DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	1	460
				(2)	AVOCA - NORTH GARFIELD (S)			

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

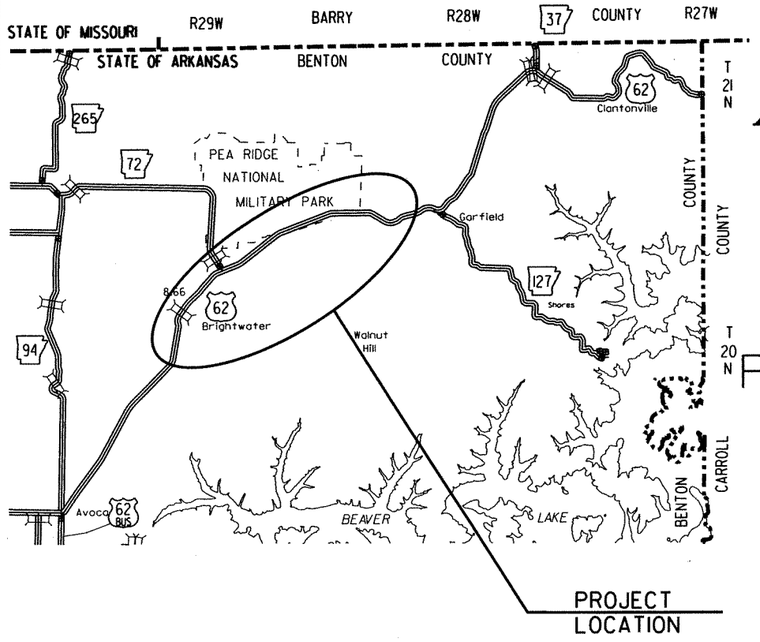
AVOCA - NORTH GARFIELD (S)

BENTON COUNTY

ROUTE 62 SECTION 2

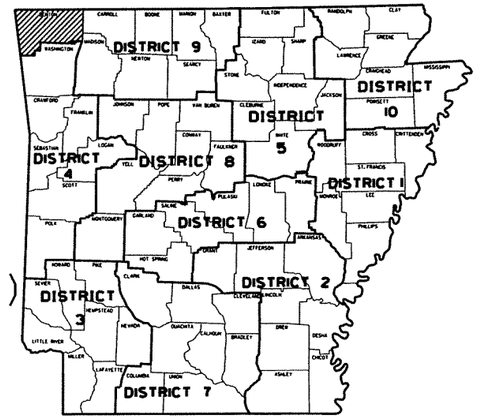
JOB 090065

FED. AID PROJ.: EBS-EBE-0004(31)



VICINITY MAP

NOT TO SCALE



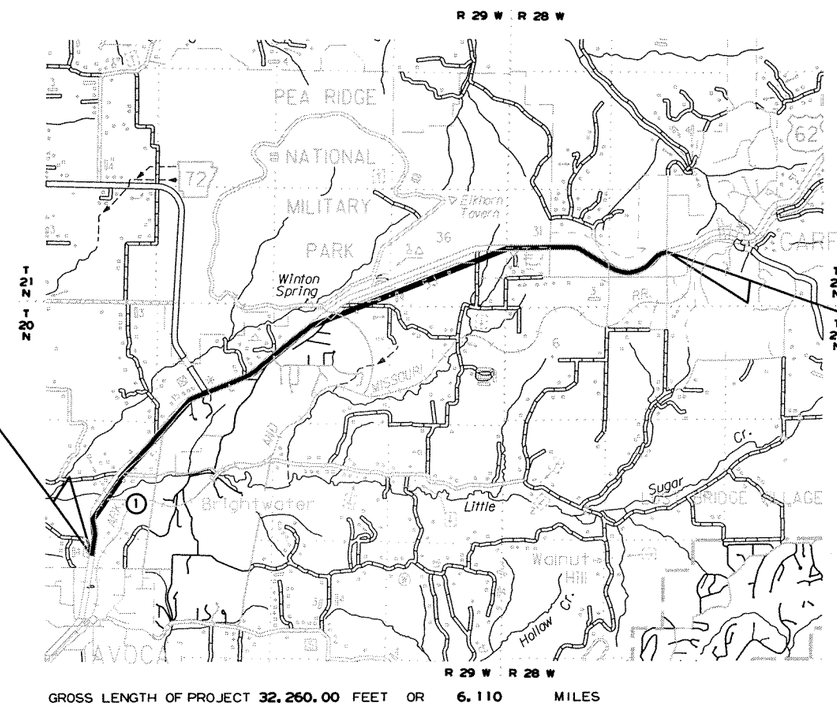
ARK. HWY. DIST. NO. 9

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2032
2012 ADT	11,000
2032 ADT	15,500
2032 DHV	1,705
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	12%
DESIGN SPEED	60 MPH RURAL 40 MPH URBAN

BRIDGE DATA

(1) B.E. STA. 149+88.92
256'-2" BRIDGE LENGTH
254'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (57.70.70.57)
75' CLEAR ROADWAY
BR. NO. 06514
B.E. STA. 152+45.08



STA. 123+90.00 BEGIN
JOB 090065
LOG MILE 8.17

STA. 446+50.00 -END
JOB 090065

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°24'35.9"	N 36°26'20.8"	N 36°26'44.9"
LONGITUDE	W 94°04'14.3"	W 94°02'00.2"	W 93°58'54.5"

GROSS LENGTH OF PROJECT			32.260.00	FEET	OR	6.110	MILES
NET	"	"	ROADWAY	32.003.84	"	"	6.061	"
NET	"	"	BRIDGES	256.16	"	"	0.049	"
NET	"	"	PROJECT	32.260.00	"	"	6.110	"

P.E. 090204
NON-PART.

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VOZEL

8/23/13

DEPUTY DIRECTOR
AND CHIEF ENGINEER

03/23/2011 r090065.dgn/title sheet

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	2	460

(2) INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES

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155	DETAILS OF STAGE CONSTRUCTION	06514	51289A	
156	DETAILS OF END BENTS 1 & 5 (SHEET 1 OF 3)	06514	51290	
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NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, 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 090065
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 090065	ASPHALT CONCRETE HOT MIX SURFACE COURSE SURFACE TOLERANCE AND INCENTIVE PAYMENTS
JOB 090065	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090065	CLEARING AND GRUBBING
JOB 090065	COMPACTED EMBANKMENT
JOB 090065	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 090065	CULVERT CLEANOUT
JOB 090065	EMBANKMENT CONSTRUCTION
JOB 090065	EXTENSION FOR PIPE CULVERTS
JOB 090065	FURNISHING FIELD LABORATORY
JOB 090065	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090065	HIGH PERFORMANCE PAVEMENT MARKING
JOB 090065	INTERNET BIDDING
JOB 090065	LRFD PRECAST REINFORCED CONCRETE BOX CULVERTS
JOB 090065	MODULAR BLOCK RETAINING WALLS
JOB 090065	NESTING SITES OF MIGRATORY BIRDS
JOB 090065	PARTNERING REQUIREMENTS
JOB 090065	PLASTIC PIPE
JOB 090065	PROSECUTION AND PROGRESS
JOB 090065	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 090065	SILICONE JOINT SEALANT
JOB 090065	SITE USE (A + C METHOD)
JOB 090065	SOIL STABILIZATION
JOB 090065	STORM WATER POLLUTION PREVENTION PLAN
JOB 090065	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090065	TEMPORARY IMPACT ATTENUATION BARRIER
JOB 090065	TEMPORARY SHORING
JOB 090065	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE
JOB 090065	UTILITY ADJUSTMENTS
JOB 090065	VALUE ENGINEERING
JOB 090065	WARM MIX ASPHALT
JOB 090065	WELLHEAD PROTECTION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

GENERAL NOTES

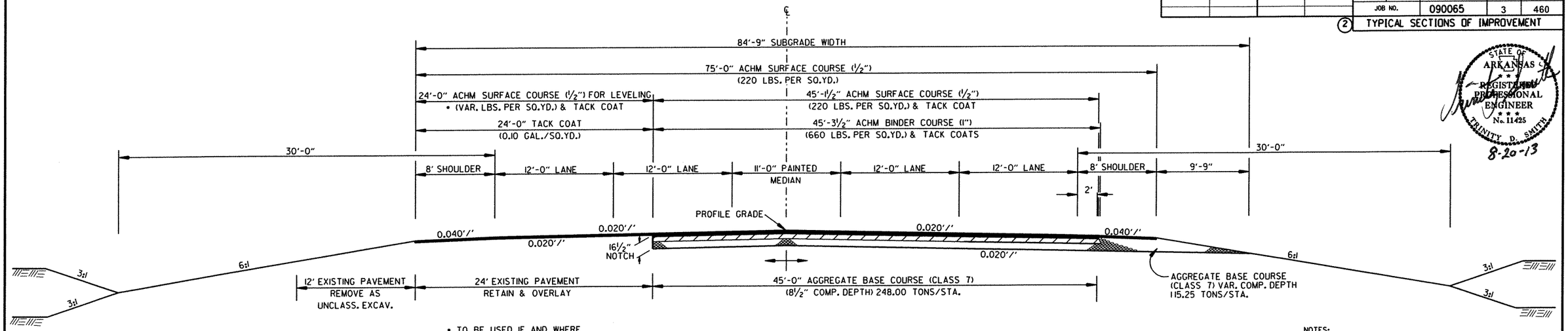
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY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

INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	3	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
OPEN SHOULDER
NOTCH AND WIDEN RIGHT

STA. 123+90.00-129+60.90

NOTES:
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.

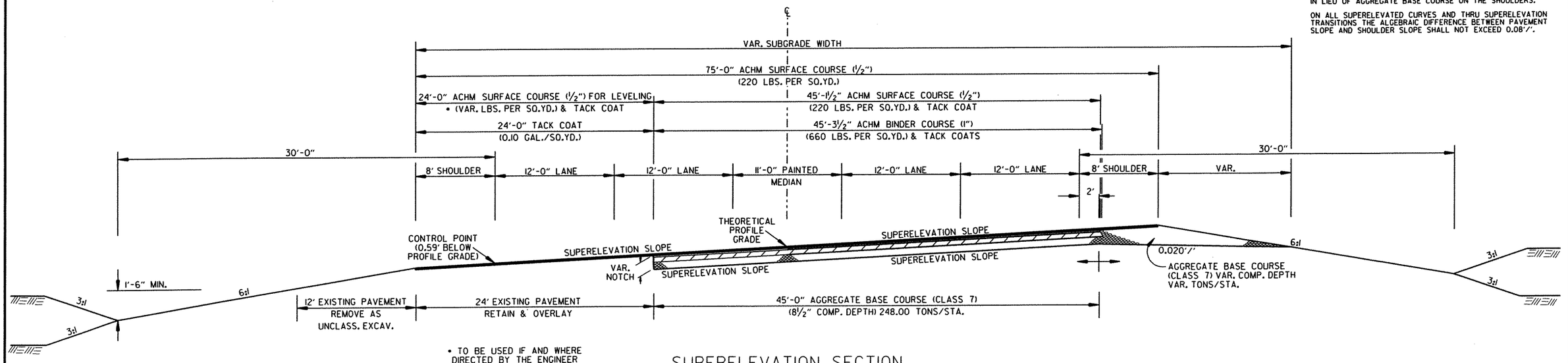
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

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.

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



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

SUPERELEVATION SECTION
OPEN SHOULDER
NOTCH AND WIDEN RIGHT

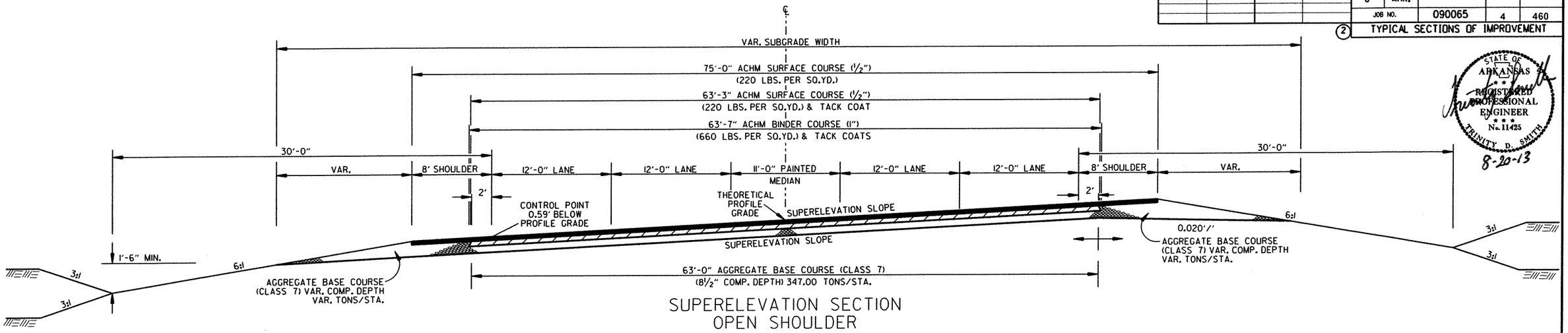
STA.129+60.90-135+50.00

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.		090065	4	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11423
TRINITY D. SMITH
8-20-13



SUPERELEVATION SECTION
OPEN SHOULDER
FULL DEPTH

STA. 135+50.00-136+39.96
STA. 136+39.96-149+88.14**
STA. 156+37.95-163+50.00**
STA. 205+79.00-208+00.00**
STA. 232+00.00-236+00.00
STA. 267+80.45-270+75.00**
STA. 273+50.00-292+54.26**
STA. 367+43.42-369+00.00**

** REVERSE TYPICAL FOR RT. TURN SUPERELEVATION

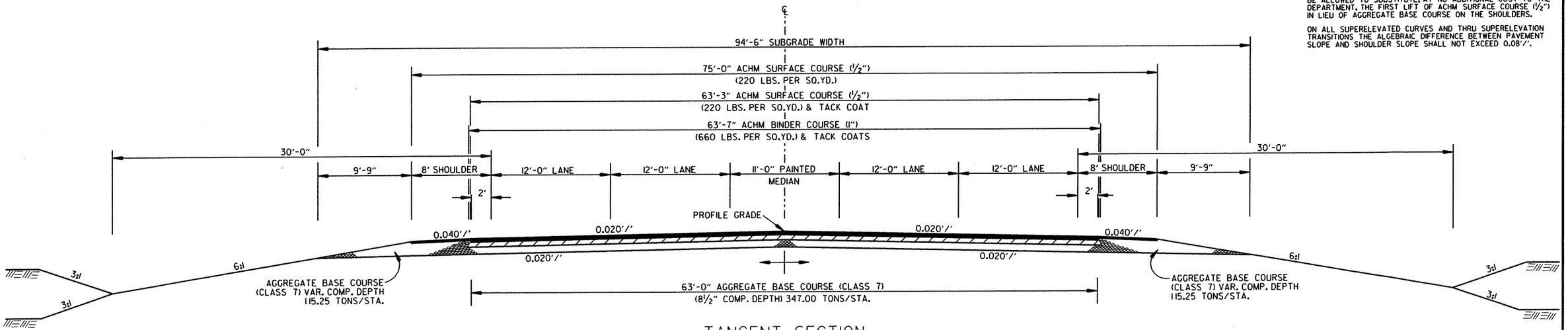
NOTES:
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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



TANGENT SECTION
OPEN SHOULDER
FULL DEPTH

STA. 149+88.14-149+88.92
STA. 152+45.08-156+37.95
STA. 222+00.00-228+53.00
STA. 258+50.00-265+74.00
STA. 266+10.00-267+80.45
STA. 292+54.26-367+43.42

TYPICAL SECTIONS OF IMPROVEMENT

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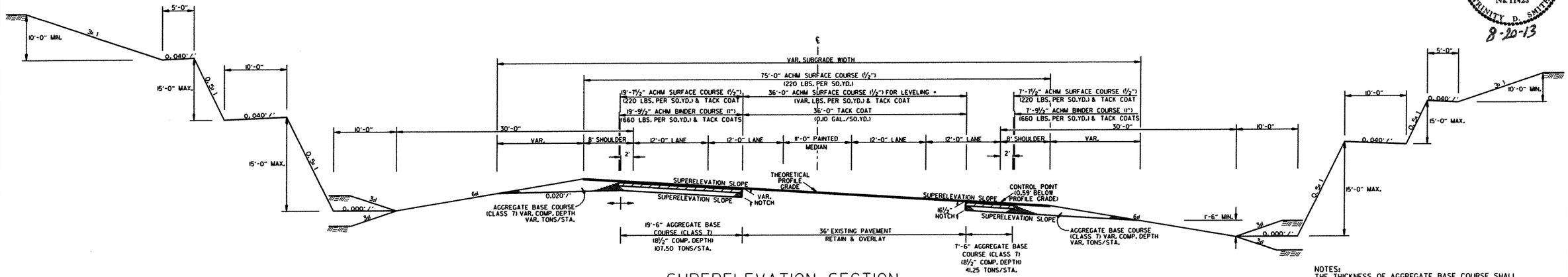
				6	ARK.			
				JOB NO.		090065	5	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SUPERELEVATION SECTION
OPEN SHOULDER
NOTCH AND WIDEN
STA. 168+46.11 - 172+51.11
STA. 173+23.16 - 189+34.34 * *
STA. 198+33.14 - 202+68.14

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** REVERSE TYPICAL FOR LT. TURN SUPERELEVATION

NOTES:
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.

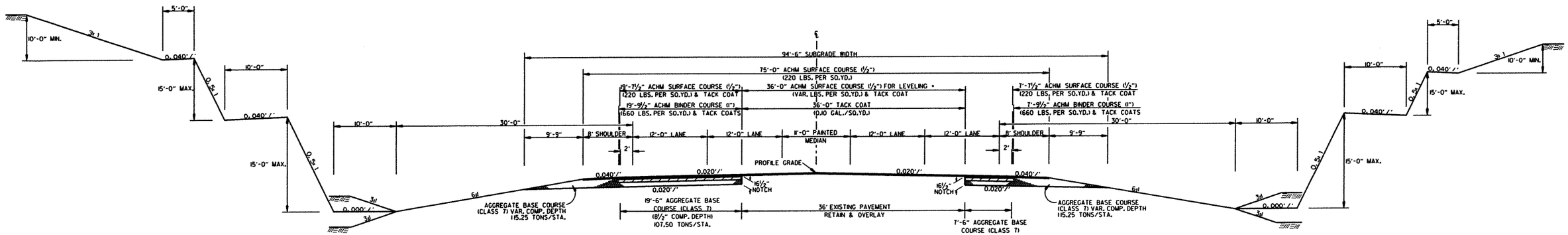
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

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 (1½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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



TANGENT SECTION
OPEN SHOULDER
NOTCH AND WIDEN
STA. 172+51.11 - 173+23.16
STA. 189+34.34 - 198+33.14

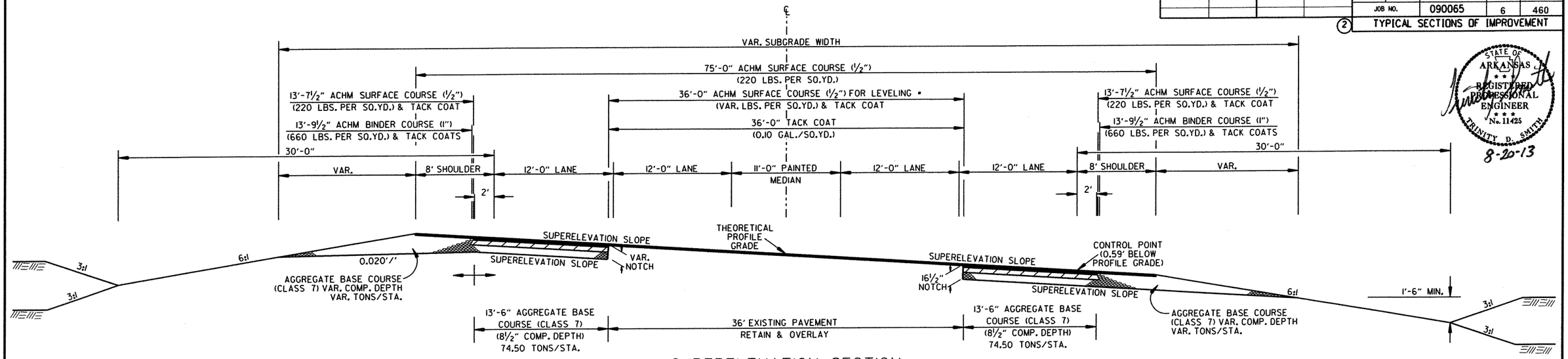
* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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.		090065	6	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SUPERELEVATION SECTION
OPEN SHOULDER
NOTCH AND WIDEN
(36' EXIST. PAVEMENT CENTERED)
STA. 211+71.76-215+76.76

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:
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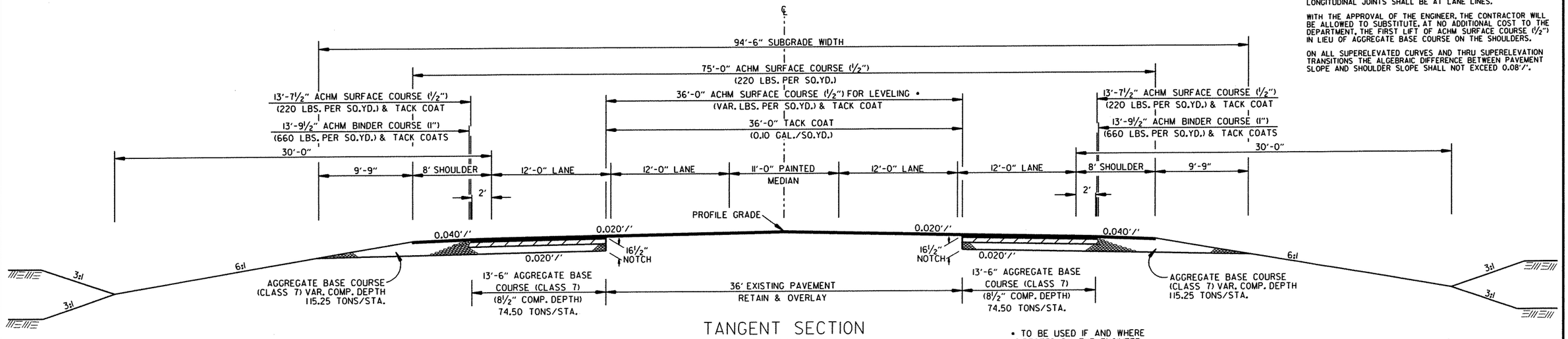

TANGENT SECTION
OPEN SHOULDER
NOTCH AND WIDEN
(36' EXIST. PAVEMENT CENTERED)
STA. 215+76.76-218+19.41

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTIONS OF IMPROVEMENT

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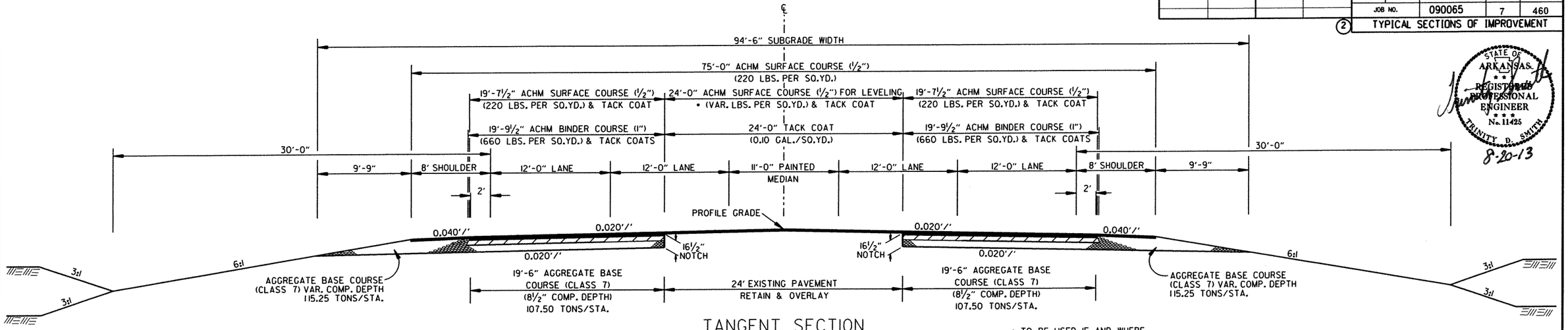
				6	ARK.			
				JOB NO.		090065	7	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



TANGENT SECTION
OPEN SHOULDER
NOTCH AND WIDEN
(24' EXIST. PAVEMENT CENTERED)
STA. 228+53.00-231+48.32

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:
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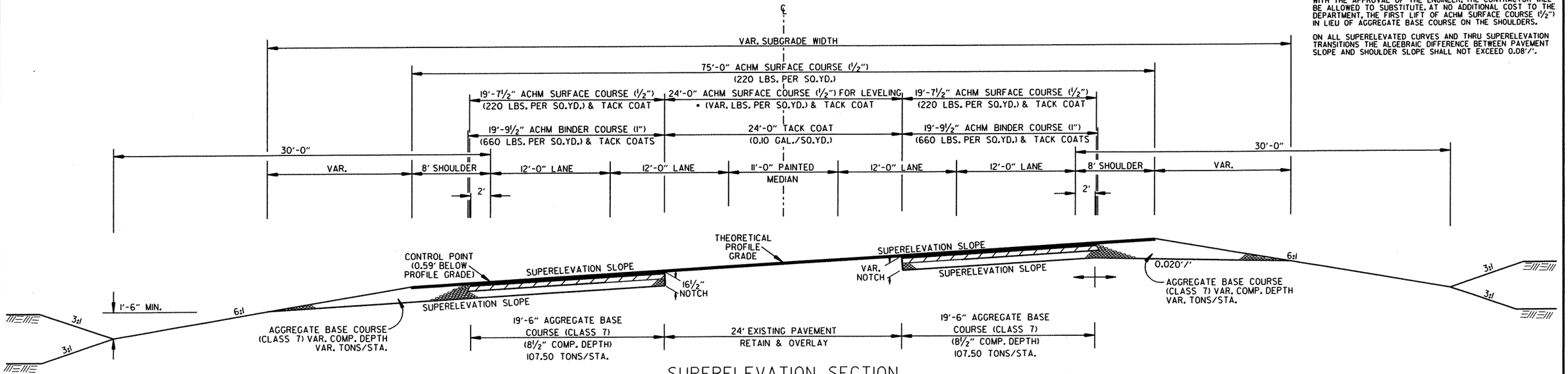


SUPERELEVATION SECTION
OPEN SHOULDER
NOTCH AND WIDEN
(24' EXIST. PAVEMENT CENTERED)
STA. 231+48.32-232+00.00

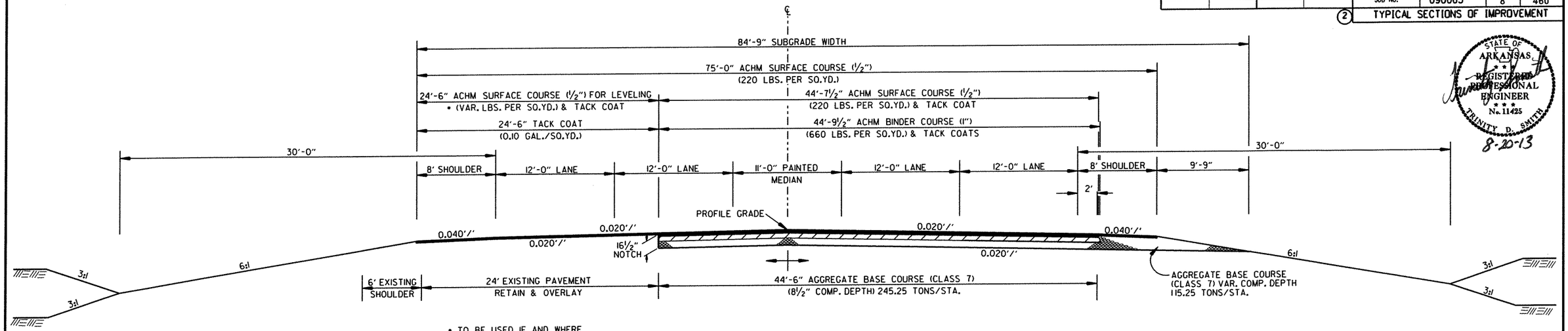
• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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.		090065	8	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
OPEN SHOULDER
NOTCH AND WIDEN RIGHT

STA.247+33.51-258+50.00
STA.265+74.00-266+10.00

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

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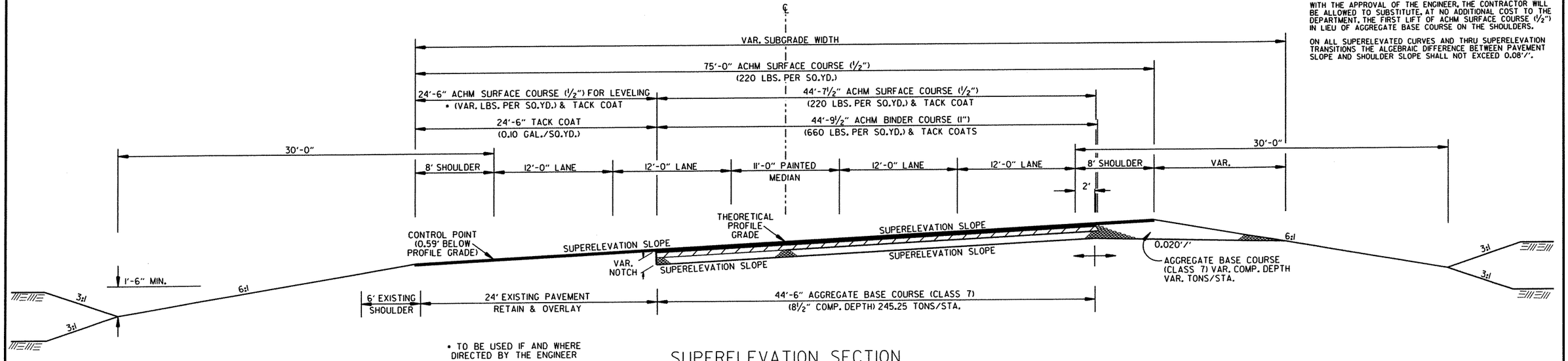


• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

SUPERELEVATION SECTION
OPEN SHOULDER
NOTCH AND WIDEN RIGHT

STA. 243+28.51-247+33.51
STA. 270+75.00-271+85.45**

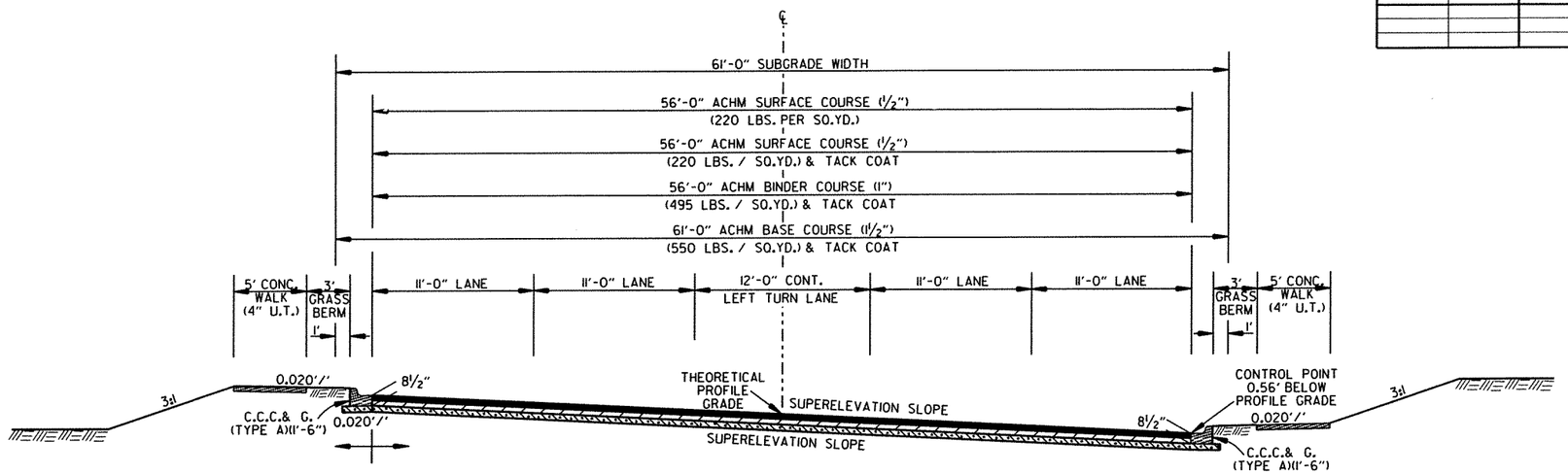
** REVERSE TYPICAL FOR RT. TURN SUPERELEVATION

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.		090065	9	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SUPERELEVATION SECTION
CURB & GUTTER
FULL DEPTH

STA. 370+00.00-376+14.04
STA. 394+43.85-397+00.00
STA. 400+25.00-408+35.62
STA. 421+50.00-426+00.00 **
STA. 440+00.00-446+25.00

** REVERSE TYPICAL FOR LT. TURN SUPERELEVATION

NOTES:
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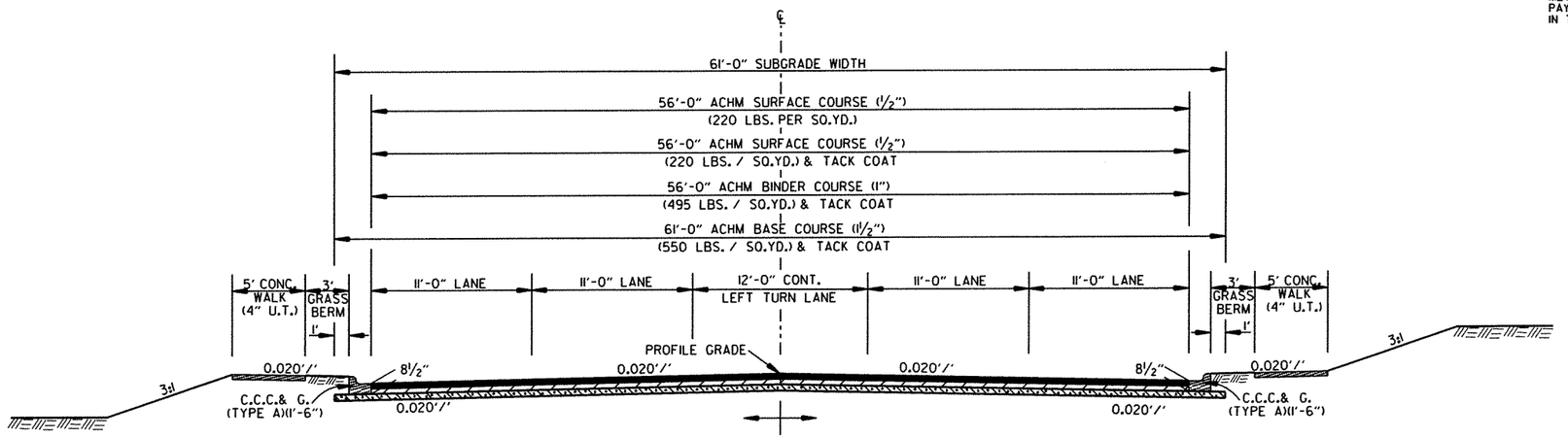


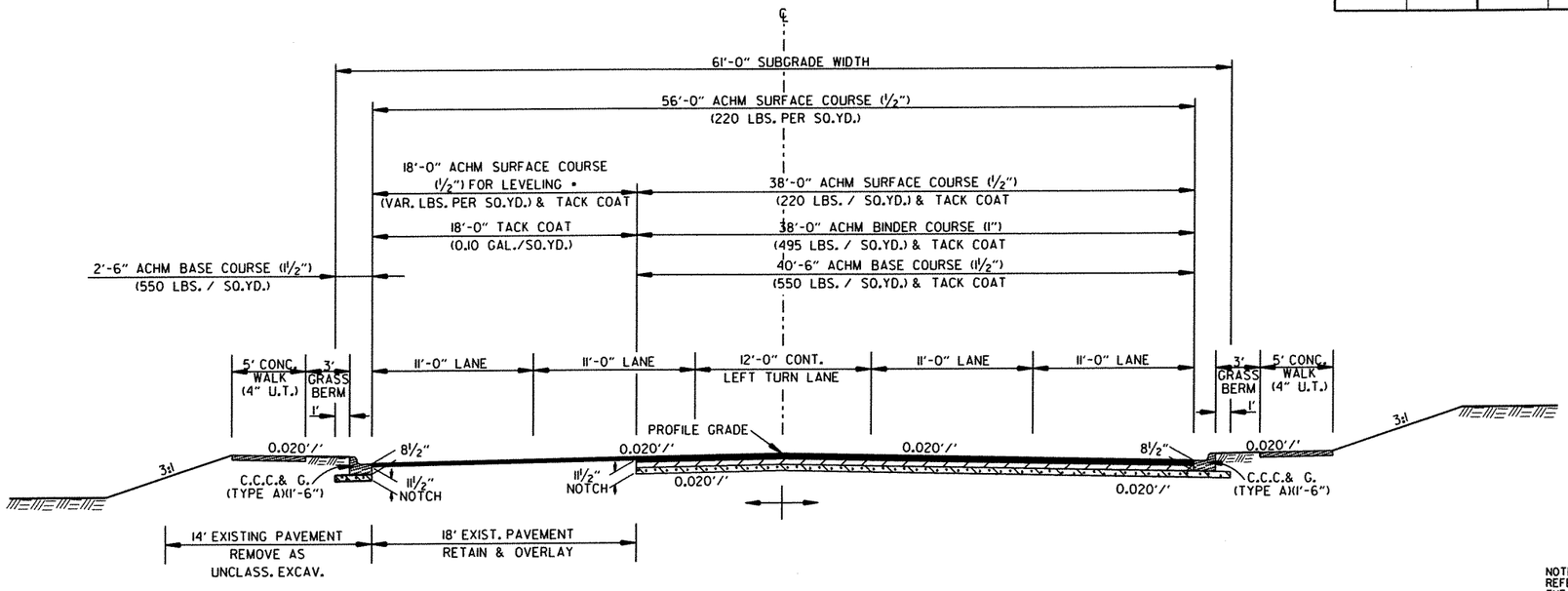
TANGENT SECTION
CURB & GUTTER
FULL DEPTH

STA. 376+14.04-385+79.00
STA. 390+00.00-394+43.85
STA. 408+35.62-409+71.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	10	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
CURB & GUTTER
NOTCH & WIDEN
STA. 385+79.00-390+00.00

NOTES:
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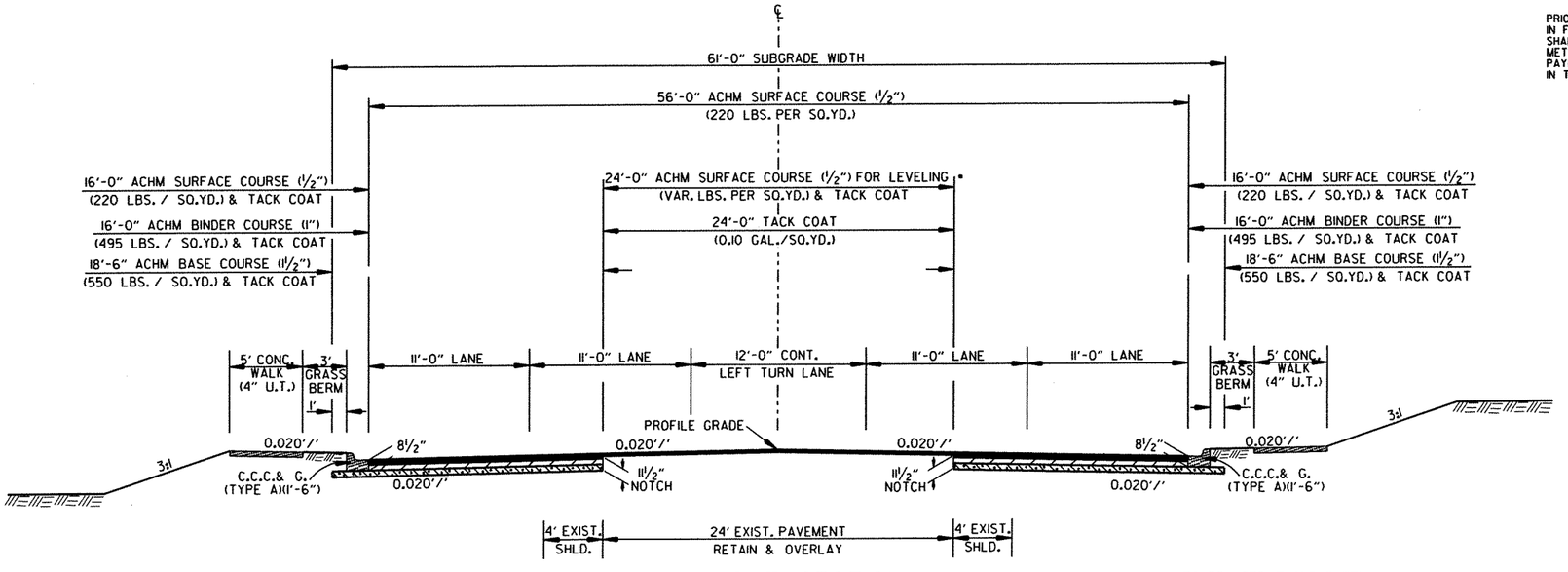


TANGENT SECTION
CURB & GUTTER
NOTCH & WIDEN
STA. 409+71.00-416+07.44

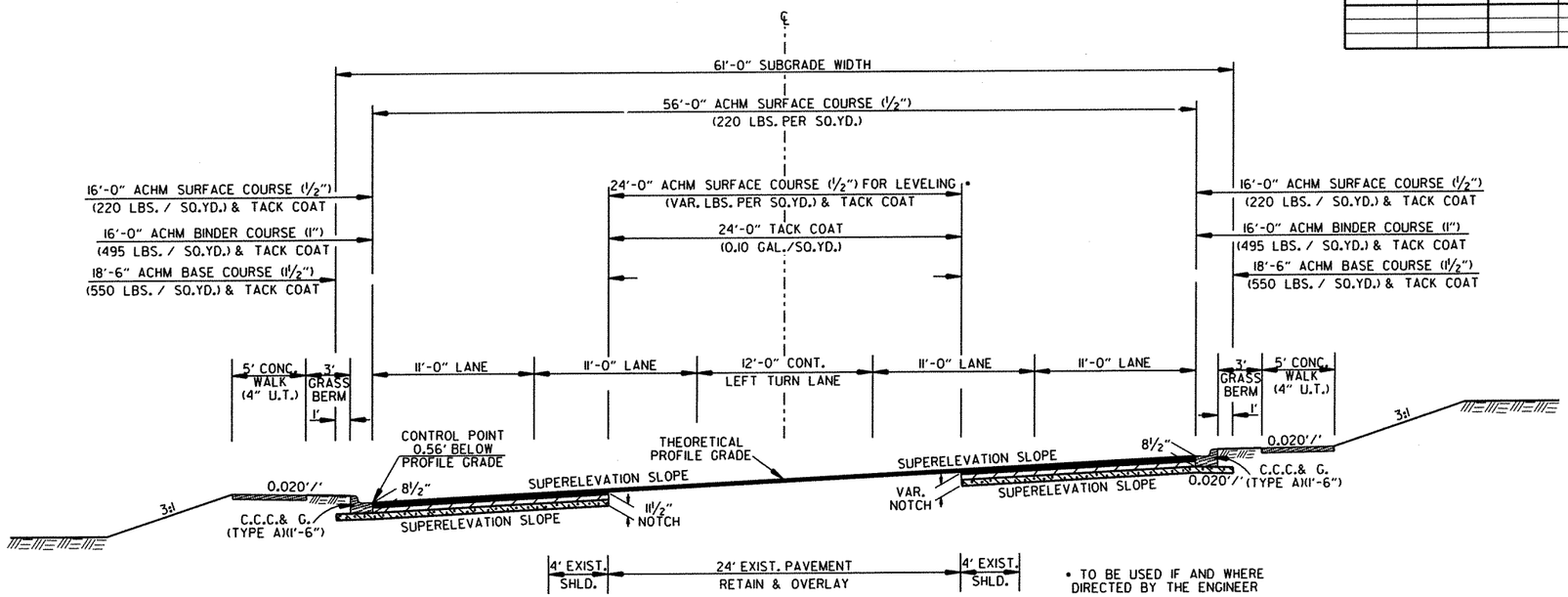
• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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.		090065	11	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TANGENT SECTION
CURB & GUTTER
NOTCH & WIDEN

STA. 416+07.44-421+50.00
STA. 426+00.00-437+55.27
STA. 437+55.27-440+00.00**
STA. 446+25.00-446+50.00**

** REVERSE TYPICAL FOR RT. TURN SUPERELEVATION

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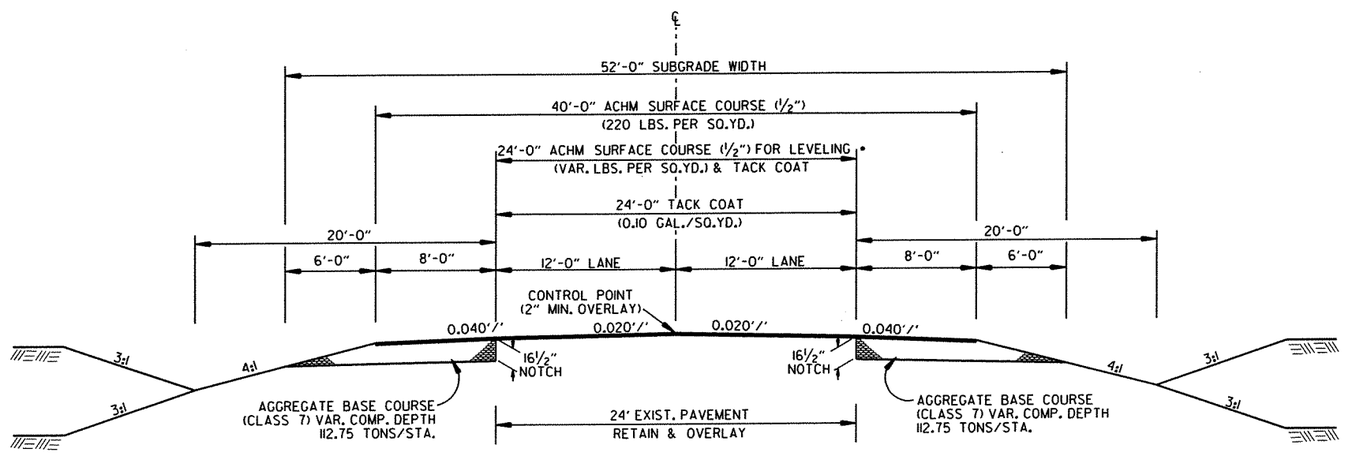


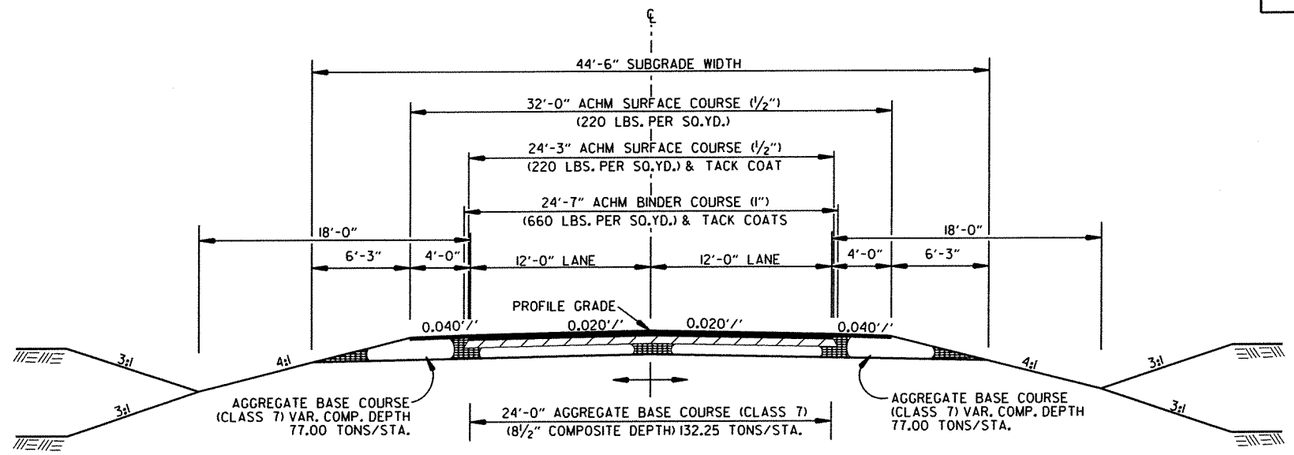
• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

HWY. 72
NOTCH & WIDEN

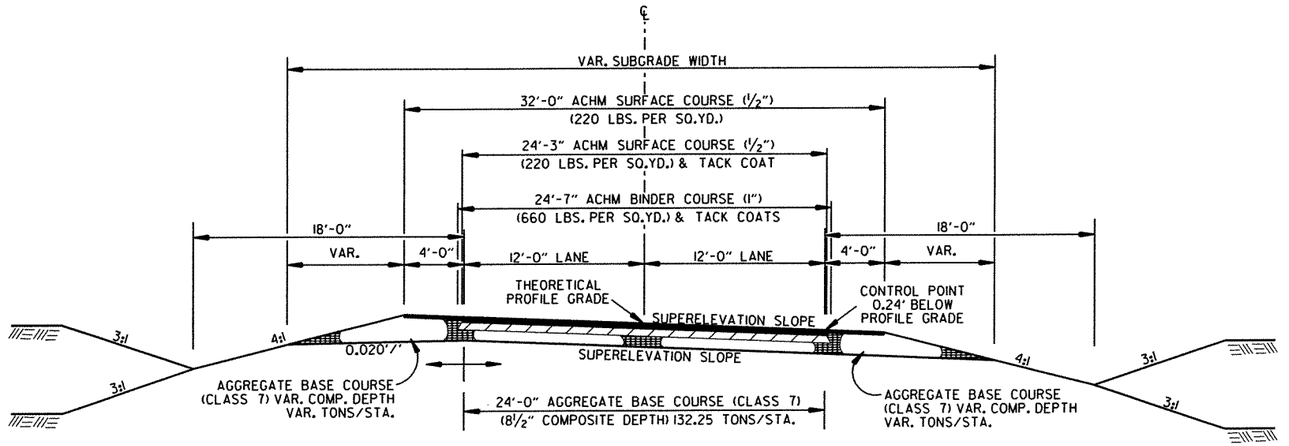
TYPICAL SECTIONS OF IMPROVEMENT

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.		090065	12	460

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 62 CONNECTOR
TANGENT SECTION
FULL DEPTH
STA. 10+31.50-10+59.50



HWY. 62 CONNECTOR
SUPERELEVATION SECTION
FULL DEPTH
STA. 10+59.50-14+25.00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

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TYPICAL SECTIONS OF IMPROVEMENT

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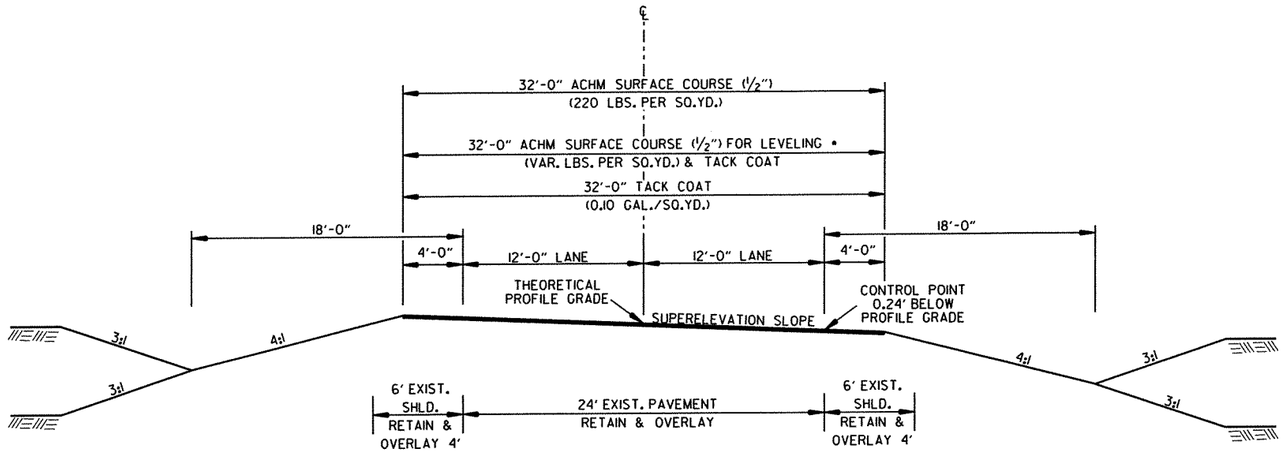
				6	ARK.			
				JOB NO.		090065	13	460

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



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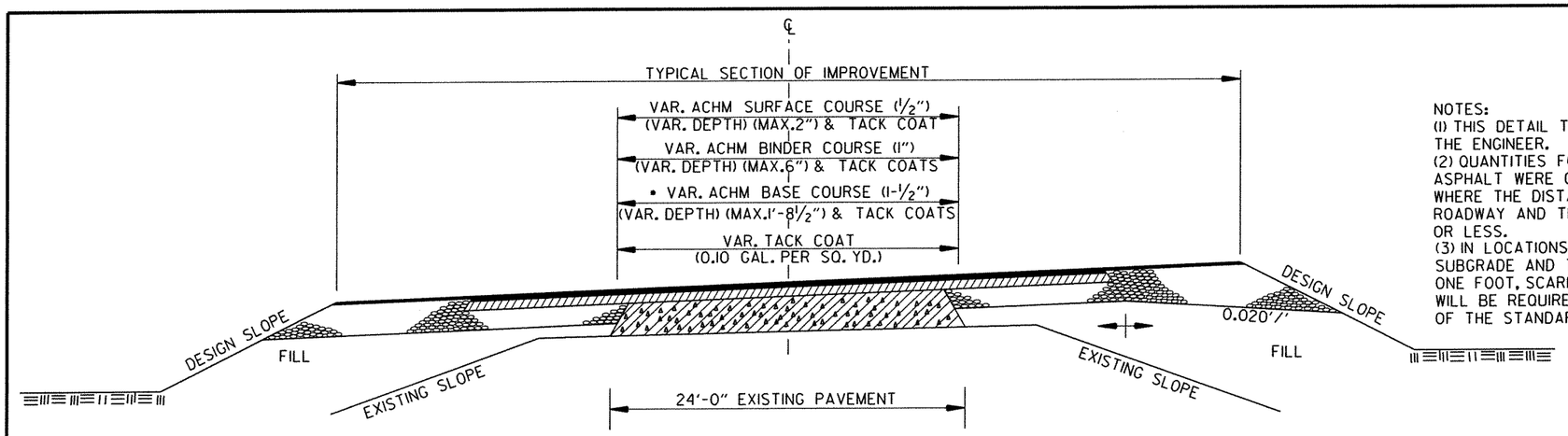
HWY. 62 CONNECTOR
SUPERELEVATION SECTION
NOTCH & WIDEN
STA. 14+25.00-16+15.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	14	460

(2) SPECIAL DETAILS

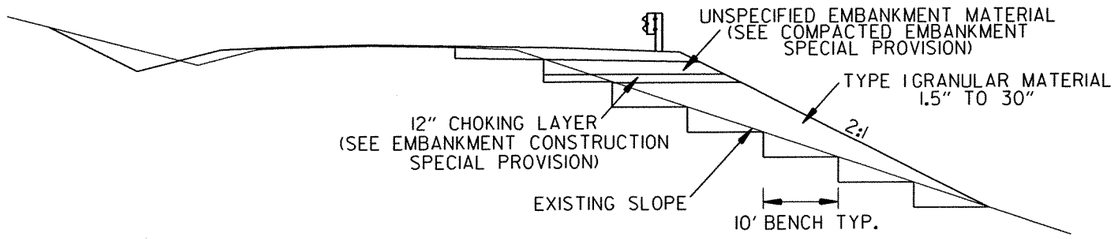


• 8 1/2" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH A.C.H.M. BASE COURSE (I1/2")

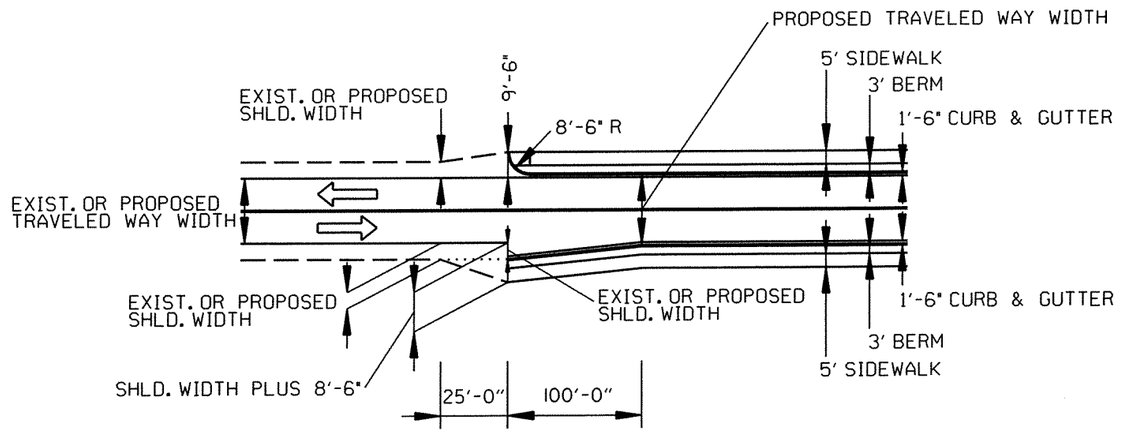
METHOD OF RAISING GRADE

NOTES:
(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210. SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.

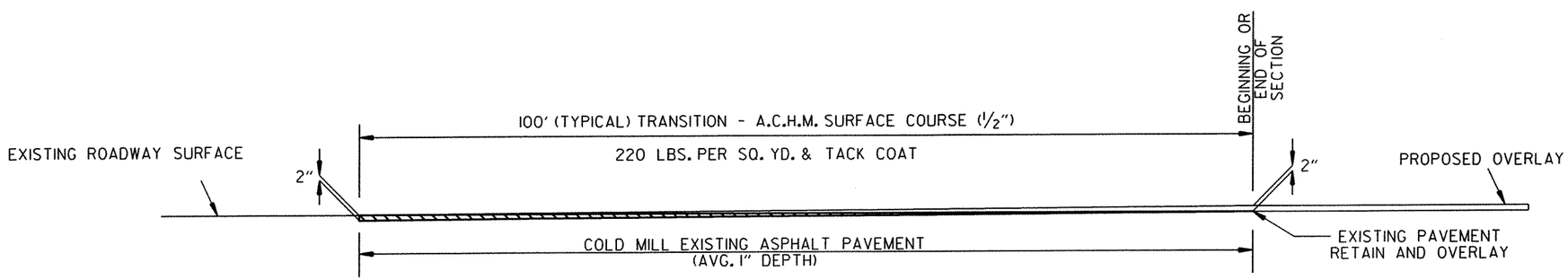
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



TYPICAL 2:1 EMBANKMENT CONSTRUCTION
STA. 139+00-140+00
STA. 147+00-148+00



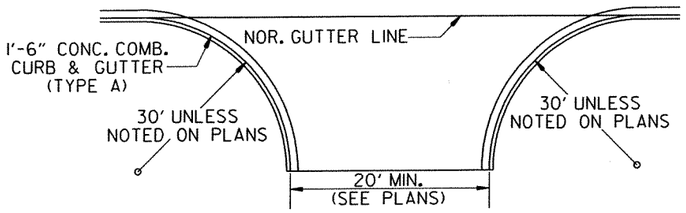
TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION



DETAIL FOR PAVEMENT TRANSITION
100' TRANSITION @ BEGINNING & END OF JOB

04/18/2011 r090065.dgn / SPECIAL DETAILS

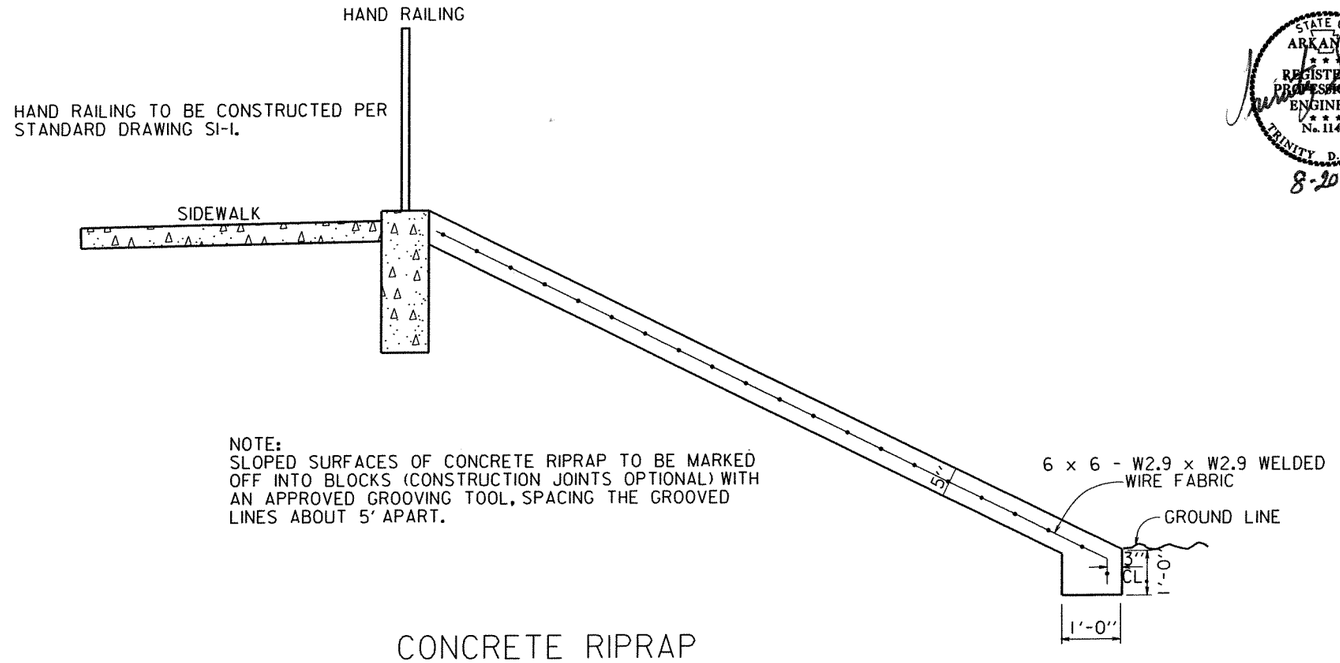
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	15	460
				(2)	SPECIAL DETAILS			



DETAIL OF TURNOUTS ASPHALT STREETS

NOTE:
PAVEMENT STRUCTURE TO BE SAME AS MAIN LANES.

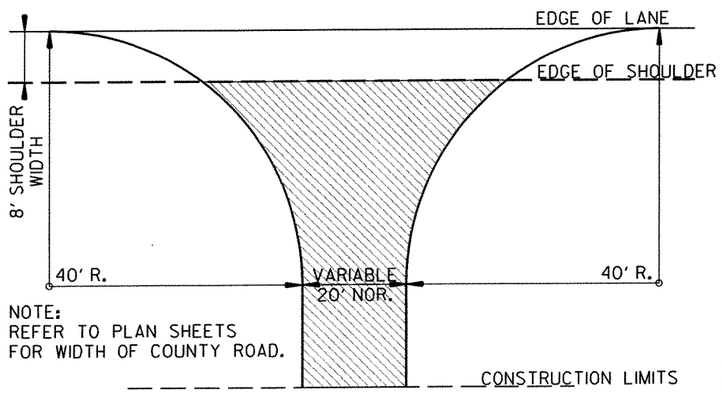
NOTE: THE TYPICAL SECTION FOR THE CITY STREET CONNECTIONS IN THE CURB & GUTTER SECTION SHALL MATCH THE PROPOSED WIDENING SECTION SHOWN FOR THE MAIN LANES. UNLESS OTHERWISE NOTED ON THE PLANS, ALL CITY STREET RADII WILL BE 30'.



NOTE:
SLOPED SURFACES OF CONCRETE RIPRAP TO BE MARKED OFF INTO BLOCKS (CONSTRUCTION JOINTS OPTIONAL) WITH AN APPROVED GROOVING TOOL, SPACING THE GROOVED LINES ABOUT 5' APART.

CONCRETE RIPRAP

TOE WALL

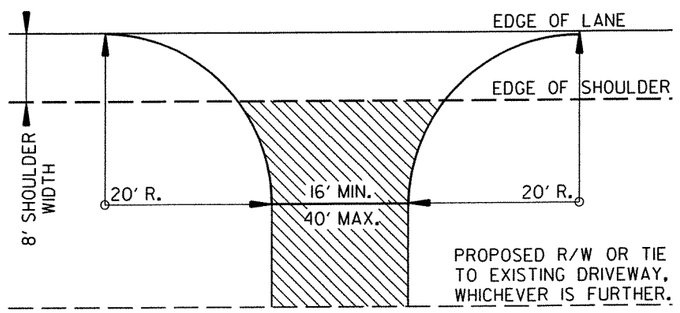


NOTE:
REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

DETAIL FOR COUNTY ROAD TURNOUTS

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 DRIVEWAY TURNOUTS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

04/18/2011 r090065.dgn / SPECIAL DETAILS

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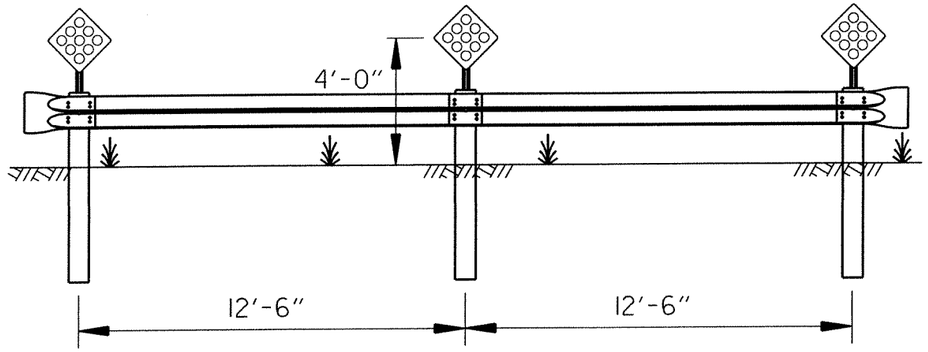
				6	ARK.			
				JOB NO.		090065	16	460
				(2) SPECIAL DETAILS				

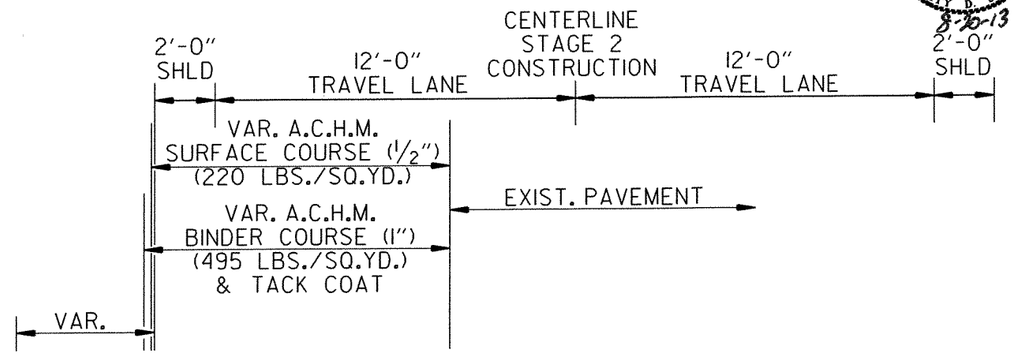


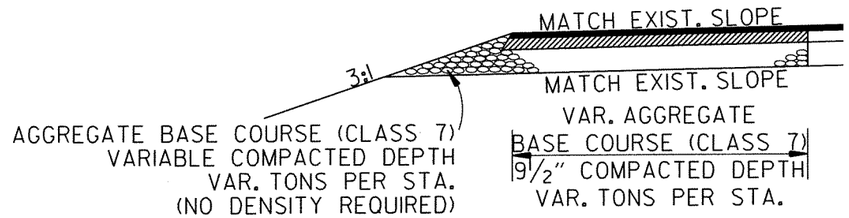
ROAD CLOSED DETAIL

TO BE USED WHERE EXISTING
ROADS WILL BE PERMANENTLY CLOSED.
SEE PLAN SHEETS FOR LOCATIONS
SEE STD. DWG. GR-7 FOR
MORE DETAILS.

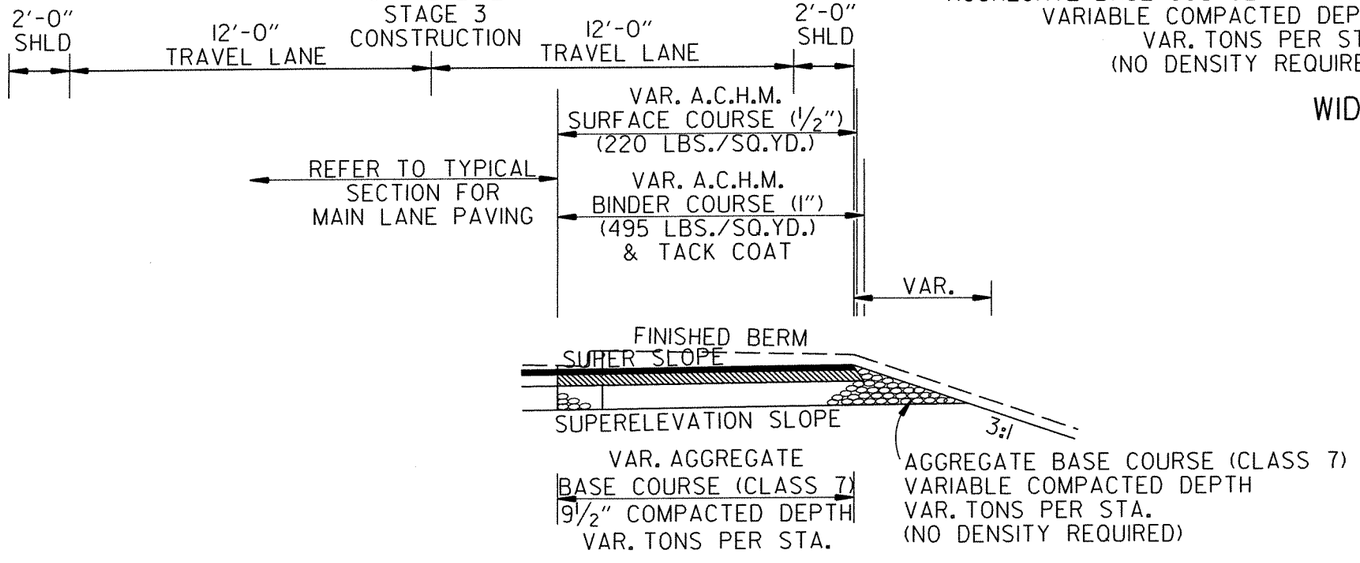
CONSTRUCT
25 LIN. FT. TYPE "C" GUARDRAIL
WITH 3 RED DIAMOND REFLECTORS
MOUNTED ON U-CHANNEL POSTS
DIRECTLY BEHIND THE GUARDRAIL
AT A HEIGHT OF 4'-0".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-16-13

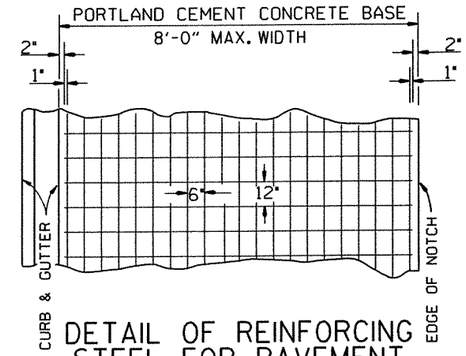




WIDENING FOR MAINTENANCE OF TRAFFIC (STAGE 2)



WIDENING FOR MAINTENANCE OF TRAFFIC (STAGE 3)



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

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 (11½" U.T.)

SPECIAL DETAILS

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(2) SPECIAL DETAILS

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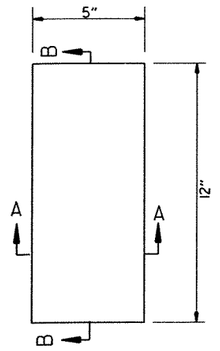
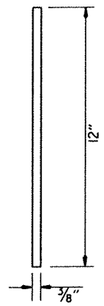
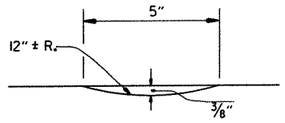
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



PLAN

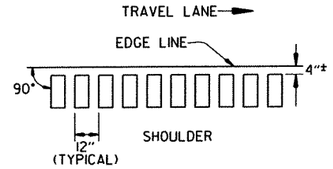


SECTION B-B

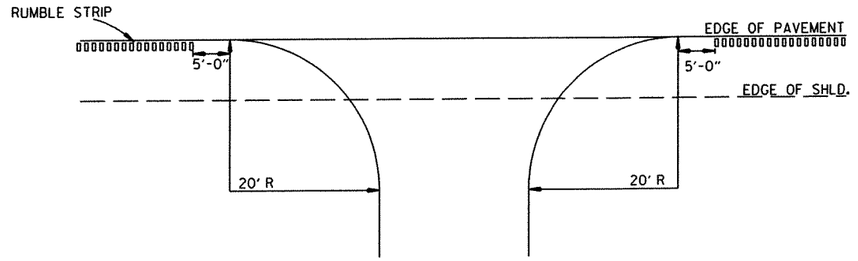


SECTION A-A

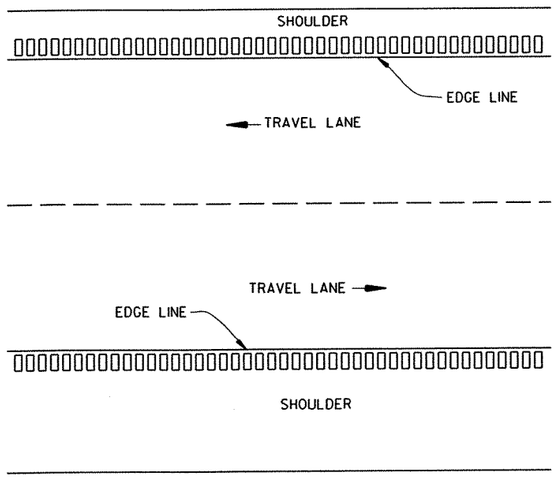
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



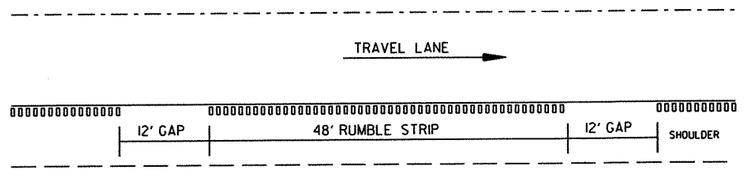
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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.



DETAIL FOR GAP PATTERN RUMBLE STRIP

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

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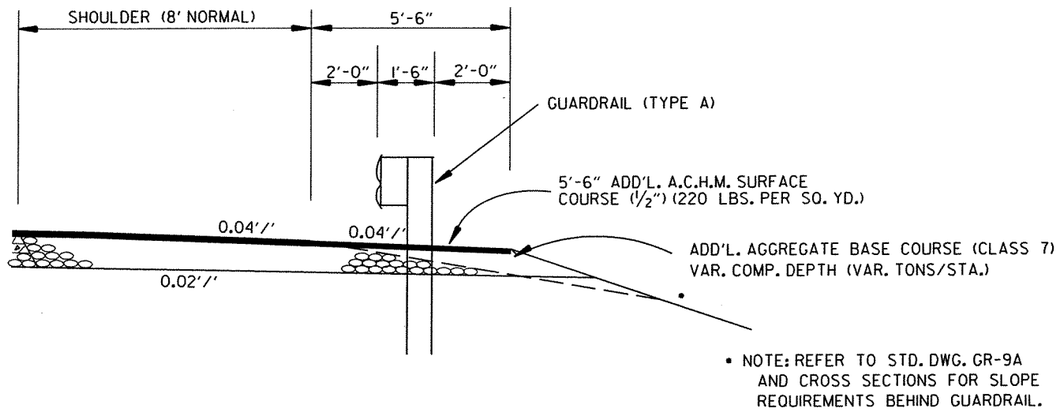
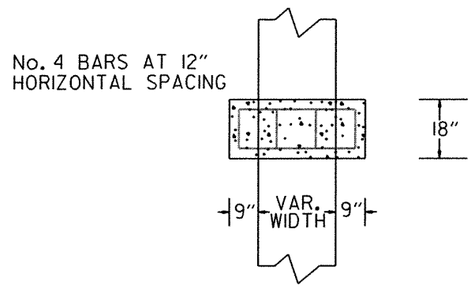
				JOB NO.		090065	18	460

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

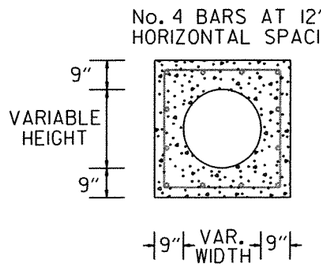


WIDENING FOR GUARDRAIL

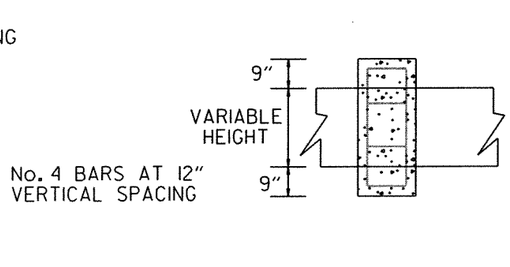


TOP VIEW

MIN 3" COVER



FRONT VIEW



SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL

04/18/2011 r090065.dgn / SPECIAL DETAILS

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				6	ARK.			
				JOB NO.		090065	19	460

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BOX CULVERT DIAGRAM STA. 147+50

CONCRETE:

A SECTION	13.85	X		=	8.19
B SECTION	7.50	X	0.619	=	4.64
C SECTION	7.50	X	0.646	=	4.85
D SECTION	18.98	X	0.691	=	13.12
HEADWALLS, APRONS & WINGS (ONE SIDE)				=	6.84
TOTAL C.Y.				=	37.64

REINFORCING STEEL:

A SECTION	*TOTAL FOR 14'-0" SKEWED LENGTH OF BARREL			=	1027.00
B SECTION	7.50	X	73.53	=	551.48
C SECTION	7.50	X	81.20	=	609.00
D SECTION	18.98	X	85.22	=	1617.48
0	LAPS @ LBS. EACH		21.71	=	
2 WINGS				=	261.00
TOTAL C.Y.				=	4065.96

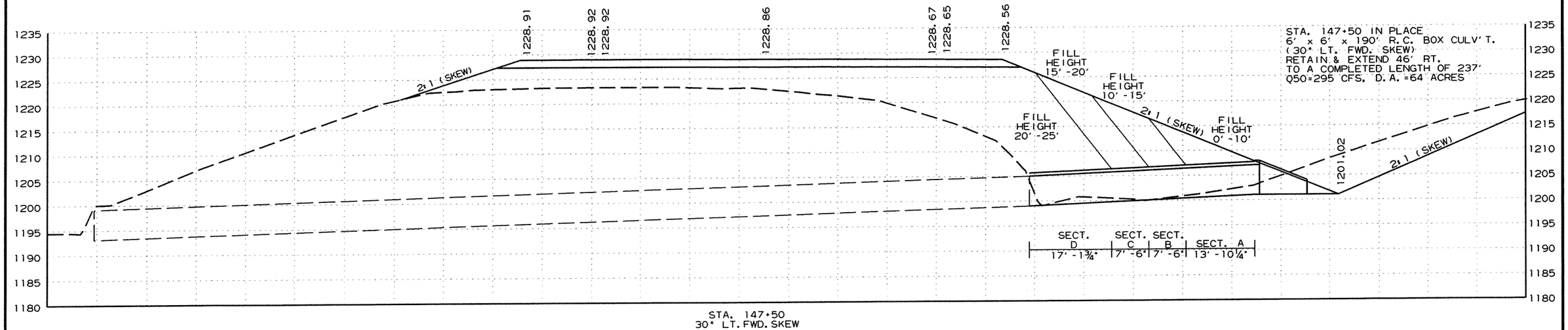
* INCLUDES HDWL., APRONS, & 1 LAP

UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY:

A SECTION	13.85	X	0.235	=	3.25
B SECTION	7.50	X	0.259	=	1.94
C SECTION	7.50	X	0.282	=	2.12
D SECTION	18.98	X	0.307	=	5.83
V.I.				=	6.14
V.O.				=	6.57
TOTAL C.Y.				=	25.85

SOLID SODDING & WATER:

(K + W-1 + W-2 + 3.46)(1 SIDE)(2' WIDE)/9 S.F./S.Y.	=	9
12.60 (GAL. / S.Y. SOLID SODDING)/1000 = M.GAL.	=	0.11



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SPECIAL DETAILS

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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BOX CULVERT DIAGRAM STA. 328+80

CONCRETE:

A SECTION	*TOTAL FOR 2'-9" SKEWED LENGTH OF BARREL & HEADWALL			=	9.94
A SECTION	63.00	X	0.44	=	27.72
B SECTION	132.50	X	0.46	=	60.95
APRONS & WINGS (BOTH SIDES)				=	15.90
TOTAL C.Y.				=	114.51

REINFORCING STEEL:

A SECTION	*TOTAL FOR 2'-9" SKEWED LENGTH OF BARREL & HEADWALL			=	332.00
A SECTION	63.00	X	40.00	=	2520.00
B SECTION	132.50	X	70.00	=	9275.00
5.00	LAPS @ LBS. EACH		26.00	=	130.00
4 WINGS				=	1630.00
TOTAL C.Y.				=	13887.00

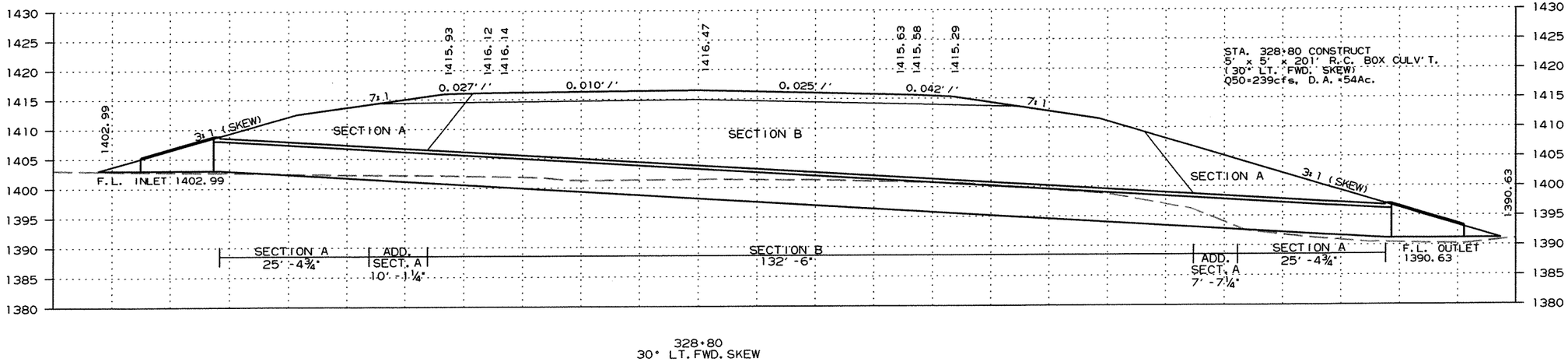
* INCLUDES HDWL., APRONS, & 1 LAP

UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY:

A SECTION	68.50	X	0.194	=	13.29
B SECTION	132.50	X	0.194	=	25.71
V.I.				=	6.64
V.O.				=	7.16
TOTAL C.Y.				=	52.80

SOLID SODDING & WATER:

(K + W-1 + W-2 + 3.46)(1 SIDE)(2' WIDE)/9 S.F./S.Y.				=	20
12.60 (GAL. / S.Y. SOLID SODDING)/1000 = M.GAL.				=	0.25



328+80
30° LT. FWD. SKEW

R090065.DGN 10/31/2011

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		090065	21	460

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BOX CULVERT DIAGRAM STA. 359+62

CONCRETE:

A SECTION	*TOTAL FOR 2'-1" SKEWED LENGTH OF BARREL & HEADWALL			=	11.22
A SECTION	40.84	X	0.54	=	22.05
B SECTION	26.00	X	0.60	=	15.60
C SECTION	145.00	X	0.70	=	101.50
APRONS & WINGS (BOTH SIDES)				=	12.95
TOTAL C.Y.				=	163.32

REINFORCING STEEL:

A SECTION	*TOTAL FOR 2'-1" SKEWED LENGTH OF BARREL & HEADWALL			=	404.00
A SECTION	40.84	X	75.00	=	3063.00
B SECTION	26.00	X	78.00	=	2028.00
C SECTION	145.00	X	106.00	=	15370.00
4.00	LAPS @ LBS. EACH		30.00	=	120.00
3.00	LAPS @ LBS. EACH		33.00	=	99.00
4 WINGS				=	1256.00
TOTAL C.Y.				=	22340.00

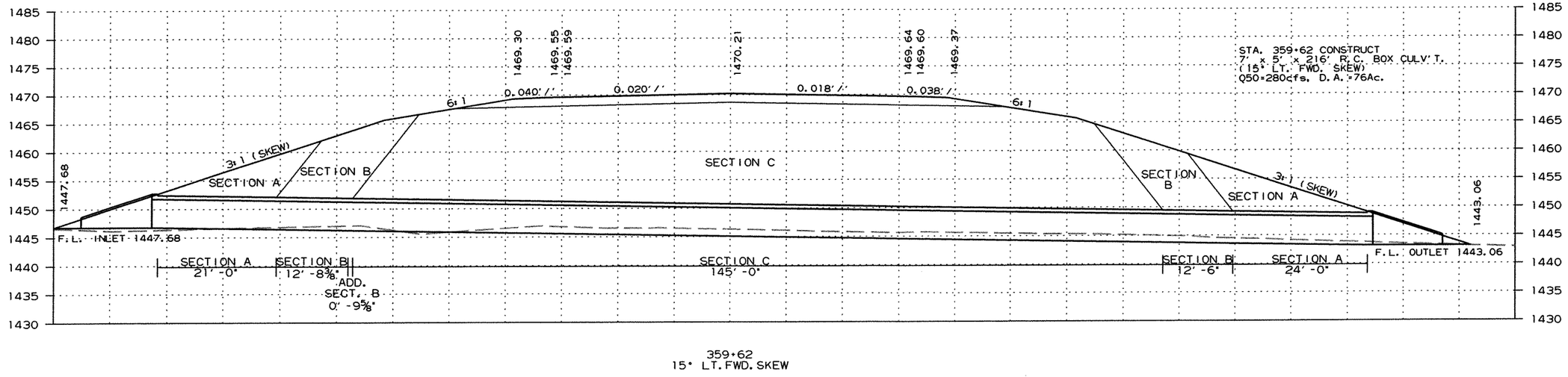
* INCLUDES HDWL., APRONS, & 1 LAP

UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY:

A SECTION	45.00	X	0.255	=	11.48
B SECTION	26.00	X	0.289	=	7.51
C SECTION	145.00	X	0.306	=	44.37
V.I.				=	5.68
V.O.				=	6.16
TOTAL C.Y.				=	75.20

SOLID SODDING & WATER:

(K + W-1 + W-2 + 3.46)(1 SIDE)(2' WIDE)/9 S.F./S.Y.				=	18
12.60 (GAL. / S.Y. SOLID SODDING)/1000 = M.GAL.				=	0.23



359+62
15° LT. FWD. SKEW

R090065.DGN 10/31/2011

SPECIAL DETAILS

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.		090065	22	460

SPECIAL DETAILS

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
5'-0"	4'-0"	0'-9"	0'-8"	30	3:1	5'-9"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-4"	2'-8"	1'-3 3/4"	1'-7 3/4"	10'-6"	21'-0"	9'-6"	21'-11 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.69	561

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

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS			F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	2	10'-2"	4	18	7	L	Min	3'-3"	4	6	13'-1"	4	18	7	Min	1'-8"		-	-	-	Min	-	4	2	10'-7"	4	2	11'-0"	6	12	4	L	3'-4"	198
									Max	6'-3"							Max	1'-10"																		
								X	Min	1'-4"																										
									Max	1'-4"																								X	1'-8"	
								Y	Min	2'-0"																										
									Max	5'-0"																										
WING B	4	18	2	20'-8"	4	18	14	L	Min	3'-1"	4	6	23'-7"	4	18	15	Min	1'-8"		-	-	-	Min	-	4	2	20'-10"	4	2	24'-2"	6	12	4	L	3'-4"	363
									Max	6'-3"							Max	2'-2"																		
								X	Min	1'-4"																										
									Max	1'-4"																								X	1'-8"	
								Y	Min	1'-10"																										
									Max	5'-0"																										

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																											
30	3:1	10	4	4	2'-5"	7	7	6	3	5'-0"	5'-2"	4	8.5	Max 4'-8" / Min 3'-0" / 4'-8"	2	4	7.5	Max 4'-8" / Min 3'-0" / 4'-8"	2	4	9	8	4'-10"	4	12	5	Max 3'-9" / Min 0'-10"	4	12	5	Max 3'-9" / Min 0'-10"	4	12	4	LONG 3'-9" / SHORT 0'-10"	k1	4	6	5'-5"
																																					k2	4	6	5'-5"
																																							1'-6"
																																				h	4	7	Y 0'-6"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.
1.01	127

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION D	DESIGN FILL DEPTH (FT.) S	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS	TOTAL ADDITIONAL REINF. FOR HDWL LBS.

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

MID-SECTION

R.C. BOX SECTION D	DESIGN FILL DEPTH (FT.) S	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	4	4	7	7	6	5'-0"	5'-2"	147.17	4	6.5	271	4'-8"	4	6	294	4'-8"	4	9	392	4'-10"	4	12	5	4	12	5	4	12	8

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT.	③ ADTL. REINF. PER LONG. LAP LOCATION(S) LBS.
0.36	33	21

③ MID-SECTION BAR LAP TABLE

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

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

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

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 284+37

SPECIAL DETAILS

Culvert-Single.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.		090065	23	460

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
5'-0"	4'-0"	0'-9"	0'-8"	30	3:1	5'-9"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-4"	2'-8"	1'-3 3/4"	1'-7 3/4"	10'-6"	21'-0"	9'-6"	21'-11 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
6.15	561

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L	Min	2'-4"	-	-	-	-	-	-	-	L	-		4	18	4	Min	4	18	2	10'-2"	4	18	7	L	Min	3'-3"	4	6	13'-1"	4	18	7	Min	-	-	-	-	4	2	10'-7"	4	2	11'-0"	6	12	4	L	3'-4"	198
					Max	5'-10"														3'-4"									Max	6'-3"						1'-8"				Max										
				X	Min	0'-9"								X	-					Max								X	Min	1'-4"						-				-								X	1'-8"	
					Max	0'-11"														7'-10"									Max	1'-4"						1'-10"														
				Y	Min	1'-8"								Y	-													Y	Min	2'-0"																				
					Max	5'-0"																							Max	5'-0"																				
WING B	4	12	21	L	Min	2'-4"	-	-	-	-	-	-	-	L	-		4	18	4	Min	4	18	2	20'-8"	4	18	14	L	Min	3'-1"	4	6	23'-7"	4	18	15	Min	-	-	-	-	4	2	20'-10"	4	2	24'-2"	6	12	4	L	3'-4"	363
					Max	6'-2"														6'-10"									Max	6'-3"						1'-8"				Max										
				X	Min	0'-9"								X	-					Max								X	Min	1'-4"						-				-								X	1'-8"	
					Max	1'-3"														15'-10"									Max	1'-4"						2'-2"														
				Y	Min	1'-8"								Y	-													Y	Min	1'-10"																				
					Max	5'-0"																							Max	5'-0"																				

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																														
30	3:1	10	4	4	2'-5"	7	7	6	3	5'-0"	5'-2"	4	8.5	Max 4'-8" / Min 3'-0" / 4'-8"	2	4	7.5	Max 4'-8" / Min 3'-0" / 4'-8"	2	4	9	8	4'-10"	4	12	5	Max 0'-10" / Min	4	12	5	Max 0'-10" / Min	4	12	4	LONG 3'-9" / SHORT 0'-10"	k1	4	6	5'-5"
																																						k2	4	6	5'-5"
																																						h	4	7	1'-6" / Y / 0'-6"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
1.01	127

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINF. "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINF. "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DIST. REINF. "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	"h" bars Y	"h" bars LENGTH	"h" bars NO. REQ'D

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT

SINGLE BARREL BOX CULVERT
STA. 284+37

SPECIAL DETAILS

Culvert-Single.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.		090065	24	460

① SPECIAL DETAILS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/7/13
CARL J. FUSELIER

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
6'-0"	5'-0"	0'-9"	0'-8"	0	3:1	6'-0"	1'-0"	5'-10"	1'-8"	30	30	2'-2"	3'-0"	3'-0"	1'-8 3/4"	1'-8 3/4"	14'-0"	14'-0"	14'-0 1/4"	14'-0 1/4"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.71	560

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY			F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 SPACING	F9 NO. REQ'D	F9 LENGTHS		F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	14	L	Min	2'-10"				L	-				L	-	4	18	6	Min			4	18	2	13'-8"	4	18	10	L	Min	2'-3"	4	6	16'-7"	4	18	10	Min			-	-	-		4	2	14'-2"	4	2	15'-8"	6	12	5	L	3'-4"	280
					Max	7'-6"														2'-1"											Max	7'-3"						1'-8"															
				X	Min	0'-9"	-	-	-	X	-	-	-	-	X	-				Max										X	Min	1'-4"						Max														X	1'-8"	
					Max	1'-7"														12'-2"											Max	1'-4"						2'-6"															
				Y	Min	2'-2"				Y	-				Y	-														Y	Min	1'-0"																					
					Max	6'-0"																									Max	6'-0"																					
WING B	4	12	14	L	Min	2'-10"				L	-				L	-	4	18	6	Min			4	18	2	13'-8"	4	18	10	L	Min	2'-3"	4	6	16'-7"	4	18	10	Min			-	-	-		4	2	14'-2"	4	2	15'-8"	6	12	5	L	3'-4"	280
					Max	7'-6"														2'-1"											Max	7'-3"						1'-8"															
				X	Min	0'-9"	-	-	-	X	-	-	-	-	X	-				Max										X	Min	1'-4"						Max														X	1'-8"	
					Max	1'-7"														12'-2"											Max	1'-4"						2'-6"															
				Y	Min	2'-2"				Y	-				Y	-														Y	Min	1'-0"																					
					Max	6'-0"																									Max	6'-0"																					

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

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINF. STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINF. STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max									Max				Max			LONG	k1			
																																					k2			
														Min				Min									Min				Min			SHORT					
																																				h			Y

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

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION D	DESIGN FILL DEPTH (FT.) S	CLEAR SPAN (FT.) H	CLEAR HEIGHT (FT.) T	TOP SLAB THICKNESS B	BOTTOM SLAB THK. C	SIDE WALL THICKNESS OW	OVER ALL WIDTH OH	OVER ALL HEIGHT SL	SECTION LENGTH (FT.)	TOP SLAB REINF. STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINF. STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINF. STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
	10	5	5																											

CLASS "S" CONCRETE PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.06	15

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D
3"	8	4	0'-6"	1'-6"	7

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINF. STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINF. STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	5	5	7	7	6	6'-0"	6'-2"	143.00	5	6	286	5'-8"	5	6	286	5'-8"	4	6.5	528	5'-10"	4	12	6	4	12	6	4	12	10

CLASS "S" CONCRETE PER LIN. FT.	REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT.	② ADTL. REINF PER LONG. LAP LOCATION(S) LBS.
0.44	53	26

③ MID-SECTION BAR LAP TABLE

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 313+70

SPECIAL DETAILS

b090065_c2.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	25	460

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
6'-0"	5'-0"	0'-9"	0'-8"	0	3:1	6'-0"	1'-0"	5'-10"	1'-8"	30	30	2'-2"	3'-0"	3'-0"	1'-8 3/4"	1'-8 3/4"	14'-0"	14'-0"	14'-0 1/4"	14'-0 1/4"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
6.12	560

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 SPACING	F9 NO. REQ'D	F9 LENGTHS			F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	14	L	Min	2'-10"	-	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	13'-8"	4	18	10	L	Min	2'-3"	4	6	16'-7"	4	18	10	Min	-	-	-	Min	-			4	2	14'-2"	4	2	15'-8"	6	12	5	L	3'-4"	280
					Max	7'-6"												2'-1"									Max	7'-3"							1'-8"																
				X	Min	0'-9"												Max								X	Min	1'-4"							Max														X	1'-8"	
					Max	1'-7"												12'-2"									Max	1'-4"							2'-6"																
				Y	Min	2'-2"																				Y	Min	1'-0"							Min																
					Max	6'-0"																					Max	6'-0"							2'-6"																
WING B	4	12	14	L	Min	2'-10"	-	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	13'-8"	4	18	10	L	Min	2'-3"	4	6	16'-7"	4	18	10	Min	-	-	-	Min	-			4	2	14'-2"	4	2	15'-8"	6	12	5	L	3'-4"	280
					Max	7'-6"												2'-1"									Max	7'-3"							1'-8"																
				X	Min	0'-9"												Max								X	Min	1'-4"							Max														X	1'-8"	
					Max	1'-7"												12'-2"									Max	1'-4"							2'-6"																
				Y	Min	2'-2"																				Y	Min	1'-0"							Min																
					Max	6'-0"																					Max	6'-0"							2'-6"																

SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACEING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL "k1", "k2" & "h" SIZE	HDWL "k1", "k2" & "h" NO. REQ'D	HDWL "k1", "k2" & "h" LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACEING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	BAR	SIZE	NO. REQ'D	LENGTH
														Max				Max								Max				Max						LONG	k1				
																																						k2			
														Min				Min								Min				Min						SHORT	h				Y

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

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																						
	10	5	5																											

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D
3"	8	4	0'-6"	1'-6"	7

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.06	15

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 313+70

SPECIAL DETAILS

LRFD

b090065_c2.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	26	460

① SPECIAL DETAILS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/15/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
6'-0"	5'-0"	0'-9"	0'-8"	30	3:1	6'-11"	1'-0"	5'-10"	1'-8"	0	60	2'-2"	2'-9"	3'-3"	1'-8 1/2"	2'-11 3/8"	12'-6"	25'-0"	11'-6 1/8"	27'-0 7/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
7.68	779

		F1					F2				F3				F4				F5			F6					F7			F8				F9			F10			F11			F12				
	WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS		REINF STEEL QTY. PER WING (LBS)
	WING A	4	12	13	L	Min	2'-8"	-	-	-	-	-	-	L	-	4	18	4	Min	4	18	2	12'-2"	4	18	9	L	Min	3'-3"	4	6	15'-1"	4	18	8	Min	1'-8"	-	-	-	Min	-	4	2	12'-8"	4	2	13'-0"	6	12	5	L	3'-4"	253
						Max	7'-3"											6'-4"									Max	1'-4"							Max	2'-2"				Max	-										
					X	Min	0'-9"							X	-			Max								X	Max	1'-4"																				X	1'-8"	
						Max	1'-4"											10'-10"									Min	2'-0"																					
					Y	Min	2'-0"							Y	-											Y	Max	6'-0"																					
						Max	6'-0"																																											
	WING B	4	12	25	L	Min	2'-8"	-	-	-	-	-	-	L	-	4	18	6	Min	4	18	2	24'-8"	4	18	17	L	Min	3'-3"	4	6	27'-7"	4	18	19	Min	1'-8"	4	18	2	Min	36'-11"	4	2	24'-10"	4	2	29'-4"	6	12	5	L	3'-4"	526
						Max	7'-9"											3'-10"									Max	1'-4"							Max	2'-10"				Max	36'-11"										
					X	Min	0'-9"							X	-			Max								X	Max	1'-4"																				X	1'-8"	
						Max	1'-10"																																											
					Y	Min	2'-0"							Y	-											Y	Min	3'-3"																					
						Max	6'-0"																					Max	7'-3"																					
																												Min	1'-4"																					
																												Max	1'-4"																					
																												Min	2'-0"																					
																												Max	6'-0"																					

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	SPACING	LENGTHS VARY	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	SPACEING	LENGTHS VARY	NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	SPACING	NO. REQ'D	LENGTH	HDWL "k1", "k2" & "h" BAR	SIZE	NO. REQ'D	LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																														
30	3:1	10	5	5	2'-9"	7	7	6	3	6'-0"	6'-2"	4	6	Max 5'-8" / Min 3'-0" / 5'-8"	4 / 2	4	6	Max 5'-8" / Min 3'-0" / 5'-8"	4	4	9	8	5'-10"	4	12	6	Max 4'-4" / Min 0'-10"	4	12	6	Max 4'-4" / Min 0'-10"	4	12	5	LONG 4'-4" / SHORT 0'-10"	k1	4	6	6'-7"
																																						k2	4	6	6'-7"
																																						h	4	8	1'-6" / Y / 0'-6"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
1.35	168

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

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	5	5	7	7	6	6'-0"	6'-2"	22.65	4	6	45	5'-8"	4	6	45	5'-8"	4	9	60	5'-10"	4	12	6	4	12	6	4	12	10

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	② ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
0.44	40	26		

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
B	15	5	5	7.5	7.5	6	6'-0"	6'-3"	150.20	6	6	300	5'-8"	6	6	300	5'-8"	5	7	514	5'-11"	4	12	6	4	12	6	4	12	10

CLASS "S" CONCRETE	REINFORCING STEEL (Gr. 60)	③ ADTL. REINF. PER LONG. LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS
0.46	70	26

③ MID-SECTION BAR LAP TABLE

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 328+80

SPECIAL DETAILS

LRFD

b090065_c3.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.		090065	27	460

① SPECIAL DETAILS

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		INSIDE FOOTING DIMENSIONS	
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
6'-0"	5'-0"	0'-9"	0'-8"	30	3:1	6'-11"	1'-0"	5'-10"	1'-8"	0	60	2'-2"	2'-9"	3'-3"	1'-8 1/2"	2'-11 3/8"	12'-6"	25'-0"	11'-6 1/8"	27'-0 7/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
8.22	779

		F1						F2				F3				F4				F5			F6					F7			F8				F9				F10			F11			F12				
	WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY			BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS		REINF. STEEL QTY. PER WING (LBS)
	WING A	4	12	13	L	Min	2'-8"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	12'-2"	4	18	9	L	Min	3'-3"	4	6	15'-1"	4	18	8	Min	1'-8"	-	-	-	-	4	2	12'-8"	4	2	13'-0"	6	12	5	L	3'-4"	253
						Max	7'-3"												6'-4"								X	Min	1'-4"								Max	-											X	1'-8"	
					X	Min	0'-9"												Max									Max	1'-4"																				
						Max	1'-4"												10'-10"								Y	Min	2'-0"								Max	2'-2"												
					Y	Min	2'-0"																					Max	6'-0"																				
						Max	6'-0"																																											
	WING B	4	12	25	L	Min	2'-8"	-	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	24'-8"	4	18	17	L	Min	3'-3"	4	6	27'-7"	4	18	19	Min	1'-8"	4	18	2	Min	4	2	24'-10"	4	2	29'-4"	6	12	5	L	3'-4"	526
						Max	7'-9"												3'-10"								X	Max	1'-4"								Max	2'-10"			36'-11"							X	1'-8"	
					X	Min	0'-9"												Max									Min	2'-0"																				
						Max	1'-10"												21'-10"								Y	Max	6'-0"																				
					Y	Min	2'-0"																																										
						Max	6'-0"																																										

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a"				BOTTOM SLAB REINFORCING STEEL "b"				SIDE WALL REINFORCING STEEL "f"				TOP SLAB DISTRIBUTION REINFORCING STEEL "d"				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e"				SIDE WALL DISTRIBUTION REINFORCING STEEL "d1"				HDWL "k1", "k2" & "h"			
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACEING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	BAR	SIZE	NO. REQ'D	LENGTH
30	3:1	10	5	5	2'-9"	7	7	6	3	6'-0"	6'-2"	4	6	Max 5'-8" Min 3'-0" 5'-8"	4 2	4	6	Max 5'-8" Min 3'-0" 5'-8"	4 2	4	9	8	5'-10"	4	12	6	Max 4'-4" Min 0'-10"	4	12	6	Max 4'-4" Min 0'-10"	4	12	5	LONG 4'-4" SHORT 0'-10"	k1 k2 h	4 4 4	6 6 8	6'-7" 6'-7" 1'-6" Y 0'-6"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
1.35	168

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4"				BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4"				SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4"				TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL			SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL		
	D	S	H	T	B	C	OW	OH	SL	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D
A	10	5	5	7	7	6	6'-0"	6'-2"	22.65	4	6	45	5'-8"	4	6	45	5'-8"	4	9	60	5'-10"	4	12	6	4	12	6	4	12	10

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	② ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
0.44	40	26		

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 328+80

SPECIAL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	28	460

(1) SPECIAL DETAILS

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		INSIDE FOOTING DIMENSIONS	
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
8'-0"	5'-0"	0'-9"	0'-8"	15	3:1	8'-3"	1'-0"	5'-10"	1'-8"	15	45	2'-2"	2'-10"	3'-1"	1'-7 1/4"	2'-0"	12'-6"	17'-6"	11'-11 5/8"	18'-2 3/4"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
6.23	598

		F1					F2				F3				F4				F5				F6					F7			F8				F9			F10			F11			F12				
	WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS		REINF. STEEL QTY. PER WING (LBS)
	WING A	4	12	13	L	Min	2'-8"	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	12'-2"	4	18	9	L	Min	3'-3"	4	6	15'-1"	4	18	8	Min	-	-	-	4	2	12'-8"	4	2	13'-6"	6	12	5	L	3'-4"	256
						Max	7'-4"											6'-4"								Max	7'-3"							1'-8"													
					X	Min	0'-9"											Max								X	Min	1'-4"							Max											X	1'-8"	
						Max	1'-5"											10'-10"									Max	1'-4"							2'-3"													
					Y	Min	2'-0"																			Y	Min	2'-0"							-													
						Max	6'-0"																					Max	6'-0"																				
	WING B	4	12	18	L	Min	1'-8"	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	17'-2"	4	18	12	L	Min	3'-4"	4	6	20'-1"	4	18	13	Min	-	-	-	4	2	17'-6"	4	2	20'-1"	6	12	5	L	3'-4"	342
						Max	7'-7"											2'-8"									Max	7'-3"							1'-8"													
					X	Min	0'-9"											Max								X	Min	1'-4"							Max											X	1'-8"	
						Max	1'-8"											15'-3"									Max	1'-4"							2'-7"													
					Y	Min	1'-0"																			Y	Min	2'-1"							-													
						Max	6'-0"																					Max	6'-0"																				

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a"				BOTTOM SLAB REINFORCING STEEL "b"				SIDE WALL REINFORCING STEEL "f"				TOP SLAB DISTRIBUTION REINFORCING STEEL "d"				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e"				SIDE WALL DISTRIBUTION REINFORCING STEEL "d1"				HDWL "k1", "k2" & "h"			
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACEING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	BAR	SIZE	NO. REQ'D	LENGTH
15	3:1	10	7	5	2'-1"	7	7.5	6	3	8'-0"	6'-2 1/2"	6	6	Max 7'-8" / Min 5'-11" / 7'-8"	1 / 2	5	4	Max 7'-6" / Min 5'-11" / 7'-6"	2 / 3	4	9	7	5'-11"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	5	LONG 2'-12" / SHORT 0'-10"	k1 / k2 / h	4	6 / 6 / 10	7'-11" / 7'-11" / 1'-6" / Y 0'-6"

CLASS "S" CONCRETE (Includes HDWL)	(1) REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
1.29	206

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

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4"				BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4"				SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4"				TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL			SIDE WALL DISTRIBUTION REINF.STEEL "d1" LENGTH = SL		
	D	S	H	T	B	C	OW	OH	SL	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D
A	10	7	5	7	7.5	6	8'-0"	6'-2 1/2"	20.70	6	6	41	7'-8"	5	4	62	7'-8"	4	9	54	5'-10"	4	12	8	4	12	8	4	12	10
B	15	7	5	8.5	8.5	6	8'-0"	6'-5"	11.39	6	6	22	7'-8"	6	6	22	7'-8"	4	6.5	42	6'-1"	4	12	8	4	12	8	4	12	10

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	(2) ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
0.54	75	30		
0.60	78	30		

(2) Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4"				BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4"				SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4"				TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL			SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL		
	D	S	H	T	B	C	OW	OH	SL	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D
C	20	7	5	10	10	6.5	8'-1"	6'-8"	147.65	6	4.5	393	7'-9"	6	4.5	393	7'-9"	6	9	392	6'-4"	4	10	9	4	10	9	4	12	10

CLASS "S" CONCRETE	REINFORCING STEEL (Gr. 60)	(2) ADTL. REINF. PER LONG. LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.
0.70	106	33

(3) MID-SECTION BAR LAP TABLE

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 359+62

SPECIAL DETAILS

LRFD

b090065_c4.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.		090065	29	460

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/5/13

TABULAR DATA BY: A.M.S. DATE: 2/4/13
CHECKED BY: ACP DATE: 2/5/13

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
8'-0"	5'-0"	0'-9"	0'-8"	15	3:1	8'-3"	1'-0"	5'-10"	1'-8"	15	45	2'-2"	2'-10"	3'-1"	1'-7 1/4"	2'-0"	12'-6"	17'-6"	11'-11 5/8"	18'-2 3/4"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
6.72	598

	F1						F2				F3				F4				F5				F6					F7			F8				F9				F10			F11			F12				
	WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY			BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS		REINF. STEEL QTY. PER WING (LBS)
	WING A	4	12	13	L	Min	2'-8"	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	12'-2"	4	18	9	L	Min	3'-3"	4	6	15'-1"	4	18	8	Min	-	-	-	-	4	2	12'-8"	4	2	13'-6"	6	12	5	L	3'-4"	256
						Max	7'-4"										6'-4"										Max	7'-3"						1'-8"														
					X	Min	0'-9"				X	-					Max								X	Min	1'-4"						Max	-												X	1'-8"	
						Max	1'-5"										10'-10"									Max	1'-4"						2'-3"														
					Y	Min	2'-0"				Y	-													Y	Min	2'-0"																				
						Max	6'-0"																			Max	6'-0"																				
	WING B	4	12	18	L	Min	1'-8"	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	17'-2"	4	18	12	L	Min	3'-4"	4	6	20'-1"	4	18	13	Min	-	-	-	-	4	2	17'-6"	4	2	20'-1"	6	12	5	L	3'-4"	342
						Max	7'-7"										2'-8"									Max	7'-3"						1'-8"														
					X	Min	0'-9"				X	-					Max								X	Min	1'-4"						Max	-												X	1'-8"	
						Max	1'-8"										15'-3"									Max	1'-4"						2'-7"														
					Y	Min	1'-0"				Y	-													Y	Min	2'-1"																				
						Max	6'-0"																			Max	6'-0"																				

SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL "k1", "k2" & "h" SIZE	HDWL "k1", "k2" & "h" NO. REQ'D	HDWL "k1", "k2" & "h" LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH				
15	3:1	10	7	5	2'-1"	7	7.5	6	3	8'-0"	6'-2 1/2"	6	6	Max 7'-8" / Min 5'-11"	1	5	4	Max 7'-8" / Min 5'-11"	2	4	9	7	5'-11"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	5	LONG 2'-12" / SHORT 0'-10"	k1 / k2 / h	4 / 4 / 4	6 / 6 / 10	7'-11" / 7'-11" / 1'-6" / Y 0'-6"
															2				3																								

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	7	5	7	7.5	6	8'-0"	6'-2 1/2"	20.70	6	6	41	7'-8"	5	4	62	7'-8"	4	9	54	5'-10"	4	12	8	4	12	8	4	12	10
B	15	7	5	8.5	8.5	6	8'-0"	6'-5"	11.39	6	6	22	7'-8"	6	6	22	7'-8"	4	6.5	42	6'-1"	4	12	8	4	12	8	4	12	10

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.
1.29	206

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
0.54	75	30		
0.60	78	30		

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

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

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

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

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2

DETAILS OF R.C. BOX CULVERT

SINGLE BARREL BOX CULVERT
STA. 359+62

SPECIAL DETAILS

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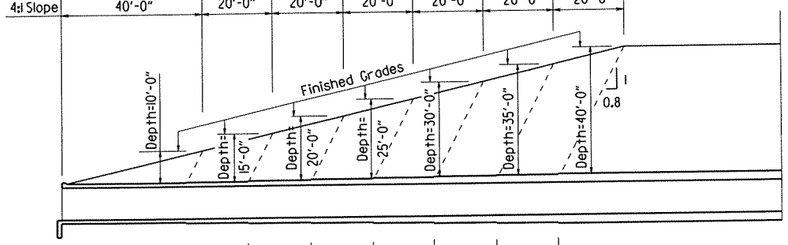
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	38	460

① SPECIAL DETAILS

2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"			
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"			
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"			



Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	G=16'-0"	Mid-Section Length - Varies

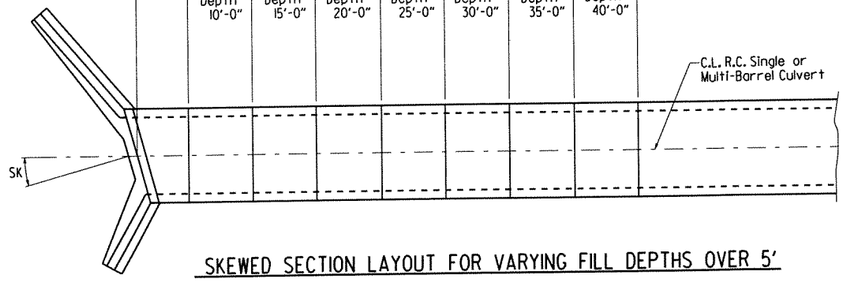
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 5'

Lengths for Non-Skewed Boxes

Note: For fill depths 5' and under, use Mid-Section full length of box culvert.

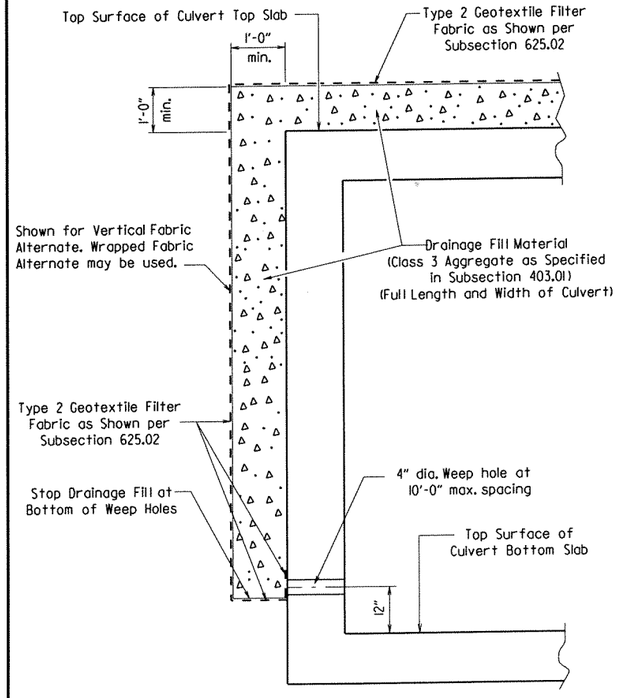
*LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

Section Length	*LL		C	D	E	F	G	Mid-Section Length - Varies	
Section Length	*LL	B	C	D	E	F	G	Mid-Section Length - Varies	
Section Length	*LL	A	B	C	D	E	F	G	Mid-Section Length - Varies
		Depth 10'-0"	Depth 15'-0"	Depth 20'-0"	Depth 25'-0"	Depth 30'-0"	Depth 35'-0"	Depth 40'-0"	



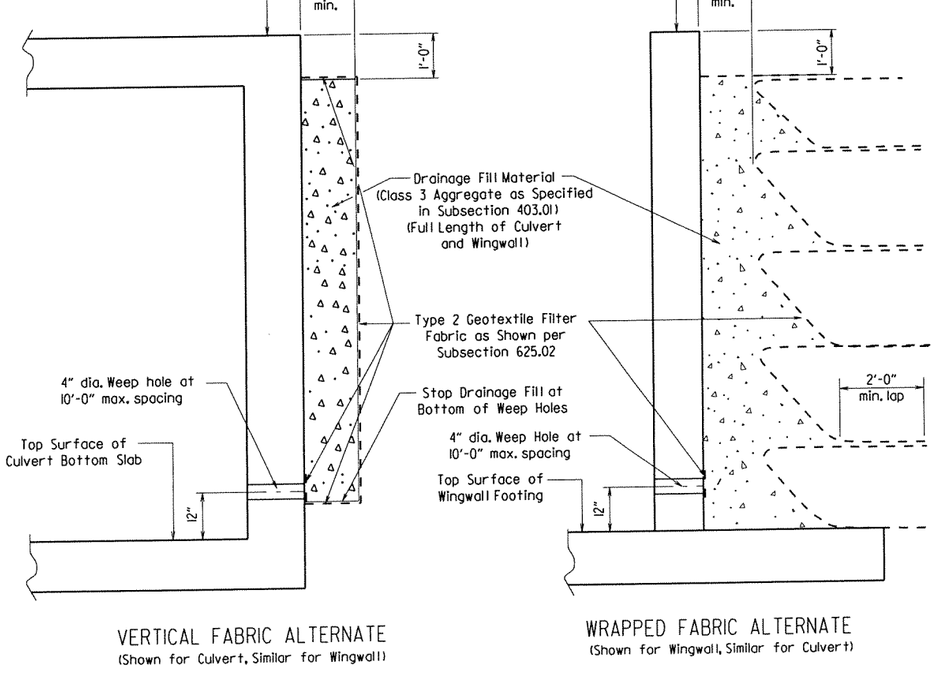
SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 5'

STATE OF ARKANSAS
Carl J. Fussellier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSSELLIER
12/5/13



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



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

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

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

WINGWALL & CULVERT DRAINAGE DETAIL

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

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

Reinforcing Steel shall be AASHTO M 31 or M 53, Grade 60.

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

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

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

Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

Construction Joints between footings and walls shall be made only where shown on the Plans. The maximum length of culvert for which a continuous pour will be permitted is 75 ft. For longer culvert construction, joints shall be provided in slabs and walls at intervals not greater than 50 ft. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise.

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

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Special Provision "LRFD Precast Reinforced Concrete Box Culverts".

SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE
SPECIAL DETAILS

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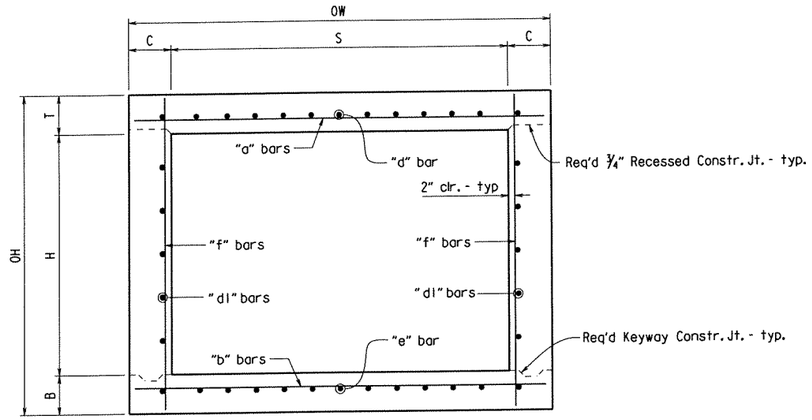
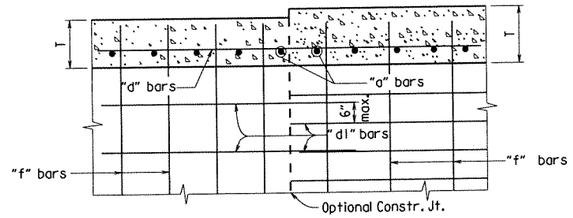
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	31	460

1 SPECIAL DETAILS

STATE OF ARKANSAS
CARL J. FUSSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/5/13



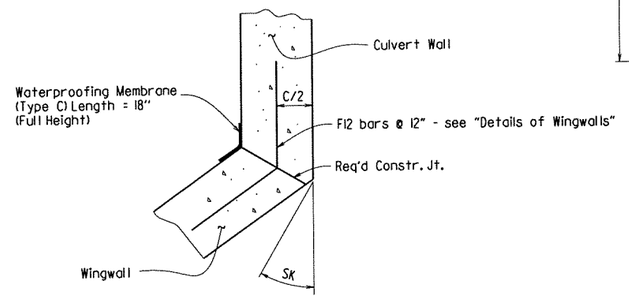
TYPICAL SECTION M-M



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

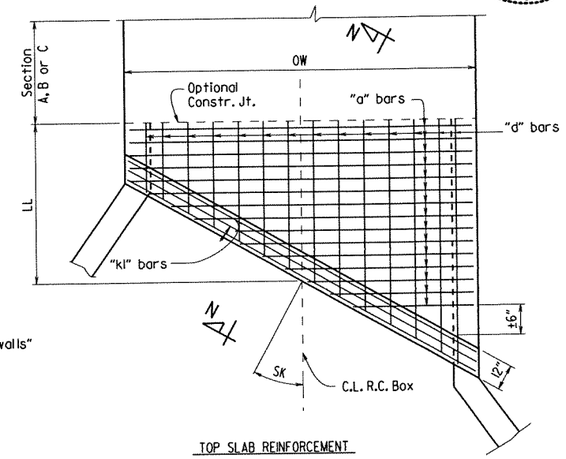
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

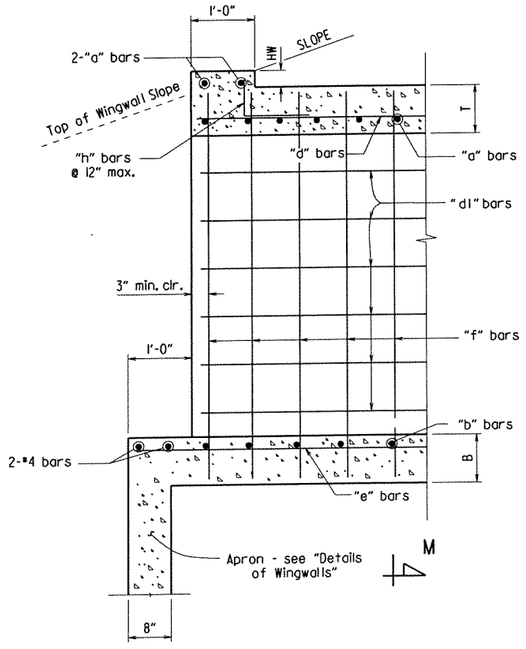


WINGWALL ATTACHMENT

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

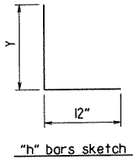


TOP SLAB REINFORCEMENT

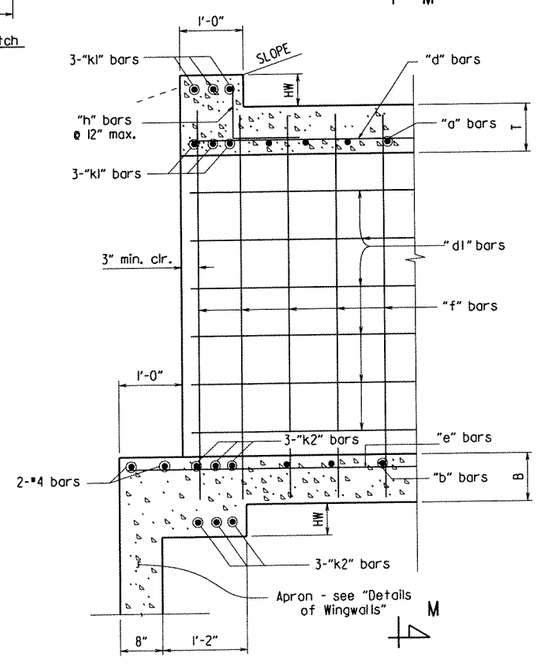


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

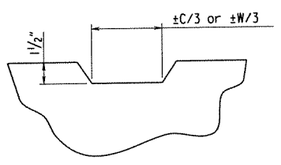


"h" bars sketch

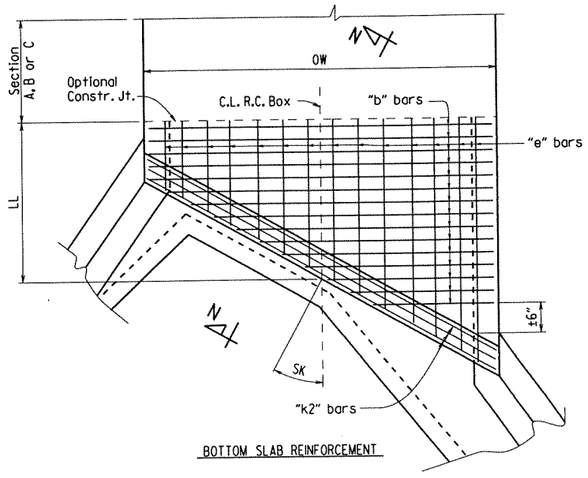


PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

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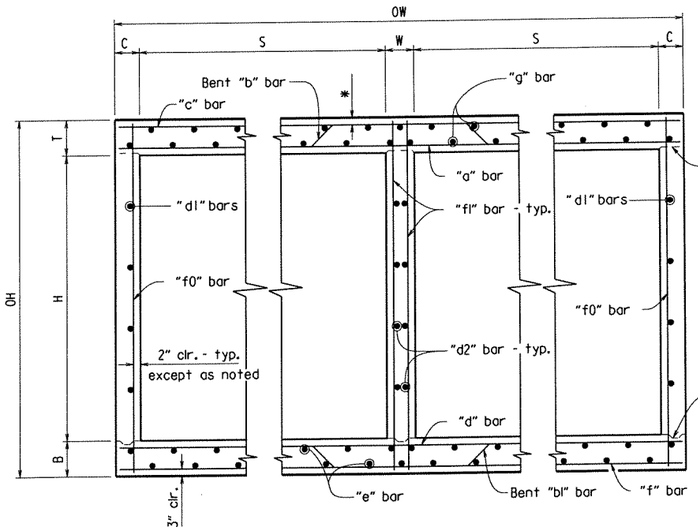
DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	32	460

SPECIAL DETAILS

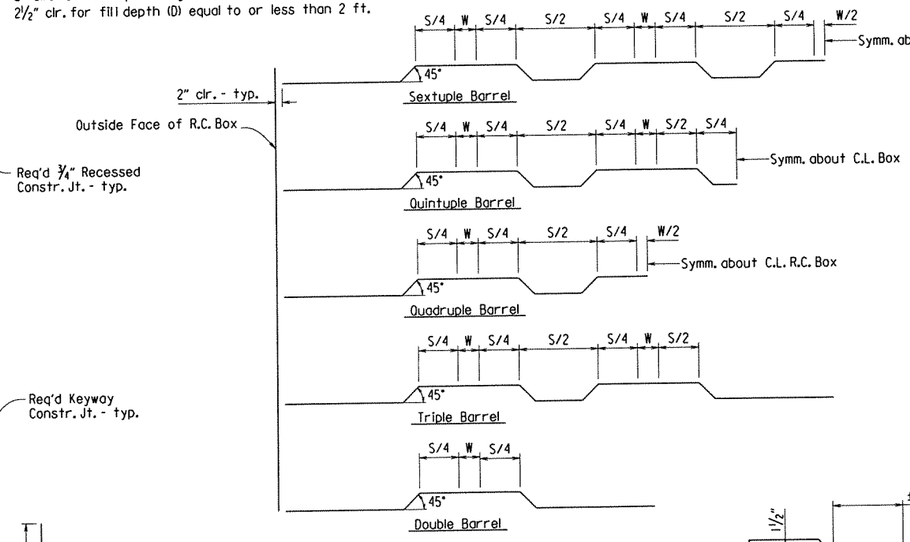


TYPICAL SECTION M-M

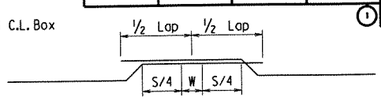
Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

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

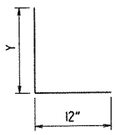


Bent "b" bars or Bent "bl" bars sketch

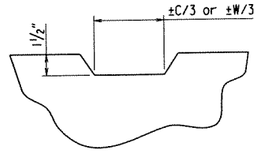


Optional Lap Detail
For Bent "b" bars and Bent "bl" bars

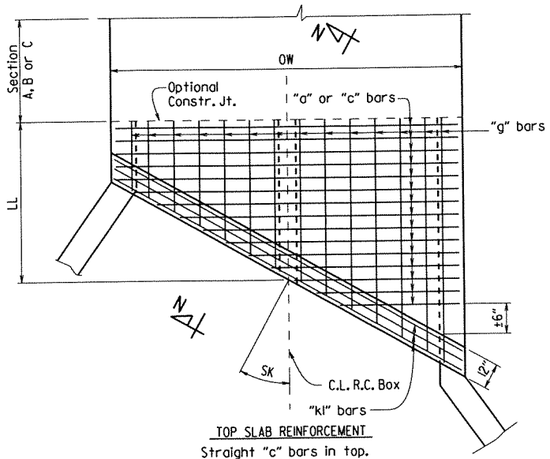
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



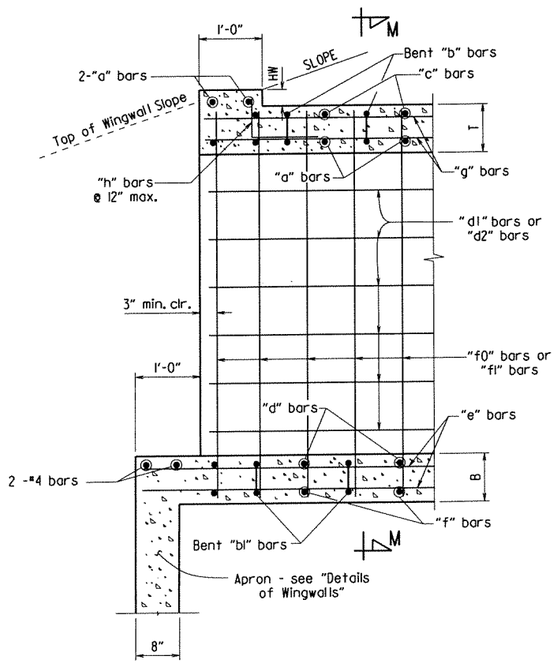
"h" bars sketch



TYPICAL KEYWAY DETAIL

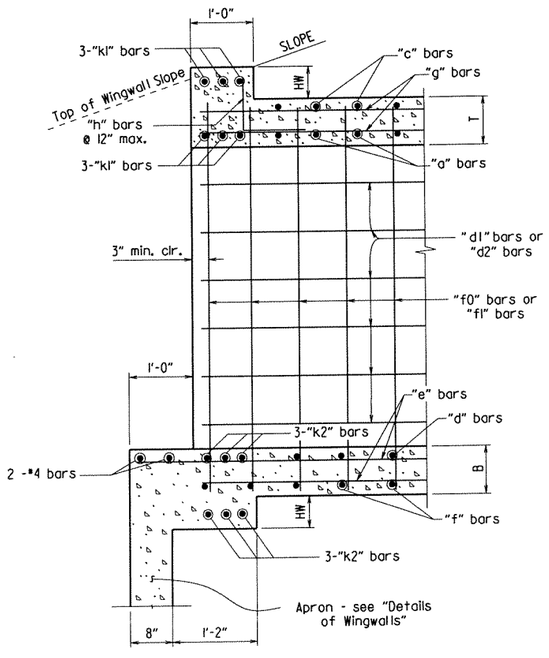


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



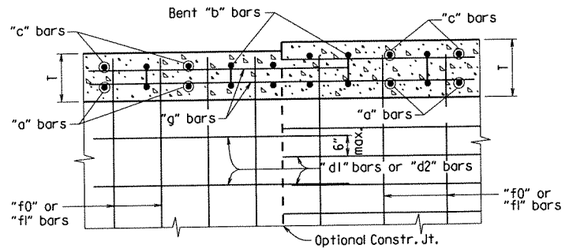
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

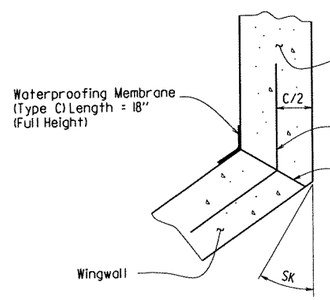
(Skewed Ends)



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

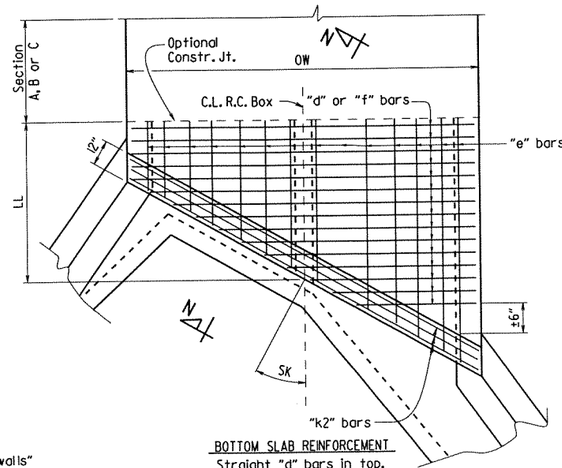
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

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



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

SKEWED END SECTION DETAILS

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

DETAILS OF MULTI-BARREL R.C. BOX CULVERT

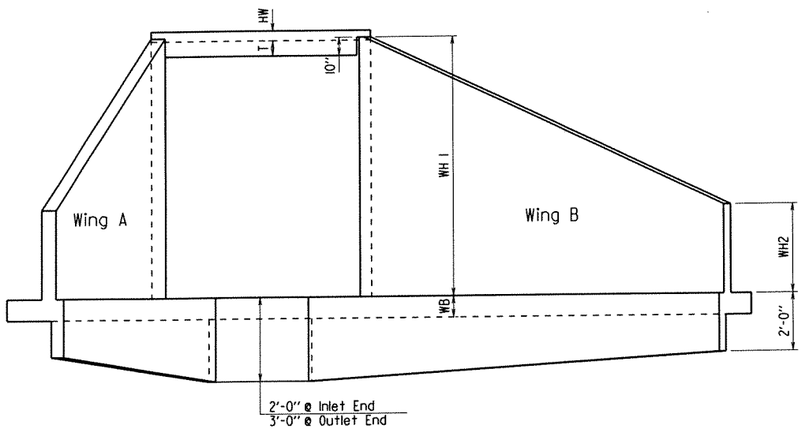
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/3/11

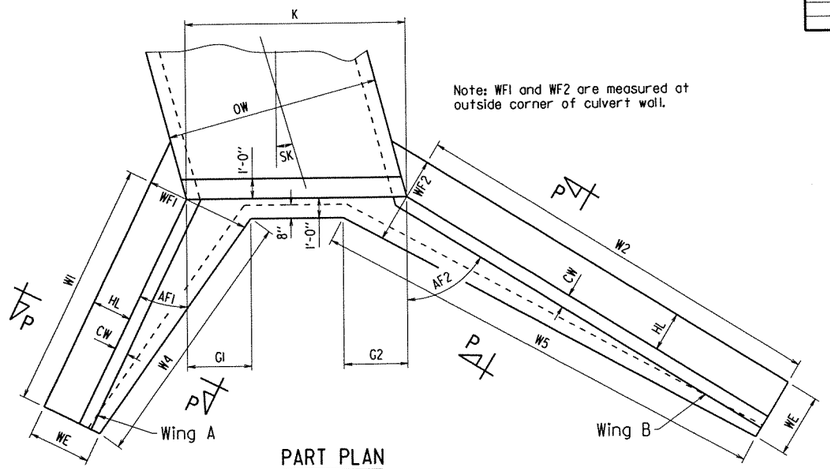
b090065_culvert.dgn

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.		090065	33	460
				1		SPECIAL DETAILS		

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
2/5/13

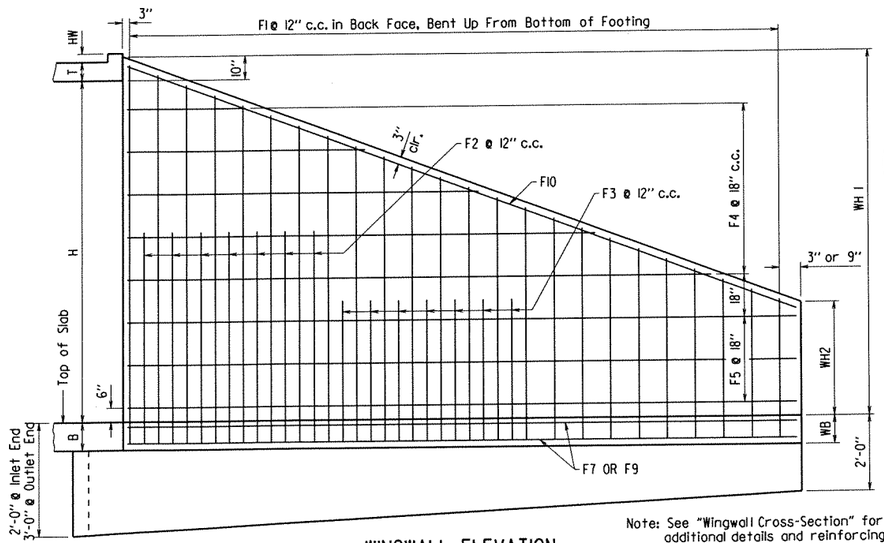


END ELEVATION



Note: WF1 and WF2 are measured at outside corner of culvert wall.

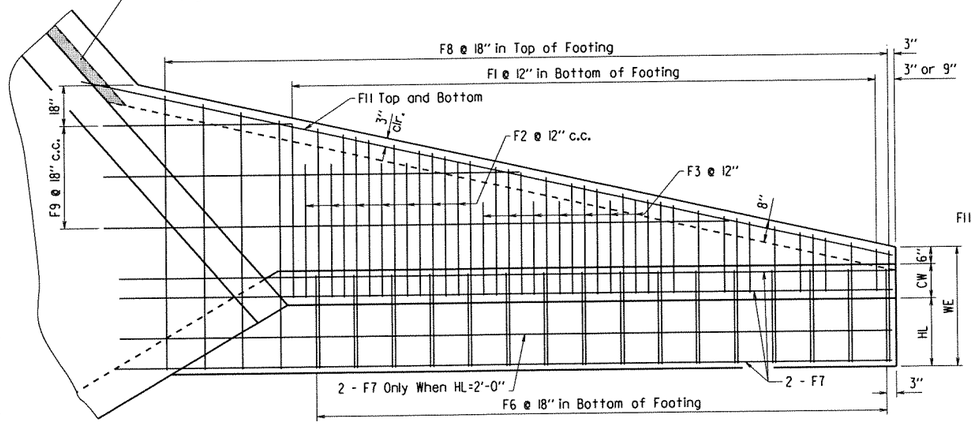
PART PLAN



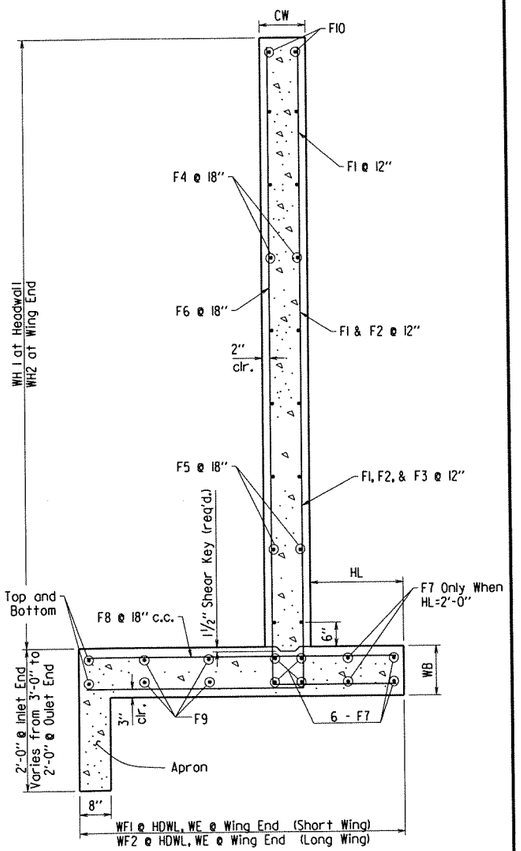
WINGWALL ELEVATION
Showing Back Face Reinforcement

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

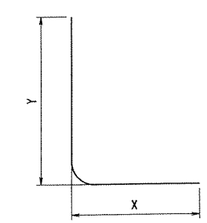
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness).
For skewed ends make the shaded area thickness the greater of WB and (B+HW).



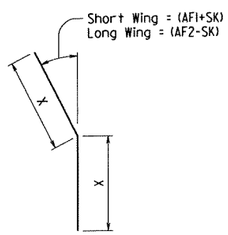
WINGWALL PLAN



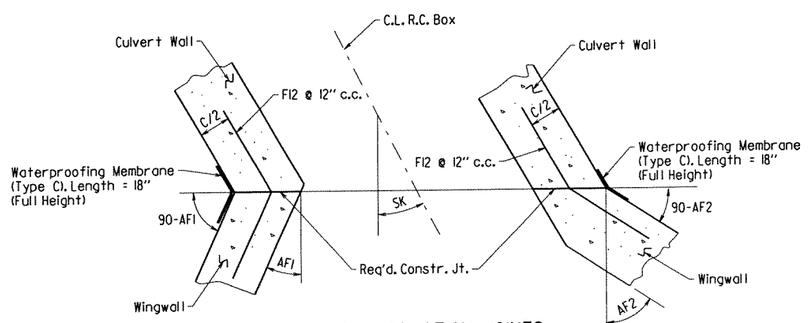
WINGWALL SECTION P-P



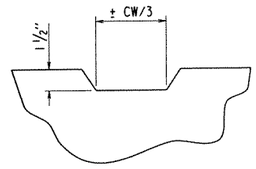
F1, F2, F3, & F6 SKETCH



F12 SKETCH



CONSTRUCTION JOINTS



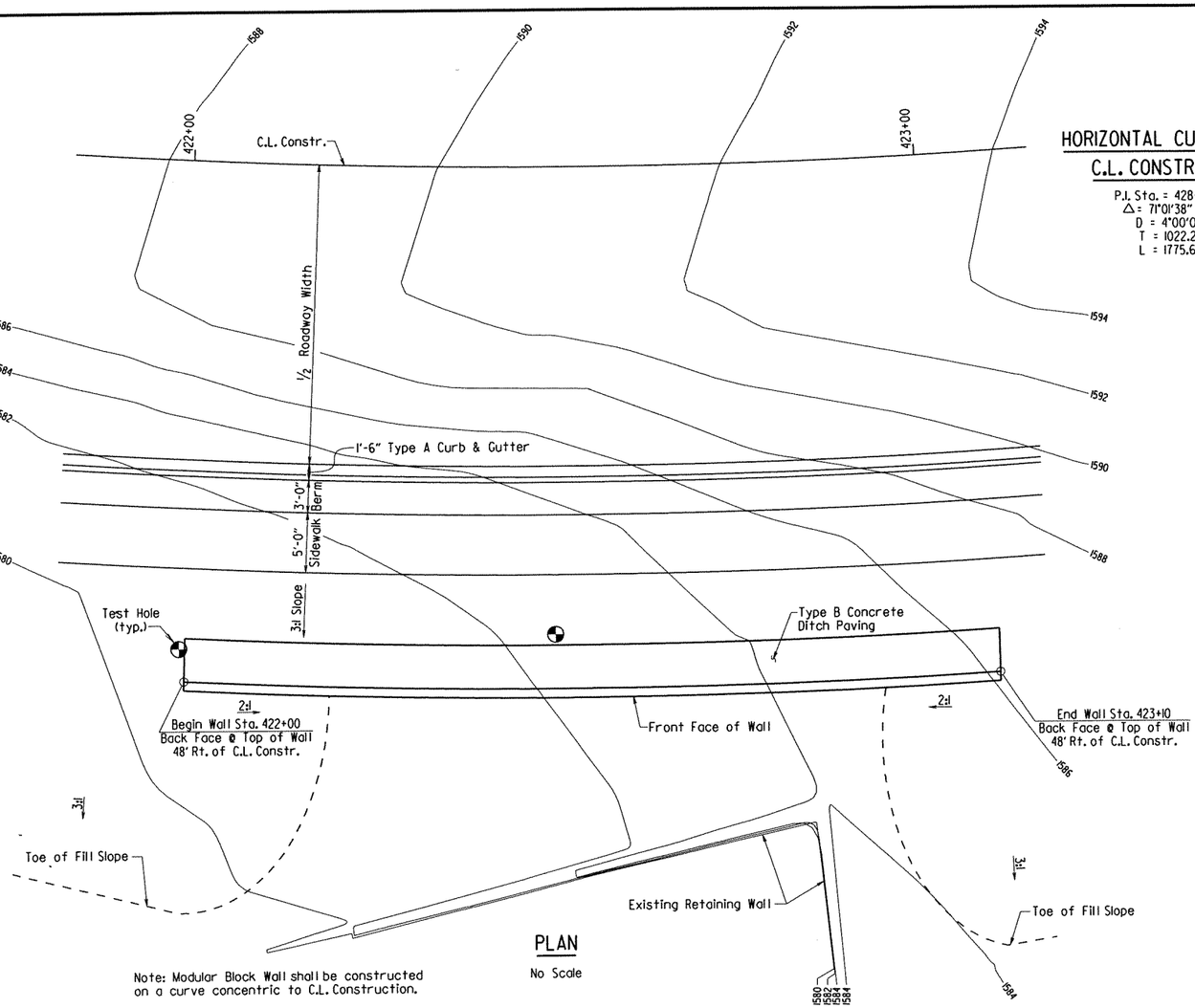
TYPICAL KEYWAY DETAIL

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

b090065_culvert.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.		090065	33A	460

SPECIAL DETAILS



PLAN

No Scale

Note: Modular Block Wall shall be constructed on a curve concentric to C.L. Construction.

HORIZONTAL CURVE DATA
C.L. CONSTRUCTION

P.I. Sta. = 428+99.67
Δ = 71°01'38" Lt.
D = 4°00'00"
T = 1022.23'
L = 1775.68'

General Notes
Design Specifications: AASHTO LRFD Bridge Design Specifications (2012 Edition) and Special Provision Job 090065 "Modular Block Retaining Walls".

Seismic Performance Zone: 1

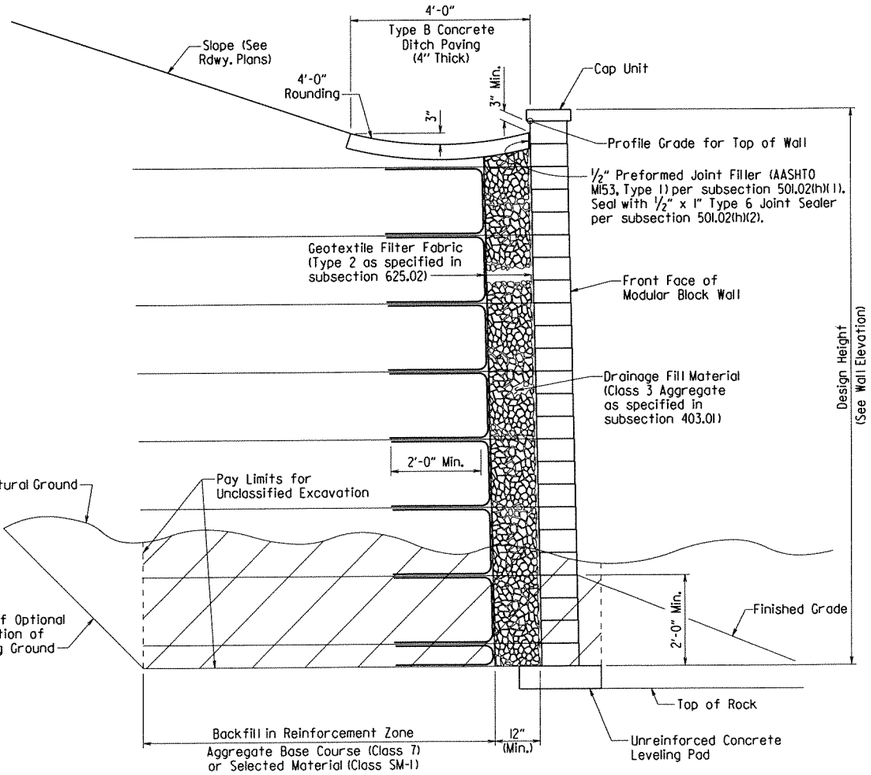
Excavation within the reinforcement zone and for the leveling pad shall be paid for as Unclassified Excavation. The Contractor has the option of using a cut slope or shoring to maintain stability of the cut. Any excavation beyond the limits of the reinforcement zone or any shoring used will not be paid for directly, but shall be considered incidental to the item "Modular Block Retaining Wall".

All backfill and drainage fill material placed behind the modular block wall within the reinforcement zone will be paid for as Select Granular Backfill.

Drainage shall be provided behind the wall as specified in SP Job 090065 "Modular Block Retaining Walls". If pipe underdrains are used for drainage, installation and details shall be in accordance with Std. Dwg. No. PU-1 and Section 611. Work and materials required for pipe underdrains or drainage systems, preformed joint filler and joint sealer shall not be paid for directly, but shall be considered incidental to the item "Modular Block Retaining Wall".

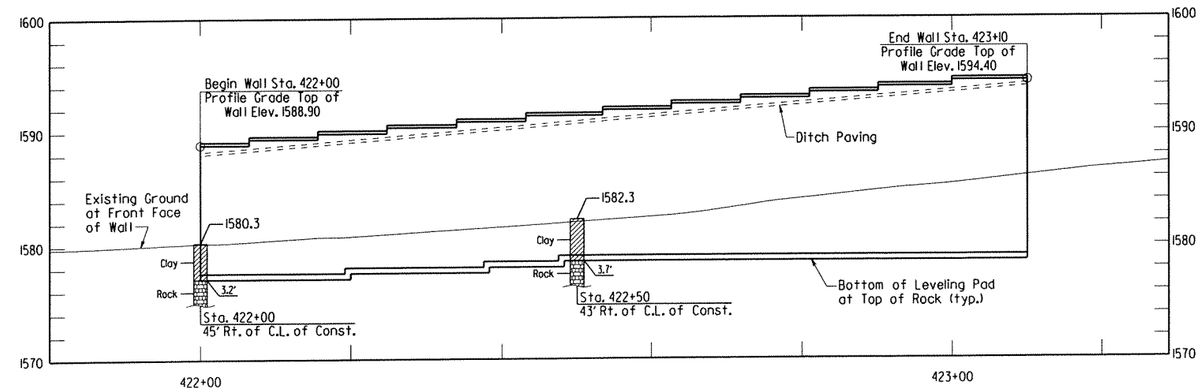
STATE OF ARKANSAS
CARL J. FUSSELMAN
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/7/16

Note: See Dwg. No. CDP-1 for Ditch Paving Details. Weep Holes shall be eliminated from ditch paving.



