

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

BRANCH OF CADRON CREEK STR. & APPRS. (HOLLAND) (S)

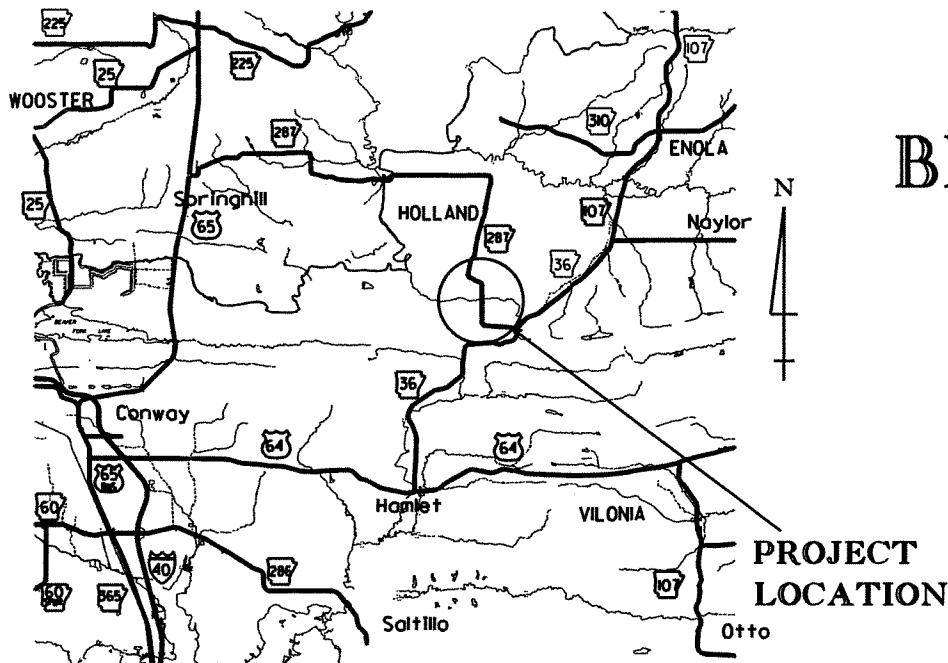
FAULKNER COUNTY

ROUTE 287 SECTION 1

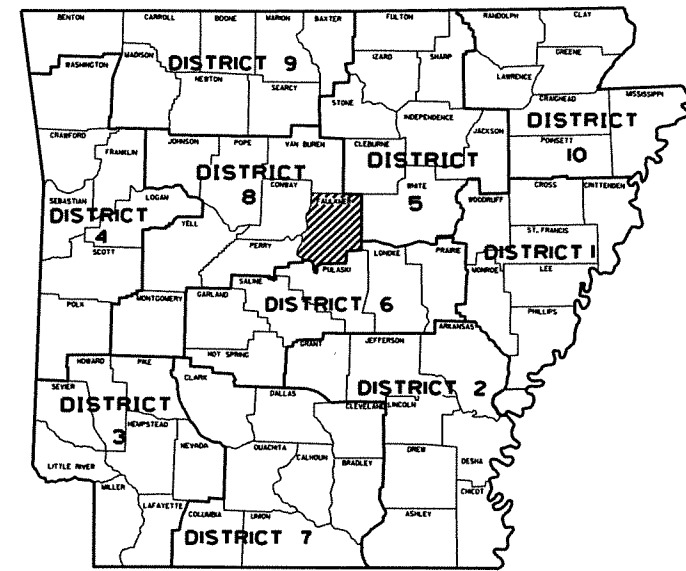
F.A.P. BRN-0023(42)

JOB 080384

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080384		1	45
				2 BRANCH OF CADRON CREEK STR. & APPRS. (HOLLAND) (S)				



VICINITY MAP



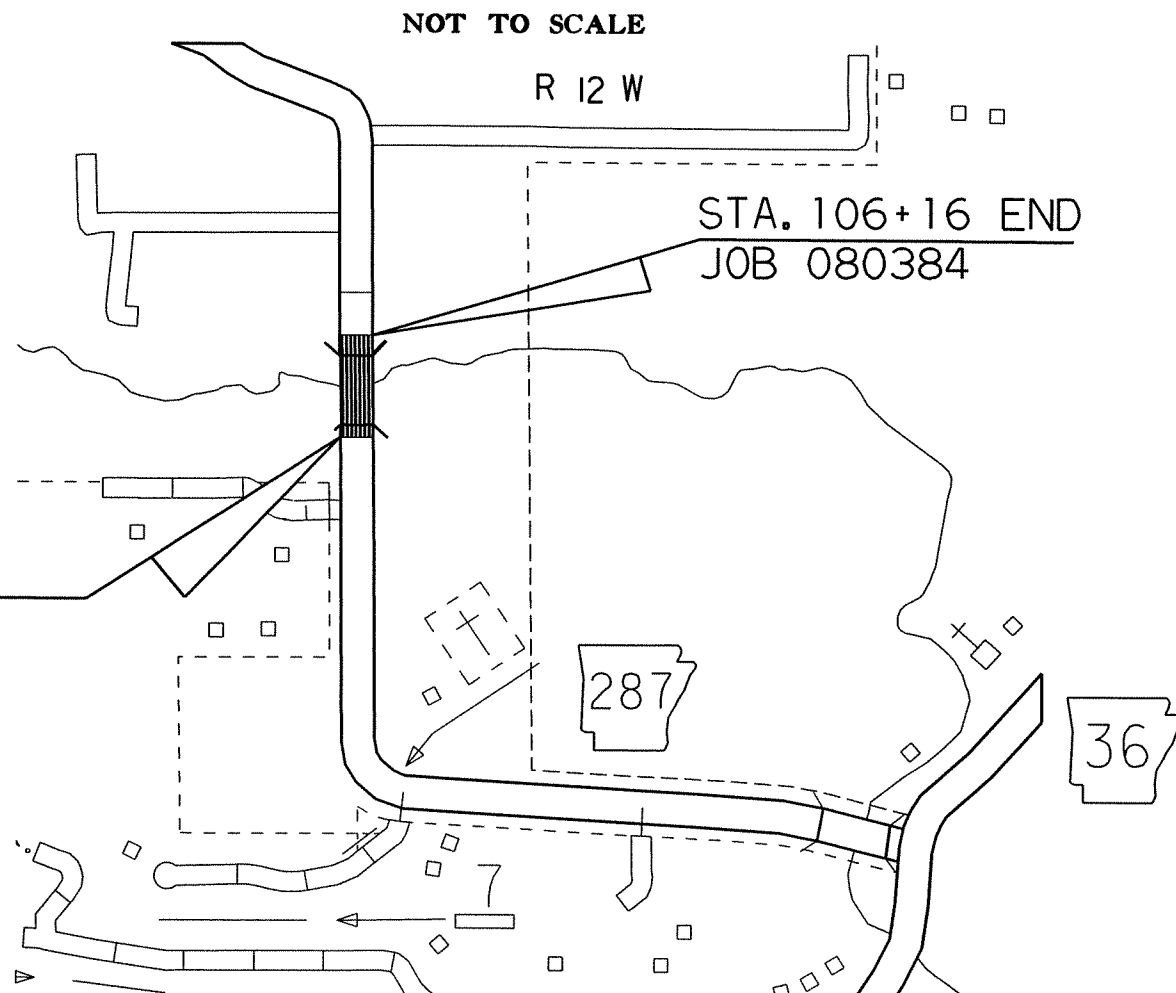
ARKANSAS HIGHWAY DISTRICT 8

DESIGN TRAFFIC DATA

DESIGN YEAR-----2031
 2011 ADT-----700
 2031 ADT-----1000
 2031 DHV-----110
 DIRECTIONAL DISTRIBUTION-----60%
 TRUCKS-----14%
 DESIGN SPEED-----55 MPH

STRUCTURES OVER 20' -0" SPAN

STATION	DESCRIPTION	SPAN
105+79.50	QUINTUPLE 7' X 4' X 64' R.C. BOX CULVT.	38.67'



STA. 105+40 BEGIN
 JOB 080384
 LOG MILE 1.39

PROJECT COORDINATES:

	MID-POINT
LAT.	N35° 08' 27.5"
LON.	W92° 16' 35.2"

GROSS LENGTH OF PROJECT	76.00	FEET OR	0.014	MILE
NET LENGTH OF ROADWAY	37.33	FEET OR	0.007	MILE
NET LENGTH OF BRIDGES	38.67	FEET OR	0.007	MILE
NET LENGTH OF PROJECT	76.00	FEET OR	0.014	MILE



APPROVED



7/20/11
 DEPUTY DIRECTOR
 AND CHIEF ENGINEER

P.E. JOB 080384
 NON-PART.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080384		2	45

② INDEX OF SHEETS & GOV. SPECS.



7-20-11

INDEX OF SHEETS

SHEET NO.	TITLE	DRAWING NO.	DATE
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2	INDEX OF SHEETS AND GOVERNING SPECIFICATIONS		
3	LEGEND AND GENERAL NOTES		
4-5	TYPICAL SECTIONS OF IMPROVEMENT		
6	SPECIAL DETAILS		
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13-15	QUANTITY SHEETS		
16	SUMMARY OF QUANTITIES AND REVISION BOX		
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20	CONCRETE DITCH PAVING	CDP-1	11-17-10
21	MAILBOX DETAILS	MB-1	11-18-04
22	PRECAST CONCRETE BOX CULVERTS	PBC-1	10-15-09
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24	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	3-30-00
25	PAVEMENT MARKING DETAILS	PM-1	11-17-10
26	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
27	REINFORCED CONCRETE BOX CULVERT DETAILS	RCB-1	5-25-06
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29	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2	10-18-96
30	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	11-17-10
31	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	3-11-10
32	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
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36	WIRE FENCE WATER GAPS	WF-2	4-20-79
37	WIRE FENCE TYPE C AND D	WF-4	8-22-02
38	DETAILS OF STANDARD BARREL SECTIONS FOR R.C. BOX CULVERTS	R-500X-0	3-15-63
39	DETAILS OF STANDARD WINGS FOR R.C. BOX CULVERTS	W-X003-1	5-10-66
40-45	CROSS SECTIONS		

