"A PARTIALLY CONTROLLED ACCESS FACILITY"
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	1	331

(2) HWY. 79 NO.-CO. RD. 525 (MAGNOLIA) (S)

HWY. 79 NO.-CO. RD. 525 (MAGNOLIA) (S)

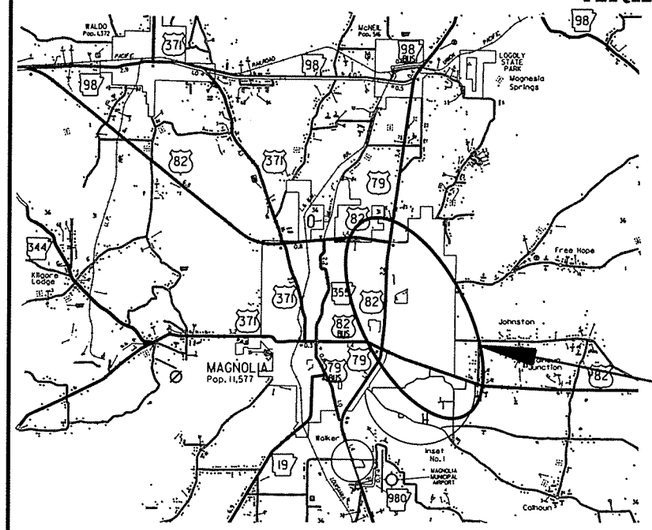
COLUMBIA COUNTY

ROUTE 82 SECTION 4

F.A.P. NHPP-9271(10)

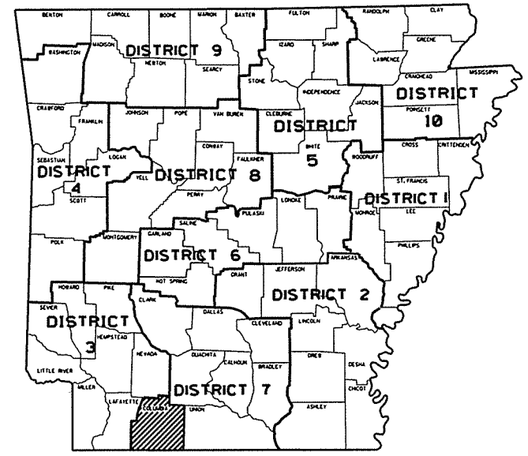
JOB 070365

NOT TO SCALE



PROJECT LOCATION

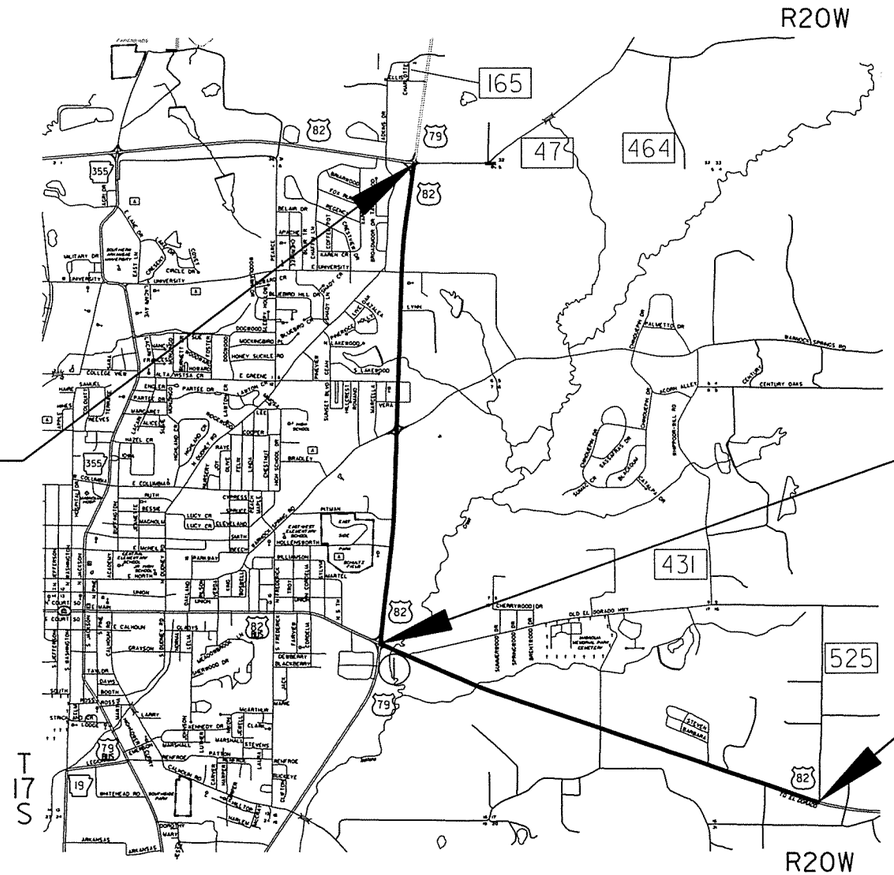
VICINITY MAP



ARKANSAS HWY. DIST. 7

BRIDGE DATA

(1) STA. 306+41.00 BRIDGE END
BRIDGE NO. 07361
136'-0" INTEGRAL W-BEAM UNIT (42'-52'-42')
58'-0" CLEAR ROADWAY
137'-0" BRIDGE LENGTH
STA. 307+78.00 BRIDGE END



STA. 107+35.00
BEGIN JOB 070365
LOG MILE 0.07

STA. 219+84.56 HWY. 82/HWY. 79 =
STA. 303+83.73 E. MAIN ST./HWY 82
Δ= 75° 34' 51"

STA. 415+00.00
END JOB 070365

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2035
2015 ADT	9,000
2035 ADT	11,000
2035 DHV	1210
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	13%
DESIGN SPEED	45 MPH

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 33°17'43.4"	N 33°15'54.0"	N 33°15'13.1"
LONGITUDE	W 93°12'46.6"	W 93°12'58.2"	W 93°10'56.3"

PROJECT LENGTH CALCULATED ALONG C.L. CONSTRUCTION
GROSS LENGTH OF PROJECT 22365.83 FEET OR 4.236 MILES
NET LENGTH OF ROADWAY 22228.83 FEET OR 4.210 MILES
NET LENGTH OF BRIDGES 137.00 FEET OR 0.026 MILES
NET LENGTH OF PROJECT 22365.83 FEET OR 4.236 MILES

APPROVED

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

11-2-15
DEPUTY DIRECTOR
AND CHIEF ENGINEER

P.E. JOB 070394

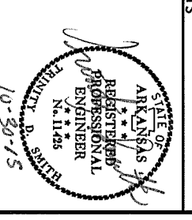
6/18/2015

R070365.DGN

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS			
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES			
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT			
7 - 11	SPECIAL DETAILS			
12 - 39	TEMPORARY EROSION CONTROL DETAILS			
40 - 50	MAINTENANCE OF TRAFFIC DETAILS			
51 - 55	PERMANENT PAVEMENT MARKING DETAILS			
56 - 64	QUANTITIES			
65	SCHEDULE OF BRIDGE QUANTITIES	07361	57512	
66 - 67	SUMMARY OF QUANTITIES AND REVISIONS			
68 - 77	SURVEY CONTROL DETAILS			
78 - 106	PLAN AND PROFILE SHEETS			
107	SYSTEM MAP			
108	SUMMARY OF TRAFFIC SIGNAL QUANTITIES			
109	TRAFFIC SIGNAL QUANTITIES (HWY. 79/82-82B/E. MAIN ST.)			
110 - 117	SIGNALIZATION PLAN SHEETS			
118	TRAFFIC SIGNAL QUANTITIES (HWY. 79/82 - WALMART DRIVE)			
119 - 123	SIGNALIZATION PLAN SHEETS			
124	TRAFFIC SIGNAL QUANTITIES (HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.)			
125 - 130	SIGNALIZATION PLAN SHEETS			
131	LAYOUT OF BRIDGE OVER NATIONS CREEK	07361	57513	
132	SOIL BORINGS NATIONS CREEK	07361	57514	
133	DETAILS OF STAGE CONSTRUCTION NATIONS CREEK	07361	57515	
134	DETAILS OF BENT 1 NATIONS CREEK	07361	57516	
135	DETAILS OF INTERMEDIATE BENTS NATIONS CREEK	07361	57517	
136	DETAILS OF 24" SQUARE PRESTRESSED CONCRETE PILES	07361	57518	
137	DETAILS OF BENT 4 NATIONS CREEK	07361	57519	
138	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 1 OF 7)	07361	57520	
139	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 2 OF 7)	07361	57521	
140	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 3 OF 7)	07361	57522	
141	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 4 OF 7)	07361	57523	
142	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 5 OF 7)	07361	57524	
143	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 6 OF 7)	07361	57525	
144	DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK (SHEET 7 OF 7)	07361	57526	
145	DETAILS OF TYPE H METAL BRIDGE RAILING	07361	57527	
146	DETAILS OF TRANSITIONAL APPROACH RAILING	07361	57528	
147	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS		55000	2-27-14
148	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES		55001	2-27-14
149	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS		55005	2-27-14
150	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES		55006	9-02-15
151	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE		55010	1-14-15
152	STANDARD DETAILS FOR CONCRETE PILES		55022	2-27-14
153	CONCRETE DITCH PAVING		CDP-1	11-17-10
154	CURBING DETAILS		CG-1	11-29-07
155	DETAILS OF DRIVEWAYS & ISLANDS		DR-1	2-27-14
156	FLARED END SECTION		FES-1	10-18-96
157	FLARED END SECTION		FES-2	10-18-96
158	DETAILS OF DROP INLETS & JUNCTION BOXES		FPC-9	11-16-01
159	DETAILS OF DROP INLETS (TYPE C)		FPC-9E	8-22-02
160	DETAILS OF DROP INLET (TYPE MO)		FPC-9M	8-22-02
161	MAILBOX DETAILS		MB-1	11-18-04
162	PRECAST CONCRETE BOX CULVERTS		PBC-1	1-28-15
163	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING		PCC-1	2-27-14
164	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	2-27-14
165	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)		PCP-1	2-27-14
166	PLASTIC PIPE CULVERT (PVC F949)		PCP-2	2-27-14
167	PAVEMENT MARKING DETAILS		PM-1	9-12-13
168	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
169	REINFORCED CONCRETE BOX CULVERT DETAILS		RCB-1	7-26-12
170	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS		RCB-2	11-20-03
171	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		RCB-3	10-12-95
172	CONTROLLER CABINET UTILITY DRAWER		SD-5	9-12-13
173	HEAVY DUTY PULL BOX		SD-6	9-02-15
174	SPAN WIRE ASSEMBLY WOOD POLE		SD-7	2-27-14
175	SIGNAL HEAD PLACEMENT		SD-8	9-12-13
176	SERVICE POINT		SD-9	9-12-13
177	STEEL POLE WITH MAST ARM		SD-11	2-27-14
178	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		SE-2	10-18-96
179	DETAILS OF SPECIAL ITEMS		SI-1	9-12-13
180	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	9-02-15
181	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	9-02-15
182	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	9-02-15
183	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-4	2-27-14
184	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-5	10-15-09
185	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
186	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
187	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
188	WIRE FENCE TYPE A AND B		WF-1	8-22-02
189	WIRE FENCE WATER GAPS		WF-2	4-20-79
190	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS		WR-1	11-10-05
191	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X003-1	5-10-66
192	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-0	2-08-63
193	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-X1	10-10-62
194	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-X2	1-14-63
195	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X30	7-15-63
196	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X303-1	5-10-66
197	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-130X-1	1-24-64
198	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X45	6-15-64
199	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X453-1	5-10-66
200	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-145X-1	8-10-64
201 - 331	CROSS SECTIONS			

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



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		2	331

(2) INDEX OF SHEETS

JOB NO. 070365

INDEX OF SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-10-15				6	ARK.			
1-8-16				JOB NO.		070365	3	331
				(2) GOV. SPECS & GEN. NOTES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-8-16

GOVERNING SPECIFICATIONS

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

NUMBER **TITLE**

ERRATA____ ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__ REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__ SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__ SUPPLEMENT - TRAINING PROGRAM - JOB 070365
FHWA-1273__ SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__ SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____ CONTRACTOR'S LICENSE
108-1_____ LIQUIDATED DAMAGES
400-1_____ TACK COATS
410-1_____ CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____ RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____ PIPE CULVERTS FOR SIDE DRAINS
620-1_____ MULCH COVER
JOB 070365__ AIRPORT CLEARANCE REQUIREMENTS
JOB 070365__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 070365__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 070365__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 070365__ CABINET DRAWER ASSEMBLY
JOB 070365__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 070365__ CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 070365__ DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 070365__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 070365__ EDGE CARD VIDEO PROCESSOR
JOB 070365__ ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 070365__ ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 070365__ EXTENSION FOR PIPE CULVERTS
JOB 070365__ LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 070365__ LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB 070365__ LED TRAFFIC SIGNAL HEAD
JOB 070365__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 070365__ HIGH PERFORMANCE PAVEMENT MARKING
JOB 070365__ MAINTENANCE OF TRAFFIC
JOB 070365__ MANDATORY ELECTRONIC CONTRACT
JOB 070365__ NESTING SITES OF MIGRATORY BIRDS
JOB 070365__ PARTNERING REQUIREMENTS
JOB 070365__ PLASTIC PIPE
JOB 070365__ PROSECUTION AND PROGRESS
JOB 070365__ RELOCATION OF TRAFFIC SIGNAL HEAD
JOB 070365__ REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 070365__ SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 070365__ SHORING
JOB 070365__ SHORING FOR CULVERTS
JOB 070365__ SOIL STABILIZATION
JOB 070365__ STORM WATER POLLUTION PREVENTION PLAN
JOB 070365__ STREET NAME SIGN (MAST ARM MOUNTED)
JOB 070365__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 070365__ UTILITY ADJUSTMENTS
JOB 070365__ VALUE ENGINEERING
JOB 070365__ VIDEO DETECTOR ROTATION
JOB 070365__ VIDEO DETECTOR (COLOR)
JOB 070365__ WARM MIX ASPHALT
JOB 070365__ WELLHEAD PROTECTION

GENERAL NOTES

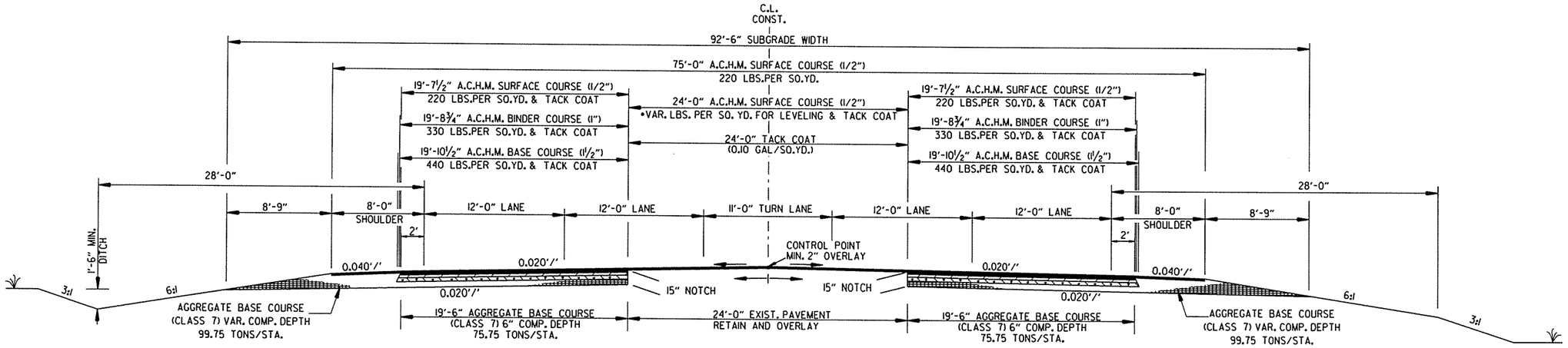
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THIS PROJECT IS COVERED UNDER A NATIONWIDE 404 SECTION 23 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

7/16/2015
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	4	331

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

OPEN SHOULDER NOTCH AND WIDENING
HWY. 82

STA. 107+35.00 - STA. 217+85.36
STA. 221+84.79 - STA. 222+00.00

NOTES:

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

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

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

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

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.

7/16/2015

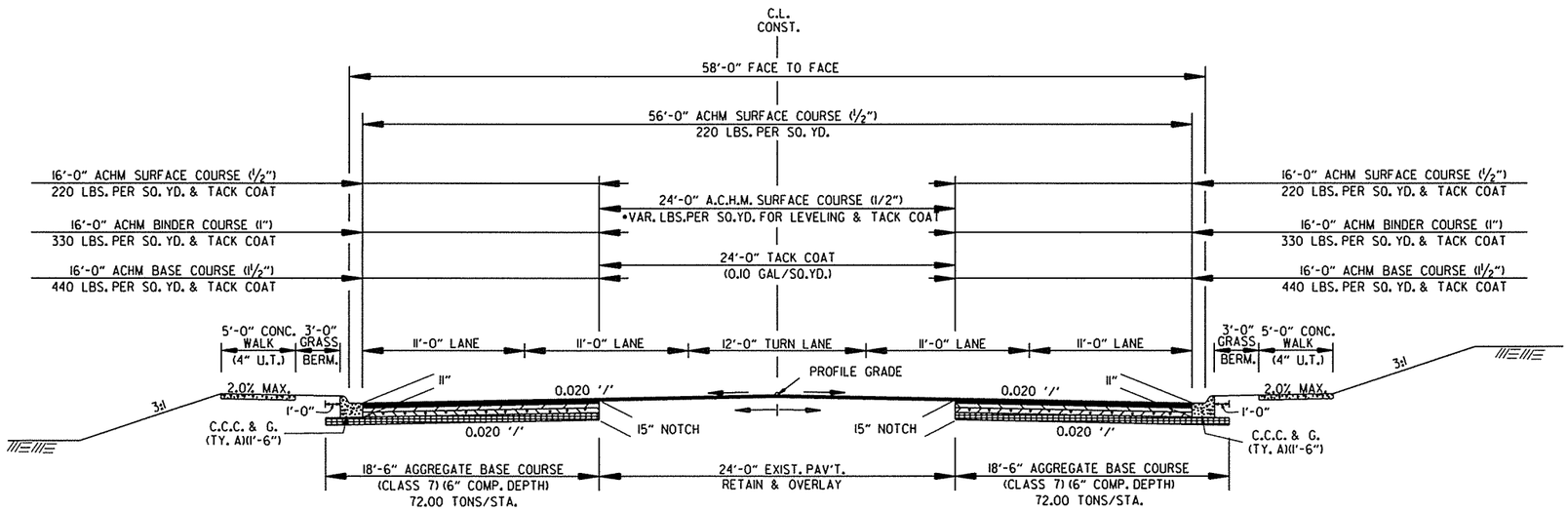
R070365.DGN

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	5	331

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
CURB AND GUTTER NOTCH AND WIDENING
HWY. 82
STA. 298+01.37 - STA. 301+82.06
STA. 305+70.99 - STA. 305+70.00
STA. 308+00.00 - STA. 410+35.35

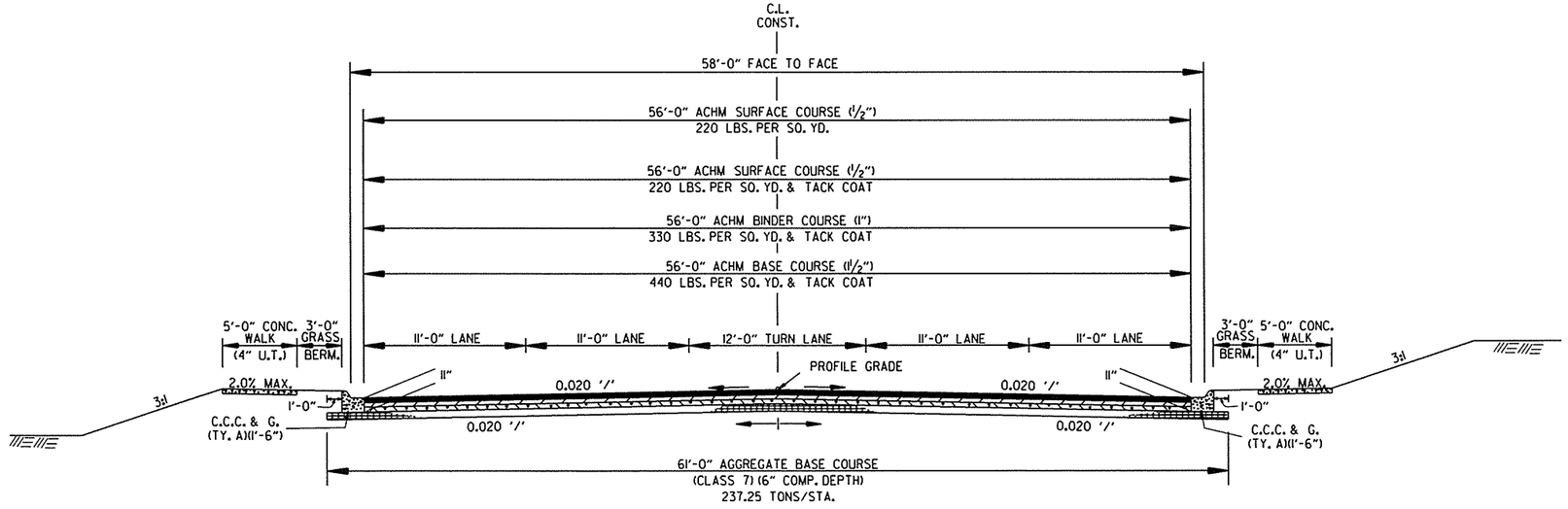
NOTES:
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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



TANGENT SECTION
CURB AND GUTTER FULL DEPTH
HWY. 82
STA. 305+70 - STA. 306+41.00 B.E.
STA. 307+78.00 B.E. - STA. 308+00.00

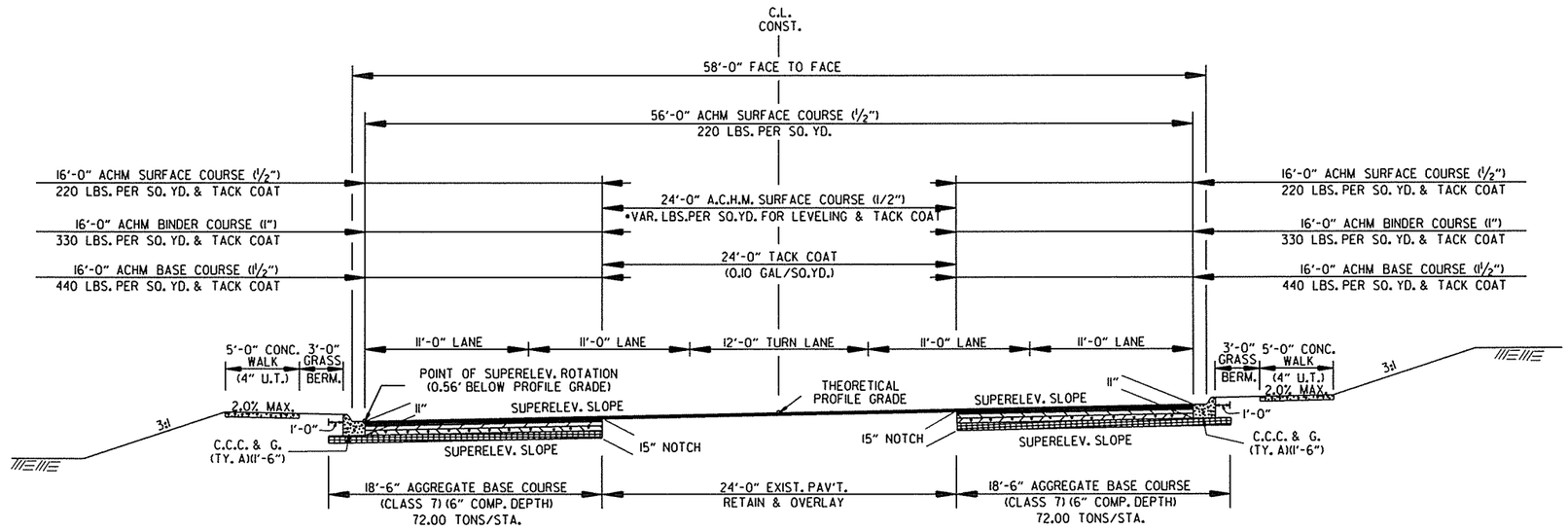
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	6	331

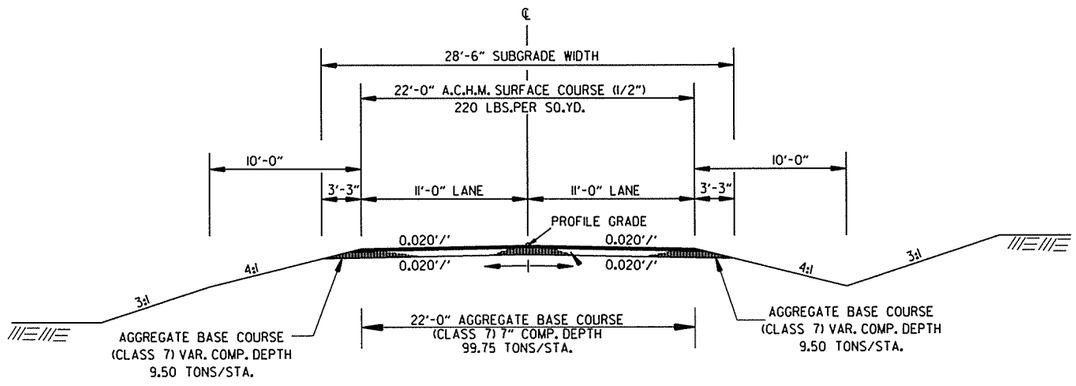
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

SUPERELEVATION SECTION
CURB AND GUTTER NOTCH AND WIDENING
HWY. 82
STA. 410+35.35 - STA. 415+00.00



FULL DEPTH

COUNTY ROAD 36

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 WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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

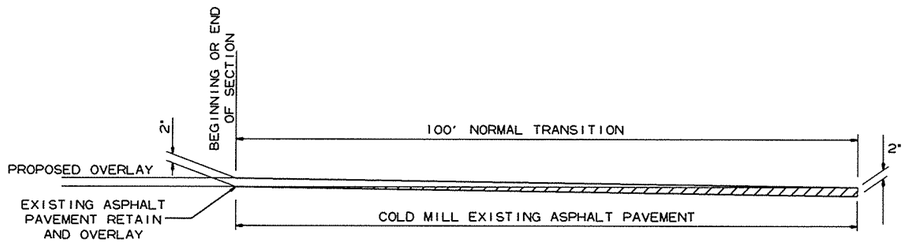
7/16/2015

R070365.DGN

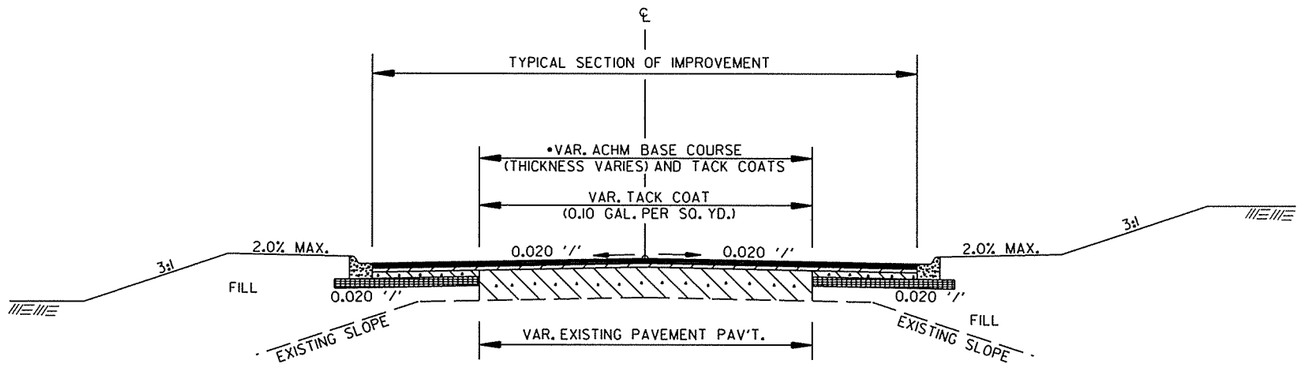
TYPICAL SECTIONS OF IMPROVEMENT

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.		070365	7	331

(2) SPECIAL DETAILS



DETAIL FOR TRANSITIONS



METHOD OF RAISING GRADE

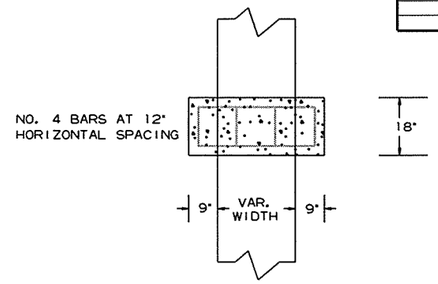
•6" AGGREGATE BASE COURSE (CLASS 7 TO BE REPLACED WITH A.C.H.M. BASE COURSE (1-½")

NOTES:

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

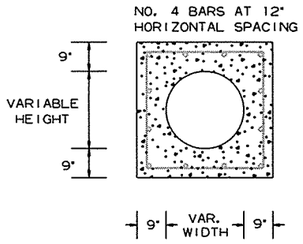
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

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

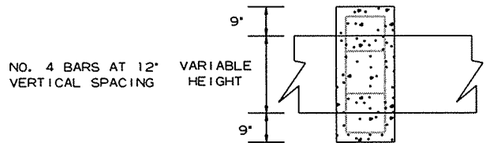


TOP VIEW

MIN 3" COVER

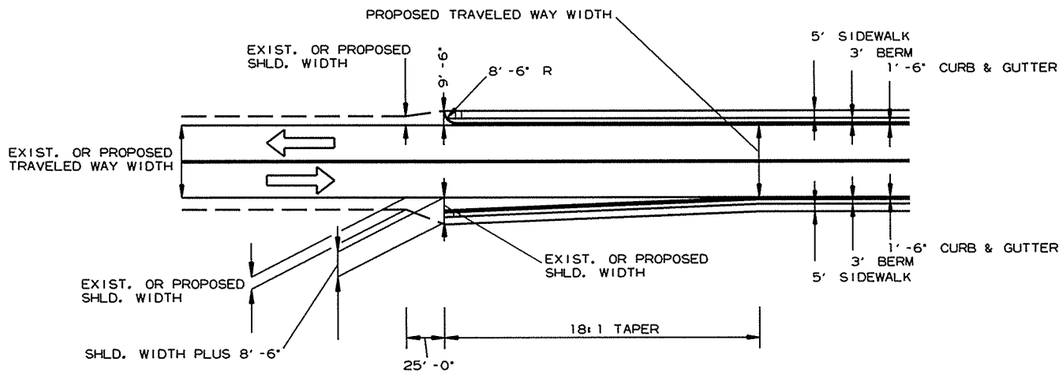


FRONT VIEW



SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



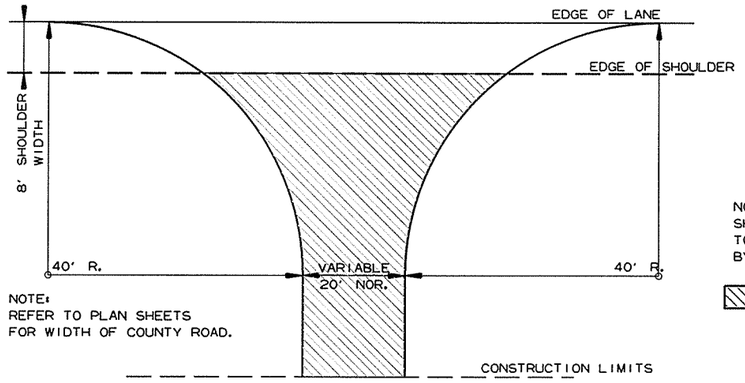
TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

6/18/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	8	331

(2) SPECIAL DETAILS

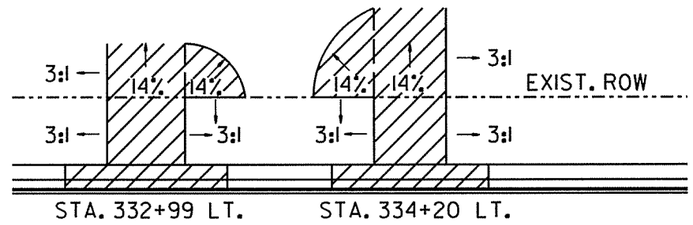


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

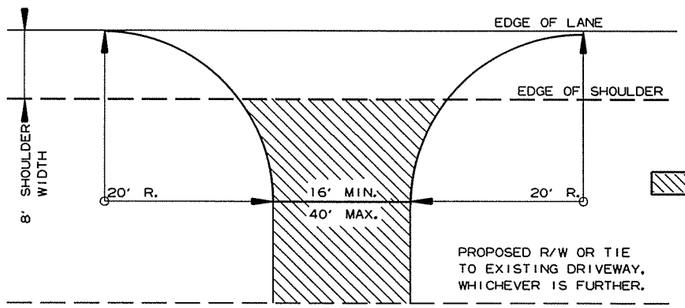
A.C.H.M. SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



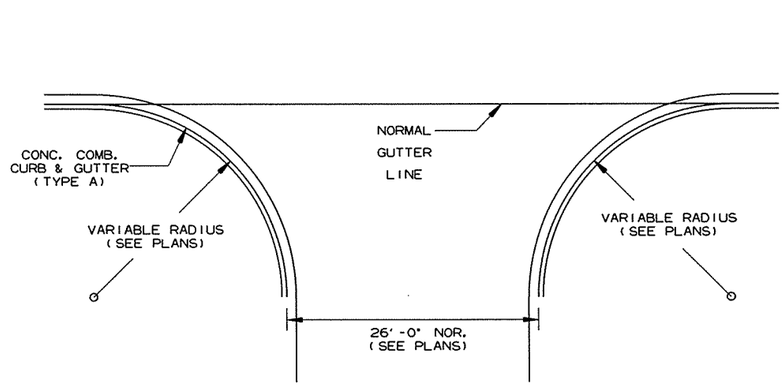
6" CONCRETE DRIVE WITH CONCRETE APRON

DETAIL FOR DRIVEWAY TURNOUTS TYPE SPECIAL



A.C.H.M. 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



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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

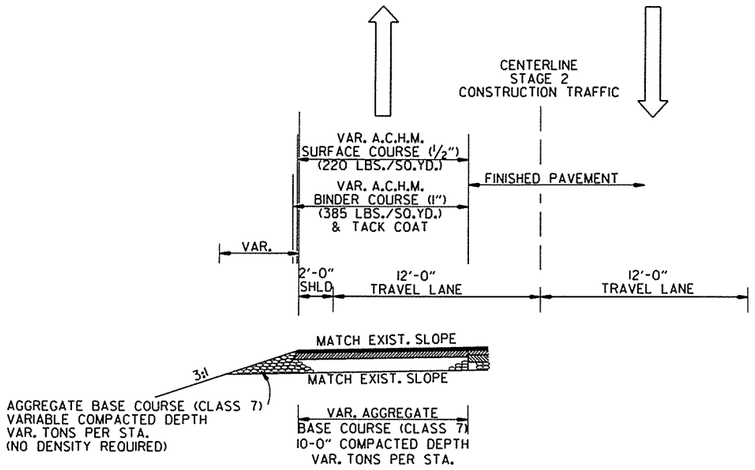
6/18/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	9	331

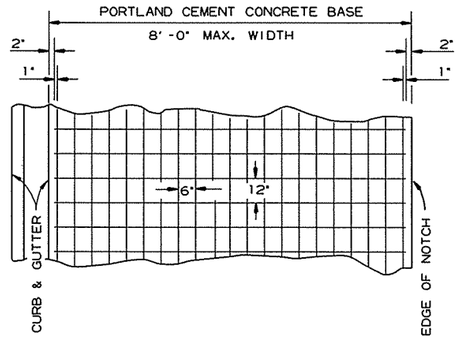
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



WIDENING FOR MAINTENANCE OF TRAFFIC

(STAGE 1)
STA. 305+05 - STA. 306+41 B.E.
STA. 307+78 B.E. - STA. 309+18

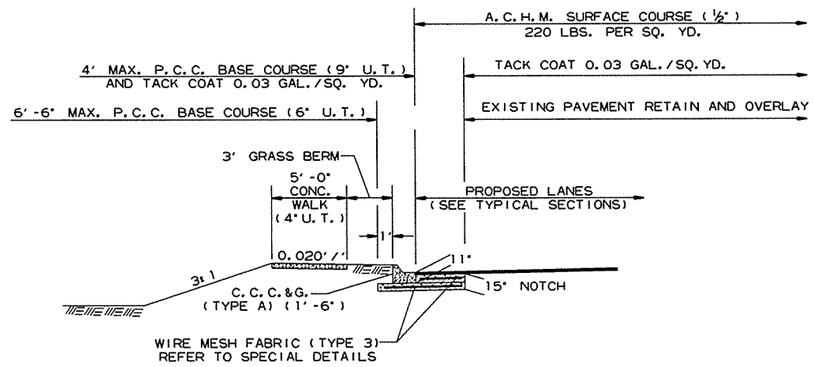


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

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 (9" U.T. & 6" U.T.)

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



P.C.C. BASE WIDENING DETAIL

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

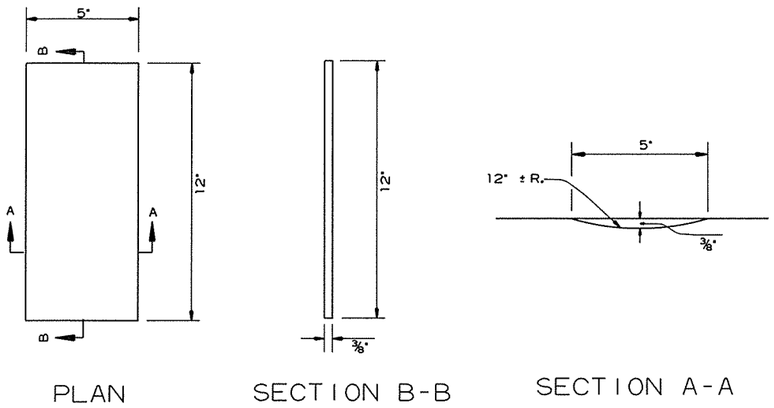
6/18/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	10	331

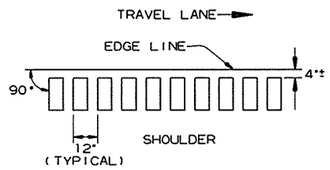
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

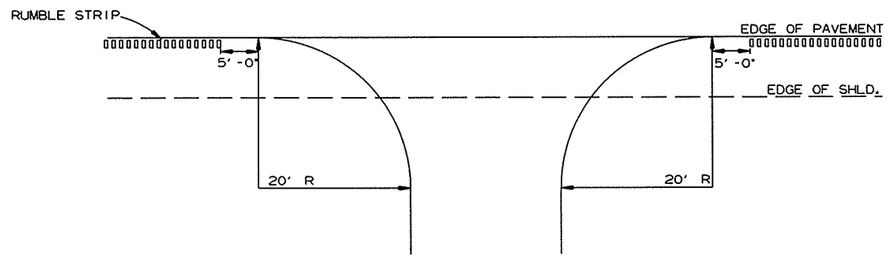


PLAN SECTION B-B SECTION A-A

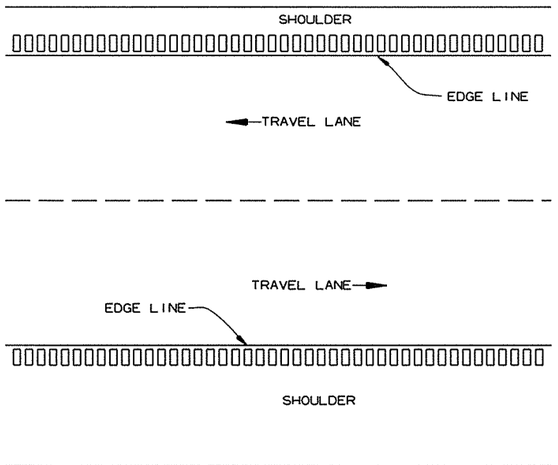
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



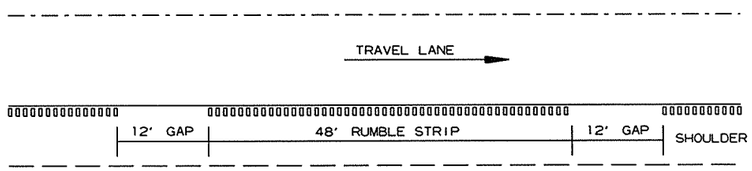
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

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



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

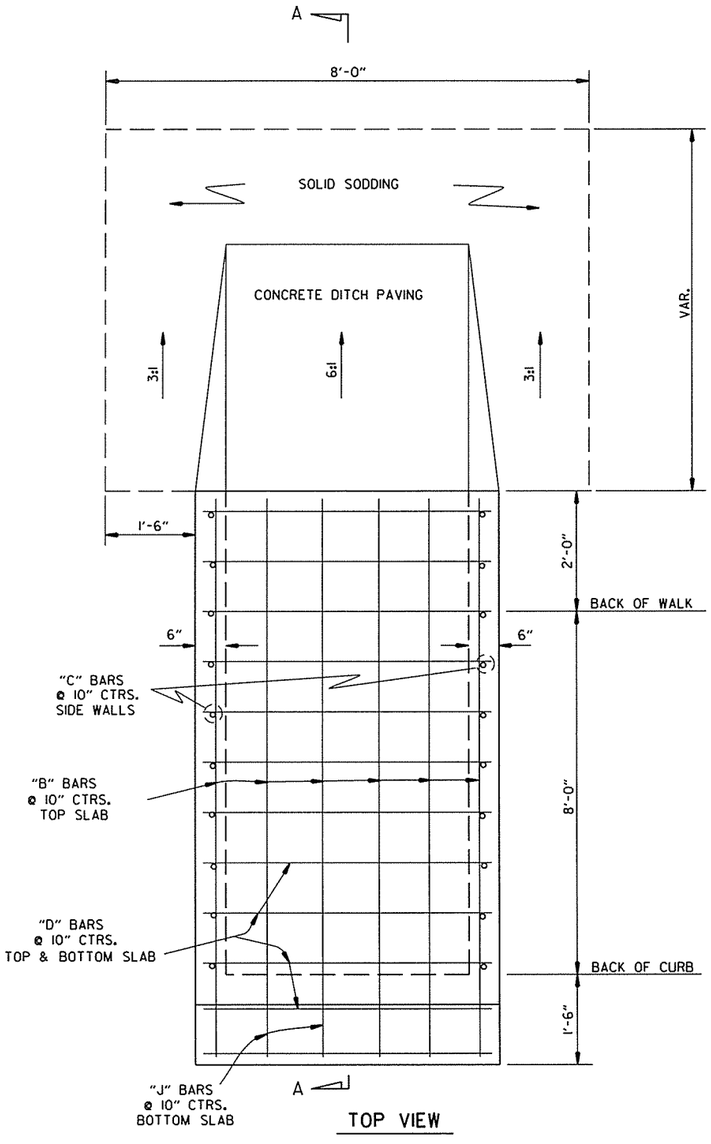
DETAIL FOR GAP PATTERN RUMBLE STRIP

6/18/2015

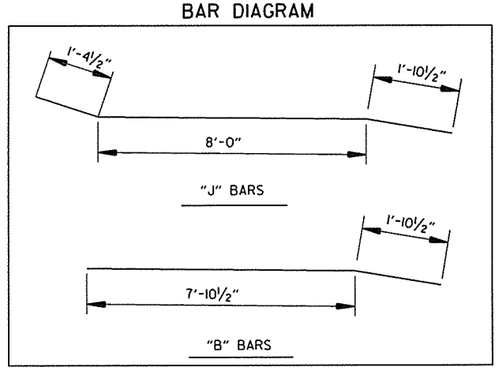
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	11	331

(2) SPECIAL DETAILS



TOP VIEW

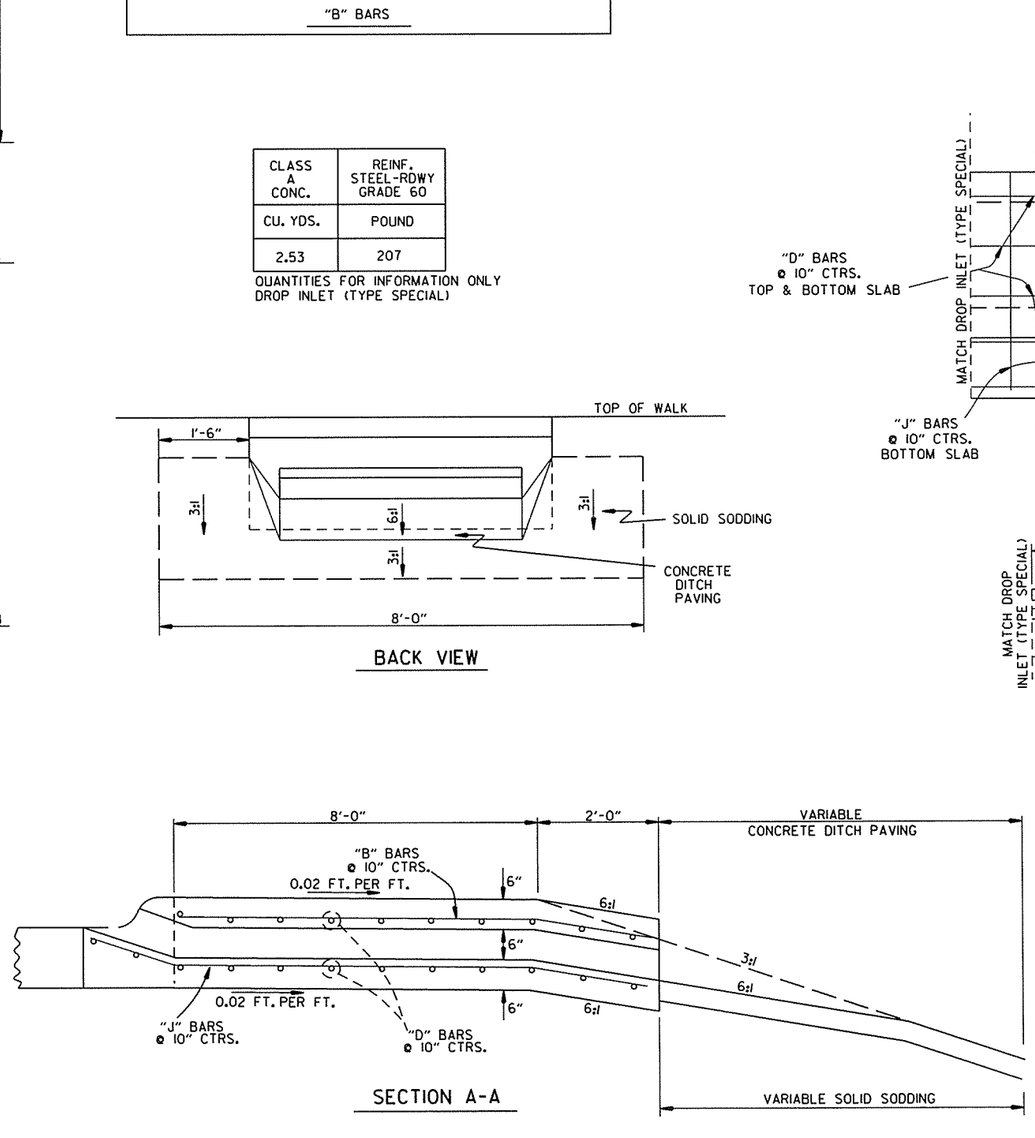


CLASS A CONC.	REINF. STEEL-RDWY GRADE 60
CU. YDS.	POUND
2.53	207

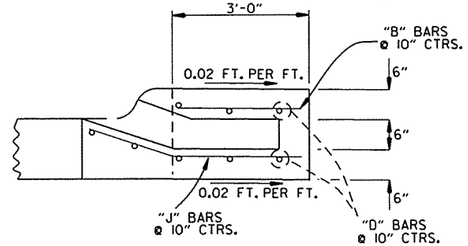
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)

BACK VIEW

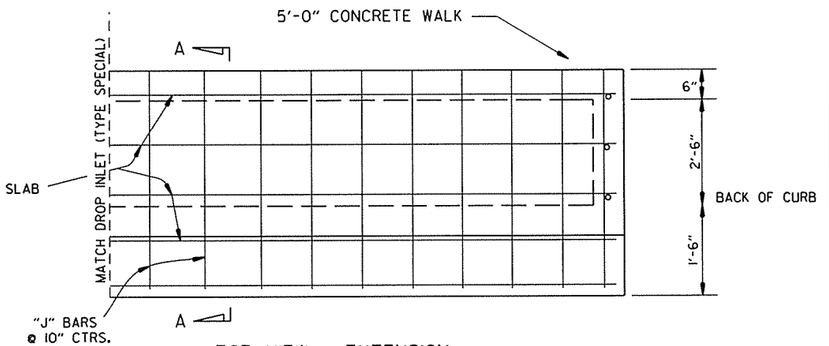
FRONT VIEW



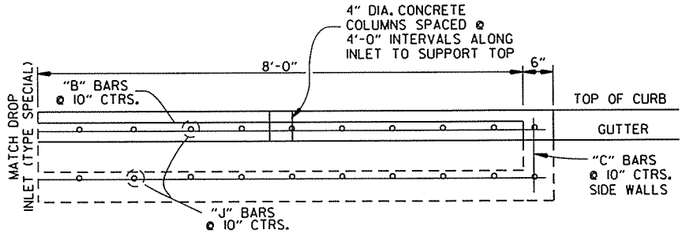
SECTION A-A



SECTION A-A - EXTENSION



TOP VIEW - EXTENSION



FRONT VIEW - EXTENSION

GENERAL NOTES:

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

DROP INLET (TYPE SPECIAL)

6/18/2015

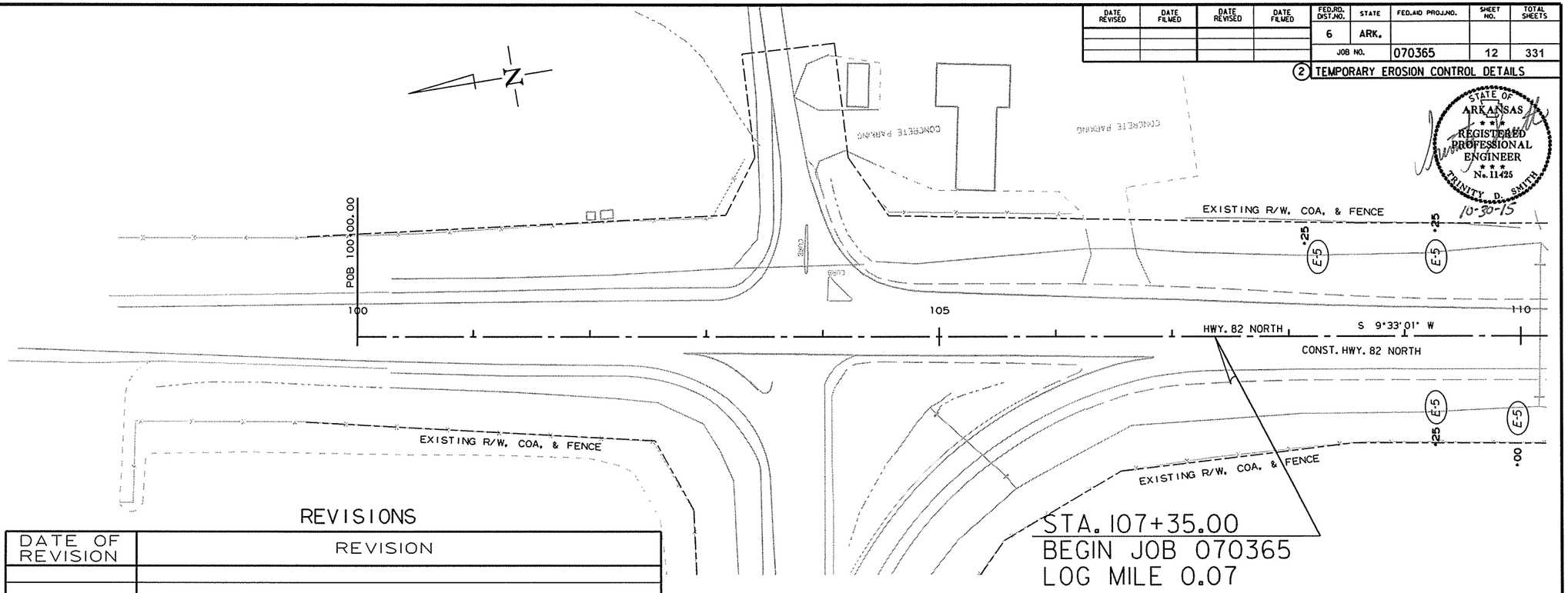
R070365.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	12	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



LEGEND

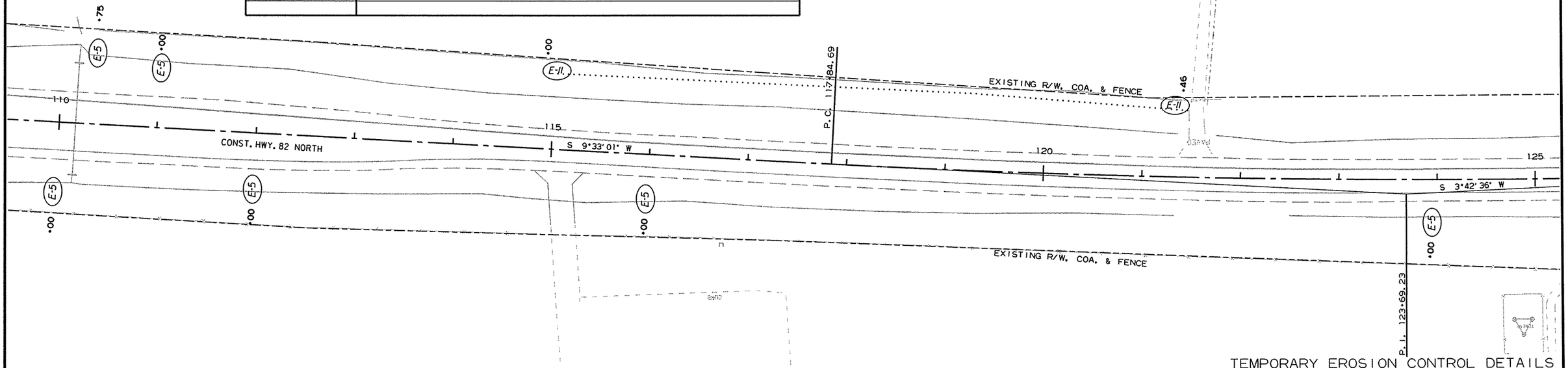
E-5 SAND BAG DITCH CHECKS

E-11 · · E-11 SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

STA. 115+00 - STA. 121+46
INSTALL E-11 = 644 LIN. FT.



TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

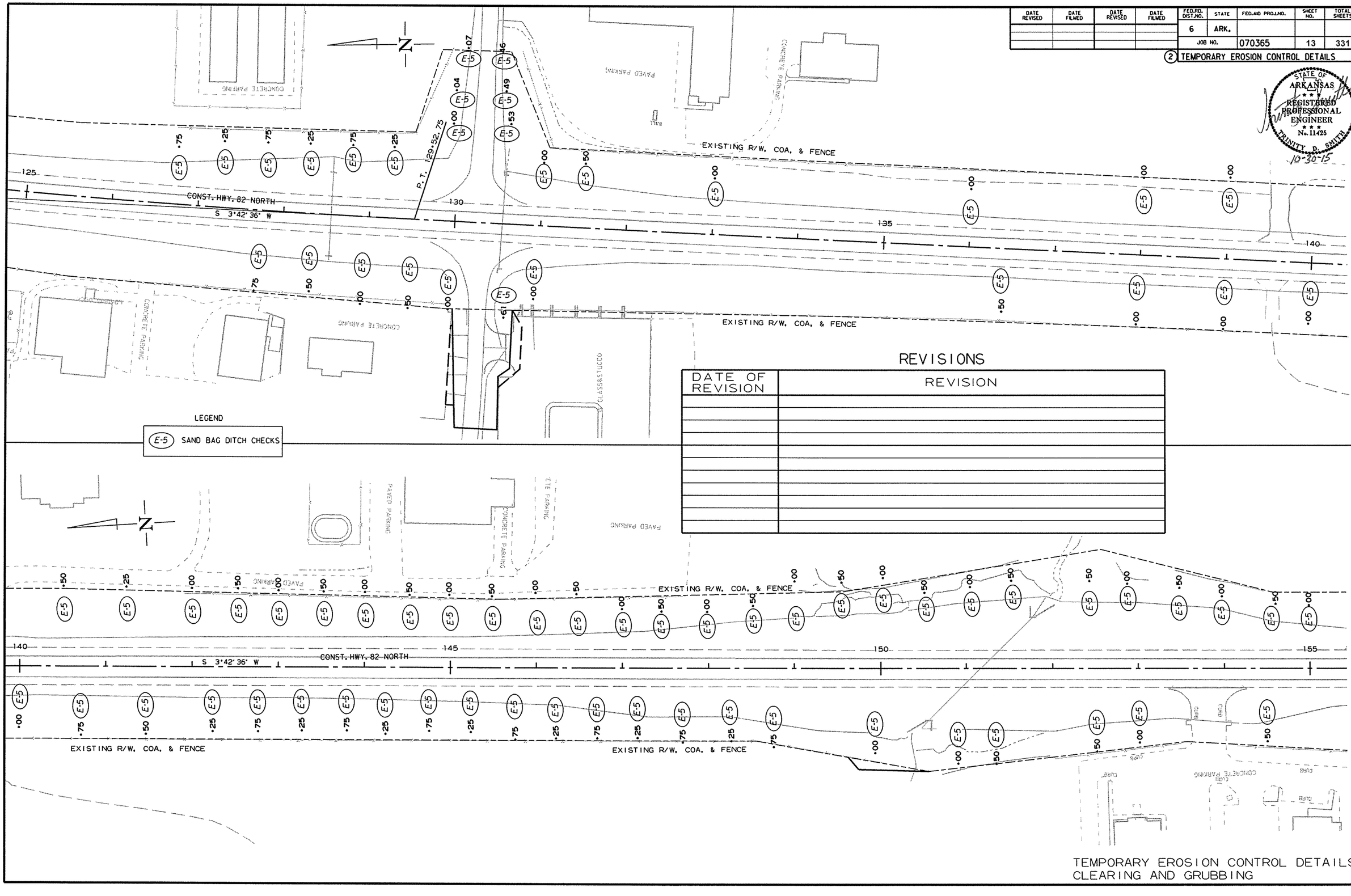
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	13	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



LEGEND

(E-5) SAND BAG DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	14	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
4-30-15

EXISTING R/W, COA, & FENCE

S 3°42'36" W — CONST. HWY. 82 NORTH

155 160 165 170

EXISTING R/W, COA, & FENCE

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 SAND BAG DITCH CHECKS

E-11 · · · E-11 SILT FENCE

STA. 177+60 - STA. 178+33
INSTALL E-11 = 116 LIN. FT.

STA. 181+50 - STA. 184+00
INSTALL E-11 = 255 LIN. FT.

170 175 180 185

S 3°42'36" W — CONST. HWY. 82 NORTH

7/16/2015

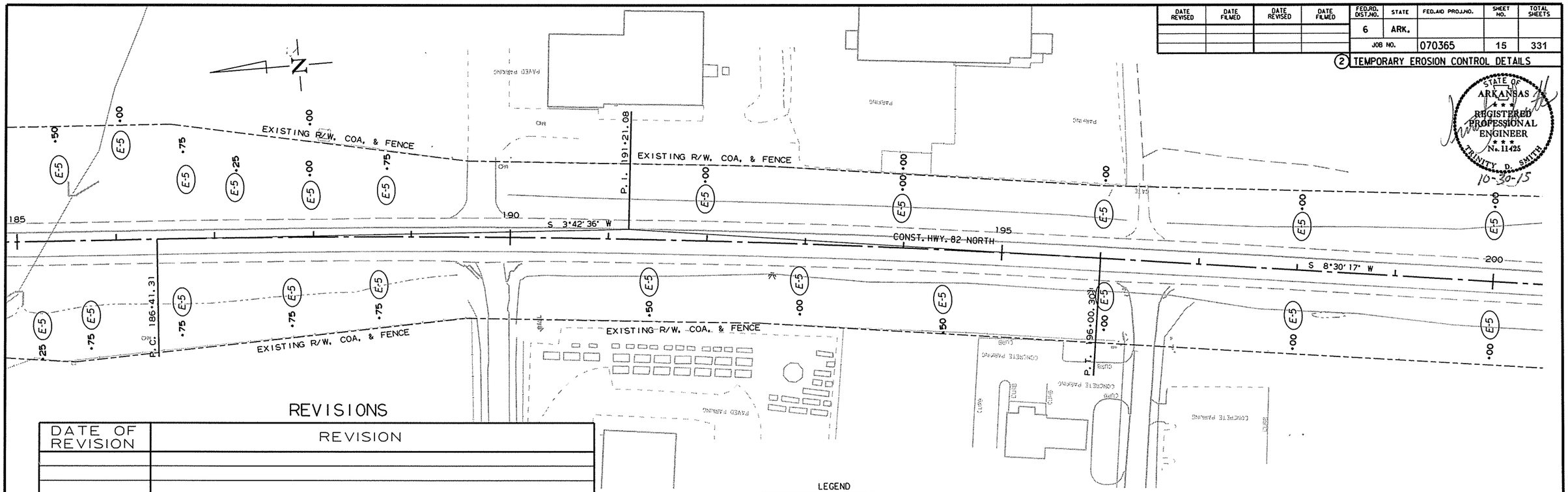
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	15	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) SAND BAG DITCH CHECKS

7/16/2015

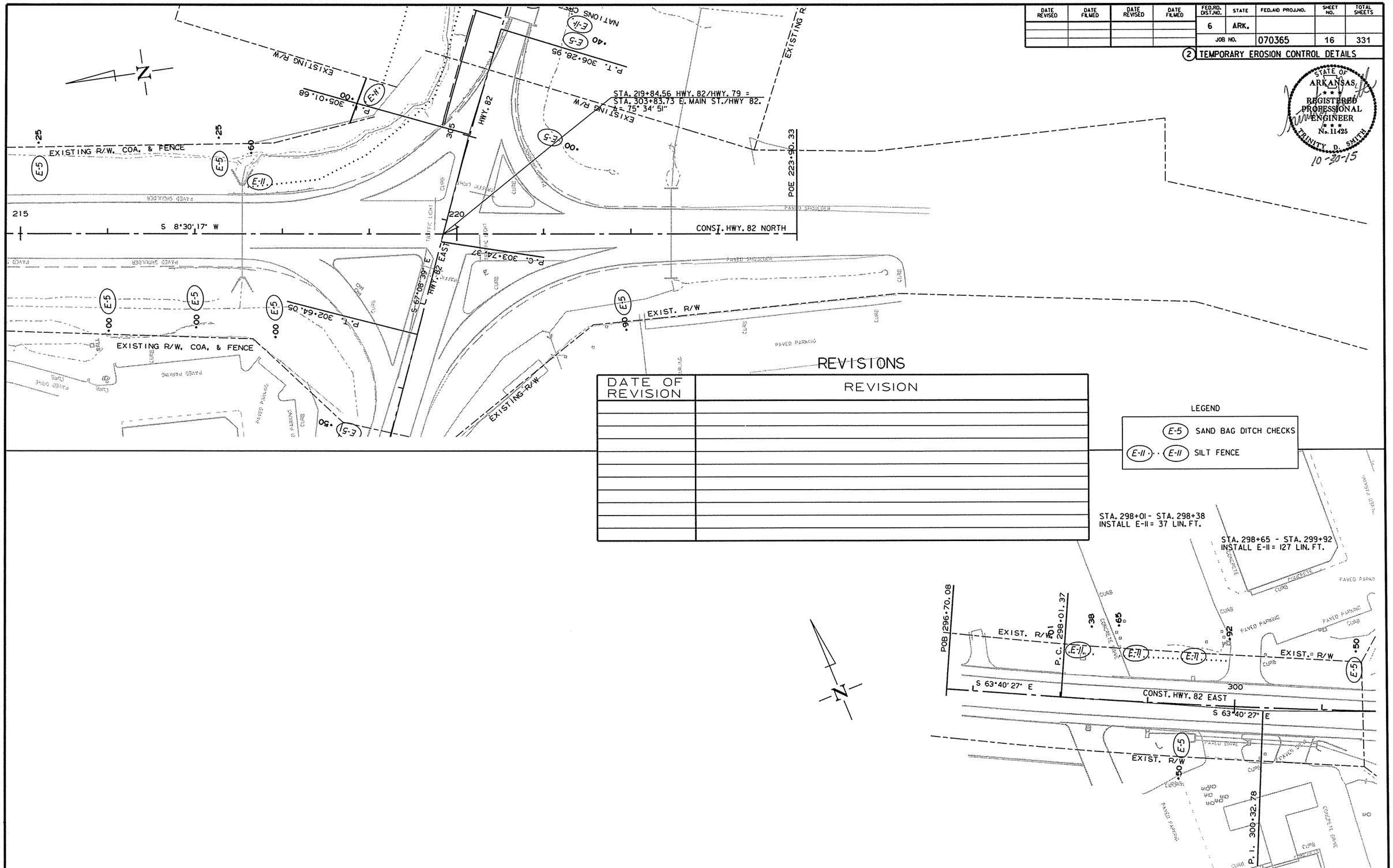
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	16	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 SAND BAG DITCH CHECKS

E-11 · · E-11 SILT FENCE

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

R070365.DGN 7/16/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	17	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 217+60 - STA. 306+75
INSTALL E-II = 435 LIN. FT.

STA. 305+00 - STA. 307+25
INSTALL E-II = 232 LIN. FT.

STA. 307+47 - STA. 309+00
INSTALL E-II = 211 LIN. FT.

STA. 306+40 - STA. 306+75
INSTALL E-II = 98 LIN. FT.

STA. 307+47 - STA. 317+75
INSTALL E-II = 1107 LIN. FT.

STA. 324+25 - STA. 328+00
INSTALL E-II = 368 LIN. FT.

STA. 312+00.45 E. MAIN ST./HWY 82. =
STA. 600+00 CO. RD. 36
Δ = 75° 02' 17"

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 SAND BAG DITCH CHECKS

E-II ·· E-II SILT FENCE

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	18	331

(2) TEMPORARY EROSION CONTROL DETAILS

STA. 334+31 - STA. 334+66
INSTALL E-11 = 35 LIN. FT.

STA. 339+81 - STA. 340+60
INSTALL E-11 = 81 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-15
TRINITY D. SMITH

P.T. 332+83.17

PROPOSED R/W

EXIST. R/W

CONST. HWY. 82 EAST

S 69°27' 54" E

S 64°35' 54" E

P.I. 330+88.62

PAVED SHOULDER

PAVED DRIVE

CONCRETE DRIVE

CONCRETE PAD

OPEN STORAGE

GATE

330 335 340 345 350 355 360

LEGEND

E-5 SAND BAG DITCH CHECKS

E-11 SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

STA. 352+00 - STA. 360+70
INSTALL E-11 = 983 LIN. FT.

UNDER CONSTRUCTION

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	19	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 374+85 - STA. 378+25
INSTALL E-II = 340 LIN. FT.

STA. 367+33 - STA. 368+80
INSTALL E-II = 146 LIN. FT.

STA. 387+67 - STA. 389+90
INSTALL E-II = 213 LIN. FT.

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 SAND BAG DITCH CHECKS

E-II SILT FENCE

CONST. HWY. 82 EAST

S 69°27'54" E

EXIST. R/W

PROPOSED R/W

PAVED SHOULDER

PAVED PARKING

OPEN STORAGE

GATE

CONCRETE DRIVE

PAVED DRIVE

CONCRETE

CURB

UNDER CONSTRUCTION

CULTIVATED FIELD

BUILDING FOUNDATION

PATIO

CONCRETE PARKING

7/16/2015

R070365.DGN

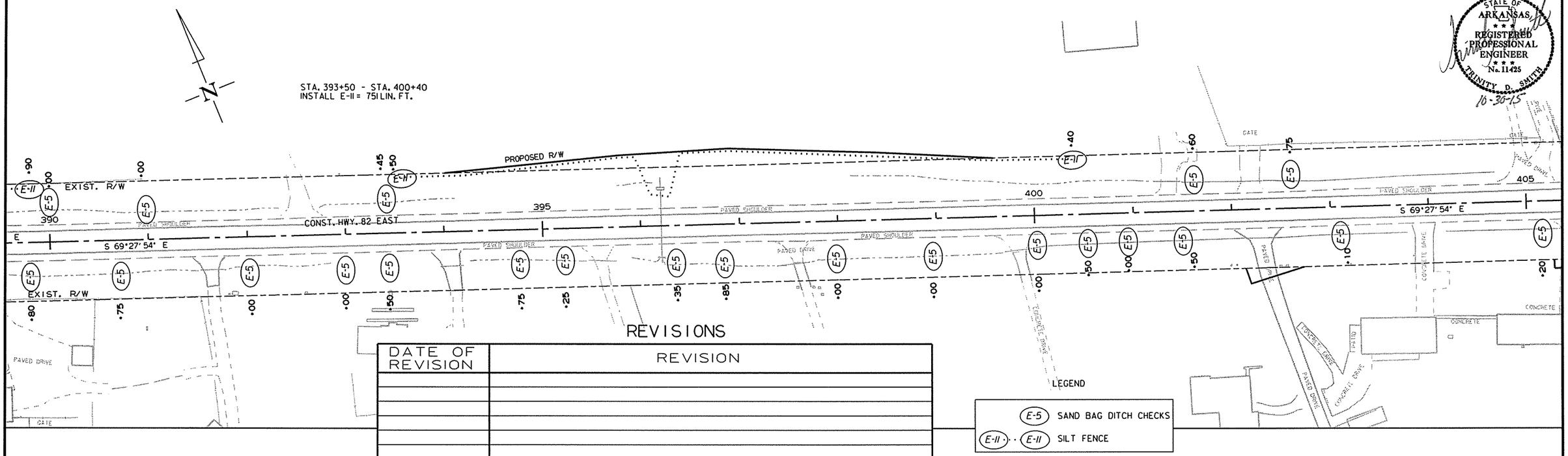
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	20	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 393+50 - STA. 400+40
INSTALL E-11 = 751 LIN. FT.



REVISIONS

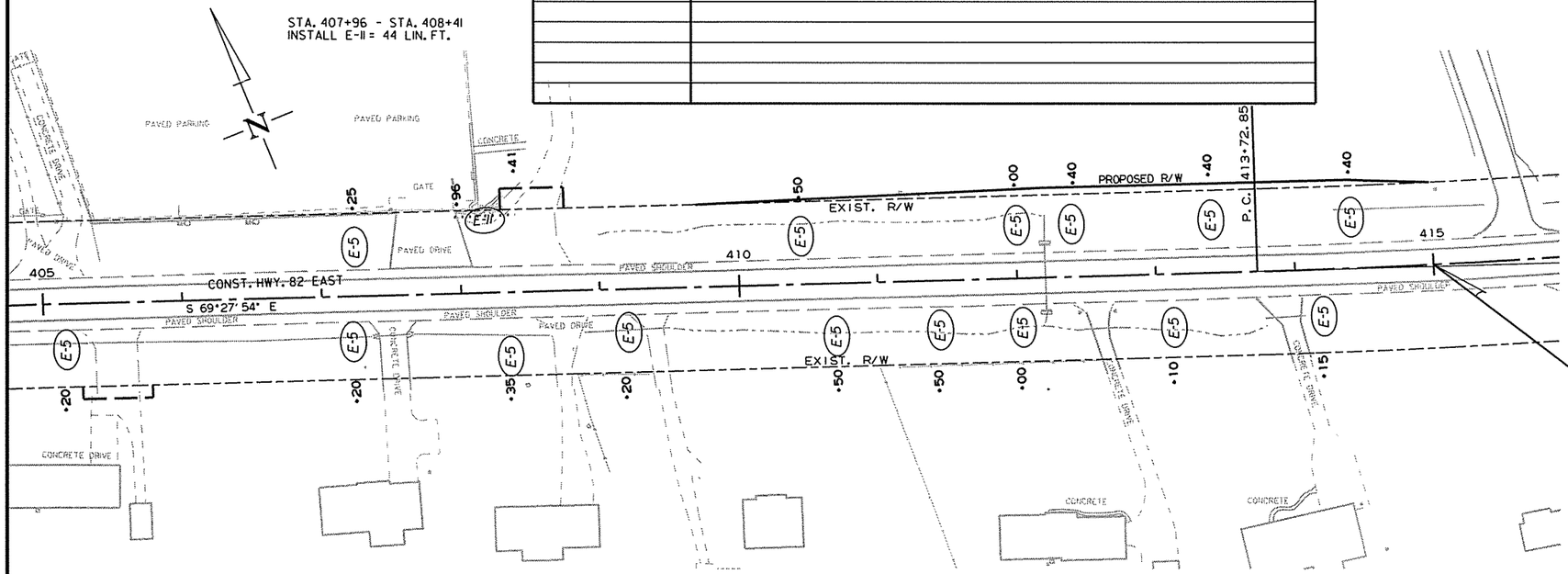
DATE OF REVISION	REVISION

LEGEND

E-5 SAND BAG DITCH CHECKS

E-11 ··· E-11 SILT FENCE

STA. 407+96 - STA. 408+41
INSTALL E-11 = 44 LIN. FT.



STA. 415+00.00
END JOB 070365

STA. 407+96 - STA. 408+41
INSTALL E-11 = 45 LIN. FT.

STA. 408+66 - STA. 414+50
INSTALL E-11 = 600 LIN. FT.

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

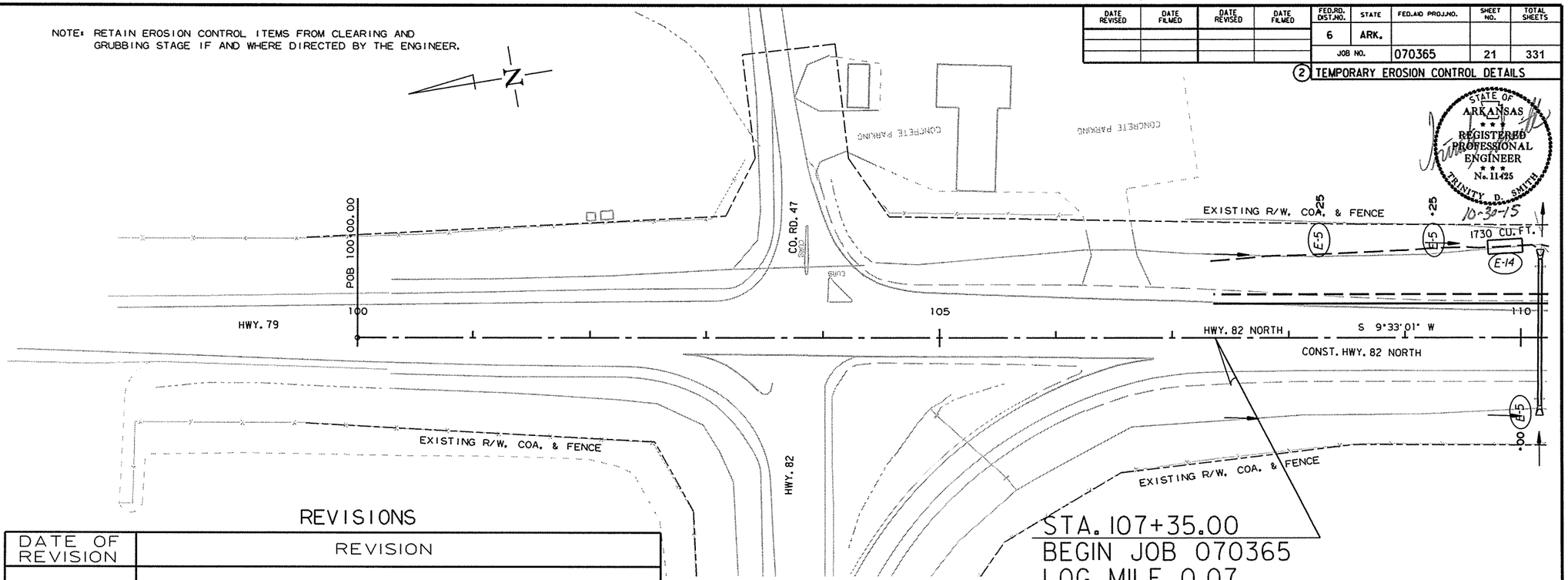
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	21	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.



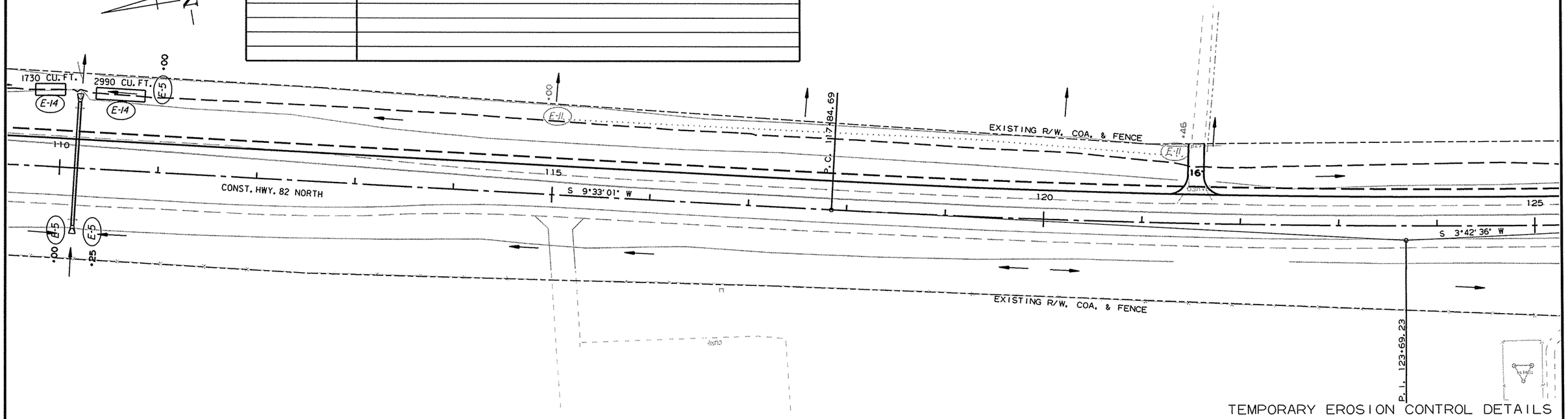
STA. 107+35.00
BEGIN JOB 070365
LOG MILE 0.07

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-14) SEDIMENT BASIN
- (E-11)·· (E-11) SILT FENCE

REVISIONS

DATE OF REVISION	REVISION



TEMPORARY EROSION CONTROL DETAILS
STAGE 1

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

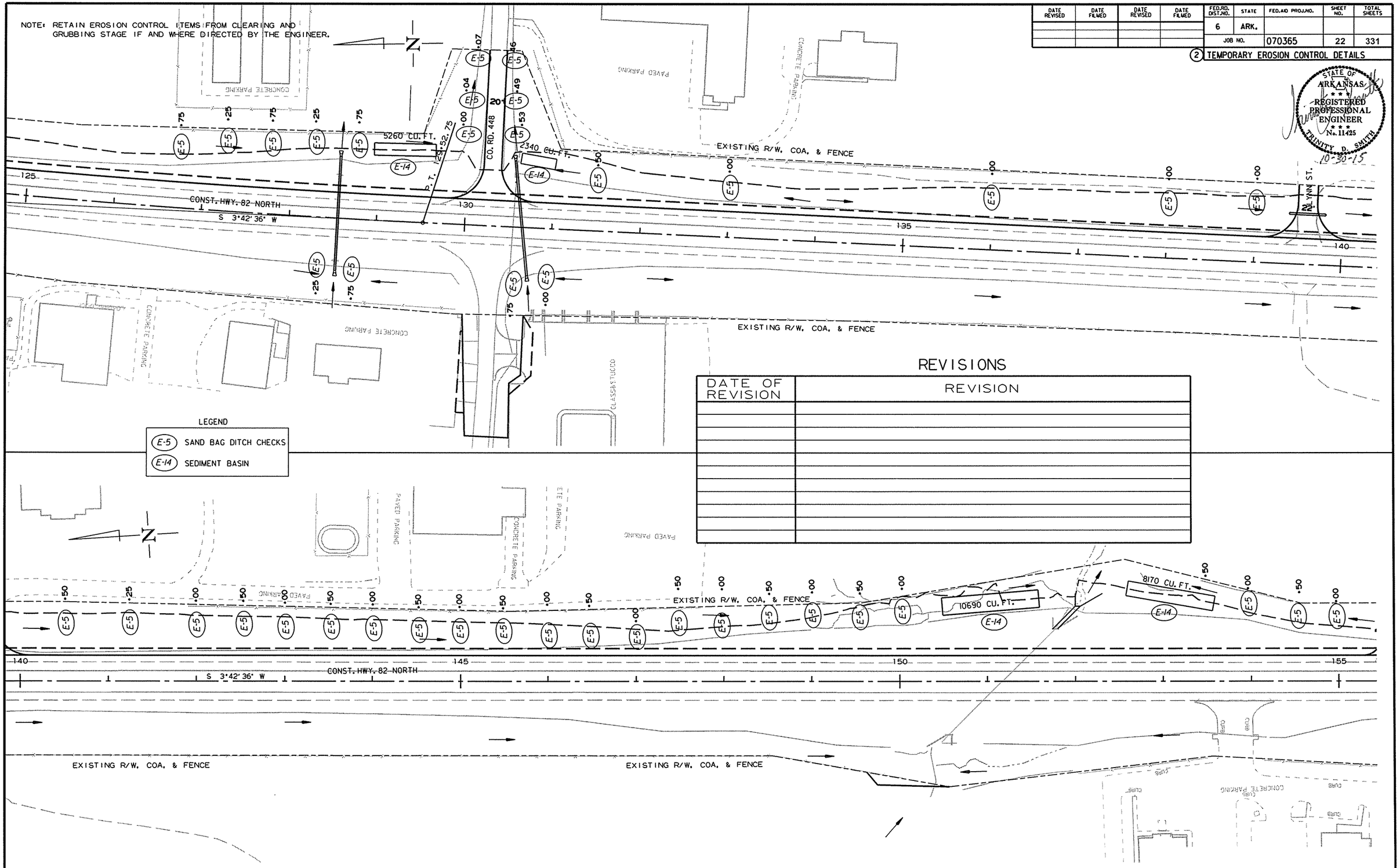
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	22	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

REVISIONS

DATE OF REVISION	REVISION

7/16/2015

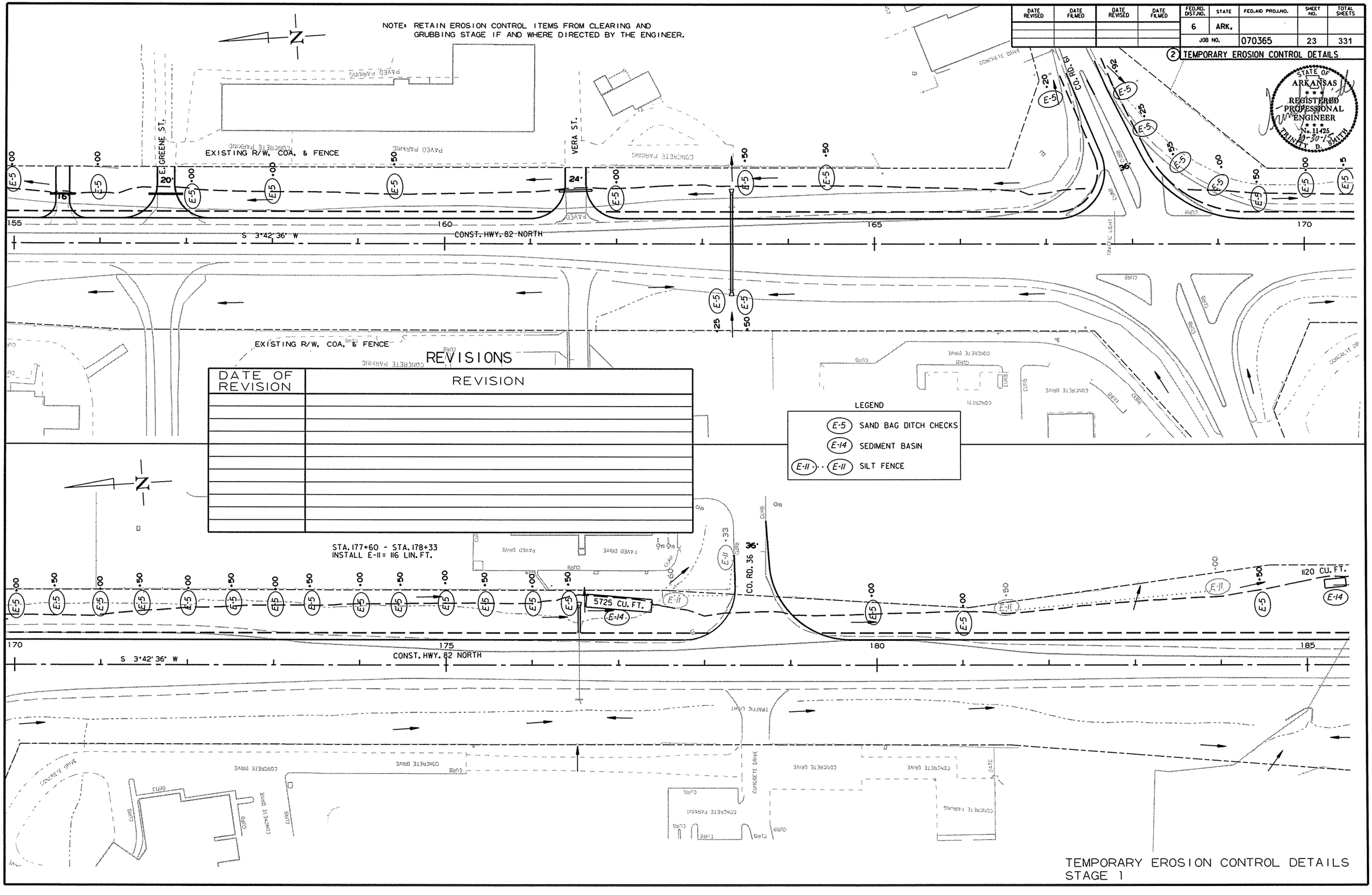
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	23	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-15
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-14) SEDIMENT BASIN
- (E-11) · · (E-11) SILT FENCE

7/16/2015

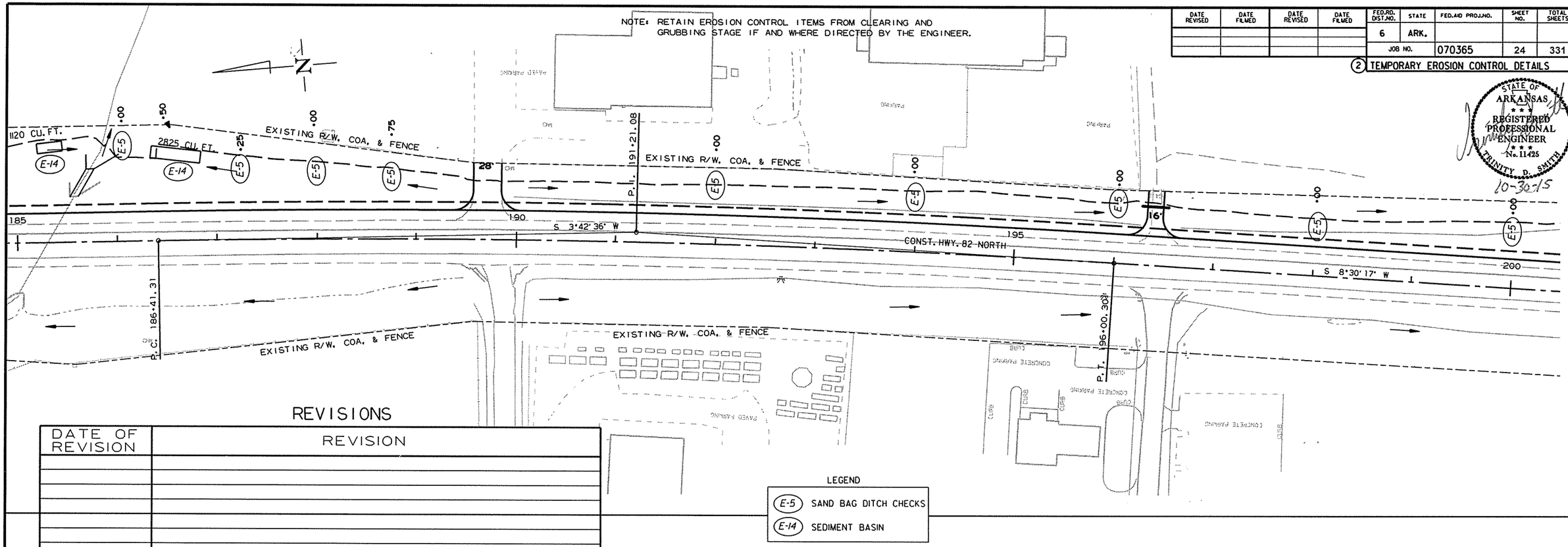
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	24	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.



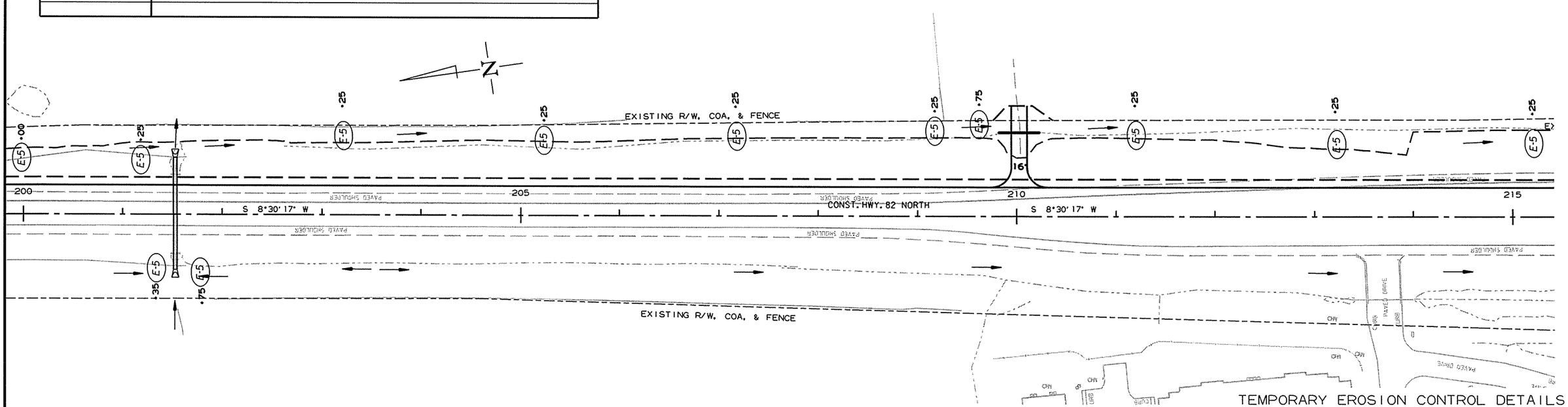
REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) SAND BAG DITCH CHECKS

(E-14) SEDIMENT BASIN



TEMPORARY EROSION CONTROL DETAILS
STAGE 1

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

7/16/2015

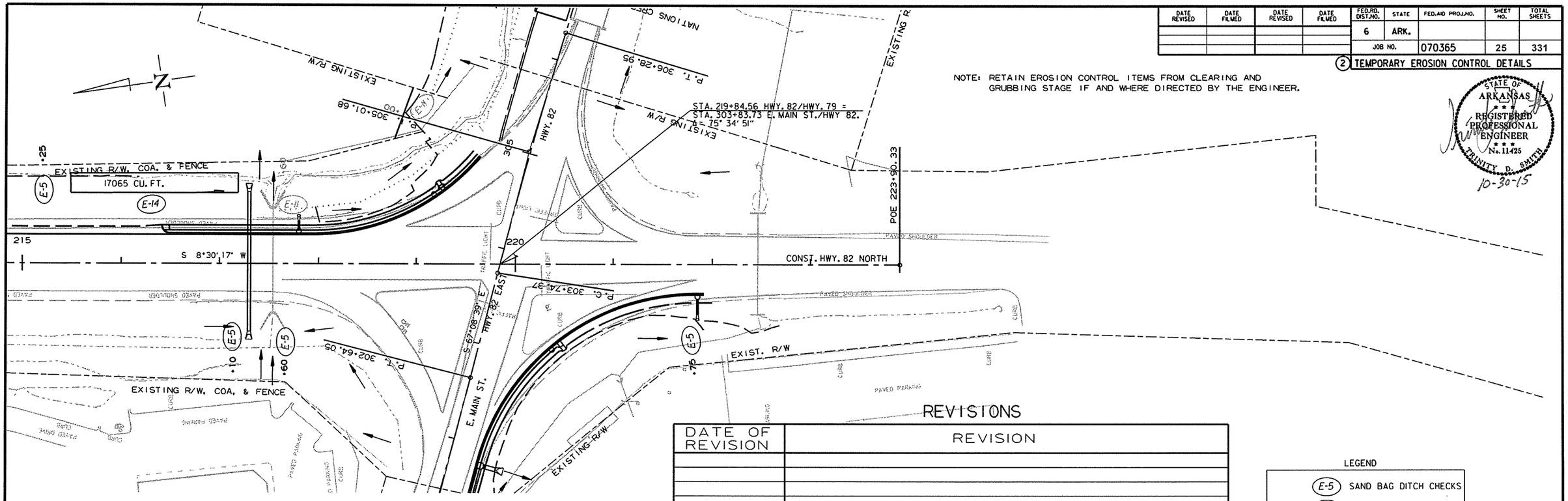
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	25	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

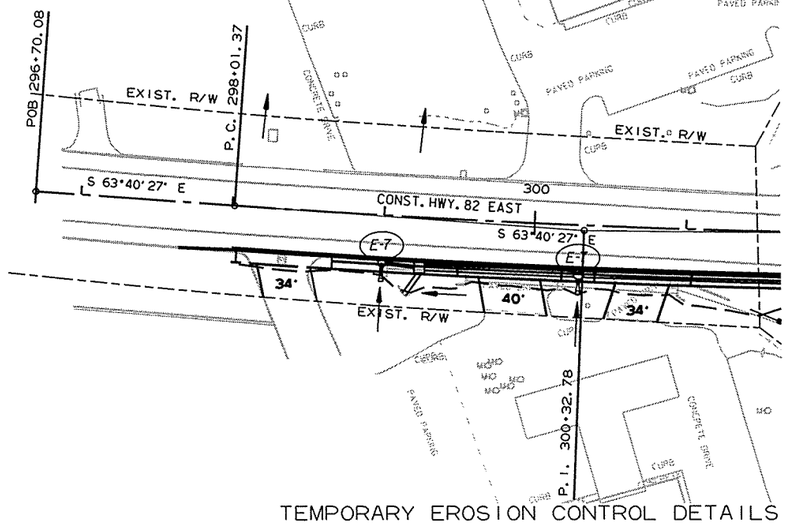


REVISIONS

DATE OF REVISION	REVISION

LEGEND

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



TEMPORARY EROSION CONTROL DETAILS
STAGE 1

7/16/2015

R070365.DGN

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	26	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 307+47 - STA. 309+00
INSTALL E-11 = 211 LIN. FT.

EXIST. R/W
EXISTING R/W
PROPOSED R/W
P.T. 302+64.05
P.C. 305+01.68
P.C. 309+95.61
P.T. 306+28.95
P.C. 303+74.37
P.I. 300+32.78
P.C. 308+03.05
NATIONS CREEK
E. MAIN ST.
CONST. HWY. 82 EAST
S 67°08' 39" E
S 63°40' 27" E
S 64°35' 54" E
S 61°42' 39" E
PAVED SHOULDER
CONCRETE DRIVE
PAVED PARKING
CURB
COA. & FENCE
TRAFFIC LIGHT
P.C. 312+03.27
P.T. 311+88.08
P.I. 313+95.82
P.C. 602+36.65
P.T. 601+39.79
P.C. 600+34.36
P.T. 602+36.41
N 83°39' 41" E
CO. RD. 36
STA. 312+00.45 E. MAIN ST./HWY 82. =
STA. 600+00 CO. RD. 36
Δ = 75° 02' 17"

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

P.I. 315+88.29
CONST. HWY. 82 EAST
EXIST. R/W
PROPOSED R/W
830 CU. FT.
1765 CU. FT.
1950 CU. FT.
P.C. 328+98.85
GATE

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	27	331

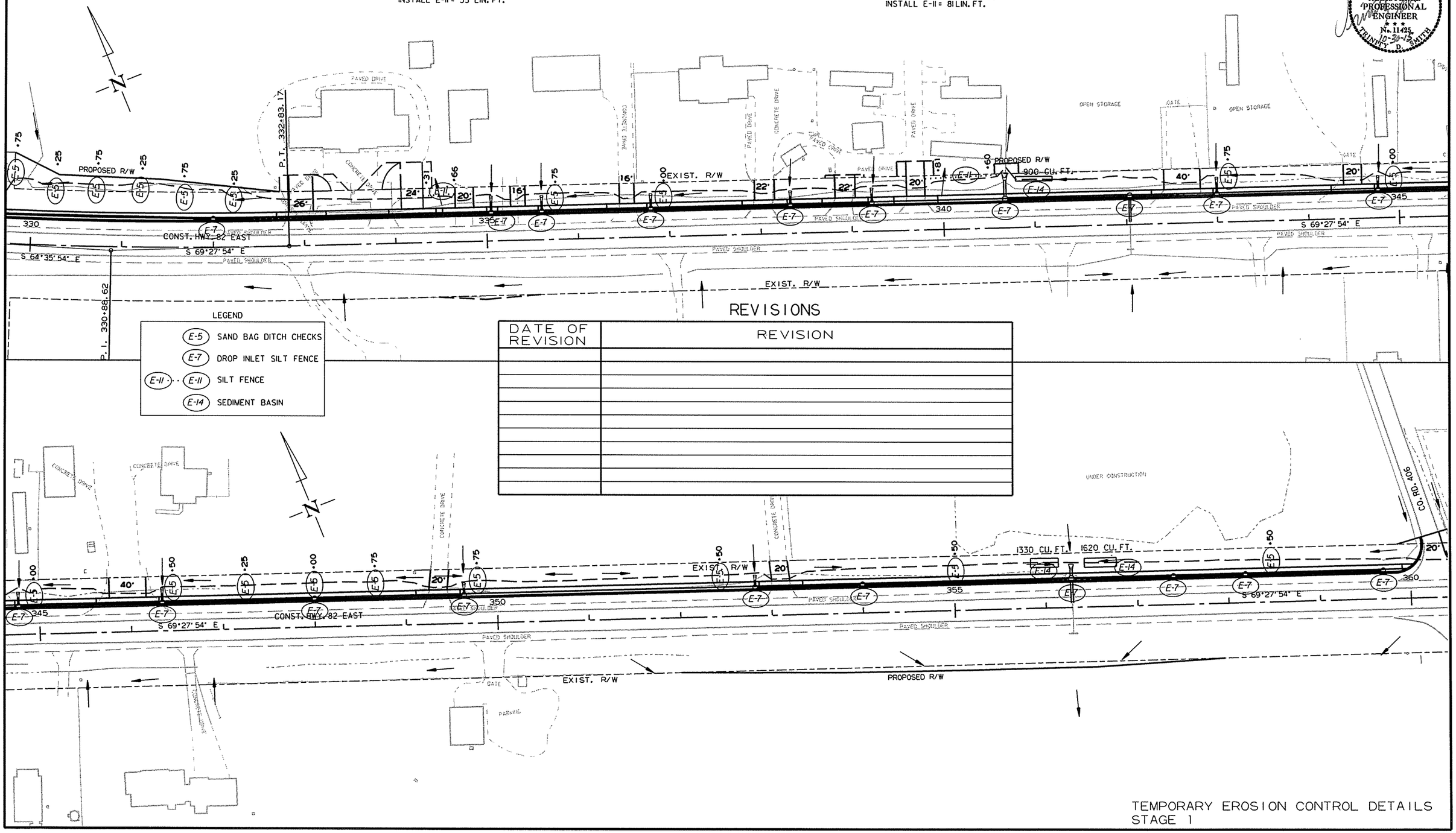
(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-24-15
TRINITY D. SMITH

STA. 334+31 - STA. 334+66
INSTALL E-11 = 35 LIN. FT.

STA. 339+81 - STA. 340+60
INSTALL E-11 = 81 LIN. FT.



REVISIONS

DATE OF REVISION	REVISION

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	28	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STA. 379+38 - STA. 379+84
INSTALL E-11 = 47 LIN. FT.

STA. 381+46 - STA. 382+40
INSTALL E-11 = 94 LIN. FT.

STA. 382+56 - STA. 384+55
INSTALL E-11 = 200 LIN. FT.

STA. 384+72 - STA. 387+45
INSTALL E-11 = 290 LIN. FT.

CO. RD. 406
CONST. HWY. 82 EAST
S 69°27'54" E
EXIST. R/W
PROPOSED R/W
1080 CU. FT.
PAVED SHOULDER
PAVED DRIVE
CONCRETE DRIVE
CONCRETE PARKING
BUILDING FOUNDATION
UNDER CONSTRUCTION
CULTIVATED FIELD
OPEN STORAGE
PAVED PARKING
GATE
CURB

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

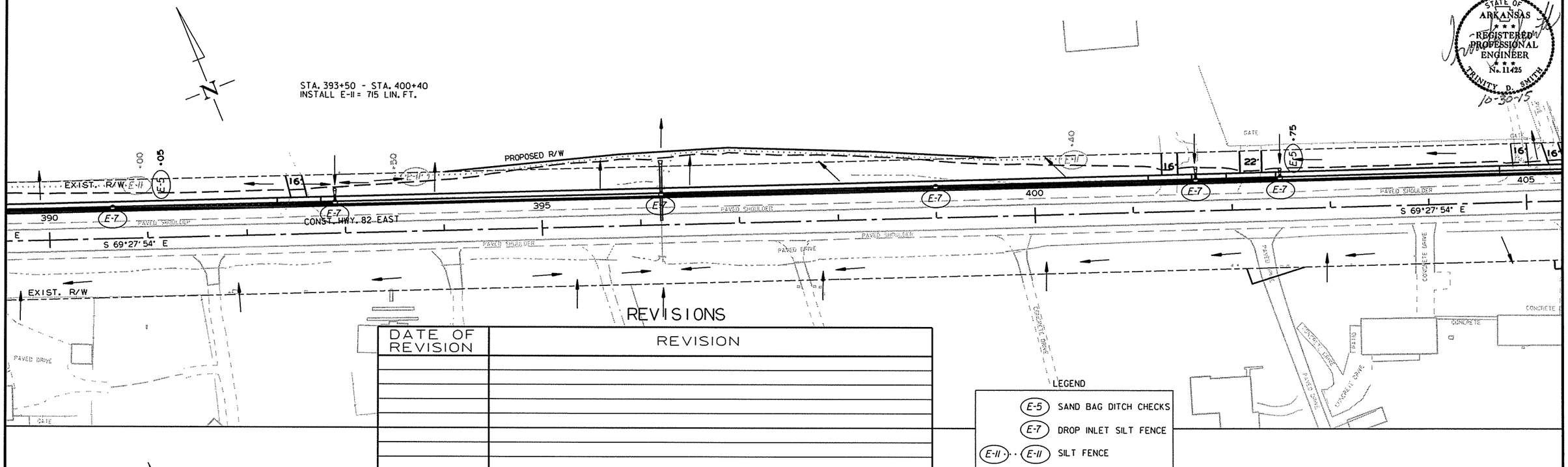
NOTE: RETAIN EROSION CONTROL ITEMS FROM CLEARING AND GRUBBING STAGE IF AND WHERE DIRECTED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	29	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 393+50 - STA. 400+40
INSTALL E-11 = 715 LIN. FT.



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-7) DROP INLET SILT FENCE
- (E-11)···(E-11) SILT FENCE

STA. 415+00.00
END JOB 070365

STA. 407+96 - STA. 408+41
INSTALL E-11 = 45 LIN. FT.

STA. 408+66 - STA. 414+50
INSTALL E-11 = 600 LIN. FT.

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

7/16/2015

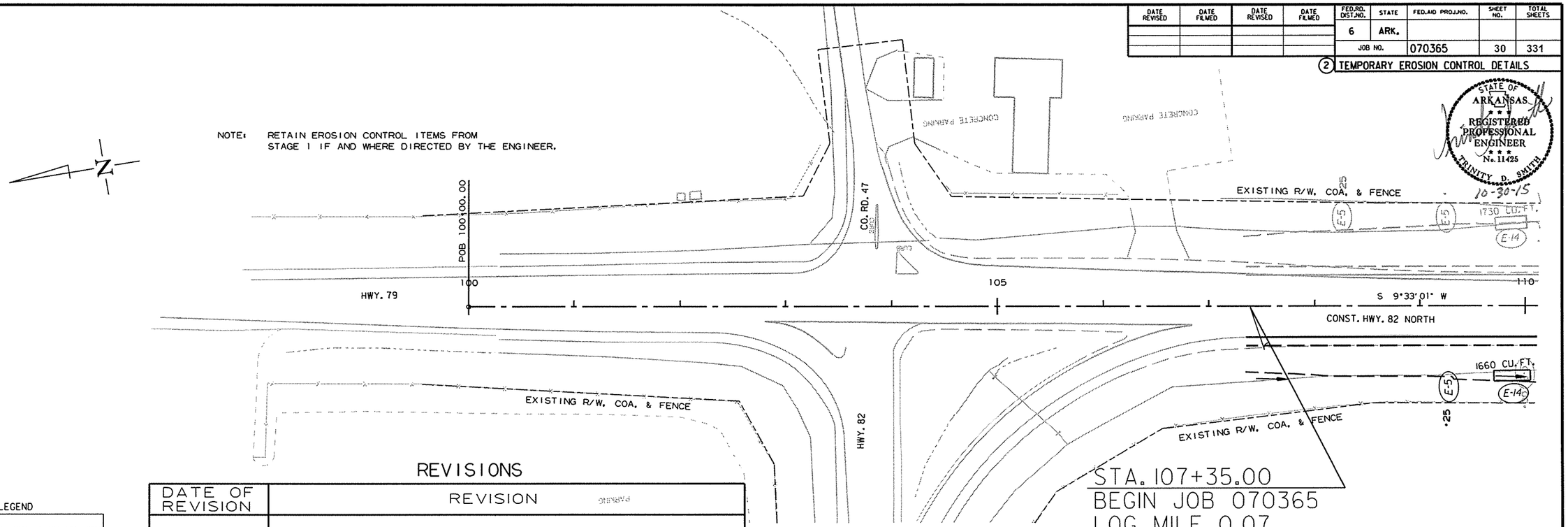
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	30	331

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM STAGE 1 IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

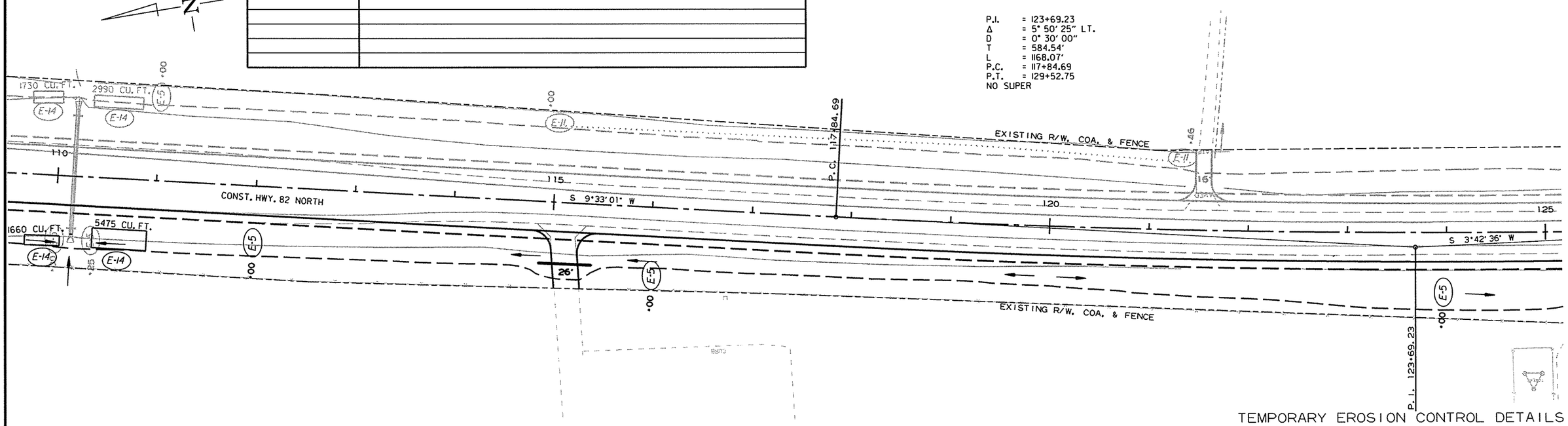


REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-14 SEDIMENT BASIN



P.I. = 123+69.23
Δ = 5° 50' 25" LT.
D = 0° 30' 00"
T = 584.54'
L = 1168.07'
P.C. = 117+84.69
P.T. = 129+52.75
NO SUPER

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

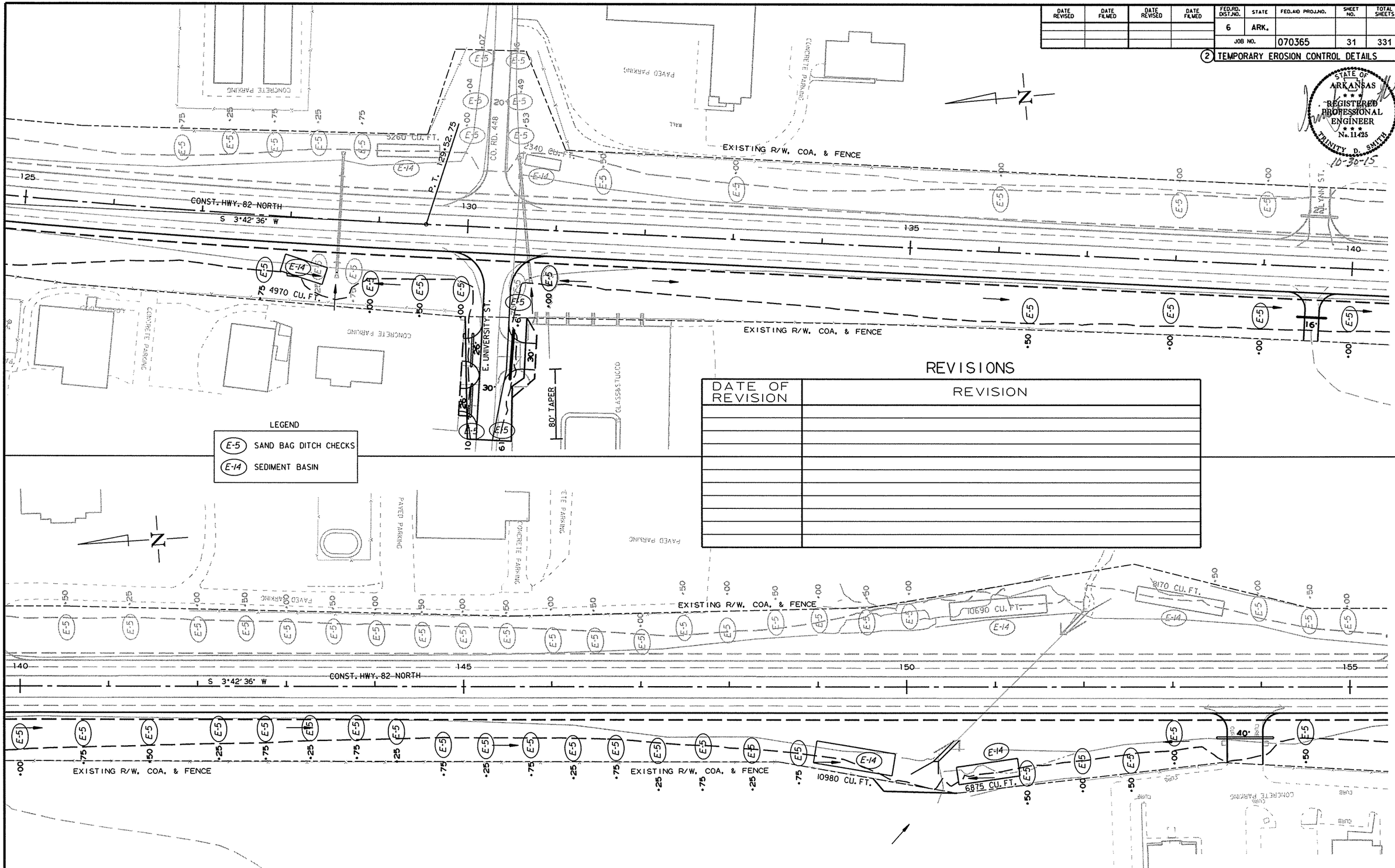
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	31	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

7/16/2015

R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	32	331

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

LEGEND

- E-5 SAND BAG DITCH CHECKS
- E-14 SEDIMENT BASIN

EXISTING R/W, COA, & FENCE

E. GREENE ST.

VERA ST.

S 3°42' 36" W

CONST. HWY. 82 NORTH

CO. RD. 36

E. NORTH ST.

3565 CU. FT.

5725 CU. FT.

5150 CU. FT.

4125 CU. FT.

1120 CU. FT.

3060 CU.

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

7/16/2015

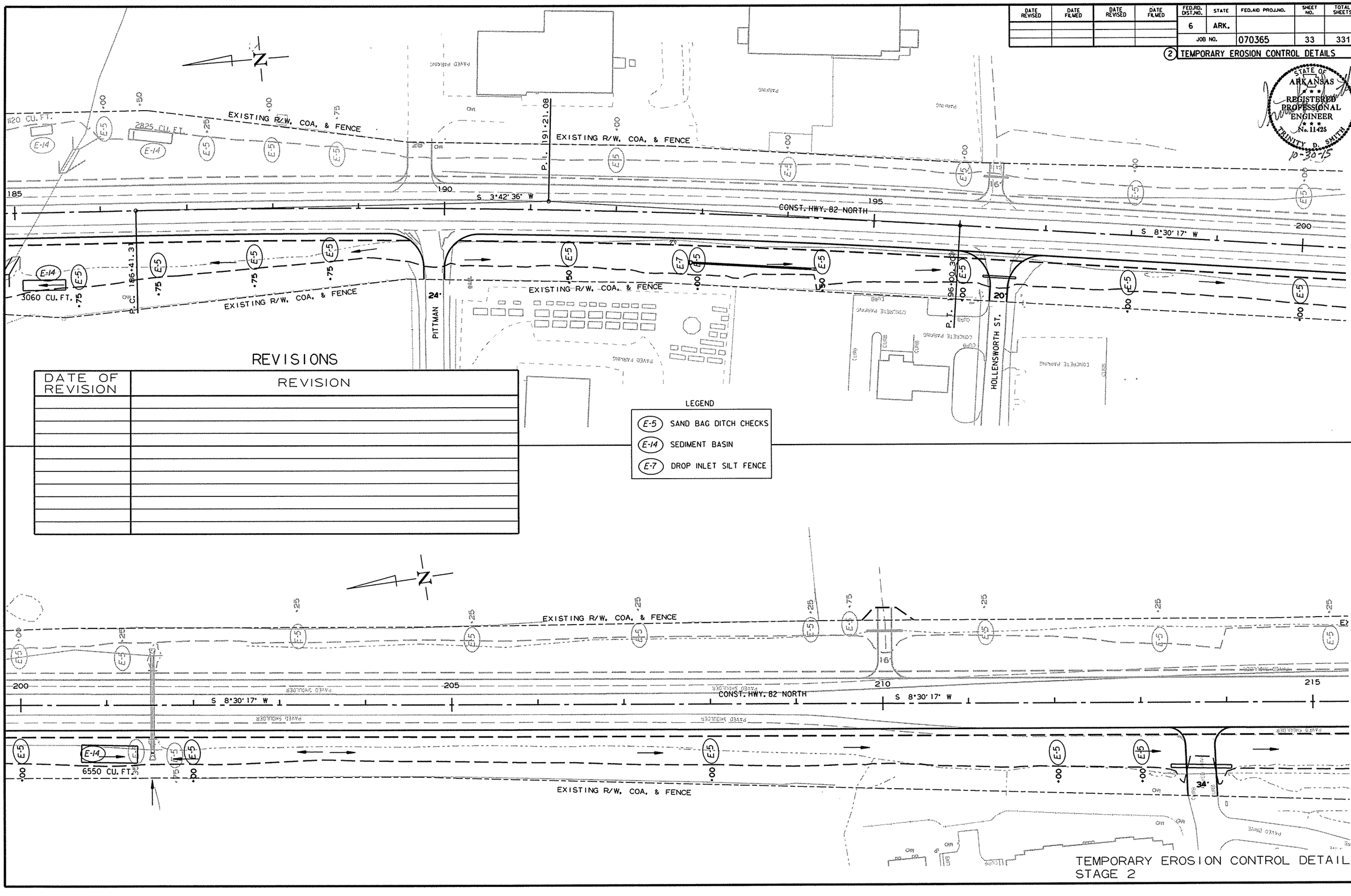
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	33	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

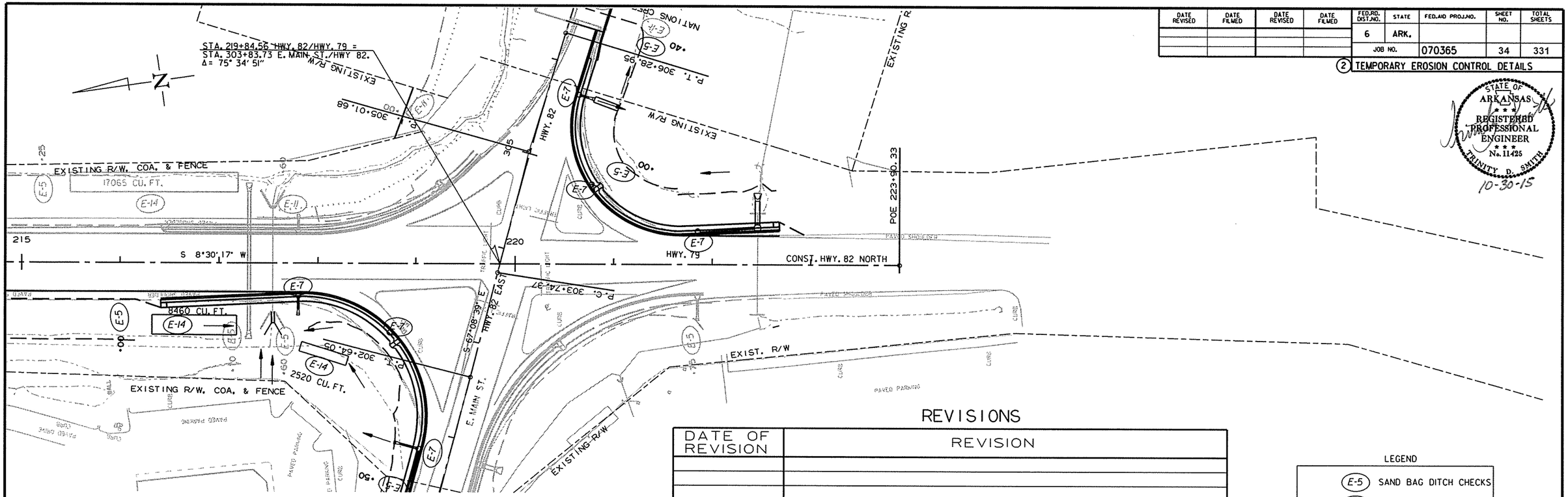
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	34	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

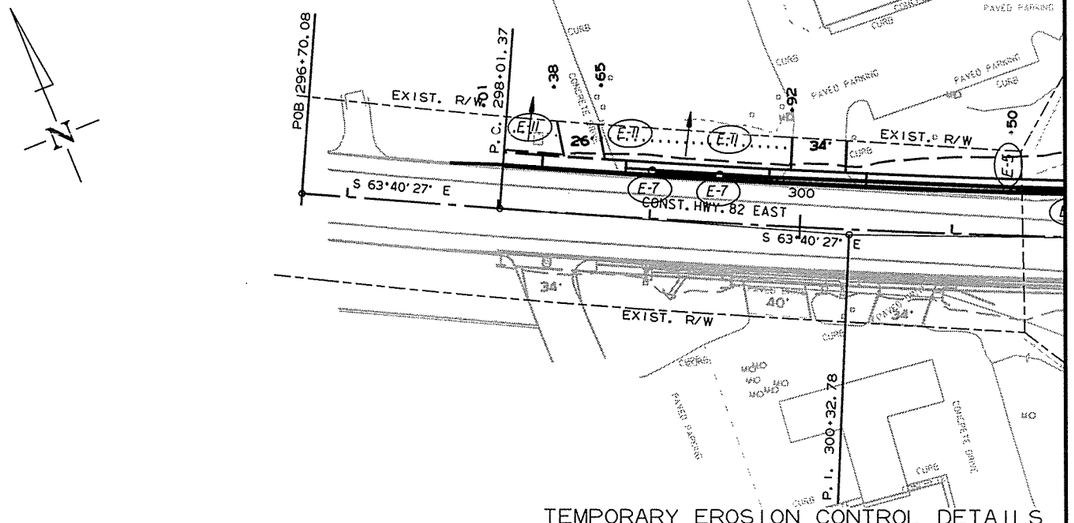


REVISIONS

DATE OF REVISION	REVISION

LEGEND

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



TEMPORARY EROSION CONTROL DETAILS
STAGE 2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	35	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

STA. 317+93 - STA. 319+00
INSTALL E-11 = 110 LIN. FT.

STA. 312+00.45 E. MAIN ST./HWY 82. =
STA. 600+00 CO. RD. 36
Δ = 75° 02' 17"

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

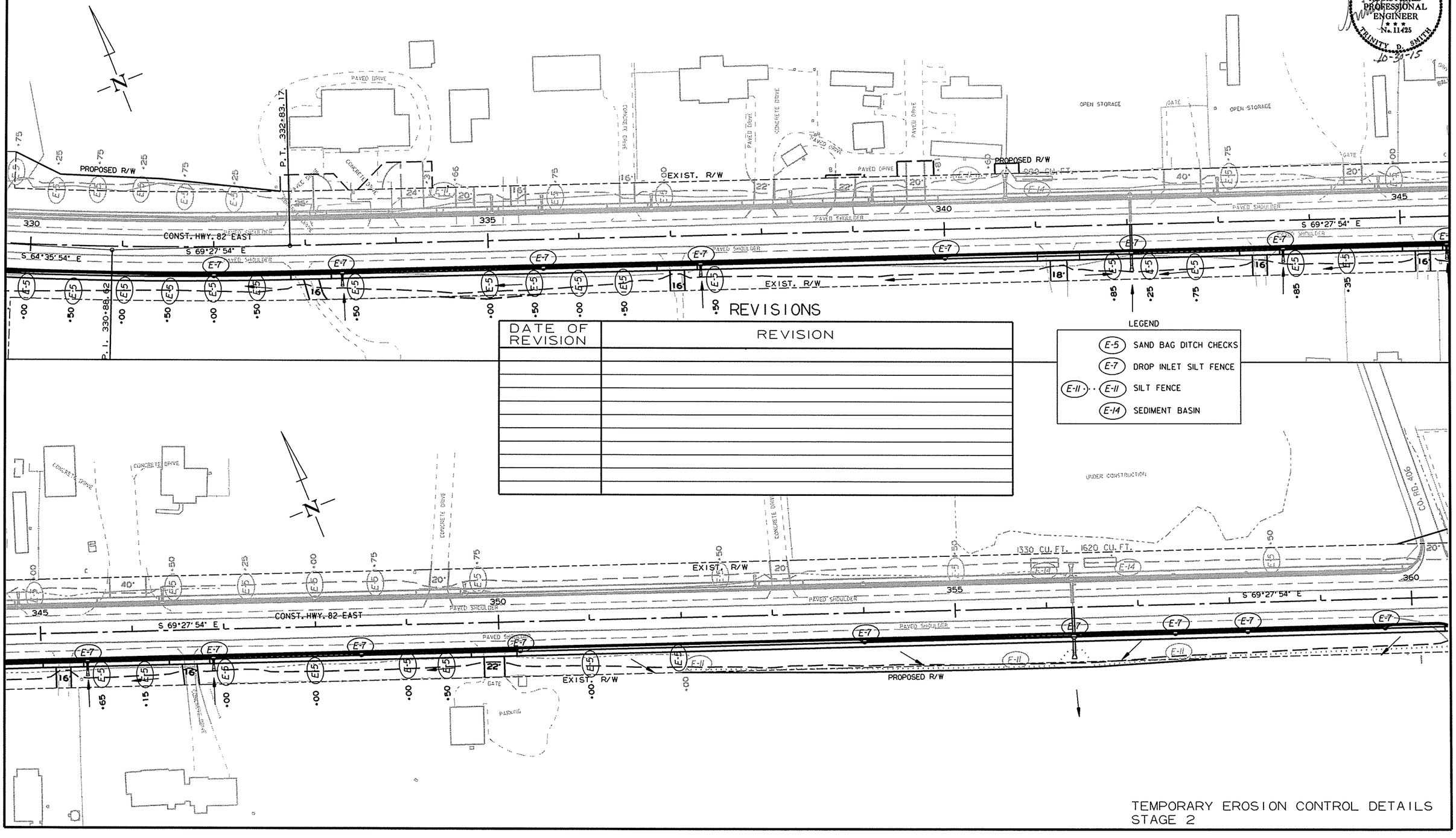
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	36	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

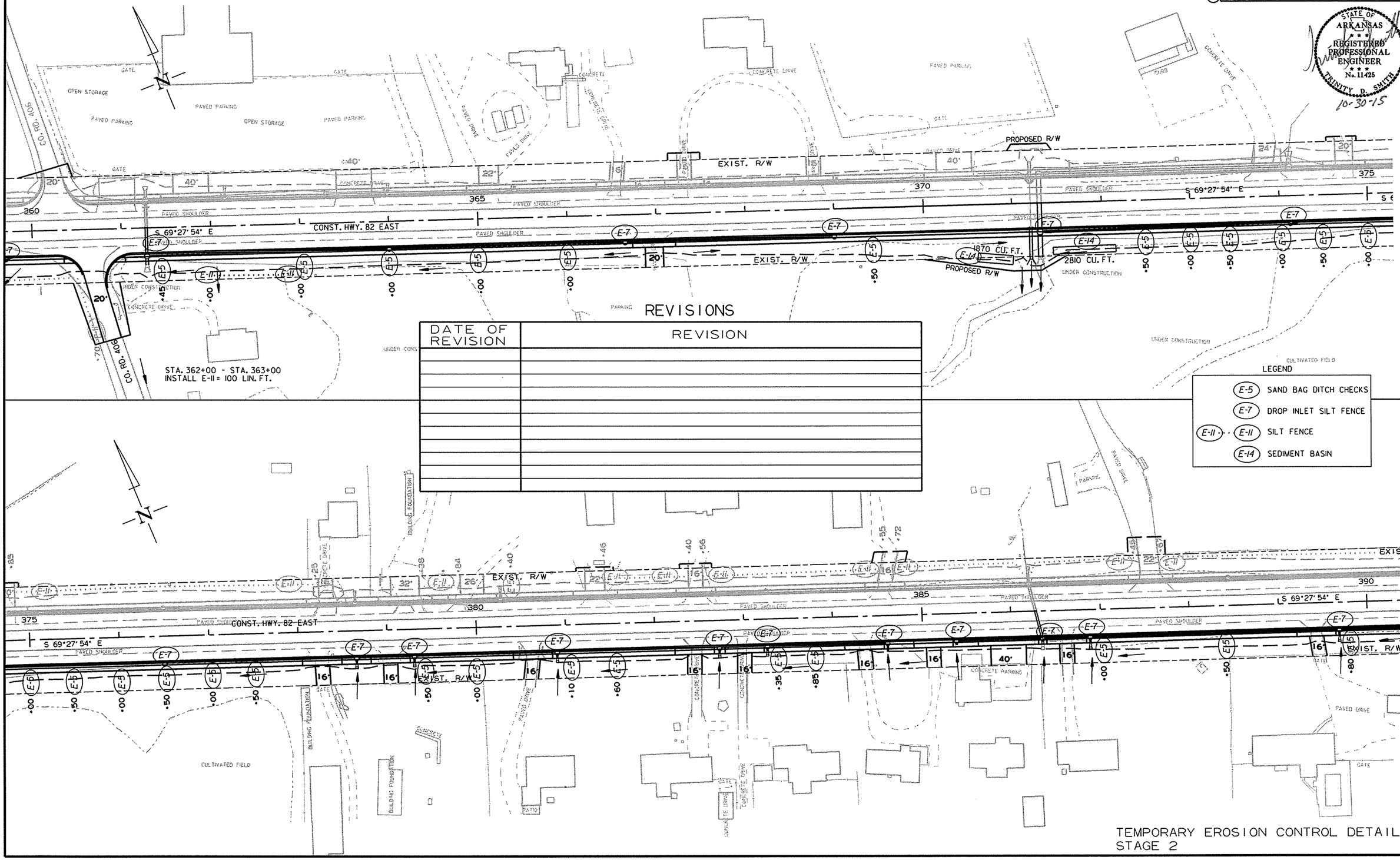
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	37	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

7/16/2015

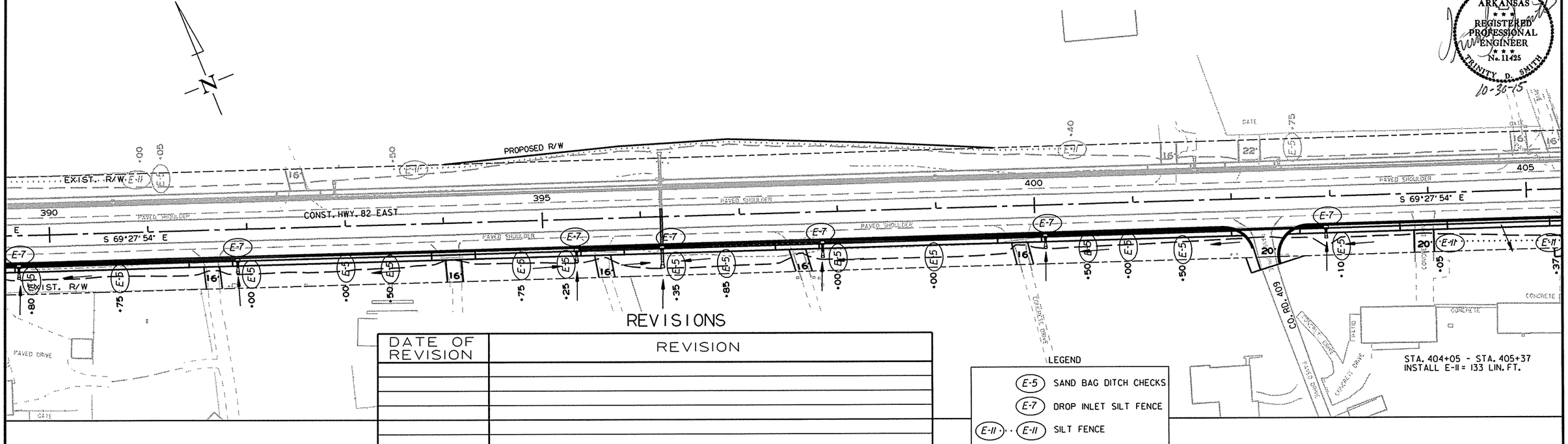
R070365.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	38	331

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



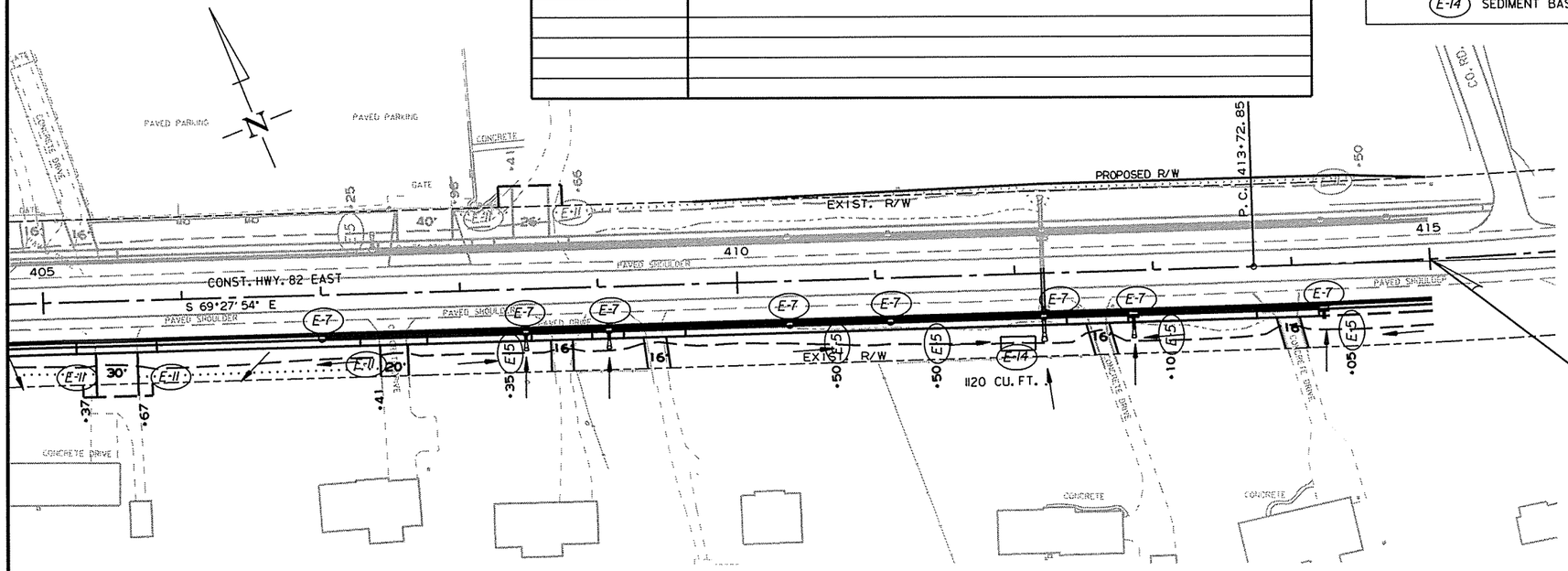
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STA. 404+05 - STA. 405+37
INSTALL E-11 = 133 LIN. FT.



STA. 415+00.00
END JOB 070365

STA. 405+67 - STA. 407+41
INSTALL E-11 = 175 LIN. FT.

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	39	331

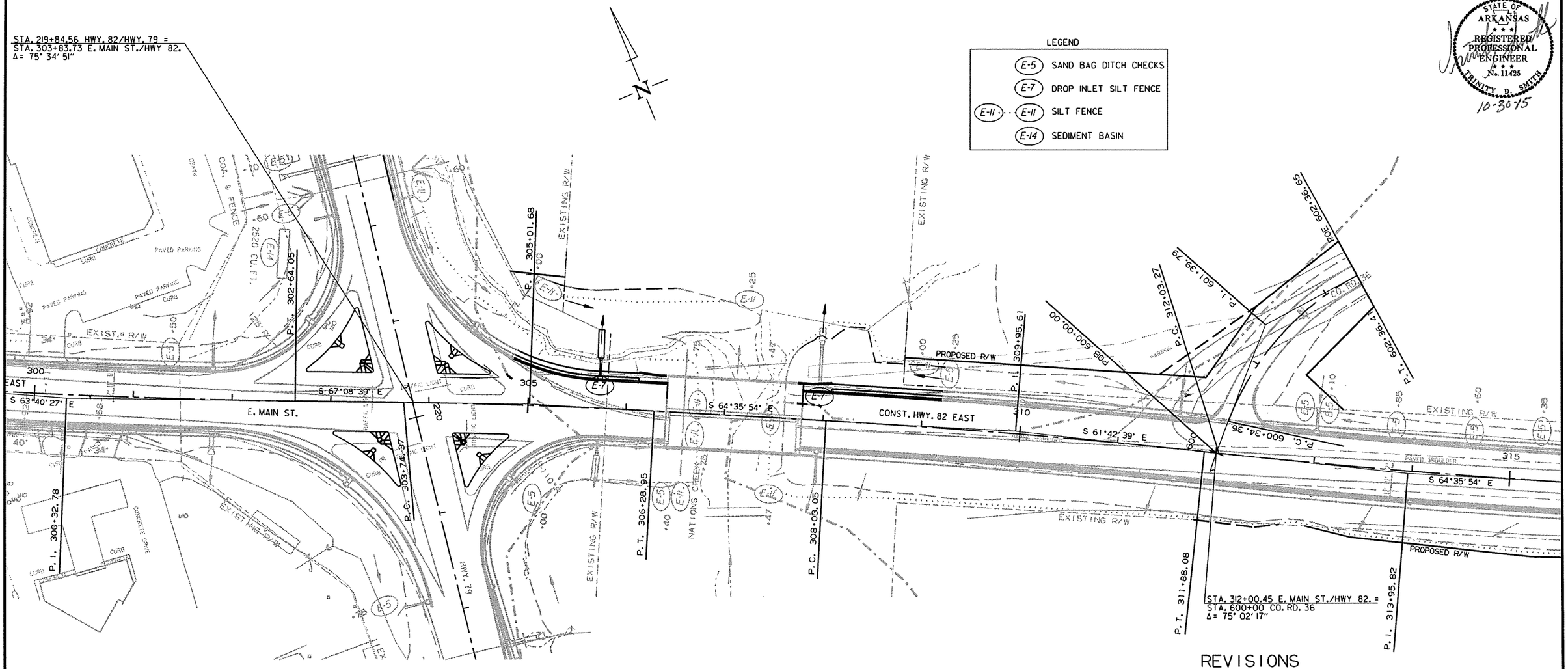
(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: RETAIN EROSION CONTROL ITEMS FROM STAGES 1 & 2 IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

LEGEND

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



REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

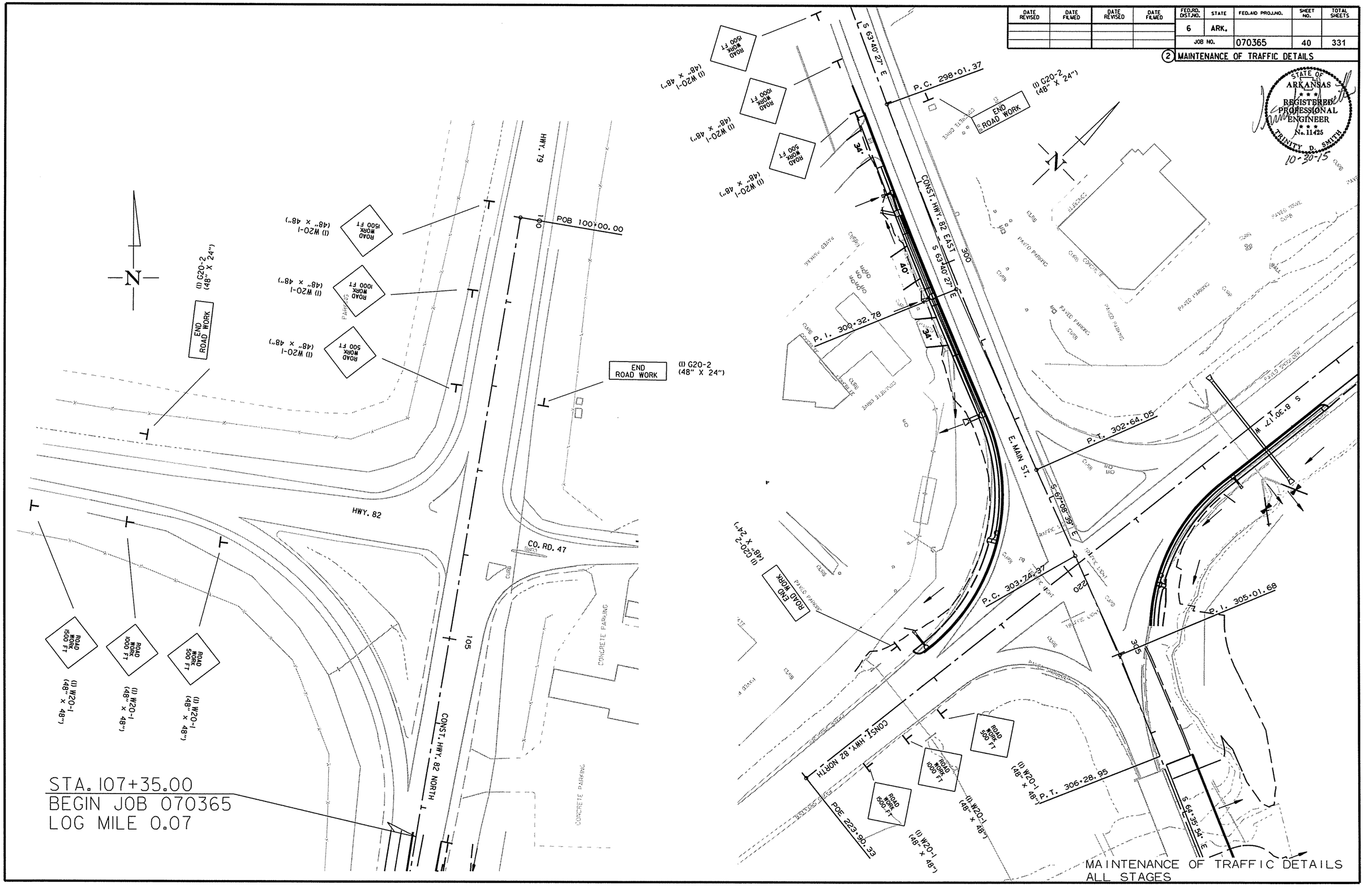
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	40	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



MAINTENANCE OF TRAFFIC DETAILS
ALL STAGES

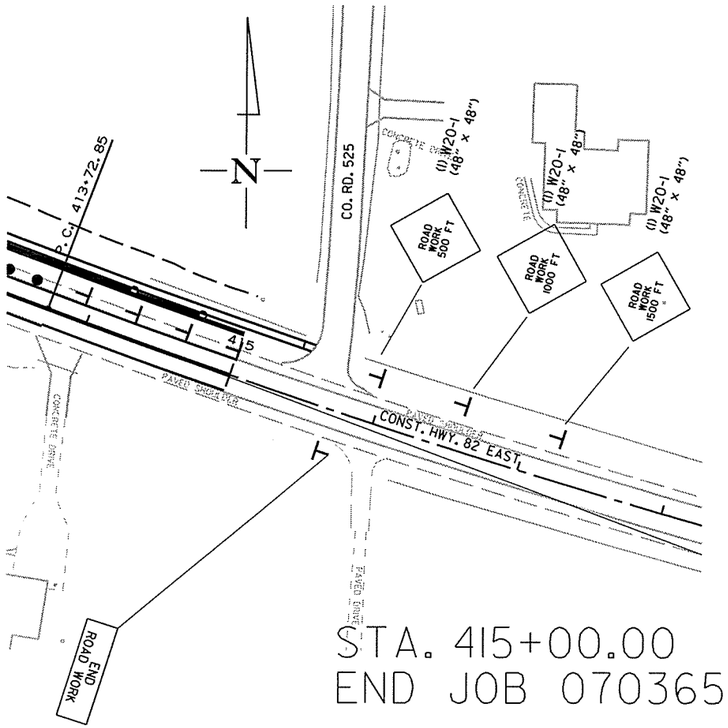
7/16/2015

R070365.DGN

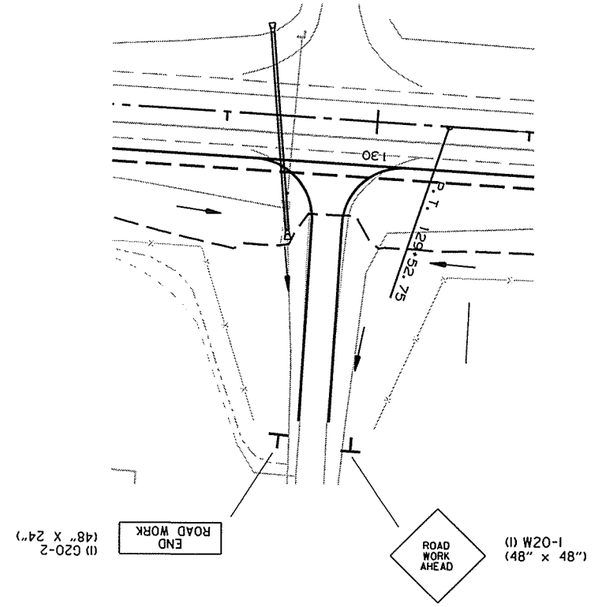
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	41	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

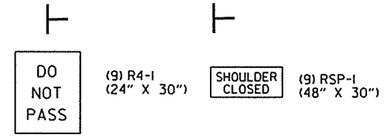


STA. 415+00.00
END JOB 070365

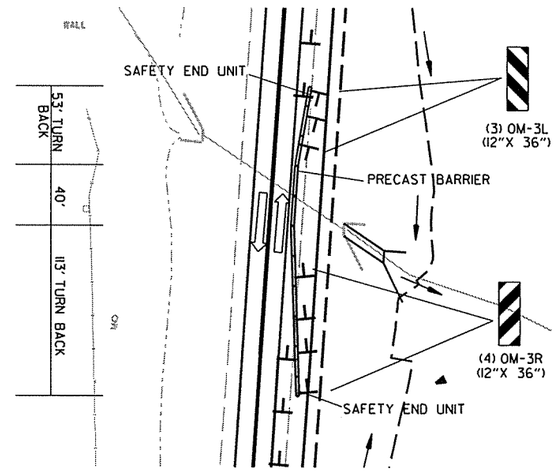


TO BE USED AT CITY STREET & COUNTY ROAD TURNOUTS
(17 LOCATIONS)

- VERTICAL PANELS
- TRAFFIC DRUMS

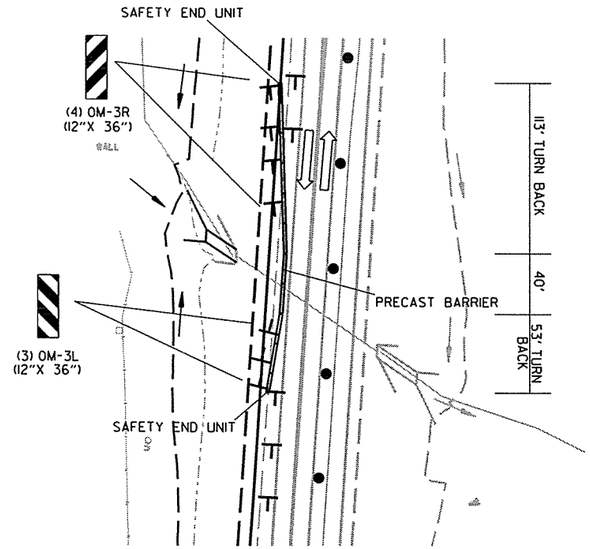


TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
ALL STAGES



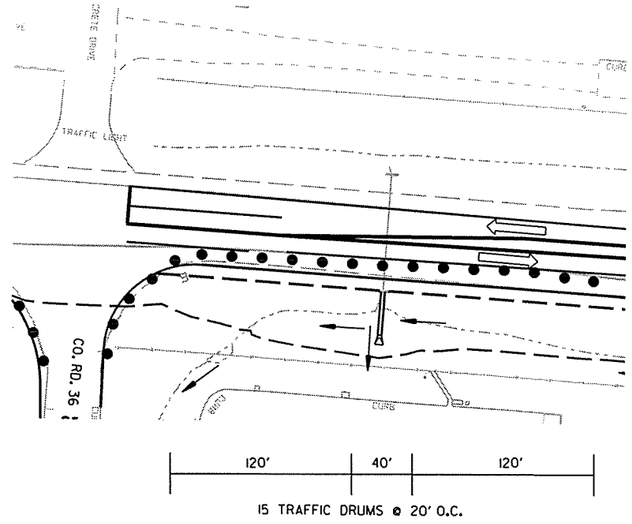
STAGE 1- TEMP. PRECAST BARRIER WALL FOR R.C. BOX CULVERTS

R.C. BOX CULVERT LOCATION	FURNISH AND INSTALL	RELOCATE
STA. 151+16	206 LIN. FT.	
STA. 185+30	206 LIN. FT.	
STA. 323+80	206 LIN. FT.	
STA. 328+90		206 LIN. FT.
STA. 371+21		206 LIN. FT.



STAGE 2 - TEMP. PRECAST BARRIER WALL FOR R.C. BOX CULVERTS

R.C. BOX CULVERT LOCATION	RELOCATE
STA. 151+16	206 LIN. FT.
STA. 185+30	206 LIN. FT.
STA. 217+54	206 LIN. FT.
STA. 323+80	206 LIN. FT.
STA. 328+90	206 LIN. FT.
STA. 371+21	206 LIN. FT.



TYPICAL MAINTENANCE OF TRAFFIC FOR PIPE CULVERT EXTENSIONS
STAGE 1- 3 LOCATIONS = 45 EACH
STAGE 2 - 4 LOCATIONS = 60 EACH

MAINTENANCE OF TRAFFIC DETAILS
ALL STAGES

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	42	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGE 1:
APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY TH EENGINEER

INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 167+62 LT., STA. 167+78 LT., AND 168+57 LT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 222+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+83.72
STRIPE EXISTING PAVEMENT AS SHOWN.
REMOVE ISLANDS AT HWY. 82/HWY.79 AND HWY. 82/E. MAIN ST. INTERSECTION.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER.

STA. 305+05.28 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
CONSTRUCT ADDITIONAL WIDENING.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT LT. SIDE OF NEW BRIDGE OVER NATIONS CREEK
ONLY BUILD PART OF THE DROP INLET AT STA. 307+95 LT.

STA. 309+17.65 - 415+00
MAINTAIN TRAFFIC ON EXISTING LANE
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STAGE 2:
INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 217+54, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 168+00 RT., STA. 168+79 RT., AND 169+00 RT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 223+66.33
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+82.05
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 305+70 - STA. 415+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT RT. SIDE OF NEW BRIDGE OVER NATIONS CREEK

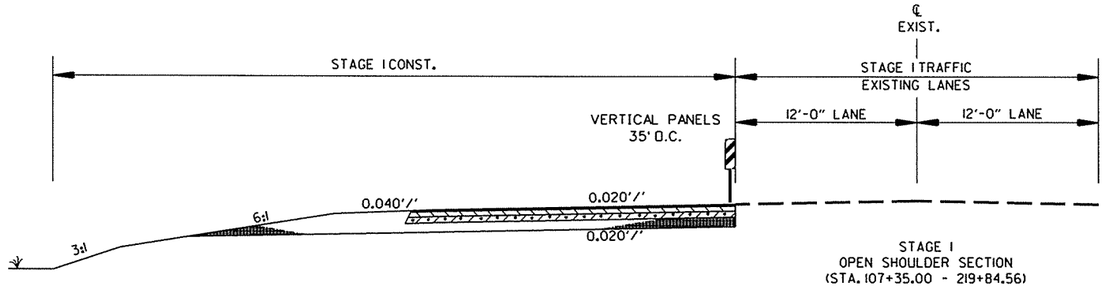
STAGE 3:
STA. 218+84 - STA. 220+78
CONSTUCT ISLANDS AT HWY. 82/HWY. 79/E. MAIN ST./HWY. 82 INTERSECTION.

STA. 304+84 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN
CONSTRUCT CURB AND GUTTER AND SIDEWALK ON LT. SIDE OF HWY. 82,
DELINEATING THE WORK ZONE USING TRAFFIC DRUMS
AT 35' O.C. AND COMPLETE THE DROP INLET AT STA. 307+95 LT.

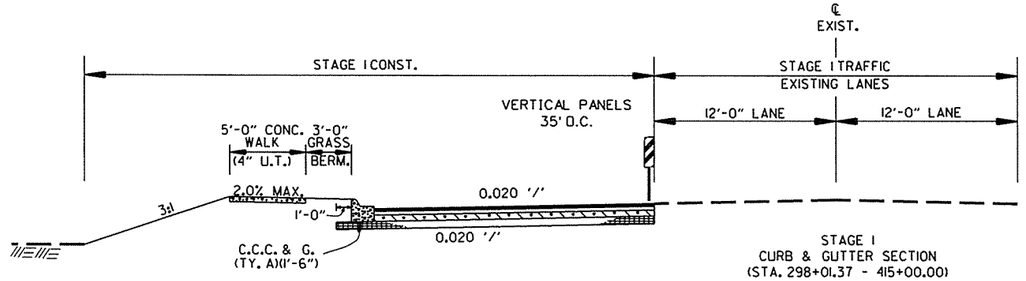
APPLY FINAL 2" OF ACHM. SURFACE AFTER ALL WIDENING HAS BEEN COMPLETED.
FINAL STRIPING.

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.

⊢ VERTICAL PANELS
● TRAFFIC DRUMS



STAGE I
OPEN SHOULDER SECTION
(STA. 107+35.00 - 219+84.56)



STAGE I
CURB & GUTTER SECTION
(STA. 298+01.37 - 415+00.00)

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

7/16/2015
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	43	331

(2) MAINTENANCE OF TRAFFIC DETAILS

VERTICAL PANELS (35' O.C.)
STA. 107+35-160+92 LT. =130 EACH
STA. 179+46-184+70 LT. = 76 EACH
STA. 308+93-415+00 LT. =199 EACH

TRAFFIC DRUMS = 10 EACH
20' O.C. ON CITY STREET
AND COUNTY ROAD TURNOUTS
(8 LOCATIONS = 80 EACH)

STA. 107+35-160+00 CONSTRUCTION
PAVEMENT MARKINGS = 21395 LIN. FT.

STA. 160+00-175+60 CONSTRUCTION
PAVEMENT MARKINGS = 5739 LIN. FT.

TRAFFIC DRUMS (35' O.C.)
STA. 160+92-174+91 LT. =27 EACH
STA. 167+17-168+09 (BOTH SIDES OF CO. RD. 61) =7 EACH
STA. 210+42-219+12 LT. = 24 EACH
STA. 220+46-221+95 LT. = 4 EACH
STA. 297+34-303+28 LT. = 3 EACH
STA. 304+42-305+48 LT. =19 EACH

TRAFFIC DRUMS
20' O.C. AROUND
ISLAND = 18 EACH

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

TRAFFIC DRUMS
(35' O.C.)

VERTICAL PANELS
(35' O.C.)

VERA ST.

CONST. HWY. 82 NORTH

S 3°42'36" W

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

TRAFFIC DRUMS = 6 EACH
20' O.C. ON DRIVES
(47 LOCATIONS = 282 EACH)

TRAFFIC DRUMS
(35' O.C.)

SAFETY END UNIT

PRECAST BARRIER

SAFETY END UNIT

S 8°30'17" W

P.T. 306+28.95

P.C. 305+01.68

TRAFFIC DRUMS
20' O.C. AROUND ISLANDS
AND INTERSECTION
RADII = 39 EACH

POE 223+90.33

CONST. HWY. 82 NORTH

P.C. 303+47.37

S 67°00'39" E

P.T. 302+64.05

E. MAIN ST.

STA. 219+84.56 HWY. 82/HWY. 79 =
STA. 303+83.73 E. MAIN ST./HWY 82.
Δ= 75° 34' 51"

STA. 208+93-223+90 CONSTRUCTION
PAVEMENT MARKINGS = 7450 LIN. FT.

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	44	331

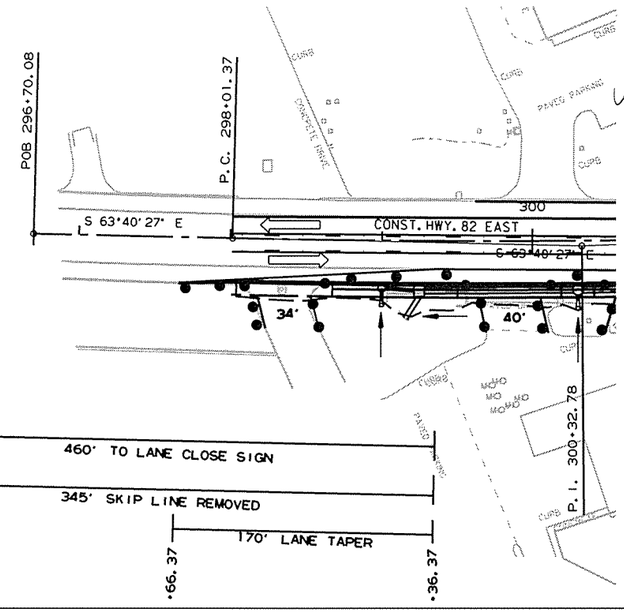
(2) MAINTENANCE OF TRAFFIC DETAILS

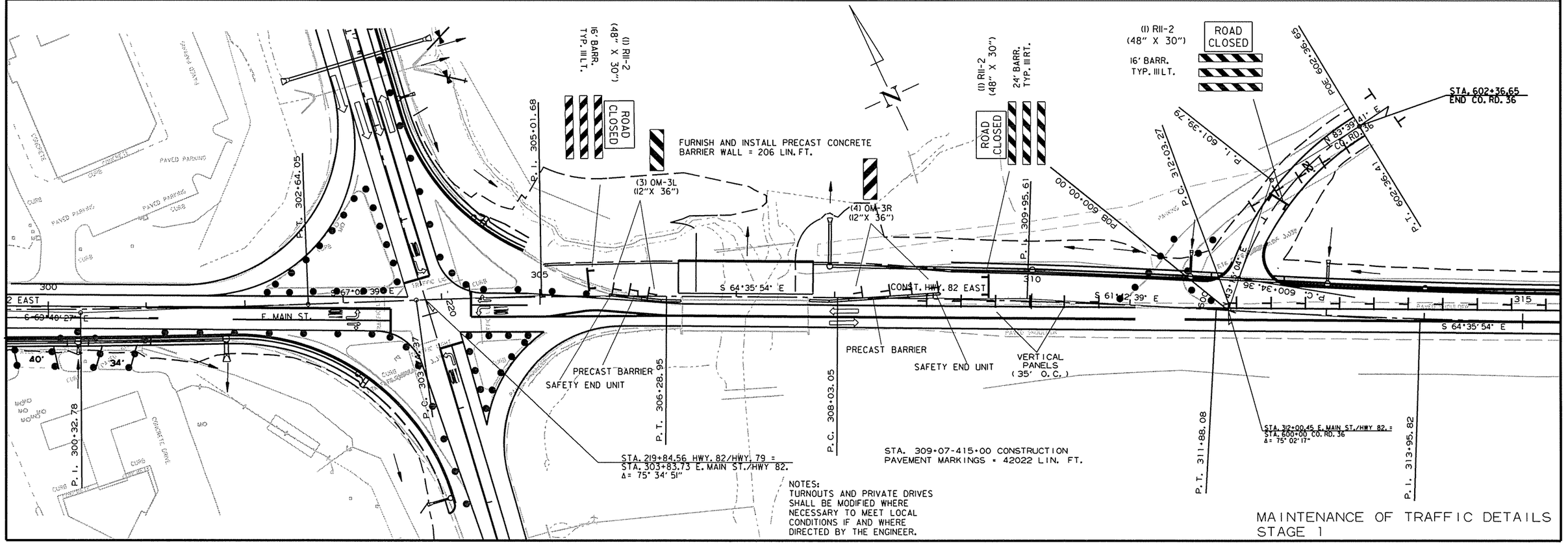
STA. 298+01.37-306+45 CONSTRUCTION
PAVEMENT MARKINGS = 4970 LIN. FT.

STA. 295+91.37-299+36.37 REMOVAL OF
PERMANENT PAVEMENT MARKINGS = 90 LIN. FT.

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	45	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGE 1:
APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY TH EENGINEER

INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 167+62 LT., STA. 167+78 LT., AND 168+57 LT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 222+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+83.72
STRIPE EXISTING PAVEMENT AS SHOWN.
REMOVE ISLANDS AT HWY. 82/HWY.79 AND HWY. 82/E. MAIN ST. INTERSECTION.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER.

STA. 305+05.28 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
CONSTRUCT ADDITIONAL WIDENING.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT LT. SIDE OF NEW BRIDGE OVER NATIONS CREEK
ONLY BUILD PART OF THE DROP INLET AT STA. 307+95 LT.

STA. 309+17.65 - 415+00
MAINTAIN TRAFFIC ON EXISTING LANE
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STAGE 2:
INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 217+54, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 168+00 RT., STA. 168+79 RT., AND 169+00 RT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 223+66.33
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+82.05
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 305+70 - STA. 415+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT RT. SIDE OF NEW BRIDGE OVER NATIONS CREEK

STAGE 3:
STA. 218+84 - STA. 220+78
CONSTUCT ISLANDS AT HWY. 82/HWY. 79/E. MAIN ST./HWY. 82 INTERSECTION.

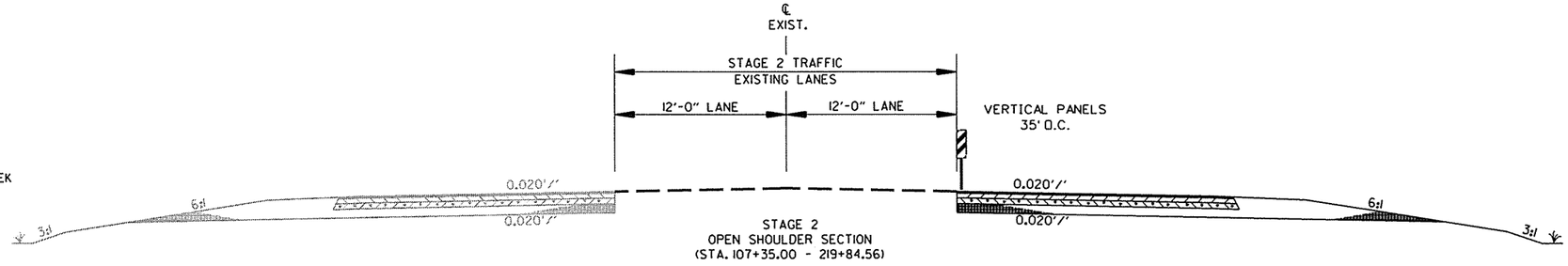
STA. 304+84 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN
CONSTRUCT CURB AND GUTTER AND SIDEWALK ON LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. AND COMPLETE THE DROP INLET AT STA. 307+95 LT.

APPLY FINAL 2" OF ACHM, SURFACE AFTER ALL WIDENING HAS BEEN COMPLETED.
FINAL STRIPING.

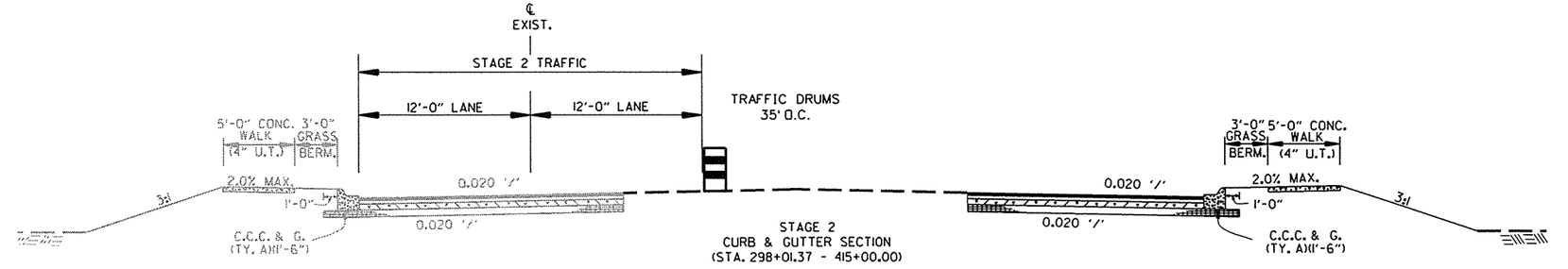
⊢ VERTICAL PANELS

● TRAFFIC DRUMS

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.



STAGE 2
OPEN SHOULDER SECTION
(STA. 107+35.00 - 219+84.56)



STAGE 2
CURB & GUTTER SECTION
(STA. 298+01.37 - 415+00.00)

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	46	331

(2) MAINTENANCE OF TRAFFIC DETAILS

TRAFFIC DRUMS (70' O.C.)
STA. 107+35-217+89 RT. =143 EACH

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

TRAFFIC DRUMS = 10 EACH
20' O.C. ON CITY STREET AND COUNTY ROAD TURNOUTS
(13 LOCATIONS = 130 EACH)

CONCRETE PARKING

PAVED PARKING

CONCRETE PARKING

CO. RD. 448

P.I. 129+52.75

EXISTING R/W, COA, & FENCE

TRAFFIC DRUMS (70' O.C.)

125

CONST. HWY. 82 NORTH

W

S 3°42'36" W

130

135

140

VERTICAL PANELS (35' O.C.)

E. UNIVERSITY ST.

26'

30'

30'

80' TAPER

CONCRETE PARKING

CLASSROOMS

EXISTING R/W, COA, & FENCE

TRAFFIC DRUMS (35' O.C.)
STA. 162+33-175+00 RT. =32 EACH
STA. 167+63-168+12 (BOTH SIDES OF CO. RD. 61) =10 EACH
STA. 168+47-169+32 (BOTH SIDES OF E. NORTH ST.) =10 EACH
STA. 209+00-218+52 RT. = 22 EACH
STA. 220+74-222+00 RT. = 2 EACH
STA. 296+89-301+66 RT. = 13 EACH
STA. 308+57-415+00 RT. =225 EACH

TRAFFIC DRUMS = 6 EACH
20' O.C. ON DRIVES
(49 LOCATIONS = 294 EACH)

16'

VERTICAL PANELS (35' O.C.)
STA. 107+35-159+95 RT. =137 EACH
STA. 130+38-130+53 (RT. SIDE OF E. UNIVERSITY ST.) =76 EACH
STA. 173+98-209+00 RT. =80 EACH

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONCRETE PARKING

VERA ST.

24'

60

CONST. HWY. 82 NORTH

165

22'

VERA ST.

CONCRETE PARKING

CURB

TRAFFIC DRUMS (35' O.C.)

CONCRETE DRIVE

CURB

CONCRETE DRIVE

CURB

CURB

E. NORTH ST.

STA. 161+76-164+00 CONSTRUCTION PAVEMENT MARKINGS = 225 LIN. FT.

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

TRAFFIC DRUMS (70' O.C.)

175

CONST. HWY. 82 NORTH

S 3°42'36" W

VERTICAL PANELS (35' O.C.)

TRAFFIC DRUMS 20' O.C. AROUND ISLAND = 18 EACH

STA. 168+64-175+50 CONSTRUCTION PAVEMENT MARKINGS = 690 LIN. FT.

CURB

CONCRETE DRIVE

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	47	331

(2) MAINTENANCE OF TRAFFIC DETAILS

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

STA. 208+93-223+90 CONSTRUCTION
PAVEMENT MARKINGS = 5904 LIN. FT.

TRAFFIC DRUMS
20' O.C. AROUND
INTERSECTION RADII=38 EACH

TRAFFIC DRUMS
(70' O.C.)

TRAFFIC DRUMS
(35' O.C.)

140' TAPER

120' TAPER

55'

S 8°30'17" W

EXISTING R/W, COA. & FENCE

EXISTING R/W

P.T. 306+28.95

P.C. 305+01.68

P.C. 302+64.05

STA. 219+84.56 HWY. 82/HWY. 79 =
STA. 303+83.73 E. MAIN ST./HWY 82.
Δ= 75° 34' 51"

POE 223+90.33

CONST. HWY. 82 NORTH

HWY. 79

E. MAIN ST.

EXIST. R/W

EXISTING RAMP

OPEN STORAGE

PAVED PARKING

PAVED SHOULDER

CURB

GATE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 298+01.37-306+41 CONSTRUCTION
PAVEMENT MARKINGS = 3612 LIN. FT.

P.I. = 300+32.78
Δ = 3° 28' 12" LT.
D = 0° 45' 00"
T = 231.41'
L = 462.68'
P.C. = 298+01.37
P.T. = 302+64.05
NO SUPER

POB 296+70.08

P.C. 298+01.37

P.I. 300+32.78

100' TAPER

EXIST. R/W

CONST. HWY. 82 EAST

S 63°40'27" E

460' TO LANE CLOSE SIGN

345' SKIP LINE REMOVED

170' LANE TAPER

66.37

(1W4-2 RT.) (48" X 48")

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

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	48	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STA. 306+41-307+78 REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 548 LIN. FT.

STA. 307+78-415+00 CONSTRUCTION PAVEMENT MARKINGS = 31885 LIN. FT.

STA. 307+72-415+00 REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 42670 LIN. FT.

RELOCATE PRECAST CONCRETE BARRIER WALL = 206 LIN. FT.

MOT I
P.I. = 1+76.00
Δ = 5° 22' 38" LT.
D = 10° 00' 00"
T = 26.91'
L = 53.77'
P.C. = 1+49.09
P.T. = 2+02.86
NO SUPER

MOT I
P.I. = 9+71.04
Δ = 3° 15' 36" LT.
D = 5° 00' 00"
T = 32.61'
L = 65.20'
P.C. = 9+38.43
P.T. = 10+03.63
NO SUPER

ROAD CLOSED

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 602+36.65
END CO. RD. 36

16' BARR. TYP. III RT.
(1) RII-2 (48" X 30")
(1) WI-6 (48" X 24")
(1) WB-1 (30" X 30")
(3) OM-3L (12"X 36")
(4) OM-3R (12"X 36")
BUMP
PRECAST BARRIER
SAFETY END UNIT
NATIONS CREEK
TRAFFIC DRUMS (35' O.C.)
CONST. HWY. 82 EAST
E. MAIN ST.
EXISTING R/W
PROPOSED R/W
CO. RD.
PAVED PARKING
CONCRETE DRIVE
FENCE
GATE
TRAFFIC LIGHT
PAVED SHOULDER
CONCRETE

POB 0+00.00
P.I. 1+49.09
P.T. 2+02.86
P.I. 1+76.00
P.C. 302+64.05
P.C. 305+01.68
P.I. 6+43.27
P.C. 6+26.15
P.T. 6+60.36
P.I. 8+71.96
P.C. 9+38.43
P.T. 10+03.63
P.I. 309+95.61
POE 10+40.59
POB 600+00.00
P.I. 601+39.79
P.C. 312+03.27
P.C. 600+34.36
P.T. 602+96.41
P.C. 303+76.37
P.I. 300+32.78
P.C. 306+28.95
P.T. 306+60.36
P.C. 308+03.05
P.I. 9+71.04
P.T. 9+16.72
P.T. 311+88.08
P.I. 313+95.82

STA. 219+84.56 HWY. 82/HWY. 79 = STA. 303+83.73 E. MAIN ST./HWY 82. Δ=\75° 34' 51"

STA. 312+00.45 E. MAIN ST./HWY 82. = STA. 600+00 CO. RD. 36 Δ= 75° 02' 17"

S 63°40'27" E
S 67°08'39" E
S 61°42'39" E
S 64°35'54" E
N 83°39'41" E

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

MOT I
P.I. = 6+43.27
Δ = 5° 18' 13" RT.
D = 15° 30' 00"
T = 17.12'
L = 34.22'
P.C. = 6+26.15
P.T. = 6+60.36
NO SUPER

MOT I
P.I. = 8+71.96
Δ = 4° 28' 43" RT.
D = 5° 00' 00"
T = 44.81'
L = 89.57'
P.C. = 8+27.15
P.T. = 9+16.72
NO SUPER

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL = 326 LIN. FT.

MOT 2
P.I. = 53+73.32
Δ = 3° 40' 11" LT.
D = 2° 15' 00"
T = 81.58'
L = 163.10'
P.C. = 52+91.74
P.T. = 54+54.84
NO SUPER

POB 50+00.00
P.I. 51+18.98
P.C. 52+91.74
P.T. 54+54.84
P.C. 413+72.85
POE 54+56.12
P.C. 50+37.40
P.T. 52+00.50
P.I. 53+73.32

S 69°27'54" E
S 65°47'43" E
CONST. HWY. 82 EAST

MOT 2
P.I. = 51+18.98
Δ = 3° 40' 11" RT.
D = 2° 15' 00"
T = 81.58'
L = 163.10'
P.C. = 50+37.40
P.T. = 52+00.50
NO SUPER

TRAFFIC DRUMS (35' O.C.)

STA. 415+00.00
END JOB 070365

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

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

7/16/2015
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	49	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGE 1:
APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY TH EENGINEER

INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 167+62 LT., STA. 167+78 LT., AND 168+57 LT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 222+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+83.72
STRIPE EXISTING PAVEMENT AS SHOWN.
REMOVE ISLANDS AT HWY. 82/HWY.79 AND HWY. 82/E. MAIN ST. INTERSECTION.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER.

STA. 305+05.28 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
CONSTRUCT ADDITIONAL WIDENING.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT LT. SIDE OF NEW BRIDGE OVER NATIONS CREEK
ONLY BUILD PART OF THE DROP INLET AT STA. 307+95 LT.

STA. 309+17.65 - 415+00
MAINTAIN TRAFFIC ON EXISTING LANE
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STAGE 2:
INSTALL PRECAST CONCRETE BARRIER WALL AND EXTEND BOX CULVERTS AT STA. 151+16, STA. 158+30, STA. 217+54, STA. 323+80, STA. 328+90, AND STA. 371+21.

STA. 107+35 - STA. 160+00
STA. 175+60 - STA. 208+93
MAINTAIN TRAFFIC ON EXISTING LANES
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 35' O.C. ON THE SIDE BEING WIDENED.

STA. 160+00 - STA. 175+60
STA. 208+93 - STA. 219+65
REMOVE ISLANDS @ STA. 168+00 RT., STA. 168+79 RT., AND 169+00 RT.
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 219+65 - STA. 223+66.33
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN LT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

STA. 298+01.37 - STA. 301+82.05
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED AND CONSTRUCT STORM SEWER

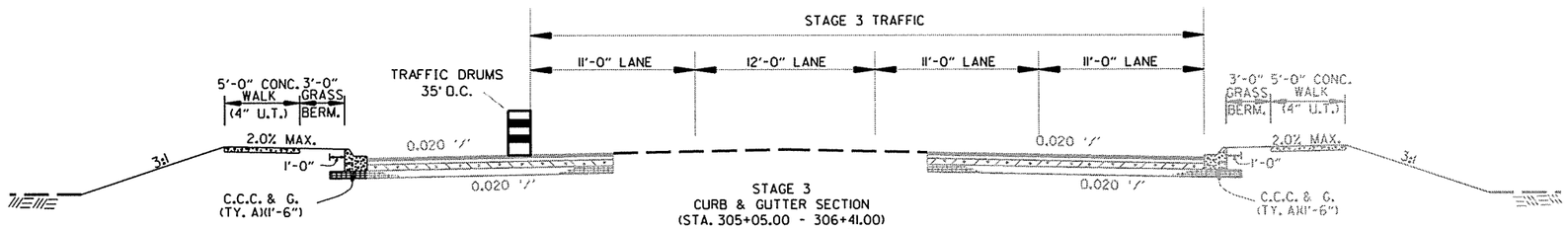
STA. 305+70 - STA. 415+00
STRIPE EXISTING PAVEMENT AS SHOWN.
NOTCH AND WIDEN RT. SIDE OF HWY. 82, DELINEATING THE WORK ZONE USING TRAFFIC DRUMS AT 35' O.C. ON THE SIDE BEING WIDENED.
INSTALL TEMPORARY BARRIER WALL AND CONSTRUCT RT. SIDE OF NEW BRIDGE OVER NATIONS CREEK

STAGE 3:
STA. 218+84 - STA. 220+78
CONSTUCT ISLANDS AT HWY. 82/HWY. 79/E. MAIN ST./HWY. 82 INTERSECTION.

STA. 304+84 - STA. 309+17.65
STRIPE EXISTING PAVEMENT AS SHOWN
CONSTRUCT CURB AND GUTTER AND SIDEWALK ON LT. SIDE OF HWY. 82,
DELINEATING THE WORK ZONE USING TRAFFIC DRUMS
AT 35' O.C. AND COMPLETE THE DROP INLET AT STA. 307+95 LT.

APPLY FINAL 2" OF ACHM. SURFACE AFTER ALL WIDENING HAS BEEN COMPLETED.
FINAL STRIPING.

⊢ VERTICAL PANELS
● TRAFFIC DRUMS



STAGE 3
CURB & GUTTER SECTION
(STA. 305+05.00 - 306+41.00)
(STA. 307+78.00 - 309+18.00)

7/16/2015

R070365.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	50	331

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

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

PERMANENT PAVEMENT MARKINGS (HWY. 82)
STA. 107+35 TO STA. 216+00
SEE PERMANENT PAVEMENT MARKING DETAILS

STA. 29766.37-306+41 CONSTRUCTION
PAVEMENT MARKINGS = 3245 LIN. FT.

STA. 306+41-307+78 REMOVEABLE CONSTRUCTION
PAVEMENT MARKINGS = 137 LIN. FT.

TRAFFIC DRUMS (35' O.C.)
STA. 305+50-311+75 RT. =32 EACH

TRAFFIC DRUMS
20' O.C. AROUND
ISLANDS = 45 EACH

STA. 307+78-313+83 CONSTRUCTION
PAVEMENT MARKINGS = 1830 LIN. FT.

PERMANENT PAVEMENT MARKINGS (HWY. 82)
STA. 313+83 TO STA. 415+00
SEE PERMANENT PAVEMENT MARKING DETAILS

7/16/2015

R070365.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

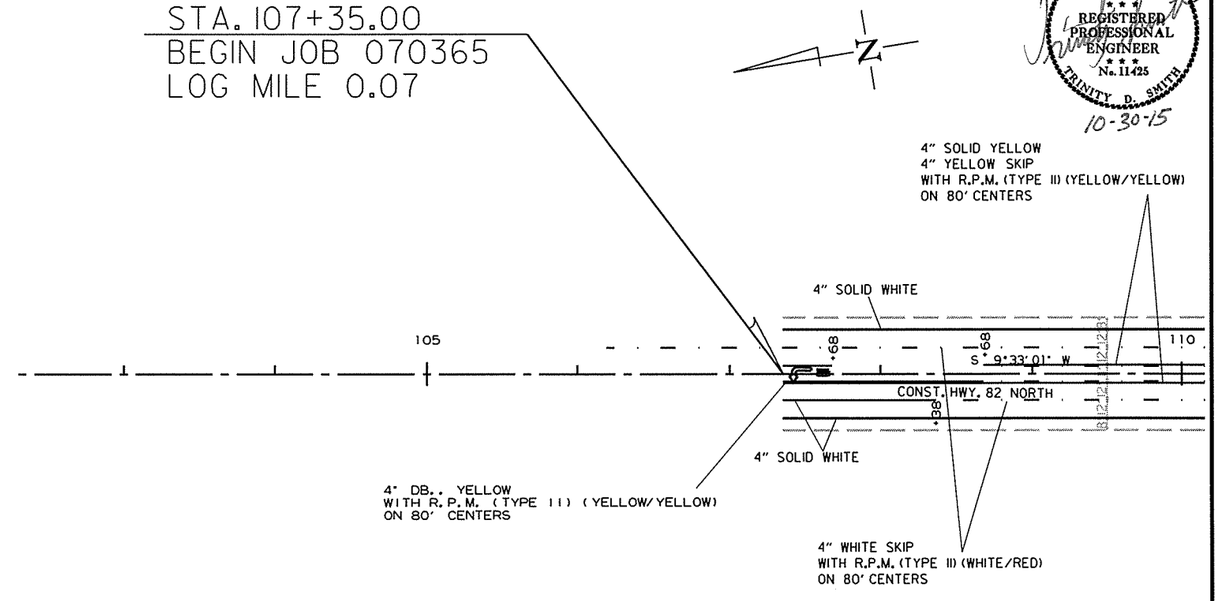
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6.	ARK.			
				JOB NO.		070365	51	331

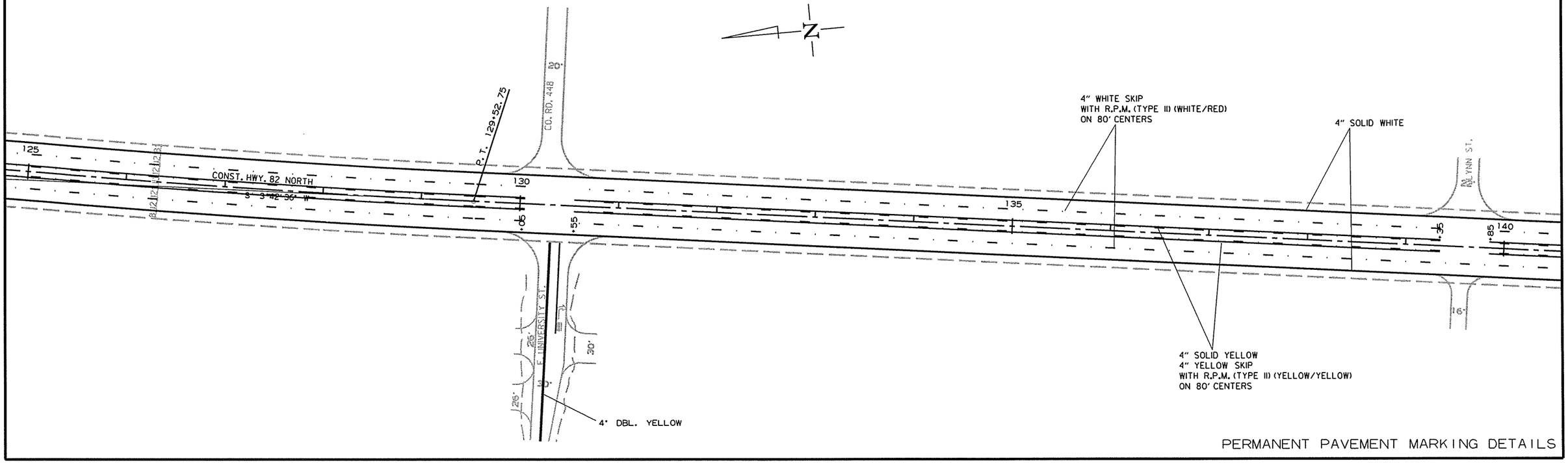
(2) PERMANENT PAVEMENT MARKING DETAILS

PERMANENT PAVEMENT MARKING DETAILS QUANTITIES

THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 35415 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 57938 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 1035 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (10") = 795 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 800 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (24") = 392 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (ARROW) = 13 EACH
THERMOPLASTIC PAVEMENT MARKING (WORD) = 11EACH
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4") = 69 LIN. FT.
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4") = 343 LIN. FT.
RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) = 551EACH
RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) = 571EACH

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





7/16/2015

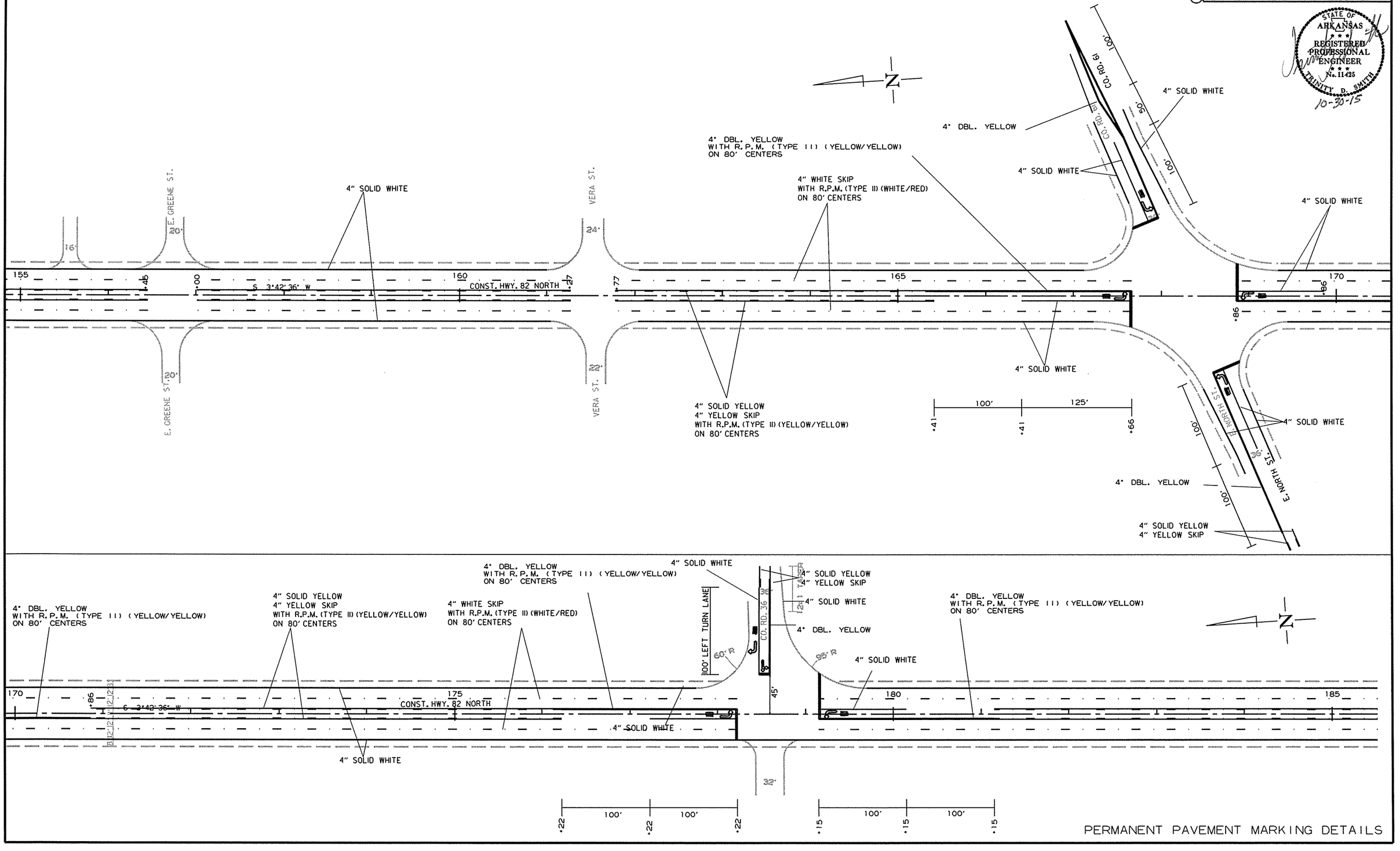
R070365.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	52	331

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



7/16/2015

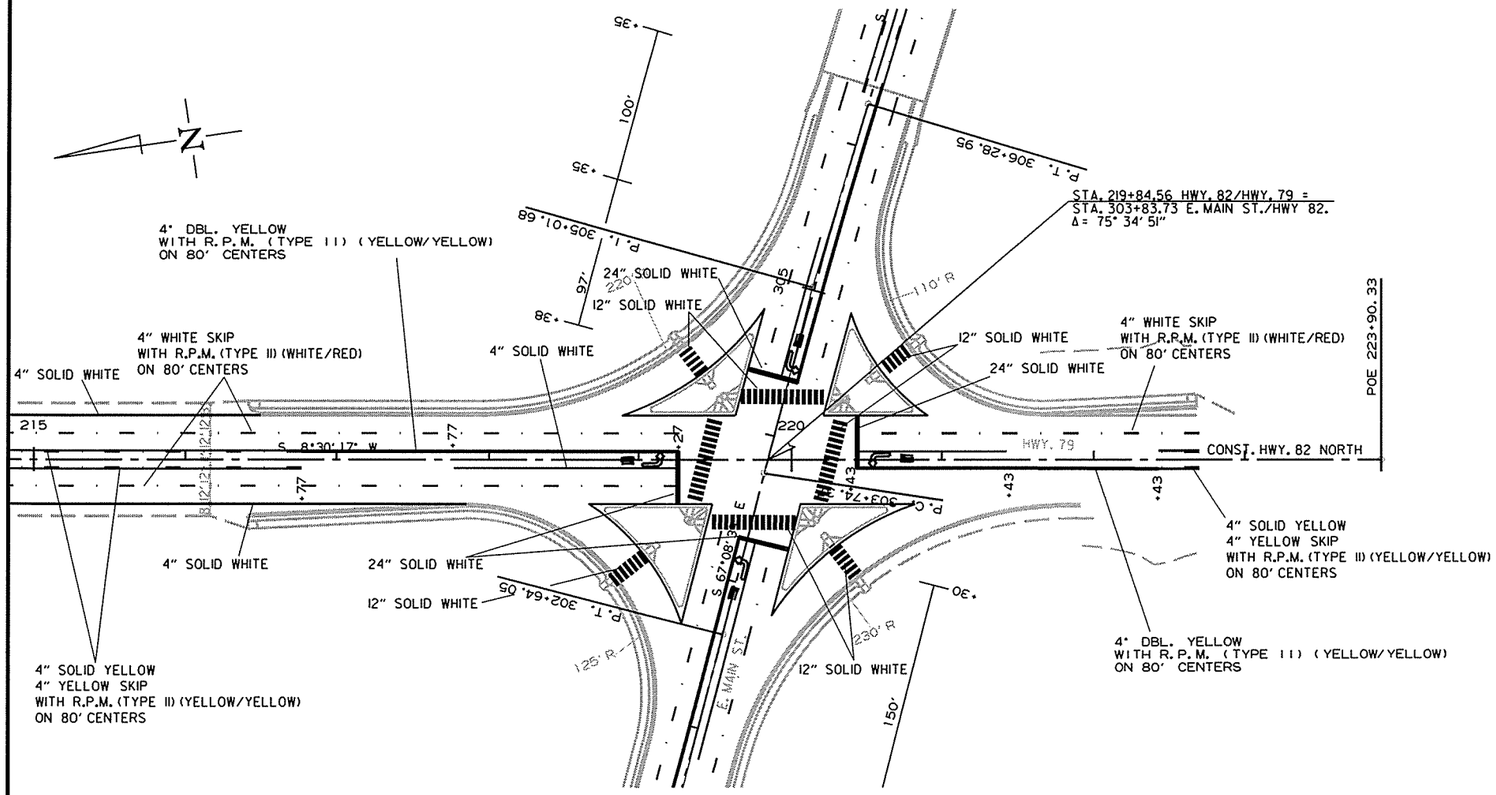
R070365.DGN

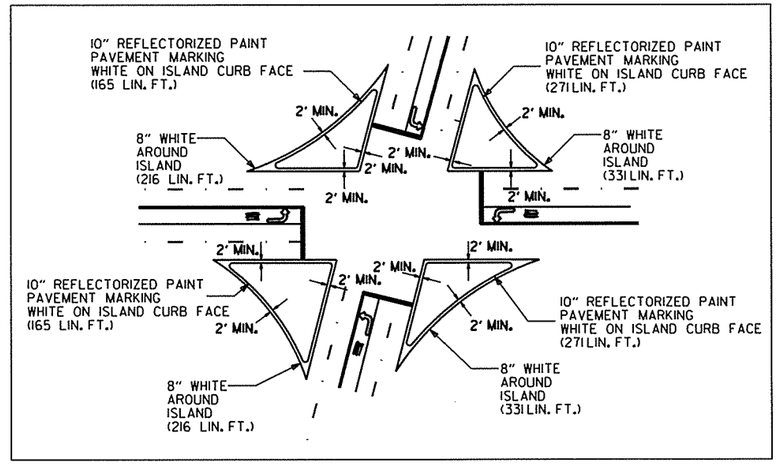
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	53	331

(2) PERMANENT PAVEMENT MARKING DETAILS

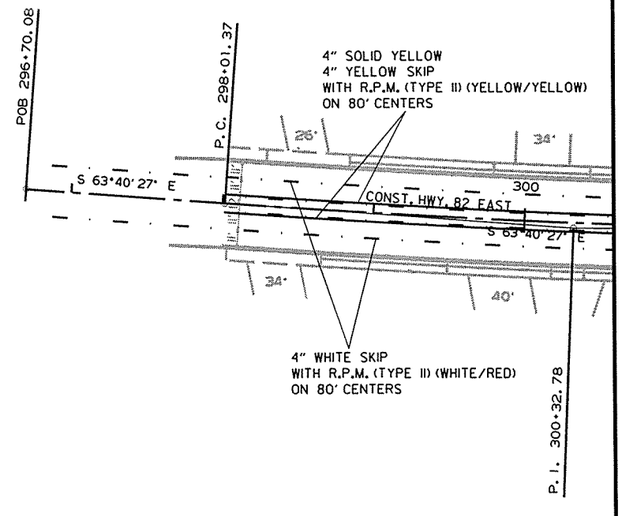
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





FINAL STRIPING DETAIL FOR CONCRETE ISLAND

FOR ISLAND DIMENSIONS SEE SHEET 86.



7/16/2015

R070365.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	54	331

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

4" DBL. YELLOW
WITH R.P.M. (TYPE II) (YELLOW/YELLOW)
ON 80' CENTERS

4" DBL. YELLOW
WITH R.P.M. (TYPE II) (YELLOW/YELLOW)
ON 80' CENTERS

HIGH PERFORMANCE CONTRAST
PAVEMENT MARKING
4" WHITE SKIP
WITH R.P.M. (TYPE II) (WHITE/RED)
ON 80' CENTERS

HIGH PERFORMANCE CONTRAST
PAVEMENT MARKING
4" SOLID YELLOW
4" YELLOW SKIP
WITH R.P.M. (TYPE II) (YELLOW/YELLOW)
ON 80' CENTERS

STA. 219+84.56 HWY. 82/HWY. 79 =
STA. 303+83.73 E. MAIN ST./HWY 82.
Δ = 75° 34' 51"

STA. 312+00.45 E. MAIN ST./HWY 82. =
STA. 600+00 CO. RD. 36
Δ = 75° 02' 17"

4" SOLID YELLOW
4" YELLOW SKIP
WITH R.P.M. (TYPE II) (YELLOW/YELLOW)
ON 80' CENTERS

4" WHITE SKIP
WITH R.P.M. (TYPE II) (WHITE/RED)
ON 80' CENTERS

LANE REDUCTION ARROW

PERMANENT PAVEMENT MARKING DETAILS

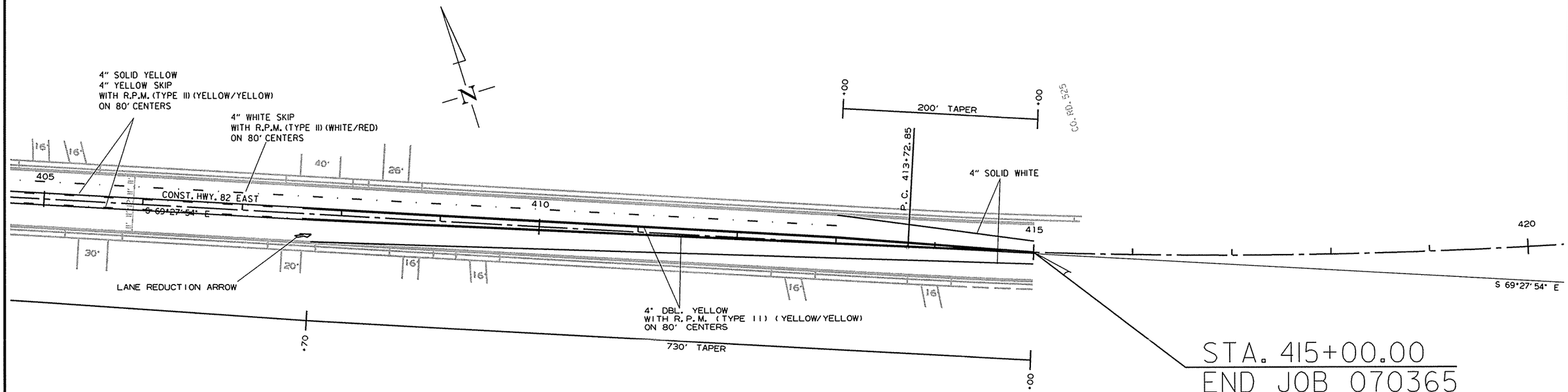
7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	55	331

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



7/24/2015

R070365.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	56	331

(2) QUANTITIES

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER
											RIGHT	LEFT		
			LIN. FT. - EACH				NO.	SQ. FT.	EACH				LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	5	5	5	5	5	80.0						
W20-1	ROAD WORK 1000 FT.	48"x48"	5	5	5	5	5	80.0						
W20-1	ROAD WORK 500 FT.	48"x48"	5	5	5	5	5	80.0						
W20-1	ROAD WORK AHEAD	48"x48"	17	17	17	17	17	272.0						
G20-2	END ROAD WORK	48"x24"	22	22	22	22	22	176.0						
R11-2	ROAD CLOSED	48"x30"	2	4	1	4	4	40.0						
OM-3L	OBJECT MARKER	12"x36"	9	15		15	15	45.0						
OM-3R	OBJECT MARKER	12"x36"	12	20		20	20	60.0						
W1-6	LARGE ARROW	48"x24"		4		4	4	32.0						
W4-2	LANE ENDS	48"x48"	1	1	1	1	1	16.0						
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.0						
RSP-1	SHOULDER CLOSED	48"x30"	2	2		2	2	20.0						
W8-1	BUMP	30"x30"		2	2	2	2	12.5						
	VERTICAL PANELS		302	296		302			302					
	TRAFFIC DRUMS		636	940	37	940				940				
	TYPE III BARRICADE-RT. (16')		2	1		2					32			
	TYPE III BARRICADE-LT. (16')		2			2						32		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	824.0	326			326							326	
	RELOCATING PRECAST CONCRETE BARRIER	618.0	1236			1236								1236
TOTALS:								923.5	302	940	32	32	326	1236

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

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
149+00	153+00	HWY. 82	4	4
203+00	212+00	HWY. 82	9	9
215+00	220+00	HWY. 82	5	5
305+00	309+00	HWY. 82	4	4
311+00	333+00	HWY. 82	22	22
335+00	337+00	HWY. 82	2	2
339+00	345+00	HWY. 82	6	6
347+00	348+00	HWY. 82	1	1
355+00	360+00	HWY. 82	5	5
378+00	379+00	HWY. 82	1	1
380+00	384+00	HWY. 82	4	4
388+00	389+00	HWY. 82	1	1
392+00	394+00	HWY. 82	2	2
398+00	399+00	HWY. 82	1	1
404+00	408+00	HWY. 82	4	4
414+00	415+00	HWY. 82	1	1
TOTALS:			72	72

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING	HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	
							WORDS	ARROWS			TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	8" WHITE	12" WHITE	24" WHITE	WORDS	ARROWS	10" WHITE	4" WHITE	4" YELLOW
	LIN. FT. - EACH				LIN. FT.		EACH		LIN. FT.		EACH		LIN. FT.					EACH		LIN. FT.	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	90				90																	
CONSTRUCTION PAVEMENT MARKINGS	81576	42316	7216			131108																
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	4	5	3				12															
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	6	5	4					15														
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		42670							42670													
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		548	137							685												
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				551							551											
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				571								571										
THERMOPLASTIC PAVEMENT MARKING WHITE (4")				35415									35415									
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")				58258										58258								
THERMOPLASTIC PAVEMENT MARKING WHITE (8")				1035											1035							
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				800												800						
THERMOPLASTIC PAVEMENT MARKING WHITE (24")				392													392					
THERMOPLASTIC PAVEMENT MARKING WORDS				11														11				
THERMOPLASTIC PAVEMENT MARKING ARROWS				13															13			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")				795																795		
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")				69																	69	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")				343																		343
TOTAL:					90	131108	12	15	42670	685	551	571	35415	58258	1035	800	392	11	13	795	69	343

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

NOTE: NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED. IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
149+62	150+56	HWY. 82 RT.	95
378+82	378+83	HWY. 82 LT.	21
383+02	384+24	HWY. 82 RT.	128
TOTALS:			244

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	39	39
TOTALS:	39	39

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
150+30	NORTHWEST CORNER OF R.C. BOX CULVERT	1
217+53	SOUTHEAST CORNER OF R.C. BOX CULVERT	1
307+38	NORTHEAST CORNER OF BRIDGE	1
371+22	SOUTHEAST CORNER OF R.C. BOX CULVERT	1
TOTAL:		4

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
107+35	219+84	HWY. 82 MAIN LANES	2750	11
298+01	415+00	HWY. 82 MAIN LANES	3000	
TOTALS:			5750	11

NOTE: QUANTITIES 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.