TYPICAL REINFORCED WALL SECTION

(Near Vertical Setback)
No Scale



WALL ELEVATION

No Scale

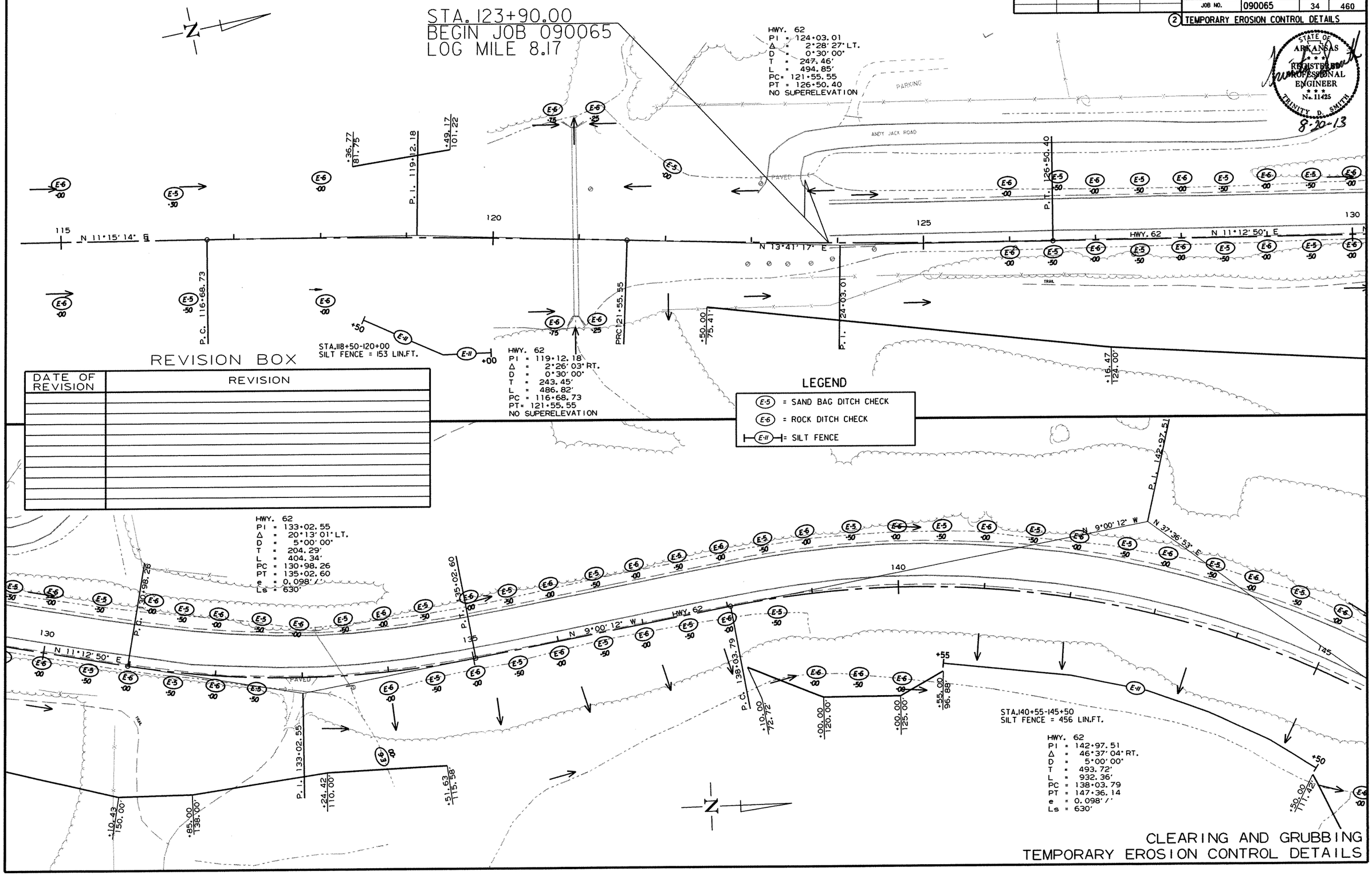
MODULAR BLOCK WALL

SPECIAL DETAILS

b090065_mb2.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	34	460

(2) TEMPORARY EROSION CONTROL DETAILS



REVISION BOX

DATE OF REVISION	REVISION

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

8-20-13

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	35	460

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
3-20-12
TIMOTHY D. SMITH

STA.148+60-150+30
SILT FENCE = 240 LIN.FT.

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STREAM OBSCURED BY TREES

STA.157+50-159+35
SILT FENCE = 185 LIN.FT.

LEGEND

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

REVISION BOX

DATE OF REVISION	REVISION

HWY. 62
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

11/5/2012

R090065.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	090065		36	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA.186+50-188+35
SILT FENCE = 187 LIN.FT.

HWY. 62
PI = 181+29.40
Δ = 8°00'43"LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 177+28.16
PT = 185+29.34
e = 0.030'/'
Ls = 540'

HWY. 62
PI = 207+14.47
Δ = 28°00'31"RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

N 49°39'43" E
N 41°39'00" E
N 41°39'00" E
HWY. 62
HWY. 62
P.C. 177+28.16
P.I. 181+29.40
P.T. 185+29.34
P.C. 202+38.14

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	37	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
I = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

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

STA.230+50-232+05
SILT FENCE = 209 LIN.FT.

11/5/2012

R090065.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	38	460

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 239+43.94
Δ = 17°26'31" LT.
D = 2°15'00"
T = 390.62'
L = 775.19'
PC = 235+53.32
PT = 243+28.51
e = 0.061'/'
Ls = 540'

REVISION BOX

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	39	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

REVISION BOX

DATE OF REVISION	REVISION

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

LEGEND

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

STA.287+00-298+15
SILT FENCE = 1107 LIN.FT.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

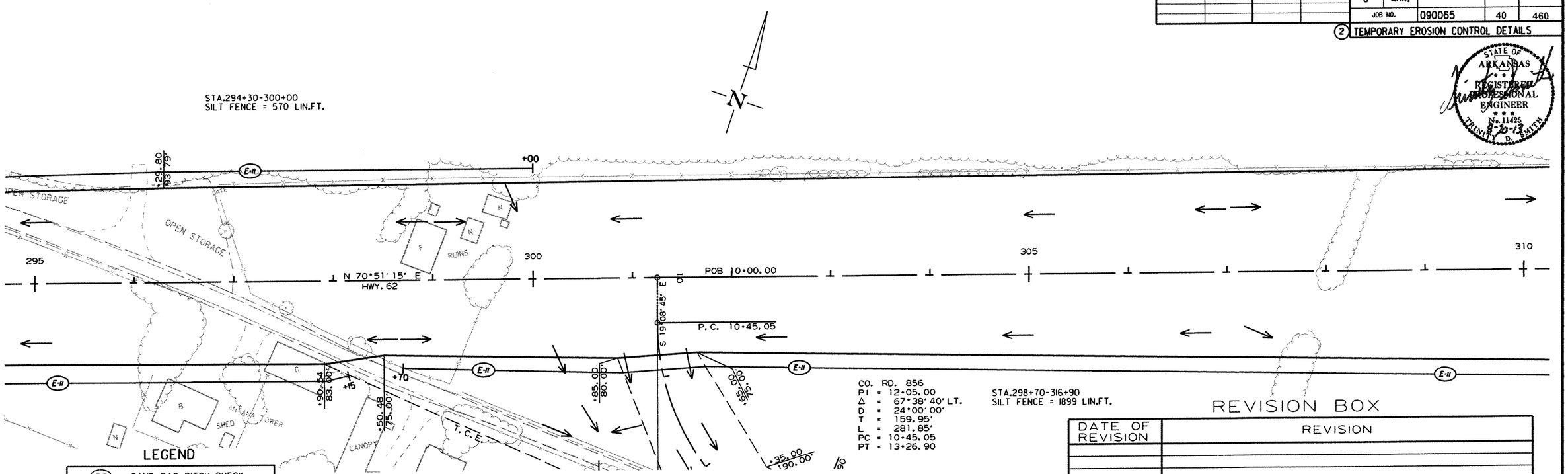
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	40	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N-11425
5-10-12
TRINITY D. SMITH

STA.294+30-300+00
SILT FENCE = 570 LIN.FT.


+29.80
93.79'
E-11
+00
OPEN STORAGE
OPEN STORAGE
GATE
295
F
RUINS
300
N 70°51' 15" E
HWY. 62
POB 10+00.00
305
310
P.C. 10+45.05
S 19°08' 45" E
+85.00
80.00'
+90.64
83.00'
+15
+70
+50.46
75.00'
B
ARKANSAS POWER
SHED
G
CANOPY
T.C.E.
+35.00
190.00'
+95.00
L
L
L

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	41	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA.330+00-337+50
SILT FENCE = 750 LIN.FT.

STA.333+00-339+50
SILT FENCE = 650 LIN.FT.

STA.346+00-352+55
SILT FENCE = 989 LIN.FT.

STA.352+85-354+55
SILT FENCE = 303 LIN.FT.

HWY. 62
PI = 338+78.82
Δ = 3°04' 36" RT.
D = 0°30' 00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION

OLD LIBERTY RD.
PI = 19+98.05
Δ = 1°48' 56" LT.
D = 0°45' 00"
T = 121.05'
L = 242.09'
PC = 18+76.99
PT = 21+19.08

OLD LIBERTY RD.
PI = 14+60.36
Δ = 0°42' 17" RT.
D = 0°30' 00"
T = 70.48'
L = 140.97'
PC = 13+89.87
PT = 15+30.84

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

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

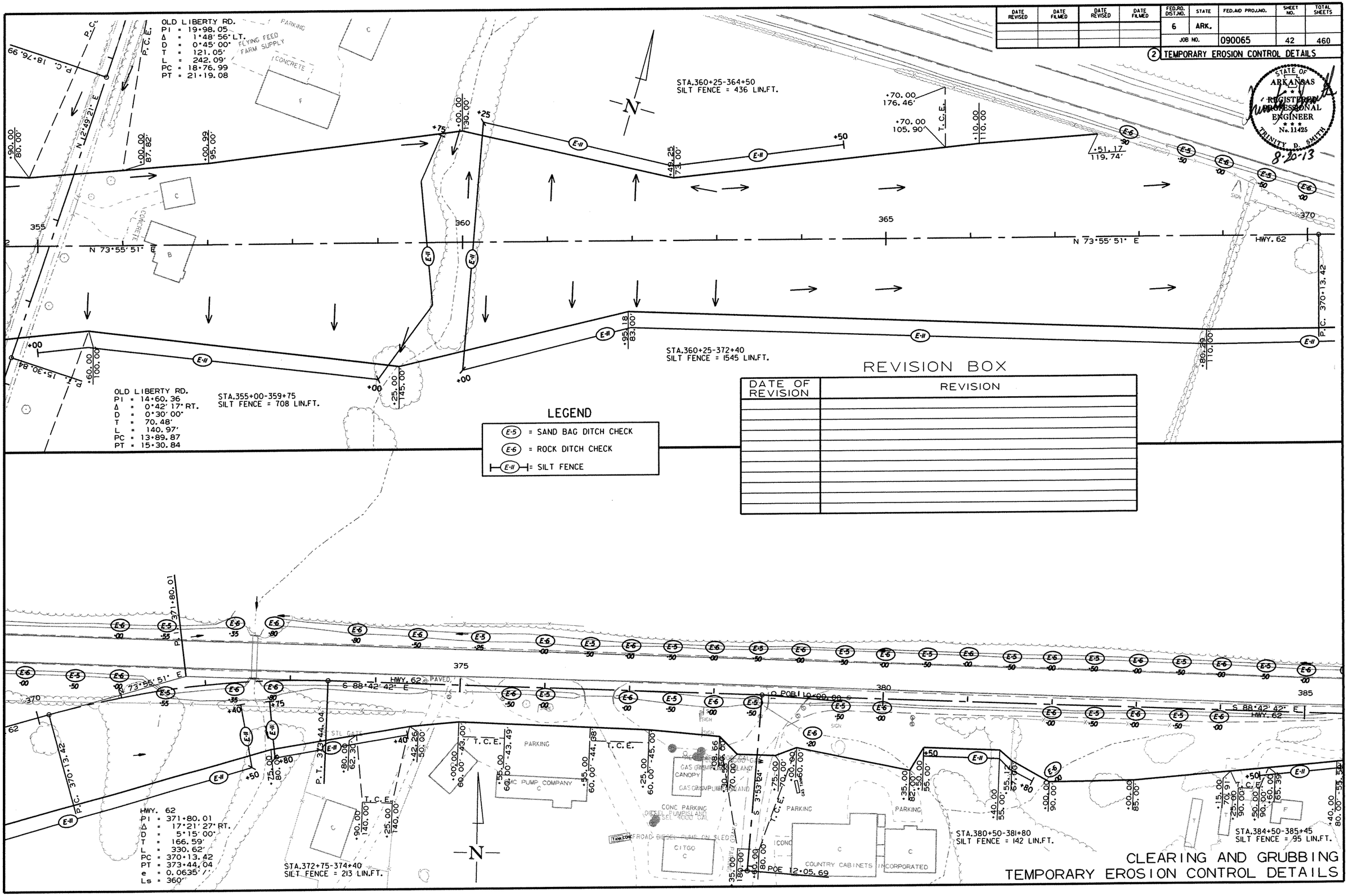
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	42	460

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND

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

REVISION BOX

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	43	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 401+51.12
Δ = 31°56'29" RT.
D = 3°45'00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

STA.389+05-391+00
SILT FENCE = 198 LIN.FT.

STA.392+19-394+15
SILT FENCE = 209 LIN.FT.

STA.394+85-396+80
SILT FENCE = 214 LIN.FT.

STA.397+15-398+60
SILT FENCE = 145 LIN.FT.

STA.398+90-400+25
SILT FENCE = 140 LIN.FT.

STA.408+90-409+85
SILT FENCE = 96 LIN.FT.

STA.409+25-410+25
SILT FENCE = 104 LIN.FT.

STA.410+40-411+50
SILT FENCE = 110 LIN.FT.

LEGEND

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

REVISION BOX

DATE OF REVISION	REVISION

11/5/2012

R090065.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

REVISION BOX

DATE OF REVISION	REVISION

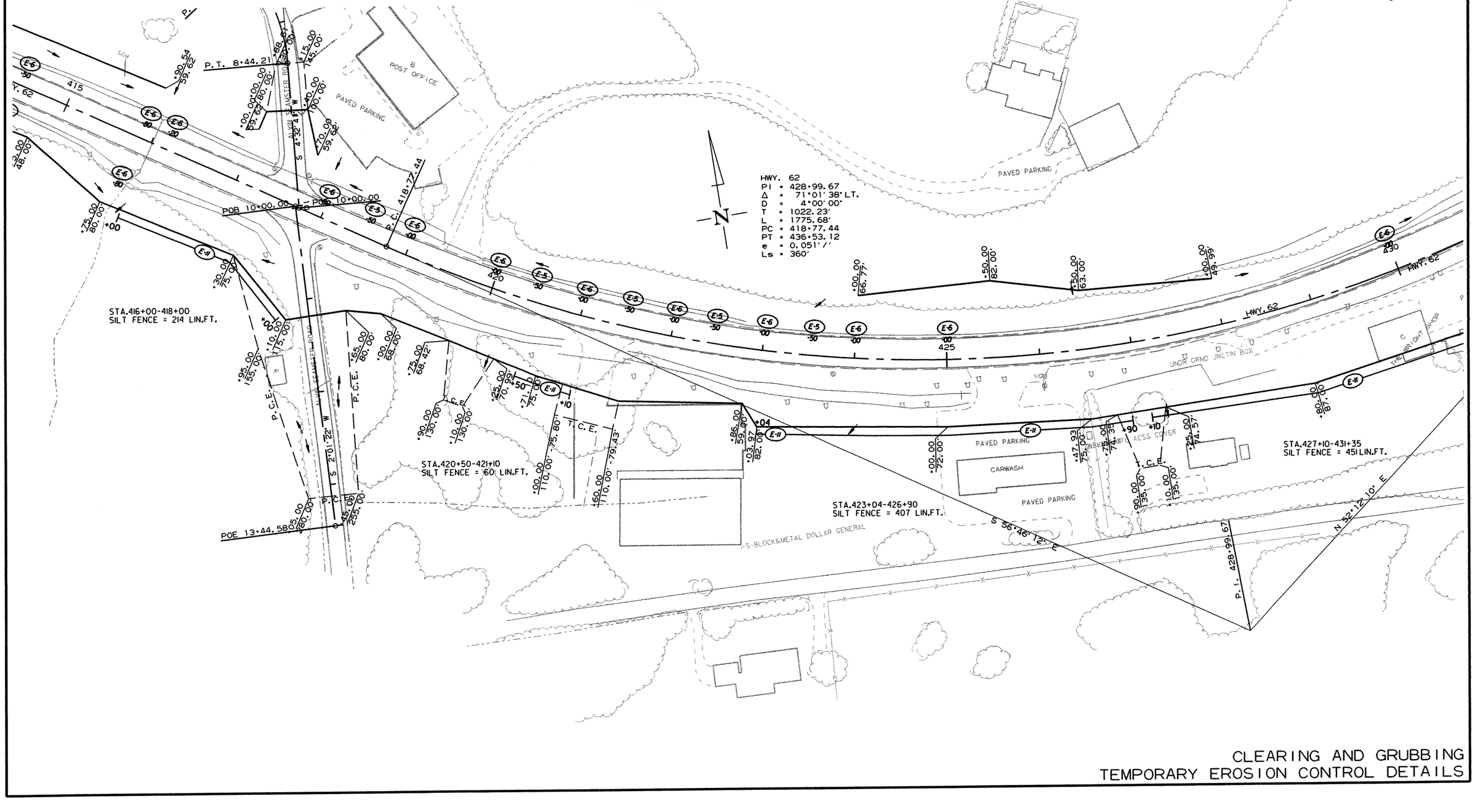
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	44	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

LEGEND

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



CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

R090065.DGN 11/5/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	45	460

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STA.432+75-434+85
SILT FENCE = 223 LIN.FT.

STA.435+10-435+80
SILT FENCE = 72 LIN.FT.

STA.436+05-437+15
SILT FENCE = 115 LIN.FT.

STA.438+50-441+30
SILT FENCE = 316 LIN.FT.

STA.441+60-443+25
SILT FENCE = 194 LIN.FT.

STA.443+90-446+50
SILT FENCE = 277 LIN.FT.

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

STA. 446+50
END JOB 090065

REVISION BOX

DATE OF REVISION	REVISION

11/5/2012

R090065.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	46	460

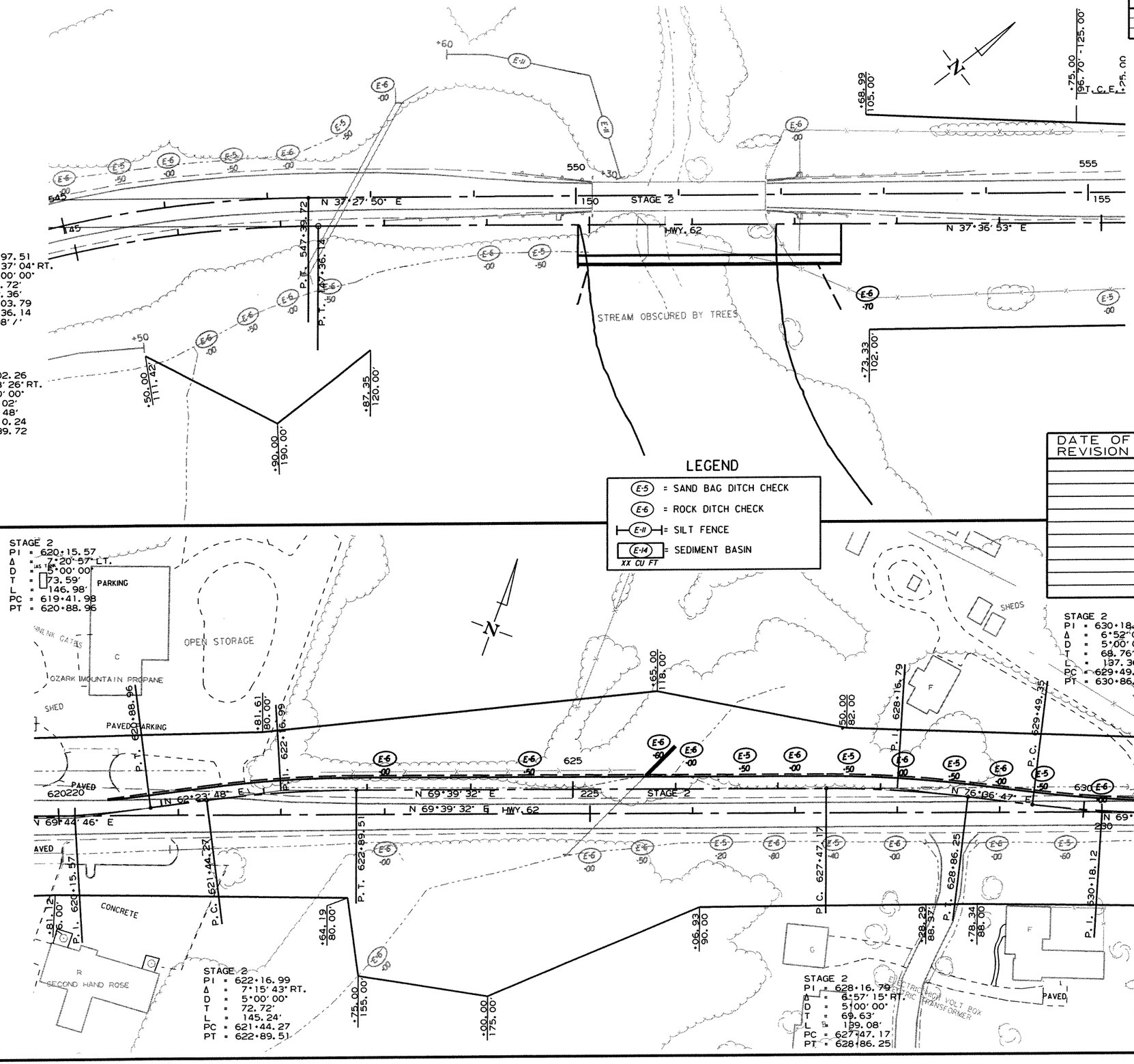
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

FOR ANY AREAS OF THE PROJECT NOT SHOWN IN THIS STAGE, THE TEMPORARY EROSION CONTROL DEVICES SHOULD BE MAINTAINED AS THEY WERE SHOWN IN THE PREVIOUS STAGE.

HWY. 62
PI = 142+97.51
Δ = 46°37' 04" RT.
D = 5°00' 00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 543+02.26
Δ = 46°28' 26" RT.
D = 5°00' 00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION

STAGE 2
PI = 620+15.57
Δ = 7°20' 57" LT.
D = 5°00' 00"
T = 73.59'
L = 146.98'
PC = 619+41.98
PT = 620+88.96

STAGE 2
PI = 622+16.99
Δ = 7°15' 43" RT.
D = 5°00' 00"
T = 72.72'
L = 145.24'
PC = 621+44.27
PT = 622+89.51

STAGE 2
PI = 628+16.79
Δ = 6°57' 15" RT.
D = 5°00' 00"
T = 69.63'
L = 139.08'
PC = 627+47.17
PT = 628+86.25

STAGE 2
PI = 630+18.12
Δ = 6°52' 05" LT.
D = 5°00' 00"
T = 68.76'
L = 137.36'
PC = 629+49.35
PT = 630+86.72

11/5/2012

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STAGE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	47	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 657+13.88
Δ = 0°44'54" LT.
D = 0°15'00"
T = 149.65'
L = 299.30'
PC = 655+64.23
PT = 658+63.53

STAGE 2
PI = 668+91.52
Δ = 1°47'23" LT.
D = 0°30'00"
T = 178.98'
L = 357.93'
PC = 667+12.54
PT = 670+70.48

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 2
PI = 661+57.83
Δ = 2°29'14" RT.
D = 1°00'00"
T = 124.37'
L = 248.71'
PC = 660+33.46
PT = 662+82.17

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" LT.
D = 57°17'45"
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

STAGE 2
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN, XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

11/5/2012

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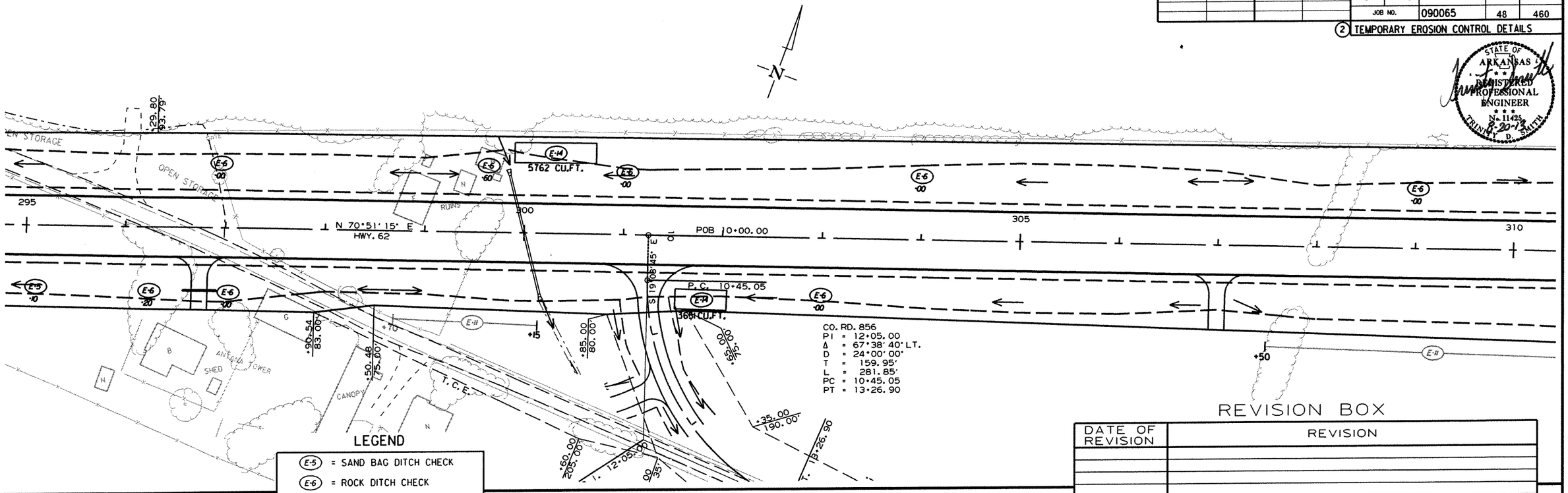
STAGE 1 TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	48	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
8-20-12
TRINITY D. SMITH

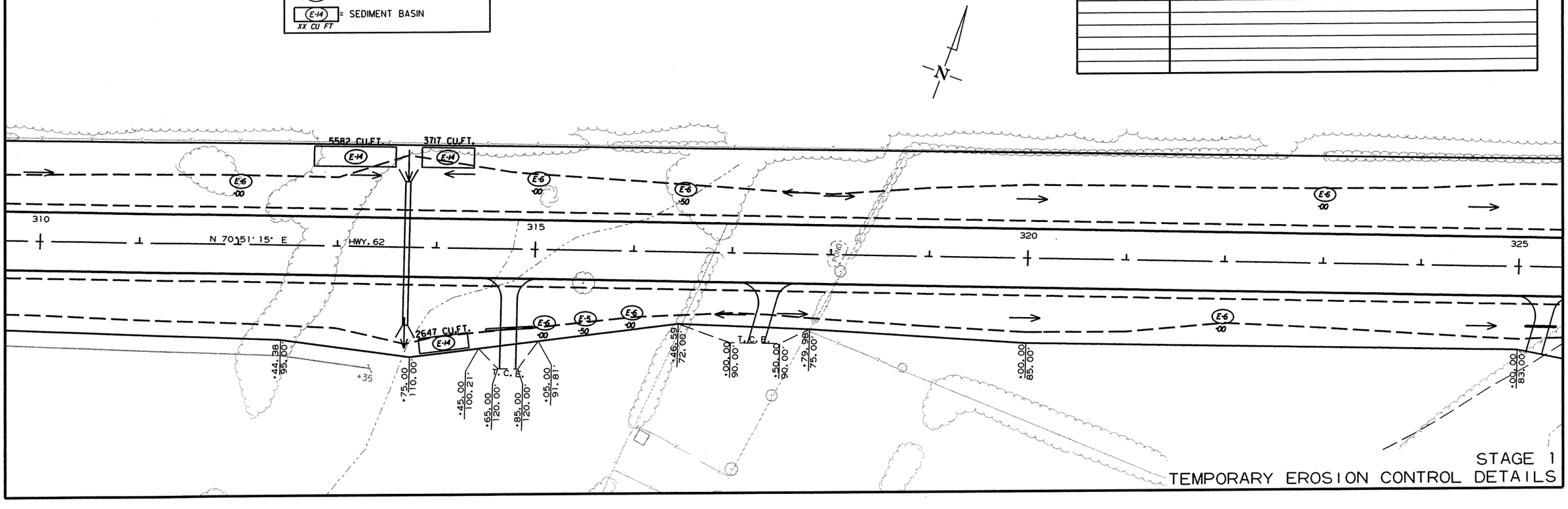


LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION



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STAGE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	49	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

N

9927 CU.FT.

21978 CU.FT.

8391 CU.FT.

17049 CU.FT.

POND

HWY. 62

N 70°51'15" E

N 73°55'51" E

P.C. 335+71.07

P.I. 338+78.82

GAS TANK

TRAIL

HWY. 62
PI = 338+78.82
Δ = 3°04'36" RT.
D = 0°30'00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION

REVISION BOX

DATE OF REVISION	REVISION

OLD LIBERTY RD.
PI = 19+98.05
Δ = 1°48'56" LT.
D = 0°45'00"
T = 121.05'
L = 242.09'
PC = 18+76.99
PT = 21+19.08

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN, XX CU FT

N

1708 CU.FT.

2577 CU.FT.

HWY. 62

N 73°55'51" E

P.I. 341+86.42

POND

T.C.E.

HWY. 62
PI = 338+78.82
Δ = 3°04'36" RT.
D = 0°30'00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION

OLD LIBERTY RD.
PI = 14+60.36
Δ = 0°42'17" RT.
D = 0°30'00"
T = 70.48'
L = 140.97'
PC = 13+89.87
PT = 15+30.84

OLD LIBERTY RD.

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STAGE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	50	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

OLD LIBERTY RD.
PI = 19+98.05
Δ = 1°48'56" LT.
D = 0°45'00"
T = 121.05'
L = 242.09'
PC = 18+76.99
PT = 21+19.08

STAGE 2
PI = 757+17.20
Δ = 20°44'49" RT.
D = 3°15'00"
T = 322.72'
L = 638.37'
PC = 753+94.48
PT = 760+32.85

OLD LIBERTY RD.
PI = 14+60.36
Δ = 0°42'17" RT.
D = 0°30'00"
T = 70.48'
L = 140.97'
PC = 13+89.87
PT = 15+30.84

4535 CU.FT.
4237 CU.FT.
3260 CU.FT.

STAGE 2 S 88°42'03" E

N 73°55'51" E

HWY. 62

REVISION BOX

DATE OF REVISION	REVISION

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	51	460

(2) TEMPORARY EROSION CONTROL DETAILS

FOR ANY AREAS OF THE PROJECT NOT SHOWN IN THIS STAGE, THE TEMPORARY EROSION CONTROL DEVICES SHOULD BE MAINTAINED AS THEY WERE SHOWN IN THE PREVIOUS STAGE.

STA. 123+90.00
BEGIN JOB 090065
LOG MILE 8.17

STAGE 2
PI = 519+12.18
Δ = 00°09'04" LT.
D = 0°15'00"
T = 30.20'
L = 60.39'
PC = 518+81.98
PT = 519+42.37

HWY. 62
PI = 124+03.01
Δ = 2°28'27" LT.
D = 0°30'00"
T = 247.46'
L = 494.85'
PC = 121+55.55
PT = 126+50.40
NO SUPERELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 119+12.18
Δ = 2°26'03" RT.
D = 0°30'00"
T = 243.45'
L = 486.82'
PC = 116+68.73
PT = 121+55.55
NO SUPERELEVATION

REVISION BOX

DATE OF REVISION	REVISION

STA.121+20-122+50
SILT FENCE = 141 LIN.FT.

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) XX CU FT = SEDIMENT BASIN

HWY. 62
PI = 133+02.55
Δ = 20°13'01" LT.
D = 5°00'00"
T = 204.29'
L = 404.34'
PC = 130+98.26
PT = 135+02.60
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 532+99.33
Δ = 20°06'47" LT.
D = 5°00'00"
T = 203.22'
L = 402.26'
PC = 530+96.11
PT = 534+98.37

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 543+02.26
Δ = 46°28'26" RT.
D = 5°00'00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72

STA.134+05-138+10
SILT FENCE = 418 LIN.FT.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	52	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 543+02.26
Δ = 46°28'26" RT.
D = 5°00'00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72

9969 CU.FT.
2454 CU.FT.
4250 CU.FT.
8376 CU.FT.
23457 CU.FT.

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN
- E-14 = SEDIMENT BASIN (XX CU FT)

REVISION BOX

DATE OF REVISION	REVISION

STAGE 2
PI = 563+12.32
Δ = 12°11'53" RT.
D = 1°15'00"
T = 489.77'
L = 975.84'
PC = 558+22.55
PT = 567+98.39

HWY. 62
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

STAGE 2
PI = 563+12.32
Δ = 12°11'53" RT.
D = 1°15'00"
T = 489.77'
L = 975.84'
PC = 558+22.55
PT = 567+98.39

STA.171+50-172+30
DIVERSION DITCH = 80 LIN.FT.

STA.172+70-185+30
DIVERSION DITCH = 1260 LIN.FT.

STA.173+00-176+60
DIVERSION DITCH = 360 LIN.FT.

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	53	460

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 62
PI = 181+29.40
Δ = 8°00'43" LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 177+28.16
PT = 185+29.34
e = 0.030'/'
Ls = 540'

STAGE 2
PI = 581+45.15
Δ = 8°00'43" LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 577+43.91
PT = 585+45.09

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN
- E-14 = SEDIMENT BASIN (XX CU FT)

STA.182+00-185+00
DIVERSION DITCH = 300 LIN.FT.

STA.200+50-201+60
SILT FENCE = 137 LIN.FT.

5235 CU.FT.

14502 CU.FT.

REVISION BOX

DATE OF REVISION	REVISION

HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

STAGE 2
PI = 607+30.23
Δ = 28°05'45" RT.
D = 3°00'00"
T = 477.88'
L = 936.53'
PC = 602+52.35
PT = 611+88.88

11/5/2012

R090065.DGN

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	54	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN, XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

STAGE 2
PI = 607+30.23
Δ = 28°05'45" RT.
D = 3°00'00"
T = 477.88'
L = 936.53'
PC = 602+52.35
PT = 611+88.88

HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077
Ls = 540'

STAGE 2
PI = 620+15.57
Δ = 7°20'57" LT.
D = 5°00'00"
T = 73.59'
L = 146.98'
PC = 619+41.98
PT = 620+88.96

STAGE 2
PI = 622+16.99
Δ = 7°15'43" RT.
D = 5°00'00"
T = 72.72'
L = 145.24'
PC = 621+44.27
PT = 622+89.51

STAGE 2
PI = 628+16.79
Δ = 6°57'15" RT.
D = 5°00'00"
T = 69.68'
L = 139.08'
PC = 627+47.17
PT = 628+86.25

STAGE 2
PI = 630+18.12
Δ = 6°52'05" LT.
D = 5°00'00"
T = 68.76'
L = 137.36'
PC = 629+49.35
PT = 630+86.72

STAGE 2
PI = 638+73.86
Δ = 17°36'56" LT.
D = 2°00'00"
T = 443.89'
L = 880.78'
PC = 634+29.97
PT = 643+10.75

1625 CU.FT.
8614 CU.FT.
4566 CU.FT.

STAGE 2

11/5/2012

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	55	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 638+73.86
Δ = 17°36'56" LT.
D = 2°00'00"
T = 443.89'
L = 880.78'
PC = 634+29.97
PT = 643+10.75

HWY. 62
PI = 239+43.94
Δ = 17°26'31" LT.
D = 2°15'00"
T = 390.62'
L = 775.19'
PC = 235+53.32
PT = 243+28.51
e = 0.061'/'
Ls = 540'

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) XX CU FT = SEDIMENT BASIN

STAGE 2
PI = 657+13.88
Δ = 0°44'54" LT.
D = 0°15'00"
T = 149.65'
L = 299.30'
PC = 655+64.23
PT = 658+63.53

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 2
PI = 661+57.83
Δ = 2°29'14" RT.
D = 1°00'00"
T = 124.37'
L = 248.71'
PC = 660+33.46
PT = 662+82.17

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" RT.
R = 100.00'
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

STAGE 2
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	56	460

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 668+91.52
Δ = 1°47'23" LT.
D = 0°30'00"
T = 178.98'
L = 357.93'
PC = 667+12.54
PT = 670+70.48

STAGE 2
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.48'
L = 326.83'
PC = 663+51.33
PT = 666+78.17

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

STAGE 2
PI = 693+01.40
Δ = 16°51'31" RT.
D = 1°48'00"
T = 471.71'
L = 936.59'
PC = 688+29.70
PT = 697+66.29

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN
- E-14 = SEDIMENT BASIN (XX CU FT)

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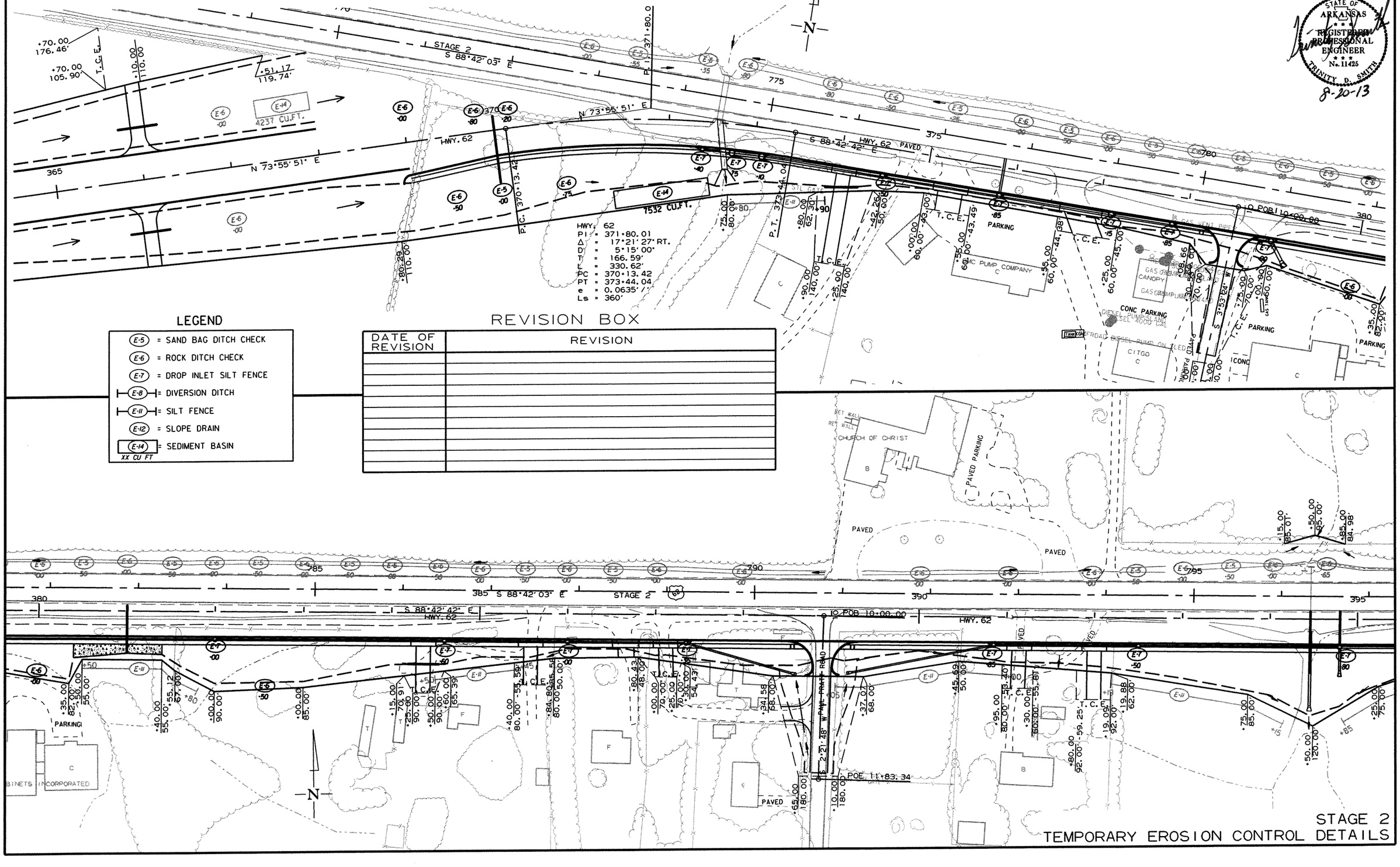
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	57	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN
  XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	58	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 803+03.25
Δ = 31°55' 51" RT.
D = 3°48' 00"
T = 431.37'
L = 840.29'
PC = 798+71.88
PT = 807+12.17

HWY. 62
PI = 401+51.12
Δ = 31°56' 29" RT.
D = 3°45' 00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

STA.404+50-406+30
SILT FENCE = 180 LIN.FT.

STA.406+60-407+60
SILT FENCE = 100 LIN.FT.

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN, XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

STAGE 3
PI = 1418+32.16
Δ = 4°00' 15" LT.
D = 4°00' 00"
T = 50.07'
L = 100.11'
PC = 1417+82.08
PT = 1418+82.19

STAGE 2
PI = 830+96.67
Δ = 71°01' 38" LT.
D = 3°54' 00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44

HWY. 62
PI = 428+99.67
Δ = 71°01' 38" LT.
D = 4°00' 00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3
PI = 1429+16.44
Δ = 70°05' 03" LT.
D = 4°00' 00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

STA.411+50-415+75
SILT FENCE = 431 LIN.FT.

STAGE 3
PI = 1417+38.55
Δ = 3°03' 40" RT.
D = 4°00' 00"
T = 38.27'
L = 76.53'
PC = 1417+00.27
PT = 1417+76.80

STA.418+60-419+80
SILT FENCE = 133 LIN.FT.

STA.420+20-420+50
SILT FENCE = 30 LIN.FT.

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	59	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-20-12
TRINITY D. SMITH

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 2
PI = 830+96.67
Δ = 71°01'38" LT.
D = 3°54'00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44

STAGE 3
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

STAGE 2
PI = 843+12.02
Δ = 25°01'19" RT.
D = 4°30'00"
T = 282.53'
L = 556.04'
PC = 840+29.49
PT = 845+85.53

STAGE 3
PI = 1441+88.62
Δ = 25°01'19" RT.
D = 4°00'00"
T = 317.84'
L = 625.55'
PC = 1438+70.77
PT = 1444+96.32

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN XX CU FT

REVISION BOX

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STA. 446+50
END JOB 090065

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	60	460

(2) TEMPORARY EROSION CONTROL DETAILS

FOR ANY AREAS OF THE PROJECT NOT SHOWN IN THIS STAGE, THE TEMPORARY EROSION CONTROL DEVICES SHOULD BE MAINTAINED AS THEY WERE SHOWN IN THE PREVIOUS STAGE.

STA. 123+90.00
BEGIN JOB 090065
LOG MILE 8.17

HWY. 62
PI = 124+03.01
Δ = 2°28'27" LT.
D = 0°30'00"
T = 247.46'
L = 494.85'
PC = 121+55.55
PT = 126+50.40
NO SUPERELEVATION

STAGE 3
PI = 1124+03.55
Δ = 4°30'51" LT.
D = 1°00'00"
T = 225.83'
L = 451.43'
PC = 1121+77.72
PT = 1126+29.15

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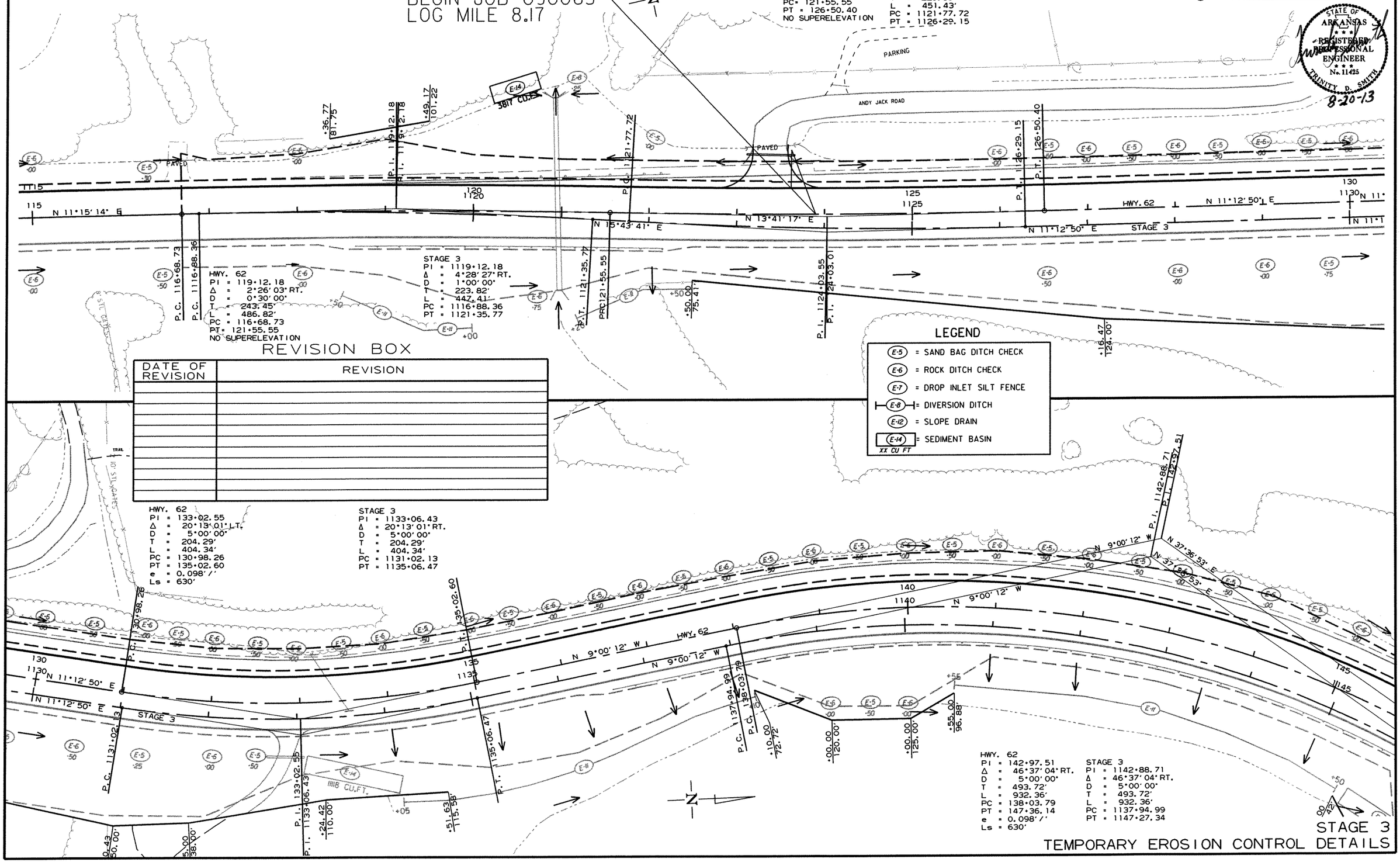
8-20-13



HWY. 62
PI = 119+12.18
Δ = 2°26'03" RT.
D = 0°30'00"
T = 243.45'
L = 486.82'
PC = 116+68.73
PT = 121+55.55
NO SUPERELEVATION

STAGE 3
PI = 1119+12.18
Δ = 4°28'27" RT.
D = 1°00'00"
T = 223.82'
L = 447.41'
PC = 1116+88.36
PT = 1121+35.77

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN (XX CU FT)

HWY. 62
PI = 133+02.55
Δ = 20°13'01" LT.
D = 5°00'00"
T = 204.29'
L = 404.34'
PC = 130+98.26
PT = 135+02.60
e = 0.098'/'
Ls = 630'

STAGE 3
PI = 1133+06.43
Δ = 20°13'01" RT.
D = 5°00'00"
T = 204.29'
L = 404.34'
PC = 1131+02.13
PT = 1135+06.47

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 3
PI = 1142+88.71
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 1137+94.99
PT = 1147+27.34

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	61	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 3
PI = 1142+88.71
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 1137+94.99
PT = 1147+27.34

STAGE 3
PI = 1153+77.62
Δ = 1°17'42" LT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1152+48.12
PT = 1155+07.11

STAGE 3
PI = 1156+43.10
Δ = 1°17'42" RT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1155+13.59
PT = 1157+72.59

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) XX CU FT = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION

HWY. 62
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

STA.172+00-173+00
DIVERSION DITCH = 106 LIN.FT.
STA.172+00-173+00
DIVERSION DITCH = 104 LIN.FT.
STA.172+00-180+00
DIVERSION DITCH = 804 LIN.FT.

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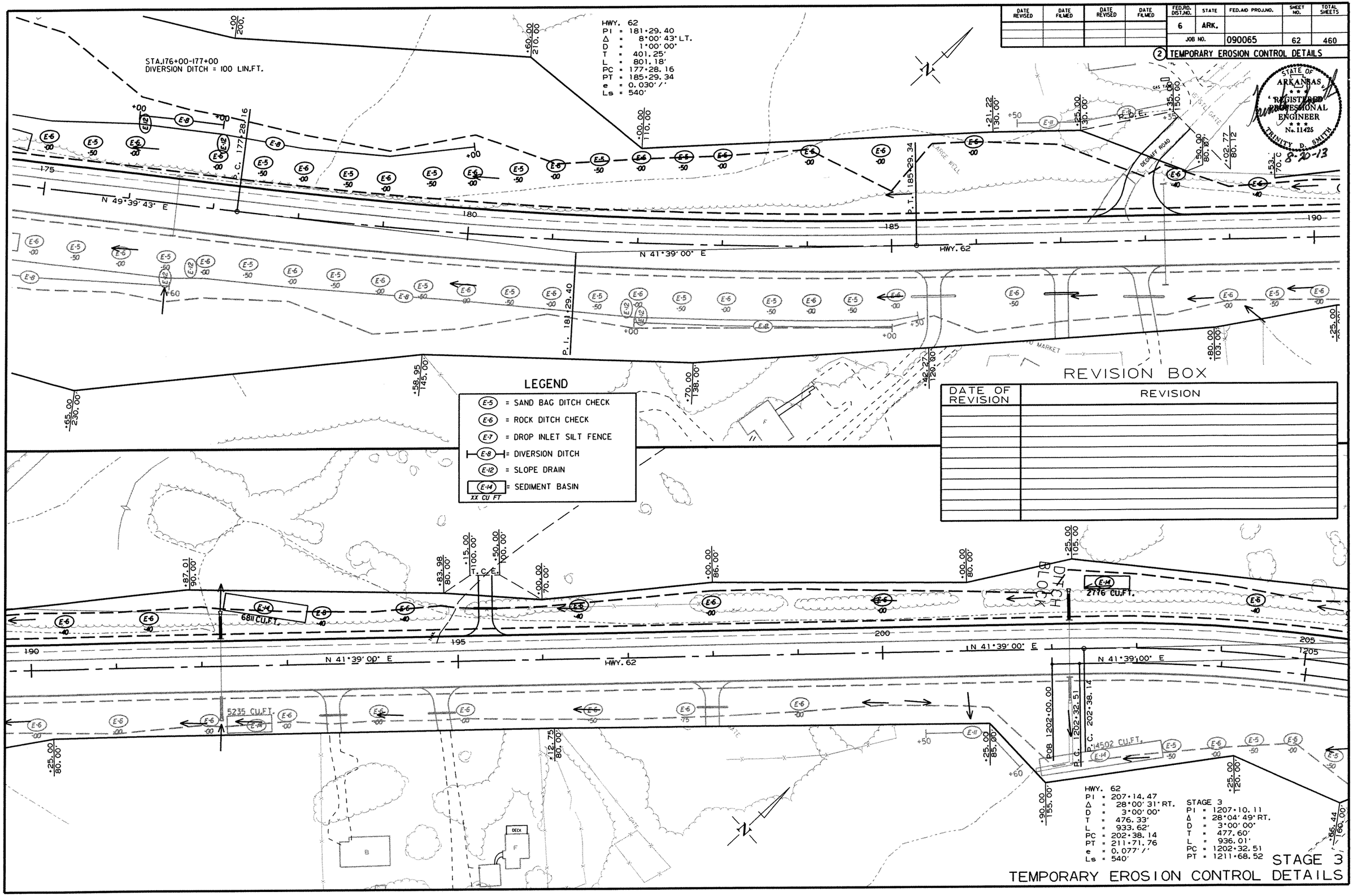
STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	62	460

(2) TEMPORARY EROSION CONTROL DETAILS



REVISION BOX

DATE OF REVISION	REVISION

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-20-13

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	63	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
P.I. = 207+14.47
Δ = 28°04'49" RT.
D = 3°00'00"
T = 477.60
L = 936.01
PC = 1202+32.51
PT = 1211+68.52

STAGE 3
P.I. = 1207+10.11
Δ = 28°04'49" RT.
D = 3°00'00"
T = 477.60
L = 936.01
PC = 1202+32.51
PT = 1211+68.52

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-12 = SLOPE DRAIN
- E-14 = SEDIMENT BASIN (XX CU FT)

REVISION BOX

DATE OF REVISION	REVISION

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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	64	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 239+43.94
Δ = 17°26'31" LT.
D = 2°15'00"
T = 390.62'
L = 775.19'
PC = 235+53.32
PT = 243+28.51
e = 0.061'/'
Ls = 540'

STAGE 3
PI = 1239+37.74
Δ = 17°16'27" LT.
D = 2°15'00"
T = 386.81'
L = 767.75'
PC = 1235+50.94
PT = 1243+18.68

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-12 = SLOPE DRAIN
- E-14 = SEDIMENT BASIN (XX CU FT)

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 3
PI = 1259+05.80
Δ = 1°56'28" RT.
D = 0°15'00"
T = 388.24'
L = 776.41'
PC = 1255+17.56
PT = 1262+93.97

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" RT.
R = 100.00'
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	65	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STAGE 3
PI = 1280+23.38
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 1271+85.58
PT = 1288+49.39

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) XX CU FT = SEDIMENT BASIN

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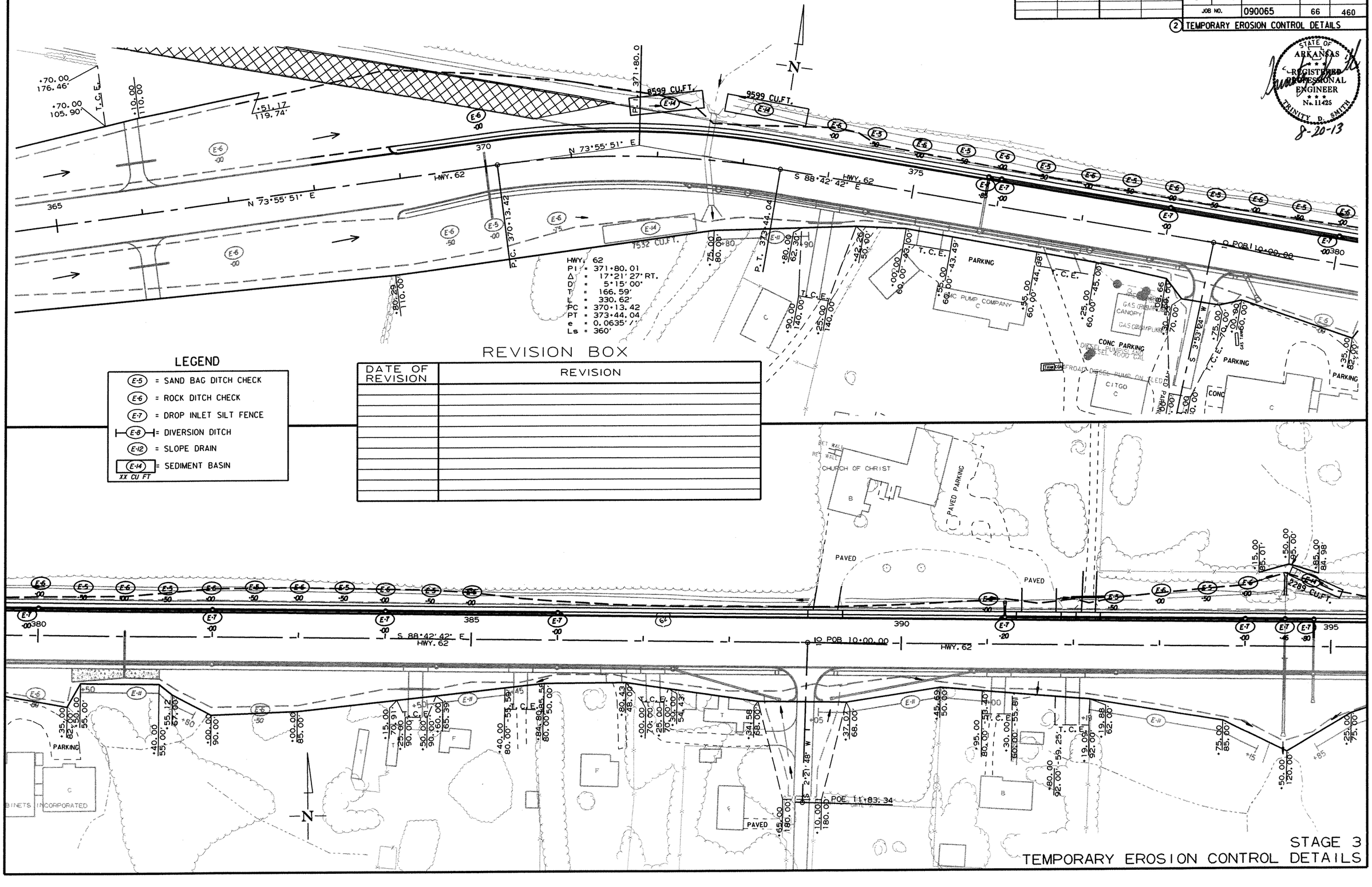
STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	66	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN
  XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	67	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 401+51.12
Δ = 31°56'29" RT.
D = 3°45'00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) XX CU FT = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION

STAGE 3
PI = 1418+32.16
Δ = 4°00'15" LT.
D = 4°00'00"
T = 50.07'
L = 100.11'
PC = 1417+82.08
PT = 1418+82.19

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

STAGE 3
PI = 1417+38.55
Δ = 3°03'40" RT.
D = 4°00'00"
T = 38.27'
L = 76.53'
PC = 1417+00.27
PT = 1417+76.80

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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	68	460

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-30-13

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

STAGE 3
PI = 1441+88.62
Δ = 25°01'19" RT.
D = 4°00'00"
T = 317.84'
L = 625.55'
PC = 438+70.77
PT = 1444+96.32

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-12) = SLOPE DRAIN
- (E-14) = SEDIMENT BASIN, XX CU FT

REVISION BOX

DATE OF REVISION	REVISION

STA. 446+50.00
END JOB 090065

11/5/2012

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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	69	460

(2) TEMPORARY EROSION CONTROL DETAILS

FOR ANY AREAS OF THE PROJECT NOT SHOWN IN THIS STAGE, THE TEMPORARY EROSION CONTROL DEVICES SHOULD BE MAINTAINED AS THEY WERE SHOWN IN THE PREVIOUS STAGE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
6-28-12
TRINITY D. SMITH

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

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STAGE 4
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	70	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

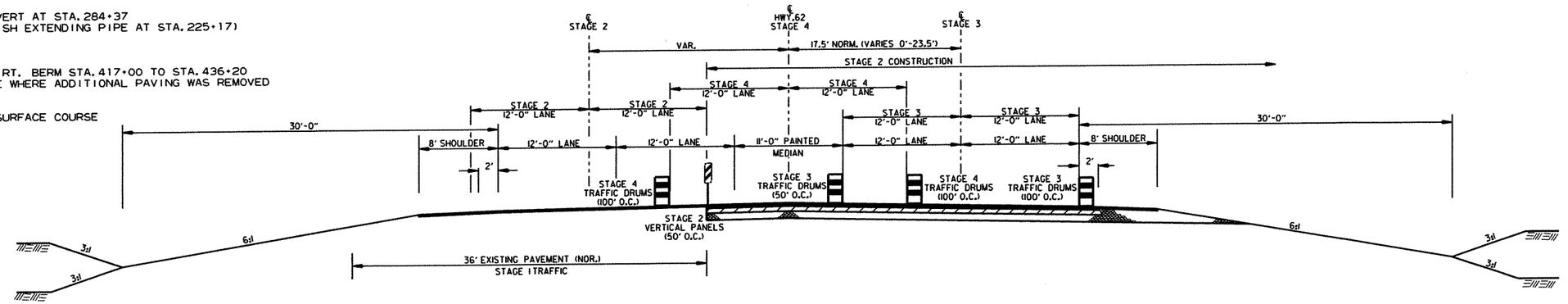
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

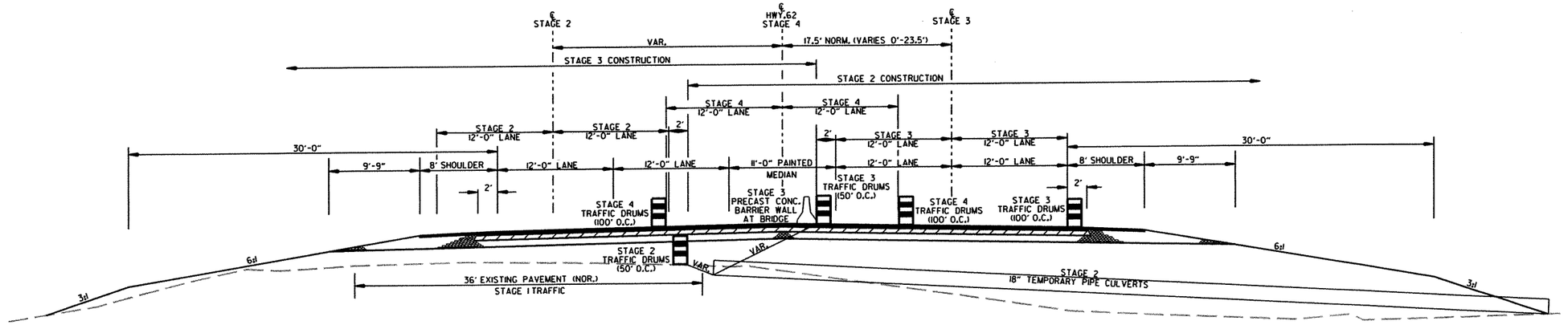
STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



MAINTENANCE OF TRAFFIC TYPICAL
STA. 114+00-136+00



MAINTENANCE OF TRAFFIC TYPICAL
STA. 136+00-164+00
STA. 274+00-280+00

11/5/2012

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ALL STAGES
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	71	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

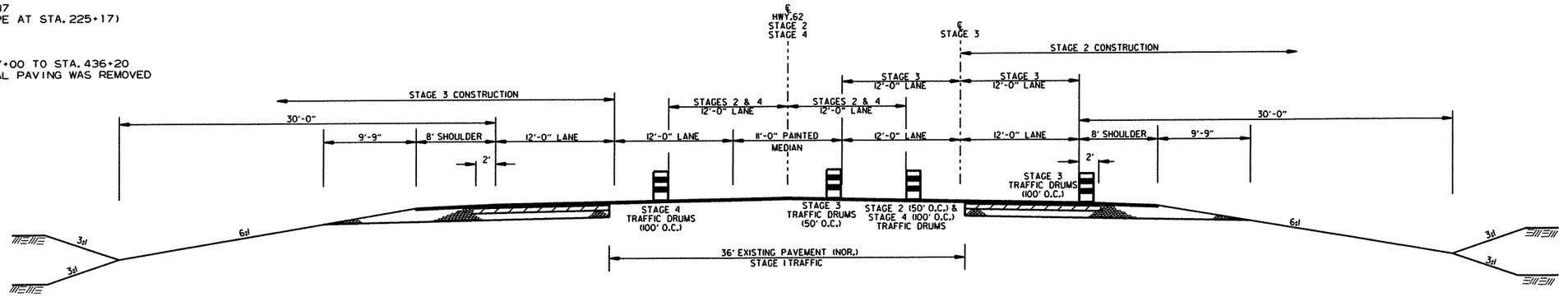
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

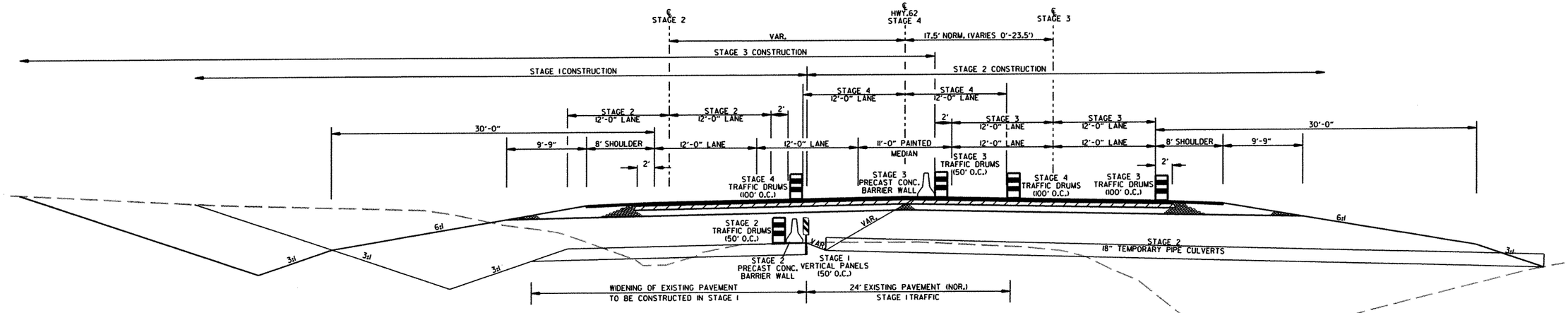
STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



MAINTENANCE OF TRAFFIC TYPICAL
STA.164+00-222+00



MAINTENANCE OF TRAFFIC TYPICAL
STA.222+00-229+00
STA.259+00-271+00

ALL STAGES
MAINTENANCE OF TRAFFIC

11/5/2012

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	72	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

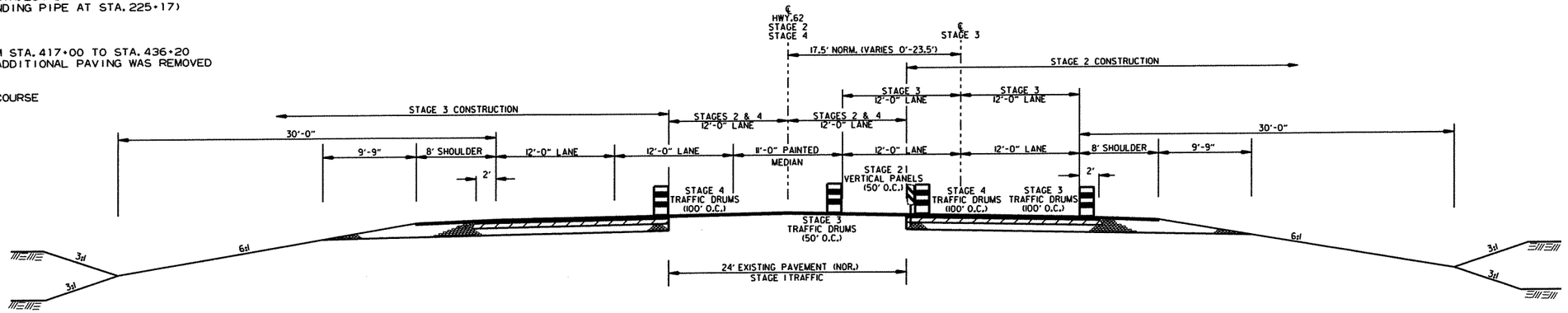
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

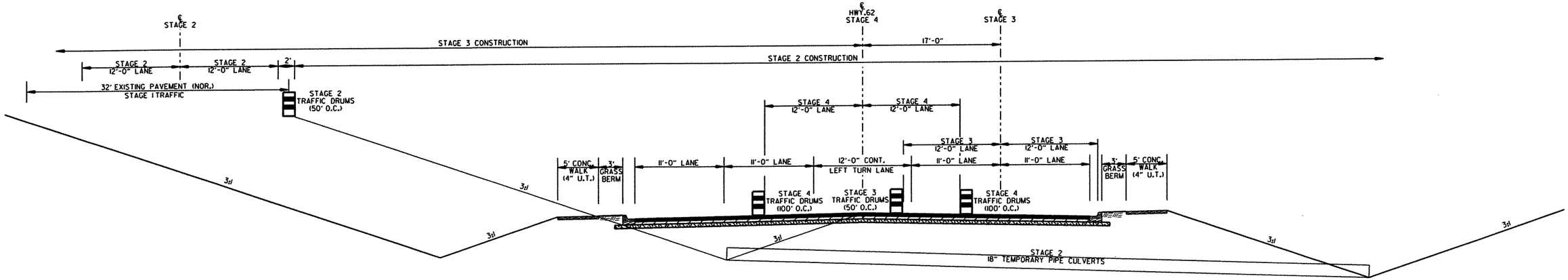
STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



MAINTENANCE OF TRAFFIC TYPICAL
STA. 229+00-259+00
STA. 271+00-274+00



MAINTENANCE OF TRAFFIC TYPICAL
STA. 369+00-372+40

ALL STAGES
MAINTENANCE OF TRAFFIC

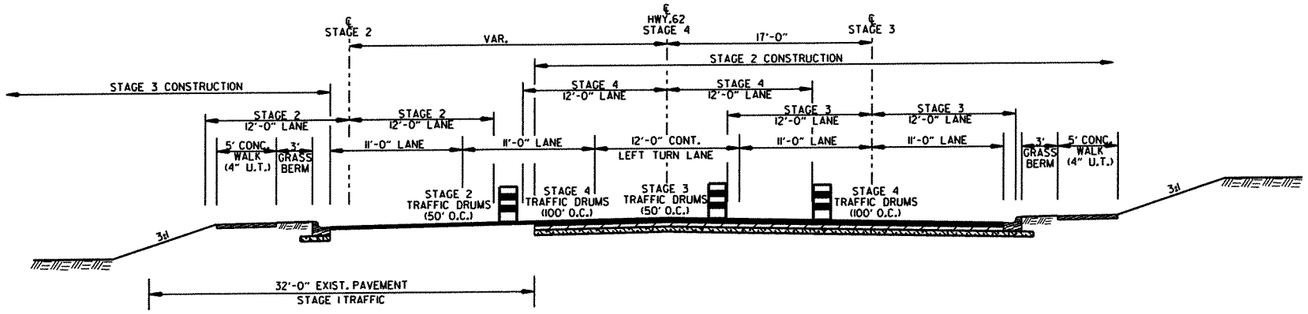
11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	73	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-30-13



MAINTENANCE OF TRAFFIC TYPICAL
STA.372+40-380+00
STA.386+00-390+00
STA.396+45-417+00

SEQUENCE OF CONSTRUCTION:

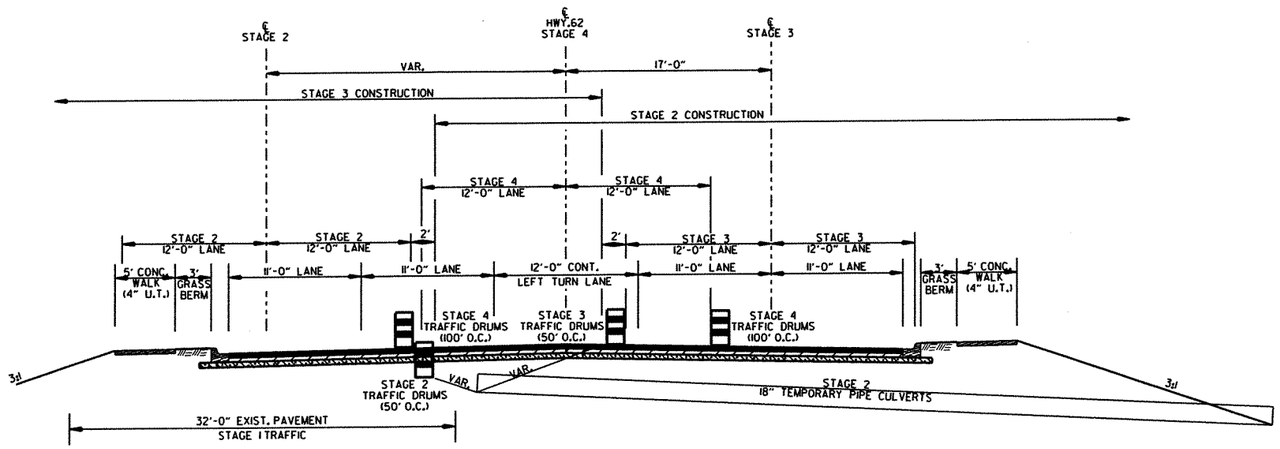
STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



MAINTENANCE OF TRAFFIC TYPICAL
STA.380+00-386+00
STA.390+00-396+45

11/5/2012

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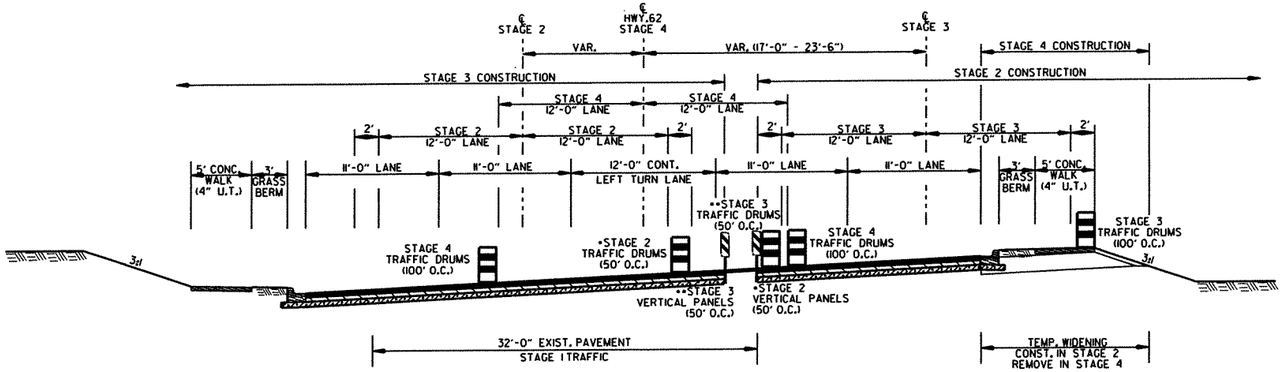
ALL STAGES
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	74	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



MAINTENANCE OF TRAFFIC TYPICAL
STA.417+00-437+00

•STAGE 2:
STA. 430+00-436+00: USE VERTICAL PANELS
OTHERWISE USE TRAFFIC DRUMS

••STAGE 3:
STA. 422+00-426+50: USE VERTICAL PANELS
OTHERWISE USE TRAFFIC DRUMS

SEQUENCE OF CONSTRUCTION:

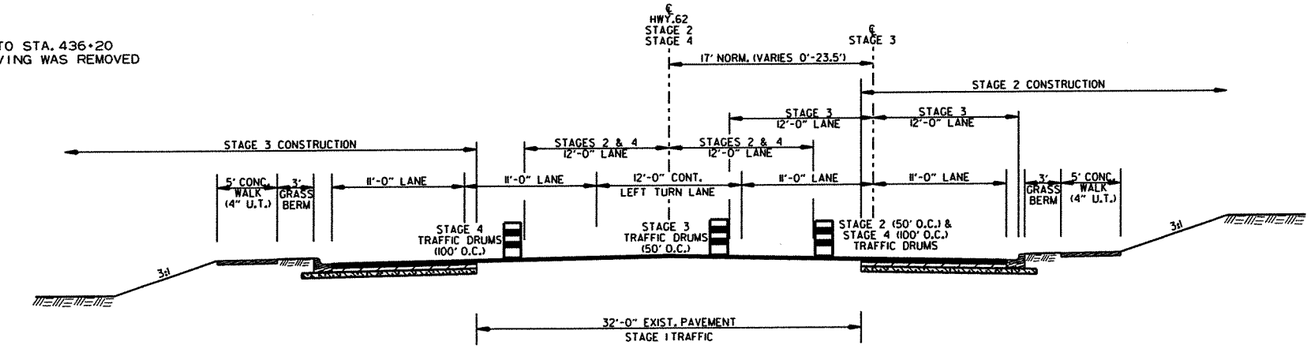
STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



MAINTENANCE OF TRAFFIC TYPICAL
STA.437+00-446+50

11/5/2012

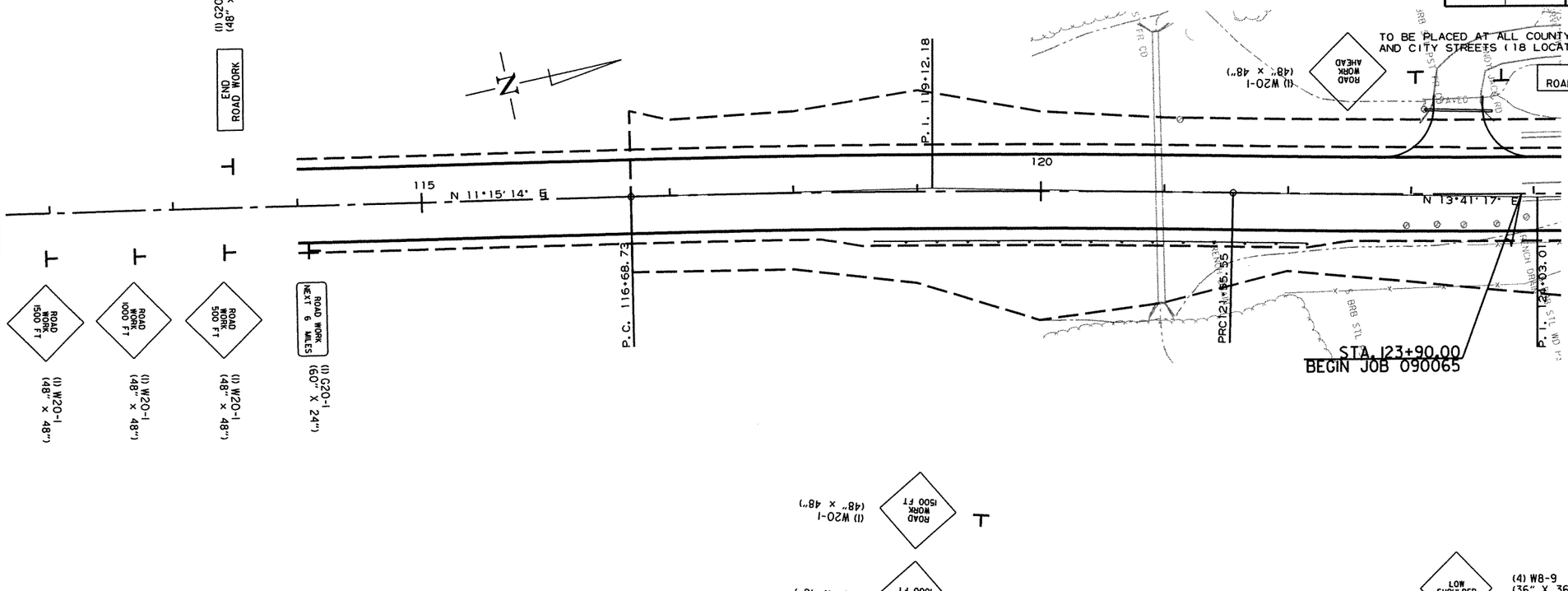
R090065.DGN

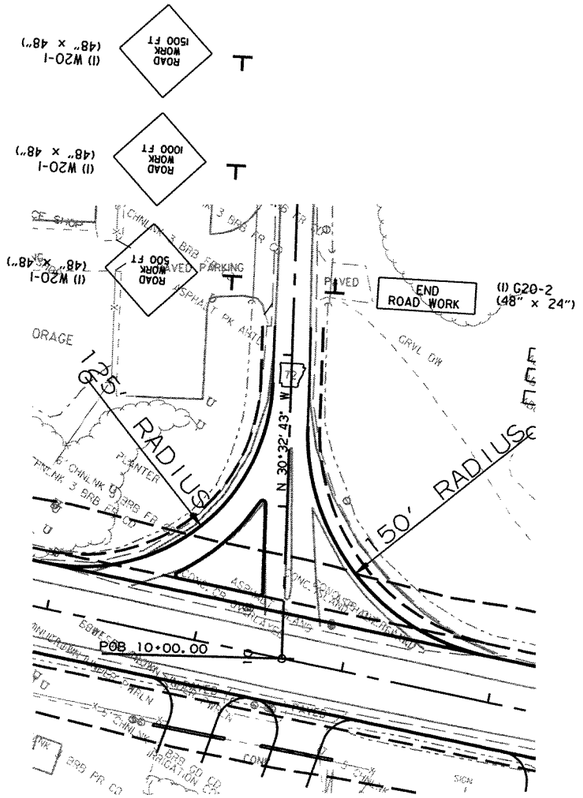
ALL STAGES
MAINTENANCE OF TRAFFIC

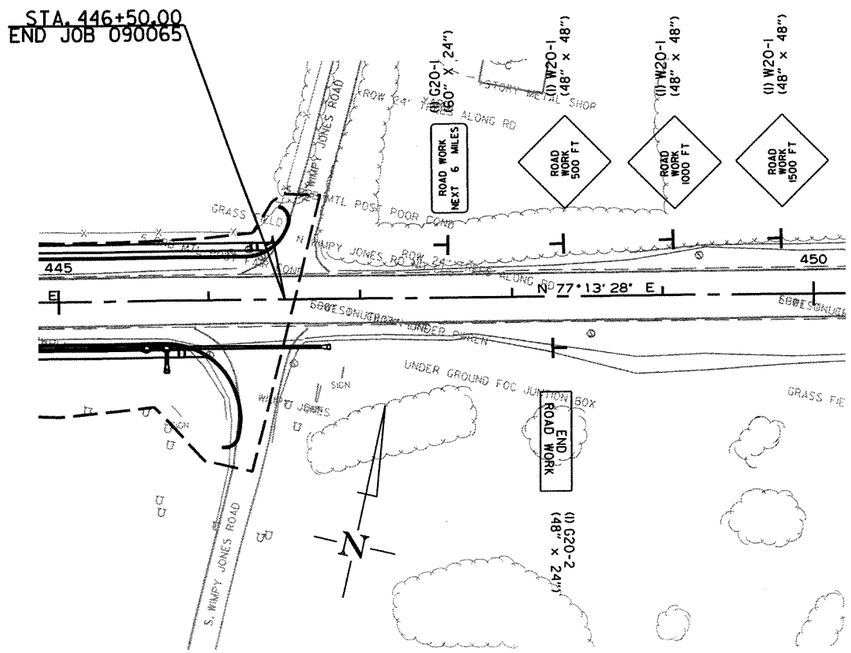
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	75	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13







LOW SHOULDER	(4) W8-9 (36" X 36")	DO NOT PASS	(24) R4-1 (24" X 30")	SHOULDER CLOSED (4) RSP-1 (48" X 30")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

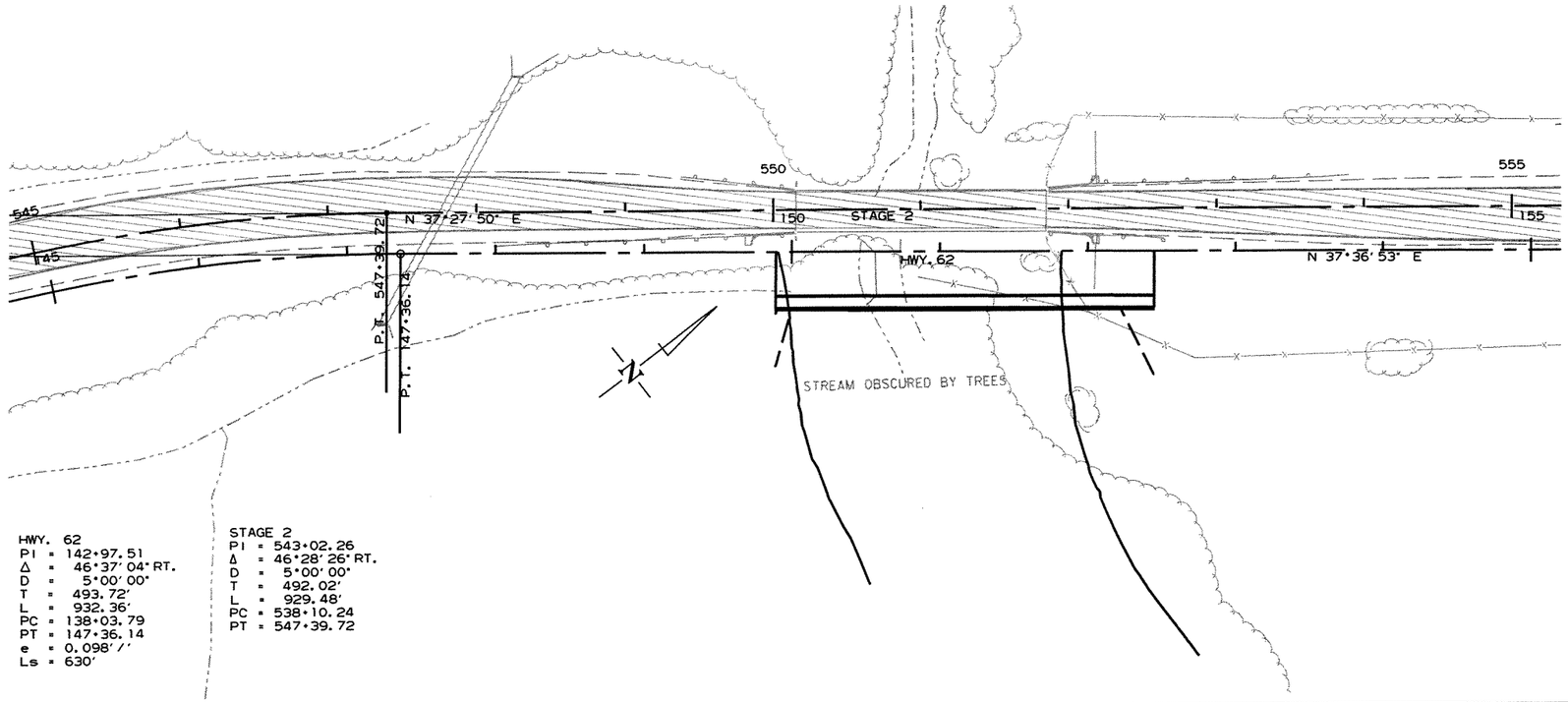
ALL STAGES
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	76	460

(2) MAINTENANCE OF TRAFFIC



HWY. 62
PI = 142+97.51
Δ = 46°37' 04" RT.
D = 5°00' 00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 543+02.26
Δ = 46°28' 26" RT.
D = 5°00' 00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72

VERTICAL PANELS (50' O.C.)
STA. 220+50-230+50 LT. = 20 EACH
STA. 256+50-271+00 LT. = 29 EACH

TRAFFIC DRUMS (50' O.C.)
STA. 294+00-298+00 (BOTH SIDES OF CO. RD.) = 16 EACH
STA. 353+00-356+30 (BOTH SIDES OF CO. RD.) = 42 EACH
STA. 367+00-369+00 (RT. SIDE OF EXIST. HWY.) = 4 EACH

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

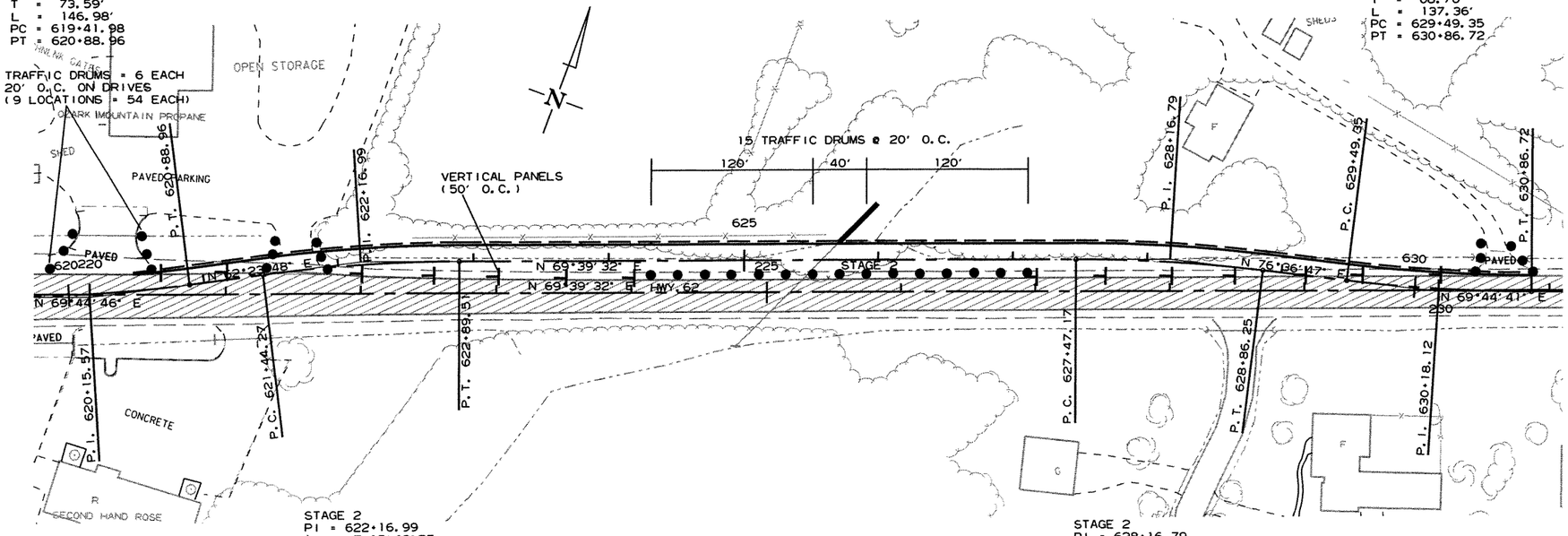
STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STAGE 2
PI = 620+15.57
Δ = 7°20' 57" LT.
D = 5°00' 00"
T = 73.59'
L = 146.98'
PC = 619+41.98
PT = 620+88.96

TRAFFIC DRUMS = 6 EACH
20' O.C. ON DRIVES
(9 LOCATIONS = 54 EACH)

STAGE 2
PI = 630+18.12
Δ = 6°52' 05" LT.
D = 5°00' 00"
T = 68.76'
L = 137.36'
PC = 629+49.35
PT = 630+86.72



STAGE 2
PI = 622+16.99
Δ = 7°15' 43" RT.
D = 5°00' 00"
T = 72.72'
L = 145.24'
PC = 621+44.27
PT = 622+89.51

STAGE 2
PI = 628+16.79
Δ = 6°57' 15" RT.
D = 5°00' 00"
T = 69.63'
L = 139.08'
PC = 627+47.17
PT = 628+86.25

11/5/2012

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STAGE 1
MAINTENANCE OF TRAFFIC

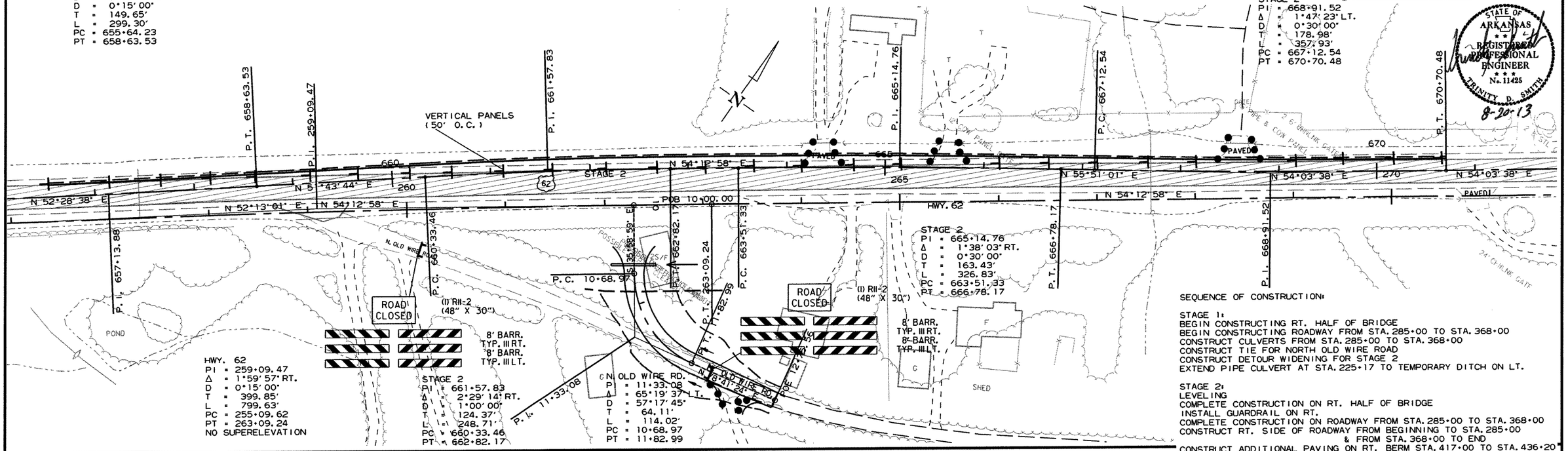
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	77	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 657+13.88
Δ = 0°44'54" LT.
D = 0°15'00"
T = 149.65'
L = 299.30'
PC = 655+64.23
PT = 658+63.53

STAGE 2
PI = 668+91.52
Δ = 1°47'23" LT.
D = 0°30'00"
T = 178.98'
L = 357.93'
PC = 667+12.54
PT = 670+70.48



HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 2
PI = 661+57.83
Δ = 2°29'14" RT.
D = 1°00'00"
T = 124.37'
L = 248.71'
PC = 660+33.46
PT = 662+82.17

C N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" LT.
D = 57°17'45"
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

STAGE 2
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

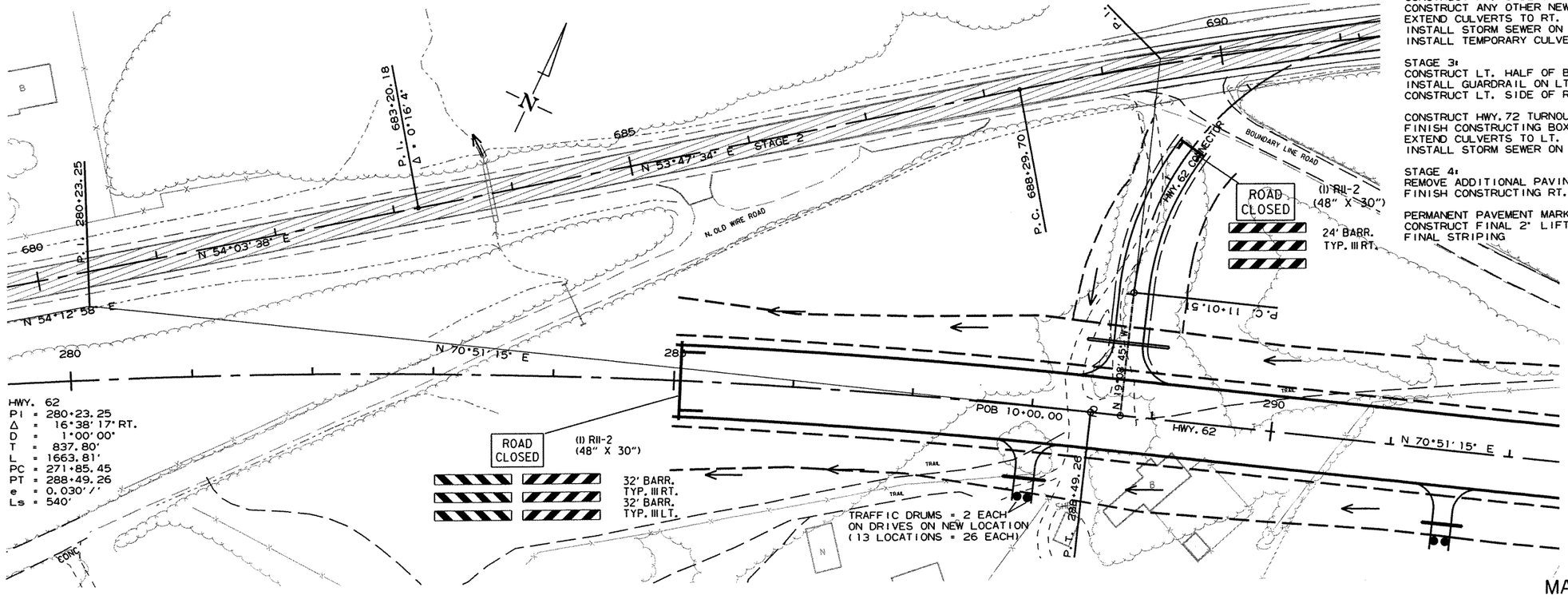
STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07



HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STAGE 1
MAINTENANCE OF TRAFFIC

11/5/2012

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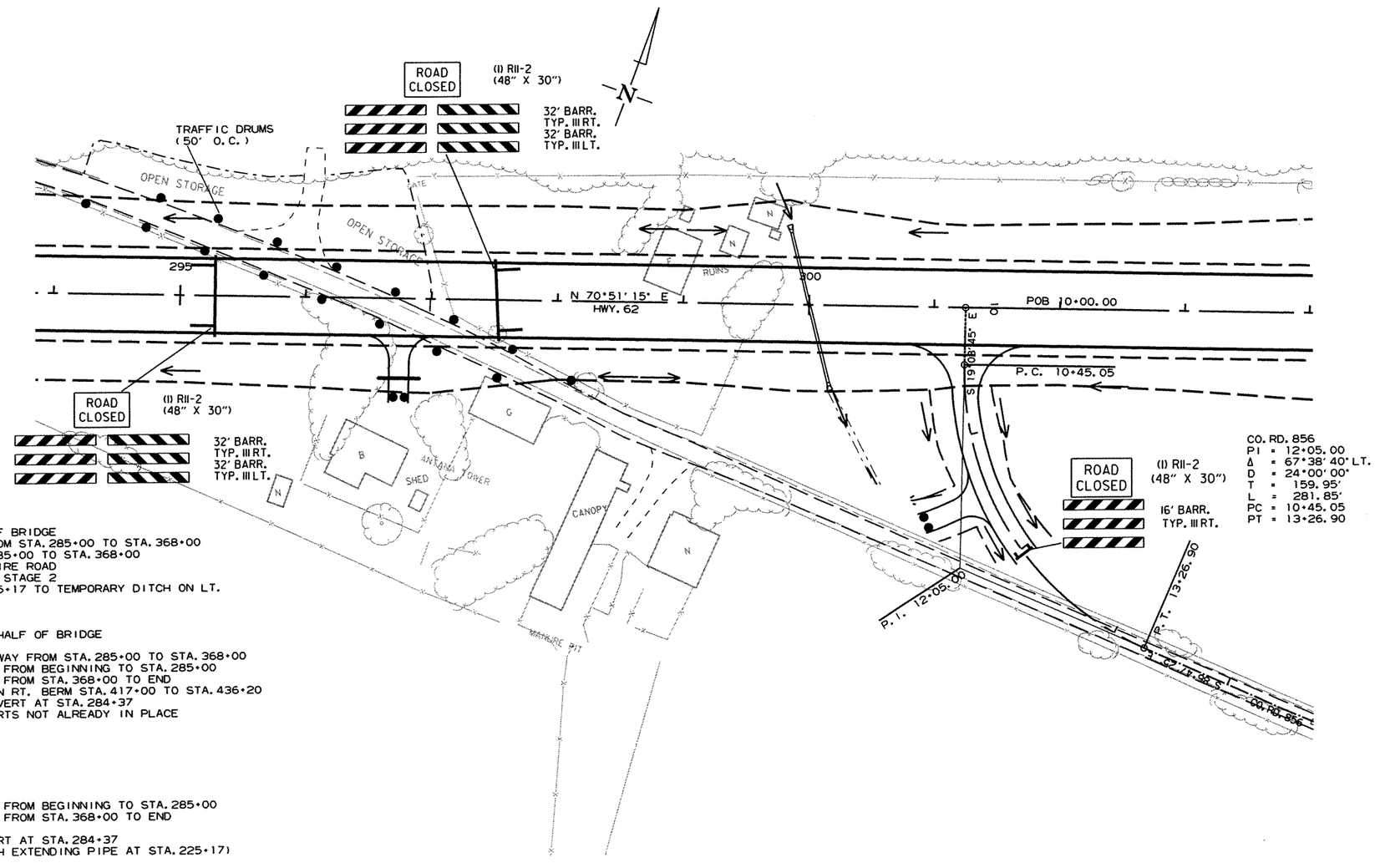
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	78	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

11/5/2012

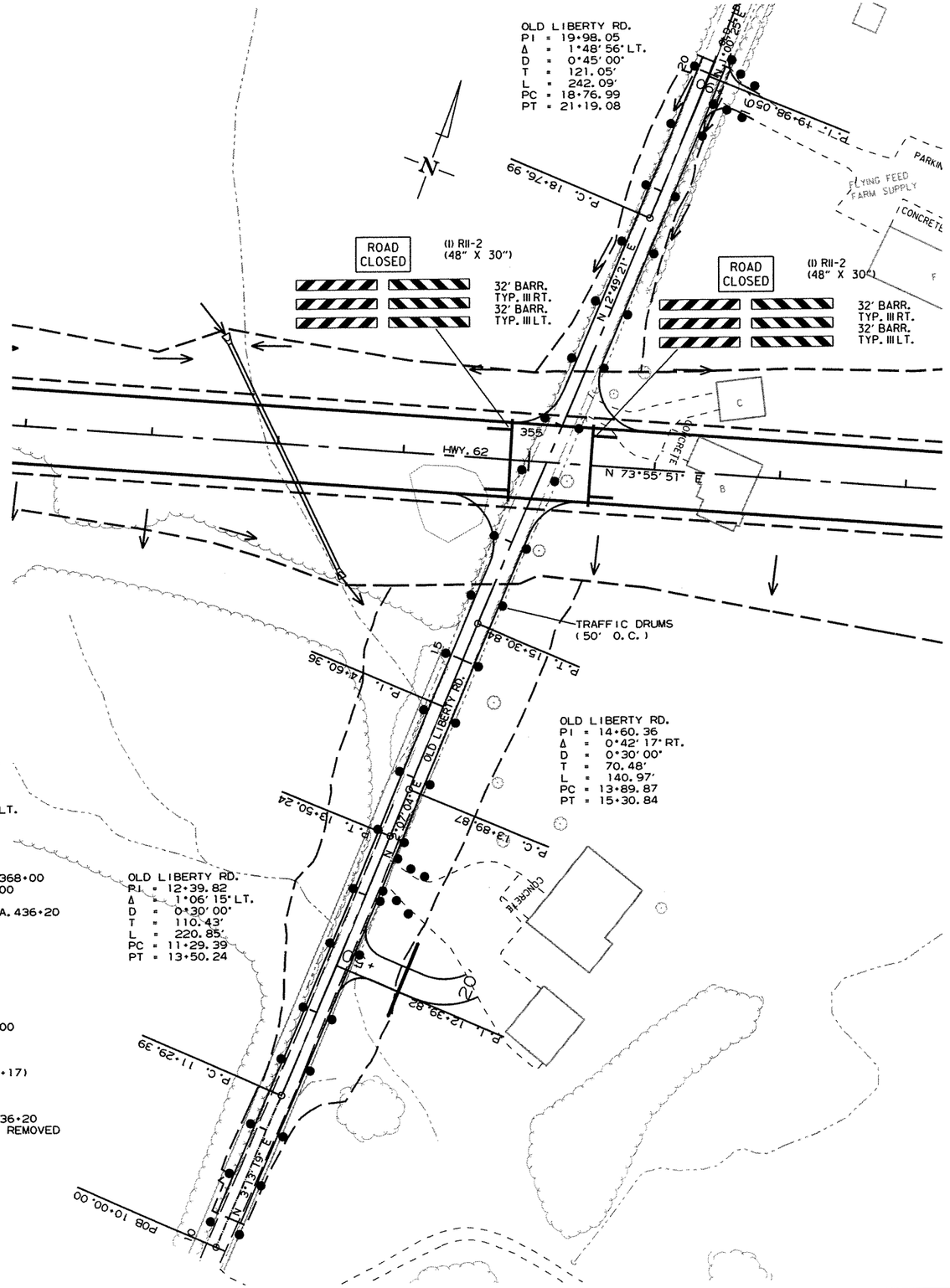
R090065.DGN

STAGE 1
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	79	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

11/5/2012

R090065.DGN

STAGE 1
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	80	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

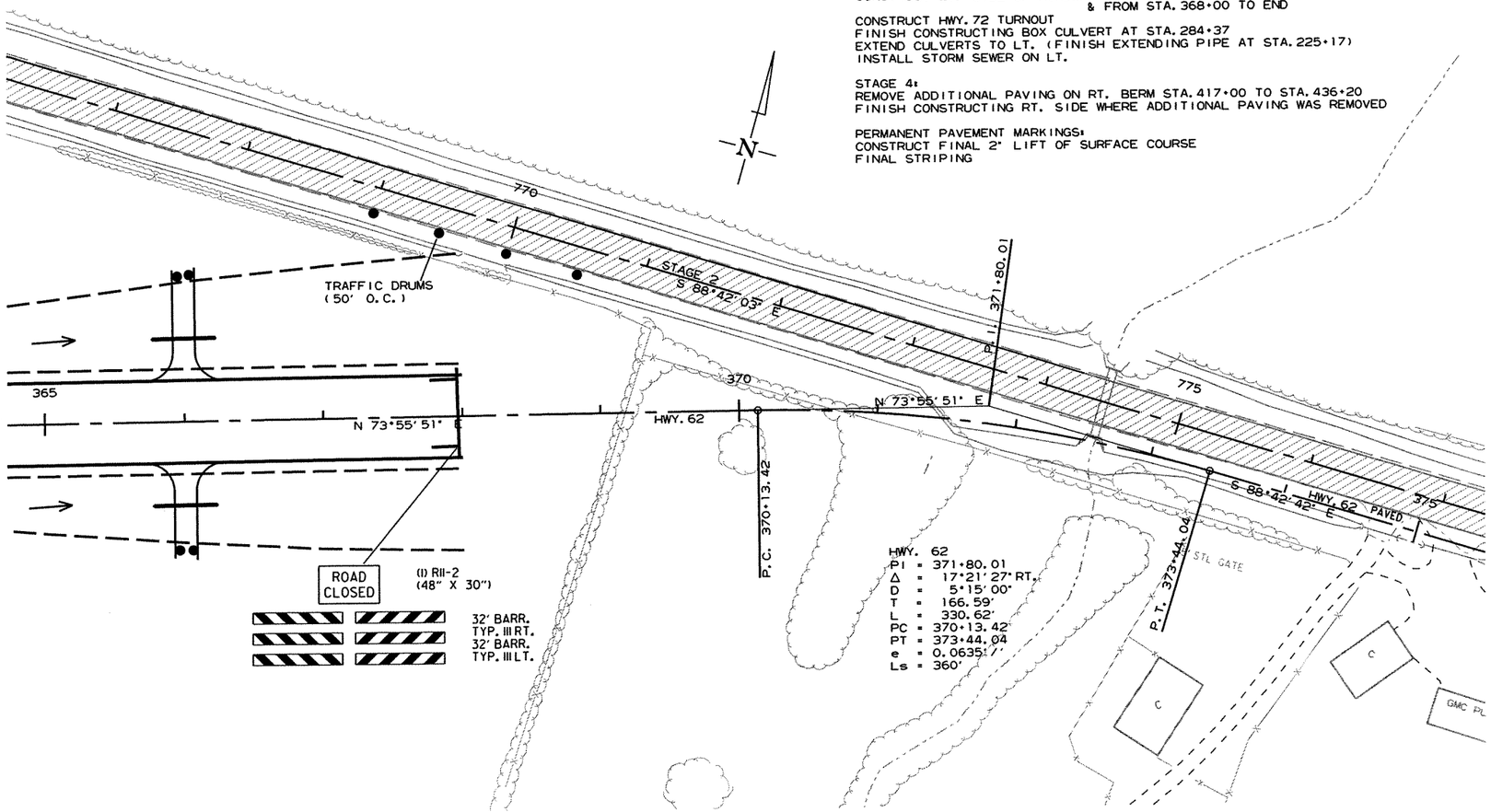
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



STAGE 1
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	81	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 114+00-149+89 REMOVAL OF PERMANENT PAVEMENT MARKINGS = 14356 LIN. FT.

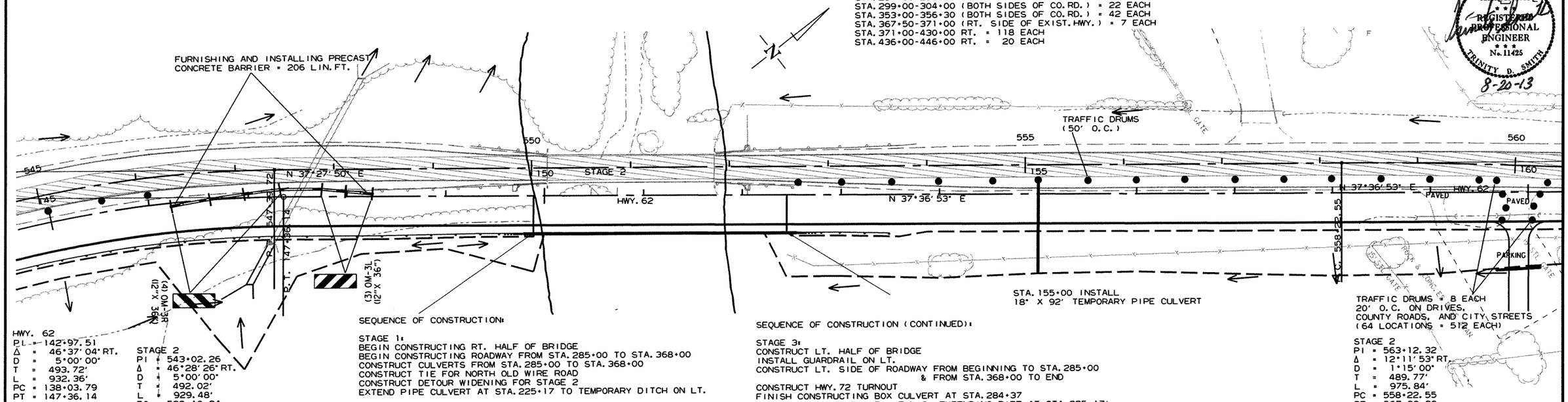
STA. 152+45-274+00 REMOVAL OF PERMANENT PAVEMENT MARKINGS = 48620 LIN. FT.

STA. 114+00-149+89 CONSTRUCTION PAVEMENT MARKINGS = 14356 LIN. FT.

STA. 152+45-274+00 CONSTRUCTION PAVEMENT MARKINGS = 48620 LIN. FT.

VERTICAL PANELS (50' O.C.)
STA. 124+00-136+00 RT. = 24 EACH
STA. 230+00-259+00 RT. = 58 EACH
STA. 271+00-274+00 RT. = 6 EACH
STA. 430+00-436+00 RT. = 12 EACH

TRAFFIC DRUMS (50' O.C.)
STA. 114+00-124+00 RT. = 20 EACH
STA. 136+00-148+00 RT. = 24 EACH
STA. 152+50-230+00 RT. = 155 EACH
STA. 259+00-261+50 RT. = 5 EACH
STA. 264+00-271+00 RT. = 14 EACH
STA. 274+00-283+00 RT. = 18 EACH
STA. 281+00-285+00 (BOTH SIDES OF CO. RD.) = 16 EACH
STA. 288+50-292+00 (RT. SIDE OF EXIST. HWY.) = 9 EACH
STA. 294+00-298+00 (BOTH SIDES OF CO. RD.) = 16 EACH
STA. 299+00-304+00 (BOTH SIDES OF CO. RD.) = 22 EACH
STA. 353+00-356+30 (BOTH SIDES OF CO. RD.) = 42 EACH
STA. 367+50-371+00 (RT. SIDE OF EXIST. HWY.) = 7 EACH
STA. 371+00-430+00 RT. = 118 EACH
STA. 436+00-446+00 RT. = 20 EACH



HWY. 62
P.I. = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 2
PI = 543+02.26
Δ = 46°28'26" RT.
D = 5°00'00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

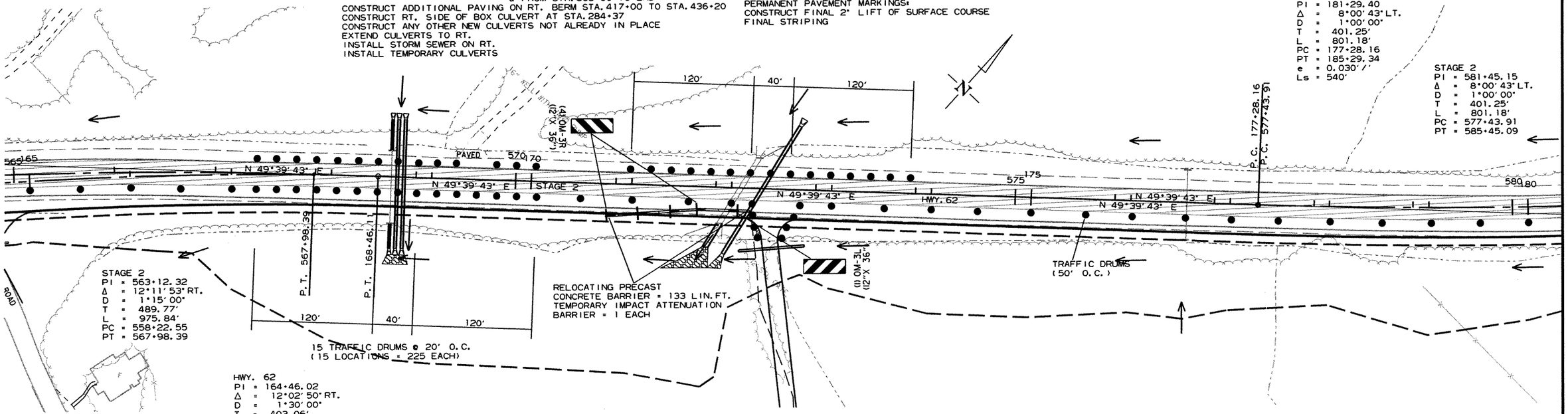
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



HWY. 62
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

11/5/2012

R090065.DGN

STAGE 2
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	82	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
PI = 620+15.57
Δ = 7°20'57" LT.
D = 5°00'00"
T = 73.59'
L = 146.98'
PC = 619+41.98
PT = 620+88.96

STAGE 2
PI = 622+16.99
Δ = 7°15'43" RT.
D = 5°00'00"
T = 72.72'
L = 145.24'
PC = 621+44.27
PT = 622+89.51

STAGE 2
PI = 628+16.79
Δ = 6°57'15" RT.
D = 5°00'00"
T = 69.63'
L = 139.08'
PC = 627+47.17
PT = 628+86.25

STAGE 2
PI = 630+18.12
Δ = 6°52'05" LT.
D = 5°00'00"
T = 68.76'
L = 137.36'
PC = 629+49.35
PT = 630+86.72

STA. 224+00 INSTALL
18" X 82' TEMPORARY PIPE CULVERT

TRAFFIC DRUMS (50' O.C.)

ROAD CLOSED

(8) WI-8 (18" X 24")

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

(1) WI-6 (48" X 24")

24' BARR. TYP. III RT.

24' BARR. TYP. III LT.

VERTICAL PANELS (50' O.C.)

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STAGE 2
PI = 657+13.88
Δ = 0°44'54" LT.
D = 0°15'00"
T = 149.65'
L = 299.30'
PC = 655+64.23
PT = 658+63.53

STA. 259+00 INSTALL
18" X 74' TEMPORARY PIPE CULVERT

TRAFFIC DRUMS (50' O.C.)

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 180 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH

VERTICAL PANELS (50' O.C.)

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 2
PI = 661+57.83
Δ = 2°29'14" RT.
D = 1°00'00"
T = 124.37'
L = 248.71'
PC = 660+33.46
PT = 662+82.17

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" LT.
D = 57°17'45"
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

STAGE 2
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17

STAGE 2
PI = 668+91.52
Δ = 1°47'23" LT.
D = 0°30'00"
T = 178.98'
L = 357.93'
PC = 667+12.54
PT = 670+70.48

STA. 267+55 INSTALL
18" X 88' TEMPORARY PIPE CULVERT

STAGE 2
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	83	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

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

P.I. 683+20.18
Δ = 0°16'4"
685
N 53°47'34" E
STAGE 2
P.C. 688+29.70
P.I. 12+95.69
690
N 59°06'11" E
15
P.C. 11+01.51
P.C.C. 14+27.54
HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54
HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PCC = 14+27.54
PT = 20+05.07
STAGE 2
PI = 693+01.40
Δ = 16°51'31" RT.
D = 1°48'00"
T = 471.71'
L = 936.59'
PC = 688+29.70
PT = 697+66.29
TRAFFIC DRUMS (50' O.C.)
BOUNDARY LINE ROAD
HWY. 62 CONNECTOR
N. OLD WIRE ROAD
P.I. 280+23.25
680
N 54°03'38" E
N 54°12'58" E
280
TRAFFIC DRUMS (50' O.C.)
N 70°51'15" E
285
POB 10+00.00
N 19°08'45" W
290
HWY. 62
N 70°51'15" E
ROAD CLOSED
(1) RII-2 (48" X 30")
64' BARR. TYP. III RT.
120'
ROAD CLOSED
(1) RII-2 (48" X 30")
32' BARR. TYP. III RT.
32' BARR. TYP. III LT.
CONC.
ROAD CLOSED
(1) RII-2 (48" X 30")
32' BARR. TYP. III RT.
32' BARR. TYP. III LT.
TRAIL
C
N
N
P.I. 288+49.26
TRAFFIC DRUMS = 2 EACH
ON DRIVES ON NEW LOCATION
(13 LOCATIONS = 26 EACH)
POND

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

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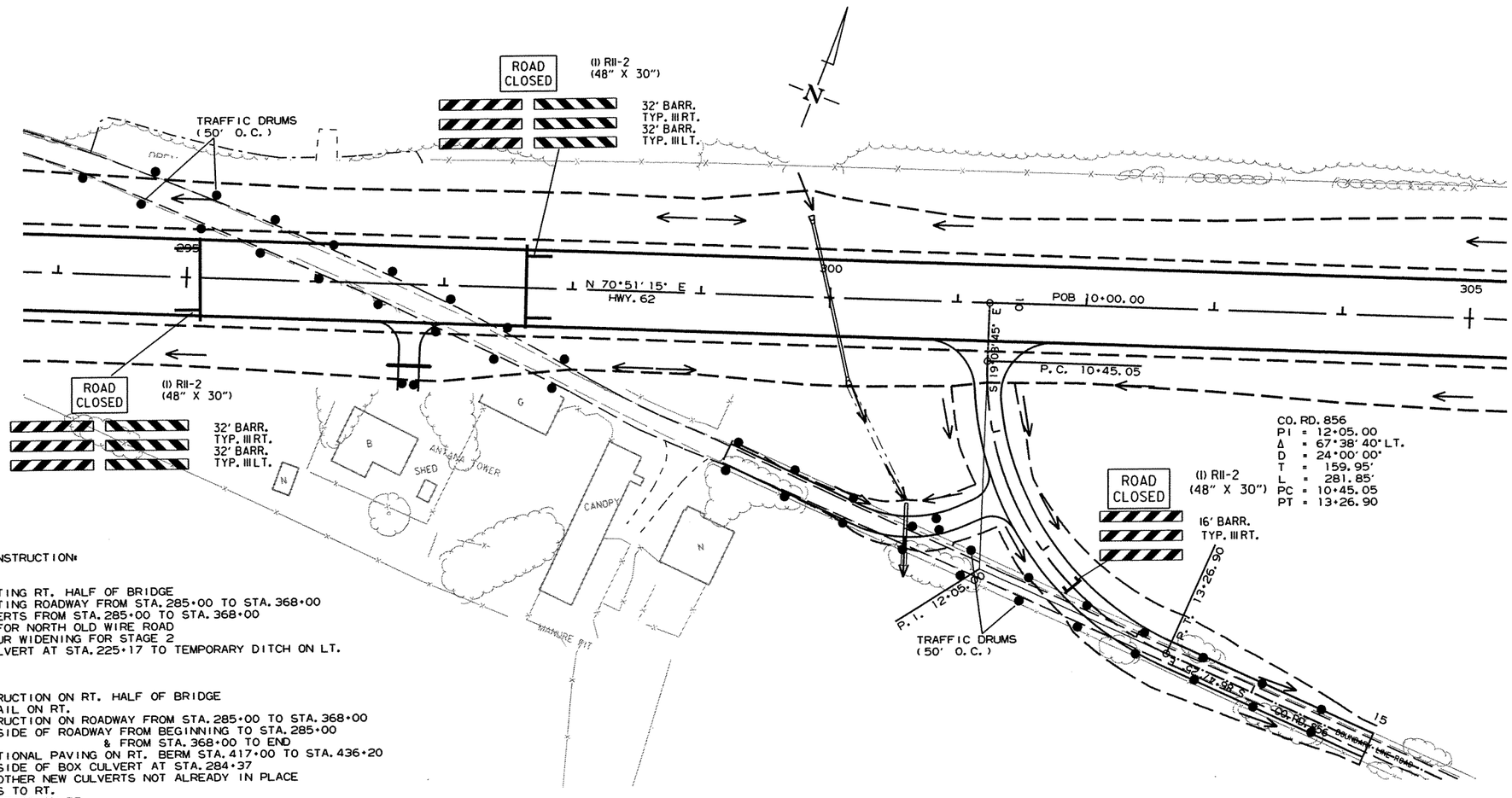
STAGE 2
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	84	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

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STAGE 2
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	85	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

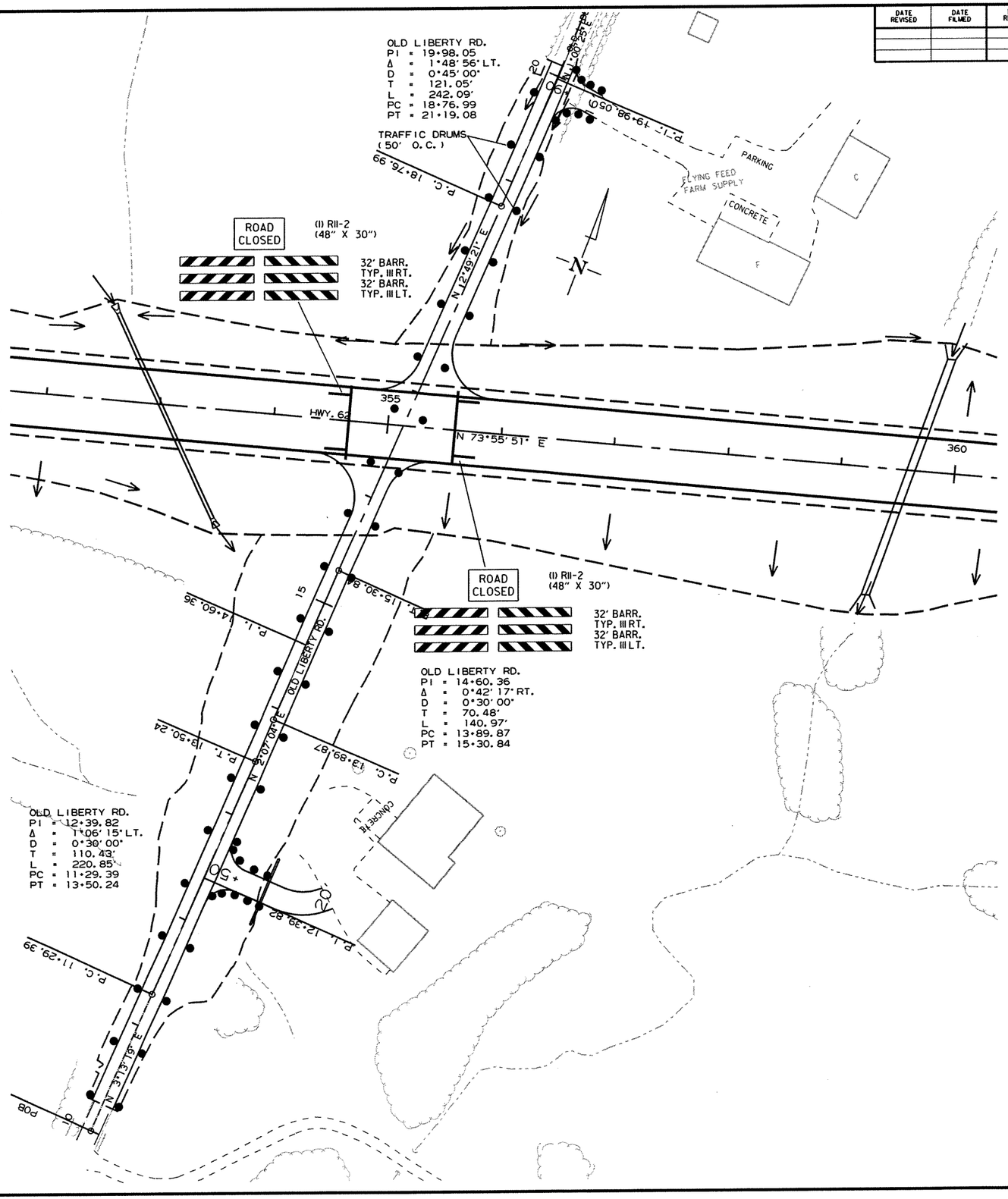
STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2
MAINTENANCE OF TRAFFIC

11/5/2012

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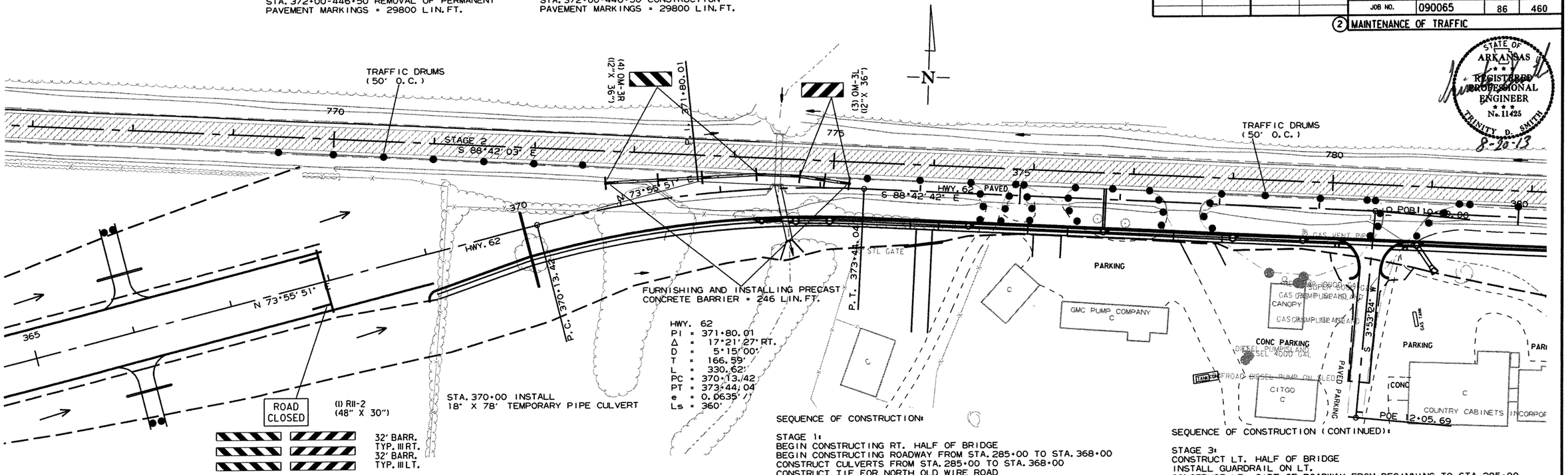
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	86	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 372+00-446+50 REMOVAL OF PERMANENT PAVEMENT MARKINGS = 29800 LIN. FT.

STA. 372+00-446+50 CONSTRUCTION PAVEMENT MARKINGS = 29800 LIN. FT.



SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

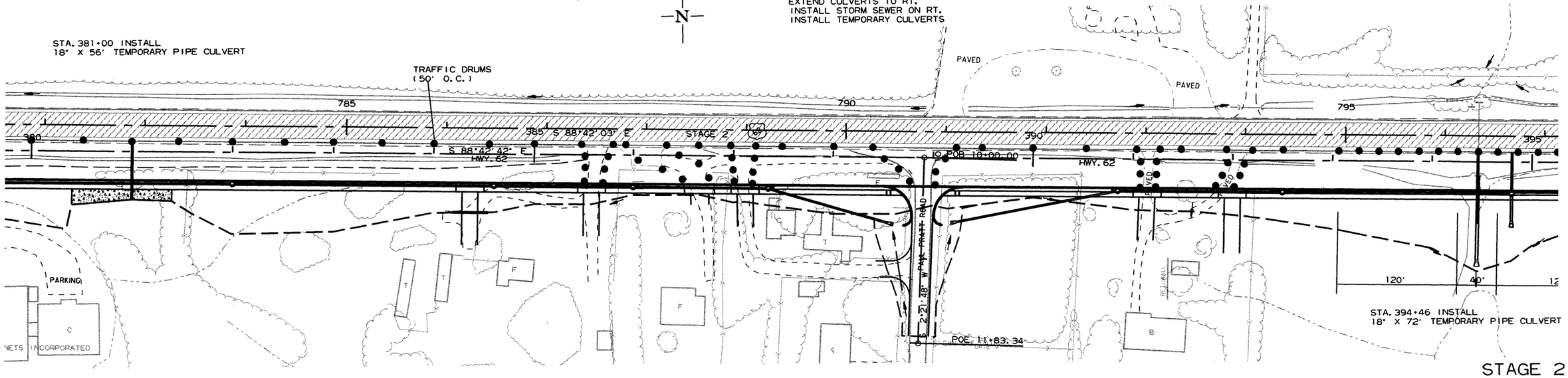
SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STAGE 2 MAINTENANCE OF TRAFFIC

11/5/2012

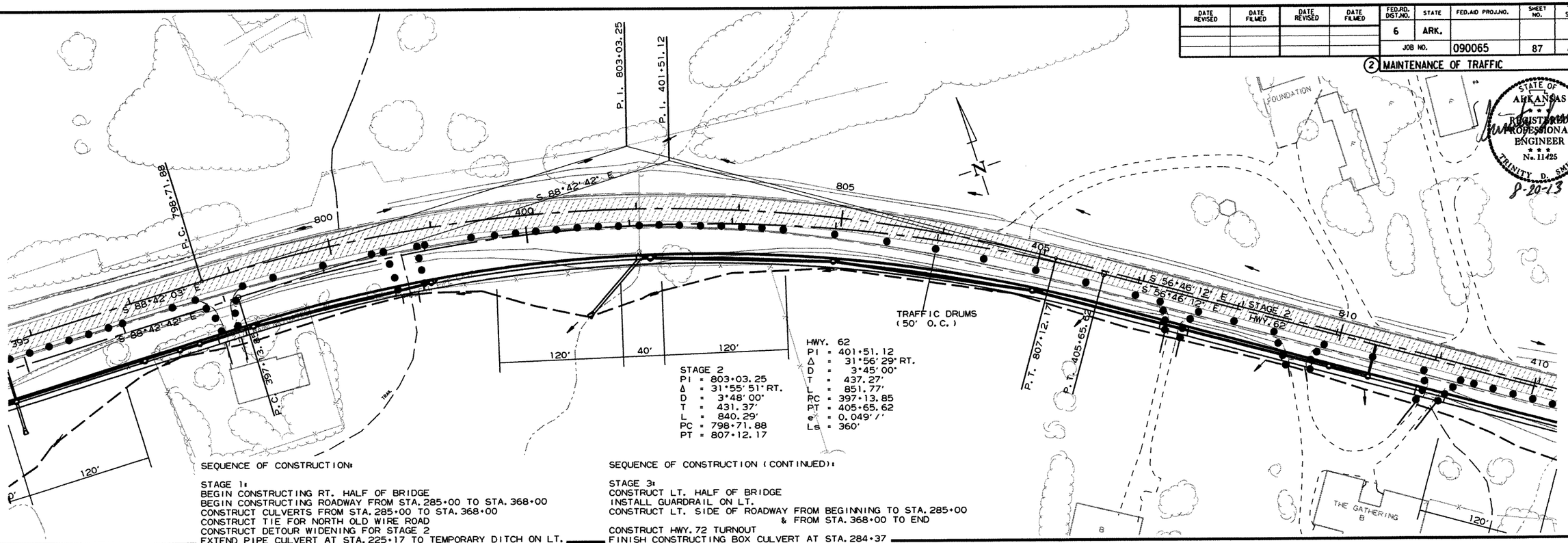
R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	87	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



STAGE 2
PI = 803+03.25
Δ = 31°55'51"RT.
D = 3°48'00"
T = 431.37'
L = 840.29'
PC = 798+71.88
PT = 807+12.17

HWY. 62
PI = 401+51.12
Δ = 31°56'29"RT.
D = 3°45'00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

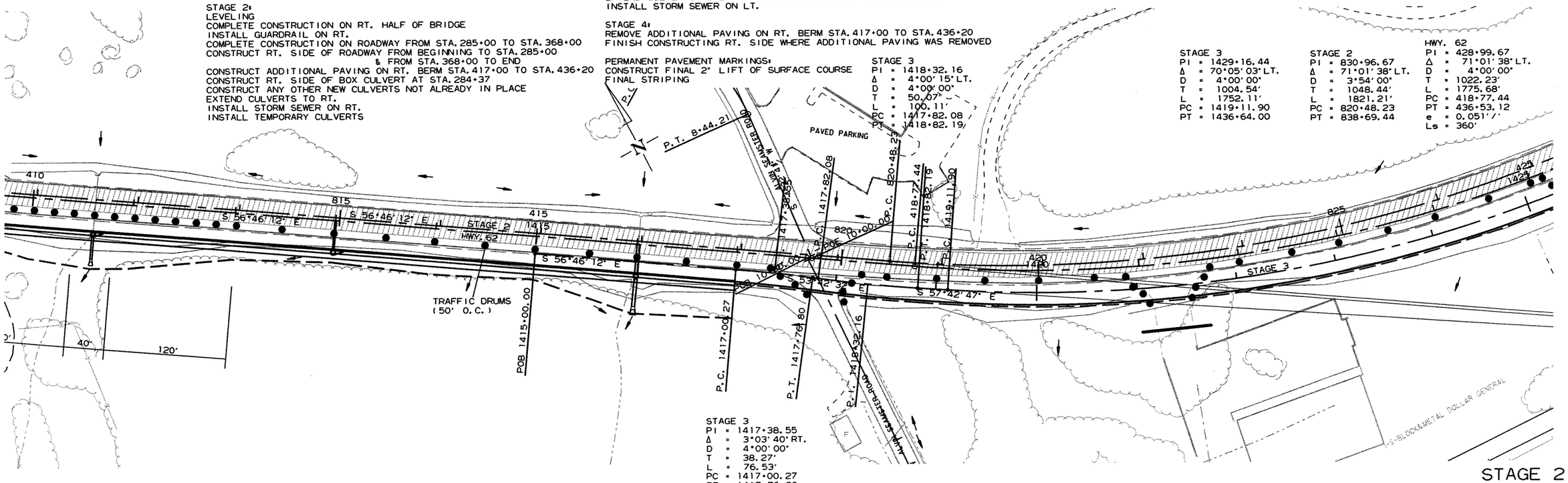
SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STAGE 3
PI = 1417+38.55
Δ = 3°03'40"RT.
D = 4°00'00"
T = 38.27'
L = 76.53'
PC = 1417+00.27
PT = 1417+76.80

STAGE 3
PI = 1418+32.16
Δ = 4°00'15"LT.
D = 4°00'00"
T = 50.07'
L = 100.11'
PC = 1417+82.08
PT = 1418+82.19

STAGE 3
PI = 1429+16.44
Δ = 70°05'03"LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

STAGE 2
PI = 830+96.67
Δ = 71°01'38"LT.
D = 3°54'00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44

HWY. 62
PI = 428+99.67
Δ = 71°01'38"LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 2
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	88	460

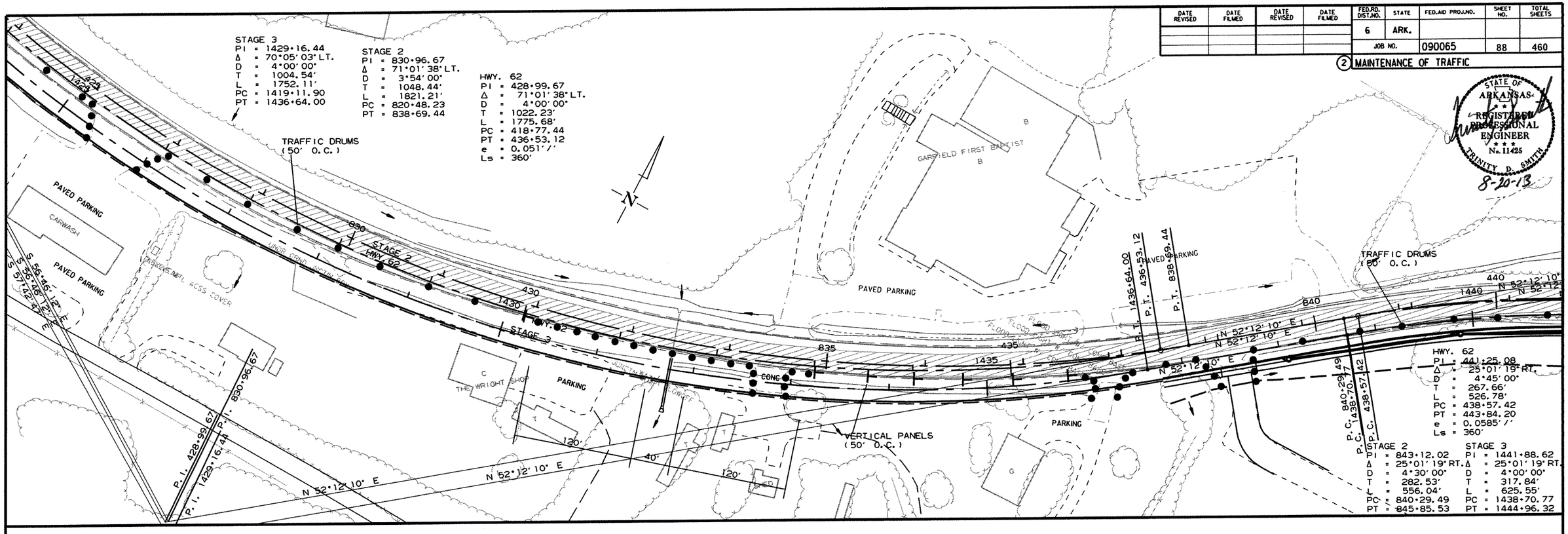
(2) MAINTENANCE OF TRAFFIC

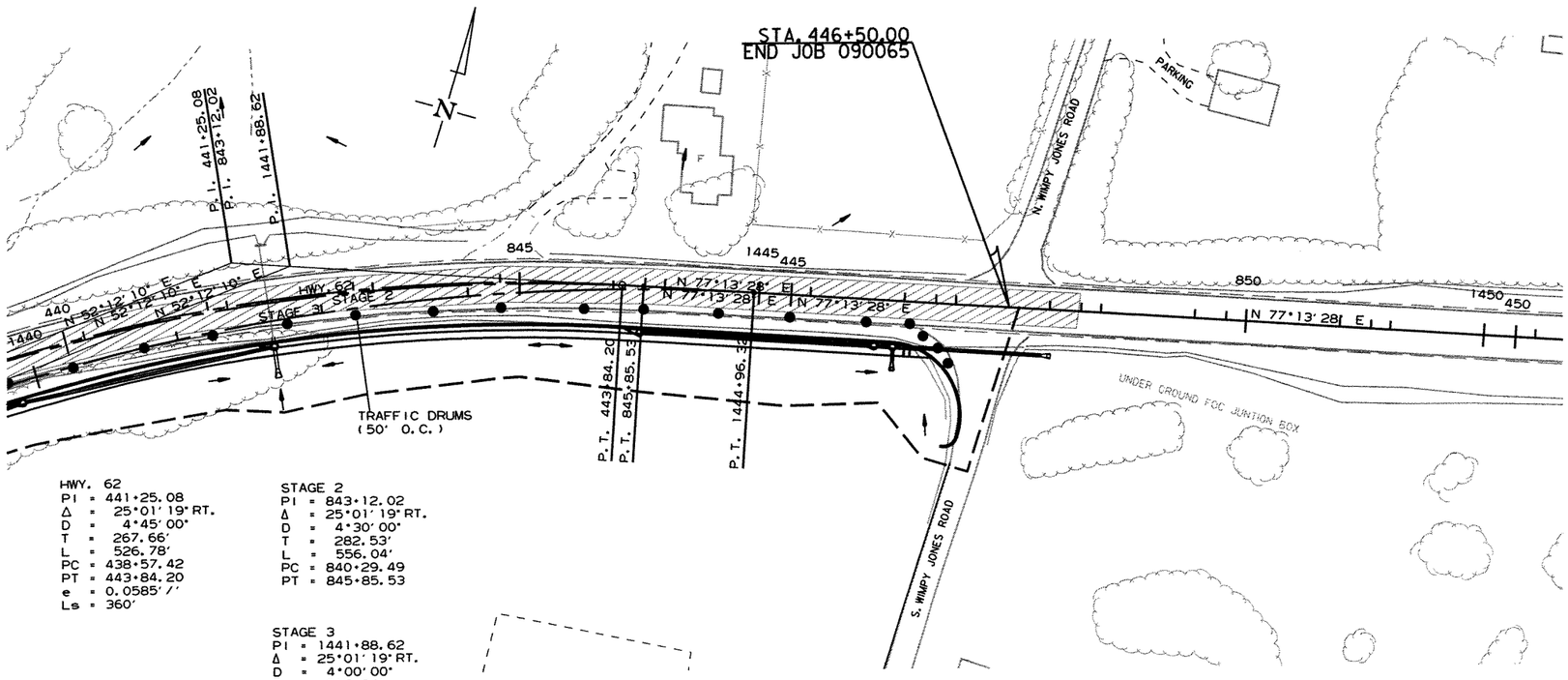
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 3
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

STAGE 2
PI = 830+96.67
Δ = 71°01'38" LT.
D = 3°54'00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'





HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

STAGE 2
PI = 843+12.02
Δ = 25°01'19" RT.
D = 4°30'00"
T = 282.53'
L = 556.04'
PC = 840+29.49
PT = 845+85.53

STAGE 3
PI = 1441+88.62
Δ = 25°01'19" RT.
D = 4°00'00"
T = 317.84'
L = 625.55'
PC = 1438+70.77
PT = 1444+96.32

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STAGE 2
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	89	460

(2) MAINTENANCE OF TRAFFIC

TRAFFIC DRUMS (50' O.C.)
STA. 114+50-149+50 LT. = 70 EACH
STA. 154+50-223+50 LT. = 138 EACH
STA. 227+00-285+00 LT. = 116 EACH
STA. 289+00-290+50 (BOTH SIDES OF EXIST. HWY. CONNECTOR) = 10 EACH
STA. 368+00-407+50 LT. = 79 EACH
STA. 410+00-422+00 LT. = 24 EACH
STA. 426+50-446+50 LT. = 40 EACH

TRAFFIC DRUMS (100' O.C.)
STA. 114+00-137+00 RT. = 23 EACH
STA. 154+00-370+00 RT. = 216 EACH
STA. 285+00-368+00 LT. = 83 EACH
STA. 417+00-437+00 RT. = 20 EACH
STA. 442+00-446+00 RT. = 4 EACH

VERTICAL PANELS (50' O.C.)
STA. 407+50-410+00 LT. = 5 EACH
STA. 422+00-426+50 LT. = 9 EACH

STA. 114+00-149+89 REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 14356 LIN. FT.

STA. 114+00-149+89 CONSTRUCTION PAVEMENT MARKINGS = 14356 LIN. FT.

HWY. 62
PI = 124+03.01
Δ = 2°28'27" LT.
D = 0°30'00"
T = 247.46'
L = 494.85'
PC = 121+55.55
PT = 126+50.40
NO SUPERELEVATION

STAGE 3
PI = 1124+03.55
Δ = 4°30'51" LT.
D = 1°00'00"
T = 225.83'
L = 451.43'
PC = 1121+77.72
PT = 1126+29.15

TRAFFIC DRUMS = 8 EACH
20' O.C. ON DRIVES, COUNTY ROADS, AND CITY STREETS
(99 LOCATIONS = 792 EACH)

PARKING

ANDY JACK ROAD

PAVED

TRAFFIC DRUMS (50' O.C.)

TRAFFIC DRUMS (100' O.C.)

STAGE 2

HWY. 62

STAGE 3

P.C. 518+81.98
P.I. 519+12.18
P.T. 519+42.37
P.C. 1116+68.73
P.C. 1116+88.36
P.I. 519+12.18
P.T. 1121+35.77
PRC 121+55.55
P.I. 1121+77.72
P.T. 1126+29.15
P.T. 126+50.40
P.I. 1124+03.55
P.T. 1124+03.01

N 11°15'14" E
N 11°06'11" E
N 15°43'41" E
N 13°41'17" E
N 11°12'50" E

STA. 123+90.00
BEGIN JOB 090065

HWY. 62
PI = 119+12.18
Δ = 2°26'03" RT.
D = 0°30'00"
T = 243.45'
L = 486.82'
PC = 116+68.73
PT = 121+55.55
NO SUPERELEVATION

STAGE 3
PI = 1119+12.18
Δ = 4°28'27" RT.
D = 1°00'00"
T = 223.82'
L = 447.41'
PC = 1116+88.36
PT = 1121+35.77

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

N 37°27'50" E
N 37°36'53" E
N 9°00'12" W

P.I. 1142+88.71
P.C. 1137+94.99
P.T. 1147+27.34

TRAFFIC DRUMS (50' O.C.)

TRAFFIC DRUMS (100' O.C.)

STAGE 2

HWY. 62

STAGE 3

(3) OM-3L (12"X 36")

(4) OM-3R (12"X 36")

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 366 LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER = 120 LIN. FT.

P.C. 1152+48.12
P.I. 1153+77.62
P.T. 1155+07.11
P.C. 1155+13.59
P.I. 1156+43.10
P.T. 1157+72.59

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 3
PI = 1142+88.71
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 1137+94.99
PT = 1147+27.34

STA. 149+89-152+45 REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1024 LIN. FT.

STA. 152+45-446+50 CONSTRUCTION PAVEMENT MARKINGS = 117620 LIN. FT.

STA. 152+45-274+00 REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 48620 LIN. FT.

STAGE 3
PI = 1153+77.62
Δ = 1°17'42" LT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1152+48.12
PT = 1155+07.11

STAGE 3
PI = 1156+43.10
Δ = 1°17'42" RT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1155+13.59
PT = 1157+72.59

STAGE 3 MAINTENANCE OF TRAFFIC

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				6	ARK.			
				JOB NO.		090065	90	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 3
PI = 1153+77.62
Δ = 1°17'42"LT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1152+48.12
PT = 1155+07.11

STAGE 3
PI = 1156+43.10
Δ = 1°17'42"RT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1155+13.59
PT = 1157+72.59

HWY. 62
PI = 164+46.02
Δ = 12°02'50"RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

HWY. 62
PI = 181+29.40
Δ = 8°00'43"LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 177+28.16
PT = 185+29.34
e = 0.030'/'
Ls = 540'

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

TRAFFIC DRUMS (50' O.C.)
TRAFFIC DRUMS (100' O.C.)
RELOCATING PRECAST CONCRETE BARRIER = 266 LIN. FT.
SUGAR CREEK ROAD
HWY. 62
STAGE 2
P.C. 1155+13.59
P.T. 1157+72.59
P.C. 160+42.95
P.T. 168+46.11
P.C. 177+28.16
P.C. 577+43.91
P.T. 185+29.34
P.T. 585+45.09
N 37°36'53" E
N 36°19'11" E
N 49°39'43" E
N 41°39'00" E
PAVED
SHED
G.S. TANK
ACES BASE ABAN.
ABAN. WELL W/ HAND PUMP
(1) 24" CM-3R (2) 72" X 36" CM-3R
24" CM-3R X 36'-0" 2497 CU.FT.

