DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	1	93
				(2)	INDEPENDENCE CO. LINE - BLACK ROCK (SAFETY IMPVTS.) (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

INDEPENDENCE CO. LINE - BLACK ROCK (SAFETY IMPVTS.) (S)

LAWRENCE COUNTY

ROUTE 25 SECTION 6

JOB 100974

FED. AID PROJ. HSIP-0038(52)

NOT TO SCALE

EXCEPTIONS TO JOB NO. 100974 (BRIDGES)

(4) STA. 572+05 BR. END
700.0' BRIDGE NO. 05815
34'-1" CLEAR ROADWAY
STA. 579+05 BR. END

(5) STA. 664+74 BR. END
62.0' BRIDGE NO. M0611
20'-0" CLEAR ROADWAY
STA. 665+36 BR. END

(6) STA. 810+86 BR. END
95.0' BRIDGE NO. 02923
23'-7" CLEAR ROADWAY
STA. 811+81 BR. END

(7) STA. 865+11 BR. END
107.0' BRIDGE NO. M3317
26'-7" CLEAR ROADWAY
STA. 866+18 BR. END

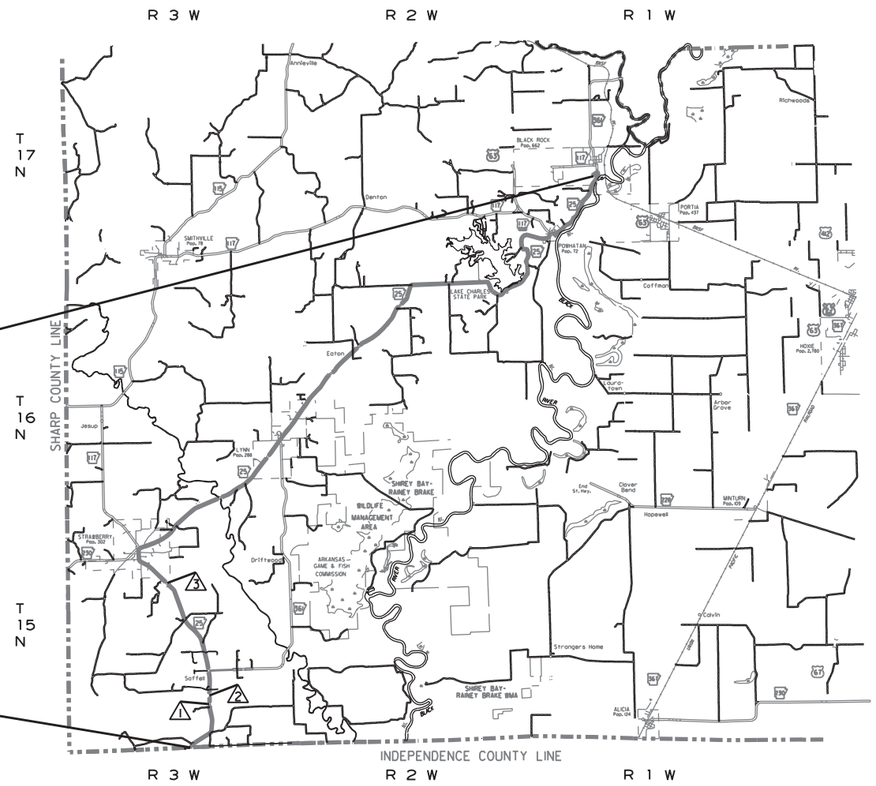
(8) STA. 947+09 BR. END
38.0' BRIDGE NO. M0614
24'-4" CLEAR ROADWAY
STA. 947+47 BR. END

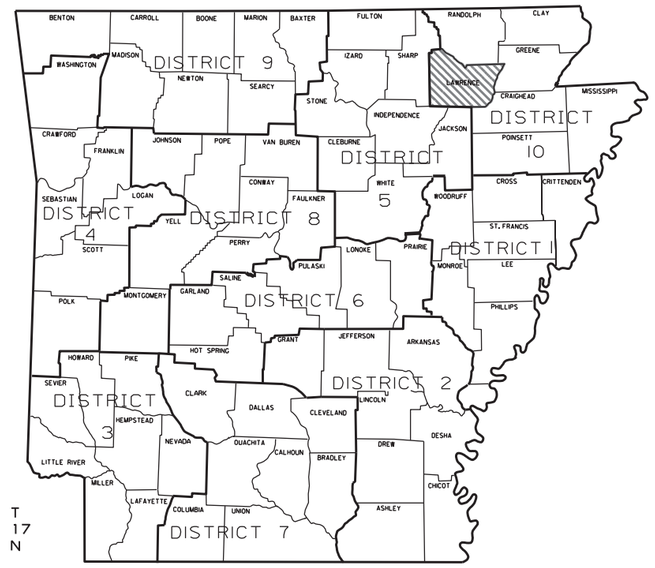
BRIDGE DATA

(1) STA. 183+30 BR. END
62.0' BRIDGE NO. M0603
24'-7" CLEAR ROADWAY
STA. 183+92 BR. END

(2) STA. 186+38 BR. END
46.0' BRIDGE NO. M0604
24'-4" CLEAR ROADWAY
STA. 186+84 BR. END

(3) STA. 370+20 BR. END
120.0' BRIDGE NO. 05094
24'-0" CLEAR ROADWAY
STA. 371+40 BR. END





ARK. HWY. DIST. NO. 10

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7836
M. E. BANKS
May 22 2020 7:06 AM
DocuSign

DEPUTY DIRECTOR
AND CHIEF ENGINEER

MID POINT OF PROJECT
LATITUDE = N 36° 01' 12"
LONGITUDE = W 91° 14' 25"

GROSS LENGTH OF PROJECT		128259.00	FEET	OR	24.291 MILES
NET	" " ROADWAY	127257.00	"	"	24.102 "
NET	" " BRIDGES	228.00	"	"	0.043 "
NET	" " PROJECT	127485.00	"	"	24.145 "

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	2	93

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4	- 12	TYPICAL SECTIONS OF IMPROVEMENT
13	- 16	SPECIAL DETAILS
17	- 24	QUANTITIES
25		SUMMARY OF QUANTITIES AND REVISIONS
26	- 93	PLAN AND PROFILE SHEETS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-2A	PIPE SIPHON	01-12-00
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-07-19
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TR-1	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS	01-21-00
TR-1A	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)	08-22-02
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6-1-2020				6	ARK.			
6-10-2020				JOB NO.		100974	3	

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 100974
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
404-3	DESIGN OF ASPHALT MIXTURES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2	INCIDENTAL CONSTRUCTION
603-1	LANE CLOSURE NOTIFICATION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1	PIPE CULVERTS FOR SIDE DRAINS
617-1	GUARDRAIL TERMINAL (TYPE 2)
620-1	MULCH COVER
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 100974	BIDDING REQUIREMENTS AND CONDITIONS
JOB 100974	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 100974	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100974	CARGO PREFERENCE ACT REQUIREMENTS
JOB 100974	CAVE DISCOVERY
JOB 100974	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 100974	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 100974	EXTENSION FOR PIPE CULVERTS
JOB 100974	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 100974	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100974	MANDATORY ELECTRONIC CONTRACT
JOB 100974	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 100974	LINEAR GRADING
JOB 100974	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 100974	PARTNERING REQUIREMENTS
JOB 100974	PLASTIC PIPE
JOB 100974	PRICE ADJESTMENT FOR ASPHALT BINDER
JOB 100974	RUMBLE STRIPS
JOB 100974	SOIL STABILIZATION
JOB 100974	SPECIAL CLEARING
JOB 100974	SPECIAL CLEARING REQUIREMENTS
JOB 100974	STORM WATER POLLUTION PREVENTION PLAN
JOB 100974	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100974	ULTRATHIN BONDED WEARING COURSE
JOB 100974	UTILITY ADJUSTMENTS
JOB 100974	VALUE ENGINEERING
JOB 100974	WARM MIX ASPHALT

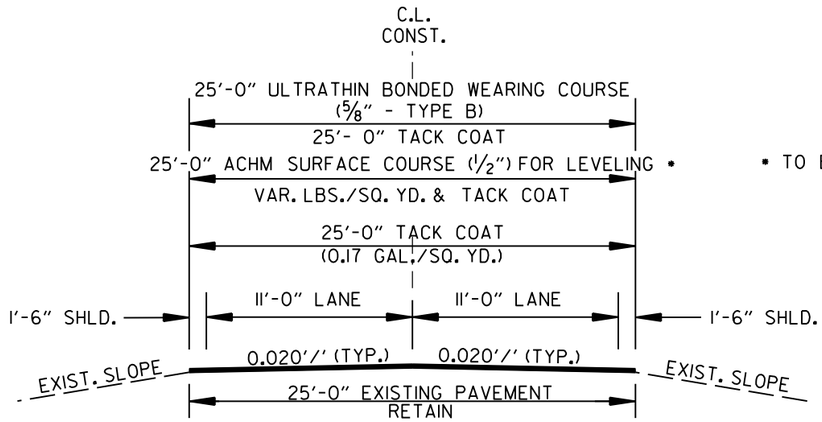
GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	4	93

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 109+41 TO STA 437+35

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

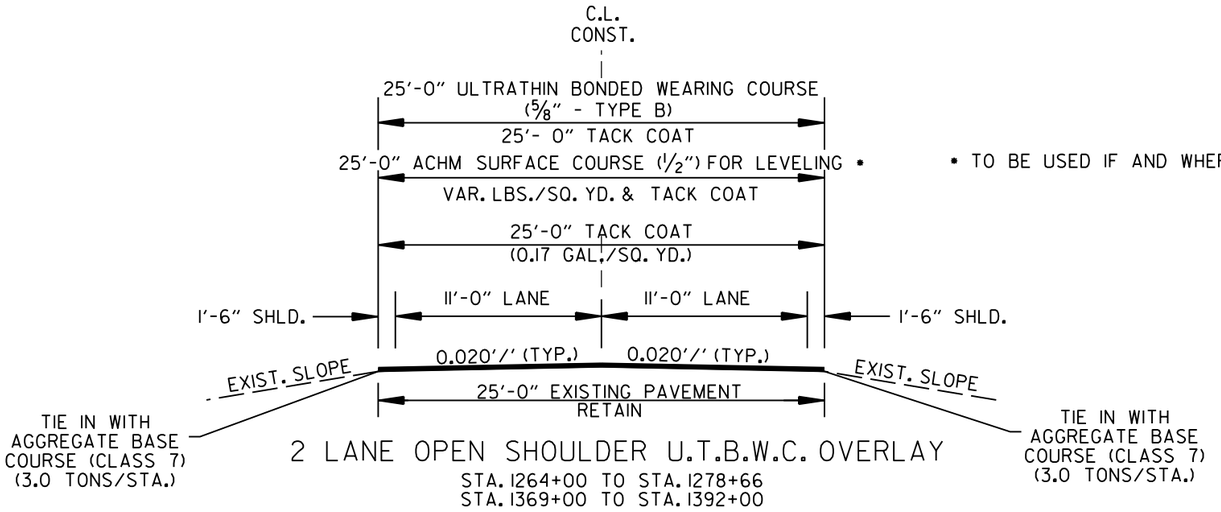
NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
6. LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH SECTION 410.07 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

NOT TO SCALE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	5	93

(2) TYPICAL SECTIONS OF IMPROVEMENT



2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 1264+00 TO STA. 1278+66
STA. 1369+00 TO STA. 1392+00

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:

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3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
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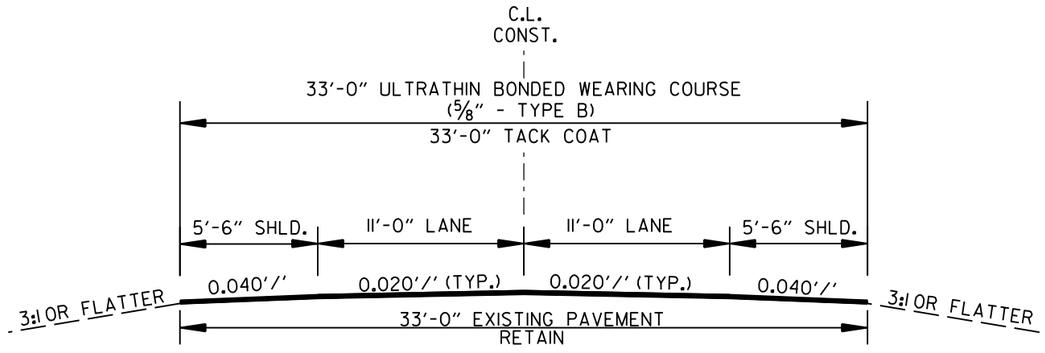

2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 532+00 TO STA. 572+05
STA. 579+05 TO STA. 602+00

NOT TO SCALE

TYPICAL SECTIONS OF IMPROVEMENT

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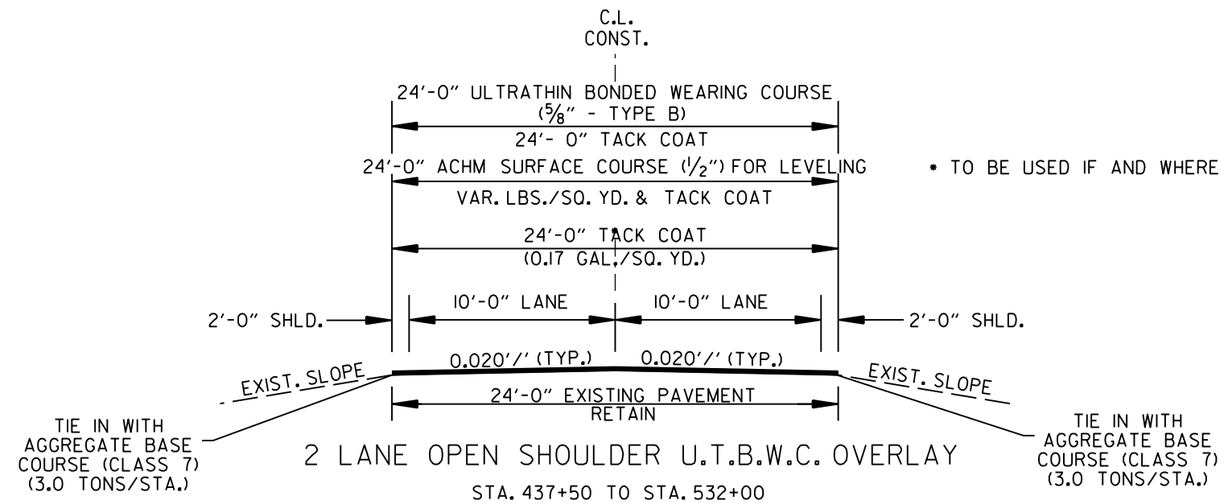
				6	ARK.			
				JOB NO.		100974	6	93

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 437+50 TO STA. 532+00
STA. 602+00 TO STA. 625+40

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-I "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-II "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
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NOT TO SCALE

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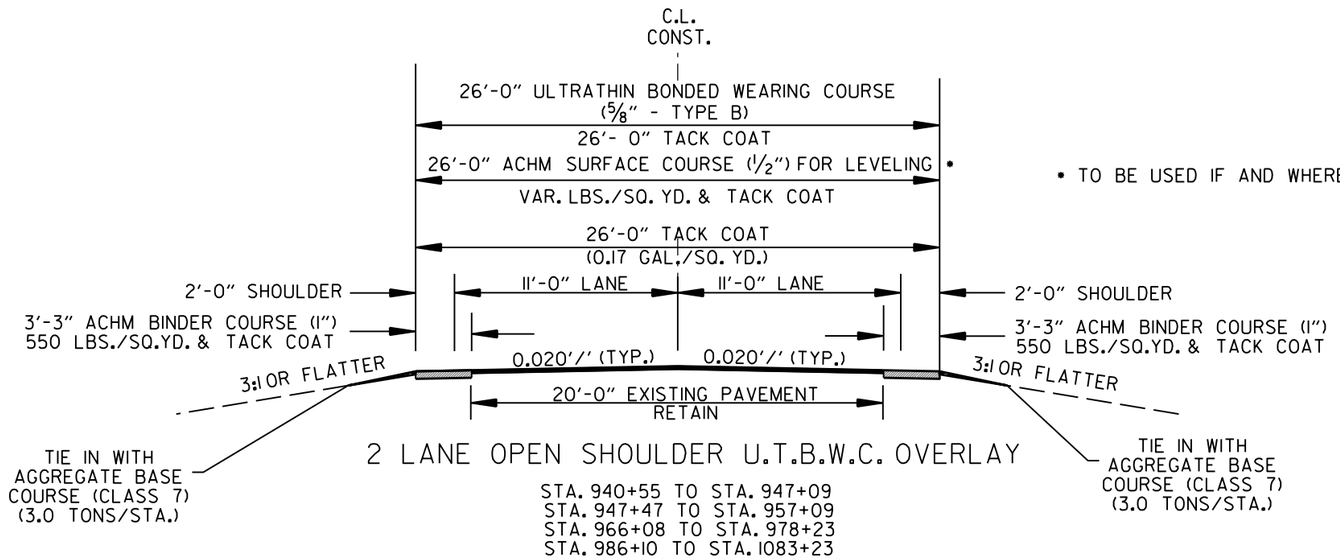
				JOB NO.		100974	7	93

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 940+55 TO STA. 947+09
STA. 947+47 TO STA. 957+09
STA. 966+08 TO STA. 978+23
STA. 986+10 TO STA. 1083+23
STA. 1086+66 TO STA. 1227+98
STA. 1234+22 TO STA. 1264+00

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
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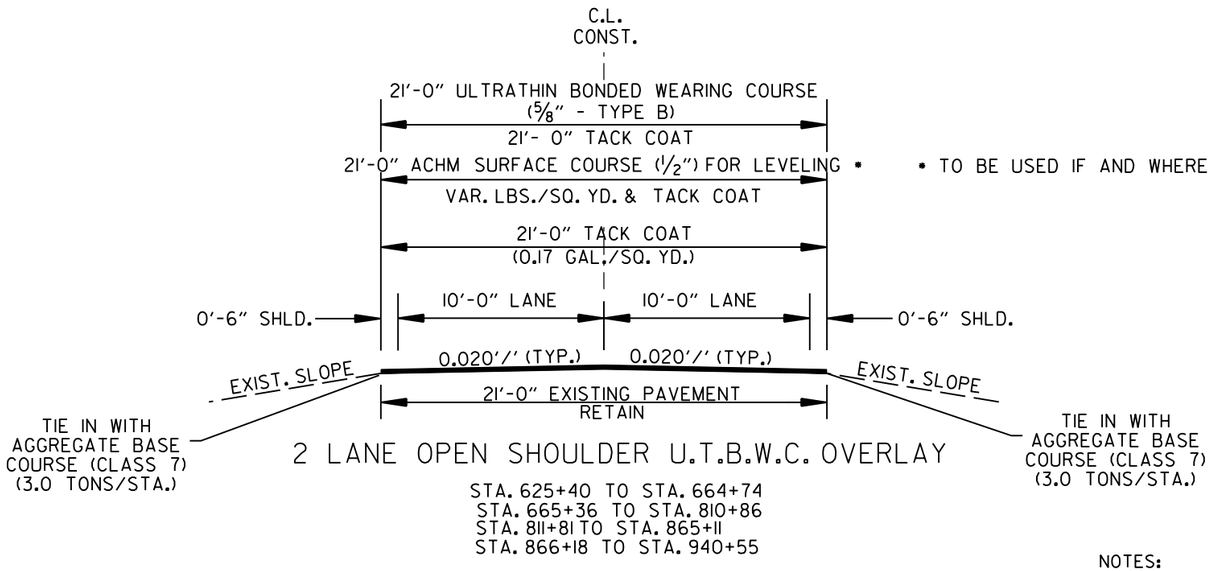
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 625+40 TO STA. 664+74
STA. 665+36 TO STA. 810+86
STA. 811+81 TO STA. 865+11
STA. 866+18 TO STA. 940+55

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
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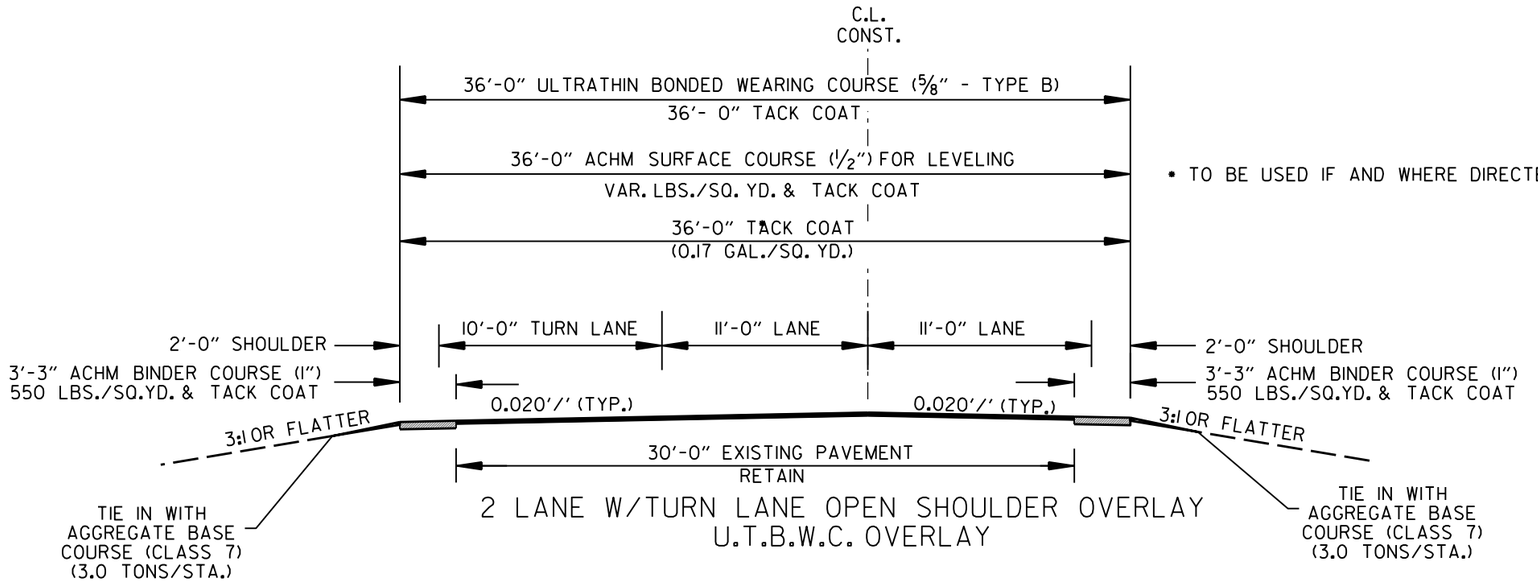
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

2 LANE W/TURN LANE OPEN SHOULDER OVERLAY U.T.B.W.C. OVERLAY

STA. 1083+23 TO STA. 1086+66

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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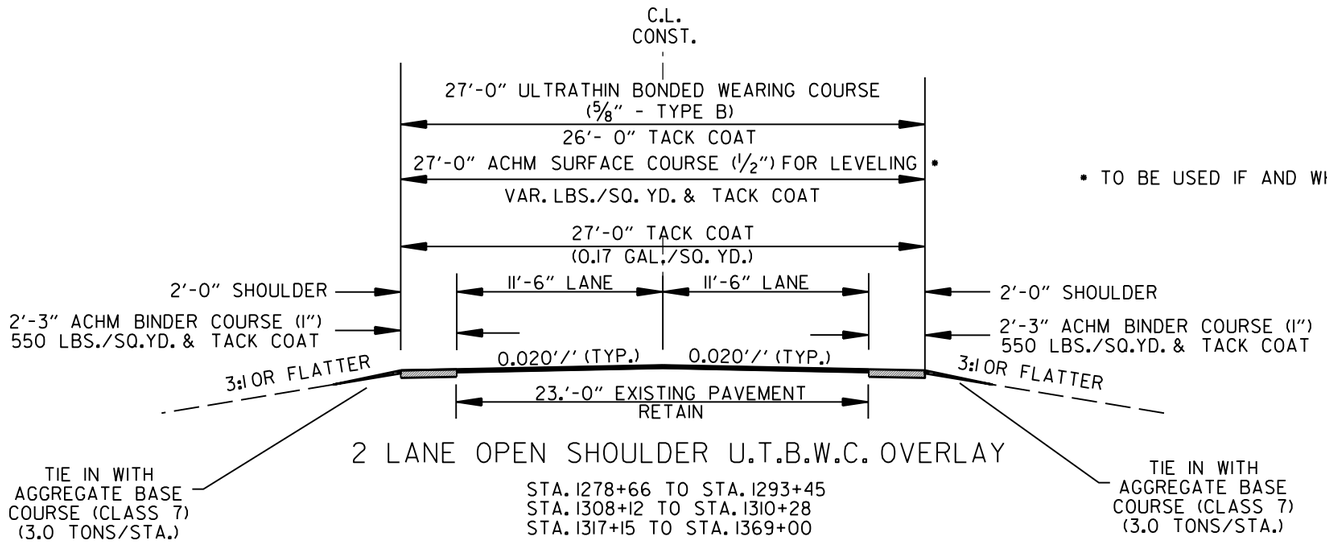
No. 8403
MARK B. SMITHEE



2 LANE OPEN SHOULDER U.T.B.W.C. OVERLAY

STA. 1278+66 TO STA. 1293+45
STA. 1308+12 TO STA. 1310+28
STA. 1317+15 TO STA. 1369+00

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

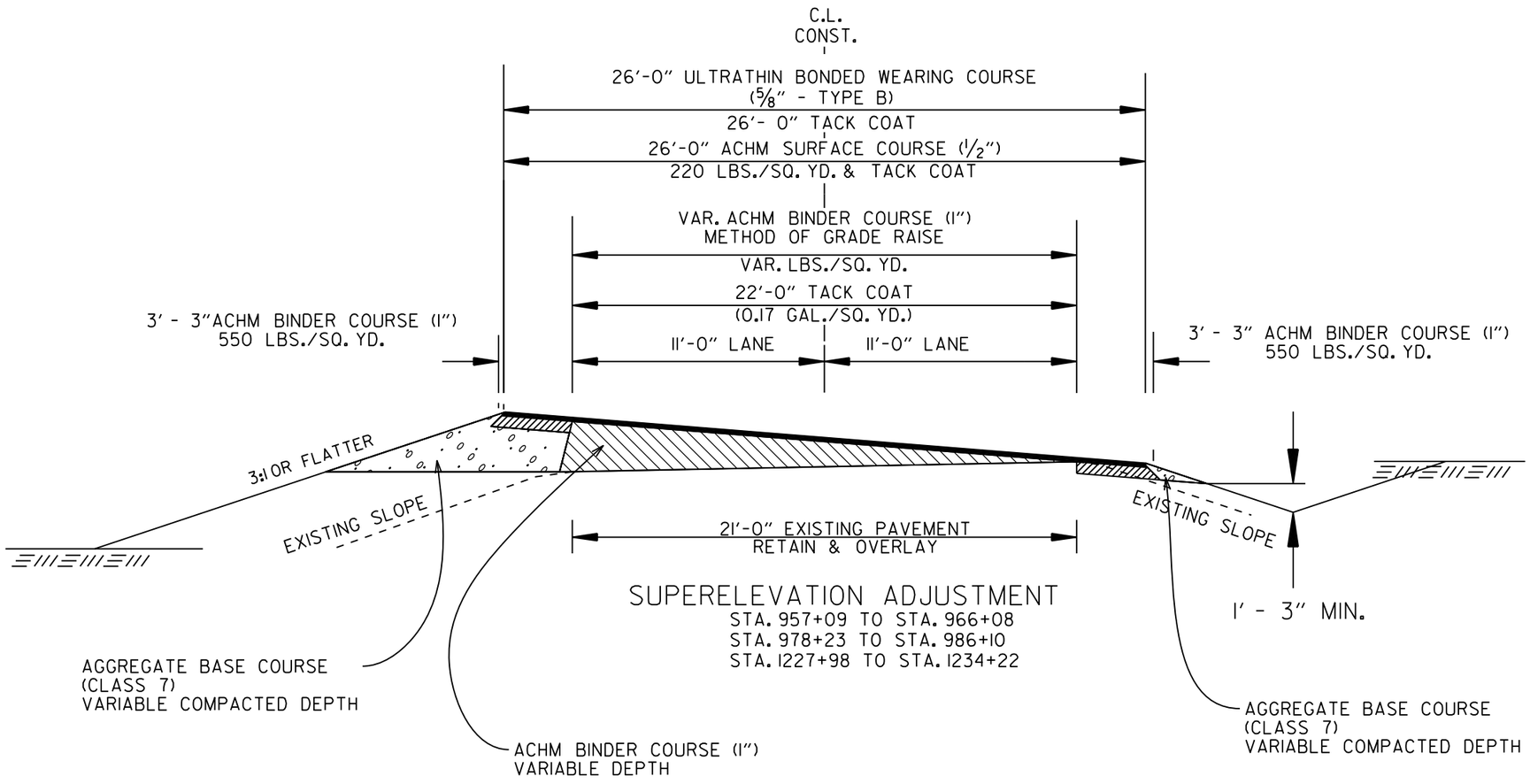
NOTES:

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATION FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
6. LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH SECTION 410.07 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	11	93