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	57	331

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-30-15

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	BAG	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING										7700		5205			543
ENTIRE	PROJECT	STAGE 1	12.39	24.78	12.39	1301.5	12.39	2997	1.00	1.00	20.4	2816	1625	1320	2479	2479	2716
ENTIRE	PROJECT	STAGE 2	12.37	24.74	12.37	1311.0	12.37	3913				3454	1750	233	2288	2288	2518
ENTIRE	PROJECT	STAGE 3	0.11	0.22	0.11	18.3	0.11	565					50				2
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.									48.00	48.00	979.2	880	200	1000	1000	1000	1084
TOTALS:			24.87	49.74	24.87	2630.8	24.87	7475	49.00	49.00	999.6	14850	3625	7758	5767	5767	6863

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

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.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	"B"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	M. GAL.
127+00	128+56	HWY. 82 ON LT.	156.00	18			312.00	69.33	0.87
128+56	130+28	HWY. 82 ON RT.	172.00	13			248.44	76.44	0.96
130+28	130+73	HWY. 82 ON RT.	45.00	20			100.00	20.00	0.25
130+55	132+00	HWY. 82 ON LT.	145.00	9			145.00	64.44	0.81
146+00	150+31	HWY. 82 ON RT.	431.00	14			670.44	191.56	2.41
147+00	152+04	HWY. 82 ON LT.	504.00	15			840.00	224.00	2.82
150+31	154+00	HWY. 82 ON RT.	369.00	10			410.00	164.00	2.07
149+28	152+04	HWY. 82 ON RT.	276.00	9			276.00	122.67	1.55
152+04	155+41	HWY. 82 ON LT.	337.00	22			823.78	149.78	1.89
168+74	176+54	HWY. 82 ON RT.	780.00	17			1473.33	346.67	4.37
170+00	177+40	HWY. 82 ON LT.	740.00	18			1480.00	328.89	4.14
178+62	184+88	HWY. 82 ON RT.	626.00	13.5			939.00	278.22	3.51
184+00	185+73	HWY. 82 ON LT.	173.00	9			173.00	76.89	0.97
185+73	189+72	HWY. 82 ON LT.	399.00	9			399.00	177.33	2.23
194+36	196+31	HWY. 82 ON RT.	195.00	13.5			292.50	86.67	1.09
196+69	201+53	HWY. 82 ON RT.	484.00	13.5			726.00	215.11	2.71
217+54	219+00	HWY. 82 ON RT.	146.00	13.5			219.00	64.89	0.82
218+75		HWY. 82 ON RT.	45.00	4			20.00	20.00	0.25
219+19		HWY. 82 ON LT.	43.00	4			19.11	19.11	0.24
220+36		HWY. 82 ON RT.	55.00	4			24.44	24.44	0.31
220+76		HWY. 82 ON LT.	45.00	4			20.00	20.00	0.25
305+72		HWY. 82 ON LT.	43.00	6			28.67	19.11	0.24
305+72		HWY. 82 ON RT.	28.00	6			18.67	12.44	0.16
307+95		HWY. 82 ON LT.	19.00	6			12.67	8.44	0.11
322+00	323+80	HWY. 82 ON LT.	180.00	9			180.00	80.00	1.01
328+00	328+90	HWY. 82 ON LT.	90.00	9			90.00	40.00	0.50
328+90	332+00	HWY. 82 ON LT.	310.00	9			310.00	137.78	1.74
328+90	332+93	HWY. 82 ON RT.	403.00	9			403.00	179.11	2.26
340+68	342+04	HWY. 82 ON LT.	136.00	9			136.00	60.44	0.76
371+00	371+21	HWY. 82 ON RT.	21.00	12.5			29.17	9.33	0.12
371+21	372+00	HWY. 82 ON LT.	79.00	9	6	79.00		35.11	0.44
395+64	397+63	HWY. 82 ON RT.	199.00	9			199.00	88.44	1.11
TOTALS:						79.00	11018.22	3410.64	42.97

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
ENTIRE	PROJECT	STAGE 1-MAIN LANES	11920	66300	
ENTIRE	PROJECT	STAGE 2-MAIN LANES	16768	50896	
ENTIRE	PROJECT	STAGE 3-MAIN LANES	166	942	
ENTIRE	PROJECT	BRIDGE EARTHWORK	500		
ENTIRE	PROJECT	APPROACHES	155	4240	
ENTIRE	PROJECT	UNDERCUT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	1000		
168+00		CO. RD. 61		90	
168+24		E. NORTH ST.		145	
178+55		CO. RD. 36		85	
312+00		CO. RD. 36	74	614	
360+26		CO. RD. 406 NORTH		20	
360+71		CO. RD. 406 SOUTH		240	
402+38		CO. RD. 409			
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			400
TOTALS:			30583	123572	400

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

CONCRETE COMBINATION CURB AND GUTTER (BOX 1 OF 2)

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
216+41.36	217+78	HWY. 82 RT.	137
217+82	217+85.36	HWY. 82 RT.	3
216+41.36	217+74	HWY. 82 LT.	137
217+82.00	217+95.25	HWY. 82 LT.	13
221+84.79	222+00	HWY. 82 RT.	20
221+67.33	221+79	HWY. 82 LT.	12
221+87	222+68.33	HWY. 82 LT.	81
297+66.37	298+01.37	HWY. 82 LT.	35
297+66.37	298+01.37	HWY. 82 RT.	35
298+01.37	298+98	HWY. 82 RT.	97
298+01.37	298+98	HWY. 82 LT.	97
299+02	300+28	HWY. 82 RT.	126
299+02	299+43	HWY. 82 LT.	41
299+51	301+78	HWY. 82 LT.	227
300+36	301+78	HWY. 82 RT.	142
301+86	304+05	HWY. 82 RT.	299
301+86	303+02	HWY. 82 LT.	218
303+66	305+70	HWY. 82 LT.	282
304+64	305+70	HWY. 82 RT.	197
305+74	306+41	HWY. 82 RT.	67
305+74	306+41	HWY. 82 LT.	67
307+78	307+89	HWY. 82 RT.	11
307+78	307+89	HWY. 82 LT.	11
307+97	309+94	HWY. 82 RT.	197
307+97	309+94	HWY. 82 LT.	197
310+02	311+54	HWY. 82 RT.	152
310+02	311+54	HWY. 82 LT.	152
311+62	312+98	HWY. 82 RT.	136
311+62	312+02	HWY. 82 LT.	49
312+33	312+98	HWY. 82 LT.	94
313+02	313+98	HWY. 82 RT.	96
313+02	313+98	HWY. 82 LT.	96
314+02	316+40	HWY. 82 RT.	238
314+06	316+40	HWY. 82 LT.	234
316+48	319+89	HWY. 82 RT.	341
316+48	319+89	HWY. 82 LT.	341
319+97	321+74	HWY. 82 RT.	177
319+97	321+74	HWY. 82 LT.	177
321+82	324+26	HWY. 82 RT.	244
321+82	324+26	HWY. 82 LT.	244
324+34	325+08	HWY. 82 RT.	74
324+34	325+08	HWY. 82 LT.	74
325+12	325+78	HWY. 82 RT.	66
325+12	325+78	HWY. 82 LT.	66
325+82	326+98	HWY. 82 RT.	116
325+82	326+98	HWY. 82 LT.	116
327+06	329+23	HWY. 82 RT.	217
327+06	329+23	HWY. 82 LT.	217
329+35	331+98	HWY. 82 RT.	263
329+35	331+98	HWY. 82 LT.	263
332+06	333+38	HWY. 82 RT.	132
332+10	335+03	HWY. 82 LT.	293
333+50	335+58	HWY. 82 RT.	208
335+07	335+58	HWY. 82 LT.	51
335+66	337+30	HWY. 82 RT.	164
335+66	336+78	HWY. 82 LT.	112
336+86	338+31	HWY. 82 LT.	145
337+42	339+98	HWY. 82 RT.	256
338+35	339+20	HWY. 82 LT.	85
339+28	340+66	HWY. 82 LT.	138
340+06	342+02	HWY. 82 RT.	196
340+74	342+02	HWY. 82 LT.	128
342+10	343+68	HWY. 82 RT.	158
342+10	342+98	HWY. 82 LT.	88
343+06	344+75	HWY. 82 LT.	169
343+76	345+48	HWY. 82 RT.	172
344+83	346+32	HWY. 82 LT.	149
345+56	346+86	HWY. 82 RT.	130
346+40	347+98	HWY. 82 LT.	158
346+94	348+48	HWY. 82 RT.	154
SUBTOTAL:			10078

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070365		58	331

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONCRETE COMBINATION CURB AND GUTTER (BOX 2 OF 2)

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
348+06	349+62	HWY. 82 LT.	156
348+56	350+21	HWY. 82 RT.	165
349+70	352+76	HWY. 82 LT.	306
350+25	353+94	HWY. 82 RT.	369
352+84	353+94	HWY. 82 LT.	110
354+02	356+23	HWY. 82 RT.	221
354+02	356+22	HWY. 82 LT.	220
356+30	357+38	HWY. 82 LT.	108
356+31	357+38	HWY. 82 RT.	107
357+42	358+17	HWY. 82 RT.	75
357+42	358+17	HWY. 82 LT.	75
358+25	359+68	HWY. 82 RT.	143
358+25	359+68	HWY. 82 LT.	143
359+76	360+56	HWY. 82 RT.	94
359+76	360+13	HWY. 82 LT.	62
360+39	361+26	HWY. 82 LT.	97
360+82	361+26	HWY. 82 RT.	13
361+34	362+15	HWY. 82 LT.	81
361+38	363+98	HWY. 82 RT.	260
362+23	363+98	HWY. 82 LT.	175
364+06	366+63	HWY. 82 RT.	257
364+06	365+40	HWY. 82 LT.	134
365+48	366+81	HWY. 82 LT.	133
366+71	368+98	HWY. 82 RT.	227
366+89	367+58	HWY. 82 LT.	69
367+66	369+02	HWY. 82 LT.	136
369+06	371+28	HWY. 82 RT.	222
369+10	371+29	HWY. 82 LT.	219
371+40	374+10	HWY. 82 RT.	270
371+41	374+10	HWY. 82 LT.	269
374+18	376+48	HWY. 82 LT.	230
374+22	376+48	HWY. 82 RT.	226
376+60	378+63	HWY. 82 RT.	203
376+60	378+63	HWY. 82 LT.	203
378+71	379+28	HWY. 82 RT.	57
378+71	380+26	HWY. 82 LT.	155
379+36	380+88	HWY. 82 RT.	152
380+38	383+24	HWY. 82 LT.	286
380+96	382+70	HWY. 82 RT.	174
382+78	383+24	HWY. 82 RT.	46
383+28	384+59	HWY. 82 RT.	131
383+36	386+19	HWY. 82 LT.	283
384+63	385+36	HWY. 82 RT.	73
385+40	386+33	HWY. 82 RT.	93
386+27	388+43	HWY. 82 LT.	216
386+37	386+86	HWY. 82 RT.	49
386+98	389+66	HWY. 82 RT.	268
388+51	390+63	HWY. 82 LT.	212
389+78	391+88	HWY. 82 RT.	210
390+75	392+88	HWY. 82 LT.	213
391+96	395+32	HWY. 82 RT.	336
393+00	396+19	HWY. 82 LT.	319
395+36	396+19	HWY. 82 RT.	83
396+27	397+82	HWY. 82 RT.	155
396+31	398+98	HWY. 82 LT.	267
397+94	400+08	HWY. 82 RT.	214
399+10	401+62	HWY. 82 LT.	252
400+20	402+20	HWY. 82 RT.	210
401+70	402+47	HWY. 82 LT.	77
402+46	402+93	HWY. 82 RT.	73
402+55	407+32	HWY. 82 LT.	477
403+01	406+94	HWY. 82 RT.	393
407+02	408+41	HWY. 82 RT.	139
407+40	410+31	HWY. 82 LT.	291
408+49	409+05	HWY. 82 RT.	56
409+09	410+35	HWY. 82 RT.	126
410+39	411+04	HWY. 82 RT.	65
410+39	411+08	HWY. 82 LT.	69
411+12	412+18	HWY. 82 RT.	106
411+12	412+14	HWY. 82 LT.	102
412+22	412+83	HWY. 82 RT.	61
412+22	414+16	HWY. 82 LT.	194
412+87	414+20	HWY. 82 RT.	133
414+20	415+00	HWY. 82 RT.	80
414+24	414+68	HWY. 82 LT.	44
414+72	415+00	HWY. 82 LT.	28
SUBTOTAL (BOX 1 OF 2):			10078
SUBTOTAL (BOX 2 OF 2):			12746
TOTAL:			22824

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	CONCRETE SLABS	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	GATES	SIGN FOUNDATIONS	GUARDRAIL	LUMINAIRE POLES	SIGNS	BACKFLOW PREVENTER	RETAINING WALLS	PLANTERS
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	LIN. FT.	EACH	EACH	EACH	LIN. FT.	EACH
106+68		HWY. 82 ON LT.						1			1			
115+12		HWY. 82 ON RT.				197								
121+56		HWY. 82 ON LT.				127								
130+10		HWY. 82 ON RT.				58								
130+10		HWY. 82 ON RT.				64								
130+23		HWY. 82 ON RT.						1			1			
130+60		HWY. 82 ON RT.				148								
153+83		HWY. 82 ON RT.				335								
158+50		HWY. 82 ON LT.								1				
161+50		HWY. 82 ON LT.				142								
167+62		HWY. 82 ON LT.			206									
167+78		HWY. 82 ON LT.			143									
168+00		HWY. 82 ON RT.			127									
168+57		HWY. 82 ON LT.			133									
168+79		HWY. 82 ON RT.			128									
169+00		HWY. 82 ON RT.			223									
177+55		HWY. 82 ON RT.										1		
178+09		HWY. 82 ON RT.												1
178+60		HWY. 82 ON RT.				286								
179+00		HWY. 82 ON RT.												1
189+85		HWY. 82 ON LT.						1			1			
196+15		HWY. 82 ON RT.										1		
196+76		HWY. 82 ON RT.										1		
216+70	217+70	HWY. 82 ON RT.							100					
217+38	218+36	HWY. 82 LT.							99					
219+20		HWY. 82 ON RT.			681									
219+60		HWY. 82 ON LT.			280									
220+56		HWY. 82 ON RT.			322									
220+62		HWY. 82 ON LT.			170									
298+50		HWY. 82 ON LT.				100								
298+77	299+58	HWY. 82 ON RT.	82											
299+85		HWY. 82 ON LT.						1			1			
300+35		HWY. 82 ON LT.						1			1			
300+45	301+46	HWY. 82 ON LT.	101											
304+81	306+44	HWY. 82 ON LT.							176					
304+85	306+44	HWY. 82 ON RT.							176					
305+70		HWY. 82 ON RT.						1			1			
307+74	310+02	HWY. 82 ON LT.							228					
307+74	308+52	HWY. 82 ON RT.							77					
312+09		HWY. 82 ON LT.						1			1			
312+72		HWY. 82 ON LT.						1			1			
332+99		HWY. 82 ON LT.				80								
333+85		HWY. 82 ON LT.				118								
333+87		HWY. 82 ON RT.						1			1			
336+54		HWY. 82 ON LT.				31								
338+05		HWY. 82 ON LT.				108								
340+84		HWY. 82 ON LT.						1			1			
346+65		HWY. 82 ON RT.				54								
349+38		HWY. 82 ON LT.				101								
353+08		HWY. 82 ON LT.				103								
360+98		HWY. 82 ON LT.				186								
363+64		HWY. 82 ON LT.				188								
365+90		HWY. 82 ON RT.						1			1			
366+59		HWY. 82 ON LT.				48								
373+84		HWY. 82 ON LT.				146								
378+33		HWY. 82 ON LT.				97								
380+45		HWY. 82 ON RT.											18	
380+75		HWY. 82 ON RT.											18	
383+00		HWY. 82 ON RT.				46								
385+55		HWY. 82 ON RT.		42										
386+62		HWY. 82 ON RT.				29								
397+63		HWY. 82 ON RT.				22								
399+87		HWY. 82 ON RT.				29								
403+96		HWY. 82 ON RT.				90								
405+40		HWY. 82 ON LT.					1							
407+32		HWY. 82 ON RT.						1			1			
407+51		HWY. 82 ON RT.				96								
412+64		HWY. 82 ON RT.				44								
414+00		HWY. 82 ON RT.				88								
TOTALS:			183	42	2413	3161	1	12	856	1	12	3	36	2

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	59	331

(2) QUANTITIES

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
127+99	128+90	HWY. 82 RT.	91.0	80.9
130+55	131+59	HWY. 82 RT.	104.0	92.4
132+00	134+30	HWY. 82 LT.	230.0	204.4
149+89	150+33	HWY. 82 LT.	44.0	39.1
152+04	153+33	HWY. 82 LT.	129.0	114.7
175+49	176+54	HWY. 82 RT.	105.0	93.3
179+20	181+53	HWY. 82 LT.	233.0	207.1
184+88	189+42	HWY. 82 RT.	454.0	403.6
185+73	189+42	HWY. 82 LT.	369.0	328.0
193+00	197+40	HWY. 82 LT.	440.0	391.1
198+00	201+52	HWY. 82 RT.	352.0	312.9
200+85	202+66	HWY. 82 LT.	181.0	160.9
108+00	110+17	HWY. 82 LT.	217.0	192.9
108+00	120+00	HWY. 82 RT.	1200.0	1066.7
144+00	146+00	HWY. 82 RT.	200.0	177.8
147+00	150+33	HWY. 82 LT.	333.0	296.0
155+41	156+77	HWY. 82 LT.	136.0	120.9
159+00	161+54	HWY. 82 LT.	254.0	225.8
163+35	167+00	HWY. 82 LT.	365.0	324.4
202+66	212+00	HWY. 82 RT.	934.0	830.2
305+72	306+71	HWY. 82 RT.	99.0	88.0
308+00	310+00	HWY. 82 RT.	200.0	177.8
309+00	312+25	HWY. 82 LT.	325.0	288.9
313+00	316+18	HWY. 82 LT.	318.0	282.7
316+42	320+21	HWY. 82 LT.	379.0	336.9
318+00	324+32	HWY. 82 RT.	632.0	561.8
323+80	328+00	HWY. 82 LT.	420.0	373.3
334+75	335+34	HWY. 82 LT.	59.0	52.4
333+40	337+00	HWY. 82 RT.	360.0	320.0
335+34	339+70	HWY. 82 LT.	436.0	387.6
337+32	341+23	HWY. 82 RT.	391.0	347.6
342+04	360+25	HWY. 82 LT.	1821.0	1618.7
341+23	352+82	HWY. 82 RT.	1159.0	1030.2
362+17	363+63	HWY. 82 LT.	146.0	129.8
363+00	367+00	HWY. 82 RT.	400.0	355.6
365+42	371+00	HWY. 82 LT.	558.0	496.0
369+00	370+00	HWY. 82 RT.	100.0	88.9
372+00	374+75	HWY. 82 LT.	275.0	244.4
371+21	380+62	HWY. 82 RT.	941.0	836.4
378+28	379+20	HWY. 82 LT.	92.0	81.8
380+28	381+35	HWY. 82 LT.	107.0	95.1
380+90	395+64	HWY. 82 RT.	1474.0	1310.2
390+00	394+00	HWY. 82 LT.	400.0	355.6
397+63	404+80	HWY. 82 RT.	717.0	637.3
400+10	405+00	HWY. 82 LT.	490.0	435.6
405+30	407+60	HWY. 82 LT.	230.0	204.4
407+00	415+00	HWY. 82 RT.	800.0	711.1
414+22	415+00	HWY. 82 LT.	78.0	69.3
*ENTIRE PROJECT TO BE USED IF AND WHERE			500.0	444.4
DIRECTED BY THE ENGINEER				
TOTAL:				18024.9

NOTE: AVERAGE WIDTH = 8'-0"

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

CONCRETE CURB

STATION	STATION	LOCATION	CONCRETE CURB (TYPE D)
			LIN. FT.
333+30	333+87	HWY. 82 LT.	57
339+04	339+56	HWY. 82 LT.	52
TOTAL:			109

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
219+18	HWY. 82 RT.	C	237
219+48	HWY. 82 LT.	C	153
220+21	HWY. 82 RT.	C	166
220+47	HWY. 82 LT.	C	169
TOTAL:			725

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3	TYPE 4
		SQ.YD.	
302+88	HWY. 82 LT.	2.7	
303+26	HWY. 82 LT.		2.7
303+32	HWY. 82 LT.		2.9
303+38	HWY. 82 LT.		2.9
304+09	HWY. 82 LT.		2.9
304+18	HWY. 82 LT.		2.9
304+19	HWY. 82 LT.		2.7
304+37	HWY. 82 LT.	2.7	
311+86	HWY. 82 LT.	5.4	
312+50	HWY. 82 LT.	5.4	
359+95	HWY. 82 LT.	5.3	
303+30	HWY. 82 RT.	2.7	
303+47	HWY. 82 RT.		2.7
303+49	HWY. 82 RT.		2.9
303+59	HWY. 82 RT.		2.9
304+30	HWY. 82 RT.		2.9
304+36	HWY. 82 RT.		2.9
304+41	HWY. 82 RT.		2.7
304+74	HWY. 82 RT.	2.7	
360+41	HWY. 82 RT.	5.3	
361+00	HWY. 82 RT.	5.4	
402+04	HWY. 82 RT.	5.2	
402+64	HWY. 82 RT.	5.4	
415+43	HWY. 82 LT.		3.8
TOTALS:		48.2	37.8

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
107+35	217+95	HWY. 82 LT.	9079
107+35	217+85	HWY. 82 RT.	8893
TOTAL:			17972

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

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

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

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	DROP INLETS
		EACH	EACH	EACH
110+16	HWY. 82 CROSS DRAIN	1		
115+12	HWY. 82 RT. (SIDE DRAIN)	1		
128+56	HWY. 82 CROSS DRAIN	1		
130+55	HWY. 82 CROSS DRAIN	1		
130+60	HWY. 82 RT. (E. UNIVERSITY ST.) (SIDE DRAIN)	1		
139+56	HWY. 82 RT. (SIDE DRAIN)	1		
139+60	HWY. 82 LT. (SIDE DRAIN)	1		
153+58	HWY. 82 RT.			1
153+83	HWY. 82 RT. (SIDE DRAIN)	1		
154+05	HWY. 82 RT.			1
155+57	HWY. 82 LT. (SIDE DRAIN)	1		
156+72	HWY. 82 RT. (SIDE DRAIN)	1		
156+77	HWY. 82 LT. (SIDE DRAIN)	1		
161+50	HWY. 82 LT. (SIDE DRAIN)	1		
163+34	HWY. 82 CROSS DRAIN	1		
196+50	HWY. 82 RT. (SIDE DRAIN)	1		
201+52	HWY. 82 CROSS DRAIN	1		
210+02	HWY. 82 LT. (SIDE DRAIN)	1		
213+69	HWY. 82 RT. (SIDE DRAIN)	1		
298+35	HWY. 82 RT.	1		1
299+02	HWY. 82 RT.	1		1
299+51	HWY. 82 LT.	1		1
300+28	HWY. 82 RT. (SIDE DRAIN)		1	
312+25	HWY. 82 LT. (SIDE DRAIN)	1		
317+82	HWY. 82 RT. (SIDE DRAIN)	1		
320+20	HWY. 82 LT. (SIDE DRAIN)	1		
322+12	HWY. 82 LT. (SIDE DRAIN)	1		
332+99	HWY. 82 LT. (SIDE DRAIN)	1		
333+09	HWY. 82 RT. (SIDE DRAIN)	1		
333+85	HWY. 82 LT. (SIDE DRAIN)	1		
334+49	HWY. 82 LT. (SIDE DRAIN)	1		
334+77	HWY. 82 LT. (SIDE DRAIN)	1		
335+34	HWY. 82 LT. (SIDE DRAIN)	1		
336+54	HWY. 82 LT. (SIDE DRAIN)	1		
338+94	HWY. 82 LT. (SIDE DRAIN)	1		
341+25	HWY. 82 RT. (SIDE DRAIN)	1		
342+64	HWY. 82 LT. (SIDE DRAIN)	1		
343+45	HWY. 82 RT. (SIDE DRAIN)	1		
345+25	HWY. 82 RT. (SIDE DRAIN)	1		
345+97	HWY. 82 LT. (SIDE DRAIN)	1		
346+65	HWY. 82 RT. (SIDE DRAIN)	1		
349+38	HWY. 82 LT. (SIDE DRAIN)	1		
353+08	HWY. 82 LT. (SIDE DRAIN)	1		
361+28	HWY. 82 CROSS DRAIN	1		
361+80	HWY. 82 LT. (SIDE DRAIN)	1		
363+64	HWY. 82 LT. (SIDE DRAIN)	1		
365+14	HWY. 82 LT. (SIDE DRAIN)	1		
366+59	HWY. 82 LT. (SIDE DRAIN)	1		
367+34	HWY. 82 LT. (SIDE DRAIN)	1		
368+80	HWY. 82 LT. (SIDE DRAIN)	1		
373+84	HWY. 82 LT. (SIDE DRAIN)	1		
374+75	HWY. 82 LT. (SIDE DRAIN)	1		
378+27	HWY. 82 RT. (SIDE DRAIN)	1		
378+33	HWY. 82 LT. (SIDE DRAIN)	1		
379+05	HWY. 82 RT. (SIDE DRAIN)	1		
379+23	HWY. 82 LT. (SIDE DRAIN)	1		
379+98	HWY. 82 LT. (SIDE DRAIN)	1		
380+61	HWY. 82 RT. (SIDE DRAIN)	1		
381+35	HWY. 82 LT. (SIDE DRAIN)	1		
382+44	HWY. 82 RT. (SIDE DRAIN)	1		
382+48	HWY. 82 LT. (SIDE DRAIN)	1		
383+00	HWY. 82 RT. (SIDE DRAIN)	1		
384+37	HWY. 82 RT. (SIDE DRAIN)	1		
386+21	HWY. 82 CROSS DRAIN	1		
386+62	HWY. 82 RT. (SIDE DRAIN)	1		
389+45	HWY. 82 RT. (SIDE DRAIN)	1		
391+65	HWY. 82 RT. (SIDE DRAIN)	1		
394+12	HWY. 82 RT. (SIDE DRAIN)	1		
395+63	HWY. 82 RT. (SIDE DRAIN)	1		
397+63	HWY. 82 RT. (SIDE DRAIN)	1		
399+87	HWY. 82 RT. (SIDE DRAIN)	1		
402+22	HWY. 82 LT. (SIDE DRAIN)	1		
402+38	HWY. 82 RT. (SIDE DRAIN)	1		
403+96	HWY. 82 RT. (SIDE DRAIN)	1		
405+52	HWY. 82 RT. (SIDE DRAIN)	1		
407+51	HWY. 82 RT. (SIDE DRAIN)	1		
409+42	HWY. 82 RT. (SIDE DRAIN)	1		
414+00	HWY. 82 RT. (SIDE DRAIN)	1		
TOTALS:		75	1	5

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

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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
222+00	223+00	HWY. 82 - MAIN LANES	63	700.00
297+01	298+01	HWY. 82 - MAIN LANES	56	622.22
414+00	415+00	HWY. 82 - MAIN LANES	23	255.56
TOTAL:				1577.78

NOTE: AVERAGE MILLING DEPTH 1".

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	* 16'-0" GATES
			LIN. FT.	EACH
149+62	150+56	HWY. 82 RT.	139	1
151+79	152+90	HWY. 82 LT.	85	1
184+09	185+10	HWY. 82 RT.	80	1
185+49	186+56	HWY. 82 LT.	81	1
217+19	217+67	HWY. 82 RT.	85	1
217+27	217+81	HWY. 82 LT.	57	1
TOTALS:			527	6

* DENOTES ALTERNATE BID ITEM.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
110+16	HWY. 82 - MAIN LANES	9.67	52	52
128+56	HWY. 82 - MAIN LANES	8.50	24	26
130+56	HWY. 82 - MAIN LANES	8.50	25	27
163+34	HWY. 82 - MAIN LANES	9.08	53	49
201+52	HWY. 82 - MAIN LANES	10.25	24	24
217+41	HWY. 82 - MAIN LANES	9.67	65	63
329+06	HWY. 82 - MAIN LANES	13.17	24	40
361+28	HWY. 82 - MAIN LANES	9.08	23	22
371+31	HWY. 82 - MAIN LANES	11.42	23	30
386+35	HWY. 82 - MAIN LANES	8.50	23	19
TOTAL:				352

AVG. DEPTH = 17"

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	800
ENGINEER	
TOTAL:	800

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

7/16/2015

R070365.DGN

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
216+47.64	217+85.44	HWY. 82 RT.	138	77
216+49	217+95.25	HWY. 82 LT.	146	81
221+67.33	222+62.06	HWY. 82 LT.	95	53
298+67	299+50	HWY. 82 RT.	83	46
298+82	299+78	HWY. 82 LT.	96	53
300+19	300+40	HWY. 82 RT.	21	12
300+43	302+92	HWY. 82 LT.	352	196
301+04	303+98	HWY. 82 RT.	376	209
303+72	306+41	HWY. 82 LT.	347	193
304+68	306+41	HWY. 82 RT.	258	143
307+78	311+81	HWY. 82 LT.	403	224
307+78	317+57	HWY. 82 RT.	979	544
312+55	315+92	HWY. 82 LT.	337	187
316+38	319+98	HWY. 82 LT.	360	200
318+01	332+83	HWY. 82 RT.	1482	823
320+42	321+86	HWY. 82 LT.	144	80
322+36	332+70	HWY. 82 LT.	1034	574
333+24	333+93	HWY. 82 LT.	69	38
333+28	336+84	HWY. 82 RT.	356	198
334+45	334+52	HWY. 82 LT.	7	4
335+00	335+12	HWY. 82 LT.	12	7
335+56	336+32	HWY. 82 LT.	76	42
336+76	337+80	HWY. 82 LT.	104	58
337+28	341+01	HWY. 82 RT.	373	207
338+30	338+68	HWY. 82 LT.	38	21
339+18	339+46	HWY. 82 LT.	28	16
339+94	342+28	HWY. 82 LT.	234	130
341+47	343+22	HWY. 82 RT.	175	97
342+96	344+25	HWY. 82 LT.	129	72
343+66	345+02	HWY. 82 RT.	136	76
344+73	345+62	HWY. 82 LT.	89	49
345+46	346+40	HWY. 82 RT.	94	52
346+30	349+12	HWY. 82 LT.	282	157
346+84	349+69	HWY. 82 RT.	285	158
349+60	352+87	HWY. 82 LT.	327	182
350+19	360+35	HWY. 82 RT.	1016	564
353+35	359+91	HWY. 82 LT.	656	364
360+60	361+45	HWY. 82 LT.	85	47
361+04	366+73	HWY. 82 RT.	569	316
362+13	363+28	HWY. 82 LT.	115	64
363+96	364+89	HWY. 82 LT.	93	52
365+39	366+35	HWY. 82 LT.	96	53
366+79	367+11	HWY. 82 LT.	32	18
367+21	378+04	HWY. 82 RT.	1083	602
367+55	368+57	HWY. 82 LT.	102	57
369+01	370+02	HWY. 82 LT.	101	56
370+70	373+56	HWY. 82 LT.	286	159
374+08	374+51	HWY. 82 LT.	43	24
374+99	378+11	HWY. 82 LT.	312	173
378+48	378+81	HWY. 82 RT.	33	18
378+55	378+92	HWY. 82 LT.	37	21
379+25	380+41	HWY. 82 RT.	116	64
379+52	379+70	HWY. 82 LT.	18	10
380+24	381+10	HWY. 82 LT.	86	48
380+85	382+22	HWY. 82 RT.	137	76
381+60	382+26	HWY. 82 LT.	66	37
382+66	382+78	HWY. 82 RT.	12	7
382+70	384+38	HWY. 82 LT.	168	93
383+22	384+13	HWY. 82 RT.	91	51
384+57	384+90	HWY. 82 RT.	33	18
384+82	387+33	HWY. 82 LT.	251	139
385+34	385+62	HWY. 82 RT.	28	16
386+30	386+40	HWY. 82 RT.	10	6
386+84	389+20	HWY. 82 LT.	236	131
387+82	392+31	HWY. 82 LT.	449	249
389+64	391+41	HWY. 82 RT.	177	98
391+85	393+87	HWY. 82 RT.	202	112
392+76	401+16	HWY. 82 LT.	840	467
394+31	395+38	HWY. 82 RT.	107	59
395+83	397+36	HWY. 82 RT.	153	85
397+80	399+62	HWY. 82 RT.	182	101
400+06	401+99	HWY. 82 RT.	193	107
401+60	401+95	HWY. 82 LT.	35	19
402+45	404+73	HWY. 82 LT.	228	127
402+68	403+71	HWY. 82 RT.	103	57
404+19	405+23	HWY. 82 RT.	104	58
405+55	407+42	HWY. 82 LT.	187	104
405+81	407+27	HWY. 82 RT.	146	81
407+75	408+51	HWY. 82 RT.	76	42
408+10	408+26	HWY. 82 LT.	16	9
408+80	415+00	HWY. 82 LT.	620	344
408+95	409+18	HWY. 82 RT.	23	13
409+62	412+36	HWY. 82 RT.	274	152
412+81	413+74	HWY. 82 RT.	93	52
414+18	415+40	HWY. 82 RT.	122	68
TOTAL:				10947

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
110+00	33	17	41.20	93	12	47.30	18' RT.	0-5	20	7	A-4 (0)	BR/GR
110+00	33	17	41.20	93	12	47.40	32' RT.	0-5	ND	NP	A-4 (0)	BR/GR
110+00	33	17	41.20	93	12	47.60	52' RT.	0-5	ND	NP	A-4 (0)	BR/GR
118+00	33	17	33.10	93	12	48.40	5' LT.	0-5	32	15	A-6 (5)	GRAY
118+00	33	17	33.10	93	12	48.30	17' LT.	0-5	40	23	A-6 (15)	BR/GR
118+00	33	17	33.00	93	12	48.10	40' LT	0-5	25	9	A-4 (3)	BR/GR
126+00	33	17	25.10	93	12	48.80	5' RT.	0-5	33	17	A-6 (4)	BROWN
126+00	33	17	25.10	93	12	49.90	15' RT.	0-5	31	15	A-6 (3)	BROWN
126+00	33	17	25.10	93	12	50.10	30' RT.	0-5	39	21	A-6 (8)	BROWN
134+00	33	17	25.10	93	12	50.20	6' LT.	0-5	24	7	A-4 (0)	BR/GR
134+00	33	17	17.30	93	12	50.00	17' LT.	0-5	29	14	A-6 (3)	BR/GR
134+00	33	17	17.20	93	12	49.80	34' LT.	0-5	31	15	A-6 (3)	BROWN
142+00	33	17	9.30	93	12	50.80	6' RT.	0-5	32	18	A-6 (7)	BROWN
142+00	33	17	9.30	93	12	50.90	18' LT.	0-5	36	21	A-6 (7)	BROWN
142+00	33	17	9.30	93	12	51.10	34' RT.	0-5	33	18	A-6 (5)	BROWN
150+00	33	17	1.30	93	12	51.10	6' LT.	0-5	31	16	A-6 (5)	BR/GR
150+00	33	17	1.30	93	12	51.00	18' LT.	0-5	32	17	A-6 (4)	BR/GR
150+00	33	17	1.30	93	12	50.50	60' LT.	0-5	ND	NP	A-2-4 (0)	GRAY
158+00	33	16	53.70	93	12	51.80	6' RT.	0-5	24	8	A-4 (0)	BROWN
158+00	33	16	53.70	93	12	51.90	17' RT.	0-5	29	14	A-6 (3)	BROWN
158+00	33	16	53.70	93	12	52.10	32' RT.	0-5	29	10	A-4 (2)	BROWN
175+00	33	16	36.80	93	12	52.60	11' LT.	0-5	31	16	A-2-6 (1)	BR/GR
175+00	33	16	36.80	93	12	52.50	24' LT.	0-5	27	13	A-2-6 (0)	BR/GR
175+00	33	16	36.70	93	12	52.20	53' LT.	0-5	ND	NP	A-4 (0)	BROWN
182+00	33	16	29.70	93	12	53.30	8' RT.	0-5	31	16	A-2-6 (1)	BR/GR
182+00	33	16	29.70	93	12	53.50	21' RT.	0-5	29	15	A-6 (1)	BR/GR
182+00	33	16	29.80	93	12	53.80	50' RT.	0-5	24	9	A-4 (1)	BROWN
190+00	33	16	21.80	93	12	53.70	5' LT.	0-5	ND	NP	A-4 (0)	BR/GR
190+00	33	16	21.80	93	12	53.60	18' LT.	0-5	16	3	A-4 (0)	BR/GR
190+00	33	16	21.80	93	12	53.40	35' LT.	0-5	21	6	A-4 (0)	BROWN
198+00	33	16	14.00	93	12	55.00	6' RT.	0-5	ND	NP	A-4 (0)	GRAY
198+00	33	16	14.00	93	12	55.10	16' RT.	0-5	ND	NP	A-4 (0)	BR/GR
198+00	33	16	14.10	93	12	55.30	36' RT.	0-5	ND	NP	A-4 (0)	GRAY
206+00	33	16	6.40	93	12	56.00	6' LT.	0-5	29	14	A-6 (1)	BROWN
206+00	33	16	6.40	93	12	55.90	17' LT.	0-5	34	18	A-6 (4)	BROWN
206+00	33	16	6.40	93	12	55.70	36' LT.	0-5	21	8	A-4 (0)	BROWN
214+00	33	15	58.30	93	12	57.70	32' RT.	0-5	28	13	A-6 (1)	BROWN
214+00	33	15	58.30	93	12	57.90	43' RT.	0-5	25	9	A-2-4 (0)	BROWN
214+00	33	15	58.30	93	12	58.10	65' RT.	0-5	27	12	A-6 (1)	BROWN
310+00	33	15	49.90	93	12	51.80	5' RT.	0-5	24	24	A-4 (2)	BR/GR
310+00	33	15	49.80	93	12	51.90	15' RT.	0-5	30	30	A-6 (6)	BR/GR
310+00	33	15	49.70	93	12	51.90	27' RT.	0-5	22	22	A-4 (2)	BROWN
318+00	33	15	46.70	93	12	43.20	5' LT.	0-5	19	4	A-4 (0)	BROWN
318+00	33	15	46.80	93	12	43.10	15' LT.	0-5	ND	NP	A-2-4 (0)	BROWN
318+00	33	15	46.90	93	12	43.00	27' LT.	0-5	ND	NP	A-4 (0)	BROWN
326+00	33	15	43.30	93	12	34.80	6' RT.	0-5	26	14	A-6 (4)	BR/GR
326+00	33	15	43.20	93	12	34.70	15' RT.	0-5	28	15	A-6 (4)	BR/GR
326+00	33	15	43.10	93	12	34.80	27' RT.	0-5	18	3	A-4 (0)	BR/GR
334+00	33	15	40.30	93	12	25.90	5' LT.	0-5	21	8	A-4 (1)	BROWN
334+00	33	15	40.40	93	12	25.80	15' LT.	0-5	21	6	A-4 (0)	BROWN
334+00	33	15	40.50	93	12	25.80	27' LT.	0-5	26	10	A-4 (2)	BROWN
343+00	33	15	32.10	93	12	16.30	5' RT.	0-5	24	8	A-4 (2)	BR/GR
343+00	33	15	37.20	93	12	16.30	16' RT.	0-5	26	11	A-6 (3)	BR/GR
343+00	33	15	37.10	93	12	16.40	26' RT.	0-5	ND	NP	A-4 (0)	GRAY
350+00	33	15	34.90	93	12	8.30	5' LT.	0-5	41	21	A-7-6 (20)	BR/GR
350+00	33	15	35.10	93	12	8.20	15' LT.	0-5	42	20	A-7-6 (20)	BR/GR
350+00	33	15	35.10	93	12	8.20	26' LT.	0-5	40	18	A-6 (18)	BR/GR
358+00	33	15	32.20	93	11	59.50	5' RT.	0-5	ND	NP	A-4 (0)	BR/GR
358+00	33	15	32.10	93	11	59.50	15' RT.	0-5	ND	NP	A-4 (0)	BROWN
358+00	33	15	32.00	93	11	59.60	27' RT.	0-5	ND	NP	A-4 (0)	BROWN
366+00	33	15	29.50	93	11	50.50	5' LT.	0-5	31	14	A-6 (4)	BROWN
366+00	33	15	29.60	93	11	50.50	15' LT.	0-5	41	24	A-7-6 (12)	BR/GR
366+00	33	15	29.70	93	11	50.40	27' LT.	0-5	37	16	A-6 (4)	BR/GR
374+00	33	15	26.80	93	11	41.80	5' RT.	0-5	21	5	A-4 (0)	BR/GR
374+00	33	15	26.70	93	11	41.80	15' RT.	0-5	24	8	A-4 (1)	BR/GR
374+00	33	15	26.60	93	11	41.90	27' RT.	0-5	ND	NP	A-4 (0)	BROWN
382+00	33	15	24.20	93	11	32.70	5' LT.	0-5	29	14	A-6 (5)	BROWN
382+00	33	15	24.30	93	11	32.70	16' LT.	0-5	28	12	A-6 (4)	BROWN
382+00	33	15	24.40	93	11	32.60	28' LT.	0-5	28	13	A-6 (5)	BROWN
390+00	33	15	21.40	93	11	24.00	5' RT.	0-5	ND	NP	A-4 (0)	BR/GR
390+00	33	15	21.30	93	11	24.00	16' RT.	0-5	ND	NP	A-4 (0)	BROWN
390+00	33	15	21.20	93	11	24.10	28' RT.	0-5	33	14	A-6 (6)	BROWN
398+00	33	15	18.80	93	11	15.00	6' LT.	0-5	27	11	A-6 (3)	BR/GR
398+00	33	15	18.80	93	11	14.90	16' LT.	0-5	23	7	A-4 (0)	BR/GR
398+00	33	15	18.90	93	11	14.90	25' LT.	0-5	23	7	A-4 (0)	BROWN
406+00	33	15	16.10	93	11	6.40	5' RT.	0-5	24	9	A-4 (2)	BR/GR
406+00	33	15	16.00	93	11	6.50	16' RT.	0-5	24	9	A-4 (2)	BR/GR
406+00	33	15	15.90	93	11	6.50	28' RT.	0-5	33	17	A-6 (7)	BROWN
414+00	33	15	13.50	93	10	57.50	5' LT.	0-5	ND	NP	A-4 (0)	BROWN
414+00	33	15	13.60	93	10	57.40	16' LT.	0-5	ND	NP	A-4 (0)	BROWN
414+00	33	15	13.70	93	10	57.40	28' LT.	0-5	ND	NP	A-4 (0)	BROWN
126+00	33	17	25.10	93	12	25.10	30' RT.	0-5	30	11	A-6 (4)	BROWN
214+00	33	17	58.30	93	12	58.10	65' RT.	0-5	25	9	A-2-4 (0)	BROWN
350+00	33	17	35.10	93	12	8.20	26' LT.	0-5	21	6	A-4 (4)	BR/GR
374+00	33	15	26.60	93	11	41.90	27' RT.	0-5	23	7	A-2-4 (0)	BROWN

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

PORTLAND CEMENT CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE		
				AVG. WID.	9" U.T.	6" U.T.
			FEET	FEET	SQ. YD.	SQ. YD.
301+82	303+02	HWY. 82 INTERSECTION NW QUADRANT	VAR.	VAR.	5.00	10.70
304+73	304+96	HYW. 82 INTERSECTION NE QUADRANT	VAR.	VAR.	5.20	12.40
304+56	304+66	HYW. 82 INTERSECTION SE QUADRANT	VAR.	VAR.	26.00	44.30
310+07	311+25	HWY. 82 ON RT.	118.00	VAR.	26.20	59.00
167+62		HWY. 82 ON LT. (UNDER OLD ISLAND)	VAR.	VAR.	206.00	206.00
167+78		HWY. 82 ON LT. (UNDER OLD ISLAND)	VAR.	VAR.	160.00	160.00
168+57		HWY. 82 ON LT. (UNDER OLD ISLAND)	VAR.	VAR.	135.00	135.00
168+00		HWY. 82 ON RT. (UNDER OLD ISLAND)	VAR.	VAR.	128.00	128.00
168+79		HWY. 82 ON RT. (UNDER OLD ISLAND)	VAR.	VAR.	128.00	128.00
169+00		HWY. 82 ON RT. (UNDER OLD ISLAND)	VAR.	VAR.	217.00	217.00
219+13		HWY. 82 ON RT. (UNDER OLD ISLAND)	VAR.	VAR.	667.00	667.00
220+50		HWY. 82 ON RT. (UNDER OLD ISLAND)	VAR.	VAR.	337.00	337.00
219+60		HWY. 82 ON LT. (UNDER OLD ISLAND)	VAR.	VAR.	282.00	282.00
220+65		HWY. 82 ON LT. (UNDER OLD ISLAND)	VAR.	VAR.	168.00	168.00
TOTALS:					2490.40	2554.40



DATE REVISED	DATE PLANS	DATE REVISED	DATE PLANS

2 QUANTITIES

FED.RD. DIV.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	070365	60	331

FED.AID PROJ.NO.

QUANTITIES

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS				STANDARD DRAWINGS
										18"	24"	48"	21"X15"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.				
115+12	RT	HWY. 82 - MAIN LANES	26			153.60				50				PCC-1, PCM-1, PCP-1, PCP-2
121+56	LT	HWY. 82 - MAIN LANES	16			79.80								PCC-1, PCM-1, PCP-1, PCP-2
130+10	RT	DRIVE ON LT. OF E. UNIVERSITY ST.	26			64.10							34	PCC-1, PCM-1, PCP-1, PCP-2
130+10	RT	DRIVE ON LT. OF E. UNIVERSITY ST.	26			64.10							36	PCC-1, PCM-1, PCP-1, PCP-2
130+28	LT	CO. RD. 448	20				398.60	43.85	162.76					
130+28	RT	E. UNIVERSITY ST.	30				709.60	78.06	289.75					PCC-1, PCM-1, PCP-1, PCP-2
130+60	RT	DRIVE ON RT. OF E. UNIVERSITY ST.	30			108.60							34	PCC-1, PCM-1, PCP-1, PCP-2
139+56	RT	HWY. 82 - MAIN LANES	16				24.70	2.72	42.74	34				PCC-1, PCM-1, PCP-1, PCP-2
139+60	LT	LYNN ST.	22				163.70	18.01	66.84		42			PCC-1, PCM-1, PCP-1, PCP-2
153+83	RT	HWY. 82 - MAIN LANES	40			225.60					64			PCC-1, PCM-1, PCP-1, PCP-2
155+57	LT	HWY. 82 - MAIN LANES	16				24.70	2.72	47.41	28				PCC-1, PCM-1, PCP-1, PCP-2
156+72	RT	E. GREENE ST.	20				176.40	19.40	72.03	40				PCC-1, PCM-1, PCP-1, PCP-2
156+77	LT	E. GREENE ST.	20				149.70	16.47	61.13	34				PCC-1, PCM-1, PCP-1, PCP-2
161+50	LT	VERA ST.	24			50.70	119.50	13.15	48.80		38			PCC-1, PCM-1, PCP-1, PCP-2
161+50	RT	VERA ST.	22				190.60	20.97	77.83					PCC-1, PCM-1, PCP-1, PCP-2
178+60	RT	HWY. 82 - MAIN LANES	32			199.70								PCC-1, PCM-1, PCP-1, PCP-2
189+72	LT	HWY. 82 - MAIN LANES	28				127.80	14.06	52.19					PCC-1, PCM-1, PCP-1, PCP-2
189+89	RT	PITTMAN	24				155.50	17.11	63.50					
196+39	LT	HWY. 82 - MAIN LANES	16				70.90	7.80	28.95	28				PCC-1, PCM-1, PCP-1, PCP-2
196+50	RT	HOLLENSWORTH ST.	20				143.10	15.74	58.43		38			PCC-1, PCM-1, PCP-1, PCP-2
210+02	LT	HWY. 82 - MAIN LANES	16				24.70	2.72	68.41	42				PCC-1, PCM-1, PCP-1, PCP-2
213+69	RT	HWY. 82 - MAIN LANES	34				274.40	30.18	112.05			70		PCC-1, PCM-1, PCP-1, PCP-2
298+36	RT	HWY. 82 - MAIN LANES	34	298+05	298+67	40.90	86.90	9.56	35.48					DR-1
298+50	LT	HWY. 82 - MAIN LANES	26	298+23	298+77	103.10								DR-1
299+92	RT	HWY. 82 - MAIN LANES	40	299+58	300+26	46.20	106.70	11.74	43.57					DR-1
300+11	LT	HWY. 82 - MAIN LANES	34	299+80	300+42	40.90	80.40	8.84	32.83					DR-1
300+68	RT	HWY. 82 - MAIN LANES	34	300+37	300+99	40.90	96.30	10.59	39.32					DR-1
316+17	LT	HWY. 82 - MAIN LANES	18	315+94	316+40	26.70			24.36					DR-1
317+82	RT	HWY. 82 - MAIN LANES	16	317+60	318+04	24.90			28.93					DR-1
320+20	LT	HWY. 82 - MAIN LANES	16	319+98	320+42	24.90			21.47					DR-1
322+12	LT	HWY. 82 - MAIN LANES	22	321+87	322+37	30.20			29.51					DR-1
332+99	LT	HWY. 82 - MAIN LANES	26	332+72	333+26	149.70								DR-1
333+09	RT	HWY. 82 - MAIN LANES	16	332+87	333+31	24.90			21.95					DR-1
334+20	LT	HWY. 82 - MAIN LANES	24	333+94	334+46	169.30								DR-1
334+77	LT	HWY. 82 - MAIN LANES	20	334+53	335+01	28.40			25.99					DR-1
335+34	LT	HWY. 82 - MAIN LANES	16	335+12	335+56	24.90			20.79					DR-1
336+54	LT	HWY. 82 - MAIN LANES	16	336+32	336+76	64.50								DR-1
337+07	RT	HWY. 82 - MAIN LANES	16	336+85	337+29	24.90			21.21					DR-1
338+05	LT	HWY. 82 - MAIN LANES	22	337+80	338+30	84.60								DR-1
338+94	LT	HWY. 82 - MAIN LANES	22	338+69	339+19	30.20	62.30	6.85	25.44					DR-1
339+70	LT	HWY. 82 - MAIN LANES	20	339+46	339+94	28.40	85.60	9.42	34.95					DR-1
341+25	RT	HWY. 82 - MAIN LANES	18	341+02	341+48	26.70			23.89					DR-1
342+64	LT	HWY. 82 - MAIN LANES	40	342+30	342+98	46.20			51.98					DR-1
343+45	RT	HWY. 82 - MAIN LANES	16	343+23	343+67	24.90			21.21					DR-1
344+49	LT	HWY. 82 - MAIN LANES	20	344+25	344+73	28.40			25.99					DR-1
345+25	RT	HWY. 82 - MAIN LANES	16	345+03	345+47	24.90			21.21					DR-1
345+97	LT	HWY. 82 - MAIN LANES	40	345+63	346+31	46.20			51.98					DR-1
346+65	RT	HWY. 82 - MAIN LANES	16	346+43	346+87	65.50								DR-1
349+38	LT	HWY. 82 - MAIN LANES	20	349+14	349+62	78.20								DR-1
349+95	RT	HWY. 82 - MAIN LANES	22	349+70	350+20	30.20			29.14					DR-1
353+08	LT	HWY. 82 - MAIN LANES	20	352+84	353+32	78.20								DR-1
361+80	LT	HWY. 82 - MAIN LANES	40	361+46	362+14	145.30								DR-1
363+64	LT	HWY. 82 - MAIN LANES	40	363+30	363+98	145.30								DR-1
365+14	LT	HWY. 82 - MAIN LANES	22	364+89	365+39	30.20			28.61					DR-1
366+59	LT	HWY. 82 - MAIN LANES	16	366+37	366+81	64.70								DR-1
366+98	RT	HWY. 82 - MAIN LANES	20	366+74	367+22	28.40			26.51					DR-1
367+34	LT	HWY. 82 - MAIN LANES	16	367+12	367+56	24.90			28.46					DR-1
368+80	LT	HWY. 82 - MAIN LANES	16	368+58	369+02	24.90			20.79					DR-1
370+39	LT	HWY. 82 - MAIN LANES	40	370+05	370+73	46.20			52.03					DR-1
373+84	LT	HWY. 82 - MAIN LANES	24	373+58	374+10	92.20								DR-1
374+75	LT	HWY. 82 - MAIN LANES	20	374+51	374+99	28.40			32.08					DR-1
378+27	RT	HWY. 82 - MAIN LANES	16	378+05	378+49	24.90			21.21					DR-1
378+33	LT	HWY. 82 - MAIN LANES	16	378+11	378+55	64.50								DR-1
379+05	RT	HWY. 82 - MAIN LANES	16	378+83	379+27	24.90			21.21					DR-1
379+23	LT	HWY. 82 - MAIN LANES	32	378+93	379+53	39.10			41.63					DR-1
379+98	LT	HWY. 82 - MAIN LANES	26	379+71	380+25	33.80			33.81					DR-1
380+61	RT	HWY. 82 - MAIN LANES	16	380+39	380+83	24.90	40.70	4.48	16.62					DR-1
381+35	LT	HWY. 82 - MAIN LANES	22	381+10	381+60	30.20			34.02					DR-1
382+44	RT	HWY. 82 - MAIN LANES	16	382+22	382+66	24.90	40.40	4.44	16.50					DR-1
382+48	LT	HWY. 82 - MAIN LANES	16	382+26	382+70	24.90			25.67					DR-1
383+00	RT	HWY. 82 - MAIN LANES	16	382+78	383+22	65.30								DR-1
384+64	LT	HWY. 82 - MAIN LANES	16	384+42	384+86	24.90			32.97					DR-1
384+37	RT	HWY. 82 - MAIN LANES	16	384+15	384+59	24.90			21.21					DR-1
385+13	RT	HWY. 82 - MAIN LANES	16	384+91	385+35	24.90			21.21					DR-1
386+00	RT	HWY. 82 - MAIN LANES	40	385+66	386+34	46.20	100.90	11.10	41.20					DR-1
386+62	RT	HWY. 82 - MAIN LANES	16	386+40	386+84	65.20								DR-1
387+58	LT	HWY. 82 - MAIN LANES	22	387+33	387+83	30.20	104.30	11.47	42.59					DR-1
389+45	RT	HWY. 82 - MAIN LANES	16	389+23	389+67	24.90	40.70	4.48	16.62					DR-1
391+65	RT	HWY. 82 - MAIN LANES	16	391+43	391+87	24.90	40.50	4.46	16.54					DR-1
392+52	LT	HWY. 82 - MAIN LANES	16	392+30	392+74	24.90			21.37					DR-1
394+12	RT	HWY. 82 - MAIN LANES	16	393+90	394+34	24.90	40.40	4.44	16.50					DR-1
395+63	RT	HWY. 82 - MAIN LANES	16	395+41	395+85	24.90			21.47					DR-1
397+63	RT	HWY. 82 - MAIN LANES	16	397+41	397+85	66.80								DR-1
399+87	RT	HWY. 82 - MAIN LANES	16	399+65	400+09	66.30								DR-1
401+39	LT	HWY. 82 - MAIN LANES	16	401+17	401+61	24.90			20.84					DR-1
402+22	LT	HWY. 82 - MAIN LANES	22	401+97	402+47	30.20			28.61					DR-1
403+96	RT	HWY. 82 - MAIN LANES	20	403+72	404+20	78.80								DR-1
404+95	LT	HWY. 82 - MAIN LANES	16	404+73	405+17	24.90			20.90					DR-1
405+28	LT	HWY. 82 - MAIN LANES	16	405+06	405+50	24.90			21.84					DR-1
405+52	RT	HWY. 82 - MAIN LANES	30	405+23	405+81	37.30			55.13					DR-1
407+51	RT	HWY. 82 - MAIN LANES	20	407+27	407+75	78.80								DR-1
407+77	LT	HWY. 82 - MAIN LANES	40	407+43	408+11	46.20	99.20	10.91	40.51					DR-1
408+56	LT	HWY. 82 - MAIN LANES	26	408+29	408+83	33.80			56.86					DR-1
408+75	RT	HWY. 82 - MAIN LANES	16	408+53	408+97	24.90			21.16					DR-1
409+42	RT	HWY. 82 - MAIN LANES	16	409+20	409+64	24.90			21.32					DR-1
412+64	RT	HWY. 82 - MAIN LANES	16	412+42	412+86	66.60								DR-1
414+00	RT	HWY. 82 - MAIN LANES	16	413+78	414+22	66.50								DR-1
* ENTIRE PROJECT TEMPORARY DRIVES									1200.00					
TOTALS:						4428.60	3779.20	415.74	4022.02	256	182	70	104	

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

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

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

** FOR INFORMATION ONLY

R.C. BOX CULVERTS

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
151+16	R.C. BOX CULVERT EXTEND 36' LT. & 33' RT.	4	6	73	61.70	4455	30	22	0.28	R-145X-1, R-100X-X1, W-X45, W-X453-1, RCB-1, RCB-2, RCB-3
185+30	R.C. BOX CULVERT EXTEND 35' LT. & 24' RT.	7	6	63	66.49	6082	37	24	0.30	R-130X-1, R-100X-X2, W-X30, W-X303-1, RCB-1, RCB-2, RCB-3
217+54	R.C. BOX CULVERT EXTEND 6' RT.	5	5	8	7.17	732	8	10	0.13	R-100X-X1, W-X003-1, RCB-1, RCB-2, RCB-3
323+80	R.C. BOX CULVERT EXTEND 24' LT. & 26' RT.	4	4	55	27.73	2873	19	14	0.18	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
328+90	R.C. BOX CULVERT EXTEND 25' LT. & 32' RT.	8	5	62	58.40	6685	35	18	0.23	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
371+21	R.C. BOX CULVERT EXTEND 24' LT. & 36' RT.	4	2	65	22.69	2868	19	9	0.11	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
TOTALS:					244.18	23695	148	97	1.23	

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. SMITH No. 11425
10-20-15

DATE REVISED	DATE PLANED	DATE REVISED	DATE PLANED

2 QUANTITIES

FEDERAL DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	070365	61	331

JOB NO.

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	62	331

(2) QUANTITIES

STRUCTURES (BOX 1 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CL. III) 18"	24"	30"	36"	48"	54"	72"	(CL. IV) 24"	30"	42"	(CL. V) 30"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	30"	36"	48"	54"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	48"	54"	72"	DROP INLETS TYPE C	MO	SPECIAL	EXT. 4'	8'	JUNCT. BOX (TYPE E)	YARD DRAINS	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.												EACH						EACH								EACH							CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
110+16	R.C. CROSS DRAIN				127																		2														34	0.43	FES-1, FES-2, PCC-1
128+56	R.C. CROSS DRAIN		132																		2																16	0.20	FES-1, FES-2, PCC-1
130+65	R.C. CROSS DRAIN		132																		2																16	0.20	FES-1, FES-2, PCC-1
163+34	R.C. CROSS DRAIN								114													2															26	0.33	FES-1, FES-2, PCC-1
176+54	R.C. PIPE CULVERT EXTEND 30' LT. & 22' RT.			60																		2														26	0.33	FES-1, FES-2, PCC-1
192+88	R.C. SPRING BOX ON RT.	140																		1													3.31	168	7	5	0.06	SI-1, FES-1, FES-2, PCC-1
201+52	R.C. CROSS DRAIN									114														2												46	0.58	FES-1, FES-2, PCC-1
217+30	R.C. CROSS DRAIN				142																		2													34	0.43	FES-1, FES-2, PCC-1
217+80	DROP INLET ON LT.	9																		1								1			1					5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
217+80	DROP INLET ON RT.	12																		1								1			1					5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-3
218+75	DROP INLET ON RT.																												1		1							SPECIAL DETAILS, CDP-1
219+19	DROP INLET ON LT.																												1		1							SPECIAL DETAILS, CDP-1
220+36	DROP INLET ON RT.																												1		1							SPECIAL DETAILS, CDP-1
220+76	DROP INLET ON LT.																												1		1							SPECIAL DETAILS, CDP-1
221+85	DROP INLET ON LT.													57														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
221+85	DROP INLET ON RT.	16																		1								1										FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
222+46	DROP INLET ON LT.					24																			1			1										FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-3
299+00	DROP INLET ON LT.																41											1										FPC-9E, FPC-9M, PCC-1, PCM-1
299+00	DROP INLET ON RT.	4												21						1								1								5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
299+16	R.C. PIPE CULVERT EXTEND 18' LT.				22																																	PCC-1
299+25	DROP INLET ON RT.																	99										1				1						FPC-9E, PCC-1, PCM-1
299+45	DROP INLET ON LT.																230											1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
300+30	DROP INLET ON RT.	4																145		1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
301+80	DROP INLET ON LT.				10																		1					1			1					17	0.21	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
301+80	DROP INLET ON RT.					12																			1			1			1					29	0.37	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
305+72	DROP INLET ON LT.	13																		1								1								5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
305+72	DROP INLET ON RT.	10																		1								1								5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
307+95	DROP INLET ON LT.			40																		1						1			1					13	0.16	FES-1, FES-2, PCC-1, FPC-9M
307+95	DROP INLET ON RT.	24																		1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
310+00	DROP INLET ON LT.															201												1			1							FES-1, FES-2, PCC-1, FPC-9M
310+00	DROP INLET ON RT.													200														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
311+60	DROP INLET ON LT.	18														156				1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
311+60	DROP INLET ON RT.													155														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
313+00	DROP INLET ON LT.		16													135					1							1								8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
313+00	DROP INLET ON RT.													136														1										FPC-9E, FPC-9M, PCC-1, PCM-1
314+00	DROP INLET ON LT.													95														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
314+00	DROP INLET ON RT.													96														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
316+42	DROP INLET ON LT.	9												237						1								1			1					5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
316+42	DROP INLET ON RT.													239														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
319+95	DROP INLET ON LT.	6												181						1								1			1					5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
319+95	DROP INLET ON RT.													181														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
321+80	DROP INLET ON LT.	10												196						1								1			1					5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
321+80	DROP INLET ON RT.													196														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
324+32	DROP INLET ON LT.													48														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
324+32	DROP INLET ON RT.													48														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
325+10	DROP INLET ON LT.													74														1										FPC-9E, FPC-9M, PCC-1, PCM-1
325+10	DROP INLET ON RT.													74														1										FPC-9E, FPC-9M, PCC-1, PCM-1
325+80	DROP INLET ON LT.													66														1										FPC-9E, FPC-9M, PCC-1, PCM-1
325+80	DROP INLET ON RT.													66														1										FPC-9E, FPC-9M, PCC-1, PCM-1
327+00	DROP INLET ON LT.													116														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
327+00	DROP INLET ON RT.													116														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
329+06	R.C.CROSS DRAIN							109																					2							128	1.61	FES-1, FES-2, PCC-1
329+25	DROP INLET ON LT.	14																		1								1				1				5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
329+25	DROP INLET ON RT.	15																		1								1				1				5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
332+00	DROP INLET ON LT.													269														1				1						FPC-9E, FPC-9M, PCC-1, PCM-1
332+00	DROP INLET ON RT.													273														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
333+40	DROP INLET ON RT.	6												137						1								1				1				5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
335+05	DROP INLET ON LT.	10												300						1								1								5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
335+60	DROP INLET ON LT.	9												51						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
335+60	DROP INLET ON RT.													216														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
336+80	DROP INLET ON LT.	8												116						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
337+32	DROP INLET ON RT.	5												168						1								1				1				5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
338+33	DROP INLET ON LT.	7												149						1								1								5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
339+22	DROP INLET ON LT.	8												85						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
340+00	DROP INLET ON RT.													264														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
340+68	DROP INLET ON LT.			18																		1						1			1					13	0.16	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
342+04	DROP INLET ON LT.															131												1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
342+04	DROP INLET ON RT.		12																		1							1			1					8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
342+04	R.C. PIPE CULVERT EXTEND 2' RT.		6																																			PCC-1
343+00	DROP INLET ON LT.	10													91					1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
343+70	DROP INLET ON RT.	7												162						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
344+77	DROP INLET ON LT.	7													173					1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
345+50	DROP INLET ON RT.	8												176						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
346+34	DROP INLET ON LT.	7													153					1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
346+88	DROP INLET ON RT.	5												134						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
348+00	DROP INLET ON LT.													162														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
348+50	DROP INLET ON RT.													158														1			1							FPC-9E, FPC-9M, PCC-1, PCM-1
349+64	DROP INLET ON LT.	5												160						1								1			1					5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
SUBTOTALS:		406	298	118	301	36		109		114	114			5578	417	623	271	244		29	6	6	5	2	2		2	1	62	4	46	6			3.31	168	7	554	6.89	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
* QUANTITIES ESTIMATED. SEE SECTION 104.03 OF STANDARD SPECIFICATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-8-16

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	63	331

(2) QUANTITIES

STRUCTURES (BOX 2 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CL. III) 18"	24"	30"	36"	48"	54"	72"	(CL. IV) 24"	30"	42"	(CL. V) 30"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	30"	36"	48"	54"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	48"	54"	72"	DROP INLETS TYPE C	MO	SPECIAL	EXT. 4'	8'	JUNCT. BOX (TYPE E)	YARD DRAINS	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.												EACH						EACH								EACH							CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
350+23	DROP INLET ON RT.													169														1												FPC-9E, FPC-9M, PCC-1, PCM-1
352+82	DROP INLET ON LT.	5												114						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
354+00	DROP INLET ON LT.													223														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
354+00	DROP INLET ON RT.													224														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
356+28	DROP INLET ON LT.			7																		1						1			1							13	0.16	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
356+28	R.C. PIPE CULVERT EXTEND 5' LT. & 1' RT.											60																												PCC-1
356+29	DROP INLET ON RT.			16																		1						1			1							13	0.16	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
357+40	DROP INLET ON LT.													108														1												FPC-9E, FPC-9M, PCC-1, PCM-1
357+40	DROP INLET ON RT.													107														1												FPC-9E, FPC-9M, PCC-1, PCM-1
358+19	DROP INLET ON LT.													75														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
358+19	DROP INLET ON RT.													75														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
359+70	DROP INLET ON LT.													147														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
359+70	DROP INLET ON RT.													147														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
361+28	DROP INLET ON LT.			6												58						1						1			1							13	0.16	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
361+28	DROP INLET ON RT.				7																			1				1				1						17	0.21	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
362+17	DROP INLET ON LT.	5													84					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
364+00	DROP INLET ON LT.	3													179					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
364+00	DROP INLET ON RT.													268														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
365+42	DROP INLET ON LT.														138													1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
366+65	DROP INLET ON RT.													261														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
366+83	DROP INLET ON LT.														137													1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
367+60	DROP INLET ON LT.														73													1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
369+00	DROP INLET ON RT.													231														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
369+04	DROP INLET ON LT.													140														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
371+31	DROP INLET ON LT.																		59									1				1								FPC-9E, FPC-9M, PCC-1
371+31	DROP INLET ON RT.						26																			1		1				1						35	0.44	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
374+12	DROP INLET ON LT.						6												275							1		1			1							35	0.44	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
374+12	DROP INLET ON RT.														276													1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
376+50	DROP INLET ON LT.													233														1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
376+50	DROP INLET ON RT.														234													1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
378+65	DROP INLET ON LT.	5												211						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
378+65	DROP INLET ON RT.	2													211					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
379+30	DROP INLET ON RT.	3													61					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
380+28	DROP INLET ON LT.	5												159						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
380+90	DROP INLET ON RT.	2													156					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
382+72	DROP INLET ON RT.	3													178					1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
383+26	DROP INLET ON LT.													294														1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
383+26	DROP INLET ON RT.	2													50					1								1										5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
384+61	DROP INLET ON RT.														131													1												FPC-9E, FPC-9M, PCC-1, PCM-1
385+38	DROP INLET ON RT.													93														1												FPC-9E, FPC-9M, PCC-1, PCM-1
386+21	DROP INLET ON LT.		11																		1							1			1							8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
386+35	DROP INLET ON RT.		4												61						1							1										8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
386+88	DROP INLET ON RT.	5												49						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
388+45	DROP INLET ON LT.													220														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
389+68	DROP INLET ON RT.	5												276						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
390+65	DROP INLET ON LT.													216														1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
391+90	DROP INLET ON RT.	5												218						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
392+90	DROP INLET ON LT.	6												221						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
395+34	DROP INLET ON RT.	4												83						1								1										5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
396+21	DROP INLET ON LT.		26																		1							1				1						8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
396+21	DROP INLET ON RT.		13																		1							1			1							8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
397+84	DROP INLET ON RT.	7												159						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
399+00	DROP INLET ON LT.													275														1				1								FPC-9E, FPC-9M, PCC-1, PCM-1
400+10	DROP INLET ON RT.	5												222						1								1				1						5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
401+64	DROP INLET ON LT.	5												260						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
402+49	DROP INLET ON LT.	2												81						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
402+95	DROP INLET ON RT.	3												281						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
407+00	DROP INLET ON RT.													143														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
407+38	DROP INLET ON LT.	5												295						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
408+47	DROP INLET ON RT.	5												56						1								1			1							5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
409+07	DROP INLET ON RT.	5												126						1								1										5	0.06	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1, PCM-1
410+37	DROP INLET ON LT.													69														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
410+37	DROP INLET ON RT.													69														1												FPC-9E, FPC-9M, PCC-1, PCM-1
411+10	DROP INLET ON LT.													106														1												FPC-9E, FPC-9M, PCC-1, PCM-1
411+10	DROP INLET ON RT.													106														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
412+20	DROP INLET ON LT.		17																		1							1			1							8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
412+20	DROP INLET ON RT.		10																		1							1			1							8	0.10	FPC-9E, FPC-9M, FES-1, FES-2, PCC-1
412+20	R.C. PIPE CULVERT EXTEND 5' LT. & 5' RT.								18																															PCC-1
412+85	JUNCTION BOX ON RT.	9												60						1													1						5	0.06	FPC-9, FES-1, FES-2, PCC-1, PCM-1
414+22	DROP INLET ON LT.													198														1			1									FPC-9E, FPC-9M, PCC-1, PCM-1
414+22	JUNCTION BOX ON RT.	6												131						1													1						5	0.06	FPC-9, FES-1, FES-2, PCC-1, PCM-1
414+70	DROP INLET ON LT.													44														1												FPC-9E, FPC-9M, PCC-1, PCM-1
*	ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER												1200																					12						FPC-9, PCC-1, PCM-1, PCP-1, PCP-2
	SUBTOTALS (BOX 1 OF 2):	406	298	118	301	36		109		114	114			5578	417	623	271	244		29	6	6	5	2	2		2	1	62	4	46	6			3.31	168	7	554	6.89	
	SUBTOTALS (BOX 2 OF 2):	112	81	29	7		32		18			60	1200	7243	1969	58			334	25	6	3	1			2			68		39	17	2	12					299	3.67	
	TOTALS:	518	379	147	308	36	32	109	18	114	114	60	1200	12821	2386	681	271	244	334	54	12	9	6	2	2	2	2	1	130	4	85	23	2	12	3.31	168	7	853	10.56	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
* QUANTITIES ESTIMATED. SEE SECTION 104.03 OF STANDARD SPECIFICATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-8-16

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	64	331

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")											
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	PG 76-22	TOTAL PG 70-22	TOTAL PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON	FEET			TON	TON		
MAIN LANES																													
107+35	111+60	HWY. 82 - N&W	425.00	232.50	988.13	93.10	4396.39	0.03	131.89	9.20	434.44	440.00	95.58	8.90	420.28	330.00	69.35	8.80	415.56	220.00	45.71		75.00	3541.67	220.00	389.58		435.29	
111+60	115+00	HWY. 82 - N&W	340.00	299.00	1016.60	127.50	4816.67	0.03	144.50	26.40	997.33	440.00	219.41	26.10	986.00	330.00	162.69	25.90	978.44	220.00	107.63		75.00	2833.33	220.00	311.67		419.30	
115+00	159+78	HWY. 82 - N&W	4478.00	351.00	15717.78	154.21	76728.04	0.03	2301.84	39.75	19777.83	440.00	4351.12	39.46	19633.54	330.00	3239.53	39.25	19529.06	220.00	2148.20		75.00	37316.67	220.00	4104.83		6253.03	
159+78	166+41	HWY. 82 - N&W	663.00	275.25	1824.91	114.70	8449.57	0.03	253.49	20.00	1473.33	440.00	324.13	19.70	1451.23	330.00	239.45	19.50	1436.50	220.00	158.02		75.00	5525.00	220.00	607.75		765.77	
166+41	169+86	HWY. 82 - N&W	345.00	199.00	686.55	77.60	2974.67	0.03	89.24	1.40	53.67	440.00	11.81	1.20	46.00	330.00	7.59	1.10	42.17	220.00		4.64	75.00	2875.00	220.00		316.25		320.89
169+86	177+22	HWY. 82 - N&W	736.00	232.75	1713.04	104.90	8578.49	0.03	257.35	15.10	1234.84	440.00	271.66	14.80	1210.31	330.00	199.70	14.60	1193.96	220.00	131.34		75.00	6133.33	220.00	674.67		806.01	
177+22	177+60	HWY. 82 - N&W	38.00	232.75	88.45	104.90	442.91	0.03	13.29	15.10	63.76	440.00	14.03	14.80	62.49	330.00	10.31	14.60	61.64	220.00		6.78	75.00	316.67	220.00		34.83		41.61
177+60	179+70	HWY. 82 - N&W	210.00	280.75	589.58	118.10	2755.67	0.03	82.67	21.70	506.33	440.00	111.39	21.40	499.33	330.00	82.39	21.10	492.33	220.00		54.16	75.00	1750.00	220.00		192.50		246.66
179+70	180+33	HWY. 82 - N&W	63.00	259.00	163.17	106.90	748.30	0.03	22.45	16.10	112.70	440.00	24.79	15.80	110.60	330.00	18.25	15.60	109.20	220.00		12.01	75.00	525.00	220.00		57.75		69.76
180+33	182+00	HWY. 82 - N&W	167.00	293.50	490.15	124.50	2310.17	0.03	69.31	24.90	462.03	440.00	101.65	24.60	456.47	330.00	75.32	24.50	454.61	220.00	50.01		75.00	1391.67	220.00	153.08		203.09	
182+00	209+13	HWY. 82 - N&W	2713.00	338.25	9176.72	154.21	46485.75	0.03	1394.57	39.75	11982.42	440.00	2636.13	39.46	11895.00	330.00	1962.68	39.25	11831.69	220.00	1301.49		75.00	22608.33	220.00	2486.92		3788.41	
209+13	211+25	HWY. 82 - N&W	212.00	289.75	614.27	122.70	2890.27	0.03	86.71	24.00	565.33	440.00	124.37	23.70	558.27	330.00	92.11	23.50	553.56	220.00	60.89		75.00	1766.67	220.00	194.33		255.22	
211+25	213+06	HWY. 82 - N&W	181.00	206.00	372.86	91.10	1832.12	0.03	54.96	8.20	164.91	440.00	36.28	7.90	158.88	330.00	26.22	7.80	156.87	220.00	17.26		75.00	1508.33	220.00	165.92		183.18	
213+06	216+41.36	HWY. 82 - N&W	335.36	180.00	603.65	89.90	3349.87	0.03	100.50	7.60	283.19	440.00	62.30	7.30	272.01	330.00	44.88	7.10	264.56	220.00	29.10		75.00	2794.67	220.00	307.41		336.51	
216+16.36	216+41.36	SHOULDER TAPER LT & RT	25.00	23.25	5.81																		6.00	16.67	220.00	1.83		1.83	
216+41.36	217+85.36	HWY. 82- N&W OS TO C&G TRANS.	144.00	50.50		78.50	1256.00	0.03	37.68	8.00	128.00	440.00	28.16	8.00	128.00	330.00	21.12	8.00	128.00	220.00		14.08	62.50	1000.00	220.00		110.00		124.08
216+03	217+85	HWY. 82 - N&W	182.00	165.25	300.76	82.20	1662.27	0.03	49.87	3.70	74.82	440.00	16.46	3.50	70.78	330.00	11.68	3.10	62.69	220.00	6.90		75.00	1516.67	220.00	166.83		173.73	
222+68.33	223+68.33	TRANSITION	100.00																				58.00	644.44	220.00		70.89		70.89
297+66.37	298+01.37	TRANSITION	35.00																				58.00	225.56	220.00		24.81		24.81
298+01.37	301+82	HWY. 82 - N&W	380.63	31.50	119.90	62.20	2630.58	0.03	78.92	3.10	131.11	440.00	28.84	3.10	131.11	330.00	21.63	3.10	131.11	220.00			56.00	2368.36	220.00		260.52		260.52
301+82	303+10	HWY. 82 INTERSECTION NW QUAD.	VAR.	VAR.	58.80	VAR.	1600.00	0.03	48.00														VAR.	1600.00	220.00		176.00		176.00
301+84	304+06	HWY. 82 INTERSECTION SW QUAD.	VAR.	VAR.	29.30	VAR.	1435.00	0.03	43.05														VAR.	1435.00	220.00		157.85		157.85
303+65	305+71	HWY. 82 INTERSECTION NE QUAD.	VAR.	VAR.	67.30	VAR.	1706.00	0.03	51.18	VAR.	133.00	440.00	29.26	VAR.	133.00	330.00	21.95	VAR.	133.00	220.00		14.63	VAR.	1440.00	220.00		158.40		173.03
304+56	305+70	HWY. 82 INTERSECTION SE QUAD.	VAR.	VAR.	12.80	VAR.	1600.00	0.03	48.00														VAR.	1600.00	220.00		176.00		176.00
305+70	306+41	HWY. 82 - FULL DEPTH	71.00	237.25	168.45	168.00	1325.33	0.03	39.76	56.00	441.78	440.00	97.19	56.00	441.78	330.00	72.89	56.00	441.78	220.00		48.60	56.00	441.78	220.00		48.60		97.20
307+78	308+00	HWY. 82 - FULL DEPTH	22.00	237.25	52.20	168.00	410.67	0.03	12.32	56.00	136.89	440.00	30.12	56.00	136.89	330.00	22.59	56.00	136.89	220.00		15.06	56.00	136.89	220.00		15.06		30.12
308+00	415+00	HWY. 82 - N&W	10700.00	148.00	15836.00	120.00	142666.67	0.03	4280.00	32.00	38044.44	440.00	8369.78	32.00	38044.44	330.00	6277.33	32.00	38044.44	220.00		4184.89	56.00	66577.78	220.00		7323.56		11508.45
415+00	416+00	TRANSITION	100.00															12.80	142.22	220.00		15.64	23.00	255.56	220.00		28.11		43.75
ADDITIONAL FOR GRADE RAISE																													
298+01.37	302+00	HWY. 82	398.63			VAR.	5302.00	0.03	159.06	VAR.	1461.00	464.07	339.00	VAR.	1461.00	260.10	190.00	VAR.	2380.00	203.36		242.00							242.00
302+00	305+70	HWY. 82 INTERSECTION	370.00			VAR.	13582.00	0.03	407.46	VAR.	3800.00	48.89	92.90	VAR.	4891.00	293.19	717.00	VAR.	4891.00	207.69		507.90							507.90
305+70	415+00	HWY. 82	10930.00			VAR.	54730.00	0.03	1641.90	VAR.	8715.00	457.81	1994.90	VAR.	18973.00	231.80	2199.00	VAR.	27042.00	203.80		2755.60							2755.60
ADDITIONAL FOR LEVELING																													
107+35	111+60	HWY. 82	425.00			54.50	2573.61	0.10	257.36									54.50	2573.61	220.00	283.10							283.10	
111+60	115+00	HWY. 82	340.00			37.40	1412.89	0.10	141.29									37.40	1412.89	220.00	155.42							155.42	
115+00	159+78	HWY. 82	4478.00			25.20	12538.40	0.10	1253.84									25.20	12538.40	220.00	1379.22							1379.22	
159+78	166+34	HWY. 82	656.00			43.80	3192.53	0.10	319.25									43.80	3192.53	220.00	351.18							351.18	
166+34	170+60	HWY. 82	426.00			62.00	2934.67	0.10	293.47									62.00	2934.67	220.00	322.81							322.81	
170+60	177+60	HWY. 82	700.00			48.60	3780.00	0.10	378.00									48.60	3780.00	220.00	415.80							415.80	
177+60	179+70	HWY. 82	210.00			42.10	982.33	0.10	98.23									42.10	982.33	220.00	108.06							108.06	
179+70	180+33	HWY. 82	63.00			47.70	333.90	0.10	33.39									47.70	333.90	220.00	36.73							36.73	
180+33	182+00	HWY. 82	167.00			38.90	721.81	0.10	72.18									38.90	721.81	220.00	79.40							79.40	
182+00	184+20	HWY. 82	220.00			27.30	667.33	0.10	66.73									27.30	667.33	220.00	73.41							73.41	
184+20	209+13	HWY. 82	2493.00			26.00	7202.00	0.10	720.20									26.00	7202.00	220.00	792.22							792.22	
209+13	211+25	HWY. 82	212.00			39.80	937.51	0.10	93.75									39.80	937.51	220.00	103.13							103.13	
211+25	216+03	HWY. 82	478.00			55.50	2947.67	0.10	294.77									55.50	2947.67	220.00	324.24							324.24	
216+03	216+68	HWY. 82	65.00			60.00	433.33	0.10	43.33									60.00	433.33	220.00	47.67							47.67	
301+82	305+70	HWY. 82 INTERSECTION	VAR.			VAR.	6428.00	0.10	642.80									VAR.	6428.00	220.00		707.08							707.08
298+01.37	301+82	HWY. 82	380.63			52.70	2228.80	0.10	222.88									52.70	2228.80	220.00		245.17							245.17
308+00	310+07	HWY. 82	207.00			25.10	577.30	0.10	57.73									25.10	577.30	220.00		63.50							63.50
310+07	415+00	HWY. 82	10493.00			22.80	26582.27	0.10	2658.23									22.80	26582.27	220.00		2924.05							2924.05
ADDITIONAL FOR STAGE CONSTRUCTION																													
305+05.00	306+41.00	HWY. 82 - TEMP. WIDENING	136.00	VAR.	78.30	VAR.	87.50	0.03	2.63					VAR.	87.50	385.00	16.84	VAR.	87.50	220.00	9.63							9.63	
307+78.00	309+18.00	HWY. 82 - TEMP. WIDENING	140.00	VAR.	81.20	VAR.	91.20	0.03	2.74					VAR.	91.20	385.00	17.56	VAR.	91.20	220.00	10.03							10.03	
SIDE STREETS																													
168+00		CO. RD. 61	VAR.	VAR.	776.40	VAR.	3174.30	0.03	95.23	VAR.	1064.10	440.00	234.10	VAR.	1057.50	330.00	174.49	VAR.	1052.70	220.00	115.80		VAR.	1600.00	220.00	176.00		291.80	
168+24		E. NORTH ST.	VAR.	VAR.	734.50	VAR.	2991.90	0.03	89.76	VAR.	1003.30	440.00	220.73	VAR.	996.30	330.00	164.39	VAR.	992.40	220.00	109.16		VAR.	1600.00	220.00	176.00		285.16	
178+55		CO. RD. 36	VAR.	VAR.	376.10	VAR.	2358.40	0.03	70.75	VAR.	790.50	440.00	173.91	VAR.	785.70	330.00	129.64	VAR.	782.20	220.00	86.04		VAR.	925.00	220.00	101.75		187.79	
312+00		CO. RD. 36 TURNOUT	VAR.	VAR.	49.40	VAR.	540.00	0.03	16.20	VAR.	180.00	440.00	39.60	VAR.	180.00	330.00	29.70	VAR.	180.00	220.00	19.80		VAR.	180.00	220.00	19.80		39.60	
312+00		CO. RD. 36	156.10	118.75	185.37																		22.00	381.58	220.00	41.97		41.97	
360+26		CO. RD. 406 NORTH TURNOUT	VAR.	VAR.	70.40	VAR.	462.20	0.03	13.87	VAR.	154.40	440.00	33.97	VAR.	154.00	330.00	25.41	VAR.	153.80	220.00	16.92		VAR.	153.40	220.00	16.87		33.79	
360+71		CO. RD. 406 SOUTH TURNOUT	VAR.	VAR.	64.60	VAR.	444.90	0.03	13.35	VAR.	148.60	440.00	32.69	VAR.	148.30	330.00	24.47	VAR.	148.00	220.00	16.28		VAR.	147.70	220.00	16.25		32.53	
360+71		CO. RD. 406 SOUTH	57.50	96.75	55.63																		20.00	127.78	220.00	14.06		14.06	
402+38		CO. RD. 409 TURNOUT	VAR.	VAR.	74.50	VAR.	460.90	0.03	13.83	VAR.	154.00	440.00	33.88	VAR.	153.60	330.00	25.34	VAR.	153.30	220.00	16.86		VAR.	153.00	220.00	16.83		33.69	
TOTALS:					**53243.58**		**483751.06**		**19865.76**		**94673.05**		**20180.14**		**105825.51**		**16393.50**		**191168.73**		**8929.46**	**11815.79**		**175413.51**		**10144.35**	**9151.13**	**19073.81**	**20966.92**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.7% MIN. AGGR.....4.3% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.1% MIN. AGGR.....3.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

7/16/2015

R070365.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.		070365	65	331
① 07361 -		QUANTITIES	- 57512	

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 070365

BRIDGE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	802	802	803	804	804	805	805	805	805	805	806	806	SP & 807	812	816	816
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	CONCRETE PILING (16'' SQ.)	CONCRETE PILING (24'' SQ.)	TEST PILE (16'' SQ.)	TEST PILE (24'' SQ.)	PREBORING	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP
		UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LB.	EACH	SQ. YD.	CU. YD.
07361 NATIONS CREEK	BENT NO. 1			48	28.90			2,685	435	520		70		90		2			472	258
	BENT NO. 2				35.55			2,745			520		70							
	BENT NO. 3				35.55			2,745			520		70							
	BENT NO. 4			39	28.90			2,685	435	520		70		90		2			291	164
	136'-0'' INTEGRAL W-BEAM UNIT					389.00	24.3		73,890						262		152,420	1		
EXIST. BR. NO. 02666 (SITE NO. 1)			1																	
TOTALS FOR JOB NO. 070365				87	128.90	389.00	24.3	10,860	74,760	1,040	1,040	140	140	180	262	4	152,420	1	763	422

STEVEN PEYTON
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
10-29-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
NATIONS CREEK
HWY. 79 NO. - CO. RD. 525 (MAGNOLIA) (S)
COLUMBIA COUNTY

ROUTE 82 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-27-15 FILENAME: b070365_ql.dgn
CHECKED BY: ADN DATE: 8-7-15 SCALE: NONE
DESIGNED BY: — DATE:

BRIDGE NO. 07361 DRAWING NO. 57512

PRINT DATE: 10/29/2015

SUMMARY OF QUANTITIES (BOX 1 OF 3)

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		72	STATION
201	GRUBBING		72	STATION
202	REMOVAL AND DISPOSAL OF CURB		183	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE		244	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE SLABS		42	SQ. YD.
202	REMOVAL AND DISPOSAL OF RETAINING WALLS		36	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		2413	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		3161	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		12	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS		5	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		75	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS		1	EACH
202	REMOVAL AND DISPOSAL OF BACKFLOW PREVENTER		3	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL		856	LIN. FT.
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLES		1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		12	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS		2	EACH
210	UNCLASSIFIED EXCAVATION		30583	CU. YD.
210	COMPACTED EMBANKMENT		123572	CU. YD.
SP & 210	SOIL STABILIZATION		400	TON
303	AGGREGATE BASE COURSE (CLASS 7)		57266	TON
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)		2554	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (9" UNIFORM THICKNESS)		2490	SQ. YD.
SS & 401	TACK COAT		20066	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		19393	TON
SP & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		787	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		15689	TON
SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		705	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		38312	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		22	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		1011	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		1111	TON
412	COLD MILLING ASPHALT PAVEMENT		1578	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		100	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY		100	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY		4428.60	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		924	SQ. FT.
SS & 604	BARRICADES		64	LIN. FT.
SS & 604	TRAFFIC DRUMS		940	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		326	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER		1236	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		131108	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		12	EACH
604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		15	EACH
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		685	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		42670	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		90	LIN. FT.
SS & 604	VERTICAL PANELS		302	EACH
605	CONCRETE DITCH PAVING (TYPE A)		79	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE B)		11018	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		518	LIN. FT.
* 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	12821	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	12821	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		379	LIN. FT.
* 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	2386	LIN. FT.
* 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	2386	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		18	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		147	LIN. FT.
* 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	681	LIN. FT.
* 606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	681	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		114	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		60	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		308	LIN. FT.
* 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	271	LIN. FT.
* 606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	271	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		114	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		36	LIN. FT.
* 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	244	LIN. FT.
* 606	48" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	244	LIN. FT.
606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		32	LIN. FT.
* 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	334	LIN. FT.
* 606	54" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	334	LIN. FT.
606	72" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		109	LIN. FT.
SS & 606	12" SIDE DRAIN		1200	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		256	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		182	LIN. FT.
SP, SS, & 606	48" SIDE DRAIN		70	LIN. FT.
SS & 606	21" X 15" SIDE DRAIN		104	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		54	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		12	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		9	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	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	72" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	SELECTED PIPE BEDDING		800	CU. YD.
609	DROP INLETS (TYPE C)		1	EACH
609	DROP INLETS (TYPE MO)		130	EACH
609	DROP INLETS (TYPE SPECIAL)		4	EACH
609	JUNCTION BOXES (TYPE E)		2	EACH

* DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS
TIMOTHY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11435
2-24-16

DATE REVISED	DATE PLANS	DATE REVISED	DATE PLANS
1-8-16 2-24-16			

(2) SUMMARY OF QUANTITIES

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	070365	66	331

SUMMARY OF QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-10-15		2-24-16		6	ARK.			
1-8-16				JOB NO.		070365	67	331
2-5-16								

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11425
TRINITY D. SMITH
2-24-16

SUMMARY OF QUANTITIES (BOX 2 OF 3)

ITEM NUMBER	ITEM		QUANTITY	UNIT
609	DROP INLET EXTENSIONS (4')		85	EACH
609	DROP INLET EXTENSIONS (8')		23	EACH
609	YARD DRAINS		12	EACH
611	UNDERDRAIN OUTLET PROTECTORS		11	EACH
611	4" PIPE UNDERDRAINS		5750	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		352	TON
619	WIRE FENCE (TYPE A)		527	LIN. FT.
619	16' STEEL GATES	(ALTERNATE NO. 1)	6	EACH
619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	6	EACH
620	LIME		50	TON
620	SEEDING		24.87	ACRE
SS & 620	MULCH COVER		73.87	ACRE
620	WATER		3685.2	M.GAL.
621	TEMPORARY SEEDING		49.00	ACRE
621	SILT FENCE		7758	LIN. FT.
621	SAND BAG DITCH CHECKS		14850	BAG
621	DROP INLET SILT FENCE		3625	LIN. FT.
621	SEDIMENT BASIN		5767	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		5767	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		6863	CU. YD.
623	SECOND SEEDING APPLICATION		24.87	ACRE
624	SOLID SODDING		11836	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		18025	SQ. YD.
632	CONCRETE ISLAND		725	SQ. YD.
633	CONCRETE WALKS		10947	SQ. YD.
634	CONCRETE CURB (TYPE D)		109	LIN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		22824	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		39	EACH
637	MAILBOX SUPPORTS (SINGLE)		39	EACH
641	WHEELCHAIR RAMPS (TYPE 3)		48	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)		38	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		17972	LIN. FT.
SP & 701	ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES)		4	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)		54	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)		12	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD		12	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED		8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)		6443	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)		2113	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)		159	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)		2249	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)		1791	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)		747	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)		148	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES		2986	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")		80	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")		202	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")		112	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")		65	LIN. FT.
710	NON-METALLIC CONDUIT (3")		1538	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)		5	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)		14	EACH
713	SPAN WIRE ASSEMBLY		3	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')		2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')		2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (50')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')		2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56')		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')		2	EACH
SP	LED LUMINAIRE ASSEMBLY		12	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)		4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT		1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 44')		16	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		795	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		35415	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")		1035	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		800	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		58258	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")		392	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		11	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		13	EACH
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	69	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	69	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	343	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	343	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		1122	EACH
SP	18" STREET NAME SIGN		4	EACH
733	VIDEO DETECTOR RELOCATION		2	EACH
SP	VIDEO DETECTOR ROTATION		17	EACH
SP & 733	VIDEO DETECTOR (CLR)		45	EACH
733	VIDEO CABLE		10537	LIN. FT.
733	VIDEO MONITOR (CLR)		3	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)		18	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)		4	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		155	CU. YD.
802	CLASS S CONCRETE-ROADWAY		247 49	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		23863	POUND

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES (BOX 3 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	87	CU. YD.
802	CLASS S CONCRETE-BRIDGE	128.90	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE	389.00	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	24.3	GAL.
804	REINFORCING STEEL-BRIDGE (GRADE 60)	10860	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	74760	POUND
805	CONCRETE PILING (16" SQUARE)	1040	LIN. FT.
805	CONCRETE PILING (24" SQUARE)	1040	LIN. FT.
805	TEST PILE (16" SQUARE)	140	LIN. FT.
805	TEST PILE (24" SQUARE)	140	LIN. FT.
805	PREBORING	180	LIN. FT.
806	METAL BRIDGE RAILING (TYPE H)	262	LIN. FT.
806	TRANSITIONAL APPROACH RAILING	4	EACH
SP & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)	152420	POUND
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
816	FILTER BLANKET	763	SQ. YD.
816	DUMPED RIPRAP	422	CU. YD.

DATE	REVISION	SHEET NUMBER
12/10/2015	REVISED PLANS TO REMOVE SPECIAL PROVISION SITE USE (A+C) AND TO ADD SUPPLEMENTAL SPECIFICATION 100-3	3 & 67
1/8/2016	REVISED PLANS TO ADD SPECIAL PROVISION CARGO PREFERENCE ACT REQUIREMENTS. REVISED STORM SEWER SYSTEM PER HYDRAULICS RECOMMENDATION. UPDATED PLAN AND PROFILE, CROSS SECTIONS, STRUCTURES AND QUANTITIES ACCORDINGLY	3,62,63,66,67 88-91,250-252
2/5/2016	REVISED MAINTENANCE OF TRAFFIC SPECIAL PROVISION	67
2/24/2016	REVISED SUMMARY OF QUANTITIES BOX TO REFLECT CORRECT ITEM NUMBERS	66 & 67

7/16/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	68	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

SURVEY CONTROL COORDINATES

Project Name: s070365
Date: 8/3/2012
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL.
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1541126.1403	941360.6913	352.148	CTL	5/8" Rebar with 2" Aluminum Cap
2	1540325.5257	941311.8121	347.430	CTL	5/8" Rebar with 2" Aluminum Cap
3	1539529.5821	941258.3559	329.407	CTL	5/8" Rebar with 2" Aluminum Cap
4	1538734.1495	941192.8996	322.109	CTL	5/8" Rebar with 2" Aluminum Cap
5	1537915.8849	941213.4047	329.469	CTL	5/8" Rebar with 2" Aluminum Cap
6	1537204.8616	941211.2927	327.550	CTL	5/8" Rebar with 2" Aluminum Cap
7	1536413.7821	941111.4312	309.366	CTL	5/8" Rebar with 2" Aluminum Cap
8	1535573.9133	941045.8289	299.588	CTL	5/8" Rebar with 2" Aluminum Cap
9	1534799.7748	940979.5216	291.379	CTL	5/8" Rebar with 2" Aluminum Cap
10	1534015.0973	940821.0999	285.116	CTL	5/8" Rebar with 2" Aluminum Cap
11	1533219.5047	940699.4053	283.760	CTL	5/8" Rebar with 2" Aluminum Cap
12	1532472.5693	940569.4098	281.689	CTL	5/8" Rebar with 2" Aluminum Cap
13	1532007.2242	940607.8749	281.408	CTL	5/8" Rebar with 2" Aluminum Cap
14	1531368.3294	942231.9762	281.874	CTL	5/8" Rebar with 2" Aluminum Cap
15	1531001.1827	942999.2707	285.211	CTL	5/8" Rebar with 2" Aluminum Cap
16	1530724.0855	943712.0569	300.931	CTL	5/8" Rebar with 2" Aluminum Cap
17	1530446.3822	944460.5423	311.747	CTL	5/8" Rebar with 2" Aluminum Cap
18	1530172.7620	945182.3235	316.792	CTL	5/8" Rebar with 2" Aluminum Cap
19	1529859.2826	945901.0968	317.690	CTL	5/8" Rebar with 2" Aluminum Cap
20	1529587.8683	946625.9780	324.549	CTL	5/8" Rebar with 2" Aluminum Cap
21	1529315.4701	947356.0393	338.505	CTL	5/8" Rebar with 2" Aluminum Cap
22	1529082.2061	948094.7586	351.428	CTL	5/8" Rebar with 2" Aluminum Cap
23	1528764.0606	948829.6410	362.076	CTL	5/8" Rebar with 2" Aluminum Cap
24	1528532.2046	949567.3773	373.981	CTL	5/8" Rebar with 2" Aluminum Cap
25	1528259.2704	950312.0106	374.501	CTL	5/8" Rebar with 2" Aluminum Cap
26	1527989.2531	951030.2059	375.710	CTL	5/8" Rebar with 2" Aluminum Cap
27	1527764.5301	951768.3632	373.817	CTL	5/8" Rebar with 2" Aluminum Cap
28	1527667.2827	952536.5657	349.528	CTL	5/8" Rebar with 2" Aluminum Cap
29	1527611.9794	953303.1511	326.289	CTL	5/8" Rebar with 2" Aluminum Cap
30	1527586.6013	954079.0476	321.080	CTL	5/8" Rebar with 2" Aluminum Cap
31	1527522.9680	954844.1870	344.627	CTL	5/8" Rebar with 2" Aluminum Cap
32	1527414.5966	956221.2132	329.481	CTL	5/8" Rebar with 2" Aluminum Cap
33	1527247.5868	958126.7568	329.354	CTL	5/8" Rebar with 2" Aluminum Cap
34	1527212.2626	958922.3264	337.949	CTL	5/8" Rebar with 2" Aluminum Cap
35	1527167.7574	959699.9959	352.117	CTL	5/8" Rebar with 2" Aluminum Cap
36	1527151.8774	960290.7086	355.548	CTL	5/8" Rebar with 2" Aluminum Cap
37	1527114.6622	961058.9530	337.954	CTL	5/8" Rebar with 2" Aluminum Cap
38	1527081.4691	961888.3318	349.174	CTL	5/8" Rebar with 2" Aluminum Cap
39	1527051.1709	962679.5793	333.915	CTL	5/8" Rebar with 2" Aluminum Cap
100	1543570.2223	941661.6867	354.335	GPS	AHTD GPS MON 140009
101	1541937.6890	941389.5705	353.698	GPS	AHTD GPS MON 140009A
102	1532392.4580	939923.6259	283.195	GPS	AHTD GPS MON 140010
103	1531673.6747	941693.5168	281.614	GPS	AHTD GPS MON 140010A
104	1527521.2960	955172.3485	345.240	GPS	AHTD GPS MON 140011
105	1527344.8862	957373.5544	322.450	GPS	AHTD GPS MON 140011A
106	1526720.6704	970325.9698	313.322	GPS	AHTD GPS MON 140012
107	1526711.5214	972592.4330	273.326	GPS	AHTD GPS MON 140012A
108	1526020.9853	987682.2499	301.284	GPS	AHTD GPS MON 140013
109	1526050.8284	990835.5201	300.882	GPS	AHTD GPS MON 140013A
900	1532942.1835	935679.6266	302.047	TBM	TOKYO JAPANESE REST. SIGN
901	1532809.5404	938310.4947	327.881	TBM	1/2" GROUND ROD
902	1532075.7378	940509.6447	283.247	TBM	CONCRETE PAD FOR SIGNALS
903	1532921.7886	937377.7400	310.294	TBM	CONCRETE HEADWALL,S/SIDE HWY 82
904	1532180.8458	940171.2149	280.190	TBM	CONCRETE HEADWALL,S/SIDE HWY 82
905	1517246.7222	937954.5462	308.305	BM	5/8" REBAR W/ AHTD CAP
906	1519782.6383	937220.2910	304.544	TBM	5/8" REBAR W/ AHTD CAP,E/SIDE HWY 79
907	1522420.6607	936402.4388	264.562	TBM	CONCRETE BRIDGE
908	1524848.3910	936261.7169	272.828	TBM	CONCRETE CULVERT,E/SIDE HWY 79 S
909	1527155.6957	937733.3114	270.445	TBM	CONCRETE HEADWALL,E/SIDE HWY 79
910	1529260.9277	939202.2820	276.728	TBM	5/8" REBAR W/ AHTD CAP,E/SIDE HWY 79
911	1531571.3950	940418.7304	282.057	TBM	CONCRETE HEADWALL
912	1541162.9965	941381.6843	347.164	TBM	CONCRETE HEADWALL,W/SIDE HWY 79
913	1538940.4574	941270.4273	309.666	TBM	CONCRETE HEADWALL,W/SIDE HWY 79
914	1536415.7141	941070.6648	306.561	TBM	CONCRETE HEADWALL,W/SIDE HWY 79
915	1533890.9708	940870.8749	280.853	TBM	CONCRETE HEADWALL,W/SIDE HWY 79
916	1531078.0881	942831.1769	282.482	TBM	CONCRETE HEADWALL,N/SIDE HWY 82
917	1530050.9074	945369.7184	314.427	TBM	CONCRETE HEADWALL,S/SIDE HWY 82
918	1529107.9032	947877.1737	349.225	TBM	CONCRETE CULVERT,S/SIDE HWY 82
919	1528321.7017	950316.8995	374.642	TBM	YAMAHA SIGN,NORTHSIDE HWY 82
920	1527673.1947	952532.4306	349.823	TBM	CONCRETE HEADWALL,SOUTHSIDE HWY 82
921	1527447.8343	955997.2168	326.714	TBM	CONCRETE HEADWALL,NORTHSIDE HWY 82
922	1527262.4209	957985.5212	327.626	TBM	CONCRETE HEADWALL,NORTHSIDE HWY 82
923	1527134.5333	961131.4204	333.656	TBM	CONCRETE HEADWALL,NORTHSIDE HWY 82
924	1526952.7314	964060.1818	285.382	TBM	CONCRETE HEADWALL,NORTHSIDE HWY 82
925	1526819.6618	966946.4122	325.965	TBM	CONC. R/W MONUMENT,NE CORNER
926	1526789.7890	969663.9257	293.456	TBM	CONCRETE HEADWALL,NORTHSIDE HWY 82
927	1526561.7007	972039.5542	271.071	TBM	CONCRETE HEADWALL,SOUTHSIDE HWY 82
928	1526535.9361	974417.3979	259.391	TBM	33.7' S OF CL OF HWY82 14.4' S OF
976	1526074.0313	989445.6834	273.461	TBM	CHISELED SQUARE
977	1526084.5618	988426.5922	292.971	TBM	5" REBAR W\ ALUM CAP
978	1526210.3341	986049.7679	278.521	TBM	CHISELED SQUARE
979	1526220.0872	985115.6050	246.731	TBM	CHISELED SQUARE
980	1526345.2166	982823.7252	236.739	TBM	CONCRETE BRIDGE END
981	1526474.1172	980192.1693	233.871	TBM	CHISELED SQUARE IN CENTER
982	1526497.6280	977984.1671	236.618	TBM	CONCRETE BRIDGE END
990	1532973.9777	933047.5531	346.340	BM	NGS BM H 120
991	1518842.5703	939757.7064	316.520	BM	NGS BM N 205
1500	1526243.2742	990828.8422	298.380	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1501	1526065.4297	990831.1484	300.998	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1502	1526174.3969	990516.5721	299.628	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1503	1525979.6649	987535.1532	303.578	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1504	1525928.2502	987706.2686	300.467	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1505	1526143.7023	987934.9508	297.910	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1506	1527371.7042	955090.6790	346.142	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1507	1527393.9788	954895.4919	344.599	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1508	1527421.3919	954688.1397	340.194	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1509	1527365.2765	957611.6369	332.737	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1510	1527482.2148	957709.0099	340.936	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1511	1527371.2738	957697.0127	334.868	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1518	1543625.8290	941892.8576	354.441	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1519	1543347.9416	941824.5214	351.491	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1520	1541927.0324	941568.2339	347.833	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1521	1541471.1791	941540.2646	351.091	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1522	1532302.2821	939929.0080	282.567	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1523	1532253.9750	940073.6823	281.163	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1524	1531746.1152	941693.4694	282.297	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1525	1531679.3186	941912.0571	283.435	TV	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1526	1526588.9689	970291.9965	320.407	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1527	1526878.9241	970237.1353	318.373	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1528	1526616.9036	972515.7234	279.279	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV
1529	1526606.7431	972354.1530	280.455	CTL	5/8" Rebar with 2" Aluminum Cap,TRIG ELEV

*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 0.9999954966 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 s070365gi.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 - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS:
140009 - 140009A
140010 - 140010A
140011 - 140011A
140012 - 140012A
140013 - 140013A
CONVERGENCE ANGLE: 0-38-19 LEFT AT LT: 33-15-04.61 LG: 093-08-28.03
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CONST. HWY. 82 NORTH

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	1544050.0093	941817.5915
8001	PC	117+84.69	1542290.0574	941521.4911
8003	PT	129+52.75	1541130.3054	941386.6870
8004	PC	186+41.31	1535453.6725	941018.6133
8006	PT	196+00.30	1534500.3975	940916.6137
8007	POE	223+90.33	1531741.0536	940503.9879

CO. RD. 36

POINT NO.	TYPE	STATION	NORTHING	EASTING
8050	POB	600+00.00	1531787.5456	941299.3516
8051	PC	600+34.36	1531812.5692	941322.8923
8053	PT	602+36.41	1531901.0025	941499.9229
8054	POE	602+36.65	1531901.0289	941500.1611

CONST. HWY. 82 EAST

POINT NO.	TYPE	STATION	NORTHING	EASTING
8008	POB	296+70.08	1532439.5890	939915.3841
8012	PC	303+74.37	1532146.0053	940555.3739
8014	PT	306+28.95	1532041.9442	940787.6937
8015	PC	308+03.05	1531967.2622	940944.9627
8017	PT	311+88.08	1531793.4102	941288.4551
8018	PC	312+03.27	1531786.2113	941301.8309
8020	PT	315+88.29	1531612.3592	941645.3233
8021	PC	328+93.85	1531052.3282	942824.6639
8023	PT	332+83.17	1530900.4526	943183.0116
8024	PC	413+72.85	1528062.7515	950758.6622
8026	PT	428+78.98	1527724.8092	952221.9365
8027	POE	430+53.57	1527708.1547	952395.7331

MOT 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8028	POB	0+00.00	1532309.5999	940176.7305
8029	PC	1+49.09	1532245.4723	940311.3271
8031	PT	2+02.86	1532224.6542	940360.8841
8032	PC	6+26.15	1532079.2030	940758.3920
8034	PT	6+60.36	1532065.9759	940789.9355
8035	PC	8+27.15	1531994.4321	940940.5958
8037	PT	9+16.72	1531952.8881	941019.9246
8038	PC	9+38.43	1531942.0701	941038.7527
8040	PT	10+03.63	1531911.2143	941096.1778
8041	POE	10+40.59	1531894.6555	941129.2160

MOT 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8042	POB	50+00.00	1528237.5877	950337.5247
8043	PC	50+37.40	1528224.4671	950372.5518
8045	PT	52+00.50	1528162.4050	950523.3507
8046	PC	52+91.74	1528124.9976	950606.5675
8048	PT	54+54.84	1528062.9355	950757.3664
8049	POE	54+56.12	1528062.4872	950758.5632

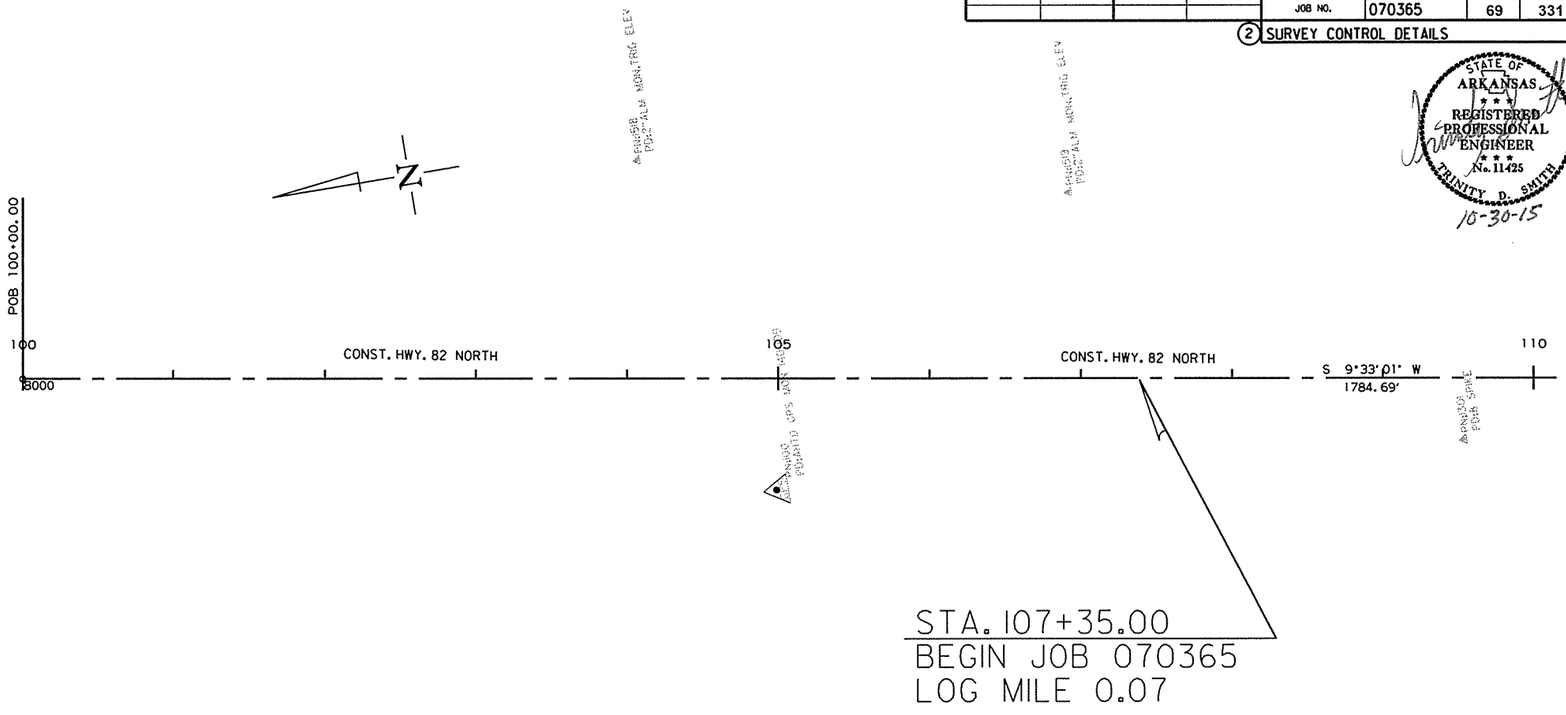
7/16/2015

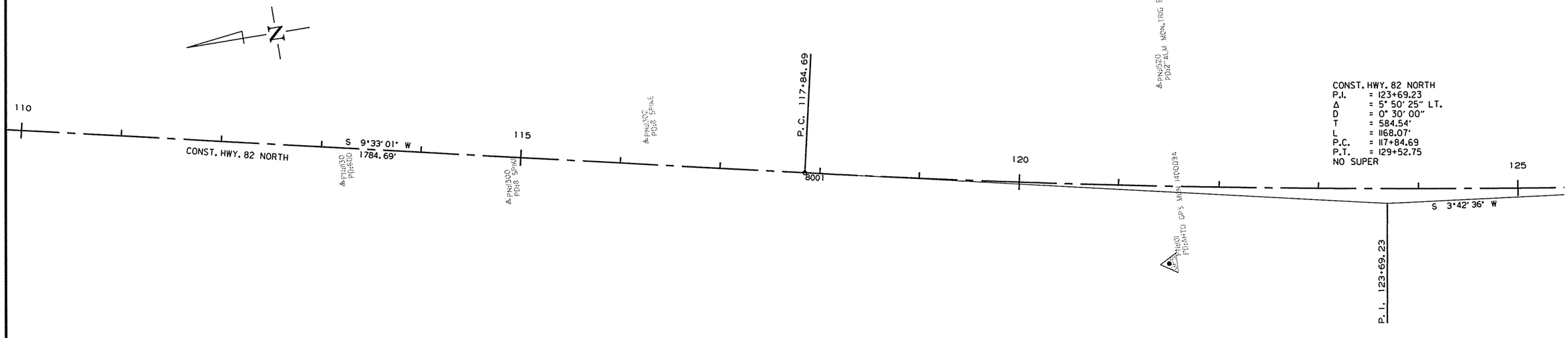
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	69	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





7/16/2015

R070365.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	70	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONST. HWY. 82 NORTH
P.I. = 123+69.23
Δ = 5° 50' 25" LT.
D = 0° 30' 00"
T = 584.54'
L = 1168.07'
P.C. = 117+84.69
P.T. = 129+52.75
NO SUPER

PNH2521 PDU2"ALM MON.TNG ELEV

125 — CONST. HWY. 82 NORTH

PNH1 PDU CONCRETE HEADWALL W/SIDE HWY 79

P.T. 129+52.75

8003

PNH2 PDU4HTD STD MON STAMPED PNH.JOB 070365

130

SURVEY BASELINE

S 3°29' 37" W
802.11'

135

S 3°42' 36" W
5688.55'

PNH3 PDU4HTD STD MON STAMPED PNH2.JOB 070365

140

PNH1304 PDU SPIKE

PNH1303 PDU SPIKE

PNH1305 PDU SPIKE

140 — CONST. HWY. 82 NORTH

S 3°50' 32" W
797.74'

SURVEY BASELINE

PNH3 PDU4HTD STD MON STAMPED PN3.JOB 070365

145

S 4°42' 15" W
798.12'

150

PNH1303 PDU SPIKE

PNH1305 PDU SPIKE

PDU CONCRETE HEADWALL W/SIDE HWY 79

S 3°42' 36" W
5688.55'

PNH4 PDU4HTD STD MON STAMPED PN4.JOB 070365

155

S 1°26' 08" E
818.52'

7/16/2015

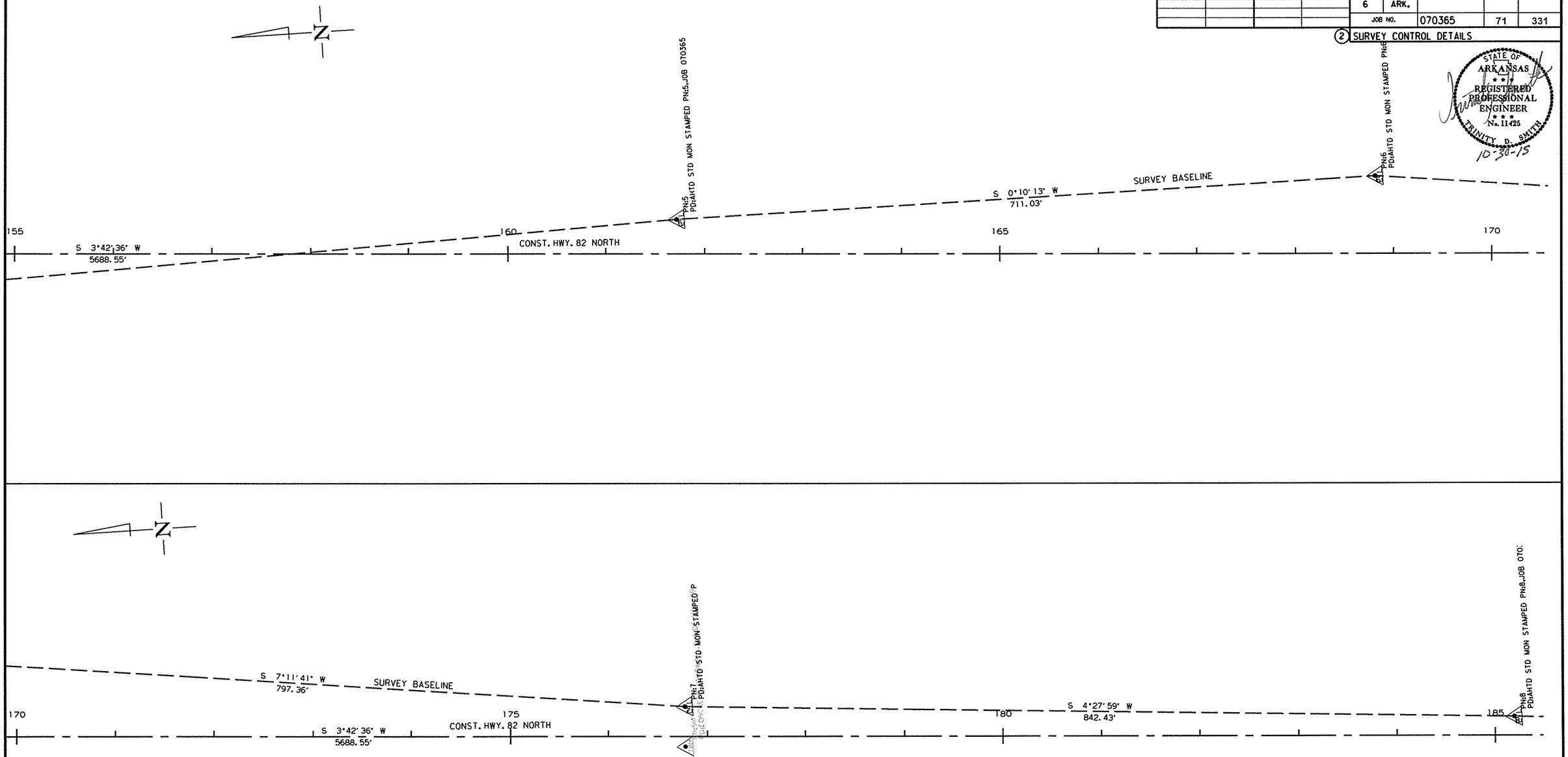
R070365.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	71	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



7/16/2015

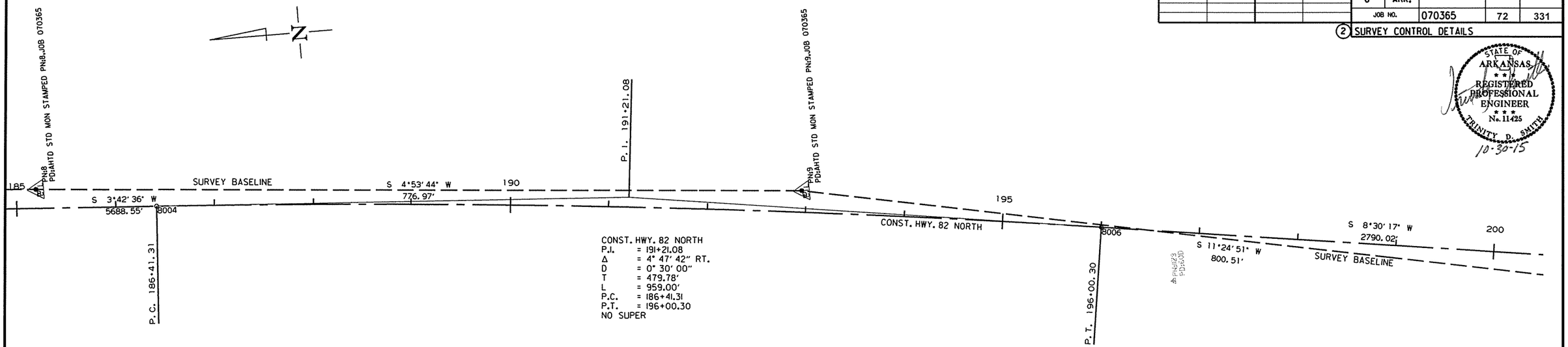
R070365.DGN

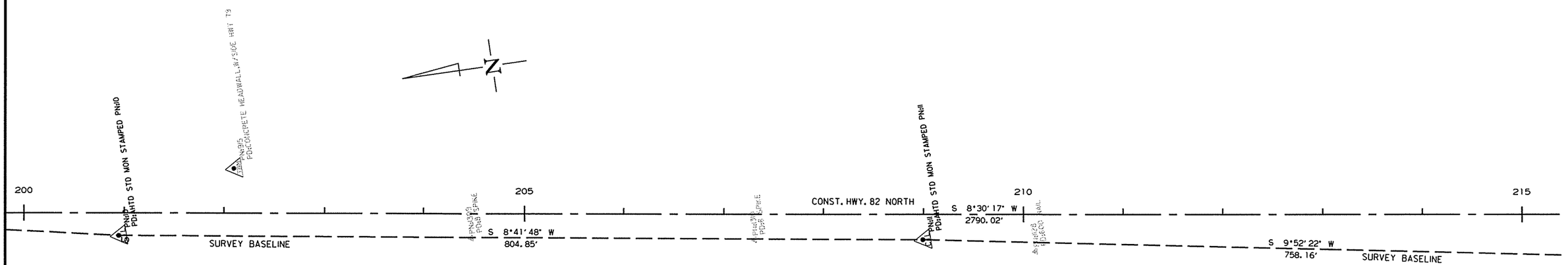
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	72	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





7/16/2015

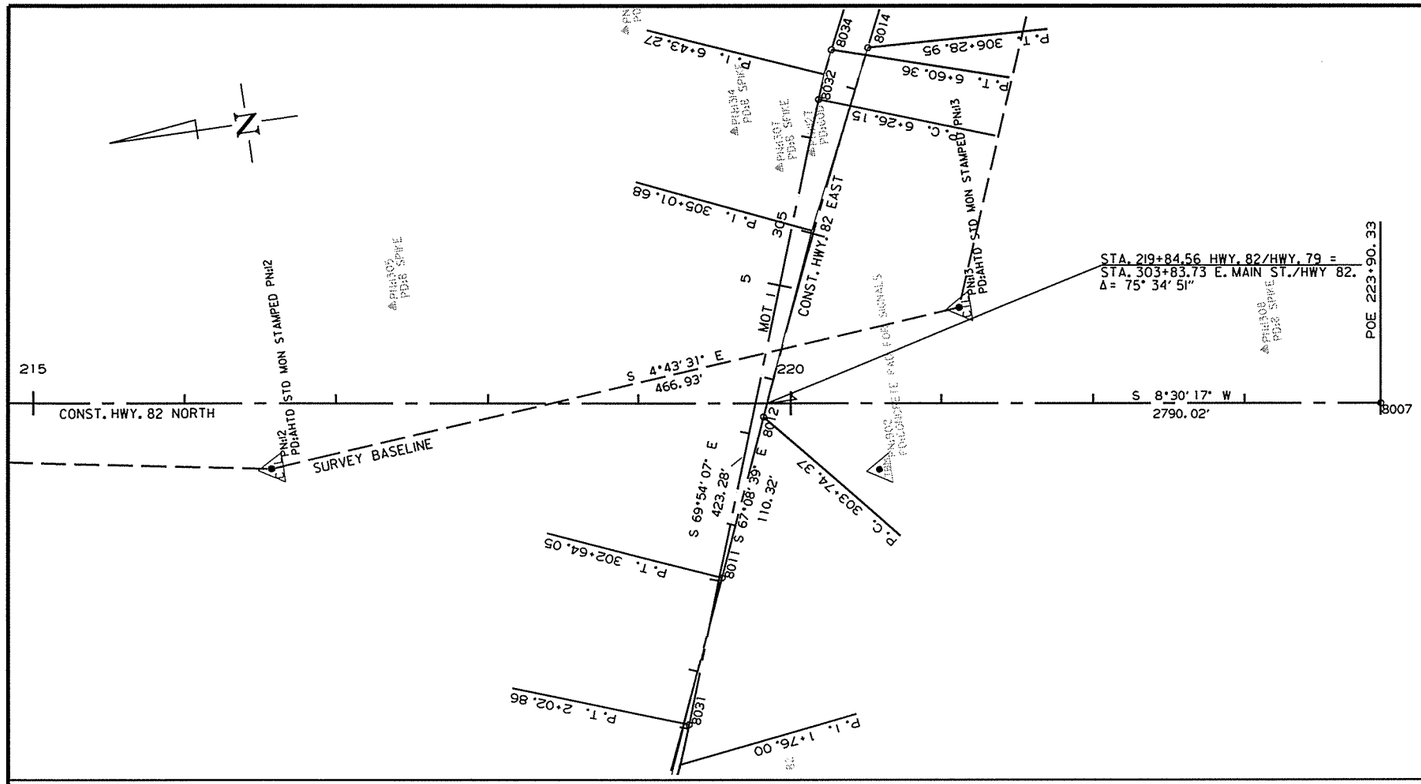
R070365.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	73	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	74	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

MOT I
P.I. = 1+76.00
Δ = 5° 22' 38" LT.
D = 10° 00' 00"
T = 26.91'
L = 53.77'
P.C. = 1+49.09
P.T. = 2+02.86
NO SUPER

CONST. HWY. 82 EAST
P.I. = 305+01.68
Δ = 2° 32' 45" RT.
D = 1° 00' 00"
T = 127.31'
L = 254.58'
P.C. = 303+74.37
P.T. = 306+28.95
NO SUPER

MOT I
P.I. = 6+43.27
Δ = 5° 18' 13" RT.
D = 15° 30' 00"
T = 17.12'
L = 34.22'
P.C. = 6+26.15
P.T. = 6+60.36
NO SUPER

MOT I
P.I. = 8+71.96
Δ = 4° 28' 43" RT.
D = 5° 00' 00"
T = 44.81'
L = 89.57'
P.C. = 8+27.15
P.T. = 9+16.72
NO SUPER

MOT I
P.I. = 9+71.04
Δ = 3° 15' 36" LT.
D = 5° 00' 00"
T = 32.61'
L = 65.20'
P.C. = 9+38.43
P.T. = 10+03.63
NO SUPER

CONST. HWY. 82 EAST
P.I. = 309+95.61
Δ = 2° 53' 16" RT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 308+03.05
P.T. = 311+88.08
NO SUPER

CONST. HWY. 82 EAST
P.I. = 313+95.82
Δ = 2° 53' 16" LT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 312+03.27
P.T. = 315+88.29
NO SUPER

CO. RD. 36
P.I. = 601+39.79
Δ = 40° 24' 37" RT.
D = 20° 00' 00"
T = 105.43'
L = 202.05'
P.C. = 600+34.36
P.T. = 602+36.41
NO SUPER

STA. 312+00.45 E. MAIN ST./HWY 82. =
STA. 600+00 CO. RD. 36
Δ = 75° 02' 17"

CONST. HWY. 82 EAST
P.I. = 313+95.82
Δ = 2° 53' 16" LT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 312+03.27
P.T. = 315+88.29
NO SUPER

CONST. HWY. 82 EAST
P.I. = 330+88.62
Δ = 4° 51' 59" LT.
D = 1° 15' 00"
T = 194.78'
L = 389.32'
P.C. = 328+93.85
P.T. = 332+83.17
NO SUPER

7/16/2015

R070365.DGN

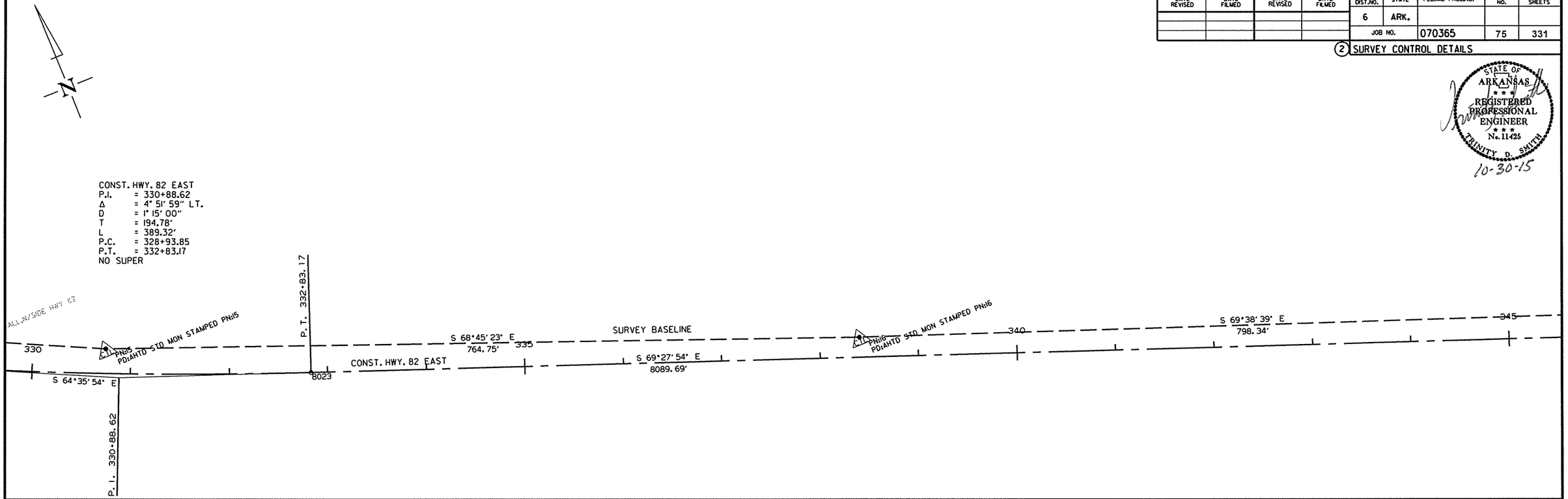
SURVEY CONTROL DETAILS

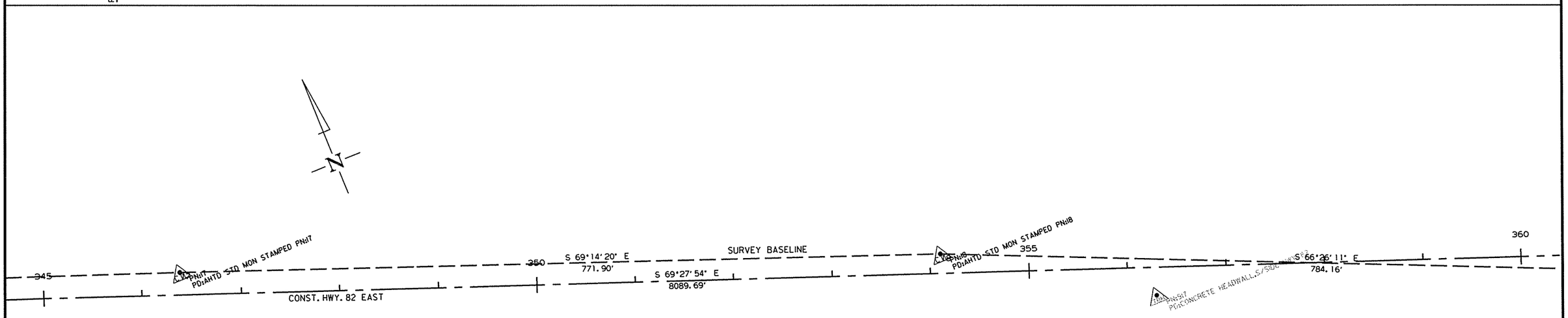
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	75	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONST. HWY. 82 EAST
P.I. = 330+88.62
Δ = 4° 51' 59" LT.
D = 1° 15' 00"
T = 194.78'
L = 389.32'
P.C. = 328+93.85
P.T. = 332+83.17
NO SUPER





7/16/2015

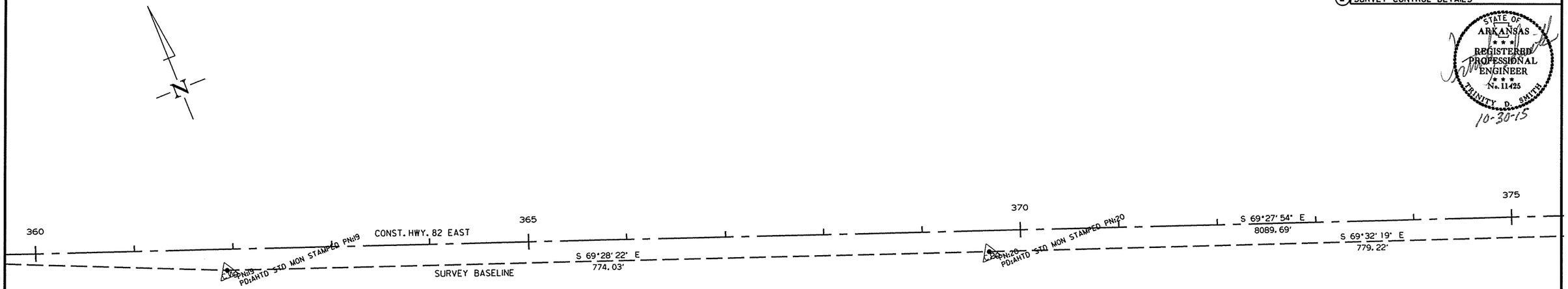
R070365.DGN

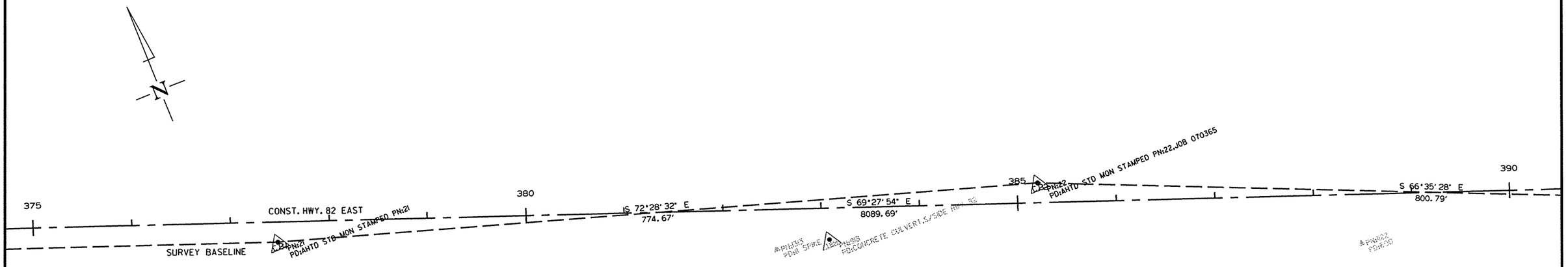
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	76	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15





7/16/2015

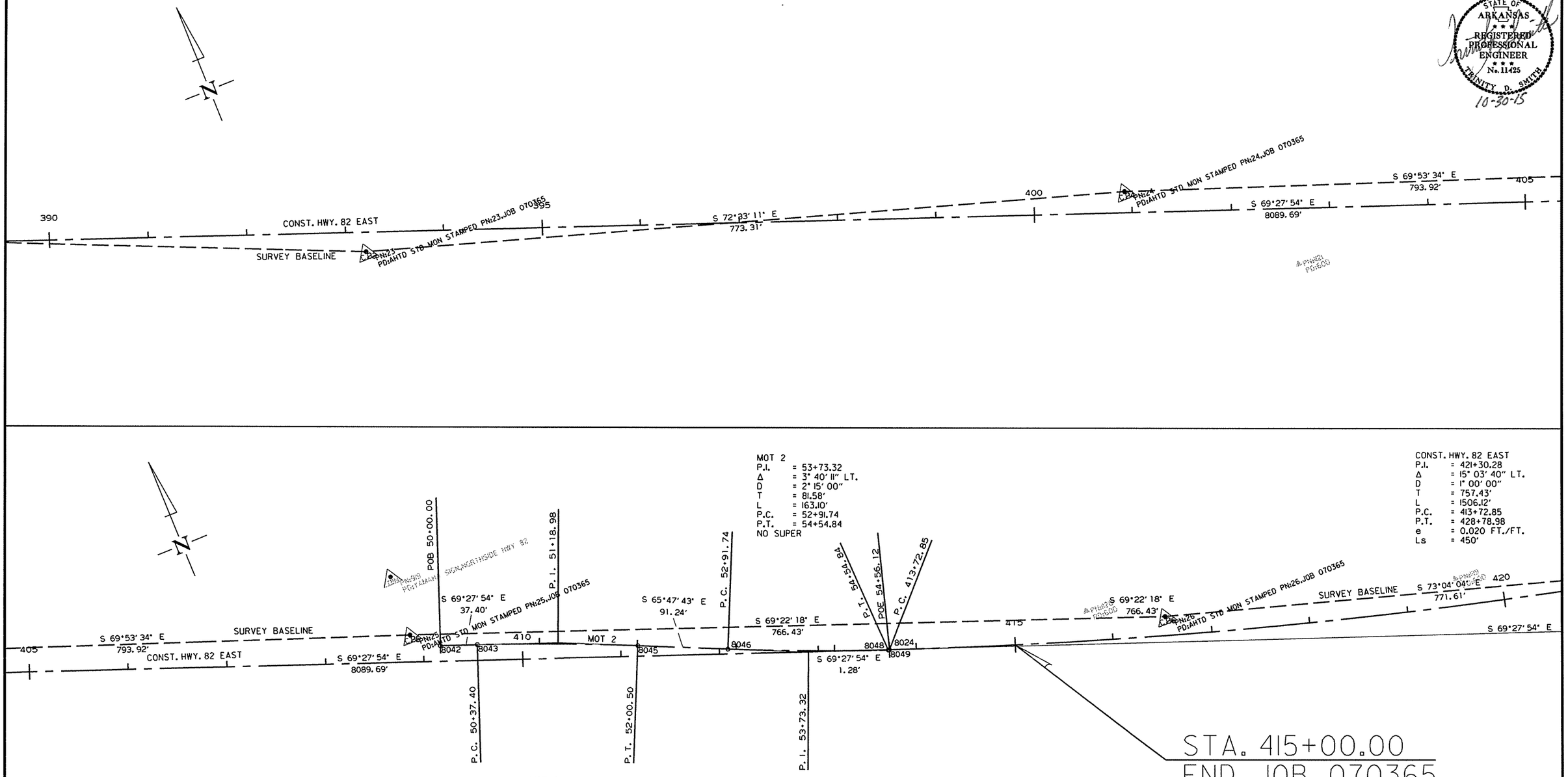
R070365.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	77	331

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



7/16/2015

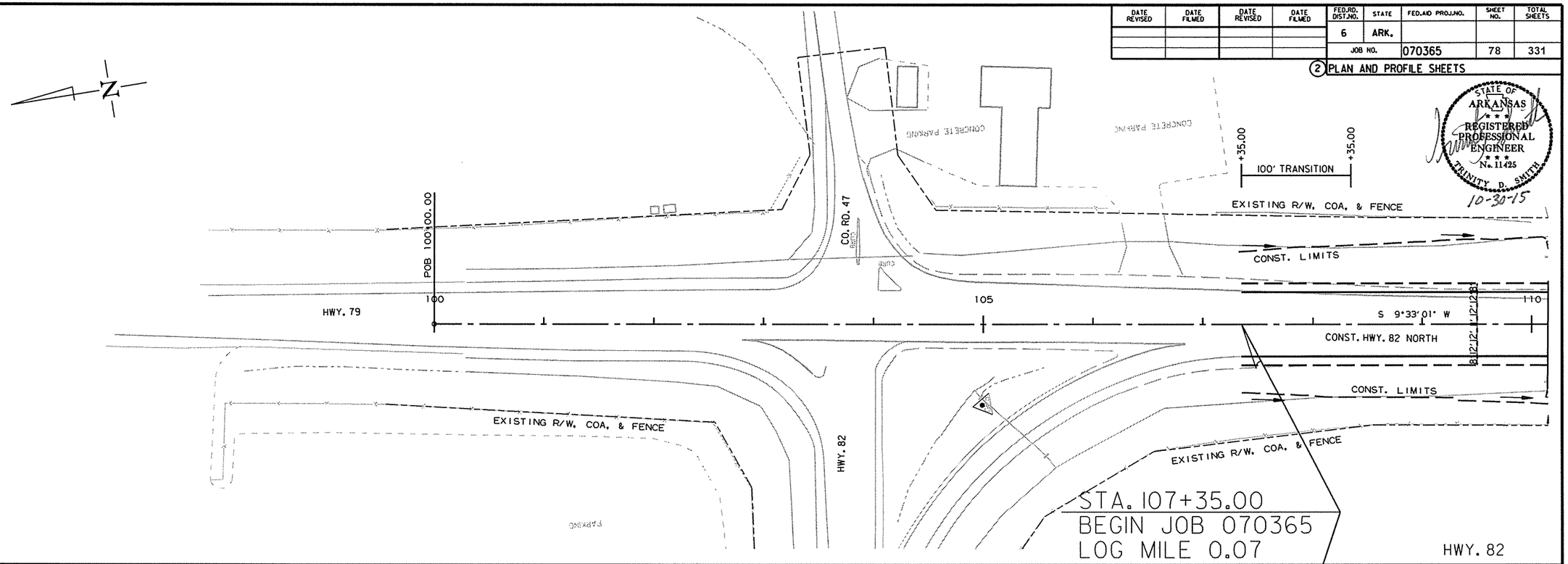
R070365.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	78	331

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



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

4/1/2013

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	79	331

(2) PLAN AND PROFILE SHEETS

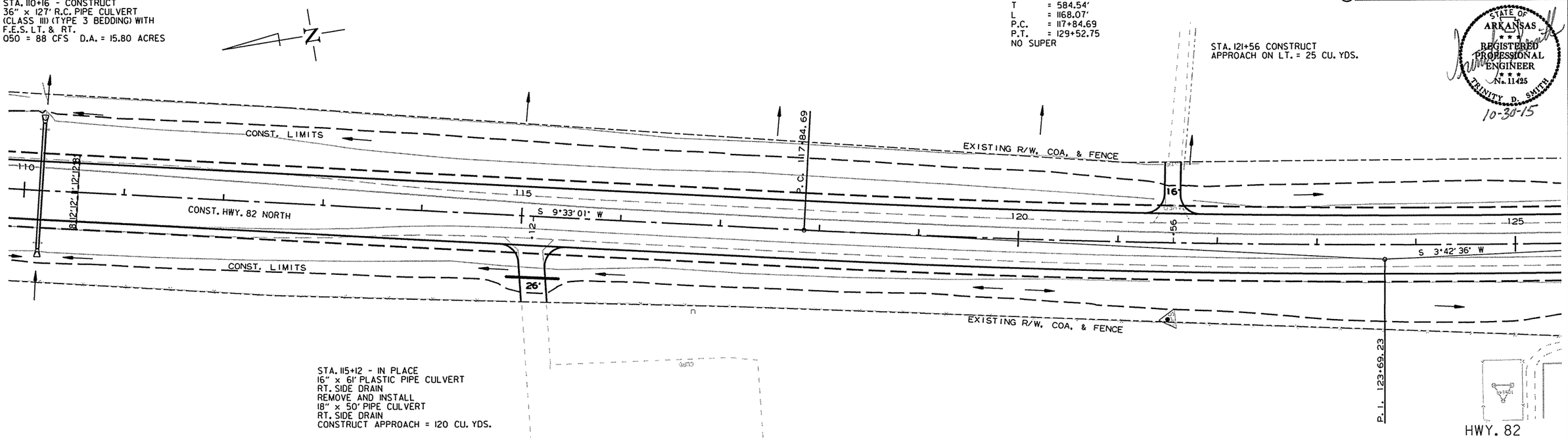
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 110+16 IN PLACE
30" x 114' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

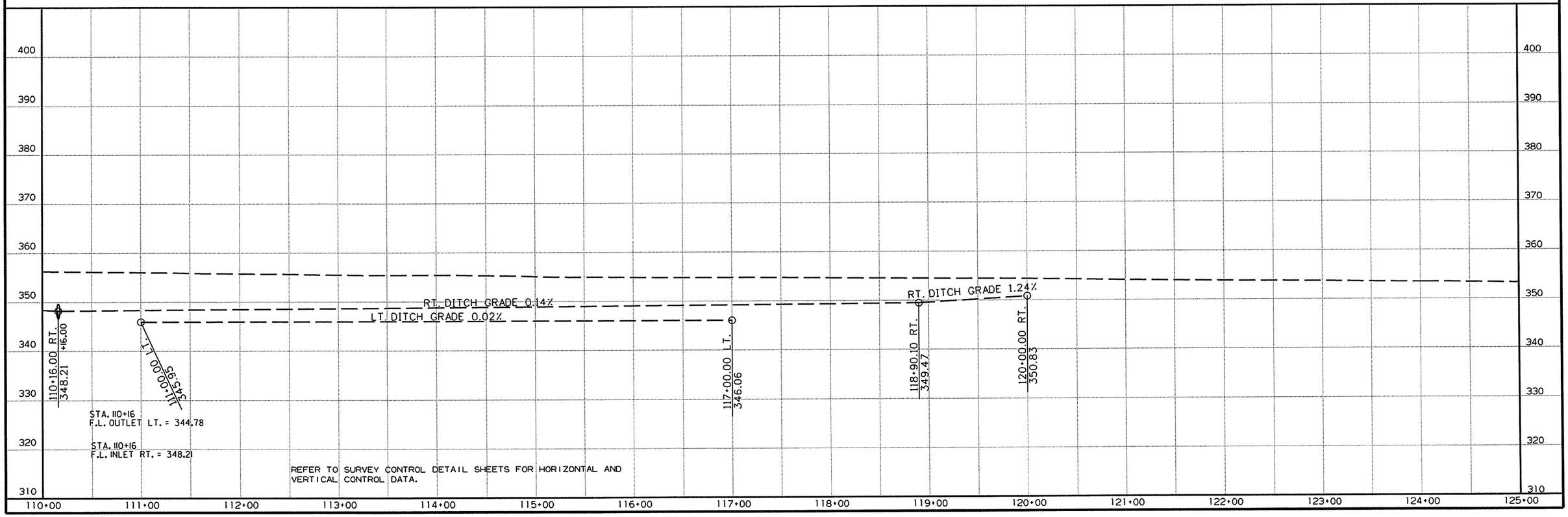
STA. 110+16 - CONSTRUCT
36" x 127' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50 = 88 CFS D.A. = 15.80 ACRES

P.I. = 123+69.23
Δ = 5° 50' 25" LT.
D = 0° 30' 00"
T = 584.54'
L = 1168.07'
P.C. = 117+84.69
P.T. = 129+52.75
NO SUPER

STA. 121+56 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.



STA. 115+12 - IN PLACE
16" x 61' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.



STA. 110+16
F.L. OUTLET LT. = 344.78

STA. 110+16
F.L. INLET RT. = 348.21

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

4/1/2013

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070365		80	331

(2) PLAN AND PROFILE SHEETS

STA. 128+56 IN PLACE
24" x 98' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 128+56 - CONSTRUCT
24" x 132' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
F.E.S. LT. & RT.
050 = 37 CFS D.A. = 6.00 ACRES

P.I. = 123+69.23
Δ = 5° 50' 25" LT.
D = 0° 30' 00"
T = 584.54'
L = 1168.07'
P.C. = 117+84.69
P.T. = 129+52.75
NO SUPER

STA. 130+28 CONSTRUCT
APPROACH ON LT. = 585 CU. YDS.

STA. 139+60 - IN PLACE
19" x 46' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 90 CU. YDS. COMP. EMB.
=10 CU. YDS. UNCLASSIFIED EXCAVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONST. LIMITS
CONST. HWY. 82 NORTH
S 3°42' 36" W
P.T. 129+52.75
CO. RD. 448
EXISTING R/W, COA, & FENCE
CONCRETE PARKING
PAVED PARKING
MAIL
E. UNIVERSITY ST.
W. MAIN ST.
125
130
135
140
20'
30'
22'
16'
T.C.E.
80' TAPER

STA. 130+10 (E. UNIVERSITY ST.) INSTALL
22" x 14" x 36' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH ON RT. = 20 CU. YDS.

STA. 130+10 (E. UNIVERSITY ST.) INSTALL
22" x 14" x 34' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH ON RT. = 15 CU. YDS.

STA. 130+28 CONSTRUCT
APPROACH ON RT. = 405 CU. YDS. COMP. EMB.
=80 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 130+60 (E. UNIVERSITY ST.) - IN PLACE
18" x 64' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
22" x 14" x 34' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 130+65 - CONSTRUCT
24" x 132' R.C. PIPE CULVERT ON 8° FWD. SKEW
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
050 = 24 CFS D.A. = 3.90 ACRES

STA. 130+55 IN PLACE
24" x 108' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
127+00	128+56	LT.	B	18	312
128+56	130+28	RT.	B	13	248
130+28	130+73	RT.	B	20	100
130+55	132+00	LT.	B	9	145

STA. 139+56 - IN PLACE
10" x 24' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS. COMP. EMB.
=5 CU. YDS. UNCLASSIFIED EXCAVATION

HWY. 82

125-20.00 LT. 349.67
LT. DITCH GRADE -2.63%
127+98.53 RT. 347.08
RT. D. GR. -2.71%
128+00.00 LT. 342.32
LT. D. GR. -1.39%
128+56.00 RT. 345.52
RT. D. GR. 2.10%
128+56.00 LT. 341.60
128+90.00 RT. 346.24
STA. 128+56
F.L. OUTLET LT. = 341.60
STA. 128+56
F.L. INLET RT. = 345.52
130+73.00 RT. 346.20
RT. D. GR. 3.13%
131+58.52 RT. 348.88
*65.00
LT. DITCH GRADE 4.17%
130+55.00 LT. 338.96
LT. DITCH GRADE 1.14%
132+00.00 LT. 345.00
134+00.00 LT. 347.28
STA. 130+55
F.L. OUTLET LT. = 338.96
STA. 130+73
F.L. INLET RT. = 346.20

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

400 390 380 370 360 350 340 330 320 310

125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00

R070365.DGN 4/1/2013

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.		070365	81	331

(2) PLAN AND PLOT SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 151+16 IN PLACE
4' x 6' x 171' R.C. BOX CULVERT
ON A 45° LT. FWD. SKEW.
RETAIN AND EXTEND 37' LT. AND 33' RT.
TO A COMPLETED LENGTH OF 241'
WITH 3:1 WINGS LT. AND RT.
050 = 564 CFS, D.A. = 140.70 ACRES

16' GATE

EXTSTING R/W, COA, & FENCE

CONST. LIMITS

PAVED PARKING

CONCRETE PARKING

140 145 150 155

S 3°42'36" W

CONST. HWY. 82 NORTH

8-12'-12'-12'-8'

CONST. LIMITS

EXISTING R/W, COA, & FENCE

EXISTING R/W, COA, & FENCE

16' GATE

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
146+00	150+31	RT.	B	14	670
147+00	152+04	LT.	B	15	840
149+28	152+04	RT.	B	9	276
150+31	154+00	RT.	B	10	410
152+04	155+41	LT.	B	22	824

152.00 LT.
103.69

PROPOSED R/W, COA, & FENCE

74.00 RT.
118.00

156.23 RT.
120.21

83

40'

CURB

CONCRETE PARKING

STA. 153+83 - IN PLACE
24" x 77' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 64' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 235 CU. YDS.

HWY. 82

UNNAMED TRIBUTARY TO NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 303 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE
2014 STANDARD SPECIFICATIONS.

144+00.00 RT.
330.45

147+00.00 RT.
321.42

149+28.23 RT.
310.96

149+89.41 LT.
307.61

150+33.00 LT.
307.01

150+60.90 LT.
305.93

150+31.00 LT.
302.42

+16.00

151+16.00 LT.
302.15

152+04.00 LT.
301.51

153+33.23 LT.
305.01

153+50.00 RT.
314.72

154+50.00 RT.
319.11

RT. DITCH GRADE -3.01%

RT. DITCH GRADE -4.58%

RT. D. GR. -8.31%

LT. D. GR. -1.37%

LT. D. GR. -3.90%

LT. D. GR. -6.85%

RT. DITCH GRADE 4.12%

LT. DITCH GRADE 2.87%

RT. DITCH GRADE 3.65%

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

STA. 150+31
F.L. INLET RT. = 302.42

STA. 152+04
F.L. OUTLET LT. = 301.31

370 360 350 340 330 320 310 300 290 280

140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00

4/1/2013

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	82	331

(2) PLAN AND PROFILE SHEETS

STA. 155+57 - IN PLACE
18" x 24' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YDS.

STA. 156+77 - IN PLACE
18" x 100' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 161+50 - IN PLACE
20" x 41' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.

STA. 163+34 IN PLACE
24" x 96' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 163+34 - CONSTRUCT
30" x 114' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING) 114 LIN. FT.
WITH F.E.S. LT. & RT.
Q50 = 52 CFS D.A. = 12.80 ACRES

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
168+74	176+54	RT.	B	17	1473

STA. 168+00 CONSTRUCT
APPROACH ON LT. = 90 CU. YDS.

STA. 156+72 - IN PLACE
18" x 101' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YDS. COMP. EMB.
=10 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 161+50 CONSTRUCT
APPROACH ON RT. = 100 CU. YDS.

STA. 168+24 CONSTRUCT
APPROACH ON RT. = 145 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

HWY. 82

161+00.00 LT.
326.15

162+00.00 RT.
328.35

163+34.00 RT.
327.84

+34.00
163+53.00 LT.
326.87

168+74.43 RT.
328.22

RT. D. GR. -0.38%

LT. DITCH GRADE 0.28%

RT. DITCH GRADE 0.07%

RT. D. GR. -3.26%

STA. 163+34
F.L. OUTLET LT. = 326.88

STA. 163+34
F.L. INLET RT. = 327.84

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

4/1/2013

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	83	331

(2) PLAN AND PROFILE SHEETS

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
170+00	177+40	LT.	B	18	1480
178+62	184+88	RT.	B	13.5	939
184±00	185+73	LT.	B	9	173

STA. 178+55 CONSTRUCT
APPROACH ON LT. = 85 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

CONST. LIMITS

CO. RD. 36

12:1 TAPER

36'

60' R

95' R

170

175

180

185

S 3°42'36" W

CONST. HWY. 82 NORTH

8 1/2" x 12" (2)

55'

60'

CONST. LIMITS

32'

16' GATE

STA. 176+54 - IN PLACE
30" x 79' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HEADWALLS LT. & RT. AND EXTEND R.C. PIPE
30' LT. AND 22' RT.
TO A COMPLETED LENGTH OF 131'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50 = 30 CFS D.A. = 6.30 ACRES
30" R.C. PIPE = 60 LIN. FT.
30" F.E.S. = 2 EACH

STA. 178+60 CONSTRUCT
APPROACH ON RT. = 100 CU. YDS

HWY. 82

350
340
330
320
310
300
290
280
270
260

170+30.00 RT. 323.14
172+07.98 LT. 316.29
173+40.15 LT. 310.35
175+48.78 RT. 306.40
176+00.80 LT. 303.71
176+54.00 RT. 303.46
176+54.00 LT. 301.21
177+40.00 LT. 301.19
178+30.00 RT. 304.74
179+20.00 LT. 303.03
181+52.64 LT. 299.36
184+06.30 LT. 289.66
184+40.00 RT. 287.51
184+88.00 RT. 285.30

RT. DITCH GRADE -3.26%
LT. DITCH GRADE -4.49%
RT. D. GR. -2.79%
LT. DITCH GRADE -4.70%
RT. DITCH GRADE 0.72%
LT. DITCH GRADE -0.02%
LT. DITCH GRADE -1.58%
LT. DITCH GRADE -4.72%
RT. D. GR. -4.59%
RT. D. GR. 1.51%

+54.00
STA. 176+54
F.L. OUTLET LT. = 301.21
STA. 176+54
F.L. INLET RT. = 303.46

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

170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00

4/1/2013
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	84	331

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 189+72 CONSTRUCT
APPROACH ON LT. = 40 CU. YDS

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
185+73	189+72	LT.	B	9	399

STA. 196+39 - INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS. CU. YDS

16' GATE

EXISTING R/W, COA, & FENCE

CONST. LIMITS

P.I. 191+21.08

S 3°42'36" W

CONST. HWY. 82 NORTH

S 8°30'17" W

P.C. 186+41.31

P.T. 196+00.30

PITTMAN

HOLLENSWORTH ST.

STA. 185+30 IN PLACE
7' x 6' x 112' R.C. BOX CULVERT
ON A 30° LT. FWD. SKEW
RETAIN AND EXTEND 35' LT. AND 24' RT.
TO A COMPLETED LENGTH OF 171'
WITH 3:1 WINGS LT. AND RT.
050 = 825 CFS, D.A. = 203.70 ACRES

STA. 189+89 CONSTRUCT
APPROACH ON RT. = 100 CU. YDS.

STA. 192+88 CONSTRUCT
SPRING BOX ON RT.
WITH 18" x 145' R.C. PIPE OUTLET WITH F.E.S.
(CLASS III) (TYPE 3 BEDDING)
IF AND WHERE DIRECTED BY THE ENGINEER

P.I. = 191+21.08
Δ = 4° 47' 42" RT.
D = 0° 30' 00"
T = 479.78'
L = 959.00'
P.C. = 186+41.31
P.T. = 196+00.30
NO SUPER

STA. 196+50 - IN PLACE
24" x 49' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

HWY. 82

UNNAMED TRIBUTARY TO NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 281FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

RT. DITCH GRADE 1.51%
LT. DITCH GRADE 1.76%
LT. D. GR. -2.40%
LT. D. GR. -4.72%
RT. D. GR. 2.21%
LT. DITCH GRADE 2.26%
LT. DITCH GRADE -0.65%
LT. D. GR. -1.77%
RT. D. GR. -33.23%
RT. D. GR. -0.10%
LT. D. GR. -0.62%
RT. DITCH GRADE -1.26%

185+25.58 LT. 284.03
185+73.00 LT. 282.89
188+50.00 RT. 290.76
188+50.00 LT. 287.78
189+42.35 RT. 292.81
189+42.16 LT. 289.86
189+97.38 LT. 290.67
191+05.00 LT. 289.97
193+00.00 LT. 287.64
194+33.21 RT. 286.34
194+37.77 RT. 284.82
194+62.53 LT. 284.76
195+98.13 RT. 284.66
197+40.00 LT. 283.04
198+00.14 RT. 282.23

STA. 185+73
F.L. OUTLET LT. = 282.89

STA. 184+88
F.L. INLET RT. = 285.30

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

340 330 320 310 300 290 280 270 260 250

185+00 186+00 187+00 188+00 189+00 190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00

4/1/2013

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	85	331

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 201+52 IN PLACE
30" x 80' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 201+52 - CONSTRUCT
42" x 114' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
050 = 137 CFS D.A. = 28.70 ACRES

STA. 210+02 - IN PLACE
18" x 30' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 90 CU. YDS.

STA. 213+69 - IN PLACE
48" x 60' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
48" x 70' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 480 CU. YDS.

FLOODPLAIN LIMITS

EXISTING R/W, COA, & FENCE

CONST. LIMITS

CONST. HWY. 82 NORTH

S 8°30'17" W

PAVED SHOULDER

PAVED DRIVE

HWY. 82

UNNAMED TRIBUTARY TO NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 278 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE
2014 STANDARD SPECIFICATIONS.

RT. D. GR. -1.26%
RT. D. GR. -0.10%
RT. DITCH GRADE 0.67%
RT. DITCH GRADE -0.45%
RT. DITCH GRADE -0.49%
LT. D. GR. -1.01%
LT. D. GR. -0.81%
LT. D. GR. -0.62%

201+00.00 RT. 278.45
201+52.00 RT. 278.40
203+50.00 RT. 279.72
210+00.00 RT. 276.80
214+00.00 RT. 274.85
200+84.76 LT. 278.31
201+52.00 LT. 277.63
202+66.36 LT. 276.71
214+00.00 LT. 272.09

STA. 201+52
F.L. OUTLET LT. = 277.62

STA. 201+52
F.L. INLET RT. = 278.41

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

330 320 310 300 290 280 270 260 250 240

200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00

R070365.DGN 4/1/2013

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.		070365	86	331

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 220+76 CONSTRUCT
D.I. ON LT 4' EXTENSION.
DROP INLET TYPE SPECIAL = 4' X 8'
H = 1'-0"

STA. 221+85 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION,
AND 18" x 57' PIPE OUTLET
CONNECT TO D.I. @ STA. 222+46 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

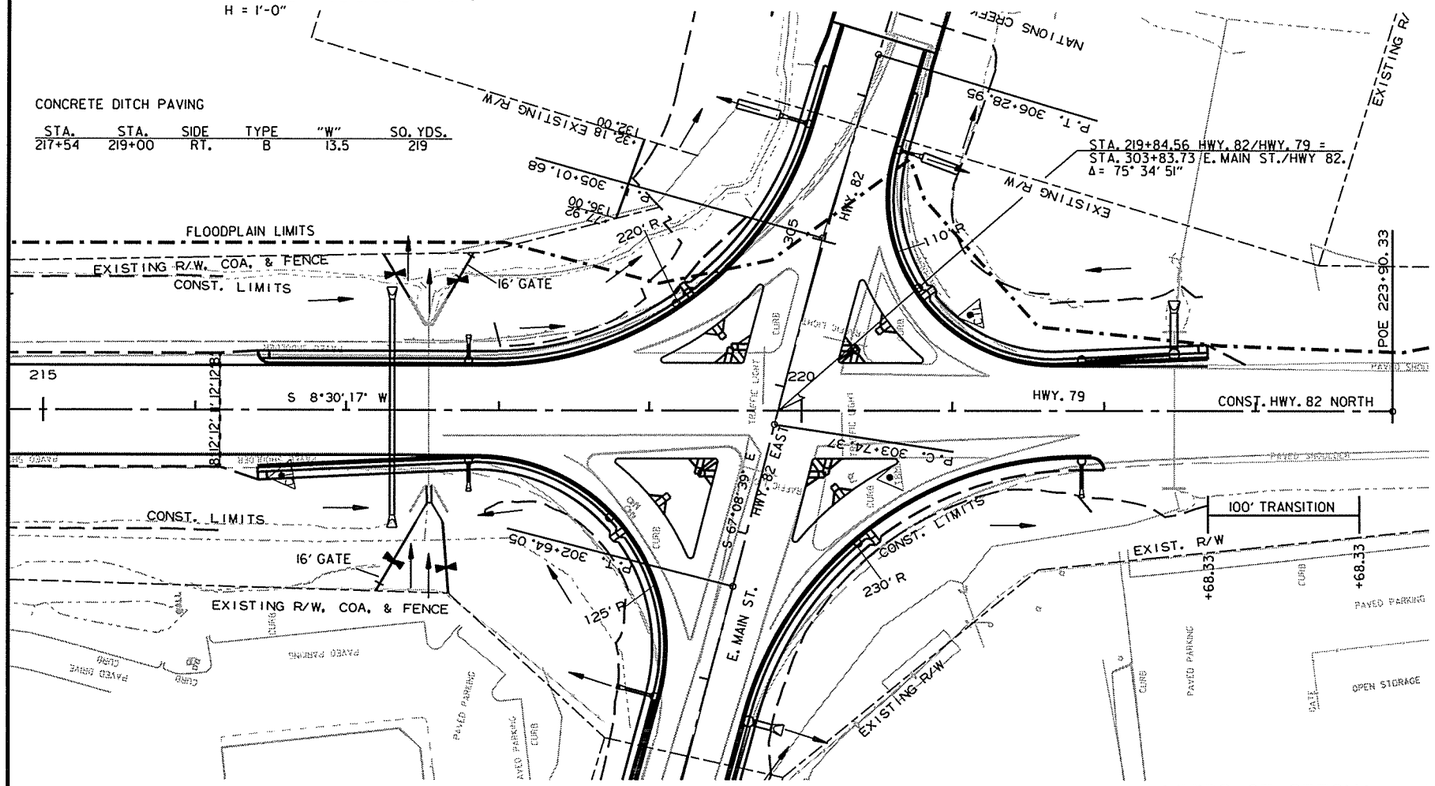
STA. 222+46 - CONSTRUCT
D.I. ON LT. WITH
48" x 24' R.C. STUB OUTLET WITH F.E.S.
CONNECT TO EXISTING 48" x 104' R.C. PIPE
TY MO = 6' I.D.
H = 11'0"

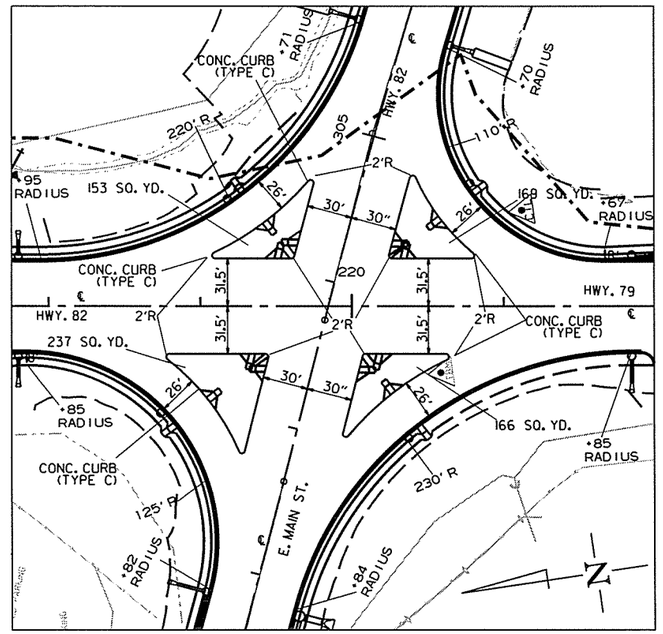
STA. 217+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION,
AND 18" x 9' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 219+19 CONSTRUCT
D.I. ON LT WITH 4' EXTENSION.
DROP INLET TYPE SPECIAL = 4' X 8'
H = 1'-0"

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
217+54	219+00	RT.	B	13.5	219





LIMITS OF SPECIAL FLOOD HAZARD AREA
STA. 218+10 TO STA. 222+00

HWY. 82/HWY. 79 AND E. MAIN ST./HWY. 82 INTERSECTION ISLAND DETAILS
TYPE C CURB FACE

STA. 217+30 - CONSTRUCT
36" x 142' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
050 = 460 CFS D.A. = 113.50 ACRES

STA. 217+54 IN PLACE
5' x 5' x 112' R.C. BOX CULVERT
RETAIN AND EXTEND 6' RT.
TO A COMPLETED LENGTH OF 118'
WITH 3:1 WINGS ON RT.
050 = 460 CFS, D.A. = 113.50 ACRES

STA. 217+80 - CONSTRUCT
D.I. ON RT. WITH
18" x 12' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'2"

STA. 218+75 CONSTRUCT
D.I. ON RT WITH 4' EXTENSION.
DROP INLET TYPE SPECIAL = 4' X 8'
H = 1'-0"

STA. 220+36 CONSTRUCT
D.I. ON RT WITH 4' EXTENSION.
DROP INLET TYPE SPECIAL = 4' X 8'
H = 1'-0"

STA. 221+85 - CONSTRUCT
D.I. ON RT. WITH
18" x 16' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'5"

STA. 222+46 - IN PLACE
48" x 104' R.C. PIPE CULVERT
WITH HDWLS. LT.
RETAIN & REMOVE HDWLS. LT.
CONNECT TO D.I. LT.
050 = 195 CFS D.A. = 59.24 ACRES

10/28/2015

R070365.DGN

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

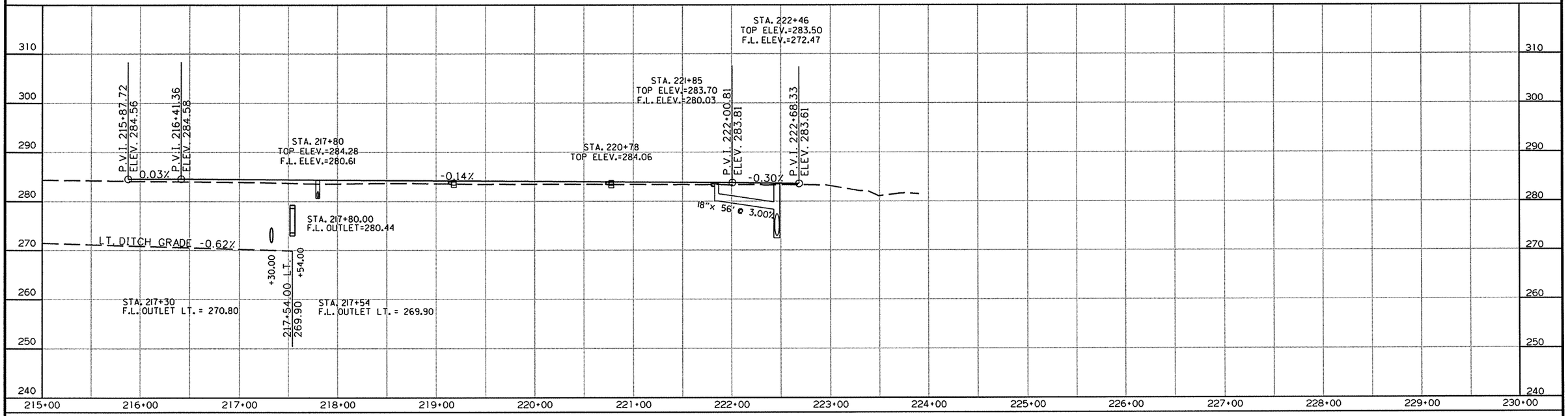
FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-15
TRINITY D. SMITH

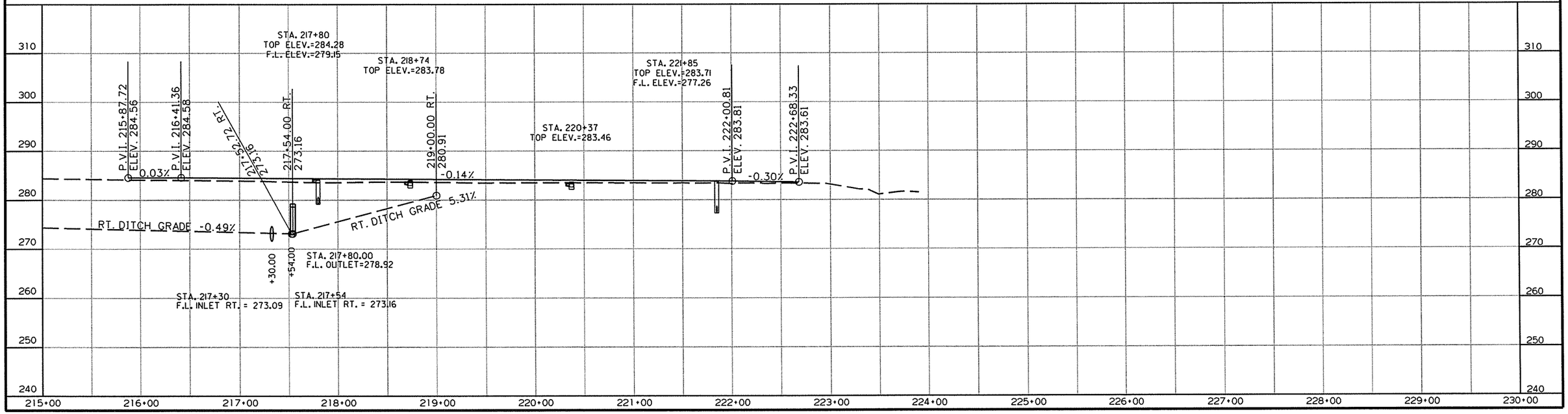
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	87	331

(2) PROFILE SHEET

HWY. 82 LT. - STORM SEWER



HWY. 82 RT. - STORM SEWER



R070365.DGN 10/26/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	88	331

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-8-16

STA. 296+34 - IN PLACE
D.I. ON LT. WITH
36" x 266' PIPE OUTLET
CONNECT TO D.I. @ STA. 299+00 LT.
RETAIN

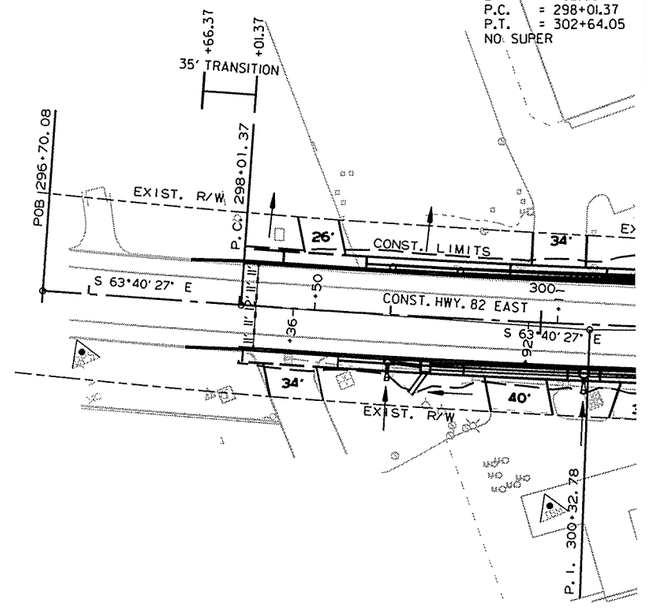
STA. 298+50 CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

STA. 299+51 IN PLACE
DROP INLET ON LT.
AND 36" x 270' R.C PIPE OUTLET
WITH FES
REMOVE

STA. 299+00 - CONSTRUCT
D.I. ON LT. WITH
36" x 41' PIPE OUTLET
CONNECT TO D.I. @ STA. 299+45 LT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 299+45 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 36" x 230' PIPE OUTLET
CONNECT TO D.I. @ STA. 301+80 LT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 5'4"

P.I. = 300+32.78
Δ = 3° 28' 12" LT.
D = 0° 45' 00"
T = 231.41'
L = 462.68'
P.C. = 298+01.37
P.T. = 302+64.05
NO SUPER



STA. 299+16 - IN PLACE
36" R.C. PIPE CULVERT
WITH HDWL. RT.
REMOVE HDWLS. RT. AND EXTEND R.C. PIPE
18' LT.
CONNECT TO D.I. @ STA. 299+25 RT.
Q50 = 46 CFS. D.A. = 22.10 ACRES
36" R.C. PIPE = 22 LIN. FT.

STA. 299+00 - CONSTRUCT
D.I. ON RT. WITH
18" x 4' R.C. STUB INLET WITH F.E.S.
& 18" x 21' PIPE OUTLET
CONNECT TO D.I. @ STA. 299+25 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 299+25 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 48" x 99' PIPE OUTLET
CONNECT TO D.I. @ STA. 300+30 RT.
TY C = 6' x 7'
H = 5'6"

STA. 299+02 IN PLACE
DROP INLET ON RT.
REMOVE

STA. 298+36 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 299+92 CONSTRUCT
APPROACH ON RT. = 30 CU. YDS.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

3/31/2014

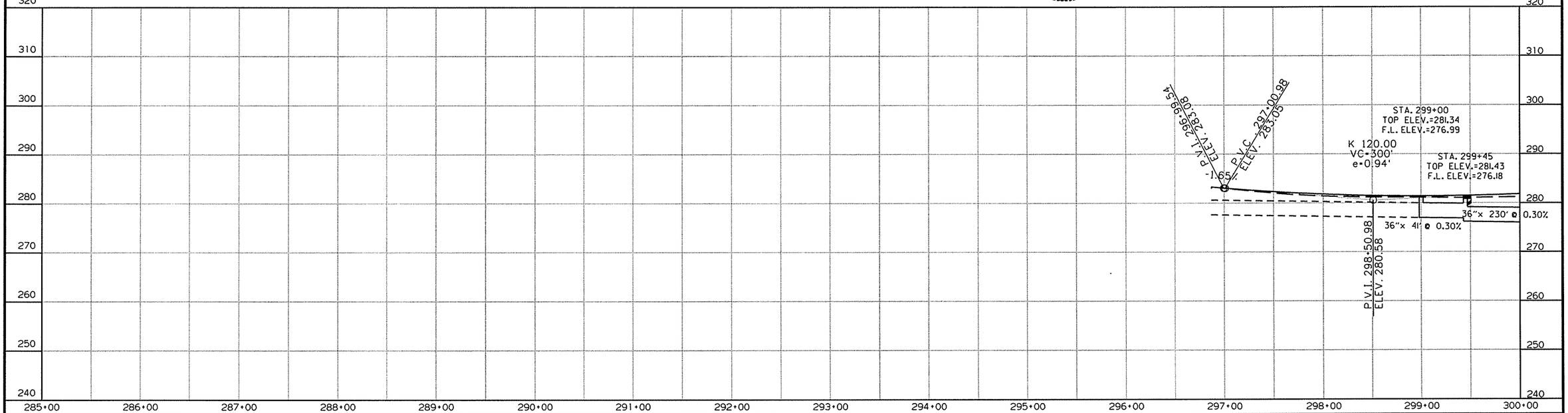
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	89	331

(2) PROFILE SHEET

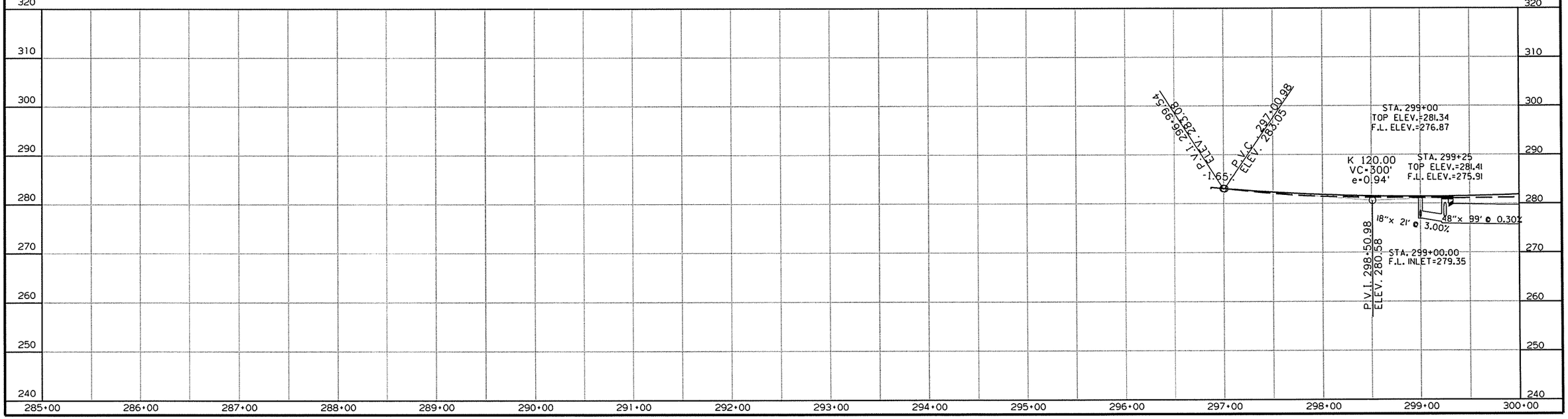
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-8-16
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER



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

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	90	331

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-16

P.I. = 300+32.78
Δ = 3° 28' 12" LT.
D = 0° 45' 00"
T = 231.41'
L = 462.68'
P.C. = 298+01.37
P.T. = 302+64.05
NO SUPER

STA. 300+11 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 301+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 36" x 10' R.C. STUB OUTLET
WITH FES.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 7'5"

STA. 302+88 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 2.7 SQ. YDS.

STA. 303+26 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.7 SQ. YDS.

STA. 303+32 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.9 SQ. YDS.

STA. 303+38 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.9 SQ. YDS.

STA. 304+09 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.9 SQ. YDS.

STA. 304+18 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.9 SQ. YDS.

STA. 304+19 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON LT. = 2.7 SQ. YDS.

STA. 304+37 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 2.7 SQ. YDS.

STA. 305+72 - CONSTRUCT
D.I. ON LT. WITH
18" x 13' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 306+41.00 BRIDGE END
BRIDGE NO. 07361
136'-0" INTEGRAL W-BEAM UNIT (42'-52'-42')
58'-0" CLEAR ROADWAY
137'-0" BRIDGE LENGTH
STA. 307+78.00 BRIDGE END

STA. 307+95 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 40' R.C. STUB OUTLET
WITH FES.
TY MO = 5' I.D.
H = 12'8"

STA. 310+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 201' PIPE OUTLET
CONNECT TO D.I. @ STA. 307+95 LT.
TY MO = 5' I.D.
H = 10'5"

STA. 311+38 - IN PLACE
24" x 49' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH @ STA. 312+00 = 614 CU. YDS.
74 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 311+60 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 18' R.C. STUB INLET WITH FES.
& 30" x 156' PIPE OUTLET
CONNECT TO D.I. @ STA. 310+00 LT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 8'6"

STA. 311+86 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

STA. 312+50 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.4 SQ. YDS.

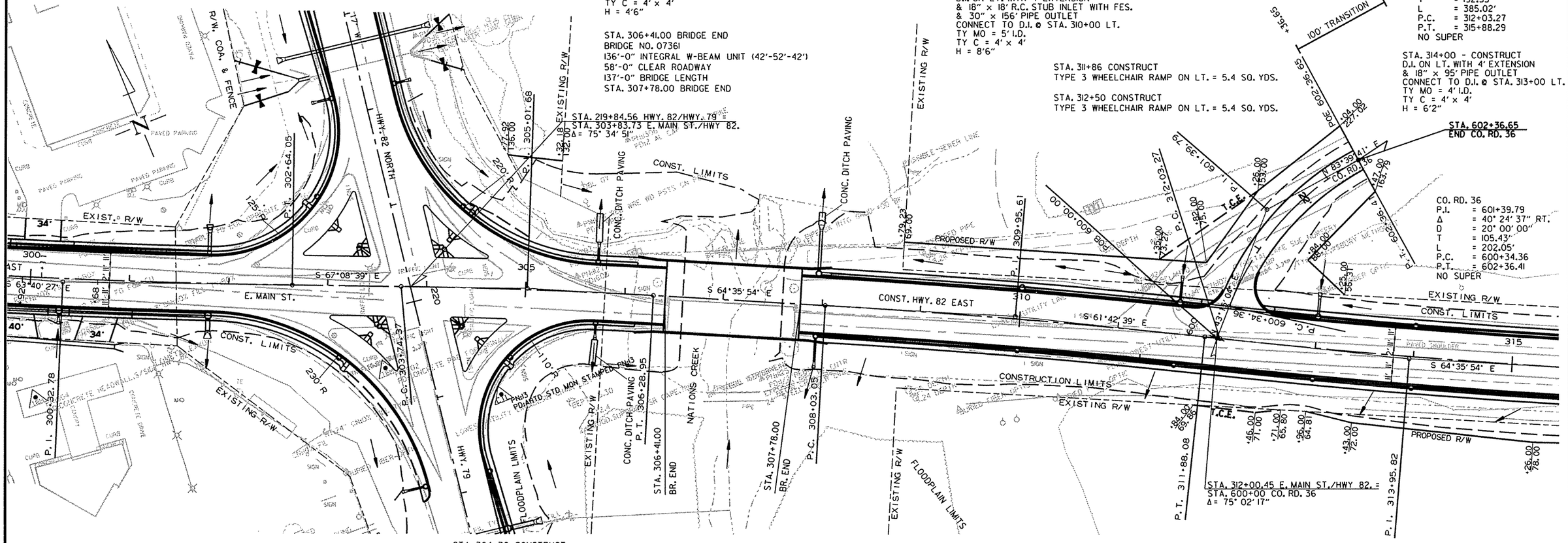
STA. 313+00 - CONSTRUCT
D.I. ON LT. WITH
24" x 16' R.C. STUB INLET WITH FES.
& 30" x 135' PIPE OUTLET
CONNECT TO D.I. @ STA. 311+60 LT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 7'1"

P.I. = 313+95.62
Δ = 2° 53' 16" LT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 312+03.27
P.T. = 315+88.29
NO SUPER

STA. 314+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 95' PIPE OUTLET
CONNECT TO D.I. @ STA. 313+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'2"

STA. 602+36.65
END CO. RD. 36

CO. RD. 36
P.I. = 601+39.79
Δ = 40° 24' 37" RT.
D = 20° 00' 00"
T = 105.43'
L = 202.05'
P.C. = 600+34.36
P.T. = 602+36.41
NO SUPER



STA. 300+30 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 4' R.C. STUB INLET WITH FES.
& 48" x 145' PIPE OUTLET
CONNECT TO D.I. @ STA. 301+80 RT.
TY MO = 6' I.D.
TY C = 4' x 5'
H = 6'5"

STA. 301+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 48" x 12' R.C. STUB OUTLET
WITH FES.
TY MO = 6' I.D.
TY C = 5' x 5'
H = 7'10"

STA. 303+30 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 2.7 SQ. YDS.

STA. 303+47 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.7 SQ. YDS.

STA. 303+49 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.9 SQ. YDS.

STA. 303+59 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.9 SQ. YDS.

STA. 300+11 IN PLACE
DROP INLET ON RT.
REMOVE

STA. 300+28 IN PLACE
4' x 3' x 140' R.C. BOX CULVERT
SIDE DRAIN
REMOVE

STA. 300+68 CONSTRUCT
APPROACH ON RT. = 35 CU. YDS.

STA. 304+30 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.9 SQ. YDS.

STA. 304+36 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.9 SQ. YDS.

STA. 304+41 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT. = 2.7 SQ. YDS.

STA. 304+74 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 2.7 SQ. YDS.

P.I. = 305+01.68
Δ = 2° 32' 45" RT.
D = 1° 00' 00"
T = 127.31'
L = 254.58'
P.C. = 303+74.37
P.T. = 306+28.95
NO SUPER

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 305+72 - CONSTRUCT
D.I. ON RT. WITH
18" x 10' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

STA. 307+95 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 24' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 8'0"

STA. 306+45 - STA. 307+73 IN PLACE
130' x 32' BRIDGE CONSISTING OF
I-BEAM SPANS SUPPORTED BY CONCRETE
TRESTLE PILE BENTS.
REMOVE AS EXISTING BRIDGE
STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM.

STA. 310+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 200' PIPE OUTLET
CONNECT TO D.I. @ STA. 307+95 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'7"

P.I. = 309+95.61
Δ = 2° 53' 16" RT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 308+03.05
P.T. = 311+88.08
NO SUPER

STA. 311+60 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 155' PIPE OUTLET
CONNECT TO D.I. @ STA. 310+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'3"

STA. 313+00 - CONSTRUCT
D.I. ON RT. WITH
18" x 136' PIPE OUTLET
CONNECT TO D.I. @ STA. 311+60 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 314+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 96' PIPE OUTLET
CONNECT TO D.I. @ STA. 313+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

CONCRETE DITCH PAVING

STA.	SIDE	TYPE	"W"	SQ. YDS.
305+72	LT.	B	6	29
305+72	RT.	B	6	19
307+95	LT.	B	6	13

LIMITS OF SPECIAL
FLOOD HAZARD AREA
STA. 307+04 TO STA. 312+69

HWY. 82

3/31/2014

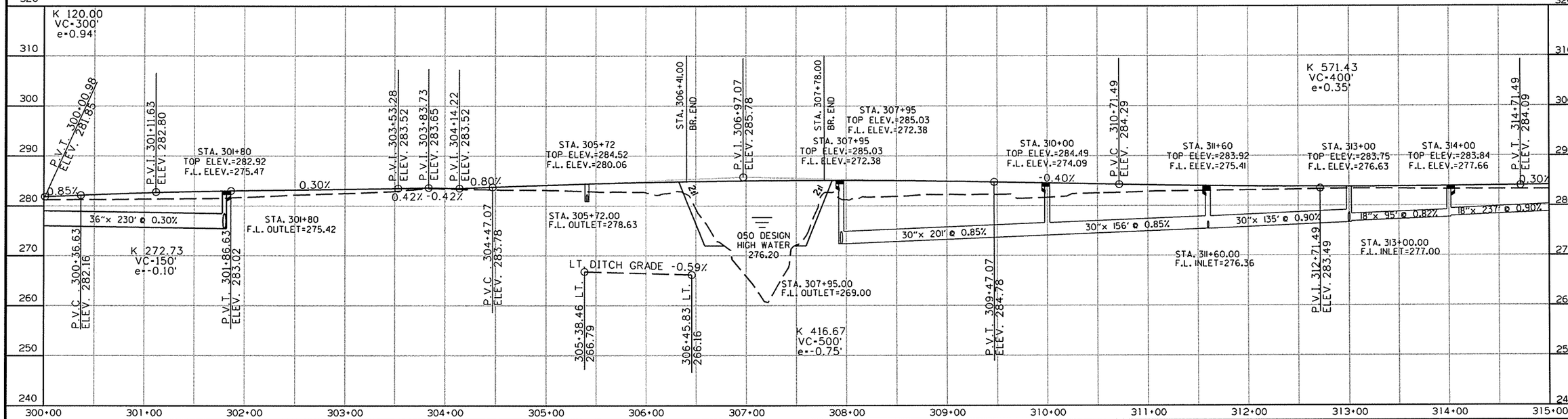
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	91	331

(2) PROFILE SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 1-8-16 TRINITY D. SMITH

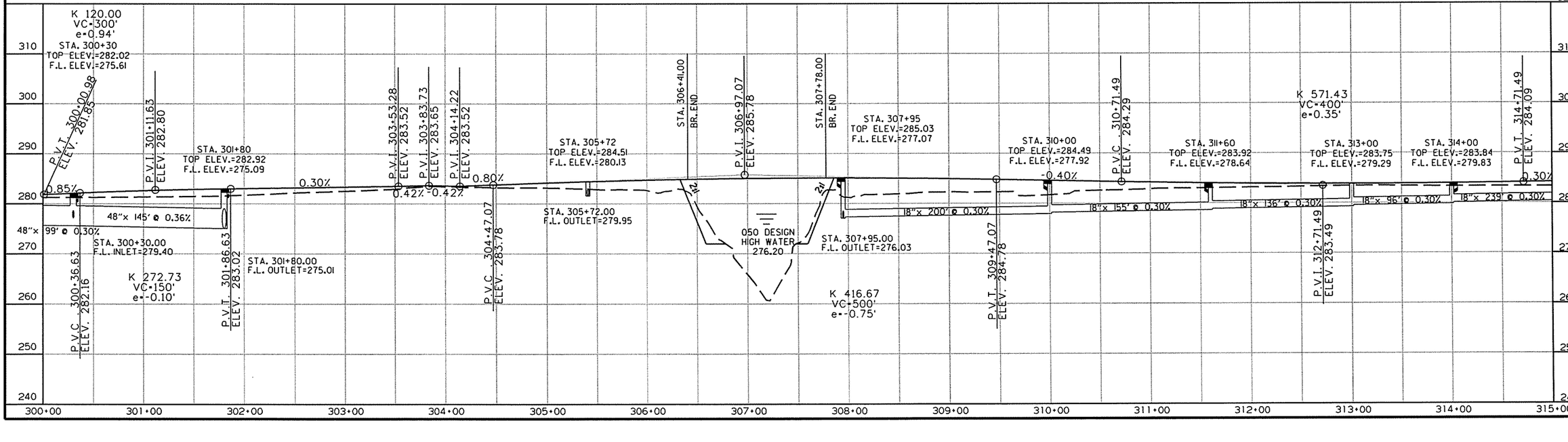
HWY. 82 LT. - STORM SEWER



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

NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 272 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	92	331

(2) PLAN SHEET

STA. 316+17 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

P.I. = 313+95.82
Δ = 2° 53' 16" LT.
D = 0° 45' 00"
T = 192.55'
L = 385.02'
P.C. = 312+03.27
P.T. = 315+88.29
NO SUPER

STA. 316+42 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 9' R.C. STUB INLET WITH FES.
& 18" x 237' PIPE OUTLET
CONNECT TO D.I. @ STA. 314+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

STA. 319+95 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 6' R.C. STUB INLET WITH FES.
& 18" x 181' PIPE OUTLET
CONNECT TO D.I. @ STA. 321+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 321+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 10' R.C. STUB INLET WITH FES.
& 18" x 196' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 323+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'8"

STA. 320+20 - IN PLACE
15" x 18' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 322+12 - IN PLACE
18" x 40' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 324+32 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 48' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 323+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'5"

STA. 325+10 - CONSTRUCT
D.I. ON LT. WITH
18" x 74' PIPE OUTLET
CONNECT TO D.I. @ STA. 324+32 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'2"

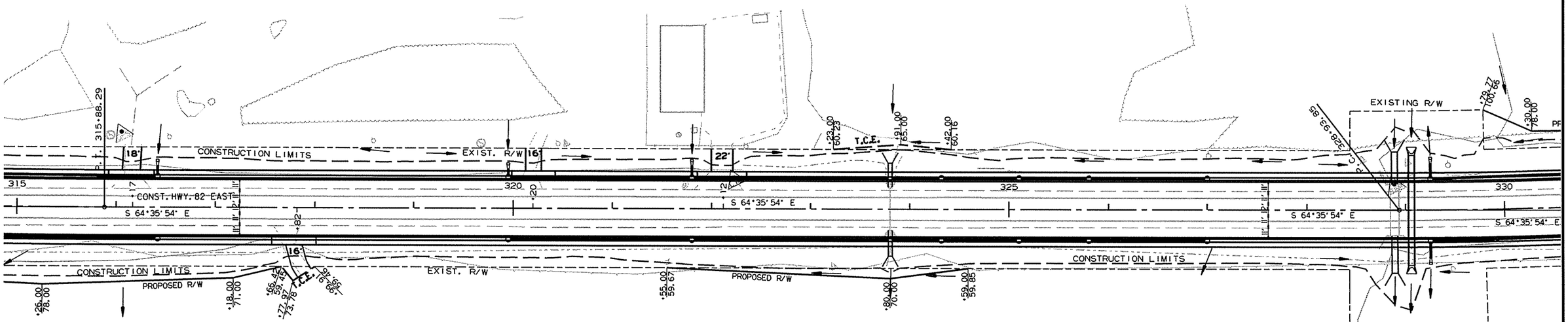
STA. 325+80 - CONSTRUCT
D.I. ON LT. WITH
18" x 66' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+10 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 327+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 116' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'1"

P.I. = 330+88.62
Δ = 4° 51' 59" LT.
D = 1° 15' 00"
T = 194.78'
L = 389.32'
P.C. = 328+93.85
P.T. = 332+83.17
NO SUPER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 329+25 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 14' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"



STA. 316+42 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 239' PIPE OUTLET
CONNECT TO D.I. @ STA. 314+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 319+95 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 181' PIPE OUTLET
CONNECT TO D.I. @ STA. 321+80 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 321+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 196' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 323+80 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'10"

STA. 324+32 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 48' PIPE OUTLET
CONNECT TO BOX CULVERT @ STA. 323+80 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'11"

STA. 325+10 - CONSTRUCT
D.I. ON RT. WITH
18" x 74' PIPE OUTLET
CONNECT TO D.I. @ STA. 324+32 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'7"

STA. 325+80 - CONSTRUCT
D.I. ON RT. WITH
18" x 66' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+10 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'5"

STA. 327+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 116' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+80 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'1"

STA. 329+25 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 15' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'1"

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
322+00	323+80	LT.	B	9	180
328+00	328+90	LT.	B	9	90
328+90	332+93	LT.	B	9	310

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 317+82 - IN PLACE
15" x 15' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 60 CU. YDS.

STA. 323+80 IN PLACE
4' x 4' x 44' R.C. BOX CULVERT
RETAIN AND EXTEND 24' LT. AND 26' RT.
TO A COMPLETED LENGTH OF 94'
WITH 3:1 WINGS LT. AND RT.
Q50 = 52 CFS, D.A. = 16.50 ACRES

STA. 328+90 IN PLACE
8' x 5' x 53' R.C. BOX CULVERT
RETAIN AND EXTEND 25' LT. AND 32' RT.
TO A COMPLETED LENGTH OF 110'
WITH 3:1 WINGS LT. AND RT.
Q50 = 1049 CFS, D.A. = 1108 ACRES

STA. 329+06 - CONSTRUCT
72" x 109' R.C. PIPE CULVERT
WITH FES LT. & RT.
Q50 = 1049 CFS D.A. = 1108 ACRES

HWY. 82

3/31/2014

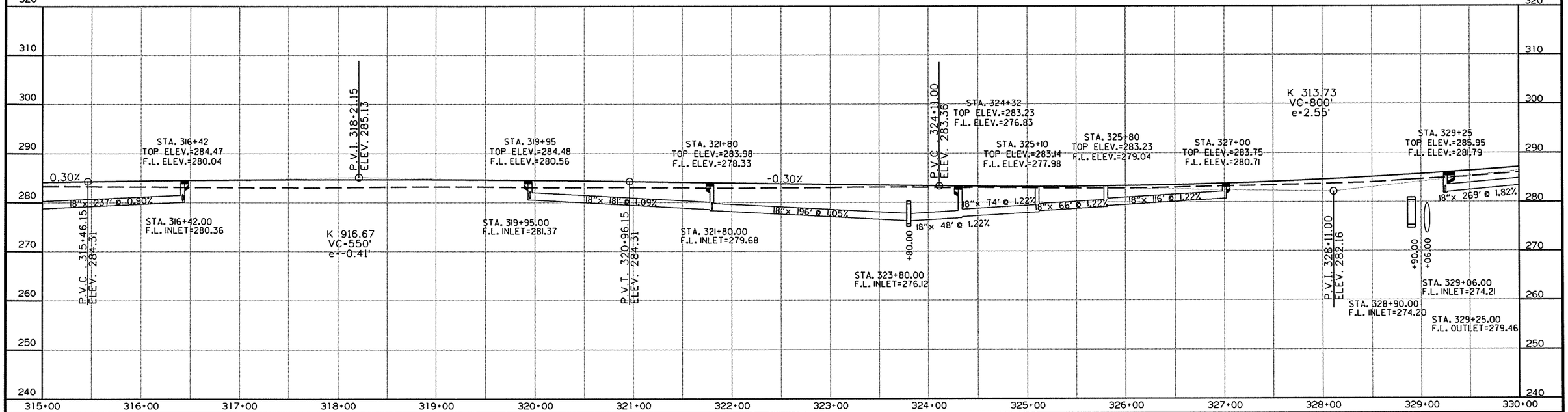
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	93	331

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-15
TRINITY D. SMITH

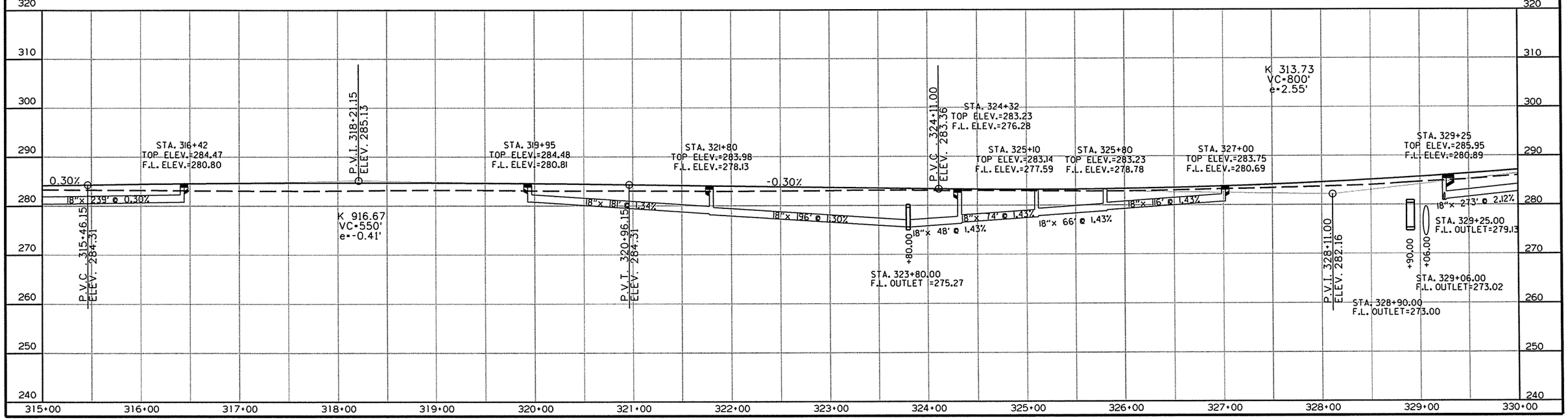
HWY. 82 LT. - STORM SEWER



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

UN-NAMED TRIBUTARY TO NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 277 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	94	331

(2) PLAN SHEET

STA. 332+99 - IN PLACE
18" x 39' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 100 CU. YDS.
SEE SPECIAL DETAIL

P.I. = 330+88.62
Δ = 4° 51' 59" LT.
D = 1° 15' 00"
T = 194.78'
L = 389.32'
P.C. = 328+93.85
P.T. = 332+83.17
NO SUPER

STA. 333+85 - IN PLACE
18" x 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH @ 334+20 = 110 CU. YDS.
SEE SPECIAL DETAIL

STA. 334+77 - IN PLACE
18" x 25' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 335+34 - IN PLACE
18" x 26' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 336+54 - IN PLACE
18" x 24' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 338+05 CONSTRUCT
APPROACH ON LT. = 15 CU. YDS.

STA. 338+94 - IN PLACE
18" x 24' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 339+70 CONSTRUCT
APPROACH ON LT. = 40 CU. YDS.

STA. 342+64 - IN PLACE
18" x 48' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 344+49 - IN PLACE
18" x 101' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 332+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 269' PIPE OUTLET
CONNECT TO D.I. @ STA. 329+25 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 335+05 - CONSTRUCT
D.I. ON LT. WITH
18" x 10' R.C. STUB INLET WITH FES.
& 18" x 300' PIPE OUTLET
CONNECT TO D.I. @ STA. 332+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'8"

STA. 335+60 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 9' R.C. STUB INLET WITH FES.
& 18" x 51' PIPE OUTLET
CONNECT TO D.I. @ STA. 335+05 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'7"

STA. 336+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 8' R.C. STUB INLET WITH FES.
& 18" x 116' PIPE OUTLET
CONNECT TO D.I. @ STA. 335+60 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 338+33 - CONSTRUCT
D.I. ON LT. WITH
18" x 7' R.C. STUB INLET WITH FES.
& 18" x 149' PIPE OUTLET
CONNECT TO D.I. @ STA. 336+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 339+22 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 8' R.C. STUB INLET WITH FES.
& 18" x 85' PIPE OUTLET
CONNECT TO D.I. @ STA. 338+33 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 340+68 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 18' R.C. STUB OUTLET
WITH FES.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 8'1"

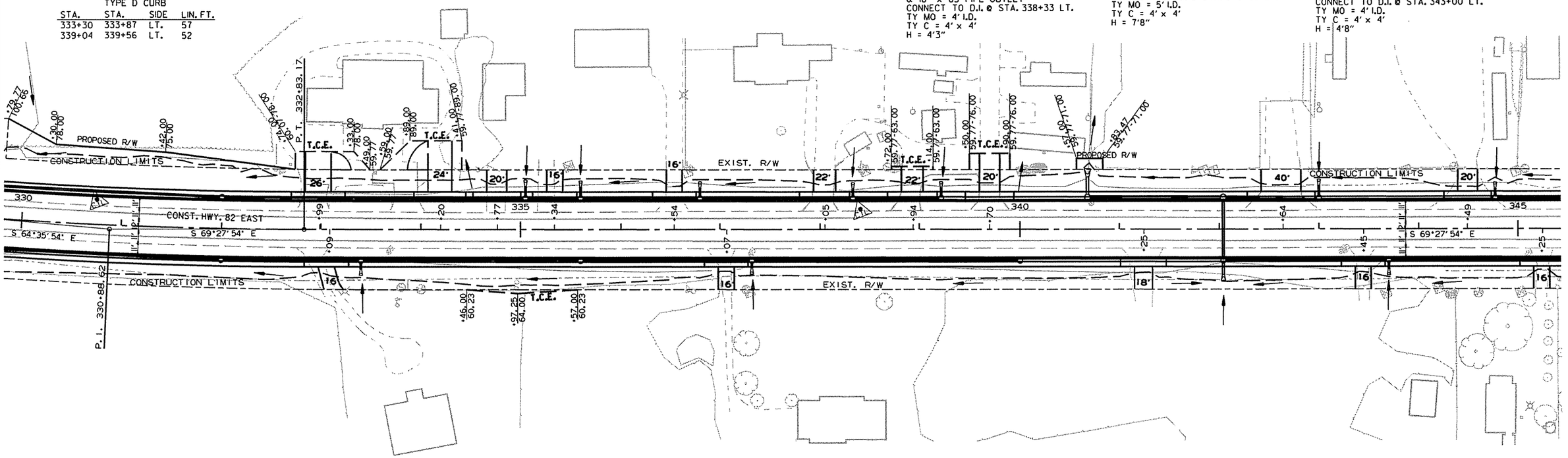
STA. 342+04 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& EXISTING 24" x 58' R.C. STUB INLET
& 30" x 131' PIPE OUTLET
CONNECT TO D.I. @ STA. 340+68 LT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 7'8"

STA. 343+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 10' R.C. STUB INLET WITH FES.
& 24" x 91' PIPE OUTLET
CONNECT TO D.I. @ STA. 338+33 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'4"

STA. 344+77 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. STUB INLET WITH FES.
& 24" x 173' PIPE OUTLET
CONNECT TO D.I. @ STA. 343+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'8"

TYPE D CURB

STA.	STA.	SIDE	LIN. FT.
333+30	333+87	LT.	57
339+04	339+56	LT.	52



STA. 332+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 273' PIPE OUTLET
CONNECT TO D.I. @ STA. 329+25 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 333+40 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 6' R.C. STUB INLET WITH FES.
& 18" x 137' PIPE OUTLET
CONNECT TO D.I. @ STA. 332+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 335+60 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 216' PIPE OUTLET
CONNECT TO D.I. @ STA. 333+40 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 337+32 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 168' PIPE OUTLET
CONNECT TO D.I. @ STA. 335+60 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 340+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 264' PIPE OUTLET
CONNECT TO D.I. @ STA. 337+32 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 342+04 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 12' R.C. STUB INLET WITH FES.
CONNECT TO EXISTING PIPE
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'1"

STA. 343+70 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 7' R.C. STUB INLET WITH FES.
& 18" x 162' PIPE OUTLET
CONNECT TO D.I. @ STA. 342+04 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'1"

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
328+90	332+93	RT.	B	9	403
340+68	342+04	LT.	B	9	136

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 333+09 - IN PLACE
15" x 23' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 337+07 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 341+25 - IN PLACE
18" x 37' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 343+45 - IN PLACE
18" x 18' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 342+04 - IN PLACE
24" x 61' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT & RT. AND EXTEND R.C. PIPE
2' RT. TO A COMPLETED LENGTH OF 63'
(CLASS III) (TYPE 3 BEDDING)
CONNECT TO D.I. LT. & RT.
Q50 = 16 CFS D.A. = 4.90 ACRES
24" R.C. PIPE = 6 LIN. FT.

