/11/2016	FILENAME:	b55014.dgn
CHECKED BY: A.M.S.	DATE: 2/11/2016	SCALE:	No Scale
DESIGNED BY: STD.	DATE: —		

BRIDGE NO. DRAWING NO. 55014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
						STEEL H-PILES		55020

(1)

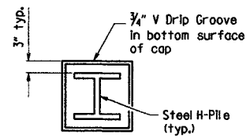
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

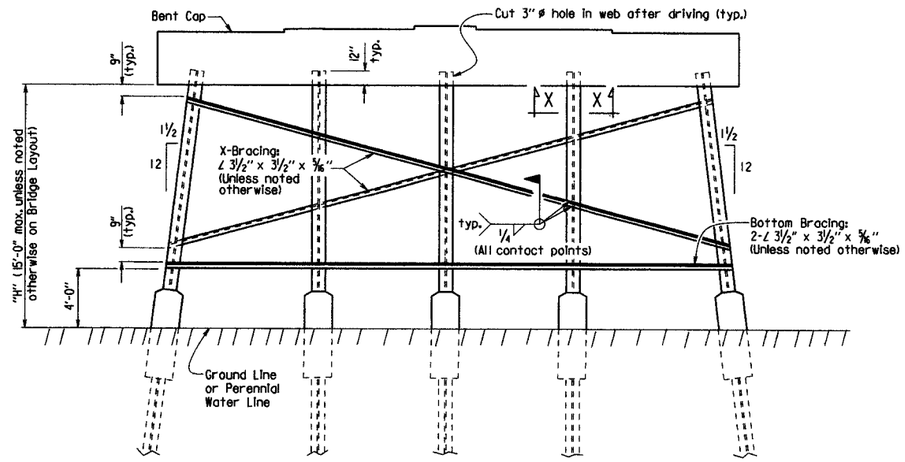
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

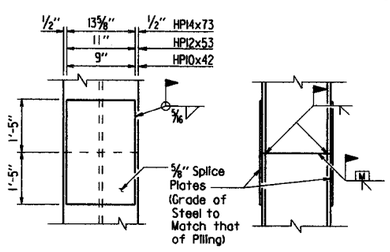
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



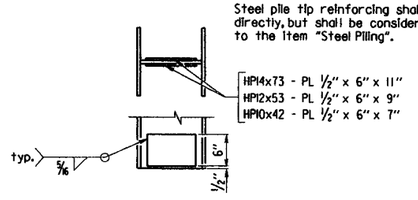
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

⚠ H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a ⅝" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifcations for Highway Construction (2014 Edition).

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

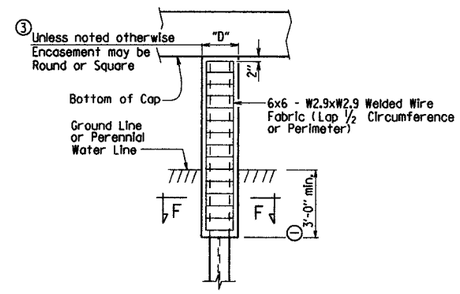
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

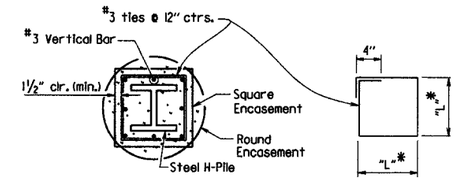
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(4) (Shown with Encasement to Bottom of Cap)

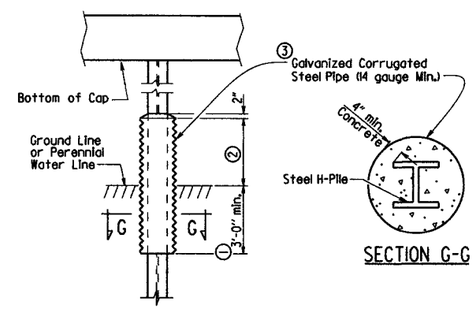


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HP10x42	1'-7"	2'-0"	1'-4"
HP12x53	1'-8"	2'-2"	1'-5"
HP14x73	1'-11"	2'-6"	1'-8"



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

(1) Unless otherwise noted on Bridge Layout.

(2) 3'-0" minimum or as shown on Bridge Layout.

(3) Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

(4) Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

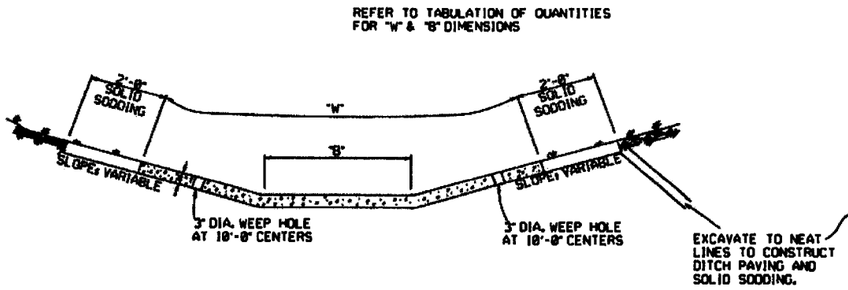
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

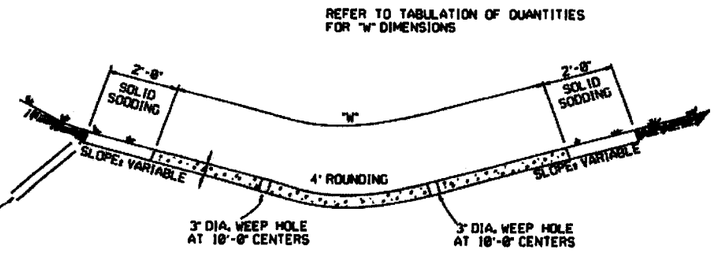
LITTLE ROCK, ARK.

DRAWN BY:	A.M.S.	DATE:	2/27/2014	FILENAME:	b55020.dgn
CHECKED BY:	B.E.F.	DATE:	2/27/2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55020

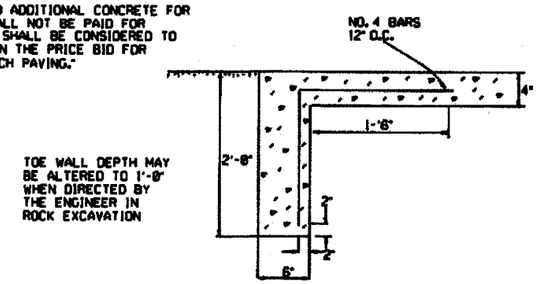


TYPE A

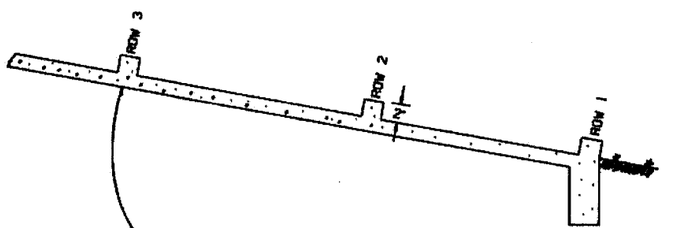


TYPE B

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

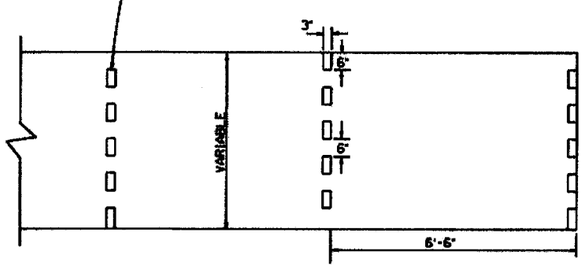


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

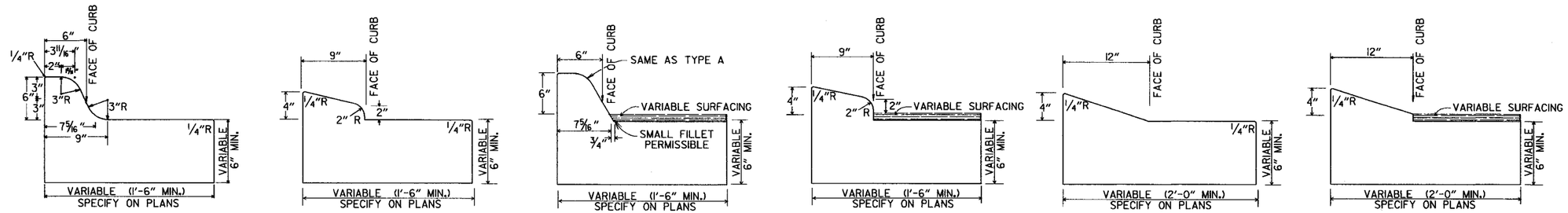
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	11-30-89
7-18-88	REVISED DISSIPATOR NOTE	853-7-18-88
4-3-87	REVISED ENERGY DISSIPATOR	871-4-3-87
1-5-87	MODIFIED NOTE ON ENERGY DISS.	832-1-5-87
11-3-86	ADDED NOTE TO ENERGY DISS.	799-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

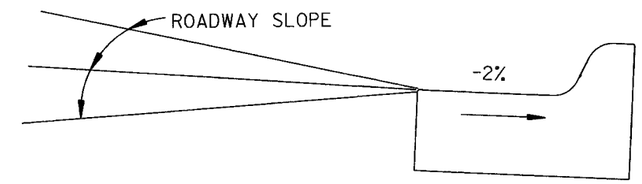
CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1



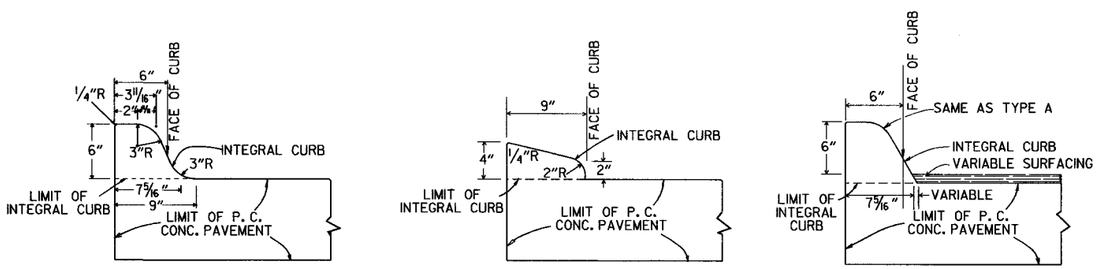
TYPE A | TYPE B-1 | TYPE C | TYPE B-2 | TYPE E-1 | TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER



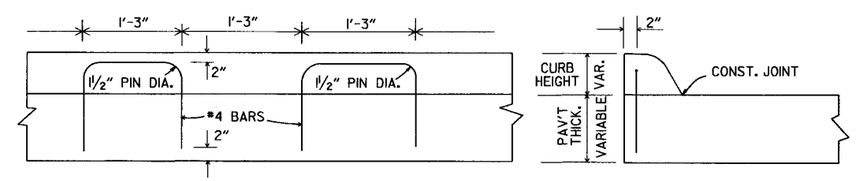
DETAIL OF GUTTER SLOPE

GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



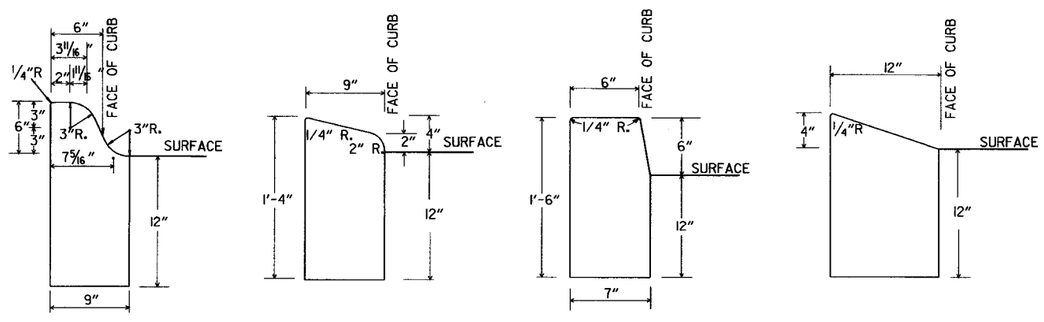
TYPE A | TYPE B | TYPE C

INTEGRAL CURB



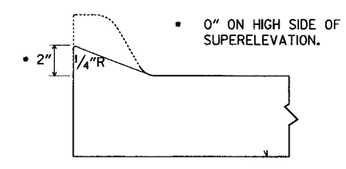
LONGITUDINAL SECTION | ELEVATION

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.

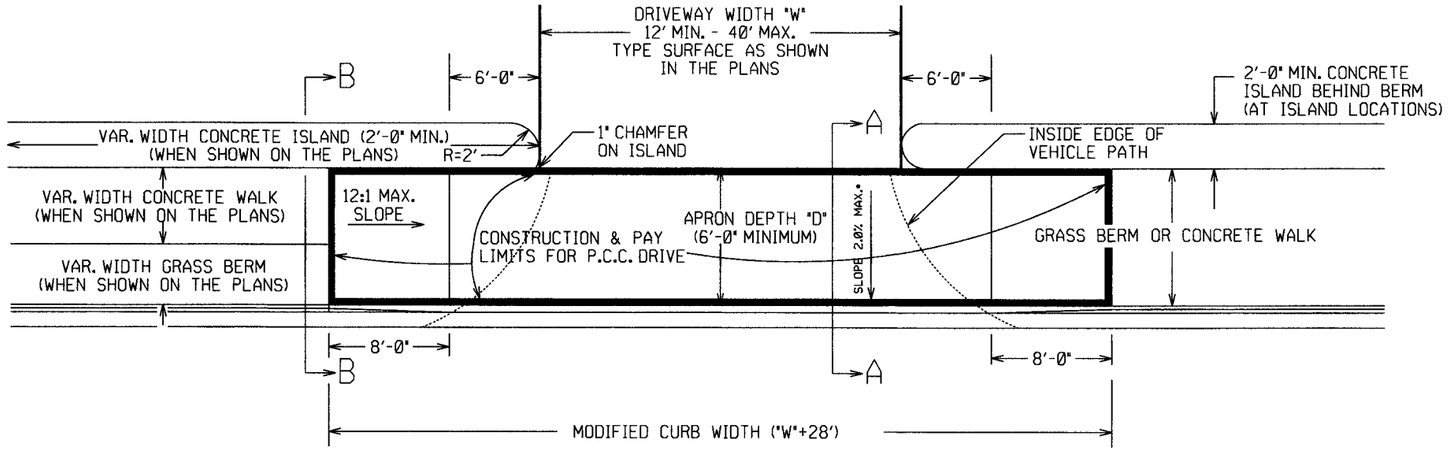
DETAILS OF MODIFIED CURB

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 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	52-10-2-72

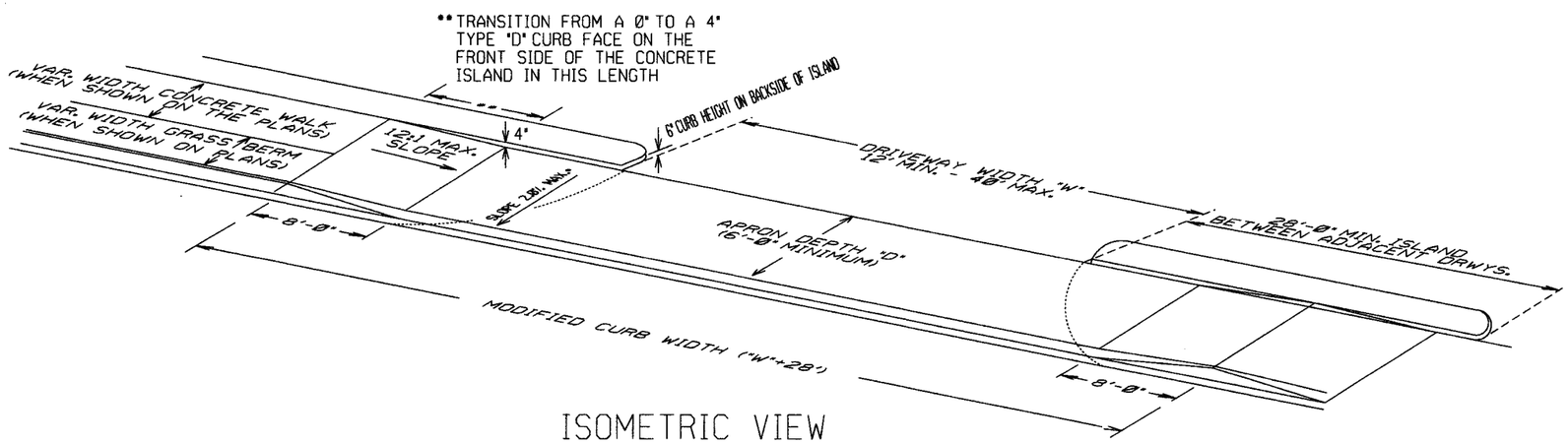
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

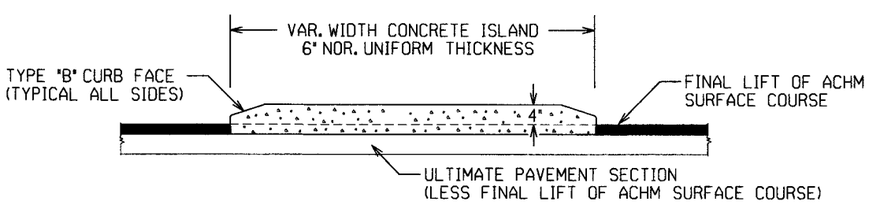
STANDARD DRAWING CG-1

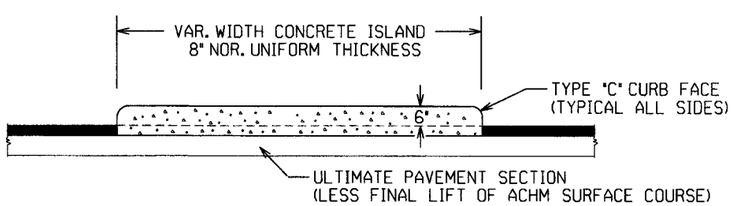


PLAN VIEW



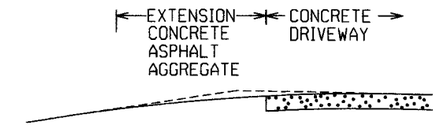
ISOMETRIC VIEW





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

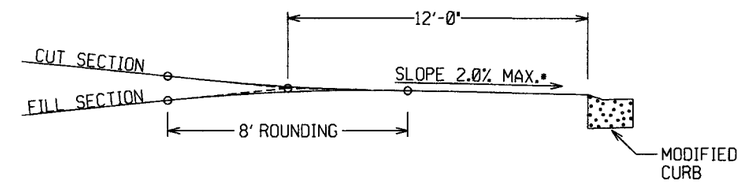
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

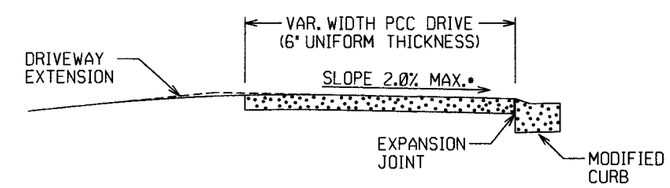
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

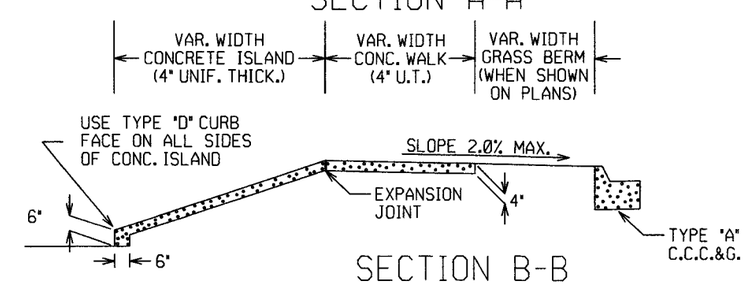


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



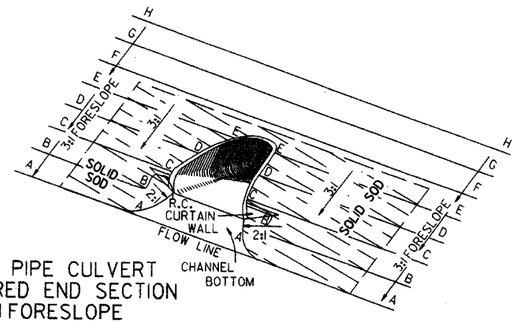
SECTION A-A



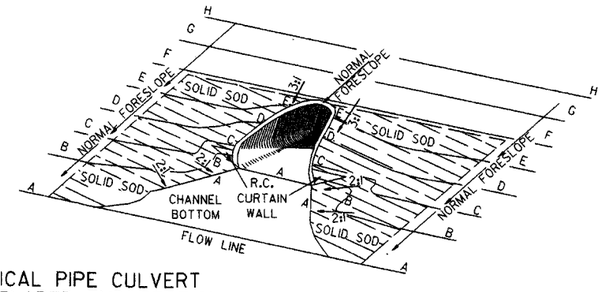
SECTION B-B
CURBED ISLAND BEHIND WALK

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

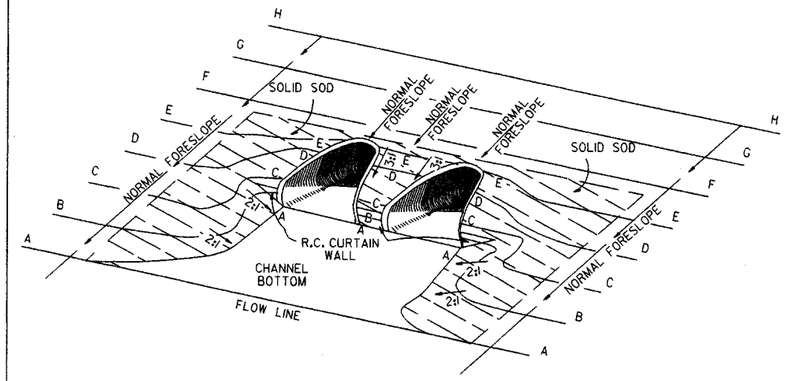
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



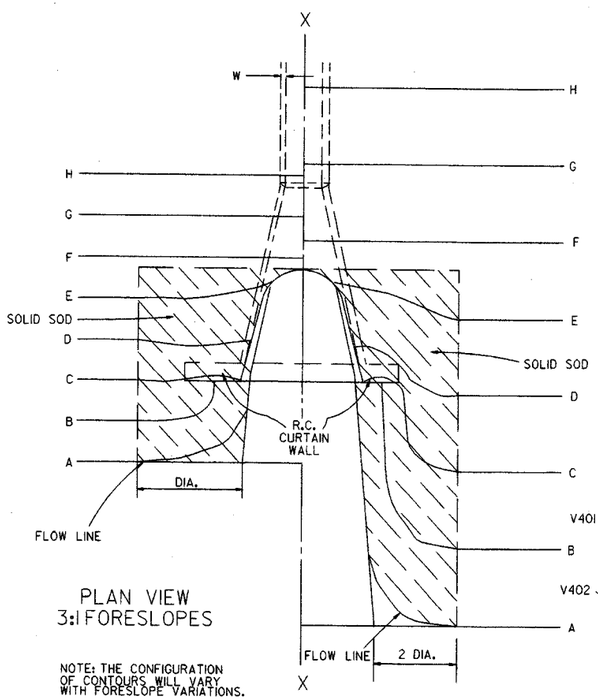
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

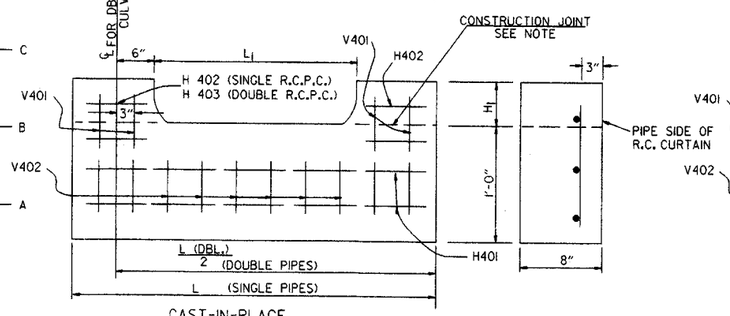
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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

REINFORCING STEEL SCHEDULE

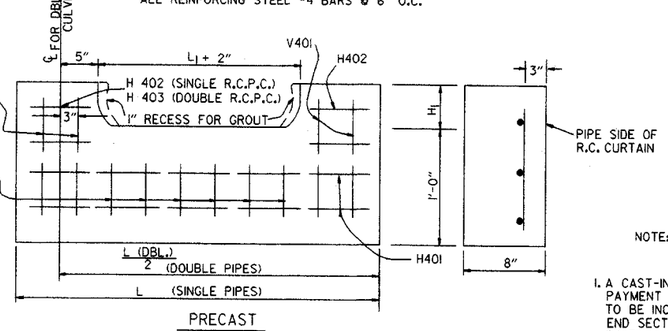
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"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

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

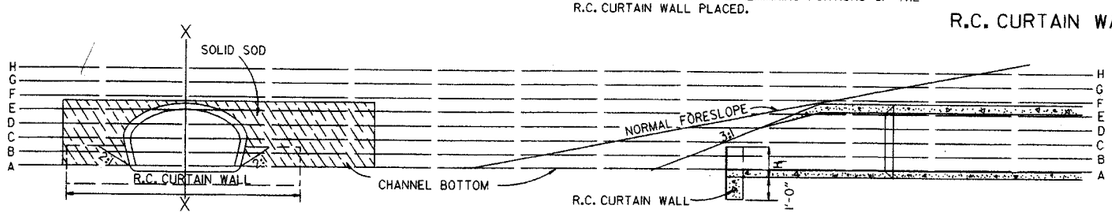
SOLID SODDING

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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

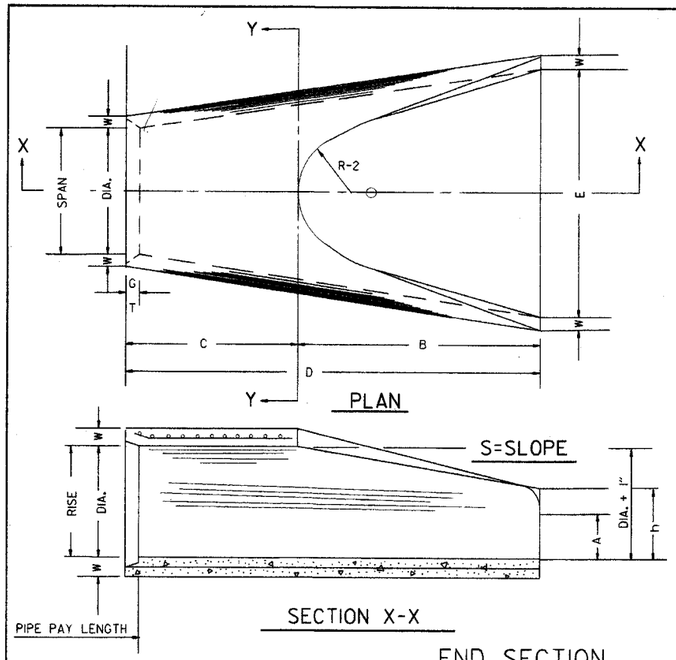


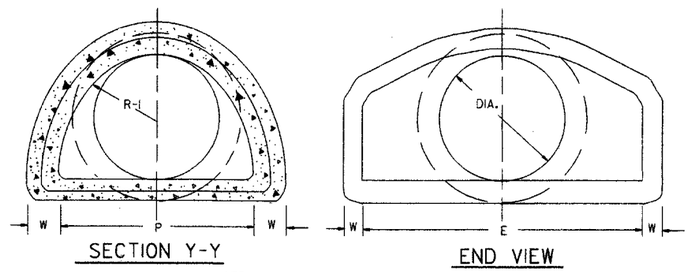
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 15/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

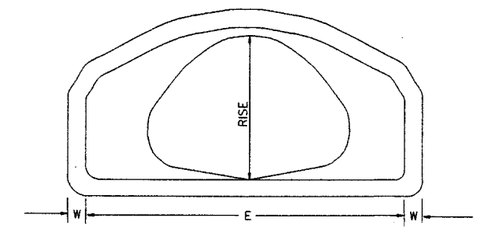
ARCH PIPE

EQUIV. DIA.	* SPAN AASHTO M 206	* SPAN AHD NOMINAL	* RISE AASHTO M 206	* RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 15/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	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"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

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

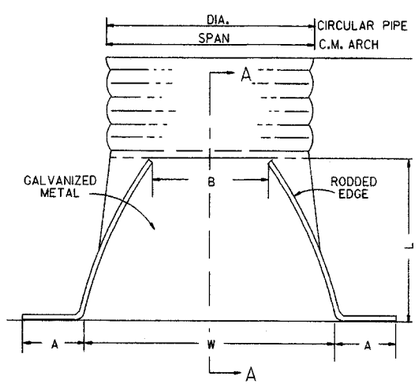


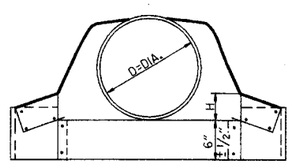
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

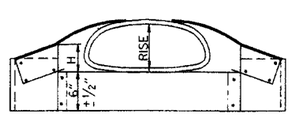




CIRCULAR PIPE

CIRCULAR PIPE

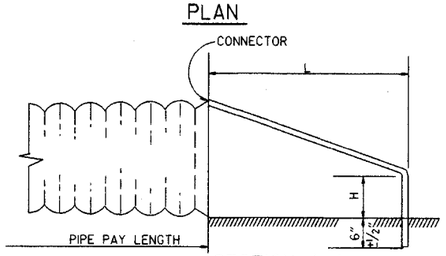
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
			INCHES				
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

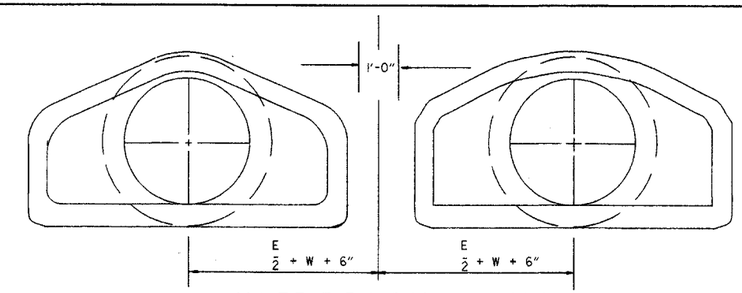
C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
				INCHES					
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

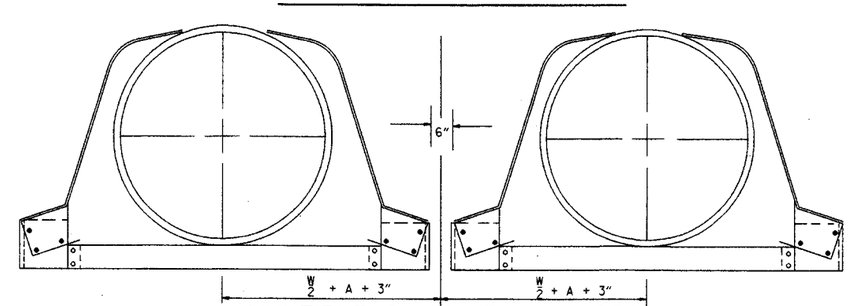


NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

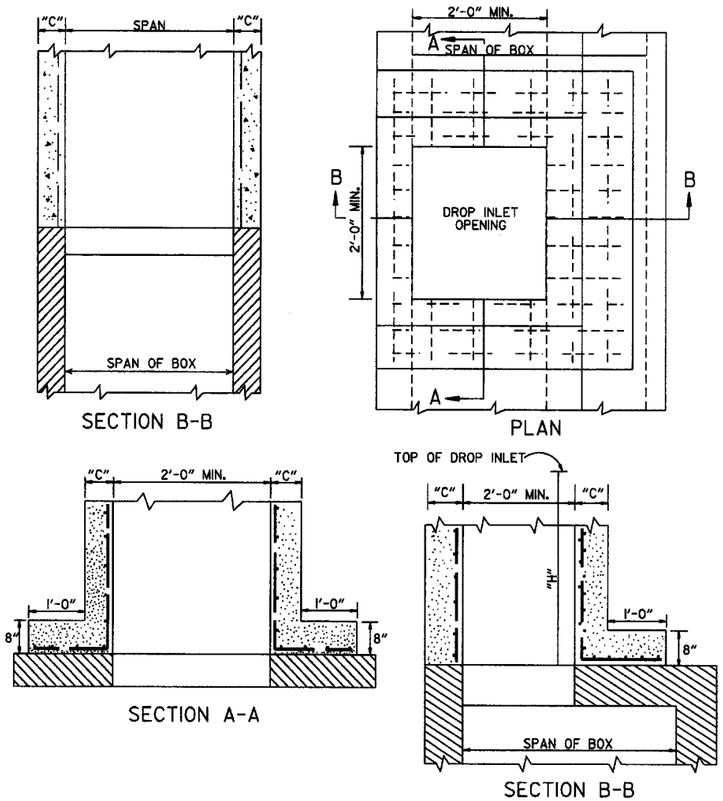
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74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

ARKANSAS STATE HIGHWAY COMMISION

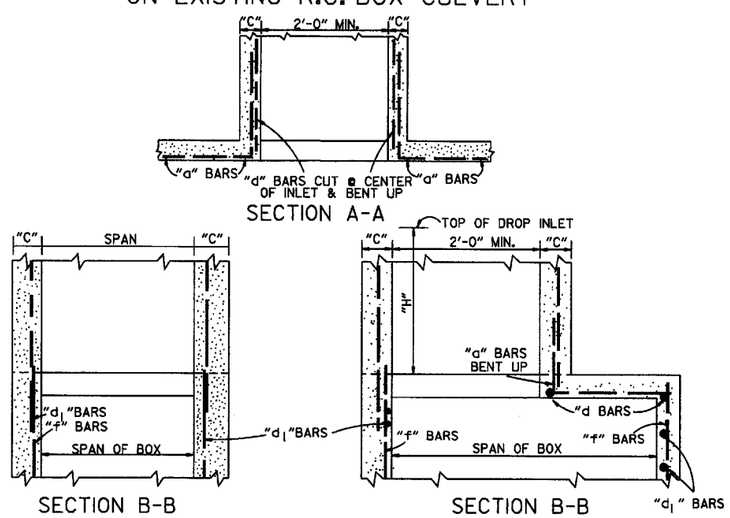
FLARED END SECTION

STANDARD DRAWING FES-2

stdfes2.dgn

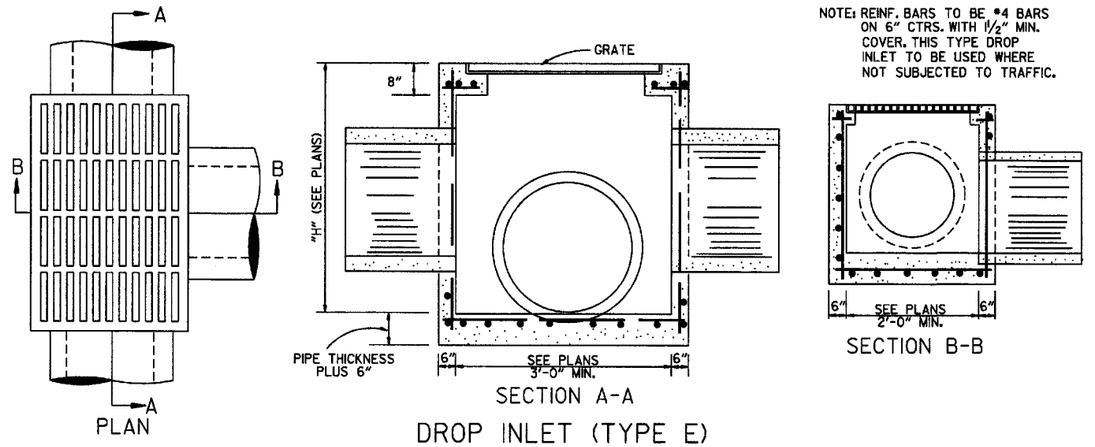


METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT

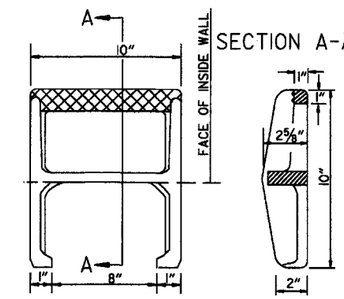


METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

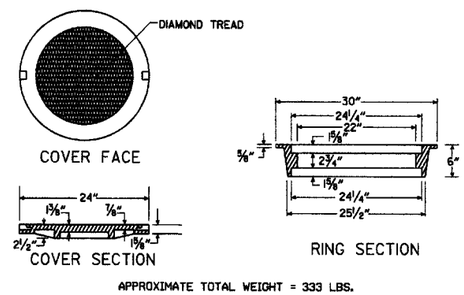


DROP INLET (TYPE E)

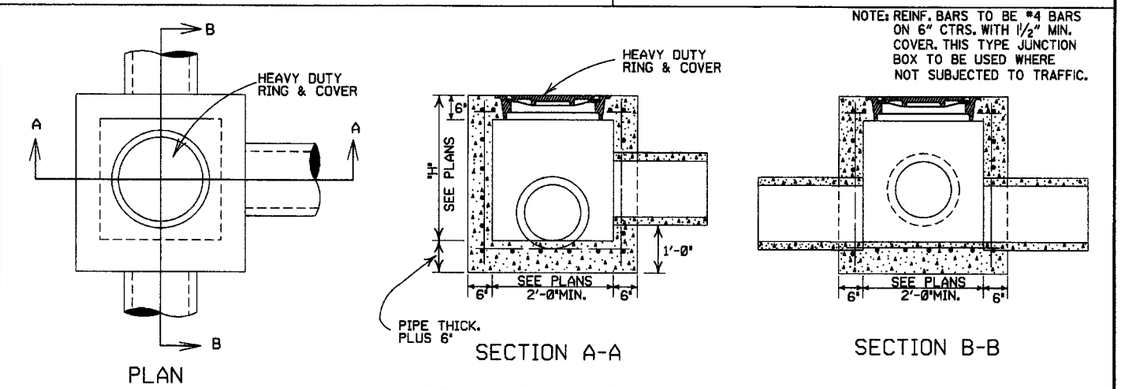


NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

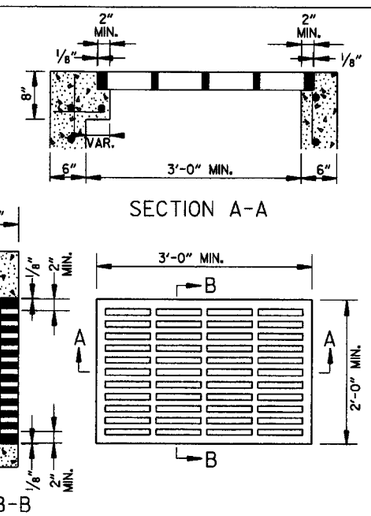
DETAIL OF STEP FOR DROP INLET



HEAVY DUTY RING & COVER

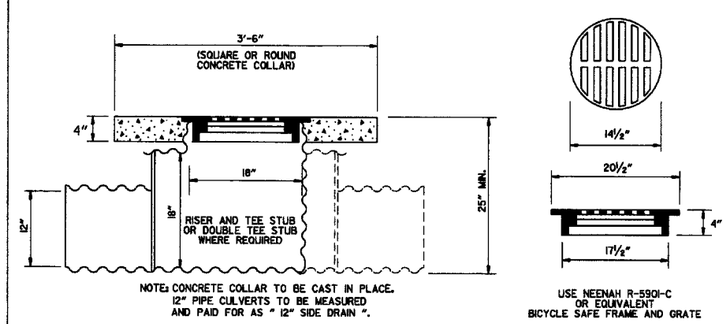


JUNCTION BOX (TYPE E)



APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



DETAIL OF YARD DRAIN

GENERAL NOTES:

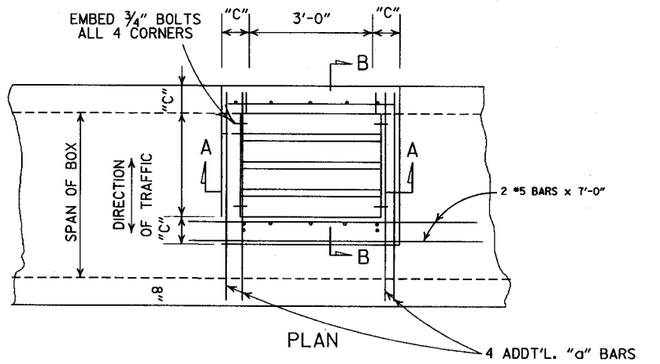
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS 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	

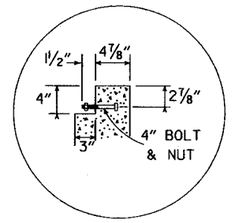
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