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

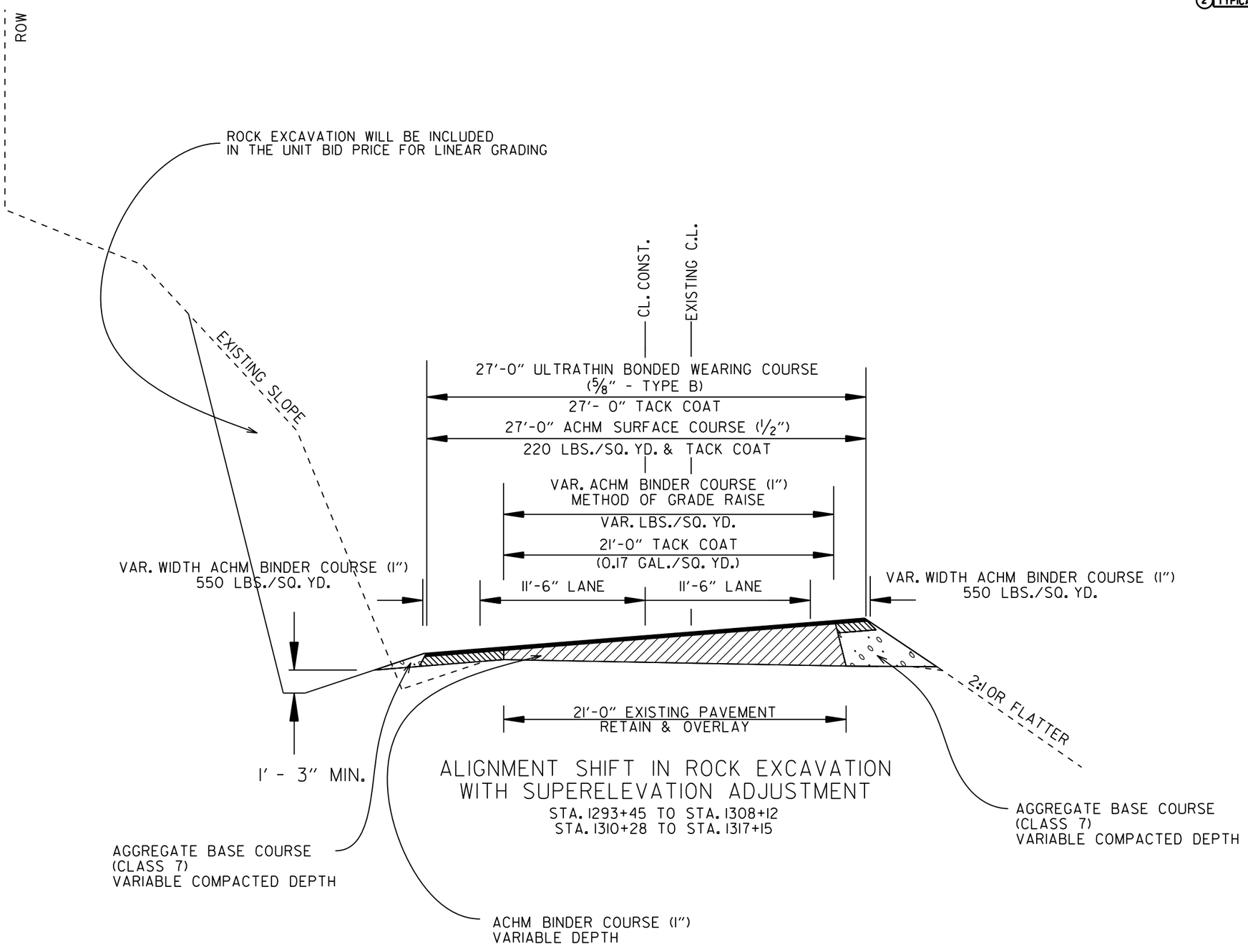


SUPERELEVATION ADJUSTMENT
STA. 957+09 TO STA. 966+08
STA. 978+23 TO STA. 986+10
STA. 1227+98 TO STA. 1234+22

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.		100974	12	93

(2) TYPICAL SECTIONS OF IMPROVEMENT

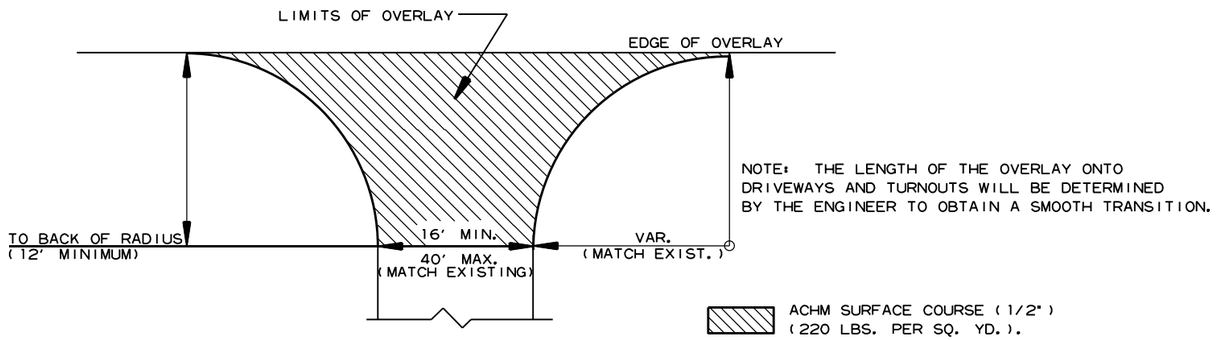
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



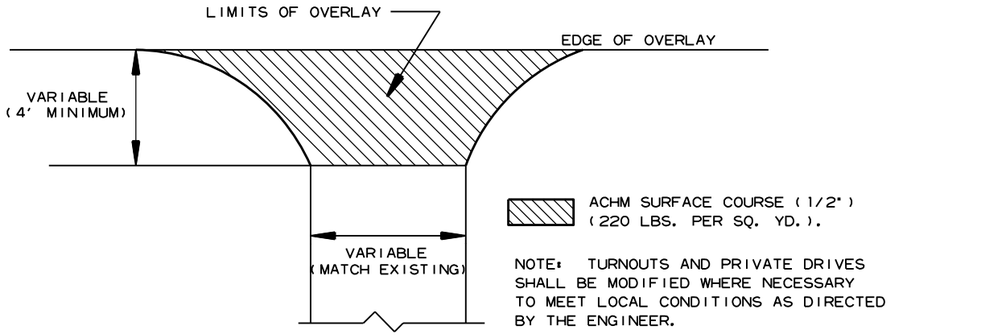
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	13	93

(2) SPECIAL DETAILS

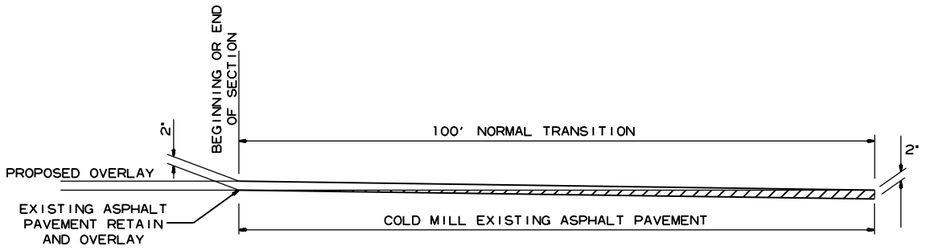
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



DETAIL FOR STATE HIGHWAY, CITY STREET, AND COUNTY ROAD TURNOUTS

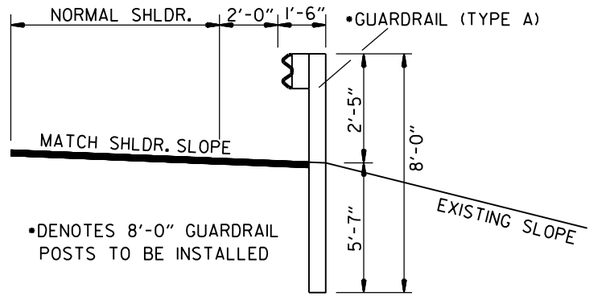


DETAIL FOR DRIVEWAY TURNOUTS



DETAIL FOR TRANSITIONS

NOTE: THE 100' TYPICAL CONNECTION LENGTH FOR TAPERING INTO EXISTING PAVEMENT MAY BE REDUCED BY THE ENGINEER WHEN USED FOR SIDE STREET CONNECTIONS.



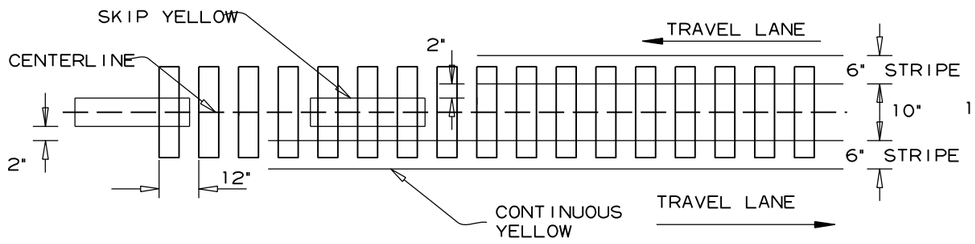
SECTION DETAIL FOR GUARDRAIL

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10 & GR-11 FOR ADDITIONAL INFORMATION.

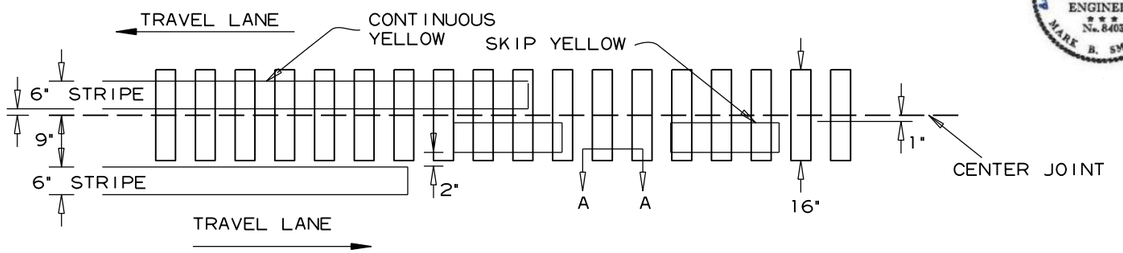
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	14	93

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

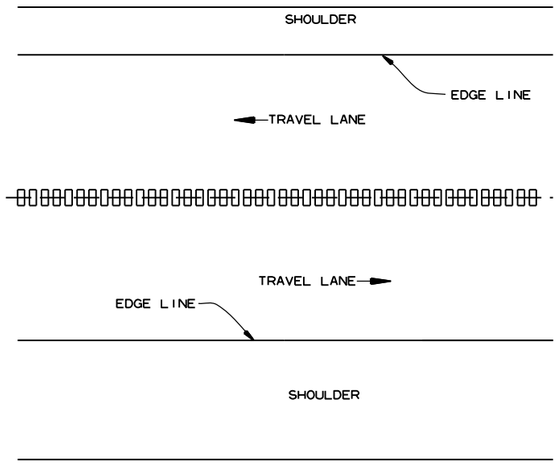


ASPHALT PAVEMENT

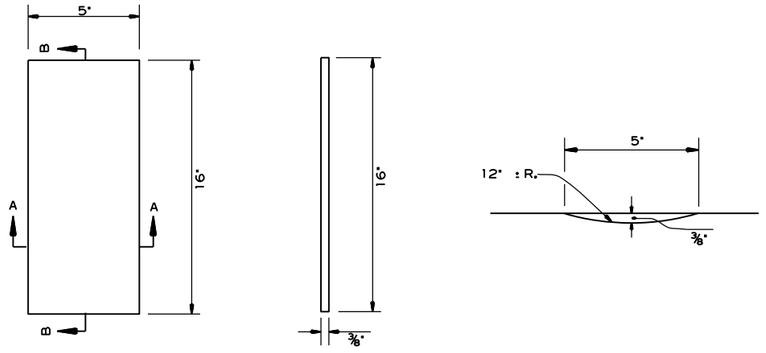


CONCRETE PAVEMENT

LOCATION PLAN OF CENTERLINE RUMBLE STRIPES



PLAN VIEW



PLAN SECTION B-B SECTION A-A

DETAILS OF CENTERLINE RUMBLE STRIPES

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE.
3. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SLOPE BREAKS MAY BE NECESSARY.

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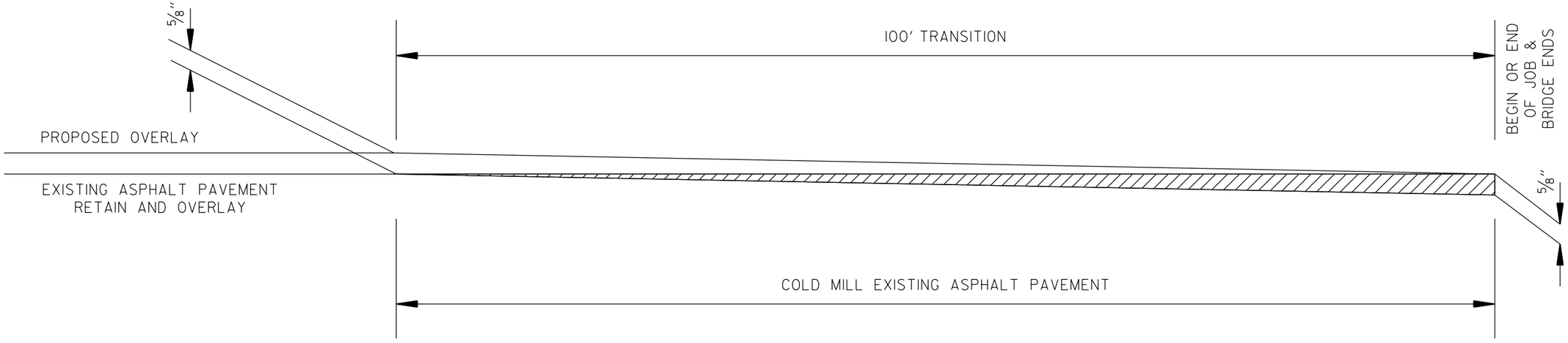
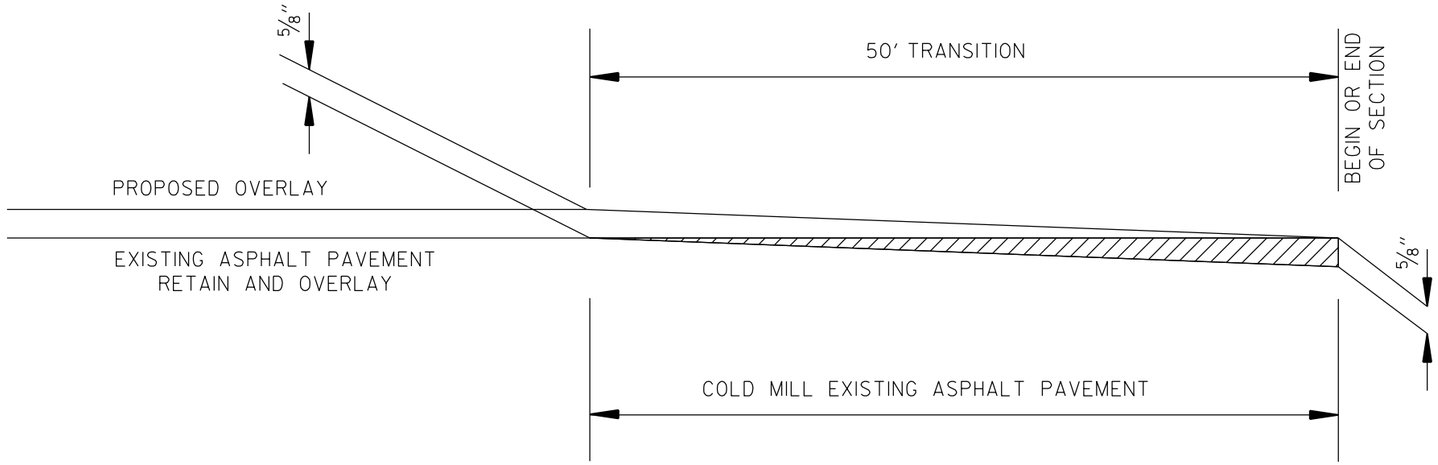
				6	ARK.			
				JOB NO.		100974	15	93

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



DETAIL FOR TRANSITION - MAIN LANES



DETAIL FOR TRANSITION - RAMPS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	16	93

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

SUPERELEVATION ADJUSTMENT.

PI = 961+64.005
Δ = 28°23'20"LT.
D = 05°25'12"
T = 0.066
L = 523.78
PC = 958+96.624
PT = 964+20.400
e = 0.066
LS = 250
Begin Superelevation = 957+09.124
Max superelevation = 959+59.124
Max superelevation = 963+57.900
End Superelevation = 966+07.900

CROSS SLOPE	STATION
NC	957+09.124
0.000%	957+47.003
2.000%	957+84.882
3.000%	958+22.760
4.000%	958+60.639
5.000%	958+98.518
6.000%	959+36.397
6.600%	959+59.124
6.600%	963+57.900
6.000%	963+80.627
5.000%	964+18.506
4.000%	964+56.385
3.000%	964+94.264
2.000%	965+32.142
0.000%	965+70.021
NC	966+07.900

PI = 982+41.028
Δ = 64°02'00"RT.
D = 15°33'19"
T = 230.31
L = 411.65
PC = 980+10.72
PT = 984+22.37
e = 0.089
LS = 250'
Begin Superelevation = 978+23.216
Max superelevation = 980+73.216
Max superelevation = 983+59.867
End Superelevation = 986+09.867

CROSS SLOPE	STATION
NC	978+23.216
0.000%	978+51.306
2.000%	978+79.396
3.000%	979+07.486
4.000%	979+35.576
5.000%	979+63.665
6.000%	979+91.755
7.000%	980+19.845
8.000%	980+47.935
8.900%	980+73.216
8.900%	983+59.867
8.000%	983+85.148
7.000%	984+13.238
6.000%	984+41.328
5.000%	984+69.418
4.000%	984+97.507
3.000%	985+25.597
2.000%	985+53.687
0.000%	985+81.777
NC	986+09.867

PI = 1231+14.425
Δ = 36°11'58"RT.
D = 14°31'02"
T = 129.000
L = 249.36
PC = 1229+85.427
PT = 1232+34.784
e = 0.086
LS = 250'
Begin Superelevation = 1227+97.927
Max superelevation = 1230+47.927
Max superelevation = 1231+72.284
End Superelevation = 1234+22.284

CROSS SLOPE	STATION
NC	1227+97.927
0.000%	1228+26.997
2.000%	1228+56.067
3.000%	1228+85.136
4.000%	1229+14.206
5.000%	1229+43.276
6.000%	1229+72.346
7.000%	1230+01.415
8.000%	1230+30.485
8.600%	1230+47.927
8.600%	1231+72.284
8.000%	1231+89.726
7.000%	1232+18.796
6.000%	1232+47.865
5.000%	1232+76.935
4.000%	1233+06.005
3.000%	1233+35.075
2.000%	1233+64.144
0.000%	1233+93.214
NC	1234+22.284

PI = 1298+22.423
Δ = 14°56'01"LT.
D = 02°17'31"
T = 327.66
LS = 651.6
PC = 1294+94.764
PT = 1301+46.367
e = 0.058
LS = 200
Begin Superelevation = 1293+44.764
Max superelevation = 1295+44.764
Max superelevation = 1300+96.367
End Superelevation = 1302+96.367

CROSS SLOPE	STATION
NC	1293+44.764
0.000%	1293+79.247
2.000%	1294+13.730
3.000%	1294+48.212
4.000%	1294+82.695
5.000%	1295+17.178
5.800%	1295+44.764
5.800%	1300+96.367
5.000%	1301+23.953
4.000%	1301+58.436
3.000%	1301+92.919
2.000%	1302+27.401
0.000%	1302+61.884
NC	1302+96.367

PI = 1304+57.431
Δ = 26°54'51"LT
D = 07°53'39"
T = 173.67
L = 340.94
PC = 1302+83.758
PT = 1306+24.694
e = 0.084
LS = 250'
Begin Superelevation = 1300+96.258
Max superelevation = 1303+46.258
Max superelevation = 1305+62.194
End Superelevation = 1308+12.194

CROSS SLOPE	STATION
NC	1300+96.258
0.000%	1301+26.020
2.000%	1301+55.782
3.000%	1301+85.544
4.000%	1302+15.306
5.000%	1302+45.068
6.000%	1302+74.829
7.000%	1303+04.591
8.000%	1303+34.353
8.400%	1303+46.258
8.400%	1305+62.194
8.000%	1305+74.099
7.000%	1306+03.861
6.000%	1306+33.623
5.000%	1306+63.384
4.000%	1306+93.146
3.000%	1307+22.908
2.000%	1307+52.670
0.000%	1307+82.432
NC	1308+12.194

PI = 1313+75.249
Δ = 29°59'39"LT.
D = 09°37'40"
T = 159.43
L = 311.54
PC = 1312+15.823
PT = 1315+27.359
e = 0.068
LS = 250
Begin Superelevation = 1310+28.323
Max superelevation = 1312+78.323
Max superelevation = 1314+64.859
End Superelevation = 1317+14.859

CROSS SLOPE	STATION
NC	1310+28.323
0.000%	1310+65.088
2.000%	1311+01.852
3.000%	1311+38.617
4.000%	1311+75.382
5.000%	1312+12.147
6.000%	1312+48.911
6.800%	1312+78.323
6.800%	1314+64.859
6.000%	1314+94.271
5.000%	1315+31.035
4.000%	1315+67.800
3.000%	1316+04.565
2.000%	1316+41.330
0.000%	1316+78.094
NC	1317+14.859

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				6	ARK.			
				JOB NO.		100974	17	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS
			NO.	SQ. FT.	EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	64.0		
W20-1	ROAD WORK 1000 FT.	48"x48"	4	64.0		
W20-1	ROAD WORK 500 FT.	48"x48"	4	64.0		
W20-1	ROAD WORK AHEAD	48"x48"	25	400.0		
G20-2	END ROAD WORK	48"x24"	29	232.0		
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	20.0		
R4-1	DO NOT PASS	24"x30"	64	320.0		
R4-2	PASS WITH CARE	24"x30"	31	155.0		
W21-5A	RIGHT SHOULDER CLOSED	36"x36"	2	18.0		
	VERTICAL PANELS				212	
	TRAFFIC DRUMS					200
TOTALS:				**1337.0**	**212**	**200**

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

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

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING				
				TYPE II	TYPE II	6"		12"	WORDS	ARROWS
		WORDS	ARROWS	(WHITE/RED)	(YEL/YEL)	WHITE	YELLOW	WHITE		
	LIN. FT.	EACH		EACH		LIN. FT.			EACH	
CONSTRUCTION PAVEMENT MARKINGS	513036									
CONSTRUCTION PAVEMENT MARKINGS (WORDS)		4								
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)			2							
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				20						
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)					1603					
THERMOPLASTIC PAVEMENT MARKING WHITE (6")						256518				
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")							256518			
THERMOPLASTIC PAVEMENT MARKING WHITE (8")										
THERMOPLASTIC PAVEMENT MARKING WHITE (12")								40		
THERMOPLASTIC PAVEMENT MARKING (WORDS)									4	
THERMOPLASTIC PAVEMENT MARKING (ARROWS)										2
TOTALS:	**513036**	**4**	**2**	**20**	**1603**	**256518**	**256518**	**40**	**4**	**2**

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

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

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				JOB NO.		100974	18	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

REMOVAL AND DISPOSAL OF SIDEDRAINS (BOX 1 of 2)

STATION	LOCATION	DESCRIPTION	PIPE CULVERTS (SIDEDRAINS)
			EACH
761+25	RIGHT	24" X 18" C.M. PIPE CULV'T	1
764+30	RIGHT	140' X 24" R.C. PIPE CULV'T	1
766+52	RIGHT	90' X 18" R.C. PIPE CULV'T	1
768+91	RIGHT	22' X 18" R.C. PIPE CULV'T	1
999+80	RIGHT	32' X 12" C.M. PIPE CULV'T	1
1020+93	RIGHT	28' X 24" C.M. PIPE CULV'T	1
1085+66	RIGHT	24' X 12" C.M. PIPE CULV'T	1
1088+75	RIGHT	24' X 18" C.M. PIPE CULV'T	1
1090+30	RIGHT	24' X 24" C.M. PIPE CULV'T	1
1094+22	RIGHT	24' X 18" C.M. PIPE CULV'T	1
1095+87	RIGHT	24' X 18" C.M. PIPE CULV'T	1
1101+00	RIGHT	24' X 18" C.M. PIPE CULV'T	1
1140+03	RIGHT	24' X 18" C.M. PIPE CULV'T	1
1146+37	RIGHT	30' X 18" C.M. PIPE CULV'T	1
1177+46	RIGHT	24' X 18" C.M. PIPE CULV'T	1
970+80	LEFT	18" X 32' C.M. PIPE CULV'T	1
972+86	LEFT	18" X 24' R.C. PIPE CULV'T	1
980+37	LEFT	18" X 24' C.M. PIPE CULV'T	1
981+52	LEFT	18" X 24' C.M. PIPE CULV'T	1
983+67	LEFT	24" X 24' C.M. PIPE CULV'T	1
1028+81	LEFT	24" X 44' R.C. PIPE CULV'T	1
1030+77	LEFT	24" X 50' C.M. PIPE CULV'T	1
1083+37	LEFT	18" X 64' C.M. PIPE CULV'T	1
1095+82	LEFT	18" X 22' C.M. PIPE CULV'T	1
1099+22	LEFT	18" X 24' C.M. PIPE CULV'T	1
1104+52	LEFT	18" X 23' C.M. PIPE CULV'T	1
1125+71	LEFT	18" X 30' C.M. PIPE CULV'T	1
1126+73	LEFT	18" X 30' C.M. PIPE CULV'T	1
1139+58	LEFT	24" X 30' C.M. PIPE CULV'T	1
1150+00	LEFT	12" X 24' C.M. PIPE CULV'T	1
1169+40	LEFT	12" X 24' C.M. PIPE CULV'T	1
1207+59	LEFT	18" X 48' C.M. PIPE CULV'T	1
1211+39	LEFT	18" X 32' C.M. PIPE CULV'T	1
1252+72	LEFT	24" X 24' C.M. PIPE CULV'T	1
1275+14	LEFT	18" X 50' R.C. PIPE CULV'T	1
1276+30	LEFT	18" X 26' R.C. PIPE CULV'T	1
1277+10	LEFT	18" X 24' C.M. PIPE CULV'T	1
1293+10	LEFT	18" X 24' C.M. PIPE CULV'T	1
1309+13	LEFT	18" X 54' C.M. PIPE CULV'T	1
1319+20	LEFT	18" X 70' C.M. PIPE CULV'T	1
1338+39	LEFT	30" X 40' C.M. PIPE CULV'T	1
1340+08	LEFT	18" X 18' C.M. PIPE CULV'T	1
1354+79	LEFT	18" X 34' C.M. PIPE CULV'T	1
1356+38	LEFT	18" X 36' C.M. PIPE CULV'T	1
1363+18	LEFT	18" X 24' C.M. PIPE CULV'T	1
1363+74	LEFT	18" X 19' C.M. PIPE CULV'T	1
1364+41	LEFT	18" X 21' C.M. PIPE CULV'T	1
SUBTOTALS: (BOX 1 OF 2)			**47**

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

REMOVAL AND DISPOSAL OF PIPE CULVERTS (BOX 2 OF 2)

STATION	LOCATION	DESCRIPTION	PIPE CULVERTS (CROSSDRAINS)
			EACH
439+32	HWY. 25	24" X 55' C.M. PIPE CULV'T	1
454+54	HWY. 25	30" X 56' C.M. PIPE CULV'T	1
463+80	HWY. 25	24" X 60' R.C. PIPE CULV'T	1
480+34	HWY. 25	36" X 60' C.M. PIPE CULV'T	1
488+39	HWY. 25	18" X 60' C.M. PIPE CULV'T	1
497+12	HWY. 25	48" X 60' DBL. R.C. PIPE CULV'T	2
513+27	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
524+60	HWY. 25	24" X 54' C.M. PIPE CULV'T	1
605+29	HWY. 25	24" X 36' C.M. PIPE CULV'T	1
621+33	HWY. 25	24" X 42' C.M. PIPE CULV'T	1
648+07	HWY. 25	24" X 48' DBL. R.C. PIPE CULV'T	2
701+18	HWY. 25	24" X 50' DBL. R.C. PIPE CULV'T	2
711+77	HWY. 25	30" X 44' C.M. PIPE CULV'T	1
719+60	HWY. 25	24" X 46' TRIP. R.C. PIPE CULV'T	3
761+00	HWY. 25	30" X 48' C.M. PIPE CULV'T	1
782+48	HWY. 25	24" X 45' C.M. PIPE CULV'T	1
789+59	HWY. 25	24" X 58' C.M. PIPE CULV'T	1
794+30	HWY. 25	24" X 68' C.M. PIPE CULV'T	1
820+90	HWY. 25	36" X 52' C.M. PIPE CULV'T	1
821+63	HWY. 25	48" X 46' R.C. PIPE CULV'T	1
835+17	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
846+50	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
893+27	HWY. 25	24" X 40' R.C. PIPE CULV'T	1
903+89	HWY. 25	30" X 42' C.M. PIPE CULV'T	1
918+58	HWY. 25	24" X 46' C.M. PIPE CULV'T	1
929+76	HWY. 25	42" X 60' R.C. PIPE CULV'T	1
954+31	HWY. 25	24" X 52' R.C. PIPE CULV'T	1
968+38	HWY. 25	24" X 50' DBL. R.C. PIPE CULV'T	2
982+20	HWY. 25	24" X 50' DBL. R.C. PIPE CULV'T	2
989+06	HWY. 25	24" X 48' R.C. PIPE CULV'T	1
995+40	HWY. 25	24" X 50' R.C. PIPE CULV'T	1
1006+86	HWY. 25	24" X 50' R.C. PIPE CULV'T	1
1023+31	HWY. 25	36" X 50' C.M. PIPE CULV'T	1
1031+88	HWY. 25	36" X 48' R.C. PIPE CULV'T	1
1044+04	HWY. 25	24" X 50' C.M. PIPE CULV'T	1
1053+62	HWY. 25	24" X 50' R.C. PIPE CULV'T	1
1058+65	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
1065+50	HWY. 25	24" X 48' R.C. PIPE CULV'T	1
1076+78	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
1080+88	HWY. 25	24" X 48' C.M. PIPE CULV'T	1
1126+25	HWY. 25	24" X 48' R.C. PIPE CULV'T	1
1140+97	HWY. 25	24" X 48' R.C. PIPE CULV'T	1
1164+66	HWY. 25	18" X 56' C.M. PIPE CULV'T	1
1175+62	HWY. 25	18" X 48' C.M. PIPE CULV'T	1
1182+30	HWY. 25	18" X 52' C.M. PIPE CULV'T	1
1217+30	HWY. 25	18" X 50' C.M. PIPE CULV'T	1
1298+60	HWY. 25	36" X 54' C.M. PIPE CULV'T	1
1325+13	HWY. 25	36" X 75' R.C. PIPE CULV'T	1
1346+90	HWY. 25	36" X 48' R.C. PIPE CULV'T	1
1355+07	HWY. 25	24" X 52' R.C. PIPE CULV'T	1
1366+98	HWY. 25	30" X 46' R.C. PIPE CULV'T	1
SUBTOTALS: (BOX 1 OF 2)			**47**
SUBTOTALS: (BOX 2 OF 2)			**58**
TOTALS:			**105**