3/31/2014

R070365.DGN

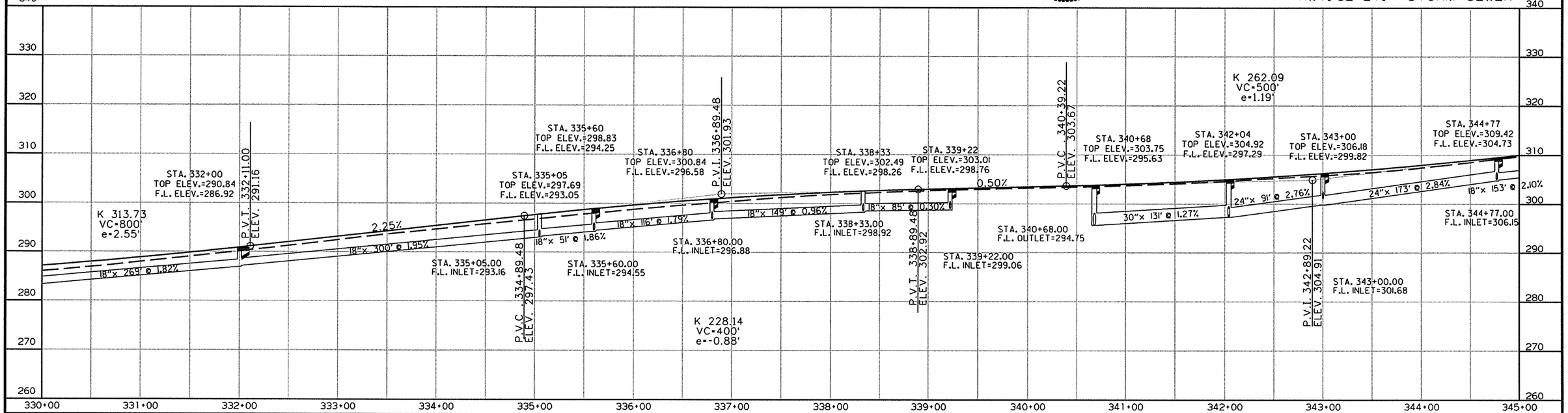
HWY. 82

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	95	331

(2) PROFILE SHEET

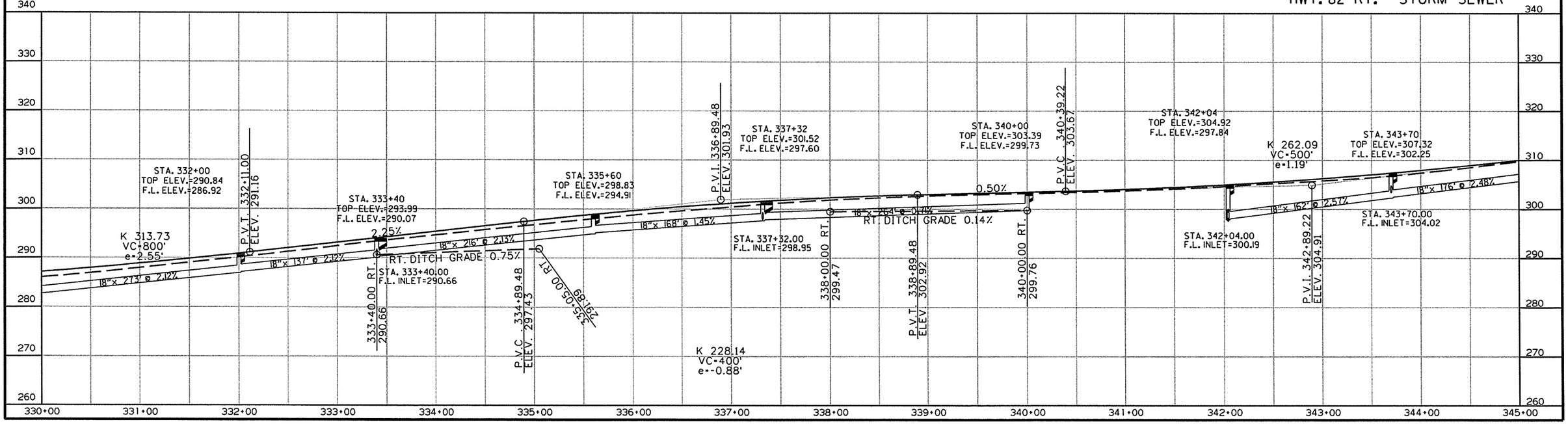
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-14
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER



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

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	96	331

(2) PLAN SHEET

STA. 345+97 - IN PLACE
18" x 67' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 349+38 - IN PLACE
18" x 44' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 353+08 - IN PLACE
18" x 40' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 359+95 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.3 SQ. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 346+34 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 7' R.C. STUB INLET WITH FES.
& 18" x 153' PIPE OUTLET
CONNECT TO D.I. @ STA. 344+77 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'11"

STA. 348+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 162' PIPE OUTLET
CONNECT TO D.I. @ STA. 346+34 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'2"

STA. 349+64 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 160' PIPE OUTLET
CONNECT TO D.I. @ STA. 348+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 352+82 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 114' PIPE OUTLET
CONNECT TO D.I. @ STA. 354+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'5"

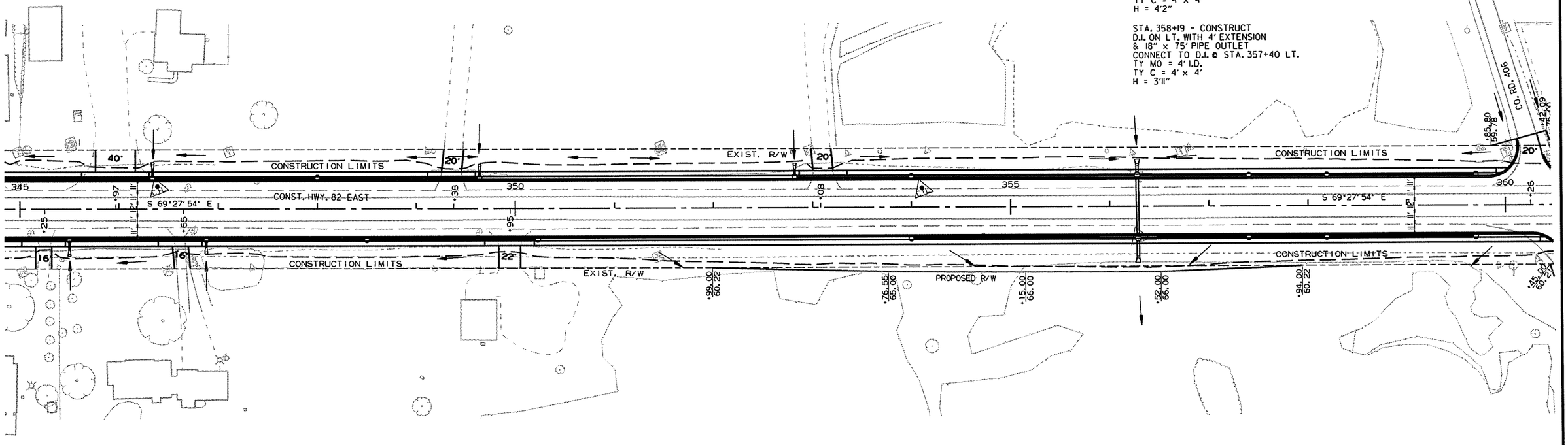
STA. 354+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 223' PIPE OUTLET
CONNECT TO D.I. @ STA. 356+28 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'7"

STA. 356+28 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 7' R.C. STUB INLET WITH FES.
CONNECT TO EXISTING PIPE
TY MO = 5' I.D.
TY C = 5' x 4'
H = 4'9"

STA. 357+40 - CONSTRUCT
D.I. ON LT. WITH
18" x 108' PIPE OUTLET
CONNECT TO D.I. @ STA. 356+28 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 358+19 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 75' PIPE OUTLET
CONNECT TO D.I. @ STA. 357+40 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 359+70 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 147' PIPE OUTLET
CONNECT TO D.I. @ STA. 358+19 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"



STA. 345+50 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 8' R.C. STUB INLET WITH FES.
& 18" x 176' PIPE OUTLET
CONNECT TO D.I. @ STA. 343+70 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'3"

STA. 346+88 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 134' PIPE OUTLET
CONNECT TO D.I. @ STA. 345+50 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'7"

STA. 348+50 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 158' PIPE OUTLET
CONNECT TO D.I. @ STA. 346+88 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'1"

STA. 350+23 - CONSTRUCT
D.I. ON RT. WITH
18" x 169' PIPE OUTLET
CONNECT TO D.I. @ STA. 348+50 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 354+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 224' PIPE OUTLET
CONNECT TO D.I. @ STA. 356+29 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 356+29 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& EXISTING 30" x 58' R.C. STUB INLET
& 30" x 16' R.C. STUB OUTLET
WITH FES.
TY MO = 5' I.D.
TY C = 5' x 4'
H = 6'4"

STA. 357+40 - CONSTRUCT
D.I. ON RT. WITH
18" x 107' PIPE OUTLET
CONNECT TO D.I. @ STA. 356+29 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'2"

STA. 358+19 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 75' PIPE OUTLET
CONNECT TO D.I. @ STA. 357+40 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 359+70 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 147' PIPE OUTLET
CONNECT TO D.I. @ STA. 358+19 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'6"

STA. 345+25 - IN PLACE
18" x 30' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 346+65 - IN PLACE
18" x 20' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 349+95 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 356+28 - IN PLACE
30" x 54' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE
5' LT. AND 1' RT.
TO A COMPLETED LENGTH OF 60'
CONNECT TO D.I. LT. & RT.
(CLASS V) (TYPE 3 BEDDING)
Q50 = 31 CFS D.A. = 7.30 ACRES
30" R.C. PIPE = 14 LIN. FT.

HWY. 82

3/31/2014

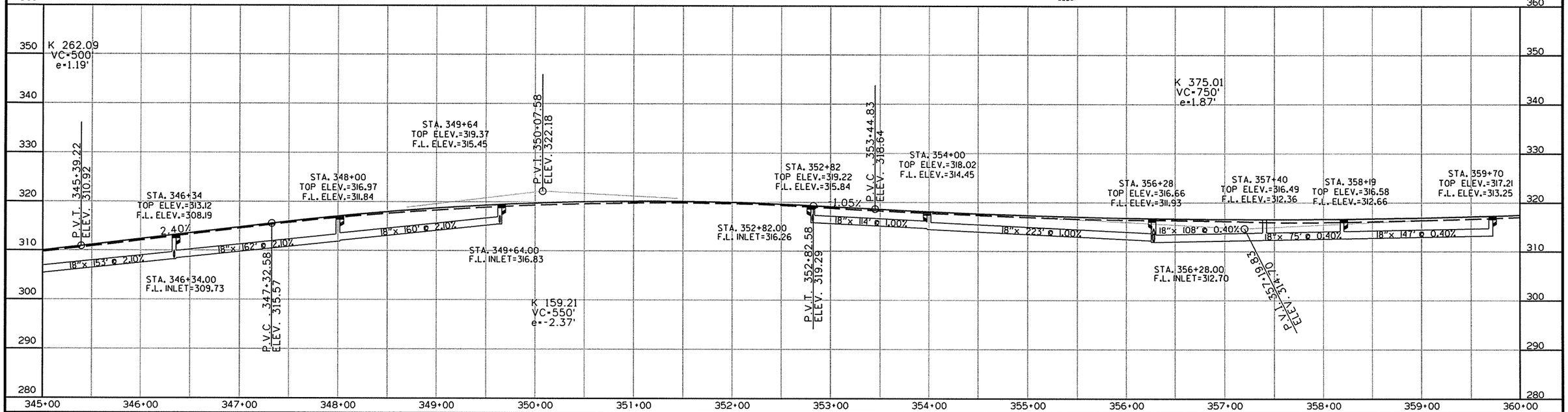
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	97	331

(2) PROFILE SHEET

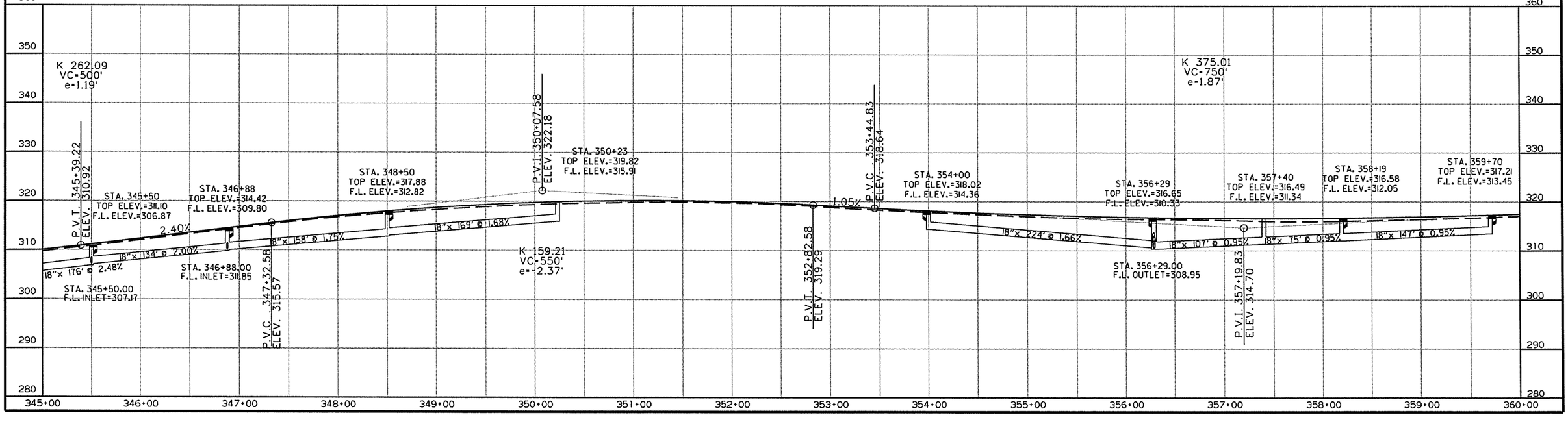
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-14
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER



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

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	98	331

(2) PLAN SHEET

STA. 360+26 CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 361+80 - IN PLACE
18" x 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 363+64 - IN PLACE
18" x 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 365+14 - IN PLACE
18" x 43' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH =
10 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 366+59 - IN PLACE
18" x 21' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

STA. 367+34 IN PLACE
18" x 18' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH =
15 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 361+28 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 30" x 6' R.C. STUB INLET WITH FES.
& 30" x 58' PIPE OUTLET
CONNECT TO D.I. @ STA. 361+28 RT.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 5'0"

STA. 364+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 3' R.C. STUB INLET WITH FES.
& 24" x 179' PIPE OUTLET
CONNECT TO D.I. @ STA. 362+17 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 366+83 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 137' PIPE OUTLET
CONNECT TO D.I. @ STA. 365+42 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 369+04 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 18" x 140' PIPE OUTLET
CONNECT TO D.I. @ STA. 367+60 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 368+80 IN PLACE
15" x 18' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH =
10 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 370+39 CONSTRUCT
APPROACH ON LT. = 15 CU. YDS.

STA. 373+84 IN PLACE
36" x 239' C.P. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 374+75 IN PLACE
18" x 24' C.P. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 35 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 362+17 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 24" x 84' PIPE OUTLET
CONNECT TO D.I. @ STA. 361+28 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

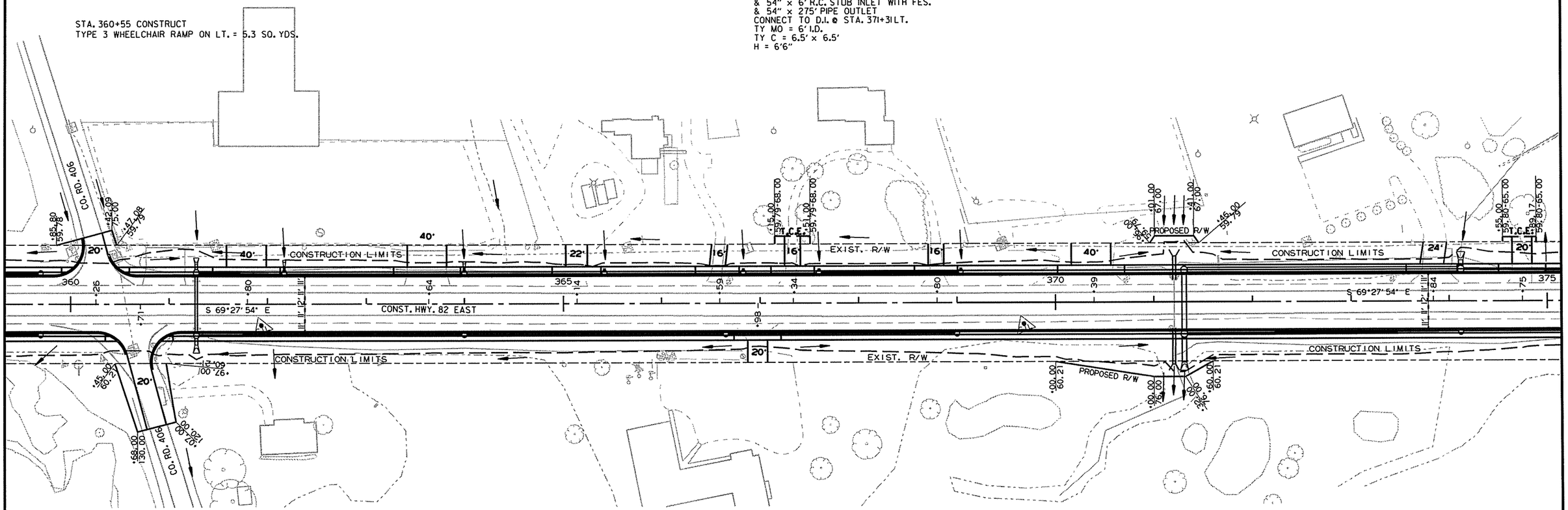
STA. 365+42 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 138' PIPE OUTLET
CONNECT TO D.I. @ STA. 364+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 367+60 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 73' PIPE OUTLET
CONNECT TO D.I. @ STA. 366+83 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 371+31 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 54" x 59' PIPE OUTLET
CONNECT TO D.I. @ STA. 371+31 RT.
TY. MO = 6' I.D.
TY C = 6.5' x 6.5'
H = 8'0"

STA. 374+12 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 54" x 6' R.C. STUB INLET WITH FES.
& 54" x 275' PIPE OUTLET
CONNECT TO D.I. @ STA. 371+31 LT.
TY MO = 6' I.D.
TY C = 6.5' x 6.5'
H = 6'6"

STA. 360+55 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT. = 5.3 SQ. YDS.



STA. 361+00 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

STA. 371+21 IN PLACE
4' x 2' x 50' R.C. BOX CULVERT
RETAIN AND EXTEND 24' LT. AND 36' RT.
TO A COMPLETED LENGTH OF 110'
WITH 31 WINGS LT. AND RT.
Q50 = 102 CFS, D.A. = 32.20 ACRES

STA. 371+31 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 54" x 26' R.C. STUB OUTLET
WITH FES.
TY MO = 6' I.D.
TY C = 6.5' x 4'
H = 9'1"

STA. 374+12 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 276' PIPE OUTLET
CONNECT TO D.I. @ STA. 371+31 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'10"

STA. 361+28 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 36" x 7' R.C. STUB OUTLET
WITH FES.
TY MO = 5' I.D.
TY C = 4' x 4'
H = 5'2"

STA. 364+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 268' PIPE OUTLET
CONNECT TO D.I. @ STA. 361+28 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

STA. 366+65 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 261' PIPE OUTLET
CONNECT TO D.I. @ STA. 364+00 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 369+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 231' PIPE OUTLET
CONNECT TO D.I. @ STA. 366+65 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 360+41 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.3 SQ. YDS.

STA. 360+71 CONSTRUCT
APPROACH ON RT. = 240 CU. YDS.

STA. 361+28 IN PLACE
24" x 49' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 366+98 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	"B"	SQ. YDS.
371+00	371+21	RT.	B	12.5		29
371+21	372+00	LT.	A	9	6	79

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

HWY. 82

3/31/2014

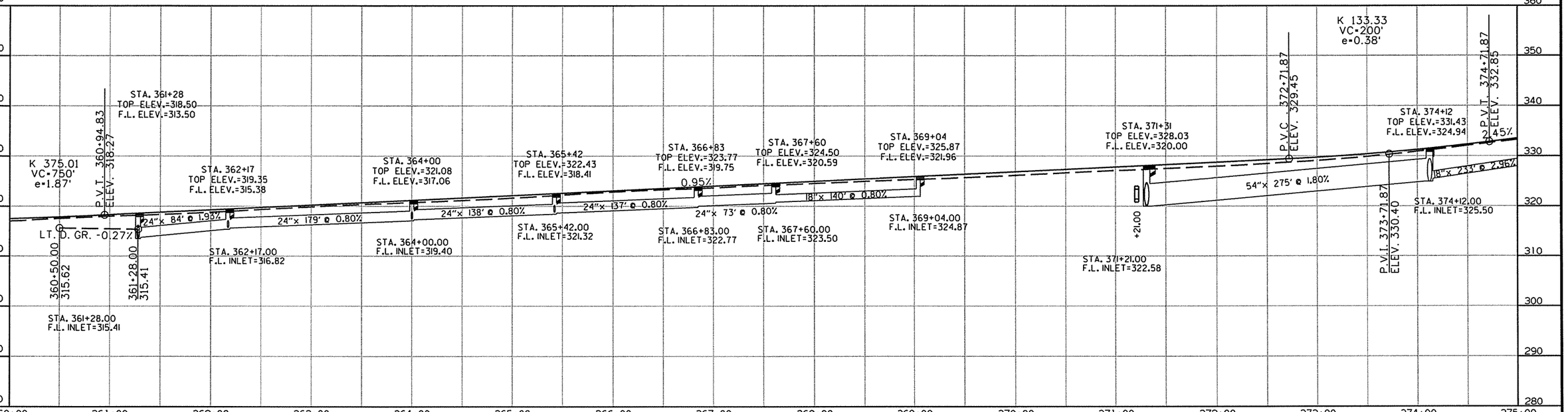
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	99	331

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-31-2015

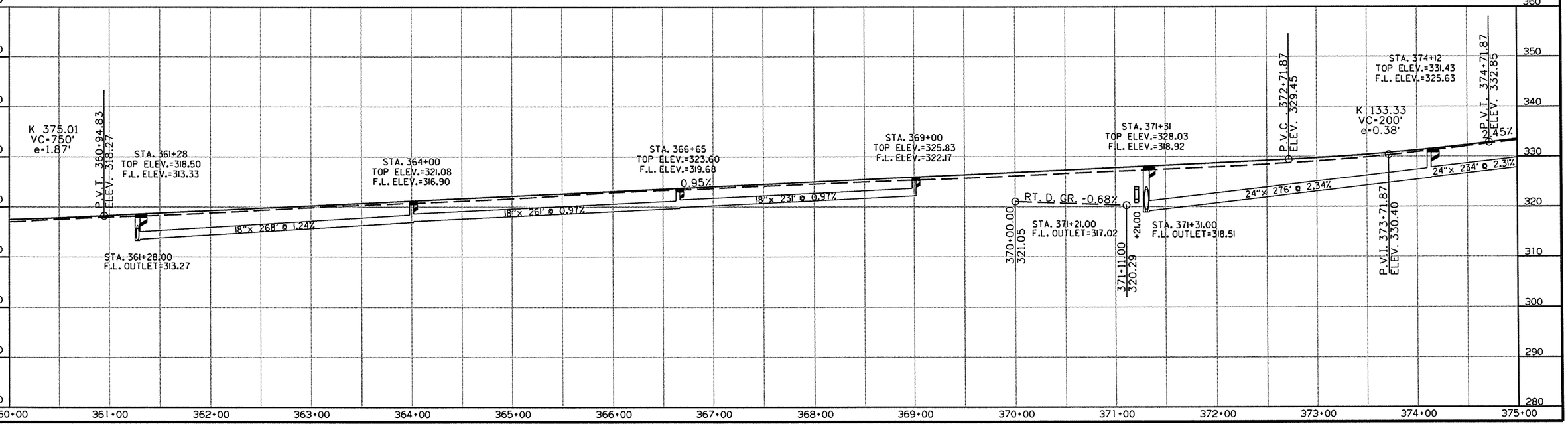
HWY. 82 LT. - STORM SEWER



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

UN-NAMED TRIBUTARY TO NATIONS CREEK:
THIS STREAM IS CLASSIFIED AS EPHEMERAL.
THE TOP OF CHANNEL ELEVATION IS 273.5 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	100	331

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 378+33 IN PLACE
18" x 38' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 379+23 IN PLACE
18" x 59' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 379+98 IN PLACE
18" x 23' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 381+35 IN PLACE
18" x 45' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 382+48 IN PLACE
24" x 49' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 384+64 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 387+58 CONSTRUCT
APROACH ON LT. = 65 CU. YDS.

STA. 378+65 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 211' PIPE OUTLET
CONNECT TO D.I. @ STA. 376+50 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 383+26 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 294' PIPE OUTLET
CONNECT TO D.I. @ STA. 380+28 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

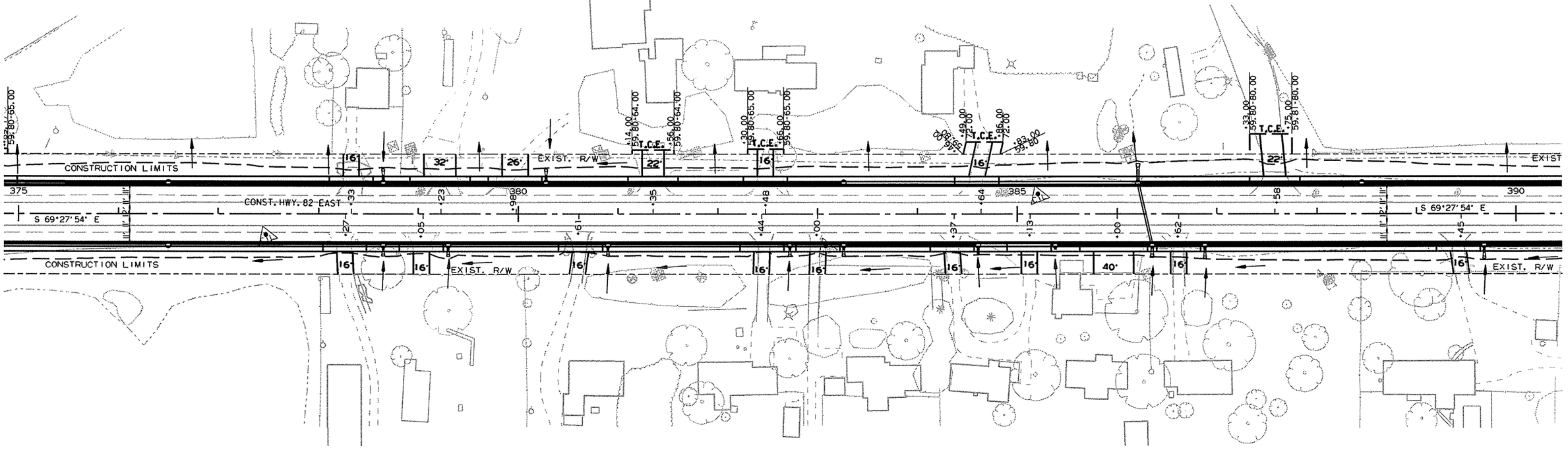
STA. 376+50 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 233' PIPE OUTLET
CONNECT TO D.I. @ STA. 374+12 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'10"

STA. 380+28 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 159' PIPE OUTLET
CONNECT TO D.I. @ STA. 378+65 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 386+21 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 11' R.C. STUB OUTLET
WITH FES.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'10"

STA. 388+45 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 220' PIPE OUTLET
CONNECT TO D.I. @ STA. 386+21 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 386+21 IN PLACE
24" x 68' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE



STA. 376+50 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 24" x 234' PIPE OUTLET
CONNECT TO D.I. @ STA. 374+12 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'10"

STA. 378+65 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 2' R.C. STUB INLET WITH FES.
& 24" x 211' PIPE OUTLET
CONNECT TO D.I. @ STA. 376+50 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'2"

STA. 379+30 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 3' R.C. STUB INLET WITH FES.
& 24" x 61' PIPE OUTLET
CONNECT TO D.I. @ STA. 378+65 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'6"

STA. 380+90 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 2' R.C. STUB INLET WITH FES.
& 24" x 156' PIPE OUTLET
CONNECT TO D.I. @ STA. 379+30 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'4"

STA. 382+72 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 3' R.C. STUB INLET WITH FES.
& 24" x 178' PIPE OUTLET
CONNECT TO D.I. @ STA. 380+90 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'0"

STA. 383+26 - CONSTRUCT
D.I. ON RT. WITH
18" x 2' R.C. STUB INLET WITH FES.
& 24" x 50' PIPE OUTLET
CONNECT TO D.I. @ STA. 382+72 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'10"

STA. 384+61 - CONSTRUCT
D.I. ON RT. WITH OPENING IN BACK
& 18" x 131' PIPE OUTLET
CONNECT TO D.I. @ STA. 383+26 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'6"

STA. 385+38 - CONSTRUCT
D.I. ON RT. WITH
OPENING IN BACK
& 18" x 93' PIPE OUTLET
CONNECT TO D.I. @ STA. 386+35 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 386+35 - CONSTRUCT
D.I. ON RT. WITH
24" x 4' R.C. STUB INLET WITH FES.
& 24" x 61' R.C. PIPE OUTLET
CONNECT TO D.I. @ STA. 386+21 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'7"

STA. 386+88 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 49' PIPE OUTLET
CONNECT TO D.I. @ STA. 386+35 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'1"

STA. 389+68 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 276' PIPE OUTLET
CONNECT TO D.I. @ STA. 386+88 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 378+27 - IN PLACE
18" x 40' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

STA. 379+05 - IN PLACE
18" x 41' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 380+61 - IN PLACE
18" x 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 382+44 - IN PLACE
18" x 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 383+00 - IN PLACE
18" x 21' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

STA. 384+37 - IN PLACE
18" x 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

STA. 385+13 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 386+00 CONSTRUCT
APPROACH ON RT. = 20 CU. YDS.

STA. 386+62 - IN PLACE
18" x 20' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 389+45 - IN PLACE
18" x 18' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

3/31/2014

R070365.DGN

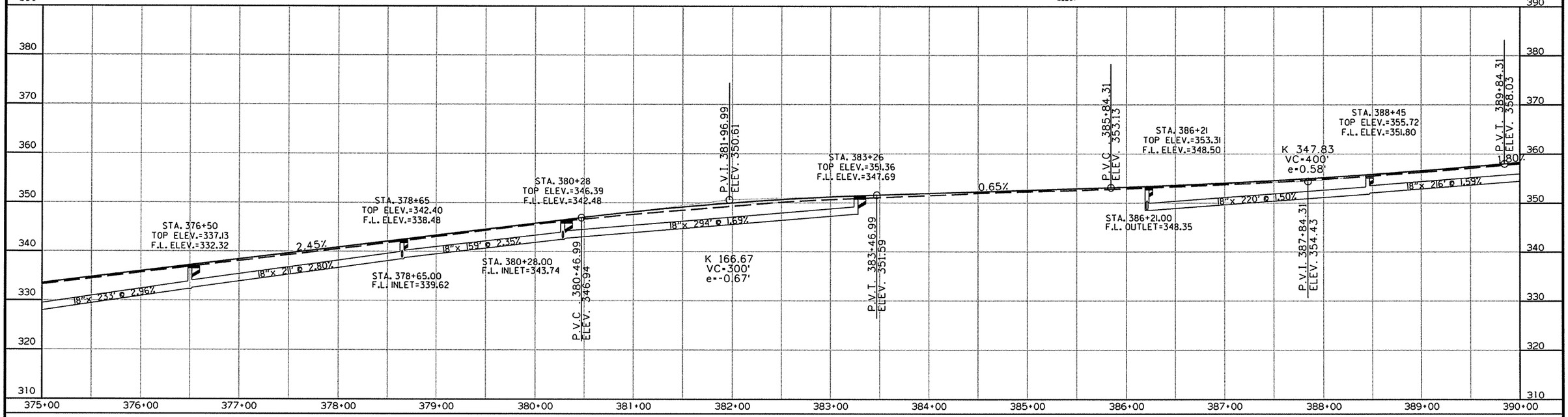
HWY. 82

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	101	331

(2) PROFILE SHEET

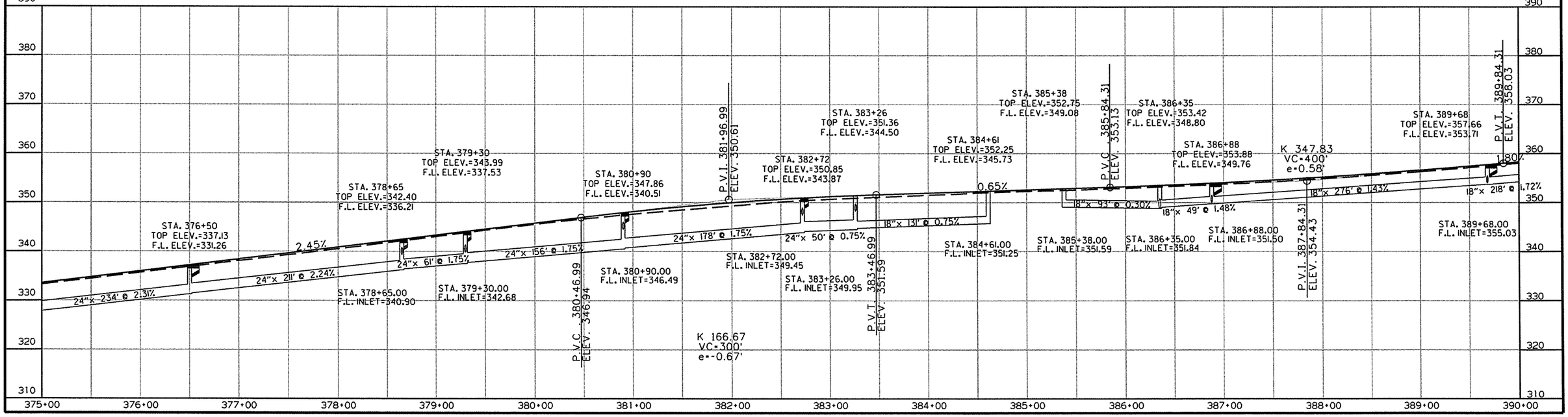
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
12-33-15
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER



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

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	102	331

(2) PLAN SHEET

STA. 392+52 CONSTRUCT
APPROACH ON LT. = 15 CU. YDS.

STA. 392+90 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 6' R.C. STUB INLET WITH FES.
& 18" x 221' PIPE OUTLET
CONNECT TO D.I. @ STA. 390+65 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 396+21 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION WITH F.E.S.
& 24" x 26' R.C. STUB OUTLET
CONNECT TO EXISTING 24" x 69' R.C. PIPE
TY MO = 4' I.D.
TY C = 4' x 4'
H = 9'9"

STA. 396+21 - IN PLACE
24" x 69' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
RETAIN & REMOVE HDWLS. LT. & RT.
CONNECT TO D.I. LT. & RT.
Q50 = 28 CFS D.A. = 6.50 ACRES

STA. 399+00 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 275' PIPE OUTLET
CONNECT TO D.I. @ STA. 396+21 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 6'5"

STA. 401+39 IN PLACE
18" x 28' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 402+22 IN PLACE
18" x 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

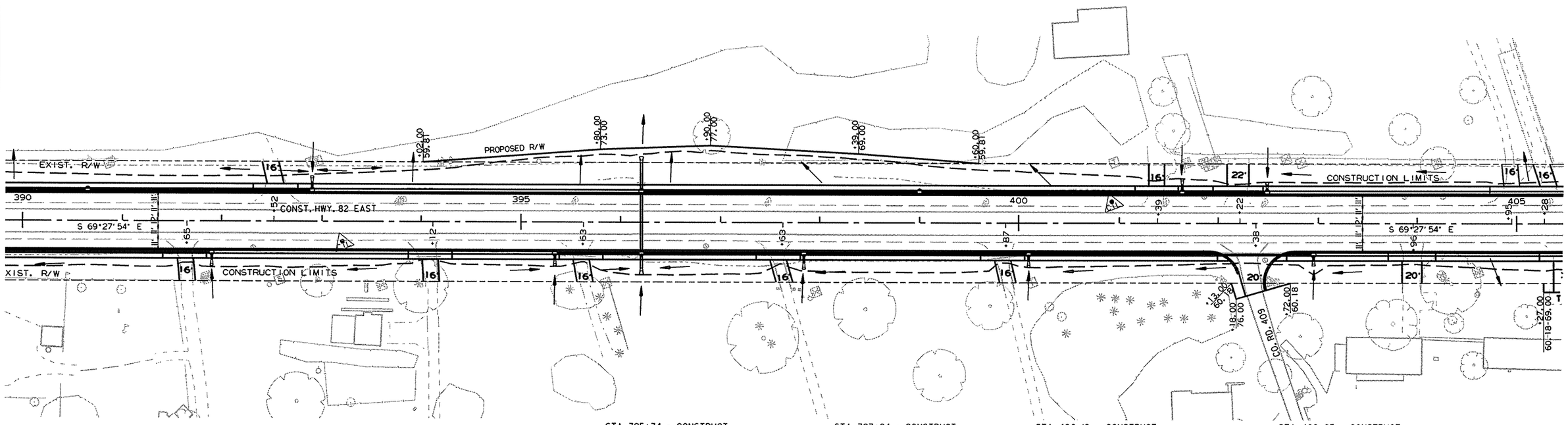
STA. 404+95 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 390+65 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 216' PIPE OUTLET
CONNECT TO D.I. @ STA. 388+45 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 401+64 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 260' PIPE OUTLET
CONNECT TO D.I. @ STA. 399+00 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'3"

STA. 402+49 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 2' R.C. STUB INLET WITH FES.
& 18" x 81' PIPE OUTLET
CONNECT TO D.I. @ STA. 401+64 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"



STA. 391+90 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 218' PIPE OUTLET
CONNECT TO D.I. @ STA. 389+68 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'2"

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
395+64	397+63	RT.	B	9	199

STA. 391+65 - IN PLACE
18" x 24' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 394+12 - IN PLACE
18" x 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH =
5 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 395+63 - IN PLACE
18" x 28' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 397+63 - IN PLACE
18" x 24' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 395+34 - CONSTRUCT
D.I. ON RT. WITH
18" x 4' R.C. STUB INLET WITH FES.
& 18" x 83' PIPE OUTLET
CONNECT TO D.I. @ STA. 396+21 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 396+21 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
24" x 13' R.C. STUB INLET WITH FES.
CONNECT TO EXISTING PIPE
TY MO = 4' I.D.
TY C = 4' x 4'
H = 7'8"

STA. 397+84 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 7' R.C. STUB INLET WITH FES.
& 18" x 159' PIPE OUTLET
CONNECT TO D.I. @ STA. 396+21 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'9"

STA. 399+87 - IN PLACE
18" x 29' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 400+10 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 222' PIPE OUTLET
CONNECT TO D.I. @ STA. 397+84 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'7"

STA. 402+38 - IN PLACE
18" x 32' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH

STA. 402+95 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 3' R.C. STUB INLET WITH FES.
& 18" x 281' PIPE OUTLET
CONNECT TO D.I. @ STA. 400+10 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 403+96 - IN PLACE
18" x 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

STA. 402+04 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.2 SQ. YDS.

STA. 402+64 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 5.4 SQ. YDS.

3/31/2014

R070365.DGN

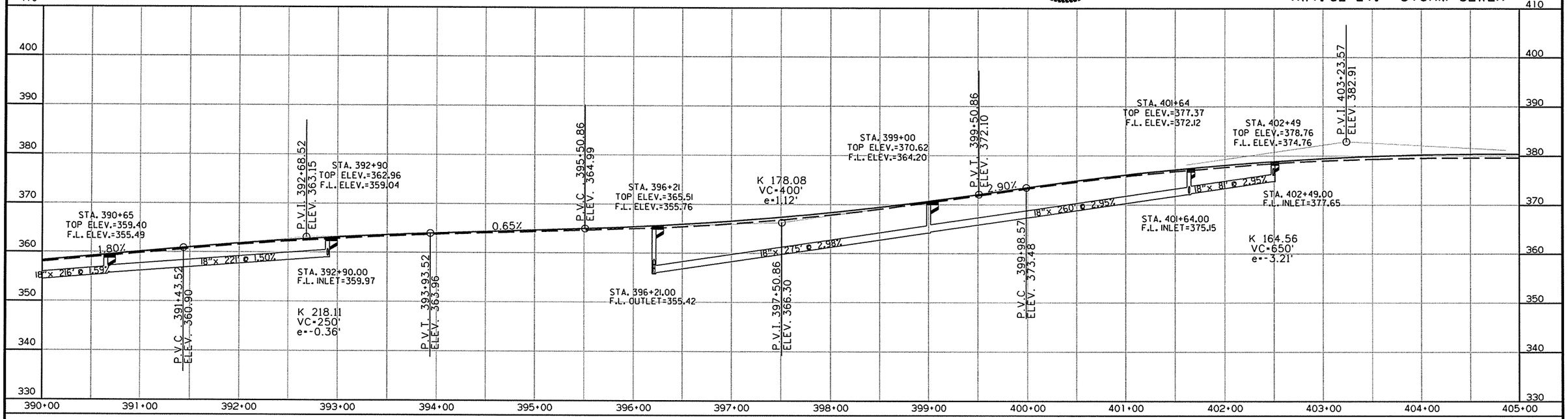
HWY. 82

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	103	331

(2) PROFILE SHEET

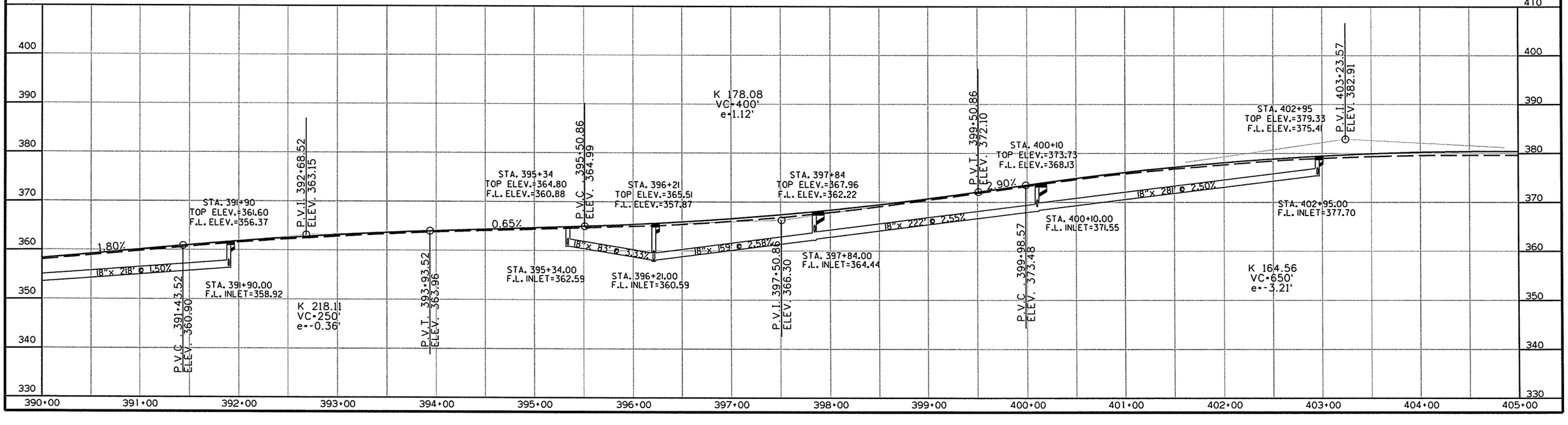
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-20-15
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER



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

HWY. 82 RT. - STORM SEWER



R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	104	331

(2) PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STA. 405+28 CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

STA. 407+77 CONSTRUCT
APPROACH ON LT. = 30 CU. YDS.

STA. 407+38 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 295' PIPE OUTLET
CONNECT TO D.I. @ STA. 410+37 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 408+56 CONSTRUCT
APPROACH ON LT. = 55 CU. YDS.

STA. 410+37 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 69' PIPE OUTLET
CONNECT TO D.I. @ STA. 411+10 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'0"

STA. 411+10 - CONSTRUCT
D.I. ON LT. WITH
18" x 106' PIPE OUTLET
CONNECT TO D.I. @ STA. 412+20 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'7"

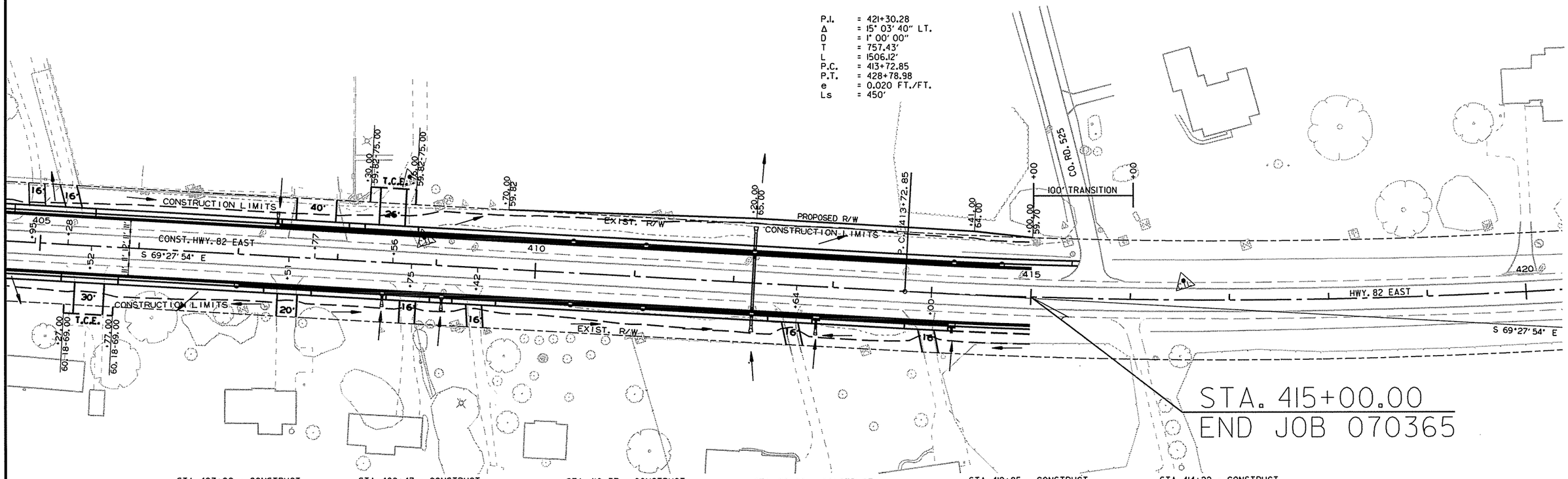
STA. 412+20 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 17' R.C. STUB OUTLET
WITH FES.
CONNECT TO EXISTING 24" x 59' R.C. PIPE
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'9"

STA. 414+22 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 198' PIPE OUTLET
CONNECT TO D.I. @ STA. 412+20 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 414+70 - CONSTRUCT
D.I. ON LT. WITH
18" x 44' PIPE OUTLET
CONNECT TO D.I. @ STA. 414+22 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 415+43 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT. = 3.8 SQ. YDS.

P.I. = 421+30.28
Δ = 15° 03' 40" LT.
D = 1° 00' 00"
T = 757.43'
L = 1506.12'
P.C. = 413+72.85
P.T. = 428+78.98
e = 0.020 FT./FT.
Ls = 450'



STA. 407+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 143' PIPE OUTLET
CONNECT TO D.I. @ STA. 408+47 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'7"

STA. 408+47 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET WITH FES.
& 18" x 56' PIPE OUTLET
CONNECT TO D.I. @ STA. 409+07 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'5"

STA. 409+07 - CONSTRUCT
D.I. ON RT. WITH
18" x 5' R.C. STUB INLET WITH FES.
& 18" x 126' PIPE OUTLET
CONNECT TO D.I. @ STA. 410+37 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'6"

STA. 410+37 - CONSTRUCT
D.I. ON RT. WITH
18" x 69' PIPE OUTLET
CONNECT TO D.I. @ STA. 411+10 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"

STA. 411+10 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 106' PIPE OUTLET
CONNECT TO D.I. @ STA. 412+20 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 4'4"

STA. 412+20 - CONSTRUCT
D.I. ON RT. WITH
24" x 10' R.C. STUB INLET WITH FES.
CONNECT TO EXISTING PIPE
TY MO = 4' I.D.
TY C = 4' x 4'
H = 5'6"

STA. 412+20 - IN PLACE
24" x 48' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE
5' LT. AND 5' RT.
TO A COMPLETED LENGTH OF 58'
CONNECT TO D.I. LT. & RT.
(CLASS IV) (TYPE 3 BEDDING)
Q50 = 13 CFS D.A. = 4.90 ACRES
24" R.C. PIPE = 18' LIN. FT.

STA. 412+85 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 9' R.C. STUB INLET WITH FES.
& 18" x 60' PIPE OUTLET
CONNECT TO D.I. @ STA. 412+20 RT.
TY E = 4' x 4'
H = 5'1"

STA. 414+22 - CONSTRUCT
JUNCTION BOX ON RT. WITH
18" x 6' R.C. STUB INLET WITH FES.
& 18" x 131' PIPE OUTLET
CONNECT TO JUNCTION BOX @ STA. 412+85 RT.
TY E = 4' x 4'
H = 3'11"

STA. 405+52 - IN PLACE
18" x 39' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 407+51 - IN PLACE
18" x 25' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 408+75 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

STA. 409+42 - IN PLACE
18" x 25' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 412+64 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 414+00 - IN PLACE
15" x 29' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 10 CU. YDS.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.

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

HWY. 82

3/31/2014

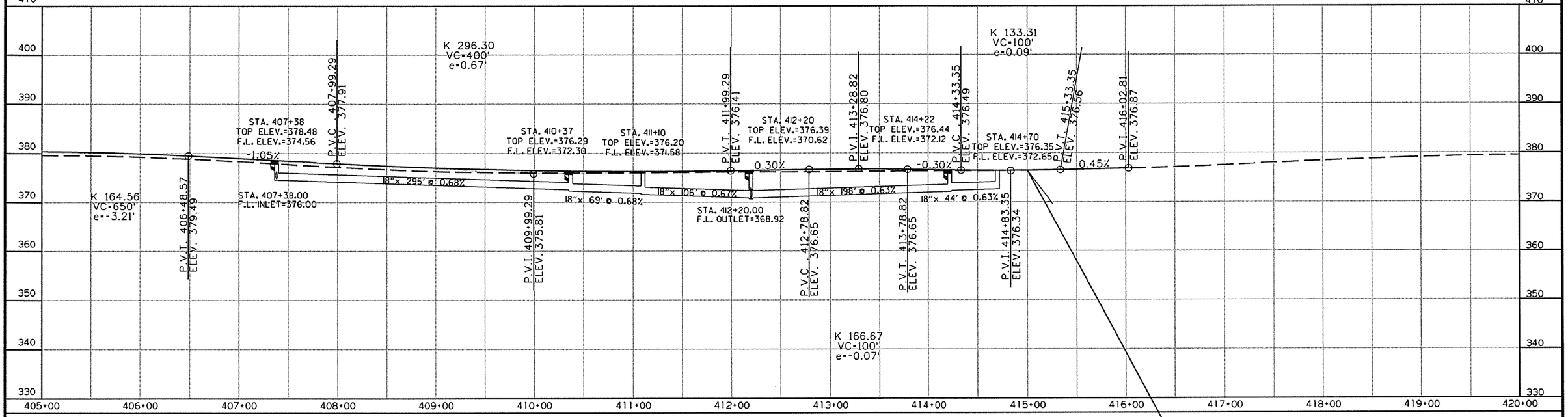
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	105	331

(2) PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-30-15
TRINITY D. SMITH

HWY. 82 LT. - STORM SEWER

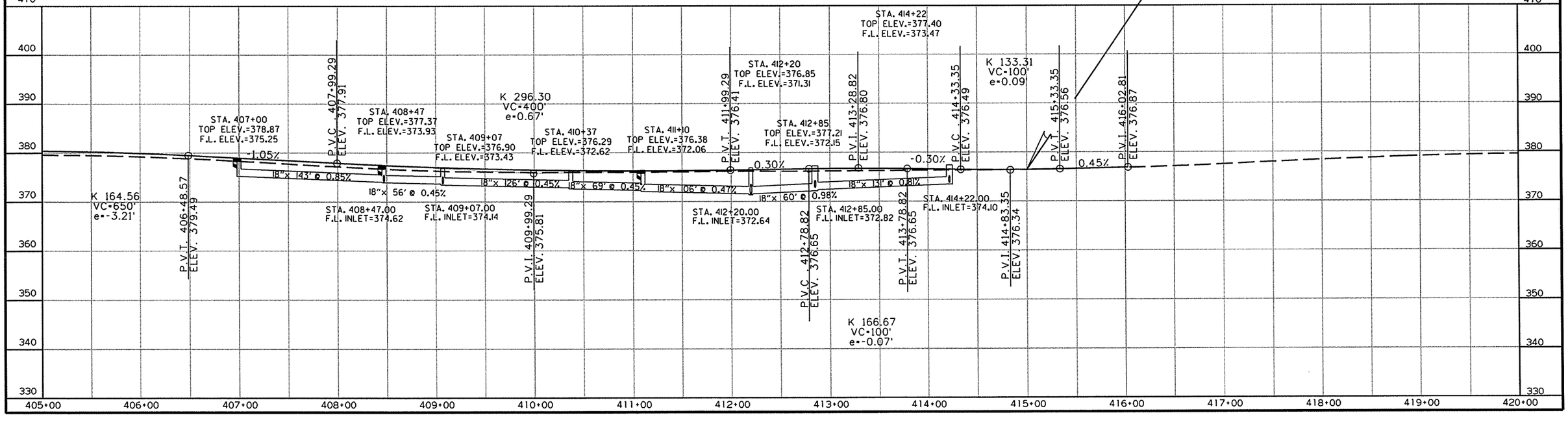


REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 410+35.35 BEGIN SUPERELEVATION
STA. 414+85.35 MAX SUPERELEVATION 0.020'/'
STA. 415+00.00 MATCH EXIST. SUPERELEVATION

STA. 415+00.00
END JOB 070365

HWY. 82 RT. - STORM SEWER

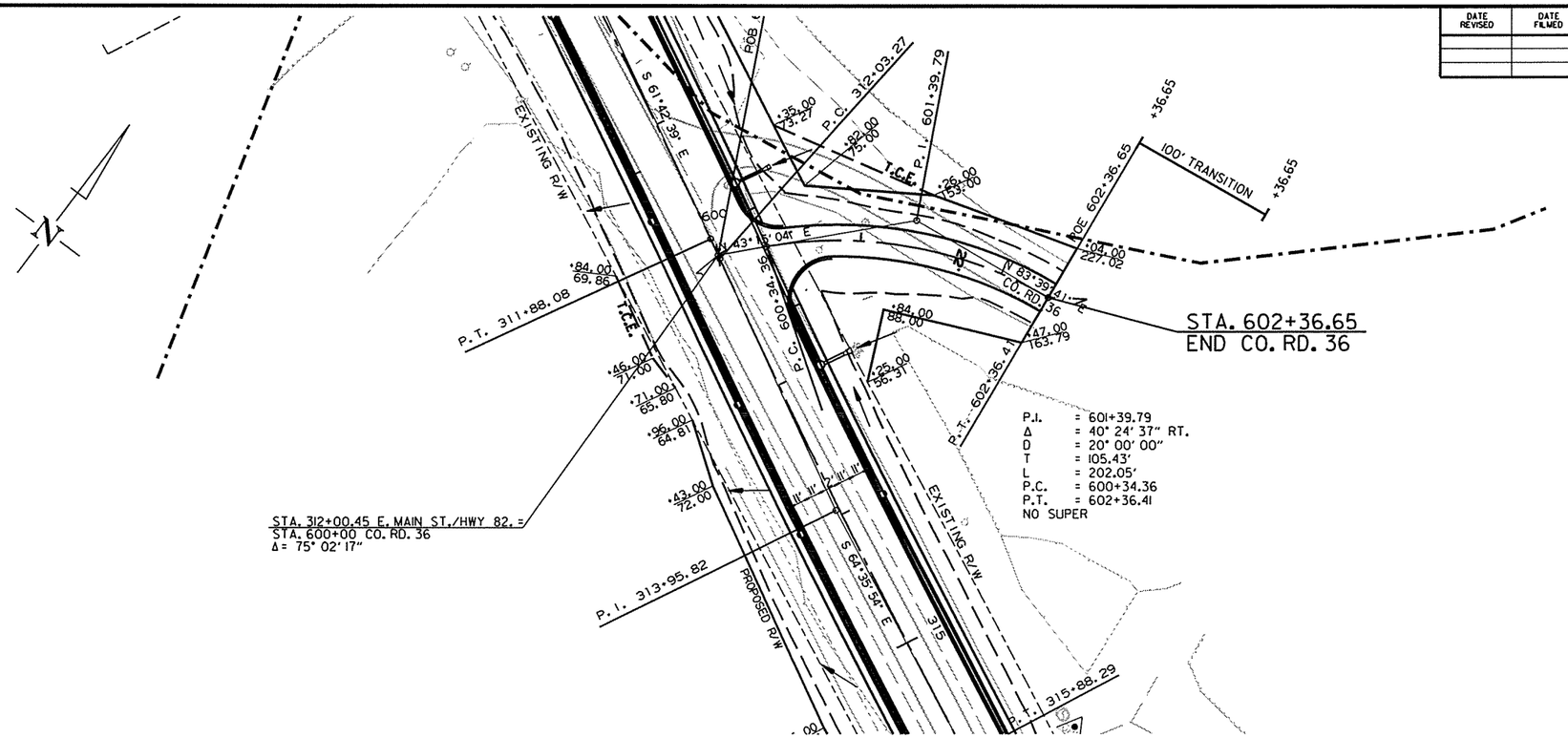


R070365.DGN 3/31/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	106	331

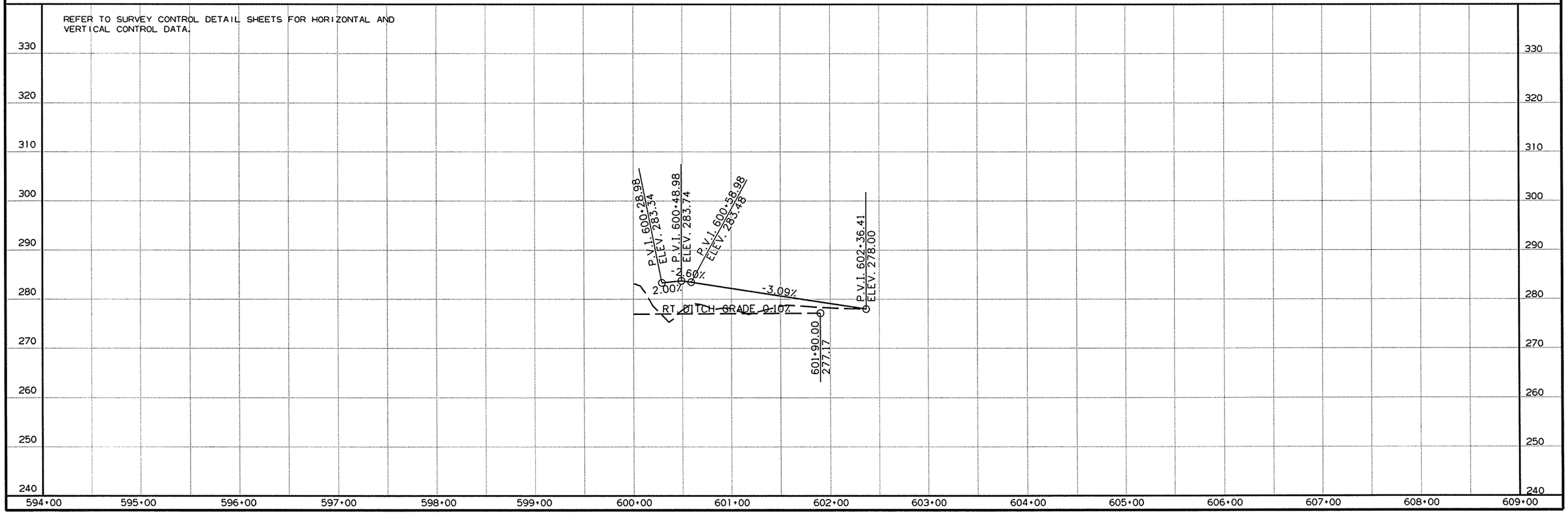
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15



CO. RD. 36

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



3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	107	331

(2) SYSTEM MAP

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

HWY. 79/82-E. NORTH ST. /WARNOCK SPRINGS RD.

HWY. 79/82-WALMART DRIVE

HWY. 79/82-HWY. 82B/E. MAIN ST.

MAGNOLIA

LYNN
AZALEA
HOLLY
PINERIDGE
N LAKEWOOD
S LAKEWOOD
BLUEBIRD CR
DOGWOOD
MOCKINGBIRD PL
HONEY SUCKLE RD
E GREENE
PINEVIEW
GEAN
SUNSET BLVD
HILLCREST
ROMANO
MARCELLA
VERA
LAWTON CR
PARTEE DR
MIMOSA
LEE
COOPER
RIDGEWOOD
RAYE
CHESTNUT
HIGH SCHOOL DR
BRADLEY
NURSERY
JOY
OLIVE
FELIX
LINDA
N DUDNEY RD
HIGHLAND CR
LACARI
NANCY
MONZINGO
BURNETT CR
SUE
FOSTER
WOODWARD
HOWARD
FRANCES
SARA
COLLEGE VIEW
ALTA VISTSA CR
ENGLER
SAMUEL
HAIRE
HINES
APPLE
COLQUITT
REEVES
TERRACE
MARGARET
ALICE
SUSIE
HAZEL CR
IOWA
355
W COLUMBIA
E COLUMBIA
HOSPITAL DR
RUTH
BESSIE
JEANETTE
BUFFINGTON
MAGNOLIA
LUCY CR
CLEVELAND
CYPRESS
SPRUCE
PEACH
MAPLE
SMITH
BEECH
E McNEIL RD
ACADEMY
W PARKWAY
WARNOCK SPRING RD
PITMAN
EAST SIDE PARK
HOLLENSWORTH
WILLIAMSON
SYLVIA
MARTEL
N FREDERICK
TROY
N CORDELIA
M 5 TH
N JEFFERSON
N WASHINGTON
N JACKSON
N PINE
E NORTH
UNION
OAKLAND
WILSON
VERDA
KING
BOSWELL
82 BUS
82
E MAIN
S PINE RD
E CALHOUN
GLADYS
NORMA
LELIA
S DUDNEY RD
GRAYSON
CALHOUN
S JEFFERSON
S WASHINGTON
S JACKSON
MEADOWBROOK LN
SHERWOOD DR
S FREDERICK
FAIRVIEW
CORDELIA
DEWBERRY
BLACKBERRY
TAYLOR
DAVIS
BOOTH
SOUTH
ROSS
ELM
MARTHA
LARRY
STRICKLAND CR
McARTHUR
JACK
MARIE
79
Creek
CHINQUEPIN DR
ACORN ALLEY
WHIPPOOR-WILL RD
SASSAFRAS DR
BLACKGUM
SUMAC CR
CATALPA DR
CHERRYWOOD DR
OLD EL DORADO HWY
SUMMERWOOD DR
SPRINGWOOD DR
BRENTWOOD DR

SCALE IN FEET
0 500 1000 2000

DATE: 10-29-15 FILE NAME: t070365.job.dgn

LOCATION: HWY. 79 No.-CO. RD. 525
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=1000' DRAWN BY: CJS

t100822_job.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	108	331

(2) SUMMARY OF TRAFFIC SIGNAL QUANTITIES

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101 (2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. THE SERVICE POINT SHALL NOT BE MORE THAN 10 FEET FROM THE CONTROLLER. THE CONTRACTOR SHALL PROVIDE AND INSTALL A TWO CIRCUIT BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS OT THE CONTROLLER.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.
11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDIATION SYSTEM IN THE CITY.
17. TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY AVOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF RAODWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY THE FACE OF A NON-BREAKWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVEING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND THE HAND-HOLE COVER AT THE BASE OF THE POLE. THE TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT THE POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGN, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.
25. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	HWY. 79/82 HWY. 82B-E. MAIN ST.	HWY. 79/82 WALMART DR.	HWY. 79/82 E. NORTH ST.-WARNOCK SPRINGS RD.	TOTAL JOB QUANTITY	UNIT
SP&701	ACTUATED CONTROLLER TS 2-TYPE 2 (8 PHASES)	2	1	1	4	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	20	20	14	54	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	2	8	12	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	0	0	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2733	1800	1910	6443	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	149	275	1689	2113	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	0	159	0	159	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	794	653	802	2249	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	40	20	20	80	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	90	112	0	202	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	0	0	112	112	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	20	25	65	LIN. FT.
710	NON-METALLIC CONDUIT (3")	510	448	580	1538	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	2	6	6	14	EACH
711	CONCRETE PULL BOX (TYPE 2)	5	0	0	5	EACH
713	SPAN WIRE ASSEMBLY	1	1	1	3	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	0	1	0	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	2	0	0	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	2	0	0	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (50')	0	1	0	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	0	0	1	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	0	1	1	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56')	0	1	0	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')	0	0	2	2	EACH
716	TREATED WOOD POLE (CLASS 2, 44')	6	5	5	16	EACH
733	VIDEO CABLE	3918	2788	3831	10537	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	17	13	15	45	EACH
733	VIDEO DETECTOR RELOCATION	2	0	0	2	EACH
733	VIDEO MONITOR (CLR)	1	1	1	3	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	9	4	5	18	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	2	1	1	4	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1018	902	1066	2986	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	533	527	731	1791	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	234	249	264	747	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	56	29	63	148	LIN. FT.
SP	LED LUMINAIRE ASSEMBLY	4	4	4	12	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	12	0	0	12	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.33	0.33	0.34	1.00	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	2	1	1	4	EACH
SP	VIDEO DETECTOR ROTATION	16	0	1	17	EACH
SP	18" STREET NAME SIGN	0	0	4	4	EACH

• QUANTITIES INCLUDE ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR.

1070365_job.dgn 10-29-15

DATE: 10-29-15 FILE NAME: t070365_job.dgn

LOCATION: HWY. 79 No.-CO. RD. 525
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	109	331

(2) TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGE 1 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	ACTUATED CONTROLLER TS-2 TYPE 2, (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	867	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	90	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	1	EACH
713	SPAN WIRE ASSEMBLY	1	EACH
716	TREATED WOOD POLE (CLASS 2, 44')	6	EACH
733	VIDEO CABLE	1736	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	8	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	30	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	30	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.16	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

STAGE 1
THE EXISTING TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL STAGE 1 TRAFFIC SIGNAL IS COMPLETED. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).
SUFFICIENT LENGTH OF TRAFFIC SIGNAL CABLE AND VIDEO CABLE SHALL BE PROVIDED TO ACCOMMODATE ALL STAGES OF TEMPORARY TRAFFIC SIGNAL OPERATION.

STAGE 2 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
733	VIDEO DETECTOR RELOCATION	2	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4	EACH
SP	VIDEO DETECTOR ROTATION	8	EACH

STAGE 2:
ROTATE ALL VIDEO DETECTORS AND RELOCATE VIDEO DETECTORS V3 AND V7. VIDEO DETECTOR V3 IS ASSIGNED AS V8 IN STAGES 2 AND 3. VIDEO DETECTOR V8 IS ASSIGNED AS V3 IN STAGES 2 AND 3. SEE STAGES 2 AND 3 PLAN SHEETS AND WIRING DIAGRAM SHEET FOR DETAILS. RELOCATE TRAFFIC SIGNAL HEADS 3, 4, 7, AND 8.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLAN.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS).

STAGE 3 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	8	EACH
SP	VIDEO DETECTOR ROTATION	8	EACH

STAGE 3:
ROTATE ALL VIDEO DETECTORS AND RELOCATE ALL TRAFFIC SIGNAL HEADS.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 3 TRAFFIC SIGNAL PLAN.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS).

PERMANENT TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	ACTUATED CONTROLLER TS-2 TYPE 2, (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	12	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.)	1866	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	149	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	794	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	510	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
711	CONCRETE PULL BOX (TYPE 2)	4	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	2	EACH
733	VIDEO CABLE	2182	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	9	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1018	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	503	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	234	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	26	LIN. FT.
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.17	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• ONE SPARE VIDEO PROCESSOR AND DETECTOR SHALL BE SUPPLIED.

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL.
REMOVE STAGE 1-3 TEMPORARY TRAFFIC SIGNAL COMPONENTS AND INSTALL PERMANENT TRAFFIC SIGNAL.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS).

DATE: 10-29-15 FILE NAME: t070365_01.dgn

LOCATION: HWY. 79/82-HWY. 828/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

t070365_01.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		070365	110	331

(2) SIGNALIZATION PLAN SHEET

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

EXIST. R/W

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER

2-2" DIA. GALV. STEEL CONDUIT TO AND UP WOOD POLE

P.C. 302+68

P.C. 303+13

P.C. 305+01.68

+77.92
136.00

+32.18
132.00

EXISTING R/W

6' X 50' VIRTUAL PRESENCE VDZ (TYPICAL)

TYPE 2 PULL BOX

TREATED WOOD POLE (CLASS 2, 44')(TYPICAL)

E. MAIN ST.

HWY. 79/82

HWY. 79

HWY. 82

Vz41
Vz71 COMB.
Vz42 COMB.
Vz72
Vz62 COMB.
Vz11 COMB.
Vz12
Vz32
Vz31 COMB.
Vz82 COMB.
Vz52
Vz51 COMB.
Vz22 COMB.
Vz81

V1 V2 V3 V4 V5 V6 V7 V8

A B C D E F

1 2 3 4 5 6 7 8

25'

S 67°06'39" E

S 64°35'54"

220

305

EXIST. ROW

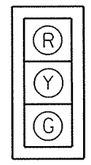
Vz81 LOCATED 200' BEHIND STOP LINE

USE SIDEWALK GUY (TYP.)

6' X 6' VIRTUAL PULSE VDZ (TYP.)
Vz21 & Vz51 LOCATED 85' BEHIND STOP BAR (TYPICAL)

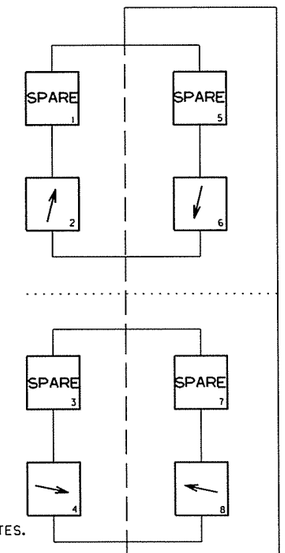
Vz22 LOCATED 115' BEHIND STOP LINE

SIGNAL FACES
12" LENSES



1&2
3&4
5&6
7&8

PHASING DIAGRAM



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 82 - E. MAIN ST. THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
HWY. 82- E. MAIN ST. LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

SCALE IN FEET
0 20 40 80

DATE: 10-28-15 FILE NAME: t070365_01.dgn

STAGE 1 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

10-28-15
t070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	111	331

(2) SIGNALIZATION PLAN SHEET

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER

2-2" DIA. GALV. STEEL CONDUIT TO AND UP WOOD POLE

6' X 50' VIRTUAL PRESENCE VDZ (TYPICAL)

TREATED WOOD POLE (CLASS 2, 44') (TYPICAL)

EXIST. ROW

EXIST. R/W

P.T. 2+76.88

P.C. 3+02.60

P.C. 3+14.37

P.T. 3+26.15

P.C. 3+60.36

P.T. 3+74.13

P.C. 3+77.92

P.T. 4+32.18

136.00

132.00

220

305

S 67°08'39" E

S 01°00'54" E

HWY. 79/82

HWY. 79

HWY. 82

E. MAIN ST.

Vz11 COMB.

Vz12

Vz41

Vz71 COMB.

Vz42 COMB.

Vz72

Vz31 COMB.

Vz82 COMB.

Vz81

Vz81 LOCATED 200' BEHIND STOP LINE

Vz52

Vz51 COMB.

Vz22 LOCATED 115' BEHIND STOP LINE

6' X 6' VIRTUAL PULSE VDZ (TYP.) Vz21 & Vz51 LOCATED 85' BEHIND STOP BAR (TYPICAL)

USE SIDEWALK GUY (TYP.)

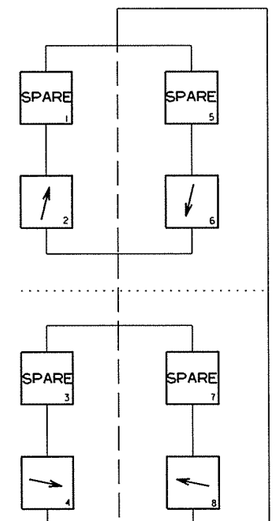
V1 V2 V3 V4 V5 V6 V7 V8

A B C D E F

1 2 3 4 5 6 7 8

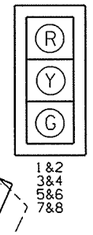
25'

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



1&2
3&4
5&6
7&8

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 82 - E. MAIN ST. THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
HWY. 82- E. MAIN ST. LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

SCALE IN FEET
0 20 40 80

STAGE 2 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365_01.dgn

10-29-15
1070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	112	331

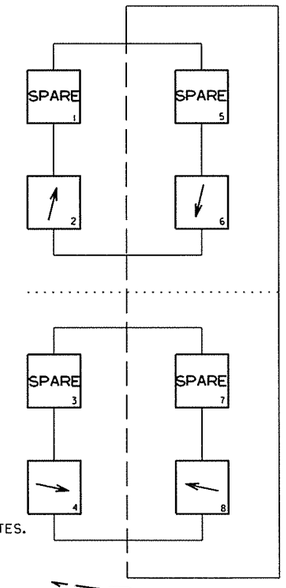
(2) SIGNALIZATION PLAN SHEET

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

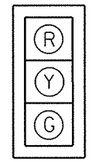
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

EXIST. R/W
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER
2-2" DIA. GALV. STEEL CONDUIT TO AND UP WOOD POLE
Vz62A COMB.
Vz62B COMB.
Vz11 COMB.
Vz62 A&B LOCATED 115' BEHIND STOP LINE
6' X 50' VIRTUAL PRESENCE VDZ (TYPICAL)
Vz41B
Vz41A
E. MAIN ST.
Vz71 COMB.
Vz42B COMB.
Vz42A COMB.
Vz12
Vz72
Vz32
Vz82 COMB.
Vz31 COMB.
Vz81
Vz51 COMB.
Vz21
HWY. 82
EXIST. ROW
TREATED WOOD POLE (CLASS 2, 44')(TYPICAL)
Vz81 LOCATED 200' BEHIND STOP LINE
USE SIDEWALK GUY (TYP.)
6' X 6' VIRTUAL PULSE VDZ (TYP.) Vz21 & Vz51 LOCATED 85' BEHIND STOP BAR (TYPICAL)
P.C. 303+74.34
P.T. 304+76.92
136.00
P.C. 305+01.68
P.T. 306+32.18
132.00
S 67°08'39" E
S 64°35'54" E
25'
A
B
C
D
E
F
V1
V2
V3
V4
V5
V6
V7
V8

PHASING DIAGRAM



SIGNAL FACES
12" LENSES



1&2
3&4
5&6
7&8

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 82 - E. MAIN ST. THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
HWY. 82- E. MAIN ST. LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

STAGE 3 TRAFFIC SIGNAL

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_01.dgn

LOCATION:	HWY. 79/82-HWY. 82B/E. MAIN ST.			
CITY:	MAGNOLIA			
COUNTY:	COLUMBIA			
DISTRICT:	7	SCALE:	1"=40'	DRAWN BY: CJS

10-29-15
1070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	113	331

(2) SIGNALIZATION PLAN SHEET

STAGES 1-2

DETECTOR SYSTEM DESCRIPTION: JOB 070365

HWY.79/82-HWY.82B/E.MAIN ST. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	
Vz12	SB LEFT TURN NEAR	LOCAL			2	V1	1			CAMERA V1	
Vz21	NB FAR	LOCAL			5	V2	2			CAMERA V2	
Vz22	NB NEAR	COMB.			6	V10	2	2		CAMERA V2	
Vz31	WB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	
Vz32	WB LEFT TURN NEAR	LOCAL			10	V3	3			CAMERA V3	
Vz41	EB FAR	LOCAL			13	V4	4			CAMERA V4	
Vz42	EB NEAR	COMB.			14	V12	4	4		CAMERA V7	
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	
Vz61	SB FAR	LOCAL			3	V6	6			CAMERA V6	
Vz62	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	
Vz71	EB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	
Vz72	EB LEFT TURN NEAR	LOCAL			16	V7	7			CAMERA V7	
Vz81	WB FAR	LOCAL			11	V8	8			CAMERA V8	
Vz82	WB NEAR	COMB.			12	V16	8	8		CAMERA V3	
					SPARE AMP. CHN. * =						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

STAGE 3

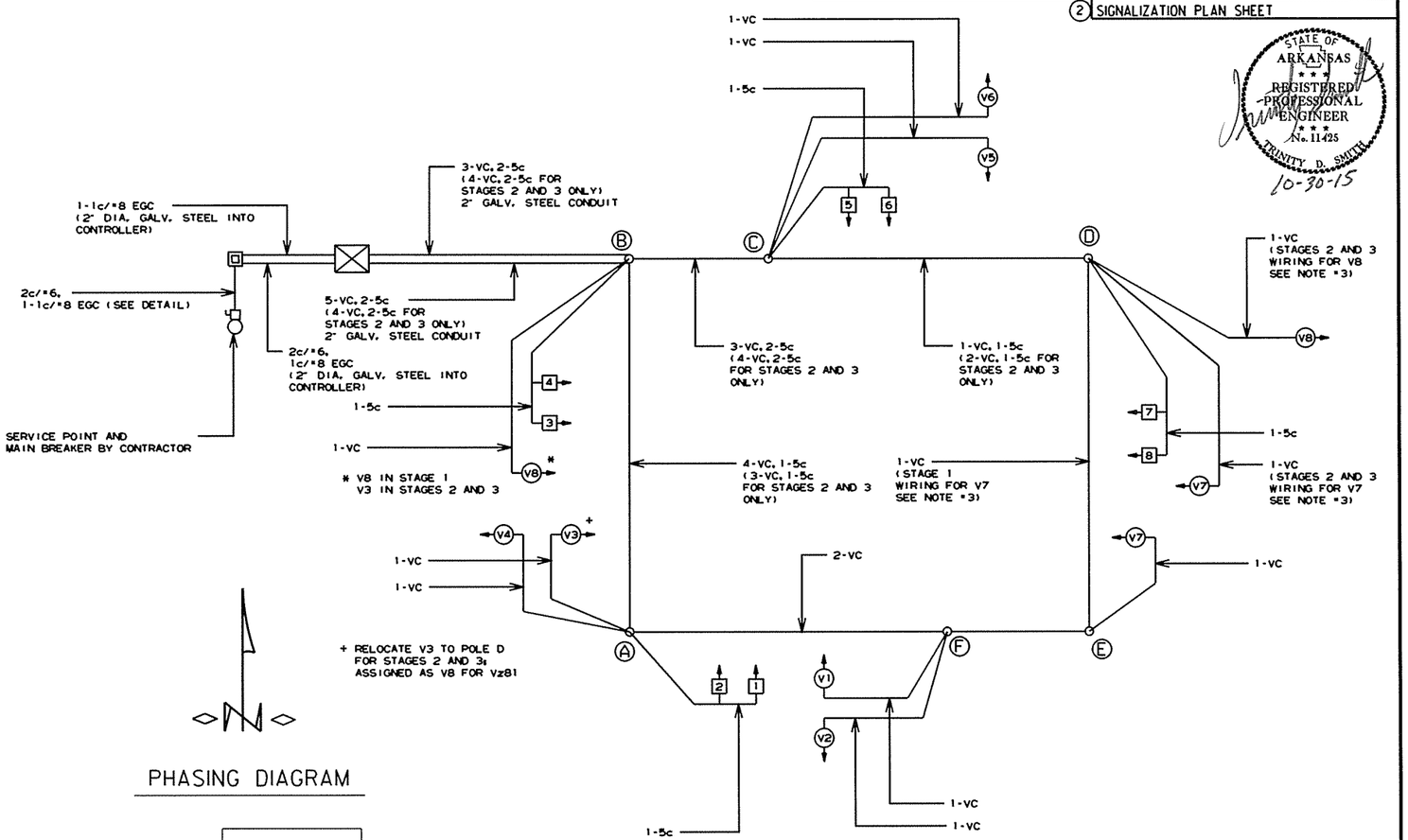
DETECTOR SYSTEM DESCRIPTION: JOB 070365

HWY.82/HWY.79 & HWY.82B/E.MAIN ST. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	
Vz12	SB LEFT TURN NEAR	LOCAL			2	V1	1			CAMERA V1	
Vz21A&B	NB FAR	LOCAL			5	V2	2			CAMERA V2	
Vz22A&B	NB NEAR	COMB.			6	V10	2	2		CAMERA V2	
Vz31	WB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	
Vz32	WB LEFT TURN NEAR	LOCAL			10	V3	3			CAMERA V3	
Vz41A&B	EB FAR	LOCAL			13	V4	4			CAMERA V4	
Vz42A&B	EB NEAR	COMB.			14	V12	4	4		CAMERA V4	
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	
Vz51	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	
Vz61A&B	SB FAR	LOCAL			3	V6	6			CAMERA V6	
Vz62A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V6	
Vz71	EB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	
Vz72	EB LEFT TURN NEAR	LOCAL			16	V7	7			CAMERA V7	
Vz81	WB FAR	LOCAL			11	V16	8	8		CAMERA V8	
Vz82	WB NEAR	COMB.			12	V8	8			CAMERA V3	
					SPARE AMP. CHN. * =						

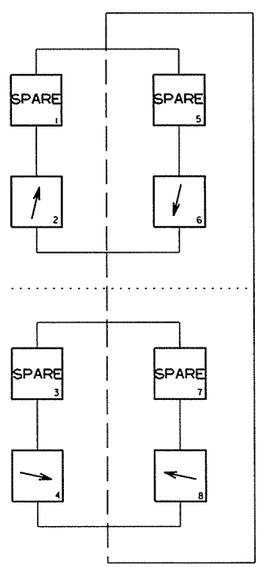
INTERVAL CHART

SIGNAL FACES	HWY.79/82-HWY.82B/E.MAIN ST.					FLASH SEQ.
	2+6	CLR.	4+8	CLR.		
1&2	G	••	R	R		R
3&4	R	R	G	••		R
5&6	G	••	R	R		R
7&8	R	R	G	••		R

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

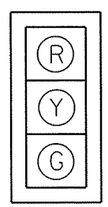


PHASING DIAGRAM



SIGNAL FACES

12" LENSES



1&2
3&4
5&6
7&8

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
3. VIDEO DETECTORS V3 AND V7 FROM STAGE 1 ARE RELOCATED TO LUMINAIRE ARM MOUNTED ON POLE D FOR STAGES 2 AND 3. SEE STAGES 2 AND 3 TRAFFIC SIGNAL PLANS FOR DETAILS.

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGES 1-3 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365_01.dgn

1070365_01.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	114	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PERMANENT TRAFFIC SIGNAL

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=80' DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365_01.dgn

SCALE IN FEET
0 40 80 160

SIGNAL FACES
12" LENSES

4, 7 — 2&3, 13 5&6 8&9, 14 11&12 — 1, 10

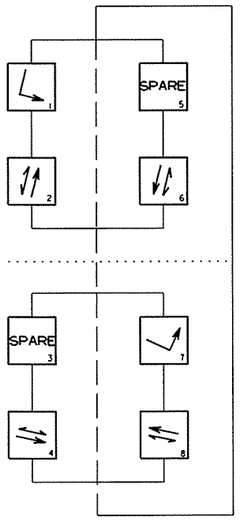
One Section (Solid Symbol)
15, 16, 17, 18, 19, 20, 21, 22

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 SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 82B - E. MAIN ST. THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
HWY. 82B - E. LEFT TURN ST. MAIN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

PHASING DIAGRAM



HWY. 79/82 - HWY. 82B/E. MAIN ST. POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 79 - STA. 220+17.24	44.33' RT.	940515.32, 1532116.59
B	HWY. 79 - STA. 219+30.42	43.79' RT.	940528.70, 1532202.37
C	HWY. 79 - STA. 219+51.91	44.34' LT.	940612.68, 1532168.09
D	HWY. 79 - STA. 220+38.96	43.16' LT.	940598.64, 1532082.18

POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	48'	270 DEGREES	35'-0"	15'	270 DEGREES
B	46'	180 DEGREES	35'-0"	15'	180 DEGREES
C	48'	270 DEGREES	35'-0"	15'	270 DEGREES
D	46'	270 DEGREES	35'-0"	15'	270 DEGREES

10-29-15
t070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	115	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PAVED PARKING
EXIST. R/W
TYPE 2 HD PULLBOX
2-3" NMC
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER
302+64.05
Vz62A COMB.
Vz62B COMB.
Vz41 COMB.
HWY. 79/82
EXIST. ROW
Vz41A&B LOCATED 200' BEHIND STOP BAR
E. MAIN ST.
Vz41B
Vz41A
TYPE 2 HD PULLBOX
2-3" NMC
Vz71 COMB.
Vz42B COMB.
Vz42A COMB.
Ø7
Ø4
S 67°08'
Vz73
Ø6 Ø1
Vz72
48'
EXIST. ROW
TYPE 2 PULLBOX (TYPICAL)
48'
46'
Vz32
Ø8
Ø3
305+01.68
P.I.
STING R/W
Vz82A COMB.
Vz82B COMB.
Vz31 COMB.
Vz82A&B, Vz31 LOCATED 85' BEHIND STOP BAR
Vz81A
Vz81B
HWY. 82
S 64°35'
EXIST. ROW
305
303+74.
P.C.
Vz62A
Vz62B
Ø5 Ø2
Vz51 COMB.
HWY. 79
PERMANENT TRAFFIC SIGNAL

DESIGN PARAMETERS

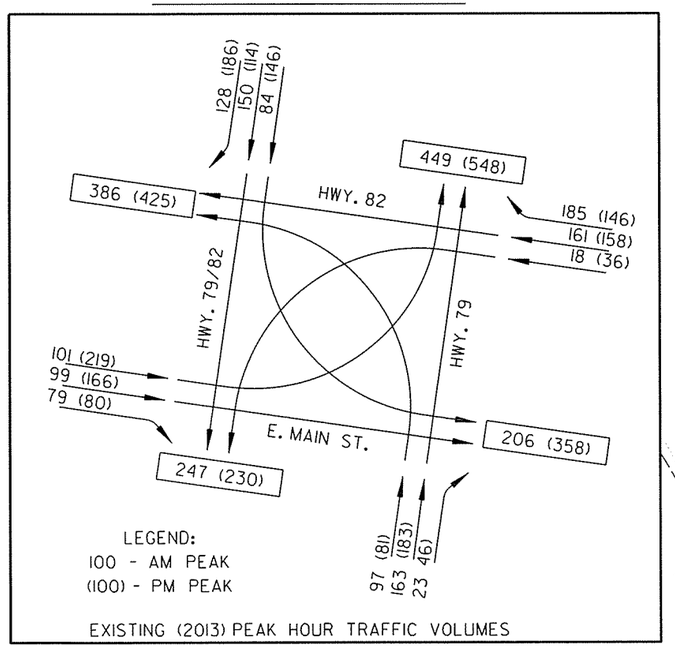
POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
45 MPH NORTH AND SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY.

SEE PERMANENT PAVEMENT MARKING PLAN SHEETS FOR DETAILS.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER -
POLE A - 20 FT. SOUTHBOUND; 14 FT. EASTBOUND
POLE B - 20 FT. SOUTHBOUND; 14 FT. WESTBOUND
POLE C - 20 FT. NORTHBOUND; 14 FT. WESTBOUND
POLE D - 20 FT. NORTHBOUND; 14 FT. EASTBOUND

TRAFFIC FLOW DIAGRAM



EXISTING (2013) PEAK HOUR TRAFFIC VOLUMES

SCALE IN FEET
0 20 40 80

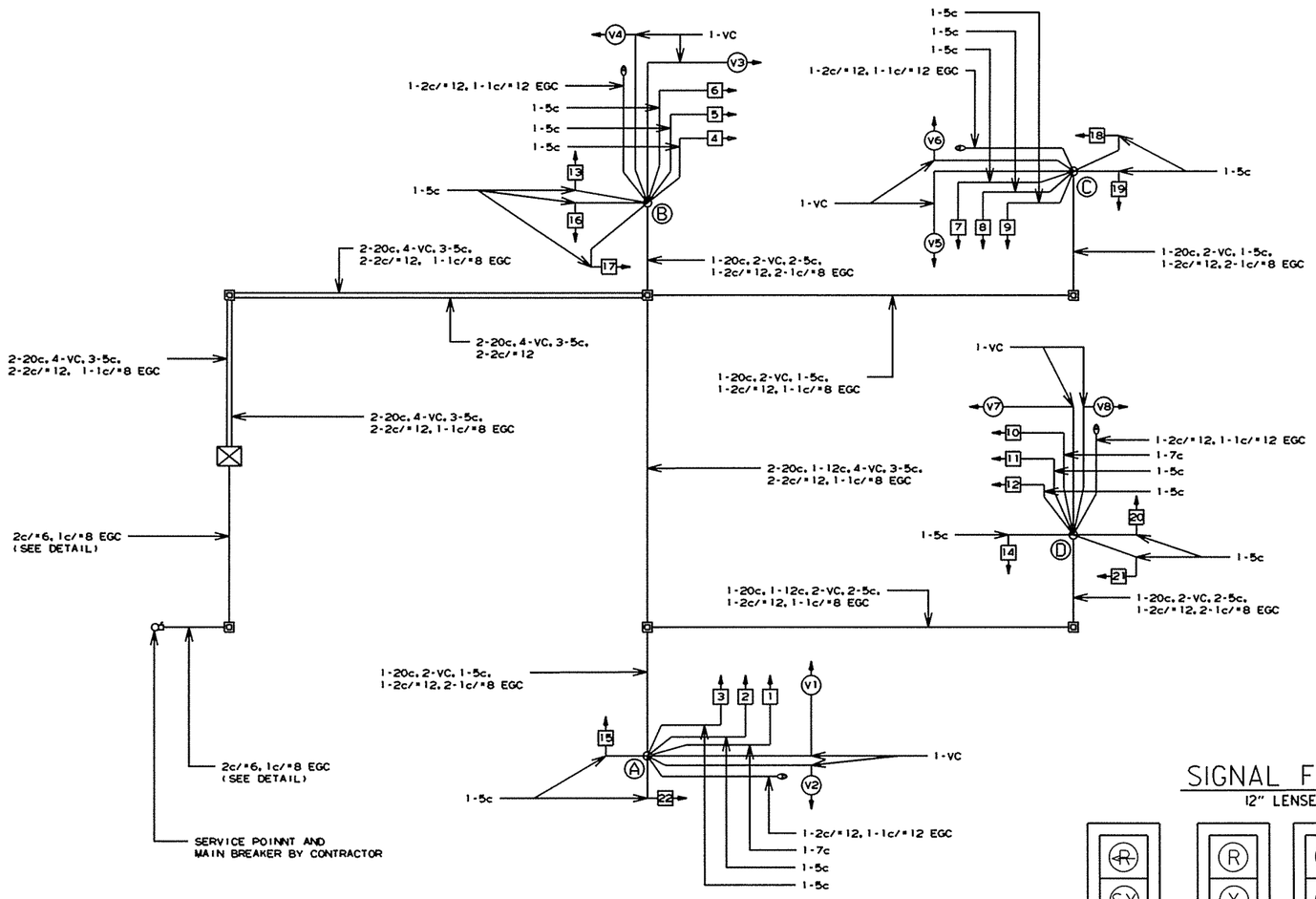
DATE: 10-29-15 FILE NAME: t070365_01.dgn

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

10-29-15
t070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	116	331

(2) SIGNALIZATION PLAN SHEET



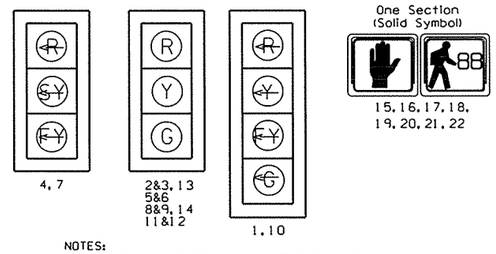
WIRING DIAGRAM

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.

SIGNAL FACES

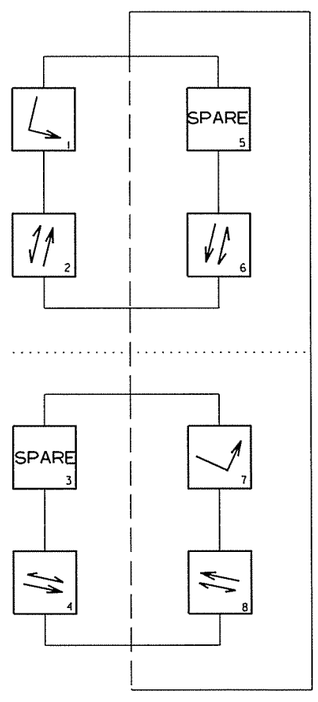
12" LENSES



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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PHASING DIAGRAM



PERMANENT TRAFFIC SIGNAL

LOCATION:	HWY. 79/82-HWY. 828/E. MAIN ST.				
CITY:	MAGNOLIA				
COUNTY:	COLUMBIA				
DISTRICT:	7	SCALE:	N/A	DRAWN BY:	CJS

DATE: 10-29-15 FILE NAME: t070365_01.dgn

t070365_01.dgn 10-29-15

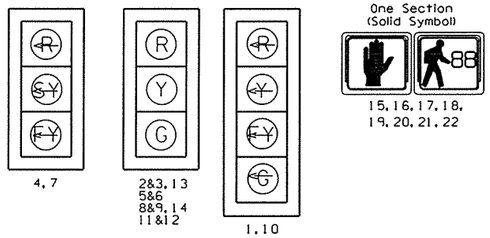
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	117	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

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 SYSTEM DESCRIPTION: JOB 070365

HWY.82/HWY.79 & HWY. 82B/E. MAIN ST. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23'
Vz12	SB LEFT TURN NEAR	LOCAL			2	V1	1			CAMERA V1	23'
Vz21A&B	NB FAR	LOCAL			5	V2	2			CAMERA V2	74'
Vz22A&B	NB NEAR	COMB.			6	V10	2	2		CAMERA V5	23'
Vz31	WB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	23'
Vz32	WB LEFT TURN NEAR	LOCAL			10	V3	3			CAMERA V3	23'
Vz41A&B	EB FAR	LOCAL			13	V4	4			CAMERA V4	23'
Vz42A&B	EB NEAR	COMB.			14	V12	4	4		CAMERA V7	23'
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23'
Vz51	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	23'
Vz61A&B	SB FAR	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	23'
Vz71	EB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	23'
Vz72	EB LEFT TURN NEAR	LOCAL			16	V7	7			CAMERA V7	23'
Vz81A&B	WB FAR	LOCAL			11	V16	8	8		CAMERA V8	23'
Vz82A&B	WB NEAR	COMB.			12	V8	8			CAMERA V3	23'
P82A&B	SOUTH TO NORTH	PED.				P2	2			HWY. 82 EAST LEG	
P84A&B	WEST TO EAST	PED.				P4	4			HWY. 79 SOUTH LEG	
P86A&B	NORTH TO SOUTH	PED.				P6	6			E. MAIN ST. WEST LEG	
P88A&B	EAST TO WEST	PED.				P8	8			HWY. 79 NORTH LEG	
					SPARE AMP. CHN. * =						

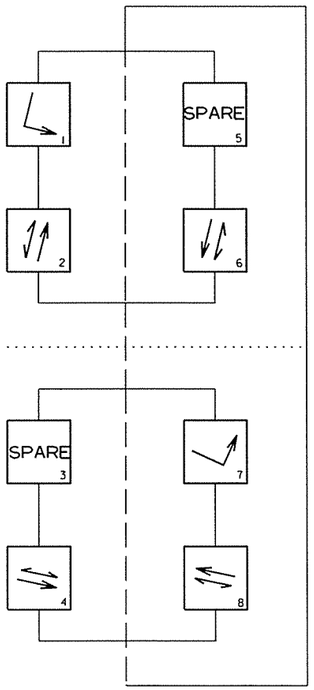
CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY. 82B/E. MAIN ST. THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
HWY. 82B/E. MAIN. ST, LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

PHASING DIAGRAM



INTERVAL CHART

SIGNAL FACES	HWY.82/HWY.79 & HWY. 82B/E. MAIN ST.												FLASH SEQ.
	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.	
1	~~G~~	•	~~R~~	~~R~~	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2&3	G	••	R	R	G	••	R	R	R	R	R	R	R
4	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~FY~~	•••	~~R~~	~~R~~	~~FY~~	•••	R
5&6	R	R	R	R	R	R	G	••	R	R	G	••	R
7	~~R~~	~~R~~	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8&9	R	R	G	••	G	••	R	R	R	R	R	R	R
10	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	•	~~FY~~	•••	~~R~~
11&12	R	R	R	R	R	R	R	R	G	••	G	••	R
13	G	••	R	R	G	••	R	R	R	R	R	R	R
14	R	R	G	••	G	••	R	R	R	R	R	R	R
15	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	BLK
16	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	BLK
17	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
18	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
19	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	BLK
20	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	BLK
21	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	BLK
22	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	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

PERMANENT TRAFFIC SIGNAL

LOCATION: HWY. 79/82-HWY. 82B/E. MAIN ST.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365_01.dgn

10-29-15
t070365_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	118	331

(2) TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGES 1-2 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	ACTUATED CONTROLLER TS-2 TYPE 2, (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	9	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1158	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	192	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	112	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	20	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
713	SPAN WIRE ASSEMBLY	1	EACH
716	TREATED WOOD POLE (CLASS 2, 44')	5	EACH
733	VIDEO CABLE	1454	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO MONITOR (CLR)	1	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	40	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	29	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.16	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.

STAGE 1
THE EXISTING TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL STAGE 1 TRAFFIC SIGNAL IS COMPLETED. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).

INSTALL THE PERMANENT CABINET, CONTROLLER, SERVICE POINT, CONDUIT, PULL BOXES, AND ALL OTHER TRAFFIC CONTROL HARDWARE IN THE PERMANENT CABINET IN STAGE 1.
THIS CONTROLLER SHALL OPERATE THE TEMPORARY TRAFFIC SIGNAL DURING STAGES 1-2 AND THE PERMANENT TRAFFIC SIGNAL. (REFER TO SIGNALIZAITON PLANS FOR STAGES 1-2 AND PERMANENT TRAFFIC SIGNAL PLANS FOR DETAILS.)

PERMANENT TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	11	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	642	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	83	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	159	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	653	LIN. FT.
710	NON-METALLIC CONDUIT (3")	428	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (50')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56')	1	EACH
733	VIDEO CABLE	1334	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	7	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	902	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	487	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	249	LIN. FT.
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.17	LUMP SUM

• ONE SPARE VIDEO DETECTOR SHALL BE SUPPLIED.

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL.

REMOVE STAGES 1-2 TEMPORARY TRAFFIC SIGNAL COMPONENTS EXCEPT FOR THE PERMANENT CABINET, CONTROLLER AND RELATED HARDWARE, SERVICE POINT, PULLBOX AND CONDUIT.

INSTALL PERMANENT TRAFFIC SIGNAL.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS).

1070365_01.dgn 10-29-15

DATE: 10-29-15 FILE NAME: t070365_01.dgn

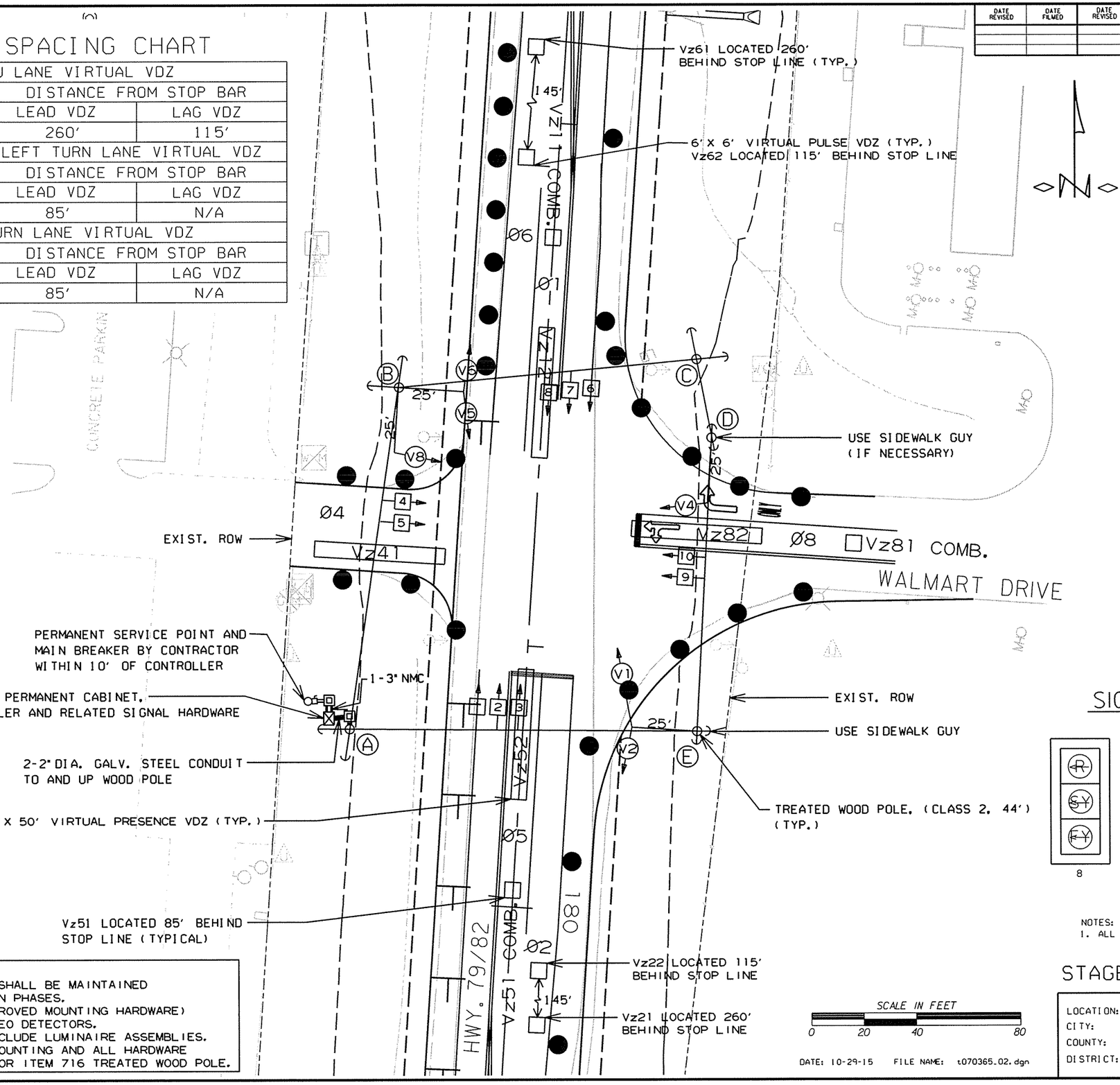
LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	119	331

(2) SIGNALIZATION PLAN SHEET

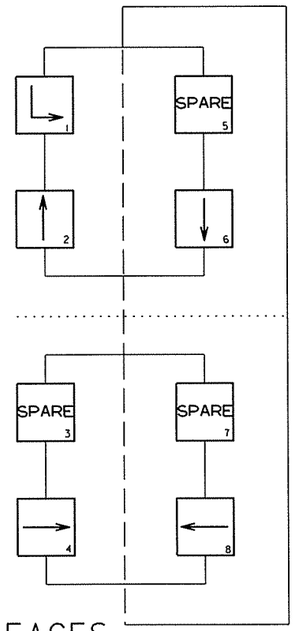
DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
WALMART DRIVE THRU/LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
25 MPH	85'	N/A
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A



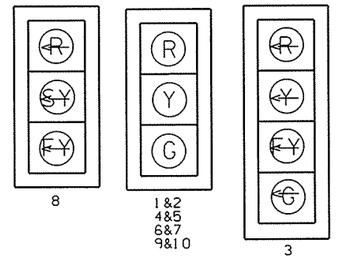
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_02.dgn

STAGES 1-2 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

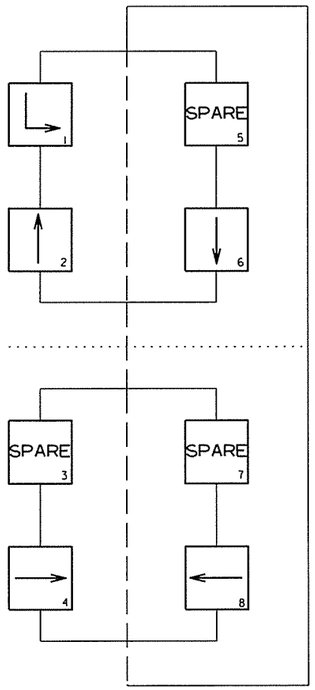
1070365_02.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	120	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PHASING DIAGRAM



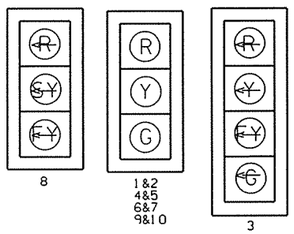
INTERVAL CHART

SIGNAL FACES	HWY.79/82-WALMART DRIVE 1+6	CLR.	2+6	CLR.	4+8	CLR.	FLASH SEQ.
1&2	G	••	G	••	R	R	R
3	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~
4&5	R	R	R	R	G	••	R
6&7	R	R	G	R	R	R	R
8	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~	~~R~~
9&10	R	R	R	R	G	••	R
11	G	••	G	••	R	R	R
12	R	R	G	R	R	R	R

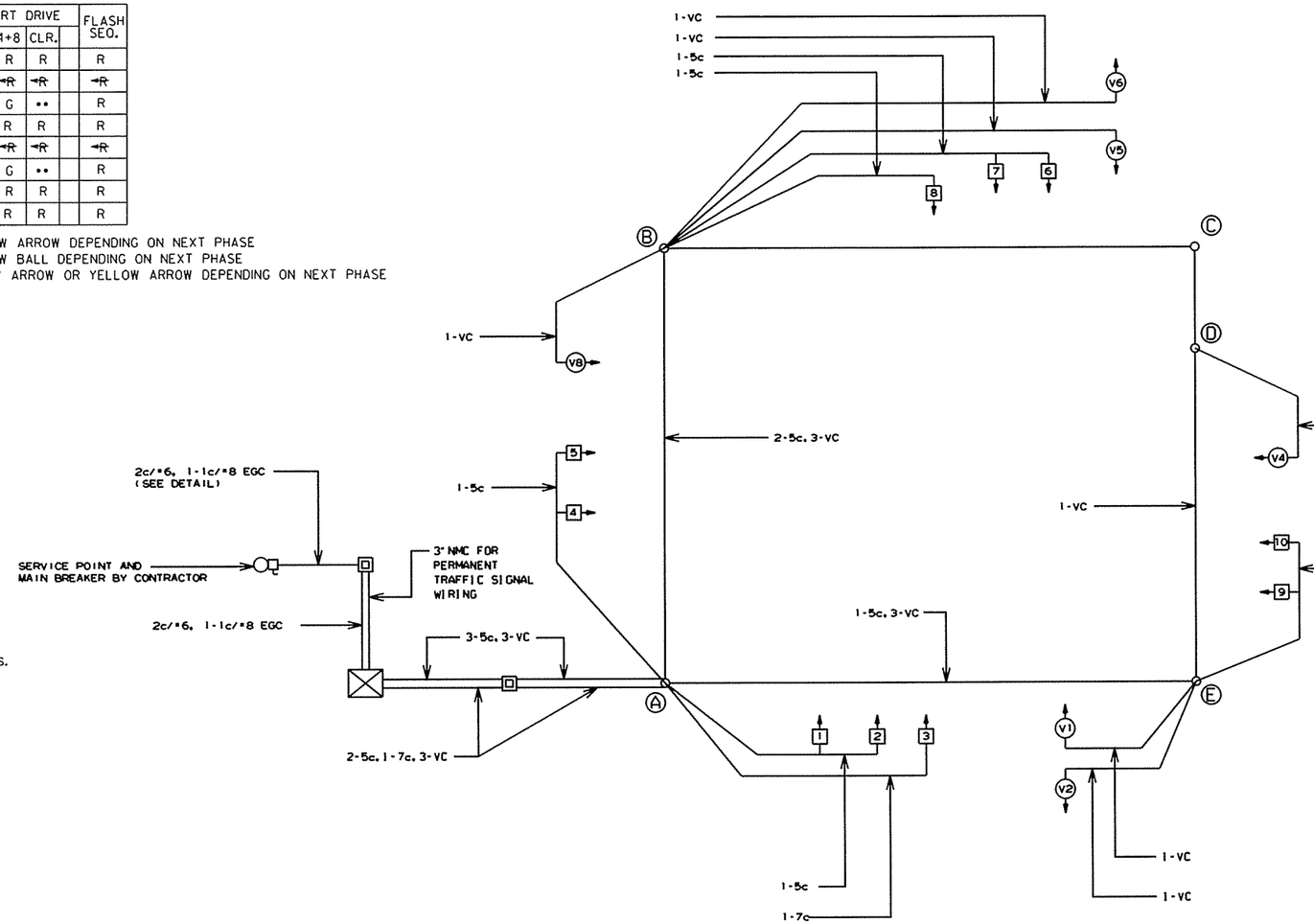
• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



DETECTOR SYSTEM DESCRIPTION: JOB 070365											
HWY. 79/82-WALMART DRIVE DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM		
DET. ID#	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM #	AMP CHN. #	CON. INP.#	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	
Vz12	SB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	
Vz21	NB FAR	LOCAL			5	V2	2			CAMERA V2	
Vz22	NB NEAR	COMB.			6	V10	2	2		CAMERA V5	
Vz41	EB NEAR	LOCAL			9	V4	4	4		CAMERA V4	
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	
Vz61	SB FAR	LOCAL			3	V6	6			CAMERA V6	
Vz62	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	
Vz81	WB FAR	COMB.			11	V16	8	8		CAMERA V8	
Vz82	WB NEAR	LOCAL			12	V8	8			CAMERA V8	
					SPARE AMP CHN. # = 10,13-16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1. V10=SYSTEM DETECTOR 2

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

STAGES 1-2 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365.dgn

t070365_02.dgn 10-29-15

HWY. 79/82-WALMART DRIVE
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 79 - STA 179+15.70	51.82' RT.	941013.85, 1536181.11
B	HWY. 79 - STA 178+20.40	52.10' RT.	941019.74, 1536276.23
C	HWY. 79 - STA 178+01.63	51.44' LT.	941124.27, 1536288.26
D	HWY. 79 - STA 179+09.38	61.93' LT.	941127.73, 1536179.46

POLE DIMENSIONS

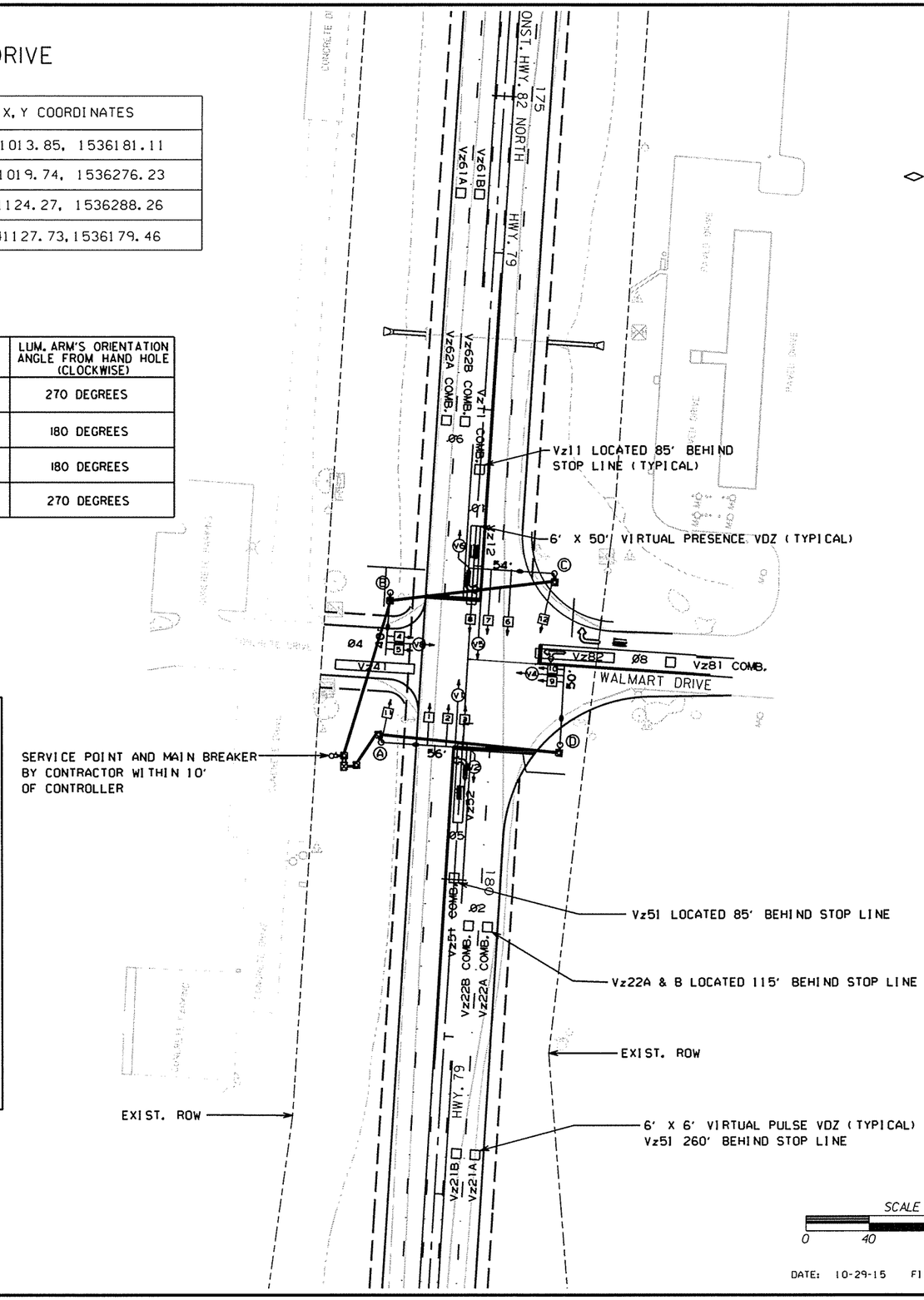
POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	56'	270 DEGREES	35'-0"	20'	270 DEGREES
B	40'	180 DEGREES	35-0"	20'	180 DEGREES
C	54'	180 DEGREES	35-0"	20'	180 DEGREES
D	60'	270 DEGREES	35-0"	25'	270 DEGREES

DESIGN PARAMETERS

POSTED SPEED LIMIT:
25 MPH WB APPROACH; 20 MPH EB 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 PAVEMENT MARKINGS FOR REFERENCE ONLY.
SEE PERMANENT PAVEMENT MARKING PLAN SHEETS FOR DETAILS.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER -
POLE A - 20 FT. SB; 7 FT. EB
POLE B - 20 FT. SB; 7 FT. EB
POLE C - 20 FT. NB; 13 FT. EB
POLE D - 20 FT. NB; 13 FT. EB

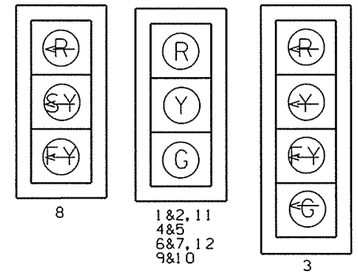


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	121	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

SIGNAL FACES
12" LENSES



8 — 1&2, 11 4&5 6&7, 12 9&10 — 3

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
WALMART DRIVE THRU/LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
25 MPH	85'	N/A
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A

SCALE IN FEET
0 40 80 160

DATE: 10-29-15 FILE NAME: t070365_02.dgn

PERMANENT TRAFFIC SIGNAL

LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=80' DRAWN BY: CJS

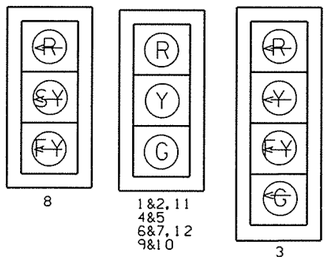
t070365_02.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	122	331

(2) SIGNALIZATION PLAN SHEET

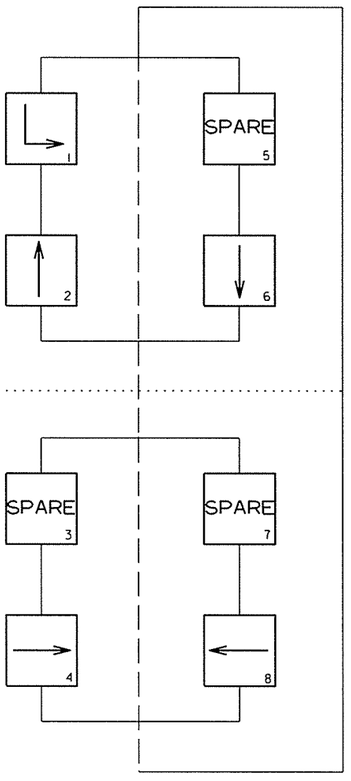
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

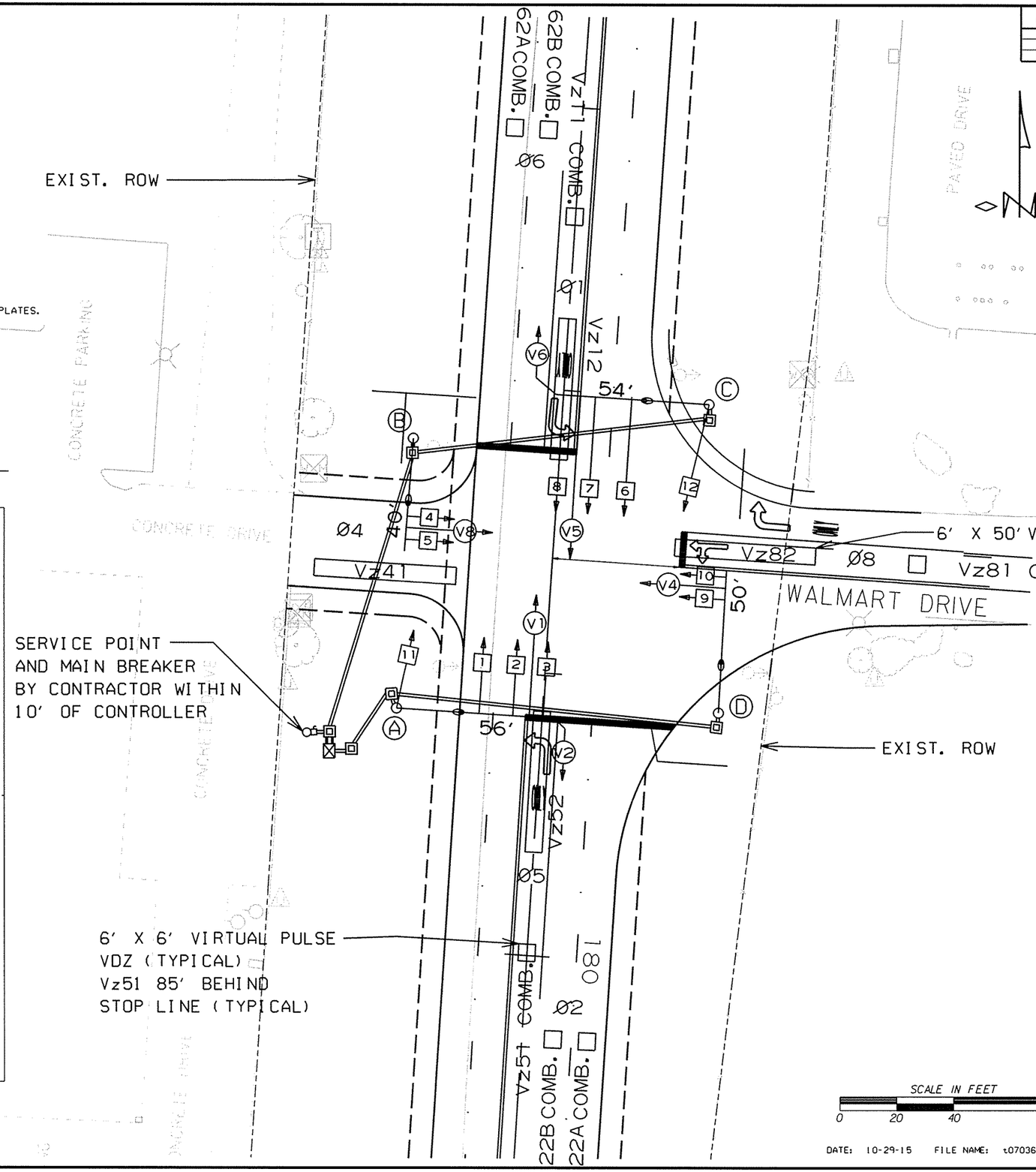
SIGNAL FACES
12" LENSES



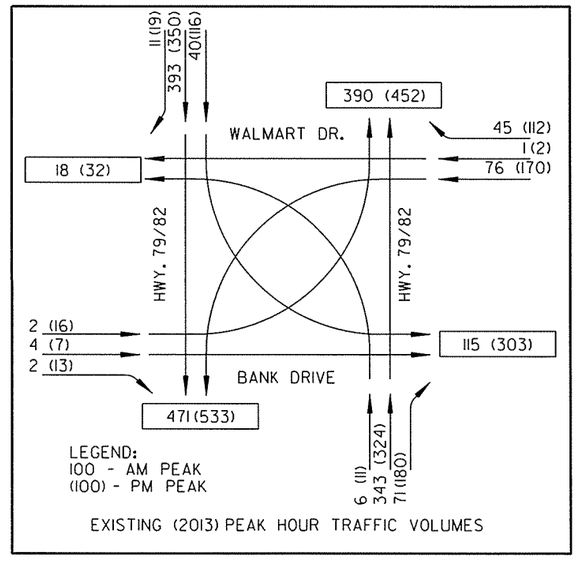
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

PHASING DIAGRAM





TRAFFIC FLOW DIAGRAM



PERMANENT TRAFFIC SIGNAL

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_02.dgn

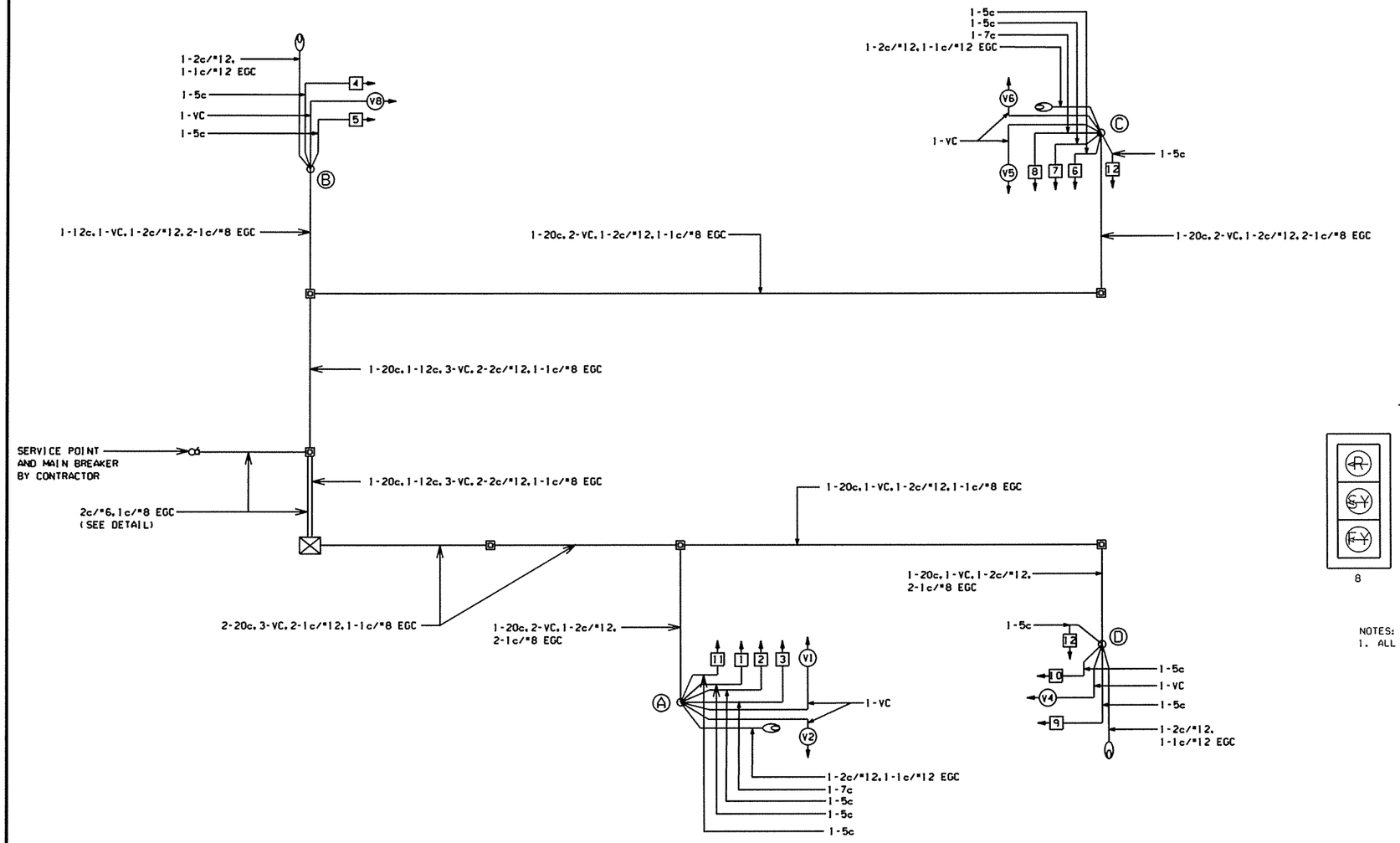
LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

t070365_02.dgn 10-29-15

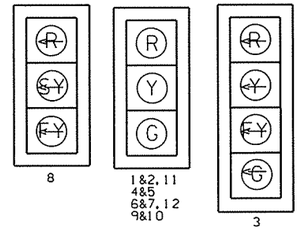
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	123	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

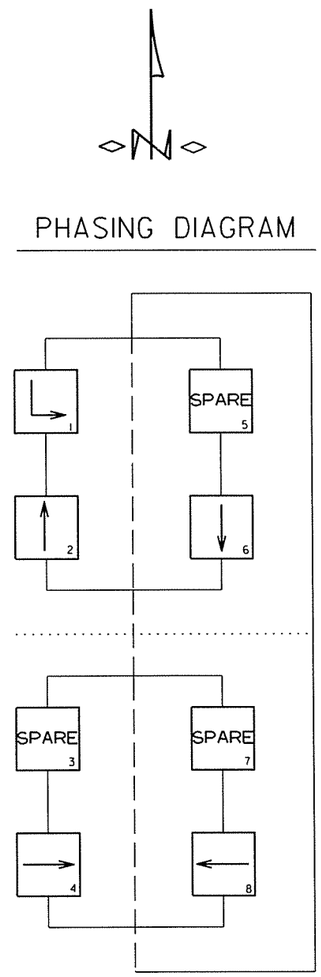


SIGNAL FACES
12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

PHASING DIAGRAM



DETECTOR SYSTEM DESCRIPTION: JOB 070365

HWY. 79/82-WALMART DRIVE DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	74'
Vz12	SB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	74'
Vz21A&B	NB FAR	LOCAL			5	V2	2			CAMERA V2	74'
Vz22A&B	NB NEAR	COMB.			6	V10	2	2		CAMERA V5	74'
Vz41	EB NEAR	LOCAL			9	V4	4	4		CAMERA V4	23'
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	74'
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	74'
Vz61A&B	SB FAR	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	74'
Vz81	WB FAR	COMB.			11	V16	8	8		CAMERA V8	23'
Vz82	WB NEAR	LOCAL			12	V8	8			CAMERA V8	23'
					SPARE AMP CHN. * = 10,13-16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

INTERVAL CHART

SIGNAL FACES	HWY.82/WALMART DRIVE							FLASH SEQ.
	1+6	CLR.	2+6	CLR.	4+8	CLR.		
1&2	G	••	G	••	R	R		R
3	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~		~~R~~
4&5	R	R	R	R	G	••		R
6&7	R	R	G	R	R	R		R
8	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~		~~R~~
9&10	R	R	R	R	G	••		R
11	G	••	G	••	R	R		R
12	R	R	G	R	R	R		R

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

PERMANENT TRAFFIC SIGNAL

LOCATION: HWY. 79/82-WALMART DRIVE
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: N/A DRAWN BY: CJS

DATE: 10-29-15 FILE NAME: t070365_02.dgn

10-29-15
1070365_02.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	124	331

(2) TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

STAGE 1 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	ACTUATED CONTROLLER TS-2 TYPE 2, (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1341	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	1341	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	112	LIN. FT.
710	NON-METALLIC (1.25")	25	LIN. FT.
710	NON-METALLIC (3")	24	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
713	SPAN WIRE ASSEMBLY	1	EACH
716	TREATED WOOD POLE (CLASS 2, 44')	5	EACH
733	VIDEO CABLE	1520	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO MONITOR (CLR)	1	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	68	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	32	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.17	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.

STAGE 1
THE EXISTING TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL STAGE 1 TRAFFIC SIGNAL IS COMPLETED. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).

INSTALL THE PERMANENT CABINET, CONTROLLER, SERVICE POINT, CONDUIT, PULLBOXES, AND ALL OTHER TRAFFIC CONTROL HARDWARE IN THE PERMANENT CABINET IN STAGE 1.
THIS CONTROLLER SHALL OPERATE THE TEMPORARY TRAFFIC SIGNAL DURING STAGES 1-2 AND THE PERMANENT TRAFFIC SIGNAL. (REFER TO SIGNALIZAITON PLANS FOR STAGES 1-2 AND PERMANENT TRAFFIC SIGNAL PLANS FOR DETAILS.)

STAGE 2 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP	VIDEO DETECTOR ROTATION	1	EACH

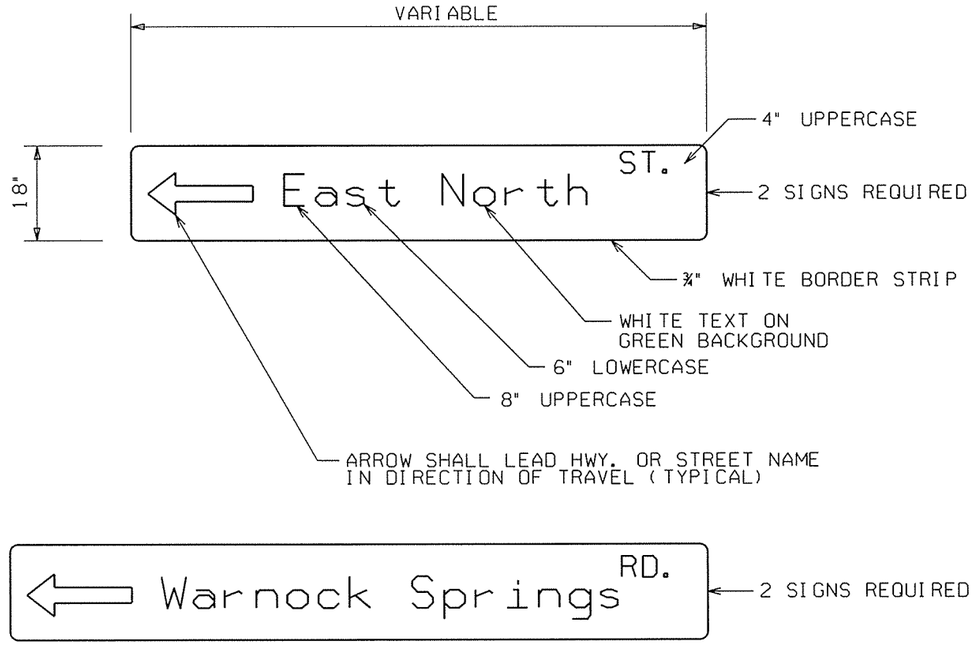
STAGE 2:
ROTATE VIDEO DETECTOR V7.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLAN.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS).

PERMANENT TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	569	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	348	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	802	LIN. FT.
710	NON-METALLIC CONDUIT (3")	556	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (64')	2	EACH
733	VIDEO CABLE	2311	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	9	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1066	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	663	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	264	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	31	LIN. FT.
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.17	LUMP SUM
SP	18" STREET NAME SIGN	4	EACH

• ONE SPARE VIDEO DETECTOR SHALL BE SUPPLIED.

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL.
REMOVE STAGE 1-2 TEMPORARY TRAFFIC SIGNAL COMPONENTS AND INSTALL PERMANENT TRAFFIC SIGNAL.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS).



NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

10-29-15
t070365_01.dgn

DATE: 10-29-15 FILE NAME: t070365_01.dgn

LOCATION:	HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.		
CITY:	MAGNOLIA		
COUNTY:	COLUMBIA		
DISTRICT:	7	SCALE: N/A	DRAWN BY: CJS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	125	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
WARNOCK SPRINGS RD. - E. NORTH ST. VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A

Vz61 LOCATED 260' BEHIND STOP LINE (TYP.)
145'
Vz62 COMB.
Vz11 COMB.
HWY. 79/82
EXIST. ROW
6' X 50' VIRTUAL PRESENCE VDZ (TYP.)
Vz12
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER
INSTALL PERMANENT CABINET, CONTROLLER AND RELATED SIGNAL HARDWARE
1-3" NMC
2-3" DIA. GALV. STEEL CONDUIT TO AND UP WOOD POLE
Vz81 COMB.
Vz82
WARNOCK SPRINGS RD.
EXIST. ROW
EXIST. ROW
Vz42
Vz41 COMB.
E. NORTH ST.
25'
TREATED WOOD POLE. (CLASS 2, 44') (TYP.)
6' X 6' VIRTUAL PULSE VDZ (TYP.)
Vz22 LOCATED 115' BEHIND STOP LINE
Vz51 COMB.
Vz22 COMB.
Vz21 LOCATED 260' BEHIND STOP LINE
145'

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

PHASING DIAGRAM

SIGNAL FACES
12" LENSES

2&3
5
7&8
10

4, 9

1, 6

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

STAGE 1 TRAFFIC SIGNAL

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_02.dgn

LOCATION:	HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.
CITY:	MAGNOLIA
COUNTY:	COLUMBIA
DISTRICT: 7	SCALE: 1"=40' DRAWN BY: CJS

10-29-15
t070365_02.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	126	331

(2) SIGNALIZATION PLAN SHEET

DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
WARNOCK SPRINGS RD. - E. NORTH ST. VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

Vz61 LOCATED 260' BEHIND STOP LINE (TYP.)

145'

Vz62 COMB.

Vz11 COMB.

HWY. 79/82

EXIST. ROW

6' X 50' VIRTUAL PRESENCE VDZ (TYP.)

Vz12

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER

1-3" NMC

2-3" DIA. GALV. STEEL CONDUIT TO AND UP WOOD POLE

Vz81 COMB.

Vz82

WARNOCK SPRINGS RD.

EXIST. ROW

V6 V5 V3 V7 V1 V2

25'

A B C D E

1 2 3 4 5 6 7 8 9 10

EXIST. ROW

Vz42

Vz41 COMB.

E. NORTH ST.

Vz52

6' X 6' VIRTUAL PULSE VDZ (TYP.)
Vz22 LOCATED 115' BEHIND STOP LINE

Vz51 COMB.

Vz22 COMB.

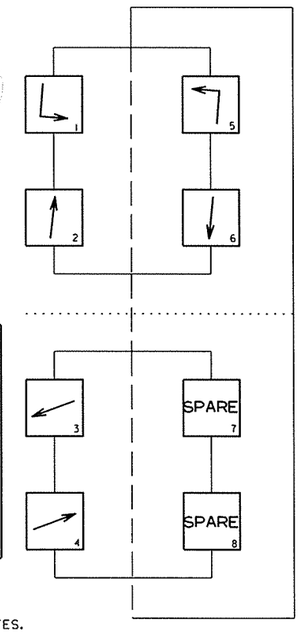
145'

Vz21 LOCATED 260' BEHIND STOP LINE

TREATED WOOD POLE. (CLASS 2, 44') (TYP

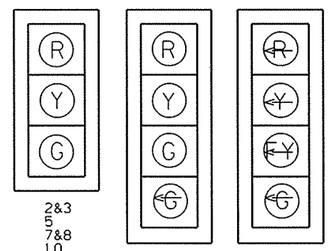
EXIST. ROW

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
25' LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS.
LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES.
COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_02.dgn

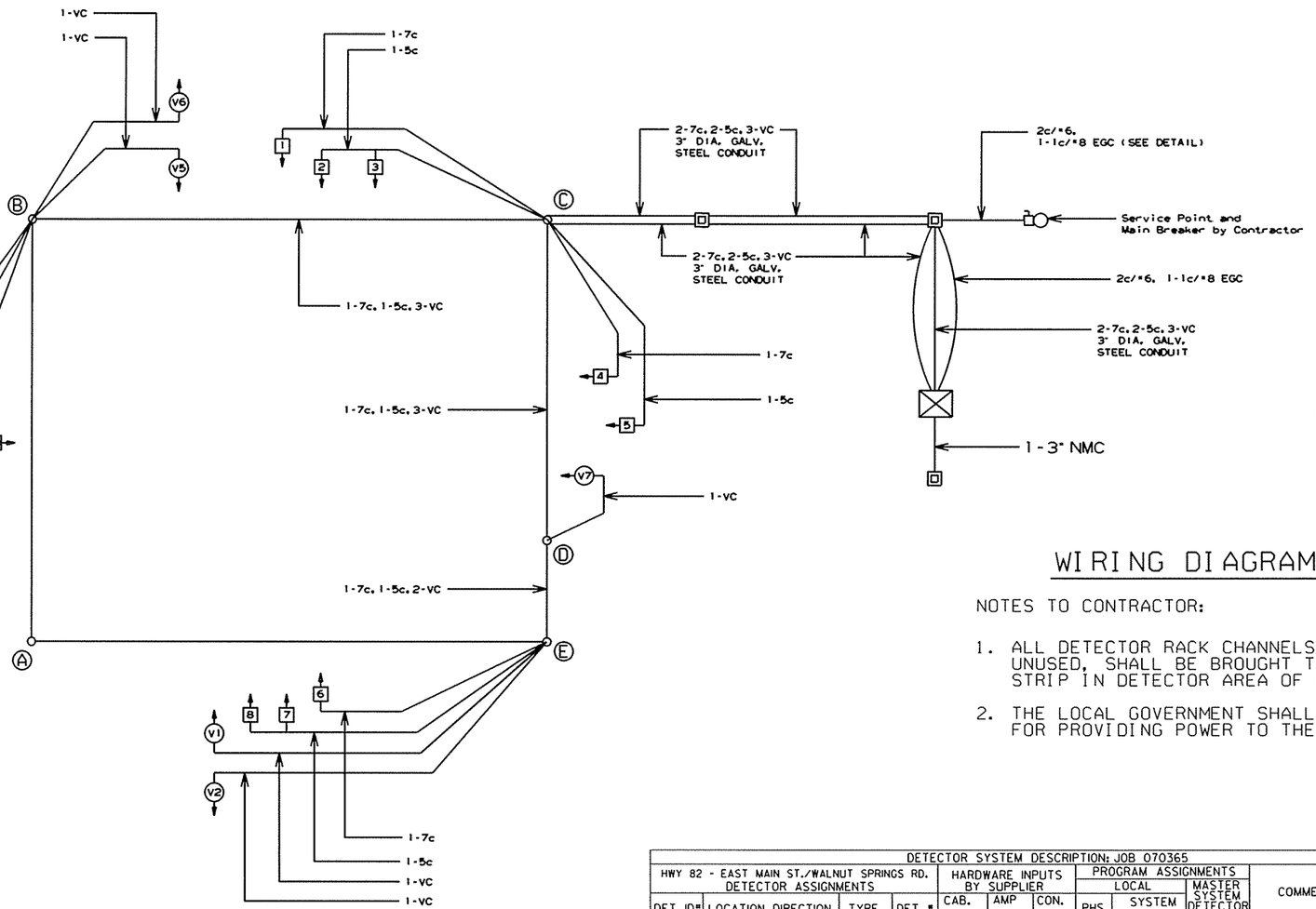
STAGE 2 TRAFFIC SIGNAL

LOCATION: HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1" = 40' DRAWN BY: CJS

10-29-15
1070365_02.dgn

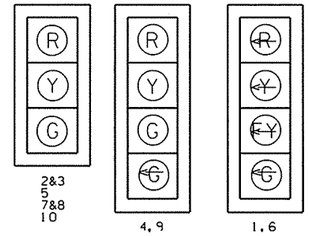
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	127	331

(2) SIGNALIZATION PLAN SHEET



SIGNAL FACES

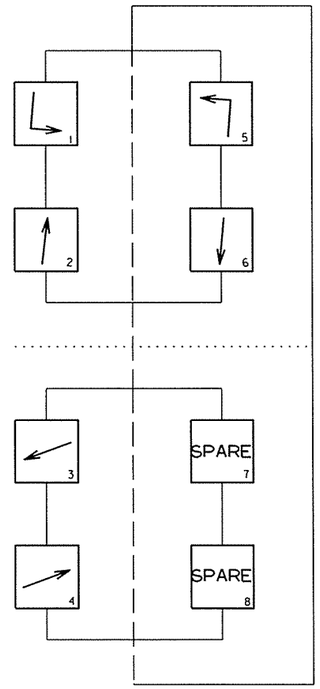
12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



PHASING DIAGRAM



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

INTERVAL CHART

SIGNAL FACES	HWY 82 - EAST MAIN STREET/WARNOCK SPRINGS. ROAD												FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3	CLR.	4	CLR.	
1	~~G~~	•	~~FY~~	•••	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2&3	R	R	R	R	G	••	G	••	R	R	R	R	R
4	R	R	R	R	R	R	R	R	R	R	G / ~~G~~	••	R
5	R	R	R	R	R	R	R	R	R	R	G	••	R
6	~~G~~	•	~~G~~	•	~~FY~~	•••	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	R
7&8	R	R	G	••	R	R	G	••	R	R	R	R	R
9	R	R	R	R	R	R	R	R	G / ~~G~~	••	R	R	R
10	R	R	R	R	R	R	R	R	G	••	R	R	R

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

DETECTOR SYSTEM DESCRIPTION: JOB 070365											
HWY 82 - EAST MAIN ST./WALNUT SPRINGS RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM		
DET. ID#	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM #	AMP CHN. #	CON. INP.#	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	
Vz12	SB LEFT TURN NEAR	LOCAL			2	V1	1			CAMERA V1	
Vz21	NB FAR	LOCAL			5	V2	2			CAMERA V2	
Vz22	NB NEAR	COMB.			6	V10	2	2		CAMERA V5	
Vz41	EB NEAR	COMB.			13	V12	4	4		CAMERA V7	
Vz42	EB PRESENCE	LOCAL			14	V4	4			CAMERA V7	
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	
Vz61	SB FAR	LOCAL			3	V6	6			CAMERA V6	
Vz62	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	
Vz81	WB NEAR	COMB.			11	V16	8	8		CAMERA V3	
Vz82	WB PRESENCE	LOCAL			12	V8	8			CAMERA V3	
					SPARE AMP CHN. # = 9, 10, 15, 16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

DATE: 10-29-15 FILE NAME: t070365_03.dgn

STAGES 1-2 TRAFFIC SIGNAL

LOCATION:	HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.		
CITY:	MAGNOLIA		
COUNTY:	COLUMBIA		
DISTRICT:	7	SCALE: N/A	DRAWN BY: CJS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

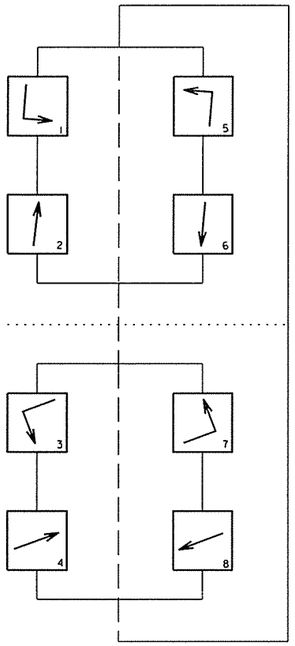
10-29-15
070365_03.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	128	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

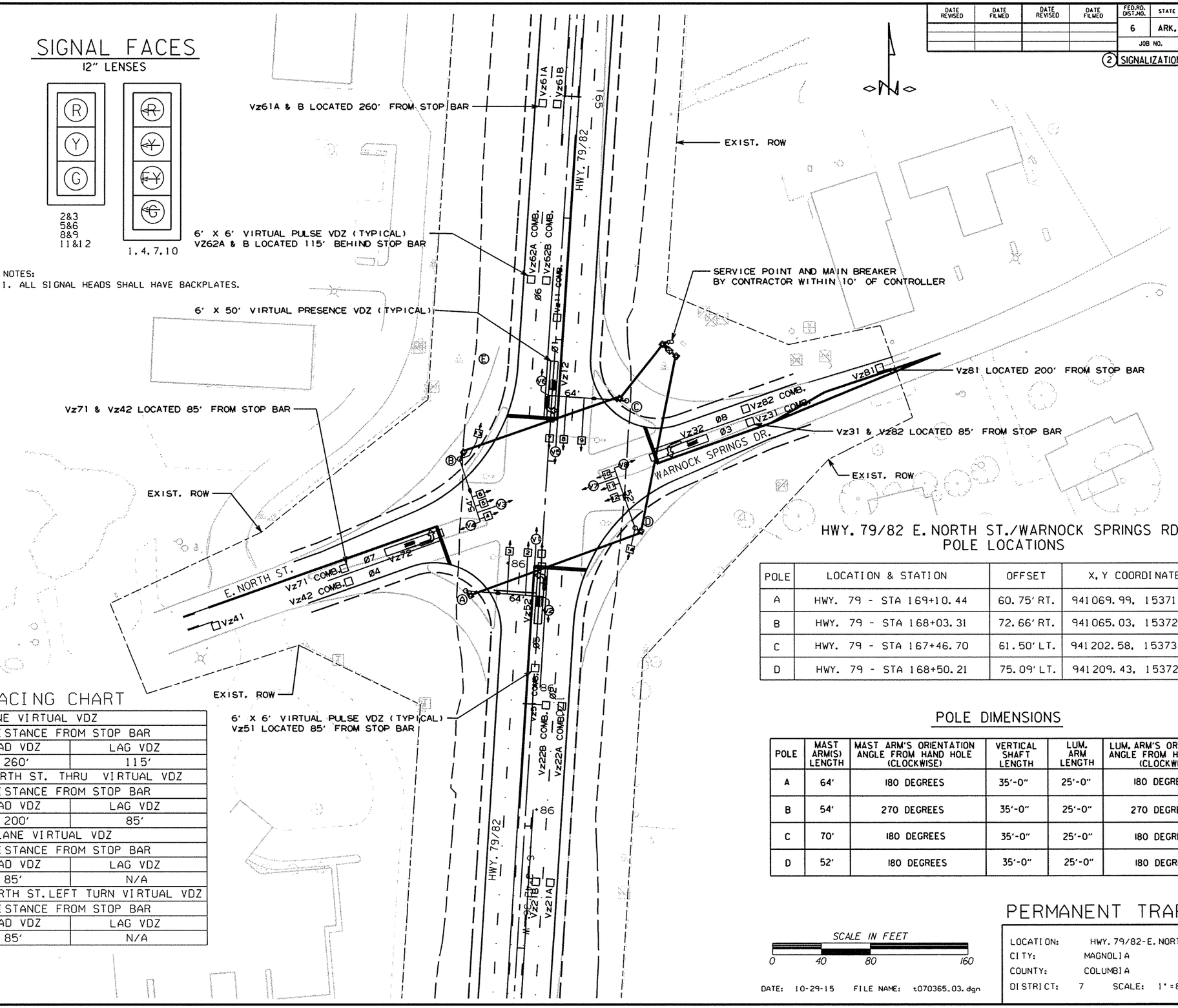
PHASING DIAGRAM



SIGNAL FACES

12" LENSES

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



DETECTOR SPACING CHART

HWY. 79/82 THRU LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
WARNOCK SPRINGS RD.-E.NORTH ST. THRU VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'
HWY. 79/82 LEFT TURN LANE VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
45 MPH	85'	N/A
WARNOCK SPRINGS RD.-E.NORTH ST. LEFT TURN VIRTUAL VDZ		
POSTED SPEED	DISTANCE FROM STOP BAR	
	LEAD VDZ	LAG VDZ
35 MPH	85'	N/A

HWY. 79/82 E. NORTH ST./WARNOCK SPRINGS RD. POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 79 - STA 169+10.44	60.75' RT.	941069.99, 1537184.84
B	HWY. 79 - STA 168+03.31	72.66' RT.	941065.03, 1537292.52
C	HWY. 79 - STA 167+46.70	61.50' LT.	941202.58, 1537340.33
D	HWY. 79 - STA 168+50.21	75.09' LT.	941209.43, 1537236.15

POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	64'	180 DEGREES	35'-0"	25'-0"	180 DEGREES
B	54'	270 DEGREES	35'-0"	25'-0"	270 DEGREES
C	70'	180 DEGREES	35'-0"	25'-0"	180 DEGREES
D	52'	180 DEGREES	35'-0"	25'-0"	180 DEGREES

SCALE IN FEET
0 40 80 160

DATE: 10-29-15 FILE NAME: t070365_03.dgn

PERMANENT TRAFFIC SIGNAL

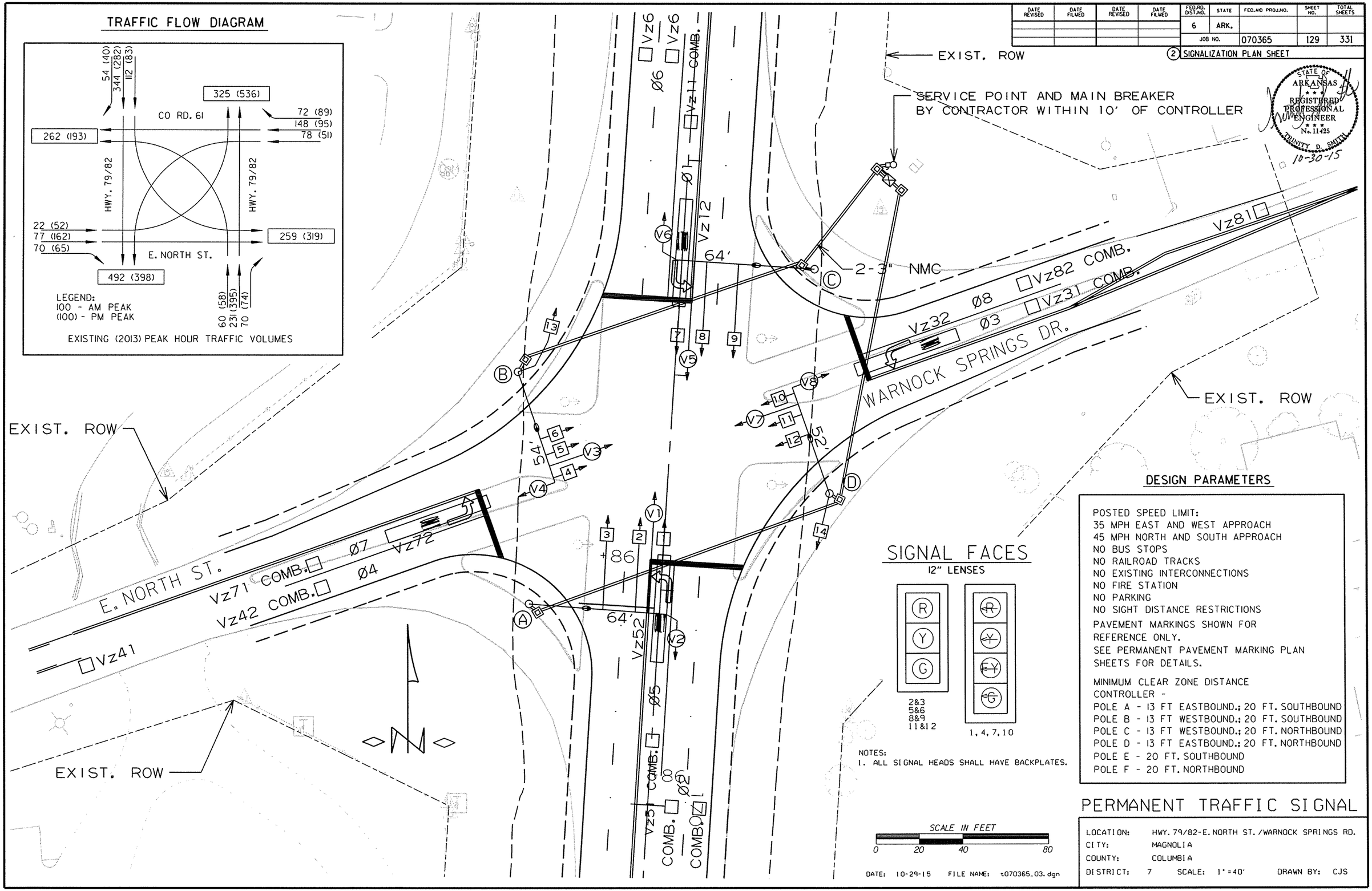
LOCATION: HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=80' DRAWN BY: CJS

10-29-15
1070365_03.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	129	331

(2) SIGNALIZATION PLAN SHEET

TRAFFIC FLOW DIAGRAM



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

SIGNAL FACES

12" LENSES

2&3
5&6
8&9
11&12

1, 4, 7, 10

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

SCALE IN FEET
0 20 40 80

DATE: 10-29-15 FILE NAME: t070365_03.dgn

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
PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY.
SEE PERMANENT PAVEMENT MARKING PLAN SHEETS FOR DETAILS.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER -
POLE A - 13 FT EASTBOUND.; 20 FT. SOUTHBOUND
POLE B - 13 FT WESTBOUND.; 20 FT. SOUTHBOUND
POLE C - 13 FT WESTBOUND.; 20 FT. NORTHBOUND
POLE D - 13 FT EASTBOUND.; 20 FT. NORTHBOUND
POLE E - 20 FT. SOUTHBOUND
POLE F - 20 FT. NORTHBOUND

PERMANENT TRAFFIC SIGNAL

LOCATION: HWY. 79/82-E. NORTH ST./WARNOCK SPRINGS RD.
CITY: MAGNOLIA
COUNTY: COLUMBIA
DISTRICT: 7 SCALE: 1"=40' DRAWN BY: CJS

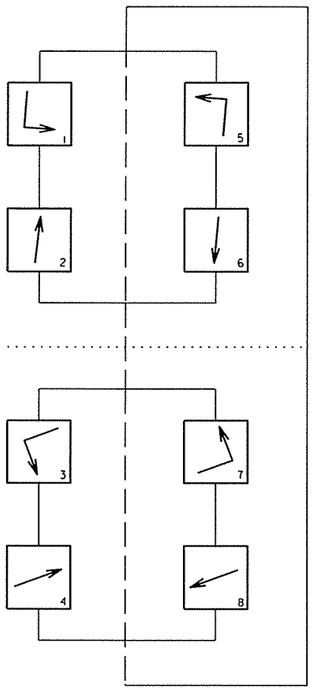
1070365_03.dgn 10-29-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	130	331

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-30-15

PHASING DIAGRAM



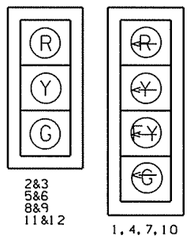
INTERVAL CHART

SIGNAL FACES	HWY 79/82 - EAST MAIN STREET/COUNTY ROAD 61																FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.	
1	~~G~~	•	~~G~~	•	~~R~~	~~R~~	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2&3	R	R	G	••	R	R	G	••	R	R	R	R	R	R	R	R	R
4	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	•	~~G~~	•	~~R~~	~~R~~	~~FY~~	•••	~~R~~
5&6	R	R	R	R	R	R	R	R	R	R	G	••	R	R	G	••	R
7	~~G~~	•	~~R~~	~~R~~	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8&9	R	R	R	R	G	••	G	••	R	R	R	R	R	R	R	R	R
10	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	•	~~R~~	~~R~~	~~G~~	•	~~FY~~	•••	~~R~~
11&12	R	R	R	R	R	R	R	R	R	R	R	R	G	••	G	••	R
13	R	R	G	••	R	R	G	••	R	R	R	R	R	R	R	R	R
14	R	R	R	R	G	••	G	••	R	R	R	R	R	R	R	R	R

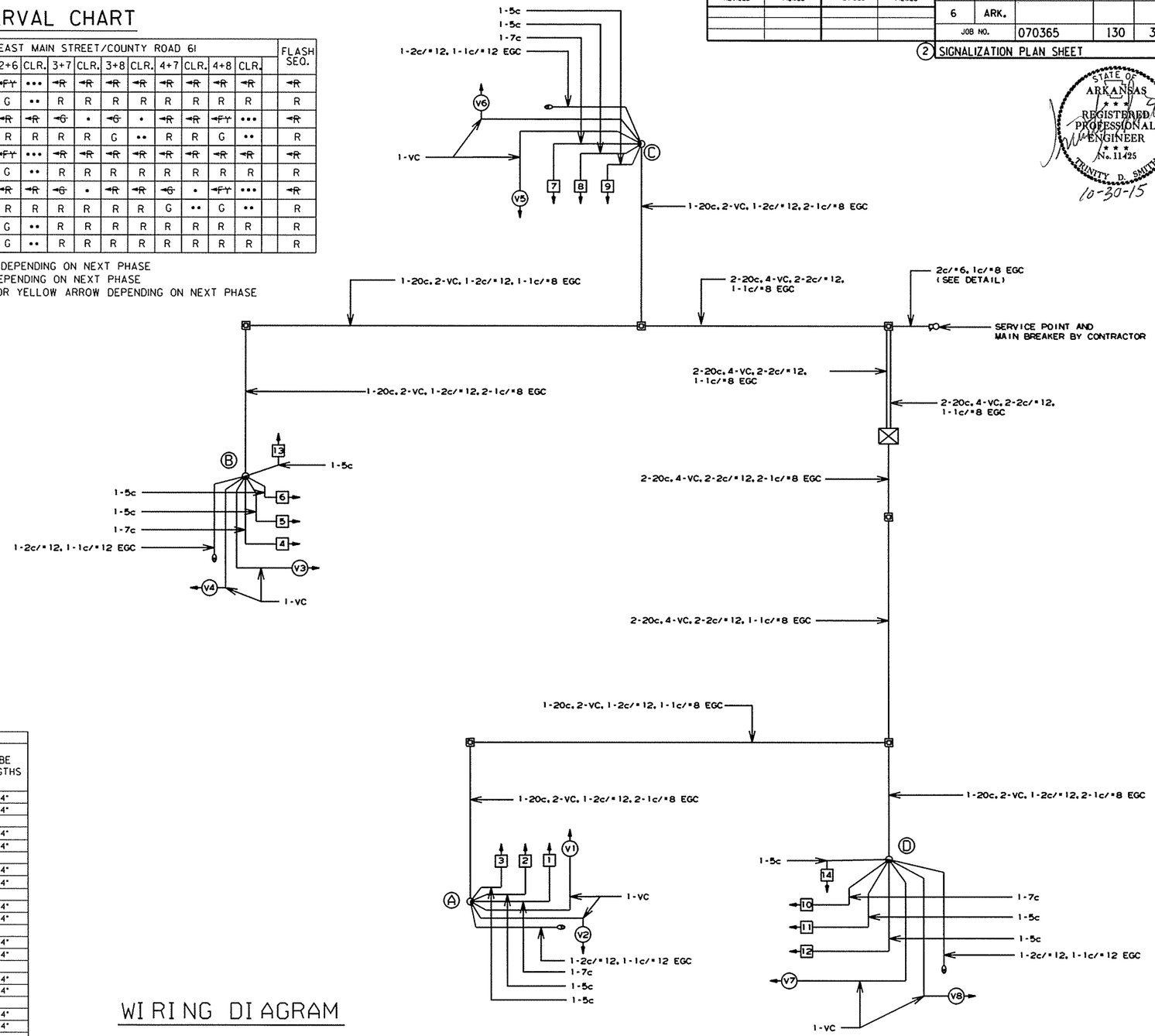
• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



DETECTOR SYSTEM DESCRIPTION: JOB 070365

HWY 79/82 - E. MAIN ST./WARNOCK SPRINGS RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz11	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	74'
Vz12	SB LEFT TURN NEAR	LOCAL			2	V1	1			CAMERA V1	74'
Vz21A&B	NB FAR	LOCAL			5	V2	2			CAMERA V2	74'
Vz22A&B	NB INSIDE NEAR	COMB.			6	V10	2	2		CAMERA V5	74'
Vz31	WB LEFT TURN FAR	COMB.			9	V11	8	3		CAMERA V3	74'
Vz32	WB LEFT TURN NEAR	LOCAL			10	V3	8			CAMERA V3	74'
Vz41	EB FAR	LOCAL			13	V4	4			CAMERA V4	74'
Vz42	EB NEAR	COMB.			14	V12	4	4		CAMERA V7	74'
Vz51	NB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	74'
Vz52	NB LEFT TURN NEAR	LOCAL			8	V5	5			CAMERA V5	74'
Vz61A&B	SB FAR	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A&B	SB NEAR	COMB.			4	V14	6	6		CAMERA V1	74'
Vz71	EB LEFT TURN FAR	COMB.			15	V15	4	7		CAMERA V7	74'
Vz72	EB LEFT TURN NEAR	LOCAL			16	V7	4			CAMERA V7	74'
Vz81	WB FAR	LOCAL			11	V8	8			CAMERA V8	74'
Vz82	WB NEAR	COMB.			12	V16	8	8		CAMERA V3	74'
					SPARE AMP CHN. * =						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: 'AMP CHN=' REFERS TO THE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9=SYSTEM DETECTOR 1. V10=SYSTEM DETECTOR 2

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 10-29-15 FILE NAME: t070365_03.dgn

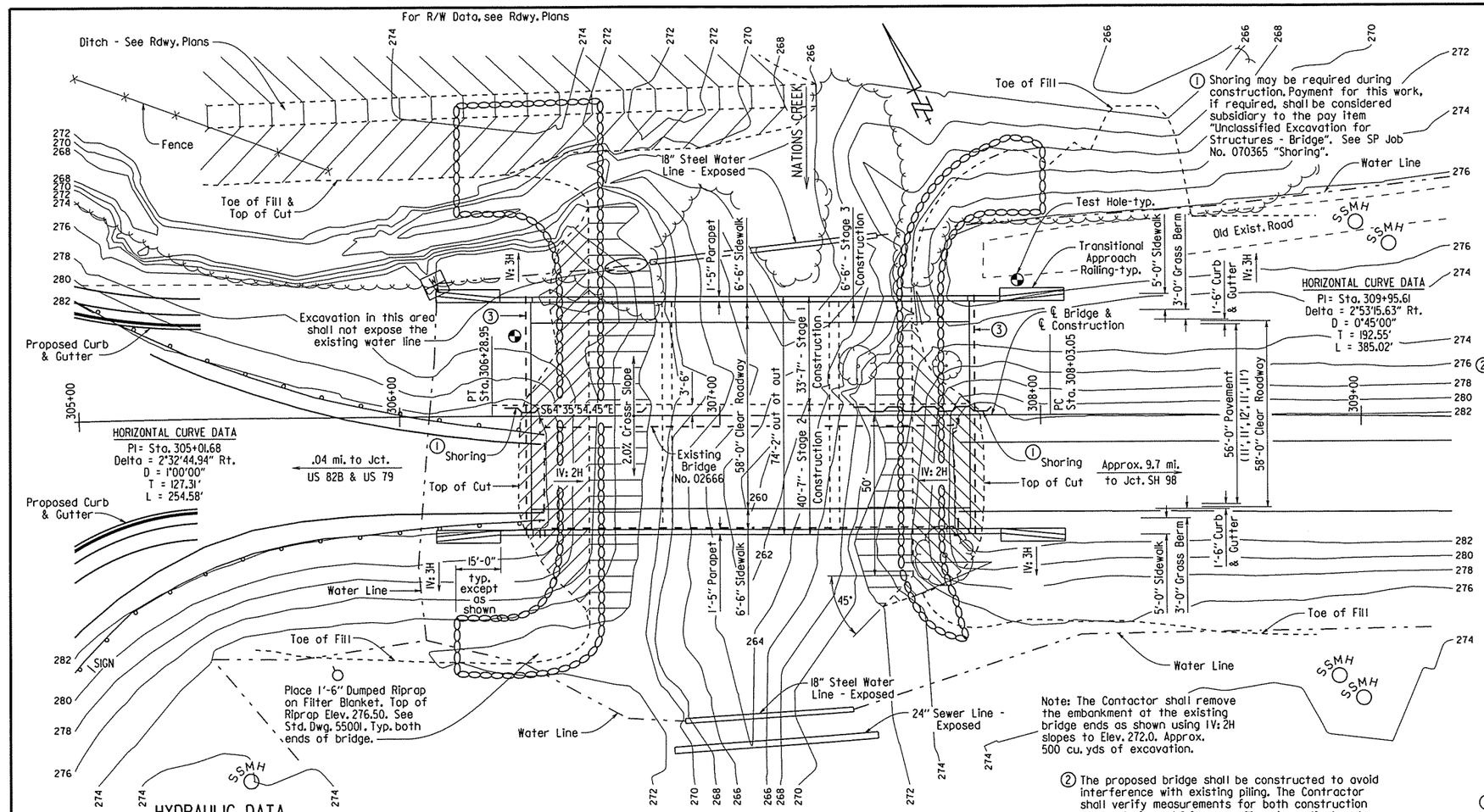
PERMANENT TRAFFIC SIGNAL

LOCATION:	HWY. 79/82-E. NORTH ST. /WARNOCK SPRINGS RD.		
CITY:	MAGNOLIA		
COUNTY:	COLUMBIA		
DISTRICT:	7	SCALE: N/A	DRAWN BY: CJS

10-29-15
t070365_03.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.		070365	131	331
				①	07361 -	LAYOUT		- 57513

For R/W Data, see Rdwy. Plans



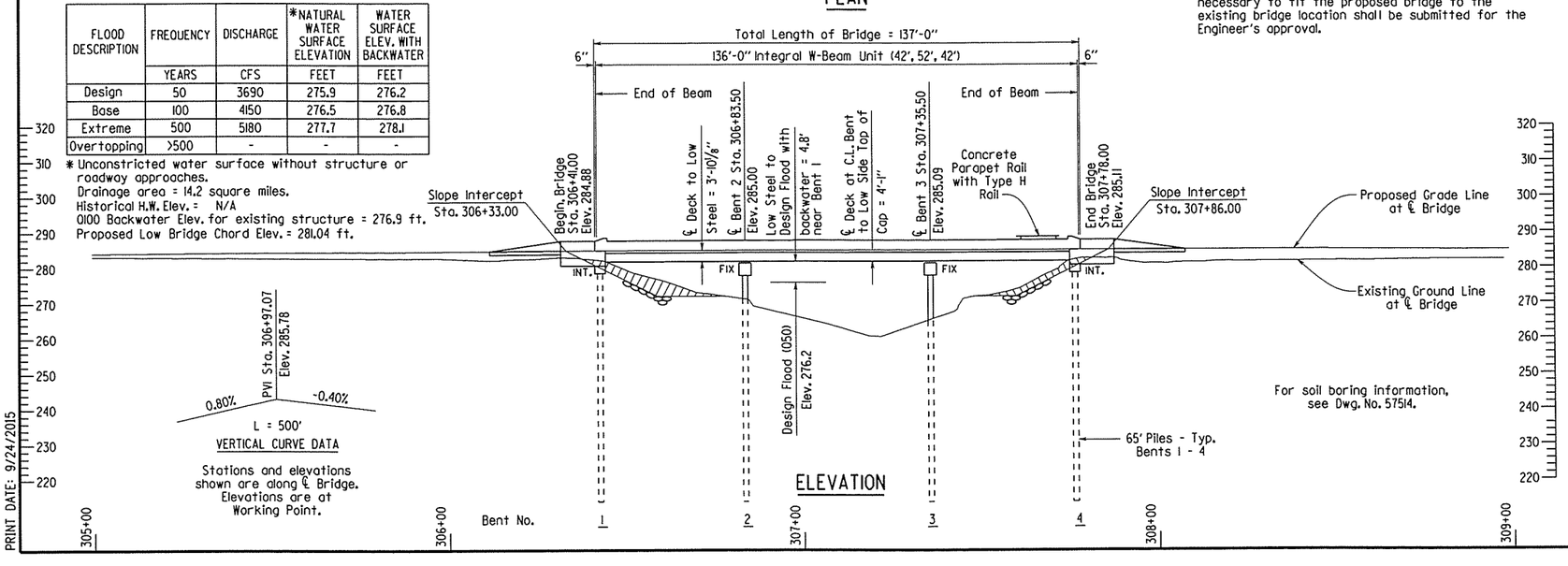
PLAN

② The proposed bridge shall be constructed to avoid interference with existing piling. The Contractor shall verify measurements for both construction stages before driving any piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	3690	275.9	276.2
Base	100	4150	276.5	276.8
Extreme	500	5180	277.7	278.1
Overtopping	>500	-	-	-

* Unconstricted water surface without structure or roadway approaches.
Drainage area = 14.2 square miles.
Historical H.W. Elev. = N/A
0100 Backwater Elev. for existing structure = 276.9 ft.
Proposed Low Bridge Chord Elev. = 281.04 ft.



ELEVATION

PRINT DATE: 9/24/2015

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown in the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATION: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection numbers in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (6th Edition, 2012) with 2013 Interims.

LIVE LOADING: HL93 SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 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. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

② CONCRETE PILING: Piling in Bents 1 & 4 shall be 16" square prestressed concrete piles and shall be driven to a minimum ultimate bearing capacity of 190 tons per pile. Piling in Bents 2 & 3 shall be 24" square prestressed concrete piles and shall be driven to a minimum ultimate bearing capacity of 280 tons per pile. All piling shall be driven to a minimum tip elevation of 235.00 or lower. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place.

Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 70' pile as the first pile in each bent during Stage 1 Construction.

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 48,500 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bents 1 & 4. It is estimated that a minimum rated hammer energy of 66,300 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bents 2 & 3.

PREBORING: Preboring is required for all piling in Bents 1 & 4 to a depth of 10' below bottom of cap. Prebored holes shall be 6" greater than the diameter of the pile cross-section and shall be backfilled with sand or pea gravel after piles are in place. This required preboring will be paid for at the unit price bid for "Preboring". The Contractor shall be responsible for keeping holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Temporary casings, if required, shall not be paid for directly but shall be considered subsidiary to "Preboring".

Preboring, water jetting or other methods approved by the Engineer may be needed below the required preboring at Bents 1 thru 4 to achieve the minimum tip elevation. Preboring to achieve the minimum tip elevation shall be in accordance with Subsection 805.08(a). Any cost associated with achieving the minimum tip elevation shall be considered subsidiary to the item "Concrete Piling".

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.

③ PIPE UNDERDRAIN: One pipe underdrain with outlet protectors shall be installed behind each bridge end in accordance with Section 611 & Std. Dwg. No. PU-1. Pipe underdrains and outlet protectors will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

DETAIL DRAWINGS:

	DRAWING NO.
Stage Construction	57515
End Bents	57516 & 57519
Int. Bents	57517
136' Integral W-Beam Unit	57520 - 57526
Transitional Approach Railing	57528
Type H Metal Bridge Railing	57527
16" Prestressed Concrete Piles	55022
24" Prestressed Concrete Piles	57518
Standard General Notes for Steel Bridge Structures	55006

EXISTING BRIDGE: Existing Bridge No. 02666 (1 log mile 2.24) is 31.7' wide and 130' long and consists of four - 32' W-Beam spans supported by concrete trestle pile bents. The existing bridge occupies the same location as the proposed new bridge.

REMOVAL AND SALVAGE: After Stage 1 Construction of the new bridge is opened to traffic, the Existing Bridge No. 02666 shall be removed in accordance with Section 205. All material 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
9-25-15
CHARLES R. ELLIS
BRIDGE ENGINEER

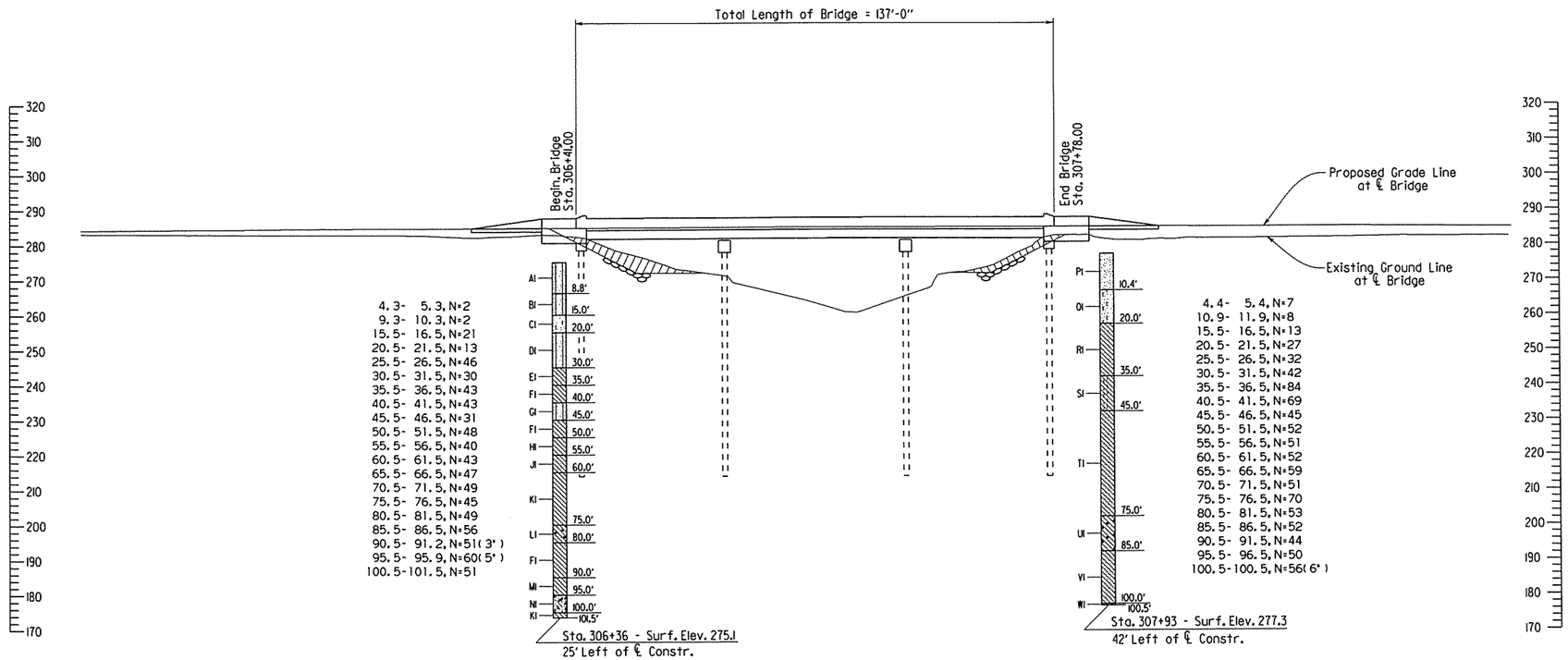
LAYOUT OF BRIDGE OVER NATIONS CREEK
HWY. 79 NO.-CO. RD. 525 (MAGNOLIA) (S)
COLUMBIA COUNTY
ROUTE 82 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-24-14 FILENAME: b070365_11.dgn
CHECKED BY: ADV DATE: 9/17/15 SCALE: 1" = 20'
DESIGNED BY: ADV DATE: 4/14

BRIDGE NO. 07361 DRAWING NO. 57513

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.		070365	132	331
				(1) 07361 -		SOIL BORINGS	- 57514	



ELEVATION

Bent No. 1 2 3 4

BORING LEGEND

A1-Moist, Very Loose, Brown Silt with Sand and some Organic Matter
B1-Wet, Very Loose, Brown and Gray Sandy Silt
C1-Wet, Medium Dense, Gray Sand with Silt
D1-Wet, Medium Dense to Dense, Gray Sandy Silt with some Gravel
E1-Moist, Very Stiff, Gray Sandy Clay with Trace of Organic Matter
F1-Moist, Hard, Gray Clay
G1-Moist, Dense, Gray Sandy Silt
H1-Moist, Hard, Gray Clay with some Cemented Sand Seams
J1-Moist, Hard, Gray Clay with Sand
K1-Moist, Hard, Gray Clay with some Sand Seams
L1-Moist, Hard, Gray Clay with Sand Seams and Lignite
M1-Moist, Hard to Very Hard, Gray Clay with Trace of Cemented Sand
N1-Moist, Very Dense, Gray Sand with Clay and Gravel
P1-Moist, Loose, Light Brown Sand with Trace of Clay and Organic Matter
O1-Wet, Loose to Medium Dense, Light Brown Silty Sand with Trace of Organic Matter
R1-Moist, Very Stiff to Hard, Gray Clay with Sand Seams and some Organic Matter
S1-Wet, Very Hard, Gray Silty Clay with Trace of Sand
T1-Moist, Hard, Gray Clay with Sand Seams
U1-Moist, Very Hard, Gray Clay with Lignite Seams
V1-Moist, Hard, Gray Clay with Sand Seams and Trace of Lignite
W1-Moist, Very Hard, Gray Sandy Clay with Trace of Lignite

Note: Traces of lignite, organic matter and cemented sands were encountered in the borings and may be encountered in greater amounts at other locations within the project area.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SOIL BORINGS
NATIONS CREEK
HWY. 79 NO.-CO. RD. 525 (MAGNOLIA) (S)
COLUMBIA COUNTY

ROUTE SEC.

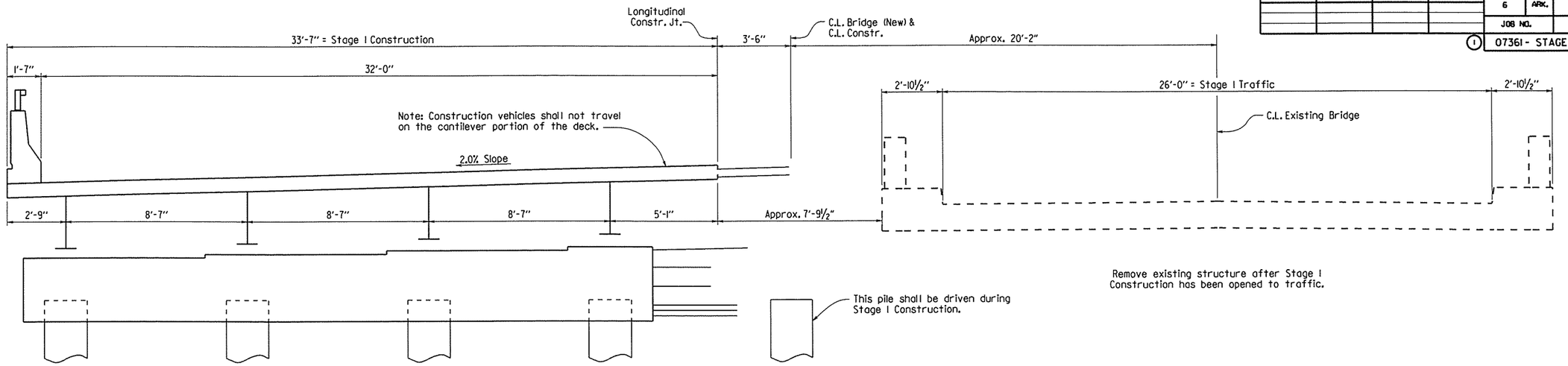
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-15-15 FILENAME: b070365_11.dgn
CHECKED BY: ADW DATE: 8/7/15 SCALE: 1" = 20'
DESIGNED BY: ADW DATE: 4/14

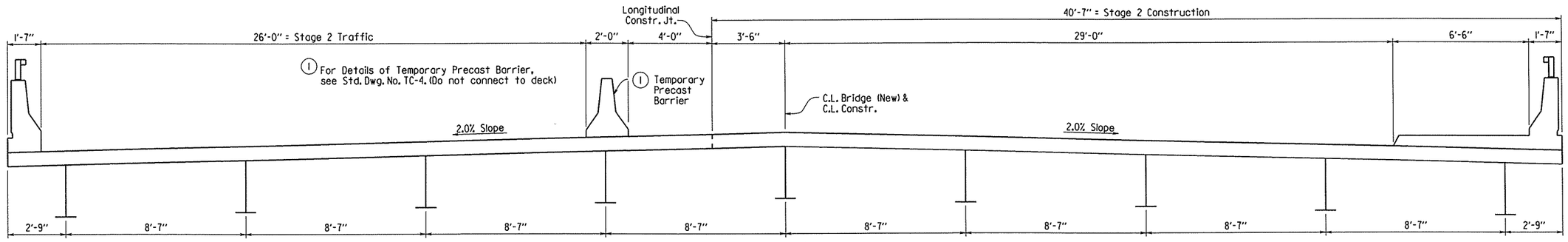
BRIDGE NO. 07361 DRAWING NO. 57514

PRINT DATE: 9/24/2015

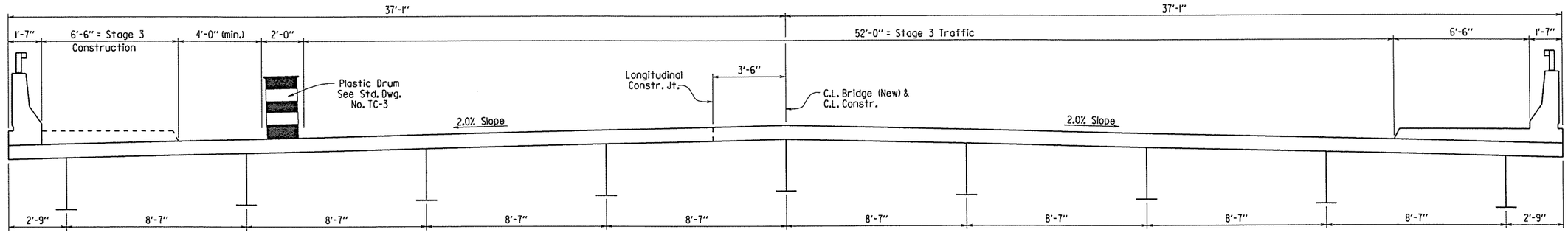
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	133	331
				① 07361 - STAGE CONSTRUCTION - 57515				



STAGE 1
Looking Ahead



STAGE 2
Looking Ahead



STAGE 3
Looking Ahead

See Roadway Plans for additional details of Stage Construction and Maintenance of traffic.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF STAGE CONSTRUCTION NATIONS CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

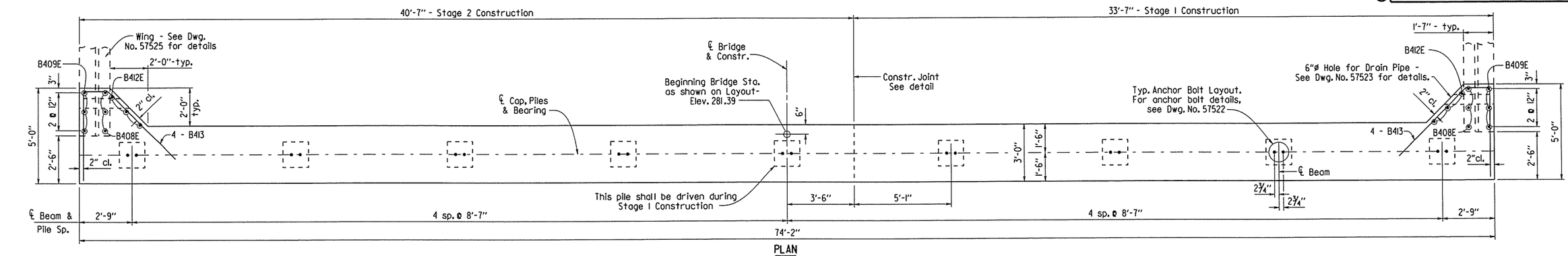
LITTLE ROCK, ARK.

DRAWN BY: ADN DATE: 5/16/14 FILENAME: b070365_sc.dgn
CHECKED BY: ADN DATE: 9/28/15 SCALE: 3/8" = 1'-0"
DESIGNED BY: ADN DATE: 4/7/14

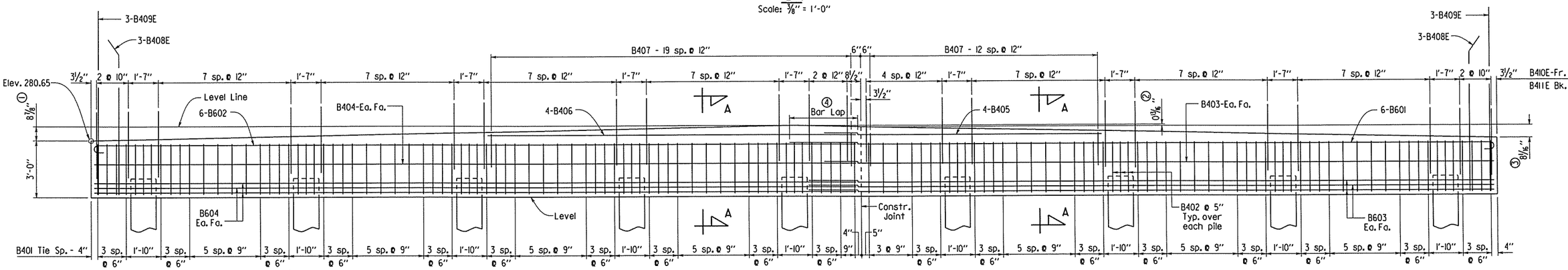
BRIDGE NO. 07361 DRAWING NO. 57515

PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	134	331
				①	07361 - BENT 1 - 57516			



PLAN
Scale: ⅜" = 1'-0"



ELEVATION
Looking Back
Scale: ⅜" = 1'-0"

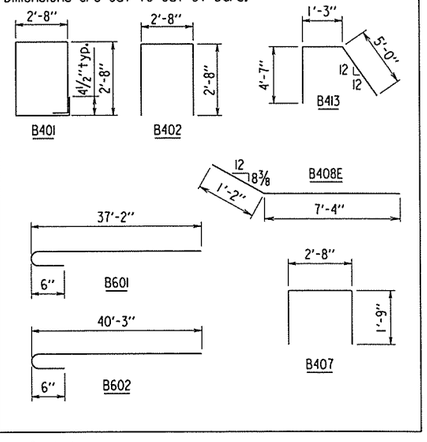
① Low side of cap to Top of cap at ℄ Bridge.
② Top of cap at Constr. Joint to Top of cap at ℄ Bridge.
③ Low side of cap to Top of cap at Constr. Joint.

④ 3'-7" lap - B601 & B602
2'-7" lap - B603 & B604
1'-9" lap - B403 & B404
1'-9" lap - B405 & B406

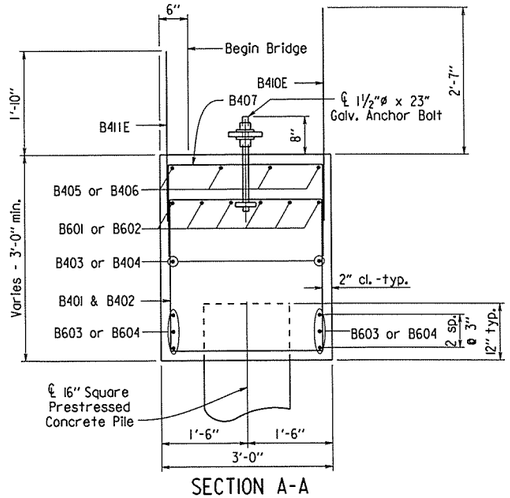
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	104	11'-0"	2"
B402	27	7'-10"	2"
B403	2	35'-4"	Str.
B404	2	40'-3"	Str.
B405	4	14'-8"	Str.
B406	4	19'-5"	Str.
B407	33	6'-0"	2"
B408E	6	8'-6"	2"
B409E	6	9'-8"	Str.
B410E	70	4'-1"	Str.
B411E	70	3'-4"	Str.
B412E	6	4'-8"	Str.
B413	8	10'-8"	2"
B601	6	37'-10"	4½"
B602	6	40'-11"	4½"
B603	6	36'-2"	Str.
B604	6	40'-3"	Str.

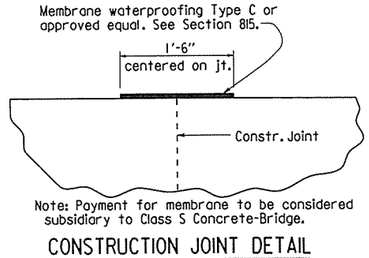
BENDING DIAGRAMS
Dimensions are out to out of bars.



Note: Bars with an "E" Suffix to be Epoxy Coated.



SECTION A-A
Scale: ¾" = 1'-0"



Note: Payment for membrane to be considered subsidiary to Class S Concrete-Bridge.

CONSTRUCTION JOINT DETAIL
No Scale

NOTES:

For General Notes, see Std. Dwg. No. 55006.

For details of prestressed concrete piles, see Std. Dwg. No. 55022.

Granular backfill and pipe underdrain required behind end bent cap. See Dwg. No. 57523.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 1
NATIONS CREEK

ROUTE SEC.

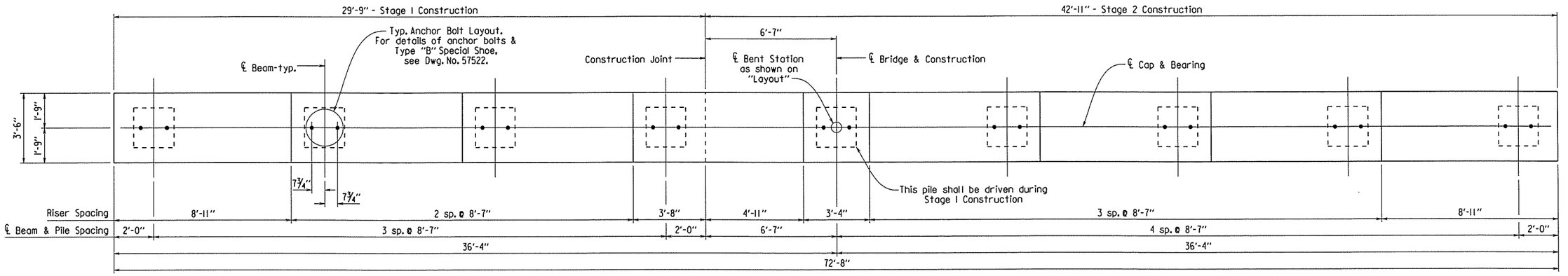
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-9-15 FILENAME: b070365_b1.dgn
CHECKED BY: ADH DATE: 9/7/15 SCALE: AS NOTED
DESIGNED BY: ADH DATE: 10/1/14

BRIDGE NO. 07361 DRAWING NO. 57516

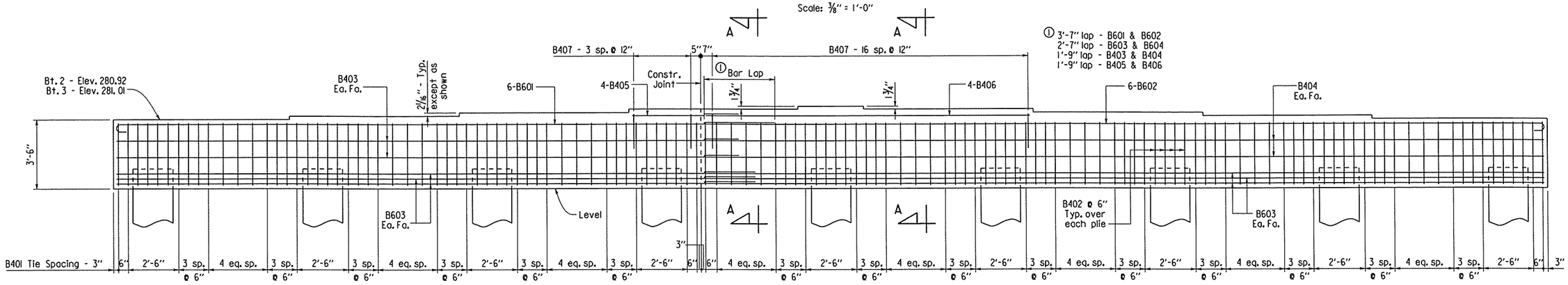
PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	135	331
				① 07361 -		INT BENTS	- 57517	



PLAN

Scale: ⅜" = 1'-0"

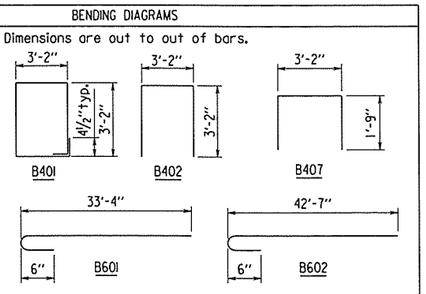


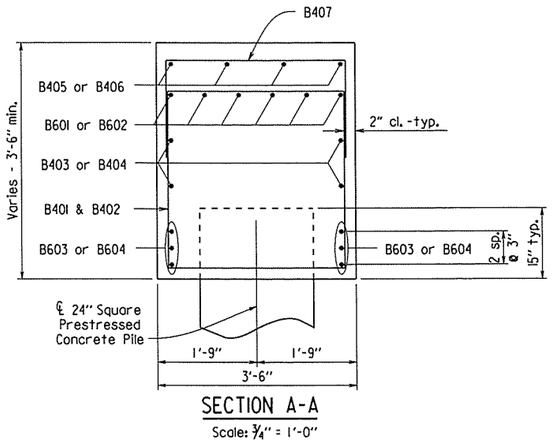
ELEVATION

Looking Ahead
Scale: ⅜" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	92	13'-0"	2"	Dimensions are out to out of bars.
B402	36	9'-4"	2"	
B403	4	31'-6"	Str.	
B404	4	42'-7"	Str.	
B405	4	5'-5"	Str.	
B406	4	16'-6"	Str.	
B407	21	6'-6"	2"	
B601	6	34'-0"	4½"	
B602	6	43'-3"	4½"	
B603	6	32'-4"	Str.	
B604	6	42'-7"	Str.	





SECTION A-A

Scale: ¾" = 1'-0"

NOTES:

For General Notes, see Std. Dwg. No. 55006.

For details of prestressed concrete piles, see Dwg. No. 57518.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS NATIONS CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

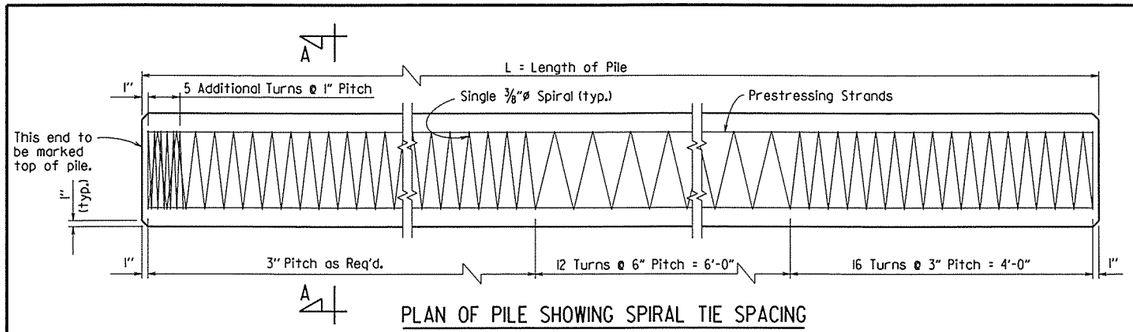
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-14-15 FILENAME: b070365_b2.dgn
CHECKED BY: ADW DATE: 9/7/15 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 1997

BRIDGE NO. 07361 DRAWING NO. 57517

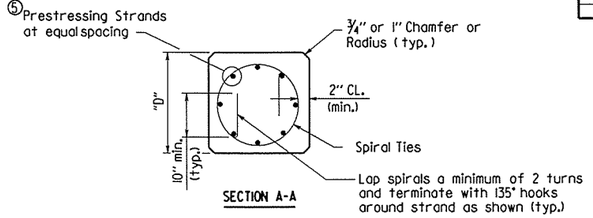
PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	130	331
				① 07361 - CONCRETE PILES - 57518				



PLAN OF PILE SHOWING SPIRAL TIE SPACING

NOTE: Strand location shall be symmetrical about the axis of the pile. Circular spiral ties are required for all piles. Spirals terminate with 1½ turns.



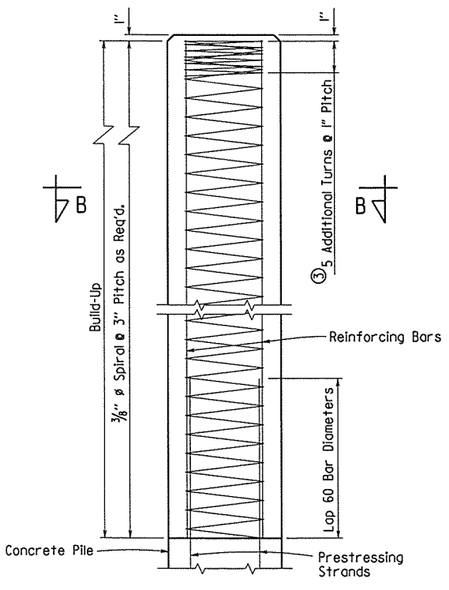
⑤See table "Prestressed Concrete Pile Properties" for actual number of strands per pile size.

PRESTRESSED CONCRETE PILE PROPERTIES

	Grade	Strand Diameter	① No. of Strands per Size "D" 24" Sq.	Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
Low Relaxation	250	7/16"	24	27,000	20,300
		1/2"	18	36,000	27,000
	270	7/16"	21	31,000	23,300
		1/2"	16	41,300	31,000

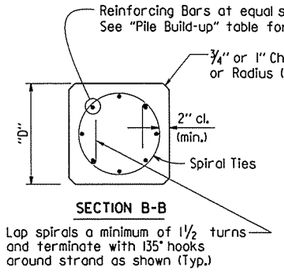
①Number based on initial pre-stress force of "B" x Ultimate Tensile Stress, Prestress Losses and min. 700 psi Unit Prestress on concrete after Losses.

"B" – 0.75 Low Relaxation



BUILD-UP

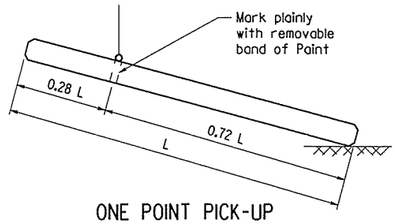
③The five additional turns of spiral reinforcing may be omitted for build-up without additional driving.



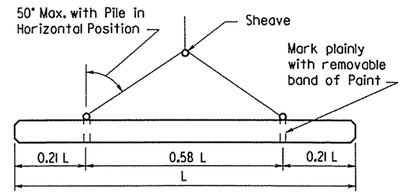
BUILD-UP PILE REINFORCING

Pile Size	No. Req'd.	Bar Size
24" Sq.	12	No. 9

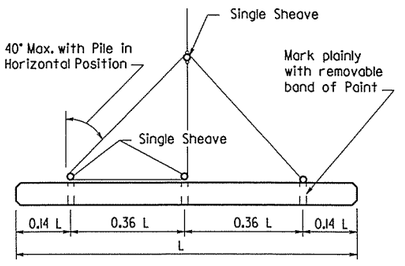
PILE BUILD-UP



ONE POINT PICK-UP



TWO POINT PICK-UP



THREE POINT PICK-UP

MAXIMUM PICKUP LENGTHS "L"

Type of Pick-Up	Prestressed 24" Sq.
One Point	69'
Two Point	104'
Three Point	138'

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (Sixth Edition, 2012).

SEISMIC PERFORMANCE ZONE: 1

The Contractor shall use prestressed piles ONLY. Piles will be measured and paid for at the contract unit price bid for "Concrete Piling".

CONCRETE: Concrete in prestressed piles shall be Class S(AE) and shall have a minimum compressive strength (f'c) of 5,000 psi at 28 days. Compressive strength at transfer of the prestressing force shall be not less than 4,000 psi. Concrete in build-ups shall have a minimum compressive strength of 4,000 psi and shall be cured for a minimum of 10 days.

COARSE AGGREGATE: Maximum size of coarse aggregate shall be ¾".

PRESTRESSING REINFORCING: Seven-wire low relaxation strands shall conform to the general requirements of AASHTO M 203. Broken wires within individual strands will be permitted up to 2% of the total number of wires in each pile, providing that there is not more than one broken wire per strand. Two or more broken wires per strand will be cause for replacement of the strand, even though the two broken wires are within the 2% limitation.

SPIRAL REINFORCING: Spiral reinforcing shall be steel wire meeting the requirements of AASHTO M 32 or M 225 or shall be plain round steel bars meeting the requirements of Grade 60, AASHTO M31 or M322, Type A.

REINFORCING STEEL: Reinforcing Steel for pile build-up shall conform to AASHTO M31 or M322, Type A, with mill test reports.

MANUFACTURE, TRANSPORTATION AND STORAGE: Shipment of piles from the plant site or pile driving will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete. Prestressed piles may be removed from the casting bed to nearby storage any time after transfer of stress. See Section 802 "Concrete for Structures" for additional information.

Unless otherwise approved by the Engineer, all protruding or exposed pile lifting or transporting devices above the finished ground shall be removed after pile driving is complete. Removal shall be a minimum of 1" below the surface of the pile and the cavity shall be filled with a non-shrink grout listed on the Department's QPL.

FORMS: For forming exterior of piles, the use of steel forms on concrete-founded casting beds is required unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding ¼" per foot.

TOLERANCES: Pile ends shall be plane surfaces perpendicular to the longitudinal axis of pile with a maximum tolerance of ⅛" per foot transversely.

The maximum sweep (deviation from straightness measured from end to end of the pile, while not subject to bending forces) shall not exceed ⅛" in 10 feet.

BUILD-UPS: To provide for build-ups of piles where authorized by the Engineer, concrete shall be cut back to expose the reinforcing steel for a distance sufficient to provide a lap of 60 diameters of the reinforcing bars required for build-up.

INSTALLATION, MEASUREMENT AND PAYMENT: See Section 805 "Piling" of the Standard Specifications.



BRIDGE ENGINEER

DETAILS OF 24" SQUARE PRESTRESSED CONCRETE PILES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-27-15 FILENAME: b070365_cp.dgn

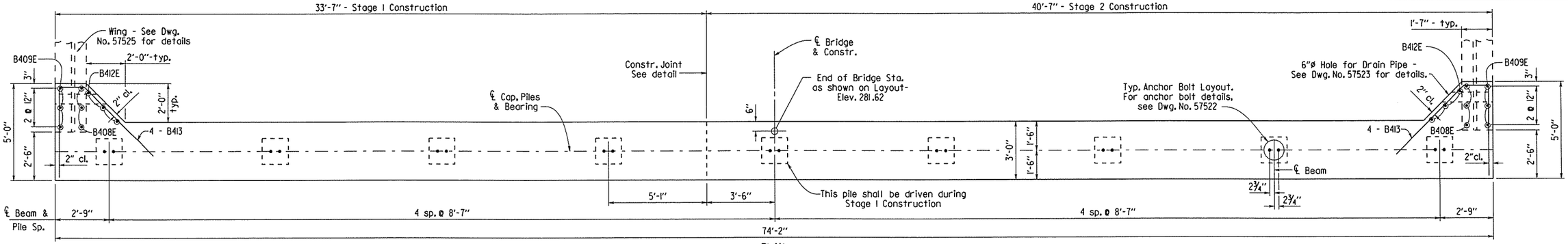
CHECKED BY: RDH DATE: 8/7/15 SCALE: NO SCALE

DESIGNED BY: STD. DATE: ——

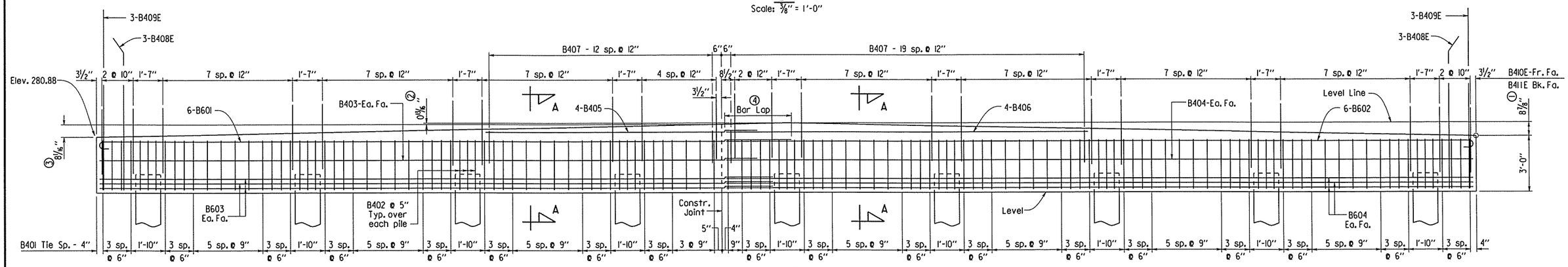
BRIDGE NO. 07361 DRAWING NO. 57518

PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	137	331
				①	07361 -	BENT 4 - 57519		



PLAN
Scale: ⅜" = 1'-0"



ELEVATION
Looking Ahead
Scale: ⅜" = 1'-0"

① Low side of cap to Top of cap at ℄ Bridge.

② Top of cap at Constr. Joint to Top of cap at ℄ Bridge.

③ Low side of cap to Top of cap at Constr. Joint.