GOVERNING SPECIFICATIONS

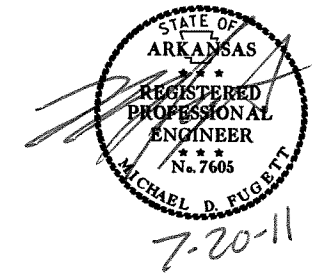
ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	FHWA-1273 REVISIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT-EQUAL 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-POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT-WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
409-1	MINERAL AGGREGATES
410-3	DENSITY TEST FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
JOB 080384	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080384	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080384	INTERNET BIDDING
JOB 080384	NESTING SITES OF MIGRATORY BIRDS
JOB 080384	REMOVING AND STOCKPILING BASE COURSE AND ASPHALT SURFACING
JOB 080384	SOIL STABILIZATION
JOB 080384	STORM WATER POLLUTION PREVENTION PLAN
JOB 080384	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080384	UTILITY ADJUSTMENTS
JOB 080384	WARM MIX ASPHALT

r080384.dgn 7/5/2011

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				6	ARK.				
							JOB NO. 080384	3	45

② LEGEND & GENERAL NOTES



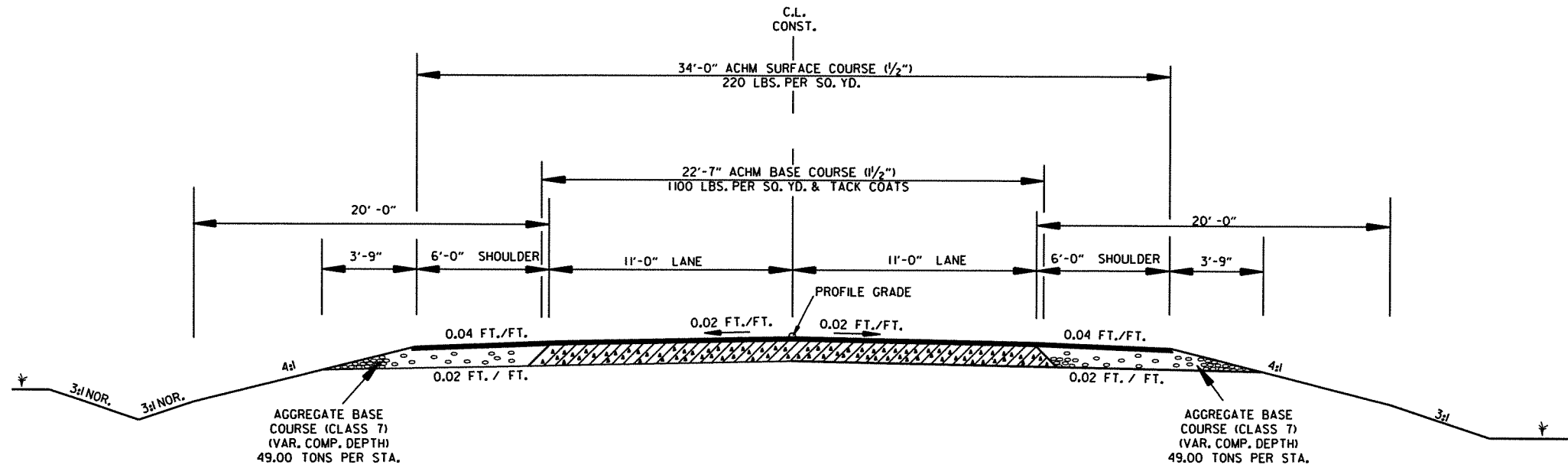
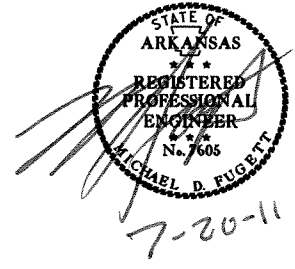
SYMBOL LEGEND		LINE LEGEND	
	SURVEY POINTS		COMBINATION POLE
	TOPO POINTS		POLE WITH GUY
	LAND CORNER		GUY
	LAND MONUMENT		TELEPHONE POLE
	FIRE HYDRANT		TELEPHONE BOX
	LIGHT POLE		UGC MARKER
	SIGN		GAS VALVE
	WATER METER		GAS LIGHT
	WATER VALVE		GAS METER
	WELL		DECIDUOUS TREE
	EXISTING DROP INLET		EVERGREEN TREE
	POWER POLE		MANHOLE
	PROPOSED BOX CULVERT		DRIVEWAY (RURAL)
	PROPOSED PIPE CULVERT		DRIVEWAY (URBAN)
			PROPOSED DROP INLET
			SURVEY ALIGNMENT
			CONSTR. ALIGNMENT
			EXISTING PAVMT EDGE
			CONSTRUCTION LIMITS
			PROPOSED RIGHT-OF-WAY
			PROPOSED STORM DRAINAGE
			EXISTING RIGHT-OF-WAY
			PROPOSED CURB
			TEMP. CONST. ESMT.
			EDGE GRAVEL SURFACE
			EXISTING CULVERT
			RIGHT-OF-WAY WITH CONTROL OF ACCESS FENCE
			RIGHT-OF-WAY WITH CONTROL OF ACCESS
			TRAIL
			BOUNDARY
			SIDEWALK BEHIND CURB
			WIRE FENCE
			CHAIN LINK FENCE
			WATER LINE
			S. & S. LINE
			GAS LINE
			STREAM OR DITCH

GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- 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.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE 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.
- 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.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210- UNCLASSIFIED EXCAVATION.
- THIS PROJECT IS COVERED UNDER A NATIONWIDE 14 SECTION 404 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, FOR PERMIT REQUIREMENTS.

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				6	ARK.			
						JOB NO. 080384	4	45

② TYPICAL SECTIONS OF IMPROVEMENT

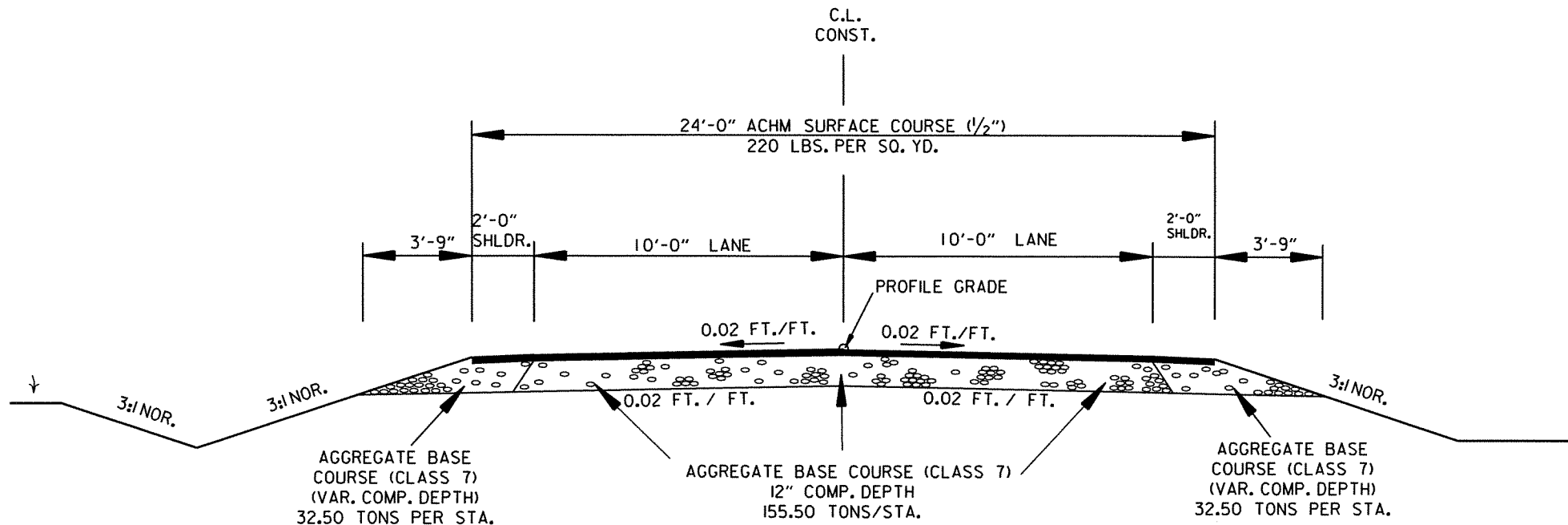
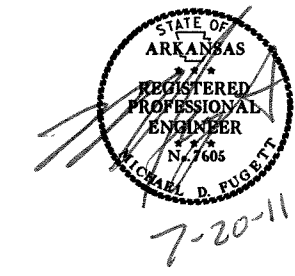


TYPICAL SECTION OF IMPROVEMENT
TANGENT SECTION

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

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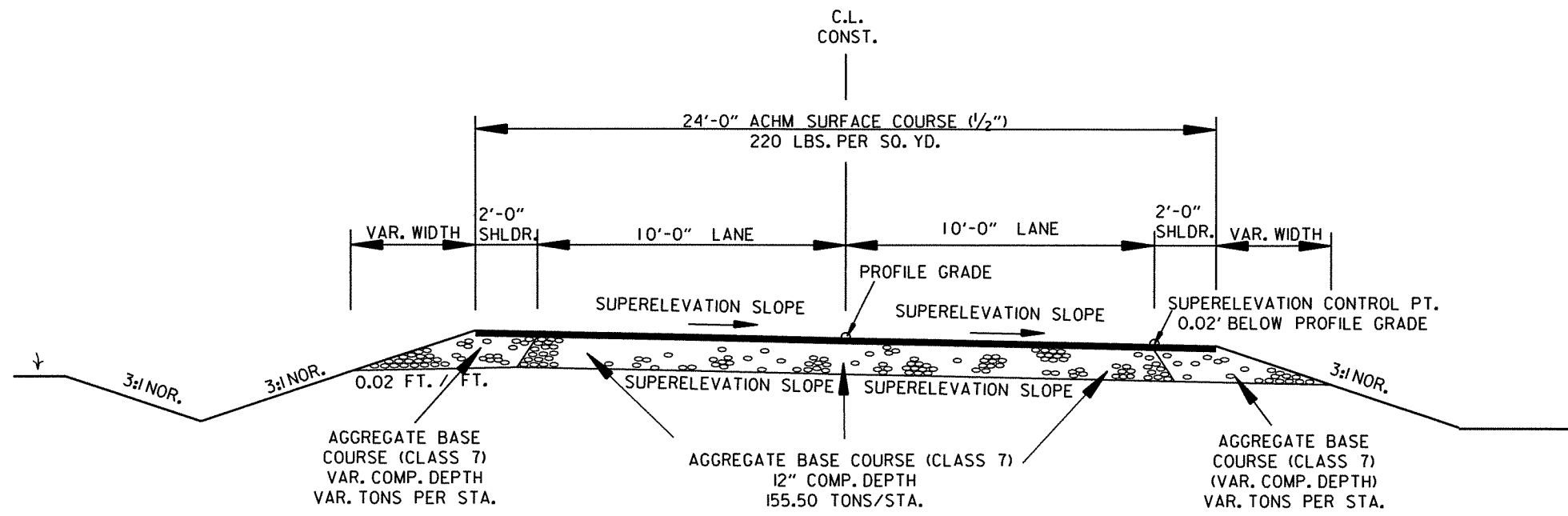
② TYPICAL SECTIONS OF IMPROVEMENT