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1)	16'-0" GATES
			LIN. FT.	EACH
940+55	953+57	LT. OF HWY. 25	1302	
954+19	970+22	LT. OF HWY. 25	1603	
976+85	977+94	LT. OF HWY. 25	109	
983+74	984+04	LT. OF HWY. 25	30	
986+52	986+81	LT. OF HWY. 25	29	
986+81	991+20	LT. OF HWY. 25	439	
994+17	1005+36	LT. OF HWY. 25	1119	
1004+50		LT. OF HWY. 25		1
1011+10	1028+89	LT. OF HWY. 25	1779	
1013+37		LT. OF HWY. 25		1
1032+26	1034+79	LT. OF HWY. 25	253	
1041+53	1047+85	LT. OF HWY. 25	632	
1049+50	1059+40	LT. OF HWY. 25	990	
1059+40	1062+96	LT. OF HWY. 25	356	
1062+96	1067+71	LT. OF HWY. 25	475	
1071+82	1076+85	LT. OF HWY. 25	503	
1076+59		LT. OF HWY. 25		1
1151+81	1157+67	LT. OF HWY. 25	586	
1161+10	1168+62	LT. OF HWY. 25	752	
1171+25	1173+93	LT. OF HWY. 25	268	
1174+04		LT. OF HWY. 25		1
1175+85	1196+66	LT. OF HWY. 25	2081	
1229+50	1230+72	LT. OF HWY. 25	122	
1230+59		LT. OF HWY. 25		1
1235+93	1258+45	LT. OF HWY. 25	2252	
1252+80		LT. OF HWY. 25		1
1285+76	1292+22	LT. OF HWY. 25	646	
960+55	980+18	RT. OF HWY 25	1963	
977+27		RT. OF HWY 25		1
1009+53	1020+16	RT. OF HWY 25	1063	
1021+32	1034+10	RT. OF HWY 25	1278	
1030+66		RT. OF HWY 25		1
1041+51	1059+36	RT. OF HWY 25	1785	
1048+75		RT. OF HWY 25		1
1057+44		RT. OF HWY 25		1
1059+36		RT. OF HWY 25		1
1075+59	1080+04	RT. OF HWY 25	445	
1078+25		RT. OF HWY 25		1
1158+61	1163+88	RT. OF HWY 25	527	
1169+59	1196+07	RT. OF HWY 25	2648	
1189+96		RT. OF HWY 25		1
1229+77	1232+06	RT. OF HWY 25	229	
1231+99		RT. OF HWY 25		1
1251+43	1254+64	RT. OF HWY 25	321	
1288+37	1308+01	RT. OF HWY 25	1964	
1300+88		RT. OF HWY 25		1
TOTALS:			**28549**	**15**

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	19	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS V)					FLARED END SECTIONS FOR R.C. PIPE CULVERTS					DROP INLETS TYPE	SOLID SODDING	WATER	STD. DWG. NOS.
		24"	30"	36"	42"	48"	24"	30"	36"	42"	48"	ST			
		LIN. FT.					EACH					EACH	SQ.YD.	M.GAL.	
439+32	Install 24" x 55' R.C. PIPE CULV'T w/ D.I.	55					2					1	8	0.10	FES-1,FES-2,PCC-1,FPC-9
454+54	Install 30" x 60' R.C. PIPE CULV'T		60					2					13	0.16	FES-1,FES-2,PCC-1
463+80	Install 24" x 60' R.C. PIPE CULV'T	60					2						8	0.10	FES-1,FES-2,PCC-1
480+34	Install 36" x 60' R.C. PIPE CULV'T			60					2				17	0.21	FES-1,FES-2,PCC-1
488+39	Install 24" x 60' R.C. PIPE CULV'T	60					2						8	0.10	FES-1,FES-2,PCC-1
497+12	Install 48" x 60' DBL. R.C. PIPE CULV'T					120					4		31	0.39	FES-1,FES-2,PCC-1
513+27	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
524+60	Install 24" x 54' R.C. PIPE CULV'T	54					2						8	0.10	FES-1,FES-2,PCC-1
605+29	Install 24" x 36' R.C. PIPE CULV'T	36					2						8	0.10	FES-1,FES-2,PCC-1
621+33	Install 24" x 42' R.C. PIPE CULV'T	42					2						8	0.10	FES-1,FES-2,PCC-1
648+07	Install 24" x 48' DBL. R.C. PIPE CULV'T	96					4						9	0.11	FES-1,FES-2,PCC-1
701+18	Install 24" x 50' DBL. R.C. PIPE CULV'T	100					4						8	0.10	FES-1,FES-2,PCC-1
711+77	Install 30" x 44' R.C. PIPE CULV'T		44					2					13	0.16	FES-1,FES-2,PCC-1
719+60	Install 36" x 50' DBL. R.C. PIPE CULV'T			100					4				18	0.23	FES-1,FES-2,PCC-1
761+00	Install 30" x 52' DBL. R.C. PIPE CULV'T		104					4					14	0.18	FES-1,FES-2,PCC-1
782+48	Install 24" x 45' R.C. PIPE CULV'T	45					2						8	0.10	FES-1,FES-2,PCC-1
789+59	Install 24" x 56' R.C. PIPE CULV'T	56					2						8	0.10	FES-1,FES-2,PCC-1
794+30	Install 24" x 68' R.C. PIPE CULV'T	68					2						8	0.10	FES-1,FES-2,PCC-1
820+90	Install 48" x 52' R.C. PIPE CULV'T					52					2		29	0.37	FES-1,FES-2,PCC-1
821+63	Install 48" x 46' R.C. PIPE CULV'T					46					2		29	0.37	FES-1,FES-2,PCC-1
835+17	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
846+50	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
893+27	Install 24" x 42' R.C. PIPE CULV'T	42					2						8	0.10	FES-1,FES-2,PCC-1
903+89	Install 30" x 42' R.C. PIPE CULV'T		42					2					13	0.16	FES-1,FES-2,PCC-1
918+58	Install 24" x 46' R.C. PIPE CULV'T	46					2						8	0.10	FES-1,FES-2,PCC-1
929+76	Install 42" x 60' R.C. PIPE CULV'T				60					2			23	0.29	FES-1,FES-2,PCC-1
954+31	Install 24" x 52' R.C. PIPE CULV'T	52					2						8	0.10	FES-1,FES-2,PCC-1
968+38	Install 24" x 50' DBL. R.C. PIPE CULV'T	100					4						9	0.11	FES-1,FES-2,PCC-1
982+20	Install 24" x 50' DBL. R.C. PIPE CULV'T	100					4						9	0.11	FES-1,FES-2,PCC-1
989+06	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
995+40	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1006+86	Install 24" x 50' R.C. PIPE CULV'T	50					2						8	0.10	FES-1,FES-2,PCC-1
1023+31	Install 36" x 50' R.C. PIPE CULV'T			50					2				17	0.21	FES-1,FES-2,PCC-1
1031+88	Install 36" x 48' R.C. PIPE CULV'T			48					2				17	0.21	FES-1,FES-2,PCC-1
1044+04	Install 24" x 50' R.C. PIPE CULV'T	50					2						8	0.10	FES-1,FES-2,PCC-1
1053+62	Install 24" x 50' R.C. PIPE CULV'T	50					2						8	0.10	FES-1,FES-2,PCC-1
1058+65	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1065+50	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1076+78	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1080+88	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1126+25	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1140+97	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1164+66	Install 24" x 56' R.C. PIPE CULV'T	56					2						8	0.10	FES-1,FES-2,PCC-1
1175+62	Install 24" x 48' R.C. PIPE CULV'T	48					2						8	0.10	FES-1,FES-2,PCC-1
1182+30	Install 24" x 52' R.C. PIPE CULV'T	52					2						8	0.10	FES-1,FES-2,PCC-1
1217+30	Install 24" x 50' R.C. PIPE CULV'T	50					2						8	0.10	FES-1,FES-2,PCC-1
1298+60	Install 36" x 54' R.C. PIPE CULV'T			54					2				17	0.21	FES-1,FES-2,PCC-1
1319+91	Install 36" x 75' R.C. PIPE CULV'T			75					2				17	0.21	FES-1,FES-2,PCC-1
1325+13	Install 36" x 75' R.C. PIPE CULV'T			75					2				17	0.21	FES-1,FES-2,PCC-1
1346+90	Install 36" x 48' R.C. PIPE CULV'T			48					2				17	0.21	FES-1,FES-2,PCC-1
1355+07	Install 24" x 52' R.C. PIPE CULV'T	52					2						8	0.10	FES-1,FES-2,PCC-1
1366+98	Install 30" x 52' R.C. PIPE CULV'T		52					2					13	0.16	FES-1,FES-2,PCC-1
TOTALS:		**1948**	**302**	**510**	**60**	**218**	**78**	**12**	**18**	**2**	**8**	**1**	**598**	**7.47**	

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.

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
439+32	HWY. 25	8.50	20	4.7
454+54	HWY. 25	9.08	20	5.0
463+80	HWY. 25	8.50	20	4.7
480+34	HWY. 25	9.67	20	5.4
488+39	HWY. 25	8.50	20	4.7
497+12	HWY. 25	19.67	20	10.9
513+27	HWY. 25	8.50	20	4.7
524+60	HWY. 25	8.50	20	4.7
605+29	HWY. 25	8.50	20	4.7
621+33	HWY. 25	8.50	20	4.7
648+07	HWY. 25	14.00	20	7.8
701+18	HWY. 25	14.00	20	7.8
711+77	HWY. 25	9.08	20	5.0
719+60	HWY. 25	17.33	20	9.6
761+00	HWY. 25	15.67	20	8.7
782+48	HWY. 25	8.50	20	4.7
789+59	HWY. 25	8.50	20	4.7
794+30	HWY. 25	8.50	20	4.7
820+90	HWY. 25	10.83	20	6.0
821+63	HWY. 25	10.83	20	6.0
835+17	HWY. 25	8.50	20	4.7
846+50	HWY. 25	8.50	20	4.7
893+27	HWY. 25	8.50	20	4.7
903+89	HWY. 25	9.08	20	5.0
918+58	HWY. 25	8.50	20	4.7
929+76	HWY. 25	10.25	20	5.7
954+31	HWY. 25	8.50	20	4.7
968+38	HWY. 25	14.00	20	7.8
982+20	HWY. 25	14.00	20	7.8
989+06	HWY. 25	8.50	20	4.7
995+40	HWY. 25	8.50	20	4.7
1006+86	HWY. 25	8.50	20	4.7
1023+31	HWY. 25	9.67	20	5.4
1031+88	HWY. 25	9.67	20	5.4
1044+04	HWY. 25	8.50	20	4.7
1053+62	HWY. 25	8.50	20	4.7
1058+65	HWY. 25	8.50	20	4.7
1065+50	HWY. 25	8.50	20	4.7
1076+78	HWY. 25	8.50	20	4.7
1080+88	HWY. 25	8.50	20	4.7
1126+25	HWY. 25	8.50	20	4.7
1140+97	HWY. 25	8.50	20	4.7
1164+66	HWY. 25	8.50	20	4.7
1175+62	HWY. 25	8.50	20	4.7
1182+30	HWY. 25	8.50	20	4.7
1217+30	HWY. 25	8.50	20	4.7
1298+60	HWY. 25	9.67	23	6.2
1319+91	HWY. 25	9.67	23	6.2
1325+13	HWY. 25	9.67	23	6.2
1346+90	HWY. 25	9.67	23	6.2
1355+07	HWY. 25	8.50	23	5.4
1366+98	HWY. 25	9.08	23	5.8
TOTAL:				**286.3**

AVG. DEPTH = 9"

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	300
ENGINEER	
TOTAL:	**300**

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	20	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHER

DRIVEWAYS & TURNOUTS (BOX 1 OF 2)

STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS				STANDARD DRAWINGS
								18"	24"	30"	36"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.				
953+95	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
970+80	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
972+86	LT.	HWY. 25	16	44.80				28				PCC-1, PCM-1, PCP-1, PCP-2
977+29	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
980+37	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
981+52	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
982+57	LT.	HWY. 25 - CO. RD. 264	22		155.13	17.06	63.34					PCC-1, PCM-1, PCP-1, PCP-2
983+67	LT.	HWY. 25	16		44.80	4.93	18.29		28			PCC-1, PCM-1, PCP-1, PCP-2
985+97	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
991+28	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
992+73	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1004+53	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1005+57	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1008+42	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1013+35	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1028+81	LT.	HWY. 25	20		52.80	5.81	21.56		28			PCC-1, PCM-1, PCP-1, PCP-2
1030+77	LT.	HWY. 25 - CO. RD. 234	20		146.69	16.14	59.90		28			PCC-1, PCM-1, PCP-1, PCP-2
1034+91	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1035+94	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1039+55	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1040+10	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1040+42	LT.	HWY. 25 - CO. RD 262	20		146.69	16.14	59.90					PCC-1, PCM-1, PCP-1, PCP-2
1049+05	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1058+99	LT.	HWY. 25	16	44.80								PCC-1, PCM-1, PCP-1, PCP-2
1061+21	LT.	HWY. 25	16	44.80								PCC-1, PCM-1, PCP-1, PCP-2
1068+05	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1070+49	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1083+37	LT.	HWY. 25	32		76.80	8.45	31.36	34				PCC-1, PCM-1, PCP-1, PCP-2
1094+26	LT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1095+82	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1099+22	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1104+52	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1112+09	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1125+71	LT.	HWY. 25	26		64.80	7.13	26.46	28				PCC-1, PCM-1, PCP-1, PCP-2
1126+73	LT.	HWY. 25	26		64.80	7.13	26.46	28				PCC-1, PCM-1, PCP-1, PCP-2
1129+58	LT.	HWY. 25	40		92.80	10.21	37.89					PCC-1, PCM-1, PCP-1, PCP-2
1139+58	LT.	HWY. 25	24		60.80	6.69	24.83		28			PCC-1, PCM-1, PCP-1, PCP-2
1141+45	LT.	HWY. 25	30		72.80	8.01	29.73					PCC-1, PCM-1, PCP-1, PCP-2
1150+00	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1151+35	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1158+38	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1160+78	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1169+40	LT.	HWY. 25	20		52.80	5.81	21.56	28				PCC-1, PCM-1, PCP-1, PCP-2
1174+09	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1207+59	LT.	HWY. 25	24		60.80	6.69	24.83	28				PCC-1, PCM-1, PCP-1, PCP-2
1208+44	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1209+73	LT.	HWY. 25 - CO. RD. 238	20		146.69	16.14	59.90					PCC-1, PCM-1, PCP-1, PCP-2
1211+39	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1230+60	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1252+72	LT.	HWY. 25	16		44.80	4.93	18.29		28			PCC-1, PCM-1, PCP-1, PCP-2
1258+90	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1261+10	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1264+13	LT.	HWY. 25	30		72.80	8.01	29.73					PCC-1, PCM-1, PCP-1, PCP-2
1266+00	LT.	HWY. 25	34		80.80	8.89	32.99					PCC-1, PCM-1, PCP-1, PCP-2
1267+33	LT.	HWY. 25	36		84.80	9.33	34.63					PCC-1, PCM-1, PCP-1, PCP-2
1268+70	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1270+47	LT.	HWY. 25	22		56.80	6.25	23.19					PCC-1, PCM-1, PCP-1, PCP-2
1272+00	LT.	HWY. 25	40		92.80	10.21	37.89					PCC-1, PCM-1, PCP-1, PCP-2
1272+98	LT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1275+14	LT.	HWY. 25	50		112.80	12.41	46.06	52				PCC-1, PCM-1, PCP-1, PCP-2
1276+30	LT.	HWY. 25	20		52.80	5.81	21.56	28				PCC-1, PCM-1, PCP-1, PCP-2
1277+10	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1279+04	LT.	HWY. 25 - CO. RD. 233	20		146.69	16.14	59.90					PCC-1, PCM-1, PCP-1, PCP-2
1293+10	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1309+13	LT.	HWY. 25	40		92.80	10.21	37.89	42				PCC-1, PCM-1, PCP-1, PCP-2
1319+20	LT.	HWY. 25	40		92.80	10.21	37.89	42				PCC-1, PCM-1, PCP-1, PCP-2
1338+39	LT.	HWY. 25	16		44.80	4.93	18.29			28		PCC-1, PCM-1, PCP-1, PCP-2
1340+08	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1354+79	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1356+38	LT.	HWY. 25 - CO. RD. 296	24		163.58	17.99	66.80	28				PCC-1, PCM-1, PCP-1, PCP-2
1363+18	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1363+74	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1364+41	LT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1386+81	LT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1376+62	LT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
SUBTOTALS (BOX 1 OF 2):				**134.40**	**4418.27**	**486.15**	**1803.98**	**842**	**140**	**28**		

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	21	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

DRIVEWAYS & TURNOUTS (BOX 2 OF 2)

STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS				STANDARD DRAWINGS
								18"	24"	30"	36"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.				
761+25	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
764+30	RT.	HWY. 25	100		484.47	53.29	197.83		200			PCC-1, PCM-1, PCP-1, PCP-2
766+52	RT.	HWY. 25	60		132.80	14.61	54.23	124				PCC-1, PCM-1, PCP-1, PCP-2
768+91	RT.	HWY. 25	16		44.80	4.93	18.29	56				PCC-1, PCM-1, PCP-1, PCP-2
942+53	RT.	HWY. 25 - CO. RD. 305	40		92.80	10.21	37.89					PCC-1, PCM-1, PCP-1, PCP-2
943+54	RT.	HWY. 25	40		92.80	10.21	37.89					PCC-1, PCM-1, PCP-1, PCP-2
959+31	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
977+29	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
986+65	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
987+56	RT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
988+55	RT.	HWY. 25	26		64.80	7.13	26.46					PCC-1, PCM-1, PCP-1, PCP-2
999+80	RT.	HWY. 25	20		52.80	5.81	21.56	28				PCC-1, PCM-1, PCP-1, PCP-2
1003+82	RT.	HWY. 25	110		232.80	25.61	95.06					PCC-1, PCM-1, PCP-1, PCP-2
1007+00	RT.	HWY. 25	70		152.80	16.81	62.39					PCC-1, PCM-1, PCP-1, PCP-2
1020+93	RT.	HWY. 25	20		52.80	5.81	21.56		28			PCC-1, PCM-1, PCP-1, PCP-2
1030+70	RT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1035+11	RT.	HWY. 25 - CO. RD. 301	25		167.80	18.46	68.52					PCC-1, PCM-1, PCP-1, PCP-2
1036+44	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1037+05	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1040+45	RT.	HWY. 25	28	68.80								PCC-1, PCM-1, PCP-1, PCP-2
1048+85	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1057+43	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1060+79	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1070+48	RT.	HWY. 25	50		112.80	12.41	46.06					PCC-1, PCM-1, PCP-1, PCP-2
1078+32	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1083+96	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1085+66	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1088+75	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1090+30	RT.	HWY. 25	16		44.80	4.93	18.29		28			PCC-1, PCM-1, PCP-1, PCP-2
1094+22	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1095+87	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1101+00	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1112+46	RT.	HWY. 25 - CO. RD. 303	28		180.47	19.85	73.69					PCC-1, PCM-1, PCP-1, PCP-2
1120+80	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1125+56	RT.	HWY. 25	40		92.80	10.21	37.89					PCC-1, PCM-1, PCP-1, PCP-2
1129+52	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1140+03	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1146+37	RT.	HWY. 25	20		52.80	5.81	21.56	28				PCC-1, PCM-1, PCP-1, PCP-2
1149+83	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1158+11	RT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1165+92	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1173+32	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1177+46	RT.	HWY. 25	16		44.80	4.93	18.29	28				PCC-1, PCM-1, PCP-1, PCP-2
1189+98	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1221+18	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1223+96	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1256+19	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1256+60	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1258+70	RT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1264+49	RT.	HWY. 25 - CO. RD. 301	20		146.69	16.14	59.90					PCC-1, PCM-1, PCP-1, PCP-2
1264+91	RT.	HWY. 25 - Co. RD. 301	20		146.69	16.14	59.90					PCC-1, PCM-1, PCP-1, PCP-2
1267+90	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1270+98	RT.	HWY. 25	22		56.80	6.25	23.19					PCC-1, PCM-1, PCP-1, PCP-2
1275+28	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1276+65	RT.	HWY. 25	20		52.80	5.81	21.56					PCC-1, PCM-1, PCP-1, PCP-2
1279+31	RT.	HWY. 25	100		212.80	23.41	86.89					PCC-1, PCM-1, PCP-1, PCP-2
1292+17	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1308+22	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1353+58	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
1365+67	RT.	HWY. 25	16		44.80	4.93	18.29					PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES							1000.00					
SUBTOTALS (BOX 1 OF 2):				134.40	4418.27	486.15	1803.98	842	140	28		
SUBTOTALS (BOX 2 OF 2):				68.80	4405.32	484.70	2798.71	488	256			
TOTALS:				**203**	**8824**	**971**	**4603**	**1330**	**396**	**28**		

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	22	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

RUMBLE STRIPES IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPES IN ASPHALT SHOULDERS
			LIN.FT.
109+41	391+00	SHOULDER LT	28159
109+41	391+00	SHOULDER RT	28159
464+00	572+05	SHOULDER LT	10805
464+00	572+05	SHOULDER RT	10805
579+05	652+28	SHOULDER LT	7323
579+05	652+28	SHOULDER RT	7323
716+86	810+86	SHOULDER LT	9400
716+86	810+86	SHOULDER RT	9400
811+81	865+11	SHOULDER LT	5330
811+81	865+11	SHOULDER RT	5330
866+18	947+09	SHOULDER LT	8091
866+18	947+09	SHOULDER RT	8091
947+47	1241+00	SHOULDER LT	29353
947+47	1241+00	SHOULDER RT	29353
1292+00	1358+00	SHOULDER LT	6600
1292+00	1358+00	SHOULDER RT	6600
TOTAL:			210122

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
109+41	110+41	MAIN LANES	25	277.78
182+30	183+30	MAIN LANES	25	277.78
183+92	184+92	MAIN LANES	25	277.78
185+38	186+38	MAIN LANES	25	277.78
186+84	187+84	MAIN LANES	25	277.78
369+20	370+20	MAIN LANES	25	277.78
371+40	372+40	MAIN LANES	25	277.78
436+35	437+35	MAIN LANES	25	277.78
437+50	438+50	MAIN LANES	21	233.33
571+05	572+05	MAIN LANES	33	366.67
579+05	580+05	MAIN LANES	33	366.67
601+00	602+00	MAIN LANES	24	266.67
663+74	664+74	MAIN LANES	21	233.33
665+36	666+36	MAIN LANES	21	233.33
809+86	810+86	MAIN LANES	21	233.33
811+81	812+81	MAIN LANES	21	233.33
864+11	865+11	MAIN LANES	21	233.33
866+18	867+18	MAIN LANES	21	233.33
946+09	947+09	MAIN LANES	21	233.33
947+47	948+47	MAIN LANES	21	233.33
TOTAL:				5322.22

NOTE: AVERAGE MILLING DEPTH 5/16".

LINEAR GRADING

STATION	STATION	LOCATION	LINEAR GRADING
			STATION
940+55	947+09	LT. & RT. OF HWY. 25	7
947+47	1264+00	LT. & RT. OF HWY. 25	317
1278+66	1369+00	LT. & RT. OF HWY. 25	91
TOTALS:			415

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING	SPECIAL CLEARING*
			STATION		
109+41	437+50	TO BE USED IF AND WHERE			60
437+50	532+00	RT. & LT. OF HWY. 25			95
532+00	602+00	RT. & LT. OF HWY. 25			70
602+00	684+00	RT. & LT. OF HWY. 25			82
684+00	696+85	RT. & LT. OF HWY. 25			13
696+85	940+55	RT. & LT. OF HWY. 25			244
940+55	1264+00	LT. & RT. OF HWY. 25	324	324	
1278+66	1369+00	LT. & RT. OF HWY. 25	91	91	
TOTALS:			415	415	564

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

NOTE: ALL REMOVAL AND DISPOSAL OF FENCE AND GATES WITHIN THE LIMITS OF CLEARING AND GRUBBING WILL BE PAID AT THE UNIT BID PRICE FOR CLEARING AND GRUBBING.

NOTE: LIMITS OF CLEARING AND GRUBBING WILL INCLUDE ALL VEGETATION WITHIN THE RIGHT OF WAY.

* SPECIAL CLEARING SHALL INCLUDE ALL VEGETAION WITHIN 25 FEET OF THE CENTERLINE, SEE SPECIAL PROVISION "SPECIAL CLEARING".