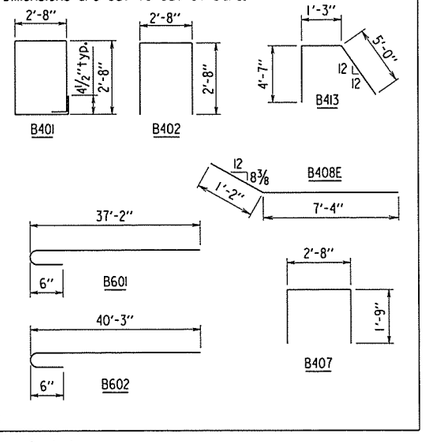
④ 3'-7" lap - B601 & B602
2'-7" lap - B603 & B604
1'-9" lap - B403 & B404
1'-9" lap - B405 & B406

BAR LIST

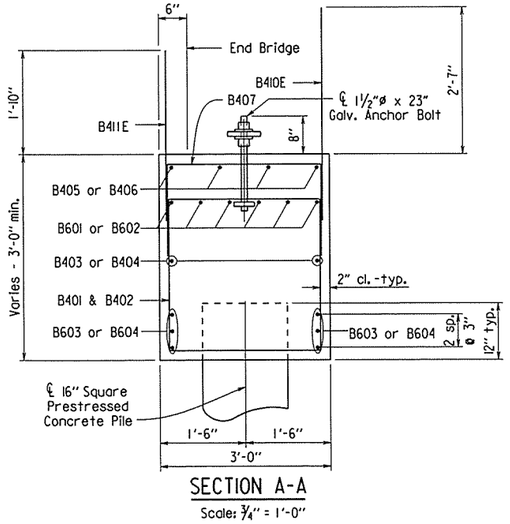
MARK	NO. REQ'D.	LENGTH	P.D.
B401	104	11'-0"	2"
B402	27	7'-10"	2"
B403	2	35'-4"	Str.
B404	2	40'-3"	Str.
B405	4	14'-8"	Str.
B406	4	19'-5"	Str.
B407	33	6'-0"	2"
B408E	6	8'-6"	2"
B409E	6	9'-8"	Str.
B410E	70	4'-1"	Str.
B411E	70	3'-4"	Str.
B412E	6	4'-8"	Str.
B413	8	10'-8"	2"
B601	6	37'-10"	4½"
B602	6	40'-11"	4½"
B603	6	36'-2"	Str.
B604	6	40'-3"	Str.

BENDING DIAGRAMS

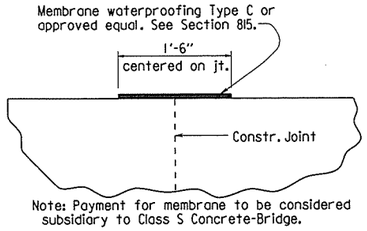
Dimensions are out to out of bars.



Note: Bars with an "E" Suffix to be Epoxy Coated.



SECTION A-A
Scale: ¾" = 1'-0"



Note: Payment for membrane to be considered subsidiary to Class S Concrete-Bridge.

CONSTRUCTION JOINT DETAIL
No Scale

NOTES:

For General Notes, see Std. Dwg. No. 55006.

For details of prestressed concrete piles, see Std. Dwg. No. 55022.

Granular backfill and pipe underdrain required behind end bent cap. See Dwg. No. 57523.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 4 NATIONS CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-9-15 FILENAME: b070365_bl.dgn
CHECKED BY: ADN DATE: 9/11/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 9/11/15

BRIDGE NO. 07361 DRAWING NO. 57519

PRINT DATE: 9/24/2015

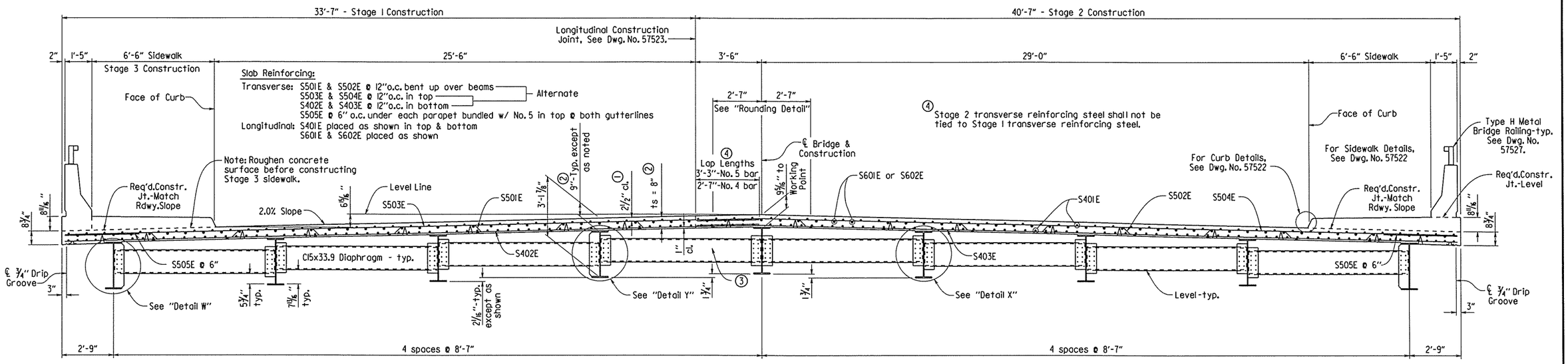
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	138	331
				① 07361 - 136 FT. UNIT		- 57520		

① Tolerance : Minus = 1/4", Plus equal to amount of Slab Thickening used to meet Slab Thickness Tolerance. See "Adjustment for Slab Thickness Tolerance".

② See "Adjustment for Slab Thickness Tolerance".

Note: At Contractor's Option, in lieu of providing bars S501E or S502E, one No. 5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S501E and S502E. Bars in top and bottom shall be Epoxy Coated.

Note: Class 1 Protective Surface Treatment shall be applied to the Roadway Surface, Top of Sidewalk, and the Face and Top of Concrete Parapet Rail.

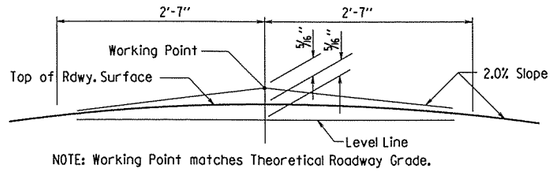


③ In this bay, connection plate widths and diaphragm lengths shall be fabricated, as necessary, to facilitate installation of diaphragms between adjacent beams with significant differential deflections. Hole diameters of 15/16" shall be provided for these connections with a washer supplied under both the nut and head of bolt.

Before the Stage 2 deck pour, loosely install as many bolts as possible on both ends of the diaphragm in this bay to the satisfaction of the Engineer. An external means of supporting the Stage 1 overhang shall be provided and shall remain in place until after completion of the Stage 2 deck pour. See "Deck Support at Longitudinal Construction Joint" detail, Dwg. No. 57522. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the Stage 2 deck pour.

TYP. ROADWAY SECTION

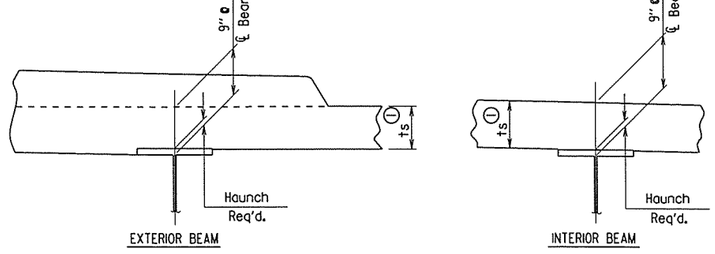
Looking Ahead
Scale: 3/8" = 1'-0"



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale



① 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.

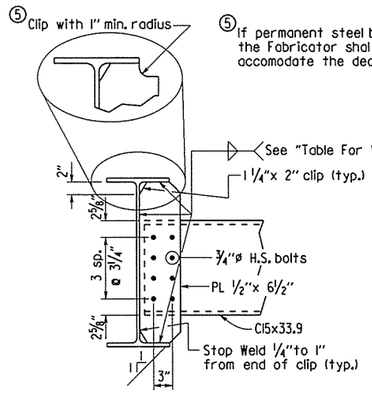
Note : ts = slab thickness as shown in "Typ. Roadway Section".

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

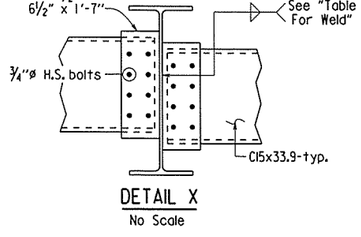
No Scale



DETAIL W

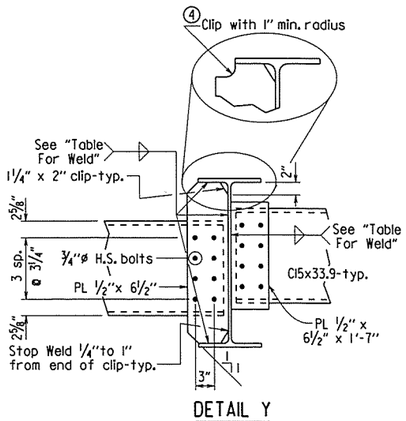
No Scale

⑤ If permanent steel bridge deck forms are used, the Fabricator shall clip plates as necessary to accomodate the deck form supports.



DETAIL X

No Scale



DETAIL Y

No Scale

Note: All plates and channels shown shall be AASHTO M 270, Gr. 50W.

Bolts in connections shall be properly installed and tightened in accordance with Subsection 807.71.

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

For General Notes, see Std. Dwg. No. 55006.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT
NATIONS CREEK

ROUTE SEC.

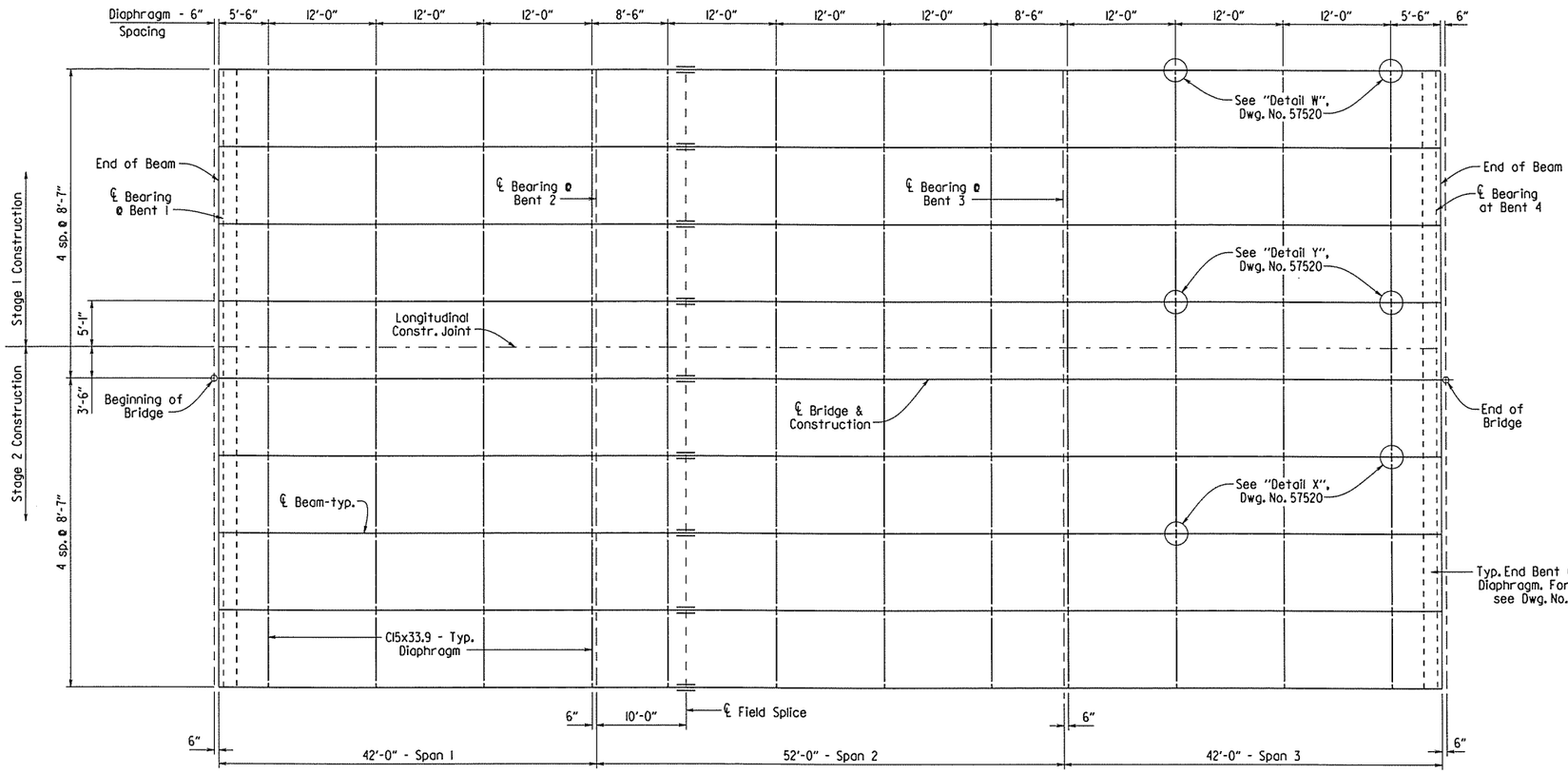
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-19-15 FILENAME: b070365_sl.dgn
CHECKED BY: ADN DATE: 9/7/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 9/7/15

BRIDGE NO. 07361 DRAWING NO. 57520

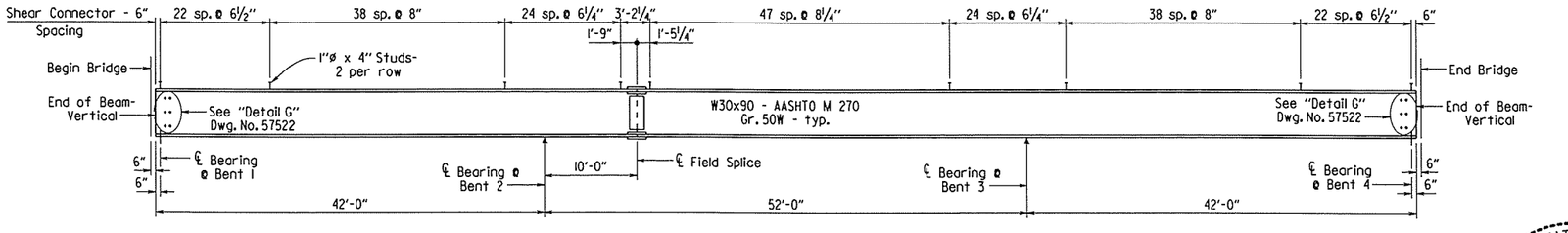
PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	139	331
				(1) 07361 -		136 FT. UNIT	- 57521	



FRAMING PLAN

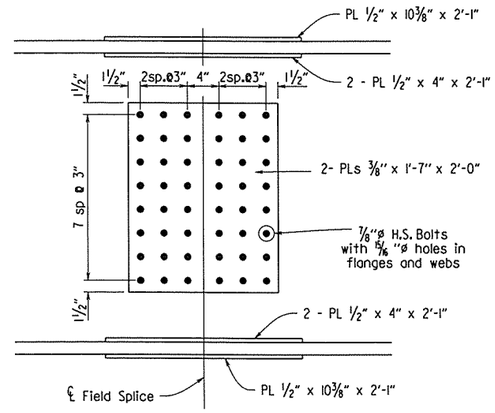
Scale: 1/8" = 1'-0"



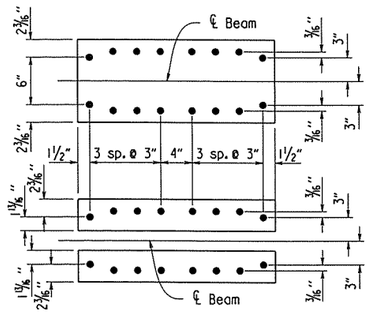
Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

BEAM ELEVATION

No Scale



WEB SPLICE



FLANGE SPLICE

Note: All field splice plates shall be AASHTO M 270, Gr. 50W

FIELD SPLICE DETAILS

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT
NATIONS CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-23-15
CHECKED BY: ADW DATE: 9/7/15
DESIGNED BY: ADW DATE: 7/24
FILENAME: b070365_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07361 DRAWING NO. 57521

PRINT DATE: 9/24/2015

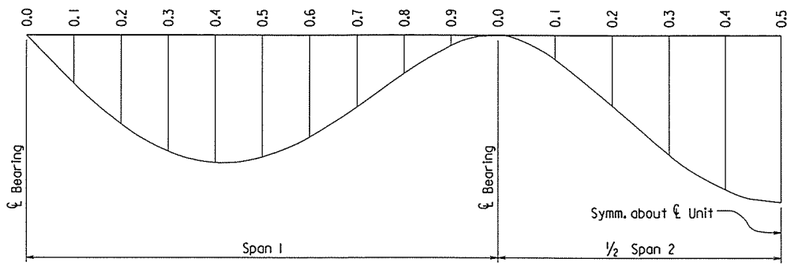
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	140	331
				① 07361 -		136 FT. UNIT	- 57522	

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Struct. Steel + Slab + Parapet + Sidewalk	
		Int. Beams	Ext. Beams	Int. Beams	Ext. Beams	Int. Beams	Ext. Beams
1	0	0	0	0	0	0	0
	0.1	0.011	0.010	0.094	0.081	0.102	0.099
	0.2	0.021	0.019	0.174	0.149	0.188	0.182
	0.3	0.028	0.024	0.228	0.194	0.246	0.237
	0.4	0.030	0.027	0.250	0.213	0.270	0.261
	0.5	0.029	0.026	0.239	0.204	0.258	0.250
	0.6	0.024	0.021	0.200	0.171	0.216	0.209
	0.7	0.017	0.015	0.141	0.120	0.152	0.147
	0.8	0.009	0.008	0.075	0.064	0.081	0.078
	0.9	0.002	0.002	0.020	0.017	0.022	0.021
½ Span 2	0	0	0	0	0	0	0
	0.1	0.006	0.005	0.047	0.040	0.051	0.049
	0.2	0.017	0.015	0.138	0.118	0.149	0.144
	0.3	0.028	0.025	0.234	0.200	0.253	0.245
	0.4	0.037	0.032	0.302	0.258	0.326	0.316
	0.5	0.040	0.035	0.327	0.280	0.354	0.342

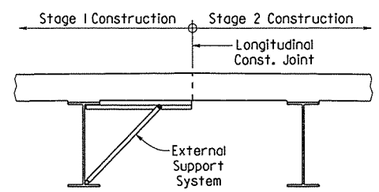
℄ Unit

Note: Table is symmetrical about ℄ Unit



DEAD LOAD DEFLECTIONS DIAGRAM (TYP.)

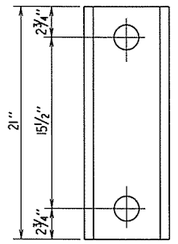
Note:
Camber for Dead Load Deflection plus Vertical curve ± ¼" tolerance.
Deflections shown are from a chord from ℄ Bearing to ℄ Bearing.
Vertical curve corrections not included. Negative sign (-) indicates point above chord.



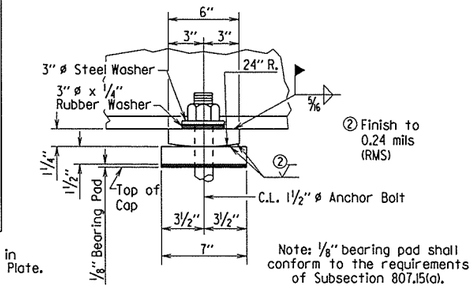
Stage 1 external supports in this bay shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding their removal.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

Looking Ahead
No Scale



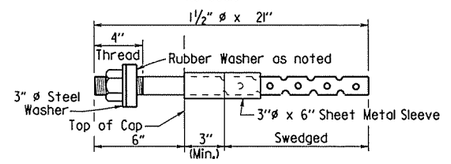
FIXED SHOE: 1¾" ø Holes in Sole Plate and Masonry Plate.



Note: ⅛" bearing pad shall conform to the requirements of Subsection 807.15(a).

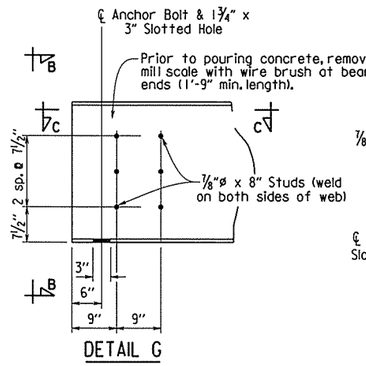
TYPE "B" SPECIAL SHOE AT INTERMEDIATE BENTS

No Scale



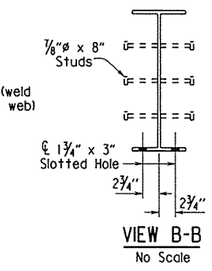
Anchor Bolts, Nuts and Washers to be according to Subsection 807.07. Indentations shall be circular with rounded bottoms and staggered as shown above. Rubber washer shall be closed cell expanded rubber, meeting the requirements of ASTM D1056 - 85 2B2 E2, and shall be considered subsidiary to the item of "Structural Steel in Beam Spans (M 270, Gr. 50W)". Anchor Bolts, Nuts and Washers shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)". Anchor bolts shall be Grade 55.

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 masonry. 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)."



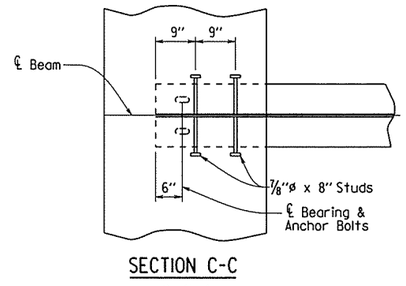
DETAIL G

No Scale



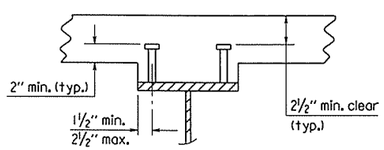
VIEW B-B

No Scale



SECTION C-C

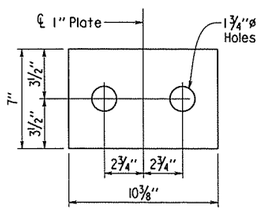
No Scale



Stud Shear Connectors shown shall be 1"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.

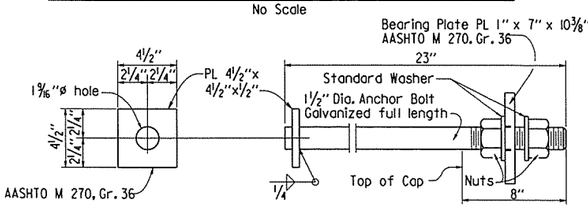
SHEAR CONNECTOR DETAIL

No Scale



BEARING PLATE DETAIL

No Scale



ANCHOR BOLT DETAIL AT END BENTS

No Scale

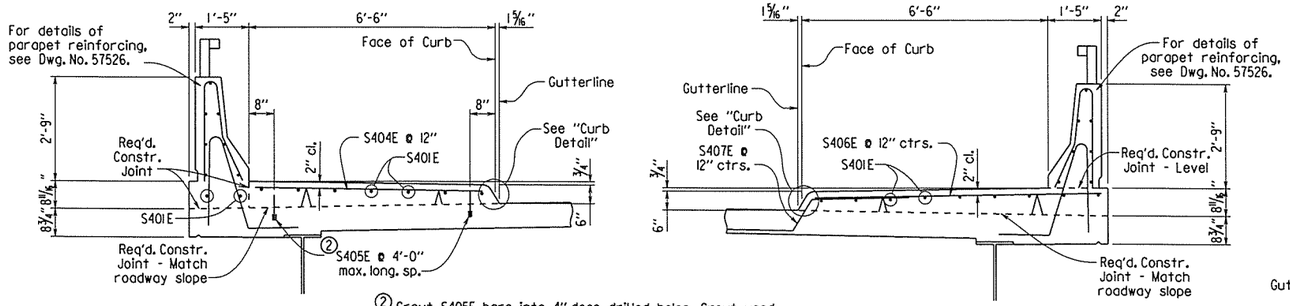
Note:

Anchor bolts shall comply with AASHTO M314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07. Plates, anchor bolts, nuts and washers shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)".

Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.

ANCHOR BOLT DETAIL FOR INTERMEDIATE BENTS

No Scale



Note: Roughen concrete surfaces before constructing Stage 3 sidewalk.

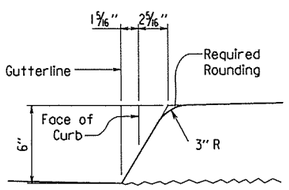
② Grout S405E bars into 4" deep drilled holes. Grout used shall be an approved epoxy grout listed on the QPL. Hole diameter and installation procedure shall be as recommended by the grout manufacturer. Dowels shall be located to avoid damaging deck reinforcing. Payment for grouting and placement shall be considered subsidiary to "Epoxy Coated Reinforcing Steel (Grade 60)".

STAGE 3 SIDEWALK DETAIL

No Scale

STAGE 2 SIDEWALK DETAIL

No Scale



CURB DETAIL

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT
NATIONS CREEK

ROUTE SEC.

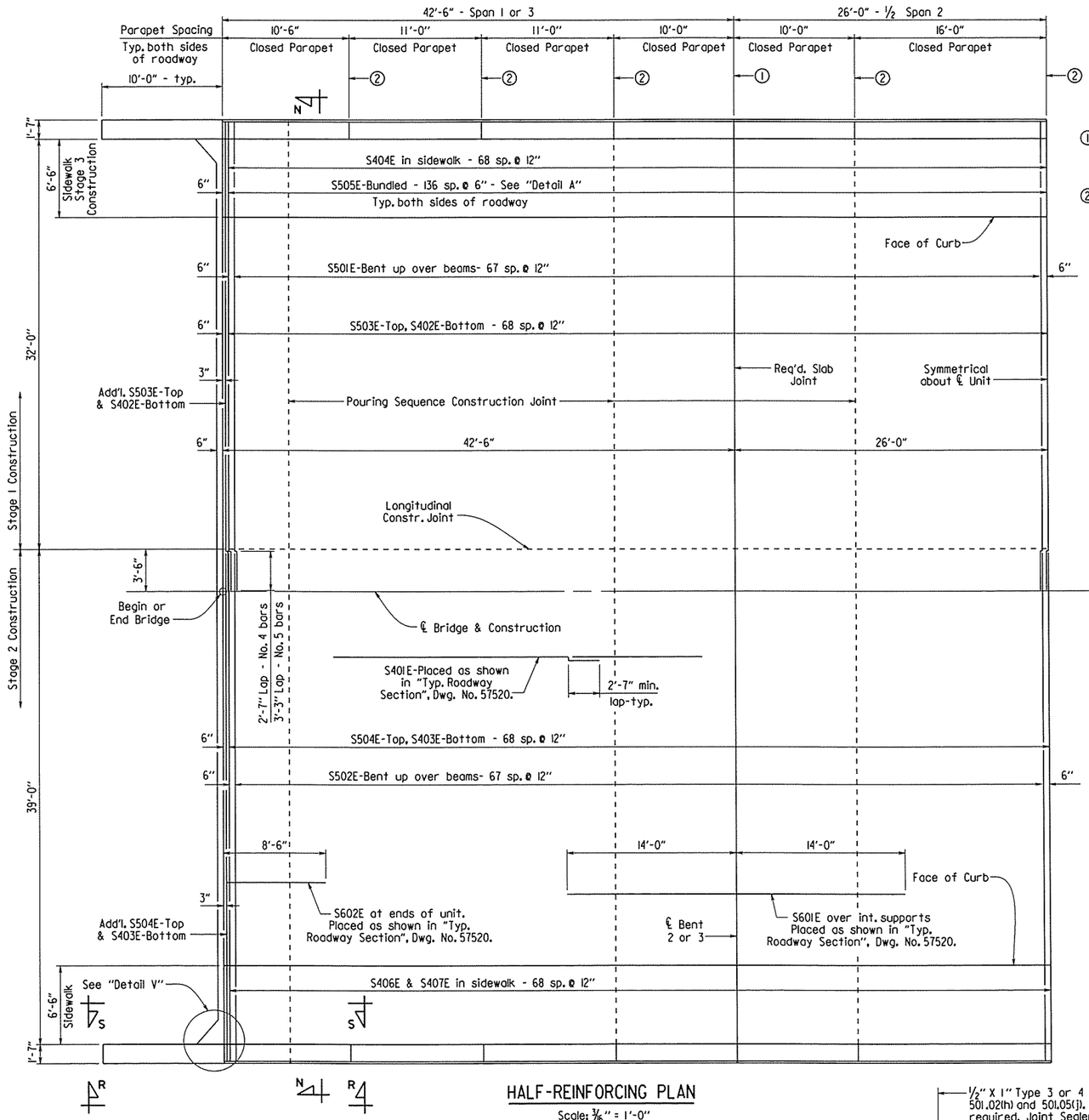
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-24-15 FILENAME: b070365_sl.dgn
CHECKED BY: RON DATE: 9/7/15 SCALE: NO SCALE
DESIGNED BY: RON DATE: 9/7/15

BRIDGE NO. 07361 DRAWING NO. 57522

PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	141	331
				①	07361 - 136 FT. UNIT - 57523			

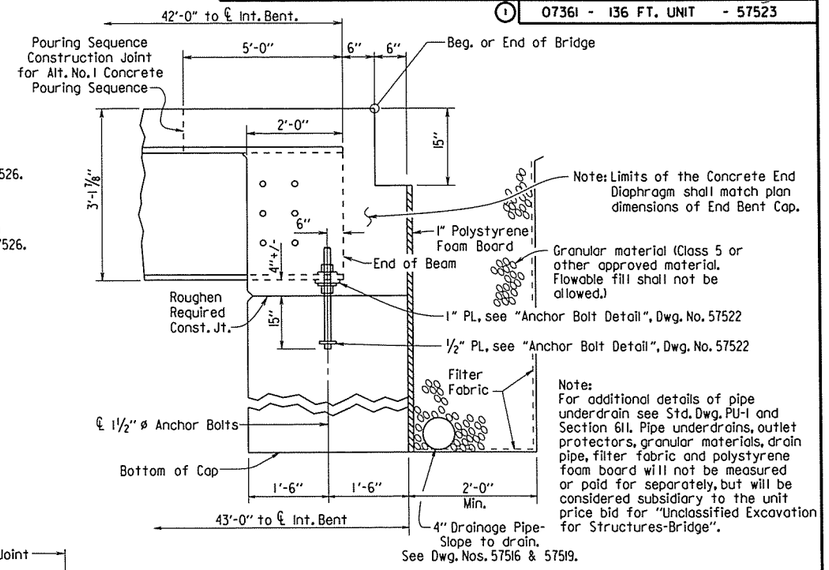


HALF-REINFORCING PLAN

Scale: 3/16" = 1'-0"

① ℄ Full-Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of sidewalk. See Dwg. No. 57526.

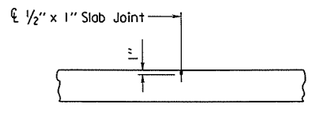
② ℄ Partial-Depth Parapet Joint (¼" to 1" max.). Stop 1'-2" from top of sidewalk. See Dwg. No. 57526.



Note: For additional details of pipe underdrain see Std. Dwg. PU-1 and Section 611. Pipe underdrains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation for Structures-Bridge".

SECTION AT END BENT

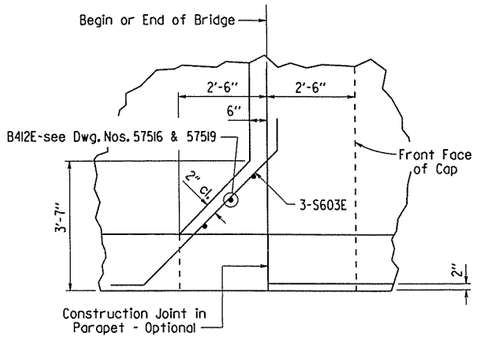
No Scale



SLAB JOINT DETAIL

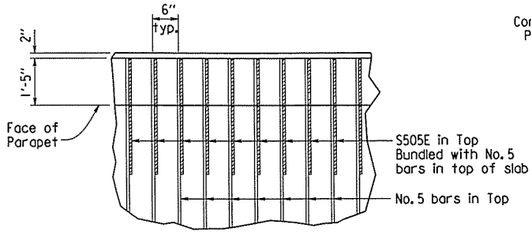
No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the sidewalk and parapet railing is 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. No joint sealer shall be placed under the sidewalk area. The joint sealer shall extend across the deck slab and across the top of the sidewalk.



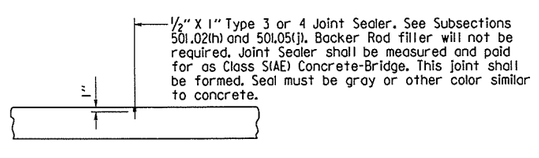
DETAIL V

No Scale



DETAIL A

No Scale



LONGITUDINAL CONSTRUCTION JOINT

No Scale

Notes:

Rails and wings above required construction joint are included in span construction and are included in span quantities.

Unless otherwise noted, required slab joints and pouring sequence contruction joints shall align with parapet open joints at the gutterline.

For "VIEW N-N", see Dwg. No. 57524.

For "VIEW R-R" and "SECTION S-S", see Dwg. No. 57525.

Construction joints shown are based on Alternate No. 1 Pouring Sequence, see Dwg. No. 57524.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 136'-0"
INTEGRAL W-BEAM UNIT
NATIONS CREEK

ROUTE SEC.

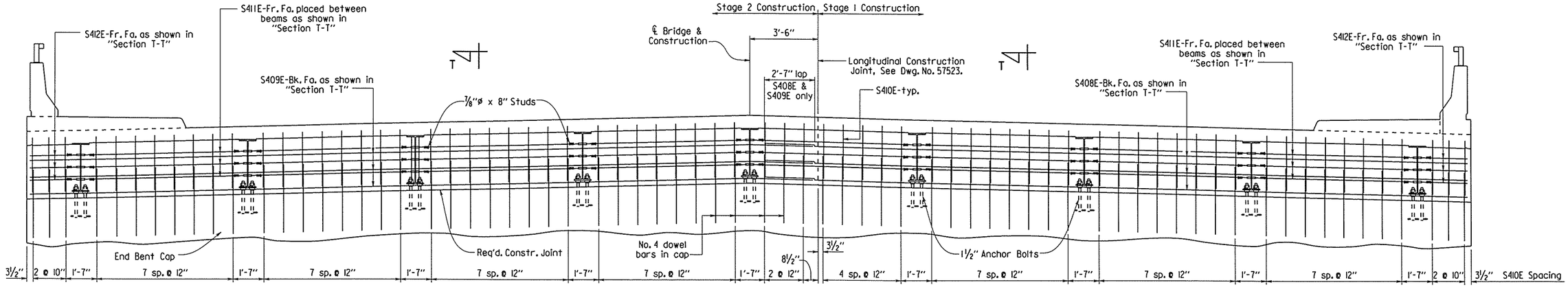
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-24-15 FILENAME: b070365_sl.dgn
CHECKED BY: RDW DATE: 9/28/15 SCALE: AS NOTED
DESIGNED BY: RDW DATE: 9/15

BRIDGE NO. 07361 DRAWING NO. 57523

PRINT DATE: 9/24/2015

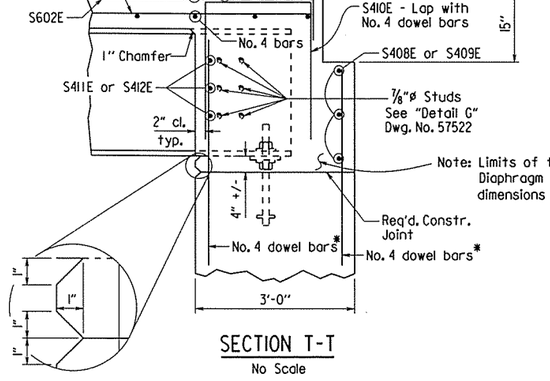
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	142	331
				① 07361 - 136 FT. UNIT		- 57524		



SECTION N-N

Looking Back - Bent 1
Bent 4 Similar
Scale: 3/8" = 1'-0"

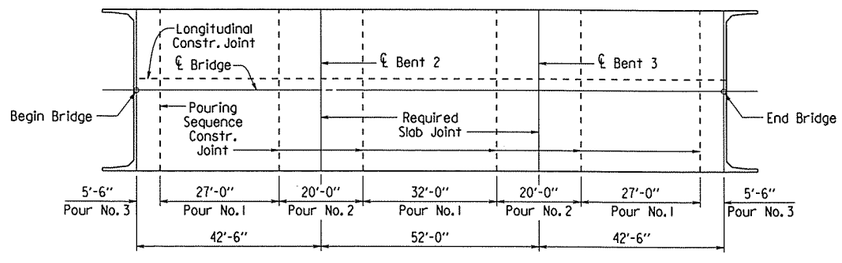
Note: End Diaphragm shall be poured monolithically with deck slab.



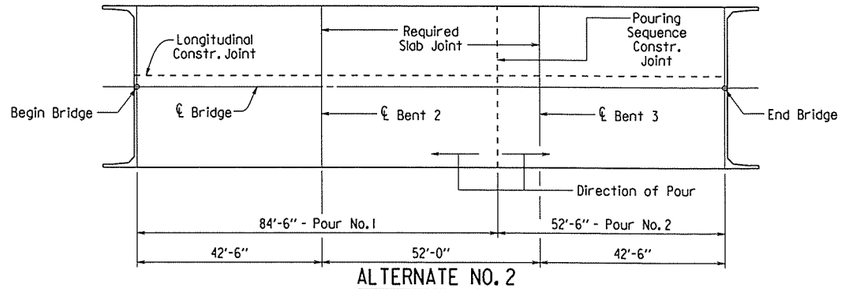
SECTION T-T

No Scale

*See Dwg. Nos. 57516 & 57519 for reinforcing details and placement.



ALTERNATE NO. 1



ALTERNATE NO. 2

CONCRETE POURING SEQUENCE

No Scale

Note: 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. All Pours (2) must be placed before Pours (3) 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. 72 hours shall elapse between the end of the deck pour and the start of the parapet railing pour for Stage 1. 72 hours shall elapse between the end of a deck pour and the start of a sidewalk pour for Stage 2. 72 hours shall elapse between the end of a sidewalk pour and the start of a parapet railing pour for Stage 2. Any sidewalk or railing pours made before the entire slab unit has been placed for each stage must be approved by the Engineer. The concrete in a bridge superstructure unit must be placed, consolidated, and screeded off for the entire pour before concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequences shown.

End diaphragm shall be poured monolithically with deck slab.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 136'-0" INTEGRAL W-BEAM UNIT NATIONS CREEK

ROUTE SEC.

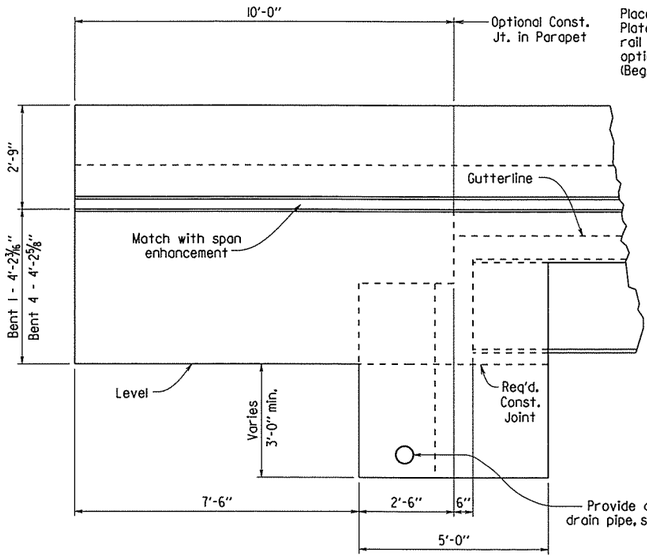
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-25-15 FILENAME: b070365_sl.dgn
CHECKED BY: ADW DATE: 9/28/15 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 9/28/15

BRIDGE NO. 07361 DRAWING NO. 57524

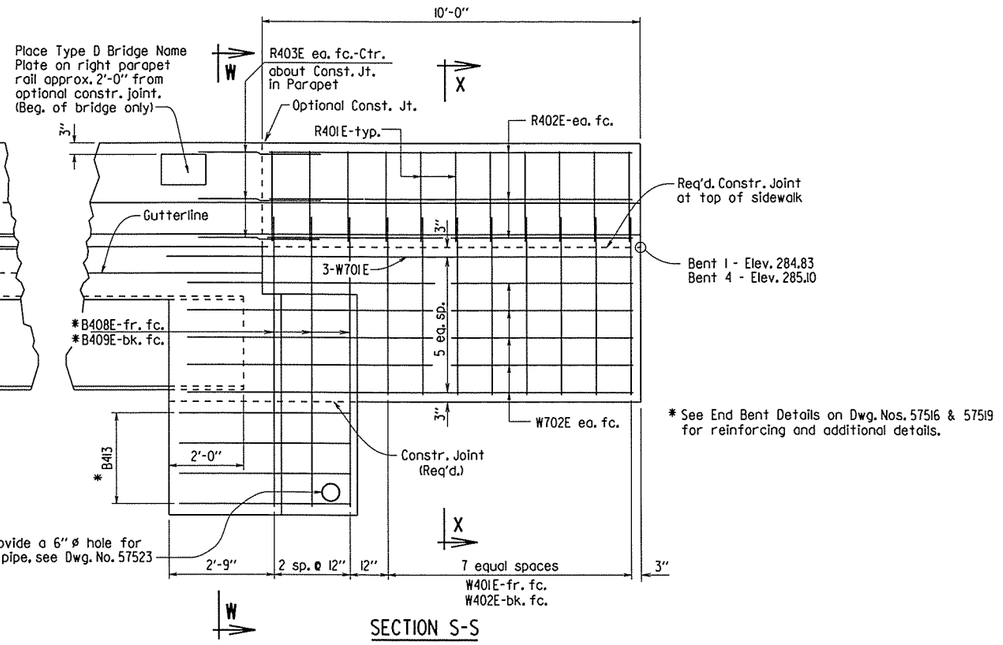
PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	143	331
				(1) 07361 -		136 FT. UNIT	- 57525	



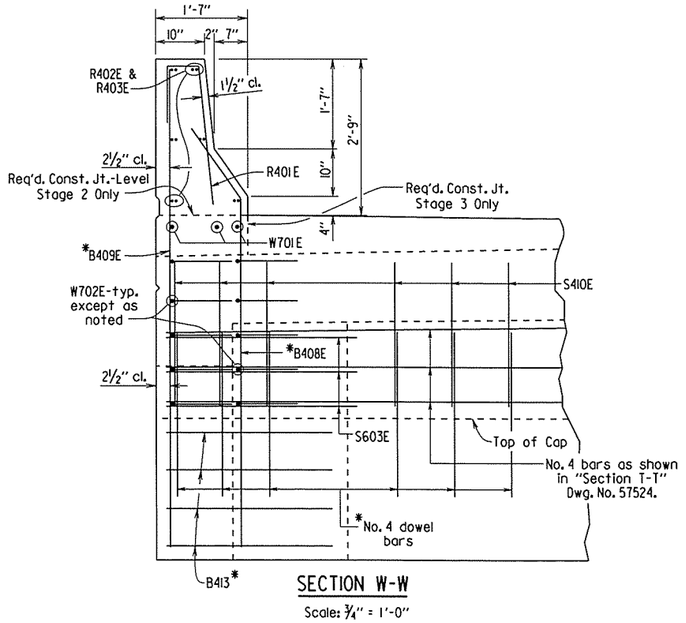
VIEW R-R

Scale: 1/2" = 1'-0"



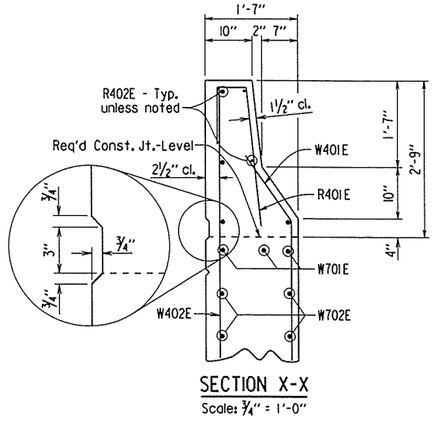
SECTION S-S

Scale: 1/2" = 1'-0"



SECTION W-W

Scale: 3/4" = 1'-0"



SECTION X-X

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 136'-0"
INTEGRAL W-BEAM UNIT
NATIONS CREEK

ROUTE SEC.

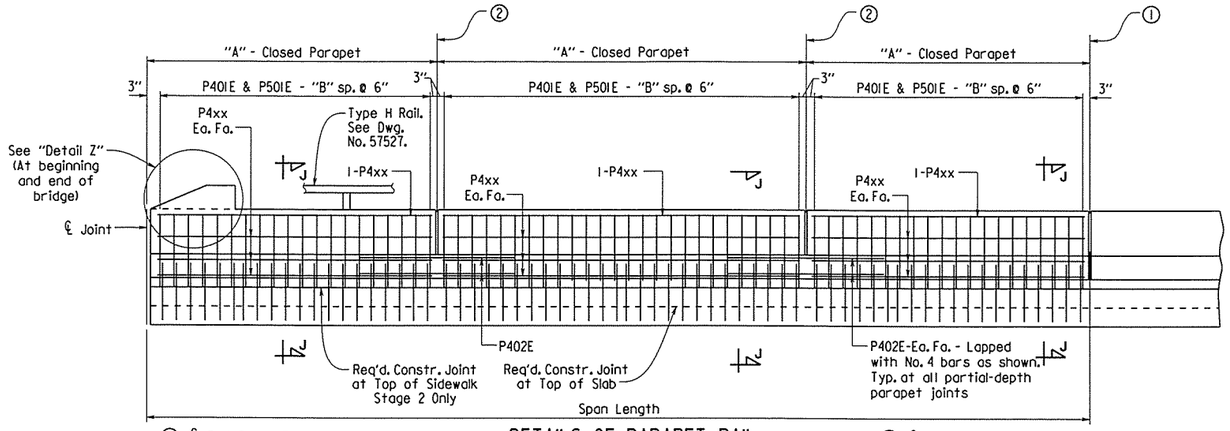
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-29-15 FILENAME: b070365_sl.dgn
CHECKED BY: ADN DATE: 8/7/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 7/14

BRIDGE NO. 07361 DRAWING NO. 57525

PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	1	331
				①	07361 -	136 FT. UNIT	- 57526	



① ℄ Full-Depth Parapet Joint (¼" to 1" max.) as shown in "Half-Reinforcing Plan", Dwg. No. 57523. Stop 4" from top of sidewalk.

DETAILS OF PARAPET RAIL

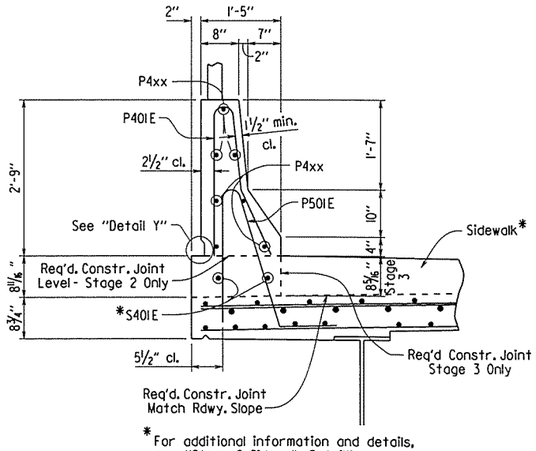
Scale: ⅜" = 1'-0"

② ℄ Partial-Depth Parapet Joint (¼" to 1" max.) as shown in "Half-Reinforcing Plan", Dwg. No. 57523. Stop 1'-2" from top of sidewalk.

TABLE OF PARAPET RAIL VARIABLES

"A" Closed Parapet	"B"	P4xx Bar
10'-6"	20	P403E
11'-0"	21	P404E
10'-0"	19	P405E
16'-0"	31	P406E

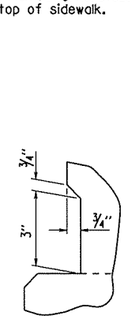
For location of Closed Parapet panels, see "Half-Reinforcing Plan", Dwg. No. 57523.



*For additional information and details, see "Stage 2 Sidewalk Detail" or "Stage 3 Sidewalk Detail", Dwg. No. 57522.

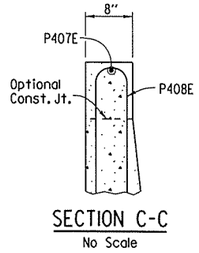
SECTION J-J

Scale: ¾" = 1'-0"



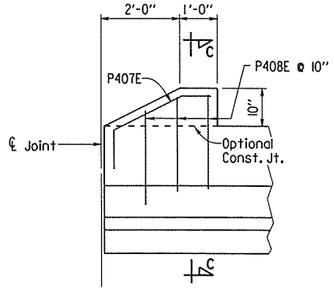
DETAIL Y

No Scale



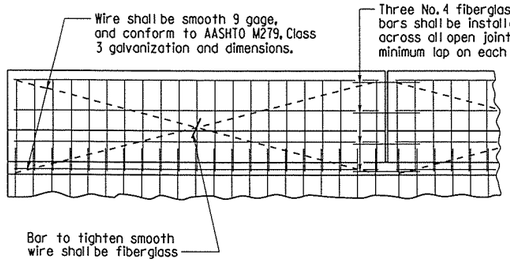
SECTION C-C

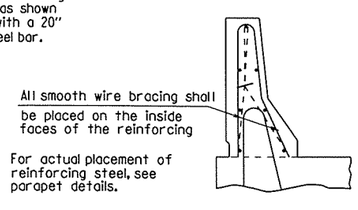
No Scale



DETAIL Z

No Scale





All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practicalto 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

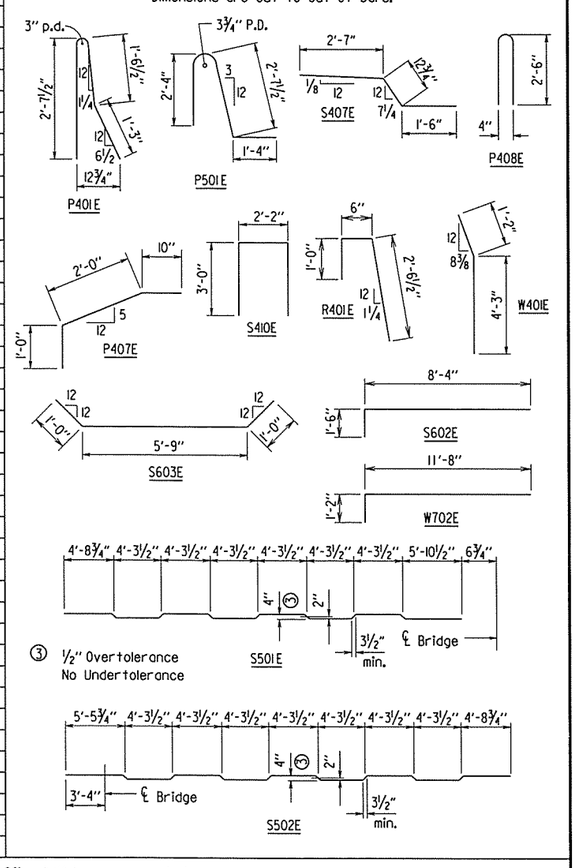
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	904	36'-2"	Str.
S402E	139	36'-2"	Str.
S403E	139	40'-3"	Str.
S404E	137	6'-1"	Str.
S405E	70	8"	Str.
S406E	137	7'-8"	Str.
S407E	137	5'-2"	3"
S408E	6	36'-2"	Str.
S409E	6	40'-3"	Str.
S410E	140	8'-0"	2"
S411E	48	8'-3"	Str.
S412E	12	2'-5"	Str.
P401E	548	5'-6"	3"
P402E	72	5'-6"	Str.
P403E	28	10'-2"	Str.
P404E	56	10'-8"	Str.
P405E	56	9'-8"	Str.
P406E	28	15'-8"	Str.
P407E	4	3'-10"	2"
P408E	12	5'-2"	3"
R401E	44	3'-11"	2"
R402E	24	9'-8"	Str.
R403E	24	4'-5"	Str.
W401E	8	5'-5"	3"
W402E	8	6'-7"	Str.
S501E	136	37'-1"	3"
S502E	136	41'-1"	3"
S503E	139	36'-10"	Str.
S504E	139	40'-3"	Str.
S505E	546	4'-10"	Str.
P501E	548	6'-5"	2½"
S601E	154	28'-0"	Str.
S602E	154	9'-9"	4½"
S603E	12	7'-9"	4½"
W701E	12	12'-11"	Str.
W702E	40	12'-8"	5¼"

BENDING DIAGRAMS

Dimensions are out to out of bars.



③ ½" Overtolerance
No Undertolerance

Note: Bars marked with an "E" suffix shall be epoxy coated.

PRINT DATE: 24-SEP-2015

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 7 OF 7
DETAILS OF 136'-0"
INTEGRAL W-BEAM UNIT
NATIONS CREEK

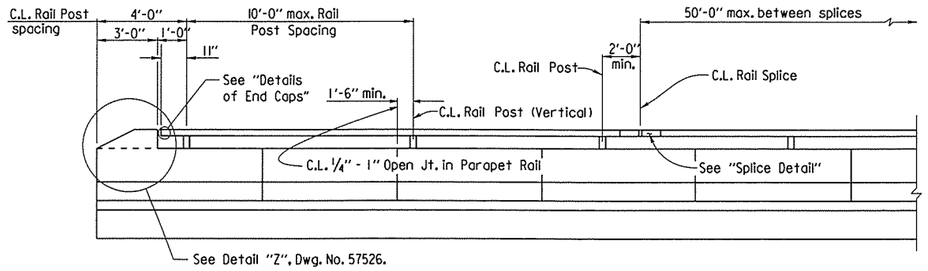
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

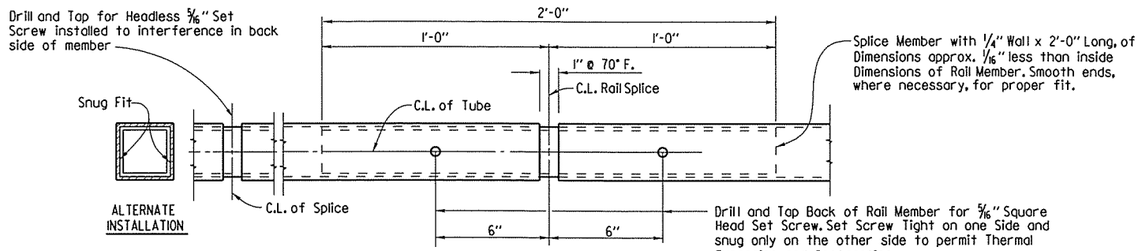
DRAWN BY: KDH DATE: 6-30-15
CHECKED BY: ADW DATE: 9/28/15
DESIGNED BY: ADW DATE: 9/28/15
FILENAME: b070365_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07361
DRAWING NO. 57526

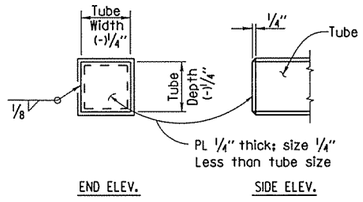
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	145	331
				(1) 07361- METAL BRIDGE RAIL - 57527				



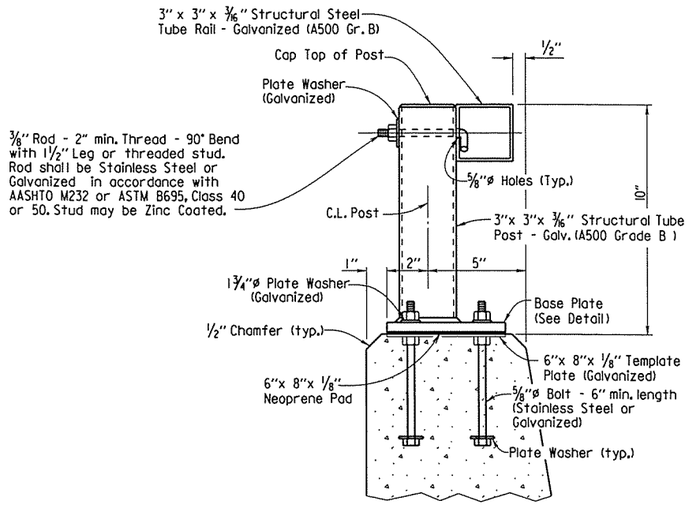
RAIL POST SPACING DETAIL

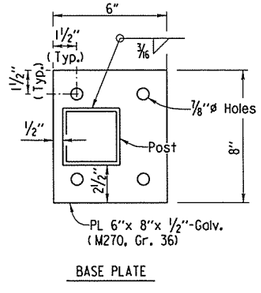


SPLICE DETAIL



DETAILS OF END CAPS





DETAILS OF POST ANCHOR SYSTEM

(CAST IN PLACE BOLTS)

NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge.

Maximum post spacing = 10'-0"

Minimum distance from centerline post to centerline open or contraction joints in parapet = 1'-6".

Rail splices shall be at 50' maximum spacing. Centerline splices shall be located at a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Bridge railing, including posts, fasteners, template plates, and neoprene pad shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

MATERIALS:

Tubing, Posts, and Accessories: AASHTO M270, Gr. 36 or ASTM A500-Grade B.

Railing End Caps: AASHTO M270, Grade 36, galvanized.

Steel Rail Members shall be galvanized in accordance with AASHTO M 111 after fabrication.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or A354-Grade BC galvanized in accordance with AASHTO M232 or ASTM B695, Class 40 or 50.

Splice Set Screws: Stainless steel, ASTM Specifications A193 or A320-Grade B8, or AASHTO M270, Grade 36, galvanized.

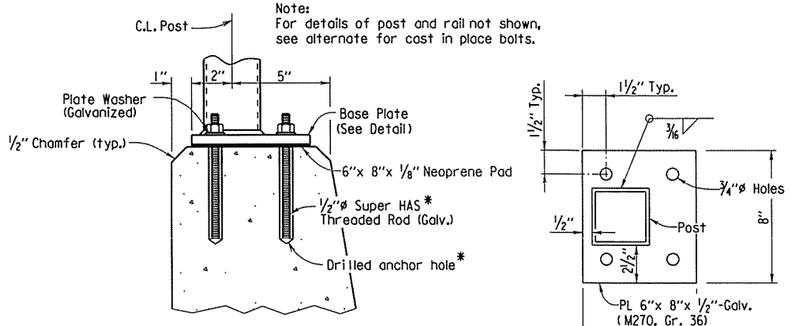
Nuts: Nuts shall conform to AASHTO M292, Gr. 8 (Stainless steel) or galvanized in accordance with AASHTO M232 or ASTM B695, Class 40 or 50.

Threads: Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1.

Washers shall conform to ASTM F436, galvanized in accordance with AASHTO M232 or ASTM B695, Class 40 or 50, or of stainless steel conforming to ASTM A276 or A167-Type 302.

Plate washers shall be stainless steel and conform to the requirements of ASTM A167-Type 302 ot AASHTO M270, Gr. 36, galvanized in accordance with AASHTO M232 or ASTM B695, Class 40 or 50. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B 18.22.1, Type A plain washer (Wide Series).

Mixing of stainless steel and galvanized fasteners will not be allowed.



* HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(EPOXY ADHESIVE ANCHORS)

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TYPE H METAL BRIDGE RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 05/18/13 FILENAME: b070365_hr.dgn

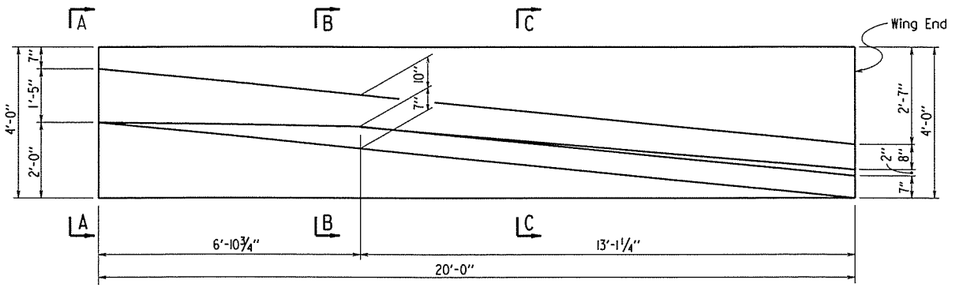
CHECKED BY: ADC DATE: 2/7/15 SCALE: NONE

DESIGNED BY: _____ DATE: _____

BRIDGE NO. 07361 DRAWING NO. 57527

PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	14/6	331
				①	07361 -	TRANSITION RAIL - 57528		



PLAN OF TRANSITIONAL APPROACH RAILING

Note: Railings on each side of Roadway are opposite hand to each other.

General Notes

Transitional Approach Railing shall be placed at ends of turnback wings at locations shown on the layout. All longitudinal lines shall be concentric to ℄ Bridge.

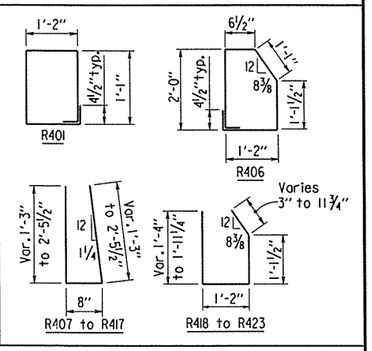
All Concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

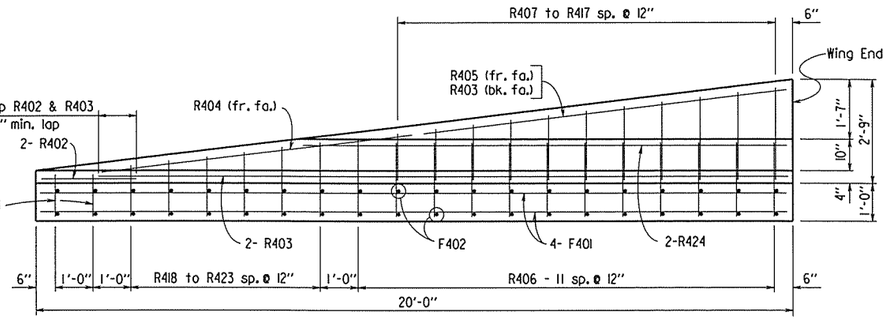
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Transitional Approach Railing shall be paid for at the contract unit price bid per each for "Transitional Approach Railing." See Section 806.

BAR LIST - ONE TRANSITIONAL RAIL

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram Dimensions are out to out of bars.
F401	8	19'-8"	str.	
F402	40	3'-8"	str.	
R401	2	4'-10"	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-R417	1ea.	3'-0"-5'-5"	2"	
R418-R423	1ea.	3'-9"-5'-1"	2"	
R424	2	12'-9"	str.	

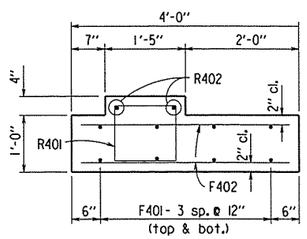




ELEVATION OF TRANSITIONAL APPROACH RAILING

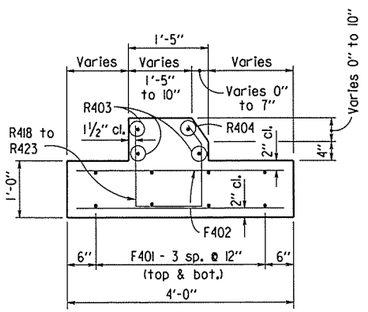
FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS I PROTECTIVE SURFACE TREATMENT
4.20 Cu. Yds.	374.00 Lbs.	0.2 gal



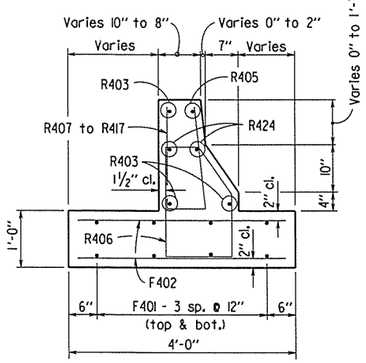
VIEW A-A

Scale: ¾" = 1'-0"



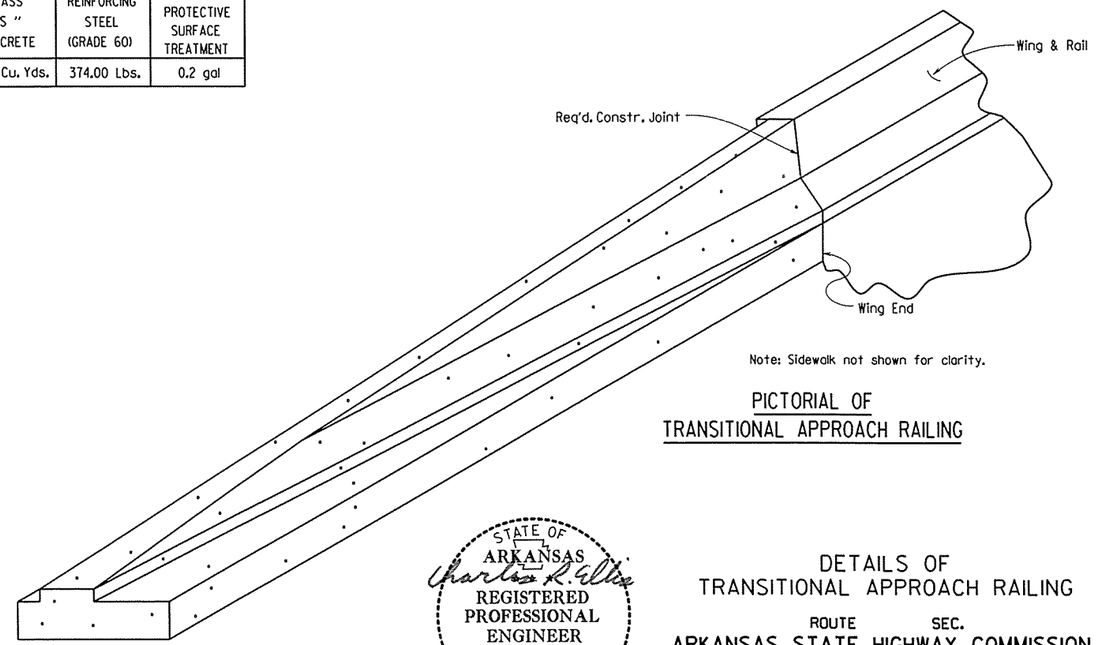
SECTION B-B

Scale: ¾" = 1'-0"



SECTION C-C

Scale: ¾" = 1'-0"



Note: Sidewalk not shown for clarity.

PICTORIAL OF TRANSITIONAL APPROACH RAILING

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-28-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TRANSITIONAL APPROACH RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSL DATE: 11/21/2005 FILENAME: b070365_tr.dgn

CHECKED BY: RDW DATE: 8/7/15 SCALE: ½" = 1'-0" or as noted

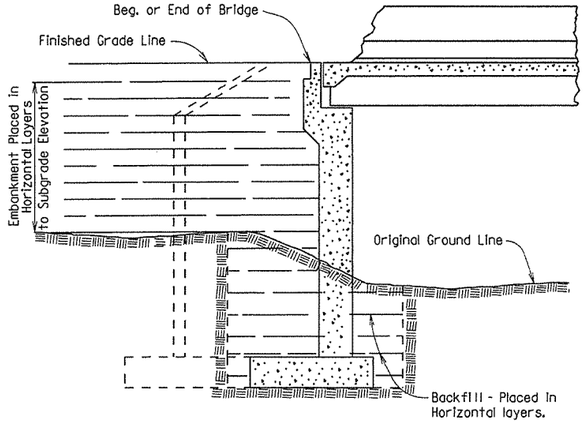
DESIGNED BY: Std. DATE:

BRIDGE NO. 07361 DRAWING NO. 57528

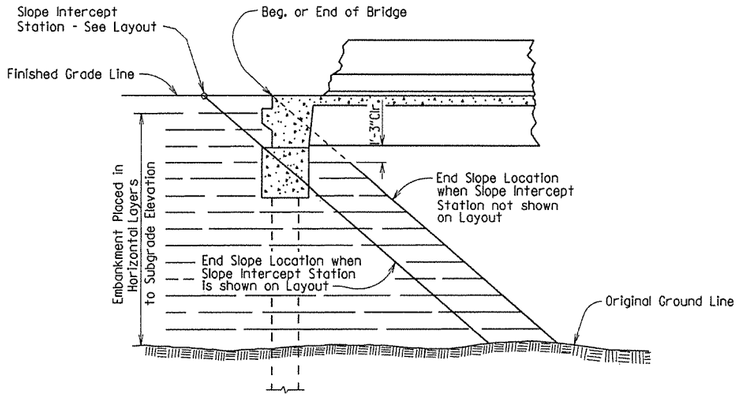
PRINT DATE: 9/24/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		147	
				JOB NO.				

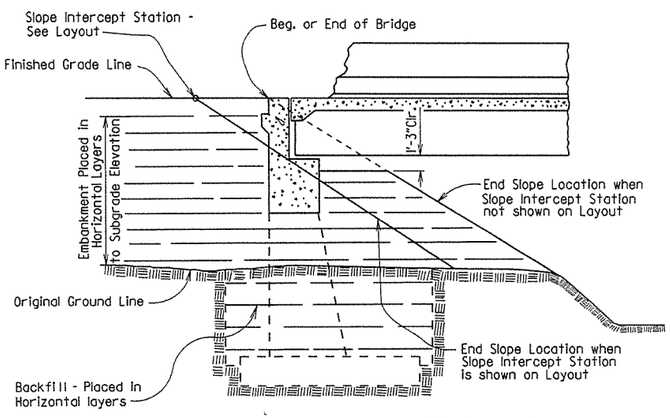
1 EMBANKMENT & BACKFILL 55000



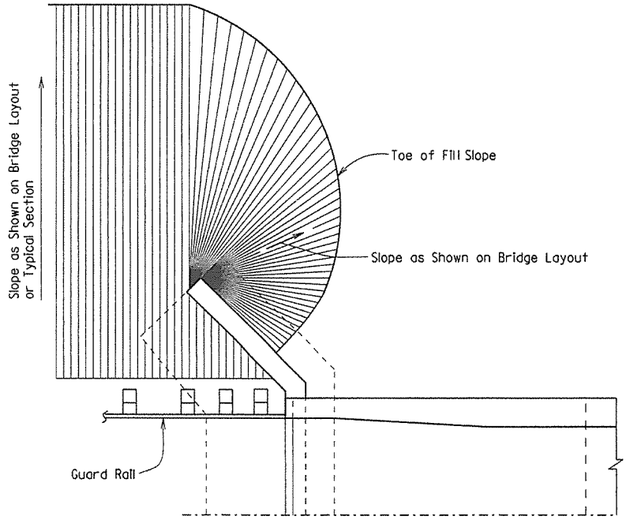
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



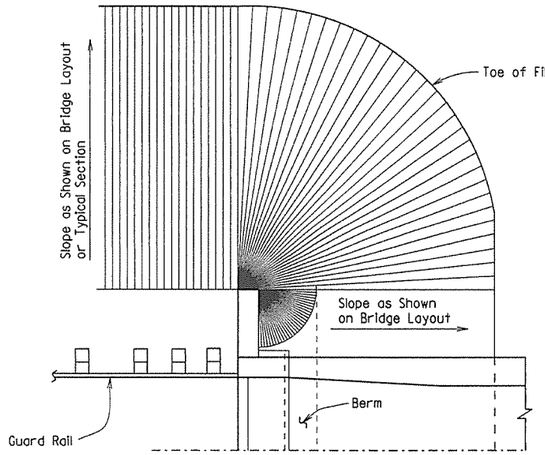
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



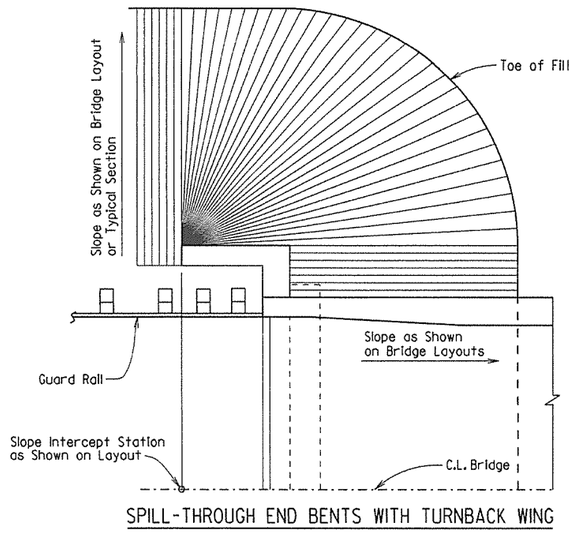
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



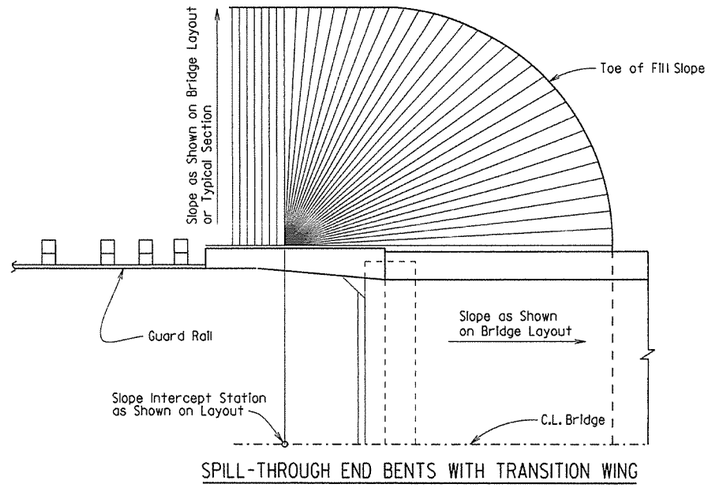
VERTICAL WALL ABUTMENTS



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

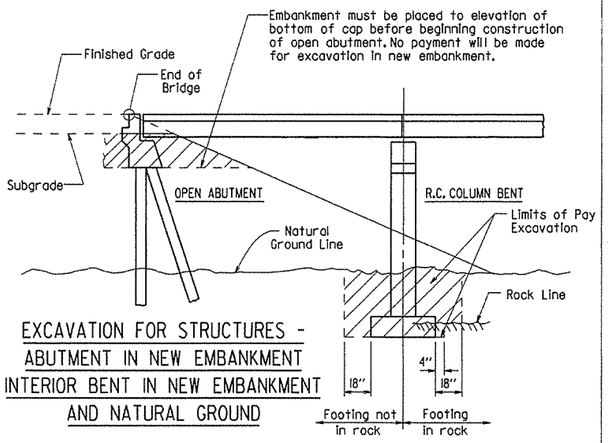
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: -

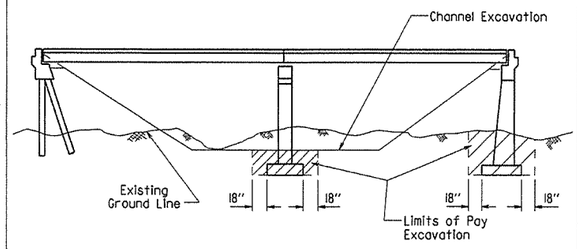
DRAWING NO. 55000

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		148	
				JOB NO.				

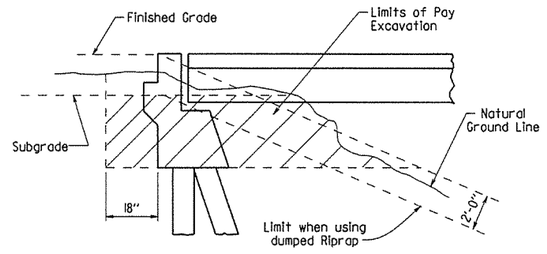
(1) RIPRAP & EXCAV. 55001



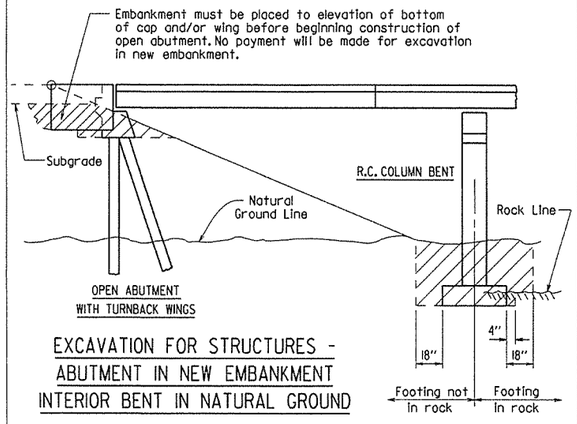
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



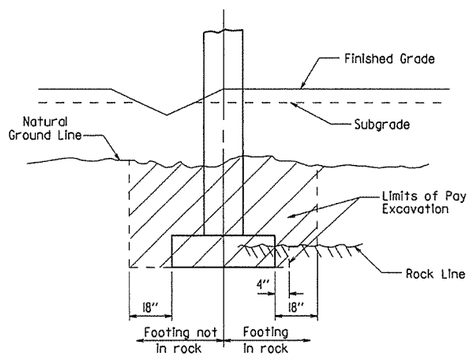
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



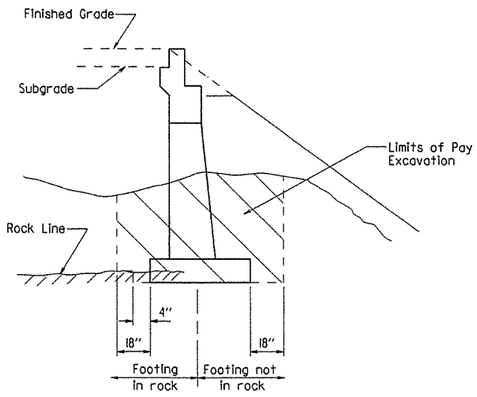
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



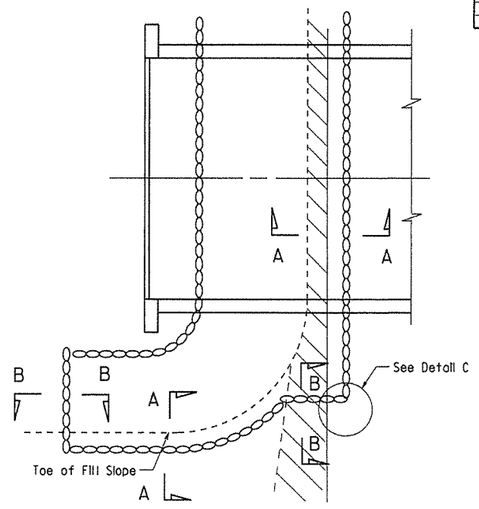
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



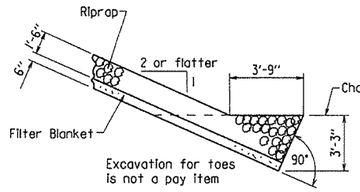
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

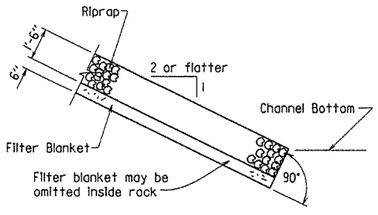


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



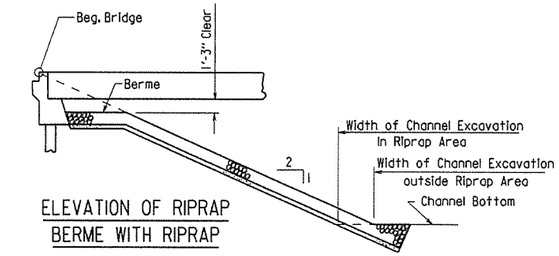
SECTION A-A

(Toe Excavation in Rock)

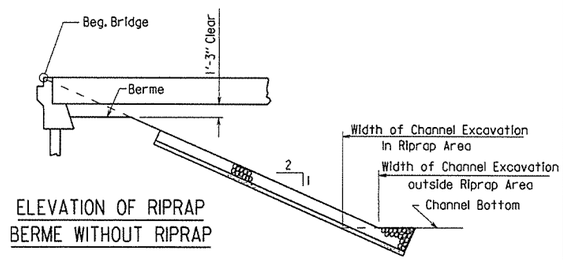
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

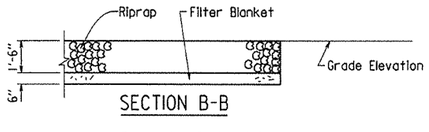
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



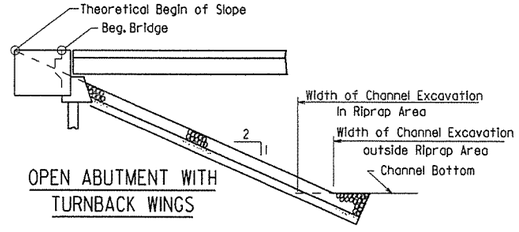
ELEVATION OF RIPRAP BERME WITH RIPRAP



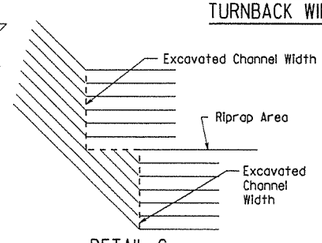
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



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.

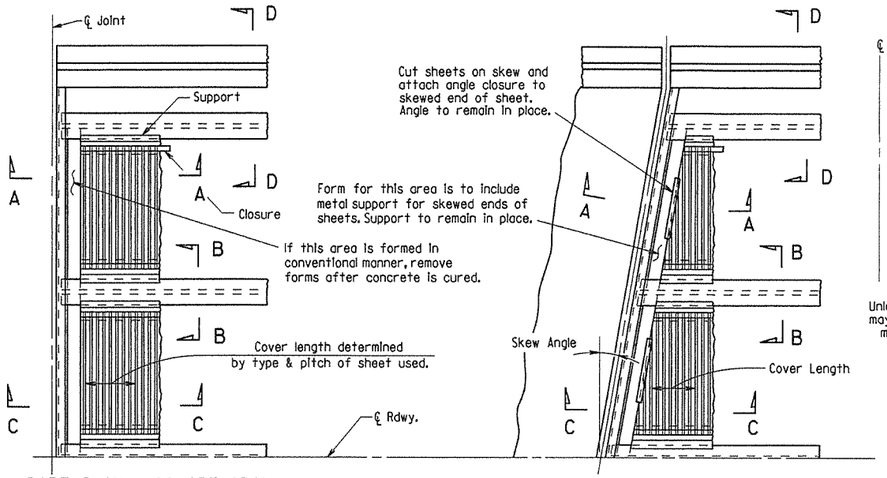
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

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
				6	ARK.		149	
				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

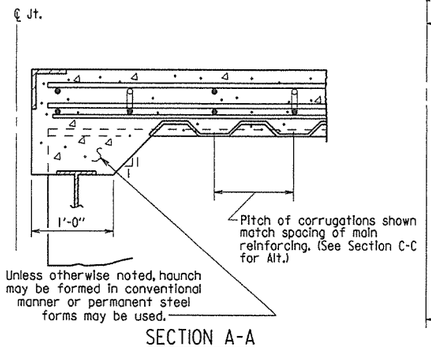


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

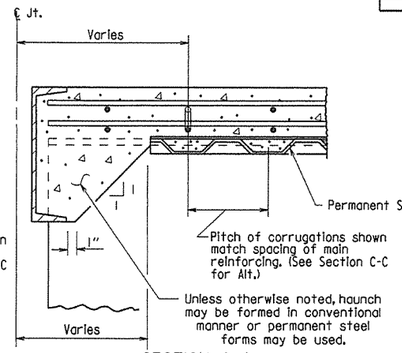
3/8" = 1'-0"



SECTION A-A

N.T.S.

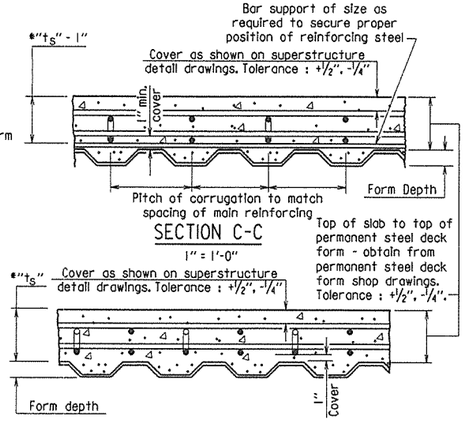
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



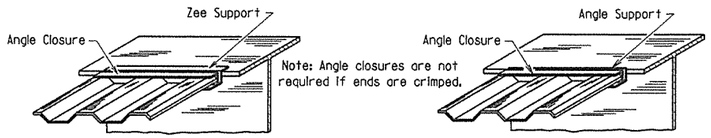
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

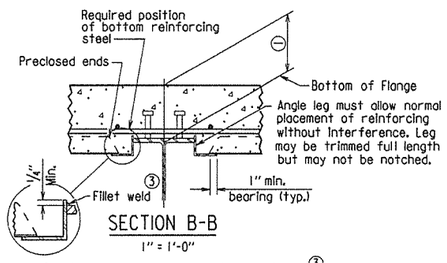
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

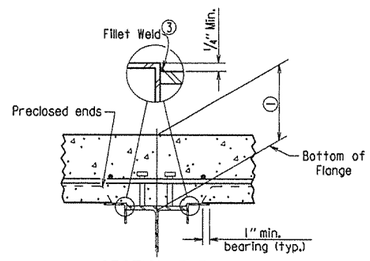


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

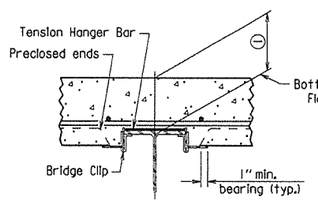
③ Minimum weld: 1/8" x 1' @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

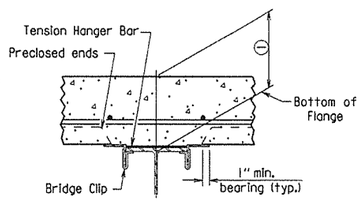
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

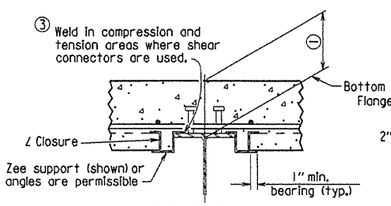
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

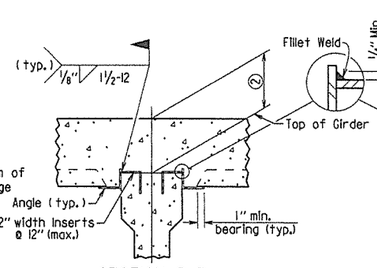
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

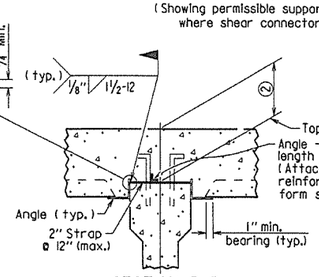


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

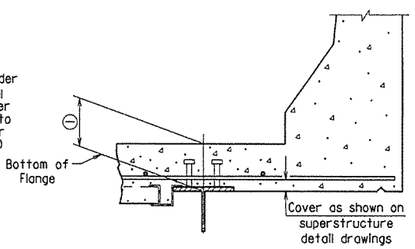


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		150	
				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 1/4" +/- 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

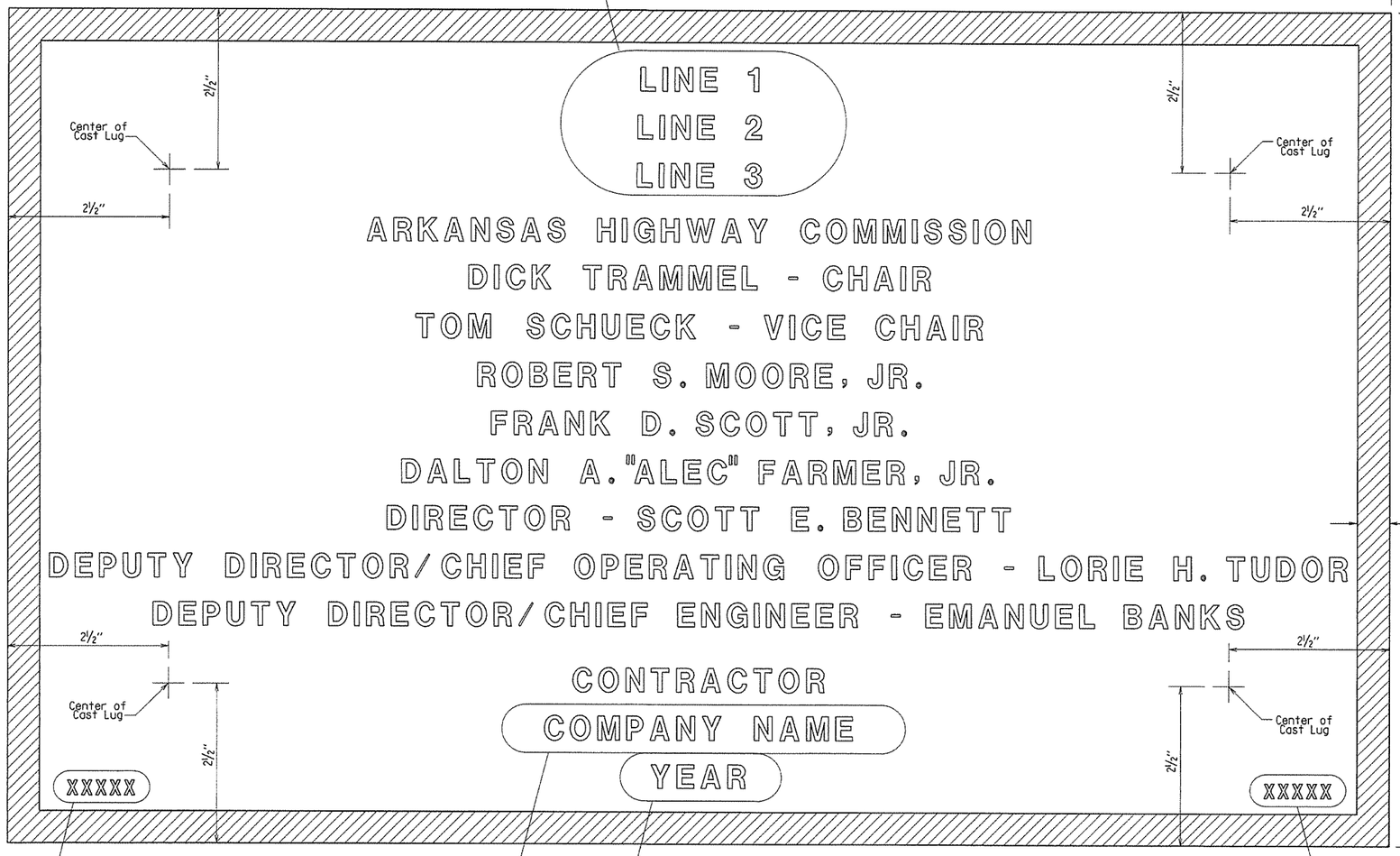
PRINT DATE: 9/10/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14				6	ARK.		151	
1-14-15				JOB NO.				

① TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



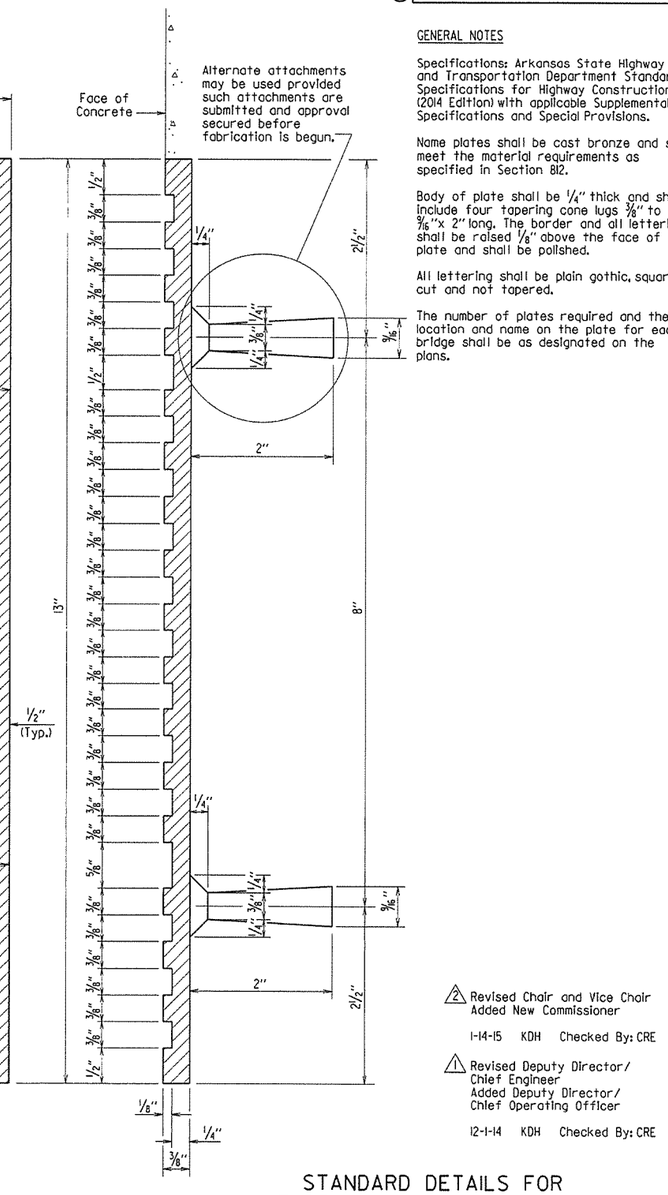
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : AI234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

⚠2 Revised Chair and Vice Chair
Added New Commissioner
1-14-15 KDH Checked By: CRE

⚠1 Revised Deputy Director/
Chief Engineer
Added Deputy Director/
Chief Operating Officer
12-1-14 KDH Checked By: CRE

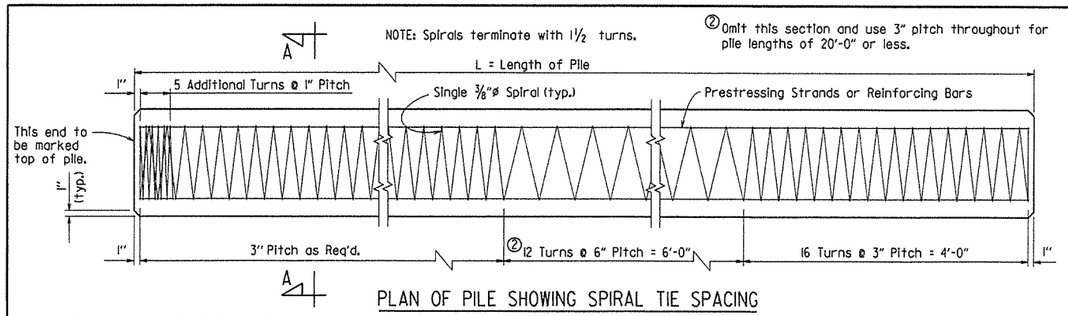
STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

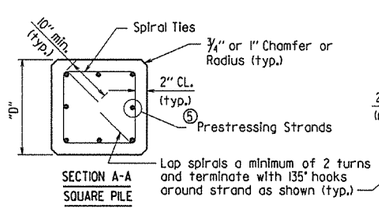
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		152	
				JOB NO.				
				①	CONC. PILES	55022		

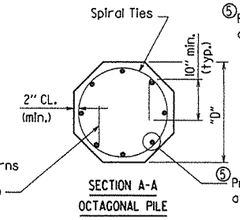


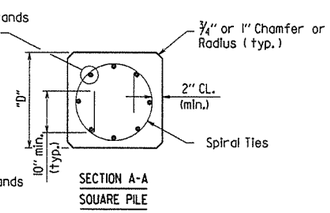
PLAN OF PILE SHOWING SPIRAL TIE SPACING

For anchorage of pile to bent, see Bent Details.

NOTE: Strand location shall be symmetrical about the axis of the pile with no more than one strand difference between any two adjacent sides. Circular spiral ties are required for odd number of strands.







PRESTRESSED CONCRETE PILES

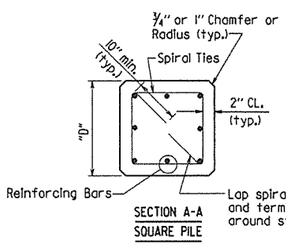
① Number based on initial pre-stress force of "B" x Ultimate Tensile Stress, Prestress Losses and min. 700 psi Unit Prestress on concrete after Losses.

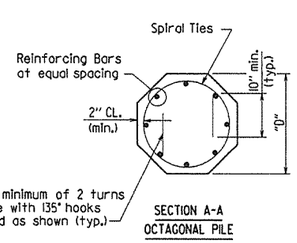
"B" — 0.75 Low Relaxation; 0.70 Stress-Relieved

⑤ See table "Prestressed Concrete Pile Properties" for actual number of strands per pile size.

PRESTRESSED CONCRETE PILE PROPERTIES

	Grade	Strand Diameter	① Number of Strands per Size "D"					Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
			16" Oct.	18" Oct.	④ 14" Sq.	16" Sq.	18" Sq.		
Stress-Relieved	250	7/16"	11	13	10	13	16	27,000	18,900
		½"	8	10	8	10	12	36,000	25,200
	270	7/16"	9	11	8	12	14	31,000	21,700
		½"	7	9	6	8	10	41,300	28,900
Low Relaxation	250	7/16"	9	11	8	11	14	27,000	20,200
		½"	7	9	6	8	10	36,000	27,000
	270	7/16"	8	10	7	9	12	31,000	23,300
		½"	6	8	6	7	9	41,300	31,000



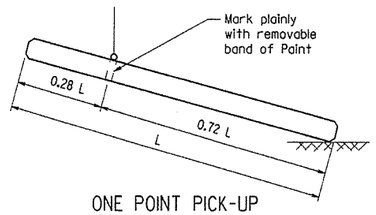


NON-PRESTRESSED PILE REINFORCING

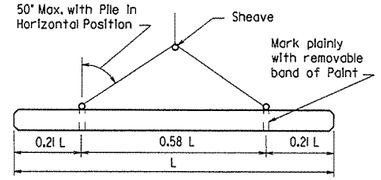
Pile Size	No. Req'd.	Bar Size
16" Oct.	8	# 7
18" Oct.	8	# 7
④ 14" Sq.	8	# 7
16" Sq.	8	# 7
18" Sq.	8	# 8

④ 14" sq. piles to be used in Seismic Performance Zone 1 only.

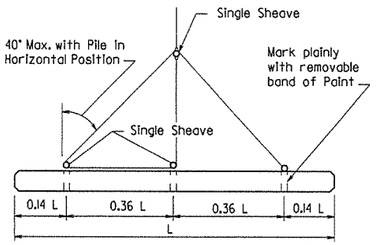
NON-PRESTRESSED CONCRETE PILES



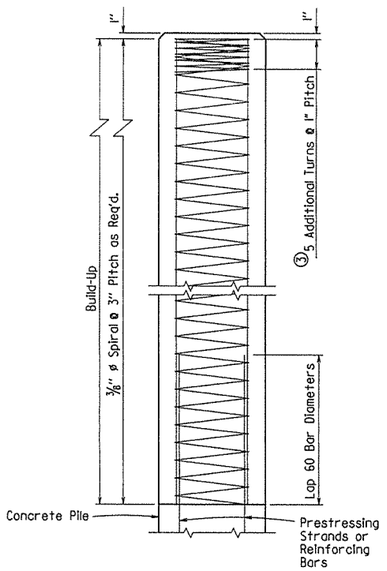
ONE POINT PICK-UP



TWO POINT PICK-UP



THREE POINT PICK-UP



BUILD-UP

③ The five additional turns of spiral reinforcing may be omitted for build-up without additional driving.

MAXIMUM PICKUP LENGTHS "L"

Type of Pick-Up	Prestressed		Non-Prestressed	Prestressed			Non-Prestressed		
	16" Oct.	18" Oct.	16" or 18" Oct.	④ 14" Sq.	16" Sq.	18" Sq.	④ 14" Sq.	16" Sq.	18" Sq.
One Point	52'	55'	46'	55'	59'	63'	52'	51'	55'
Two Point	75'	80'	67'	79'	84'	90'	75'	74'	79'
Three Point	105'	112'	93'	110'	117'	126'	104'	103'	111'

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, current Edition with Interim Specifications.

SEISMIC PERFORMANCE ZONES: 1 & 2

Unless otherwise noted, the Contractor may use prestressed piles or non-prestressed piles. Either type will be measured and paid for at the contract unit price bid for "Concrete Piling".

SPIRAL REINFORCING: Spiral reinforcing shall be steel wire meeting the requirements of AASHTO M 32 or M 225 or shall be plain round steel bars meeting the requirements of Grade 60, AASHTO M31 or M322, Type A.

MANUFACTURE, TRANSPORTATION AND STORAGE: Shipment of piles from the plant site or pile driving will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete. Prestressed piles may be removed from the casting bed to nearby storage any time after transfer of stress. See Section 802 "Concrete for Structures" for additional information.

Unless otherwise approved by the Engineer, all protruding or exposed pile lifting or transporting devices above the finished ground shall be removed after pile driving is complete. Removal shall be a minimum of 1" below the surface of the pile and the cavity shall be filled with a non-shrink grout listed on the Department's QPL.

FORMS: For forming exterior of piles, the use of steel forms on concrete-founded casting beds is required unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding ¼" per foot.

TOLERANCES: Pile ends shall be plane surfaces perpendicular to the longitudinal axis of pile with a maximum tolerance of ⅛" per foot transversely.

The maximum sweep (deviation from straightness measured from end to end of the pile, while not subject to bending forces) shall not exceed ⅛" in 10 feet.

BUILD-UPS: To provide for build-ups of piles where authorized by the Engineer, concrete shall be cut back to expose the reinforcing steel for a distance sufficient to provide a lap of 60 diameters of the reinforcing bars required for build-up. Reinforcing for build-ups shall be the reinforcing shown for non-prestressed piles.

INSTALLATION, MEASUREMENT AND PAYMENT: See Section 805 "Piling".

ADDITIONAL NOTES FOR PRESTRESSED PILES ONLY:

CONCRETE: Concrete in prestressed piles shall be Class S(AE) and shall have a minimum compressive strength (f'c) of 5,000 psi at 28 days. Compressive strength at transfer of the prestressing force shall be not less than 4,000 psi. Concrete in build-ups shall have a minimum compressive strength of 4,000 psi and shall be cured for a minimum of 10 days.

PRESTRESSING REINFORCING: Seven-wire stress-relieved or low relaxation strands shall conform to the general requirements of AASHTO M 203. Broken wires within individual strands will be permitted up to 2% of the total number of wires in each pile, providing that there is not more than one broken wire per strand. Two or more broken wires per strand will be cause for replacement of the strand, even though the two broken wires are within the 2% limitation.

ADDITIONAL NOTES FOR NON-PRESTRESSED PILES ONLY:

All concrete shall be Class S(AE) and shall have a minimum compressive strength (f'c) of 4,000 psi at 28 days.

All longitudinal reinforcing bars shall be deformed bars and shall conform to the requirements of Grade 60, AASHTO M31 or M322, Type A.

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on February 27, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

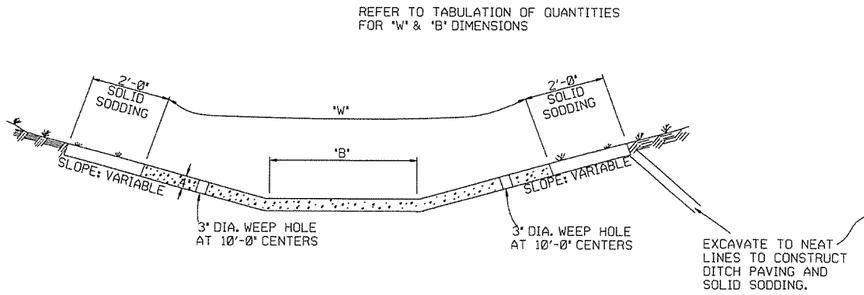
STANDARD DETAILS FOR CONCRETE PILES

ARKANSAS STATE HIGHWAY COMMISSION

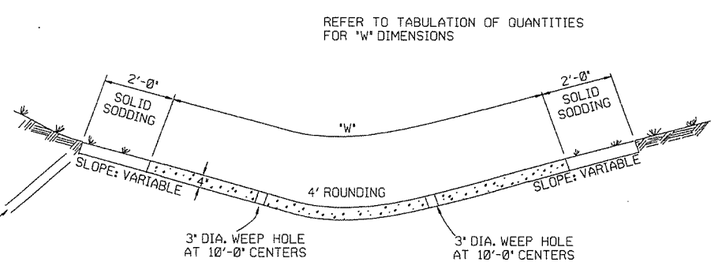
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55022.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55022

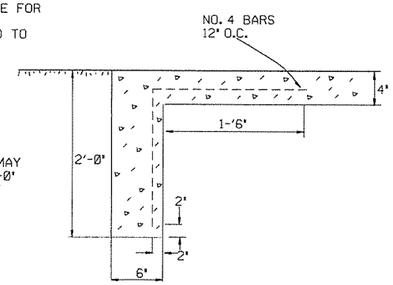


TYPE A



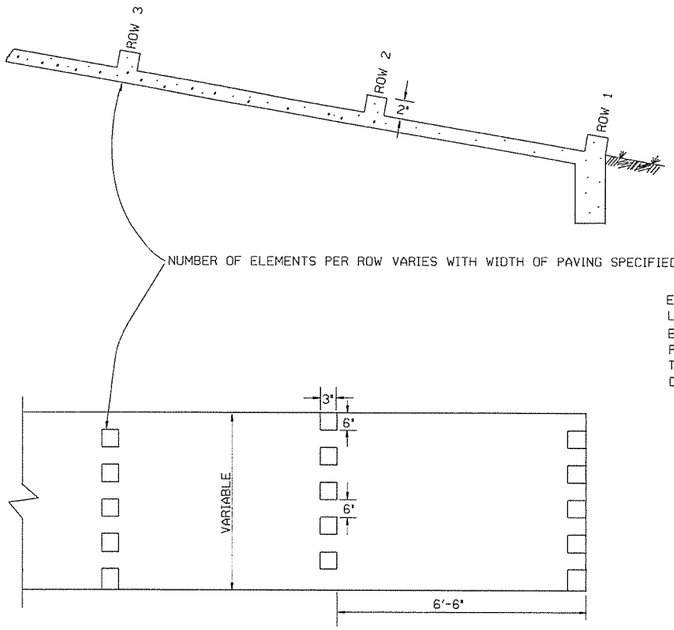
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'



TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

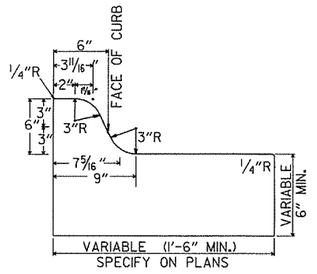
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

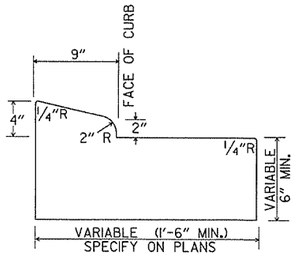
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

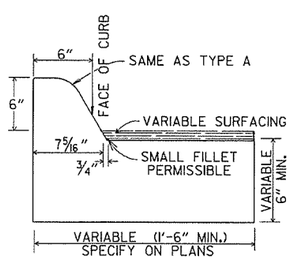
STANDARD DRAWING CDP-1



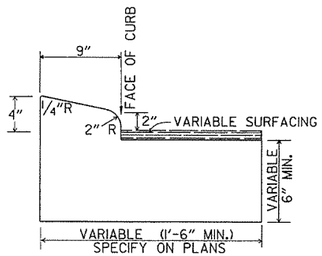
TYPE A



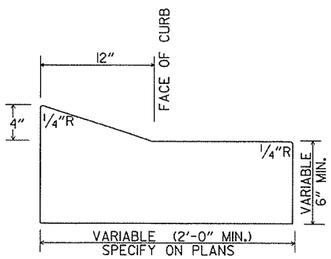
TYPE B-1



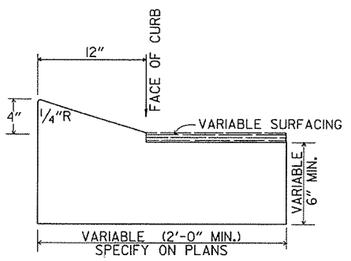
TYPE C



TYPE B-2

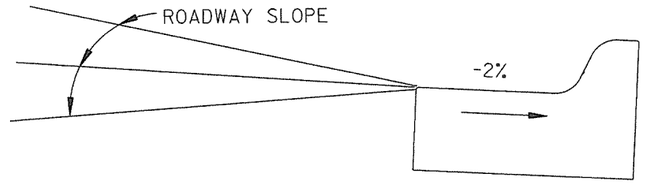


TYPE E-1



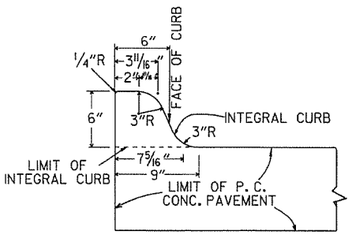
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

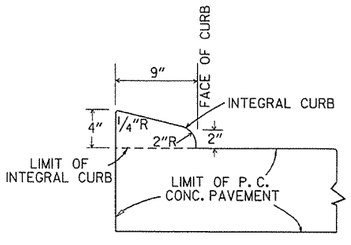


DETAIL OF GUTTER SLOPE

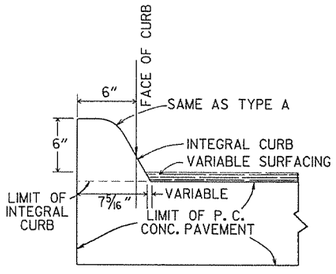
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

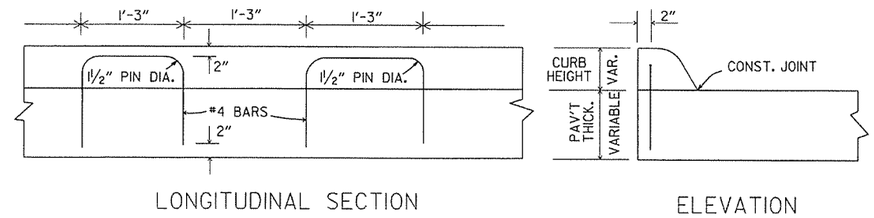


TYPE B



TYPE C

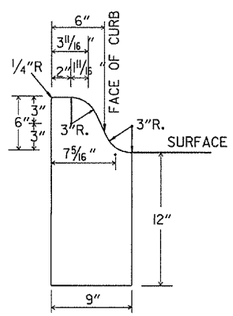
INTEGRAL CURB



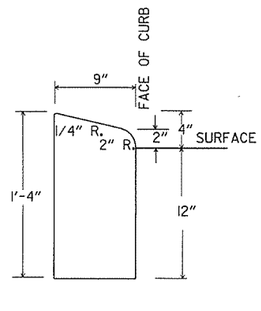
LONGITUDINAL SECTION

ELEVATION

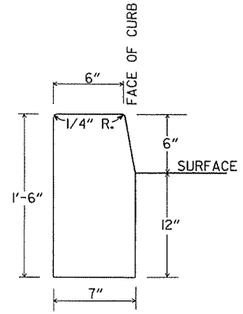
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



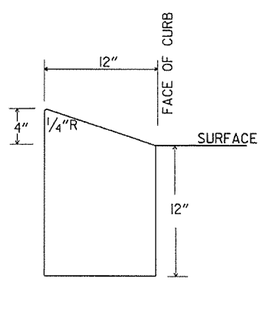
TYPE A



TYPE B

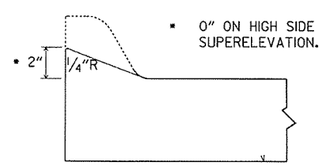


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

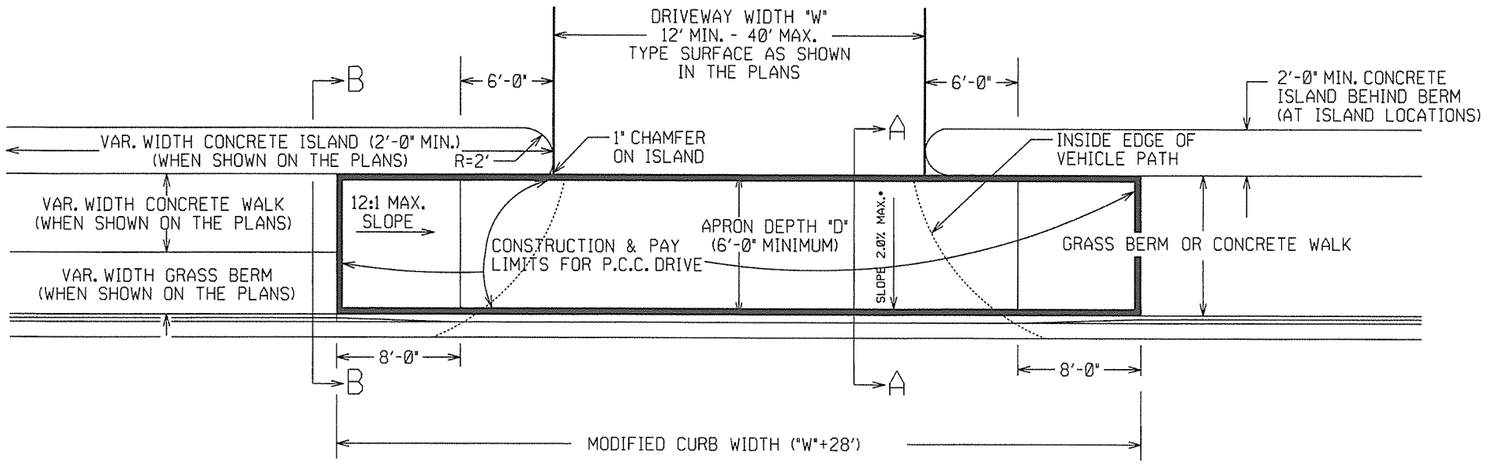
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

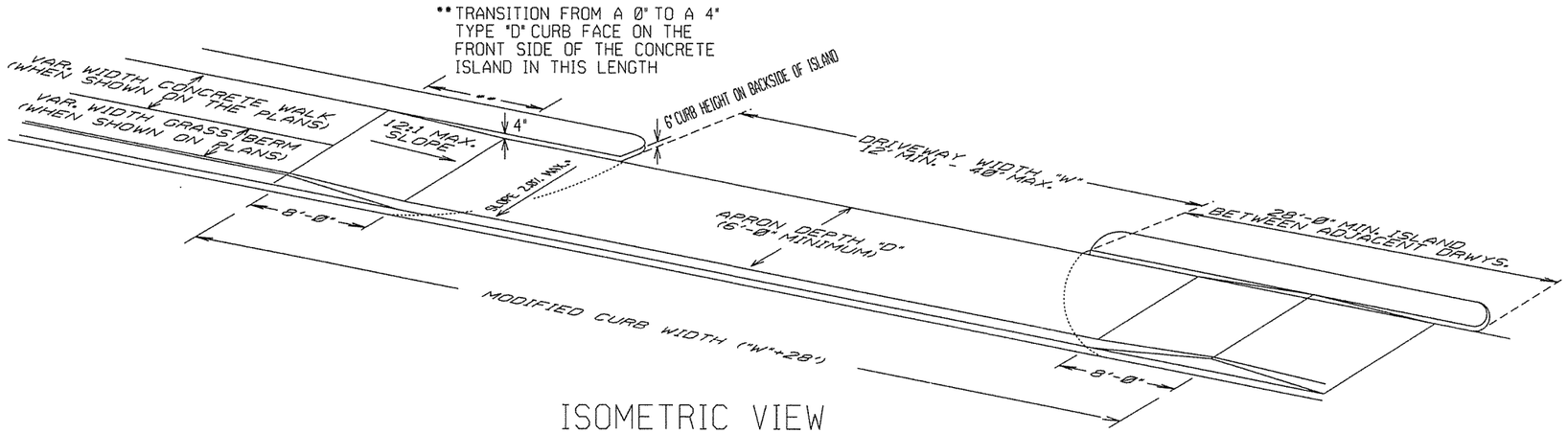
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

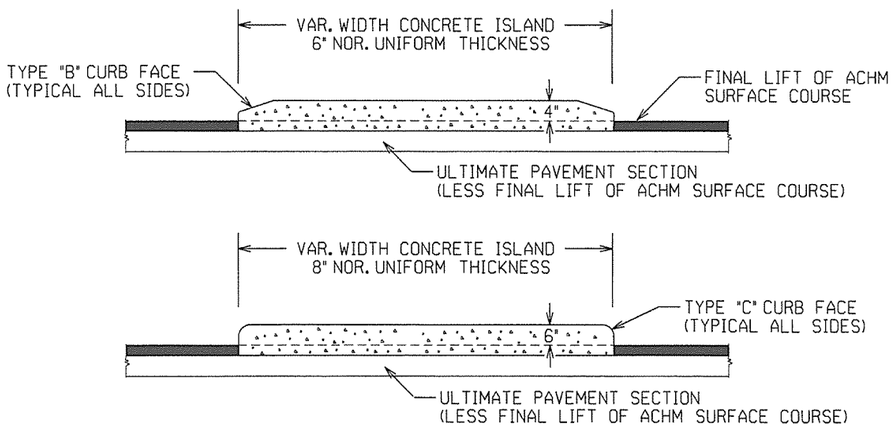
STANDARD DRAWING CG-1



PLAN VIEW

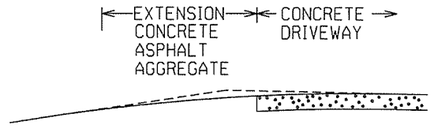


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

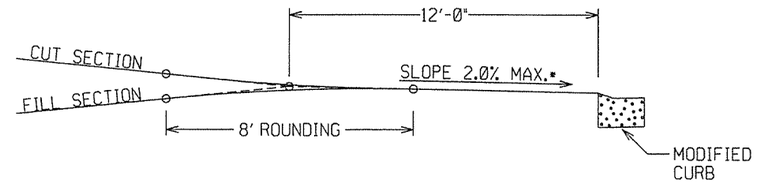
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

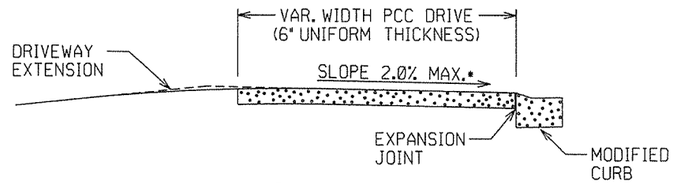
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

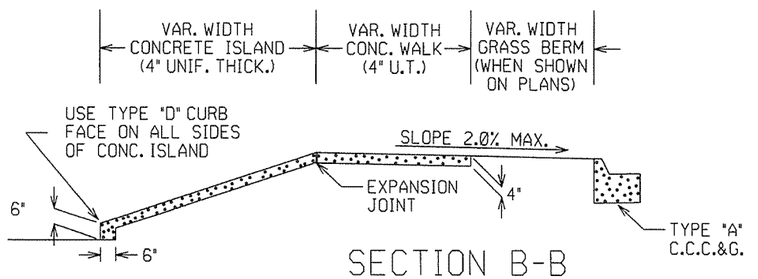


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



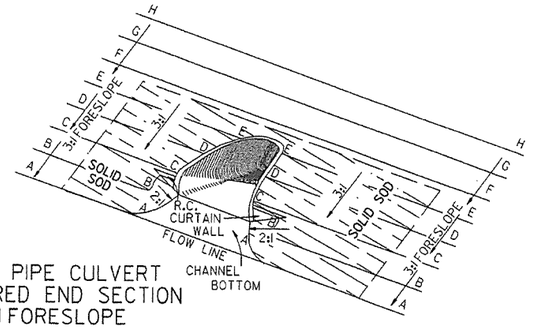
SECTION A-A



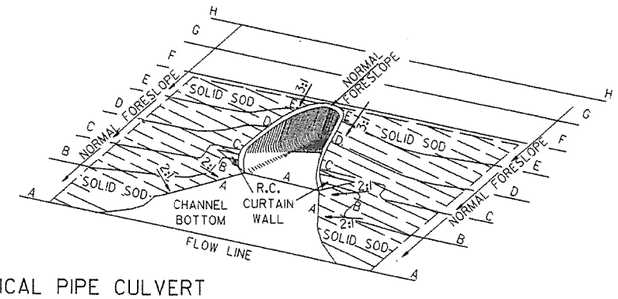
SECTION B-B
CURBED ISLAND BEHIND WALK

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

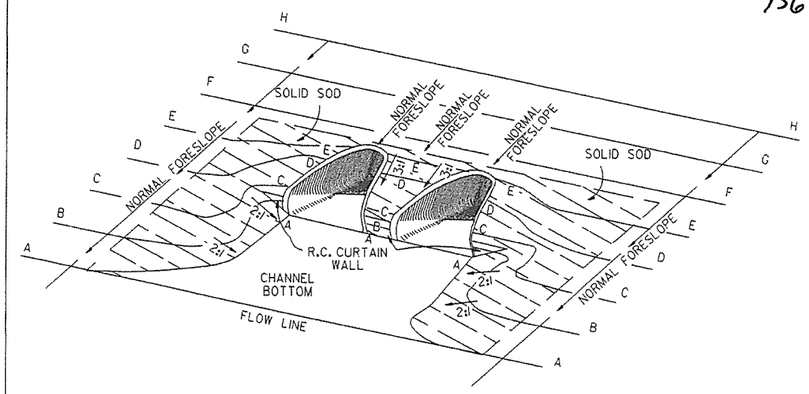
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

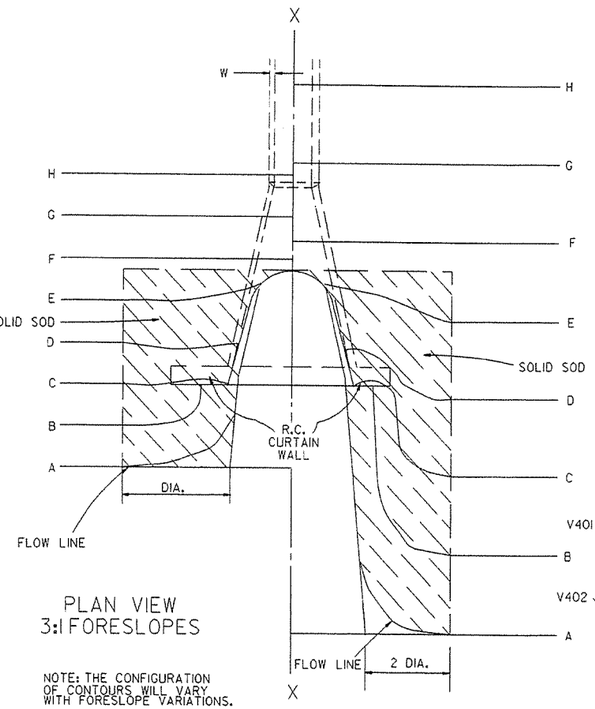
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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	NO.	H402 L	NO.	V401 L	NO.	V402 L	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403 L	NO.	V401 L	NO.	V402 L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

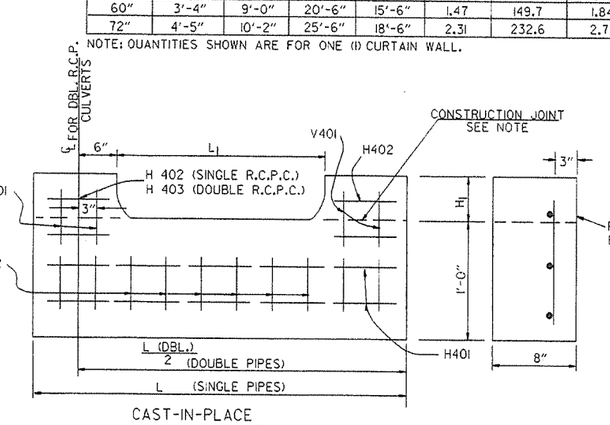
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

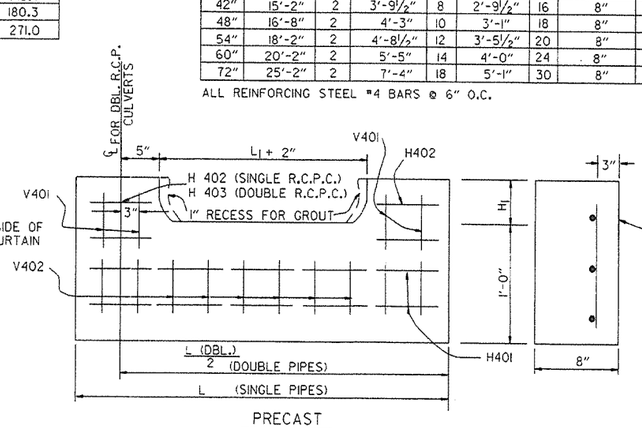
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

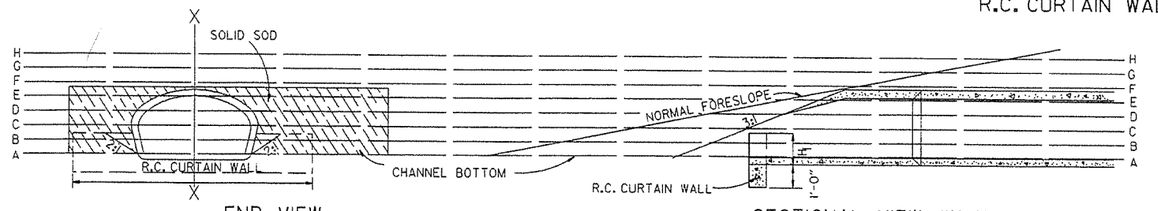
SOLID SODDING

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

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

GENERAL NOTES

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



END VIEW

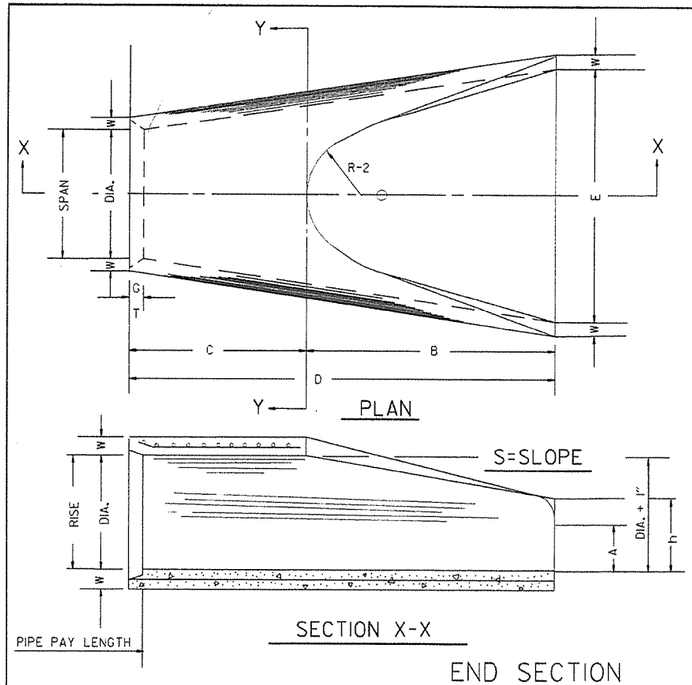
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

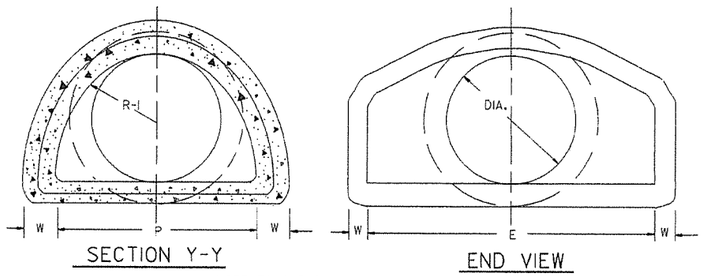
STANDARD DRAWING FES-1



END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. ± 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	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 1/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 9/16"	24"	5"	13250	4'-6"

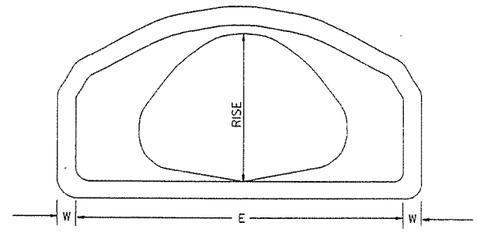


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

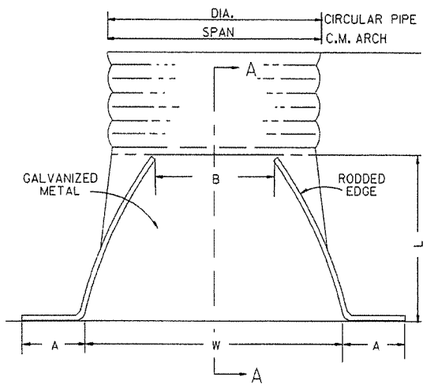
ARCH PIPE

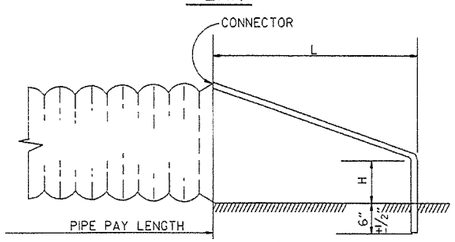
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 13/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅜"	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.

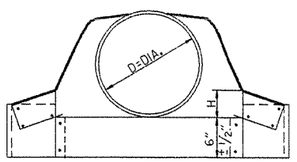


END VIEW
CONCRETE ARCH PIPE





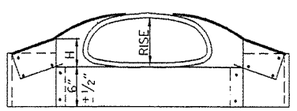
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE

CIRCULAR PIPE

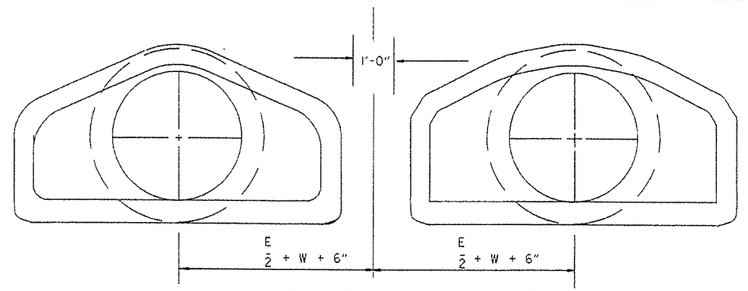
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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



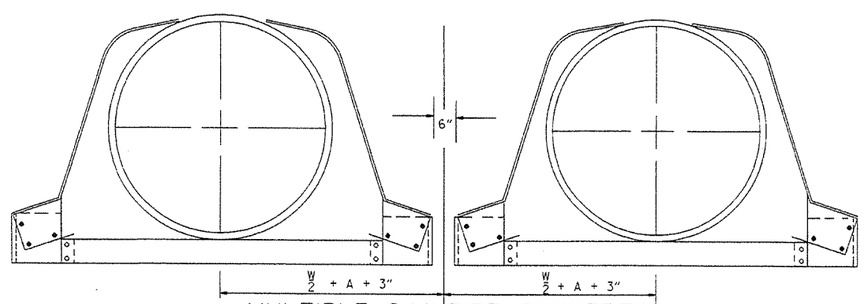
C.M. ARCH PIPE

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

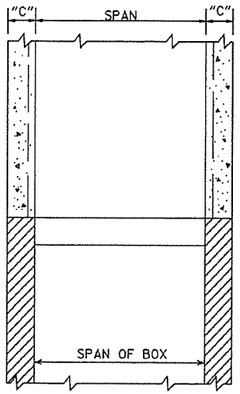
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
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

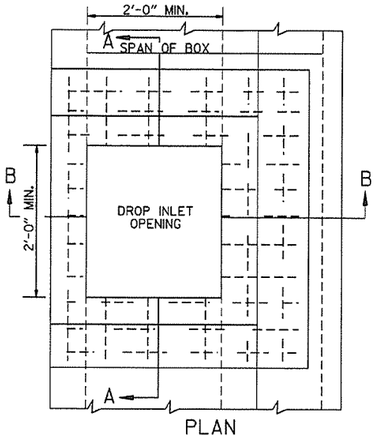
FLARED END SECTION

STANDARD DRAWING FES-2

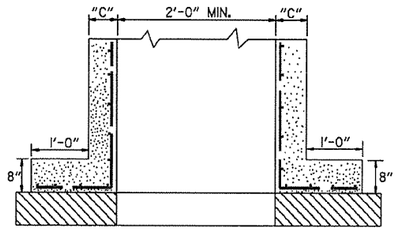
stdfes2.dgn



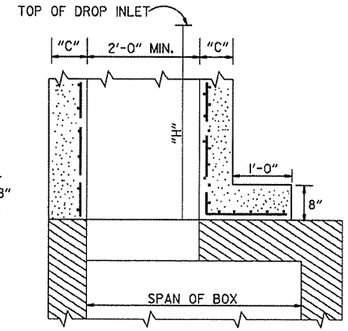
SECTION B-B



PLAN

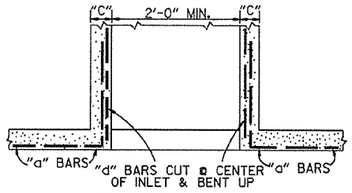


SECTION A-A

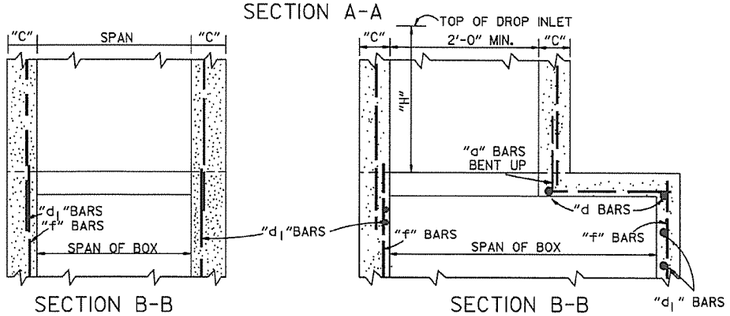


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



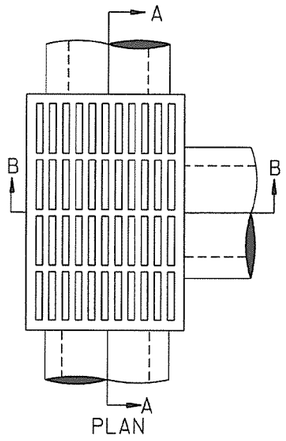
SECTION A-A



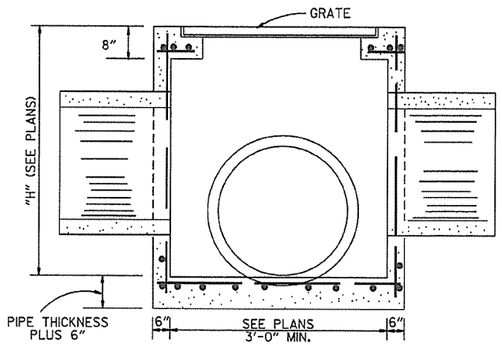
SECTION B-B SECTION B-B

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.

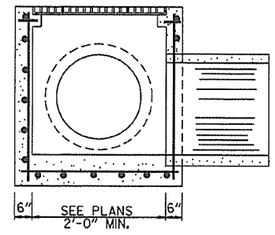


PLAN



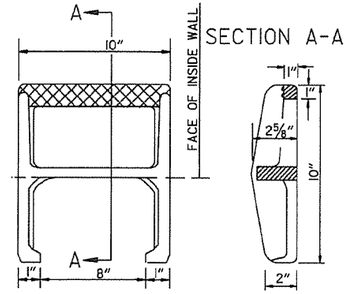
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



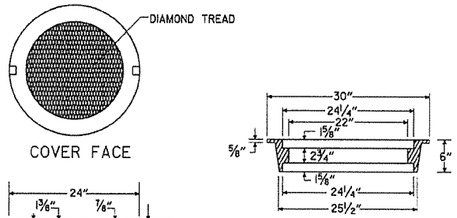
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

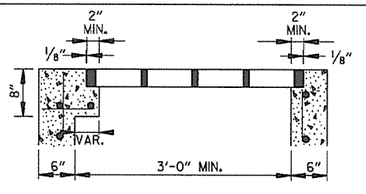
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

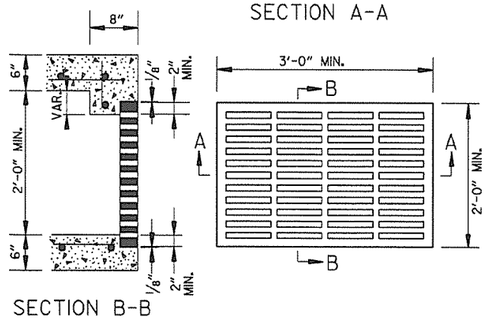


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



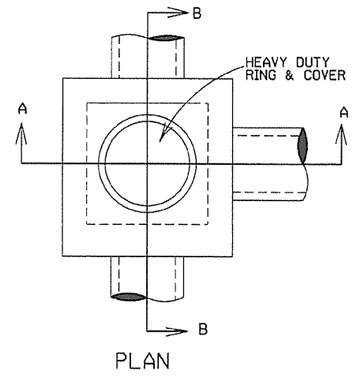
SECTION A-A



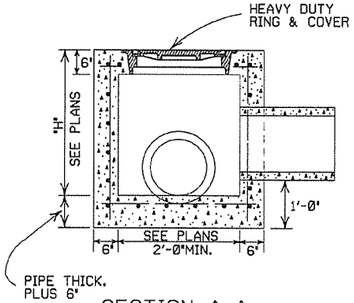
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

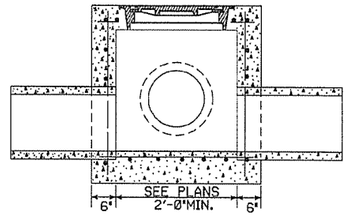


PLAN



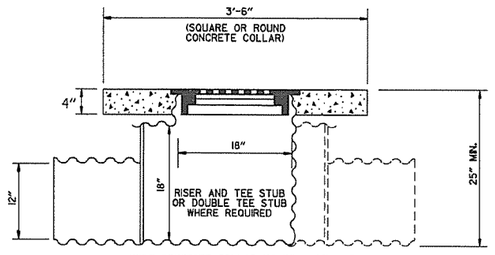
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

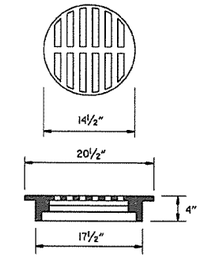


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

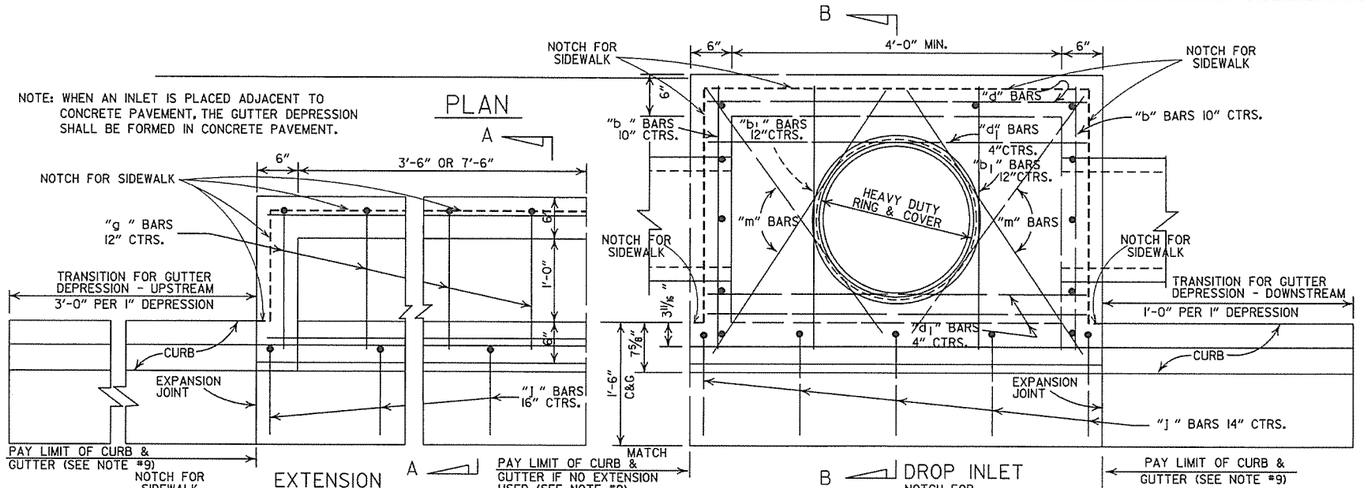
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9



4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

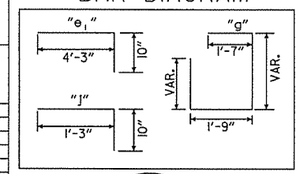
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

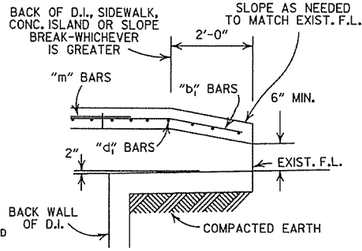
DROP INLET EXTENSION

4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

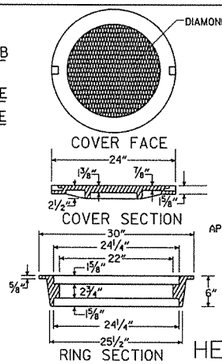
BAR DIAGRAM





BACK OPENING

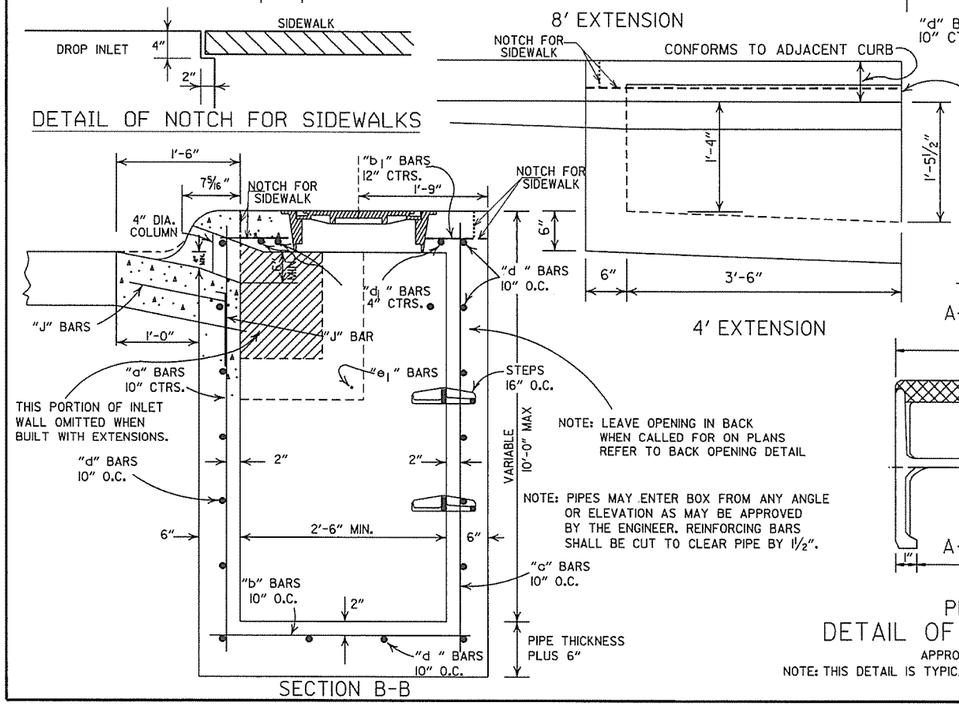
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

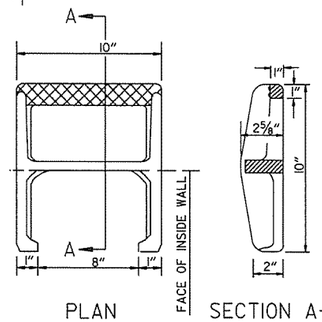


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

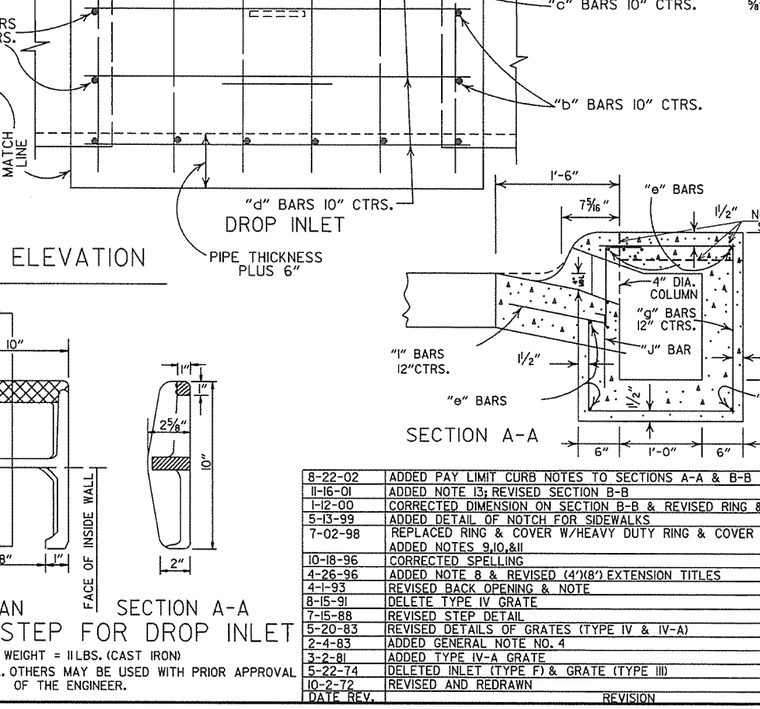
GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

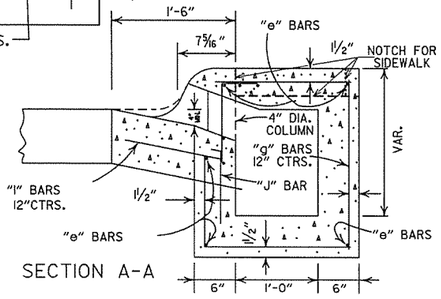




DETAIL OF STEP FOR DROP INLET

APPROX. WEIGHT = 11 LBS. (CAST IRON)
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.





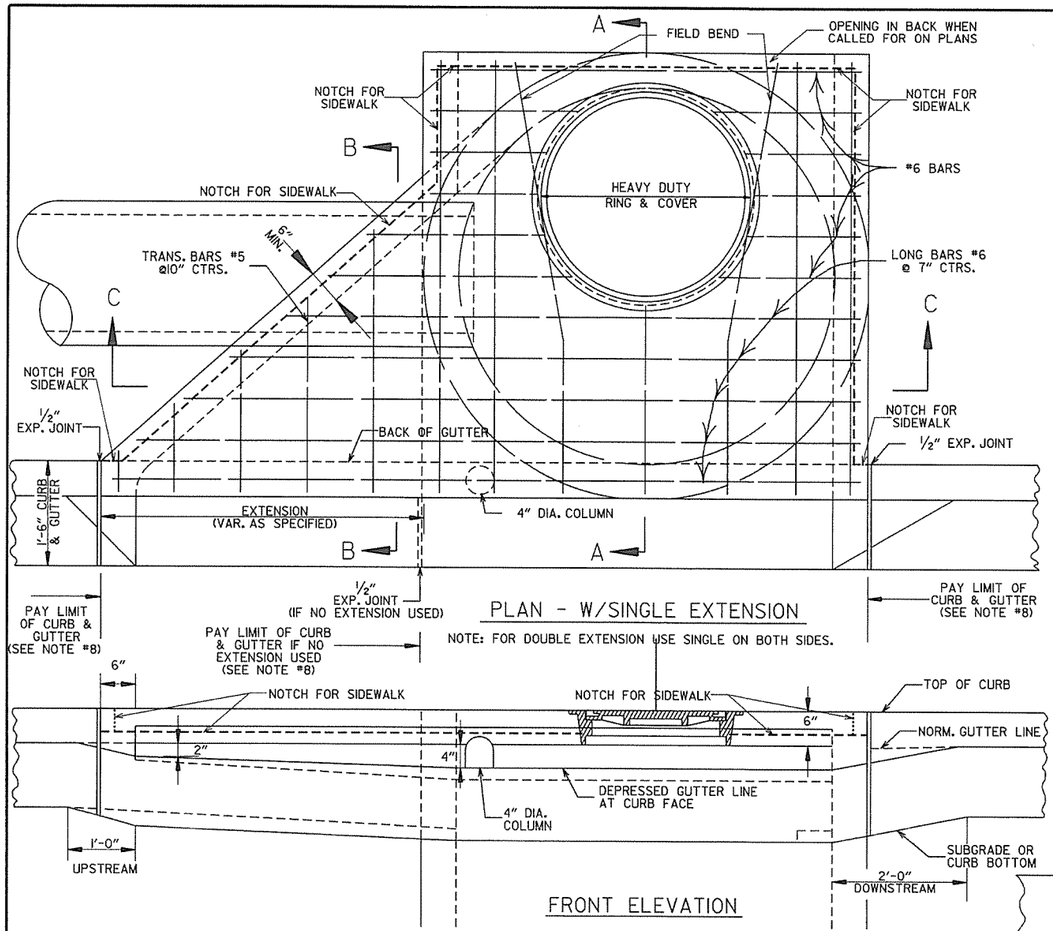
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

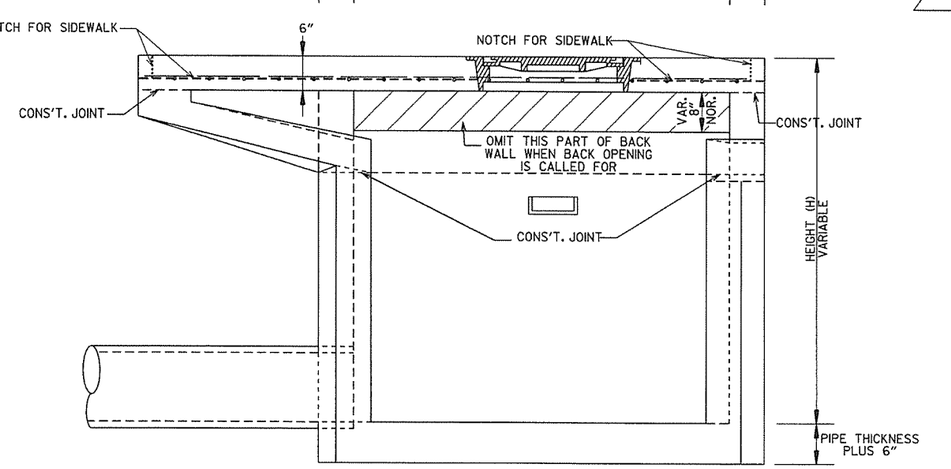
STANDARD DRAWING FPC-9E



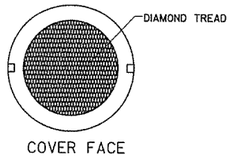
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



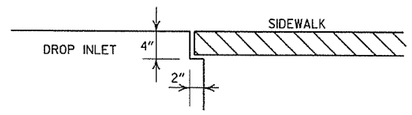
SECTION C-C



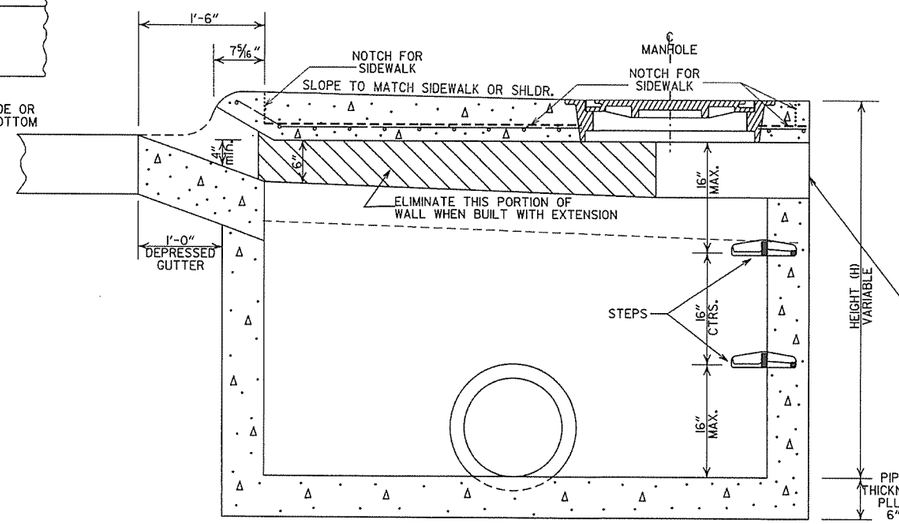
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

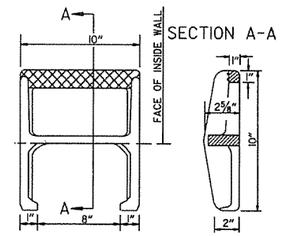
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS



SECTION A-A

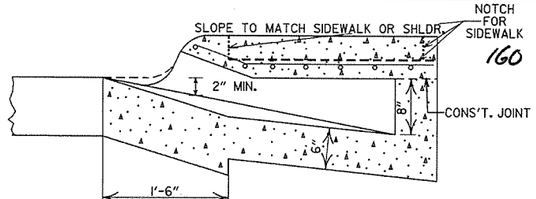


APPROX. WEIGHT = 11 LBS. (CAST IRON)

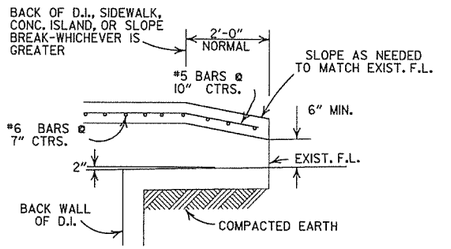
PLAN

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.

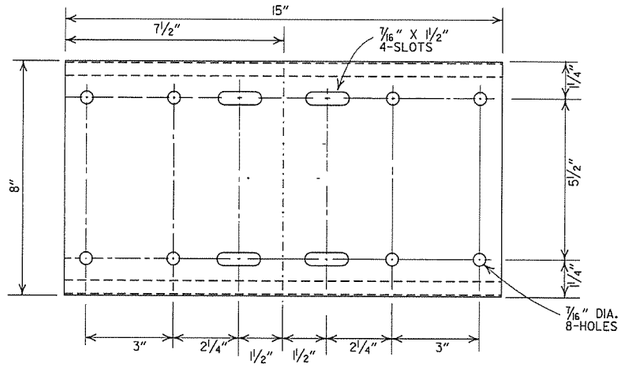
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11, ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN, BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11, 12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	5(3-5-23-89
1-15-88	ADDED EXTEND NOTE TO SECTION A-A	6(3)-1-15-88
1-14-87	MODIFIED WALL THICKNESS	7(3)-1-14-87
6-12-87	ISSUED	4-6-12-87

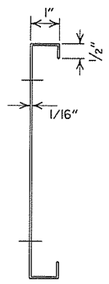
ARKANSAS STATE HIGHWAY COMMISSION

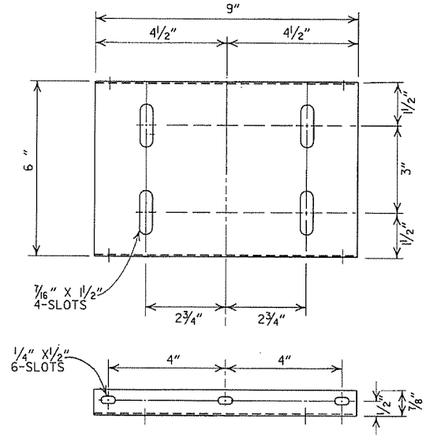
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

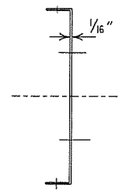


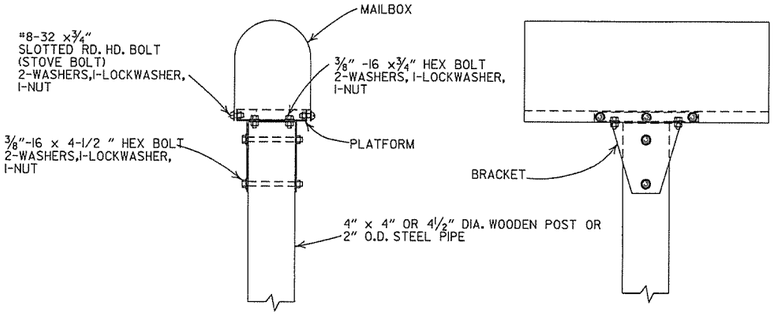
SHELF



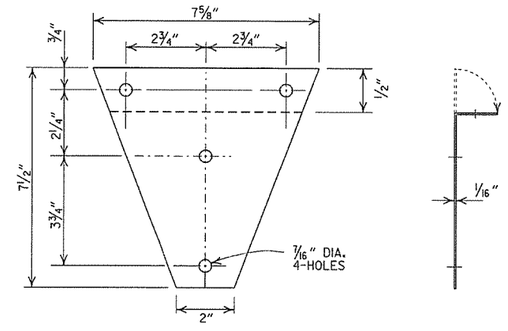


PLATFORM

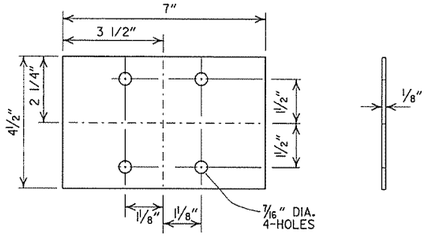




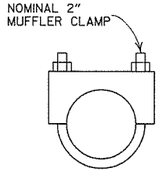
SINGLE INSTALLATION



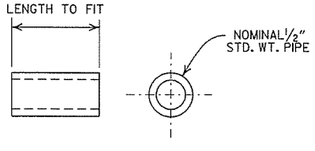
BRACKET



ANTI-TWIST PLATE



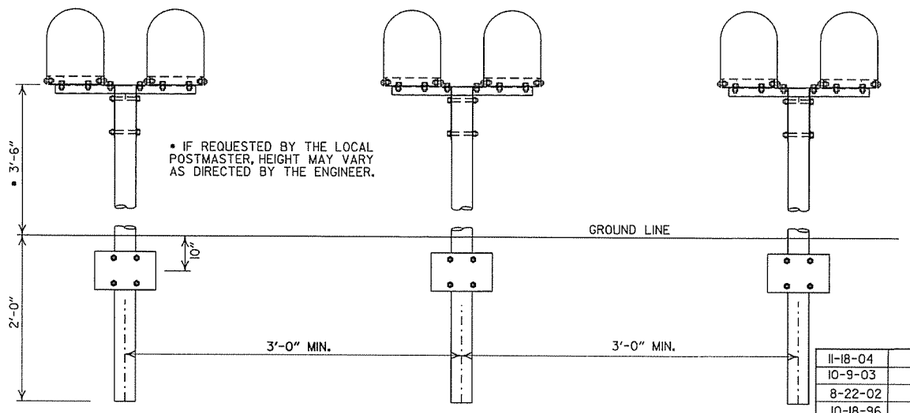
CLAMP



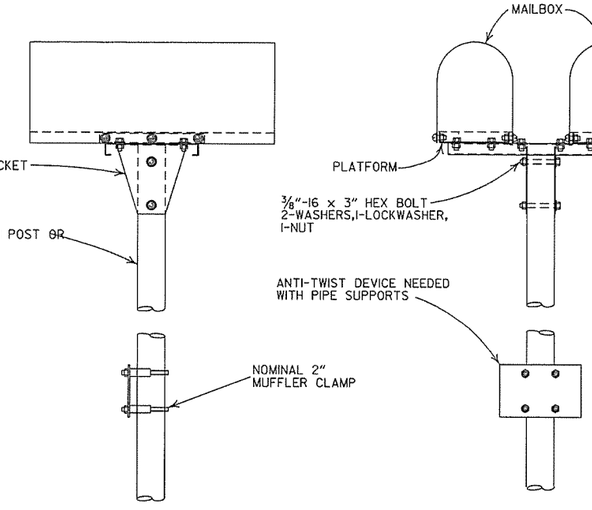
SPACER

GENERAL NOTES

1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



SPACING FOR MULTIPLE POST INSTALLATION



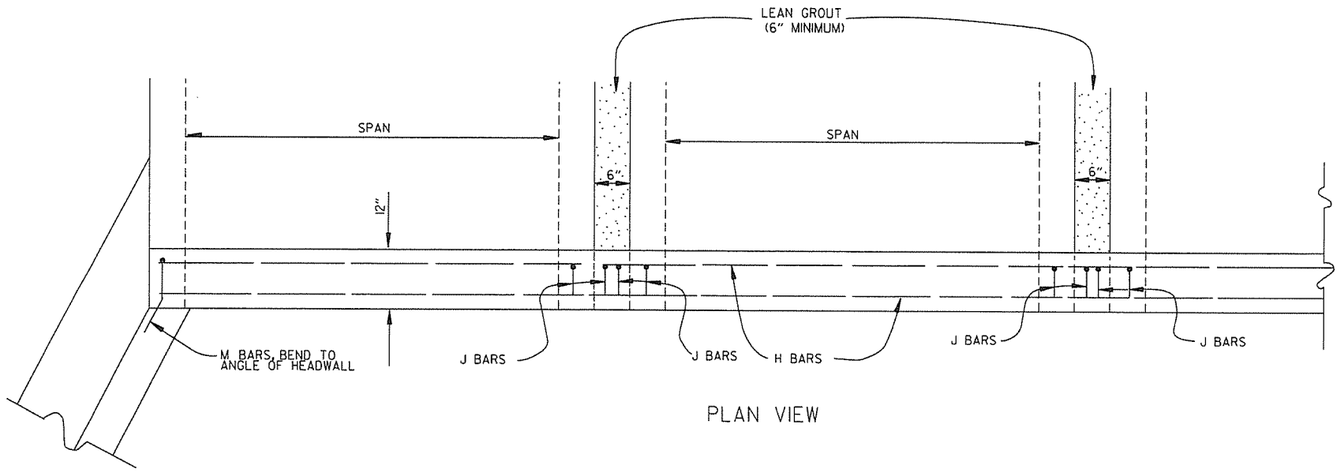
DOUBLE INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

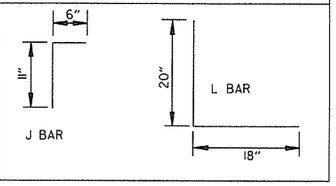
STANDARD DRAWING MB-1



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.

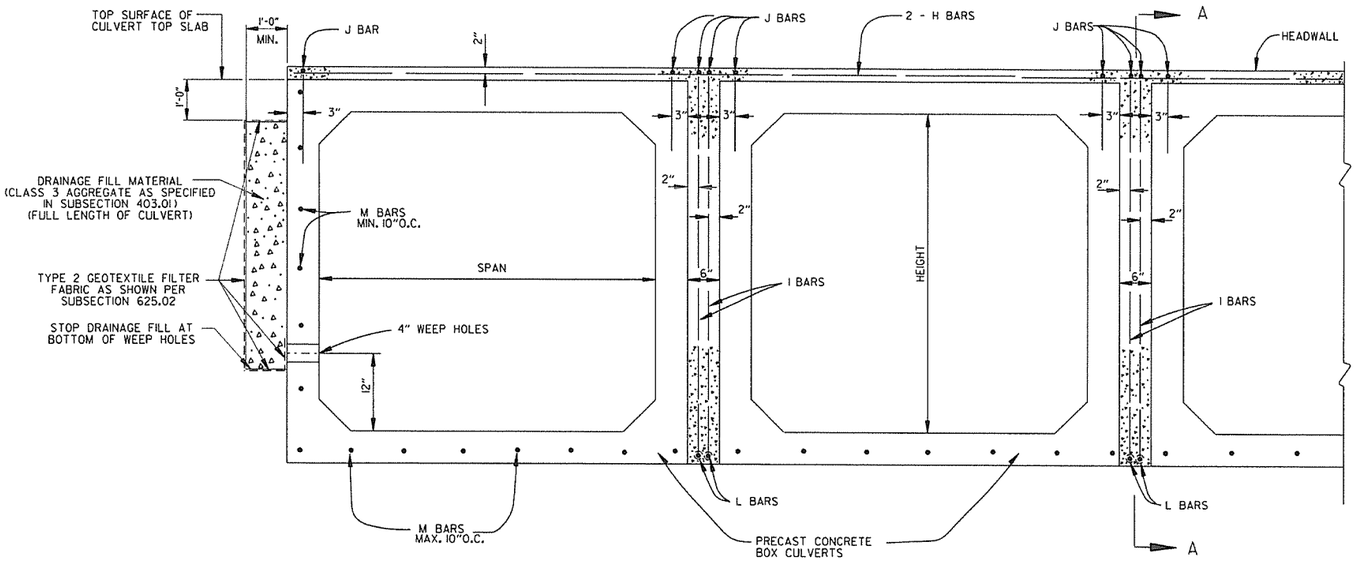
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

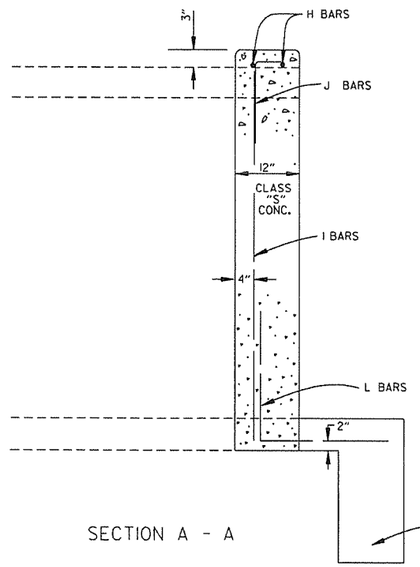
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

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	31⅞	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

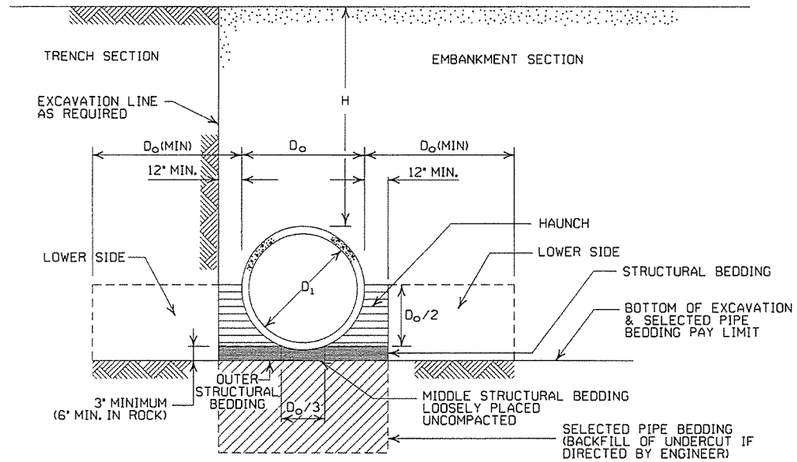
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, 'H' SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, 'H' SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

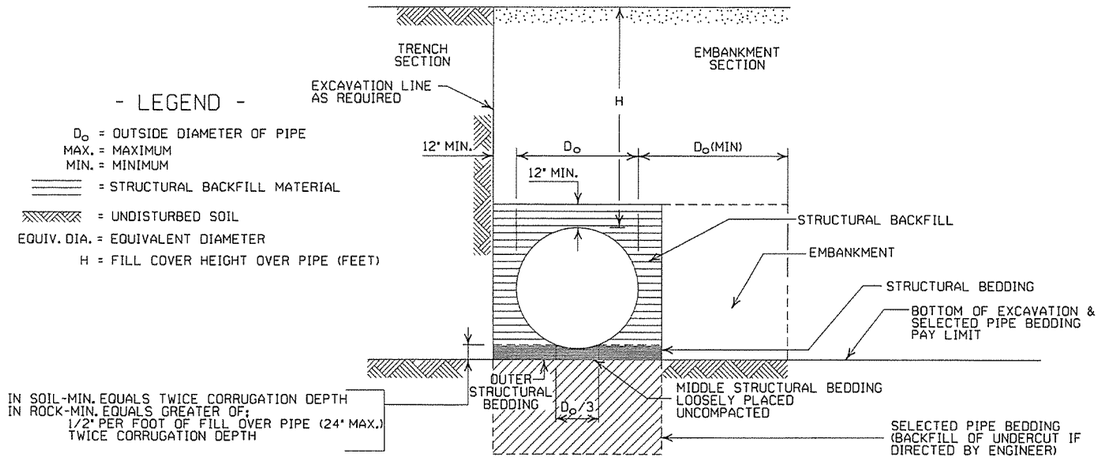
③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1			
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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

  SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

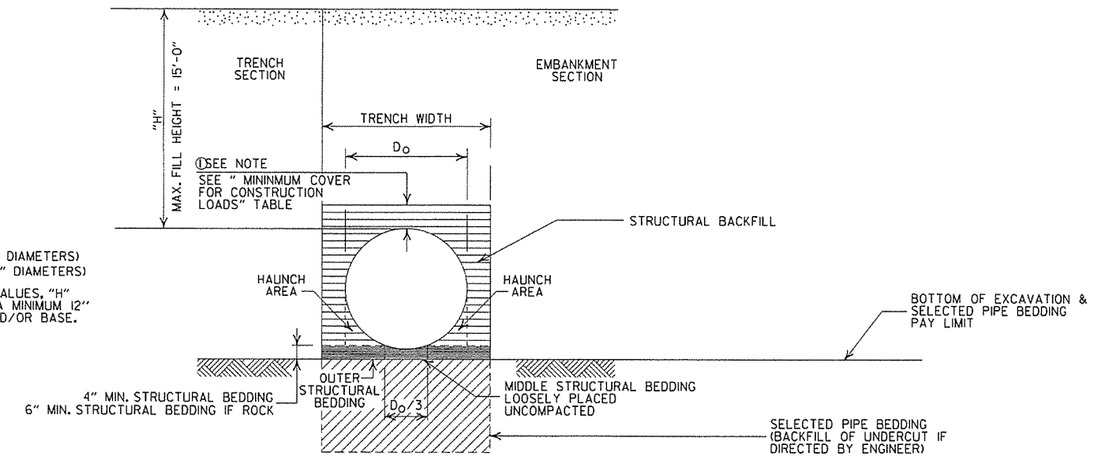
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

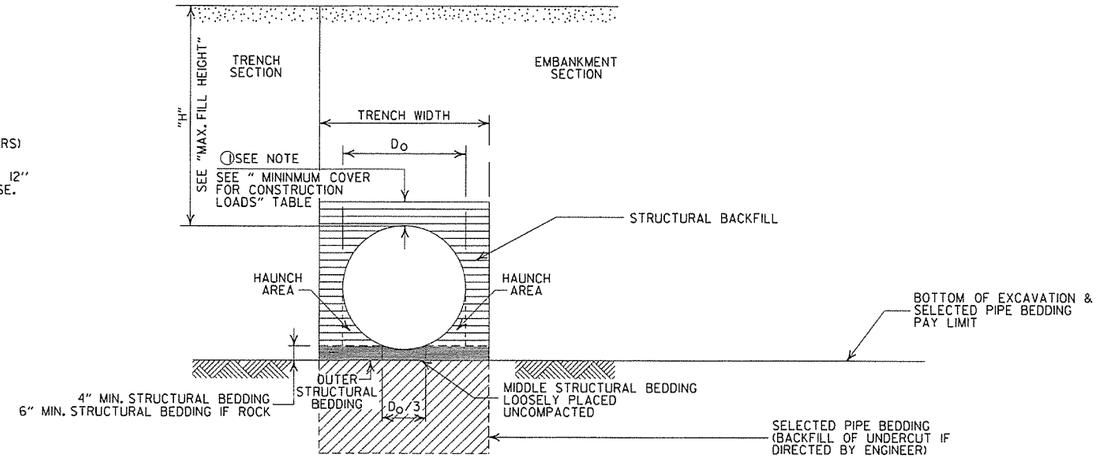
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

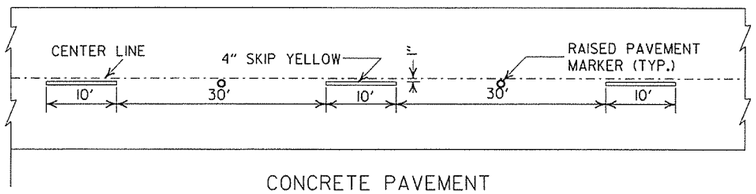
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

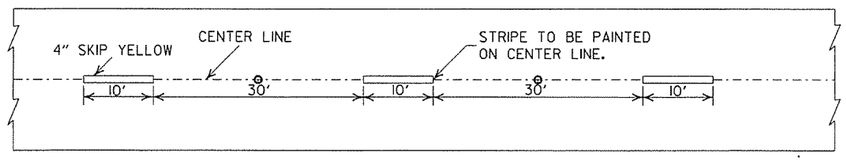
STANDARD DRAWING PCP-2

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

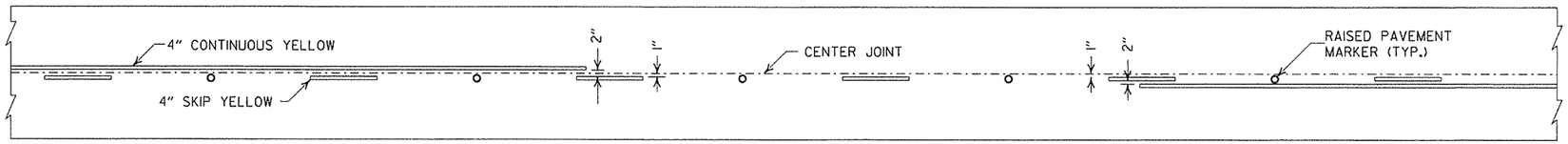


CONCRETE PAVEMENT

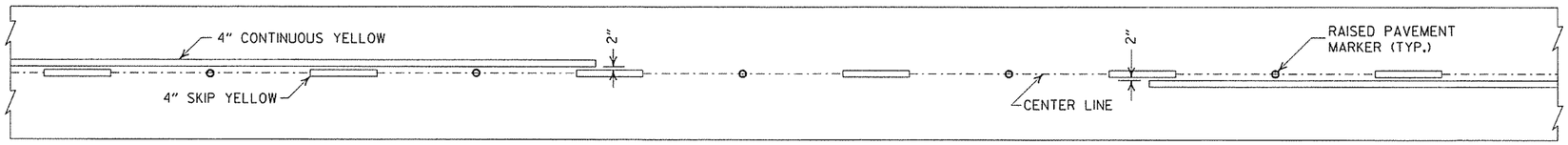


ASPHALT PAVEMENT

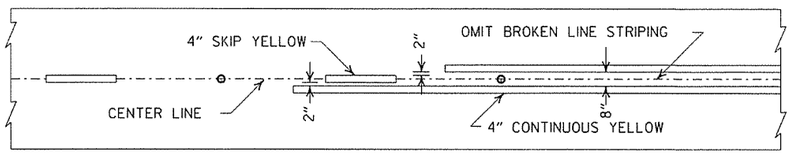
BROKEN LINE STRIPING



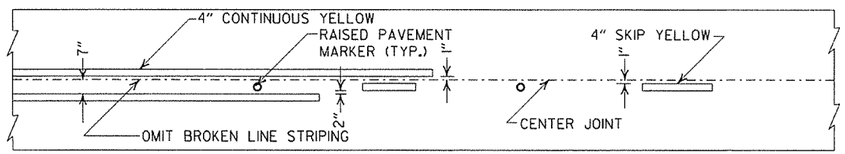
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT



CONCRETE PAVEMENT

GENERAL NOTES:

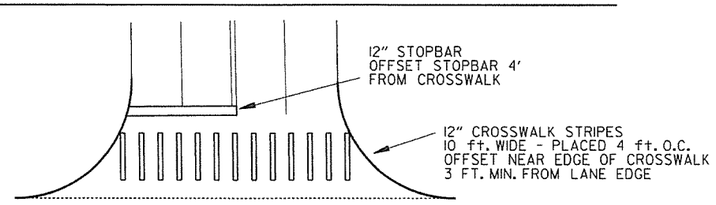
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

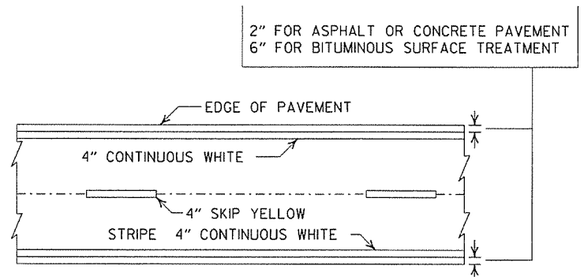
NOTE:

DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

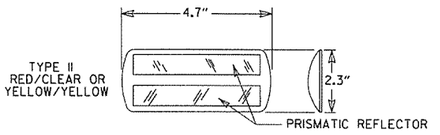
STRIPING AT ADJACENT NO PASSING LANES



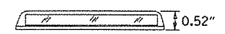
CROSSWALK AND STOPBAR DETAILS



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	
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	I-9-30-80
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

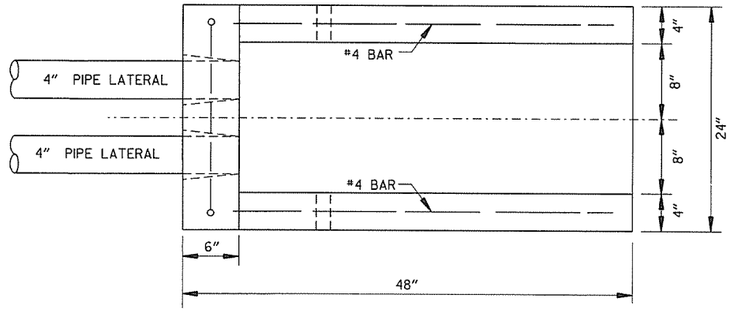
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

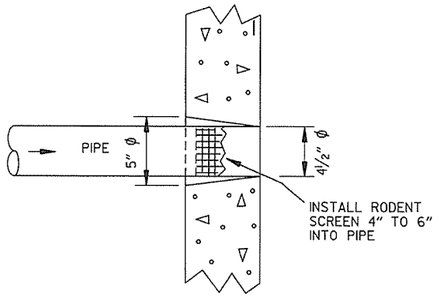
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

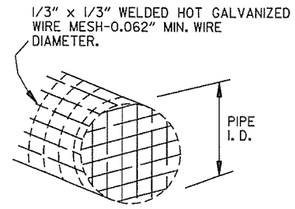
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



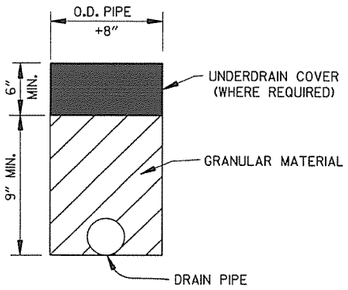
PLAN VIEW

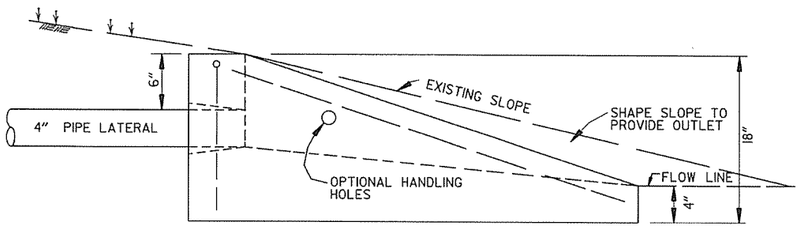


DETAIL OF HOLE FOR 4" PIPE

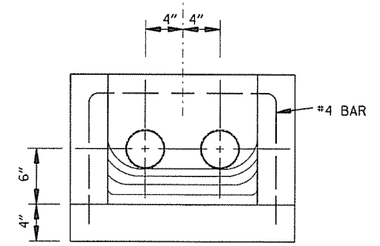


DETAIL OF RODENT SCREEN

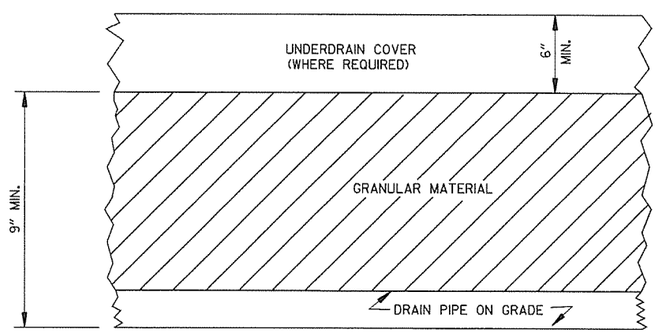




SIDE VIEW

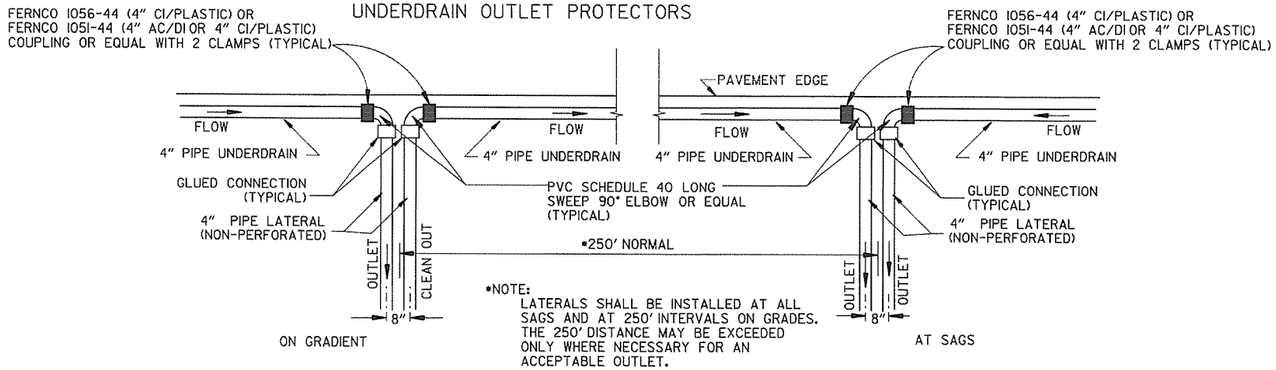


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

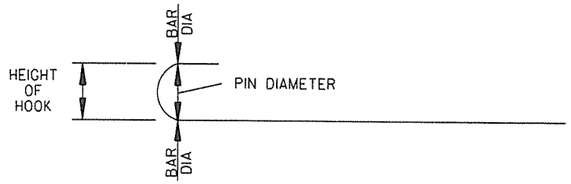
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

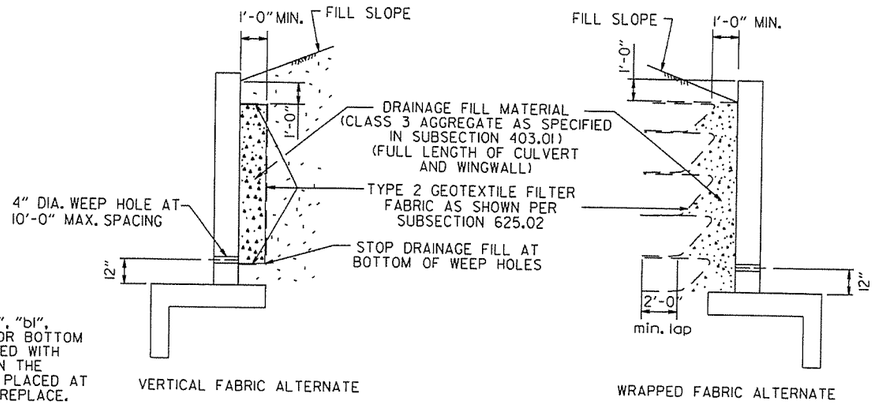
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

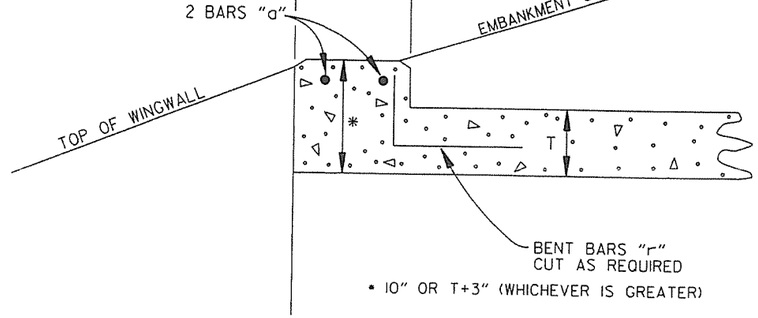
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

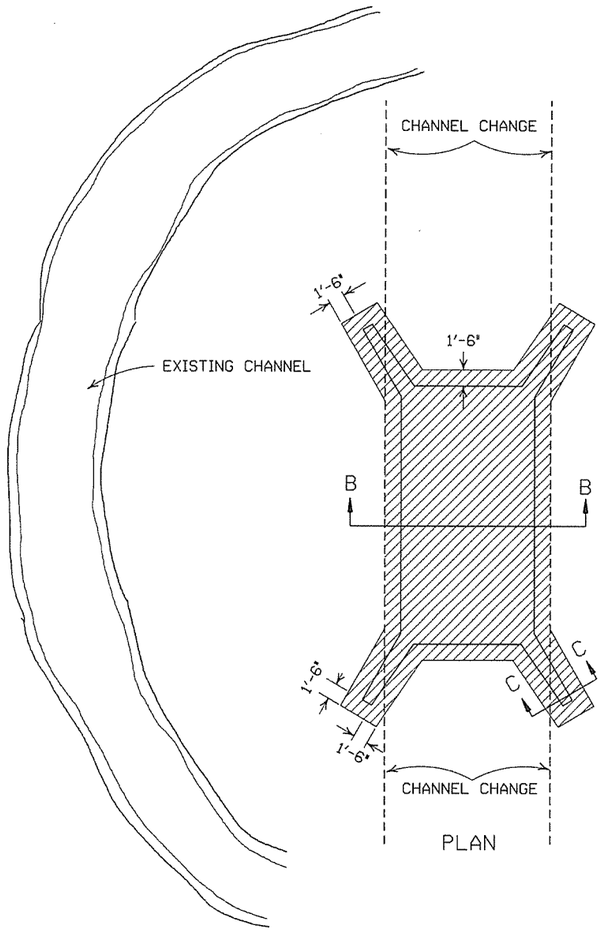
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

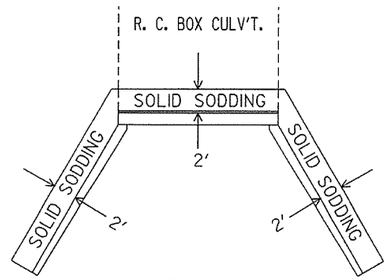
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

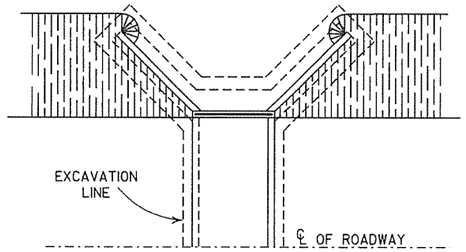
SOLID SODDING



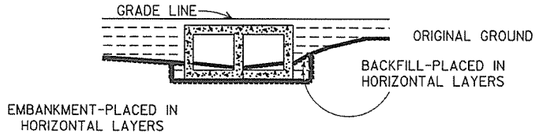
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

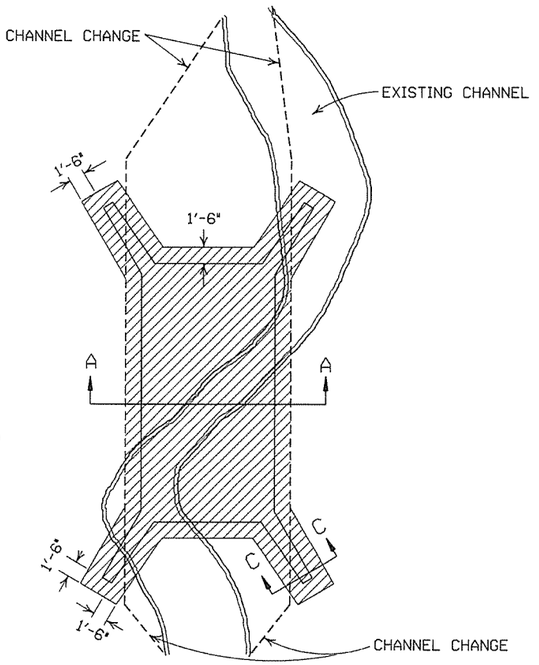


PLAN

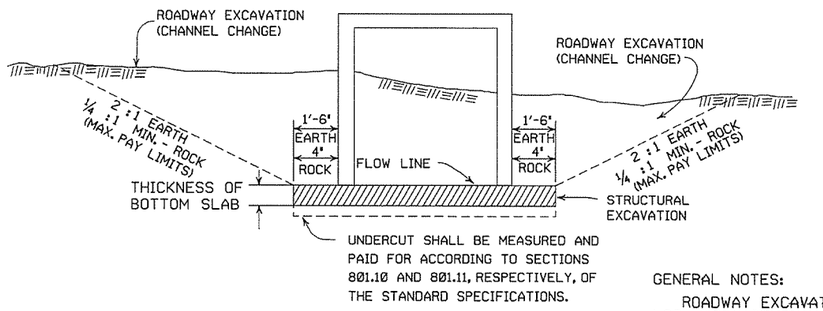


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

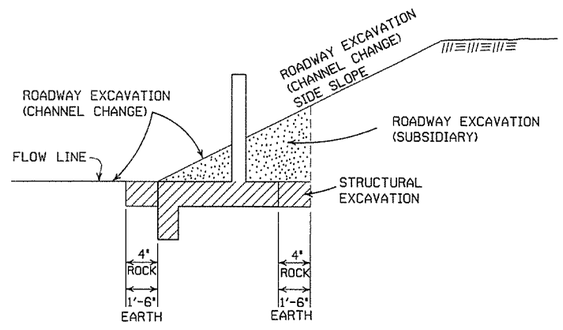


PLAN

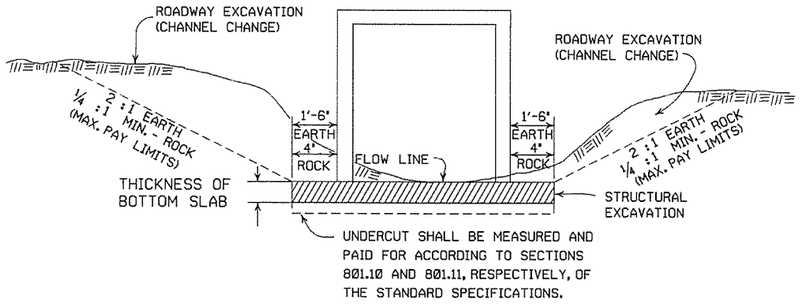


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

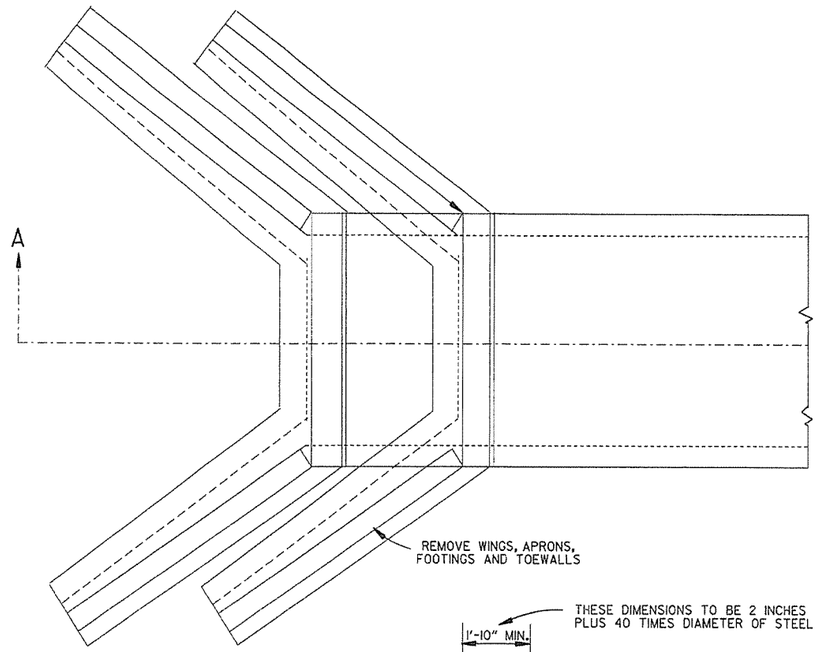
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

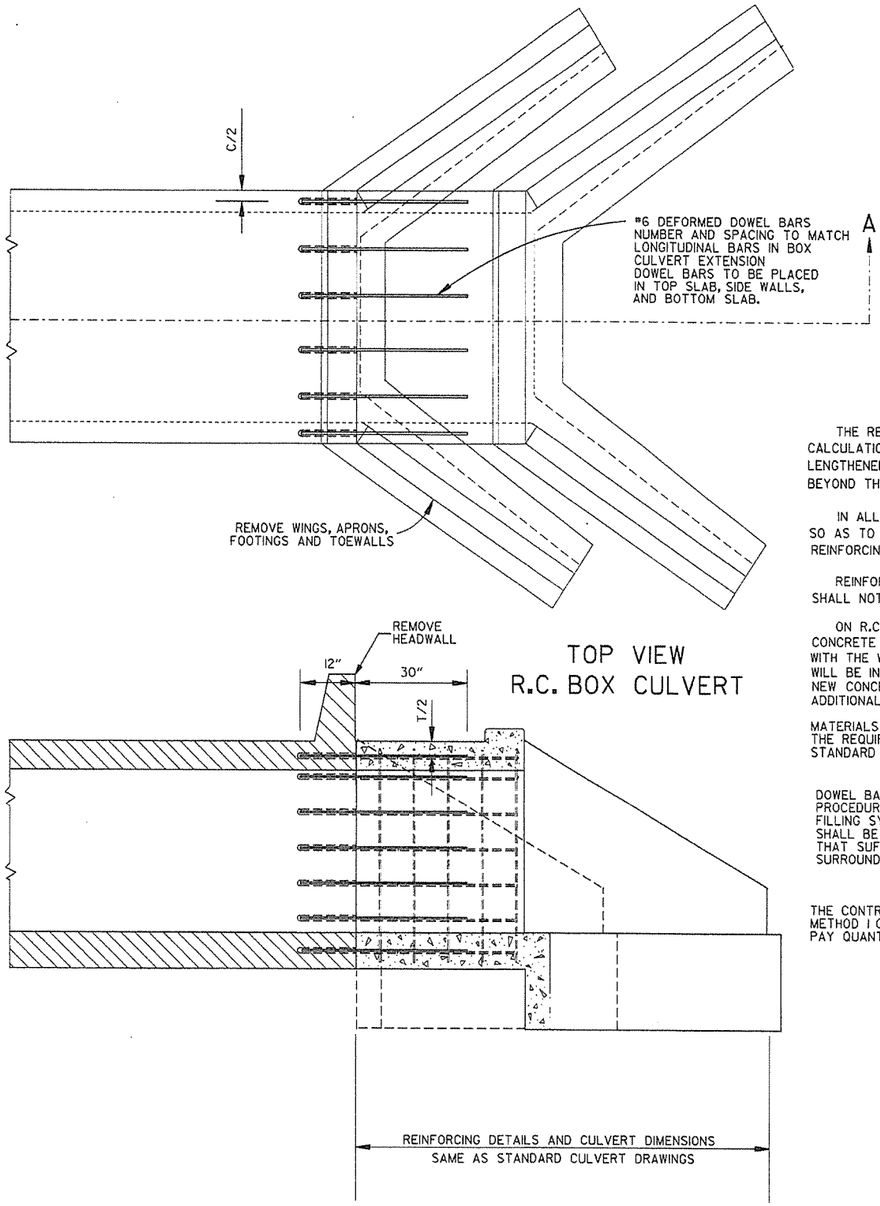
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER. AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

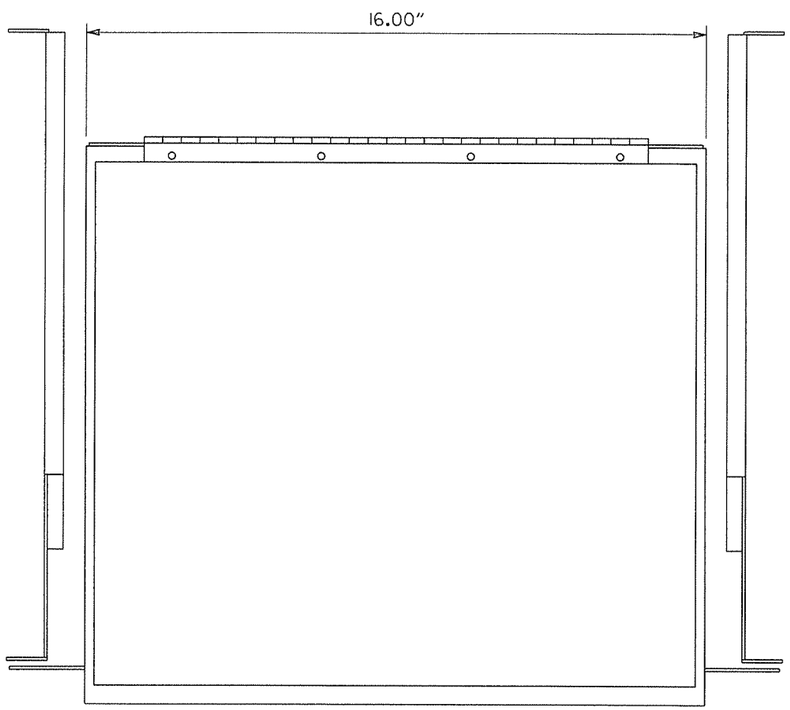
DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

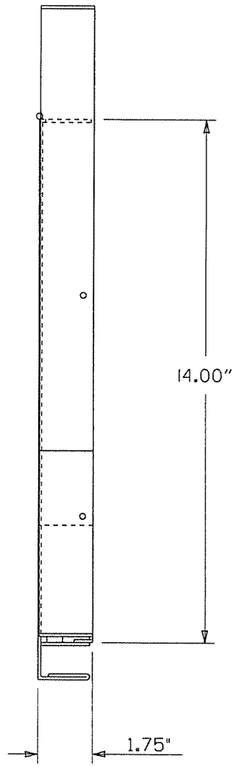
ARKANSAS STATE HIGHWAY COMMISSION

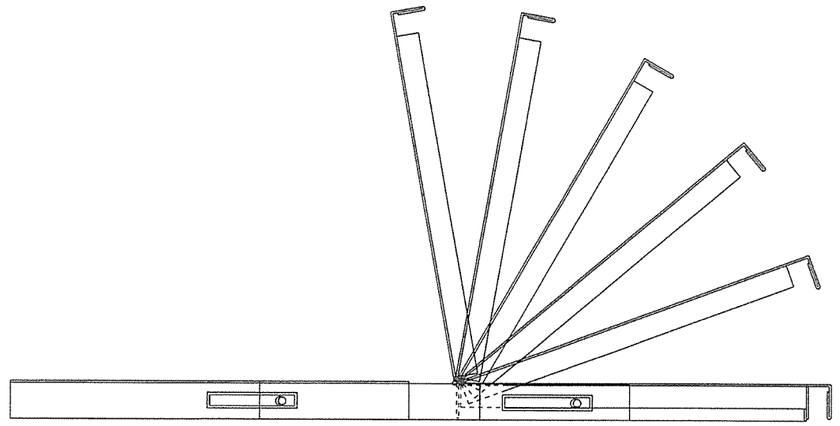
METHOD OF EXTENDING
EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

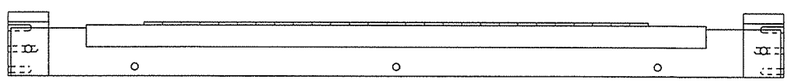
DRAWER PLAN VIEW



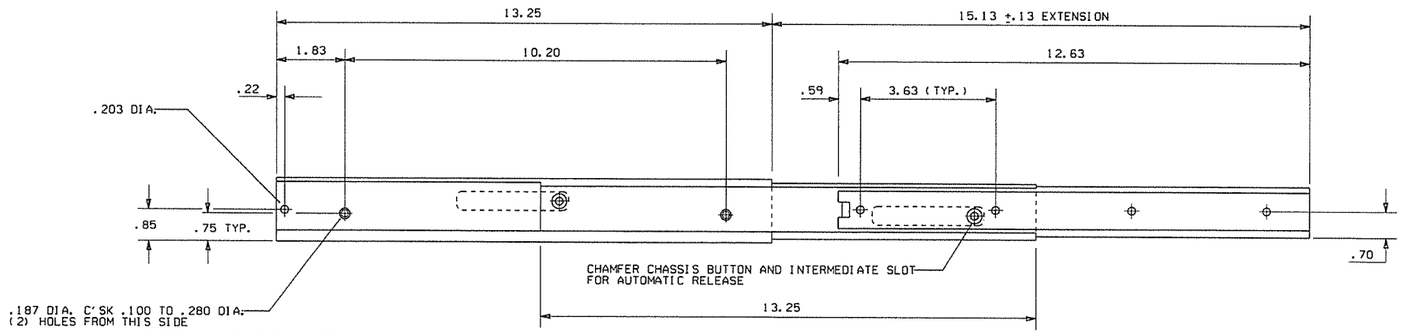




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

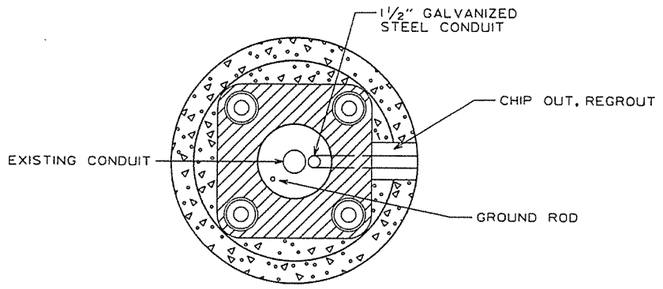
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

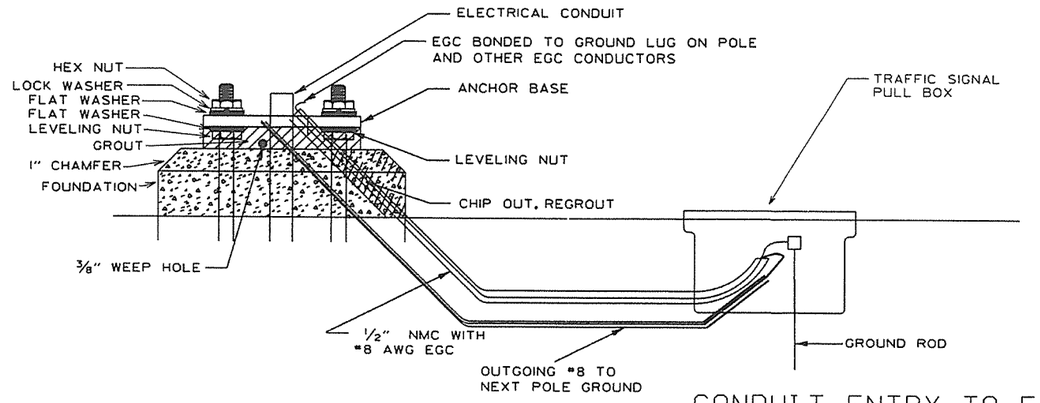
CONTROLLER CABINET UTILITY DRAWER

STANDARD DRAWING SD-5

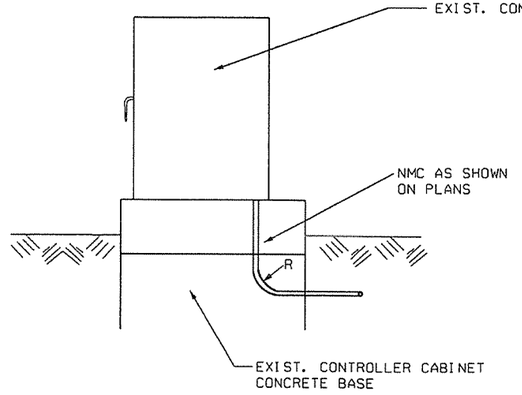
CONDUIT ENTRY TO EXISTING POLE BASE



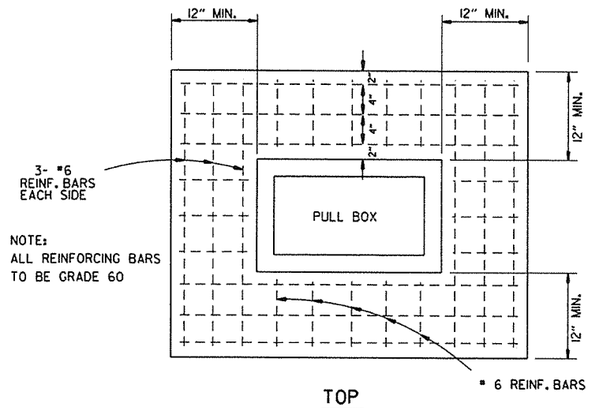
ANCHOR BASE



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

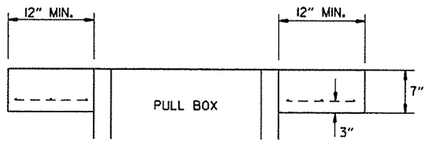


NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



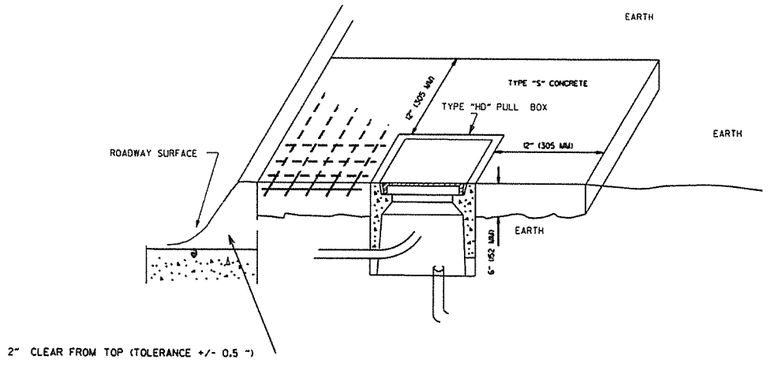
NOTE:
ALL REINFORCING BARS TO BE GRADE 60

TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



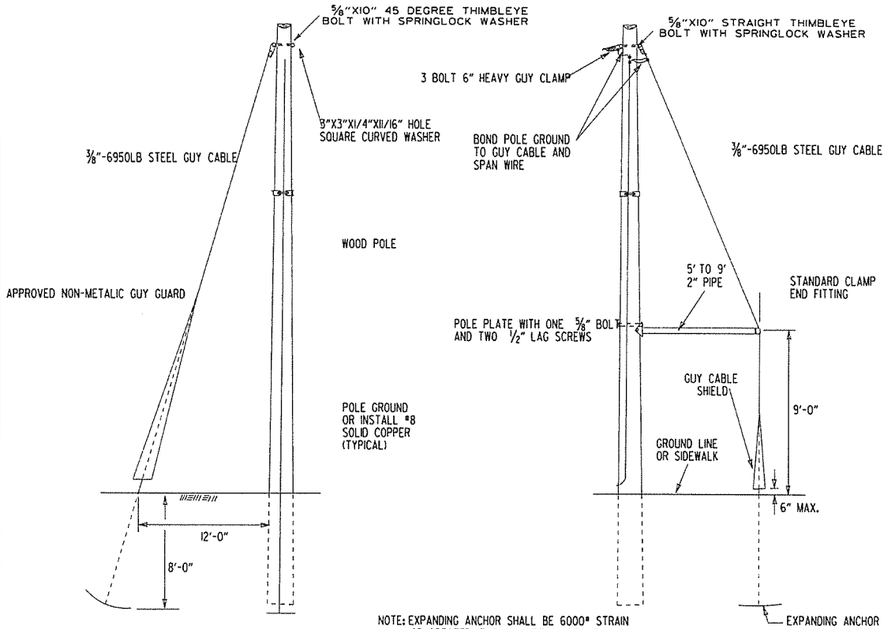
NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 7" (178 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE 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

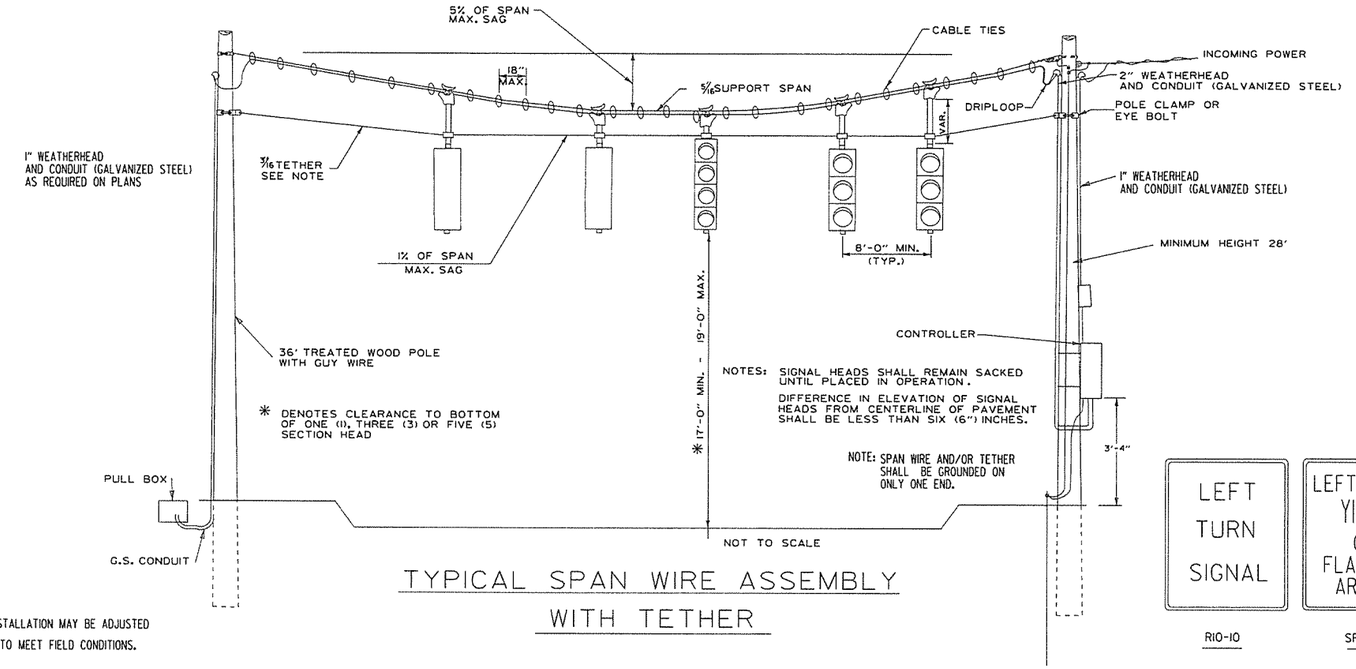


STANDARD GUY INSTALLATION

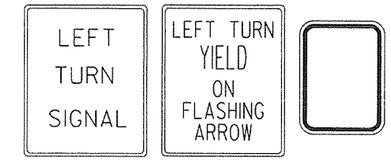
NOTE: EXPANDING ANCHOR SHALL BE 6000# STRAIN OR GREATER. IT SHALL BE A "NEW CHANCE 8-WAY EXPANDING ANCHOR", WITH A 5/8" MINIMUM GUY ROD.