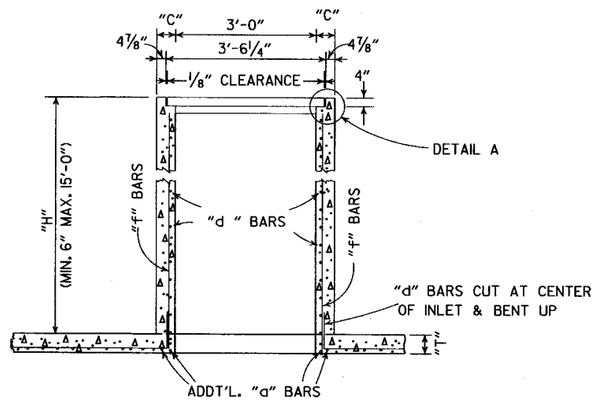
STANDARD DRAWING FPC-9



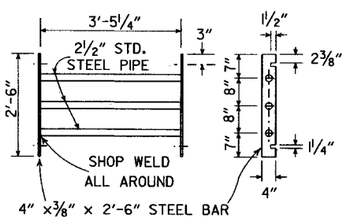
PLAN



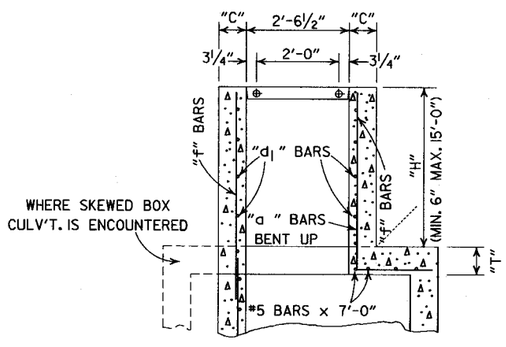
DETAIL A



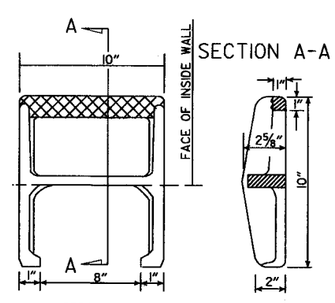
SECTION A-A



GRATE DETAIL



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

NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM"
FOR REINFORCED CONC. BOX CULVERTS

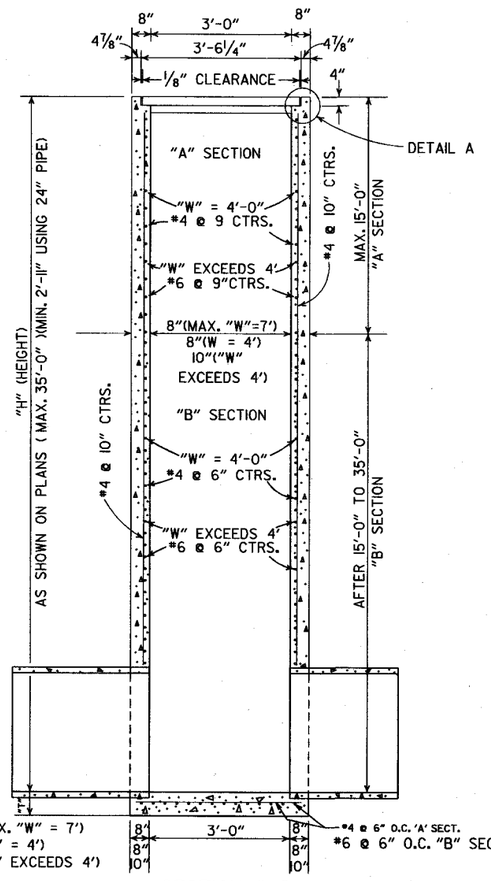
GENERAL NOTES:

1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

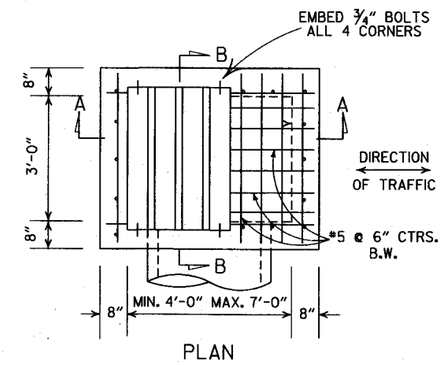
TABLE OF "W" DIMENSIONS

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
	"W"	"W"	"W"
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-11"	6'-1"
48"	4'-10"	5'-7"	6'-11"

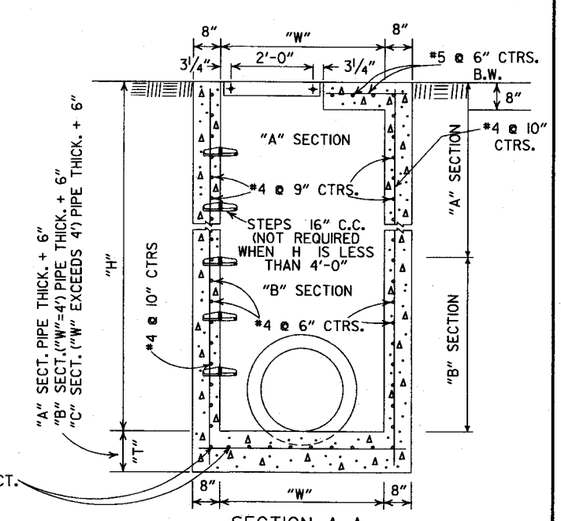
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

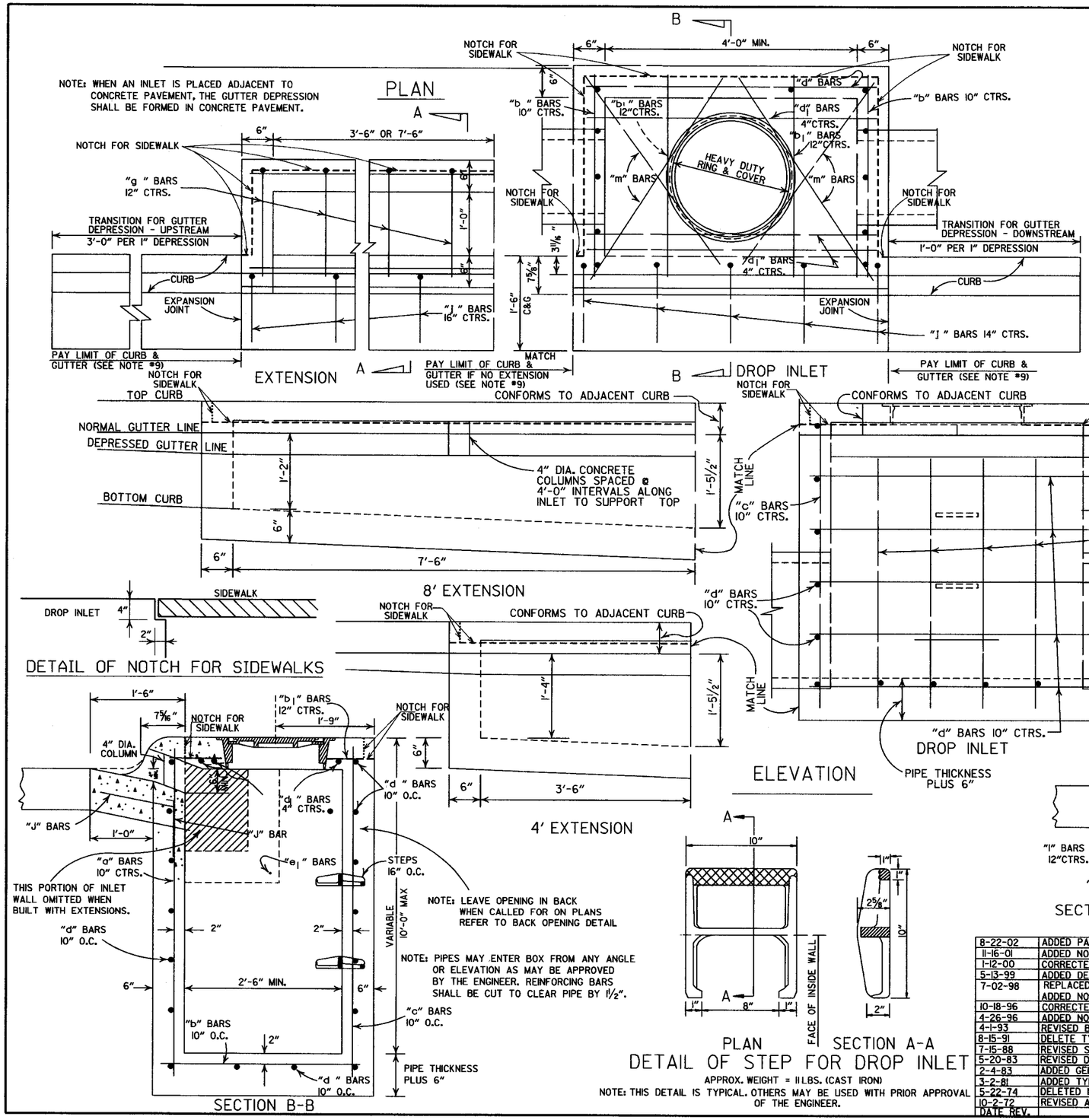
DROP INLET(TYPE RM)

REVISED		DATE FILMED
8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL, TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

STANDARD DRAWING FPC-9D



4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC. CU. YDS.	HEIGHT 5'-0" REINF. STEEL POUNDS	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL 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

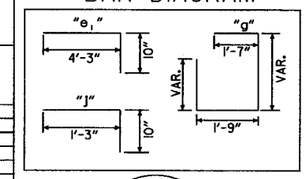
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

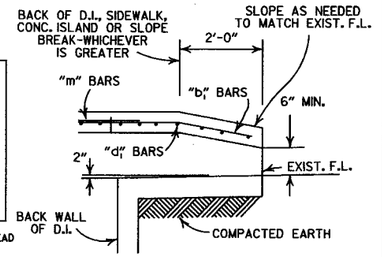
DROP INLET EXTENSION

4'-0" CLASS A CONC. CU. YDS.	4'-0" REINF. STEEL POUNDS	8'-0" CLASS A CONC. CU. YDS.	8'-0" REINF. STEEL 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

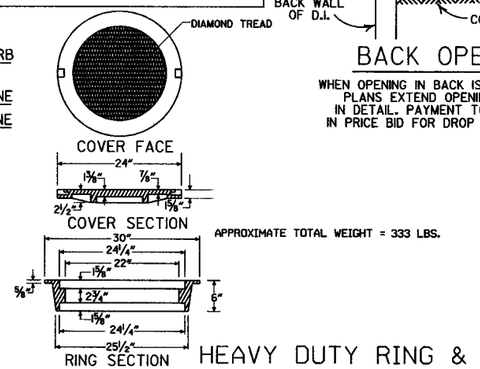
BAR DIAGRAM





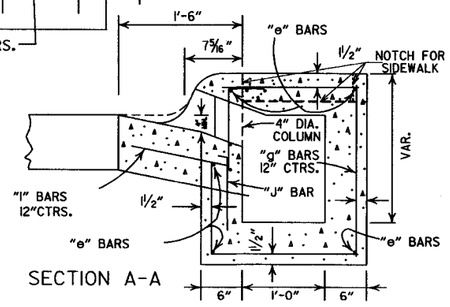
BACK OPENING

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:

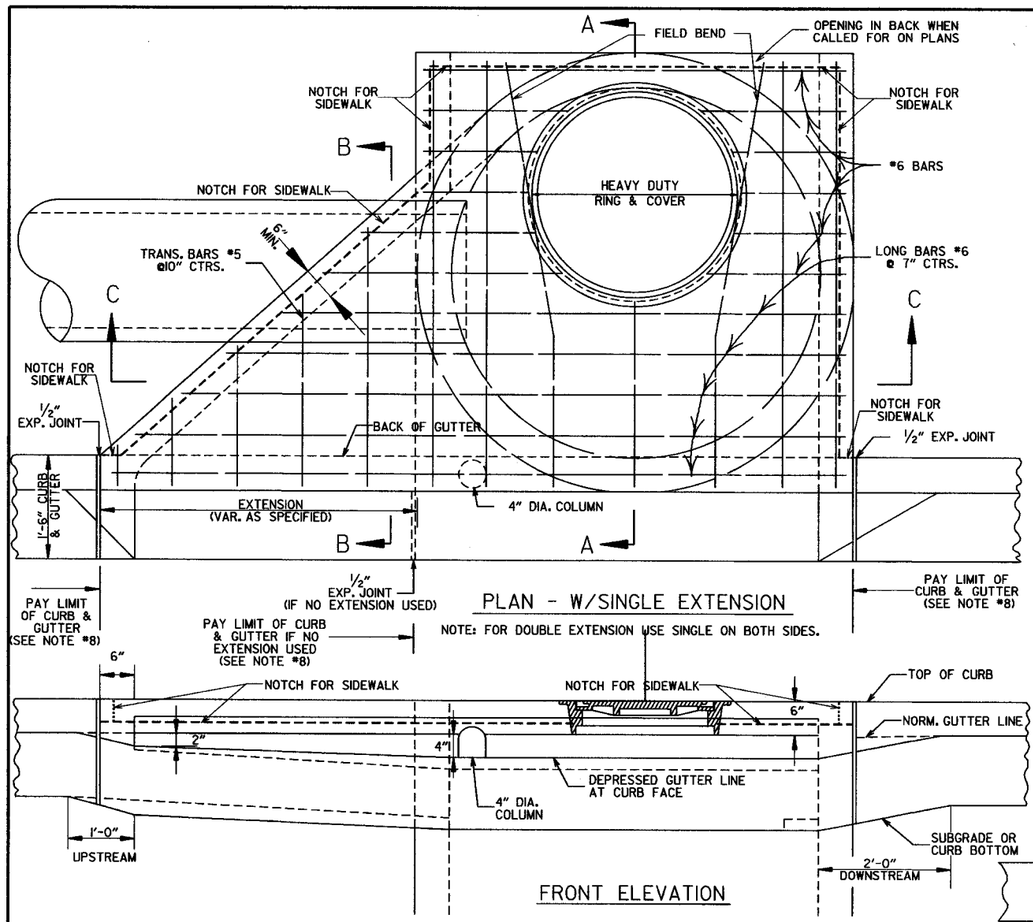
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY 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)

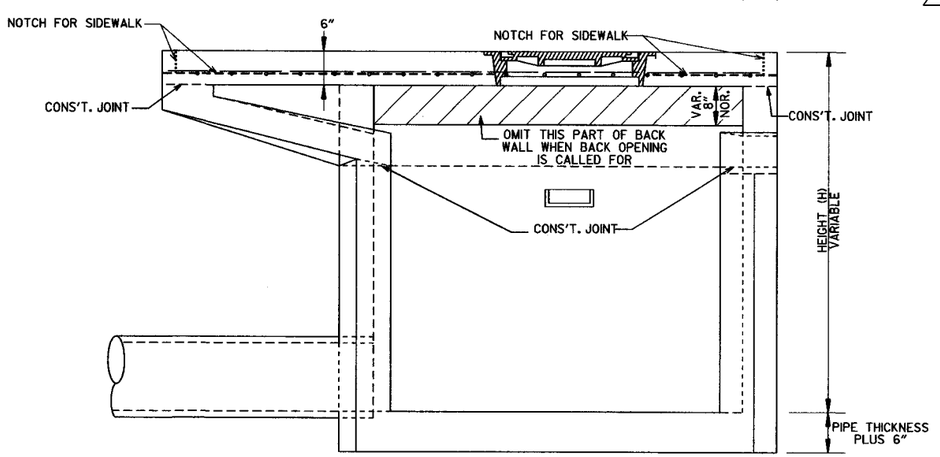
STANDARD DRAWING FPC-9E



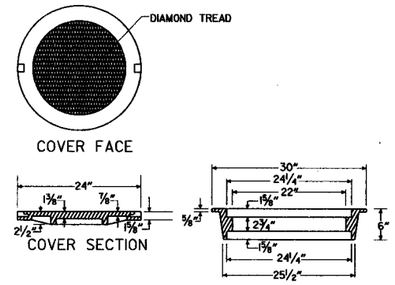
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



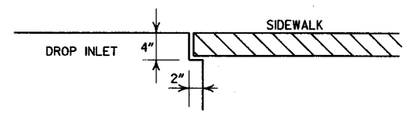
SECTION C-C



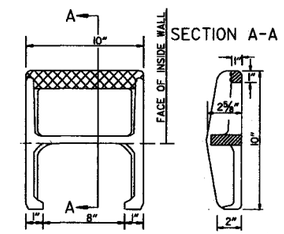
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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

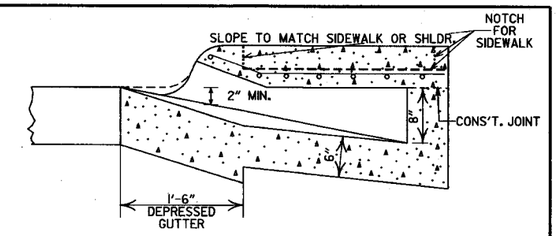


APPROX. WEIGHT = 11 LBS. (CAST IRON)

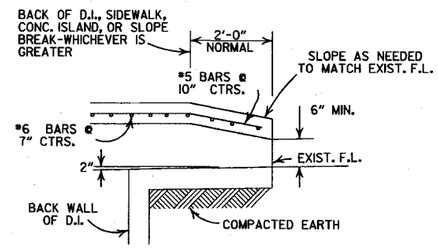
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

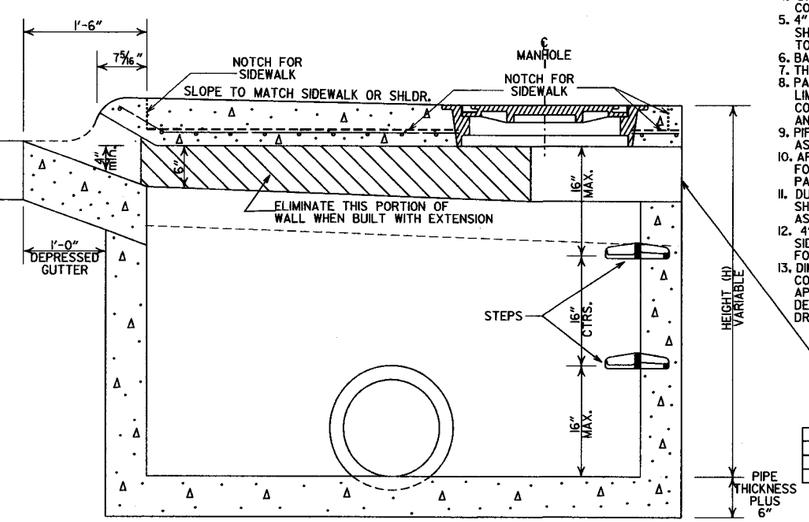


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



SECTION A-A

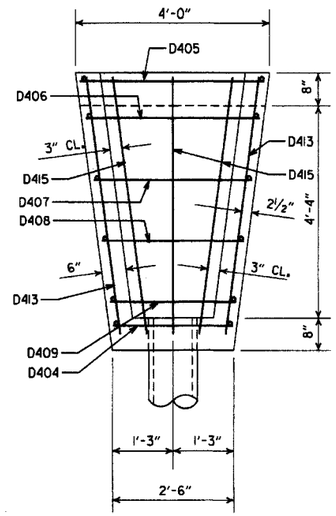
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 ADJ. OPENING DIMENSION	
10-12-95	CORRECTED *6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-11-93	REV. BACK OPEN DETAIL & NOTE	4-11-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE 8 MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	639-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

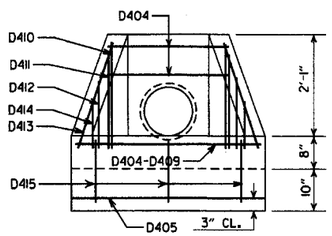
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

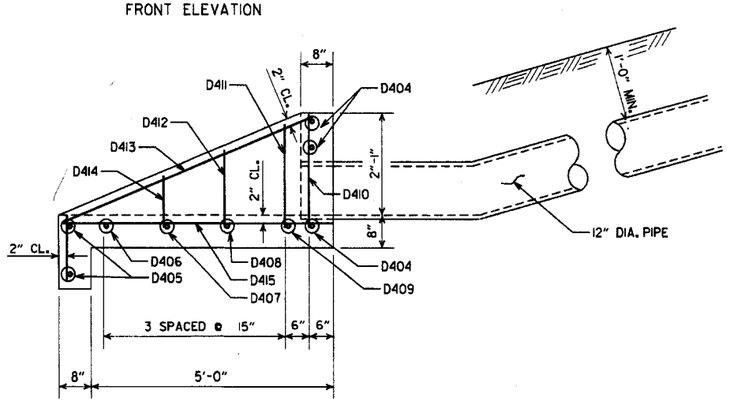
STANDARD DRAWING FPC-9M



PLAN



FRONT ELEVATION

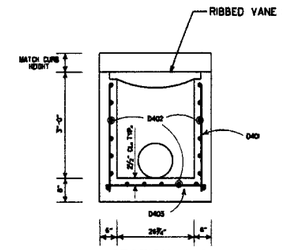


SIDE ELEVATION
CONCRETE SPILLWAY

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	5'-4" / 1'-2" / 2" P.D. / D415
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	

DETAILS OF CONCRETE SPILLWAY (TYPE A)

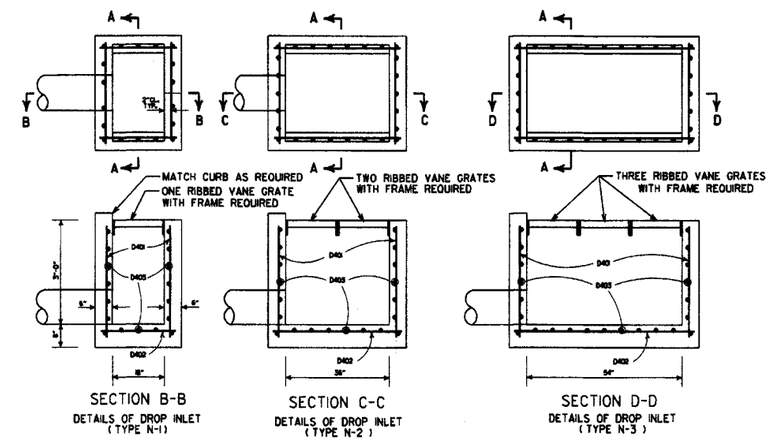


SECTION A-A

BAR LIST (DROP INLET)

MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

ALL BARS #4 @ 6" SPACING



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

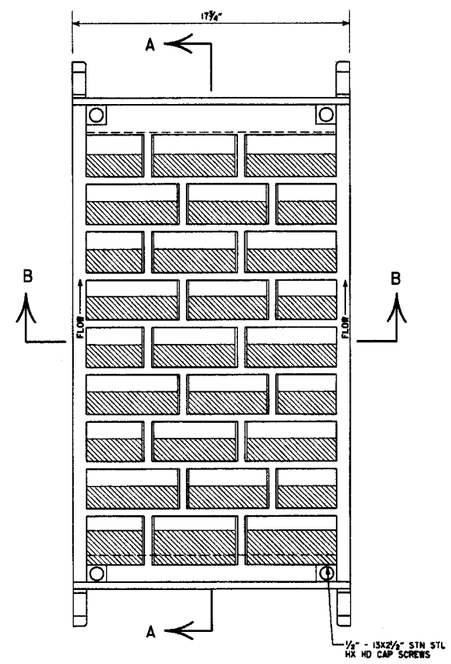
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

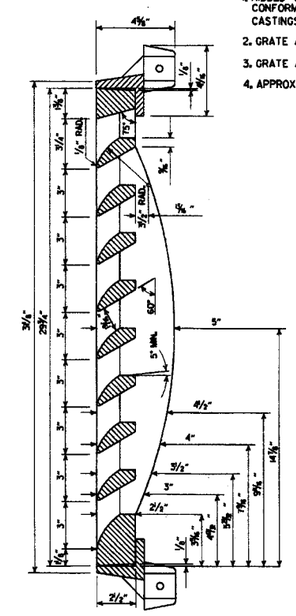
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

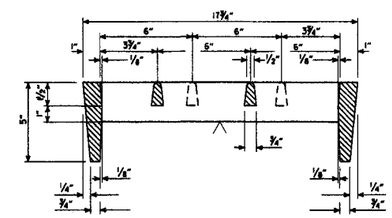
GENERAL NOTES (GRATE & FRAME)

1. RIBBED VANE 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 & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

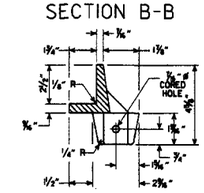




SECTION A-A



SECTION B-B



SECTION THRU FRAME

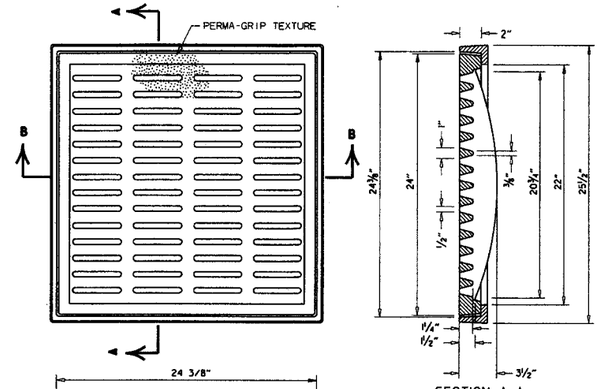
DETAILS OF RIBBED VANE GRATE AND FRAME

DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98	7-2-98	REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N



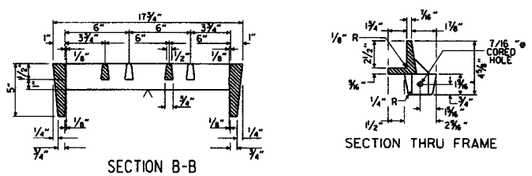
SECTION B-B

SECTION A-A

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

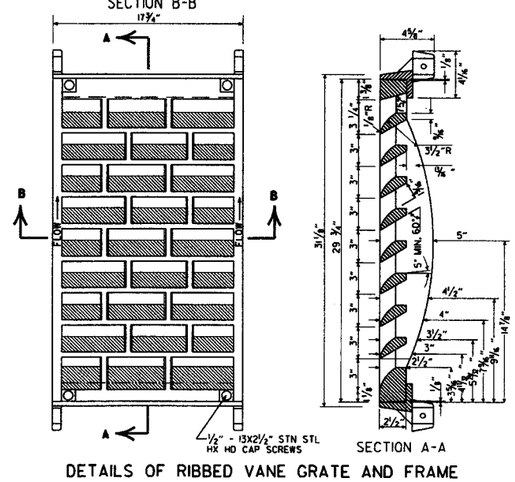
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



SECTION B-B

SECTION THRU FRAME

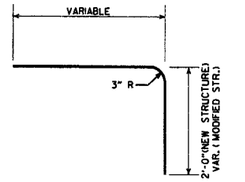


SECTION A-A

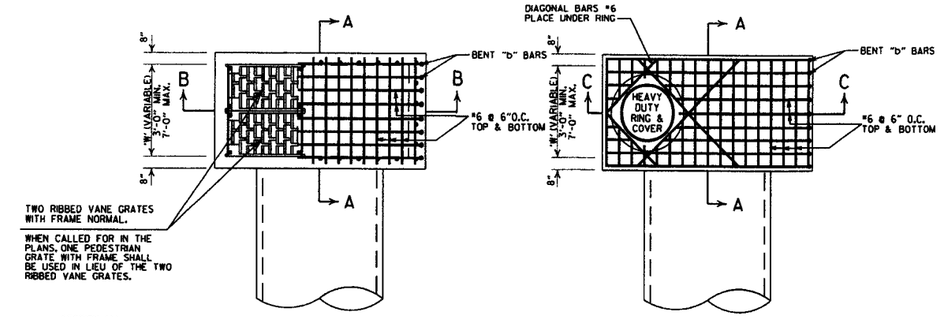
DETAILS OF RIBBED VANE GRATE AND FRAME

GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE 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, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



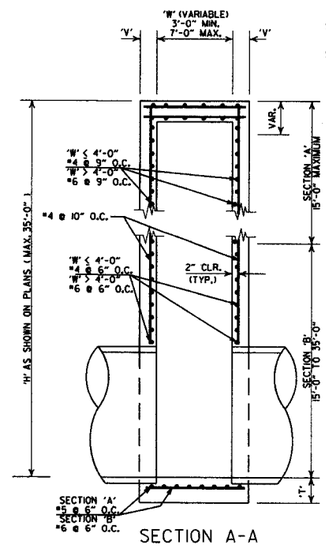
DETAIL OF BENT "b" BAR



SECTION 'A'
'V' = 8"

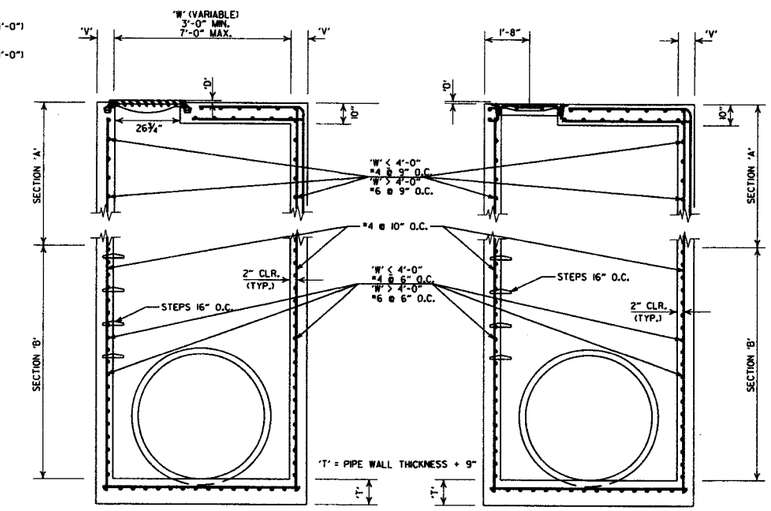
SECTION 'B' (W<4'-0")
'V' = 8"

SECTION 'B' (W>4'-0")
'V' = 10"



SECTION A-A

DETAILS OF DROP INLET (TYPE ST)



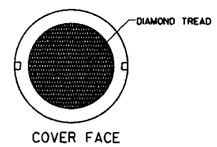
SECTION B-B

SECTION C-C

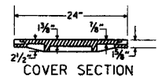
DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

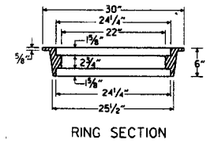
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (HEAVY DUTY RING & COVER):

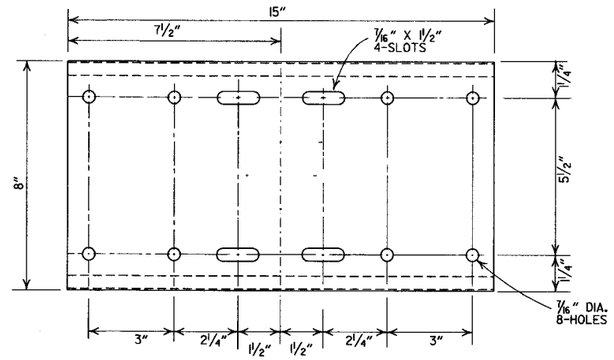
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. 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 REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

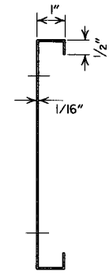
ARKANSAS STATE HIGHWAY COMMISSION

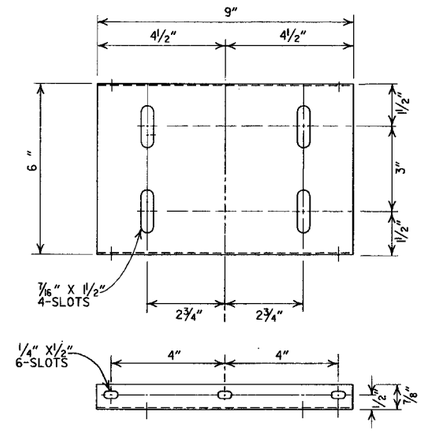
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

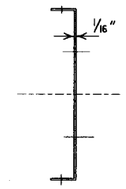


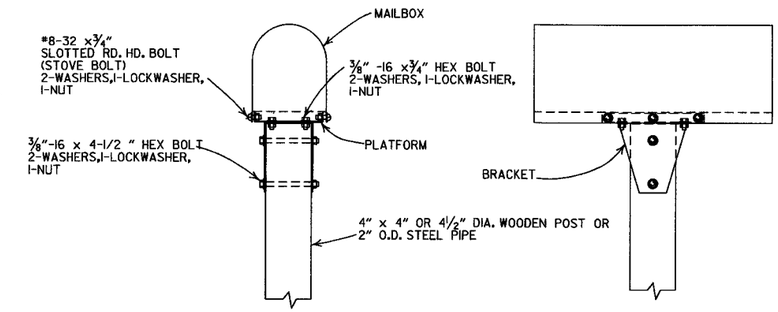
SHELF



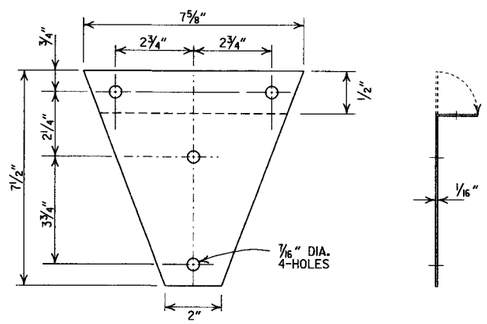


PLATFORM





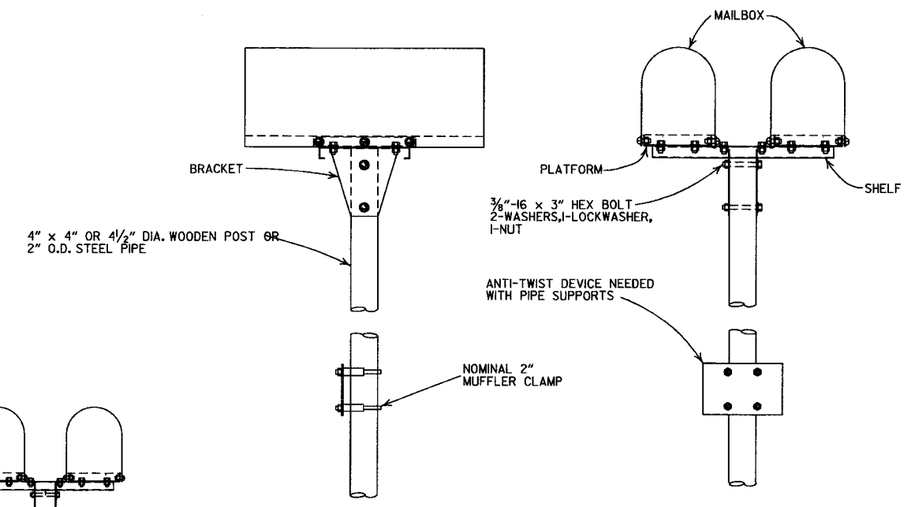
SINGLE INSTALLATION



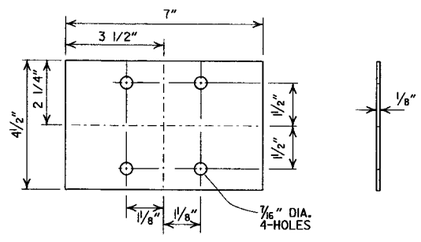
BRACKET

GENERAL NOTES

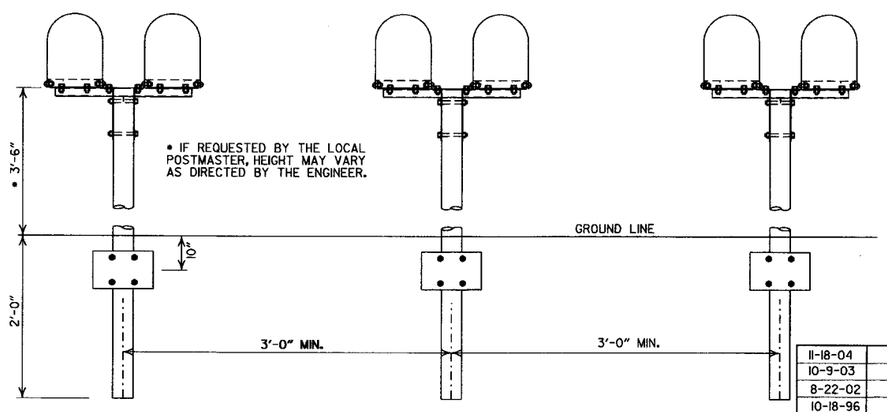
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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.



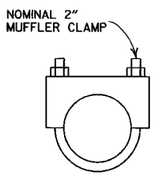
DOUBLE INSTALLATION



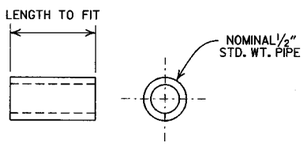
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



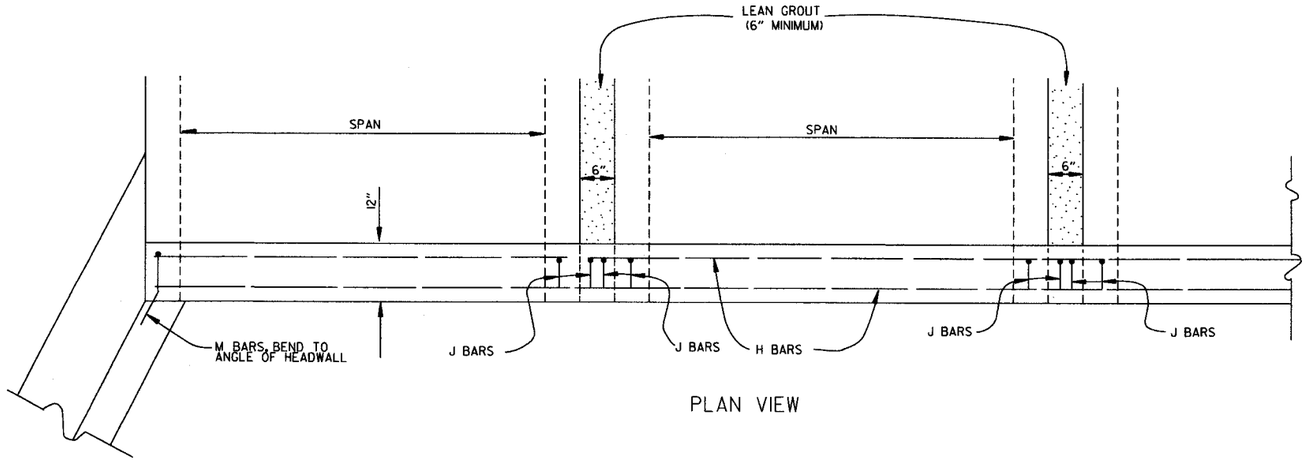
SPACER

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

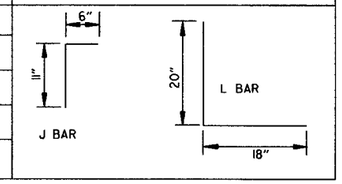
STANDARD DRAWING MB-1



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.