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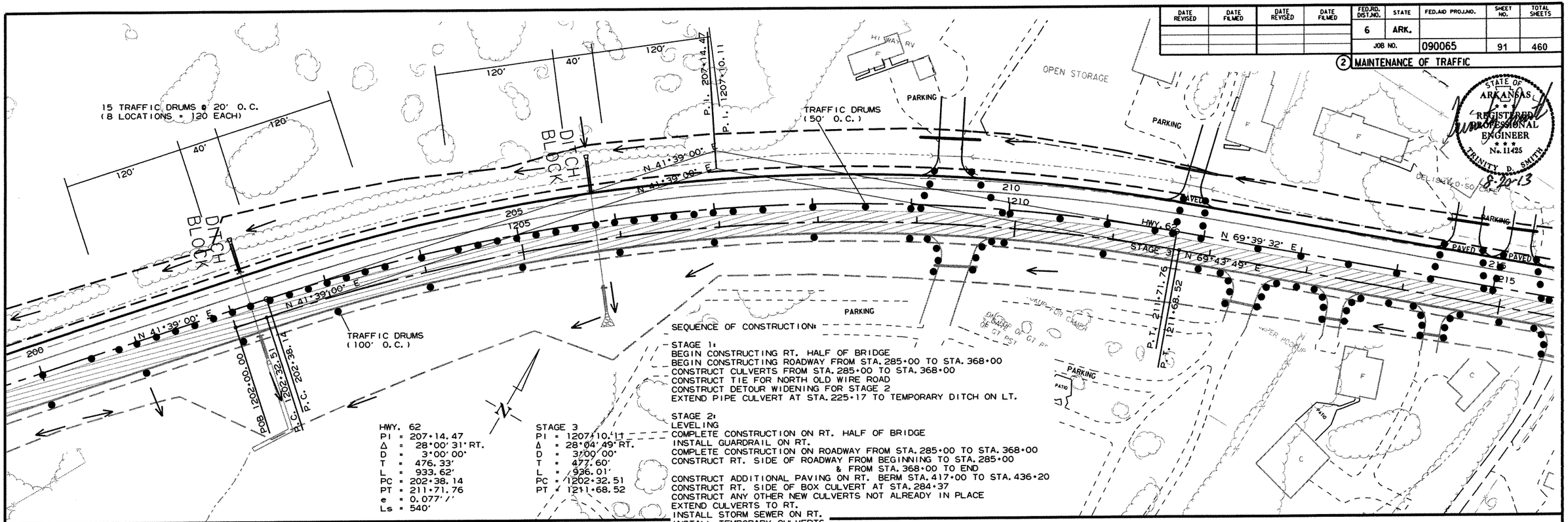
STAGE 3
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	91	460

(2) MAINTENANCE OF TRAFFIC



HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

STAGE 3
PI = 1207+10.11
Δ = 28°04'49" RT.
D = 3°00'00"
T = 477.60'
L = 936.01'
PC = 1202+32.51
PT = 1211+68.52

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

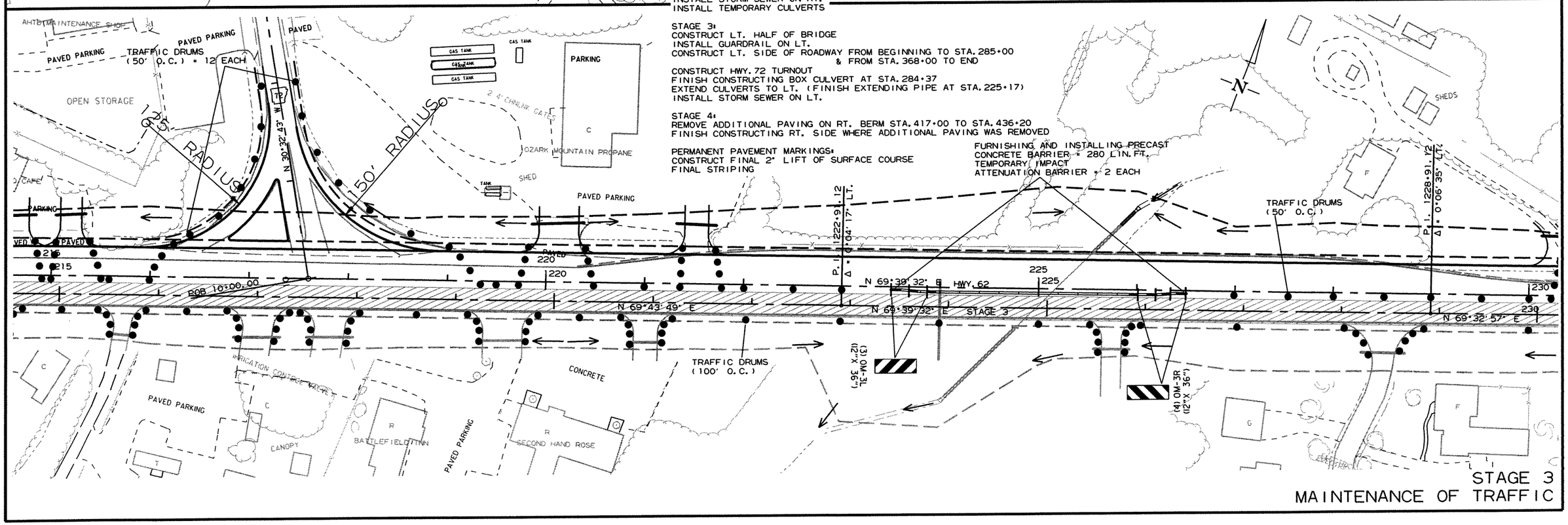
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

FURNISHING AND INSTALLING PRECAST
CONCRETE BARRIER = 280 LIN. FT.
TEMPORARY IMPACT
ATTENUATION BARRIER = 2 EACH



STAGE 3
MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

11/5/2012

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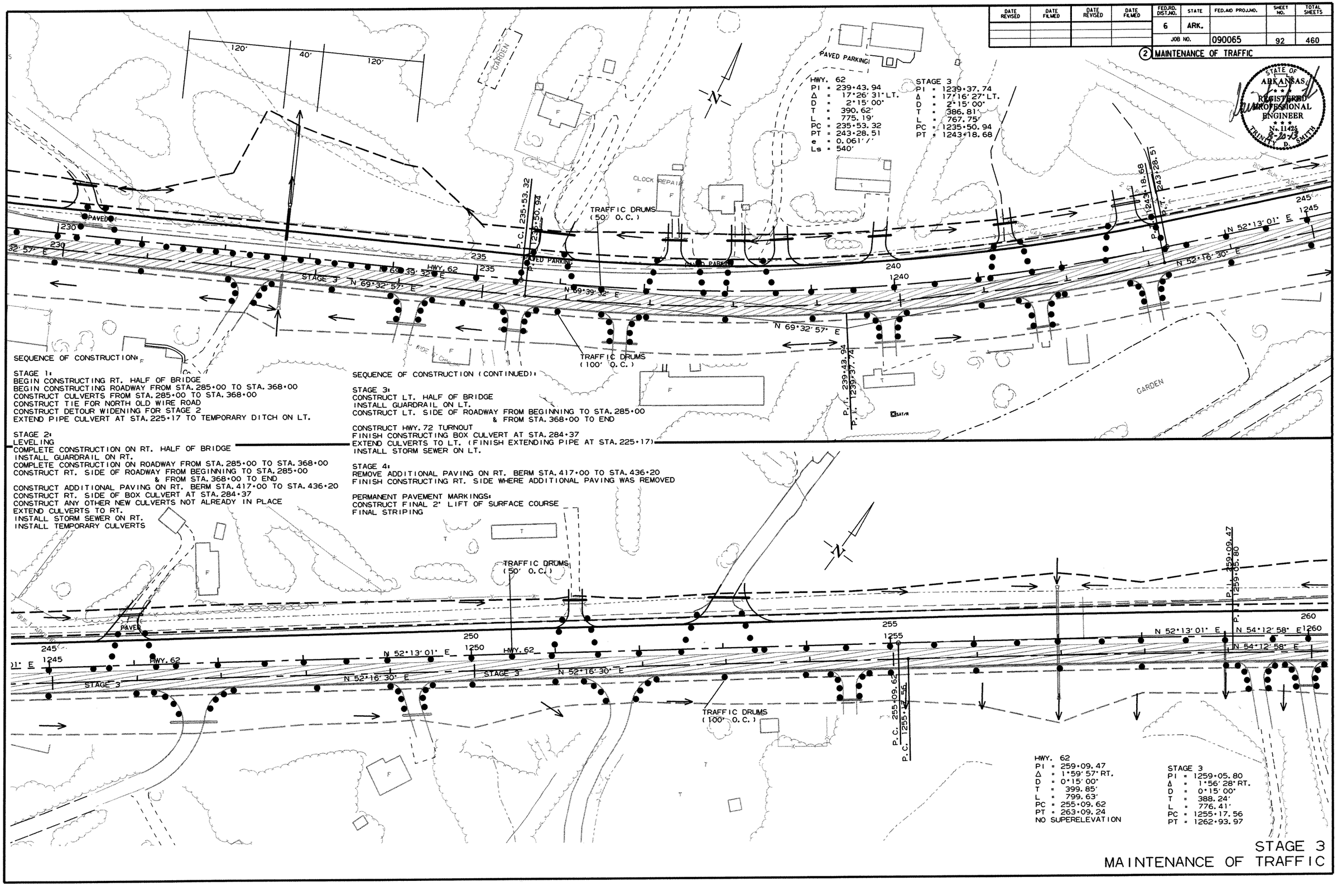
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	92	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
2-28-13
TRINITY D. SMITH



STAGE 3
MAINTENANCE OF TRAFFIC

11/5/2012

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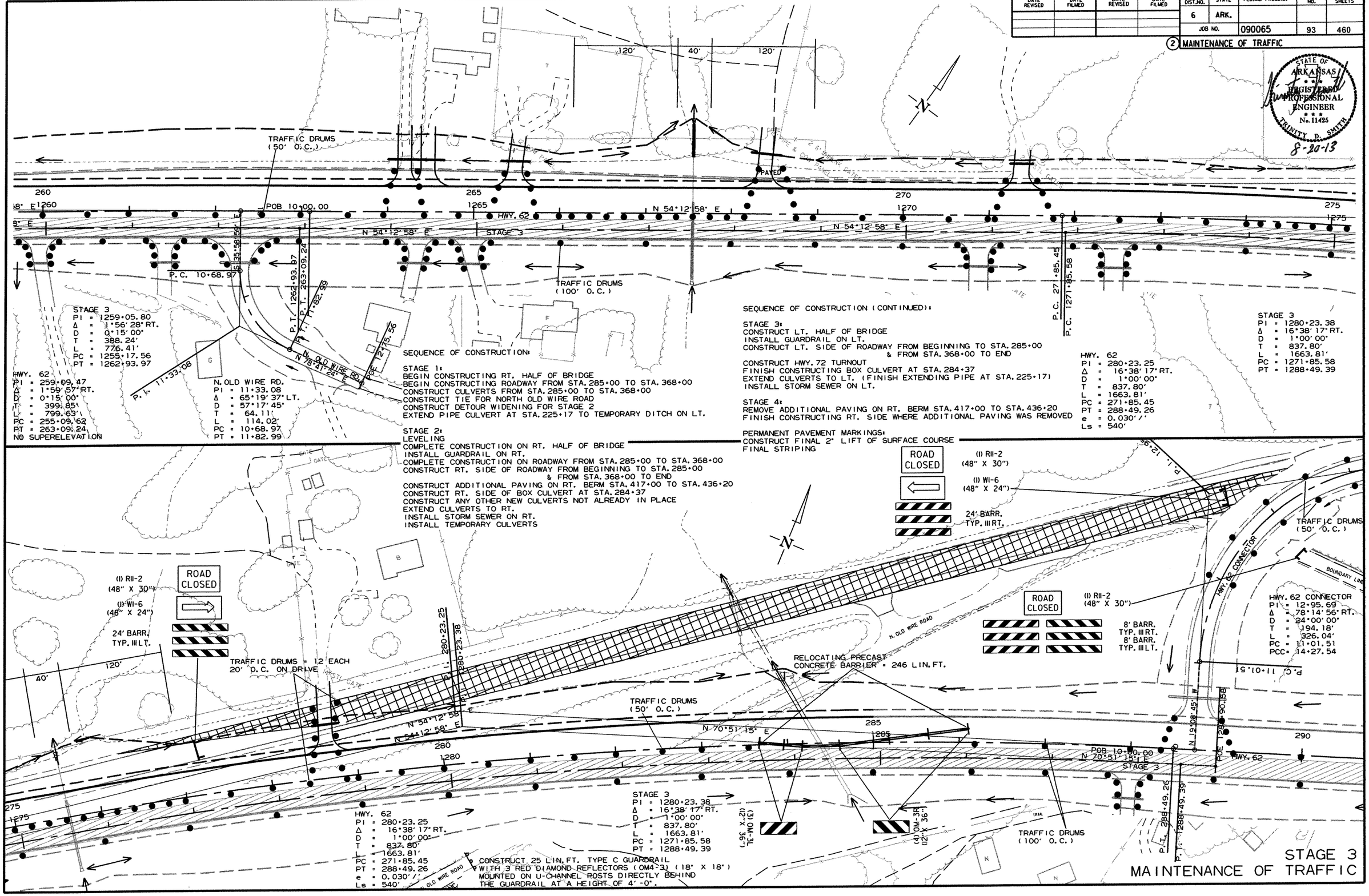
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	93	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



STAGE 3
PI = 1259+05.80
Δ = 1°56'28" RT.
D = 0°15'00"
T = 388.24'
L = 776.41'
PC = 1255+17.56
PT = 1262+93.97

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" LT.
D = 57°17'45"
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STAGE 3
PI = 1280+23.38
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 1271+85.58
PT = 1288+49.39

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STAGE 3
PI = 1280+23.38
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 1271+85.58
PT = 1288+49.39

(3) OM-3L (12" X 36")
(4) OM-3R (12" X 36")

CONSTRUCT 25 LIN. FT. TYPE C GUARDRAIL WITH 3 RED DIAMOND REFLECTORS (OM4-3) (18" X 18") MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND THE GUARDRAIL AT A HEIGHT OF 4'-0".

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54

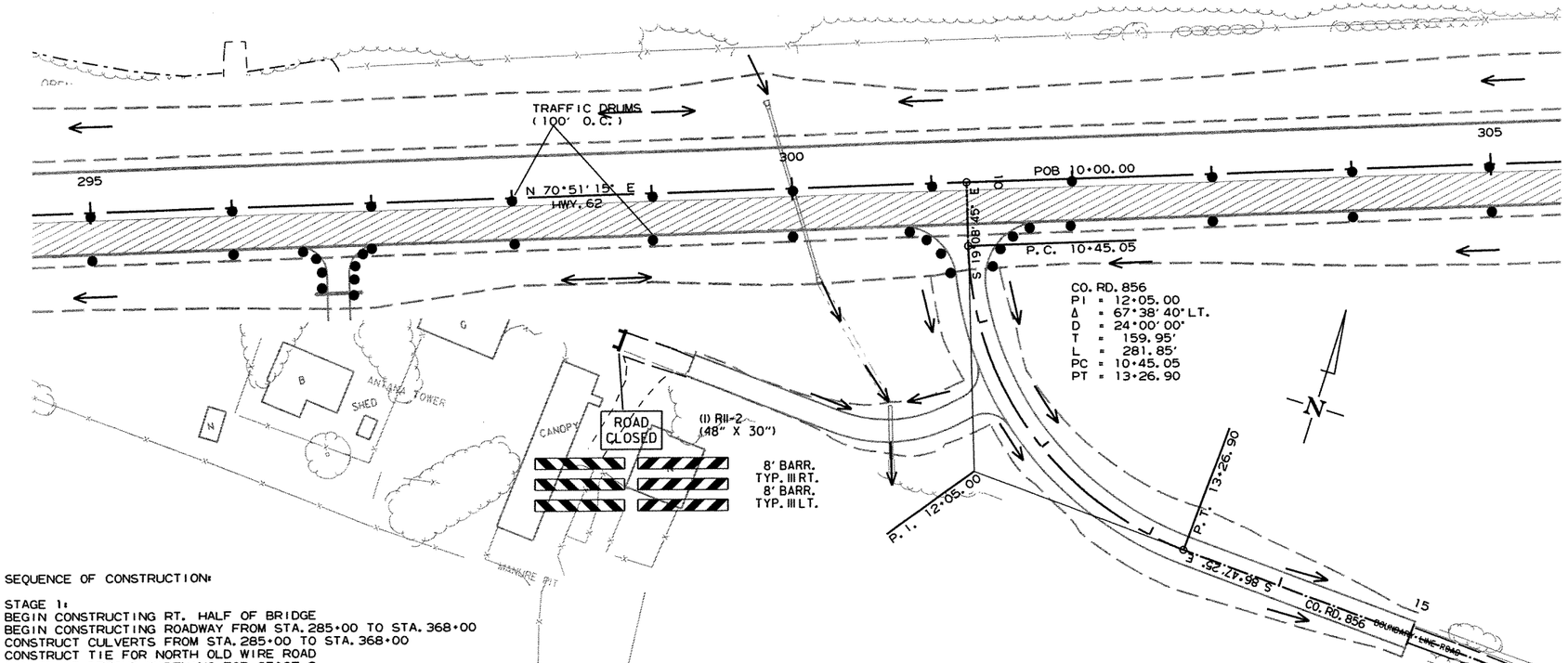
STAGE 3
MAINTENANCE OF TRAFFIC

11/5/2012
R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	94	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SEQUENCE OF CONSTRUCTION:

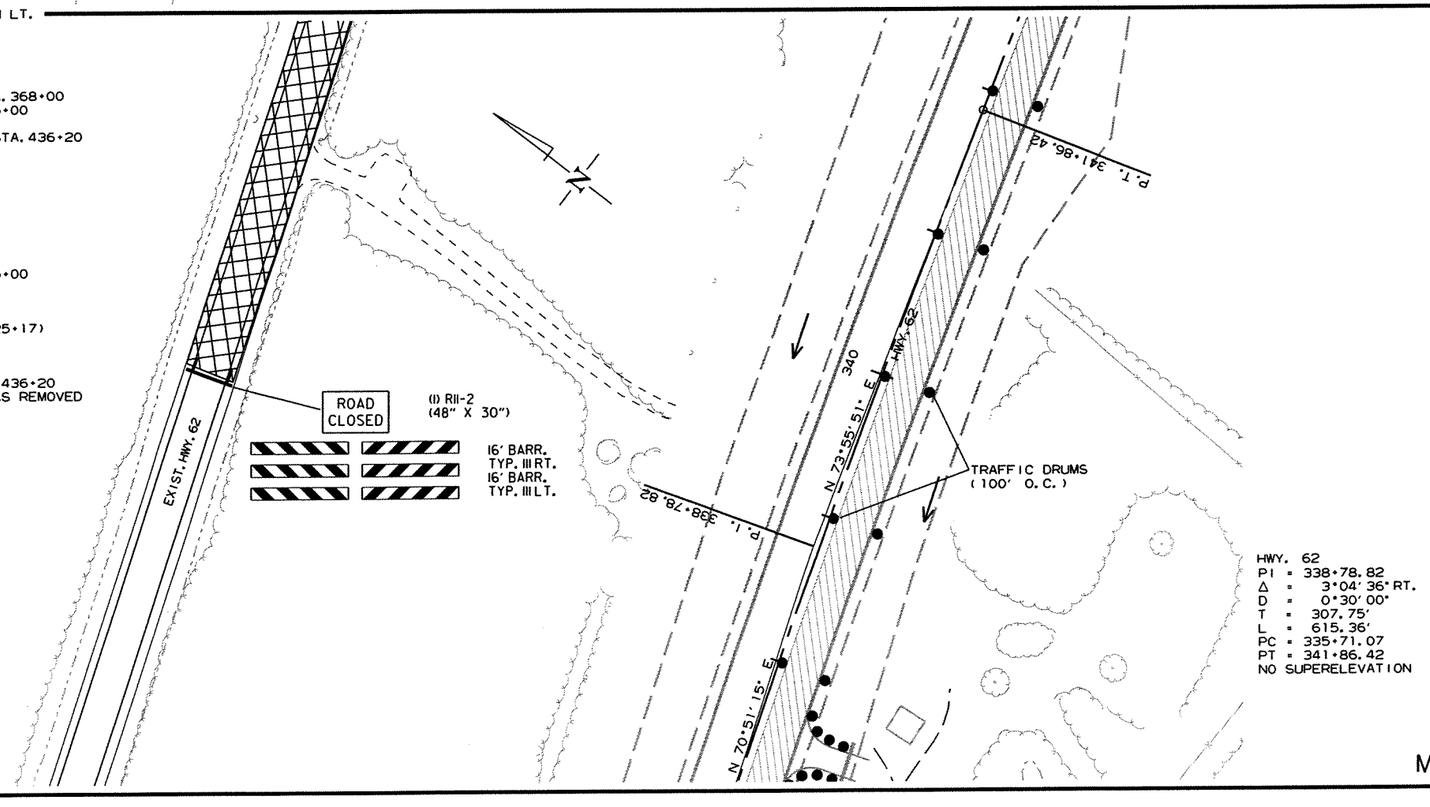
STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STAGE 3
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	95	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

SEQUENCE OF CONSTRUCTION:

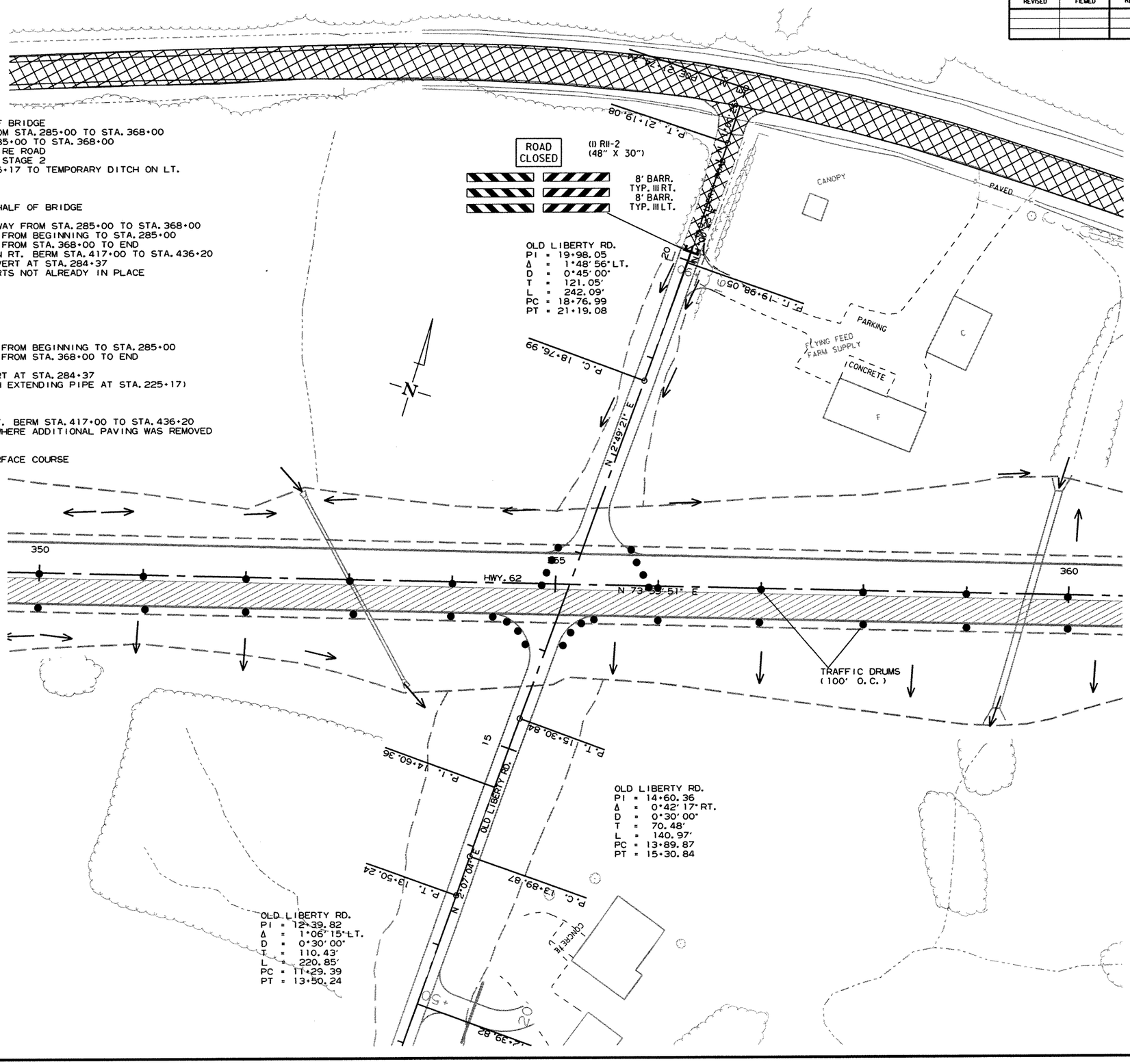
STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STAGE 3
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	96	460

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 372+00-446+50 REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 29800 LIN. FT.

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

TRAFFIC DRUMS (50' O.C.)
TRAFFIC DRUMS (100' O.C.)
TRAFFIC DRUMS = 6 EACH 20' O.C. ON DRIVES AND CITY STREETS (22 LOCATIONS = 132 EACH)

HWY. 62
PI = 371+80.01
Δ = 17°21'27" RT.
D = 5°15'00"
T = 166.59'
L = 330.62'
PC = 370+13.42
PT = 373+44.04
e = 0.0635'/'
Ls = 360'

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

SEQUENCE OF CONSTRUCTION (CONTINUED):

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STAGE 3
PI = 1418+92.16
Δ = 4°00'15" LT.
D = 4°00'00"
T = 50.07'
L = 100.11'
PC = 1417+82.08
PT = 1418+82.19

STAGE 3
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3
PI = 1417+38.55
Δ = 3°03'40" RT.
D = 4°00'00"
T = 38.27'
L = 76.53'
PC = 1417+00.27
PT = 1417+76.80

VERTICAL PANELS (50' O.C.)

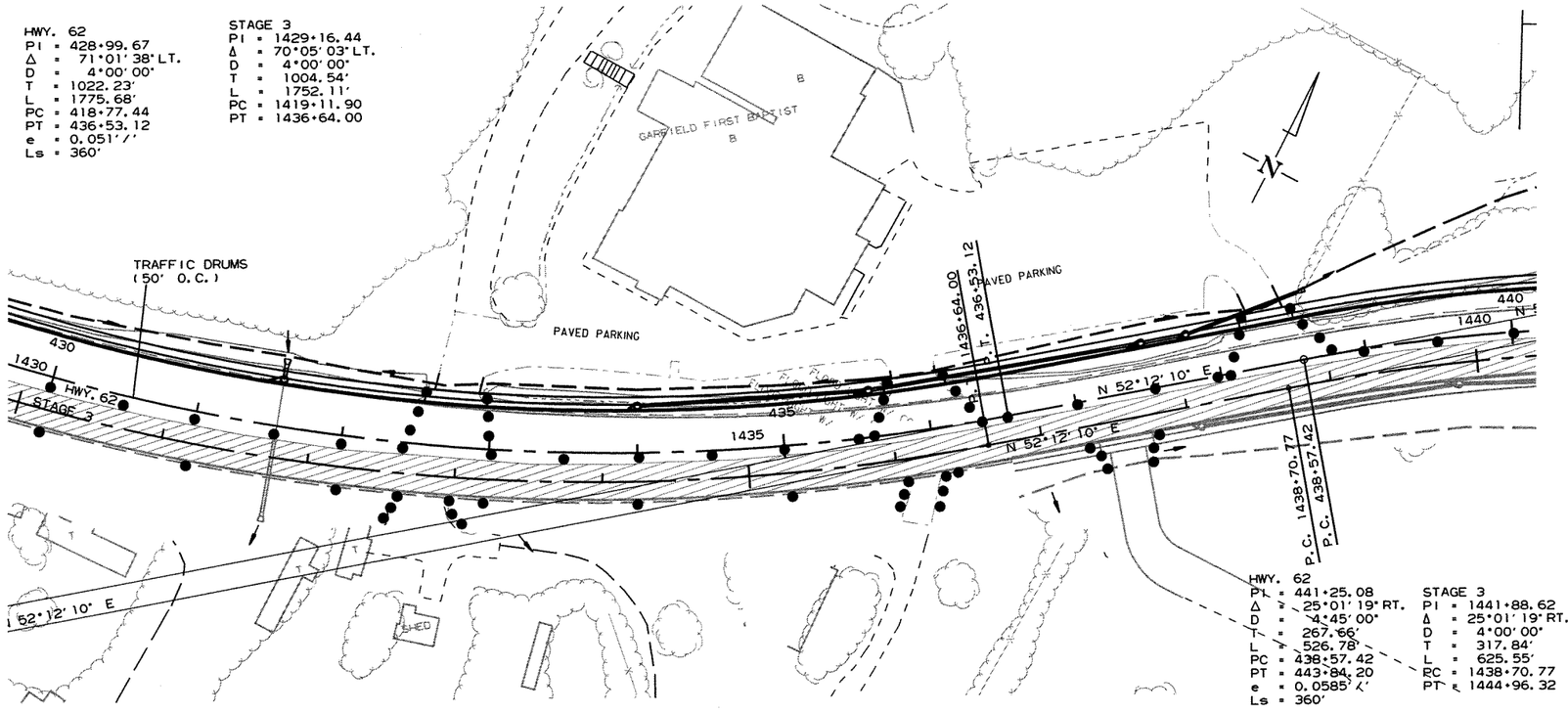
STAGE 3
MAINTENANCE OF TRAFFIC

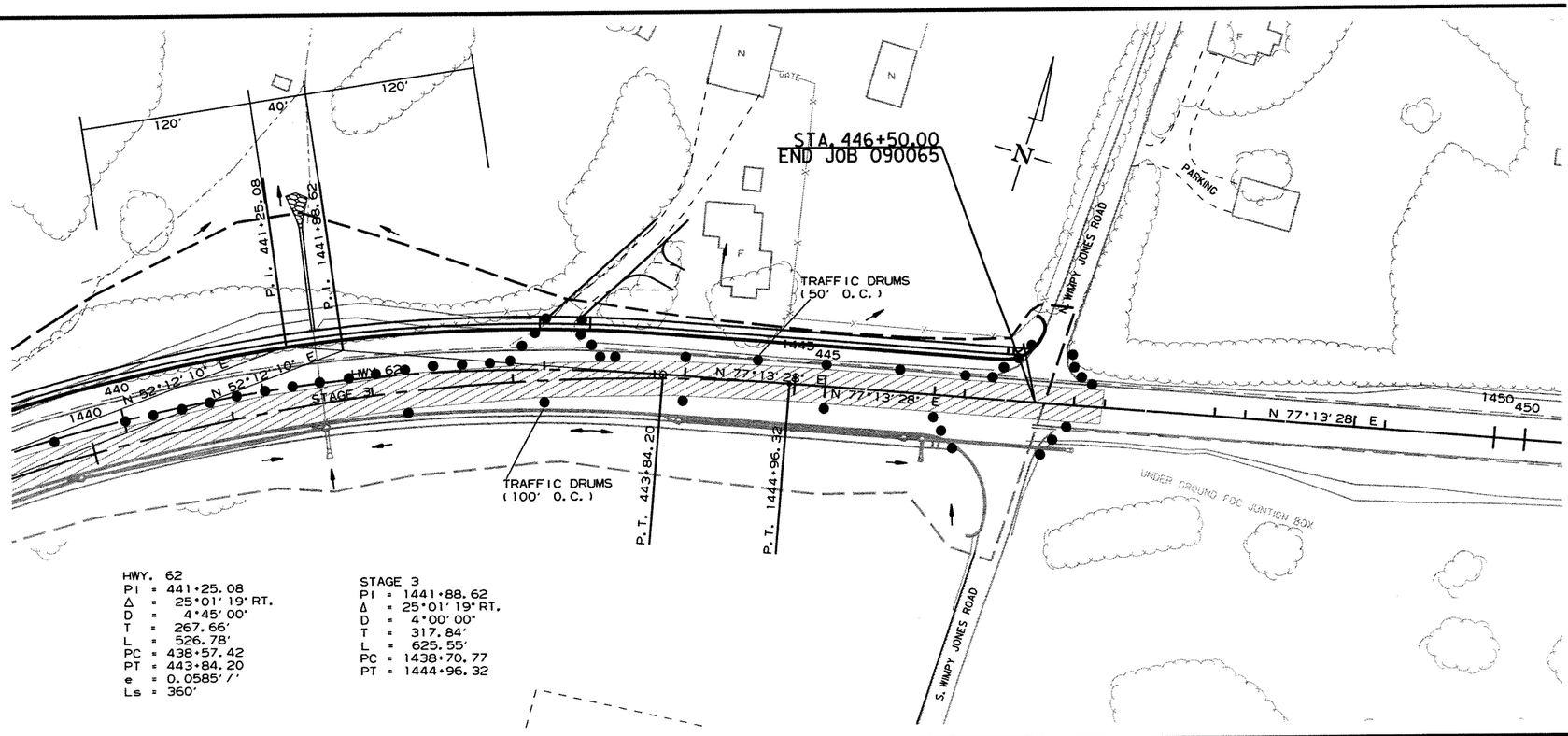
11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	97	460

(2) MAINTENANCE OF TRAFFIC





SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

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STAGE 3
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	98	460

(2) MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
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CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING

TRAFFIC DRUMS (50' O.C.)
STA. 417+00-437+00 RT. = 40 EACH

TRAFFIC DRUMS (100' O.C.)
STA. 417+00-417+00 RT. = 303 EACH
STA. 114+00-446+50 LT. = 333 EACH
STA. 437+00-446+50 RT. = 10 EACH

STA. 114+00-149+89 CONSTRUCTION
PAVEMENT MARKINGS = 14356 LIN. FT.

STA. 149+89-152+45 REMOVABLE CONSTRUCTION
PAVEMENT MARKINGS = 1024 LIN. FT.

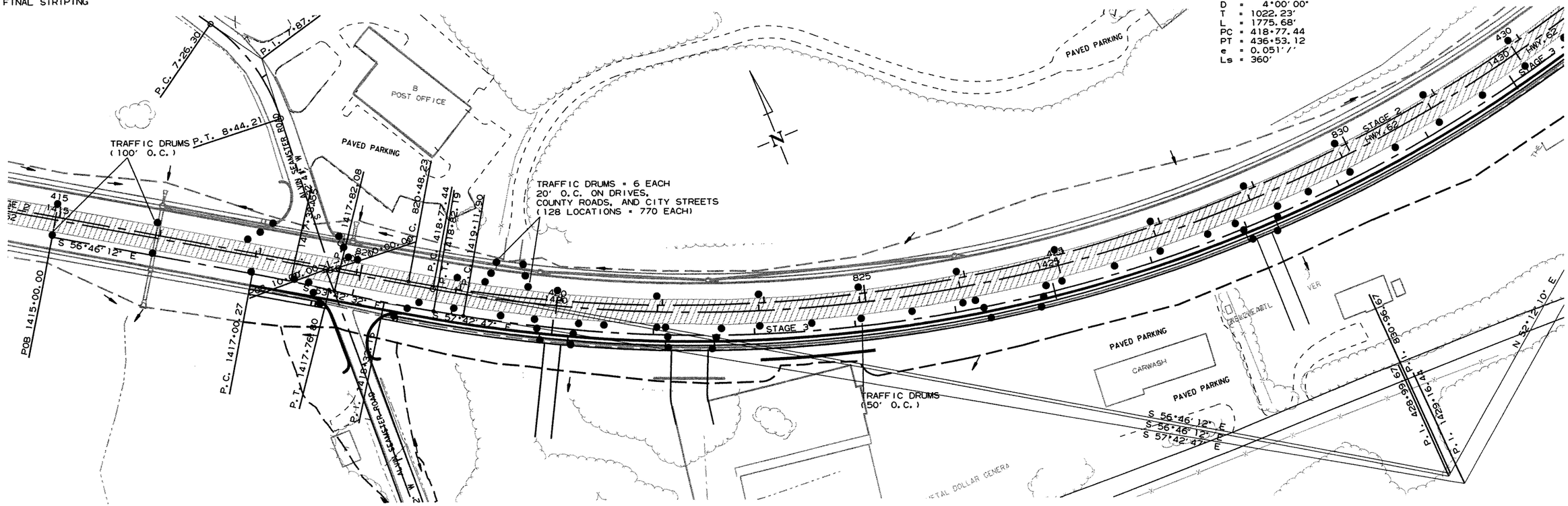
STA. 152+45-446+50 CONSTRUCTION
PAVEMENT MARKINGS = 117620 LIN. FT.

STA. 114+00-149+89 REMOVAL OF CONSTRUCTION
PAVEMENT MARKINGS = 14356 LIN. FT.

STA. 152+45-446+50 REMOVAL OF CONSTRUCTION
PAVEMENT MARKINGS = 117620 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

HWY. 62
PI = 428+99.67
Δ = 71°01' 38" LT.
D = 4°00' 00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'



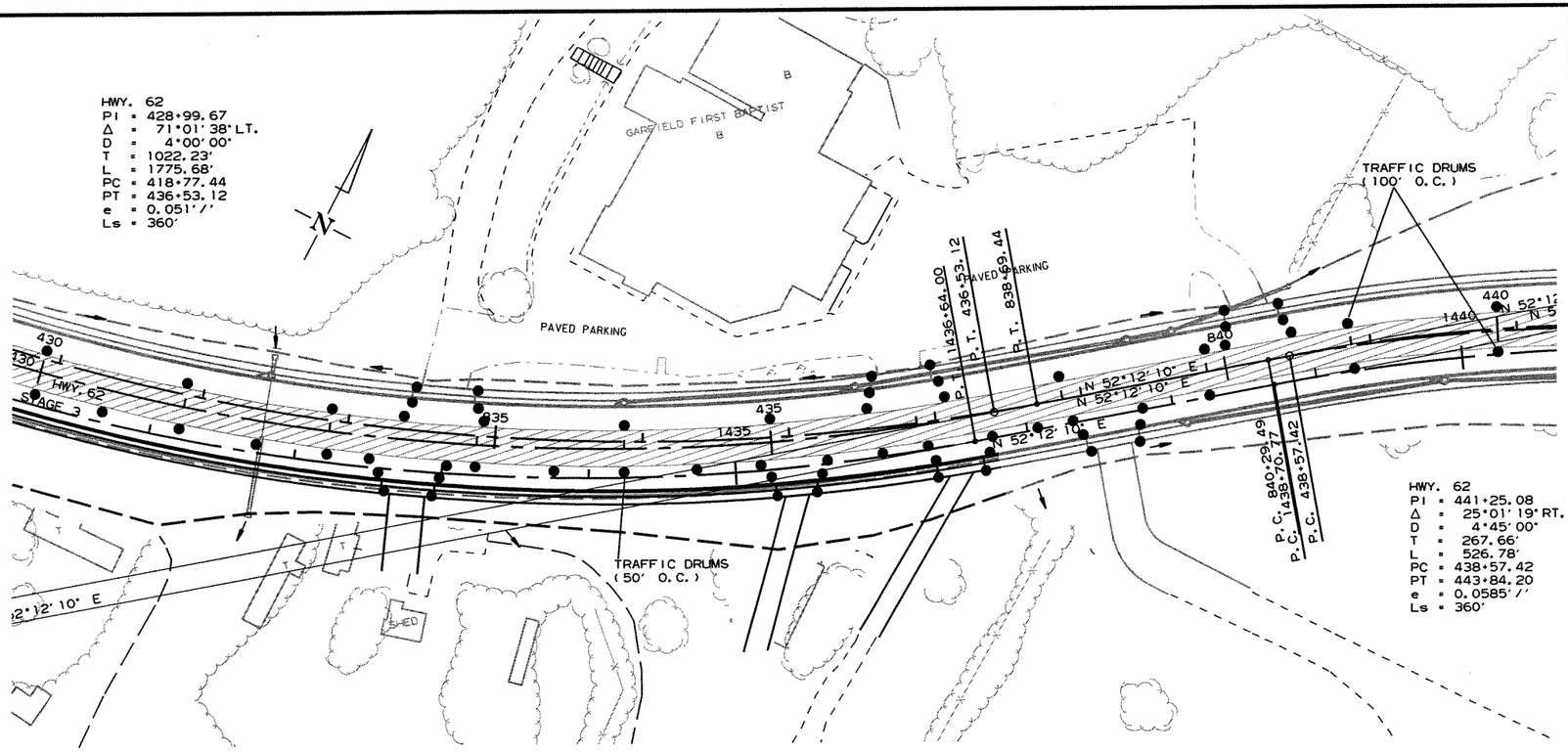
STAGE 4
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	99	460

(2) MAINTENANCE OF TRAFFIC



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

SEQUENCE OF CONSTRUCTION:

STAGE 1:
BEGIN CONSTRUCTING RT. HALF OF BRIDGE
BEGIN CONSTRUCTING ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT CULVERTS FROM STA. 285+00 TO STA. 368+00
CONSTRUCT TIE FOR NORTH OLD WIRE ROAD
CONSTRUCT DETOUR WIDENING FOR STAGE 2
EXTEND PIPE CULVERT AT STA. 225+17 TO TEMPORARY DITCH ON LT.

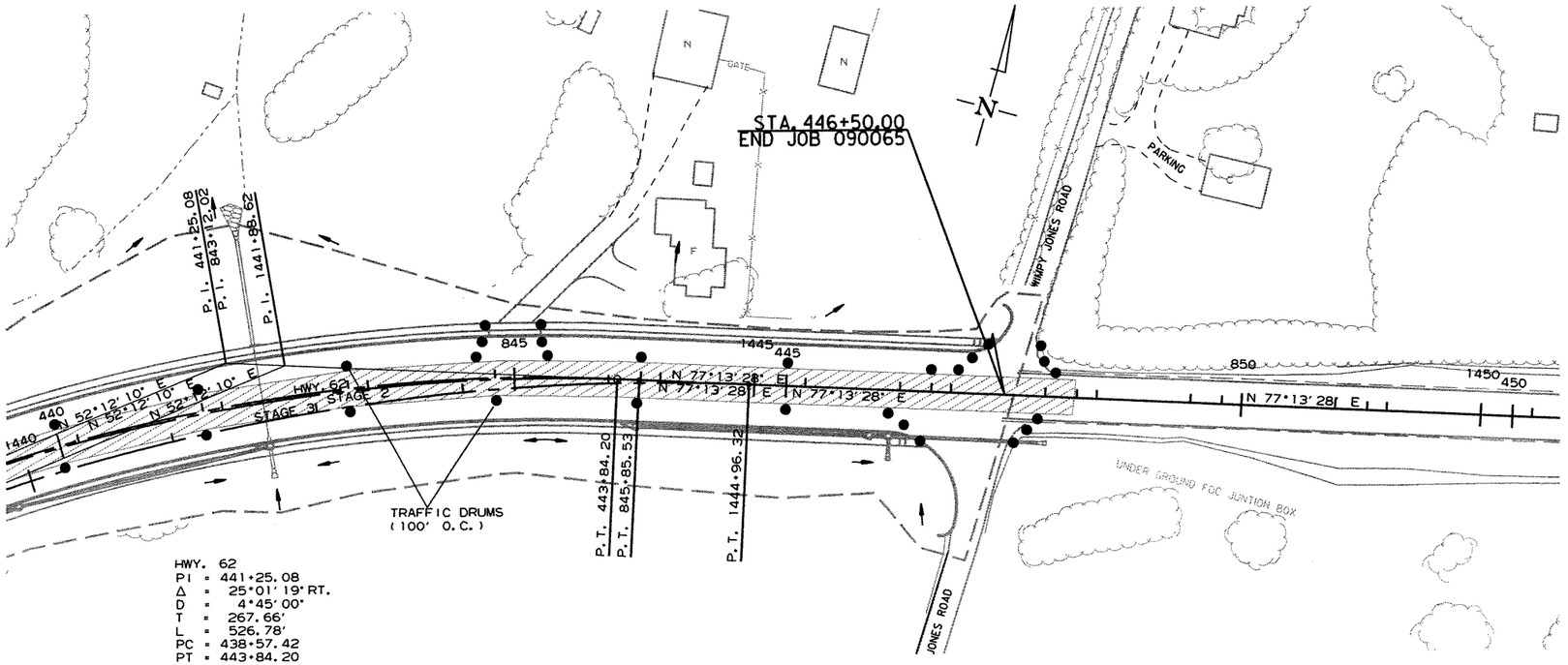
STAGE 2:
LEVELING
COMPLETE CONSTRUCTION ON RT. HALF OF BRIDGE
INSTALL GUARDRAIL ON RT.
COMPLETE CONSTRUCTION ON ROADWAY FROM STA. 285+00 TO STA. 368+00
CONSTRUCT RT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END
CONSTRUCT ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
CONSTRUCT RT. SIDE OF BOX CULVERT AT STA. 284+37
CONSTRUCT ANY OTHER NEW CULVERTS NOT ALREADY IN PLACE
EXTEND CULVERTS TO RT.
INSTALL STORM SEWER ON RT.
INSTALL TEMPORARY CULVERTS

STAGE 3:
CONSTRUCT LT. HALF OF BRIDGE
INSTALL GUARDRAIL ON LT.
CONSTRUCT LT. SIDE OF ROADWAY FROM BEGINNING TO STA. 285+00
& FROM STA. 368+00 TO END

CONSTRUCT HWY. 72 TURNOUT
FINISH CONSTRUCTING BOX CULVERT AT STA. 284+37
EXTEND CULVERTS TO LT. (FINISH EXTENDING PIPE AT STA. 225+17)
INSTALL STORM SEWER ON LT.

STAGE 4:
REMOVE ADDITIONAL PAVING ON RT. BERM STA. 417+00 TO STA. 436+20
FINISH CONSTRUCTING RT. SIDE WHERE ADDITIONAL PAVING WAS REMOVED

PERMANENT PAVEMENT MARKINGS:
CONSTRUCT FINAL 2" LIFT OF SURFACE COURSE
FINAL STRIPING



STAGE 4
MAINTENANCE OF TRAFFIC

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	100	460

(2) PERMANENT PAVEMENT MARKING DETAILS

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SKIP LINE LT.
STA. 114+00-123+13 = 228 LIN. FT.
STA. 123+63-149+89 = 657 LIN. FT.
STA. 152+45-162+70 = 256 LIN. FT.
STA. 163+20-187+66 = 612 LIN. FT.
STA. 188+16-217+33 = 729 LIN. FT.
STA. 217+83-288+49 = 1767 LIN. FT.
STA. 288+99-354+95 = 1649 LIN. FT.
STA. 355+45-417+19 = 1544 LIN. FT.
STA. 417+69-446+25 = 714 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SOLID EDGE LINE LT.
STA. 114+00-122+78 = 878 LIN. FT.
STA. 123+98-162+43 = 3845 LIN. FT.
STA. 163+45-187+36 = 2391 LIN. FT.
STA. 188+50-215+93 = 2743 LIN. FT.
STA. 218+92-288+32 = 6940 LIN. FT.
STA. 289+16-354+85 = 6569 LIN. FT.
STA. 355+90-369+00 = 1310 LIN. FT.
STA. 446+80-450+00 = 320 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SKIP LINE RT.
STA. 104+00-149+89 = 1147 LIN. FT.
STA. 152+45-164+28 = 296 LIN. FT.
STA. 164+78-228+28 = 1588 LIN. FT.
STA. 228+78-246+46 = 442 LIN. FT.
STA. 246+96-251+52 = 114 LIN. FT.
STA. 252+02-262+06 = 251 LIN. FT.
STA. 262+56-301+00 = 961 LIN. FT.
STA. 301+50-354+83 = 1333 LIN. FT.
STA. 355+33-378+30 = 574 LIN. FT.
STA. 378+80-388+65 = 246 LIN. FT.
STA. 389+15-417+79 = 716 LIN. FT.
STA. 418+29-439+00 = 518 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SOLID EDGE LINE RT.
STA. 108+00-163+96 = 5596 LIN. FT.
STA. 165+08-228+02 = 6294 LIN. FT.
STA. 229+03-246+17 = 1714 LIN. FT.
STA. 247+23-251+25 = 402 LIN. FT.
STA. 252+29-261+79 = 950 LIN. FT.
STA. 262+80-300+76 = 3796 LIN. FT.
STA. 301+77-354+37 = 5260 LIN. FT.
STA. 355+43-370+00 = 1457 LIN. FT.
STA. 446+65-450+00 = 335 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS

4" YELLOW SOLID LINES FOR CENTER LANE
STA. 114+00-123+13 = 1826 LIN. FT.
STA. 123+63-149+89 = 5252 LIN. FT.
STA. 152+45-162+70 = 2050 LIN. FT.
STA. 163+20-164+28 = 216 LIN. FT.
STA. 164+78-187+66 = 4576 LIN. FT.
STA. 188+16-215+33 = 5434 LIN. FT.
STA. 217+83-228+28 = 2090 LIN. FT.
STA. 228+78-246+46 = 3536 LIN. FT.
STA. 246+96-251+52 = 912 LIN. FT.
STA. 252+02-262+06 = 2008 LIN. FT.
STA. 262+56-288+49 = 5186 LIN. FT.
STA. 288+99-301+00 = 2402 LIN. FT.
STA. 301+50-354+89 = 10678 LIN. FT.
STA. 355+39-378+30 = 4582 LIN. FT.
STA. 378+80-388+65 = 1970 LIN. FT.
STA. 389+15-417+19 = 5608 LIN. FT.
STA. 418+29-446+25 = 5592 LIN. FT.
STA. 446+75-450+00 = 650 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS

4" YELLOW SKIP LINES FOR CENTER LANE
STA. 114+00-123+13 = 457 LIN. FT.
STA. 123+63-149+89 = 1313 LIN. FT.
STA. 152+45-162+70 = 513 LIN. FT.
STA. 163+20-164+28 = 54 LIN. FT.
STA. 164+78-187+66 = 1144 LIN. FT.
STA. 188+16-215+33 = 1359 LIN. FT.
STA. 217+83-228+28 = 523 LIN. FT.
STA. 228+78-246+46 = 884 LIN. FT.
STA. 246+96-251+52 = 228 LIN. FT.
STA. 252+02-262+06 = 502 LIN. FT.
STA. 262+56-288+49 = 1297 LIN. FT.
STA. 288+99-301+00 = 601 LIN. FT.
STA. 301+50-354+89 = 2670 LIN. FT.
STA. 355+39-378+30 = 1146 LIN. FT.
STA. 378+80-388+65 = 493 LIN. FT.
STA. 389+15-417+19 = 1402 LIN. FT.
STA. 418+29-446+25 = 1398 LIN. FT.
STA. 446+75-450+00 = 162 LIN. FT.

STATE OF ARKANSAS
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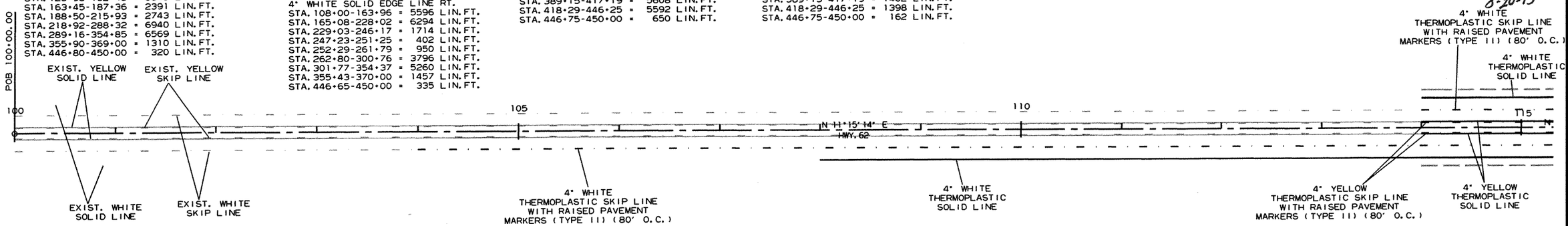


RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(WHITE/RED) SKIP LINE RT.
STA. 104+00-149+89 = 57 EACH
STA. 152+45-164+28 = 15 EACH
STA. 164+78-228+28 = 79 EACH
STA. 228+78-246+46 = 22 EACH
STA. 246+96-251+52 = 6 EACH
STA. 252+02-262+06 = 13 EACH
STA. 262+56-301+00 = 48 EACH
STA. 301+50-354+83 = 67 EACH
STA. 355+33-378+30 = 29 EACH
STA. 378+80-388+65 = 12 EACH
STA. 389+15-417+79 = 36 EACH
STA. 418+29-439+00 = 26 EACH

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(WHITE/RED) SKIP LINE LT.
STA. 114+00-123+13 = 11 EACH
STA. 123+63-149+89 = 33 EACH
STA. 152+45-162+70 = 13 EACH
STA. 163+20-187+66 = 31 EACH
STA. 188+16-217+33 = 36 EACH
STA. 217+83-288+49 = 88 EACH
STA. 288+99-354+95 = 82 EACH
STA. 355+45-417+19 = 77 EACH
STA. 417+69-446+25 = 36 EACH

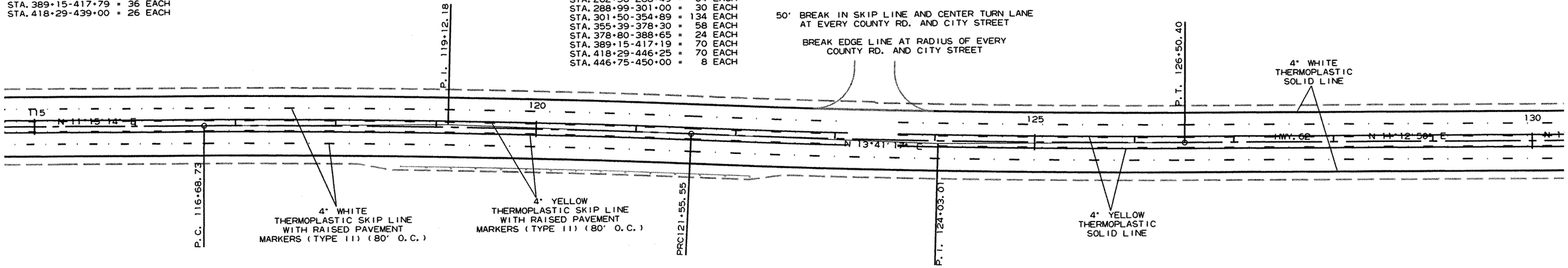
RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(YELLOW/YELLOW) SKIP LINES FOR CENTER LANE
STA. 114+00-123+13 = 22 EACH
STA. 123+63-149+89 = 66 EACH
STA. 152+45-162+70 = 26 EACH
STA. 163+20-164+28 = 2 EACH
STA. 164+78-187+66 = 58 EACH
STA. 188+16-215+33 = 68 EACH
STA. 217+83-228+28 = 26 EACH
STA. 228+78-246+46 = 44 EACH
STA. 246+96-251+52 = 12 EACH
STA. 252+02-262+06 = 26 EACH
STA. 262+56-288+49 = 64 EACH
STA. 288+99-301+00 = 30 EACH
STA. 301+50-354+89 = 134 EACH
STA. 355+39-378+30 = 58 EACH
STA. 378+80-388+65 = 24 EACH
STA. 389+15-417+19 = 70 EACH
STA. 418+29-446+25 = 70 EACH
STA. 446+75-450+00 = 8 EACH

HWY. 62
PI = 124+03.01
Δ = 2°28'27" LT.
D = 0°30'00"
T = 247.46'
L = 494.85'
PC = 121+55.55
PT = 126+50.40
NO SUPERELEVATION

50' BREAK IN SKIP LINE AND CENTER TURN LANE AT EVERY COUNTY RD. AND CITY STREET

BREAK EDGE LINE AT RADIUS OF EVERY COUNTY RD. AND CITY STREET



HWY. 62
PI = 119+12.18
Δ = 2°26'03" RT.
D = 0°30'00"
T = 243.45'
L = 486.82'
PC = 116+68.73
PT = 121+55.55
NO SUPERELEVATION

1/15/2013

R090065.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.		090065	101	460

(2) PERMANENT PAVEMENT MARKING DETAILS

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS

4" WHITE SKIP LINE LT.
STA. 149+89-152+45 = 64 LIN. FT.

4" WHITE SKIP LINE RT.
STA. 149+89-152+45 = 64 LIN. FT.

4" YELLOW SOLID LINES FOR CENTER LANE
STA. 149+89-152+45 = 512 LIN. FT.

4" YELLOW SKIP LINES FOR CENTER LANE
STA. 149+89-152+45 = 128 LIN. FT.

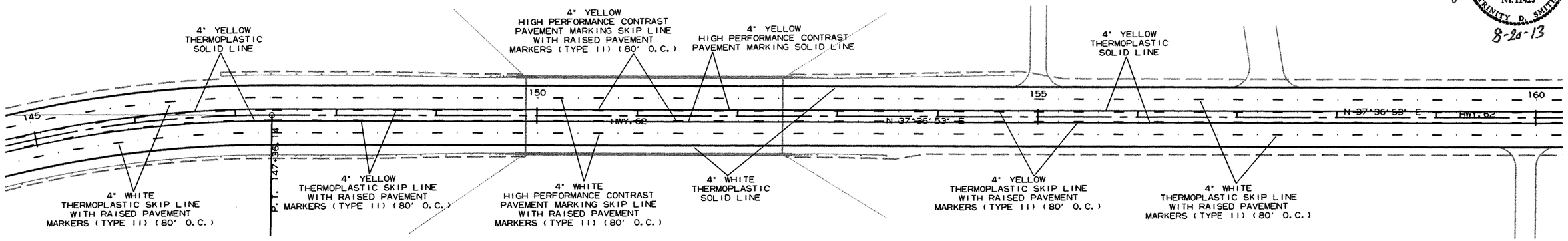
RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(WHITE/RED) SKIP LINE LT.
STA. 149+89-152+45 = 3 EACH

(WHITE/RED) SKIP LINE RT.
STA. 149+89-152+45 = 3 EACH

(YELLOW/YELLOW) SKIP LINES FOR CENTER LANE
STA. 149+89-152+45 = 6 EACH

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SOLID EDGE LINES FOR HWY. 72 = 530 LIN. FT.

4" DOUBLE YELLOW FOR HWY. 72 = 362 LIN. FT.

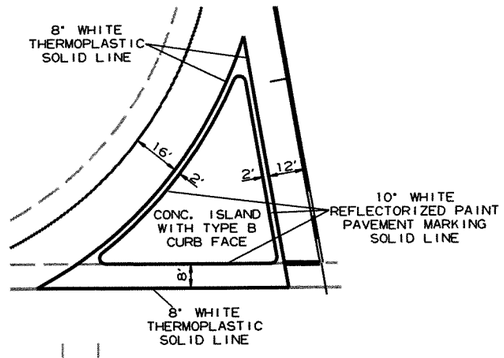
8" WHITE SOLID AROUND ISLAND FOR HWY. 72 = 280 LIN. FT.

12" WHITE SOLID STOP BAR FOR HWY. 72 = 12 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKINGS

10" WHITE ON ISLAND FOR HWY. 72 = 201 LIN. FT.

CONCRETE ISLAND INSET



HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SOLID LINE FOR LT. TURN LANE
STA. 216+33-217+33 = 100 LIN. FT.

4" DOUBLE YELLOW FOR LT. TURN LANE
STA. 215+33-217+33 = 400 LIN. FT.

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(WHITE/RED) LT. TURN LANE
STA. 216+33-217+33 = 2 EACH

PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	102	460

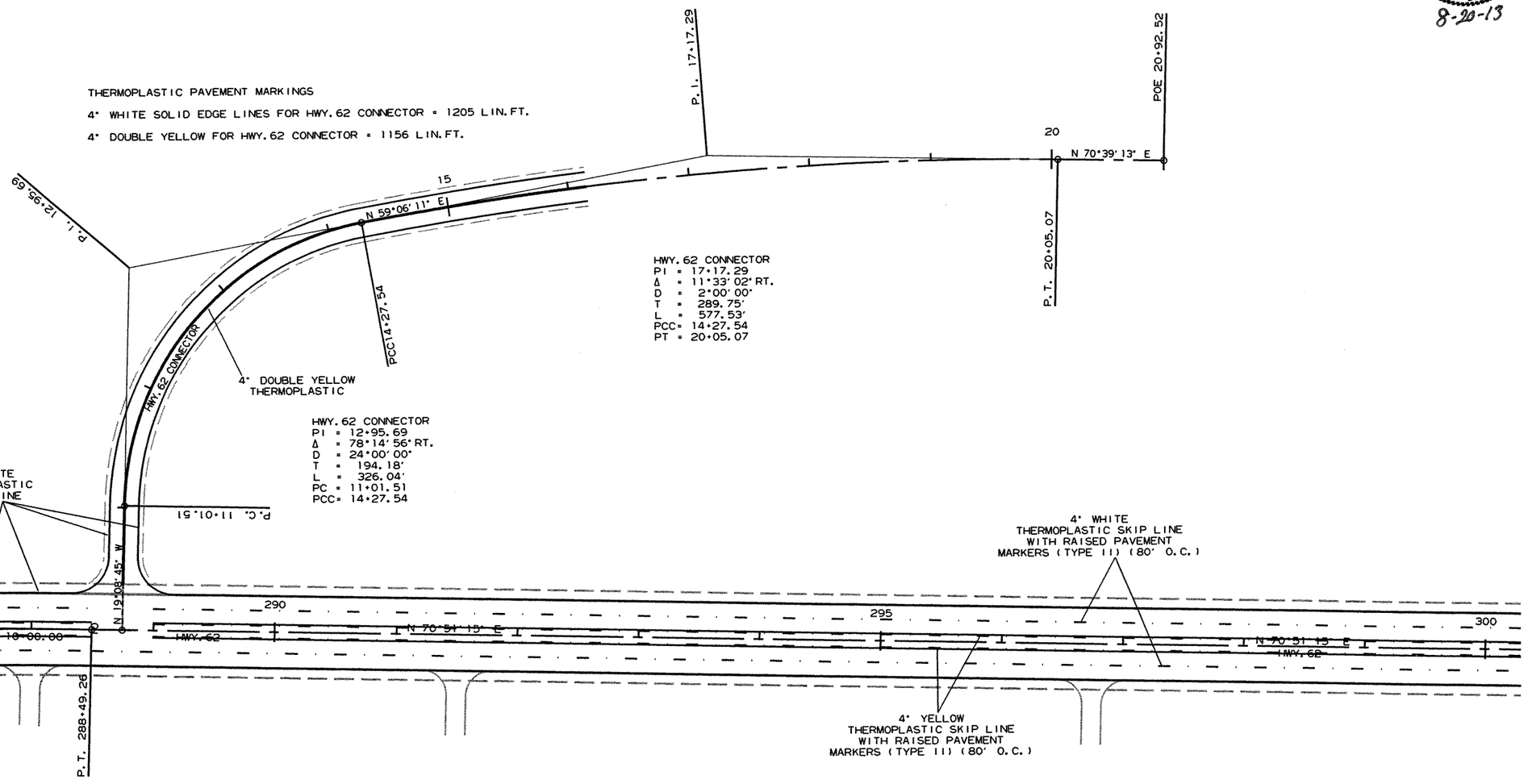
(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

THERMOPLASTIC PAVEMENT MARKINGS

4" WHITE SOLID EDGE LINES FOR HWY. 62 CONNECTOR = 1205 LIN. FT.

4" DOUBLE YELLOW FOR HWY. 62 CONNECTOR = 1156 LIN. FT.



HWY. 62
PI = 280+23.25
Δ = 16°38' 17" RT.
D = 1°00' 00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

1/15/2013

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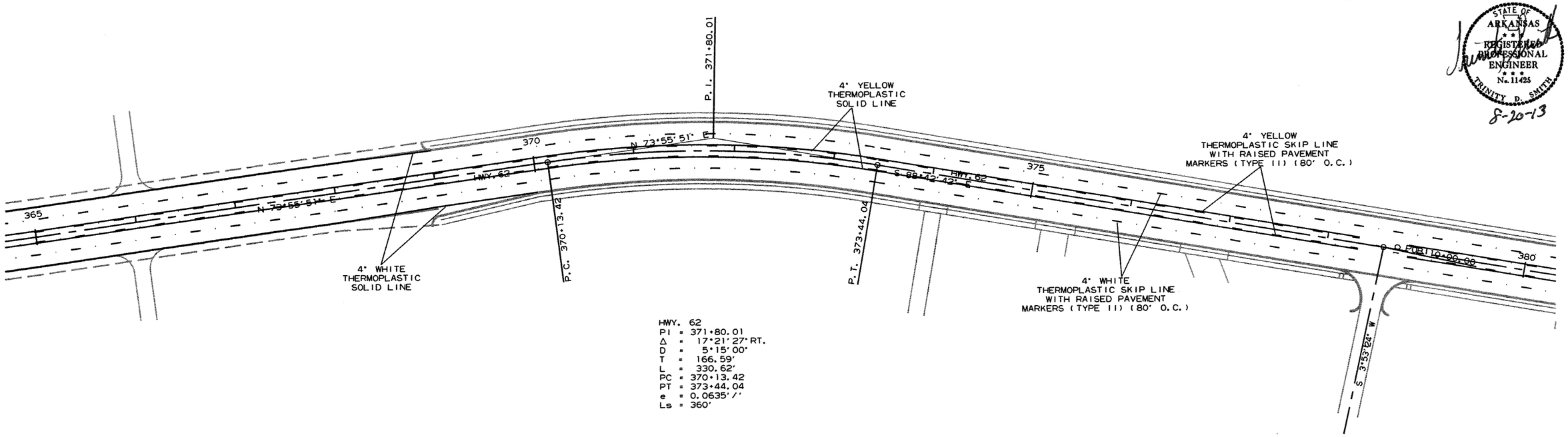
PERMANENT PAVEMENT MARKING DETAILS

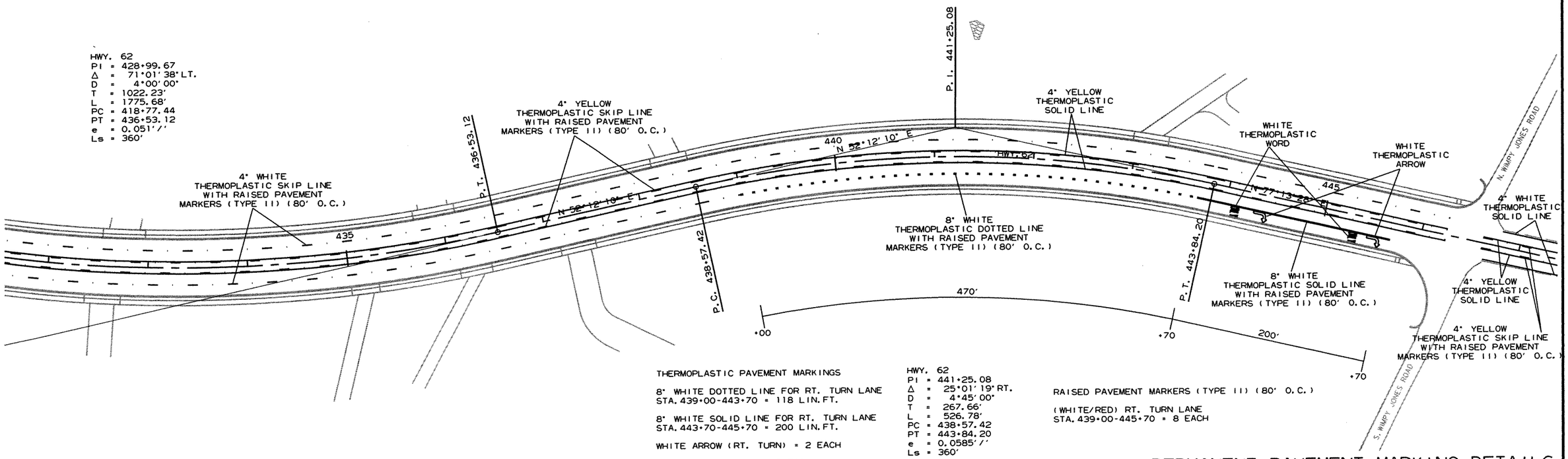
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	103	460

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



HWY. 62
PI = 371+80.01
Δ = 17°21'27" RT.
D = 5°15'00"
T = 166.59'
L = 330.62'
PC = 370+13.42
PT = 373+44.04
e = 0.0635'/'
Ls = 360'



THERMOPLASTIC PAVEMENT MARKINGS

8" WHITE DOTTED LINE FOR RT. TURN LANE
STA. 439+00-443+70 = 118 LIN. FT.

8" WHITE SOLID LINE FOR RT. TURN LANE
STA. 443+70-445+70 = 200 LIN. FT.

WHITE ARROW (RT. TURN) = 2 EACH

WHITE WORD (ONLY) = 2 EACH

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

RAISED PAVEMENT MARKERS (TYPE II) (80' O.C.)

(WHITE/RED) RT. TURN LANE
STA. 439+00-445+70 = 8 EACH

PERMANENT PAVEMENT MARKING DETAILS

1/15/2013

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	104	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
8-20-13
TRINITY D. SMITH

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	STAGE 4	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		SIGNS LEFT IN PLACE		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONCRETE BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)
															RIGHT	LEFT				
			LIN.FT. - EACH						NO.	SQ. FT.	NO.	SQ. FT.	EACH		LIN.FT.				EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	3	3	3	48.0										
W20-1	ROAD WORK AHEAD	48"x48"	18	18	18	18	18	18	18	288.0										
G20-2	END ROAD WORK	48"x24"	21	21	21	21	21	21	21	168.0										
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	2	2	2	2	20.0										
R11-2	ROAD CLOSED	48"x30"	10	13	7			13	13	130.0										
OM-3L	OBJECT MARKER	12"x36"		10	12			12	12	36.0										
OM-3R	OBJECT MARKER	12"x36"		16	16			16	16	48.0										
OM4-3	RED DIAMOND REFLECTORS	18"x18"			3			3			3	7								
W1-6	LARGE ARROW	48"x24"		2	3			3	3	24.0										
W1-8	CHEVRONS	18"x24"		16				16	16	48.0										
R4-1	DO NOT PASS	24"x30"	24	24	24	24	24	24	24	120.0										
RSP-1	SHOULDER CLOSED	48"x30"	4	4	4	4	4	4	4	40.0										
W8-9	LOW SHOULDER	36"X36"	4	4	4	4	4	4	4	36.0										
	VERTICAL PANELS		49	100	14			100					100							
	TRAFFIC DRUMS		157	1249	1891	1454		1891						1891						
	TYPE III BARRICADE-RT. (8')		2	1	3			3							24					
	TYPE III BARRICADE-LT. (8')		2	1	3			3								24				
	TYPE III BARRICADE-RT. (16')		1	1	1			1							16					
	TYPE III BARRICADE-LT. (16')				1			1								16				
	TYPE III BARRICADE-RT. (24')		1	2	1			2							48					
	TYPE III BARRICADE-LT. (24')			1	1			1								24				
	TYPE III BARRICADE-RT. (32')		6	7	1			7							224					
	TYPE III BARRICADE-LT. (32')		6	7				7								224				
	TYPE III BARRICADE-RT. (64')			1				1							64					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			632	646			1278									1278			
	RELOCATING PRECAST CONCRETE BARRIER			133	632			765										765		
	TEMPORARY IMPACT ATTENUATION BARRIER			3	2			5											5	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			3	2			5												5
TOTALS:									1102.0		7	100	1891	376	288		1278	765	5	5

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	STAGE 4	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKINGS						REFLECTORIZED PAINT PAVEMENT MARKINGS	HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	
										TYPE II (WHITE/RED	TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	8" WHITE	12" WHITE	WORDS	ARROWS	10" WHITE	4" WHITE	4" YELLOW
	LIN.FT. - EACH					LIN.FT.				EACH		LIN.FT.				EACH		LIN.FT.	LIN.FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS		92776				92776														
CONSTRUCTION PAVEMENT MARKINGS		92776	131976	131976			356728													
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			92776	131976				224752												
REMOVABLE CONSTRUCTION PAV'T MARKINGS			1024	1024					2048											
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)					833					833										
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)					814						814									
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")					68977							68977								
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")					82632								82632							
THERMOPLASTIC PAVEMENT MARKINGS WHITE (8")					598									598						
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12")					12										12					
THERMOPLASTIC PAVEMENT MARKINGS WORDS					2											2				
THERMOPLASTIC PAVEMENT MARKINGS ARROWS					2												2			
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (10")					201													201		
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")					128														128	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")					640															640
TOTALS:						92776	356728	224752	2048	833	814	68977	82632	598	12	2	2	201	128	640

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	105	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-13-13

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS
		EACH	EACH
133+06	18"X47' PIPE CULVERT	1	
133+47	24"X76' R.C. PIPE CULVERT W/ HDWLS.	1	
157+23	18"X50' PIPE CULVERT	1	
159+06	24"X37' PIPE CULVERT	1	
159+88	18"X40' PIPE CULVERT	1	
163+10	18"X40' PIPE CULVERT	1	
164+32	18"X40' PIPE CULVERT	1	
164+56	18"X24' PIPE CULVERT	1	
169+37	18"X25' PIPE CULVERT	1	
172+22	18"X28' PIPE CULVERT	1	
185+93	18"X24' PIPE CULVERT	1	
193+51	18"X24' PIPE CULVERT	1	
194+77	18"X24' PIPE CULVERT	1	
197+98	18"X32' PIPE CULVERT	1	
206+17	18"X35' PIPE CULVERT	1	
209+39	18"X40' PIPE CULVERT	1	
209+53	18"X44' PIPE CULVERT	1	
211+80	18"X40' PIPE CULVERT	1	
212+49	18"X34' PIPE CULVERT	1	
213+45	18"X24' PIPE CULVERT	1	
215+77	18"X22' PIPE CULVERT	1	
217+11	12"X40' PIPE CULVERT	1	
217+86	18"X40' PIPE CULVERT	1	
219+67	18"X44' PIPE CULVERT	1	
220+12	18"X54' PIPE CULVERT	1	
221+12	18"X44' PIPE CULVERT	1	
228+53	18"X50' PIPE CULVERT	1	
230+45	12"X34' PIPE CULVERT	1	
234+22	24"X40' PIPE CULVERT	1	
235+36	24"X40' PIPE CULVERT	1	
240+87	18"X30' PIPE CULVERT	1	
241+35	12"X42' PIPE CULVERT	1	
241+63	18"X24' PIPE CULVERT	1	
242+91	24"X48' PIPE CULVERT	1	
243+87	24"X30' PIPE CULVERT	1	
245+97	24"X20' PIPE CULVERT	1	
247+78	24"X20' PIPE CULVERT	1	
249+01	24"X60' PIPE CULVERT	1	
249+26	18"X24' PIPE CULVERT	1	
249+58	24"X28' PIPE CULVERT	1	
251+25	18"X22' PIPE CULVERT	1	
253+02	18"X42' PIPE CULVERT	1	
257+30	24"X48' R.C. PIPE CULVERT W/ HDWLS.	1	
259+18	12"X60' PIPE CULVERT	1	
264+21	18"X38' PIPE CULVERT	1	
265+51	18"X24' PIPE CULVERT	1	
268+46	18"X30' PIPE CULVERT	1	
270+89	18"X40' PIPE CULVERT	1	
272+47	18"X40' PIPE CULVERT	1	
273+52	18"X30' PIPE CULVERT	1	
283+45	2'X4'X50' R.C. BOX CULVERT		1
284+15	24"X38' PIPE CULVERT	1	
374+74	24"X26' PIPE CULVERT	1	
375+29	24"X40' PIPE CULVERT	1	
376+63	24"X40' PIPE CULVERT	1	
378+80	18"X48' PIPE CULVERT	1	
378+83	24"X60' PIPE CULVERT	1	
391+14	18"X20' PIPE CULVERT	1	
391+59	18"X48' PIPE CULVERT	1	
392+04	18"X18' PIPE CULVERT	1	
392+17	18"X20' PIPE CULVERT	1	
396+93	18"X20' PIPE CULVERT	1	
404+83	18"X30' PIPE CULVERT	1	
406+45	18"X25' PIPE CULVERT	1	
416+00	24"X60' R.C. PIPE CULVERT W/ HDWLS.	1	
417+54	18"X40' PIPE CULVERT	1	
419+50	18"X44' PIPE CULVERT	1	
432+56	18"X40' PIPE CULVERT	1	
432+75	18"X40' PIPE CULVERT	1	
435+93	18"X41' PIPE CULVERT	1	
438+36	18"X60' PIPE CULVERT	1	
13+20	18"X30' PIPE CULVERT (OLD LIBERTY RD.)	1	
19+90	18"X40' PIPE CULVERT (OLD LIBERTY RD.)	1	
TOTALS:		72	1

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
116+00	157+00	HWY. 62 LT. & RT.	41	41
158+00	210+00	HWY. 62 LT. & RT.	52	52
212+00	219+00	HWY. 62 LT. & RT.	7	7
221+00	252+00	HWY. 62 LT. & RT.	31	31
253+00	305+00	HWY. 62 LT. & RT.	52	52
307+00	309+00	HWY. 62 LT. & RT.	2	2
311+00	356+00	HWY. 62 LT. & RT.	45	45
359+00	361+00	HWY. 62 LT. & RT.	2	2
368+00	403+00	HWY. 62 LT. & RT.	35	35
410+00	428+00	HWY. 62 LT. & RT.	18	18
431+00	437+00	HWY. 62 LT. & RT.	6	6
438+00	447+00	HWY. 62 LT. & RT.	9	9
TOTALS:			300	300

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH		
ENTIRE PROJECT	72	52	10
TOTALS:	72	52	10

REMOVAL AND DISPOSAL OF GATES

STATION	LOCATION	GATES
		EACH
172+26	12' STEEL GATE ON RT.	1
209+42	17' PIPE GATES ON RT.	2
212+49	18' CHAIN GATE ON RT.	1
327+00	RT. OF CONSTRUCTION C.L.	1
TOTAL:		5

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	RETAINING WALLS	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	POSTS	SIGN FOUNDATIONS	GUARDRAIL	WELL	BUILDINGS	SEPTIC SYSTEM	SIGNS
			LIN.FT.		SQ. YD.	SQ. YD.	EACH	EACH	LIN.FT.	EACH	EACH	EACH	EACH
147+99	149+99	LT. OF C.L. HWY. 62							200				
149+24	149+99	LT. OF C.L. HWY. 62							75				
151+71	152+46	LT. OF C.L. HWY. 62							75				
151+71	153+73	LT. OF C.L. HWY. 62							200				
163+68		LT. OF C.L. HWY. 62					4						
164+65		RT. OF C.L. HWY. 62											1
187+51		RT. OF C.L. HWY. 62											1
204+28	206+03	RT. OF C.L. HWY. 62							175				
209+22		LT. OF C.L. HWY. 62											1
209+64		LT. OF C.L. HWY. 62						1					1
209+90		RT. OF C.L. HWY. 62					1						
210+95		LT. OF C.L. HWY. 62											1
212+17		RT. OF C.L. HWY. 62					1						
216+51	217+43	LT. OF C.L. HWY. 62	273										
216+92	218+05	RT. OF C.L. HWY. 62				234							
217+36	217+56	LT. OF C.L. HWY. 62			30								
217+59	218+51	LT. OF C.L. HWY. 62	270										
219+77	221+47	RT. OF C.L. HWY. 62				601							
219+84	219+93	LT. OF C.L. HWY. 62	29										
219+88	220+98	RT. OF C.L. HWY. 62	135										
220+33	220+42	LT. OF C.L. HWY. 62	34										
236+58		RT. OF C.L. HWY. 62						1					
237+10		LT. OF C.L. HWY. 62						1					
240+69	241+04	RT. OF C.L. HWY. 62				72							
244+50		RT. OF C.L. HWY. 62										1	
252+68		LT. OF C.L. HWY. 62						1					1
263+84		RT. OF C.L. HWY. 62								1			
288+30		RT. OF C.L. HWY. 62								1	1		
288+53	289+19	RT. OF C.L. HWY. 62				145							
256+04	356+33	LT. OF C.L. HWY. 62				49							
265+22		LT. OF C.L. HWY. 62											1
369+12		LT. OF C.L. HWY. 62											1
376+32	376+96	RT. OF C.L. HWY. 62	40			235							
377+88		RT. OF C.L. HWY. 62											1
377+88		RT. OF C.L. HWY. 62											1
378+19	379+36	RT. OF C.L. HWY. 62	44			352							
379+47		RT. OF C.L. HWY. 62											1
380+35		RT. OF C.L. HWY. 62											1
391+31		RT. OF C.L. HWY. 62											1
398+69		RT. OF C.L. HWY. 62											1
415+44		LT. OF C.L. HWY. 62											1
421+73	422+23	RT. OF C.L. HWY. 62	53										
422+23	422+94	RT. OF C.L. HWY. 62		94									
422+92	422+95	RT. OF C.L. HWY. 62	16										
425+11		RT. OF C.L. HWY. 62											1
432+40	432+75	RT. OF C.L. HWY. 62				74							
TOTALS:			894	94	30	1762	6	4	725	2	1	1	16

11/5/2012

R090065.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	106	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-13-13

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT			PRESPLITTING	* SOIL STABILIZATION
					NORMAL	TYPE 1 GRANULAR MATERIAL	TOTAL		
				CU. YD.				SQ. YD.	TON
	ENTIRE	PROJECT	STAGE 1-MAIN LANES	123141	143575		143575		
	ENTIRE	PROJECT	STAGE 2-MAIN LANES	139206	117242	10107	127349	3330	
	ENTIRE	PROJECT	STAGE 3-MAIN LANES	73796	70693		70693	2258	
	ENTIRE	PROJECT	STAGE 4-MAIN LANES	890	1183		1183		
	ENTIRE	PROJECT	OBLITERATION OF EXIST. PAVEMENT	5998					
	ENTIRE	PROJECT	APPROACHES	2265	11800		11800		
*	ENTIRE	PROJECT	TEMPORARY APPROACHES		2000		2000		
	ENTIRE	PROJECT	ADDITIONAL FOR BRIDGE	2060					
	262+30		N. OLD WIRE RD.	1365					
	288+74		HWY. 62 CONNECTOR	1287	1329		1329		
	301+25		COUNTY RD. 856	681	510		510		
	355+14		OLD LIBERTY RD.	128	15286		15286		
	378+52		RANCH VIEW ROAD	13	95		95		
	388+91		PAUL PRATT ROAD	991					
	417+70		ALVIN SEAMSTER ROAD (SOUTH)	9	2437		2437		
	417+74		ALVIN SEAMSTER ROAD (NORTH)	10					
	147+50		CHANNEL CHANGE	9					
	172+09		CHANNEL CHANGE	53					
	284+37		CHANNEL CHANGE	30					
	313+70		CHANNEL CHANGE	68					
	328+80		CHANNEL CHANGE	97					
	359+62		CHANNEL CHANGE	52					
	372+58		CHANNEL CHANGE	24					
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE						500
			DIRECTED BY THE ENGINEER						
	TOTALS:			352173	366150	10107	376257	5588	500

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

CONCRETE RIPRAP

STATION	STATION	LOCATION / DESCRIPTION	CONCRETE RIPRAP
			CU. YD.
380+40	381+40	RT. OF MAIN LANES	24
TOTAL:			24

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.
	128+00	147+00	LT. SIDE OF HWY. 62	1900.00	4.00			844.44	844.44	10.64
	132+00	134+00	RT. SIDE OF HWY. 62	200.00	9.50			211.11	88.89	1.12
	147+00	149+89	RT. SIDE OF HWY. 62	289.00	6.50			208.72	128.44	1.62
	159+00	164+83	RT. SIDE OF HWY. 62	583.00	9.50			615.39	259.11	3.26
	160+00	168+00	LT. SIDE OF HWY. 62	800.00	9.50			844.44	355.56	4.48
	169+00	172+00	RT. SIDE OF HWY. 62	300.00	6.50			216.67	133.33	1.68
	172+00	186+00	RT. SIDE OF HWY. 62	1400.00	17.00	10	2644.44		622.22	7.84
	172+43	179+00	LT. SIDE OF HWY. 62	657.00	17.00	10	1241.00		292.00	3.68
	186+00	187+00	RT. SIDE OF HWY. 62	100.00	9.50			105.56	44.44	0.56
	202+00	206+80	RT. SIDE OF HWY. 62	480.00	6.50			346.67	213.33	2.69
	202+21		RT. SIDE OF HWY. 62	116.00	4.00			51.56	51.56	0.65
	223+00	229+00	RT. SIDE OF HWY. 62	600.00	9.50			633.33	266.67	3.36
	227+00	229+00	LT. SIDE OF HWY. 62	200.00	9.50			211.11	88.89	1.12
	232+70		LT. SIDE OF HWY. 62	92.00	4.00			40.89	40.89	0.52
	232+70	234+22	LT. SIDE OF HWY. 62	152.00	6.50			109.78	67.56	0.85
	274+00	275+66	RT. SIDE OF HWY. 62	166.00	6.50			119.89	73.78	0.93
	280+00	283+00	LT. SIDE OF HWY. 62	300.00	6.50			216.67	133.33	1.68
	284+73	291+00	RT. SIDE OF HWY. 62	627.00	9.50			661.83	278.67	3.51
	331+00	343+00	LT. SIDE OF HWY. 62	1200.00	9.50			1266.67	533.33	6.72
	333+00	343+00	RT. SIDE OF HWY. 62	1000.00	9.50			1055.56	444.44	5.60
	394+80		RT. SIDE OF HWY. 62	68.00	4.00			30.22	30.22	0.38
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE				500.00	500.00	666.67	8.40
			DIRECTED BY THE ENGINEER.							
	TOTALS:						4385.44	8290.51	5657.77	71.29

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

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

EROSION CONTROL

	STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	SLOPE DRAIN (E-12): PIPE FOR SLOPE DRAINS	SLOPE DRAIN (E-12): DUMPED RIPRAP	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
				ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	CU.YD.	CU.YD.	CU.YD.	CU. YD.
	ENTIRE	PROJECT	CLEARING AND GRUBBING						126.62	126.62	2583.0	3014	984		16744						753
	ENTIRE	PROJECT	STAGE 1	13.51	27.02	13.51	1378.0	13.51	0.63	0.63	12.9	946	270						4229	4229	4362
	ENTIRE	PROJECT	STAGE 2	17.99	35.98	17.99	1835.0	17.99	2.17	2.17	44.3	924	312	875	1570	2000	175	14	4695	4695	4932
	ENTIRE	PROJECT	STAGE 3	15.47	30.94	15.47	1577.9	15.47				814	318	625		1114	175	14	6409	6409	7564
	ENTIRE	PROJECT	STAGE 4	1.60	3.20	1.60	163.2	1.60													
												550	180	150	2000	800	90	8	1500	1500	2310
	*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.																				
	TOTALS:			48.57	97.14	48.57	4954.1	48.57	129.42	129.42	2640.2	6248	2064	1650	20314	3914	440	36	16833	16833	19921

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

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

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

11/5/2012

R090065.DGN

SOIL LOG

STATION	LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
115+00	52'RT	0-5	51	32	A-7-6(21)	RED
115+00	27'RT	0-4.0Z	29	15	A-6(10)	RED
115+00	10'RT	0-4.2Z	33	18	A-6(9)	RED
123+00	56'RT	0-5	40	22	A-6(9)	RED
123+00	28'RT	0-5	56	39	A-7-6(31)	RED
123+00	7'RT	0-5	52	36	A-7-6(22)	RED
131+00	34'RT	0-3.5Z	50	33	A-7-6(22)	RED
131+00	16'RT	0-5	36	23	A-6(13)	RED
131+00	6'RT	0-5	50	32	A-7-6(24)	RED
139+00	50'RT	0-5	35	19	A-6(9)	RED
139+00	17'RT	0-5	36	20	A-6(13)	RED
139+00	6'RT	0-2.5Z	41	26	A-7-6(15)	RED
147+00	29'RT	0-5	61	42	A-7-6(31)	RED
147+00	1'RT	0-3.5Z	44	27	A-7-6(16)	RED
147+00	8'LT	0-4Z	35	20	A-6(11)	RED
155+00	41'RT	0-5	24	5	A-4(2)	RED
155+00	7'RT	0-2.5Z	26	10	A-4(5)	RED
155+00	7'LT	0-5	27	12	A-6(6)	RED
155+00	56'RT	0-5	27	8	A-4(5)	RED
163+00	11'RT	0-5	48	32	A-7-6(18)	RED
163+00	R'LT	0-2.5Z	36	22	A-6(11)	RED
171+00	30'LT	0-3.5Z	47	27	A-7-6(19)	RED
171+00	16'LT	0-5	60	42	A-7-6(37)	RED
171+00	6'LT	0-4Z	60	42	A-7-6(39)	RED
179+00	6'LT	0-5	23	7	A-4(2)	RED
179+00	36'LT	0-4.7Z	40	24	A-6(16)	RED
179+00	20'LT	0-1.5Z	ND	NP	A-4(0)	RED
187+00	5'LT	0-5	26	9	A-4(4)	RD/BR
187+00	35'LT	0-5	37	20	A-6(14)	RED
187+00	16'LT	0-5	37	23	A-6(12)	RD/BR
195+00	40'LT	0-5	30	14	A-6(9)	RD/BR
195+00	16'LT	0-5	31	17	A-6(9)	RD/BR
195+00	5'LT	0-5	33	19	A-6(11)	RD/BR
203+00	45'LT	0-3.5Z	55	39	A-7-6(28)	RED
203+00	21'LT	0-3.5Z	28	12	A-6(6)	RD/BR
203+00	8'LT	0-5	24	7	A-4(11)	RD/BR
210+00	48'LT	0-4Z	47	30	A-7-6(24)	RED
210+00	23'LT	0-4Z	34	19	A-6(14)	RED
210+00	11'LT	0-3Z	33	18	A-6(11)	RED
219+00	11'RT	0-3.5Z	34	18	A-6(11)	RED
219+00	50'RT	0-4Z	41	24	A-7-6(18)	RED
227+00	27'LT	0-5	68	50	A-7-6(35)	RED
227+00	15'LT	0-5	45	30	A-7-6(15)	RED
227+00	7'LT	0-5	54	37	A-7-6(19)	RED
235+00	15'RT	0-5	23	6	A-4(2)	RED
235+00	5'RT	0-3.5Z	28	13	A-6(5)	RED
235+00	50'RT	0-5	38	22	A-6(15)	RED
235+00	50'RT	0-5	33	20	A-6(13)	RED
243+00	47'LT	0-5	31	12	A-6(8)	RED
243+00	16'LT	0-3.5Z	27	12	A-6(6)	RD/BR
243+00	7'LT	0-3.5Z	33	17	A-6(11)	RD/BR
251+00	7'RT	0-5	26	9	A-4(6)	BROWN
251+00	50'RT	0-5	34	18	A-6(12)	RD/BR
251+00	16'RT	0-5	23	7	A-4(3)	BROWN
259+00	56'LT	0-2.8Z	45	27	A-7-6(17)	RED
259+00	16'LT	0-5	31	14	A-6(6)	RED
259+00	6'LT	0-3.8Z	28	13	A-6(5)	RED
267+00	16'RT	0-4.5Z	23	7	A-4(2)	BROWN
267+00	6'RT	0-5	22	7	A-4(2)	BROWN
267+00	50'RT	0-1.5Z	31	7	A-4(3)	RD/BR
275+00	58'RT	0-2.5Z	26	7	A-4(3)	RED
275+00	15'RT	0-2.5Z	26	8	A-4(2)	RED
275+00	6'RT	0-5	27	11	A-6(3)	RED
283+00	CL	0-5	35	18	A-6(9)	RD/BR
291+00	CL	0-5	31	13	A-6(9)	RD/BR
296+00	CL	0-5	29	12	A-6(7)	RED
307+00	CL	0-4Z	29	11	A-6(5)	RED
318+50	CL	0-5	29	12	A-6(7)	RED
323+00	CL	0-5	31	14	A-6(8)	RED
331+00	CL	0-5	25	8	A-4(2)	BR/RD
339+50	100'LT	0-5	28	10	A-4(5)	BR/RD
347+00	CL	0-5	27	10	A-4(5)	RED
355+25	CL	0-5	25	7	A-4(2)	RED
363+00	CL	0-5	32	13	A-6(9)	RED
371+00	23'LT	0-5	32	14	A-6(9)	RED
371+00	14'LT	0-1.5Z	44	26	A-7-6(13)	RED
379+50	11'RT	0-5	34	18	A-6(8)	RED
379+50	50'RT	0-5	28	10	A-4(6)	RED
387+00	29'LT	0-5	38	22	A-6(13)	RD/BR
387+00	12'LT	0-3.1Z	48	31	A-7-6(23)	RED
395+40	42'RT	0-5	29	11	A-6(7)	RED
395+40	12'RT	0-5	22	8	A-4(3)	RED
395+40	42'RT	0-5	35	16	A-6(11)	RED
403+00	11'LT	0-5	22	7	A-4(2)	RED
403+00	45'LT	0-5	29	13	A-6(5)	RED
411+00	50'RT	0-5	27	8	A-4(4)	RED
411+00	10'RT	0-5	23	7	A-4(1)	RED
419+00	44'LT	0-2.0Z	50	32	A-7-6(24)	BROWN
419+00	10'LT	0-5	46	31	A-7-6(24)	RED
427+00	12'LT	0-2Z	24	7	A-4(1)	BROWN
427+00	22'LT	0-3.0Z	35	17	A-6(6)	BROWN
435+00	11'RT	0-5	21	6	A-4(1)	BROWN
443+00	10'LT	0-1.5Z	26	10	A-4(3)	RED
443+00	20'LT	0-5	29	10	A-4(6)	RED
443+00	32'LT	0-5	28	10	A-4(4)	RED

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

Z- AUGER REFUSAL

NP - NON-PLASTIC

ND - NOT DETERMINABLE

QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY D. SMITH
1-20-13

(2) QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		107	460
				JOB NO.		090065		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	108	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-13-13

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
127+00	128+00	LT. SIDE OF HWY. 62	100.0	88.9
127+00	132+00	RT. SIDE OF HWY. 62	500.0	444.4
157+00	159+00	RT. SIDE OF HWY. 62	200.0	177.8
166+00	169+00	RT. SIDE OF HWY. 62	300.0	266.7
181+00	184+00	LT. SIDE OF HWY. 62	300.0	266.7
189+00	191+00	LT. SIDE OF HWY. 62	200.0	177.8
190+00	195+00	RT. SIDE OF HWY. 62	500.0	444.4
198+00	202+00	LT. SIDE OF HWY. 62	400.0	355.6
202+21	205+60	LT. SIDE OF HWY. 62	339.0	301.3
229+00	231+00	LT. SIDE OF HWY. 62	200.0	177.8
229+00	232+32	RT. SIDE OF HWY. 62	332.0	295.1
232+70	236+00	RT. SIDE OF HWY. 62	330.0	293.3
243+00	248+00	RT. SIDE OF HWY. 62	500.0	444.4
247+00	250+00	LT. SIDE OF HWY. 62	300.0	266.7
257+00	258+00	LT. SIDE OF HWY. 62	100.0	88.9
276+00	280+00	RT. SIDE OF HWY. 62	400.0	355.6
276+65	280+00	LT. SIDE OF HWY. 62	335.0	297.8
288+74	295+00	LT. SIDE OF HWY. 62	626.0	556.4
293+00	295+00	RT. SIDE OF HWY. 62	200.0	177.8
330+00	333+00	RT. SIDE OF HWY. 62	300.0	266.7
343+00	346+00	RT. SIDE OF HWY. 62	300.0	266.7
343+00	346+00	LT. SIDE OF HWY. 62	300.0	266.7
352+54	354+00	LT. SIDE OF HWY. 62	146.0	129.8
355+14	359+87	LT. SIDE OF HWY. 62	473.0	420.4
TOTAL:				6827.7

NOTE: AVERAGE WIDTH = 8'-0"

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
147+50	RT. HEADWALL	1
149+89	LT. PARAPET WALL	1
172+09	RT. HEADWALL	1
284+37	L.T HEADWALL	1
313+70	RT. HEADWALL	1
328+80	LT. HEADWALL	1
359+62	RT. HEADWALL	1
372+58	LT. HEADWALL	1
TOTAL:		8

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

APPROACH GUTTERS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE B)	REINFORCING STEEL RDWY. (GR 60)
			CU.YD.	POUND
149+61.92	149+88.92	LT. SIDE	6.75	590
149+61.92	149+88.92	RT. SIDE	6.75	590
152+45.08	152+72.08	LT. SIDE	6.75	590
152+45.08	152+72.08	RT. SIDE	6.75	590
TOTALS:			27.00	2360

NOTE: USE T =18.5" FOR 8' SHOULDER.

HAND RAILING

STATION	STATION	LOCATION	HAND RAILING
			LIN.FT.
380+40	381+40	RT. OF MAIN LANES	100
TOTAL:			100

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
217+09	TURNOUT FOR HWY. 72	B	195
TOTAL:			195

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	SOLID SODDING	WATER
			LIN.FT.	SQ.YD.	SQ.YD.	M. GAL.
369+00	374+12	RT. OF MAIN LANES	512	284	171	2.15
369+00	388+91	LT. OF MAIN LANES	1991	1106	664	8.37
374+40	375+09	RT. OF MAIN LANES	69	38	23	0.29
375+50	376+56	RT. OF MAIN LANES	106	59	35	0.44
377+05	378+18	RT. OF MAIN LANES	113	63	38	0.48
378+90	384+22	RT. OF MAIN LANES	532	296	177	2.23
384+50	385+44	RT. OF MAIN LANES	94	52	31	0.39
385+72	386+51	RT. OF MAIN LANES	79	44	26	0.33
386+81	386+98	RT. OF MAIN LANES	17	9	6	0.08
387+26	388+54	RT. OF MAIN LANES	128	71	43	0.54
389+26	391+00	RT. OF MAIN LANES	174	97	58	0.73
389+31	391+33	LT. OF MAIN LANES	202	112	67	0.84
391+28	396+83	RT. OF MAIN LANES	555	308	185	2.33
391+85	392+03	LT. OF MAIN LANES	18	10	6	0.08
392+31	398+09	LT. OF MAIN LANES	578	321	193	2.43
397+11	398+64	RT. OF MAIN LANES	153	85	51	0.64
398+37	404+67	LT. OF MAIN LANES	630	350	210	2.65
398+93	406+31	RT. OF MAIN LANES	738	410	246	3.10
405+00	407+92	LT. OF MAIN LANES	292	162	97	1.22
406+59	407+54	RT. OF MAIN LANES	95	53	32	0.40
407+84	408+88	RT. OF MAIN LANES	104	58	35	0.44
408+26	409+24	LT. OF MAIN LANES	98	54	33	0.42
409+18	417+62	RT. OF MAIN LANES	844	469	281	3.54
409+55	417+00	LT. OF MAIN LANES	745	414	248	3.12
417+85	419+36	LT. OF MAIN LANES	151	84	50	0.63
418+48	419+86	RT. OF MAIN LANES	138	77	46	0.58
419+65	432+53	LT. OF MAIN LANES	1288	716	429	5.41
420+14	421+84	RT. OF MAIN LANES	170	94	57	0.72
422+16	424+23	RT. OF MAIN LANES	207	115	69	0.87
424+77	426+84	RT. OF MAIN LANES	207	115	69	0.87
427+16	432+39	RT. OF MAIN LANES	523	291	174	2.19
432+74	435+01	RT. OF MAIN LANES	227	126	76	0.96
432+97	438+18	LT. OF MAIN LANES	521	289	174	2.19
435+29	436+09	RT. OF MAIN LANES	80	44	27	0.34
436+41	437+11	RT. OF MAIN LANES	70	39	23	0.29
437+47	445+80	RT. OF MAIN LANES	833	463	278	3.50
438+55	442+97	LT. OF MAIN LANES	442	246	147	1.85
443+31	446+28	LT. OF MAIN LANES	297	165	99	1.25
TOTALS:				7789	4674	58.89

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SQ. YDS.
168+65	OUTLET OF PIPE CULVERTS	11	22
172+09	OUTLET OF BOX CULVERT	30	59
172+31	OUTLET OF PIPE CULVERT	5	9
205+79	OUTLET OF PIPE CULVERT	5	10
328+80	OUTLET OF BOX CULVERT	61	121
441+42	OUTLET OF PIPE CULVERT	10	20
	TO BE USED IF AND WHERE	50	100
	DIRECTED BY THE ENGINEER		
TOTALS:		172	341

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

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

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3
		SQ.YD.
369+00	LT. OF MAIN LANES	66.7
369+00	RT. OF MAIN LANES	66.7
378+18	RT. OF MAIN LANES	66.9
378+90	RT. OF MAIN LANES	65.7
388+54	RT. OF MAIN LANES	66.6
389+26	RT. OF MAIN LANES	66.7
417+00	LT. OF MAIN LANES	66.7
417+62	RT. OF MAIN LANES	66.7
417+85	LT. OF MAIN LANES	66.7
418+48	RT. OF MAIN LANES	66.7
445+80	RT. OF MAIN LANES	73.4
446+28	LT. OF MAIN LANES	66.6
TOTAL:		806.1

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL (TYPE C)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
			LIN.FT.	LIN.FT.	EACH		
118+66.00	122+16.00	RT. SIDE	300			1	1
136+60.17	149+78.92	RT. SIDE	1250		1	1	
146+85.17	149+78.92	LT. SIDE	275		1		1
152+55.08	153+48.83	RT. SIDE	75		1		1
152+55.08	154+73.83	LT. SIDE	150		1	1	
280+20.00		RT. OF MAIN LANES ON OLD WIRE RD.		25			
TOTALS:			2050	25	4	3	3

RETAINING WALLS

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	MODULAR BLOCK RETAINING WALL	SELECT GRANULAR BACKFILL
			CU.YDS.	SQ. FT.	CU.YDS.
422+00	423+10	48' RT. OF CENTERLINE	229	1511	540
TOTALS:			229	1511	540

11/5/2012

R0090065.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	109	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-25-13

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
368+91	372+36	RT. OF MAIN LANES	351
368+91	375+83	LT. OF MAIN LANES	698
372+42	372+73	RT. OF MAIN LANES	31
372+77	373+08	RT. OF MAIN LANES	31
373+16	374+48	RT. OF MAIN LANES	132
374+56	375+83	RT. OF MAIN LANES	127
375+91	375+98	LT. OF MAIN LANES	7
375+91	377+13	RT. OF MAIN LANES	122
376+06	377+98	LT. OF MAIN LANES	192
377+25	377+83	RT. OF MAIN LANES	58
377+91	378+44	RT. OF MAIN LANES	86
378+06	379+98	LT. OF MAIN LANES	192
378+64	378+98	RT. OF MAIN LANES	65
379+06	381+98	RT. OF MAIN LANES	292
380+06	381+98	LT. OF MAIN LANES	192
382+06	383+98	LT. OF MAIN LANES	192
382+06	384+58	RT. OF MAIN LANES	252
384+06	385+98	LT. OF MAIN LANES	192
384+66	385+98	RT. OF MAIN LANES	132
386+06	387+33	RT. OF MAIN LANES	127
386+06	391+14	LT. OF MAIN LANES	508
387+41	388+80	RT. OF MAIN LANES	172
389+00	390+79	RT. OF MAIN LANES	210
390+87	392+44	RT. OF MAIN LANES	157
391+22	393+94	LT. OF MAIN LANES	272
392+52	394+74	RT. OF MAIN LANES	222
394+02	394+40	LT. OF MAIN LANES	38
394+48	394+78	LT. OF MAIN LANES	30
394+82	396+04	RT. OF MAIN LANES	122
394+82	408+38	LT. OF MAIN LANES	1356
396+12	396+43	RT. OF MAIN LANES	31
396+47	396+63	RT. OF MAIN LANES	16
396+67	397+18	RT. OF MAIN LANES	51
397+26	398+98	RT. OF MAIN LANES	172
399+06	401+17	RT. OF MAIN LANES	211
401+25	402+98	RT. OF MAIN LANES	173
403+06	404+98	RT. OF MAIN LANES	192
405+06	407+98	RT. OF MAIN LANES	292
408+06	408+38	RT. OF MAIN LANES	32
408+42	410+60	RT. OF MAIN LANES	218
408+50	409+69	LT. OF MAIN LANES	119
409+81	410+60	LT. OF MAIN LANES	79
410+68	412+98	LT. OF MAIN LANES	230
410+68	412+98	RT. OF MAIN LANES	230
413+06	415+99	RT. OF MAIN LANES	293
413+10	415+99	LT. OF MAIN LANES	289
416+03	418+10	RT. OF MAIN LANES	249
416+11	417+26	LT. OF MAIN LANES	162
417+36	417+89	LT. OF MAIN LANES	88
418+01	419+78	LT. OF MAIN LANES	177
418+22	437+75	RT. OF MAIN LANES	2002
419+90	421+48	LT. OF MAIN LANES	158
421+60	423+98	LT. OF MAIN LANES	238
424+10	431+45	LT. OF MAIN LANES	735
431+57	433+96	LT. OF MAIN LANES	239
434+02	435+51	LT. OF MAIN LANES	149
435+63	437+40	LT. OF MAIN LANES	177
437+52	437+79	LT. OF MAIN LANES	27
437+83	439+51	RT. OF MAIN LANES	168
437+83	446+54	LT. OF MAIN LANES	896
439+63	441+32	RT. OF MAIN LANES	169
441+43	443+88	RT. OF MAIN LANES	245
444+00	445+49	RT. OF MAIN LANES	149
445+61	445+62	RT. OF MAIN LANES	1
445+74	446+22	RT. OF MAIN LANES	104
TOTAL:			15319

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN.FT.	EACH
149+00	161+00	MAIN LANES	1400	6
221+00	223+00	MAIN LANES	240	2
252+00	258+00	MAIN LANES	720	4
279+00	288+00	MAIN LANES	1060	5
320+00	327+00	MAIN LANES	820	4
370+00	376+00	MAIN LANES	660	4
394+00	400+00	MAIN LANES	660	4
* ENTIRE PROJECT TO BE USED IF AND			1400	6
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			6960	35

* NOTE: QUANTITIES ARE 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.

CULVERT CLEAN OUT

STATION	LOCATION	EACH
225+17	MAIN LANES	1
275+62	MAIN LANES	1
410+62	MAIN LANES	1
* TO BE USED IF AND WHERE		2
DIRECTED BY THE ENGINNER.		
TOTAL:		5

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	WIRE FENCE (TYPE D-2)	* 4' CHAIN LINK FENCE	* 5' CHAIN LINK FENCE	* 12'-0" GATES	* 16'-0" GATES	* 20'-0" GATES
			LIN.FT.						EACH		
122+50	131+10	RT. OF MAIN LANES			862						
145+50	147+87	RT. OF MAIN LANES		205						1	
148+59	149+89	LT. OF MAIN LANES		177						1	
148+73	149+89	RT. OF MAIN LANES		141							
152+45	156+51	LT. OF MAIN LANES	424							1	
152+45	160+64	RT. OF MAIN LANES	837							1	1
165+31	169+27	LT. OF MAIN LANES			503						
188+90	189+38	RT. OF MAIN LANES	48								
189+84	207+61	LT. OF MAIN LANES		1807						1	
222+00	227+50	LT. OF MAIN LANES		555							
230+67	234+14	LT. OF MAIN LANES	399								
240+10	244+74	LT. OF MAIN LANES					464		4		
244+74	250+82	LT. OF MAIN LANES	608							1	
256+07	258+27	RT. OF MAIN LANES			229						
265+22	265+75	LT. OF MAIN LANES	53							1	
266+82	268+10	LT. OF MAIN LANES	156								
269+07	271+30	LT. OF MAIN LANES						222			
271+48	274+16	LT. OF MAIN LANES						271			
275+10	276+30	LT. OF MAIN LANES	129								
290+21	296+21	RT. OF MAIN LANES	601							1	
301+65	307+71	RT. OF MAIN LANES		1026						1	
316+51	333+36	RT. OF MAIN LANES		1685						4	
329+19	329+93	LT. OF MAIN LANES		65						1	
333+36	353+96	RT. OF MAIN LANES	2066							2	
361+95	368+80	RT. OF MAIN LANES			686					1	
362+49	367+51	LT. OF MAIN LANES			504					1	
368+80	373+36	RT. OF MAIN LANES	431							1	
373+36	374+42	RT. OF MAIN LANES		108						1	
381+55	385+45	RT. OF MAIN LANES	275							1	
389+03	390+46	RT. OF MAIN LANES	232								
392+20	396+20	RT. OF MAIN LANES	426								
394+15	394+85	LT. OF MAIN LANES	73								
396+20	397+78	RT. OF MAIN LANES						155		1	
397+78	402+39	RT. OF MAIN LANES	460							1	
438+73	443+21	LT. OF MAIN LANES				513					
445+01	446+52	LT. OF MAIN LANES			165						
TOTALS:			7218	5769	2949	513	464	648	4	23	1

* DENOTES ALTERNATE BID ITEM.

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	110	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-13

STRUCTURES (BOX 1 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	30"	36"	42"	(CLASS IV) 24"	30"	36"	(CLASS V) 18"	24"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	30"	48"	54"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	TEMPORARY PIPE CULVERTS 18"	DROP INLETS TYPE MO	EXT. 4'	EXT. 8'	JUNCTION BOX (TYPE E)	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.															EACH					LIN. FT.	EACH				SQ.YD.	M.GAL	
155+00	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					92							PCC-1, PCM-1
168+65	RETAIN AND EXTEND R.C. PIPE CULV'T. W/ FES LT. & RT.		66														2										16	0.20	PCC-1, FES-1, FES-2
168+65	CONST. DBL. R.C. PIPE CULV'T. W/ FES LT. & RT.			260														4									28	0.35	PCC-1, FES-1, FES-2
172+31	CONST. R.C. PIPE CULV'T. W/ FES LT. & RT.				146														2								34	0.43	PCC-1, FES-1, FES-2
192+23	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.		58														2										16	0.20	PCC-1, FES-1, FES-2
202+21	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.		62														2										16	0.20	PCC-1, FES-1, FES-2
205+79	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.		62														2										16	0.20	PCC-1, FES-1, FES-2
224+00	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					82							PCC-1, PCM-1
225+17	RETAIN AND EXTEND R.C. PIPE CULV'T.45° LT. FWD. SKEW W/FES LT. & RT.										170						2										16	0.20	PCC-1, FES-1, FES-2
232+70	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.		82														2										16	0.20	PCC-1, FES-1, FES-2
257+00	CONST. R.C. PIPE CULV'T. W/ FES LT. & RT.		122														2										16	0.20	PCC-1, FES-1, FES-2
259+00	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					74							PCC-1, PCM-1
267+55	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					88							PCC-1, PCM-1
267+55	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.						114										2										16	0.20	PCC-1, FES-1, FES-2
275+62	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.		84														2										16	0.20	PCC-1, FES-1, FES-2
300+00	CONST. R.C. PIPE CULV'T. 15° RT. FWD. SKEW W/ FES LT. & RT.		122														2										16	0.20	PCC-1, FES-1, FES-2
353+00	CONST. R.C. PIPE CULV'T. 30° RT. FWD. SKEW W/ FES LT. & RT.								198										2								34	0.43	PCC-1, FES-1, FES-2
370+00	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					78							PCC-1, PCM-1
372+40	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.										20												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
372+75	CONST. D.I. ON RT. & PIPE CULV'T.														6								1						FPC-9E, FPC-9M, PCC-1, PCM-1
373+10	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.														30								1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
374+50	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.													136									1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
375+85	CONST. D.I. ON LT. W/ EXT. & R.C. PIPE CULV'T.						59																1	1					FPC-9E, FPC-9M, PCC-1
375+85	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.													132									1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
376+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.												12										1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
377+15	CONST. D.I. ON RT. W/ OPENING IN BACK, EXT. & PIPE CULV'T.													125									1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
377+85	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.													66									1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
378+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										198												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
379+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T. & R.C. PIPE CULV'T.					20								110						1			1	1			23	0.29	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
380+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										198												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
381+00	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					56							PCC-1, PCM-1
382+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										198												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
382+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.										296												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
384+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										198												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
384+60	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.										258												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
386+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										198												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
386+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.										138												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
387+35	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T. & R.C. PIPE CULV'T.	124									132							1					1	1			5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
390+85	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T. & R.C. PIPE CULV'T.	162									162							1					1	1			5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
391+20	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T. & R.C. PIPE CULV'T.	12									276							1					1	1			5	0.06	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
392+50	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.										226												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
394+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										42												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
394+46	INSTALL TEMPORARY PIPE CULV'T. (STAGE 2)																					72							PCC-1, PCM-1
394+46	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES LT. & RT.							110										2									26	0.33	PCC-1, FES-1, FES-2
394+46	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.										30												1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
SUBTOTALS:		**298**	**658**	**260**	**146**	**20**	**173**	**110**	**198**		**170**	**2570**	**12**		**569**	**36**	**3**	**20**	**6**	**4**	**1**	**542**	**24**	**22**	**1**		**320**	**4.01**	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	111	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STRUCTURES (BOX 2 OF 2)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	30"	36"	42"	(CLASS IV) 24"	30"	36"	(CLASS V) 18"	24"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	24"	30"	48"	54"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	TEMPORARY PIPE CULVERTS 18"	DROP INLETS TYPE MO	EXT. 4'	EXT. 8'	JUNCTION BOX (TYPE E)	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.															EACH					LIN. FT.	EACH				SQ.YD.	M.GAL	
394+80	CONST. D.I. ON LT. & R.C. PIPE CULV'T.									59													1						FPC-9E, FPC-9M, PCC-1
394+80	CONST. D.I. ON RT. W/ EXT. & R.C. PIPE CULV'T.		22														1						1	1			8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
396+10	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.												126										1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
396+45	CONST. D.I. ON RT. & PIPE CULV'T.												32										1						FPC-9E, FPC-9M, PCC-1, PCM-1
396+65	CONST. D.I. ON RT. & PIPE CULV'T.											16											1						FPC-9E, FPC-9M, PCC-1, PCM-1
397+20	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											52											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
399+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											174											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
401+08	RETAIN AND EXTEND R.C. PIPE CULV'T. RT.			8																									PCC-1
401+08	CONST. JCT. BOX ON LT. W/ R.C. PIPE CULV'T. W/ FES 30° LT. FWD. SKEW			32														1								1	13	0.16	FPC-9, PCC-1, FES-1, FES-2
401+08	CONST. JCT. BOX ON RT. W/ R.C. PIPE CULV'T. W/FES 45° LT. FWD. SKEW			62														1								1	13	0.16	FPC-9, PCC-1, FES-1, FES-2
401+19	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											7											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
403+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											174											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
405+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											192											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
408+00	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											296											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
408+40	CONST. D.I. ON LT. W/ EXT. & R.C. PIPE CULV'T.									59													1		1				FPC-9E, FPC-9M, PCC-1
408+40	CONST. D.I. ON RT. & PIPE CULV'T.											36											1						FPC-9E, FPC-9M, PCC-1, PCM-1
409+71	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											128											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
410+62	RETAIN AND EXTEND R.C. PIPE CULV'T. LT. & RT.		13																										PCC-1
410+62	CONST. D.I. ON LT. W/ EXT. & R.C. PIPE CULV'T.		10														1						1	1			8	0.10	FPC-9E, FPC-9M, PCC-1
410+62	CONST. D.I. ON RT. W/ EXT. & R.C. PIPE CULV'T.		24														1						1	1			8	0.10	FPC-9E, FPC-9M, PCC-1
413+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											234											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
413+00	CONST. D.I. ON RT. W/ EXT. & R.C. PIPE CULV'T.									59													1	1					FPC-9E, FPC-9M, PCC-1
416+01	CONST. D.I. ON LT. W/ EXT. & R.C. PIPE CULV'T.S	8			59												1						1		1		5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
416+01	CONST. D.I. ON RT. & R.C. PIPE CULV'T.				24															1			1				17	0.21	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
417+91	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T. & R.C. PIPE CULV'T.			6									186						1				1		1		13	0.16	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2
419+80	CONST. D.I. ON LT. W/ OPENING IN BACK, EXT. & PIPE CULV'T.											184											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
421+50	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											164											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
424+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											242											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
431+55	RETAIN AND EXTEND R.C. PIPE CULV'T. W/FES RT.		50														1										8	0.10	PCC-1,FES-1,FES-2
431+55	CONST. D.I. ON LT. W/ EXT. & R.C. PIPE CULV'T.		6														1						1		1		8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
434+00	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											154											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
435+61	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											184											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
437+50	CONST. D.I. ON LT. W/ EXT. & PIPE CULV'T.											27											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
437+81	CONST. D.I. ON LT. & R.C. PIPE CULV'T.	78															1						1				5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
437+81	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											174											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1
439+61	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											172											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
441+42	RETAIN AND EXTEND R.C. PIPE CULV'T. LT. & RT. W/FES LT.						86										1										8	0.10	PCC-1,FES-1,FES-2
441+42	CONST. D.I. ON RT. W/ EXT. & R.C. PIPE CULV'T.		10														1						1		1		8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
443+98	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											158											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
445+59	CONST. D.I. ON RT. W/ EXT. & PIPE CULV'T.											10											1		1				FPC-9E, FPC-9M, PCC-1, PCM-1
445+72	CONST. D.I. ON RT. W/ EXT. & R.C. PIPE CULV'T.S W/FES	108															2						1	1			10	0.13	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
10+60	CONST. R.C. PIPE CULV'T. W/ FES LT. & RT. ON HWY. 62 CONNECTOR		68															2									16	0.20	PCC-1, FES-1, FES-2
SUBTOTALS (BOX 1):		**298**	**658**	**260**	**146**	**20**	**173**	**110**	**198**		**170**	**2570**	**12**		**569**	**36**	**3**	**20**	**6**	**4**	**1**	**542**	**24**	**22**	**1**		**320**	**4.01**	
SUBTOTALS (BOX 2):		**194**	**203**	**108**	**83**		**86**			**177**		**2778**	**158**	**186**			**4**	**9**	**3**	**1**			**35**	**14**	**15**	**2**	**148**	**1.84**	
TOTALS:		**492**	**861**	**368**	**229**	**20**	**259**	**110**	**198**	**177**	**170**	**5348**	**170**	**186**	**569**	**36**	**7**	**29**	**9**	**5**	**1**	**542**	**59**	**36**	**16**	**2**	**468**	**5.85**	

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.

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	112	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

SELECTED PIPE BEDDING

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

NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
168+65	HWY. 62 MAIN LANES	15.67	36	20.9
172+31	HWY. 62 MAIN LANES	9.67	41	14.7
257+00	HWY. 62 MAIN LANES	8.50	24	7.6
257+30	HWY. 62 MAIN LANES	8.50	24	7.6
375+85	HWY. 62 MAIN LANES	8.50	18	5.7
394+80	HWY. 62 MAIN LANES	7.92	18	5.3
408+40	HWY. 62 MAIN LANES	7.92	31	9.1
413+00	HWY. 62 MAIN LANES	7.92	31	9.1
416+01	HWY. 62 MAIN LANES	9.67	31	11.1
TOTAL:				**91.1**

AVG. DEPTH = 1'-0"

RUMBLE STRIPS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
114+00	149+62	RT. SIDE	2797
114+00	149+62	LT. SIDE	2690
152+72	369+00	RT. SIDE	14174
152+72	369+00	LT. SIDE	15387
TOTAL:			**35048**

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
113+00	114+00	MAIN LANES	75	833.33
449+00	450+00	MAIN LANES	36	400.00
16+15	17+15	HWY. 62 CONNECTOR	24	266.67
		HWY. 72	24	266.67
TOTAL:				**1766.67**

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	150
DIRECTED BY THE ENGINEER	
TOTAL:	**150**

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	150	300
DIRECTED BY THE ENGINEER		
TOTALS:	**150**	**300**

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

CONCRETE BASE

	STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE	
					AVG. WID.	11.5" U.T.
				FEET	FEET	SQ. YD.
	216+51	217+43	HWY. 72 TURNOUT (EXIST. ISLAND)	92.0	13.5	138.0
	217+36	217+56	HWY. 72 TURNOUT (EXIST. ISLAND)	20.0	VAR.	30.2
	217+59	218+51	HWY. 72 TURNOUT (EXIST. ISLAND)	92.0	VAR.	245.4
	417+74		ALVIN SEAMSTER RD. (NORTH) TURNOUT WIDENING	VAR.	VAR.	61.1
	446+50		SOUTH WIMPY JONES RD. TURNOUT WIDENING	VAR.	VAR.	35.2
	446+50		NORTH WIMPY JONES RD. TURNOUT WIDENING	VAR.	VAR.	5.4
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINNER.			150.0
	TOTAL:					**665.3**

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

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	
147+50	RETAIN AND EXTEND R.C. BOX CULV'T. 30° LT. FWD. SKEW RT.	6	6	46	37.51	4066	26	9	0.11	R-100X-X1, W-X30, W-X302-1, R-130X-1, RCB-1, RCB-2, RCB-3
172+09	RETAIN AND EXTEND R.C. BOX CULV'T. 30° LT. FWD. SKEW LT. & RT.	5	5	62	44.33	4721	27	21	0.26	W-X30, W-X303-1, R-130X-0, RCB-1, RCB-2, RCB-3
284+37	CONST. R.C. BOX CULV'T. 30° RT. FWD. SKEW	4	4	152	66.84	6296	39	17	0.21	SPECIAL DETAILS, RCB-2
313+70	CONST. R.C. BOX CULV'T.	5	5	143	74.87	8807	42	16	0.20	SPECIAL DETAILS, RCB-2
328+80	CONST. R.C. BOX CULV'T. 30° LT. FWD. SKEW	5	5	201	107.62	14350	53	20	0.25	SPECIAL DETAILS, RCB-2
359+62	CONST. R.C. BOX CULV'T. 15° LT. FWD. SKEW	7	5	216	154.91	22360	73	18	0.23	SPECIAL DETAILS, RCB-2
372+58	RETAIN AND EXTEND R.C. BOX CULV'T. 15° RT. FWD. SKEW RT.	6	6	56	43.02	4882	29	20	0.25	W-X15, W-X153-1, R-115X-0, RCB-1, RCB-2, RCB-3
TOTALS:					**529.10**	**65482**	**289**	**121**	**1.51**	

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

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	113	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

DRIVEWAYS & TURNOUTS (BOX 1 OF 2)

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"	21"X15"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.			
116+65	LT.	MAIN LANES - OVERLAY DRIVE	20				96.5	10.6					
123+38	LT.	MAIN LANES - OVERLAY ANDY JACK ROAD	40				218.5	24.0					
132+83	RT.	MAIN LANES	16				213.9	23.5	87.3	42			PCC-1, PCM-1, PCP-1, PCP-2
155+00	LT.	MAIN LANES	16				158.9	17.5	64.9	48			PCC-1, PCM-1, PCP-1, PCP-2
157+23	LT.	MAIN LANES	32				191.5	21.1	78.2	56			PCC-1, PCM-1, PCP-1, PCP-2
159+91	RT.	MAIN LANES	20				186.8	20.5	76.3	46			PCC-1, PCM-1, PCP-1, PCP-2
162+94	LT.	MAIN LANES - CO. RD. 44	20				337.2	37.1	137.7	52			PCC-1, PCM-1, PCP-1, PCP-2
164+50	RT.	DRIVE OFF OF CO. RD. 44	16				99.1	10.9	40.5				
164+52	RT.	MAIN LANES - CO. RD. 44	20				227.6	25.0	92.9	46			PCC-1, PCM-1, PCP-1, PCP-2
164+83	LT.	MAIN LANES	16				590.7	65.0	241.2	46			PCC-1, PCM-1, PCP-1, PCP-2
170+03	LT.	MAIN LANES	16				181.1	19.9	73.9	40			PCC-1, PCM-1, PCP-1, PCP-2
172+40	RT.	MAIN LANES	16				412.3	45.4	168.4		66		PCC-1, PCM-1, PCP-1, PCP-2
185+49	RT.	MAIN LANES	16				153.6	16.9	62.7		38		PCC-1, PCM-1, PCP-1, PCP-2
187+00	RT.	MAIN LANES	16				135.9	14.9	55.5		40		PCC-1, PCM-1, PCP-1, PCP-2
187+79	LT.	MAIN LANES - CO. RD. 700	20				275.5	30.3	112.5				PCC-1, PCM-1, PCP-1, PCP-2
187+98	RT.	MAIN LANES	16				125.8	13.8	51.4		48		PCC-1, PCM-1, PCP-1, PCP-2
193+51	RT.	MAIN LANES	16				78.9	8.7	32.2	32			PCC-1, PCM-1, PCP-1, PCP-2
194+80	RT.	MAIN LANES	16				78.9	8.7	32.2	32			PCC-1, PCM-1, PCP-1, PCP-2
195+33	LT.	MAIN LANES	16				114.5	12.6	46.8	28			PCC-1, PCM-1, PCP-1, PCP-2
197+98	RT.	MAIN LANES	16				82.0	9.0	33.5	32			PCC-1, PCM-1, PCP-1, PCP-2
209+37	LT.	MAIN LANES	24			197.30				62			PCC-1, PCM-1, PCP-1, PCP-2
209+47	RT.	MAIN LANES	30				286.0	31.5	116.8	44			PCC-1, PCM-1, PCP-1, PCP-2
211+81	LT.	MAIN LANES	16				132.3	14.6	54.0	44			PCC-1, PCM-1, PCP-1, PCP-2
212+50	RT.	MAIN LANES	24				116.7	12.8	47.7	40			PCC-1, PCM-1, PCP-1, PCP-2
213+45	RT.	MAIN LANES	16				74.3	8.2	30.3	30			PCC-1, PCM-1, PCP-1, PCP-2
214+46	RT.	MAIN LANES	16				71.1	7.8	29.0	28			PCC-1, PCM-1, PCP-1, PCP-2
214+64	LT.	MAIN LANES	26				120.2	13.2	49.1	42			PCC-1, PCM-1, PCP-1, PCP-2
215+20	LT.	MAIN LANES	22				103.2	11.4	42.1	38			PCC-1, PCM-1, PCP-1, PCP-2
215+73	RT.	MAIN LANES	16				68.9	7.6	28.1	28			PCC-1, PCM-1, PCP-1, PCP-2
217+08	RT.	MAIN LANES	30			135.50				48			PCC-1, PCM-1, PCP-1, PCP-2
217+83	RT.	MAIN LANES	30			140.60				48			PCC-1, PCM-1, PCP-1, PCP-2
219+57	RT.	MAIN LANES	40				174.5	19.2	71.3	52			PCC-1, PCM-1, PCP-1, PCP-2
220+12	LT.	MAIN LANES	40				174.6	19.2	71.3	54			PCC-1, PCM-1, PCP-1, PCP-2
221+02	RT.	MAIN LANES	24			110.20				36			PCC-1, PCM-1, PCP-1, PCP-2
221+51	LT.	MAIN LANES	24				114.4	12.6	46.7	42			PCC-1, PCM-1, PCP-1, PCP-2
225+75	RT.	MAIN LANES	20				149.3	16.4	61.0	38			PCC-1, PCM-1, PCP-1, PCP-2
228+53	RT.	MAIN LANES - LATRICIA LANE	20				191.2	21.0	78.1	52			PCC-1, PCM-1, PCP-1, PCP-2
230+26	LT.	MAIN LANES	16				65.6	7.2	26.8	28			PCC-1, PCM-1, PCP-1, PCP-2
232+32	RT.	MAIN LANES	16				104.8	11.5	42.8				
234+22	RT.	MAIN LANES	18				104.9	11.5	42.8		46		PCC-1, PCM-1, PCP-1, PCP-2
235+51	RT.	MAIN LANES	16				87.6	9.6	35.8		38		PCC-1, PCM-1, PCP-1, PCP-2
235+87	LT.	MAIN LANES	40				170.0	18.7	69.4	50			PCC-1, PCM-1, PCP-1, PCP-2
236+75	RT.	MAIN LANES	16				89.6	9.9	36.6	42			PCC-1, PCM-1, PCP-1, PCP-2
237+34	LT.	MAIN LANES	16				76.4	8.4	31.2	30			PCC-1, PCM-1, PCP-1, PCP-2
238+12	LT.	MAIN LANES	16				75.5	8.3	30.8	28			PCC-1, PCM-1, PCP-1, PCP-2
238+66	LT.	MAIN LANES	16				72.4	8.0	29.6	28			PCC-1, PCM-1, PCP-1, PCP-2
239+85	LT.	MAIN LANES	16				72.3	8.0	29.5	28			PCC-1, PCM-1, PCP-1, PCP-2
239+89	RT.	MAIN LANES	16				86.2	9.5	35.2	36			PCC-1, PCM-1, PCP-1, PCP-2
241+39	LT.	MAIN LANES	16				74.3	8.2	30.3	28			PCC-1, PCM-1, PCP-1, PCP-2
241+69	RT.	MAIN LANES	16				89.5	9.8	36.5	38			PCC-1, PCM-1, PCP-1, PCP-2
242+88	LT.	MAIN LANES	24				112.2	12.3	45.8		34		PCC-1, PCM-1, PCP-1, PCP-2
243+00	RT.	MAIN LANES	16				87.4	9.6	35.7		36		PCC-1, PCM-1, PCP-1, PCP-2
245+96	LT.	MAIN LANES	16				70.7	7.8	28.9		28		PCC-1, PCM-1, PCP-1, PCP-2
246+71	RT.	MAIN LANES - N. OLD WIRE RD.	20				301.4	33.2	123.1		56		PCC-1, PCM-1, PCP-1, PCP-2
249+33	RT.	MAIN LANES	16				105.2	11.6	43.0		34		PCC-1, PCM-1, PCP-1, PCP-2
251+25	LT.	MAIN LANES	16				70.0	7.7	28.6		28		PCC-1, PCM-1, PCP-1, PCP-2
251+76	RT.	MAIN LANES - BATTLEFIELD RD.	20				170.7	18.8	69.7				
253+02	LT.	MAIN LANES-COUNTY RD.	20				141.6	15.6	57.8		50		PCC-1, PCM-1, PCP-1, PCP-2
254+50	RT.	MAIN LANES	16				83.2	9.2	34.0	28			PCC-1, PCM-1, PCP-1, PCP-2
259+40	RT.	MAIN LANES	16				132.3	14.6	54.0				
259+97	RT.	MAIN LANES	16				132.3	14.6	54.0	30			PCC-1, PCM-1, PCP-1, PCP-2
261+42	RT.	MAIN LANES	16				108.9	12.0	44.5	34			PCC-1, PCM-1, PCP-1, PCP-2
262+30	RT.	MAIN LANES - N. OLD WIRE RD.	20				634.2	69.8	259.0	46			PCC-1, PCM-1, PCP-1, PCP-2
264+32	RT.	MAIN LANES	16				109.6	12.1	44.8	40			PCC-1, PCM-1, PCP-1, PCP-2
264+33	LT.	MAIN LANES-DRIVE AT 264+19	16				114.0	12.5	46.6	66			PCC-1, PCM-1, PCP-1, PCP-2
264+46	LT.	MAIN LANES	16				111.6	12.3	45.6				
264+99	RT.	MAIN LANES	16				106.0	11.7	43.3	40			PCC-1, PCM-1, PCP-1, PCP-2
SUBTOTALS:						**583.60**	**9496.3**	**1044.9**	**3749.3**	**1846**	**542**		

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.1% MIN. AGGR.....5.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

** FOR INFORMATION ONLY

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

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.

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	114	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

DRIVEWAYS & TURNOUTS (BOX 2 OF 2)

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"	21"X15"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.			
265+48	LT.	MAIN LANES	16				92.6	10.2	37.8	34			PCC-1, PCM-1, PCP-1, PCP-2
268+39	LT.	MAIN LANES	16				114.5	12.6	46.8	36			PCC-1, PCM-1, PCP-1, PCP-2
270+89	RT.	MAIN LANES	22				124.6	13.7	50.9	40			PCC-1, PCM-1, PCP-1, PCP-2
271+37	LT.	MAIN LANES	18				79.2	8.7	32.3	28			PCC-1, PCM-1, PCP-1, PCP-2
272+47	RT.	MAIN LANES	22				122.7	13.5	50.1	40			PCC-1, PCM-1, PCP-1, PCP-2
278+68	LT.	MAIN LANES	16				131.5	14.5	53.7	32			PCC-1, PCM-1, PCP-1, PCP-2
288+00	RT.	MAIN LANES	16				77.3	8.5	31.6	34			PCC-1, PCM-1, PCP-1, PCP-2
291+50	RT.	MAIN LANES	16				82.6	9.1	33.7	34			PCC-1, PCM-1, PCP-1, PCP-2
296+75	RT.	MAIN LANES	16				83.0	9.1	33.9	34			PCC-1, PCM-1, PCP-1, PCP-2
301+25	RT.	MAIN LANES - CO. RD. 856	20				1146.4	126.1	468.1				
307+00	RT.	MAIN LANES	16				87.4	9.6	35.7				
314+75	RT.	MAIN LANES	16				150.0	16.5	61.3		48		PCC-1, PCM-1, PCP-1, PCP-2
317+37	RT.	MAIN LANES	16				96.7	10.6	39.5				
325+27	RT.	MAIN LANES	16				87.4	9.6	35.7	32			PCC-1, PCM-1, PCP-1, PCP-2
331+00	RT.	MAIN LANES	16				88.0	9.7	35.9	34			PCC-1, PCM-1, PCP-1, PCP-2
337+50	RT.	MAIN LANES	16				76.6	8.4	31.3	32			PCC-1, PCM-1, PCP-1, PCP-2
345+00	RT.	MAIN LANES	16				131.8	14.5	53.8	44			PCC-1, PCM-1, PCP-1, PCP-2
355+14	LT.	MAIN LANES - OLD LIBERTY RD.	20				738.9	81.3	301.7				
355+14	RT.	MAIN LANES - OLD LIBERTY RD.	20				1410.2	155.1	575.8				
366+00	LT.	MAIN LANES	16				130.5	14.4	53.3	40			PCC-1, PCM-1, PCP-1, PCP-2
366+00	RT.	MAIN LANES	16				111.6	12.3	45.6	40			PCC-1, PCM-1, PCP-1, PCP-2
374+06	RT.	MAIN LANES	16	373+84	374+28	24.90	182.3	20.1	74.4	38			PCC-1, PCM-1, PCP-1, PCP-2
375+29	RT.	MAIN LANES	28	375+01	375+57	35.60	70.0	7.7	28.6				
376+80	RT.	MAIN LANES	30	376+51	377+09	124.10							
384+36	RT.	MAIN LANES	16	384+14	384+58	24.90	84.8	9.3	34.6	36			PCC-1, PCM-1, PCP-1, PCP-2
385+58	RT.	MAIN LANES	16	385+36	385+80	24.90	75.6	8.3	30.9				
386+67	RT.	MAIN LANES	16	386+45	386+89	24.90	19.2	2.1	7.8				
387+12	RT.	MAIN LANES	16	386+90	387+34	24.90	57.8	6.4	23.6				
389+11	LT.	MAIN LANES	28	388+83	389+39	35.60	87.3	9.6	35.6				
391+14	RT.	MAIN LANES	16	390+92	391+36	24.90	75.6	8.3	30.9				
391+59	LT.	MAIN LANES	40	391+25	391+93	46.20	122.8	13.5	50.1				
392+00	RT.	MAIN LANES	16	391+78	392+22	24.90	96.9	10.7	39.6				
392+17	LT.	MAIN LANES	16	391+95	392+39	24.90	84.7	9.3	34.6	32			PCC-1, PCM-1, PCP-1, PCP-2
396+97	RT.	MAIN LANES	16	396+75	397+19	24.90	40.0	4.4	16.3				
398+23	LT.	MAIN LANES	16	398+01	398+45	24.90	43.9	4.8	17.9				
398+78	RT.	MAIN LANES	16	398+56	399+00	24.90	17.6	1.9	7.2				
404+83	LT.	MAIN LANES	16	404+61	405+05	24.90	72.5	8.0	29.6			28	PCC-1, PCM-1
406+45	RT.	MAIN LANES	16	406+23	406+67	24.90	40.0	4.4	16.3				
407+69	RT.	MAIN LANES	16	407+47	407+91	24.90	18.9	2.1	7.7				
408+09	LT.	MAIN LANES	16	407+87	408+31	24.90	101.9	11.2	41.6				
409+03	RT.	MAIN LANES	16	408+81	409+25	24.90	63.1	6.9	25.8				
409+39	LT.	MAIN LANES	16	409+17	409+61	24.90	110.2	12.1	45.0				
419+50	LT.	MAIN LANES	16	419+28	419+72	24.90	41.6	4.6	17.0				
420+00	RT.	MAIN LANES	16	419+78	420+22	24.90	164.4	18.1	67.1				
421+33	RT.	MAIN LANES	36	421+01	421+65	334.60				70			PCC-1, PCM-1, PCP-1, PCP-2
427+00	RT.	MAIN LANES	16	426+78	427+22	24.90	173.4	19.1	70.8				
432+56	RT.	MAIN LANES	24	432+30	432+82	32.00	139.6	15.4	57.0				
432+75	LT.	MAIN LANES	30	432+46	433+04	37.30	39.0	4.3	15.9				
435+15	RT.	MAIN LANES	16	434+93	435+37	24.90	193.1	21.2	78.8				
435+93	LT.	MAIN LANES	30	435+64	436+22	37.30	17.1	1.9	7.0				
436+25	RT.	MAIN LANES	16	436+03	436+47	24.90	223.2	24.6	91.1				
437+29	RT.	MAIN LANES	24	437+03	437+55	32.00	343.5	37.8	140.3				
438+36	LT.	MAIN LANES	24	438+10	438+62	32.00	41.5	4.6	16.9				
443+14	LT.	MAIN LANES	16	442+92	443+36	24.90	183.0	20.1	74.7				
443+72	LT.	DRIVE OFF OF DRIVE AT STA. 443+14	16				62.4	6.9	25.5				
12+39	RT.	N. OLD WIRE RD.	16				52.4	5.8	21.4				
11+50	RT.	COUNTY ROAD 856	16				410.3	45.1	167.5	28			PCC-1, PCM-1, PCP-1, PCP-2
12+50	RT.	OLD LIBERTY ROAD	20				222.9	24.5	91.0	62			PCC-1, PCM-1, PCP-1, PCP-2
19+90	RT.	OLD LIBERTY ROAD	16				63.5	7.0	25.9			28	PCC-1, PCM-1, PCP-1, PCP-2
11+11	RT.	PAUL PRATT ROAD	16				60.4	6.6	24.7	28			PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED							1200.0				
		BY THE ENGINEER.											
SUBTOTALS (BOX 1):						**583.60**	**9496.3**	**1044.9**	**3749.3**	**1846**	**542**		
SUBTOTALS (BOX 2):						**1319.40**	**9059.9**	**996.7**	**4899.2**	**828**	**48**	**56**	
TOTALS:						**1903.00**	**18556.2**	**2041.6**	**8648.5**	**2674**	**590**	**56**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.1% MIN. AGGR.....5.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

** FOR INFORMATION ONLY

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

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	115	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BASE AND SURFACING (BOX 1 OF 3)

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")				
			FEET	TON / STATION	TON	TOTAL WID. FEET	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 70-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 70-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 70-22 TON	PG 76-22 TON
MAIN LANES																						
113+00.00	114+00.00	COLD MILL	100.0			75.0	833.3	0.10	83.3									75.0	833.3	220.0	91.7	
114+00.00	116+68.73	TRANSITION	268.7			75.0	2239.2	0.03	67.2									75.0	2239.2	220.0	246.3	
116+68.73	123+90.00	TRANSITION	721.3	VAR.	1208.2	VAR.	7095.7	0.03	212.9					VAR.	784.0	660.0	258.7	VAR.	6779.0	220.0	745.7	
123+90.00	135+50.00	NOTCH & WIDEN RT.	1160.0	363.25	4213.7	159.7	20583.6	0.03	617.5					45.3	5838.7	660.0	1926.8	120.1	15479.6	220.0	1702.8	
135+50.00	149+88.92	FULL DEPTH	1438.9	577.50	8309.6	190.4	30440.7	0.03	913.2					63.6	10168.2	660.0	3355.5	138.3	22111.1	220.0	2432.2	
135+50.00	149+88.92	FULL DEPTH	1104.9	577.50	6380.8	190.4	23374.8	0.03	701.2					63.6	7808.0	660.0	2576.6	138.3	16978.6	220.0	1867.6	
152+45.08	163+50.00	FULL DEPTH	1104.9	577.50	6380.8	190.4	23374.8	0.03	701.2					VAR.	1546.6	660.0	510.4	VAR.	5662.4	220.0	622.9	
163+50.00	168+46.11	NOTCH & WIDEN BOTH SIDES (VAR.)	496.1	VAR.	1894.4	VAR.	6565.9	0.03	197.0					27.6	10494.1	660.0	3463.1	102.3	38896.7	220.0	4278.6	
168+46.11	202+68.14	NOTCH & WIDEN BOTH SIDES	3422.0	379.25	12977.9	118.4	45018.3	0.03	1350.5					27.6	953.4	660.0	314.6	102.3	3533.9	220.0	388.7	
202+68.14	205+79.00	NOTCH & WIDEN BOTH SIDES (VAR.)	310.9	379.25	1179.1	118.4	4090.1	0.03	122.7					27.6	1040.2	660.0	343.3	102.3	3396.0	220.0	373.6	
205+79.00	208+00.00	FULL DEPTH (GRADE RAISE)	221.0	379.25	838.1	262.5	6445.8	0.03	193.4	36.0	884.0	935.0	413.3	63.6	1561.7	660.0	515.4	138.3	4226.1	220.0	464.9	
208+00.00	211+71.76	NOTCH & WIDEN BOTH SIDES (VAR.)	371.8	379.25	1410.1	118.4	4891.2	0.03	146.7					27.6	1140.2	660.0	376.3	102.3	7362.2	220.0	809.8	
211+71.76	218+19.41	NOTCH & WIDEN (36' EXIST. CENTERED)	647.7	379.50	2458.0	118.4	8520.9	0.03	255.6					27.6	1986.3	660.0	655.5	102.3	4451.4	220.0	489.7	
218+19.41	222+00.00	NOTCH & WIDEN BOTH SIDES (VAR.)	380.6	VAR.	1506.6	VAR.	5251.9	0.03	157.6					VAR.	1293.8	660.0	427.0	VAR.	10034.4	220.0	1103.8	
222+00.00	228+53.00	FULL DEPTH	653.0	577.50	3771.1	190.4	13814.6	0.03	414.4					63.6	4614.5	660.0	1522.8	138.3	4406.9	220.0	484.8	
228+53.00	232+00.00	NOTCH & WIDEN (24' EXIST. CENTERED)	347.0	445.50	1545.9	142.4	5490.3	0.03	164.7					39.6	1526.8	660.0	503.8	114.3	6146.7	220.0	676.1	
232+00.00	236+00.00	FULL DEPTH (GRADE RAISE)	400.0	445.25	1781.0	238.5	10600.0	0.03	318.0	24.0	1066.7	935.0	498.7	63.6	2826.7	660.0	932.8	138.3	6385.0	220.0	702.4	
236+00.00	240+99.39	NOTCH & WIDEN BOTH SIDES (VAR.)	499.4	VAR.	2246.6	VAR.	7979.5	0.03	239.4					VAR.	2241.8	660.0	739.8	VAR.	3022.7	220.0	332.5	
240+99.39	243+28.51	NOTCH & WIDEN RT. (VAR.)	229.1	VAR.	814.5	VAR.	3992.0	0.03	119.8					VAR.	1117.8	660.0	368.9	VAR.	20219.0	220.0	2224.1	
243+28.51	258+50.00	NOTCH & WIDEN RT.	1521.5	360.50	5485.0	158.7	26829.1	0.03	804.9					44.8	7573.7	660.0	2499.3	119.6	11125.5	220.0	1223.8	
258+50.00	265+74.00	FULL DEPTH	724.0	577.50	4181.1	190.4	15316.6	0.03	459.5					63.6	5116.3	660.0	1688.4	138.3	478.4	220.0	52.6	
265+74.00	266+10.00	NOTCH & WIDEN RT.	36.0	360.50	129.8	158.7	634.8	0.03	19.0					44.8	179.2	660.0	59.1	119.6	7145.5	220.0	786.0	
266+10.00	270+75.00	FULL DEPTH	465.0	577.50	2685.4	190.4	9837.3	0.03	295.1					63.6	3286.0	660.0	1084.4	138.3	1468.4	220.0	161.5	
270+75.00	271+85.45	NOTCH & WIDEN RT.	110.5	360.50	398.4	158.7	1948.5	0.03	58.5					44.8	550.0	660.0	181.5	VAR.	2222.7	220.0	244.5	
271+85.45	273+50.00	NOTCH & WIDEN RT. (VAR.)	164.5	VAR.	610.8	VAR.	2971.0	0.03	89.1					VAR.	854.9	660.0	282.1	VAR.	146367.5	220.0	16100.4	
273+50.00	368+75.00	FULL DEPTH	9525.0	577.50	55006.9	190.4	201506.7	0.03	6045.2					63.6	67310.0	660.0	22212.3	138.3	398.1	220.0	43.8	
368+75.00	369+00.00	FULL DEPTH (SHLD. TAPER)	25.0	615.88	154.0	190.4	528.9	0.03	15.9					63.6	176.7	660.0	58.3	143.3	1366.7	220.0		150.3
369+00.00	370+00.00	FULL DEPTH TRANSITION FROM O.S. TO C&G	100.0			184.5	2050.0	0.03	61.5	66.5	738.9	550.0	203.2	61.5	683.3	495.0	169.1	123.0	2737.8	220.0		301.2
370+00.00	372+20.00	FULL DEPTH (C&G)	220.0			168.0	4106.7	0.03	123.2	61.0	1491.1	550.0	410.1	56.0	1368.9	495.0	338.8	112.0	5724.4	220.0		629.7
372+20.00	376+80.00	FULL DEPTH (C&G) (GRADE RAISE)	460.0			168.0	8586.7	0.03	257.6	61.0	3117.8	550.0	857.4	56.0	2862.2	495.0	708.4	112.0	11187.6	220.0		1230.6
376+80.00	385+79.00	FULL DEPTH (C&G)	899.0			168.0	16781.3	0.03	503.4	61.0	6093.2	550.0	1675.6	56.0	5593.8	495.0	1384.5	112.0	11187.6	220.0		1230.6
385+79.00	390+00.00	NOTCH & WIDEN RT. (C&G)	421.0			132.0	6174.7	0.03	185.2	43.0	2011.4	550.0	553.1	38.0	1777.6	495.0	440.0	94.0	4397.1	220.0		483.7
390+00.00	397+00.00	FULL DEPTH (C&G)	700.0			168.0	13066.7	0.03	392.0	61.0	4744.4	550.0	1304.7	56.0	4355.6	495.0	1078.0	112.0	8711.1	220.0		958.2
397+00.00	400+25.00	NOTCH & WIDEN RT. (C&G) (VAR.)	325.0			VAR.	5218.9	0.03	156.6	VAR.	1625.5	550.0	447.0	VAR.	1411.7	495.0	349.4	VAR.	3807.2	220.0		418.8
400+25.00	409+71.00	FULL DEPTH (C&G) (GRADE RAISE)	946.0			168.0	17658.7	0.03	529.8	61.0	6411.8	550.0	1763.2	56.0	5886.2	495.0	1456.8	112.0	11772.4	220.0		1295.0
409+71.00	421+50.00	NOTCH & WIDEN (C&G) (CENTERED)	1179.0			125.2	16401.2	0.03	492.0	37.0	4847.0	550.0	1332.9	32.0	4192.0	495.0	1037.5	88.0	11528.0	220.0		1268.1
421+50.00	426+00.00	FULL DEPTH (C&G)	450.0			168.0	8400.0	0.03	252.0	61.0	3050.0	550.0	838.8	56.0	2800.0	495.0	693.0	112.0	5600.0	220.0		616.0
426+00.00	440+00.00	NOTCH & WIDEN (C&G) (CENTERED)	1400.0			125.2	19475.6	0.03	584.3	37.0	5755.6	550.0	1582.8	32.0	4977.8	495.0	1232.0	88.0	13688.9	220.0		1505.8
440+00.00	446+25.00	FULL DEPTH (C&G) (GRADE RAISE)	625.0			168.0	11666.7	0.03	350.0	61.0	4236.1	550.0	1164.9	56.0	3888.9	495.0	962.5	112.0	7777.8	220.0		855.6
446+25.00	446+50.00	NOTCH & WIDEN (C&G) (CENTERED)	25.0			125.2	347.8	0.03	10.4	37.0	102.8	550.0	28.3	32.0	88.9	495.0	22.0	88.0	244.4	220.0		26.9
446+50.00	449+00.00	250' TRANSITION	250.0							32.0	888.9	550.0	244.4	32.0	888.9	495.0	220.0	64.0	1777.8	220.0		195.6
449+00.00	450+00.00	COLD MILL	100.0			32.0	355.6	0.10	35.6									32.0	355.6	220.0		39.1
ADDITIONAL FOR LEVELING																						
114+00.00	116+68.73	MAIN LANES LEVELING - O.S.	268.7			75.0	2239.2	0.10	223.9									75.0	2239.2	220.0	246.3	
116+68.73	123+90.00	MAIN LANES LEVELING - O.S.	721.3			VAR.	4764.0	0.10	476.4									VAR.	4764.0	220.0	524.0	
123+90.00	135+50.00	MAIN LANES LEVELING - O.S.	1160.0			24.0	3093.3	0.10	309.3									24.0	3093.3	220.0	340.3	
163+50.00	205+79.00	MAIN LANES LEVELING - O.S.	4229.0			36.0	16916.0	0.10	1691.6									36.0	16916.0	220.0	1860.8	
205+79.00	208+00.00	MAIN LANES LEVELING - O.S.	221.0			36.0	884.0	0.10	88.4													
208+00.00	218+19.41	MAIN LANES LEVELING - O.S.	1019.4			36.0	4077.6	0.10	407.8									36.0	4077.6	220.0	448.5	
218+19.41	222+00.00	MAIN LANES LEVELING - O.S.	380.6			VAR.	1395.0	0.10	139.5									VAR.	1395.0	220.0	153.5	
228+53.00	232+00.00	MAIN LANES LEVELING - O.S.	347.0			24.0	925.3	0.10	92.5									24.0	925.3	220.0	101.8	
232+00.00	236+00.00	MAIN LANES LEVELING - O.S.	400.0			24.0	1066.7	0.10	106.7													
236+00.00	240+99.39	MAIN LANES LEVELING - O.S.	499.4			VAR.	1286.3	0.10	128.6									VAR.	1286.3	220.0	141.5	
240+99.39	243+28.51	MAIN LANES LEVELING - O.S.	229.1			VAR.	644.2	0.10	64.4									VAR.	644.2	220.0	70.9	
243+28.51	258+50.00	MAIN LANES LEVELING - O.S.	1521.5			24.5	4141.9	0.10	414.2									24.5	4141.9	220.0	455.6	
265+74.00	266+10.00	MAIN LANES LEVELING - O.S.	36.0			24.5	98.0	0.10	9.8									24.5	98.0	220.0	10.8	
270+75.00	271+85.45	MAIN LANES LEVELING - O.S.	110.5			24.5	300.8	0.10	30.1									24.5	300.8	220.0	33.1	
271+85.45	273+50.00	MAIN LANES LEVELING - O.S.	164.5			VAR.	412.7	0.10	41.3									VAR.	412.7	220.0	45.4	
372+20.00	376+80.00	MAIN LANES LEVELING - C&G	460.0			VAR.	885.3	0.10	88.5													
385+79.00	390+00.00	MAIN LANES LEVELING - C&G	421.0			18.0	842.0	0.10	84.2									18.0	842.0	220.0		92.6
397+00.00	400+25.00	MAIN LANES LEVELING - C&G	325.0			VAR.	983.9	0.10	98.4									VAR.	983.9	220.0		108.2
400+25.00	409+71.00	MAIN LANES LEVELING - C&G	946.0			24.0	2522.7	0.10	252.3													
409+71.00	421+50.00	MAIN LANES LEVELING - C&G	1179.0			24.0	3144.0	0.10	314.4									24.0	3144.0	220.0		345.8
426+00.00	440+00.00	MAIN LANES LEVELING - C&G	1400.0			24.0	3733.3	0.10	373.3									24.0	3733.3	220.0		410.7
440+00.00	446+25.00	MAIN LANES LEVELING - C&G	625.0			24.0	1666.7	0.10	166.7													
446+25.00	446+50.00	MAIN LANES LEVELING - C&G	25.0			24.0	66.7	0.10	6.7									24.0	66.7	220.0		7.3
SUBTOTALS:					121187.0		**653180.9**		**23604.9**		**47065.2**		**13318.4**		**181725.2**		**56605.4**		**491111.3**		**43083.3**	**10939.2**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.1% MIN. AGGR.....5.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	116	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BASE AND SURFACING (BOX 2 OF 3)

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	TOTAL 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
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR GRADE RAISE																						
116+68.73	135+50.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	1881.3			VAR.	17755.4	0.03	532.7	VAR.	4126.4	440.0	907.8	VAR.	6814.5	660.0	2248.8					
163+50.00	205+79.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	4229.0			VAR.	20946.2	0.03	628.4	VAR.	6401.4	440.0	1408.3	VAR.	7272.4	660.0	2399.9					
205+79.00	208+00.00	GRADE RAISE UNDER FULL DEPTH (OPEN SHLD.)	221.0			VAR.	860.0	0.03	25.8	VAR.	860.0	660.0	283.8									
208+00.00	222+00.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	1400.0			VAR.	11405.1	0.03	342.2	VAR.	5282.7	440.0	1162.2	VAR.	3061.2	660.0	1010.2					
228+53.00	232+00.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	347.0			VAR.	776.4	0.03	23.3					VAR.	776.4	330.0	128.1					
232+00.00	236+00.00	GRADE RAISE UNDER FULL DEPTH (OPEN SHLD.)	400.0			VAR.	2102.8	0.03	63.1	VAR.	1051.4	1210.0	636.1									
236+00.00	258+50.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	2250.0			VAR.	7047.4	0.03	211.4	VAR.	1119.5	440.0	246.3	VAR.	5927.9	330.0	978.1					
265+74.00	266+10.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	36.0			VAR.	139.9	0.03	4.2	VAR.	31.4	440.0	6.9	VAR.	108.5	330.0	17.9					
270+75.00	273+50.00	GRADE RAISE IN NOTCH & WIDEN (OPEN SHLD.)	275.0			VAR.	976.4	0.03	29.3	VAR.	169.1	440.0	37.2	VAR.	807.3	330.0	133.2					
372+20.00	376+80.00	GRADE RAISE UNDER FULL DEPTH (C&G)	460.0			VAR.	798.2	0.03	23.9	VAR.	798.2	440.0	175.6									
385+79.00	390+00.00	GRADE RAISE IN NOTCH & WIDEN (C&G)	421.0			VAR.	808.8	0.03	24.3	VAR.	111.8	440.0	24.6	VAR.	697.0	330.0	115.0					
397+00.00	400+25.00	GRADE RAISE IN NOTCH & WIDEN (C&G)	325.0			VAR.	348.5	0.03	10.5					VAR.	348.5	330.0	57.5					
400+25.00	409+71.00	GRADE RAISE UNDER FULL DEPTH (C&G)	946.0			VAR.	851.4	0.03	25.5	VAR.	851.4	440.0	187.3									
409+71.00	421+50.00	GRADE RAISE IN NOTCH & WIDEN (C&G)	1179.0			VAR.	2086.9	0.03	62.6	VAR.	113.6	440.0	25.0	VAR.	1973.3	330.0	325.6					
427+00.00	440+00.00	GRADE RAISE IN NOTCH & WIDEN (C&G)	1300.0			VAR.	5661.4	0.03	169.8	VAR.	1703.2	440.0	374.7	VAR.	3958.2	330.0	653.1					
440+00.00	446+25.00	GRADE RAISE UNDER FULL DEPTH (C&G)	625.0			VAR.	3510.4	0.03	105.3	VAR.	1755.2	880.0	772.3									
446+25.00	446+50.00	GRADE RAISE IN NOTCH & WIDEN (C&G)	25.0			VAR.	103.7	0.03	3.1	VAR.	39.5	440.0	8.7	VAR.	64.2	330.0	10.6					
ADDITIONAL FOR SUPERELEVATION																						
129+60.90	133+00.43	SUPER TRANSITION RT. SHLD. ONLY (N.C.-5.3%)	339.5	31.50	106.9																	
133+00.43	135+50.00	SUPER TRANSITION RT. SHLD. ONLY (5.3%-1.4%)	249.6	19.69	49.1																	
135+50.00	136+39.96	SUPER TRANSITION (1.4%-N.C.)	90.0	7.88	7.1																	
136+39.96	142+69.96	SUPER TRANSITION (N.C.-9.8%)	630.0	91.25	574.9																	
142+69.96	143+58.14	MAX SUPER (9.8%)	88.2	182.50	161.0																	
143+58.14	149+88.14	SUPER TRANSITION (9.8%-N.C.)	630.0	91.25	574.9																	
156+37.95	161+77.95	SUPER TRANSITION (N.C.-4.3%)	540.0	39.25	212.0																	
161+77.95	167+11.11	MAX SUPER (4.3%)	533.2	78.50	418.6																	
167+11.11	172+51.11	SUPER TRANSITION (4.3%-N.C.)	540.0	39.25	212.0																	
198+33.14	203+73.14	SUPER TRANSITION (N.C.-7.7%)	540.0	67.25	363.2																	
203+73.14	210+36.76	MAX SUPER (7.7%)	663.6	134.50	892.5																	
210+36.76	215+76.76	SUPER TRANSITION (7.7%-N.C.)	540.0	67.25	363.2																	
231+48.32	236+88.32	SUPER TRANSITION (N.C.-6.1%)	540.0	52.25	282.2																	
236+88.32	240+99.39	MAX SUPER (6.1%)	411.1	104.50	429.6																	
240+99.39	241+93.51	MAX SUPER RT. SHLD. ONLY (6.1%)	94.1	68.75	64.7																	
241+93.51	247+33.51	SUPER TRANSITION RT. SHLD. ONLY (6.1%-N.C.)	540.0	34.38	185.7																	
ADDITIONAL FOR GUARDRAIL WIDENING																						
118+23.00	118+56.00	TAPER FOR GUARDRAIL WIDENING ON RT.	33.0	21.63	7.1													2.8	10.3	220.0	1.1	
118+56.00	122+26.00	GUARDRAIL WIDENING (5.5') ON RT.	370.0	43.25	160.0													5.5	226.1	220.0	24.9	
122+26.00	122+59.00	TAPER FOR GUARDRAIL WIDENING ON RT.	33.0	21.63	7.1													2.8	10.3	220.0	1.1	
136+17.17	136+50.17	TAPER FOR GUARDRAIL WIDENING ON RT.	33.0	21.63	7.1													2.8	10.3	220.0	1.1	
136+50.17	148+35.17	GUARDRAIL WIDENING (5.5') ON RT.	1185.0	43.25	512.5													5.5	724.2	220.0	79.7	
148+35.17	149+35.17	GUARDRAIL TAPER FOR GUARDRAIL WIDENING ON RT.	100.0	35.63	35.6													4.5	50.0	220.0	5.5	
149+35.17	149+78.92	GUARDRAIL WIDENING (3.5') ON RT.	43.8	28.00	12.3													3.5	17.0	220.0	1.9	
146+42.17	146+75.17	TAPER FOR GUARDRAIL WIDENING ON LT.	33.0	21.63	7.1													2.8	10.3	220.0	1.1	
146+75.17	148+35.17	GUARDRAIL WIDENING (5.5') ON LT.	160.0	43.25	69.2													5.5	97.8	220.0	10.8	
148+35.17	149+35.17	GUARDRAIL TAPER FOR GUARDRAIL WIDENING ON LT.	100.0	35.63	35.6													4.5	50.0	220.0	5.5	
149+35.17	149+78.92	GUARDRAIL WIDENING (3.5') ON LT.	43.8	28.00	12.3													3.5	17.0	220.0	1.9	
152+55.08	152+98.83	GUARDRAIL WIDENING (3.5') ON RT.	43.8	28.00	12.3													3.5	17.0	220.0	1.9	
152+98.83	153+58.83	GUARDRAIL TAPER FOR GUARDRAIL WIDENING ON RT.	60.0	31.50	18.9													4.0	26.7	220.0	2.9	
153+58.83	153+85.83	TAPER FOR GUARDRAIL WIDENING ON RT.	27.0	17.50	4.7													2.3	6.9	220.0	0.8	
152+55.08	152+98.83	GUARDRAIL WIDENING (3.5') ON LT.	43.8	28.00	12.3													3.5	17.0	220.0	1.9	
152+98.83	154+83.83	GUARDRAIL TAPER FOR GUARDRAIL WIDENING ON LT.	185.0	41.88	77.5													5.4	111.0	220.0	12.2	
154+83.83	155+27.03	TAPER FOR GUARDRAIL WIDENING ON LT.	43.2	27.88	12.0													3.6	17.3	220.0	1.9	
SUBTOTALS:					**5901.2**		**76178.9**		**2285.4**		**24414.8**		**6256.8**		**31809.4**		**8078.0**		**1419.2**		**156.2**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.1% MIN. AGGR.....5.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

11/5/2012

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	117	460

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

BASE AND SURFACING (BOX 3 OF 3)

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	TOTAL 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
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR STAGE CONSTRUCTION																						
620+48.14	622+89.51	ADDITIONAL WIDENING FOR STAGE 2 (VAR.)	241.4	108.25	261.3	14.1	378.2	0.03	11.3					14.1	378.2	495.0	93.6	14.0	375.5	220.0	41.3	
622+89.51	627+47.17	ADDITIONAL WIDENING FOR STAGE 2 (AVERAGE 28')	457.7	194.50	890.2	28.2	1434.1	0.03	43.0					28.2	1434.1	495.0	354.9	28.0	1424.0	220.0	156.6	
627+47.17	630+86.72	ADDITIONAL WIDENING FOR STAGE 2 (VAR.)	339.6	108.25	367.6	14.1	532.0	0.03	16.0					14.1	532.0	495.0	131.7	14.0	528.3	220.0	58.1	
656+52.07	662+82.17	ADDITIONAL WIDENING FOR STAGE 2 (VAR.)	630.1	63.63	400.9	6.8	476.1	0.03	14.3					6.8	476.1	495.0	117.8	6.8	476.1	220.0	52.4	
662+82.17	663+51.33	ADDITIONAL WIDENING FOR STAGE 2 (AVERAGE 13.5')	69.2	105.25	72.8	13.5	103.8	0.03	3.1					13.5	103.8	495.0	25.7	13.5	103.8	220.0	11.4	
663+51.33	670+70.48	ADDITIONAL WIDENING FOR STAGE 2 (VAR.)	719.1	63.63	457.6	6.8	543.3	0.03	16.3					6.8	543.3	495.0	134.5	6.8	543.3	220.0	59.8	
1417+00.27	1436+77.94	ADDITIONAL WIDENING FOR STAGE 3 (VAR.)	1977.7	VAR.	1364.0	VAR.	1715.2	0.03	51.5					VAR.	1715.2	495.0	424.5	VAR.	1676.3	220.0	184.4	
HWY. 72																						
10+11.89	11+81.64	HWY. 72 TURNOUT	169.8	225.50	492.9	VAR.	905.7	0.03	27.2									VAR.	1243.7	220.0	136.8	
10+11.89	11+81.64	HWY. 72 TURNOUT (LEVELING)	169.8			VAR.	905.7	0.10	90.6									VAR.	905.7	220.0	99.6	
11+81.64	12+18.86	HWY. 72	37.2	225.50	83.9	24.0	99.2	0.03	3.0									40.0	165.3	220.0	18.2	
11+81.64	12+18.86	HWY. 72 (LEVELING)	37.2			24.0	99.2	0.10	9.9									24.0	99.2	220.0	10.9	
HWY. 62 CONNECTOR																						
10+31.50	14+25.00	FULL DEPTH	393.5	286.25	1126.4	73.4	3209.2	0.03	96.3					24.6	1075.6	660.0	354.9	56.3	2461.6	220.0	270.8	
14+25.00	16+15.00	NOTCH & WIDEN	190.0			32.0	675.6	0.03	20.3									32.0	675.6	220.0	74.3	
14+25.00	16+15.00	NOTCH & WIDEN (LEVELING)	190.0			32.0	675.6	0.10	67.6									32.0	675.6	220.0	74.3	
14+00.00	16+15.00	NOTCH & WIDEN (GRADE RAISE)	215.0			VAR.	750.0	0.03	22.5	VAR.	223.2	440.0	49.1	VAR.	526.8	440.0	115.9					
16+15.00	17+15.00	TRANSITION	100.0			32.0	355.6	0.10	35.6									32.0	355.6	220.0	39.1	
CITY STREETS																						
10+26.27	10+59.88	RANCH VIEW RD. TURNOUT FULL DEPTH	33.6			VAR.	341.7	0.03	10.3	VAR.	117.8	550.0	32.4	VAR.	113.9	495.0	28.2	VAR.	227.8	220.0		25.1
10+59.88	10+75.00	RANCH VIEW RD. FULL DEPTH	15.1	44.00	6.6	61.5	103.2	0.03	3.1	20.7	34.7	550.0	9.5	20.5	34.4	495.0	8.5	40.3	67.6	220.0		7.4
10+75.00	11+70.40	RANCH VIEW RD. NOTCH & WIDEN	95.4	22.00	21.0	36.9	391.1	0.03	11.7	11.1	117.7	550.0	32.4	5.8	61.5	495.0	15.2	25.6	271.4	220.0		29.9
10+75.00	11+70.40	RANCH VIEW RD. (LEVELING)	95.4			14.5	153.7	0.10	15.4									14.5	153.7	220.0		16.9
10+75.00	11+70.40	RANCH VIEW RD. (GRADE RAISE)	95.4			29.0	307.4	0.03	9.2	14.5	153.7	330.0	25.4	14.5	153.7	495.0	38.0					
10+27.26	10+58.76	PAUL PRATT RD. TURNOUT	31.5			VAR.	333.9	0.03	10.0	VAR.	114.6	550.0	31.5	VAR.	111.3	495.0	27.5	VAR.	222.6	220.0		24.5
10+58.76	11+76.44	PAUL PRATT RD.	117.7	44.00	51.8	61.5	804.3	0.03	24.1	20.7	270.7	550.0	74.4	20.5	268.1	495.0	66.4	40.3	527.0	220.0		58.0
9+00.99	9+82.63	ALVIN SEAMSTER RD. (NORTH) TURNOUT	81.6			VAR.	236.4	0.03	7.1									VAR.	236.4	220.0		26.0
9+00.99	9+82.63	ALVIN SEAMSTER RD. (NORTH) TURNOUT (LEVELING)	81.6			VAR.	167.3	0.10	16.7									VAR.	167.3	220.0		18.4
10+17.92	10+92.04	ALVIN SEAMSTER RD. (SOUTH) TURNOUT	74.1			VAR.	625.5	0.03	18.8	VAR.	227.5	550.0	62.6	VAR.	208.5	495.0	51.6	VAR.	417.1	220.0		45.9
10+92.04	13+11.72	ALVIN SEAMSTER RD. (SOUTH)	219.7	44.00	96.7	61.5	1501.3	0.03	45.0	20.7	505.3	550.0	139.0	20.5	500.4	495.0	123.8	40.3	983.8	220.0		108.2
12+50.00	13+11.72	ALVIN SEAMSTER RD. (SOUTH) (GRADE RAISE)	61.7			36.0	246.8	0.03	7.4	18.0	123.4	660.0	40.7									
		SOUTH WIMPY JONES RD. TURNOUT				VAR.	262.6	0.03	7.9									VAR.	262.6	220.0		28.9
		SOUTH WIMPY JONES RD. TURNOUT (LEVELING)				VAR.	227.4	0.10	22.7									VAR.	227.4	220.0		25.0
		NORTH WIMPY JONES RD. TURNOUT				VAR.	80.2	0.03	2.4									VAR.	80.2	220.0		8.8
		NORTH WIMPY JONES RD. TURNOUT (LEVELING)				VAR.	74.8	0.10	7.5									VAR.	74.8	220.0		8.2
SUBTOTALS (BOX 1 OF 3):					**121187.0**		**653180.9**		**23604.9**		**47065.2**		**13318.4**		**181725.2**		**56605.4**		**491111.3**		**43083.3**	**10939.2**
SUBTOTALS (BOX 2 OF 3):					**5901.2**		**76178.9**		**2285.4**		**24414.8**		**6256.8**		**31809.4**		**8078.0**		**1419.2**		**156.2**	
SUBTOTALS (BOX 3 OF 3):					**5693.7**		**18716.1**		**747.8**		**1888.6**		**497.0**		**8236.9**		**2112.7**		**15629.3**		**1288.0**	**431.2**
TOTALS:					**132781.9**		**748075.9**		**26638.1**		**73368.6**		**20072.2**		**221771.5**		**66796.1**		**508159.8**		**44527.5**	**11370.4**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.1% MIN. AGGR.....5.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

11/5/2012

R090065.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.		090065	118	460
06514		QUANTITIES		51287

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 090065

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	802	802	803	554 & 804	554 & 804	805	807	808	812	816	816	SP JOB 090065
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	② STEEL PILING (HP 12x53)	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	DUMPED RIPRAP	FILTER BLANKET	SILICONE JOINT SEALANT
		UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LB.	CU. IN.	EACH	CU. YD.	SQ. YD.	LIN. FT.
06514 X071 LITTLE SUGAR CREEK	BENT 1				53.28		16.7	5,012		320	1,417	2,933.0		219	418	
	BENT 2			356	174.60			23,675				3,154.0				
	BENT 3			299	156.83			22,064				3,154.0				
	BENT 4			466	163.94			22,337				3,154.0				
	BENT 5				52.85		16.7	5,012		240	1,417	2,933.0		251	548	
	254'-0" CONTINUOUS COMPOSITE W-BEAM UNIT					532.40	2,318.4		130,810		421,176		1			156
TOTALS FOR JOB NO. 090065			1	① 1,121	601.50	532.40	2,351.8	78,100	130,810	560	424,010	15,328.0	1	470	966	156

① Includes approx. 60 cu. yds. of rock excavation.