DETOUR ROAD TANGENT SECTION

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH (1") OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

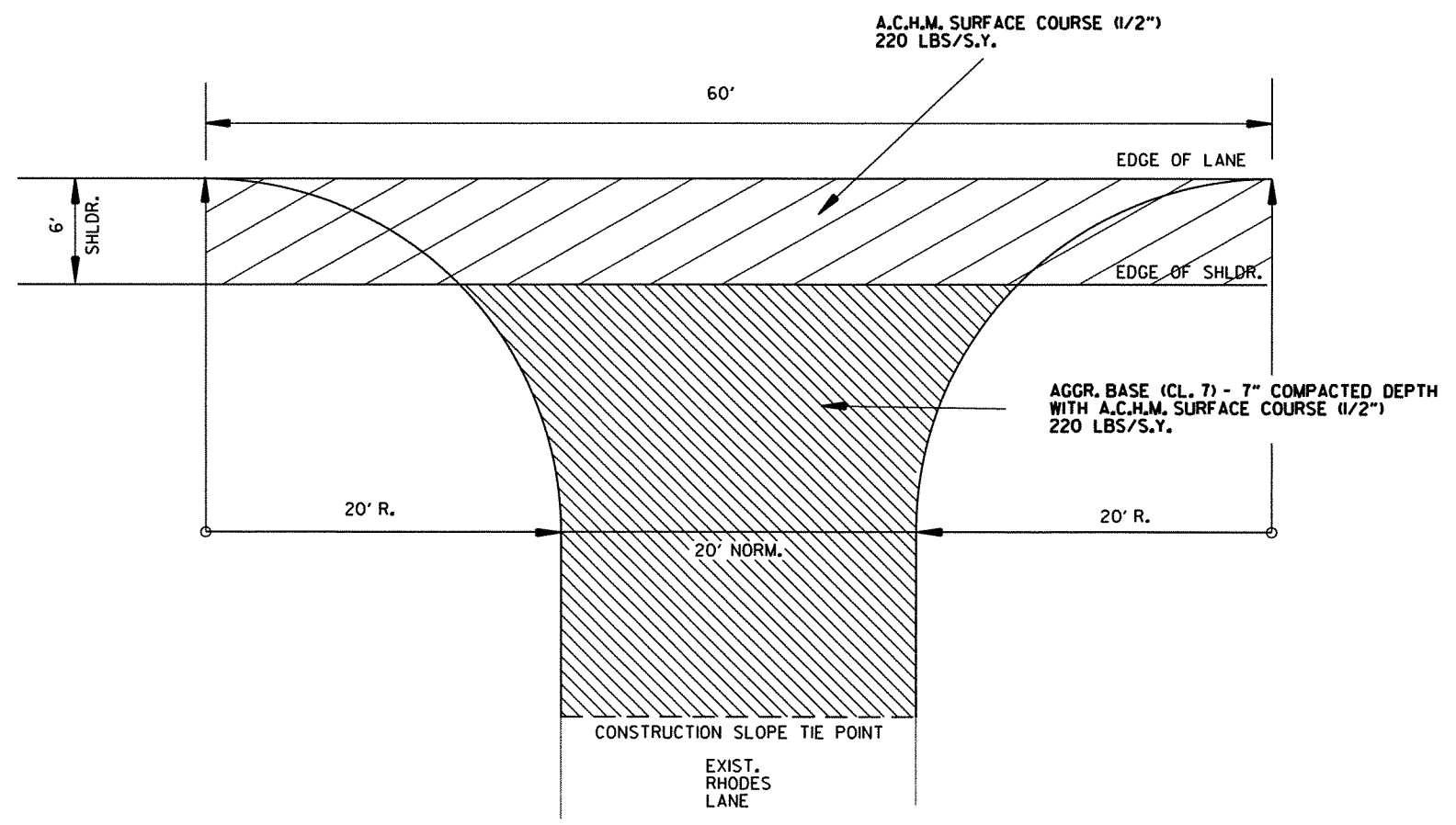
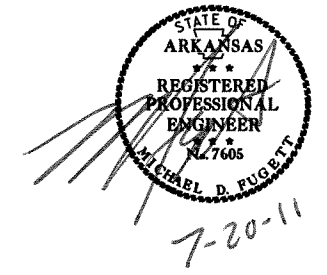


DETOUR ROAD SUPERELEVATED SECTION

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2 SPECIAL DETAILS



DETAIL FOR RHODES LANE TURNOUT

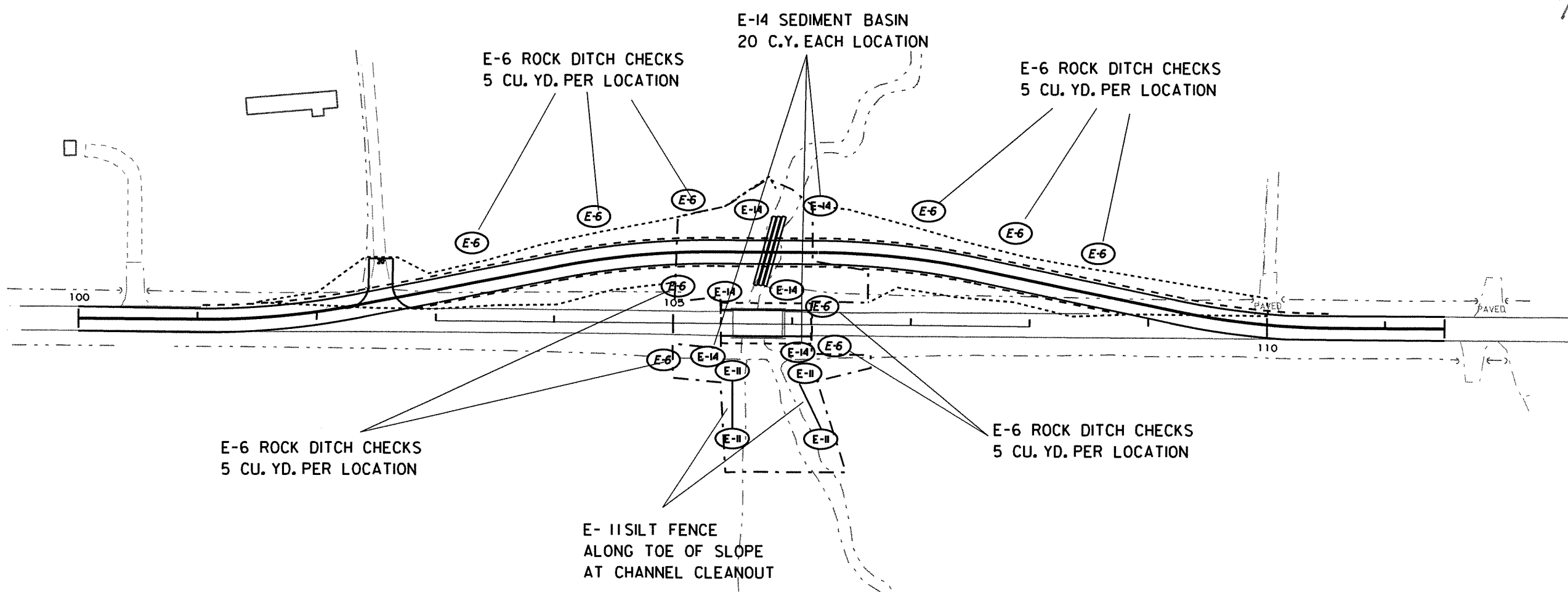
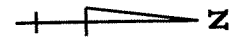
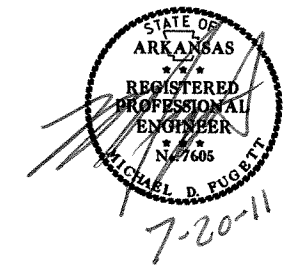
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SPECIAL DETAILS

STAGE 1

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							JOB NO.	080384
							SHEET NO.	7
							TOTAL SHEETS	45

② TEMPORARY EROSION CONTROL DETAILS



LEDGEND

- E-6 ROCK DITCH CHECK
5 CUBIC YARDS PER LOCATION
- E-11 SILT FENCE
- E-12 SLOPE DRAIN
- E-14 SEDIMENT BASIN

PLACE SEDIMENT BASINS (E-14)
NEAR END OF DITCH RUNS

PLAN REVISIONS

DATE	REVISION

STAGE I
TEMPORARY EROSION CONTROL DETAILS

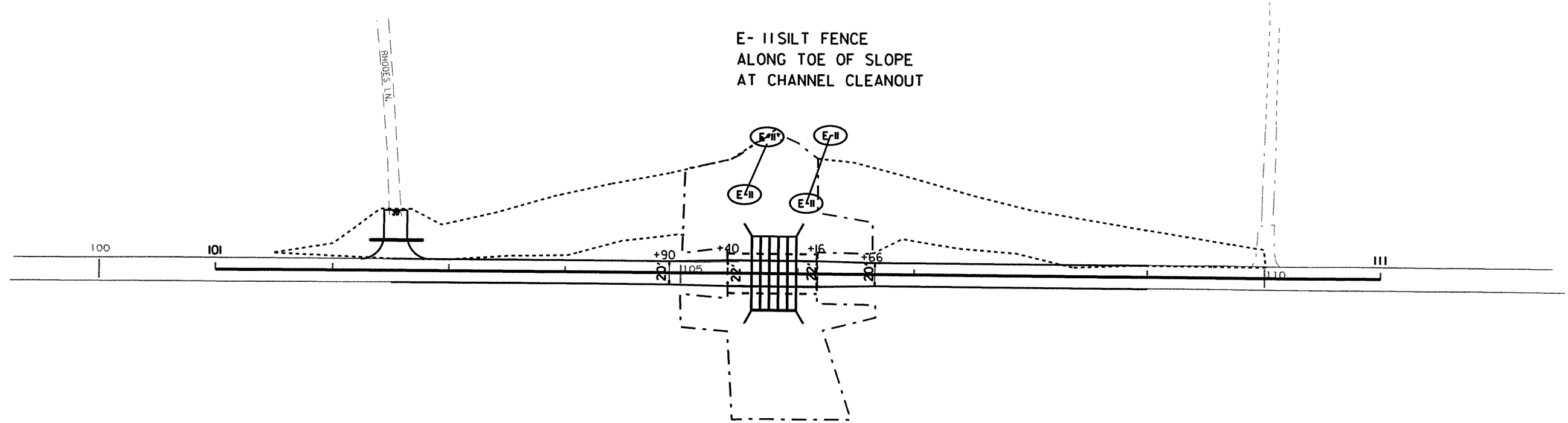
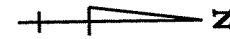
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② TEMPORARY EROSION CONTROL DETAILS