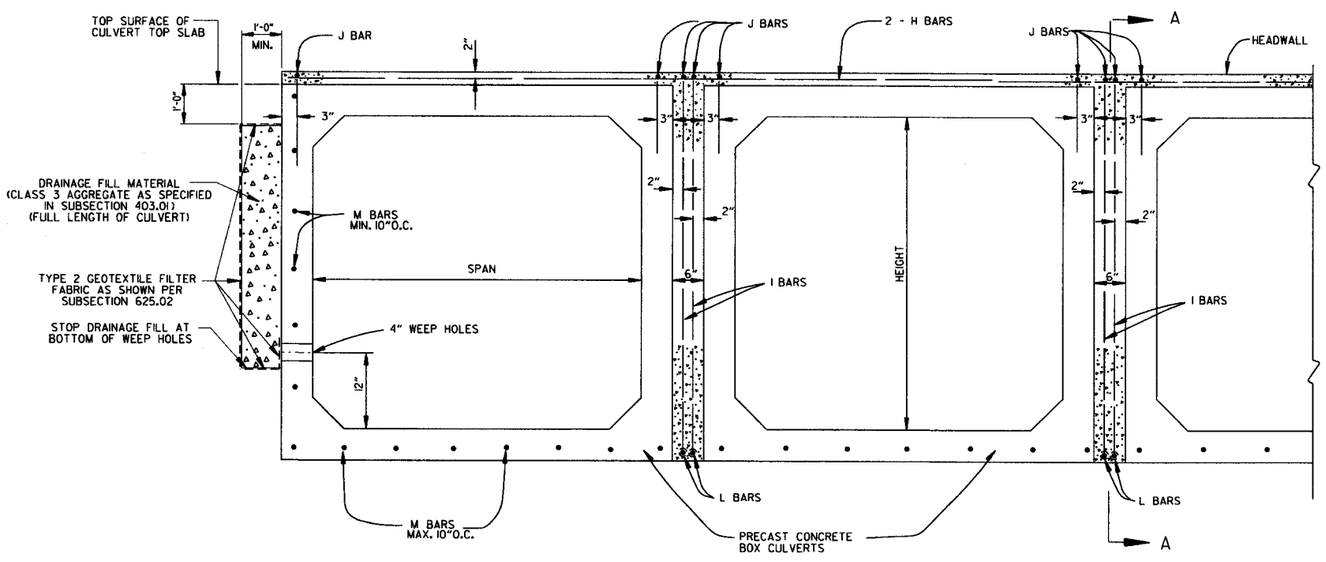
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

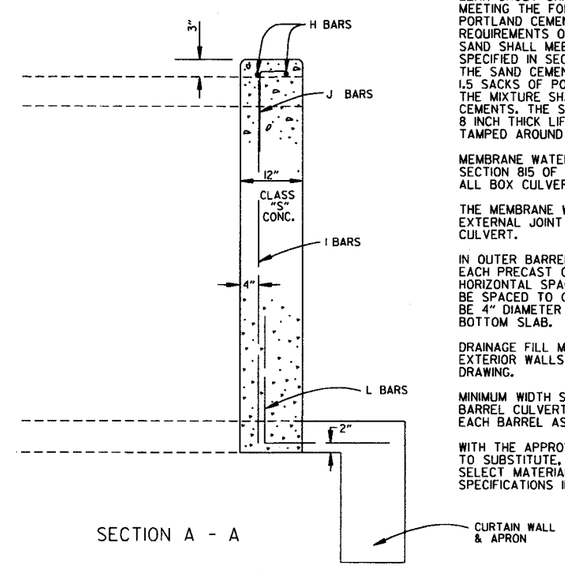
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

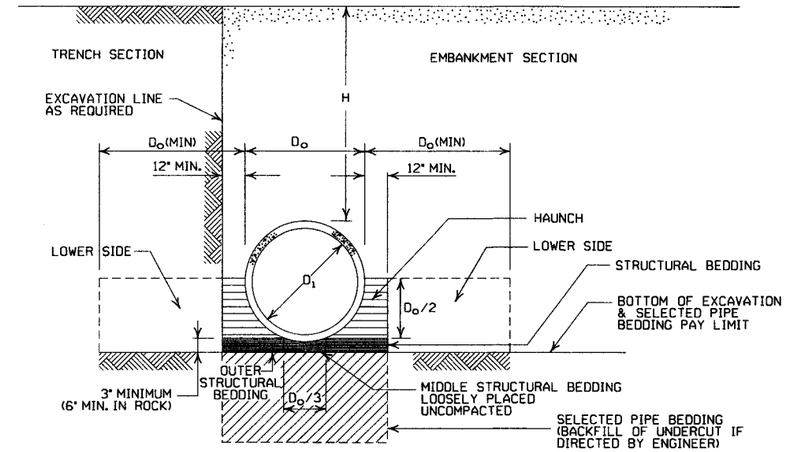
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		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				ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1		MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			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	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

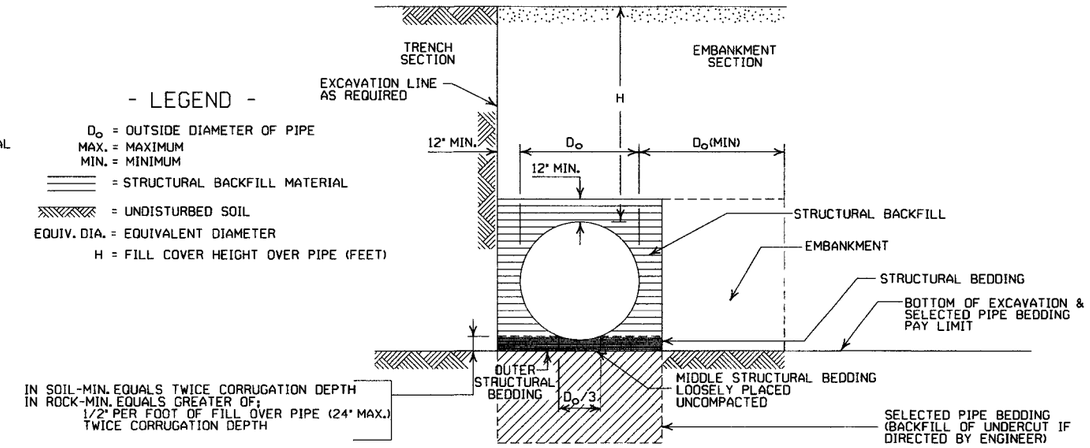
METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

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

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

- LEGEND -

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS 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."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

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

SM3 WILL NOT BE ALLOWED.

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

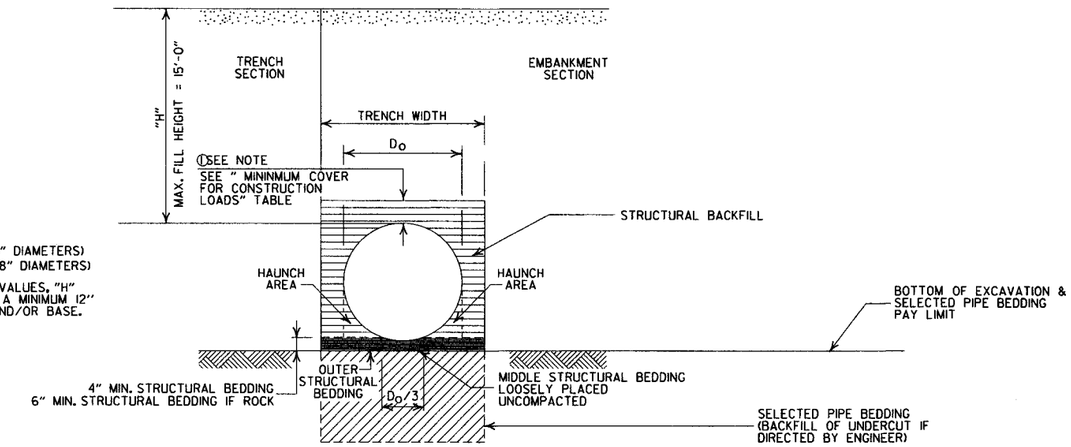
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	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.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

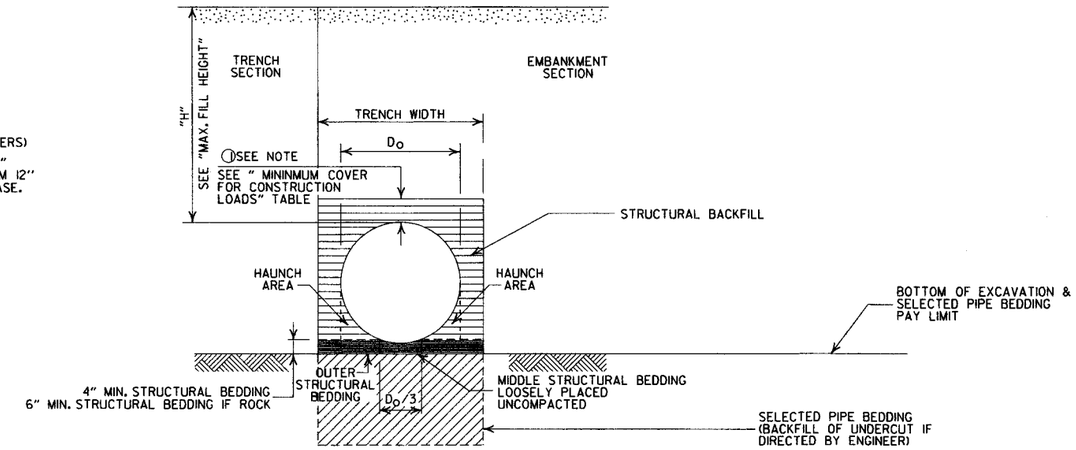
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

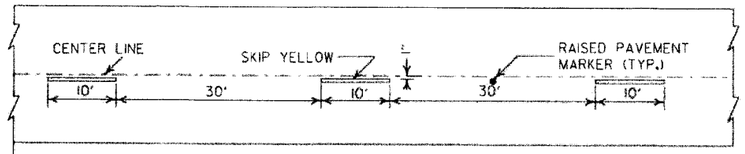
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

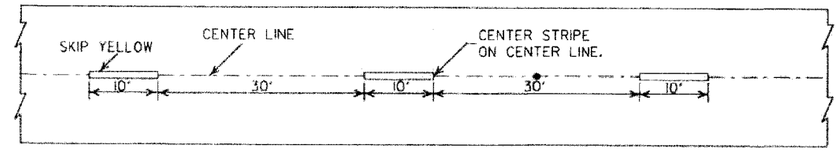
STANDARD DRAWING PCP-2

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.

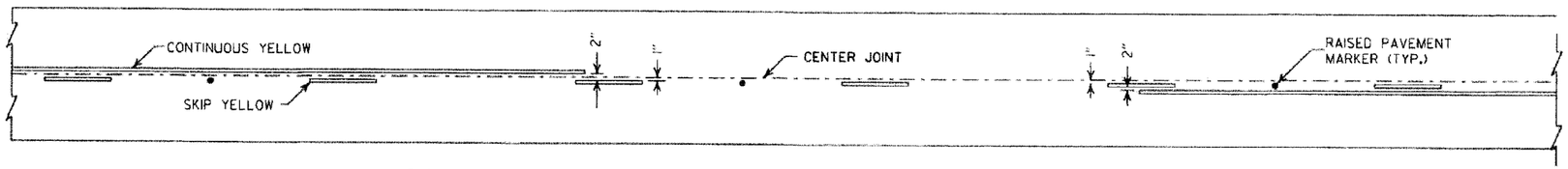


CONCRETE PAVEMENT

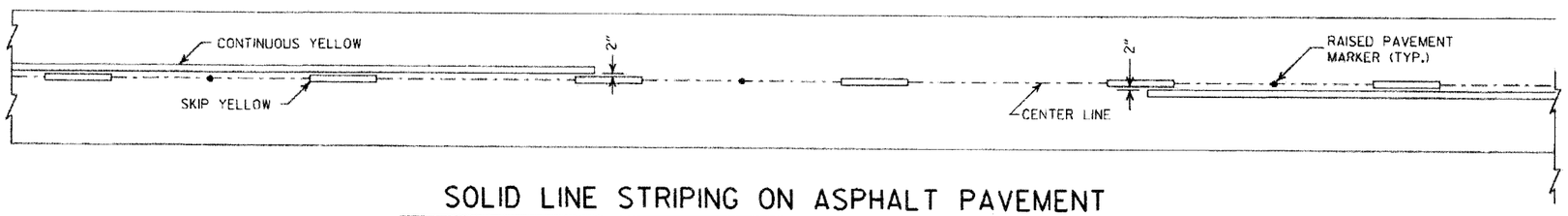


ASPHALT PAVEMENT

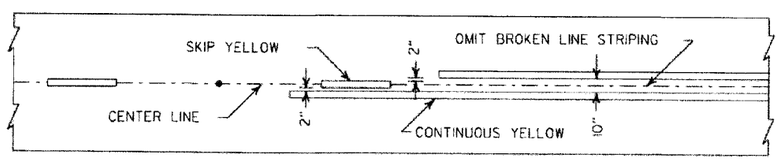
BROKEN LINE STRIPING



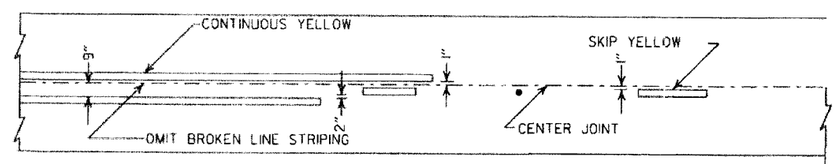
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

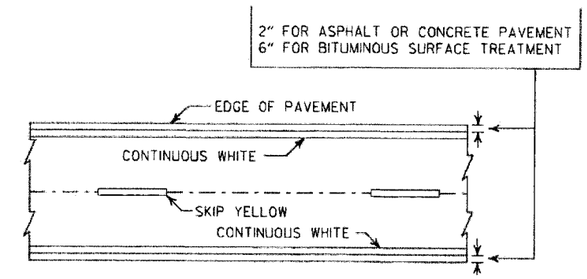


ASPHALT PAVEMENT



CONCRETE PAVEMENT

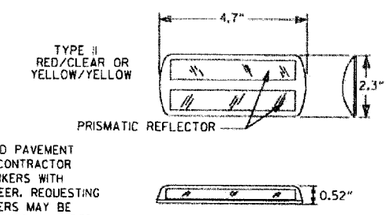
STRIPING AT ADJACENT NO PASSING LANES



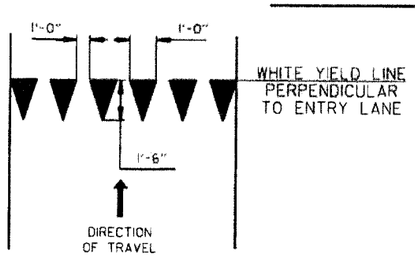
PAVEMENT EDGE LINE MARKING

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

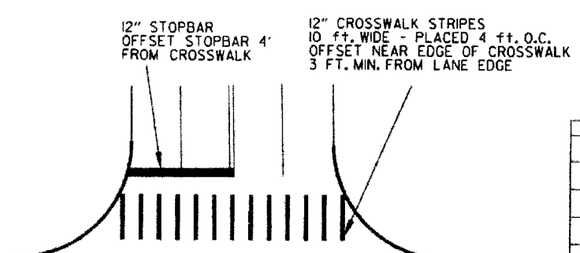
NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS



YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

DATE	REVISION	FILMED
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

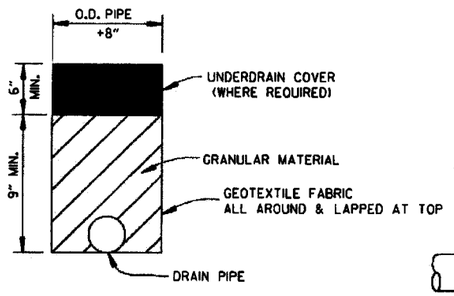
PAVEMENT MARKING DETAILS

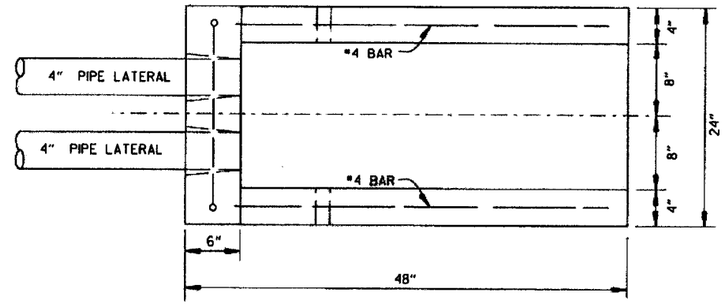
STANDARD DRAWING PM-1

NOTE:

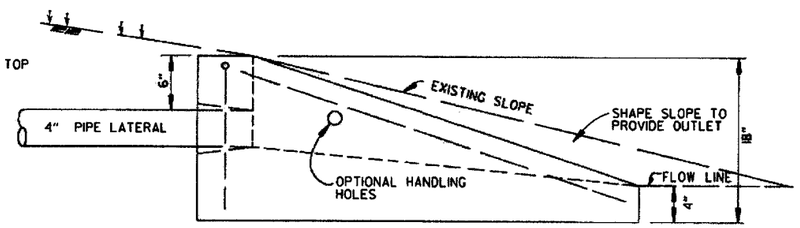
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

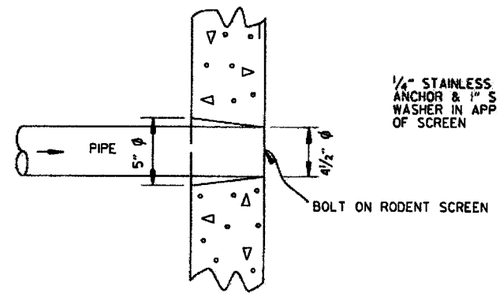




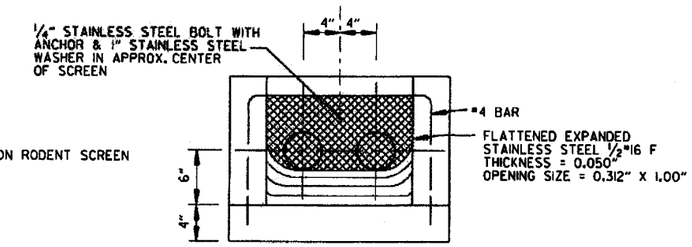
PLAN VIEW



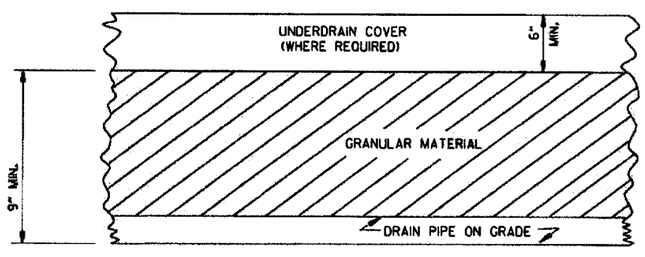
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

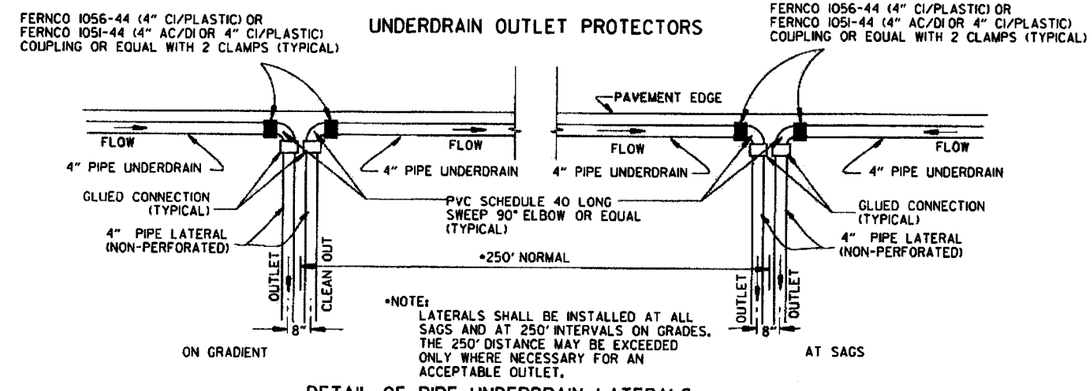


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



*NOTE: LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

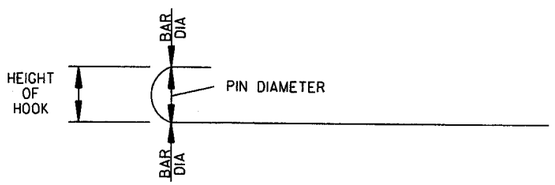
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3 "	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "bl", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "bl", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

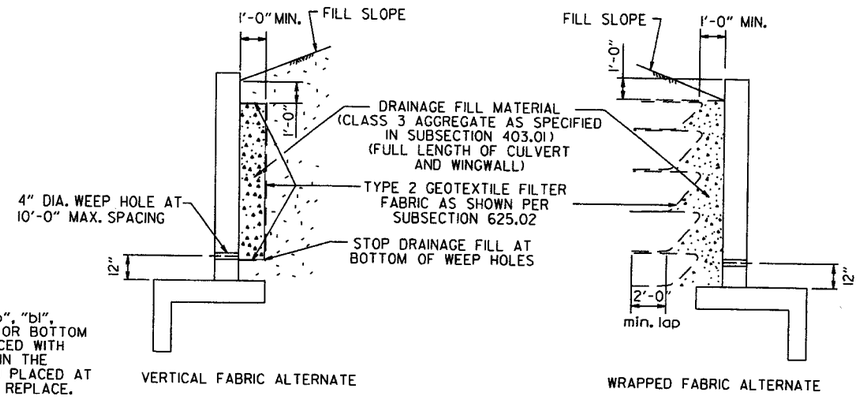
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "bl", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

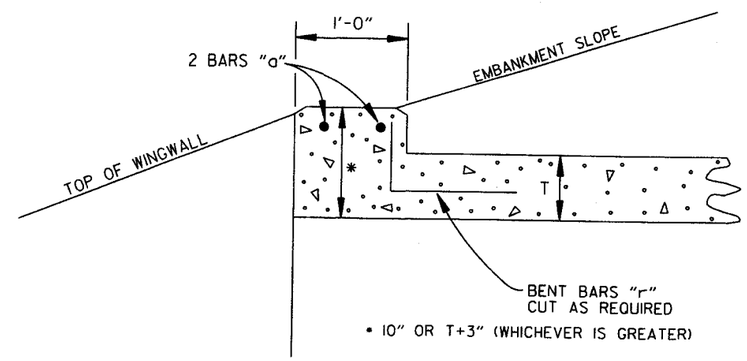
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



* 10" OR T+3" (WHICHEVER IS GREATER)

NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

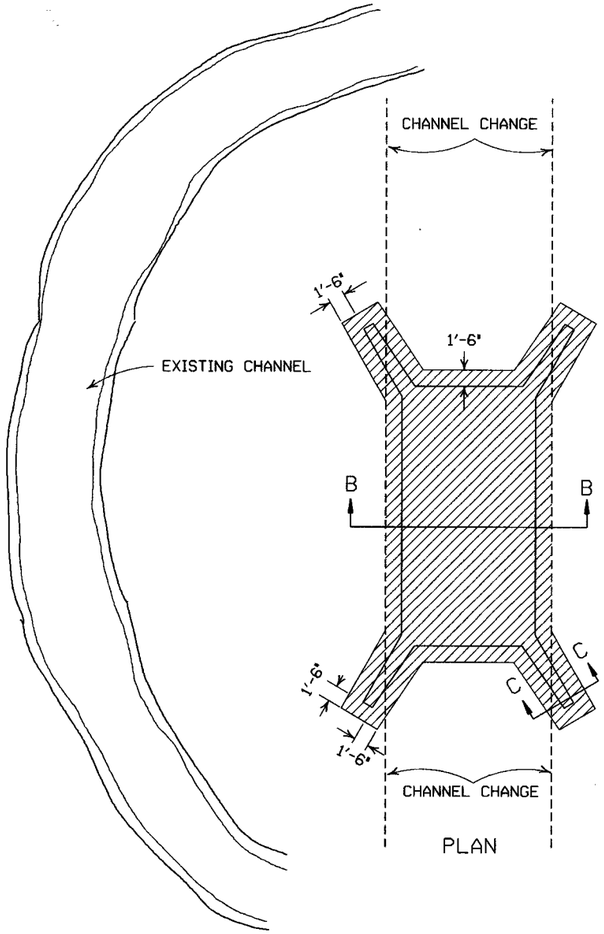
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

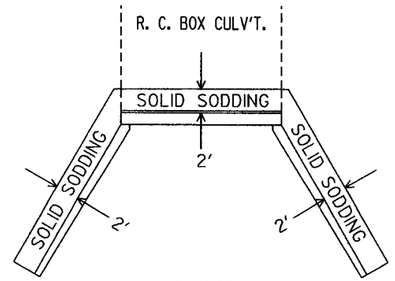
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

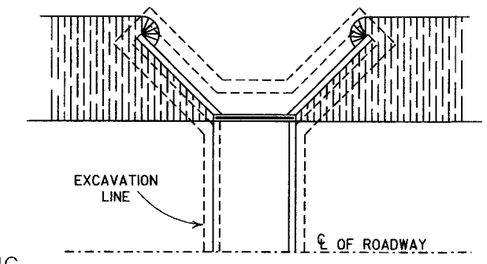
SOLID SODDING



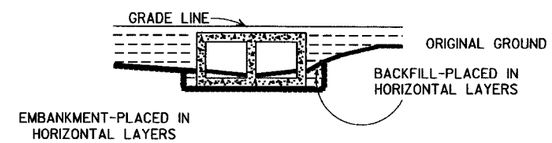
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

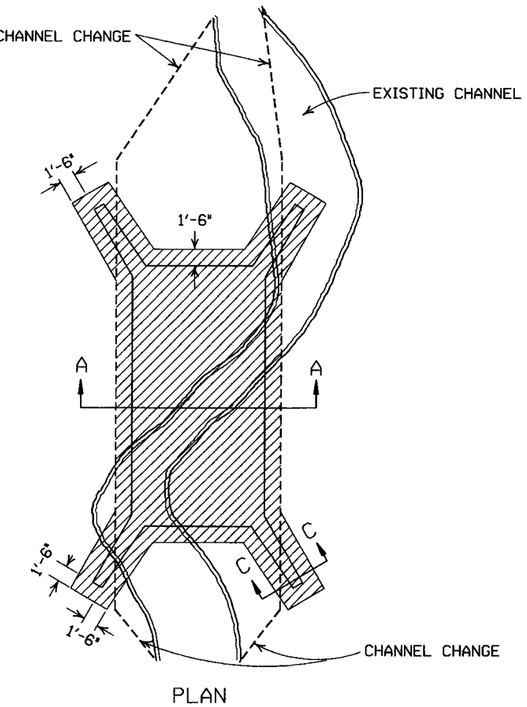


PLAN

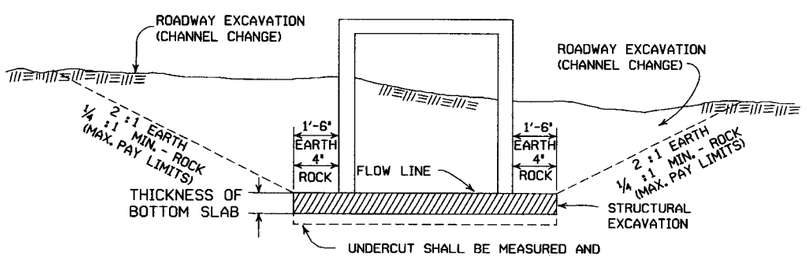


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

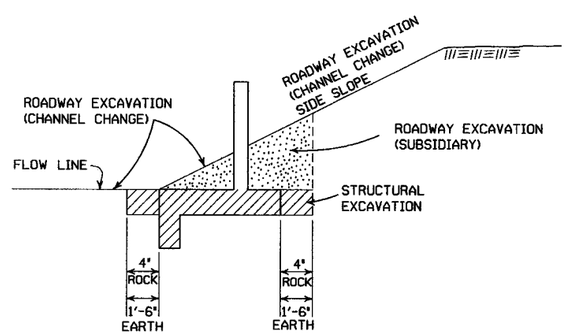


PLAN

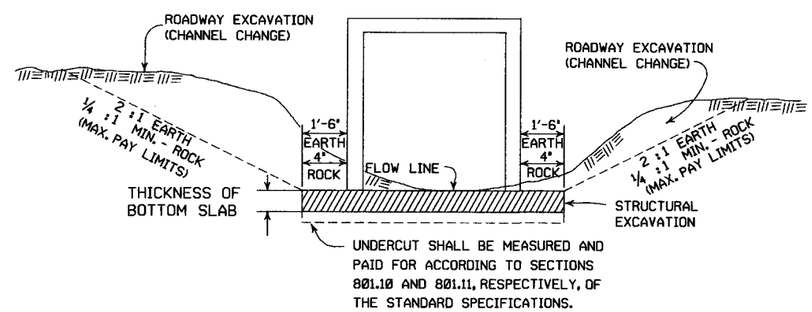


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

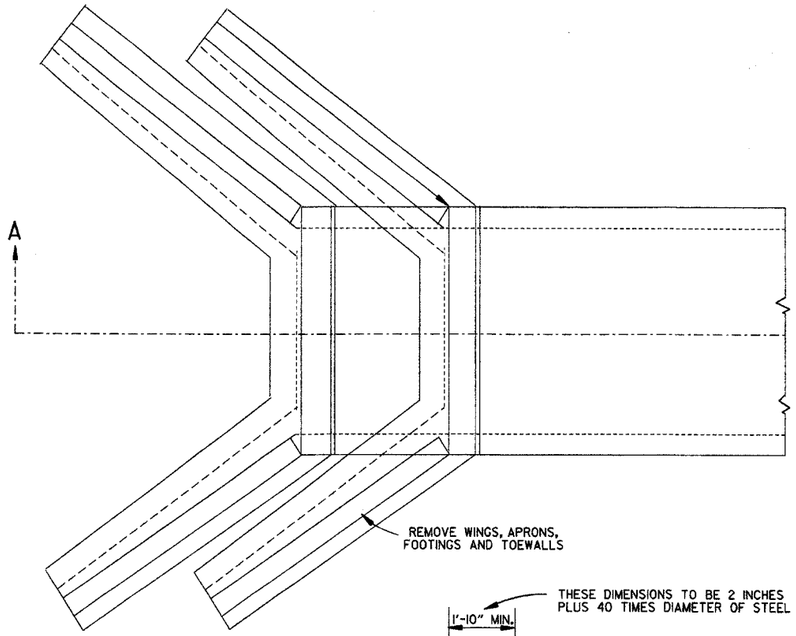
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

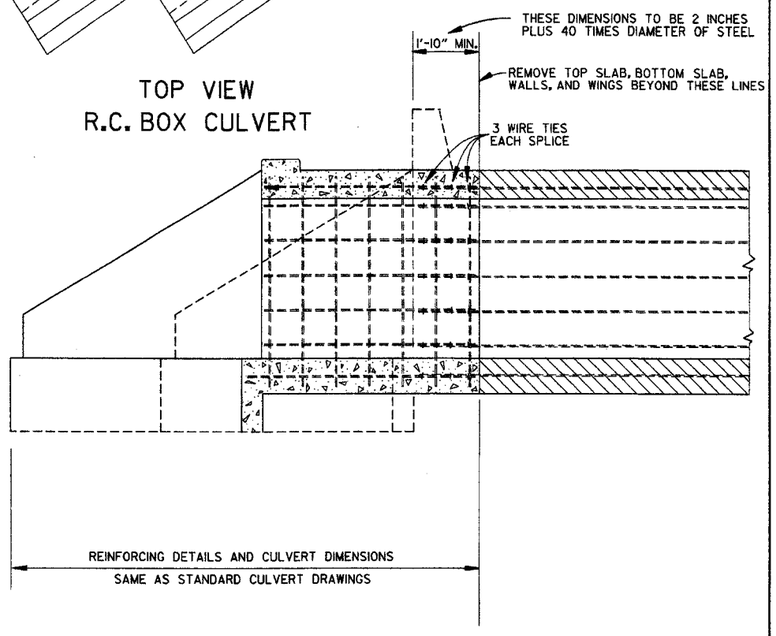
ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

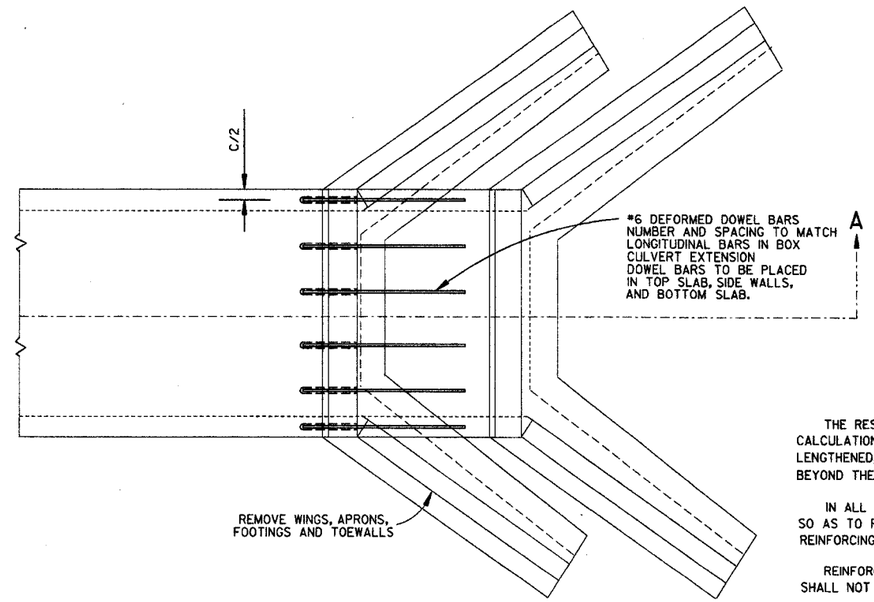


TOP VIEW
R.C. BOX CULVERT

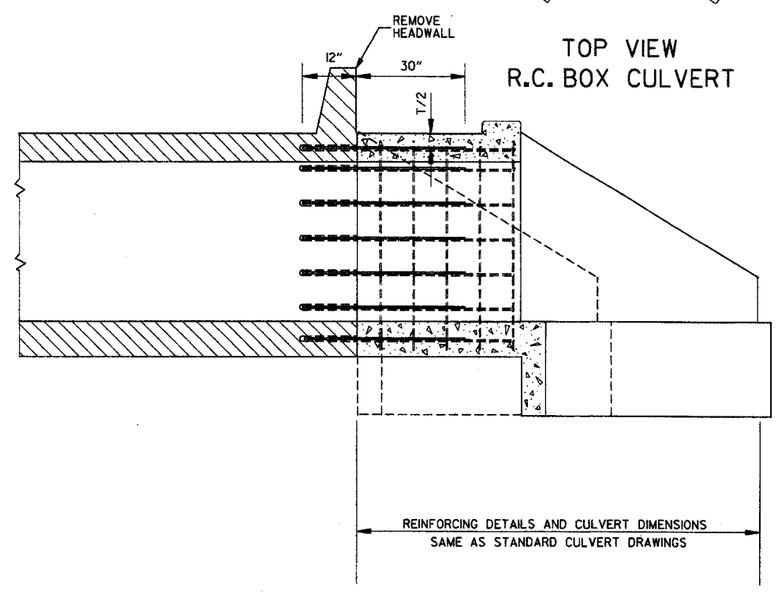


SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT



SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER. AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
8-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

LOOP DETECTOR INSTALLATION AND TESTING

NOTES:

1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"Ø) CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

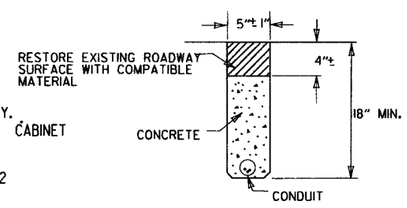
TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

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

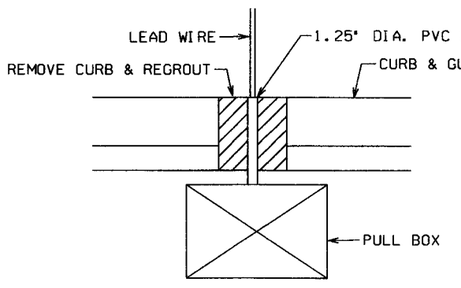
FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.

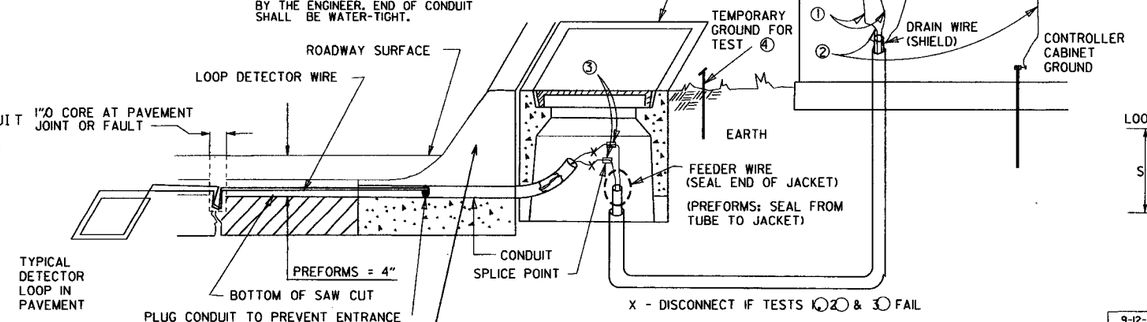
TRENCHING DETAIL

(FOR SAW CUT TRENCH IN ROADWAY)



NOTE: CONDUIT SHALL BE INSTALLED IN CURB AS SHOWN OR AS DIRECTED BY THE ENGINEER. END OF CONDUIT SHALL BE WATER-TIGHT.

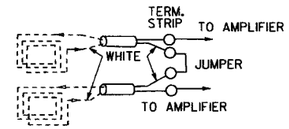




SECTION A-A

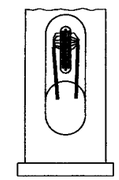
1'-6" CONCRETE COMBINATION CURB AND GUTTER

SERIES CONNECTED LOOPS

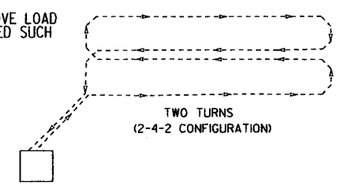


WIND LOOPS COUNTERCLOCKWISE; TAG WIRE EXITING SLOT AND TIE TO WHITE LEAD OF FEEDER WIRE; WHEN LOOPS ARE TIED TO SAME VEHICLE DETECTOR, SERIES CONNECT IN CABINET AS SHOWN.

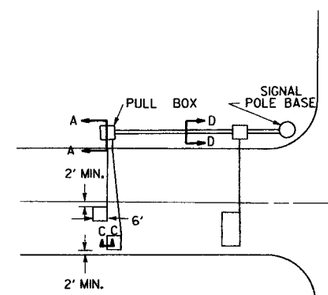
HANDHOLE TERMINAL



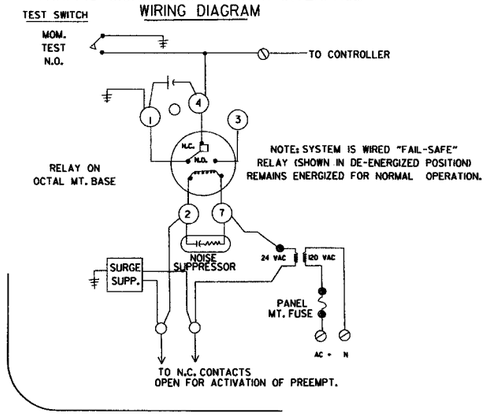
QUADRUPOLE LOOP

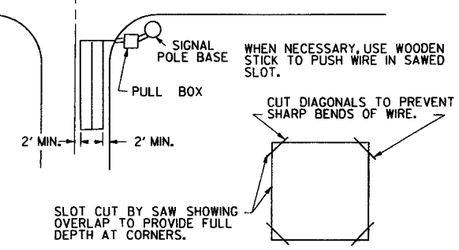


TYPICAL INTERSECTION

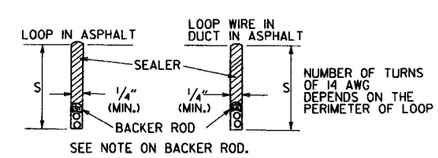


TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM



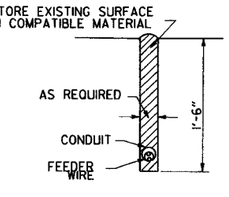


TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS



SECTION C-C

S=2 1/2" IN ASPHALT
S=1 1/2" IN CONCRETE



SECTION D-D

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.