SIDEWALK GUY INSTALLATION

NOTE: CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIELD CONDITIONS.



TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

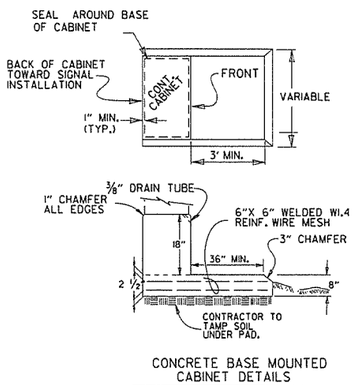


R10-10 SPECIAL R10-3E (SEE MUTCD)

NOTES: SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF 4' BEHIND CURB OR SHOULDER.

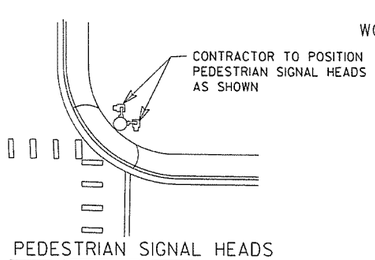
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS. CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE GROUND ROD WITH A #8 AWG SOLID COPPER WIRE. ON EXISTING INSTALLATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.

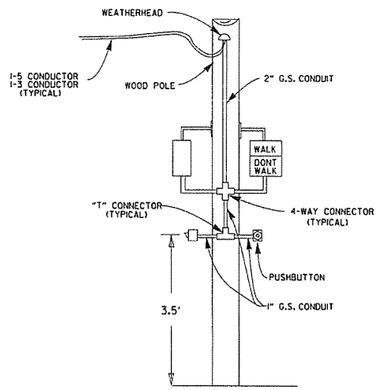


CONCRETE BASE MOUNTED CABINET DETAILS

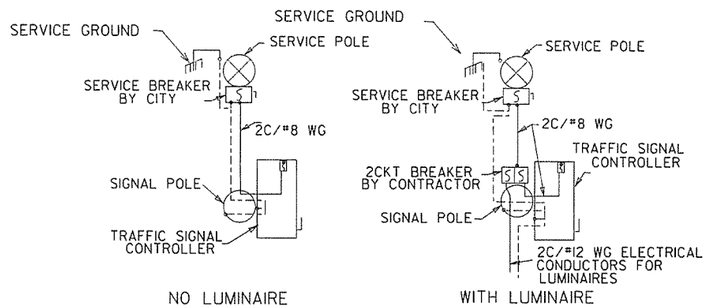
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.



PEDESTRIAN SIGNAL HEADS



WOODEN POLE INSTALLATION OF PED HEADS



SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

NOTES:

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 SIGNAL PLAN NOTES.

SIGN BLANK SHALL BE CONSTRUCTED OF ALLUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

SIGN FACE SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORKING DAYS. 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 THE 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.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

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 THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

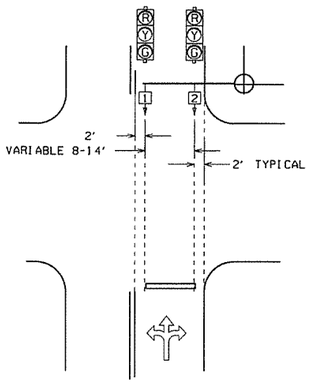
DATE	REVISION	DATE FILM
2-27-14	REVISED NOTES.	
9-12-13	ISSUED AS STANDARD DRAWING	
7-21-11	REVISED PED SIGN, CABINET GROUNDING	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENT. & SIGNAL OPER.	
5-22-02	REV. TYP. SPAN WIRE ASSEMBLY	
12-27-99	REVISED	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

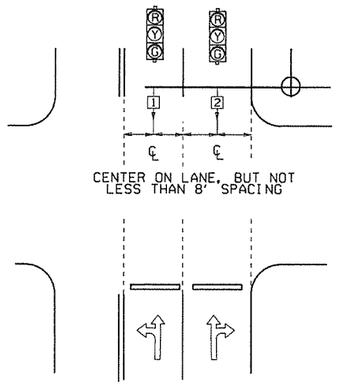
SPAN WIRE ASSEMBLY WOOD POLE

STANDARD DRAWING SD-7

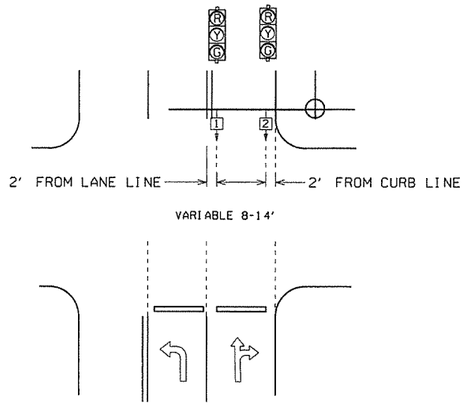
(A)



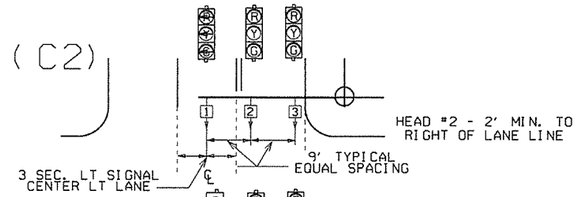
(B)



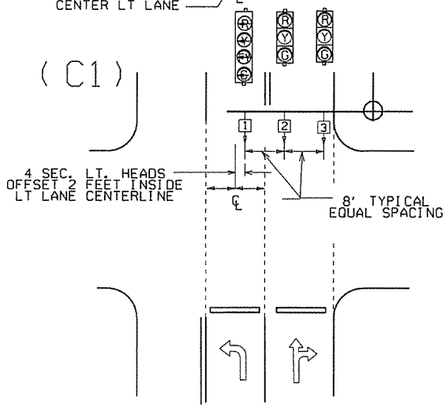
(C)



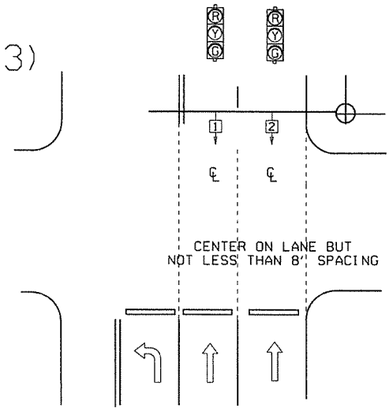
(C2)



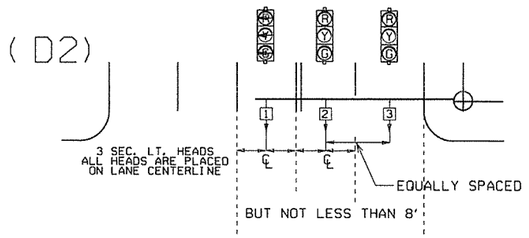
(C1)



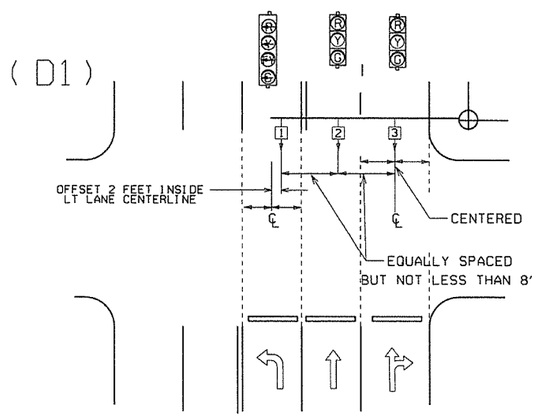
(C3)



(D2)

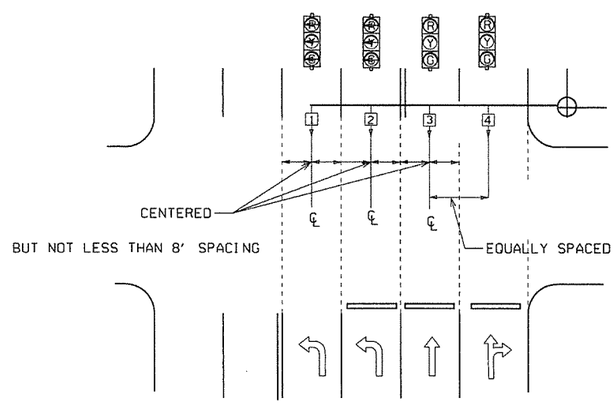


(D1)



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

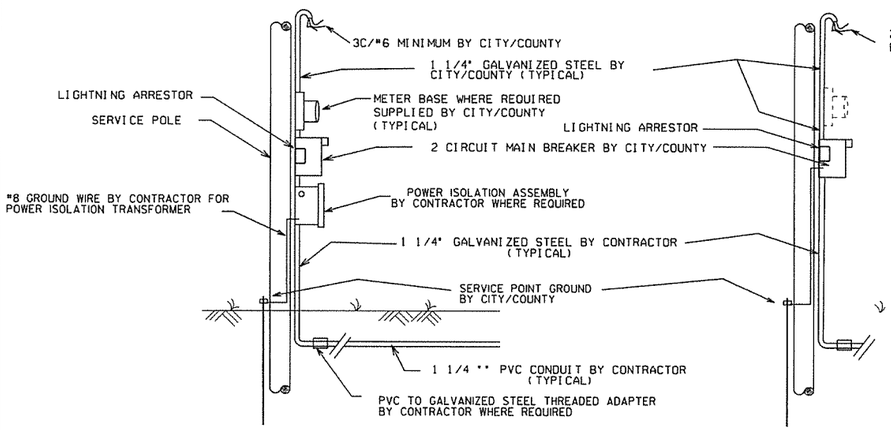
5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

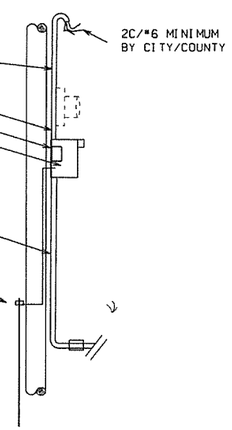
			ARKANSAS STATE HIGHWAY COMMISSION
9-12-13	ISSUED AS STANDARD DRAWING		SIGNAL HEAD PLACEMENT
3-11-10	2009 MUTCD		
12-9-99	ISSUED		
DATE	REVISION	DATE FILM	STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

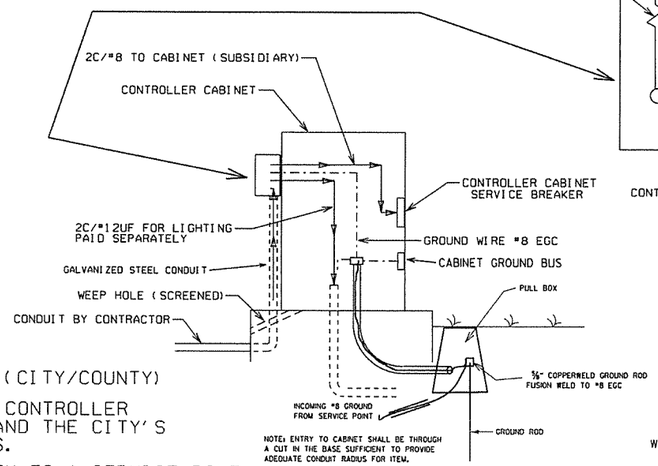


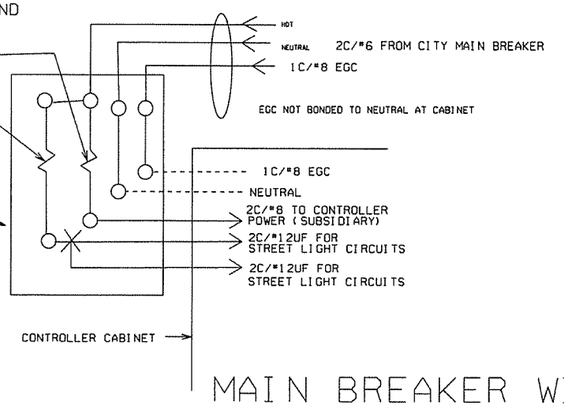
WITHOUT POWER ISOLATION ASSEMBLY



GROUND ROD-A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)





MAIN BREAKER WIRING (TYPICAL)

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

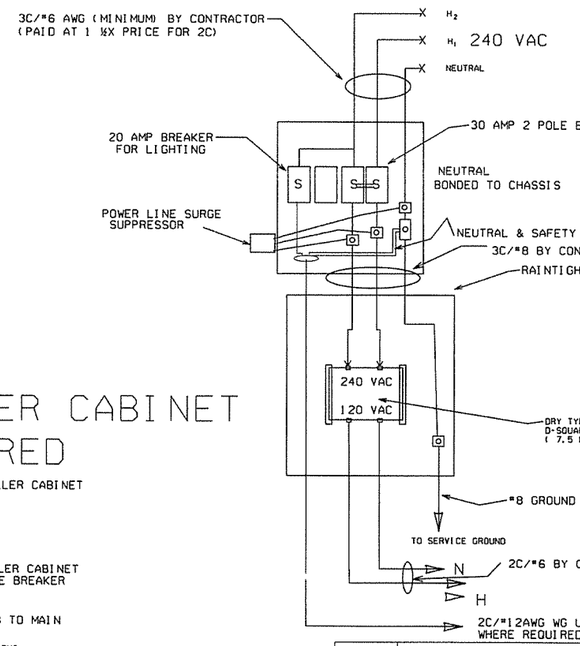
1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2C/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

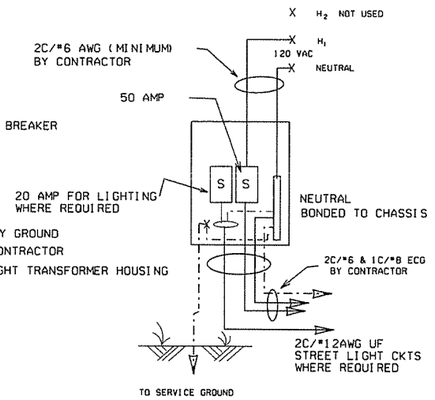
3. MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

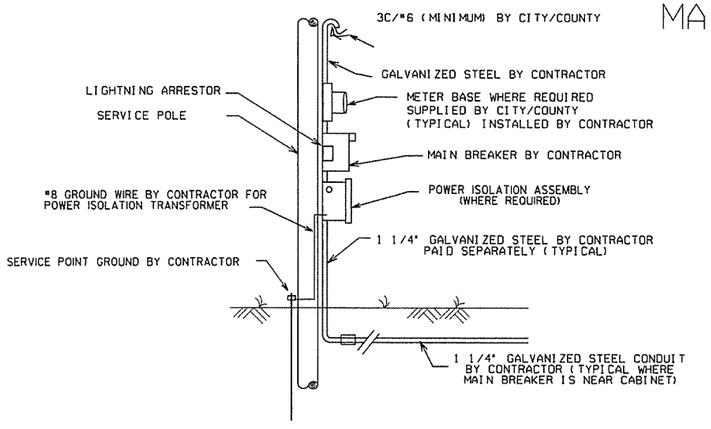


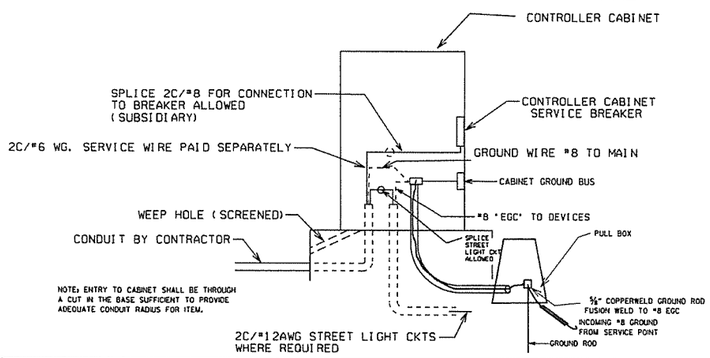
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (ECG) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
4-18-13	ADDED LIGHTNING ARRESTOR	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL = 2' X 0' X 2' = 6'; 20 LB. REMAINING HEADS SPACED A 8 FT. = 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT.; INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) = VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

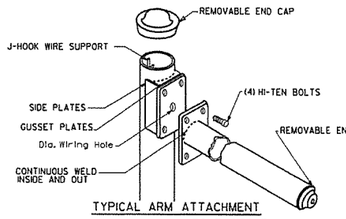
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

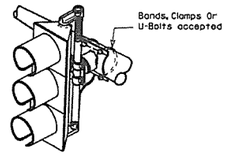
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

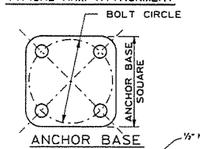
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



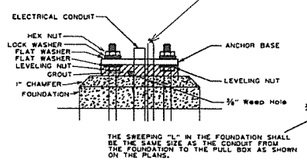
TYPICAL ARM ATTACHMENT

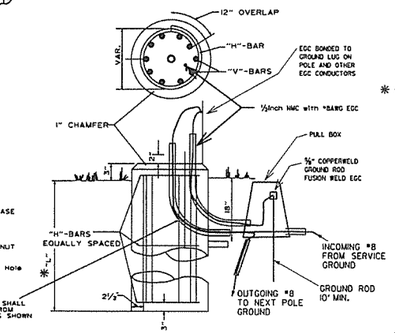


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



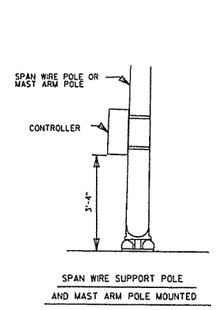


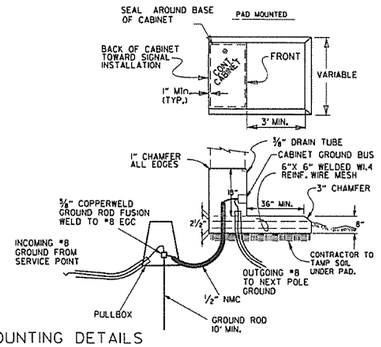
THE GROUND ROD SHALL BE FUSION WELDED TO A 10'/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

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.

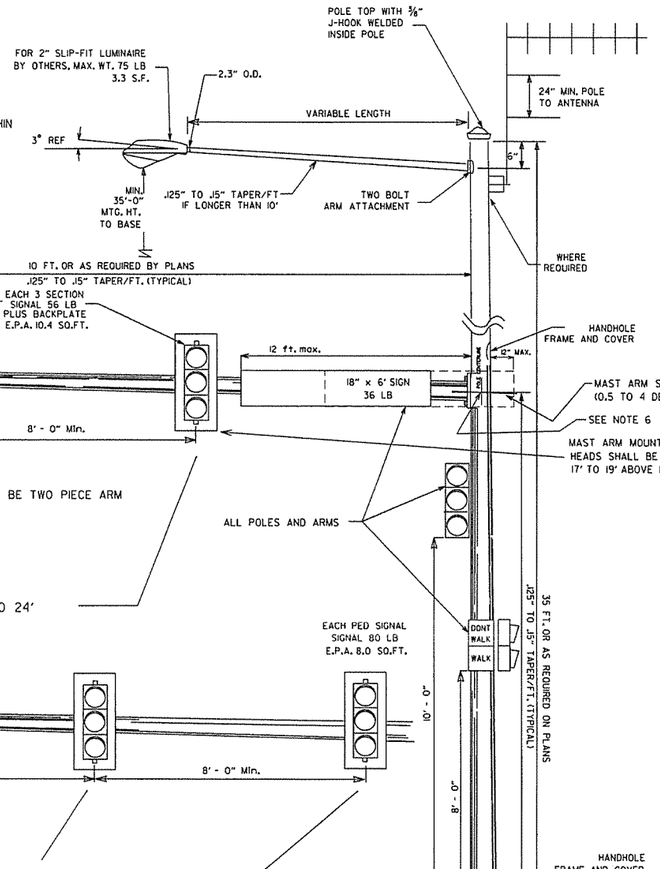
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD, AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

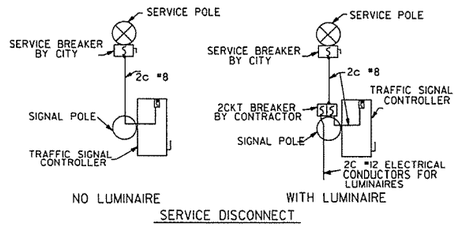
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

* 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.

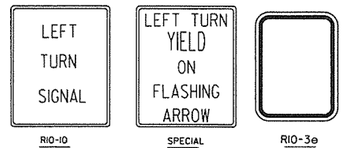
** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"XO.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

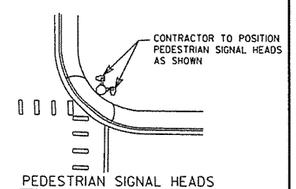
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.





SERVICE DISCONNECT





PEDESTRIAN SIGNAL HEADS

DATE	REVISION	DATE FILM
2-27-14	REVISED NOTES.	
9-12-13	ISSUED AS STANDARD DRAWING	
7-26-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-25-04	REVISED	
5-3-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-III-01	REV. NOTES & POLE MAST ARM SLOPE	
4-8-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
II-22-99	REVISED FOUNDATION DETAILS	
II-17-98	REVISED DETAILS AND NOTES	
II-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

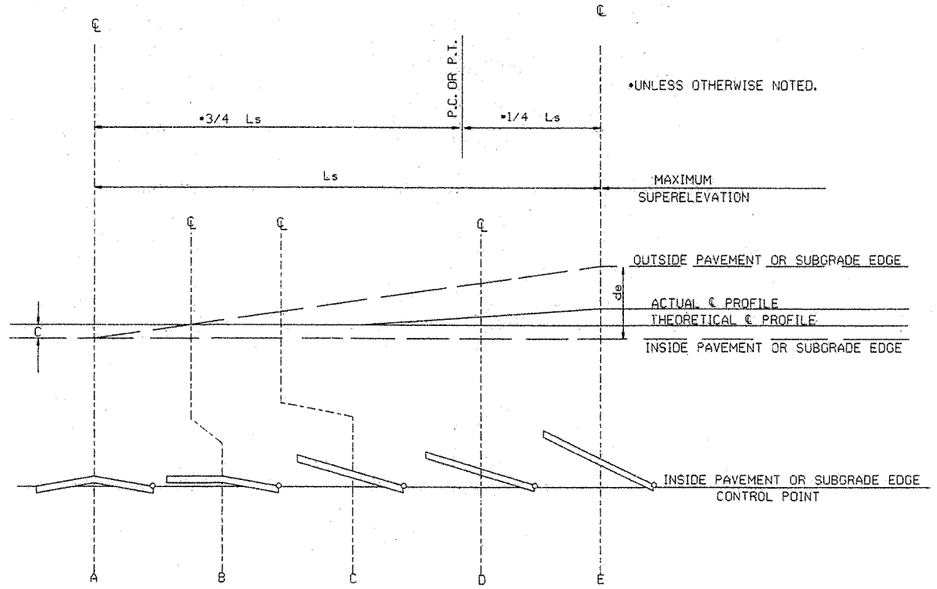
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			40 MPH			50 MPH			55 MPH			60 MPH			70 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
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	250	300	0. 046		
1° 30'	N. C.			0. 021			0. 031	200		0. 037	225		0. 043			0. 054		
1° 45'	N. C.			0. 025	175		0. 036			0. 043		300	0. 049			0. 062		
2° 00'	R. C.			0. 028			0. 040		250	0. 048			0. 055			0. 070		
2° 15'	R. C.			0. 031			0. 045			0. 053			0. 061			0. 078	300	350
2° 30'	0. 021			0. 034			0. 049			0. 058			0. 067			0. 085	315	
2° 45'	0. 023			0. 037		200	0. 053			0. 063			0. 072			0. 091	335	
3° 00'	0. 025	150		0. 040			0. 057			0. 067	230		0. 077	260		0. 096	350	400
3° 15'	0. 027			0. 043			0. 061			0. 072	245		0. 082	275		0. 098	360	
3° 30'	0. 029			0. 046			0. 065	205		0. 076	255		0. 086	285		0. 100	360	
3° 45'	0. 031		200	0. 049			0. 069	215		0. 080	265		0. 090	295	350			
4° 00'	0. 033			0. 051			0. 072	225		0. 083	270		0. 093	305				
4° 30'	0. 037			0. 056			0. 078	240		0. 087	280		0. 096	315				
5° 00'	0. 040			0. 061			0. 083	250		0. 091	295	350	0. 098	320				
5° 30'	0. 043			0. 066	185		0. 088	260		0. 094	300							
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. 056			0. 081	215		0. 099	290										
8° 00'	0. 058			0. 084	220	250	0. 100	290										
8° 30'	0. 061			0. 087	225													
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.

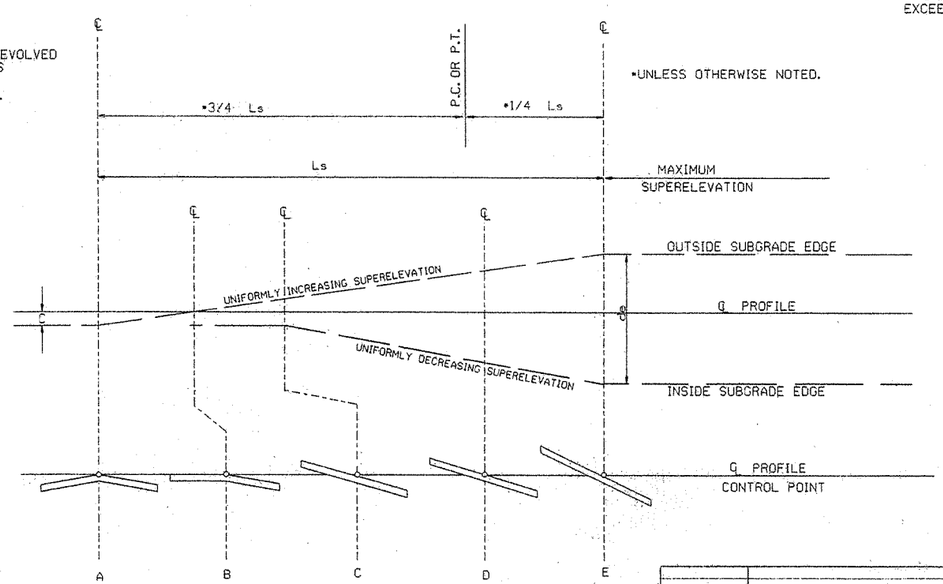
GENERAL NOTES

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 = $\frac{Lde}{Ls}$

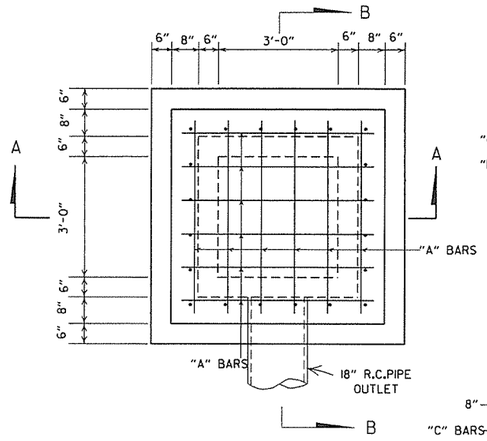
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

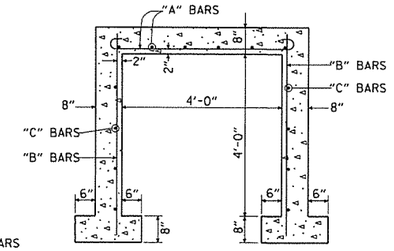
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

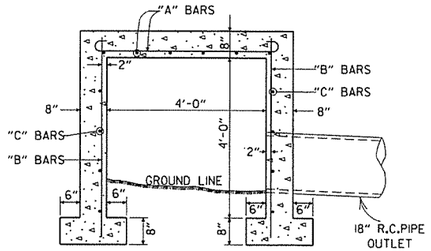
STANDARD DRAWING SE-2

FILE STDSE2.DGN





SEC A-A



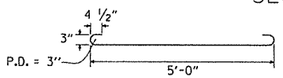
SEC B-B

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

STEEL SCHEDULE

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

ALL STEEL TO BE #4 BARS



"A" BARS

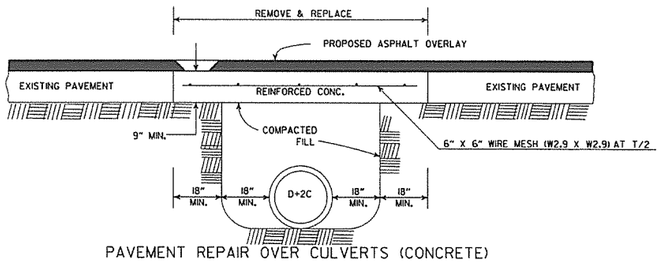
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

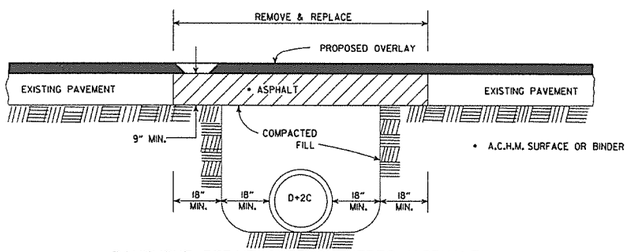
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



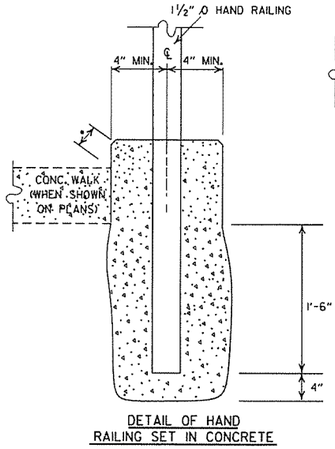
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



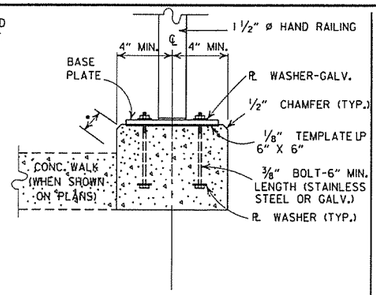
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

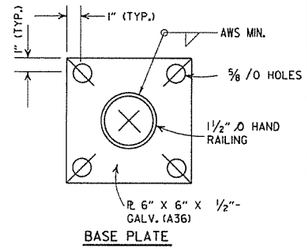
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

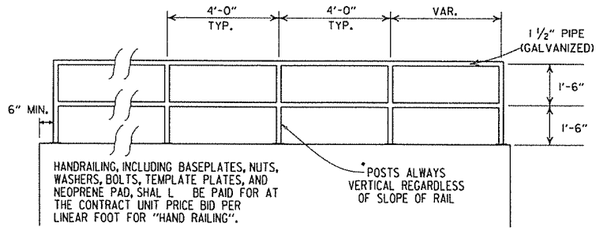


POST CONNECTION TO WALL

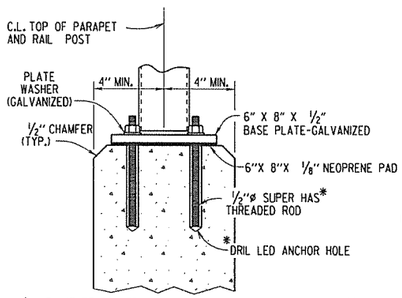


BASE PLATE

POST CONNECTION DETAILS



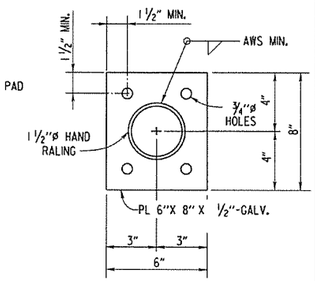
HAND RAILING SHAL L CONFORM TO SECTION 633.



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

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

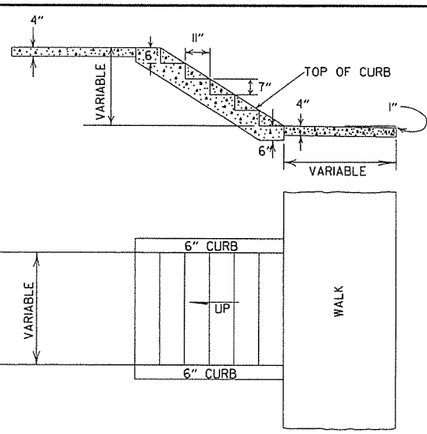
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

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

DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

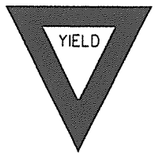
STANDARD DRAWING SI-1

R1-1



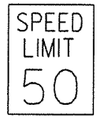
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



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

W3-5



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

W3-5a



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

R4-1



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

R4-2



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

R5-1



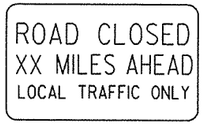
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



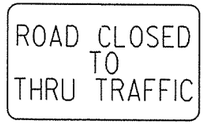
48"X30"

R11-3A



60"X30"

R11-4



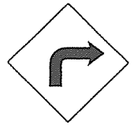
60"X30"

RSP-1



48"X30"

W1-1



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

W1-2



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

W1-3



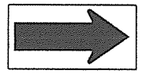
STD. 48"X48"

W1-4



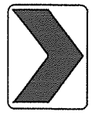
STD. 48"X48"

W1-6



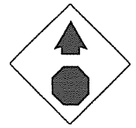
STD. 48"X24"
SPECIAL 60"X30"

W1-8



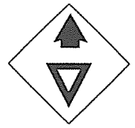
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



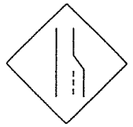
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



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

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



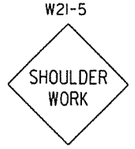
STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



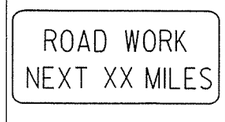
STD. 36"X36"
FWY. 48"X48"

W8-9



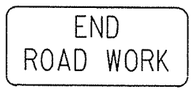
STD. 36"X36"
FWY. 48"X48"

G20-1



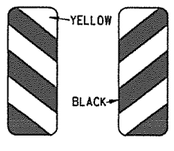
60"X24"

G20-2



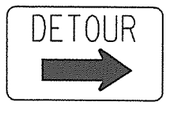
48"X24"

OM-3L OM-3R



12"X36"

M4-9



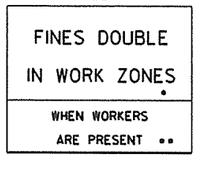
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

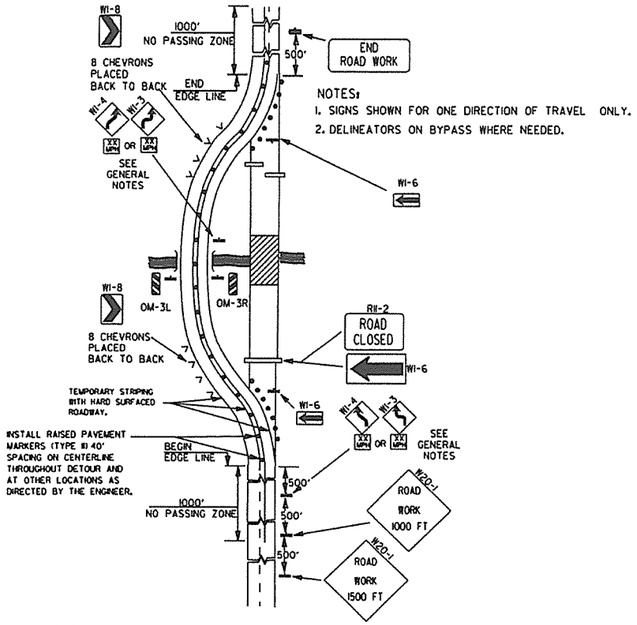
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
8-18-98	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	
8-15-94	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

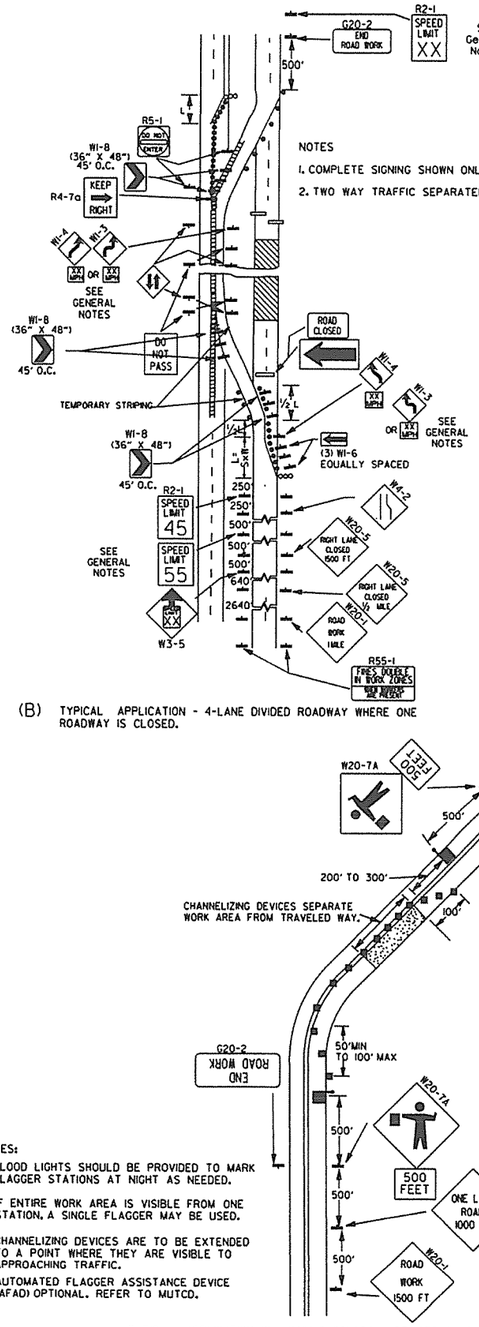
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



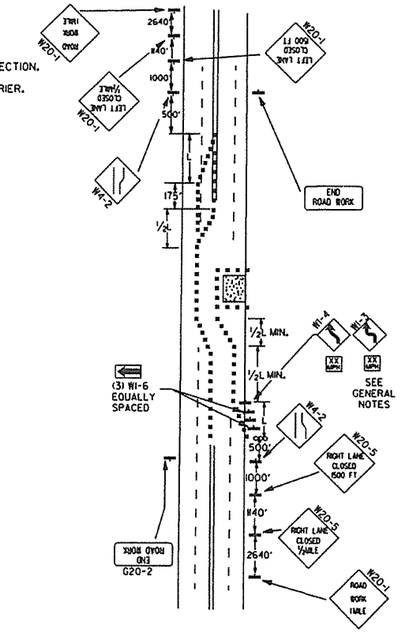
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

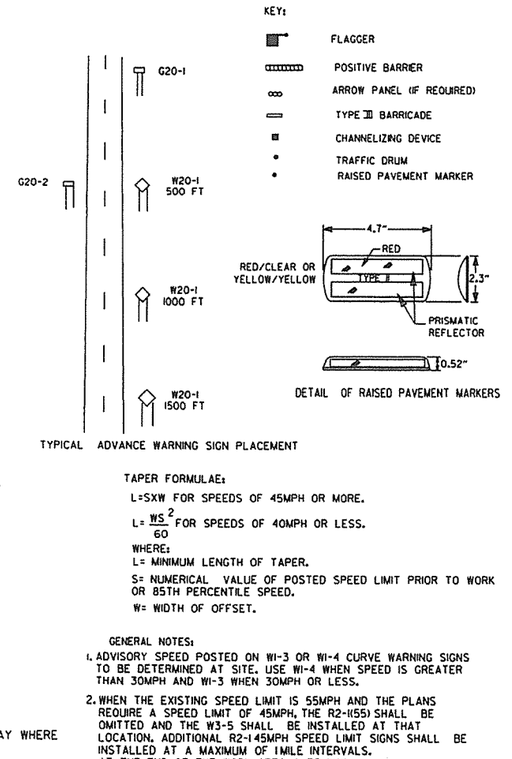


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

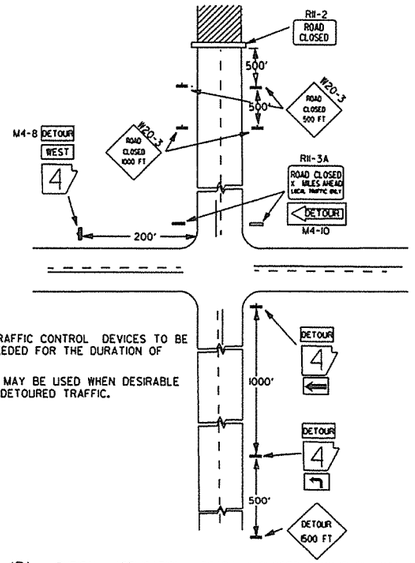
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

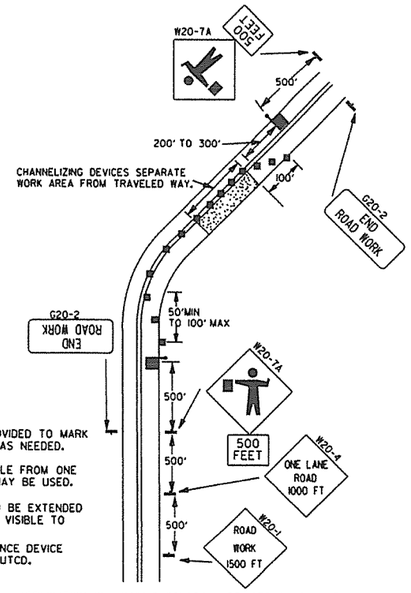
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



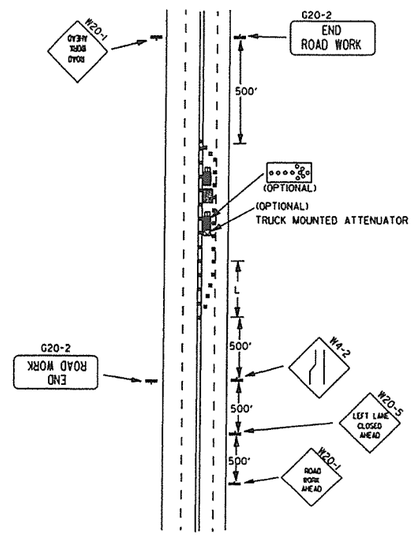
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



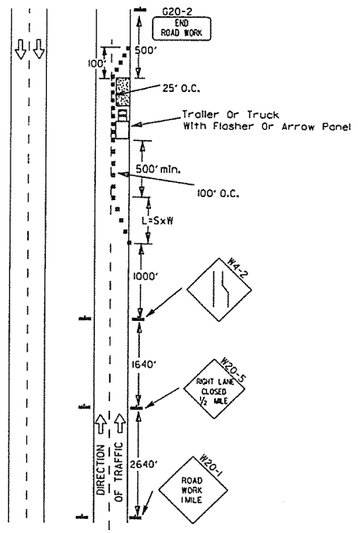
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
9-18-04	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	

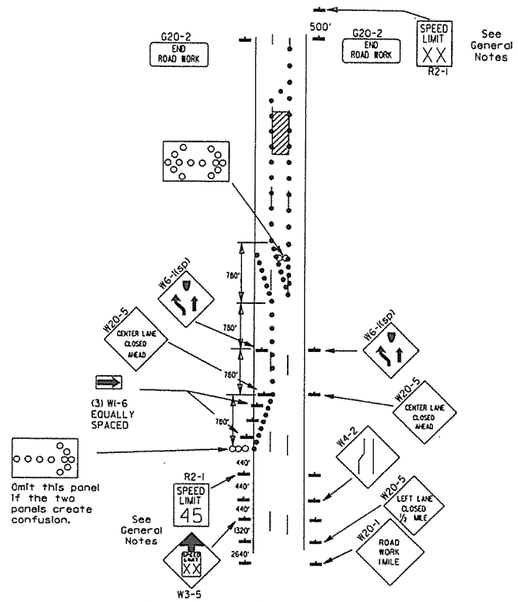
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

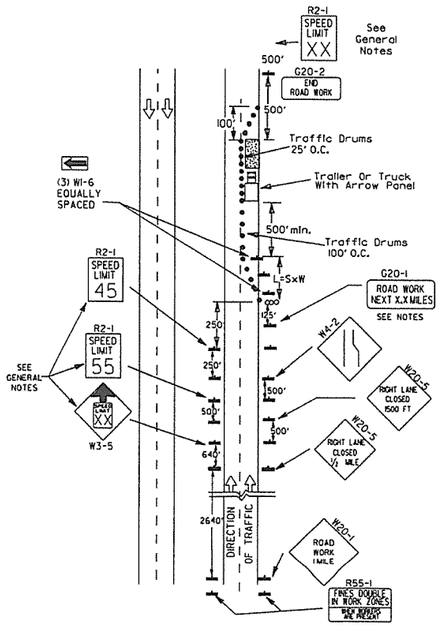
STANDARD DRAWING TC-2



(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 operatipns of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

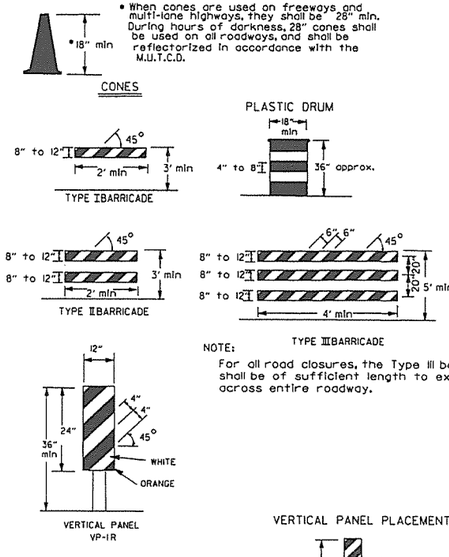
KEY:

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

GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



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

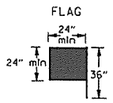
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

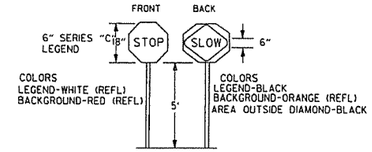
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

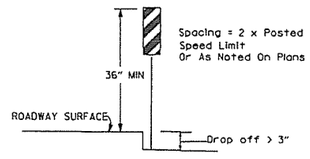


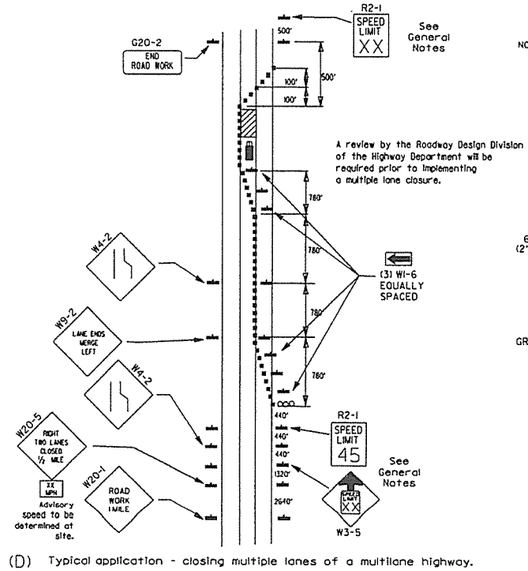
Flag shall be of good grade red material

STOP SLOW PADDLE



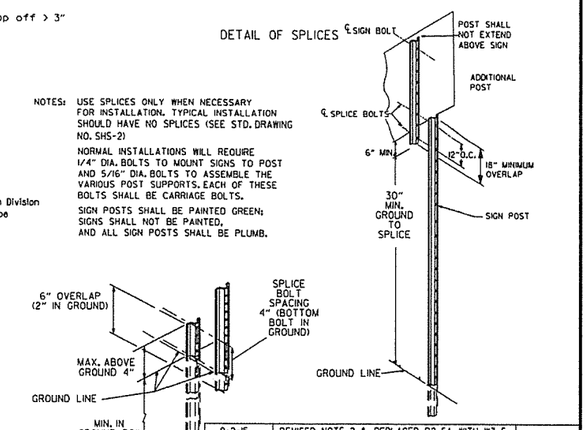
VERTICAL PANEL PLACEMENT





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

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

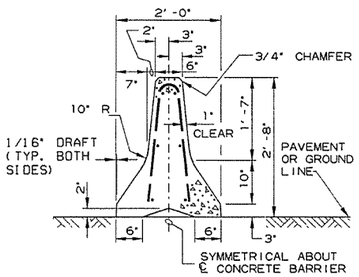
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

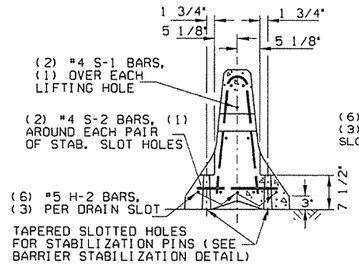
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

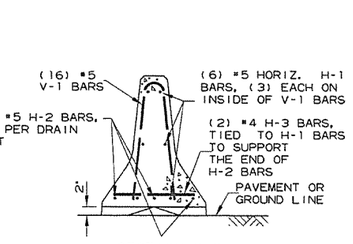
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ.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



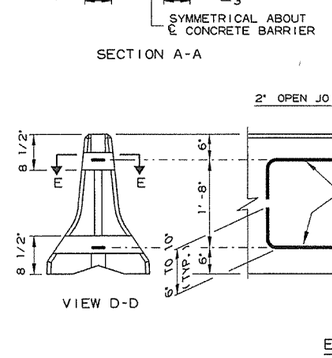
SECTION A-A



SECTION B-B



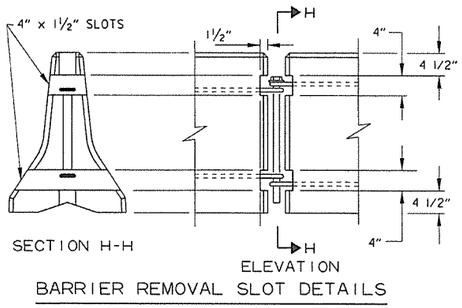
SECTION C-C



VIEW D-D

VIEW D'-D'

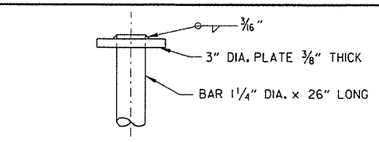
ELEVATION



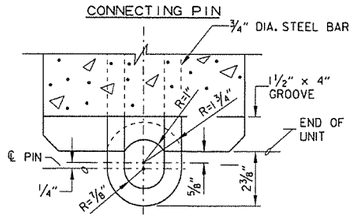
SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS

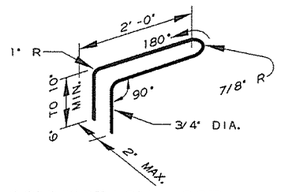


CONNECTING PIN

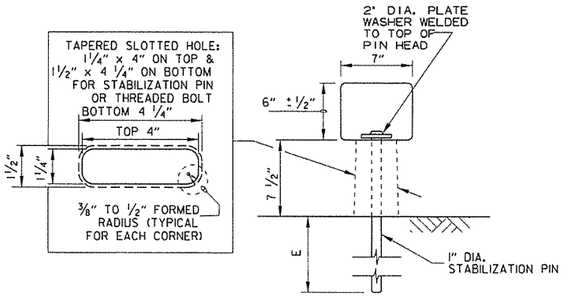


SECTION E-E

CONNECTION DETAILS



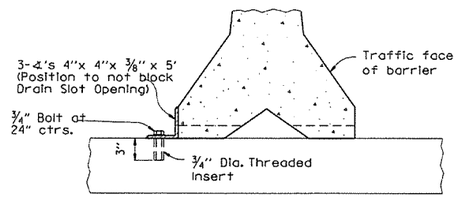
CONNECTION LOOP



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

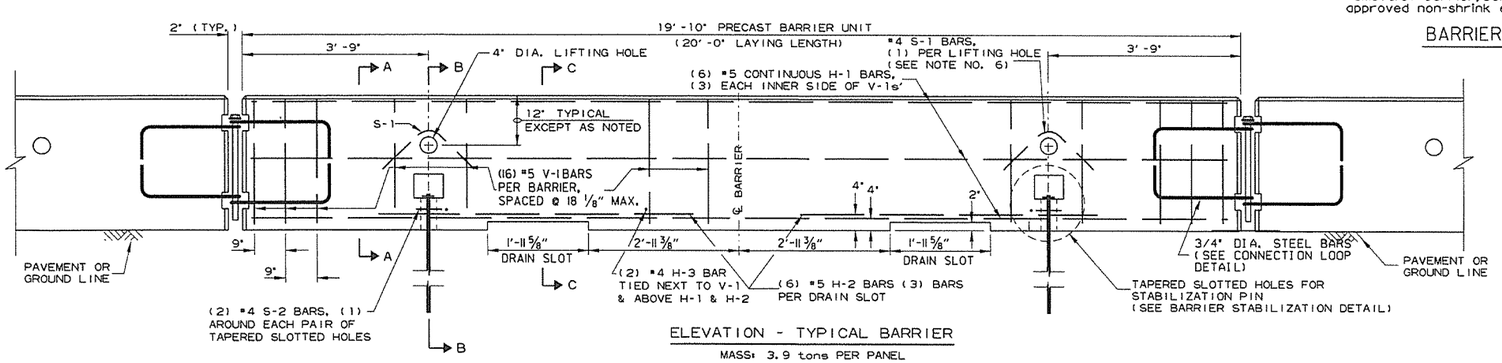
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements;
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

(3) Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

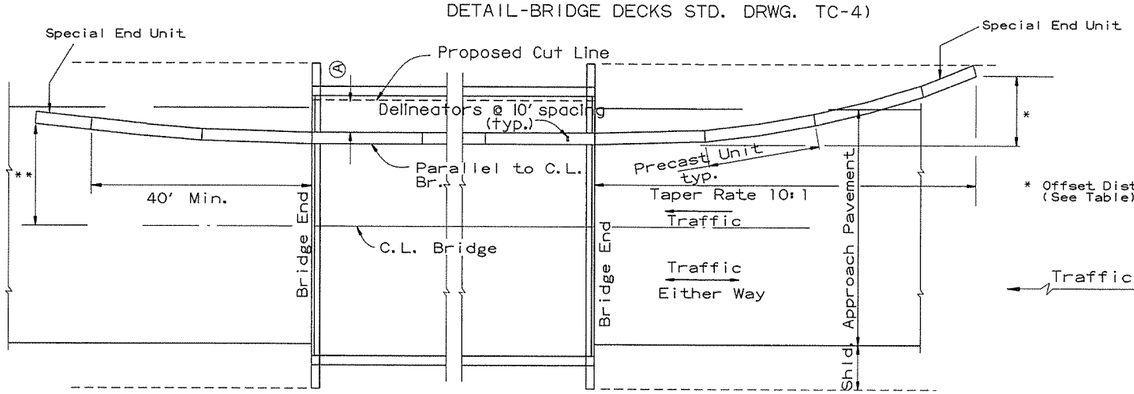
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

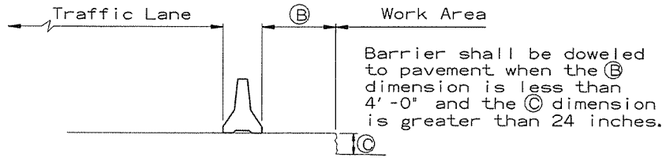
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

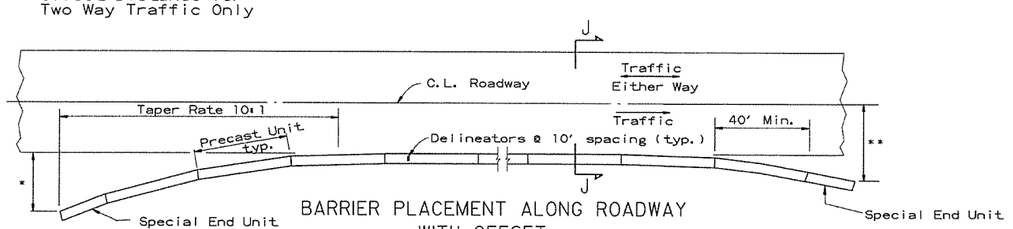


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

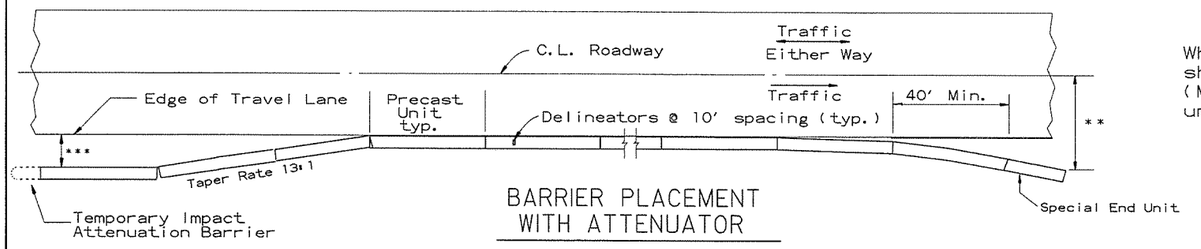
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

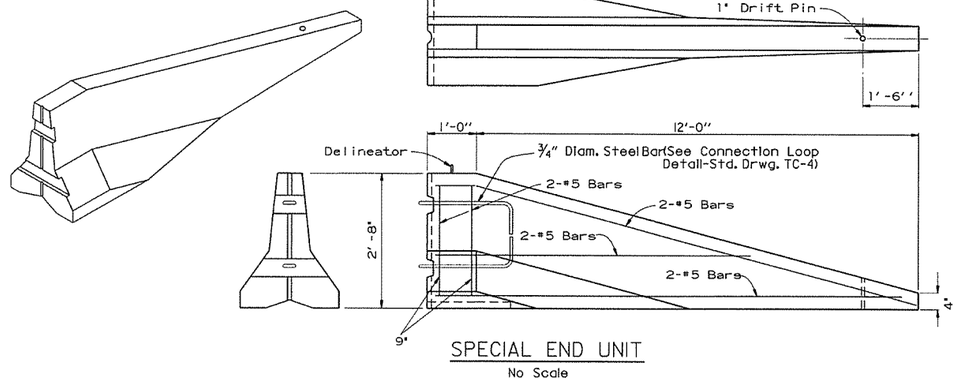


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

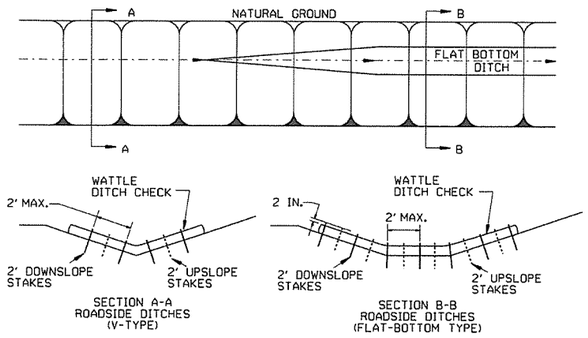
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

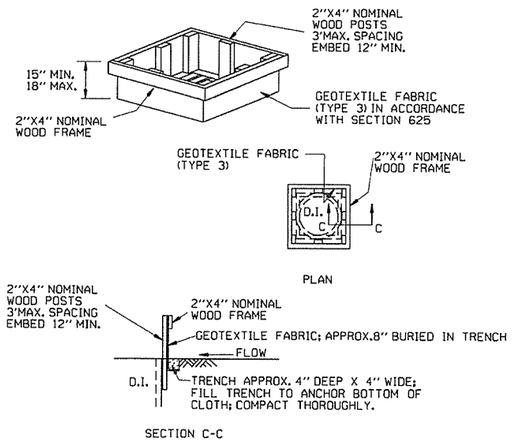
STANDARD DRAWING TC-5

GENERAL NOTES

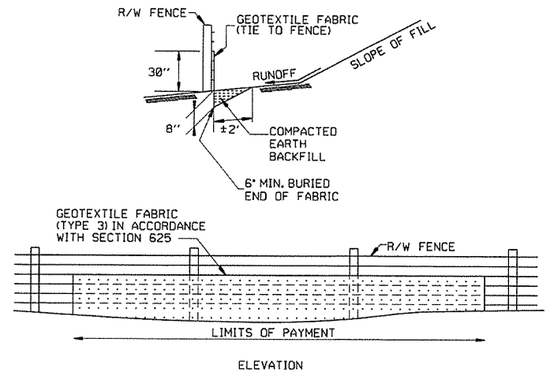
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

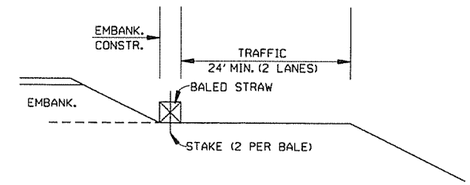
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

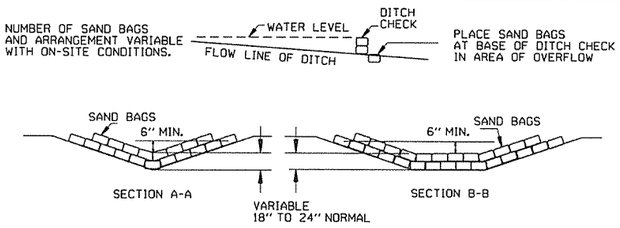
2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

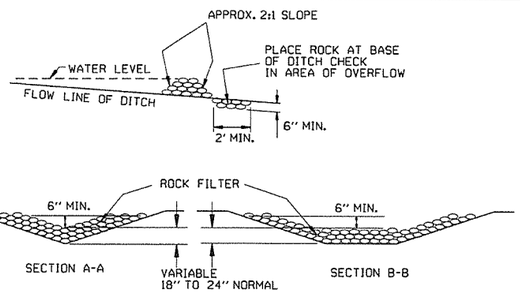


BALED STRAW FILTER BARRIER (E-2)

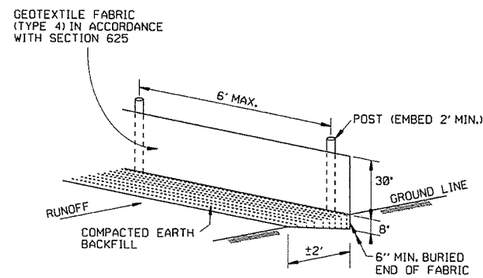
NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS.



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

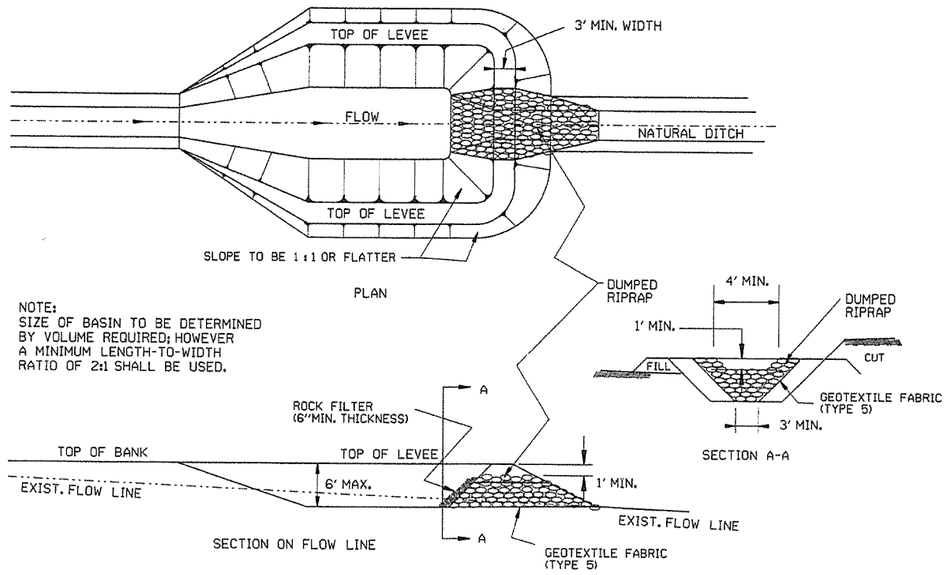
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

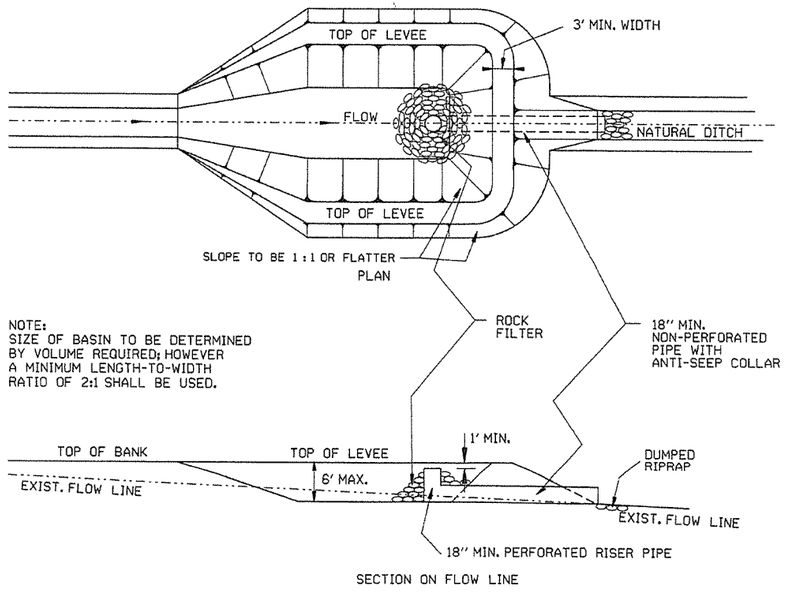
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

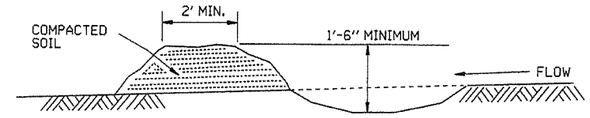
STANDARD DRAWING TEC-1



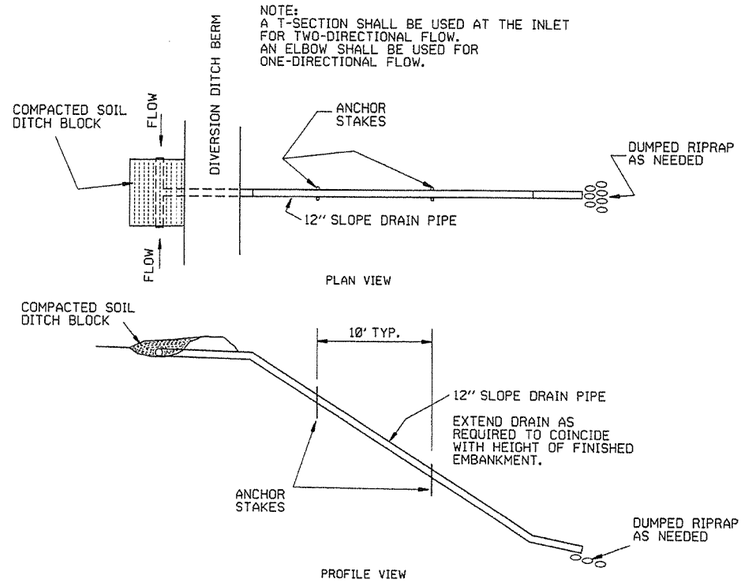
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



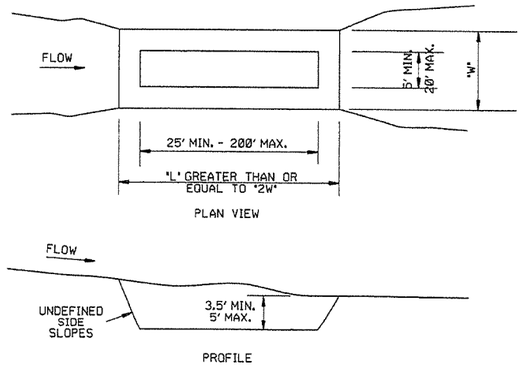
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

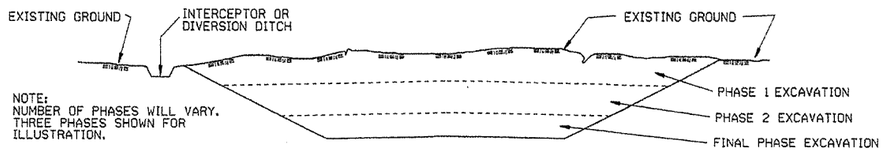
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



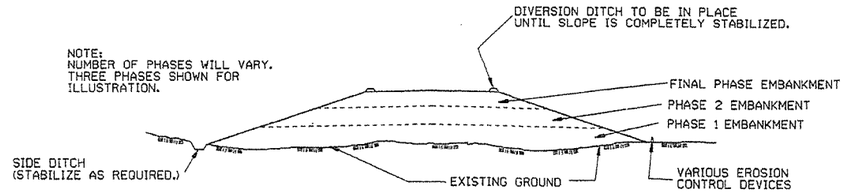
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES, CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

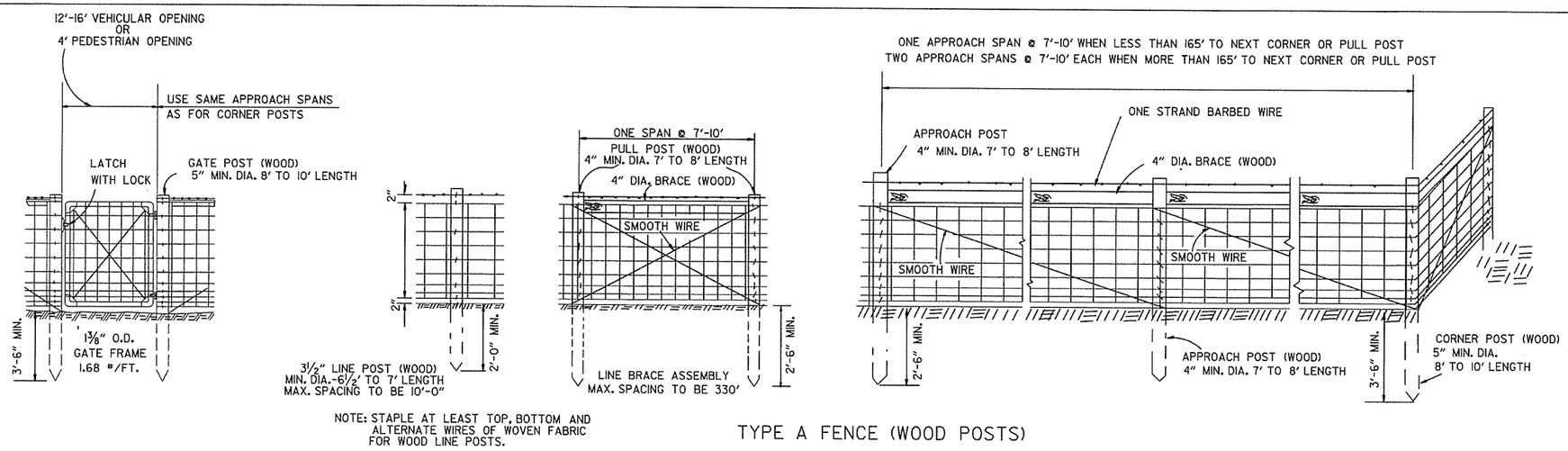
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

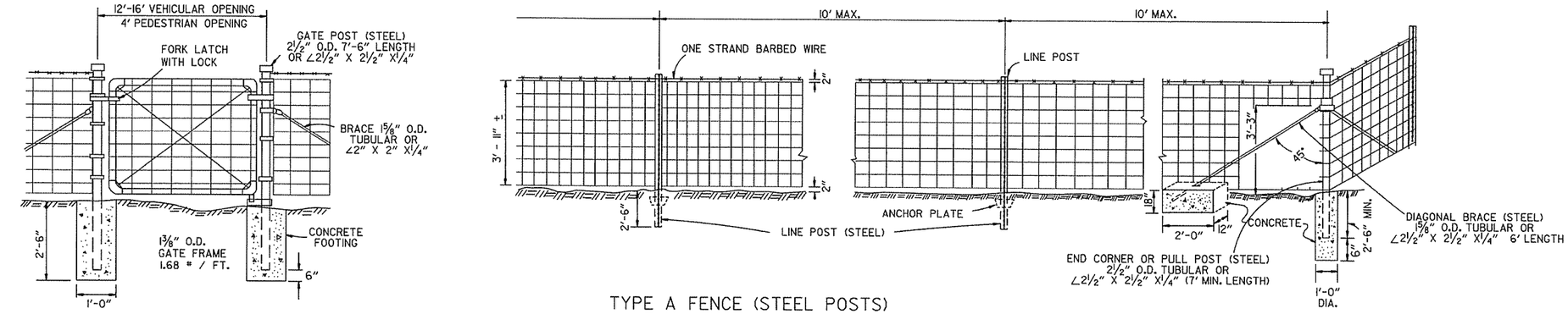
STANDARD DRAWING TEC-3

stdtec3.dgn

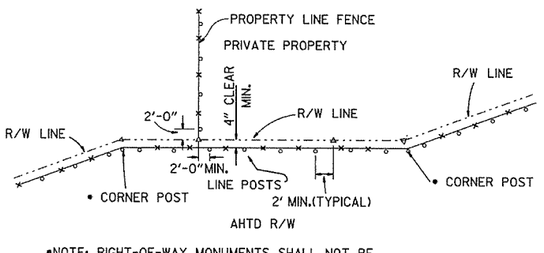


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



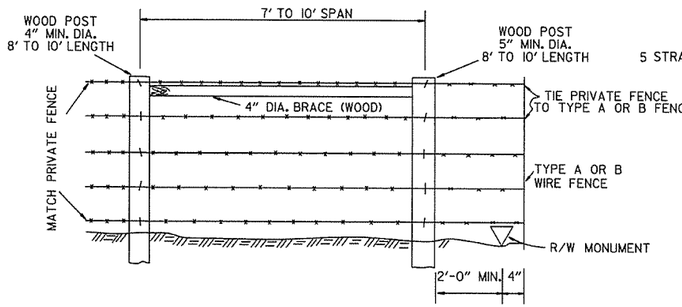
TYPE A FENCE (STEEL POSTS)



•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.

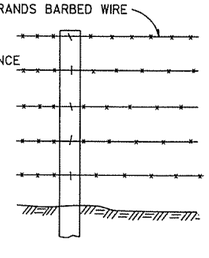
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



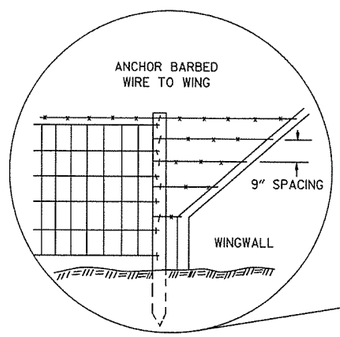
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

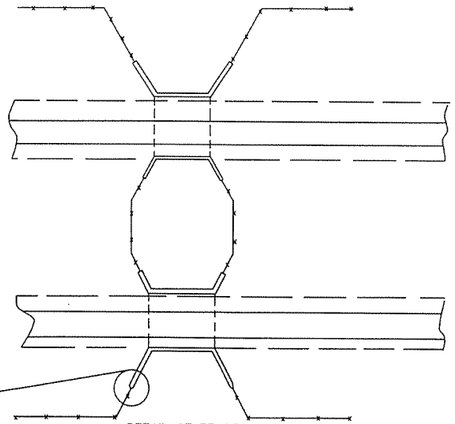
PRIVATE FENCE TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE





DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF WOOD LINE POSTS OF 7' LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

GATE HINGES AND LATCHES WITH LOCKS TO BE OF A TYPE APPROVED BY THE ENGINEER. DRIVEWAY GATES, EITHER SINGLE 12' OR 16' OR DOUBLE 6' TO 8' OPENINGS 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 BY MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON THE 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 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 SUFFIEICNT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO THE BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

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.

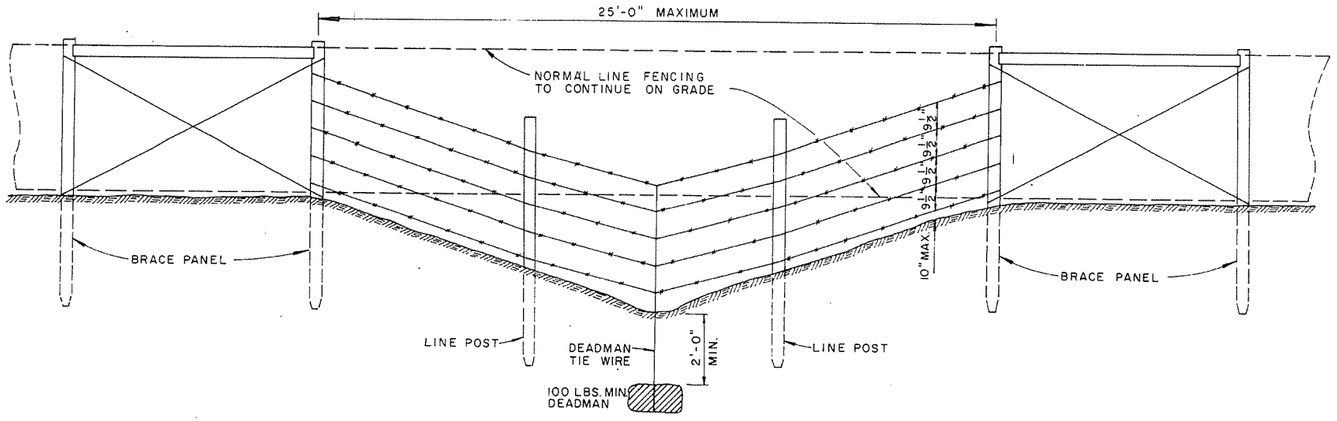
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

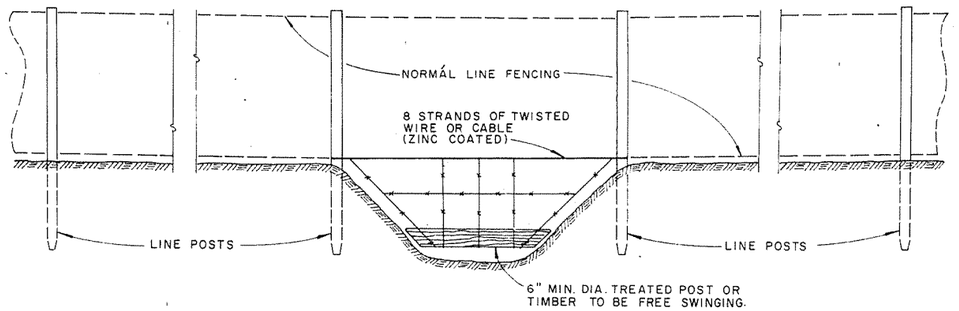
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES	
	AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

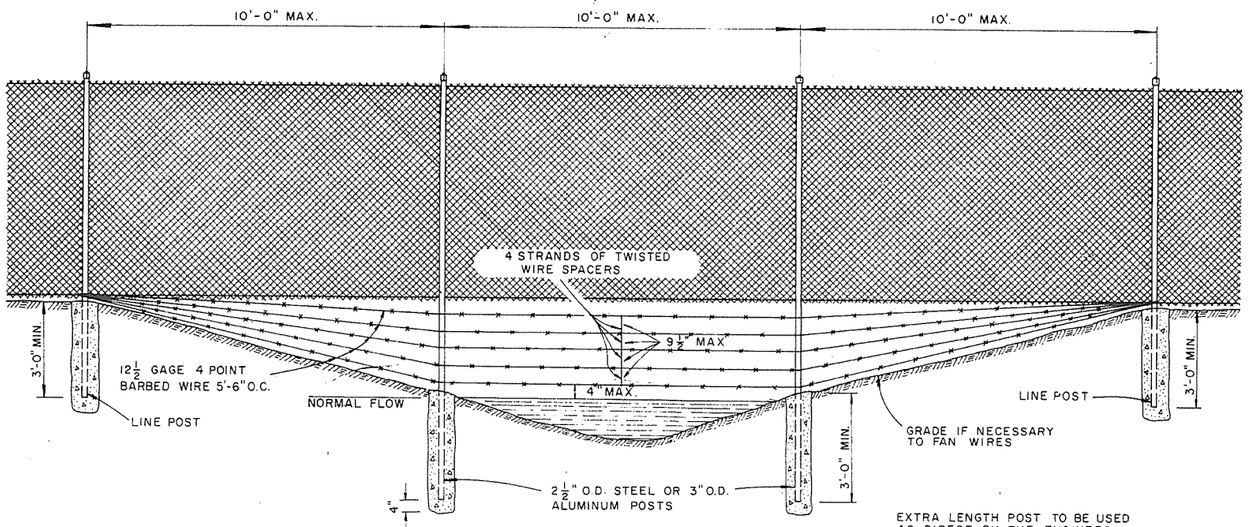
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







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

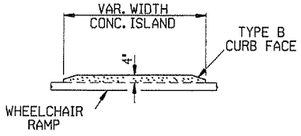
WIRE FENCE WATER GAPS

STANDARD DRAWING

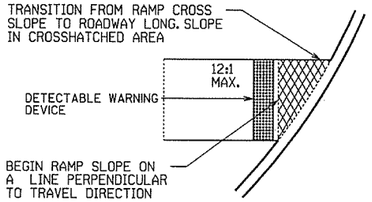
WF-2

73

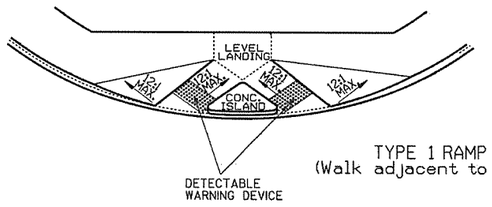
1M—11-71—67001—PPASC



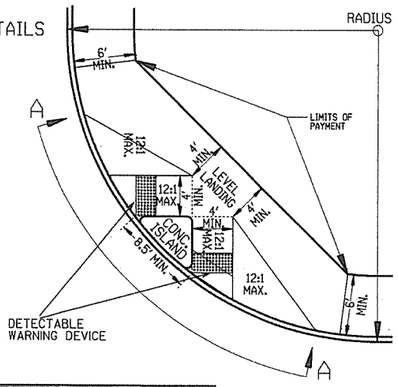
CONCRETE ISLAND DETAIL

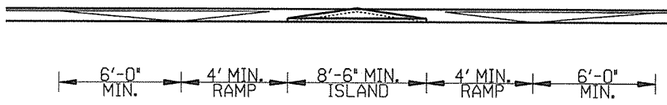


SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)

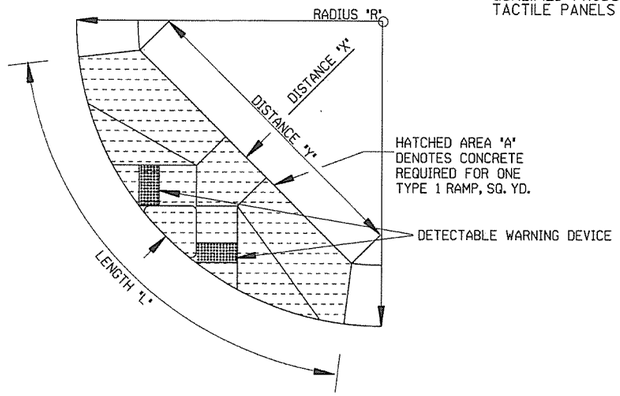




SECTION A-A

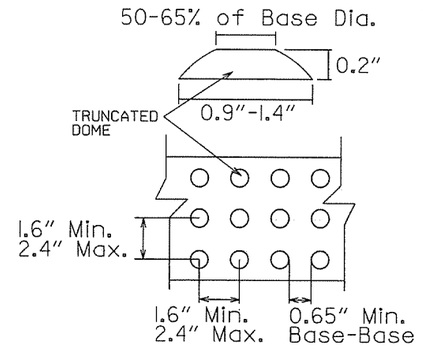
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

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

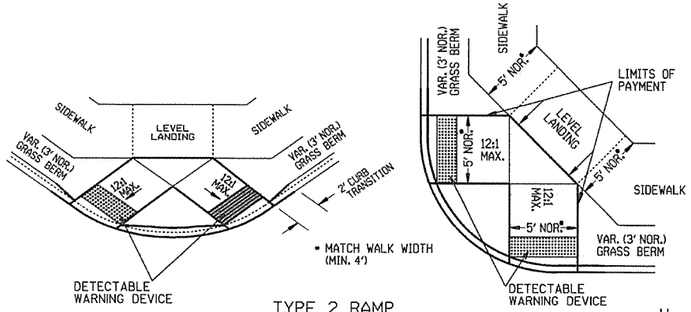
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT 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

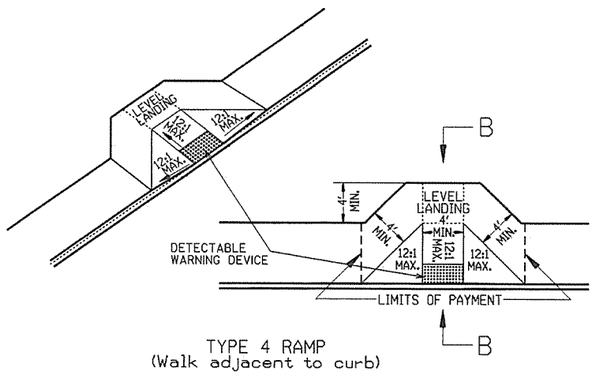
GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

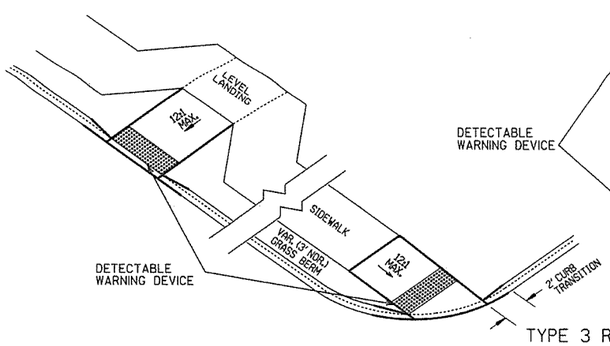


TYPE 2 RAMP

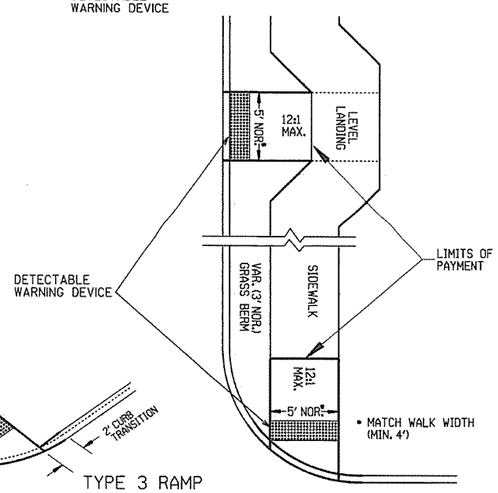
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

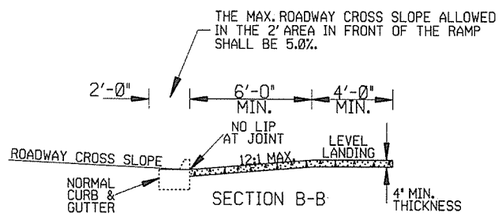


TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP





SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL. (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8:1TO12:1MAX.SLOPES	5-24-90
1-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76

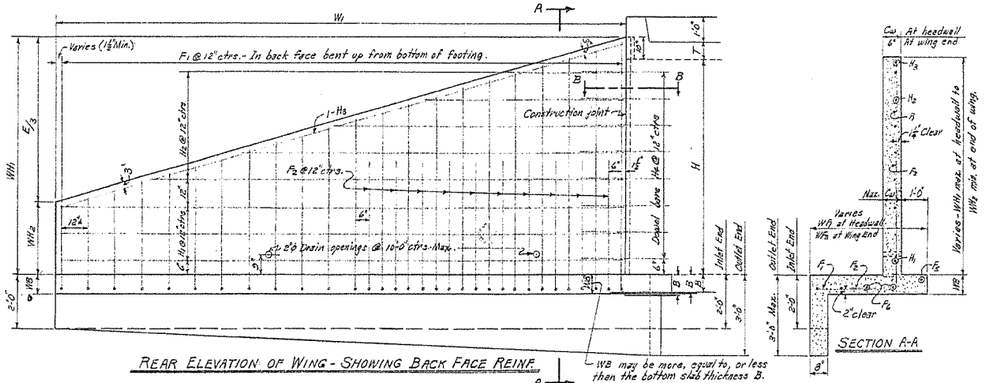
ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

FED. ROAD NO.	STATE PROJECT	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
			191	

JOB NO.



RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			192	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'a' bars STRAIGHT In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall- Each. SIZE	'a' bars SPACING	'a' bars NUMBER REQ'D 3:1	'a' bars NUMBER REQ'D 4:1	'a' bars LENGTH	'b' bars BENT - See Diagram below. In Top and Bottom Slabs of Barrel. Alternate with 'a' bars. SIZE	'b' bars SPACING	'b' bars NUMBER REQ'D 3:1	'b' bars NUMBER REQ'D 4:1	'b' bars LENGTH	X	'd' bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	'd' bars SPACING	'd' bars No. REQ'D	'd' bars LENGTH	'd1' bars STRAIGHT Longitudinal in Sidewalls SIZE	'd1' bars SPACING	'd1' bars No. REQ'D	'd1' bars LENGTH	'e' bars. Longitudinal in Bottom Slab of Barrel SIZE	'e' bars. SPACING	'e' bars. No. REQ'D	'e' bars. LENGTH	'f' bars STRAIGHT Verticals in Sidewalls SIZE	'f' bars SPACING	'f' bars NUMBER REQ'D 3:1	'f' bars NUMBER REQ'D 4:1	'f' bars LENGTH
D	S	H																											
0'-0" TO 5'-0" MAXIMUM	1 @ 4'-0"	2'	#5	13"	120	120	4'-9"	#6	13"	110	110	5'-10"	6'-8"	#5	10½"	6	#4	12"	4											
		3'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			5											
		4'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			8											
		5'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			10											
		6'			120	120	4'-11"			110	110	6'-0"	6'-10"			6			12											
	1 @ 5'-0"	3'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"	#5	10½"	6	#4	12"	5	#4	12"	5	#4	12"	5					
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			6			6			6					
		5'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			10			10			10					
		6'			120	120	5'-11"			110	110	7'-0"	6'-0"			7			12			12			12					
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"			7			14			14			14					
		3'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			6			6			6					
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8			8			8					
	1 @ 6'-0"	5'	#6	12"	128	128	6'-9"	#6	12"	118	118	7'-10"	6'-8"	#5	10½"	8	#4	12"	10	#4	12"	10	#4	12"	10					
		6'			128	128	6'-11"			118	118	8'-0"	6'-10"			8			12			12			12					
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			8			14			14			14					
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			8			16			16			16	#5	12"	120	120	9'-1"
		4'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			8			8			8					
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			10			10			10					
	1 @ 7'-0"	6'	#6	11"	140	140	7'-11"	#6	11"	130	130	9'-0"	7'-10"	#5	10½"	9	#4	12"	12	#4	12"	12	#4	12"	12					
		7'			140	140	8'-0"			130	130	9'-2"	8'-0"			9			14			14			14					
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"			9			16			16			16					
		9'			140	140	8'-3"			130	130	9'-4"	8'-2"			9			18			18			18	#5	12"	120	120	10'-2"
		4'			128	128	8'-9"			118	118	9'-10"	8'-8"			8			8			8			8					
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"			10			10			10			10					
	1 @ 8'-0"	6'	#7	12"	128	128	8'-11"	#6	12"	118	118	10'-0"	8'-10"	#5	10"	11	#4	12"	12	#4	12"	12	#4	12"	12					
		7'			128	128	9'-0"			118	118	10'-1"	8'-11"			11			14			14			14					
		8'			128	128	9'-1"			118	118	10'-2"	9'-0"			11			16			16			16					
		9'			128	128	9'-3"			118	118	10'-4"	9'-2"			11			18			18			18	#5	12"	120	120	10'-6"
		10'			128	128	9'-5"			118	118	10'-6"	9'-4"			11			20			20			20					
		5'			140	140	9'-11"			130	130	11'-0"	9'-10"			12			10			10			10					
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			12			12			12					
	1 @ 9'-0"	7'	#7	11"	140	140	10'-0"	#6	11"	130	130	11'-1"	9'-11"	#5	10"	12	#4	12"	14	#4	12"	14	#4	12"	14					
		8'			140	140	10'-1"			130	130	11'-2"	10'-0"			12			16			16			16					
		9'			140	140	10'-3"			130	130	11'-4"	10'-2"			12			18			18			18	#5	12"	120	120	10'-5"
		10'			140	140	10'-5"			130	130	11'-6"	10'-4"			12			20			20			20					
		11'			140	140	10'-7"			130	130	11'-8"	10'-6"			12			22			22			22					
		5'			128	128	10'-11"			118	118	12'-2"	10'-10"			13			10			10			10					
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			12			12			12					
	1 @ 10'-0"	7'	#7	12"	128	128	11'-0"	#7	12"	118	118	12'-3"	10'-11"	#5	10"	13	#4	12"	14	#4	12"	14	#4	12"	14					
		8'			128	128	11'-1"			118	118	12'-4"	11'-0"			13			16			16			16					
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"			13			18			18			18	#5	12"	120	120	10'-8"
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13			20			20			20					
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13			22			22			22					
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"			13			24			24			24	#6	12"	120	120	13'-6"
		6'			140	140	12'-1"			130	130	13'-5"	12'-0"			15			12			12			12					
		7'			140	140	12'-1"			130	130	13'-5"	12'-0"			15			14			14			14					
	1 @ 11'-0"	8'	#7	11"	140	140	12'-1"	#7	11"	130	130	13'-6"	12'-0"	#5	9½"	15	#4	12"	16	#4	12"	16	#4	12"	16					
		9'			140	140	12'-3"			130	130	13'-6"	12'-2"			15			18			18			18	#5	12"	120	120	10'-9"
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"			15			20			20			20					
		11'			140	140	12'-7"			130	130	13'-10"	12'-6"			15			22			22			22					
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"			15			24			24			24	#6	12"	120	120	13'-7"
		6'			128	128	13'-1"			118	118	14'-2"	13'-0"			16			12			12			12					
		7'			128	128	13'-1"			118	118	14'-2"	13'-0"			16			14			14			14					
	1 @ 12'-0"	8'			128	128	13'-1"			118	118	14'-2"	13'-0"			16			16			16			16					
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-4"	13'-2"	#5	9½"	16	#4	12"	18	#4	12"	18	#4	12"	18					
		10'			128	128	13'-5"			118	118	14'-6"	13'-4"			16			20			20			20					
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16			22			22			22					
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16			24			24			24					

Designed By:- W.C.H. 1-23-63. Checked By:- RBHS - 5-24-63
Drawn By:- W.C.H. 2-8-63. Checked By:- RBHS - 5-24-63
Quantities By:- W.C.H. 2-12-63. Checked By:- RBHS - 5-24-63

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars 'b'
#6	3"	5"	1'-2"	K, Pin Diam., X
#7	3½"	5⅝"	1'-4"	

NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. REQD	LENGTH	X
4'	#4	11⅛"	12	2'-6"	1'-3"
5'	#4	11⅛"	14	2'-7"	1'-3½"
6'	#4	11⅛"	16	2'-8"	1'-4"
7'	#4	11⅛"	18	2'-9"	1'-4½"
8'	#4	11⅛"	20	2'-11"	1'-5½"
9'	#4	11⅛"	22	3'-0"	1'-6"
10'	#4	11⅛"	24	3'-1"	1'-6½"
11'	#4	12"	26	3'-3"	1'-7"
12'	#4	12"	28	3'-3"	1'-7½"

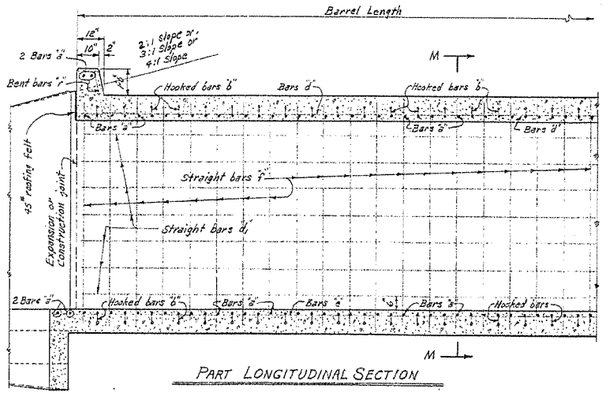
Bars 'r' Dowel bars in Headwalls. (X, 12)

DIMENSIONS — QUANTITIES

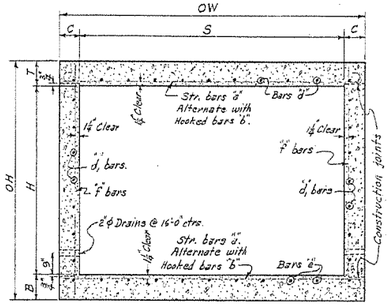
MIN. DESIGN DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	BARREL DIMENSIONS Sq. Ft. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	UNIT QUANTITIES CLASS S CONC. PER LIN. FT. OF BARREL CU.YD.	REINFORCING STEEL PER LIN. FT. OF BARREL LB.	REINFORCING STEEL ADDITIONAL PER LAP LB.	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS LB.
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
5'-0"	1 @ 4'-0"	2'	8	5'-0"	7"	6"	6½"	3'-1½"	0.282	41.99	17.95	66.35
		3'	12	5'-0"		6"		3'-1½"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1½"	0.356	46.83	21.29	66.85
		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	24.63	67.75
	1 @ 5'-0"	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	28.89	104.27
	1 @ 6'-0"	3'	18	7'-0"	8"	6"	7½"	4'-3½"	0.496	66.29	29.76	118.96
		4'	24	7'-0"		6"		5'-3½"	0.533	68.96	26.93	118.96
		5'	30	7'-0"		6"		6'-3½"	0.570	71.64	28.10	118.96
		6'	36	7'-2"		7"		7'-3½"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3½"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3½"	0.746	88.47	33.11	122.97
	1 @ 7'-0"	4'	28	8'-0"	9"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.65	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.76	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	94.98	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
	1 @ 8'-0"	4'	32	9'-0"	9½"	6"	9½"	5'-7"	0.676	95.26	38.32	194.67
		5'	40	9'-2"		7"		6'-7"	0.754	99.12	39.99	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	38.39	198.16
		8'	64	9'-4"		8"		9'-7"	0.992	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"	1.189	126.67	43.34	204.97
	1 @ 9'-0"	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	118.06	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	223.04
		10'	90	10'-8"		10"		11'-8"	1.276	142.68	45.91	223.78
		11'	99	10'-10"		11"		12'-8"	1.416	150.90	47.58	239.81
	1 @ 10'-0"	5'	50	11'-0"	10½"	7"	11"	6'-9½"	0.957	130.69	40.13	242.69
		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'-5"		8"		9'-9½"	1.147	142.55	45.14	245.36
		9'	90	11'-6"		9"		10'-9½"	1.263	151.92	46.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	48.98	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	166.71	50.15	253.54
		12'	120	12'-0"		12"		13'-9½"	1.685	178.67	51.82	256.26
	1 @ 11'-0"	6'	66	12'-4"	11"	8"	11½"	7'-10½"	1.153	156.16	46.12	268.62
		7'	77	12'-4"		8"		8'-10½"	1.202	157.83	47.79	268.62
		8'	88	12'-4"		8"		9'-10½"	1.252	162.06	49.46	268.62
		9'	99	12'-6"		9"		10'-10½"	1.368	172.60	51.13	271.39
		10'	110	12'-8"		10"		11'-10½"	1.497	173.70	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	195.79	56.14	279.52
	1 @ 12'-0"	6'	72	13'-8"	11⅝"	8"	12½"	8'-0"	1.284	172.20	48.69	357.62
		7'	84	13'-8"		8"		9'-0"	1.333	174.87	50.36	357.62
		8'	96	13'-8"		8"		10'-0"	1.383	180.15	52.03	357.62
		9'	108	13'-6"		9"		11'-0"	1.500	183.85	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 or W-X003-1 and W-X004-1
W-X002-2 or W-X003-2 and W-X004-2.

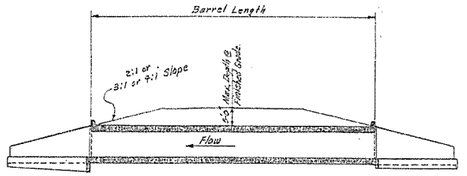
Note:- For details of wings and bar lists, see Drawing Nos.



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

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 @ 9'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 lb/in²
Reinforcing Steel 20,000 lb/in²

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 Not. 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

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			193	
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	LENGTH OF SECTIONS	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT: In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQD 3:1	NUMBER REQD 4:1	LENGTH	"b" bars BENT - See Diagram at Right. In Top and Bottom Slabs of Barrel Alternate with "a" bars. SIZE	SPACING	NUMBER REQD 3:1	NUMBER REQD 4:1	LENGTH	X	"d" bars STRAIGHT: Longitudinal in Top Slab of Barrel SIZE	SPACING	"d1" bars STRAIGHT: Longitudinal in Sidewalls SIZE	SPACING	NUMBER REQD	LENGTH	"d2" bars STRAIGHT: Longitudinal in Bottom Slab of Barrel SIZE	SPACING	NUMBER REQD	LENGTH	"f" bars STRAIGHT: Verticals in Sidewalls SIZE	SPACING	NUMBER REQD 3:1	NUMBER REQD 4:1	LENGTH
SECTION "A" & BAR GROUP "A"	3'1" = 32'0"	0' TO 10'0"	4'@	3'	#4	12"	48	68	4'-9"	#4	12"	48	68	5'-2"	4'-8½"	#4	12"	#4	12"	6	5	#4	12"	48	68	3'-10"	#4	12"	44	64	3'-10"
				4'			48	68	4'-9"			48	68	5'-7"	4'-11½"					8	5					4'-10"			44	64	4'-10"
				5'			48	68	4'-9"			48	68	5'-7"	4'-11½"					10	5					5'-10"			44	64	5'-10"
				6'			48	68	4'-11"			48	68	5'-9"	5'-1½"					12	5					6'-10"			44	64	6'-10"
			6'@	3'			48	68	5'-9"			48	68	6'-8"	5'-12½"					6	6					3'-11"			44	64	3'-11"
				4'			48	68	5'-9"			48	68	6'-8"	5'-12½"					8	6					4'-11"			44	64	4'-11"
				5'	#5	12"	48	68	5'-9"	#5	12"	48	68	6'-8"	5'-12½"	#4	12"	#4	12"	10	6	#4	12"	44	64	5'-11"	#4	12"	44	64	5'-11"
				6'			48	68	5'-11"			48	68	6'-10"	5'-12½"					12	6					6'-11"			44	64	6'-11"
				7'			48	68	6'-0"			48	68	6'-11"	5'-12½"					14	6					7'-11"			44	64	7'-11"
				4'			48	68	4'-9"			48	68	7'-10"	6'-8"					8	7								44	64	5'-0"
				5'			48	68	4'-9"			48	68	7'-10"	6'-8"					10	7								44	64	6'-0"
			6'@	6'	#5	12"	48	68	4'-11"	#6	12"	48	68	8'-0"	6'-10"	#4	12"	#4	12"	12	7	30'-3" for 32'-0" Section					#4	12"	44	64	7'-0"
				7'			48	68	4'-11"			48	68	8'-1"	6'-11"					14	7					33'-3" for 32'-0" Section			44	64	8'-0"
				8'			48	68	5'-1"			48	68	8'-2"	7'-0"					16	7						#5	11"	98	70	9'-10"
SECTION "B" & BAR GROUP "B"	3'1" = 14'0"	10'0" TO 15'0"	4'@	3'	#4	12"	22	32	4'-9"	#4	12"	22	32	5'-8"	4'-8½"	#4	12"	#4	12"	6	5	#4	12"	22	32	3'-10"	#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"					8	5					4'-10"			22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"					10	5					5'-10"			22	32	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"					12	5					6'-10"			22	32	6'-10"
			6'@	3'			22	32	5'-9"			22	32	6'-10"	5'-8"					6	6					3'-11"			22	32	3'-11"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"					8	6					4'-11"			22	32	4'-11"
				5'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	#4	12"	10	6	#4	12"	22	32	5'-11"	#4	12"	22	32	5'-11"
				6'			22	32	5'-11"			22	32	7'-0"	5'-10"					12	6					6'-11"			22	32	6'-11"
				7'			22	32	6'-0"			22	32	7'-1"	5'-11"					14	6					7'-11"			22	32	7'-11"
				4'			22	32	6'-9"			22	32	7'-10"	6'-8"					8	7								22	32	5'-1"
				5'			22	32	6'-9"			22	32	7'-10"	6'-8"					10	7								22	32	6'-1"
			6'@	6'	#6	12"	22	32	6'-11"	#6	12"	22	32	8'-0"	6'-10"	#4	12"	#4	12"	12	7	33'-3" for 32'-0" Section					#4	12"	22	32	7'-0"
				7'			22	32	7'-0"			22	32	8'-1"	6'-11"					14	7						#5	11"	24	34	8'-1"
				8'			22	32	7'-1"			22	32	8'-2"	7'-0"					16	7						#6	12"	22	32	9'-1"
SECTION "C" & BAR GROUP "C"	3'1" = 16'0"	15'0" TO 20'0"	4'@	3'	#5	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"	#4	12"	#4	12"	6	5	#4	12"	22	32	3'-10"	#4	12"	22	32	3'-10"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"					8	5					4'-10"			22	32	4'-10"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"					10	5					5'-10"			22	32	5'-10"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"					12	5					6'-10"			22	32	6'-10"
			6'@	3'			24	36	5'-9"			24	36	6'-10"	5'-8"					6	6					3'-11"			24	36	3'-11"
				4'			24	36	5'-9"			24	36	6'-10"	5'-8"					8	6					4'-11"			24	36	4'-11"
				5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	#4	12"	10	6	#4	12"	24	36	5'-11"	#4	12"	24	36	5'-11"
				6'			24	36	5'-11"			24	36	7'-0"	5'-10"					12	6					6'-11"			24	36	6'-11"
				7'			24	36	6'-0"			24	36	7'-1"	5'-11"					14	6					7'-11"			24	36	7'-11"
				4'			24	36	6'-9"			24	36	7'-10"	6'-8"					8	7								24	36	5'-1"
				5'			24	36	6'-9"			24	36	7'-10"	6'-8"					10	7								24	36	6'-1"
			6'@	6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	#4	12"	12	7	34'-3" for 33'-0" Section					#4	12"	24	36	7'-0"
				7'			24	36	7'-0"			24	36	8'-1"	6'-11"					14	7						#5	11"	24	36	8'-1"
				8'			24	36	7'-1"			24	36	8'-2"	7'-0"					16	7						#6	12"	24	36	9'-1"
SECTION "D" & BAR GROUP "D"	4'1" = 16'0"	25'0" TO 30'0"	4'@	3'	#5	11"	24	36	4'-9"	#5	11"	24	36	5'-8"	4'-8½"	#4	12"	#4	12"	6	5	#4	12"	24	36	3'-11"	#4	12"	24	36	3'-11"
				4'			24	36	4'-9"			24	36	5'-8"	4'-8½"					8	5					4'-11"			24	36	4'-11"
				5'			24	36	4'-9"			24	36	5'-8"	4'-8½"					10	5					5'-11"			24	36	5'-11"
				6'			24	36	4'-11"			24	36	5'-10"	4'-10½"					12	5					6'-11"			24	36	6'-11"
			6'@	3'			24	36	5'-9"			24	36	6'-10"	5'-8"					6	6					3'-11"			24	36	3'-11"
				4'			24	36	5'-9"			24	36	6'-10"	5'-8"					8	6					4'-11"			24	36	4'-11"
				5'	#5	11"	24	36	5'-9"	#6	11"	24	36	7'-0"	5'-10"	#4	12"	#4	12"	10	6	#4	12"	24	36	5'-11"	#4	12"	24	36	5'-11"
				6'			24	36	6'-0"			24	36	7'-1"	5'-11"					12	6					6'-11"			24	36	6'-11"
				7'			24	36	6'-2"			24	36	7'-3"	6'-1"					14	6					7'-11"			24	36	7'-11"
				4'			24	36	6'-9"			24	36	7'-10"	6'-8"					8	7								24	36	5'-1"
				5'			24	36	6'-9"			24	36	7'-10"	6'-8"					10	7								24	36	6'-1"
			6'@	6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	#4	12"	12	7	34'-3" for 33'-0" Section					#4	12"	24	36	7'-0"
				7'			24	36	7'-0"			24	36	8'-1"	6'-11"					14	7						#5	11"	24	36	8'-1"
				8'			24	36	7'-1"			24	36	8'-2"	7'-0"					16	7						#6	12"	24	36	9'-1"
SECTION "E" & BAR GROUP "E"	3'1" = 16'0"	25'0" TO 30'0"	4'@	3'	#5	11"	24	36	4'-9"	#5	11"	24	36	5'-8"	4'-8½"	#4	12"	#4	12"	6	5	#4	12"	24	36	4'-0"	#4	12"	24	36	4'-0"
				4'			24	36	4'-9"			24	36	5'-8"	4'-8½"					8	5					5'-0"			24	36	5'-0"
				5'			24	36	4'-9"			24	36	5'-9"	4'-9½"					10	5					6'-0"			24	36	6'-0"
				6'			24	36	4'-11"			24	36	5'-10"	4'-10½"					12	5					7'-0"			24	36	7'-0"
			6'@	3'			24	36	5'-9"			24	36	6'-10"	5'-8"					6	6					4'-1"			24	36	4'-1"
				4'			24	36	5'-9"			24	36	6'-10"	5'-8"					8	6					5'-1"			24	36	5'-1"
				5'	#5	11"	24	36	5'-9"	#6	11"	24	36	7'-0"	5'-10"	#4	12"	#4	12"	10	6	#4	12"	24	36	6'-1"	#4	12"	24	36	6'-1"
				6'			24	36	6'-0"			24	36	7'-1"	5'-11"					12	6					7'-1"			24	36	7'-1"
				7'			24	36	6'-2"			24	36	7'-3"	6'-1"					14	6					8'-1"			24	36	8'-1"
				4'			24	36	6'-9"			24	36	7'-10"	6'-8"					8	7								24	36	5'-2"
				5'			24	36	6'-9"			24	36	7'-10"	6'-8"					10	7								24	36	6'-2"
			6'@	6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	#4	12"	12	7	34'-3" for 33'-0" Section					#4	12"	24	36	7'-0"
				7'			24	36	7'-0"			24	36	8'-1"	6'-11"					14	7						#5	11"	24	36	8'-2"
				8'			24	36	7'-1"			24	36	8'-2"	7'-0"					16	7						#6	12"	24	36	9'-2"
SECTION "F" & BAR GROUP "F"	3'1" = 14'0"	30'0" TO 35'0"	4'@	3'	#6	13"	20	30	4'-9"	#6	13"	20	30	5'-10"	4'-8"	#4	12"	#4	12"	6	5	#4	12"	20	30	4'-1"	#4	12"	20	30	4'-1"
				4'			20	30	4'-9"			20	30	5'-10"	4'-8"					8	5					5'-1"			20	30	5'-1"
				5'			20	30	4'-11"			20	30	6'-0"	5'-0"					10	5					6'-1"			20	30	6'-1"
				6'			20	30	5'-1"			20	30	6'-2"	5'-0"					12	5					7'-1"			20	30	7'-1"
			6'@	3'			22	32	5'-9"			22	32	6'-10"	5'-8"					6	6					4'-1"			22	32	4'-1"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"					8	6					5'-1"			22	32	5'-1"
				5'	#7	12"	22	32	5'-9"	#6	12"	22	32	7'-0"	5'-10"	#4	12"	#4	12"	10	6	#4	10½"	22	32	6'-1"	#4	10½"	22	32	6'-1"
				6'			22	32	6'-0"			22	32	7'-1"	5'-11"					12	6					7'-1"			22	32	7'-1"
				7'			22	32	6'-2"			22	32	7'-3"	6'-1"					14	6					8'-1"			22	32	8'-1"
				4'			22	32	6'-9"			22	32	7'-10"	6'-8"					8	7								22	32	5'-2"
				5'			22	32	6'-9"			22	32	7'-10"	6'-8"					10	7								22	32	6'-2"
			6'@	6'	#7	11"	22	32	6'-11"	#6	11"	22	32	8'-0"	6'-10"	#4	12"	#4	12"	12	7	34'-3" for 33'-0" Section					#4	12"	22	32	7'-0"
				7'			22	32	7'-0"			22	32	8'-1"	6'-11"					14	7						#5	11"	22	32	8'-2"
				8'			22	32	7'-1"			22	32	8'-2"	7'-0"					16	7						#6	12"	22	32	9'-2"
SECTION "G" & BAR GROUP "G"	4'1" = 16'0"	35'0" TO 40'0"	4'@	4'	#7	12"	Varies with Length of Barrel		6'-10"	6'-9"	Varies with Length of Barrel				8'-1"	6'-9"	#4	12"	#4	10½"	8	9	#4	10½"	Varies with Length of Barrel					5'-7"
				5'					7'-0"	7'-0"					8'-2"	6'-11"					10	9										6'-7"
			6'@	6'					7'-2"	7'-3"					8'-3"	7'-1"			#5	9½"	12	9										7'-7"
				7'					7'-4"	7'-5"					8'-4"	7'-3"					14	9										8'-7"
				8'					7'-5"	7'-6"					8'-5"	7'-4"					16	9										9'-7"
			8'@	4'					5'-10"	4'-9"					6'-1"	4'-11"	#4	12"	#4	10½"	8	6	#4	10½"						5'-2"		
				5'					5'-11"	4'-10"					6'-2"	5'-0"					10	6								6'-2"		
				6'					6'-0"	5'-1"					6'-3"	5'-1"			#5	10½"	12	6								7'-2"		
				7'					6'-1"	5'-2"					6'-4"	5'-2"					14	6								8'-2"		
				8'					6'-2"	5'-3"					6'-5"	5'-3"					16	6								9'-2"		

NOTE:- Bars for each Section to be marked with the Section Letter, thus for Section B, the bars should be marked Ba, Bb, Bc, Bd, Be and Bf.

Designed By:- W.C.H. 9-5-62 Checked By:- RWS 11-8-62
Drawn By:- W.C.H. 10-10-62 Checked By:- J.S.M. 11-12-62
Quantities By:- W.C.H. 11-9-62 Checked By:- E.M. 11-16-62

DIMENSIONS AND QUANTITIES

MAX. DESIGN DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES: CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL: PER LIN. FT. OF BARREL	ADDITIONAL: PER LAP	ADDITIONAL: TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
SECTION "A" - 10'0"	4'@	3'	12	5'-0"	6"	6"	6"	4'-1"	0.312	29.62	13.86	51.44
		4'	16	5'-0"				4'-11"	0.349	32.29	15.03	51.44
		5'	20	5'-0"				6'-1"	0.386	34.96	16.70	51.96
		6'	24	5'-2"				7'-1"	0.467	38.08	18.37	52.33
	6'@	3'	15	6'-0"	6"	6"	6"	4'-2"	0.370	93.16	15.03	79.37
		4'	20	6'-0"				5'-2"	0.907	95.83	16.70	79.37
		5'	25	6'-0"				6'-2"	0.444	98.50	18.37	79.37
		6'	30	6'-2"				7'-2"	0.526	51.87	20.04	80.77
		7'	35	6'-3"				8'-3"	0.594	57.00	21.71	81.46
SECTION "B" - 15'0"	4'@	3'	12	5'-0"	6"	6"	6"	4'-1"	0.312	33.98	19.86	
		4'	16	5'-0"				5'-1"	0.349	36.65	15.03	
		5'	20	5'-0"				6'-1"	0.386	38.32	16.70	
		6'	24	5'-2"				7'-1"	0.467	44.39	18.37	
	6'@	3'	15	6'-0"	6"	6"	6"	4'-2"	0.370	49.76	15.03	
		4'	20	6'-0"				5'-2"	0.407	52.45	16.70	
		5'	25	6'-0"				6'-2"	0.444	55.12	18.37	
		6'	30	6'-2"				7'-2"	0.526	59.68	20.04	
		7'	35	6'-3"				8'-3"	0.594	67.68	21.71	
SECTION "C" - 20'0"	4'@	3'	12	5'-0"	6"	6"	6"	4'-1"	0.312	37.54	13.36	
		4'	16	5'-0"				5'-1"	0.353	40.21	15.03	
		5'	20	5'-0"				6'-1"	0.390	44.44	16.70	
		6'	24	5'-2"				7'-1"	0.471	51.38	18.37	
	6'@	3'	15	6'-0"	6"	6"	6"	4'-2"	0.394	52.85	15.03	
		4'	20	6'-0"				5'-2"	0.431	55.52	16.70	
		5'	25	6'-0"				6'-2"	0.468	58.32	18.37	
		6'	30	6'-2"				7'-2"	0.550	67.04	20.04	
		7'	35	6'-3"				8'-2"	0.618	78.27	21.71	
SECTION "D" - 25'0"	4'@	4'	24	7'-0"	6"	6"	6"	5'-2"	0.526	69.39	18.37	
		5'	30	7'-0"				6'-2"	0.563	72.06	20.04	
		6'	36	7'-2"				7'-2"	0.644	81.20	21.71	
		7'	42	7'-3"				8'-2"	0.716	92.67	23.38	
		8'	48	7'-4"				9'-2"	0.791	105.06	25.05	
	6'@	4'	24	7'-0"	6"	6"	6"	5'-2"	0.559	72.95	18.37	
		5'	30	7'-0"				6'-2"	0.616	76.21	20.04	
		6'	36	7'-2"				7'-2"	0.691	85.22	21.71	
		8'	48	7'-4"				9'-2"	0.776	97.23	23.38	
		10'	60	7'-8"				11'-2"	0.869	108.02	25.05	
SECTION "E" - 30'0"	4'@	3'	12	5'-0"	6"	6"	6"	4'-3"	0.343	42.12	13.36	
		4'	16	5'-0"				5'-3"	0.380	44.79	15.03	
		5'	20	5'-1"				6'-3"	0.436	52.39	16.70	
		6'	24	5'-3"				7'-3"	0.521	63.09	18.37	
	6'@	3'	15	6'-0"	6"	6"	6"	4'-4"	0.449	58.96	15.03	
		4'	20	6'-0"				5'-4"	0.481	61.61	16.70	
		5'	25	6'-1"				6'-4"	0.549	66.77	18.37	
		6'	30	6'-3"				7'-4"	0.637	75.68	20.04	
		7'	35	6'-5"				8'-4"	0.724	88.37	21.71	
SECTION "F" - 35'0"	4'@	4'	24	7'-0"	6"	6"	6"	5'-3"	0.591	79.04	20.04	
		5'	30	7'-0"				6'-3"	0.669	83.78	21.71	
	6'@	4'	24	7'-0"	6"	6"	6"	5'-4"	0.591	79.04	20.04	
		5'	30	7'-0"				6'-4"	0.669	83.78	21.71	
SECTION "G" - 40'0"	6'@	4'	24	7'-0"	6"	6"	6"	5'-4"	0.699	87.54	20.04	
		5'	30	7'-0"				6'-4"	0.778	92.30	21.71	
		6'	36	7'-2"				7'-4"	0.863	103.49	23.38	
		7'	42	7'-3"				8'-4"	0.948	114.68	25.05	

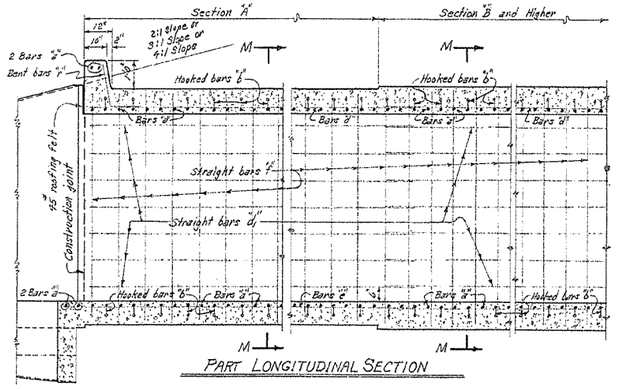
QUANTITIES

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	Bars "b"
#4	2"	4"	0'-10½"	
#5	2½"	5"	0'-13½"	
#6	3"	5"	1'-2"	
#7	3½"	5½"	1'-4"	

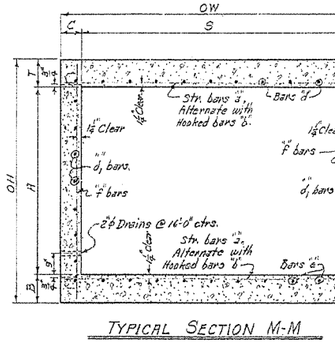
Note:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. REQD	LENGTH	X	Bars "f" 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'-3½"	

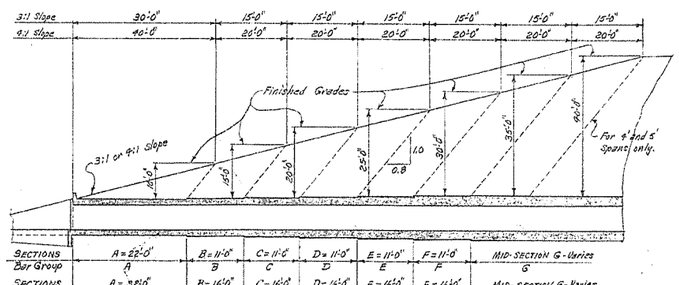


PART LONGITUDINAL SECTION



TYPICAL SECTION M-M

Note:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X003-1, and W-X004-1.



3:1 Slope =	SECTIONS	A = 22'-0"	B = 11'-0"	C = 11'-6"	D = 11'-0"	E = 11'-0"	F = 11'-6"	MID-SECTION G-Varies
	Bar Group	A	B	C	D	E	F	G
4:1 Slope =	SECTIONS	A = 32'0"	B = 16'0"	C = 16'-6"	D = 16'-0"	E = 16'0"	F = 16'0"	MID-SECTION G-Varies
	Bar Group	A	B	C	D	E	F	G

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	B, C, D, E & F	4:1 SLOPES SECTIONS A	B, C, D, E & 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.

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 9'-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 REINFOR

RESHOT 3-4-93

155

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			194	
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"b" bars STRAIGHT BENT - See Diagram at Right. 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	"g" 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. STRAIGHT Longitudinal in Bottom Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
SECTION "A" & BAR GROUP "A"	D	S	H																												
SECTION "A" & BAR GROUP "A"	0' TO 10'-0"	3:1 = 22'-0"	4:1 = 32'-0"																												
		5'				48	68	7'-9"				44	64	8'-10"	7'-8"			8				8									
		6'				48	68	7'-11"				44	64	9'-0"	7'-10"			8				10									
	1 @ 7'	7'		#5	12"	48	68	8'-0"		#6	12"	44	64	9'-1"	7'-11"	#4	12"	8		#4	12"	12				#4	12"	8		#5	12"	44	64	7'-1"
		8'				48	68	8'-1"				44	64	9'-2"	8'-0"			8				14									
		9'				48	68	8'-3"				44	64	9'-4"	8'-2"			8				16									
		6'				48	68	8'-11"				44	64	10'-0"	8'-10"			8				9									
	1 @ 8'	7'		#6	12"	48	68	9'-0"		#6	12"	44	64	10'-1"	8'-11"	#4	12"	9		#4	12"	12				#4	12"	9		#5	12"	44	64	8'-3"
		8'				48	68	9'-1"				44	64	10'-2"	9'-0"			9				14									
		9'				48	68	9'-3"				44	64	10'-4"	9'-2"			9				16									
		10'				48	68	9'-5"				44	64	10'-6"	9'-4"			9				18									
		7'				52	74	10'-0"				48	70	11'-3"	9'-11"			10				14									
	1 @ 9'	8'		#6	11"	52	74	10'-1"		#7	11"	48	70	11'-4"	10'-0"	#4	12"	10		#4	12"	16				#4	12"	10		#5	12"	44	69	8'-5"
		9'				52	74	10'-3"				48	70	11'-6"	10'-2"			10				18									
		10'				52	74	10'-5"				48	70	11'-8"	10'-4"			10				20									
		11'				52	74	10'-7"				48	70	11'-10"	10'-6"			10				22									
		8'				48	68	11'-1"				44	64	12'-4"	11'-0"			11				16									
	1 @ 10'	9'		#7	12"	48	68	11'-3"		#7	12"	44	64	12'-6"	11'-2"	#4	12"	11		#4	12"	18				#4	12"	11		#5	12"	44	69	9'-11"
		10'				48	68	11'-5"				44	64	12'-8"	11'-4"			11				20									
		11'				48	68	11'-7"				44	64	12'-10"	11'-6"			11				22									
		12'				48	68	11'-9"				44	64	13'-0"	11'-8"			11				24									
SECTION "B" & BAR GROUP "B"	10'-0" TO 15'-0"	3:1 = 11'-0"	4:1 = 16'-0"																												
		5'				24	36	7'-9"				22	32	8'-10"	7'-8"			8				10									
		6'				24	36	7'-11"				22	32	9'-0"	7'-10"			8				12									
	1 @ 7'	7'		#6	11"	24	36	8'-0"		#6	11"	22	32	9'-1"	7'-11"	#4	12"	8		#4	12"	14				#4	12"	8		#5	12"	22	32	8'-3"
		8'				24	36	8'-1"				22	32	9'-2"	8'-0"			8				16									
		9'				24	36	8'-3"				22	32	9'-4"	8'-2"			8				18									
		6'				22	32	8'-11"				22	32	10'-0"	8'-10"			9				12									
	1 @ 8'	7'		#7	12"	22	32	9'-0"		#6	12"	22	32	10'-1"	8'-11"	#4	12"	9		#4	12"	14				#4	12"	9		#5	12"	22	32	8'-5"
		8'				22	32	9'-1"				22	32	10'-2"	9'-0"			9				16									
		9'				22	32	9'-3"				22	32	10'-4"	9'-2"			9				18									
		10'				22	32	9'-5"				22	32	10'-6"	9'-4"			9				20									
		7'				22	32	10'-0"				22	32	11'-3"	9'-11"			10				14									
	1 @ 9'	8'		#7	12"	22	32	10'-1"		#7	12"	22	32	11'-4"	10'-0"	#4	12"	10		#4	12"	16				#4	12"	10		#5	12"	22	32	8'-7"
		9'				22	32	10'-3"				22	32	11'-6"	10'-2"			10				18									
		10'				22	32	10'-5"				22	32	11'-8"	10'-4"			10				20									
		11'				22	32	10'-7"				22	32	11'-10"	10'-6"			10				22									
		8'				22	32	11'-1"				22	32	12'-4"	11'-0"			12				16									
	1 @ 10'	9'		#8	12"	22	32	11'-3"		#8	12"	22	32	12'-6"	11'-2"	#4	11"	12		#4	12"	18				#4	12"	12		#6	11"	22	32	8'-9"
		10'				22	32	11'-5"				22	32	12'-8"	11'-4"			12				20									
		11'				22	32	11'-7"				22	32	12'-10"	11'-6"			12				22									
		12'				22	32	11'-9"				22	32	13'-0"	11'-8"			12				24									
SECTION "C" & BAR GROUP "C"	15'-0" TO 20'-0"	3:1 = 11'-0"	4:1 = 16'-0"																												
		5'				20	30	7'-9"				20	30	9'-0"	7'-8"			8				10									
		6'				20	30	7'-11"				20	30	9'-2"	7'-10"			8				12									
	1 @ 7'	7'		#7	13"	20	30	8'-0"		#7	13"	20	30	9'-3"	7'-11"	#4	12"	8		#4	12"	14				#4	12"	8		#5	12"	20	30	8'-3"
		8'				20	30	8'-1"				20	30	9'-4"	8'-0"			8				16									
		9'				20	30	8'-3"				20	30	9'-6"	8'-2"			8				18									
		6'				22	32	8'-11"				22	32	10'-2"	8'-10"			10				12									
	1 @ 8'	7'		#7	12"	22	32	9'-0"		#7	12"	22	32	10'-3"	8'-11"	#4	11"	10		#4	12"	16				#4	12"	10		#5	12"	22	32	8'-9"
		8'				22	32	9'-1"				22	32	10'-4"	9'-0"			10				18									
		9'				22	32	9'-3"				22	32	10'-6"	9'-2"			10				20									
		10'				22	32	9'-5"				22	32	10'-8"	9'-4"			10				22									
		7'				22	32	10'-1"				22	32	11'-4"	10'-0"			11				14									
	1 @ 9'	8'		#8	12"	22	32	10'-2"		#8	12"	22	32	11'-5"	10'-1"	#4	11"	11		#4	12"	16				#4	12"	11		#6	11"	22	32	8'-11"
		9'				22	32	10'-3"				22	32	11'-7"	10'-3"			11				18									
		10'				22	32	10'-5"				22	32	11'-9"	10'-5"			11				20									
		11'				22	32	10'-7"				22	32	11'-11"	10'-7"			11				22									
		8'				22	32	11'-4"				22	32	12'-9"	11'-3"			13				16									
	1 @ 10'	9'		#8	12"	22	32	11'-6"		#8	12"	22	32	12'-11"	11'-5"	#4	10"	13		#4	12"	18				#4	12"	13		#7	12"	22	32	9'-1"
		10'				22	32	11'-8"				22	32	13'-1"	11'-7"			13				20									
		11'				22	32	11'-10"				22	32	13'-3"	11'-9"			13				22									
		12'				22	32	12'-0"				22	32	13'-5"	11'-11"			13				24									
SECTION "D" & BAR GROUP "D"	20'-0" TO 25'-0"	3:1 = 11'-0"	4:1 = 16'-0"																												
		5'				22	32	7'-10"				22	32	9'-1"	7'-9"			9				10									
		6'				22	32	8'-0"				22	32	9'-3"	7'-11"			9				12									
	1 @ 7'	7'		#7	12"	22	32	8'-1"		#7	12"	22	32	9'-4"	8'-0"	#4	11"	9		#4	12"	14				#4	12"	9		#5	12"	22	32	8'-1"
		8'				22	32	8'-3"				22	32	9'-6"	8'-2"			9				16									
		9'				22	32	8'-5"				22	32	9'-8"	8'-4"			9				18									
		6'				22	32	8'-11"				22	32	10'-2"	8'-10"			10				12									
	1 @ 8'	7'		#7	12"	22	32	9'-0"		#7	12"	22	32	10'-3"	8'-11"	#4	11"	10		#4	12"	16				#4	12"	10		#5	12"	22	32	8'-7"
		8'				22	32	9'-1"				22	32	10'-4"	9'-0"			10				18									
		9'				22	32	9'-3"				22	32	10'-6"	9'-2"			10				20									
		10'				22	32	9'-5"				22	32	10'-8"	9'-4"			10				22									
		7'				22	32	10'-1"				22	32	11'-4"	10'-0"			11				14									
	1 @ 9'	8'		#8	12"	22	32	10'-2"		#8	12"	22	32	11'-5"	10'-1"	#4	11"	11		#4	12"	16				#4	12"	11		#6	11"	22	32	8'-9"
		9'				22	32	10'-3"				22	32	11'-7"	10'-3"			11				18									
		10'				22	32	10'-5"				22	32	11'-9"	10'-5"			11				20									
		11'				22	32	10'-7"				22	32	11'-11"	10'-7"			11				22									
		8'				22	32	11'-4"				22	32	12'-9"	11'-3"			13				16									
	1 @ 10'	9'		#8	12"	22	32	11'-6"		#8	12"	22	32	12'-11"	11'-5"	#4	10"	13		#4	12"	18				#4	12"	13		#7	12"	22	32	9'-1"
		10'				22	32	11'-8"				22	32	13'-1"	11'-7"			13				20									
		11'				22	32	11'-10"				22	32	13'-3"	11'-9"			13				22									
		12'				22	32	12'-0"				22	32	13'-5"	11'-11"			13				24									
SECTION "E" & BAR GROUP "E"	25'-0" TO 30'-0"	Varies with Length of Barrel																													
		5'						7'-11"						9'-5"	7'-10"			9				10									
		6'						8'-1"						9'-7"	8'-0"			9				12									
	1 @ 7'	7'		#7	11"			8'-3"		#7	11"			9'-8"	8'-2"	#4	11"	9		#4	12"	14				#4	12"	9		#5	12"			8'-1"
		8'						8'-4"						9'-10"	8'-4"			9				16									
		9'						8'-6"						9'-11"	8'-5"			9				18									
		6'						9'-1"						10'-4"	9'-0"			11				12									
	1 @ 8'	7'		#8	11"			9'-3"		#8	11"			10'-6"	9'-2"	#4	10"	11		#4	12"	14				#4	12"	11		#6	11"			8'-11"
		8'						9'-5"						10'-8"	9'-4"			11				16									
		9'						9'-7"						10'-10"	9'-6"			11				18									
		10'						9'-9"						11'-0"	9'-8"			11				20									
		7'						10'-3"						11'-6"	10'-2"			13				14									
	1 @ 9'	8'		#8	11"			10'-5"		#8	11"			11'-8"	10'-4"	#4	9"	13		#4	12"	16				#4	12"	13		#7	12"			9'-3"
		9'						10'-7"						11'-10"	10'-6"			13				18									
		10'						10'-9"						12'-0"	10'-8"			13				20									
		11'						10'-11"						12'-2"	10'-10"			13				22									

NOTE:- Bars for each Section to be marked with the Section letters thus for Section B, the bars should be marked B1, B2, B3, B4, B5, B6 and B7.

Designed By:- W.C.H. 7-18-62. Checked By:- RMS 7-25-62.
Drawn By:- W.C.H. 8-3-62. Checked By:- RMS 8-10-62.
Quantities By:- W.C.H. 8-1-62. Checked By:- RMS 8-10-62.

DIMENSIONS AND QUANTITIES

MAX. DESIGN DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS
	D	S	H	A	OW	T	C	B	OH	CU. YD.	LB.	LB.	LB
SECTION "A" - 10'-0"		5'	35	8'-0"		6"			6'-4½"	0.593	68.20	21.71	107.92
	1 @ 7'	6'	42	8'-2"		7"			7'-4½"	0.675	71.72	23.38	108.51
		7'	49	8'-3"	8"	7½"	8½"	9"	8'-4½"	0.744	75.80	25.05	109.50
		7'	56	8'-4"		8"			9'-4½"	0.819	84.72	26.72	110.28
		9'	63	8'-6"		9"			10'-4½"	0.933	90.91	28.39	111.59
		6'	48	9'-2"		7"			7'-6"	0.769	86.55	25.05	157.02
	1 @ 8'	7'	56	9'-3"		7½"			8'-6"	0.838	89.72	26.72	158.08
		8'	64	9'-4"	8½"	8"	9½"		9'-6"	0.914	99.84	28.39	159.02
		9'	72	9'-6"		8½"			10'-6"	1.028	106.20	30.06	161.03
		10'	80	9'-8"		9"			11'-6"	1.154	113.38	31.73	168.03
		7'	63	10'-3"		7½"			8'-8"	0.957	116.90	28.39	177.61
	1 @ 9'	8'	72	10'-4"		8½"			9'-8"	1.033	127.28	30.06	178.61
		9'	81	10'-6"	9½"	9"	10½"		10'-8"	1.148	138.97	31.73	180.61
		10'	90	10'-8"		10"			11'-8"	1.276	141.46	33.40	182.62
		11'	99	10'-10"		11"			12'-8"	1.416	152.81	35.07	184.62
		8'	80	11'-1"		8"			9'-10½"	1.165	141.10	31.73	249.37
	1 @ 10'	9'	90	11'-3"		9"			10'-10½"	1.281	145.89	33.40	252.10
		10'	100	11'-5"	10½"	10"	11½"		11'-10½"	1.409	155.50	35.07	254.82
		11'	110	11'-7"		11"			12'-10½"	1.550	167.01	36.74	257.55
		12'	120	12'-0"		12"			13'-10½"	1.704	176.92	38.41	260.27
SECTION "B" - 15'-0"		5'	35	8'-0"		6"			6'-6"	0.630	80.06	21.71	
	1 @ 7'	6'	42	8'-2"		7"			7'-6"	0.713	88.82	22.38	
		7'	49	8'-3"	8¾"	7½"	9¼"		8'-6"	0.792	93.23	25.05	
		8'	56	8'-4"		8"			9'-6"	0.858	105.69	26.72	
		9'	63	8'-6"		9"			10'-6"	0.972	111.13	28.39	
		6'	48	9'-2"		7"			7'-8½"	0.839	96.94	25.05	
	1 @ 8'	7'	56	9'-3"		7½"			8'-8½"	0.909	106.02	26.72	
		8'	64	9'-4"	9¾"	8"	10¾"	12"	9'-8½"	0.986	113.96	28.39	
		9'	72	9'-6"		9"			10'-8½"	1.101	126.20	30.06	
		10'	80	9'-8"		10"			11'-8½"	1.229	136.58	31.73	
		7'	63	10'-3"		7½"			8'-10½"	1.036	127.99	28.39	
	1 @ 9'	8'	72	10'-4"	10¾"	8"	11¾"	14½"	9'-10½"	1.113	135.59	30.06	
		9'	81	10'-6"		9"			10'-10½"	1.229	146.09	31.73	
		10'	90	10'-8"		10"			11'-10½"	1.358	158.75	33.40	
		11'	99	10'-10"		11"			12'-10½"	1.499	171.19	35.07	
		8'	80	11'-1"		8"			10'-0½"	1.252	160.73	33.40	
	1 @ 10'	9'	90	11'-3"		9"			11'-0½"	1.370	171.52	35.07	
		10'	100	11'-5"	11¾"	10"	12¾"		12'-0½"	1.499	180.64	36.74	
		11'	110	11'-7"		11"			13'-0½"	1.642	197.17	38.41	
		12'	120	12'-0"		12"			14'-0½"	1.796	203.27	40.08	
SECTION "C" - 20'-0"		5'	35	8'-0"		6"			6'-8"	0.679	89.15	21.71	
	1 @ 7'	6'	42	8'-2"		7"			7'-8"	0.763	98.64	23.38	
		7'	49	8'-3"	9¾"	7½"	10¾"		8'-8"	0.833	106.20	25.05	
		8'	56	8'-4½"		8½"			9'-8"	0.924	117.96	26.72	
		9'	63	8'-6½"		9¼"			10'-8"	1.041	192.28	28.39	
		6'	48	9'-2"		7"			7'-10½"	0.896	111.55	26.72	
	1 @ 8'	7'	56	9'-3"		7½"			8'-10½"	0.966	122.89	28.39	
		8'	64	9'-5"	11"	8½"	11¾"		9'-10½"	1.074	132.89	30.06	
		9'	72	9'-6½"		9¼"			10'-10½"	1.177	144.87	31.73	
		10'	80	9'-8½"		10¼"			11'-10½"	1.307	156.17	33.40	
		7'	63	10'-4"		8"			9'-11"	1.143	192.55	30.06	
	1 @ 9'	8'	72	10'-5"		8½"			10'-11"	1.224	155.89	31.73	
		9'	81	10'-6½"	12"	9¼"	13"		11'-11"	1.327	167.52	33.40	
		10'	90	10'-8½"		10¼"			12'-1"	1.459	179.75	35.07	
		11'	99	10'-10½"		11¼"			13'-1"	1.603	192.28	36.74	
		8'	80	11'-3½"		8¾"			10'-3½"	1.405	173.91	35.07	
	1 @ 10'	9'	90	11'-5"		9¼"			11'-3½"	1.511	194.05	36.74	
		10'	100	11'-8½"	13½"	10¼"	14¾"		12'-3½"	1.626	209.20	38.41	
		11'	110	11'-10½"		11¼"			13'-3½"	1.772	221.91	40.08	
		12'	120	12'-0½"		12¼"			14'-3½"	1.929	241.22	41.75	
SECTION "D" - 25'-0"		5'	35	8'-1"		6¼"			6'-10½"	0.749	96.65	23.38	
	1 @ 7'	6'	42	8'-3"		7¼"			7'-10½"	0.898	106.98	25.05	
		7'	49	8'-4½"	10¾"	8¼"	11¾"		8'-10½"	0.925	114.06	26.72	
		8'	56	8'-6"		9"			9'-10"	1.022	126.68	28.39	
		9'	63	8'-8"		10"			10'-10"	1.146	141.24	30.06	
		5'	48	9'-3"		7¼"			8'-0½"	0.977	128.84	28.39	
	1 @ 8'	6'	56	9'-4½"		8¼"			9'-0½"	1.065	136.70	30.06	
		7'	64	9'-6"	12"	9¼"	12¾"		10'-0½"	1.178	146.59	31.73	
		8'	72	9'-8"		10¼"			11'-0½"	1.304	159.36	33.40	
		9'	80	9'-10"		11¼"			12'-0½"	1.441	173.92	35.07	
		7'	63	10'-5"		8¼"			9'-3½"	1.251	160.30	31.73	
	1 @ 9'	8'	72	10'-7"		9¼"			10'-3½"	1.367	179.69	33.40	
		9'	81	10'-8½"	13½"	10¼"	14¼"		11'-3½"	1.498	186.52	35.07	
		10'	90	10'-10½"		11¼"			12'-3½"	1.617	199.04	36.74	
		11'	99	11'-0½"		12¼"			13'-3½"	1.769	216.88	38.41	
		8'	80	11'-1"		9¼"			10'-6"	1.542	200.20	36.74	
	1 @ 10'	9'	90	11'-3"		10¼"			11'-6"	1.671	214.77	38.41	
		10'	100	11'-5½"	14½"	11¼"	15½"		12'-6"	1.794	230.33	40.08	
		11'	110	11'-7½"		12¼"			13'-6"	1.997	248.61	41.75	
		12'	120	11'-9½"		13¼"			14'-6"	2.112	268.06	43.42	
SECTION "E" - 30'-0"		5'	35	8'-2"		7"			6'-11½"	0.808	108.90	23.38	
	1 @ 7'	6'	42	8'-4"		8"			7'-11½"	0.901	113.71	25.05	
		7'	49	8'-5"	11½"	9"	12½"		8'-11½"	1.005	122.23	26.72	
		8'	56	8'-7½"		9¾"			9'-11½"	1.107	134.29	28.39	
		9'	63	8'-9½"		10¾"			10'-11½"	1.235	149.04	30.06	
		6'	48	9'-4"		8"			8'-2½"	1.060	138.22	28.39	
	1 @ 8'	7'	56	9'-5"		9"			9'-2½"	1.166	147.08	30.06	
		8'	64	9'-6"	13"	10"	13¾"		10'-2½"	1.284	159.60	31.73	
		9'	72	9'-8"		11"			11'-2½"	1.415	170.21	33.40	
		10'	80	10'-0"		12"			12'-2½"	1.559	187.05	35.07	
		7'	63	10'-6½"		9¼"			9'-5½"	1.360	173.52	33.40	
	1 @ 9'	8'	72	10'-8½"		10¼"			10'-5½"	1.481	188.21	35.07	
		9'	81	10'-10"	14½"	11"	15½"		11'-5½"	1.597	201.20	36.74	
		10'	90	11'-0"		12"			12'-5½"	1.742	218.49	38.41	
		11'	99	11'-2"		13"			13'-5½"	1.899	232.10	40.08	

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	Bars "b"
#6	3"	5"	1'-2"	
#7	3½"	5⅝"	1'-4"	
#8	4"	6⅝"	1'-6"	

K = Pin Diam. + X

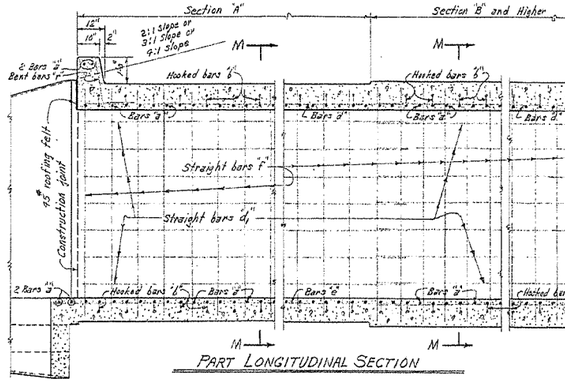
NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NUMBER	LENGTH	X	Bars "f" Dowel bars in Headwalls
7'	#4	11"	18	2'-8"	1'-4"	
8'	#4	12"	20	2'-10"	1'-5"	
9'	#4	12"	22	3'-0"	1'-6"	
10'	#4	12"	24	3'-2"	1'-7"	

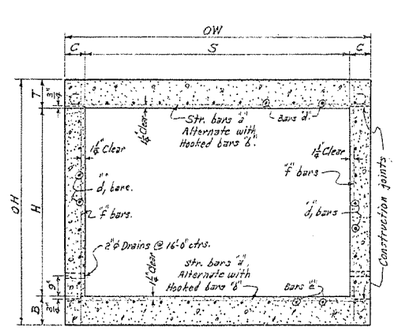
X = 12" + r + 2"Pin

W-X002-2, W-X003-2, W-X004-2. or W-X003-1 or W-X004-1 and W-X002-1 or



PART LONGITUDINAL SECTION

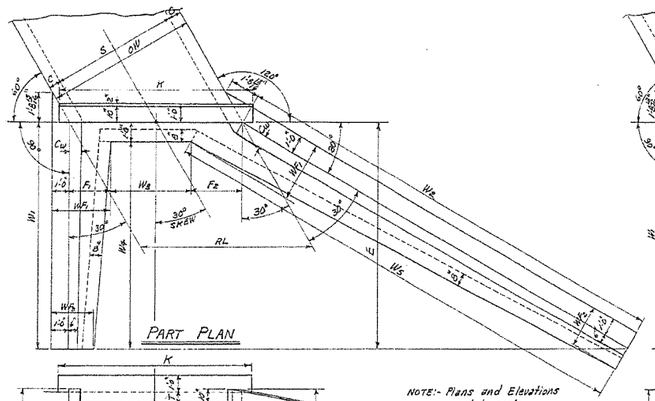
Note:- For details of wings and bar lists, see Drawing Nos. W-X002-1 or W-X003-1 and W-X004-1


OW
C
S
C
T
OH
H
B
Bars "a"
Str. bars "a" Alternate with H

Reshot 3-8-93

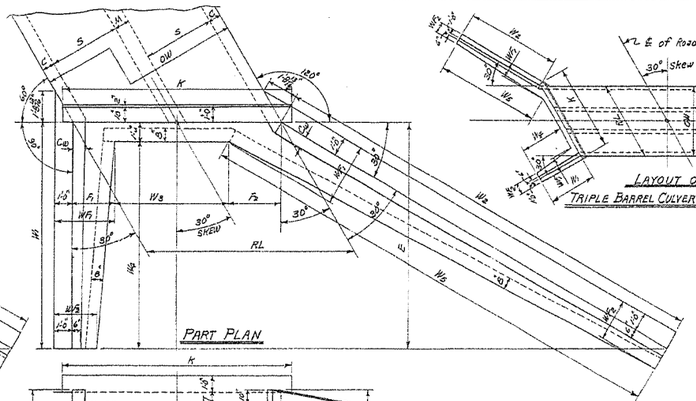
191

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			195	
JOB No.					



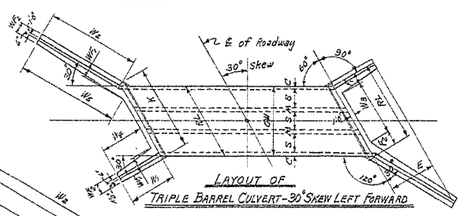
SINGLE BARREL CULVERT-30°SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

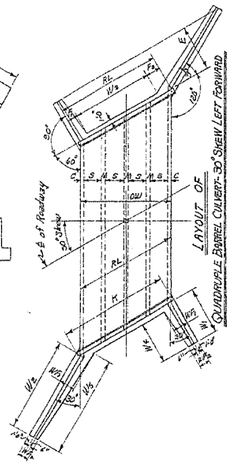


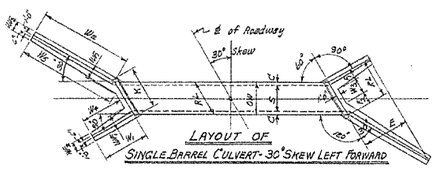
DOUBLE BARREL CULVERT-30°SKEW RIGHT FORWARD

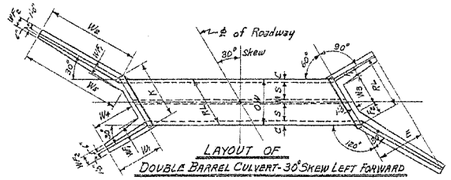
Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

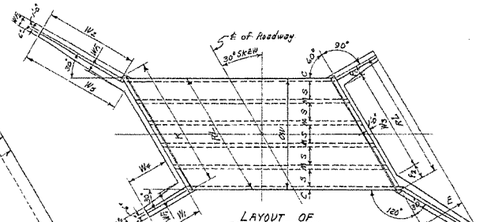


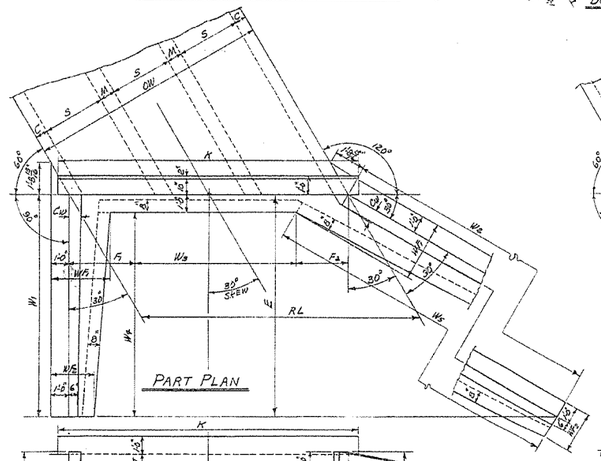
NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.





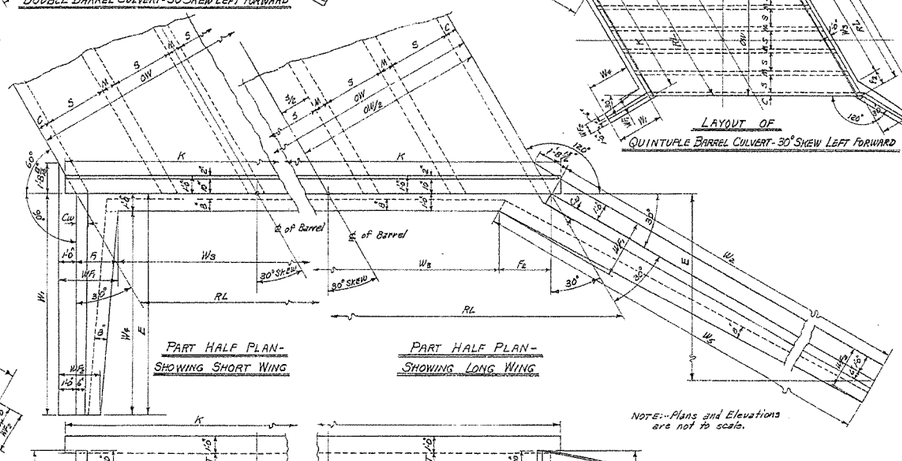


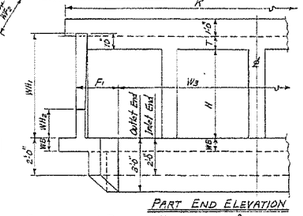




TRIPLE BARREL CULVERT-30°SKEW RIGHT FORWARD

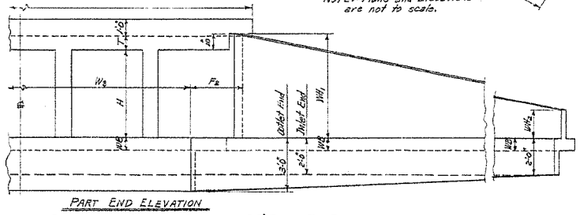
Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.





QUADRUPLE BARREL CULVERT-30°SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT-30°SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.1547 — K = RL + (1'-$12\frac{3}{8}$") — W_3 = RL - (F_1 + F_2)

USE WITH DRAWING NO.	CLEAR SPAN	CLEAR HEIGHT	SLOPE OF WING DIMENSIONS	SINGLE BARREL CULVERT				DOUBLE BARREL CULVERT				TRIPLE BARREL CULVERT				QUADRUPLE BARREL CULVERT				QUINTUPLE BARREL CULVERT			
	S	H	F_1 & F_2	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3
W-X302-1, W-X303-1 or W-X304-1. (FOR H=8'-0" OR LESS)	4'	2'	2'-$3\frac{3}{4}$"	5'-0"	5'-$9\frac{5}{8}$"	6'-$11\frac{5}{8}$"	3'-6"	9'-8"	11'-2"	12'-$3\frac{3}{8}$"	6'-$10\frac{5}{8}$"	14'-6"	16'-$4\frac{5}{8}$"	17'-$8\frac{1}{2}$"	14'-$3\frac{5}{8}$"	19'-0"	21'-$11\frac{5}{8}$"	23'-1"	19'-8"	23'-8"	27'-4"	28'-$5\frac{3}{8}$"	25'-$0\frac{5}{8}$"
		3'	3'-$3\frac{3}{4}$"	5'-0"	"	"	2'-6"	9'-8"	"	"	6'-$10\frac{5}{8}$"	14'-9"	"	"	13'-$3\frac{5}{8}$"	19'-0"	"	"	18'-8"	23'-8"	"	"	23'-$0\frac{5}{8}$"
		4'	4'-$3\frac{3}{4}$"	5'-0"	"	"	1'-6"	9'-8"	"	"	6'-$10\frac{5}{8}$"	14'-9"	"	"	12'-$8\frac{5}{8}$"	19'-0"	"	"	17'-8"	23'-8"	"	"	23'-$0\frac{5}{8}$"
		5'	5'-$3\frac{3}{4}$"	5'-0"	5'-$9\frac{5}{8}$"	6'-$11\frac{5}{8}$"	0'-6"	9'-8"	11'-2"	12'-$3\frac{3}{8}$"	5'-$10\frac{5}{8}$"	14'-6"	16'-$6\frac{5}{8}$"	17'-$8\frac{1}{2}$"	11'-$3\frac{5}{8}$"	19'-0"	21'-$11\frac{5}{8}$"	23'-1"	16'-8"	23'-8"	27'-4"	28'-$5\frac{3}{8}$"	22'-$0\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	5'-2"	5'-$11\frac{5}{8}$"	7'-$1\frac{5}{8}$"	Ⓐ 0"	9'-11"	11'-$5\frac{3}{4}$"	12'-$7\frac{5}{8}$"	5'-$2\frac{5}{8}$"	14'-8"	16'-$11\frac{5}{8}$"	18'-1"	10'-8"	19'-5"	22'-5"	23'-7"	14'-$7\frac{5}{8}$"	24'-2"	27'-$10\frac{5}{8}$"	29'-$0\frac{5}{8}$"	21'-$7\frac{5}{8}$"
	5'	3'	3'-$3\frac{3}{4}$"	6'-0"	6'-$11\frac{5}{8}$"	8'-1"	3'-$7\frac{5}{8}$"	11'-8"	13'-$5\frac{5}{8}$"	14'-$7\frac{5}{8}$"	10'-$2\frac{5}{8}$"	17'-4"	20'-$0\frac{5}{8}$"	21'-$2\frac{5}{8}$"	16'-9"	23'-0"	26'-$6\frac{5}{8}$"	27'-$8\frac{1}{2}$"	23'-$3\frac{5}{8}$"	28'-8"	32'-$1\frac{5}{8}$"	34'-3"	29'-$1\frac{5}{8}$"
		4'	4'-$3\frac{3}{4}$"	6'-0"	"	"	2'-$7\frac{5}{8}$"	11'-8"	"	"	9'-$2\frac{5}{8}$"	17'-4"	"	"	15'-9"	23'-0"	"	"	22'-$3\frac{5}{8}$"	28'-8"	"	"	28'-$10\frac{5}{8}$"
		5'	5'-$3\frac{3}{4}$"	6'-0"	6'-$11\frac{5}{8}$"	8'-1"	1'-$7\frac{5}{8}$"	11'-8"	13'-$5\frac{5}{8}$"	14'-$7\frac{5}{8}$"	8'-$2\frac{5}{8}$"	17'-4"	20'-$0\frac{5}{8}$"	21'-2"	14'-9"	23'-0"	26'-$6\frac{5}{8}$"	27'-$8\frac{1}{2}$"	21'-$3\frac{5}{8}$"	28'-8"	32'-$1\frac{5}{8}$"	34'-3"	27'-$10\frac{5}{8}$"
	6'	6'	6'-$3\frac{3}{4}$"	6'-2"	7'-$1\frac{5}{8}$"	8'-$2\frac{5}{8}$"	0'-$10\frac{5}{8}$"	11'-$11\frac{5}{8}$"	13'-$9\frac{5}{8}$"	15'-$1\frac{5}{8}$"	7'-$5\frac{5}{8}$"	17'-8"	20'-$4\frac{5}{8}$"	21'-$6\frac{1}{2}$"	14'-$1\frac{5}{8}$"	23'-5"	27'-0"	28'-$2\frac{5}{8}$"	20'-$9\frac{5}{8}$"	29'-2"	33'-$8\frac{5}{8}$"	34'-$10\frac{5}{8}$"	27'-5"
		7'	7'-$3\frac{3}{4}$"	6'-3"	7'-$2\frac{5}{8}$"	8'-$4\frac{5}{8}$"	Ⓐ 0"	12'-1"	13'-$11\frac{5}{8}$"	15'-$5\frac{5}{8}$"	6'-$2\frac{5}{8}$"	17'-11"	20'-$8\frac{1}{2}$"	21'-$10\frac{5}{8}$"	12'-11"	23'-$8\frac{5}{8}$"	27'-$5\frac{5}{8}$"	28'-7"	19'-$8\frac{5}{8}$"	29'-7"	34'-2"	35'-$3\frac{5}{8}$"	26'-$4\frac{5}{8}$"
		8'	8'-$3\frac{3}{4}$"	6'-3"	8'-$1\frac{5}{8}$"	9'-$2\frac{5}{8}$"	Ⓐ 0"	12'-1"	13'-$11\frac{5}{8}$"	15'-$5\frac{5}{8}$"	6'-$2\frac{5}{8}$"	17'-11"	20'-$8\frac{1}{2}$"	21'-$10\frac{5}{8}$"	12'-11"	23'-$8\frac{5}{8}$"	27'-$5\frac{5}{8}$"	28'-7"	19'-$8\frac{5}{8}$"	29'-7"	34'-2"	35'-$3\frac{5}{8}$"	26'-$4\frac{5}{8}$"
	6'	3'	3'-$3\frac{3}{4}$"	7'-0"	8'-1"	9'-$2\frac{5}{8}$"	4'-$9\frac{5}{8}$"	13'-8"	15'-$9\frac{5}{8}$"	16'-$11\frac{5}{8}$"	12'-$6\frac{5}{8}$"	20'-$4\frac{5}{8}$"	23'-$2\frac{5}{8}$"	24'-$7\frac{5}{8}$"	20'-$2\frac{5}{8}$"	27'-0"	31'-$2\frac{5}{8}$"	32'-$4\frac{5}{8}$"	27'-$1\frac{5}{8}$"	33'-8"	38'-$10\frac{5}{8}$"	40'-$0\frac{5}{8}$"	33'-$7\frac{5}{8}$"
		4'	4'-$3\frac{3}{4}$"	7'-0"	"	"	3'-$9\frac{5}{8}$"	13'-8"	"	"	11'-$6\frac{5}{8}$"	20'-$4\frac{5}{8}$"	"	"	19'-$2\frac{5}{8}$"	27'-0"	"	"	26'-$1\frac{5}{8}$"	33'-8"	"	"	39'-$7\frac{5}{8}$"
		5'	5'-$3\frac{3}{4}$"	7'-0"	8'-1"	9'-$2\frac{5}{8}$"	2'-$9\frac{5}{8}$"	13'-8"	15'-$9\frac{5}{8}$"	16'-$11\frac{5}{8}$"	10'-$6\frac{5}{8}$"	20'-$4\frac{5}{8}$"	23'-$2\frac{5}{8}$"	24'-$7\frac{5}{8}$"	18'-$2\frac{5}{8}$"	27'-0"	31'-$2\frac{5}{8}$"	32'-$4\frac{5}{8}$"	25'-$1\frac{5}{8}$"	33'-8"	38'-$10\frac{5}{8}$"	40'-$0\frac{5}{8}$"	33'-$7\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	7'-2"	8'-$4\frac{5}{8}$"	9'-$5\frac{5}{8}$"	2'-0"	13'-11"	16'-$0\frac{5}{8}$"	17'-$2\frac{5}{8}$"	9'-$9\frac{5}{8}$"	20'-8"	23'-$10\frac{5}{8}$"	25'-$0\frac{5}{8}$"	17'-$2\frac{5}{8}$"	27'-5"	31'-$7\frac{5}{8}$"	32'-$9\frac{5}{8}$"	25'-$5\frac{5}{8}$"	34'-5"	39'-$5\frac{5}{8}$"	40'-$7\frac{5}{8}$"	33'-$5\frac{5}{8}$"
		7'	7'-$3\frac{3}{4}$"	7'-3"	8'-$6\frac{1}{2}$"	9'-$7\frac{5}{8}$"	0'-$7\frac{5}{8}$"	14'-1"	16'-$3\frac{5}{8}$"	17'-5"	8'-$6\frac{5}{8}$"	20'-11"	24'-$1\frac{5}{8}$"	25'-$3\frac{5}{8}$"	14'-$6\frac{5}{8}$"	27'-9"	32'-$0\frac{5}{8}$"	33'-$2\frac{5}{8}$"	25'-$8\frac{5}{8}$"	34'-7"	39'-$10\frac{5}{8}$"	41'-$1\frac{5}{8}$"	32'-$2\frac{5}{8}$"
		8'	8'-$3\frac{3}{4}$"	7'-4"	8'-$5\frac{5}{8}$"	9'-$7\frac{5}{8}$"	Ⓐ 0"	14'-2"	16'-$4\frac{5}{8}$"	17'-$6\frac{1}{2}$"	7'-1"	21'-0"	24'-$5\frac{5}{8}$"	25'-$6\frac{5}{8}$"	14'-$11\frac{5}{8}$"	27'-10"	32'-$1\frac{5}{8}$"	33'-$3\frac{5}{8}$"	22'-$10\frac{5}{8}$"	34'-8"	40'-$0\frac{5}{8}$"	41'-$2\frac{5}{8}$"	30'-$9\frac{5}{8}$"
	7'	4'	4'-$3\frac{3}{4}$"	8'-0"	9'-$2\frac{5}{8}$"	10'-$8\frac{5}{8}$"	4'-$11\frac{5}{8}$"	15'-8"	18'-$1\frac{5}{8}$"	19'-$9\frac{1}{2}$"	13'-$9\frac{5}{8}$"	23'-6"	26'-$11\frac{5}{8}$"	28'-$1\frac{5}{8}$"	22'-8"	31'-0"	35'-$9\frac{5}{8}$"	36'-$11\frac{5}{8}$"	31'-$6\frac{5}{8}$"	38'-8"	44'-$7\frac{5}{8}$"	45'-$9\frac{5}{8}$"	40'-$6\frac{5}{8}$"
		5'	5'-$3\frac{3}{4}$"	8'-0"	9'-$2\frac{5}{8}$"	10'-$8\frac{5}{8}$"	3'-$11\frac{5}{8}$"	15'-8"	18'-$1\frac{5}{8}$"	19'-8"	12'-$3\frac{5}{8}$"	23'-6"	26'-$11\frac{5}{8}$"	28'-$1\frac{5}{8}$"	21'-8"	31'-0"	35'-$9\frac{5}{8}$"	36'-$11\frac{5}{8}$"	30'-$6\frac{5}{8}$"	38'-8"	44'-$7\frac{5}{8}$"	45'-$9\frac{5}{8}$"	39'-$5\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	8'-2"	9'-$5\frac{5}{8}$"	10'-$7\frac{5}{8}$"	3'-2"	15'-11"	18'-$3\frac{5}{8}$"	19'-$10\frac{5}{8}$"	12'-$1\frac{5}{8}$"	23'-8"	27'-0"	28'-$5\frac{5}{8}$"	21'-$0\frac{5}{8}$"	31'-5"	36'-$3\frac{5}{8}$"	37'-$5\frac{5}{8}$"	29'-$10\frac{5}{8}$"	38'-$10\frac{5}{8}$"	45'-$2\frac{5}{8}$"	46'-$4\frac{5}{8}$"	38'-$11\frac{5}{8}$"
		7'	7'-$3\frac{3}{4}$"	8'-3"	9'-$6\frac{1}{2}$"	10'-$8\frac{5}{8}$"	1'-3"	16'-1"	18'-$5\frac{5}{8}$"	19'-$6\frac{5}{8}$"	10'-$3\frac{5}{8}$"	23'-11"	27'-$2\frac{5}{8}$"	28'-$6\frac{5}{8}$"	19'-$10\frac{5}{8}$"	31'-9"	36'-$8\frac{5}{8}$"	37'-$10\frac{5}{8}$"	28'-$1\frac{5}{8}$"	39'-$1\frac{5}{8}$"	45'-$5\frac{5}{8}$"	46'-$6\frac{5}{8}$"	37'-$11\frac{5}{8}$"
		8'	8'-$3\frac{3}{4}$"	8'-4"	9'-$7\frac{5}{8}$"	10'-$8\frac{5}{8}$"	0'-$4\frac{5}{8}$"	16'-2"	18'-8"	19'-$9\frac{1}{2}$"	9'-$4\frac{5}{8}$"	24'-0"	27'-$10\frac{5}{8}$"	28'-$10\frac{5}{8}$"	18'-$5\frac{5}{8}$"	32'-0"	36'-$11\frac{5}{8}$"	37'-$11\frac{5}{8}$"	27'-6"	39'-$5\frac{5}{8}$"	45'-$9\frac{5}{8}$"	46'-$10\frac{5}{8}$"	36'-$6\frac{5}{8}$"
	8'	4'	4'-$3\frac{3}{4}$"	9'-0"	10'-$4\frac{5}{8}$"	11'-$6\frac{5}{8}$"	6'-$1\frac{5}{8}$"	17'-8"	20'-$1\frac{5}{8}$"	21'-$6\frac{5}{8}$"	14'-$1\frac{5}{8}$"	26'-9"	30'-$2\frac{5}{8}$"	31'-$6\frac{5}{8}$"	26'-$1\frac{5}{8}$"	35'-6"	40'-5"	41'-$6\frac{5}{8}$"	36'-$1\frac{5}{8}$"	43'-8"	49'-$3\frac{5}{8}$"	50'-$5\frac{5}{8}$"	46'-$1\frac{5}{8}$"
		5'	5'-$3\frac{3}{4}$"	9'-2"	10'-7"	11'-$8\frac{5}{8}$"	5'-$3\frac{5}{8}$"	17'-11"	20'-$3\frac{5}{8}$"	21'-10"	15'-5"	26'-8"	30'-$0\frac{5}{8}$"	31'-$11\frac{5}{8}$"	25'-6"	35'-$5\frac{5}{8}$"	40'-$0\frac{5}{8}$"	41'-$11\frac{5}{8}$"	35'-$2\frac{5}{8}$"	43'-$5\frac{5}{8}$"	49'-$2\frac{5}{8}$"	50'-$7\frac{5}{8}$"	45'-$5\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	9'-2"	10'-7"	11'-$8\frac{5}{8}$"	4'-$3\frac{5}{8}$"	17'-11"	20'-$3\frac{5}{8}$"	21'-10"	14'-5"	26'-8"	30'-$0\frac{5}{8}$"	31'-$11\frac{5}{8}$"	24'-6"	35'-5"	40'-$0\frac{5}{8}$"	42'-$0\frac{1}{2}$"	34'-$7\frac{5}{8}$"	43'-5"	49'-$2\frac{5}{8}$"	51'-0"	45'-$1\frac{5}{8}$"
		7'	7'-$0\frac{3}{4}$"	9'-3"	10'-$8\frac{1}{4}$"	11'-10"	2'-11"	18'-1"	20'-$10\frac{5}{8}$"	22'-$0\frac{1}{2}$"	13'-$1\frac{5}{8}$"	26'-11"	31'-1"	32'-$2\frac{5}{8}$"	23'-$3\frac{5}{8}$"	35'-9"	41'-$3\frac{5}{8}$"	42'-$10\frac{5}{8}$"	33'-$4\frac{5}{8}$"	44'-7"	51'-$5\frac{5}{8}$"	52'-$7\frac{5}{8}$"	43'-$5\frac{5}{8}$"
		8'	9'-$3\frac{3}{4}$"	9'-4"	10'-$11\frac{5}{8}$"	11'-10"	2'-$5\frac{5}{8}$"	18'-2"	20'-$11\frac{5}{8}$"	22'-$1\frac{5}{8}$"	11'-$8\frac{5}{8}$"	27'-0"	31'-$2\frac{5}{8}$"	32'-$4\frac{5}{8}$"	21'-$11\frac{5}{8}$"	35'-10"	41'-$4\frac{5}{8}$"	42'-$6\frac{1}{2}$"	32'-$1\frac{5}{8}$"	44'-8"	51'-7"	52'-$8\frac{5}{8}$"	42'-$5\frac{5}{8}$"
	9'	5'	5'-$3\frac{3}{4}$"	10'-2"	11'-$8\frac{5}{8}$"	12'-$10\frac{5}{8}$"	6'-$5\frac{5}{8}$"	19'-11"	23'-0"	24'-$2\frac{5}{8}$"	17'-$0\frac{5}{8}$"	29'-8"	34'-$3\frac{5}{8}$"	35'-$5\frac{5}{8}$"	28'-$11\frac{5}{8}$"	39'-5"	45'-$5\frac{5}{8}$"	46'-$8\frac{5}{8}$"	40'-$3\frac{5}{8}$"	49'-2"	56'-$9\frac{5}{8}$"	57'-$11\frac{5}{8}$"	51'-$6\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	10'-$3\frac{5}{8}$"	11'-$10\frac{5}{8}$"	13'-0"	5'-$6\frac{5}{8}$"	20'-1"	23'-$2\frac{5}{8}$"	24'-$4\frac{5}{8}$"	16'-$1\frac{5}{8}$"	29'-$9\frac{5}{8}$"	34'-$4\frac{5}{8}$"	35'-$6\frac{5}{8}$"	28'-$5\frac{5}{8}$"	39'-$3\frac{5}{8}$"	45'-$4\frac{5}{8}$"	46'-$7\frac{5}{8}$"	39'-$10\frac{5}{8}$"	49'-$1\frac{5}{8}$"	56'-$8\frac{5}{8}$"	57'-$10\frac{5}{8}$"	50'-$11\frac{5}{8}$"
		7'	7'-$0\frac{3}{4}$"	10'-$4\frac{1}{2}$"	11'-$11\frac{5}{8}$"	13'-0"	4'-$0\frac{5}{8}$"	20'-1"	23'-$2\frac{5}{8}$"	24'-$4\frac{5}{8}$"	15'-5"	29'-$9\frac{5}{8}$"	34'-$4\frac{5}{8}$"	35'-$6\frac{5}{8}$"	28'-$5\frac{5}{8}$"	39'-$3\frac{5}{8}$"	45'-$4\frac{5}{8}$"	46'-$7\frac{5}{8}$"	39'-$10\frac{5}{8}$"	49'-$1\frac{5}{8}$"	56'-$8\frac{5}{8}$"	57'-$10\frac{5}{8}$"	50'-$11\frac{5}{8}$"
		8'	9'-$3\frac{3}{4}$"	10'-$4\frac{1}{2}$"	11'-$11\frac{5}{8}$"	13'-$1\frac{1}{2}$"	2'-$5\frac{5}{8}$"	20'-2"	23'-$3\frac{5}{8}$"	24'-$5\frac{5}{8}$"	15'-5"	29'-$10\frac{5}{8}$"	34'-$5\frac{5}{8}$"	35'-$7\frac{5}{8}$"	28'-$6\frac{5}{8}$"	39'-$4\frac{5}{8}$"	45'-$5\frac{5}{8}$"	46'-$8\frac{5}{8}$"	39'-$11\frac{5}{8}$"	49'-$2\frac{5}{8}$"	56'-$9\frac{5}{8}$"	57'-$11\frac{5}{8}$"	50'-$12\frac{5}{8}$"
	10'	5'	5'-$3\frac{3}{4}$"	11'-2"	12'-$10\frac{5}{8}$"	14'-$0\frac{5}{8}$"	7'-$0\frac{5}{8}$"	21'-11"	25'-$5\frac{5}{8}$"	26'-$5\frac{1}{2}$"	20'-$0\frac{5}{8}$"	32'-$8\frac{5}{8}$"	37'-$6\frac{5}{8}$"	38'-$10\frac{5}{8}$"	32'-$5\frac{5}{8}$"	43'-$3\frac{5}{8}$"	50'-$1\frac{5}{8}$"	51'-$3\frac{5}{8}$"	44'-$10\frac{5}{8}$"	54'-2"	62'-$6\frac{5}{8}$"	63'-$10\frac{5}{8}$"	57'-$3\frac{5}{8}$"
		6'	6'-$3\frac{3}{4}$"	11'-3"	12'-$11\frac{5}{8}$"	14'-$1\frac{5}{8}$"	6'-$0\frac{5}{8}$"	22'-1"	25'-6"	26'-$7\frac{5}{8}$"	17'-$0\frac{5}{8}$"	32'-$11\frac{5}{8}$"	37'-$8\frac{5}{8}$"	38'-$11\frac{5}{8}$"	32'-$5\frac{5}{8}$"	43'-$3\frac{5}{8}$"	50'-$1\frac{5}{8}$"	51'-$3\frac{5}{8}$"	44'-$10\frac{5}{8}$"	54'-2"	62'-$6\frac{5}{8}$"	63'-$10\frac{5}{8}$"	57'-$3\frac{5}{8}$"
		7'	7'-$0\frac{3}{4}$"	11'-3"	12'-$11\frac{5}{8}$"	14'-$1\frac{5}{8}$"	5'-$2\frac{5}{8}$"	22'-1"	25'-6"	26'-$7\frac{5}{8}$"	17'-$0\frac{5}{8}$"	32'-$11\frac{5}{8}$"	37'-$8\frac{5}{8}$"	38'-$11\frac{5}{8}$"	32'-$5\frac{5}{8}$"	43'-$3\frac{5}{8}$"	50'-$1\frac{5}{8}$"	51'-$3\frac{5}{8}$"	44'-$10\frac{5}{8}$"	54'-2"	62'-$6\frac{5}{8}$"	63'-$10\frac{5}{8}$"	57'-$3\frac{5}{8}$"
		8'	9'-$3\frac{3}{4}$"	11'-4"	13'-1"	14'-$2\frac{5}{8}$"	5'-$3\frac{5}{8}$"	22'-2"	25'-$7\frac{5}{8}$"	26'-$8\frac{1}{2}$"	16'-$4\frac{5}{8}$"	33'-0"	38'-$1\frac{5}{8}$"	39'-$3\frac{5}{8}$"	28'-$10\frac{5}{8}$"	43'-$10\frac{5}{8}$"	50'-$7\frac{5}{8}$"	51'-$9\frac{5}{8}$"	41'-$0\frac{5}{8}$"	54'-3"	62'-$7\frac{5}{8}$"	63'-$11\frac{5}{8}$"	53'-$10\frac{5}{8}$"
	11'	6'	6'-$3\frac{3}{4}$"	12'-4"	14'-$2\frac{5}{8}$"	15'-$4\frac{5}{8}$"	7'-$1\frac{5}{8}$"	24'-2"	27'-$10\frac{5}{8}$"	29'-$0\frac{5}{8}$"	21'-$7\frac{5}{8}$"	36'-0"	41'-$4\frac{5}{8}$"	42'-$8\frac{1}{2}$"	35'-$3\frac{5}{8}$"	47'-$10\frac{5}{8}$"	55'-$2\frac{5}{8}$"	56'-$4\frac{5}{8}$"	48'-$11\frac{5}{8}$"	—	—	—	—
		7'	7'-$0\frac{3}{4}$"	12'-5"	"	"	6'-$5\frac{5}{8}$"	24'-$2\frac{5}{8}$"	"	"	20'-$1\frac{5}{8}$"	36'-0"	"	"	38'-$9\frac{5}{8}$"	47'-$10\frac{5}{8}$"	"	"	49'-$1\frac{5}{8}$"	—	—	—	—
		8'	9'-$3\frac{3}{4}$"	12'-6"	"	"	4'-$11\frac{5}{8}$"	24'-$2\frac{5}{8}$"	"	"	18'-$7\frac{5}{8}$"	36'-0"	"	"	32'-$3\frac{5}{8}$"	47'-$10\frac{5}{8}$"	"	"	49'-$1\frac{5}{8}$"	—	—	—	—
	12'	6'	6'-$3\frac{3}{4}$"	13'-6"	15'-$9\frac{5}{8}$"	16'-$6\frac{5}{8}$"	9'-$1\frac{5}{8}$"	26'-2"	30'-$0\frac{5}{8}$"	31'-$6\frac{5}{8}$"	23'-$1\frac{5}{8}$"	39'-0"	45'-0"	46'-$4\frac{5}{8}$"	38'-$9\frac{5}{8}$"	51'-$10\frac{5}{8}$"	59'-$10\frac{5}{8}$"	61'-0"	53'-$1\frac{5}{8}$"	—	—	—	—
		7'	7'-$0\frac{3}{4}$"	13'-6"	"	"	7'-$7\frac{5}{8}$"	26'-2"	"	"	22'-$5\frac{5}{8}$"	39'-0"	"	"	37'-$3\frac{5}{8}$"	51'-$10\frac{5}{8}$"	"	"	52'-$1\frac{5}{8}$"	—	—	—	—
		8'	9'-$3\frac{3}{4}$"	13'-6"	"	"	6'-$1\frac{5}{8}$"	26'-2"	"	"	20'-$11\frac{5}{8}$"	39'-0"	"	"	35'-$9\frac{5}{8}$"	51'-$10\frac{5}{8}$"	"	"	50'-7"	—	—	—	—

Ⓐ Special case for these boxes, See Detail 'R' and Table 'A' for revised values of F_1, F_2, W_2 and W_3, when apron width is more than 1'-0" and W_3=0. For Details 'R' and Tables 'A' for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 30° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X302-1 or W-X302-2	W-X303-1 or W-X303-2	W-X304-1 or W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

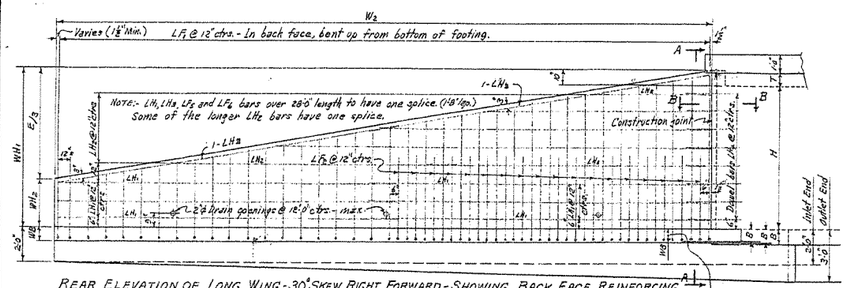
STANDARD DRAWING NO. W-X30

Designed by:- W.C.H. 5-16-63 — Checked by:-
Drawn by:- W.C.H. 7-15-63 — Checked by:- JSHS - 6-21-63
Quantities by:- — Checked by:-

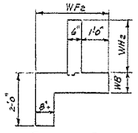
(50)

Reshot 3-8-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			196	
JOB No.					

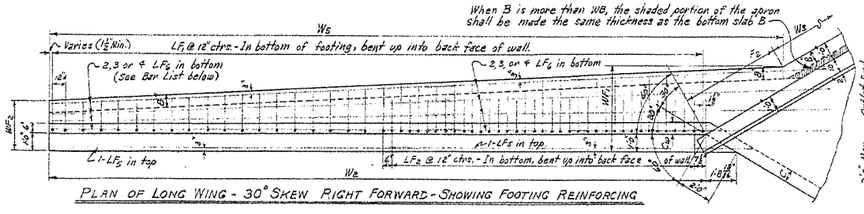


REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING

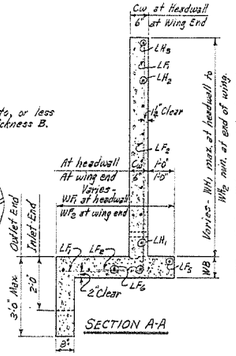


TYPICAL END VIEW OF WING

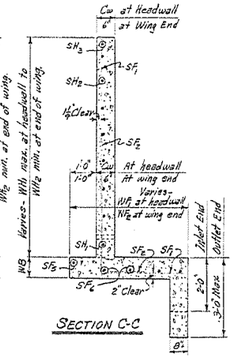
WB may be more, equal to, or less than the bottom slab thickness B.



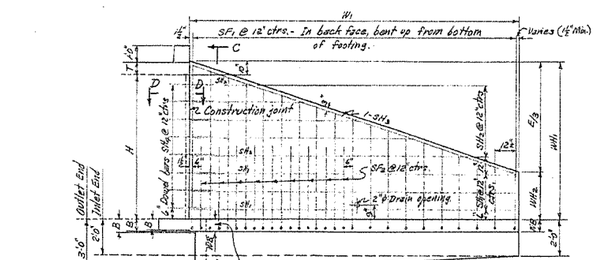
PLAN OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



SECTION A-A

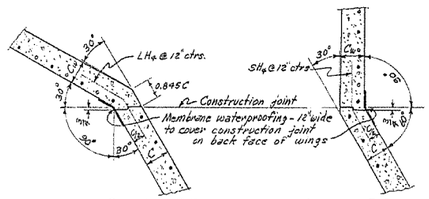


SECTION C-C



REAR ELEVATION OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING BACK FACE REINFORCING

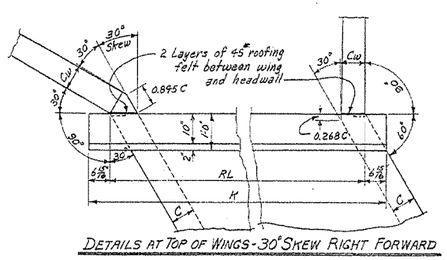
PLAN OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD

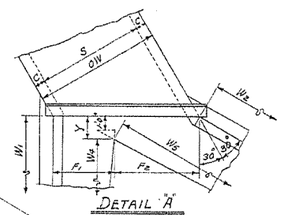
REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WINGS AT TOP 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	FOOTING DIMENSION PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIST. FROM HDWL TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSION SHORT WING	INSIDE FOOTING DIMENSION LONG WING	* QUANTITY PER WING CLASS S CONCRETE INLET END SHORT WING	* QUANTITY PER WING CLASS S CONCRETE INLET END LONG WING	* QUANTITY PER WING CLASS S CONCRETE OUTLET END SHORT WING	* QUANTITY PER WING CLASS S CONCRETE OUTLET END LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W3	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-4"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	19'-3⅜"	0.752	1.599	0.836	1.717
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-7½"	8'-6"	8'-6"	17'-0"	7'-6"	17'-10⅜"	1.130	2.340	1.239	2.565
4'	7"	6"	4'-10"	1'-2"	3'-0"	2'-3"	2'-0"	2'-3⅜"	10'-6"	10'-6"	21'-0"	8'-6"	22'-5¼"	1.577	3.270	1.711	3.552
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-10½"	2.093	4.341	2.252	4.680
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-10½"	2.179	4.524	2.337	4.862
@ 6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7⅛"	2.908	6.024	3.092	6.419
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7⅛"	2.964	6.147	3.150	6.543
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-2⅝"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7⅛"	3.025	6.272	3.208	6.667
@ 7'	0½"	7½"	7'-10"	2'-9"	4'-2"	2'-7½"	3'-2"	3'-6⅞"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.811	7.895	4.019	8.350
		8"	7'-10"	2'-9"	4'-2"	2'-7½"	3'-2"	3'-6⅞"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.887	8.057	4.095	8.512
@ 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	3'-10⅞"	18'-6"	18'-6"	37'-0"	17'-6"	41'-4⅝"	4.874	10.097	5.107	10.612

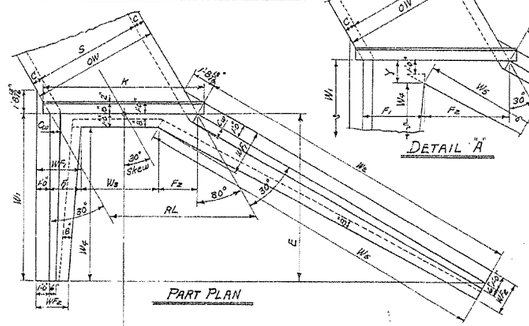
* Quantity per wing does not include headwall or that portion of apron or footwall for the length W3.
@ See Table "A" for special values of F1 & F2 and W4 & W5 for Single 9'x6', 8'x7' and 6'x8' Box Culverts.

TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F1	F2	W3	Y	W4	W5
4'	6'	2'-7⅞"	3'-3⅝"	0"	1'-1⅜"	13'-6⅛"	31'-3⅝"
5'	7'	3'-1⅜"	4'-1"	0"	1'-3⅜"	15'-2⅜"	35'-10⅜"
6'	8'	3'-7⅛"	4'-10⅛"	0"	1'-6⅜"	17'-1⅛"	40'-6"

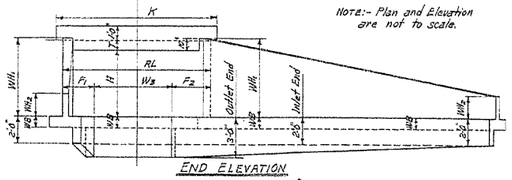


DETAIL "A"



PART PLAN

Note:- Plan and Elevation are not to scale.



END ELEVATION

SINGLE BARREL CULVERT - 30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Drawing No. W-X.30.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X.30. For values of RL, K and W3 for each box, see above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints of same.

QUANTITIES

CLASS S CONCRETE - 4 WINGS

CLEAR SPAN S	CLEAR HEIGHT H	THICKNESS OF WING AT HEADWALL Cw	THICKNESS OF WING FOOTING WB	REINFORCING STEEL - LB. FOR 4 WINGS @	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS SINGLE BARREL CULVERT CU.YD.	DOUBLE BARREL CULVERT CU.YD.	TRIPLE BARREL CULVERT CU.YD.	QUADRUPLE BARREL CULVERT CU.YD.	QUINTUPLE BARREL CULVERT CU.YD.
4'	2'	6"	7"	141	5.80	6.90	8.01	9.12	10.23
	3'	6"	7"	213	8.08	9.18	10.29	11.40	12.51
	4'	6"	7"	327	10.78	11.88	12.99	14.10	15.21
	5'	6"	7"	460	13.90	15.00	16.11	17.22	18.32
	6'	7"	8"	762	18.85	19.99	21.13	22.27	23.41
5'	3'	6"	7"	213	8.33	9.67	11.01	12.34	13.70
	4'	6"	7"	327	11.03	12.36	13.71	15.06	16.90
	5'	6"	7"	460	14.14	15.48	16.83	18.17	19.52
	6'	7"	8"	762	19.11	20.98	21.86	23.24	24.62
	7'	7½"	8½"	1974	24.51	25.96	27.35	28.75	30.16
6'	3'	6"	7"	213	8.57	10.17	11.73	13.33	14.92
	4'	6"	7"	327	11.27	12.86	14.43	16.03	17.62
	5'	6"	7"	460	14.38	15.98	17.55	19.15	20.73
	6'	7"	8"	762	19.35	20.98	22.59	24.21	25.83
	7'	7½"	8½"	1974	24.79	26.54	28.08	29.73	31.38
	8'	8"	9"	1870	31.15	32.87	34.51	36.17	37.83
7'	4'	6"	7"	327	11.52	13.37	15.19	17.05	18.85
	5'	6"	7"	460	14.63	14.49	18.31	20.16	21.97
	6'	7"	8"	762	19.61	21.98	23.32	25.20	27.04
	7'	7½"	8½"	1974	25.05	26.94	28.82	30.71	32.59
	8'	8"	9"	1870	31.47	33.37	35.25	37.16	39.05
8'	4'	6"	7"	327	11.77	13.89	15.97	18.09	20.12
	5'	7"	7"	460	15.46	17.60	19.70	21.83	23.89
	6'	7"	8"	762	19.86	21.98	24.05	26.17	28.20
	7'	7½"	8½"	1974	25.30	27.96	29.58	31.73	33.81
	8'	8"	9"	1870	31.72	33.88	36.00	38.16	40.27
9'	5'	7"	7"	460	15.72	18.13	20.47	22.87	25.15
	6'	7½"	8"	762	20.50	22.93	25.29	27.71	30.01
	7'	7½"	8½"	1974	25.55	27.98	30.34	32.76	35.07
	8'	8"	9"	1870	31.97	34.39	36.76	39.18	41.49
10'	5'	7"	7"	460	15.98	18.65	21.25	23.80	26.32
	6'	7½"	8"	762	20.76	23.65	26.07	28.69	31.28
	7'	7½"	8½"	1974	25.81	28.50	31.12	33.70	36.34
	8'	8"	9"	1870	32.22	34.91	37.58	40.12	42.76
11'	6'	8"	8"	762	21.39	24.38	27.25	30.11	——
	7'	8"	8½"	1974	26.55	29.53	32.41	35.27	——
	8'	8"	9"	1870	32.67	35.65	38.53	41.19	——
12'	6'	8"	8"	762	21.64	24.93	28.05	31.20	——
	7'	8"	8½"	1974	26.81	30.08	33.21	36.34	——
	8'	8"	9"	1870	32.93	35.99	39.13	42.28	——

@ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.
CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.:-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'0" OR LESS

STANDARD DRAWING NO. W-X303-1

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT H	WING LOCATION	SF1 & LF1 BENT — In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length: SIZE	SPACING	NO./REQD	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.
2'	Short	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"
	Long	#3	12"	14	1'-5"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"
3'	Short	#3	12"	9	2'-1"	5'-3"	0'-10"	1'-6"	1'-0"	4'-0"
	Long	#3	12"	18	1'-11"	5'-3"	0'-10"	1'-6"	0'-10"	4'-0"
4'	Short	#3	12"	11	2'-6"	6'-7"	0'-11"	1'-7"	1'-0"	5'-0"
	Long	#3	12"	22	2'-2"	6'-6"	0'-11"	1'-7"	1'-0"	5'-0"
5'	Short	#3	12"	13	2'-11"	7'-11"	1'-0"	2'-0"	1'-0"	6'-0"
	Long	#3	12"	26	2'-9"	7'-10"	1'-0"	1'-11"	1'-0"	6'-0"
6'	Short	#4	12"	15	3'-5"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"
	Long	#4	12"	30	3'-4"	9'-3"	1'-2"	2'-3"	2'-3"	7'-1"
7'	Short	#4	12"	17	3'-11"	10'-10"	1'-3"	2'-10"	2'-9"	8'-1"
	Long	#4	12"	34	3'-9"	10'-8"	1'-3"	2'-8"	2'-7"	8'-1"
8'	Short	#4	12"	19	4'-6"	12'-5"	1'-5"	3'-4"	3'-2"	9'-2"
	Long	#4	12"	38	4'-5"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"

CLEAR HEIGHT H	WING LOCATION	SF2 & LF2 BENT — In bottom of footing, bent up into back face of wing. Alt. with F1 bars.: SIZE	SPACING	NO./REQD	LENGTH	X	Y
2'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
3'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
4'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
5'	Short	#3	12"	3	3'-6"	1'-1"	2'-6"
	Long	#3	12"	6	3'-5"	1'-1"	2'-6"
6'	Short	#3	12"	9	4'-2"	1'-4"	3'-3"
	Long	#4	12"	6	4'-6"	1'-9"	3'-3"
7'	Short	#4	12"	6	5'-6"	1'-7"	4'-0"
	Long	#4	12"	12	5'-6"	1'-7"	4'-0"
8'	Short	#4	12"	9	6'-6"	1'-10"	4'-9"
	Long	#4	12"	18	6'-5"	1'-10"	4'-9"

CLEAR HEIGHT H	WING LOCATION	SF5 & LF5 STRAIGHT — Longitudinal in top of wing footing heel.: SIZE	NO./REQD	LENGTH	SF6 & LF6 STRAIGHT — Longitudinal in bottom of wing footing toe.: SIZE	NO./REQD	LENGTH
2'	Short	#3	1	9'-0"	#3	2	8'-0"
	Long	#3	1	15'-6"	#3	2	15'-6"
3'	Short	#3	1	11'-0"	#3	2	10'-6"
	Long	#3	1	19'-6"	#3	2	20'-0"
4'	Short	#3	1	13'-0"	#3	3	12'-0"
	Long	#3	1	23'-6"	#3	3	24'-0"
5'	Short	#3	1	15'-0"	#3	3	14'-0"
	Long	#3	1	27'-6"	#3	3	15'-7"
6'	Short	#3	1	17'-0"	#3	3	16'-0"
	Long	#4	2	16'-8"	#3	6	19'-0"
7'	Short	#4	2	19'-0"	#4	4	18'-0"
	Long	#4	2	20'-8"	#4	8	22'-9"
8'	Short	#4	2	21'-0"	#4	4	20'-6"
	Long	#4	2	20'-8"	#4	8	22'-9"

CLEAR HEIGHT H	WING LOCATION	SH1 & LH1 STRAIGHT — Horizontal in back face of wing.: SIZE	SPACING	NO./REQD	LENGTH	SH2 & LH2 STRAIGHT — Horizontal in back face of wing. One bar of each length.: SIZE	SPACING	NO./REQD	LENGTHS VARY MAX.	LENGTHS VARY MIN.
2'	Short	#3	12"	1	6'-8"	#3	12"	1	—	3'-3"
	Long	#3	12"	1	12'-8"	#3	12"	1	—	6'-6"
3'	Short	#3	12"	1	8'-3"	#3	12"	2	6'-2"	3'-3"
	Long	#3	12"	1	16'-8"	#3	12"	2	12'-6"	6'-6"
4'	Short	#3	12"	1	10'-3"	#3	12"	3	9'-3"	3'-3"
	Long	#3	12"	1	20'-8"	#3	12"	3	18'-6"	6'-6"
5'	Short	#3	12"	1	12'-3"	#3	12"	3	9'-3"	3'-3"
	Long	#3	12"	2	24'-9"	#3	12"	3	18'-6"	6'-6"
6'	Short	#3	12"	2	14'-3"	#4	12"	4	12'-3"	3'-3"
	Long	#3	12"	4	15'-2"	#3	12"	4	24'-6"	6'-6"
7'	Short	#3	12"	2	16'-3"	#4	12"	5	15'-3"	3'-3"
	Long	#4	12"	4	18'-0"	#4	12"	5	#30'-6"	6'-6"
8'	Short	#4	12"	2	18'-3"	#4	12"	5	15'-3"	3'-3"
	Long	#4	12"	6	19'-2"	#4	12"	5	#30'-6"	6'-6"

CLEAR HEIGHT H	WING LOCATION	SH3 & LH3 — In back face of wing at top - on slope.: SIZE	NO./REQD	LENGTH	SH4 & LH4 BENT — Dowels thru construction joint at headwall.: SIZE	SPACING	NO./REQD	LENGTH	X
2'	Short	#3	1	6'-7"	#3	12"	2	2'-8"	1'-4"
	Long	#3	1	12'-11"	#3	12"	2	"	"
3'	Short	#3	1	8'-8"	#3	12"	3	"	"
	Long	#3	1	16'-11"	#3	12"	3	"	"
4'	Short	#3	1	10'-9"	#3	12"	4	"	"
	Long	#3	1	21'-0"	#3	12"	4	"	"
5'	Short	#3	1	12'-11"	#3	12"	5	"	"
	Long	#3	1	25'-1"	#3	12"	5	"	"
6'	Short	#3	1	15'-0"	#3	12"	6	"	"
	Long	#3	1	29'-2"	#3	12"	6	2'-9"	1'-9"
7'	Short	#3	1	17'-1"	#4	12"	7	"	"
	Long	#4	2	16'-8"	#4	12"	7	3'-6"	1'-8"
8'	Short	#4	1	19'-2"	#4	12"	8	"	"
	Long	#4	2	20'-8"	#4	12"	8	3'-6"	1'-8"

BAR BENDING DIAGRAM — SF5 & SF6 LF5 & LF6: 3" Pin, X, Y. SH4 & LH4: X, Y, 1/2. Note:- Dimensions are to bar centers.

QUANTITY — REINFORCING STEEL PER WING - LBS.	SHORT WING	LONG WING
	29.7	45.6
	37.0	68.5
	56.2	107.2
	78.0	152.2
	127.8	253.1
	267.0	489.8
	312.9	622.3

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

* Length without splice. Bars over 28'0" length may be spliced. (1'8" lap.)

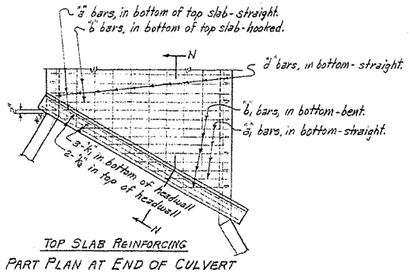
REVISIONS:- Membrane Added. 5-10-66 W.C.H.

Designed By:- W.C.H. 5-13-63 Checked By:- 2nd CHK 8-19-63
Drawn By:- W.C.H. 7-26-63 Checked By:- CHIEF 7-15-64
Quantities By:- W.C.H. 1-7-64

Reshot 3-8-93

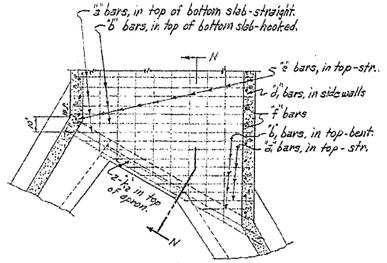
199

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			197	
JOB No.					