STAGE 2



LEDGEND

- (E-6) ROCK DITCH CHECK
5 CUBIC YARDS PER LOCATION
- (E-11) SILT FENCE
- (E-12) SLOPE DRAIN
- (E-14) SEDIMENT BASIN

MAINTAIN ALL STAGE 1 ITEMS WHERE POSSIBLE
DURING STAGE 2 CONSTRUCTION

PLAN REVISIONS

DATE	REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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② TEMPORARY EROSION CONTROL DETAILS

NOTES:

DEVICES INSTALLED UNDER STAGES 1 & 2 SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION OF THE AREA HAS BEEN ACCOMPLISHED.

THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER.

TO MAXIMIZE THEIR EFFECTIVENESS, THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 AND SECTION 621 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

QUANTITIES

ROCK DITCH CHECKS	50 CUBIC YARDS
SILT FENCE	400 LINEAR FEET
SEDIMENT BASINS	120 CUBIC YARDS
OBLITERATION OF SEDIMENT BASIN	120 CUBIC YARDS
SEDIMENT BASIN REMOVAL & DISPOSAL	160 CUBIC YARDS

LEDGEND

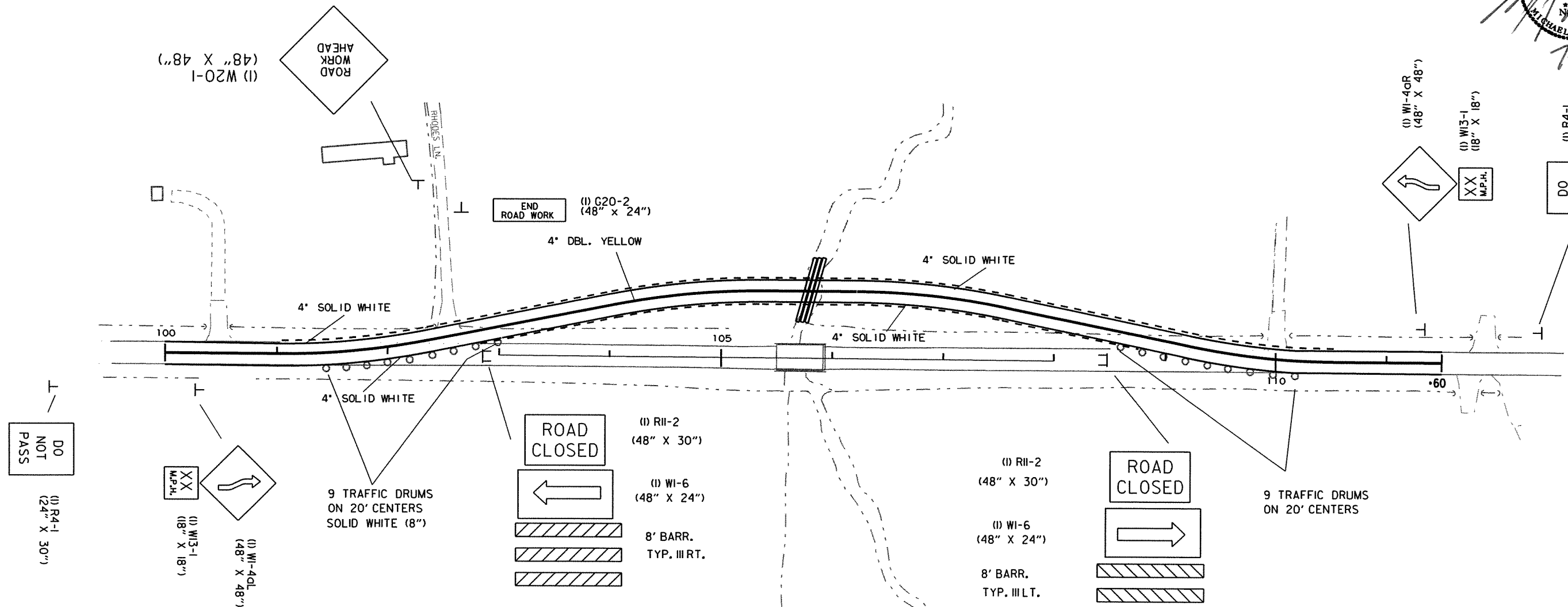
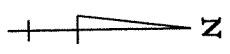
- ⓔ-6 ROCK DITCH CHECK
5 CUBIC YARDS PER LOCATION
- ⓔ-11 SILT FENCE
- ⓔ-12 SLOPE DRAIN
- ⓔ-14 SEDIMENT BASIN



Michael D. Bugbee

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2 MAINTENANCE OF TRAFFIC DETAILS



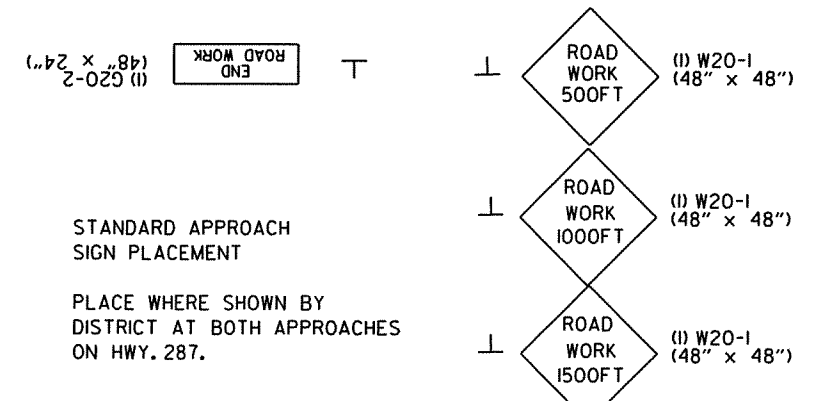
NOTE:
TURNOUTS AND PRIVATE DRIVES
SHALL BE MODIFIED WHERE
NECESSARY TO MEET LOCAL
CONDITIONS IF AND WHERE DIRECTED BY
THE ENGINEER.

STAGE 1:
PLACE ALL WARNING SIGNS WHERE SHOWN.
CONSTRUCT DETOUR ROAD, INSTALL CONSTRUCTION
PAVEMENT MARKINGS, PLACE TRAFFIC CONTROL
DEVICES FOR TRAFFIC SHIFT TO DETOUR RD.

KEEP W1-4qR & W1-4qL SIGNS COVERED UNTIL DETOUR IS
READY FOR TRAFFIC.

STAGE 2:
SHIFT TRAFFIC TO DETOUR RD.
REMOVE EXISTING BRIDGE STRUCTURE.
CONSTRUCT R.C. BOX CULVERT AND WINGS ON RT. SIDE.
CONSTRUCT MAIN LANE FULL DEPTH TYPICAL SECTION.

INSTALL PERMANENT PAVEMENT MARKINGS
FROM STA. 102+00 - STA. 109+00.



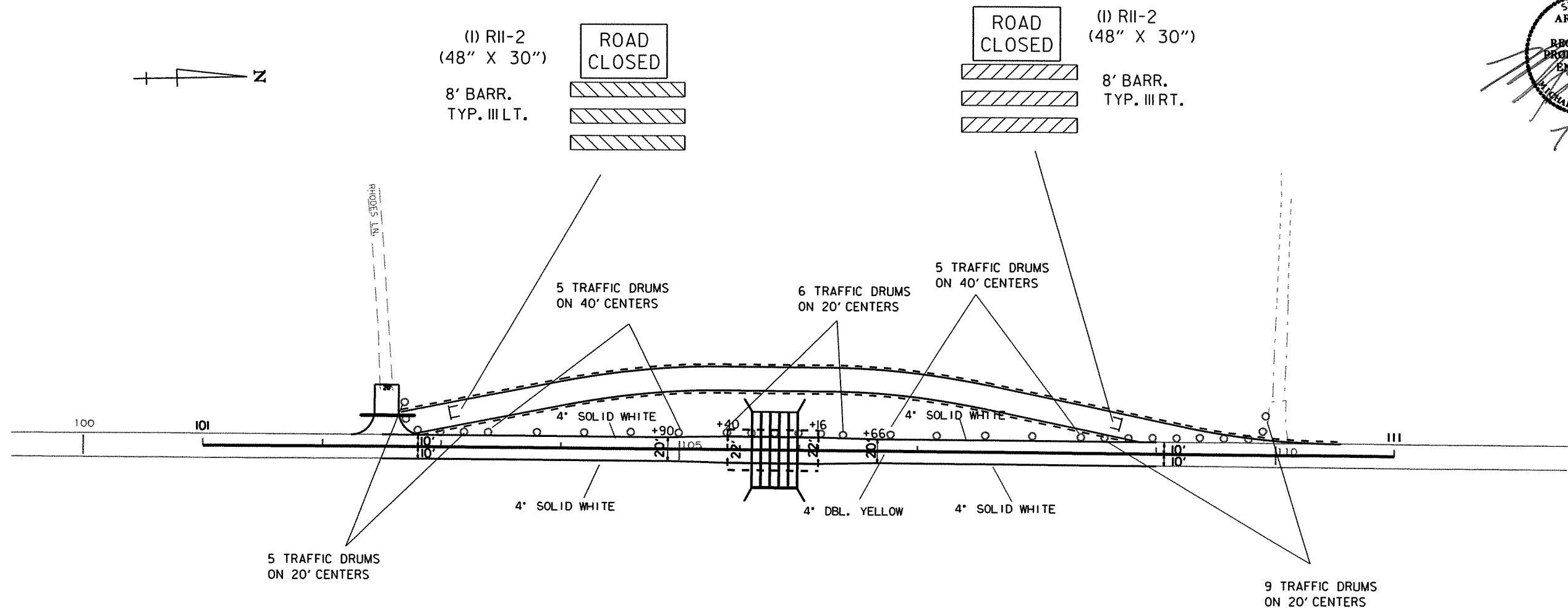
STAGES 1 & 2
MAINTENANCE OF TRAFFIC DETAILS

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② MAINTENANCE OF TRAFFIC DETAILS



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QUANTITIES FOR STAGE 1:

- SIGNS - 219 SQ. FT.
- TYPE III BARRICADES - 16 LIN. FT.
- TRAFFIC DRUMS - 18 EACH
- CONST. PAVEMENT MARKINGS - 4640 L.F.
- REMOVAL OF PERMANENT PAVEMENT MARKINGS - 1350 L.F.