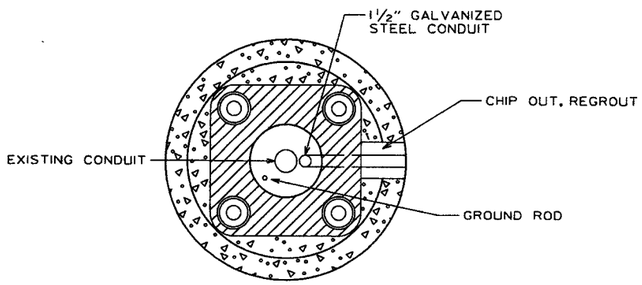
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-17-01	REVISED	
4-11-01	REVISED	
2-4-00	REVISED PRE-EMPTION TEST SWITCH	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

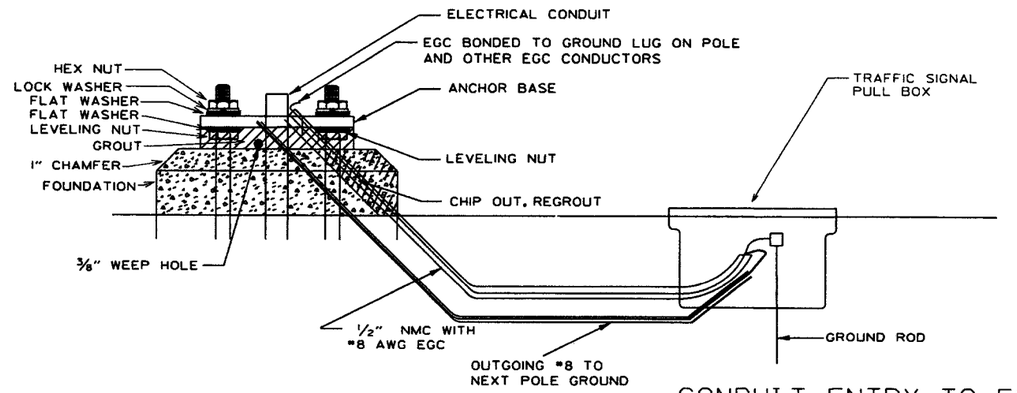
LOOP DETECTOR INSTALLATION

STANDARD DRAWING SD-4

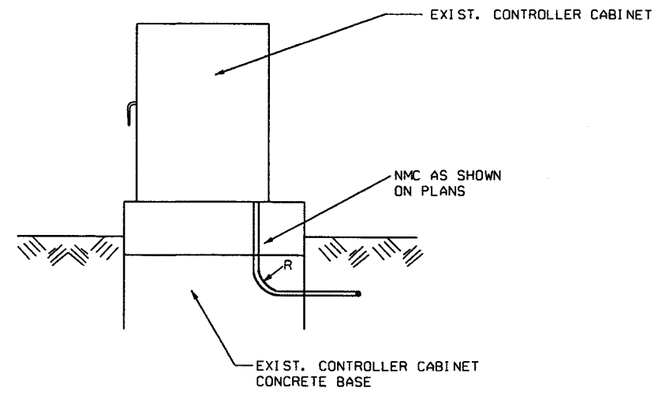
CONDUIT ENTRY TO EXISTING POLE BASE



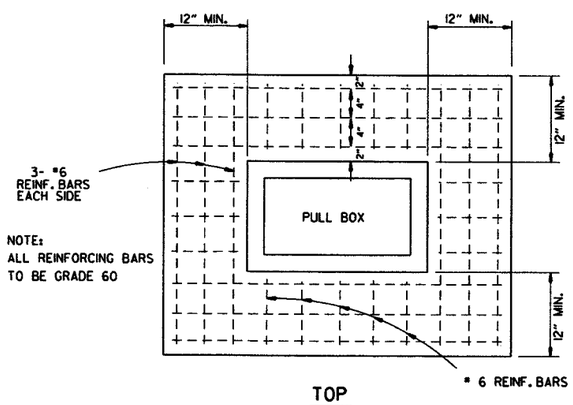
ANCHOR BASE



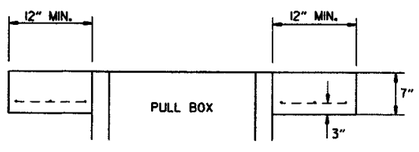
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

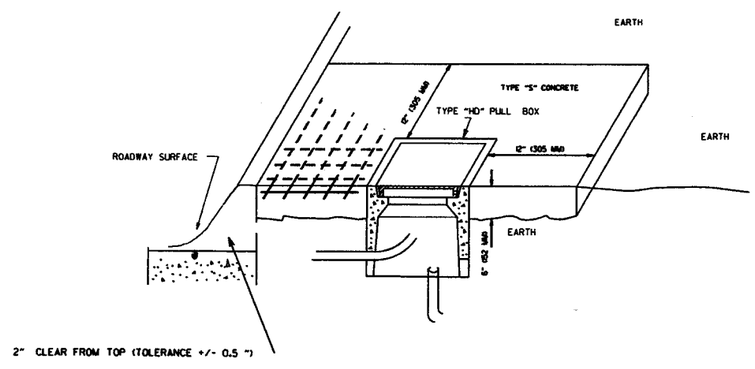


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



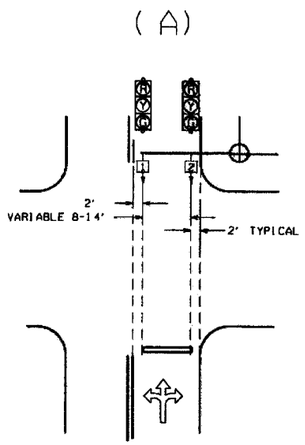
NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 7" (178 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

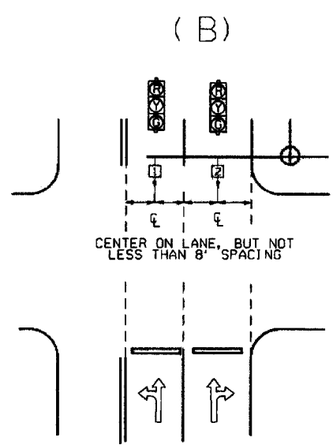
DATE	REVISION	DATE FILM
9-2-15	REVISED PULL BOX DEPTH	
9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

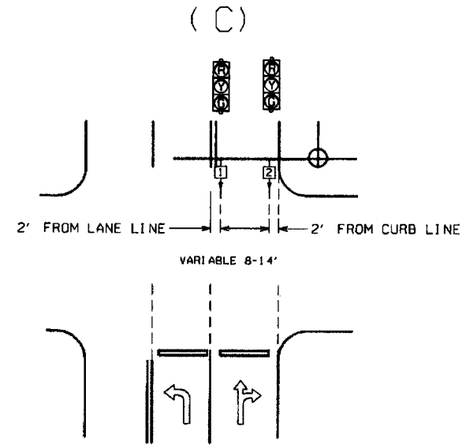
ARKANSAS STATE HIGHWAY COMMISSION

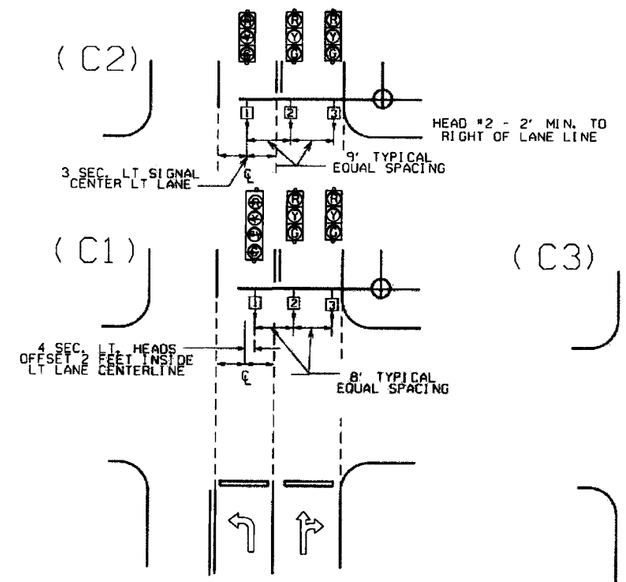
HEAVY DUTY PULL BOX

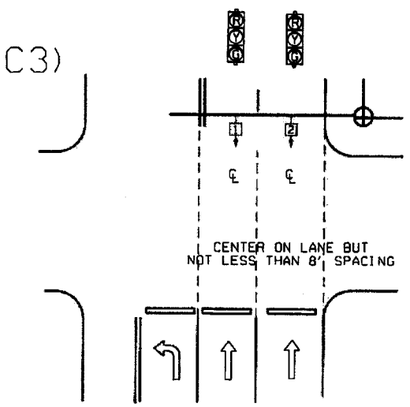
STANDARD DRAWING SD-6

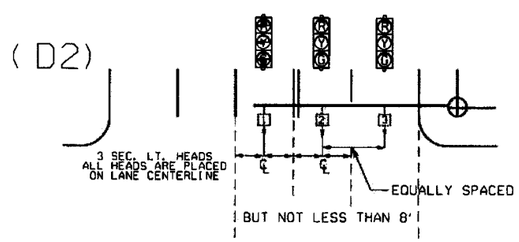


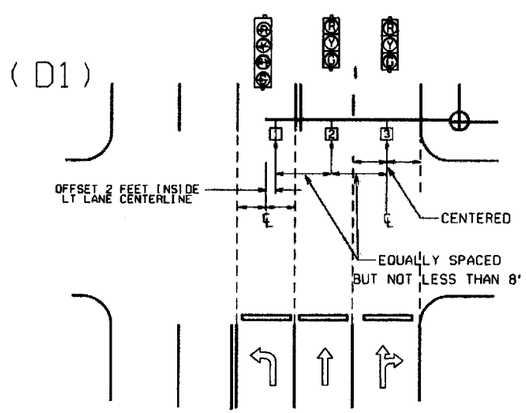




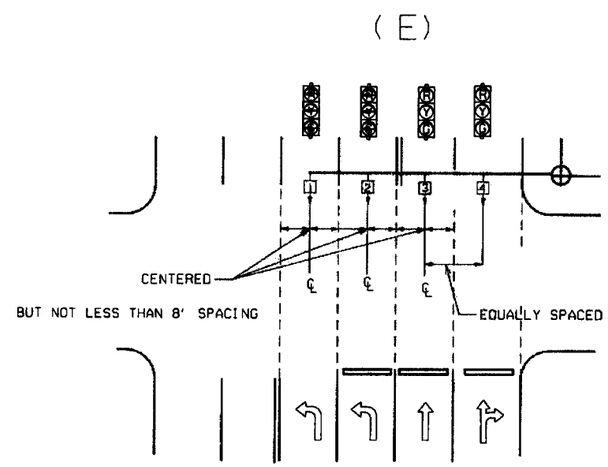








NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.



℄ = 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-5 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

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 (R10-101 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 SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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", 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.

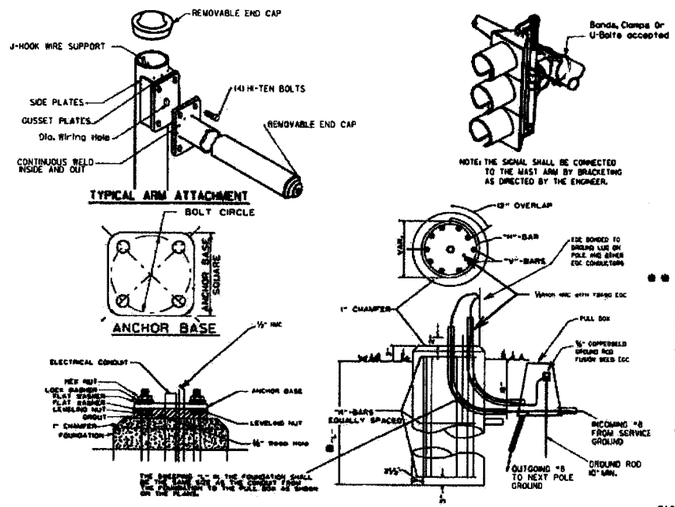
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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.

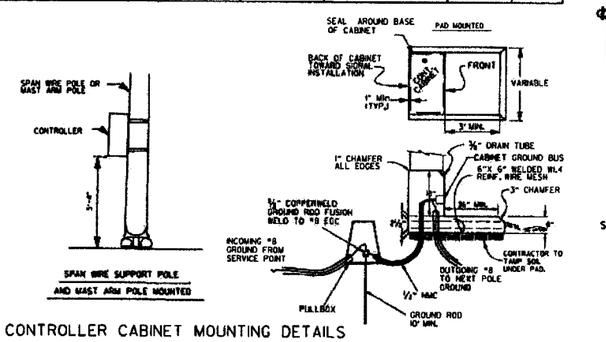


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH "L" *	STEEL VERT.	STEEL HORZ.	STEEL O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

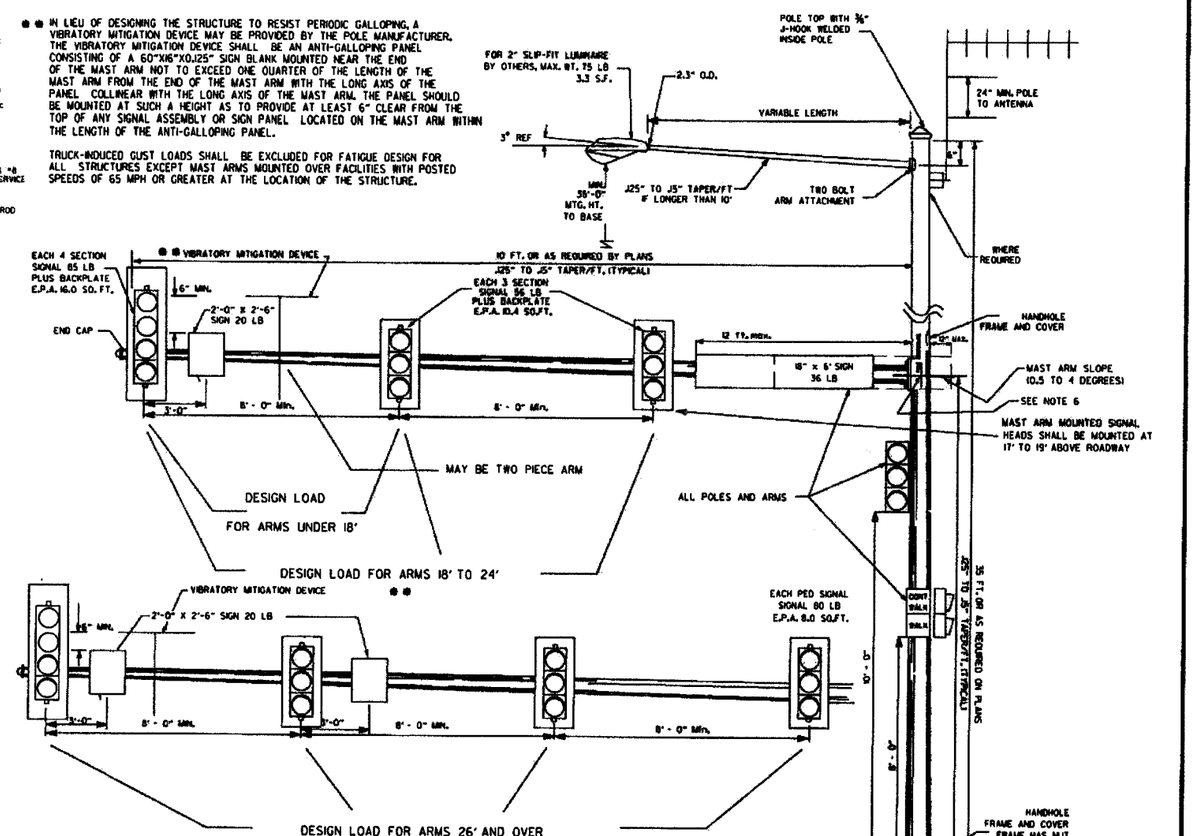
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

* * IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM 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.



DATE	REVISION	DATE FILM
12-8-16	REVISED NOTES	
2-27-14	REVISED NOTES	
8-8-13	ISSUED AS STANDARD DRAWING	
7-2-11	REVISED VIAS SIGNAL HEADS	
5-21-09	REVISED DRAWING	
7-3-08	REVISED DRAWING	
4-23-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
6-18-04	REVISED AASHTO NOTES	
4-17-03	REVISED TO 2001 AASHTO STANDARDS	
10-21-01	REVISED CABINET ORIENTATION	
5-21-01	REVISED	
5-5-01	REV. NOTE 3/AASHTO REQUIREMENTS	
6-5-01	REV. NOTES & POLE MAST ARM SLOPE	
4-4-01	REVISED POLE TAPERS	
4-26-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
1-22-99	REVISED FOUNDATION DETAILS	
6-11-98	REVISED DETAILS AND NOTES	
10-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

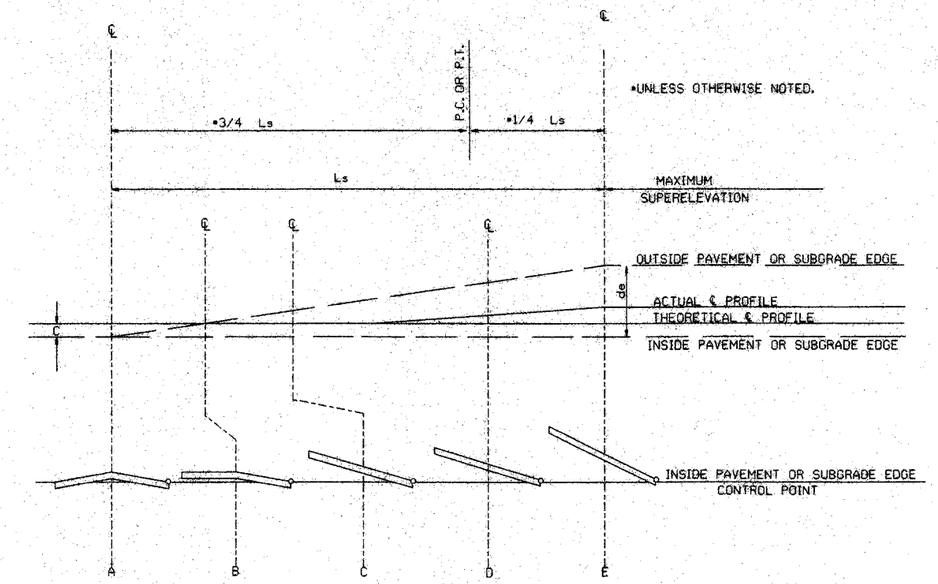
STANDARD DRAWING SD-11

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.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45'	N.C.			0.025	175		0.036			0.043		300	0.049		300	0.062		
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.070		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.078	300	
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	350
2° 45'	0.023			0.037		200	0.053			0.063			0.072			0.091	335	
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.096	350	
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.098	360	400
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45'	0.031			0.049			0.069	215		0.080	265		0.090	295				
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305	350			
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300							
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.055			0.081	215		0.099	290										
8° 00'	0.058			0.084	220		0.100	290										
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.

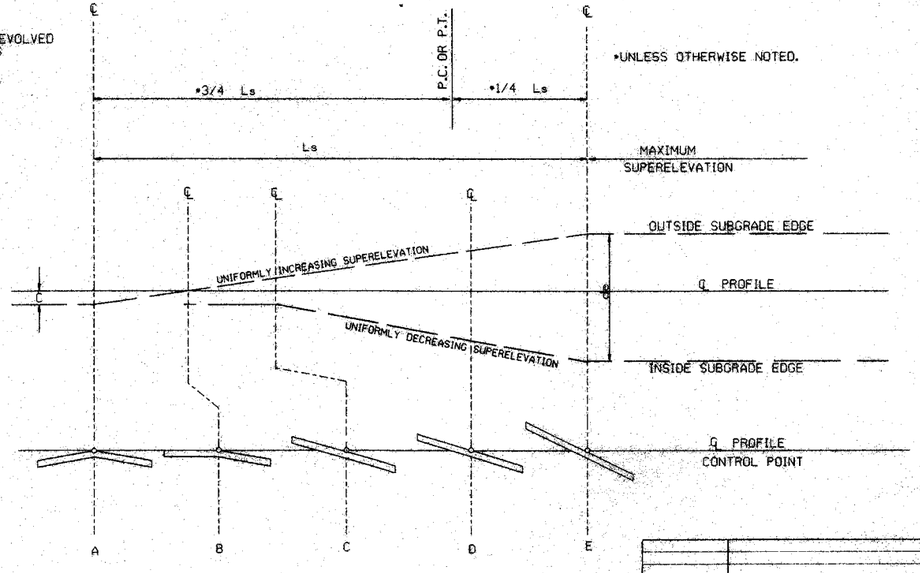
GENERAL NOTES

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 $= \frac{Lde}{Ls}$

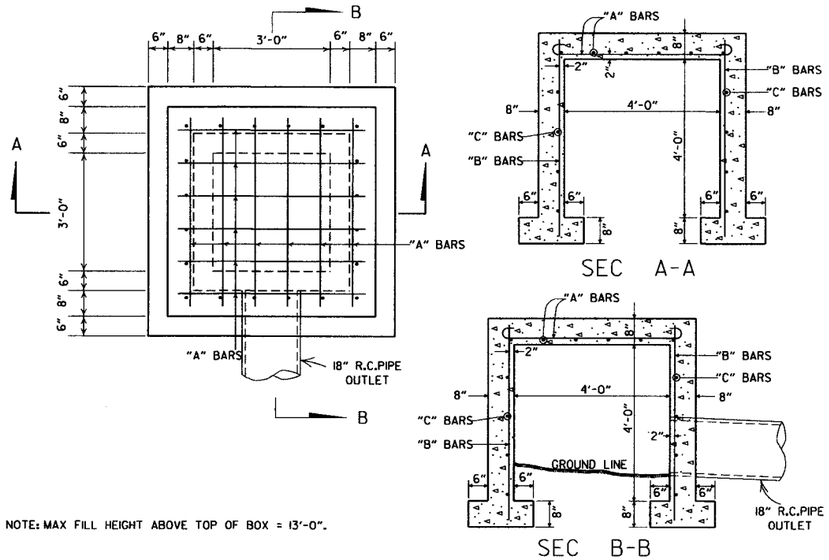
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

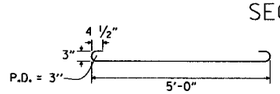
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN



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



"A" BARS

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"

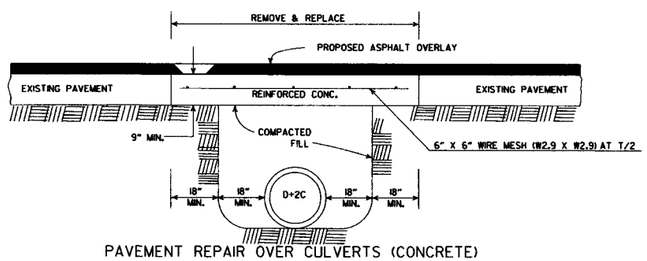
ALL STEEL TO BE #4 BARS

QUANTITIES

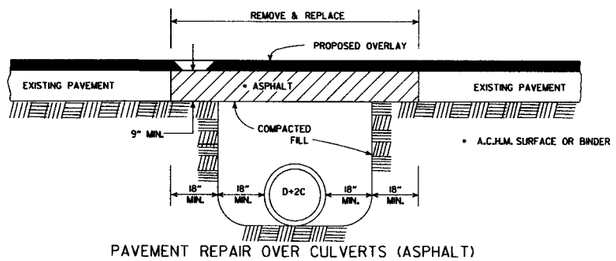
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

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

REINFORCED CONCRETE SPRING BOX



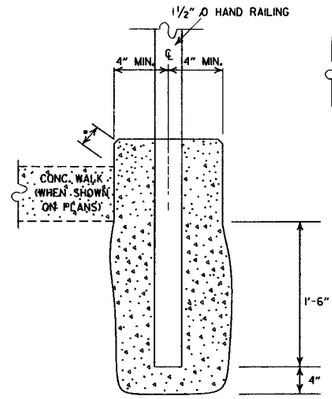
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



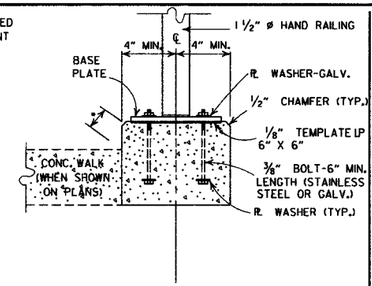
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

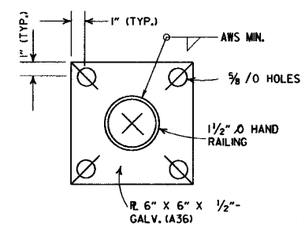
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

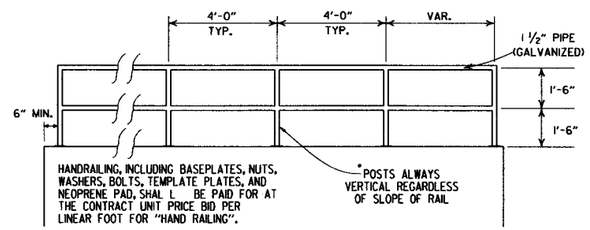


POST CONNECTION TO WALL

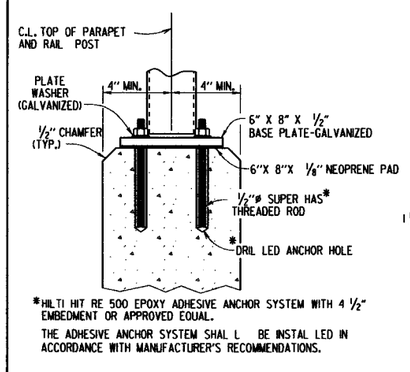


BASE PLATE

POST CONNECTION DETAILS



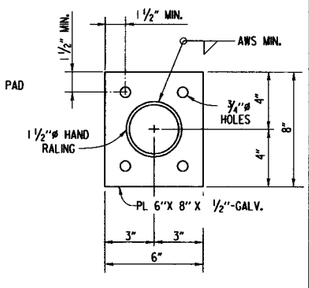
HAND RAILING SHAL L CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL.

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

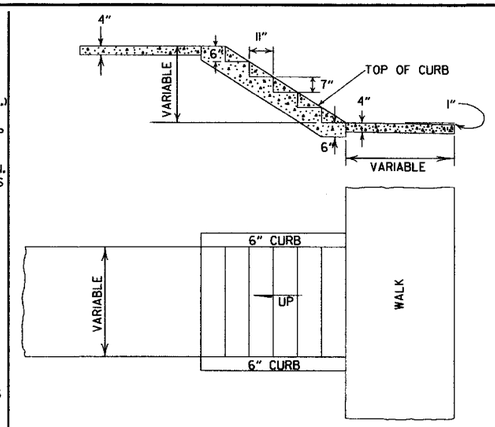
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

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

DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1

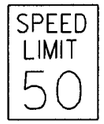
R1-1

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

R1-2

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

R2-1



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

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

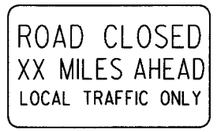
R5-1

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

R11-2

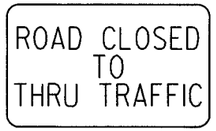
48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a

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

W1-1

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

W1-2

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

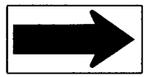
W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8

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

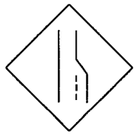
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

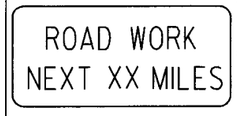
W8-11

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

W8-9

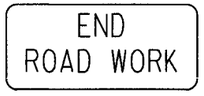
STD. 36"X36"
FWY. 48"X48"

G20-1



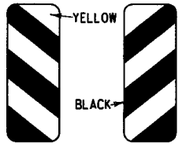
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

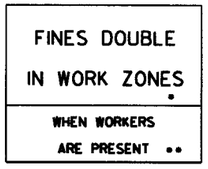
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

• 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

• 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

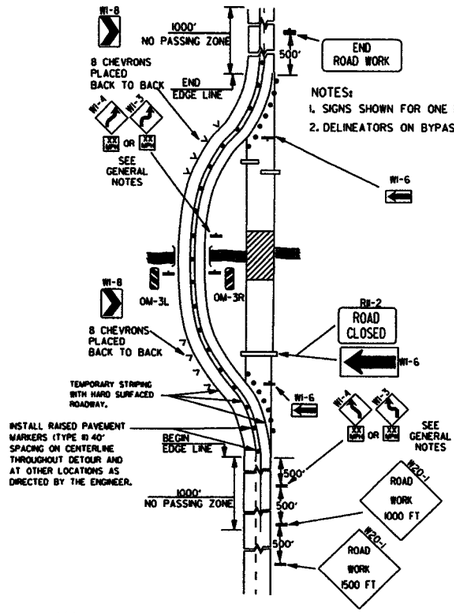
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

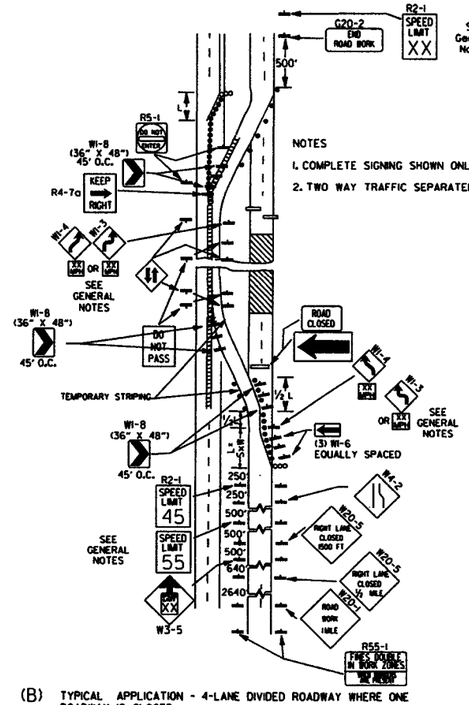
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



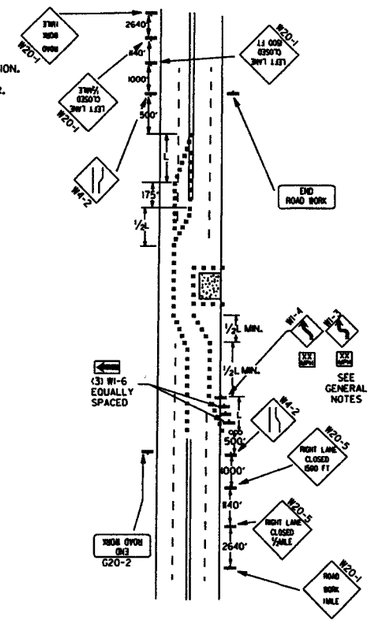
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

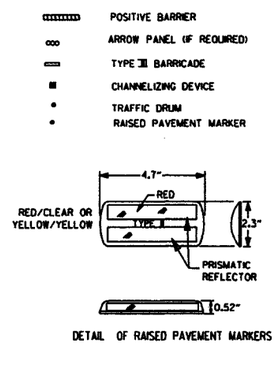


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

KEY:
- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER

DETAIL OF RAISED PAVEMENT MARKERS

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

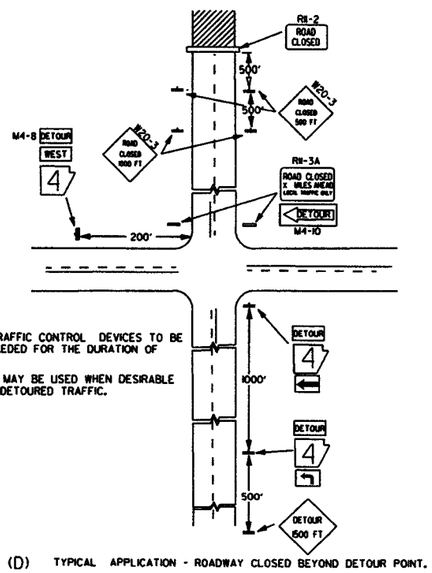
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

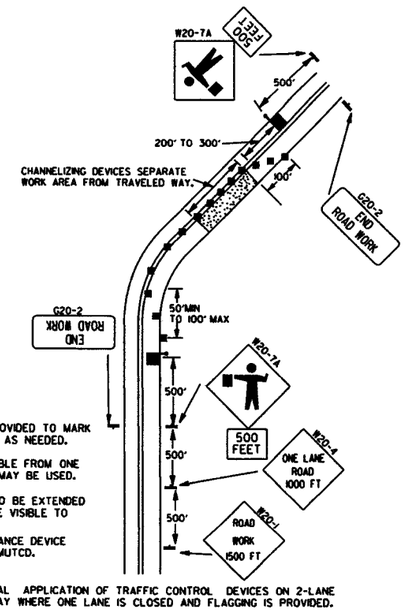
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



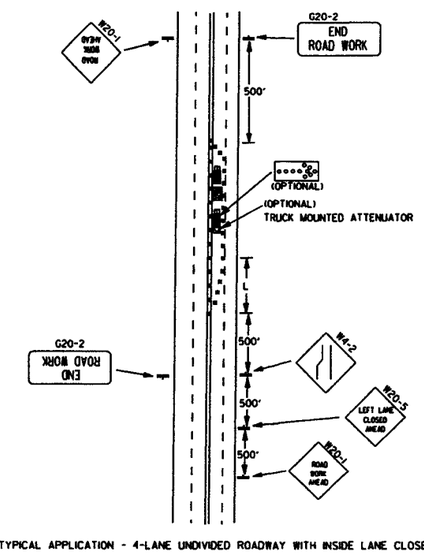
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



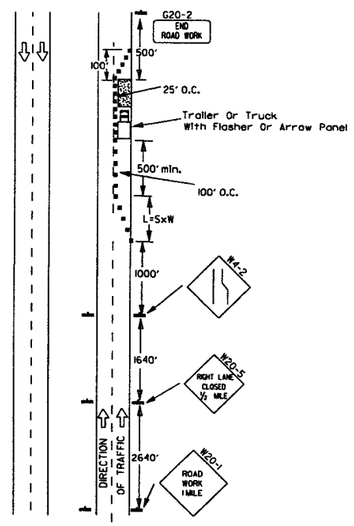
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
6-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

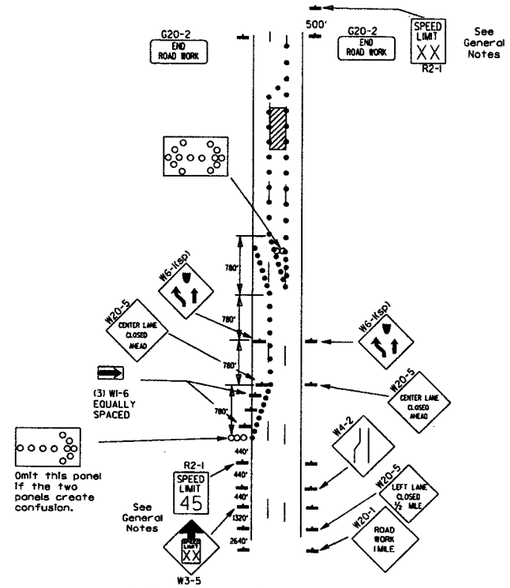
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

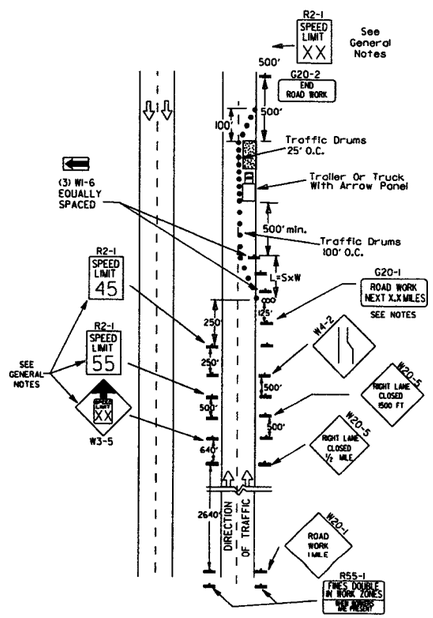
STANDARD DRAWING TC-2



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



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



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

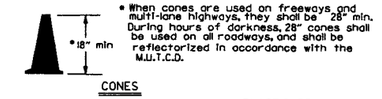
KEY:

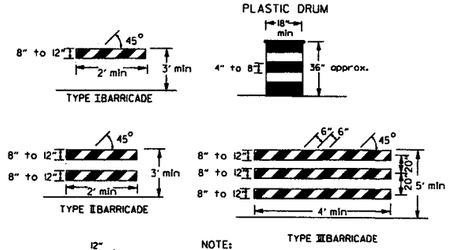
- ooo Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

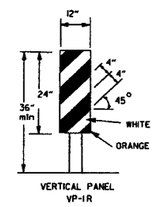
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices





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

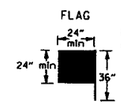


TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

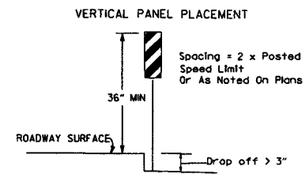
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical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

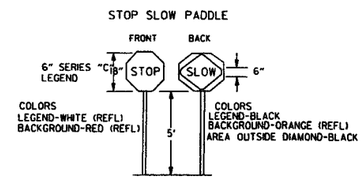
* When shown on the plans concrete barrier will be used.

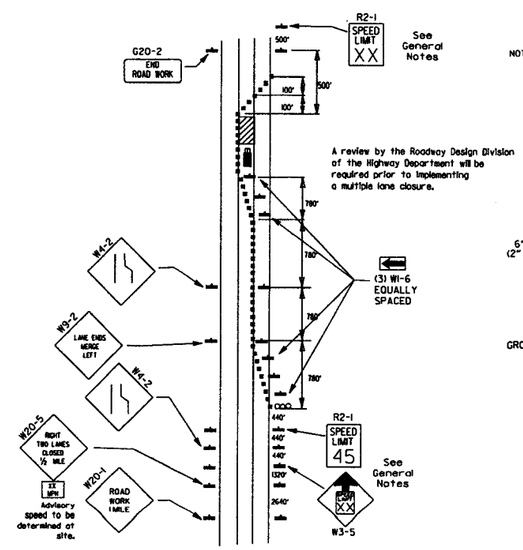
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material





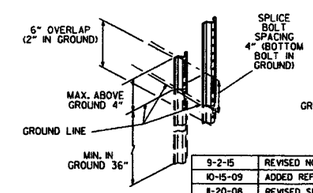


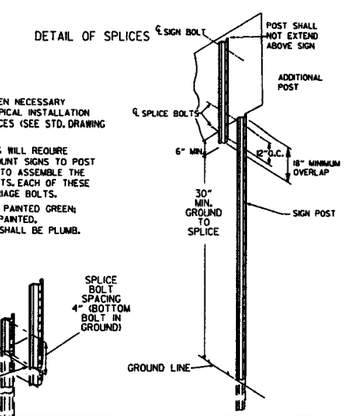
(D) Typical application - closing multiple lanes of a multilane highway.