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
	*TO BE USED IF AND WHERE	500	1000
	DIRECTED BY THE ENGINEER		
TOTALS:		500	1000

*QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	450	900
DIRECTED BY THE ENGINEER		
TOTALS:	450	900

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

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE	500	500	200
			DIRECTED BY THE ENGINEER			
TOTALS:				500	500	200

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	750
DIRECTED BY THE ENGINEER	
TOTAL:	750

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

APPROACH GUTTERS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE AT2)	APPROACH GUTTER (TYPE PT)	REINFORCING STEEL-RDWY. (GR. 60)
			CU.YD.	CU.YD.	POUND
369+86	370+20	BRIDGE APPROACH LT	9.05		1077
369+86	370+20	BRIDGE APPROACH RT	9.05		1077
371+40	371+74	BRIDGE EXIT LT	9.05		1077
371+40	371+74	BRIDGE EXIT RT	9.05		1077
571+69	572+05	BRIDGE APPROACH LT		14.65	1364
571+69	572+05	BRIDGE APPROACH RT		14.65	1364
579+05	579+41	BRIDGE EXIT LT		14.65	1364
579+05	579+41	BRIDGE EXIT RT		14.65	1364
TOTALS:			36.20	58.60	9764

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
369+70	370+20	BRIDGE APPROACH LT & RT	300	2	2
371+40	371+90	BRIDGE EXIT LT & RT	300	2	2
570+05	572+05	BRIDGE APPROACH LT & RT	300	2	2
579+05	581+05	BRIDGE EXIT LT & RT	300	2	2
TOTALS:			1200	8	8

NOTE: GUARDRAIL SHALL REQUIRE 8'-0" POSTS TO BE INSTALLED

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	23	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

ULTRATHIN BONDED WEARING COURSE

STATION	STATION	LOCATION	TOTAL LENGTH	AVG. WIDTH	ULTRATHIN BONDED WEARING COURSE (5/8" - TYPE B)
			FEET	FEET	SQ. YD.
109+41	437+35	MAIN LANES AND SHOULDER	32794.00	25.00	91094.44
437+50	532+00	MAIN LANES	9450.00	24.00	25200.00
532+00	572+05	MAIN LANES AND SHOULDER	4005.00	33.00	14685.00
579+05	602+00	MAIN LANES AND SHOULDER	2295.00	33.00	8415.00
602+00	625+40	MAIN LANES	2340.00	24.00	6240.00
625+40	664+74	MAIN LANES	3934.00	21.00	9179.33
665+36	684+00	MAIN LANES	1864.00	21.00	4349.33
684+00	696+85	MAIN LANES AND SHOULDER	1285.00	21.00	2998.33
696+85	810+66	MAIN LANES	11381.00	21.00	26555.67
811+81	865+11	MAIN LANES	5330.00	21.00	12436.67
866+18	940+55	MAIN LANES	7437.00	21.00	17353.00
940+55	947+09	MAIN LANES AND SHOULDER	654.00	26.00	1889.33
947+47	1083+23	MAIN LANES AND SHOULDER	13576.00	26.00	39219.56
1083+23	1086+66	MAIN LANES AND SHOULDER	343.00	36.00	1372.00
1086+66	1264+00	MAIN LANES AND SHOULDER	17734.00	26.00	51231.56
1264+00	1278+66	MAIN LANES AND SHOULDER	1466.00	25.00	4072.22
1278+66	1369+00	MAIN LANES AND SHOULDER	9034.00	27.00	27102.00
1369+00	1392+00	MAIN LANES AND SHOULDER	2300.00	25.00	6388.89
TOTALS:			**127222.00**		**349782.33**

NOTE: ACHM SURFACE COURSE TO BE USED FOR LEVELING SHOULDERS AND MAIN LANES AS DIRECTED BY THE ENGINEER.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CONCRETE DRIVEWAYS	GUARDRAIL	SIGNS	APPROACH GUTTERS
			SQ. YD.	LIN. FT.	EACH	EACH
369+70	370+20	BRIDGE APPROACH LR & RT		100		
371+40	371+90	BRIDGE EXIT LR & RT		100		
570+05	572+05	BRIDGE APPROACH LR & RT		275		2
579+05	581+05	BRIDGE EXIT LR & RT		275		2
972+81	972+92	LEFT DRIVEWAY	26			
977+27		RIGHT OF HWY. 25				
1013+37		LEFT OF HWY. 25				
1036+30		RIGHT OF HWY. 25			1	
1040+34	1040+57	RIGHT DRIVEWAY	54			
1057+44		RIGHT OF HWY. 25				
1059+36		RIGHT OF HWY. 25				
1058+89	1059+09	LEFT DRIVEWAY	47			
1061+13	1061+29	LEFT DRIVEWAY	37			
1076+59		LEFT OF HWY. 25				
1078+25		RIGHT OF HWY. 25				
1174+04		LEFT OF HWY. 25				
1198+96		RIGHT OF HWY. 25				
1230+59		LEFT OF HWY. 25				
1231+99		RIGHT OF HWY. 25				
1252+80		LEFT OF HWY. 25				
1300+88		RIGHT OF HWY. 25				
1329+85	1331+25	RIGHT OF HWY. 25		140		
TOTALS:			**164**	**890**	**1**	**4**

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.
NOTE: ALL REMOVAL AND DISPOSAL OF FENCE AND GATES WITHIN THE LIMITS OF CLEARING AND BE PAID AT THE UNIT BID PRICE FOR CLEARING AND GRUBBING.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL					
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE
											(E-5)	(E-6)	(E-11)
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.
ENTIRE	PROJECT	CLEARING AND GRUBBING	55.00	110.00	55.00	5610.0	55.00	30.00	30.00	612.0	50	1000	85000
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.													
TOTALS:			**55.00**	**110.00**	**55.00**	**5610.0**	**55.00**	**30.00**	**30.00**	**612.0**	**50**	**1000**	**85000**

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	CLASS 3
			SQ. YD.
ENTIRE	PROJECT	*TO BE USED IF AND WHERE	100.00
		DIRECTED BY THE ENGINEER	
TOTAL:			**100.00**

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	35	35
TOTALS:	**35**	**35**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	24	93

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT (0.17 GAL. PER SQ. YD.)				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")			
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22
			FEET			FEET				FEET			TON	FEET			TON
MAIN LANES																	
437+50	532+00	LEFT AND RIGHT SHOULDERS	9450.00	6.00	567.00												
602+00	664+74	LEFT AND RIGHT SHOULDERS	6274.00	6.00	376.44												
665+36	684+00	LEFT AND RIGHT SHOULDERS	1864.00	6.00	111.84												
696+85	810+86	LEFT AND RIGHT SHOULDERS	11401.00	6.00	684.06												
811+81	865+11	LEFT AND RIGHT SHOULDERS	5330.00	6.00	319.80												
866+18	940+55	LEFT AND RIGHT SHOULDERS	7437.00	6.00	446.22												
940+55	947+09	MAIN LANES AND SHOULDERS	654.00	6.00	39.24					6.50	472.33	550.00	129.89				
947+47	957+09	MAIN LANES AND SHOULDERS	962.00	6.00	57.72					6.50	694.78	550.00	191.06				
957+09	966+08	MAIN LANES AND SHOULDERS	899.00	6.00	53.94					6.50	649.28	550.00	178.55	26.00	2597.11	220.00	285.68
966+08	978+23	MAIN LANES AND SHOULDERS	1215.00	6.00	72.90					6.50	877.50	550.00	241.31				
978+23	986+10	MAIN LANES AND SHOULDERS	787.00	6.00	47.22					6.50	568.39	550.00	156.31	26.00	2273.56	220.00	250.09
986+10	1083+23	MAIN LANES AND SHOULDERS	9713.00	6.00	582.78					6.50	7014.94	550.00	1929.11				
1083+23	1086+66	MAIN LANES AND SHOULDERS	343.00	6.00	20.58					6.50	247.72	550.00	68.12				
1086+66	1227+98	MAIN LANES AND SHOULDERS	14132.00	6.00	847.92					6.50	10206.44	550.00	2806.77				
1227+98	1234+22	MAIN LANES AND SHOULDERS	624.00	6.00	37.44					6.50	450.67	550.00	123.93	26.00	1802.67	220.00	198.29
1234+22	1264+00	MAIN LANES AND SHOULDERS	2978.00	6.00	178.68					6.50	2150.78	550.00	591.46				
1278+66	1293+45	MAIN LANES AND SHOULDERS	1479.00	6.00	88.74					6.50	1068.17	550.00	293.75				
1293+45	1301+85	MAIN LANES AND SHOULDERS	840.00	6.00	50.40					6.50	606.67	550.00	166.83	27.00	2520.00	220.00	277.20
1301+85	1308+12	MAIN LANES AND SHOULDERS	627.00	6.00	37.62					6.50	452.83	550.00	124.53	27.00	1881.00	220.00	206.91
1308+12	1310+28	MAIN LANES AND SHOULDERS	216.00	6.00	12.96					6.50	156.00	550.00	42.90				
1310+28	1317+15	MAIN LANES AND SHOULDERS	687.00	6.00	41.22					6.50	496.17	550.00	136.45	27.00	2061.00	220.00	226.71
1317+15	1369+00	MAIN LANES AND SHOULDERS	5185.00	6.00	311.10					6.50	3744.72	550.00	1029.80				
ADDITIONAL FOR LEVELING																	
109+41	437+35	MAIN LANES AND SHOULDER	32794.00			VAR.	VAR.	1240.00	1240.00					VAR.	VAR.	VAR.	400.00
437+50	532+00	MAIN LANES AND SHOULDER	9450.00			24.00	25200.00	4284.00	4284.00					24.00	25200.00	110.00	1386.00
602+00	625+40	MAIN LANES AND SHOULDER	2340.00			24.00	6240.00	1060.80	1060.80					24.00	6240.00	110.00	343.20
625+40	664+74	MAIN LANES AND SHOULDER	3934.00			21.00	9179.33	1560.49	1560.49					21.00	9179.33	111.00	509.45
665+36	684+00	MAIN LANES AND SHOULDER	1864.00			21.00	4349.33	739.39	739.39					21.00	4349.33	110.00	239.21
684+00	696+85	MAIN LANES AND SHOULDER	1285.00			21.00	2998.33	509.72	509.72					21.00	2998.33	110.00	164.91
696+85	810+86	MAIN LANES AND SHOULDER	11401.00			21.00	26602.33	4522.40	4522.40					21.00	26602.33	110.00	1463.13
811+81	865+11	MAIN LANES AND SHOULDER	5330.00			21.00	12436.67	2114.23	2114.23					21.00	12436.67	110.00	684.02
866+18	940+55	MAIN LANES AND SHOULDER	7437.00			21.00	17353.00	2950.01	2950.01					21.00	17353.00	110.00	954.42
940+55	947+09	MAIN LANES AND SHOULDER	654.00			26.00	1889.33	321.19	321.19					26.00	1889.33	110.00	103.91
947+47	957+09	MAIN LANES AND SHOULDER	962.00			26.00	2779.11	472.45	472.45					26.00	2779.11	110.00	152.85
966+08	978+23	MAIN LANES AND SHOULDER	1215.00			26.00	3510.00	596.70	596.70					26.00	3510.00	110.00	193.05
986+10	1083+23	MAIN LANES AND SHOULDER	9713.00			26.00	28059.78	4770.16	4770.16					27.00	29139.00	111.00	1617.21
1083+23	1086+66	MAIN LANES AND SHOULDER	343.00			36.00	1372.00	233.24	233.24					36.00	1372.00	110.00	75.46
1086+66	1227+98	MAIN LANES AND SHOULDER	14132.00			26.00	40825.78	6940.38	6940.38					26.00	40825.78	110.00	2245.42
1234+22	1264+00	MAIN LANES AND SHOULDER	2978.00			26.00	8603.11	1462.53	1462.53					26.00	8603.11	110.00	473.17
1264+00	1278+66	MAIN LANES AND SHOULDER	1466.00			25.00	4072.22	692.28	692.28					25.00	4072.22	110.00	223.97
1278+66	1293+45	MAIN LANES AND SHOULDER	1479.00			27.00	4437.00	754.29	754.29					27.00	4437.00	110.00	244.04
1308+12	1310+28	MAIN LANES AND SHOULDER	216.00			27.00	648.00	110.16	110.16					27.00	648.00	110.00	35.64
1317+15	1369+00	MAIN LANES AND SHOULDER	5185.00			27.00	15555.00	2644.35	2644.35					27.00	15555.00	110.00	855.53
1369+00	1392+00	MAIN LANES AND SHOULDER	2300.00			25.00	6388.89	1086.11	1086.11					25.00	6388.89	110.00	351.39
ADDITIONAL FOR SUPERELEVATION																	
957+09	966+08	MAIN LANES AND SHOULDER	899.00		376.00					22.00	2197.56	VAR.	614.00				
978+23	986+10	MAIN LANES AND SHOULDER	787.00		467.00					22.00	1923.78	VAR.	718.00				
1227+98	1234+22	MAIN LANES AND SHOULDER	624.00		300.00					22.00	1525.33	VAR.	471.00				
1293+45	1301+85	MAIN LANES AND SHOULDER	840.00		332.00					22.00	2053.33	VAR.	617.00				
1301+85	1308+12	MAIN LANES AND SHOULDER	627.00		369.00					22.00	1532.67	VAR.	578.00				
1310+28	1317+15	MAIN LANES AND SHOULDER	687.00		229.00					22.00	1679.33	VAR.	418.00				
TOTALS:					**7058.82**		**222499.21**	**39064.88**	**39064.88**		**40769.39**		**11626.77**		**236713.77**		**14160.86**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.9% MIN. AGGR.....4.1% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6-1-2020				6	ARK.			
6-10-2020				JOB NO.		100974	25	93

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

SUMMARY OF QUANTITIES

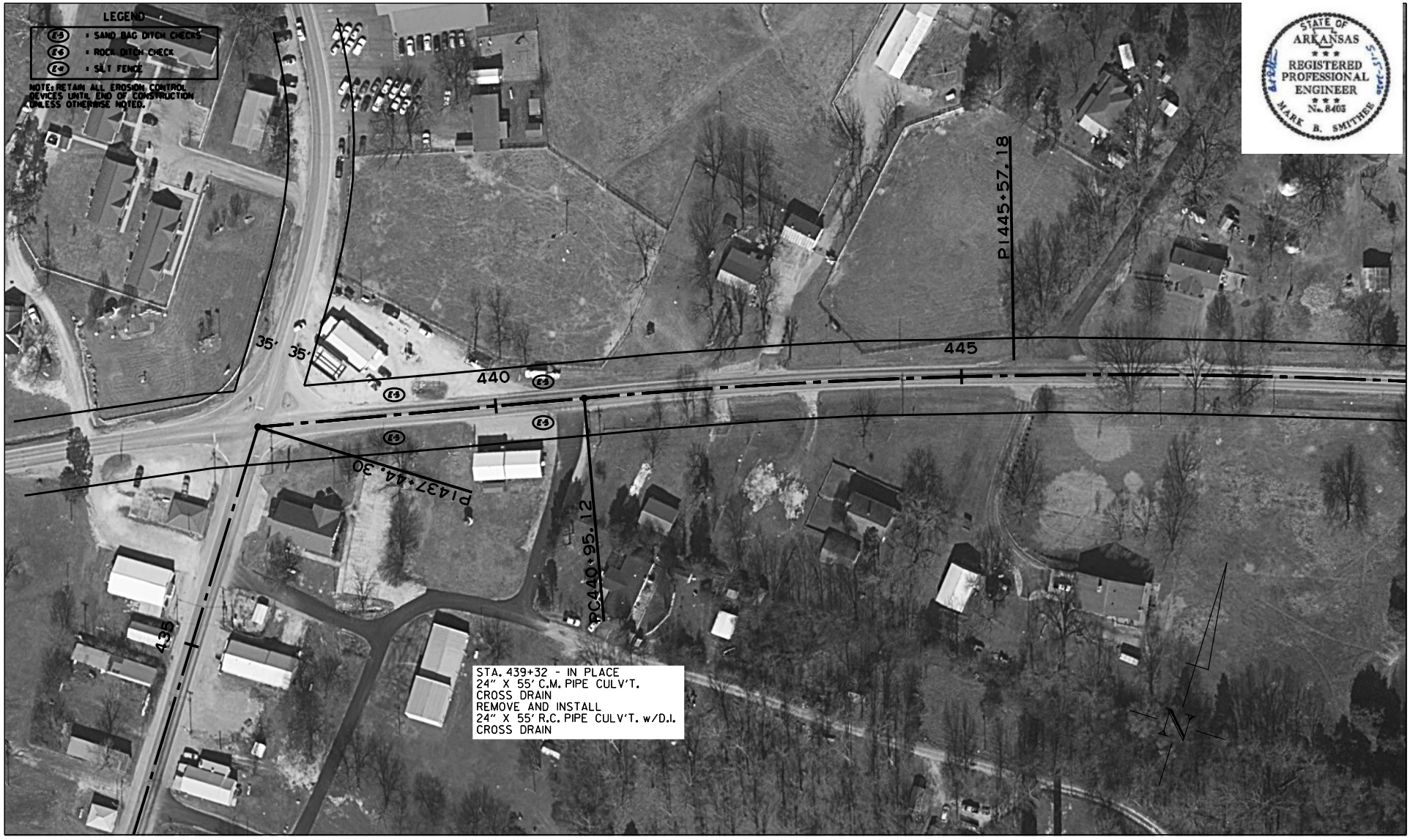
ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	415	STATION
201	GRUBBING	415	STATION
SP	SPECIAL CLEARING	564	STATION
202	REMOVAL AND DISPOSAL OF APPROACH GUTTERS	4	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	164	SQ. YD.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	105	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	890	LIN.FT.
202	REMOVAL AND DISPOSAL OF SIGNS	1	EACH
SS & 210	UNCLASSIFIED EXCAVATION	500	CU. YD.
210	COMPACTED EMBANKMENT	500	CU. YD.
SP & 210	SOIL STABILIZATION	200	TON
SP & 210	LINEAR GRADING	415	STATION
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	11862	TON
SS & 401	TACK COAT	39965	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	11160	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	477	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	14345	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	787	TON
SP	ULTRATHIN BONDED WEARING COURSE (5/8"-TYPE B)	349782	SQ. YD.
412	COLD MILLING ASPHALT PAVEMENT	5322	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	450	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	750	TON
504	APPROACH GUTTERS	94.80	CU. YD.
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	203.20	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	1337	SQ.FT.
SS & 604	TRAFFIC DRUMS	200	EACH
604	CONSTRUCTION PAVEMENT MARKINGS	513036	LIN.FT.
604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)	4	EACH
604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	2	EACH
SS & 604	VERTICAL PANELS	212	EACH
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	1948	LIN.FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	302	LIN.FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	510	LIN.FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	60	LIN.FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	218	LIN.FT.
SP, SS, & 606	18" SIDE DRAIN	1330	LIN.FT.
SP, SS, & 606	24" SIDE DRAIN	396	LIN.FT.
SP, SS, & 606	30" SIDE DRAIN	28	LIN.FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	78	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	12	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	18	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	8	EACH
606	SELECTED PIPE BEDDING	300	CU.YD.
SS & 609	DROP INLETS (TYPE ST)	1	EACH
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	266.3	CU. YD.
SS& 617	GUARDRAIL (TYPE A)	1200	LIN.FT.
SS& 617	GUARDRAIL TERMINAL (TYPE 2)	8	EACH
SS& 617	THRIE BEAM GUARDRAIL TERMINAL	8	EACH
619	WIRE FENCE (TYPE D-1)	28549	LIN.FT.
* 619	16' STEEL GATES	15	EACH (ALTERNATE NO. 1)
* 619	16' ALUMINUM GATES	15	EACH (ALTERNATE NO. 2)
620	LIME	110	TON
620	SEEDING	55.00	ACRE
SS & 620	MULCH COVER	85.00	ACRE
620	WATER	6229.5	M.GAL.
621	TEMPORARY SEEDING	30.00	ACRE
621	SILT FENCE	85000	LIN.FT.
621	SAND BAG DITCH CHECKS	50	BAG
621	ROCK DITCH CHECKS	1000	CU.YD.
623	SECOND SEEDING APPLICATION	55.00	ACRE
624	SOLID SODDING	588	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	100	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	35	EACH
637	MAILBOX SUPPORTS (SINGLE)	35	EACH
SP & 642	RUMBLE STRIPES IN ASPHALT SHOULDERS	2101222	LIN.FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	256518	LIN.FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	40	LIN.FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	256518	LIN.FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	4	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	1623	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	9764	POUND
816	FILTER BLANKET	1000	SQ.YD.
816	DUMPED RIPRAP	500	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
6/1/2020	ADDED SUPPLEMENTAL SPECIFICATIONS FOR GUARDRAIL AND REINFORCING STEEL	3, 25
6/10/2020	ADDED SPECIAL PROVISION "PRICE ADJUSTMENT FOR ASPHALT BINDER"	3, 25

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	26	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	27	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
8-15-2018

PLAN 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.		100974	28	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8405
MARK B. SMITHEE

PLAN SHEETS

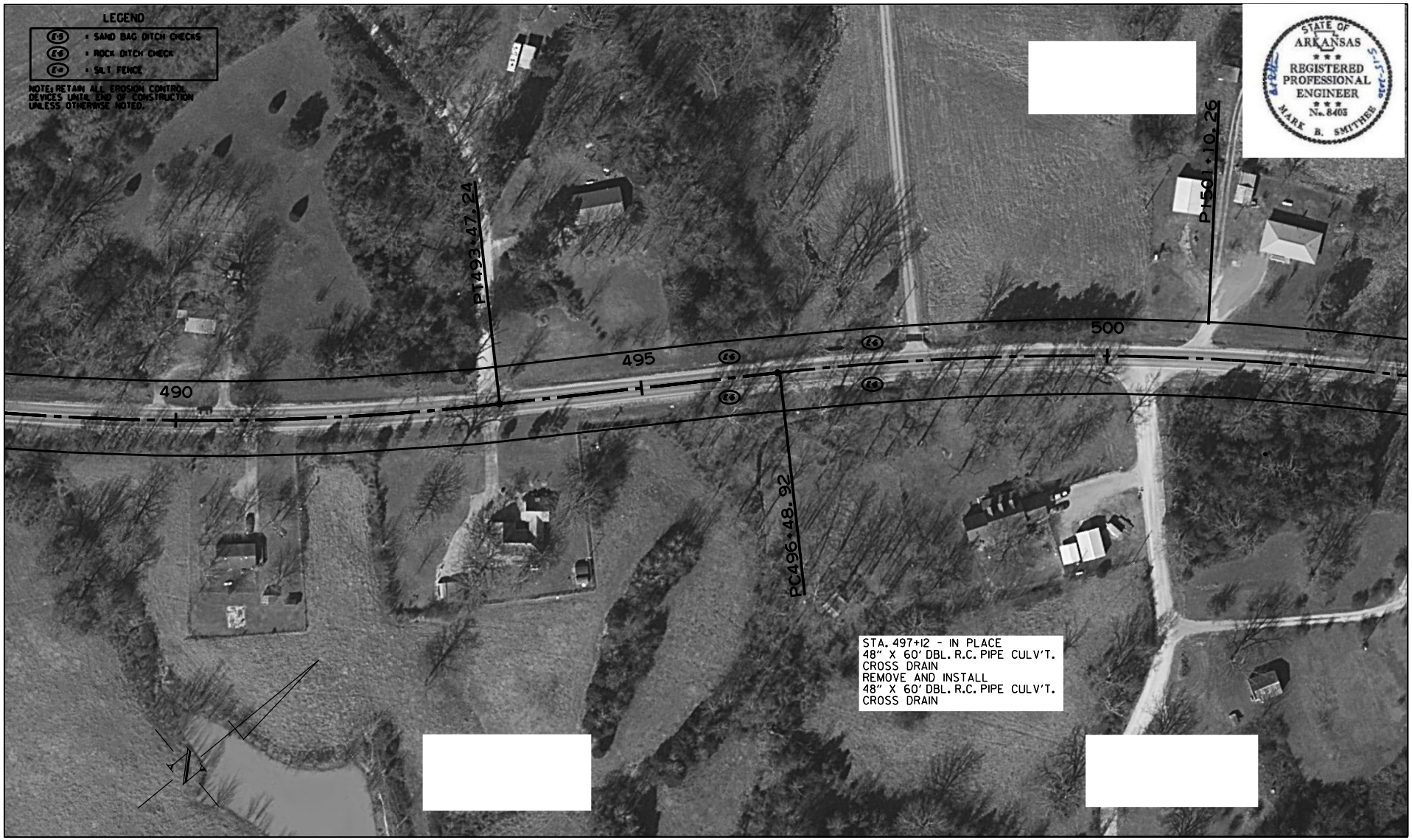
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	29	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	30	93
				(2)		PLAN SHEETS		



PLAN 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.		100974	31	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	32	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN SHEETS

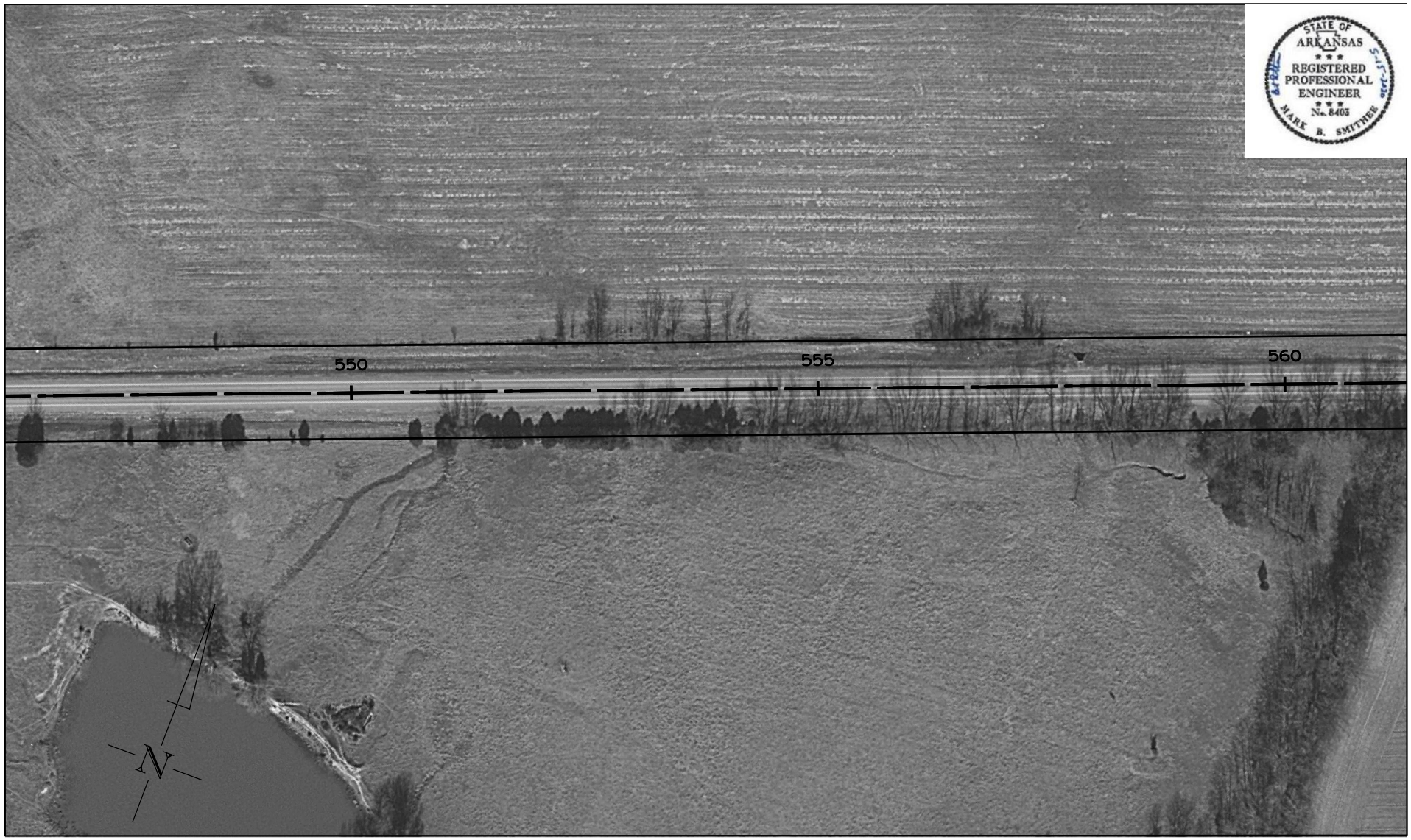
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	33	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	34	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
8-15-20

PLAN 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.		100974	35	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	36	93
				(2)	PLAN SHEETS			



PLAN 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.		100974	37	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN SHEETS

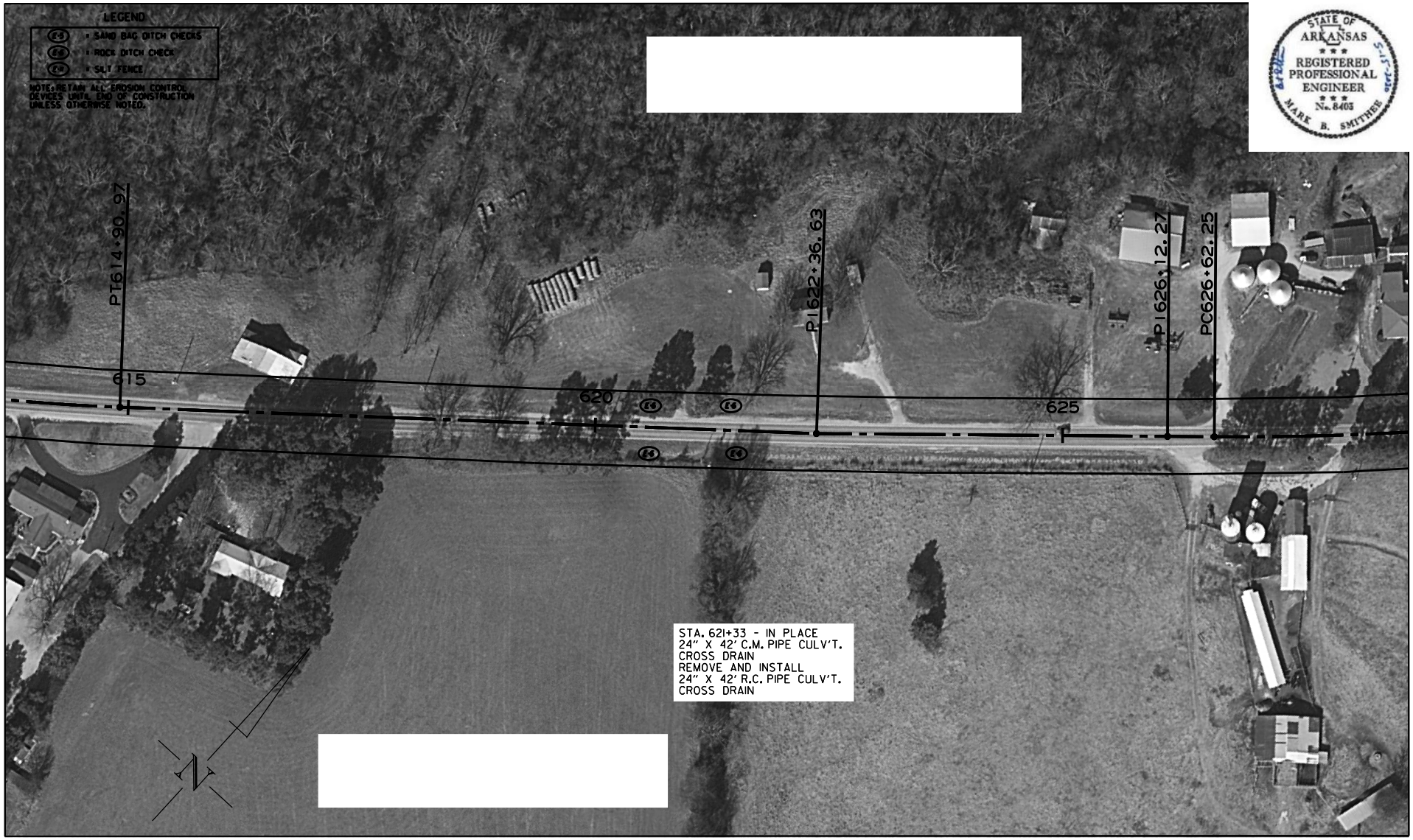
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	38	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8405
MARK B. SMITHEE
5-15-20

PLAN 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.		100974	39	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	40	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN SHEETS