② These steel piles are required to be Grade 50 and to have special pile tips which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)".

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
AVOCA-NORTH GARFIELD (S)
BENTON COUNTY

ROUTE 62 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 8-24-10 FILENAME: b090065_gl.dgn
CHECKED BY: PGT DATE: 8-10 SCALE: NONE
DESIGNED BY: DATE:
BRIDGE NO. 06514 DRAWING NO. 51287

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	119	460

(2) SUMMARY OF QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-13-13

SUMMARY OF QUANTITIES (BOX 1 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	SP & 201	CLEARING		300	STATION
	SP & 201	GRUBBING		300	STATION
	202	REMOVAL AND DISPOSAL OF CURB		894	LIN. FT.
	202	REMOVAL AND DISPOSAL OF WELL		2	EACH
	202	REMOVAL AND DISPOSAL OF GATES		5	EACH
	202	REMOVAL AND DISPOSAL OF POSTS		6	EACH
	202	REMOVAL AND DISPOSAL OF RETAINING WALLS		94	LIN. FT.
	202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		30	SQ. YD.
	202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		1762	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		4	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		72	EACH
	202	REMOVAL AND DISPOSAL OF BOX CULVERTS		1	EACH
	202	REMOVAL AND DISPOSAL OF GUARDRAIL		725	LIN. FT.
	202	REMOVAL AND DISPOSAL OF BUILDINGS		1	EACH
	202	REMOVAL AND DISPOSAL OF SIGNS		16	EACH
	202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM		1	EACH
	210	UNCLASSIFIED EXCAVATION		352173	CU. YD.
	SP	SELECT GRANULAR BACKFILL		540	CU. YD.
	210	PRESPLITTING		5588	SQ. YD.
	SP & 210	COMPACTED EMBANKMENT		376257	CU. YD.
	SP & 210	SOIL STABILIZATION		500	TON
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		141430	TON
	309	PORTLAND CEMENT CONCRETE BASE (11 1/2" UNIFORM THICKNESS)		665	SQ. YD.
	401	TACK COAT		26938	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		19189	TON
	SP, SS, & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		883	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		63523	TON
	SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		3273	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		54522	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		120	TON
	SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		2627	TON
	SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		671	TON
	412	COLD MILLING ASPHALT PAVEMENT		1767	SQ. YD.
	SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		150	TON
	SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		150	TON
	504	APPROACH GUTTERS (TYPE B)		27.00	CU. YD.
	505	PORTLAND CEMENT CONCRETE DRIVEWAY		1903.00	SQ. YD.
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD LABORATORY		1	EACH
	SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	603	18" TEMPORARY CULVERT		542	LIN. FT.
	SS & 604	SIGNS		1102	SQ. FT.
	SP, SS, & 604	SIGNS LEFT IN PLACE		7	SQ. FT.
	SS & 604	BARRICADES		664	LIN. FT.
	SS & 604	TRAFFIC DRUMS		1891	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1278	LIN. FT.
	SS & 604	RELOCATING PRECAST CONCRETE BARRIER		765	LIN. FT.
	SS & 604	CONSTRUCTION PAVEMENT MARKINGS		356728	LIN. FT.
	604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		2048	LIN. FT.
	604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		224752	LIN. FT.
	604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		92776	LIN. FT.
	SS & 604	VERTICAL PANELS		100	EACH
	605	CONCRETE DITCH PAVING (TYPE A)		4385	SQ. YD.
	605	CONCRETE DITCH PAVING (TYPE B)		8291	SQ. YD.
	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		492	LIN. FT.
*	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	5348	LIN. FT.
*	606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	5348	LIN. FT.
	SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		177	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		861	LIN. FT.
*	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	170	LIN. FT.
*	606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	170	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		259	LIN. FT.
	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		170	LIN. FT.
	SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		368	LIN. FT.
*	SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	186	LIN. FT.
*	606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	186	LIN. FT.
	SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		110	LIN. FT.
	SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		229	LIN. FT.
	SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		198	LIN. FT.
	SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		20	LIN. FT.
*	SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	569	LIN. FT.
*	606	48" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	569	LIN. FT.
*	SS & 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	36	LIN. FT.
*	606	54" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	36	LIN. FT.
	SP, SS, & 606	18" SIDE DRAIN		2674	LIN. FT.
	SP, SS, & 606	24" SIDE DRAIN		590	LIN. FT.
	SS & 606	21" X 15" SIDE DRAIN		56	LIN. FT.
	606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		7	EACH
	606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		29	EACH
	606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		9	EACH
	606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		5	EACH
	606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
	606	SELECTED PIPE BEDDING		500	CU. YD.

*DENOTES ALTERNATE BID ITEMS

11/8/2011

ZBORDER.CEL

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
609	DROP INLETS (TYPE MO)		59	EACH
609	JUNCTION BOXES (TYPE E)		2	EACH
609	DROP INLET EXTENSIONS (4')		36	EACH
609	DROP INLET EXTENSIONS (8')		16	EACH
611	UNDERDRAIN OUTLET PROTECTORS		35	EACH
611	4" PIPE UNDERDRAINS		6960	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)		91.1	CU. YD.
SS & 617	GUARDRAIL (TYPE A)		2050	LIN. FT.
SS & 617	GUARDRAIL (TYPE C)		25	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)		3	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		3	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
619	WIRE FENCE (TYPE C)		7218	LIN. FT.
619	WIRE FENCE (TYPE D)		5769	LIN. FT.
619	WIRE FENCE (TYPE D-1)		2949	LIN. FT.
619	WIRE FENCE (TYPE D-2)		513	LIN. FT.
* 619	4' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	464	LIN. FT.
* 619	4' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	464	LIN. FT.
* 619	5' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	648	LIN. FT.
* 619	5' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	648	LIN. FT.
* 619	12' STEEL GATES	(ALTERNATE NO. 1)	4	EACH
* 619	12' ALUMINUM GATES	(ALTERNATE NO. 2)	4	EACH
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	23	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	23	EACH
* 619	20' STEEL GATES	(ALTERNATE NO. 1)	1	EACH
* 619	20' ALUMINUM GATES	(ALTERNATE NO. 2)	1	EACH
620	LIME		97	TON
620	SEEDING		48.57	ACRE
620	MULCH COVER		177.99	ACRE
SS & 620	WATER		7731.8	M.GAL.
621	TEMPORARY SEEDING		129.42	ACRE
621	SILT FENCE		20314	LIN. FT.
621	SAND BAG DITCH CHECKS		6248	BAG
621	DIVERSION DITCH		3914	LIN. FT.
621	DROP INLET SILT FENCE		1650	LIN. FT.
621	SEDIMENT BASIN		16833	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		16833	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		19921	CU. YD.
621	PIPE FOR SLOPE DRAINS		440	LIN. FT.
621	ROCK DITCH CHECKS		2064	CU. YD.
623	SECOND SEEDING APPLICATION		48.57	ACRE
624	SOLID SODDING		10921	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		6828	SQ. YD.
632	CONCRETE ISLAND		195	SQ. YD.
633	CONCRETE WALKS		7789	SQ. YD.
633	HAND RAILING		100	LIN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		15319	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		72	EACH
637	MAILBOX SUPPORTS (SINGLE)		52	EACH
637	MAILBOX SUPPORTS (DOUBLE)		10	EACH
641	WHEELCHAIR RAMPS (TYPE 3)		806	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		35048	LIN. FT.
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		201	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		68977	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")		598	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		12	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		82632	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		2	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		2	EACH
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	128	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	128	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	640	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	640	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		1647	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		518	CU. YD.
802	CLASS S CONCRETE-ROADWAY		529.10	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		67842	POUND
816	FILTER BLANKET		341	SQ. YD.
816	DUMPED RIPRAP		208	CU. YD.
816	CONCRETE RIPRAP		24	CU. YD.
SP	CULVERT CLEAN OUT		5	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER		5	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		5	EACH
SP	MODULAR BLOCK RETAINING WALLS		1511	SQ. FT.
	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		1121	CU. YD.
802	CLASS S CONCRETE-BRIDGE		601.50	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE		532.40	CU. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT		2351.8	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		78100	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		130810	POUND
805	STEEL PILING (HP 12X53)		560	LIN. FT.
807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)		424010	POUND
808	ELASTOMERIC BEARINGS		15328.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)		1	EACH
816	FILTER BLANKET		966	SQ. YD.
816	DUMPED RIPRAP		470	CU. YD.
SP	SILICONE JOINT SEALANT		156	LIN. FT.

*DENOTES ALTERNATE BID ITEMS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	120	460

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-13-13

REVISIONS

DATE	REVISION	SHEET NUMBER

8/14/2013

R090065.DGN

SUMMARY OF QUANTITIES AND REVISIONS

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.		090065	121	460

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES

Project Name: s090065
Date: 5/20/2009
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	759252.8452	702372.9758	1360.26	CTL	T-1=T-20(JOB 090064)
2	760039.8311	702583.7358	1365.03	CTL	T-2=T-21(JOB 090064)
3	764393.7089	703227.5740	1239.05	CTL	T-3
4	765138.2307	703720.5709	1200.89	CTL	REBAR & CAP
5	767425.4282	706081.2896	1319.46	CTL	REBAR & CAP
6	768012.2778	706627.7844	1337.06	CTL	REBAR & CAP
7	768758.2332	707197.5635	1349.38	CTL	REBAR & CAP
8	769261.1318	708145.3058	1365.16	CTL	T-8\CPS
9	769725.3981	709536.5365	1385.36	CTL	REBAR & CAP
10	770215.7573	710598.1479	1397.08	CTL	REBAR & CAP
11	771507.1249	712221.6480	1395.46	CTL	REBAR & CAP
12	772076.8876	713099.1402	1401.47	CTL	REBAR & CAP
13	773318.6517	714783.8088	1395.02	CTL	REBAR & CAP
14	773826.3503	716154.8228	1417.90	CTL	T-14\RBR CAP
15	774500.0871	718067.0134	1417.48	CTL	T-15\RBR CAP
16	775094.6008	719876.3586	1482.21	CTL	REBAR & CAP
17	775359.4065	720663.3184	1479.39	CTL	REBAR & CAP T-17
18	775387.9993	722063.6371	1482.89	CTL	REBAR & CAP T-18
19	775339.8525	724053.8042	1533.94	CTL	8" SPIKE
20	775022.7530	725786.0881	1535.51	CTL	REBAR & CAP T-20
21	774160.6645	727235.6134	1591.39	CTL	REBAR & CAP T-21
22	774090.9690	727633.0025	1603.24	CTL	REBAR & CAP T-22
23	774776.5334	729110.6088	1569.28	CTL	REBAR & CAP T-23
24	774795.5263	729493.0633	1558.63	CTL	REBAR & CAP T-24
25	774945.7575	730095.9498	1510.03	CTL	REBAR & CAP
26	775366.4900	731017.7534	1510.69	CTL	T-26 RBR-CAP
27	775610.4358	731544.4186	1494.31	CTL	T-27 CPS
28	775674.2193	732051.1460	1502.44	CTL	T-28 NAIL BOTTLE CAP
29	775494.3718	732621.1418	1496.01	CTL	T-29 REBAR & CAP
30	775323.5499	732915.0619	1492.06	CTL	T-30 REBAR & CAP
31	775427.8062	733462.1702	1474.24	CTL	T-31 REBAR & CAP
32	775910.5307	733944.1664	1502.24	CTL	T-32 REBAR & CAP
33	776408.7835	734315.7941	1519.13	CTL	T-33 REBAR & CAP
34	776699.2490	734850.5303	1555.29	CTL	T-34 REBAR & CAP
35	777762.1760	735715.2106	1527.44	CTL	T-35 REBAR & CAP
36	778402.3398	736118.9613	1501.57	CTL	T-36 NAIL BOTTLE CAP
38	780119.5743	737186.7571	1521.78	CTL	T-38 REBAR & CAP
39	781087.2609	737525.1790	1539.50	CTL	T-39 REBAR & CAP
40	783082.3001	738142.5408	1595.03	CTL	T-40 REBAR & CAP
41	784440.7616	738755.0599	1637.84	CTL	T-41 REBAR & CAP
42	784952.1445	738877.7382	1641.85	CTL	T-42 REBAR & CAP
43	786509.0167	739458.5707	1636.58	CTL	T-43 REBAR & CAP
44	787056.6368	739787.4354	1623.35	CTL	T-44 REBAR & CAP
45	787674.1789	740281.0655	1608.43	CTL	T-45 REBAR & CAP
46	788753.6678	741428.1863	1594.49	CTL	T-46 REBAR & CAP
47	789504.9120	742346.1710	1564.65	CTL	T-47\REBAR & CAP
48	790377.0105	743271.2096	1555.09	CTL	T-48\REBAR & CAP
49	790489.3934	744787.8516	1539.84	CTL	T-49\REBAR & CAP
50	790202.2384	745113.5011	1546.45	CTL	T-50\REBAR & CAP
51	791569.5188	744646.1967	1561.91	CTL	T-51\REBAR & CAP
100	746093.7962	690870.6884	1353.71	GPS	ROGPORT GPS 1989
101	760564.6788	702721.5652	1362.46	GPS	AHTD CAP GPS 040023A
102	762461.3410	702985.6130	1340.30	GPS	AHTD CAP GPS 040023
103	770503.9228	711008.0502	1389.05	GPS	AHTD CAP GPS 040024A
104	771536.6166	712215.6506	1396.94	GPS	GPS040024 DESTROYED
105	775283.9366	725148.4277	1518.69	GPS	REBAR & CAP 040025A
106	774429.9781	726861.8762	1569.24	GPS	REBAR & CAP 040025
107	781900.9796	737836.2648	1558.79	GPS	GPS NGS PT Z 309
108	783767.1526	738359.2423	1636.68	GPS	GPS Z309A
109	789088.3331	746859.9651	0000.00	GPS	GPS J26A
110	790045.1634	744028.1855	1557.38	GPS	GPS J 26\GOV. BM
111	748162.6287	691570.0948	1353.45	GPS	ROGPORT AZ MK 1989
112	761370.9087	702869.5403	1340.67	CTL	REBAR & CAP
113	763223.5193	703201.7941	1313.79	CTL	REBAR & CAP
114	763945.3829	703124.3459	1265.20	CTL	REBAR & CAP
115	764493.3104	703293.0272	1230.36	CTL	REBAR & CAP
116	765875.5306	704425.3833	1233.05	CTL	REBAR & CAP
117	766278.9766	704748.8320	1249.11	CTL	REBAR & CAP
118	766957.6249	705557.2661	1285.29	CTL	REBAR & CAP
119	769358.6222	708277.5707	1365.28	CTL	REBAR & CAP
120	774174.3048	717304.4209	1414.25	CTL	REBAR W/ ALUM CAP
121	775413.4807	722903.3810	1470.60	CTL	REBAR & CAP T-121
122	775383.9479	724848.4978	1516.25	CTL	REBAR & CAP
123	775141.1231	730794.4619	1504.31	CTL	REBAR & CAP
124	775408.5151	731078.4595	1502.88	CTL	REBAR W/ ALUM CAP
125	775671.5412	732074.7867	1500.81	CTL	REBAR W/ ALUM CAP
900	759167.1258	702578.7127	1358.16	BM	NGS POINT P 26 HALFCAP GONE
901	758279.8009	701511.3697	1351.67	BM	TBM-901\CHISELED SQUARE HEADW ALL
902	759146.9090	702335.7806	1358.68	BM	TBM-902\CPS POWERPOLE
903	762393.8633	702884.7164	1336.05	BM	NGS POINT P 309
904	764932.8973	703616.0916	1206.14	BM	NGS POINT Q 309
905	765897.1554	704497.3765	1233.51	BM	TBM-905\CPS COMBINATION POLE W-GUY
906	767876.2659	706518.9020	1333.84	BM	NGS POINT R 309
907	769240.6066	708321.9479	1367.65	BM	TBM-907\CPS COMBINATION POLE
908	770865.4552	711519.9483	1379.64	BM	TBM-908\CPS POWERPOLE
909	771715.2436	712442.2506	1398.27	BM	NGS POINT S 309
910	774341.6079	717534.8561	1416.53	BM	NGS POINT T 309
911	775469.0336	720883.6650	1472.18	BM	TBM-911\CPS POWERPOLE
912	775343.4484	722254.4166	1479.93	BM	NGS POINT U 309
913	775399.9122	724223.8419	1538.11	BM	TBM-913\CPS POWERPOLE
914	774362.8680	726769.7362	1563.55	BM	TBM-914 CPS POWERPOLE
915	774159.5294	727473.8342	1605.73	BM	NGS POINT V 309
916	774791.9075	729469.2901	1561.31	BM	TBM-916 CPS POWERPOLE
917	775676.0500	731821.1340	1501.72	BM	TBM-917 CPS POWERPOLE LEFT CENTERLINE
918	775294.9111	732339.3837	1515.59	BM	NGS POINT W 309
919	776569.0640	734724.9319	1541.30	BM	NGS POINT X 309
920	777585.1926	735538.0764	1527.37	BM	TBM-920\CPS 24" OAK
921	778949.1725	736572.8174	1465.17	BM	NGS POINT Y 309
922	779882.1180	737123.6758	1512.00	BM	TBM-922 CPS POWERPOLE 14 ' EAST
923	781900.9796	737836.2648	1558.79	BM	NGS POINT Z 309
924	782921.2323	738066.9790	1589.35	BM	TBM-924 CPS POWERPOLE
925	785320.6061	739077.0939	1643.24	BM	NGS POINT G 313
926	789479.7182	742350.7282	1565.13	BM	TBM-926\CPS POWERPOLE
927	790138.1202	743104.0196	1555.89	BM	TBM-927\CPS POWERPOLE
928	790692.4302	744562.8003	1535.72	BM	TBM-928\CPS COMBINATION POLE
999	790001.1471	744167.3666	1557.38	BM	NGS POINT J 26

Point Name	Northing	Easting	Elev	Feature	Description
1500	762869.1071	702967.5568	1347.10	CTL	REBAR/CAP 9' NE OF A POWERPOLE, 5' E OF 5 BARB STEEL POST FENCE
1501	762995.3094	702079.5050	1338.53	CTL	REBAR/CAP 6' NORTH OF 5 BARB FENCE 6' SOUTH OF EDGE OF RUSSELL RD 50' SOUTHWEST OF INTERSECTION ANDY JACK RD & RUSSELL RD
1502	765856.7909	703765.4518	1232.36	CTL	REBAR/CAP 5' WEST OF NORTH CORNER ASPHALT DRIVEWAY, SET IN E EDGE GRAVEL ROAD 10, SOUTHWEST OF 4 MAILBOXES 25' E OF DOUBLE 10' GATES
1503	765736.3481	703351.6883	1215.75	CTL	REBAR/CAP 6' WEST OF 2" STEEL PIPE FENCE 9' SOUTH OF THE CORNER 8' EAST OF EDGE OF COUNTY GRAVEL ROAD
1504	768643.1023	707788.9487	1356.76	CTL	REBAR/CAP 31' NORTHWEST OF A POWERPOLE, 51' SOUTH OF 1-S-F POST OAK PAVILION 60' EAST OF 1-S-F SHED
1505	768135.7535	707911.3210	1348.95	CTL	REBAR/CAP 12' NORTHWEST OF TOP BANK 68' NORTHEAST OF ELECTRIC CAMPER HOOKUP
1506	771451.1894	711526.9224	1380.24	CTL	REBAR/CAP 21' EAST OF CONC. DRIVEWAY TO DWMH IN GRASS FIELD 65' NORTHEAST OF 38" OAK
1507	771053.8885	711028.6349	1379.66	CTL	REBAR/CAP 4' SW OF T POST AT EDGE OF GRASS FIELD CAMPER PARKING
1508	774893.7774	724121.4262	1534.55	CTL	REBAR/CAP 3' WEST OF EDGE PAVEMENT IN FRONT OF A YELLOW HOUSE 39' NORTH OF A GRAVEL DRIVEWAY
1509	774017.3274	724096.1960	1511.89	CTL	REBAR/CAP SOUTH OF EDGE PAVEMENT AT INTERSECTION DENNIS MITCHELL ROAD & PAUL PRATT ROAD
1510	774082.2853	726749.5797	1556.40	CTL	REBAR/CAP 12' WEST OF EDGE PAVEMENT ALVIN SEAMSTR ROAD 36' SOUTH OF TELEPHONE POLE
1511	773619.0989	726772.7750	1547.34	CTL	REBAR/CAP 36' NORTH OF STEEL PIPE GATE 24' EAST OF ALVIN SEAMSTER ROAD IN AW PASTURE
1512	774423.0298	729385.3565	1577.65	CTL	REBAR/CAP 11' WEST OF FIRE HYDRANT NORTHWEST OF 3 WATERMETERS 9' NORTH OF 1 WATERMETER 3' SOUTH OF GRAVEL DRIVEWAY TO NEBCO FIRE DEPARTMENT
1513	774404.2687	729004.8497	1580.45	CTL	REBAR/CAP 6' NORTH OF POWERPOLE WITH LIGHT & TRANSFORMER 8' NORTH OF GRAVEL PARKING FOR COMMUNITY CENTER
1514	776433.7698	734627.6471	1527.50	CTL	REBAR/CAP 40' EAST OF CENTER OF GRAVEL RAILROAD CROSSING, SET IN CENTER OF TRACKS 225' WEST OF RAILROAD MILE MARKER 319
1515	776546.4995	735090.8638	1532.42	CTL	REBAR/CAP 277' EAST OF RAILROAD MILE MARKER 319 IN CENTER OF TRACKS 31' SOUTHEAST OF WATER LINE MARKER
1516	780866.3784	737739.8222	1536.75	CTL	REBAR/CAP 14' EAST OF SOUTHEAST CORNER 1-S-METAL BUILDING FLEA MARKET AROUND JUNK PILE
1517	781202.7465	737383.9140	1537.10	CTL	REBAR/CAP 28' NORTH OF SMALL PLANT POND NORTHEAST MOST POND 42' WEST OF TWIN 28" & 20" OAK

*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 0.999988242 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME. S090065GI.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 040025-040025A
CONVERGENCE ANGLE: 1-09-26.97754 LEFT AT POINT NUMBER 105
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

1/15/2013

R090065.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.		090065	122	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

CONSTRUCTION C.L.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	759969.8380	702546.8925
8001	PC	116+68.73	761606.4836	702872.5588
8003	PRC	121+55.55	762081.7789	702977.6769
8005	PT	126+50.40	762564.9507	703084.3593
8006	PC	130+98.26	763004.2611	703171.4551
8008	PT	135+02.60	763406.4326	703179.2142
8009	PC	138+03.79	763703.9086	703132.0815
8011	PT	147+36.14	764582.6394	703356.1600
8012	PC	160+42.95	765617.8101	704153.7691
8014	PT	168+46.11	766197.9936	704707.0100
8015	PC	177+28.16	766768.9369	705379.3378
8017	PT	185+29.34	767328.4797	705951.8432
8018	PC	202+38.14	768605.3248	707087.4783
8020	PT	211+71.76	769126.8290	707850.6708
8021	PC	235+53.32	769954.6828	710083.7102
8023	PT	243+28.51	770329.7866	710758.6877
8024	PC	255+09.62	771053.4186	711692.1581
8026	PT	263+09.24	771532.2064	712332.5508
8027	PC	271+85.45	772044.5528	713043.3550
8029	PT	288+49.26	772809.2178	714514.4594
8030	PC	335+71.07	774357.8514	718975.0844
8032	PT	341+86.42	774543.9711	719561.5411
8033	PC	370+13.42	775326.4753	722278.0835
8036	PT	373+44.04	775368.8401	722604.7055
8037	PC	397+13.85	775315.5524	724973.9158
8039	PT	405+65.62	775066.0957	725776.8431
8040	PC	418+77.44	774347.2199	726874.1501
8042	PT	436+53.12	774413.5326	728536.9744
8043	PC	438+57.42	774538.7419	728698.4086
8045	PT	443+84.20	774761.9673	729170.9361
8034	POE	453+27.46	774970.5518	730090.8496

ALVIN SEAMSTER (NORTH)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8046	POB	6+43.02	774741.1736	726726.3990
8047	PC	7+26.30	774671.3230	726771.7392
8049	PT	8+44.21	774559.0575	726800.1915
8050	POE	10+00.00	774403.7592	726787.8472

ALVIN SEAMSTER RD. (SOUTH)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8051	POB	10+00.00	774406.1109	726784.2576
8052	POE	13+44.58	774061.7495	726772.0956

CO. RD. 856

POINT NO.	TYPE	STATION	NORTHING	EASTING
8053	POB	10+00.00	773227.6280	715719.6323
8054	PC	10+45.05	773185.0740	715734.4061
8056	PT	13+26.90	773025.0143	715946.5665
8057	POE	16+26.90	773008.2170	716246.0959

HWY. 72

POINT NO.	TYPE	STATION	NORTHING	EASTING
8058	POB	10+00.00	769331.1862	708401.9005
8059	POE	15+29.76	769787.4266	708132.6683

HWY. 62 CONNECTOR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8060	POB	10+00.00	772817.3861	714537.9871
8061	PC	11+01.51	772913.2767	714504.6959
8063	PCC	14+27.54	773196.4292	714607.6348
8065	PT	20+05.07	773441.2010	715129.6509
8066	POE	20+92.52	773470.1702	715212.1597

N. OLD WIRE RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8069	POB	10+00.00	771485.5275	712268.0273
8070	PC	10+68.97	771429.7143	712308.5528
8072	PT	11+82.99	771390.4109	712409.0834
8073	POE	12+75.56	771408.5652	712499.8546

OLD LIBERTY ROAD

POINT NO.	TYPE	STATION	NORTHING	EASTING
8074	POB	10+00.00	774243.5854	720805.0402
8075	PC	11+29.39	774372.7730	720812.3125
8077	PT	13+50.24	774593.3795	720822.5996
8078	PC	13+89.87	774632.9834	720824.0640
8080	PT	15+30.84	774773.8189	720830.1394
8081	PC	18+76.99	775119.5528	720847.1849
8083	PT	21+19.08	775361.4959	720855.2731
8084	POE	21+74.74	775417.1463	720856.2512

PAUL PRATT RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8085	POB	10+00.00	775334.0489	724151.5489
8086	POE	11+83.34	775150.8617	724143.9882

RANCH VIEW RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8087	POB	10+00.00	775357.3147	723117.1300
8088	POE	12+05.69	775152.0963	723103.1751

STAGE 2 TRAFFIC

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	500+00.00	759969.8380	702546.8925
8091	PC	518+81.98	761815.6331	702914.1763
8093	PT	519+42.37	761874.8780	702925.8839
8094	PC	530+96.11	763007.0191	703148.0622
8096	PT	534+98.37	763407.1503	703155.3712
8097	PC	538+10.24	763715.1748	703106.5296
8099	PT	547+39.72	764591.6509	703328.7510
8100	PC	558+22.55	765451.1283	703987.3926
8102	PT	567+98.39	766156.9047	704658.6248
8103	PC	577+43.91	766768.9370	705379.3379
8105	PT	585+45.09	767328.4796	705951.8431
8106	PC	602+52.35	768604.1711	707086.4522
8108	PT	611+88.88	769126.6836	707852.3709
8109	PC	619+41.98	769387.3948	708558.9068
8111	PT	620+88.96	769446.9702	708693.1654
8112	PC	621+44.27	769472.5967	708742.1776
8114	PT	622+89.51	769531.5671	708874.8003
8115	PC	627+47.17	769690.6530	709303.9161
8117	PT	628+86.25	769730.9768	709436.9366
8118	PC	629+49.35	769745.5870	709498.3252
8120	PT	630+86.72	769785.3138	709629.7316
8121	PC	634+29.97	769904.1491	709951.7591
8123	PT	643+10.75	770330.3238	710718.6090
8124	PI	652+06.40	770880.1455	711425.6289
8125	PC	655+64.23	771098.0923	711709.4284
8127	PT	658+63.53	771281.9351	711945.6108
8128	PC	660+33.46	771387.1858	712079.0196
8130	PT	662+82.17	771536.9465	712277.5602
8131	PC	663+51.33	771577.3903	712333.6699
8133	PT	666+78.17	771764.6928	712601.4947
8134	PC	667+12.54	771783.9911	712629.9448
8136	PT	670+70.48	771989.5128	712922.9738
8137	PI	683+20.18	772723.0014	713934.7797
8138	PC	688+29.70	773023.9763	714345.9020
8140	PT	697+66.29	773458.8975	715171.5792
8141	PI	722+34.60	774276.6771	717500.4773
8142	PC	753+94.48	775328.7608	720480.0751
8144	PT	760+32.85	775428.8934	721107.0157
8145	PC	798+71.88	775341.8587	724945.0602
8147	PT	807+12.17	775095.6911	725737.1426
8148	PC	820+48.23	774363.5278	726854.7318
8150	PT	838+69.44	774431.5408	728560.1927
8151	PC	840+29.49	774529.6286	728686.6588
8153	PT	845+85.53	774765.2554	729185.4378
8034	POE	855+13.93	774970.5518	730090.8496

STAGE 3 TRAFFIC (A)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	1100+00.00	759969.8380	702546.8925
8154	PC	1116+88.36	761625.7304	702876.3887
8156	PT	1121+35.77	762060.6889	702980.7409
8157	PC	1121+77.72	762101.0626	702992.1108
8159	PT	1126+29.15	762539.9593	703097.2452
8160	PC	1131+02.13	763003.9182	703189.2277
8162	PT	1135+06.47	763406.0897	703196.9869
8163	PC	1137+94.99	763691.0463	703151.8377
8165	PT	1147+27.34	764569.7771	703375.9162
8166	PC	1152+48.12	764982.2986	703693.7680
8168	PT	1155+07.11	765189.2299	703849.5158
8169	PC	1155+13.59	765194.4473	703853.3510
8171	PT	1157+72.59	765401.3787	704009.0988
8172	POE	1157+89.38	765414.6764	704019.3448

STAGE 3 TRAFFIC (B)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8173	POB	1202+00.00	768565.1955	707075.2073
8174	PC	1202+32.51	768589.4860	707096.8114
8176	PT	1211+68.52	769111.8184	707862.2423
8177	PI	1222+91.12	769500.7324	708915.3290
8178	PI	1228+91.12	769709.2987	709477.9124
8179	PC	1235+50.94	769939.8388	710096.1404
8181	PT	1243+18.68	770311.6669	710764.5167
8182	PC	1255+17.56	771045.2252	711712.7744
8184	PT	1262+93.97	771509.7954	712334.8075
8185	PC	1271+85.58	772031.1510	713058.1107
8187	PT	1288+49.39	772795.8160	714529.2150
8188	POE	1288+90.58	772809.3268	714568.1309

STAGE 3 TRAFFIC (C)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8189	POB	1415+00.00	774539.8373	726549.1129
8190	PC	1417+00.27	774430.0875	726716.6372
8192	PT	1417+76.80	774386.4588	726779.5031
8193	PC	1417+82.08	774383.3344	726783.7578
8195	PT	1418+82.19	774326.9488	726866.4502
8196	PC	1419+11.90	774311.0793	726891.5659
8198	PT	1436+64.00	774390.1490	728534.5639
8199	PC	1438+70.77	774516.8724	728697.9503
8201	PT	1444+96.32	774781.9526	729259.0767
8034	POE	1453+49.21	774970.5518	730090.8496

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SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090065		123	460

(2) SURVEY CONTROL DETAILS

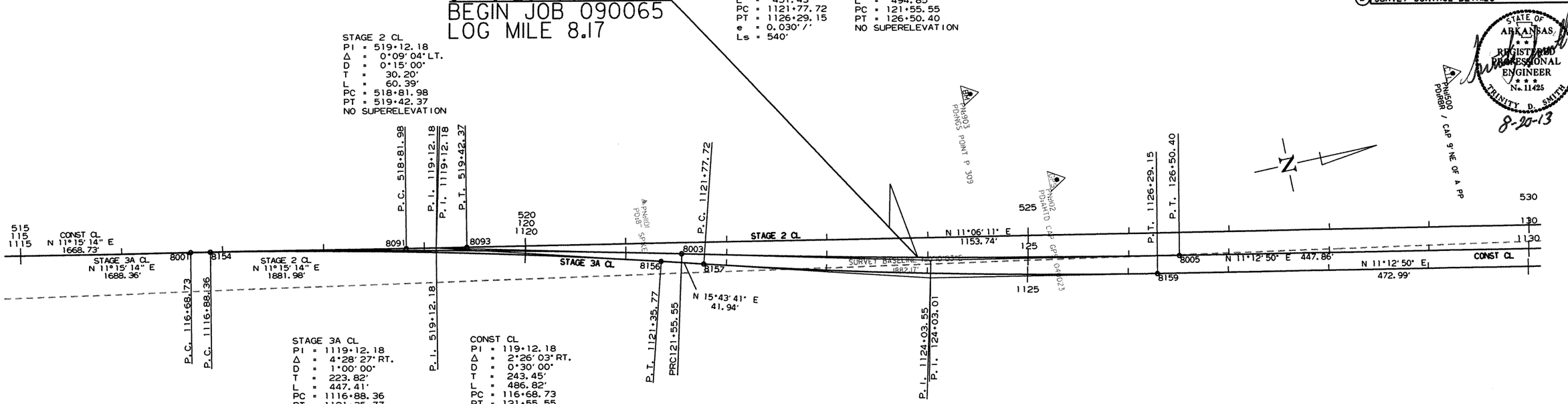
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 123+90
BEGIN JOB 090065
LOG MILE 8.17

STAGE 2 CL
PI = 519+12.18
Δ = 0°09'04" LT.
D = 0°15'00"
T = 30.20'
L = 60.39'
PC = 518+81.98
PT = 519+42.37
NO SUPERELEVATION

STAGE 3A CL
PI = 1124+03.55
Δ = 4°30'52" LT.
D = 1°00'00"
T = 225.83'
L = 451.43'
PC = 1121+77.72
PT = 1126+29.15
e = 0.030'/'
Ls = 540'

CONST CL
PI = 124+03.01
Δ = 2°28'27" LT.
D = 0°30'00"
T = 247.46'
L = 494.85'
PC = 121+55.55
PT = 126+50.40
NO SUPERELEVATION



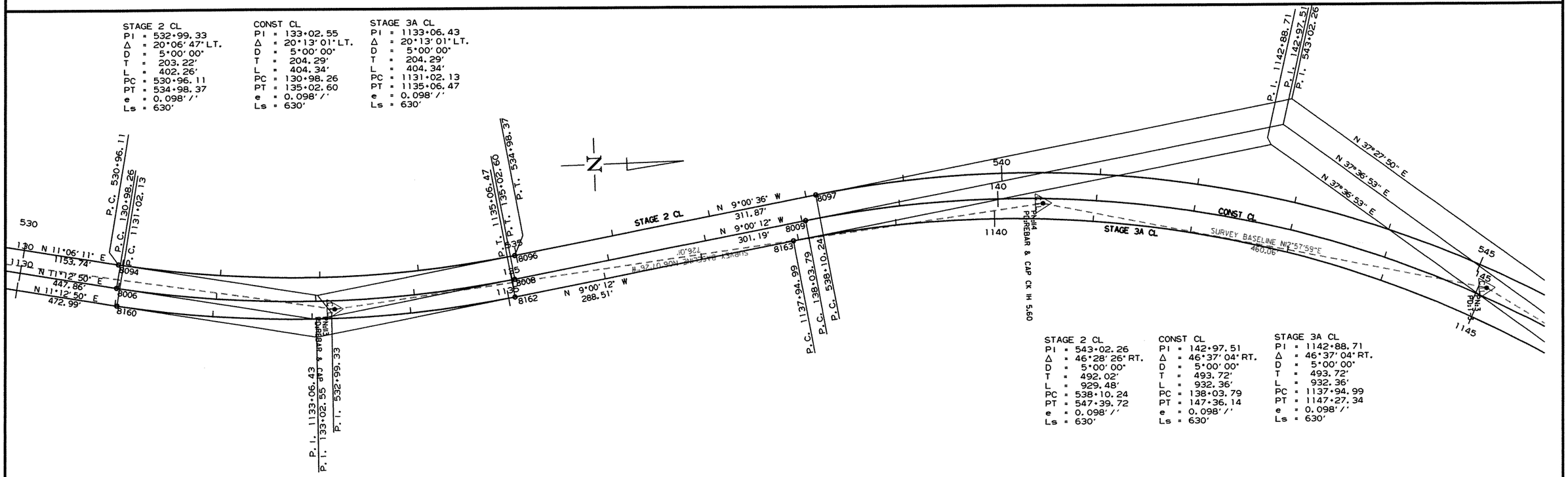
STAGE 3A CL
PI = 1119+12.18
Δ = 4°28'27" RT.
D = 1°00'00"
T = 223.82'
L = 447.41'
PC = 1116+88.36
PT = 1121+35.77
e = 0.030'/'
Ls = 540'

CONST CL
PI = 119+12.18
Δ = 2°26'03" RT.
D = 0°30'00"
T = 243.45'
L = 486.82'
PC = 116+68.73
PT = 121+55.55
NO SUPERELEVATION

STAGE 2 CL
PI = 532+99.33
Δ = 20°06'47" LT.
D = 5°00'00"
T = 203.22'
L = 402.26'
PC = 530+96.11
PT = 534+98.37
e = 0.098'/'
Ls = 630'

CONST CL
PI = 133+02.55
Δ = 20°13'01" LT.
D = 5°00'00"
T = 204.29'
L = 404.34'
PC = 130+98.26
PT = 135+02.60
e = 0.098'/'
Ls = 630'

STAGE 3A CL
PI = 1133+06.43
Δ = 20°13'01" LT.
D = 5°00'00"
T = 204.29'
L = 404.34'
PC = 1131+02.13
PT = 1135+06.47
e = 0.098'/'
Ls = 630'



STAGE 2 CL
PI = 543+02.26
Δ = 46°28'26" RT.
D = 5°00'00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72
e = 0.098'/'
Ls = 630'

CONST CL
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 3A CL
PI = 1142+88.71
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 1137+94.99
PT = 1147+27.34
e = 0.098'/'
Ls = 630'

SURVEY CONTROL DETAILS

1/15/2013

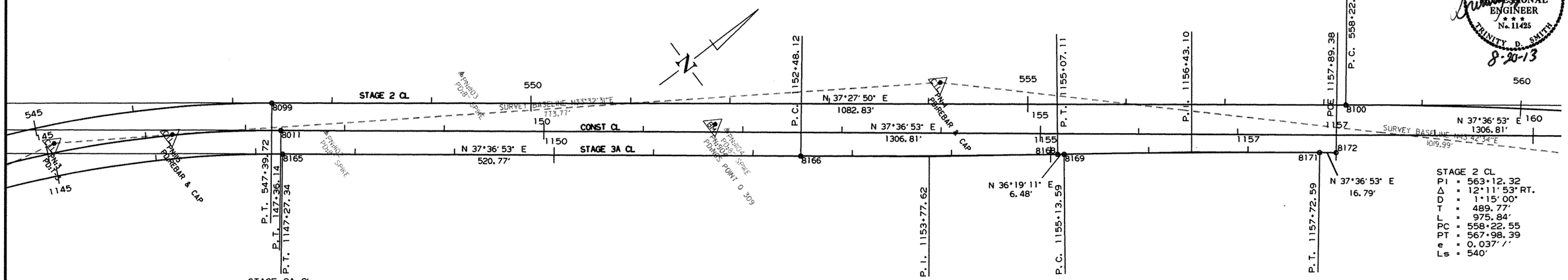
R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	124	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 3A CL
PI = 1153+77.62
Δ = 1°17'42" LT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1152+48.12
PT = 1155+07.11
NO SUPERELEVATION



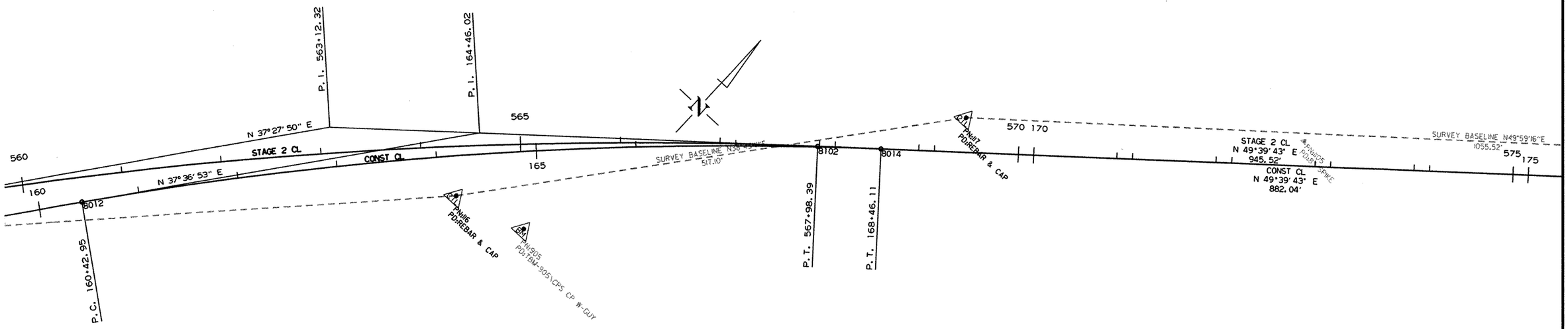
STAGE 2 CL
PI = 543+02.26
Δ = 46°28'26" RT.
D = 5°00'00"
T = 492.02'
L = 929.48'
PC = 538+10.24
PT = 547+39.72
e = 0.098'/'
Ls = 630'

CONST CL
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

STAGE 3A CL
PI = 1142+88.71
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 1137+94.99
PT = 1147+27.34
e = 0.098'/'
Ls = 630'

STAGE 3A CL
PI = 1156+43.10
Δ = 1°17'42" RT.
D = 0°30'00"
T = 129.51'
L = 259.00'
PC = 1155+13.59
PT = 1157+72.59
NO SUPERELEVATION

STAGE 2 CL
PI = 563+12.32
Δ = 12°11'53" RT.
D = 1°15'00"
T = 489.77'
L = 975.84'
PC = 558+22.55
PT = 567+98.39
e = 0.037'/'
Ls = 540'



STAGE 2 CL
PI = 563+12.32
Δ = 12°11'53" RT.
D = 1°15'00"
T = 489.77'
L = 975.84'
PC = 558+22.55
PT = 567+98.39
e = 0.037'/'
Ls = 540'

CONST CL
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

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SURVEY CONTROL DETAILS

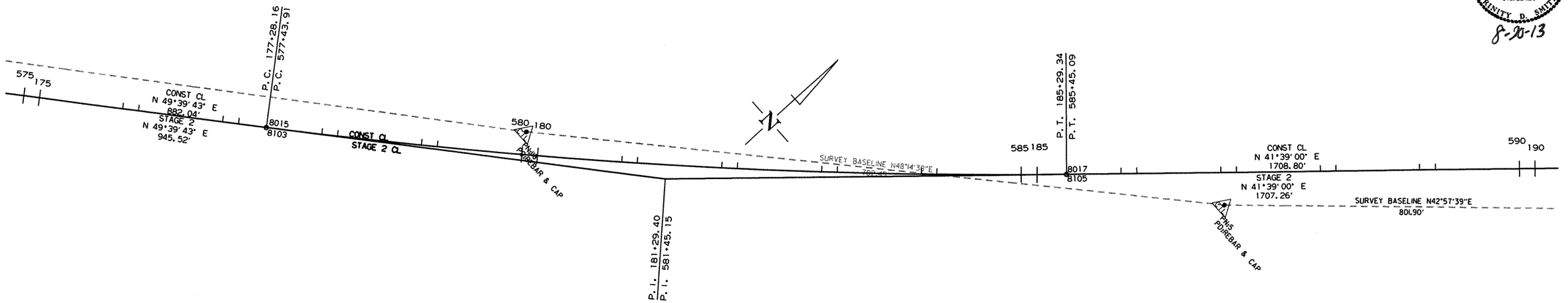
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	125	460

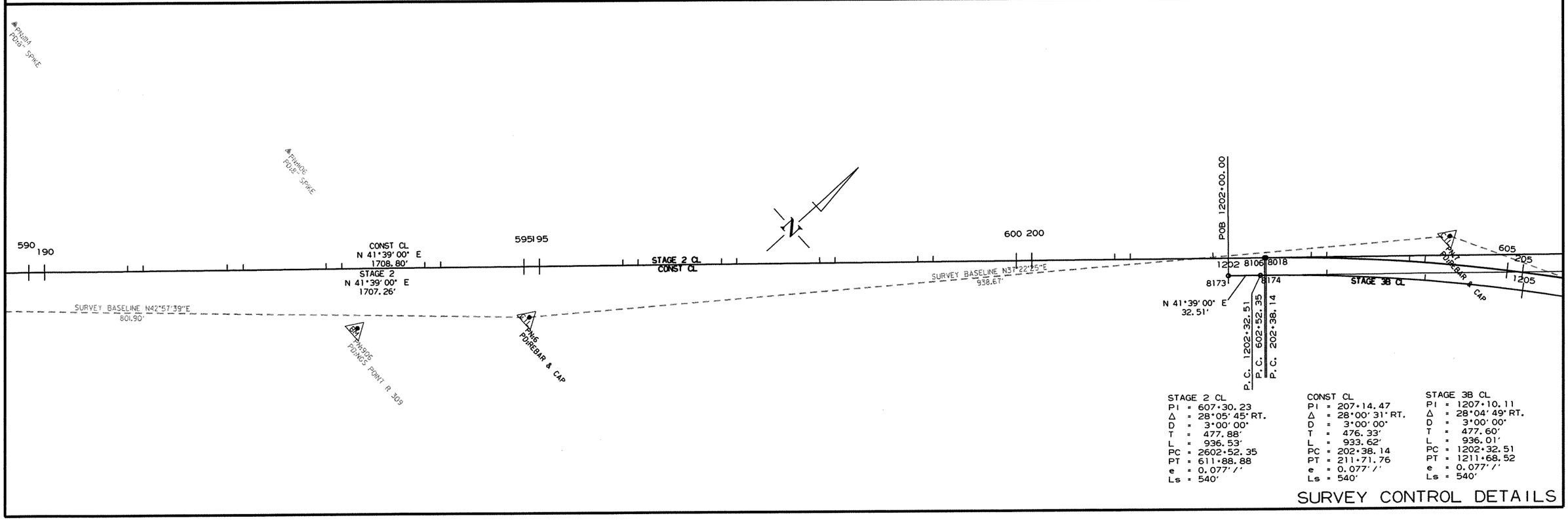
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2 CL
PI = 581+45.15
Δ = 8°00'43" LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 577+43.91
PT = 585+45.09
e = 0.030'/'
Ls = 540'

CONST CL
PI = 181+29.40
Δ = 8°00'43" LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 177+28.16
PT = 185+29.34
e = 0.030'/'
Ls = 540'





STAGE 2 CL
PI = 607+30.23
Δ = 28°05'45" RT.
D = 3°00'00"
T = 477.88'
L = 936.53'
PC = 2602+52.35
PT = 611+88.88
e = 0.077'/'
Ls = 540'

CONST CL
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33'
L = 933.62'
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

STAGE 3B CL
PI = 1207+10.11
Δ = 28°04'49" RT.
D = 3°00'00"
T = 477.60'
L = 936.01'
PC = 1202+32.51
PT = 1211+68.52
e = 0.077'/'
Ls = 540'

SURVEY CONTROL DETAILS

1/15/2013

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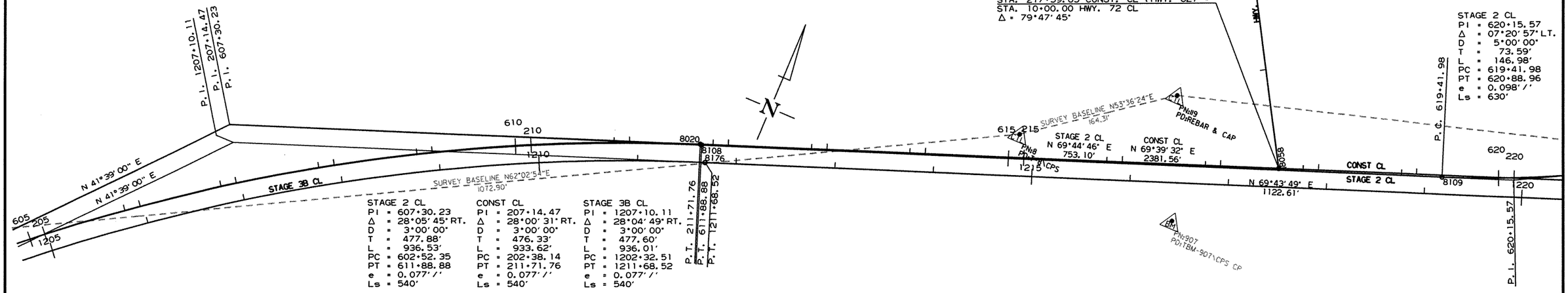
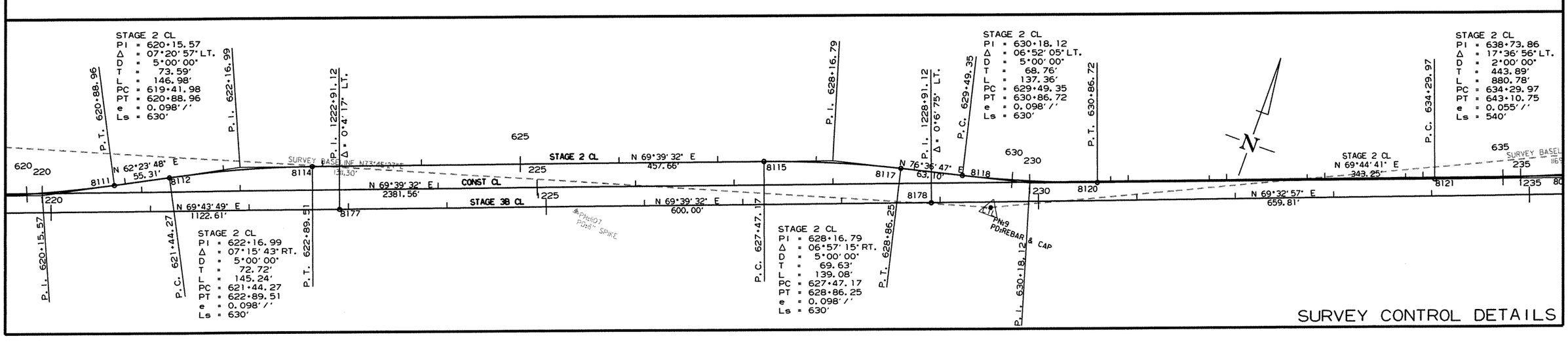
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	126	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13





SURVEY CONTROL DETAILS

1/15/2013

R090065.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	127	460

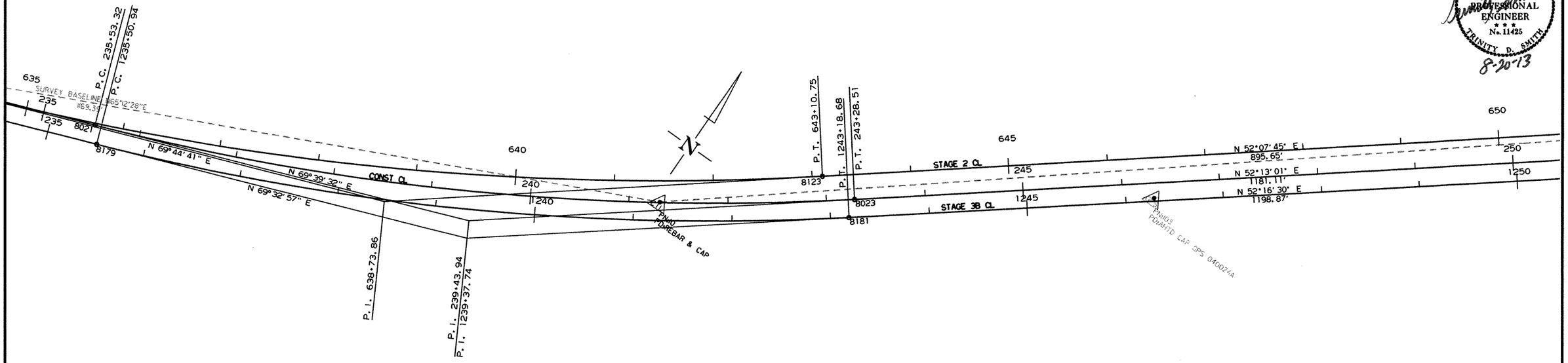
(2) SURVEY CONTROL DETAILS

STATE OF U.S. ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2 CL
PI = 638+73.86
Δ = 17°36'56"LT.
D = 2°00'00"
T = 443.89'
L = 880.78'
PC = 634+29.97
PT = 643+10.75
e = 0.055'/'
Ls = 540'

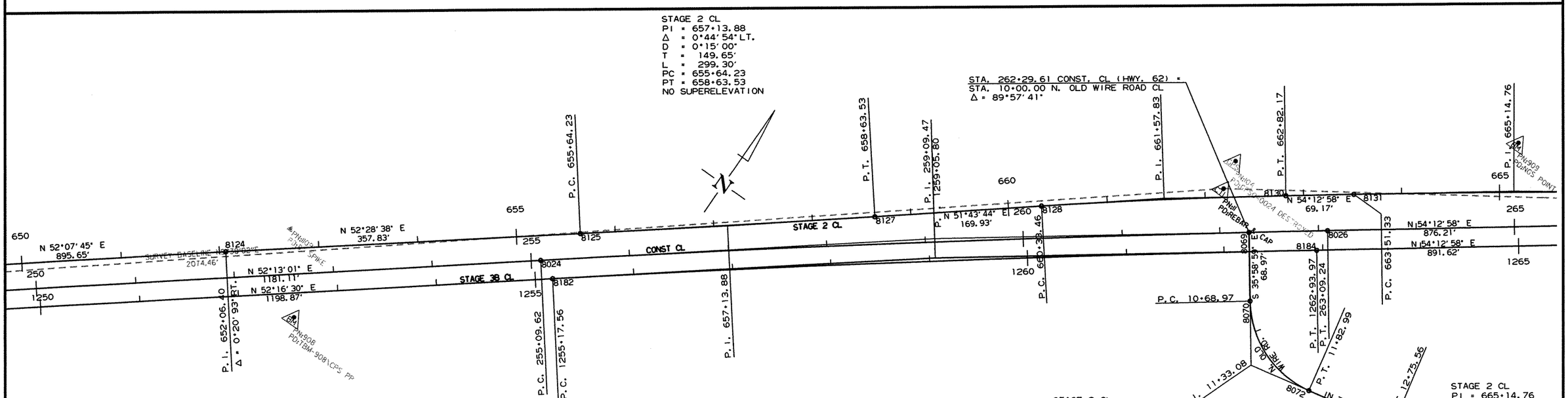
CONST CL
PI = 239+43.94
Δ = 17°26'31"LT.
D = 2°15'00"
T = 390.62'
L = 775.19'
PC = 235+53.32
PT = 243+28.51
e = 0.061'/'
Ls = 540'

STAGE 3B CL
PI = 1239+37.74
Δ = 17°16'27"LT.
D = 2°15'00"
T = 386.81'
L = 767.75'
PC = 1235+50.94
PT = 1243+18.68
e = 0.061'/'
Ls = 540'



STAGE 2 CL
PI = 657+13.88
Δ = 0°44'54"LT.
D = 0°15'00"
T = 149.65'
L = 299.30'
PC = 655+64.23
PT = 658+63.53
NO SUPERELEVATION

STA. 262+29.61 CONST. CL (HWY. 62) =
STA. 10+00.00 N. OLD WIRE ROAD CL
Δ = 89°57'41"



CONST CL
PI = 259+09.47
Δ = 1°59'57"RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

STAGE 3B CL
PI = 1259+05.80
Δ = 1°56'28"RT.
D = 0°15'00"
T = 388.24'
L = 776.41'
PC = 1255+17.56
PT = 1262+93.97
NO SUPERELEVATION

STAGE 2 CL
PI = 661+57.83
Δ = 2°29'14"RT.
D = 1°00'00"
T = 124.37'
L = 248.71'
PC = 660+33.46
PT = 662+82.17
e = 0.030'/'
Ls = 540'

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37"RT.
R = 100.00'
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99

STAGE 2 CL
PI = 665+14.76
Δ = 1°38'03"RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17
NO SUPERELEVATION

SURVEY CONTROL DETAILS

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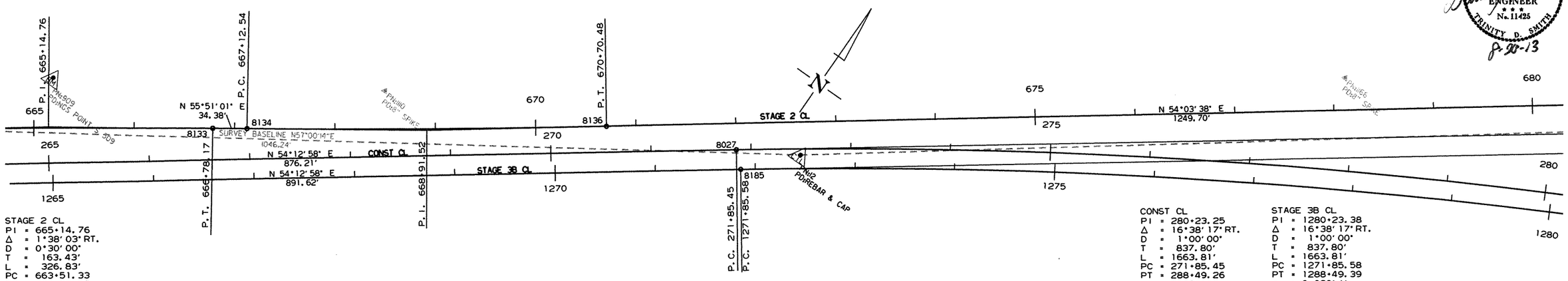
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	128	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-30-13

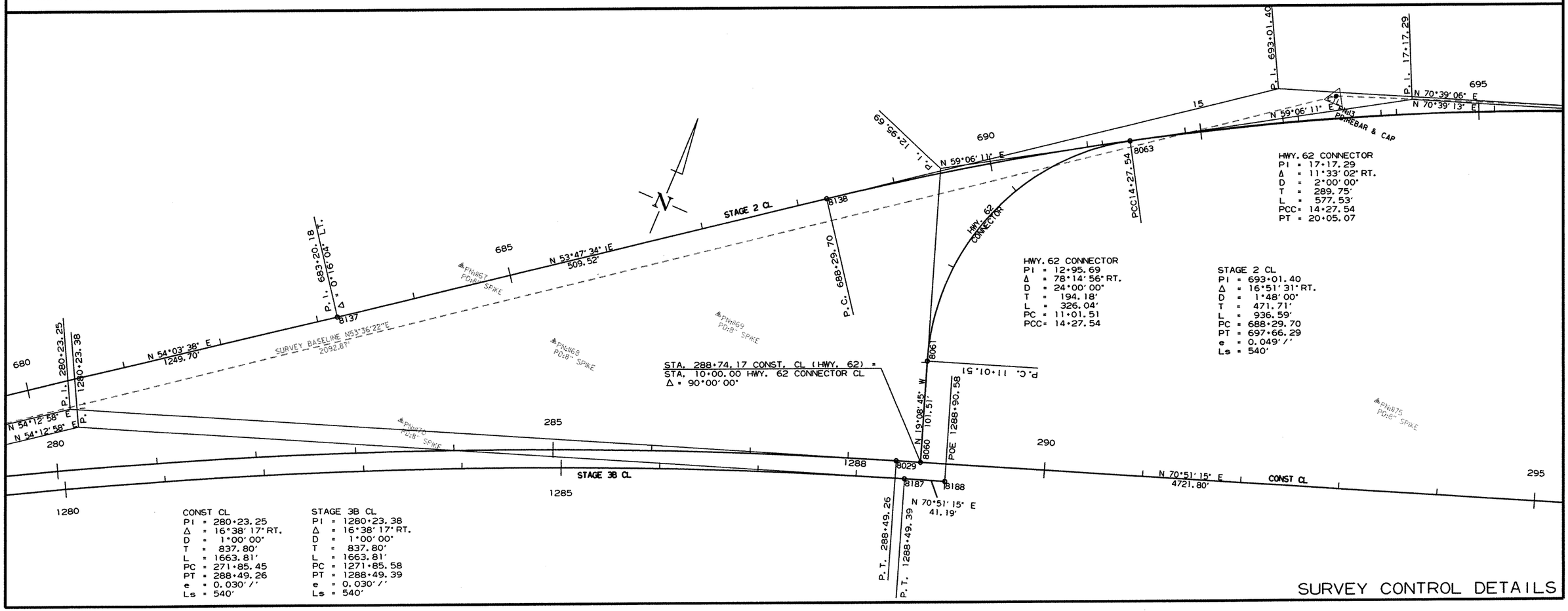
STAGE 2 CL
PI = 668+91.52
Δ = 1°47'23" LT.
D = 0°30'00"
T = 178.98'
L = 357.93'
PC = 667+12.54
PT = 670+70.48
NO SUPERELEVATION



STAGE 2 CL
PI = 665+14.76
Δ = 1°38'03" RT.
D = 0°30'00"
T = 163.43'
L = 326.83'
PC = 663+51.33
PT = 666+78.17
NO SUPERELEVATION

CONST CL
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STAGE 3B CL
PI = 1280+23.38
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 1271+85.58
PT = 1288+49.39
e = 0.030'/'
Ls = 540'



CONST CL
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STAGE 3B CL
PI = 1280+23.38
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 1271+85.58
PT = 1288+49.39
e = 0.030'/'
Ls = 540'

1/15/2013

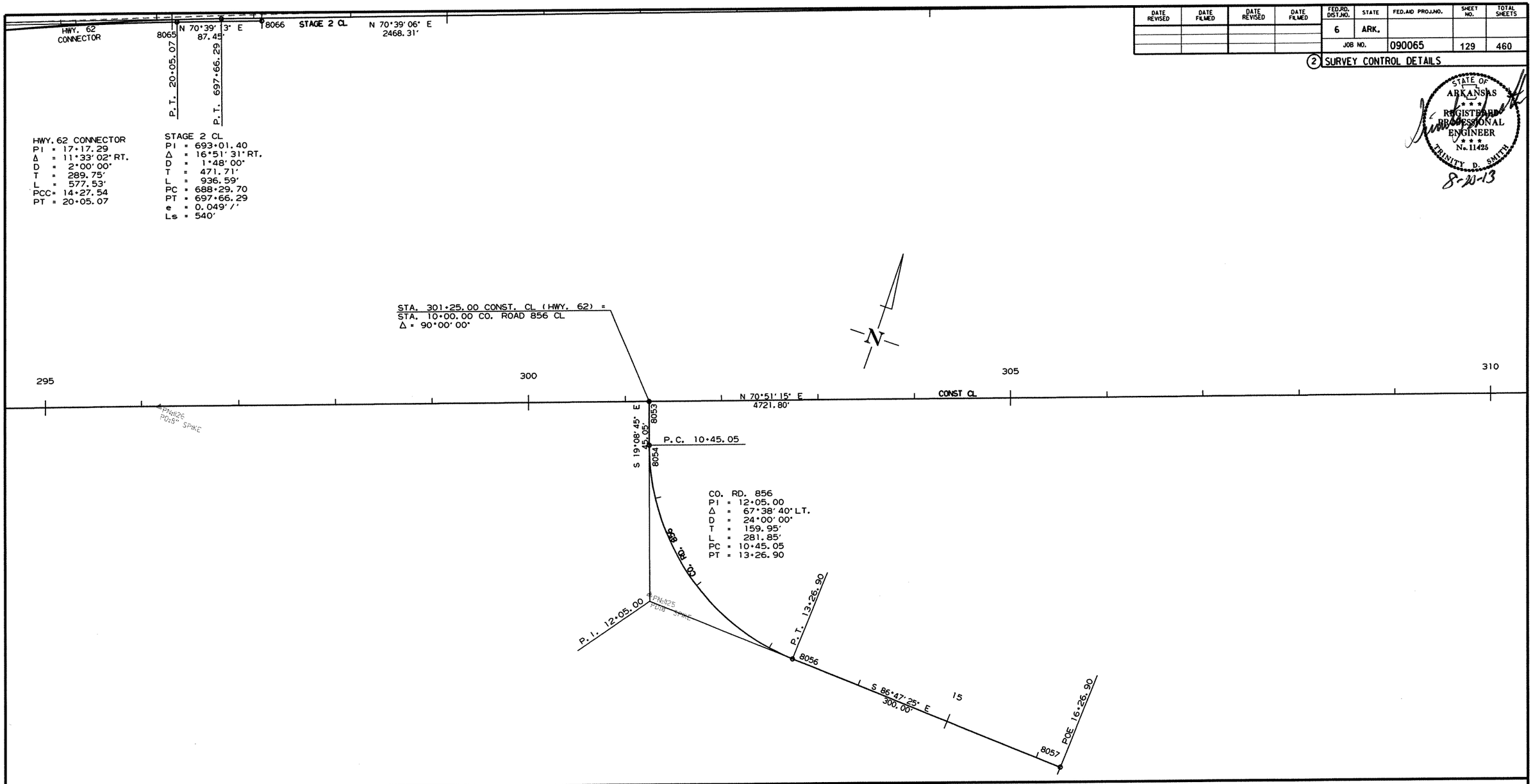
R090065.DGN

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.		090065	129	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13



SURVEY CONTROL DETAILS

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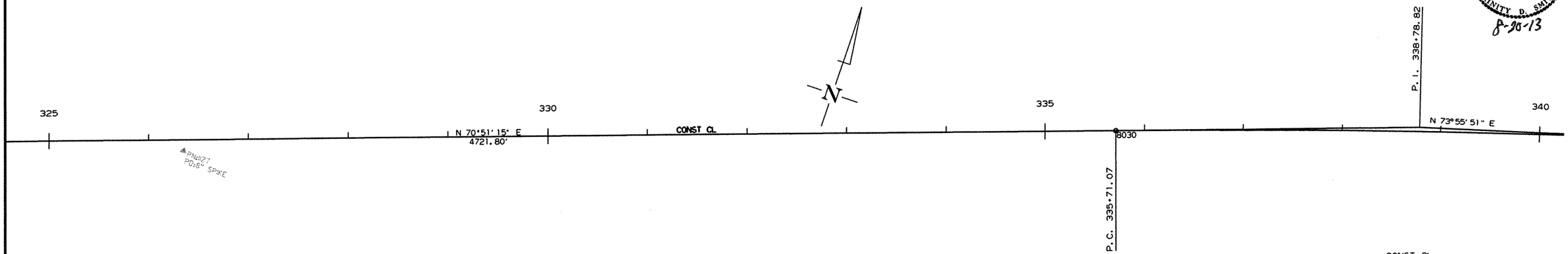
R090065.DGN

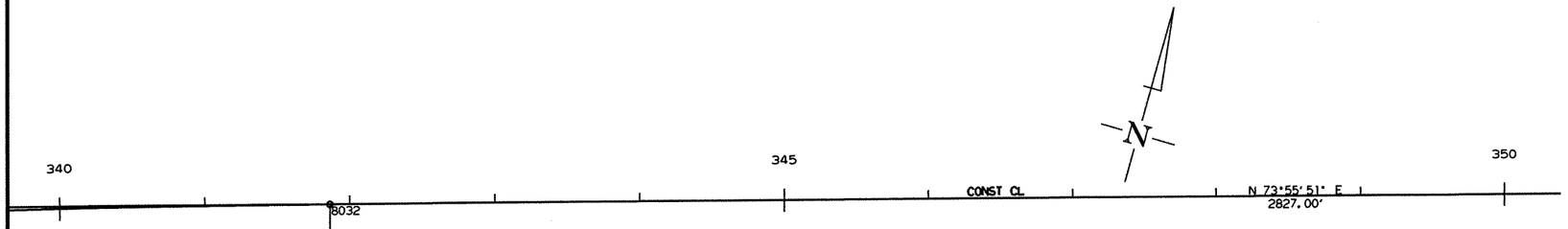
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	130	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-30-13



CONST CL
PI = 338+78.82
Δ = 3°04' 36" RT.
D = 0°30' 00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION



CONST CL
PI = 338+78.82
Δ = 3°04' 36" RT.
D = 0°30' 00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION

SURVEY CONTROL DETAILS

1/15/2013

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	131	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STAGE 2 CL
PI = 757+17.20
Δ = 20°44'49" RT.
D = 3°15'00"
T = 322.72'
L = 638.37'
PC = 753+94.48
PT = 760+32.85
e = 0.049'/'
Ls = 540'

OLD LIBERTY RD.
PI = 19+98.05
Δ = 1°48'56" LT.
D = 0°45'00"
T = 121.05'
L = 242.09'
PC = 18+76.99
PT = 21+19.08

STA. 355+13.66 CONST. CL (HWY. 62) =
STA. 16+69.00 OLD LIBERTY ROAD CL
Δ = 71°06'30"

OLD LIBERTY RD.
PI = 12+39.82
Δ = 01°06'15" LT.
D = 0°30'00"
T = 110.43'
L = 220.85'
PC = 11+29.39
PT = 13+50.24

OLD LIBERTY RD.
PI = 14+60.36
Δ = 0°42'17" RT.
D = 0°30'00"
T = 70.48'
L = 140.97'
PC = 13+89.87
PT = 15+30.84

N 70°33'08" E P.I. 757+17.20
S 88°42'03" E
N 80°19'12" E P.I. 19+98.05
N 1°00'25" E 55.66'
N 2°49'21" E 346.15'
N 73°55'51" E 2827.00'
N 2°07'04" E 39.63'
N 3°13'19" E 129.39'
S 88°42'03" E 3839.03'
SURVEY BASELINE NRB°49'49"E 1400.67'
CONST CL
SURVEY BASELINE

P.C. 18+76.99
P.I. 19+98.05
P.T. 760+32.85
P.I. 14+60.36
P.T. 13+50.24
P.C. 13+89.87
P.I. 15+30.84
P.C. 11+29.39
P.I. 12+39.82

8083 8084 8081 8080 8078 8077 8075 8074

350 355 360 365 760 765

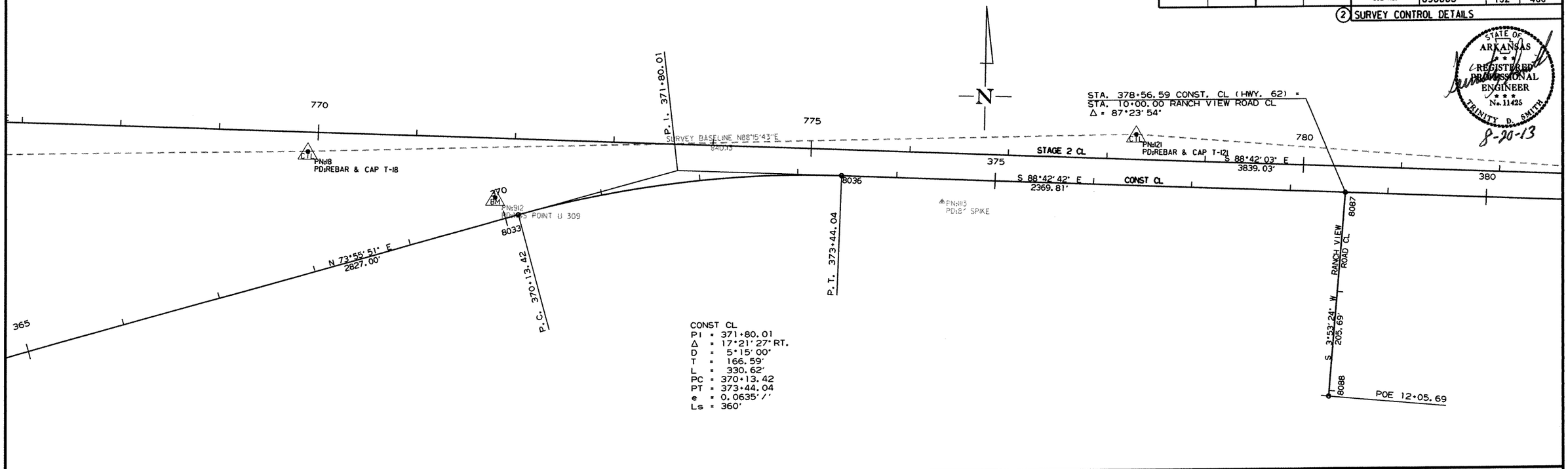
FNW34 FD3/8" SPIKE
FNW33 FD3/8" SPIKE
FNW31 FD3/8" SPIKE
FNW32 FD3/8" SPIKE
FNW35 FD3/8" SPIKE
FNW37 FD3/8" SPIKE
FNW36 FD3/8" SPIKE
FNW38 FD3/8" SPIKE
FNW39 FD3/8" SPIKE
FNW40 FD3/8" SPIKE
FNW41 FD3/8" SPIKE
FNW42 FD3/8" SPIKE
FNW43 FD3/8" SPIKE
FNW44 FD3/8" SPIKE
FNW45 FD3/8" SPIKE
FNW46 FD3/8" SPIKE
FNW47 FD3/8" SPIKE
FNW48 FD3/8" SPIKE
FNW49 FD3/8" SPIKE
FNW50 FD3/8" SPIKE

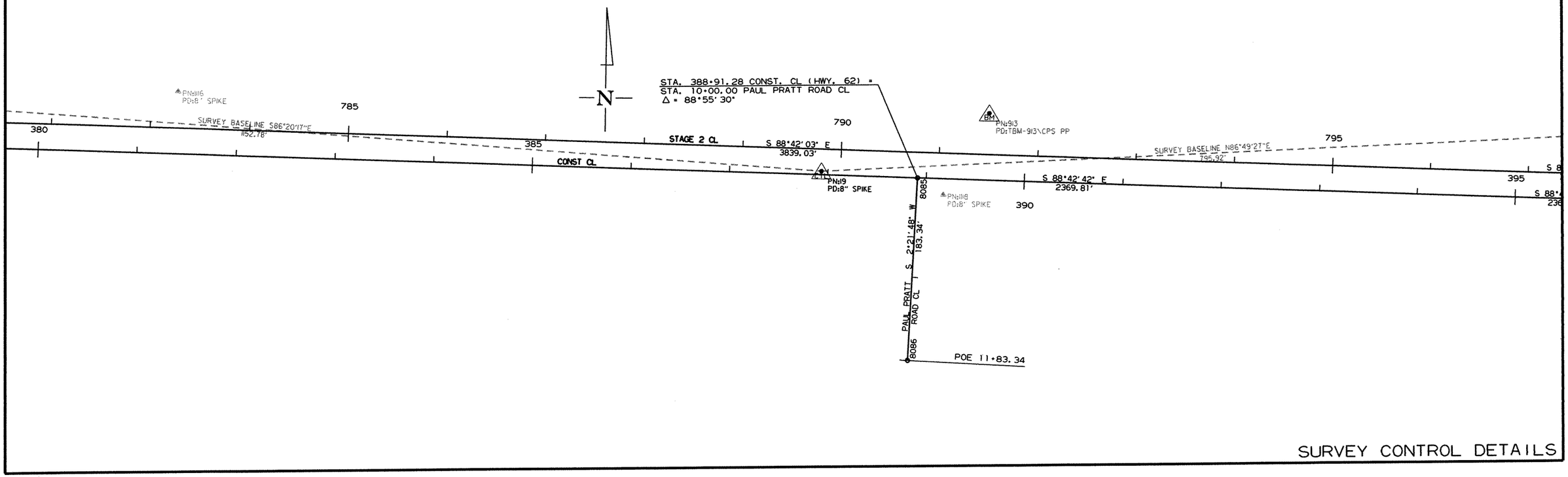
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	132	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13





1/15/2013

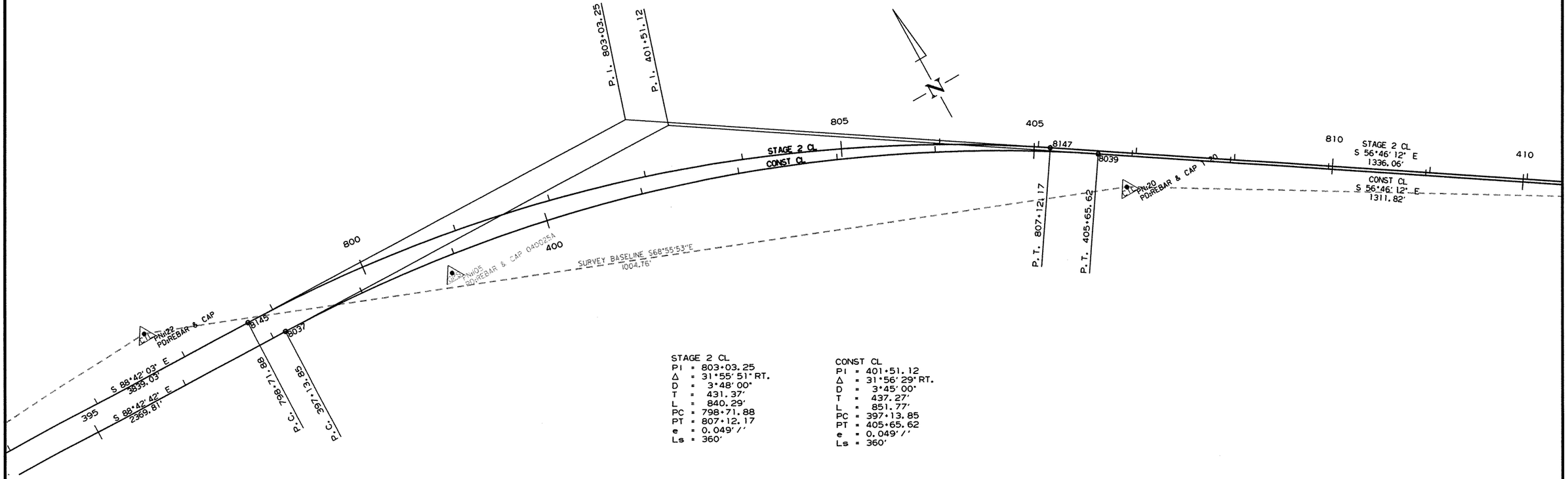
R090065.DGN

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.		090065	133	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-30-13



STAGE 2 CL
PI = 803+03.25
Δ = 31°55' 51" RT.
D = 3°48' 00"
T = 431.37'
L = 840.29'
PC = 798+71.88
PT = 807+12.17
e = 0.049'/'
Ls = 360'

CONST CL
PI = 401+51.12
Δ = 31°56' 29" RT.
D = 3°45' 00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

1/15/2013

R090065.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.		090065	134	460

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

410
815
1415
1425
820
825
420
STAGE 2 CL
S 56°46'12" E
1336.06'
CONST CL
S 56°46'12" E
1311.82'
PN:HUG
PD:8" SPIKE
SURVEY BASELINE S59°15'30"E
1000.00'
POB 1415+00.00
8189
S 56°46'12" E
200.27'
8190
8193
8195
8196
8148
8052
8049
8050
8051
8047
POB 6+43.02
S 22°59'16" E
83.28'
P.C. 7+26.30
P.I. 7+87.45
P.T. 8+44.21
S 41°32'41" W
155.79'
ALVIN SEAMSTER ROAD CL
P.I. 1417+38.55
P.C. 1417+00.27
P.T. 1417+76.80
S 2°01'22" W
344.58'
P.I. 1418+32.16
S 53°42'32" E
5.28'
S 57°42'47" E
29.71'
STAGE 3C CL
S 57°42'47" E
1420.90'
P.C. 820+48.23
P.C. 418+77.44
P.T. 1418+82.19
P.C. 1417+82.08
P.I. 1419+11.90
P.T. 1436+64.00
PN:914
PD:TBM-914 CPS PP
PN:910
PD:REBAR / CAP 12' W OF EP ALVIN SEAMSTR RD
POE 13+44.58
PN:NOD
PD:REBAR & CAP T-21
PN:915
PD:NGS POINT V 309
403.45'
PN:912
PD:8" SPIKE
PN:911
PD:8" SPIKE
STAGE 2 CL
S 56°46'12" E
CONST CL
STAGE 3C CL
S 57°42'47" E

STAGE 3C CL
PI = 1418+32.16
Δ = 4°00'15" LT.
D = 4°00'00"
T = 50.07'
L = 100.11'
PC = 1417+82.08
PT = 1418+82.19
e = 0.051'/'
Ls = 360'

ALVIN SEAMSTER RD.
PI = 7+87.45
Δ = 37°31'57" RT.
D = 31°49'52"
T = 61.16'
L = 117.91'
PC = 7+26.30
PT = 8+44.21

STA. 417+74.27 CONST. CL (HWY. 62) =
STA. 10+00.00 ALVIN SEAMSTER RD. NORTH CL
Δ = 61°18'54"

STA. 417+69.98 CONST. CL (HWY. 62) =
STA. 10+00.00 ALVIN SEAMSTER RD. SOUTH CL
Δ = 58°47'34"

STAGE 3C CL
PI = 1417+38.55
Δ = 3°03'40" RT.
D = 4°00'00"
T = 38.27'
L = 76.53'
PC = 1417+00.27
PT = 1417+76.80
e = 0.051'/'
Ls = 360'

STAGE 2 CL
PI = 830+96.67
Δ = 71°01'38" LT.
D = 3°54'00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44
e = 0.051'/'
Ls = 360'

CONST CL
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3C CL
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00
e = 0.051'/'
Ls = 360'

1/15/2013

R090065.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.		090065	135	460

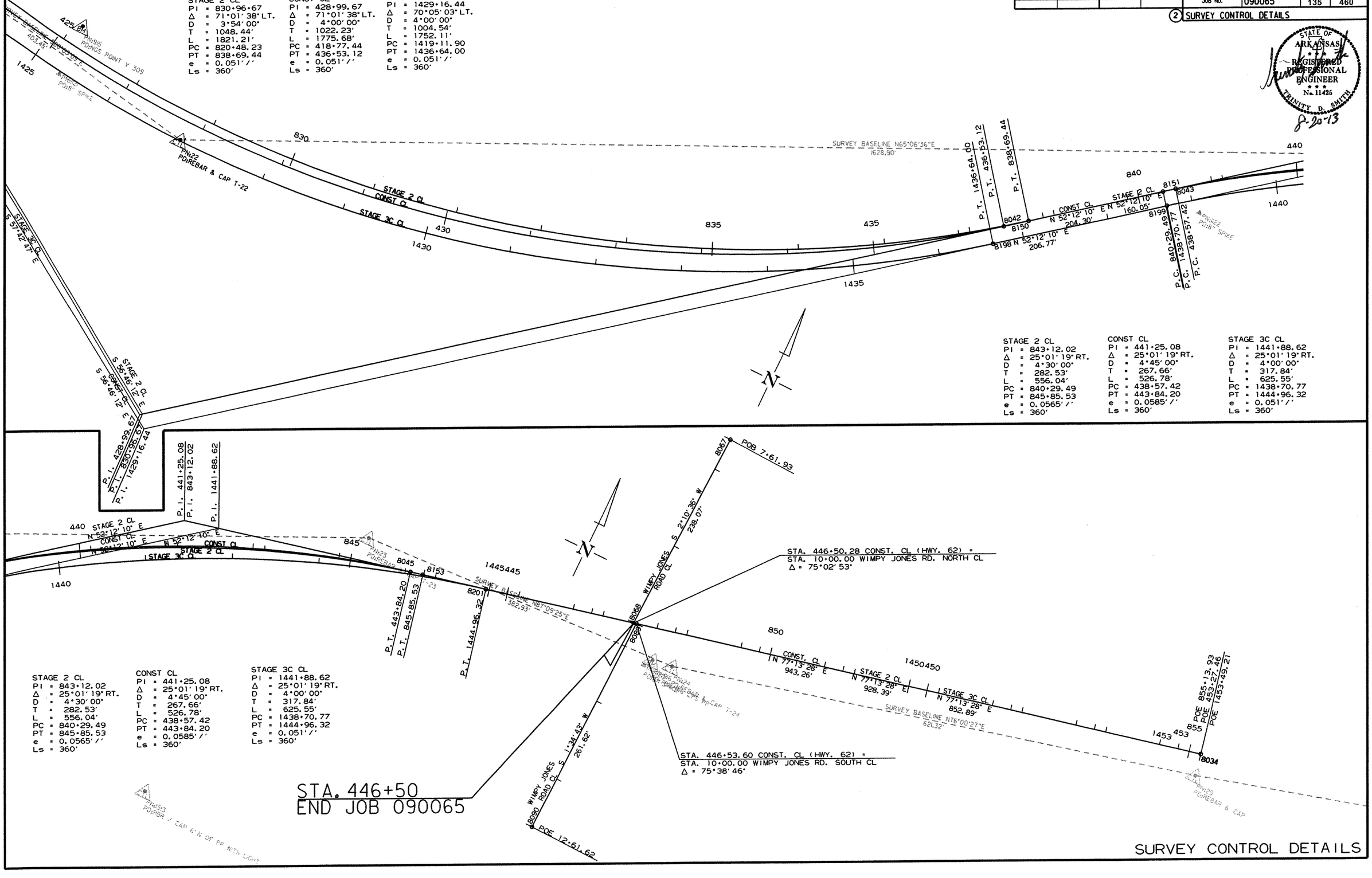
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-2013

STAGE 2 CL
PI = 830+96.67
Δ = 71°01'38" LT.
D = 3°54'00"
T = 1048.44'
L = 1821.21'
PC = 820+48.23
PT = 838+69.44
e = 0.051'/'
Ls = 360'

CONST CL
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STAGE 3C CL
PI = 1429+16.44
Δ = 70°05'03" LT.
D = 4°00'00"
T = 1004.54'
L = 1752.11'
PC = 1419+11.90
PT = 1436+64.00
e = 0.051'/'
Ls = 360'


SURVEY BASELINE N65°06'36"E 1628.90'
SURVEY BASELINE N87°09'25"E 382.93'
SURVEY BASELINE N76°00'27"E 621.32'
STAGE 2 CL
CONST CL
STAGE 3C CL
P.T. 1436+64.00
P.T. 436+53.12
P.T. 838+69.44
P.C. 840+29.49
P.C. 1438+70.77
P.C. 438+57.42
P.I. 428+99.67
P.I. 830+96.67
P.I. 1429+16.44
P.I. 441+25.08
P.I. 843+12.02
P.I. 1441+88.62
P.T. 443+84.20
P.T. 845+85.53
P.I. 1444+96.32
CONST. CL N 52°12'10" E 204.30'
STAGE 2 CL N 52°12'10" E 160.05'
8042
8150
8198 N 52°12'10" E 206.77'
8151
8043
8199
CONST. CL N 77°13'28" E 943.26'
STAGE 2 CL N 77°13'28" E 928.39'
STAGE 3C CL N 77°13'28" E 852.89'
8067
POB 7+61.93
S 2°10'36" W 238.07'
WIMPY JONES ROAD CL
8068
8090
S 1°34'43" W 261.62'
POE 12+61.62
8034
POE 855+13.93
POE 453+27.46
POE 1453+49.21
STA. 446+50.28 CONST. CL (HWY. 62) =
STA. 10+00.00 WIMPY JONES RD. NORTH CL
Δ = 75°02'53"
STA. 446+53.60 CONST. CL (HWY. 62) =
STA. 10+00.00 WIMPY JONES RD. SOUTH CL
Δ = 75°38'46"
STA. 446+50
END JOB 090065
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PK22
PONDEROSA PINE
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	136	460

(2) PLAN & PROFILE-STA. 110+00 TO STA. 140+00

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-20-13

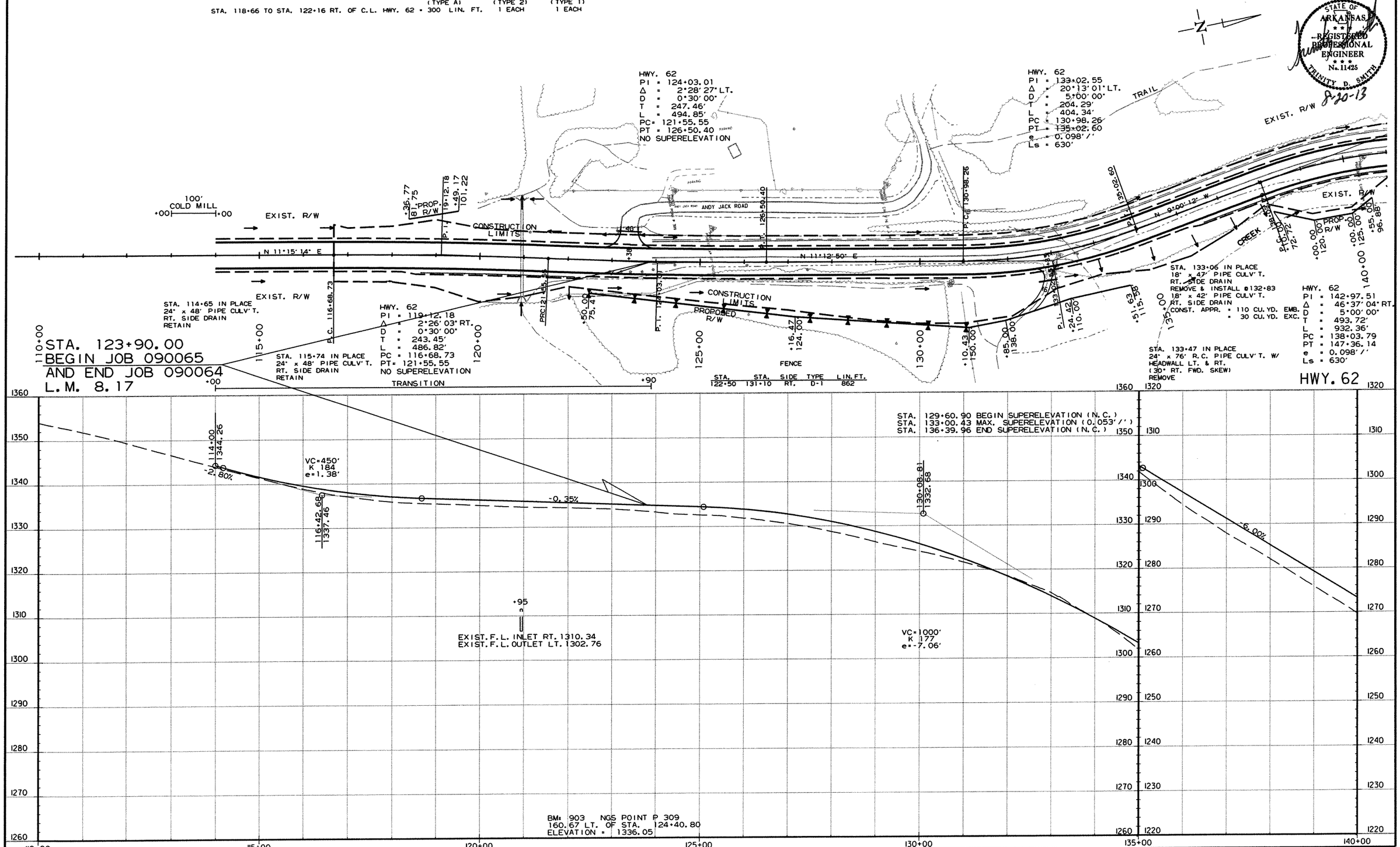
STA. 113+98 IN PLACE
18" x 36' PIPE CULV'T.
LT. SIDE DRAIN
RETAIN

STA. 116+65 IN PLACE
18" x 36' PIPE CULV'T.
LT. SIDE DRAIN
RETAIN & OVERLAY

STA. 120+95 IN PLACE
5' x 5' x 219' R.C. BOX CULV'T.
RETAIN

STA. 123+38 IN PLACE
18" x 55' PIPE CULV'T.
LT. SIDE DRAIN
RETAIN & OVERLAY

	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POSTS (TYPE 1)
STA. 118+66 TO STA. 122+16 RT. OF C.L. HWY. 62 =	300 LIN. FT.	1 EACH	1 EACH



r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	137	460

(2) PLAN & PROFILE-STA. 140+00 TO STA. 170+00

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE	20' GATE
145+50	147+87	RT.	D	205		1
148+59	149+89	LT.	D	177		1
148+73	149+89	RT.	D	141		
152+45	156+51	LT.	C	424	1	
152+45	160+64	RT.	C	837	1	1
165+31	169+27	LT.	D-1	503		

STA. 147+50 IN PLACE
6' x 6' x 190' R.C. BOX CULV'T.
(30° LT. FWD. SKEW)
RETAIN & EXTEND 46' RT.
FOR A COMPLETED LENGTH OF 236'
Q50=295 CFS. D.A. =64 ACRES

STA. 150+00 - STA. 151+70 IN PLACE
170' x 30' CLEAR ROADWAY WIDTH
BRIDGE CONSISTING OF A CONCRETE DECK ON
SIMPLE SPAN STEEL W-BEAMS
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) - 1.00 LUMP SUM

STA. 155+00 INSTALL
18" x 48" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 275 CU. YD.

STA. 157+23 IN PLACE
18" x 50 PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
18" x 56' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 170 CU. YD.

STA. 168+65 IN PLACE
24" x 73' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
RETAIN & EXTEND R.C. PIPE
26' RT. & 32' LT.
TO A COMPLETED LENGTH OF 131'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
& CONSTRUCT
DBL. 30" x 130' R.C. PIPE CULV'T.
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=68 CFS. D.A. =13 ACRES
24" R.C. PIPE = 66 LIN.FT.
30" R.C. PIPE = 260 LIN.FT.
24" FES = 2 EACH
30" FES = 4 EACH

STA. 163+10 IN PLACE
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ 162+94
18" x 52' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 110 CU. YD.

STA. 164+56 IN PLACE
18" x 24' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +83
18" x 46' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 175 CU. YD.
UNCLASS. EXCAV. = 795 CU. YDS.

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
9-20-13

HWY. 62
PI = 142+97.51
Δ = 46°37'04" RT.
D = 5°00'00"
T = 493.72'
L = 932.36'
PC = 138+03.79
PT = 147+36.14
e = 0.098'/'
Ls = 630'

REMOVAL & DISPOSAL OF GUARDRAIL
STA. 147+99 TO STA. 149+99 LT. OF C.L. HWY. 62 = 200 LIN. FT.
STA. 149+24 TO STA. 149+99 LT. OF C.L. HWY. 62 = 75 LIN. FT.
STA. 151+71 TO STA. 152+46 LT. OF C.L. HWY. 62 = 75 LIN. FT.
STA. 151+71 TO STA. 153+73 LT. OF C.L. HWY. 62 = 200 LIN. FT.

	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POST (TYPE 1)
STA. 136+60.17 TO STA. 149+78.92 RT. OF C.L. HWY. 62 =	1250 LIN. FT.	1 EACH	1 EACH	
STA. 146+85.17 TO STA. 149+78.92 LT. OF C.L. HWY. 62 =	275 LIN. FT.		1 EACH	1 EACH
STA. 152+55.08 TO STA. 153+48.83 RT. OF C.L. HWY. 62 =	75 LIN. FT.		1 EACH	1 EACH
STA. 152+55.08 TO STA. 154+73.83 LT. OF C.L. HWY. 62 =	150 LIN. FT.	1 EACH	1 EACH	

STA. 149+88.92 - STA. 152+45.08 CONSTRUCT
256'-2" x 75'-0" CLEAR ROADWAY WIDTH BRIDGE
254'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(SPANS: 57'-0", 70'-0", 70'-0", 57'-0")

STA. 159+06 IN PLACE
24" x 37' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 159+88 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL @ +91
18" x 46' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 225 CU. YD.

HWY. 62
PI = 164+46.02
Δ = 12°02'50" RT.
D = 1°30'00"
T = 403.06'
L = 803.16'
PC = 160+42.95
PT = 168+46.11
e = 0.043'/'
Ls = 540'

STA. 164+32 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +52
18" x 46' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 100 CU. YD.

STA. 164+50 CONST. APPR.
DRIVE OFF OF CO. RD. 44
UNCLASS. EXCAV. = 15 CU. YD.

HWY. 62

STA. 136+39.96 BEGIN SUPERELEVATION (N.C.)
STA. 142+69.96 MAX. SUPERELEVATION (0.098'/')
STA. 143+58.14 MAX. SUPERELEVATION (0.098'/')
STA. 149+88.14 END SUPERELEVATION (N.C.)

STA. 156+37.95 BEGIN SUPERELEVATION (N.C.)
STA. 161+77.95 MAX. SUPERELEVATION (0.043'/')
STA. 167+11.11 MAX. SUPERELEVATION (0.043'/')
STA. 172+51.11 END SUPERELEVATION (N.C.)

LITTLE SUGAR CREEK-
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5 CFS STREAM. THE STREAM BANK ELEVATIONS ARE 1188. SEE SUBSECTION 110.06 (c) FOR THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN 5 CFS STREAM LIMITS.

VC=1500'
K 136
e=20.63'

VC=600'
K 191
e=-2.36'

BR. END
STA. 149+88.92

BR. END
STA. 152+45.08

DESIGN H.W.
ELEV. 1199.50

F.L. INLET RT. 1201.02
EXIST. F.L. OUTLET LT. 1193.10

REFER TO BRIDGE
DRAWING NO. 51288 FOR
ADDITIONAL INFORMATION

BM: 904 NGS POINT Q 309
7.88 LT. OF STA. 151+72.24
ELEVATION = 1206.14

BM: 905 TBM-905\CPS CP W-GUY
76.79 RT. OF STA. 164+83.77
ELEVATION = 1233.51

F.L. OUTLET RT. 1237.01
F.L. INLET LT. 1244.71
RT. DITCH GR. 2.04%

165+80.38
1243.47

166+65.00 RT
1235.15

168+55.00 RT
1237.01

168+75.00 RT
1237.01

169+75.00 LT.
1247.97

170+00.00
1251.21

168+75.00 LT.
1244.71

6.00%
5.00%
1.85%
5.26%
3.39%
2:1

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04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	138	460

(2) PLAN & PROFILE-STA. 170+00 TO STA. 200+00

STA. 172+09 IN PLACE
5' x 5' x 76' R.C. BOX CULV'T.
(30° LT. FWD. SKEW)
RETAIN & EXTEND 34' LT. & 28' RT.
FOR A COMPLETED LENGTH OF 138'
Q50=185 CFS, D.A. =40 ACRES

STA. 172+31 CONSTRUCT
36' x 146' R.C. PIPE CULV'T.
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
(30° LT. FWD. SKEW)

STA. 169+37 IN PLACE
18" x 25' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ 170+03
18" X 40' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. = 100 CU. YDS.
UNCLASS. EXCAV. = 85 CU. YDS.

STA. 176+56 IN PLACE
24" x 70' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
PLUG AND ABANDON

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
188+90	189+38	RT.	C	48	
189+84	207+61	LT.	D	1807	1

STA. 188+24 IN PLACE
24" x 118' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
PLUG AND ABANDON

STA. 192+23 IN PLACE
24" x 67' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
26' LT. & 24' RT.
TO A COMPLETED LENGTH OF 117'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=8 CFS, D.A. =2 ACRES
24" R.C. PIPE = 58 LIN.FT.
24" FES = 2 EACH

STA. 187+79
CONST. APPR. = 570 CU. YD.

STA. 195+33 INSTALL
18" x 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

HWY. 62
PI = 181+29.40
Δ = 8°00'43" LT.
D = 1°00'00"
T = 401.25'
L = 801.18'
PC = 177+28.16
PT = 185+29.34
e = 0.030'/'
Ls = 540'

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
8-20-13

PROPOSED R/W
CONSTRUCTION LIMITS
EXIST. R/W
N 49°39'43.05" E
N 41°39'00" E
CREEK
CO. RD. 700

STA. 172+22 IN PLACE
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +40
24" x 66' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 305 CU. YDS.
UNCLASS. EXCAV. = 575 CU. YDS.

STA. 185+93 IN PLACE
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +49
24" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 115 CU. YDS. EMB.
= 150 CU. YDS. EXC.

STA. 187+00 INSTALL
24" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 115 CU. YDS.
UNCLASS. EXCAV. = 30 CU. YDS.

STA. 187+98 INSTALL
24" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 180 CU. YD.

STA. 193+51 IN PLACE
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 50 CU. YD.

STA. 194+77 IN PLACE
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +80
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.

STA. 197+98 IN PLACE
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.

HWY. 62

STA. 173+23.16 BEGIN SUPERELEVATION (N.C.)
STA. 178+63.16 MAX. SUPERELEVATION (0.030'/')
STA. 183+94.34 MAX. SUPERELEVATION (0.030'/')
STA. 189+34.34 END SUPERELEVATION (N.C.)

VC=700'
K 173
e=3.54'

VC=1000'
K 250
e=-5.00'

VC=400'
K 444
e=-0.45'

F.L. INLET LT. 1247.90
F.L. OUTLET RT. 1246.34

F.L. INLET LT. 1248.04
F.L. OUTLET RT. 1246.84

F.L. INLET RT. 1330.24
F.L. OUTLET LT. 1327.31

BM: 906 NGS POINT R 309
59.67 RT. OF STA. 193+15.51
ELEVATION = 1333.84

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	139	460

(2) PLAN & PROFILE-STA. 200+00 TO STA. 230+00

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
8-20-13

STA. 202+21 IN PLACE
24" x 67' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
30' LT. & 24' RT.
TO A COMPLETED LENGTH OF 121'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=8 CFS, D.A.=2 ACRES
24" R.C. PIPE = 62 LIN.FT.
24" FES = 2 EACH

STA. 205+79 IN PLACE
24" x 100' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
30' LT. & 24' RT.
TO A COMPLETED LENGTH OF 154'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=17 CFS, D.A.=5 ACRES
24" R.C. PIPE = 62 LIN.FT.
24" FES = 2 EACH

STA. 209+39 IN PLACE
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +37
18" x 62' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 335 CU.YD.

STA. 211+80 IN PLACE
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +81
18" x 44' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 195 CU.YD.

STA. 214+64 INSTALL
18" x 42' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 70 CU.YD.

STA. 215+20 INSTALL
18" x 38' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 60 CU.YD.

STA. 220+12 IN PLACE
18" x 54' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
18" x 54' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 80 CU.YD.

STA. 221+51 INSTALL
18" x 42' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 75 CU.YD.

STA. 225+17 IN PLACE
24" x 108' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
(45° LT. FWD. SKEW)
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
62' LT. & 100' RT.
TO A COMPLETED LENGTH OF 270'
(CLASS V) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=14 CFS, D.A.=4 ACRES
24" R.C. PIPE = 170 LIN.FT.
24" FES = 2 EACH

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.
222+00	227+50	LT.	D	555

STA. 206+17 IN PLACE
18" x 35' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

REMOVAL & DISPOSAL OF GUARDRAIL
STA. 204+28 TO STA. 206+03 RT. OF C.L. HWY. 62 = 175 LIN. FT.

STA. 209+53 IN PLACE
18" x 44' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +47
18" x 44' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU.YD.
UNCLASS. EXCAV. = 70 CU. YD.

STA. 212+49 IN PLACE
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +50
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 65 CU.YD.

STA. 213+45 IN PLACE
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 30' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 40 CU.YD.

STA. 214+46 INSTALL
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 35 CU.YD.

STA. 215+77 IN PLACE
18" x 22' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +73
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 35 CU.YD.

STA. 217+11 IN PLACE
12" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +08
18" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 90 CU.YD.

STA. 217+86 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +83
18" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 85 CU.YD.

STA. 219+67 IN PLACE
18" x 44' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +57
18" x 52' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 65 CU. YD.

STA. 221+12 IN PLACE
18" x 44' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +02
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 50 CU.YD.

STA. 225+75 IN PLACE
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 85 CU.YD.

STA. 228+53 IN PLACE
18" x 50' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 52' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 105 CU.YD.
UNCLASS. EXCAV. = 5 CU.YD.

HWY. 62

HWY. 62
PI = 207+14.47
Δ = 28°00'31" RT.
D = 3°00'00"
T = 476.33
L = 933.62
PC = 202+38.14
PT = 211+71.76
e = 0.077'/'
Ls = 540'

STA. 217+59.65 C.L. HWY. 62 =
STA. 10+00.00 C.L. HWY. 72
=79°47'45"

CONC. ISLAND WITH TYPE B CURB FACE

1500' RADIUS

POB 10+00.00

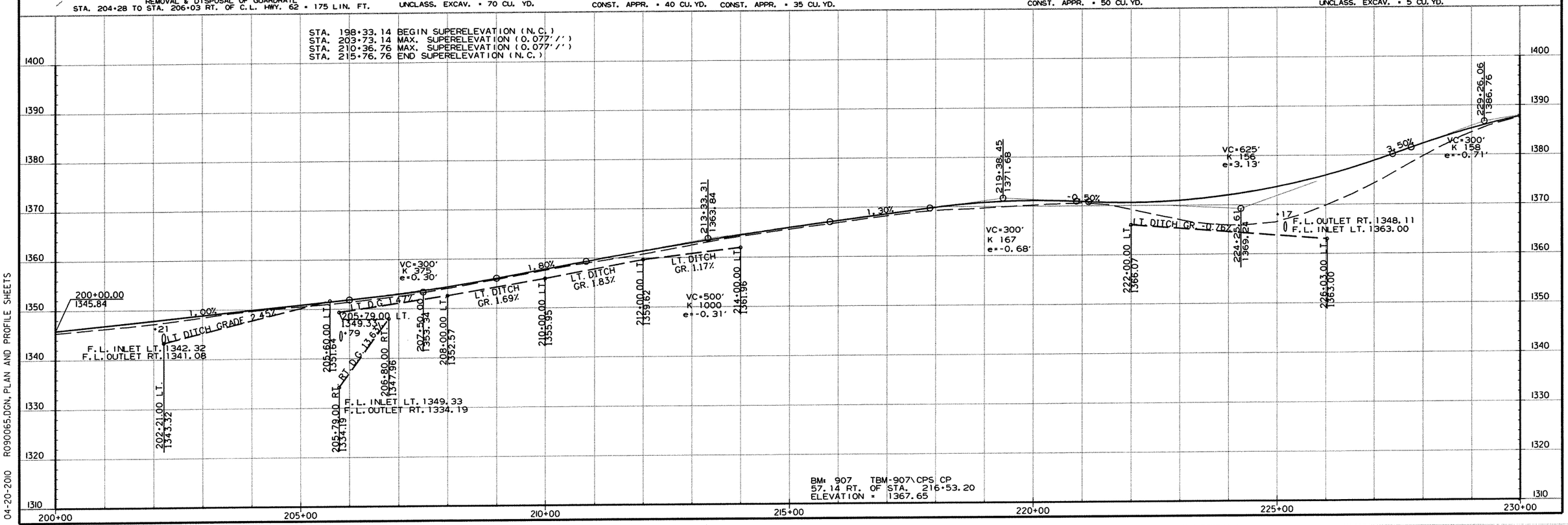
N 69°39'32" E

CONSTRUCTION LIMITS

PROPOSED R/W

EXIST. R/W

LATRICA LANE



BM= 907 TBM-907\CPS CP
57.14 RT. OF STA. 216+53.20
ELEVATION = 1367.65

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	140	460

(2) PLAN & PROFILE-STA. 230+00 TO STA. 260+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 230+45 IN PLACE
12" x 34" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +26
18" x 28" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 25 CU. YD.

STA. 232+70 IN PLACE
24" x 48" R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
38' LT. & 36' RT.
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50-12 CFS, D.A. =4 ACRES
24" R.C. PIPE = 82 LIN.FT.
24" FES = 2 EACH

STA. 232+32
CONST. APPR. = 75 CU. YD.

STA. 234+22 IN PLACE
24" x 40" PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
24" x 46" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 140 CU. YD.

STA. 235+87 INSTALL
18" x 50' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 235+36 IN PLACE
24" x 40" PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +51
24" x 38" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 105 CU. YD.

STA. 236+75 INSTALL
18" x 42' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 115 CU. YD.

STA. 237+34 INSTALL
18" x 30' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 35 CU. YD.

STA. 238+12 INSTALL
18" x 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 35 CU. YD.

STA. 238+66 INSTALL
18" x 28' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. = 35 CU. YD.

STA. 239+85 INSTALL
18" x 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 30 CU. YD.

STA. 239+89 INSTALL
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

STA. 240+87 IN PLACE
18" x 30' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 241+35 IN PLACE
12" x 42" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +39
18" x 28" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 25 CU. YD.

STA. 241+63 IN PLACE
18" x 24" PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +69
18" x 38" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 85 CU. YD.

STA. 242+91 IN PLACE
24" x 48" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +88
24" x 34" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.
UNCLASS. EXCAV. = 5 CU. YD.

STA. 243+87 IN PLACE
24" x 30" PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +00
24" x 36" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 85 CU. YD.

STA. 245+97 IN PLACE
24" x 20' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +96
24" x 28" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 40 CU. YD.

STA. 246+71 INSTALL
24" x 56' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 175 CU. YD. EMB
= 15 CU. YD. EXC.

STA. 247+78 IN PLACE
24" x 20' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 249+01 IN PLACE
24" x 60' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 249+26 IN PLACE
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL @ +33
24" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

STA. 249+58 IN PLACE
24" x 28" PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 251+76
CONST. APPR. = 80 CU. YD.

STA. 251+25 IN PLACE
18" x 22" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
24" x 28" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 35 CU. YD.

STA. 253+02 IN PLACE
18" x 42" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
24" x 50" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 40 CU. YD.

STA. 254+50 INSTALL
18" x 28" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.

STA. 257+00 CONSTRUCT
24" x 122' R.C. PIPE CULV'T. (CL. III) W/
F.E.S. LT. & RT.
(USE TYPE 3 BEDDING)
Q50+15cfs, D.A. =5Ac.

STA. 257+30 IN PLACE
24" x 48' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
REMOVE

STA. 259+18 IN PLACE
12' x 60' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 259+40
CONST. APPR. = 90 CU. YD.

STA. 259+97 INSTALL
18" x 30' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.

HWY. 62
PI = 239+43.94
Δ = 17°26'31" LT.
D = 2°15'00"
T = 390.62'
L = 775.19'
PC = 235+53.32
PT = 243+28.51
e = 0.061'/'
Ls = 540'

HWY. 62
PI = 259+09.47
Δ = 1°59'57" RT.
D = 0°15'00"
T = 399.85'
L = 799.63'
PC = 255+09.62
PT = 263+09.24
NO SUPERELEVATION

FENCE						
STA.	STA.	SIDE	TYPE	LIN.FT.	12' GATE	16' GATE
230+67	234+14	LT.	C	399		
240+10	244+74	LT.	4' CHAIN LINK	464	4	
244+74	250+82	LT.	C	608		1
256+07	258+27	RT.	D-1	229		

STA. 231+48.32 BEGIN SUPERELEVATION (N.C.)
STA. 236+88.32 MAX. SUPERELEVATION (0.061'/')
STA. 241+93.51 MAX. SUPERELEVATION (0.061'/')
STA. 247+33.51 END SUPERELEVATION (N.C.)

BM: 908 TBM-908\CPS PP
43.05 RT. OF STA. 252+58.35
ELEVATION = 1379.64

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	141	460

(2) PLAN & PROFILE-STA. 260+00 TO STA. 290+00

STA. 264+21 IN PLACE
18" x 38" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +33
18" x 66' PIPE CULV'T.
LT. SIDE DRAIN
STA. 264+19
CONST. APPR. = 105 CU. YD.
UNCLASS. EXCAV. = 15 CU. YD.

STA. 264+46
CONST. APPR. = 105 CU. YD.
UNCLASS. EXCAV. = 15 CU. YD.

STA. 265+51 IN PLACE
18" x 24" PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +48
18" x 34' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 65 CU. YD.
UNCLASS EXCAV. = 5 CU. YD.

STA. 267+55 IN PLACE
24" x 78' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
40' LT. & 66' RT.
TO A COMPLETED LENGTH OF 184'
(CLASS IV) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=12 CFS, D.A.=4 ACRES
24" R.C. PIPE = 114 LIN.FT.
24" FES = 2 EACH

STA. 268+46 IN PLACE
18" x 30' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL @ +39
18" x 36' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 105 CU. YD.

STA. 271+37 INSTALL
18" x 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 30 CU. YD.

STA. 275+62 IN PLACE
24" x 54' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
2' LT. & 74' RT.
TO A COMPLETED LENGTH OF 130'
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=12 CFS, D.A.=4 ACRES
24" R.C. PIPE = 84 LIN.FT.
24" FES = 2 EACH

STA. 278+68 INSTALL
18" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 50 CU. YD.

STA.	STA.	SIDE	FENCE TYPE	LIN.FT.	16' GATE
265+22	265+75	LT.	C	53	1
266+82	268+10	LT.	C	156	
269+07	271+30	LT.	5' CHAIN LINK	222	
271+48	274+16	LT.	5' CHAIN LINK	271	
275+10	276+30	LT.	C	129	

STA. 283+45 IN PLACE 151' LT. C.L.
2' x 4' x 50' R.C. BOX CULV'T.
REMOVE

STA. 284+15 IN PLACE 60' LT. C.L.
24" x 38' PIPE CULV'T.
REMOVE

STA. 284+37 CONSTRUCT
4' x 4' x 152' R.C. BOX CULV'T.
(30° RT. FWD. SKEW)
Q50=79cfs, D.A.=30Ac.

DENOTES: OBLITERATION OF EXISTING PAVEMENT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
TRINITY D. SMITH
No. 11425
8-20-13

STA. 262+29.61 C.L. HWY. 62 =
STA. 10+00.00 C.L. N. OLD WIRE RD.
Δ = 89°57'41"

CONSTRUCTION LIMITS
EXIST. R/W
PROPOSED R/W
WEB/2 BARB
WEB/1 BARB
16'-0" GATE
2-8' GATES CHAIN LINK
N 54°12'58" E
P.O.B. 10+68.97
P.O.B. 10+00.00
100' R
EXIST. R/W
CONSTRUCTION LIMITS
PROPOSED R/W
SPECIALITY FENCE
SPECIALITY FENCE
N. OLD WIRE RD.
C.L. N. OLD WIRE RD.
STA. 12+39
CONST. APPR. = 5 CU. YD. EXC.

N. OLD WIRE RD.
PI = 11+33.08
Δ = 65°19'37" RT.
R = 100.00'
T = 64.11'
L = 114.02'
PC = 10+68.97
PT = 11+82.99
NO SUPER

CONSTRUCT 25 LIN.FT. TYPE C GUARDRAIL
WITH 3 RED DIAMOND REFLECTORS (OM4-3) (18" x 18")
MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND
THE GUARDRAIL AT A HEIGHT OF 4'-0".

HWY. 62
PI = 280+23.25
Δ = 16°38'17" RT.
D = 1°00'00"
T = 837.80'
L = 1663.81'
PC = 271+85.45
PT = 288+49.26
e = 0.030'/'
Ls = 540'

STA. 261+42 INSTALL
18" x 34' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.
UNCLASS. EXCAV. = 20 CU. YD.

STA. 262+30 INSTALL
18" x 46' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 1365 CU. YD. EXC.

STA. 264+32 INSTALL
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 105 CU. YD.
UNCLASS. EXCAV. 10 CU. YD.

STA. 264+99 INSTALL
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 105 CU. YD.
UNCLASS. EXCAV. = 10 CU. YD.

STA. 270+89 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.
UNCLASS. EXCAV. = 5 CU. YD.

STA. 272+47 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.
UNCLASS. EXCAV. = 5 CU. YD.

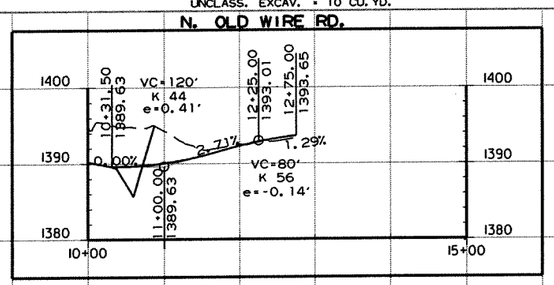
STA. 273+52 IN PLACE
18" x 20' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

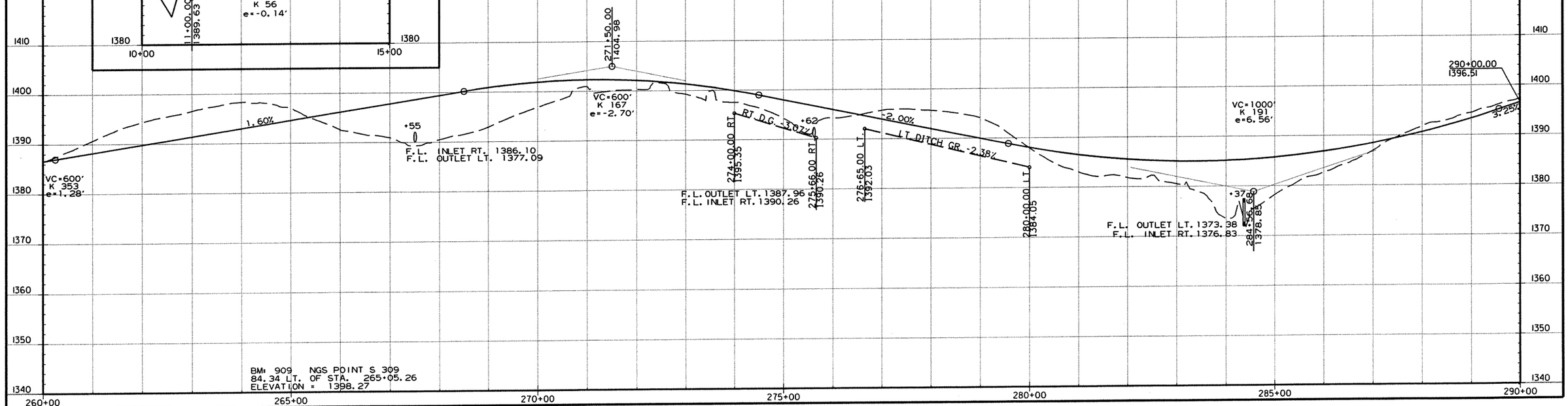
STA. 286+00 INSTALL
18" x 24' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 50 CU. YD.

STA. 288+74.17 C.L. HWY. 62 =
STA. 10+00.00 C.L. HWY. 62 CONNECTOR
Δ = 90°00'00"

HWY. 62

STA. 267+80.45 BEGIN SUPERELEVATION (N.C.)
STA. 273+20.45 MAX. SUPERELEVATION (0.030'/')
STA. 287+14.26 MAX. SUPERELEVATION (0.030'/')
STA. 292+54.26 END SUPERELEVATION (N.C.)





BM: 909 NGS POINT S 309
84.34 LT. OF STA. 265+05.26
ELEVATION = 1398.27

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN. PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	142	460

(2) PLAN & PROFILE-STA. 290+00 TO STA. 320+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 313+70 CONSTRUCT
5' x 5' x 143' R.C. BOX CULV'T.
Q50=177cfs, D.A.=43Ac.

EXIST. R/W
HWY. 62 CONNECTOR
N 70°38' 13" E
P.I. 17+17.72
P.T. 20+05.07
P.O.E. 20+92.
DENOTES: OBLITERATION OF EXISTING PAVEMENT.

STA. 300+00 CONSTRUCT
24" x 122' R.C. PIPE CULV'T.
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
(15° RT. FWD. SKEW)
Q50=25 CFS, D.A.=.5 ACRES

STA. 301+25.00 C.L. HWY. 62 =
STA. 10+00.00 C.L. CO. RD. 856
Δ=90°00'00"

PEA RIDGE FENCING
CONSTRUCTION LIMITS
P.O.B. 10+00.00
P.C. 10+45.05
N 70°51' 15" E
PROPOSED R/W
16'-0" GATE
C.L. CO. RD. 856
C.L. CO. RD. 856
STA. 11+50 INSTALL
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 200 CU. YD.

CO. RD. 856
PI = 12+05.00
Δ = 67°38'40" LT.
D = 24°00'00"
T = 159.95'
L = 281.85'
PC = 10+45.05
PT = 13+26.90
NO SUPER

100' TRANSITION
P.T. 13+26.90
P.O.E. 16+26.90
STA. 307+00
CONST. APPR. = 35 CU. YD.

STA. 301+25
CONST. APPR. = 510 CU. YD.
UNCLASS. EXCAV. = 681 CU. YD.

STA. 291+50 INSTALL
18" x 34' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 55 CU. YD.

STA. 296+75 INSTALL
18" x 34' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.
UNCLASS. EXCAV. = 5 CU. YD.

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
290+21	296+21	RT.	C	601	1
301+65	307+71	RT.	D	1026	1
316+51	333+36	RT.	D	1685	4

STA. 314+75 INSTALL
24" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 305 CU. YD.

STA. 317+37
CONST. APPR. = 45 CU. YD.

HWY. 62

CO. RD. 856
10+31.50
1414.44
-4.00%
VC=400'
K 135
e=1.48'
15+00.00
1402.47
12+71.28
1404.85
-1.04%

290+00.00
1396.51
-3.25%
RT. DITCH GR 1.97%
RT. DITCH GR 2.87%
291+00.00 RT.
1395.15
293+00.00 RT.
1399.08
295+00.00 RT.
1404.83
VC=1000'
K 333
e=-3.75'
295+25.00
1413.57
F.L. INLET LT. 1408.22
F.L. OUTLET RT. 1407.42
+00
L.T. D.G. 2.29%
299+82.50 LT.
1408.21
300+75.00 LT.
1410.33
VC=800'
K 2000
e=-0.40'
306+25.00
1416.32
0.25%
320+00.00
1414.26
-0.15%
F.L. INLET LT. 1403.53
F.L. OUTLET RT. 1398.20
+70
L.T. D.G. 1.48%
313+70.00 LT.
1403.53
315+35.00 LT.
1405.97

1450 1440 1430 1420 1410 1400 1390 1380 1370 1360
290+00 295+00 300+00 305+00 310+00 315+00 320+00

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04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	143	460

(2) PLAN & PROFILE-STA. 320+00 TO STA. 350+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

EXIST. R/W

EXIST. R/W

STA. 328+80 CONSTRUCT
5' x 5' x 201' R.C. BOX CULV'T.
(30° LT. FWD. SKEW)
Q50=239cfs. D.A.=54Ac.

DENOTES OBLITERATION OF EXISTING PAVEMENT.

PROPOSED R/W

CONSTRUCTION LIMITS

PEA RIDGE FENCING

16'-0" GATE

CONSTRUCTION LIMITS

PROPOSED R/W

16'-0" GATE

16'-0" GATE

16'-0" GATE

16'-0" GATE

16'-0" GATE

320+00.00
55.00

325+00.27
83.00

330+00.00
83.00

335+00

340+00

345+00

350+00

+15.00
140.00

+36.23
90.00

P.C. 335+71.07

+00
77.00

+40.00
185.00

+35.00
155.00

+00
116.00

+75.00

338+78.82

+86.82
75.00

100.00

+92.04
158.32

+96.09
123.00

T.C.E.

+00.00
100.00

+86.42

+50.00
105.44

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
329+19	329+93	LT.	D	65	1
333+36	353+96	RT.	C	2066	2

STA. 325+27 INSTALL
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 45 CU.YD.
UNCLASS. EXCAV. = 5 CU.YD.

STA. 331+00 INSTALL
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU.YD.
UNCLASS. EXCAV. = 5 CU.YD.

STA. 337+50 INSTALL
18" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 50 CU.YD.

HWY. 62
PI = 338+78.82
Δ = 3°04'36" RT.
D = 0°30'00"
T = 307.75'
L = 615.36'
PC = 335+71.07
PT = 341+86.42
NO SUPERELEVATION

STA. 345+00 INSTALL
18" x 44' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 145 CU.YD. EMB.
= 20 CU.YD. EXC.

HWY. 62

1490

STREAM NAME
UNNAMED TRIBUTARY

STATION
STA. 328+75 - STA. 328+85

STREAM TYPE
INTERMITTENT

TOP OF CHANNEL
1404 FT. MSL.

1490
1480
1470
1460
1450
1440
1430
1420
1410
1400
1390

320+00.00
1414.26

-0.15%

324+50.00 LT
1409.04

LT. DITCH GR. -0.09%
RT. D.G. -0.90%

324+50.00 RT
1409.04

326+35.00 RT
1407.37

327+60.00 LT
1408.75

+80

329+50.00
1412.83

VC=1000'
K=262
e=4.78'

3.67%

VC=1000'
K=249
e=-5.01'

346+35.11
1474.72

F.L. INLET LT. 1402.99
F.L. OUTLET RT. 1390.63

BM= 910 NGS POINT T 309
457.01 LT. OF STA. 322+05.17
ELEVATION = 1416.53

320+00 325+00 330+00 335+00 340+00 345+00 350+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	144	460

(2) PLAN & PROFILE-STA. 350+00 TO STA. 370+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 353+00 CONSTRUCT
36" x 198' R.C. PIPE CULV'T.
(CLASS IV) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
(30° RT. FWD. SKEW)
Q50= 39 CFS. D.A.= 18 ACRES

STA. 359+62 CONSTRUCT
7' x 5' x 216' R.C. BOX CULV'T.
(15° LT. FWD. SKEW)
Q50=280cfs, D.A.=76Ac.

STA. 366+00 INSTALL
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 105 CU.YD.
UNCLASS. EXCAV. = 85 CU.YD.

DENOTES: OBLITERATION OF EXISTING PAVEMENT.

EXIST. R/W

PROPOSED R/W

CONSTRUCTION LIMITS

N 73°55'51" E

STA. 355+13.66 (HWY. 62) =
STA. 16+69 (OLD LIBERTY RD.)
Δ = 71° 06' 30"

CO. RD. 857
OLD LIBERTY RD.

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
361+95	368+80	RT.	D-1	686	1
362+49	367+51	LT.	D-1	504	1
368+80	373+36	RT.	C	431	1

STA. 366+00 INSTALL
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 105 CU.YD.
UNCLASS. EXCAV. = 40 CU.YD.

STA. 369+00 BEGIN
COMBINATION CURB & GUTTER

HWY.	62
PI	= 371+80.01
Δ	= 17°21'27" RT.
D	= 5°15'00"
T	= 166.59'
L	= 330.62'
PC	= 370+13.42
PT	= 373+44.04
e	= 0.0635'/'
Ls	= 360'

HWY. 62

STREAM NAME	STATION	STREAM TYPE	TOP OF CHANNEL
UNNAMED TRIBUTARY	STA. 359+55 - STA. 359+65	INTERMITTENT	1449 FT. MSL.

STA. 367+43.42 BEGIN SUPERELEVATION (N.C.)
STA. 371+03.42 MAX. SUPERELEVATION (0.0635'/')
STA. 372+54.04 MAX. SUPERELEVATION (0.0635'/')
STA. 376+14.04 END SUPERELEVATION (N.C.)

355+02.88
1471.7696

355+24.44
1471.6963

VC=1000'
K=249
e=-5.01

-0.34%

+00
F.L. OUTLET RT. 1451.56
F.L. INLET LT. 1458.77

+62
F.L. OUTLET RT. 1443.06
F.L. INLET LT. 1447.68

370+00.00
1466.67

LT. DITCH GRADE -0.10%
RT. D.G. -3.10%

367+00.00 LT.
1463.16

369+00.00 RT.
1462.32

BM: 911 TBM-911\CPS PP
522.96 LT. OF STA. 357+12.94
ELEVATION = 1472.18

BM: 912 NGS POINT U 309
22.86 LT. OF STA. 369+95.38
ELEVATION = 1479.93

1520
1510
1500
1490
1480
1470
1460
1450
1440
1430

350+00 355+00 360+00 365+00 370+00

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	145	460

(2) PLAN & PROFILE-STA. 370+00 TO STA. 385+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 372+58 IN PLACE
6' x 6' x 50' R.C. BOX CULV'T.
RETAIN & EXTEND
56' RT. (15° RT. FWD. SKEW)
FOR A COMPLETED LENGTH OF 106'
Q50=233cfs, D.A. =54Ac.

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
373+36	374+42	RT.	D	108	1
381+55	385+45	RT.	C	275	1

DENOTES: OBLITERATION OF EXISTING PAVEMENT.

STA. 375+85 CONSTRUCT
DROP INLET ON LT. H=4'-9"
WITH 4' EXTENSION AND 24" x 59'
R.C. PIPE CULVERT (CLASS IV)(TYPE 3 BEDDING)
TO DROP INLET AT
STA. 375+85 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 376+00 CONSTRUCT
DROP INLET ON LT. H=4'-9"
WITH 4' EXTENSION AND 24" x 12'
PIPE CULVERT TO DROP INLET AT
STA. 375+85 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 12 LIN.FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 12 LIN.FT.

STA. 378+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 198'
PIPE CULVERT TO DROP INLET AT
STA. 376+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 198 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 198 LIN.FT.

STA. 380+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 198'
PIPE CULVERT TO DROP INLET AT
STA. 378+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 198 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 198 LIN.FT.

STA. 382+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 198'
PIPE CULVERT TO DROP INLET AT
STA. 380+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 198 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 198 LIN.FT.

STA. 384+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 198'
PIPE CULVERT TO DROP INLET AT
STA. 382+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 198 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 198 LIN.FT.

STA.378+56.59 C.L. CONST. =
STA.10+00.00 C.L. RANCH VIEW RD.
Δ = 87° 23' 54"

N

EXIST. R/W
EXIST. R/W
PROPOSED R/W
CONSTRUCTION LIMITS
CONSTRUCTION LIMITS
HWY. 62 PAVED
S 88°42'42" E
S 88°42'42" E
HWY. 62
S 73°55'51" E
POBL 10+00.00
POE 12+05.69
RANCH VIEW RD.
P.C. 370+13.42
P.T. 373+44.04
PINEY CREEK ADAMS POINT U 309
CONC PUMP COMPANY
CANOPY
CONC PARKING
PARKING
COUNTRY CABINETS INCORPORATED
LITGO
SIGN
SIGN
SIGN
370
375
380
385
2
1540
1530
1520
1510
1500
1490
1480
1470
1460
1450
1440

HWY. 62
PI = 371+80.01
Δ = 17°21'27" RT.
D = 5°15'00"
T = 166.59'
L = 330.62'
PC = 370+13.42
PT = 373+44.04
e = 0.0635'/'
Ls = 360'

STA. 372+40 CONSTRUCT
DROP INLET ON RT. H=7'-2"
WITH 4' EXTENSION AND 18" x 26'
PIPE CULVERT TO BOX CULVERT AT
STA. 372+58 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 20 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 20 LIN.FT.

STA. 372+75 CONSTRUCT
DROP INLET ON RT. H=10'-0"
WITH 54" X 6'
PIPE CULVERT TO BOX CULVERT AT
STA. 372+58 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 5'-6"
54" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 6 LIN.FT.
54" SLPPMCCS PIPE (TYPE 2 BEDDING) = 6 LIN.FT.

STA. 373+10 CONSTRUCT
DROP INLET ON RT. H=7'-0"
WITH 4' EXTENSION AND 54" x 30'
PIPE CULVERT TO DROP INLET AT
STA. 372+75 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 5'-6"
54" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 30 LIN.FT.
54" SLPPMCCS PIPE (TYPE 2 BEDDING) = 30 LIN.FT.

STA. 374+06 INSTALL
18" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 245 CU.YD.

STA. 374+50 CONSTRUCT
DROP INLET ON RT. H=6'-8"
WITH 4' EXTENSION AND 48" x 136'
PIPE CULVERT TO DROP INLET AT
STA. 373+10 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 4'-10"
48" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 136 LIN.FT.
48" SLPPMCCS PIPE (TYPE 2 BEDDING) = 136 LIN.FT.

STA. 374+74 IN PLACE
24" x 26' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 375+29 IN PLACE
24" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE &
CONST. APPR.
UNCLASS. EXCAV. = 15 CU.YD.

STA. 375+85 CONSTRUCT
DROP INLET ON RT. H=6'-10"
WITH 4' EXTENSION AND 48" x 132'
PIPE CULVERT TO DROP INLET AT
STA. 374+50 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 4'-10"
48" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 132 LIN.FT.
48" SLPPMCCS PIPE (TYPE 2 BEDDING) = 132 LIN.FT.

STA. 376+63 IN PLACE
24" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & 8'+80
CONST. APPR.

STA. 377+15 CONSTRUCT
DROP INLET ON RT. H=9'-0"
WITH OPENING IN BACK
WITH 8' EXTENSION AND 48" x 125'
PIPE CULVERT TO DROP INLET AT
STA. 375+85 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 4'-10"
48" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 125 LIN.FT.
48" SLPPMCCS PIPE (TYPE 2 BEDDING) = 125 LIN.FT.

STA. 377+85 CONSTRUCT
DROP INLET ON RT. H=8'-0"
WITH 4' EXTENSION AND 48" x 66'
PIPE CULVERT TO DROP INLET AT
STA. 377+15 ON RT.
TYPE MO DROP INLET = 6' DIA.
TYPE C DROP INLET = 4' X 4'-10"
48" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 66 LIN.FT.
48" SLPPMCCS PIPE (TYPE 2 BEDDING) = 66 LIN.FT.

STA. 378+80 IN PLACE
18" x 48' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 378+83 IN PLACE
24" x 60' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 379+00 CONSTRUCT
DROP INLET ON RT. H=9'-10"
WITH 4' EXTENSION AND 42" x 20'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 48" x 110'
PIPE CULVERT TO DROP INLET AT
STA. 377+85 ON RT.
TYPE C DROP INLET = 5'-4" X 4'-10"
48" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 110 LIN.FT.
48" SLPPMCCS PIPE (TYPE 2 BEDDING) = 110 LIN.FT.

STA. 380+40-381+40 RT.
INSTALL HAND RAILING = 100 LIN.FT.

STA. 380+40-381+40 RT.
CONST. CONCRETE RIPRAP = 24 CU.YD.

STA. 382+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 296'
PIPE CULVERT TO DROP INLET AT
STA. 379+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 296 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 296 LIN.FT.

STA. 384+36 INSTALL
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 100 CU.YD.

STA. 384+60 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 258'
PIPE CULVERT TO DROP INLET AT
STA. 382+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 258 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 258 LIN.FT.

HWY. 62

STA. 367+43.42 BEGIN SUPERELEVATION (N.C.)
STA. 371+03.42 MAX. SUPERELEVATION (0.0635'/')
STA. 372+54.04 MAX. SUPERELEVATION (0.0635'/')
STA. 376+14.04 END SUPERELEVATION (N.C.)

STREAM NAME: UNNAMED TRIBUTARY
STATION: STA. 370+00 - STA. 370+20
STREAM TYPE: INTERMITTENT
TOP OF CHANNEL: 1459 FT. MSL.

370+00.00
1466.67
-0.34%
+40 RT. TOP D.I. 1465.78
LT. DITCH GRADE -0.10%
RT. DITCH GRADE -3.10%
F.L. D.I. 1458.60
372+30.00 LT.
1462.82
+75 RT. TOP D.I. 1465.71
+10 RT. TOP D.I. 1465.77
18"X 20' @ 3.00%
54"X 30' @ 3.00%
48"X 136' @ 1.45%
F.L. D.I. 1458.77
F.L. D.I. 1455.71
54"X 6' @ 11.31%
371+35.00 RT.
1455.04
EXIST F.L. INLET LT. 1456.69
F.L. OUTLET RT. 1454.88
+50 RT. TOP D.I. 1467.37
48"X 132' @ 2.62%
F.L. D.I. 1460.70
+85 RT. TOP D.I. 1470.94
48"X 125' @ 2.49%
F.L. D.I. 1464.11
P.V.I. 375+44.12
ELEV. 1464.82
K 92
VC=600'
e=4.91'
24"X 12' @ 3.18%
F.L. D.I. 1466.49
+85 LT. TOP D.I. 1471.22
+00 LT. TOP D.I. 1471.59
F.L. D.I. 1466.84
18"X 198' @ 4.91%
+15 RT. TOP D.I. 1476.24
+00 LT. TOP D.I. 1480.71
18"X 198' @ 6.28%
F.L. D.I. 1476.96
+85 RT. TOP D.I. 1479.87
48"X 66' @ 2.51%
F.L. INVERT 1473.87
F.L. D.I. 1471.87
48"X 110' @ 2.83%
F.L. INVERT 1470.25
F.L. D.I. 1467.24
+00 RT. TOP D.I. 1486.81
F.L. INVERT 1482.51
F.L. INLET 1481.13
F.L. INVERT 1480.62
F.L. D.I. 1476.98
+00 LT. TOP D.I. 1493.01
18"X 198' @ 6.33%
F.L. D.I. 1489.26
6.20%
18"X 296' @ 6.48%
+00 LT. TOP D.I. 1505.41
F.L. D.I. 1501.66
+00 RT. TOP D.I. 1505.41
F.L. D.I. 1501.66
18"X 258' @ 5.30%
+00 LT. TOP D.I. 1517.81
18"X 198' @ 5.91%
385+00.00
524.09
F.L. D.I. 1514.06
+60 RT. TOP D.I. 1521.53
F.L. D.I. 1513.78

RANCH VIEW RD.
VC=130'
K 20
e=1.08'
10+28.03
1483.56
4.00%
11+70.40
1482.43
2.64%
11+01.59
1480.61
10+00
13+00

370+00
375+00
380+00
385+00

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	146	460

(2) PLAN & PROFILE-STA. 385+00 TO STA. 400+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 386+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 198'
PIPE CULVERT TO DROP INLET AT
STA. 384+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 198 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 198 LIN.FT.

STA. 389+11
CONST. APPR. = 20 CU.YD.

STA. 391+20 CONSTRUCT
DROP INLET ON LT. H=5'-3"
WITH 4' EXTENSION AND 18" x 12'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 18" x 276'
PIPE CULVERT TO DROP INLET AT
STA. 394+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 276 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 276 LIN.FT.

STA. 391+59 IN PLACE
18" x 48' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE
CONST. APPR. = 65 CU.YD.

STA. 392+17 IN PLACE
18" x 20' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
18" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 65 CU.YD.

STA. 394+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 42'
PIPE CULVERT TO DROP INLET AT
STA. 394+46 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 42 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 42 LIN.FT.

STA. 394+46 CONSTRUCT
DROP INLET ON LT. H=3'-5"
WITH 4' EXTENSION AND 18" x 30'
PIPE CULVERT TO DROP INLET AT
STA. 394+80 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 30 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 30 LIN.FT.

STA. 394+80 CONSTRUCT
DROP INLET ON LT. H=3'-10"
WITH 18" x 59'
R.C. PIPE CULVERT (CLASS V) (TYPE 3 BEDDING)
TO DROP INLET AT
STA. 394+80 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.	16' GATE
389+03	390+46	RT.	C	232	
392+20	396+20	RT.	C	426	
394+15	394+85	LT.	C	73	
396+20	397+78	RT.	5' CHAIN LINK	155	1
397+78	402+39	RT.	C	460	1

STA. 398+23
CONST. APPR. = 5 CU.YD.

STA. 385+58
CONST. APPR. = 60 CU.YD.

STA. 386+67
CONST. APPR.

STA. 386+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 138'
PIPE CULVERT TO DROP INLET AT
STA. 384+60 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 138 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 138 LIN.FT.

STA. 387+35 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 124'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 18" x 132'
PIPE CULVERT TO DROP INLET AT
STA. 386+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'-0"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 132 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 132 LIN.FT.

STA. 387+12
CONST. APPR.
UNCLASS. EXCAV. = 45 CU.YD.

STA. 391+14 IN PLACE
18" x 20' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
CONST. APPR. = 70 CU.YD.

STA. 392+04 IN PLACE
18" x 18' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & @ +00
CONST. APPR. = 75 CU.YD.

STA. 388+30.95
ELEV. 1544.55
P.V.I.

STA. 388+91.28 C.L. CONST. =
STA. 10+00.00 C.L. PAUL PRATT RD.
Δ = 88° 55' 30"

EXIST. R/W

PROPOSED R/W

T.C.E.

C.L. PAUL PRATT RD.
STA. 11+11 INSTALL
18" x 28' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 15 CU.YD. EMB.
= 5 CU.YD. EXC.