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

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

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





DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

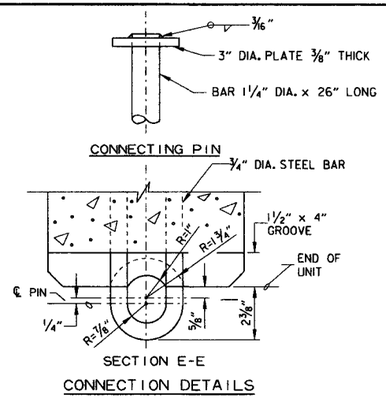
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

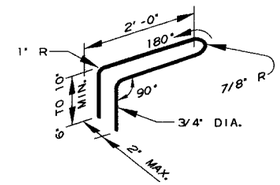
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

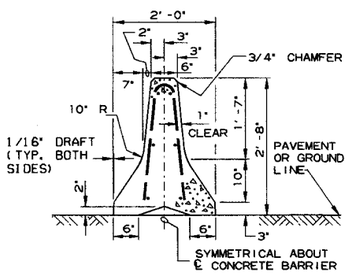
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19' -3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6' -6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1' -6"
S-1	OVER LIFT HOLES	#4	(2)	2' -5", LIFTING HOLE, 90°, 3 3/8" R
S-2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



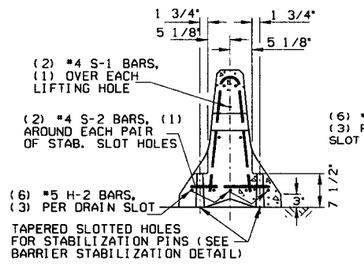
CONNECTION DETAILS



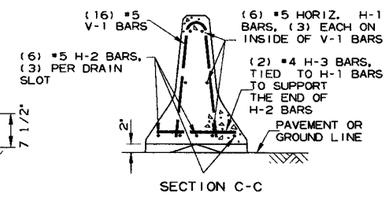
CONNECTION LOOP



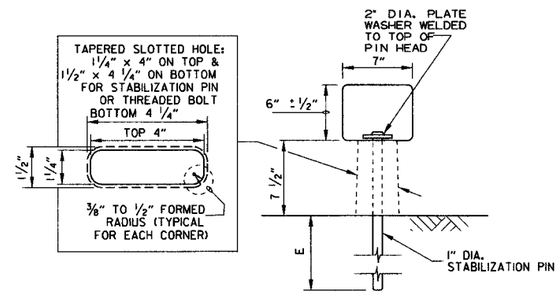
SECTION A-A



SECTION B-B



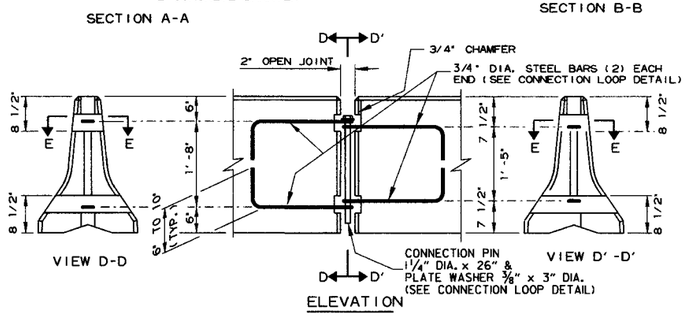
SECTION C-C



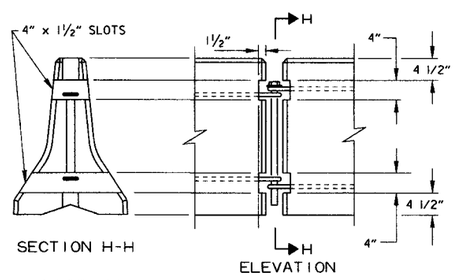
BARRIER STABILIZATION DETAIL

ROADWAY SECTION

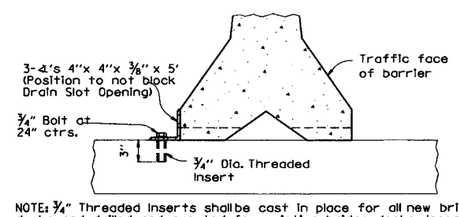
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



ELEVATION



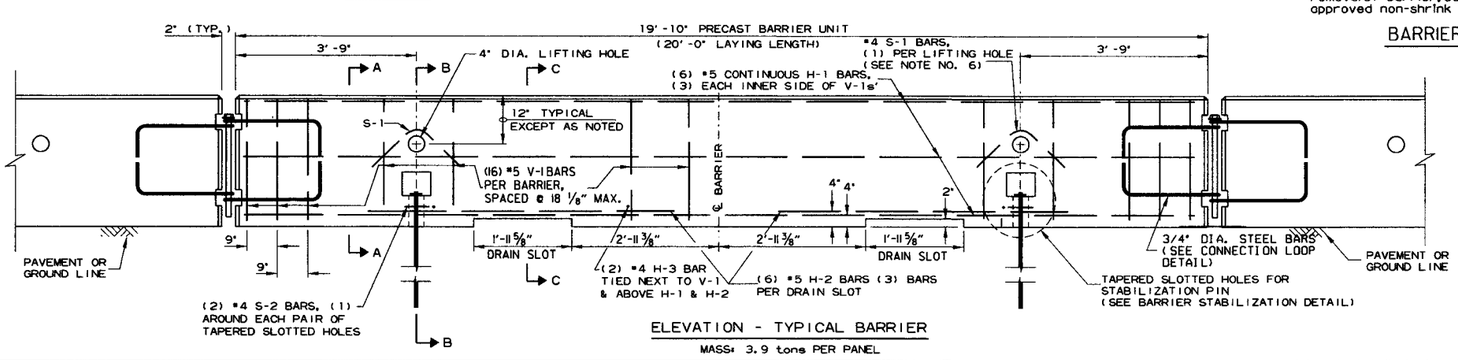
BARRIER REMOVAL SLOT DETAILS



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

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

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

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

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

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

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

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

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

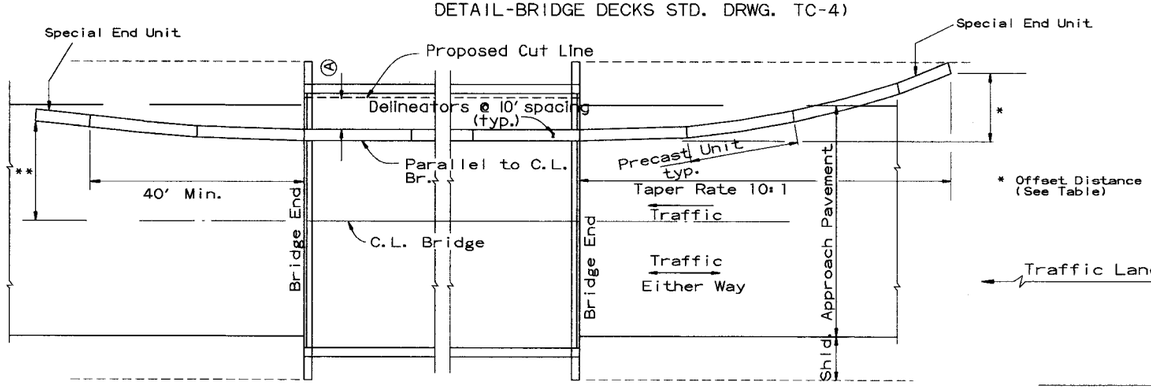
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

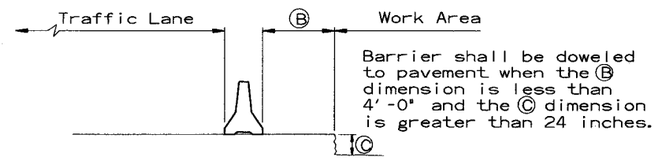
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

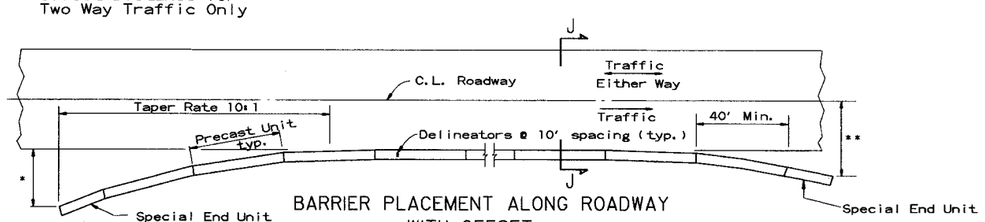


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

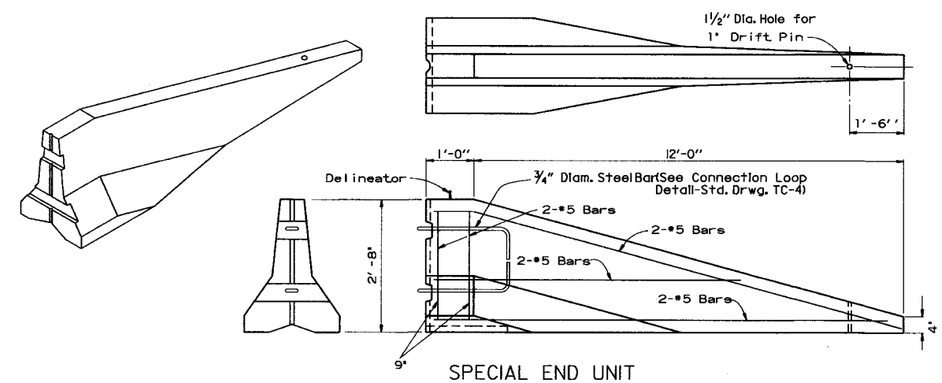
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

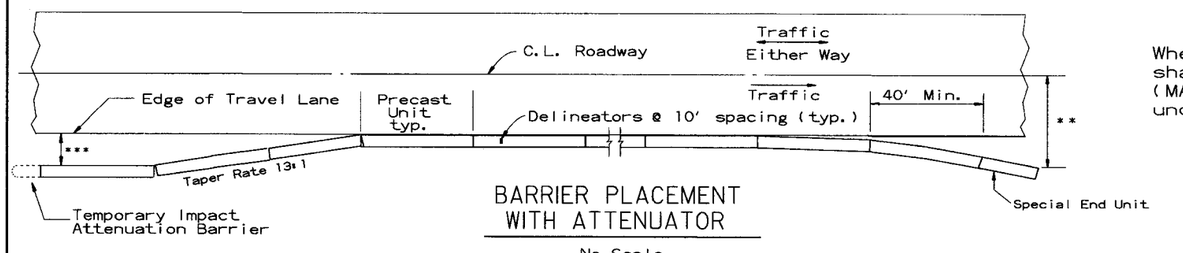
Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

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



SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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

General Notes

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

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

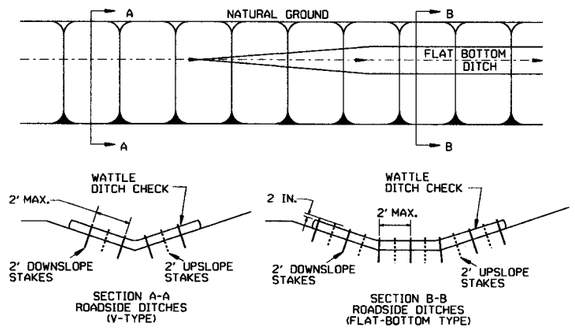
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

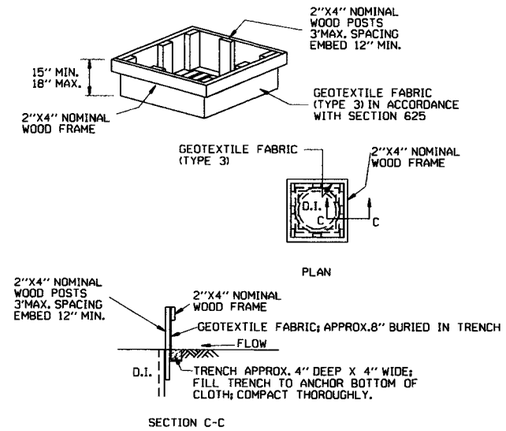
STANDARD DRAWING TC-5

GENERAL NOTES

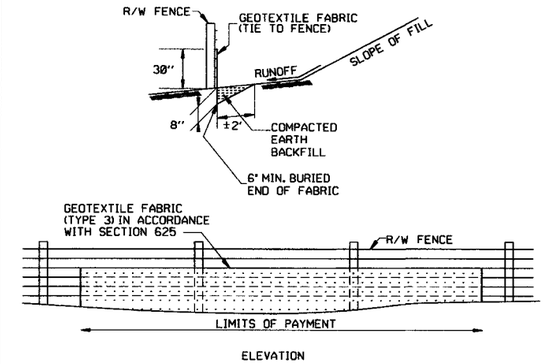
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

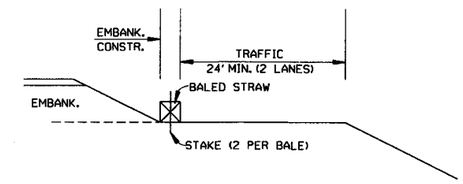
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST. OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

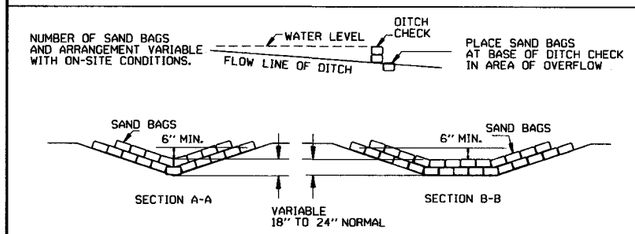
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

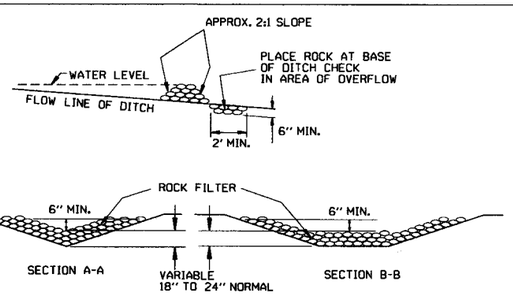
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



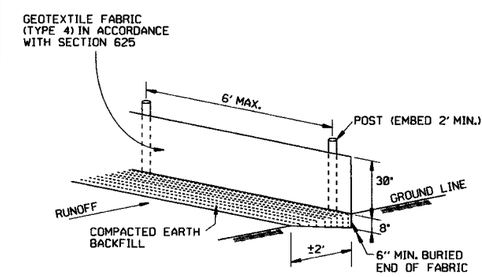
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

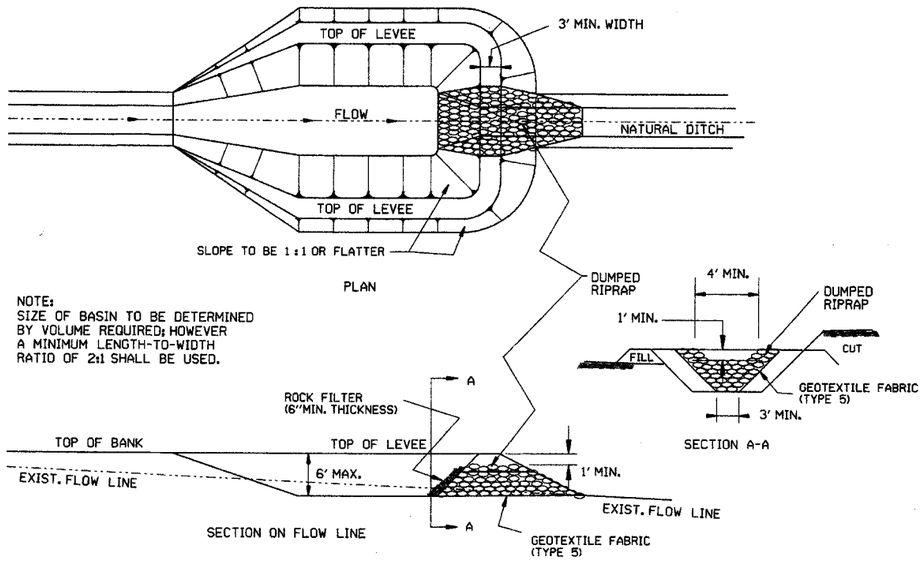
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

ARKANSAS STATE HIGHWAY COMMISSION

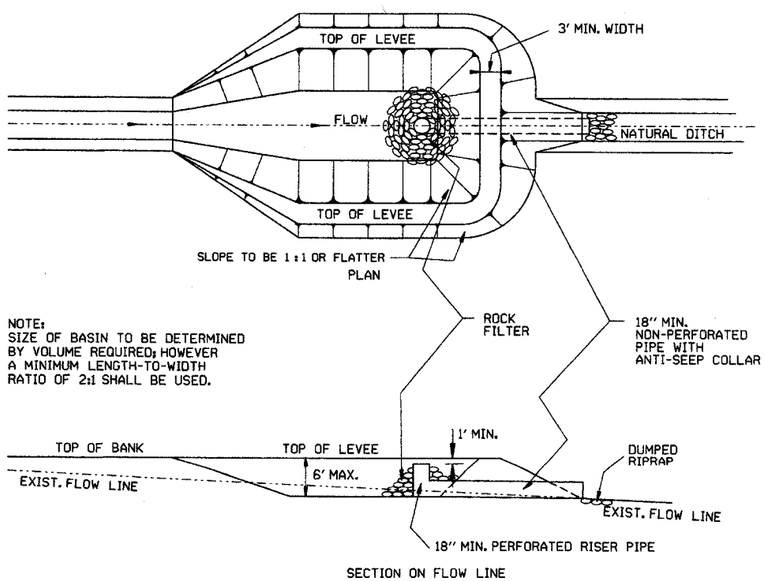
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-1



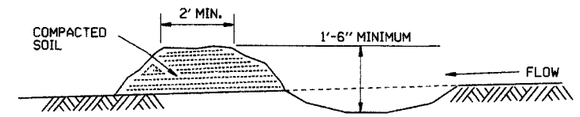
NOTE:
SIZE OF BASIN TO BE DETERMINED BY VOLUME REQUIRED; HOWEVER A MINIMUM LENGTH-TO-WIDTH RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

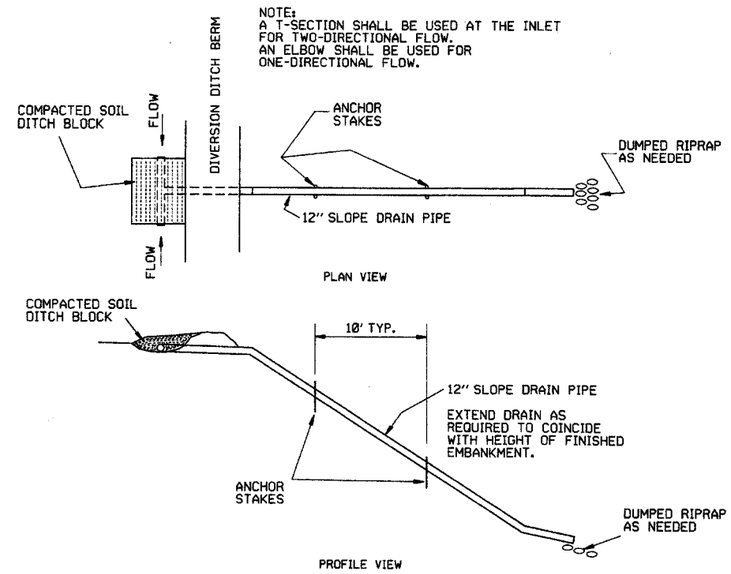


NOTE:
SIZE OF BASIN TO BE DETERMINED BY VOLUME REQUIRED; HOWEVER A MINIMUM LENGTH-TO-WIDTH RATIO OF 2:1 SHALL BE USED.

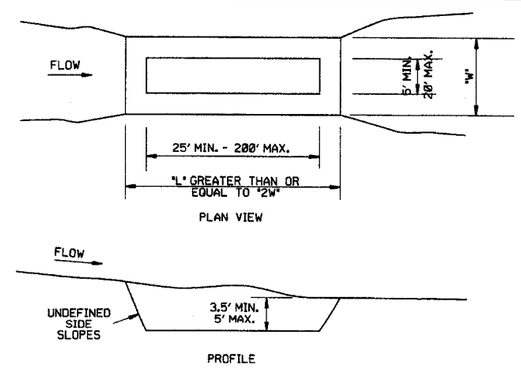
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

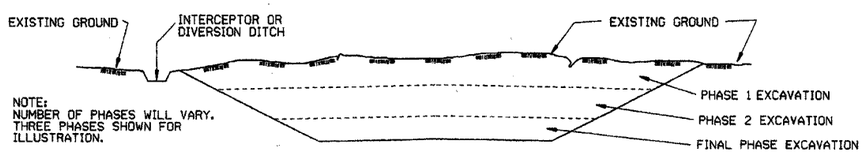
STANDARD DRAWING TEC-2

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



NOTE:
NUMBER OF PHASES WILL VARY. THREE PHASES SHOWN FOR ILLUSTRATION.

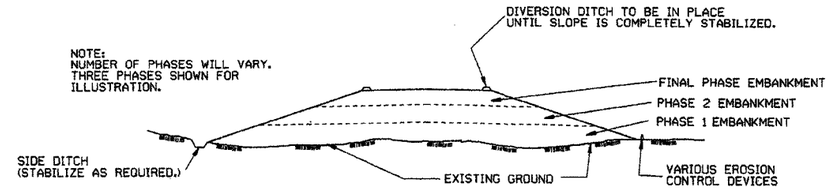
GENERAL NOTE

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



NOTE:
NUMBER OF PHASES WILL VARY. THREE PHASES SHOWN FOR ILLUSTRATION.

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

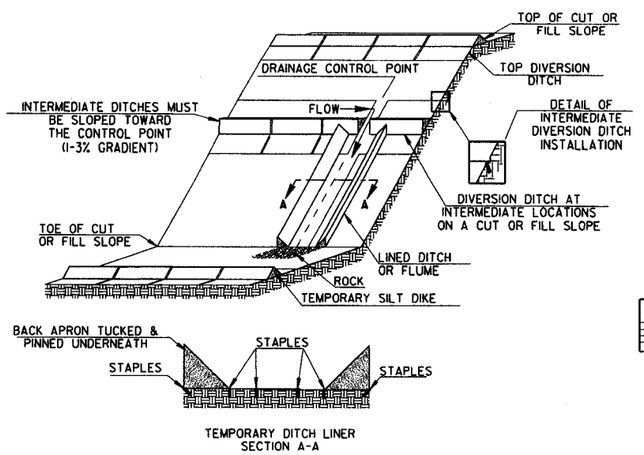
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

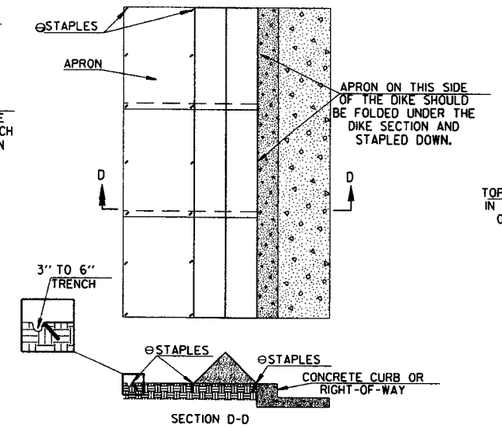
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

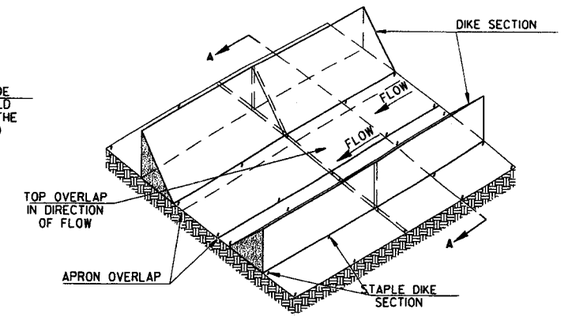
STANDARD DRAWING TEC-3



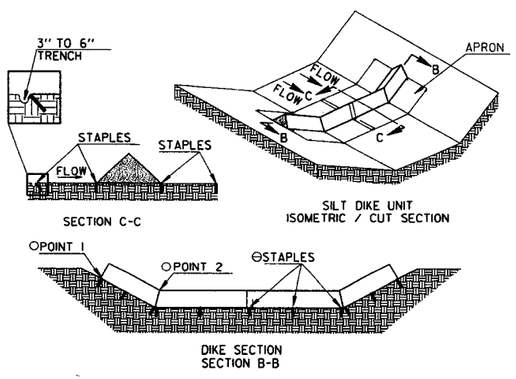
TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER



TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER



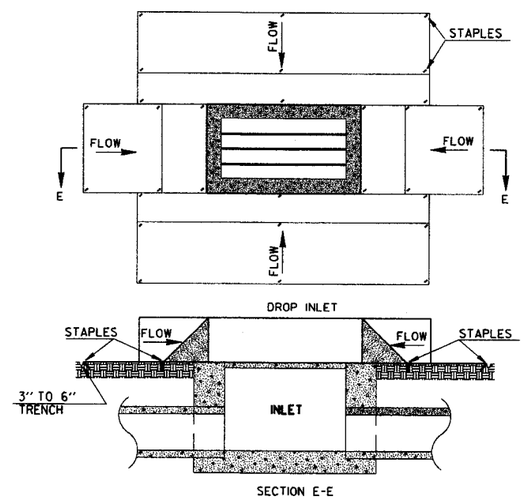
TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER



TRIANGULAR SILT DIKE INSTALLATION
FOR
ROADWAY DITCH OR DRAINAGE DITCH

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

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



TRIANGULAR SILT DIKE INSTALLATION
FOR
DROP INLETS

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

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

GENERAL NOTES

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

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

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

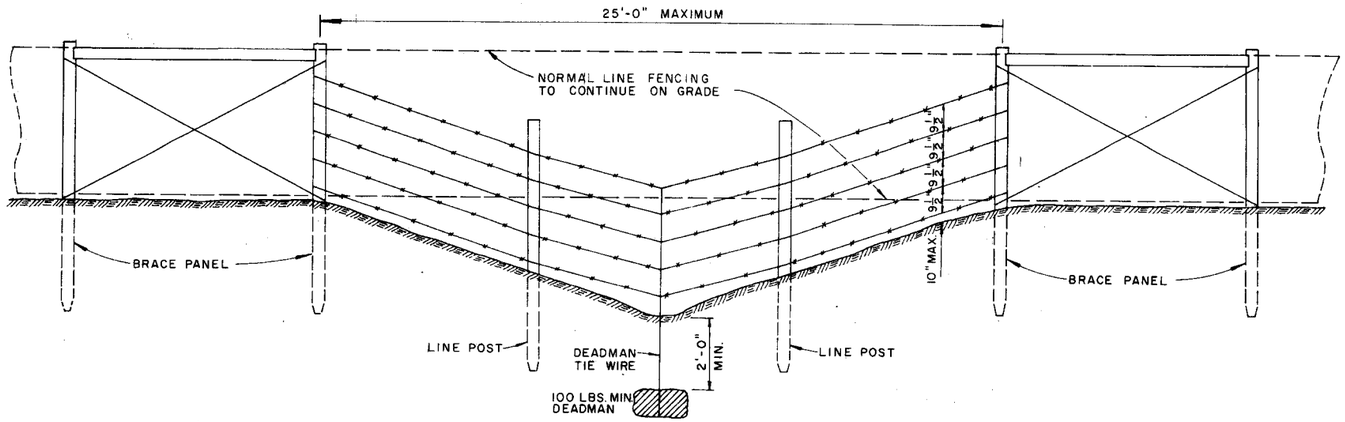
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

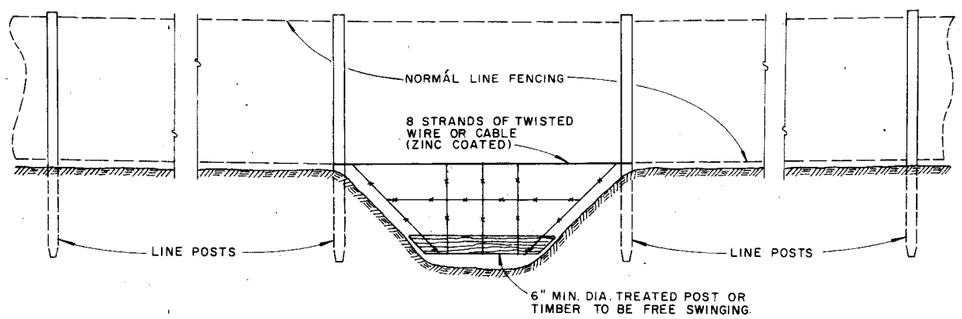
DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

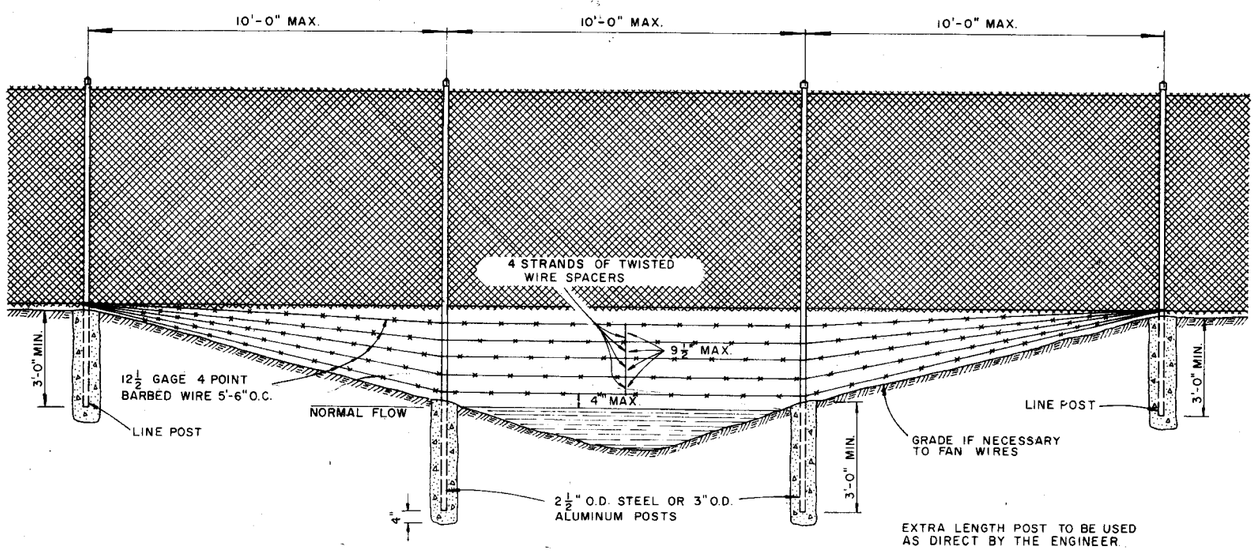
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4







GENERAL NOTES:

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

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

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

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

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

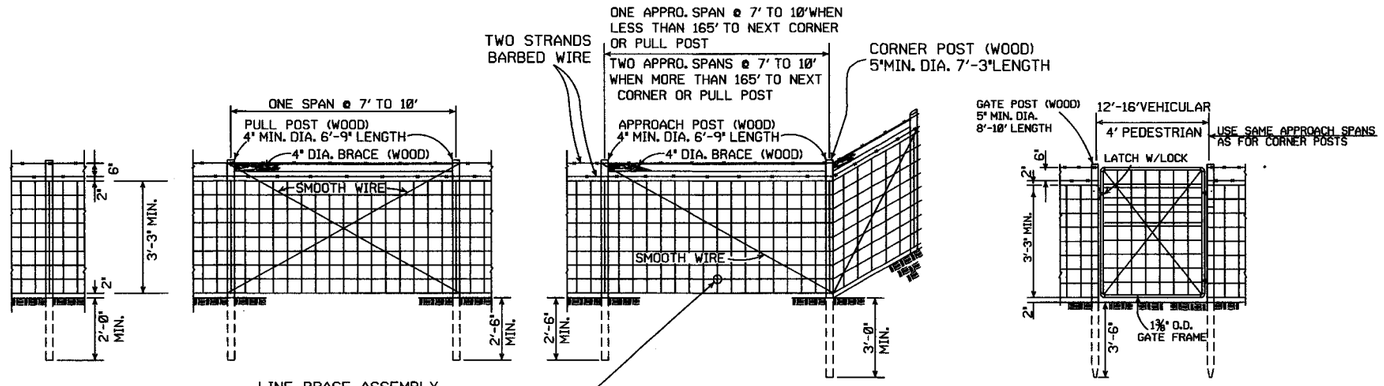
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING

WF-2

1M—11-71—67001—PP&BCo



LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

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.

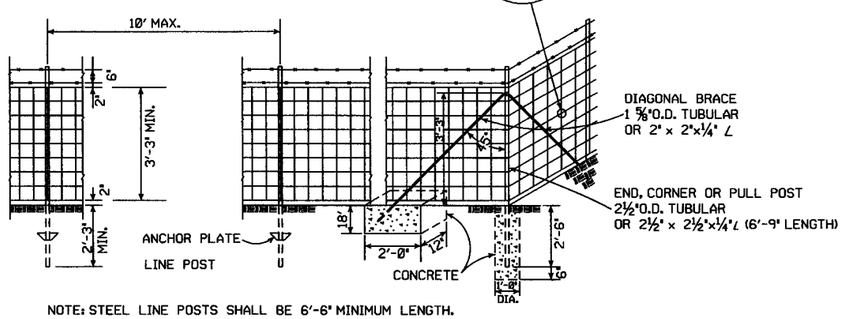
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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.

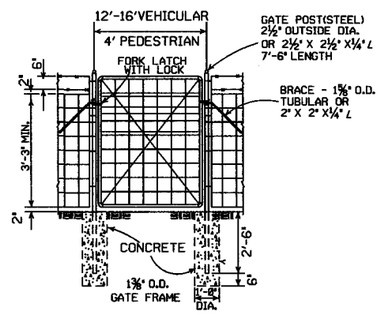
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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

TYPE C FENCE (WOOD POSTS)

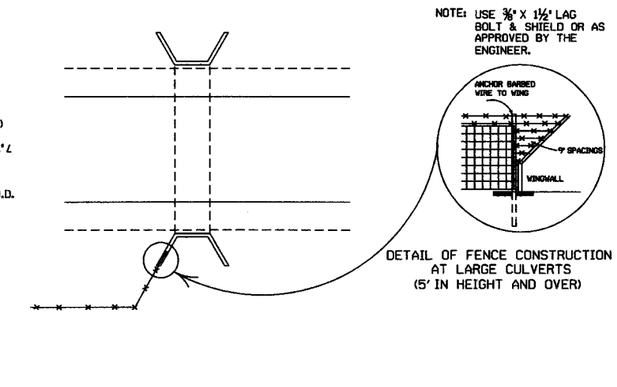
OTHER APPROVED TIES WILL BE PERMITTED



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



TYPE C FENCE (STEEL POSTS)



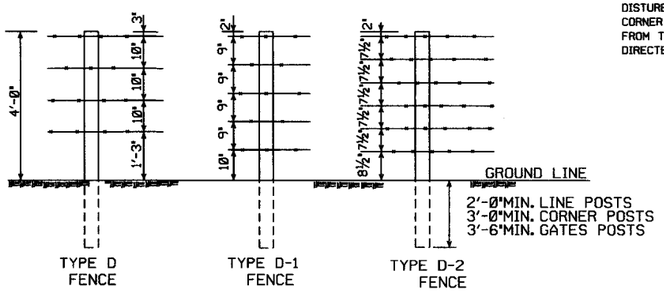
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

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.

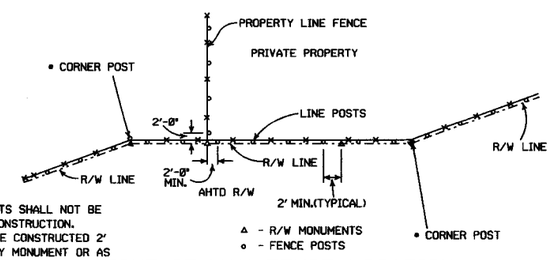
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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

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

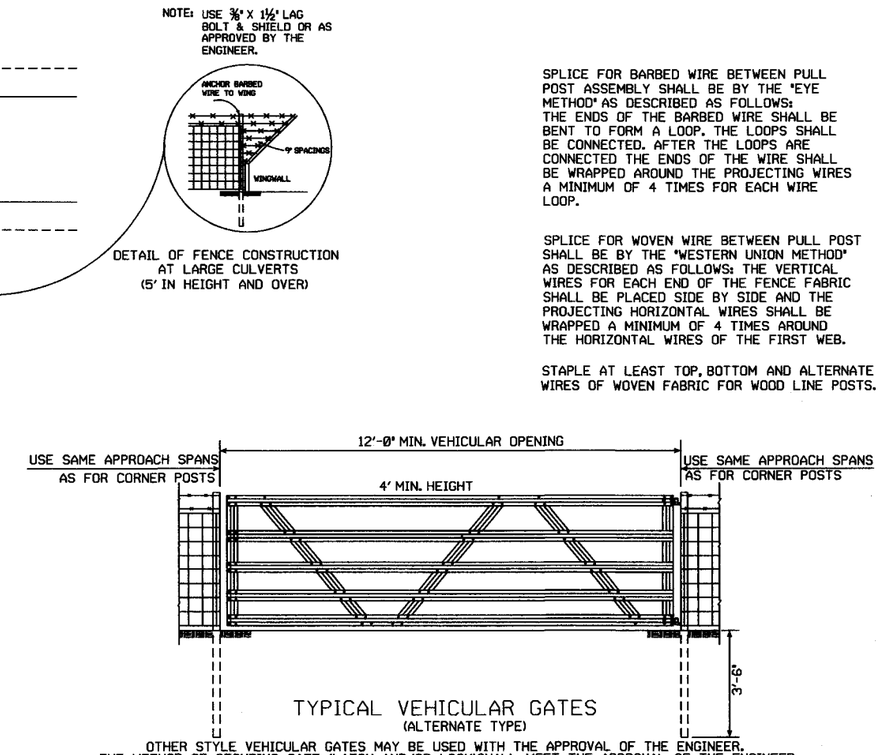


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



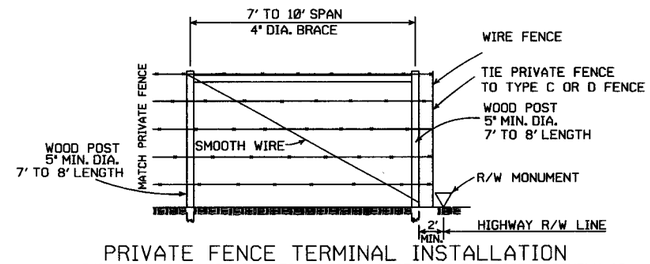
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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.



PRIVATE FENCE TERMINAL INSTALLATION

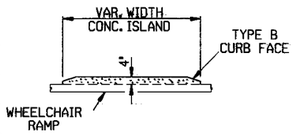
WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

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

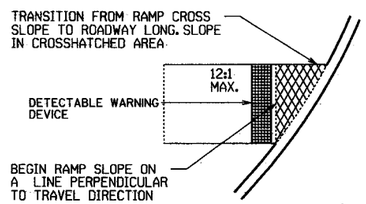
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4



CONCRETE ISLAND DETAIL



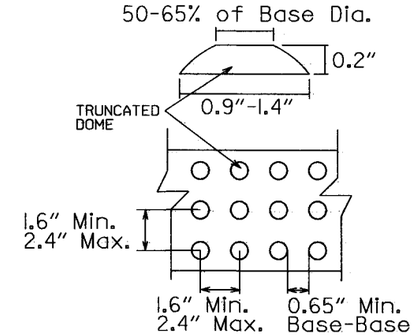
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

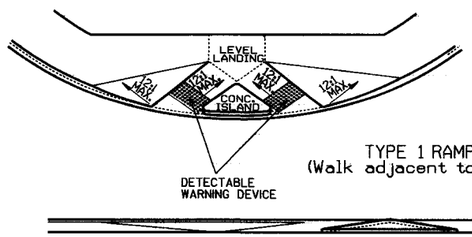
RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

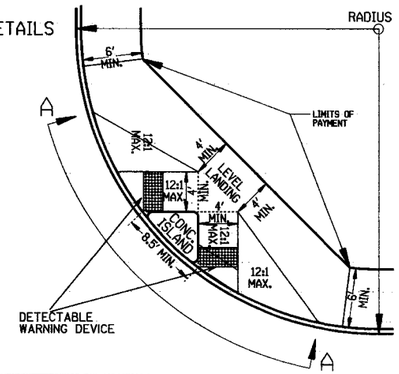
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

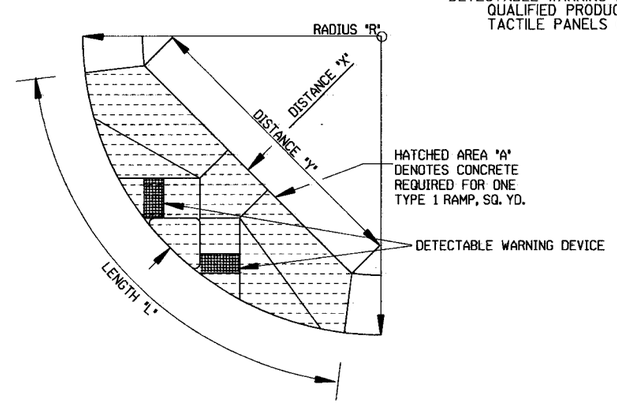


DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)





SECTION A-A

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:

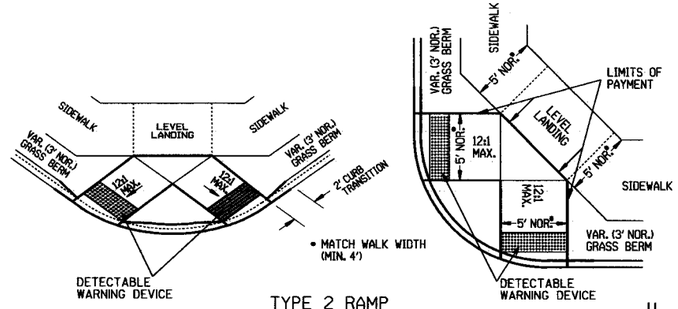
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK 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.

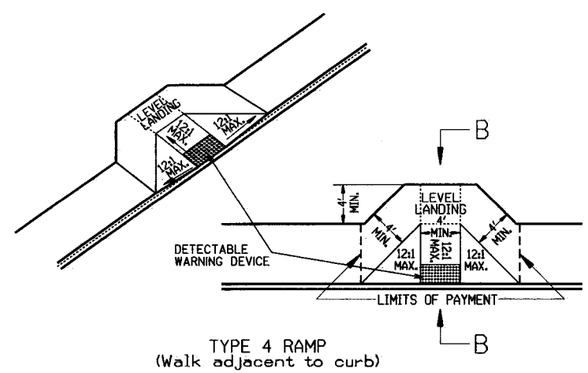
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 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

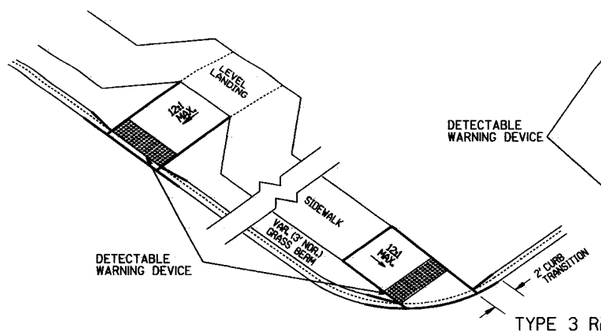


TYPE 4 RAMP
(Walk adjacent to curb)

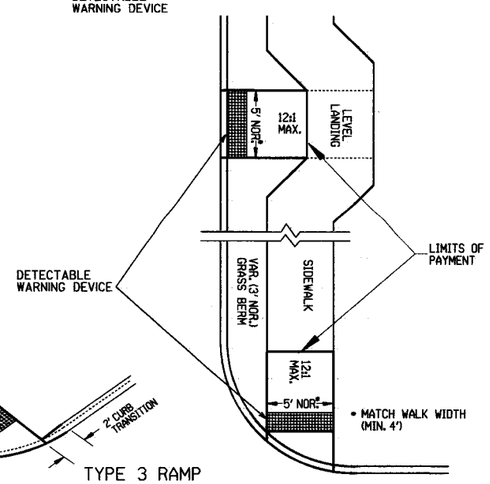
RAMP SELECTION CRITERIA

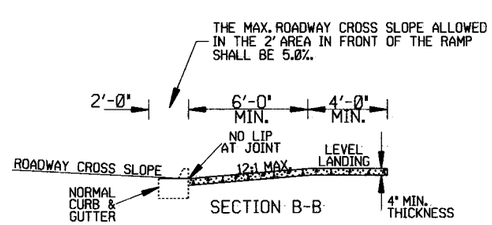
FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH 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.