TOP SLAB REINFORCING

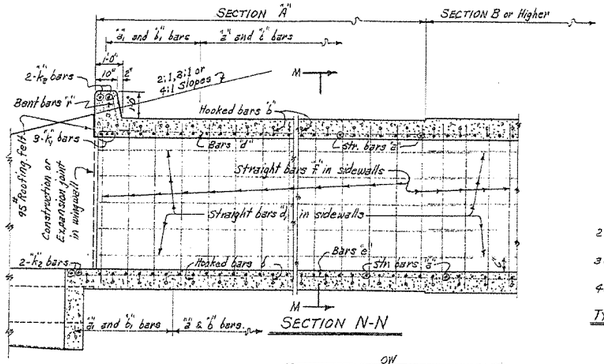
PART PLAN AT END OF CULVERT

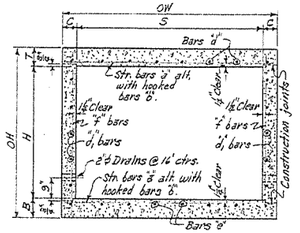


BOTTOM SLAB REINFORCING

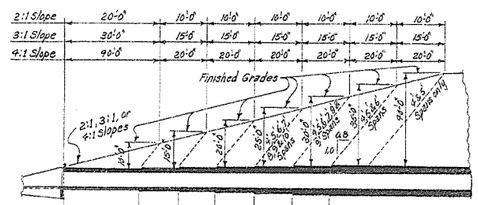
PART PLAN AT END OF CULVERT

NOTE:- The "d", "d1" and "a" bars vary in length. They should extend 1'-9" min. into "SECTION B".





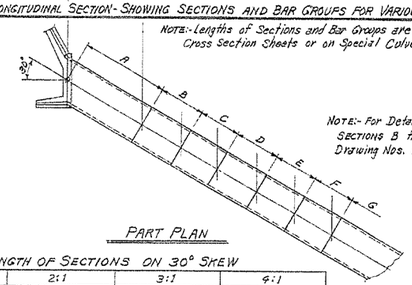
TYPICAL SECTION M-M



2:1 Slope =	SECTIONS	A=18'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	MID-SECTION	G-Varies	These lengths are perpendicular to ℄ of roadway. See Table of Skew Lengths below.
	Bar Group	A	B	C	D	E	F		G	
3:1 Slope =	SECTIONS	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	MID-SECTION	G-Varies	
	Bar Group	A	B	C	D	E	F		G	
4:1 Slope =	SECTIONS	A=22'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	MID-SECTION	G-Varies	
	Bar Group	A	B	C	D	E	F		G	

TYPICAL LONGITUDINAL SECTION - SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections and Bar Groups are to be shown on Cross Section Sheets or on Special Culvert Layout Sheet.



PART PLAN

NOTE:- For Details and Bar Lists for SECTIONS B thru G, see Barrel Drawing Nos. R-100X-X.1 or R-100X-X.2.

LENGTH OF SECTIONS ON 30° SKEW

SLOPE	2:1		3:1		4:1	
SECTIONS	A	B, C, D, E & F	A	B, C, D, E & F	A	B, C, D, E & F
LENGTHS	13'-10⅝"	6'-11⅝"	25'-4⅝"	12'-8⅝"	36'-11⅝"	18'-5⅝"

NOTE:- Minimum ℄ Length of Section "A" on 30° Skew = (0.293675 OW+2').

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS						MID-SECTION AND BAR GROUP
	A	B	C	D	E	F	
5.0' to 9.5'	R						A
10.0 to 14.5'	A						B
15.0 to 19.5'	A	B					C
20.0' to 24.5'	A	B	C				D
25.0 to 29.5'	A	B	C	D			E
30.0 to 34.5'	A	B	C	D	E		F
35.0 to 40.0'	A	B	C	D	E	F	G

OR ALT.

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS						MID-SECTION AND BAR GROUP
	A	B	C	D	E	F	
5.0 to 9.5'	A						A
10.0 to 19.5'	A						B
15.0 to 19.5'	A	B					C
20.0 to 24.5'	A	B	2@C				D
25.0 to 29.5'	A	B	2@D				E
30.0 to 34.5'	A	B	2@C	2@E			F
35.0 to 40.0'	A	B	2@D	2@F			G

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM FOR BARS "b"
#4	2"	4"	0-10½"	K, Pin diam., X
#5	2½"	4½"	0-11½"	
#6	3"	5"	1-2"	
#7	3½"	5½"	1-4"	

BAR SIZE	PIN DIAM.	K	ADD FOR 1 HOOK	BENDING DIAGRAM FOR BARS "b1"
#4	2"	4"	0-5⅝"	K, Pin diam., X
#5	2½"	4½"	0-5¾"	
#6	3"	5"	0-7"	
#7	3½"	5½"	0-8"	

Note:- Dimensions are to centers of bars. ("b" and "b1")

DOWEL BARS FOR ONE HEADWALL

SPAN	SIZE	SPACING	No. REQ'D	LENGTH	X	Dowel bars "f" in One Headwall
4'	#4	12"	6	2'-5"	1'-2½"	2", 12", X
5'	#4	12"	8	2'-6"	1'-3"	
6'	#4	12"	9	2'-7"	1'-3½"	
7'	#4	12"	10	2'-8"	1'-4"	
8'	#4	12"	11	2'-10"	1'-5"	
9'	#4	12"	13	3'-0"	1'-6"	
10'	#4	12"	14	3'-2"	1'-7"	

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961 AND SPECIAL MILITARY LOADING

Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/in²

Reinforcing Steel 20,000 #/in²

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.

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.

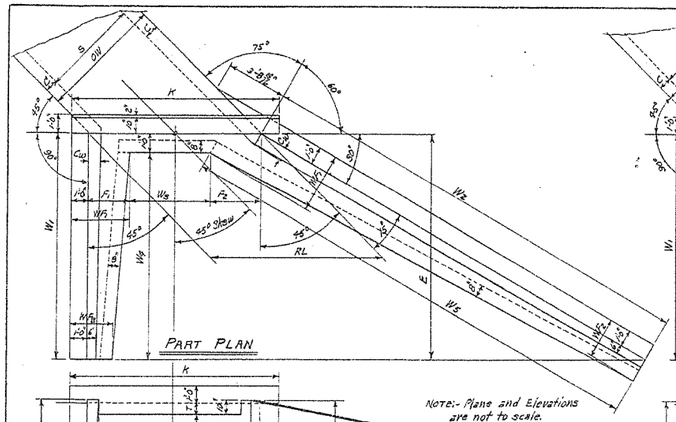
BAR LIST FOR SECTION "A" ON 30° SKEW - ONE END ONLY.

SECTION "A" = 10'-0"

SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"a1" bars STRAIGHT In Top and Bottom Slab of Barrel - (Two of each Length.) SIZE	SPACING	NUMBER REQ'D	LENGTH	X
A	S	D	S	H											
SECTION "A" & BAR GROUP "A"	2:1 = 13'-10⅝" , 3:1 = 25'-4⅝" , 4:1 = 36'-11⅝"	0'-0" TO 10'-0" MAXIMUM.	1 @ 4'-0" 1 @ 5'-0" 1 @ 6'-0" 1 @ 7'-0" 1 @ 8'-0" 1 @ 9'-0" 1 @ 10'-0"	4'-0" 5'-0" 6'-0" 7'-0" 8'-0" 9'-0" 10'-0" 11'-0" 12'-0"	2' 3' 4' 5' 6' 3' 4' 5' 6' 7' 3' 4' 5' 6' 7' 8' 3' 4' 5' 6' 7' 8' 9' 3' 4' 5' 6' 7' 8' 9' 10' 3' 4' 5' 6' 7' 8' 9' 10' 11' 3' 4' 5' 6' 7' 8' 9' 10' 11' 12'	#4	12"	27 99 73 / 25 99 71 / 23 97 69 / 21 95 69	4'-9" / 5'-7" / 6'-5" / 7'-3" / 8'-1" / 8'-10" / 9'-8" / 10'-6" / 11'-4"	#4	12"	4 / 6 / 8 / 10 / 12 / 14 / 16 / 18 / 20 / 22 / 24

Reshot 3-8-93

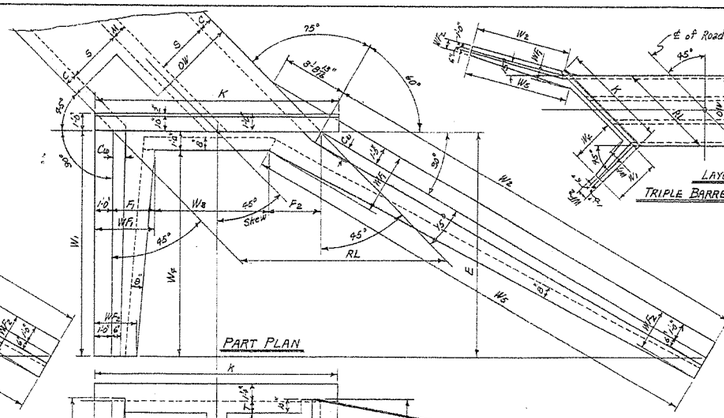
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			198	
JOB No.					



SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

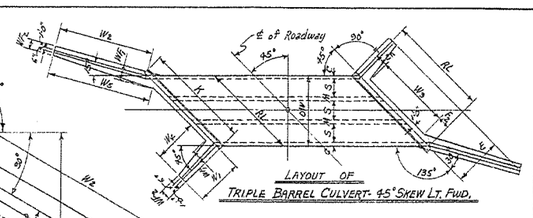
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.

Note:- Plans and Elevations are not to scale.

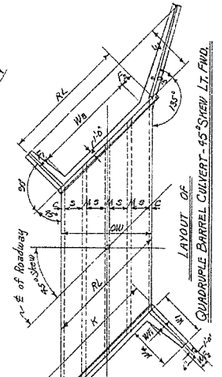


DOUBLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

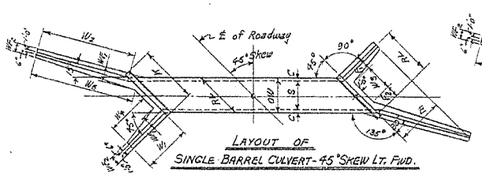
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.



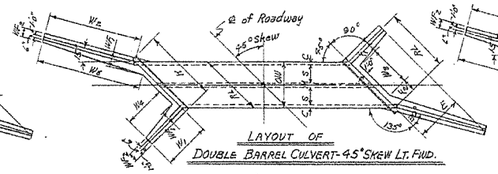
LAYOUT OF TRIPLE BARREL CULVERT - 45° SKEW LT. FWD.



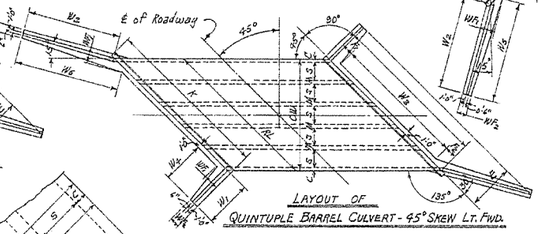
LAYOUT OF QUADRUPLE BARREL CULVERT - 45° SKEW LT. FWD.



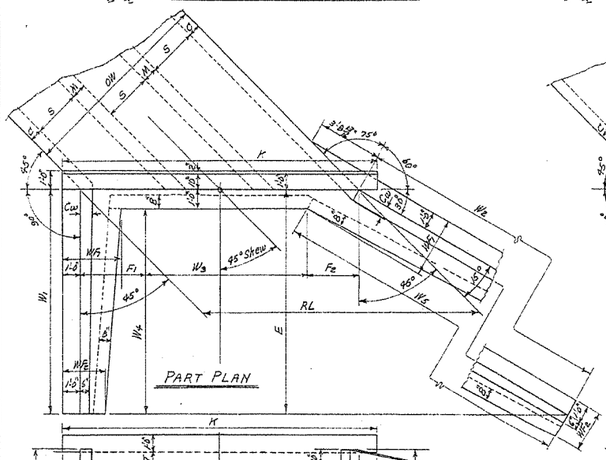
LAYOUT OF SINGLE BARREL CULVERT - 45° SKEW LT. FWD.



LAYOUT OF DOUBLE BARREL CULVERT - 45° SKEW LT. FWD.

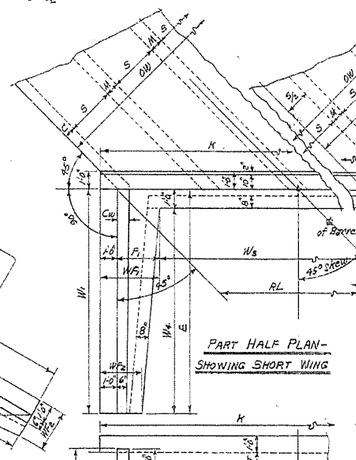


LAYOUT OF QUINTUPLE BARREL CULVERT - 45° SKEW LT. FWD.



TRIPLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

Details of Culvert with 45° Skew Left Forward is reversed, see Layout at top center of sheet.

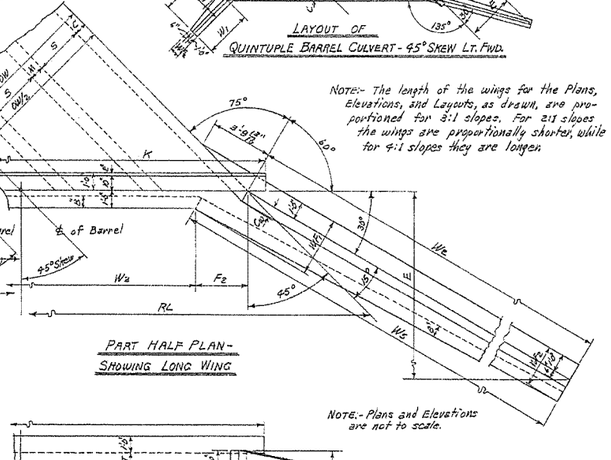


QUADRUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout at above center.

Note:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.

Note:- Plans and Elevations are not to scale.



QUINTUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = .OW × 1.41421 — K = RL + (2'-0") — $W_3 = RL - (F_1 + F_2)$

USE WITH DRAWING NO.	CLEAR SPAN S	CLEAR HEIGHT H	SUM OF SKEWING DIMENSIONS $F_1 & F_2$	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT RL	SINGLE BARREL CULVERT K	SINGLE BARREL CULVERT W_3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT RL	DOUBLE BARREL CULVERT K	DOUBLE BARREL CULVERT W_3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT RL	TRIPLE BARREL CULVERT K	TRIPLE BARREL CULVERT W_3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT RL	QUADRUPLE BARREL CULVERT K	QUADRUPLE BARREL CULVERT W_3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT RL	QUINTUPLE BARREL CULVERT K	QUINTUPLE BARREL CULVERT W_3
W-X452-1, W-X453-1 or W-X454-1. (FOR H=8'-0" OR LESS.)	4'	2'	2'-3⅜"	5'-0"	7'-0⅝"	9'-5⅝"	4'-9⅝"	9'-5"	13'-8"	15'-8"	11'-4⅝"	14'-0"	20'-3⅜"	22'-3⅜"	18'-0"	19'-0"	26'-10⅝"	28'-10⅝"	24'-7⅛"	23'-8"	33'-5⅝"	35'-5⅝"	31'-2⅝"
		3'	3'-3⅜"	5'-0"	"	"	3'-3⅝"	9'-8"	"	"	10'-4⅝"	14'-4"	"	"	17'-0"	19'-0"	"	"	23'-7⅛"	23'-8"	"	"	30'-2⅝"
		4'	4'-3⅜"	5'-0"	"	"	2'-3⅝"	9'-8"	"	"	9'-4⅝"	14'-4"	"	"	16'-0"	19'-0"	"	"	22'-7⅛"	23'-8"	"	"	29'-2⅝"
		5'	5'-3⅜"	5'-0"	7'-0⅝"	9'-5⅝"	1'-9⅝"	9'-8"	13'-8"	15'-8"	8'-4⅝"	14'-4"	20'-3⅜"	22'-3⅜"	15'-0"	19'-0"	26'-10⅝"	28'-10⅝"	21'-7⅛"	23'-8"	33'-5⅝"	35'-5⅝"	28'-2⅝"
		6'	6'-3⅜"	5'-0"	7'-0⅝"	9'-5⅝"	1'-0⅝"	9'-11"	14'-0⅝"	16'-0⅝"	7'-10⅝"	14'-8"	20'-8⅜"	22'-8"	16'-5⅝"	18'-5"	27'-5⅝"	29'-5⅝"	22'-2"	24'-2"	34'-2"	36'-2"	27'-10⅜"
	5'	3'	3'-3⅜"	6'-0"	9'-5⅝"	12'-5⅝"	5'-2⅝"	11'-8"	16'-6"	18'-6"	13'-2⅝"	17'-4"	24'-1⅜"	26'-1⅜"	21'-3"	23'-0"	32'-4⅝"	34'-4⅝"	29'-1⅝"	28'-8"	40'-6⅝"	42'-6⅝"	37'-3⅜"
		4'	4'-3⅜"	6'-0"	"	"	4'-2⅝"	11'-8"	"	"	12'-2⅝"	17'-4"	"	"	20'-3"	23'-0"	"	"	28'-1⅜"	28'-8"	"	"	36'-3⅜"
		5'	5'-3⅜"	6'-0"	9'-5⅝"	12'-5⅝"	3'-2⅝"	11'-8"	16'-6"	18'-6"	11'-2⅝"	17'-4"	24'-1⅜"	26'-1⅜"	19'-3"	23'-0"	32'-4⅝"	34'-4⅝"	27'-1⅜"	28'-8"	40'-6⅝"	42'-6⅝"	35'-3⅜"
		6'	6'-3⅜"	6'-0"	9'-5⅝"	12'-5⅝"	2'-1⅝"	11'-10"	16'-10⅝"	18'-10⅝"	10'-1"	17'-8"	24'-5⅛"	27'-0"	18'-8⅝"	23'-4"	33'-0⅝"	35'-0⅝"	26'-10⅝"	29'-2"	41'-1"	43'-1"	34'-0⅝"
		7'	7'-3⅜"	6'-3"	9'-10⅝"	12'-10⅝"	1'-0⅝"	12'-1"	17'-1"	19'-1"	9'-3⅝"	17'-11"	25'-4"	27'-4"	17'-4⅝"	23'-9"	33'-5"	35'-5"	26'-9⅝"	29'-7"	41'-10"	43'-10"	33'-8⅜"
	6'	3'	3'-3⅜"	7'-0"	9'-10⅝"	11'-10⅝"	6'-2⅝"	13'-8"	19'-3⅜"	21'-4"	16'-0⅝"	20'-6"	28'-3⅝"	30'-3⅝"	25'-5⅜"	27'-0"	38'-2⅝"	40'-2⅝"	34'-11"	33'-8"	47'-7⅝"	49'-7⅝"	44'-4"
		4'	4'-3⅜"	7'-0"	"	"	5'-2⅝"	13'-8"	"	"	15'-0⅝"	20'-6"	"	"	28'-2⅝"	27'-0"	"	"	33'-11"	33'-8"	"	"	43'-4"
		5'	5'-3⅜"	7'-0"	9'-10⅝"	11'-10⅝"	4'-1⅝"	13'-8"	19'-3⅜"	21'-4"	14'-0⅝"	20'-6"	28'-3⅝"	30'-3⅝"	23'-5⅜"	27'-0"	38'-2⅝"	40'-2⅝"	32'-11"	33'-8"	47'-7⅝"	49'-7⅝"	42'-4"
		6'	6'-3⅜"	7'-3"	10'-1⅝"	12'-1⅝"	3'-0⅝"	13'-11"	19'-8⅛"	21'-8⅛"	13'-5"	20'-9"	29'-2⅝"	31'-2⅝"	22'-1⅛"	27'-5"	38'-8⅝"	40'-8⅝"	32'-4"	34'-2"	48'-3⅝"	50'-3⅝"	42'-0⅝"
		7'	7'-3⅜"	7'-3"	10'-3"	12'-3"	2'-0⅝"	14'-1"	19'-11"	21'-11"	12'-1⅜"	20'-11"	29'-7"	31'-7"	21'-0⅝"	27'-9"	39'-3"	41'-3"	31'-5⅝"	34'-7"	48'-10⅝"	50'-7"	41'-7⅜"
		8'	8'-3⅜"	7'-6"	10'-6⅝"	12'-6⅝"	1'-1⅝"	14'-2"	20'-0⅝"	22'-0⅝"	10'-9⅜"	21'-0"	29'-8⅝"	31'-8⅝"	20'-5⅛"	27'-10"	39'-4⅝"	41'-4⅝"	30'-1"	34'-8"	49'-0⅝"	51'-0⅝"	39'-9"
	7'	4'	4'-3⅜"	8'-0"	11'-3⅝"	13'-3⅝"	7'-0⅛"	15'-9"	22'-1⅞"	24'-1⅞"	17'-10⅛"	23'-6"	33'-1"	35'-1"	28'-1⅝"	31'-0"	43'-10⅝"	45'-10"	39'-6⅝"	38'-1"	54'-0⅝"	56'-0⅝"	50'-5"
		5'	5'-3⅜"	8'-0"	11'-3⅝"	13'-3⅝"	6'-0⅛"	15'-9"	22'-1⅞"	24'-1⅞"	16'-10⅛"	23'-6"	33'-1"	35'-1"	27'-8⅝"	31'-0"	43'-10⅝"	45'-10"	38'-6⅝"	38'-1"	54'-0⅝"	56'-0⅝"	49'-5"
		6'	6'-3⅜"	8'-0"	11'-3⅝"	13'-3⅝"	5'-0⅛"	15'-11"	22'-3⅝"	24'-3⅝"	16'-0⅝"	23'-8"	33'-5⅝"	35'-5⅝"	27'-2⅛"	31'-5"	44'-3⅝"	46'-3⅝"	38'-11"	38'-7"	54'-6⅝"	56'-6⅝"	49'-1⅛"
		7'	7'-3⅜"	8'-3"	11'-8"	13'-8"	3'-10⅝"	16'-1"	22'-6"	24'-6"	14'-11"	23'-11"	33'-9⅜"	35'-10"	26'-6⅝"	31'-9"	44'-10⅝"	46'-10⅝"	37'-11"	38'-7"	55'-0⅝"	57'-0⅝"	48'-6⅜"
		8'	8'-3⅜"	8'-6"	11'-11⅝"	13'-10⅝"	2'-6⅝"	16'-2"	22'-10⅝"	24'-10⅝"	13'-7"	24'-0"	33'-11⅝"	35'-11⅝"	24'-8"	31'-10"	45'-0⅝"	47'-0⅝"	35'-9"	39'-0"	55'-2⅛"	57'-2⅛"	48'-0⅜"
	8'	5'	5'-3⅜"	9'-0"	12'-8⅜"	14'-8⅜"	8'-1⅛"	17'-9"	25'-1⅛"	26'-1⅛"	20'-8⅛"	26'-9"	37'-10⅜"	39'-5"	32'-11⅝"	35'-5"	49'-8"	51'-8"	43'-9"	43'-9"	61'-11"	63'-9"	55'-6⅝"
		6'	6'-3⅜"	9'-0"	12'-8⅜"	14'-8⅜"	7'-1⅛"	17'-11"	25'-4"	27'-4"	19'-10⅝"	26'-11"	38'-0⅝"	40'-0⅝"	31'-5⅝"	35'-7"	50'-1"	52'-1"	44'-3⅛"	44'-0"	62'-2⅝"	64'-5⅝"	57'-2⅛"
		7'	7'-3⅜"	9'-3"	13'-1"	15'-1"	6'-1⅛"	18'-1"	25'-6⅝"	27'-7"	17'-9⅛"	26'-11"	38'-0⅝"	40'-0⅝"	30'-3⅝"	35'-9"	50'-5⅝"	52'-5⅝"	42'-8⅝"	44'-3"	63'-0⅝"	65'-0⅝"	55'-3⅛"
		8'	8'-3⅜"	9'-6"	13'-5"	15'-5"	5'-1⅛"	18'-2"	25'-8⅝"	27'-8⅝"	16'-5"	27'-0"	38'-2⅝"	40'-2⅝"	28'-11"	35'-10"	50'-10"	52'-9"	41'-5"	44'-6"	63'-2"	65'-2"	52'-9⅜"
	9'	5'	5'-3⅜"	10'-2"	14'-4⅝"	16'-4⅝"	9'-1⅞"	19'-4"	27'-2"	30'-2"	22'-1⅛"	29'-0"	41'-0⅝"	43'-1⅛"	36'-8⅛"	39'-5"	55'-8⅛"	57'-9"	50'-5⅝"	49'-2"	69'-6⅝"	71'-6⅝"	64'-3⅜"
		6'	6'-3⅜"	10'-5"	14'-7"	16'-7"	8'-2⅝"	20'-1"	28'-0⅝"	30'-0⅝"	22'-1⅛"	29'-11"	42'-3⅜"	44'-3⅜"	36'-2⅛"	39'-9"	56'-2⅝"	58'-2⅝"	49'-11⅛"	49'-7"	70'-1⅛"	72'-1⅛"	63'-10⅛"
		7'	7'-3⅜"	10'-5"	14'-7"	16'-6"	6'-3⅝"	20'-1"	28'-1⅝"	30'-1⅝"	20'-7⅛"	29'-11"	42'-3⅜"	44'-3⅜"	34'-5⅛"	39'-9"	56'-2⅝"	58'-2⅝"	48'-5⅝"	49'-7"	70'-1⅛"	72'-1⅛"	62'-6⅛"
		8'	8'-3⅜"	10'-6"	14'-10⅝"	16'-10⅝"	5'-4⅝"	20'-2"	28'-3⅛"	30'-3⅛"	19'-3"	30'-0"	42'-5⅝"	44'-5⅝"	33'-2"	39'-10"	56'-5⅛"	58'-5⅛"	47'-0⅛"	49'-8"	70'-2⅝"	72'-2⅝"	61'-3⅝"
	10'	5'	5'-3⅜"	11'-2"	15'-9⅝"	17'-9⅝"	10'-1⅝"	21'-11"	31'-0"	33'-0"	24'-3⅝"	32'-8"	46'-2⅝"	48'-2⅝"	40'-0"	43'-5"	61'-4⅝"	63'-4⅝"	55'-1⅛"	55'-6"	78'-7⅝"	80'-7⅝"	71'-4"
		6'	6'-3⅜"	11'-5"	15'-11"	17'-11"	9'-2⅝"	22'-1"	31'-2⅝"	33'-2⅝"	24'-5⅛"	32'-11"	46'-6⅝"	48'-6⅝"	40'-3⅝"	43'-9"	61'-10⅝"	63'-10⅝"	55'-6⅛"	55'-9"	78'-11⅝"	80'-11⅝"	71'-8⅛"
		7'	7'-3⅜"	11'-5"	15'-11"	17'-11"	8'-1⅝"	22'-1"	31'-2⅝"	33'-2⅝"	23'-5⅝"	32'-11"	46'-6⅝"	48'-6⅝"	38'-10⅝"	43'-9"	61'-10⅝"	63'-10⅝"	54'-6⅛"	55'-9"	77'-2⅛"	79'-2⅛"	69'-5"
		8'	8'-3⅜"	11'-8"	16'-2⅛"	18'-0⅛"	6'-3⅝"	22'-2"	31'-4⅝"	33'-4⅝"	22'-1"	33'-0"	46'-8⅝"	48'-8⅝"	37'-6⅝"	43'-9"	61'-11⅝"	63'-11⅝"	52'-10⅝"	55'-10"	77'-3⅝"	79'-3⅝"	67'-10⅜"
	12'	6'	6'-3⅜"	12'-0"	17'-0⅝"	19'-0⅝"	11'-2⅝"	23'-2"	33'-2⅝"	35'-2"	29'-11"	34'-6"	49'-0⅝"	51'-0⅝"	43'-10⅝"	47'-10"	67'-11⅝"	69'-11⅝"	61'-6⅛"	—	—	—	—
		7'	7'-3⅜"	12'-4"	"	"	10'-2⅝"	23'-2"	"	"	26'-5"	34'-6"	"	"	39'-10⅝"	47'-10"	"	"	58'-10⅛"	—	—	—	—
		8'	8'-3⅜"	12'-8"	"	"	9'-1⅝"	23'-2"	"	"	24'-11"	34'-6"	"	"	36'-10"	47'-10"	"	"	55'-9⅛"	—	—	—	—
		6'	6'-3⅜"	13'-6"	18'-10⅝"	20'-10⅝"	12'-7⅛"	24'-8"	37'-0⅝"	39'-0"	30'-8⅝"	38'-0"	55'-1⅜"	57'-1⅜"	49'-0⅜"	51'-10"	73'-3⅝"	75'-3⅝"	67'-0⅛"	—	—	—	—
		7'	7'-3⅜"	13'-8"	"	"	11'-7⅛"	24'-8"	"	"	29'-2⅝"	39'-0"	"	"	47'-0⅜"	51'-10"	"	"	65'-4⅛"	—	—	—	—
		8'	8'-3⅜"	13'-8"	"	"	9'-7⅛"	24'-8"	"	"	27'-8⅝"	39'-0"	"	"	46'-10⅝"	51'-10"	"	"	60'-10⅝"	—	—	—	—
(FOR H=9'-0" & OVER) W-X452-2, W-X453-2 OR W-X454-2.	7'	9'	10'-8⅜"	8'-6"	12'-0⅝"	14'-0⅝"	7'-3"	16'-5"	23'-2⅝"	25'-2⅝"	18'-2⅝"	24'-9"	34'-5"	36'-5"	28'-7⅜"	32'-3"	45'-7⅝"	47'-7⅝"	39'-1⅛"	40'-2"	56'-9⅝"	58'-9⅝"	49'-10⅝"
	8'	9'	10'-9¼"	9'-6"	13'-5⅝"	15'-5⅝"	8'-3"	18'-5"	26'-0⅝"	28'-0⅝"	19'-5⅝"	27'-9"	38'-7⅜"	40'-8"	31'-5⅝"	36'-3"	51'-3⅝"	53'-3⅝"	43'-9⅛"	45'-2"	63'-10⅝"	65'-10⅝"	55'-11⅝"
		10'	12'-3¼"	9'-8"	13'-8"	15'-8"	7'-4⅝"	18'-8"	26'-4⅝"	28'-4⅝"	16'-1⅝"	27'-8"	39'-1⅛"	41'-1⅛"	26'-10⅝"	36'-8"	51'-10⅝"	53'-10⅝"	39'-7"	44'-7"	64'-7"	66'-7"	52'-3⅜"
	9'	9'	10'-9¼"	10'-6"	14'-10⅝"	16'-10⅝"	9'-1"	20'-5"	28'-10⅝"	30'-10⅝"	18'-1⅜"	30'-6"	42'-10⅜"	44'-10⅜"	32'-1⅝"	40'-3"	56'-11⅛"	58'-11"	44'-1⅜"	50'-2"	70'-11⅜"	72'-11"	58'-6⅜"
		10'	12'-3¼"	10'-8"	15'-1"	17'-1"	8'-8⅜"	20'-8"	29'-2⅜"	31'-2⅜"	16'-11⅝"	30'-8"	43'-1⅝"	45'-1⅝"	29'-10"	40'-8"	57'-4⅝"	59'-4⅝"	45'-3"	50'-8"	71'-5⅜"	73'-5⅜"	59'-0⅜"
		11'	13'-3¼"	10'-10"	15'-3⅜"	17'-3⅜"	7'-4⅝"	20'-10"	29'-5⅛"	31'-5⅛"	15'-8⅛"	30'-10"	43'-3⅛"	45'-3⅛"	29'-10"	40'-10"	57'-9"	59'-9"	45'-11⅛"	50'-10"	71'-10⅝"	73'-10⅝"	59'-7⅛"
	10'	9'	10'-9¼"	11'-6"	16'-3⅛"	18'-3⅛"	5'-4"	22'-5"	31'-8⅜"	33'-8⅜"	20'-11⅝"	33'-4"	47'-1⅛"	49'-1⅛"	34'-6⅝"	44'-3"	62'-7"	64'-7"	51'-0⅜"	55'-2"	78'-0⅝"	80'-0⅝"	63'-8"
		10'	12'-3¼"	11'-8"	16'-6"	18'-6"	4'-2⅝"	22'-8"	32'-0⅝"	34'-0⅝"	19'-9⅝"	33'-8"	47'-7⅛"	49'-7⅛"	35'-5⅝"	44'-9"	63'-2"	65'-2"	51'-6⅝"	55'-6"	78'-10⅝"	80'-10⅝"	64'-2⅝"
		11'	13'-3¼"	11'-10"	16'-8⅝"	18'-8⅝"	3'-1⅝"	22'-10"	32'-3⅛"	34'-3⅛"	18'-6⅝"	33'-10"	47'-10⅛"	49'-10⅛"	36'-4"	44'-10"	63'-4⅛"	65'-4⅛"	51'-9⅝"	55'-10"	79'-1⅛"	81'-1⅛"	64'-5⅜"
		12'	15'-3¼"	12'-0"	16'-11⅝"	18'-11⅝"	1'-10⅝"	23'-1"	32'-6⅛"	34'-6⅛"	17'-3"	34'-0"	48'-1"	50'-1"	32'-9⅜"	45'-0"	63'-5⅝"	65'-5⅝"	48'-6⅛"	55'-10"	79'-2⅝"	81'-2⅝"	63'-1⅛"
	11'	9'	10'-9¼"	12'-4"	17'-5⅝"	19'-5⅝"	6'-10⅜"	23'-8"	33'-5⅛"	35'-5⅛"	23'-0⅝"	34'-2"	48'-4⅜"	50'-4⅜"	38'-0⅝"	45'-3"	63'-8⅝"	65'-8⅝"	52'-3⅛"	—	—	—	—
		10'	12'-3¼"	12'-8"	17'-11"	19'-11"	5'-7⅜"	24'-0"	33'-10⅛"	35'-10⅛"	22'-2⅝"	34'-6"	48'-8⅜"	50'-8⅜"	37'-1⅝"	45'-5"	64'-0⅝"	66'-0⅝"	52'-6⅛"	—	—	—	—
		11'	13'-3¼"	12'-10"	18'-2⅜"	20'-2⅜"	4'-4⅜"	24'-2"	34'-0⅝"	36'-0⅝"	21'-4⅜"	34'-10"	49'-1⅛"	51'-1⅛"	36'-1⅜"	45'-7"	64'-2⅝"	66'-2⅝"	52'-10⅛"	—	—	—	—
		12'	15'-3¼"	13'-0"	18'-5⅝"	20'-5⅝"	3'-1⅜"	25'-0"	35'-5⅛"	37'-5⅛"	20'-7"	35'-2"	49'-4⅝"	51'-4⅝"	35'-1⅜"	45'-9"	64'-5⅛"	66'-5⅛"	53'-2⅝"	—	—	—	—
	12'	9'	10'-9¼"	12'-8"	17'-11⅛"	19'-11⅛"	6'-5⅜"	24'-5"	34'-2⅝"	36'-2⅝"	24'-3⅝"	35'-4"	49'-7⅜"	51'-7⅜"	39'-0⅝"	46'-3"	64'-8⅝"	66'-8⅝"	53'-3⅛"	—	—	—	—
		10'	12'-3¼"	13'-0"	18'-2⅝"	20'-2⅝"	5'-2⅜"	24'-10"	34'-7⅛"	36'-7⅛"	24'-2⅝"	35'-10"	50'-1⅜"	52'-1⅜"	39'-10"	46'-9"	65'-2⅛"	67'-2⅛"	53'-8⅝"	—	—	—	—
		11'	13'-3¼"	13'-4"	18'-6"	20'-6"	4'-6⅜"	25'-4"	35'-0⅛"	37'-0⅛"	23'-11⅝"	36'-4"	50'-5⅜"	52'-5⅜"	40'-6"	47'-3"	65'-8⅛"	67'-8⅛"	54'-2⅝"	—	—	—	—
		12'	15'-3¼"	14'-0"	19'-3⅝"	21'-3⅝"	4'-6⅜"	27'-0"	38'-2⅝"	40'-2⅝"	22'-11"	40'-0"	56'-6⅝"	58'-6⅝"	41'-3⅝"	53'-0"	74'-11⅝"	76'-11⅝"	59'-8⅛"	—	—	—	—

Note:- This drawing to be used in conjunction with Standard Wing Drawings for 45° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X452-1 or W-X452-2	W-X453-1 or W-X453-2	W-X454-1 or W-X454-2.

Note:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

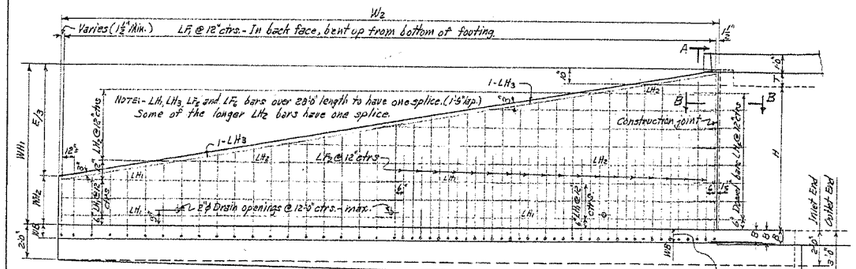
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER H = 2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'

STANDARD DRAWING No. W-X45

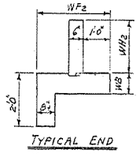
Designed by:- W.C.H. 5-16-63 — Checked by:- — Checked by:- —
Drawn by:- W.C.H. 6-15-64 — Checked by:- J.E.M. 6-23-64 — Checked by:- —
Quantities by:- — Checked by:- —

Reshot 3-8-93 352

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			199	
JOB No.					

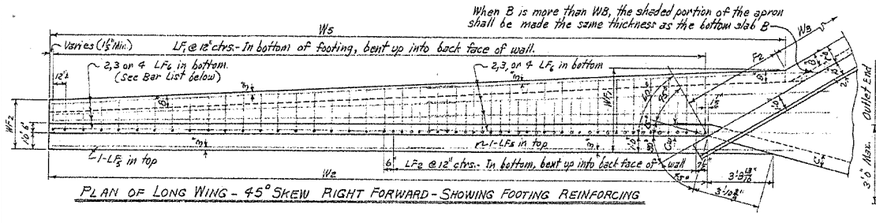


REAR ELEVATION OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING

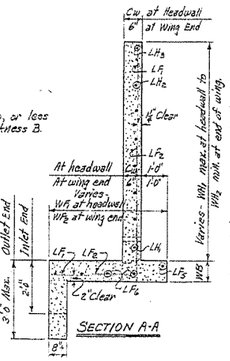


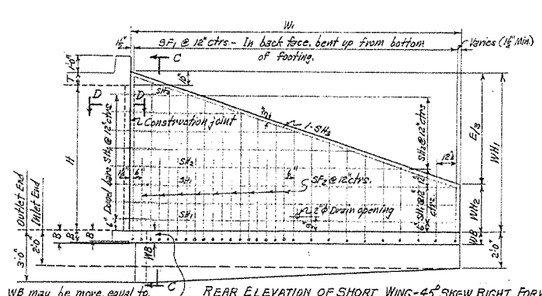
TYPICAL END VIEW OF WING

WB may be more, equal to, or less than the bottom slab thickness B.



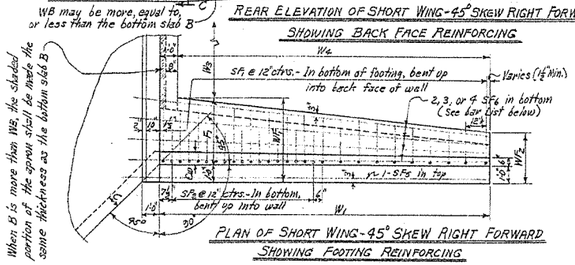
PLAN OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



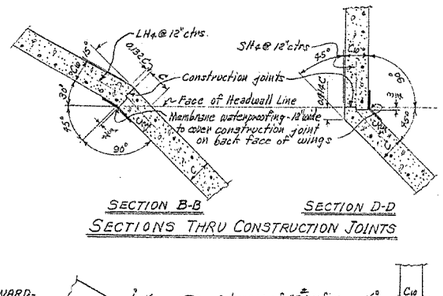


WB may be more, equal to, or less than the bottom slab B

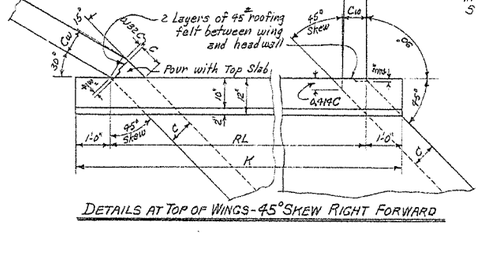
REAR ELEVATION OF SHORT WING - 45° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



PLAN OF SHORT WING - 45° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING

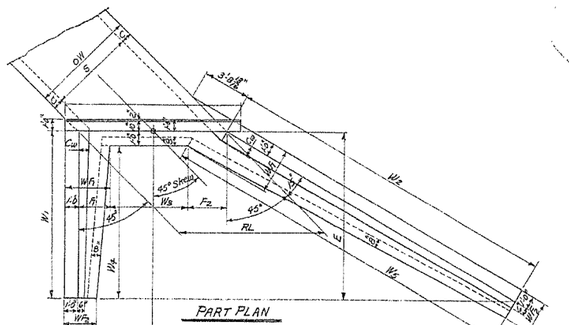


SECTIONS THRU CONSTRUCTION JOINTS

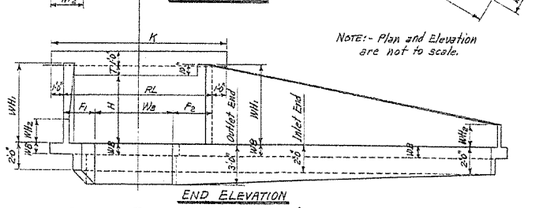


DETAILS AT TOP OF WINGS - 45° SKEW RIGHT FORWARD

NOTE:- Payment for the membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



NOTE:- Plan and Elevation are not to scale.



END ELEVATION

SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

Details of Culvert with 45° Skew Left Forward is reversed, see Drawing No. W-X45.

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEAD & END	WINGWALL HEIGHTS: FT. HEADWALL	WINGWALL HEIGHTS: AT END OF WING	WIDTHS OF WING FOOTINGS: AT HEADWALL	WIDTHS OF WING FOOTINGS: AT END OF WING	FOOTING DIMENSION PARALLEL WITH HEADWALL: SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL: LONG WING	PERPENDICULAR DIST. FROM HEAD TO END OF WING	LENGTHS OF WINGWALLS: SHORT WING	LENGTHS OF WINGWALLS: LONG WING	INSIDE FOOTING DIMENSION: SHORT WING	INSIDE FOOTING DIMENSION: LONG WING	* QUANTITY PER WING, CLASS S CONCRETE, INLET END: SHORT WING	INLET END: LONG WING	OUTLET END: SHORT WING	OUTLET END: LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-4"	0'-11⅝"	6'-6"	6'-6"	13'-0"	5'-6"	13'-3⅝"	0.783	1.572	0.829	1.791
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-7⅛"	8'-6"	9'-6"	17'-0"	7'-6"	17'-10⅜"	1.120	2.369	1.229	2.590
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	2'-0"	2'-3½"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5½"	1.547	3.295	1.700	3.577
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-4"	2'-11⅝"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0⅝"	2.088	4.367	2.241	4.705
		7"	5'-10"	1'-5"	3'-4"	2'-4½"	2'-4"	2'-11⅝"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0⅝"	2.166	4.551	2.325	4.889
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.894	6.055	3.078	6.460
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.952	6.180	3.135	6.575
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	3.009	6.305	3.192	6.700
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-7½"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.794	7.930	4.003	8.385
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-7½"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.800	8.093	4.078	8.598
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-6"	5'-1½"	18'-6"	18'-6"	37'-0"	17'-6"	41'-4½"	9.855	10.186	5.088	10.651

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W5.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	⊕ REINFORCING STEEL - WINGS	CLASS S CONCRETE - 4 WINGS: HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS: SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	192	6.15	7.50	8.86	10.22	11.58
	3'	6"	7"	214	8.44	9.79	11.14	12.50	13.86
	4'	6"	7"	328	11.13	12.98	13.99	15.20	16.56
	5'	6"	7"	468	14.25	15.60	16.96	18.32	19.68
	6'	7"	8"	763	19.23	20.62	22.02	23.41	24.81
5'	3'	6"	7"	214	8.74	10.38	12.03	13.67	15.32
	4'	6"	7"	328	11.93	13.07	14.72	16.37	18.02
	5'	6"	7"	468	14.55	16.19	17.84	19.49	21.13
	6'	7"	8"	763	19.53	21.21	22.90	24.59	26.28
	7'	7½"	8½"	1975	26.99	26.69	28.91	30.14	31.86
6'	3'	6"	7"	214	9.03	10.93	12.91	14.86	16.79
	4'	6"	7"	328	11.75	13.69	15.60	17.54	19.48
	5'	6"	7"	468	14.85	16.80	18.72	20.68	22.60
	6'	7"	8"	763	19.93	21.82	23.70	25.58	27.74
	7'	7½"	8½"	1475	25.28	27.30	29.31	31.33	33.35
	8'	8"	9"	1872	31.70	33.74	35.75	37.79	39.81
7'	4'	6"	7"	328	12.06	14.31	16.56	18.81	21.02
	5'	6"	7"	463	15.15	17.93	19.65	21.93	24.13
	6'	7"	8"	763	20.14	22.94	25.49	26.99	28.25
	7'	7½"	8½"	1475	25.59	27.91	30.21	32.53	34.83
	8'	8"	9"	1872	32.02	34.36	36.66	38.99	41.31
8'	4'	6"	7"	328	12.35	14.95	17.49	20.08	22.57
	5'	7"	7"	463	16.05	18.47	21.29	23.86	26.37
	6'	7"	8"	763	21.95	23.07	25.66	28.26	30.77
	7'	7½"	8½"	1475	25.90	28.54	31.18	33.78	36.32
	8'	8"	9"	1872	32.33	34.97	37.56	40.21	42.80
9'	5'	7"	7"	463	16.37	19.32	22.18	25.02	27.91
	6'	7½"	8"	763	21.16	24.15	27.02	29.89	32.81
	7'	7½"	8½"	1475	26.21	29.18	32.06	34.96	37.86
	8'	8"	9"	1872	32.63	35.61	38.61	41.37	44.29
10'	5'	7"	7"	463	16.69	19.96	23.14	26.27	29.47
	6'	7½"	8"	763	21.98	25.27	27.99	31.13	34.34
	7'	7½"	8½"	1475	26.53	29.82	33.06	36.19	39.42
	8'	8"	9"	1872	32.95	36.25	39.46	42.62	45.86
11'	6'	8"	8"	763	22.18	25.85	29.35	32.84	———
	7'	8"	8½"	1475	29.39	30.99	34.51	38.01	———
	8'	8"	9"	1872	33.26	36.91	40.43	43.93	———
12'	6'	8"	8"	763	22.50	26.51	30.33	34.19	———
	7'	8"	8½"	1475	27.46	31.66	35.69	39.56	———
	8'	8"	9"	1872	33.58	37.58	41.41	45.27	———

⊕ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:-
This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.:-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X453-1

TYPICAL WING DETAILS

NOTE:-
For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X45.
For values of RL, H and W5 for each box, see above Std. also.

MEMBRANE:- A membrane waterproofing 18" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric, shall be applied to the back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE SHORT AND ONE LONG WING — 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar for each two bars of each length. SIZE	SPACING	NO. REQD	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.
H	SHORT OR LONG									
2'	Short	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"
	Long	#3	12"	14	1'-5"	5'-11"	0'-8"	1'-0"	0'-10"	3'-10"
3'	Short	#3	12"	9	2'-1"	5'-3"	0'-10"	1'-6"	1'-0"	4'-0"
	Long	#3	12"	18	1'-11"	5'-3"	0'-9"	1'-5"	1'-2"	4'-0"
4'	Short	#3	12"	11	2'-6"	6'-7"	0'-11"	1'-8"	1'-0"	5'-0"
	Long	#3	12"	22	2'-4"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"
5'	Short	#3	12"	13	2'-11"	7'-11"	1'-0"	2'-0"	2'-0"	6'-0"
	Long	#3	12"	26	2'-9"	7'-10"	1'-0"	1'-11"	1'-10"	6'-0"
6'	Short	#4	12"	15	3'-6"	9'-6"	1'-2"	2'-4"	2'-0"	7'-0"
	Long	#4	12"	30	3'-4"	9'-3"	1'-2"	2'-3"	2'-3"	7'-0"
7'	Short	#4	12"	17	3'-11"	10'-10"	1'-3"	2'-10"	2'-9"	8'-0"
	Long	#4	12"	34	3'-9"	10'-8"	1'-3"	2'-8"	2'-7"	8'-0"
8'	Short	#4	12"	19	4'-6"	12'-5"	1'-5"	3'-6"	3'-2"	9'-0"
	Long	#4	12"	38	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-0"

CLEAR HEIGHT	WING LOCATION	SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Rft. with F bars. SIZE	SPACING	NO. REQD	LENGTH	X	Y
H	SHORT OR LONG						
2'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
3'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
4'	Short	—	—	—	—	—	—
	Long	—	—	—	—	—	—
5'	Short	#3	12"	3	3'-6"	1'-1"	2'-6"
	Long	#3	12"	6	3'-6"	1'-1"	2'-6"
6'	Short	#3	12"	3	4'-6"	1'-4"	3'-3"
	Long	#3	12"	6	4'-6"	1'-4"	3'-3"
7'	Short	#4	12"	4	5'-6"	1'-7"	4'-0"
	Long	#4	12"	8	5'-6"	1'-7"	4'-0"
8'	Short	#4	12"	4	6'-6"	1'-10"	4'-9"
	Long	#4	12"	8	6'-6"	1'-10"	4'-9"

CLEAR HEIGHT	WING LOCATION	SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO. REQD	LENGTH	SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQD	LENGTH
H	SHORT OR LONG						
2'	Short	#3	1	8'-0"	#3	2	8'-0"
	Long	#3	1	12'-6"	#3	2	12'-6"
3'	Short	#3	1	10'-6"	#3	2	10'-0"
	Long	#3	1	15'-6"	#3	2	15'-0"
4'	Short	#3	1	12'-6"	#3	2	12'-0"
	Long	#3	1	20'-6"	#3	2	20'-0"
5'	Short	#3	1	14'-6"	#3	3	13'-0"
	Long	#3	2	15'-8"	#3	3	15'-2"
6'	Short	#3	1	16'-6"	#3	3	15'-0"
	Long	#3	2	17'-8"	#3	3	17'-0"
7'	Short	#4	1	18'-6"	#4	4	18'-0"
	Long	#4	2	19'-8"	#4	4	19'-0"
8'	Short	#4	1	20'-6"	#4	4	20'-0"
	Long	#4	2	21'-8"	#4	4	20'-0"

CLEAR HEIGHT	WING LOCATION	SH1 & LH1 Horizontal in back face of wing. SIZE	SPACING	NO. REQD	LENGTH	SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. X SIZE	SPACING	NO. REQD	LENGTHS VARY MAX.	LENGTHS VARY MIN.
H	SHORT OR LONG									
2'	Short	#3	12"	1	6'-3"	#3	12"	1	—	3'-3"
	Long	#3	12"	1	12'-1"	#3	12"	1	—	6'-1"
3'	Short	#3	12"	1	8'-3"	#3	12"	2	6'-9"	3'-9"
	Long	#3	12"	1	16'-8"	#3	12"	2	12'-6"	6'-6"
4'	Short	#3	12"	1	10'-3"	#3	12"	3	9'-3"	3'-3"
	Long	#3	12"	1	20'-8"	#3	12"	3	18'-6"	6'-6"
5'	Short	#3	12"	2	12'-3"	#3	12"	3	11'-0"	3'-3"
	Long	#3	12"	2	24'-8"	#3	12"	3	18'-6"	6'-6"
6'	Short	#3	12"	2	14'-3"	#3	12"	4	12'-3"	3'-3"
	Long	#3	12"	2	28'-8"	#3	12"	4	24'-6"	6'-6"
7'	Short	#4	12"	2	16'-3"	#4	12"	5	15'-3"	3'-9"
	Long	#4	12"	2	32'-8"	#4	12"	5	30'-6"	6'-6"
8'	Short	#4	12"	2	18'-3"	#4	12"	5	15'-9"	3'-9"
	Long	#4	12"	2	36'-8"	#4	12"	5	30'-6"	6'-6"

CLEAR HEIGHT	WING LOCATION	SH3 & LH3 In back face of wing at top - on slope. SIZE	NO. REQD	LENGTH	SH4 & LH4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQD	LENGTH	X
H	SHORT OR LONG								
2'	Short	#3	1	6'-7"	#3	12"	2	2'-8"	1'-9"
	Long	#3	1	12'-11"	#3	12"	2	"	"
3'	Short	#3	1	8'-18"	#3	12"	3	"	"
	Long	#3	1	16'-11"	#3	12"	3	"	"
4'	Short	#3	1	10'-19"	#3	12"	4	"	"
	Long	#3	1	20'-11"	#3	12"	4	"	"
5'	Short	#3	1	12'-11"	#3	12"	5	"	"
	Long	#3	1	25'-1"	#3	12"	5	"	"
6'	Short	#3	1	15'-0"	#3	12"	6	"	"
	Long	#3	1	29'-2"	#3	12"	6	2'-8"	1'-4"
7'	Short	#4	1	17'-1"	#4	12"	7	3'-6"	1'-9"
	Long	#4	2	33'-6"	#4	12"	7	"	"
8'	Short	#4	1	19'-1"	#4	12"	8	"	"
	Long	#4	2	37'-6"	#4	12"	8	3'-6"	1'-9"

BAR BENDING DIAGRAM



NOTE:- Dimensions are to bar centers.

QUANTITY: REINFORCING STEEL PER WING - LBS. SHORT WING	LONG WING
29.4	46.3
36.8	70.3
55.9	107.9
77.7	153.7
127.6	253.9
246.5	491.1
312.5	623.6

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

* Length without splice. Bars over 28'-0" length may be spliced. (1'-8" lap)

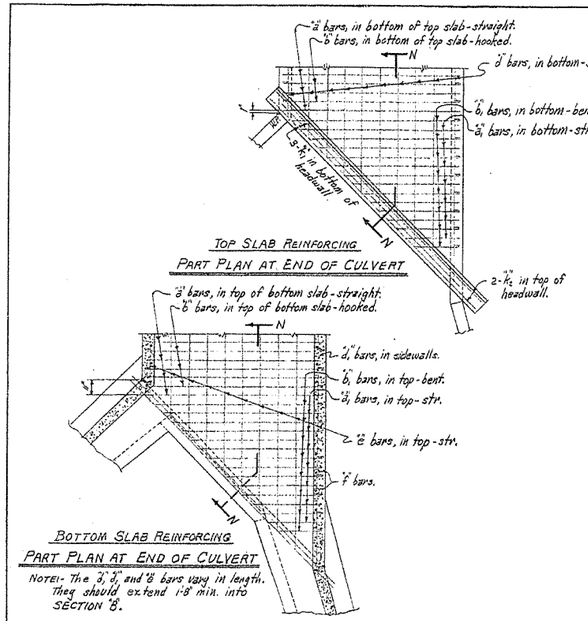
REVISIONS:- Membrane Added. 5-10-66 W.C.H.

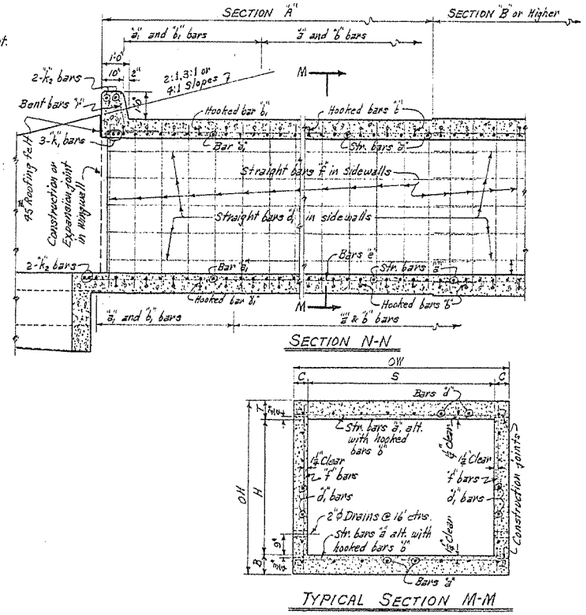
Designed By:- W.C.H. 5-13-63 Checked By:- J.E.M. 7-21-64
Drawn By:- W.C.H. 6-5-64 Checked By:- J.E.M. 7-21-64
Quantities By:- W.C.H. 7-2-64 Checked By:- J.E.M.

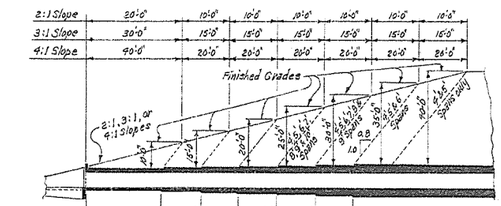
Reshot 3-9-93

356

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			208	
JOB No.					

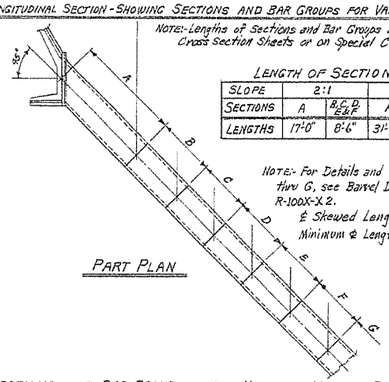






TYPICAL LONGITUDINAL SECTION - SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections and Bar Groups are to be shown on Cross Section Sheets or on Special Culvert Layout Sheet.



LENGTH OF SECTIONS ON 45° SKEW

SLOPE	2:1		3:1		4:1	
SECTIONS	A	B, C, D, E & F	A	B, C, D, E & F	A	B, C, D, E & F
LENGTHS	17'-0"	8'-6"	31'-1½"	15'-6¾"	45'-3"	22'-7½"

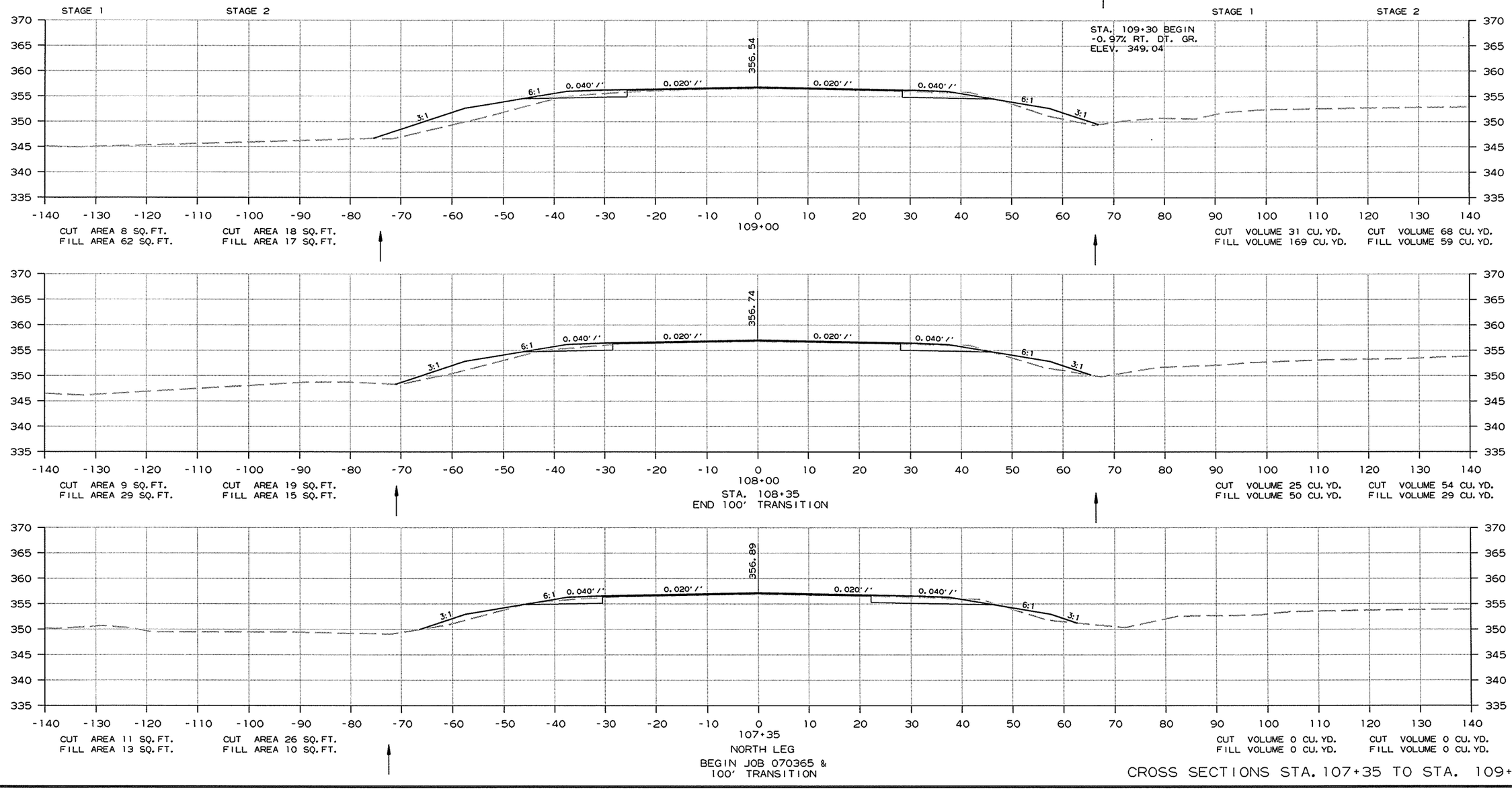
NOTE:- For Details and Bar Lists for SECTIONS B thru G, see Barrel Drawing Nos. R-100X-X1 or R-100X-X2.
℄ Skewed Length of A = 1.41421 x A.
Minimum ℄ Length on Skew = (0.5 OW+1').

BAR LIST FOR SECTION "A" ON 45° SKEW - ONE END ONLY.

| SECTION & BAR GROUP | LENGTH OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE | SPACING | NUMBER REQ'D 2:1 | 3:1 | 4:1 | LENGTH | "a1" bars STRAIGHT In Top and Bottom Slab of Barrel-(two of each Length) SIZE | SPACING | NUMBER REQ'D 2:1 | 3:1 | 4:1 | LENGTH | "b" bars BENT - See Diagrams at Right. In Top and Bottom Slabs of Barrel-Alternate with "a" bars. SIZE | SPACING | NUMBER REQ'D 2:1 | 3:1 | 4:1 | LENGTH | X | "b1" bars In Top and Bottom Slabs of Barrel-one end hooked. (Two of each Length) Alternate with "a1" bars. SIZE | SPACING | NO. REQ'D | LENGTH MAX. | LENGTH MIN. | X MAX. | X MIN. | "j" 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 STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE | SPACING | NO. REQ'D | LENGTH | "f" bars STRAIGHT Verticals in Sidewalls. SIZE | SPACING | NUMBER REQ'D 2:1 | 3:1 | 4:1 | LENGTH | "k1" bars STRAIGHT In Bottom of Headwall. SIZE | NO. REQ'D | LENGTH | "k2" bars STRAIGHT In Top of Headwall and Apron. (2 Each) SIZE | NO. REQ'D | LENGTH |
|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	201	331

(2) CROSS SECTIONS



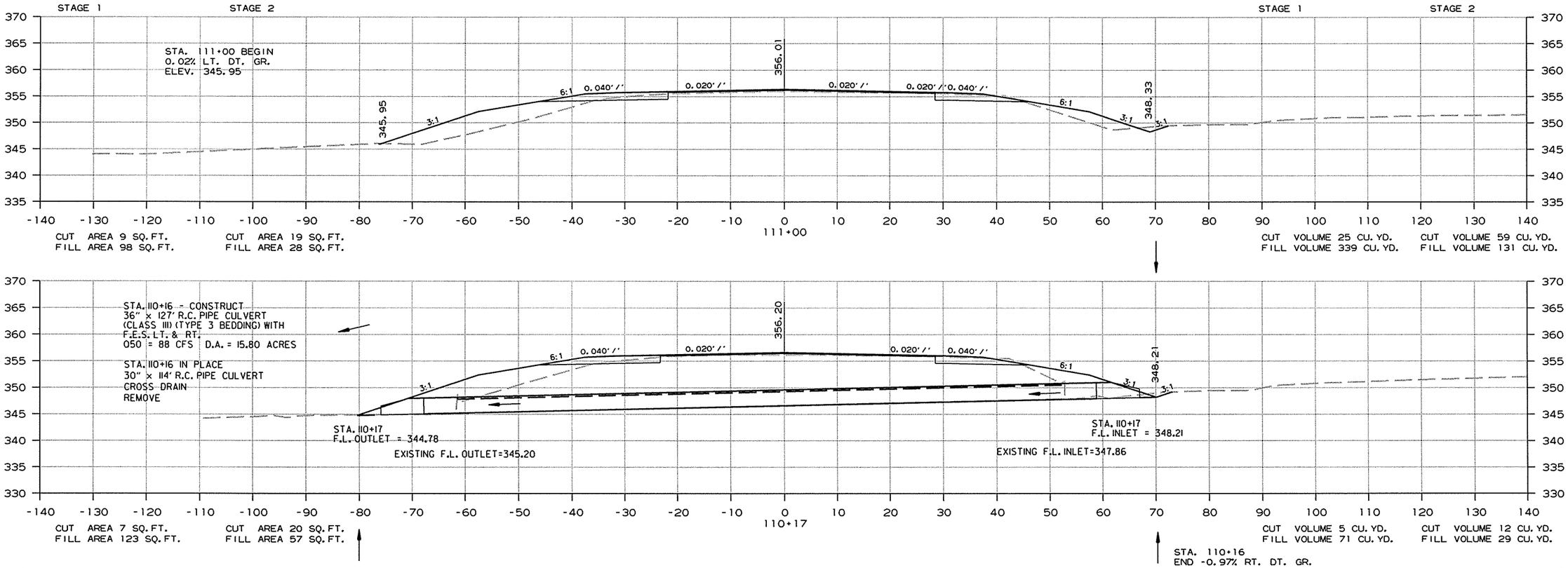
CROSS SECTIONS STA. 107+35 TO STA. 109+00

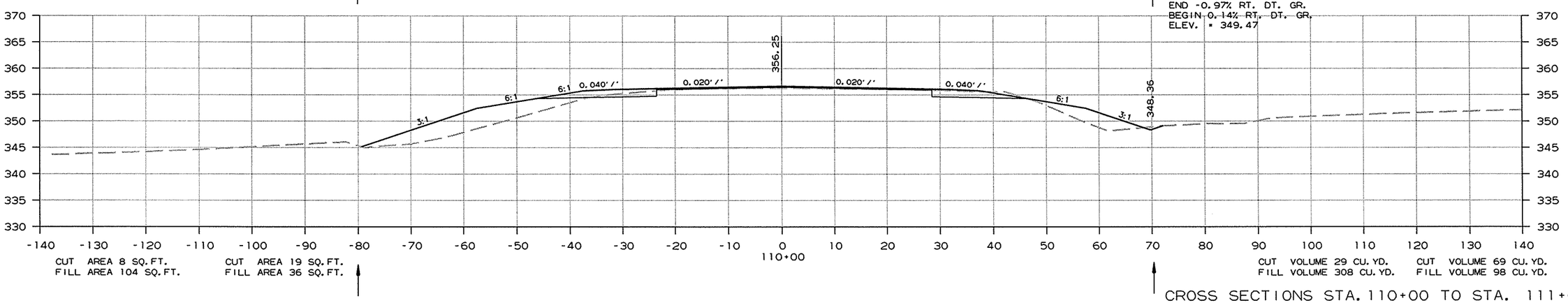
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	202	331

(2) CROSS SECTIONS





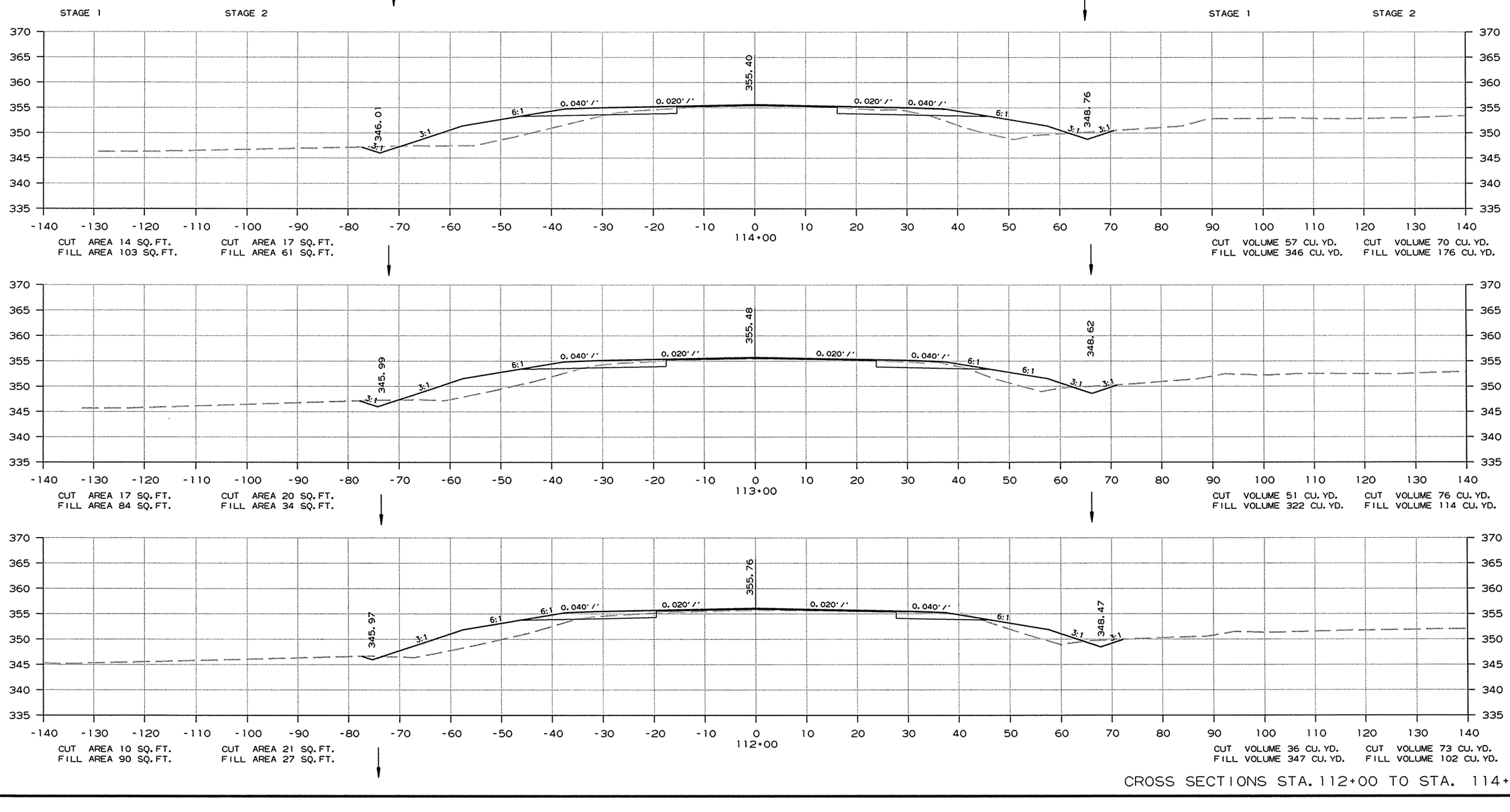
CROSS SECTIONS STA. 110+00 TO STA. 111+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	203	331

(2) CROSS SECTIONS



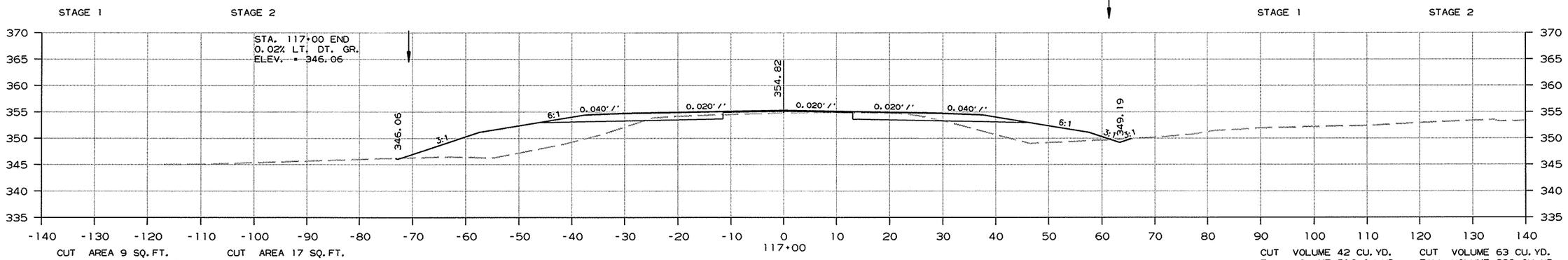
CROSS SECTIONS STA. 112+00 TO STA. 114+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	204	331

(2) CROSS SECTIONS

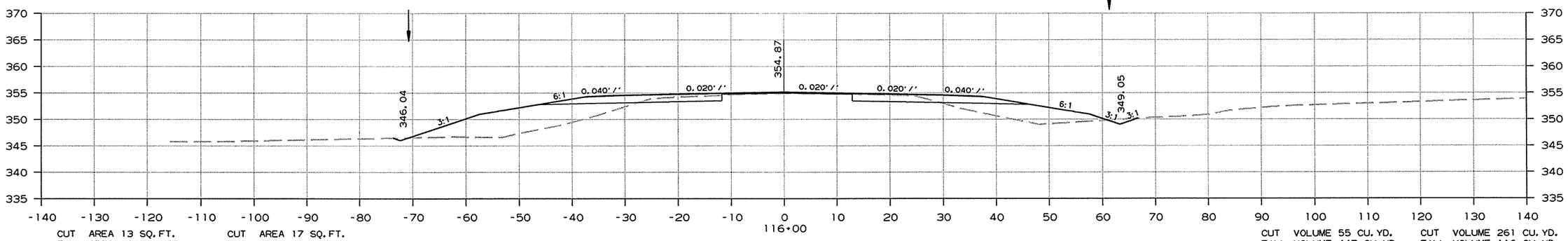


CUT AREA 9 SQ. FT.
FILL AREA 148 SQ. FT.

CUT AREA 17 SQ. FT.
FILL AREA 66 SQ. FT.

CUT VOLUME 42 CU. YD.
FILL VOLUME 516 CU. YD.

CUT VOLUME 63 CU. YD.
FILL VOLUME 238 CU. YD.

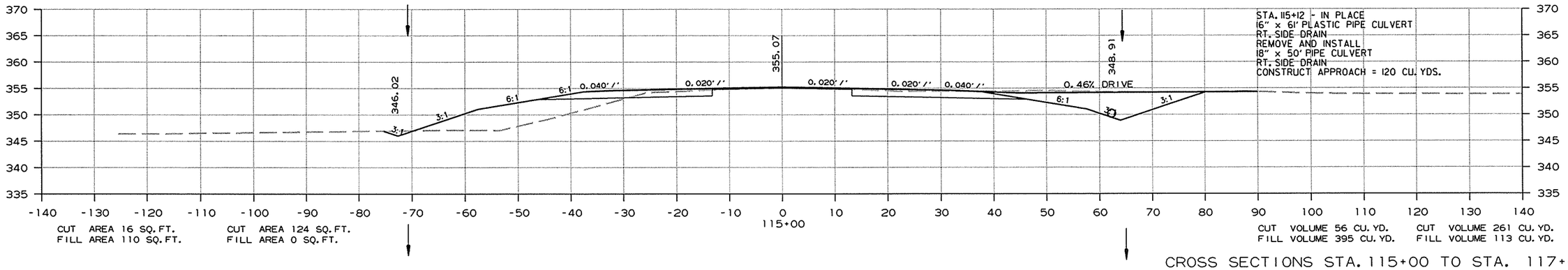


CUT AREA 13 SQ. FT.
FILL AREA 131 SQ. FT.

CUT AREA 17 SQ. FT.
FILL AREA 62 SQ. FT.

CUT VOLUME 55 CU. YD.
FILL VOLUME 447 CU. YD.

CUT VOLUME 261 CU. YD.
FILL VOLUME 116 CU. YD.



STA. 115+12 - IN PLACE
16" x 61' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.

CUT AREA 16 SQ. FT.
FILL AREA 110 SQ. FT.

CUT AREA 124 SQ. FT.
FILL AREA 0 SQ. FT.

CUT VOLUME 56 CU. YD.
FILL VOLUME 395 CU. YD.

CUT VOLUME 261 CU. YD.
FILL VOLUME 113 CU. YD.

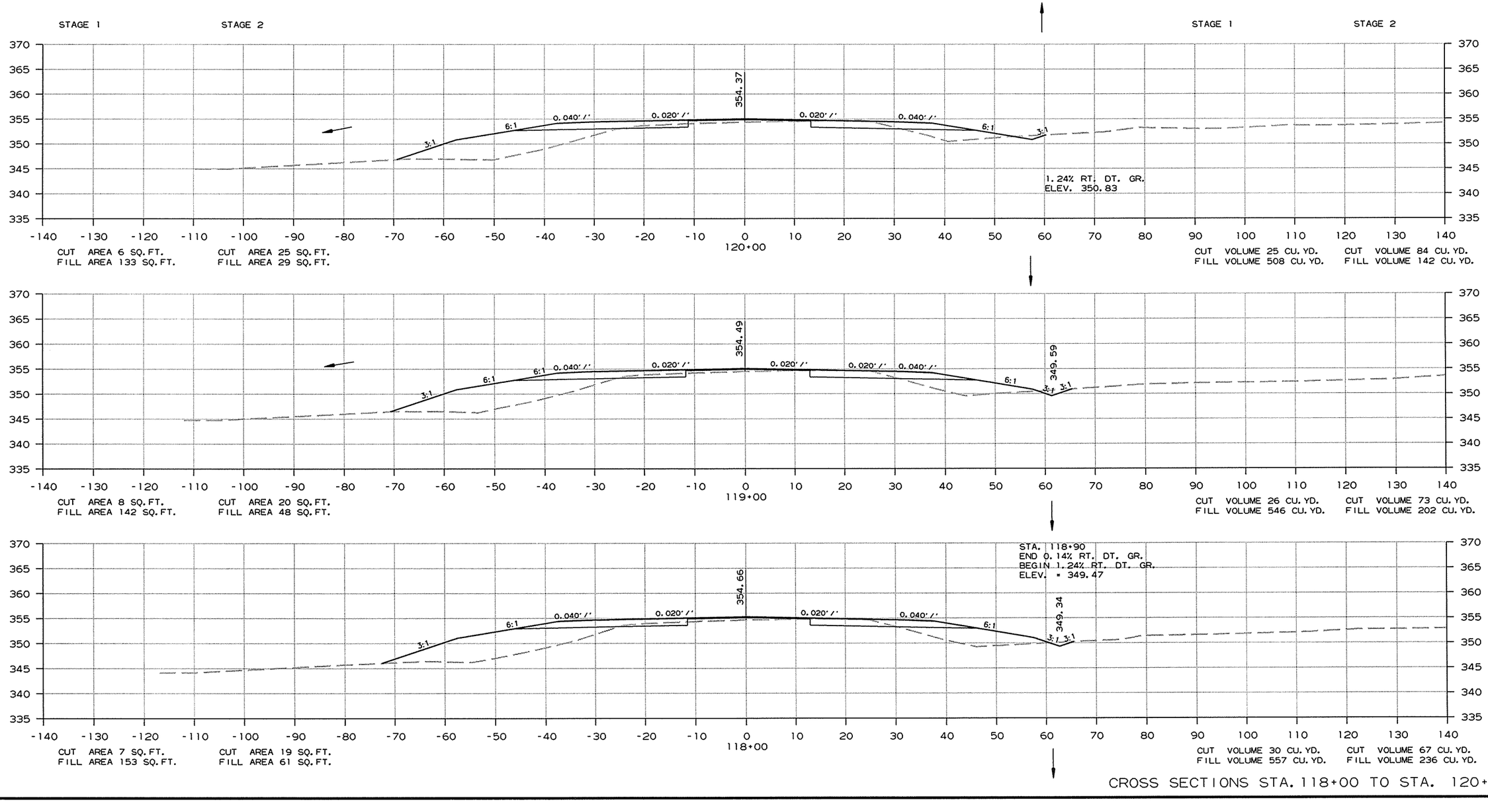
CROSS SECTIONS STA. 115+00 TO STA. 117+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	205	331

(2) CROSS SECTIONS



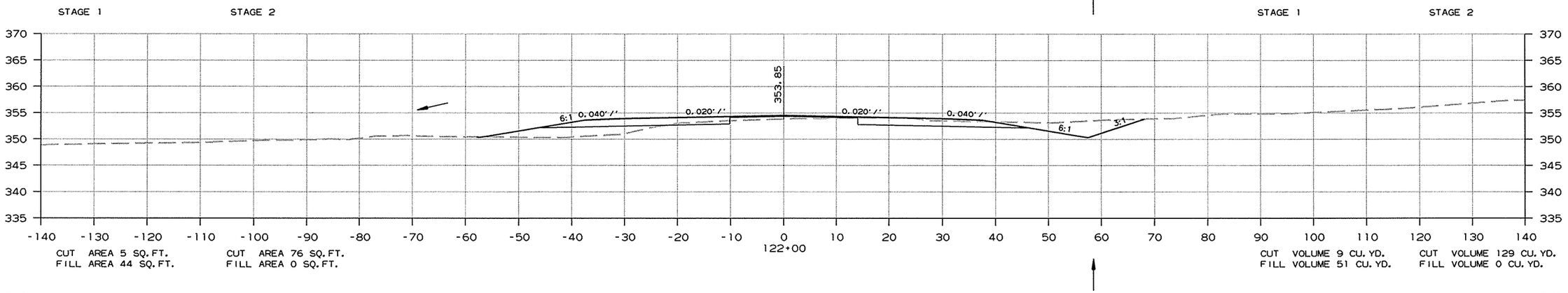
CROSS SECTIONS STA. 118+00 TO STA. 120+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	206	331

(2) CROSS SECTIONS

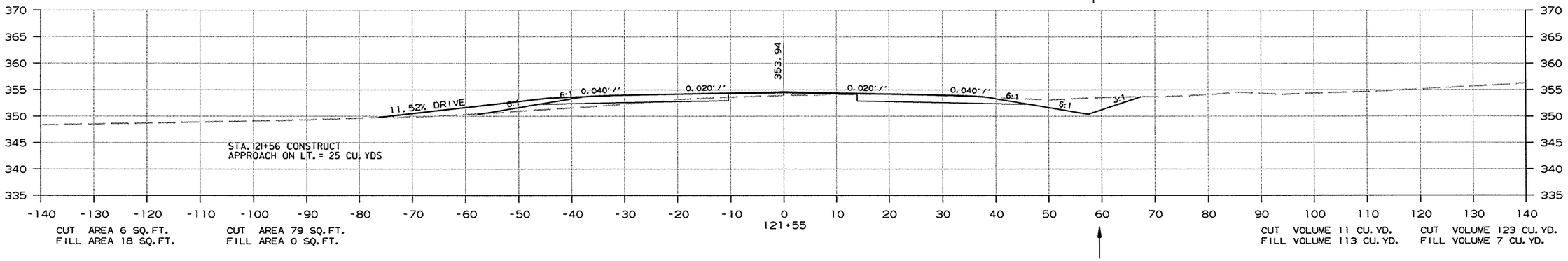


CUT AREA 5 SQ.FT.
FILL AREA 44 SQ.FT.

CUT AREA 76 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 9 CU.YD.
FILL VOLUME 51 CU.YD.

CUT VOLUME 129 CU.YD.
FILL VOLUME 0 CU.YD.

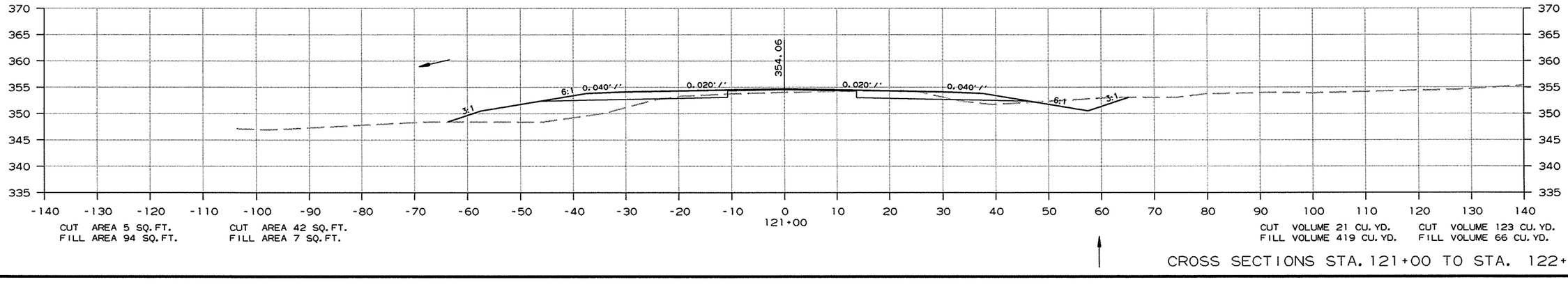


CUT AREA 6 SQ.FT.
FILL AREA 18 SQ.FT.

CUT AREA 79 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 11 CU.YD.
FILL VOLUME 113 CU.YD.

CUT VOLUME 123 CU.YD.
FILL VOLUME 7 CU.YD.



CUT AREA 5 SQ.FT.
FILL AREA 94 SQ.FT.

CUT AREA 42 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 21 CU.YD.
FILL VOLUME 419 CU.YD.

CUT VOLUME 123 CU.YD.
FILL VOLUME 66 CU.YD.

CROSS SECTIONS STA. 121+00 TO STA. 122+00

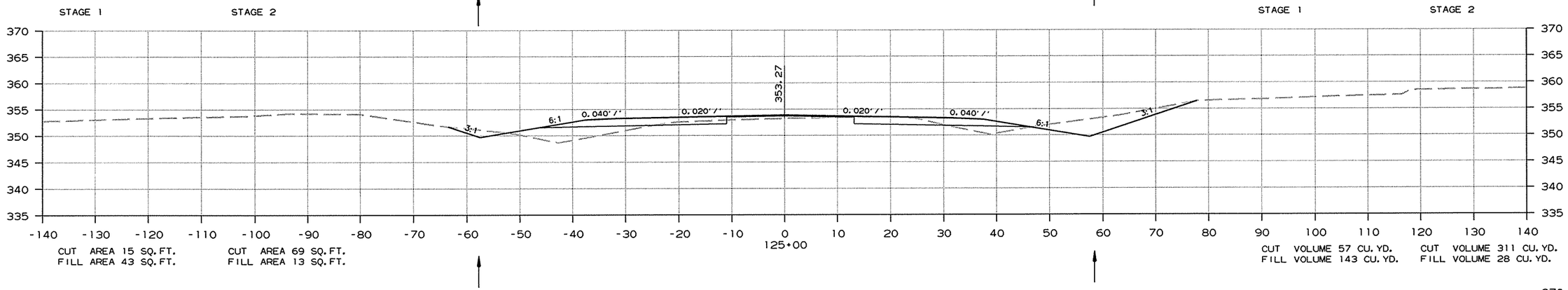
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	207	331

(2) CROSS SECTIONS

STA. 125+20 END
BEGIN -2.63% LT. DT. GR.
ELEV. = 349.67

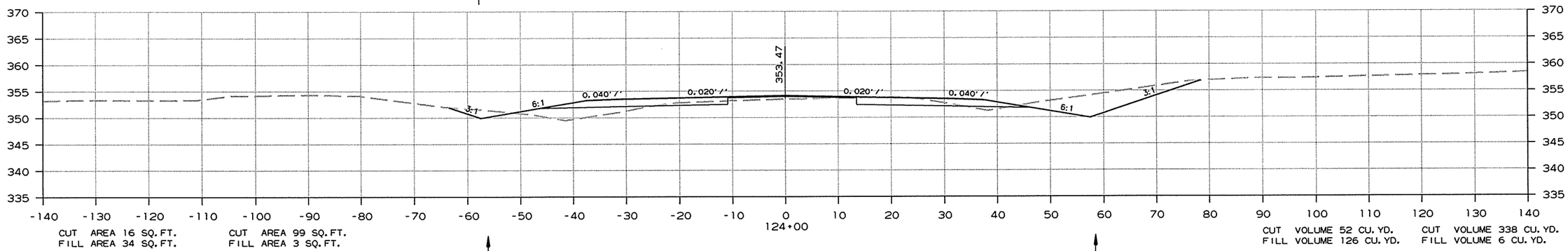


CUT AREA 15 SQ.FT.
FILL AREA 43 SQ.FT.

CUT AREA 69 SQ.FT.
FILL AREA 13 SQ.FT.

CUT VOLUME 57 CU.YD.
FILL VOLUME 143 CU.YD.

CUT VOLUME 311 CU.YD.
FILL VOLUME 28 CU.YD.

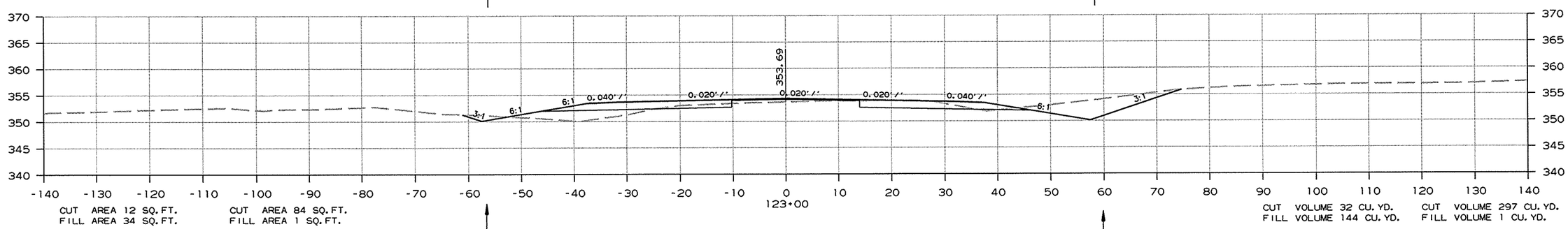


CUT AREA 16 SQ.FT.
FILL AREA 34 SQ.FT.

CUT AREA 99 SQ.FT.
FILL AREA 3 SQ.FT.

CUT VOLUME 52 CU.YD.
FILL VOLUME 126 CU.YD.

CUT VOLUME 338 CU.YD.
FILL VOLUME 6 CU.YD.



CUT AREA 12 SQ.FT.
FILL AREA 34 SQ.FT.

CUT AREA 84 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 32 CU.YD.
FILL VOLUME 144 CU.YD.

CUT VOLUME 297 CU.YD.
FILL VOLUME 1 CU.YD.

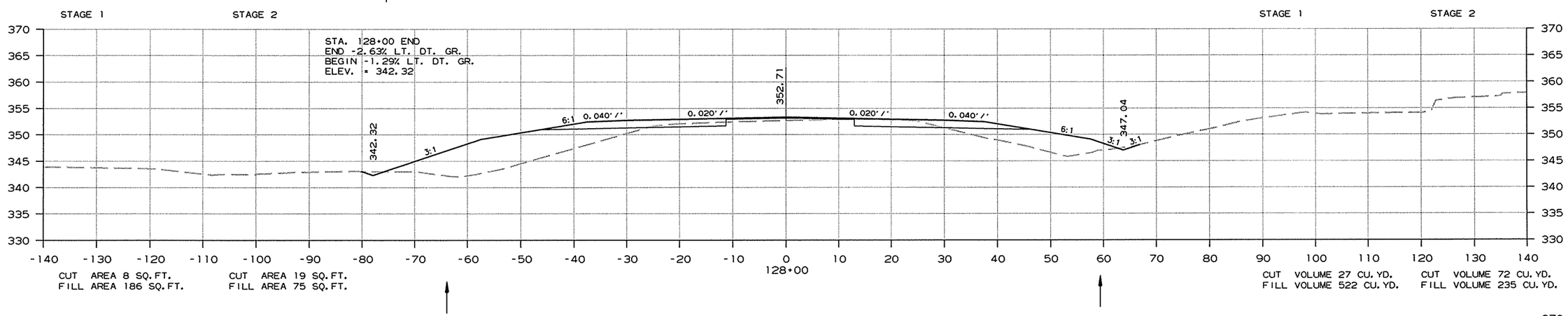
CROSS SECTIONS STA. 123+00 TO STA. 125+00

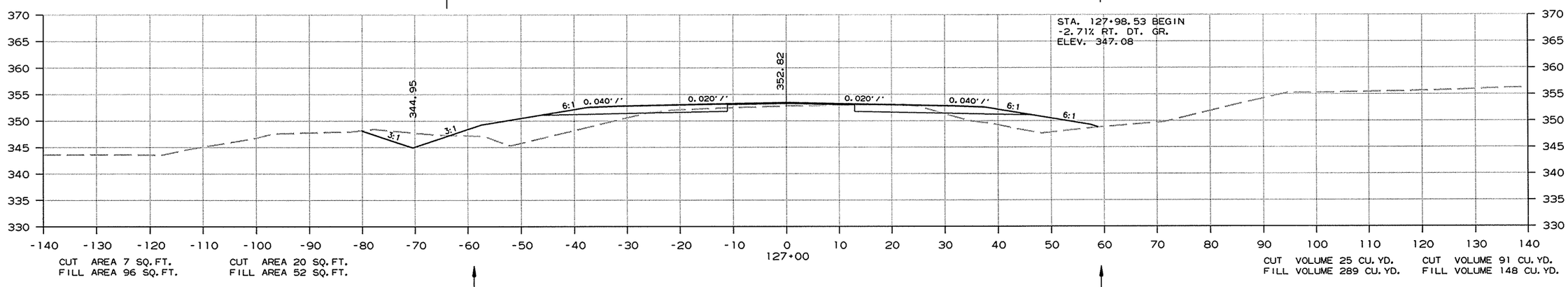
10/29/2015

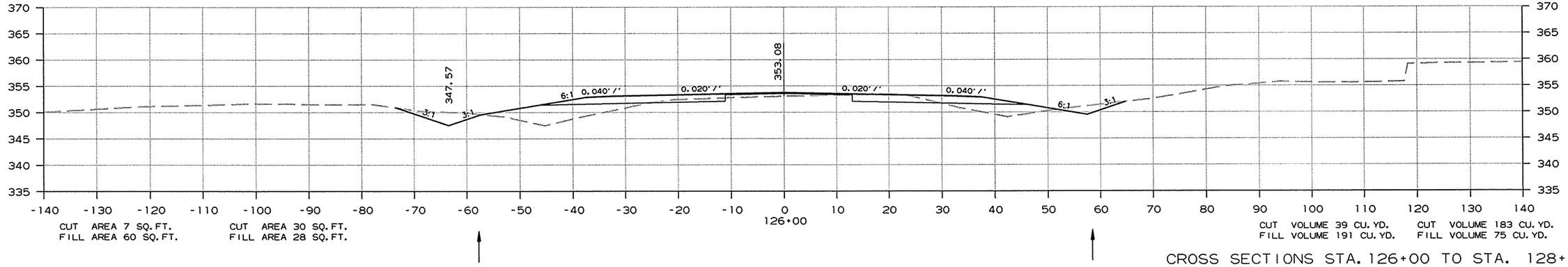
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	208	331

(2) CROSS SECTIONS







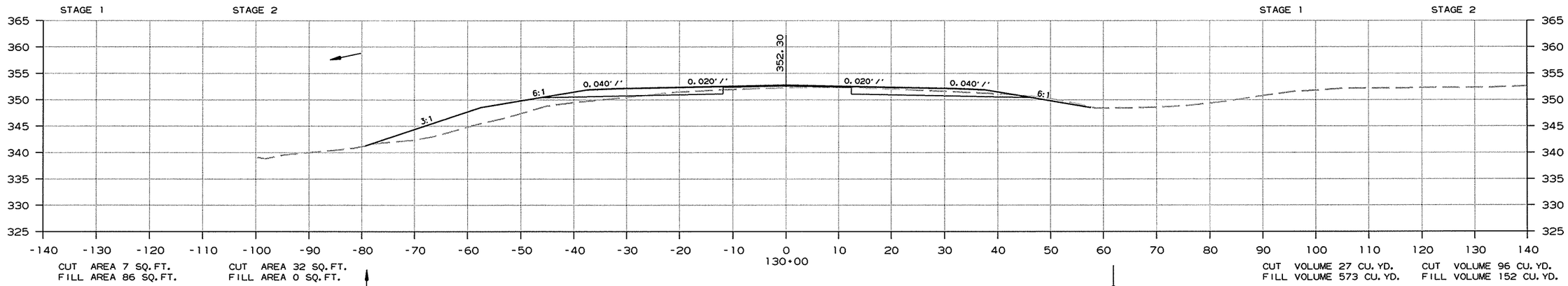
CROSS SECTIONS STA. 126+00 TO STA. 128+00

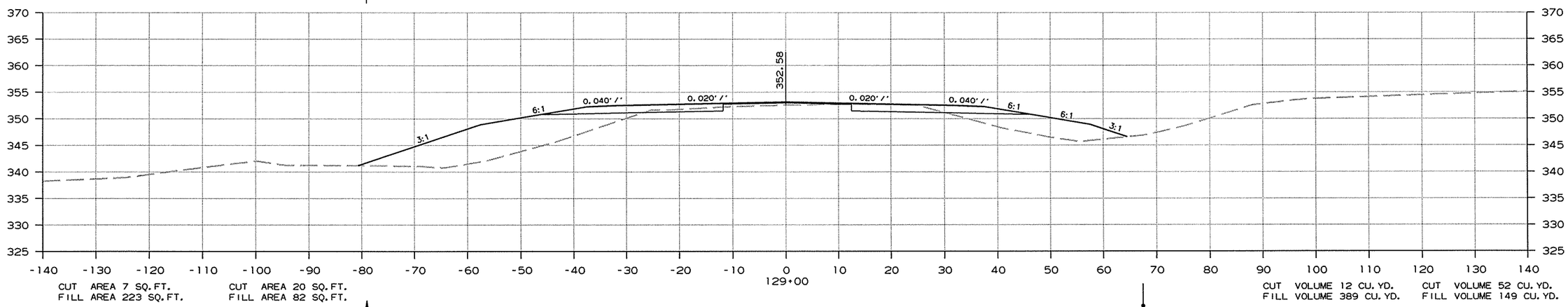
10/29/2015

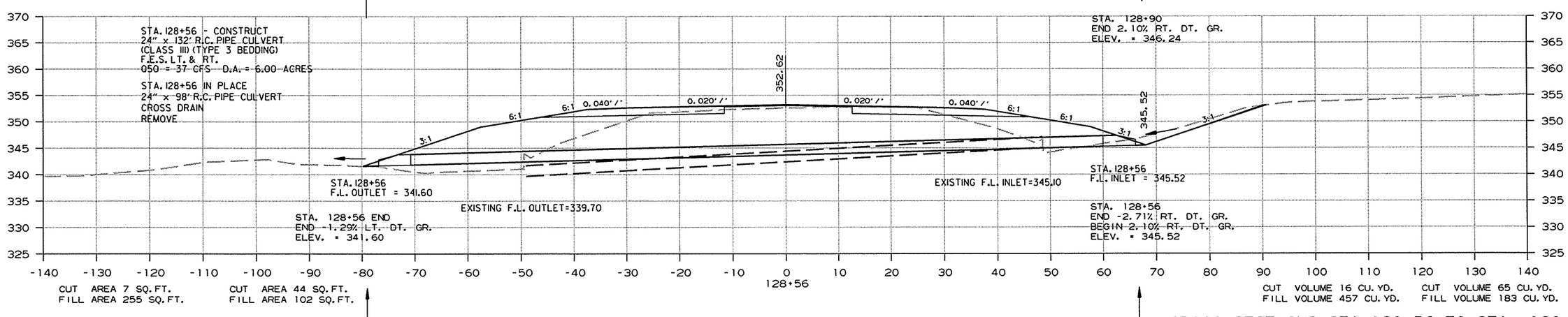
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	209	331

(2) CROSS SECTIONS







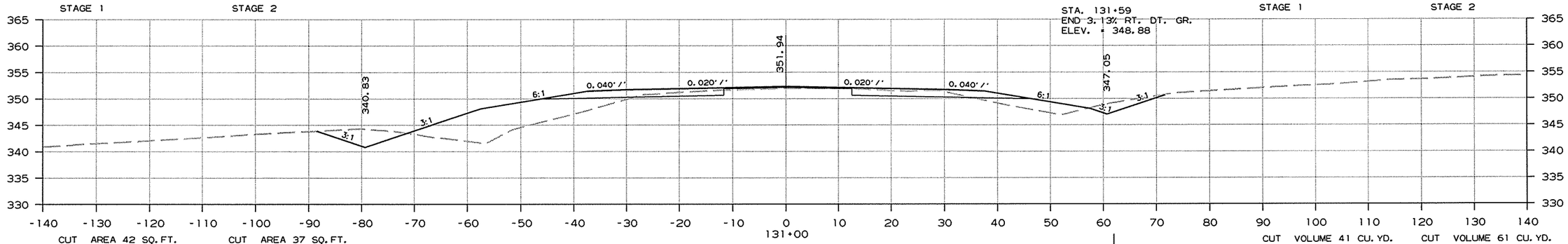
CROSS SECTIONS STA. 128+56 TO STA. 130+00

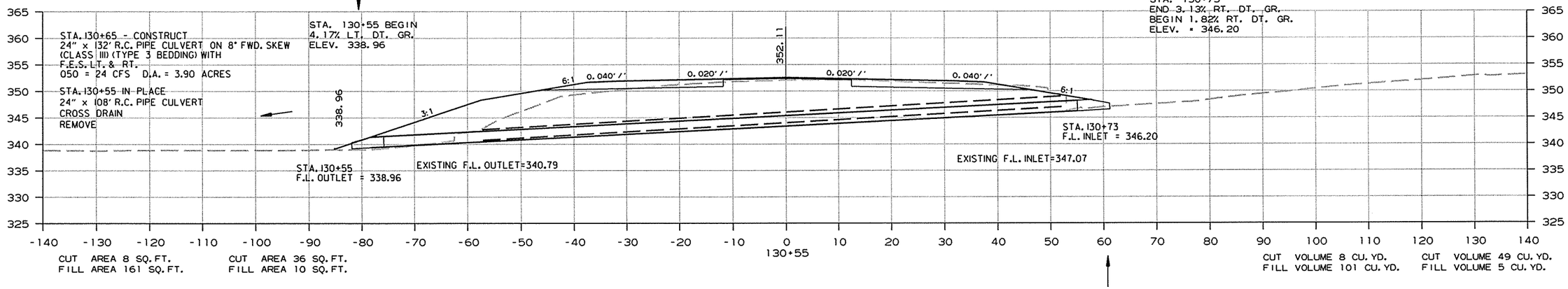
10/29/2015

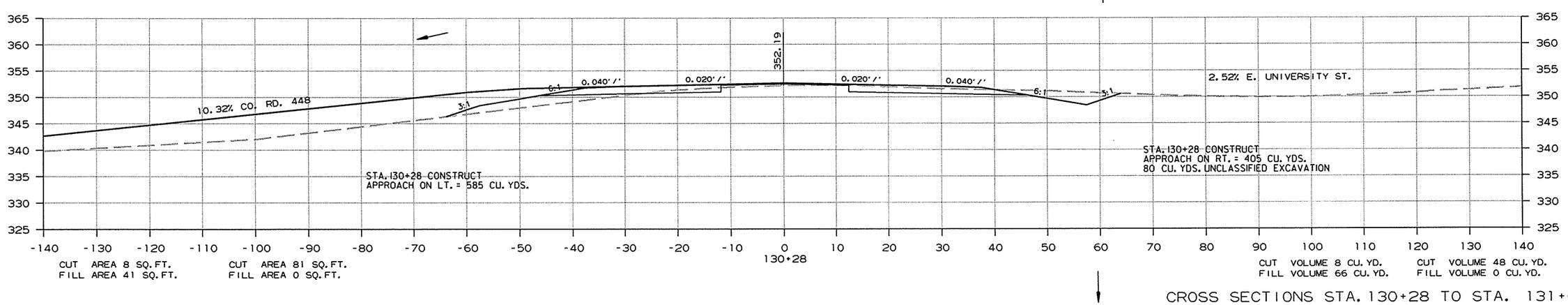
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	210	331

(2) CROSS SECTIONS







CROSS SECTIONS STA. 130+28 TO STA. 131+00

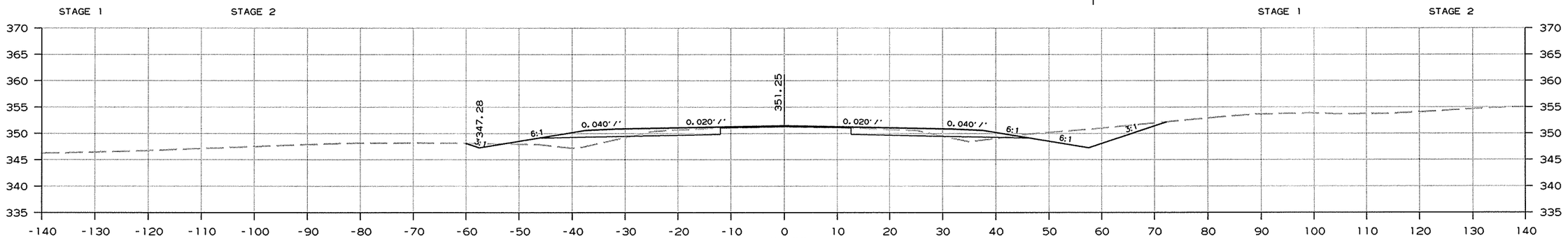
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	211	331

(2) CROSS SECTIONS

STA. 134+00 END
1.14% LT. DT. GR.
ELEV. = 347.28

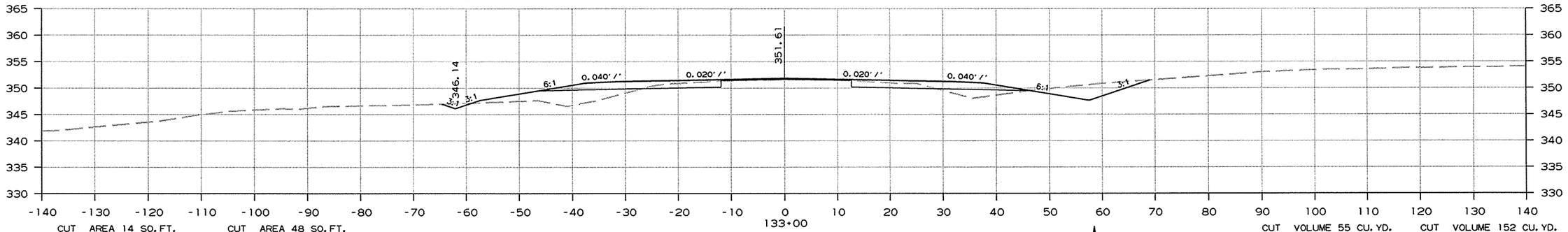


CUT AREA 18 SQ.FT.
FILL AREA 27 SQ.FT.

CUT AREA 68 SQ.FT.
FILL AREA 5 SQ.FT.

CUT VOLUME 59 CU.YD.
FILL VOLUME 143 CU.YD.

CUT VOLUME 216 CU.YD.
FILL VOLUME 37 CU.YD.



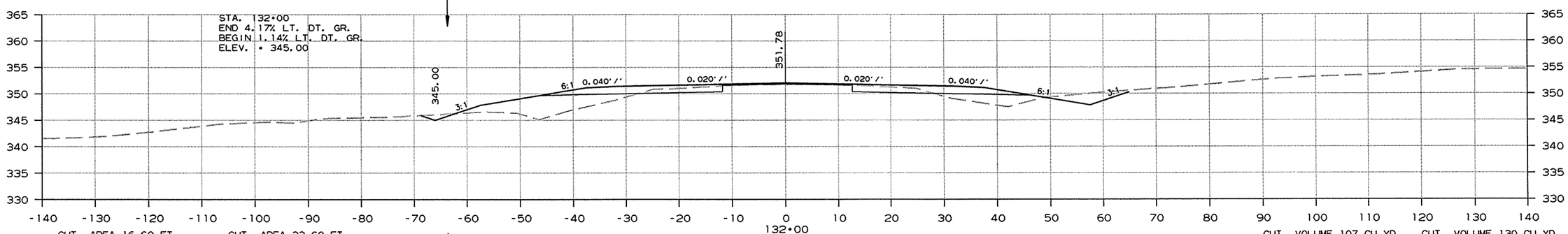
CUT AREA 14 SQ.FT.
FILL AREA 50 SQ.FT.

CUT AREA 48 SQ.FT.
FILL AREA 15 SQ.FT.

CUT VOLUME 55 CU.YD.
FILL VOLUME 229 CU.YD.

CUT VOLUME 152 CU.YD.
FILL VOLUME 76 CU.YD.

STA. 132+00
END 4.17% LT. DT. GR.
BEGIN 1.14% LT. DT. GR.
ELEV. = 345.00



CUT AREA 16 SQ.FT.
FILL AREA 74 SQ.FT.

CUT AREA 33 SQ.FT.
FILL AREA 27 SQ.FT.

CUT VOLUME 107 CU.YD.
FILL VOLUME 407 CU.YD.

CUT VOLUME 130 CU.YD.
FILL VOLUME 103 CU.YD.

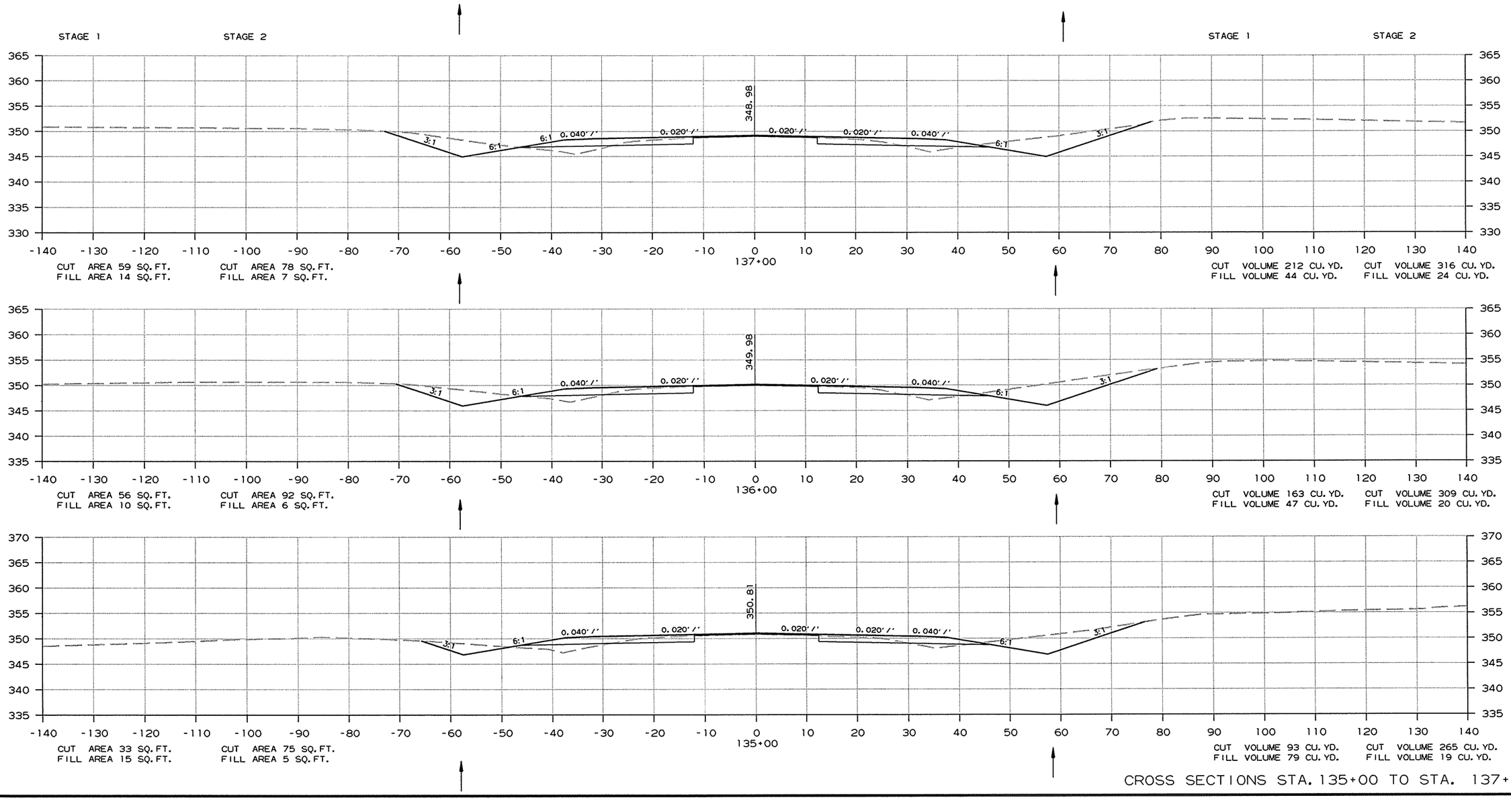
CROSS SECTIONS STA. 132+00 TO STA. 134+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	212	331

(2) CROSS SECTIONS



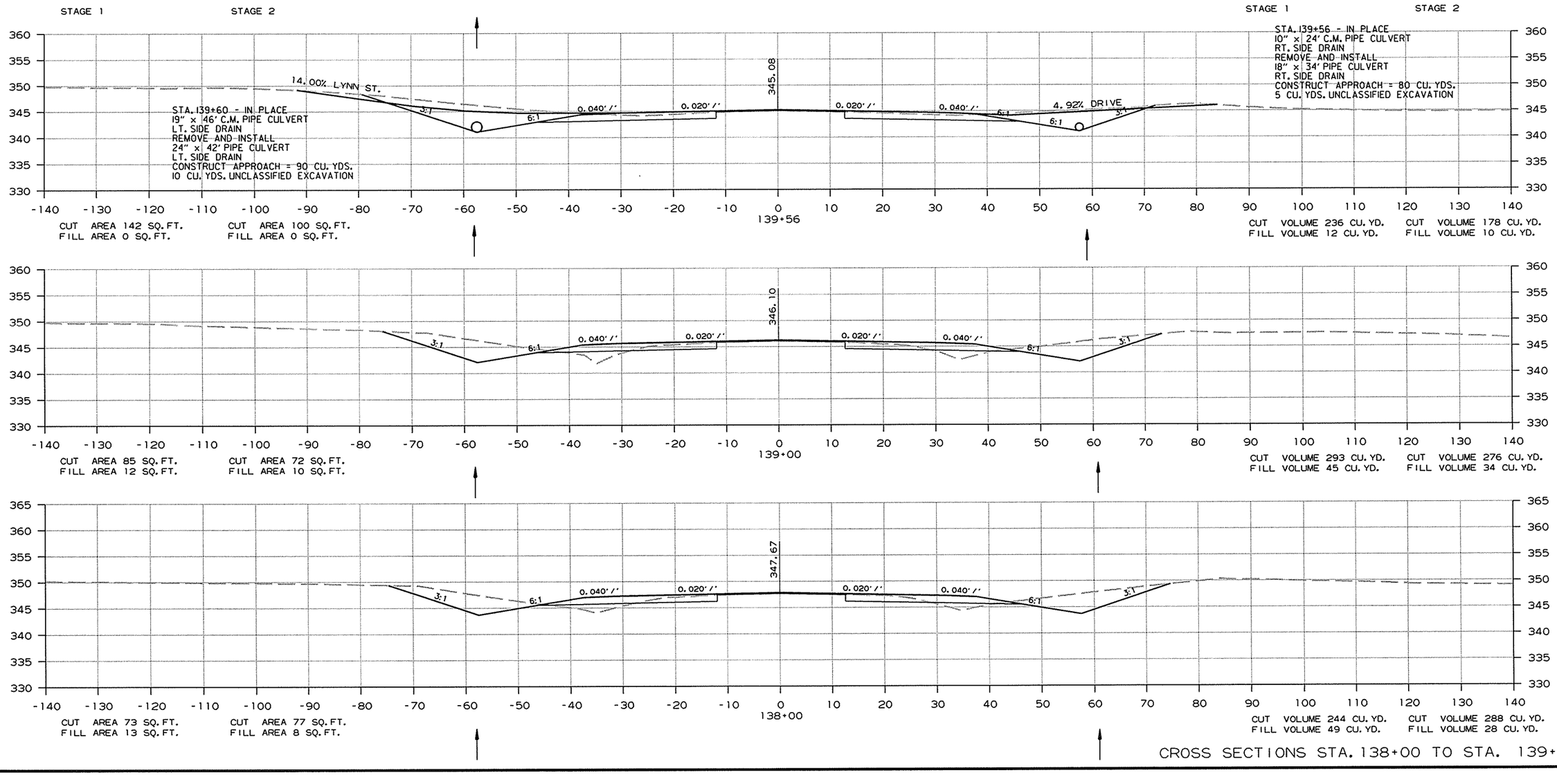
CROSS SECTIONS STA. 135+00 TO STA. 137+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	213	331

(2) CROSS SECTIONS



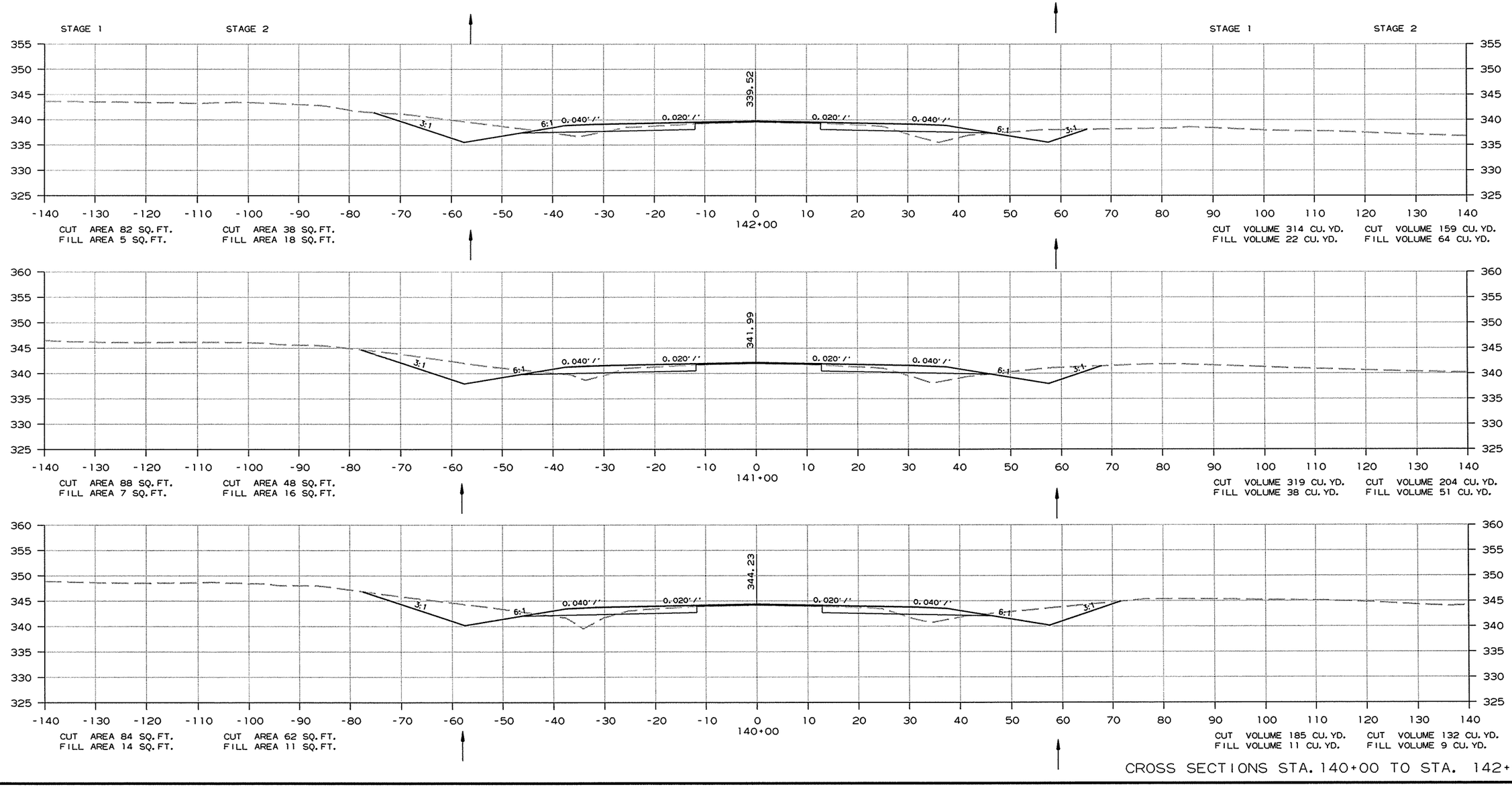
CROSS SECTIONS STA. 138+00 TO STA. 139+56

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	214	331

(2) CROSS SECTIONS



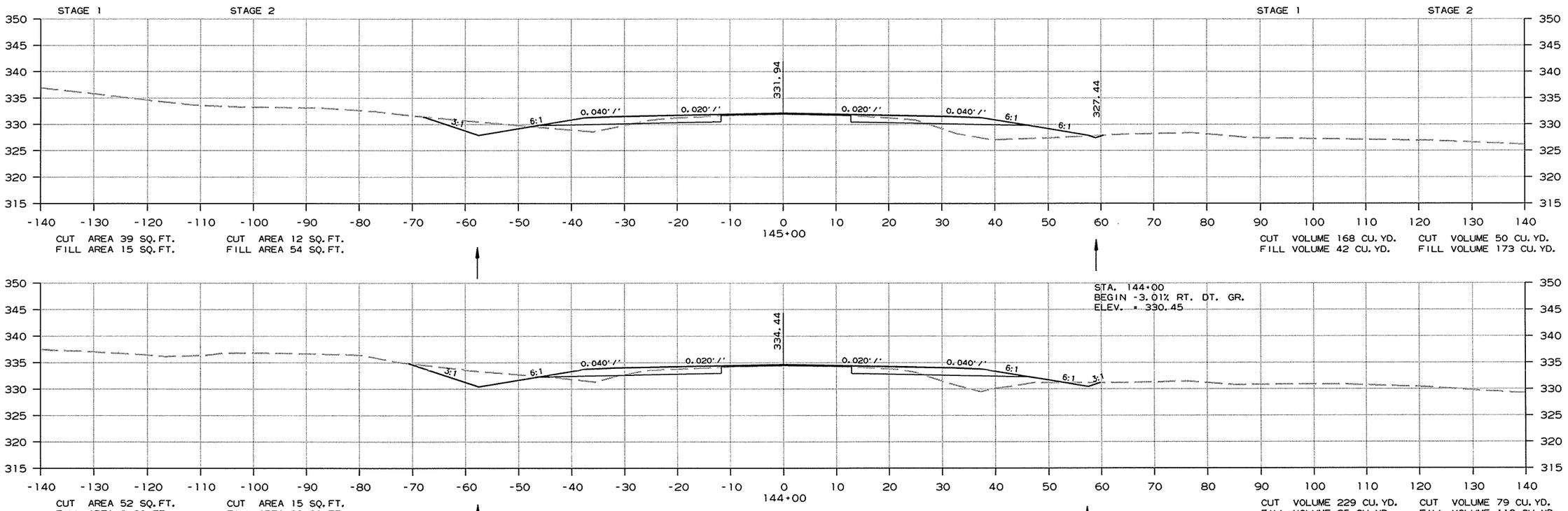
CROSS SECTIONS STA. 140+00 TO STA. 142+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	215	331

(2) CROSS SECTIONS



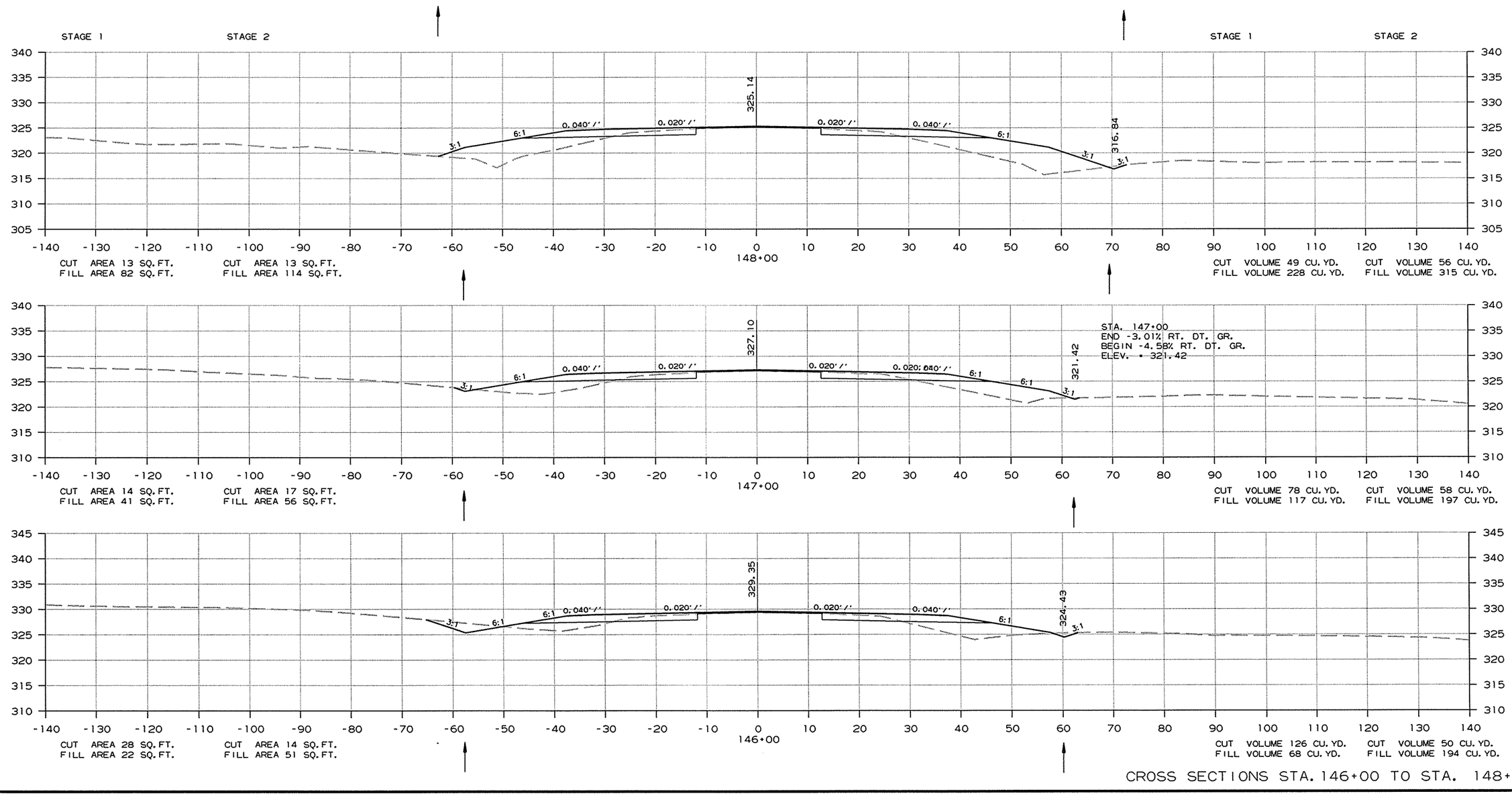
CROSS SECTIONS STA. 143+00 TO STA. 145+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	216	331

(2) CROSS SECTIONS



CROSS SECTIONS STA. 146+00 TO STA. 148+00

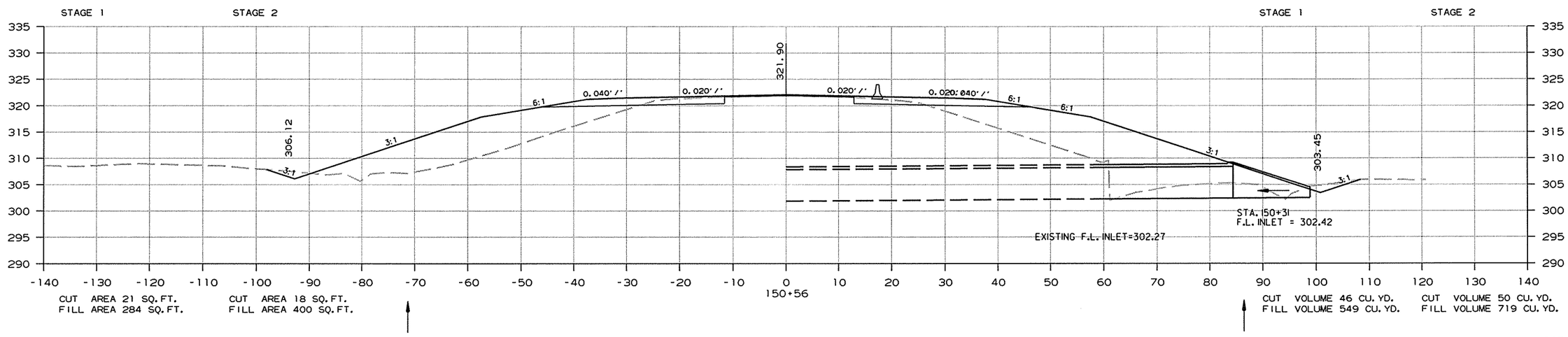
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	217	331

(2) CROSS SECTIONS

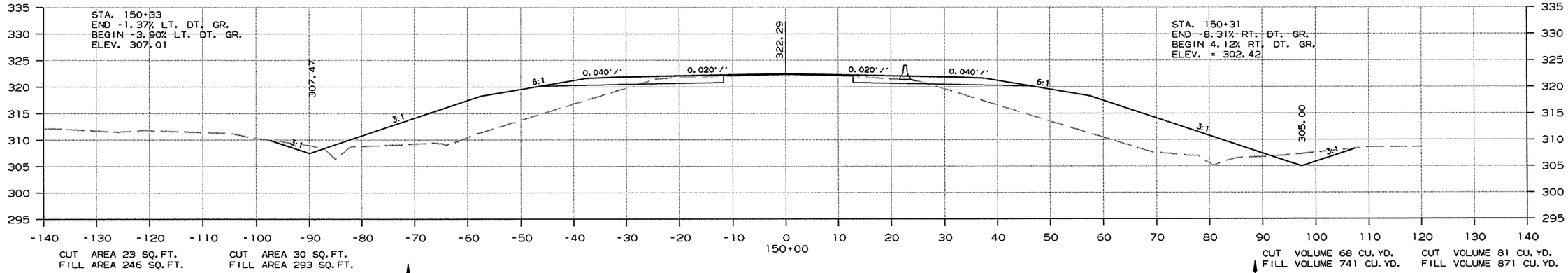
STA. 150+61
END -3.90% LT. DT. GR.
BEGIN -6.85% LT. DT. GR.
ELEV. 305.93



CUT AREA 21 SQ.FT. FILL AREA 284 SQ.FT.
CUT AREA 18 SQ.FT. FILL AREA 400 SQ.FT.
CUT VOLUME 46 CU.YD. FILL VOLUME 549 CU.YD.
CUT VOLUME 50 CU.YD. FILL VOLUME 719 CU.YD.

STA. 150+33
END -1.37% LT. DT. GR.
BEGIN -3.90% LT. DT. GR.
ELEV. 307.01

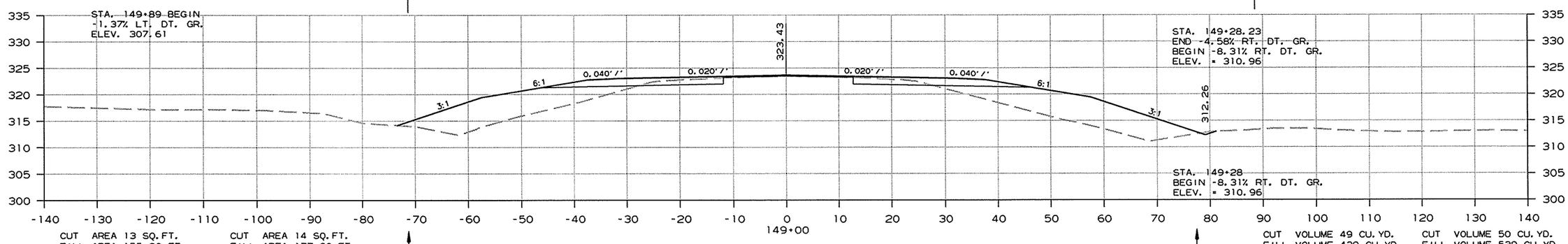
STA. 150+31
END -8.31% RT. DT. GR.
BEGIN 4.12% RT. DT. GR.
ELEV. = 302.42



CUT AREA 23 SQ.FT. FILL AREA 246 SQ.FT.
CUT AREA 30 SQ.FT. FILL AREA 293 SQ.FT.
CUT VOLUME 68 CU.YD. FILL VOLUME 741 CU.YD.
CUT VOLUME 81 CU.YD. FILL VOLUME 871 CU.YD.

STA. 149+89 BEGIN
-1.37% LT. DT. GR.
ELEV. 307.61

STA. 149+28.23
END -4.58% RT. DT. GR.
BEGIN -8.31% RT. DT. GR.
ELEV. = 310.96



CUT AREA 13 SQ.FT. FILL AREA 155 SQ.FT.
CUT AREA 14 SQ.FT. FILL AREA 177 SQ.FT.
CUT VOLUME 49 CU.YD. FILL VOLUME 439 CU.YD.
CUT VOLUME 50 CU.YD. FILL VOLUME 539 CU.YD.

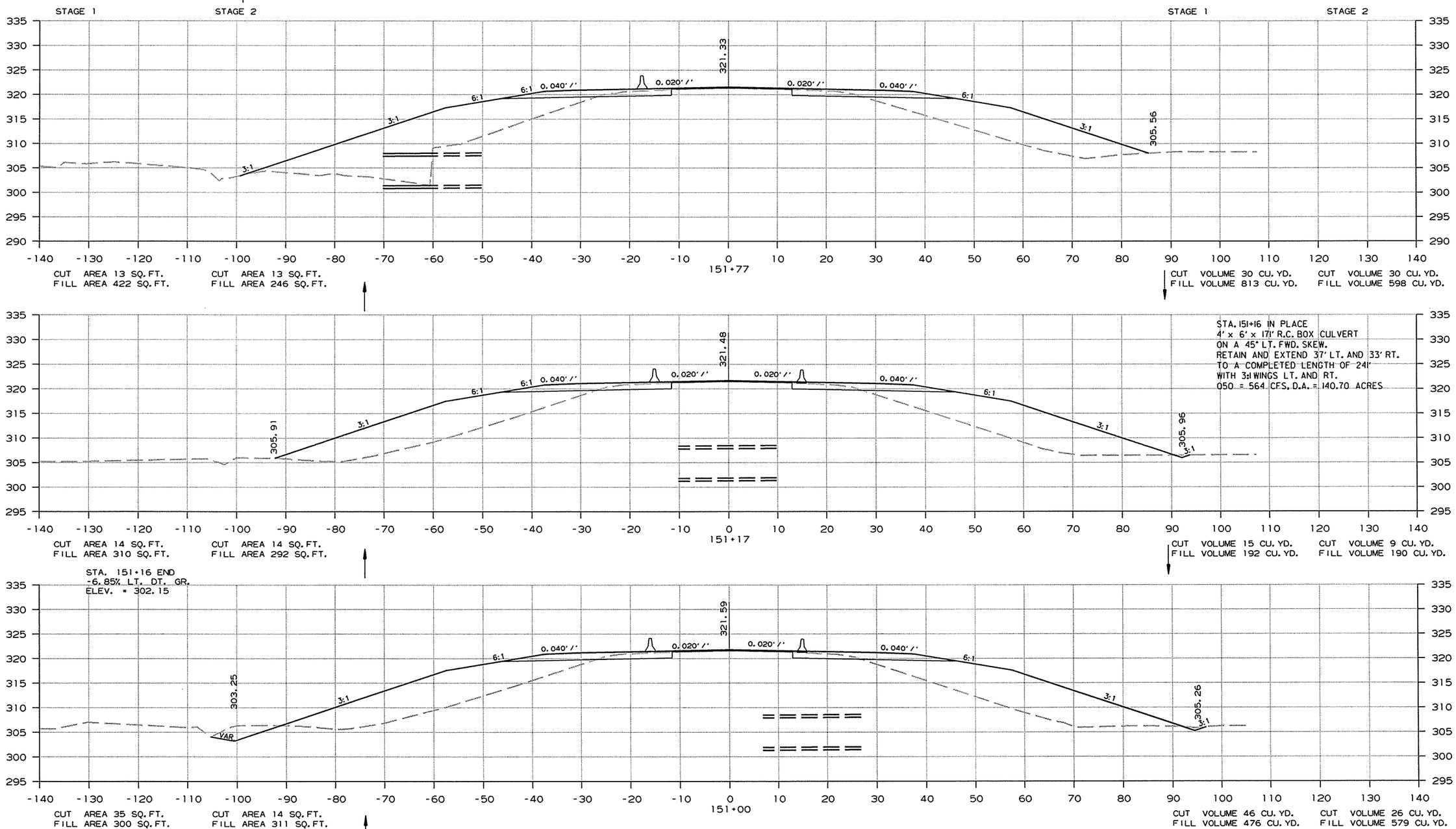
CROSS SECTIONS STA. 149+00 TO STA. 150+56

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	218	331

(2) CROSS SECTIONS



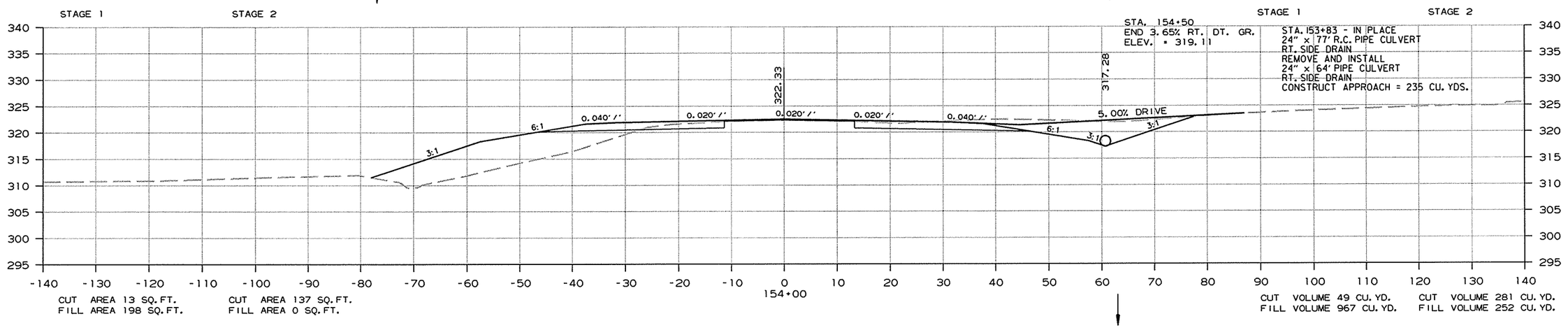
CROSS SECTIONS STA. 151+00 TO STA. 151+77

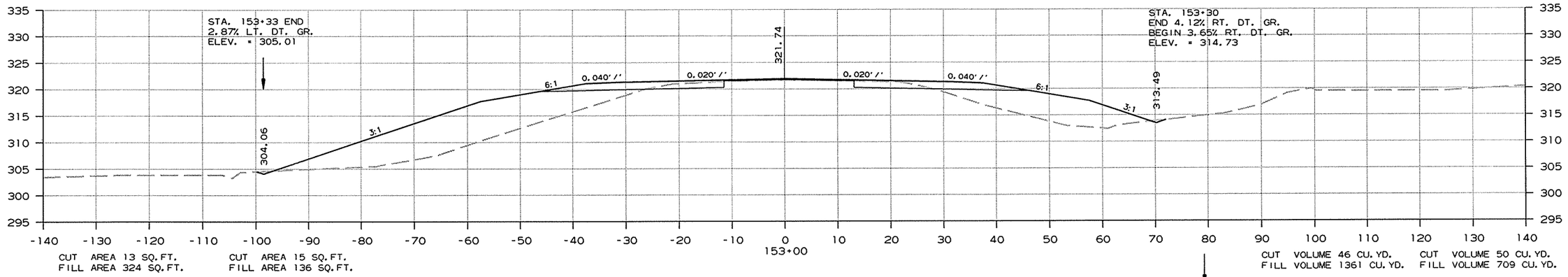
10/29/2015

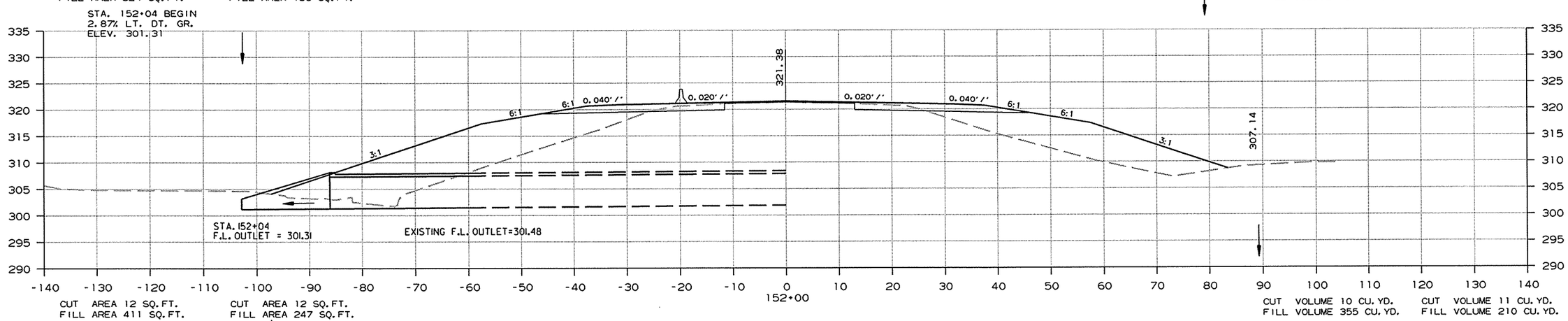
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	219	331

(2) CROSS SECTIONS







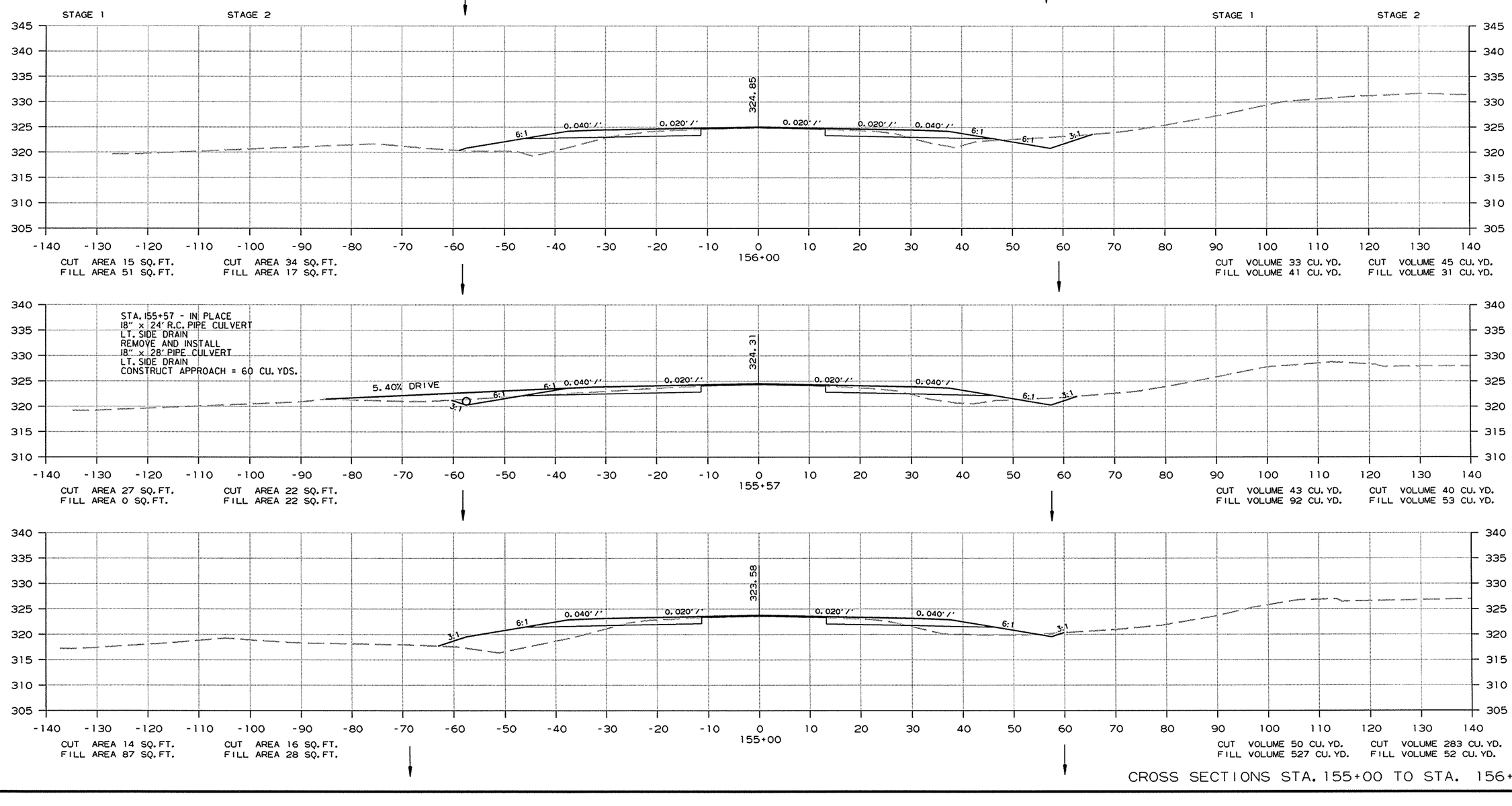
CROSS SECTIONS STA. 152+00 TO STA. 154+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	220	331

(2) CROSS SECTIONS



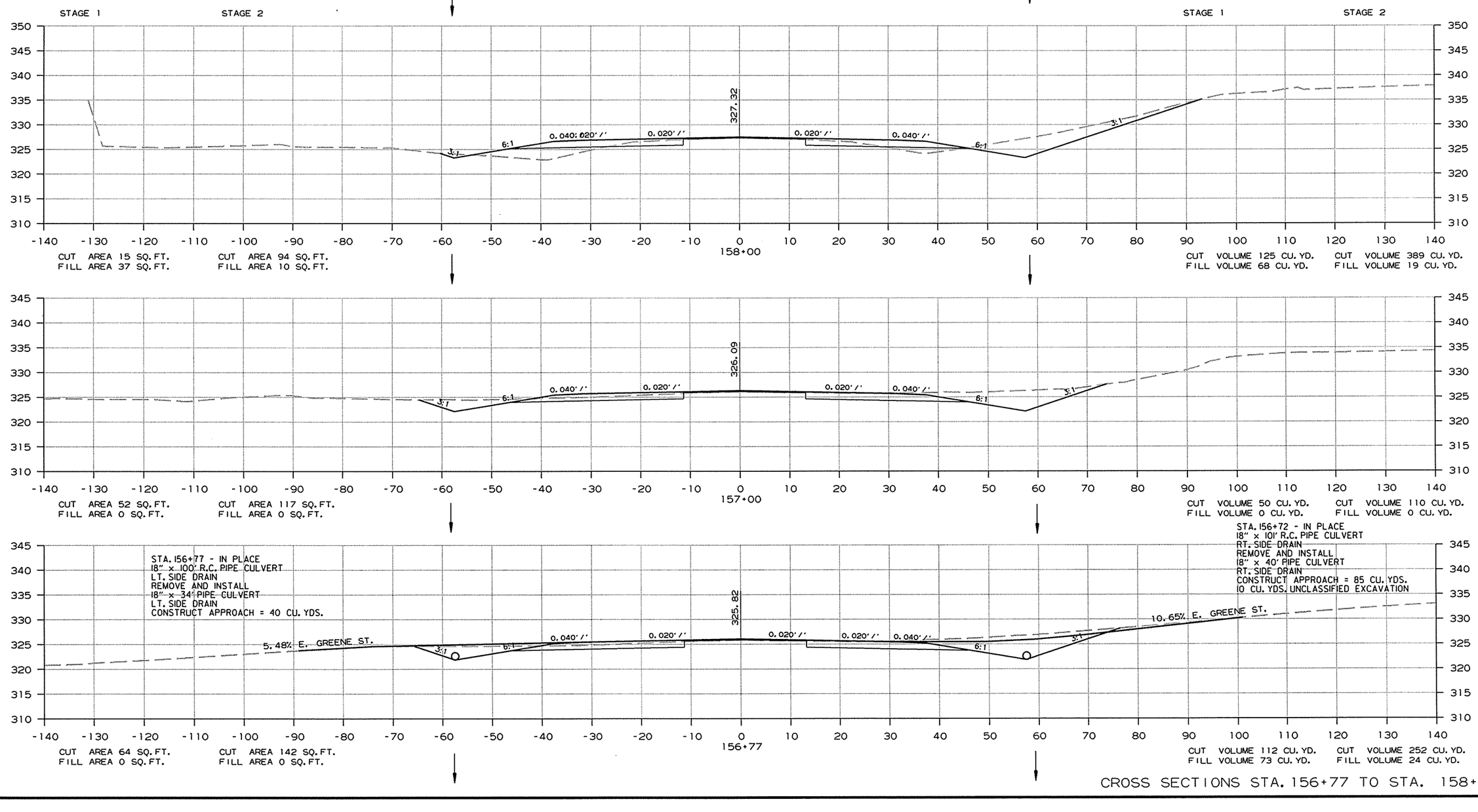
CROSS SECTIONS STA. 155+00 TO STA. 156+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	221	331

(2) CROSS SECTIONS



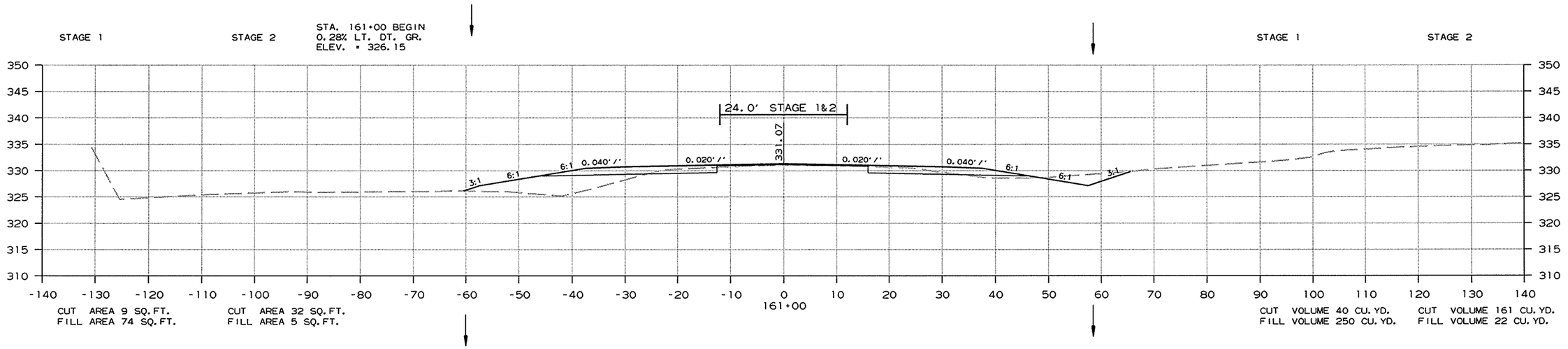
CROSS SECTIONS STA. 156+77 TO STA. 158+00

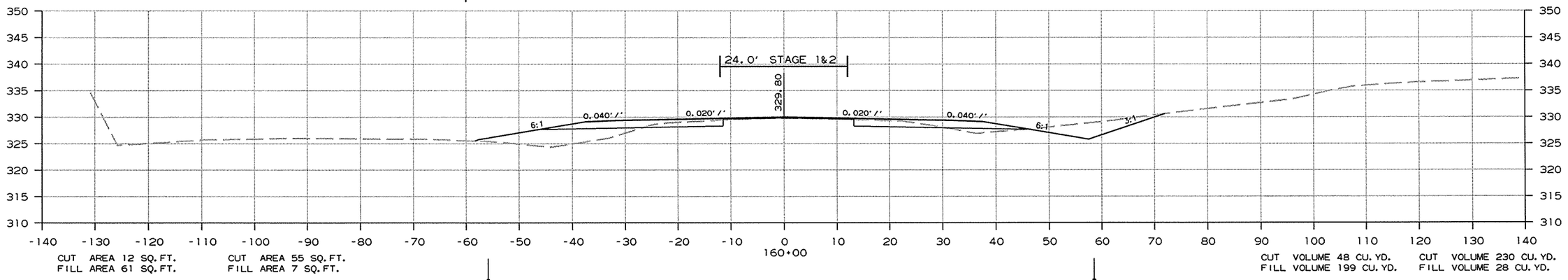
10/29/2015

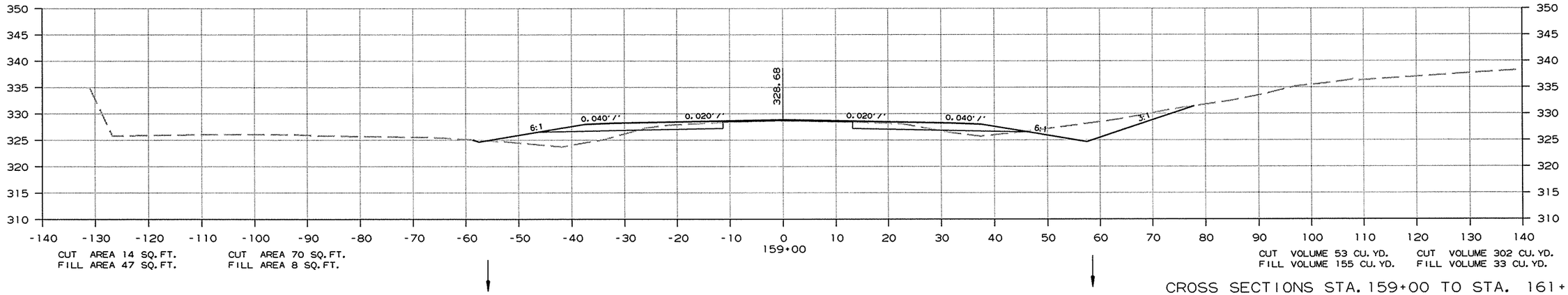
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	222	331

(2) CROSS SECTIONS







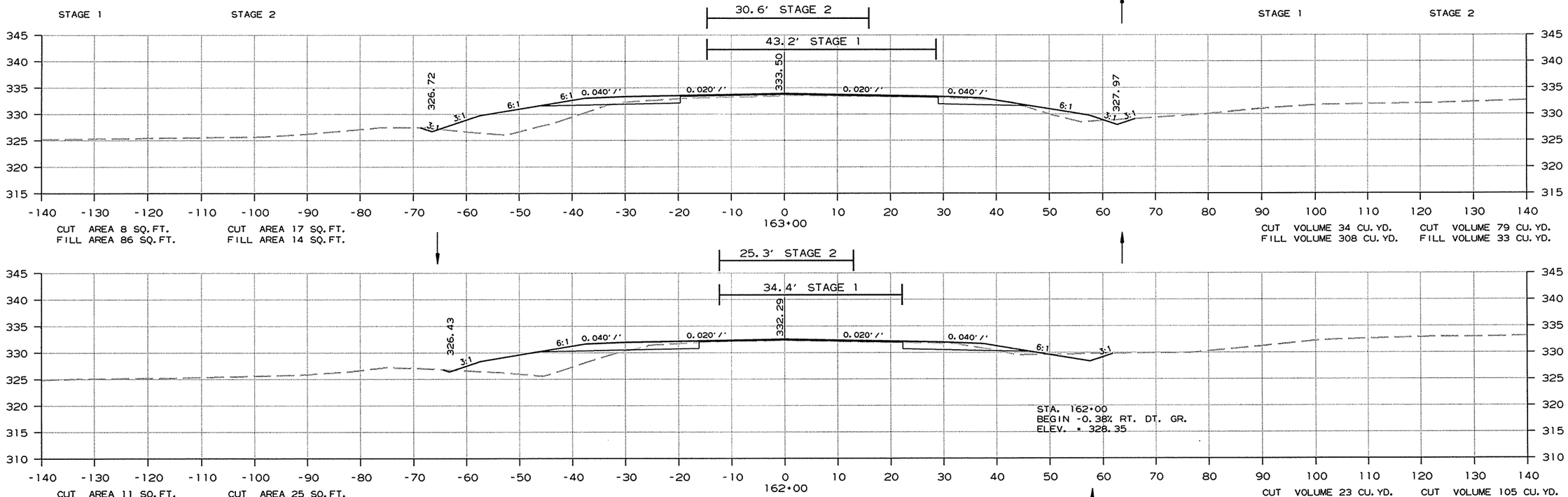
CROSS SECTIONS STA. 159+00 TO STA. 161+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	223	331

(2) CROSS SECTIONS



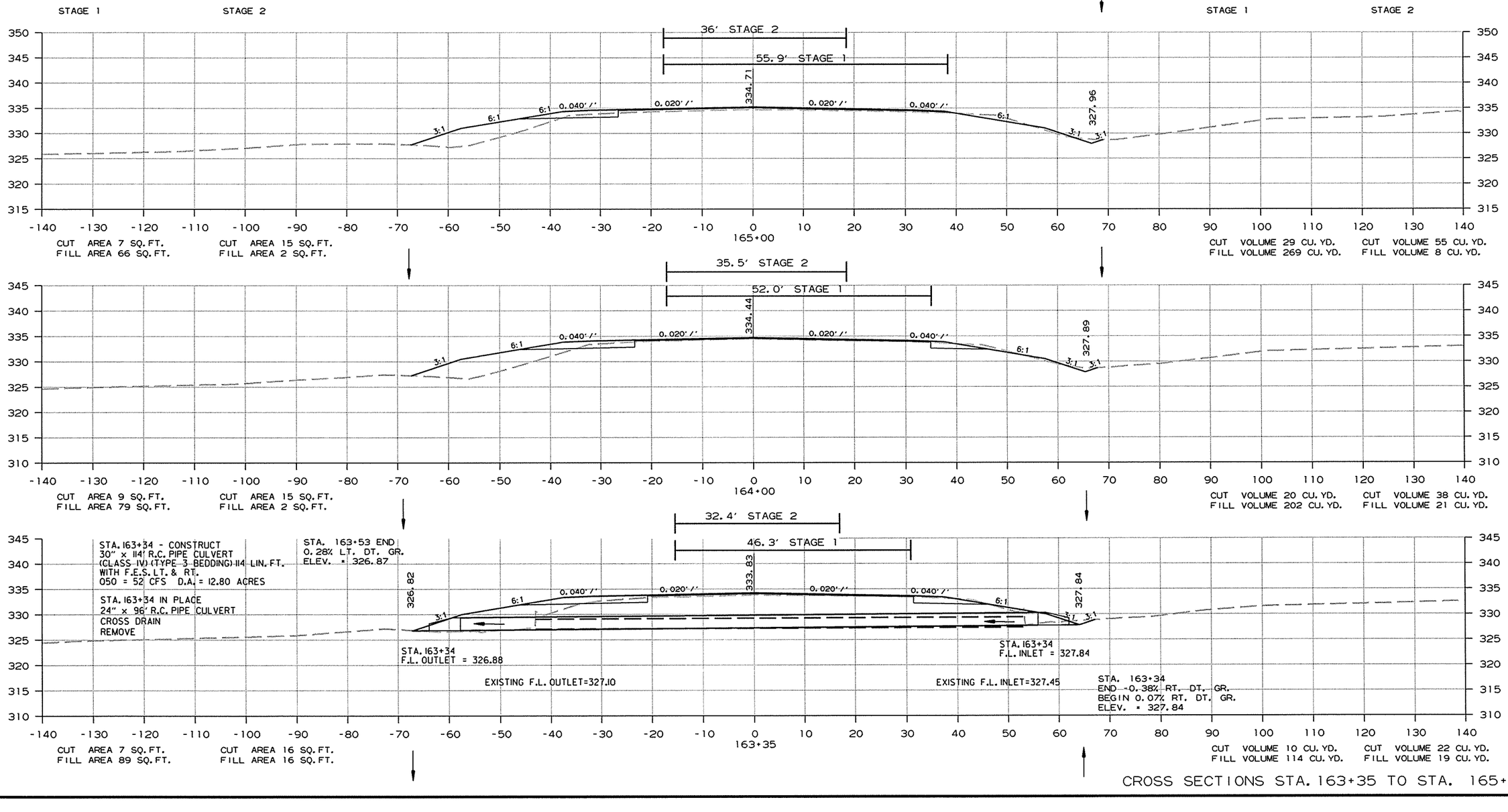
CROSS SECTIONS STA. 161+54 TO STA. 163+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	224	331

(2) CROSS SECTIONS



CROSS SECTIONS STA. 163+35 TO STA. 165+00

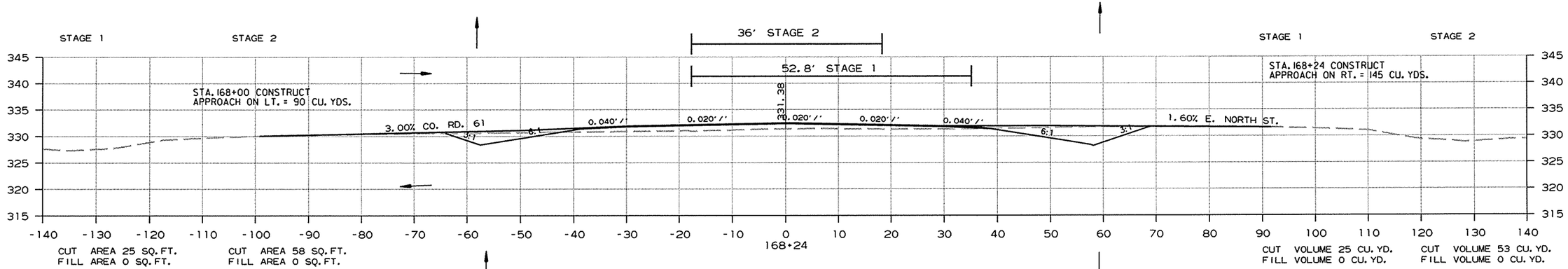
10/29/2015

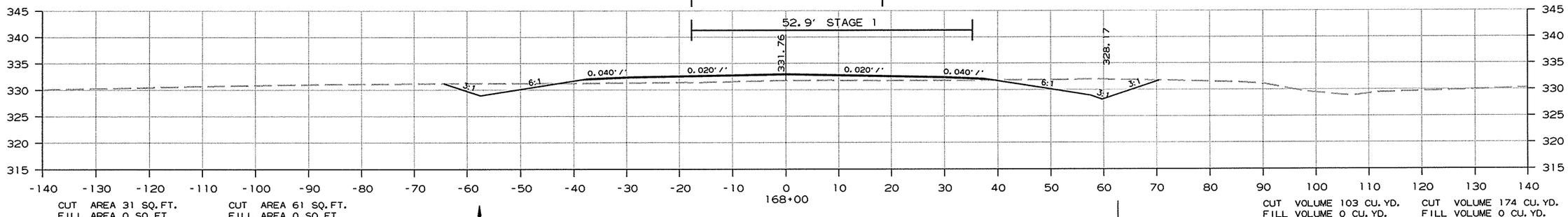
R070365.DGN

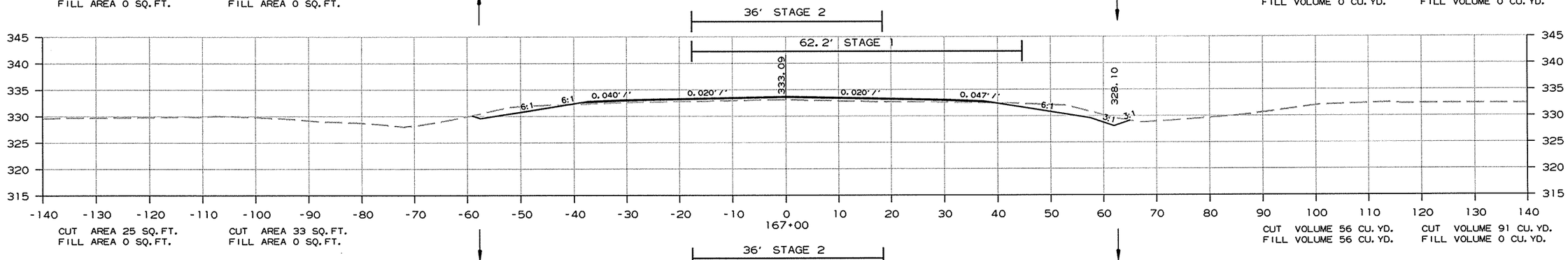
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	225	331

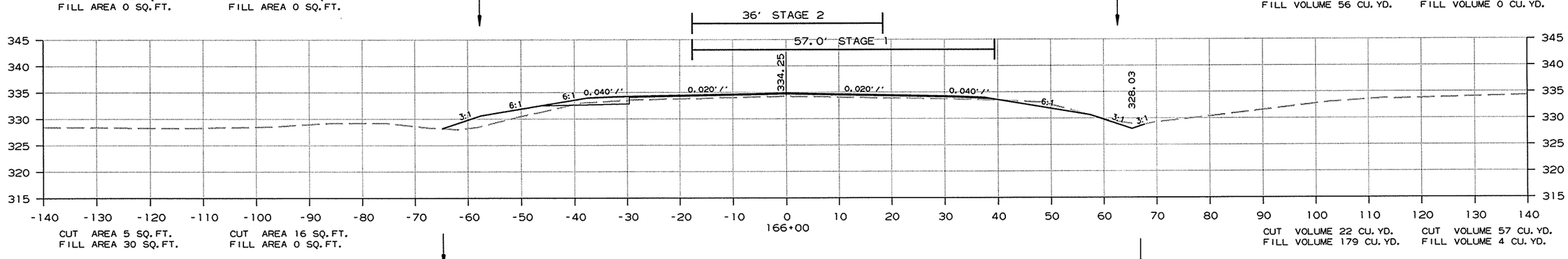
(2) CROSS SECTIONS

STA. 168+74
END 0.07% RT. DT. GR.
BEGIN -3.26% RT. DT. GR.
ELEV. = 328.22









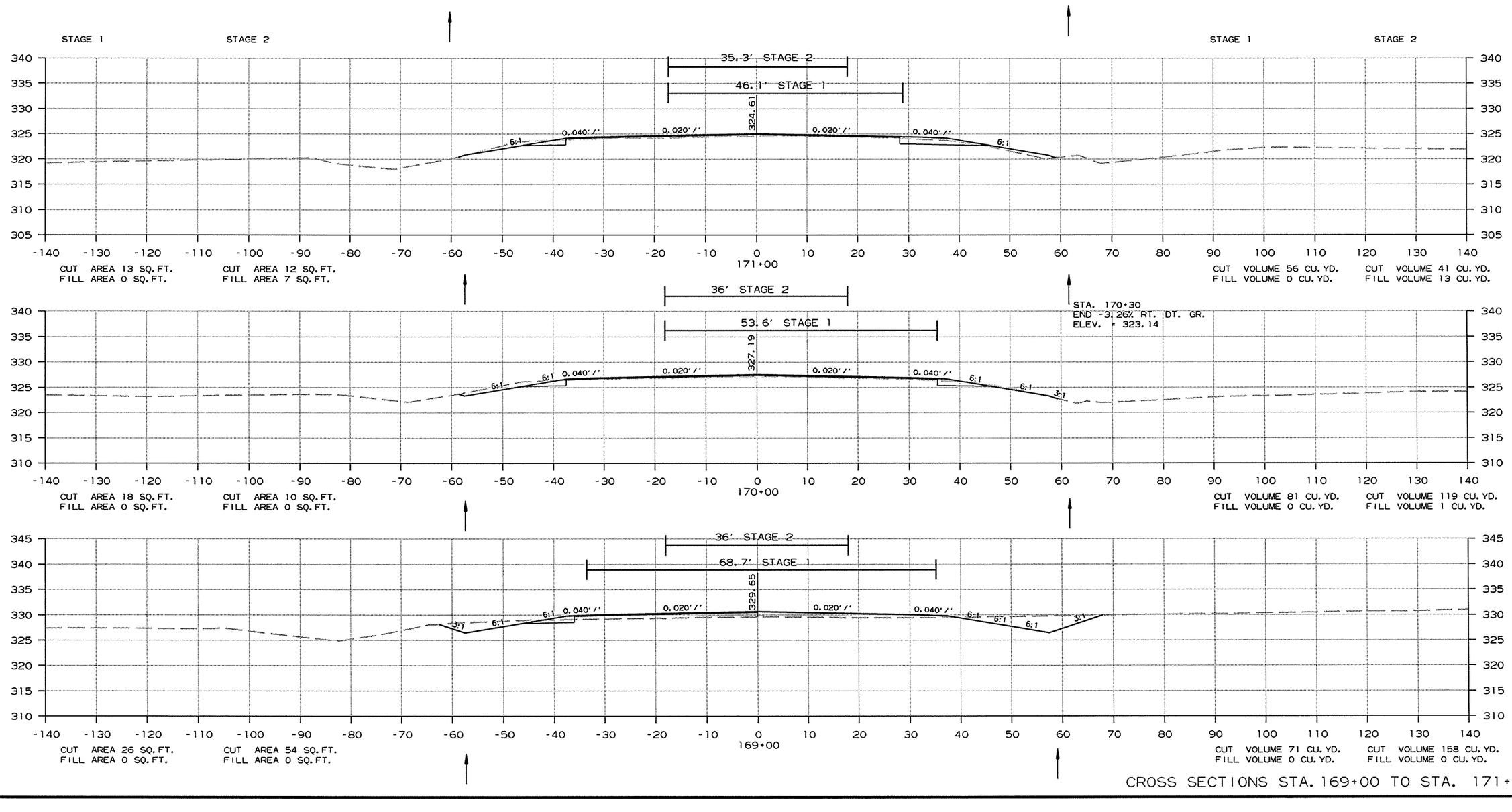
CROSS SECTIONS STA. 166+00 TO STA. 168+24

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	226	331

(2) CROSS SECTIONS



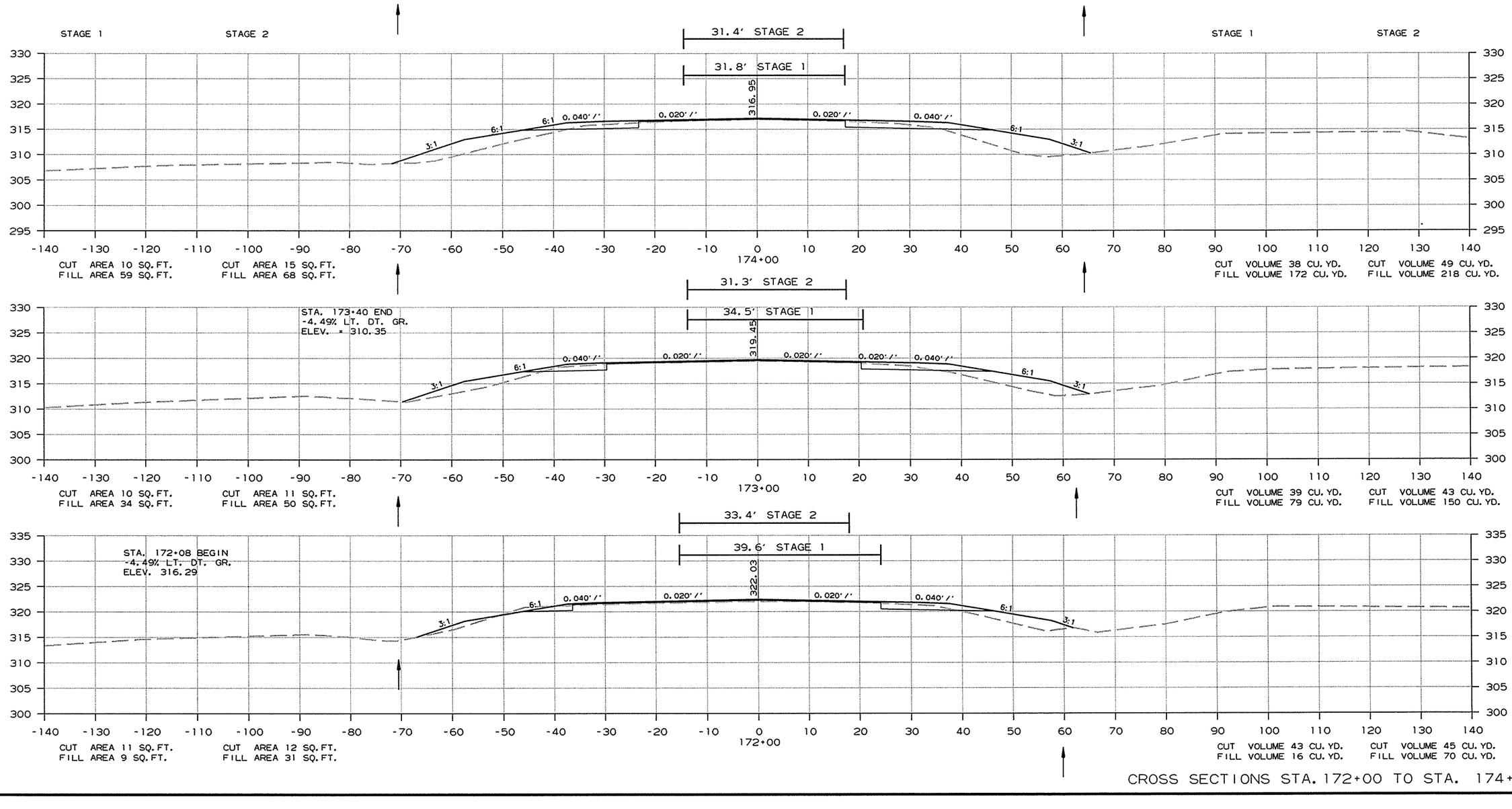
CROSS SECTIONS STA. 169+00 TO STA. 171+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	227	331

(2) CROSS SECTIONS



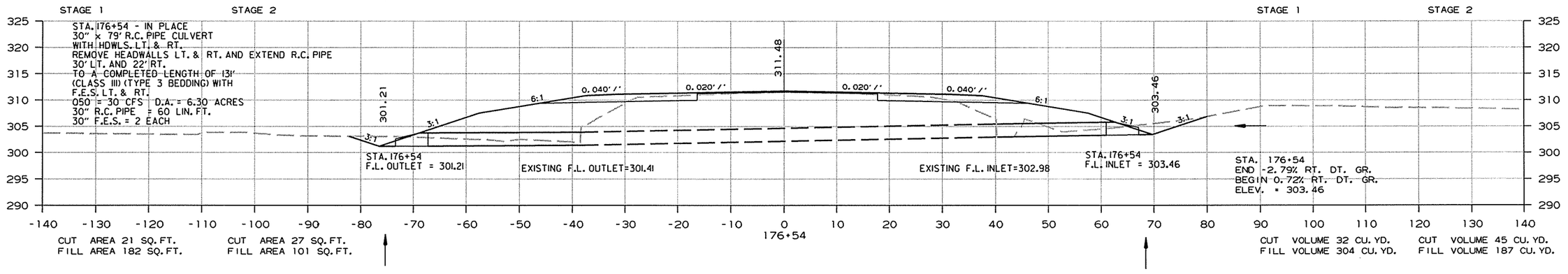
CROSS SECTIONS STA. 172+00 TO STA. 174+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	228	331

(2) CROSS SECTIONS



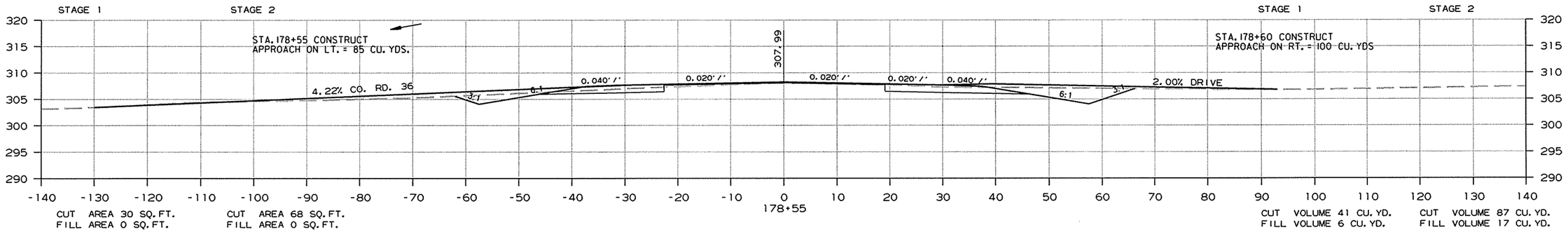
CROSS SECTIONS STA. 175+00 TO STA. 176+54

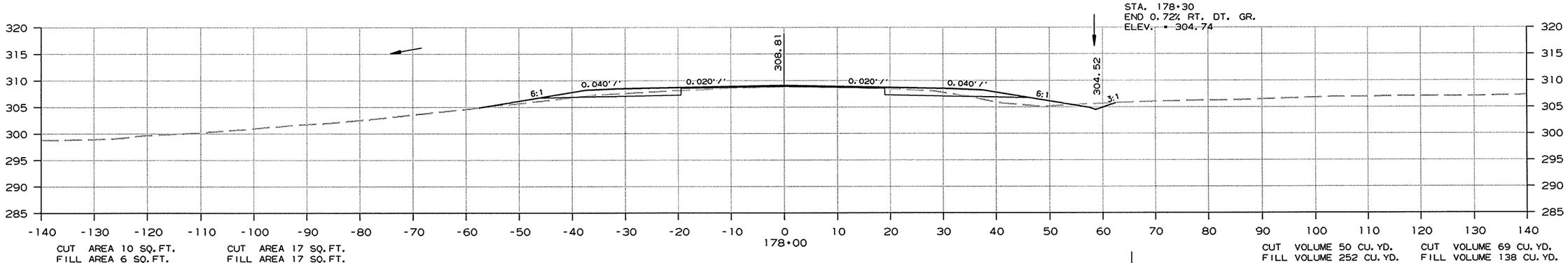
10/29/2015

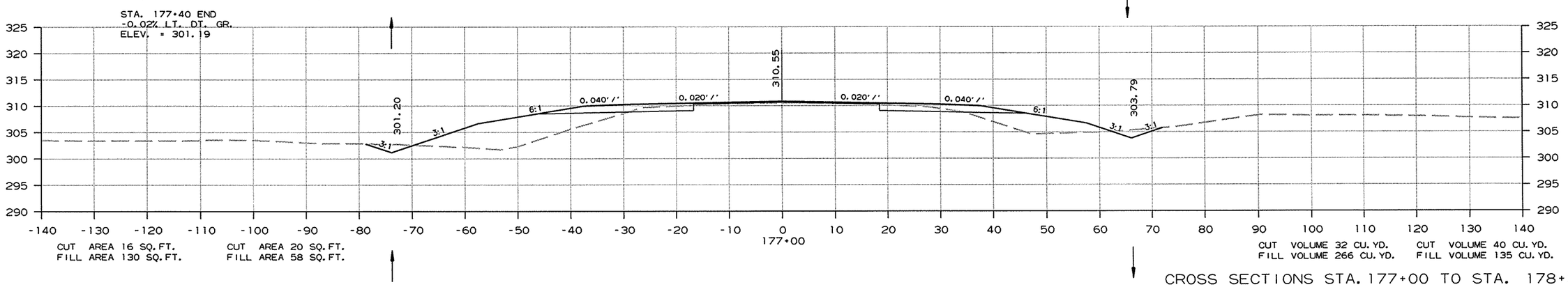
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	229	331

(2) CROSS SECTIONS







CROSS SECTIONS STA. 177+00 TO STA. 178+55

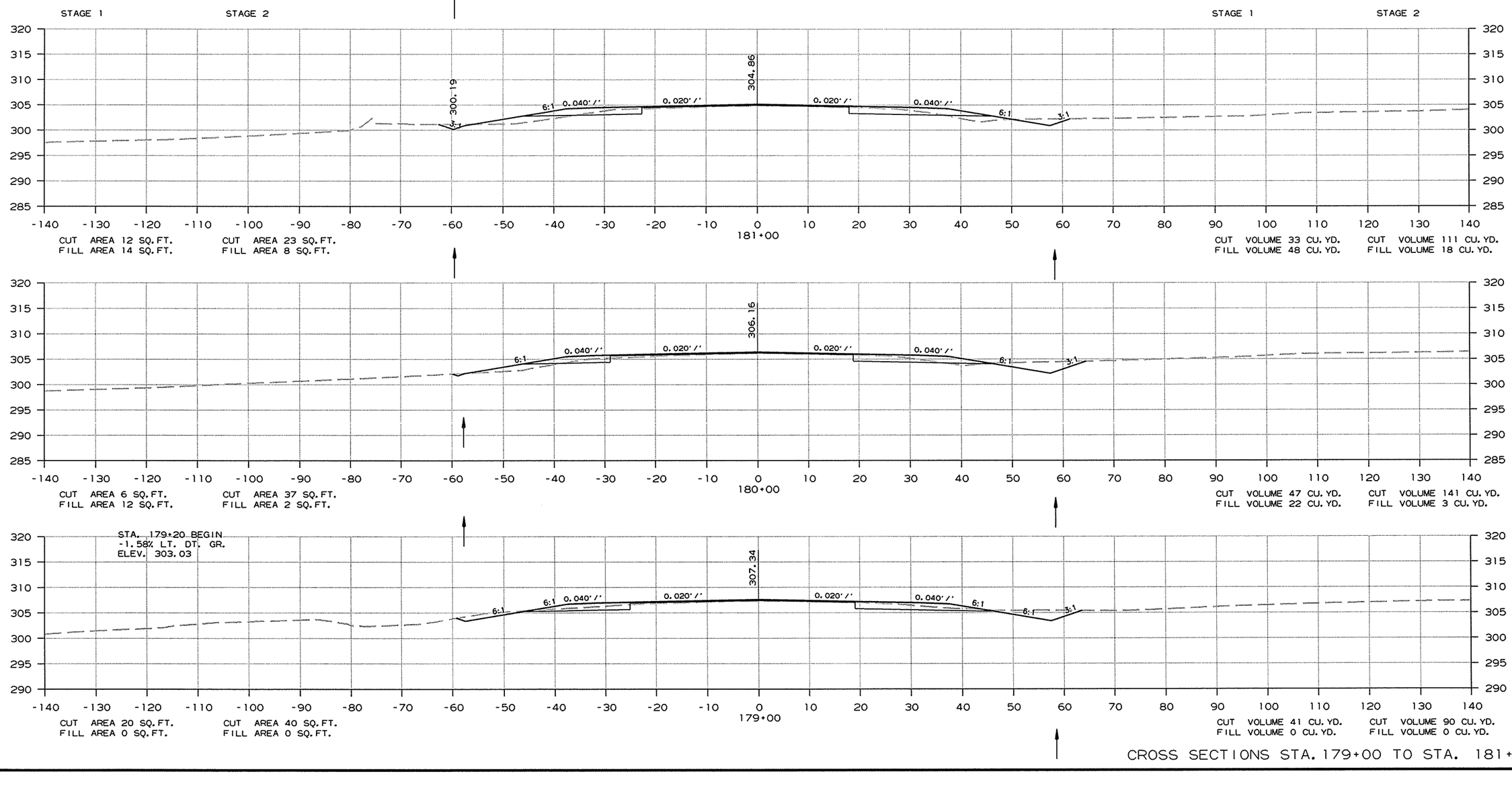
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	230	331

(2) CROSS SECTIONS

STA. 181+53 END
-1.58% LT. DT. GR.
ELEV. = 299.36



CUT AREA 12 SQ.FT.
FILL AREA 14 SQ.FT.

CUT AREA 23 SQ.FT.
FILL AREA 8 SQ.FT.

CUT VOLUME 33 CU.YD.
FILL VOLUME 48 CU.YD.

CUT VOLUME 111 CU.YD.
FILL VOLUME 18 CU.YD.

CUT AREA 6 SQ.FT.
FILL AREA 12 SQ.FT.

CUT AREA 37 SQ.FT.
FILL AREA 2 SQ.FT.

CUT VOLUME 47 CU.YD.
FILL VOLUME 22 CU.YD.

CUT VOLUME 141 CU.YD.
FILL VOLUME 3 CU.YD.

STA. 179+20 BEGIN
-1.58% LT. DT. GR.
ELEV. 303.03

CUT AREA 20 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 40 SQ.FT.
FILL AREA 0 SQ.FT.

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

CUT VOLUME 90 CU.YD.
FILL VOLUME 0 CU.YD.

CROSS SECTIONS STA. 179+00 TO STA. 181+00

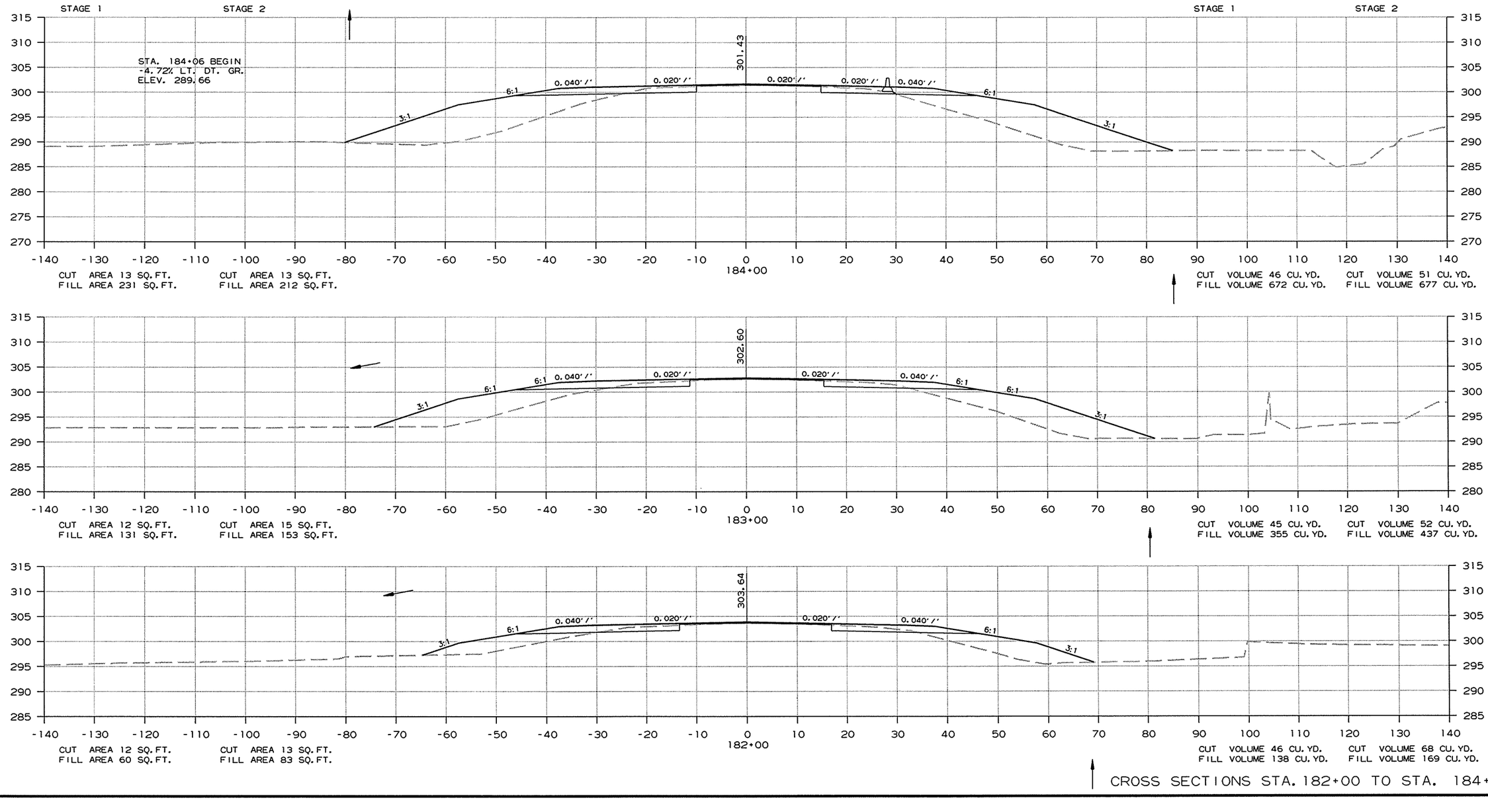
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	231	331

(2) CROSS SECTIONS

STA. 184+40
BEGIN -4.59% RT. DT. GR.
ELEV. = 287.51



CUT AREA 13 SQ.FT.
FILL AREA 231 SQ.FT.

CUT AREA 13 SQ.FT.
FILL AREA 212 SQ.FT.

CUT VOLUME 46 CU.YD.
FILL VOLUME 672 CU.YD.

CUT VOLUME 51 CU.YD.
FILL VOLUME 677 CU.YD.

CUT AREA 12 SQ.FT.
FILL AREA 131 SQ.FT.

CUT AREA 15 SQ.FT.
FILL AREA 153 SQ.FT.

CUT VOLUME 45 CU.YD.
FILL VOLUME 355 CU.YD.

CUT VOLUME 52 CU.YD.
FILL VOLUME 437 CU.YD.

CUT AREA 12 SQ.FT.
FILL AREA 60 SQ.FT.

CUT AREA 13 SQ.FT.
FILL AREA 83 SQ.FT.

CUT VOLUME 46 CU.YD.
FILL VOLUME 138 CU.YD.

CUT VOLUME 68 CU.YD.
FILL VOLUME 169 CU.YD.

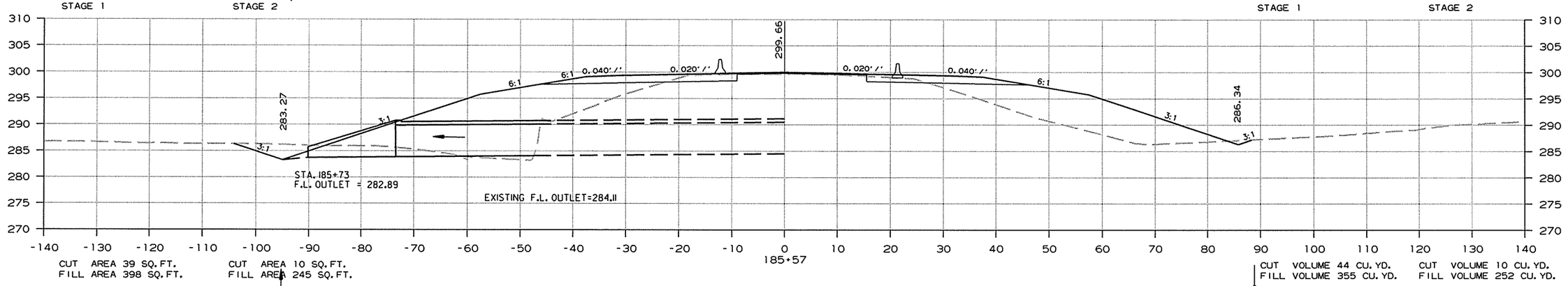
CROSS SECTIONS STA. 182+00 TO STA. 184+00

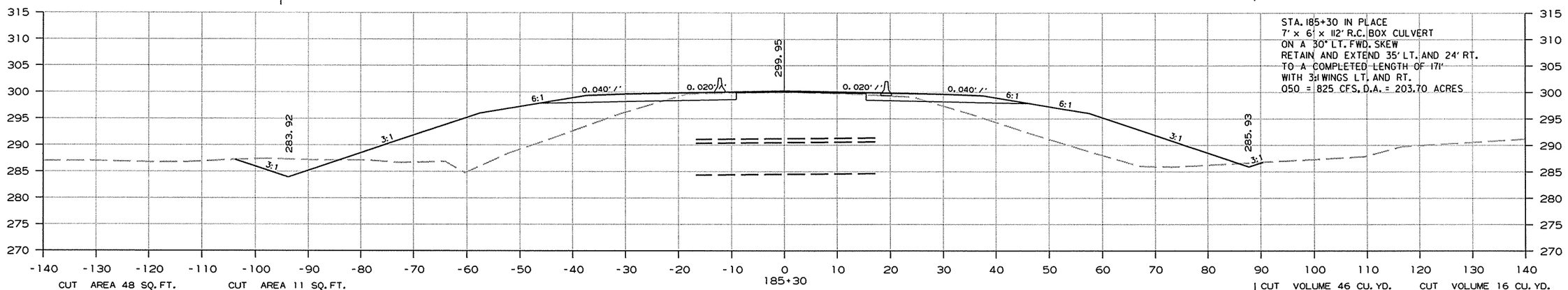
10/29/2015

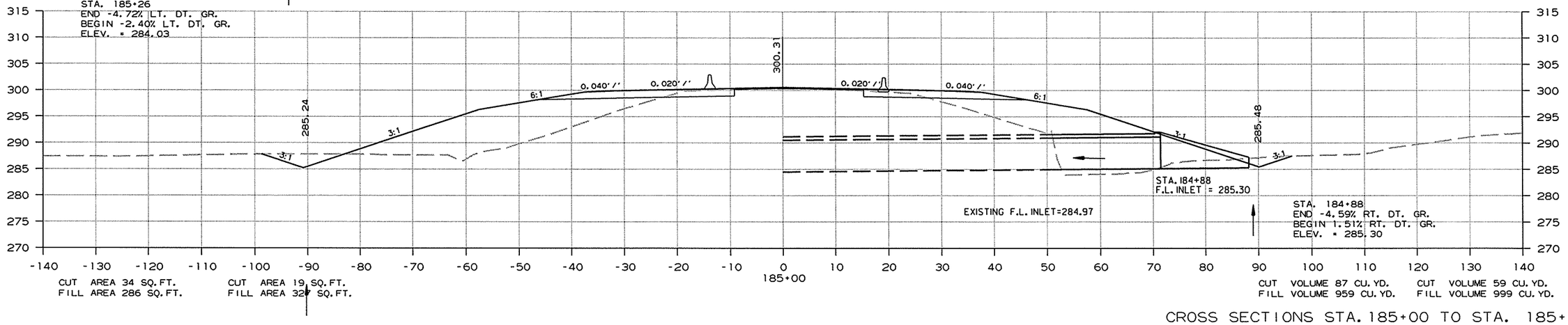
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	232	331

(2) CROSS SECTIONS







CROSS SECTIONS STA. 185+00 TO STA. 185+57

10/29/2015

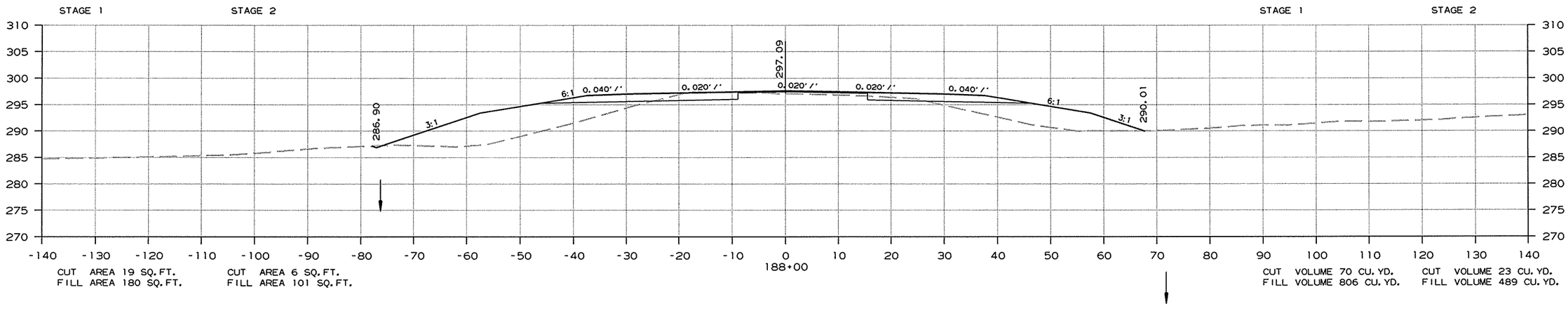
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	233	331

(2) CROSS SECTIONS

STA. 188+50
END 1.76% LT. DT. GR.
BEGIN 2.26% LT. DT. GR.
ELEV. = 287.78

STA. 188+50
END 1.51% RT. DT. GR.
BEGIN 2.21% RT. DT. GR.
ELEV. = 290.76

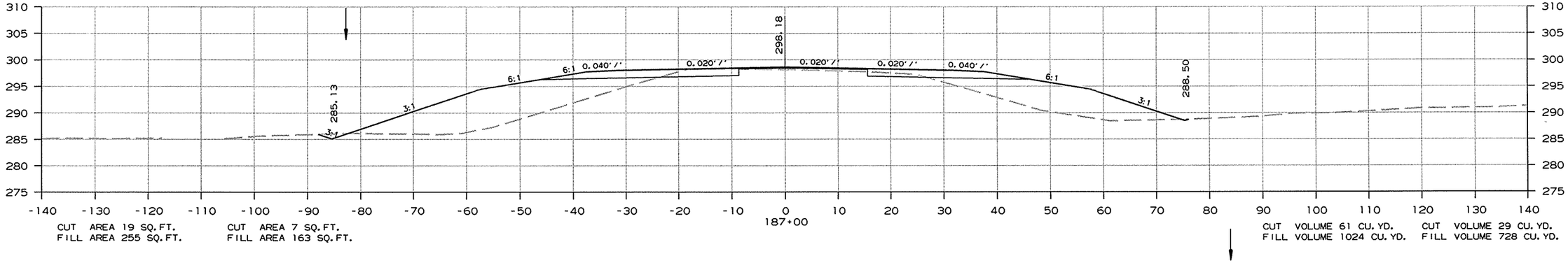


CUT AREA 19 SQ.FT.
FILL AREA 180 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 101 SQ.FT.

CUT VOLUME 70 CU.YD.
FILL VOLUME 806 CU.YD.

CUT VOLUME 23 CU.YD.
FILL VOLUME 489 CU.YD.

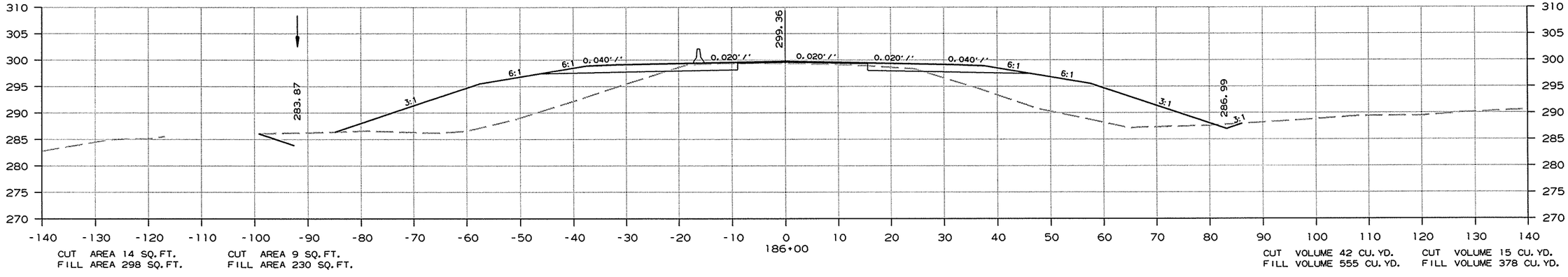


CUT AREA 19 SQ.FT.
FILL AREA 255 SQ.FT.

CUT AREA 7 SQ.FT.
FILL AREA 163 SQ.FT.

CUT VOLUME 61 CU.YD.
FILL VOLUME 1024 CU.YD.

CUT VOLUME 29 CU.YD.
FILL VOLUME 728 CU.YD.



CUT AREA 14 SQ.FT.
FILL AREA 298 SQ.FT.

CUT AREA 9 SQ.FT.
FILL AREA 230 SQ.FT.

CUT VOLUME 42 CU.YD.
FILL VOLUME 555 CU.YD.

CUT VOLUME 15 CU.YD.
FILL VOLUME 378 CU.YD.

CROSS SECTIONS STA. 186+00 TO STA. 188+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	234	331

(2) CROSS SECTIONS

CROSS SECTIONS STA. 189+00 TO STA. 190+00

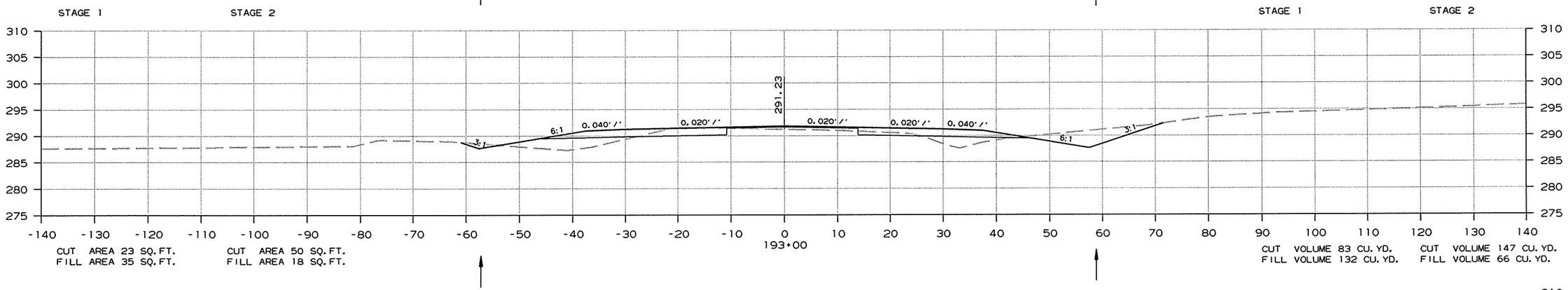
10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	235	331

(2) CROSS SECTIONS

STA. 193+00 BEGIN
-1.77% LT. DT. GR.
ELEV. = 287.64

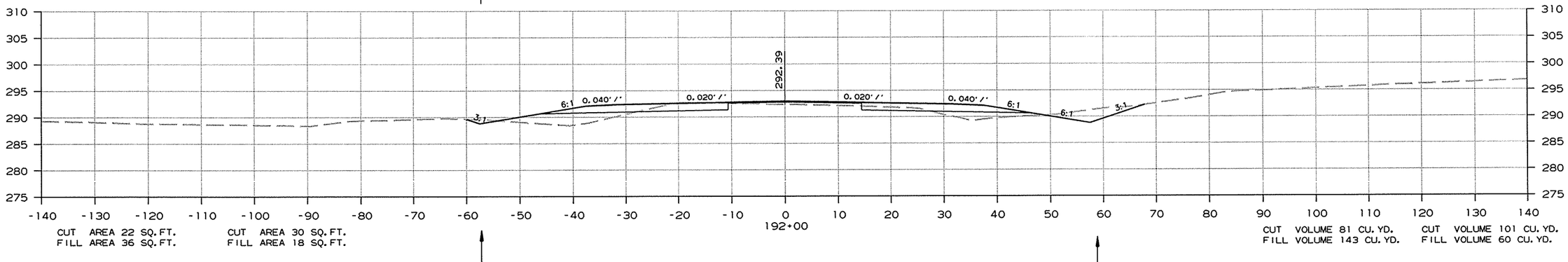


CUT AREA 23 SQ.FT.
FILL AREA 35 SQ.FT.

CUT AREA 50 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 83 CU.YD.
FILL VOLUME 132 CU.YD.

CUT VOLUME 147 CU.YD.
FILL VOLUME 66 CU.YD.



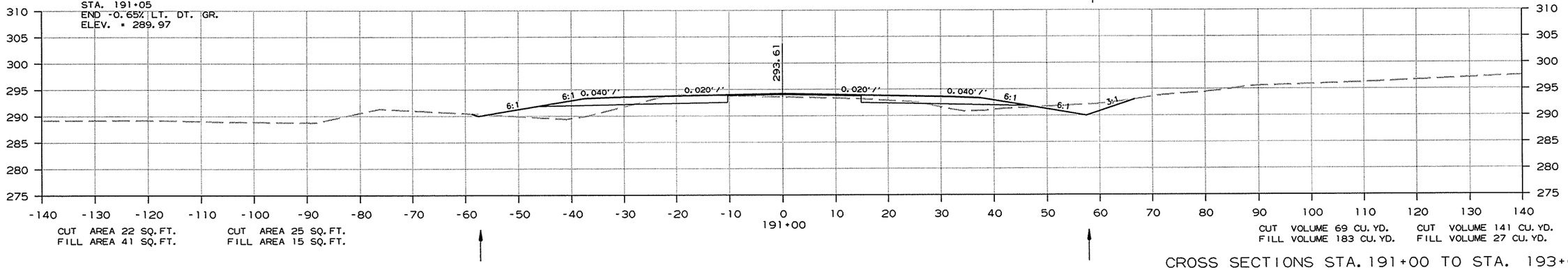
CUT AREA 22 SQ.FT.
FILL AREA 36 SQ.FT.