ADDITIONAL QUANTITIES FOR STAGE 2:

- TRAFFIC DRUMS - 12 EACH
- CONST. PAVEMENT MARKINGS - 4000 L.F.
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 1600 L.F.

ADDITIONAL QUANTITIES FOR STAGE 3:

- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 2000 L.F.

STAGE 3:

- PLACE ALL WARNING SIGNS AS SHOWN.
- MOVE TRAFFIC TO C.L. CONSTRUCTION FROM DETOUR.
- REMOVE DETOUR ROAD.
- CONSTRUCT R.C. BOX WINGS ON LT. SIDE.
- CONSTRUCT TURNOUT FOR RHODES LANE.
- REMOVE CONFLICTING CONSTRUCTION PAVEMENT MARKINGS AND COMPLETE INSTALLATION OF PERMANENT PAVEMENT MARKINGS.

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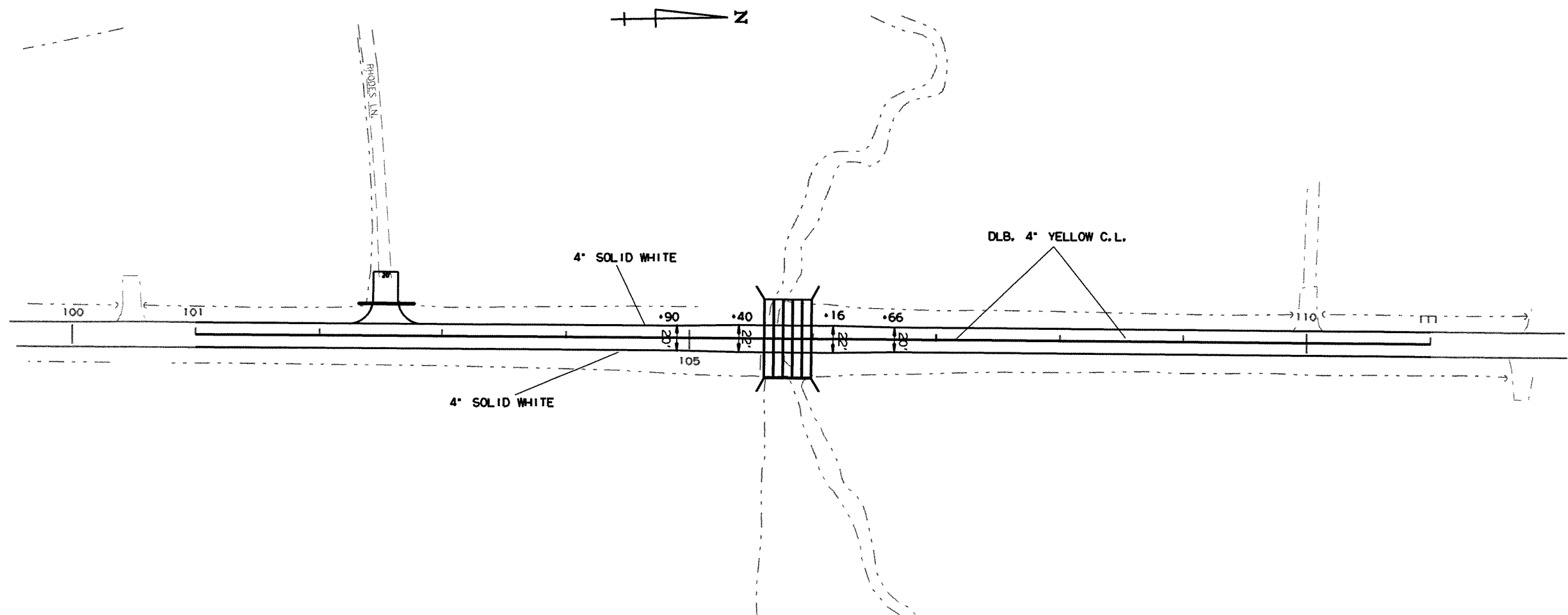
2 PERM. PAVEMENT MARKING DETAILS



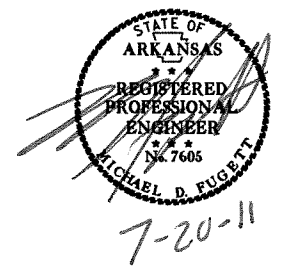
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FINAL STRIPING QUANTITIES:

- REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") = 2000 LIN. FT.
- REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") = 2000 LIN. FT.



PERMANENT PAVEMENT MARKING DETAILS



SIGN NO.	DESCRIPTION	SIGNS		QUANTITY		MAXIMUM REQUIRED	SIGNS SQ. FT.
		SIZE SQ. FT.		STAGE 1	STAGE 2		
G20-2	END ROAD WORK	8		3	3	3	24
R4-1	DO NOT PASS	5		2	2	2	10
R11-2	ROAD CLOSED	10		2	2	2	20
W1-4I	SHIFT LEFT ARROW	16		1	0	1	16
W1-4R	SHIFT RIGHT ARROW	16		1	0	1	16
W1-6	ARROW	8		2	0	2	16
W13-1	"XX" MPH	2.5		2	0	2	5
W20-1	ROAD WORK 500 FT.	16		2	2	2	32
W20-1	ROAD WORK 1000 FT.	16		2	2	2	32
W20-1	ROAD WORK 1500 FT.	16		2	2	2	32
W20-1	ROAD WORK AHEAD	16		1	1	1	16
TOTAL							219

CONCRETE DITCH PAVING					
STATION	STATION	SIDE	"W"	(TYPE A)	(TYPE B)
			FEET	SQ. YD.	SQ. YD.
105+00	105+60	LT.	6		40.00
105+00	105+60	RT.	6		40.00
106+00	106+50	LT.	13	72.22	
106+00	106+50	RT.	6		33.33
TOTALS				72.22	113.33

LOCATION	BARRICADES (TYPE III)	TRAFFIC DRUMS	CONST. PAVEMENT MARKINGS	REMOVAL OF CONST. PAVEMENT MARKINGS	REMOVAL OF PERMANENT PAVEMENT MARKINGS
	LIN. FT.	EACH	LIN. FT.		
SUMMARY OF THE MAINTENANCE OF TRAFFIC AS SHOWN IN THE MAINTENANCE OF TRAFFIC DETAILS	16	30	8640	3600	1350
TOTALS	16	30	8640	3600	1350

NOTE: THIS IS A LOW VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003.

EARTHWORK						
STATION	STATION	LOCATION	UNCLASS. EXCAVATION	COMPACTED EMBANKMENT	SOIL STABILIZATION	REMOVING AND STOCKPILING BASE COURSE & ASPH. SURFACING
			CU. YD.		TON	CU. YD.
105+40	106+16	MAIN LANES & CHANNEL CHANGE	456	185		
202+50	209+00	DETOUR	785	525		
202+58		TEMPORARY TURNOUT-RHODES		11		
102+53		TURNOUT - RHODES LANE		30		
202+50	205+00	DETOUR REMOVAL**	145	27		
206+50	209+50	DETOUR REMOVAL **	219	147		
* ENTIRE PROJECT					10	
201+50	210+00	STOCKPILING AGGR. & SURF.				1292
TOTALS			1605	925	10	1292

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE TO BE PAID AS PLAN QUANTITY.
 MAIN LANE QUANTITIES INCLUDE EXCAVATION FOR CHANNEL, R.C.BOX AND REMOVAL OF DETOUR RD.
 * QUANTITIES ARE ESTIMATED AND ARE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
 ** DETOUR REMOVAL INCLUDED IN FINAL MAIN LANE CROSS SECTIONS (STA. 205+00 TO STA. 206+50).

LOCATION	REFLECTORIZED PAINT PAVEMENT MARKINGS	
	WHITE 4"	YELLOW 4"
	LIN. FT.	
ENTIRE JOB AS SHOWN ON PERM. PAVEMENT MARKING DETAILS	2000	2000
TOTALS	2000	2000

NOTE: THIS IS A LOW VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003.