POB 10+00.00

POE 11+83.34

PAVED

CHURCH OF CHRIST

PAVED PARKING

CONSTRUCTION LIMITS

HWY. 62

S 88°42'42" E

PN:913
PB:TBM-913\CPS PP

PN:19
CO:8"-SPIKE

PN:22
POWERBAR & CAP

PN:25
POWERBAR & CAP 060025A

STA. 390+85 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 162'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 18" x 162'
PIPE CULVERT TO DROP INLET AT
STA. 392+50 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'-0"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 162 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 162 LIN.FT.

STA. 392+50 CONSTRUCT
DROP INLET ON RT. H=4'-9"
WITH 4' EXTENSION AND 18" x 226'
PIPE CULVERT TO DROP INLET AT
STA. 394+80 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 226 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 226 LIN.FT.

STA. 394+46 IN PLACE
30" x 74' R.C. PIPE CULV'T.
WITH HEADWALLS LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
18' LT. & 84' RT.
TO A COMPLETED LENGTH OF 176'
(CLASS IV) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.
Q50=42 CFS, D.A. =7 ACRES
30" R.C. PIPE = 110 LIN.FT.
30" FES = 2 EACH

STA. 394+80 CONSTRUCT
DROP INLET ON RT. H=8'-1"
WITH 4' EXTENSION AND 24" x 22'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 396+10 CONSTRUCT
DROP INLET ON RT. H=5'-4"
WITH 4' EXTENSION AND 24" x 126'
PIPE CULVERT TO DROP INLET AT
STA. 394+80 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 126 LIN.FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 126 LIN.FT.

STA. 396+65 CONSTRUCT
DROP INLET ON RT. H=4'-3"
WITH 18" x 16'
PIPE CULVERT TO DROP INLET AT
STA. 396+45 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 16 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 16 LIN.FT.

STA. 396+93 IN PLACE
18" x 20' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & @ +97
CONST. APPR.
UNCLASS. EXCAV. = 30 CU.YD.

STA. 396+45 CONSTRUCT
DROP INLET ON RT. H=4'-4"
WITH 24" x 32'
PIPE CULVERT TO DROP INLET AT
STA. 396+10 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 32 LIN.FT.
24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 32 LIN.FT.

STA. 398+78
CONST. APPR.

STA. 397+20 CONSTRUCT
DROP INLET ON RT. H=4'-30"
WITH 4' EXTENSION AND 18" x 52'
PIPE CULVERT TO DROP INLET AT
STA. 396+65 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 52 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 52 LIN.FT.

STA. 399+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 174'
PIPE CULVERT TO DROP INLET AT
STA. 397+20 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 174 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 174 LIN.FT.

HWY. 62
PI = 401+51.12
Δ = 31°56'29" RT.
D = 3°45'00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

STA. 394+43.85 BEGIN SUPERELEVATION (N.C.)
STA. 398+03.85 MAX. SUPERELEVATION (0.049'/')
STA. 404+75.62 MAX. SUPERELEVATION (0.049'/')
STA. 408+35.62 END SUPERELEVATION (N.C.)

+00 LT. TOP D.I. 1529.39
18"X 198' @ 5.91%
F.L. D.I. 1525.64

+00 RT. TOP D.I. 1529.39
385+00.00 1524.09
6.20%
18"X 138' @ 5.78%
18"X 132' @ 3.54%
F.L. D.I. 1525.64

+35 RT. TOP D.I. 1534.06
18"X 124' @ 2.50%
F.L. D.I. 1530.31

388+90.75 1535.819

F.L. INLET 1533.41

K 61
VC=660'
e=-8.91'

+20 LT. TOP D.I. 1531.00
F.L. INLET 1526.12
F.L. INVERT 1525.75
F.L. D.I. 1525.75

+85 RT. TOP D.I. 1532.28
F.L. D.I. 1528.53

18"X 162' @ 3.01%
-4.60%
18"X 162' @ 4.41%

+50 RT. TOP D.I. 1525.18
F.L. INVERT 1521.43
F.L. D.I. 1520.43

18"X 276' @ 3.47%

+00 LT. TOP D.I. 1519.91
18"X 42' @1.26%
F.L. D.I. 1516.16

+46 LT. TOP D.I. 1518.80
18"X 30' @ 2.00%
F.L. D.I. 1514.53

+80 LT. TOP D.I. 1518.38

F.L. INVERT 1515.63
F.L. D.I. 1515.38

K 90.91
VC=500'
e=3.44'

+80 RT. TOP D.I. 1518.10

18"X 226' @ 2.81%

24"X 126' @ 0.98%
F.L. D.I. 1511.35

F.L. INVERT 1515.03
F.L. D.I. 1510.00
F.L. OUTLET 1509.36

F.L. INLET LT. 1503.21
F.L. OUTLET RT. 1495.33

P.V.I. 394+76.55
ELEV. 1514.81

+10 RT. TOP D.I. 1516.68
24" X 32" @ 2.99%
18"X 16' @0.63%
F.L. D.I. 1512.28
F.L. D.I. 1512.38

+65 RT. TOP D.I. 1516.63
+45 RT. TOP D.I. 1516.61
+20 RT. TOP D.I. 1516.92
18"X 52' @0.51%
F.L. D.I. 1512.67

0.90%
18"X 174' @ 0.94%
F.L. INVERT 1513.17

+00 RT. TOP D.I. 1518.54
F.L. D.I. 1514.79

K 96.77
VC=300'
e=1.16'

PAUL PRATT RD.

10+28.00
1535.26
VC=70'
K 9
e=0.65'
11+40.05
1540.46
11+76.44
1540.06
7.43%
0.00%
-1.11%
VC=70'
K 8
e=-0.75'
10+70.00
1535.26
10+00
13+00

BM= 913 TBM-913\CPS PP
67.47 LT. OF STA. 389+62.07
ELEVATION = 1538.11

385+00 390+00 395+00 400+00

1560 1550 1540 1530 1520 1510 1500 1490 1480 1470 1460

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	147	460

(2) PLAN & PROFILE-STA. 400+00 TO STA. 415+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 401+08 CONSTRUCT
JUNCTION BOX ON LT. H=13'-9"
WITH 30° x 32' (30° LT. FWD. SKEW)
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE E JUNCTION BOX = 4'-6" X 2'-6"
CONNECT EXISTING PIPE CULVERT TO JUNCTION BOX

STA. 404+83 IN PLACE
18" x 30' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE & INSTALL
21" x 15" x 28' ARCH PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 30 CU. YD.

STA. 408+09
CONST. APPR.
UNCLASS. EXCAV. = 45 CU. YD.

STA. 408+40 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 59'
R.C. PIPE CULVERT (CLASS V) (TYPE 3 BEDDING)
TO DROP INLET AT
STA. 408+40 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 409+71 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 128'
PIPE CULVERT TO DROP INLET AT
STA. 408+40 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 128 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 128 LIN.FT.

STA. 409+39
CONST. APPR.
UNCLASS. EXCAV. = 65 CU. YD.

STA. 410+62 CONSTRUCT
DROP INLET ON LT. H=5'-8"
WITH 4' EXTENSION AND 24" x 10'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 410+62 IN PLACE
24" x 54' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
RETAIN & EXTEND 4' LT. & 1' RT.
TO A COMPLETED LENGTH OF 59'
CONNECT TO D.I. AT
STA. 410+62 ON LT. & RT.
050+9cfs. D.A.+3Ac.
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 13 LIN.FT.

STA. 413+00 CONSTRUCT
DROP INLET ON LT. H=4'-10"
WITH 8' EXTENSION AND 18" x 234'
PIPE CULVERT TO DROP INLET AT
STA. 410+62 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 234 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 234 LIN.FT.

HWY. 62
PI = 401+51.12
Δ = 31°56'29" RT.
D = 3°45'00"
T = 437.27'
L = 851.77'
PC = 397+13.85
PT = 405+65.62
e = 0.049'/'
Ls = 360'

STA. 401+08 CONSTRUCT
JUNCTION BOX ON RT. H=14'-2"
WITH 30° x 62' (45° LT. FWD. SKEW)
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE E JUNCTION BOX = 4'-6" X 2'-6"

STA. 401+08 IN PLACE
30" x 76' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
RETAIN & REMOVE PORTION OF PIPE CULV'T. ON LT.
AND EXTEND 4' RT.
CONNECT TO JUNCTION BOXES LT. & RT.
TO A COMPLETED LENGTH OF 59'
050+48cfs. D.A.+8Ac.
30" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 8 LIN.FT.

STA. 401+19 CONSTRUCT
DROP INLET ON RT. H=4'-0"
WITH 4' EXTENSION AND 18" x 7'
PIPE CULVERT TO JUNCTION BOX AT
STA. 401+08 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 7 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 7 LIN.FT.

STA. 403+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 174'
PIPE CULVERT TO DROP INLET AT
STA. 401+19 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 174 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 174 LIN.FT.

STA. 405+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 192'
PIPE CULVERT TO DROP INLET AT
STA. 403+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 192 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 192 LIN.FT.

STA. 406+45 IN PLACE
18" x 25' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE &
CONST. APPR. = 15 CU. YD.

STA. 407+69
CONST. APPR. = 5 CU. YD.

STA. 408+00 CONSTRUCT
DROP INLET ON RT. H=5'-6"
WITH 4' EXTENSION AND 18" x 296'
PIPE CULVERT TO DROP INLET AT
STA. 405+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 296 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 296 LIN.FT.

STA. 408+40 CONSTRUCT
DROP INLET ON RT. H=5'-4"
WITH 18" x 36'
PIPE CULVERT TO DROP INLET AT
STA. 408+00 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 36 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 36 LIN.FT.

STA. 409+03
CONST. APPR. = 20 CU. YD.

STA. 410+62 CONSTRUCT
DROP INLET ON RT. H=8'-11
CONNECT TO EXISTING PIPE CULVERT
WITH 4' EXTENSION AND 24" x 24'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 413+00 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 59'
R.C. PIPE CULVERT (CLASS V) (TYPE 3 BEDDING)
TO DROP INLET AT
STA. 413+00 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

HWY. 62

STA. 394+43.85 BEGIN SUPERELEVATION (N.C.)
STA. 398+03.85 MAX. SUPERELEVATION (0.049'/')
STA. 404+75.62 MAX. SUPERELEVATION (0.049'/')
STA. 408+35.62 END SUPERELEVATION (N.C.)

+10 LT. TOP J.B. 1524.47
F.L. INLET 1514.28
K 96.77 VC-300' e-1.16'
+08 RT TOP J.B. 1521.71
+19 RT TOP D.I. 1521.99 F.L. INLET 1518.02
18"X 114' @ 4.21%
18"X 7' @ 5.57% F.L. INVERT 1517.63
P.V.I. 401+00.00 ELEV. 1520.42
F.L. J.B. 1507.54
F.L. OUTLET RT. 1504.84
+00 RT. TOP D.I. 1528.34
4.00%
18"X 192' @ 3.77%
F.L. D.I. 1524.59
+00 RT. TOP D.I. 1535.56
P.V.I. 405+31.12 ELEV. 1537.67
F.L. D.I. 1531.81
18"X 296' @ 0.71%
F.L. D.I. 1533.91
K 90.37 VC-300' e-1.25'
+40 LT. TOP D.I. 1539.69
+71 LT. TOP D.I. 1541.24
18"X 128' @ 1.22%
F.L. D.I. 1537.49
F.L. D.I. 1535.94
+00 RT. TOP D.I. 1539.41
+40 RT. TOP D.I. 1539.69
0.68%
18"X 36' @ 1.22%
F.L. D.I. 1534.36
P.V.I. 410+36.57 ELEV. 1541.10
K 82.53 VC-340' e-1.75'
+62 LT. TOP D.I. 1543.51
F.L. INLET 1539.87
F.L. INVERT 1539.77
F.L. D.I. 1537.81
18"X 234' @ 3.82%
4.80%
+62 LT. TOP D.I. 1543.51
F.L. D.I. 1543.60
F.L. OUTLET 1534.33
+00 LT. TOP D.I. 1553.51
F.L. D.I. 1548.68
+00 RT. TOP D.I. 1553.51
F.L. D.I. 1549.76
P.V.I. 413+76.18 ELEV. 1557.41
K 76.92 VC-250' e-1.02'

1580 1570 1560 1550 1540 1530 1520 1510 1500 1490 1480

400+00 405+00 410+00 415+00

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	148	460

(2) PLAN & PROFILE-STA. 415+00 TO STA. 430+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
8-29-13
TRINITY D. SMITH

STA. 416+01 CONSTRUCT
DROP INLET ON LT. H=6'-11"
WITH 8' EXTENSION AND 18' x 8'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 36" x 59'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
TO DROP INLET AT
STA. 416+01 ON RT.
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 3'-2"

STA. 417+91 CONSTRUCT
DROP INLET ON LT. H=5'-4"
WITH 8' EXTENSION AND 30" x 6'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
WITH 30" x 186'
PIPE CULVERT TO DROP INLET AT
STA. 416+00 ON LT.
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 3'-2"
30" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 186 LIN.FT.
30" SLPPMCCS PIPE (TYPE 2 BEDDING) = 186 LIN.FT.

STA. 421+50 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 164'
PIPE CULVERT TO DROP INLET AT
STA. 419+80 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 164 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 164 LIN.FT.

STA. 424+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 242'
PIPE CULVERT TO DROP INLET AT
STA. 421+50 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 242 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 242 LIN.FT.

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STA. 417+74.27 HWY. 62=
STA. 10+00 ALVIN SEAMSTER RD. NORTH
Δ = 81°18'54"

STA. 417+54 IN PLACE
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

STA. 419+50 IN PLACE
18" x 44' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE &
CONST. APPR.
UNCLASS. EXCAV. = 10 CU. YD.

STA. 417+69.98 HWY. 62=
STA. 10+00 ALVIN SEAMSTER RD. SOUTH
Δ = 58°47'34"

STA. 416+00 IN PLACE
24" x 60' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
REMOVE

STA. 416+01 CONSTRUCT
DROP INLET ON RT. H=9'-5"
WITH 36" x 24'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 5' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 420+00
CONST. APPR. = 300 CU. YD.

STA. 421+25 IN PLACE
18" X 74' PIPE CULVERT
RT. SIDE DRAIN
REMOVAL AND INSTALL @ 33
18" X 70' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 415 CU. YD.

STA. 422+00-423+10 RT.
CONSTRUCT RETAINING WALL

STA. 427+00
CONST. APPR. = 455 CU. YD.

STA. 416+07.44 BEGIN SUPERELEVATION (N.C.)
STA. 419+67.44 MAX. SUPERELEVATION (0.051'/')
STA. 433+95.27 MAX. SUPERELEVATION (0.051'/')
STA. 437+55.27 END SUPERELEVATION (N.C.)

+00 LT.
TOP D.I. 1597.30
F.L. D.I. 1593.55

+50 LT.
TOP D.I. 1584.69
F.L. D.I. 1580.94

+80 LT.
TOP D.I. 1575.60
F.L. D.I. 1571.85

+91 LT.
TOP D.I. 1566.40
F.L. INLET 1563.75
F.L. INVERT 1562.00
F.L. INVERT 1562.00
F.L. D.I. 1561.06

+01 LT.
TOP D.I. 1560.84
F.L. INLET 1557.01
F.L. INVERT 1556.71
F.L. INVERT 1555.54
F.L. D.I. 1553.92

+01 RT.
TOP D.I. 1560.84
F.L. D.I. 1551.42
F.L. OUTLET 1550.74

18"X 242' @ 5.25%
18"X 164' @ 5.61%
18"X 184' @ 5.40%
30"X 186' @ 2.99%
5.35%
-0.67%
1.55%
-1.22%
LT. DITCH GRADE 5.76%

K 83.13
VC=500'
e=-3.76'

K 92.14
VC=350'
e=1.66'

K 76.92
VC=250'
e=-1.02'

P.V.I. 425+37.64
ELEV. 1605.50

P.V.I. 417+45.34
ELEV. 1563.13

416+01.00 LT.
1557.00

417+91.00 LT.
1563.75

418+50.00 LT.
1567.15

430+00.00
1602.42

ALVIN SEAMSTER RD.

10+32.74
1567.18

11+00.00
1570.21

13+11.72
1557.09

VC=100'
K 9
e=-1.34'

4.50%
-6.19%

BM: 914 TBM-914 GPS PP
44.13 RT. OF STA. 417+81.53
ELEVATION = 1563.55

BM: 915 NGS POINT V 309
34.21 LT. OF STA. 425+17.83
ELEVATION = 1605.73

415+00 420+00 425+00 430+00

1630 1620 1610 1600 1590 1580 1570 1560 1550 1540 1530

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

HWY. 62

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090065	149	460

(2) PLAN & PROFILE-STA. 430+00 TO STA. 445+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

STA. 431+55 CONSTRUCT
DROP INLET ON LT. H=4'-7"
WITH 8' EXTENSION AND 24' x 6'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
CONNECT EXISTING 24" R.C. PIPE CULVERT
TO DROP INLET
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 432+75 IN PLACE
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE &
CONST. APPR. = 5 CU. YD.

HWY. 62
PI = 428+99.67
Δ = 71°01'38" LT.
D = 4°00'00"
T = 1022.23'
L = 1775.68'
PC = 418+77.44
PT = 436+53.12
e = 0.051'/'
Ls = 360'

STA. 434+00 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 4' EXTENSION AND 18" x 154'
PIPE CULVERT TO DROP INLET AT
STA. 435+61 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 154 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 154 LIN.FT.

STA. 435+61 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 184'
PIPE CULVERT TO DROP INLET AT
STA. 437+50 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 184 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 184 LIN.FT.

STA. 435+93 IN PLACE
18" x 41' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE &
CONST. APPR.

STA. 437+50 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 8' EXTENSION AND 18" x 27'
PIPE CULVERT TO DROP INLET AT
STA. 437+81 ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 27 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 27 LIN.FT.

STA. 437+81 CONSTRUCT
DROP INLET ON LT. H=3'-9"
WITH 18" x 78'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 438+36 IN PLACE
18" x 60' PIPE CULV'T.
LT. SIDE DRAIN
REMOVE &
CONST. APPR.

FENCE

STA.	STA.	SIDE	TYPE	LIN.FT.
438+73	443+21	LT.	D-2	513

STA. 443+14
CONST. APPR. = 155 CU. YD.

STA. 443+72
OFF OF DRIVE AT STA. 443+14
CONST. APPR. = 65 CU. YD.

HWY. 62
PI = 441+25.08
Δ = 25°01'19" RT.
D = 4°45'00"
T = 267.66'
L = 526.78'
PC = 438+57.42
PT = 443+84.20
e = 0.0585'/'
Ls = 360'

STA. 439+61 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 8' EXTENSION AND 18" x 172'
PIPE CULVERT TO DROP INLET AT
STA. 441+42 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 172 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 172 LIN.FT.

STA. 441+42 IN PLACE
24" x 63' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
RETAIN & EXTEND
72' LT. & 6' RT.
CONNECT TO D.I. AT STA. 441+42 ON RT.
WITH FES ON LT.
Q50= 4.4 CFS, D.A. = 0.9 Ac.
24" R.C. PIPE (CLASS IV) (TYPE 3 BEDDING) = 86 LIN.FT.
24" FES = 1 EACH

STA. 441+42 CONSTRUCT
DROP INLET ON RT. H=4'-9"
WITH 8' EXTENSION AND 24" x 10'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"

STA. 443+98 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 8' EXTENSION AND 18" x 158'
PIPE CULVERT TO DROP INLET AT
STA. 445+59 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 158 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 158 LIN.FT.

STA. 431+55 IN PLACE
24" x 46' R.C. PIPE CULV'T. W/
HEADWALLS LT. & RT.
RETAIN & REMOVE PORTION OF CULV'T. ON LT.
& EXTEND 46' RT.
TO A COMPLETED LENGTH OF 84'
(CLASS III) (TYPE 3 BEDDING) WITH
FES RT.
Q50=182 cfs, D.A. =3Ac.
24" R/C. PIPE = 50 LIN.FT.
24" FES = 1 EACH

STA. 432+56 IN PLACE
18" x 40' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE &
CONST. APPR. = 115 CU. YD.

STA. 435+15
CONST. APPR. = 660 CU. YD.

STA. 436+25
CONST. APPR. = 290 CU. YD.

STA. 437+29
CONST. APPR. = 25 CU. YD.
UNCLASS. EXCAV. = 25 CU. YD.

STA. 437+81 CONSTRUCT
DROP INLET ON RT. H=3'-9"
WITH 4' EXTENSION AND 18" x 174'
PIPE CULVERT TO DROP INLET AT
STA. 439+61 ON RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 174 LIN.FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 174 LIN.FT.

STA. 416+07.44 BEGIN SUPERELEVATION (N.C.)
STA. 419+67.44 MAX. SUPERELEVATION (0.051'/')
STA. 433+95.27 MAX. SUPERELEVATION (0.051'/')
STA. 437+55.27 END SUPERELEVATION (N.C.)

STA. 437+55.27 BEGIN SUPERELEVATION (N.C.)
STA. 441+15.27 MAX. SUPERELEVATION (0.0585'/')
STA. 442+90.00 MAX. SUPERELEVATION (0.0585'/')
STA. 446+50.00 END SUPERELEVATION (N.C.)

HWY. 62

1630 1620 1610 1600 1590 1580 1570 1560 1550 1540 1530

430+00 435+00 440+00 445+00

+55 LT. TOP D.I. 1601.31
F.L. INLET 1598.10
F.L. INVERT 1597.80
F.L. D.I. 1596.73
430+00.00 1602.42
-0.67%
F.L. OUTLET 1595.83
+00 LT. TOP D.I. 1597.78
F.L. D.I. 1594.03
P.V.I. 433+92.65 ELEV. 1599.87
18" X 154' @ 3.84%
+61 LT. TOP D.I. 1591.89
F.L. D.I. 1588.15
18" X 184' @ 4.80%
+81 LT. TOP D.I. 1581.90
+50 LT. TOP D.I. 1583.11
F.L. D.I. 1579.36
18" X 27' @ 4.40%
18" X 78' @ 2.10%
F.L. D.I. 1578.15
F.L. OUTLET 1576.50
K 87.86
VC-350'
e=-1.74'
-4.65%
+81 RT. TOP D.I. 1581.67
RT. DITCH GRADE -4.72%
F.L. D.I. 1577.91
18" X 174' @ 4.49%
437+20.00 RT. 1582.93
+61 RT. TOP D.I. 1573.90
F.L. D.I. 1570.15
439+00.00 RT. 1574.43
K 80.46
VC-350'
e=1.90'
RT. DITCH GRADE -3.75%
18" X 172' @ 2.98%
P.V.I. 440+37.16 ELEV. 1569.84
+42 RT. TOP D.I. 1569.75
F.L. INLET 1565.40
F.L. D.I. 1565.00
441+41.00 RT. 1565.39
-0.30%
RT. DITCH GRADE 0.94%
443+35.00 RT. 1567.22
+98 RT. TOP D.I. 1568.64
RT. D.I. -2.63%
18" X 158' 2.73%
F.L. D.I. 1564.90
K 44.78
VC-300'
e=-2.51'
F.L. OUTLET ON LT. 1545.19

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	150	460

(2) PLAN & PROFILE-STA. 445+00 TO STA. 455+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

FENCE

STA.	STA	SIDE	TYPE	LIN.FT.
445+01	446+52	LT.	D-1	165

S. WIMPY JONES ROAD

PARKING

C.J.'s INTERIOR

END JOB 090065
STA. 446+50.00

PROPOSED R/W

CONSTRUCTION LIMITS

EXIST. R/W

POE 453+27.46

N 77°13'28" E

450

445

250' TRANSITION

100' COLD MILLING

PK NAIL & PVC SHIM SET IN TOP OF CAP T-24

PK NAIL & PVC SHIM SET IN TOP OF CAP T-25

PK NAIL & PVC SHIM SET IN TOP OF CAP T-26

PK NAIL & PVC SHIM SET IN TOP OF CAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	151	460

(2) PLAN & PROFILE HWY. 62 CONNECTOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

DENOTES: OBLITERATION OF EXISTING PAVEMENT.

STA. 10+60 CONSTRUCT
24" x 68' R.C. PIPE CULV'T.
(CLASS III) (TYPE 3 BEDDING) WITH
F.E.S. LT. & RT.

HWY. 62 CONNECTOR
PI = 12+95.69
Δ = 78°14'56" RT.
D = 24°00'00"
T = 194.18'
L = 326.04'
PC = 11+01.51
PCC = 14+27.54
e = 0.100'/'
Ls = 250'

HWY. 62 CONNECTOR
PI = 17+17.29
Δ = 11°33'02" RT.
D = 2°00'00"
T = 289.75'
L = 577.53'
PC = 14+27.54
PT = 20+05.07
e = 0.038'/'

STA. 288+74.17 C.L. HWY. 62 =
STA. 10+00.00 C.L. HWY. 62 CONNECTOR
Δ=90°00'00"

STA. 301+25.00 C.L. HWY. 62 =
STA. 10+60.00 C.L. CO. RD. 856
Δ=90°00'00"

HWY. 62 CONNECTOR

STA. 10+59.50 BEGIN SUPERELEVATION (N.C.)
STA. 13+09.50 MAX. SUPERELEVATION (0.100'/')
STA. 13+65.04 MAX. SUPERELEVATION (0.100'/')
STA. 15+20.00 END SUPERELEVATION (0.038'/')
STA. 17+15.00 MATCH EXIST. SUPERELEVATION

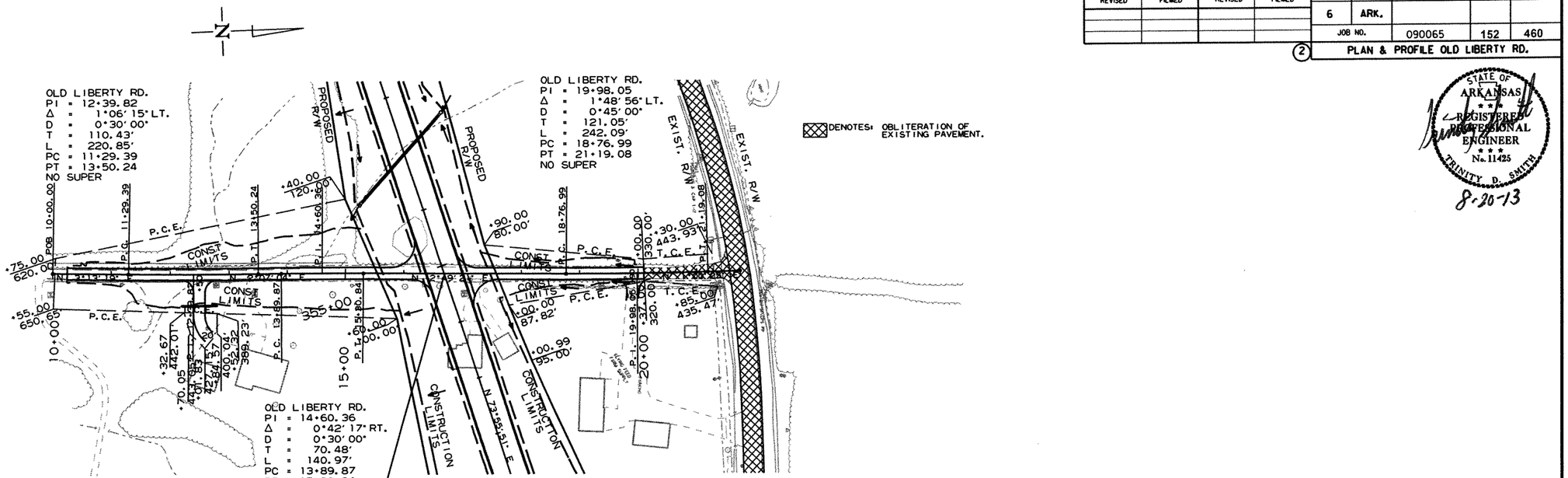
F.L. OUTLET LT. 1390.30
F.L. INLET RT. 1391.55

VC=100'
K 53
e=-0.24'

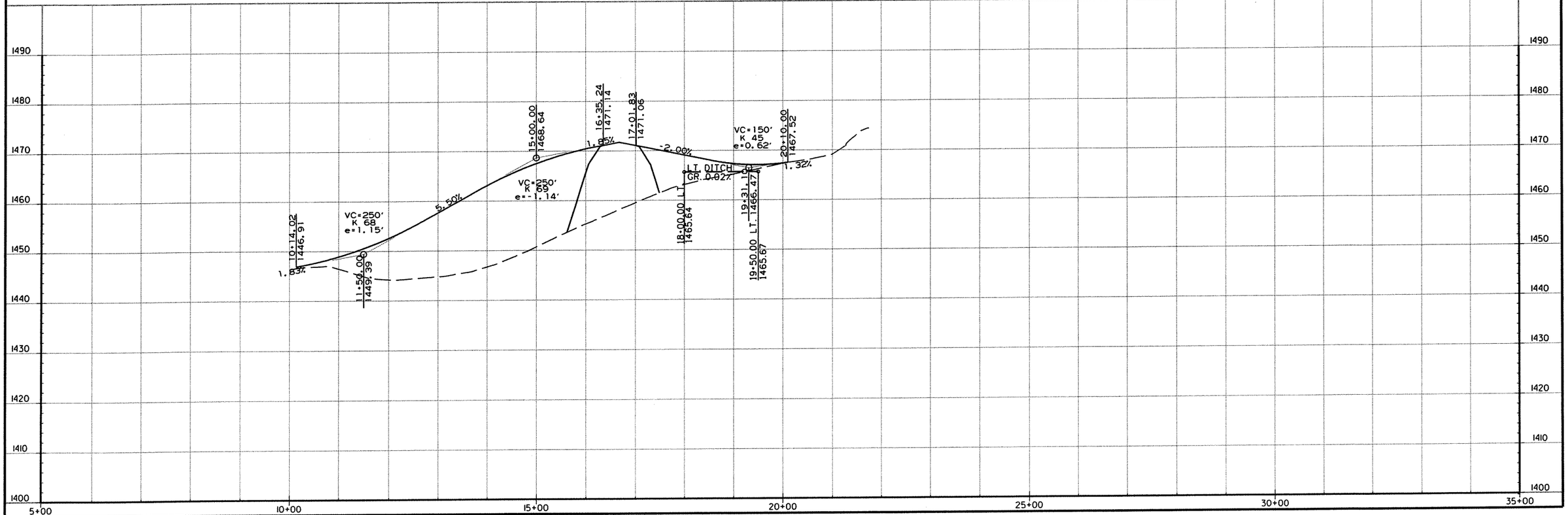
0.22%

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	152	460

(2) PLAN & PROFILE OLD LIBERTY RD.



OLD LIBERTY RD.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-20-13

r090065.dgn 4/30/2010
04-20-2010 R090065.DGN, PLAN AND PROFILE SHEETS

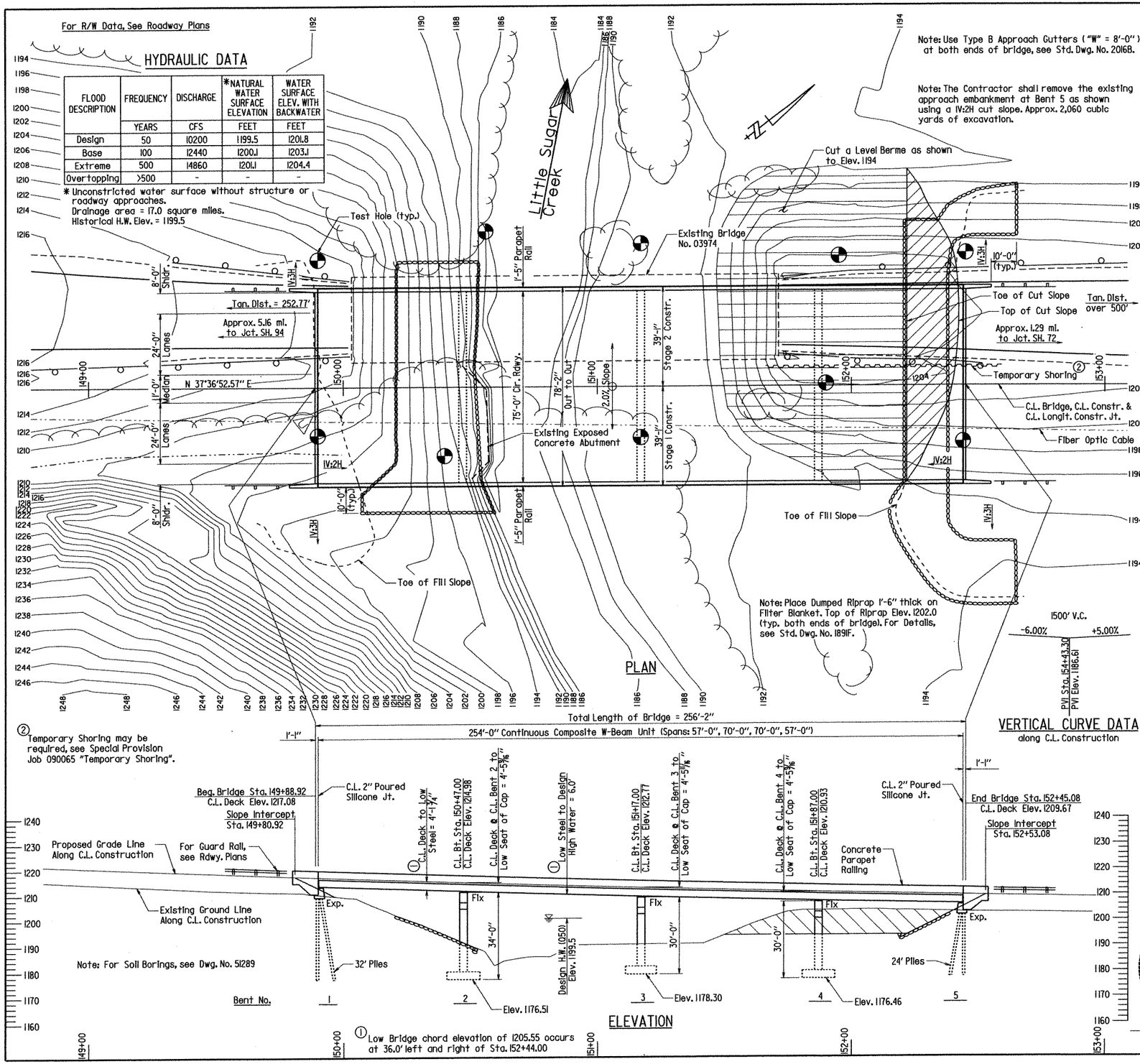
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	153	460
				① 06514		LAYOUT		51288

For R/W Data, See Roadway Plans

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	10200	1199.5	1201.8
Base	100	12440	1200.1	1203.1
Extreme	500	14860	1201.1	1204.4
Overtopping	>500	-	-	-

* Unconstricted water surface without structure or roadway approaches.
Drainage area = 17.0 square miles.
Historical H.W. Elev. = 1199.5



Note: Use Type B Approach Gutters ("W" = 8'-0") at both ends of bridge, see Std. Dwg. No. 2016B.

Note: The Contractor shall remove the existing approach embankment at Bent 5 as shown using a 1V:2H cut slope. Approx. 2,060 cubic yards of excavation.

GENERAL NOTES

BENCH MARK: 904 NGS Point Q 309, 7.88 LT. of Sta. 151+72.24, Elevation = 1206.14

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (Fourth Edition) with 2009 interim revisions.

LIVE LOADING: HL93
SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	Fy = 36,000 psi
Structural Steel (AASHTO M270, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL PILING: Piling in End Bents 1 and 5 shall be HP 12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 70 tons per pile and into the material designated as limestone on the boring legend. Length of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Actual pile lengths to be determined in the field. Piles in end bents to be driven after embankment to bottom of cap is in place. The Contractor shall use approved steel H-pile driving points on all piles.

FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as limestone on the boring legend, and shall have a minimum cover above the top of the footing of 2'-0". Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surface of rock. Excavations shall be backfilled and compacted to the level of the existing ground or finished surface in accordance with Subsection 801.08.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS:

	DRAWING NO.
End Bents	51290-51292
Int. Bents	51293-51295
Elastomeric Bearings	51296
254'-0" Continuous W-Beam Unit	51297-51302
Steel Piling	14995A
Type B Approach Gutters	2016B

EXISTING BRIDGE: The existing three-span bridge, no. 03974, (L.M. 8.68) is 33.7' wide and 170' long. The superstructure consists of a concrete deck on simple span steel W-beams. The substructure consists of columns on spread footings.

REMOVAL AND SALVAGE: After Stage 1 has been constructed and opened to traffic, existing Bridge No. 03974 shall be removed in accordance with Section 205. Portions of the existing footings which interfere with the new construction at the intermediate bents shall be removed as directed by the Engineer. The exposed concrete abutment from a previous structure shall be removed to a minimum of 2' below the finished surface or as directed by the Engineer. This work shall be considered incidental to the item "Removal of Existing Bridge Structure".

All material from the existing bridge shall become the property of the Contractor except for the salvageable guardrail and aluminum bridge railing with brackets, as determined by the Engineer, which shall remain the property of the State. The Contractor shall provide temporary storage and on site loading onto AHTD equipment for removal of salvage items from the site.

MAINTENANCE OF TRAFFIC: See Roadway Plans and Details of Stage Construction on Dwg. No. 51289A

STATE OF ARKANSAS
CHARLES P. BRAND
REGISTERED PROFESSIONAL ENGINEER
No. 14337
BRIDGE ENGINEER

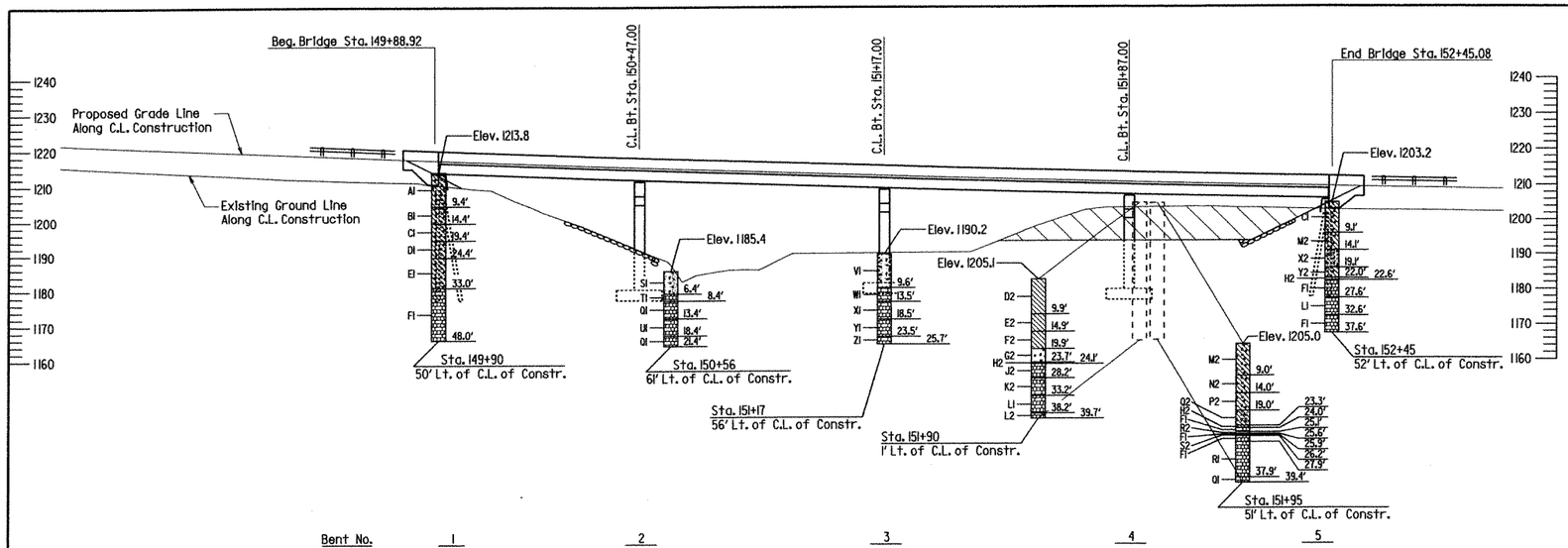
SHEET 1 OF 2
LAYOUT OF BRIDGE OVER LITTLE SUGAR CREEK
AVOCA - NORTH GARFIELD (S)
BENTON COUNTY
ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

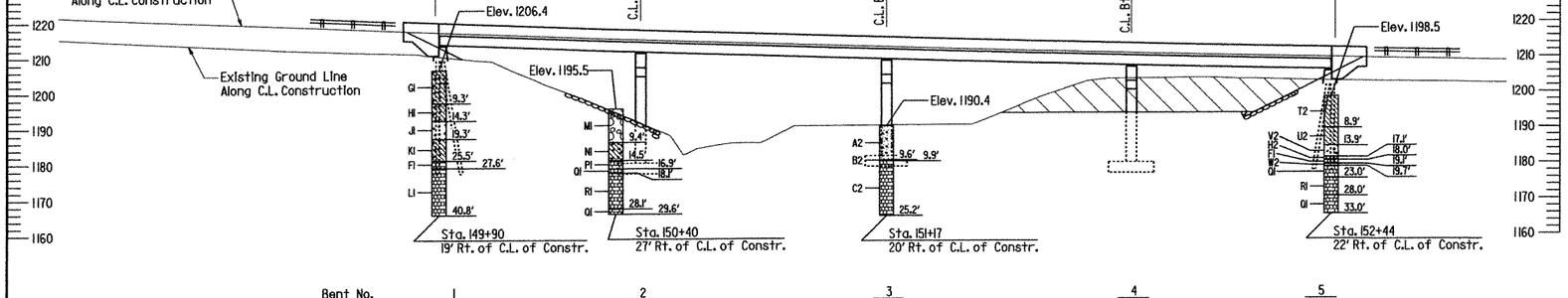
DRAWN BY: PGT DATE: 2-4-10 FILENAME: b090065_L1.dgn
CHECKED BY: AHS DATE: 3-3-10 SCALE: 1" = 20'
DESIGNED BY: PGT DATE: 1-10

BRIDGE NO. 06514 DRAWING NO. 51288

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.		090065	154	460
				(1) 06514		LAYOUT		51289



ELEVATION OF SOIL BORINGS LEFT OF C.L. CONSTR.



ELEVATION OF SOIL BORINGS RIGHT OF C.L. CONSTR.

BORING LEGEND

A1-Moist, Medium Dense, Brown and Gray Gravel (Chert and Limestone Fragments) with Clay
B1-Moist, Soft, Reddish Brown Clay with Gravel (Chert Fragments)
C1-Moist, Medium Stiff, Reddish Brown Clay with Gravel (Chert Fragments)
D1-Moist, Stiff, Reddish Brown and Gray Clay with Gravel (Chert and Limestone Fragments)
E1-Moist to Wet, Medium Dense, Brown Gravel (Chert Fragments) with Clay
F1-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip
G1-Moist, Stiff, Brown Clay with Gravel (Chert and Limestone Fragments)
H1-Moist, Very Loose, Gray Gravel (Chert and Limestone Fragments) with Clay
J1-Moist, Medium Dense, Gray Gravel (Chert and Limestone Fragments) with some Clay
K1-Moist to Wet, Medium Dense, Reddish Brown Gravel (Chert and Limestone Fragments) with Clay
L1-LIMESTONE WITH CHERT LAYERS - Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip
M1-Cobbles and Boulders
N1-Wet, Medium Dense, Brown Gravel (Chert and Limestone Fragments) with Clay
P1-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip and Highly Fractured Seams
Q1-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip
R1-LIMESTONE WITH CHERT LAYERS - Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip
S1-Wet, Very Dense, Brown Gravel (Cherty Limestone Fragments) with Sand
T1-LIMESTONE WITH CHERT SEAMS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip
U1-LIMESTONE WITH CHERT LAYERS - Gray, THICK Bedded, Slightly Weathered, Hard, with Slight Dip
V1-Wet, Medium Dense, Brown Gravel (Chert Fragments) with Sand
W1-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip and some Fractured Seams
X1-LIMESTONE WITH CHERT LAYERS - Gray, ThickBedded, Slightly Weathered, Moderately Hard, with Slight Dip
Y1-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
Z1-LIMESTONE WITH CHERT SEAMS - Gray, Medium Bedded, Slightly Weathered, Moderately Hard, with Slight Dip
A2-Wet, Medium Dense, Reddish Brown Gravel (Chert Fragments) with Sand
B2-Wet, Dense, Reddish Brown Gravel (Chert Fragments) with Sand
C2-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip
D2-Moist, Soft, Reddish Brown Clay with some Gravel
E2-Moist, Medium Stiff, Reddish Brown Clay with some Gravel (Limestone Fragments)
F2-Moist, Medium Stiff, Brown Clay with some Gravel (Chert Fragments)
G2-Moist, Medium Dense, Reddish Brown and Gray Gravel (Chert Fragments)
H2-LIMESTONE - Gray, Hard
J2-LIMESTONE WITH CHERT LAYERS - Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip
K2-LIMESTONE WITH CHERT LAYERS - Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and some Vertical Fractures
L2-LIMESTONE WITH CHERT LAYERS - Gray, Thin Bedded, Slightly Weathered, Hard, with Slight Dip
M2-Moist, Stiff, Reddish Brown Clay with Gravel (Chert Fragments)
N2-Moist, Medium Stiff, Reddish Brown Clay with Gravel (Chert and Limestone Fragments)
P2-Moist, Very Stiff, Reddish Brown Clay with Gravel (Chert Fragments) and some Sand
Q2-Moist, Stiff, Reddish Brown Clay with Sand and Gravel (Chert Fragments)
R2-Cavity (25.1' to 25.6')
S2-Cavity (25.9' to 26.2')
T2-Moist, Soft, Brown Clay with some Gravel
U2-Wet, Soft, Brown Clay with some Gravel
V2-Wet, Medium Dense, Reddish Brown and Gray Gravel (Chert Fragments)
W2-Cavity (19.1' to 19.7')
X2-Wet, Loose, Reddish Brown Gravel (Chert Fragments) with Sand and Clay
Y2-Wet, Stiff, Reddish Brown Gravelly Clay

"N" VALUES

Sta. 149+90 - 50' Lt. of C.L. of Constr.
4.9- 5.9, N=16
9.9- 10.9, N=4
14.9- 15.9, N=6
19.9- 20.9, N=11
24.9- 25.9, N=19
29.9- 30.9, N=24
32.9- 33.0, N=15(1")

Sta. 149+90 - 19' Rt. of C.L. of Constr.
4.8- 5.8, N=9
9.8- 10.8, N=4
14.8- 15.8, N=12
19.8- 20.8, N=14
24.8- 25.4, N=27(7")

Sta. 150+40 - 27' Rt. of C.L. of Constr.
9.9- 10.9, N=12
14.4- 14.5, N=16(1")

Sta. 150+56 - 61' Lt. of C.L. of Constr.
5.0- 5.2, N=60(3")
6.3- 6.4, N=12(1")

Sta. 151+17 - 56' Lt. of C.L. of Constr.
5.0- 6.0, N=15
9.5- 9.6, N=20(1")

Sta. 151+17 - 20' Rt. of C.L. of Constr.
5.1- 6.1, N=23
9.6- 9.9, N=21(3")

Sta. 151+90 - 1' Lt. of C.L. of Constr.
5.4- 6.4, N=4
10.4- 11.4, N=5
15.4- 16.4, N=7
20.4- 21.4, N=13

Sta. 151+95 - 51' Lt. of C.L. of Constr.
4.5- 5.5, N=13
9.5- 10.5, N=7
14.5- 15.5, N=17
19.5- 20.5, N=9

Sta. 152+44 - 22' Rt. of C.L. of Constr.
4.4- 5.4, N=4
9.4- 10.4, N=4
14.4- 15.4, N=17

Sta. 152+45 - 52' Lt. of C.L. of Constr.
4.6- 5.6, N=7
9.6- 10.6, N=11
14.6- 15.6, N=10
19.6- 20.6, N=11
22.5- 22.6, N=12(1")

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
2/15/11
CHARLES P. BRANTLEY
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE OVER LITTLE SUGAR CREEK
AVOCA - NORTH GARFIELD (S)
BENTON COUNTY
ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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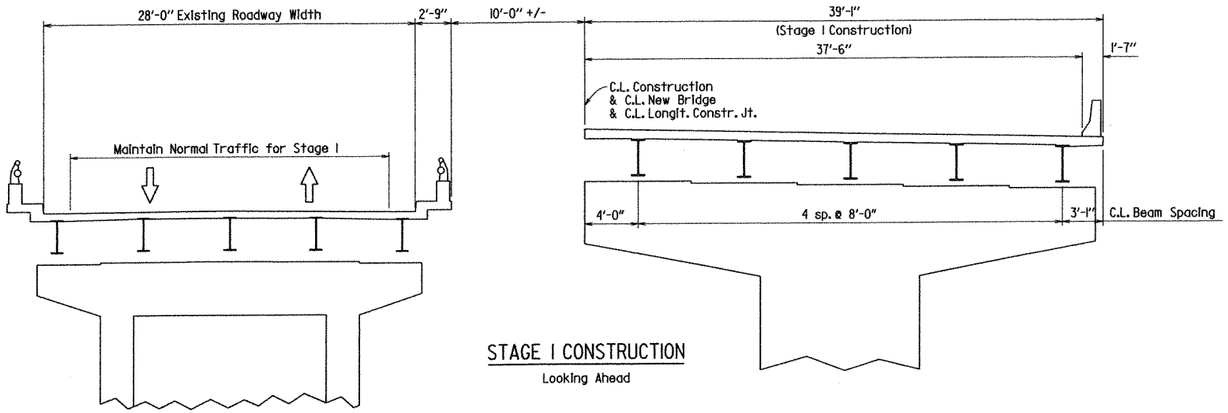
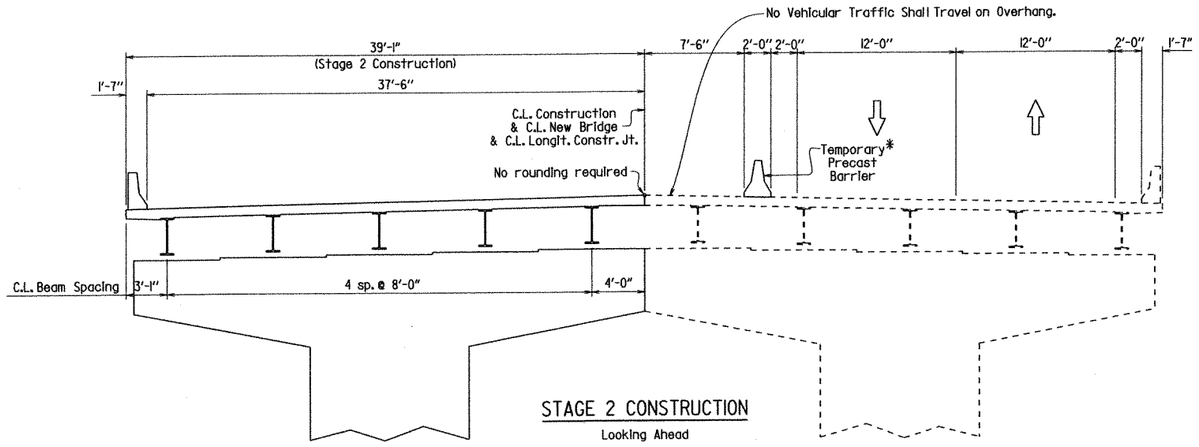
CHECKED BY: [illegible] DATE: 3-3-10 SCALE: 1" = 20'
DESIGNED BY: PGT DATE: 1-10
BRIDGE NO. 06514 DRAWING NO. 51289

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.		090065	155	460
				06514		STAGE CONSTR.		51289A



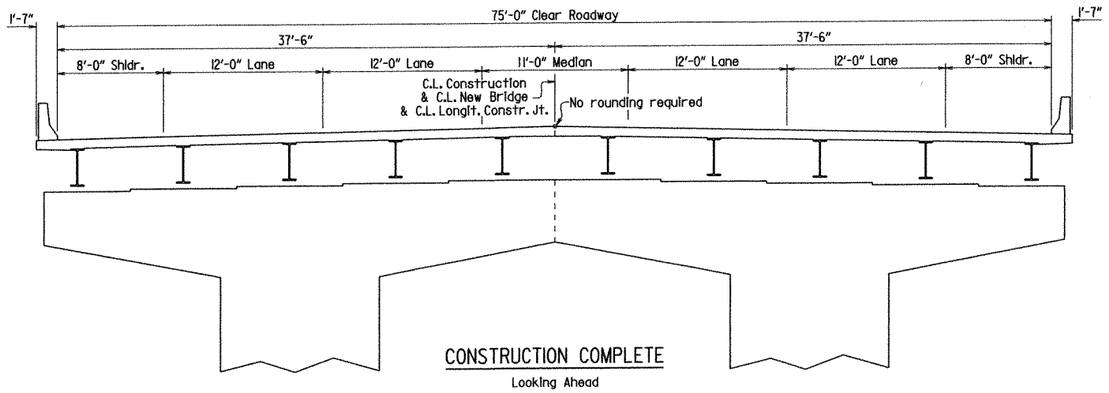
STAGE 1 CONSTRUCTION

Looking Ahead



STAGE 2 CONSTRUCTION

Looking Ahead



CONSTRUCTION COMPLETE

Looking Ahead

*Do not cast threaded inserts into bridge deck.

NOTE: See Roadway Plans for details of staged roadway construction.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF STAGE CONSTRUCTION LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 12-21-09 FILENAME: b090065_scl.dgn

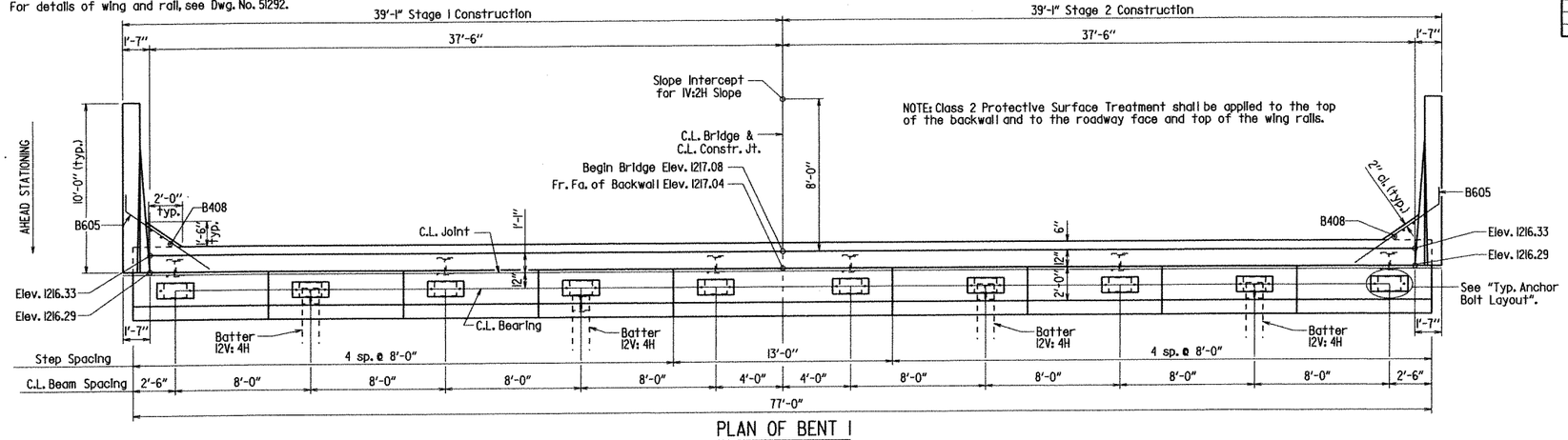
CHECKED BY: AMS DATE: 3-3-10 SCALE: 3/16" = 1'-0"

DESIGNED BY: PGT DATE: 12-09

BRIDGE NO. 06514 DRAWING NO. 51289A

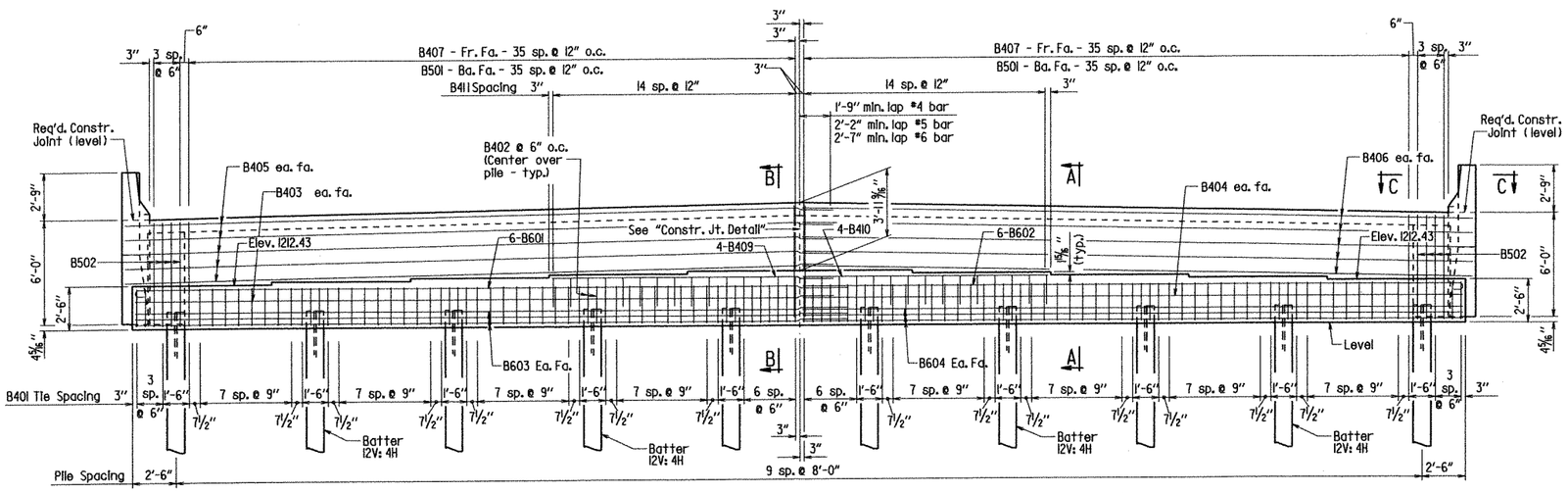
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	156	460
				(1) 06514		END BENTS		51290

For details of wing and rail, see Dwg. No. 51292.



PLAN OF BENT 1

1/4" = 1'-0"



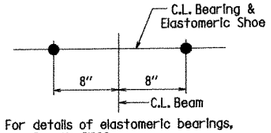
ELEVATION OF BENT 1

1/4" = 1'-0"

Looking Back

NOTE: For "Section C-C" and General Notes, see Dwg. No. 51291.

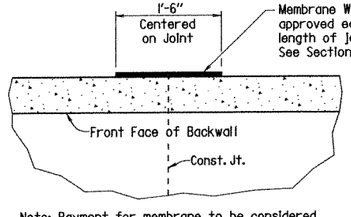
NOTE: Longitudinal reinforcing bars in the cap and backwall may require threaded type mechanical rebar splices to minimize interference with Stage 2 pile driving. Mechanical couplers may be used in the regions of conflict only, shall be a QPL approved type and shall maintain a minimum concrete cover of 2". Mechanical couplers shall develop at least 125% of the specified yield strength of the reinforcing steel. Mechanical couplers, if required, shall be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)".



For details of elastomeric bearings, see Dwg. No. 51296.

TYP. ANCHOR BOLT LAYOUT

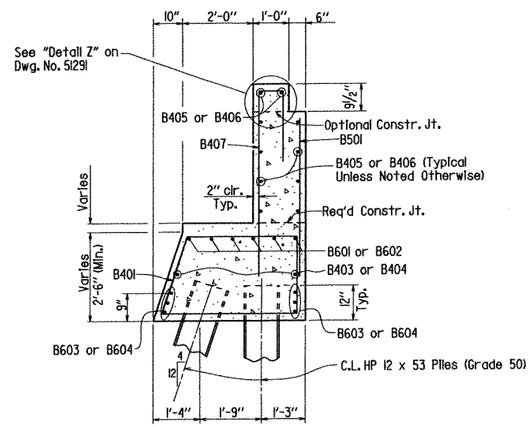
No Scale



Note: Payment for membrane to be considered subsidiary to Class S Concrete-Bridge.

CONSTRUCTION JOINT DETAIL

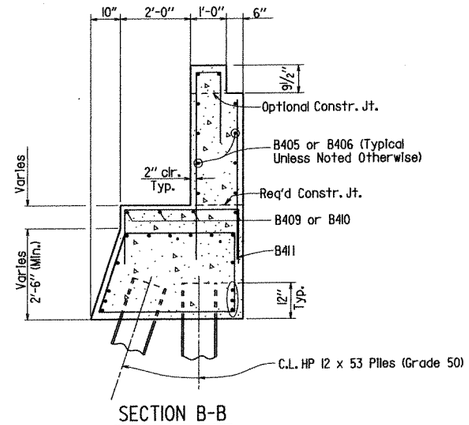
No Scale



SECTION A-A

Scale: 1/2" = 1'-0"

NOTE: The Backwall above the required construction joint shall not be poured until the beams are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See Dwg. No. 51298, "Expansion Device Installation at End Bents", for additional information.



SECTION B-B

Scale: 1/2" = 1'-0"

NOTE: Reinforcing bars and dimensions not labelled are similar to those shown in "Section A-A".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
2/17/11

BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF END BENTS 1 & 5
LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

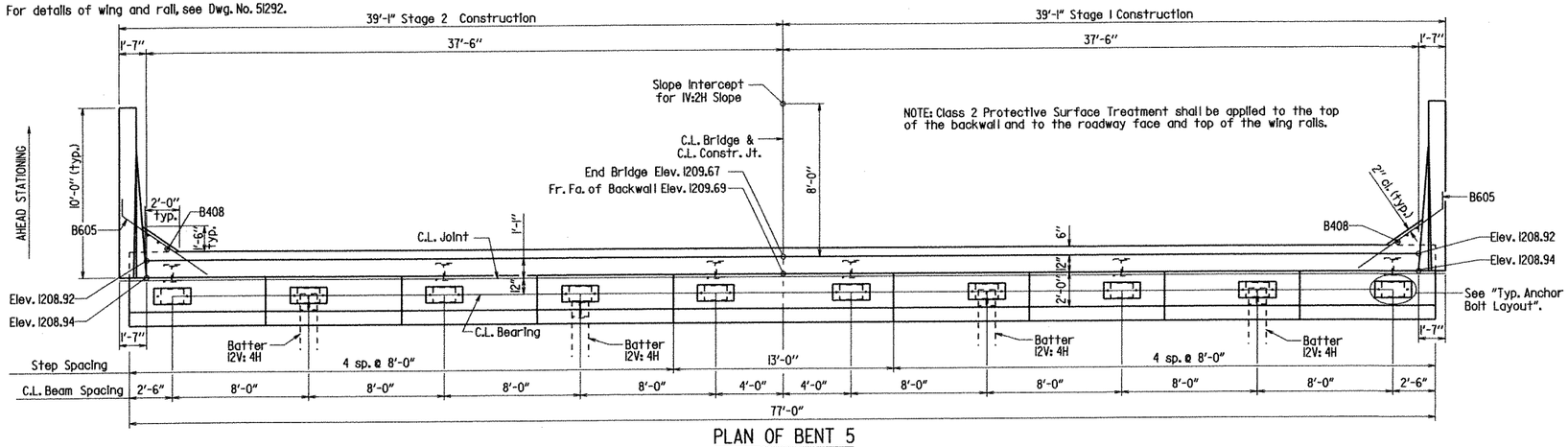
LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 6-22-10 FILENAME: b090065_bl.dgn
CHECKED BY: JYP DATE: 2-16-11 SCALE: As Shown
DESIGNED BY: KWY DATE: 6-10

BRIDGE NO. 06514 DRAWING NO. 51290

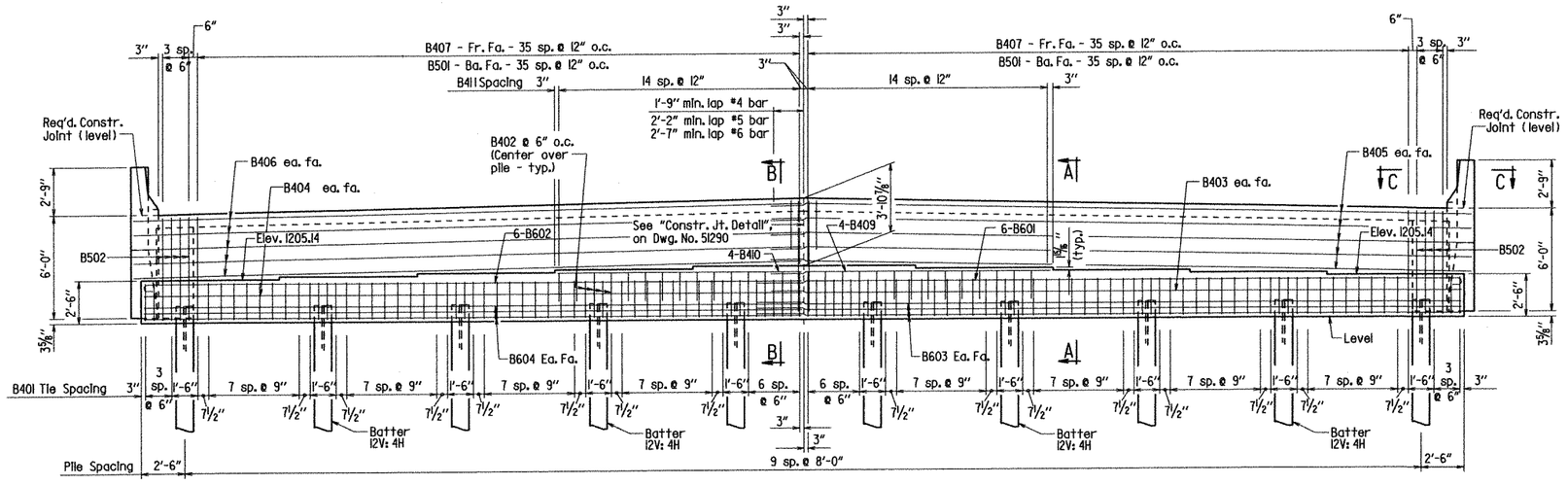
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	157	460
				1 06514		END BENTS		51291

For details of wing and rail, see Dwg. No. 51292.



PLAN OF BENT 5

1/4" = 1'-0"



ELEVATION OF BENT 5

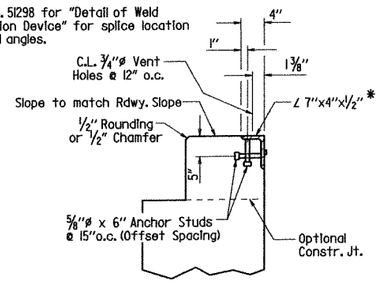
1/4" = 1'-0"

Looking Ahead

NOTE: Longitudinal reinforcing bars in the cap and backwall may require threaded type mechanical rebar splices to minimize interference with Stage 2 pile driving. Mechanical couplers may be used in the regions of conflict only, shall be a QPL approved type and shall maintain a minimum concrete cover of 2". Mechanical couplers shall develop at least 125% of the specified yield strength of the reinforcing steel. Mechanical couplers, if required, shall be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)".

NOTE: For "Section A-A", "Section B-B", and Typ. Anchor Bolt Layout, see Dwg. No. 51290.

*See Dwg. No. 51298 for "Detail of Weld for Expansion Device" for splice location of backwall angles.

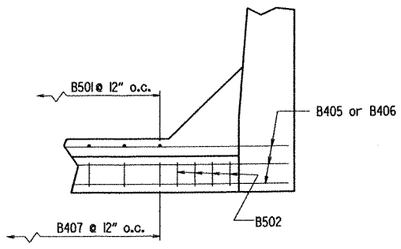


NOTES: For additional joint details, see Dwg. No. 51298.

Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Z

No Scale



SECTION C-C

1/2" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi.).

All piling shall be Grade 50.

Structural steel in end bents shall be M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13537 CHARLES P. BRAND 9/17/11

BRIDGE ENGINEER

SHEET 2 OF 3

DETAILS OF END BENTS 1 & 5
LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

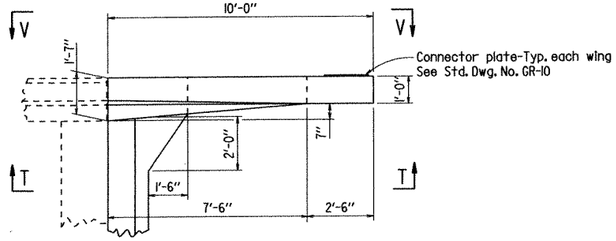
DRAWN BY: PGT DATE: 6-22-10 FILENAME: b090065_b1.dgn

CHECKED BY: JWP DATE: 2-16-11 SCALE: As Shown

DESIGNED BY: KWH DATE: 6-10

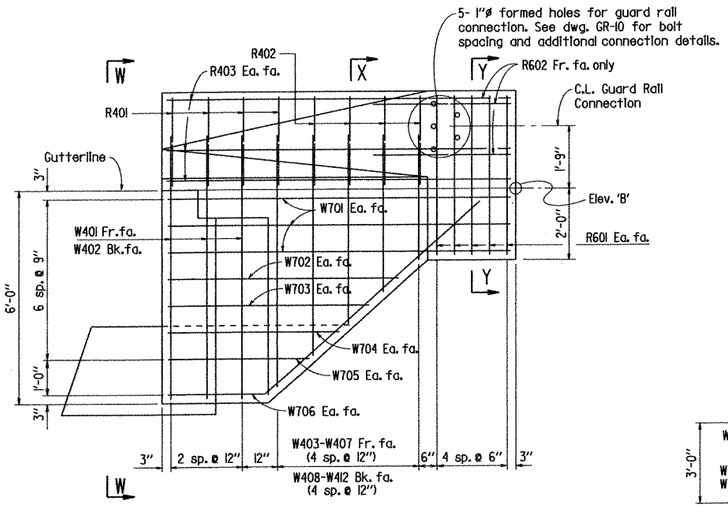
BRIDGE NO. 06514 DRAWING NO. 51291

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.		090065	158	460
				(1) 06514		END BENTS		51292



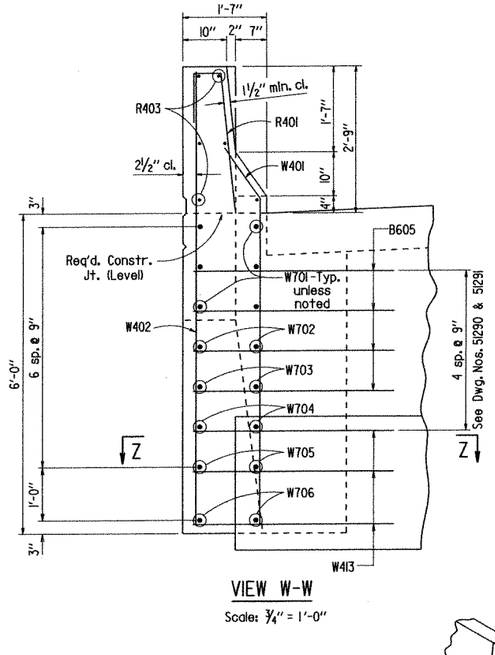
PLAN OF RAIL

Scale: 3/8" = 1'-0"



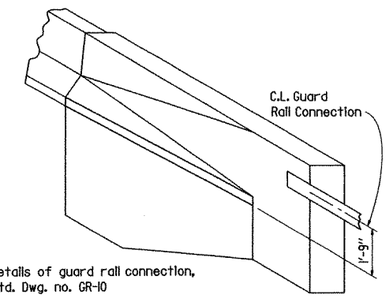
VIEW T-T

Scale: 1/2"= 1'-0"

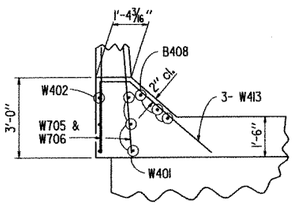


VIEW W-W

Scale: 3/4" = 1'-0"



For details of guard rail connection, See Std. Dwg. no. GR-10



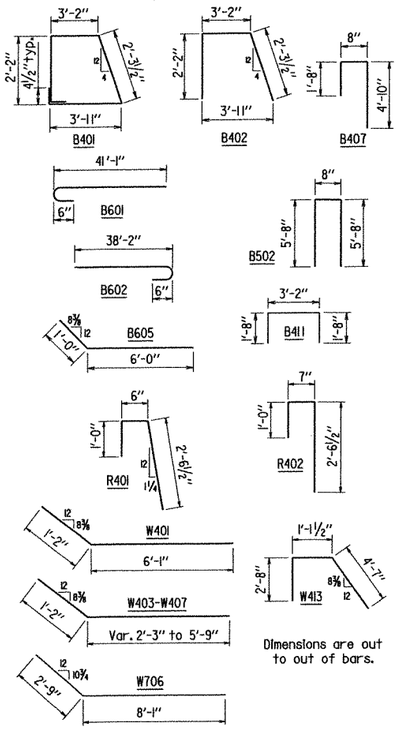
SECTION Z-Z

Scale: 3/8" = 1'-0"

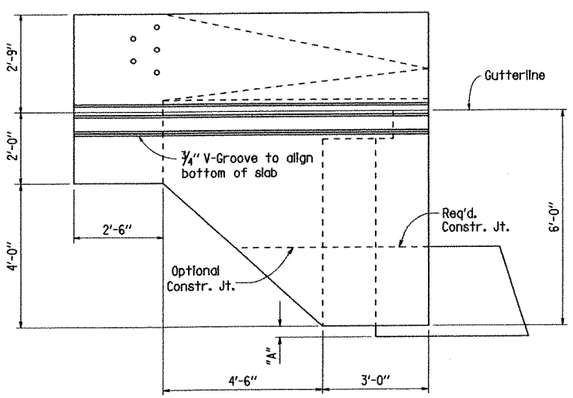
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	102	11'-11"	2"
B402	20	7'-6"	2"
B403	2	40'-3"	Str.
B404	2	38'-2"	Str.
B405	10	40'-11"	Str.
B406	10	38'-9"	Str.
B407	72	7'-0"	2"
B408	6	4'-10"	Str.
B409	4	16'-3"	Str.
B410	4	14'-2"	Str.
B411	30	6'-4"	2"
B501	72	4'-1"	Str.
B502	8	11'-9"	2½"
B601	6	41'-9"	4½"
B602	6	38'-10"	4½"
B603	6	41'-1"	Str.
B604	6	38'-2"	Str.
B605	8	7'-0"	4½"
R401	8	3'-11"	2"
R402	8	4'-0"	2"
R403	12	9'-8"	Str.
R601	20	4'-5"	Str.
R602	6	5'-0"	Str.
W401	6	7'-3"	2"
W402	6	8'-5"	Str.
W403-W407	2 each	Var. 3'-5" to 6'-11"	2"
W408-W412	2 each	Var. 4'-7" to 8'-1"	Str.
W413	6	8'-3"	2"
W701	12	9'-8"	Str.
W702	4	6'-6"	Str.
W703	4	5'-8"	Str.
W704	4	4'-10"	Str.
W705	4	3'-11"	Str.
W706	4	10'-10"	5¼"

BENDING DIAGRAMS

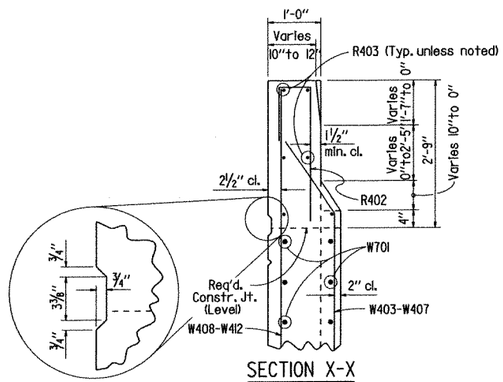


Dimensions are out to out of bars.



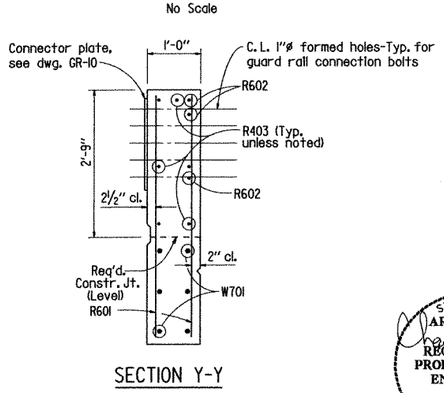
VIEW V-V

Scale: 1/2"= 1'-0"



SECTION X-X

Scael: 3/4" = 1'-0"



SECTION Y-Y

Scale: 3/4"= 1'-0"

THREE DIMENSIONAL VIEW OF RAIL

No Scale

TABLE OF VARIABLES

BENT	"A"	Elev. "B"
1	4 5/16"	1216.68
5	3 5/8"	1208.74

STATE OF ARKANSAS
CHARLES P. BRAND
No. 4337
REGISTERED PROFESSIONAL ENGINEER
2/14/11

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS 1 & 5
LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

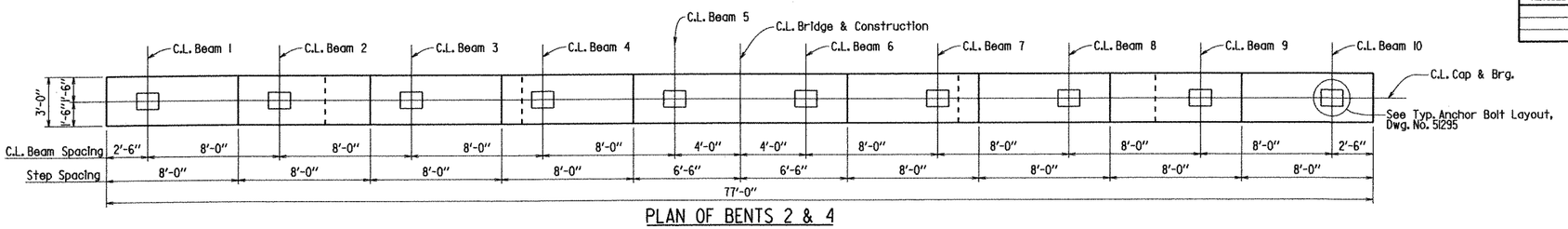
DRAWN BY: PGT DATE: 6-22-10 FILENAME: b090065_b1.dgn

CHECKED BY: JNP DATE: 2-16-11 SCALE: As Shown

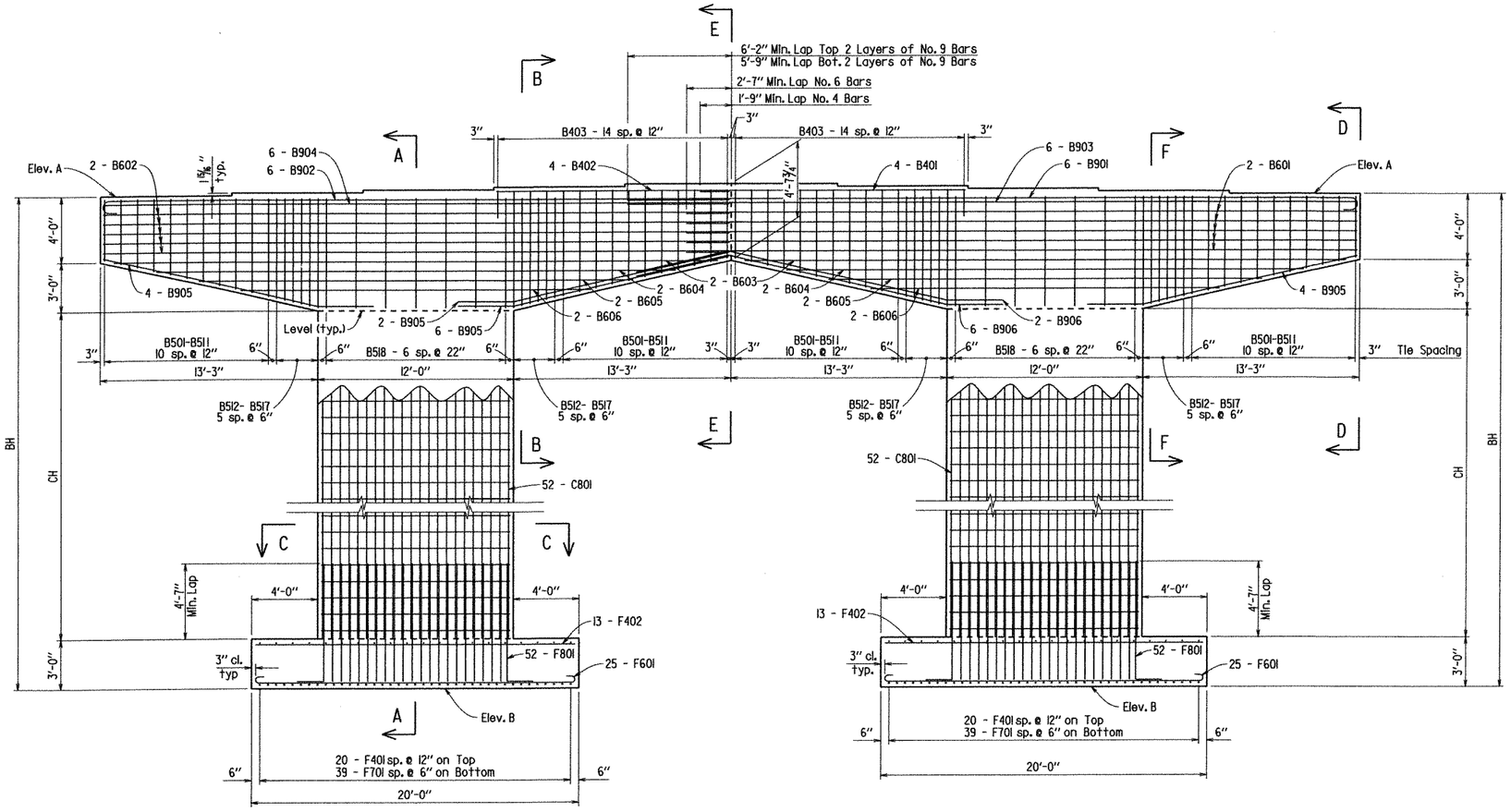
DESIGNED BY: KWH DATE: 6-10

BRIDGE NO. 06514 DRAWING NO. 51292

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.		090065	159	460
				(1) 06514		INT. BENTS		51293

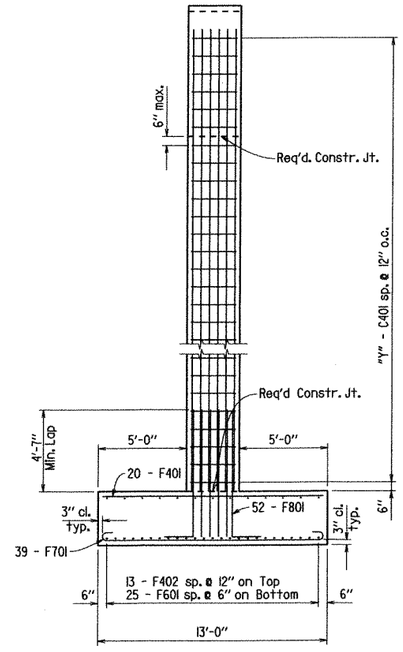


PLAN OF BENTS 2 & 4



ELEVATION OF BENTS 2 & 4

Looking Ahead



SECTION A - A

TABLE OF VARIABLES

Bent No.	BH	CH	Elev. A	Elev. B	"Y"
2	34'-0"	24'-0"	1210.51	1176.51	60
4	30'-0"	20'-0"	1206.46	1176.46	52

Note: For "Section B-B", "Section C-C", "Section D-D", "Section E-E", "Section F-F", Bar List, and General Notes, See Dwg. No. 51295

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4437
2/17/11
CHARLES P. BRAND
BRIDGE ENGINEER

DETAILS OF INT. BENT NOS. 2 & 4 LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

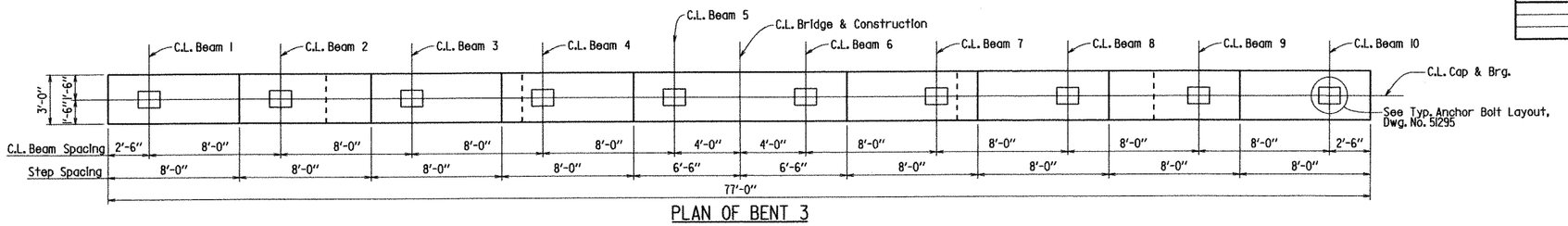
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

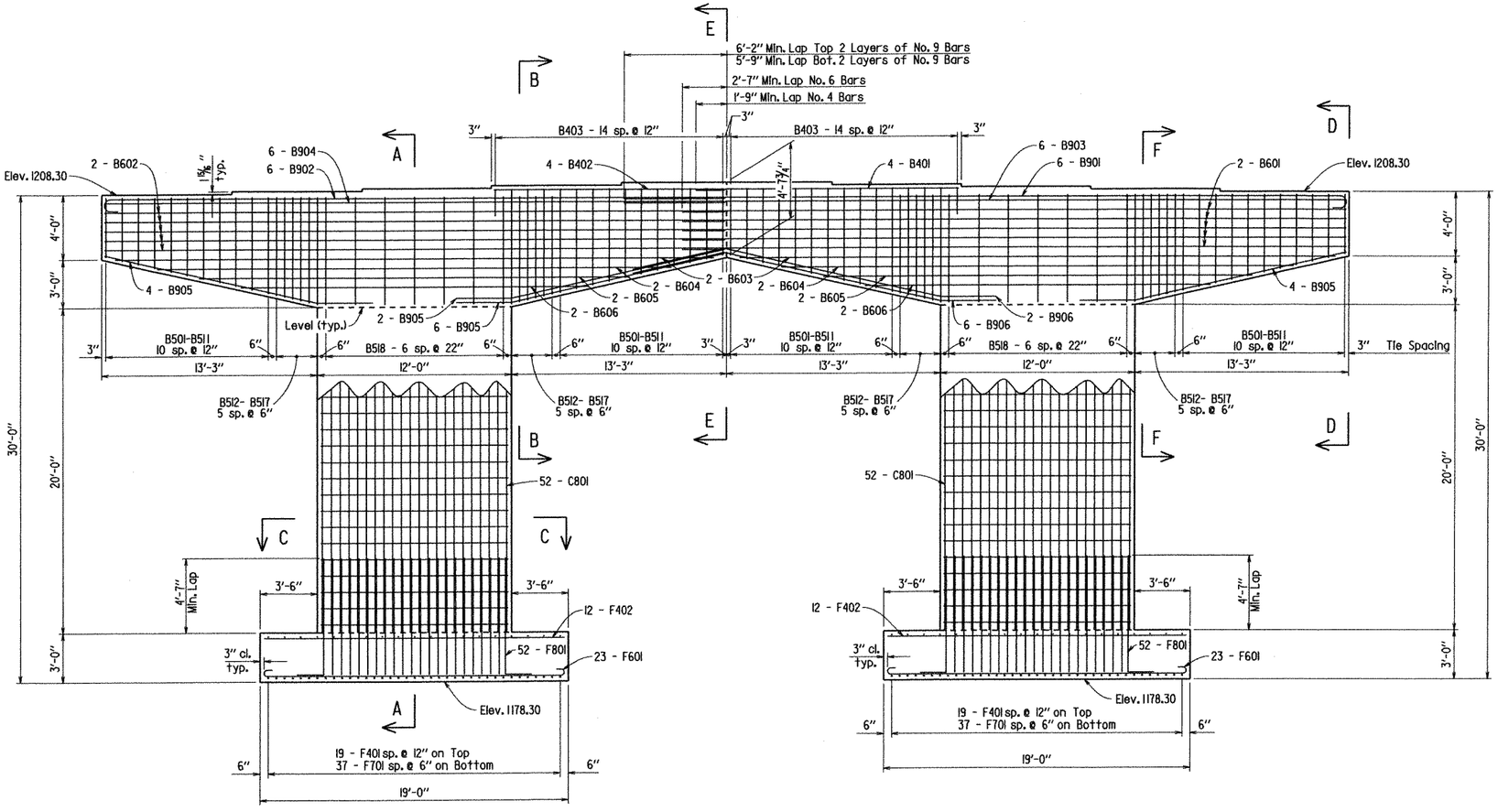
DRAWN BY: PGT DATE: 6-18-10 FILENAME: b090065_b2.dgn
CHECKED BY: JHP DATE: 2-16-11 SCALE: 1/4" = 1'-0"
DESIGNED BY: KWH DATE: 5-10

BRIDGE NO. 06514 DRAWING NO. 51293

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.		090065	160	460
				06514		INT. BENTS		51294



PLAN OF BENT 3



ELEVATION OF BENT 3

Looking Ahead

SECTION A - A

Note: For "Section B-B", "Section C-C", "Section D-D", "Section E-E", "Section F-F", Bar List, and General Notes, See Dwg. No. 51295

STATE OF ARKANSAS
CHARLES P. BRAND
No. 4537
REGISTERED PROFESSIONAL ENGINEER
2011
BRIDGE ENGINEER

DETAILS OF INT. BENT NO. 3 LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 7-1-10 FILENAME: b090065_b2.dgn
CHECKED BY: JHP DATE: 2-14-11 SCALE: 1/4" = 1'-0"
DESIGNED BY: PGT DATE: 5-10

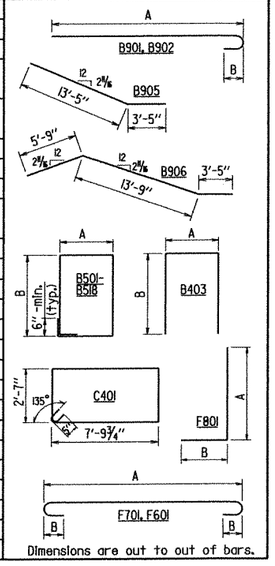
BRIDGE NO. 06514 DRAWING NO. 51294

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.		090065	161	460
				① 06514		INT. BENTS		51295

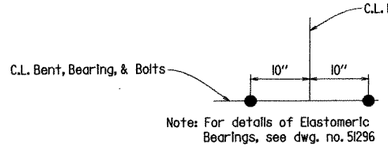
BAR LIST PER BENT

BENT 2						BENT 3						BENT 4					
Mark	No. Req'd.	Length	A	B	Pin Dia.	Mark	No. Req'd.	Length	A	B	Pin Dia.	Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	4	16'-3"			Str.	B401	4	16'-3"			Str.	B401	4	16'-3"			Str.
B402	4	14'-2"			Str.	B402	4	14'-2"			Str.	B402	4	14'-2"			Str.
B403	30	5'-10"	2'-8"	1'-8"	2"	B403	30	5'-10"	2'-8"	1'-8"	2"	B403	30	5'-10"	2'-8"	1'-8"	2"
B501-B511	4 ea.	13'-3" to 17'-9½"	2'-8"	3'-8½"to 5'-11¾"	2½"	B501-B511	4 ea.	13'-3" to 17'-9½"	2'-8"	3'-8½"to 5'-11¾"	2½"	B501-B511	4 ea.	13'-3" to 17'-9½"	2'-8"	3'-8½"to 5'-11¾"	2½"
B512-B517	4 ea.	18'-0" to 19'-1½"	2'-8"	6'-1"to 6'-7¾"	2½"	B512-B517	4 ea.	18'-0" to 19'-1½"	2'-8"	6'-1"to 6'-7¾"	2½"	B512-B517	4 ea.	18'-0" to 19'-1½"	2'-8"	6'-1"to 6'-7¾"	2½"
B518	14	19'-2"	2'-8"	6'-8"	2½"	B518	14	19'-2"	2'-8"	6'-8"	2½"	B518	14	19'-2"	2'-8"	6'-8"	2½"
B601	10	41'-1"			Str.	B601	10	41'-1"			Str.	B601	10	41'-1"			Str.
B602	10	38'-2"			Str.	B602	10	38'-2"			Str.	B602	10	38'-2"			Str.
B603-B606	4 ea.	36'-10¼" to 21'-4¾"			Str.	B603-B606	4 ea.	36'-10¼" to 21'-4¾"			Str.	B603-B606	4 ea.	36'-10¼" to 21'-4¾"			Str.
B901	6	45'-11"	44'-8"	10"	9"	B901	6	45'-11"	44'-8"	10"	9"	B901	6	45'-11"	44'-8"	10"	9"
B902	6	39'-5"	38'-2"	10"	9"	B902	6	39'-5"	38'-2"	10"	9"	B902	6	39'-5"	38'-2"	10"	9"
B903	6	44'-8"			Str.	B903	6	44'-8"			Str.	B903	6	44'-8"			Str.
B904	6	38'-2"			Str.	B904	6	38'-2"			Str.	B904	6	38'-2"			Str.
B905	16	16'-10"			9"	B905	16	16'-10"			9"	B905	16	16'-10"			9"
B906	8	23'-1"			9"	B906	8	23'-1"			9"	B906	8	23'-1"			9"
C401	120	21'-3½"	2'-7"	7'-9¾"	3"	C401	104	21'-3½"	2'-7"	7'-9¾"	3"	C401	104	21'-3½"	2'-7"	7'-9¾"	3"
C801	104	30'-0"			Str.	C801	104	26'-0"			Str.	C801	104	26'-0"			Str.
F401	20	12'-6"			Str.	F401	19	11'-6"			Str.	F401	20	12'-6"			Str.
F402	13	19'-6"			Str.	F402	12	18'-6"			Str.	F402	13	19'-6"			Str.
F601	25	20'-10"	19'-6"	6"	4½"	F601	23	19'-10"	18'-6"	6"	4½"	F601	25	20'-10"	19'-6"	6"	4½"
F701	39	14'-2"	12'-6"	7"	5¼"	F701	37	13'-2"	11'-6"	7"	5¼"	F701	39	14'-2"	12'-6"	7"	5¼"
F801	104	10'-4"	9'-2½"	1'-4"	9"	F801	104	10'-4"	9'-2½"	1'-4"	9"	F801	104	10'-4"	9'-2½"	1'-4"	9"

Bending Diagrams



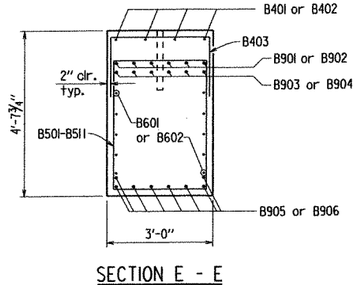
Dimensions are out to out of bars.



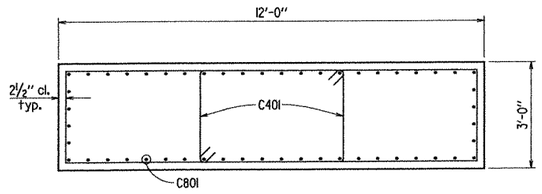
Note: For details of Elastomeric Bearings, see dwg. no. 51296

TYP. ANCHOR BOLT LAYOUT

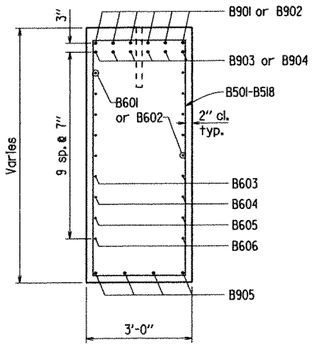
1" = 1'-0"



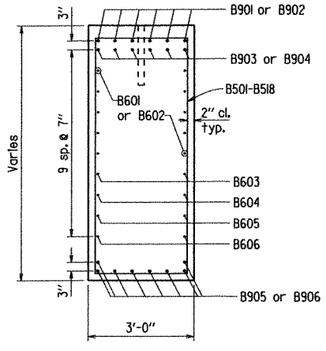
SECTION E - E



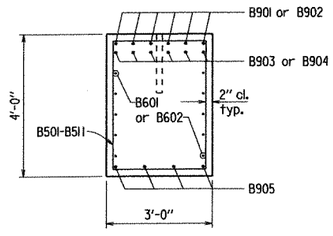
SECTION C - C



SECTION F - F



SECTION B - B



VEIW D - D

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi.).

If anchor bolts are drilled, the top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

COMMON DETAILS OF INT. BENTS LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

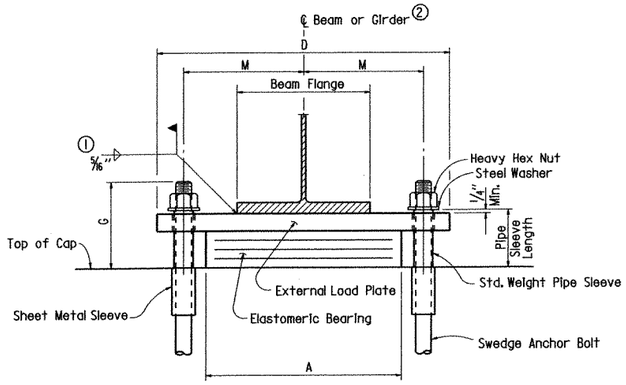
DRAWN BY: PGT DATE: 7-1-10 FILENAME: b090065_b2.dgn

CHECKED BY: JNP DATE: 2-16-11 SCALE: ½" = 1'-0" or as shown

DESIGNED BY: KWH DATE: 5-10

BRIDGE NO. 06514 DRAWING NO. 51295

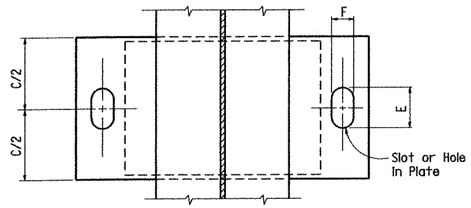
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090065	162	460
				① 06514		ELASTOMERIC BEARINGS		51296



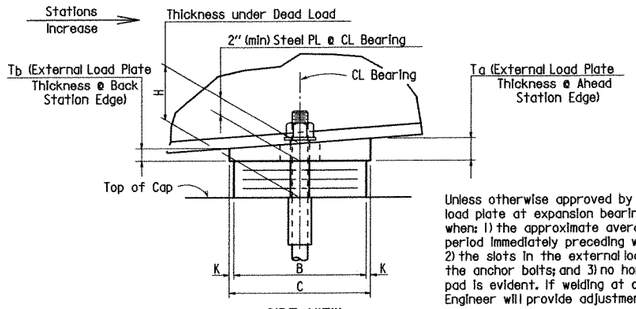
FRONT VIEW

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L Elastomeric pad shall be aligned with C.L. Beam.

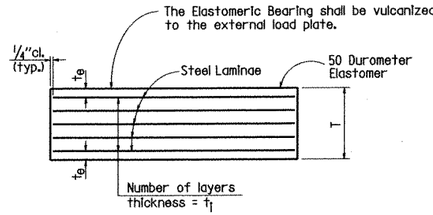


PLAN VIEW



SIDE VIEW

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

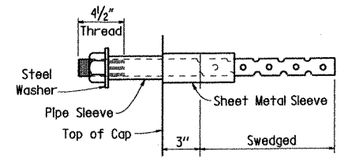


t_e = thickness of elastomer cover on top and bottom of pad

t_l = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_l

ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

NOTE: 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)"

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION BENT NO(S).	LOCATION BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD A	B	N	t_l	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE C	D	E	F	K	M	T_a	T_b	ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
06514	1	All	Exp	10	89	7 1/2"	5"	11 1/2"	8 1/2"	4	1/2"	1/4"	5 @ 12 Ga.	3"	9 1/2"	21"	4"	2"	1/2"	8"	1.82"	2.18"	1 1/4" x 22"	55	1 1/4" x 5 1/4"	3" x 11"	2 1/2"
	2	All	Fix	10	188	7 1/8"	3 13/16"	14 1/2"	12"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	13"	26 1/2"	3 1/8"	3 1/8"	1/2"	10"	1.78"	2.22"	2" x 31"	55	2 1/2" x 4 1/8"	4" x 14"	3 3/4"
	3	All	Fix	10	191	7 1/8"	3 13/16"	14 1/2"	12"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	13"	26 1/2"	3 1/8"	3 1/8"	1/2"	10"	1.81"	2.19"	2" x 31"	55	2 1/2" x 4 1/8"	4" x 14"	3 3/4"
	4	All	Fix	10	188	7 1/8"	3 13/16"	14 1/2"	12"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	13"	26 1/2"	3 1/8"	3 1/8"	1/2"	10"	1.85"	2.15"	2" x 31"	55	2 1/2" x 4 1/8"	4" x 14"	3 3/4"
	5	All	Exp	10	89	7 1/2"	5"	11 1/2"	8 1/2"	4	1/2"	1/4"	5 @ 12 Ga.	3"	9 1/2"	21"	4"	2"	1/2"	8"	1.91"	2.09"	1 1/4" x 22"	55	1 1/4" x 5 1/4"	3" x 11"	2 1/2"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

STATE OF ARKANSAS
CHARLES P. BRAND
REGISTERED PROFESSIONAL ENGINEER
No. 4337
2/11/11

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
LITTLE SUGAR CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 7/6/10 FILENAME: b090065_ei.dgn

CHECKED BY: JNP DATE: 2-16-11 SCALE: NONE

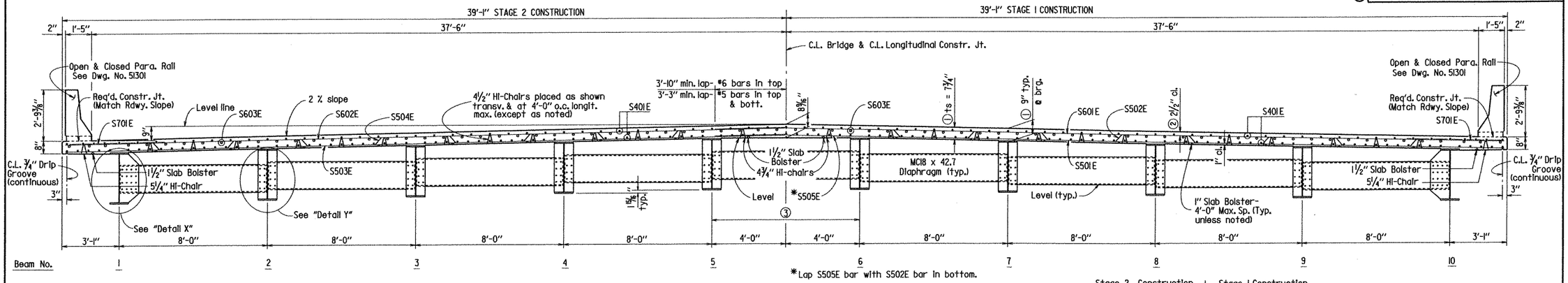
DESIGNED BY: PGT DATE: 2-10

BRIDGE NO. 06514 DRAWING NO. 51296

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.		090065	163	460
① 06514		Cont. Unit		51297

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway surface and to the Face & Top of the Concrete Parapet Rail.



*Lap S505E bar with S502E bar in bottom.

TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

Slab Reinforcing:

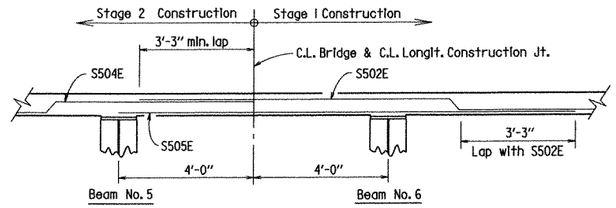
Transverse: S601E in top, S501E in bottom @ 15" o.c. — Alternate in Stage 1
S502E @ 15" o.c. bent up over beams & lapped with S505E
S602E in top, S503E in bottom @ 15" o.c. — Alternate in Stage 2
S504E @ 15" o.c. bent up over beams
S701E @ 15" o.c. in top of overhangs

Longitudinal: S401E placed as shown in top & bottom (12" max. sp.)
S603E placed as shown over interior supports. See "Reinforcing Plan & Slab Pouring Sequence" Dwg. No. 51300.

① See "Adjustment for Slab Thickness Tolerance"

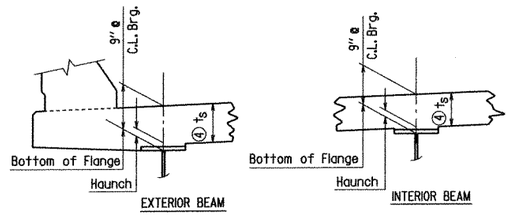
② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

③ Before the Stage 2 deck pour, loosely install as many bolts as possible on both ends of the diaphragms 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. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the Stage 2 deck pour.



LAP DETAIL OF TRUSSED BARS

NTS



④ Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

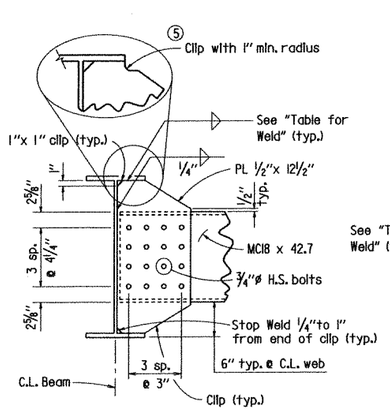
Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 149?1 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

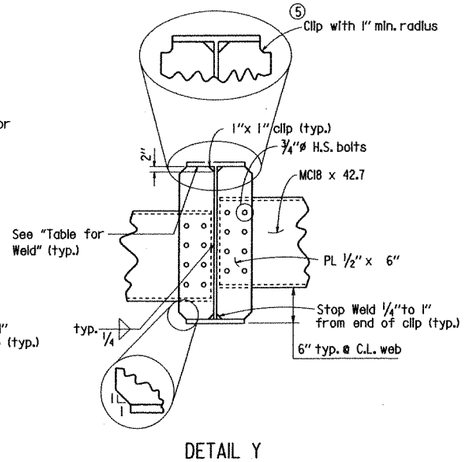
NTS

⑤ If permanent steel bridge deck forms are used, the Fabricator shall clip plate as necessary to accomodate the deck form supports.



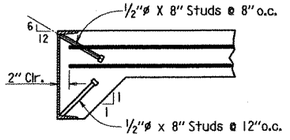
DETAIL X

NTS



DETAIL Y

NTS



ANCHOR DETAIL

NTS

Note: As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

STATE OF ARKANSAS
CHARLES P. BRAND
REGISTERED PROFESSIONAL ENGINEER
No. 1337

BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 254'-0" CONTINUOUS W-BEAM UNIT LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

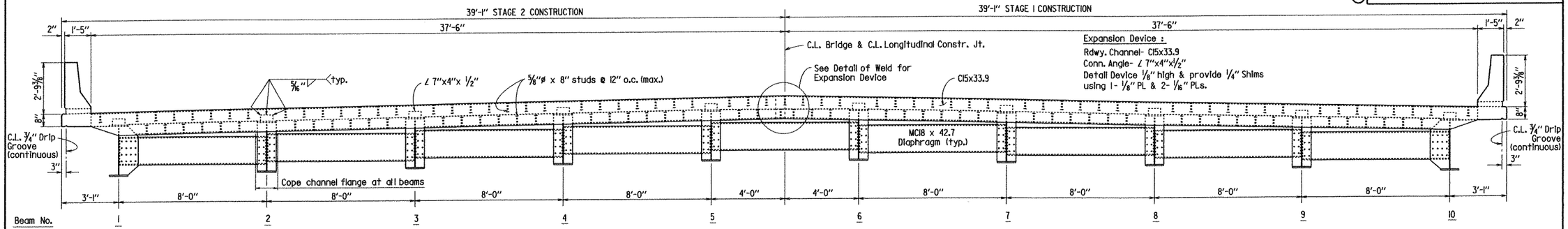
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 2-11-10 FILENAME: b090065_sl.dgn
CHECKED BY: JNP DATE: 2-14-11 SCALE: ⅜" = 1'-0" or as shown
DESIGNED BY: PGT DATE: 1-10

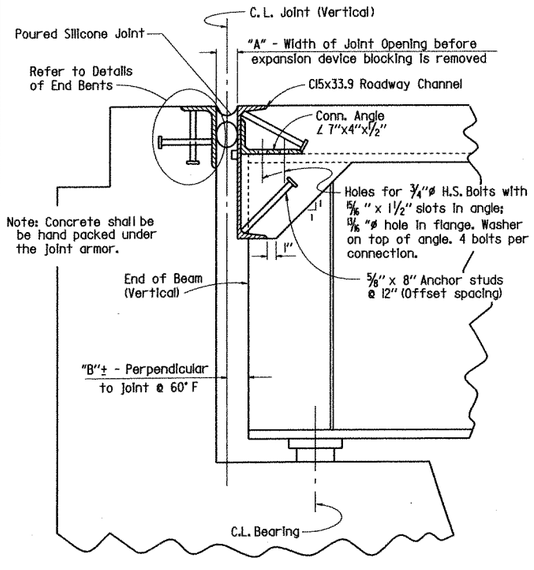
BRIDGE NO. 06514 DRAWING NO. 51297

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.		090065	164	460
				① 06514		Cont. Unit		51298



ROADWAY SECTION NEAR JOINT

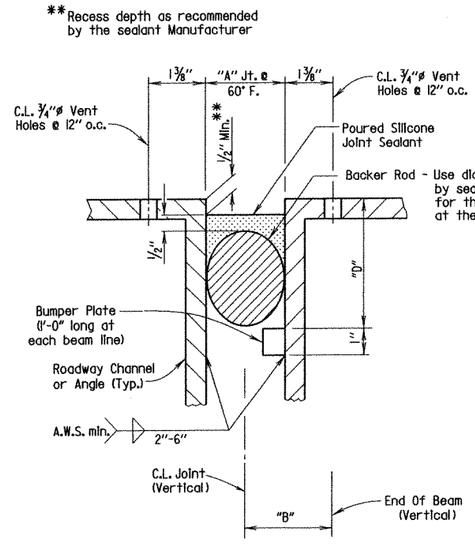
Looking Ahead
⅜" = 1'-0"



Note: Section taken perpendicular to C.L. Joint

SECTION THRU JOINT AT END BENT

NTS



DETAIL OF POURED SILICONE JOINT

NTS

SILICONE JOINT DATA

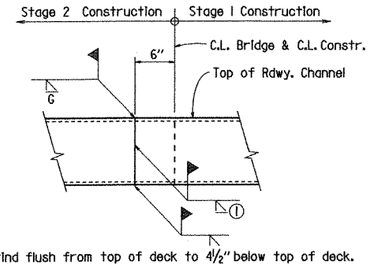
"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 3/16"	2"	1 13/16"	2¼" ±	4½"	1" x 1"

*The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

Notes:
The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

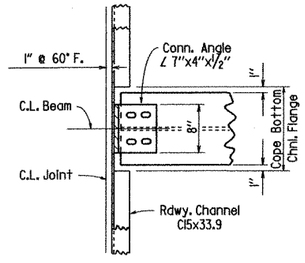
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



① Grind flush from top of deck to 4½" below top of deck.

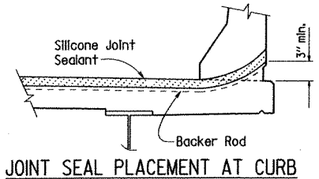
DETAIL OF WELD FOR EXPANSION DEVICE

Looking Ahead
NTS



CHANNEL CONNECTION DETAIL

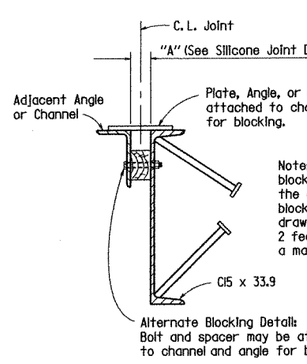
NTS



JOINT SEAL PLACEMENT AT CURB

NTS

Note:
Backer rods shall be extended beyond length of poured joint in Stage 1 so that the two pieces can be properly spliced together prior to installing sealant for Stage 2. Manufacturer's recommendations shall be followed to prevent sealant from "running out of the joint" during stage construction.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

NTS

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 254'-0" CONTINUOUS W-BEAM UNIT LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

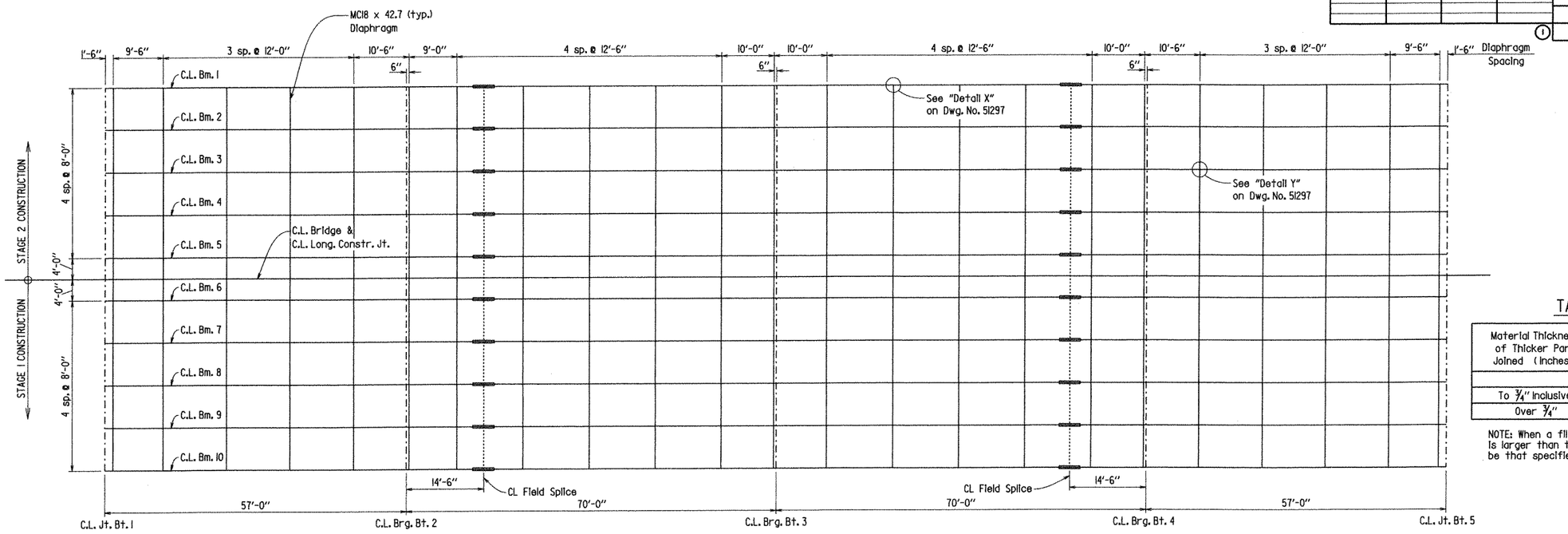
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 2/19/10 FILENAME: b090065_s2.dgn
CHECKED BY: JVP DATE: 2-16-11 SCALE: ⅜" = 1'-0" or as shown
DESIGNED BY: PGT DATE: 1-10

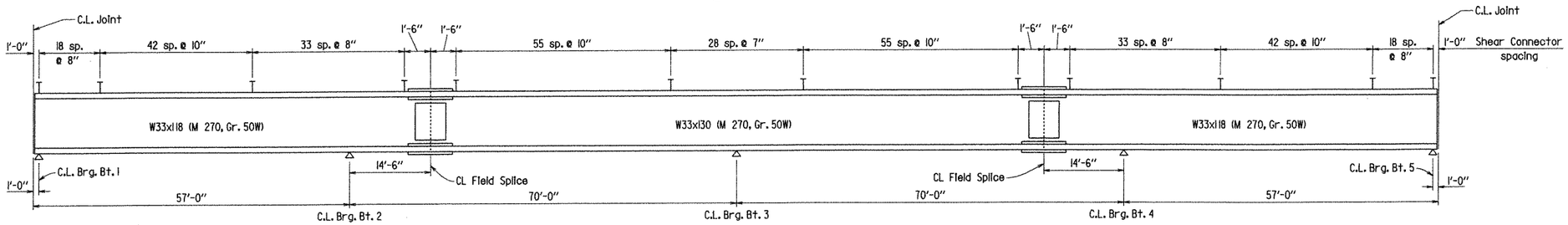
BRIDGE NO. 06514 DRAWING NO. 51298

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.		090065	165	460
				06514		Cont. Unit		51299



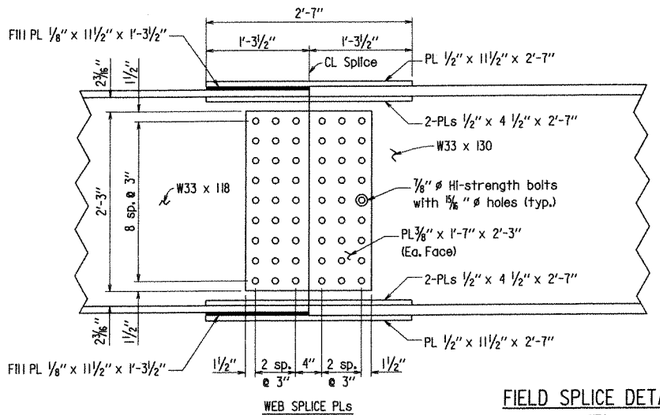
FRAMING PLAN

1/32 " = 1'-0"



BEAM ELEVATION

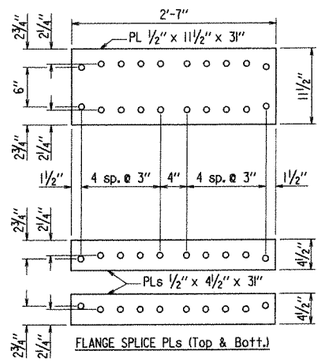
NTS



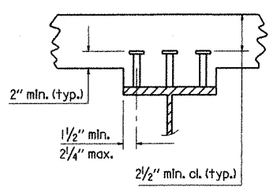
WEB SPLICE PLs

FIELD SPLICE DETAILS

NTS



FLANGE SPLICE PLs (Top & Bott.)



Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 -¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

NTS

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS
No. 4337
CHARLES P. BRAND
REGISTERED PROFESSIONAL ENGINEER
BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 254'-0" CONTINUOUS W-BEAM UNIT LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

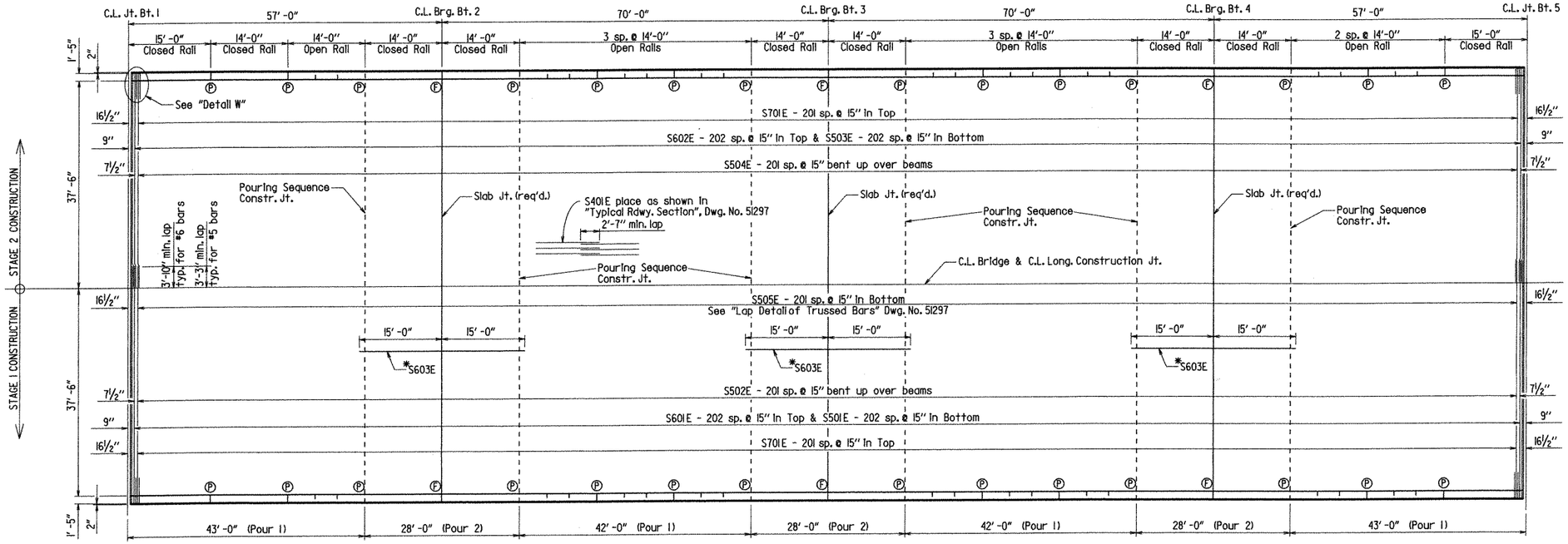
LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 2/16/10 FILENAME: b090065_s3.dgn
CHECKED BY: JYP DATE: 2-16-11 SCALE: As Shown
DESIGNED BY: PGT DATE: 1-10

BRIDGE NO. 06514 DRAWING NO. 51299

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.		090065	166	460
				(1) 06514		Cont. Unit		51300

*Place this reinforcing in top of slab and space as shown in "Typ. Rdwy. Section", Dwg. No. 51297



Ⓟ Partial depth parapet joint at this location

Ⓕ Full depth parapet joint at this location

Notes:
Req'd. slab joints and pouring sequence joints shall align with open joints in parapet rail at the gutterline.

Parapet rail spacing, drain opening and reinforcing are the same on both sides.

Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

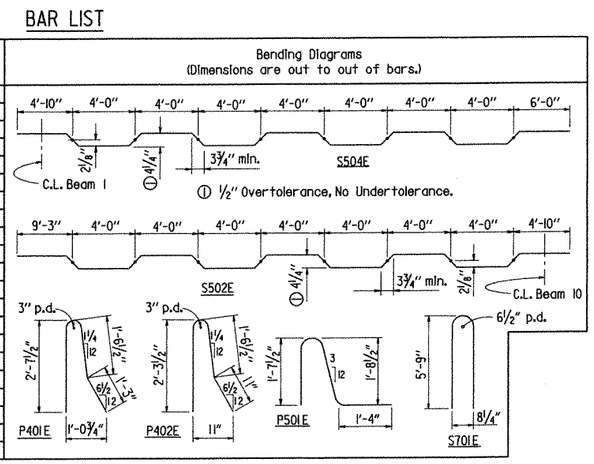
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

REINFORCING PLAN & SLAB POURING SEQUENCE
NTS

BAR LIST

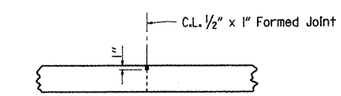
Mark	No. Req'd.	Length	Pin Dia.
S401E	1456	38'-6"	Str.
S501E	205	42'-2"	Str.
S502E	202	42'-11"	3"
S503E	205	38'-11"	Str.
S504E	202	39'-8"	3"
S505E	202	13'-6"	Str.
S601E	205	42'-9"	Str.
S602E	205	38'-11"	Str.
S603E	234	30'-0"	Str.
S701E	404	11'-9"	6½"
P401E	872	5'-6"	3"
P402E	144	4'-10"	3"
P403E	12	14'-7"	Str.
P404E	96	13'-7"	Str.
P405E	32	29'-8"	Str.
P406E	32	36'-2"	Str.
P501E	872	4'-9"	3¾"

Bending Diagrams
(Dimensions are out to out of bars.)



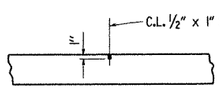
Notes: All Bars shall be epoxy-coated.

At the Contractor's option, two straight epoxy coated #5 bars, top and bottom, may be substituted for bars S502E and S504E. If this option is taken, bar S505E shall be eliminated and lap lengths maintained. Payment for reinforcing will be based on the weight of bars S502E, S504E, and S505E.



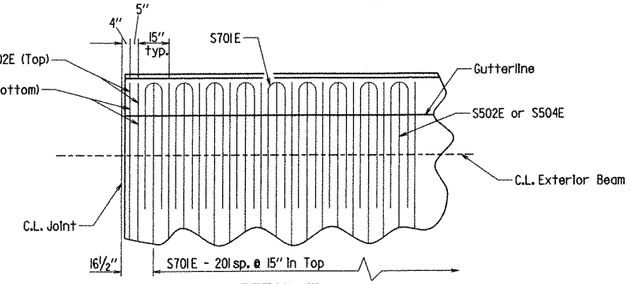
Use ½" x 1" Type 3, 4, or 6 Joint Sealer. Backer Rod filler will not be required. See Sections 501.02 (h) and 501.05 (j). Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal must be gray in color or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT
NTS



Use Type 3, 4, or 6 Joint Sealer. See subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab Joints shall be installed before the 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. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL
NTS



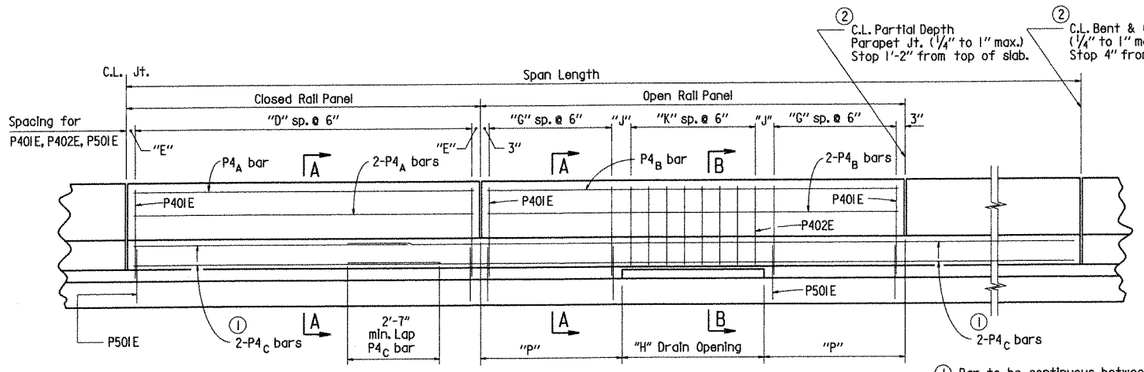
DETAIL W
NTS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13537
CHARLES P. BRANUM
2/17/11
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 254'-0" CONTINUOUS W-BEAM UNIT LITTLE SUGAR CREEK
ROUTE 62 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 2/17/10 FILENAME: b090065_s4.dgn
CHECKED BY: JNP DATE: 2-16-11 SCALE: NTS
DESIGNED BY: PGT DATE: 1-10
BRIDGE NO. 06514 DRAWING NO. 51300

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				8	ARK.			
				JOB NO.		090065	167	460
				(1) 06514		Cont. Unit		51301



(2) C.L. Partial Depth Parapet Jt. (1/4" to 1" max.) Stop 1'-2" from top of slab.

(2) C.L. Bent & C.L. Full-Depth Parapet Jt. (1/4" to 1" max.) Stop 4" from top of slab.

ELEVATION - CONCRETE PARAPET RAIL

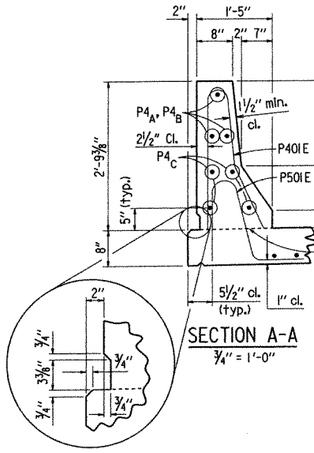
1/2" = 1'-0"

(1) Bar to be continuous between full depth parapet jts.

(2) For location of full and partial depth parapet joints, see Dwg. No. 51300

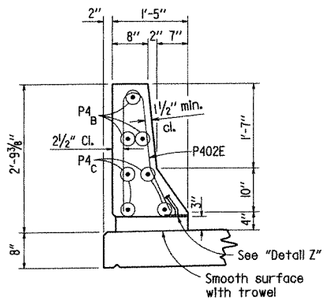
TABLE OF VARIABLES

Span Length	$P4_C$ bar	Closed Rail Panel	"D"	"E"	$P4_A$ bar	Open Rail Panel	"G"	"H"	"J"	"K"	"P"	$P4_B$ bar
57'-0"	P405E	15'-0"	29	3"	P403E	14'-0"	9	4'-0"	6"	7	5'-0"	P404E
		14'-0"	27	3"	P404E							
70'-0"	P406E	14'-0"	27	3"	P404E	14'-0"	9	4'-0"	6"	7	5'-0"	P404E



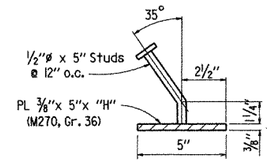
SECTION A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



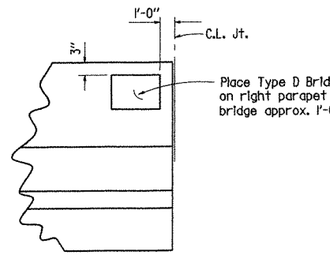
Note:

Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as Structural Steel in Beam Spans (M270, Gr. 50W).

The surfaces of the ⅜" Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel in Beam Spans (M270, Gr. 50W).

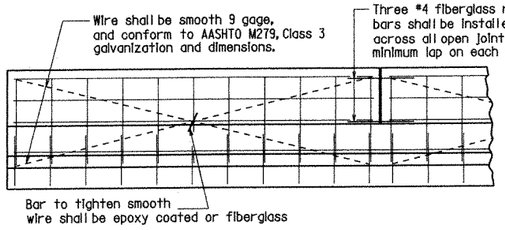
DETAIL Z

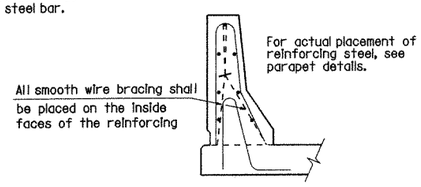
NTS



VIEW SHOWING LOCATION OF NAME PLATE

NTS





All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practicalto a minimum width of 1/4". To controlcracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

1/2" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
2/18/11

BRIDGE ENGINEER

SHEET 5 OF 6

DETAILS OF

254'-0" CONTINUOUS W-BEAM UNIT

LITTLE SUGAR CREEK

ROUTE 62 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 2/18/10 FILENAME: b090065_s5.dgn

CHECKED BY: JWP DATE: 2-16-11 SCALE: As shown

DESIGNED BY: PGT DATE: 1-10

BRIDGE NO. 06514 DRAWING NO. 51301

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.		090065	168	460
06514		Cont. Unit		51302

(1)

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition 2010.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

CONCRETE :
Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 149911 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. 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. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL :
All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60. 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".

STRUCTURAL STEEL :
Structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36 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.

Beams and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05.

All beams shall be assembled in the shop as specified in Section 807.54 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 beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

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 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.

Field connections shall be bolted with high-strength bolts and shall be ¾" ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for ¾" ø high-strength bolts may be 15/16" ø diameter if a washer is supplied for use under both the nut and head of the bolt.

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 unless otherwise noted.

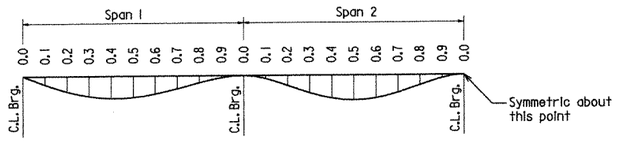
TABLE OF DEAD LOAD DEFLECTIONS-INCHES

Span	Point of Deflection	Structural Steel		Structural Steel+Slab		Str. Steel +Slab+Rail	
		Ext. Bms.	Int. Bms.	Ext. Bms.	Int. Bms.	Ext. Bms.	Int. Bms.
1	0	0	0	0	0	0	0
	0.1	0.024	0.024	0.183	0.214	0.191	0.222
	0.2	0.044	0.044	0.337	0.395	0.351	0.409
	0.3	0.058	0.058	0.442	0.518	0.461	0.536
	0.4	0.064	0.064	0.488	0.572	0.509	0.592
	0.5	0.061	0.061	0.471	0.552	0.491	0.571
	0.6	0.051	0.051	0.399	0.467	0.416	0.483
	0.7	0.036	0.036	0.286	0.336	0.298	0.348
	0.8	0.019	0.019	0.158	0.186	0.165	0.193
	0.9	0.005	0.005	0.049	0.057	0.051	0.059
2	0	0	0	0	0	0	0
	0.1	0.011	0.011	0.066	0.077	0.069	0.080
	0.2	0.033	0.033	0.210	0.246	0.219	0.255
	0.3	0.055	0.055	0.360	0.420	0.376	0.435
	0.4	0.071	0.071	0.466	0.545	0.487	0.565
	0.5	0.076	0.076	0.503	0.588	0.525	0.609
	0.6	0.070	0.070	0.462	0.540	0.482	0.560
	0.7	0.053	0.053	0.353	0.412	0.369	0.472
	0.8	0.031	0.031	0.204	0.239	0.213	0.248
	0.9	0.010	0.010	0.065	0.075	0.068	0.078
	0	0	0	0	0	0	0

Half-point of Unit.

Note: Camber for Dead Load Deflection plus Vertical Curve ± ¼" tolerance. Deflections shown are along C.L. Beam from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

Symmetrical about half-point of Unit.



DEAD LOAD DEFLECTION DIAGRAM
NTS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

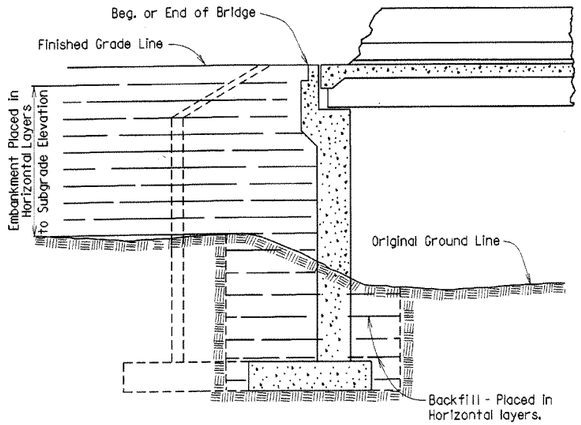
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF
254'-0" CONTINUOUS W-BEAM UNIT
LITTLE SUGAR CREEK
ROUTE 62 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

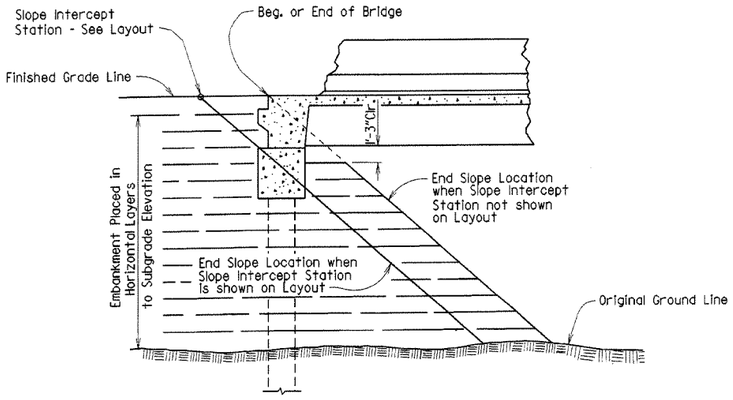
DRAWN BY: PGT DATE: 2/22/10 FILENAME: b090065_s6.dgn
CHECKED BY: JVP DATE: 2-16-11 SCALE: NONE
DESIGNED BY: PGT DATE: 1-10
BRIDGE NO. 06514 DRAWING NO. 51302

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		169	
				JOB NO.				

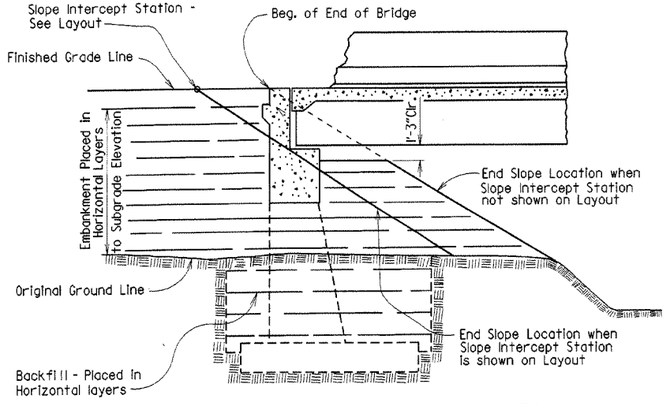
① EMBANKMENT & BACKFILL 1888A



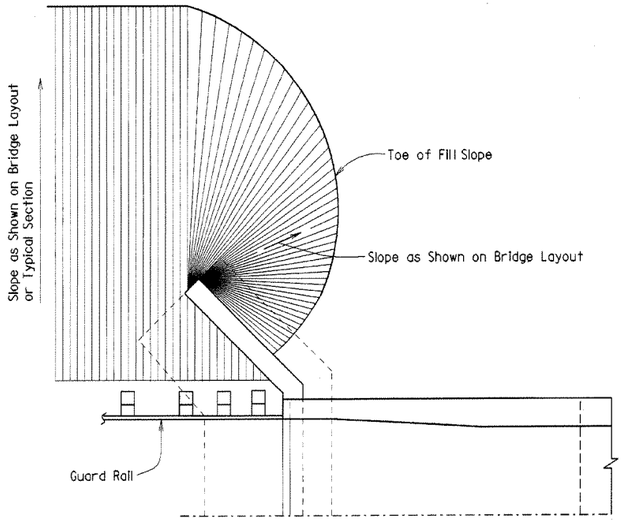
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



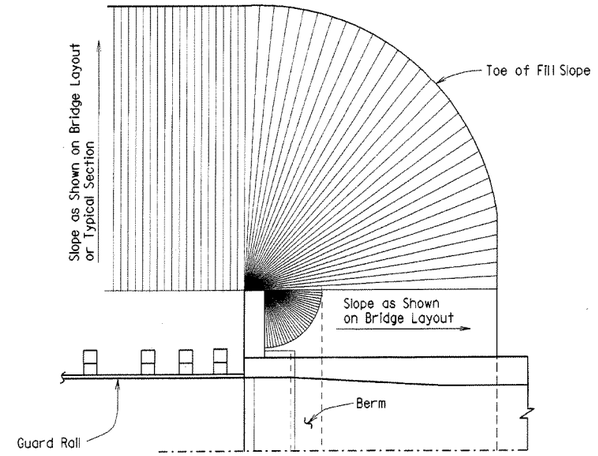
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



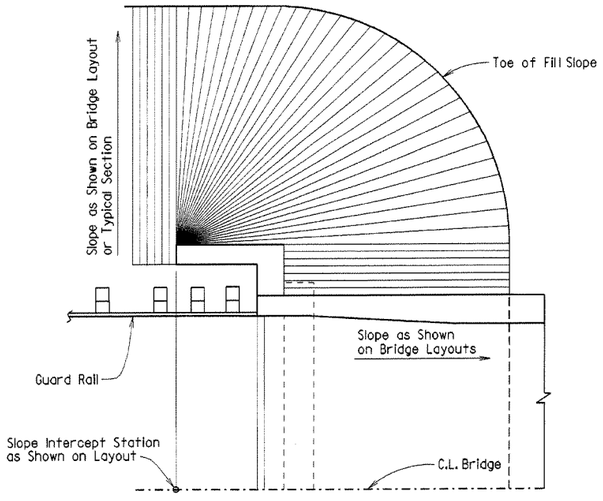
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



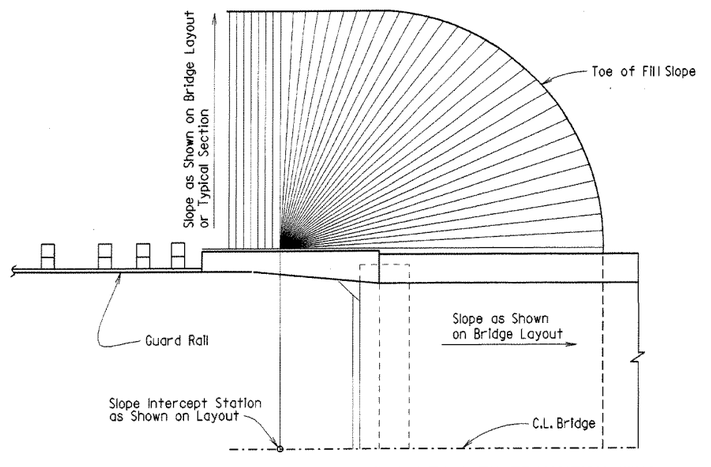
VERTICAL WALL ABUTMENTS



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 4 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 of the Specifications for construction requirements.

⚠ Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

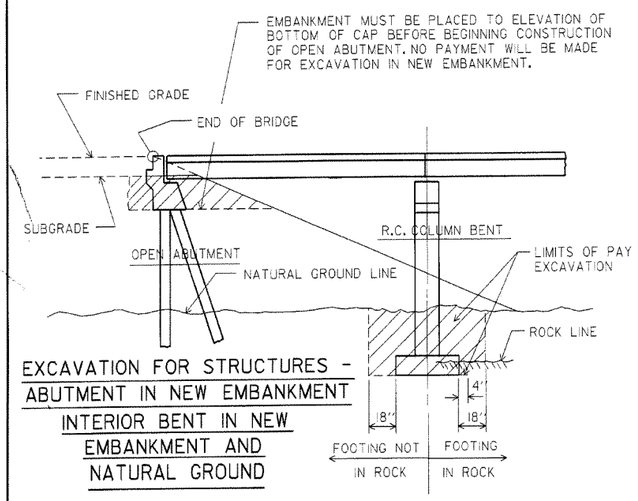
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——

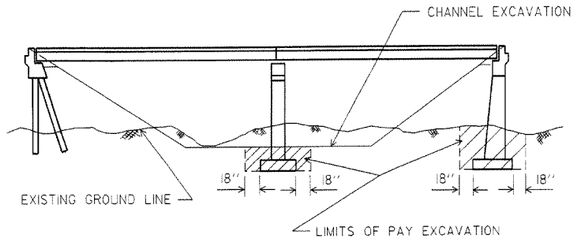
BRIDGE NO. DRAWING NO. 1888A

BI888A.STD

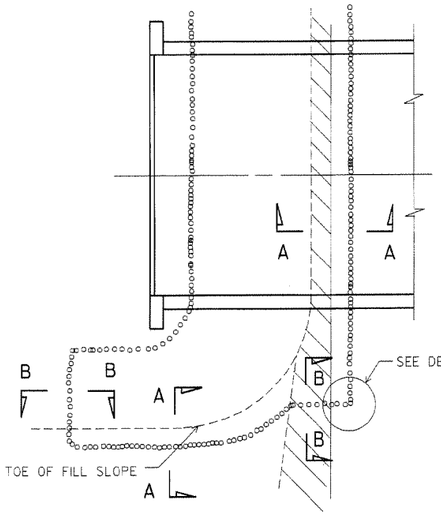
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		170	
				JOB NO.				
				①	RIP. & EXCAV.		1891F	



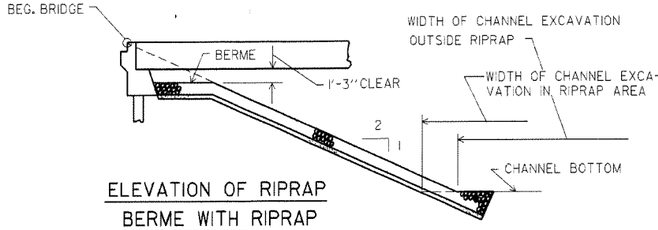
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



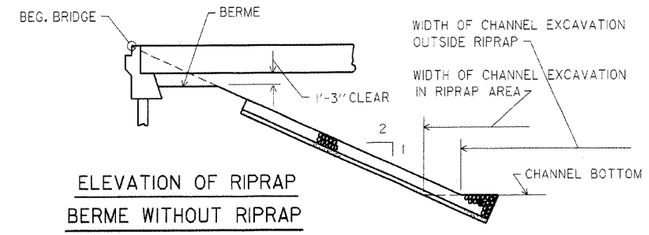
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



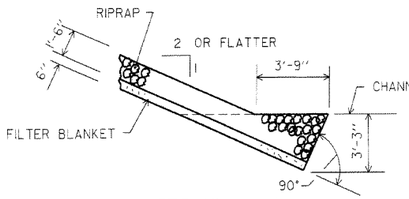
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP



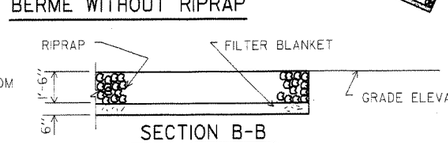
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



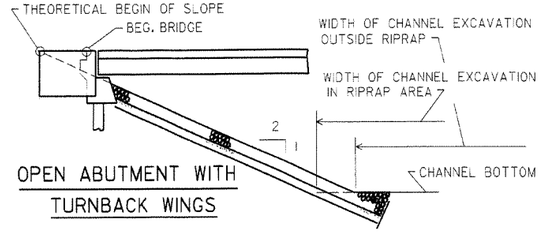
SECTION A-A

(TOE EXCAVATION IN SOIL)

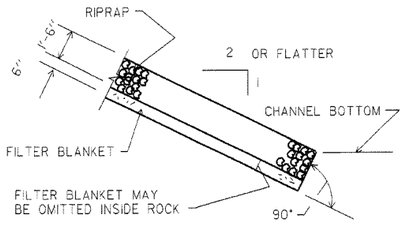
EXCAVATION FOR TOES IS NOT A PAY ITEM



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



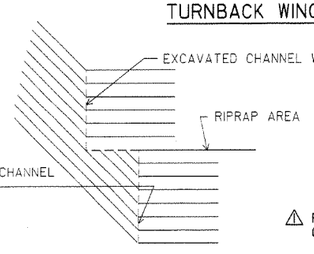
SECTION A-A

(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.



DETAIL C

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES E. BRAND

BRIDGE ENGINEER

⚠ Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

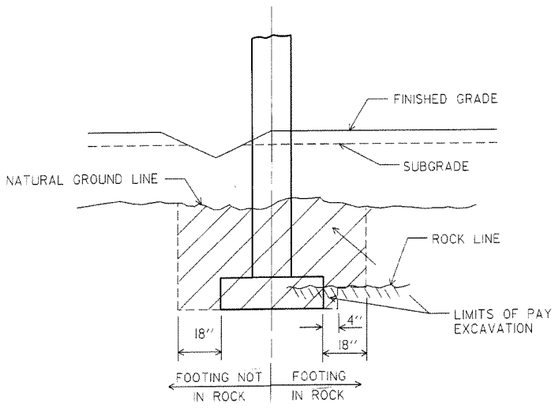
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

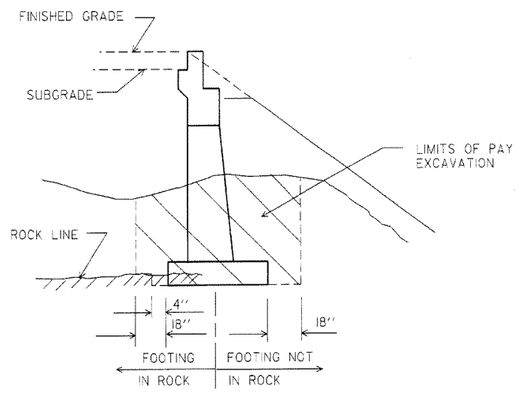
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

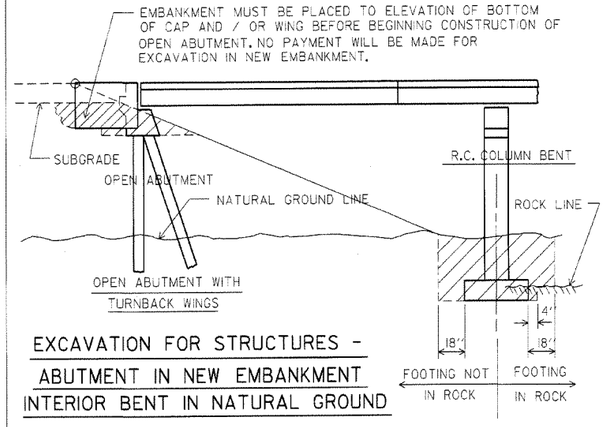
BRIDGE NO. DRAWING NO. 1891F



EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND

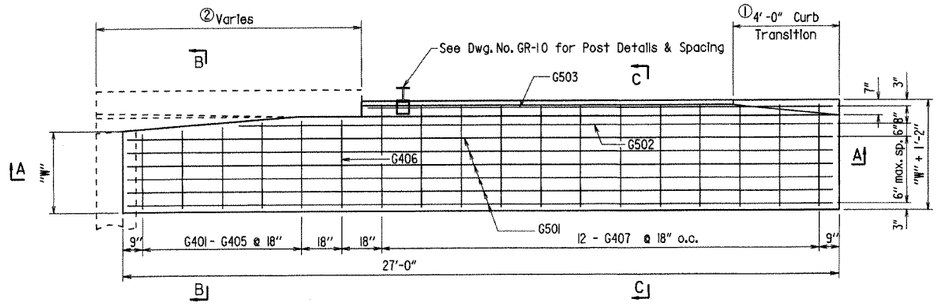


EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



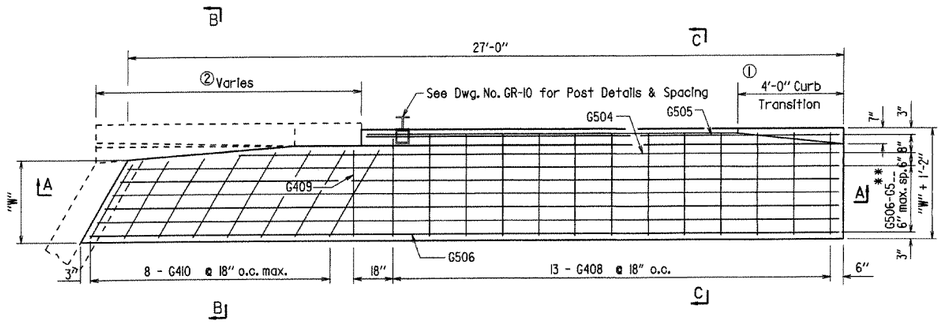
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND

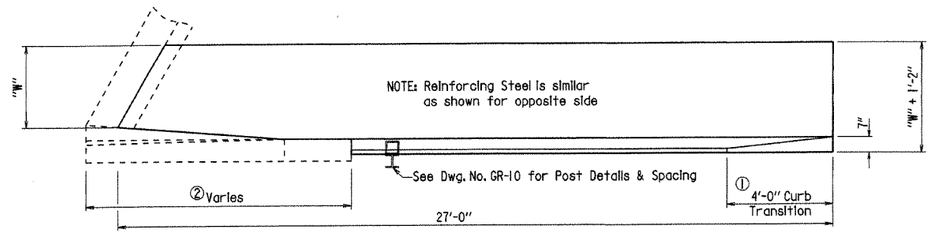
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		171	
07-14-2010				JOB NO.				
①				TYPE B GUTTERS			2016B	



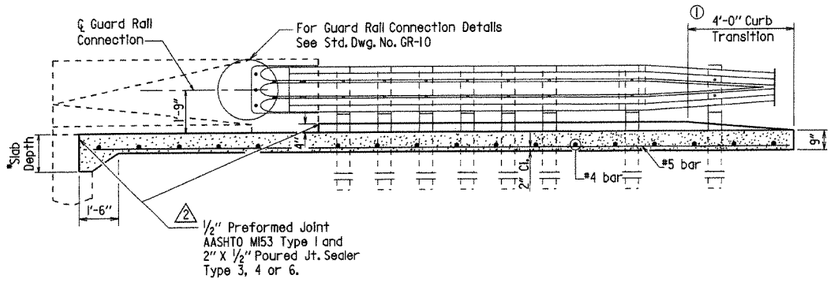
HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

② Length varies. See End Bent details for actual length. Quantities shown are for 10'-0" Transition Rail.





PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

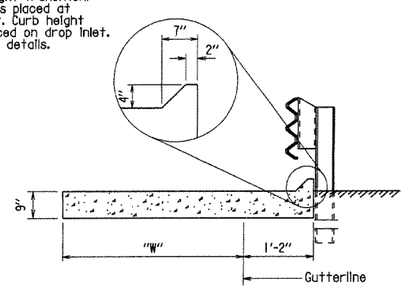


SECTION A - A

*Slab Depth Varies - See Span and Bent Details

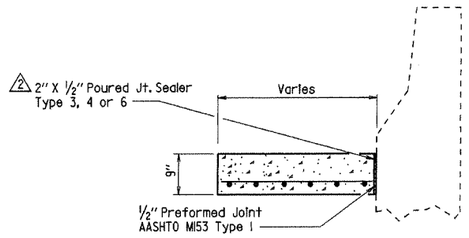
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION C - C

N.T.S.