TYPE 3 RAMP





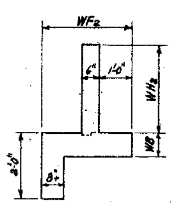
SECTION B-B

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.	
1-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8%TO12%MAX.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.J.D.	299-7-28-76

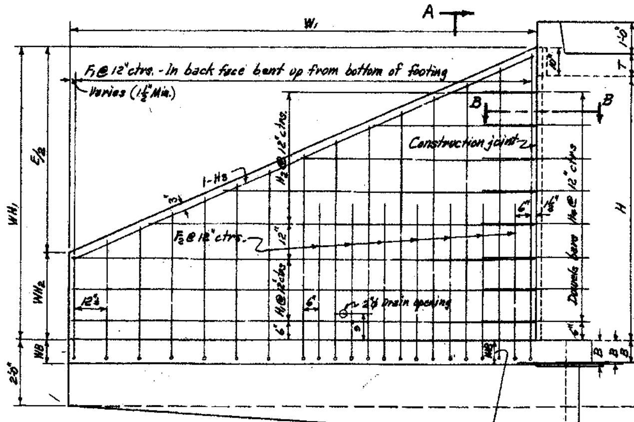
ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

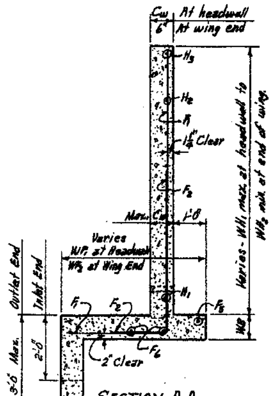


END VIEW OF WING

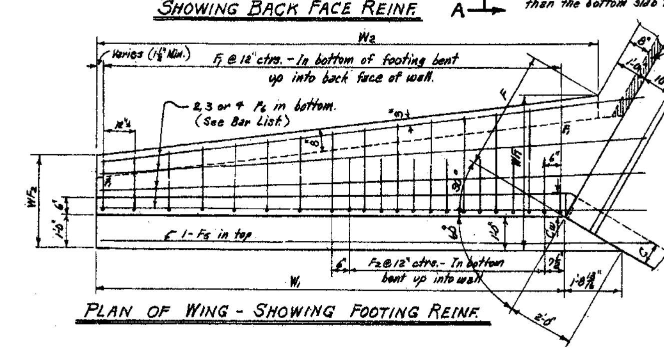


REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

WB may be more, equal to, or less than the bottom slab thickness B.

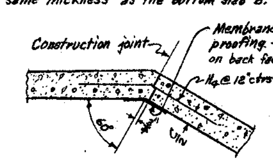


SECTION A-A



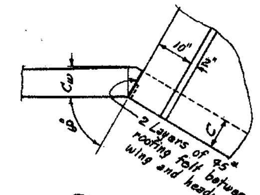
PLAN OF WING - SHOWING FOOTING REINF.

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B.



SECTION B-B THRU CONSTRUCTION JOINT

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



DETAIL AT TOP OF WING

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS: AT HEADWALL	WINGWALL HEIGHTS: AT END OF WING	WIDTHS OF WING FOOTINGS: AT HEADWALL	WIDTHS OF WING FOOTINGS: AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL TO END OF WING	LENGTH OF WINGWALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING, CLASS S CONCRETE: INLET END	OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11¾"	4'-4"	5'-0"	4'-7½"	0.604	0.670
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-4¾"	5'-8"	6'-6½"	6'-4¼"	0.908	0.996
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9"	7'-0"	8'-1"	8'-1"	1.267	1.376
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1¾"	8'-4"	9'-7½"	9'-9¾"	1.679	1.810
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1¾"	8'-4"	9'-7½"	9'-9¾"	1.750	1.881
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	9'-8"	11'-2"	11'-6½"	2.330	2.483
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	9'-8"	11'-2"	11'-6½"	2.379	2.581
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6¼"	9'-8"	11'-2"	11'-6½"	2.427	2.590
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1¼"	11'-0"	12'-8½"	13'-4½"	3.054	3.230
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1¼"	11'-0"	12'-8½"	13'-4½"	3.117	3.293
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	12'-4"	14'-3"	15'-2½"	3.905	4.104

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

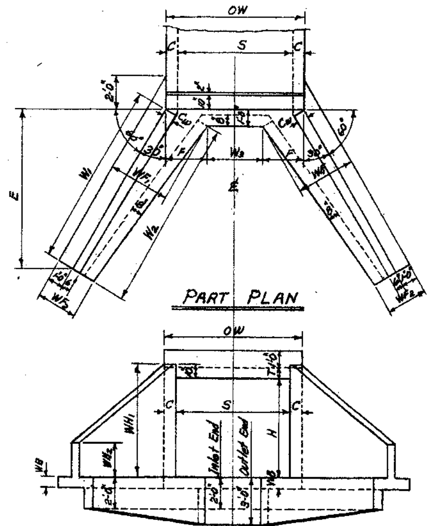
W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11½"	5'-0"	3'-0½"	9'-8"	7'-8½"	14'-4"	12'-4½"	19'-0"	17'-0½"	23'-8"	21'-8½"
	3'	2'-8¼"	5'-0"	2'-3¾"	9'-8"	6'-11¾"	14'-4"	11'-7¾"	19'-0"	16'-3¾"	23'-8"	20'-11¾"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3¾"	5'-0"	0'-8¼"	9'-8"	5'-4¼"	14'-4"	10'-0¼"	19'-0"	14'-8¼"	23'-8"	19'-4¼"
	6'	5'-0½"	5'-2"	0'-1½"	9'-11"	4'-10½"	14'-8"	9'-7½"	19'-5"	14'-4½"	24'-2"	19'-1½"
5'	3'	2'-8¼"	6'-0"	3'-3¾"	11'-8"	8'-11¾"	17'-4"	14'-7¾"	23'-0"	20'-3¾"	28'-8"	25'-11¾"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3¾"	6'-0"	1'-8¼"	11'-8"	7'-4¼"	17'-4"	13'-0¼"	23'-0"	18'-8¼"	28'-8"	24'-4¼"
	6'	5'-0½"	6'-2"	1'-1½"	11'-11"	6'-10½"	17'-8"	12'-7½"	23'-5"	18'-4½"	29'-2"	24'-1½"
	7'	6'-2½"	6'-3"	0'-0½"	12'-1"	5'-10½"	17'-11"	11'-8½"	23'-9"	17'-6½"	29'-7"	23'-4½"
6'	3'	2'-8¼"	7'-0"	4'-3¾"	13'-8"	10'-11¾"	20'-4"	17'-7¾"	27'-0"	24'-3¾"	33'-8"	30'-11¾"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3¾"	7'-0"	2'-8¼"	13'-8"	9'-4¼"	20'-4"	16'-0¼"	27'-0"	22'-8¼"	33'-8"	29'-4¼"
	6'	5'-0½"	7'-2"	2'-1½"	13'-11"	8'-10½"	20'-8"	15'-7½"	27'-5"	22'-4½"	34'-2"	29'-1½"
	7'	6'-2½"	7'-3"	1'-0½"	14'-1"	7'-10½"	20'-11"	14'-8½"	27'-9"	21'-6½"	34'-7"	28'-4½"
	8'	7'-4"	7'-4"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-4"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3¾"	8'-0"	3'-8¼"	15'-8"	11'-4¼"	23'-4"	19'-0¼"	31'-0"	26'-8¼"	38'-8"	34'-4¼"
	6'	5'-0½"	8'-2"	3'-1½"	15'-11"	10'-10½"	23'-8"	18'-7½"	31'-5"	26'-4½"	39'-2"	34'-1½"
	7'	6'-2½"	8'-3"	2'-0½"	16'-1"	9'-10½"	23'-11"	17'-8½"	31'-9"	25'-6½"	39'-7"	33'-4½"
	8'	7'-4"	8'-4"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-4"
8'	4'	3'-6"	9'-0"	5'-6"	17'-8"	14'-2"	26'-4"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3¾"	9'-2"	4'-10¼"	17'-11"	13'-7¼"	26'-8"	22'-4¼"	35'-5"	31'-1¼"	44'-2"	39'-10¼"
	6'	5'-0½"	9'-2"	4'-1½"	17'-11"	12'-10½"	26'-8"	21'-7½"	35'-5"	30'-4½"	44'-2"	39'-1½"
	7'	6'-2½"	9'-3"	3'-0½"	18'-1"	11'-10½"	26'-11"	20'-8½"	35'-9"	29'-6½"	44'-7"	38'-4½"
	8'	7'-4"	9'-4"	2'-0"	18'-2"	10'-10"	27'-0"	19'-8"	35'-10"	28'-6"	44'-8"	37'-4"
9'	5'	4'-3¾"	10'-2"	5'-10¼"	19'-11"	15'-7¼"	29'-8"	25'-4¼"	39'-5"	35'-1¼"	49'-2"	44'-10¼"
	6'	5'-0½"	10'-3"	5'-2½"	20'-1"	15'-0½"	29'-11"	24'-10½"	39'-9"	34'-8½"	49'-7"	44'-6½"
	7'	6'-2½"	10'-3"	4'-0½"	20'-1"	13'-10½"	29'-11"	23'-8½"	39'-9"	33'-6½"	49'-7"	43'-4½"
	8'	7'-4"	10'-4"	3'-0"	20'-2"	12'-10"	30'-0"	22'-8"	39'-10"	32'-6"	49'-8"	42'-4"
10'	5'	4'-3¾"	11'-2"	6'-10¼"	21'-11"	17'-7¼"	32'-8"	28'-4¼"	43'-5"	39'-1¼"	54'-2"	49'-10¼"
	6'	5'-0½"	11'-3"	6'-2½"	22'-1"	17'-0½"	32'-11"	27'-10½"	43'-9"	38'-8½"	54'-7"	49'-6½"
	7'	6'-2½"	11'-3"	5'-0½"	22'-1"	15'-10½"	32'-11"	26'-8½"	43'-9"	37'-6½"	54'-7"	48'-4½"
	8'	7'-4"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-8"	43'-10"	36'-6"	54'-8"	47'-4"
11'	6'	5'-0½"	12'-4"	7'-3½"	24'-2"	19'-1½"	36'-0"	30'-11½"	47'-10"	42'-9½"		
	7'	6'-2½"	12'-4"	6'-1½"	24'-2"	17'-11½"	36'-0"	29'-9½"	47'-10"	41'-7½"		
	8'	7'-4"	12'-4"	5'-0"	24'-2"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0½"	13'-4"	8'-3½"	26'-2"	21'-1½"	39'-0"	33'-11½"	51'-10"	46'-9½"		
	7'	6'-2½"	13'-4"	7'-1½"	26'-2"	19'-11½"	39'-0"	32'-9½"	51'-10"	45'-7½"		
	8'	7'-4"	13'-4"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	® REINFORCING STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS (HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS): SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	81.0	3.30	4.25	5.21	6.17	7.13
	3'	6"	7"	119.8	4.45	5.41	6.37	7.33	8.29
	4'	6"	7"	183.3	5.83	6.78	7.74	8.70	9.66
	5'	6"	7"	253.2	7.41	8.37	9.33	10.29	11.25
	6'	7"	8"	415.4	9.97	10.95	11.94	12.93	13.92
5'	3'	6"	7"	119.8	4.67	5.83	6.99	8.16	9.33
	4'	6"	7"	183.3	6.04	7.20	8.36	9.53	10.70
	5'	6"	7"	253.2	7.63	8.78	9.95	11.12	12.28
	6'	7"	8"	415.4	10.19	11.38	12.57	13.77	14.96
	7'	7½"	8½"	797.6	12.98	14.19	15.41	16.63	17.85
6'	3'	6"	7"	119.8	4.88	6.26	7.62	9.00	10.38
	4'	6"	7"	183.3	6.25	7.63	8.99	10.37	11.75
	5'	6"	7"	253.2	7.83	9.22	10.57	11.96	13.33
	6'	7"	8"	415.4	10.40	11.81	13.20	14.61	16.01
	7'	7½"	8½"	797.6	13.19	14.63	16.04	17.47	18.90
	8'	8"	9"	1004.9	16.50	17.93	19.36	20.79	22.23
7'	4'	6"	7"	183.3	6.47	8.07	9.64	11.25	12.85
	5'	6"	7"	253.2	8.05	9.66	11.23	12.84	14.44
	6'	7"	8"	415.4	10.62	12.25	13.84	15.46	17.08
	7'	7½"	8½"	797.6	13.42	16.06	16.68	18.32	19.96
	8'	8"	9"	1004.9	16.72	18.37	20.00	21.65	23.29
8'	4'	6"	7"	183.3	6.69	8.52	10.32	12.15	13.95
	5'	7"	7"	253.2	8.59	10.44	12.26	14.11	15.92
	6'	7"	8"	415.4	10.84	12.69	14.51	16.36	18.17
	7'	7½"	8½"	797.6	13.63	15.60	17.34	19.21	21.08
	8'	8"	9"	1004.9	16.94	18.81	20.65	22.51	24.86
9'	5'	7"	7"	253.2	8.81	10.90	12.92	15.00	17.02
	6'	7½"	8"	415.4	11.27	13.38	15.42	17.52	19.56
	7'	7½"	8½"	797.6	13.85	15.96	18.00	20.10	22.14
	8'	8"	9"	1004.9	17.16	19.26	21.31	23.41	25.45
10'	5'	7"	7"	253.2	9.04	11.35	13.60	15.81	18.08
	6'	7½"	8"	415.4	11.50	13.83	16.10	18.33	20.61
	7'	7½"	8½"	797.6	14.08	16.41	18.68	20.91	23.20
	8'	8"	9"	1004.9	17.38	19.71	21.98	24.22	26.50
11'	6'	8"	8"	415.4	11.93	14.51	17.00	19.47	
	7'	8"	8½"	797.6	14.56	17.15	19.64	22.11	
	8'	8"	9"	1004.9	17.59	20.18	22.67	25.14	
12'	6'	8"	8"	415.4	12.16	14.99	17.70	20.92	
	7'	8"	8½"	797.6	14.79	17.62	20.33	23.06	
	8'	8"	9"	1004.9	17.82	20.65	23.36	26.09	

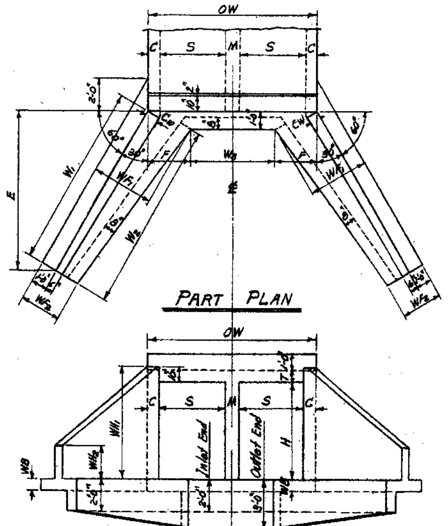
® For reinforcing steel in Headwalls and Aprons, see Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT

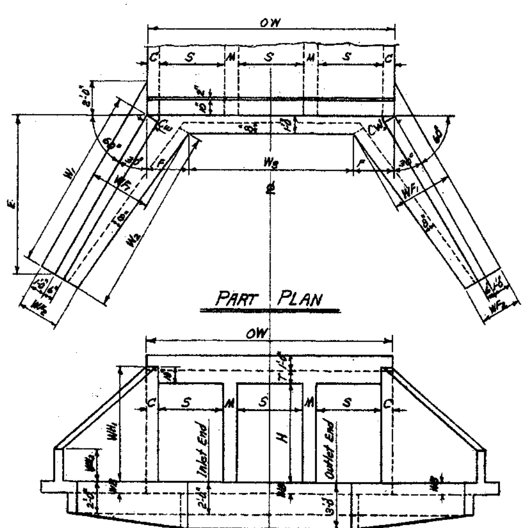


PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

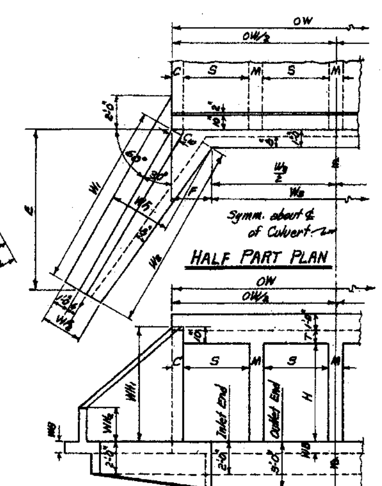
NOTE:- Plans and Elevations are not to scale.



PART PLAN

END ELEVATION

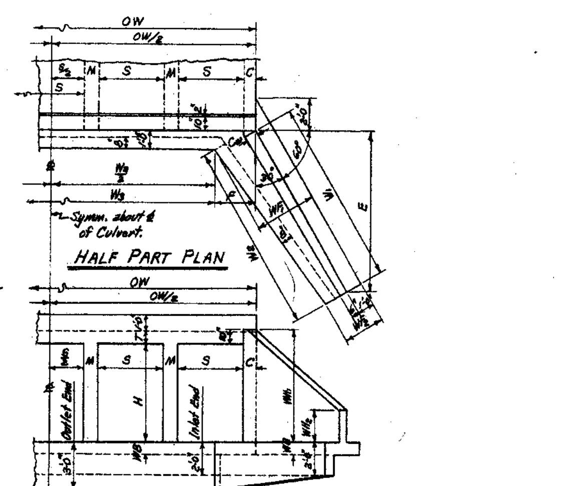
TRIPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/□"

Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

BAR LIST FOR ONE WING - 4 REQUIRED

F1 — BENT — In bottom of footing, bent up into back face of wing. One bar of each length.
F2 — BENT — In bottom of footing, bent up into back face of wing. Alt. with F1 bars.

CLEAR HEIGHT H	F1 SIZE	F1 SPACING	F1 NO. REQ'D	F1 LENGTHS VARY MIN.	F1 LENGTHS VARY MAX.	F1 X MIN.	F1 X MAX.	F1 Y MIN.	F1 Y MAX.	F2 SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTH	F2 X	F2 Y
2'	#3	12"	6	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—
3'	#3	12"	7	2'-2"	5'-3"	0'-10"	1'-4"	1'-5"	4'-0"	—	—	—	—	—	—
4'	#3	12"	9	2'-4"	6'-7"	0'-11"	1'-8"	1'-6"	5'-0"	—	—	—	—	—	—
5'	#3	12"	10	3'-0"	7'-10"	1'-1"	1'-11"	2'-0"	6'-0"	#3	12"	3	3'-6"	1'-1"	2'-6"
6'	#4	12"	12	3'-5"	9'-3"	1'-2"	2'-3"	2'-4"	7'-1"	#3	12"	3	4'-6"	1'-4"	3'-3"
7'	#4	12"	13	4'-1"	10'-9"	1'-4"	2'-9"	2'-10"	8'-1"	#4	12"	5	5'-6"	1'-7"	4'-0"
8'	#4	12"	15	4'-5"	12'-3"	1'-5"	3'-2"	3'-1"	9'-2"	#4	12"	7	6'-6"	1'-10"	4'-9"

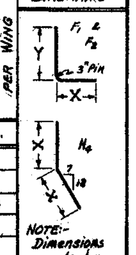
F5 — STRAIGHT — Longitudinal in top of wing footing heel.
F6 — STRAIGHT — Longitudinal in bottom of wing footing toe.
H1 — STRAIGHT — Horizontal in back face of wing.

CLEAR HEIGHT H	F5 SIZE	F5 NO. REQ'D	F5 LENGTH	F6 SIZE	F6 NO. REQ'D	F6 LENGTH	H1 SIZE	H1 SPACING	H1 NO. REQ'D	H1 LENGTH
2'	#3	1	7'-6"	#3	2	6'-3"	#3	12"	1	4'-9"
3'	#3	1	9'-0"	#3	2	8'-0"	#3	12"	1	6'-3"
4'	#3	1	10'-7"	#3	2	9'-9"	#3	12"	1	7'-10"
5'	#3	1	12'-1"	#3	3	11'-6"	#3	12"	2	9'-4"
6'	#3	1	13'-8"	#3	3	13'-3"	#3	12"	2	10'-11"
7'	#4	1	15'-2"	#4	4	15'-0"	#4	12"	2	12'-5"
8'	#4	1	16'-9"	#4	4	16'-9"	#4	12"	3	14'-0"

H2 — STRAIGHT — Horizontal in back face of wing. One bar of each length.
H3 — STRAIGHT — In back face of wing at top-on slope.
H4 — BENT — Dowels thru construction joint at headwall.

CLEAR HEIGHT H	H2 SIZE	H2 SPACING	H2 NO. REQ'D	H2 LENGTHS VARY MAX.	H2 LENGTHS VARY MIN.	H3 SIZE	H3 NO. REQ'D	H3 LENGTH	H4 SIZE	H4 SPACING	H4 NO. REQ'D	H4 LENGTH	H4 X	QUANTITY-REINFORCING STEEL PER WING LB.
2'	#3	12"	1	—	2'-8"	#3	1	5'-1"	#3	12"	2	2'-8"	1'-4"	20.8
3'	#3	12"	2	5'-0"	2'-8"	#3	1	6'-9"	#3	12"	3	2'-8"	1'-4"	29.9
4'	#3	12"	3	7'-4"	2'-8"	#3	1	8'-5"	#3	12"	4	2'-8"	1'-4"	45.8
5'	#3	12"	3	7'-4"	2'-8"	#3	1	10'-1"	#3	12"	5	2'-8"	1'-4"	68.3
6'	#3	12"	4	9'-8"	2'-8"	#3	1	11'-9"	#3	12"	6	2'-8"	1'-9"	103.8
7'	#4	12"	5	12'-0"	2'-8"	#4	1	13'-5"	#4	12"	7	3'-6"	1'-9"	199.4
8'	#4	12"	5	12'-6"	2'-8"	#4	1	15'-2"	#4	12"	8	3'-6"	1'-9"	251.2

BAR BENDING DIAGRAMS



NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.R.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

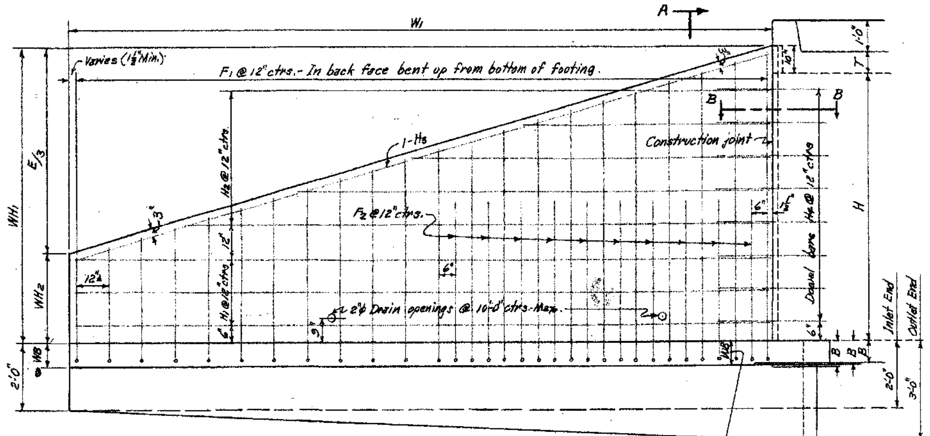
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X002-1

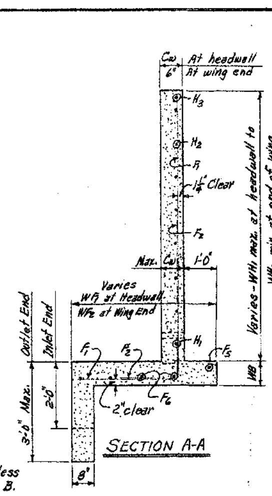
Drawn by - ... 4-16-63
Checked by - J.E.M. - 5-5-63
Quantities by - W.C.H.

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

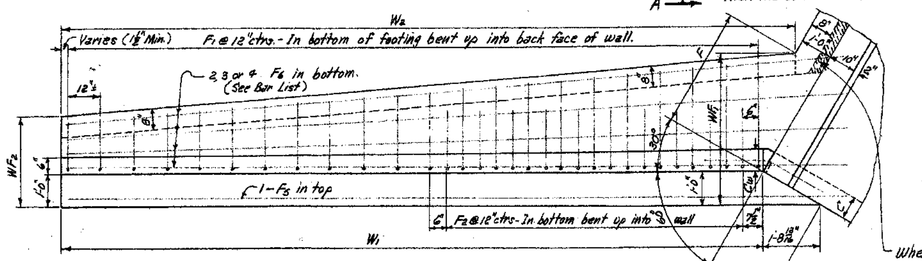


REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

WB may be more, equal to, or less than the bottom slab thickness B.

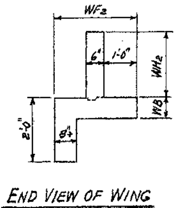


SECTION A-A

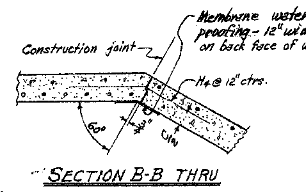


PLAN OF WING - SHOWING FOOTING REINF.

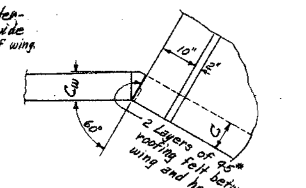
When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.



END VIEW OF WING



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL TO END OF WING	LENGTH OF WINGWALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE INLET END	OUTLET END
H	WB	C_W	WH_1	WH_2	WF_1	WF_2	F	E	W_1	W_2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11 3/4"	6'-6"	7'-6"	7'-1 1/2"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1 1/2"	1'-4 7/8"	8'-6"	9'-9 3/4"	9'-7 1/2"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9"	10'-6"	12'-1 1/2"	12'-1 1/2"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4 1/2"	2'-1 5/8"	12'-6"	14'-5 1/4"	14'-7 1/2"	2.478	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4 1/2"	2'-1 5/8"	12'-6"	14'-5 1/4"	14'-7 1/2"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6 1/2"	14'-6"	16'-9"	17'-1 1/2"	3.440	3.661
		7 1/2"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6 5/8"	14'-6"	16'-9"	17'-1 1/2"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6 5/8"	14'-6"	16'-9"	17'-1 1/2"	3.582	3.803
7'	8 1/2"	7 1/2"	7'-10"	2'-4"	4'-2"	2'-7 1/2"	3'-1 1/4"	16'-6"	19'-0 1/4"	19'-8 3/4"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7 1/2"	3'-1 1/4"	16'-6"	19'-0 1/4"	19'-8 3/4"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-4 3/4"	22'-4"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.

APRON DIMENSION W_3

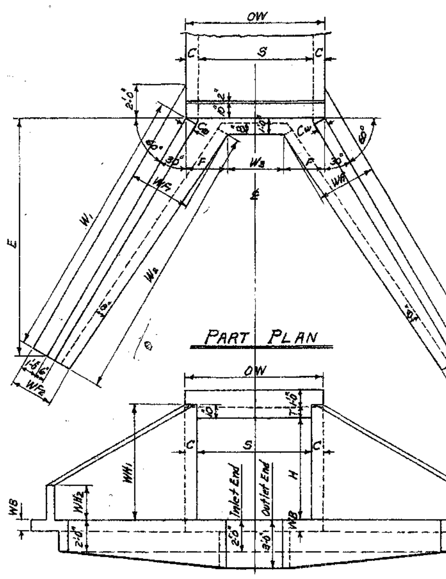
W_3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W_3	OW	W_3	OW	W_3	OW	W_3	OW	W_3
4'	2'	1'-11 1/2"	5'-0"	3'-0 1/2"	9'-8"	7'-8 1/2"	14'-4"	12'-4 1/2"	19'-0"	17'-0 1/2"	23'-8"	21'-8 1/2"
	3'	2'-8 3/4"	5'-0"	2'-3 1/4"	9'-8"	6'-11 1/4"	14'-4"	11'-7 1/4"	19'-0"	16'-3 1/4"	23'-8"	20'-11 1/4"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3 1/4"	5'-0"	0'-8 3/4"	9'-8"	5'-4 3/4"	14'-4"	10'-0 3/4"	19'-0"	14'-8 3/4"	23'-8"	19'-4 3/4"
	6'	5'-0 1/2"	5'-2"	0'-1 1/2"	9'-11"	4'-10 1/2"	14'-8"	9'-7 1/2"	19'-5"	14'-4 1/2"	24'-2"	19'-1 1/2"
5'	3'	2'-8 3/4"	6'-0"	3'-3 1/4"	11'-8"	8'-11 1/4"	17'-4"	14'-7 1/4"	23'-0"	20'-3 1/4"	28'-8"	25'-11 1/4"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3 1/4"	6'-0"	1'-8 3/4"	11'-8"	7'-4 3/4"	17'-4"	13'-0 3/4"	23'-0"	18'-8 3/4"	28'-8"	24'-4 3/4"
	6'	5'-0 1/2"	6'-2"	1'-1 1/2"	11'-11"	6'-10 1/2"	17'-8"	12'-7 1/2"	23'-5"	18'-4 1/2"	29'-2"	24'-1 1/2"
	7'	6'-2 1/2"	6'-3"	0'-0 1/2"	12'-1"	5'-10 1/2"	17'-11"	11'-8 1/2"	23'-9"	17'-6 1/2"	29'-7"	23'-4 1/2"
6'	3'	2'-8 3/4"	7'-0"	4'-3 1/4"	13'-8"	10'-11 1/4"	20'-4"	17'-7 1/4"	27'-0"	24'-3 1/4"	33'-8"	30'-11 1/4"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3 1/4"	7'-0"	2'-8 3/4"	13'-8"	9'-4 3/4"	20'-4"	16'-0 3/4"	27'-0"	22'-8 3/4"	33'-8"	29'-4 3/4"
	6'	5'-0 1/2"	7'-2"	2'-1 1/2"	13'-11"	8'-10 1/2"	20'-8"	15'-7 1/2"	27'-5"	22'-4 1/2"	34'-2"	29'-1 1/2"
	7'	6'-2 1/2"	7'-3"	1'-0 1/2"	14'-1"	7'-10 1/2"	20'-11"	14'-8 1/2"	27'-9"	21'-6 1/2"	34'-7"	28'-4 1/2"
	8'	7'-4"	7'-4"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-4"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3 1/4"	8'-0"	3'-8 3/4"	15'-8"	11'-4 3/4"	23'-4"	19'-0 3/4"	31'-0"	26'-8 3/4"	38'-8"	34'-4 3/4"
	6'	5'-0 1/2"	8'-2"	3'-1 1/2"	15'-11"	10'-10 1/2"	23'-8"	18'-7 1/2"	31'-5"	26'-4 1/2"	39'-2"	34'-1 1/2"
	7'	6'-2 1/2"	8'-3"	2'-0 1/2"	16'-1"	9'-10 1/2"	23'-11"	17'-8 1/2"	31'-9"	25'-6 1/2"	39'-7"	33'-4 1/2"
	8'	7'-4"	8'-4"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-4"
8'	4'	3'-6"	9'-0"	5'-6"	17'-8"	14'-2"	26'-4"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3 1/4"	9'-2"	4'-10 3/4"	17'-11"	13'-7 3/4"	26'-8"	22'-4 3/4"	35'-5"	31'-1 3/4"	44'-2"	39'-10 3/4"
	6'	5'-0 1/2"	9'-2"	4'-1 1/2"	17'-11"	12'-10 1/2"	26'-8"	21'-7 1/2"	35'-5"	30'-4 1/2"	44'-2"	39'-1 1/2"
	7'	6'-2 1/2"	9'-3"	3'-0 1/2"	18'-1"	11'-10 1/2"	26'-11"	20'-8 1/2"	35'-9"	29'-6 1/2"	44'-7"	38'-4 1/2"
	8'	7'-4"	9'-4"	2'-0"	18'-2"	10'-10"	27'-0"	19'-8"	35'-10"	28'-6"	44'-8"	37'-4"
9'	5'	4'-3 1/4"	10'-2"	5'-10 3/4"	19'-11"	15'-7 3/4"	29'-8"	25'-4 3/4"	39'-5"	35'-1 3/4"	49'-2"	44'-10 3/4"
	6'	5'-0 1/2"	10'-3"	5'-2 1/2"	20'-1"	15'-0 1/2"	29'-11"	24'-10 1/2"	39'-9"	34'-8 1/2"	49'-7"	44'-6 1/2"
	7'	6'-2 1/2"	10'-3"	4'-0 1/2"	20'-1"	13'-10 1/2"	29'-11"	23'-8 1/2"	39'-9"	33'-6 1/2"	49'-7"	43'-4 1/2"
	8'	7'-4"	10'-4"	3'-0"	20'-2"	12'-10"	30'-0"	22'-8"	39'-10"	32'-6"	49'-8"	42'-4"
10'	5'	4'-3 1/4"	11'-2"	6'-10 3/4"	21'-11"	17'-7 3/4"	32'-8"	28'-4 3/4"	43'-5"	39'-1 3/4"	54'-2"	49'-10 3/4"
	6'	5'-0 1/2"	11'-3"	6'-2 1/2"	22'-1"	17'-0 1/2"	32'-11"	27'-10 1/2"	43'-9"	38'-8 1/2"	54'-7"	49'-6 1/2"
	7'	6'-2 1/2"	11'-3"	5'-0 1/2"	22'-1"	15'-10 1/2"	32'-11"	26'-8 1/2"	43'-9"	37'-6 1/2"	54'-7"	48'-4 1/2"
	8'	7'-4"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-8"	43'-10"	36'-6"	54'-8"	47'-4"
11'	6'	5'-0 1/2"	12'-4"	7'-3 1/2"	24'-2"	19'-1 1/2"	36'-0"	30'-11 1/2"	47'-10"	42'-9 1/2"		
	7'	6'-2 1/2"	12'-4"	6'-1 1/2"	24'-2"	17'-11 1/2"	36'-0"	29'-9 1/2"	47'-10"	41'-7 1/2"		
	8'	7'-4"	12'-4"	5'-0"	24'-2"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0 1/2"	13'-4"	8'-3 1/2"	26'-2"	21'-1 1/2"	39'-0"	33'-11 1/2"	51'-10"	46'-9 1/2"		
	7'	6'-2 1/2"	13'-4"	7'-1 1/2"	26'-2"	19'-11 1/2"	39'-0"	32'-9 1/2"	51'-10"	45'-7 1/2"		
	8'	7'-4"	13'-4"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	® REINFORCING STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS (HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS): SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	C_W	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34
	3'	6"	7"	164.4	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	254.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.4	6.47	7.63	8.79	9.96	11.12
	4'	6"	7"	254.6	8.54	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7 1/2"	8 1/2"	1134.6	18.94	20.16	21.37	22.59	23.80
6'	3'	6"	7"	164.4	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	254.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7 1/2"	8 1/2"	1134.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1425.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	254.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.54	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7 1/2"	8 1/2"	1134.6	19.38	21.02	22.64	24.28	25.92
	8'	8"	9"	1425.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	254.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.36
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7 1/2"	8 1/2"	1134.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1425.6	24.54	26.41	28.24	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.34	16.37	18.45	20.47
	6'	7 1/2"	8"	583.1	15.94	18.04	20.09	22.19	24.23
	7'	7 1/2"	8 1/2"	1134.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1425.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.26	21.52
	6'	7 1/2"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7 1/2"	8 1/2"	1134.6	20.04	22.37	24.64	26.87	29.15
	8'	8"	9"	1425.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8 1/2"	1134.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1425.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18	
	7'	8"	8 1/2"	1134.6	20.87	23.69	26.40	29.13	
	8'	8"	9"	1425.6	25.42	28.25	30.96	33.69	

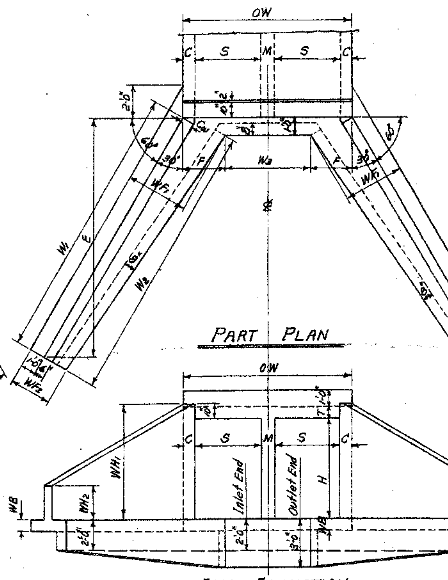
® For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT

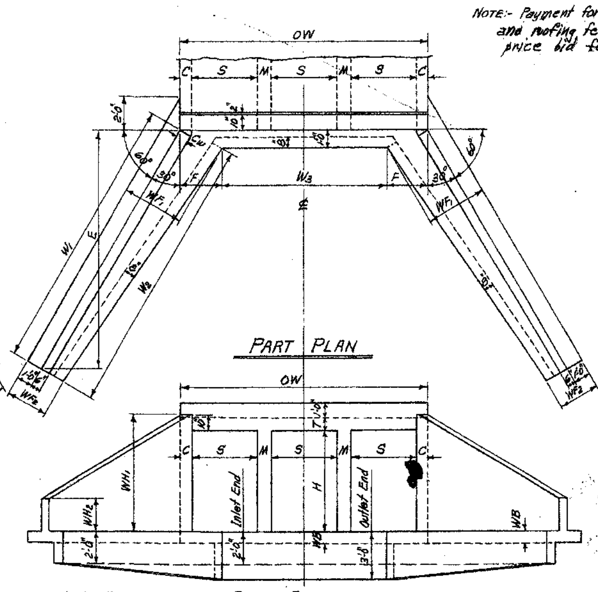


PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

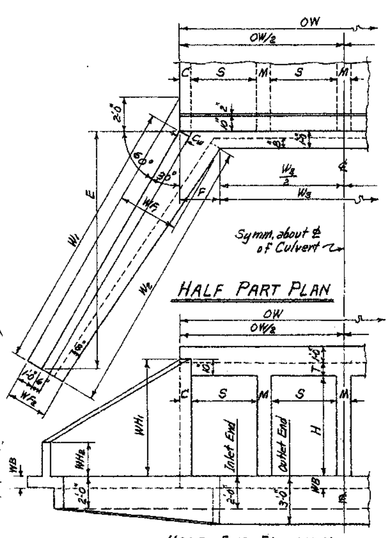
NOTE:- Plans and Elevations are not to scale.