REMOVAL OF EXISTING BRIDGE STRUCTURE		
STATION	DESCRIPTION	REM. OF EXIST. BR. STR. (SITE NO. 1) LUMP SUM
105+79	42' X 25' STEEL GIRDERS W/CONCRETE DECK	1.00
TOTAL		1.00

STATION	STATION	SIDE	DESCRIPTION	PIPE CULVERTS	FENCE
				EACH	LIN. FT.
102+54		LT.	18" X 20' C.M. PIPE CULVERT	1	
203+27	210+06	LT.	BARB WIRE FENCE		734
205+00	207+00	RT.	BARB WIRE FENCE		283
TOTALS				1	1017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080384	14	45	

② QUANTITY SHEET

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO SOIL CLASS	COLOR
		FEET				
102+00	5' RT.	0 - 5	22	7	A-4(2)	BROWN
102+00	27' RT	0 - 5	28	10	A-4(5)	BROWN
109+00	5' LT.	0 - 5	29	12	A-6(7)	BROWN
109+00	22' LT.	0 - 5	35	15	A-6(9)	BROWN

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



SELECTED PIPE BEDDING AND BACKFILL

LOCATION	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL
	CU. YD.	
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER*	10	20
TOTALS	10	20

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

TEMPORARY EROSION CONTROL

LOCATION	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLIT. OF SEDIMENT BASIN	SEDIMENT REMOVAL AND DISPOSAL
	CU. YD.	LIN. FT.	CU. YD.	CU. YD.	CU. YD.
ENTIRE PROJECT - AS SHOWN ON EROSION CONTROL DETAILS	50	400	120	120	160
TOTALS	50	400	120	120	160

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

BASIS OF ESTIMATE: ROCK DITCH CHECKS = 5 CU. YD./INSTALLATION
SEDIMENT BASIN = 20 CU. YD./INSTALLATION

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATIONS	
202+00	210+00	8	8
TOTALS		8	8

EROSION CONTROL

LOCATION	LIME	SEEDING	MULCH COVER	TEMPORARY SEEDING	SOLID SODDING	WATER	SECOND SEEDING APPLICATION
	TON	ACRE			SQ. YD.	M. GAL.	ACRE
ENTIRE PROJECT	4	1.72	3.44	1.72		210.5	1.72
SOLID SODDING @ BOX CULVT. WINGS & HEADWALLS					28	0.4	
TOTALS	4	1.72	3.44	1.72	28	210.9	1.72

BASIS OF ESTIMATE:
LIME = 2 TONS PER ACRE
WATER = 102.0 M.G. PER ACRE (SEEDING)
20.4 M.G. PER ACRE (TEMPORARY SEEDING)
12.6 GAL. PER SQ. YD. (SOLID SODDING)

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS SINGLE	MAILBOX SUPPORTS DOUBLE
		EACH	
STA. 102+70 LT.	5	1	2
STA. 110+15 LT.	1	1	
TOTALS	6	2	2

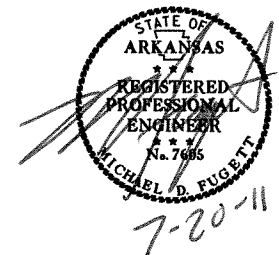
BENCH MARKS

LOCATION	BENCH MARKS
EACH	
STA. 105+62 - IN TOP OF HEAD WALL ON RT.	1

SHOWN FOR INFORMATIONAL PURPOSES ONLY. BENCH MARKS TO BE FURNISHED, PLACED AND RECORDED BY STATE FORCES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080384	15

② QUANTITY SHEET



SIDE DRAINS & TEMPORARY CULVERTS

STATION	DESCRIPTION	TEMPORARY CULVERT		SIDE DRAINS
		18"	36"	18"
		LINEAR FT.		LINEAR FT.
102+54	LEFT SIDE DRAIN			46
202+59	TEMPORARY LT. SIDE DRAIN	24		
205+85	TRIP. 36" TEMP. CROSS DR.		150	
TOTALS		24	150	46

WIRE FENCE & GATES

STATION	STATION	SIDE	TYPE D	16' GATE
			LIN. FT.	EACH
103+27	10747	LT.	403	1
105+00	107+00	RT.	280	1
TOTALS			683	2

STRUCTURES OVER 20' SPAN

STATION	DESCRIPTION	UNCLASSIFIED EXCAVATION FOR STR.-ROADWAY	CLASS S CONCRETE - ROADWAY	REINFORCING STEEL - RDWY. (GR. 60)	STANDARD DRAWINGS
		CU. YD.	CU. YD.	LBS.	
105+79	QUINTUPLE 7' X 4' X 64' R.C. BOX CULVERT	81	170.42	31932	R-500X-0, W-X003-1, RCB-1, RCB-2
TOTALS		81	170.42	31932	

ACHM PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ACHM PATCHING FOR MAINT. OF TRAFFIC	TACK COAT
	TON	GALLON
ENTIRE PROJECT - IF ANE WHERE DIRECTED BY THE ENGINEER. *	2	2
TOTALS	2	2

* NOTE: QUANTITIES ESTIMATED - SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT			ACHM BASE COURSE (1 1/2")				ACHM SURFACE COURSE (1/2")				
				TON / STATION	TON	TOTAL WID. FEET	SQ. YD.	GALLONS / SQ. YD.	GALLON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON
MAIN LANES																	
105+40	106+16	MAIN LANES - FULL DEPTH	76.00	98.00	74.5	45.16	381.4	0.03	11.4	22.58	190.7	1100.0	104.9	34.00	287.1	220.0	31.6
DETOUR ROAD																	
202+30	209+50	DETOUR ROAD ON LEFT.	720.00	220.50	1587.6									24.00	1300.0	220.0	143.0
SIDE ROAD TURNOUTS																	
202+58		TEMPORARY TURNOUT - RHODES LANE			11.0												
102+53		TURNOUT - RHODES LANE			14.0										130.0	220.0	14.3
TOTALS						1687.1			11.4				104.9				188.9

BASIS OF ESTIMATE:

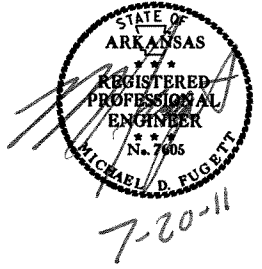
VOLUME CONTROL OF MINERAL AGGREGATE AND ASPHALT BINDER IN:
 ACHM SURFACE COURSE (1/2") 94.6% MIN. AGGR. 5.4% ASPH. BNDR. GYRATIONS: Nmax = 115
 ACHM BASE COURSE (1 1/2") 96.2% MIN. AGGR. 3.8% ASPH. BNDR.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080384	16 45

② SUMMARY OF QUANT. & REV. BOX

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
201	CLEARING	8	STATION
201	GRUBBING	8	STATION
202	REMOVAL AND DISPOSAL OF FENCE	1017	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	EACH
210	UNCLASSIFIED EXCAVATION	1605	CU. YD.
210	COMPACTED EMBANKMENT	925	CU. YD.
SP	REMOVING AND STOCKPILING BASE COURSE AND ASPHALT SURFACING	1292	CU. YD.
SP & 210	SOIL STABILIZATION	10	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	1687	TON
401	TACK COAT	13	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	101	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	4	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	179	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	10	TON
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	2	TON
601	MOBILIZATION	1.00	LUMP SUM
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	24	LIN. FT.
603	36" TEMPORARY CULVERT	150	LIN. FT.
SS & 604	SIGNS	219	SQ. FT.
SS & 604	BARRICADES	16	LIN. FT.
SS & 604	TRAFFIC DRUMS	30	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	8640	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	3600	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1350	LIN. FT.
605	CONCRETE DITCH PAVING (TYPE A)	72	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE B)	113	SQ. YD.
SS & 606	18" SIDE DRAIN	46	LIN. FT.
606	SELECTED PIPE BEDDING	10	CU. YD.
606	SELECTED PIPE BACKFILL	20	CU. YD.
619	WIRE FENCE (TYPE D)	683	LIN. FT.
* 619	16' ALUMINUM GATES ALTERNATE NO. 1	2	EACH
* 619	16' STEEL GATES ALTERNATE NO. 2	2	EACH
620	LIME	4	TON
620	SEEDING	1.72	ACRE
620	MULCH COVER	3.44	ACRE
SS & 620	WATER	210.9	M.GAL.
621	TEMPORARY SEEDING	1.72	ACRE
621	SILT FENCE	400	LIN. FT.
621	ROCK DITCH CHECKS	50	CU. YD.
621	SEDIMENT BASIN	120	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	120	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	160	CU. YD.
623	SECOND SEEDING APPLICATION	1.72	ACRE
624	SOLID SODDING	28	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	6	EACH
637	MAILBOX SUPPORTS (SINGLE)	2	EACH
637	MAILBOX SUPPORTS (DOUBLE)	2	EACH
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	2000	LIN. FT.
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	2000	LIN. FT.
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	81	CU. YD.
802	CLASS S CONCRETE-ROADWAY	170.42	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	31932	POUND



REVISION BOX

DATE	REVISION	SHEET NO.

* DENOTES ALTERNATE BID ITEMS.

P. I. 202+50.00 - DETOUR
 Δ - 16°27' 19.1" Lt.
 D - 8'15' 00.0"
 T - 100.42
 R - 694.49
 L - 199.46
 PC - 201+49.58
 PT - 203+49.04
 NO SUPER

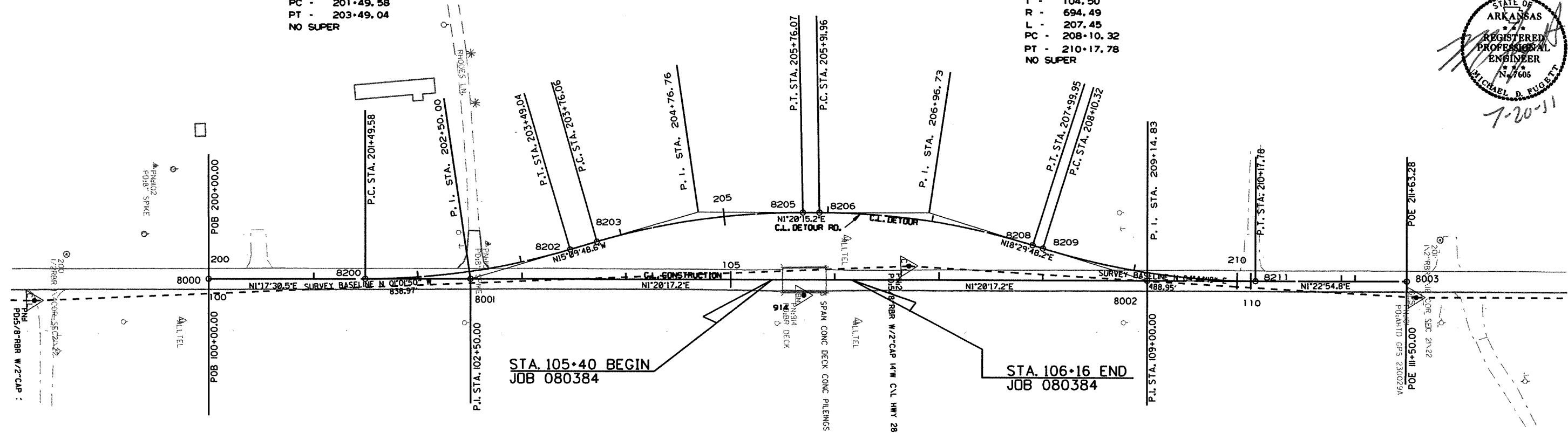
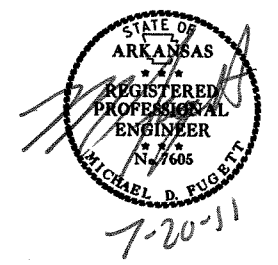
P. I. 209+14.83 - DETOUR
 Δ - 17°06' 53.4" Lt.
 D - 8'15' 00.0"
 T - 104.50
 R - 694.49
 L - 207.45
 PC - 208+10.32
 PT - 210+17.78
 NO SUPER