CUT AREA 30 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 81 CU.YD.
FILL VOLUME 143 CU.YD.

CUT VOLUME 101 CU.YD.
FILL VOLUME 60 CU.YD.

STA. 191+05
END -0.65% LT. DT. GR.
ELEV. = 289.97



CUT AREA 22 SQ.FT.
FILL AREA 41 SQ.FT.

CUT AREA 25 SQ.FT.
FILL AREA 15 SQ.FT.

CUT VOLUME 69 CU.YD.
FILL VOLUME 183 CU.YD.

CUT VOLUME 141 CU.YD.
FILL VOLUME 27 CU.YD.

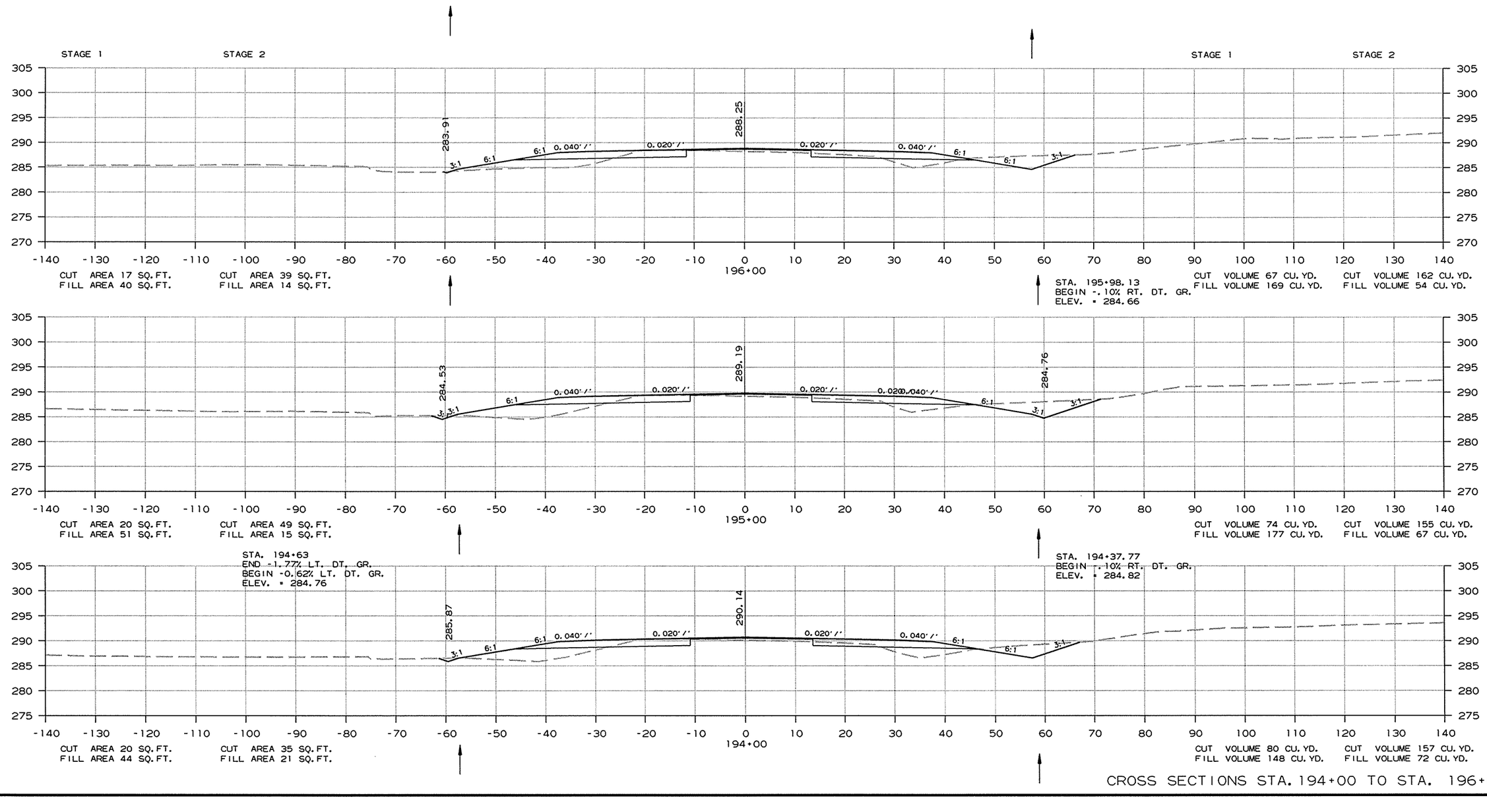
CROSS SECTIONS STA. 191+00 TO STA. 193+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	236	331

(2) CROSS SECTIONS



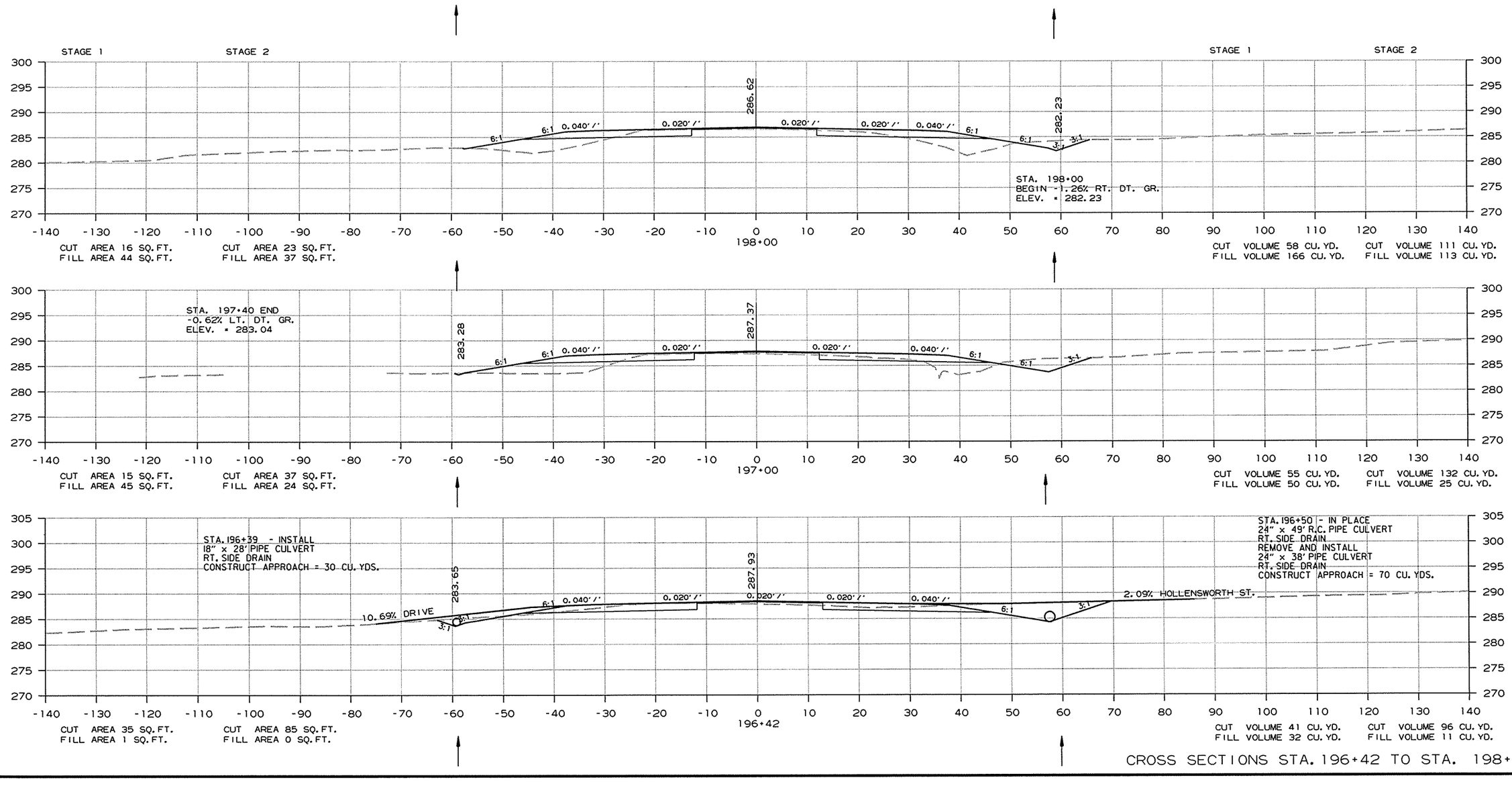
CROSS SECTIONS STA. 194+00 TO STA. 196+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	237	331

(2) CROSS SECTIONS



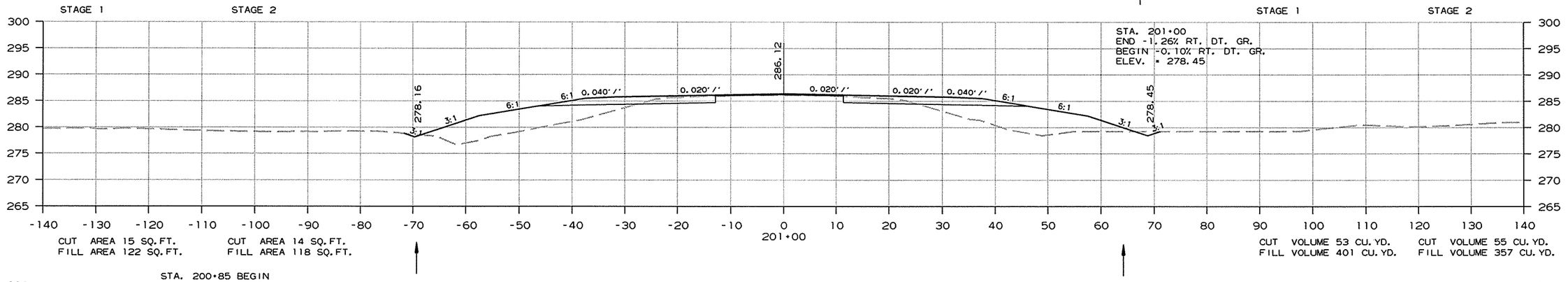
CROSS SECTIONS STA. 196+42 TO STA. 198+00

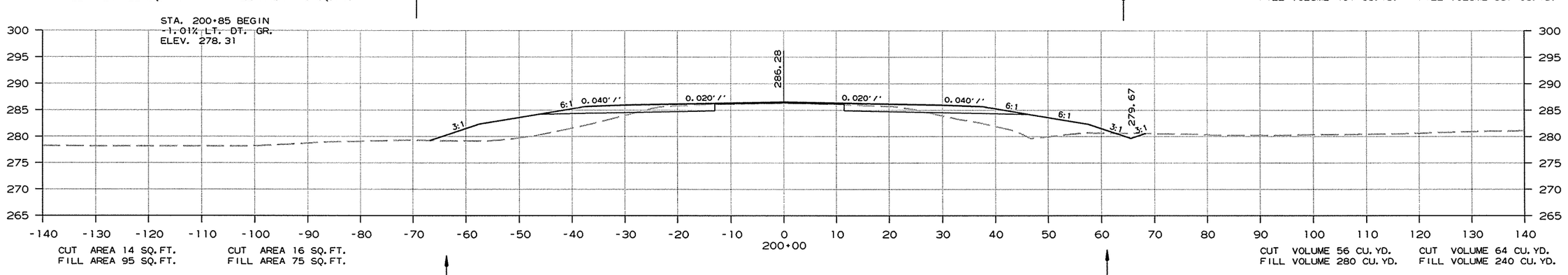
10/29/2015

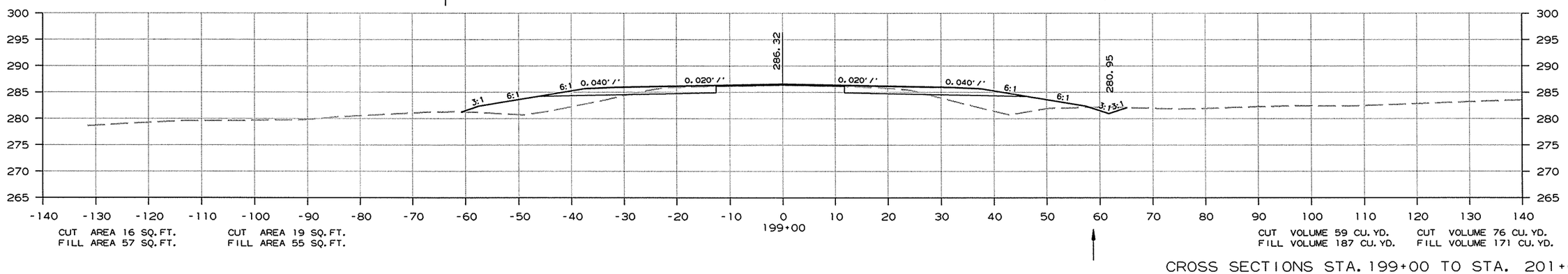
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	238	331

(2) CROSS SECTIONS







CROSS SECTIONS STA. 199+00 TO STA. 201+00

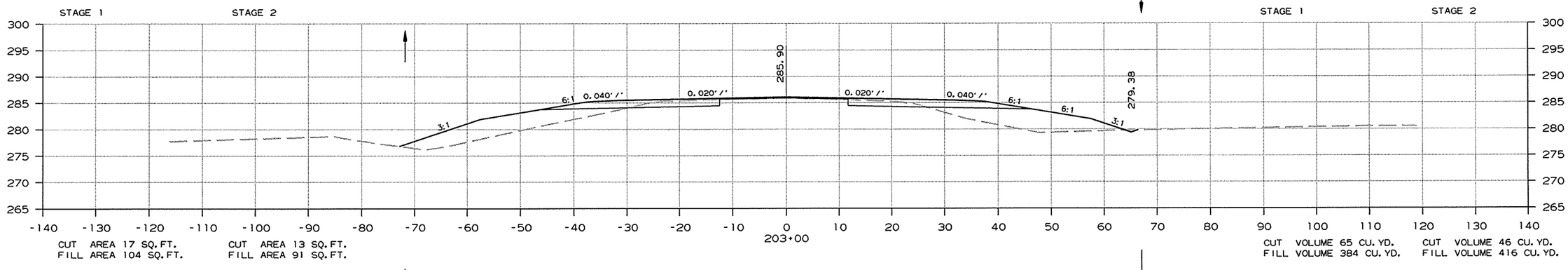
10/29/2015

R070365.DGN

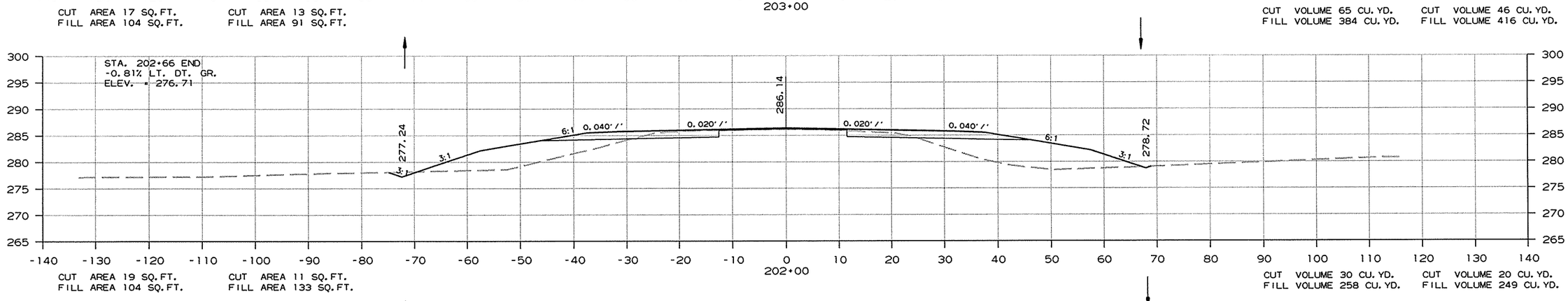
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	239	331

(2) CROSS SECTIONS

STA. 203+50
END 0.67% RT. DT. GR.
BEGIN -0.45% RT. DT. GR.
ELEV. = 279.72

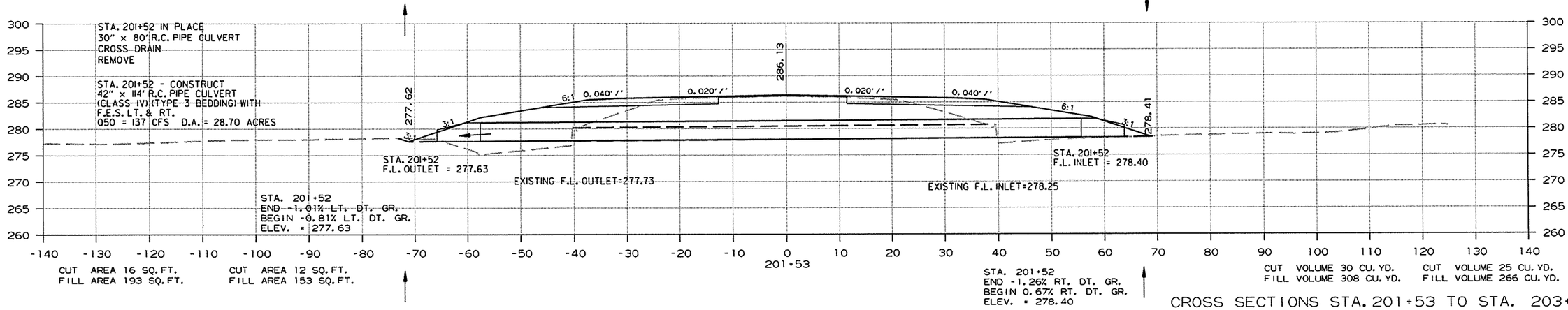


STA. 202+66 END
-0.81% LT. DT. GR.
ELEV. = 276.71



STA. 201+52 IN PLACE
30" x 80' R.C. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 201+52 - CONSTRUCT
42" x 114' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50 = 137 CFS D.A. = 28.70 ACRES



STA. 201+52
END -1.26% RT. DT. GR.
BEGIN 0.67% RT. DT. GR.
ELEV. = 278.40

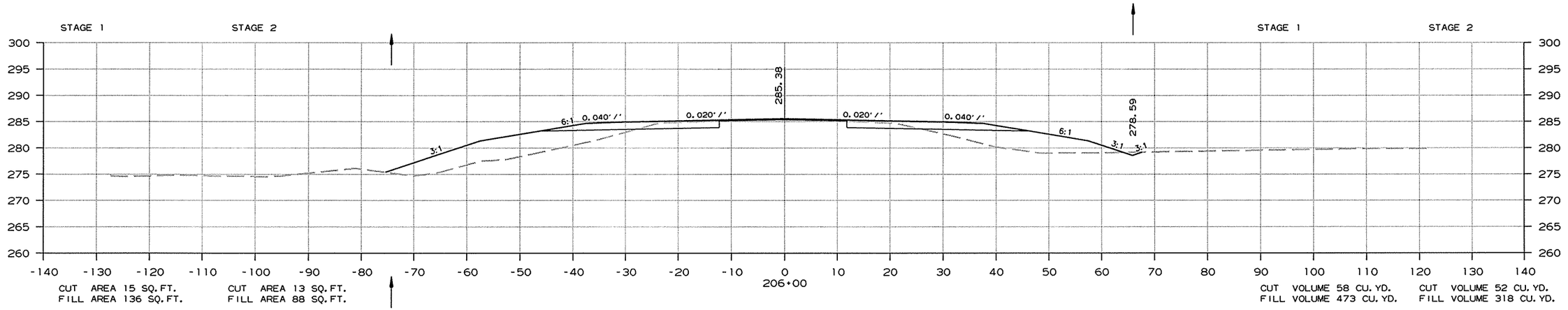
CROSS SECTIONS STA. 201+53 TO STA. 203+00

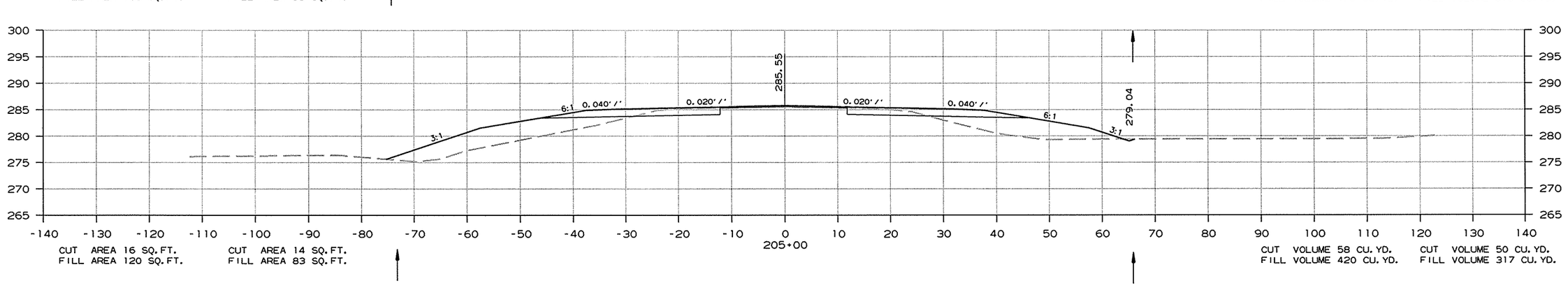
10/29/2015

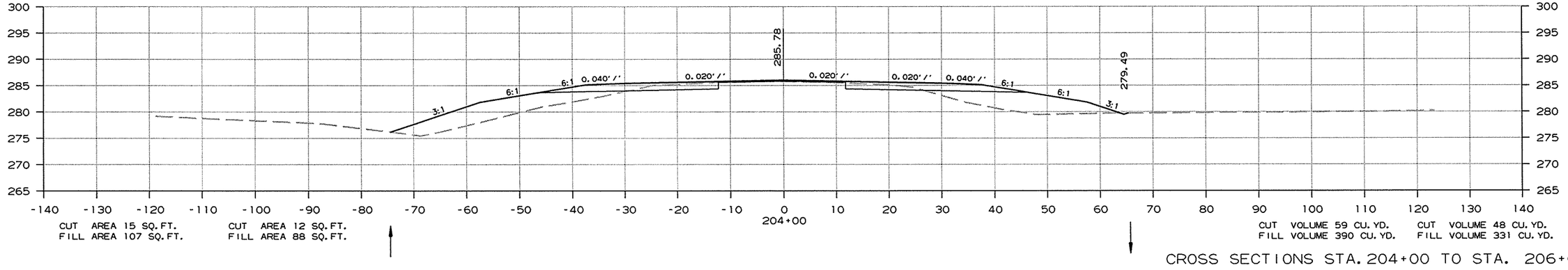
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	240	331

(2) CROSS SECTIONS







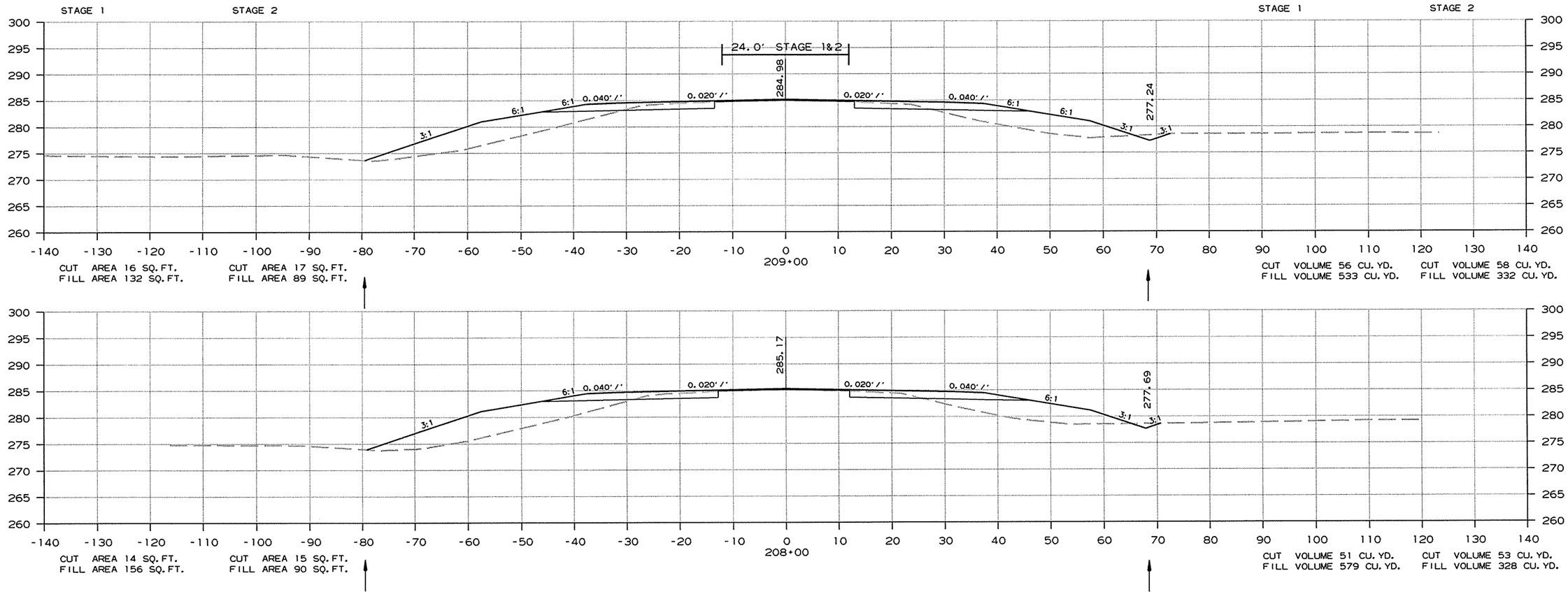
CROSS SECTIONS STA. 204+00 TO STA. 206+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	241	331

(2) CROSS SECTIONS



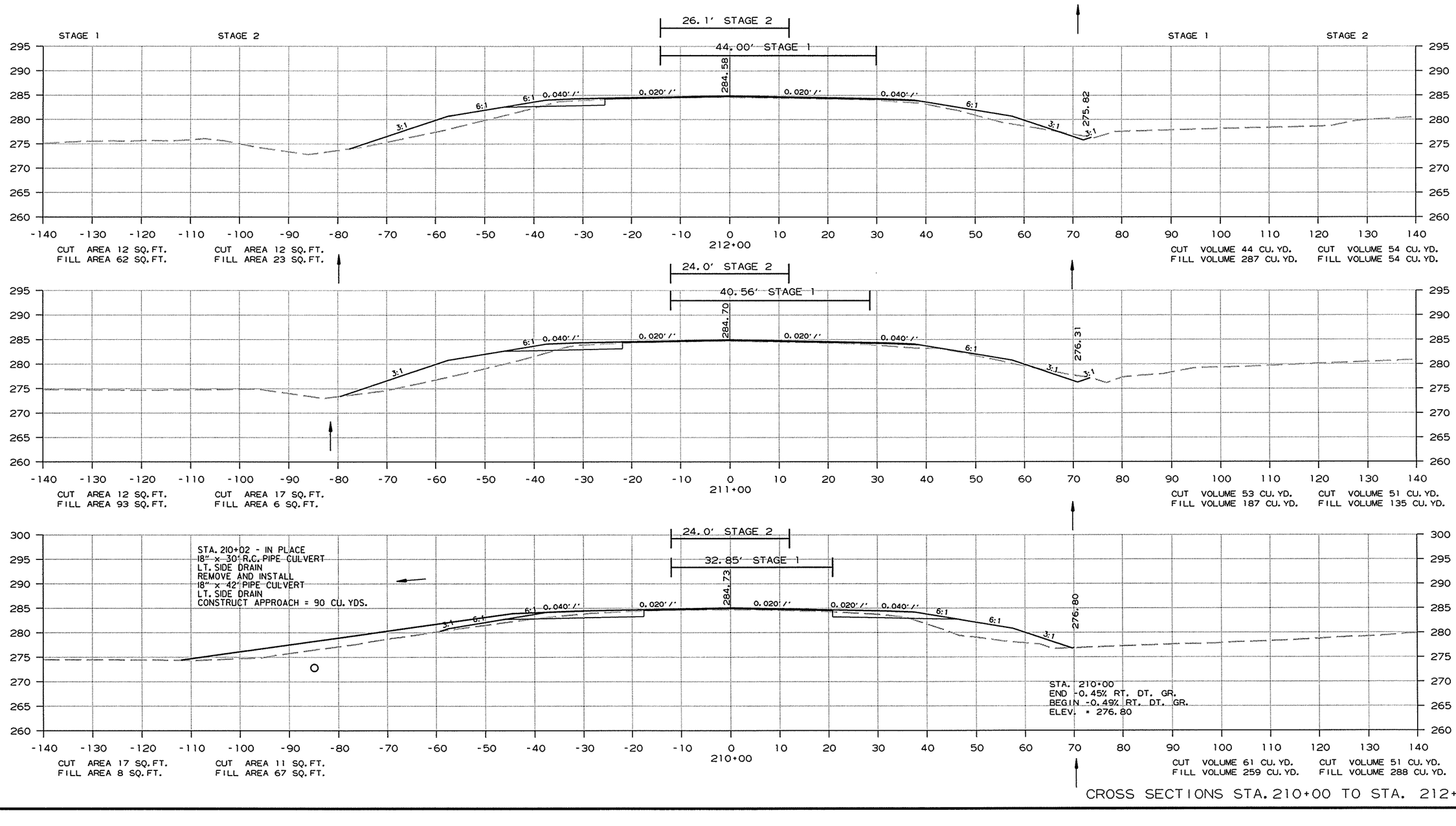
CROSS SECTIONS STA. 207+00 TO STA. 209+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	242	331

(2) CROSS SECTIONS



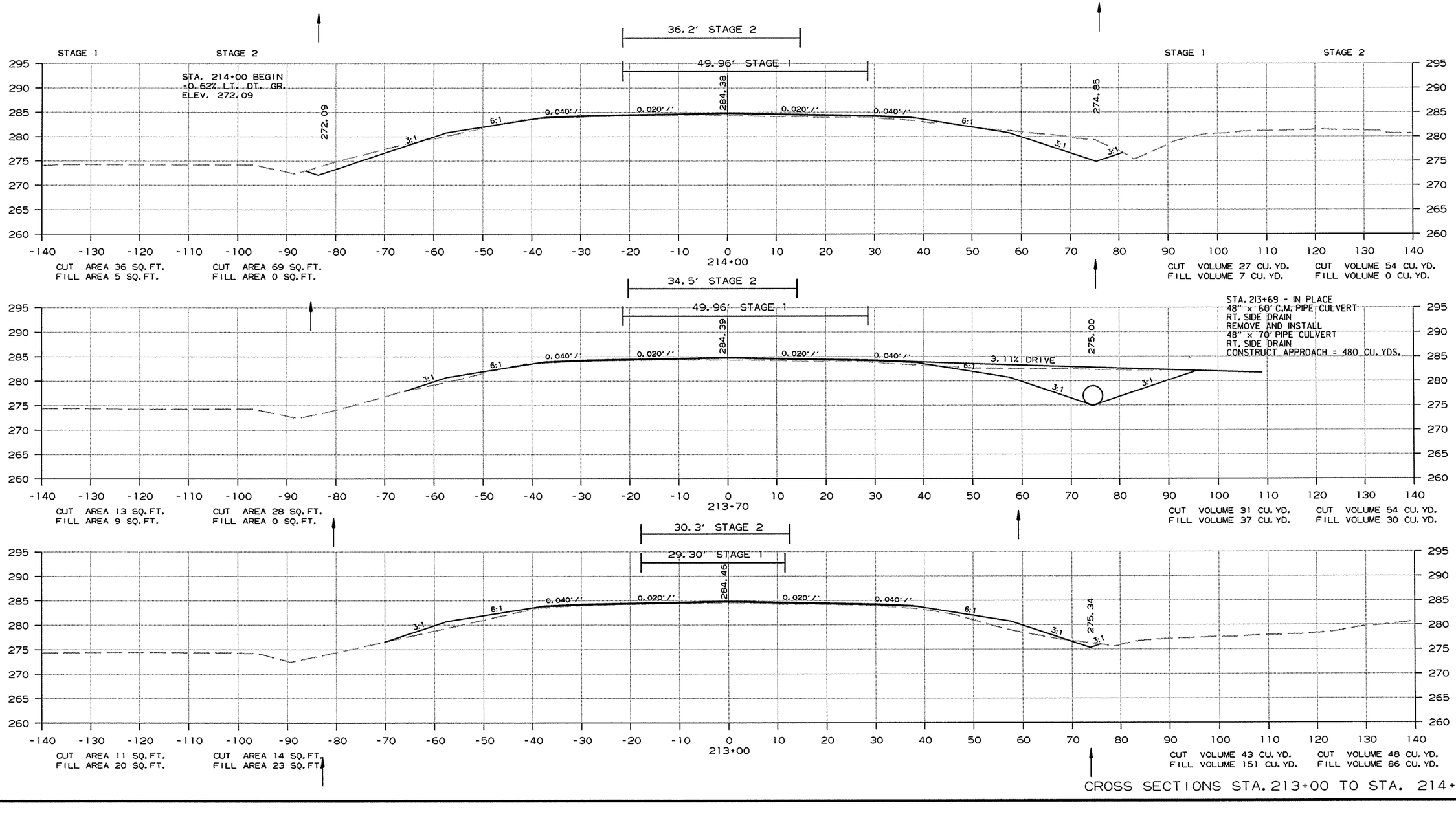
CROSS SECTIONS STA. 210+00 TO STA. 212+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	243	331

(2) CROSS SECTIONS

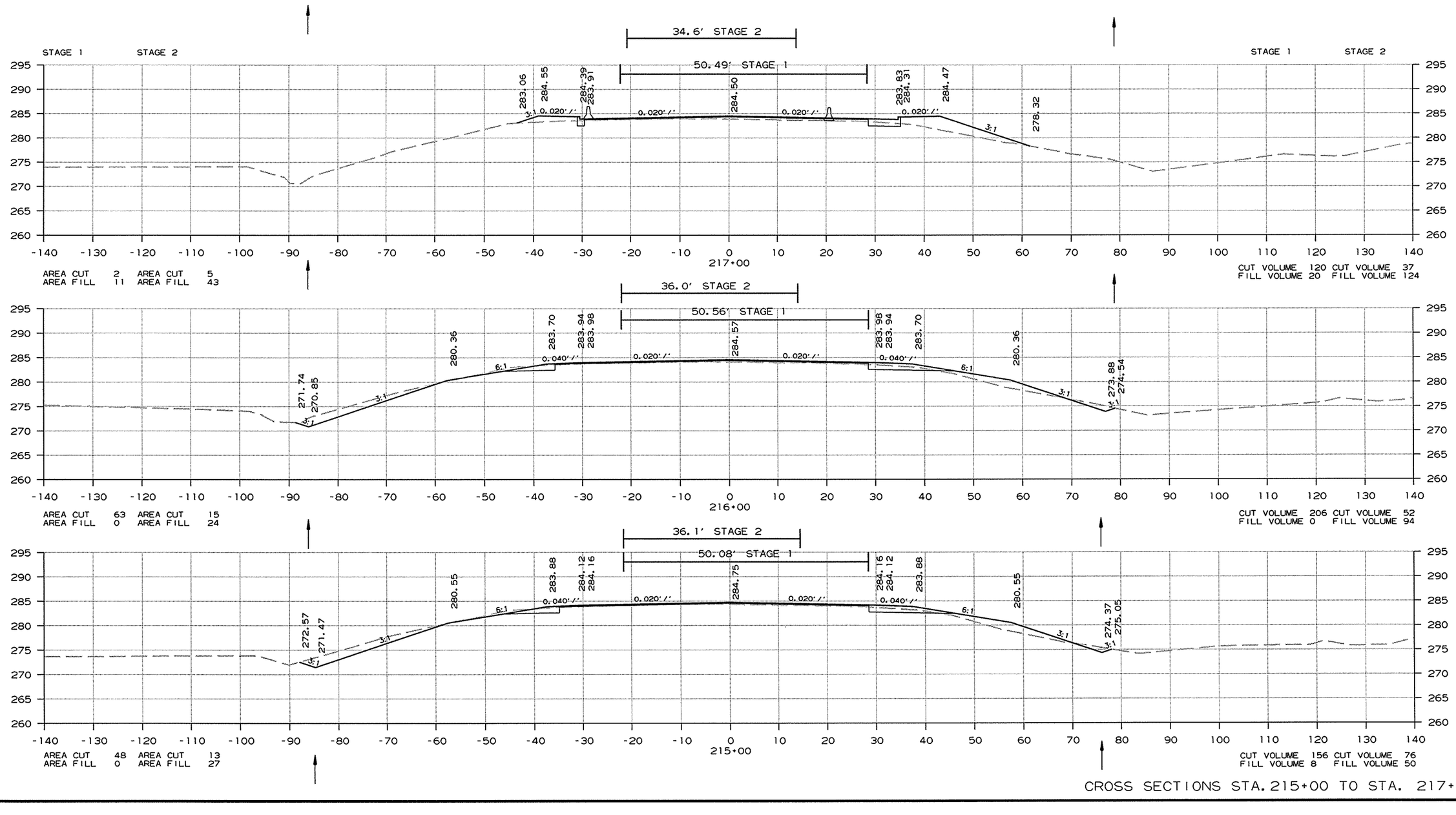


10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	244	331

(2) CROSS SECTIONS



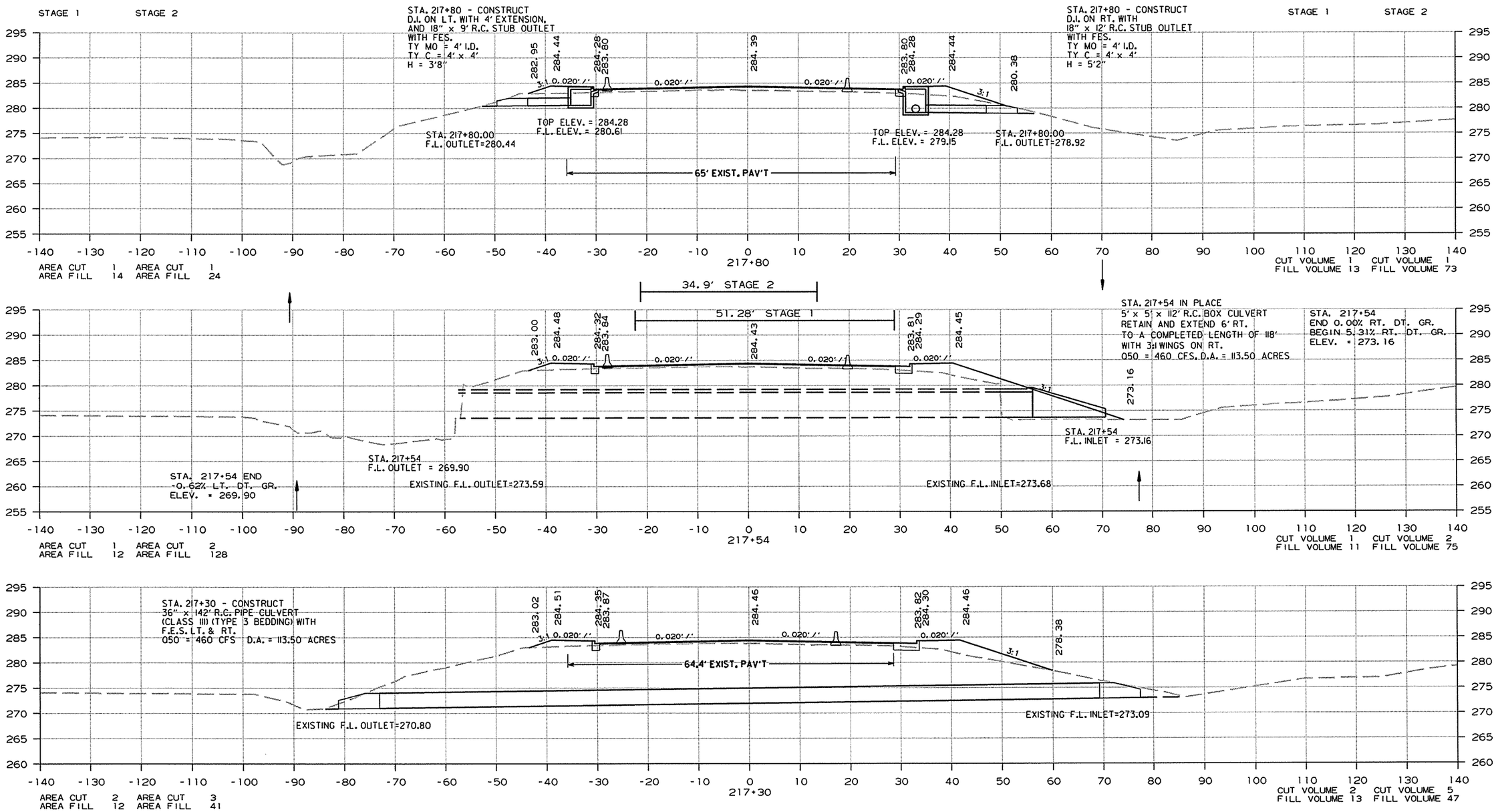
CROSS SECTIONS STA. 215+00 TO STA. 217+00

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	245	331

(2) CROSS SECTIONS



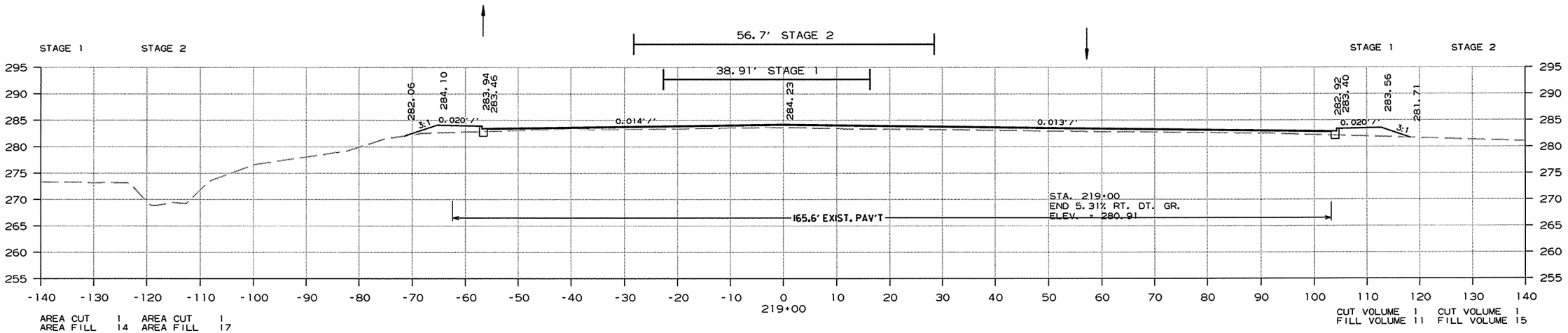
CROSS SECTIONS STA. 217+30 TO STA. 217+80

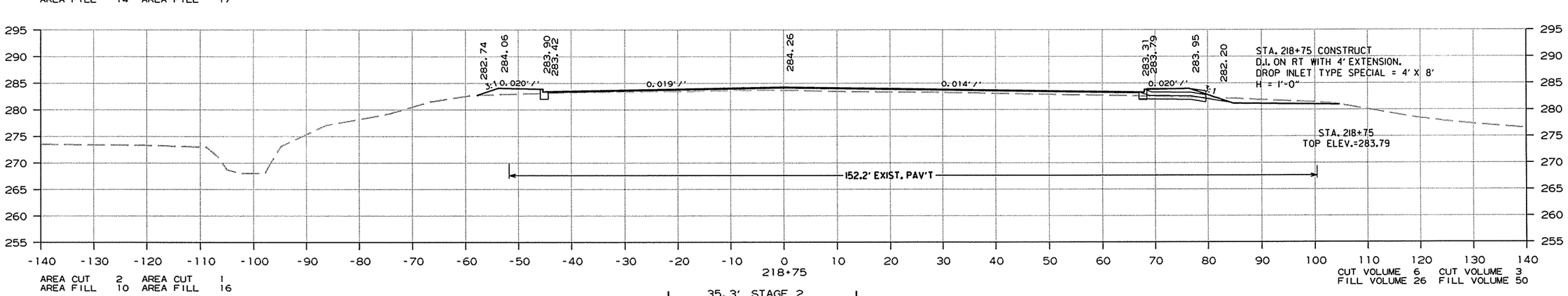
10/29/2015

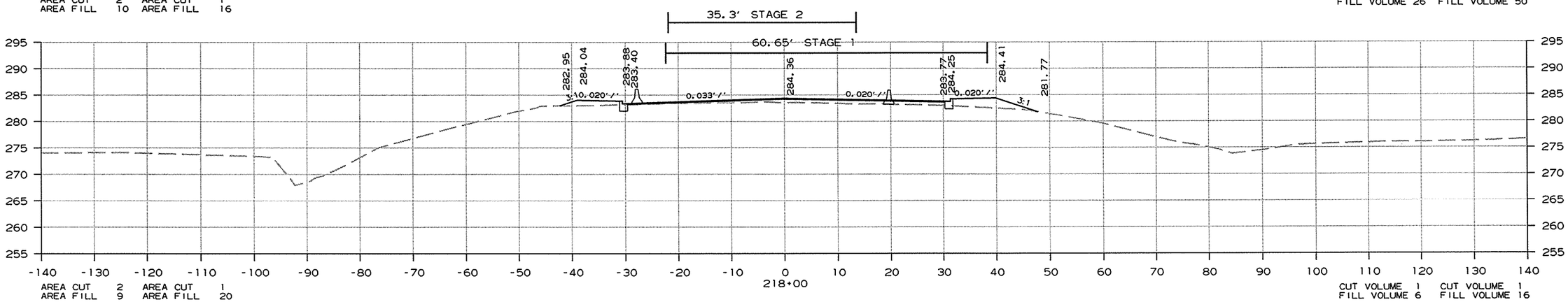
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	246	331

(2) CROSS SECTIONS







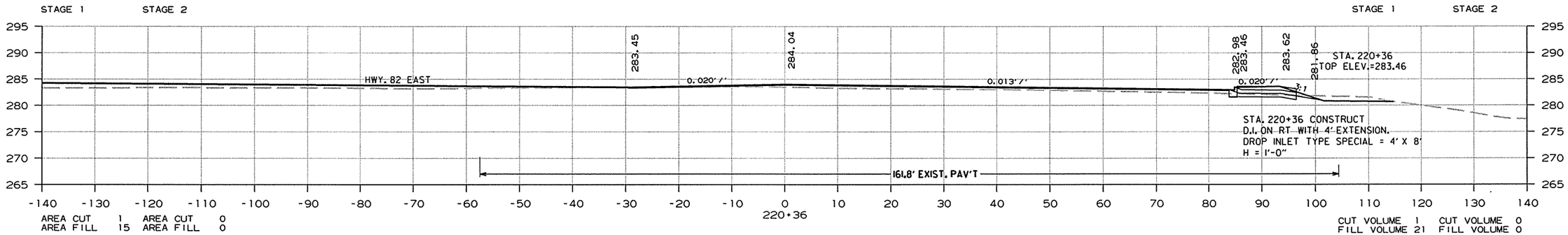
CROSS SECTIONS STA. 218+00 TO STA. 219+00

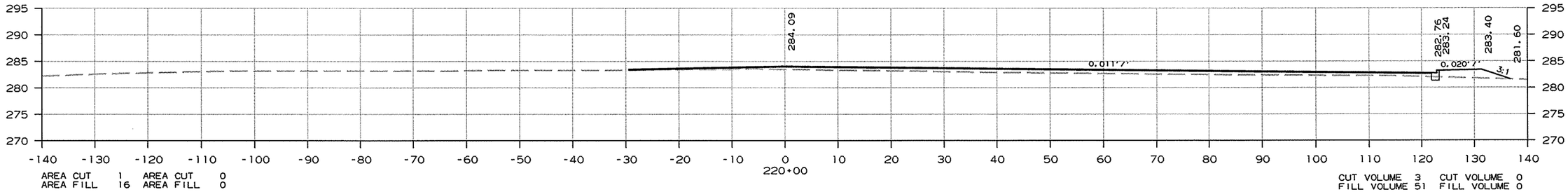
10/29/2015

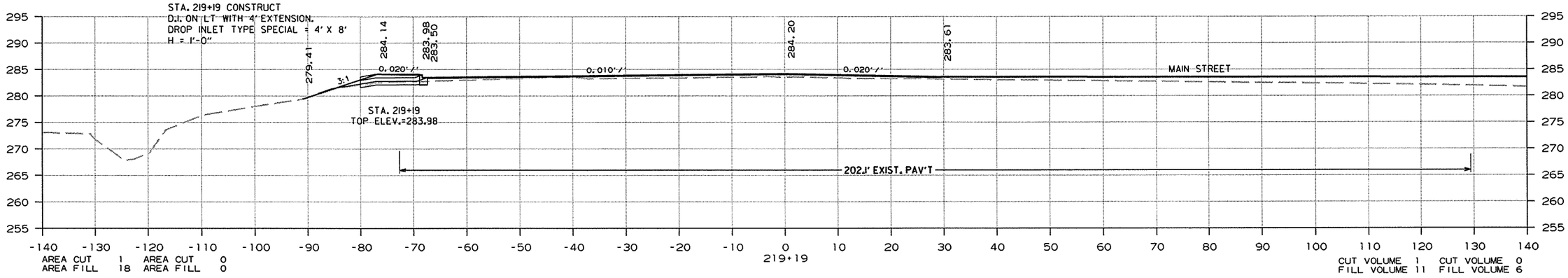
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	247	331

(2) CROSS SECTIONS







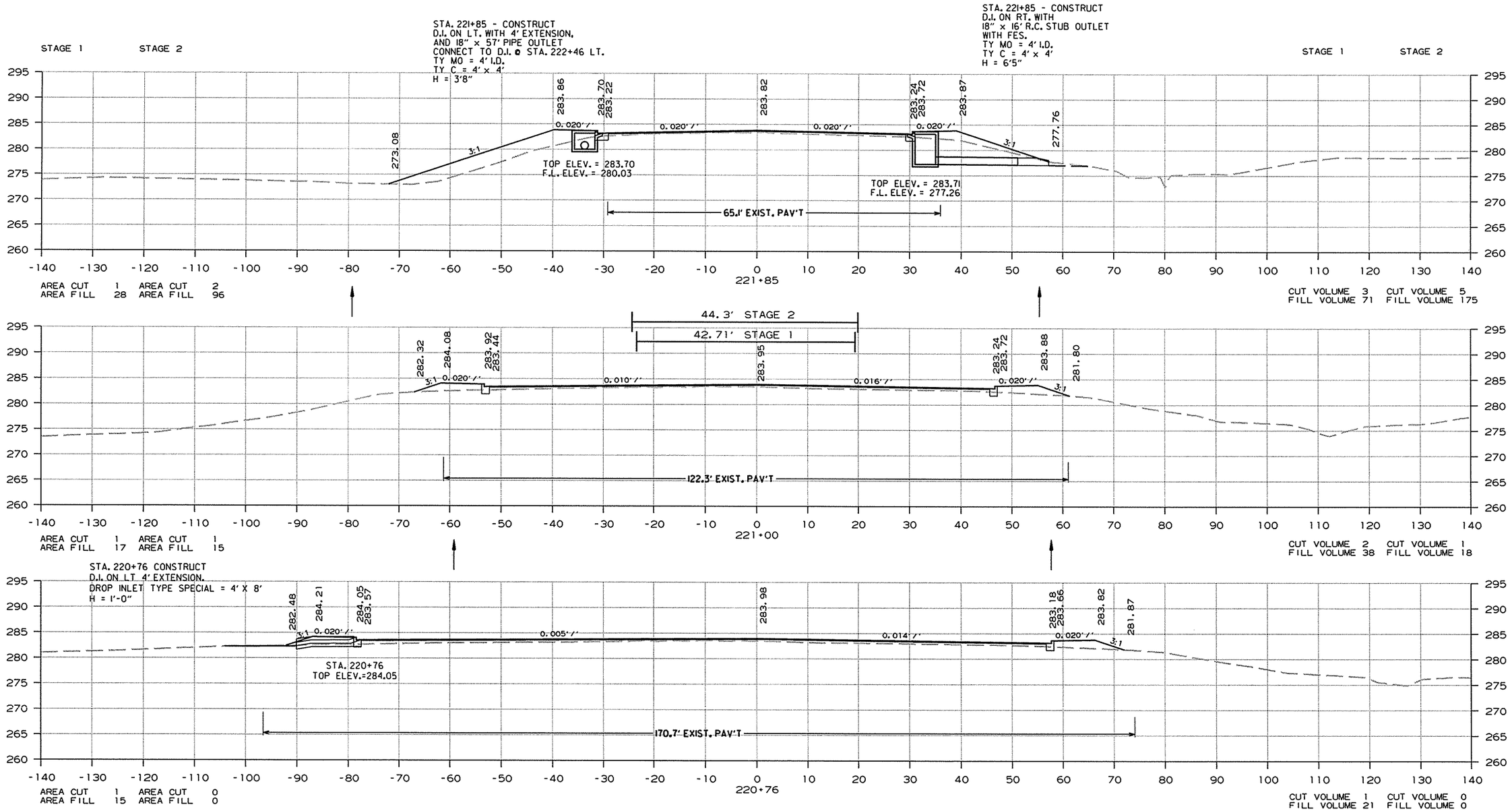
CROSS SECTIONS STA. 219+19 TO STA. 220+36

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	248	331

(2) CROSS SECTIONS



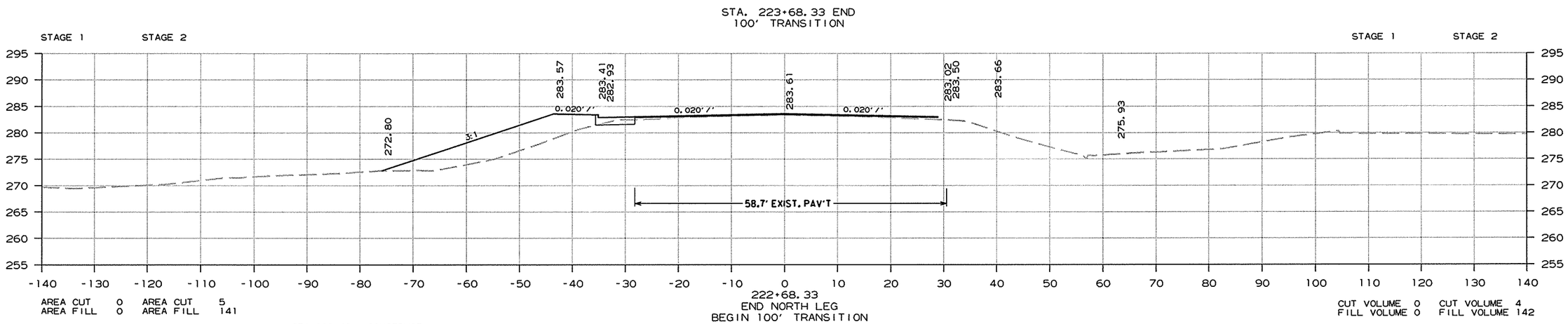
CROSS SECTIONS STA. 220+76 TO STA. 221+85

10/29/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	249	331

(2) CROSS SECTIONS



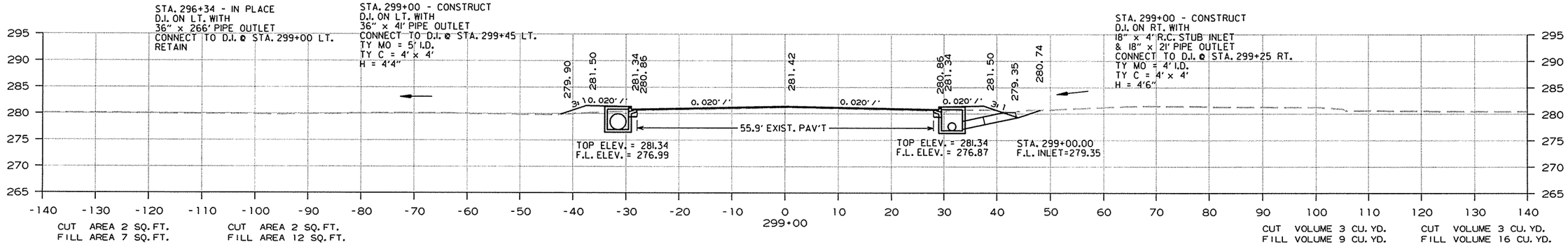
CROSS SECTIONS STA. 222+00 TO STA. 222+68.33

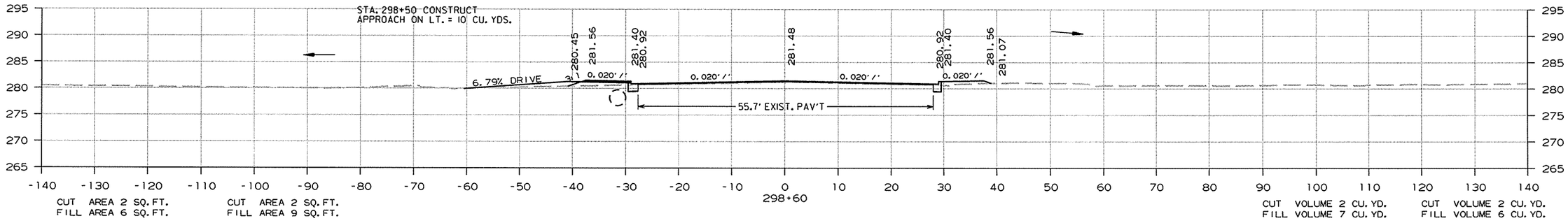
10/29/2015

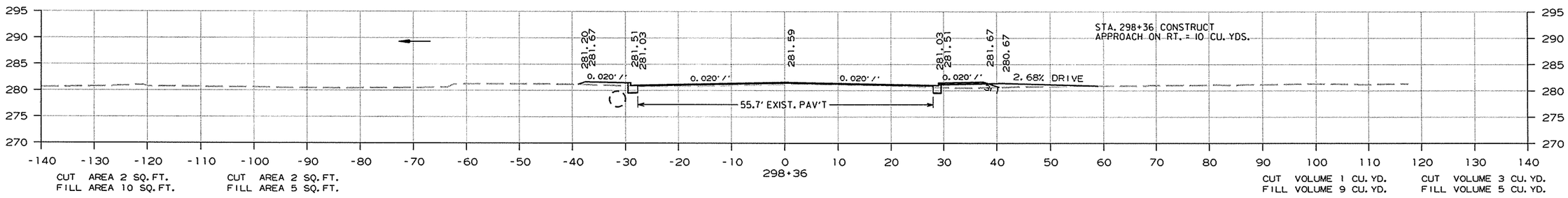
R070365.DGN

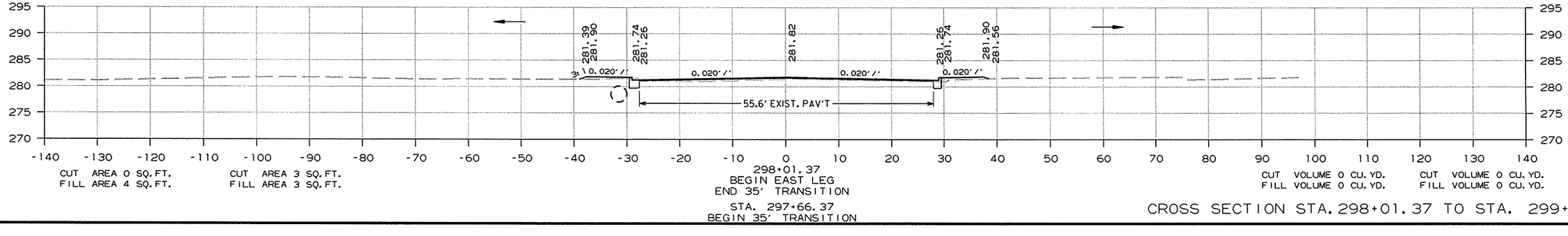
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	250	331

(2) CROSS SECTIONS









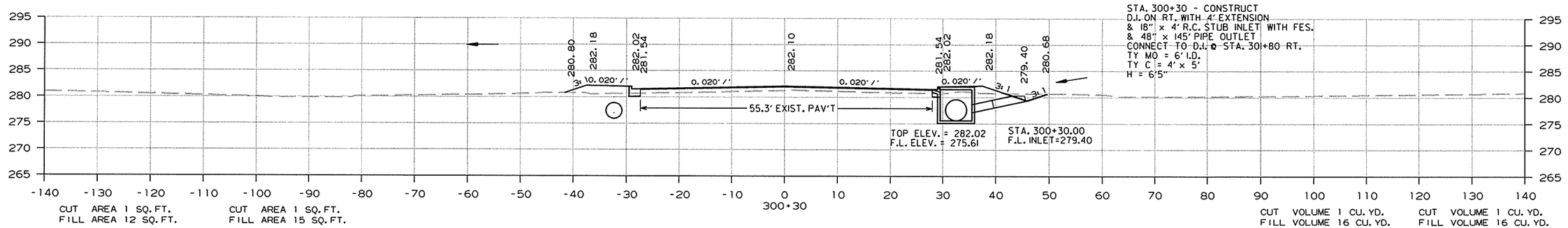
CROSS SECTION STA. 298+01.37 TO STA. 299+00

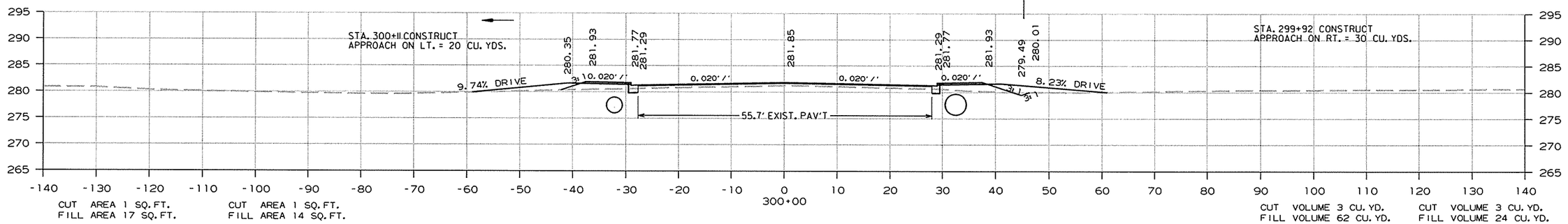
3/31/2014

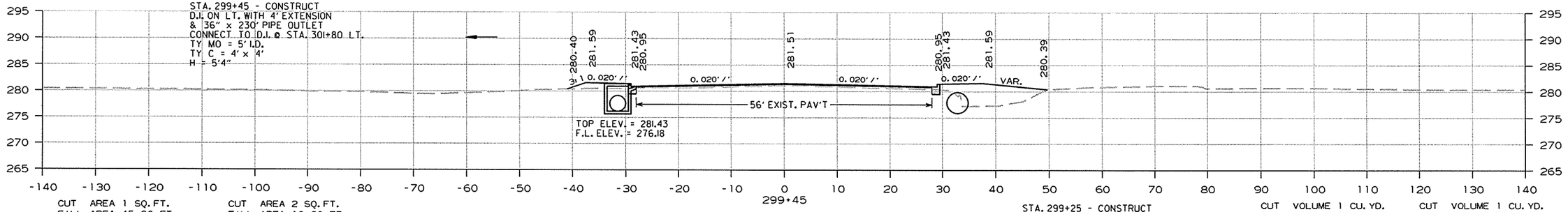
R070365.DGN

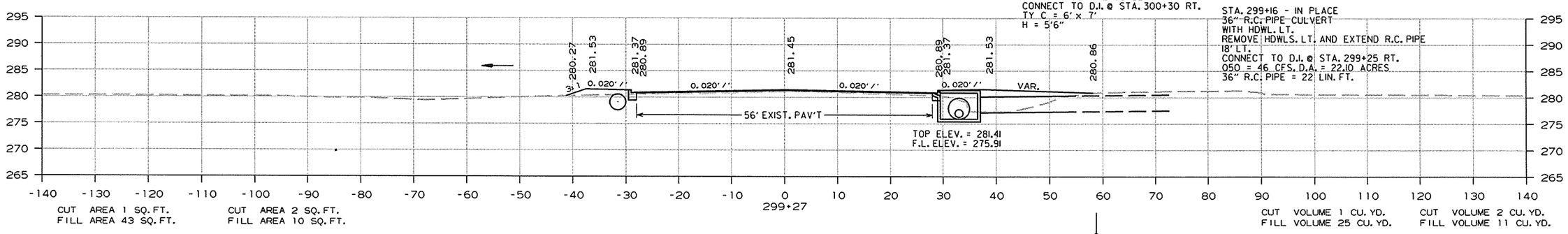
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	251	331

(2) CROSS SECTIONS









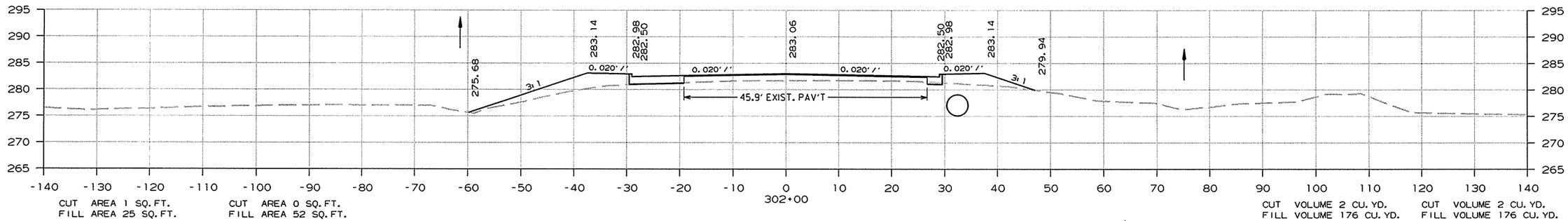
CROSS SECTION STA. 299+27 TO STA. 300+30

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-8-16				6	ARK.			
				JOB NO.		070365	252	331

(2) CROSS SECTIONS

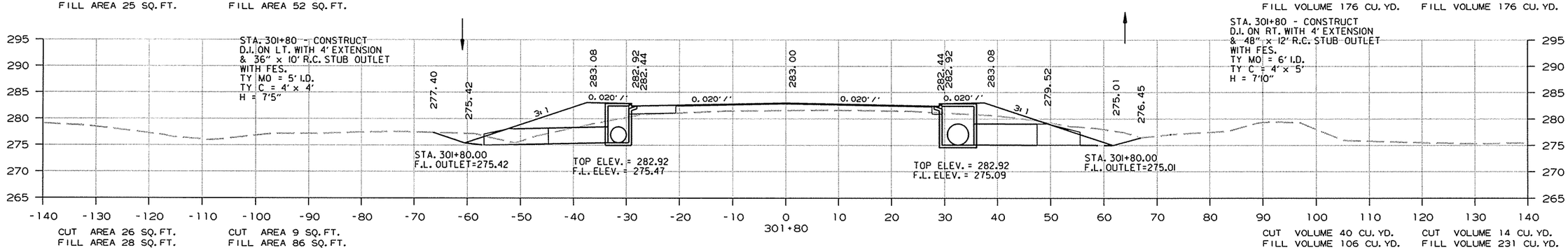


CUT AREA 1 SQ. FT.
FILL AREA 25 SQ. FT.

CUT AREA 0 SQ. FT.
FILL AREA 52 SQ. FT.

CUT VOLUME 2 CU. YD.
FILL VOLUME 176 CU. YD.

CUT VOLUME 2 CU. YD.
FILL VOLUME 176 CU. YD.

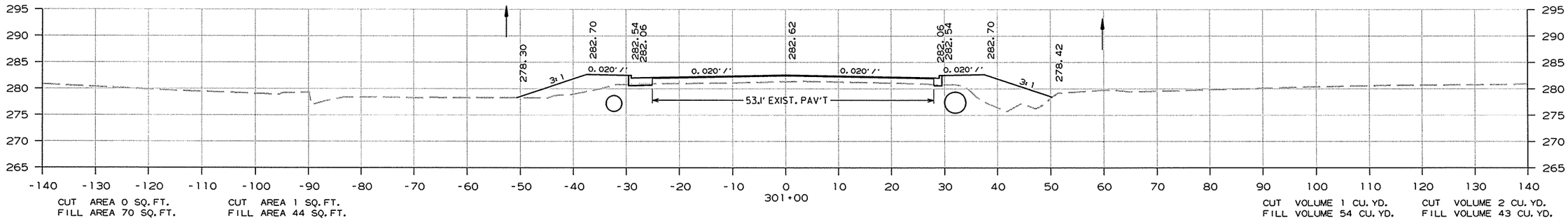


CUT AREA 26 SQ. FT.
FILL AREA 28 SQ. FT.

CUT AREA 9 SQ. FT.
FILL AREA 86 SQ. FT.

CUT VOLUME 40 CU. YD.
FILL VOLUME 106 CU. YD.

CUT VOLUME 14 CU. YD.
FILL VOLUME 231 CU. YD.

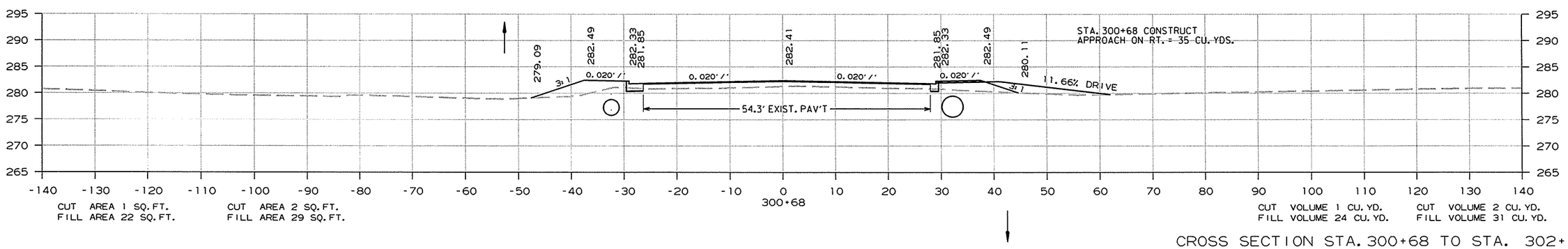


CUT AREA 0 SQ. FT.
FILL AREA 70 SQ. FT.

CUT AREA 1 SQ. FT.
FILL AREA 44 SQ. FT.

CUT VOLUME 1 CU. YD.
FILL VOLUME 54 CU. YD.

CUT VOLUME 2 CU. YD.
FILL VOLUME 43 CU. YD.



CUT AREA 1 SQ. FT.
FILL AREA 22 SQ. FT.

CUT AREA 2 SQ. FT.
FILL AREA 29 SQ. FT.

CUT VOLUME 1 CU. YD.
FILL VOLUME 24 CU. YD.

CUT VOLUME 2 CU. YD.
FILL VOLUME 31 CU. YD.

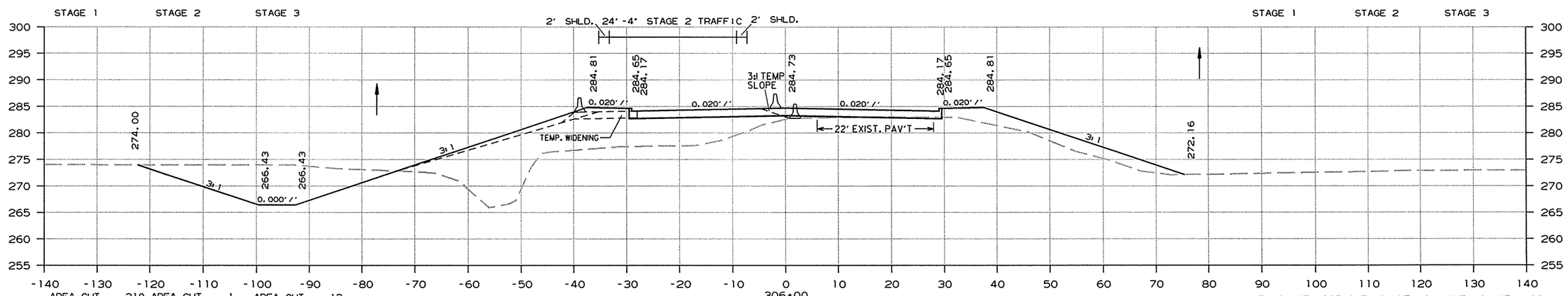
CROSS SECTION STA. 300+68 TO STA. 302+10

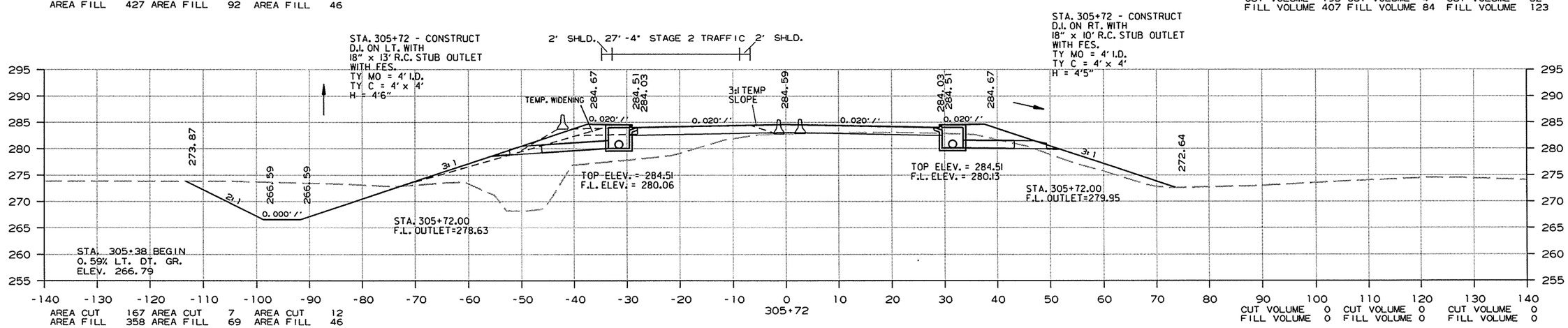
3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	253	331

(2) CROSS SECTIONS





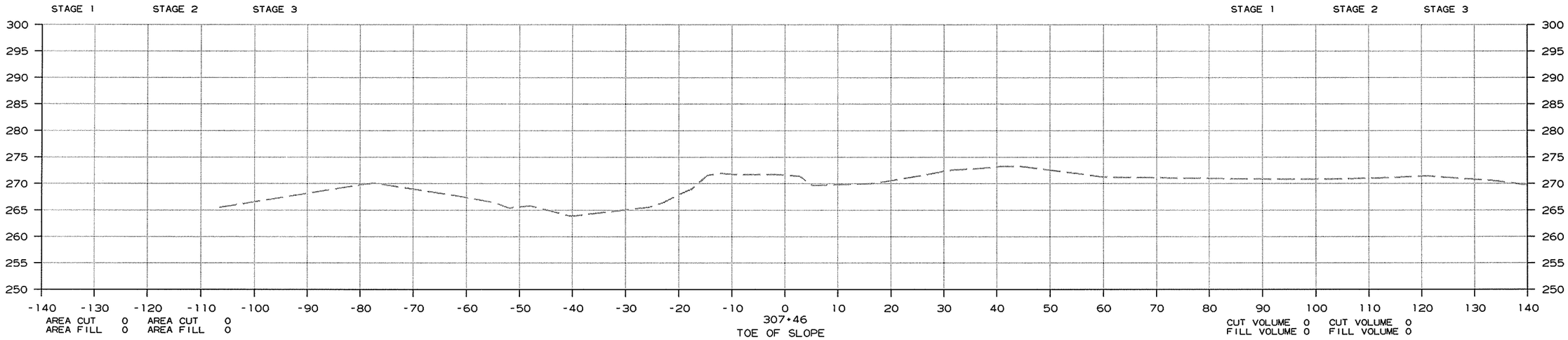
CROSS SECTION STA. 305+72 TO STA. 306+00

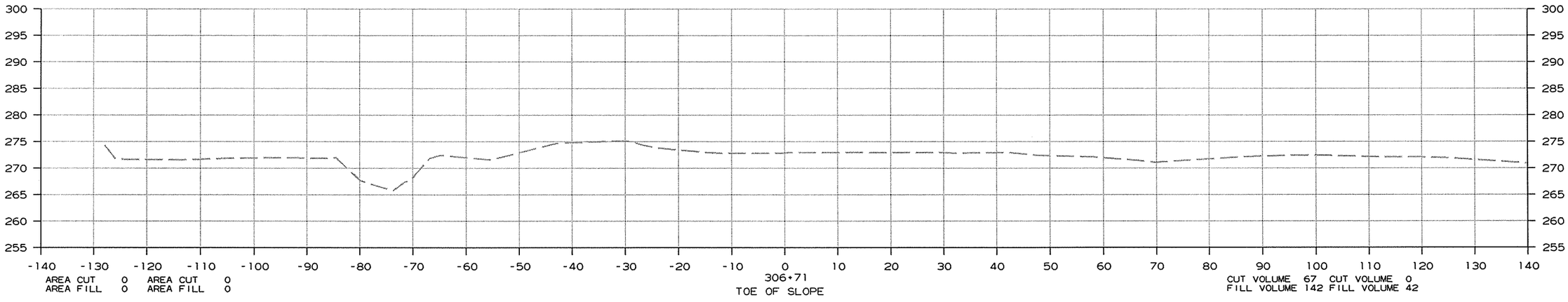
3/31/2014

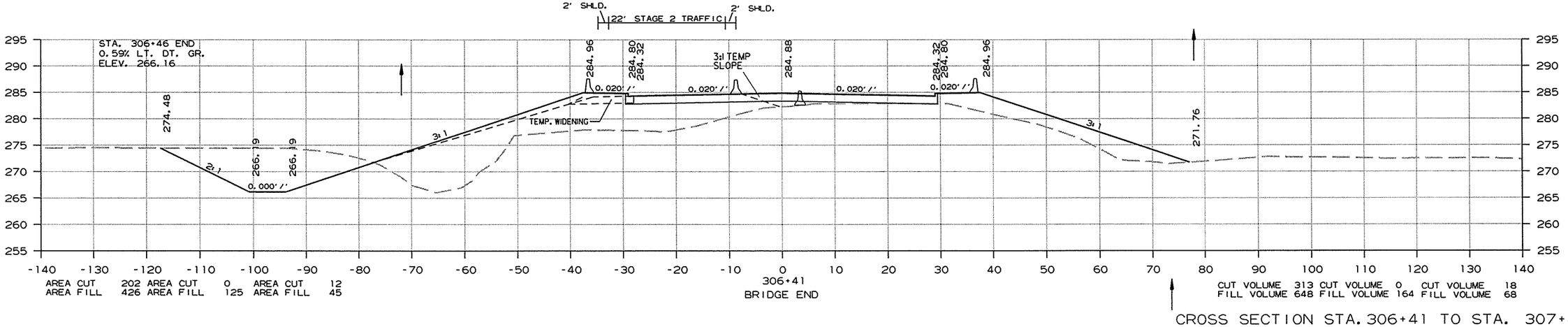
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	254	331

(2) CROSS SECTIONS







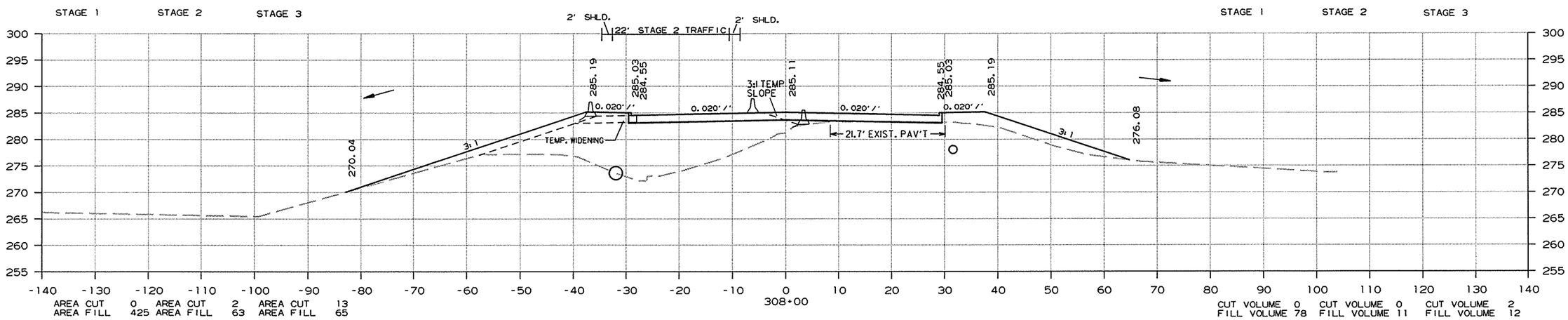
CROSS SECTION STA. 306+41 TO STA. 307+46

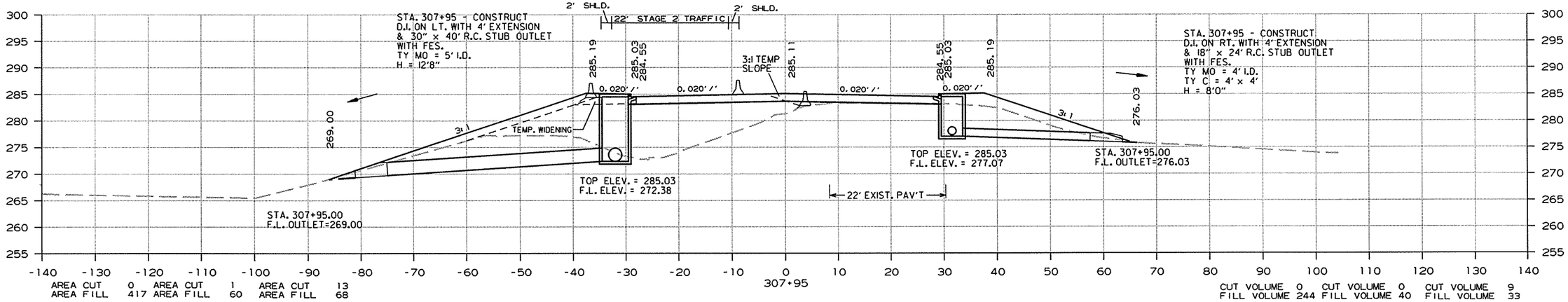
3/31/2014

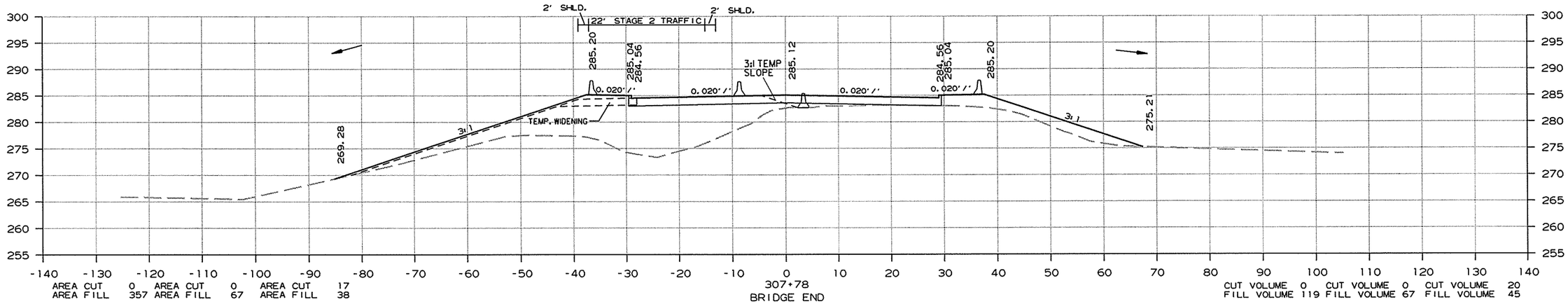
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	255	331

(2) CROSS SECTIONS







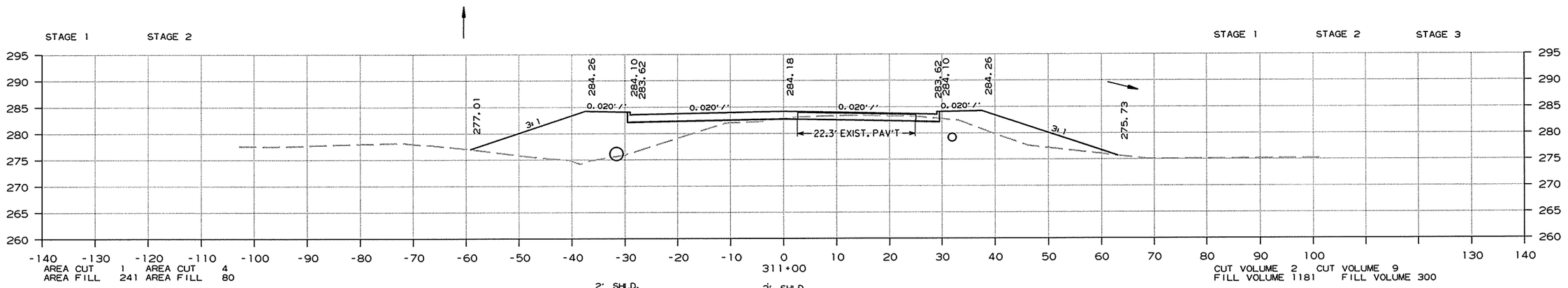
CROSS SECTION STA. 307+78 TO STA. 308+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	256	331

(2) CROSS SECTIONS



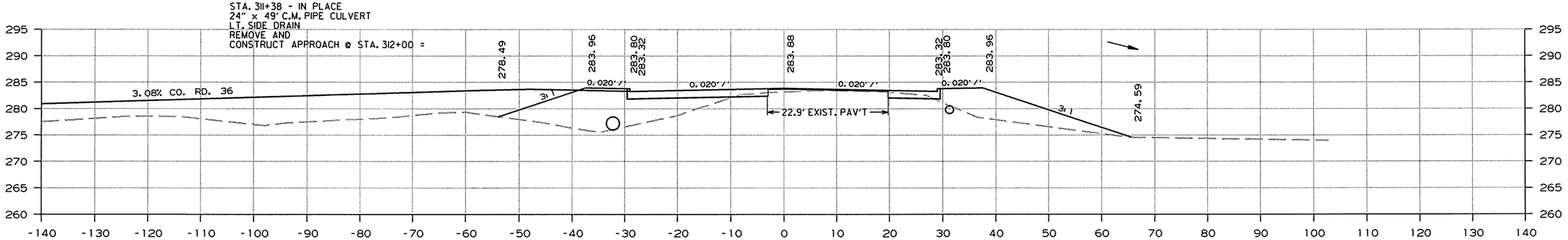
CROSS SECTION STA. 309+00 TO STA. 311+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	257	331

(2) CROSS SECTIONS



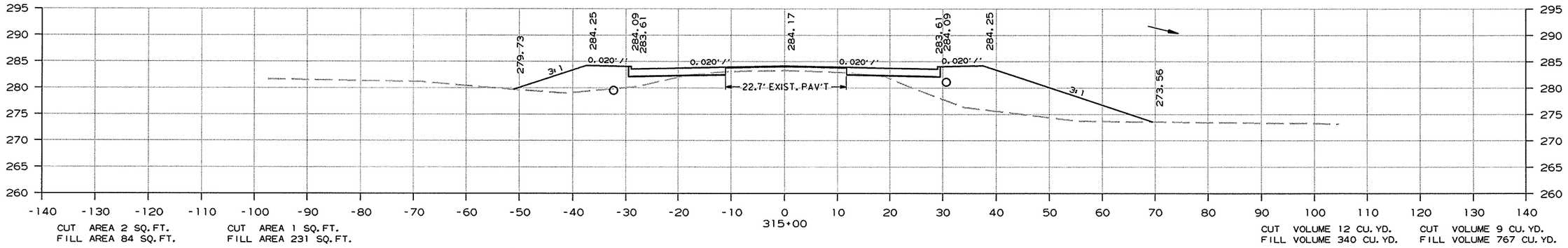
CROSS SECTION STA. 311+60 TO STA. 312+25

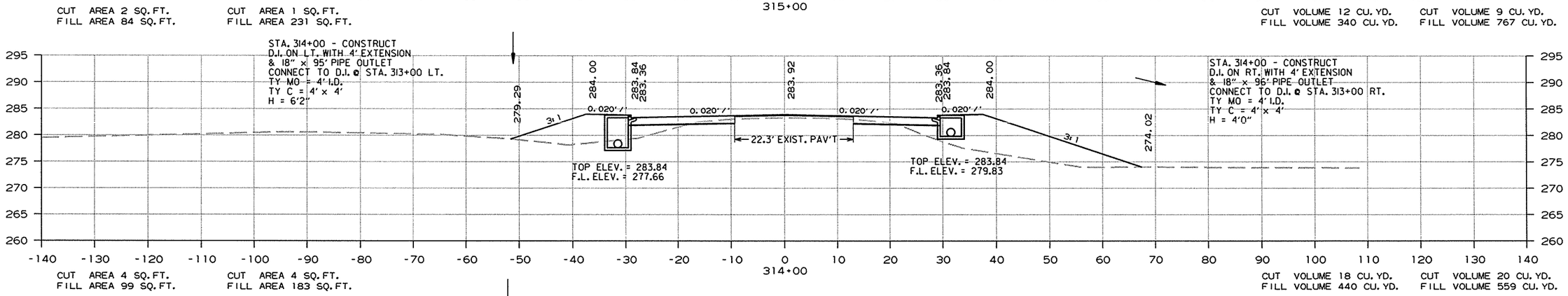
3/31/2014

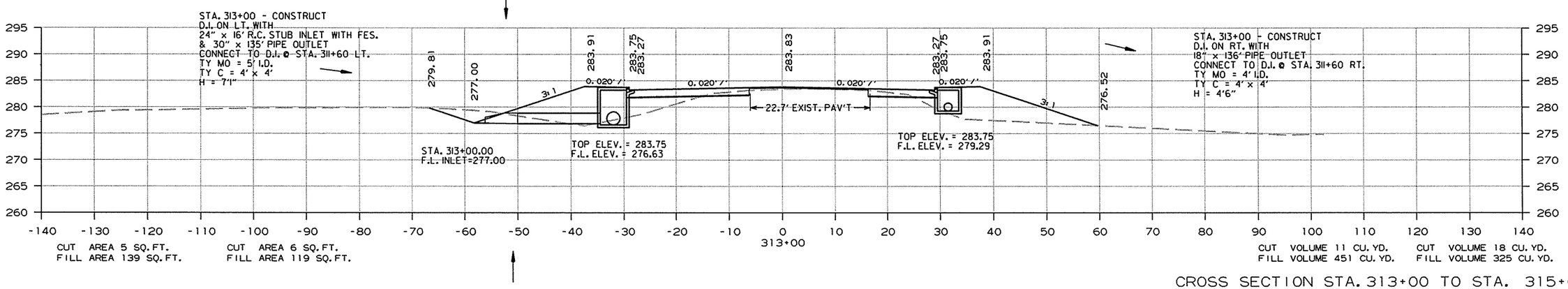
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	258	331

(2) CROSS SECTIONS







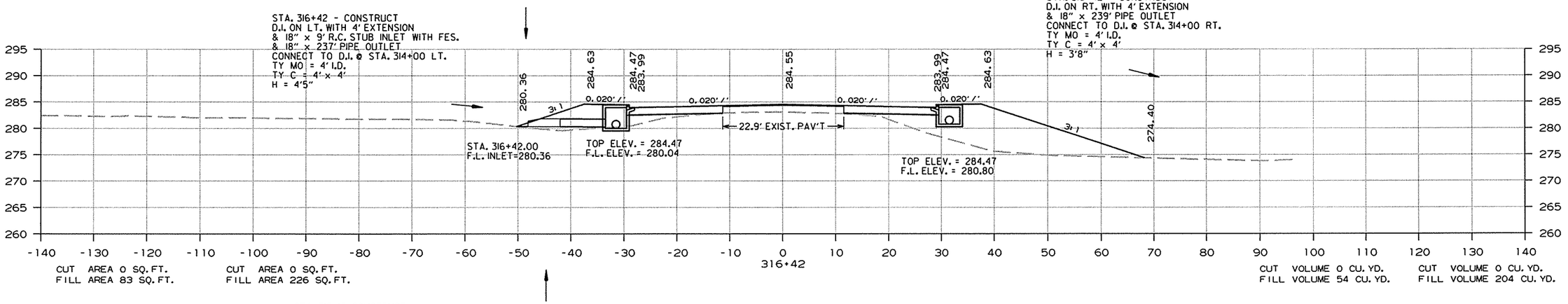
CROSS SECTION STA. 313+00 TO STA. 315+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	259	331

(2) CROSS SECTIONS



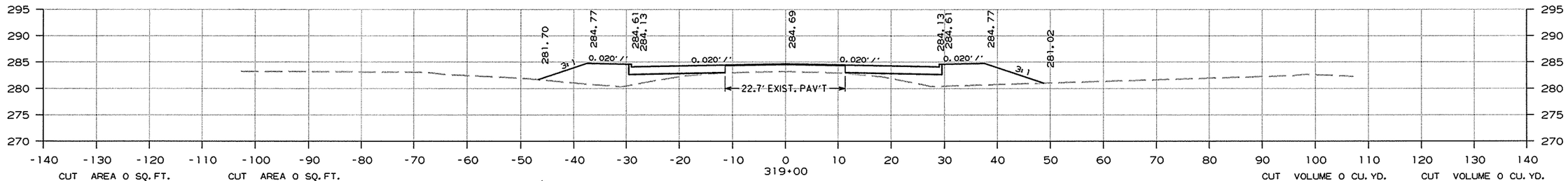
CROSS SECTION STA. 316+00 TO STA. 316+42

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	260	331

(2) CROSS SECTIONS

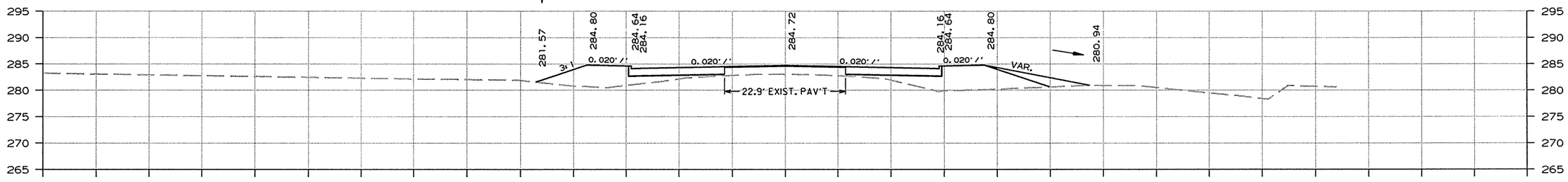


CUT AREA 0 SQ.FT.
FILL AREA 67 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 77 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 250 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 311 CU. YD.

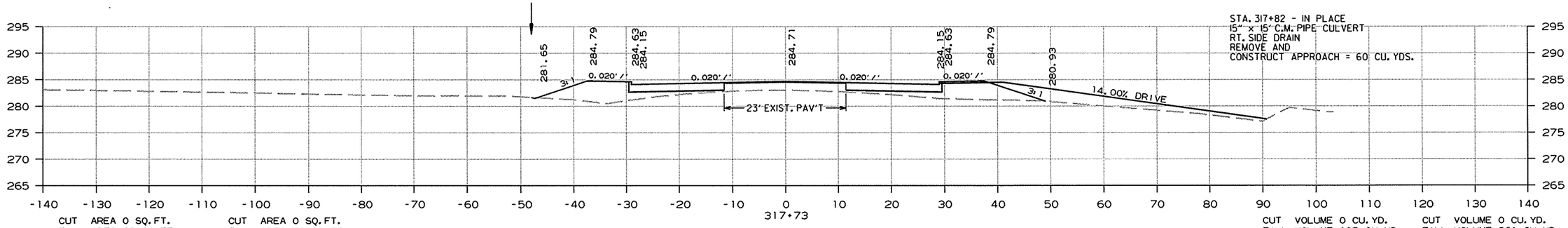


CUT AREA 0 SQ.FT.
FILL AREA 68 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 91 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 66 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 76 CU. YD.

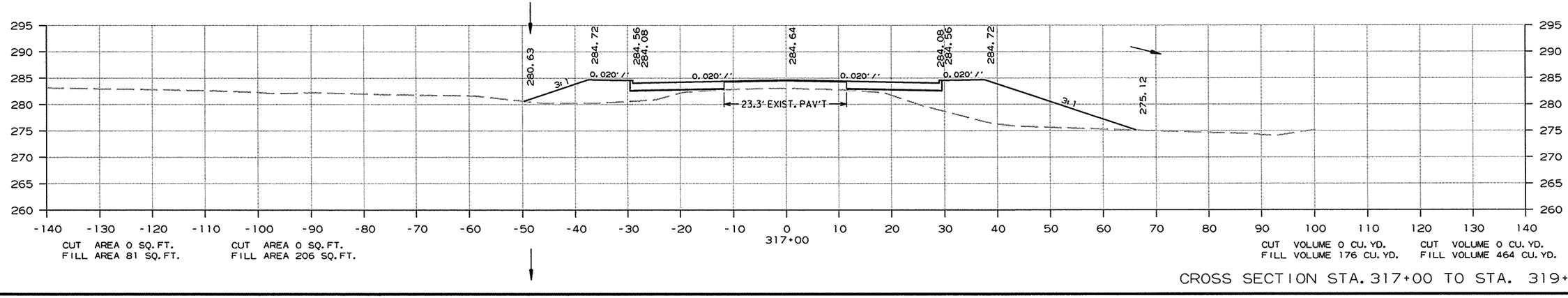


CUT AREA 0 SQ.FT.
FILL AREA 63 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 61 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 195 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 361 CU. YD.



CUT AREA 0 SQ.FT.
FILL AREA 81 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 206 SQ.FT.

CUT VOLUME 0 CU. YD.
FILL VOLUME 176 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 464 CU. YD.

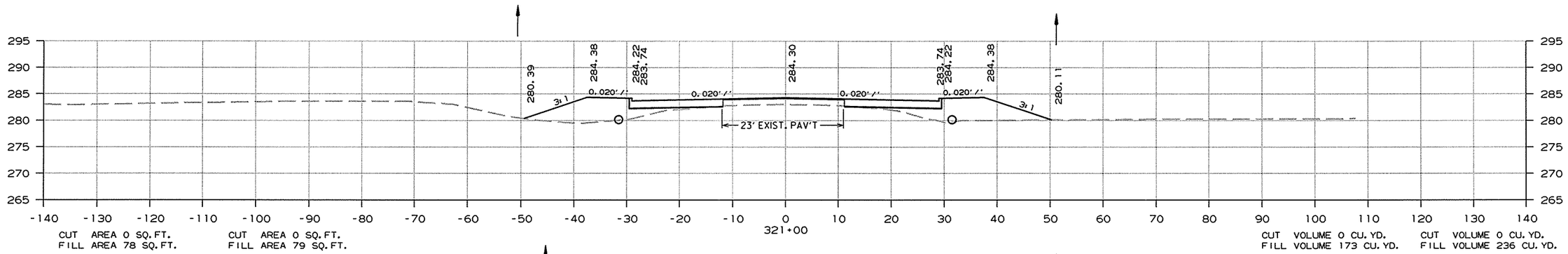
CROSS SECTION STA. 317+00 TO STA. 319+00

3/31/2014

R070365.DGN

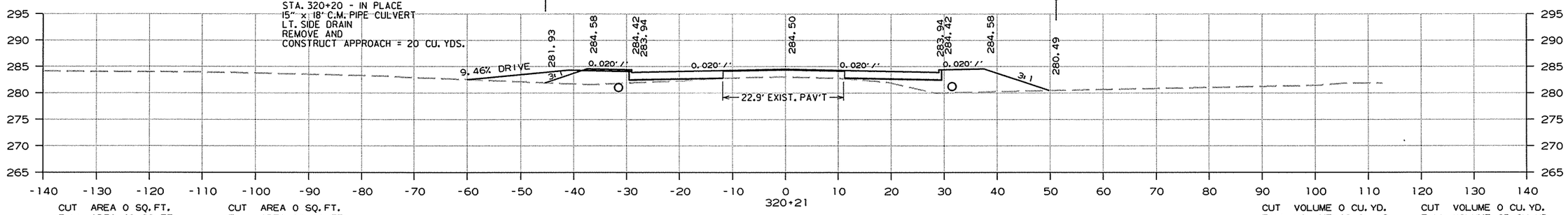
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	261	331

(2) CROSS SECTIONS

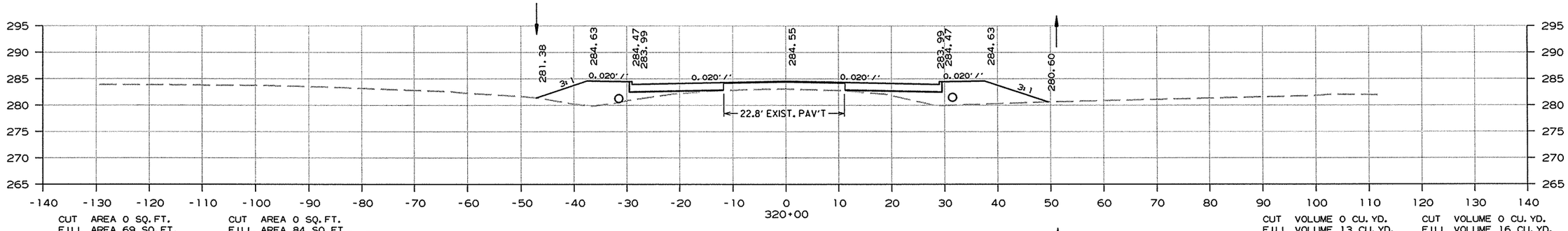


CUT AREA 0 SQ.FT. FILL AREA 78 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 79 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 173 CU.YD.
CUT VOLUME 0 CU.YD. FILL VOLUME 236 CU.YD.

STA. 320+20 - IN PLACE
15" x 18" C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 20 CU. YDS.



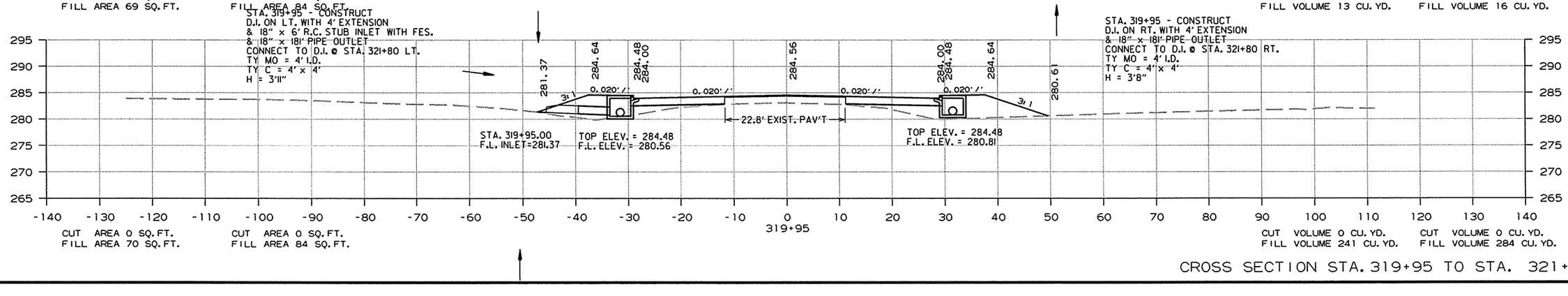
CUT AREA 0 SQ.FT. FILL AREA 41 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 83 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 43 CU.YD.
CUT VOLUME 0 CU.YD. FILL VOLUME 65 CU.YD.



CUT AREA 0 SQ.FT. FILL AREA 69 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 84 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 13 CU.YD.
CUT VOLUME 0 CU.YD. FILL VOLUME 16 CU.YD.

STA. 319+95 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 6' R.C. STUB INLET WITH FES.
& 18" x 18I' PIPE OUTLET
CONNECT TO D.I. @ STA. 321+80 LT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'11"

STA. 319+95 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 18I' PIPE OUTLET
CONNECT TO D.I. @ STA. 321+80 RT.
TY MO = 4' I.D.
TY C = 4' x 4'
H = 3'8"



CUT AREA 0 SQ.FT. FILL AREA 70 SQ.FT.
CUT AREA 0 SQ.FT. FILL AREA 84 SQ.FT.
CUT VOLUME 0 CU.YD. FILL VOLUME 241 CU.YD.
CUT VOLUME 0 CU.YD. FILL VOLUME 284 CU.YD.

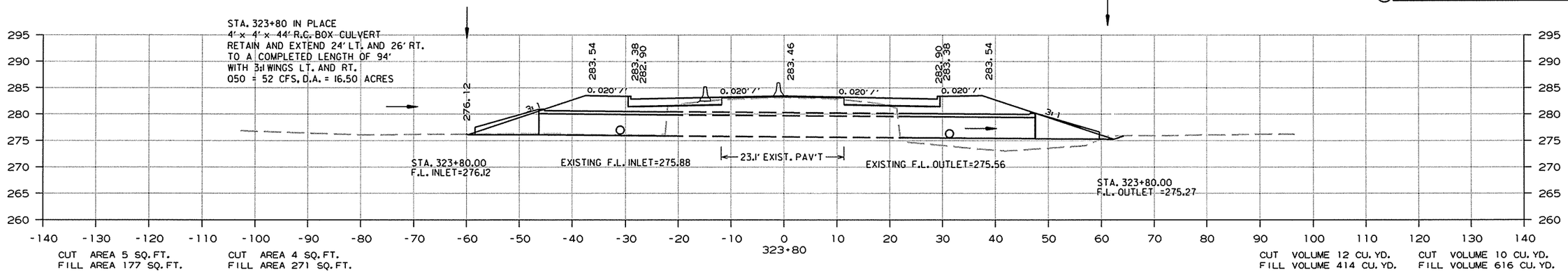
CROSS SECTION STA. 319+95 TO STA. 321+00

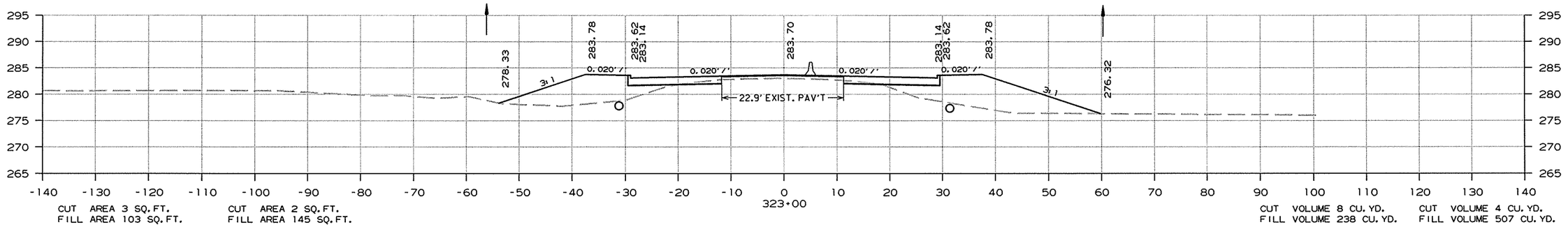
3/31/2014

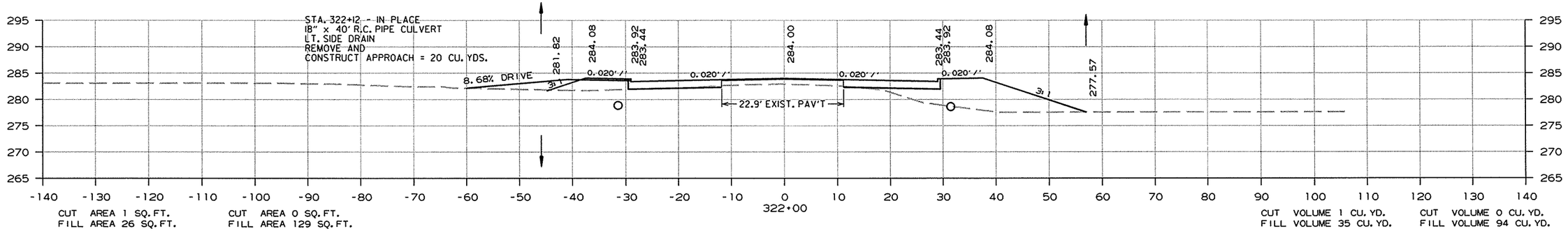
R070365.DGN

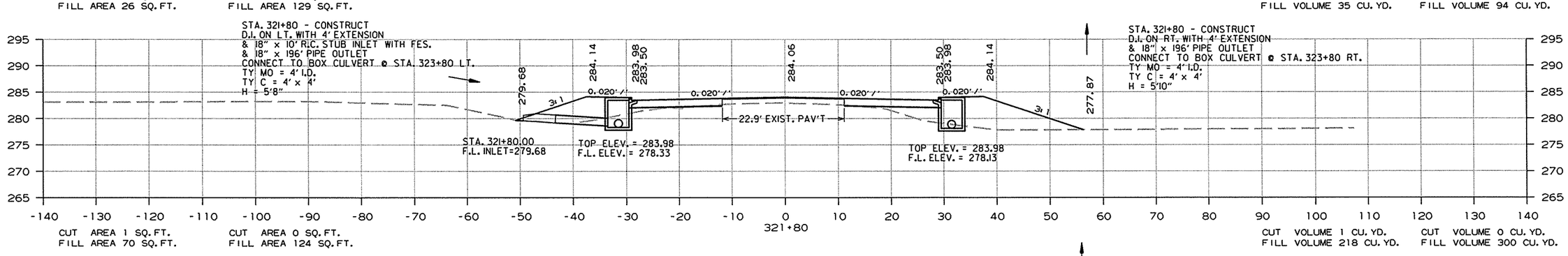
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	262	331

(2) CROSS SECTIONS









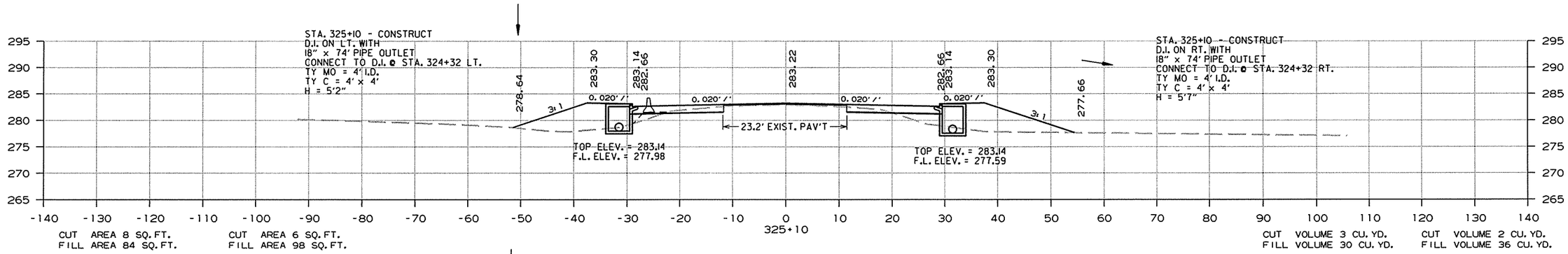
CROSS SECTION STA. 321+80 TO STA. 323+80

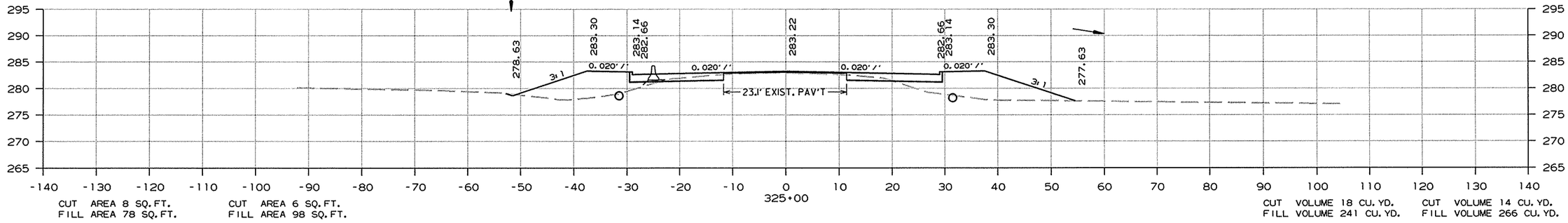
3/31/2014

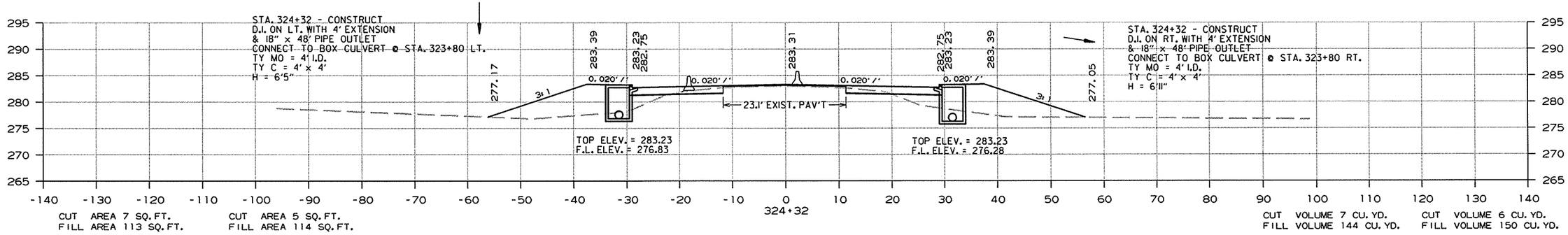
R070365.DGN

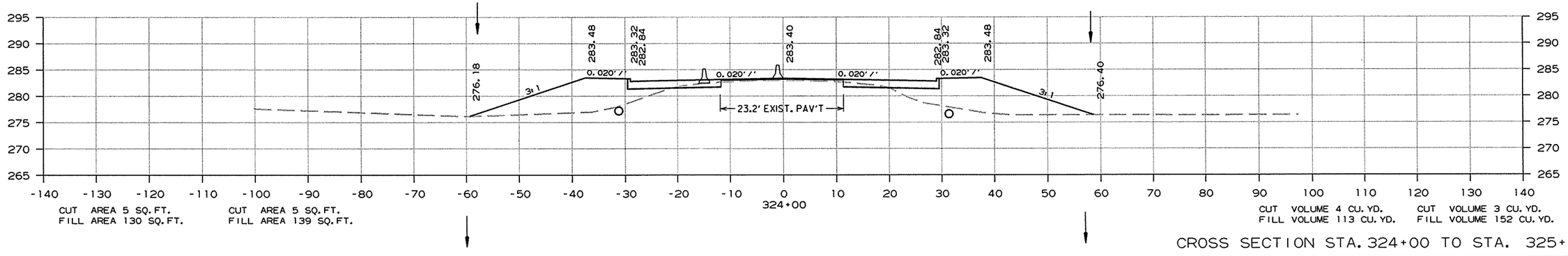
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	263	331

(2) CROSS SECTIONS









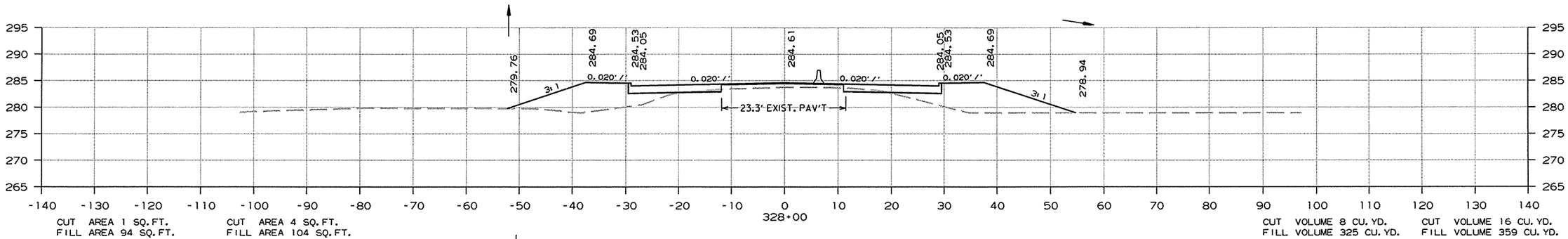
CROSS SECTION STA. 324+00 TO STA. 325+10

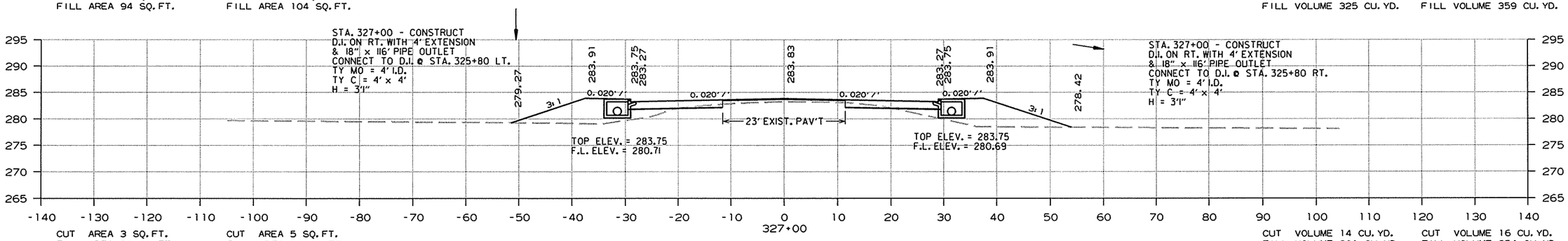
3/31/2014

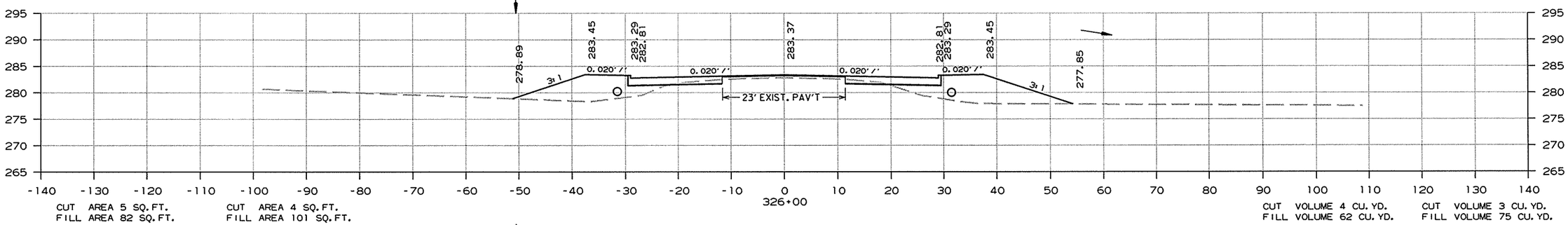
R070365.DGN

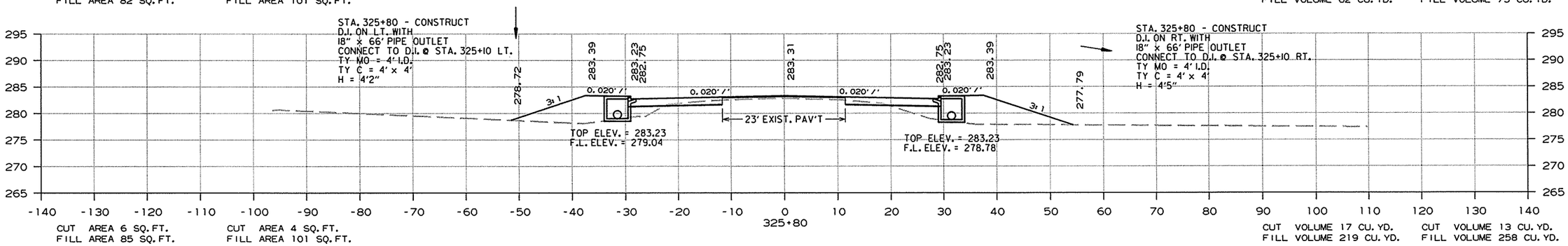
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	264	331

(2) CROSS SECTIONS









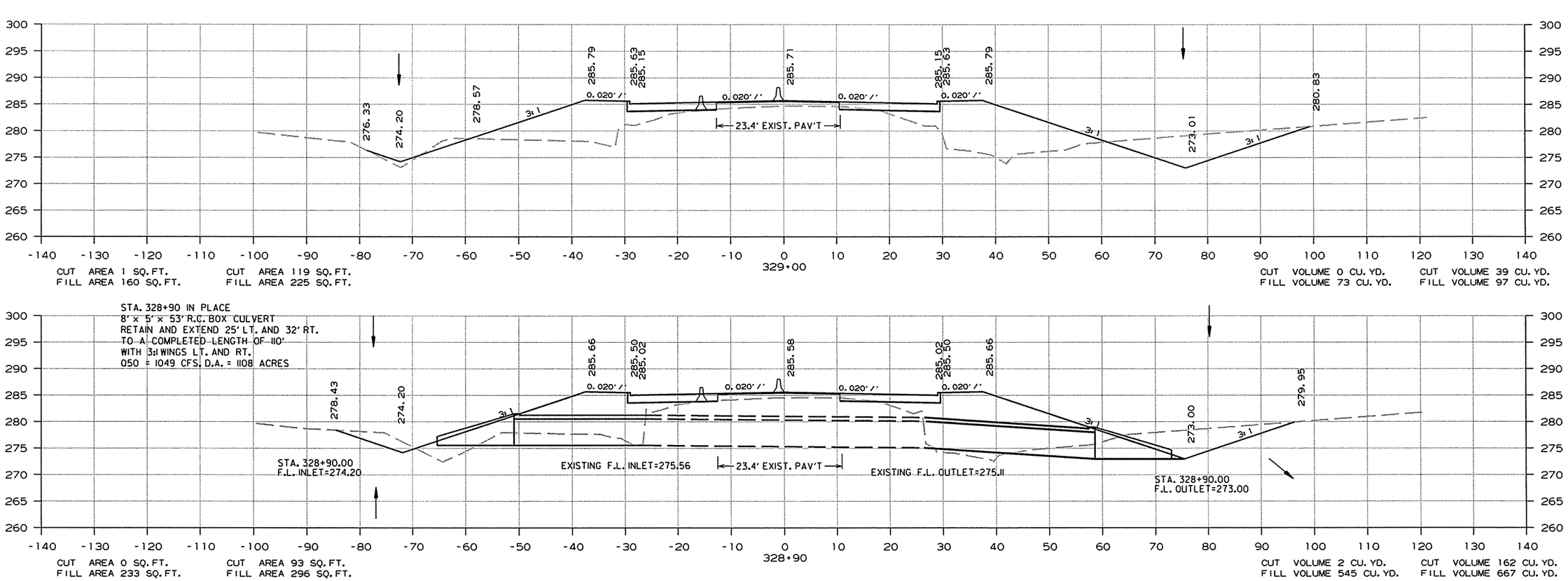
CROSS SECTION STA. 325+80 TO STA. 328+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	265	331

(2) CROSS SECTIONS



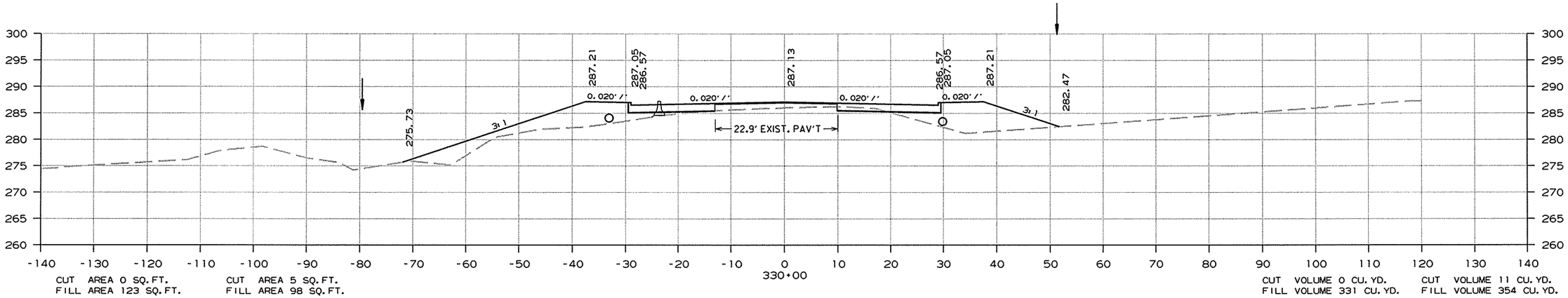
CROSS SECTION STA. 328+90 TO STA. 329+00

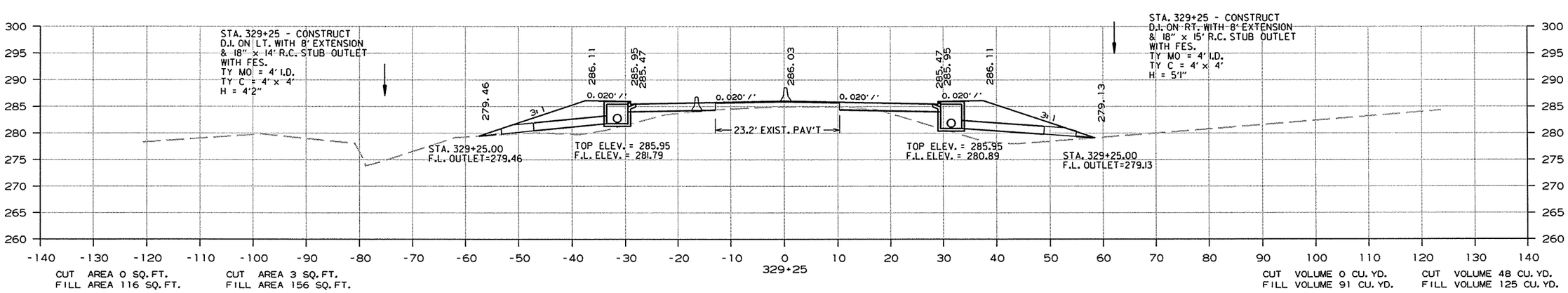
3/31/2014

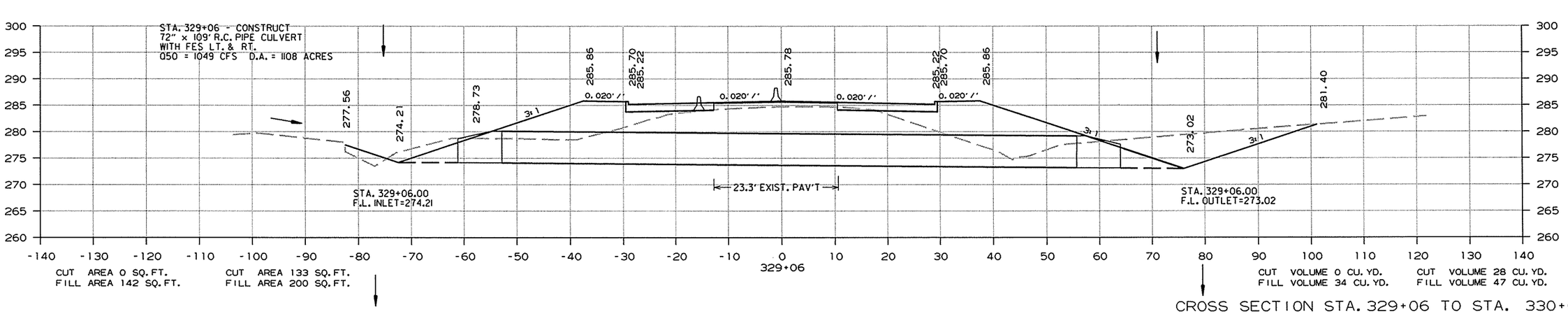
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	266	331

(2) CROSS SECTIONS







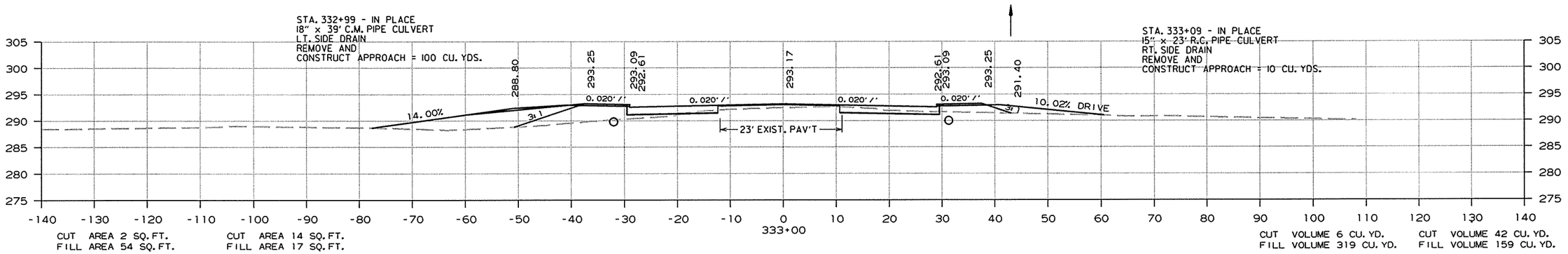
CROSS SECTION STA. 329+06 TO STA. 330+00

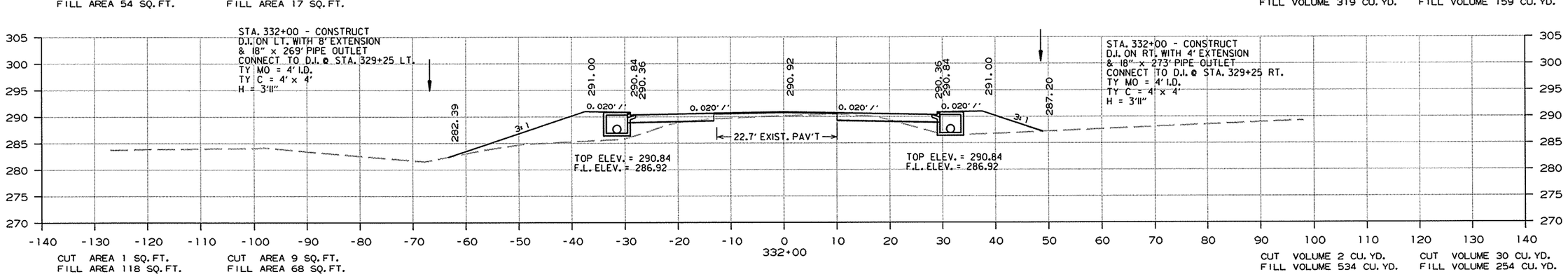
3/31/2014

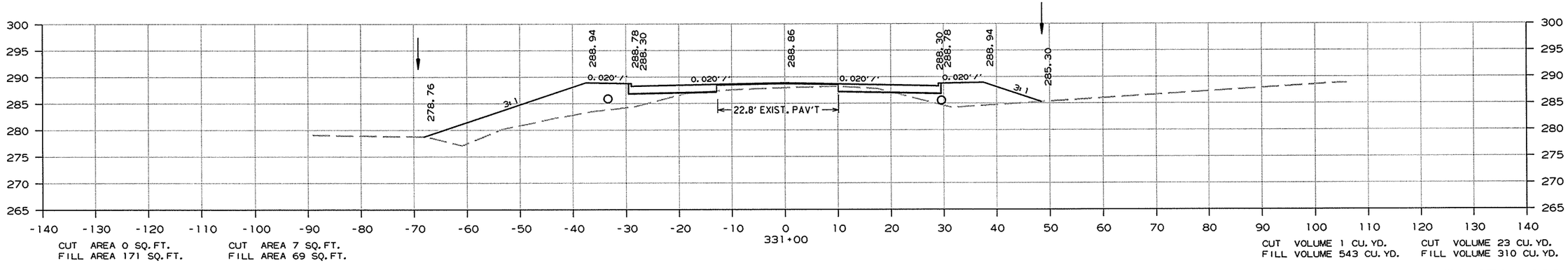
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	267	331

(2) CROSS SECTIONS







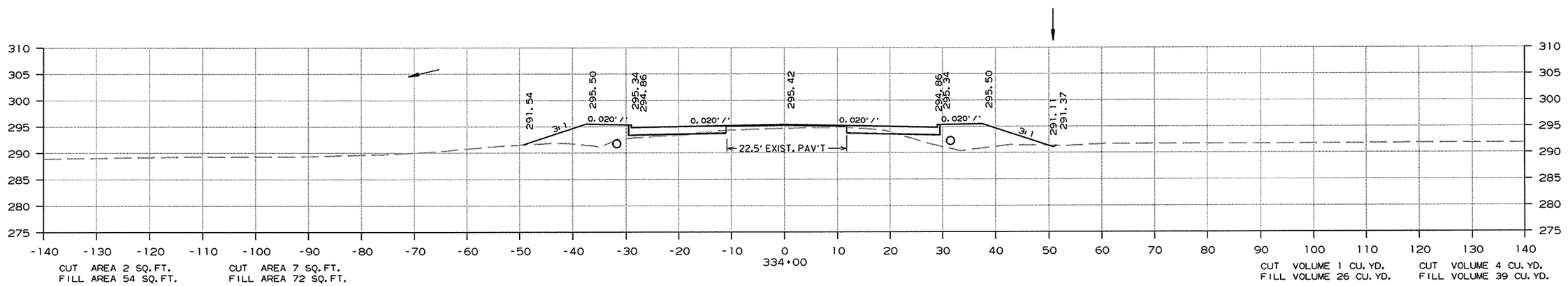
CROSS SECTION STA. 331+00 TO STA. 333+00

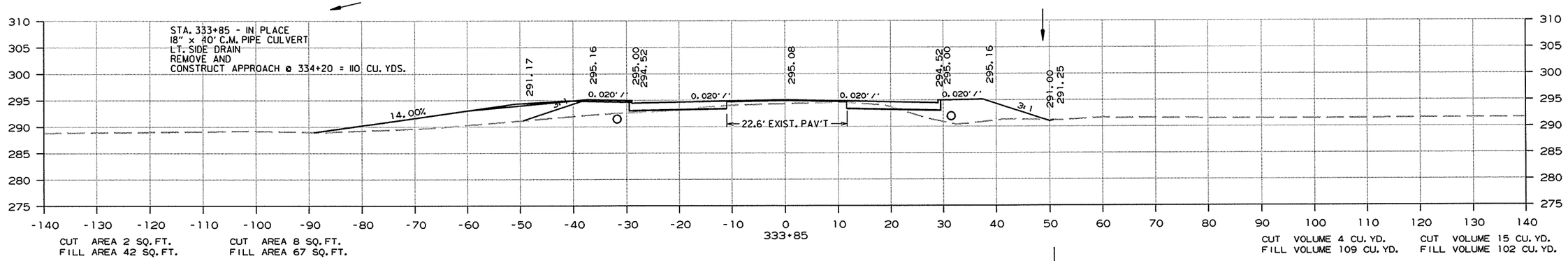
3/31/2014

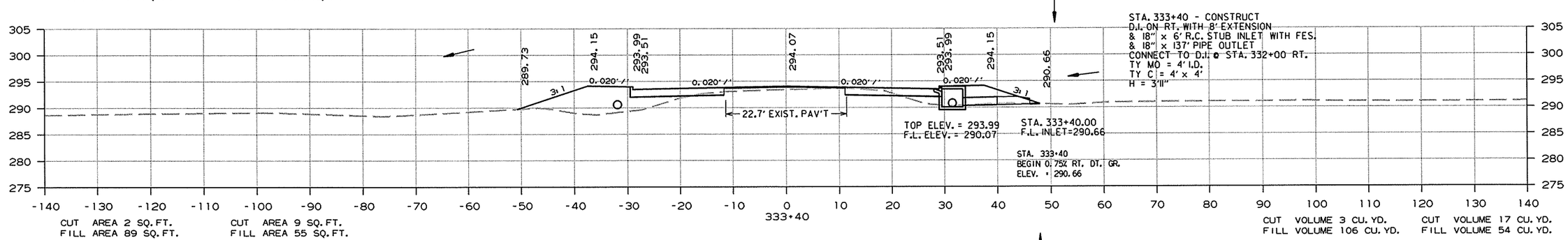
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	268	331

(2) CROSS SECTIONS







CROSS SECTION STA. 333+40 TO STA. 334+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	269	331

(2) CROSS SECTIONS

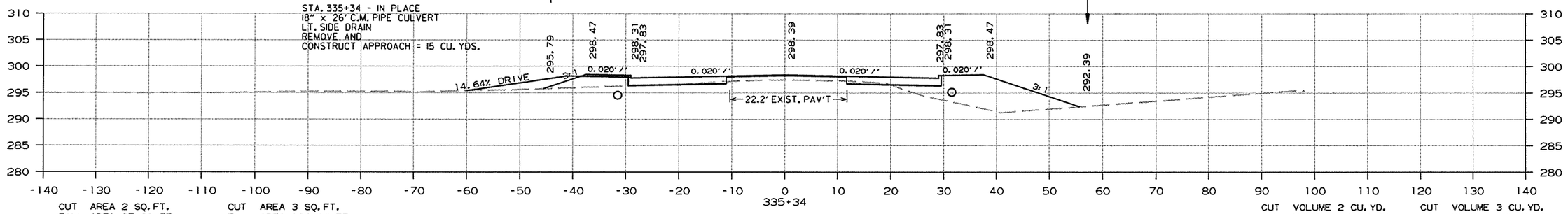
CROSS SECTION STA. 334+19 TO STA. 334+19

3/31/2015

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	270	331

(2) CROSS SECTIONS

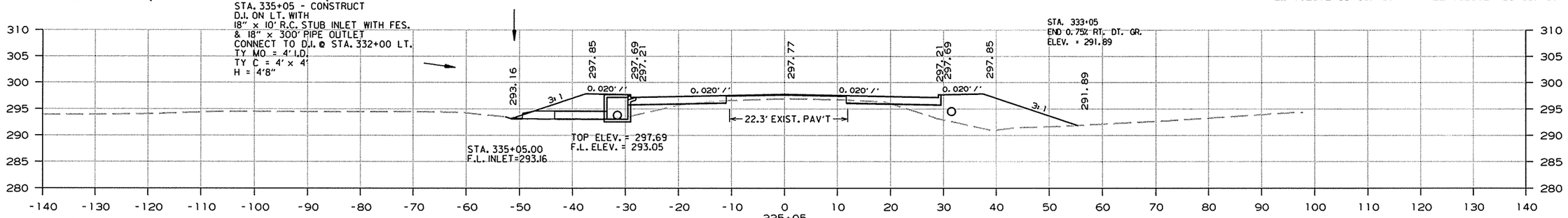


CUT AREA 2 SQ.FT.
FILL AREA 27 SQ.FT.

CUT AREA 3 SQ.FT.
FILL AREA 124 SQ.FT.

CUT VOLUME 2 CU.YD.
FILL VOLUME 59 CU.YD.

CUT VOLUME 3 CU.YD.
FILL VOLUME 130 CU.YD.

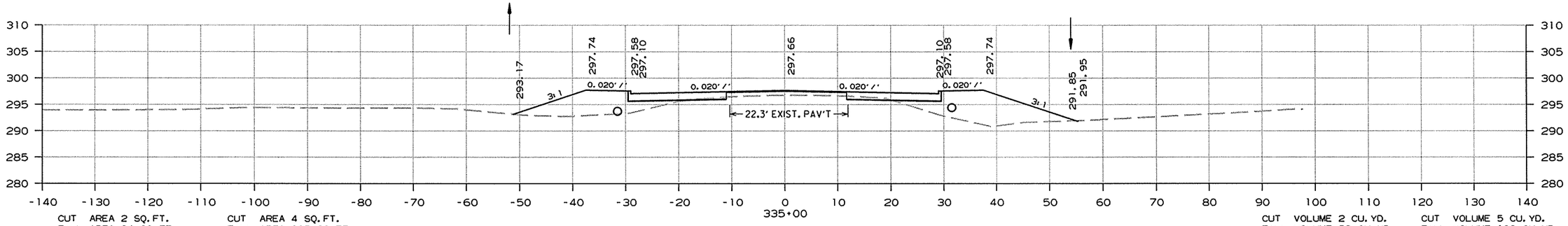


CUT AREA 2 SQ.FT.
FILL AREA 83 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 118 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 15 CU.YD.

CUT VOLUME 1 CU.YD.
FILL VOLUME 22 CU.YD.

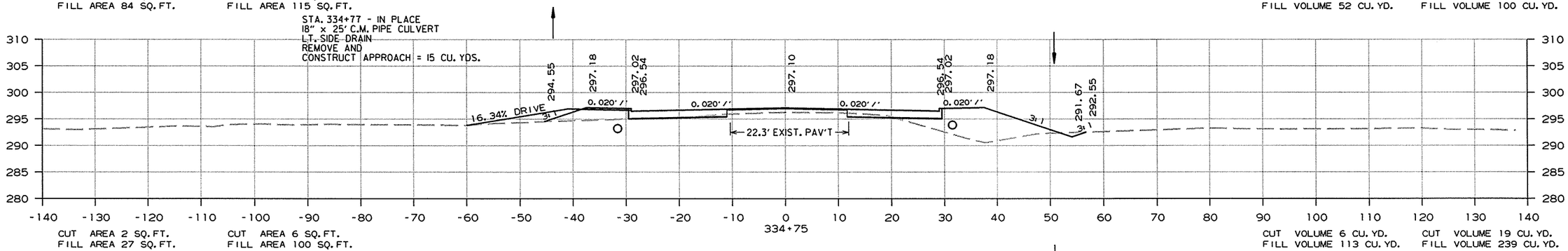


CUT AREA 2 SQ.FT.
FILL AREA 84 SQ.FT.

CUT AREA 4 SQ.FT.
FILL AREA 115 SQ.FT.

CUT VOLUME 2 CU.YD.
FILL VOLUME 52 CU.YD.

CUT VOLUME 5 CU.YD.
FILL VOLUME 100 CU.YD.



CUT AREA 2 SQ.FT.
FILL AREA 27 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 100 SQ.FT.

CUT VOLUME 6 CU.YD.
FILL VOLUME 113 CU.YD.

CUT VOLUME 19 CU.YD.
FILL VOLUME 239 CU.YD.

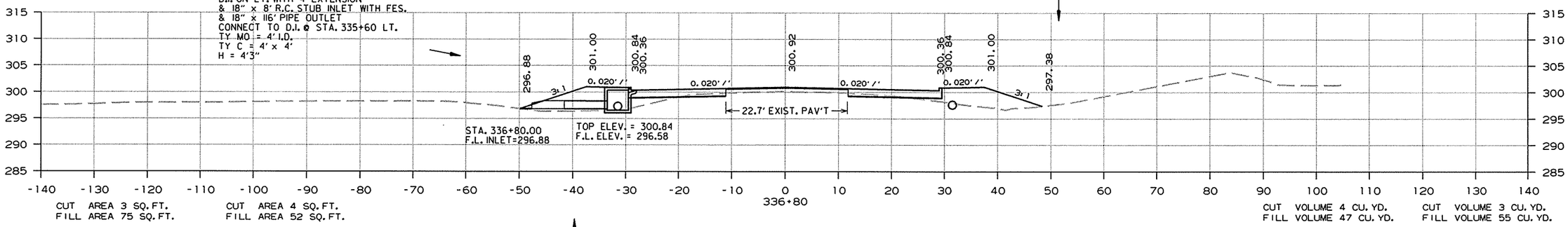
CROSS SECTION STA. 334+75 TO STA. 335+34

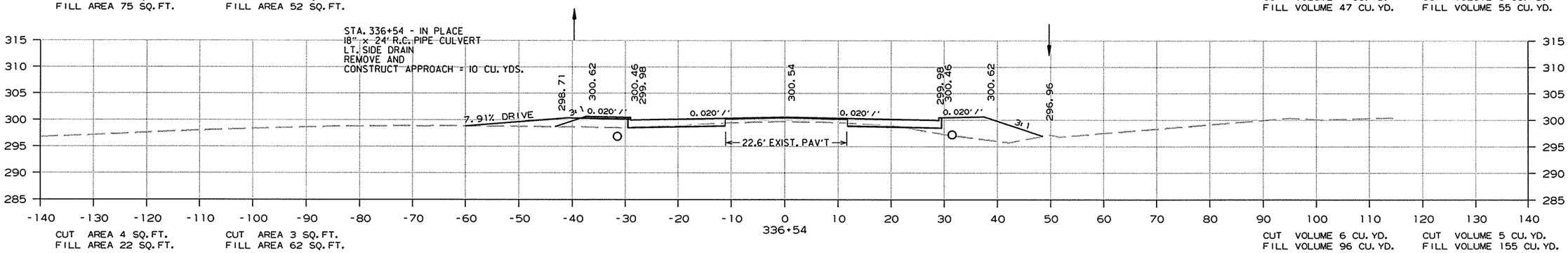
3/31/2014

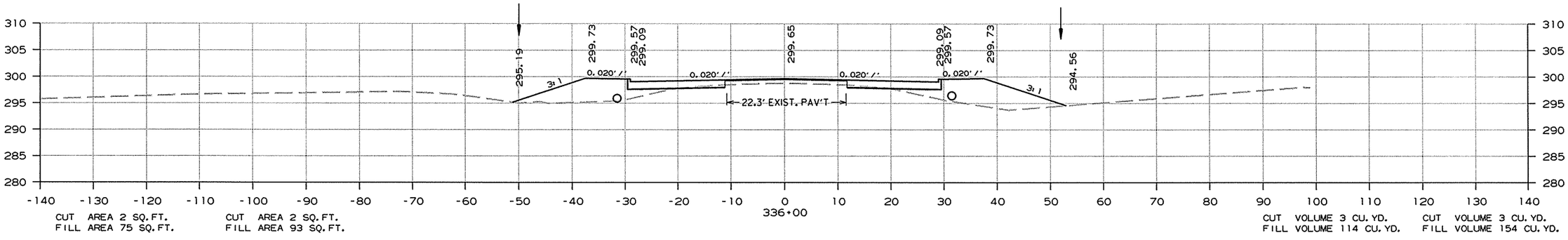
R070365.DGN

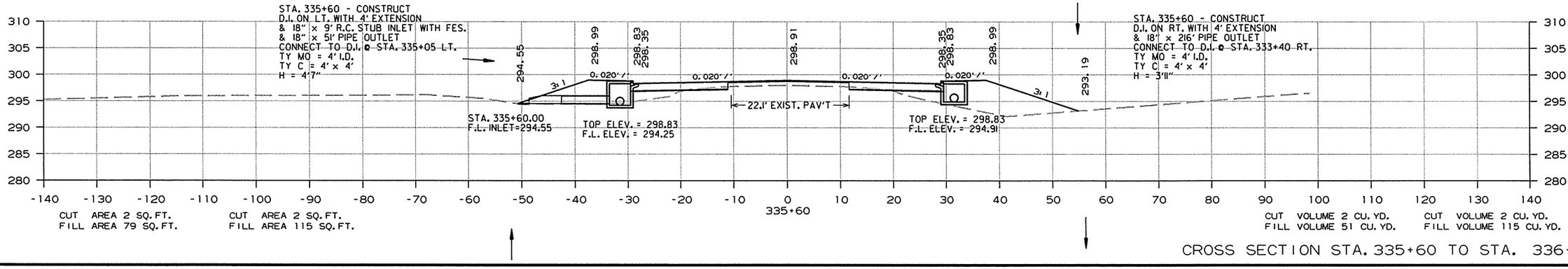
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	271	331

(2) CROSS SECTIONS









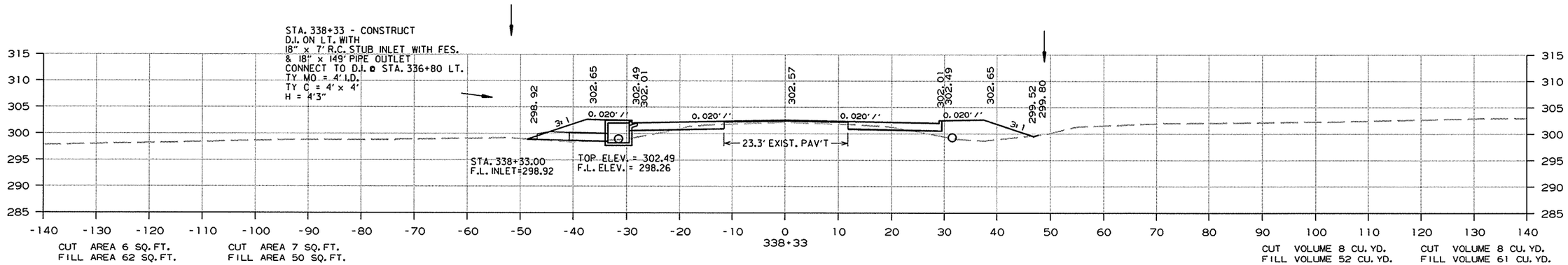
CROSS SECTION STA. 335+60 TO STA. 336+80

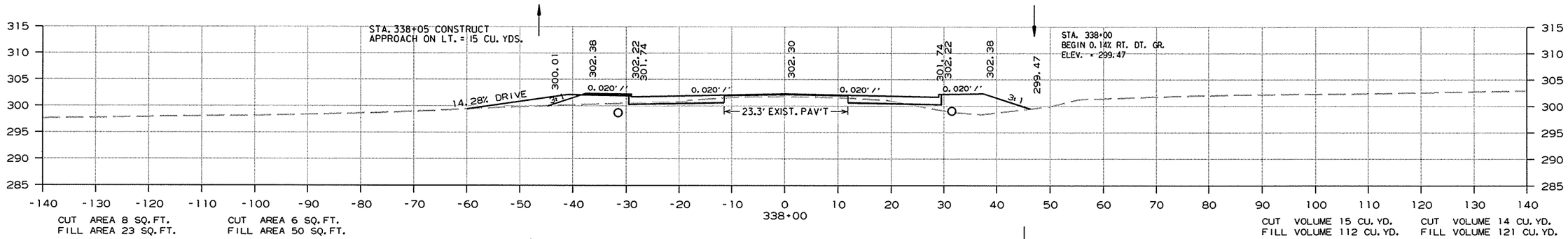
3/31/2014

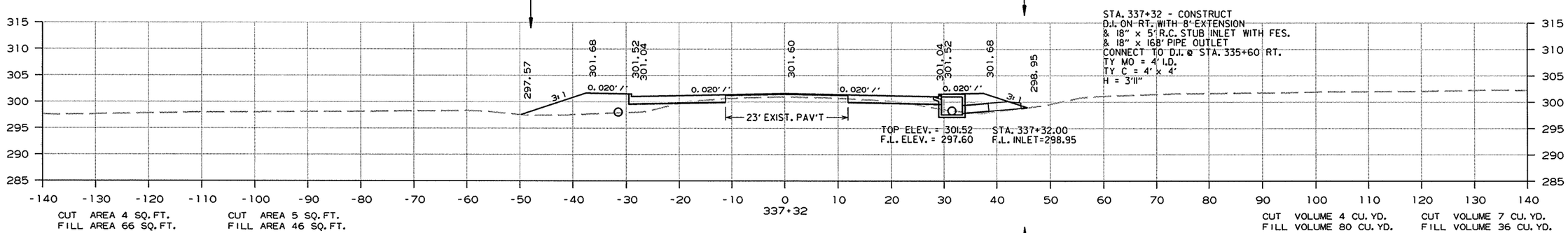
R070365.DGN

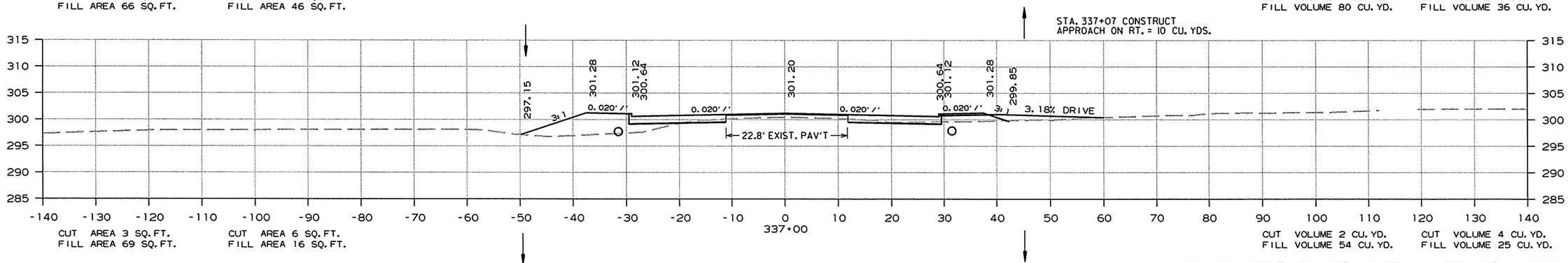
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	272	331

(2) CROSS SECTIONS









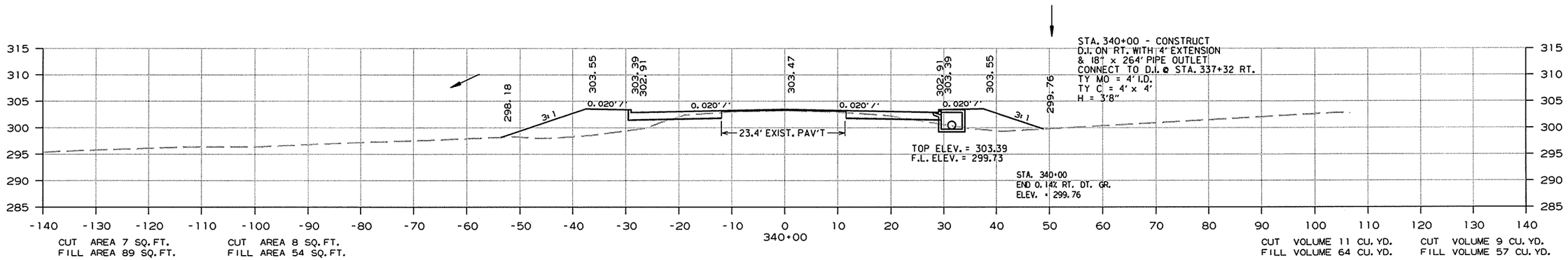
CROSS SECTION STA. 337+00 TO STA. 338+33

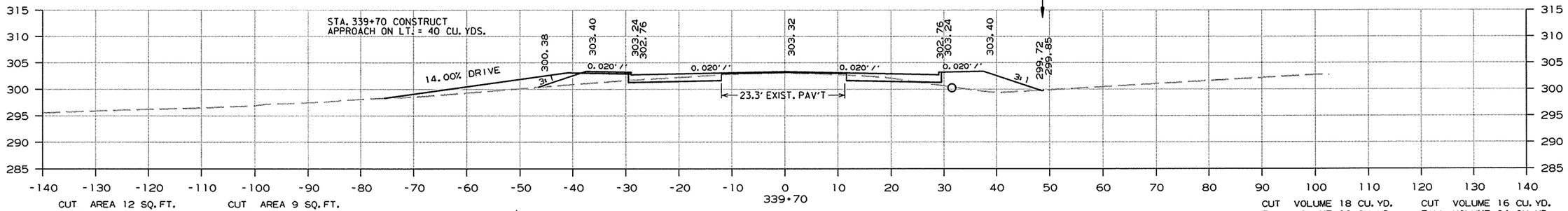
3/31/2014

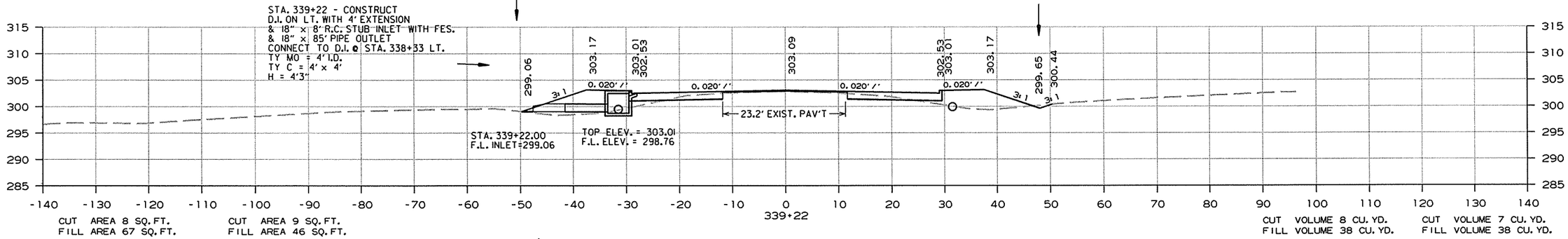
R070365.DGN

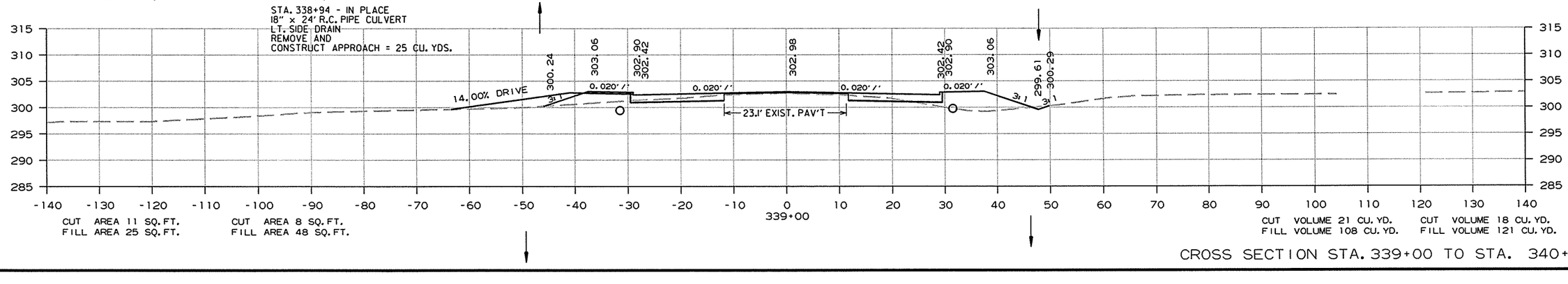
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	273	331

(2) CROSS SECTIONS









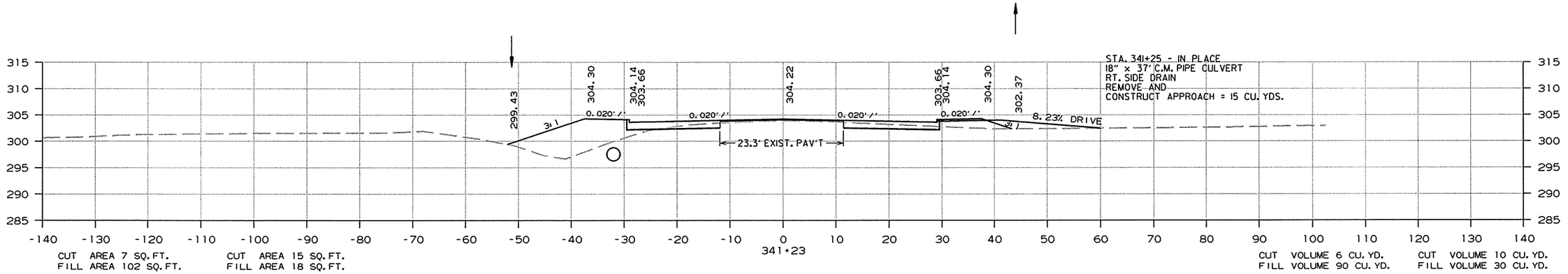
CROSS SECTION STA. 339+00 TO STA. 340+00

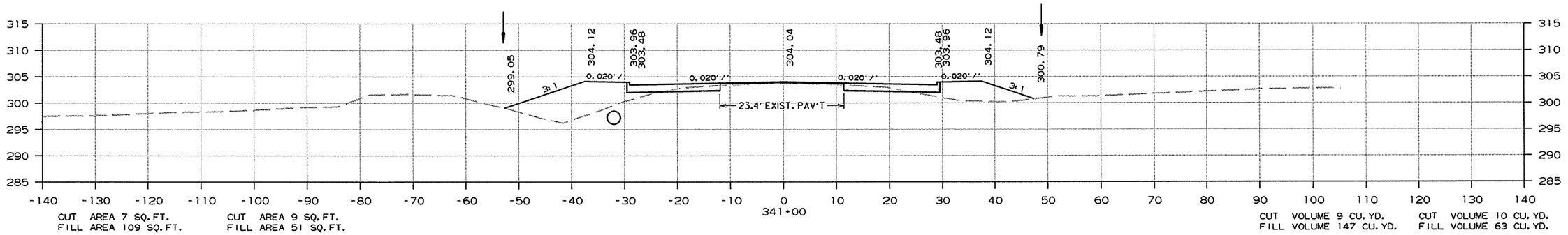
3/31/2014

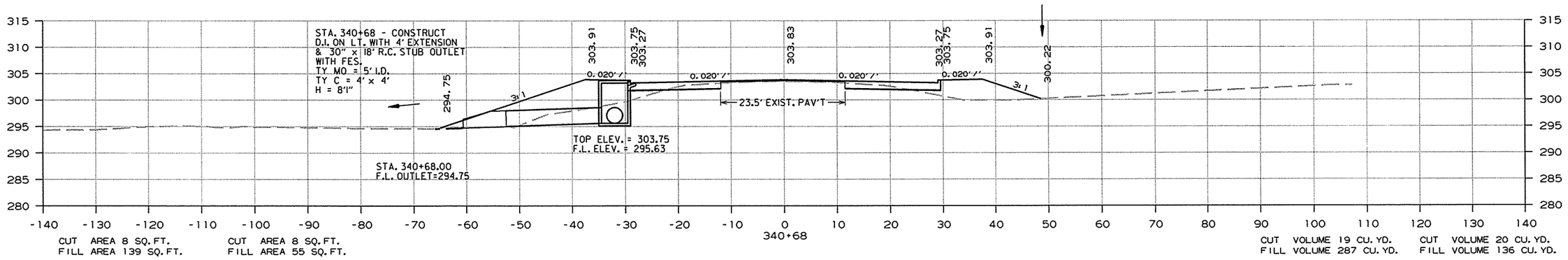
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	274	331

(2) CROSS SECTIONS







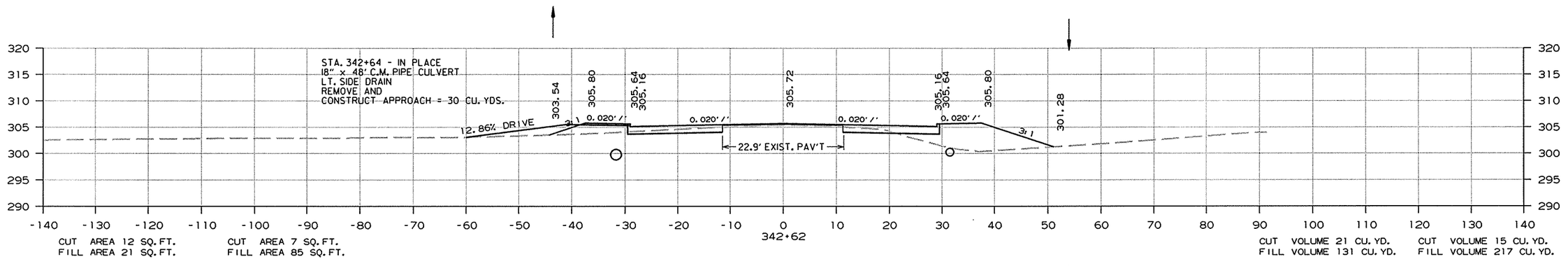
CROSS SECTION STA. 340+68 TO STA. 341+23

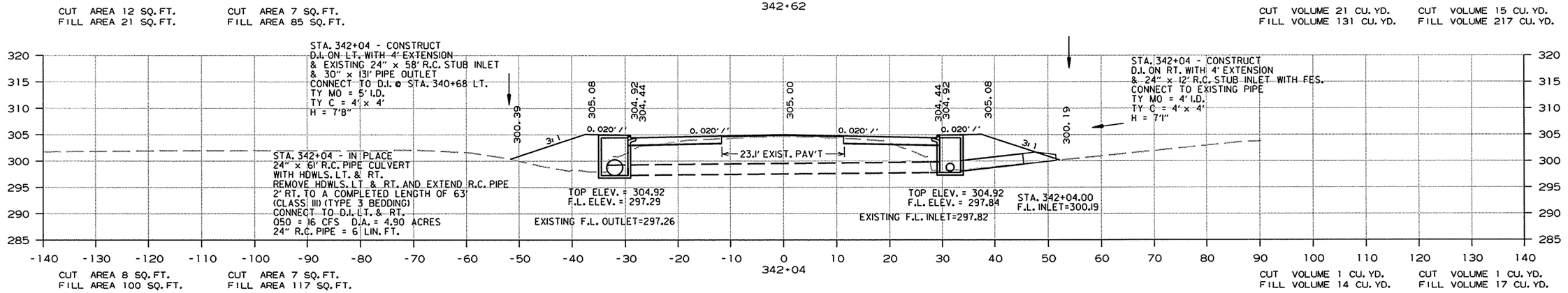
3/31/2014

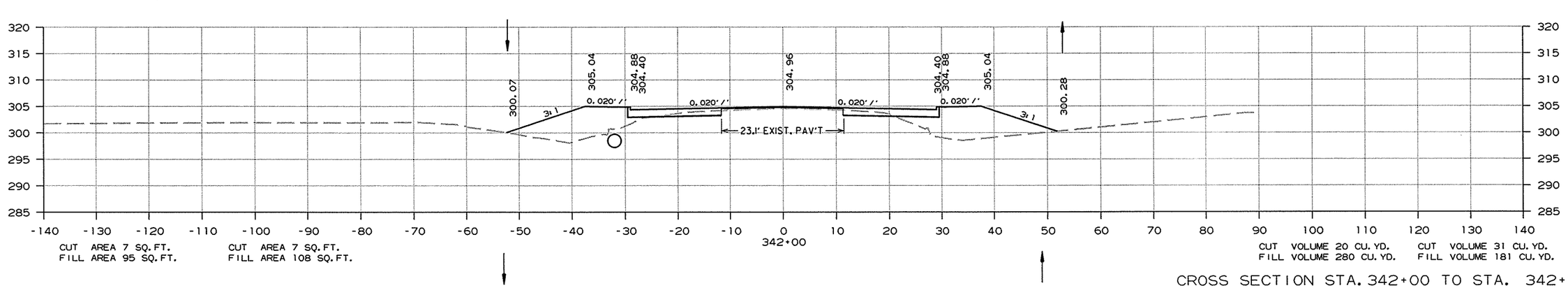
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	275	331

(2) CROSS SECTIONS







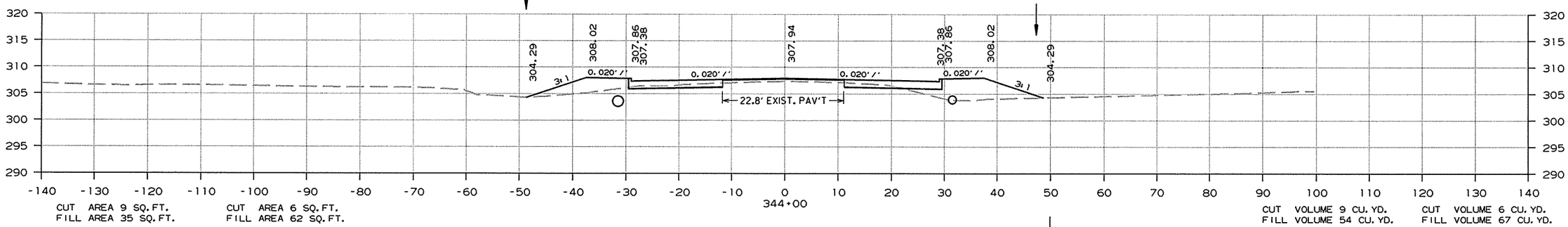
CROSS SECTION STA. 342+00 TO STA. 342+62

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	276	331

(2) CROSS SECTIONS

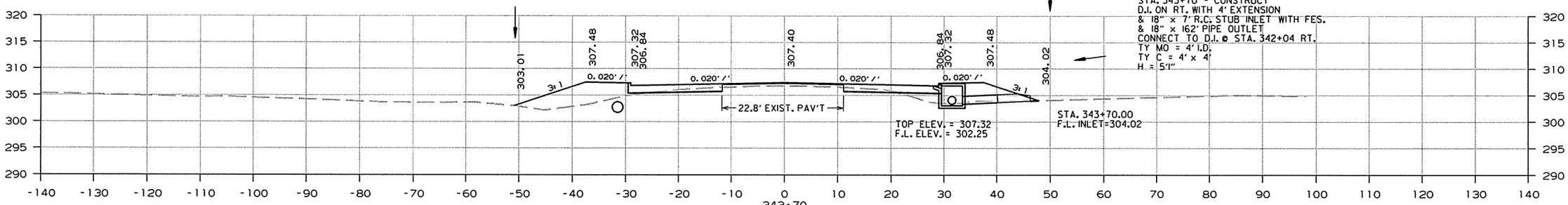


CUT AREA 9 SQ.FT.
FILL AREA 35 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 62 SQ.FT.

CUT VOLUME 9 CU.YD.
FILL VOLUME 54 CU.YD.

CUT VOLUME 6 CU.YD.
FILL VOLUME 67 CU.YD.

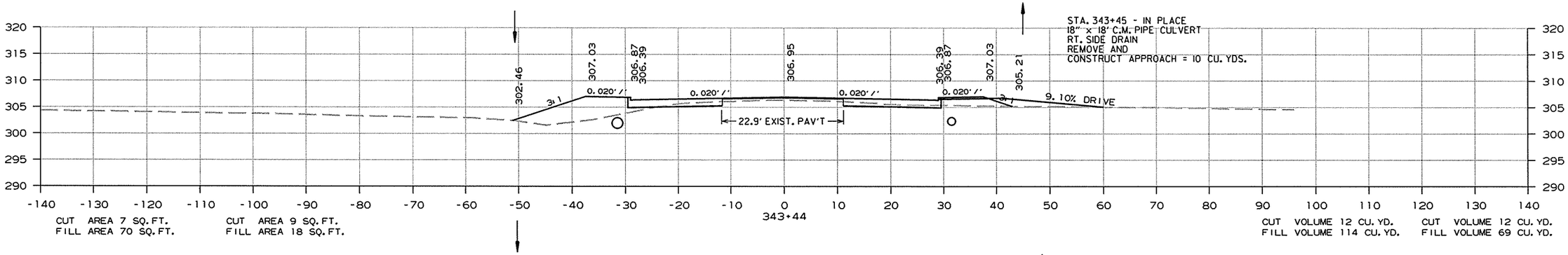


CUT AREA 7 SQ.FT.
FILL AREA 62 SQ.FT.

CUT AREA 5 SQ.FT.
FILL AREA 58 SQ.FT.

CUT VOLUME 6 CU.YD.
FILL VOLUME 64 CU.YD.

CUT VOLUME 7 CU.YD.
FILL VOLUME 37 CU.YD.

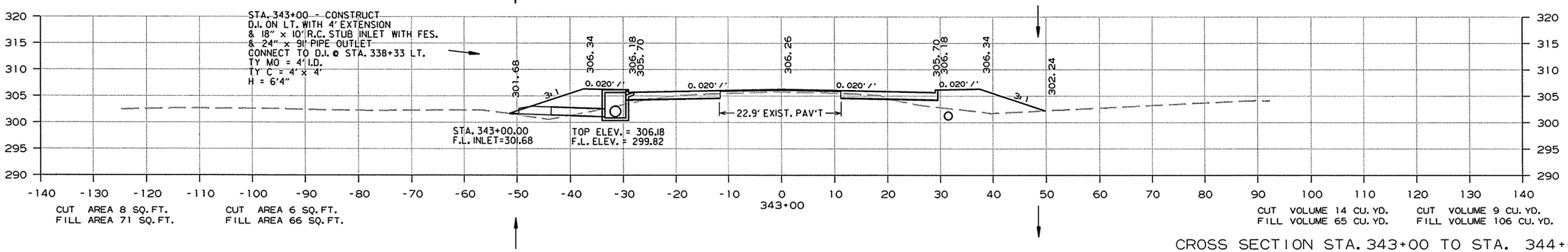


CUT AREA 7 SQ.FT.
FILL AREA 70 SQ.FT.

CUT AREA 9 SQ.FT.
FILL AREA 18 SQ.FT.

CUT VOLUME 12 CU.YD.
FILL VOLUME 114 CU.YD.

CUT VOLUME 12 CU.YD.
FILL VOLUME 69 CU.YD.



CUT AREA 8 SQ.FT.
FILL AREA 71 SQ.FT.

CUT AREA 6 SQ.FT.
FILL AREA 66 SQ.FT.

CUT VOLUME 14 CU.YD.
FILL VOLUME 65 CU.YD.

CUT VOLUME 9 CU.YD.
FILL VOLUME 106 CU.YD.

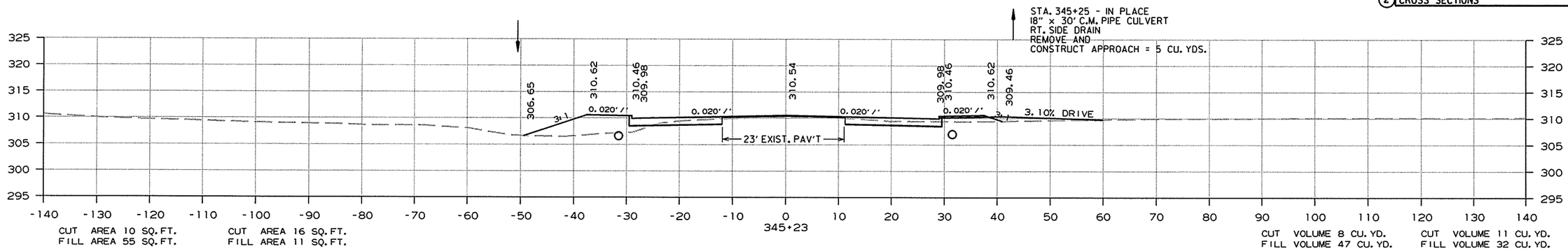
CROSS SECTION STA. 343+00 TO STA. 344+00

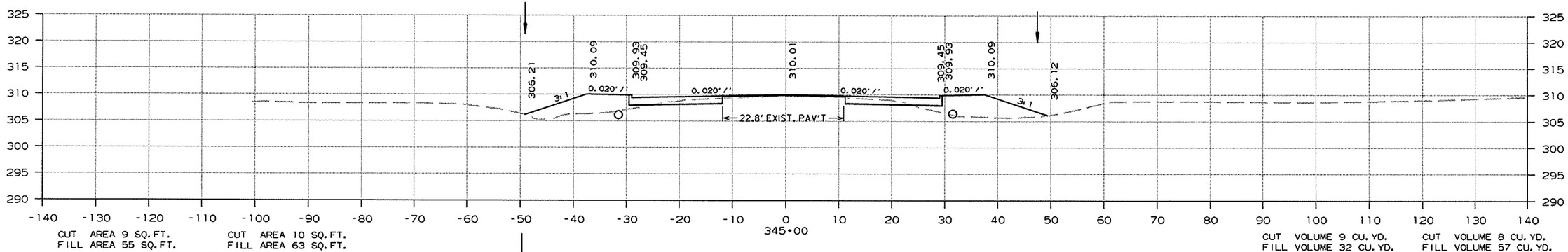
3/31/2014

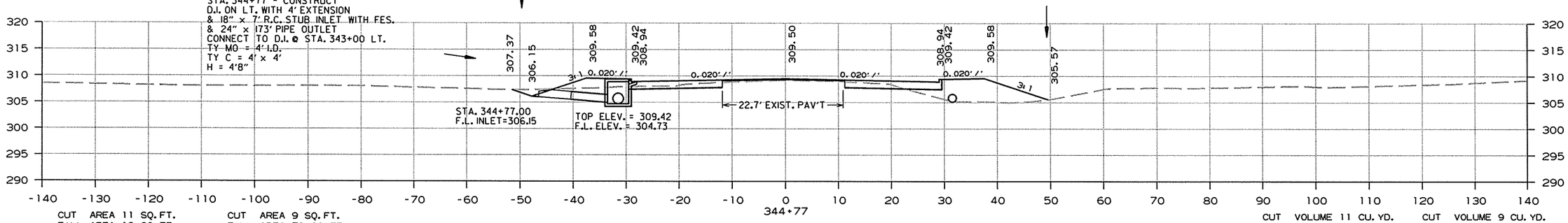
R070365.DGN

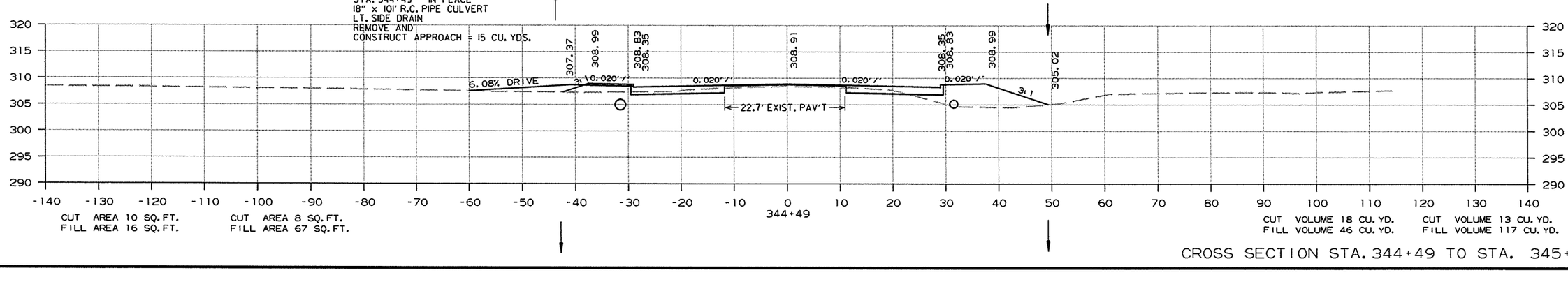
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	277	331

(2) CROSS SECTIONS









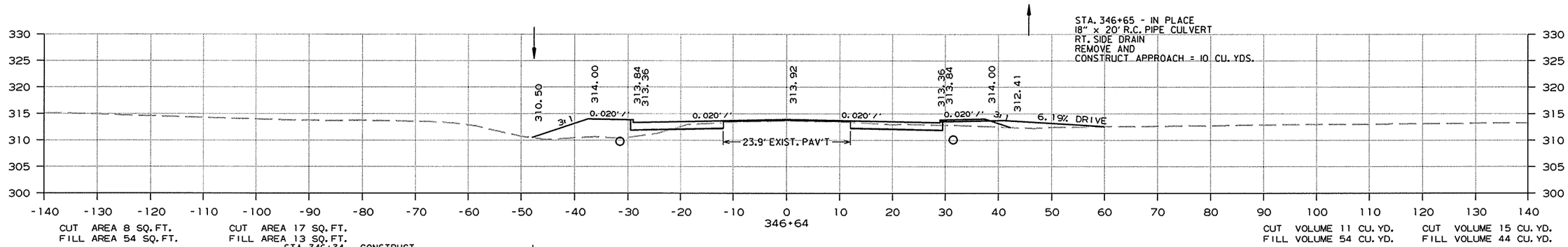
CROSS SECTION STA. 344+49 TO STA. 345+23

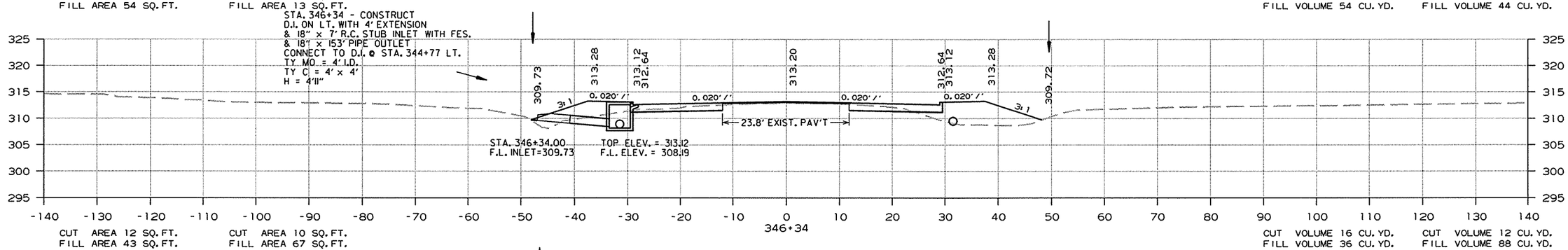
3/31/2014

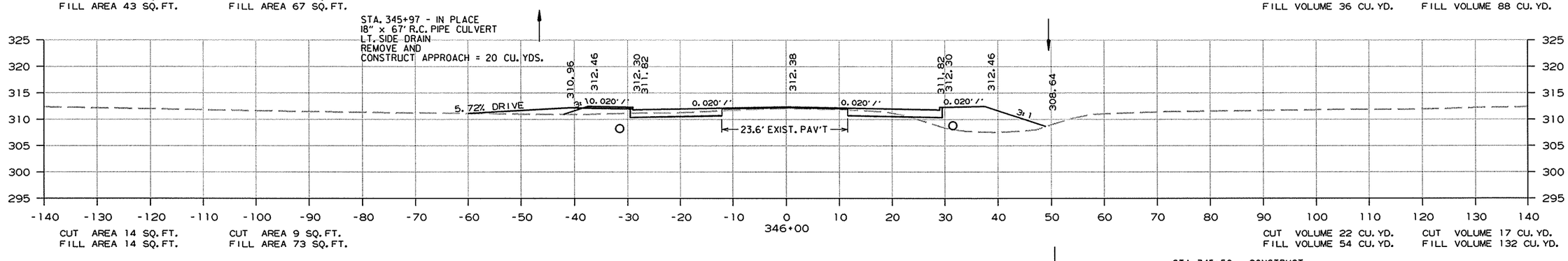
R070365.DGN

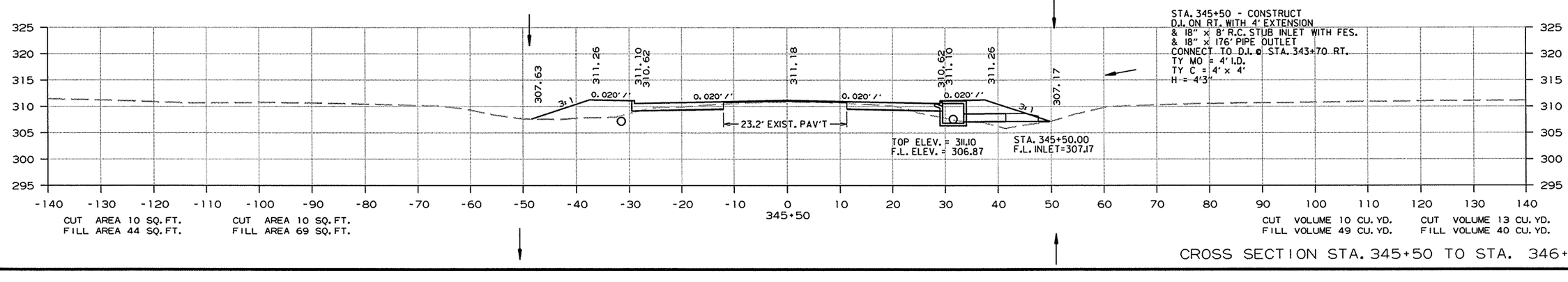
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	278	331

(2) CROSS SECTIONS









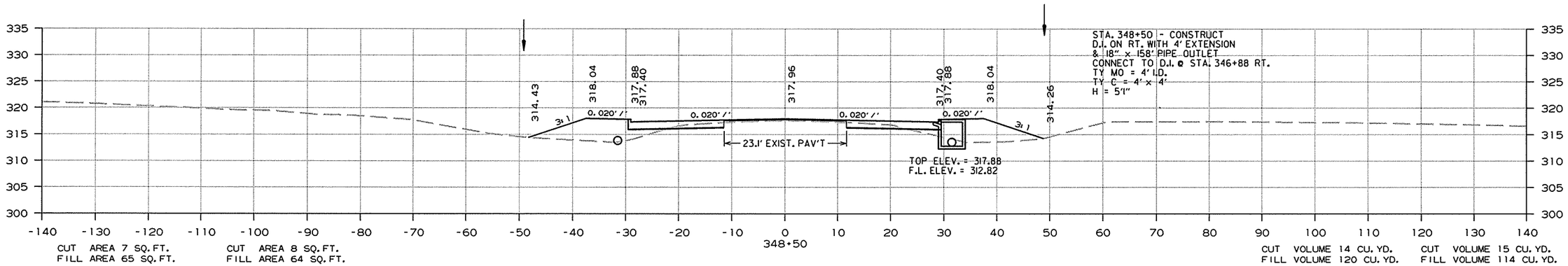
CROSS SECTION STA. 345+50 TO STA. 346+64

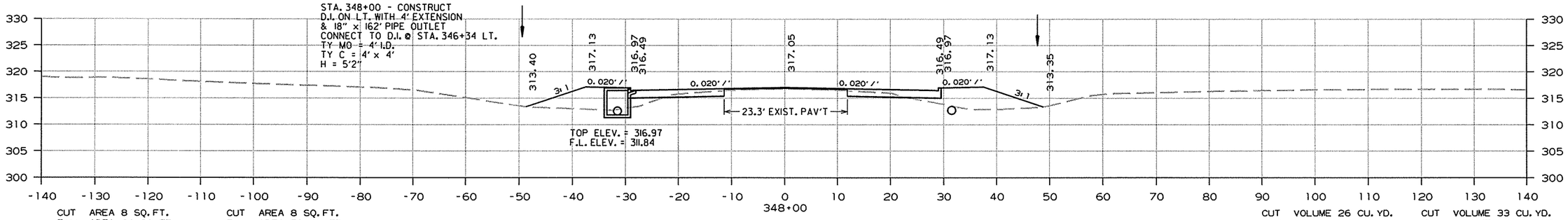
3/31/2014

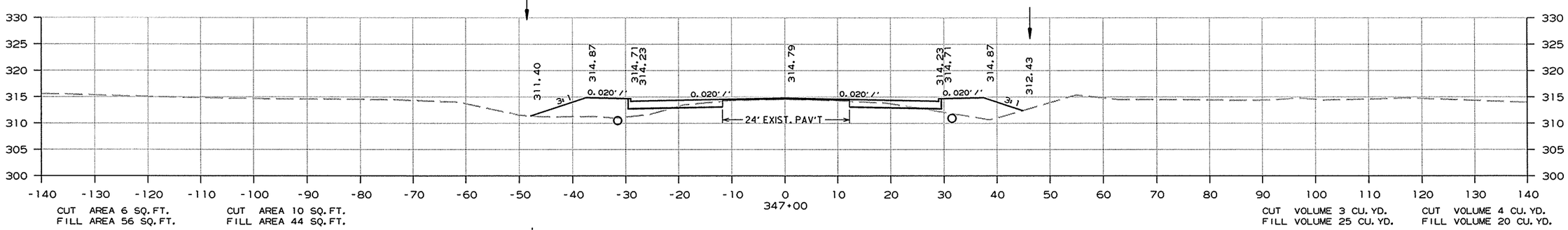
R070365.DGN

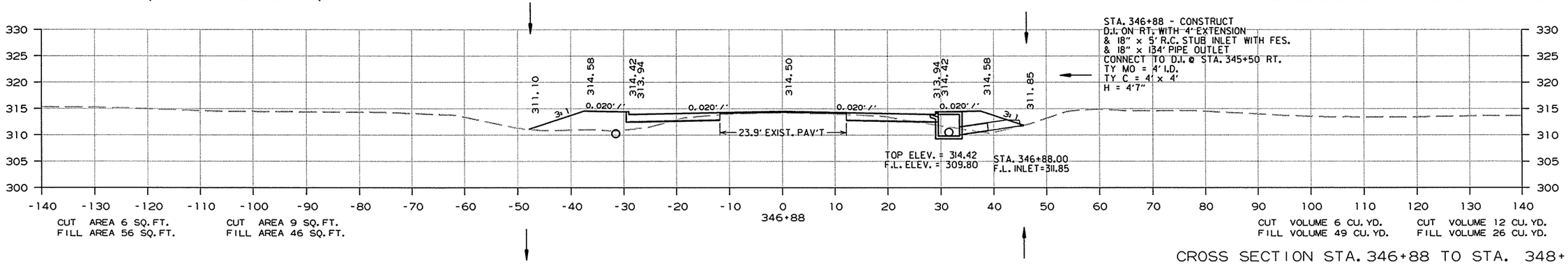
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	279	331

(2) CROSS SECTIONS









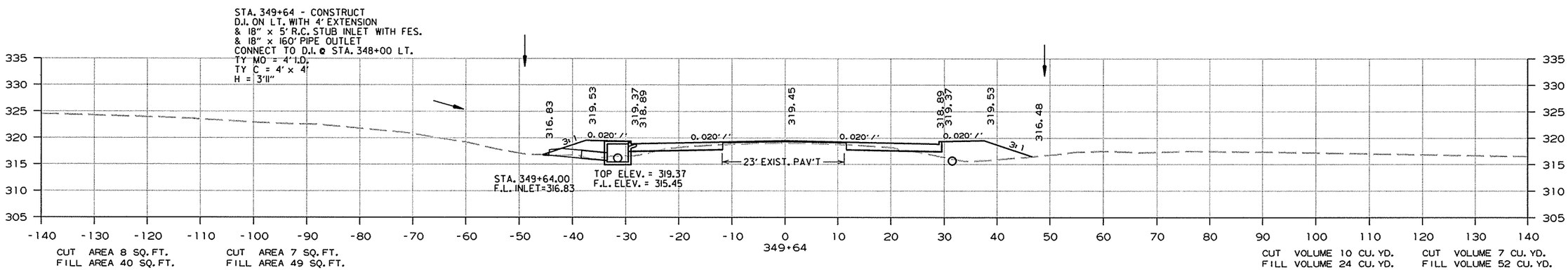
CROSS SECTION STA. 346+88 TO STA. 348+50

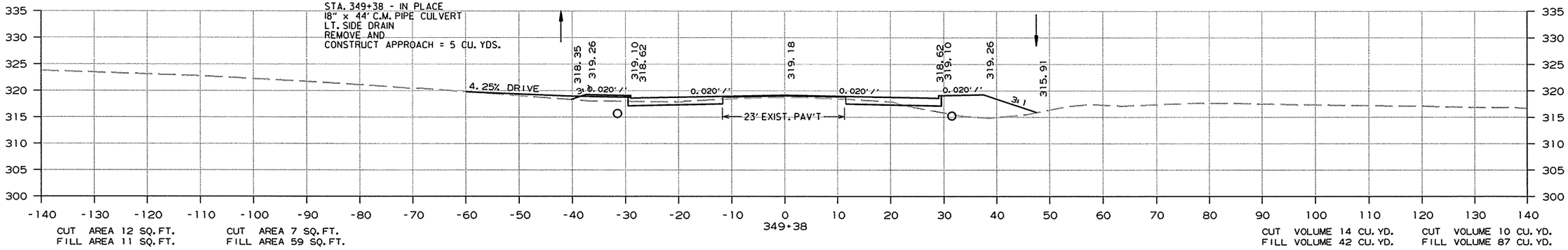
3/31/2014

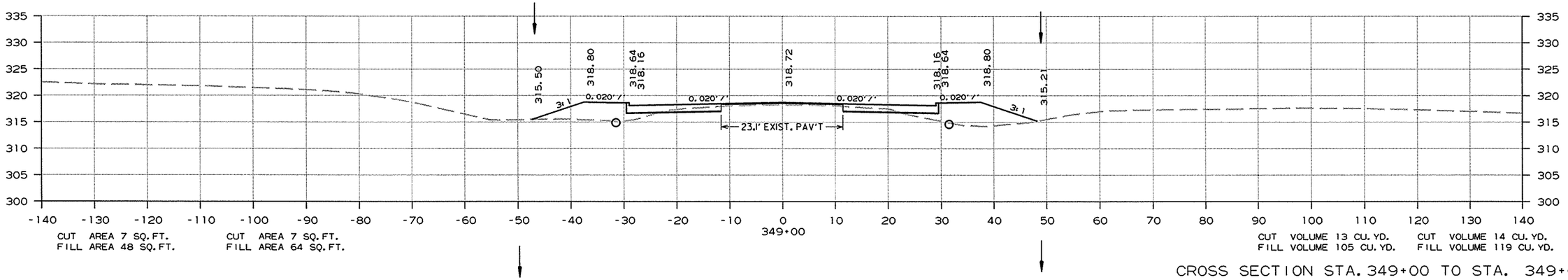
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	280	331

(2) CROSS SECTIONS







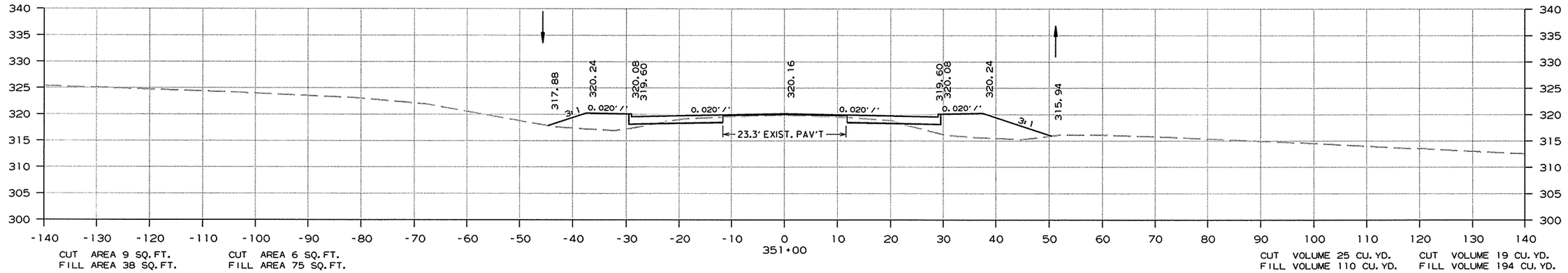
CROSS SECTION STA. 349+00 TO STA. 349+64

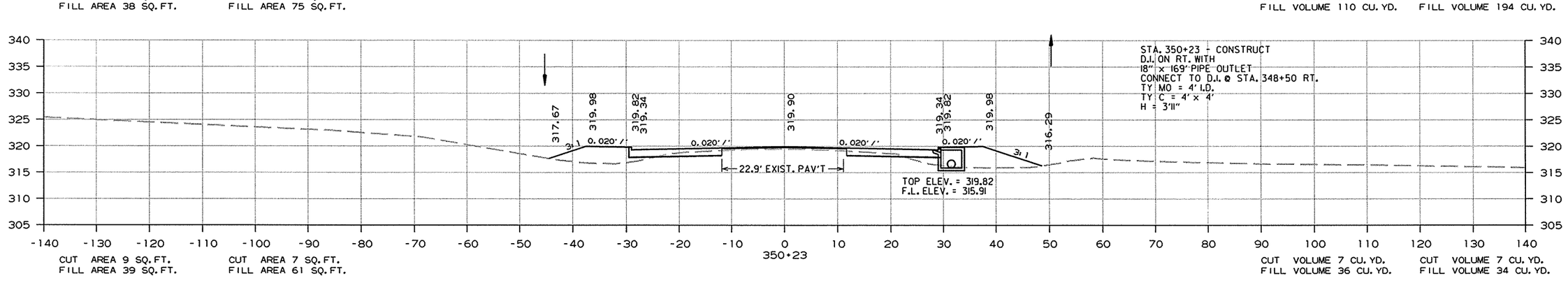
3/31/2014

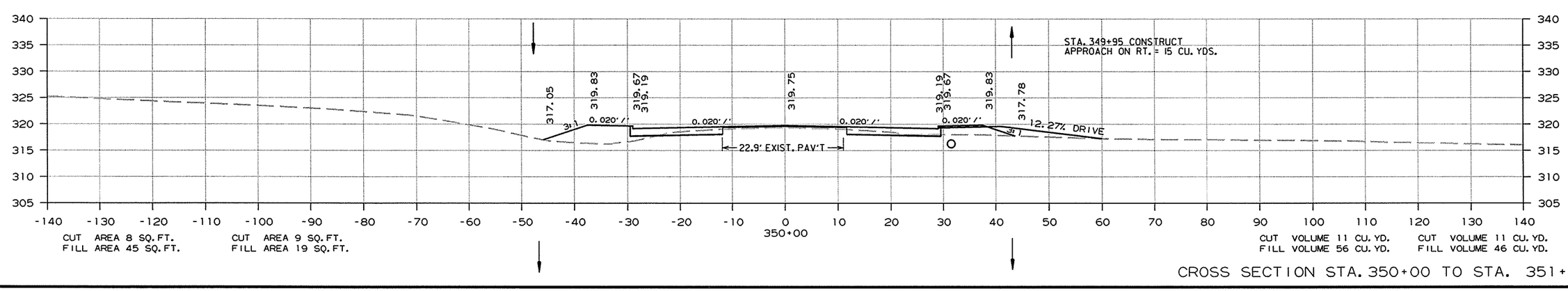
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	281	331

(2) CROSS SECTIONS







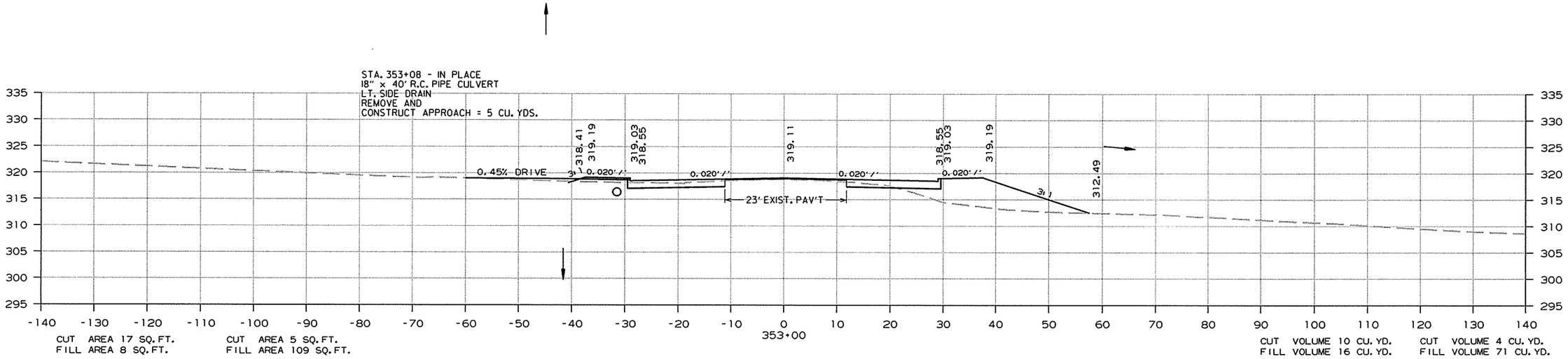
CROSS SECTION STA. 350+00 TO STA. 351+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	282	331

(2) CROSS SECTIONS



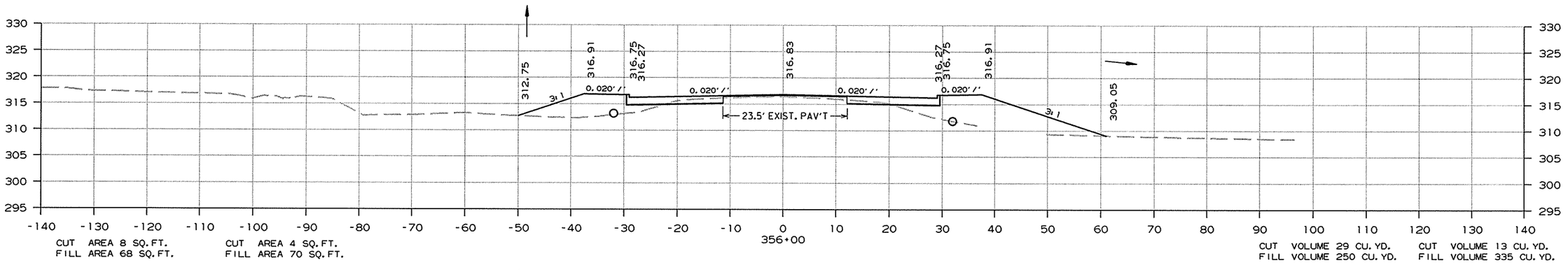
CROSS SECTION STA. 352+00 TO STA. 353+00

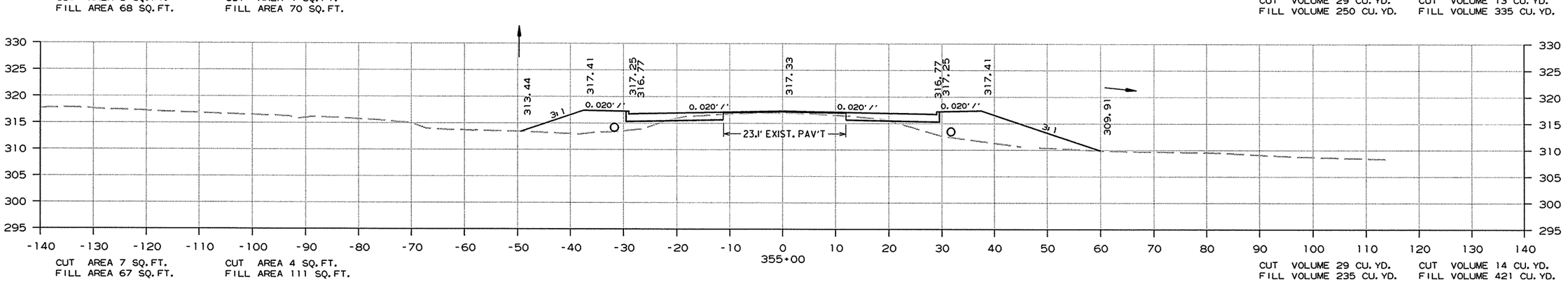
3/31/2014

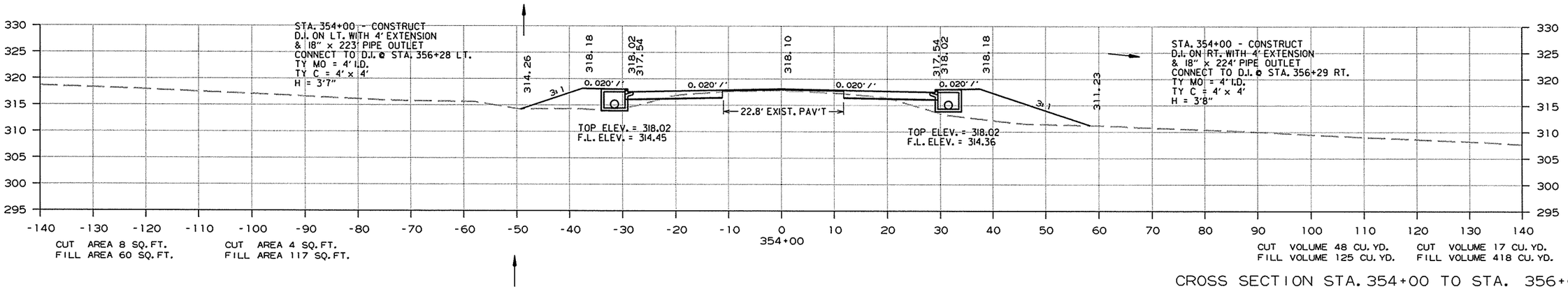
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	283	331

(2) CROSS SECTIONS







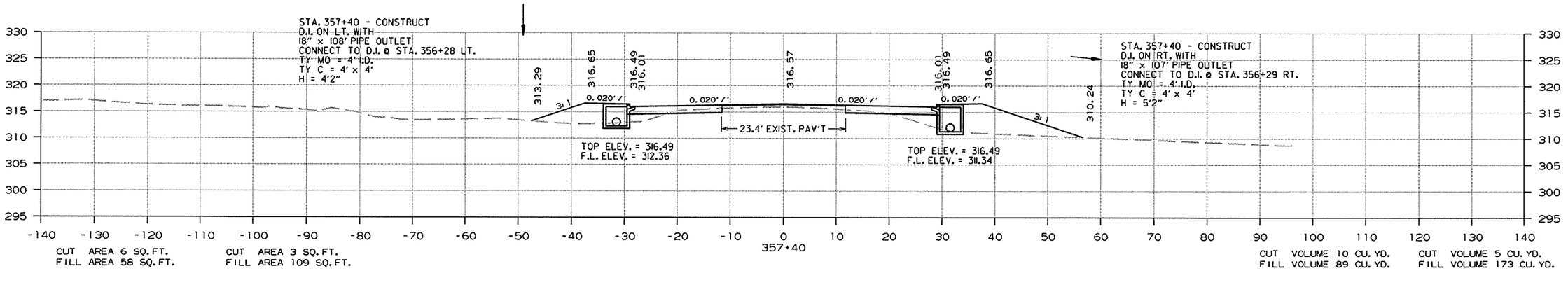
CROSS SECTION STA. 354+00 TO STA. 356+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	284	331