SECTION B - B

N.T.S.

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
3	252	3.00
4	319	3.75
6	459	5.25
8	590	6.75

***BAR LIST ②
TYPE B GUTTER

Mark	No. Required for Width "W"				Length	Square or Skewed
	3'-0"	4'-0"	6'-0"	8'-0"		
G401-G405	1 each	1 each	1 each	1 each	"W" - 3" to "W" + 3"	Square
G406	1	1	1	1	"W" + 3"	Square
G407	12	12	12	12	"W" + 10"	Square
G408	13	13	13	13	"W" + 10"	Skewed
G409	1	1	1	1	"W" + 3"	Skewed
G410	8	8	8	8	*	Skewed
G501	6	8	12	16	26'-8"	Square
G502	1	1	1	1	22'-2"	Square
G503	1	1	1	1	17'-8"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G506-G5__**	1 each	1 each	1 each	1 each	*	Skewed

*Bar Lengths vary with Skew.

**G512 for "W" = 3'
G514 for "W" = 4'
G518 for "W" = 6'
G522 for "W" = 8'

***Special bar list required when skew angle exceeds 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

⚠1 Revised and redrawn 4-10-2003. By KDH Ck. By: CJF 4-10-2003

⚠2 Added joint sealer type & revised transition rail length 07-14-2010 by MJT Checked by: CJF 07-14-2010

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE B APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016B.STD
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD DATE:

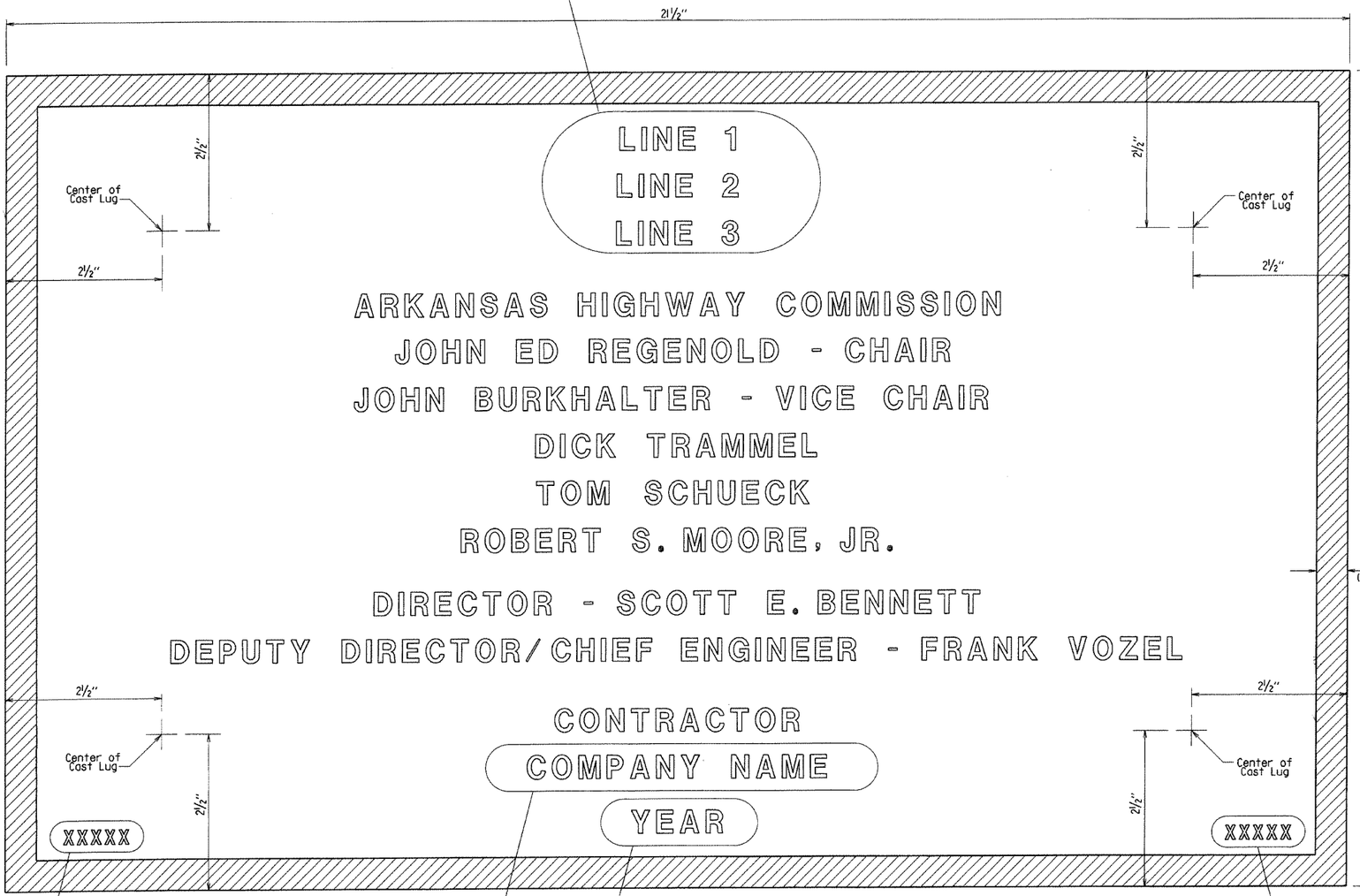
BRIDGE NO. DRAWING NO. 2016B

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		172	
1-3-13				JOB NO.				
1-10-13								

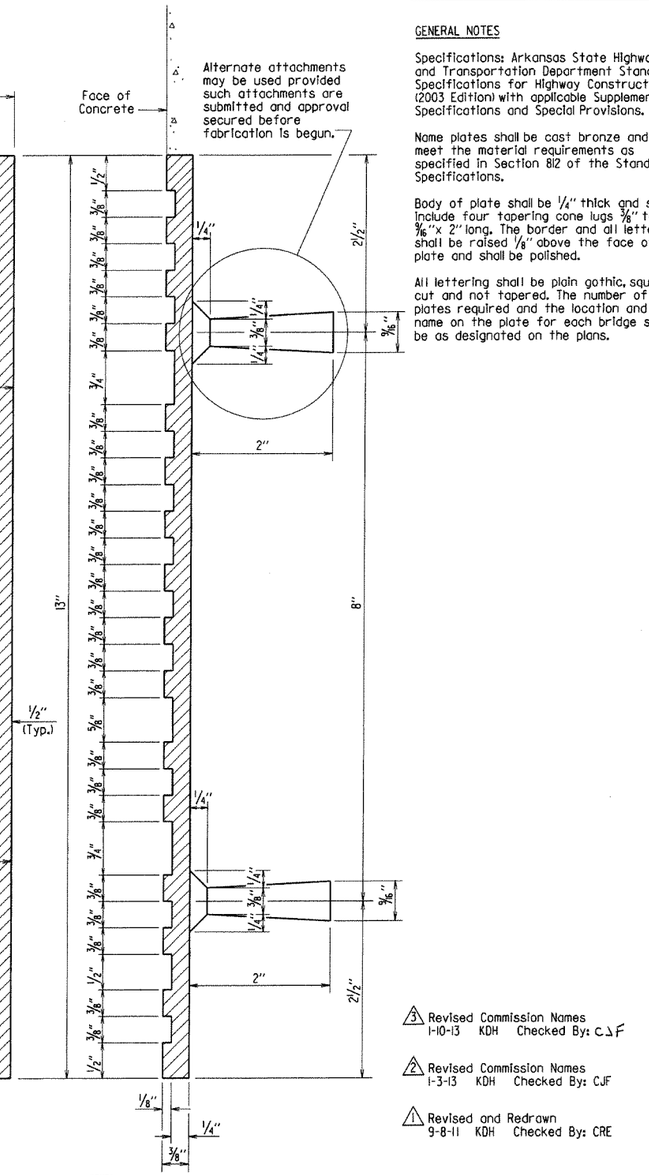
(1) NAME PLATE 2387

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	



TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 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 of the Standard Specifications.

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to 9/16"x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered. The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

(3) Revised Commission Names 1-10-13 KDH Checked By: CJF

(2) Revised Commission Names 1-3-13 KDH Checked By: CJF

(1) Revised and Redrawn 9-8-11 KDH Checked By: CRE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-11 FILENAME: b2387_std.dgn

CHECKED BY: CRE DATE: 9-8-11 SCALE: 1'-0" = 1'-0"

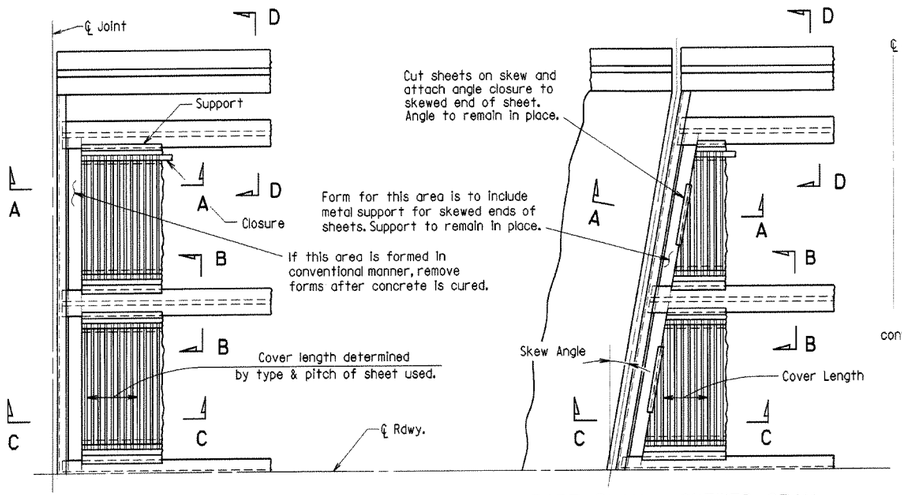
DESIGNED BY: STD. DATE: —— OR AS NOTED

BRIDGE NO. DRAWING NO. 2387

PRINT DATE: 1/18/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		173	
04-10-2003						JOB NO.				

1 BR. DECK FORMS 14991

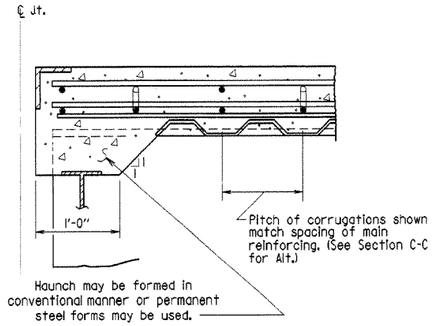


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

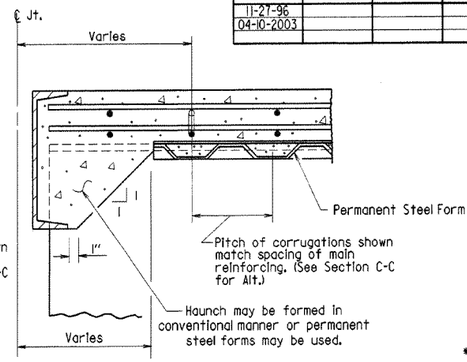
3/8" = 1'-0"



SECTION A-A

N.T.S.

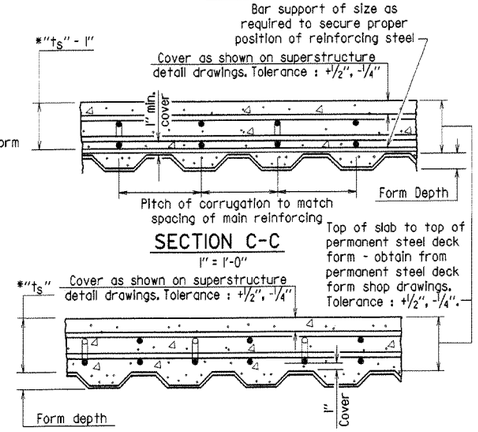
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



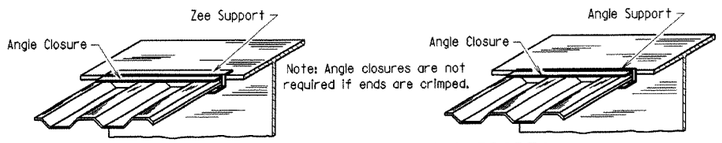
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

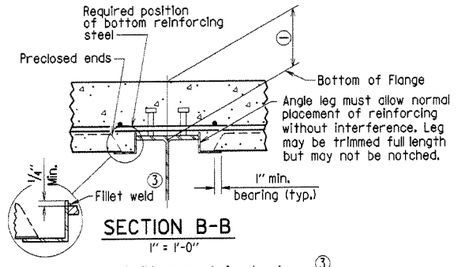
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

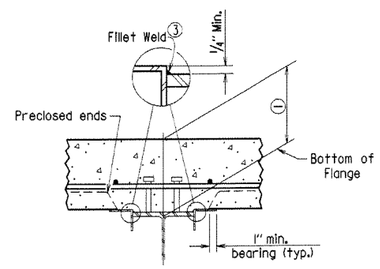


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

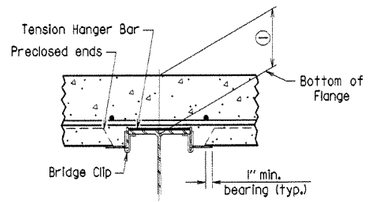
③ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

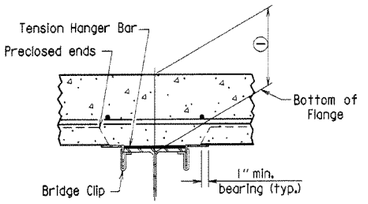
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

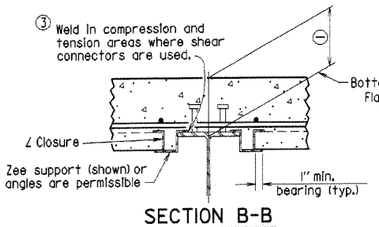
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

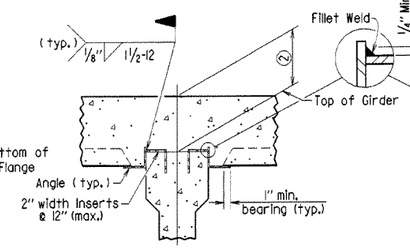
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

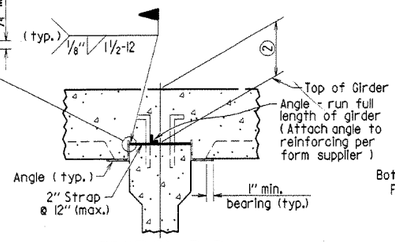


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

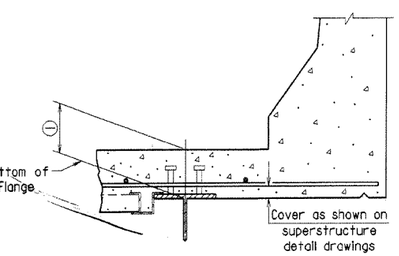


SECTION B-B

(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) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge 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 Bridge 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 Bridge 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.

⚠2 Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.

⚠1 Redrawn and revised 11/27/96; MJT

⚠2 Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

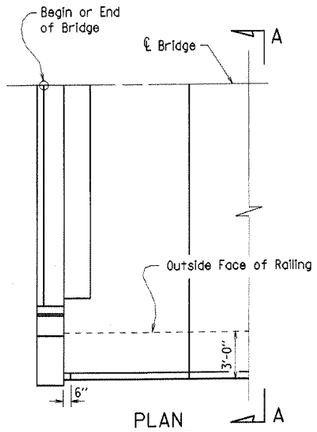
DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96 SCALE: as noted
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14991

B14991.STD

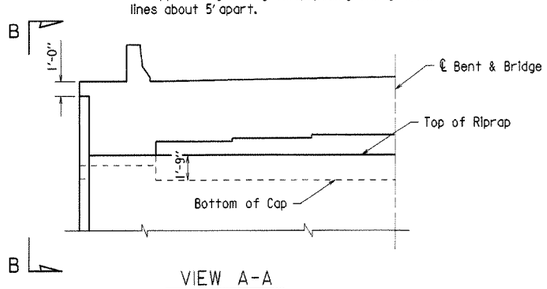
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		174	
				JOB NO.				

1 RIPRAP & PILE - 14995A

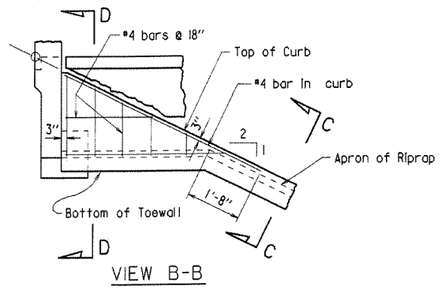


PLAN

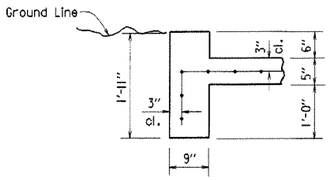
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



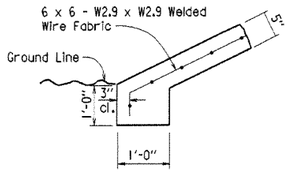
VIEW A-A



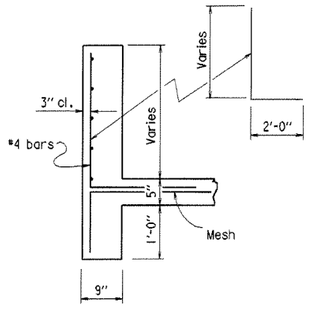
VIEW B-B



SECTION C-C

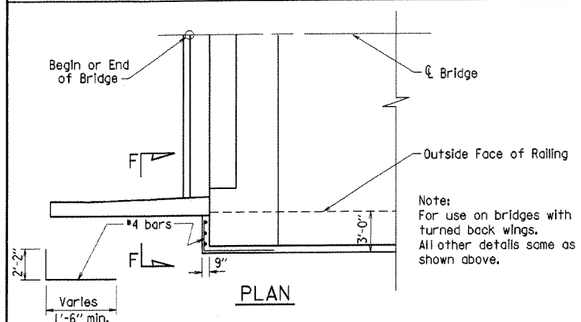


TOE WALL



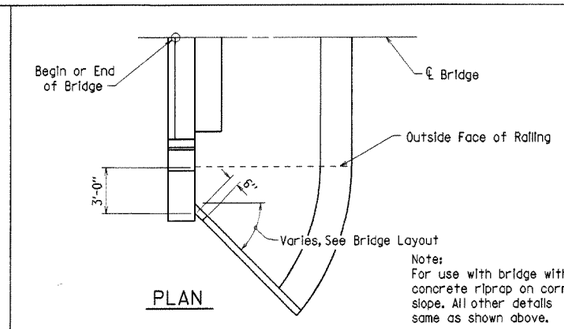
SECTION D-D

DETAILS OF CONCRETE RIPRAP



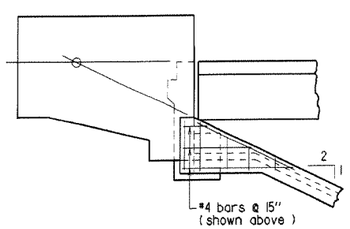
PLAN

Note:
For use on bridges with turned back wings. All other details same as shown above.

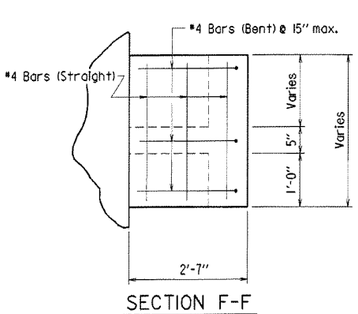


PLAN

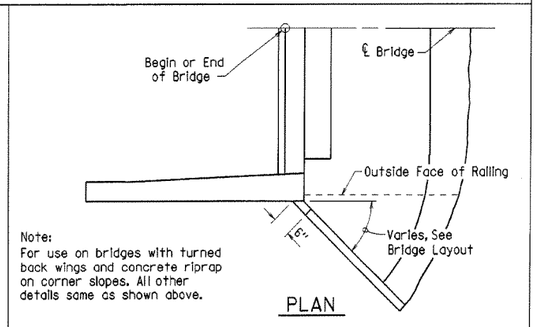
Note:
For use with bridge with concrete riprap on corner slope. All other details same as shown above.



ELEVATION

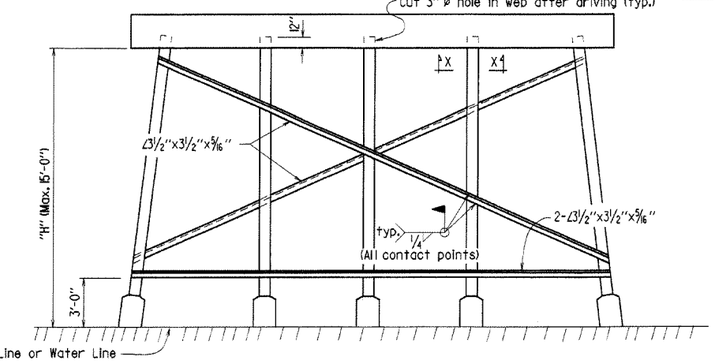


SECTION F-F



Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.

PLAN



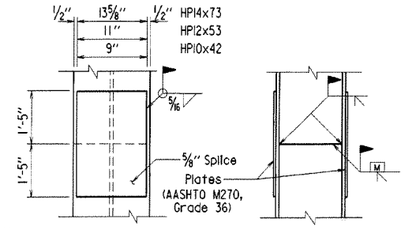
Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

Note:
Where required by the bridge layout sheet, pile encasements shall be constructed.

Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

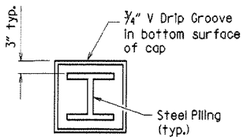
TYPICAL BRACING FOR INT. STEEL PILE BENTS



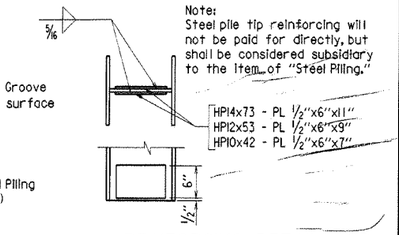
Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"

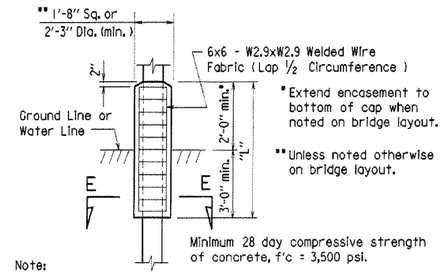


VIEW X-X



REINFORCING DETAIL FOR STEEL PILE TIP

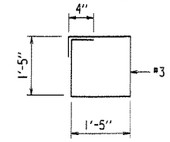
Scale : 1" = 1'-0"

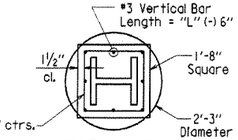


Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

PILE ENCASEMENT DETAIL

Reinforcing Alternate
#3 Vertical - 8 per encasement
#3 ties @ 12" ctrs.
Yield Strength , fy = 60,000 psi.





SECTION E-E
REINF. ALTERNATE

⚠1 Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9337 CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF CONCRETE RIPRAP
AND MISC. DETAILS OF STEEL PILING

ROUTE SEC.

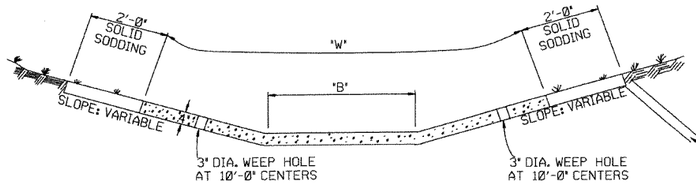
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI4995A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14995A

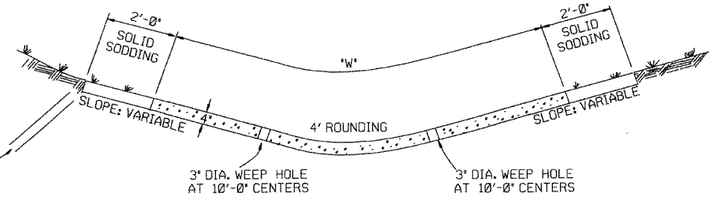
REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



TYPE A

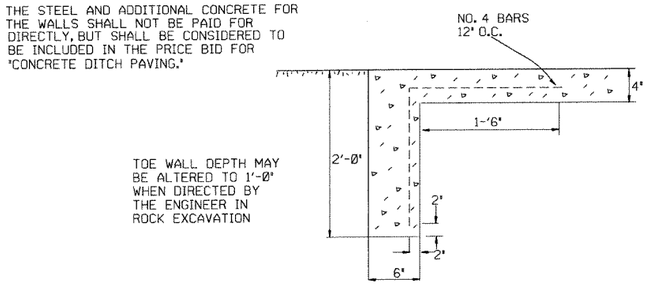
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



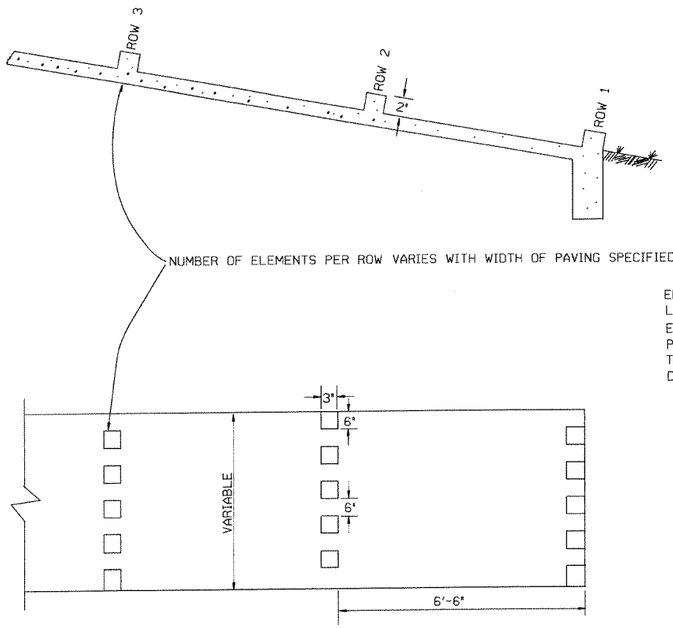
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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.

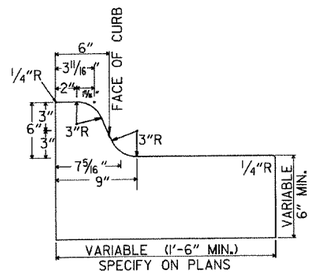
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

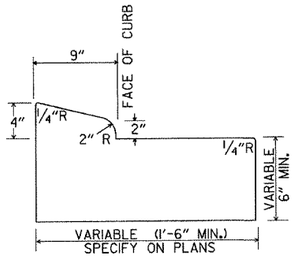
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

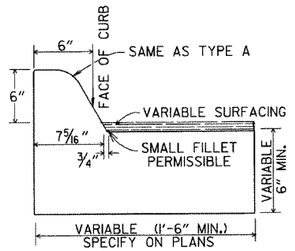
STANDARD DRAWING CDP-1



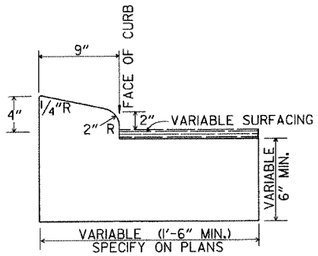
TYPE A



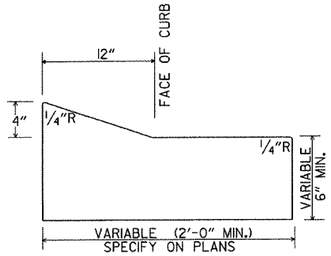
TYPE B-I



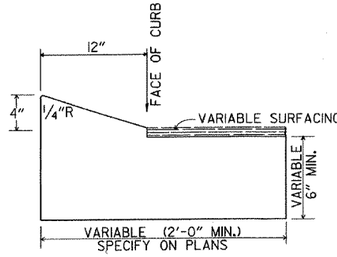
TYPE C



TYPE B-2

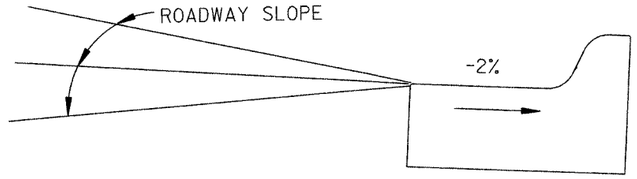


TYPE E-I



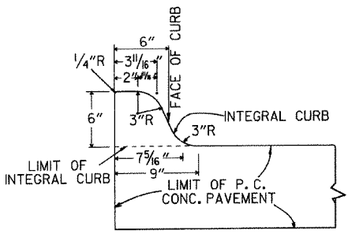
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

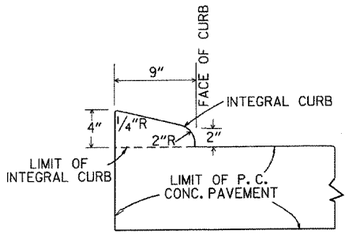


DETAIL OF GUTTER SLOPE

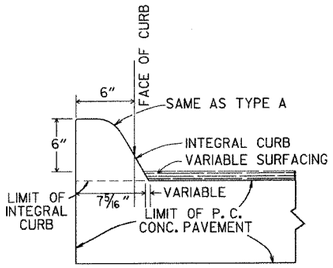
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

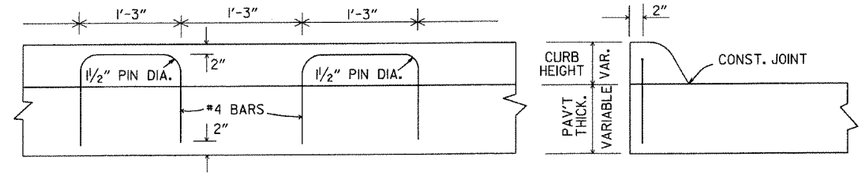


TYPE B



TYPE C

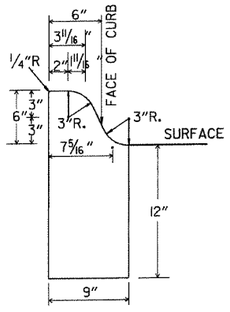
INTEGRAL CURB



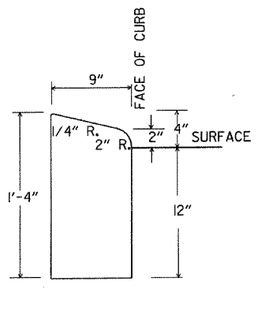
LONGITUDINAL SECTION

ELEVATION

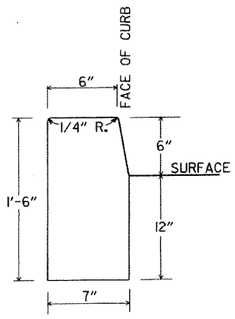
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



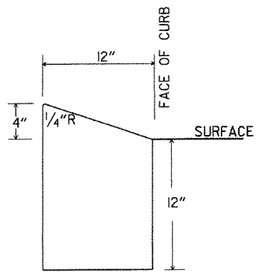
TYPE A



TYPE B

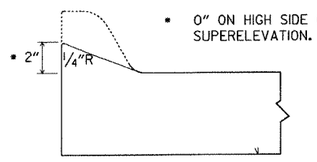


TYPE D



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.

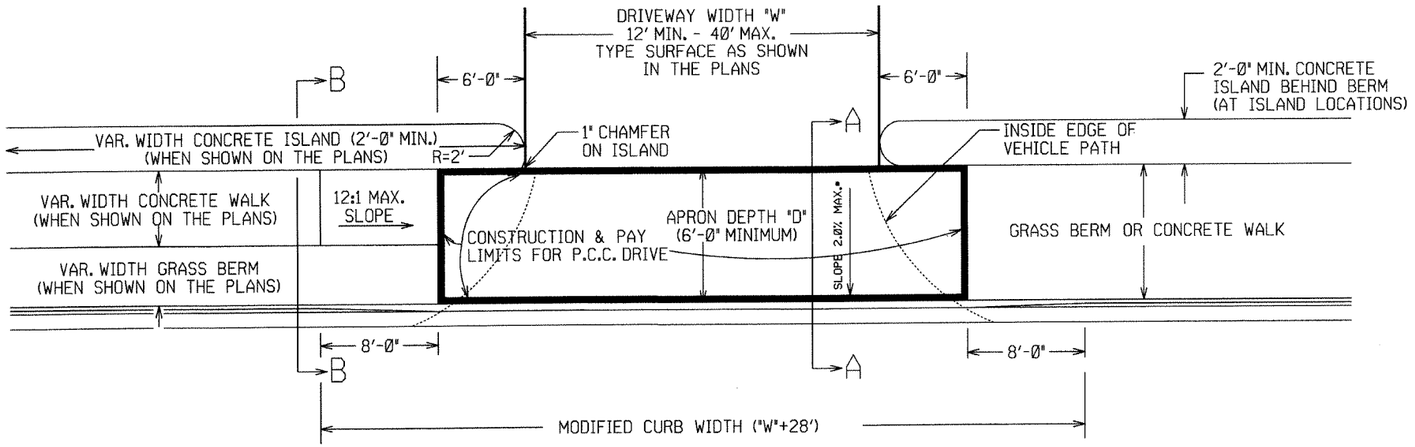
DETAILS OF MODIFIED CURB

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 I	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

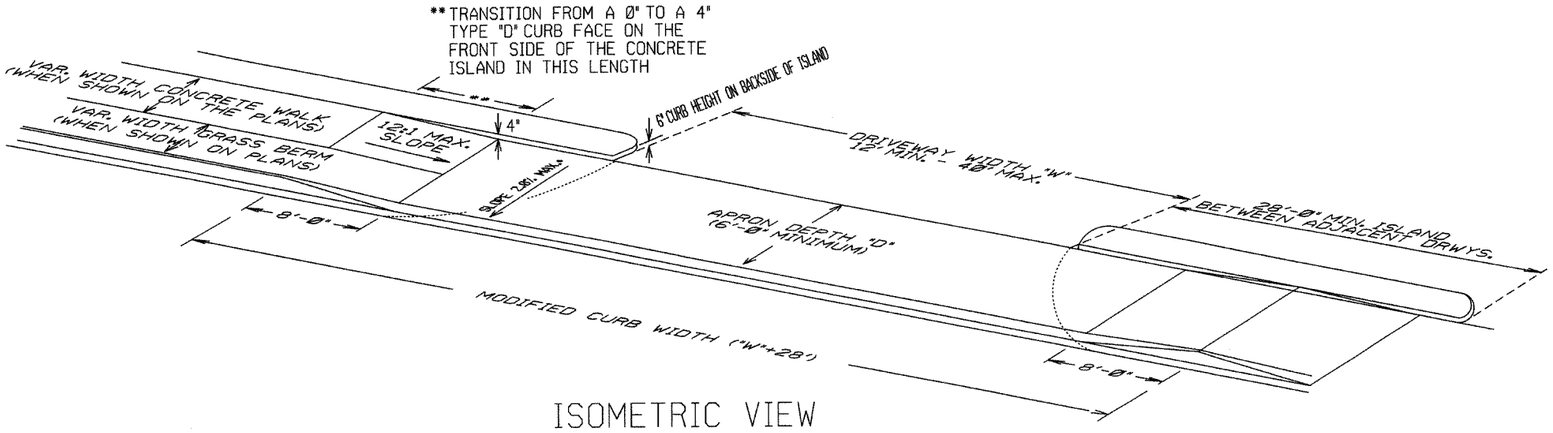
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

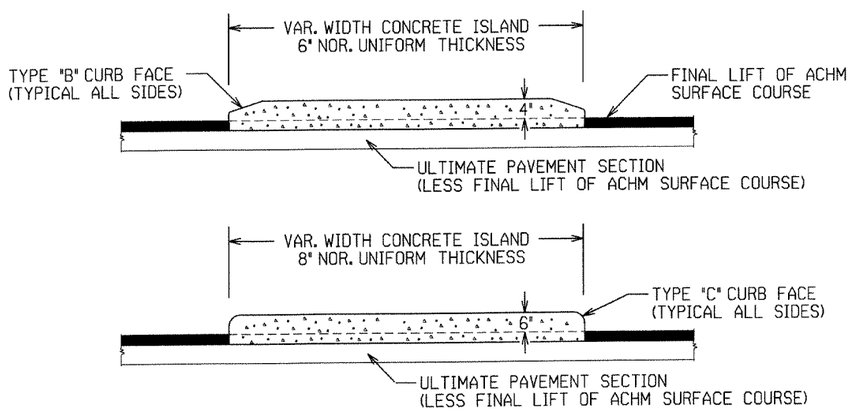
STANDARD DRAWING CG-1



PLAN VIEW

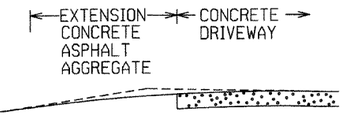


ISOMETRIC VIEW



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

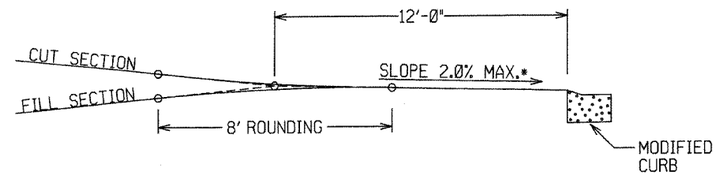
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

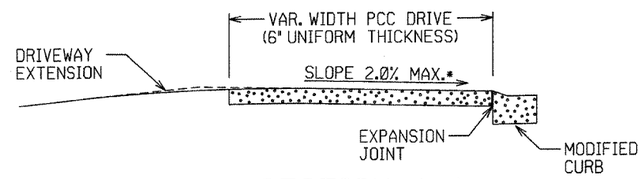
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

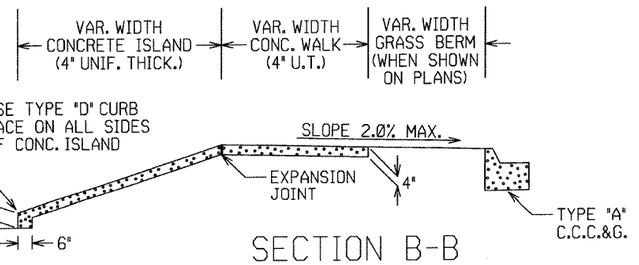


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A

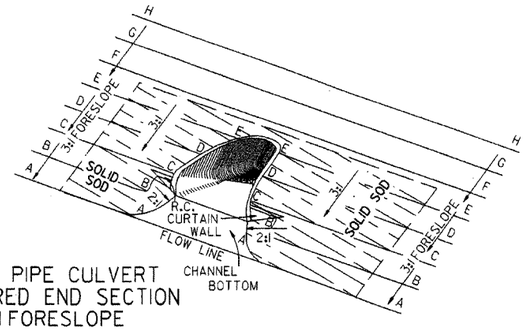


SECTION B-B

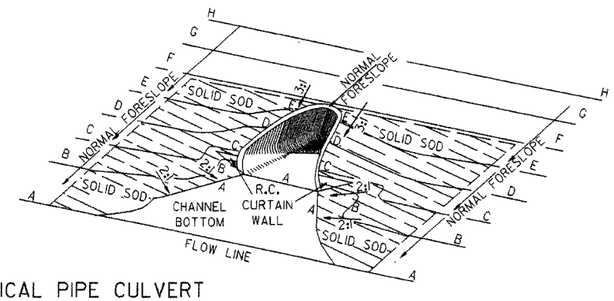
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

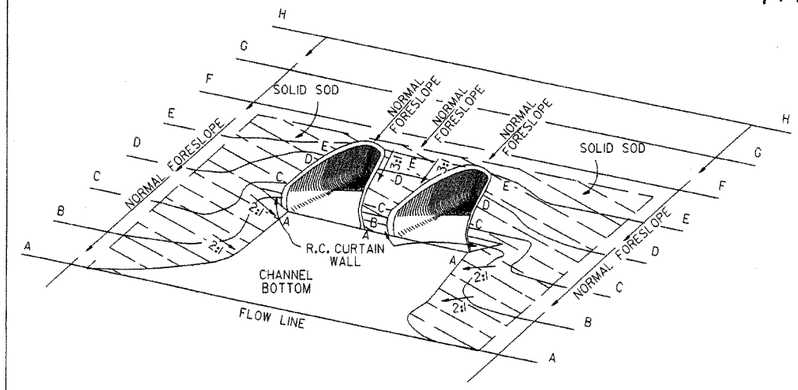
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



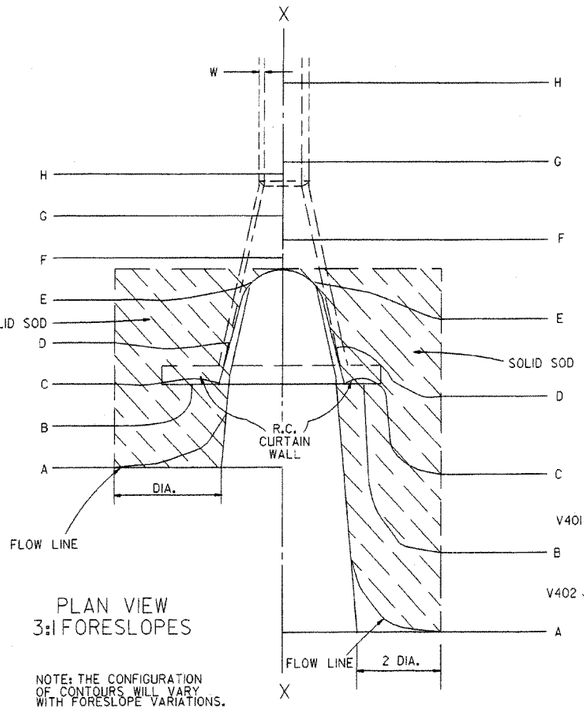
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

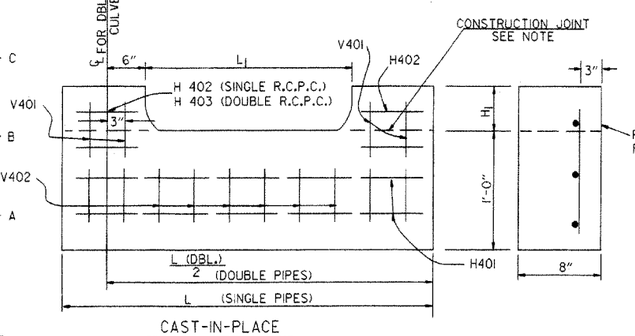
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

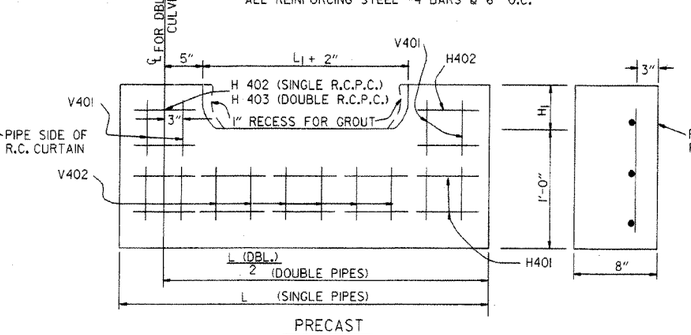
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



CAST-IN-PLACE

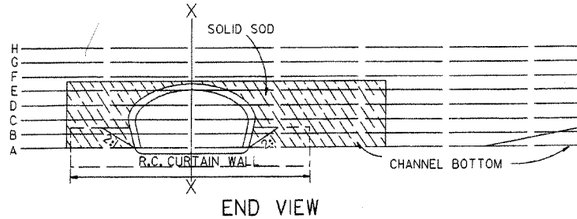
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



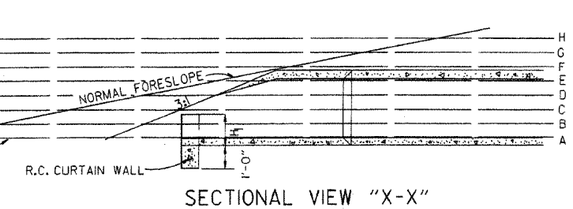
PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS



END VIEW



SECTIONAL VIEW "X-X"

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.

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"	36	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

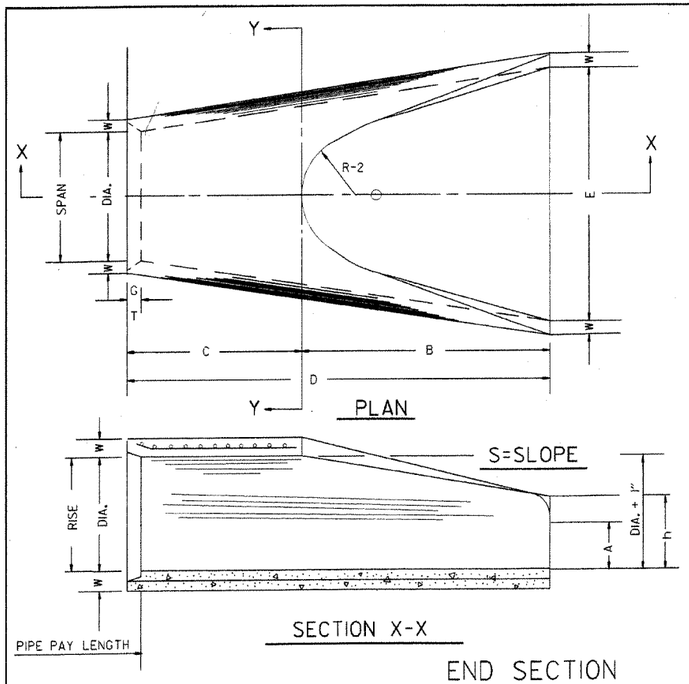
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 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 × 3 W10 × W10 MAY BE USED IN LIEU OF REINFORCING BARS.

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

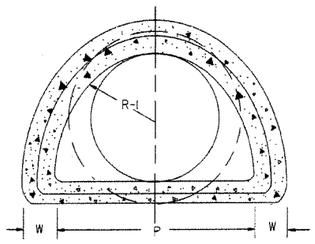
STANDARD DRAWING FES-1



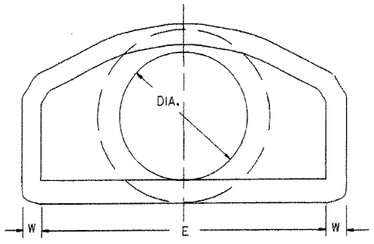
SECTION X-X

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33⅜"	16Ⅼ⅜"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-3½"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅜"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47Ⅼ⅜"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅜"	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"	36Ⅼ⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77Ⅼ⅛"	38⅝"	24"	5"	13250	4'-6"



SECTION Y-Y



END VIEW

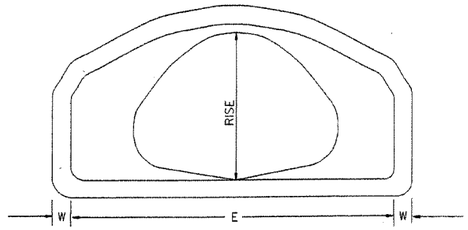
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

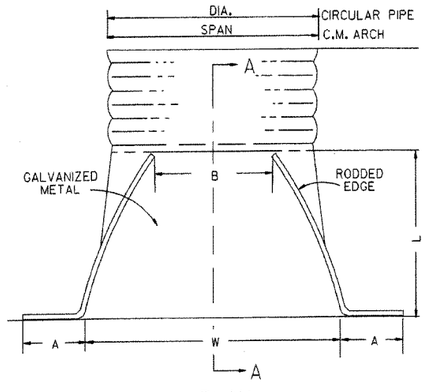
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅜"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅜"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36Ⅼ⅜"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47Ⅼ⅜"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¾"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72Ⅼ⅜"	24"	4¾"	2½:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77Ⅼ⅛"	24"	5"	2½:1

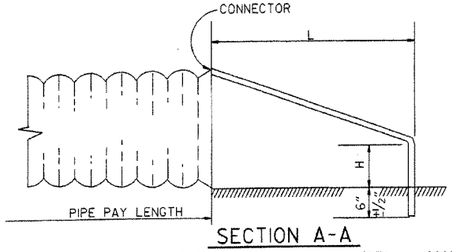
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



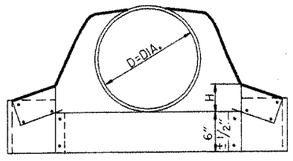
END VIEW
CONCRETE ARCH PIPE



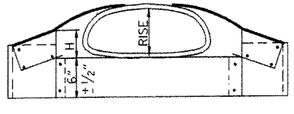
PLAN



SECTION A-A



CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

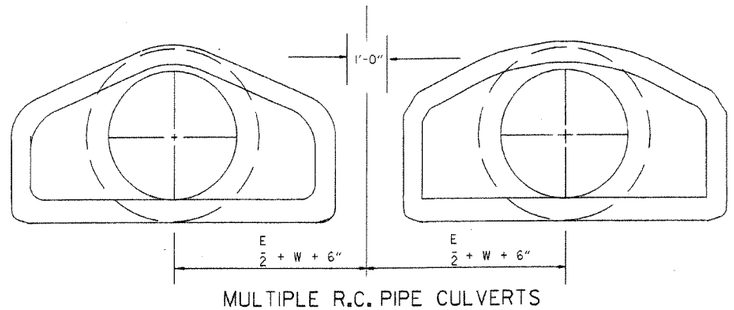
D. DIA.	GAUGE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

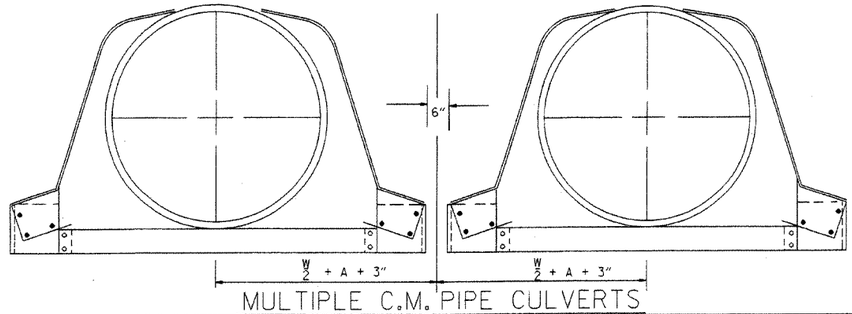
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

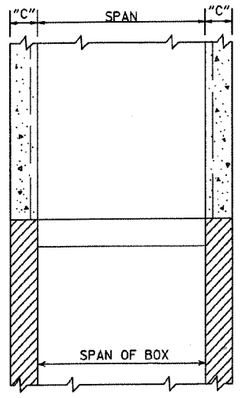
DATE	REVISION	BY/MED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
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

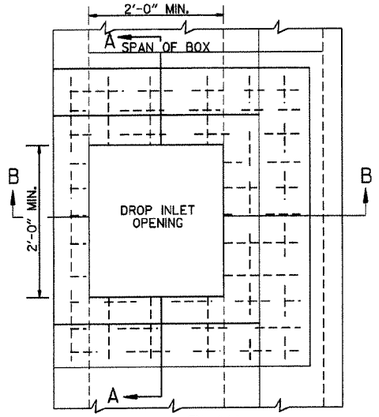
FLARED END SECTION

STANDARD DRAWING FES-2

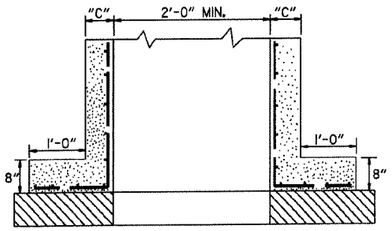
stdfes2.dgn



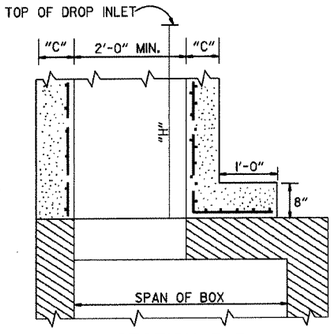
SECTION B-B



PLAN

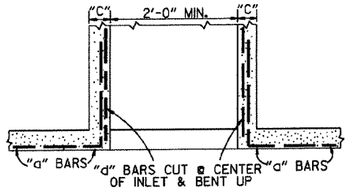


SECTION A-A

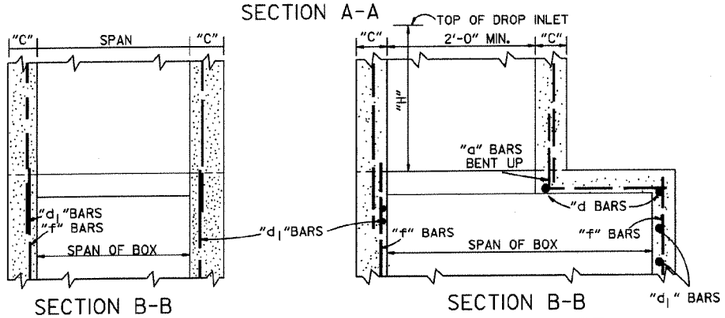


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



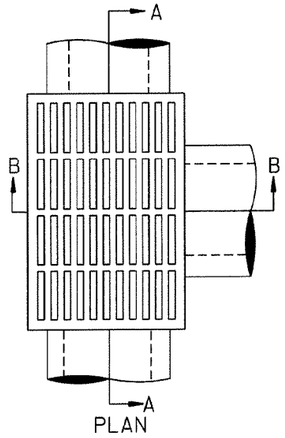
SECTION A-A



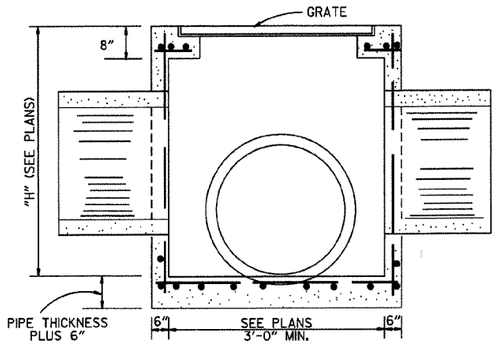
SECTION B-B SECTION B-B

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.

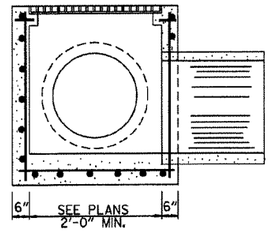


PLAN



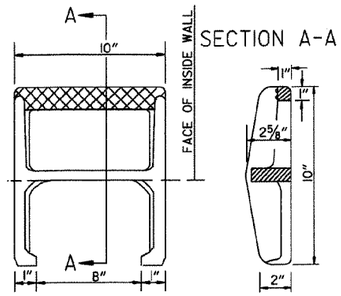
SECTION A-A

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)

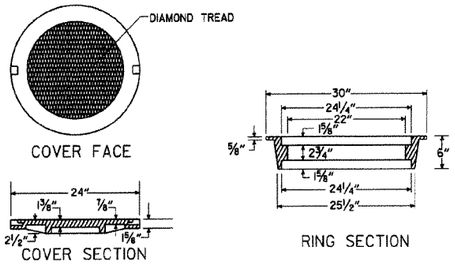


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

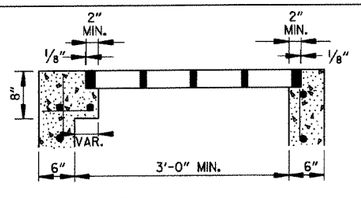
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

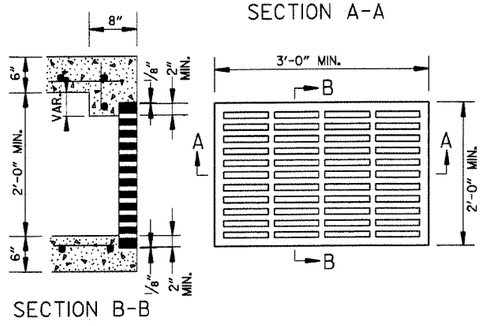


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



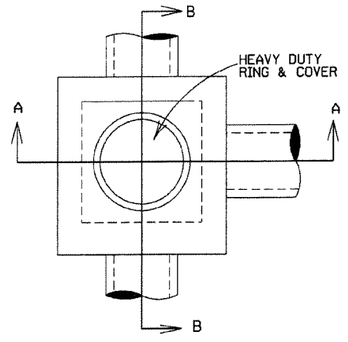
SECTION A-A



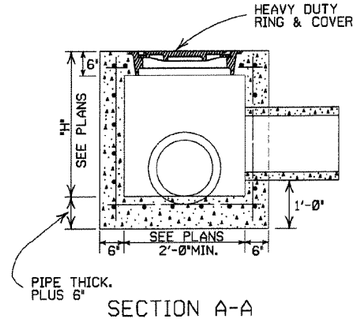
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

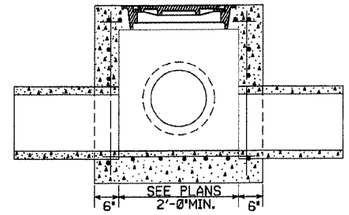


PLAN



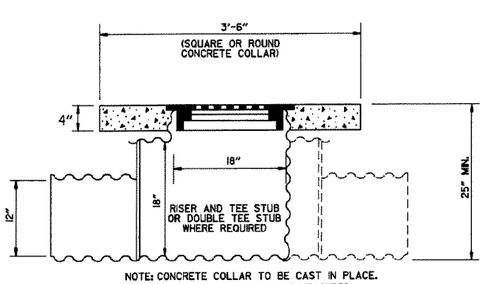
SECTION A-A

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.

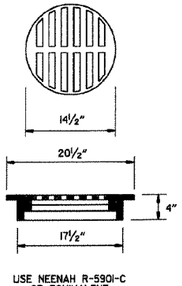


SECTION B-B

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:

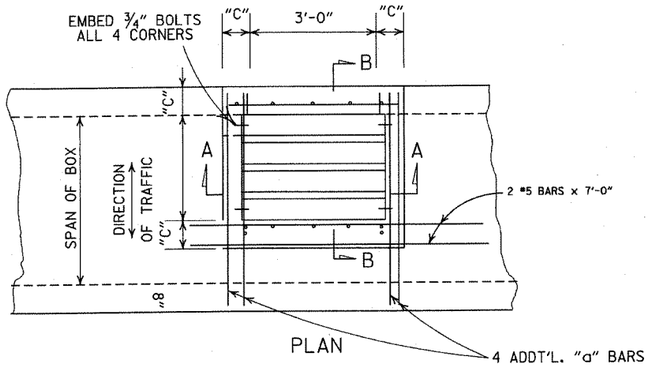
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS 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	

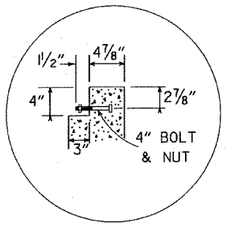
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

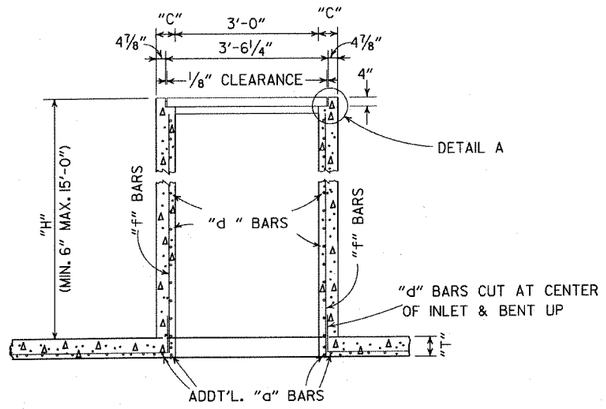
STANDARD DRAWING FPC-9



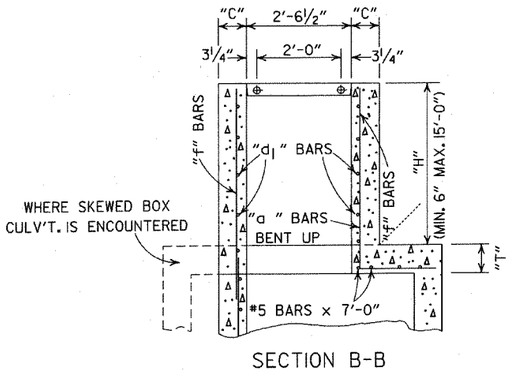
PLAN



DETAIL A



SECTION A-A

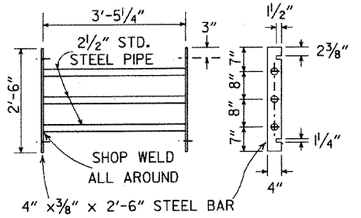


SECTION B-B

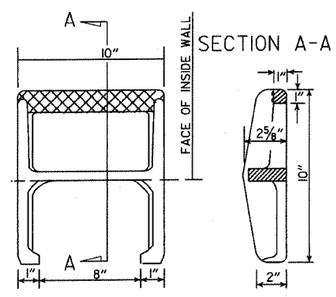
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM" FOR REINFORCED CONC. BOX CULVERTS



GRATE DETAIL



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

GENERAL NOTES:

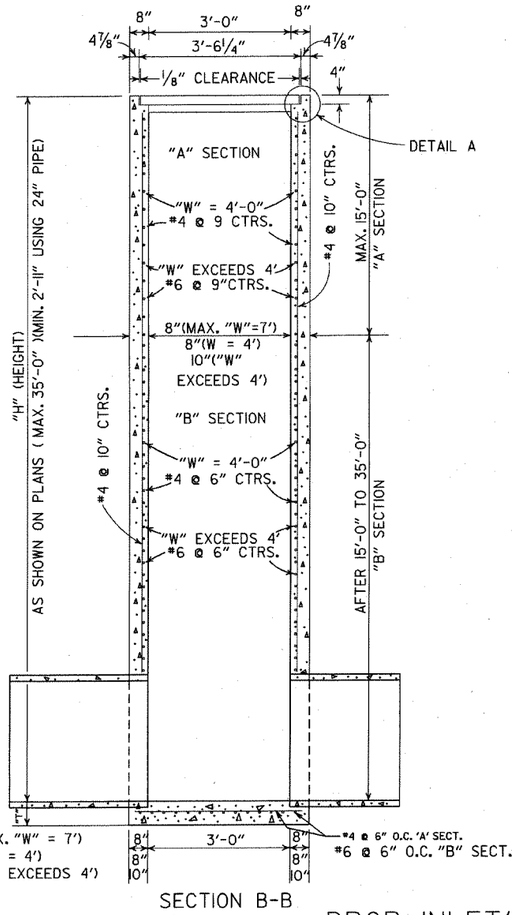
1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TABLE OF "W" DIMENSIONS

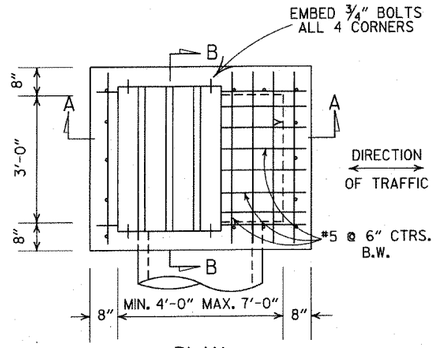
191

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
	"W"	"W"	"W"
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-11"	6'-1"
48"	4'-10"	5'-7"	6'-11"

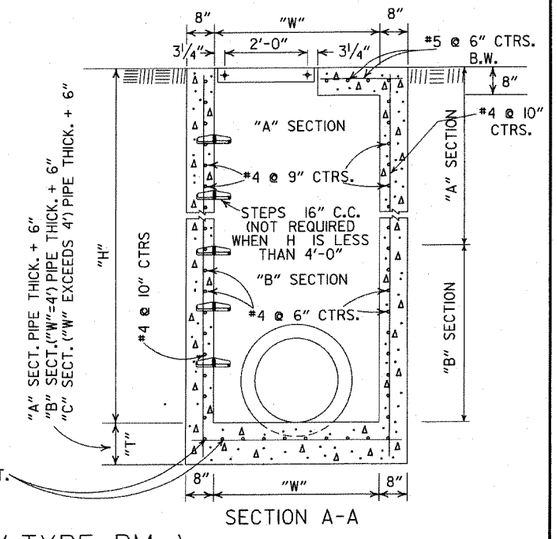
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

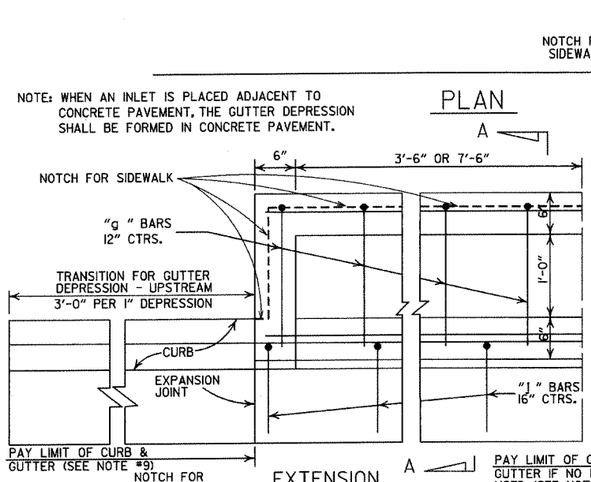
DROP INLET(TYPE RM)

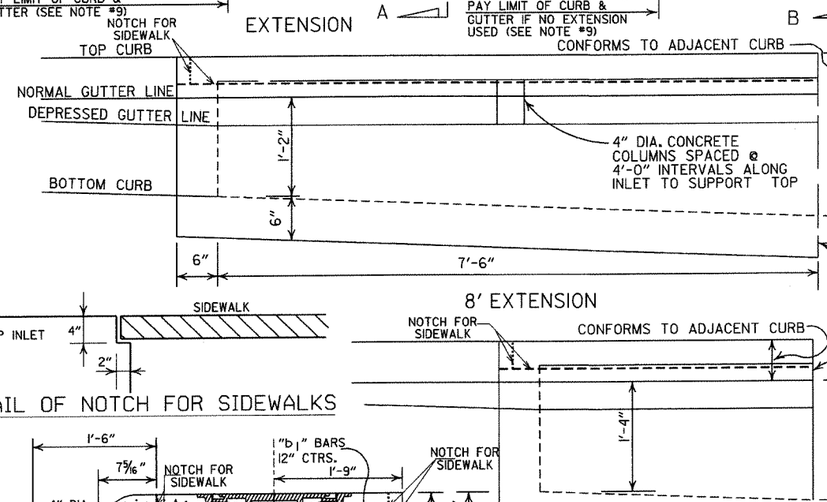
8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL,TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72
REVISED		DATE FILMED

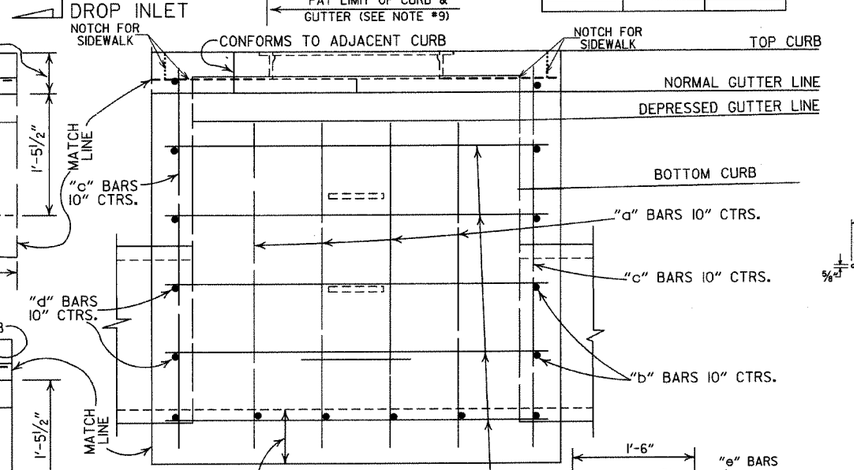
ARKANSAS STATE HIGHWAY COMMISSION

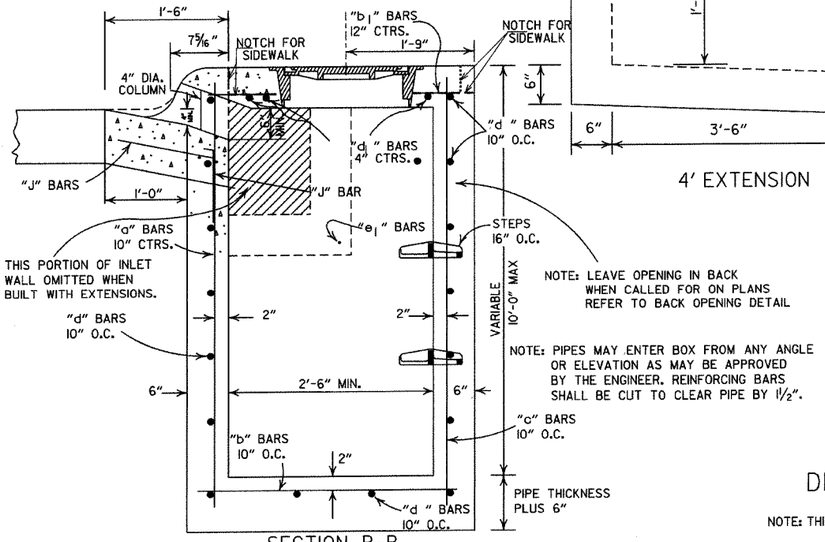
DETAILS OF DROP INLETS

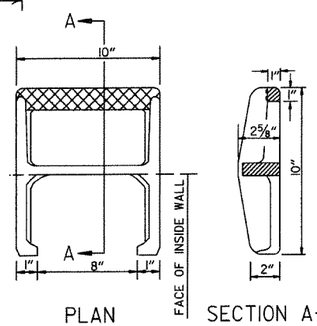
STANDARD DRAWING FPC-9D

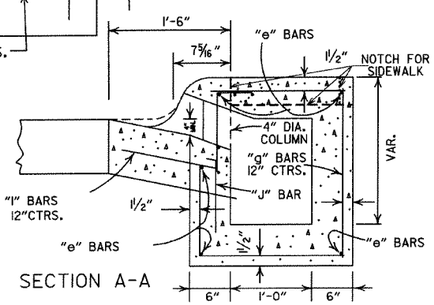












4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	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

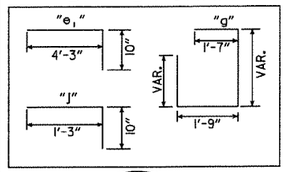
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

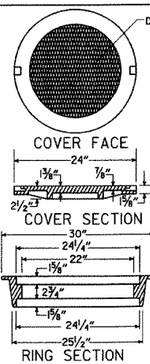
DROP INLET EXTENSION

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

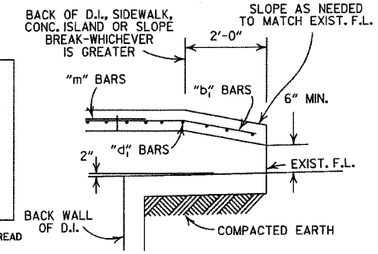
BAR DIAGRAM





APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



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).

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

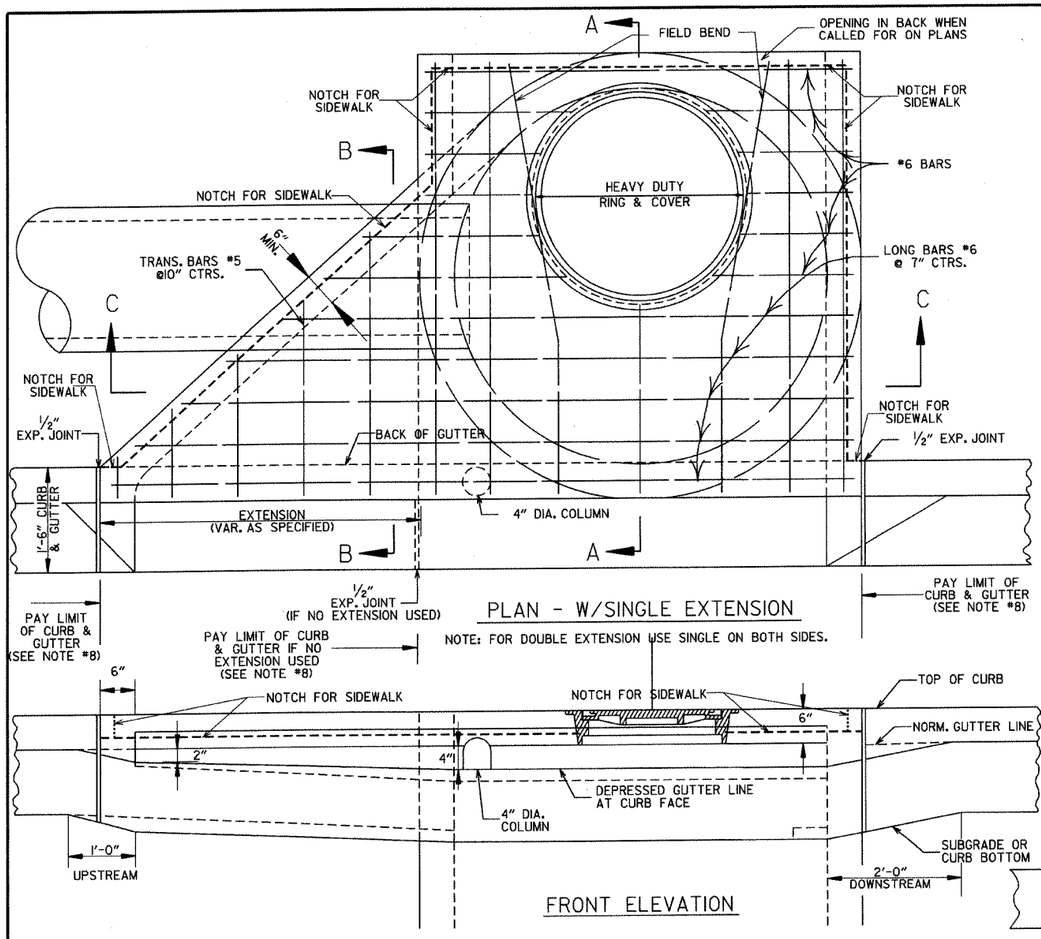
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

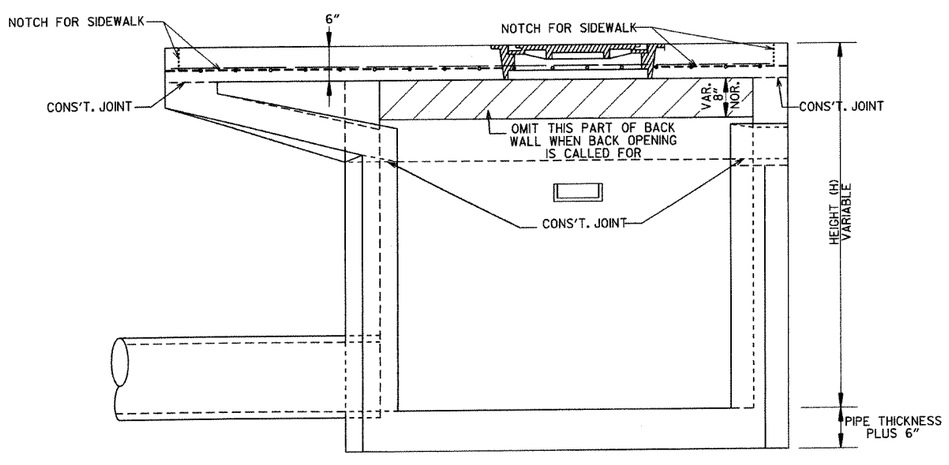
STANDARD DRAWING FPC-9E



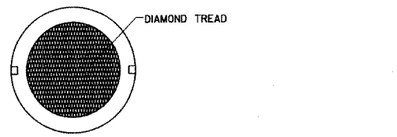
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



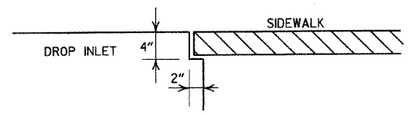
SECTION C-C



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

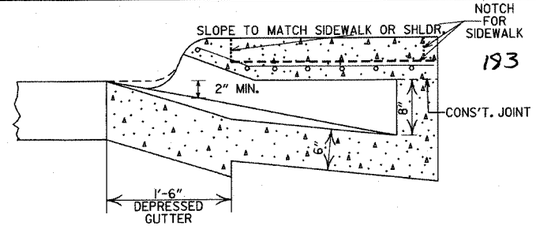
SECTION A-A

APPROX. WEIGHT = 11LBS. (CAST IRON)

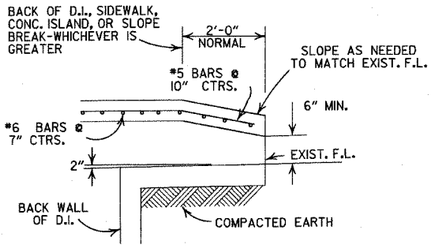
PLAN

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.

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 & ADJ. OPENING DIMENSION	
10-12-95	CORRECTED *6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	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 8, MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	639-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	466-6-2-87

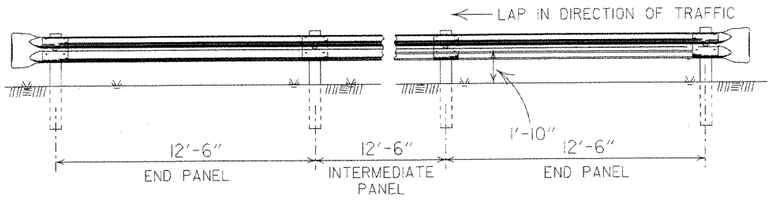
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

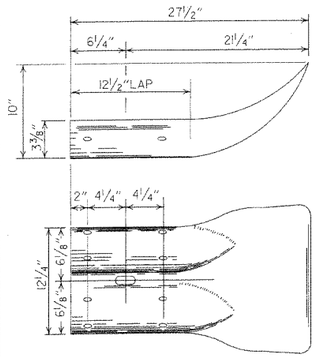
STANDARD DRAWING FPC-9M



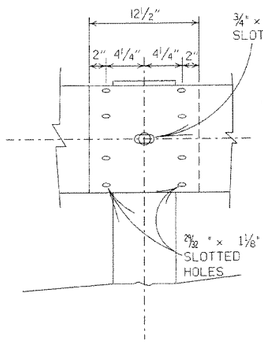
PLAN



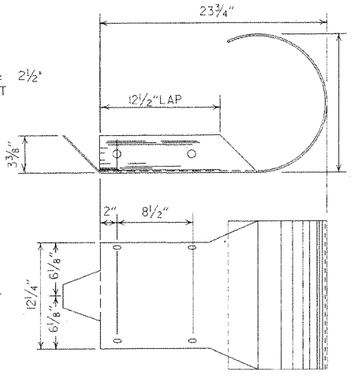
ELEVATION



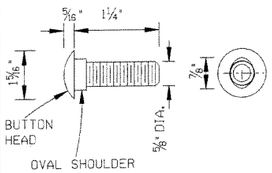
TERMINAL SECTION



RAIL SPLICE

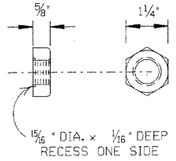


TERMINAL SECTION

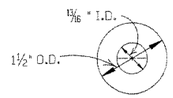


SPLICE BOLT

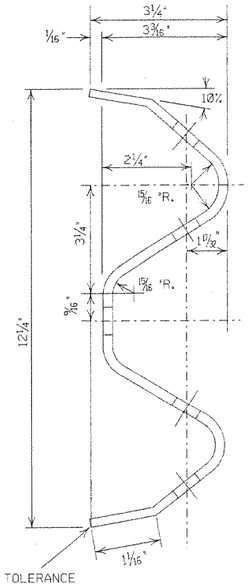
NOTE: POST BOLT SAME EXCEPT LENGTH.



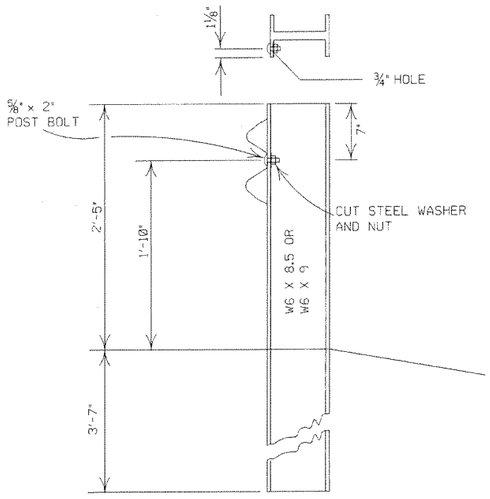
NUT



CUT STEEL WASHER

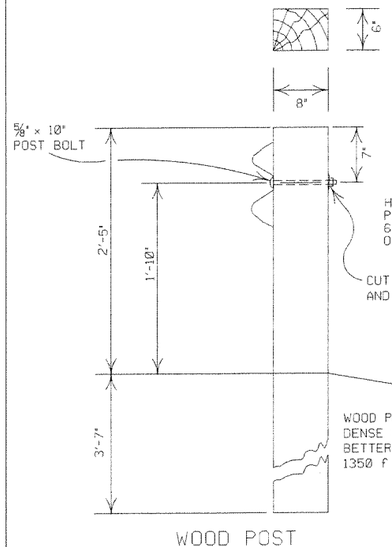


SECTION THRU RAIL



BOLT TO BE ON SIDE AWAY FROM APPROACHING TRAFFIC WHERE FEASIBLE.

STEEL POST



WOOD POST

DETAILS OF POST CONNECTIONS

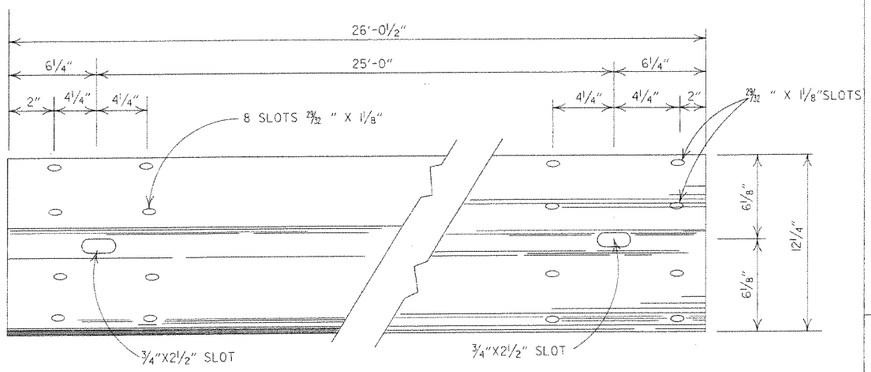
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
8-22-02	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
8-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
6-2-94	ADDED ALTERNATE STEEL POST SIZE	
8- 5-93	REVISED STEEL POSTS SIZE	8-5-93
8-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DET. PLCMNT. ON HWY.	555-11-20-87
1-4-83	GRADE FOR WOOD POSTS	679-1-4-83
10-1-77	HARDENED WASHER	922-10-1-72
10-2-72	REVISED & REDRAWN	521-10-2-72

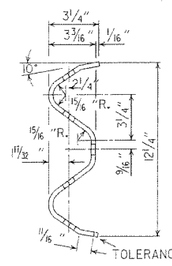
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS (TYPE C)

STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

STANDARD DRAWING GR-7

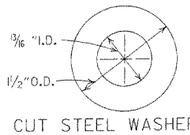




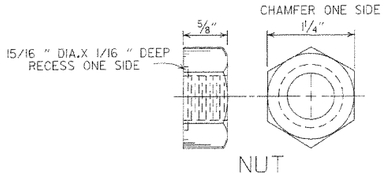
DETAILS OF W-BEAM GUARD RAIL

RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

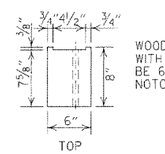
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

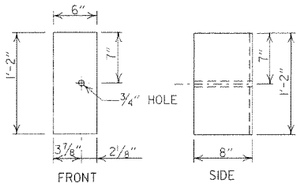


NUT

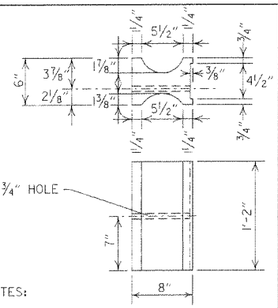


TOP

WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.



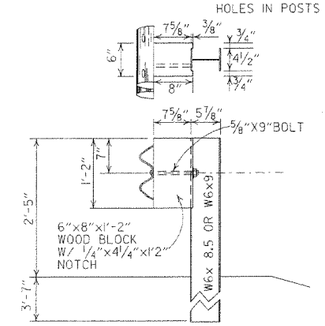
WOOD BLOCKOUT (W-BEAM)



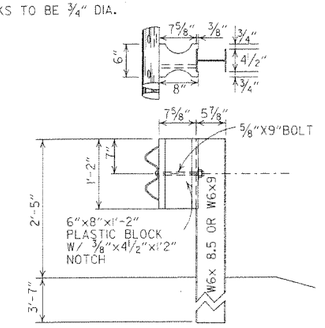
NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.

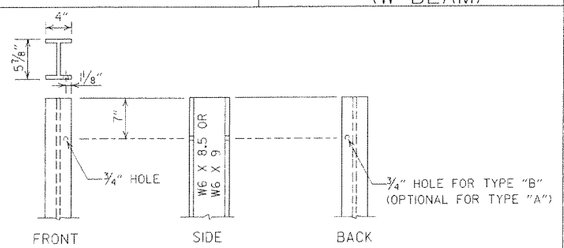


WOOD BLOCKOUT CONNECTIONS

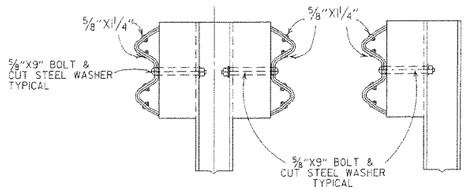


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



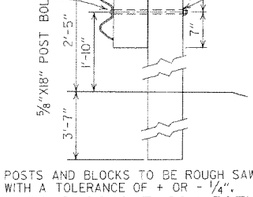
STEEL POST



TYPE "B" TYPE "A"

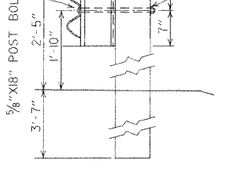
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

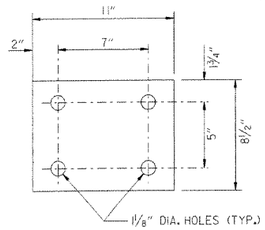
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED 4 FT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-5-91
8-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87

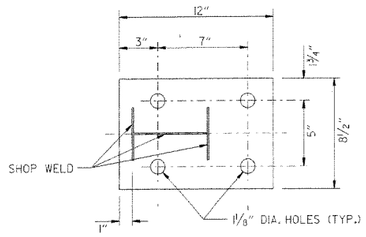
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

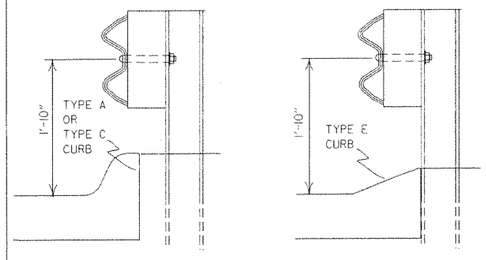


WASHER PLATE



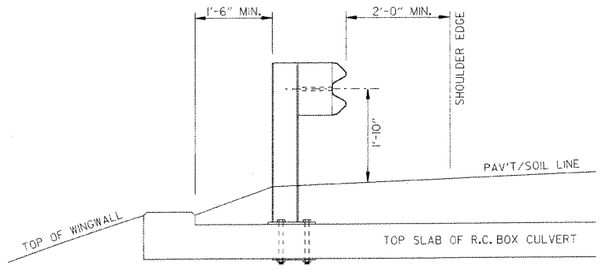
BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

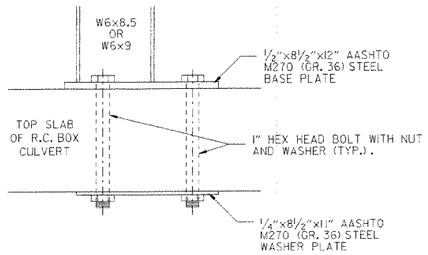


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

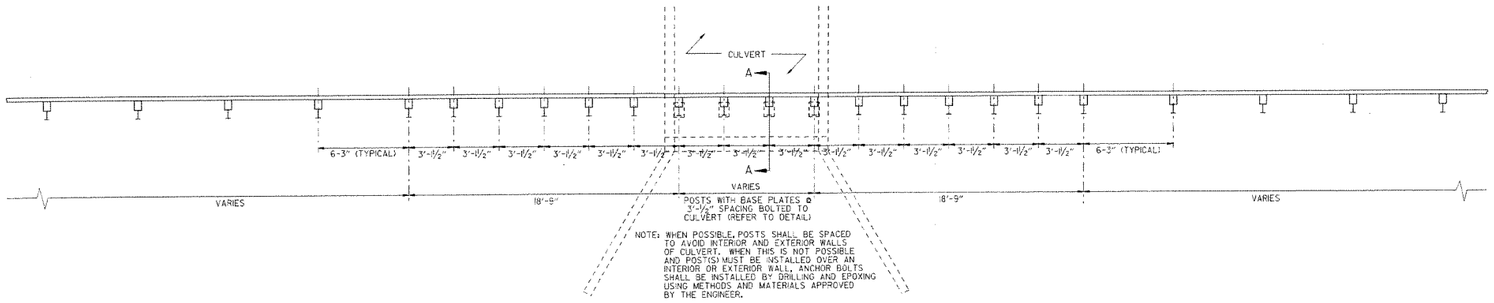
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CC-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



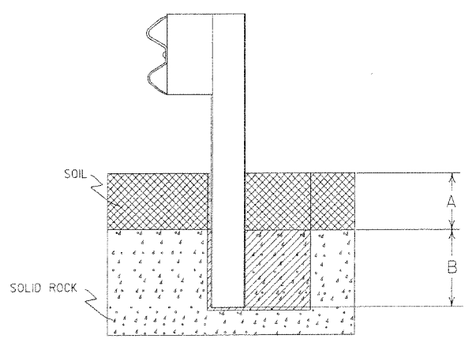
DETAIL OF CONNECTION



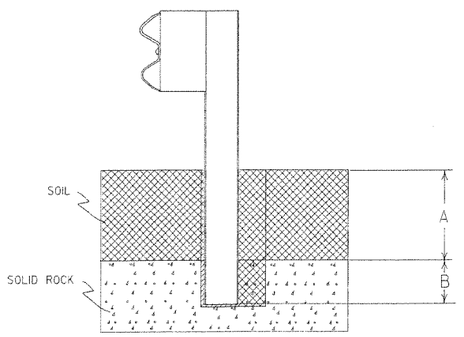
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

Case 1

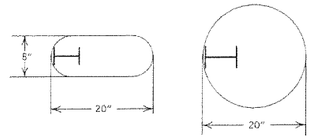


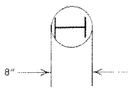
Case 2



Plan View Steel Posts

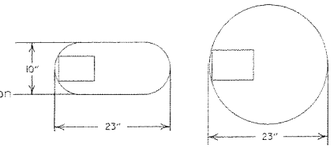
Either hole configuration acceptable

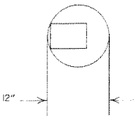




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

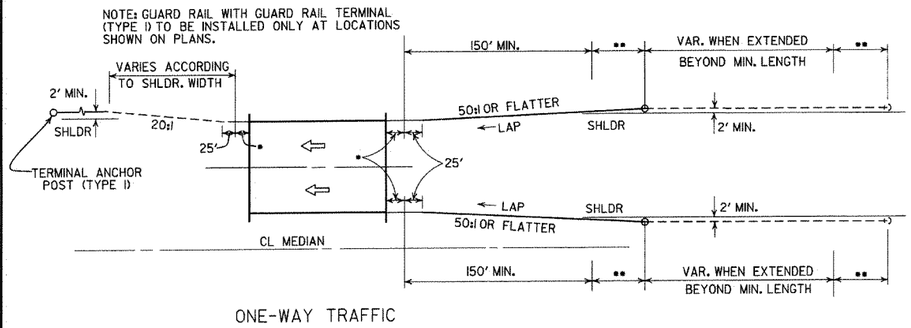
DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
6-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

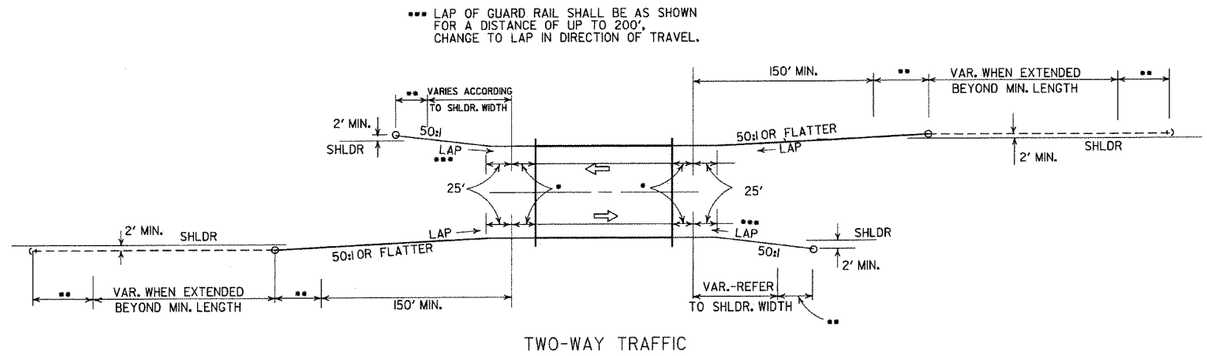
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



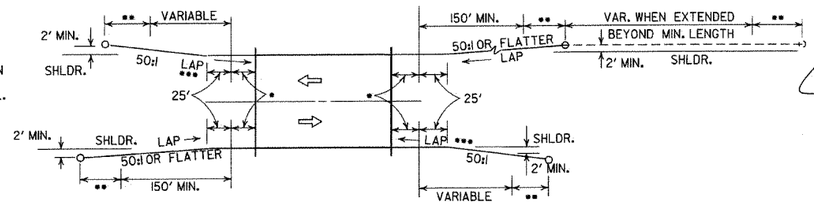
ONE-WAY TRAFFIC



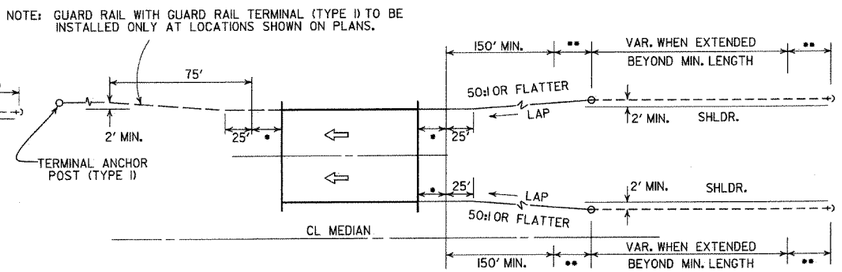
TWO-WAY TRAFFIC

METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



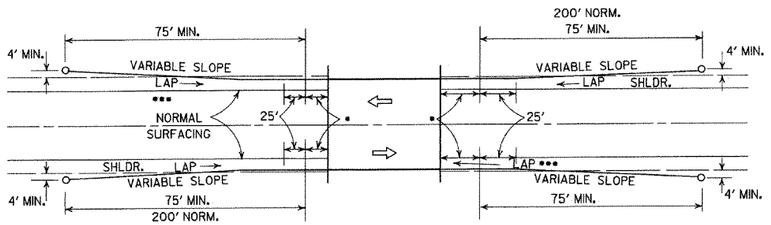
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



LEGEND

- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

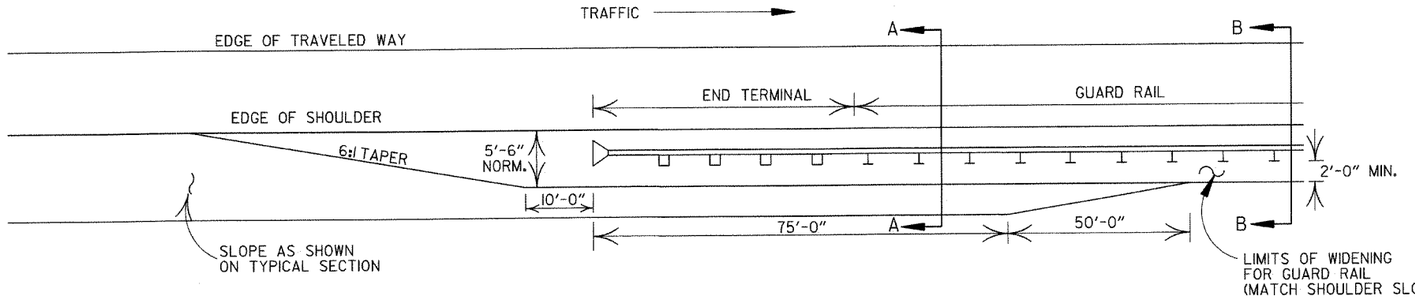
METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

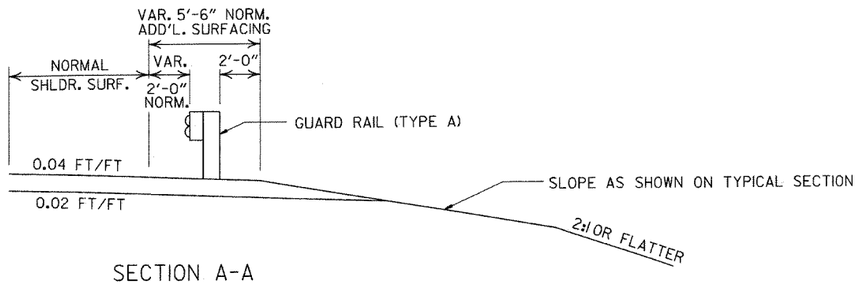
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

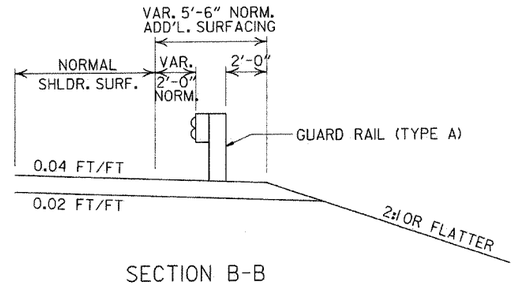
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





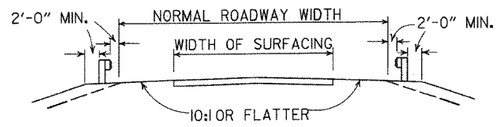
SECTION A-A



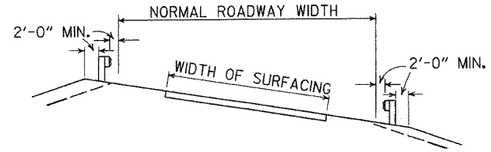
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

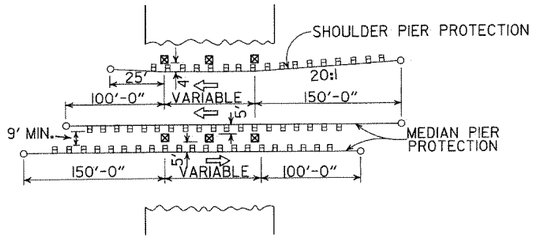


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



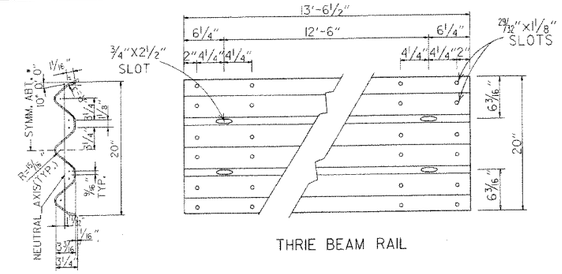
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

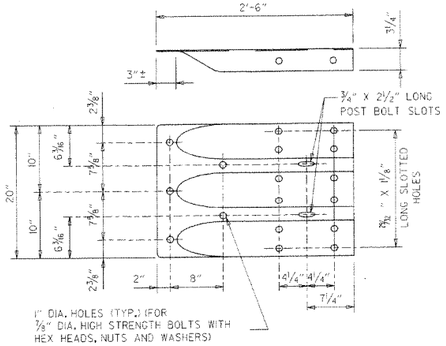
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



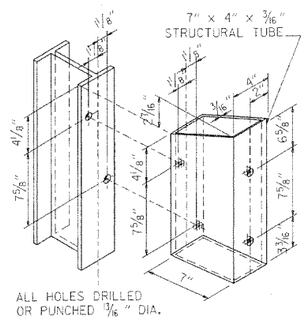
THRIE BEAM RAIL

SECTION THRU
THRIE BEAM RAIL



1" DIA. HOLES (TYP.) FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

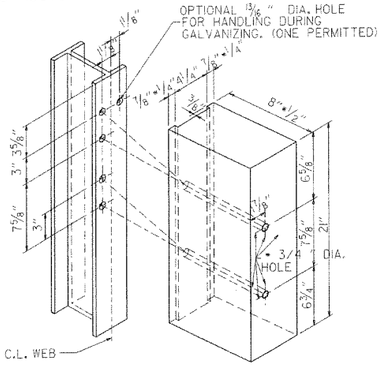
SPECIAL END SHOE



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

ALL HOLES DRILLED OR PUNCHED 13/16" DIA.

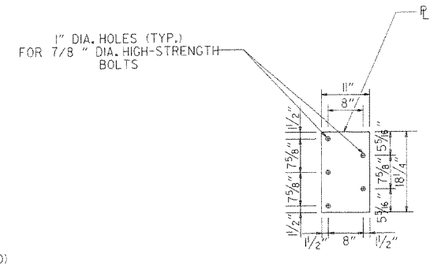
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

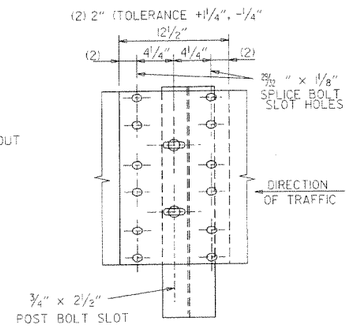
HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

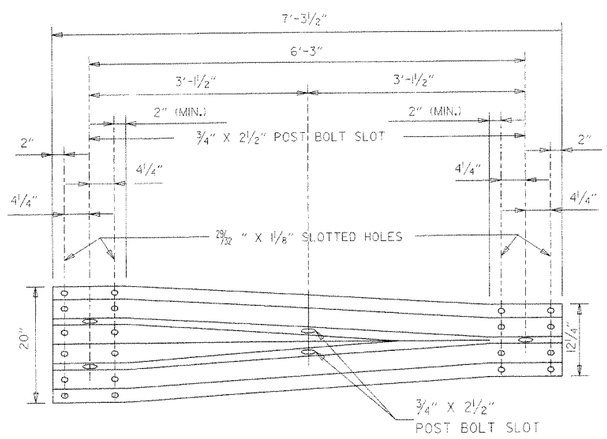


CONNECTOR PLATE

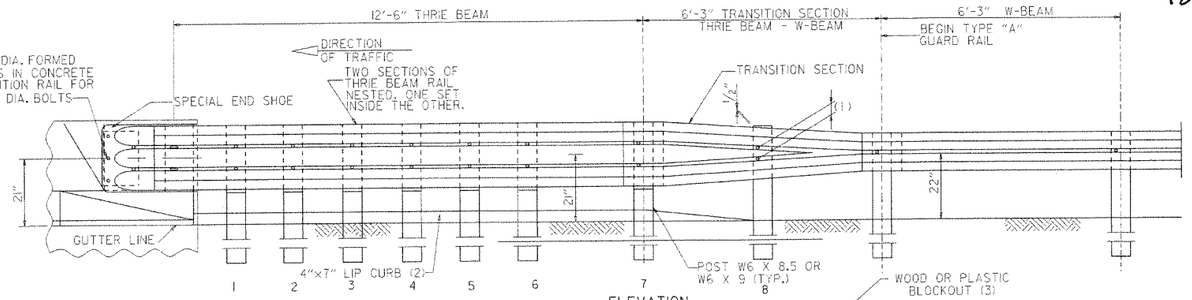
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



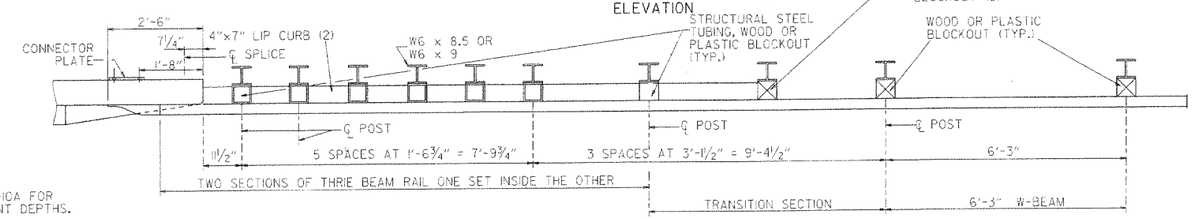
THRIE BEAM RAIL
SPLICE AT POST



TRANSITION SECTION

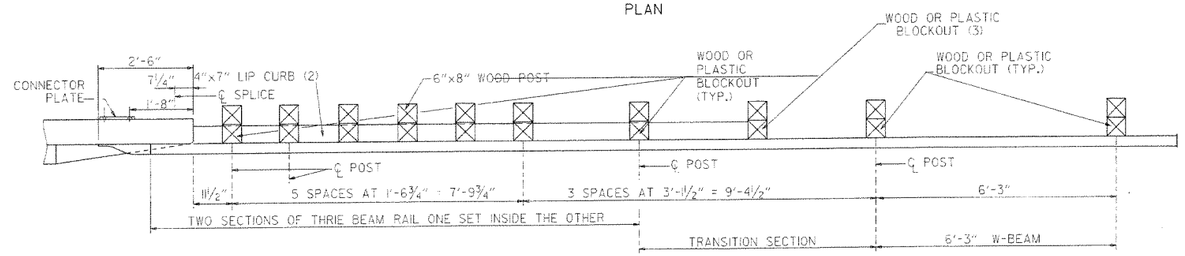


ELEVATION



PLAN

NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-11.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED NOTE (2)	
6-29-00	MOVED DIMENSION LINES	
5-18-00	ADDED NOTE	
3-30-00	DRAWN & ISSUED	

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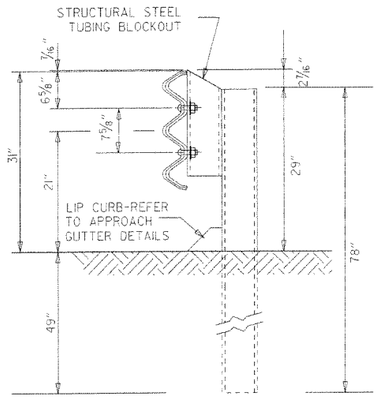
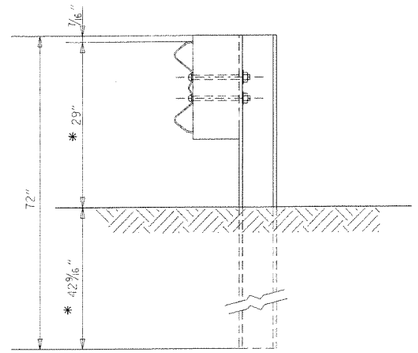
GUARD RAIL DETAILS

STANDARD DRAWING GR-10

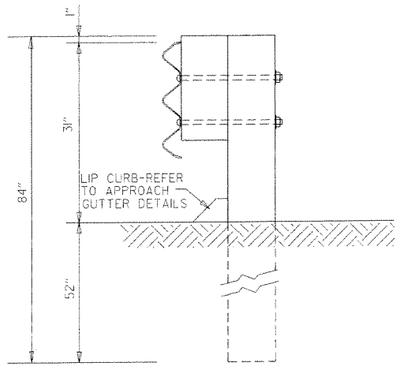


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

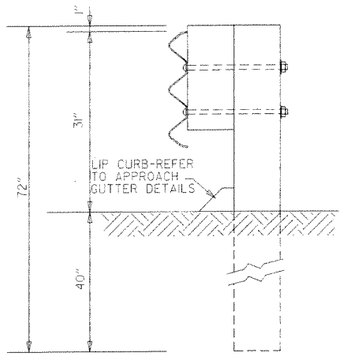


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

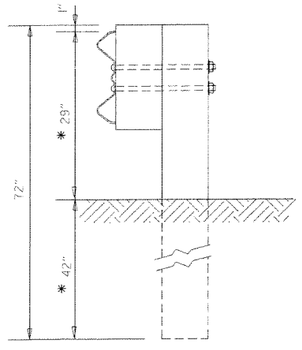
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

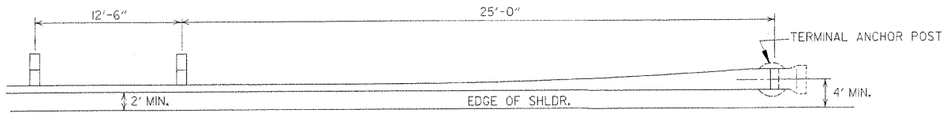
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

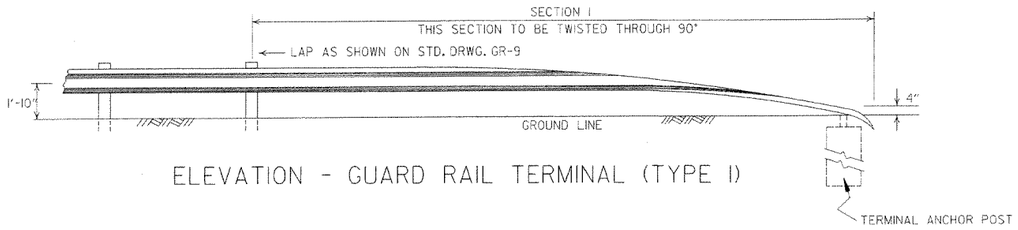
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

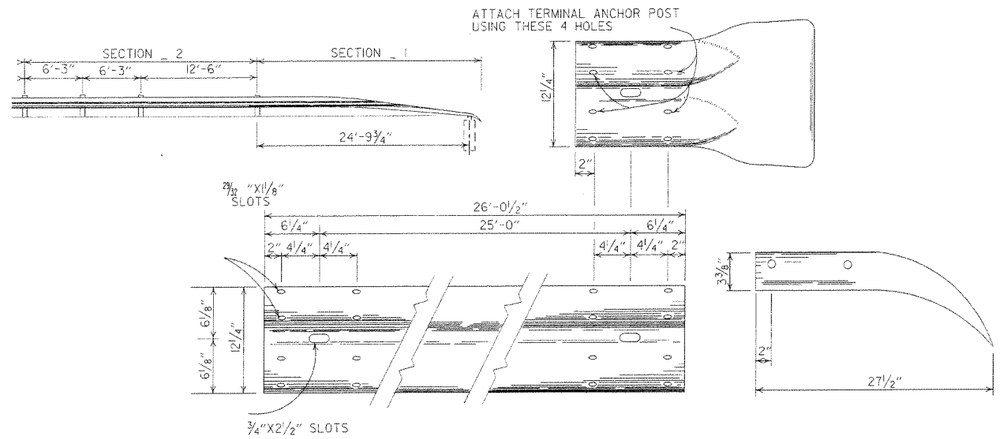


PLAN - GUARD RAIL TERMINAL (TYPE I)



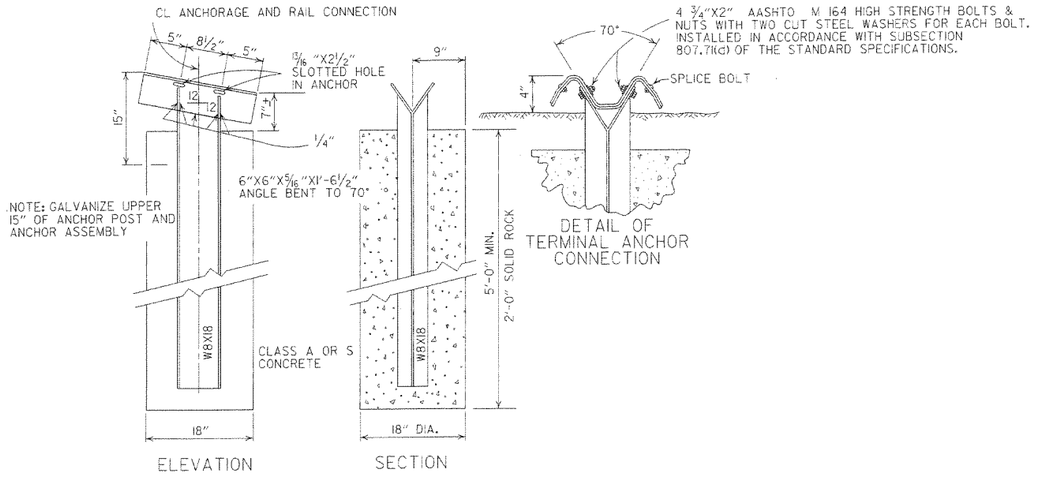
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION



NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

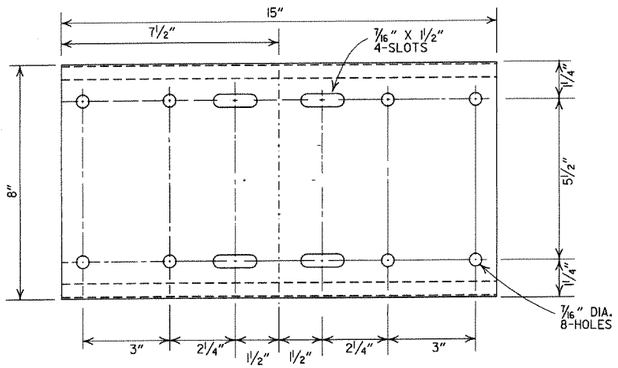
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
6-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-3-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-1-92	DRAWN & ISSUED	10-1-92

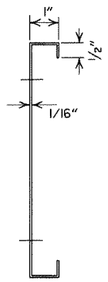
ARKANSAS STATE HIGHWAY COMMISSION

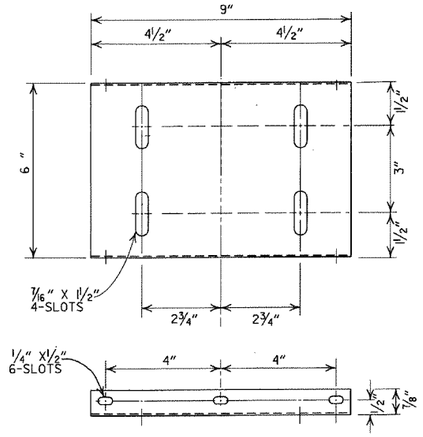
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1

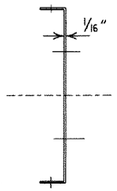


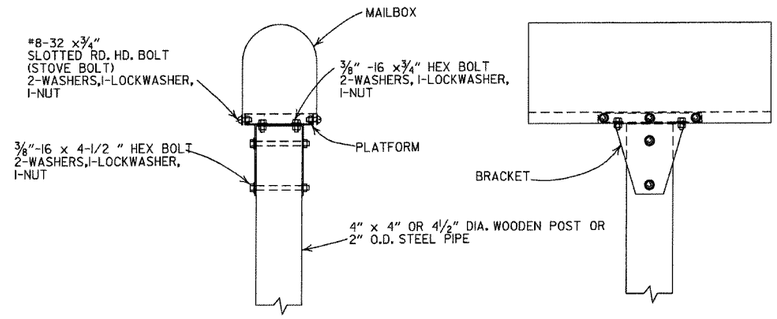
SHELF



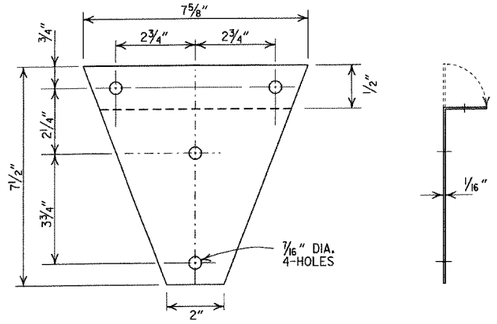


PLATFORM





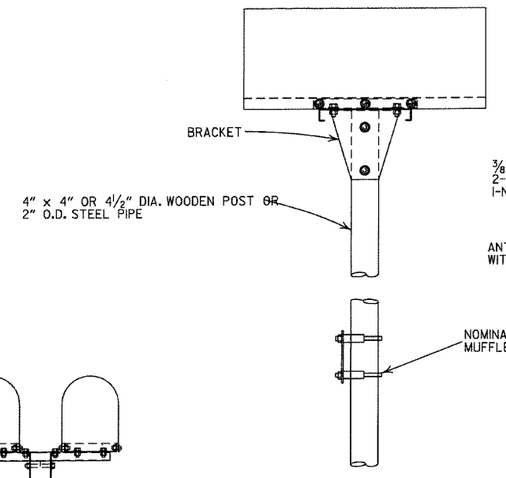
SINGLE INSTALLATION



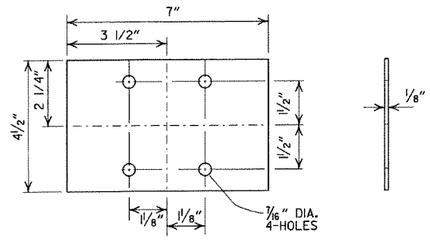
BRACKET

GENERAL NOTES

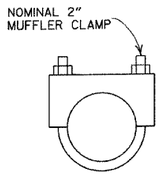
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



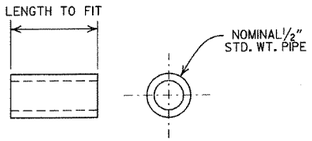
DOUBLE INSTALLATION



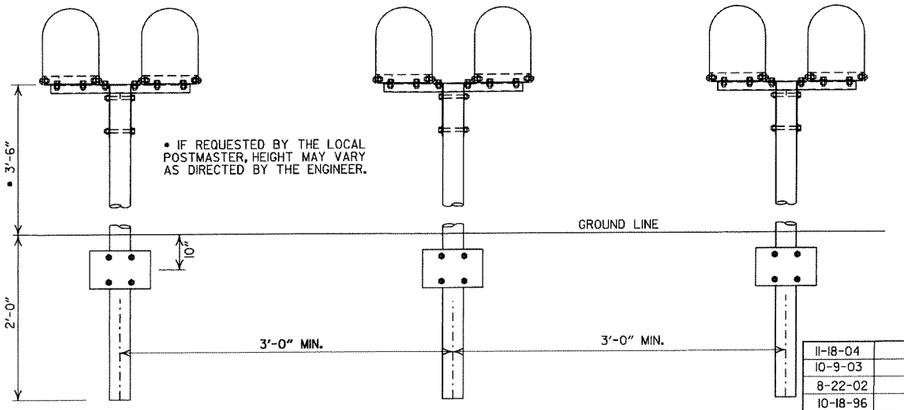
ANTI-TWIST PLATE



CLAMP



SPACER



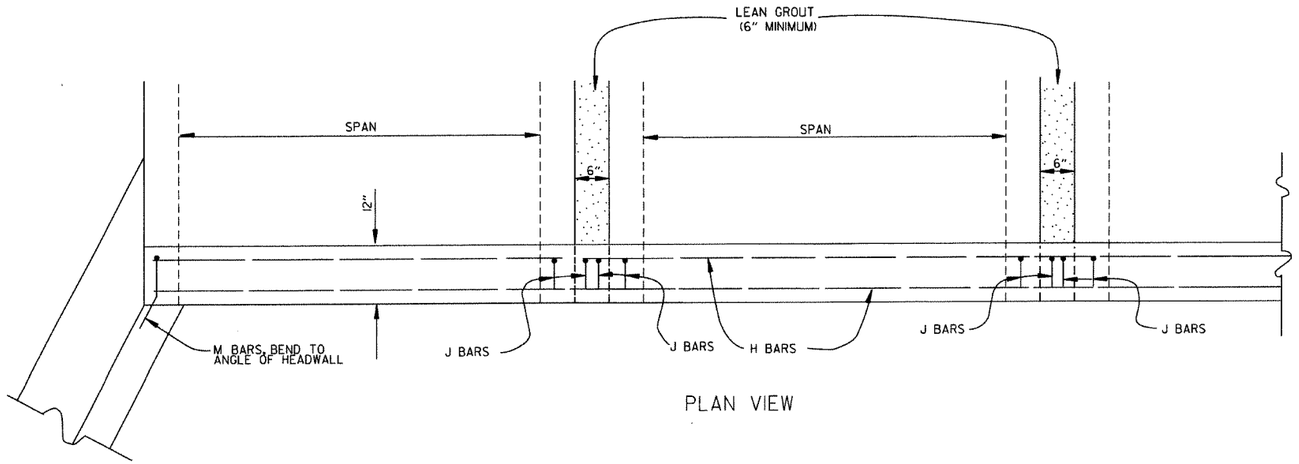
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

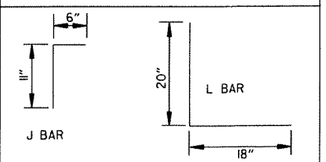
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

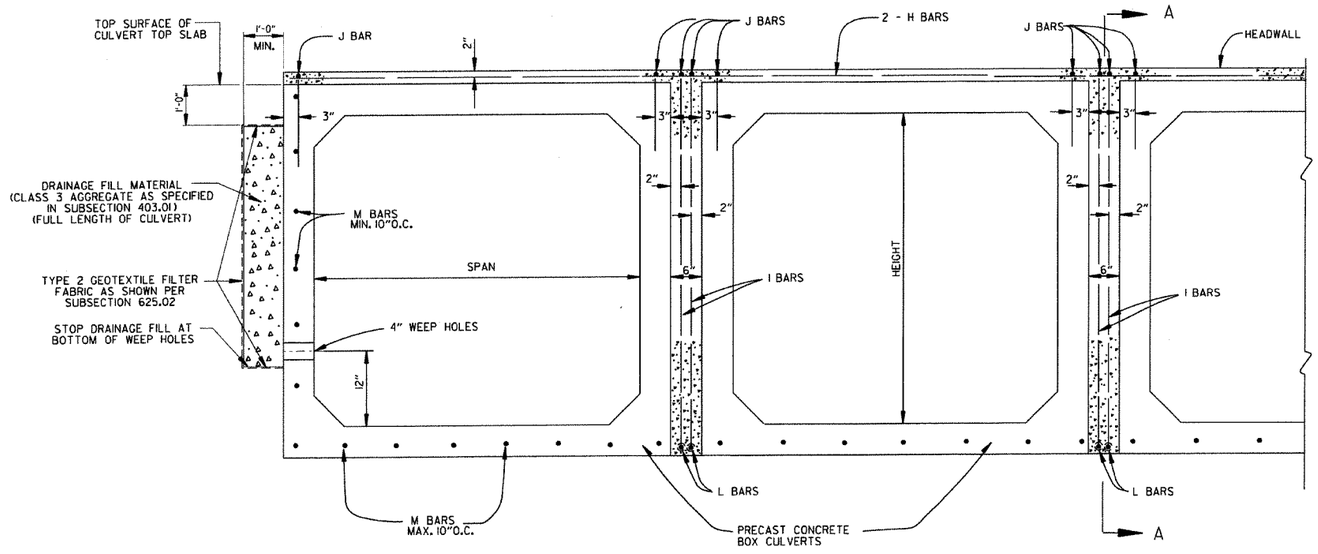
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

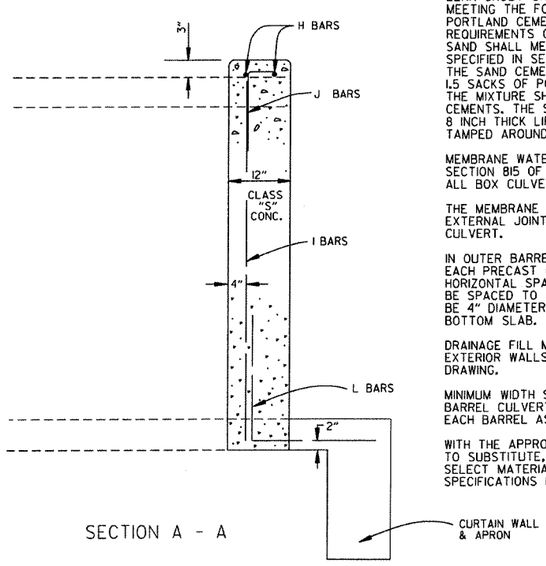
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED: JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

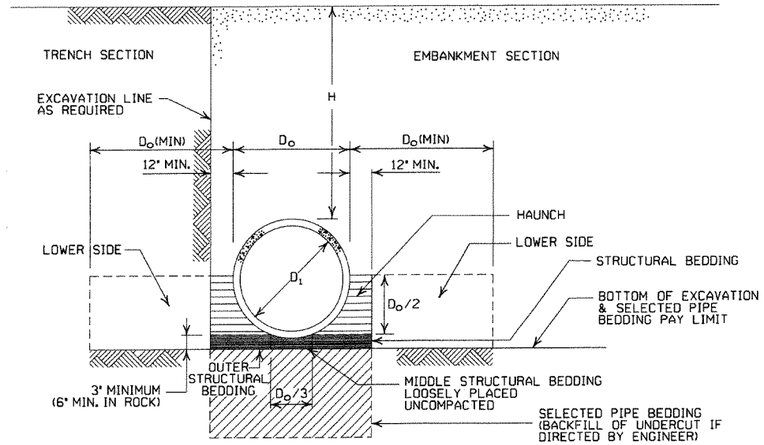
- LEGEND -

D_i = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
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

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.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION	INSTALLATION			INSTALLATION	INSTALLATION
				TYPE 1	TYPE 1			TYPE 1	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		INSTALLATION			
				TYPE 2	TYPE 1	TYPE 2	TYPE 1		
36	40x31	5	0.079	3	2	12	15		
42	46x36	6	0.079	3	2	13	15		
48	53x41	7	0.079	3	2	13	15		
54	60x46	8	0.079	3	2	13	15		
60	66x51	9	0.079	3	2	13	15		
66	73x55	12	0.079	3	2	15	15		
72	81x59	14	0.079	3	2	15	15		
78	87x63	14	0.079	3	2	15	15		
84	95x67	16	0.109	3	2	15	15		
90	103x71	16	0.109	3	2	15	15		
96	112x75	18	0.109	3	2	15	15		
102	117x79	18	0.109	3	2	15	15		
108	128x83	18	0.138	3	2	15	15		

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

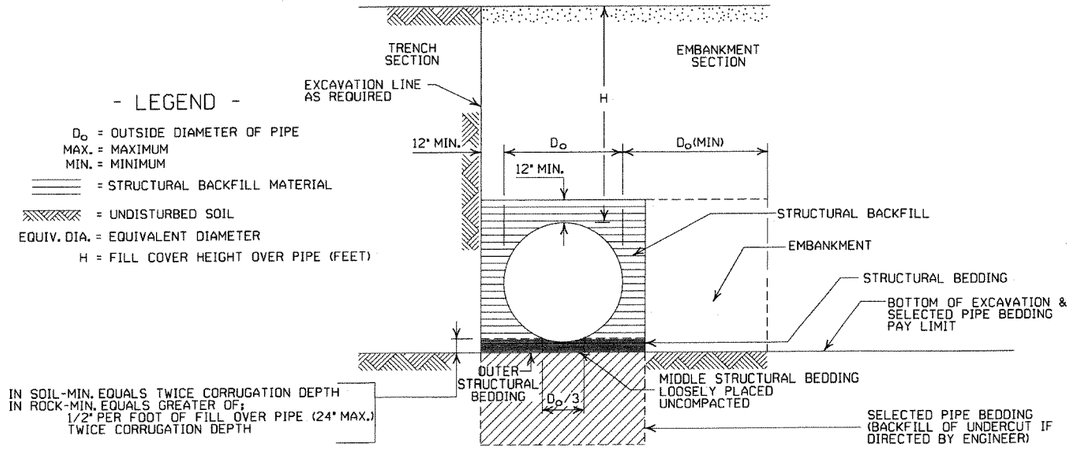
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8



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. INSTALAALTION 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 (2003 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
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

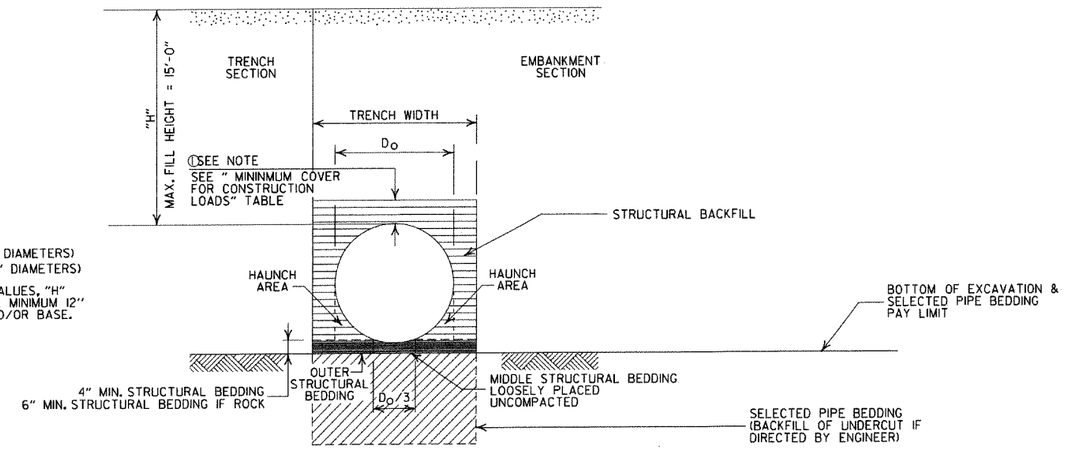
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

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.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION, 2003 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
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 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF 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

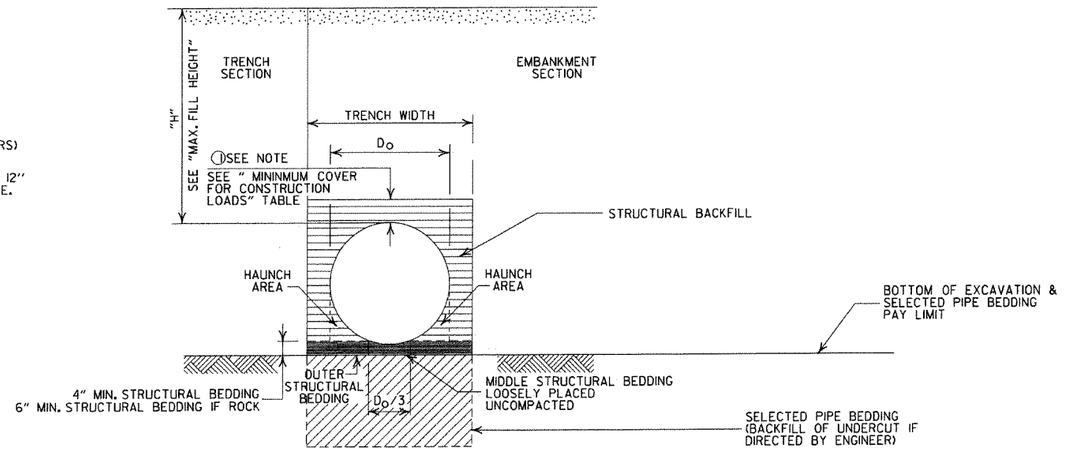
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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, 2003 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

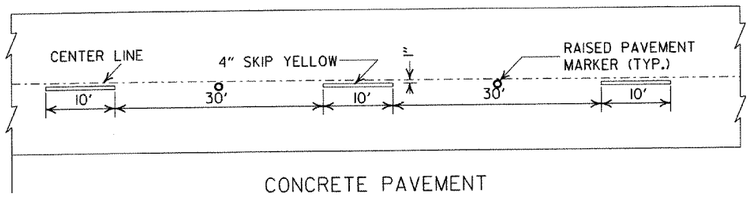
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

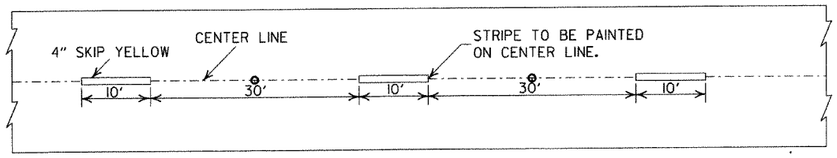
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

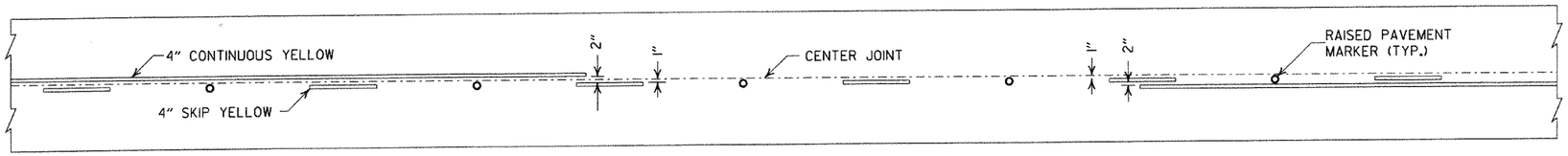


CONCRETE PAVEMENT

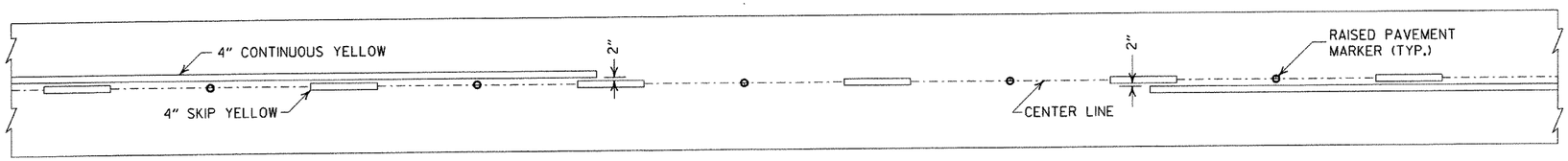


ASPHALT PAVEMENT

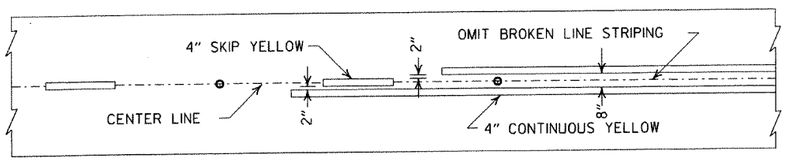
BROKEN LINE STRIPING



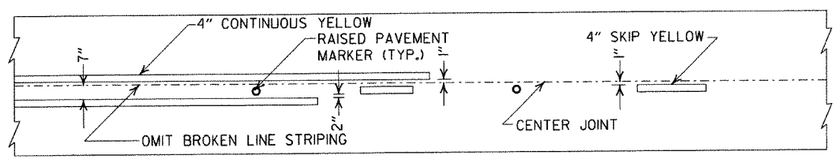
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

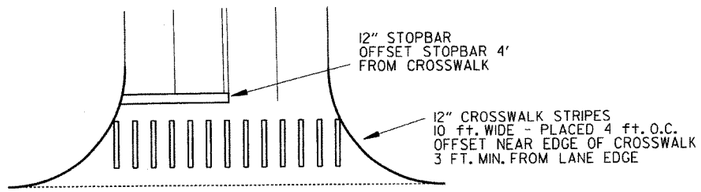


ASPHALT PAVEMENT



CONCRETE PAVEMENT

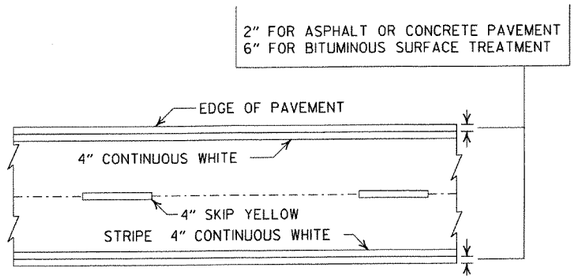
STRIPING AT ADJACENT NO PASSING LANES



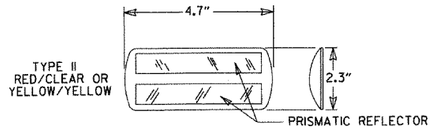
CROSSWALK AND STOPBAR DETAILS

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

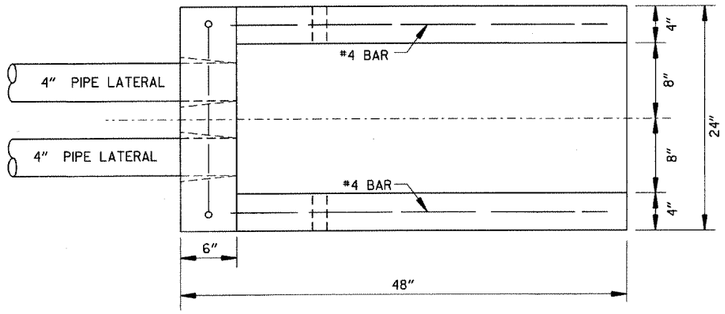
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

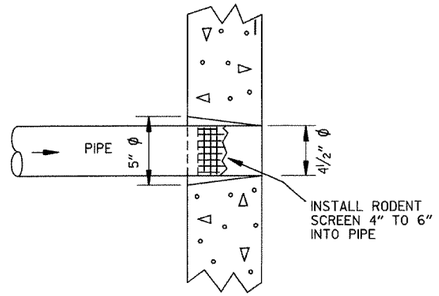
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

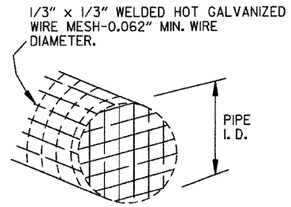
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



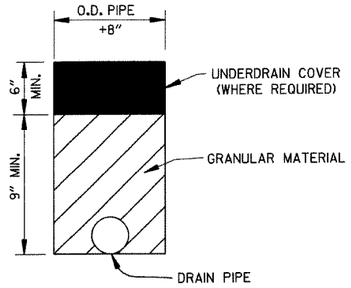
PLAN VIEW

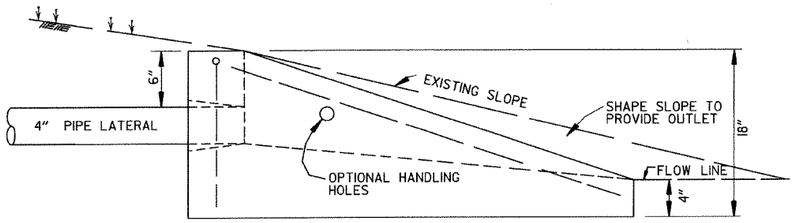


DETAIL OF HOLE FOR 4" PIPE

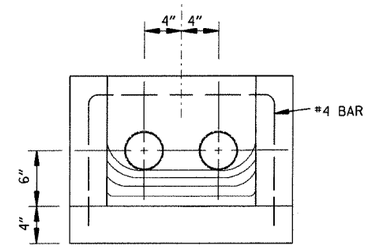


DETAIL OF RODENT SCREEN

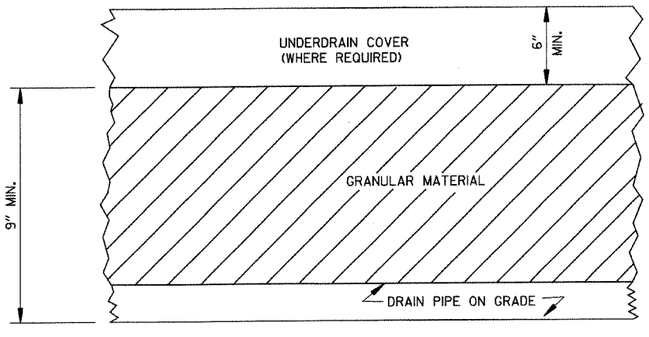




SIDE VIEW

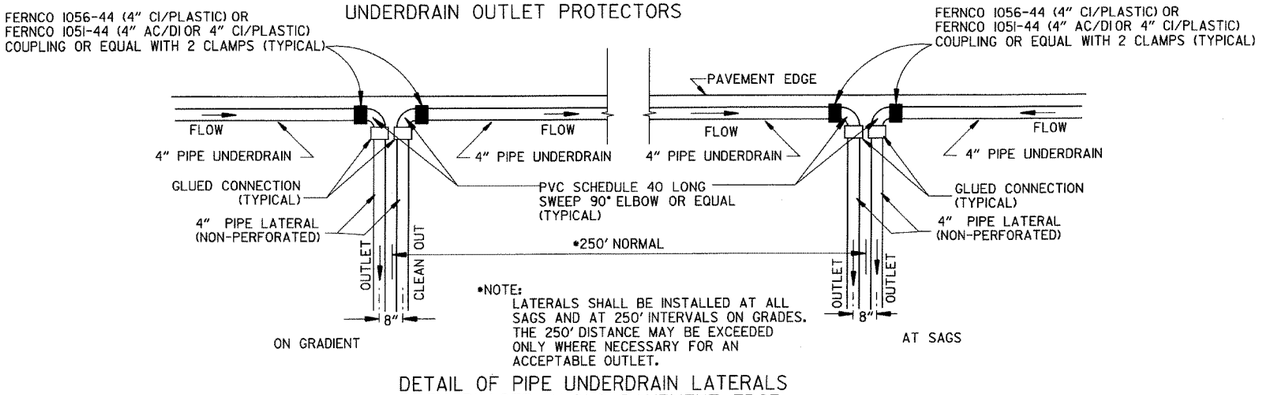


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF 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

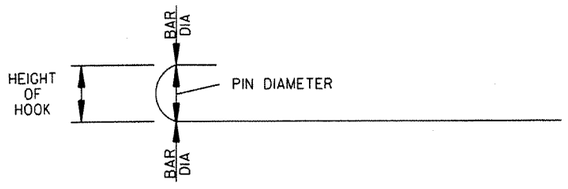
STANDARD DRAWING PU-1

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

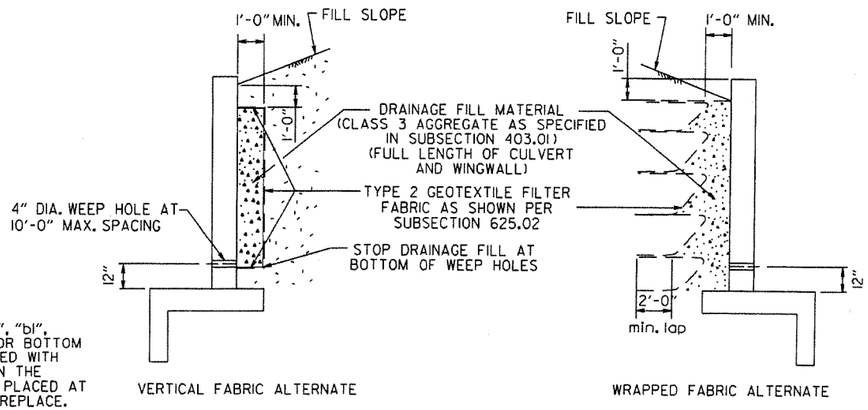
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

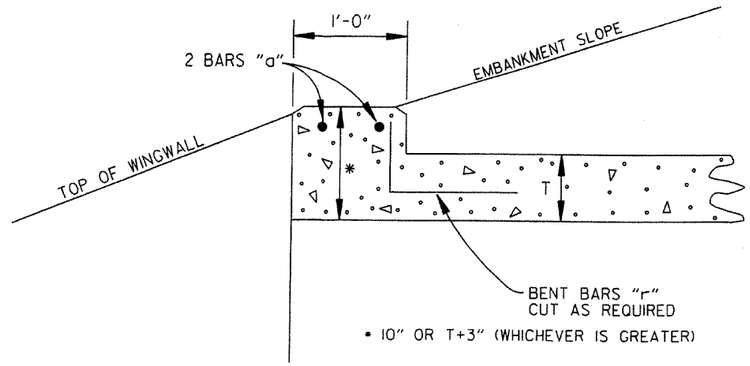
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

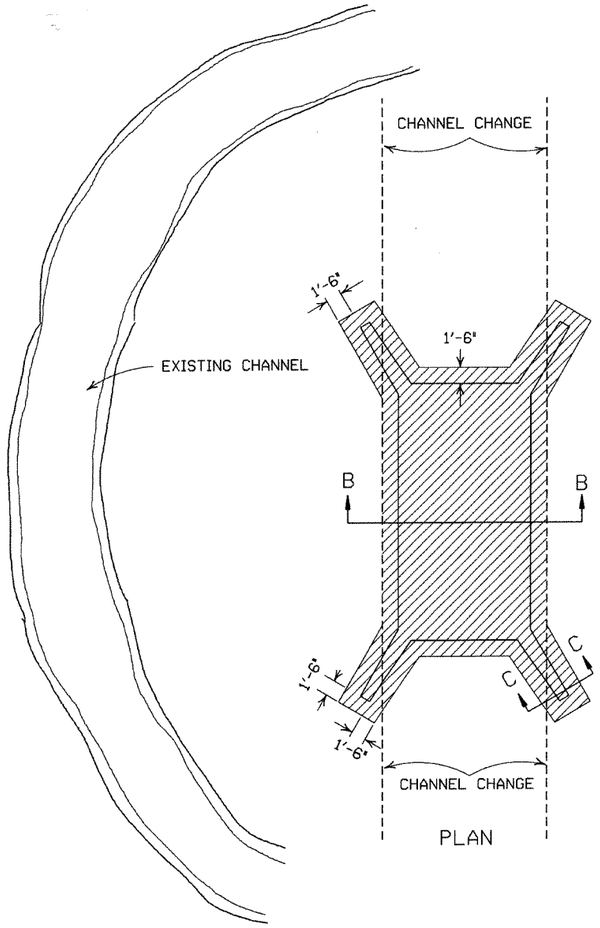
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

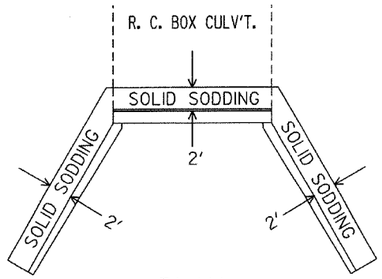
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

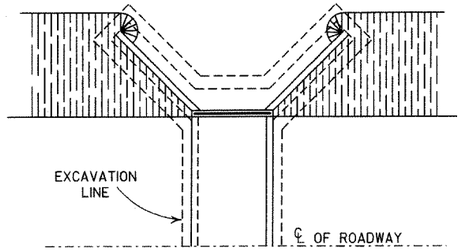
SOLID SODDING



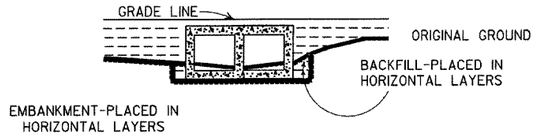
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

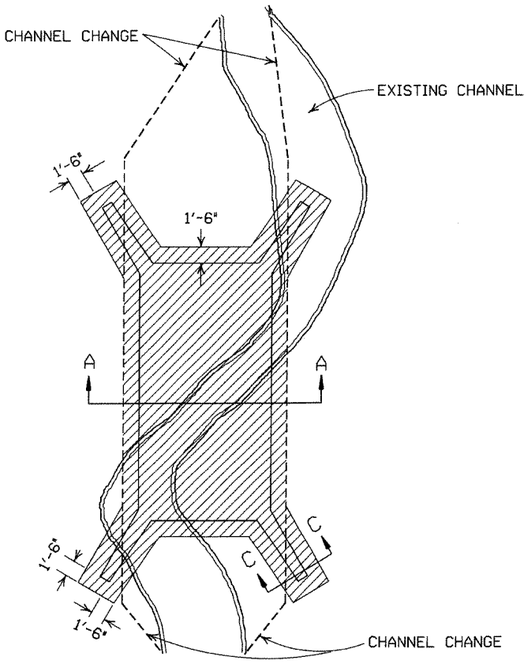


PLAN

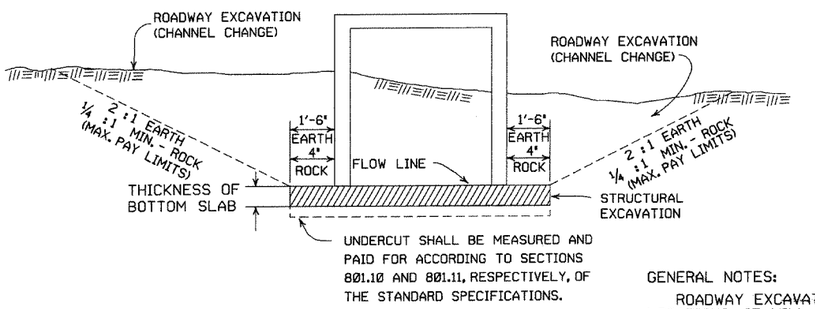


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

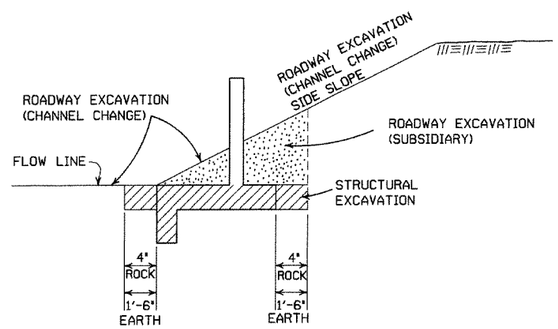


PLAN

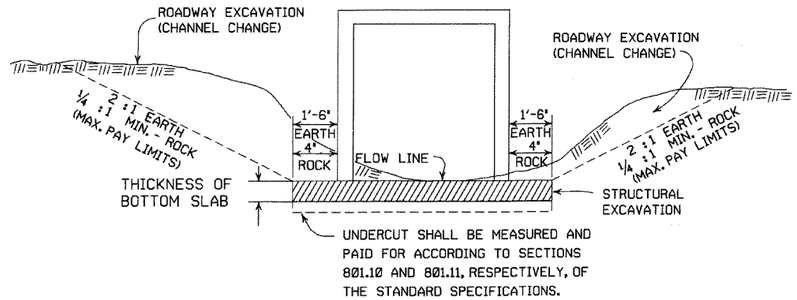


SECTION B-B

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.