P. I. 204+76.76 - DETOUR
 Δ - 16°30' 03.8" Rt.
 D - 8'15' 00.0"
 T - 100.70
 R - 694.49
 L - 200.01
 PC - 203+76.06
 PT - 205+76.07
 e - 0.095' /'
 Ls - 275.00'
 ROTATE ABOUT INSIDE EDGE

P. I. 206+96.73 - DETOUR
 Δ - 17°09' 33.04" Rt.
 D - 8'15' 00.0"
 T - 104.78
 R - 694.49
 L - 207.99
 PC - 205+91.96
 PT - 207+99.95
 e - 0.095' /'
 Ls - 275.00'
 ROTATE ABOUT INSIDE EDGE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		17	45

2 SURVEY CONTROL DETAILS



Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description	Point Name	Station	Northing	Easting	Elevation	Feature
1	293351.6274	1229752.2723	340.089	CTL	5/8" RBR W/2" CAP 20' W PP	8000	100+00.00	293519.29	1229735.10	341.29	P. O. B.
2	294190.4594	1229737.1844	336.778	CTL	5/8" RBR W/2" CAP 14' W C/L HWY 287	8001	102+50.00	293769.23	1229740.73	0.00	P. I.
3	295365.0131	1229792.6161	347.902	CTL	5/8" RBR W/2" CAP 14' E OF C/L HWY 287	8002	109+00.00	294419.05	1229755.91	0.00	P. I.
100	292921.7089	1229735.1171	345.150	GPS	AHTD GPS 230029	8003	111+50.00	294668.98	1229761.94	342.00	P. O. E.
101	294677.7413	1229777.5763	341.431	GPS	AHTD GPS 230029A						
900	288989.2167	1230164.4594	538.969	TBM	EXIST. NAIL IN PP AT SE COR CHAINLINK FE COR. 36' N OF C/L HWY						
901	289081.4555	1233404.3594	449.365	TBM	SQ. CUT IN E END 18' CU AT HWY 36 & PIPELINE RD						
902	290802.0927	1232744.4732	412.366	TBM	SQ. CUT IN HDWL 16' N OF C/L						
903	291821.6536	1229674.0100	368.228	TBM	2" RBR/CAP 21' W OF C/L HWY 7' NW OF LARGE BRICK MAILBOX						
904	297083.5385	1228193.9812	407.921	TBM	2" RBR/CAP W OF C/L HWY 287						
905	298594.9989	1230025.2062	405.942	TBM	2" RBR/CAP 15' N C/L JACKSON RD						
906	298485.6752	1233014.3842	473.505	TBM	2" RBR/CAP 10' S OF C/L OF JACKSON RD.						
907	299368.6070	1235674.0561	406.899	TBM	NAIL IN LARGE TWIN WHITE OAK 22' S OF C/L JACKSON RD.						
908	300596.1527	1237919.1546	341.848	TBM	NAIL IN 10" RED OAK E 18' OF C/L OF MISSILE BASE RD.						
909	303629.2060	1238009.8563	324.114	TBM	2" RBR/CAP 45' SE OF JUNCTION OF MISSILE BASE RD & SAWMILL RD.						
910	303014.5461	1241246.4081	305.283	TBM	RBR IN WINGWALL 11' N OF C/L SAWMILL RD.						
911	303007.2787	1244318.4385	307.945	TBM	2" RBR/CAP 12' S SAWMILL RD.						
913	292784.0155	1229744.8206	348.389	TBM	CPS IN BASE OF PP 40' E OF C/L HWY 287						
914	294089.2852	1229763.4356	337.197	TBM	BR DECK 11' E OF C/L 287 38' NW OF PP						
915	295408.7856	1229755.5122	347.329	TBM	REBAR/CAP 35' W C/L HWY 287						
990	288390.1096	1227504.5545	411.910	BM	NGS MARK WRB						
991	300780.0302	1245558.8038	308.040	BM	NGS MARK M 208						
1500	295389.5068	1229157.2621	343.428	CTL	REBAR/CAP 11' N C/L GRIGGERS LN.						
1501	295382.1694	1228432.8165	340.116	CTL	RBR/CAP 10' N PP 11' S C/L GRIGGERS LN.						
1502	293342.5814	1228886.0462	338.857	CTL	RBR/CAP 8' S OF PP 30' S OF C/L ARNOLDBURG RD.						
1503	293159.6219	1229316.0356	338.878	CTL	RBR/CAP 13' NE OF PP 32' S C/L ARNOLDBURG RD						

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped (standard markings common to all caps), or as indicated (other markings indicated in the point description of the individual point). ALL DISTANCES ARE GROUND. USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT. A PROJECT CAF OF 0.9999481375 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES. THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS. GRID DISTANCE = GROUND DISTANCE X CAF. GRID COORDINATES ARE STORED UNDER FILE NAME: S080384G1.CTL HORIZONTAL DATUM: NAD 83 (1997) VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT. REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL. IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED, REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL. BASIS OF BEARING: ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE DETERMINED FROM GPS CONTROL POINTS: 230029-230029A CONVERGENCE ANGLE: 00 09 39.18 LEFT AT LT 35-08-28.42 LG 092-16-35.31 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

SURVEY CONTROL DETAILS

r080384.dgn 05/07/10

STA. 100+48 - IN PLACE
18" X 21' R.C. PIPE CULVT.
LT. SIDE DRAIN
RETAIN

P. I. 202+50.00 - DETOUR
Δ - 16°27'19.1" Lt.
D - 8'15'00.0"
T - 100.42
R - 694.49
L - 199.46
PC - 201+49.58
PT - 203+49.04
NO SUPER

STA. 205+85 (DETOUR RD.) - INSTALL
TRIPLE 36" X 50' TEMP. PIPE CULVERTS
ON A 15' LEFT FORWARD SKEW.

P. I. 209+14.83 - DETOUR
Δ - 17°06'53.4" Lt.
D - 8'15'00.0"
T - 104.50
R - 694.49
L - 207.45
PC - 208+10.32
PT - 210+17.78
NO SUPER

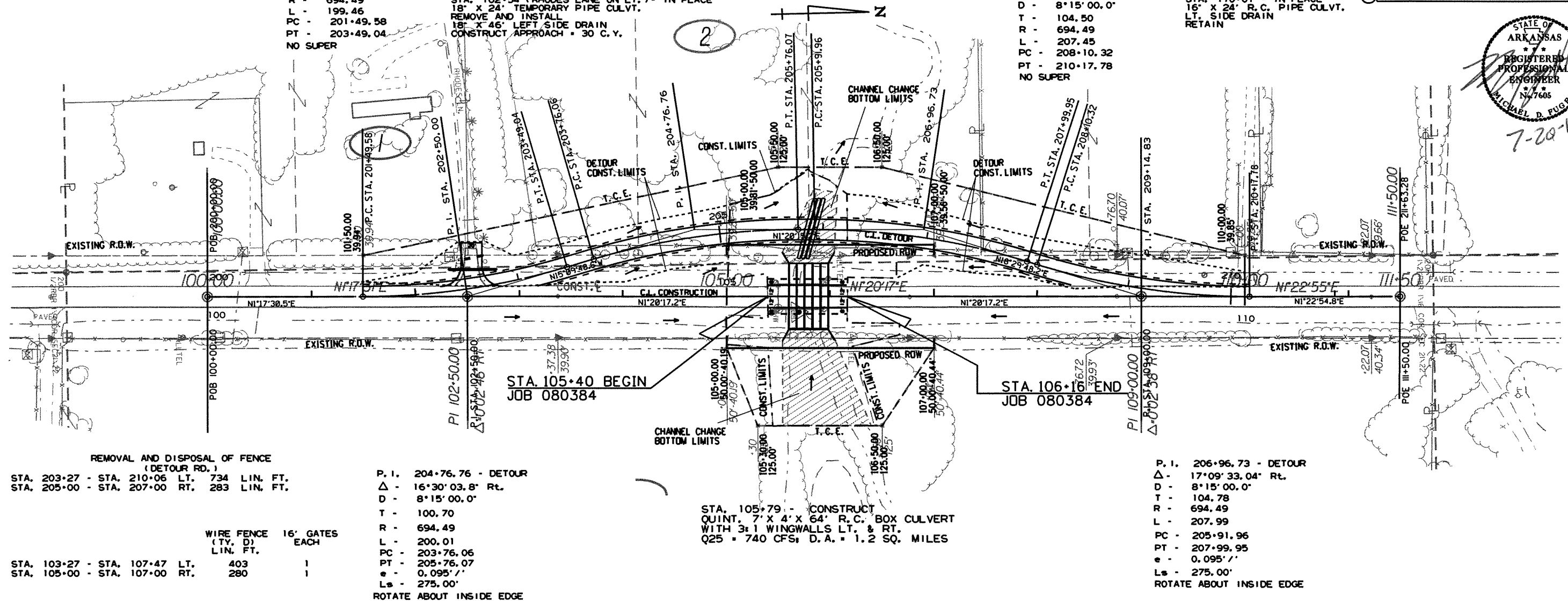
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		18	45
				JOB NO.	080384		PLAN AND PROFILE SHEET	

STA. 110+01 - IN PLACE
16" X 24' R.C. PIPE CULVT.
LT. SIDE DRAIN
RETAIN

2 PLAN AND PROFILE SHEET



7-20-11



REMOVAL AND DISPOSAL OF FENCE
(DETOUR RD.)
STA. 203+27 - STA. 210+06 LT. 734 LIN. FT.
STA. 205+00 - STA. 207+00 RT. 283 LIN. FT.