(2) CROSS SECTIONS



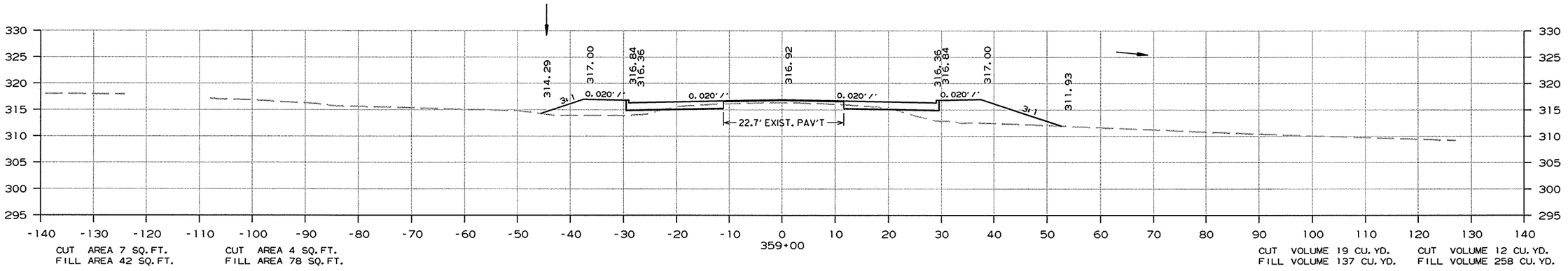
CROSS SECTION STA. 356+29 TO STA. 357+40

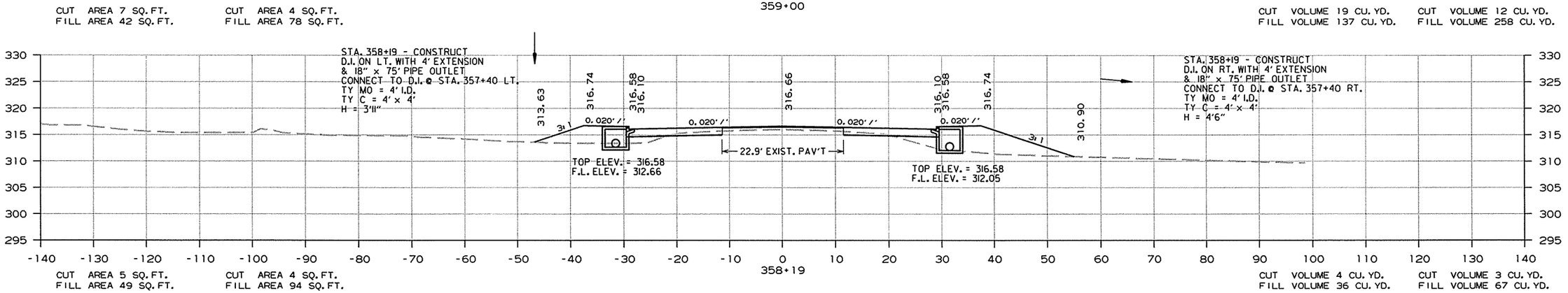
3/31/2014

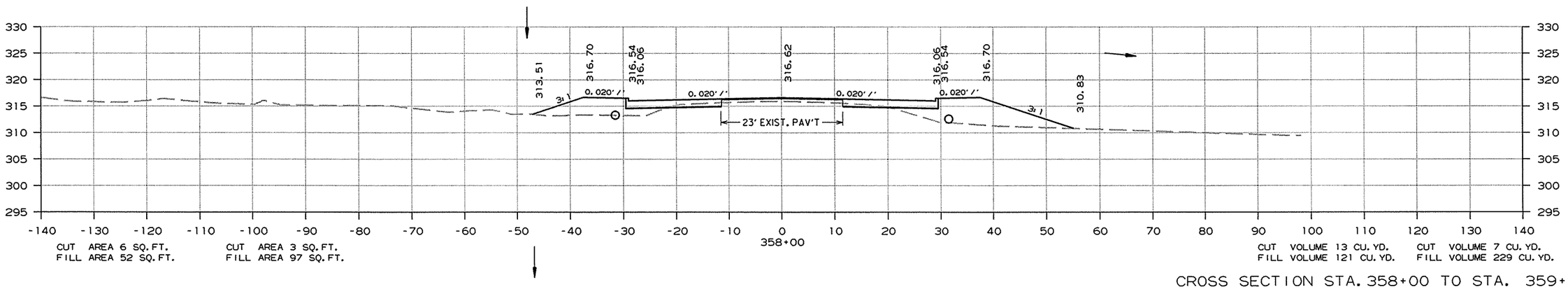
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	285	331

(2) CROSS SECTIONS







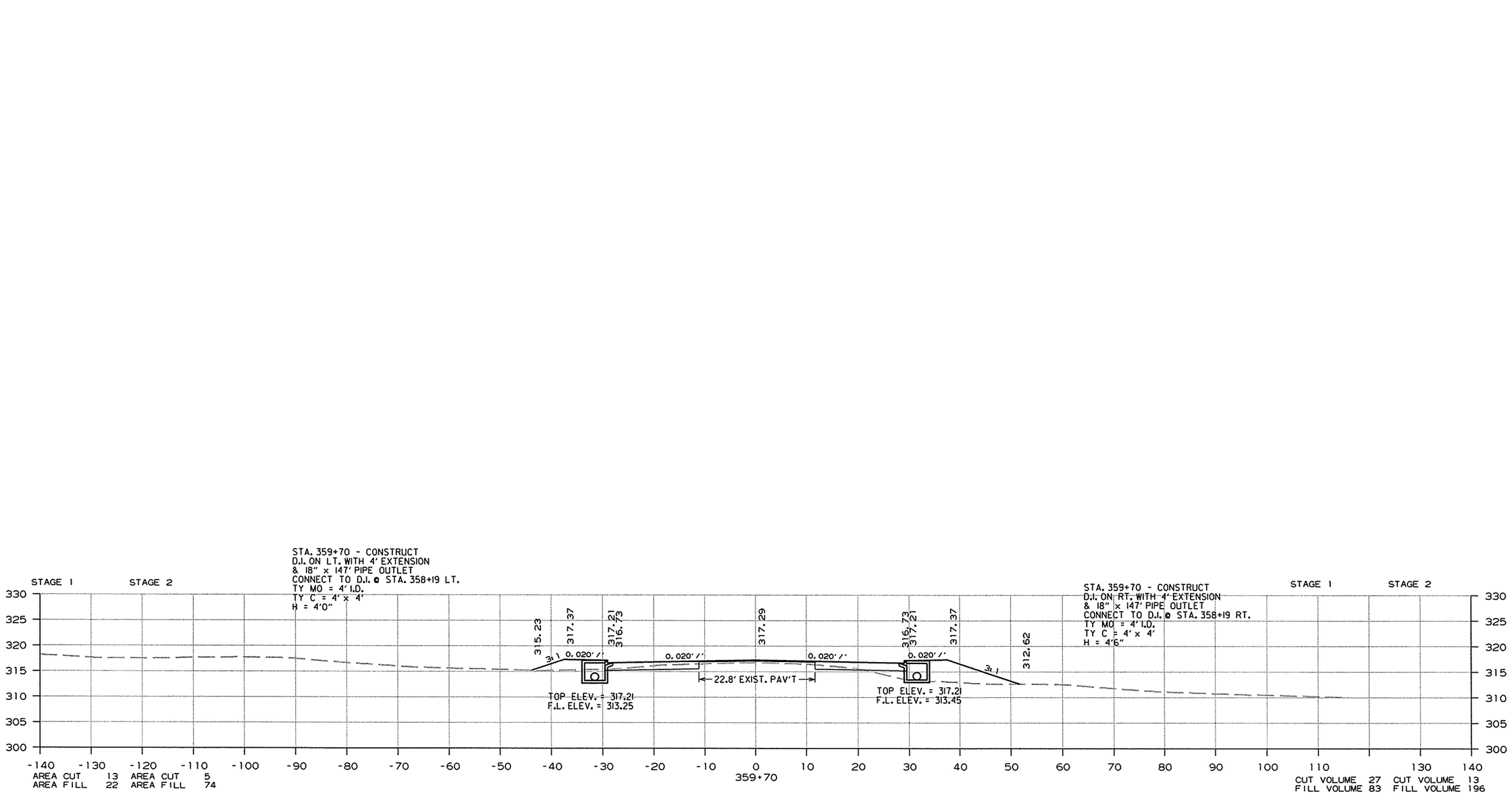
CROSS SECTION STA. 358+00 TO STA. 359+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	286	331

(2) CROSS SECTIONS EAST



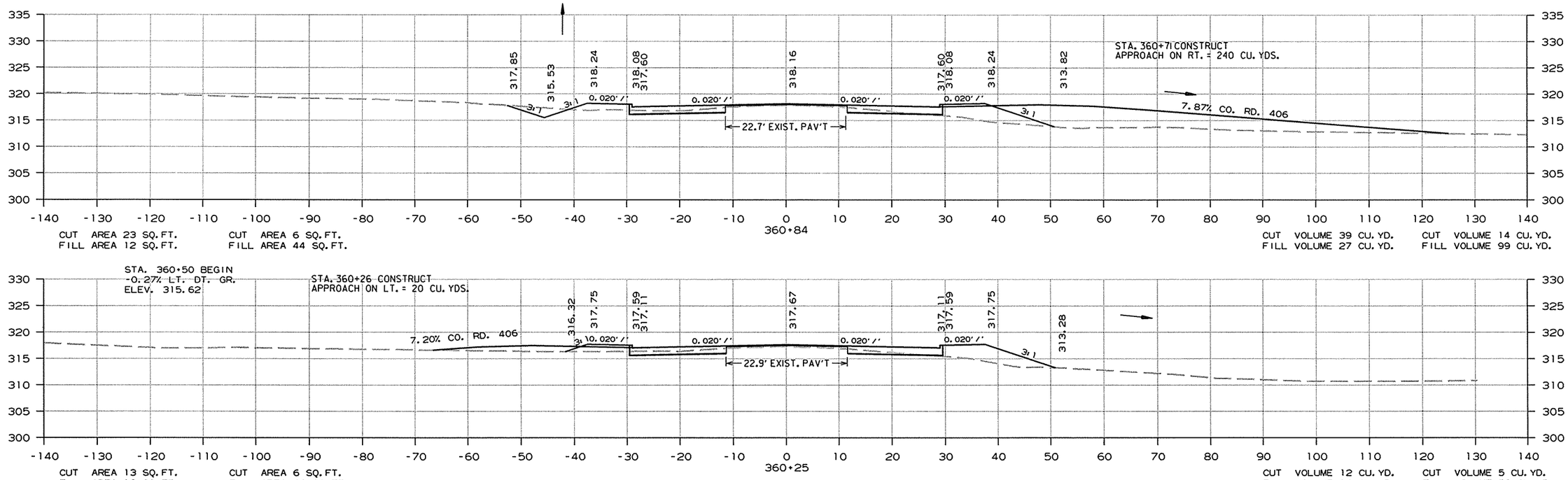
CROSS SECTION STA. 359+70 TO STA. 359+70

11/8/2011

ZBORDER.CEL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	287	331

(2) CROSS SECTIONS



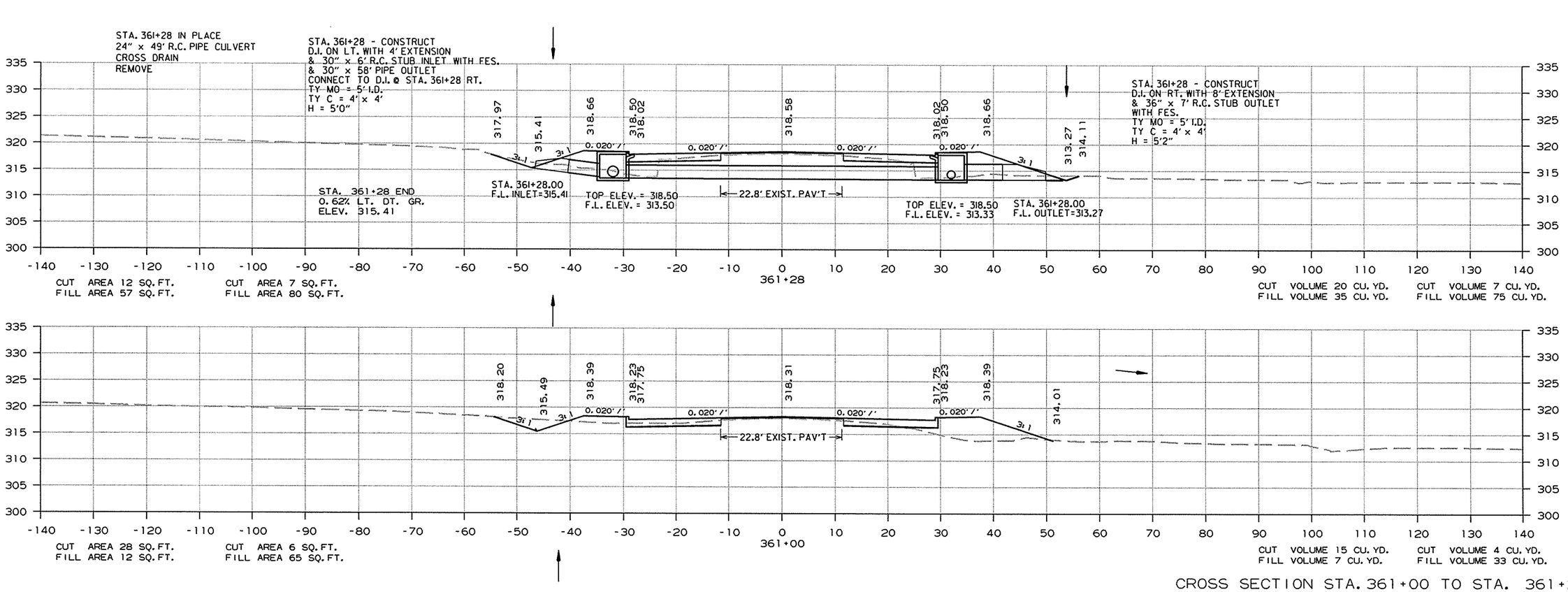
CROSS SECTION STA. 360+00 TO STA. 360+84

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	288	331

(2) CROSS SECTIONS



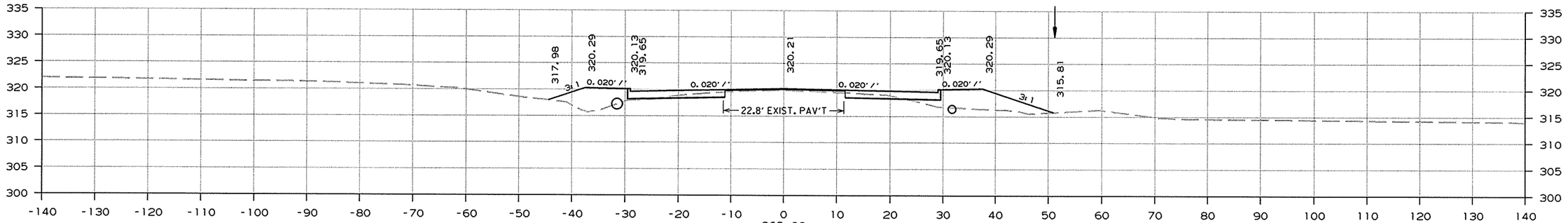
CROSS SECTION STA. 361+00 TO STA. 361+29

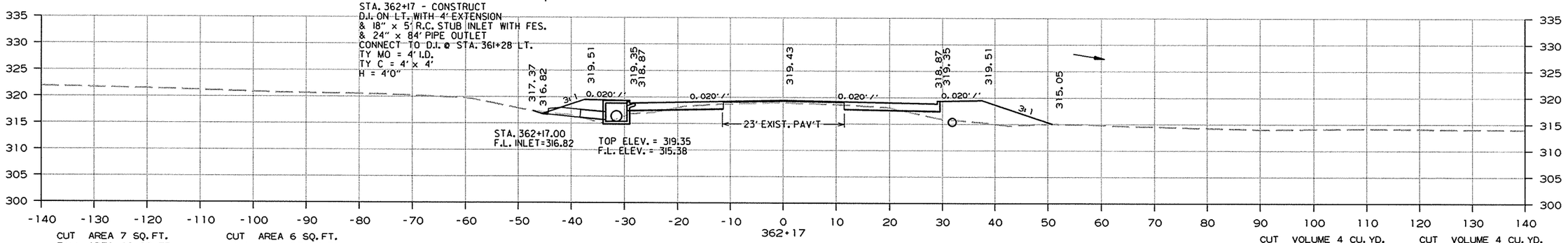
3/31/2014

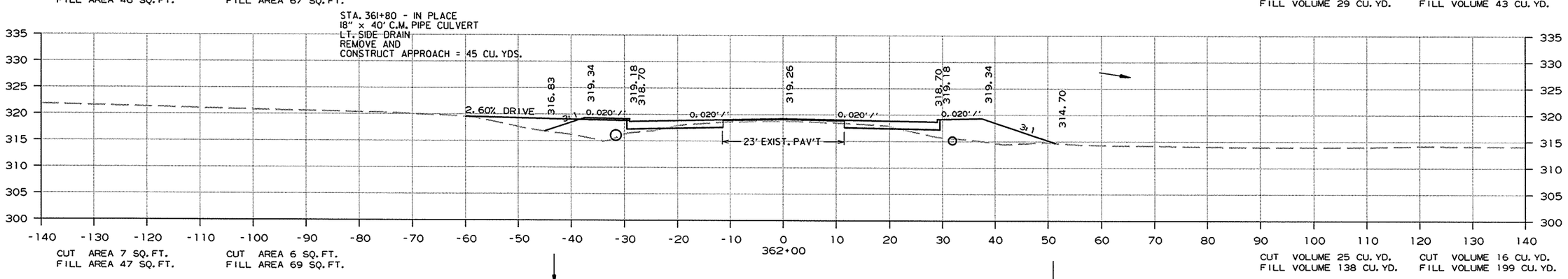
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	289	331

(2) CROSS SECTIONS







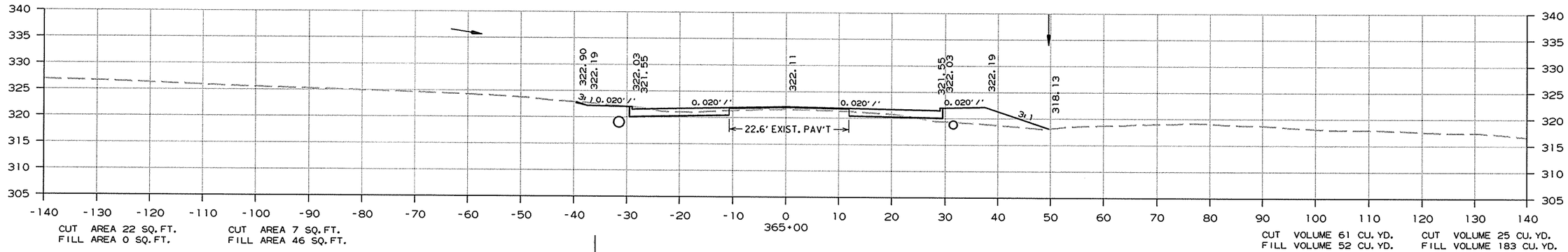
CROSS SECTION STA. 362+00 TO STA. 363+00

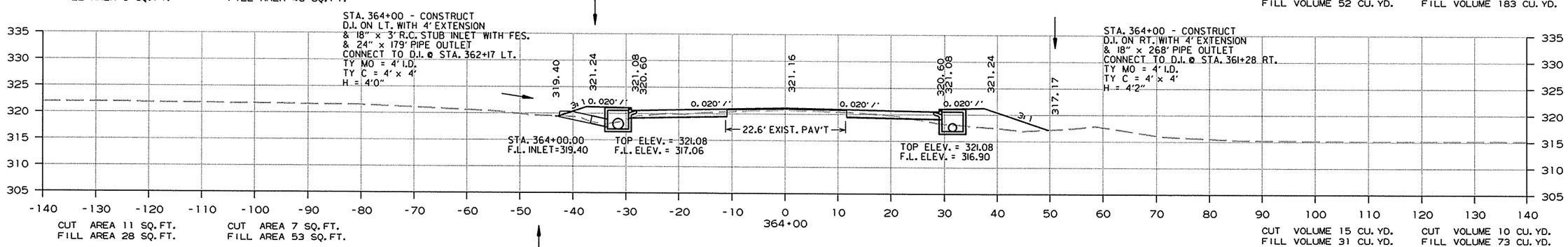
3/31/2014

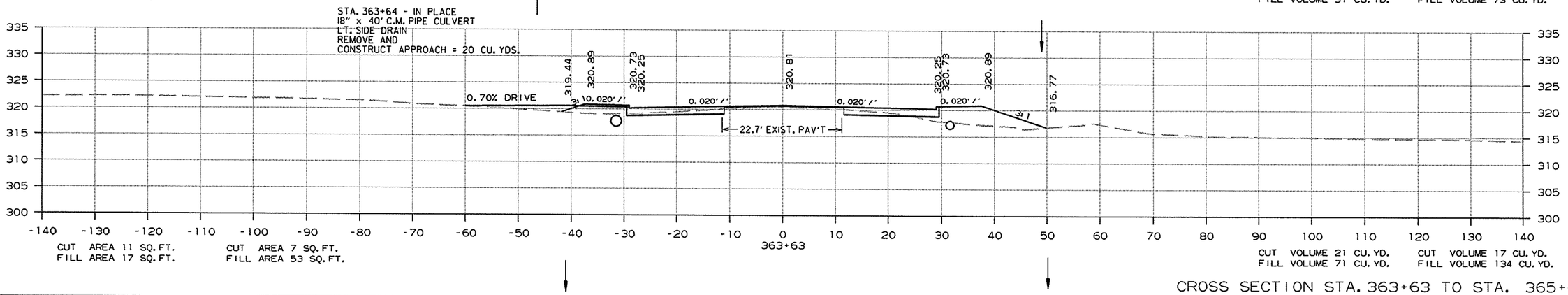
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	290	331

(2) CROSS SECTIONS







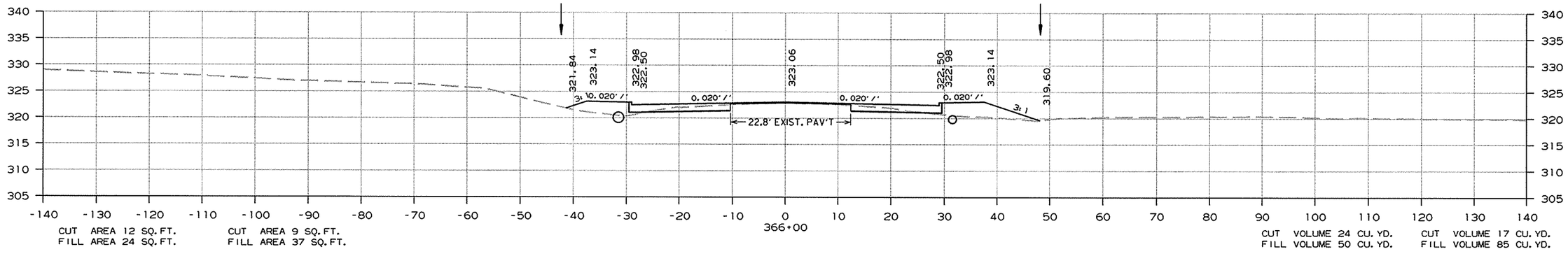
CROSS SECTION STA. 363+63 TO STA. 365+00

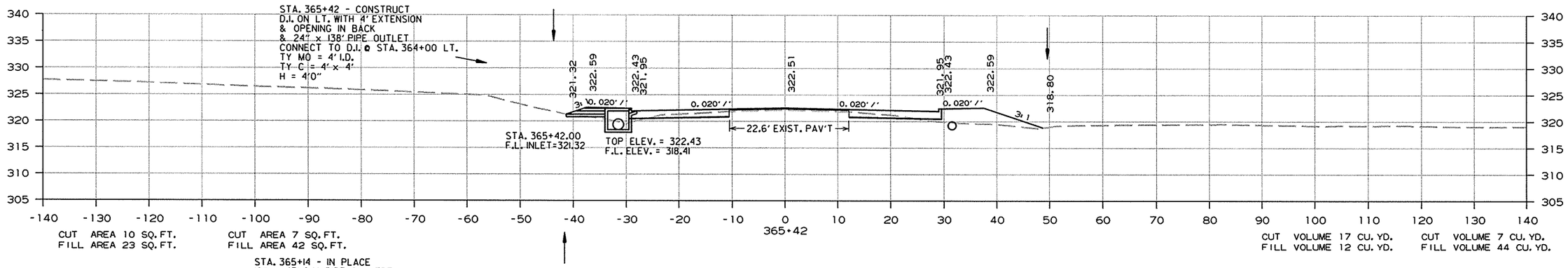
3/31/2014

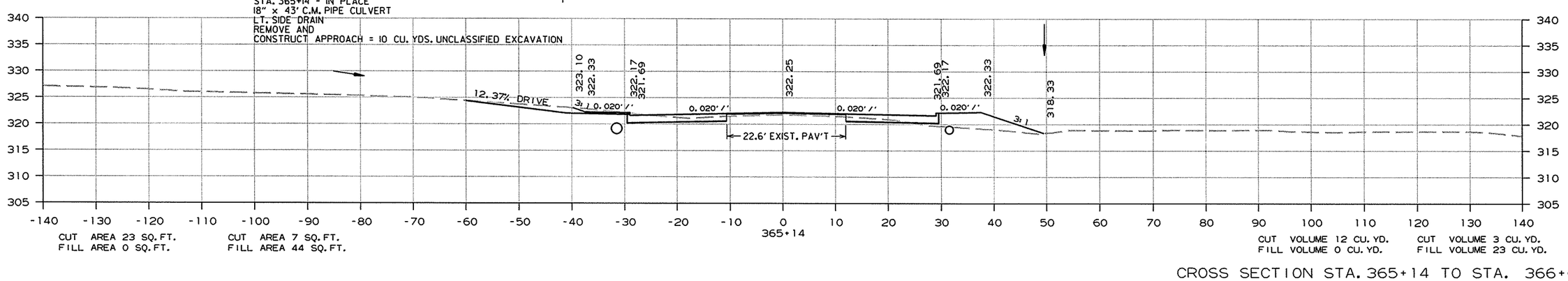
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	291	331

(2) CROSS SECTIONS







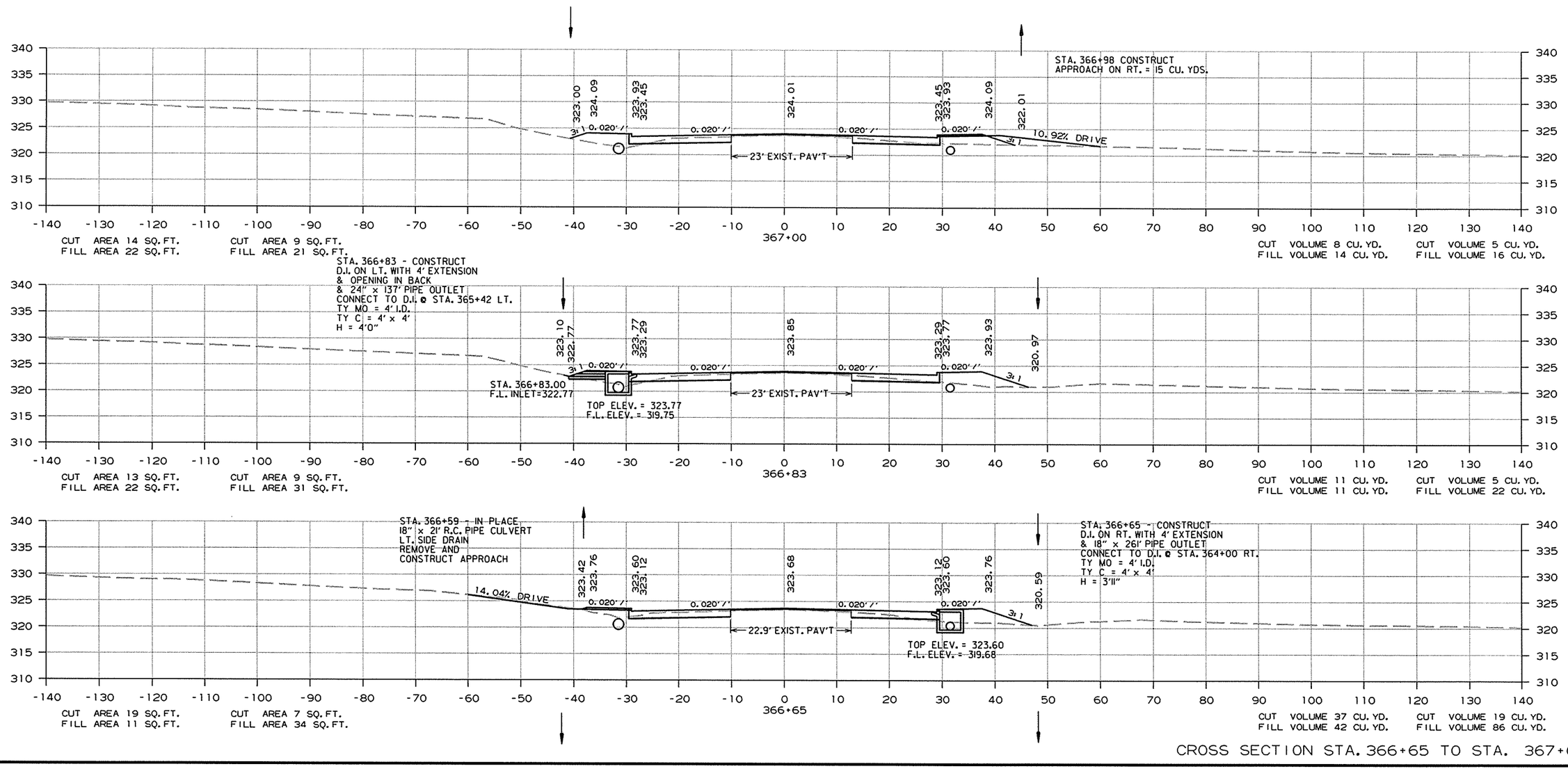
CROSS SECTION STA. 365+14 TO STA. 366+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	292	331

(2) CROSS SECTIONS



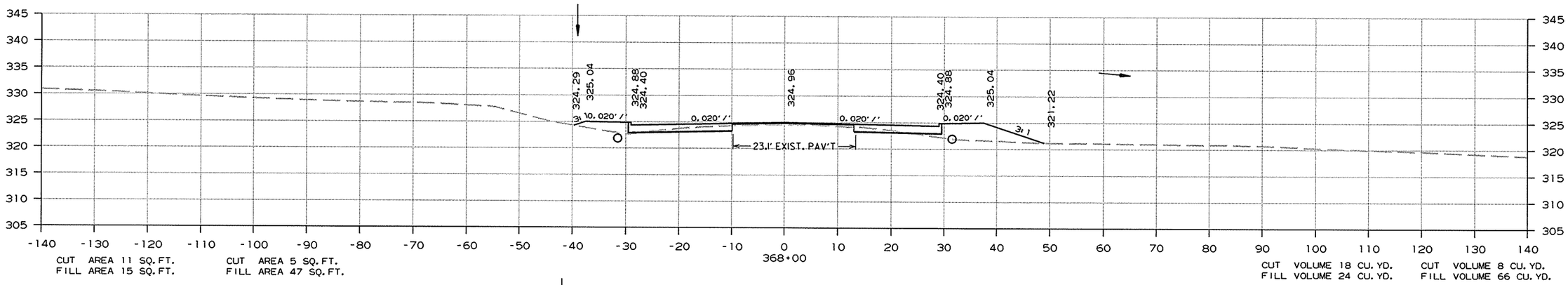
CROSS SECTION STA. 366+65 TO STA. 367+00

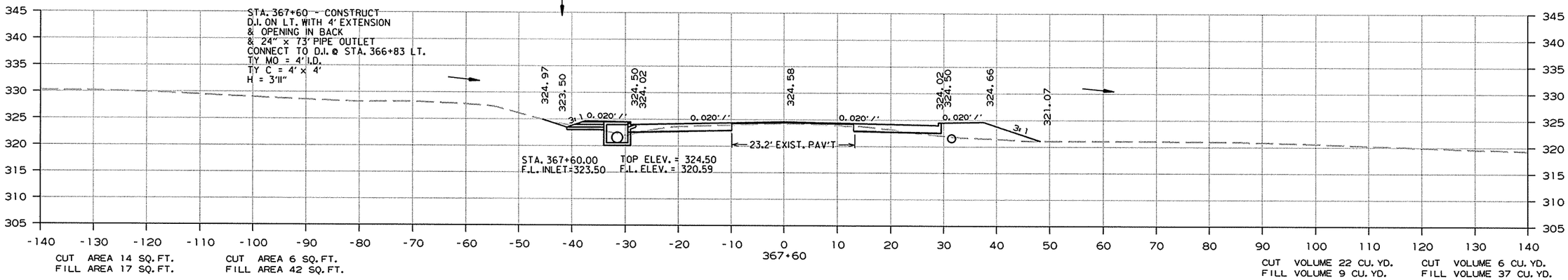
3/31/2014

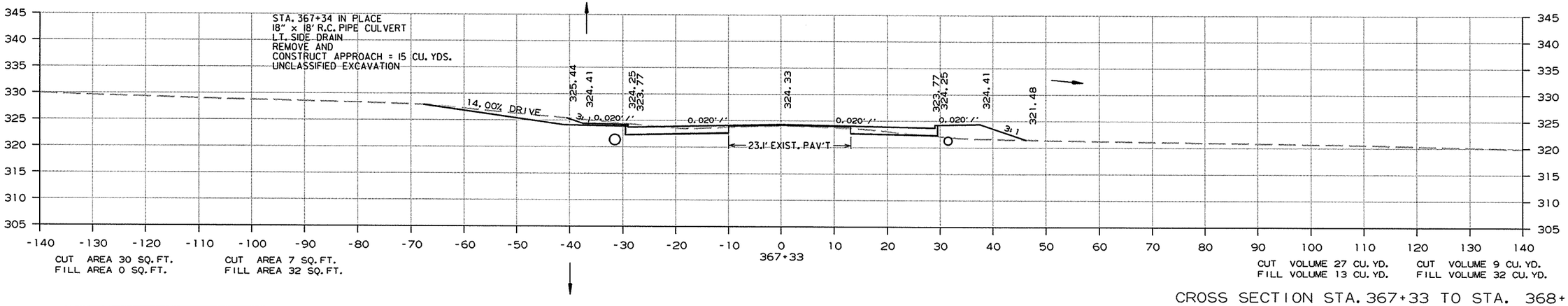
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	293	331

(2) CROSS SECTIONS







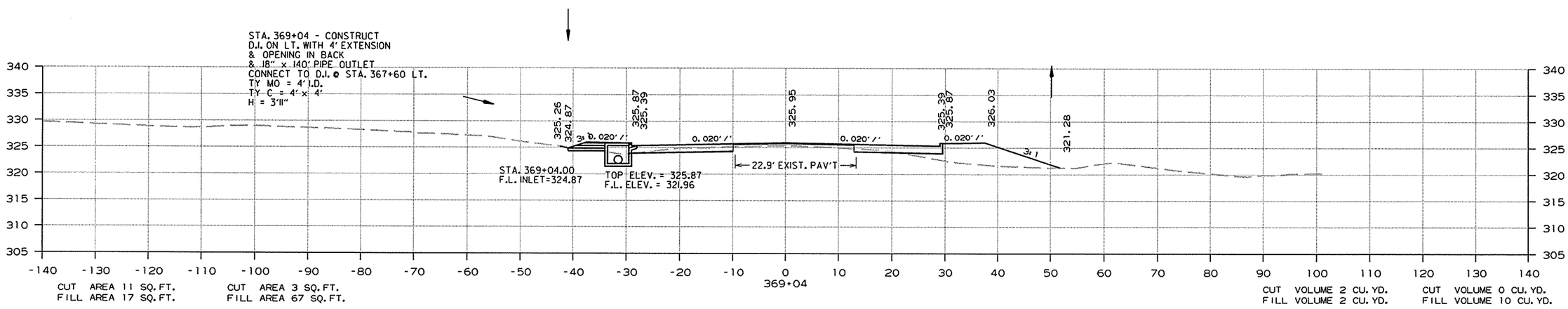
CROSS SECTION STA. 367+33 TO STA. 368+00

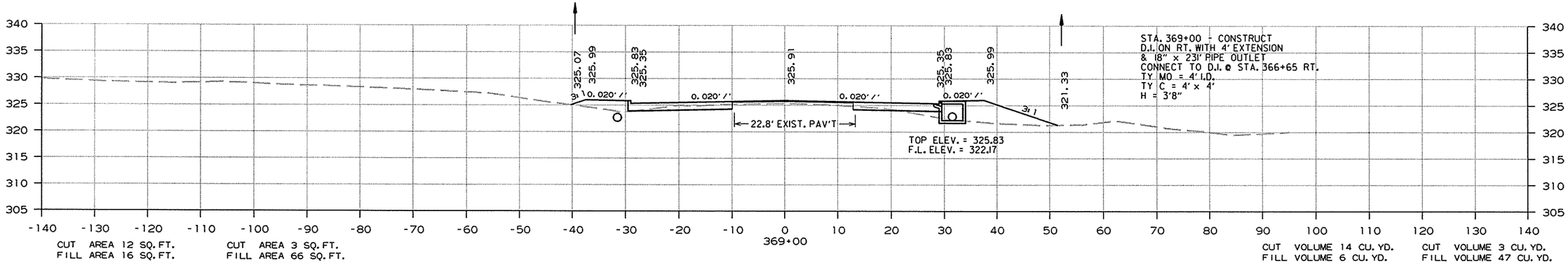
3/31/2014

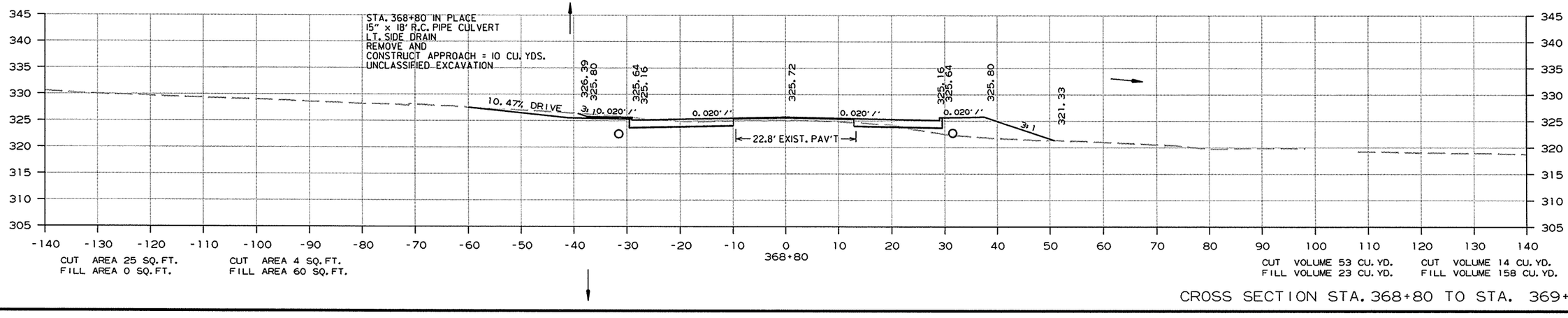
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	294	331

(2) CROSS SECTIONS







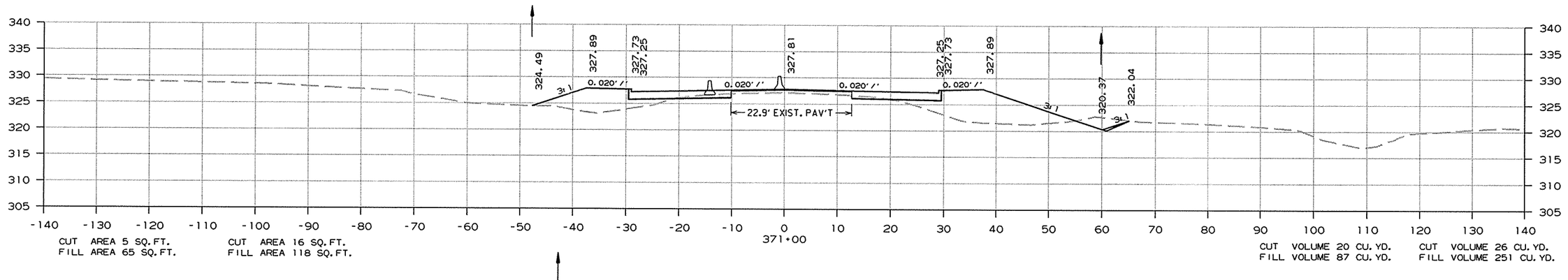
CROSS SECTION STA. 368+80 TO STA. 369+04

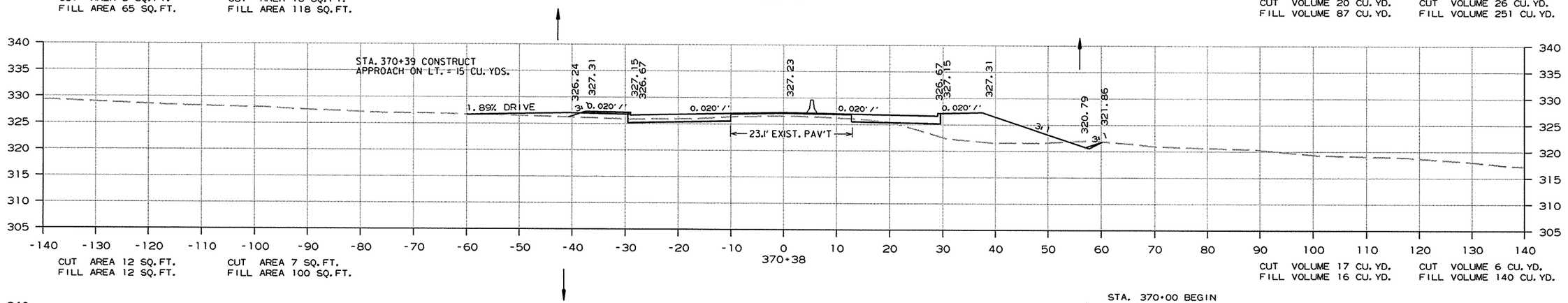
3/31/2014

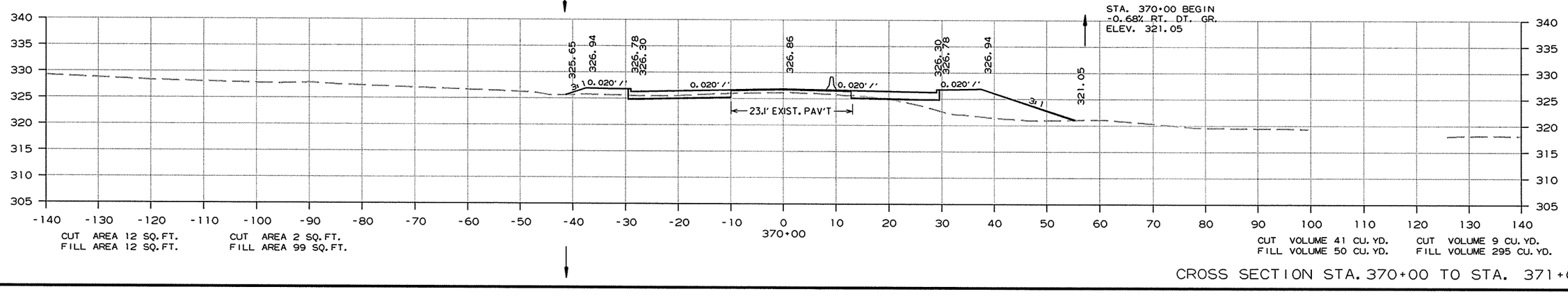
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	295	331

(2) CROSS SECTIONS







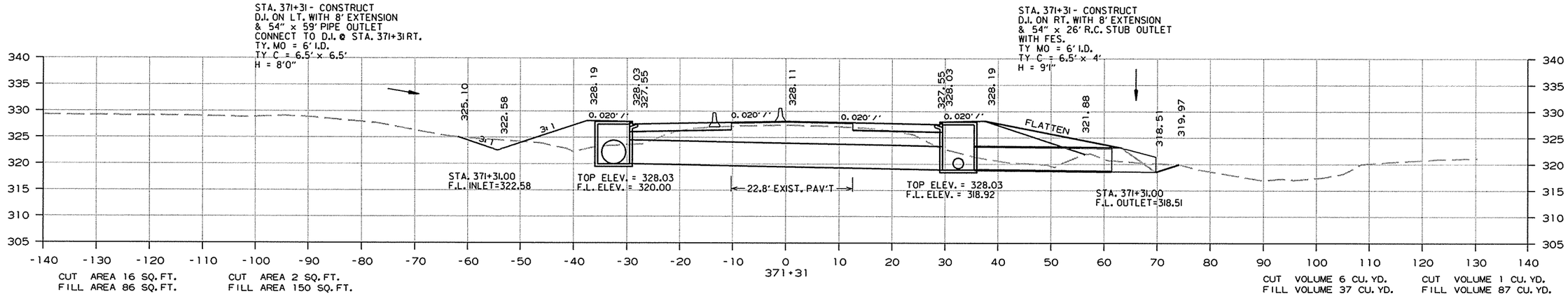
CROSS SECTION STA. 370+00 TO STA. 371+00

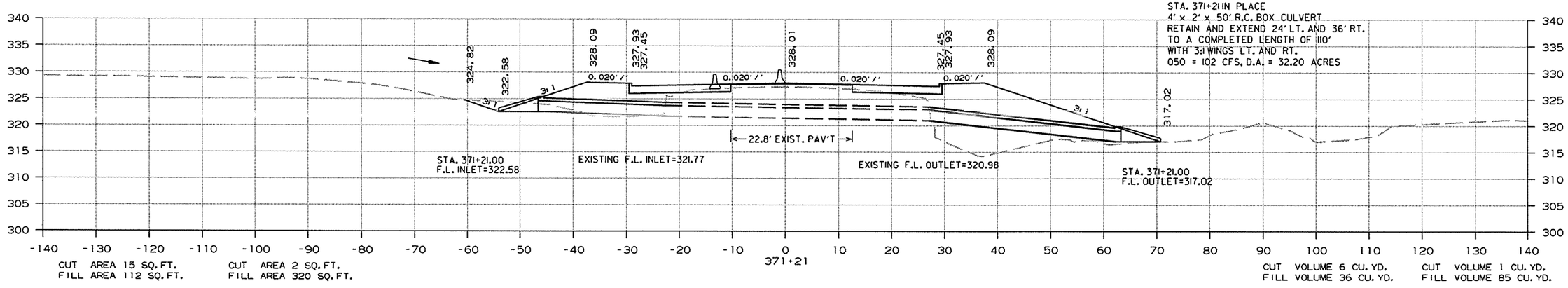
3/31/2014

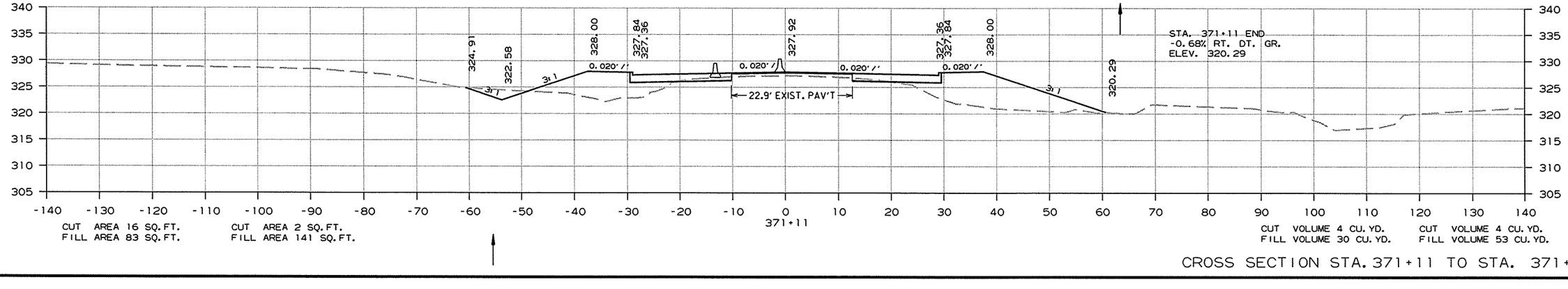
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	296	331

(2) CROSS SECTIONS







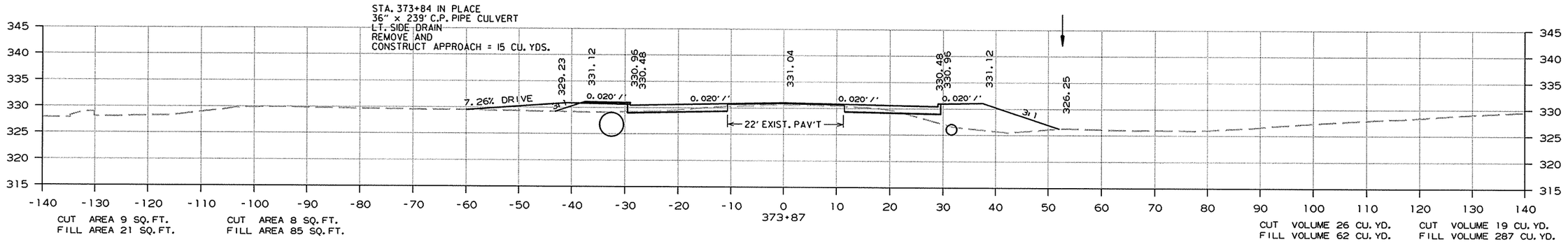
CROSS SECTION STA. 371+11 TO STA. 371+31

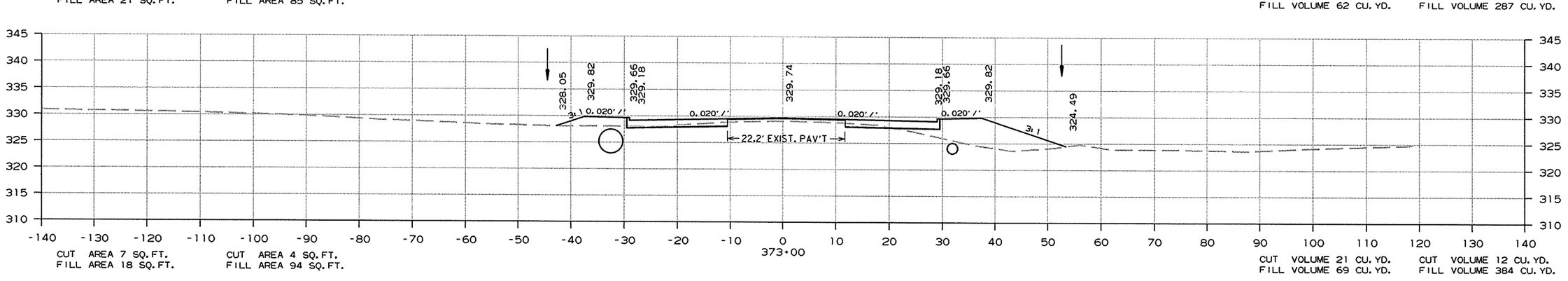
3/31/2014

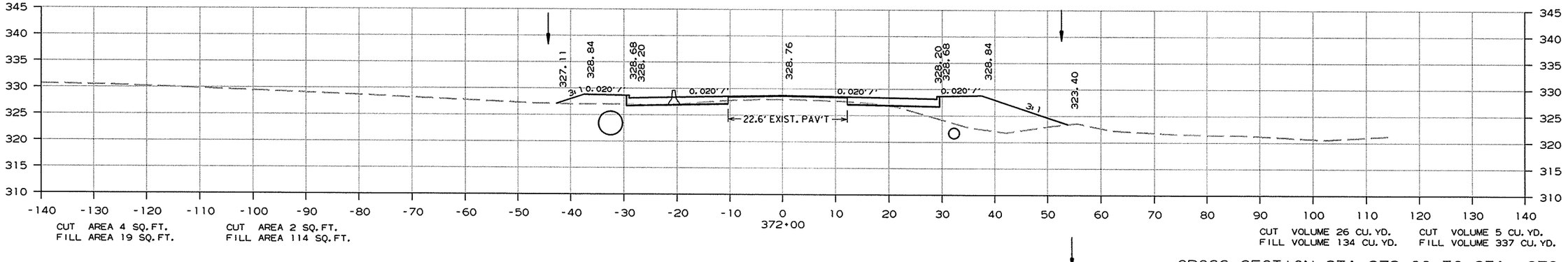
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	297	331

(2) CROSS SECTIONS







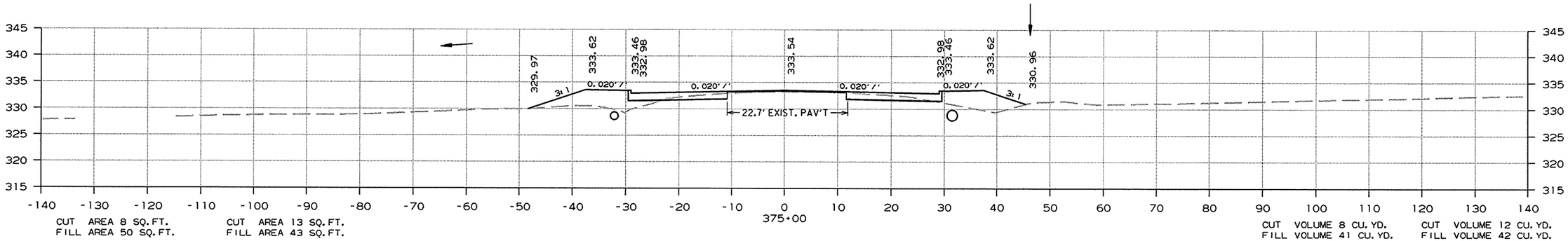
CROSS SECTION STA. 372+00 TO STA. 373+87

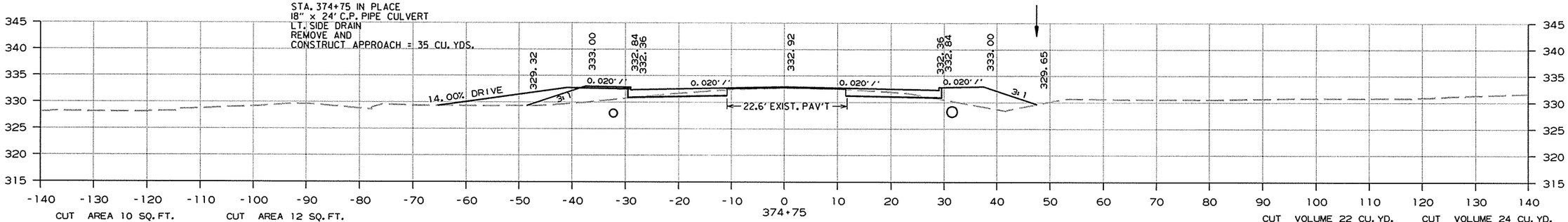
3/31/2014

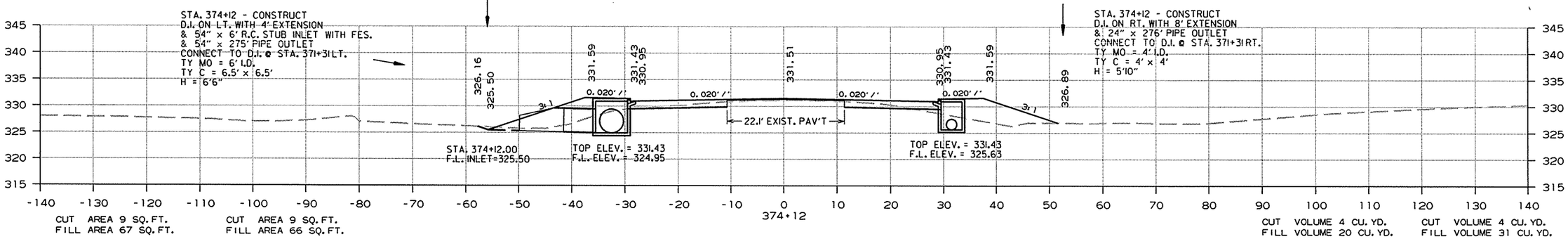
R070365.DGN

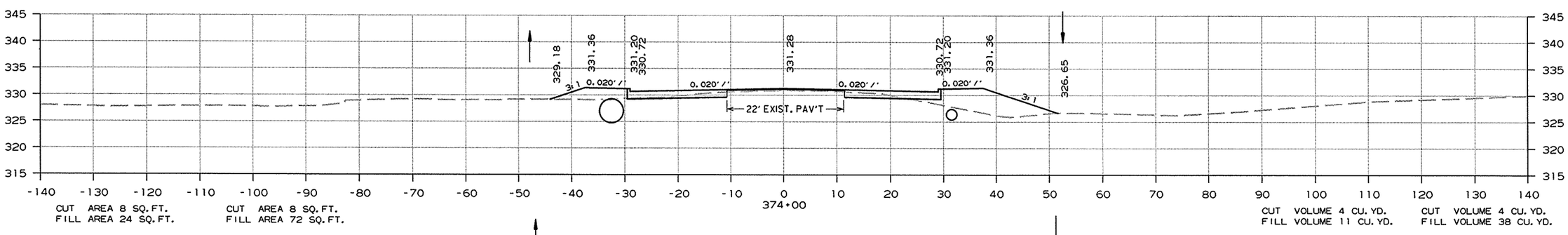
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	298	331

(2) CROSS SECTIONS









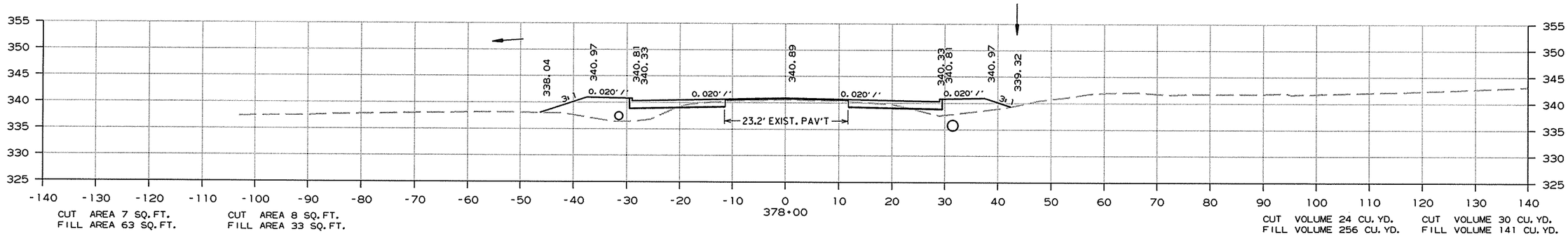
CROSS SECTION STA. 374+00 TO STA. 375+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	299	331

(2) CROSS SECTIONS

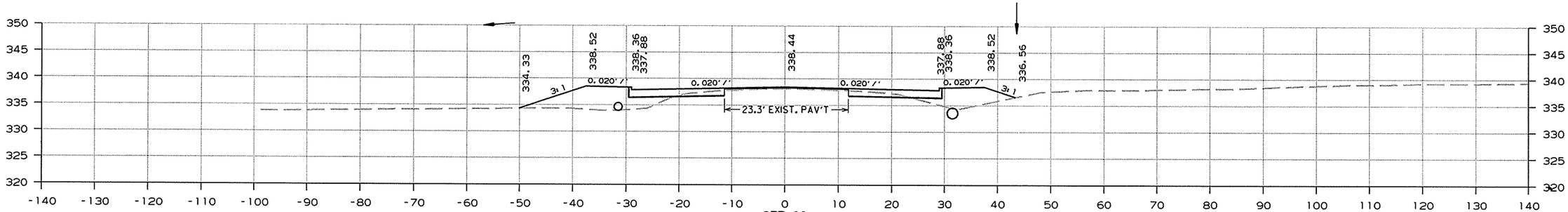


CUT AREA 7 SQ.FT.
FILL AREA 63 SQ.FT.

CUT AREA 8 SQ.FT.
FILL AREA 33 SQ.FT.

CUT VOLUME 24 CU.YD.
FILL VOLUME 256 CU.YD.

CUT VOLUME 30 CU.YD.
FILL VOLUME 141 CU.YD.

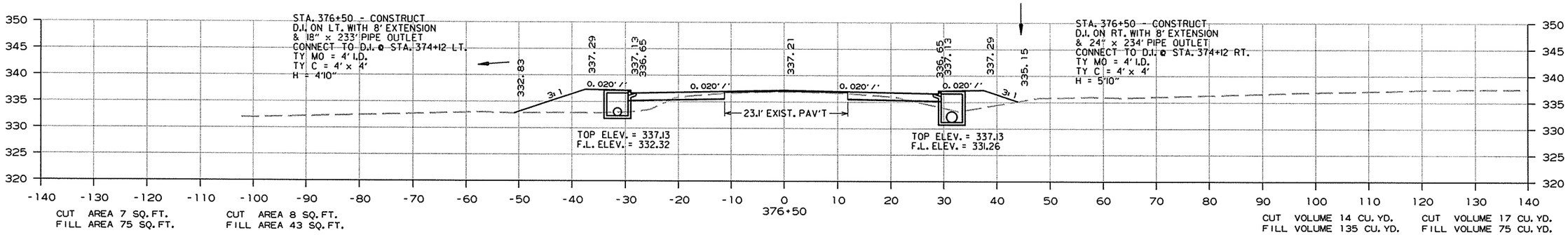


CUT AREA 6 SQ.FT.
FILL AREA 75 SQ.FT.

CUT AREA 8 SQ.FT.
FILL AREA 44 SQ.FT.

CUT VOLUME 13 CU.YD.
FILL VOLUME 138 CU.YD.

CUT VOLUME 15 CU.YD.
FILL VOLUME 80 CU.YD.

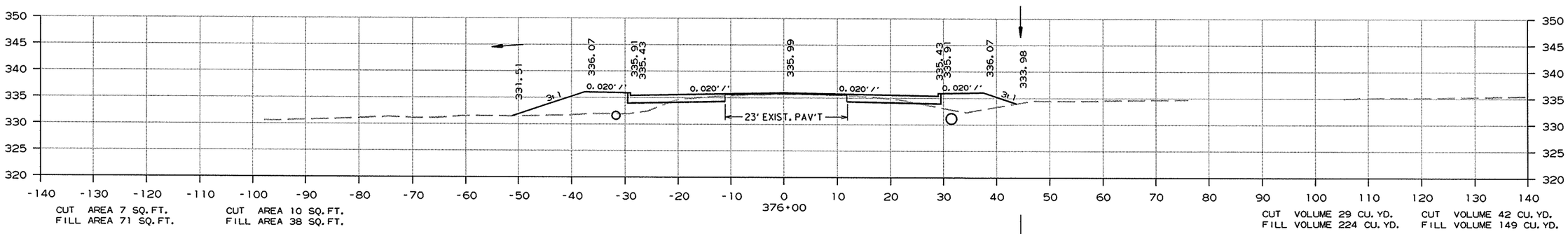


CUT AREA 7 SQ.FT.
FILL AREA 75 SQ.FT.

CUT AREA 8 SQ.FT.
FILL AREA 43 SQ.FT.

CUT VOLUME 14 CU.YD.
FILL VOLUME 135 CU.YD.

CUT VOLUME 17 CU.YD.
FILL VOLUME 75 CU.YD.



CUT AREA 7 SQ.FT.
FILL AREA 71 SQ.FT.

CUT AREA 10 SQ.FT.
FILL AREA 38 SQ.FT.

CUT VOLUME 29 CU.YD.
FILL VOLUME 224 CU.YD.

CUT VOLUME 42 CU.YD.
FILL VOLUME 149 CU.YD.

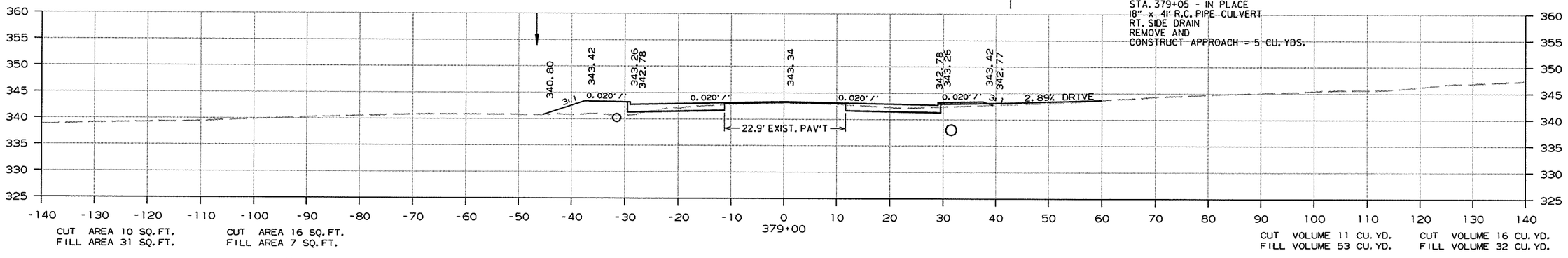
CROSS SECTION STA. 376+00 TO STA. 378+00

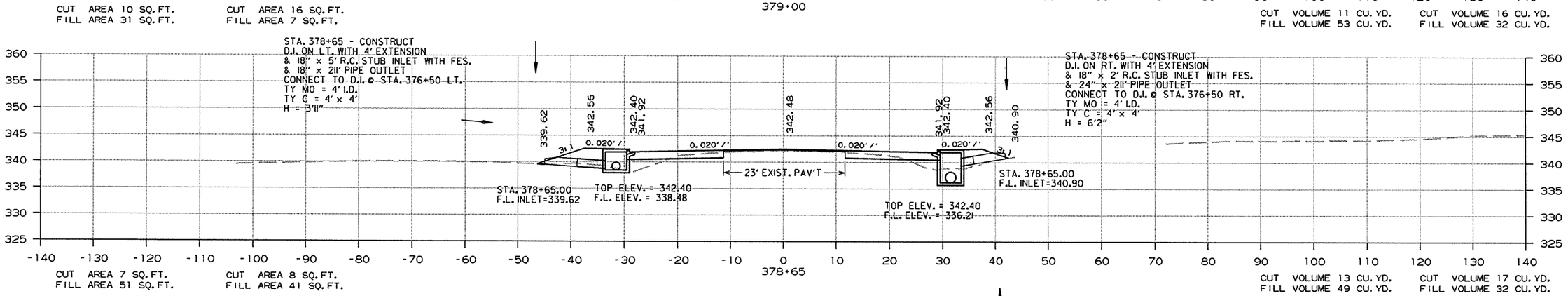
3/31/2014

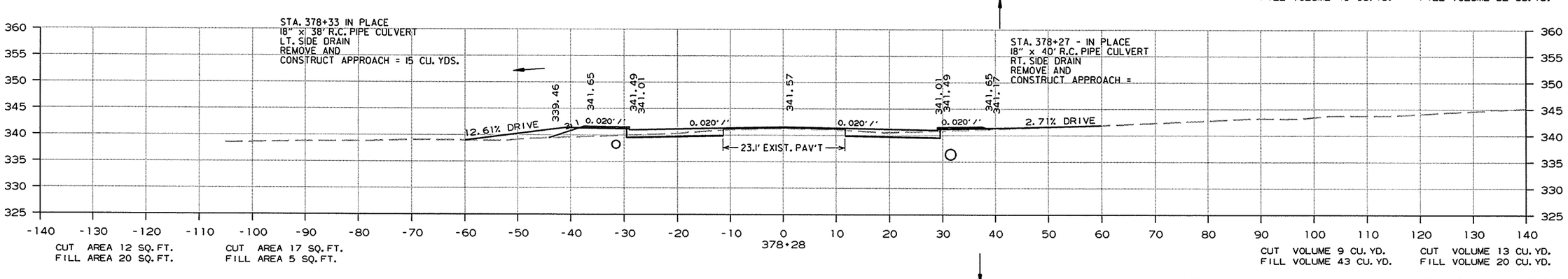
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	300	331

(2) CROSS SECTIONS







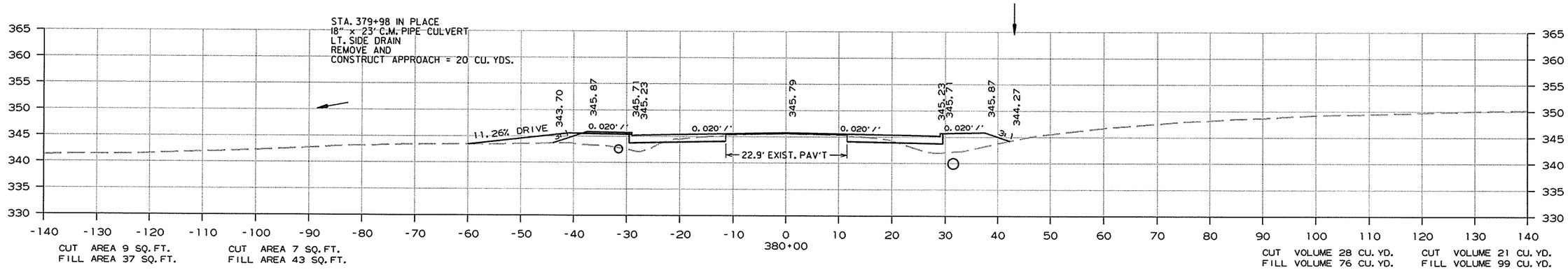
CROSS SECTION STA. 378+28 TO STA. 379+00

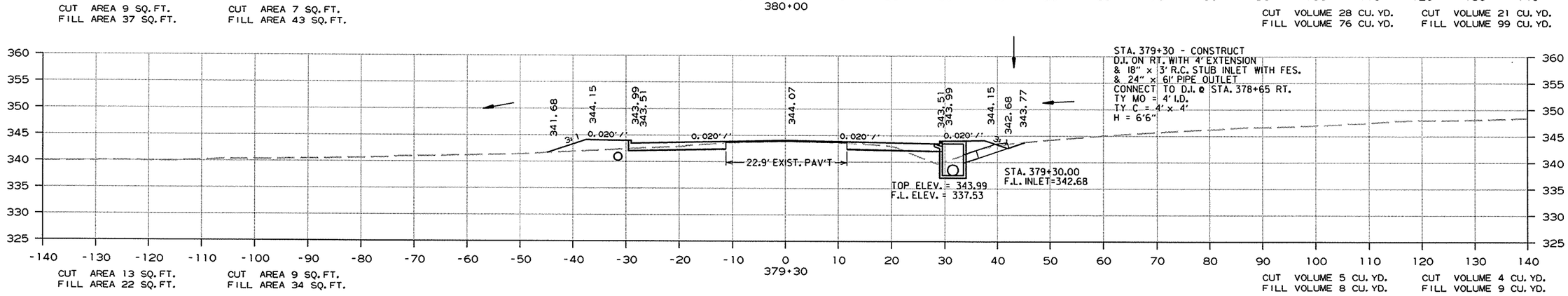
3/31/2014

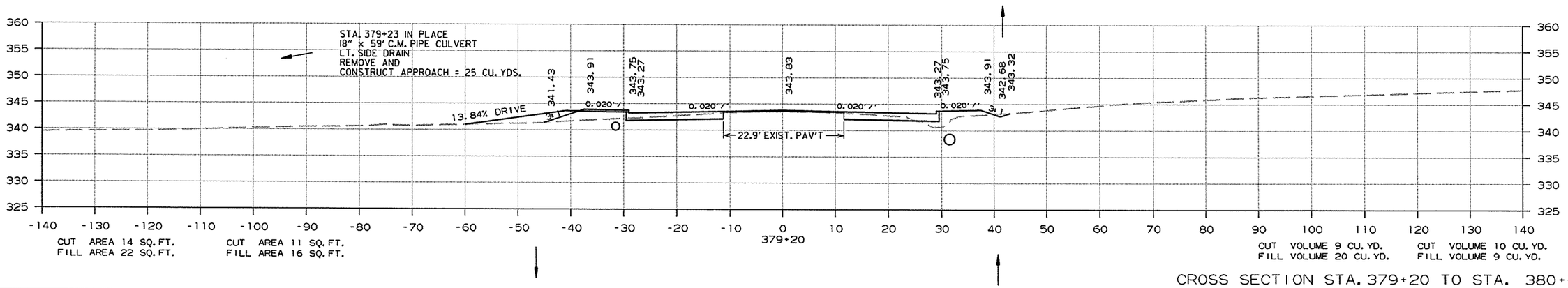
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	301	331

(2) CROSS SECTIONS







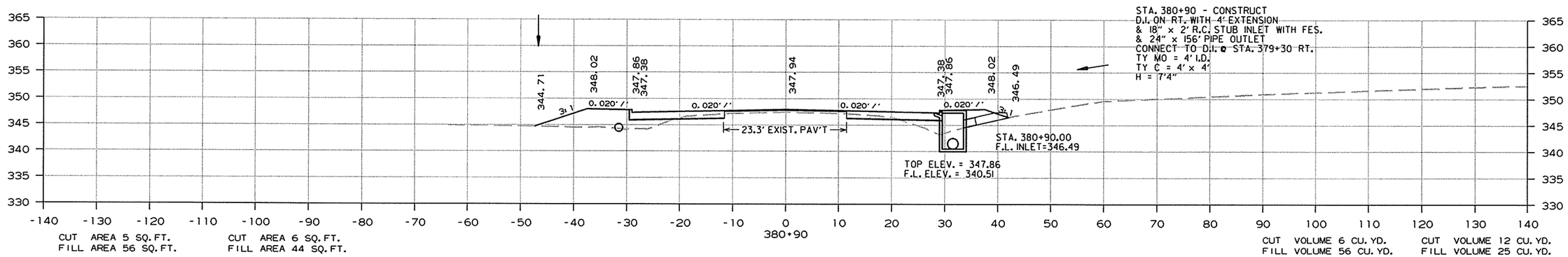
CROSS SECTION STA. 379+20 TO STA. 380+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	302	331

(2) CROSS SECTIONS



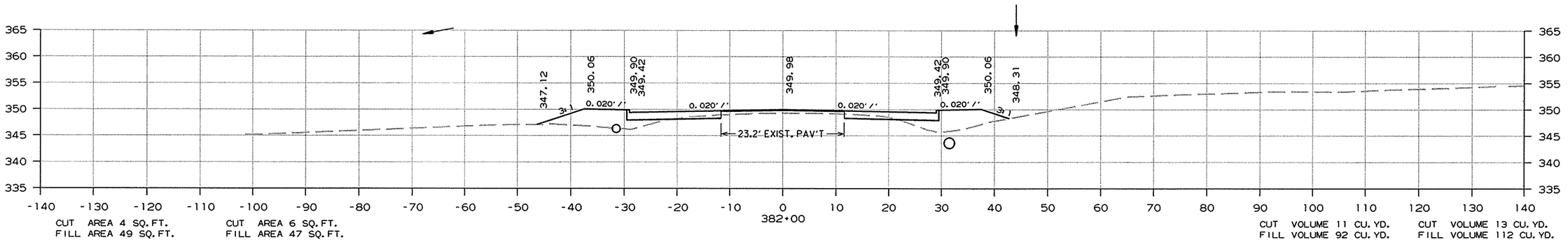
CROSS SECTION STA. 380+28 TO STA. 380+90

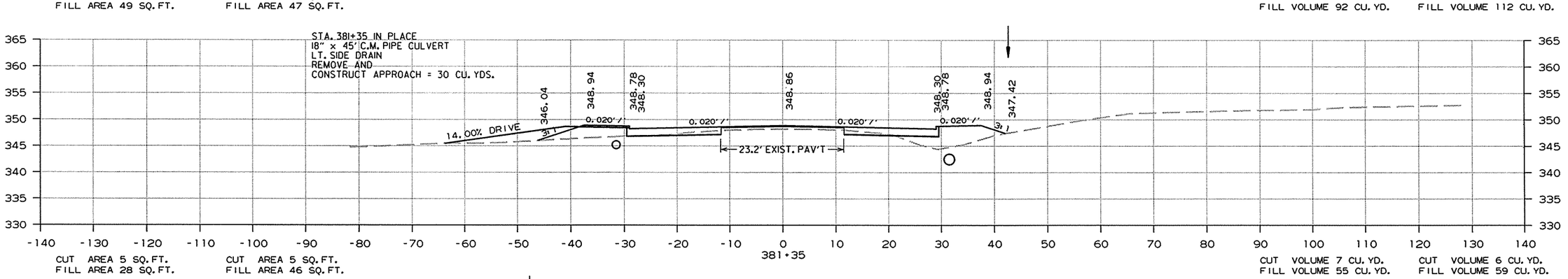
3/31/2014

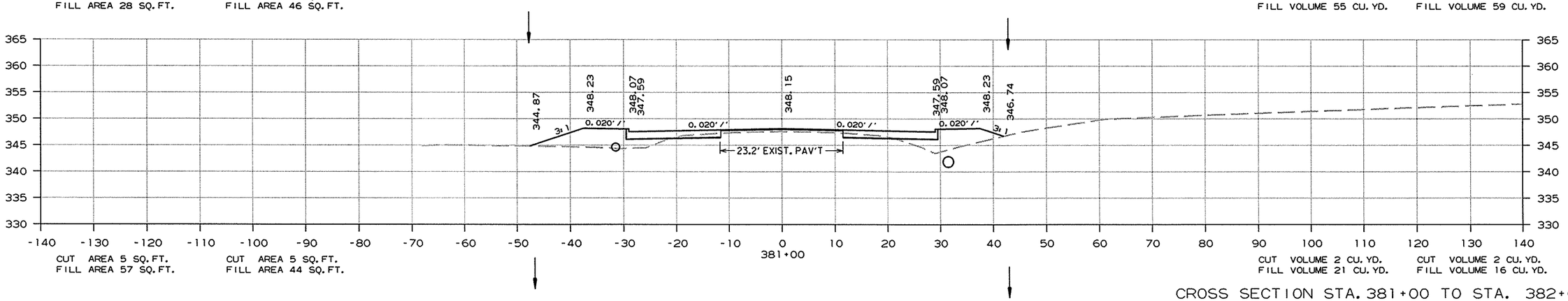
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	303	331

(2) CROSS SECTIONS







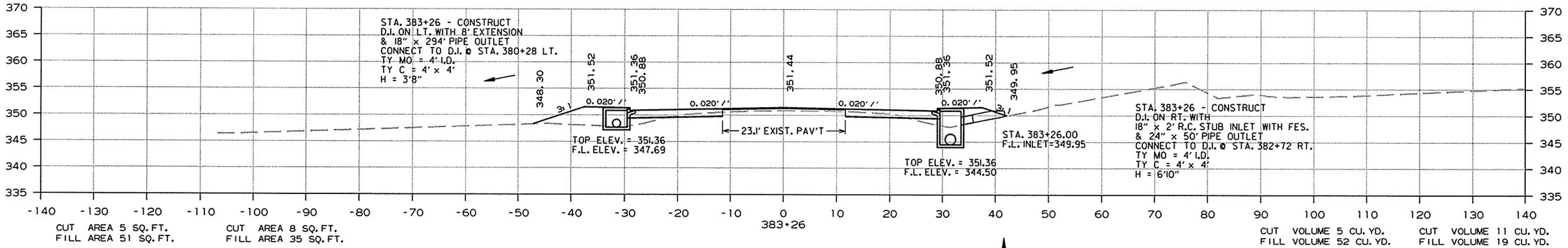
CROSS SECTION STA. 381+00 TO STA. 382+00

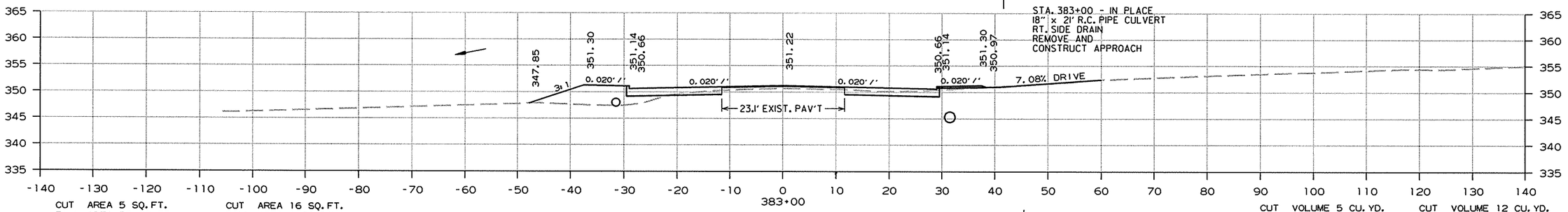
3/31/2014

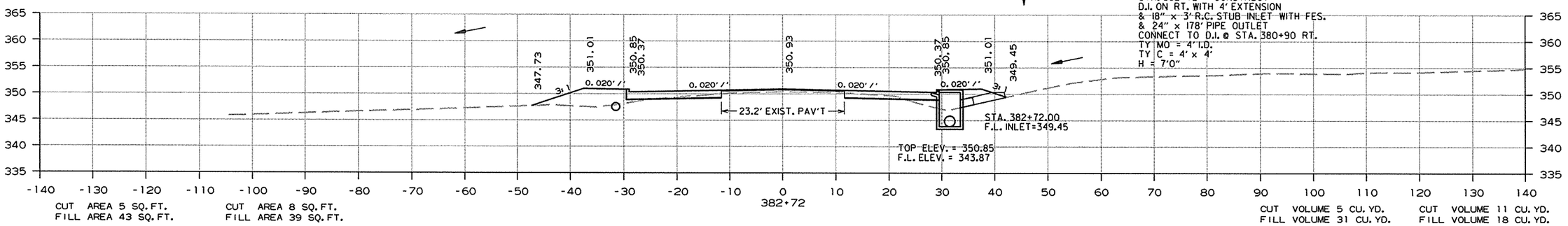
R070365.DGN

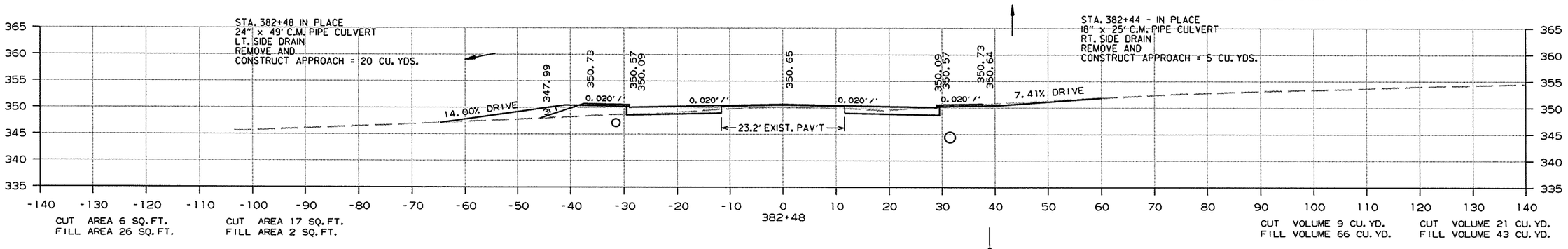
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	304	331

(2) CROSS SECTIONS









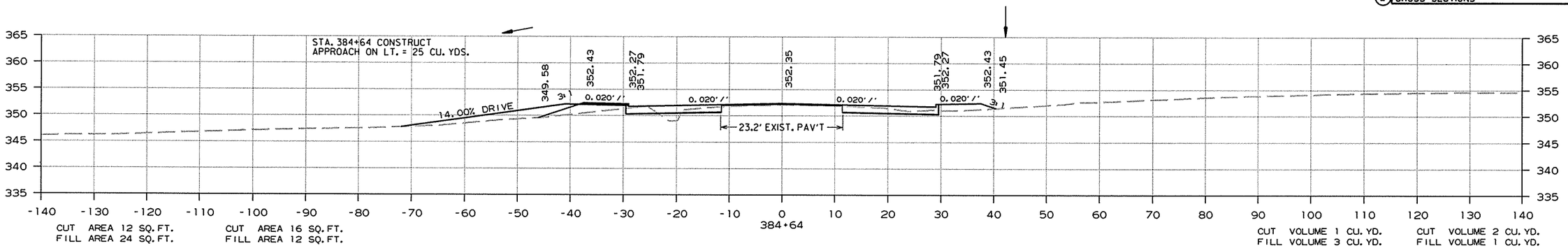
CROSS SECTION STA. 382+48 TO STA. 383+26

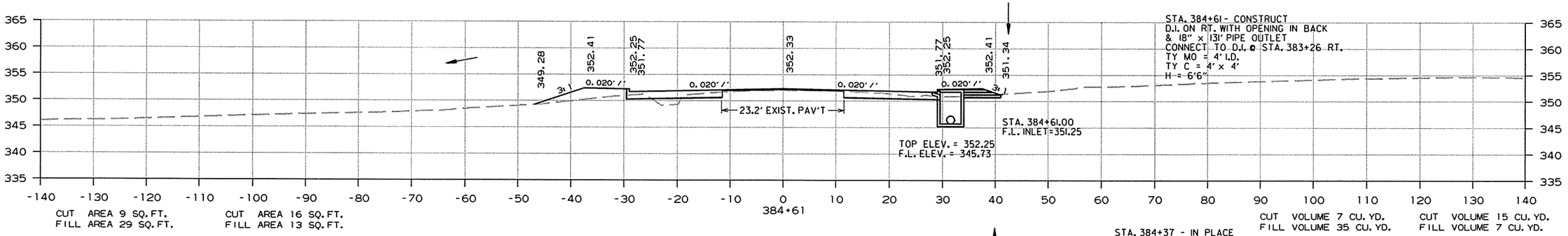
3/31/2014

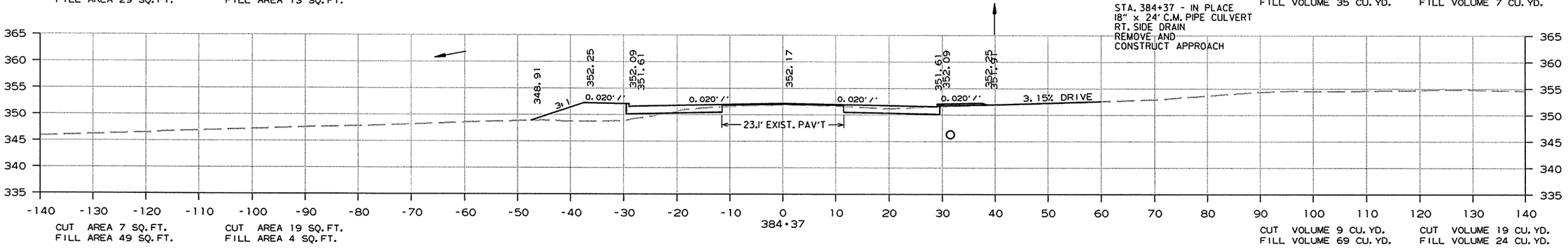
R070365.DGN

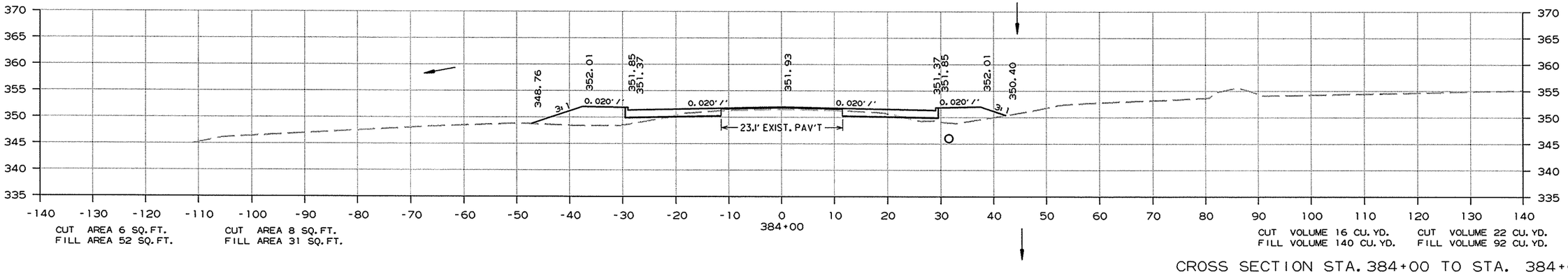
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	305	331

(2) CROSS SECTIONS









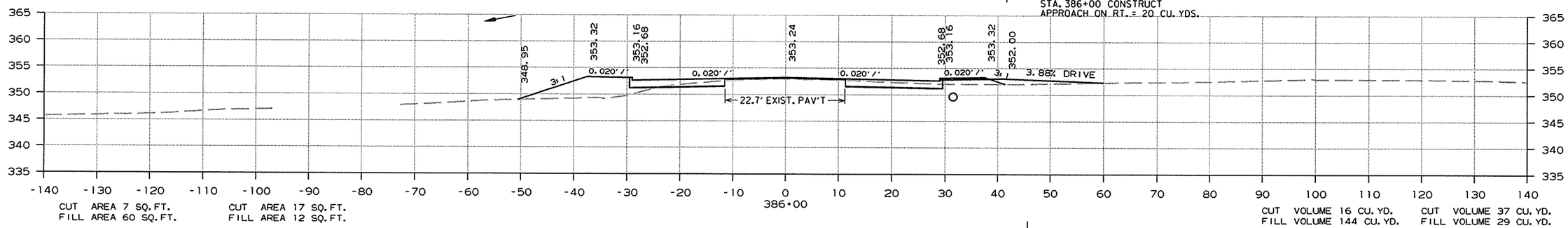
CROSS SECTION STA. 384+00 TO STA. 384+64

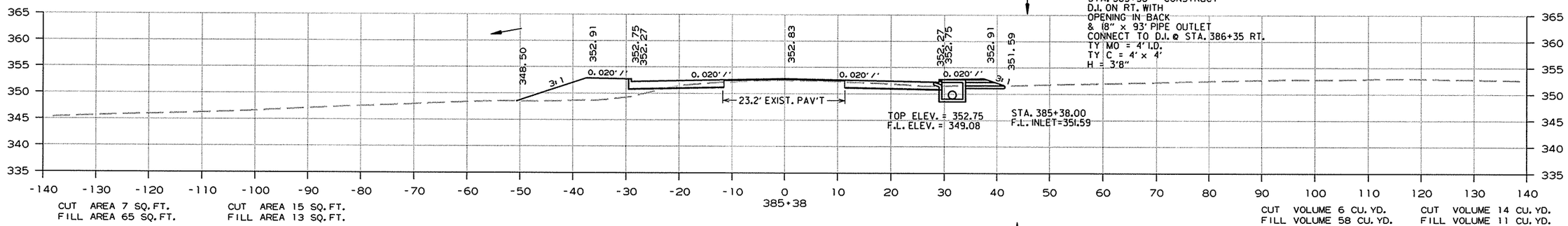
3/31/2014

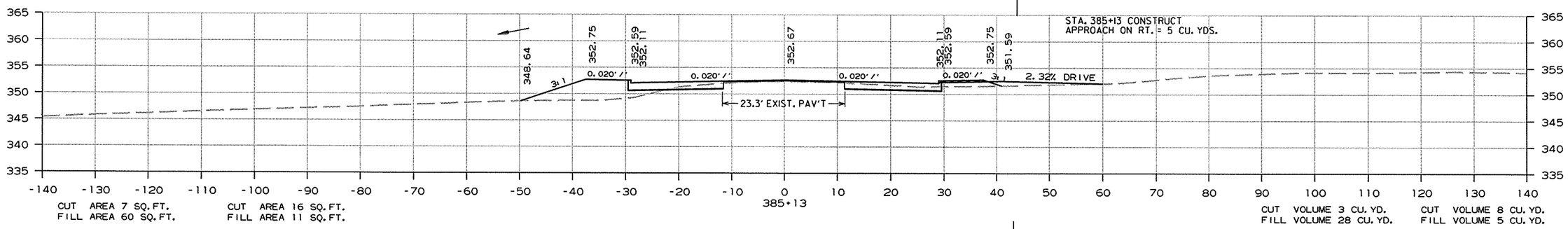
R070365.DGN

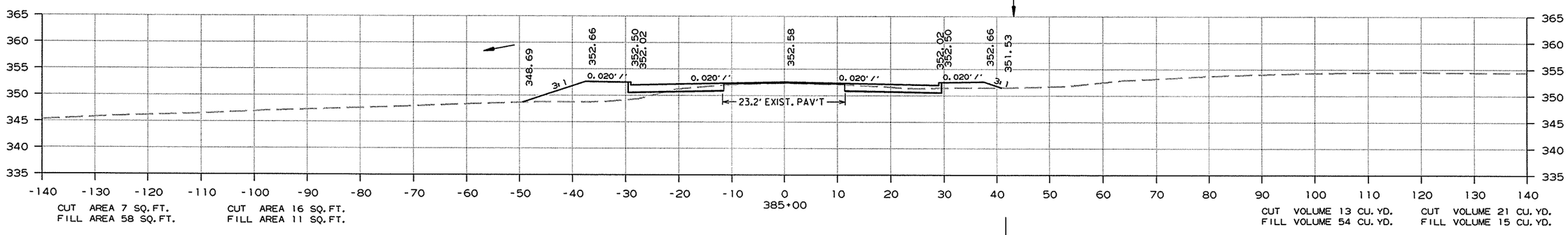
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	306	331

(2) CROSS SECTIONS









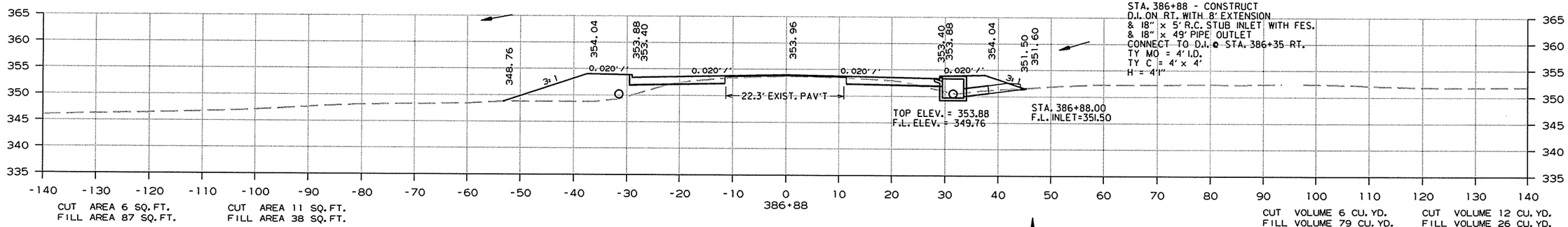
CROSS SECTION STA. 385+00 TO STA. 386+00

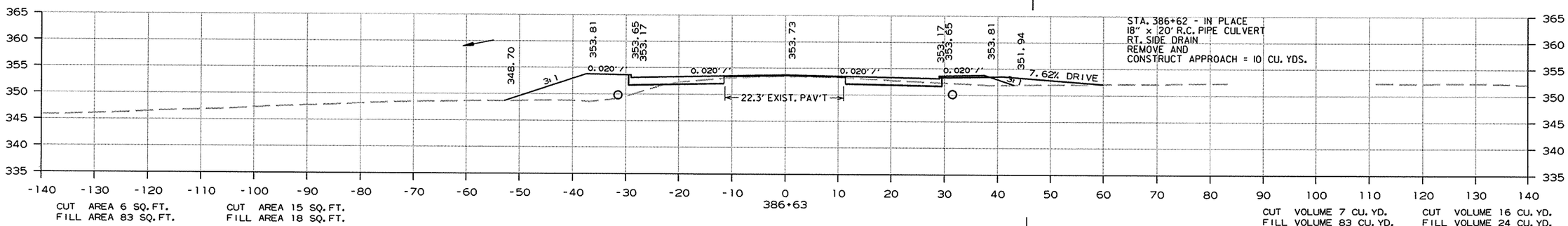
3/31/2014

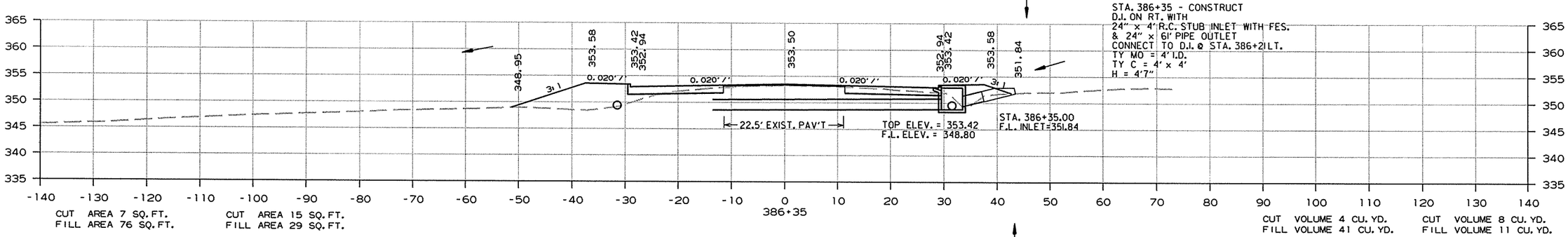
R070365.DGN

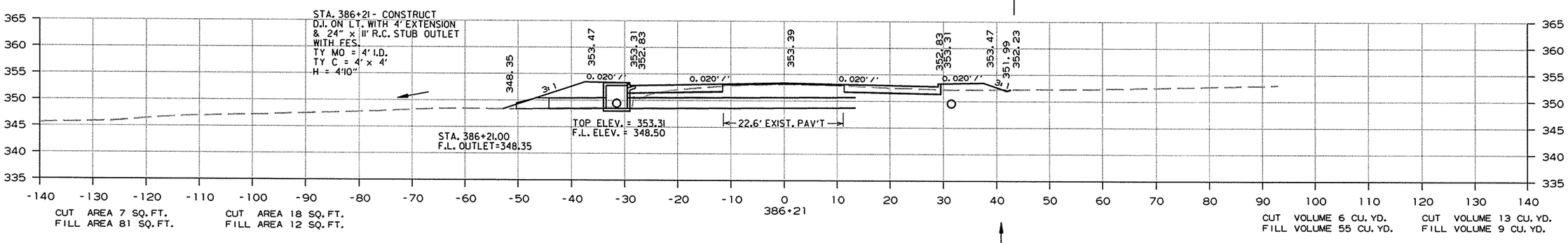
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	307	331

(2) CROSS SECTIONS









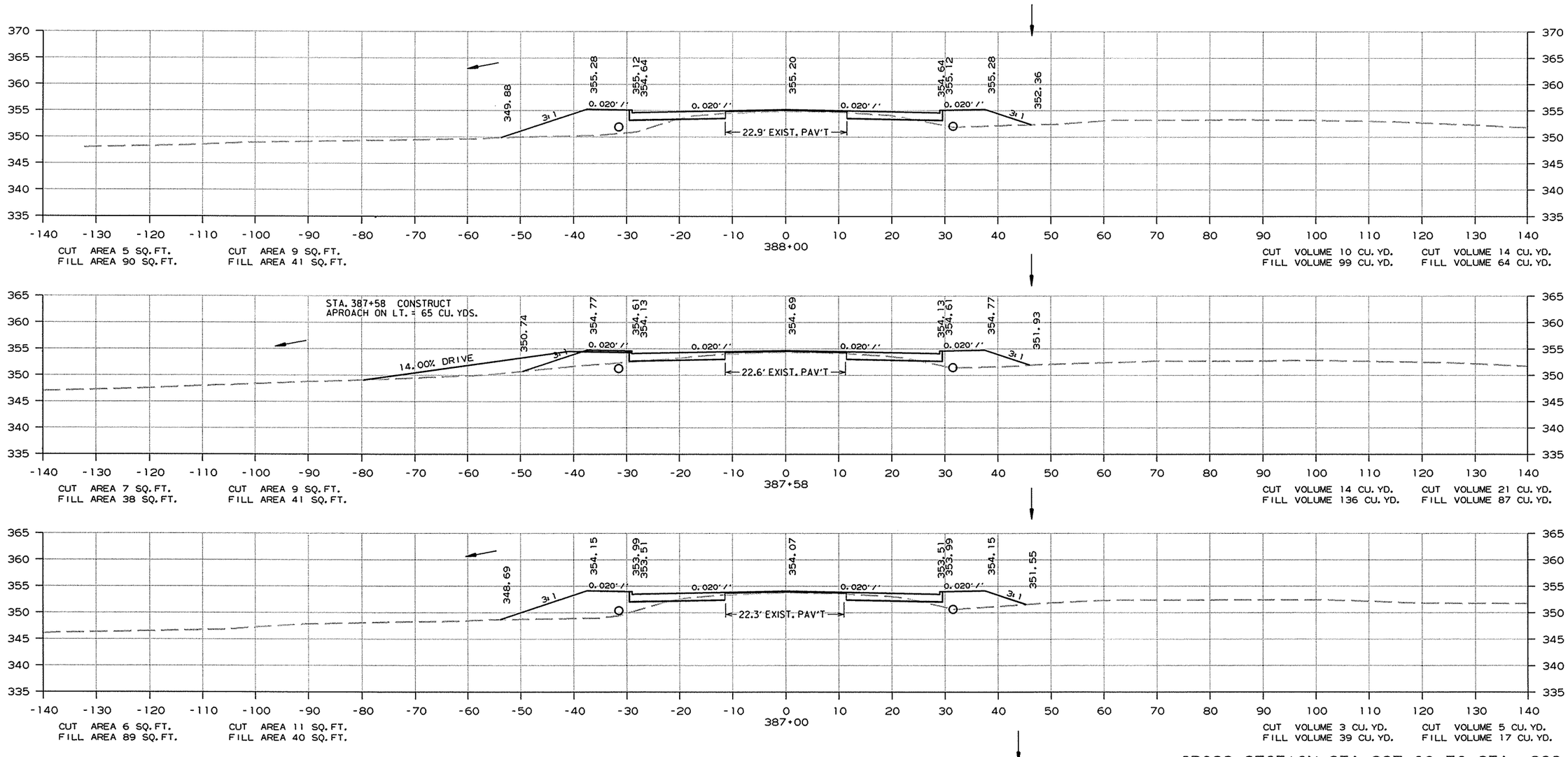
CROSS SECTION STA. 386+21 TO STA. 386+88

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	308	331

(2) CROSS SECTIONS



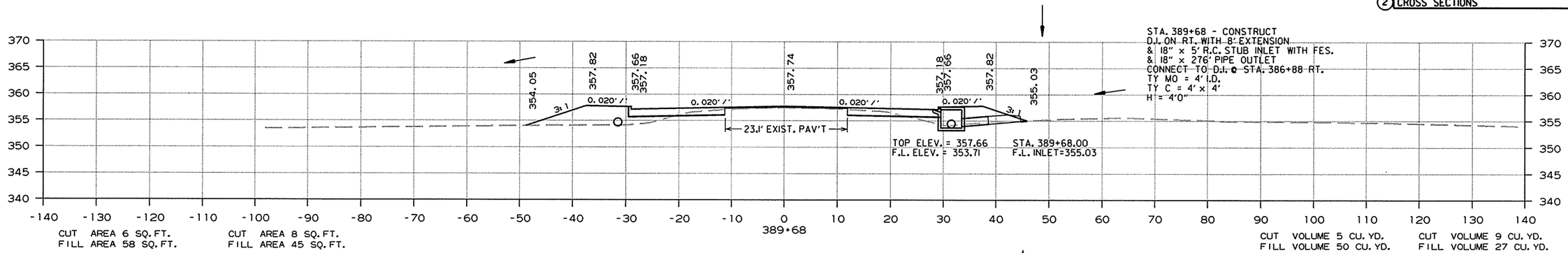
CROSS SECTION STA. 387+00 TO STA. 388+00

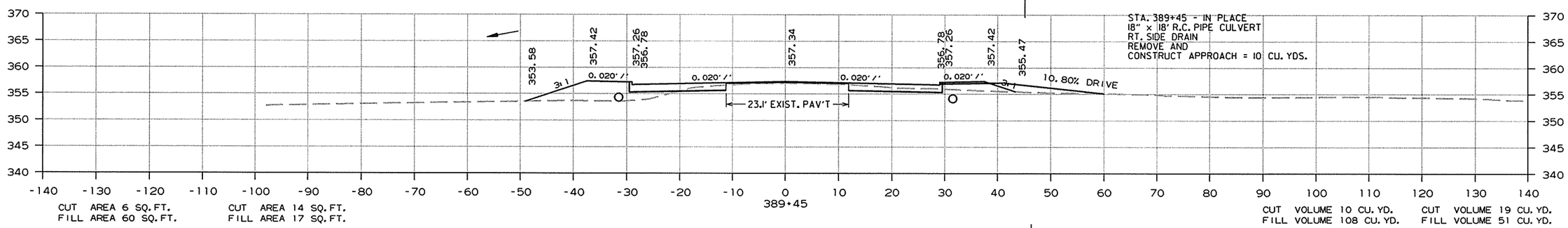
3/31/2014

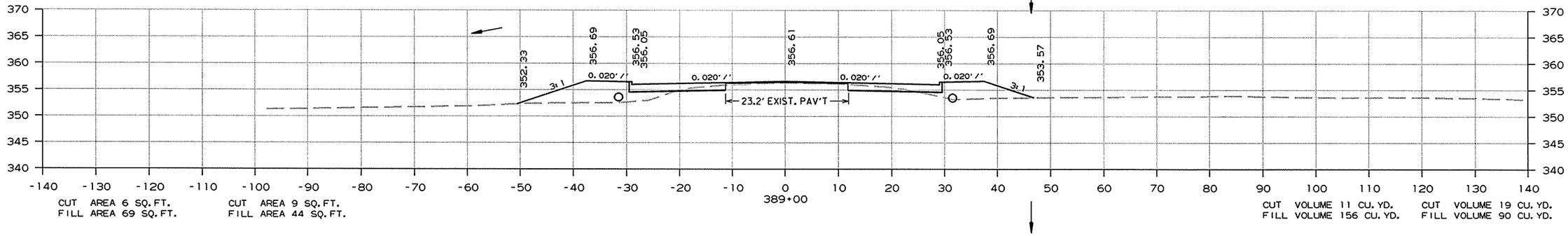
R070365.DGN

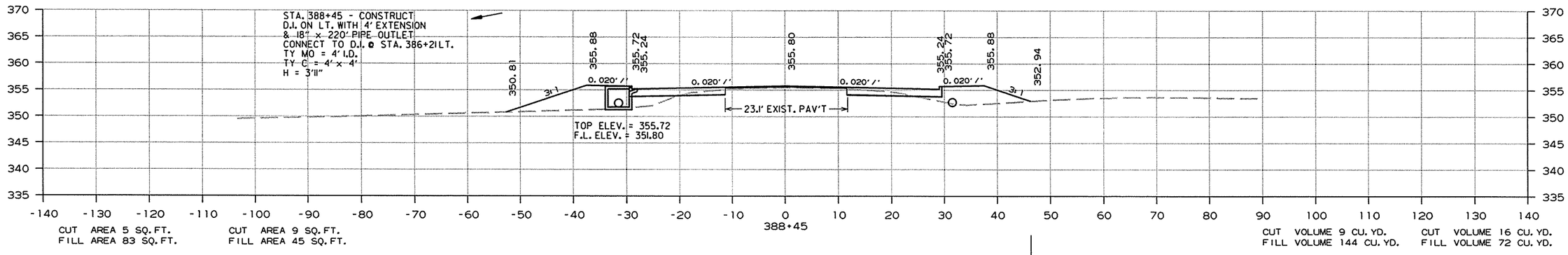
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	309	331

(2) CROSS SECTIONS









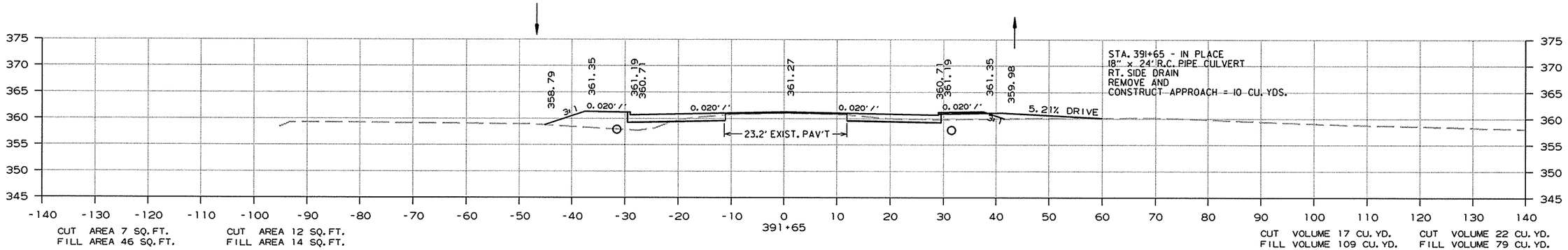
CROSS SECTION STA. 388+45 TO STA. 389+68

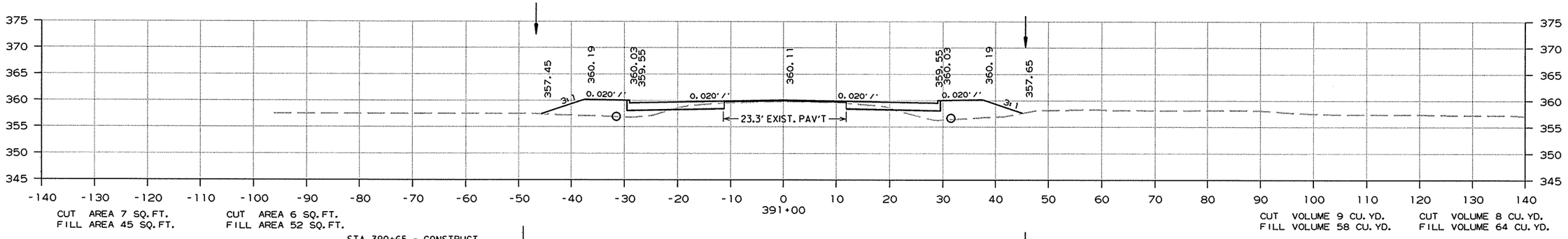
3/31/2014

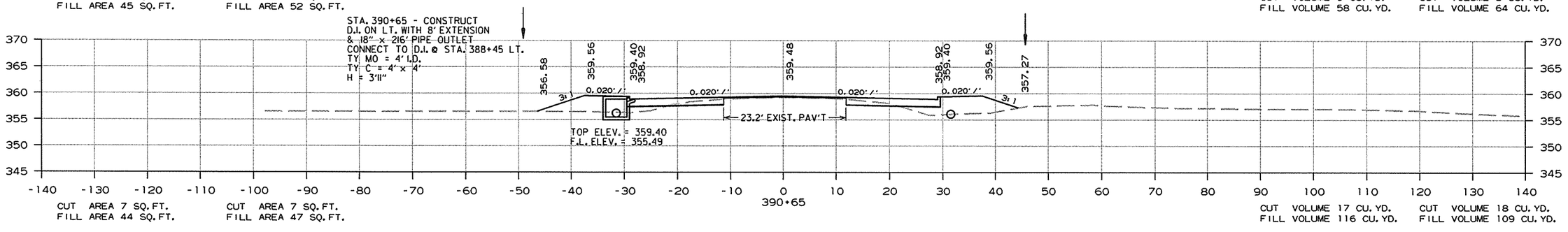
R070365.DGN

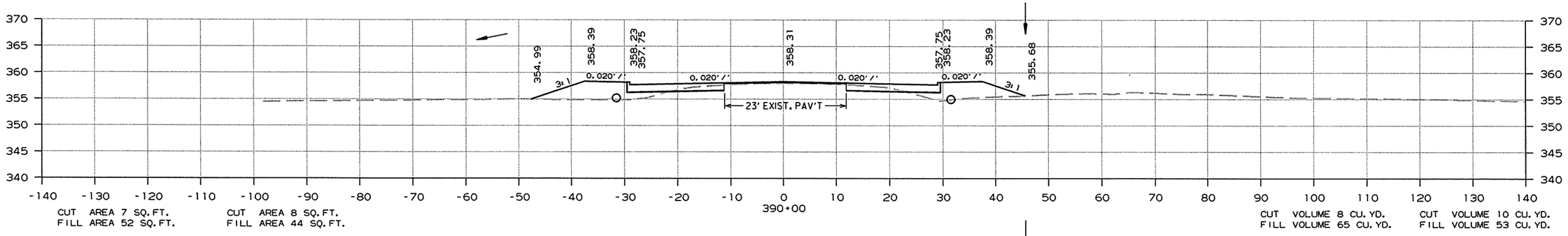
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	310	331

(2) CROSS SECTIONS









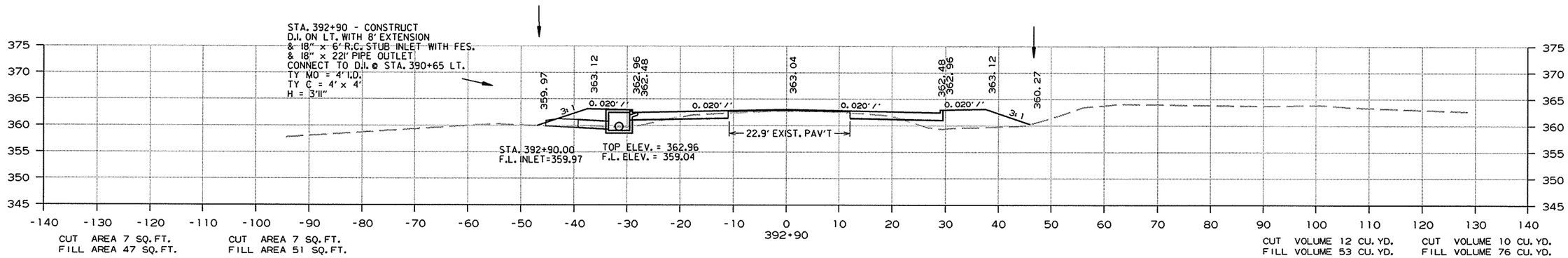
CROSS SECTION STA. 390+00 TO STA. 391+65

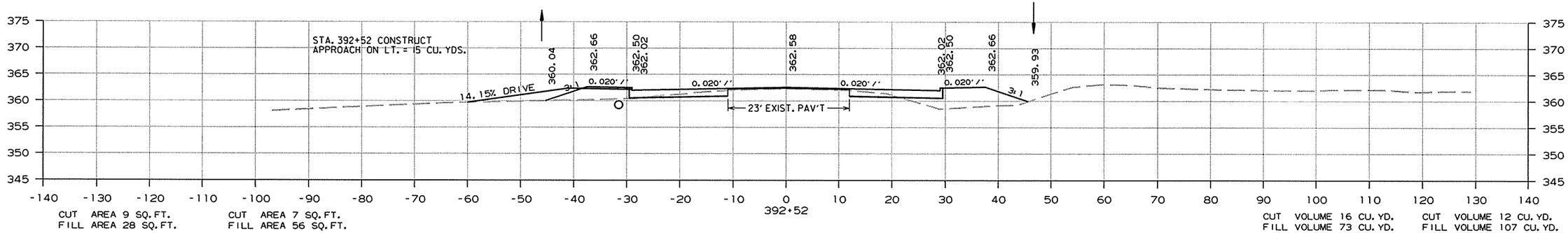
3/31/2014

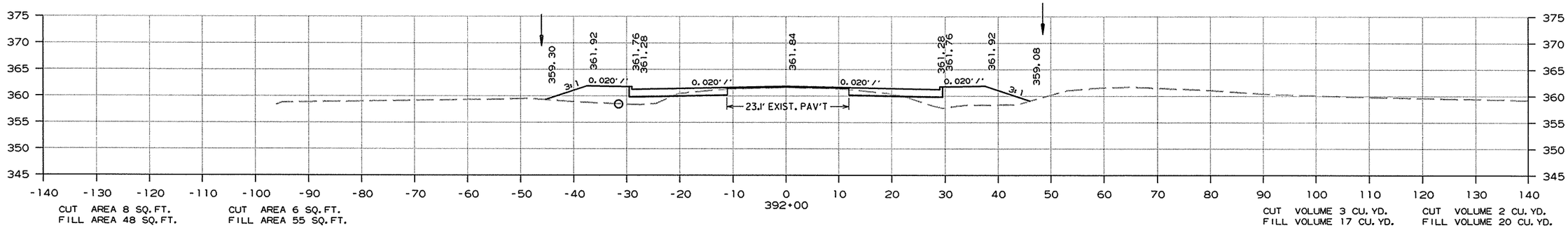
R070365.DGN

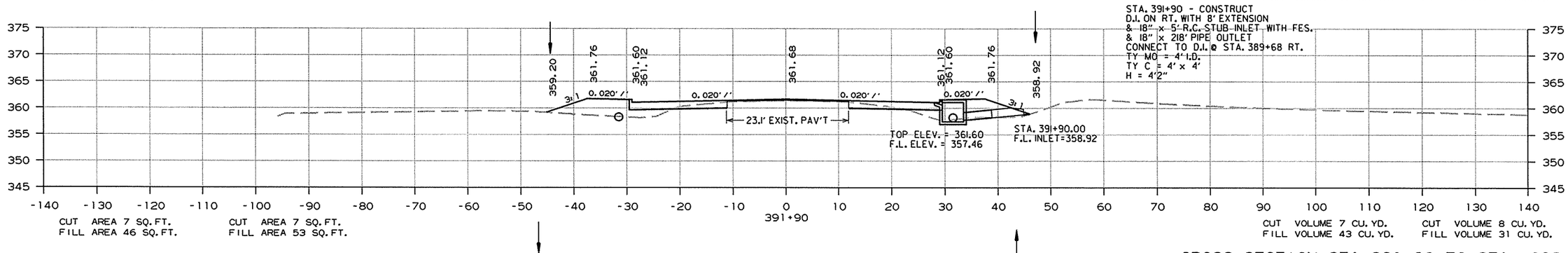
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	311	331

(2) CROSS SECTIONS









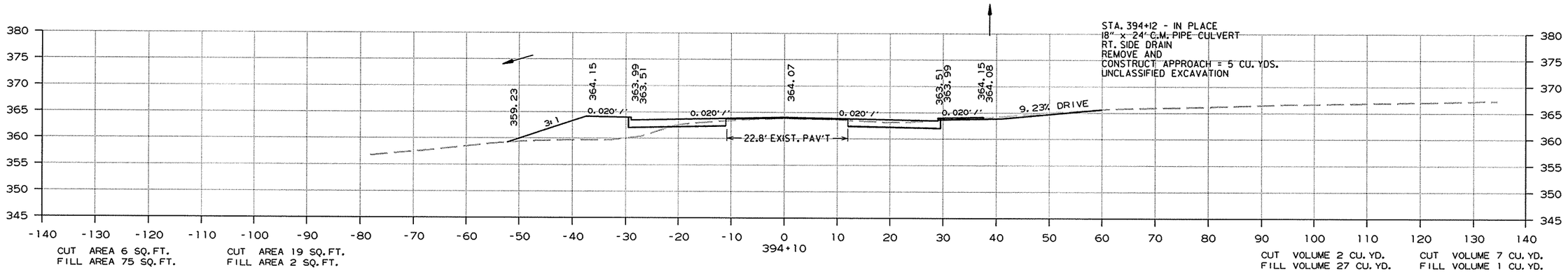
CROSS SECTION STA. 391+90 TO STA. 392+90

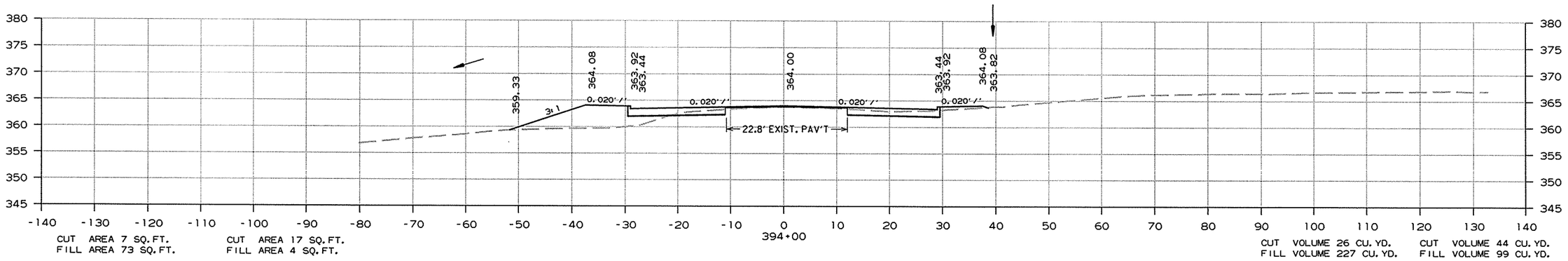
3/31/2014

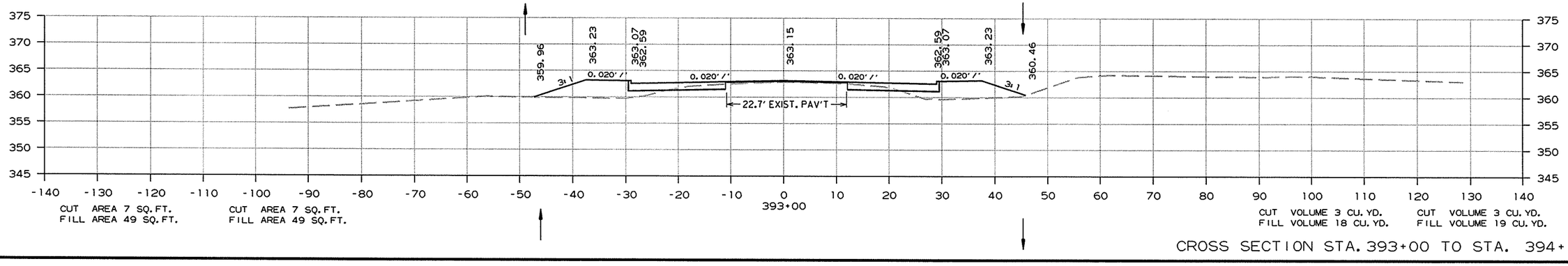
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	312	331

(2) CROSS SECTIONS







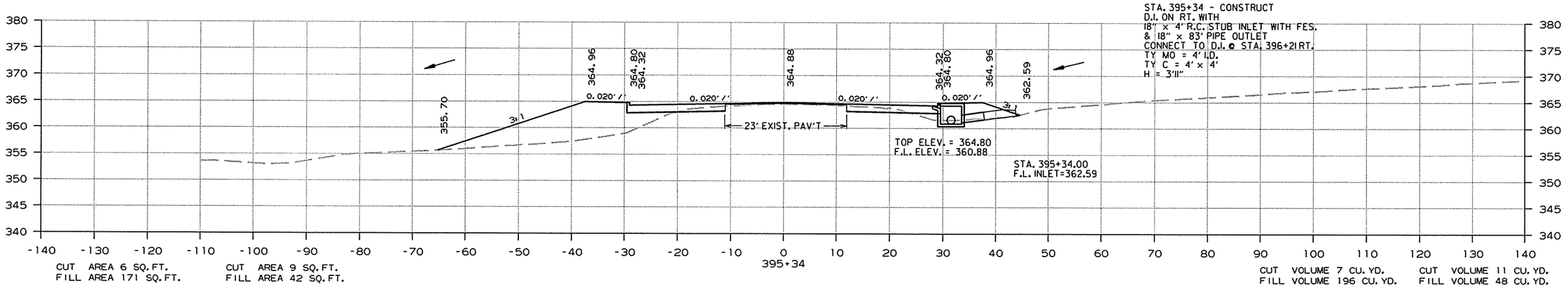
CROSS SECTION STA. 393+00 TO STA. 394+10

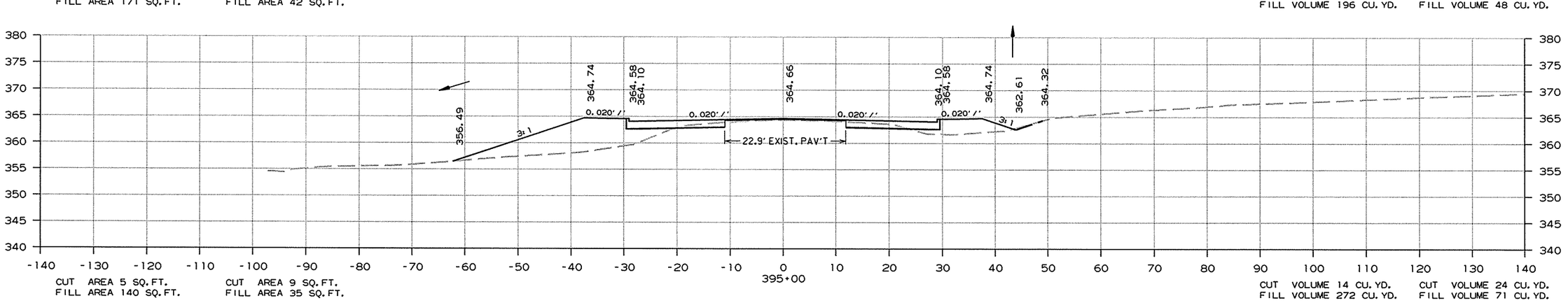
3/31/2014

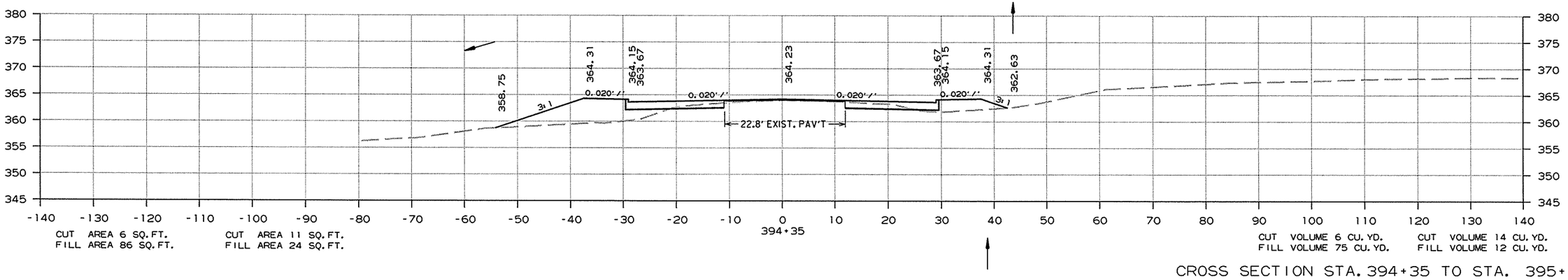
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	313	331

(2) CROSS SECTIONS







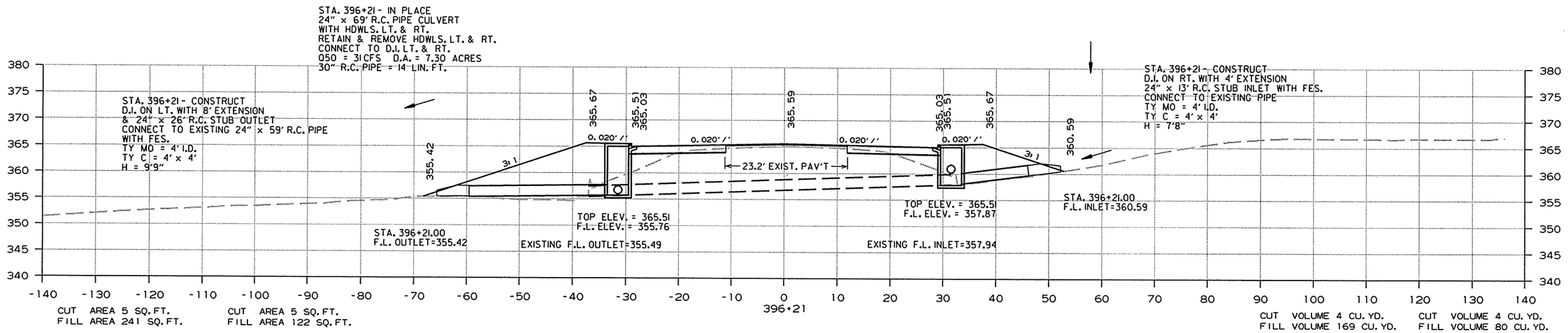
CROSS SECTION STA. 394+35 TO STA. 395+34

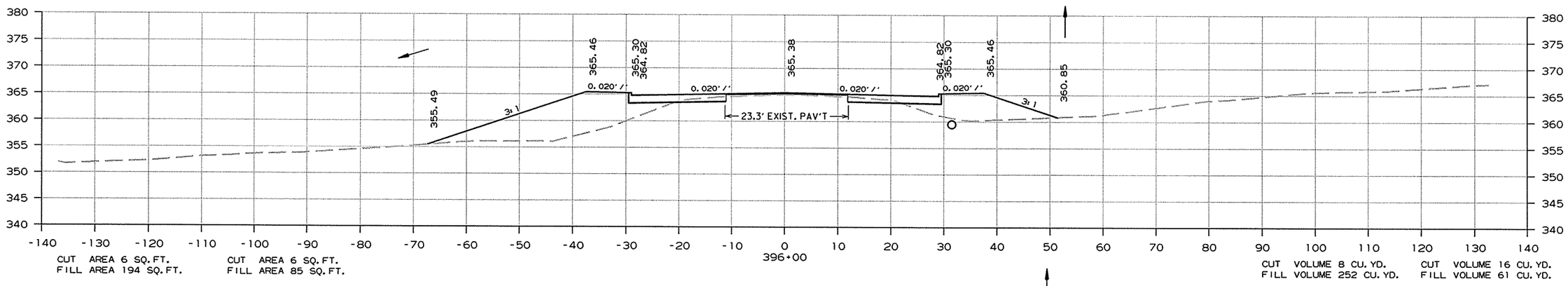
3/31/2014

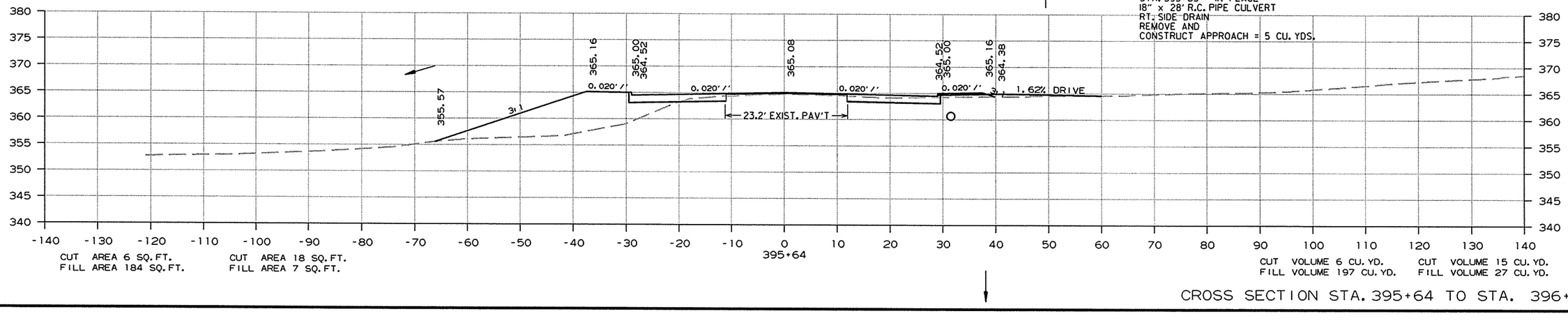
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	314	331

(2) CROSS SECTIONS







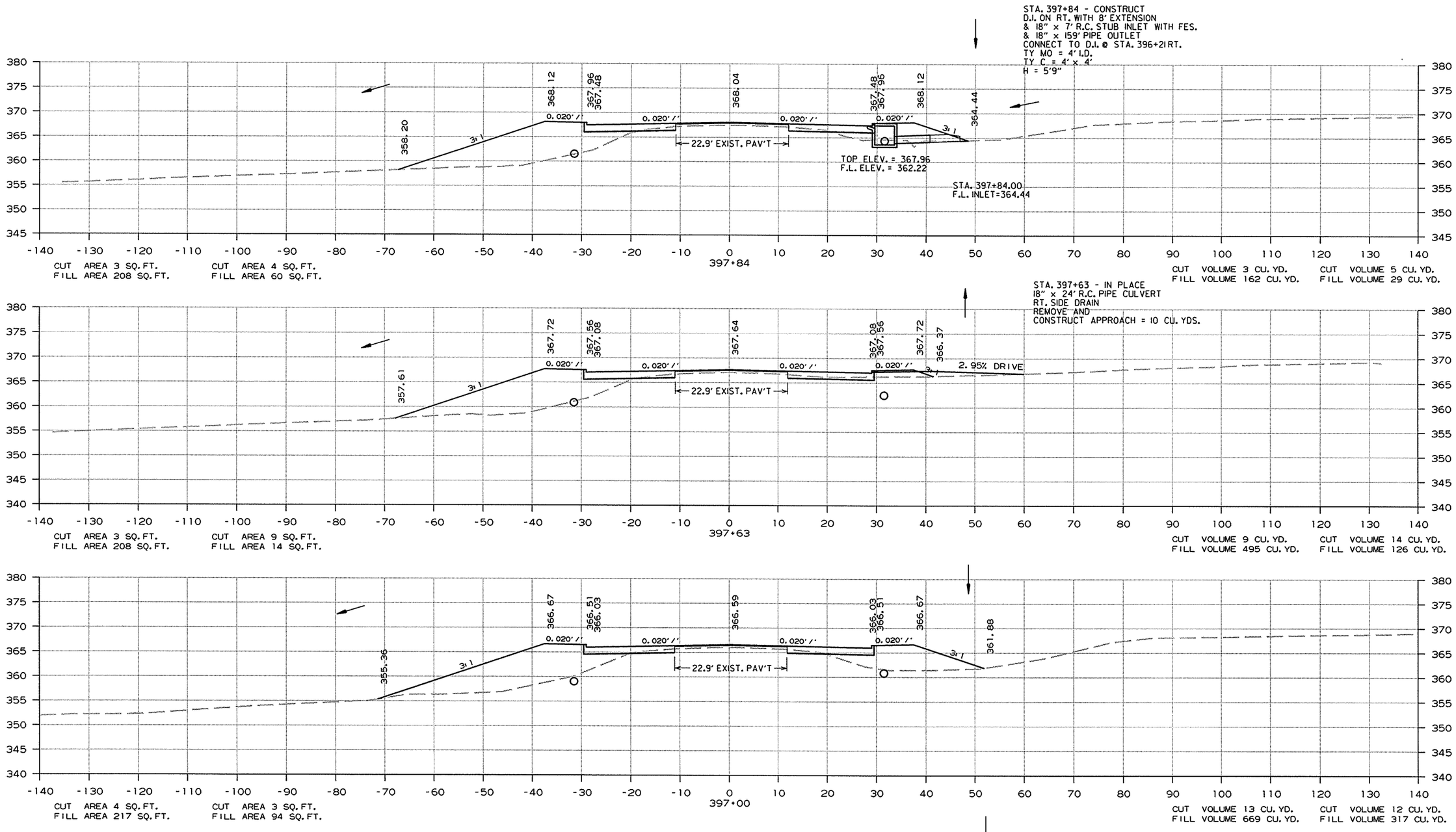
CROSS SECTION STA. 395+64 TO STA. 396+21

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	315	331

(2) CROSS SECTIONS



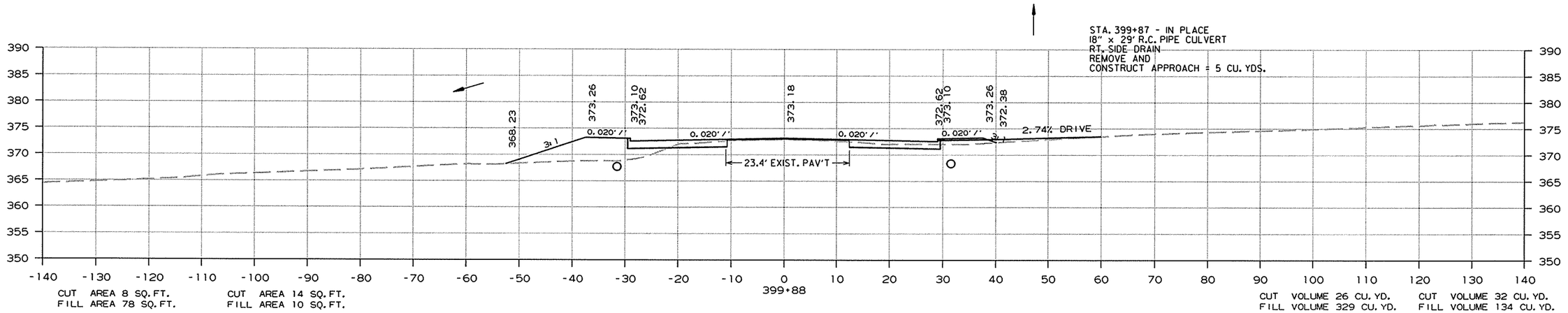
CROSS SECTION STA. 397+00 TO STA. 397+84

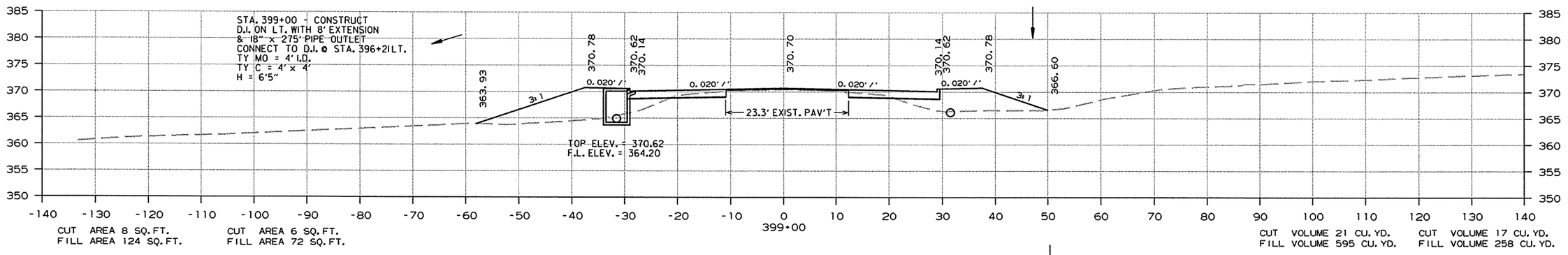
3/31/2014

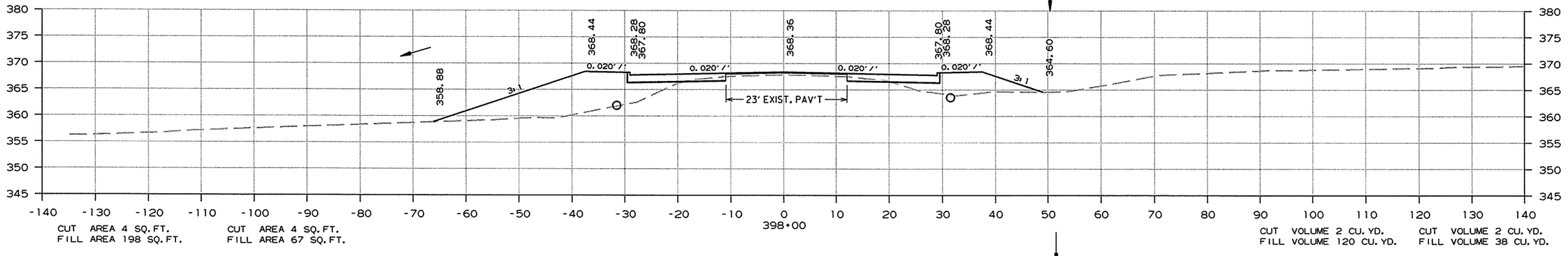
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	316	331

(2) CROSS SECTIONS







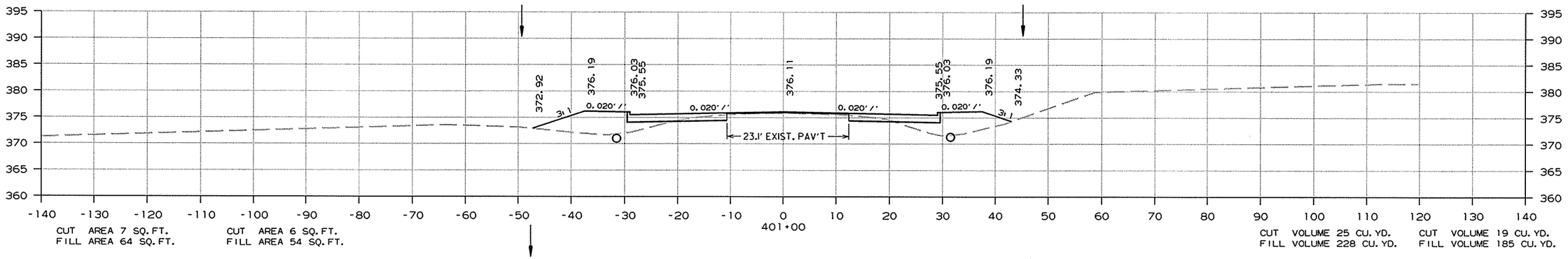
CROSS SECTION STA. 398+00 TO STA. 399+88

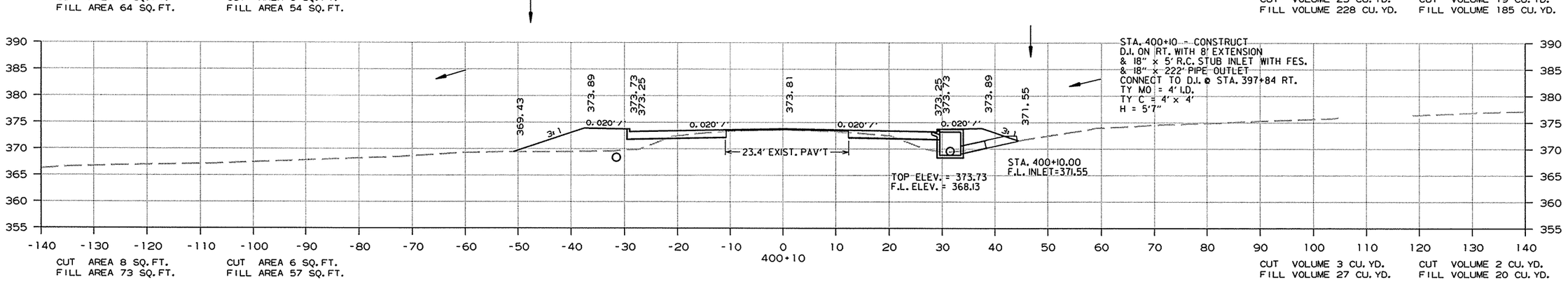
3/31/2014

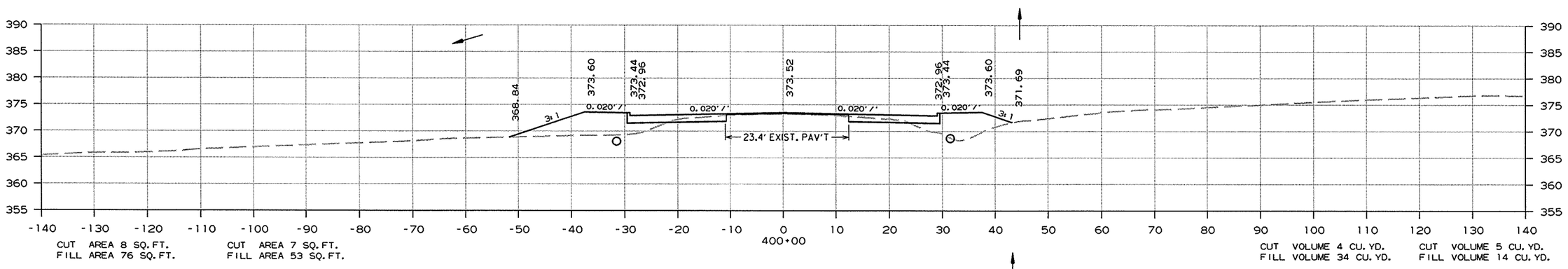
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	317	331

(2) CROSS SECTIONS







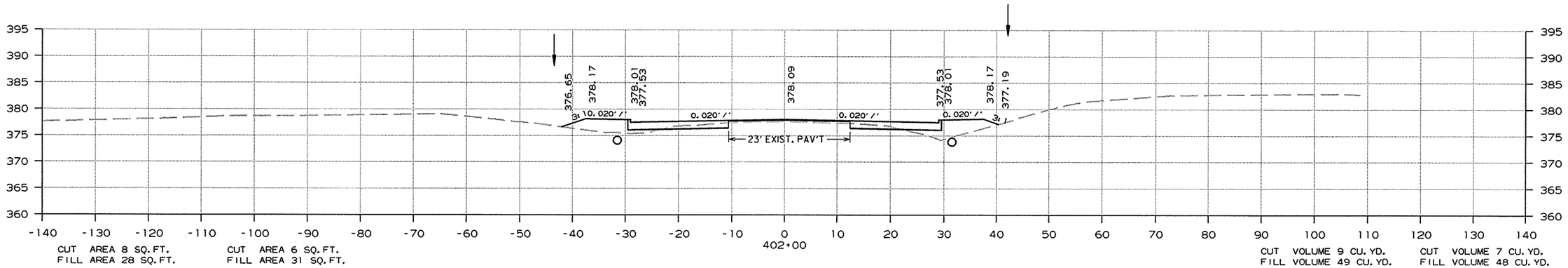
CROSS SECTION STA. 400+00 TO STA. 401+00

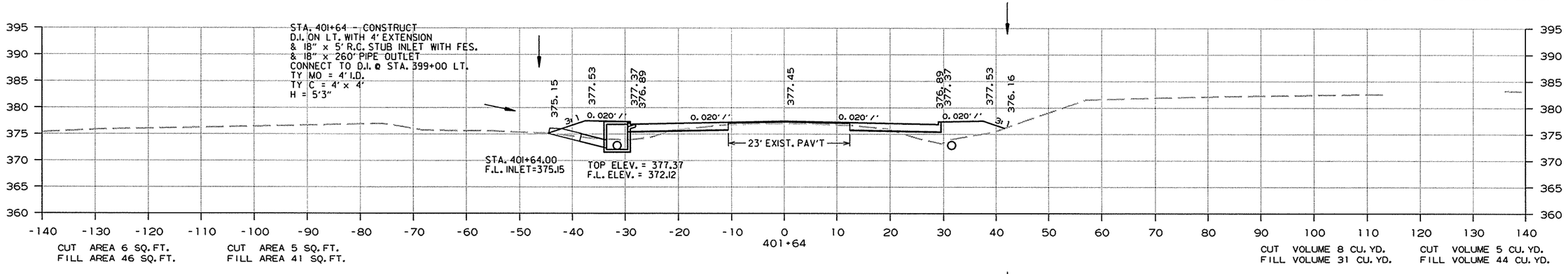
3/31/2014

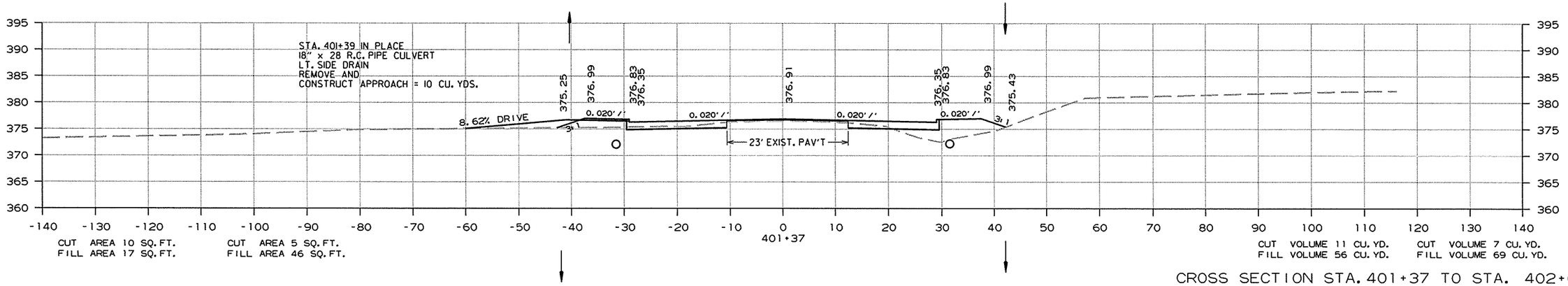
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	318	331

(2) CROSS SECTIONS







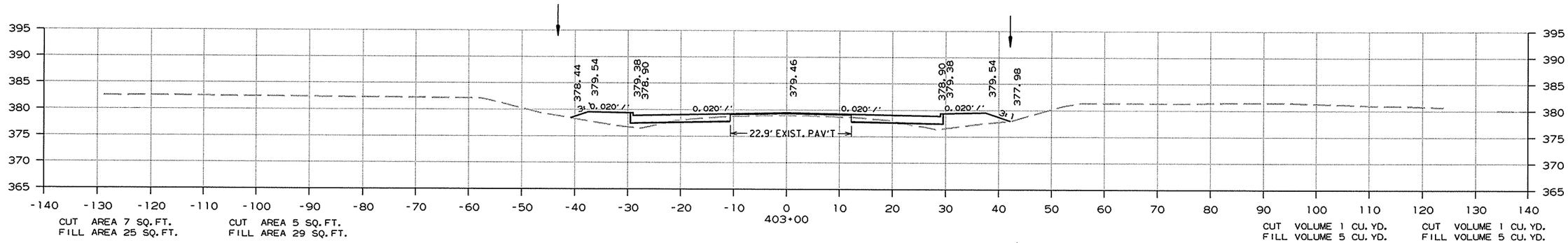
CROSS SECTION STA. 401+37 TO STA. 402+00

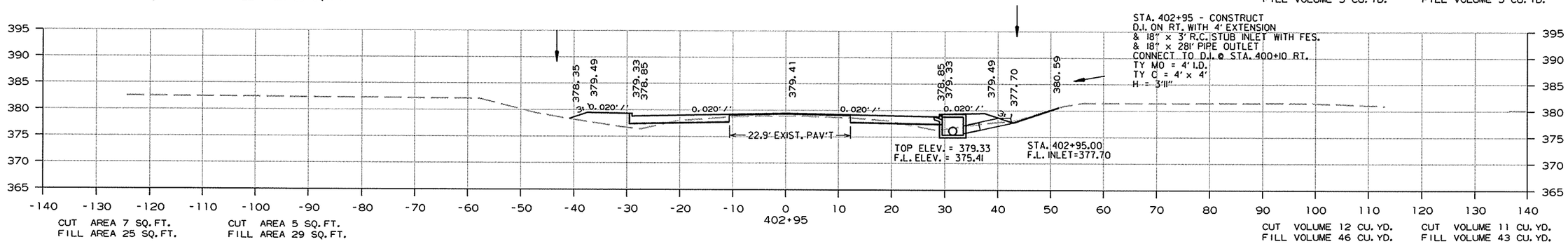
3/31/2014

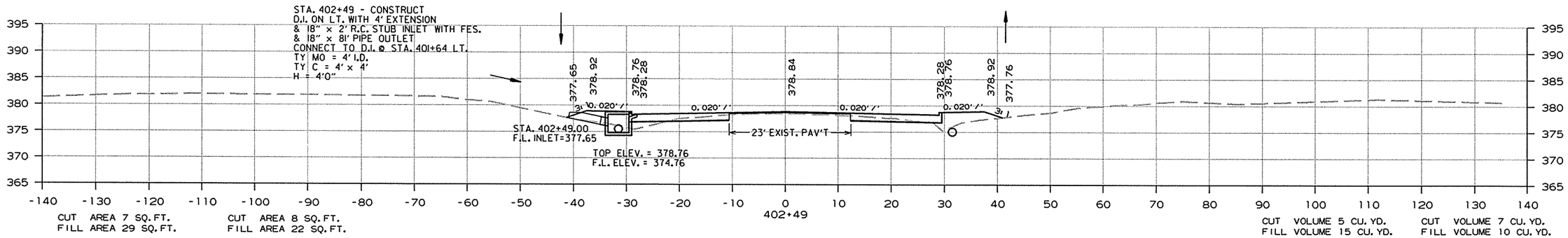
R070365.DGN

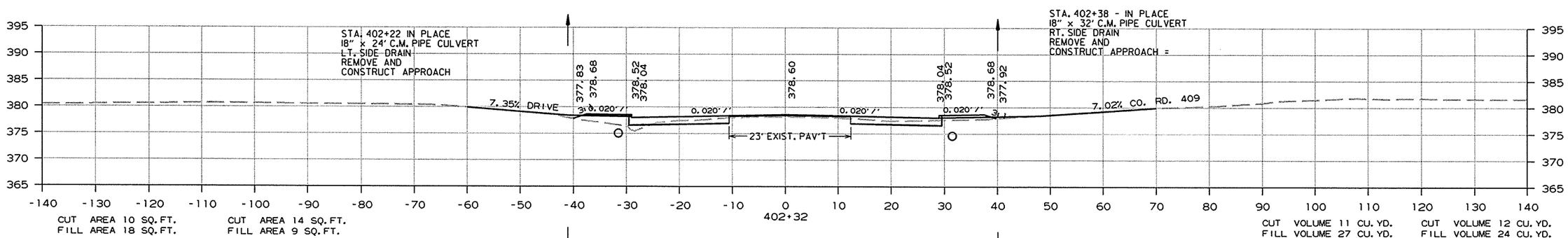
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	319	331

(2) CROSS SECTIONS









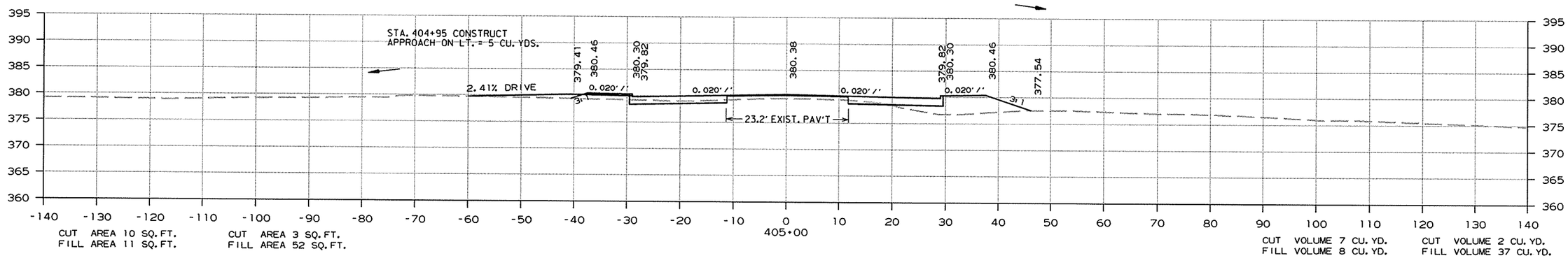
CROSS SECTION STA. 402+32 TO STA. 403+00

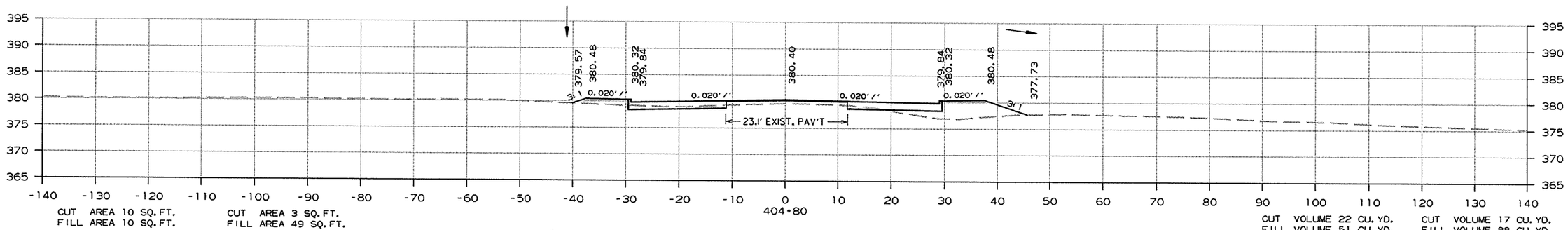
3/31/2014

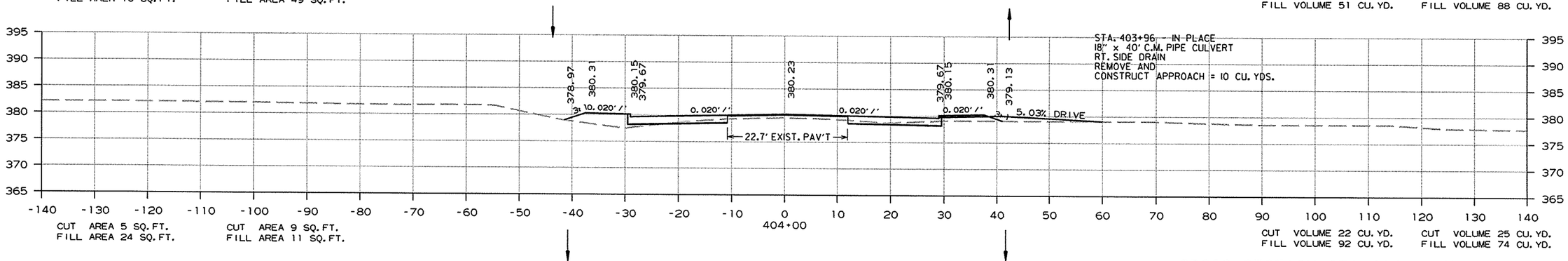
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	320	331

(2) CROSS SECTIONS







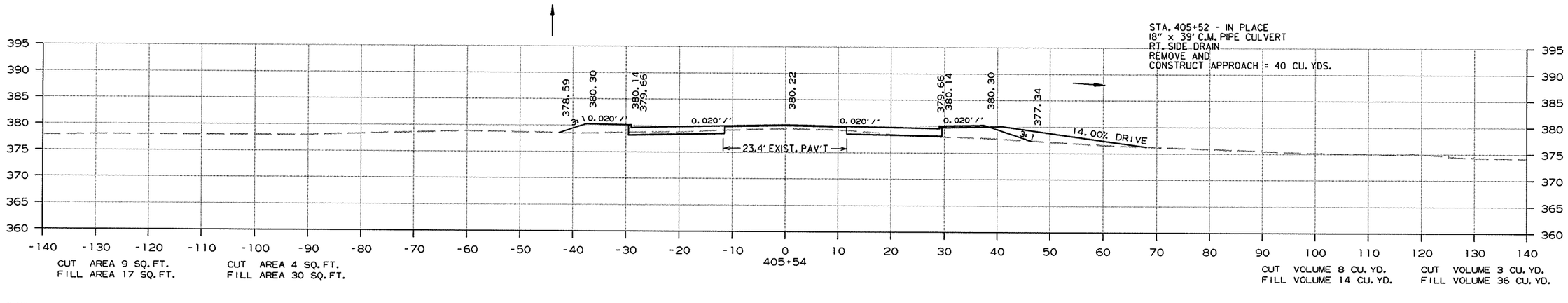
CROSS SECTION STA. 404+00 TO STA. 405+00

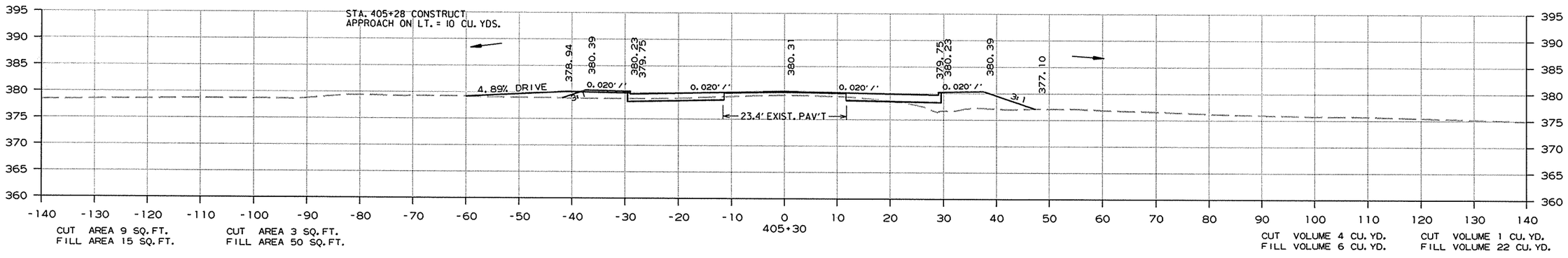
3/31/2014

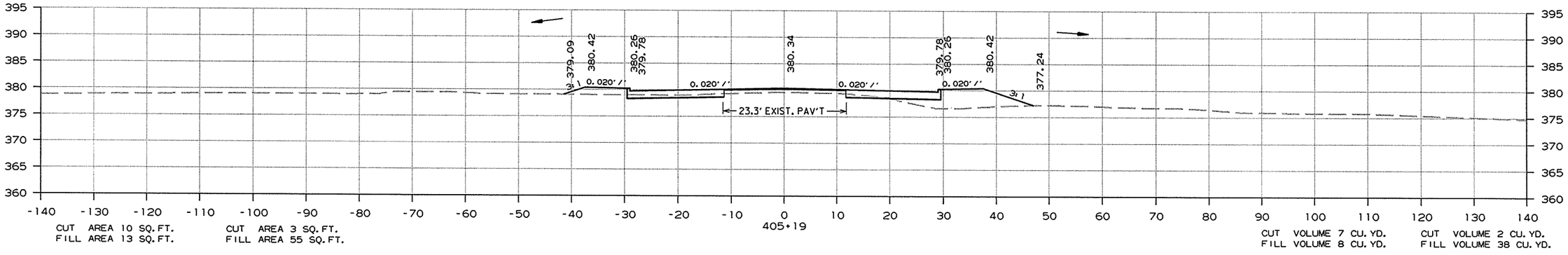
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	321	331

(2) CROSS SECTIONS







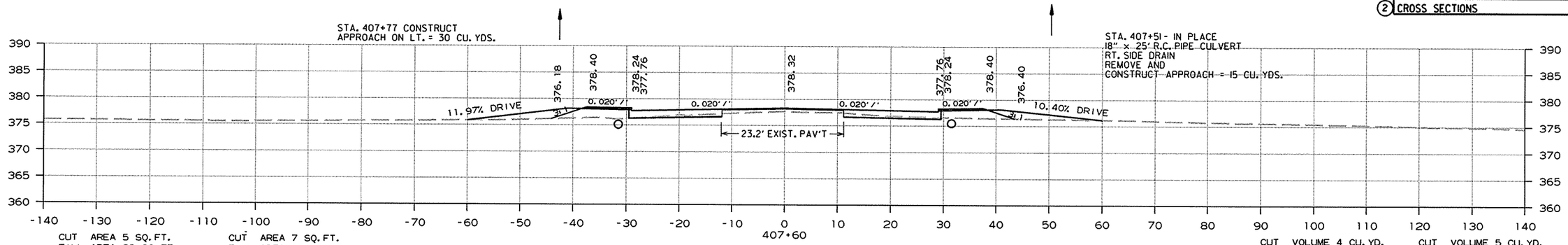
CROSS SECTION STA. 405+19 TO STA. 405+54

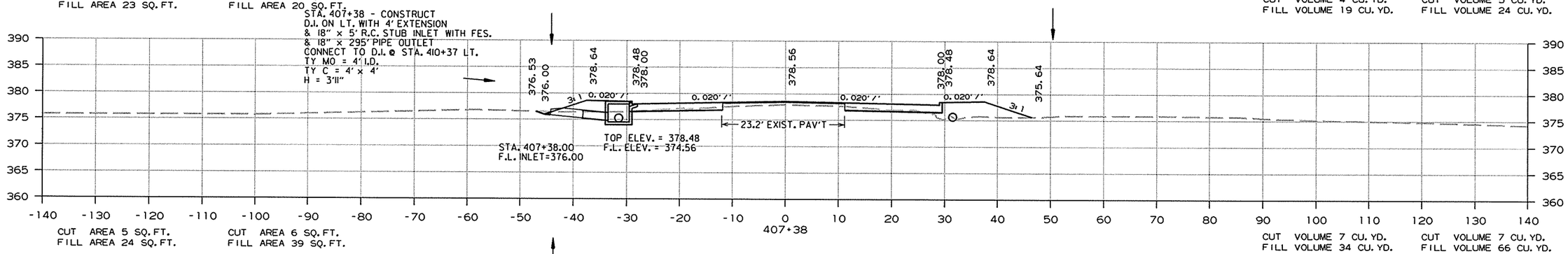
3/31/2014

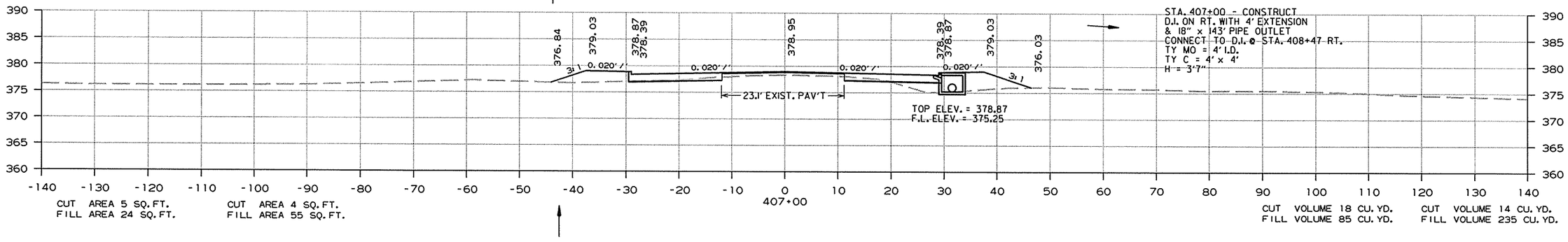
R070365.DGN

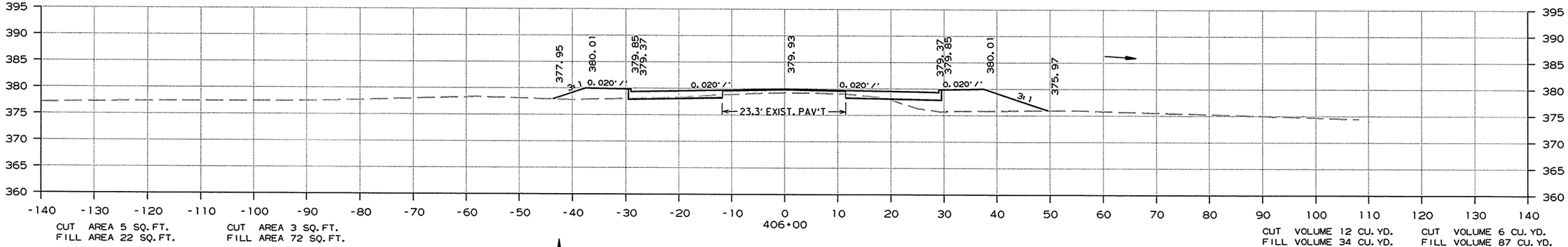
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	322	331

(2) CROSS SECTIONS









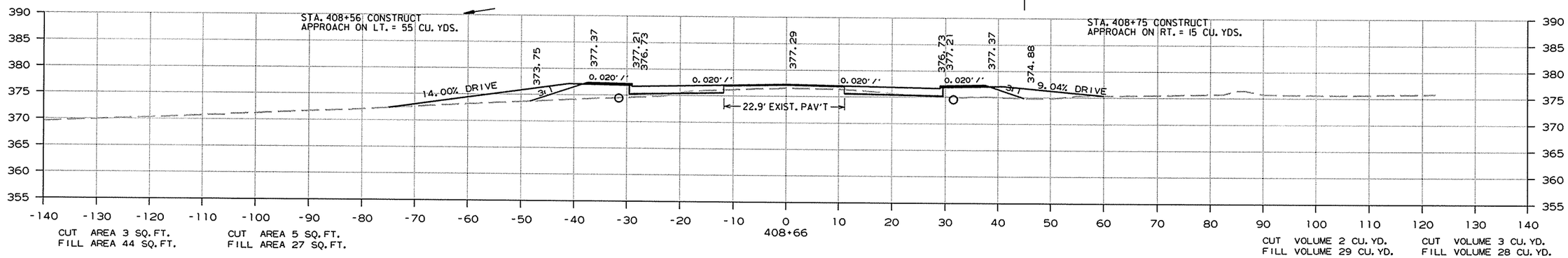
CROSS SECTION STA. 406+00 TO STA. 407+60

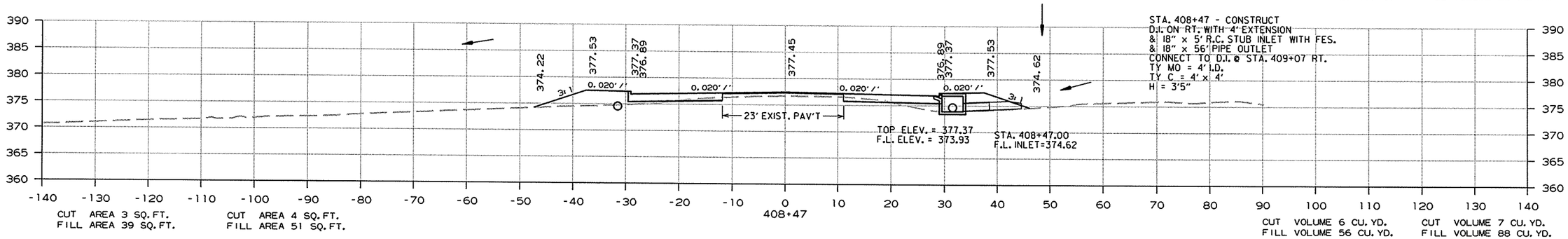
3/31/2014

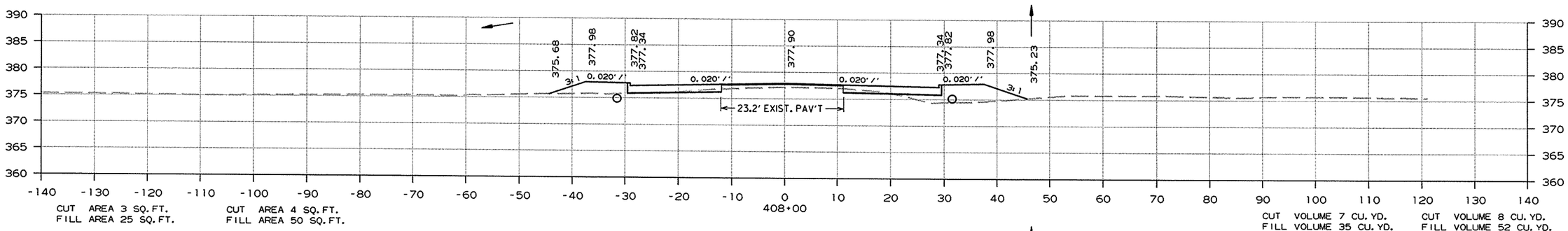
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	323	331

(2) CROSS SECTIONS







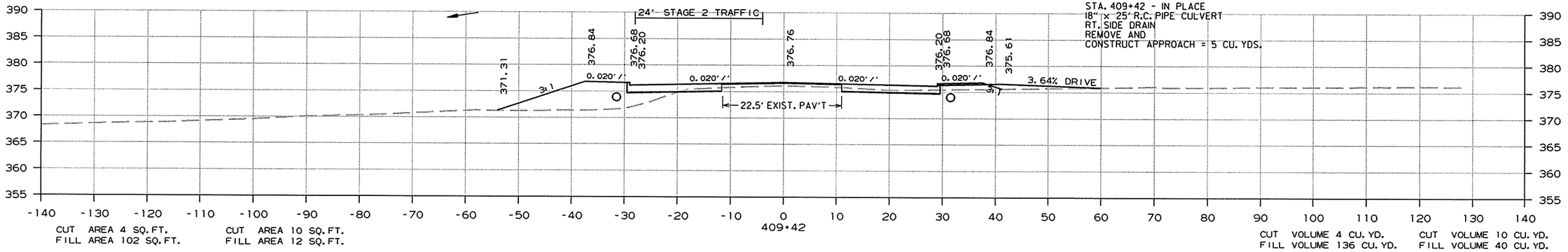
CROSS SECTION STA. 408+00 TO STA. 408+66

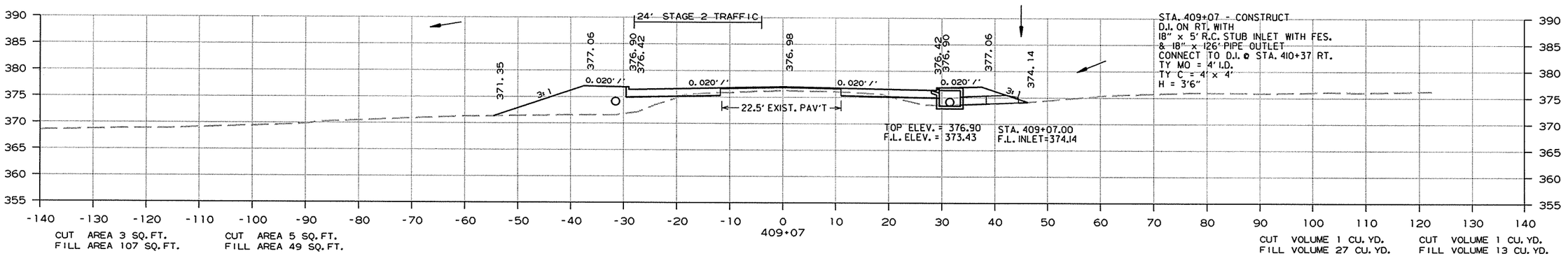
3/31/2014

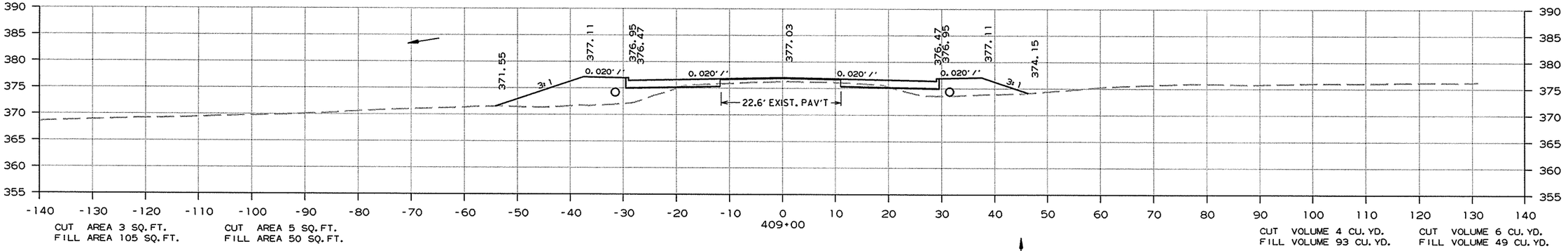
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	324	331

(2) CROSS SECTIONS







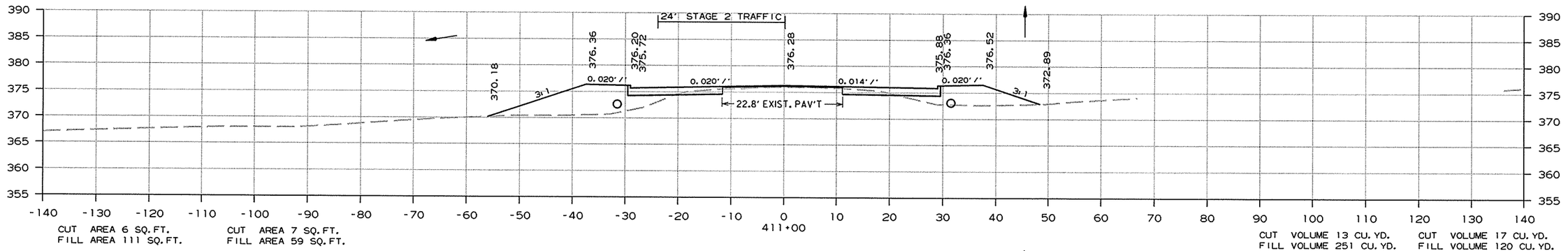
CROSS SECTION STA. 409+00 TO STA. 409+42

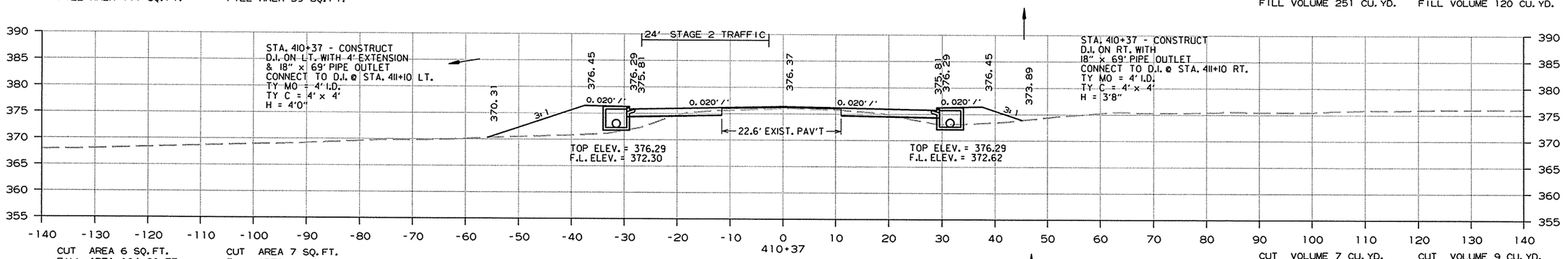
3/31/2014

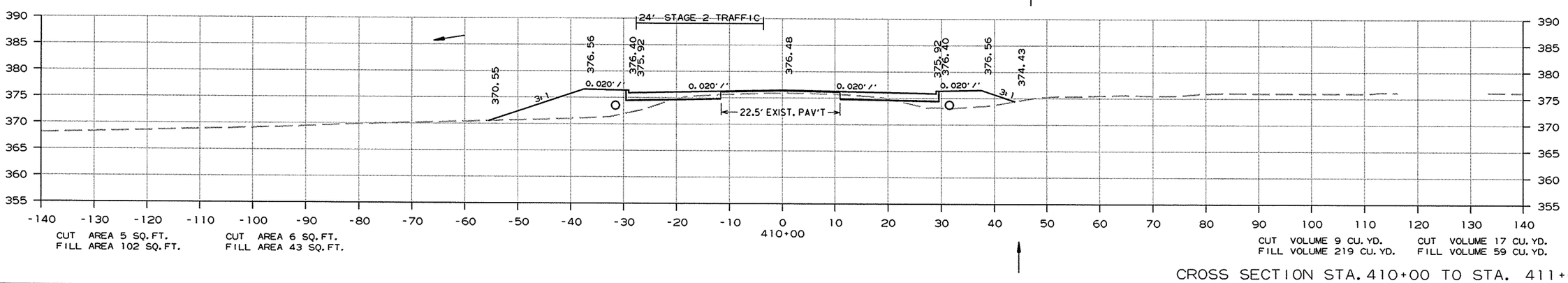
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	325	331

(2) CROSS SECTIONS







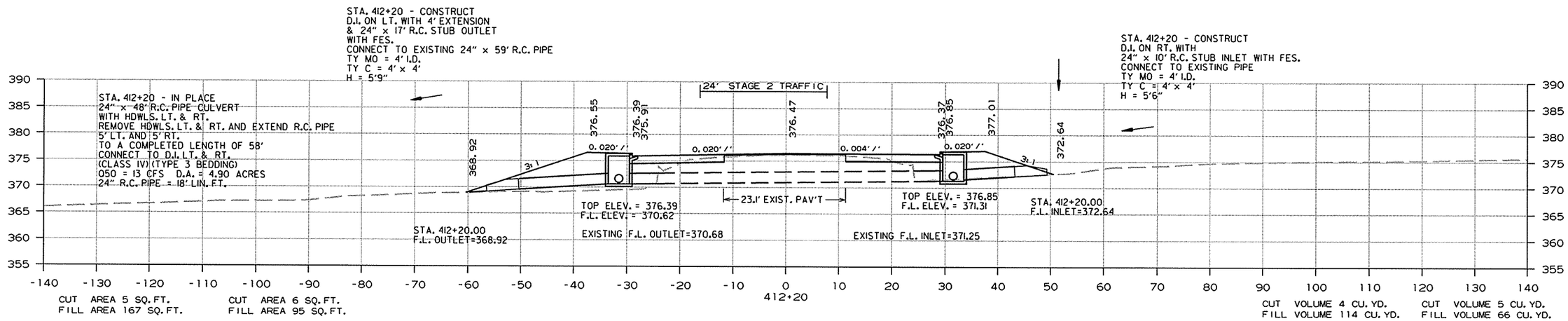
CROSS SECTION STA. 410+00 TO STA. 411+00

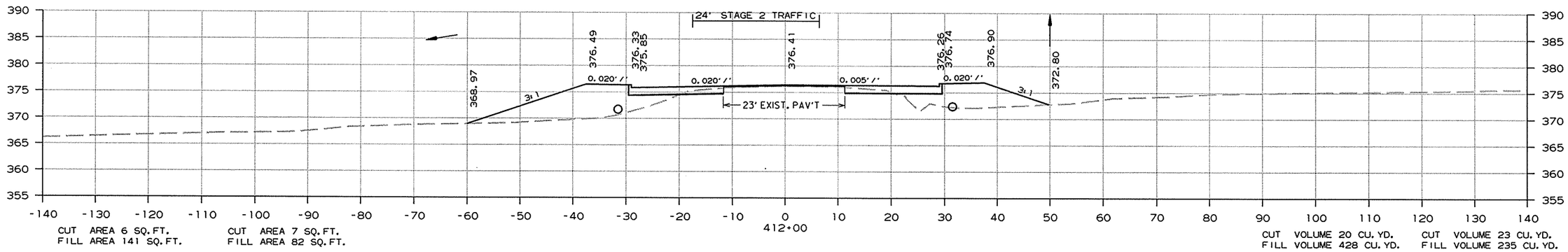
3/31/2014

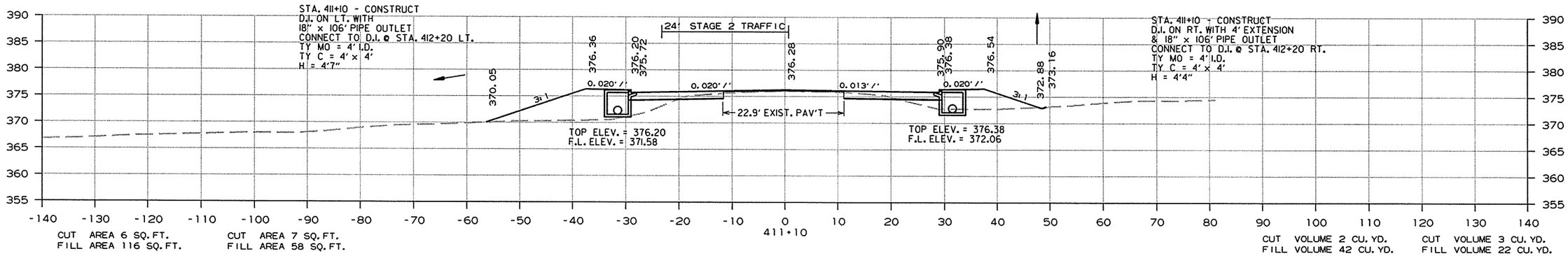
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	326	331

(2) CROSS SECTIONS







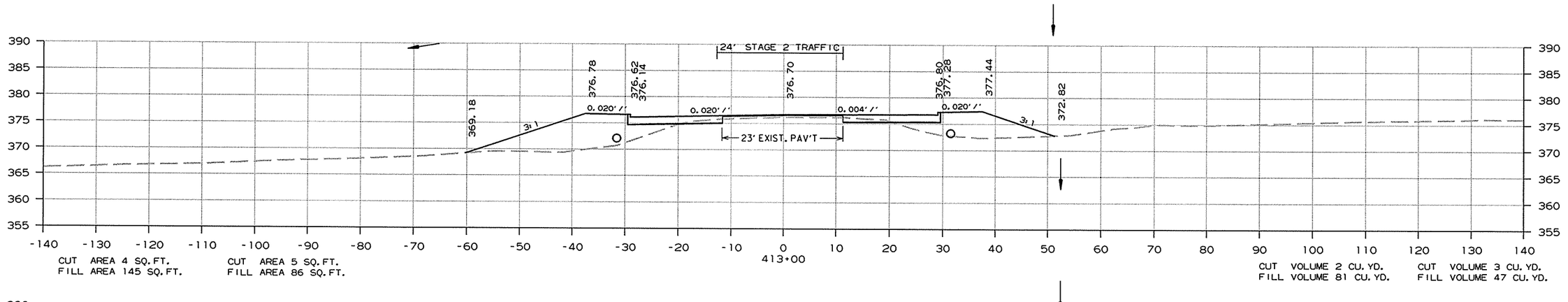
CROSS SECTION STA. 411+10 TO STA. 412+20

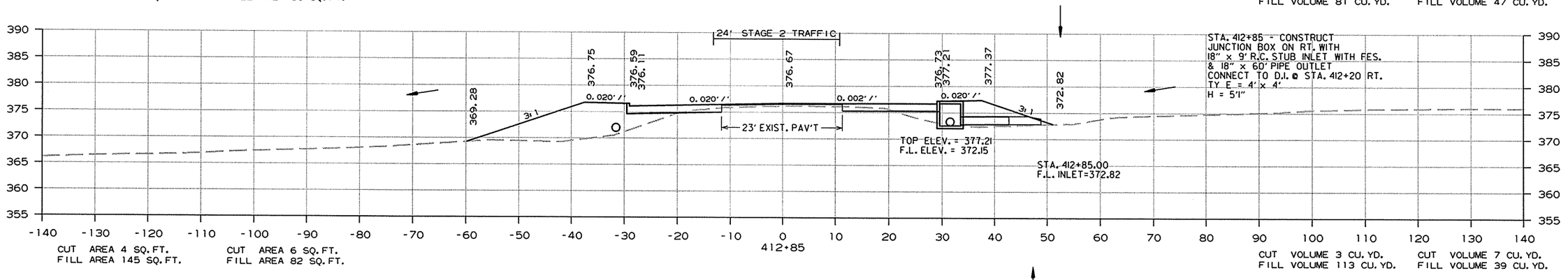
3/31/2014

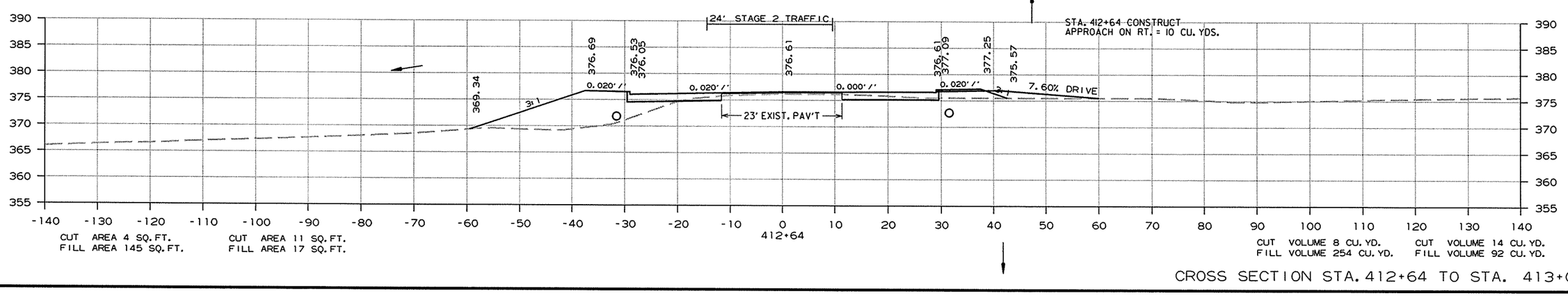
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	327	331

(2) CROSS SECTIONS







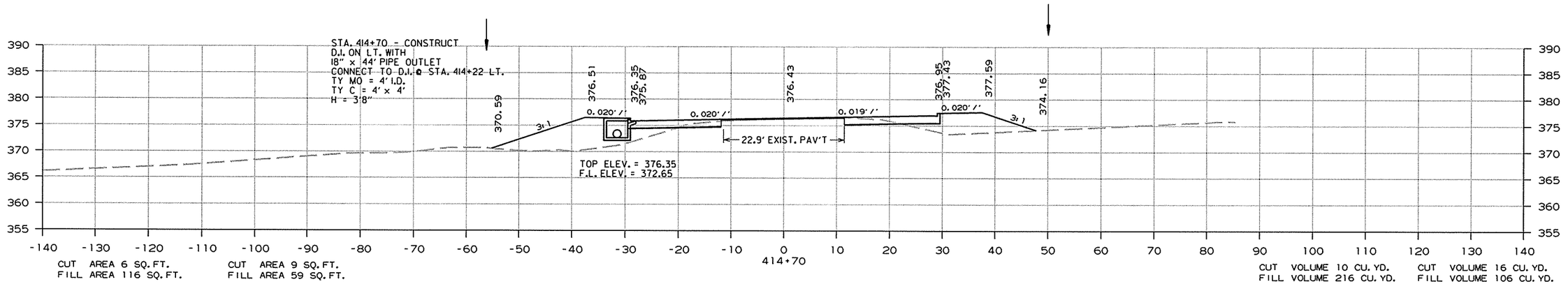
CROSS SECTION STA. 412+64 TO STA. 413+00

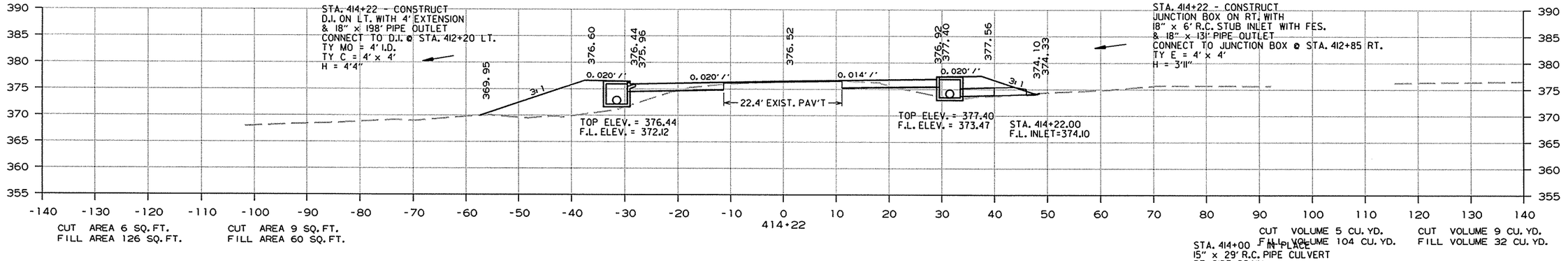
3/31/2014

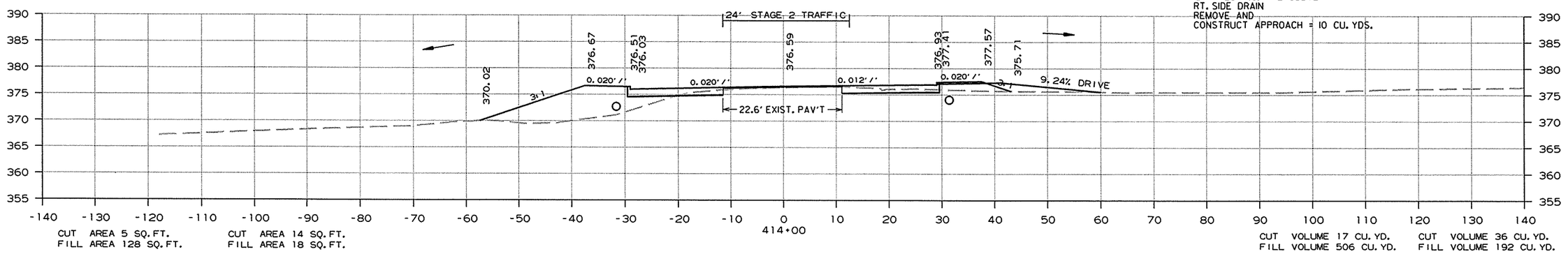
R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	328	331

(2) CROSS SECTIONS







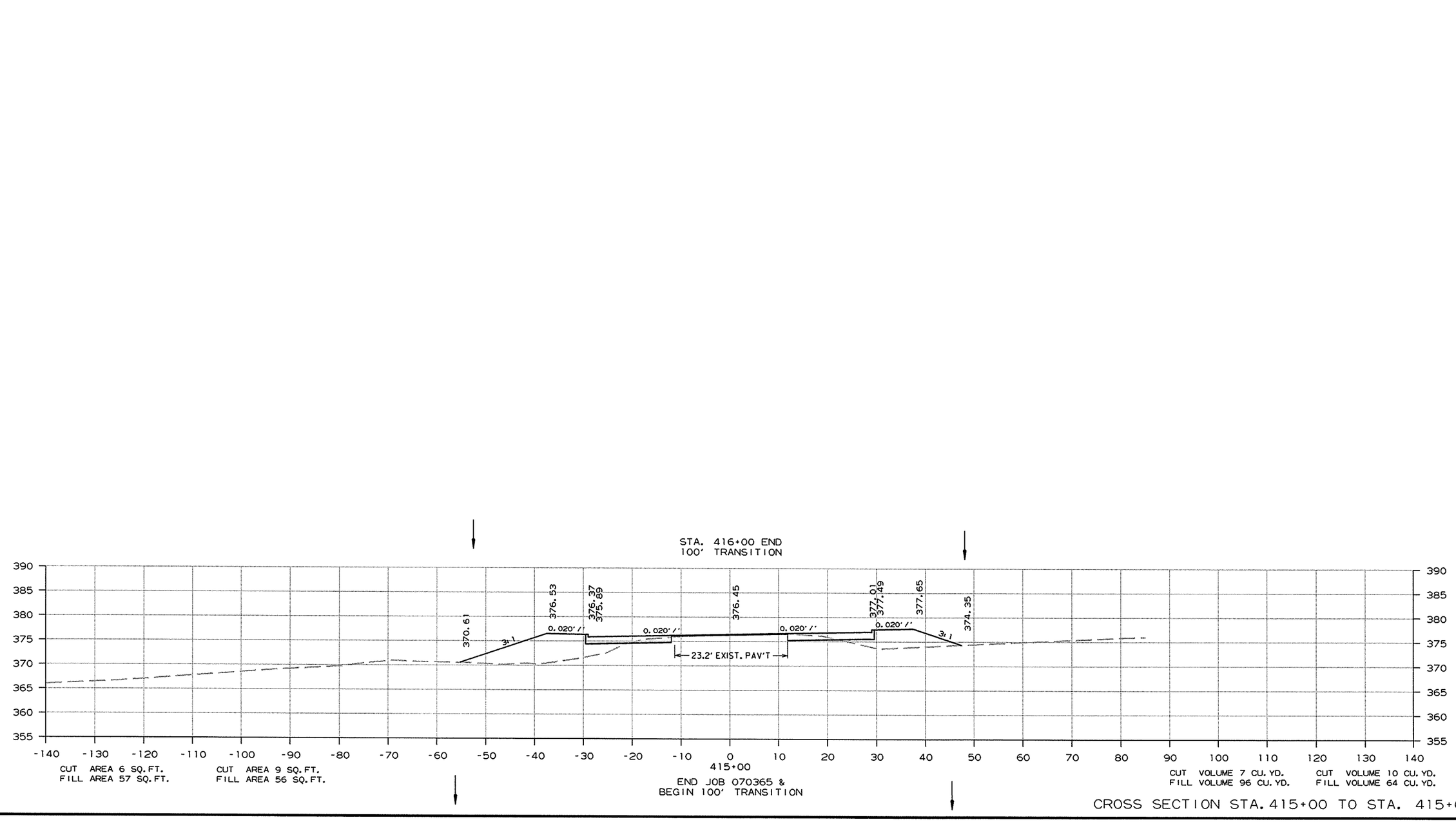
CROSS SECTION STA. 414+00 TO STA. 414+70

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	329	331

(2) CROSS SECTIONS



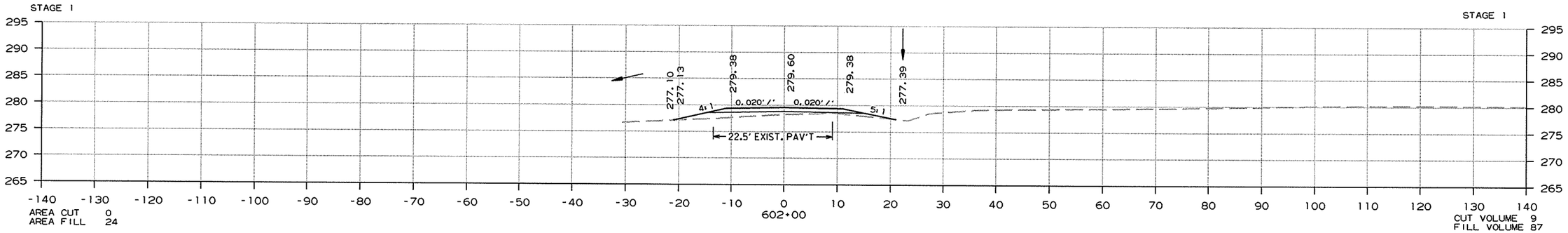
CROSS SECTION STA. 415+00 TO STA. 415+00

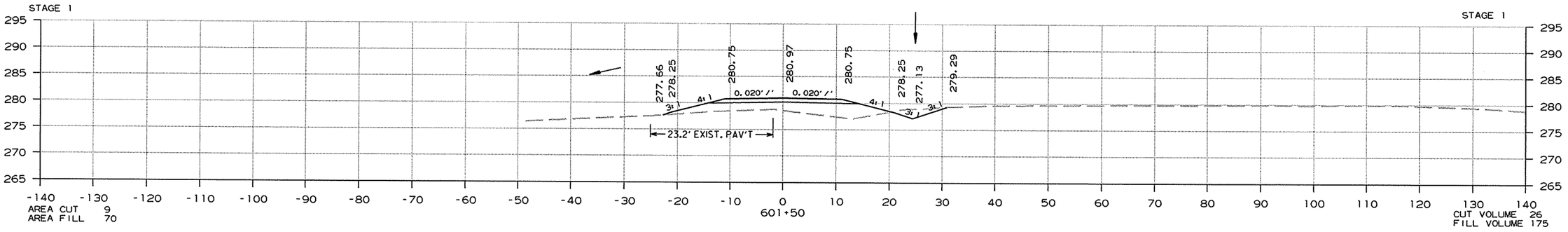
3/31/2014

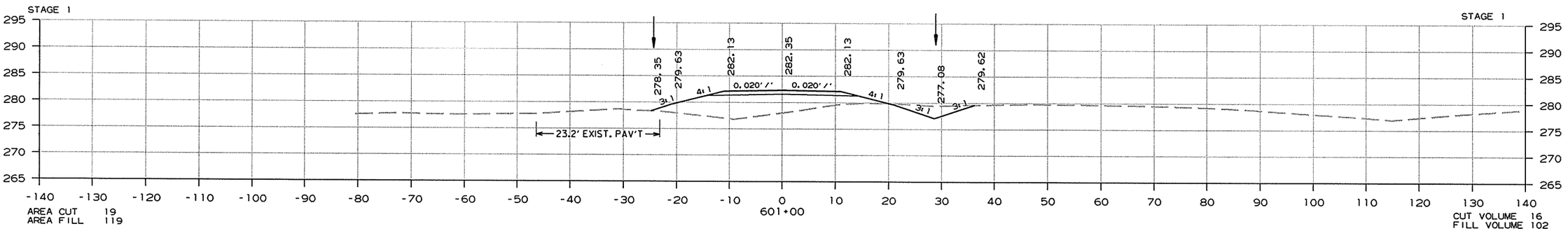
R070365.DGN

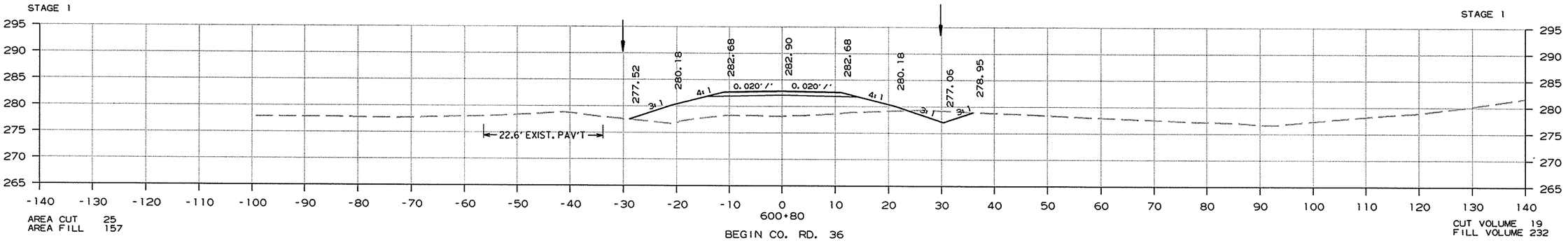
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	330	331

(2) CROSS SECTIONS









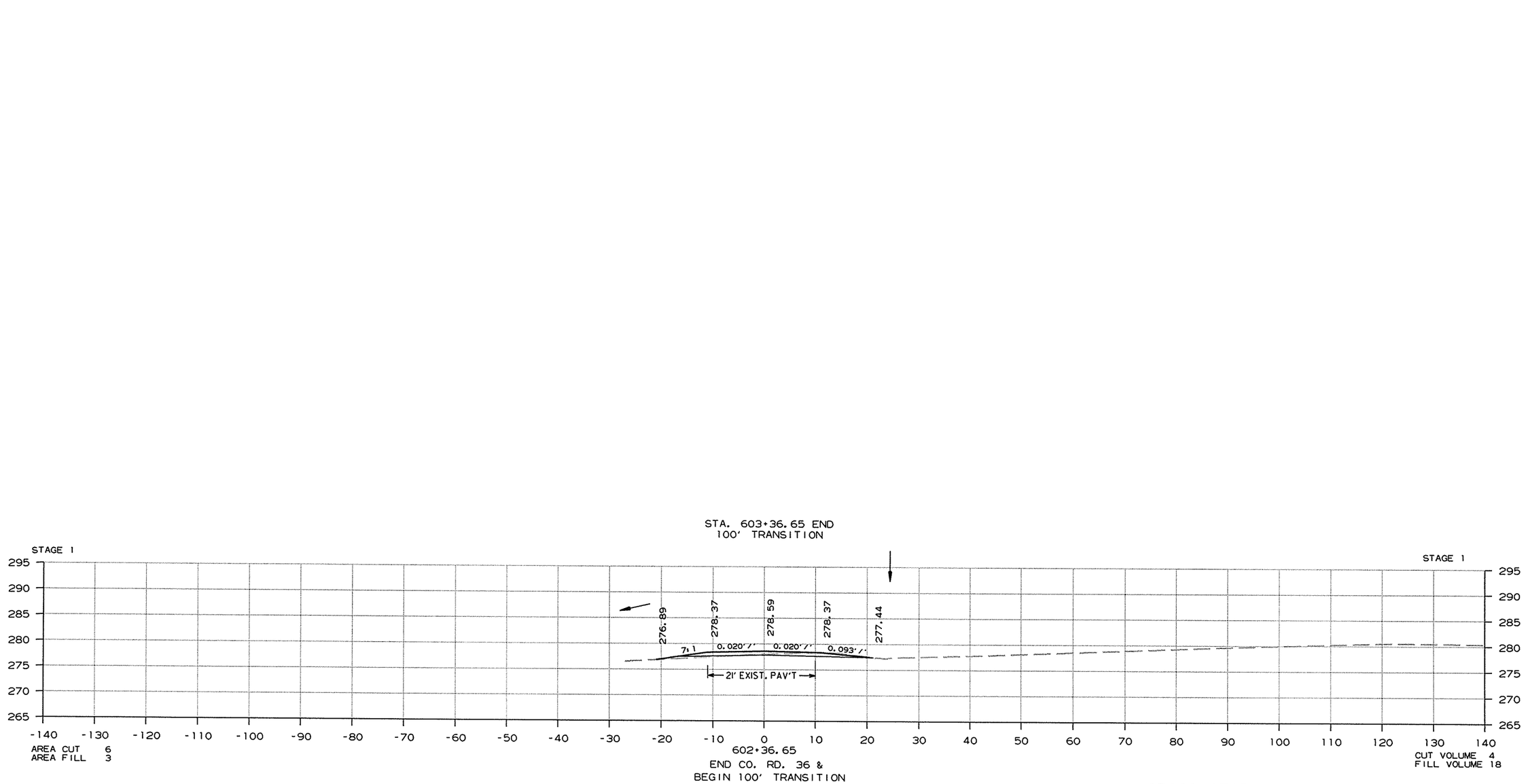
CROSS SECTION STA. 600+80 TO STA. 602+00

3/31/2014

R070365.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070365	331	331

(2) CROSS SECTIONS



CROSS SECTION STA. 602+36 TO STA. 602+36

3/31/2014

R070365.DGN