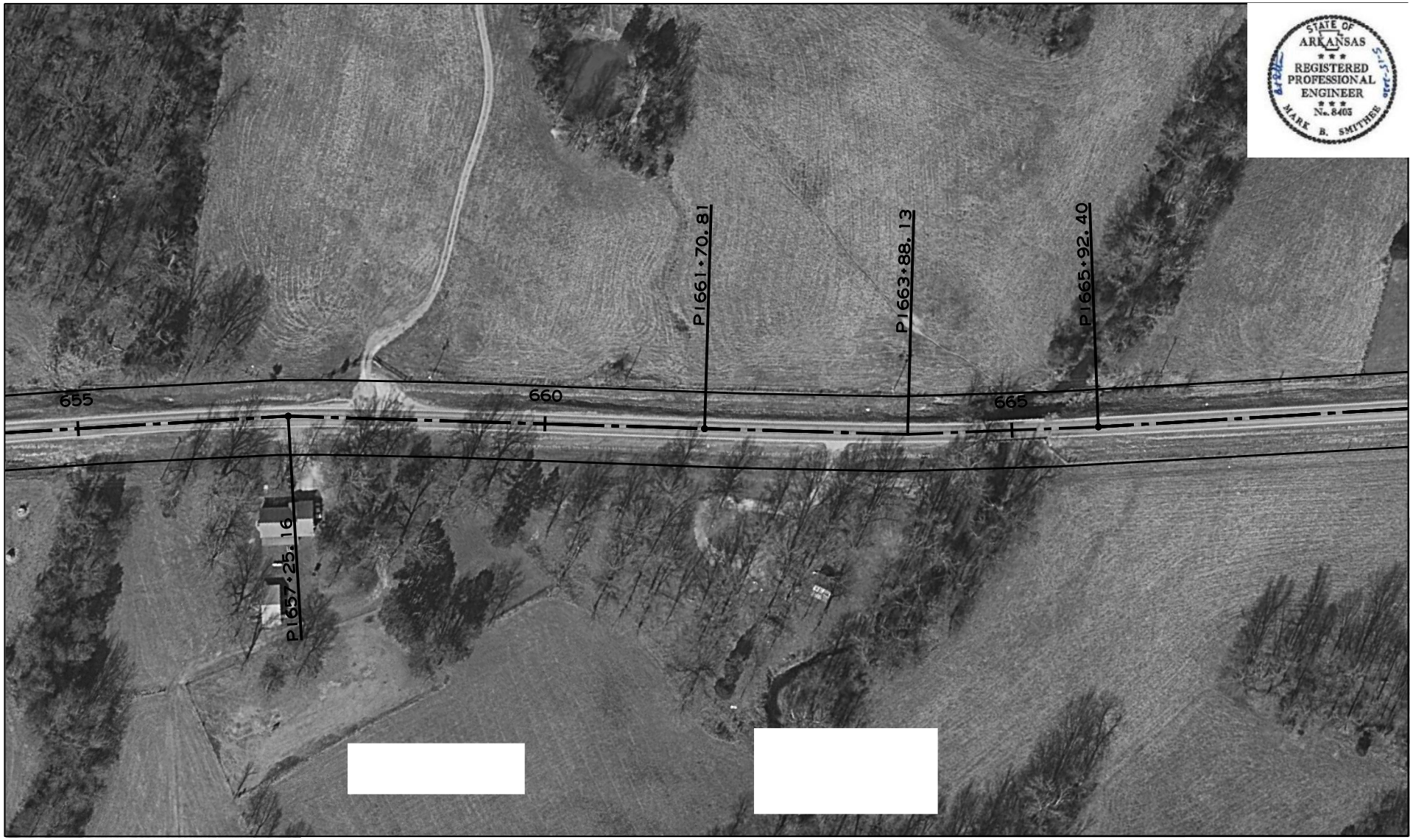
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	41	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8405
MARK B. SMITHEE

PLAN 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.		100974	42	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	43	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	44	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	45	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	46	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	47	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-2020

PLAN 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.		100974	48	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	49	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8405
MARK B. SMITHEE
5-15-20

PLAN 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.		100974	50	93
				(2)		PLAN SHEETS		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	51	93
				(2)	INDEPENDENCE COUNTY LINE - BLACK ROCK (SAFETY IMPROVEMENTS)			

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PC786+37.31

PT789+33.41

P1781+28.20

P1787+85.90

785

790

795

STA. 782+48 - IN PLACE
24" X 45' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 45' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 789+59 - IN PLACE
24" X 58' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 56' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 794+30 - IN PLACE
24" X 68' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 68' R.C. PIPE CULV'T.
CROSS DRAIN

PLAN 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.		100974	52	93
				(2)		PLAN 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.		100974	53	93

(2) PLAN 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.		100974	54	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PI 827+51.93

825

830

PC824+94.48

PT830+08.47

(E-6) 40. 50. (E-6)

(E-6) 40. 50. (E-6)

STA. 835+17 - IN PLACE
24" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	55	93
				(2)	PLAN SHEETS			

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

840 50' 40' 845 850

50' 40'

P1841+32.43

P1846+94.15

STA. 846+50 - IN PLACE
24" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	56	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	57	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8405
MARK B. SMITHEE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	58	93
				(2)		PLAN SHEETS		

LEGEND

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECK

E-11 = SILT FENCE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P1884+01.07

P1886+11.96

P1890+30.84

P1892+83.87

885

890

895

40'

50'

E-6

STA. 893+27 - IN PLACE
24" X 40' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 42' R.C. PIPE CULV'T.
CROSS DRAIN

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	59	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P1896+19.63

P1899+64.83

P1907+69.16

895

900

905

40'

50'

40'

E-6

E-6

E-6

E-6

STA. 903+89 - IN PLACE
30" X 42' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
30" X 42' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	60	93
				(2)		PLAN SHEETS		

LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P1910+22.38

P1914+88.31

P1920+51.16

910

915

920

E-6

E-6

E-6

E-6

STA. 918+58 - IN PLACE
24" X 46' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 46' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	61	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P1924+65.72
P1928+34.38
PC930+19.69
PT934+76.31
925
930
935
P1929+66.28
P1932+49.00

STA. 929+76 - IN PLACE
42" X 60' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
42" X 60' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	62	93
				(2)		PLAN SHEETS		

LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P1940+77.96

PC937+42.90

PT944+01.36

P1948+18.28

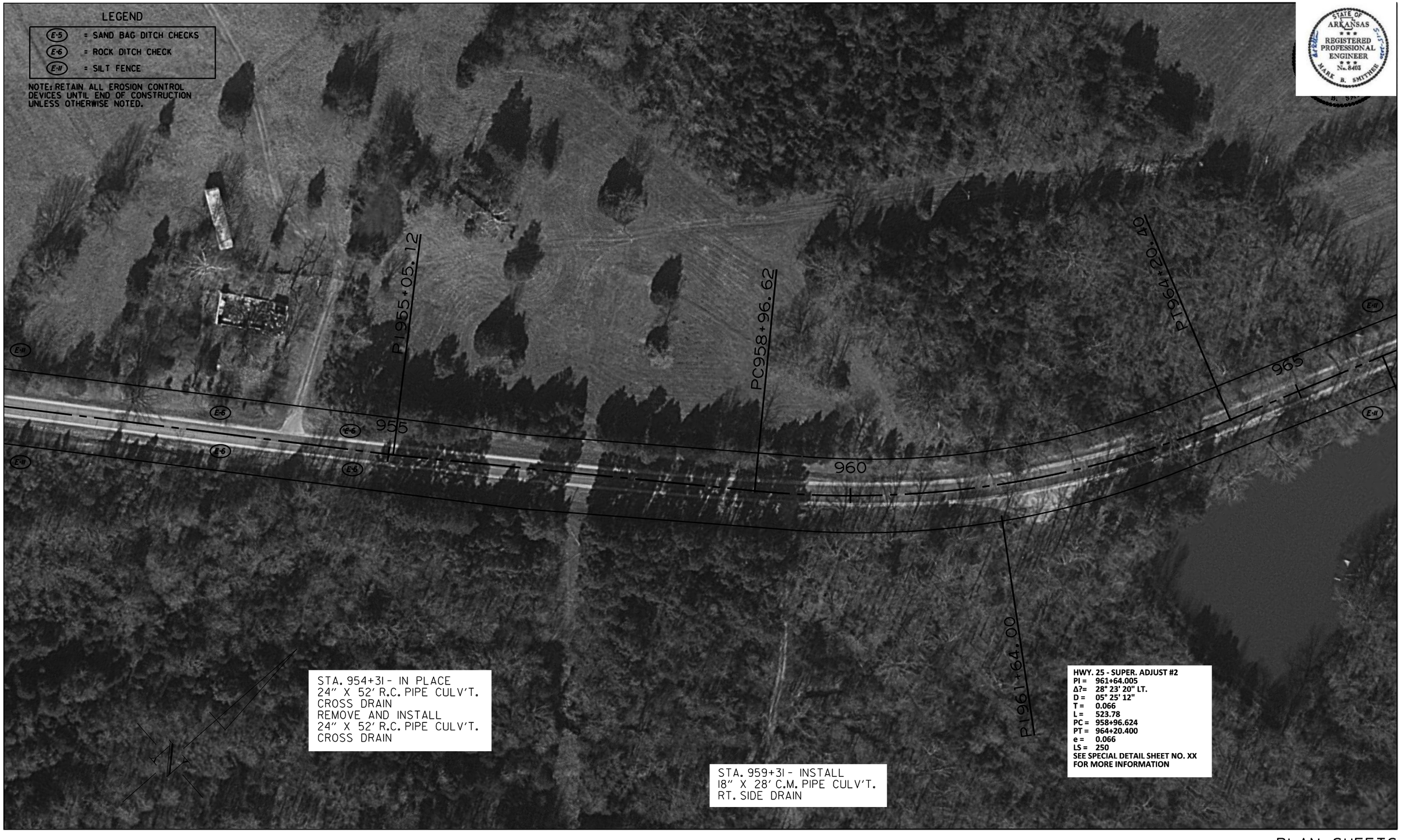
940

945

950

E-11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	63	93
				(2)		PLAN 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.		100974	64	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 970+80 - IN PLACE
18" X 32' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

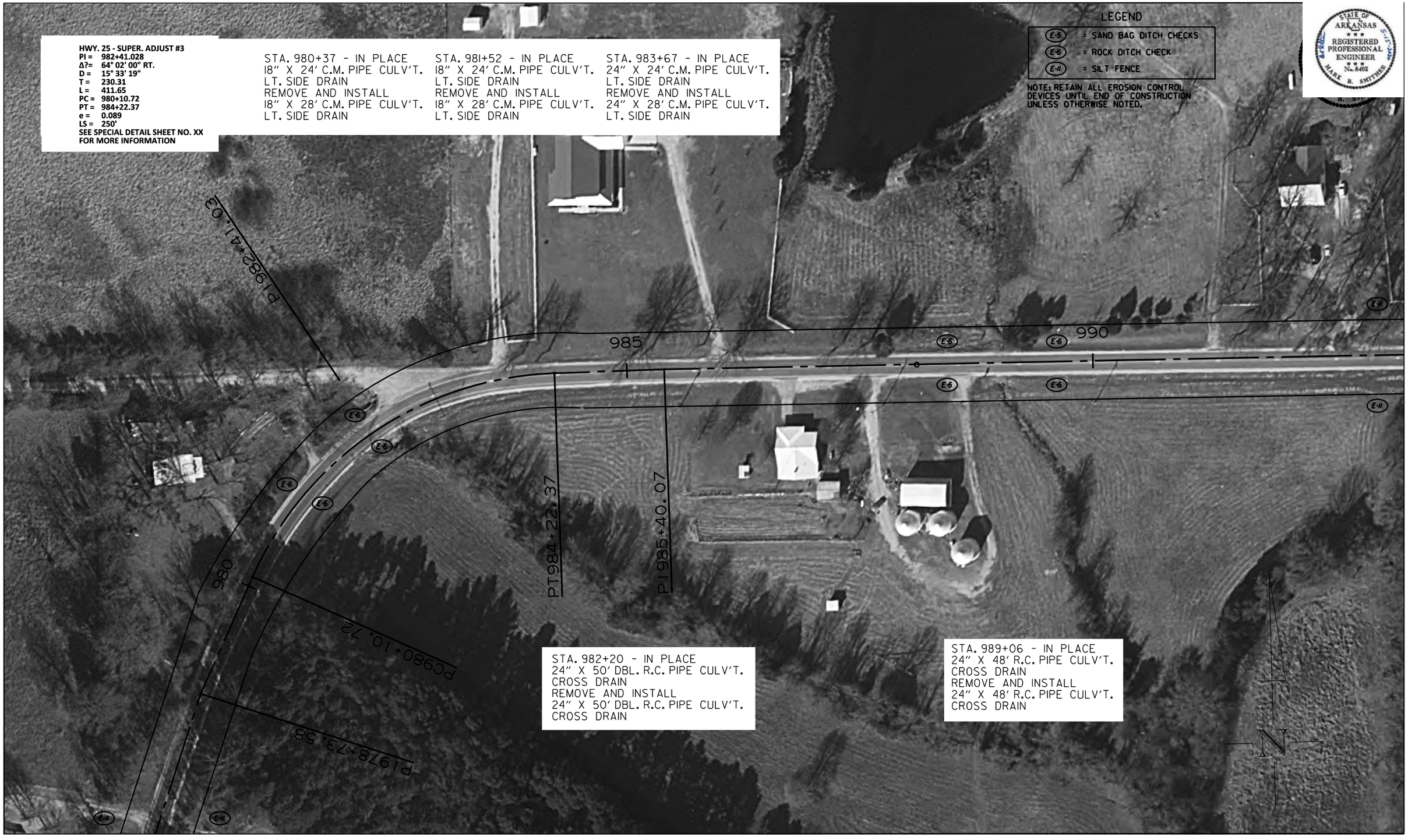
STA. 972+86 - IN PLACE
18" X 24' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STA. 968+38 - IN PLACE
24" X 50' DBL. R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 50' DBL. R.C. PIPE CULV'T.
CROSS DRAIN

PI 965+98.29
970
975
98
PI 978+73.58
PC 980+10.72

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	65	93
				(2)		PLAN 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.		100974	66	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

P.I. 1004+38.50

995 1000 1005

STA. 995+40 - IN PLACE
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 999+80 - IN PLACE
12" X 32' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1006+86 - IN PLACE
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	67	93

(2) PLAN SHEETS



PLAN 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.		100974	68	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1028+81 - IN PLACE
24" X 44' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1030+77 - IN PLACE
24" X 50' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1034+91 - INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

1025
1030
1035

STA. 1023+31 - IN PLACE
36" X 50' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
36" X 50' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1031+88 - IN PLACE
36" X 48' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
36" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	69	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-15-20

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	70	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

1050 1055 1060

STA. 1053+62 - IN PLACE
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1058+65 - IN PLACE
24" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100974	71	93
(2)	PLAN SHEETS			

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHER

PI 1068+74.63

1065

1070

1075

STA. 1065+50 - IN PLACE
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1076+78 - IN PLACE
24" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	72	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STA. 1083+37 - IN PLACE
18" X 64' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' C.M. PIPE CULV'T.
LT. SIDE DRAIN

PI 1078+72.15

PI 1090+03.05

1080

1085

1090

40'

45'

60'

50'

PC 1085+54.06

PT 1093+25.04

STA. 1080+88 - IN PLACE
24" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1085+66 - IN PLACE
12" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1088+75 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1090+30 - IN PLACE
24" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

PLAN 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.		100974	73	93
				(2)		PLAN SHEETS		

LEGEND

(E-5) = SAND BAG DITCH CHECKS
(E-6) = ROCK DITCH CHECK
(E-4) = SILT FENCE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STA. 1095+82 - IN PLACE
18" X 22' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1099+22 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1104+52 - IN PLACE
18" X 23' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN



STA. 1094+22 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1095+87 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1101+00 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	74	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	75	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1125+71 - IN PLACE
18" X 30' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1126+73 - IN PLACE
18" X 30' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PI 1123+99.43
PI 1121+67.08
1125
1130
1135
70'
50'
65'
60'
50'
65'
60'
PT 1125+24.54
PI 1128+33.02
PI 1130+77.70
PI 1122+05.15
PC 1122+70.32

STA. 1126+25 - IN PLACE
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	76	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STA. 1139+58 - IN PLACE
24" X 30' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1140+97 - IN PLACE
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1140+03 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

STA. 1146+37 - IN PLACE
18" X 30' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

PI 1143+82.16
PI 1145+89.27
PI 1147+17.18
PC 1147+56.90
PI 1138+42.48

1140 1145 1150

70' 50' 50' 40' 45' 40' 45'

N

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	77	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1150+00 - IN PLACE
12" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE
5-1-20

PT 1154+53.41
PI 1154+79.36
PI 1157+80.36
PI 1151+10.59
1150
1155
1160
(E-11)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	78	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STA. 1169+40 - IN PLACE
12" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

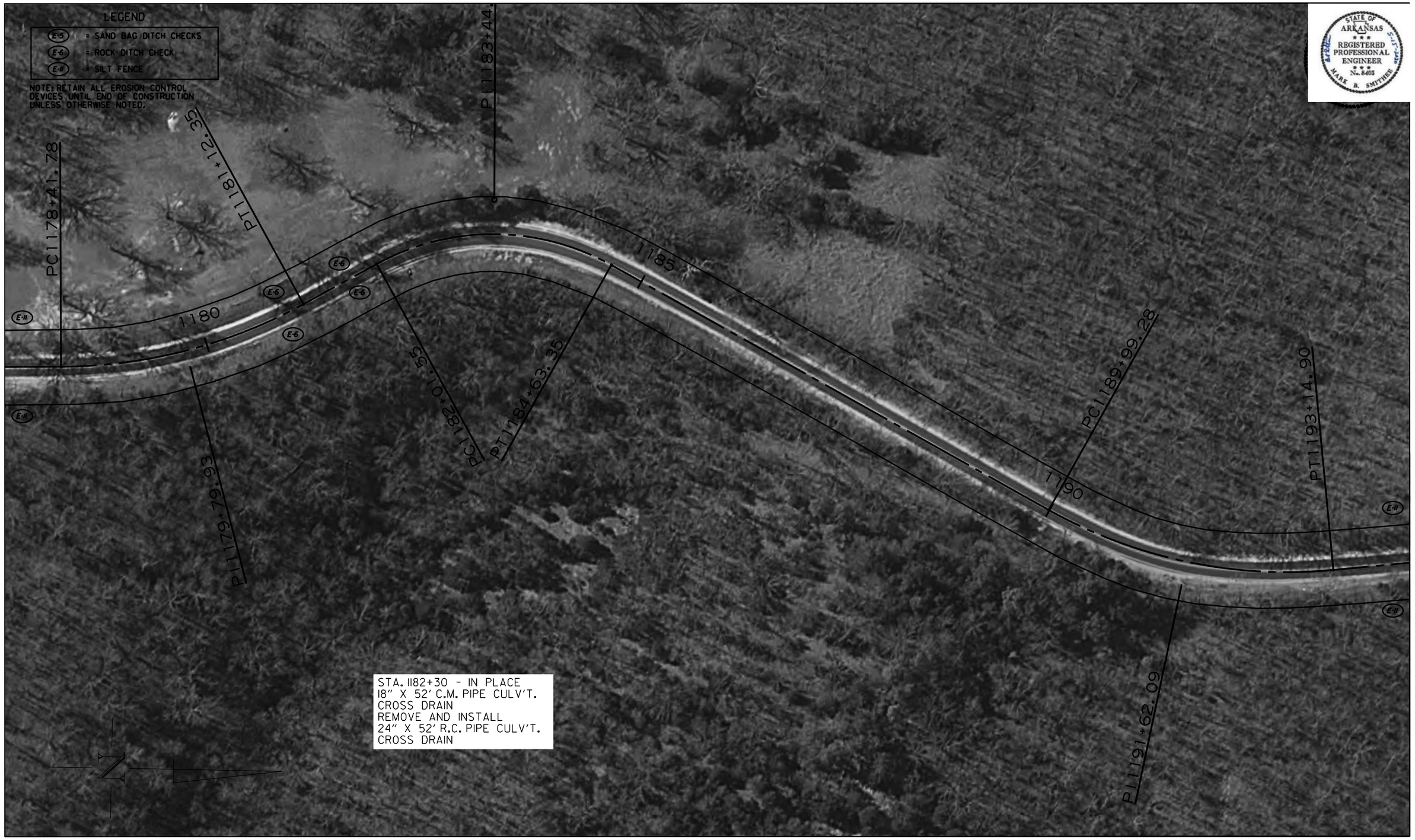
PC1165+45.31
PT1168+01.60
PC1178+41.78
PI1166+77.61
1165
1170
1175

STA. 1164+66 - IN PLACE
18" X 56' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 56' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1175+62 - IN PLACE
18" X 48' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1177+46 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN

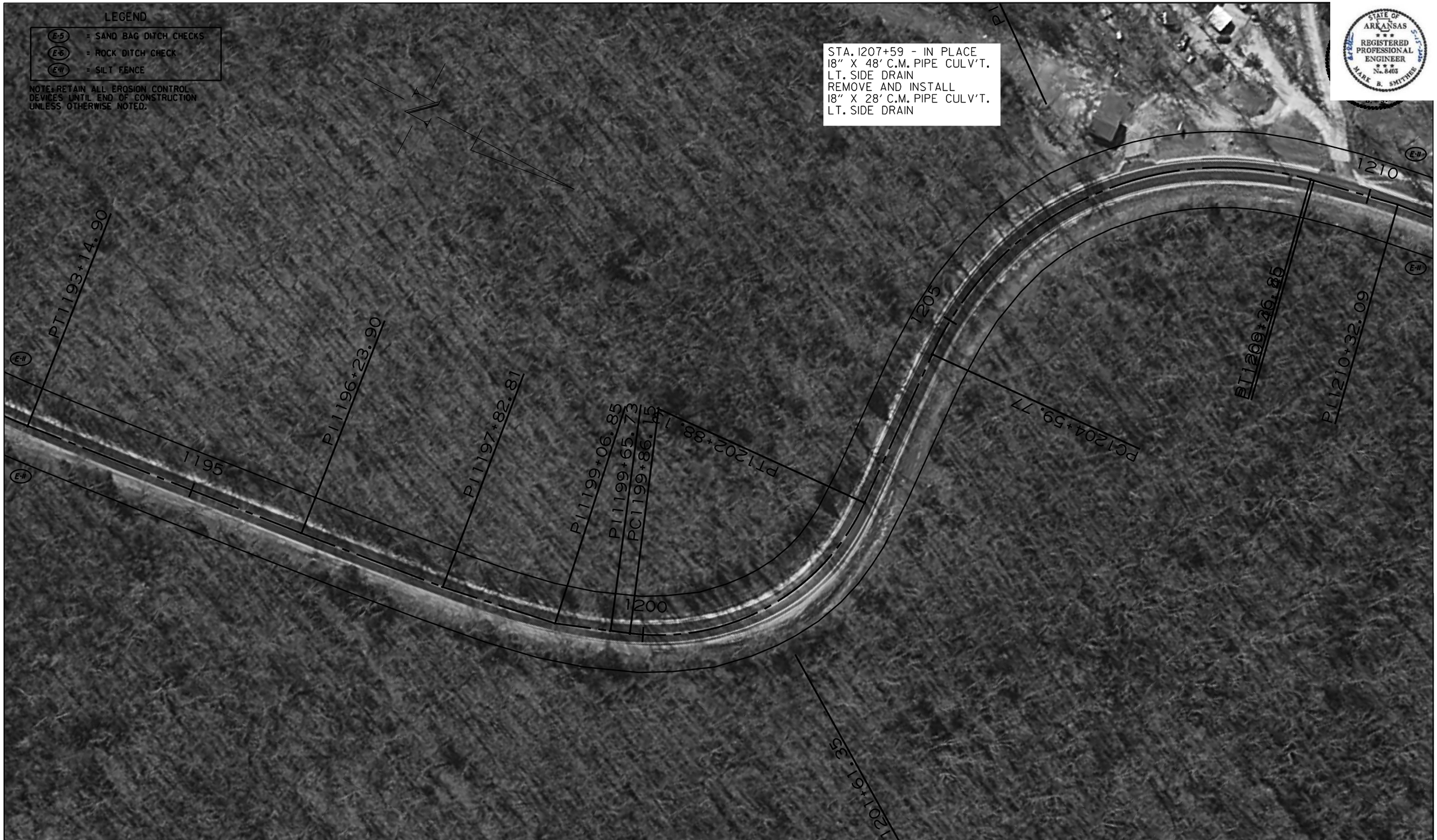
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	79	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	80	93

(2) PLAN SHEETS



PLAN 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.		100974	81	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1211+39 - IN PLACE
18" X 32' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

1215
1220
1225
PI 1219+84.82
PI 1214+50.32
PI 1218+02.48
PC 1219+86.01
PI 1210+32.09

STA. 1217+30 - IN PLACE
18" X 50' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 50' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	82	93
				(2)	PLAN SHEETS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	83	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1252+72 - IN PLACE
24" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PI 1238+99.13
PI 1241+28.07
PC 1250+17.66
PT 1252+93.46
PI 1251+56.91
1240
1245
1250
(E-11)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	84	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHER



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	85	93
				(2)		PLAN SHEETS		

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-8) = ROCK DITCH CHECK
- (E-11) = SILT FENCE

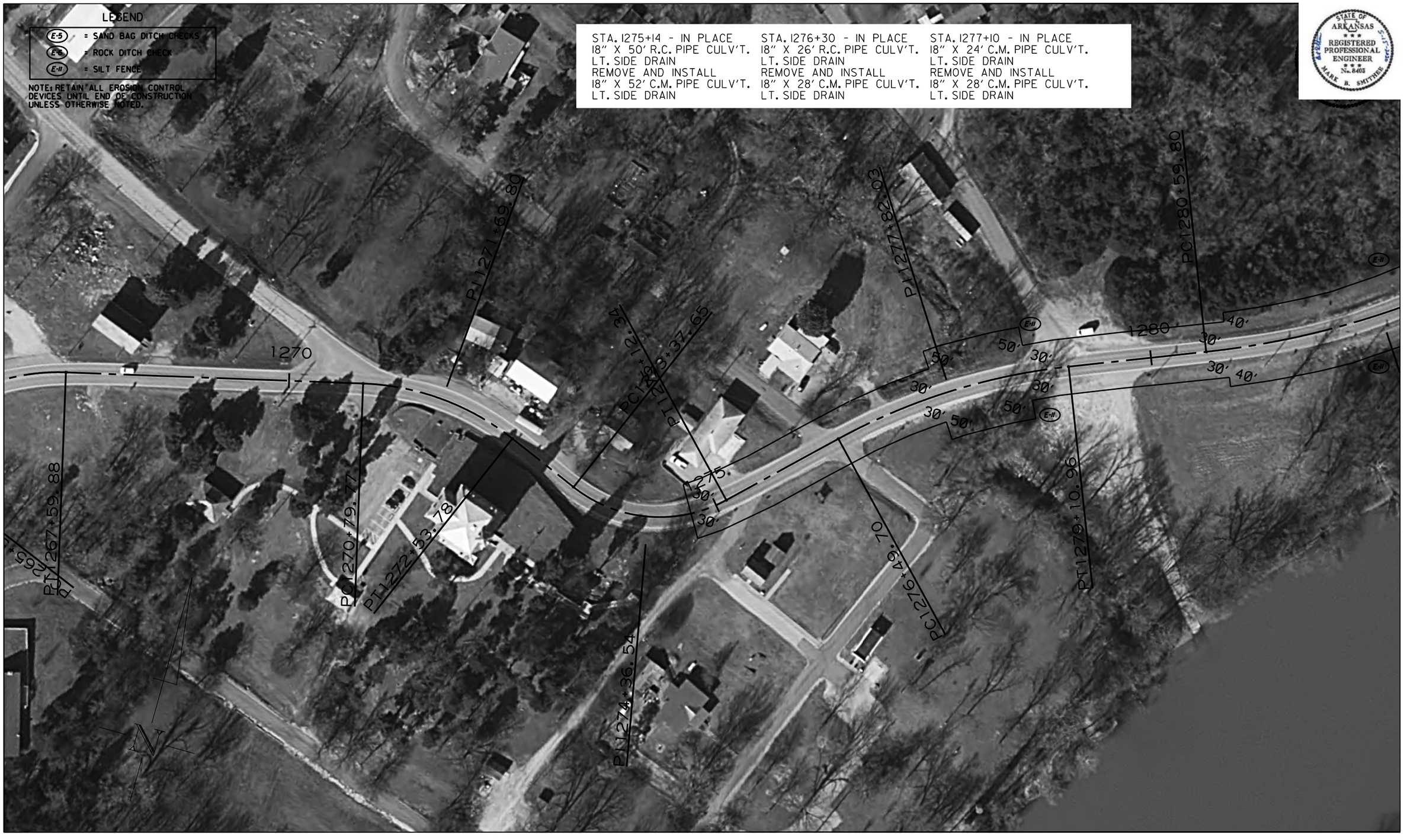
NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STA. 1275+14 - IN PLACE
18" X 50' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 52' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1276+30 - IN PLACE
18" X 26' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1277+10 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	86	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STA. 1293+10 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
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PT 1284+44.39
PI 1284+73.32
PI 1288+39.90
PI 1292+93.58
PC 1294+94.76
PC 1291+97.63
PT 1293+85.80
PI 1294+36.56
PI 1282+54.95

1285 1290 1295

60' 40' 90'

E-11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	87	93
				(2)		PLAN SHEETS		

LEGEND

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

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

STATE OF ARKANSAS
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STA. 1309+13 - IN PLACE
18" X 54' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' C.M. PIPE CULV'T.
LT. SIDE DRAIN

HWY. 25 - SUPER. ADJUST #5
PI = 1298+22.423
Δ = 14° 56' 01" LT.
D = 02° 17' 31"
T = 327.66
LS = 651.6
PC = 1294+94.764
PT = 1301+46.367
e = 0.058
LS = 200
SEE SPECIAL DETAIL SHEET NO. XX FOR MORE INFORMATION

STA. 1298+60 - IN PLACE
36" X 54' C.M. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
36" X 54' R.C. PIPE CULV'T.
CROSS DRAIN

HWY. 25 - SUPER. ADJUST #6
PI = 1304+57.431
Δ = 26° 54' 51" LT
D = 07° 53' 39"
T = 173.67
L = 340.94
PC = 1302+83.758
PT = 1306+24.694
e = 0.084
LS = 250'
SEE SPECIAL DETAIL SHEET NO. XX FOR MORE INFORMATION

PI 1298+22.42
PT 1301+46.37
PI 1301+88.10
PC 1302+83.76
PT 1306+24.69
PI 1304+57.43
PI 1309+29.98
PC 1307+84.34
PT 1310+59.43
1300
1305
1310
40'
40'
E-11
E-6

PLAN 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.		100974	88	93
				(2)		PLAN SHEETS		



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	89	93

(2) PLAN SHEETS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PLAN 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.		100974	90	93
				(2)		PLAN SHEETS		

STA. 1338+39 - IN PLACE
30" X 40' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
30" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1340+08 - IN PLACE
18" X 18' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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MARK B. SMITHEE