PART PLAN

END ELEVATION

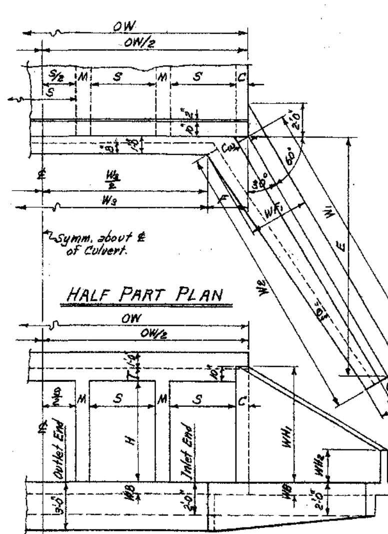
TRIPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 3/4" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"

Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

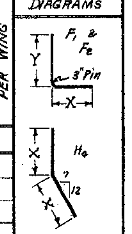
BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F_1 BENT - In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	F_2 BENT - In bottom of footing, bent up into back face of wing. Alt. with F_1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	—	—
4'	#3	12"	13	2'-4"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"

CLEAR HEIGHT	F_5 STRAIGHT - Longitudinal in top of wing footing heel. SIZE	NO. REQ'D	LENGTH	F_6 STRAIGHT - Longitudinal in bottom of wing footing toe. SIZE	NO. REQ'D	LENGTH	H_1 STRAIGHT - Horizontal in back face of wing. SIZE	SPACING	NO. REQ'D	LENGTH
2'	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"
3'	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"
4'	#3	1	14'-4"	#3	3	13'-6"	#3	12"	1	11'-10"
5'	#3	1	16'-8"	#3	3	16'-0"	#3	12"	2	14'-2"
6'	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-6"
7'	#4	1	21'-4"	#4	4	21'-0"	#4	12"	2	18'-9"
8'	#4	1	23'-8"	#4	4	23'-9"	#4	12"	3	21'-1"

CLEAR HEIGHT	H_2 STRAIGHT - Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	H_3 - In back face of wing at top - on slope. SIZE	NO. REQ'D	LENGTH	H_4 BENT - Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQ'D	LENGTH	X	QUANTITY REINFORCING STEEL PER WING LB.
2'	#3	12"	1	—	4'-0"	#3	1	7'-4"	#3	12"	2	2'-8"	1'-4"	27.0
3'	#3	12"	2	7'-6"	4'-0"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-4"	41.1
4'	#3	12"	3	10'-11"	4'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-4"	63.7
5'	#3	12"	3	10'-11"	4'-0"	#3	1	14'-7"	#3	12"	5	2'-8"	1'-4"	89.5
6'	#3	12"	4	14'-4"	4'-0"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-4"	145.8
7'	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	5	17'-9"	4'-0"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"	356.4

BAR BENDING DIAGRAMS



NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RHS- 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RHS- 1-31-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RHS- Rechecked By:- RHS 3-29-63

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MVI. AR. (3)

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

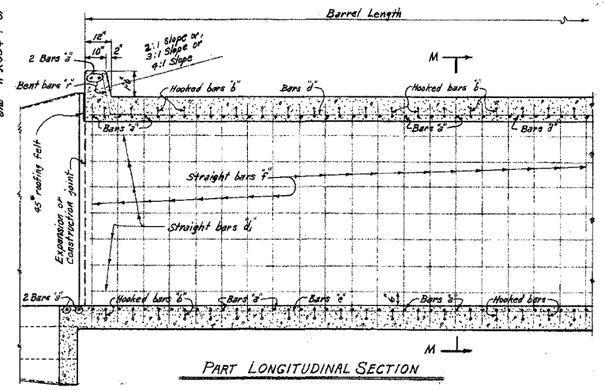
DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. 2 Add'l In Aprons and Headwall- Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars BENT - See Diagram below In Top and Bottom Slabs of Barrel. Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X
0'-0" TO 5'-0" MAXIMUM	4'	2'	#5	13"	120	120	4'-9"	#6	13"	110	110	5'-10"	4'-8"
		3'			120	120	4'-9"			110	110	5'-10"	4'-8"
		4'			120	120	4'-9"			110	110	5'-10"	4'-8"
		5'			120	120	4'-9"			110	110	5'-10"	4'-8"
		6'			120	120	4'-11"			110	110	6'-0"	4'-10"
	5'	3'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"
		5'			120	120	5'-9"			110	110	6'-10"	5'-8"
		6'			120	120	5'-11"			110	110	7'-0"	5'-10"
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"
	6'	3'			128	128	6'-9"			118	118	7'-10"	6'-8"
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"
		5'	#6	12"	128	128	6'-9"	#6	12"	118	118	7'-10"	6'-8"
		6'			128	128	6'-11"			118	118	8'-0"	6'-10"
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"
	7'	4'			140	140	7'-9"			130	130	8'-10"	7'-8"
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"
		6'	#6	11"	140	140	7'-11"	#6	11"	130	130	9'-0"	7'-10"
		7'			140	140	8'-0"			130	130	9'-1"	7'-11"
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"
		9'			140	140	8'-3"			130	130	9'-4"	8'-2"
	8'	4'			128	128	8'-9"			118	118	9'-10"	8'-8"
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"
		6'			128	128	8'-11"			118	118	10'-0"	8'-10"
		7'	#7	12"	128	128	9'-0"	#6	12"	118	118	10'-1"	8'-11"
		8'			128	128	9'-1"			118	118	10'-2"	9'-0"
		9'			128	128	9'-3"			118	118	10'-4"	9'-2"
		10'			128	128	9'-5"			118	118	10'-6"	9'-4"
	9'	5'			140	140	9'-11"			130	130	11'-0"	9'-10"
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"
		7'			140	140	10'-0"			130	130	11'-1"	9'-11"
		8'	#7	11"	140	140	10'-1"	#6	11"	130	130	11'-2"	10'-0"
		9'			140	140	10'-3"			130	130	11'-4"	10'-2"
		10'			140	140	10'-5"			130	130	11'-6"	10'-4"
		11'			140	140	10'-7"			130	130	11'-8"	10'-6"
	10'	5'			128	128	10'-11"			118	118	12'-2"	10'-10"
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"
		7'			128	128	11'-0"			118	118	12'-3"	10'-11"
		8'	#7	12"	128	128	11'-1"	#7	12"	118	118	12'-4"	11'-0"
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"
	11'	6'			140	140	12'-1"			130	130	13'-6"	12'-0"
		7'			140	140	12'-1"			130	130	13'-6"	12'-0"
		8'			140	140	12'-1"			130	130	13'-6"	12'-0"
		9'	#7	11"	140	140	12'-3"	#7	11"	130	130	13'-6"	12'-2"
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"
		11'			140	140	12'-7"			130	130	13'-10"	12'-6"
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"
	12'	6'			128	128	13'-1"			118	118	14'-6"	13'-0"
		7'			128	128	13'-1"			118	118	14'-6"	13'-0"
		8'			128	128	13'-1"			118	118	14'-6"	13'-0"
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-6"	13'-2"
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"

CLEAR SPAN S	"c" bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	"d" bars STRAIGHT Longitudinal in Sidewalls SIZE	SPACING	No. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Side walls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
4'	#5	10½"	6		#4	12"	4		#4	12"	5		#4	12"	120	120	2'-11"
			6				6				5				120	120	3'-11"
			6				8				5				120	120	4'-11"
			6				10				5				120	120	5'-11"
			6				12				5				120	120	6'-11"
5'			7				6				6				120	120	4'-0"
			7				8				6				120	120	5'-0"
			7				10				6				120	120	6'-0"
			7				12				6				120	120	7'-0"
			7				14				6				120	120	8'-0"
6'			8				6				7				120	120	4'-1"
			8				8				7				120	120	5'-1"
	#5	10½"	8		#4	12"	10		#4	12"	7		#4	12"	120	120	6'-1"
			8				12				7				120	120	7'-1"
			8				14				7				120	120	8'-1"
			8				16				7		#5	12"	120	120	9'-1"
7'			9				8				8				120	120	5'-2"
			9				10				8		#4	12"	120	120	6'-2"
	#5	10½"	9		#4	12"	12		#4	12"	8				120	120	7'-2"
			9				14				8				120	120	8'-2"
			9				16				8		10"	144	144	9'-2"
			9				18				8		#5	12"	120	120	10'-2"
8'			10				8				9				120	120	5'-9"
			10				10				9		#4	12"	120	120	6'-9"
			10				12				9				120	120	7'-9"
	#5	10"	10		#4	12"	14		#4	12"	9				120	120	8'-9"
			10				16				9		10"	144	144	9'-9"
			10				18				9		#5	12"	120	120	10'-9"
			10				20				9		11"	132	132	11'-9"
9'			10				10				10				120	120	6'-5"
			10				12				10		#4	12"	120	120	7'-5"
			10				14				10				120	120	8'-5"
	#5	10"	10		#4	12"	16		#4	12"	10		10"	144	144	9'-5"
			10				18				10		12"	120	120	10'-5"
			10				20				10		#5	11"	132	132	11'-5"
			10				22				10		10"	144	144	12'-5"
10'			11				10				11				120	120	6'-6"
			11				12				11		#4	12"	120	120	7'-6"
			11				14				11				120	120	8'-6"
	#5	10"	11		#4	12"	16		#4	12"	11		10"	144	144	9'-6"
			11				18				11		12"	120	120	10'-6"
			11				20				11		#5	11"	132	132	11'-6"
			11				22				11		10"	144	144	12'-6"
11'			12				12				12		#4	12"	120	120	7'-7"
			12				14				12				120	120	8'-7"
			12				16				12		10"	144	144	9'-7"
	#5	9½"	12		#4	12"	18		#4	12"	12		12"	120	120	10'-7"
			12				20				12		#5	11"	132	132	11'-7"
			12				22				12		10"	144	144	12'-7"
			12				24				12		#6	12"	120	120	13'-7"
12'			13				12				13		#4	12"	120	120	7'-9"
			13				14				13				120	120	8'-9"
			13				16				13		10"	144	144	9'-9"
	#5	9½"	13		#4	12"	18		#4	12"	13		12"	120	120	10'-9"
			13				20				13		#5	11"	132	132	11'-9"
			13				22				13		10"	144	144	12'-9"
			13				24				13		#6	12"	120	120	13'-9"

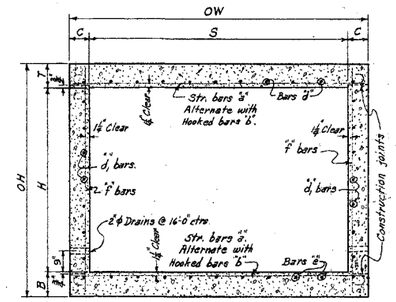
DIMENSIONS / QUANTITIES

MAX. DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	Sq. Ft. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	CLASS S CONC. PER LIN. FT. OF BARREL CU.YD.	REINFORCING STEEL PER LIN. FT. OF BARREL LB.	ADDITIONAL PER LAP LB.	ADDITIONAL TWO HEADWALLS & APRONS LB.
5'-0"	4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	0.282	41.93	17.95	66.35
		3'	12	5'-0"		6"		4'-1½"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1½"	0.356	46.83	21.29	66.35
		5'	20	5'-0"		6"		6'-1½"	0.394	49.50	22.96	66.35
		6'	24	5'-2"		7"		7'-1½"	0.474	52.96	29.63	67.75
	5'	3'	15	6'-0"	7½"	6"	7"	4'-2½"	0.380	55.55	22.19	101.27
		4'	20	6'-0"		6"		5'-2½"	0.417	58.23	23.86	101.27
		5'	25	6'-0"		6"		6'-2½"	0.454	60.90	25.53	101.27
		6'	30	6'-2"		7"		7'-2½"	0.535	64.49	27.20	103.27
		7'	35	6'-3"		7½"		8'-2½"	0.609	67.63	28.87	104.27
	6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	0.446	66.29	24.76	118.94
		4'	24	7'-0"		6"		5'-3½"	0.488	68.96	26.93	118.94
		5'	30	7'-0"		6"		6'-3½"	0.520	71.64	28.10	118.94
		6'	36	7'-2"		7"		7'-3½"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3½"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3½"	0.746	88.47	33.11	122.97
	7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.66	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.74	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	90.98	34.02	139.88
		8'	56	8'-4"		8"		9'-5"	0.832	96.65	35.69	140.88
		9'	63	8'-6"		9"		10'-5"	0.996	105.59	37.36	142.89
	8'	4'	32	9'-0"	9½"	6"	9½"	5'-7"	0.676	95.26	38.32	194.07
		5'	40	9'-2"		7"		6'-7"	0.754	99.12	34.99	196.80
		6'	48	9'-2"		7"		7'-7"	0.797	101.79	36.66	196.80
		7'	56	9'-3"		7½"		8'-7"	0.867	105.05	38.33	198.16
		8'	64	9'-4"		8"		9'-7"	0.942	110.81	40.00	199.52
		9'	72	9'-6"		9"		10'-7"	1.057	119.92	41.67	202.25
		10'	80	9'-8"		10"		11'-7"	1.184	124.67	43.34	204.97
	9'	5'	45	10'-2"	10"	7"	10"	6'-8"	0.844	119.72	37.56	219.61
		6'	54	10'-3"		7½"		7'-8"	0.910	118.04	39.23	220.97
		7'	63	10'-3"		7½"		8'-8"	0.957	120.71	40.90	220.97
		8'	72	10'-4"		8"		9'-8"	1.033	126.54	42.57	222.33
		9'	81	10'-6"		9"		10'-8"	1.148	135.80	44.24	225.06
		10'	90	10'-8"		10"		11'-8"	1.276	192.68	45.91	227.78
		11'	99	10'-10"		11"		12'-8"	1.416	150.40	47.58	230.51
	10'	5'	50	11'-2"	10½"	7"	11"	6'-9½"	0.957	130.64	40.13	242.64
		6'	60	11'-3"		7½"		7'-9½"	1.024	133.99	41.80	244.00
		7'	70	11'-3"		7½"		8'-9½"	1.071	136.66	43.47	244.00
		8'	80	11'-4"		8"		9'-9½"	1.147	142.55	45.14	245.36
		9'	90	11'-6"		9"		10'-9½"	1.263	151.92	46.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	48.48	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	166.71	50.15	253.54
		12'	120	12'-0"		12"		13'-9½"	1.685	178.67	51.82	256.26
	11'	6'	66	12'-4"	11"	8"	11½"	7'-10½"	1.153	152.16	46.12	268.62
		7'	77	12'-4"		8"		8'-10½"	1.202	157.88	47.79	268.62
		8'	88	12'-4"		8"		9'-10½"	1.252	163.06	49.46	268.62
		9'	99	12'-6"		9"		10'-10½"	1.368	172.60	51.13	271.34
		10	110	12'-8"		10"		11'-10½"	1.497	179.70	52.80	274.07
		11'	121	12'-10"		11"		12'-10½"	1.638	187.67	54.47	276.79
		12'	132	13'-0"		12"		13'-10½"	1.792	199.79	56.14	279.52
	12'	6'	72	13'-4"	11½"	8"	12"	8'-0"	1.284	172.20	48.69	357.62
		7'	84	13'-4"		8"		9'-0"	1.333	174.87	50.36	357.62
		8'	96	13'-4"		8"		10'-0"	1.383	180.15	52.03	357.62
		9'	108	13'-6"		9"		11'-0"	1.500	189.85	53.70	361.18
		10'	120	13'-8"		10"		12'-0"	1.630	197.07	55.37	364.74
		11'	132	13'-10"		11"		13'-0"	1.772	205.16	57.04	368.30
		12'	144	14'-0"		12"		14'-0"	1.926	217.95	58.71	371.86

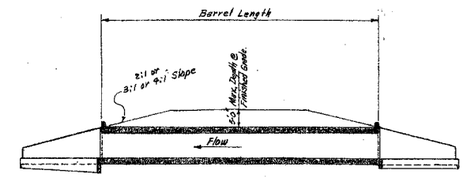
W-X002-1, W-X003-1, W-X004-1 or W-X002-2, W-X003-2, W-X004-2



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

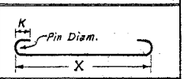
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-6". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#6	3"	5"	1'-2"
#7	3½"	5¾"	1'-4"

BENDING DIAGRAM Bars "b".

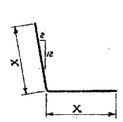


NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. REQ'D	LENGTH	X
4'	#4	11"±	12	2'-6"	1'-3"
5'	#4	11"±	14	2'-7"	1'-3½"
6'	#4	11"±	16	2'-8"	1'-4"
7'	#4	11"±	18	2'-9"	1'-4½"
8'	#4	11½"±	20	2'-11"	1'-5½"
9'	#4	11½"±	22	3'-0"	1'-6"
10'	#4	11½"±	24	3'-1"	1'-6½"
11'	#4	12"±	26	3'-2"	1'-7"
12'	#4	12"±	28	3'-3"	1'-7½"

Bars "r"
Dowel bars in Headwalls.



DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 25,000 Lb. Axles @ 9'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS

4,5,6,7,8,9,10,11 & 12' SPANS — 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

Designed By:- W.C.H. 1-23-63. Checked By:- RWS-5-24-63
Drawn By:- W.C.H. 2-8-63. Checked By:- RWS-5-24-63
Quantities By:- W.C.H. 2-18-63. Checked By:- RWS-5-24-63

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

"a" bars: STRAIGHT — In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each.
"b" bars: BENT - See Diagram at Right — In Top and Bottom Slabs of Barrel. Alternate with "a" bars.
"d" bars: STRAIGHT — Longitudinal in Top Slab of Barrel
"d1" bars: STRAIGHT — Longitudinal in Sidewalls
"e" bars: STRAIGHT — Longitudinal in Bottom Slab of Barrel
"f" bars: STRAIGHT — Verticals in Sidewalls

Section & Bar Group	Length of Sections	Depth of Cover D	Clear Span S	Clear Height H	"a" Size	"a" Spacing	"a" No. Req'd 3:1	"a" No. Req'd 4:1	"a" Length	"b" Size	"b" Spacing	"b" No. Req'd 3:1	"b" No. Req'd 4:1	"b" Length	"b" X	"d" Size	"d" Spacing	"d" No. Req'd	"d" Length	"d1" Size	"d1" Spacing	"d1" No. Req'd	"d1" Length	"e" Size	"e" Spacing	"e" No. Req'd	"e" Length	"f" Size	"f" Spacing	"f" No. Req'd 3:1	"f" No. Req'd 4:1	"f" Length
SECTION "A" & BAR GROUP "A"	3:1 = 22'-0" 4:1 = 32'-0"	0' TO 10'-0"	1 @ 4'	3'	#4	12"	48	68	4'-9"	#4	12"	44	64	5'-7"	4'-8½"	#4	12"	5	33'-3" for 32'-0" Section	#4	12"	6	33'-3" for 32'-0" Section	#4	12"	5	34'-3" for 32'-0" Section	#4	12"	44	64	3'-10"
				4'			48	68	4'-9"			44	64	5'-7"	4'-8½"			5				8				5				44	64	4'-10"
				5'			48	68	4'-9"			44	64	5'-7"	4'-8½"			5				10				5				44	64	5'-10"
				6'			48	68	4'-11"			44	64	5'-9"	4'-10½"			5				12				5				44	64	6'-10"
			1 @ 5'	3'	#5	12"	48	68	5'-9"	#5	12"	44	64	6'-8"	5'-8½"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	44	64	3'-11"
				4'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6				8				6				44	64	4'-11"
				5'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6				10				6				44	64	5'-11"
				6'			48	68	5'-11"			44	64	6'-10"	5'-10½"			6				12				6				44	64	6'-11"
				7'			48	68	6'-0"			44	64	6'-11"	5'-11½"			6				14				6			10"	54	78	7'-11"
			1 @ 6'	4'	#5	12"	48	68	6'-9"	#6	12"	44	64	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	44	64	5'-0"
				5'			48	68	6'-9"			44	64	7'-10"	6'-8"			7				10				7				44	64	6'-0"
				6'			48	68	6'-11"			44	64	8'-0"	6'-10"			7				12				7				44	64	7'-0"
				7'			48	68	7'-0"			44	64	8'-1"	6'-11"			7				14				7			10"	54	78	8'-0"
				8'			48	68	7'-1"			44	64	8'-2"	7'-0"			7				16				7		#5	11"	48	70	9'-0"
SECTION "B" & BAR GROUP "B"	3:1 = 11'-0" 4:1 = 16'-0"	10'-6" TO 15'-0"	1 @ 4'	3'	#4	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	6	34'-3" for 33'-0" Length Section	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				10				5				22	32	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"			5				12				5			10"	28	40	6'-10"
			1 @ 5'	3'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	3'-11"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6				8				6				22	32	4'-11"
				5'			22	32	5'-9"			22	32	6'-10"	5'-8"			6				10				6				22	32	5'-11"
				6'			22	32	5'-11"			22	32	7'-0"	5'-10"			6				12				6			11"	24	36	6'-11"
				7'			22	32	6'-0"			22	32	7'-1"	5'-11"			6				14				6		#5	12"	22	32	7'-11"
			1 @ 6'	4'	#6	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-1"
				5'			22	32	6'-9"			22	32	7'-10"	6'-8"			7				10				7				22	32	6'-1"
				6'			22	32	6'-11"			22	32	8'-0"	6'-10"			7				12				7			10"	28	40	7'-1"
				7'			22	32	7'-0"			22	32	8'-1"	6'-11"			7				14				7		#5	11"	24	34	8'-1"
				8'			22	32	7'-1"			22	32	8'-2"	7'-0"			7				16				7		#6	12"	22	32	9'-1"
SECTION "C" & BAR GROUP "C"	3:1 = 11'-0" 4:1 = 16'-0"	15'-0" TO 20'-0"	1 @ 4'	3'	#5	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				10				5			10"	28	40	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"			5				12				5		#5	12"	22	32	6'-10"
			1 @ 5'	3'	#5	11"	24	36	5'-9"	#6	11"	24	34	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-0"
				4'			24	36	5'-9"			24	34	6'-10"	5'-8"			6				8				6				22	32	5'-0"
				5'			24	36	5'-9"			24	34	6'-10"	5'-8"			6				10				6			11"	24	36	6'-0"
				6'			24	36	5'-11"			24	34	7'-0"	5'-10"			6				12				6		#5	12"	22	32	7'-0"
				7'			24	36	6'-0"			24	34	7'-1"	5'-11"			6				14				6		#6	12"	22	32	8'-0"
			1 @ 6'	4'	#6	11"	24	36	6'-9"	#6	11"	24	34	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-2"
				5'			24	36	6'-9"			24	34	7'-10"	6'-8"			7				10				7				22	32	6'-2"
				6'			24	36	6'-11"			24	34	8'-0"	6'-10"			7				12				7		#5	12"	22	32	7'-2"
				7'			24	36	7'-0"			24	34	8'-1"	6'-11"			7				14				7		#6	12"	22	32	8'-2"
				8'			24	36	7'-1"			24	34	8'-2"	7'-0"			7				16				7			10"	26	38	9'-2"
SECTION "D" & BAR GROUP "D"	3:1 = 11'-0" 4:1 = 16'-0"	20'-0" TO 25'-0"	1 @ 4'	3'	#5	11"	24	36	4'-9"	#5	11"	24	34	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-11"
				4'			24	36	4'-9"			24	34	5'-8"	4'-8½"			5				8				5				22	32	4'-11"
				5'			24	36	4'-9"			24	34	5'-8"	4'-8½"			5				10				5		#5	12"	22	32	5'-11"
				6'			24	36	4'-11"			24	34	5'-10"	4'-10½"			5				12				5			10"	26	38	6'-11"
			1 @ 5'	3'	#6	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-1"
				4'			22	32	5'-9"			22	32	6'-10"	5'-9"			6				8				6				22	32	5'-1"
				5'			22	32	5'-9"			22	32	6'-11"	5'-9"			6				10				6			11"	24	34	6'-1"
				6'			22	32	5'-11"			22	32	7'-1"	5'-11"			6				12				6		#5	11"	24	34	7'-1"
				7'			22	32	6'-1"			22	32	7'-2"	6'-0"			6				14				6		#6	12"	22	32	8'-1"
			1 @ 6'	4'	#7	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-4"
				5'			22	32	6'-10"			22	32	7'-11"	6'-9"			7				10				7				22	32	6'-4"
				6'			22	32	6'-11"			22	32	8'-1"	6'-11"			7				12				7		#5	12"	22	32	7'-4"
				7'			22	32	7'-1"			22	32	8'-2"	7'-0"			7				14				7		#6	12"	22	32	8'-4"
				8'			22	32	7'-2"			22	32	8'-4"	7'-2"			7				16				7			10"	26	40	9'-4"
SECTION "E" & BAR GROUP "E"	3:1 = 11'-0" 4:1 = 16'-0"	25'-0" TO 30'-0"	1 @ 4'	3'	#6	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-0"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"			5				8				5				22	32	5'-0"
				5'			22	32	4'-10"			22	32	5'-9"	4'-9½"			5				10				5		#5	12"	22	32	6'-0"
				6'			22	32	5'-0"			22	32	5'-11"	4'-11½"			5				12				5		#6	12"	22	32	7'-0"
			1 @ 5'	3'	#6	11"	24	34	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-3"
				4'			24	34	5'-9"			24	36	6'-10"	5'-8"			6				8				6				22	32	5'-3"
				5'			24	34	5'-10"			24	36	7'-0"	5'-10"			6				10				6			10"	28	40	6'-3"
				6'			24	34	6'-0"			24	36	7'-2"	6'-0"			6				12				6		#5	11"	24	36	7'-3"
				7'			24	34	6'-2"			24	36	7'-3"	6'-1"			6				14				6		#6	11"	24	34	8'-3"
			1 @ 6'	4'	#7	11"	24	34	6'-9"	#6	11"	24	36	7'-10"	6'-8"	#4	11"	8		#4	12"	8		#4	11"	8		#4	12"	22	32	5'-5"
				5'			24	34	6'-11"			24	36	8'-0"	6'-10"			8				10				8			11"	24	36	6'-5"
				6'			24	34	7'-1"			24	36	8'-2"	7'-0"			8				12				8		#5	12"	22	32	7'-5"
				7'			24	34	7'-2"			24	36	8'-4"	7'-2"			8				14				8		#6	12"	22	32	8'-5"
				8'			24	34	7'-4"			24	36	8'-5"	7'-3"			8				16				8			10"	26	38	9'-5"
SECTION "F" & BAR GROUP "F"	3:1 = 11'-0" 4:1 = 16'-0"	30'-0" TO 35'-0"	1 @ 4'	3'	#6	13"	20	30	4'-9"	#6	13"	20	30	5'-10"	4'-8"	#4	12	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-1"
				4'			20	30	4'-9"			20	30	5'-10"	4'-8"			5				8				5				22	32	5'-1"
				5'			20	30	4'-11"			20	30	6'-0"	4'-10"			5				10				5		#5	12"	22	32	6'-1"
				6'			20	30	5'-1"			20	30	6'-2"	5'-0"			5				12				5		#6	12"	22	32	7'-1"
			1 @ 5'	3'	#7	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"	22	32	4'-4"
				4'			22	32	5'-9"			22	32	6'-11"	5'-9"			7				8				7				22	32	5'-4"
				5'			22	32	5'-11"			22	32	7'-1"	5'-11"			7				10				7			10"	26	36	6'-4"
				6'			22	32	6'-1"			22	32	7'-3"	6'-1"			7				12				7		#5	11"	24	34	7'-4"
				7'			22	32	6'-3"			22	32	7'-4"	6'-2"			7				14				7		#6	11"	24	36	8'-4"
	Varies with Length of Barrel	30'-0"	1 @ 6'	4'	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	6'-10"	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	8'-1"	6'-9"	#4	9½"	9	Varies with Length of Barrel	#4	12"	8	Varies with Length of Barrel	#4	9½"	9	Varies with Length of Barrel	#4	12"	Varies with Length of Barrel	Varies with Length of Barrel	5'-7"
				5'					7'-0"					8'-3"	6'-11"			9				10				9			10"			6'-7"
				6'					7'-2"					8'-5"	7'-1"			9				12				9		#5	12"			7'-7"
				7'					7'-4"					8'-7"	7'-3"			9				14				9		#6	12"			8'-7"
				8'					7'-5"					8'-8"	7'-4"			9				16				9			10"			9'-7"
SECTION "G" & BAR GROUP "G"	Varies with Length of Barrel	35'-0" TO 40'-0"	1 @ 4'	3'	#6	12"			4'-9"	#6	12"			5'-10"	4'-8"	#4	10½"	6		#4	12"	6		#4	10½"	6		#4	12"			4'-2"
				4'					4'-10"					5'-11"	4'-9"			6				8				6						5'-2"
				5'					5'-0"					6'-1"	4'-11"			6				10				6		#5	12"			6'-2"
				6'					5'-2"					6'-3"	5'-1"			6				12				6		#6	12"			7'-2"
			1 @ 5'	3'	#7	11"			5'-9"	#6	11"			6'-10"	5'-8"	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"			4'-5"
				4'					5'-10"					7'-0"	5'-10"			7				8				7						5'-5"
				5'					6'-0"					7'-2"	6'-0"			7				10				7			10"			6'-5"
				6'					6'-2"					7'-4"	6'-2"			7				12				7		#5	11"			7'-5"
				7'					6'-4"					7'-5"	6'-3"			7				14				7		#6	11"			8'-5"

NOTE:- Bars for each Section to be marked with the Section Letter, thus for Section B, the bars should be marked Ba, Bb, Bd, Bd1, Be and Bf.

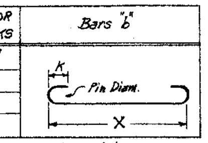
Designed By:- W.C.H. 9-5-62 Checked By:- RHS 11-8-62
Drawn By:- W.C.H. 10-10-62 Checked By:- J.Z.M. 11-12-62
Quantities By:- W.C.H. 11-7-62 Checked By:- J.Z.M. 11-16-62

DIMENSIONS QUANTITIES

Section	Max. Design Depth of Cover D	Clear Span S	Clear Height H	Sq. Ft. Opening A	Overall Width OW	Thickness of Top Slab T	Thickness of Sidewalls C	Thickness of Bottom Slab B	Overall Height OH	Class S Conc. per Lin. Ft. of Barrel CU.YD.	Reinforcing Steel per Lin. Ft. of Barrel LB.	Additional per Lap LB.	Additional Two Headwalls & Aprons LB.
SECTION "A"	10'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	29.62	13.36	51.44
			4'	16	5'-0"		6"		5'-1"	0.349	32.29	15.03	51.44
			5'	20	5'-0"		6"		6'-1"	0.386	34.96	16.70	51.44
			6'	24	5'-2"		7"		7'-1"	0.467	38.08	18.37	52.33
		1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	43.16	15.03	79.37
			4'	20	6'-0"		6"		5'-2"	0.407	45.83	16.70	79.37
			5'	25	6'-0"		6"		6'-2"	0.444	48.50	18.37	79.37
			6'	30	6'-2"		7"		7'-2"	0.526	51.87	20.04	80.77
			7'	35	6'-3"		7½"		8'-2"	0.594	57.00	21.71	81.46
		1 @ 6'	4'	24	7'-0"	7½"	6"	7½"	5'-3"	0.472	58.99	18.37	93.29
			5'	30	7'-0"		6"		6'-3"	0.509	61.66	20.04	93.29
			6'	36	7'-2"		7"		7'-3"	0.591	65.18	21.71	94.68
			7'	42	7'-3"		7½"		8'-3"	0.660	70.41	23.38	95.37
			8'	48	7'-4"		8"		9'-3"	0.735	79.83	25.05	96.07
SECTION "B"	15'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	33.98	13.36	
			4'	16	5'-0"		6"		5'-1"	0.349	36.65	15.03	
			5'	20	5'-0"		6"		6'-1"	0.386	39.32	16.70	
			6'	24	5'-2"		7"		7'-1"	0.467	44.39	18.37	
		1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	49.78	15.03	
			4'	20	6'-0"		6"		5'-2"	0.407	52.45	16.70	
			5'	25	6'-0"		6"		6'-2"	0.444	55.12	18.37	
			6'	30	6'-2"		7"		7'-2"	0.526	59.48	20.04	
			7'	35	6'-3"		7½"		8'-2"	0.594	67.68	21.71	
		1 @ 6'	4'	24	7'-0"	8"	6"	8¼"	5'-4½"	0.499	65.30	18.37	
			5'	30	7'-0"		6"		6'-4½"	0.536	66.63	20.04	
			6'	36	7'-2"		7"		7'-4½"	0.619	73.53	21.71	
			7'	42	7'-3"		7½"		8'-4½"	0.688	82.41	23.38	
			8'	48	7'-4"		8"		9'-4½"	0.763	93.19	25.05	
SECTION "C"	20'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6¾"	4'-1¼"	0.316	37.54	13.36	
			4'	16	5'-0"		6"		5'-1¼"	0.353	40.21	15.03	
			5'	20	5'-0"		6"		6'-1¼"	0.390	44.44	16.70	
			6'	24	5'-2"		7"		7'-1¼"	0.471	51.38	18.37	
		1 @ 5'	3'	15	6'-0"	7½"	6"	7¾"	4'-3¾"	0.394	52.85	15.03	
			4'	20	6'-0"		6"		5'-3¾"	0.431	55.52	16.70	
			5'	25	6'-0"		6"		6'-3¾"	0.468	58.92	18.37	
			6'	30	6'-2"		7"		7'-3¾"	0.550	67.04	20.04	
			7'	35	6'-3"		7½"		8'-3¾"	0.618	78.27	21.71	
		1 @ 6'	4'	24	7'-0"	8½"	6"	9"	5'-5½"	0.526	69.39	18.37	
			5'	30	7'-0"		6"		6'-5½"	0.563	72.06	20.04	
			6'	36	7'-2"		7"		7'-5½"	0.646	81.20	21.71	
			7'	42	7'-3"		7½"		8'-5½"	0.716	92.67	23.38	
			8'	48	7'-4"		8"		9'-5½"	0.791	103.06	25.05	
SECTION "D"	25'-0"	1 @ 4'	3'	12	5'-0"	6¾"	6"	7¼"	4'-2"	0.327	39.63	13.36	
			4'	16	5'-0"		6"		5'-2"	0.364	42.30	15.03	
			5'	20	5'-0"		6"		6'-2"	0.401	49.41	16.70	
			6'	24	5'-2"		7"		7'-2"	0.483	55.14	18.37	
		1 @ 5'	3'	15	6'-0"	8"	6"	8¼"	4'-4¼"	0.417	55.28	15.03	
			4'	20	6'-0"		6"		5'-4¼"	0.454	57.95	16.70	
			5'	25	6'-0½"		6½"		6'-4¼"	0.501	61.61	18.37	
			6'	30	6'-2½"		7½"		7'-4¼"	0.585	71.20	20.04	
			7'	35	6'-4"		8"		8'-4¼"	0.668	81.45	21.71	
		1 @ 6'	4'	24	7'-0"	9¼"	6"	9¾"	5'-7"	0.559	72.95	18.37	
			5'	30	7'-1"		6½"		6'-7"	0.616	76.21	20.04	
			6'	36	7'-2½"		7¼"		7'-7"	0.691	85.22	21.71	
			7'	42	7'-4"		8"		8'-7"	0.776	97.23	23.38	
			8'	48	7'-5½"		8¾"		9'-7"	0.869	108.02	25.05	
SECTION "E"	30'-0"	1 @ 4'	3'	12	5'-0"	7¼"	6"	7¾"	4'-3"	0.343	42.12	13.36	
			4'	16	5'-0"		6"		5'-3"	0.380	44.78	15.03	
			5'	20	5'-1"		6½"		6'-3"	0.436	52.39	16.70	
			6'	24	5'-3"		7½"		7'-3"	0.521	63.09	18.37	
		1 @ 5'	3'	15	6'-0"	8¾"	6"	9¼"	4'-6"	0.444	58.94	15.03	
			4'	20	6'-0"		6"		5'-6"	0.481	61.61	16.70	
			5'	25	6'-1½"		6¾"		6'-6"	0.549	66.77	18.37	
			6'	30	6'-3½"		7¾"		7'-6"	0.637	75.68	20.04	
			7'	35	6'-5"		8½"		8'-6"	0.724	88.37	21.71	
		1 @ 6'	4'	24	7'-0"	10"	6"	10½"	5'-8½"	0.591	79.04	20.04	
			5'	30	7'-2"		7"		6'-8½"	0.669	83.78	21.71	
			6'	36	7'-4"		8"		7'-8½"	0.760	92.53	23.38	
			7'	42	7'-5½"		8¾"		8'-8½"	0.850	104.59	25.05	
			8'	48	7'-7"		9½"		9'-8½"	0.949	115.61	26.72	
SECTION "F"	35'-0"	1 @ 4'	3'	12	5'-0"	7¾"	6"	8¼"	4'-4"	0.358	45.49	13.36	
			4'	16	5'-0"		6"		5'-4"	0.395	48.16	15.03	
			5'	20	5'-2"		7"		6'-4"	0.471	56.32	16.70	
			6'	24	5'-4"		8"		7'-4"	0.560	67.17	18.37	
		1 @ 5'	3'	15	6'-0"	9¼"	6"	9¾"	4'-7"	0.463	63.18	16.70	
			4'	20	6'-0½"		6¼"		5'-7"	0.509	66.11	18.37	
			5'	25	6'-2½"		7¼"		6'-7"	0.588	71.65	20.04	
			6'	30	6'-4½"		8¼"		7'-7"	0.679	80.70	21.71	
			7'	35	6'-6"		9"		8'-7"	0.770	93.59	23.38	
		1 @ 6'	4'	24	7'-1"	10¾"	6½"	11¼"	5'-10"	0.641	85.81	21.71	
			5'	30	7'-3"		7½"		6'-10"	0.724	91.60	23.38	
			6'	36	7'-5"		8½"		7'-10"	0.818	99.56	25.05	
			7'	42	7'-7"		9½"		8'-10"	0.925	112.23	26.72	
			8'	48	7'-8½"		10¼"		9'-10"	1.030	123.01	28.39	
SECTION "G"	40'-0"	1 @ 4'	3'	12	5'-0"	8¼"	6"	8¾"	4'-5"	0.373	49.38	15.03	
			4'	16	5'-1"		6½"		5'-5"	0.427	52.56	16.70	
			5'	20	5'-3"		7½"		6'-5"	0.507	60.85	18.37	
			6'	24	5'-5"		8½"		7'-5"	0.599	71.86	20.04	
		1 @ 5'	3'	15	6'-0"	9¾"	6"	10¼"	4'-8"	0.481	67.30	16.70	
			4'	20	6'-1½"		6¾"		5'-8"	0.545	70.89	18.37	
			5'	25	6'-3½"		7¾"		6'-8"	0.628	76.56	20.04	
			6'	30	6'-5½"		8¾"		7'-8"	0.723	85.78	21.71	
			7'	35	6'-7"		9½"		8'-8"	0.817	98.84	23.38	

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X003-1, and W-X004-1.

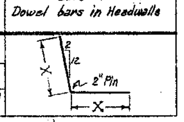
Bar Size	Pin Diam.	K	Add for 2 Hooks	Bars "b"
#4	2"	4"	0'-10½"	
#5	2½"	4¾"	0'-11½"	
#6	3"	5"	1'-2"	
#7	3½"	5¾"	1'-4"	

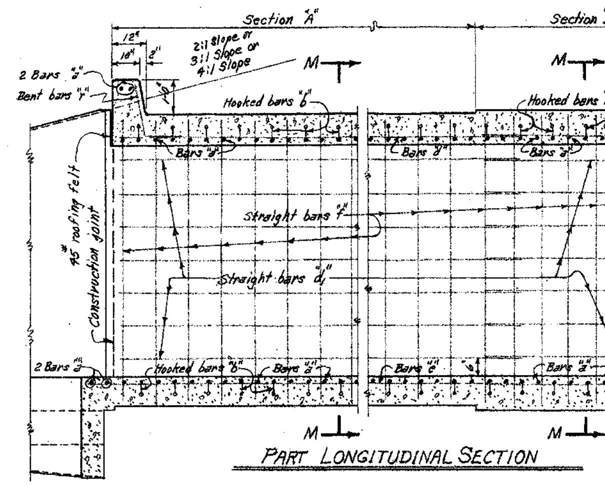


NOTE:- Dimensions are to centers of bars.

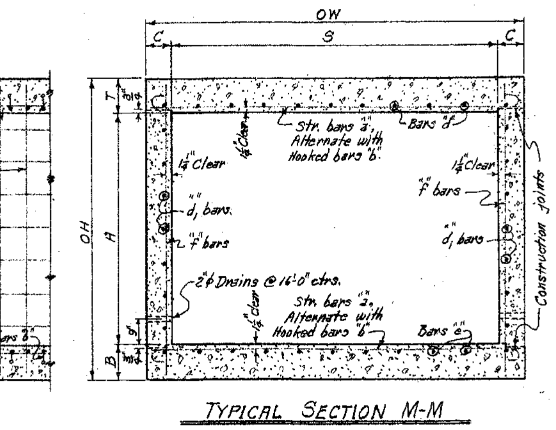
DOWEL BARS FOR TWO HEADWALLS

Span	Size	Spacing	No. Req'd	Length	X	Bars "r" Dowel bars in Headwalls
4'	#4	11"±	12	2'-5"	1'-2½"	
5'	#4	11½"±	14	2'-6"	1'-3"	
6'	#4	12"±	16	2'-7"	1'-3⅛"	

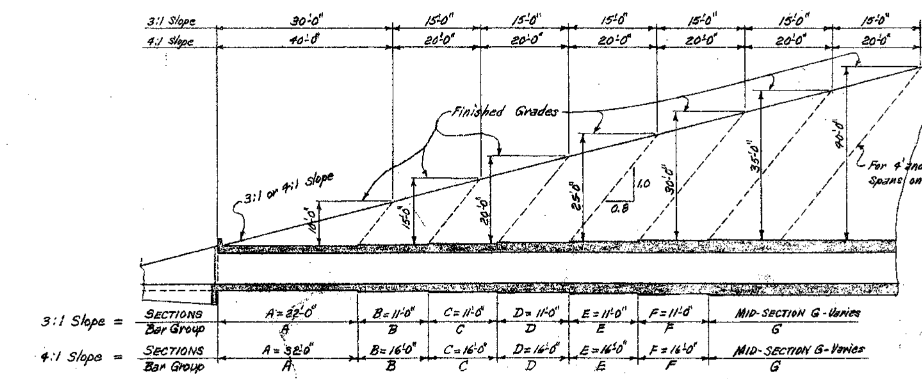




PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



TYPICAL LONGITUDINAL SECTION-SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections, with Bar Groups to be shown on Cross Section Sheets.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

Depths of Cover	Sections & Bar Groups for End Sections A	B	C	D	E	F	Mid-Section and Bar Group
5.0' to 9.5'	✓						A
10.0' to 14.5'	✓						B
15.0' to 19.5'	✓	✓					C
20.0' to 24.5'	✓	✓	✓				D
25.0' to 29.5'	✓	✓	✓	✓			E
30.0' to 34.5'	✓	✓	✓	✓	✓		F
35.0' to 40.0'	✓	✓	✓	✓	✓	✓	G

LENGTH OF SECTIONS FOR SKEWED CULVERTS

Skew Angle	Sec. of Skew Angle	3:1 Slopes Sections A	3:1 Slopes Sections B,C,D,E, or F	4:1 Slopes Sections A	4:1 Slopes Sections B,C,D,E, or F
0°	1.0	22.0'	11.0'	32.0'	16.0'
15°	1.0353	22.776'	11.388'	33.129'	16.564'
30°	1.1547	25.403'	12.702'	36.950	18.475'
45°	1.4142	31.113'	15.556'	45.255'	22.627'

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" Ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5' & 6' SPANS — 3:1 OR 4:1 SLOPES
SINGLES — OVER 5'-0" COVER

STANDARD DRAWING NO. R-100X-X1

RESHOT 3-5-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

NOTE:- Bars for each Section to be marked with the Section letter, thus for Section B, the bars should be marked Ba, Bb, Bb2, Bc, Bd, Bd1, Be and Bf.