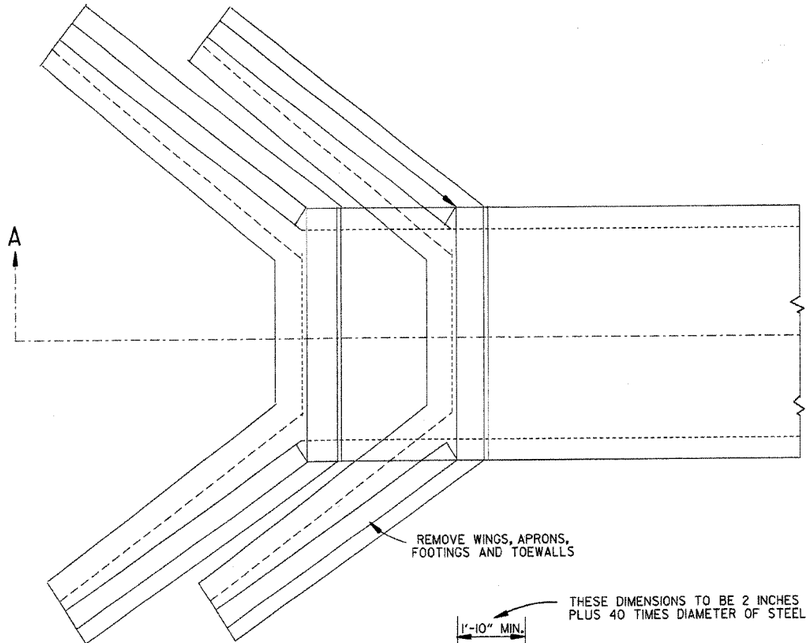
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

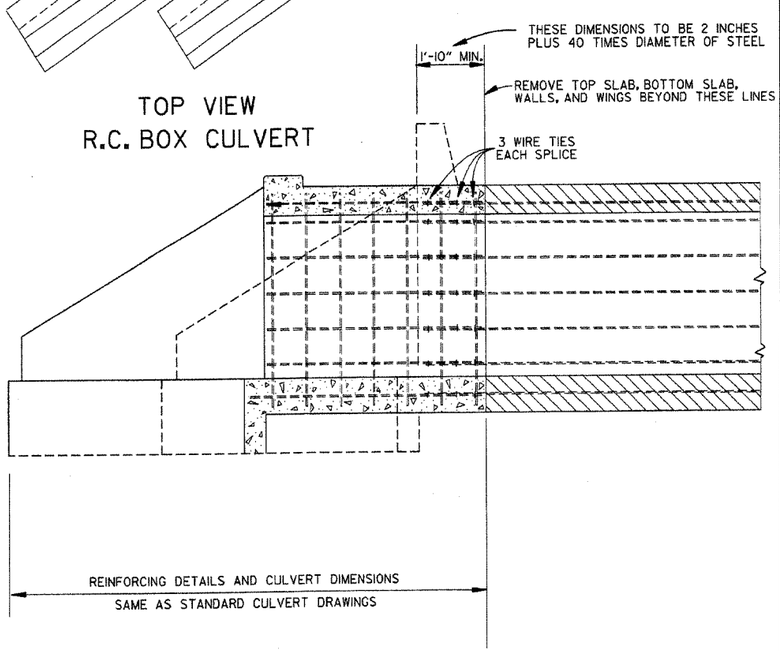
ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

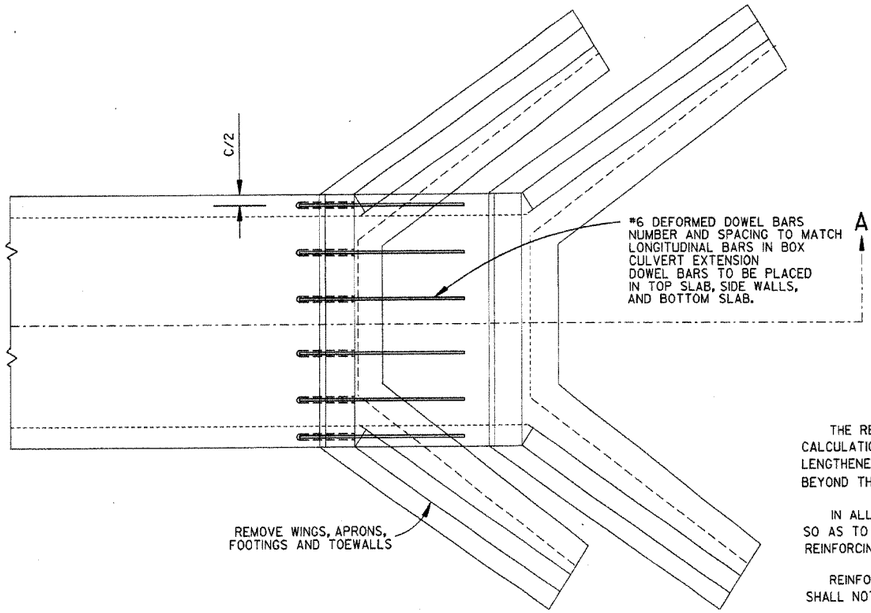


TOP VIEW
R.C. BOX CULVERT

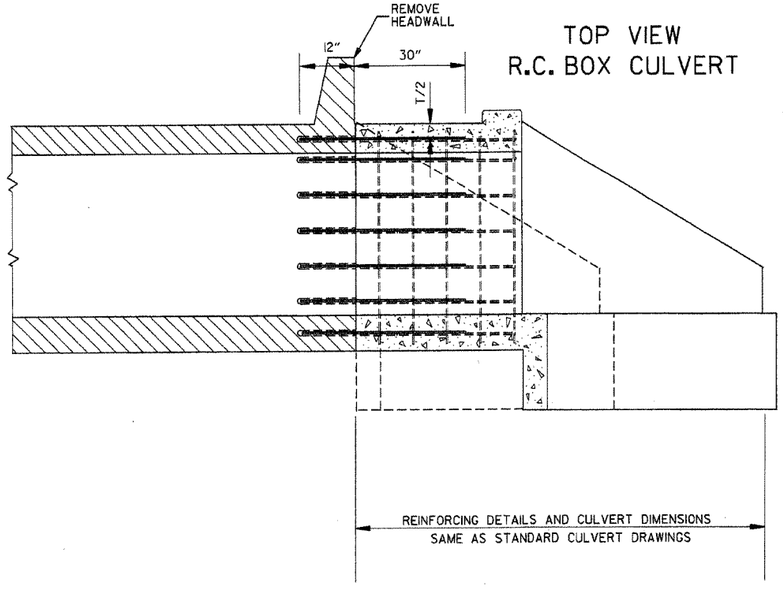


SECTION A-A

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

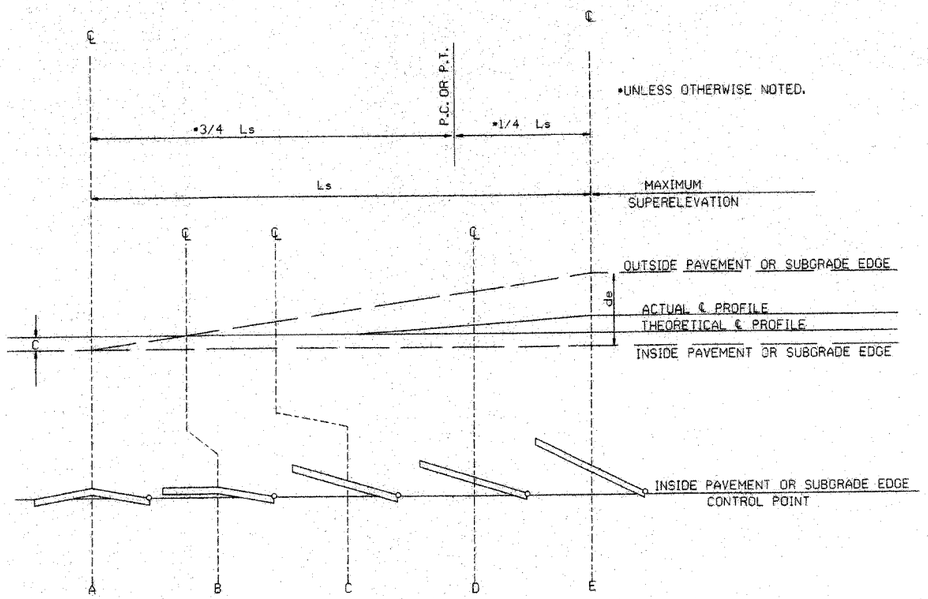
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30′	N.C.			N.C.			N.C.			0.022			0.023			0.028		
0° 45′	N.C.			N.C.			N.C.			0.026			0.030			0.037		
1° 00′	N.C.			N.C.			R.C.			0.032			0.037			0.046		
1° 15′	N.C.			R.C.			0.021			0.037			0.043			0.054		
1° 30′	N.C.			0.021			0.026			0.043			0.049			0.062		
1° 45′	N.C.			0.025			0.031			0.048			0.055			0.070		
2° 00′	R.C.			0.028	175		0.036	200		0.053	225		0.061	250		0.078	300	
2° 15′	R.C.			0.031			0.040			0.056			0.067			0.085	315	350
2° 30′	0.021			0.034			0.045			0.063			0.072			0.091	335	
2° 45′	0.023			0.037			0.049			0.067	230		0.077	260		0.096	350	400
3° 00′	0.025	150		0.040			0.053			0.072	245		0.082	275		0.098	360	
3° 15′	0.027			0.043			0.057			0.076	255		0.086	285		0.100	360	
3° 30′	0.029			0.046			0.061			0.080	265		0.090	295	350			
3° 45′	0.031			0.049			0.065	205		0.083	270		0.093	305				
4° 00′	0.033			0.051			0.069	215		0.087	280		0.096	315				
4° 30′	0.037			0.056			0.072	225		0.091	295		0.098	320				
5° 00′	0.040			0.061			0.078	240		0.094	300							
5° 30′	0.043			0.066	185		0.083	250		0.096	305							
6° 00′	0.046			0.070	190		0.088	260		0.100	315							
6° 30′	0.050			0.074	200		0.092	270	300									
7° 00′	0.053			0.078	210		0.095	280										
7° 30′	0.056			0.081	215		0.098	285										
8° 00′	0.058			0.084	220		0.099	290										
8° 30′	0.061			0.087	225	250	0.100	290										
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	205																
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.

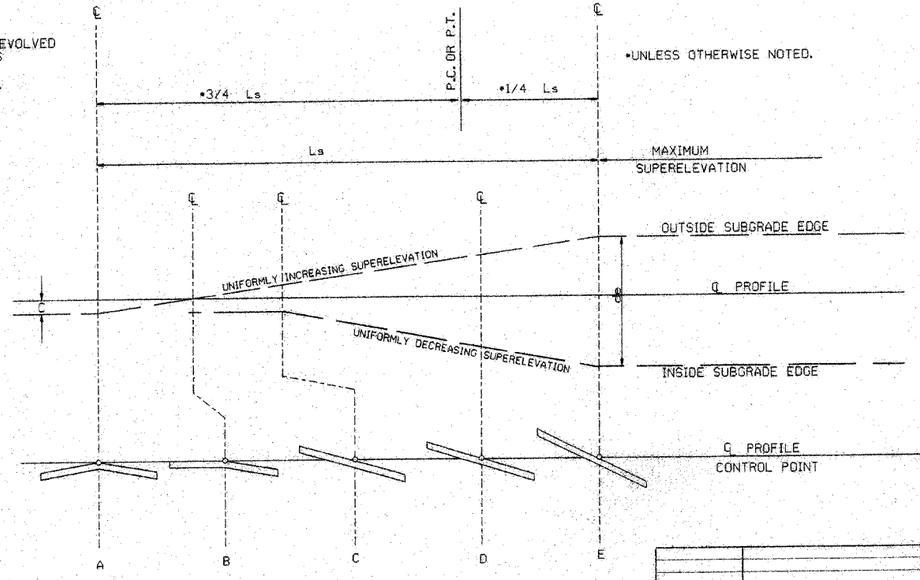
GENERAL NOTES

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

$$\text{SUPERELEVATION FORMULA} = \frac{Lde}{Ls}$$

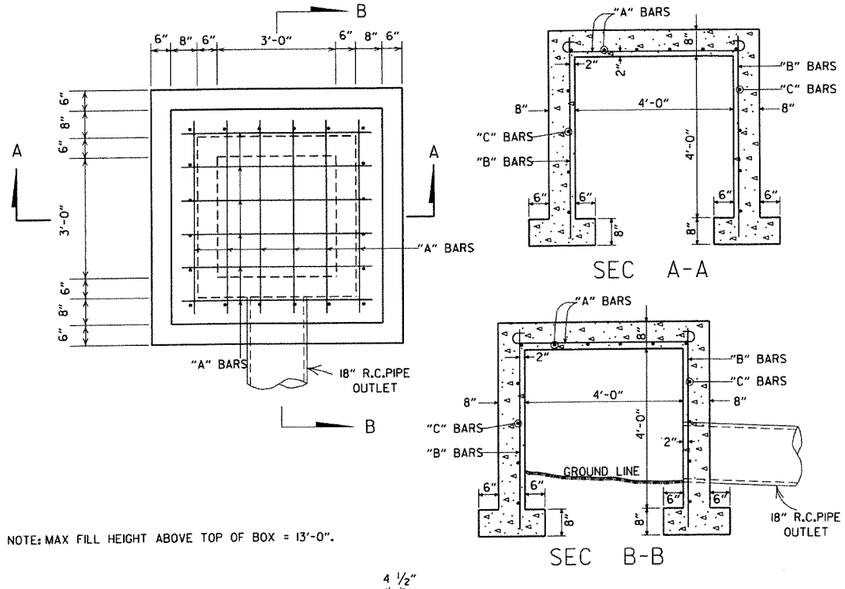
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

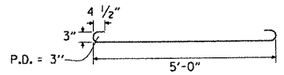


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



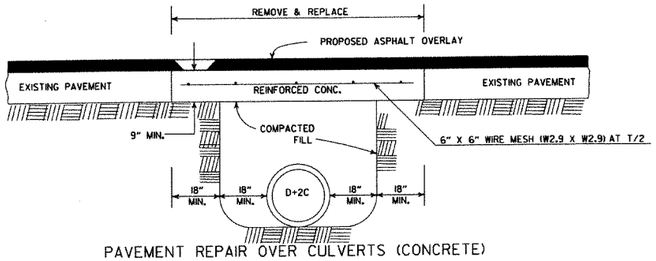
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

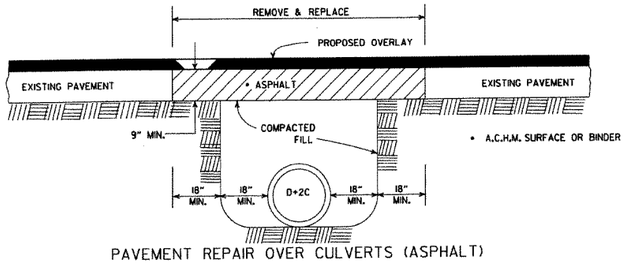
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



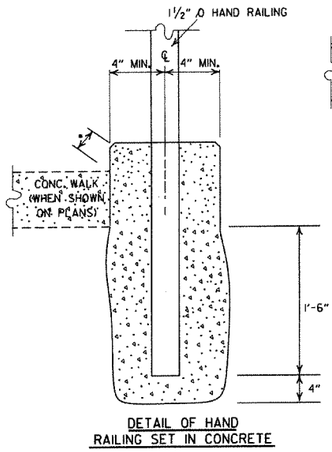
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



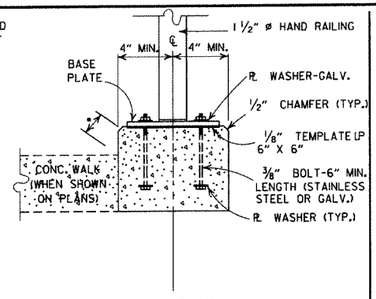
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

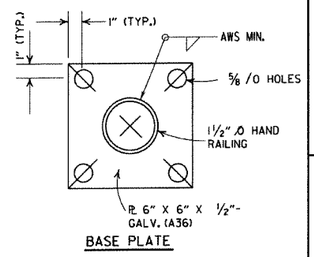
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

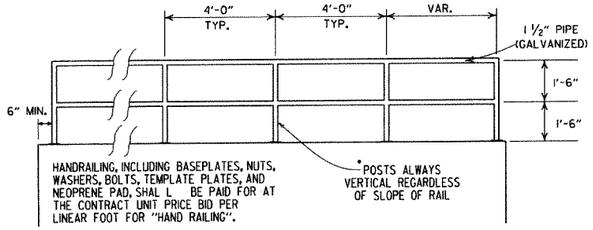


POST CONNECTION TO WALL

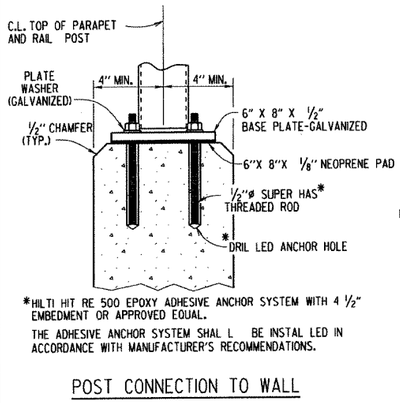


BASE PLATE

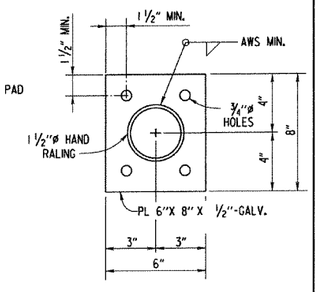
POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.



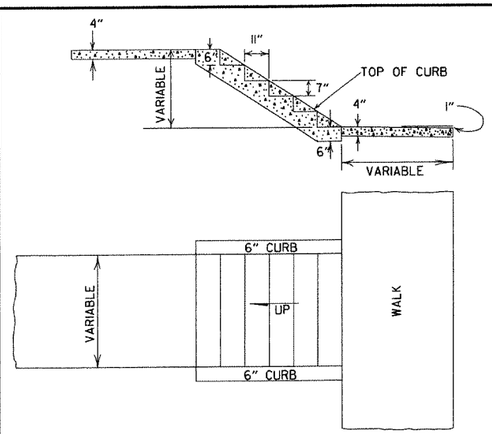
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP 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

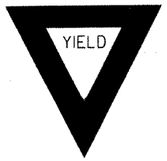
STANDARD DRAWING SI-1

R1-1



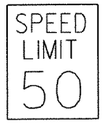
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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"

R2-5A



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



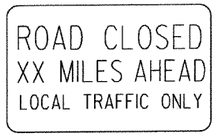
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



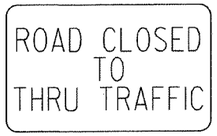
48"X30"

R11-3A



60"X30"

R11-4



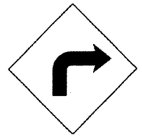
60"X30"

RSP-1



48"X30"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2



STD. 36"X36"
FWY. 48"X48"

W1-3



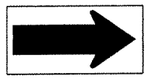
STD. 48"X48"

W1-4



STD. 48"X48"

W1-6



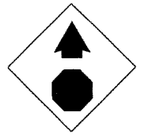
STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



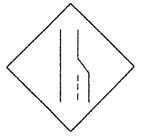
STD. 36"X36"
SPECIAL 48"X48"

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



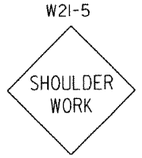
STD. 36"X36"
FWY. 48"X48"

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



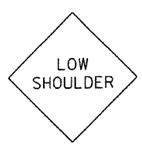
STD. 18"X18"

W8-11



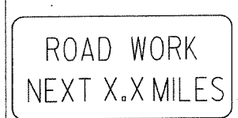
STD. 36"X36"
FWY. 48"X48"

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	1/2 MILE
1000 FT	3/4 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.

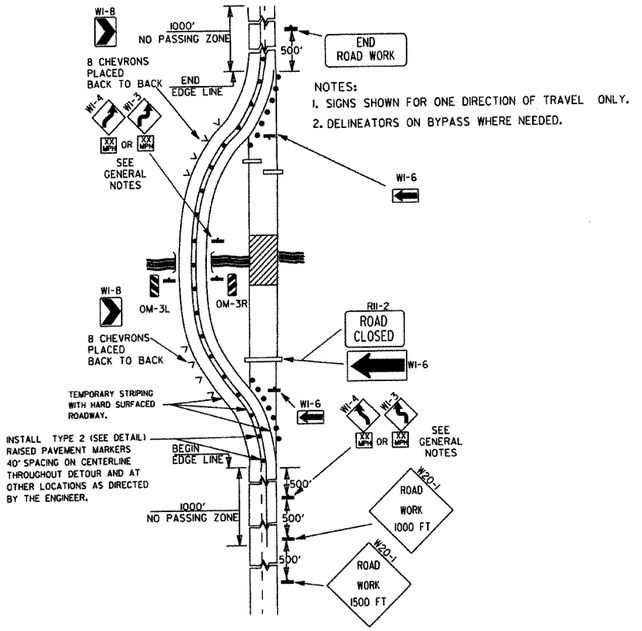
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

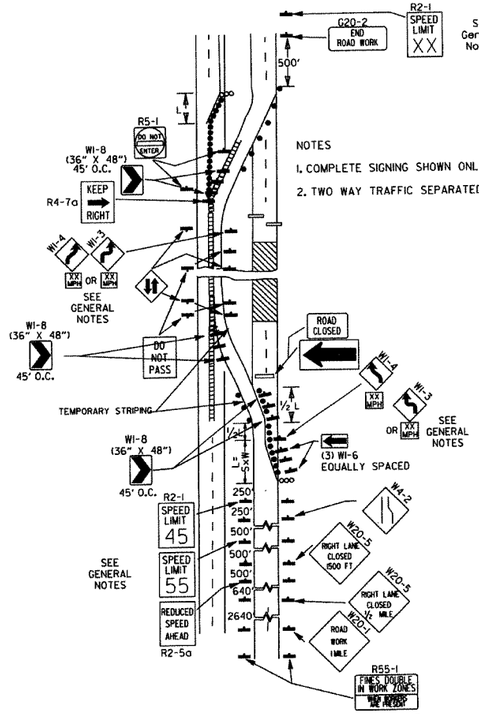
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



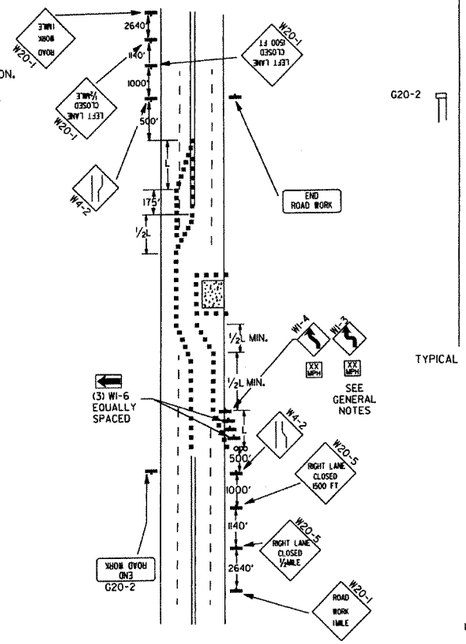
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

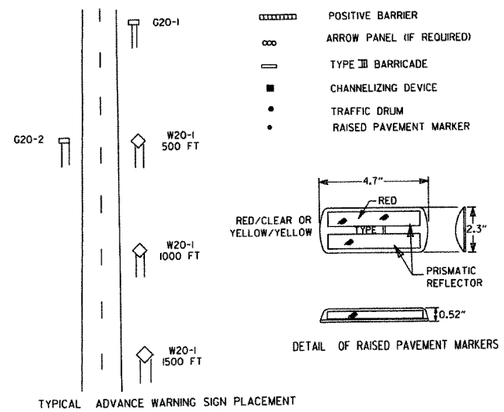


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

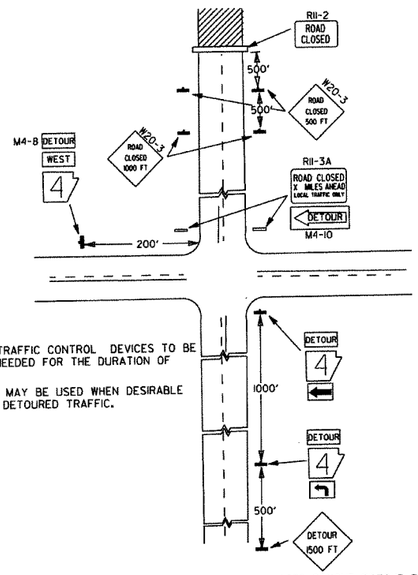
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

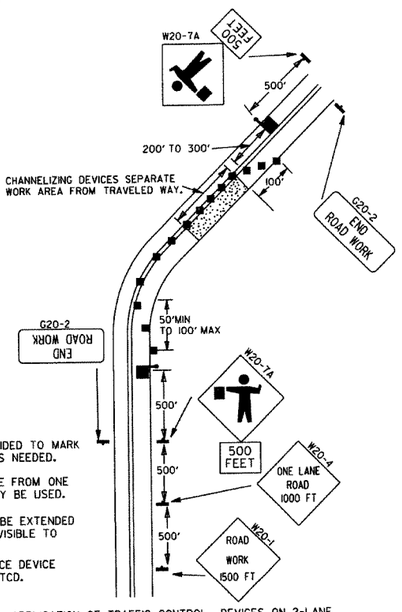
GENERAL NOTES:

1. 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 R2-5A 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.



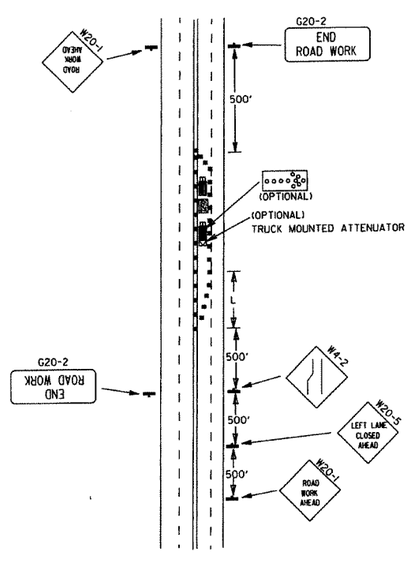
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



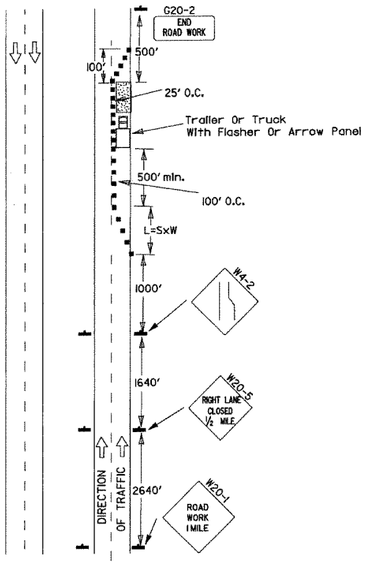
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-9-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

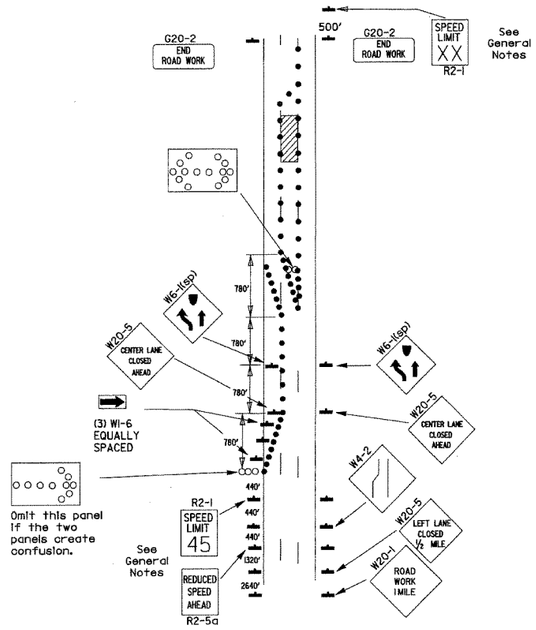
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

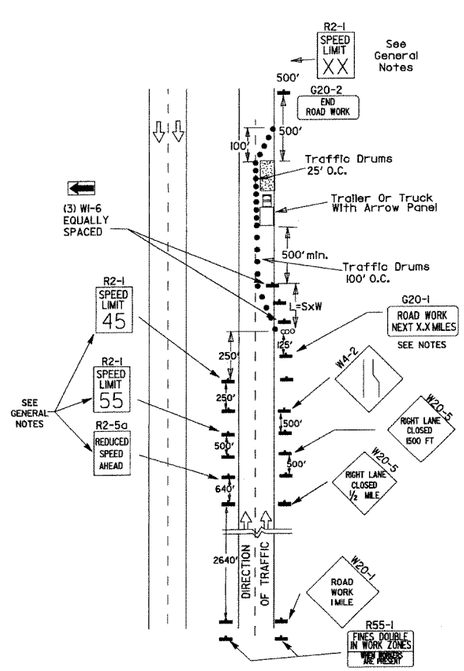
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

○○○ Arrow Panel (If Required)

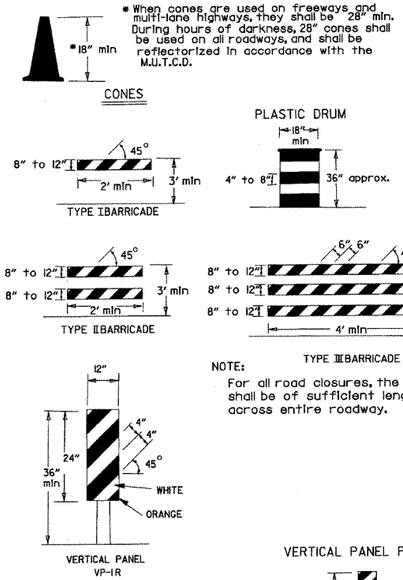
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



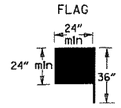
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

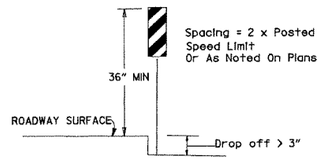
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

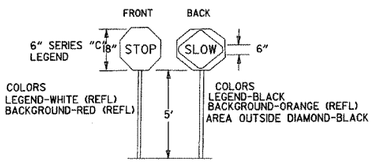


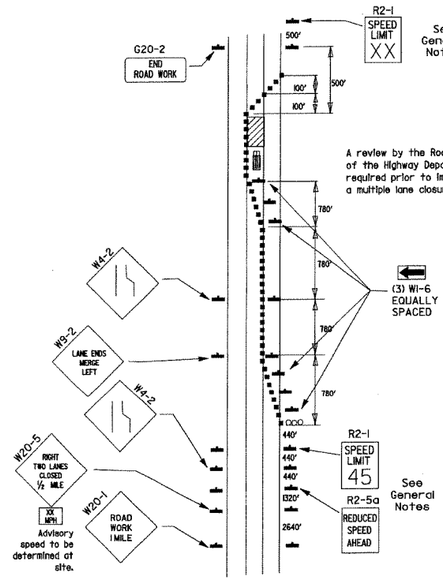
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



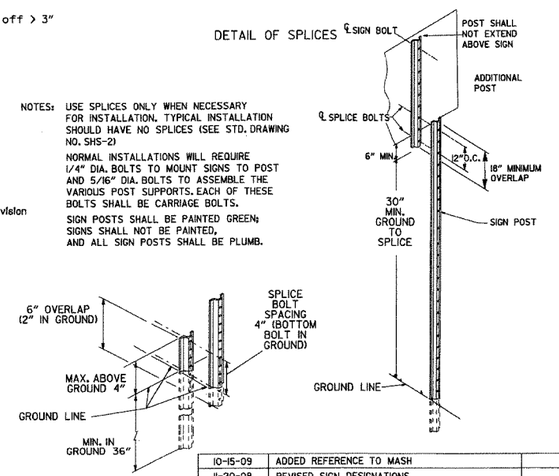
STOP SLOW PADDLE





(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
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	

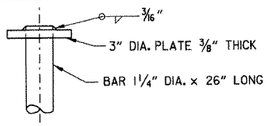
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

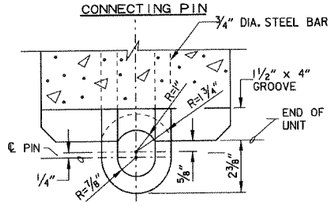
STANDARD DRAWING TC-3

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", 2'-1 3/8", 4 3/8", 1 1/2"

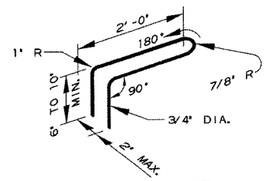


CONNECTING PIN

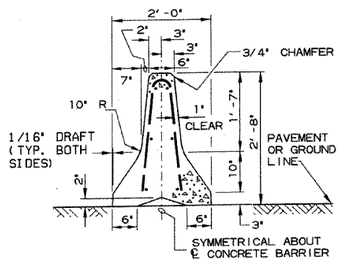


SECTION E-E

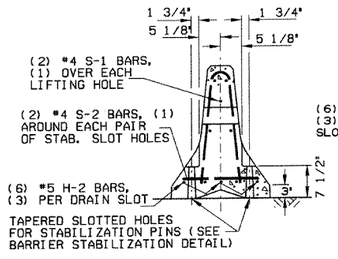
CONNECTION DETAILS



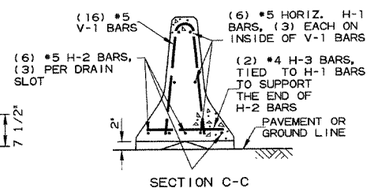
CONNECTION LOOP



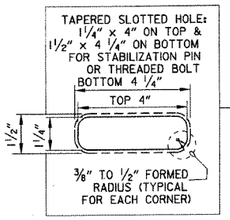
SECTION A-A

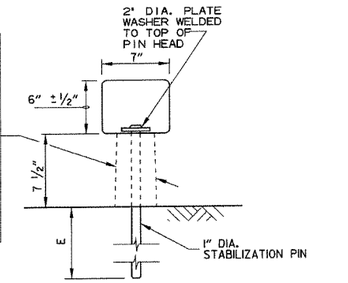


SECTION B-B



SECTION C-C

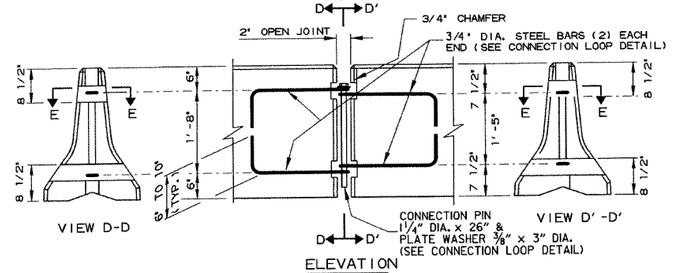




BARRIER STABILIZATION DETAIL

ROADWAY SECTION

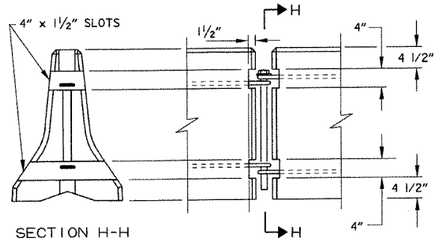
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



VIEW D-D

VIEW D'-D'

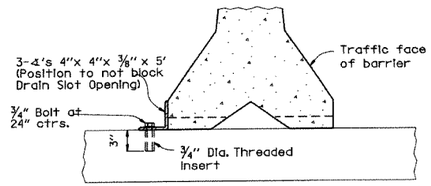
ELEVATION



SECTION H-H

ELEVATION

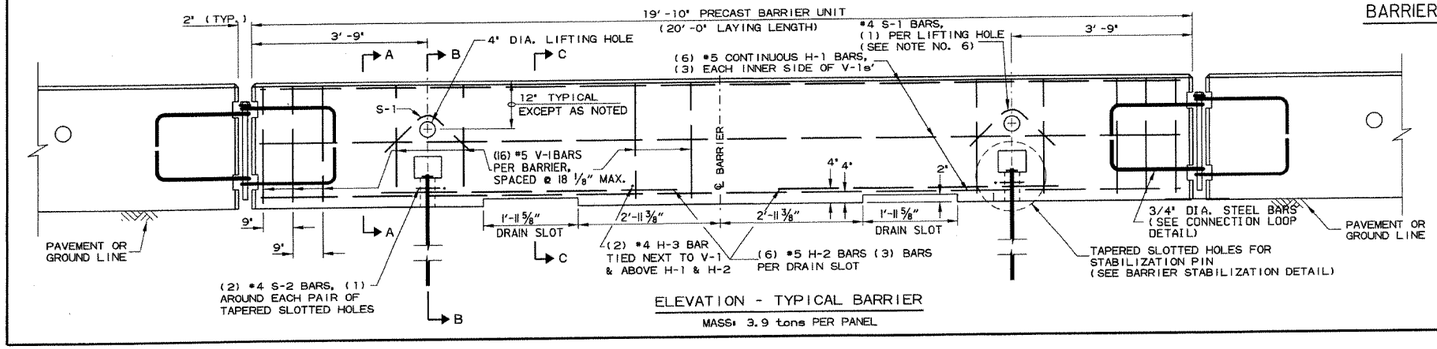
BARRIER REMOVAL SLOT DETAILS



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls 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.

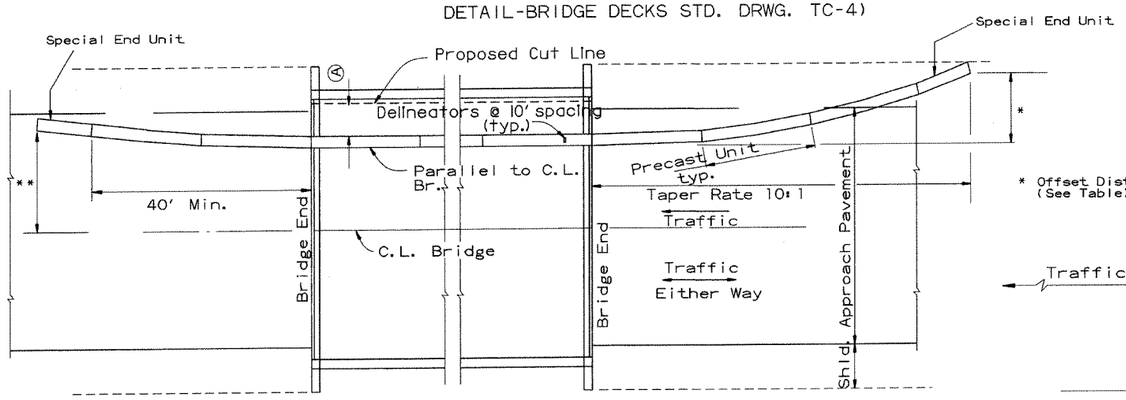
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)

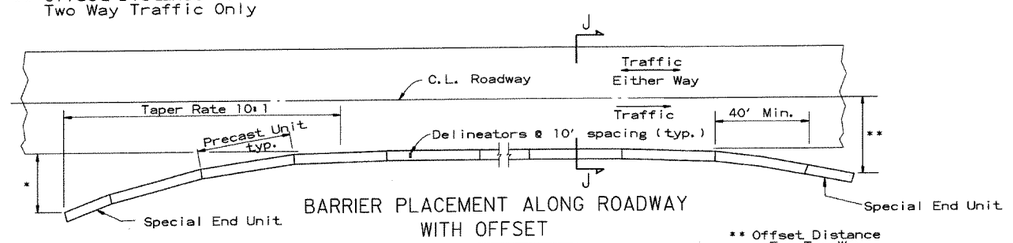


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

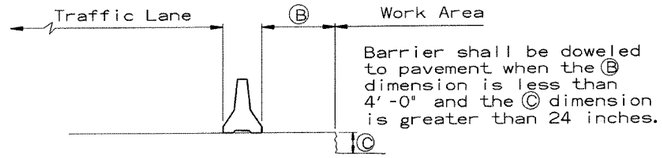
No Scale

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

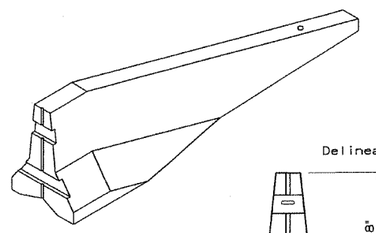
If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.

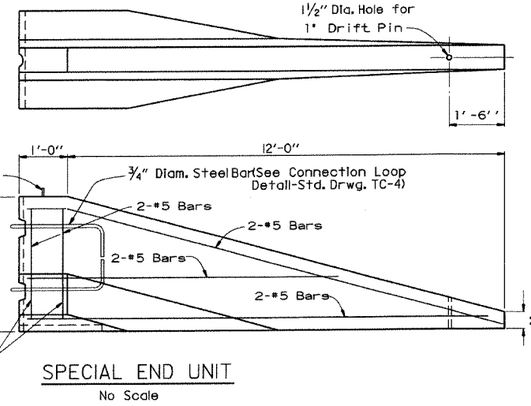


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

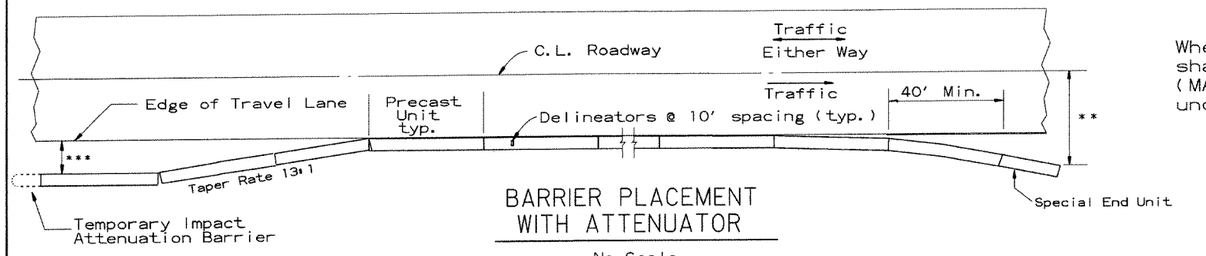
No Scale





SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

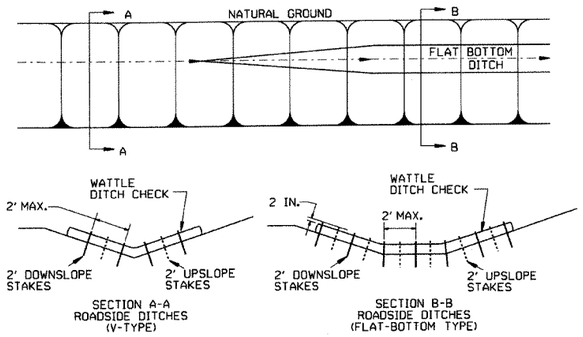
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

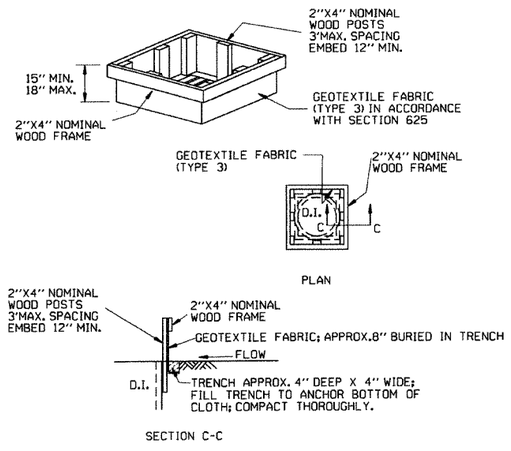
STANDARD DRAWING TC-5

GENERAL NOTES

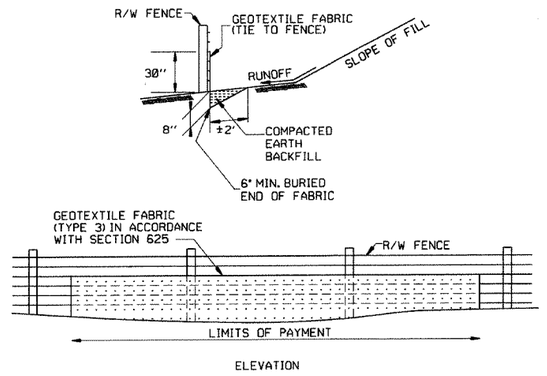
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

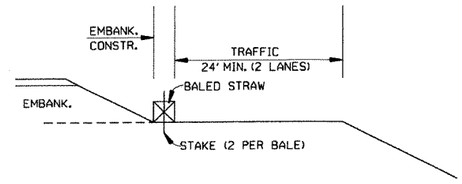
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

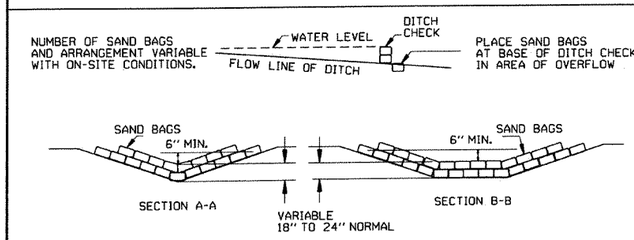
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

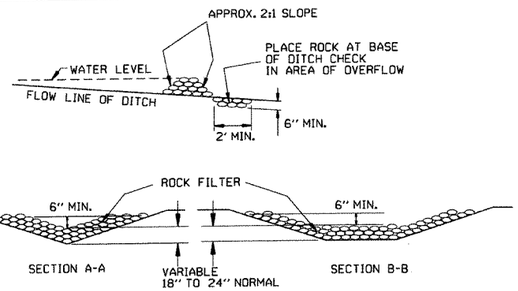
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



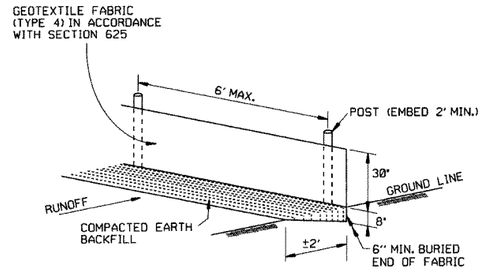
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

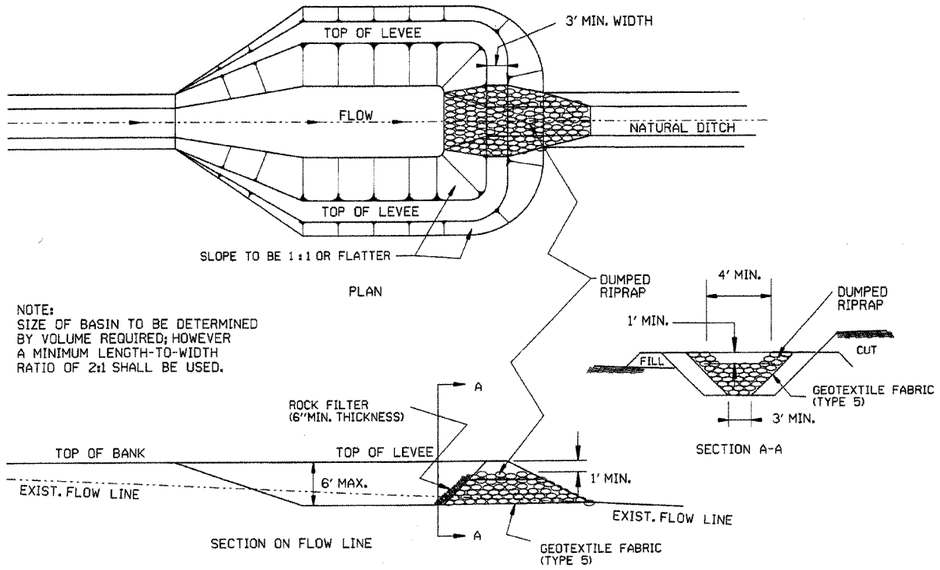
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

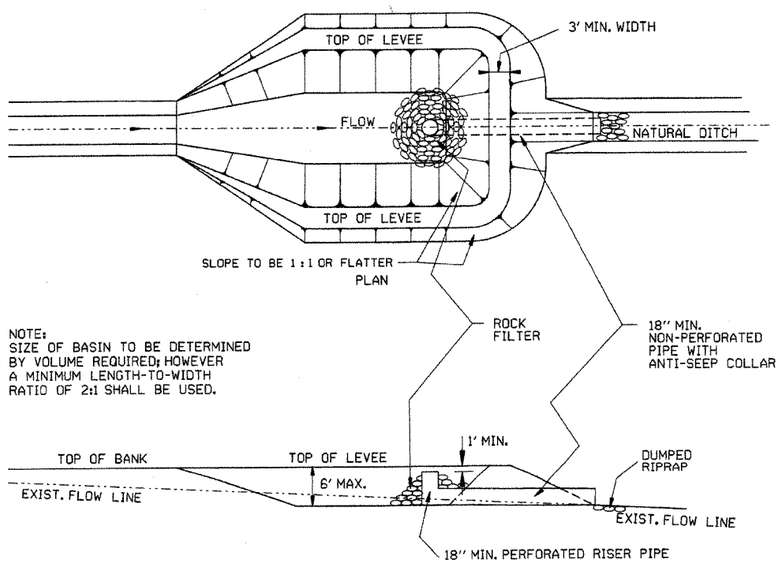
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

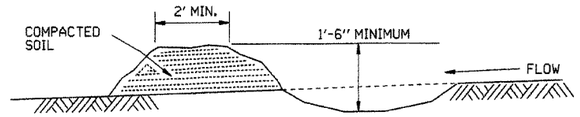
STANDARD DRAWING TEC-1



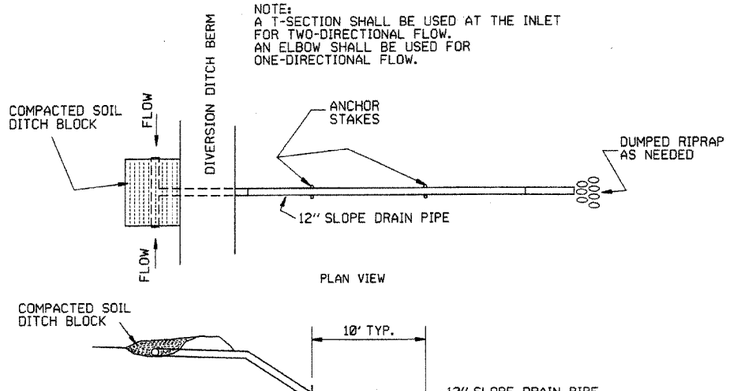
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



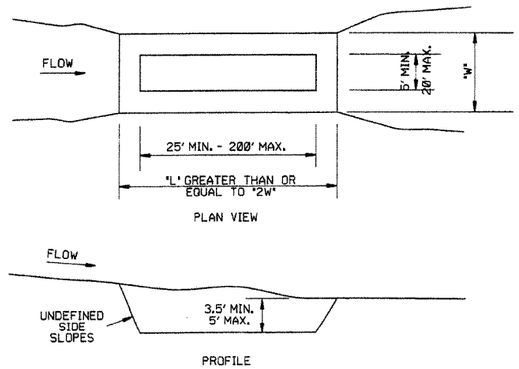
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

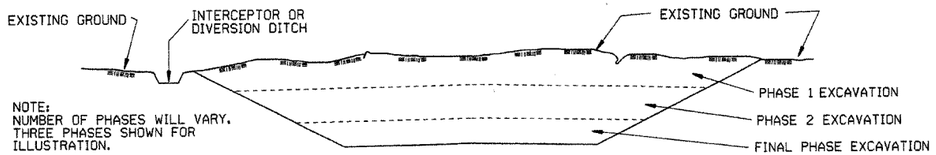
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



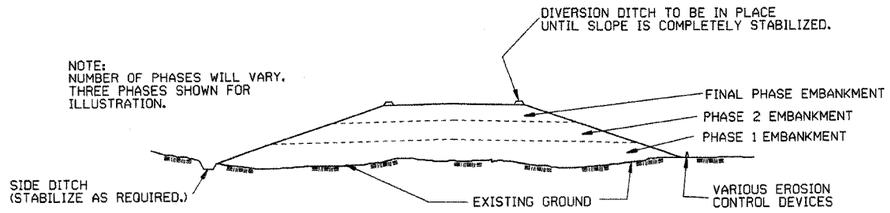
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

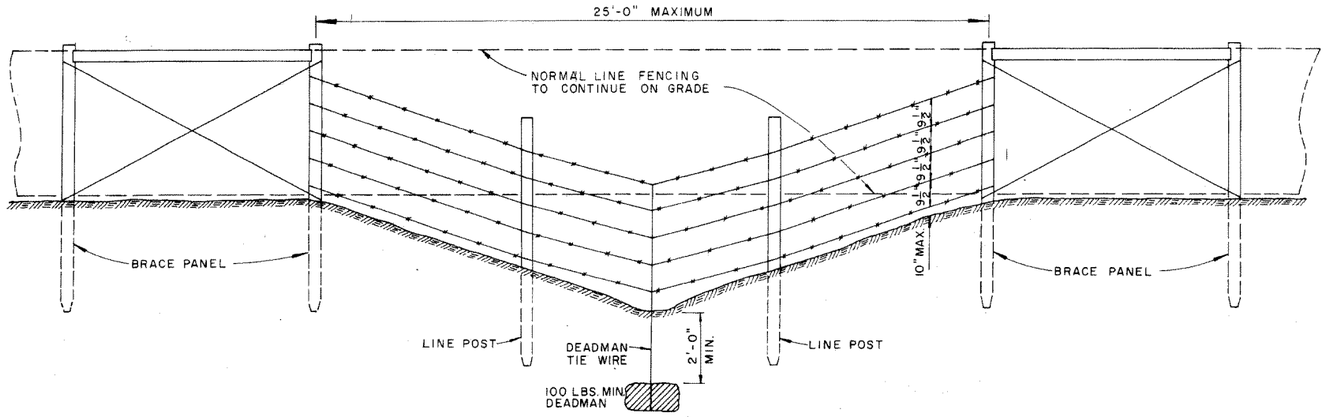
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

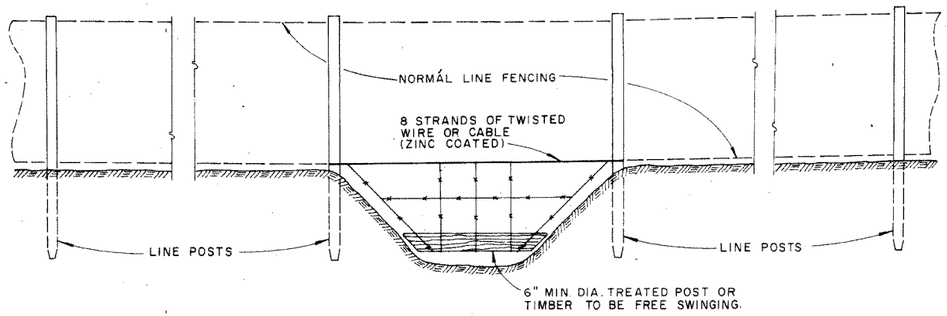
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

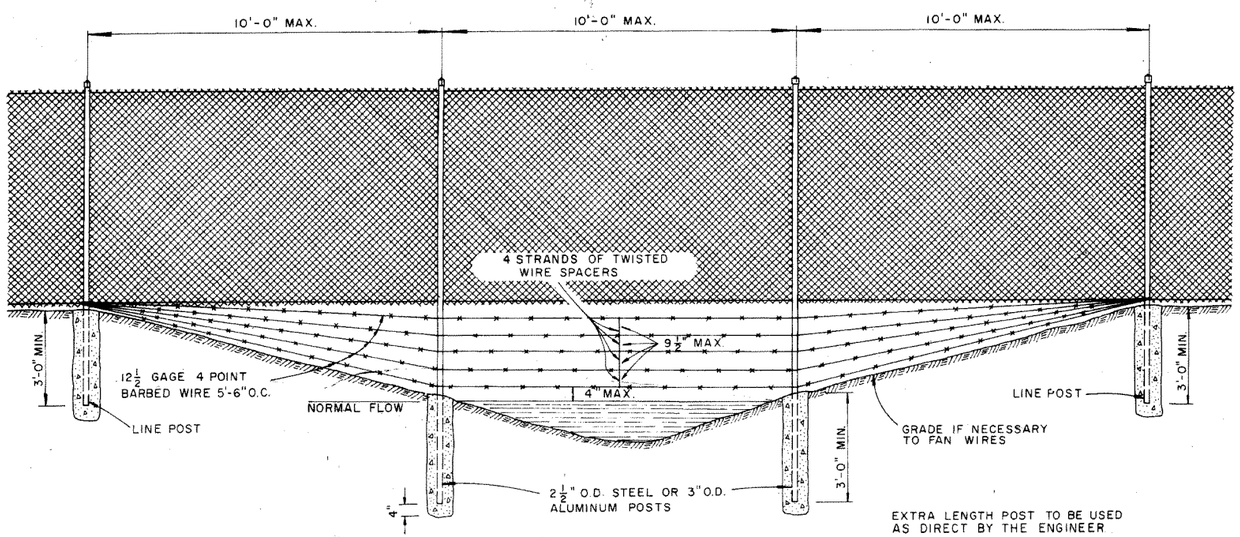
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	DATE FILM'D
4-20-79	REVISED TOP RAIL & TENSION WIRE	696 4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72

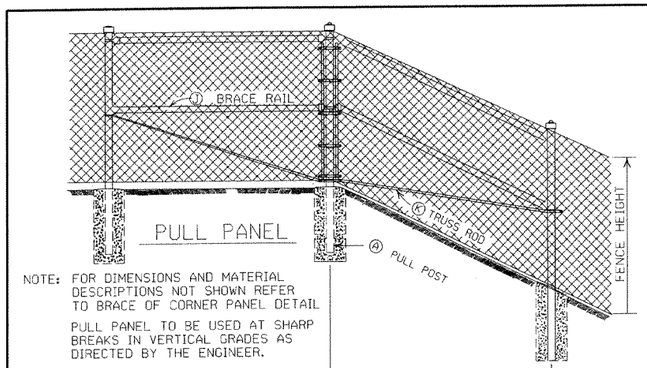
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING

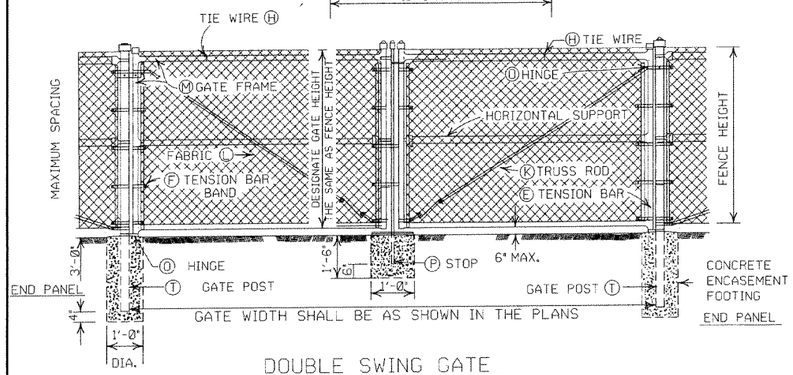
WF-2

1M—11-71—67001—PP&SCo



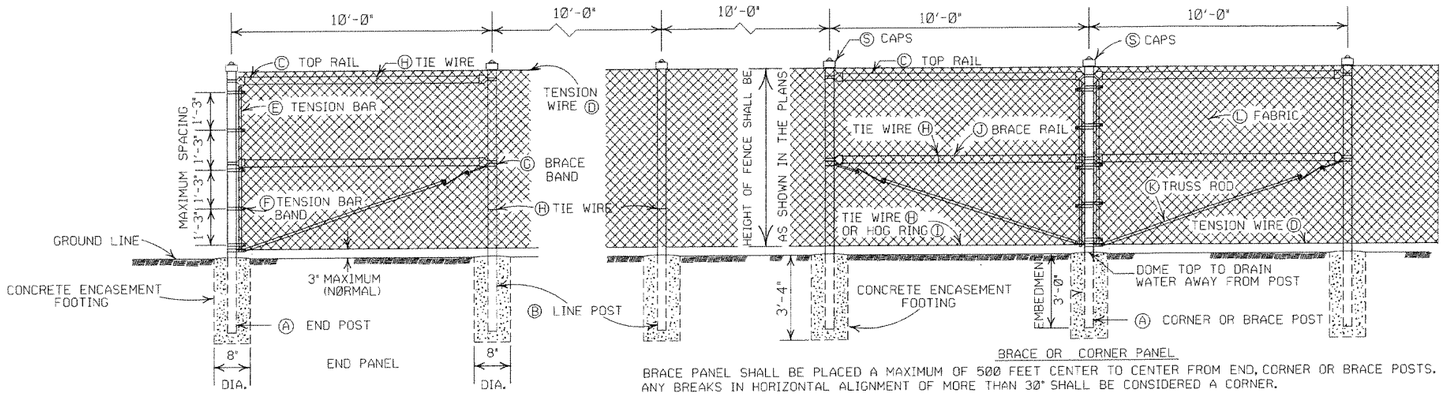
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



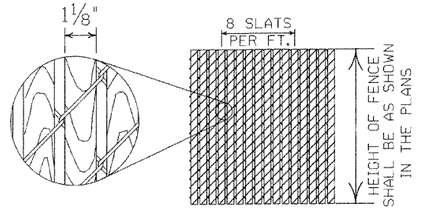
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

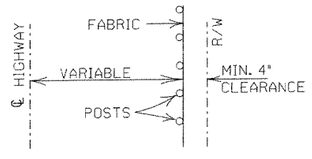
HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST SIZE	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF 3/16" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅜" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK -ING AND/OR TWIST -ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS.
9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

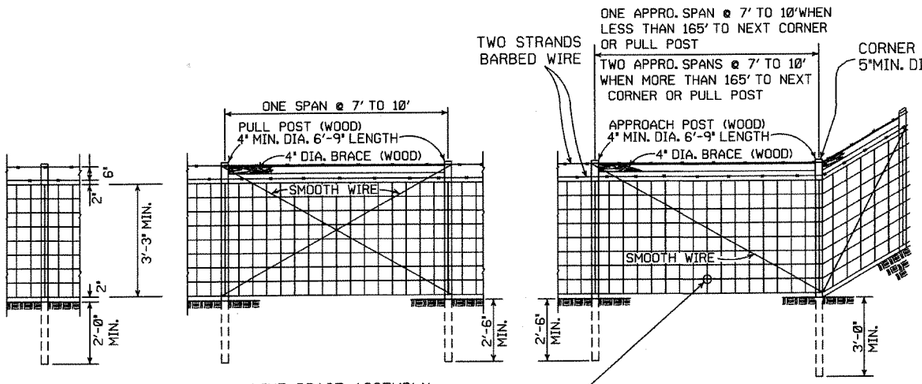
EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE. & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91 8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

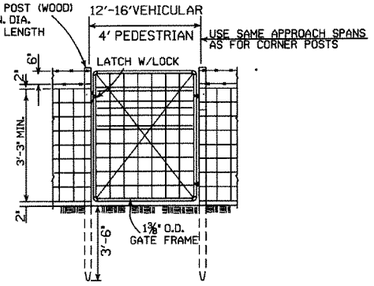
CHAIN LINK FENCE

STANDARD DRAWING WF-3



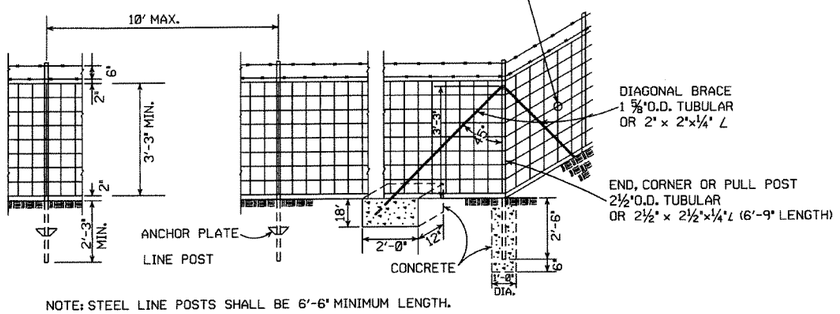
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

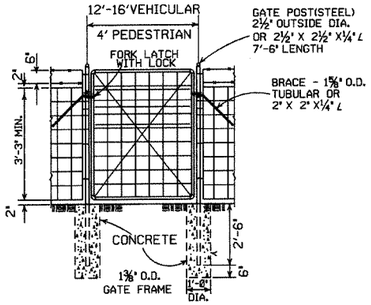
LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

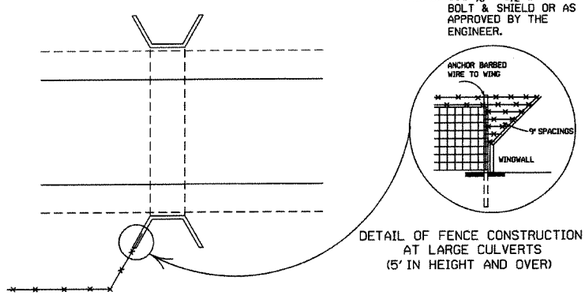


TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED





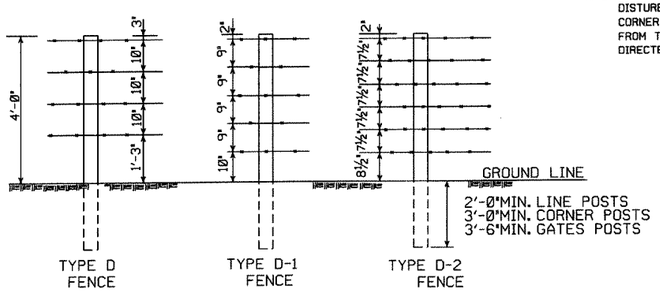


DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

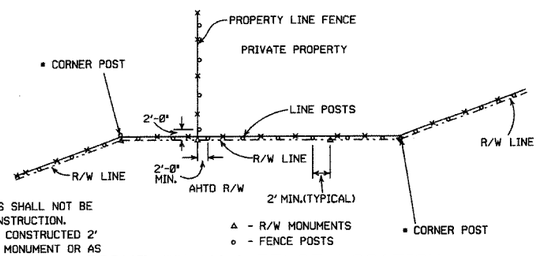
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)



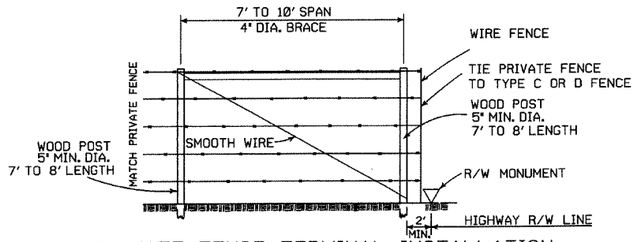
NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

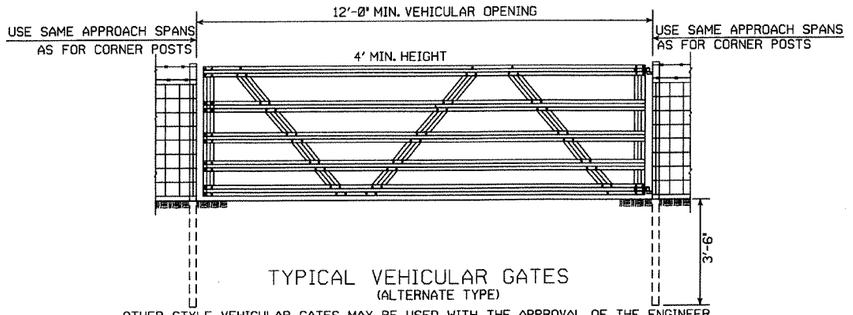
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

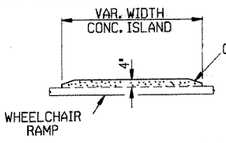
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

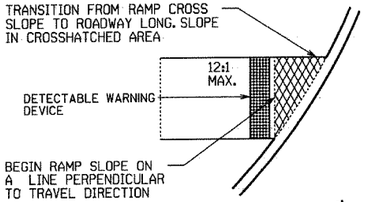
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4



CONCRETE ISLAND DETAIL



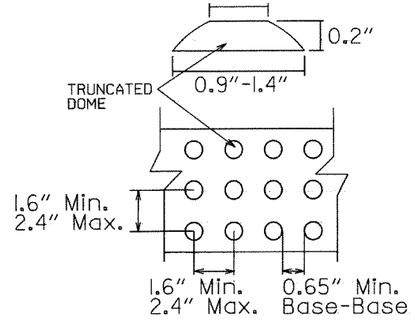
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

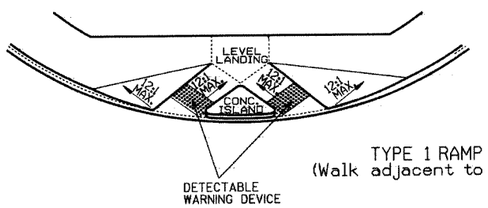
RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

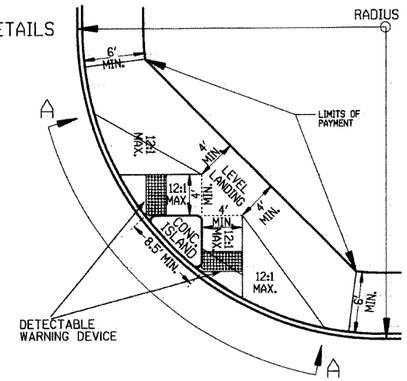
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

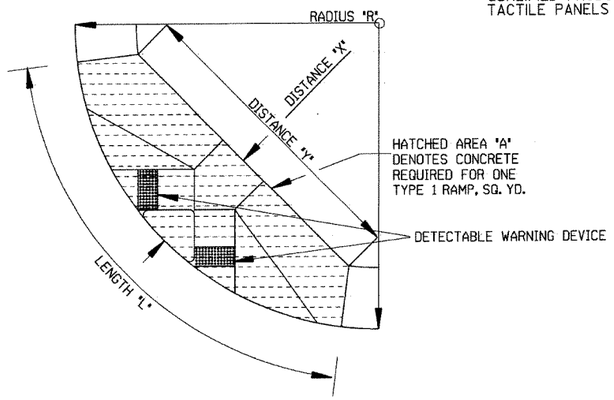


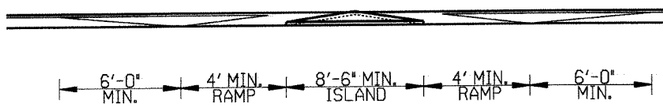
DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)





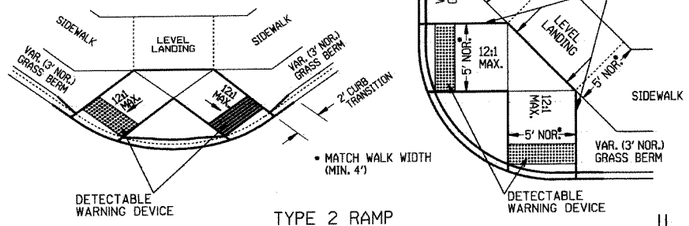


SECTION A-A

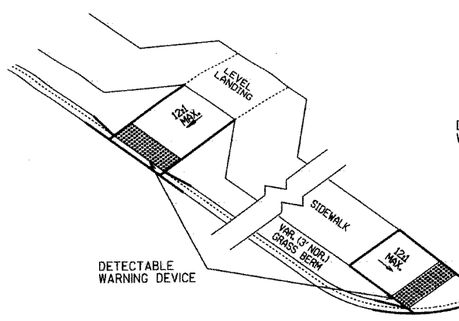
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

GENERAL NOTES:

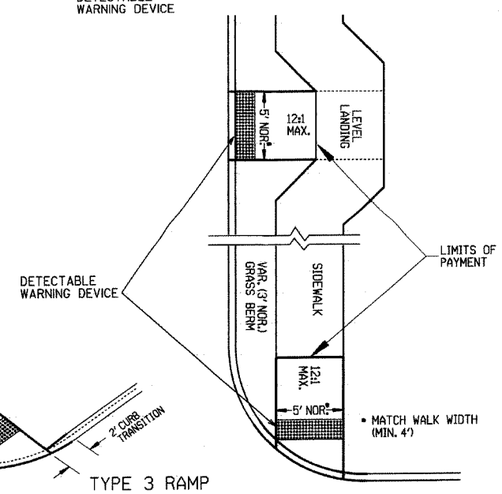
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

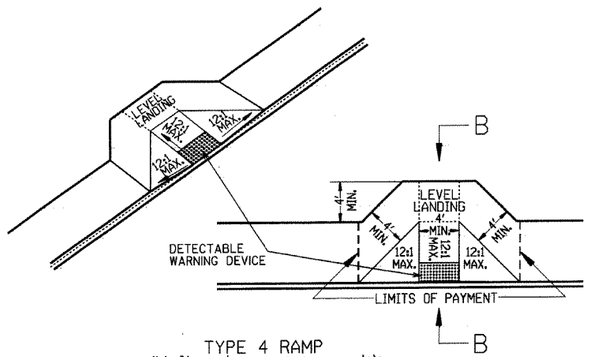


TYPE 2 RAMP

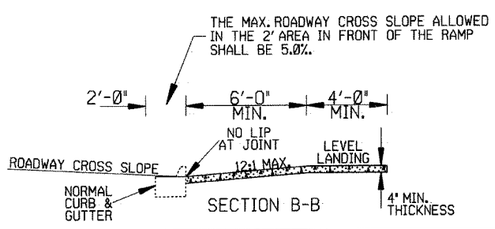


TYPE 3 RAMP





TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

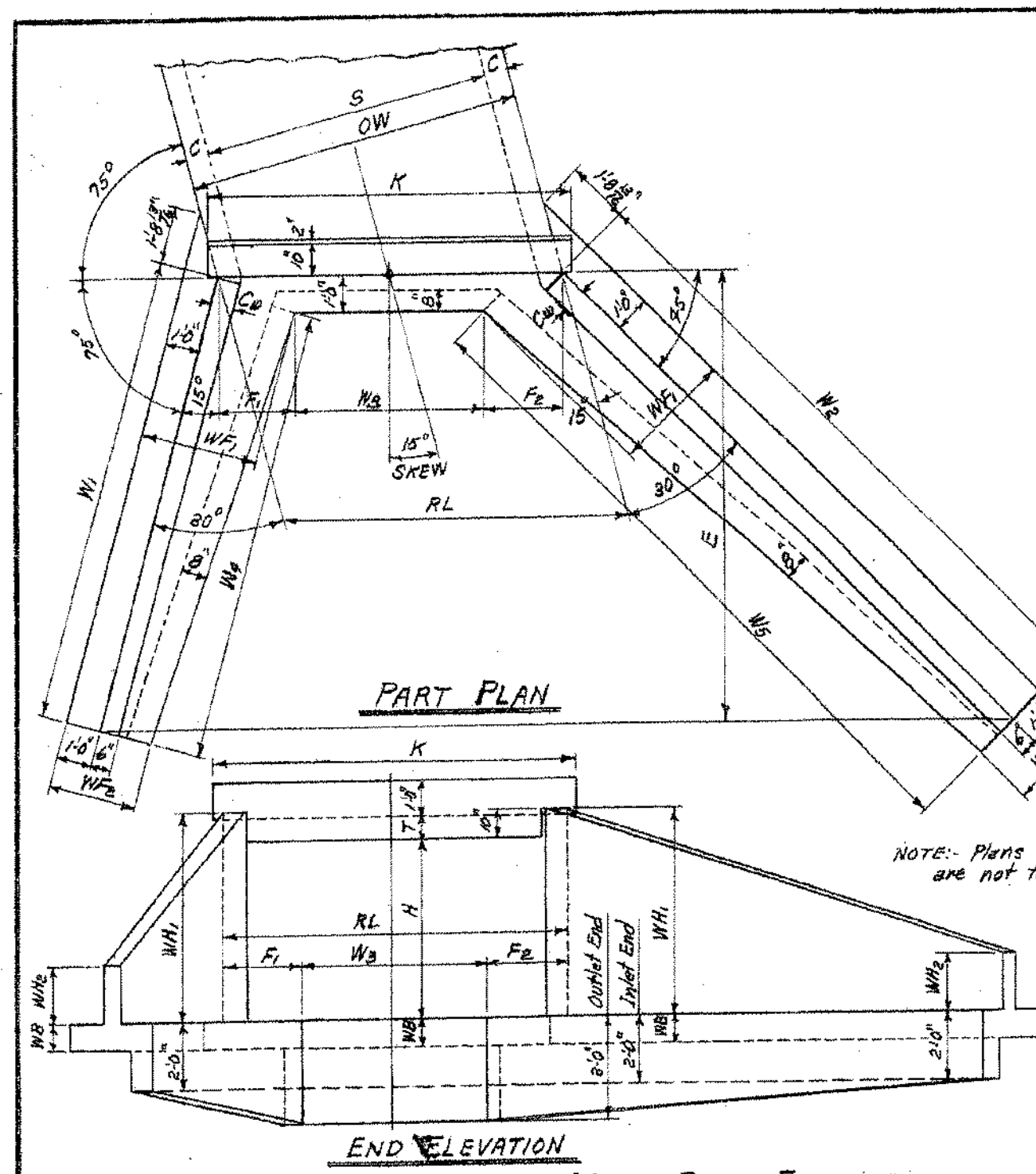
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD. SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLD." IN PAY ITEM	-------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

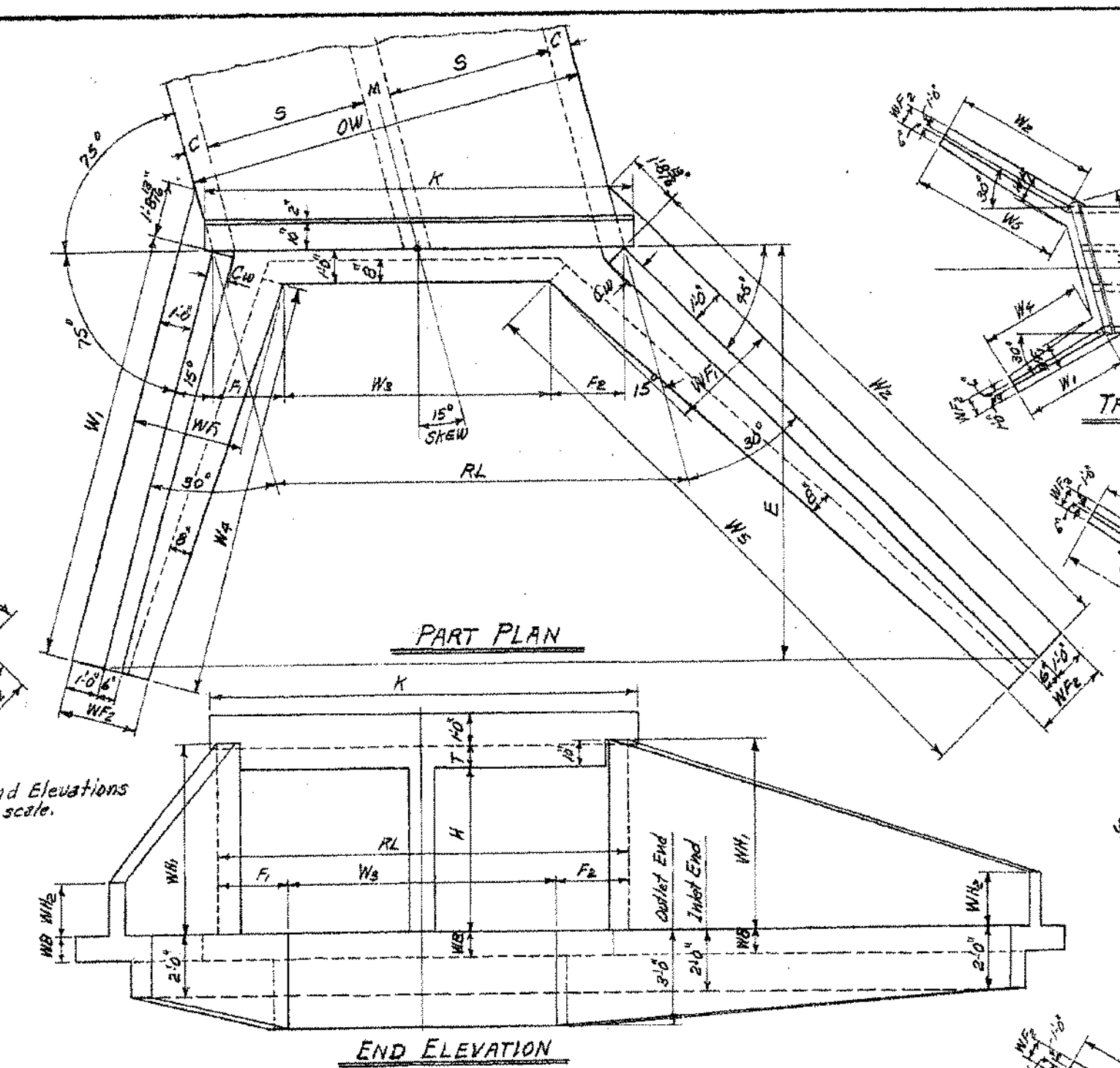
STANDARD DRAWING WR-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			217	
JOB No.					



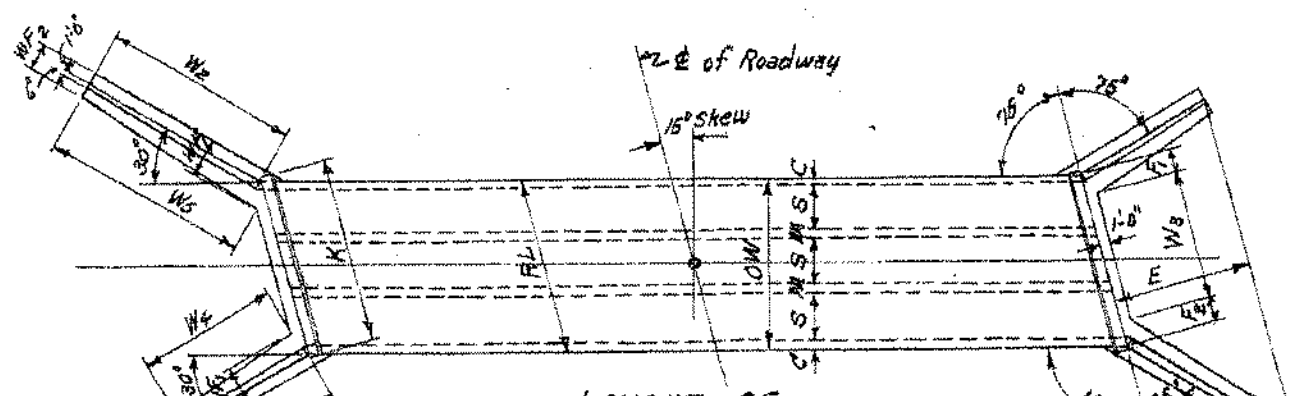
SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.

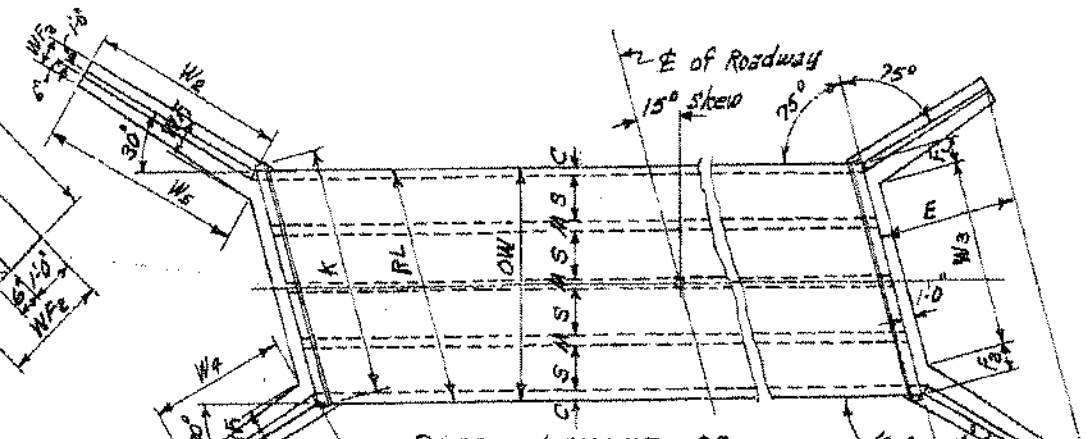


DOUBLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

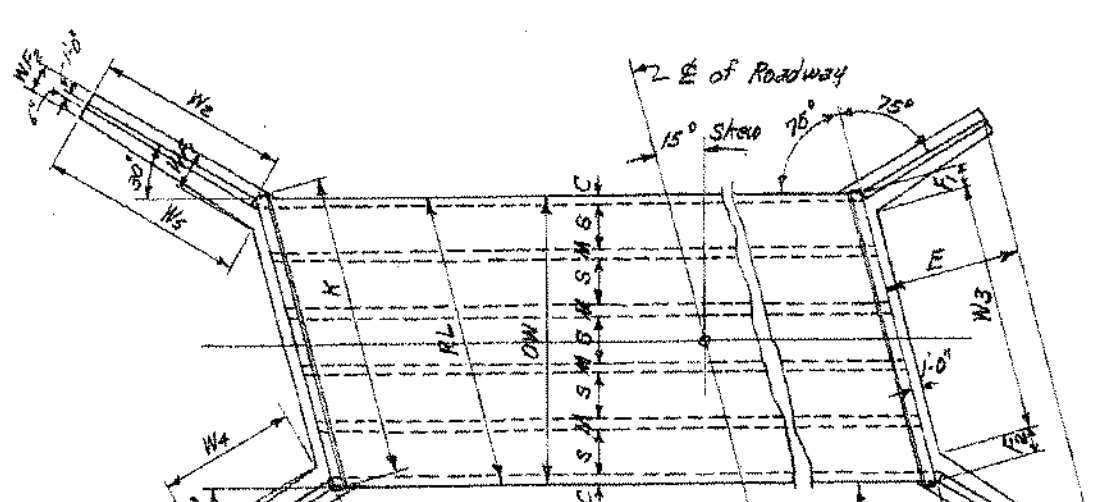
Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.



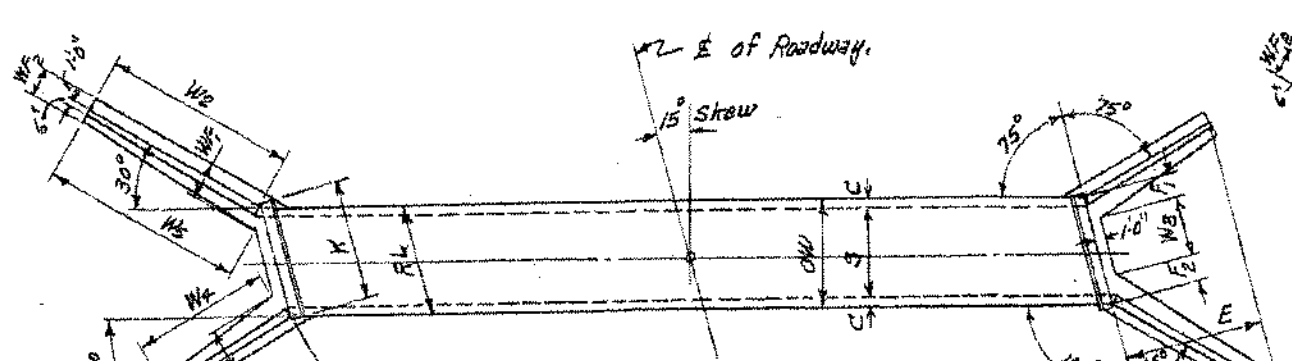
LAYOUT OF TRIPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



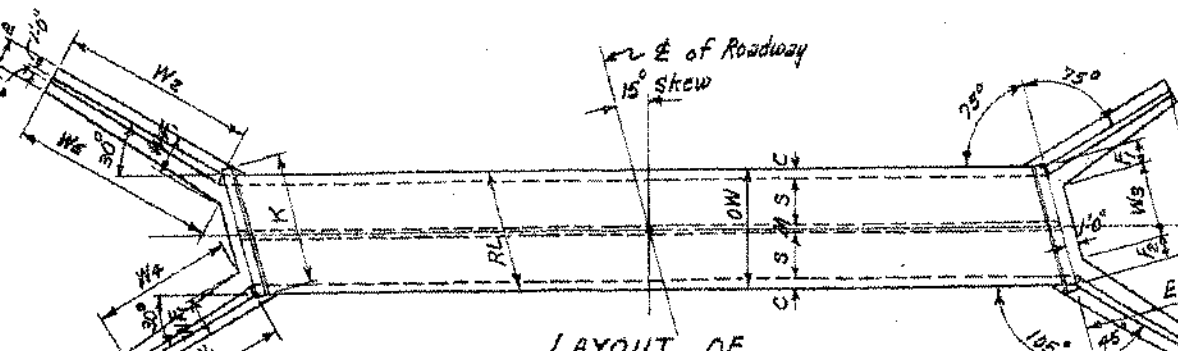
PART LAYOUT OF QUADRUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



PART LAYOUT OF QUINTUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD

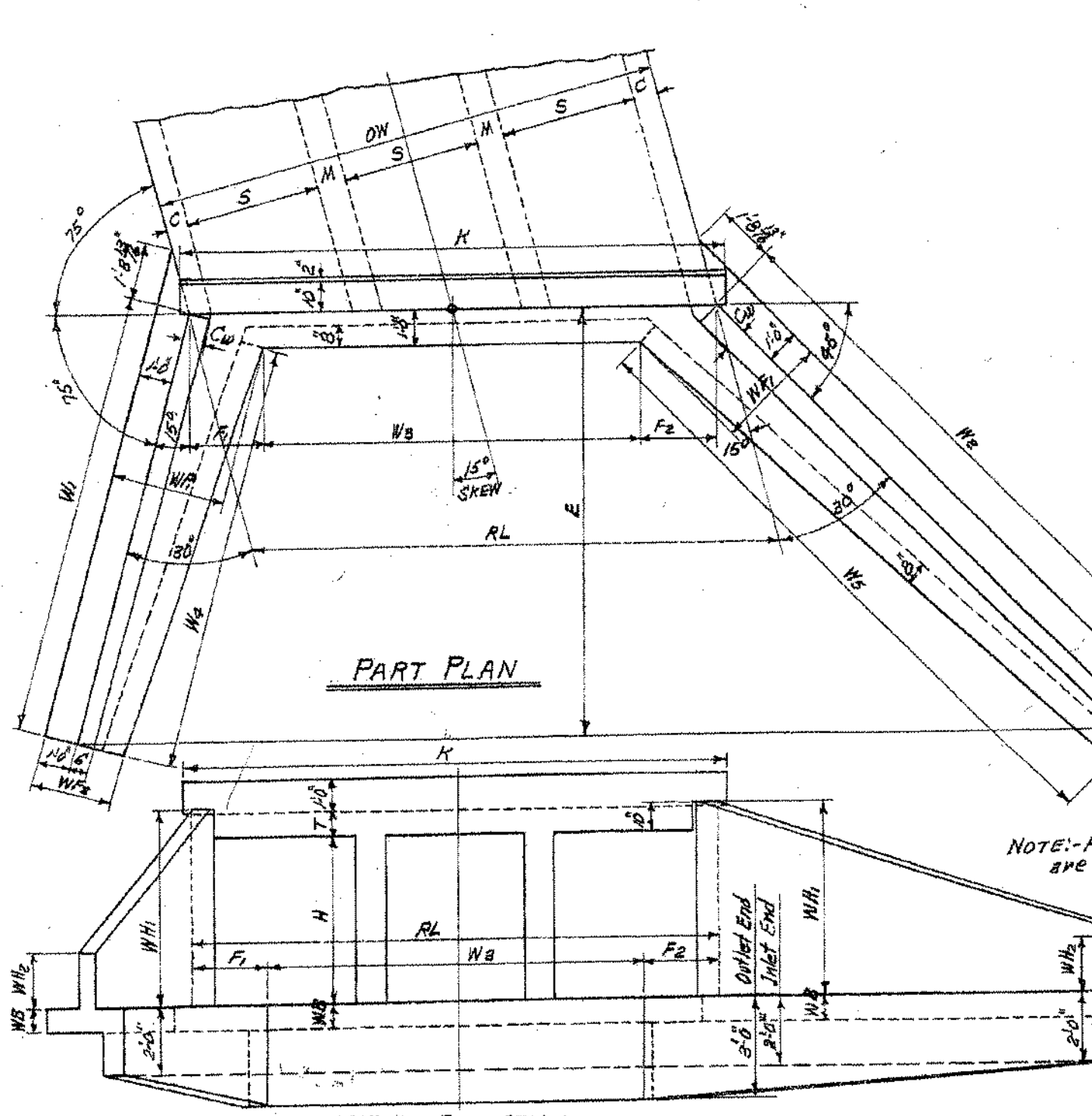


LAYOUT OF SINGLE BARREL CULVERT - 15° SKEW LEFT FORWARD



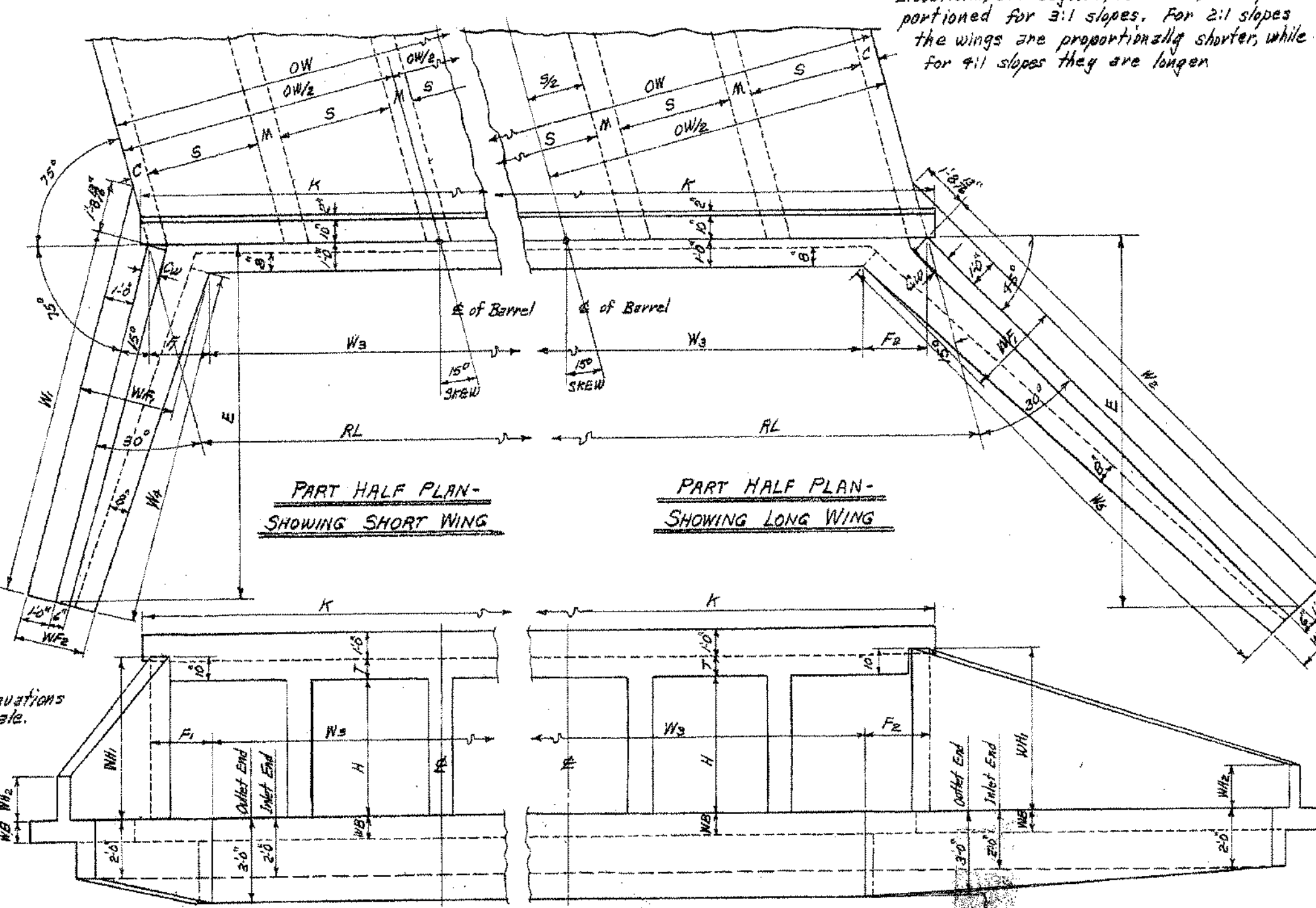
LAYOUT OF DOUBLE BARREL CULVERT - 15° SKEW LEFT FORWARD

NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



TRIPLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at top center of sheet.



QUADRUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at above center.

QUINTUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.035276 — K = RL + (6½") — $W_3 = RL - (F_1 + F_2)$

Use with Drawing No.	Clear Span S	Clear Height H	Sum of Footing Dimensions F_1&F_2	Single Barrel Culvert OW	RL	K	W_3	Double Barrel Culvert OW	RL	K	W_3	Triple Barrel Culvert OW	RL	K	W_3	Quadruple Barrel Culvert OW	RL	K	W_3	Quintuple Barrel Culvert OW	RL	K	W_3
W-X152-1, W-X153-1 or W-X154-1. (For H=8'-0" or less)	4'	2'	2'-0"	5'-0"	5'-2 1/8"	5'-8 5/8"	3'-2 1/8"	9'-8"	10'-0"	10'-6 1/2"	8'-0"	14'-4"	14'-10"	15'-4 1/2"	12'-10"	19'-0"	19'-8"	20'-2 1/2"	17'-8"	23'-8"	24'-6"	25'-0 1/2"	22'-6"
		3'	2'-9 3/4"	5'-0"	"	"	2'-4 3/8"	9'-8"	"	"	7'-2 1/4"	14'-4"	"	"	12'-0 1/4"	19'-0"	"	"	16'-10 1/4"	23'-8"	"	"	21'-8 1/4"
		4'	3'-7 5/8"	5'-0"	"	"	1'-6 1/2"	9'-8"	"	"	6'-4 1/2"	14'-4"	"	"	11'-2 1/2"	19'-0"	"	"	16'-0 1/2"	23'-8"	"	"	20'-10 1/2"
		5'	4'-5 3/8"	5'-0"	"	"	0'-8 3/4"	9'-8"	"	"	5'-6 3/4"	14'-4"	"	"	10'-4 3/4"	19'-0"	"	"	15'-2 3/4"	23'-8"	"	"	20'-0 3/4"
		6'	5'-3 1/8"	5'-2"	5'-4 1/8"	5'-10 5/8"	0'-1"	9'-11"	10'-3 1/8"	10'-9 5/8"	5'-0"	14'-8"	15'-2 1/4"	15'-8 3/4"	9'-11"	19'-5"	20'-1 1/4"	20'-7 3/4"	14'-10"	24'-2"	25'-0 1/4"	25'-6 3/4"	19'-9"
	5'	3'	2'-9 3/4"	6'-0"	6'-2 1/2"	6'-9"	3'-4 3/4"	11'-8"	12'-1"	12'-7 1/2"	9'-3 3/4"	17'-4"	17'-11 3/8"	18'-5 3/4"	15'-1 1/2"	23'-0"	23'-9 3/4"	24'-4 1/4"	21'-0"	28'-8"	29'-8 1/8"	30'-2 1/8"	26'-10 1/4"
		4'	3'-7 5/8"	6'-0"	"	"	2'-7"	11'-8"	"	"	8'-3 3/4"	17'-4"	"	"	14'-3 3/4"	23'-0"	"	"	20'-2 1/4"	28'-8"	"	"	26'-0 1/4"
		5'	4'-5 3/8"	6'-0"	"	"	1'-9 1/4"	11'-8"	"	"	7'-7 3/8"	17'-4"	"	"	13'-6"	23'-0"	"	"	19'-4 1/4"	28'-8"	"	"	25'-2 3/4"
		6'	5'-3 1/8"	6'-2"	6'-4 5/8"	6'-11 1/8"	1'-1 1/8"	11'-11"	12'-4"	12'-10 1/2"	7'-0 7/8"	17'-8"	18'-3 1/2"	18'-10"	13'-0 1/4"	23'-5"	24'-2 3/4"	24'-9 1/4"	18'-11 3/4"	29'-2"	30'-2 3/8"	30'-8 3/4"	24'-11 1/4"
		7'	6'-5 7/8"	6'-3"	6'-5 5/8"	7'-0 1/8"	Ⓐ 0"	12'-1"	12'-6 5/8"	13'-0 1/8"	6'-0 3/4"	17'-11"	18'-6 3/8"	19'-1"	12'-0 3/4"	23'-9"	24'-7"	25'-1 1/2"	18'-1 1/4"	29'-7"	30'-7 1/4"	31'-2"	24'-1 3/4"
	6'	3'	2'-9 3/4"	7'-0"	7'-3"	7'-9 1/2"	4'-3 1/4"	13'-8"	14'-1 3/8"	14'-8 1/4"	11'-4"	20'-4"	21'-0 3/8"	21'-7"	18'-2 3/4"	27'-0"	27'-11 3/8"	28'-5 3/4"	25'-1 3/4"	33'-8"	34'-10 1/4"	35'-4 3/4"	32'-0 1/4"
		4'	3'-7 5/8"	7'-0"	"	"	3'-7 3/4"	13'-8"	"	"	10'-6 1/4"	20'-4"	"	"	17'-5"	27'-0"	"	"	24'-3 3/4"	33'-8"	"	"	31'-2 3/4"
		5'	4'-5 3/8"	7'-0"	"	"	2'-9 5/8"	13'-8"	"	"	9'-8 3/8"	20'-4"	"	"	16'-7 1/4"	27'-0"	"	"	23'-6"	33'-8"	"	"	30'-4 3/4"
		6'	5'-3 1/8"	7'-2"	7'-5"	7'-11 1/2"	2'-1 7/8"	13'-11"	14'-5"	14'-11 1/2"	9'-1 3/4"	20'-8"	21'-4 3/4"	21'-11 1/4"	16'-1 1/2"	27'-5"	28'-4 3/8"	28'-11"	23'-1 1/2"	34'-2"	35'-4 1/2"	35'-11"	30'-1 1/4"
		7'	6'-5 7/8"	7'-3"	7'-6"	8'-0 1/2"	1'-0 3/4"	14'-1"	14'-7"	15'-1 1/2"	8'-1 1/4"	20'-11"	21'-7 7/8"	22'-2 1/4"	15'-2"	27'-9"	28'-8 3/4"	29'-3 1/4"	22'-3"	34'-7"	35'-9 5/8"	36'-4"	29'-3 3/8"
		8'	7'-8 5/8"	7'-4"	7'-7 1/8"	8'-1 5/8"	Ⓐ 0"	14'-2"	14'-8"	15'-2 1/2"	6'-11 3/8"	21'-0"	21'-8 7/8"	22'-3 1/4"	14'-0 1/4"	27'-10"	28'-9 3/4"	29'-4 1/4"	21'-1 1/4"	34'-8"	35'-10 5/8"	36'-5"	28'-2"
	7'	4'	3'-7 5/8"	8'-0"	8'-3 3/8"	8'-9 7/8"	4'-7 3/4"	15'-8"	16'-2 5/8"	16'-9"	12'-7"	23'-4"	24'-1 3/8"	24'-8 1/4"	20'-6 1/4"	31'-0"	32'-1 1/8"	32'-7 5/8"	28'-5 1/2"	38'-8"	40'-0 3/8"	40'-6 3/4"	36'-4 3/4"
		5'	4'-5 3/8"	8'-0"	"	"	3'-10"	15'-8"	"	"	11'-9 1/4"	23'-4"	"	"	19'-8 1/2"	31'-0"	"	"	27'-7 3/4"	38'-8"	"	"	35'-7"
		6'	5'-3 1/8"	8'-2"	8'-5 1/2"	9'-0"	3'-2 1/4"	15'-11"	16'-5 3/8"	17'-0 1/4"	11'-2 1/4"	23'-8"	24'-6"	25'-0 1/4"	19'-2 3/4"	31'-5"	32'-6 1/2"	33'-0 3/4"	27'-3"	39'-2"	40'-6 5/8"	41'-1"	35'-3 1/2"
		7'	6'-5 7/8"	8'-3"	8'-6 1/2"	9'-1"	2'-0 3/8"	16'-1"	16'-7 3/4"	17'-2 1/4"	10'-2"	23'-11"	24'-9 1/2"	25'-3 1/4"	18'-3 1/4"	31'-9"	32'-10 1/2"	33'-5"	26'-4 1/2"	39'-7"	40'-11 3/4"	41'-6 1/4"	34'-6"
		8'	7'-8 5/8"	8'-4"	8'-7 1/2"	9'-2"	0'-11"	16'-2"	16'-8 3/8"	17'-3 1/4"	9'-0 1/2"	24'-0"	24'-10 1/8"	25'-4 1/2"	17'-1 1/4"	31'-10"	32'-11 1/2"	33'-6"	25'-3"	39'-8"	41'-0 3/4"	41'-7 1/4"	33'-4 1/2"
	8'	4'	3'-7 5/8"	9'-0"	9'-3 3/8"	9'-10 1/8"	5'-8 1/4"	17'-8"	18'-2 1/2"	18'-10"	14'-8"	26'-4"	27'-3 1/8"	27'-9 1/2"	23'-7 1/2"	35'-0"	36'-2 3/8"	36'-9 1/4"	32'-7 1/4"	43'-8"	45'-2 1/8"	45'-9"	41'-7"
		5'	4'-5 3/8"	9'-2"	9'-5 7/8"	10'-0 1/4"	5'-0 1/2"	17'-11"	18'-6 5/8"	19'-1"	14'-1 1/2"	26'-8"	27'-7 1/4"	28'-1 3/4"	23'-2"	35'-5"	36'-8"	37'-2 1/2"	32'-2 3/4"	44'-2"	45'-8 3/4"	46'-3 1/4"	41'-3 1/4"
		6'	5'-3 1/8"	9'-2"	"	"	4'-2 3/4"	17'-11"	"	"	13'-3 1/2"	26'-8"	"	"	22'-4"	36'-5"	"	"	31'-4 3/4"	44'-2"	"	"	40'-5 1/2"
		7'	6'-5 7/8"	9'-3"	9'-6 3/8"	10'-1 1/4"	3'-1"	18'-1"	18'-8 3/4"	19'-3"	12'-2 3/4"	26'-11"	27'-10 3/8"	28'-4 3/4"	21'-4 1/4"	35'-9"	37'-0 1/8"	37'-6 1/2"	30'-6 1/4"	44'-7"	46'-1 7/8"	46'-8 1/2"	39'-8"
		8'	7'-8 5/8"	9'-4"	9'-8"	10'-2 1/2"	1'-11 1/2"	18'-2"	18'-9 3/4"	19'-4 1/4"	11'-1 1/4"	27'-0"	27'-11 3/8"	28'-5 3/4"	20'-2 3/4"	35'-10"	37'-1 1/8"	37'-7 1/2"	29'-4 1/4"	44'-8"	46'-2 3/4"	46'-9 1/2"	38'-6 1/4"
	9'	5'	4'-5 3/8"	10'-2"	10'-6 1/4"	11'-0 3/4"	6'-1"	19'-11"	20'-7 1/2"	21'-2"	16'-2"	29'-8"	30'-8 1/2"	31'-3"	26'-3 1/4"	39'-5"	40'-9 3/4"	41'-4 1/4"	36'-4 1/2"	49'-2"	50'-10 3/8"	51'-5 1/4"	46'-5 1/8"
		6'	5'-3 1/8"	10'-3"	10'-7 3/8"	11'-1 3/4"	5'-4 1/4"	20'-1"	20'-9 1/2"	21'-4"	15'-6 1/4"	29'-11"	30'-11 5/8"	31'-6"	25'-8 1/2"	39'-9"	41'-1 3/8"	41'-8 1/4"	35'-10 3/4"	49'-7"	51'-4"	51'-10 1/2"	46'-0 3/4"
		7'	6'-5 7/8"	10'-3"	"	"	4'-1 1/2"	20'-1"	"	"	14'-3 3/4"	29'-11"	"	"	24'-5 3/4"	39'-9"	"	"	34'-8"	49'-7"	"	"	44'-10"
		8'	7'-8 5/8"	10'-4"	10'-8 3/8"	11'-2 3/4"	2'-11 3/8"	20'-2"	20'-10 1/2"	21'-5"	13'-2"	30'-0"	31'-0 3/4"	31'-7 1/4"	23'-4 1/4"	39'-10"	41'-2 3/8"	41'-9 1/4"	33'-6 1/2"	49'-8"	51'-5"	51'-11 1/8"	43'-8 1/2"
	10'	5'	4'-5 3/8"	11'-2"	11'-6 3/4"	12'-1 1/4"	7'-1 3/8"	21'-11"	22'-8 1/2"	23'-2 3/4"	18'-3"	32'-8"	33'-9 3/4"	34'-4 1/4"	29'-4 1/2"	43'-5"	44'-11 1/2"	45'-6"	40'-6"	54'-2"	56'-1"	56'-7 1/2"	51'-7 1/2"
		6'	5'-3 1/8"	11'-3"	11'-7 3/4"	12'-2 1/4"	6'-4 5/8"	22'-1"	22'-10 3/4"	23'-4 3/4"	17'-7 1/4"	32'-11"	34'-1"	34'-7 1/2"	28'-9 3/4"	43'-9"	45'-3 1/2"	45'-10"	40'-0 1/4"	54'-7"	56'-6"	57'-0 1/2"	51'-3"
		7'	6'-5 7/8"	11'-3"	"	"	5'-1 7/8"	22'-1"	"	"	16'-4 1/2"	32'-11"	"	"	27'-7"	43'-9"	"	"	38'-9 3/4"	54'-7"	"	"	50'-0 1/4"
		8'	7'-8 5/8"	11'-4"	11'-8 3/4"	12'-3 1/4"	4'-0 1/4"	22'-2"	22'-11 3/4"	23'-5 3/4"	15'-2 3/4"	33'-0"	34'-2"	34'-8 1/2"	26'-5 1/2"	43'-10"	45'-4 1/2"	45'-11"	37'-8"	54'-8"	56'-7 1/8"	57'-1 1/2"	48'-10 1/2"
	11'	6'	5'-3 1/8"	12'-4"	12'-9 1/4"	13'-3 3/4"	7'-6"	24'-2"	25'-0 1/4"	25'-6 3/4"	19'-9"	36'-0"	37'-3 1/4"	37'-9 3/4"	32'-0"	47'-10"	49'-6 1/4"	50'-0 3/4"	44'-3"	—	—	—	—
		7'	6'-5 7/8"	12'-4"	"	"	6'-3 3/8"	24'-2"	"	"	18'-6 1/2"	36'-0"	"	"	30'-9 1/4"	47'-10"	"	"	43'-0 1/2"	—	—	—	—
		8'	7'-8 5/8"	12'-4"	"	"	5'-0 5/8"	24'-2"	"	"	17'-3 3/4"	36'-0"	"	"	29'-6 3/4"	47'-10"	"	"	41'-9 3/4"	—	—	—	—
	12'	6'	5'-3 1/8"	13'-4"	13'-9 5/8"	14'-4"	8'-6 1/2"	26'-2"	27'-1"	27'-7 1/2"	21'-10"	39'-0"	40'-4 1/8"	40'-11"	35'-1 1/4"	51'-10"	53'-8"	54'-2 1/2"	48'-4 3/4"	—	—	—	—
		7'	6'-5 7/8"	13'-4"	"	"	7'-3 3/4"	26'-2"	"	"	20'-7 1/4"	39'-0"	"	"	33'-10 3/4"	51'-10"	"	"	47'-2"	—	—	—	—
		8'	7'-8 5/8"	13'-4"	"	"	6'-1"	26'-2"	"	"	19'-4 1/2"	39'-0"	"	"	32'-8"	51'-10"	"	"	45'-11 1/2"	—	—	—	—
W-X152-2, W-X153-2 or W-X154-2. (For H=9'-0" & over)	7'	9'	8'-11 1/8"	8'-6"	8'-9 3/8"	9'-4"	Ⓐ 0"	16'-5"	17'-0"	17'-6 1/2"	8'-0 1/8"	24'-4"	25'-2 1/2"	25'-8 3/4"	16'-3"	32'-8"	33'-4 5/8"	33'-11"	24'-5 1/4"	40'-2"	41'-7"	42'-1 1/2"	32'-7 3/4"
	8'	9'	8'-11 1/8"	9'-6"	9'-10"	10'-4 1/2"	0'-10 3/4"	18'-5"	19'-0 3/4"	19'-7 1/4"	10'-1 1/2"	27'-4"	28'-3 5/8"	28'-10"	19'-4 1/4"	36'-3"	37'-6 3/4"	38'-0 3/4"	28'-7"	45'-2"	46'-9 5/8"	47'-3 3/4"	37'-9 3/4"
		10'	10'-2"	9'-8"	10'-0 1/8"	10'-6 1/2"	Ⓐ 0"	18'-8"	19'-3 7/8"	19'-10 1/8"	9'-2"	27'-8"	28'-7 3/4"	29'-2 1/4"	18'-5 3/4"	36'-8"	37'-11 1/2"	38'-6"	27'-9 1/2"	45'-8"	47'-3 3/4"	47'-9 3/4"	37'-1 1/2"
	9'	9'	8'-11 1/8"	10'-6"	10'-10 1/2"	11'-5"	1'-11 1/8"	20'-5"	21'-1 5/8"	21'-8 1/4"	12'-2 1/2"	30'-4"	31'-4 3/8"	31'-11 1/4"	22'-5 1/2"	40'-3"	41'-8"	42'-2 1/2"	32'-8 3/4"	50'-2"	51'-11 1/4"	52'-5 3/4"	43'-0"
		10'	10'-2"	10'-8"	11'-0 1/2"	11'-7"	0'-10 1/4"	20'-8"	21'-4 3/4"	21'-11 1/4"	11'-2 3/4"	30'-8"	31'-9"	32'-3 1/4"	21'-7"	40'-8"	42'-1 1/4"	42'-7 3/4"	31'-11 1/4"	50'-8"	52'-5 1/2"	53'-0"	42'-3 1/2"
		11'	11'-4 5/8"	10'-10"	11'-2 5/8"	11'-9"	Ⓐ 0"	20'-10"	21'-6 7/8"	22'-1 1/2"	10'-2 1/4"	30'-10"	31'-11"	32'-5 1/2"	20'-6 1/2"	40'-10"	42'-3 1/4"	42'-9 3/4"	30'-10 3/4"	50'-10"	52'-7 1/4"	53'-2"	41'-2 3/4"
	10'	9'	8'-11 1/8"	11'-6"	11'-10 7/8"	12'-5 3/8"	2'-11 5/8"	22'-5"	23'-2 1/4"	23'-9"	14'-3 1/4"	33'-4"	34'-6 1/8"	35'-0 5/8"	25'-6 3/4"	44'-3"	45'-9 3/4"	46'-4 1/4"	36'-10 1/2"	55'-2"	57'-1 3/8"	57'-7 3/4"	48'-2"
		10'	10'-2"	11'-8"	12'-1"	12'-7 1/2"	1'-11"	22'-8"	23'-5 5/8"	24'-0"	13'-3 3/4"	33'-8"	34'-10 1/8"	35'-4 3/4"	24'-8 1/4"	44'-8"	46'-2 7/8"	46'-9 1/4"	36'-1"	55'-8"	57'-7 5/8"	58'-2"	47'-5 1/2"
		11'	11'-4 5/8"	11'-10"	12'-3"	12'-9 1/2"	0'-10 3/8"	22'-10"	23'-7 3/4"	24'-2"	12'-3"	33'-10"	35'-0 3/8"	35'-6 3/4"	23'-7 3/4"	44'-10"	46'-5"	46'-11 1/2"	35'-0 1/4"	55'-10"	57'-9 3/4"	58'-4"	46'-5"
		12'	12'-7 3/8"	12'-0"	12'-5 1/8"	12'-11 1/2"	Ⓐ 0"	23'-0"	23'-9 3/4"	24'-4 1/4"	11'-2 1/2"	34'-0"	35'-2 3/8"	35'-8 3/4"	22'-7"	45'-0"	46'-7"	47'-1 1/2"	33'-11 3/4"	56'-0"	57'-11 3/8"	58'-6"	45'-4 3/4"
	11'	9'	8'-11 1/8"	12'-6"	12'-11 1/2"	13'-5 3/4"	4'-0"	24'-5"	25'-3 3/4"	25'-9 3/4"	16'-4"	36'-4"	37'-7 3/8"	38'-1 3/4"	28'-8"	48'-3"	49'-11 3/4"	50'-5 3/4"	41'-0 1/4"	—	—	—	—
		10'	10'-2"	12'-8"	13'-1 3/8"	13'-7 3/4"	2'-11 3/8"	24'-8"	25'-6 1/2"	26'-1"	15'-4 1/2"	36'-8"	37'-11 1/2"	38'-6"	27'-9 1/2"	48'-8"	50'-4 5/8"	50'-11"	40'-2 3/4"	—	—	—	—
		11'	11'-4 5/8"	12'-10"	13'-3 3/4"	13'-10"	1'-10 3/4"	24'-10"	25'-8 1/2"	26'-3"	14'-3 3/4"	36'-10"	38'-1 5/8"	38'-8"	26'-9"	48'-10"	50'-6 5/8"	51'-1"	39'-2"	—	—	—	—
		12'	12'-7 3/8"	13'-0"	13'-5 1/2"	14'-0"	0'-10 1/2"	25'-0"	25'-10 5/8"	26'-5"	13'-3 1/4"	37'-0"	38'-3 5/8"	38'-10"	25'-8 1/4"	49'-0"	50'-8 3/4"	51'-3 1/4"	38'-1 1/2"	—	—	—	—
	12'	9'	8'-11 1/8"	13'-6"	13'-11 3/4"	14'-6 1/4"	5'-0 1/2"	26'-5"	27'-4 1/8"	27'-10 3/4"	18'-5"	39'-4"	40'-8 3/4"	41'-3"	31'-9 1/2"	52'-3"	54'-1 1/8"	54'-7 1/2"	45'-1 3/4"	—	—	—	—
		10'	10'-2"	13'-8"	14'-1 3/4"	14'-8 1/4"	3'-11 3/4"	26'-8"	27'-7 1/4"	28'-1 3/4"	17'-5 1/4"	39'-8"	41'-0 3/4"	41'-7 1/4"	30'-10 3/4"	52'-8"	54'-6 1/4"	55'-0 3/4"	44'-4 1/4"	—	—	—	—
		11'	11'-4 5/8"	13'-10"	14'-3 7/8"	14'-10 1/4"	2'-11 1/4"	26'-10"	27'-9 3/4"	28'-3 3/4"	16'-4 3/4"	39'-10"	41'-2 3/4"	41'-9 1/4"	29'-10 1/4"	52'-10"	54'-8 3/4"	55'-2 3/4"	43'-3 3/4"	—	—	—	—
		12'	12'-7 3/8"	14'-0"	14'-5 7/8"	15'-0 1/2"	1'-10 1/2"	27'-0"	27'-11 3/8"	28'-6"	15'-4"	40'-0"	41'-4 7/8"	41'-11 1/4"	28'-9 1/2"	53'-0"	54'-10 3/8"	55'-4 3/4"	42'-3"	—	—	—	—

Ⓐ Special case for these boxes, See Detail "A" and Table "A" for revised values of F_1, F_2, W_4 and W_5, when apron width is more than 1'-0" and W_3 = 0". For Detail "A" and Tables "A" for each slope, see Drawing Nos. W-X152-1, W-X152-2, or W-X153-1, W-X153-2, or W-X154-1, W-X154-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 15° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X152-1 or W-X152-2	W-X153-1 or W-X153-2	W-X154-1 or W-X154-2.

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

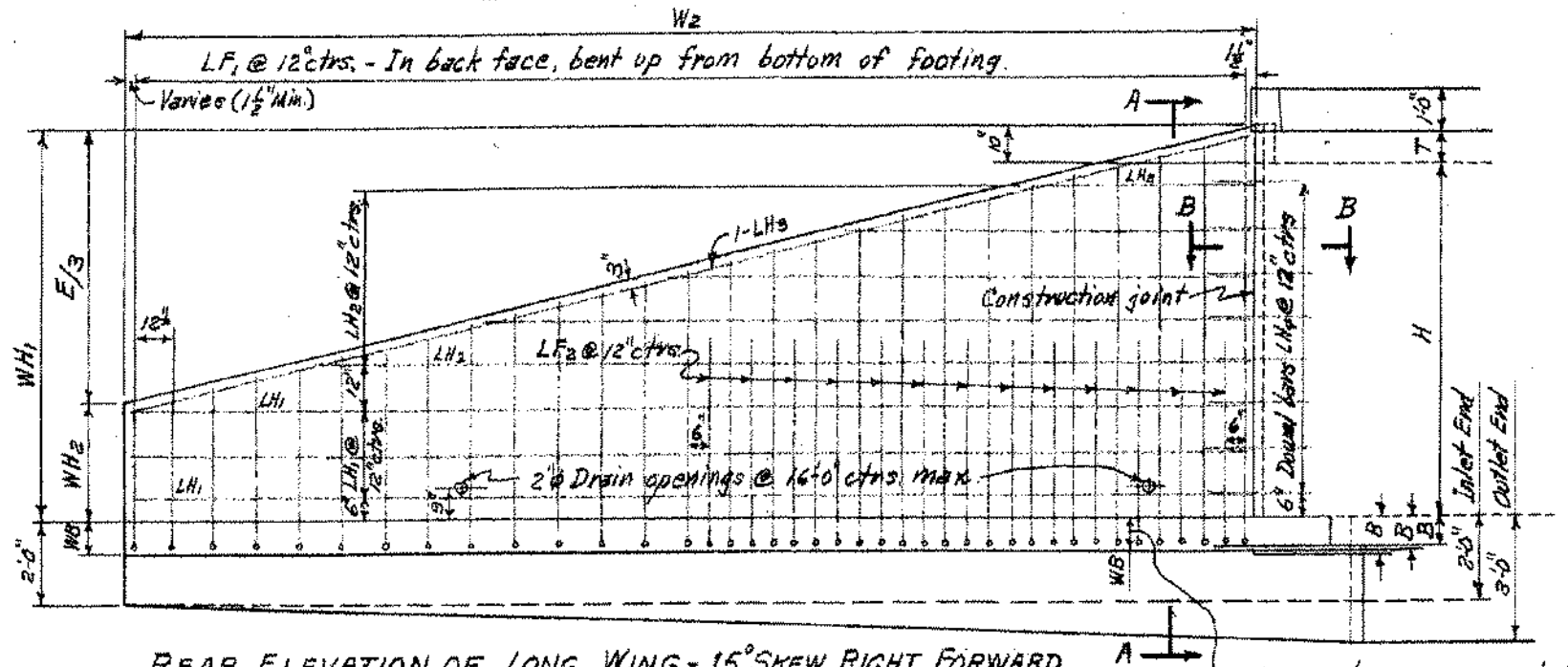
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER — H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

STANDARD DRAWING NO. W-X15

Designed by:- W.C.H. 5-22-63. Checked by:-
Traced by:- W.C.H. 6-13-63 Checked by:- J.E.M. 6-20-63
Quantities by:- Checked by:-

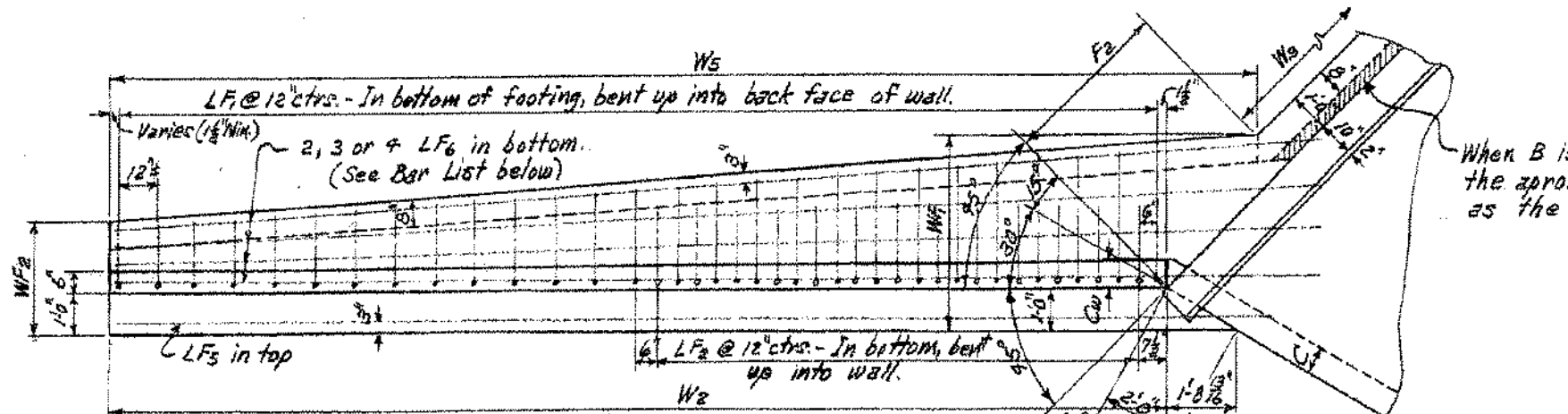
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			218	
JOB No.					



REAR ELEVATION OF LONG WING - 15° SKEW RIGHT FORWARD

SHOWING BACK FACE REINFORCING

WB may be more, equal to, or less than the bottom slab thickness B.

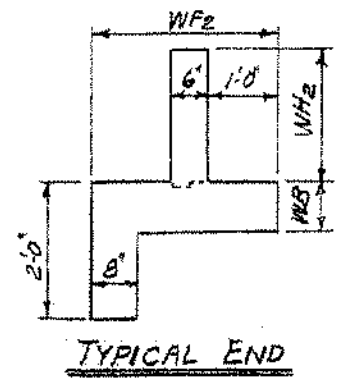


PLAN OF LONG WING - 15° SKEW RIGHT FORWARD

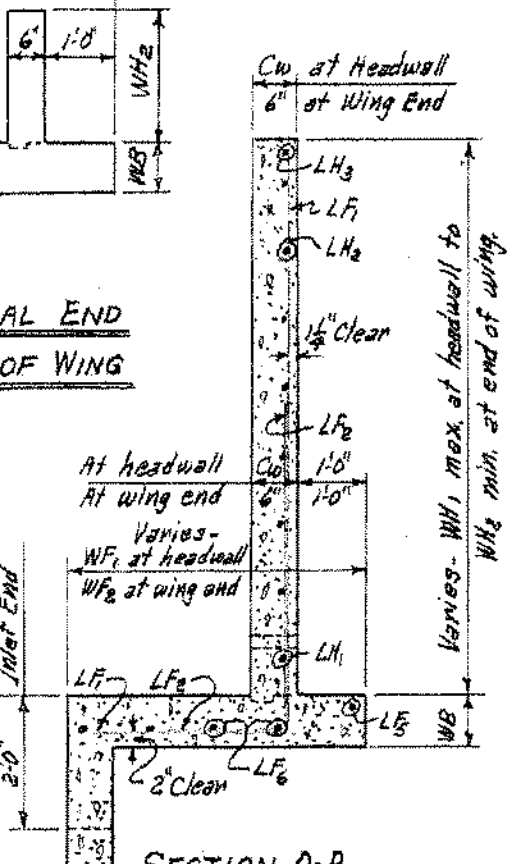
SHOWING FOOTING REINFORCING.

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B.

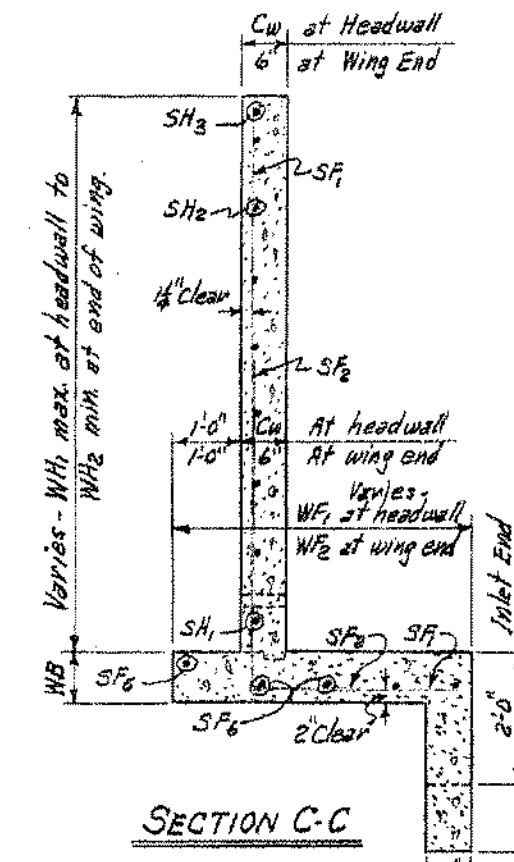
NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



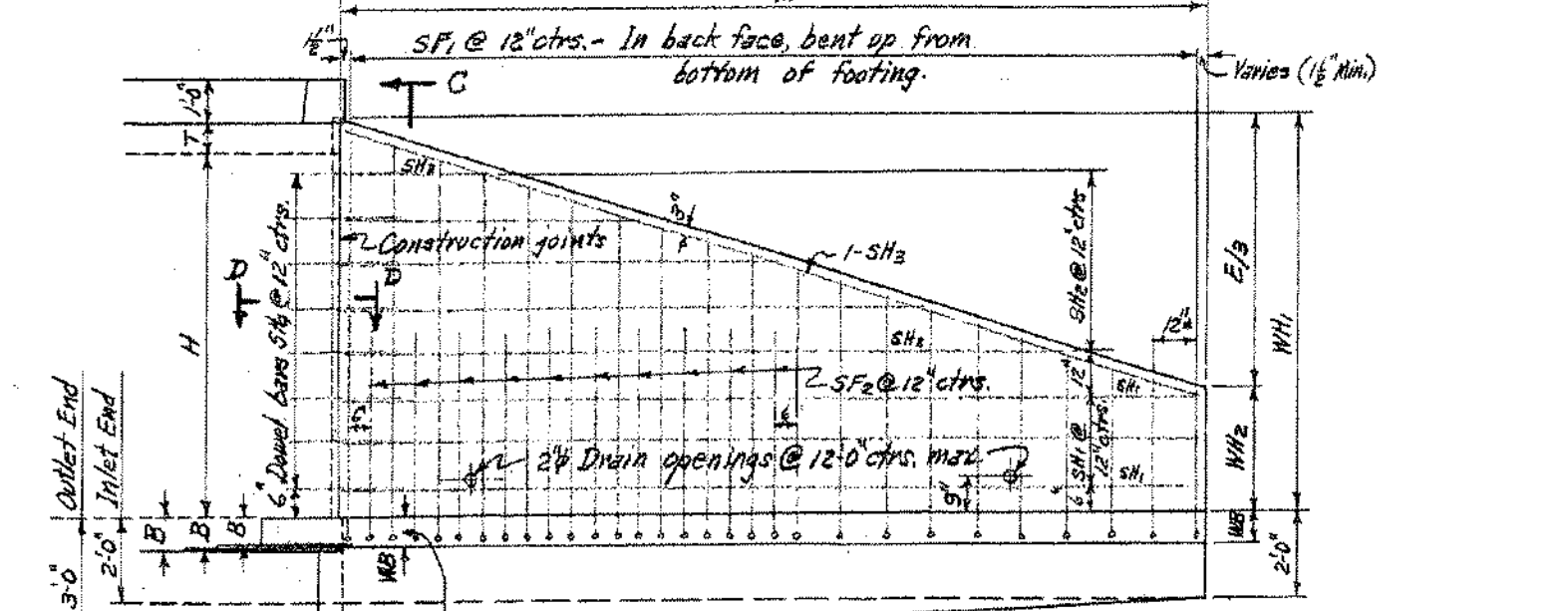
TYPICAL END VIEW OF WING



SECTION A-A



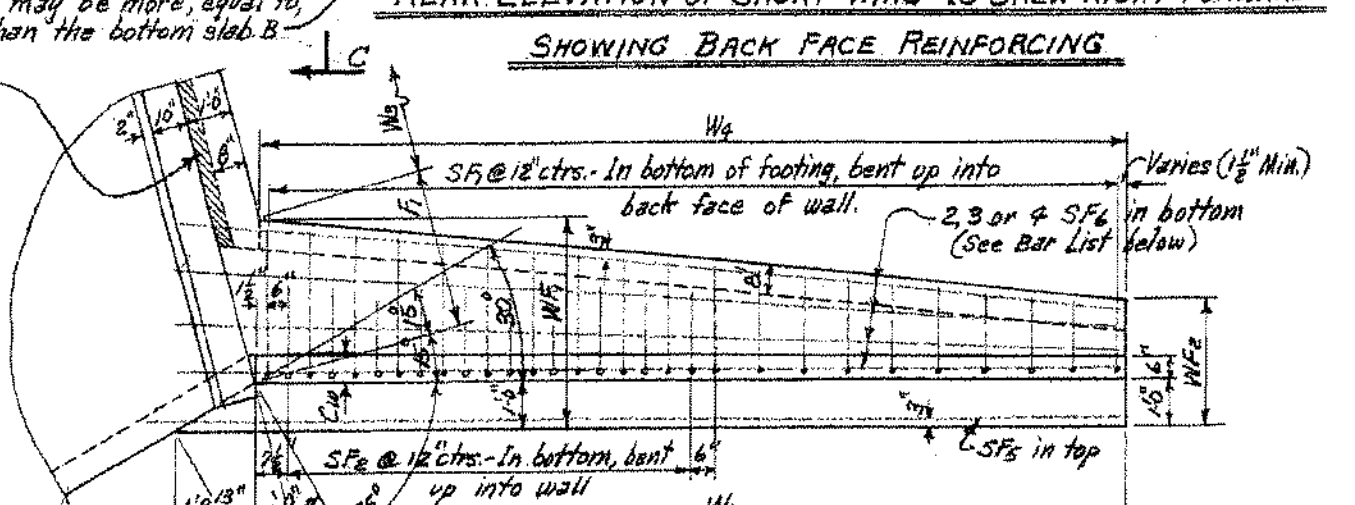
SECTION C-C



WB may be more, equal to, or less than the bottom slab B.

REAR ELEVATION OF SHORT WING - 15° SKEW RIGHT FORWARD

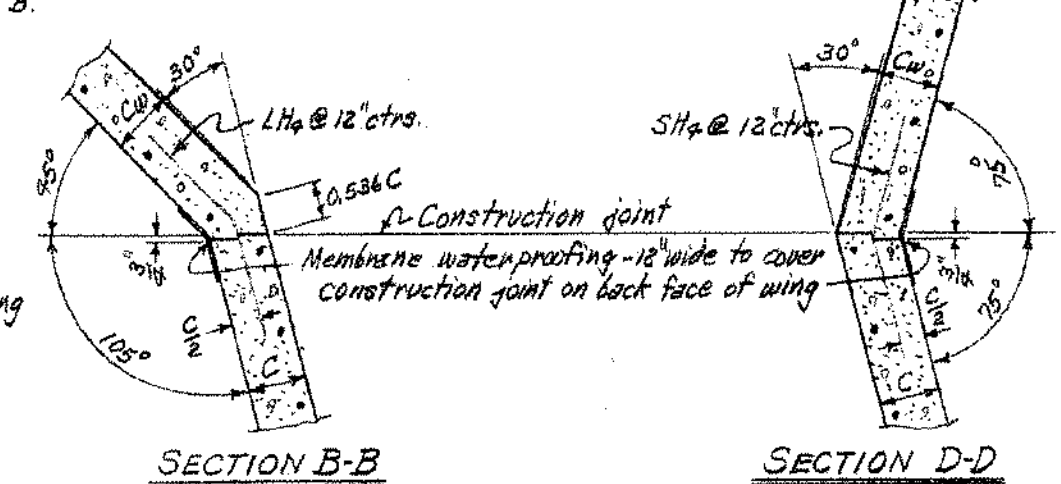
SHOWING BACK FACE REINFORCING



When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B.

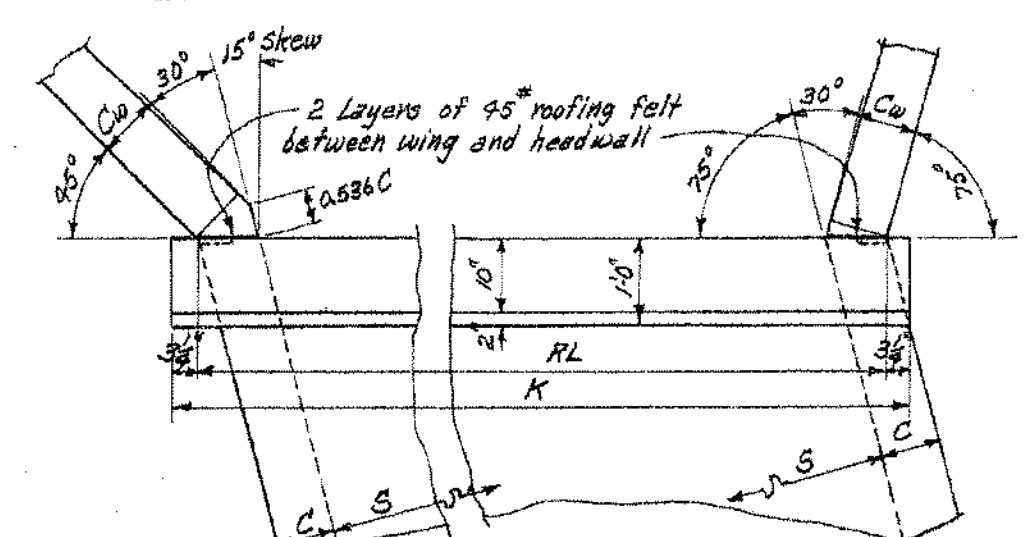
PLAN OF SHORT WING - 15° SKEW RIGHT FORWARD

SHOWING FOOTING REINFORCING



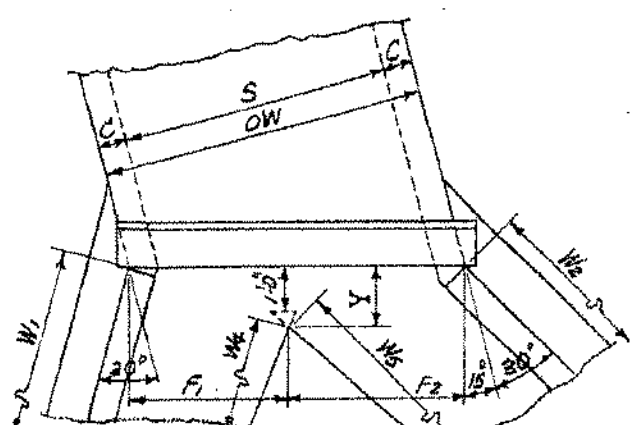
SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS



DETAILS AT TOP OF WINGS

15° SKEW RIGHT FORWARD



DETAIL "A"

TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F_1	F_2	W_4	W_5	W_3	Y
5'	7'	3'-0"	3'-5⅝"	16'-10½"	25'-0⅜"	0"	1'-0½"
6'	8'	3'-6"	4'-1⅝"	19'-0¼"	28'-3½"	0"	1'-1"

REGULAR WING DIMENSIONS - 3:1 SLOPES

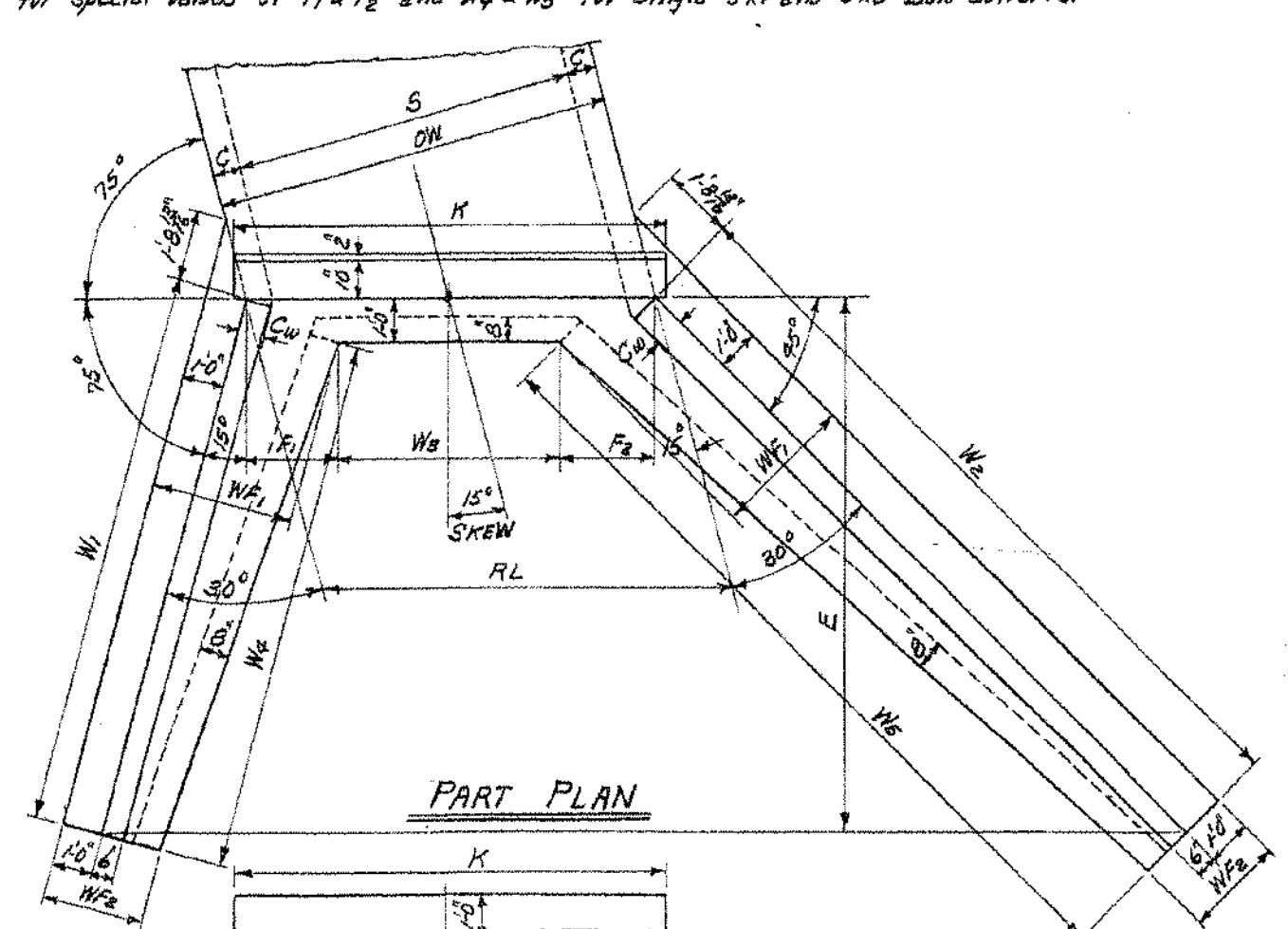
CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HDWL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	FOOTING DIMENSION PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIST. FROM HDWL TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSIONS SHORT WING	INSIDE FOOTING DIMENSIONS LONG WING	* QUANTITY PER WING, CLASS S CONCRETE, INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	Cw	WH_1	WH_2	WF_1	WF_2	F_1	F_2	E	W_1	W_2	W_4	W_5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-1⅜"	0'-10⅝"	6'-6"	6'-8¾"	9'-2¼"	6'-0½"	9'-1¼"	0.789	1.094	0.876	1.212
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-5⅝"	1'-4¼"	8'-6"	8'-9½"	12'-0¼"	8'-2½"	12'-3¼"	1.186	1.650	1.300	1.808
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9⅝"	1'-10"	10'-6"	10'-10½"	14'-10¼"	10'-4½"	15'-5¼"	1.656	2.305	1.797	2.502
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1¾"	2'-3⅝"	12'-6"	12'-11¼"	17'-8¼"	12'-6¼"	18'-7¼"	2.196	3.059	2.363	3.295
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1¾"	2'-3⅝"	12'-6"	12'-11¼"	17'-8¼"	12'-6¼"	18'-7¼"	2.287	3.188	2.455	3.424
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅞"	2'-9¼"	14'-6"	15'-0¼"	20'-6"	14'-8¼"	21'-9"	3.052	4.242	3.246	4.517
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅞"	2'-9¼"	14'-6"	15'-0¼"	20'-6"	14'-8¼"	21'-9"	3.114	4.329	3.309	4.605
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅞"	2'-9¼"	14'-6"	15'-0¼"	20'-6"	14'-8¼"	21'-9"	3.177	4.417	3.371	4.693
⊕ 7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-0⅛"	3'-5¾"	16'-6"	17'-1"	23'-4"	16'-10¾"	25'-1"	3.998	5.560	4.220	5.877
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-0⅛"	3'-5¾"	16'-6"	17'-1"	23'-4"	16'-10¾"	25'-1"	4.079	5.675	4.301	5.991
⊕ 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-6⅜"	4'-2¼"	18'-6"	19'-1¾"	26'-2"	19'-1¼"	28'-5"	5.111	7.111	5.360	7.470

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.
⊕ See Table "A" for special values of F_1 & F_2 and W_4 & W_5 for Single 5'x7' and 6'x8' Box Culverts.

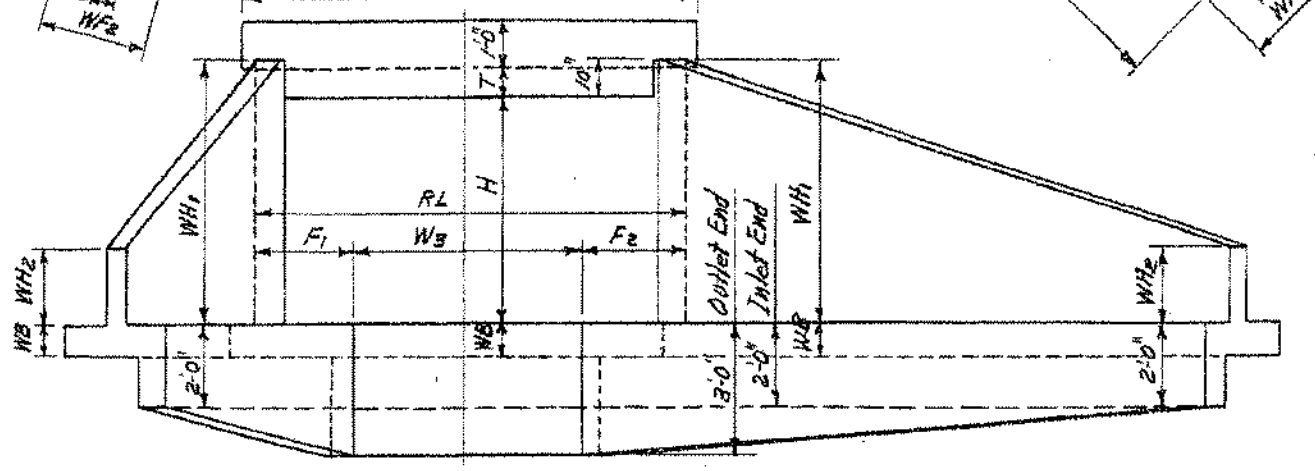
QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS ⊛	SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
					CLASS S CONCRETE - 4 WINGS: HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	117	4.79	5.78	6.77	7.77	8.76
	3'	6"	7"	176	6.65	7.64	8.63	9.63	10.62
	4'	6"	7"	267	8.85	9.84	10.84	11.83	12.82
	5'	6"	7"	379	11.40	12.38	13.38	14.37	15.36
	6'	7"	8"	626	15.45	16.46	17.48	18.51	19.53
5'	3'	6"	7"	176	6.87	8.07	9.28	10.48	11.69
	4'	6"	7"	267	9.08	10.28	11.48	12.69	13.90
	5'	6"	7"	379	11.61	12.81	14.02	15.23	16.44
	6'	7"	8"	626	15.67	16.90	18.14	19.38	20.61
	7'	7½"	8½"	1210	20.11	21.36	22.62	23.88	25.14
6'	3'	6"	7"	176	7.09	8.52	9.92	11.36	12.78
	4'	6"	7"	267	9.29	10.73	12.13	13.56	14.98
	5'	6"	7"	379	11.83	13.26	14.67	16.10	17.53
	6'	7"	8"	626	15.89	17.35	18.79	20.25	21.70
	7'	7½"	8½"	1210	20.33	21.81	23.28	24.76	26.24
	8'	8"	9"	1533	25.56	27.05	28.53	30.02	31.50
7'	4'	6"	7"	267	9.52	11.18	12.81	14.47	16.09
	5'	6"	7"	379	12.05	13.72	15.35	17.01	18.63
	6'	7"	8"	626	16.12	17.80	19.45	21.13	22.78
	7'	7½"	8½"	1210	20.56	22.26	23.94	25.64	27.33
	8'	8"	9"	1533	25.80	27.50	29.20	30.90	32.60
8'	4'	6"	7"	267	9.75	11.65	13.51	15.41	17.23
	5'	7"	7"	379	12.76	14.68	16.55	18.47	20.31
	6'	7"	8"	626	16.34	18.26	20.14	22.06	23.90
	7'	7½"	8½"	1210	20.78	22.72	24.62	26.55	28.42
	8'	8"	9"	1533	26.03	27.96	29.86	31.80	33.71
9'	5'	7"	7"	379	12.99	15.15	17.25	19.40	21.45
	6'	7½"	8"	626	16.89	19.07	21.19	23.36	25.42
	7'	7½"	8½"	1210	21.01	23.19	25.31	27.48	29.54
	8'	8"	9"	1533	26.25	28.42	30.55	32.72	34.78
10'	5'	7"	7"	379	13.23	16.62	17.95	20.24	22.59
	6'	7½"	8"	626	17.13	19.54	21.89	24.20	26.56
	7'	7½"	8½"	1210	21.44	23.66	26.01	28.32	30.68
	8'	8"	9"	1533	26.48	28.89	31.25	33.56	35.92
11'	6'	8"	8"	626	17.67	20.34	22.92	25.48	——
	7'	8"	8½"	1210	21.88	24.55	27.13	29.69	——
	8'	8"	9"	1533	26.70	29.37	31.96	34.52	——
12'	6'	8"	8"	626	17.91	20.84	23.64	26.46	——
	7'	8"	8½"	1210	22.11	25.04	27.85	30.67	——
	8'	8"	9"	1533	26.93	29.86	32.67	35.49	——

⊛ For reinforcing steel in Headwalls and Aprons, see Drawings listed below.



PART PLAN



END ELEVATION

SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Drwg. No. W-X15

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-X15. For values of RL, K, and W_3 for each box, see the above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"

Reinforcing Steel 20,000#/□"

NOTE:-

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

SF₁ & LF₁ — BENT — In bottom of footing, bent up into back face of wing. One bar of each length.

H	SHORT OR LONG	SIZE	SPACING	NO. REQ'D	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"	10	1'-7"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"
3'	Short	#3	12"	9	2'-2"	5'-3"	0'-10"	1'-4"	1'-5"	4'-0"
	Long	#3	12"	13	1'-11"	5'-2"	0'-10"	1'-3"	1'-2"	4'-0"
4'	Short	#3	12"	11	2'-7"	6'-7"	0'-11"	1'-8"	1'-9"	5'-0"
	Long	#3	12"	15	2'-6"	6'-6"	0'-11"	1'-7"	1'-8"	5'-0"
5'	Short	#3	12"	13	3'-1"	7'-11"	1'-1"	2'-0"	2'-1"	6'-0"
	Long	#3	12"	18	3'-0"	7'-10"	1'-1"	1'-11"	2'-0"	6'-0"
6'	Short	#4	12"	16	3'-4"	9'-4"	1'-2"	2'-4"	2'-3"	7'-1"
	Long	#4	12"	21	3'-5"	9'-3"	1'-2"	2'-3"	2'-4"	7'-1"
7'	Short	#4	12"	18	3'-9"	10'-10"	1'-3"	2'-10"	2'-7"	8'-1"
	Long	#4	12"	24	3'-10"	10'-8"	1'-3"	2'-8"	2'-8"	8'-1"
8'	Short	#4	12"	20	4'-4"	12'-5"	1'-5"	3'-4"	3'-0"	9'-2"
	Long	#4	12"	27	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"

SF₂ & LF₂ — BENT — In bottom of footing, bent up into back face of wing. Alt. with F₁ bars. SF₅ & LF₅ — STRAIGHT — Longitudinal in top of wing footing heel. SF₆ & LF₆ — STRAIGHT — Longitudinal in bottom of wing footing toe.

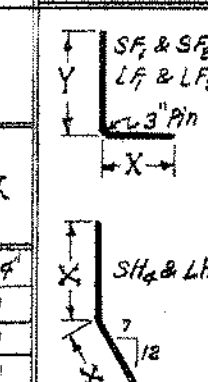
H	SHORT OR LONG	SF₂ & LF₂ SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	SF₅ & LF₅ SIZE	NO. REQ'D	LENGTH	SF₆ & LF₆ SIZE	NO. REQ'D	LENGTH
2'	Short	—	—	—	—	—	—	#3	1	9'-2"	#3	2	7'-10"
	Long	—	—	—	—	—	—	#3	1	11'-8"	#3	2	10'-10"
3'	Short	—	—	—	—	—	—	#3	1	11'-3"	#3	2	10'-0"
	Long	—	—	—	—	—	—	#3	1	14'-6"	#3	2	14'-0"
4'	Short	—	—	—	—	—	—	#3	1	13'-4"	#3	3	12'-2"
	Long	—	—	—	—	—	—	#3	1	17'-4"	#3	3	17'-2"
5'	Short	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	15'-5"	#3	3	14'-4"
	Long	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	20'-2"	#3	3	20'-4"
6'	Short	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	17'-6"	#3	3	16'-6"
	Long	#3	12"	5	4'-6"	1'-4"	3'-3"	#3	1	23'-0"	#3	3	23'-6"
7'	Short	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	19'-7"	#4	4	18'-9"
	Long	#4	12"	9	5'-6"	1'-7"	4'-0"	#4	1	25'-10"	#4	4	26'-10"
8'	Short	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	21'-8"	#4	4	21'-0"
	Long	#4	12"	13	6'-6"	1'-10"	4'-9"	#4	1	28'-8"	#4	4	30'-3"

SH₁ & LH₁ — STRAIGHT — Horizontal in back face of wing. SH₂ & LH₂ — STRAIGHT — Horizontal in back face of wing. One bar of each length. SH₃ & LH₃ — STRAIGHT — In back face of wing at top - on slope.