STA. 1346+90 - IN PLACE
36" X 48' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
36" X 48' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	91	93
				(2)	PLAN SHEETS			

LEGEND

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

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

STA. 1354+79 - IN PLACE
18" X 34' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1356+38 - IN PLACE
18" X 36' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1363+18 - IN PLACE
18" X 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1363+74 - IN PLACE
18" X 19' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STA. 1364+41 - IN PLACE
18" X 21' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN

STATE OF ARKANSAS
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MARK B. SMITHEE

PI 1351+98.59
PI 1353+20.22
PI 1358+91.42
PI 1363+32.97
1355
1360
1365
40'
30'
PC 1356+56.87
PT 1361+24.69
PC 1365+60.87

STA. 1355+07 - IN PLACE
24" X 52' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
24" X 52' R.C. PIPE CULV'T.
CROSS DRAIN

STA. 1366+98 - IN PLACE
30" X 46' R.C. PIPE CULV'T.
CROSS DRAIN
REMOVE AND INSTALL
30" X 52' R.C. PIPE CULV'T.
CROSS DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100974	92	93
				(2)	PLAN SHEETS			

LEGEND

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

PI 1366+81.36
PC 1369+29.48
PT 1370+84.34
PT 1367+99.72
PI 1370+07.26
PC 1378+00.58
PT 1381+61.64
PI 1379+68.89
1370
1375
1380
30'
30'

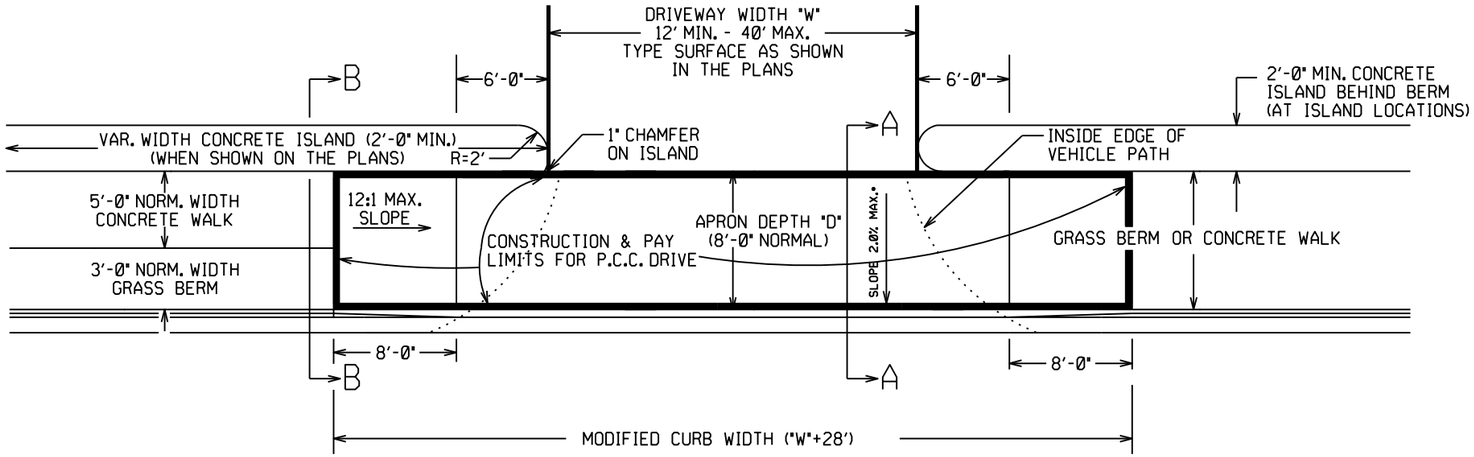
PLAN SHEETS

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.		100974	93	93
				(2)		PLAN SHEETS		

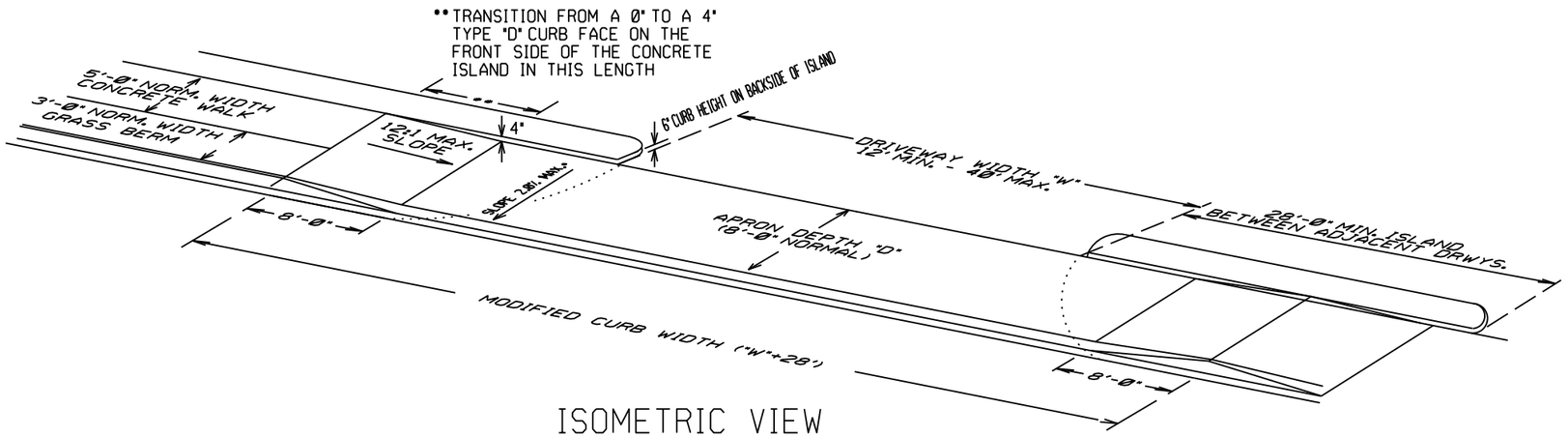


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8403
MARK B. SMITHEE

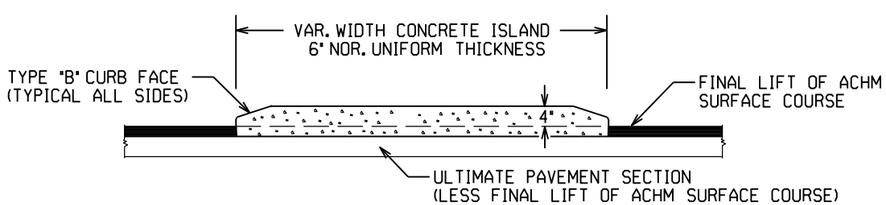
PLAN SHEETS



PLAN VIEW

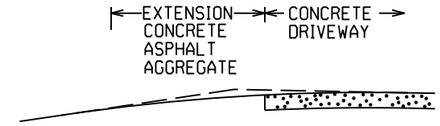


ISOMETRIC VIEW



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

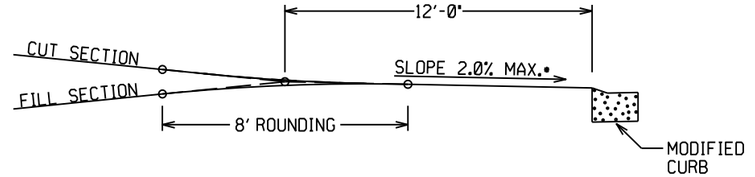
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

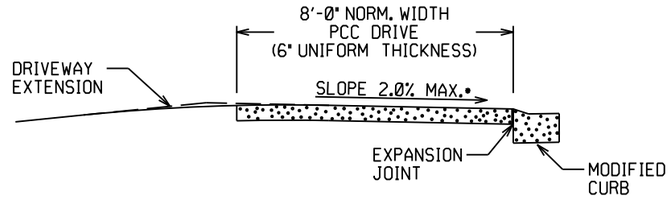
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

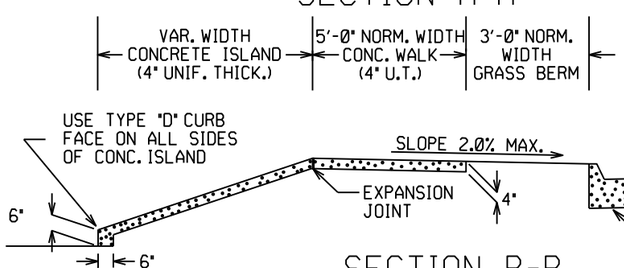


DRIVEWAY VERTICAL ALIGNMENT DETAILS

• NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



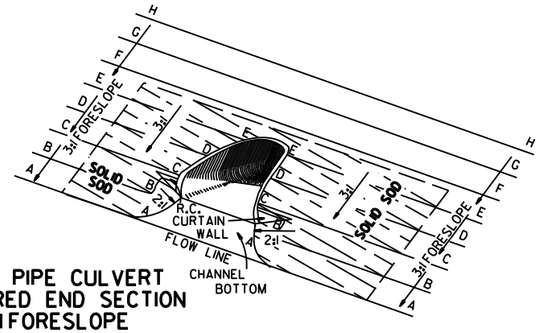
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-07-19		REVISED WALK DETAILS
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

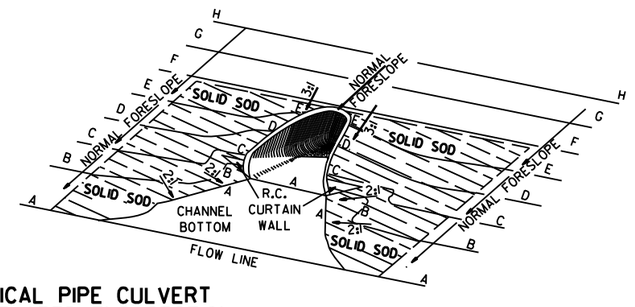
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

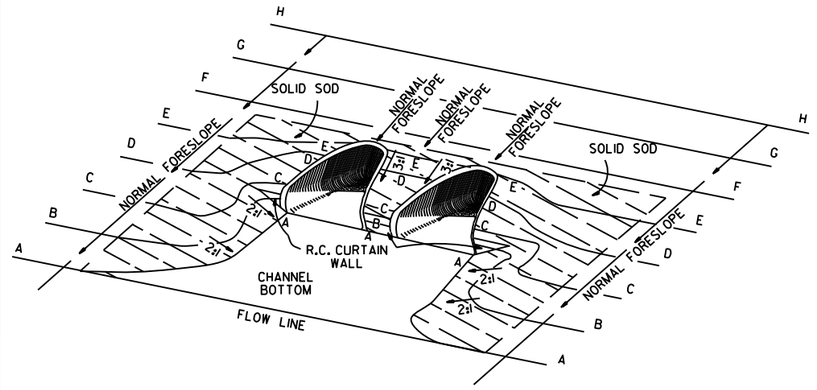
STANDARD DRAWING DR-1



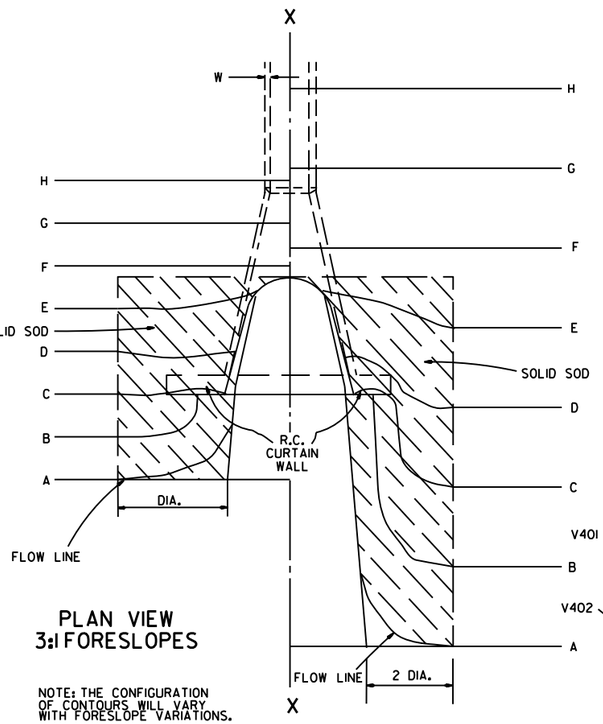
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

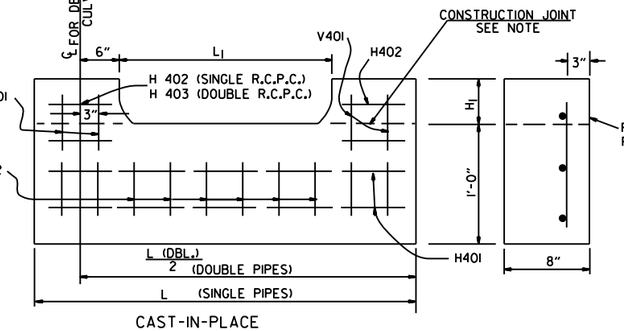
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

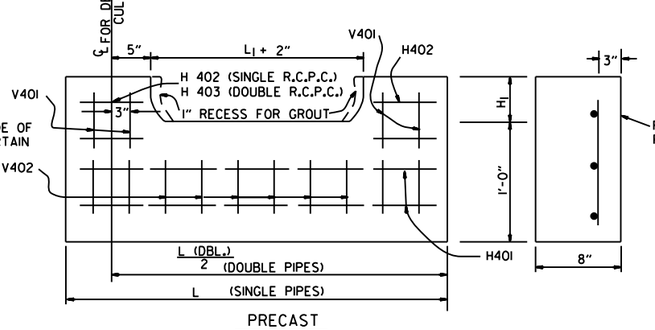
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	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

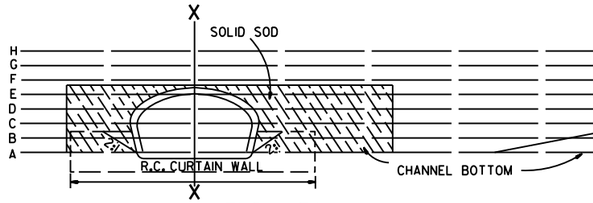
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



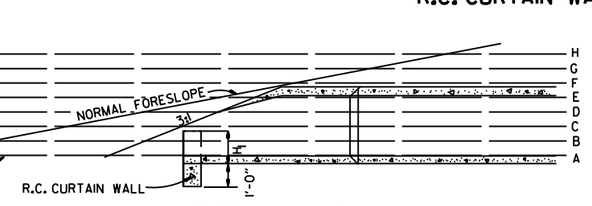
PRECAST

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"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

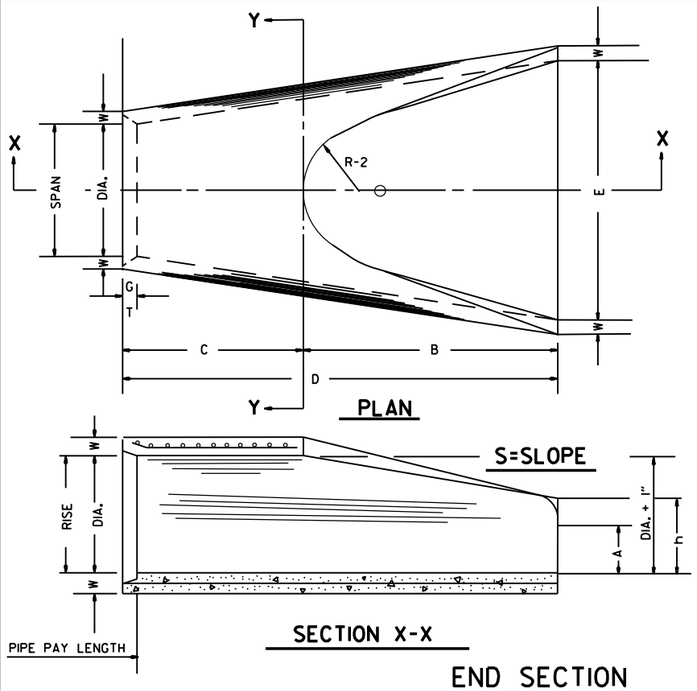
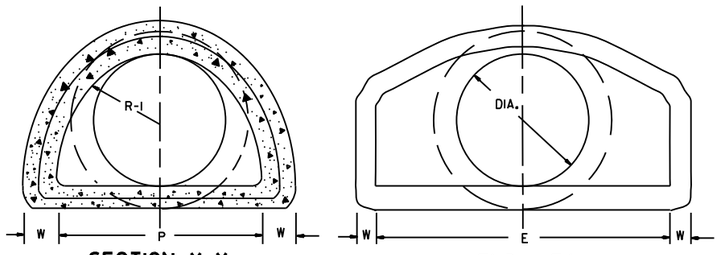


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 15/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 3/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

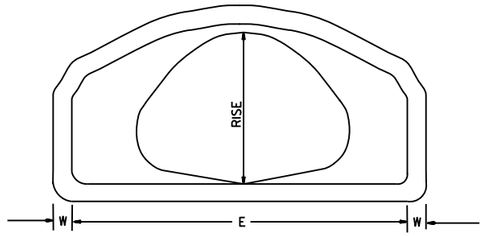


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

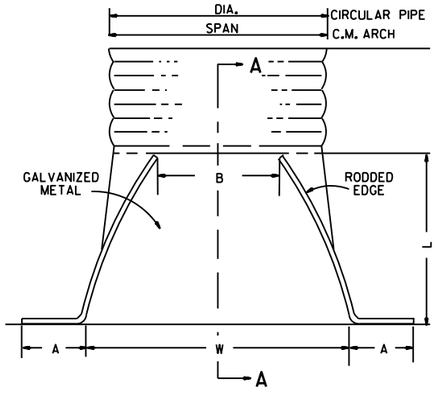
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 11/16"	20"	3"	2½:1
36	43¾	44	26⅜	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

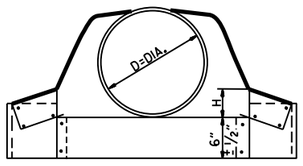
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

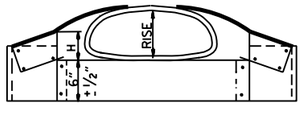


END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE

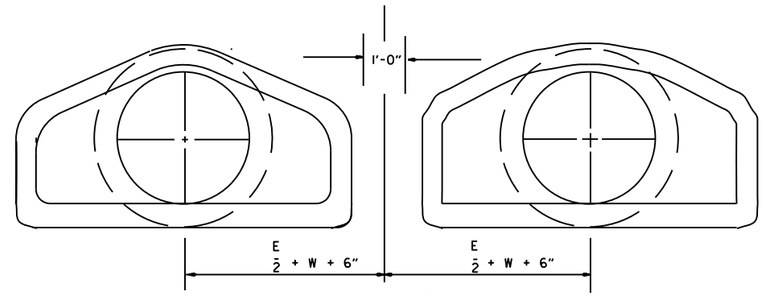
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

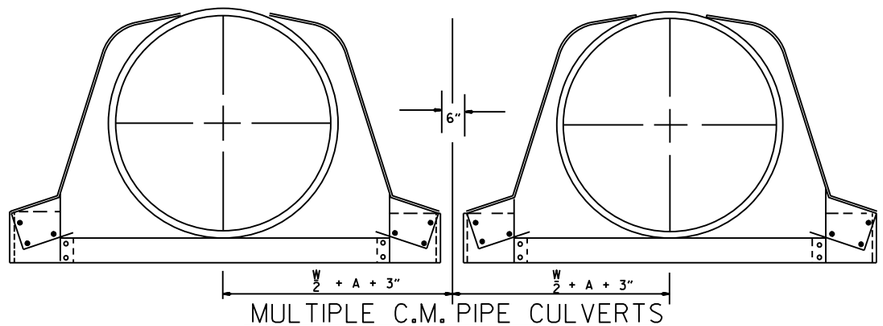
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



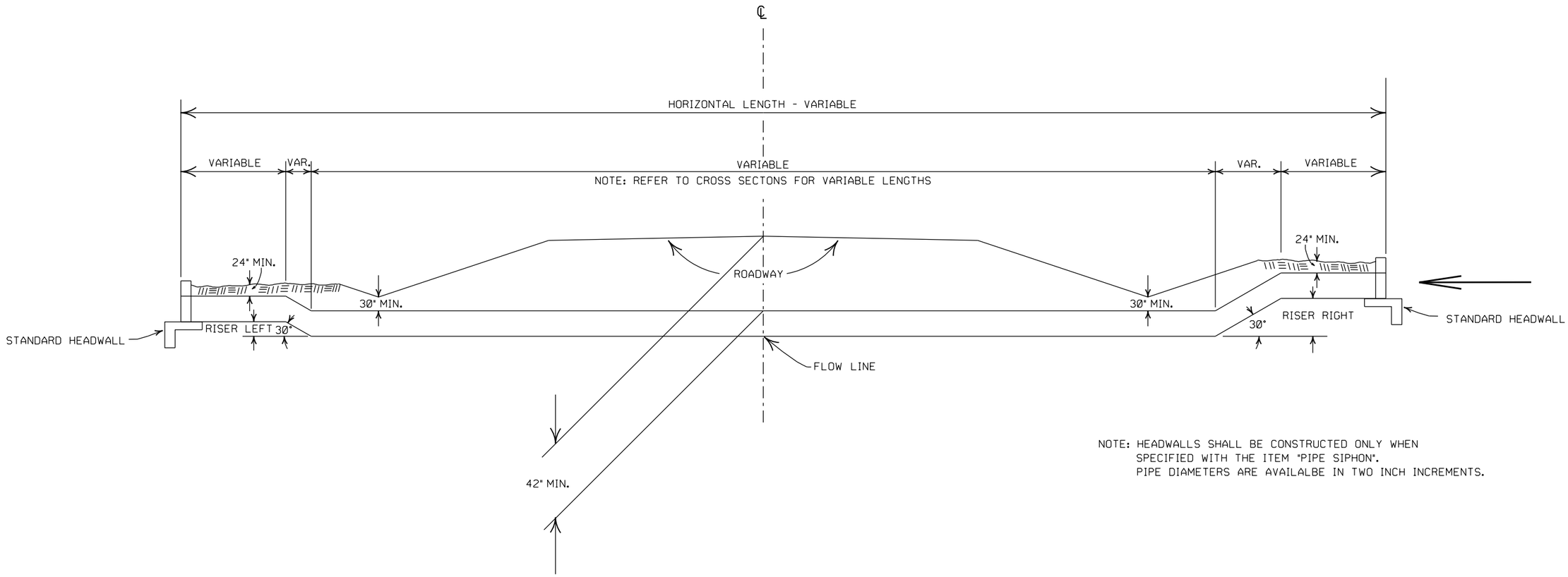
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-2



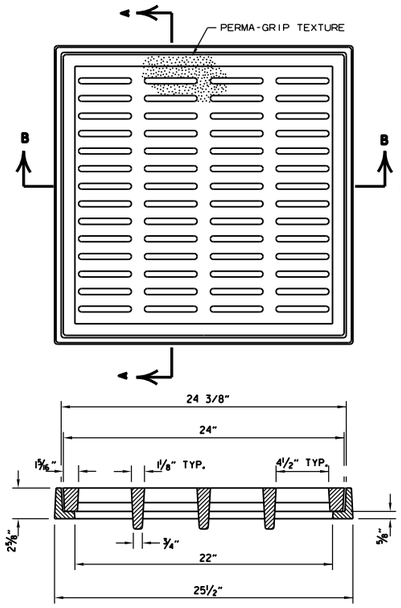
NOTE: HEADWALLS SHALL BE CONSTRUCTED ONLY WHEN SPECIFIED WITH THE ITEM "PIPE SIPHON". PIPE DIAMETERS ARE AVAILALBE IN TWO INCH INCREMENTS.

DATE	REVISION	FILMED
1-12-00	CORRECTED SPELLING	
1-4-83	MINIMUM COVER INCREASED	678-1-4-83
10-2-72	REVISED AND REDRAWN	758-10-2-72

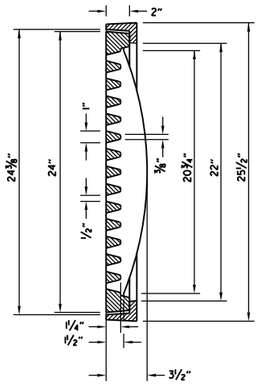
ARKANSAS STATE HIGHWAY COMMISSION

PIPE SIPHON

STANDARD DRAWING FPC-2A



SECTION B-B

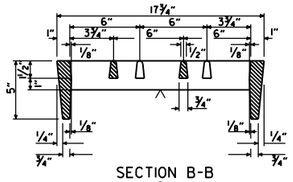


SECTION A-A

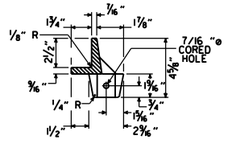
DETAILS OF PEDESTRIAN GRATE AND FRAME

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

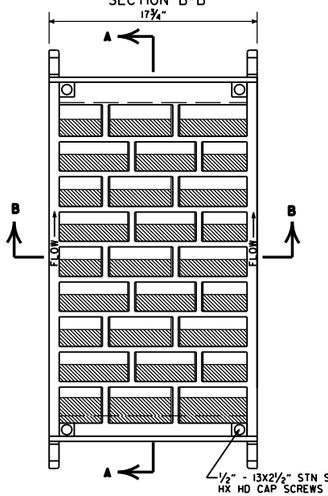
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 218 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

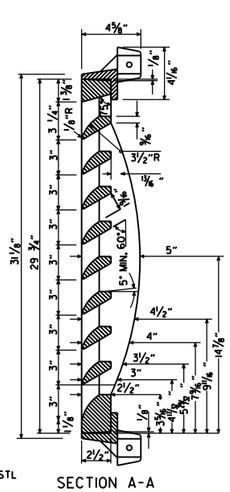


SECTION B-B



SECTION THRU FRAME



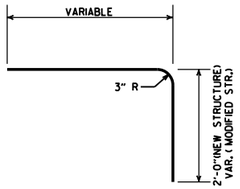


SECTION A-A

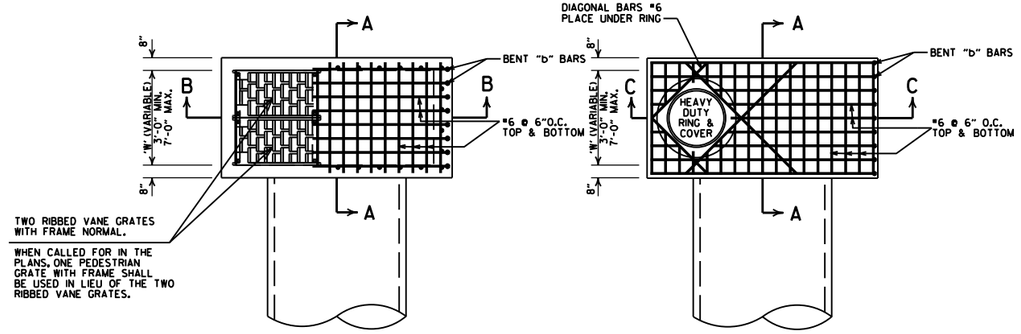
DETAILS OF RIBBED VANE GRATE AND FRAME

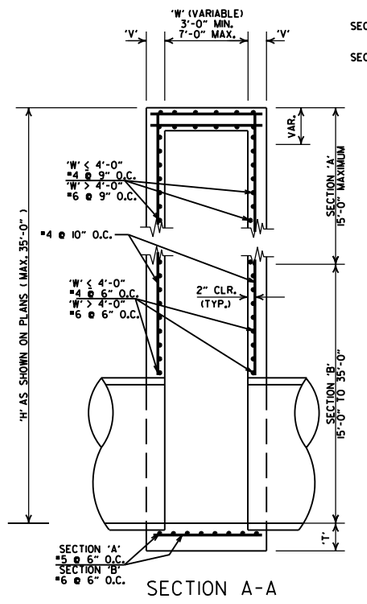
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



DETAIL OF BENT "b" BAR



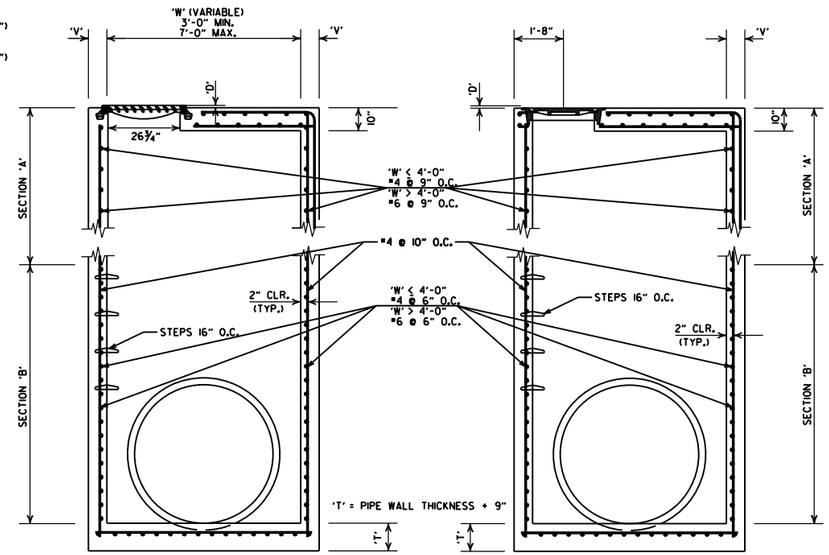


SECTION A-A

SECTION 'A'
'V' = 8"

SECTION 'B' (W≤4'-0")
'V' = 8"

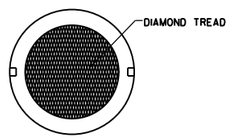
SECTION 'B' (W>4'-0")
'V' = 10"



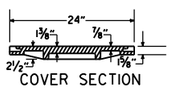
SECTION B-B

SECTION C-C

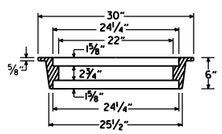
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