BAR LIST FOR VARIOUS SECTIONS OF BARREL

"a" bars — STRAIGHT — In Top and Bottom Slab of Barrel, 2 Add'l in Apron and Headwall - Each.
"b" bars — BENT - See Diagram below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars.

SECTION & BAR GROUP	LENGTHS OF SECTION	DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" SIZE	"a" SPACING	"a" NUMBER REQ'D 3:1	"a" NUMBER REQ'D 4:1	"a" LENGTH	"b" SIZE	"b" SPACING	"b" NUMBER REQ'D 3:1	"b" NUMBER REQ'D 4:1	"b" LENGTH	X	Y	Z
SECTION "A" & BAR GROUP "A"	3:1 = 22'-0"; 4:1 = 32'-0"	0' TO 10'-0"	2 @ 8'	5'	#5	13"	46	64	17'-8"	#6	13"	20	29	19'-1"	0'-5¾"	3'-8"	6'-6"
				6'			46	64	17'-8"			20	29	19'-1"	0'-5¾"	3'-8"	6'-6"
				7'			46	64	17'-10"			20	29	19'-3"	0'-5¾"	3'-9"	6'-6½"
				8'			46	64	17'-11"			20	29	19'-4"	0'-5¾"	3'-9"	6'-7"
				9'			46	64	18'-2"			20	29	19'-7"	0'-5¾"	3'-10"	6'-8"
				10'			46	64	18'-5"			20	29	19'-10"	0'-5¾"	3'-11"	6'-9"
			2 @ 10'	6'	#5	12"	48	68	21'-10"	#6	12"	22	32	23'-4"	0'-7¼"	4'-7¼"	7'-11½"
				7'			48	68	21'-10"			22	32	23'-4"	0'-7¼"	4'-7¼"	7'-11½"
				8'			48	68	21'-11"			22	32	23'-5"	0'-7¼"	4'-7¼"	8'-0"
				9'			48	68	22'-2"			22	32	23'-8"	0'-7¼"	4'-8¼"	8'-1"
				10'			48	68	22'-5"			22	32	23'-11"	0'-7¼"	4'-9¼"	8'-2"
				11'			48	68	22'-7"			22	32	24'-1"	0'-7¼"	4'-9¼"	8'-3"
				12'			48	68	22'-9"			22	32	24'-3"	0'-7¼"	4'-9¼"	8'-4"
			2 @ 12'	6'	#5	11"	52	74	25'-11"	#7	11"	24	35	27'-8"	0'-8¾"	5'-1¾"	9'-6"
				7'			52	74	25'-11"			24	35	27'-8"	0'-8¾"	5'-1¾"	9'-6"
				8'			52	74	25'-11"			24	35	27'-8"	0'-8¾"	5'-1¾"	9'-6"
				9'			52	74	26'-2"			24	35	27'-11"	0'-8¾"	5'-2¾"	9'-7"
				10'			52	74	26'-5"			24	35	28'-2"	0'-8¾"	5'-3¾"	9'-8"
				11'			52	74	26'-7"			24	35	28'-4"	0'-8¾"	5'-3¾"	9'-9"
				12'			52	74	26'-9"			24	35	28'-6"	0'-8¾"	5'-3¾"	9'-10"
SECTION "B" & BAR GROUP "B"	3:1 = 11'-0"; 4:1 = 16'-0"	10'-0" TO 15'-0"	2 @ 8'	5'	#5	12"	22	32	17'-8"	#6	12"	11	16	19'-2"	0'-6¾"	3'-6"	6'-6"
				6'			22	32	17'-8"			11	16	19'-2"	0'-6¾"	3'-6"	6'-6"
				7'			22	32	17'-10"			11	16	19'-4"	0'-6¾"	3'-7"	6'-6½"
				8'			22	32	17'-11"			11	16	19'-5"	0'-6¾"	3'-7"	6'-7"
				9'			22	32	18'-2"			11	16	19'-8"	0'-6¾"	3'-8"	6'-8"
				10'			22	32	18'-5"			11	16	19'-11"	0'-6¾"	3'-9"	6'-9"
			2 @ 10'	6'	#5	12"	22	32	21'-10"	#7	12"	11	16	23'-7"	0'-8¼"	4'-5¼"	7'-11½"
				7'			22	32	21'-10"			11	16	23'-7"	0'-8¼"	4'-5¼"	7'-11½"
				8'			22	32	21'-11"			11	16	23'-8"	0'-8¼"	4'-5¼"	8'-0"
				9'			22	32	22'-2"			11	16	23'-11"	0'-8¼"	4'-6¼"	8'-1"
				10'			22	32	22'-5"			11	16	24'-2"	0'-8¼"	4'-7¼"	8'-2"
				11'			22	32	22'-7"			11	16	24'-4"	0'-8¼"	4'-7¼"	8'-3"
				12'			22	32	22'-9"			11	16	24'-6"	0'-8¼"	4'-7¼"	8'-4"
			2 @ 12'	6'	#6	13"	20	30	25'-11"	#8	13"	10	15	28'-0"	0'-10½"	5'-1"	9'-6"
				7'			20	30	25'-11"			10	15	28'-0"	0'-10½"	5'-1"	9'-6"
				8'			20	30	25'-11"			10	15	28'-0"	0'-10½"	5'-1"	9'-6"
				9'			20	30	26'-3"			10	15	28'-3"	0'-10½"	5'-2"	9'-7"
				10'			20	30	26'-5"			10	15	28'-6"	0'-10½"	5'-3"	9'-8"
				11'			20	30	26'-7"			10	15	28'-8"	0'-10½"	5'-3"	9'-9"
				12'			20	30	26'-9"			10	15	28'-10"	0'-10½"	5'-3"	9'-10"
SECTION "C" & BAR GROUP "C"	3:1 = 11'-0"; 4:1 = 16'-0"	15'-0" TO 20'-0"	2 @ 8'	5'	#5	12"	22	32	17'-8"	#6	12"	11	16	19'-3"	0'-7¾"	3'-4"	6'-6"
				6'			22	32	17'-8"			11	16	19'-3"	0'-7¾"	3'-4"	6'-6"
				7'			22	32	17'-10"			11	16	19'-5"	0'-7¾"	3'-5"	6'-6½"
				8'			22	32	17'-11"			11	16	19'-6"	0'-7¾"	3'-5"	6'-7"
				9'			22	32	18'-2"			11	16	19'-9"	0'-7¾"	3'-6"	6'-8"
				10'			22	32	18'-5"			11	16	20'-0"	0'-7¾"	3'-7"	6'-9"
			2 @ 10'	6'	#6	13"	20	30	21'-11"	#8	13"	10	15	23'-11"	0'-9¾"	4'-2¼"	8'-0"
				7'			20	30	21'-11"			10	15	23'-11"	0'-9¾"	4'-2¼"	8'-0"
				8'			20	30	22'-0"			10	15	24'-0"	0'-9¾"	4'-2¼"	8'-0½"
				9'			20	30	22'-3"			10	15	24'-3"	0'-9¾"	4'-3¼"	8'-1½"
				10'			20	30	22'-6"			10	15	24'-6"	0'-9¾"	4'-4¼"	8'-2½"
				11'			20	30	22'-7"			10	15	24'-7"	0'-9¾"	4'-4¼"	8'-3"
				12'			20	30	22'-9"			10	15	24'-9"	0'-9¾"	4'-4¼"	8'-4"
			2 @ 12'	6'	#6	11"	24	34	25'-11"	#8	11"	12	17	28'-2"	1'-0¾"	4'-9½"	9'-6"
				7'			24	34	25'-11"			12	17	28'-2"	1'-0¾"	4'-9½"	9'-6"
				8'			24	34	26'-0"			12	17	28'-3"	1'-0¾"	4'-9½"	9'-6½"
				9'			24	34	26'-3"			12	17	28'-6"	1'-0¾"	4'-10½"	9'-7½"
				10'			24	34	26'-5"			12	17	28'-8"	1'-0¾"	4'-11½"	9'-8½"
				11'			24	34	26'-7"			12	17	28'-10"	1'-0¾"	4'-11½"	9'-9½"
				12'			24	34	26'-9"			12	17	29'-0"	1'-0¾"	4'-11½"	9'-10½"
SECTION "D" & BAR GROUP "D"	Varies with Length of Barrel	20'-0" TO 25'-0"	2 @ 8'	5'	#5	11"	Varies with length of Barrel.	Varies with length of Barrel.	17'-8"	#6	11"	Varies with length of Barrel.	Varies with length of Barrel.	19'-4"	0'-8¾"	3'-2"	6'-6"
				6'					17'-9"					19'-5"	0'-8¾"	3'-2"	6'-6½"
				7'					18'-0"					19'-8"	0'-8¾"	3'-3"	6'-7½"
				8'					18'-1"					19'-9"	0'-8¾"	3'-3"	6'-8"
				9'					18'-4"					20'-0"	0'-8¾"	3'-4"	6'-9"
				10'					18'-7"					20'-3"	0'-8¾"	3'-5"	6'-10"
			2 @ 10'	6'	#6	12"	Varies with length of Barrel.	Varies with length of Barrel.	21'-11"	#8	12"	Varies with length of Barrel.	Varies with length of Barrel.	24'-0"	0'-10¾"	4'-0¼"	8'-0"
				7'					22'-0"					24'-1"	0'-10¾"	4'-0¼"	8'-0½"
				8'					22'-1"					24'-3"	0'-10¾"	4'-0¼"	8'-1½"
				9'					22'-4"					24'-6"	0'-10¾"	4'-1¼"	8'-2½"
				10'					22'-7"					24'-9"	0'-10¾"	4'-2¼"	8'-3½"
				11'					22'-9"					24'-10"	0'-10¾"	4'-2¼"	8'-4"
				12'					22'-10"					25'-0"	0'-10¾"	4'-2¼"	8'-4½"
			2 @ 12'	6'	#6	10"	Varies with length of Barrel.	Varies with length of Barrel.	25'-11"	#8	10"	Varies with length of Barrel.	Varies with length of Barrel.	28'-3"	1'-1¾"	4'-6½"	9'-6"
				7'					26'-0"					28'-4"	1'-1¾"	4'-6½"	9'-6¾"
				8'					26'-2"					28'-6"	1'-1¾"	4'-6½"	9'-7½"
				9'					26'-5"					28'-9"	1'-1¾"	4'-7½"	9'-8½"
				10'					26'-7"					28'-11"	1'-1¾"	4'-8½"	9'-9½"
				11'					26'-9"					29'-1"	1'-1¾"	4'-8½"	9'-10½"
				12'					26'-11"					29'-3"	1'-1¾"	4'-8½"	9'-11½"

"b2" bars — BENT - See Diagram below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "a" and "c" bars.
"c" bars — STRAIGHT — In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars.

SECTION	S	H	"b2" SIZE	"b2" SPACING	"b2" NUMBER REQ'D 3:1	"b2" NUMBER REQ'D 4:1	"b2" LENGTH	X	Y	Z	"c" SIZE	"c" SPACING	"c" NUMBER REQ'D 3:1	"c" NUMBER REQ'D 4:1	"c" LENGTH
A	2 @ 8'	5'	#6	13"	20	29	19'-2"	0'-6¾"	3'-7"	6'-6"	#7	13"	42	60	8'-9"
		6'			20	29	19'-2"	0'-6¾"	3'-7"	6'-6"			42	60	8'-9"
		7'			20	29	19'-4"	0'-6¾"	3'-8"	6'-6½"			42	60	8'-10"
		8'			20	29	19'-5"	0'-6¾"	3'-8"	6'-7"			42	60	8'-10"
		9'			20	29	19'-8"	0'-6¾"	3'-9"	6'-8"			42	60	8'-11"
		10'			20	29	19'-11"	0'-6¾"	3'-10"	6'-9"			42	60	9'-0"
	2 @ 10'	6'	#6	12"	22	32	23'-5"	0'-8"	4'-6"	7'-11½"	#8	12"	44	64	10'-10"
		7'			22	32	23'-5"	0'-8"	4'-6"	7'-11½"			44	64	10'-10"
		8'			22	32	23'-6"	0'-8"	4'-6"	8'-0"			44	64	10'-10"
		9'			22	32	23'-9"	0'-8"	4'-7"	8'-1"			44	64	10'-11"
		10'			22	32	24'-0"	0'-8"	4'-8"	8'-2"			44	64	11'-0"
		11'			22	32	24'-2"	0'-8"	4'-8"	8'-3"			44	64	11'-0"
		12'			22	32	24'-4"	0'-8"	4'-8"	8'-4"			44	64	11'-0"
	2 @ 12'	6'	#7	11"	24	35	27'-9"	0'-9¾"	5'-2¾"	9'-6"	#8	11"	48	70	12'-10"
		7'			24	35	27'-9"	0'-9¾"	5'-2¾"	9'-6"			48	70	12'-10"
		8'			24	35	27'-9"	0'-9¾"	5'-2¾"	9'-6"			48	70	12'-10"
		9'			24	35	28'-0"	0'-9¾"	5'-3¾"	9'-7"			48	70	12'-11"
		10'			24	35	28'-3"	0'-9¾"	5'-4¾"	9'-8"			48	70	13'-0"
		11'			24	35	28'-5"	0'-9¾"	5'-4¾"	9'-9"			48	70	13'-0"
		12'			24	35	28'-7"	0'-9¾"	5'-4¾"	9'-10"			48	70	13'-0"
B	2 @ 8'	5'	#6	12"	11	16	19'-3"	0'-7¾"	3'-5"	6'-6"	#7	12"	22	32	8'-9"
		6'			11	16	19'-3"	0'-7¾"	3'-5"	6'-6"			22	32	8'-9"
		7'			11	16	19'-5"	0'-7¾"	3'-6"	6'-6½"			22	32	8'-10"
		8'			11	16	19'-6"	0'-7¾"	3'-6"	6'-7"			22	32	8'-10"
		9'			11	16	19'-9"	0'-7¾"	3'-7"	6'-8"			22	32	8'-11"
		10'			11	16	20'-0"	0'-7¾"	3'-8"	6'-9"			22	32	9'-0"
	2 @ 10'	6'	#7	12"	11	16	23'-8"	0'-9¼"	4'-3¼"	7'-11½"	#8	12"	22	32	10'-10"
		7'			11	16	23'-8"	0'-9¼"	4'-3¼"	7'-11½"			22	32	10'-10"
		8'			11	16	23'-9"	0'-9¼"	4'-3¼"	8'-0"			22	32	10'-10"
		9'			11	16	24'-0"	0'-9¼"	4'-4¼"	8'-1"			22	32	10'-11"
		10'			11	16	24'-3"	0'-9¼"	4'-5¼"	8'-2"			22	32	11'-0"
		11'			11	16	24'-5"	0'-9¼"	4'-5¼"	8'-3"			22	32	11'-0"
		12'			11	16	24'-7"	0'-9¼"	4'-5¼"	8'-4"			22	32	11'-0"
	2 @ 12'	6'	#8	13"	10	15	28'-1"	0'-11½"	4'-11½"	9'-6"	#9	13"	20	30	12'-10"
		7'			10	15	28'-1"	0'-11½"	4'-11½"	9'-6"			20	30	12'-10"
		8'			10	15	28'-1"	0'-11½"	4'-11½"	9'-6"			20	30	12'-10"
		9'			10	15	28'-4"	0'-11½"	5'-0½"	9'-7"			20	30	12'-11"
		10'			10	15	28'-7"	0'-11½"	5'-1½"	9'-8"			20	30	13'-0"
		11'			10	15	28'-9"	0'-11½"	5'-1½"	9'-9"			20	30	13'-0"
		12'			10	15	28'-11"	0'-11½"	5'-1½"	9'-10"			20	30	13'-0"
C	2 @ 8'	5'	#6	12"	11	16	19'-3"	0'-8¾"	3'-3"	6'-6"	#8	12"	22	32	8'-9"
		6'			11	16	19'-3"	0'-8¾"	3'-3"	6'-6"			22	32	8'-9"
		7'			11	16	19'-5"	0'-8¾"	3'-4"	6'-6½"			22	32	8'-10"
		8'			11	16	19'-6"	0'-8¾"	3'-4"	6'-7"			22	32	8'-10"
		9'			11	16	19'-9"	0'-8¾"	3'-5"	6'-8"			22	32	8'-11"
		10'			11	16	20'-0"	0'-8¾"	3'-6"	6'-9"			22	32	9'-0"
	2 @ 10'	6'	#8	13"	10	15	24'-0"	0'-10¾"	4'-1"	8'-0"	#9	13"	20	30	10'-10"
		7'			10	15	24'-0"	0'-10¾"	4'-1"	8'-0"			20	30	10'-10"
		8'			10	15	24'-1"	0'-10¾"	4'-1"	8'-0½"			20	30	10'-10"
		9'			10	15	24'-4"	0'-10¾"	4'-2"	8'-1½"			20	30	10'-11"
		10'			10	15	24'-7"	0'-10¾"	4'-3"	8'-2½"			20	30	11'-0"
		11'			10	15	24'-8"	0'-10¾"	4'-3"	8'-3"			20	30	11'-0"
		12'			10	15	24'-10"	0'-10¾"	4'-3"	8'-4"			20	30	11'-0"
	2 @ 12'	6'	#8	11"	12	17	28'-2"	1'-0¾"	4'-8½"	9'-6"	#9	11"	24	34	12'-10"
		7'			12	17	28'-2"	1'-0¾"	4'-8½"	9'-6"			24	34	12'-10"
		8'			12	17	28'-3"	1'-0¾"	4'-8½"	9'-6½"			24	34	12'-10"
		9'			12	17	28'-6"	1'-0¾"	4'-9½"	9'-7½"			24	34	12'-11"
		10'			12	17	28'-8"	1'-0¾"	4'-10½"	9'-8½"			24	34	13'-0"
		11'			12	17	28'-10"	1'-0¾"	4'-10½"	9'-9½"			24	34	13'-0"
		12'			12	17	29'-0"	1'-0¾"	4'-10½"	9'-10½"			24	34	13'-0"
D	2 @ 8'	5'	#6	11"	Varies with length of Barrel.	Varies with length of Barrel.	19'-4"	0'-9¾"	3'-1"	6'-6"	#8	11"	Varies with length of Barrel.	Varies with length of Barrel.	8'-9"
		6'					19'-5"	0'-9¾"	3'-1"	6'-6½"					8'-9"
		7'					19'-8"	0'-9¾"	3'-2"	6'-7½"					8'-10"
		8'					19'-9"	0'-9¾"	3'-2"	6'-8"					8'-10"
		9'					20'-0"	0'-9¾"	3'-3"	6'-9"					8'-11"
		10'					20'-3"	0'-9¾"	3'-4"	6'-10"					9'-0"
	2 @ 10'	6'	#8	12"	Varies with length of Barrel.	Varies with length of Barrel.	24'-1"	0'-11¾"	3'-11"	8'-0"	#9	12"	Varies with length of Barrel.	Varies with length of Barrel.	10'-10"
		7'					24'-2"	0'-11¾"	3'-11"	8'-0½"					10'-10"
		8'					24'-3"	0'-11¾"	3'-11"	8'-1½"					10'-10"
		9'					24'-6"	0'-11¾"	4'-0"	8'-2½"					10'-11"
		10'					24'-9"	0'-11¾"	4'-1"	8'-3½"					11'-0"
		11'					24'-11"	0'-11¾"	4'-1"	8'-4"					11'-0"
		12'					25'-0"	0'-11¾"	4'-1"	8'-4½"					11'-0"
	2 @ 12'	6'	#8	10"	Varies with length of Barrel.	Varies with length of Barrel.	28'-3"	1'-2¾"	4'-5½"	9'-6"	#9	10"	Varies with length of Barrel.	Varies with length of Barrel.	12'-10"
		7'					28'-5"	1'-2¾"	4'-5½"	9'-6¾"					12'-10"
		8'					28'-6"	1'-2¾"	4'-5½"	9'-7½"					12'-10"
		9'					28'-9"	1'-2¾"	4'-6½"	9'-8½"					12'-11"
		10'					29'-0"	1'-2¾"	4'-7½"	9'-9½"					13'-0"
		11'					29'-2"	1'-2¾"	4'-7½"	9'-10½"					13'-0"
		12'					29'-4"	1'-2¾"	4'-7½"	9'-11½"					13'-0"

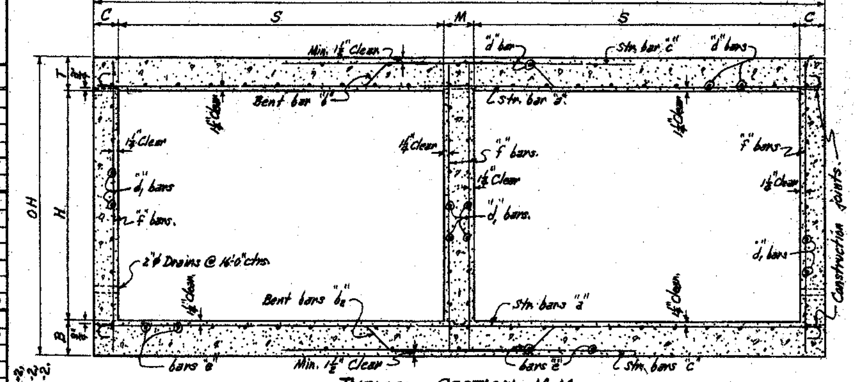
"d" bars — STRAIGHT — Longitudinal in Top Slab of Barrel. "d1" bars — STRAIGHT — Longitudinal in Sidewalls and Division Walls. "e" bars — STRAIGHT — Longitudinal in Bottom Slab of Barrel. "f" bars — STRAIGHT — Vertical in Sidewalls and Division Walls.

SECTION	S	H	"d" SIZE	"d" SPACING	"d" No. REQ'D	"d" LENGTH	"d1" SIZE	"d1" SPACING	"d1" No. REQ'D	"d1" LENGTH	"e" SIZE	"e" SPACING	"e" No. REQ'D	"e" LENGTH	"f" SIZE	"f" SPACING	"f" NUMBER REQ'D 3:1	"f" NUMBER REQ'D 4:1	"f" LENGTH
A	2 @ 8'	5'	#4	12"	23	33'-3" for 32'-0" Section	#4	12"	20	33'-3" for 32'-0" Section	#4	12"	23	34'-3" for 32'-0" Section	#4	12"	88	128	6'-4"
		6'			23				24				23			12"	88	128	7'-4"
		7'			23				28				23			10"	108	156	8'-4"
		8'			23				32				23		#5	11"	96	140	9'-4"
		9'			23				36				23			10"	108	156	10'-4"
		10'			23				40				23		#6	12"	88	128	11'-4"
	2 @ 10'	6'	#4	12"	27		#4	12"	24		#4	12"	27		#4	12"	88	128	7'-7"
		7'			27				28				27			10"	108	156	8'-7"
		8'			27				32				27		#5	12"	88	128	9'-7"
		9'			27				36				27			10"	108	156	10'-7"
		10'			27				40				27			12"	88	128	11'-7"
		11'			27				44				27		#6	11"	96	140	12'-7"
		12'			27				48				27			10"	108	156	13'-7"
	2 @ 12'	6'	#4	12"	31		#4	12"	24		#4	12"	31		#4	12"	88	128	7'-11"
		7'			31				28				31				88	128	8'-11"
		8'			31				32				31		#5	12"	88	128	9'-11"
		9'			31				36				31			10"	108	156	10'-11"
		10'			31				40				31			12"	88	128	11'-11"
		11'			31				44				31		#6	11"	96	140	12'-11"
		12'			31				48				31			9"	120	172	13'-11"
B	2 @ 8'	5'	#4	12"	23	34'-3" for 33'-0" Length Section	#4	12"	20	34'-3" for 33'-0" Length Section	#4	12"	23	34'-3" for 33'-0" Length Section	#4	12"	44	64	6'-6"
		6'			23				24				23				44	64	7'-6"
		7'			23				28				23		#5	12"	44	64	8'-6"
		8'			23				32				23			9"	60	84	9'-6"
		9'			23				36				23		#6	11"	48	68	10'-6"
		10'			23				40				23			10"	56	80	11'-6"
	2 @ 10'	6'	#4	12"	27		#4	12"	24		#4	12"	27		#4	12"	44	64	7'-10"
		7'			27				28				27		#5	12"	44	64	8'-10"
		8'			27				32				27			9"	60	88	9'-10"
		9'			27				36				27		#6	12"	44	64	10'-10"
		10'			27				40				27			10"	56	80	11'-10"
		11'			27				44				27			9"	60	88	12'-10"
		12'			27				48				27			8"	64	96	13'-10"
	2 @ 12'	6'	#4	12"	31		#4	12"	24		#4	12"	31		#4	12"	44	64	8'-2"
		7'			31				28				31			9"	60	88	9'-2"
		8'			31				32				31		#6	12"	44	64	10'-2"
		9'			31				36				31			11"	48	68	11'-2"
		10'			31				40				31			9"	60	88	12'-2"
		11'			31				44				31		#7	11"	48	72	13'-2"
		12'			31				48				31			10"	52	76	14'-2"
C	2 @ 8'	5'	#4	12"	23		#4	12"	20		#4	12"	23		#4	12"	44	64	6'-8"
		6'			23				24				23				44	64	7'-8"
		7'			23				28				23		#5	11"	48	68	8'-8"
		8'			23				32				23			11"	48	68	9'-8"
		9'			23				36				23		#6	10"	52	76	10'-8"
		10'			23				40				23		#7	10"	52	76	11'-8"
	2 @ 10'	6'	#4	12"	27		#4	12"	24		#4	12"	27		#4	12"	44	64	8'-0"
		7'			27				28				27		#5	12"	44	64	9'-0"
		8'			27				32				27		#6	12"	44	64	10'-0"
		9'			27				36				27			10"	52	76	11'-0"
		10'			27				40				27		#7	12"	44	64	12'-0"
		11'			27				44				27			10"	52	76	13'-0"
		12'			27				48				27			9"	60	84	14'-0"
	2 @ 12'	6'	#4	11"	33		#4	12"	24		#4	11"	33		#4	12"	44	64	8'-5"
		7'			33				28				33		#5	11"	48	68	9'-5"
		8'			33				32				33		#6	12"	44	64	10'-5"
		9'			33				36				33			10"	52	76	11'-5"
		10'			33				40				33			11"	48	68	12'-5"
		11'			33				44				33		#7	10"	56	76	13'-5"
		12'			33				48				33			8"	64	96	14'-5"
D	2 @ 8'	5'	#4	12"	23	Varies with length of Barrel.	#4	12"	20	Varies with length of Barrel.	#4	12"	23	Varies with length of Barrel.	#4	12"	Varies with length of Barrel.	Varies with length of Barrel.	6'-10"
		6'			23				24				23			10"			7'-10"
		7'			23				28				23		#5	10"			8'-10"
		8'			23				32				23			11"			9'-10"
		9'			23				36				23		#6	9"			10'-10"
		10'			23				40				23			8"			11'-10"
	2 @ 10'	6'	#4	12"	27		#4	12"	24		#4	12"	27		#4	12"			8'-2"
		7'			27				28				27		#5	11"			9'-2"
		8'			27				32				27		#6	12"			10'-2"
		9'			27				36				27			10"			11'-2"
		10'			27				40				27			11"			12'-2"
		11'			27				44				27		#7	9"			13'-2"
		12'			27				48				27			8"			14'-2"
	2 @ 12'	6'	#4	10½"	35		#4	12"	24		#4	10½"	35		#4	12"			8'-8"
		7'			35				28				35		#5	11"			9'-8"
		8'			35				32				35		#6	12"			10'-8"
		9'			35				36				35			10"			11'-8"
		10'			35				40				35			11"			12'-8"
		11'			35				44				35		#7	9"			13'-8"
		12'			35				48				35			8"			14'-8"

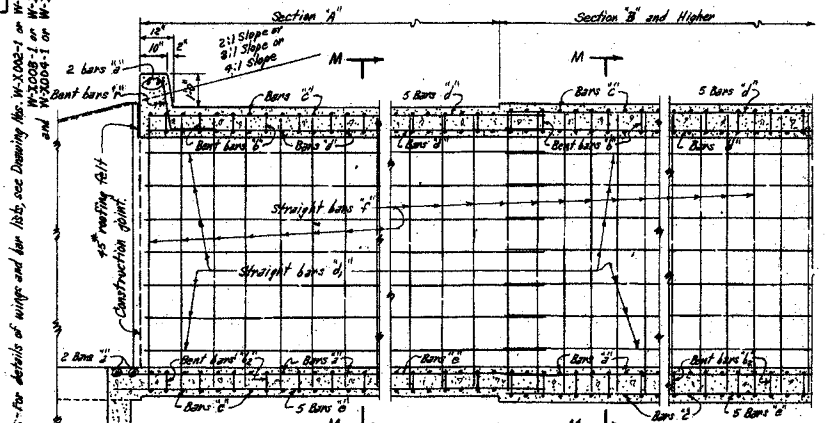
DIMENSIONS — QUANTITIES

MAX. DESIGN DEPTH OF COVER D	CLEAR SPANS S	CLEAR HEIGHT H	SQ. FT. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF DIVISION WALL M	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	CLASS S CONC. PER LIN. FT. OF BARREL (CU.YD.)	REINFORCING STEEL PER LIN. FT. OF BARREL (LB.)	ADDITIONAL PER LAP (LB.)	ADDITIONAL TWO HEADWALLS & APRONS (LB.)
SECTION "A" - 10'-0"	2 @ 8'	5'	80	17'-11"	9¼"	7"	9"	9¾"	6'-7"	1.406	181.08	55.11	250.28
		6'	96	17'-11"		7"	9"		7'-7"	1.477	186.42	58.45	250.28
		7'	112	18'-1"		7½"	10"		8'-7"	1.601	197.32	61.79	251.67
		8'	128	18'-2"		8"	10"		9'-7"	1.707	216.14	65.13	252.37
		9'	144	18'-5"		9"	11"		10'-7"	1.886	229.56	68.47	254.46
		10'	160	18'-8"		10"	12"		11'-7"	2.082	250.08	71.81	256.54
	2 @ 10'	6'	120	22'-1"	10⅞"	7½"	10"	11¼"	7'-10⅛"	1.979	245.98	65.13	315.55
		7'	140	22'-1"		7½"	10"		8'-10⅛"	2.057	265.91	68.47	316.55
		8'	160	22'-2"		8"	10"		9'-10⅛"	2.164	271.47	71.81	316.25
		9'	180	22'-5"		9"	11"		10'-10⅛"	2.345	288.86	75.15	318.34
		10'	200	22'-8"		10"	12"		11'-10⅛"	2.544	308.86	78.49	320.42
		11'	220	22'-10"		11"	12"		12'-10⅛"	2.722	326.26	81.83	321.81
		12'	240	23'-0"		12"	12"		13'-10⅛"	2.913	346.24	85.17	323.20
	2 @ 12'	6'	144	26'-2"	12½"	8"	10"	13½"	8'-2"	2.581	335.91	71.81	383.92
		7'	168	26'-2"		8"	10"		9'-2"	2.662	341.25	75.15	383.92
		8'	192	26'-2"		8"	10"		10'-2"	2.742	361.97	78.49	383.92
		9'	216	26'-5"		9"	11"		11'-2"	2.925	379.59	81.83	386.00
		10'	240	26'-8"		10"	12"		12'-2"	3.128	401.38	85.17	388.09
		11'	264	26'-10"		11"	12"		13'-2"	3.308	418.23	88.51	389.48
		12'	288	27'-0"		12"	12"		14'-2"	3.500	448.85	91.85	390.87
SECTION "B" - 15'-0"	2 @ 8'	5'	80	17'-11"	10¼"	7"	9"	10¾"	6'-9"	1.516	191.78	55.11	
		6'	96	17'-11"		7"	9"		7'-9"	1.587	197.13	58.45	
		7'	112	18'-1"		7½"	10"		8'-9"	1.712	216.41	61.79	
		8'	128	18'-2"		8"	10"		9'-9"	1.819	236.89	65.13	
		9'	144	18'-5"		9"	11"		10'-9"	1.999	257.15	68.47	
		10'	160	18'-8"		10"	12"		11'-9"	2.198	275.52	71.81	
	2 @ 10'	6'	120	22'-1"	12"	7½"	10"	13"	8'-1"	2.167	273.01	65.13	
		7'	140	22'-1"		7½"	10"		9'-1"	2.244	291.60	68.47	
		8'	160	22'-2"		8"	10"		10'-1"	2.352	312.64	71.81	
		9'	180	22'-5"		9"	11"		11'-1"	2.585	327.68	75.15	
		10'	200	22'-8"		10"	12"		12'-1"	2.737	352.57	78.49	
		11'	220	22'-10"		11"	12"		13'-1"	2.916	373.76	81.83	
		12'	240	23'-0"		12"	12"		14'-1"	3.108	399.33	85.17	
	2 @ 12'	6'	144	26'-2"	14¼"	8"	10"	15"	8'-5¼"	2.849	369.91	71.81	
		7'	168	26'-2"		8"	10"		9'-5¼"	2.929	383.42	75.15	
		8'	192	26'-2"		8"	10"		10'-5¼"	3.004	419.52	78.49	
		9'	216	26'-5"		9"	11"		11'-5¼"	3.190	431.74	81.83	
		10'	240	26'-8"		10"	12"		12'-5¼"	3.395	461.14	85.17	
		11'	264	26'-10"		11"	12"		13'-5¼"	3.577	485.07	88.51	
		12'	288	27'-0"		12"	12"		14'-5¼"	3.771	510.58	91.85	
SECTION "C" - 20'-0"	2 @ 8'	5'	80	17'-11"	11¼"	7"	9"	11¾"	6'-11"	1.627	203.31	55.11	
		6'	96	17'-11½"		7¼"	9"		7'-11"	1.710	218.85	58.45	
		7'	112	18'-1½"		7¾"	10"		8'-11"	1.838	231.57	61.79	
		8'	128	18'-2½"		8¼"	10"		9'-11"	1.947	258.58	65.13	
		9'	144	18'-5½"		9¼"	11"		10'-11"	2.130	276.52	68.97	
		10'	160	18'-8½"		10¼"	12"		11'-11"	2.331	318.47	71.81	
	2 @ 10'	6'	120	22'-2"	13½"	8"	10"	14¼"	8'-3¾"	2.380	320.35	65.13	
		7'	140	22'-2"		8"	10"		9'-3¾"	2.460	339.19	68.47	
		8'	160	22'-3"		8½"	10"		10'-3¾"	2.572	365.09	71.81	
		9'	180	22'-6"		9½"	11"		11'-3¾"	2.760	389.39	75.15	
		10'	200	22'-8½"		10¼"	12"		12'-3¾"	2.948	413.08	78.49	
		11'	220	22'-10"		11"	12"		13'-3¾"	3.110	446.06	81.83	
		12'	240	23'-0"		12"	12"		14'-3¾"	3.303	475.09	85.17	
	2 @ 12'	6'	144	26'-2"	16"	8"	10"	16½"	8'-8½"	3.106	426.82	75.15	
		7'	168	26'-2"		8"	10"		9'-8½"	3.186	449.87	78.49	
		8'	192	26'-3½"		8¾"	10"		10'-8½"	3.316	473.02	81.83	
		9'	216	26'-6"		9½"	11"		11'-8½"	3.492	498.31	86.17	
		10'	240	26'-8½"		10¼"	12"		12'-8½"	3.682	531.56	88.51	
		11'	264	26'-10½"		11¼"	12"		13'-8½"	3.867	556.63	91.85	
		12'	288	27'-0½"		12¼"	12"		14'-8½"	4.064	605.99	95.19	
SECTION "D" - 25'-0"	2 @ 8'	5'	80	17'-11"	12¼"	7"	9"	12¾"	7'-1"	1.737	216.88	55.11	
		6'	96	18'-0½"		7¾"	9"		8'-1"	1.846	226.87	58.45	
		7'	112	18'-3"		8½"	10"		9'-1"	1.992	250.52	61.79	
		8'	128	18'-4½"		9¼"	10"		10'-1"	2.122	278.89	65.13	
		9'	144	18'-7"		10"	11"		11'-1"	2.295	300.76	68.47	
		10'	160	18'-10"		11"	12"		12'-1"	2.503	325.17	71.81	
	2 @ 10'	6'	120	22'-2"	14½"	8"	10"	15¼"	8'-5¾"	2.517	341.89	65.13	
		7'	140	22'-3"		8½"	10"		9'-5¾"	2.626	365.08	68.47	
		8'	160	22'-4½"		9¼"	10"		10'-5¾"	2.758	388.08	71.81	
		9'	180	22'-7½"		10¼"	11"		11'-5¾"	2.952	412.78	75.15	
		10'	200	22'-10½"		11¼"	12"		12'-5¾"	3.165	446.12	78.49	
		11'	220	23'-1"		12"	12"		13'-5¾"	3.334	489.97	81.83	
		12'	240	23'-1½"		12¼"	12"		14'-5¾"	3.512	518.78	85.17	
	2 @ 12'	6'	144	26'-2"	17½"	8"	10"	18"	8'-11½"	3.349	465.12	78.49	
		7'	168	26'-3½"		8¾"	10"		9'-11½"	3.475	489.73	81.83	
		8'	192	26'-5"		9½"	10"		10'-11½"	3.610	513.90	85.17	
		9'	216	26'-8"		10½"	11"		11'-11½"	3.811	539.78	88.51	
		10'	240	26'-10½"		11¼"	12"		12'-11½"	4.009	578.93	91.85	
		11'	264	27'-0½"		12¼"	12"		13'-11½"	4.202	619.28	95.19	
		12'	288	27'-2½"		13¼"	12"		14'-11½"	4.407	649.51	98.53	

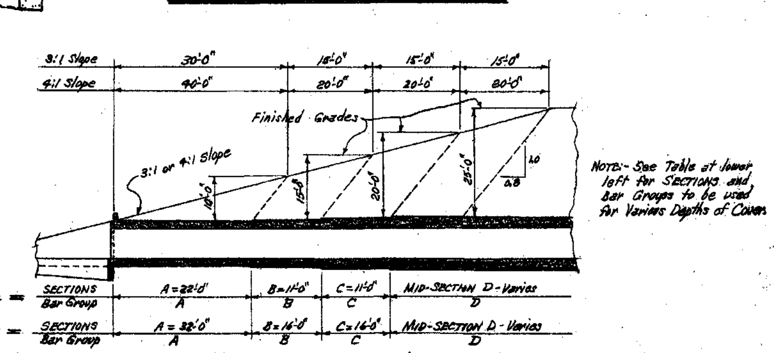
NOTE:- For details of wings and bar lists, see Drawing Nos. W-X002-1 or W-X002-2, W-X003-1 or W-X003-2, and W-X004-1 or W-X004-2.



TYPICAL SECTION M-M



PART LONGITUDINAL SECTION



NOTE:- See Table at lower left for SECTIONS and Bar Groups to be used for Various Depths of Cover.

TYPICAL LONGITUDINAL SECTION-SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

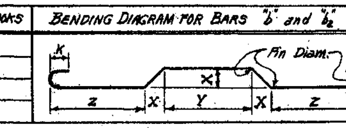
NOTE:- Lengths of Sections, with Bar Groups to be shown on Cross Section Sheets.

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2, and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.
To use this Drawing for skewed culverts, multiply the length of each section by the secant of the skew angle. For 15° by 1.0353, for 30° by 1.1547, and for 45° by 1.4142.

REVISIONS:-
Wing Drwg. Nos.- W.C.H. 1-14-63.

BAR SIZE	PIN DIAM.	K.	ADD FOR 2 HOOKS
#6	3"	5"	1'-1½"
#7	3½"	5¾"	1'-3¾"
#8	4"	6½"	1'-6"

BENDING DIAGRAM FOR BARS "b" and "b2"

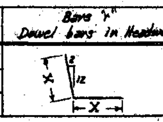


NOTE:- Dimension are to centers of bars. ("b" and "b2").

DOWEL BARS FOR TWO HEADWALLS

S	SIZE	SPACING	No. REQ'D	LENGTH	X
8'	#4	12¼"	36	3'-0"	1'-6"
10'	#4	12½"	46	3'-2"	1'-7"
12'	#4	12"	54	3'-6"	1'-9"

Bars "r" Dowel bars in Headwalls



SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	MID-SECTION AND BAR GROUP
5.0' to 9.5'	✓			A
10.0' to 14.5'	✓			B
15.0' to 19.5'	✓	✓		C
20.0' to 25.0'	✓	✓	✓	D

GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division walls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

8', 10' & 12' SPANS — 3:1 OR 4:1 SLOPES
DOUBLES — OVER 5'-0" COVER

STANDARD DRAWING No. R-200X-X2

Designed by: W.C. Haigh 6-26-62 — Checked by:- R.H.S. 7-16-62
Drawn by: W.C. Haigh 7-5-62 — Checked by:- R.H.S. 7-20-62
Quantities by: W.C. Haigh 7-5-62 — Checked by:- R.H.S. 7-19-62