H	SHORT OR LONG	SH₁ & LH₁ SIZE	SPACING	NO. REQ'D	LENGTH	SH₂ & LH₂ SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	SH₃ & LH₃ SIZE	NO. REQ'D	LENGTH
2'	Short	#3	12"	1	6'-5"	#3	12"	1	—	3'-6"	#3	1	6'-10"
	Long	#3	12"	1	8'-11"	#3	12"	1	—	4'-8"	#3	1	9'-1"
3'	Short	#3	12"	1	8'-6"	#3	12"	2	6'-7"	3'-6"	#3	1	9'-0"
	Long	#3	12"	1	11'-9"	#3	12"	2	8'-11"	4'-8"	#3	1	12'-0"
4'	Short	#3	12"	1	10'-7"	#3	12"	3	9'-8"	3'-6"	#3	1	11'-8"
	Long	#3	12"	1	14'-7"	#3	12"	3	13'-2"	4'-8"	#3	1	14'-11"
5'	Short	#3	12"	2	12'-8"	#3	12"	3	9'-8"	3'-6"	#3	1	13'-4"
	Long	#3	12"	2	17'-5"	#3	12"	3	13'-2"	4'-8"	#3	1	17'-10"
6'	Short	#3	12"	2	14'-9"	#3	12"	4	12'-9"	3'-6"	#3	1	15'-6"
	Long	#3	12"	2	20'-3"	#3	12"	4	17'-5"	4'-8"	#3	1	20'-9"
7'	Short	#4	12"	2	16'-10"	#4	12"	5	15'-10"	3'-6"	#4	1	17'-8"
	Long	#4	12"	2	23'-1"	#4	12"	5	21'-8"	4'-8"	#4	1	23'-8"
8'	Short	#4	12"	3	18'-11"	#4	12"	5	15'-10"	3'-6"	#4	1	19'-10"
	Long	#4	12"	3	25'-11"	#4	12"	5	21'-8"	4'-8"	#4	1	26'-7"

SH₄ & LH₄ — BENT — Dowels thru construction joint at headwall. QUANTITY — Reinforcing Steel per Wing - LBS.

H	SHORT OR LONG	SH₄ & LH₄ SIZE	SPACING	NO. REQ'D	LENGTH	X	SHORT WING	LONG WING
2'	Short	#3	12"	2	2'-8"	1'-4"	24.9	33.4
	Long	#3	12"	2	"	"		
3'	Short	#3	12"	3	"	"	37.7	50.3
	Long	#3	12"	3	"	"		
4'	Short	#3	12"	4	"	"	57.3	76.4
	Long	#3	12"	4	"	"		
5'	Short	#3	12"	5	"	"	81.1	108.4
	Long	#3	12"	5	"	"		
6'	Short	#3	12"	6	"	"	134.8	178.1
	Long	#3	12"	6	2'-8"	1'-4"		
7'	Short	#4	12"	7	3'-6"	1'-9"	259.5	345.2
	Long	#4	12"	7	"	"		
8'	Short	#4	12"	8	"	"	328.0	438.3
	Long	#4	12"	8	3'-6"	1'-9"		



BAR BENDING DIAGRAM

NOTE:- Dimensions are to bar centers.

NOTE:- Bars for short wing shall be marked with prefix letter "S", while those for long wing shall be marked with letter "L".

Designed By:- W.C.H. 5-13-63 Checked By:-
Drawn By:- W.C.H. 6-20-63 Checked By:- BHS - 8-7-63
Quantities By:- W.C.H. 9-23-63 Checked By:-

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS

FOR

REINFORCED CONCRETE BOX CULVERTS

15° SKEW

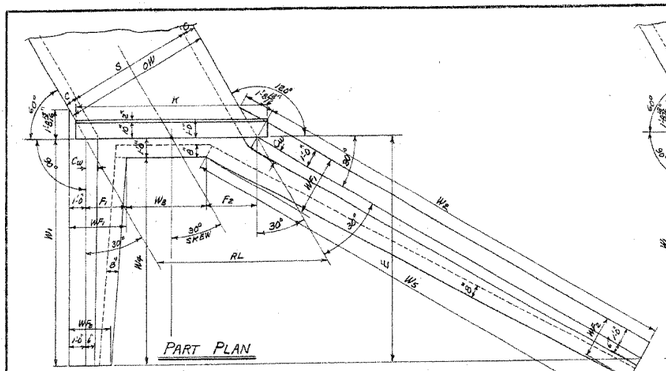
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, — ALL DEPTHS OF COVER

QUADRUPLES & QUINTUPLES — FOR H = 8'-0" OR LESS

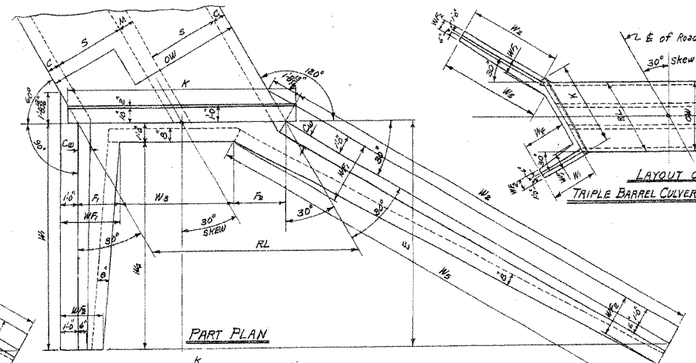
STANDARD DRAWING NO. W-X153-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			219	
JOB No.					



SINGLE BARREL CULVERT-30° SKEW RIGHT FORWARD

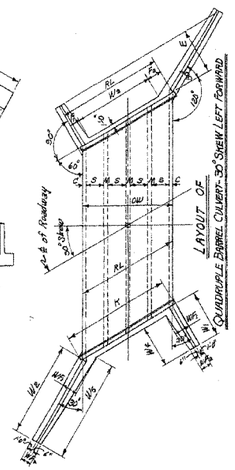
Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.



DOUBLE BARREL CULVERT-30° SKEW RIGHT FORWARD

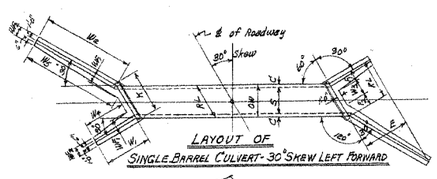
Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

LAYOUT OF TRIPLE BARREL CULVERT-30° SKEW LEFT FORWARD

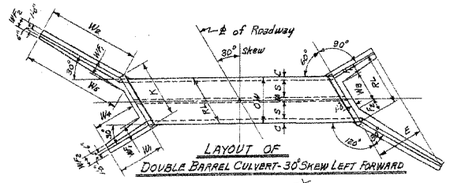


LAYOUT OF QUADRUPLE BARREL CULVERT-30° SKEW LEFT FORWARD

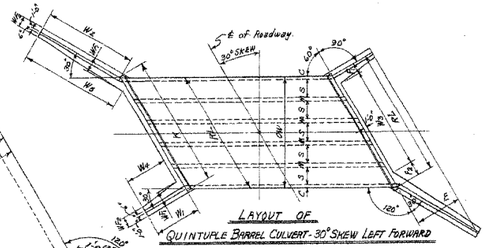
NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



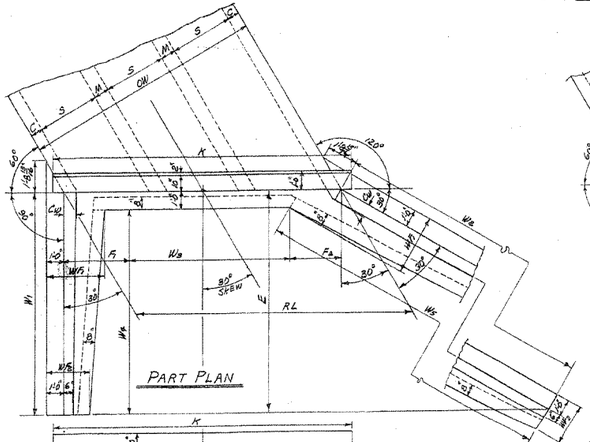
LAYOUT OF SINGLE BARREL CULVERT-30° SKEW LEFT FORWARD



LAYOUT OF DOUBLE BARREL CULVERT-30° SKEW LEFT FORWARD

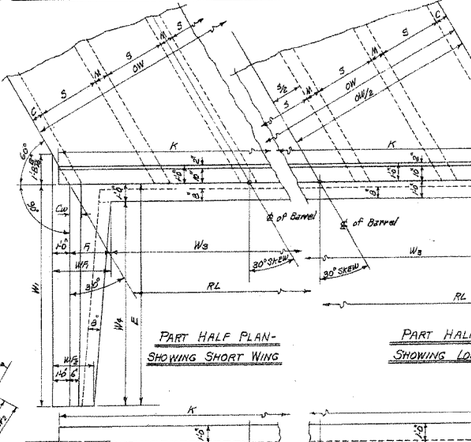


LAYOUT OF QUINTUPLE BARREL CULVERT-30° SKEW LEFT FORWARD



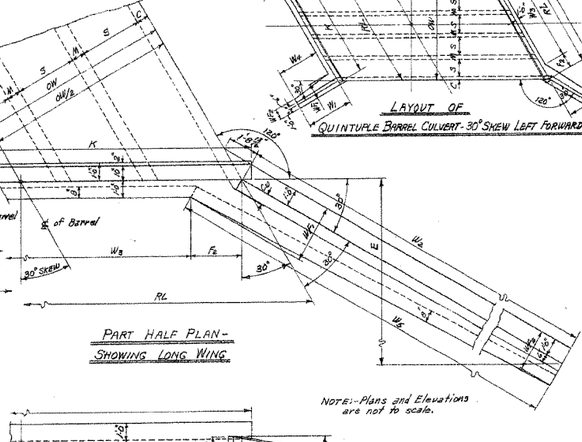
TRIPLE BARREL CULVERT-30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.



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.

NOTE:-Plans and Elevations are not to scale.

Designed by:- W.C.H. 5-16-63
Drawn by:- W.C.H. 7-15-63
Quantities by-

Checked by-
Checked by- JBHS-8-21-63
Checked by-

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.1547 — K = RL + (1'-1½") — W_3 = RL - (F_1 + F_2)

USE WITH DRAWING NO.	CLEAR SPAN	CLEAR HEIGHT	SUM OF SKEWS	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'-3"	5'-0"	5'-0½"	6'-11⅝"	3'-6"	9'-8"	11'-2"	12'-3⅝"	8'-1½"	19'-4"	16'-6⅛"	17'-8½"	14'-3⅝"	19'-5"	21'-1⅛"	22'-1"	19'-8"	23'-6"	27'-4"	28'-5⅛"	22'-10⅝"
		3'	3'-3"	5'-0"	"	"	2'-6"	9'-8"	"	"	7'-10⅝"	19'-4"	"	"	15'-3⅝"	19'-0"	"	"	18'-8"	23'-8"	"	"	29'-0⅝"
		4'	4'-3"	5'-0"	"	"	1'-6"	9'-8"	"	"	6'-10⅝"	19'-4"	"	"	12'-8⅝"	19'-0"	"	"	17'-8"	23'-8"	"	"	29'-0⅝"
		5'	5'-3"	5'-0"	5'-5⅝"	6'-11⅝"	0'-6"	9'-8"	11'-2"	12'-3⅝"	5'-10⅝"	19'-4"	16'-6⅛"	17'-8½"	11'-3⅝"	19'-0"	21'-1⅛"	22'-1"	16'-8"	23'-8"	27'-4"	28'-5⅛"	22'-10⅝"
		6'	6'-3"	5'-2"	5'-7⅛"	7'-1⅝"	Ⓐ 0°	9'-11"	11'-5½"	12'-7⅛"	5'-2⅛"	19'-8"	16'-11⅛"	18'-1"	10'-8"	19'-5"	22'-5"	23'-7"	14'-7⅝"	24'-2"	27'-10⅝"	29'-0⅛"	21'-7⅝"
	5'	3'	3'-3½"	6'-0"	6'-11⅝"	8'-1"	3'-7½"	11'-8"	13'-5⅝"	14'-7⅛"	10'-2⅝"	17'-4"	20'-0⅝"	21'-2"	16'-9"	23'-0"	26'-6⅝"	27'-8½"	23'-3½"	28'-8"	33'-1⅛"	34'-3"	29'-10"
		4'	4'-3½"	6'-0"	"	"	2'-7½"	11'-8"	"	"	9'-2½"	17'-4"	"	"	15'-3"	23'-0"	"	"	22'-3½"	28'-8"	"	"	28'-10"
		5'	5'-3½"	6'-0"	6'-11⅝"	8'-1"	1'-7½"	11'-8"	13'-5⅝"	14'-7⅛"	8'-2½"	17'-4"	20'-0⅝"	21'-2"	14'-9"	23'-0"	26'-6⅝"	27'-8½"	21'-3½"	28'-8"	33'-1⅛"	34'-3"	27'-10"
		6'	6'-3½"	6'-2"	7'-1⅛"	8'-3½"	0'-10½"	11'-11"	13'-9½"	14'-11"	7'-5⅝"	17'-8"	20'-4⅝"	21'-6⅝"	14'-1½"	23'-5"	27'-0⅛"	28'-2⅝"	20'-9⅛"	29'-2"	33'-8½"	34'-10"	27'-5"
		7'	7'-3½"	6'-3"	7'-2⅝"	8'-4⅝"	Ⓐ 0°	12'-1"	13'-11½"	15'-1⅛"	6'-2⅝"	17'-11"	20'-8⅝"	21'-10"	13'-1"	23'-10"	27'-5⅝"	28'-7"	19'-8"	29'-7"	34'-2"	35'-3⅝"	26'-9⅝"
	6'	3'	3'-3½"	7'-0"	8'-1"	9'-2⅝"	4'-0⅝"	13'-8"	15'-9⅜"	16'-11⅝"	12'-6⅛"	20'-4"	23'-5⅛"	24'-7⅝"	20'-2⅝"	27'-0"	31'-2⅛"	32'-4"	27'-11"	33'-8"	38'-10⅝"	40'-0⅛"	35'-0⅝"
		4'	4'-3½"	7'-0"	"	"	3'-3½"	13'-8"	"	"	11'-4⅝"	20'-4"	"	"	19'-2⅝"	27'-0"	"	"	26'-11"	33'-8"	"	"	34'-7⅝"
		5'	5'-3½"	7'-0"	8'-1"	9'-2⅝"	2'-9⅜"	13'-8"	15'-9⅜"	16'-11⅝"	10'-6⅝"	20'-4"	23'-5⅛"	24'-7⅝"	18'-2⅝"	27'-0"	31'-2⅛"	32'-4"	25'-11"	33'-8"	38'-10⅝"	40'-0⅛"	33'-7⅝"
		6'	6'-3½"	7'-2"	8'-3⅛"	9'-5⅜"	2'-1⅜"	13'-11"	16'-0⅝"	17'-2⅝"	9'-3⅝"	20'-8"	23'-10⅝"	25'-0⅛"	17'-2⅝"	27'-5"	31'-7⅝"	32'-9⅝"	25'-4"	34'-2"	39'-5⅝"	40'-7⅝"	33'-2⅝"
		7'	7'-3½"	7'-3"	8'-4⅛"	9'-7⅛"	1'-5"	14'-1"	16'-3⅝"	17'-5"	8'-1"	21'-0"	24'-3"	25'-5⅛"	16'-1⅛"	27'-10"	32'-0⅛"	33'-2⅝"	24'-10⅝"	34'-8"	40'-0⅜"	41'-2⅝"	32'-10⅝"
		8'	8'-3½"	8'-3"	9'-5⅛"	10'-8⅜"	0'-8½"	16'-2"	18'-8"	19'-3⅝"	9'-8⅝"	23'-0"	26'-6"	27'-8"	18'-5⅛"	30'-5"	34'-8"	35'-11"	27'-6"	37'-8"	43'-3"	44'-6"	36'-1"
	8'	4'	4'-3½"	9'-0"	10'-4⅝"	11'-6⅛"	6'-1½"	17'-8"	20'-4⅝"	21'-6⅝"	16'-1⅝"	26'-9"	30'-9⅝"	31'-11⅝"	26'-1⅝"	35'-6"	40'-5"	41'-6⅝"	36'-1⅝"	43'-8"	50'-5⅝"	51'-7"	46'-1⅞"
		5'	5'-3½"	9'-2"	10'-7"	11'-8⅝"	5'-3⅜"	17'-11"	20'-8⅝"	21'-10"	15'-5"	26'-8"	30'-5⅝"	31'-11⅛"	25'-6⅝"	35'-5"	40'-10⅝"	42'-0⅛"	35'-7⅛"	44'-2"	51'-0"	52'-1⅞"	45'-8⅝"
		6'	6'-3½"	9'-2"	10'-7"	11'-8⅝"	4'-3⅜"	17'-11"	20'-8⅝"	21'-10"	14'-5"	26'-8"	30'-5⅝"	31'-11⅛"	24'-6⅝"	35'-5"	40'-10⅝"	42'-0⅛"	34'-7⅛"	44'-2"	51'-0"	52'-1⅞"	44'-8⅝"
		7'	7'-3½"	9'-3"	10'-8⅜"	11'-10"	3'-1"	18'-1"	20'-10⅝"	22'-0⅛"	13'-1⅛"	26'-11"	31'-1"	32'-3⅜"	23'-3⅝"	35'-10"	41'-3⅝"	42'-5⅝"	33'-6⅝"	44'-7"	51'-5⅝"	52'-7½"	43'-8½"
		8'	8'-3½"	9'-4"	10'-9⅜"	11'-11⅛"	1'-6⅛"	18'-2"	20'-11⅛"	22'-1½"	11'-8¼"	27'-0"	31'-2⅜"	32'-4"	21'-11"	35'-10"	41'-4½"	42'-6⅝"	32'-1⅛"	44'-8"	51'-7"	52'-8½"	42'-8⅜"
	9'	5'	5'-3½"	10'-2"	11'-8⅝"	12'-10⅝"	6'-5⅜"	19'-11"	23'-0"	24'-1⅜"	17'-0⅜"	29'-8"	34'-3⅜"	35'-5"	28'-1⅜"	39'-5"	45'-5⅜"	46'-8"	40'-3"	49'-2"	56'-9⅜"	57'-11⅝"	51'-6"
		6'	6'-3½"	10'-3"	11'-10"	13'-0"	5'-6⅝"	20'-1"	23'-2⅛"	24'-4⅝"	15'-11"	29'-11"	34'-6⅝"	35'-8½"	26'-9⅝"	39'-9"	45'-9⅝"	47'-0⅛"	38'-6"	49'-7"	57'-3"	58'-5"	50'-1⅛"
		7'	7'-3½"	10'-3"	11'-10"	13'-0"	4'-0⅜"	20'-1"	23'-2⅛"	24'-4⅝"	15'-5"	29'-11"	34'-6⅝"	35'-8½"	25'-9⅝"	39'-9"	45'-9⅝"	47'-0⅛"	36'-11⅜"	49'-7"	57'-3"	58'-5"	49'-5⅝"
		8'	8'-3½"	10'-4"	11'-11⅝"	13'-1"	2'-8"	20'-2"	23'-3⅝"	24'-5⅝"	14'-10⅝"	30'-0"	34'-7⅜"	35'-9⅝"	25'-4⅜"	39'-10"	46'-0"	47'-1⅜"	36'-8⅜"	49'-8"	57'-4⅜"	58'-6"	48'-1"
	10'	5'	5'-3½"	11'-2"	12'-10⅛"	14'-0⅛"	7'-1⅝"	21'-11"	25'-3⅜"	26'-6⅜"	20'-0⅝"	32'-8"	37'-8⅝"	38'-10⅝"	32'-5⅛"	43'-5"	50'-1⅝"	51'-3⅝"	44'-10⅝"	54'-2"	62'-6⅛"	63'-8½"	57'-3½"
		6'	6'-3½"	11'-3"	12'-11⅝"	14'-1⅝"	6'-6⅝"	22'-1"	25'-4"	26'-7⅜"	19'-2⅝"	32'-11"	38'-0⅝"	39'-2"	31'-9"	43'-9"	50'-6⅝"	51'-8"	44'-3"	54'-7"	63'-0⅜"	64'-2⅝"	56'-11"
		7'	7'-3½"	11'-3"	12'-11⅝"	14'-1⅝"	5'-5⅝"	22'-1"	25'-4"	26'-7⅜"	17'-8⅝"	32'-11"	38'-0⅝"	39'-2"	30'-3"	43'-9"	50'-6⅝"	51'-8"	42'-9"	54'-7"	63'-0⅜"	64'-2⅝"	55'-8"
		8'	8'-3½"	11'-4"	12'-1"	14'-2"	3'-9⅝"	22'-2"	25'-5⅛"	26'-8"	16'-4"	33'-0"	38'-1⅛"	39'-3"	28'-10"	43'-10"	50'-7⅝"	51'-9⅝"	41'-4⅝"	54'-8"	63'-1⅛"	64'-3⅜"	53'-10⅝"
	11'	6'	6'-3½"	12'-4"	14'-2⅝"	15'-6⅝"	7'-11⅝"	24'-2"	27'-10⅝"	29'-0⅝"	21'-7⅝"	36'-0"	41'-4⅝"	42'-6⅝"	35'-3⅝"	47'-10"	55'-2⅝"	56'-4⅝"	48'-10⅛"	——	——	——	——
		7'	7'-3½"	12'-5"	"	"	6'-5⅝"	24'-2"	"	"	20'-1⅝"	36'-0"	"	"	33'-9⅝"	47'-10"	"	"	47'-5⅝"	——	——	——	——
		8'	8'-3½"	12'-6"	"	"	4'-11⅝"	24'-2"	"	"	18'-7⅝"	36'-0"	"	"	32'-3⅝"	47'-10"	"	"	45'-11⅝"	——	——	——	——
	12'	6'	6'-3½"	13'-4"	15'-4⅝"	16'-6⅛"	9'-1⅝"	26'-2"	30'-2⅝"	31'-4⅝"	23'-1⅛"	39'-0"	45'-0⅛"	46'-2⅝"	38'-9⅝"	51'-10"	59'-10⅛"	61'-0"	53'-7"	——	——	——	——
		7'	7'-3½"	13'-4"	"	"	7'-7½"	26'-2"	"	"	22'-5⅝"	39'-0"	"	"	37'-3⅝"	51'-10"	"	"	52'-1"	——	——	——	——
		8'	8'-3½"	13'-5"	"	"	6'-1½"	26'-2"	"	"	20'-11⅛"	39'-0"	"	"	35'-3⅝"	51'-10"	"	"	50'-1"	——	——	——	——
W-X302-2, W-X303-2 or W-X304-2 (FOR H=9'0" & OVER)	7'	9'	10'-3½"	8'-6"	9'-8⅜"	10'-11⅛"	Ⓐ 0°	16'-5"	18'-11⅛"	20'-1⅛"	8'-2⅛"	24'-4"	28'-1⅛"	29'-3"	17'-9"	32'-3"	37'-2⅜"	38'-4⅝"	26'-5⅝"	40'-2"	46'-9⅝"	47'-11⅝"	35'-7⅛"
	8'	9	10'-3½"	9'-6"	10'-11⅝"	12'-1⅛"	0'-2⅜"	18'-5"	21'-3⅛"	22'-5"	10'-6"	27'-9"	31'-1⅝"	32'-3⅝"	20'-9⅜"	36'-3"	41'-10⅝"	43'-0⅛"	31'-1"	45'-2"	52'-1⅝"	53'-3⅝"	41'-6⅝"
		10'	12'-3½"	9'-8"	11'-2"	12'-3⅜"	Ⓐ 0°	18'-8"	21'-6⅝"	22'-8⅝"	9'-3⅝"	27'-8"	31'-11⅜"	33'-1⅛"	19'-8⅝"	36'-8"	42'-3⅝"	43'-6"	30'-0⅝"	45'-9"	52'-8⅝"	53'-10⅝"	40'-5½"
	9'	9'	10'-3½"	10'-6"	12'-1⅛"	13'-3⅜"	1'-4⅛"	20'-5"	23'-6⅛"	24'-8⅝"	12'-9⅜"	30'-4"	35'-0⅛"	36'-2⅝"	24'-3"	40'-1"	46'-1⅛"	47'-2⅝"	34'-8⅜"	50'-8"	58'-6"	59'-8"	46'-2⅝"
		10'	12'-3½"	10'-8"	12'-3⅜"	13'-5⅝"	0'-0⅝"	20'-8"	23'-10⅝"	25'-0⅛"	11'-7⅛"	30'-8"	35'-4⅜"	36'-6⅝"	23'-8⅛"	40'-5"	46'-6⅛"	47'-7⅝"	34'-2⅝"	50'-10"	58'-8⅝"	59'-10⅝"	46'-11⅛"
		11'	13'-3½"	10'-10"	12'-5⅝"	13'-8"	Ⓐ 0°	20'-10"	24'-0⅝"	25'-2⅝"	10'-1⅝"	30'-10"	35'-7⅛"	36'-9"	21'-10"	40'-10"	47'-1⅛"	48'-2⅝"	33'-9⅝"	50'-10"	58'-10⅝"	59'-11⅝"	46'-11⅛"
	10'	9'	10'-3½"	11'-6"	13'-2⅜"	14'-5⅝"	2'-2⅝"	22'-5"	25'-10⅜"	27'-0⅝"	15'-2⅜"	33'-4"	38'-5⅜"	39'-7⅝"	27'-3⅝"	44'-3"	51'-1⅜"	52'-3"	38'-0"	55'-2"	63'-8⅜"	64'-10⅝"	52'-1⅛"
		10'	12'-3½"	11'-8"	13'-5⅝"	14'-7⅞"	1'-2⅝"	22'-8"	26'-1⅝"	27'-4"	15'-10⅝"	33'-8"	38'-10⅝"	40'-0⅛"	26'-7⅝"	44'-8"	51'-7"	52'-8⅝"	38'-3⅜"	55'-8"	64'-3⅝"	65'-5⅝"	52'-6"
		11'	13'-3½"	11'-10"	13'-8"	14'-9⅜"	Ⓐ 0°	22'-10"	26'-4⅝"	27'-6⅝"	12'-0⅝"	33'-10"	39'-0⅝"	40'-2⅝"	25'-3⅝"	44'-10"	51'-9⅝"	52'-11"	38'-0"	55'-10"	64'-5⅝"	65'-7⅝"	50'-8⅝"
		12'	15'-3½"	12'-0"	13'-10⅛"	15'-0⅛"	Ⓐ 0°	23'-0"	26'-6⅝"	27'-8⅝"	11'-3⅛"	34'-0"	39'-3⅛"	40'-5"	24'-0"	45'-0"	51'-11⅝"	53'-1⅛"	36'-8⅝"	56'-0"	64'-8"	65'-9⅜"	49'-7⅛"
	11'	9'	10'-3½"	12'-6"	14'-5⅛"	15'-7"	3'-3"	24'-5"	28'-2⅜"	29'-4⅝"	17'-5"	36'-4"	41'-11⅜"	43'-1⅛"	31'-2⅜"	48'-5"	55'-0⅜"	56'-2⅝"	44'-1⅛"	——	——	——	——
		10'	12'-3½"	12'-8"	14'-7⅛"	15'-8½"	2'-6⅝"	24'-10"	28'-5⅛"	29'-7⅝"	16'-8⅜"	36'-8"	42'-3⅛"	43'-4⅝"	30'-0⅝"	48'-8"	56'-2⅝"	57'-4⅝"	43'-3⅛"	——	——	——	——
		11'	13'-3½"	12'-10"	14'-9⅜"	15'-11⅝"	1'-10⅝"	24'-10"	28'-8⅛"	29'-10"	16'-1"	36'-10"	42'-6⅝"	43'-8⅛"	28'-9⅝"	48'-10"	56'-4⅝"	57'-6⅝"	42'-7⅛"	——	——	——	——
		12'	15'-3½"	13'-0"	15'-0⅝"	16'-2"	Ⓐ 0°	25'0"	28'-10⅝"	30'-0⅝"	13'-7⅝"	37'-0"	42'-8⅝"	43'-10⅝"	27'-5⅝"	49'-0"	56'-7"	57'-8⅝"	41'-3⅝"	——	——	——	——
	12'	9'	10'-3½"	13'-6"	15'-7⅛"	16'-9⅜"	4'-3⅝"	26'-5"	30'-1"	31'-3"	18'-8"	39'-4"	45'-5"	46'-7"	34'-2⅝"	52'-3"	60'-4"	61'-5⅝"	47'-10⅝"	——	——	——	——
		10'	12'-3½"	13'-8"	15'-9⅜"	16'-10⅝"	3'-6⅝"	26'-6"	30'-2⅝"	31'-4⅝"	18'-6⅝"	39'-8"	45'-9⅜"	46'-11⅝"	33'-6⅝"	52'-8"	60'-9⅜"	61'-10⅝"	48'-6⅝"	——	——	——	——
		11'	13'-3½"	13'-10"	15'-11⅝"	17'-1⅛"	2'-2⅝"	26'-10"	30'-11⅝"	32'-1⅝"	17'-2⅝"	39'-10"	46'-0"	47'-1⅝"	32'-2⅝"	52'-10"	61'-0⅜"	62'-2"	47'-2⅝"	——	——	——	——
		12'	15'-3½"	14'-0"	16'-2"	17'-3⅜"	0'-10⅝"	27'-0"	31'-2⅜"	32'-4"	15'-11"	40'-0"	46'-2⅛"	47'-4"	30'-11"	53'-0"	61'-2⅜"	62'-6⅝"	45'-10⅛"	——	——	——	——

Ⓐ Special case for these boxes. See Detail 'A' and Table 'A' for revised values of F_1, F_2, W_2 and W_3, when apron width is more than 1'-0" and W_3=0". For Details 'A' and Tables 'A' for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 30° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X302-1 or W-X302-2	W-X303-1 or W-X303-2	W-X304-1 or W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

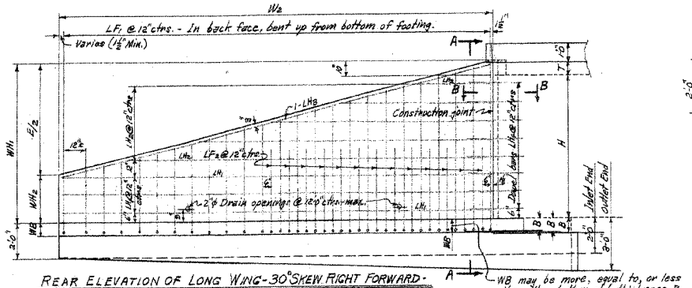
DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

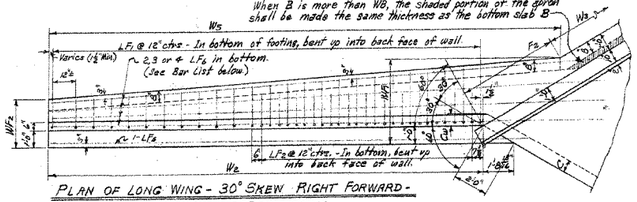
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

STANDARD DRAWING NO. W-X30

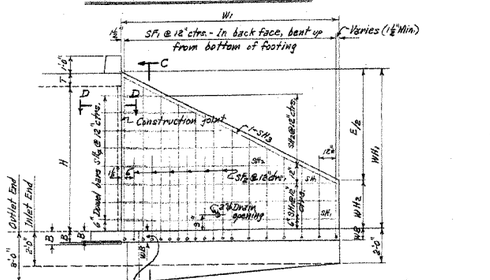
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			220	
JOB No.					



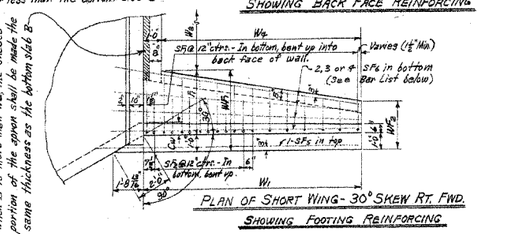
REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD -
SHOWING BACK FACE REINFORCING



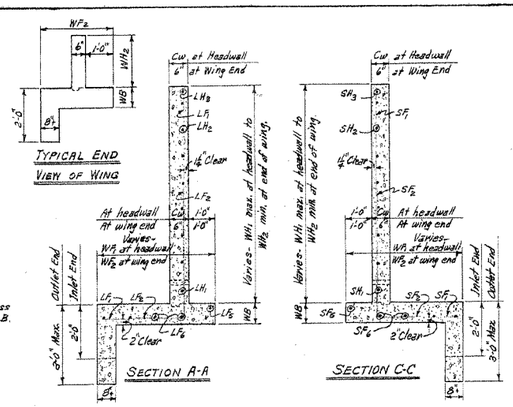
PLAN OF LONG WING - 30° SKEW RIGHT FORWARD -
SHOWING FOOTING REINFORCING



REAR ELEVATION OF SHORT WING - 30° SKEW RT. FWD.
SHOWING BACK FACE REINFORCING



PLAN OF SHORT WING - 30° SKEW RT. FWD.
SHOWING FOOTING REINFORCING

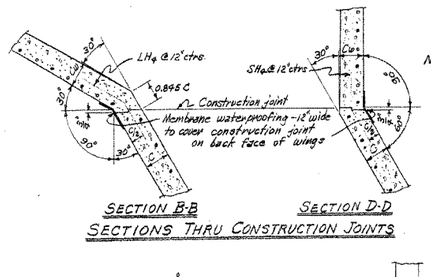


TYPICAL END VIEW OF WING

SECTION A-A

SECTION C-C

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B

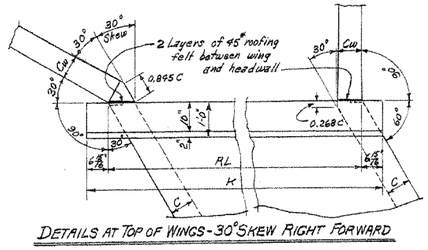


SECTION B-B

SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

NOTE:- Payment for the membrane waterproofing and roofing felt shall be included in unit price bid for Class S Concrete.



DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD

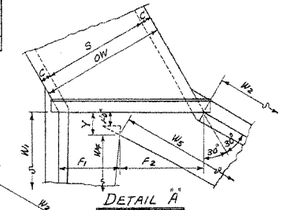
REGULAR WING DIMENSIONS - 2:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		FOOTING DIMENSION PARALLEL WITH HEADWALL		PERPENDICULAR DIMENSION FROM END OF WING	LENGTHS OF WINGWALLS		INSIDE FOOTING DIMENSIONS		* QUANTITY PER WING CLASS S CONCRETE			
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	SHORT WING	LONG WING		SHORT WING	LONG WING	SHORT WING	LONG WING	INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	C_{WB}	W_{H_1}	W_{H_2}	W_{F_1}	W_{F_2}	F_1	F_2	E	W_1	W_2	W_3	W_5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	1'-4"	0'-11½"	4'-4"	4'-4"	8'-8"	3'-4"	8'-11⅞"	0.505	1.054	0.562	1.169
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-8"	1'-1⅝"	5'-8"	5'-8"	11'-4"	4'-8"	12'-2⅜"	0.757	1.595	0.831	1.750
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	2'-0"	2'-3½"	7'-0"	7'-0"	14'-0"	6'-0"	15'-5½"	1.056	2.229	1.197	2.429
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-6⅝"	2'-4"	2'-11⅝"	8'-4"	8'-4"	16'-8"	7'-4"	18'-8½"	1.902	2.957	1.509	3.193
		7"	5'-10"	1'-8"	3'-4"	2'-6⅝"	2'-4"	2'-11⅝"	8'-4"	8'-4"	16'-8"	7'-4"	18'-8½"	1.958	3.083	1.565	3.318
* 6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11⅝"	1.998	4.101	2.071	4.377
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11⅝"	1.986	4.186	2.110	4.462
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	9'-8"	9'-8"	19'-4"	8'-8"	21'-11⅝"	2.025	4.272	2.149	4.547
* 7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-2½"	11'-0"	11'-0"	22'-0"	10'-0"	25'-5⅜"	2.552	5.377	2.693	5.696
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-2½"	11'-0"	11'-0"	22'-0"	10'-0"	25'-5⅜"	2.609	5.487	2.743	5.807
* 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	5'-2½"	12'-8"	12'-8"	24'-8"	11'-8"	29'-0⅝"	3.260	6.875	3.422	7.239

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.
* See Table 'A' for special values of F_1 & F_2 and W_6 & W_5 for Single 4'x6', 5'x7' and 6'x8' Box Culverts.

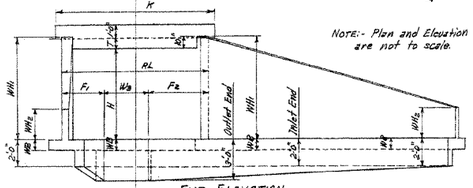
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F_1	F_2	W_3	Y	W_4	W_5
4'	6'	2'-7⅛"	3'-3⅜"	0"	1'-1⅜"	8'-6⅝"	21'-7⅛"
5'	7'	3'-1⅝"	4'-1⅜"	0"	1'-3"	9'-9"	24'-11"
6'	8'	3'-7⅛"	4'-10⅜"	0"	1'-4⅝"	10'-11⅛"	28'-2⅝"



DETAIL "A"

PART PLAN



END ELEVATION

Note:- Plan and Elevation are not to scale.

SINGLE BARREL CULVERT - 30° SKEW RIGHT FORWARD
Details of Culvert with 30° Skew Left Forward is reversed, see Drawing No. W-X30.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X30. For values of RL, K and W_3 for each box, see above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	® REINFORCING STEEL FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	C_W	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	100	4.23	5.34	6.44	7.55	8.66
	3'	6"	7"	151	5.74	6.94	7.95	9.06	10.17
	4'	6"	7"	232	7.58	8.68	9.73	10.84	11.95
	5'	6"	7"	321	9.59	10.69	11.80	12.91	14.02
	6'	7"	8"	522	12.31	13.05	15.19	16.33	17.47
5'	3'	6"	7"	151	5.99	7.33	8.67	10.02	11.36
	4'	6"	7"	232	7.77	9.11	10.46	11.80	13.15
	5'	6"	7"	321	9.84	11.18	12.52	13.87	15.22
	6'	7"	8"	522	13.16	14.63	15.91	17.29	18.67
	7'	7½"	8½"	1023	16.76	18.18	19.59	21.00	22.40
6	3'	6"	7"	151	6.23	7.83	9.39	10.99	12.58
	4'	6"	7"	232	8.01	9.61	11.18	12.77	14.36
	5'	6"	7"	321	10.08	11.69	13.24	14.84	16.43
	6'	7"	8"	522	13.41	15.03	16.64	18.26	19.88
	7'	7½"	8½"	1023	17.08	18.69	20.32	21.97	23.62
	8'	8"	9"	1285	21.26	22.98	24.62	26.28	27.84
7'	4'	6"	7"	232	8.26	10.12	11.94	13.79	15.60
	5'	6"	7"	321	10.33	12.18	14.00	15.86	17.66
	6'	7"	8"	522	13.66	15.54	17.38	19.25	21.09
	7'	7½"	8½"	1023	17.29	19.18	21.06	22.95	24.83
	8'	8"	9"	1285	21.57	23.48	25.36	27.27	29.16
8'	4'	6"	7"	232	8.52	10.64	12.71	14.83	16.96
	5'	7"	7"	321	10.98	13.12	15.22	17.36	19.41
	6'	7"	8"	522	13.91	16.05	18.15	20.28	22.34
	7'	7½"	8½"	1023	17.54	19.70	21.82	23.98	26.05
	8'	8"	9"	1285	21.93	23.98	26.11	28.26	30.38
9'	5'	7"	7"	321	11.24	13.65	15.99	18.39	20.67
	6'	7½"	8"	522	14.44	16.86	19.23	21.65	23.95
	7'	7½"	8½"	1023	17.79	20.22	22.59	25.01	27.31
	8'	8"	9"	1285	22.08	24.50	26.87	29.29	31.60
10'	5'	7"	7"	321	11.50	14.17	16.77	19.32	21.84
	6'	7½"	8"	522	14.70	17.39	20.01	22.58	25.22
	7'	7½"	8½"	1023	18.05	20.74	23.37	25.94	28.58
	8'	8"	9"	1285	22.39	25.02	27.65	30.23	32.87
11'	6'	8"	8"	522	15.21	18.20	21.07	23.93	———
	7'	8"	8½"	1023	18.69	21.62	24.50	27.36	———
	8'	8"	9"	1285	22.58	24.54	28.44	31.80	———
12'	6'	8"	8"	522	15.48	18.75	21.88	25.02	———
	7'	8"	8½"	1023	18.90	22.17	25.30	28.45	———
	8'	8"	9"	1295	22.84	26.10	29.24	32.39	———

® 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 #/sq"
Reinforcing Steel 20,000 #/sq"

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-290X-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 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X302-1

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING	LOCATION	SF1 & LF1 BENT — In bottom of footing, bent up into back face of wing. One bar of each length.						SF2 & LF2 BENT — In bottom of footing, bent up into back face of wing. Alt. with F1 bars.					SF3 & LF3 STRAIGHT — Longitudinal in top of wing footing (toe).			SF4 & LF4 STRAIGHT — Longitudinal in bottom of wing footing (toe).			SH1 & LH1 STRAIGHT — Horizontal in back face of wing.				SH2 & LH2 STRAIGHT — Horizontal in back face of wing. One bar of each length.					SH3 & LH3 BENT — In back face of wing at top-on slope			SH4 & LH4 BENT — Dowels thru construction joint at headwall.					BAR BENDING DIAGRAM	QUANTITY — REINFORCING STEEL PER WING - LBS.	
					LENGTHS VARY		X		Y																																	
H	SHORT OR LONG		SIZE	SPACING	NO. REQD	MIN.	MAX.	MIN.	MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X	SF3 & SF5 LF3 & LF5	SH4 & LH4	SHORT WING	LONG WING
2'	Short	#3	12"	5	1'-4"	3'-11"	0'-8"	1'-1"	6'-11"	—	—	—	—	—	—	#3	1	6'-11"	#3	2	6'-0"	#3	12"	1	4'-1"	#3	18"	1	—	2'-2"	#3	1	4'-6"	#3	12"	2	2'-8"	1'-9"			18.2	31.9
	Long	#3	12"	9	1'-9"	3'-11"	0'-8"	1'-0"	7'-0"	—	—	—	—	—	—	#3	1	11'-2"	#3	2	11'-2"	#3	12"	1	5'-5"	#3	18"	1	—	4'-6"	#3	1	8'-8"	"	"	"	"	"				
3'	Short	#3	12"	6	2'-2"	3'-3"	0'-10"	1'-5"	8'-11"	—	—	—	—	—	—	#3	1	8'-2"	#3	2	7'-9"	#3	12"	1	5'-5"	#3	18"	2	4'-2"	2'-8"	#3	1	6'-0"	#3	12"	3	"	"			26.6	98.7
	Long	#3	12"	12	2'-0"	3'-3"	0'-10"	1'-4"	11'-3"	—	—	—	—	—	—	#3	1	18'-10"	#3	2	14'-6"	#3	12"	1	11'-0"	#3	18"	3	6'-8"	4'-0"	#3	1	11'-5"	#3	12"	3	"	"				
4'	Short	#3	12"	8	2'-8"	4'-7"	0'-11"	1'-9"	11'-5"	—	—	—	—	—	—	#3	1	13'-6"	#3	3	9'-8"	#3	12"	1	6'-9"	#3	12"	3	6'-2"	2'-5"	#3	1	7'-4"	#3	12"	4	"	"			40.7	75.1
	Long	#3	12"	15	2'-9"	4'-6"	0'-11"	1'-7"	14'-6"	—	—	—	—	—	—	#3	1	17'-4"	#3	3	17'-10"	#3	12"	1	10'-8"	#3	18"	5	10'-6"	4'-6"	#3	1	9'-10"	#3	18"	5	"	"				
5'	Short	#3	12"	9	2'-10"	7'-11"	1'-0"	2'-1"	17'-11"	#3	12"	2	3'-4"	1'-1"	2'-6"	#3	1	10'-0"	#3	3	10'-0"	#3	12"	2	8'-1"	#3	18"	5	6'-5"	2'-8"	#3	1	10'-11"	#3	18"	6	"	"			55.4	105.1
	Long	#3	12"	17	2'-11"	7'-10"	1'-0"	1'-11"	21'-0"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	19'-2"	#3	3	21'-0"	#3	12"	2	16'-4"	#3	18"	9	6'-5"	2'-8"	#3	1	12'-6"	"	"	"	"	"				
6'	Short	#4	12"	10	3'-7"	9'-9"	1'-2"	2'-5"	21'-6"	#3	12"	2	4'-6"	1'-4"	3'-3"	#3	1	12'-2"	#3	3	11'-6"	#3	12"	2	9'-5"	#3	12"	4	8'-2"	2'-8"	#3	1	13'-11"	#3	12"	6	2'-8"	1'-4"			88.7	172.2
	Long	#4	12"	20	3'-5"	9'-3"	1'-2"	2'-3"	25'-6"	#3	12"	5	4'-6"	1'-4"	3'-3"	#3	1	21'-10"	#3	3	23'-6"	#3	12"	2	19'-0"	#3	12"	4	16'-8"	4'-6"	#3	1	15'-4"	"	"	"	"	"				
7'	Short	#4	12"	12	3'-8"	10'-10"	1'-3"	2'-11"	25'-6"	#4	12"	4	5'-6"	1'-7"	4'-0"	#4	1	13'-6"	#4	4	12'-9"	#4	12"	2	10'-9"	#4	12"	5	10'-2"	2'-8"	#4	1	16'-10"	#3	12"	7	3'-6"	1'-9"			175.0	336.5
	Long	#4	12"	23	3'-9"	10'-8"	1'-3"	2'-8"	31'-7"	#4	12"	9	5'-6"	1'-7"	4'-0"	#4	1	24'-6"	#4	4	28'-0"	#4	12"	2	21'-8"	#4	12"	5	20'-8"	4'-6"	#4	1	18'-10"	"	"	"	"	"				
8'	Short	#4	12"	13	4'-5"	12'-5"	1'-5"	3'-5"	31'-1"	#4	12"	6	6'-6"	1'-10"	4'-9"	#4	1	14'-10"	#4	4	14'-0"	#4	12"	3	12'-1"	#4	12"	5	10'-2"	2'-8"	#4	1	19'-6"	#4	12"	8	3'-6"	1'-9"			219.0	423.4
	Long	#4	12"	25	4'-6"	12'-2"	1'-5"	3'-4"	37'-2"	#4	12"	13	6'-6"	1'-10"	4'-9"	#4	1	27'-2"	#4	4	31'-6"	#4	12"	3	24'-6"	#4	12"	5	20'-8"	4'-6"	#4	1	21'-2"	"	"	"	"	"				

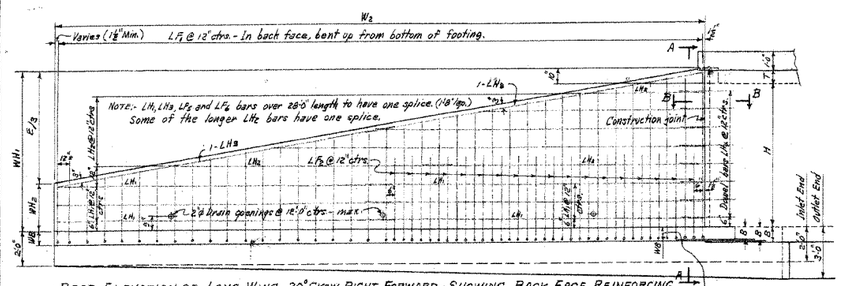
NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

Designed By:- W.C.H. 5-13-63 Checked By:- FINAL 5-21-63
Drawn By:- W.C.H. 7-30-63 Checked By:- DMT 2-15-64
Quantities By:- W.C.H. 1-7-64 Checked By:-

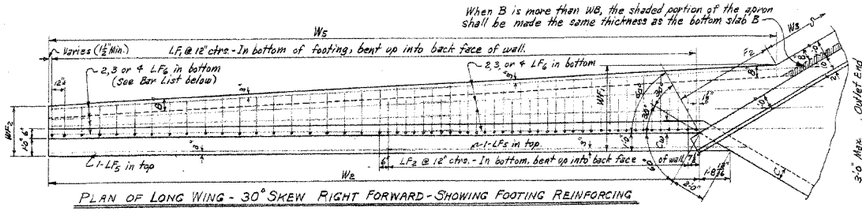
(51)

Revised 3-8-93

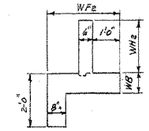
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			221	
JOB No.					



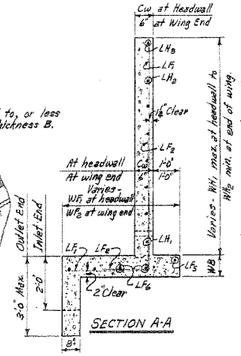
REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



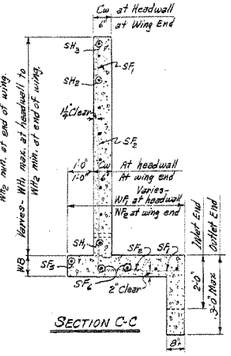
PLAN OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



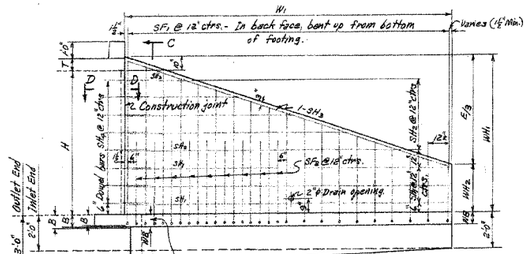
TYPICAL END VIEW OF WING



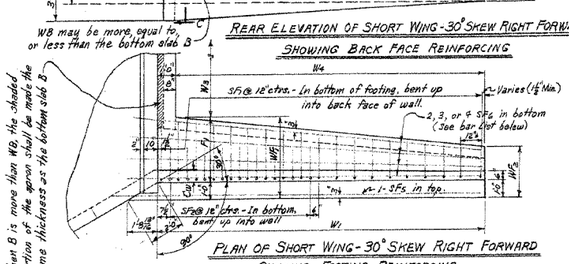
SECTION A-A



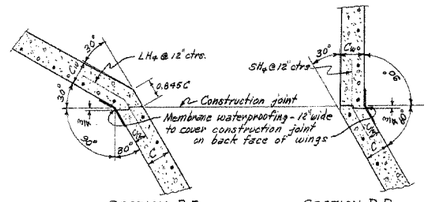
SECTION C-C



REAR ELEVATION OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING BACK FACE REINFORCING



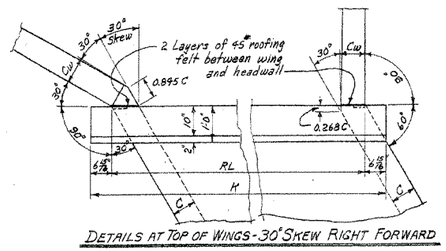
PLAN OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD

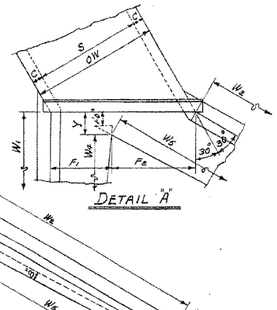
REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HDWL. = 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	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	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	1'-4"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	13'-3⅜"	0.752	1.599	0.836	1.717
3'	7"	6"	3'-10"	1'-0"	3'-8"	2'-7½"	1'-8"	1'-7½"	8'-6"	8'-6"	17'-0"	7'-6"	17'-10⅞"	1.130	2.340	1.239	2.565
4'	7"	6"	4'-10"	1'-8"	3'-0"	2'-5"	2'-0"	2'-3⅛"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5½"	1.577	3.270	1.711	3.552
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-9½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.093	4.391	2.252	4.680
		7"	5'-10"	1'-8"	3'-9"	2'-9½"	2'-4"	2'-11⅛"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.179	4.529	2.337	4.862
◎ 6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.908	6.026	3.092	6.419
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.964	6.147	3.150	6.593
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	3'-7½"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	3.025	6.272	3.208	6.667
◎ 7'	8½"	7½"	7'-0"	2'-4"	4'-2"	2'-7½"	3'-2"	4'-7⅛"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.811	7.895	4.019	8.350
		8"	7'-0"	2'-4"	4'-2"	2'-7⅛"	3'-2"	4'-7⅛"	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"	5'-7⅛"	18'-6"	18'-6"	37'-0"	17'-6"	41'-6⅝"	4.874	10.097	5.107	10.612

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.
◎ See Table 'A' for special values of F1 & F2 and W4 & W5 for Single 9'x6', 5'x7' and 6'x8' Box Culverts.

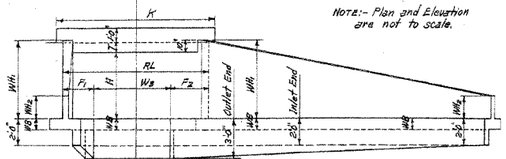
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F1	F2	W3	Y	W4	W5
4'	6'	2'-7⅞"	3'-3⅝"	0"	1'-1⅜"	13'-6⅝"	31'-3⅝"
5'	7'	3'-1⅜"	4'-1"	0"	1'-3⅛"	15'-2⅝"	35'-10⅝"
6'	8'	3'-7⅞"	4'-10⅝"	0"	1'-6⅜"	17'-1⅛"	40'-6"



DETAIL "A"

PART PLAN



END ELEVATION

Note:- Plan and Elevation are not to scale.

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 wings.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	◎ REINFORCING STEEL FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS: SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	141	5.80	6.90	8.01	9.12	10.23
	3'	6"	7"	213	8.08	9.18	10.29	11.40	12.51
	4'	6"	7"	327	10.78	11.88	12.99	14.10	15.21
	5'	6"	7"	460	13.90	15.00	16.11	17.22	18.32
	6'	7"	8"	762	18.85	19.99	21.13	22.27	23.41
5'	3'	6"	7"	213	8.33	9.47	11.01	12.36	13.70
	4'	6"	7"	327	11.08	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"	1494	24.51	25.99	27.35	28.75	30.16
6'	3'	6"	7"	213	9.57	10.17	11.73	13.33	14.92
	4'	6"	7"	327	11.27	12.86	14.49	16.08	17.62
	5'	6"	7"	460	14.38	15.96	17.55	19.15	20.73
	6'	7"	8"	762	19.35	20.98	22.59	24.21	25.85
	7'	7½"	8½"	1494	24.79	26.44	28.08	29.73	31.38
	8'	8"	9"	1870	31.15	32.87	34.51	36.17	37.83
7'	4'	6"	7"	327	11.52	13.37	15.19	17.05	18.85
	5'	6"	7"	460	14.43	16.49	18.31	20.16	21.97
	6'	7"	8"	762	19.61	21.98	23.82	25.20	27.04
	7'	7½"	8½"	1494	25.05	26.94	28.82	30.71	32.59
	8'	8"	9"	1870	31.47	33.37	35.25	37.16	39.05
8'	4'	6"	7"	327	11.77	13.89	15.97	18.09	20.12
	5'	7"	7"	460	15.46	17.60	19.70	21.83	23.69
	6'	7"	8"	762	19.86	21.98	24.05	26.17	28.20
	7'	7½"	8½"	1494	25.80	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"	1494	25.55	27.98	30.84	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	26.92
	6'	7½"	8"	762	20.76	23.45	26.07	28.69	31.28
	7'	7½"	8½"	1494	25.81	28.50	31.12	33.70	36.34
	8'	8"	9"	1870	32.22	34.91	37.54	40.12	42.76
11'	6'	8"	8"	762	21.39	24.38	27.25	30.11	——
	7'	8"	8½"	1494	26.55	29.53	32.41	35.27	——
	8'	8"	9"	1870	32.47	35.45	38.33	41.19	——
12'	6'	8"	8"	762	21.66	24.93	28.05	31.20	——
	7'	8"	8½"	1494	26.81	30.08	33.21	36.34	——
	8'	8"	9"	1870	32.73	35.99	39.13	42.28	——

◎ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.
CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/s'
Reinforcing Steel 20,000 #/s

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	WING	LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length								SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						SF5 & LF5 STRAIGHT: Longitudinal in top of wing footing heel.			SF6 & LF6 STRAIGHT: Longitudinal in bottom of wing footing toe.			SH1 & LH1 STRAIGHT: Horizontal in back face of wing.				SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. *				SH3 & LH3 STRAIGHT: In back face of wing at top - on slope.			SH4 & LH4 BENT: Dowels thru construction joint at headwall.				BAR BENDING DIAGRAM	QUANTITY: REINFORCING STEEL PER WING - LBS.	
H	SHORT OR LONG		SIZE	SPACING	NO. REQ'D	LENGTHS VARY MIN.	MAX.	X MIN.	MAX.	Y MIN.	MAX.	SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	SIZE	NO. REQ'D	LENGTH	SIZE	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	MIN.	SIZE	NO. REQ'D	LENGTH	SIZE	NO. REQ'D	LENGTH	X		SHORT WING	LONG WING
2'	Short		#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"	—	—	—	—	—	—	#3	1	9'-0"	#3	2	8'-0"	#3	12"	1	6'-8"	#3	12"	1	3'-8"	#3	1	6'-7"	#3	12"	2	2'-8"	1'-9"		29.7	45.6
	Long		#3	12"	14	1'-5"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"	—	—	—	—	—	—	#3	1	15'-6"	#3	2	15'-6"	#3	12"	1	12'-8"	#3	12"	1	—	#3	1	6'-6"	#3	12"	1	12'-11"	#3	2	" "	37.0	69.5
3'	Short		#3	12"	9	2'-1"	5'-3"	0'-10"	1'-6"	1'-4"	4'-0"	—	—	—	—	—	—	#3	1	11'-0"	#3	2	10'-0"	#3	12"	1	9'-3"	#3	12"	2	6'-5"	#3	1	8'-3"	#3	12"	2	6'-6"	#3	3	" "	56.2	107.2
	Long		#3	12"	18	1'-11"	5'-3"	0'-10"	1'-6"	1'-8"	4'-0"	—	—	—	—	—	—	#3	1	19'-6"	#3	3	20'-0"	#3	12"	1	16'-8"	#3	12"	2	12'-6"	#3	1	10'-3"	#3	12"	3	9'-8"	#3	4	" "	78.0	152.2
4'	Short		#3	12"	11	2'-6"	6'-7"	0'-11"	1'-8"	1'-8"	5'-0"	—	—	—	—	—	—	#3	1	13'-0"	#3	3	12'-0"	#3	12"	1	11'-2"	#3	12"	3	8'-6"	#3	1	12'-5"	#3	12"	3	12'-5"	#3	4	" "	127.8	253.1
	Long		#3	12"	22	2'-2"	6'-6"	0'-11"	1'-7"	2'-0"	6'-0"	—	—	—	—	—	—	#3	1	23'-6"	#3	3	24'-0"	#3	12"	1	20'-0"	#3	12"	3	10'-6"	#3	1	15'-0"	#3	12"	4	14'-11"	#3	5	" "	267.0	489.8
5'	Short		#3	12"	13	2'-11"	7'-11"	1'-0"	2'-0"	2'-0"	6'-0"	#3	12"	3	3'-6"	1'-1"	2'-6"	#3	1	27'-6"	#3	3	28'-0"	#3	12"	1	23'-4"	#3	12"	3	12'-6"	#3	1	17'-10"	#3	12"	4	16'-11"	#3	5	" "	312.9	622.3
	Long		#3	12"	26	2'-9"	7'-10"	1'-0"	2'-0"	2'-10"	6'-0"	#3	12"	6	3'-6"	1'-1"	2'-6"	#3	1	31'-6"	#3	3	32'-0"	#3	12"	1	26'-8"	#3	12"	3	14'-6"	#3	1	20'-7"	#3	12"	4	19'-10"	#3	5	" "		
6'	Short		#3	12"	15	3'-4"	9'-3"	1'-2"	2'-4"	2'-5"	7'-1"	#3	12"	3	4'-6"	1'-4"	3'-5"	#3	2	16'-8"	#3	3	16'-0"	#3	12"	2	14'-3"	#3	12"	4	16'-5"	#3	1	23'-2"	#3	12"	5	22'-10"	#3	6	" "		
	Long		#3	12"	30	3'-10"	9'-2"	1'-2"	2'-3"	2'-3"	7'-1"	#3	12"	6	4'-6"	1'-4"	3'-5"	#3	2	36'-8"	#3	3	36'-0"	#3	12"	2	32'-3"	#3	12"	4	18'-6"	#3	1	26'-0"	#3	12"	5	25'-9"	#3	6	" "		
7'	Short		#4	12"	17	3'-11"	10'-10"	1'-3"	2'-10"	2'-9"	8'-1"	#4	12"	6	5'-6"	1'-7"	4'-0"	#4	1	19'-0"	#4	4	18'-0"	#4	12"	2	16'-3"	#4	12"	5	15'-8"	#4	1	29'-10"	#4	12"	6	28'-8"	#4	7	" "		
	Long		#4	12"	34	3'-9"	10'-8"	1'-3"	2'-8"	2'-7"	8'-1"	#4	12"	12	5'-6"	1'-7"	4'-0"	#4	2	38'-0"	#4	4	36'-0"	#4	12"	3	18'-3"	#4	12"	5	15'-9"	#4	1	33'-6"	#4	12"	6	32'-3"	#4	7	" "		
8'	Short		#4	12"	19	4'-6"	12'-5"	1'-5"	3'-4"	3'-2"	9'-2"	#4	12"	9	6'-6"	1'-10"	4'-9"	#4	1	21'-0"	#4	4	20'-0"	#4	12"	3	18'-3"	#4	12"	5	30'-6"	6'-6"	#4	2	17'-5"	#4	12"	7	16'-4"	#4	8	3'-6"	1'-9"		
	Long		#4	12"	38	5'-8"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	18	6'-6"	1'-10"	4'-9"	#4	2	40'-0"	#4	4	38'-0"	#4	12"	4	32'-3"	#4	12"	5	30'-6"	6'-6"	#4	2	29'-5"	#4	12"	8	28'-4"	#4	8	" "		

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).

BAR BENDING DIAGRAM: SF5 & SF6 LF5 & LF6 ∠ 3" Pin; SH4 & LH4; Y = 1/2 X; Note:- Dimensions are to bar centers.

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

Designed By:- W.C.H. 5-13-63 Checked By:- 2BWS 8-19-63
Drawn By:- W.C.H. 7-26-63 Checked By:- 2JWT 7-15-64
Quantities By:- W.C.H. 1-7-64

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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	"b" bars 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	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	"d" bars STRAIGHT Longitudinal in Sidewalls SIZE	SPACING	NO. REQ'D	LENGTH	"d" bars. 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"	4'-1" = 32'-0"	3'1" = 22'-0"	#4	12"	48	68	4'-1 9/16"	#4	12"	44	64	5'-7 9/16"	4'-8 1/16"	#4	12"	5	5'-7 9/16"	#4	12"	6	4'-8 1/16"	#4	12"	5	5'-7 9/16"	#4	12"	44	64	3'-10 5/16"
			4'			48	68	4'-9 9/16"			44	64	5'-7 9/16"	4'-8 1/16"			5	5'-7 9/16"			8	4'-8 1/16"			5	5'-7 9/16"			44	64	4'-10 5/16"
			5'			48	68	4'-9 9/16"			44	64	5'-7 9/16"	4'-8 1/16"			5	5'-7 9/16"			10	4'-8 1/16"			5	5'-7 9/16"			44	64	5'-10 5/16"
			6'			48	68	4'-11 9/16"			44	64	5'-9 9/16"	4'-10 1/16"			5	5'-9 9/16"			12	4'-10 1/16"			5	5'-9 9/16"			44	64	6'-10 5/16"
			3'			48	68	5'-9 9/16"			44	64	6'-8 9/16"	5'-8 1/16"			6	6'-8 9/16"			6	5'-8 1/16"			6	6'-8 9/16"			44	64	9'-11 5/16"
			4'			48	68	5'-9 9/16"			44	64	6'-8 9/16"	5'-8 1/16"			6	6'-8 9/16"			8	5'-8 1/16"			6	6'-8 9/16"			44	64	4'-11"
			5'			48	68	5'-9 9/16"			44	64	6'-8 9/16"	5'-8 1/16"			6	6'-8 9/16"			10	5'-8 1/16"			6	6'-8 9/16"			44	64	5'-1 5/16"
			6'			48	68	5'-11 9/16"			44	64	6'-10 9/16"	5'-10 1/16"			6	6'-10 9/16"			12	5'-10 1/16"			6	6'-10 9/16"			44	64	6'-10 5/16"
			7'			48	68	6'-0"			44	64	6'-11 9/16"	5'-11 1/16"			6	6'-11 9/16"			14	5'-11 1/16"			6	6'-11 9/16"			10"	54	78	7'-11 5/16"
SECTION "B" & BAR GROUP "B"	0' TO 10'-0"	4'-1" = 32'-0"	3'1" = 22'-0"	#5	12"	48	68	5'-9"	#5	12"	44	64	6'-8"	5'-8 1/16"	#4	12"	6	6'-8"	#4	12"	6	5'-8 1/16"	#4	12"	6	6'-8"	#4	12"	44	64	5'-0"
			4'			48	68	5'-9"			44	64	6'-8"	5'-8 1/16"			6	6'-8"			8	5'-8 1/16"			6	6'-8"			44	64	7'-1"
			5'			48	68	5'-9"			44	64	6'-8"	5'-8 1/16"			6	6'-8"			10	5'-8 1/16"			6	6'-8"			44	64	8'-2"
			6'			48	68	5'-11"			44	64	6'-10"	5'-10 1/16"			6	6'-10"			12	5'-10 1/16"			6	6'-10"			44	64	9'-3"
			7'			48	68	6'-0"			44	64	6'-11"	5'-11 1/16"			6	6'-11"			14	5'-11 1/16"			6	6'-11"			10"	54	78	10'-3"
			8'			48	68	6'-1"			44	64	7'-0"	6'-0 1/16"			6	7'-0"			16	6'-0 1/16"			6	7'-0"			10"	54	78	10'-8"
			3'			48	68	6'-9"			44	64	7'-10"	6'-8"			7	7'-10"			8	6'-8"			7	7'-10"			44	64	5'-0"
			4'			48	68	6'-9"			44	64	7'-10"	6'-8"			7	7'-10"			10	6'-8"			7	7'-10"			44	64	6'-6"
			5'			48	68	6'-9"			44	64	8'-0"	6'-10"			7	8'-0"			12	6'-10"			7	8'-0"			44	64	7'-10"
			6'			48	68	6'-11"			44	64	8'-1"	6'-11"			7	8'-1"			14	6'-11"			7	8'-1"			44	64	9'-2"
			7'			48	68	7'-0"			44	64	8'-2"	7'-0"			7	8'-2"			16	7'-0"			7	8'-2"			10"	54	78	9'-0"
			8'			48	68	7'-1"			44	64	8'-3"	7'-1"			7	8'-3"							7	8'-3"					
SECTION "C" & BAR GROUP "C"	0' TO 15'-0"	4'-1" = 16'-0"	3'1" = 11'-0"	#5	12"	22	32	4'-9"	#5	12"	22	32	5'-3"	4'-8 1/16"	#4	12"	6	5'-3"	#4	12"	6	4'-8 1/16"	#4	12"	6	5'-3"	#4	12"	22	32	3'-10 5/16"
			4'			22	32	4'-9"			22	32	5'-3"	4'-8 1/16"			8	5'-3"			8	4'-8 1/16"			8	5'-3"			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-3"	4'-8 1/16"			10	5'-3"			10	4'-8 1/16"			10	5'-3"			22	32	5'-10 5/16"
			6'			22	32	4'-11"			22	32	5'-5"	4'-10 1/16"			12	5'-5"			12	4'-10 1/16"			12	5'-5"			22	32	6'-10 5/16"
			3'			22	32	5'-9"			22	32	6'-7 1/16"	5'-8"			6	6'-7 1/16"			6	5'-8"			6	6'-7 1/16"			22	32	3'-11"
			4'			22	32	5'-9"			22	32	6'-7 1/16"	5'-8"			8	6'-7 1/16"			8	5'-8"			8	6'-7 1/16"			22	32	4'-11"
			5'			22	32	5'-9"			22	32	6'-7 1/16"	5'-8"			10	6'-7 1/16"			10	5'-8"			10	6'-7 1/16"			22	32	5'-11"
			6'			22	32	5'-11"			22	32	6'-9"	5'-10"			12	6'-9"			12	5'-10"			12	6'-9"			22	32	7'-1"
			7'			22	32	6'-0"			22	32	6'-10"	5'-11"			14	6'-10"			14	5'-11"			14	6'-10"			22	32	8'-2"
			8'			22	32	6'-1"			22	32	6'-11"	6'-0"			16	6'-11"			16	6'-0"			16	6'-11"			22	32	9'-3"
SECTION "D" & BAR GROUP "D"	0' TO 25'-0"	4'-1" = 16'-0"	3'1" = 11'-0"	#5	11"	24	36	4'-9"	#5	11"	24	36	5'-8"	4'-8 1/16"	#4	12"	6	5'-8"	#4	12"	6	4'-8 1/16"	#4	12"	6	5'-8"	#4	12"	24	36	3'-11"
			4'			24	36	4'-9"			24	36	5'-8"	4'-8 1/16"			8	5'-8"			8	4'-8 1/16"			8	5'-8"			24	36	4'-11"
			5'			24	36	4'-9"			24	36	5'-8"	4'-8 1/16"			10	5'-8"			10	4'-8 1/16"			10	5'-8"			24	36	5'-11"
			6'			24	36	4'-11"			24	36	5'-10"	4'-10 1/16"			12	5'-10"			12	4'-10 1/16"			12	5'-10"			24	36	6'-10"
			3'			22	32	5'-9"			22	32	6'-10"	5'-8"			6	6'-10"			6	5'-8"			6	6'-10"			22	32	3'-11"
			4'			22	32	5'-9"			22	32	6'-10"	5'-8"			8	6'-10"			8	5'-8"			8	6'-10"			22	32	4'-11"
			5'			22	32	5'-9"			22	32	6'-10"	5'-8"			10	6'-10"			10	5'-8"			10	6'-10"			22	32	5'-11"
			6'			22	32	5'-11"			22	32	7'-0"	5'-10"			12	7'-0"			12	5'-10"			12	7'-0"			22	32	7'-1"
			7'			22	32	6'-1"			22	32	7'-2"	6'-0"			14	7'-2"			14	6'-0"			14	7'-2"			22	32	8'-3"
			8'			22	32	6'-2"			22	32	7'-3"	6'-1"			16	7'-3"			16	6'-1"			16	7'-3"			22	32	9'-4"
SECTION "E" & BAR GROUP "E"	0' TO 30'-0"	4'-1" = 16'-0"	3'1" = 11'-0"	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	6'-10"	#4	12"	6	5'-8"	#4	12"	6	6'-10"	#4	12"	24	36	4'-0"
			4'			24	36	5'-9"			24	36	7'-0"	5'-8"			8	7'-0"			8	5'-8"			8	7'-0"			24	36	5'-0"
			5'			24	36	5'-9"			24	36	7'-0"	5'-8"			10	7'-0"			10	5'-8"			10	7'-0"			24	36	6'-0"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			12	7'-2"			12	5'-10"			12	7'-2"			24	36	7'-2"
			7'			24	36	6'-2"			24	36	7'-3"	6'-0"			14	7'-3"			14	6'-0"			14	7'-3"			24	36	8'-4"
			8'			24	36	6'-3"			24	36	7'-4"	6'-1"			16	7'-4"			16	6'-1"			16	7'-4"			24	36	9'-5"
SECTION "F" & BAR GROUP "F"	0' TO 30'-0"	4'-1" = 16'-0"	3'1" = 11'-0"	#6	13"	20	30	5'-10"	#6	13"	20	30	6'-10"	5'-8"	#4	12"	6	6'-10"	#4	12"	6	5'-8"	#4	12"	6	6'-10"	#4	12"	20	30	4'-3"
			4'			20	30	5'-10"			20	30	7'-0"	5'-9"			8	7'-0"			8	5'-9"			8	7'-0"			20	30	5'-1"
			5'			20	30	6'-0"			20	30	7'-1"	5'-10"			10	7'-1"			10	5'-10"			10	7'-1"			20	30	6'-0"
			6'			20	30	6'-2"			20	30	7'-2"	5'-11"			12	7'-2"			12	5'-11"			12	7'-2"			20	30	7'-0"
			7'			20	30	6'-3"			20	30	7'-3"	6'-0"			14	7'-3"			14	6'-0"			14	7'-3"			20	30	8'-1"
			8'			20	30	6'-4"			20	30	7'-4"	6'-1"			16	7'-4"			16	6'-1"			16	7'-4"			20	30	9'-2"
SECTION "G" & BAR GROUP "G"	0' TO 40'-0"	5'-0" = 20'-0"	4'1" = 16'-0"	#6	12"	18	26	5'-9"	#6	12"	18	26	6'-10"	5'-8"	#4	12"	6	6'-10"	#4	12"	6	5'-8"	#4	12"	6	6'-10"	#4	12"	18	26	4'-3"
			5'			18	26	6'-0"			18	26	7'-0"	5'-9"			8	7'-0"			8	5'-9"			8	7'-0"			18	26	5'-1"
			6'			18	26	6'-2"			18	26	7'-2"	5'-10"			10	7'-2"			10	5'-10"			10	7'-2"			18	26	6'-0"
			7'			18	26	6'-3"			18	26	7'-3"	5'-11"			12	7'-3"			12	5'-11"			12	7'-3"			18	26	7'-0"
			8'			18	26	6'-4"			18	26	7'-4"	6'-0"			14	7'-4"			14	6'-0"			14	7'-4"			18	26	8'-1"
			9'			18	26	6'-5"			18	26	7'-5"	6'-1"			16	7'-5"			16	6'-1"			16	7'-5"			18	26	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 11-9-62
Drawn By:- W.C.H. 10-10-62 Checked By:- J.E.M. 11-12-62
Quantities By:- W.C.H. 11-7-62 Checked By:- E.N. 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	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"	3'	12	5'-0"		6"			4'-1"	0.312	29.62	13.86	51.44
	4'	16	5'-0"	6½"	6"	6½"	6½"	5'-1"	0.349	32.29	15.03	51.44
	5'	20	5'-0"		6"			6'-1"	0.386	34.96	16.70	51.44
	6'	24	5'-2"		7"			7'-1"	0.467	38.08	18.37	52.33
	3'	15	6'-0"		6"			4'-2"	0.370	33.16	15.03	79.37
	4'	20	6'-0"		6"			5'-2"	0.907	95.83	16.70	79.37
	5'	25	6'-0"	7"	6"	7"	7"	6'-2"	0.444	48.50	18.37	79.37
	6'	30	6'-2"		7"			7'-2"	0.526	51.87	20.04	80.77
	7'	35	6'-3"		7½"			8'-2"	0.594	54.00	21.71	81.96
	4'	24	7'-0"		6"			5'-3"	0.972	58.99	18.37	93.29
	5'	30	7'-0"		6"			6'-3"	0.509	61.66	20.04	93.29
	6'	36	7'-2"	7½"	7"	7½"	7½"	7'-3"	0.591	65.18	21.71	94.68
	7'	42	7'-3"		7½"			8'-3"	0.660	70.41	23.38	95.37
	8'	48	7'-4"		8"			9'-3"	0.735	79.83	25.05	96.07
SECTION "B" - 15'-0"	3'	12	5'-0"		6"			4'-1"	0.312	33.96	13.86	
	4'	16	5'-0"	6½"	6"	6½"	6½"	5'-1"	0.349	36.65	15.03	
	5'	20	5'-0"		6"			6'-1"	0.386	39.32	16.70	
	6'	24	5'-2"		7"			7'-1"	0.467	44.39	18.37	
	3'	15	6'-0"		6"			4'-2"	0.370	49.76	15.03	
	4'	20	6'-0"		6"			5'-2"	0.907	52.45	16.70	
	5'	25	6'-0"	7"	6"	7"	7"	6'-2"	0.444	55.12	18.37	
	6'	30	6'-2"		7"			7'-2"	0.526	59.98	20.04	
	7'	35	6'-3"		7½"			8'-2"	0.594	67.68	21.71	
	4'	24	7'-0"		6"			5'-3"	0.699	65.30	18.37	
	5'	30	7'-0"		6"			6'-3"	0.596	66.63	20.04	
	6'	36	7'-2"	8"	7"	8½"	8½"	7'-3"	0.619	73.59	21.71	
	7'	42	7'-3"		7½"			8'-3"	0.688	82.91	23.38	
	8'	48	7'-4"		8"			9'-3"	0.763	93.19	25.05	
SECTION "C" - 20'-0"	3'	12	5'-0"		6"			4'-1"	0.316	37.54	13.36	
	4'	16	5'-0"	6½"	6"	6½"	6½"	5'-1"	0.353	40.21	15.03	
	5'	20	5'-0"		6"			6'-1"	0.390	44.96	16.70	
	6'	24	5'-2"		7"			7'-1"	0.471	51.38	18.37	
	3'	15	6'-0"		6"			4'-3"	0.394	52.85	15.03	
	4'	20	6'-0"		6"			5'-3"	0.431	55.52	16.70	
	5'	25	6'-0"	7½"	6"	7⅞"	7⅞"	6'-3"	0.468	58.92	18.37	
	6'	30	6'-2"		7"			7'-3"	0.550	67.04	20.04	
	7'	35	6'-3"		7½"			8'-3"	0.618	78.27	21.71	
	4'	24	7'-0"		6"			5'-3"	0.526	69.89	18.37	
	5'	30	7'-0"		6"			6'-3"	0.548	72.06	20.04	
	6'	36	7'-2"	8½"	7"	9"	9"	7'-3"	0.696	81.20	21.71	
	7'	42	7'-3"		7½"			8'-3"	0.716	92.67	23.38	
	8'	48	7'-4"		8"			9'-3"	0.791	103.06	25.05	
SECTION "D" - 25'-0"	3'	12	5'-0"		6"			4'-2"	0.327	39.63	13.36	
	4'	16	5'-0"	6½"	6"	6½"	6½"	5'-2"	0.364	42.30	15.03	
	5'	20	5'-0"		6"			6'-2"	0.401	44.97	16.70	
	6'	24	5'-2"		7"			7'-2"	0.483	55.19	18.37	
	3'	15	6'-0"		6"			4'-4½"	0.417	55.28	15.03	
	4'	20	6'-0"		6"			5'-4½"	0.455	57.95	16.70	
	5'	25	6'-0"	8"	6"	8½"	8½"	6'-4½"	0.501	61.61	18.37	
	6'	30	6'-2"		7"			7'-4½"	0.585	71.20	20.04	
	7'	35	6'-4"		8"			8'-4½"	0.668	81.95	21.71	
	4'	24	7'-0"		6"			5'-5"	0.559	72.95	18.37	
	5'	30	7'-0"		6"			6'-5"	0.616	76.21	20.04	
	6'	36	7'-2"	9½"	7"	9⅞"	9⅞"	7'-5"	0.691	85.22	21.71	
	7'	42	7'-4"		8"			8'-7"	0.776	97.23	23.38	
	8'	48	7'-5"		8½"			9'-7"	0.868	108.02	25.05	
SECTION "E" - 30'-0"	3'	12	5'-0"		6"			4'-3"	0.368	42.12	13.36	
	4'	16	5'-0"		6"			5'-3"	0.380	44.79	15.03	
	5'	20	5'-1"	7⅛"	6½"	7⅞"	8"	6'-3"	0.436	52.39	16.70	
	6'	24	5'-3"		7⅛"			7'-3"	0.521	63.09	18.37	
	3'	15	6'-0"		6"			4'-6"	0.444	58.94	15.03	
	4'	20	6'-0"		6"			5'-6"	0.491	61.61	16.70	
	5'	25	6'-1"	8⅜"	6⅜"	9¼"	9¼"	6'-6"	0.549	66.77	18.37	
	6'	30	6'-3"		7⅜"			7'-6"	0.637	75.68	20.04	
	7'	35	6'-5"		8⅜"			8'-6"	0.724	88.37	21.71	
	4'	24	7'-0"		6"			5'-8½"	0.591	79.04	20.04	
	5'	30	7'-0"		6"			6'-8½"	0.663	83.78	21.71	
	6'	36	7'-2"	10"	7"	10⅛"	10⅛"	7'-8½"	0.760	92.53	23.38	
	7'	42	7'-5"		8"			8'-8½"	0.850	104.59	25.05	
	8'	48	7'-7"		8½"			9'-8½"	0.949	115.61	26.72	
SECTION "F" - 35'-0"	3'	12	5'-0"		6"			4'-5"	0.358	45.49	13.36	
	4'	16	5'-0"	7⅞"	6"	8⅛"	8⅛"	5'-5"	0.395	48.16	15.03	
	5'	20	5'-2"		7"			6'-5"	0.471	56.32	16.70	
	6'	24	5'-4"		8"			7'-5"	0.560	67.17	18.37	
	3'	15	6'-0"		6"			4'-7"	0.963	68.18	16.70	
	4'	20	6'-0"		6"			5'-7"	0.509	66.11	18.37	
	5'	25	6'-2"	9¼"	6⅝"	9⅜"	9⅜"	6'-7"	0.588	71.65	20.04	
	6'	30	6'-4"		7⅝"			7'-7"	0.679	80.70	21.71	
	7'	35	6'-6"		9"			8'-7"	0.770	93.59	23.38	
	4'	24	7'-1"		6"			5'-10"	0.691	85.81	21.71	
	5'	30	7'-3"		7"			6'-10"	0.724	91.60	23.38	
	6'	36	7'-5"	10⅝"	8"	11⅛"		7'-10"	0.818	99.56	25.05	
	7'	42	7'-7"		9"			8'-10"	0.925	112.23	26.72	
	8'	48	7'-8"		10"			9'-10"	1.030	123.01	28.39	
SECTION "G" - 40'-0"	3'	12	5'-0"		6"			4'-5"	0.373	49.38	15.03	
	4'	16	5'-1"	8⅛"	6"	8⅝"	8⅝"	5'-5"	0.427	52.56	16.70	
	5'	20	5'-3"		7"			6'-5"	0.507	60.85	18.37	
	6'	24	5'-5"		8"			7'-5"	0.599	71.86	20.04	
	3'	15	6'-0"		6"			4'-8"	0.481	67.30	16.70	
	4'	20	6'-1"		6"			5'-8"	0.595	70.89	18.37	
	5'	25	6'-3"	9⅜"	6⅝"	10⅛"	10⅛"	6'-8"	0.628	76.56	20.04	
	6'	30	6'-5"		7⅝"			7'-8"	0.723	85.78	21.71	
	7'	35	6'-7"		9"			8'-8"	0.817	98.84	23.38	

DOWEL BARS FOR TWO HEADWALLS

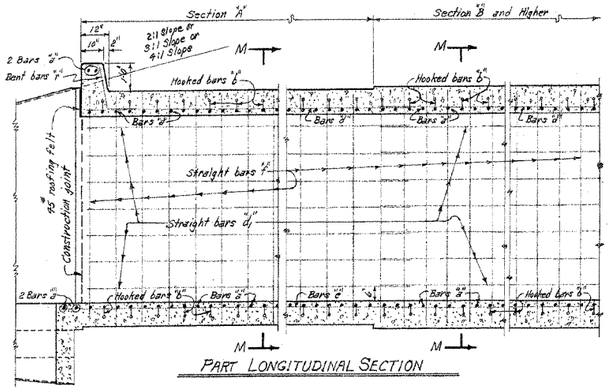
BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#4	2"	4"	0'-10½"
#5	2½"	4⅝"	0'-11½"
#6	3"	5"	1'-0"
#7	3½"	5⅝"	1'-0½"

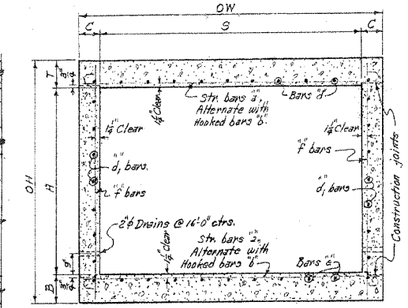
Bars "b": K, Pin Diam., X

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X
4'	#6	11"	12	2'-5"	1'-2½"
5'	#5	11½"	14	2'-6"	1'-3"
6'	#6	12"	16	2'-7"	1'-3½"

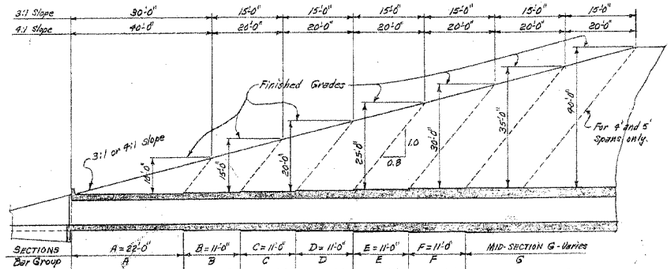
Bars "f" Dowel bars in Headwalls: 12", X, 2" Pin, 2" Pin

NOTE:- Dimensions are to centers of bars.





NOTE:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X003-1, and W-X004-1.



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 BAR GROUP
5.0' to 9.5'	←						A
10.0' to 14.5'	←	←					B
15.0' to 19.5'	←	←	←				C
20.0' to 24.5'	←	←	←	←			D
25.0' to 29.5'	←	←	←	←	←		E
30.0' to 34.5'	←	←	←	←	←	←	F
35.0' to 40.0'	←	←	←	←	←	←	G

LENGTH OF SECTIONS FOR SKEWED CULVERTS

SKEW ANGLE	SEC. OF SKEW ANGLE	3:1 SLOPES SECTIONS A	3:1 SLOPES SECTIONS B,C,D,E or F	4:1 SLOPES SECTIONS A	4:1 SLOPES SECTIONS B,C,D,E or F
0°	1.0	22.0'	11.0'	32.0'	16.0'
15°	1.0353	22.776'	11.388'	33.129'	16.564'
30°	1.1547	25.403'	12.702'	36.950'	18.475'
45°	1.4142	31.113'	15.556'	45.255'	22.627'

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 93'-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.R.S.H.O. 1961 AND SPECIAL MILITARY LOADING

Two 24,000 Lb. Axles @ 9'-0" ctrs.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/sq"
Reinforcing Steel 20,000 #/sq"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5' & 6' SPANS SINGLES

3:1 OR 4:1 SLOPES OVER 5'-0" COVER

STANDARD DRAWING NO. R-100X-X1

| FED. ROAD No. | STATE | F

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK			223	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

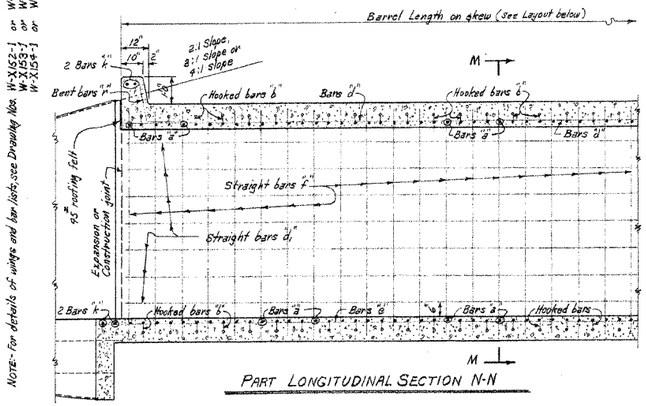
DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE	"a" bars SPACING	"a" bars No. REQD.	"a" bars LENGTH	"b" bars BENT- See Diagram. In Top and Bottom Slabs of Barrel. Alternate with "a" bars. SIZE	"b" bars SPACING	"b" bars No. REQD.	"b" bars LENGTH	"b" bars X	"d" bars Longitudinal in Top Slab of Barrel. SIZE	"d" bars SPACING	"d" bars No. REQD.	"d" bars LENGTH	"d'" bars STRAIGHT Longitudinal in Sidewalls SIZE	"d'" bars SPACING	"d'" bars No. REQD.	"d'" bars LENGTH	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel SIZE	"e" bars SPACING	"e" bars No. REQD.	"e" bars LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SPACING	"f" bars No. REQD.	"f" bars LENGTH	"k" bars STRAIGHT 2 in Top of Headwalls and Aprons-Each. SIZE	"k" bars No. REQD.	"k" bars LENGTH
0'-0" TO 5'-0" MAXIMUM	4' @ 4	2'			112	4'-11"			110	6'-0"	4'-10"	#5	10½"	6					120	2'-11"			8	5'-5"
		3'			112	4'-11"			110	6'-0"	4'-10"			6					120	3'-11"			8	5'-5"
		4'			112	4'-11"			110	6'-0"	4'-10"			6					120	4'-11"			8	5'-5"
		5'			112	4'-11"			110	6'-0"	4'-10"			6					120	5'-11"			8	5'-5"
		6'			112	5'-1"			110	6'-2"	5'-0"			6					120	6'-11"			8	5'-7"
	5' @ 5	3'	#6	13"	112	5'-11"	#6	18"	110	7'-1"	5'-11"	#5	10½"	7					120	4'-8"			8	6'-6"
		4'			112	5'-11"			110	7'-1"	5'-11"			7					120	5'-8"			8	6'-6"
		5'			112	5'-11"			110	7'-1"	5'-11"			7					120	6'-8"			8	6'-6"
		6'			112	6'-1"			110	7'-5"	6'-1"			7					120	7'-10"			8	6'-8"
		7'			112	6'-2"			110	7'-9"	6'-2"			7					120	8'-9"			8	6'-9"
	6' @ 6	3'	#6	12"	120	7'-0"	#6	12"	118	8'-1"	6'-11"	#5	10½"	8					120	4'-11"			8	7'-6"
		4'			120	7'-0"			118	8'-1"	6'-11"			8					120	5'-11"			8	7'-6"
		5'			120	7'-0"			118	8'-1"	6'-11"			8					120	6'-11"			8	7'-6"
		6'			120	7'-2"			118	8'-3"	7'-1"			8					120	7'-11"			8	7'-8"
		7'			120	7'-3"			118	8'-4"	7'-2"			8					120	8'-11"			8	7'-9"
		8'			120	7'-4"			118	8'-5"	7'-3"			8					120	9'-11"			8	7'-10"
	7' @ 7	4'	#6	11"	132	8'-0"	#6	12"	130	9'-1"	7'-11"	#5	10½"	9					120	5'-2"			8	8'-7"
		5'			132	8'-0"			130	9'-1"	7'-11"			9					120	6'-2"			8	8'-7"
		6'			132	8'-2"			130	9'-3"	8'-1"			9					120	7'-2"			8	8'-9"
		7'			132	8'-3"			130	9'-4"	8'-2"			9					120	8'-2"			8	8'-10"
		8'			132	8'-6"			130	9'-5"	8'-3"			9					120	9'-2"			8	8'-11"
		9'			132	8'-6"			130	9'-7"	8'-5"			9					120	10'-2"			8	9'-1"
	8' @ 8	4'	#7	12"	120	9'-1"	#6	12"	118	10'-2"	9'-0"	#5	10"	11					120	5'-4"			8	9'-7"
		5'			120	9'-3"			118	10'-2"	9'-2"			11					120	6'-4"			8	9'-9"
		6'			120	9'-3"			118	10'-4"	9'-2"			11					120	7'-4"			8	9'-9"
		7'			120	9'-4"			118	10'-5"	9'-3"			11					120	8'-4"			8	9'-10"
		8'			120	9'-5"			118	10'-6"	9'-4"			11					120	9'-4"			8	9'-11"
		9'			120	9'-7"			118	10'-8"	9'-6"			11					120	10'-4"			8	10'-1"
		10'			120	9'-8"			118	10'-10"	9'-8"			11					120	11'-4"			8	10'-3"
	9' @ 9	5'	#7	12"	132	10'-3"	#6	11"	130	11'-4"	10'-2"	#5	10"	12					120	6'-5"			8	10'-9"
		6'			132	10'-4"			130	11'-5"	10'-3"			12					120	7'-5"			8	10'-11"
		7'			132	10'-4"			130	11'-5"	10'-3"			12					120	8'-5"			8	10'-11"
		8'			132	10'-5"			130	11'-6"	10'-4"			12					120	9'-5"			8	11'-0"
		9'			132	10'-7"			130	11'-8"	10'-6"			12					120	10'-5"			8	11'-2"
		10'			132	10'-8"			130	11'-10"	10'-8"			12					120	11'-5"			8	11'-3"
		11'			132	10'-11"			130	12'-0"	10'-10"			12					120	12'-5"			8	11'-5"
	10' @ 10	5'	#7	12"	120	11'-3"	#7	11"	118	12'-7"	11'-3"	#5	10"	13					120	7'-4"			8	11'-10"
		6'			120	11'-9"			118	12'-8"	11'-4"			13					120	8'-4"			8	11'-11"
		7'			120	11'-6"			118	12'-8"	11'-4"			13					120	9'-4"			8	12'-0"
		8'			120	11'-5"			118	12'-9"	11'-5"			13					120	10'-4"			8	12'-2"
		9'			120	11'-8"			118	12'-11"	11'-7"			13					120	11'-4"			8	12'-3"
		10'			120	11'-10"			118	13'-1"	11'-9"			13					120	12'-4"			8	12'-4"
		11'			120	12'-0"			118	13'-3"	11'-11"			13					120	13'-4"			8	12'-6"
		12'			120	12'-2"			118	13'-5"	12'-1"			13					120	14'-4"			8	12'-8"
		6'			120	12'-6"			118	13'-8"	12'-6"			15					120	8'-7"			8	13'-0"
		7'			120	12'-6"			118	13'-8"	12'-6"			15					120	9'-7"			8	13'-0"
		8'			120	12'-6"			118	13'-9"	12'-5"			15					120	10'-7"			8	13'-0"
	11' @ 11	9'	#7	12"	120	12'-8"	#7	11"	118	13'-11"	12'-7"	#5	9½"	15					120	11'-7"			8	13'-2"
		10'			120	12'-10"			118	14'-1"	12'-9"			15					120	12'-7"			8	13'-4"
		11'			120	13'-0"			118	14'-3"	12'-11"			15					120	13'-7"			8	13'-7"
		12'			120	13'-2"			118	14'-5"	13'-1"			15					120	14'-7"			8	13'-9"
		6'			120	13'-6"			118	14'-10"	13'-6"			16					120	9'-8"			8	14'-1"
		7'			120	13'-6"			118	14'-10"	13'-6"			16					120	10'-8"			8	14'-1"
		8'			120	13'-6"			118	14'-10"	13'-6"			16					120	11'-8"			8	14'-1"
	12' @ 12	9'	#7	12"	120	13'-8"	#7	12"	118	15'-0"	13'-8"	#5	9½"	16					120	12'-8"			8	14'-2"
		10'			120	13'-10"			118	15'-2"	13'-10"			16					120	13'-8"			8	14'-5"
		11'			120	14'-0"			118	15'-4"	14'-0"			16					120	14'-8"			9	14'-7"
		12'			120	14'-2"			118	15'-6"	14'-2"			16					120	15'-8"			9	14'-9"

2 @ 3'-6" for 60'-0" Length Barrel (1'-8" Lap)
2 @ 3'-6" for 60'-0" Length Barrel (1'-3" Lap)
2 @ 3'-1" for 60'-0" Length Barrel (1'-3" Lap)

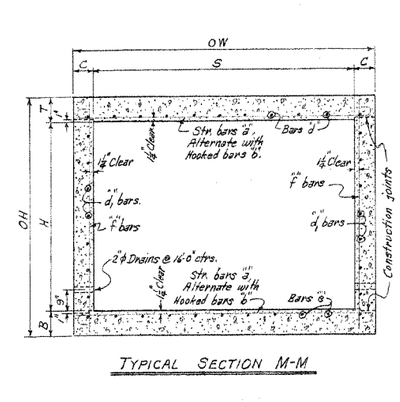
NOTE:- The "a" and "b" bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

DIMENSIONS AND QUANTITIES

MAX. DESIGN DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	BARREL DIMENSIONS SQ. FT. OF OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	ROADWAY LENGTH RL	LENGTH OF HEADWALL K	UNIT QUANTITIES CLASS S CONC. PER BARREL PER LIN. FT. OF BARREL CU.YD.	REINFORCING STEEL PER BARREL LB.	REINFORCING STEEL ADDITIONAL PER LAP LB.	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS LB.
5'-0"	4' @ 4	2'	8	5'-0"	7"	6"	6⅔"	3'-1⅛"	5'-2⅛"	5'-8⅛"	0.282	92.27	17.95	71.92
		3'	12	5'-0"		6"		4'-1⅛"	"	"	0.319	94.94	13.62	71.92
		4'	16	5'-0"		6"		5'-1⅛"	"	"	0.356	97.62	21.29	71.92
		5'	20	5'-0"		6"		6'-1⅛"	"	"	0.394	100.29	22.96	71.92
		6'	24	5'-2"		7"		7'-1⅛"	5'-6⅝"	5'-10⅝"	0.479	53.74	24.63	73.31
	5' @ 5	3'	15	6'-0"		6"		4'-2⅛"	6'-2⅝"	6'-6"	0.380	56.71	22.19	110.28
		4'	20	6'-0"		6"		5'-2⅛"	"	"	0.417	59.30	23.86	110.28
		5'	25	6'-0"		6"		6'-2⅛"	"	"	0.454	62.05	25.53	110.28
		6'	30	6'-2"		7"		7'-2⅛"	6'-6⅝"	6'-11⅛"	0.535	65.65	27.20	112.28
		7'	35	6'-3"		7½"		8'-2½"	6'-5⅝"	7'-0⅛"	0.609	68.78	28.87	113.28
	6' @ 6	3'	18	7'-0"		6"		5'-3⅝"	7'-3⅝"	7'-9⅝"	0.446	67.79	29.76	127.97
		4'	24	7'-0"		6"		5'-3⅝"	"	"	0.483	70.92	26.93	127.97
		5'	30	7'-0"		6"		6'-3⅝"	"	"	0.520	73.19	28.10	127.97
		6'	36	7'-2"		7"		7'-3⅝"	7'-5"	7'-11⅛"	0.602	74.81	29.77	129.98
		7'	42	7'-3"		7½"		8'-3⅝"	7'-6"	8'-0⅛"	0.671	79.38	31.44	130.98
		8'	48	7'-4"		8"		9'-3⅝"	7'-7⅛"	8'-1⅛"	0.746	83.97	33.11	131.98
	7' @ 7	4'	28	8'-0"		6"		5'-5"	8'-3⅛"	8'-9⅛"	0.568	82.36	29.01	196.89
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	85.63	30.68	196.89
		6'	42	8'-2"	8½"	7"	8⅔"	7'-5"	8'-5⅛"	9'-0"	0.688	89.40	32.35	198.89
		7'	49	8'-3"		7½"		8'-5"	8'-6⅛"	9'-1"	0.757	92.62	34.02	199.90
		8'	56	8'-4"		8"		9'-5"	8'-7⅛"	9'-2"	0.832	98.28	35.69	150.90
		9'	63	8'-6"		9"		10'-5"	8'-8⅛"	9'-4"	0.946	107.22	37.36	152.90
	8' @ 8	4'	32	9'-0"		6"		5'-7"	9'-3⅛"	9'-10⅛"	0.676	97.69	33.32	207.70
		5'	40	9'-2"		7"		6'-7"	9'-5⅞"	10'-0⅛"	0.759	101.98	34.99	210.92
		6'	48	9'-2"	9½"	7"	9⅔"	7'-7"	"	"	0.797	104.15	36.66	210.92
		7'	56	9'-3"		7½"		8'-7"	9'-6⅞"	10'-1⅛"	0.867	107.92	38.33	211.79
		8'	64	9'-4"		8"		9'-7"	9'-8"	10'-2⅝"	0.992	113.17	40.00	213.15
		9'	72	9'-6"		9"		10'-7"	9'-10"	10'-4⅝"	1.057	122.28	41.67	215.87
		10'	80	9'-8"		10"		11'-7"	10'-0⅛"	10'-6⅛"	1.189	129.04	43.34	218.60
	9' @ 9	5'	45	10'-2"		7"		6'-8"	10'-6⅝"	11'-0⅝"	0.894	117.30	37.56	233.23
		6'	54	10'-3"		7½"		7'-8"	10'-7⅜"	11'-1⅝"	0.910	120.62	39.23	234.60
		7'	63	10'-3"		7½"		8'-8"	"	"	0.957	123.29	40.90	234.60
		8'	72	10'-4"	10'	8"	10'	9'-8"	10'-8⅜"	11'-2⅝"	1.033	129.12	42.57	235.96
		9'	81	10'-4"		9"		10'-8"	10'-10⅛"	11'-5"	1.149	138.38	44.24	240.05
		10'	90	10'-8"		10"		11'-8"	11'-0⅛"	11'-7"	1.276	145.26	45.91	242.77
		11'	99	10'-10"		11"		12'-8"	11'-2⅝"	11'-9"	1.416	152.98	47.58	245.50
	10' @ 10	5'	50	11'-2"		7"		6'-8⅛"	11'-6⅜"	12'-1⅝"	0.957	133.70	40.13	257.63
		6'	60	11'-3"		7½"		7'-8⅛"	11'-7⅜"	12'-2⅝"	1.024	137.06	41.80	258.99
		7'	70	11'-3"		7½"		8'-8⅛"	"	"	1.071	139.73	43.47	258.99
		8'	80	11'-4"	10½"	8"	11"	9'-8⅛"	11'-8⅜"	12'-3⅝"	1.147	145.62	45.14	260.35
		9'	90	11'-4"		9"		10'-8⅛"	11'-10⅜"	12'-5⅝"	1.263	155.33	46.81	263.08
		10'	100	11'-8"		10"		11'-8⅛"	12'-1⅜"	12'-7⅝"	1.391	162.30	48.48	265.80
		11'	110	11'-10"		11"		12'-8⅛"	12'-3⅜"	12'-9⅝"	1.532	170.12	50.15	268.53
		12'	120	12'-0"		12"		13'-8⅛"	12'-5⅜"	12'-11⅝"	1.685	182.08	51.82	271.25
	11' @ 11	6'	66	12'-4"		8"		7'-10⅝"	12'-9⅜"	13'-3⅝"	1.153	158.87	46.12	283.61
		7'	77	12'-4"		8"		8'-10⅝"	"	"	1.202	161.55	47.79	283.61
		8'	88	12'-4"		8"		9'-10⅝"	"	"	1.252	166.78	49.46	283.61
		9'	99	12'-6"	11"	9"	11½"	10'-10⅝"	12'-11⅜"	13'-5⅝"	1.368	176.31	51.13	286.33
		10'	110	12'-8"		10"		11'-10⅝"	13'-1⅜"	13'-7⅝"	1.497	183.92	52.80	289.06
		11'	121	12'-10"		11"		12'-10⅝"	13'-3⅜"	13'-10"	1.638	191.38	54.47	293.15
		12'	132	13'-0"		12"		13'-10⅝"	13'-5¼"	14'-0"	1.792	203.51	56.14	295.87
	12' @ 12	6'	72	13'-6"		8"		8'-0"	13'-9⅝"	14'-4"	1.284	176.97	48.69	378.98
		7'	84	13'-6"		8"		9'-0"	"	"	1.333	179.16	50.36	378.98
		8'	96	13'-6"		8"		10'-0"	"	"	1.383	184.62	52.03	378.98
		9'	108	13'-6"	11½"	9"	12"	11'-0"	13'-11⅝"	14'-6⅝"	1.500	194.12	53.70	382.54
		10'	120	13'-8"		10"		12'-0"	14'-1⅜"	14'-8⅝"	1.630	201.34	55.37	386.10
		11'	132	13'-10"		11"		13'-0"	14'-3⅜"	14'-10⅝"	1.772	209.45	57.04	389.66
		12'	144	14'-0"		12"		14'-0"	14'-5⅜"	15'-0⅝"	1.926	221.72	58.71	393.22

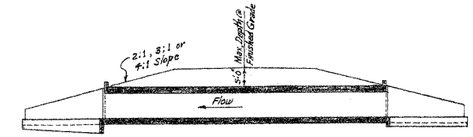


PART LONGITUDINAL SECTION N-N

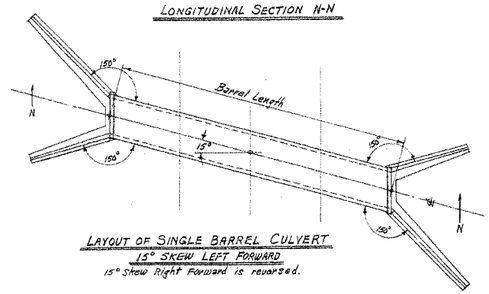


TYPICAL SECTION M-M

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X152-1 or W-X152-2 and W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2.



LONGITUDINAL SECTION N-N



LAYOUT OF SINGLE BARREL CULVERT
15° SKEW LEFT FORWARD
15° Skew Right Forward is reversed.

GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33-0" length of barrel over 32-0. Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

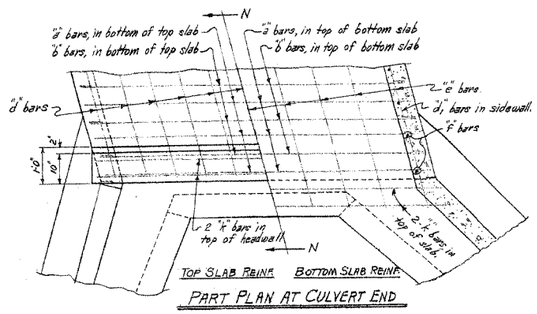
UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars "b"
#6	3"	5"	1'-2"	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	Bars "j" Dowel bars in headwalls
4'	#4	11"	12	2'-6"	1'-3"	
5'	#4	11"	14	2'-7"	1'-3½"	
6'	#4	11"	16	2'-8"	1'-4"	
7'	#4	11½"	18	2'-9"	1'-4⅝"	
8'	#4	11½"	20	2'-11"	1'-5⅝"	
9'	#4	11⅝"	22	3'-0"	1'-6"	
10'	#4	12"	24	3'-1"	1'-6½"	
11'	#4	12"	26	3'-2"	1'-7"	
12'	#4	12"	28	3'-3"	1'-7½"	



PART PLAN AT CULVERT END

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X152-1 or W-X152-2 ; W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
15° SKEW

4,5,6,7,8,9,10,11&12 SPANS 2:1, 3:1 OR 4:1 SLOPES
SINGLES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-115X-0

Designed By - W.C.H. 1-23-63 Checked By - RMS 5-8-63
Drawn By - W.C.H. 8-14-63 Checked By - FHS 10-7-63
Quantities By - W.C.H. 8-21-63 Checked By - R.G. 12-10-63

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			224	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE	"a" bars STRAIGHT In Top and Bottom Slab of Barrel - (Four of each Length) SPACING	"a" bars STRAIGHT In Top and Bottom Slab of Barrel - (Four of each Length) No. Reqd	"a" bars STRAIGHT In Top and Bottom Slab of Barrel - (Four of each Length) LENGTH	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars SIZE	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars SPACING	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars No. Reqd	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars LENGTH	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars X MAX.	"a" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-hooked. Alternate with "a" bars X MIN.	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. SIZE	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. SPACING	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. No. Reqd	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. LENGTH	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. X MAX.	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked; (Four of each Length) Alternate with "a" bars. X MIN.	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel. SIZE	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel. SPACING	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel. No. Reqd	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel. LENGTH	"d" bars STRAIGHT Longitudinal in sidewalls. SIZE	"d" bars STRAIGHT Longitudinal in sidewalls. SPACING	"d" bars STRAIGHT Longitudinal in sidewalls. No. Reqd	"d" bars STRAIGHT Longitudinal in sidewalls. LENGTH	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SPACING	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. No. Reqd	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. LENGTH	"f" bars STRAIGHT Verticals in Sidewalls. SIZE	"f" bars STRAIGHT Verticals in Sidewalls. SPACING	"f" bars STRAIGHT Verticals in Sidewalls. No. Reqd	"f" bars STRAIGHT Verticals in Sidewalls. LENGTH	K_1 bars STRAIGHT In Bottom of Headwall. SIZE	K_1 bars STRAIGHT In Bottom of Headwall. No. Reqd	K_1 bars STRAIGHT In Bottom of Headwall. LENGTH	K_2 bars STRAIGHT In Top of Headwall and Apron (2 Each) SIZE	K_2 bars STRAIGHT In Top of Headwall and Apron (2 Each) No. Reqd	K_2 bars STRAIGHT In Top of Headwall and Apron (2 Each) LENGTH
D	S	H																																						
0'-0" TO 5'-0" MAXIMUM	4' @ 1	2'	# 5	13"	108	4'-9"	# 6	18"	4	2'-11"	—	3'-10"	—	# 5	12"	4	2'-11"	# 4	12"	6	5'-6"	# 6	6'-8"																		
		3'			108	4'-9"			4	"	—	"	—			4	"			6	"	8	"																		
		4'			108	4'-9"			4	"	—	"	—			4	"			6	"	8	"																		
		5'			108	4'-9"			4	"	—	"	—			4	"			6	"	8	"																		
		6'			108	4'-11"			4	3'-1"	—	—	—			8	4'-8"	2'-8"	4'-10"	2'-1"																				
	5' @ 2	2'	# 5	18"	108	5'-9"	# 6	18"	4	3'-2"	—	3'-10"	—	# 5	12"	4	3'-2"	# 4	12"	6	5'-6"	# 6	6'-8"																		
		3'			108	5'-9"			4	"	—	"	—			4	"			6	"	8	"																		
		4'			108	5'-9"			4	"	—	"	—			4	"			6	"	8	"																		
		5'			108	5'-11"			4	4'-1"	—	"	—			4	"			6	"	8	"																		
		6'			108	6'-0"			4	4'-2"	—	"	—			4	"			6	"	8	"																		
		7'			108	6'-0"			4	"	—	"	—			4	"			6	"	8	"																		
	6' @ 3	3'	# 6	18"	106	6'-1"	# 6	18"	4	3'-11"	—	4'-10"	2'-11"	# 5	13"	8	5'-5"	3'-6"	4'-10"	2'-11"	# 4	12"	6	6'-3"	# 6	6'-8"														
		4'			106	6'-1"			4	"	—	"	—			8	"	"	"	"			6	"																		
		5'			106	6'-1"			4	"	—	"	—			8	5'-7"	3'-8"	6'-0"	3'-1"			7	"																		
		6'			106	7'-1"			4	4'-2"	—	"	—			8	5'-8"	3'-8"	5'-11"	3'-2"			7	"																		
		7'			106	7'-1"			4	"	—	"	—			8	5'-8"	3'-8"	5'-11"	3'-2"			7	"																		
	7' @ 4	3'	# 6	12"	114	7'-10"	# 6	12"	8	5'-0"	3'-8"	6'-0"	2'-11"	# 5	10"	6	6'-5"	2'-11"	5'-10"	2'-9"	# 4	12"	6	6'-8"	# 6	6'-8"														
		4'			114	7'-10"			8	"	"	"	"			6	"	"	"	"			7	"																		
		5'			114	7'-10"			8	"	"	"	"			6	"	"	"	"			7	"																		
		6'			114	8'-1"			8	5'-8"	3'-8"	6'-0"	2'-6"			6	6'-7"	3'-1"	6'-0"	2'-6"			7	"																		
		7'			114	8'-1"			8	5'-8"	3'-8"	6'-1"	6'-11"			6	6'-8"	3'-2"	6'-1"	2'-7"			7	"																		
		8'			114	7'-7"			8	5'-4"	3'-8"	5'-7"	3'-7"			6	6'-9"	3'-2"	6'-2"	2'-8"			7	"																		
	8' @ 5	3'	# 6	12"	124	7'-9"	# 6	12"	12	6'-6"	3'-8"	6'-0"	3'-0"	# 5	10"	9	7'-6"	4'-4"	6'-10"	3'-9"	# 4	12"	9	7'-1"	# 6	6'-8"														
		4'			124	7'-9"			12	"	"	"	"			9	"	"	"	"			9	"																		
		5'			124	7'-11"			12	6'-9"	3'-8"	6'-0"	3'-2"			9	7'-2"	3'-11"	7'-0"	3'-4"			9	"																		
		6'			124	8'-0"			12	6'-5"	3'-8"	6'-0"	3'-3"			9	7'-10"	3'-11"	7'-8"	2'-6"			9	"																		
		7'			124	8'-1"			12	6'-6"	3'-8"	6'-0"	3'-4"			9	8'-2"	4'-0"	8'-0"	2'-7"			9	"																		
		8'			124	8'-3"			12	6'-8"	3'-8"	6'-0"	3'-4"			9	8'-6"	4'-2"	8'-5"	2'-8"			9	"																		
	9' @ 6	3'	# 6	11"	112	8'-8"	# 6	12"	12	7'-0"	3'-8"	6'-0"	3'-6"	# 5	10"	11	8'-5"	3'-2"	7'-10"	2'-7"	# 4	12"	11	8'-2"	# 6	6'-8"														
		4'			112	8'-11"			12	7'-2"	3'-8"	6'-0"	3'-7"			11	8'-7"	3'-4"	8'-1"	2'-8"			11	"																		
		5'			112	8'-11"			12	"	"	"	"			11	"	"	"	"			11	"																		
		6'			112	8'-11"			12	7'-3"	3'-8"	6'-0"	3'-8"			11	8'-9"	3'-5"	8'-3"	2'-9"			11	"																		
		7'			112	9'-0"			12	7'-4"	3'-8"	6'-0"	3'-9"			11	8'-11"	3'-5"	8'-4"	2'-10"			11	"																		
		8'			112	9'-1"			12	7'-5"	3'-8"	6'-0"	3'-10"			11	9'-1"	3'-5"	8'-6"	2'-11"			11	"																		
		9'			112	9'-3"			12	7'-6"	3'-8"	6'-0"	4'-0"			11	9'-3"	3'-5"	8'-7"	3'-0"			11	"																		
		10'			112	9'-5"			12	7'-8"	3'-8"	6'-0"	4'-1"			11	9'-5"	3'-5"	8'-9"	3'-1"			11	"																		
	10' @ 7	5'	# 6	11"	122	9'-11"	# 6	12"	16	8'-9"	3'-8"	7'-0"	3'-11"	# 5	10"	20	9'-8"	3'-4"	9'-1"	2'-9"	# 4	12"	12	9'-4"	# 7	6'-8"														
		6'			122	10'-0"			16	8'-10"	3'-8"	7'-0"	3'-11"			20	9'-9"	3'-5"	9'-2"	2'-10"			12	"																		
		7'			122	10'-0"			16	"	"	"	"			20	"	"	"	"			12	"																		
		8'			122	10'-1"			16	8'-11"	3'-8"	7'-0"	3'-11"			20	9'-10"	3'-6"	9'-3"	2'-11"			12	"																		
		9'			120	10'-2"			16	9'-0"	3'-8"	7'-0"	4'-0"			20	10'-0"	3'-8"	9'-5"	3'-0"			12	"																		
		10'			120	10'-5"			20	9'-0"	3'-8"	9'-9"	3'-5"			20	10'-4"	4'-0"	9'-9"	3'-5"			12	"																		
		11'			120	10'-7"			20	9'-0"	3'-8"	9'-11"	3'-8"			20	10'-7"	4'-0"	9'-11"	3'-8"			12	"																		
	11' @ 8	5'	# 6	11"	110	10'-11"	# 6	12"	20	9'-2"	3'-8"	10'-0"	3'-10"	# 5	10"	20	10'-8"	3'-8"	10'-0"	3'-10"	# 4	12"	13	9'-9"	# 7	6'-8"														
		6'			110	11'-0"			20	9'-3"	3'-8"	10'-1"	3'-11"			20	10'-9"	3'-9"	10'-1"	3'-11"			13	"																		
		7'			110	11'-0"			20	9'-4"	3'-8"	10'-2"	4'-0"			20	10'-9"	3'-9"	10'-1"	3'-11"			13	"																		
		8'			110	11'-1"			20	9'-5"	3'-8"	10'-2"	4'-0"			20	10'-10"	3'-10"	10'-2"	3'-12"			13	"																		
		9'			110	11'-2"			20	9'-6"	3'-8"	10'-3"	4'-1"			20	11'-0"	4'-0"	10'-4"	3'-12"			13	"																		
		10'			110	11'-3"			20	9'-7"	3'-8"	10'-4"	4'-1"			20	11'-2"	4'-2"	10'-5"	3'-12"			13	"																		
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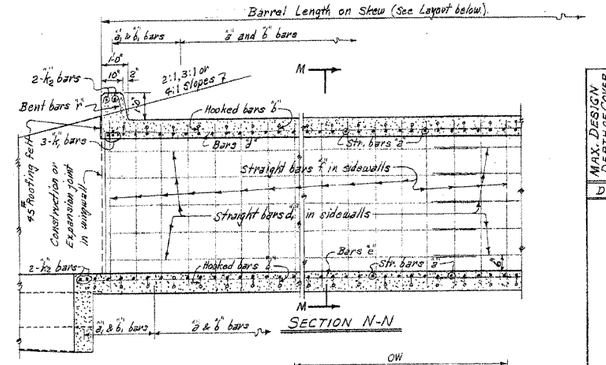
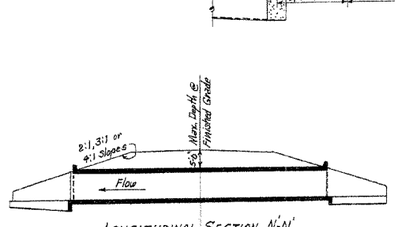
		12'			110	11'-5"			20	9'-9"	3'-8"	10'-6"	4'-2"			20	11'-6"	4'-6"	10'-10"	3'-10"			13	"																		
	12' @ 9	6'	# 6	11"	118	12'-1"	# 6	12"	24	10'-6"	2'-7"	11'-3"	3'-10"	# 5	10"	24	11'-11"	4'-0"	11'-3"	3'-10"	# 4	12"	15	10'-8"	# 7	6'-8"														
		7'			118	12'-1"			24	"	"	"	"			24	"	"	"	"			15	"																		
		8'			118	12'-1"			24	"	"	"	"			24	"	"	"	"			15	"																		
		9'			118	12'-8"			24	10'-8"	2'-9"	11'-5"	3'-6"			24	12'-1"	4'-2"	11'-5"	3'-6"			15	"																		
		10'			118	12'-5"			24	10'-10"	2'-11"	11'-7"	3'-8"			24	12'-3"	4'-4"	11'-7"	3'-8"			15	"																		
		11'			118	12'-7"			24	11'-0"	3'-1"	11'-9"	3'-8"			24	12'-5"	4'-6"	11'-9"	3'-8"			15	"																		
		12'			118	12'-9"			24	11'-2"	3'-3"	11'-11"	4'-0"			24	12'-7"	4'-8"	11'-11"	3'-8"			15	"																		
	13' @ 10	6'	# 6	11"	108	13'-1"	# 6	12"	24	10'-11"	2'-7"	11'-4"	3'-8"	# 5	10"	24	12'-0"	4'-0"	11'-4"	3'-8"	# 4	12"	15	10'-9"	# 7	6'-8"														
		7'			108	13'-1"			24	"	"	"	"			24	"	"	"	"			15	"																		
		8'			108	13'-1"			24	"	"	"	"			24	"	"	"	"			15	"																		
		9'			108	13'-3"			24	11'-6"	2'-9"	11'-6"	3'-8"			24	12'-2"	4'-2"	11'-6"	3'-8"			15	"																		
		10'			108	13'-5"			24	11'-8"	2'-11"	11'-8"	3'-8"			24	12'-4"	4'-4"	11'-8"	3'-8"			15	"																		
		11'			108	13'-7"			24	11'-10"	3'-1"	11'-10"	3'-8"			24	12'-6"	4'-6"	11'-10"	3'-8"			15	"																		
		12'			108	13'-9"			24	12'-0"	3'-3"	12'-0"	4'-0"			24	12'-8"	4'-8"	12'-0"	3'-8"			15	"																		
	14' @ 11	6'	# 6	11"	106	14'-2"	# 6	12"	24	11'-5"	2'-7"	11'-5"	3'-8"	# 5	10"	24	12'-10"	4'-0"	11'-5"	3'-8"	# 4	12"	16	11'-6"	# 7	6'-8"														
		7'			106	14'-2"			24	"	"	"	"			24	"	"	"	"			16	"																		
		8'			106	14'-2"			24	"	"	"	"			24	"	"	"	"			16	"																		
		9'			106	14'-3"			24	11'-7"	2'-9"	11'-7"	3'-8"			24	12'-11"	4'-2"	11'-7"	3'-8"			16	"																		
		10'			106	14'-4"			24	11'-9"	2'-11"	11'-9"	3'-8"			24	13'-1"	4'-4"	11'-9"	3'-8"			16	"																		
		11'			106	14'-5"			24	11'-11"	3'-1"	11'-11"	3'-8"			24	13'-3"	4'-6"	11'-11"	3'-8"			16	"																		
		12'			106	14'-6"			24	12'-1"	3'-3"	12'-1"	4'-0"			24	13'-5"	4'-8"	12'-1"	3'-8"			16	"																		

These bars are in the skewed portion of barrel only. The length of "a" bars and overall length X of "b" bars vary by 1'-11" for 13" spacing, 1'-9" for 12" spacing and 1'-7" for 11" spacing.

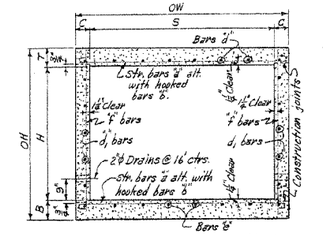
2 @ 30'-6" for 60'-0" Length Barrel. (1'-8" Lap)
2 @ 31'-4" for 60'-0" Length Barrel. (1'-8" Lap)
2 @ 31'-3" for 60'-0" Length Barrel. (1'-3" Lap)

NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X302-1 or W-X302-2; W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

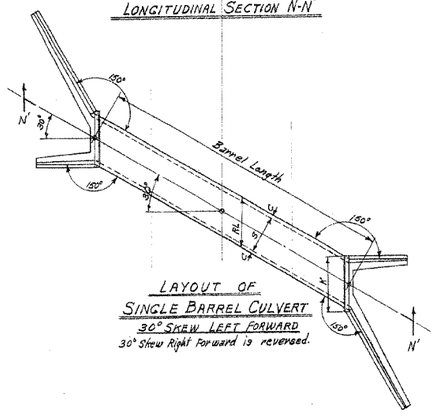




LONGITUDINAL SECTION N-'N'



TYPICAL SECTION M-M



LAYOUT OF SINGLE BARREL CULVERT
30° SKEW LEFT FORWARD
30° Skew Right Forward is reversed.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/in²
Reinforcing Steel 20,000 #/in²

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

GENERAL NOTES

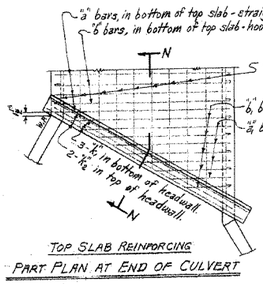
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-6". Lap longitudinal bars 30 diameters min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

BAR SIZE	PIN DIAM.	K	ADD FOR HOOKS	BENDING DIAGRAMS FOR BARS "b" & "b_1"
#6	3"	5"	1'-2"	2 HOOKS — "b" bars: K, Pin diam, X
#7	3½"	5¾"	1'-4"	
#6	3"	5"	0'-7"	1 HOOK — "b_1" bars: K, Pin diam., X
#7	3½"	5¾"	0'-8"	

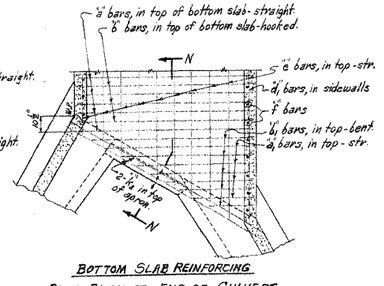
NOTE:- Dimensions are to centers of bars. ("b" and "b_1")

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. Reqd	LENGTH	X	Dowel bars "f" in Two Headwalls.
4'	#4	12"c	12	2'-6"	1'-9"	
5'	#4	12"c	16	2'-7"	1'-3½"	
6'	#4	12"c	18	2'-8"	1'-4"	
7'	#4	12"c	20	2'-9"	1'-4½"	
8'	#4	12"c	22	2'-11"	1'-5½"	
9'	#4	12"c	26	3'-0"	1'-6"	
10'	#4	12"c	28	3'-1"	1'-6½"	
11'	#4	12"c	30	3'-2"	1'-7"	
12'	#4	12"c	32	3'-3"	1'-7½"	



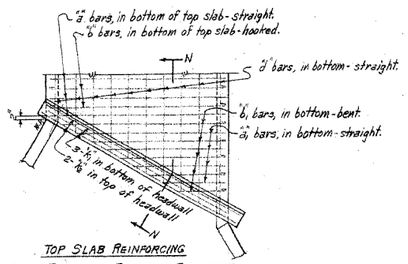
TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT



BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

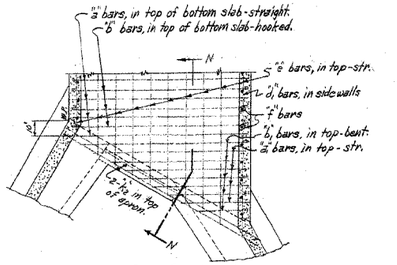
MAX. DESIGN DEPTH OF COVER	CLEAR SPANS	BARREL DIMENSIONS CLEAR HEIGHT	SQ.FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALLS	* QUANTITIES REINFORCING STEEL CLASS S CONC. PER LIN. FT. OF BARREL	TOTAL FOR 60'-0" LENGTH OF BARREL	PER LIN. FT. OF BARREL	ADDITIONAL PER LAP
D	S	H	A	OW	T	C	B	OH	RL	K	CU.YD.	LB.	LB.	LB.
5'-0"	4' @ 1	2'	8	5'-0"	7"	6"	6½"	3'-1½"	5'-9⅝"	6'-11⅝"	0.282	2 622	41.99	17.95
		3'	12	5'-0"		6"		3'-7½"	"	"	0.319	2786	44.16	19.62
		4'	16	5'-0"		6"		4'-1½"	"	"	0.354	2946	44.83	21.29
		5'	20	5'-0"		6"		4'-7½"	"	"	0.394	3107	49.50	22.96
		6'	24	5'-2"		7"		5'-1⅛"	5'-11⅝"	7'-1⅝"	0.473	3335	52.96	24.63
	5' @ 2	2'	8	5'-0"		6"		3'-1½"	5'-9⅝"	6'-11⅝"	0.280	3 541	55.55	22.19
		3'	12	5'-0"		6"		3'-7½"	"	"	0.317	3703	58.23	23.86
		4'	16	5'-0"		6"		4'-1½"	"	"	0.354	3865	60.90	25.53
		5'	20	5'-0"		6"		4'-7½"	"	"	0.394	4031	64.99	27.20
		6'	24	5'-2"		7"		5'-1⅛"	5'-11⅝"	7'-1⅝"	0.473	4283	67.63	28.87
	6' @ 3	3'	18	7'-0"		6"		4'-3⅝"	6'-1⅜"	9'-2⅝"	0.446	4221	66.29	26.76
		4'	24	7'-0"		6"		4'-9⅝"	"	"	0.483	4383	68.96	26.93
		5'	30	7'-0"		6"		5'-3⅝"	"	"	0.520	4595	71.69	28.10
		6'	36	7'-2"		7"		5'-7⅝"	6'-1⅜"	9'-5⅝"	0.602	4772	75.31	29.77
		7'	42	7'-5"		7"		6'-1⅝"	6'-1⅜"	9'-5⅝"	0.671	4966	78.48	31.44
		8'	48	7'-8"		8"		6'-5⅝"	6'-5⅝"	9'-7⅝"	0.796	5570	88.97	33.11
	7' @ 4	4'	28	8'-0"	8"	6"	7"	5'-5"	6'-1⅜"	10'-4⅝"	0.568	5196	81.32	29.01
		5'	35	8'-0"		6"		6'-1"	"	"	0.605	5307	84.00	30.68
		6'	42	8'-2"		7"		6'-5"	6'-5⅝"	10'-0⅝"	0.688	5558	87.76	32.35
		7'	49	8'-3"		7"	7½"	7'-1"	6'-5⅝"	10'-0⅝"	0.767	5755	90.98	34.02
		8'	56	8'-6"		8"		7'-5"	6'-5⅝"	10'-0⅝"	0.832	6 100	96.65	35.69
		9'	63	8'-8"		9"		7'-9"	6'-5⅝"	10'-0⅝"	0.896	6648	105.59	37.36
	8' @ 5	4'	32	9'-0"		7"		5'-7"	6'-11⅝"	11'-6⅝"	0.676	6119	96.26	33.32
		5'	40	9'-2"		7"		6'-1"	6'-11⅝"	11'-6⅝"	0.759	6357	99.12	34.99
		6'	48	9'-2"		7"		6'-7"	"	"	0.797	6518	101.79	36.66
		7'	56	9'-3"	9"	7½"	9½"	8'-1"	10'-6½"	11'-10"	0.869	6720	105.05	38.33
		8'	64	9'-5"		8"		8'-5"	10'-6½"	11'-11½"	0.992	7070	110.81	40.00
		9'	72	9'-6"		9"		8'-9"	10'-6½"	12'-1½"	1.057	7627	119.92	41.67
		10'	80	9'-8"		10"		9'-1"	11'-2"	12'-3½"	1.184	8093	126.67	43.34
	9' @ 6	5'	45	10'-8"		7"		6'-8"	11'-8½"	12'-10⅝"	0.844	7356	114.72	37.56
		6'	54	10'-8"		7½"		7'-1"	11'-8½"	13'-0"	0.910	7567	118.04	39.23
		7'	63	10'-8"		7½"		7'-6"	"	"	0.957	7725	120.71	40.90
		8'	72	10'-8"	10"	8"	10"	8'-0"	11'-11½"	13'-1"	1.033	8081	126.59	42.57
		9'	81	10'-8"		9"		8'-6"	12'-1½"	13'-3⅜"	1.148	8625	135.80	44.24
		10'	90	10'-8"		9"		9'-0"	12'-3⅝"	13'-5¾"	1.296	9069	142.68	45.91
		11'	99	10'-10"		11"		9'-6"	12'-6"	13'-8"	1.496	9526	150.40	47.58
	10' @ 7	5'	50	11'-2"		7"		6'-9"	12'-10⅝"	14'-0⅝"	0.857	8359	130.68	40.13
		6'	60	11'-3"		7½"		7'-3"	12'-10⅝"	14'-1⅜"	1.024	8567	132.99	41.80
		7'	70	11'-3"		7½"		7'-8"	"	"	1.071	8729	136.46	43.47
		8'	80	11'-4"		8"		8'-2"	12'-10⅝"	14'-3"	1.149	9110	142.35	45.14
		9'	90	11'-6"		9"		8'-10"	13'-1"	14'-5⅝"	1.243	9634	151.92	46.81
		10'	100	11'-8"		10"		9'-3"	13'-3⅜"	14'-7⅝"	1.391	10,019	158.89	48.48
		11'	110	11'-10"		11"		9'-7"	13'-6"	14'-9⅝"	1.532	10,547	166.71	50.15
		12'	120	12'-0"		12"		10'-0"	13'-8"	15'-0⅝"	1.685	11,278	178.67	51.82

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			225	
JOB No.					



TOP SLAB REINFORCING

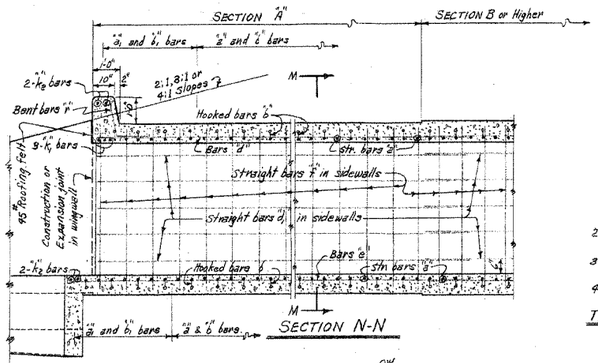
PART PLAN AT END OF CULVERT

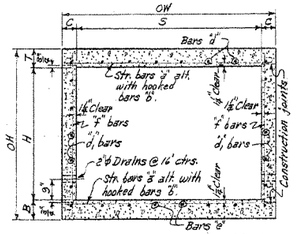


BOTTOM SLAB REINFORCING

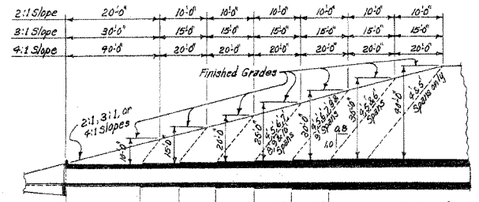
PART PLAN AT END OF CULVERT

NOTE:- The "d", "d1" and "a" bars vary in length. They should extend 1'-9" min. into Section "B".





TYPICAL SECTION M-M

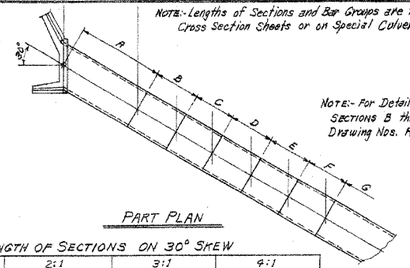


		A	B	C	D	E	F	MID-SECTION G-Varies
2:1 Slope =	SECTIONS	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	MID-SECTION G-Varies
	Bar Group	A	B	C	D	E	F	G
3:1 Slope =	SECTIONS	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	MID-SECTION G-Varies
	Bar Group	A	B	C	D	E	F	G
4:1 Slope =	SECTIONS	A=32'-0"	B=16'-0"	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

These lengths are perpendicular to ℄ of roadway. See Table of Skew Lengths below.

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'-10 1/8"	6'-11 1/8"	25'-4 3/8"	12'-8 3/8"	36'-11 1/2"	18'-5 3/8"

NOTE:- Minimum ℄ Length of Section "A" on 30° Skew = (0.898675 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'	A						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
350 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 14.5'	A						B
15.0 to 19.5'	A	B					C
20.0 to 24.5'	A	2@C					D
25.0 to 29.5'	A	B	2@D				E
30.0 to 34.5'	A	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"	0-10 1/2"	K, Pin diam., X
#5	2 1/2"	4 1/2"	0-11 1/2"	
#6	3"	5"	1'-2"	
#7	3 1/2"	5 1/2"	1'-4"	

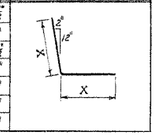
BAR SIZE	PIN DIAM.	K	ADD FOR 1 HOOK	BENDING DIAGRAM FOR BARS "b1"
#4	2"	4"	0-5 1/2"	K, Pin diam., X
#5	2 1/2"	4 1/2"	0-5 3/4"	
#6	3"	5"	0'-7"	
#7	3 1/2"	5 1/2"	0'-8"	

Note:- Dimensions are to centers of bars. ("b" and "b1")

DOWEL BARS FOR ONE HEADWALL

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X
4'	#4	12"	6	2'-5"	1'-2 1/2"
5'	#4	12"	8	2'-6"	1'-3"
6'	#4	12"	9	2'-7"	1'-3 1/2"
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"

Dowel bars "d" in One Headwall



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 3/4" 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.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.
For Barrels of 4', 5 & 6' Spans, See Drawing No. R-100X-X.1.
For Barrels of 7', 8', 9' & 10' Spans, See Drawing No. R-100X-X.2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

30° SKEW – SECTIONS "A" ONLY

4', 5', 6', 7', 8', 9' & 10' SPANS — 2:1, 3:1 OR 4:1 SLOPES

SINGLES — OVER 5'-0" COVER

STANDARD DRAWING NO. R-130X-1

BAR LIST FOR SECTION "A" ON 30° SKEW – ONE END ONLY.

SECTION "A" & BAR GROUP "A" — 2:1 = 13'-10 1/8", 3:1 = 25'-4 3/8", 4:1 = 36'-11 1/2" — 0'-0" TO 10'-0" MAXIMUM.

Designed by- W.C.H. 9-5-62 — Checked by- R.M.S. 11-8-62
Drawn by- W.C.H. 1-24-64 — Checked by-
Quantities by- W.C.H 4-21-64 — Checked by-

SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SIZE	"a" bars SPACING	"a" bars NUMBER REQ'D 2:1	3:1	4:1	"a" bars LENGTH	"a1" bars STRAIGHT In Top and Bottom Slab of Barrel- (Two of each Length.) SIZE	"a1" bars SPACING	"a1" bars NUMBER REQ'D	"a1" bars LENGTH
		D	S	H										
A	2:1 = 13'-10 1/8", 3:1 = 25'-4 3/8", 4:1 = 36'-11 1/2"	0'-0" TO 10'-0" MAXIMUM.	4'	2'	#4	12"	27	49	73	4'-9"	#4	12"	25	49	71	5'-7"	4'-9 1/2"
				3'			27	49	73	"			25	49	71	"	"
				4'			27	49	73	"			25	49	71	"	"
				5'			27	49	73	"			25	49	71	"	"
				6'			27	49	73	4'-11"			25	49	71	5'-9"	4'-10 1/2"
			5'	3'	#4	12"	25	49	73	5'-9"	#5	12"	25	49	71	6'-8"	5'-8 1/2"
				4'			25	49	73	"			25	49	71	"	"
				5'			25	49	73	5'-11"			25	49	71	6'-10"	5'-10 1/2"
				6'			25	49	73	6'-0"			25	49	71	6'-11"	5'-11 1/2"
				7'			25	49	73	"			25	47	71	7'-10"	6'-8"
			6'	3'	#4	12"	25	49	71	6'-9"	#5	12"	25	47	71	7'-8"	6'-7 1/2"
				4'			25	49	71	"			25	47	71	"	"
				5'			25	49	71	7'-11"			25	47	71	8'-10"	6'-11"
				6'			25	49	71	8'-0"			25	47	71	8'-11"	7'-0"
				7'			25	49	71	8'-1"			25	47	71	9'-0"	7'-1"
				8'			25	49	71	8'-2"			25	47	71	9'-1"	7'-2"
			7'	4'	#4	12"	25	49	71	7'-0"	#5	12"	25	47	71	8'-0"	7'-0"
				5'			25	49	71	"			25	47	71	"	"
				6'			25	49	71	8'-1"			25	47	71	9'-1"	8'-1"
				7'			25	49	71	8'-2"			25	47	71	9'-2"	8'-2"
				8'			25	49	71	8'-3"			25	47	71	9'-3"	8'-3"
			8'	4'	#4	12"	25	49	71	8'-3"	#5	12"	25	47	71	9'-3"	8'-3"
				5'			25	49	71	"			25	47	71	"	"
				6'			25	49	71	8'-4"			25	47	71	9'-4"	8'-4"
				7'			25	49	71	8'-5"			25	47	71	9'-5"	8'-5"
				8'			25	49	71	8'-6"			25	47	71	9'-6"	8'-6"
				9'			25	49	71	8'-7"			25	47	71	9'-7"	8'-7"
			9'	5'	#4	12"	25	49	71	8'-7"	#5	12"	25	47	71	9'-7"	8'-7"
				6'			25	49	71	8'-8"			25	47	71	9'-8"	8'-8"
				7'			25	49	71	8'-9"			25	47	71	9'-9"	8'-9"
				8'			25	49	71	8'-10"			25	47	71	9'-10"	8'-10"
				9'			25	49	71	8'-11"			25	47	71	9'-11"	8'-11"
				10'			25	49	71	9'-0"			25	47	71	10'-0"	9'-0"
			10'	6'	#4	12"	25	49	71	8'-11"	#5	12"	25	47	71	9'-11"	8'-11"
				7'			25	49	71	9'-0"			25	47	71	10'-0"	9'-0"
				8'			25	49	71	9'-1"			25	47	71	10'-1"	9'-1"
				9'			25	49	71	9'-2"			25	47	71	10'-2"	9'-2"
				10'			25	49	71	9'-3"			25	47	71	10'-3"	9'-3"
				11'			25	49	71	9'-4"			25	47	71	10'-4"	9'-4"
			11'	7'	#4	12"	25	49	71	9'-4"	#5	12"	25	47	71	10'-4"	9'-4"
				8'			25	49	71	9'-5"			25	47	71	10'-5"	9'-5"
				9'			25	49	71	9'-6"			25	47	71	10'-6"	9'-6"
				10'			25	49	71	9'-7"			25	47	71	10'-7"	9'-7"
				11'			25	49	71	9'-8"			25	47	71	10'-8"	9'-8"
				12'			25	49	71	9'-9"			25	47	71	10'-9"	9'-9"

SECTION & BAR GROUP	"b" bars BENT - See Diagrams at Right. Alternate with "a" bars SIZE	SPACING	NO. REQ'D 2:1	3:1	4:1	LENGTH	X	"b1" bars Alternate with "a1" bars SIZE	SPACING	NO. REQ'D	LENGTH	X	"d" bars STRAIGHT Longitudinal in Top Slabs of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars Longitudinal in Sidewalls SIZE	NO. REQ'D	LENGTH	"e" bars Longitudinal in Bottom Slab of Barrel. SIZE	NO. REQ'D	LENGTH
A	#4	12"	25	49	71	5'-7"	4'-9 1/2"	#4	12"	4	4'-3"	2'-6"	#4	12"	4	4'-0"	#4	4	12"	#4	4	12"
			25	49	71	"	"			4	"	"			4	"		5			5	
			25	49	71	"	"			4	"	"			4	"		6			6	
			25	49	71	"	"			4	"	"			4	"		7			7	
			25	49	71	5'-9"	4'-9 1/2"			4	4'-5"	2'-8"			4	4'-0"		8			8	
	#5	12"	25	49	71	6'-8"	5'-8 1/2"	#5	12"	4	5'-4"	3'-7"	#5	12"	4	4'-10"	#5	9	12"	#5	9	12"
			25	49	71	"	"			4	"	"			4	"		10			10	
			25	49	71	"	"			4	"	"			4	"		11			11	
			25	49	71	"	"			4	"	"			4	"		12			12	
			25	49	71	6'-8"	5'-8 1/2"			4	5'-4"	3'-7"			4	4'-10"		13			13	
			25	47	71	7'-8"	6'-8"			6	6'-5"	3'-11"			6	5'-10"		14			14	
			25	47	71	"	"			6	"	"			6	"		15			15	
			25	47	71	"	"			6	"	"			6	"		16			16	
			25	47	71	8'-7"	7'-6"			6	7'-0"	4'-3"			6	6'-4"		17			17	
			25	47	71	"	"			6	"	"			6	"		18			18	
			25	47	71	"	"			6	"	"			6	"		19			19	
			25	47	71	9'-6"	8'-5"			6	8'-0"	4'-7"			6	7'-3"		20			20	
			25	47	71	"	"			6	"	"			6	"		21			21	
			25	47	71	"	"			6	"	"			6	"		22			22	
			25	47	71	10'-5"	9'-4"			6	9'-0"	4'-11"			6	8'-1"		23			23	
			25	47	71	"	"			6	"	"			6	"		24			24	
			25	47	71	"	"			6	"	"			6	"		25			25	
			25	47	71	11'-4"	10'-3"			6	10'-0"	5'-3"			6	9'-1"		26			26	
			25	47	71	"	"			6	"	"			6	"		27			27	
			25	47	71	"	"			6	"	"			6	"		28			28	
			25	47	71	12'-3"	11'-2"			6	11'-0"	5'-7"			6	10'-1"		29			29	
			25	47	71	"	"			6	"	"			6	"		30			30	
			25	47	71	"	"			6	"	"			6	"		31			31	
			25	47	71	13'-2"	12'-1"			6	12'-0"	6'-0"			6	11'-1"		32			32	
			25	47	71	"	"			6	"	"			6	"		33			33	
			25	47	71	"	"			6	"	"			6	"		34			34	
			25	47	71	14'-1"	13'-0"			6	13'-0"	6'-6"			6	12'-2"		35			35	
			25	47	71	"	"			6	"	"			6	"		36			36	
			25	47	71	"	"			6	"	"			6	"		37			37	
			25	47	71	15'-0"	13'-11"			6	14'-0"	7'-0"			6	13'-3"		38			38	
			25	47	71	"	"			6	"	"			6	"		39			39	
			25	47	71	"	"			6	"	"			6	"		40			40	
			25	47	71	15'-11"	14'-10"			6	15'-0"	7'-6"			6	14'-3"		41			41	
			25	47	71	"	"			6	"	"			6	"		42			42	
			25	47	71	"	"			6	"	"			6	"		43			43	
			25	47	71	16'-10"	15'-9"			6	16'-0"	8'-0"			6	15'-4"		44			44	
			25	47	71	"	"			6	"	"			6	"		45			45	
			25	47	71	"	"			6	"	"			6	"		46			46	
			25	47	71	17'-9"	16'-8"			6	17'-0"	8'-6"			6	16'-5"		47			47	
			25	47	71	"	"			6	"	"			6	"		48			48	
			25	47	71	"	"			6	"	"			6	"		49			49	
			25	47	71	18'-8"	17'-7"			6	18'-0"	9'-0"			6	17'-5"		50			50	

Lengths Vary - Average Length; 2:1 = 16'-8", 3:1 = 27'-1", 4:1 = 38'-3"

SECTION & BAR GROUP	"f" bars STRAIGHT Verticals in Sidewalls. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH MAX.	LENGTH MIN.	X MAX.	X MIN.	"h" bars STRAIGHT In Bottom of Headwall. SIZE	NO. REQ'D	LENGTH	"h2" bars STRAIGHT In Top of Headwall and Apron. (2 Each) SIZE	NO. REQ'D	LENGTH
A	#4	12"	28	51	74	2'-10"				#5	3	5'-6"	#6	4	6'-8"
			28	51	74	3'-10"					3	"		4	"
			28	51	74	4'-10"					3	"		4	"
			28	51	74	5'-10"					3	"		4	"
			28	51	74	6'-10"					3	5'-8"		4	6'-10"
	#5	12"	28	51	74	3'-11"				#5	3	6'-8"	#7	4	7'-10"
			28	51	74	4'-11"					3	"		4	"
			28	51	74	5'-11"					3	"		4	"
			28	51	74	6'-11"					3	6'-10"		4	8'-0"
			28	51	74	7'-11"					3	6'-11"		4	8'-1"
	#6	12"	28	51	74	4'-0"				#6	3	7'-10"	#8	4	9'-0"
			28	51	74	5'-0"					3	"		4	"
			28	51	74	6'-0"					3	"		4	"
			28	51	74	7'-0"					3	8'-0"		4	9'-2"
			28	51	74	8'-0"					3	8'-1"		4	9'-3"
			28	51	74	9'-0"					3	8'-2"		4	9'-4"
	#7	12"	28	51	74	4'-2"				#7	3	8'-9"	#9	4	10'-2"
			28	51	74	5'-2"					3	"		4	"
			28	51	74	6'-2"					3	"		4	"
			28	51	74	7'-2"					3	8'-10"		4	10'-0"
			28	51	74	8'-2"					3	8'-11"		4	10'-1"
			28	51	74	9'-2"					3	9'-0"		4	10'-2"
			28	51	74	10'-2"					3	9'-1"		4	10'-3"
	#8	12"	28	51	74	4'-3"				#8	3	9'-5"	#10	4	10'-11"
			28	51	74	5'-3"					3	"		4	"
			28	51	74	6'-3"					3	"		4	"
			28	51	74	7'-3"					3	9'-6"		4	11'-0"
			28	51	74	8'-3"					3	9'-7"		4	11'-1"
			28	51	74	9'-3"					3	9'-8"		4	11'-2"
			28	51	74	10'-3"					3	9'-9"		4	11'-3"
			28	51	74	11'-3"					3	9'-10"		4	11'-4"
	#9	12"	28	51	74	4'-4"				#9	3	10'-1"	#11	4	11'-9"
			28	51	74	5'-4"					3	"		4	"
			28	51	74	6'-4"					3	"		4	"
			28	51	74	7'-4"					3	10'-2"		4	11'-10"
			28	51	74	8'-4"					3	10'-3"		4	11'-11"
			28	51	74	9'-4"					3	10'-4"		4	12'-0"
			28	51	74	10'-4"					3	10'-5"		4	12'-1"
			28	51	74	11'-4"					3	10'-6"		4	12'-2"
			28	51	74	12'-4"					3	10'-7"		4	12'-3"
	#10	12"	28	51	74	4'-5"				#10	3	10'-8"	#12	4	12'-4"
			28	51	74	5'-5"					3	"		4	"
			28	51	74	6'-5"					3	"		4	"
			28	51	74	7'-5"					3	10'-9"		4	12'-5"
			28	51	74	8'-5"					3	10'-10"		4	12'-6"
			28	51	74	9'-5"					3	10'-11"		4	12'-7"
			28	51	74	10'-5"					3	11'-0"		4	12'-8"
			28	51	74	11'-5"					3	11'-1"		4	12'-9"
			28	51	74	12'-5"					3	11'-2"		4	12'-10"
			28	51	74	13'-5"					3	11'-3"		4	12'-11"

Lengths Vary - Average Length; 2:1 = 15'-4", 3:1 = 27'-1", 4:1 = 39'-10"

These bars are in the skewed portion of barrel only. The length of "a" bars and overall length X of "b" bars vary by 1'-3" for 12" spacing and 1'-7" for 11" spacing.

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS CLEAR SPANS	CLEAR HEIGHT	SAFE OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALL	* QUANTITIES - ONE SECTION "A" CLASS S CONCRETE BARREL ONLY 2:1	3:1	4:1	REINFORCING STEEL BARREL, APRON AND HEADWALL 2:1	3:1	4:1
D	S	H	A	OW	T	C	B	OH	RL	K	CU.YD.	CU.YD.	CU.YD.	LB.	LB.	LB.
SECTION "A" = 10'-0"	4'	2'	B	6'-0"	6"			3'-1"	5'-9 1/4"	6'-11 3/8"	3.81	6.98	10.16	953	764	1074
		3'	12	5'-0"	6"			4'-1"	"	"	4.32	7.92	11.53	992	836	1178
		4'	16	5'-0"	6"	6 1/2"	6 1/2"	5'-1"	"	"	4.84	8.86	12.89	531	904	1276
		5'	20	5'-0"	6"			6'-1"	"	"	5.35	9.80	14.26	571	975	1377
		6'	24	5'-2"	7"			7'-1"	5'-11 3/8"	7'-1 1/2"	6.47	11.86	17.25	614	1053	1492
	5'	3'	15	6'-0"	6"			4'-2"	6'-11 3/8"	8'-1"	6.13	9.40	13.67	687	1188	1693
		4'	20	6'-0"	6"			5'-2"	"	"	5.64	10.34	15.03	726	1258	1794
		5'	25	6'-0"	6"	7"	7"	6'-2"	"	"	6.15	11.28	16.40	765	1323	1895
		6'	30	6'-2"	7"			7'-2"	7'-1 3/8"	8'-3 1/2"	7.29	12.36	19.93	816	1413	2024
		7'	35	6'-3"	7 1/2"			8'-2"	7'-2 3/8"	8'-4 1/2"	8.23	15.09	21.94	899	1525	2171
	6'	3'	18	7'-0"	6"			4'-8"	8'-1"	9'-2 5/8"	6.08	11.05	16.07	894	1538	2192
		4'	24	7'-0"	6"			5'-8"	"	"	6.54	11.99	17.44	934	1609	2293
		5'	30	7'-0"	6"			6'-8"	"	"	7.05	12.93	18.80	978	1679	2394
		6'	36	7'-2"	7"			7'-8"	8'-3 1/8"	9'-5 1/2"	8.19	15.01	21.83	1027	1773	2523
		7'	42	7'-8"	7 1/2"			8'-8"	8'-4 1/8"	9'-6 1/2"	8.76	16.76	24.38	1105	1908	2727
		8'	48	7'-8"	8"			9'-3"	8'-5 5/8"	9'-7 1/2"	16.18	18.67	27.15	1242	2156	3080
	7'	4'	28	8'-0"	6"			6'-4 1/8"	9'-2 5/8"	10'-4 3/8"	7.70	14.12	20.56	1054	1815	2565
		5'	35	8'-0"	6"			6'-4 1/8"	"	"	8.22	15.06	21.90	1094	1885	2666
		6'	42	8'-2"	7"			7'-4 1/8"	9'-5 1/8"	10'-3"	9.35	17.18	24.93	1147	1979	2800
		7'	49	8'-8"	7 1/2"	8"	8 1/2"	8'-4 1/8"	9'-6 1/8"	10'-10 3/8"	10.31	18.89	27.98	1210	2088	2956
		8'	56	8'-8"	8"			9'-4 1/8"	9'-7 1/8"	10'-9 3/8"	11.35	20.80	30.25	1282	2263	3284
		9'	63	8'-8"	9"			10'-4 1/8"	9'-9 3/8"	10'-11 3/8"	12.93	23.69	34.46	1432	2484	3525
	8'	4'	32	9'-0"	6"			5'-6"	10'-6 1/8"	11'-6 1/4"	8.98	16.96	23.94	1293	2219	3141
		5'	40	9'-2"	7"			6'-6"	10'-7"	11'-8 3/8"	10.04	18.91	26.78	1362	2329	3294
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