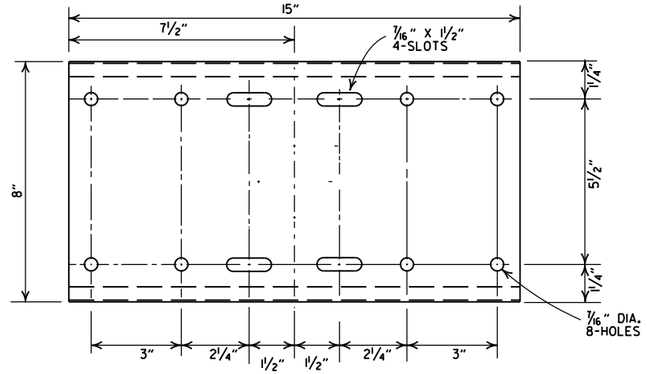
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

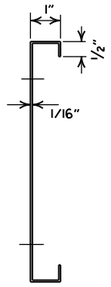
ARKANSAS STATE HIGHWAY COMMISSION

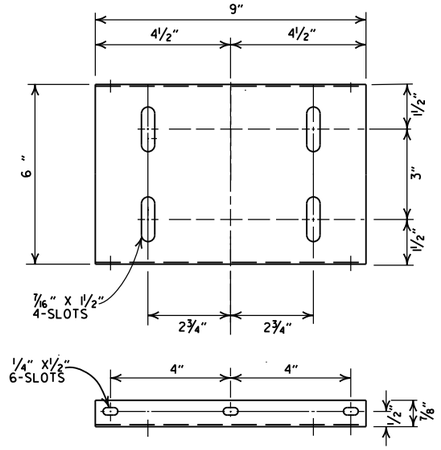
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

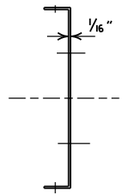


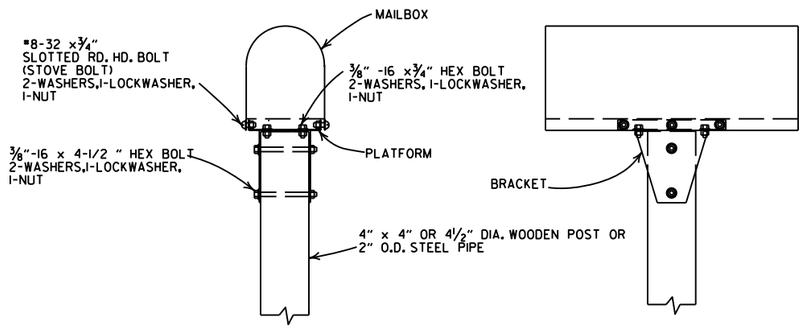
SHELF



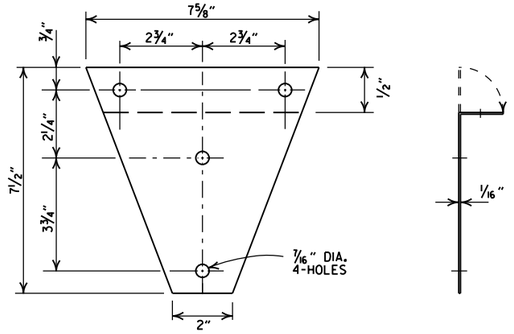


PLATFORM





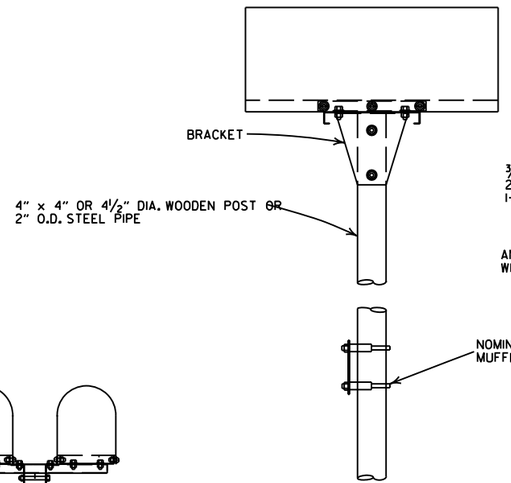
SINGLE INSTALLATION



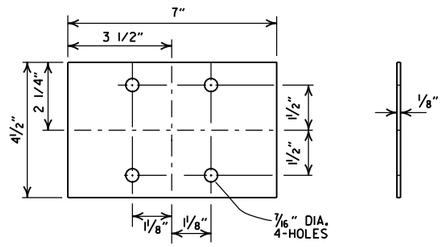
BRACKET

GENERAL NOTES

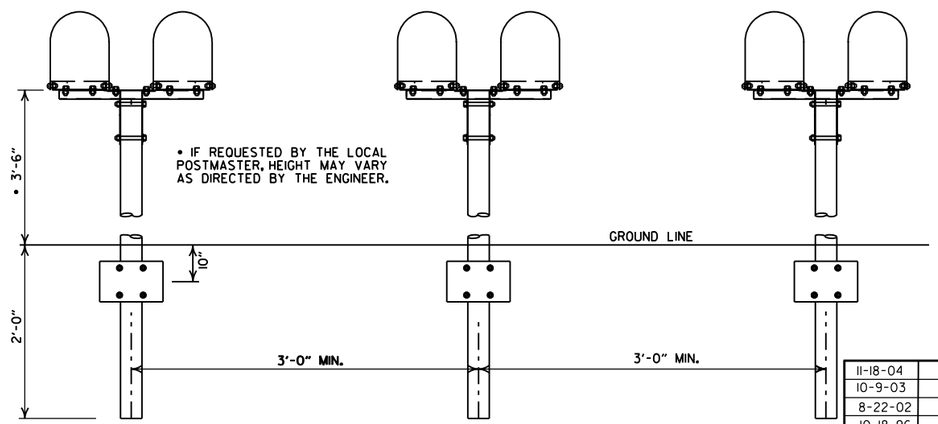
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



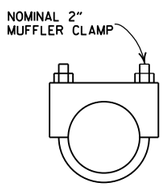
DOUBLE INSTALLATION



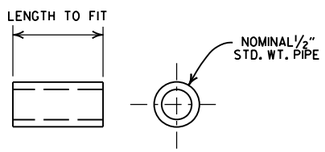
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

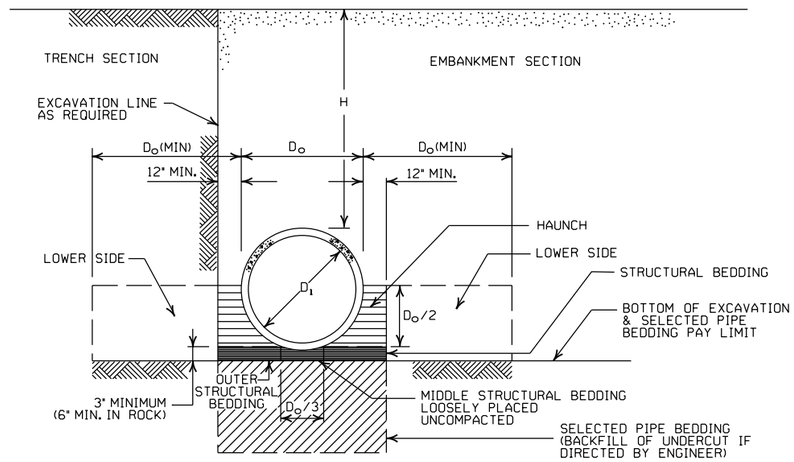
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

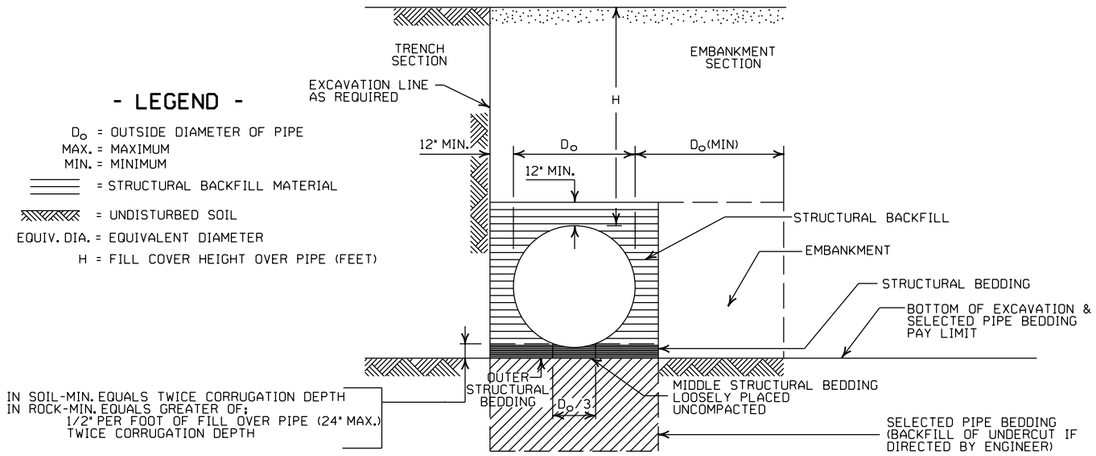
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				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			

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

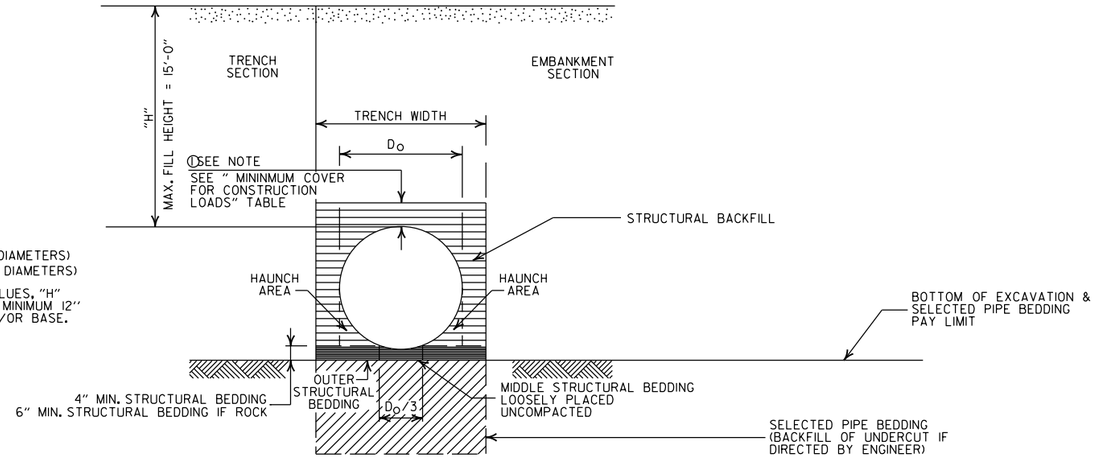
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

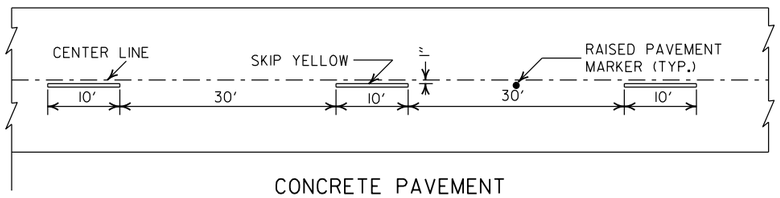
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

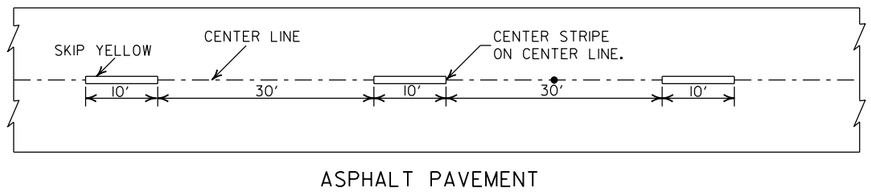
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

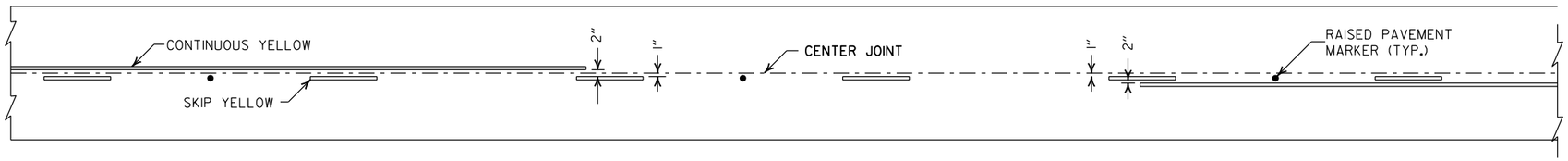


CONCRETE PAVEMENT

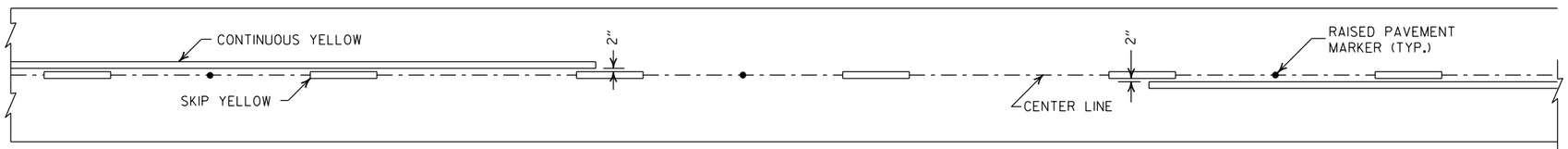


ASPHALT PAVEMENT

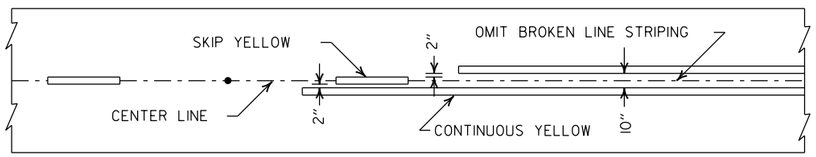
BROKEN LINE STRIPING



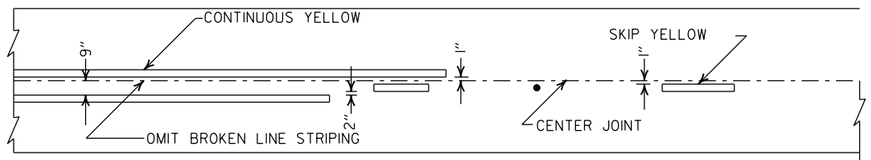
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

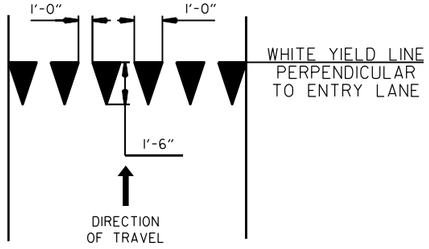


ASPHALT PAVEMENT

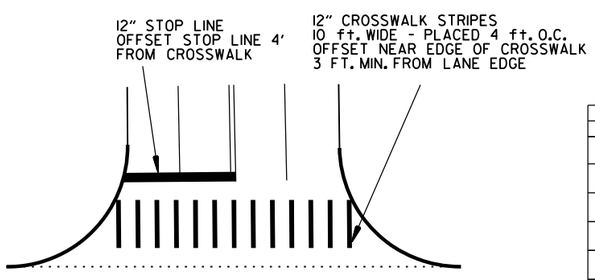


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

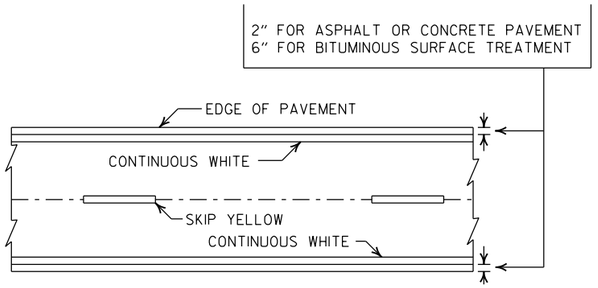


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

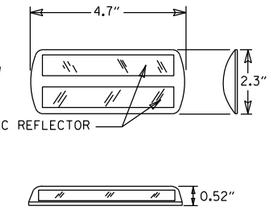
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300	D MAX = 13° 45'																			
14° 00'	0.080	180		0.094	222																								
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											
D MAX = 28° 30'																													

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)

GENERAL NOTES

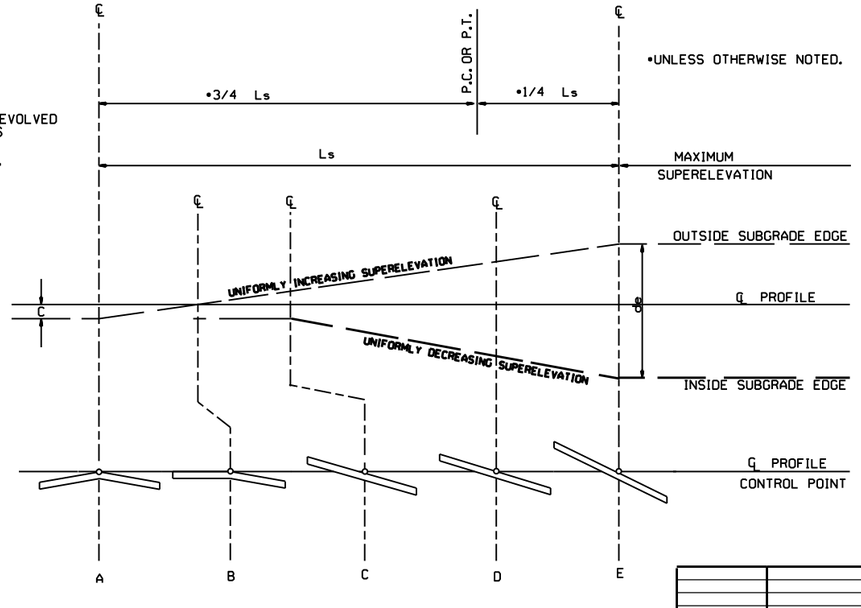
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

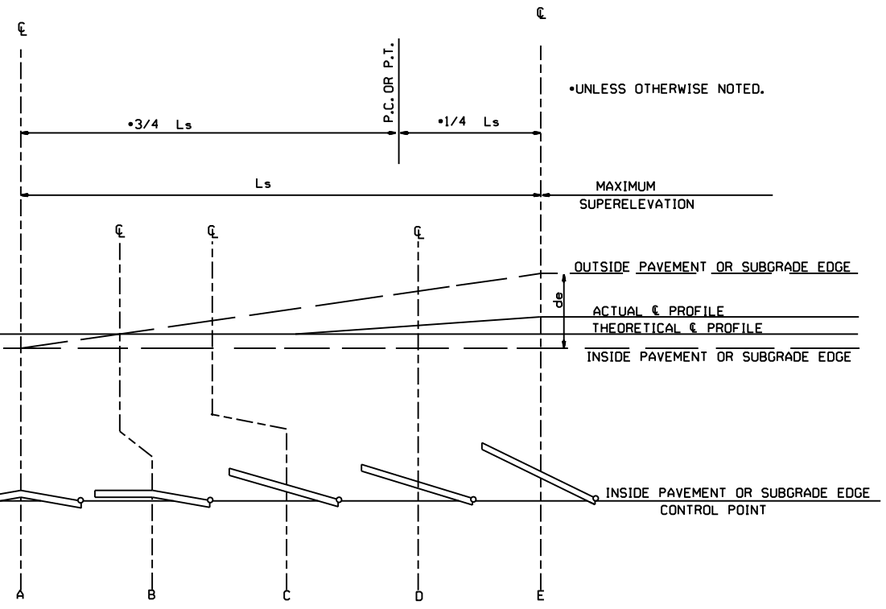
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

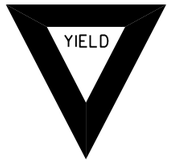
STANDARD DRAWING SE-2

R1-1



STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



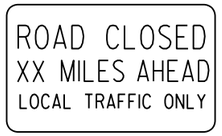
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a



STD. 36"X36"
FWY. 48"X48"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2



STD. 36"X36"
FWY. 48"X48"

W1-3



STD. 48"X48"

W1-4



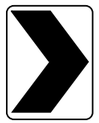
STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



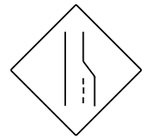
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



STD. 36"X36"
FWY. 48"X48"

W8-9



STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

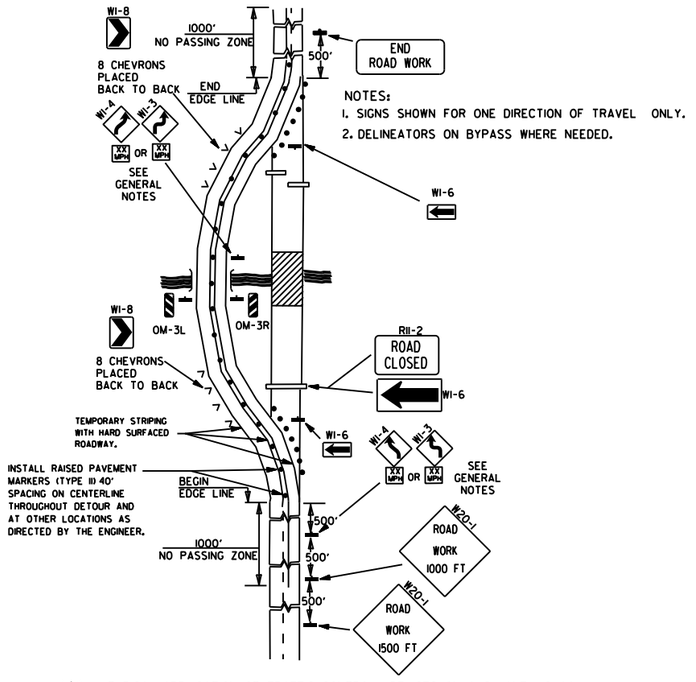
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

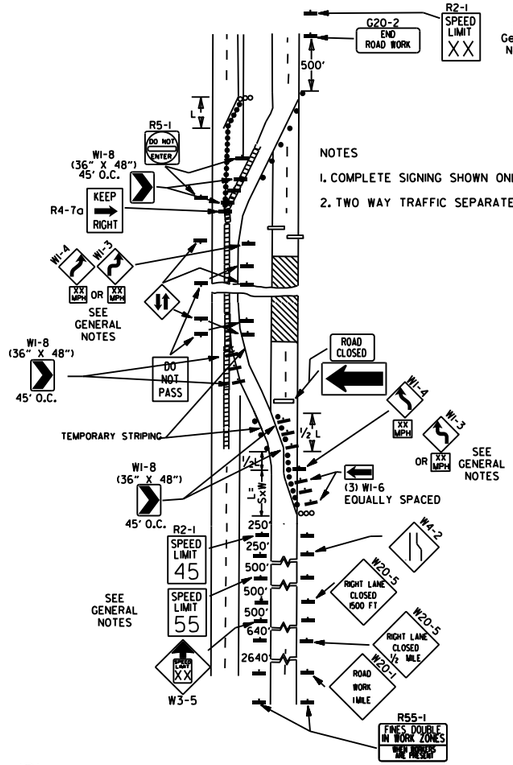
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



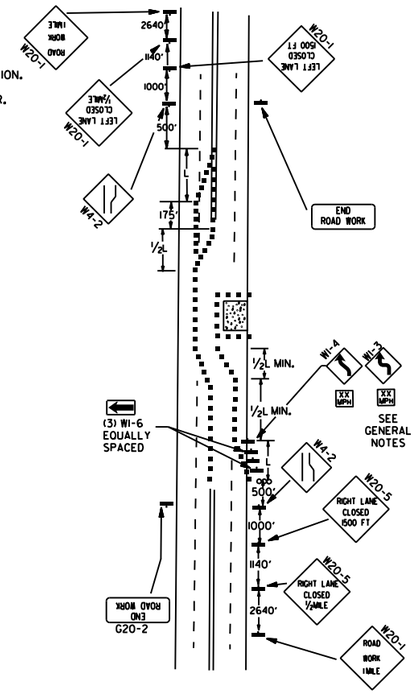
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

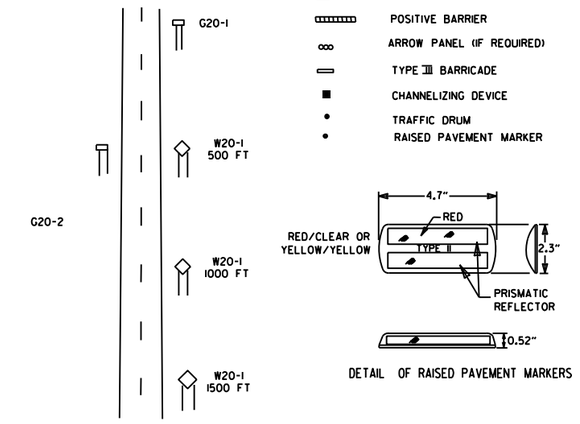


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

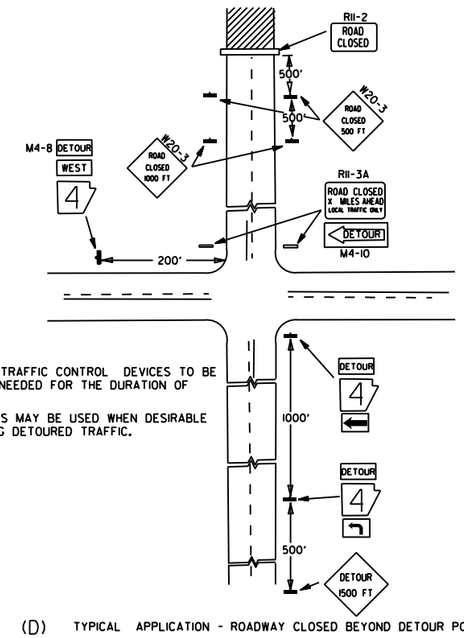
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

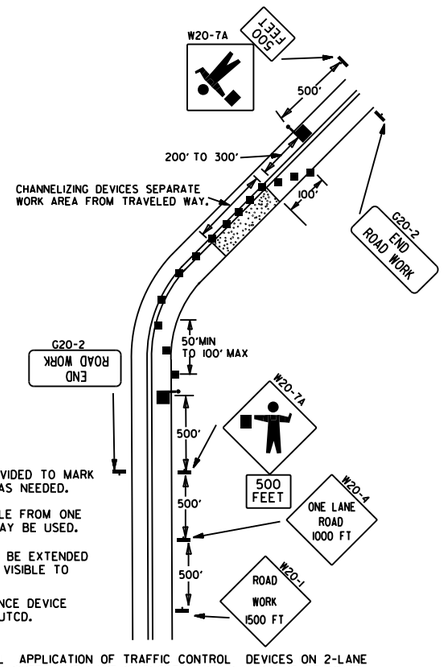
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH 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 R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



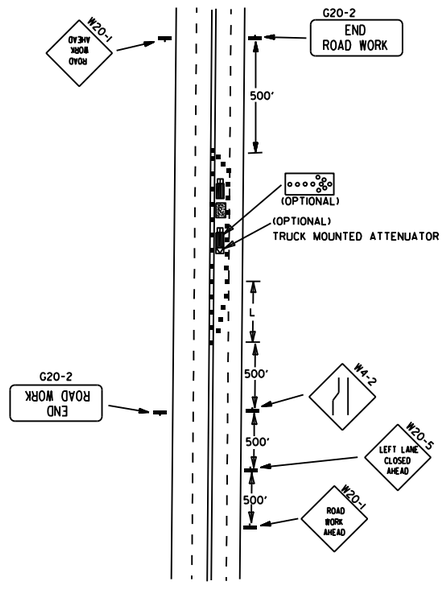
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



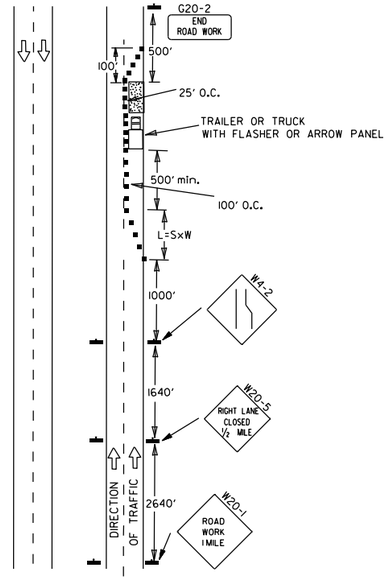
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON 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

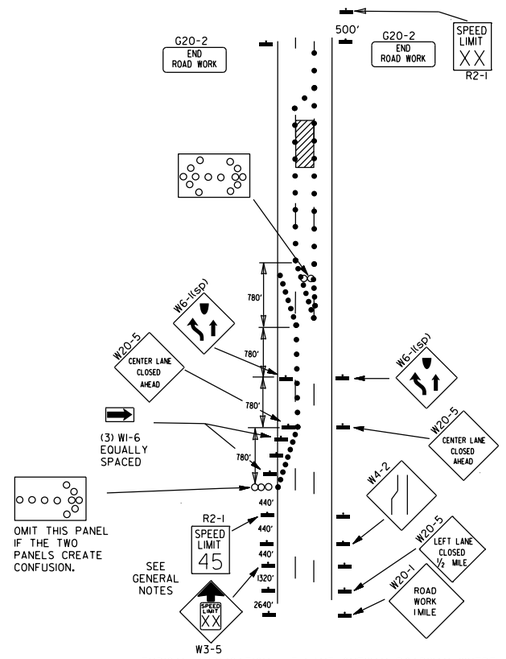
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

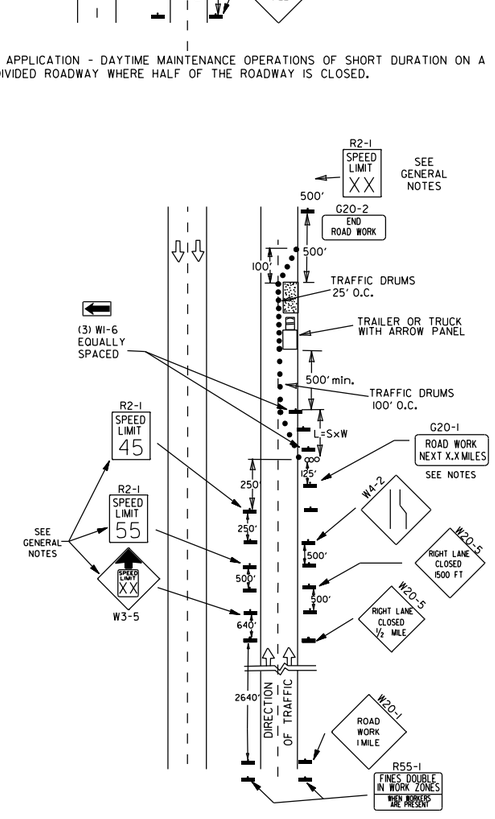
STANDARD DRAWING TC-2



(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:

ooo ARROW PANEL (IF REQUIRED)

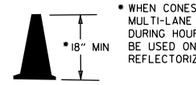
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

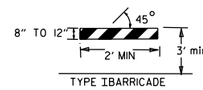
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH 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 R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES

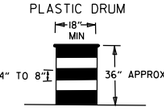


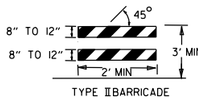
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

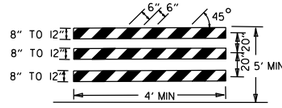
CONES



PLASTIC DRUM

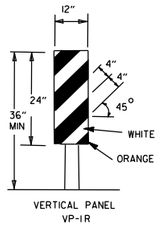




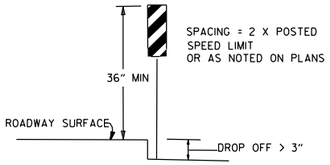


TYPE III BARRICADE

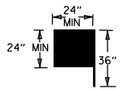
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



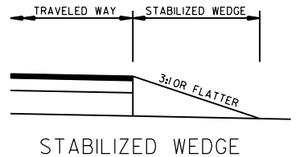
VERTICAL PANEL PLACEMENT



FLAG

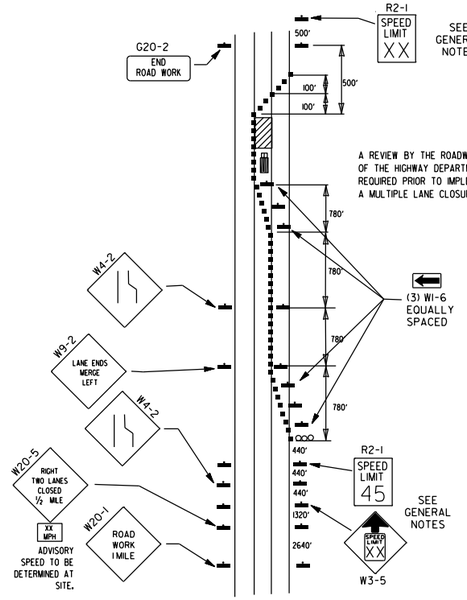


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL ≤ 45 MPH	TRAFFIC CONTROL > 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

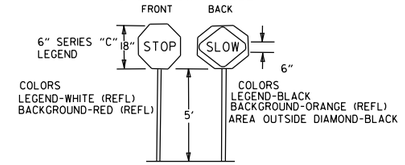
INTERSTATE AND NON-INTERSTATE

FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

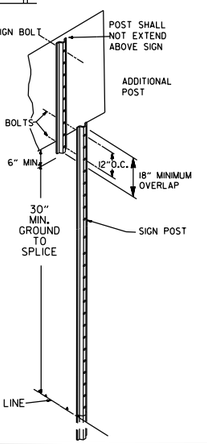
GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



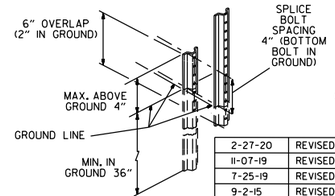
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

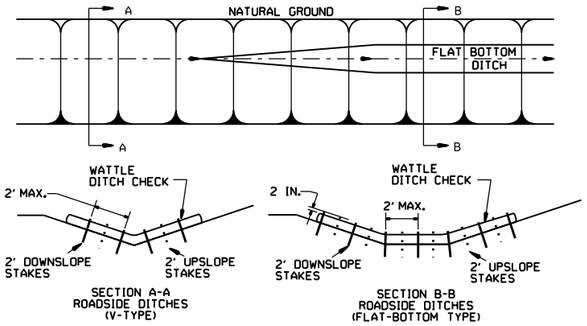
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

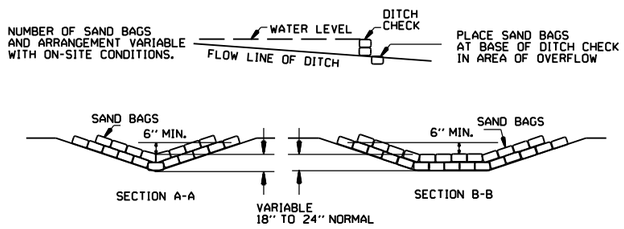
STANDARD DRAWING TC-3

GENERAL NOTES

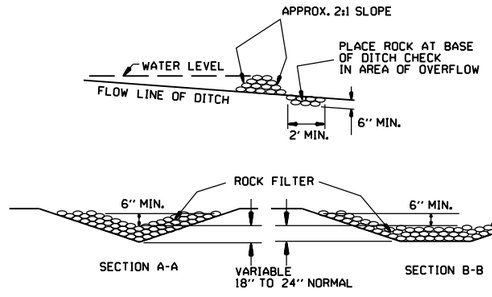
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

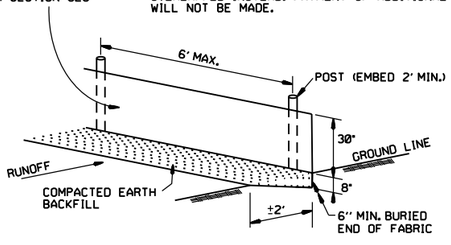


ROCK DITCH CHECK (E-6)

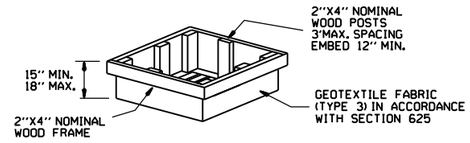
GENERAL NOTES

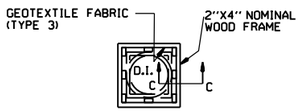
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

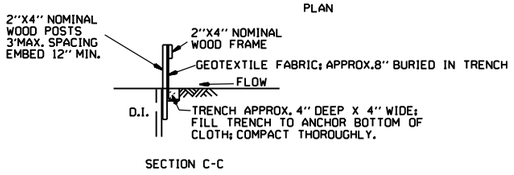
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



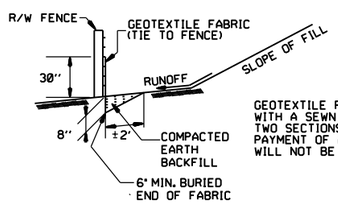
SILT FENCE (E-11)





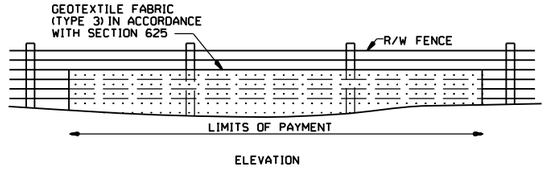


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



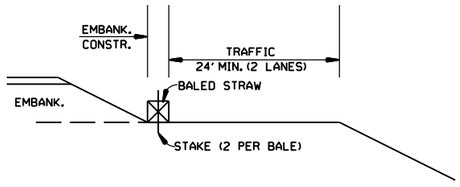
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

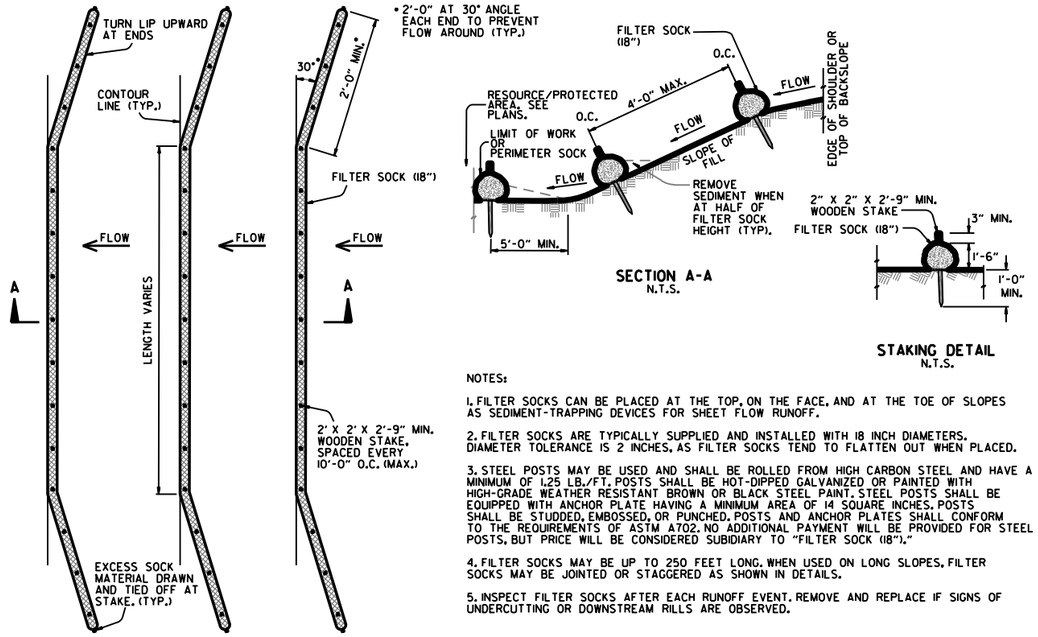
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

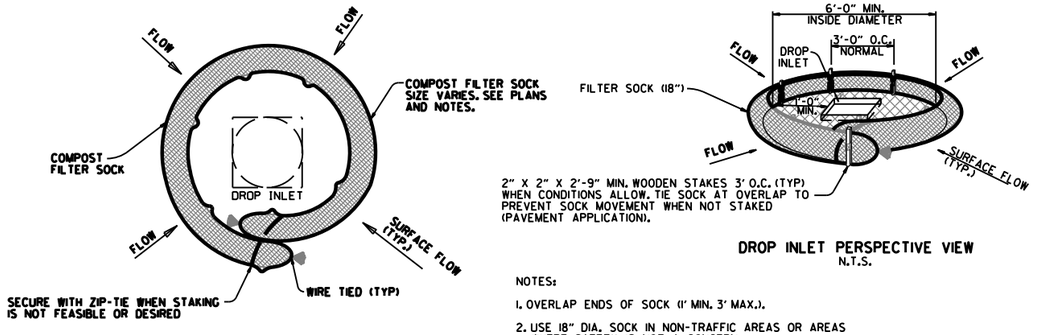
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

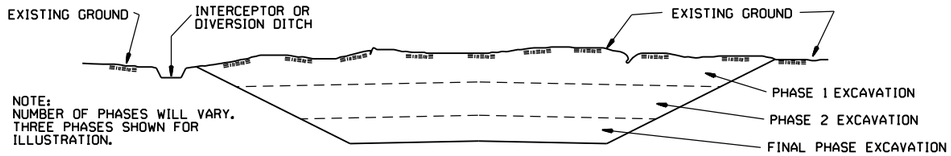
STANDARD DRAWING TEC-1

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



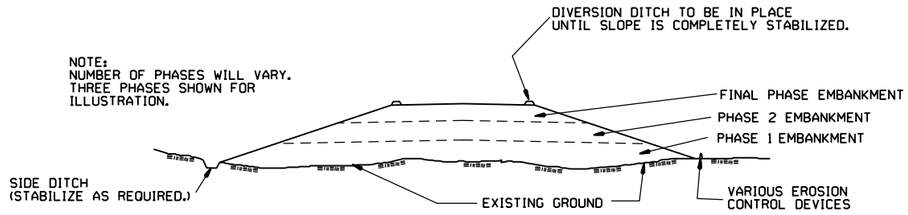
GENERAL NOTE

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

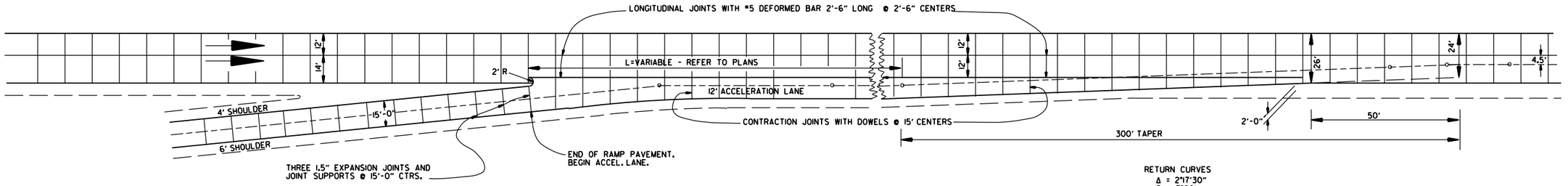
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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.

11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

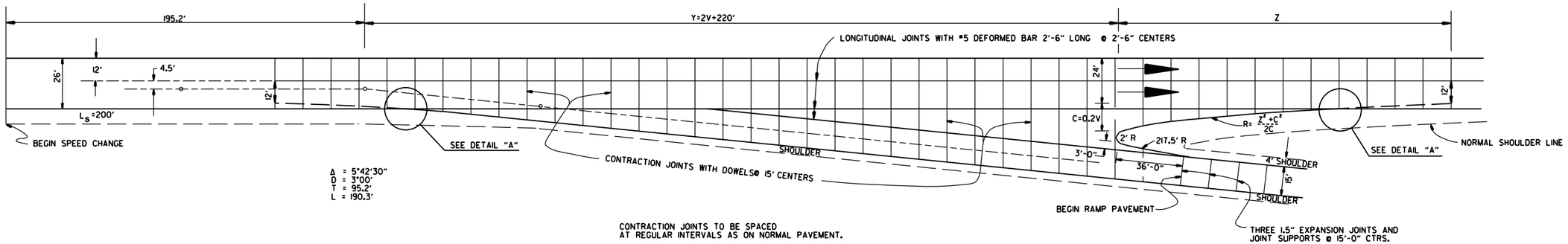
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



ENTRANCE RAMP

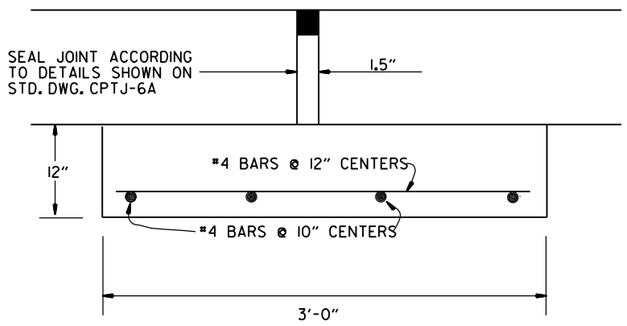
RETURN CURVES
Δ = 2°17'30"
D = 3°00'
T = 38.2'
L = 76.4'



Δ = 5°42'30"
D = 3°00'
T = 95.2'
L = 190.3'

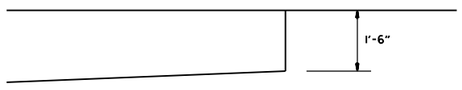
CONTRACTION JOINTS TO BE SPACED AT REGULAR INTERVALS AS ON NORMAL PAVEMENT.

EXIT RAMP



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS).
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE SUBSIDIARY TO THE ABOVE ITEMS.



DETAIL "A"

EXIT RAMP

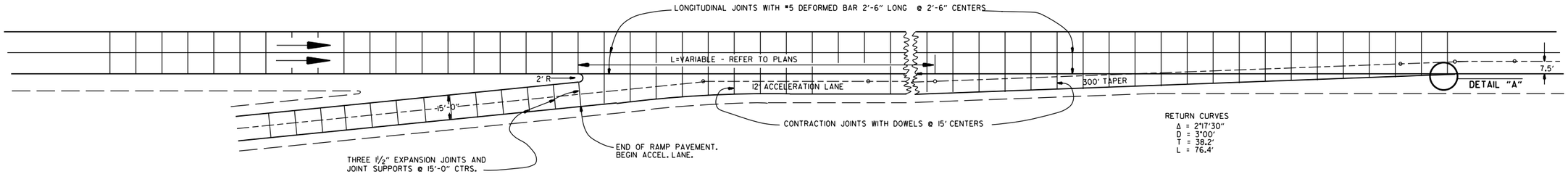
DESIGN SPEED V	X Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R
40	300.0	8.0	96.0	580.0
50	320.0	10.0	120.0	725.0
60	340.0	12.0	168.0	1182.0
70	360.0	14.0	210.0	1582.0

DATE	REVISION	DATE FILM'D
1-12-00	REDRAWN & REISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

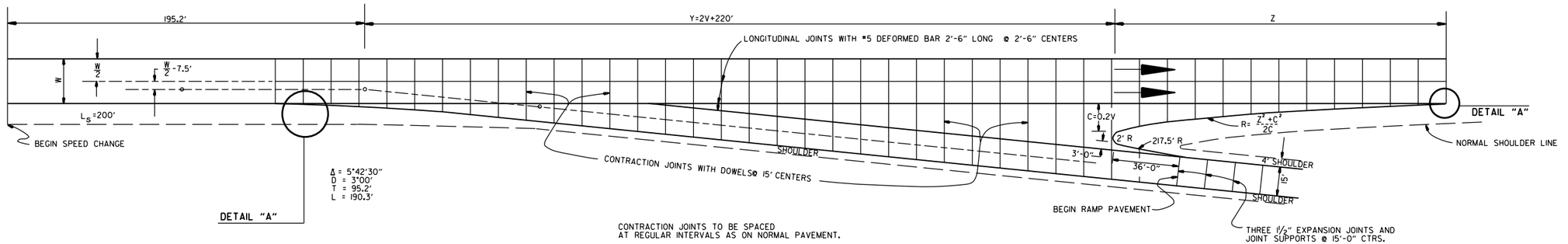
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS

STANDARD DRAWING TR-1



ENTRANCE RAMP

NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.

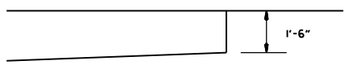


CONTRACTION JOINTS TO BE SPACED AT REGULAR INTERVALS AS ON NORMAL PAVEMENT.

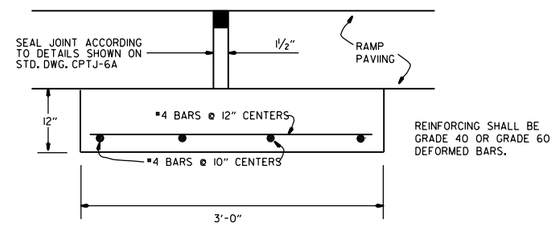
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	X Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.29
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

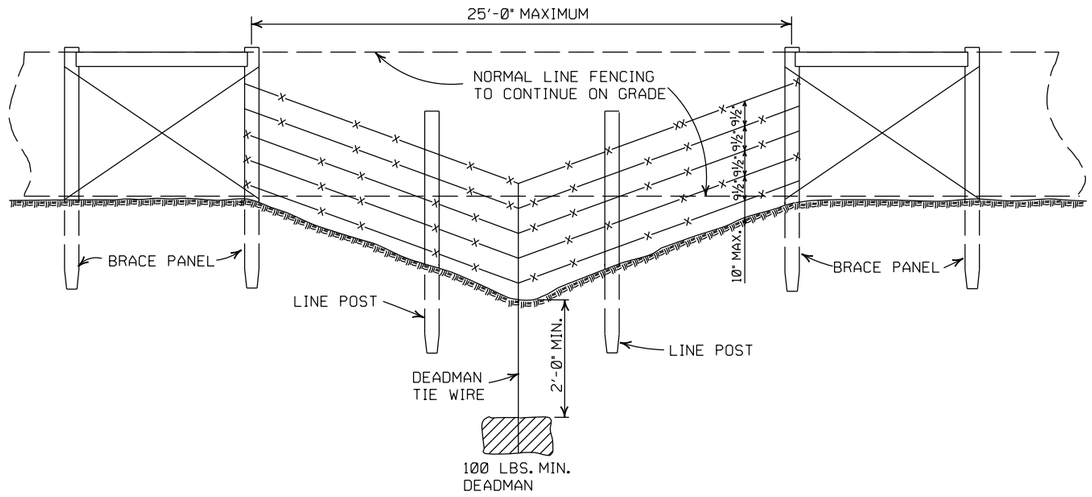
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

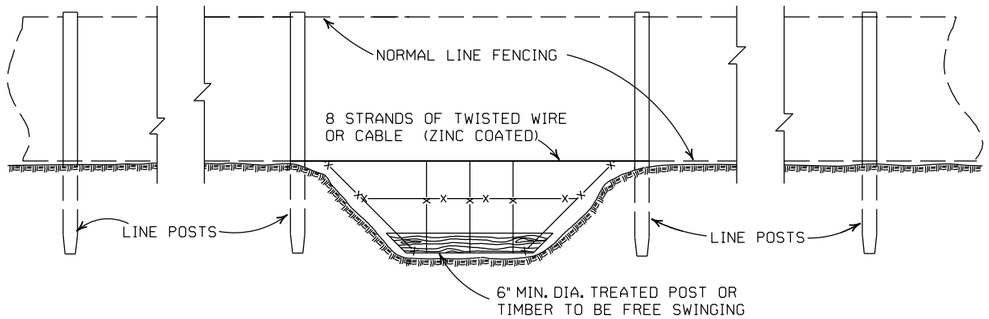
DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORM'D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72

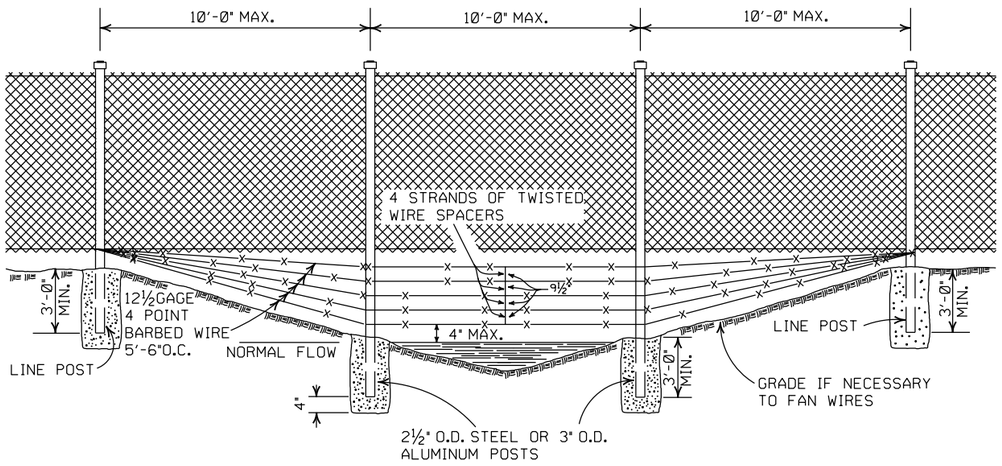
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A







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.

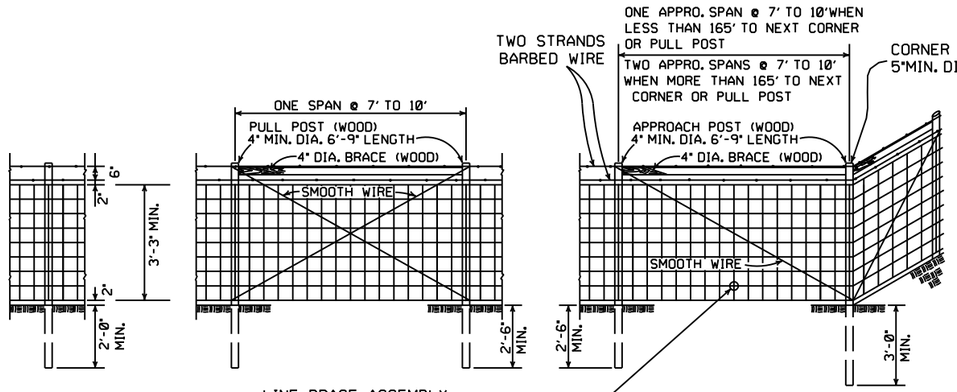
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	FILMED
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72

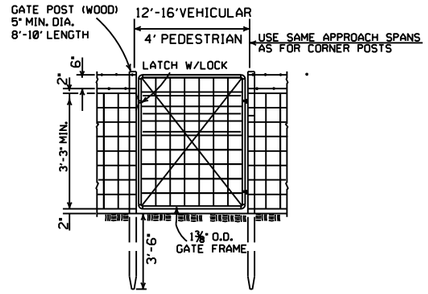
ARKANSAS STATE HIGHWAY COMMISSION

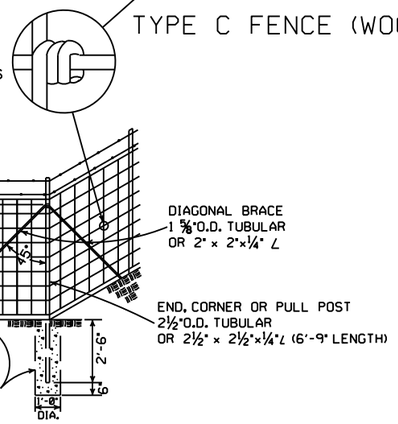
WIRE FENCE WATER GAPS

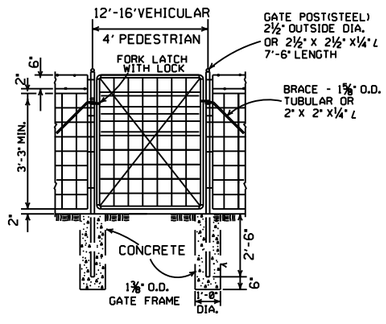
STANDARD DRAWING WF-2



TYPE C FENCE (WOOD POSTS)

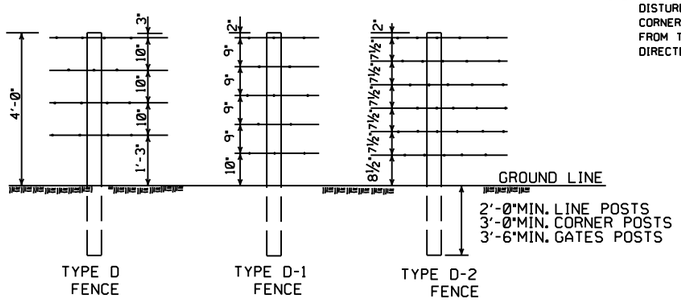




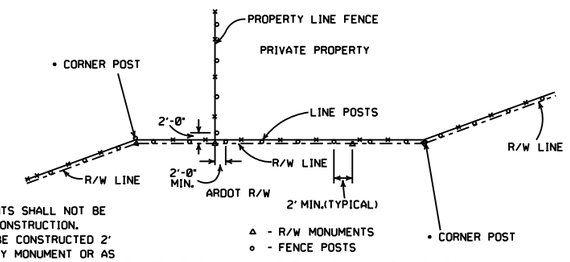


NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

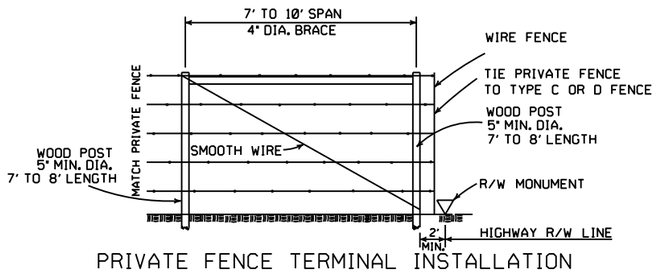


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



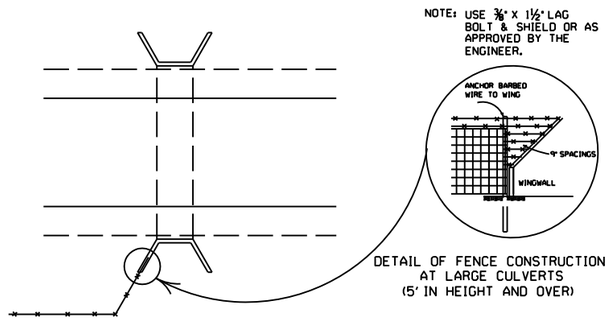
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION

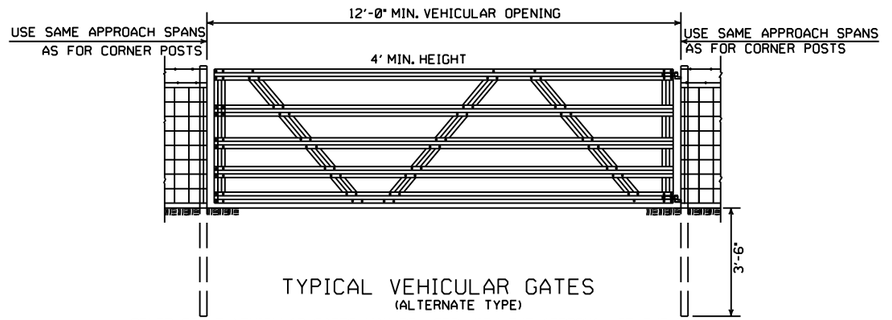


PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)



TYPICAL VEHICULAR GATES

(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK)SHALL MEET THE APPROVAL OF THE ENGINEER.

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4