STA.	TY.	D.	WIRE FENCE LIN. FT.	16' GATES EACH
STA. 103+27 - STA. 107+47	LT.		403	1
STA. 105+00 - STA. 107+00	RT.		280	1

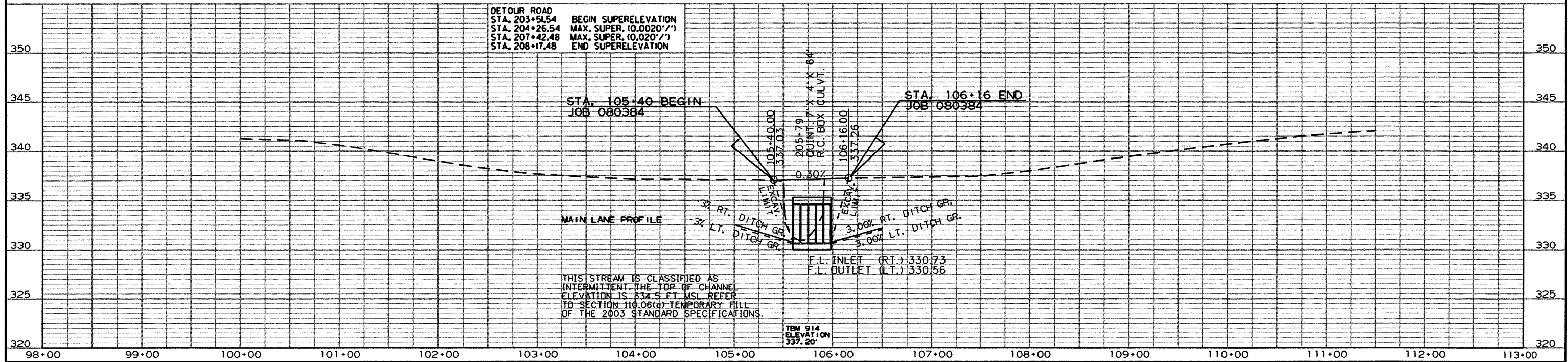
P. I. 204+76.76 - DETOUR
Δ - 16°30'03.8" Rt.
D - 8'15'00.0"
T - 100.70
R - 694.49
L - 200.01
PC - 203+76.06
PT - 205+76.07
e - 0.095' /'
Ls - 275.00'
ROTATE ABOUT INSIDE EDGE

STA. 105+79 - CONSTRUCT
QUINT. 7' X 4' X 64' R.C. BOX CULVERT
WITH 3x1 WINGWALLS LT. & RT.
Q25 = 740 CFS; D.A. = 1.2 SQ. MILES

P. I. 206+96.73 - DETOUR
Δ - 17°09'33.04" Rt.
D - 8'15'00.0"
T - 104.78
R - 694.49
L - 207.99
PC - 205+91.96
PT - 207+99.95
e - 0.095' /'
Ls - 275.00'
ROTATE ABOUT INSIDE EDGE

HWY. 287

9-07-2010 r080384.dgn



DETOUR ROAD
STA. 203+51.54 BEGIN SUPERELEVATION
STA. 204+26.54 MAX. SUPER. (0.020' /')
STA. 207+42.48 MAX. SUPER. (0.020' /')
STA. 208+17.48 END SUPERELEVATION

STA. 105+40 BEGIN
JOB 080384

STA. 106+16 END
JOB 080384

THIS STREAM IS CLASSIFIED AS
INTERMITTENT. THE TOP OF CHANNEL
ELEVATION IS 334.5 FT. MSL REFER
TO SECTION 110.08(d) TEMPORARY FILL
OF THE 2003 STANDARD SPECIFICATIONS.

STA. 100+48 - IN PLACE
18" X 21' R.C. PIPE CULVT.
LT. SIDE DRAIN
RETAIN

P. I. 202+50.00 - DETOUR
Δ - 16°27' 19.1" Lt.
D - 8'15' 00.0"
T - 100.42
R - 694.49
L - 199.46
PC - 201+49.58
PT - 203+49.04
NO SUPER

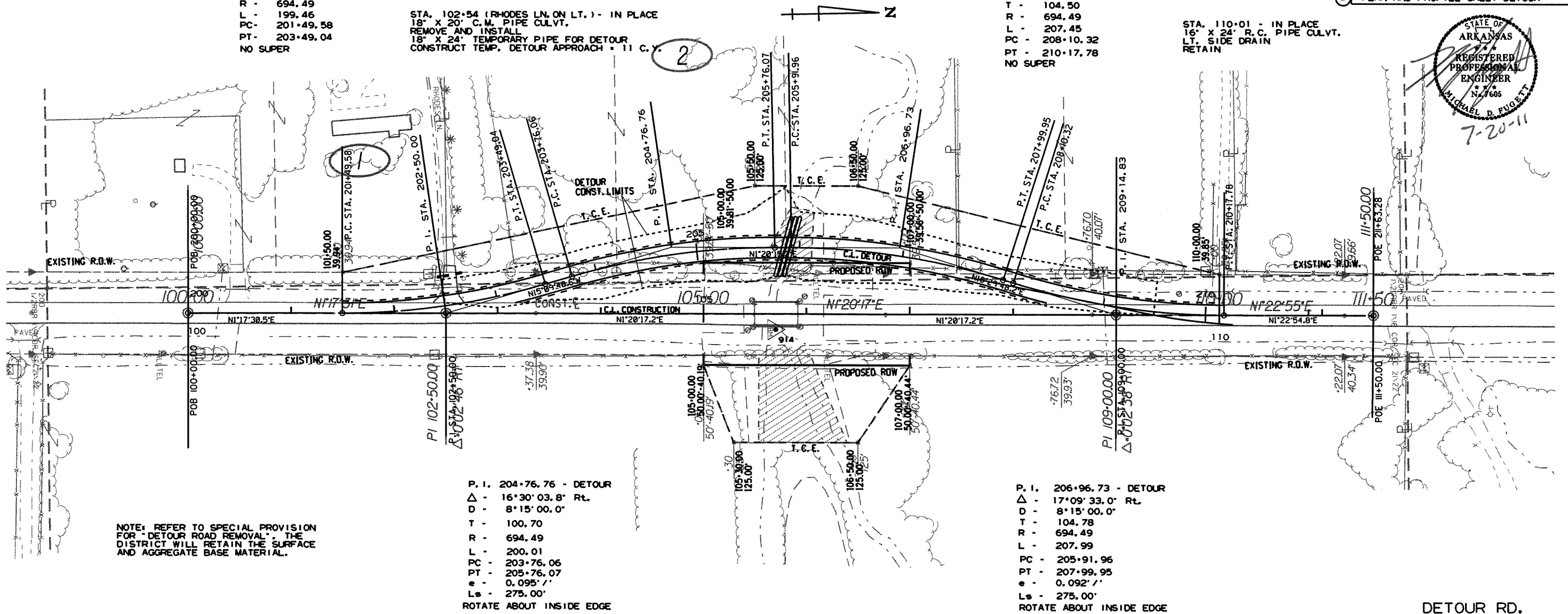
STA. 205+85 (DETOUR RD.) - INSTALL
TRIPLE 36" X 60" TEMPORARY PIPE CULVERTS
ON A 15° LEFT FORWARD SKEW.

STA. 102+54 (RHODES LN. ON LT.) - IN PLACE
18" X 20" C.M. PIPE CULVT.
REMOVE AND INSTALL
18" X 24" TEMPORARY PIPE FOR DETOUR
CONSTRUCT TEMP. DETOUR APPROACH - 11 C.V.

P. I. 209+14.83 - DETOUR
Δ - 17°06' 53.4" Lt.
D - 8'15' 00.0"
T - 104.50
R - 694.49
L - 207.45
PC - 208+10.32
PT - 210+17.78
NO SUPER

REVISED	FILED	REVISED	FILED	FED. RD.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	080384	19	45
				JOB NO. 080384				
				PLAN AND PROFILE SHEET-DETOUR				

STA. 110+01 - IN PLACE
16" X 24" R.C. PIPE CULVT.
LT. SIDE DRAIN
RETAIN



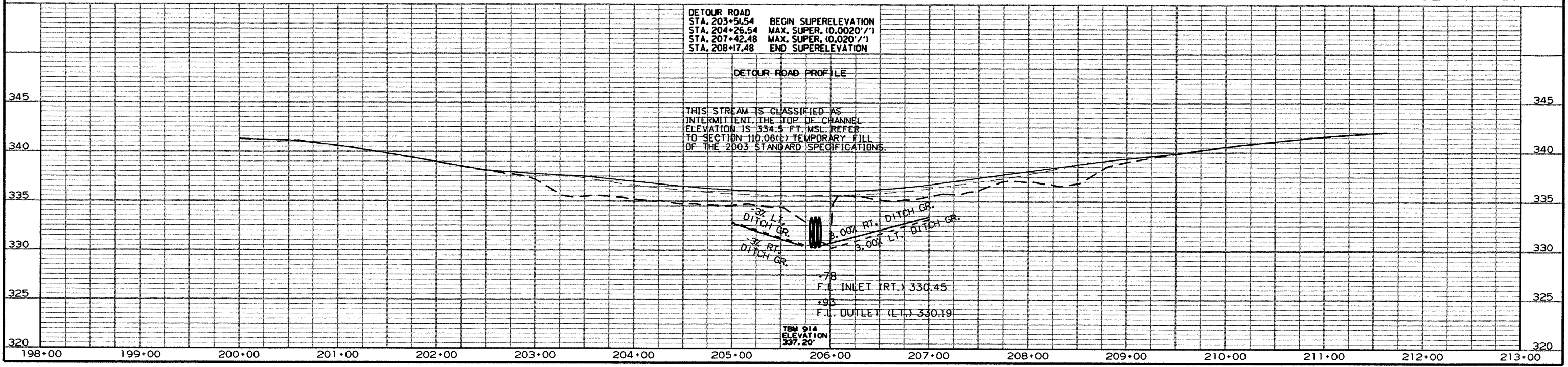
NOTE: REFER TO SPECIAL PROVISION FOR "DETOUR ROAD REMOVAL". THE DISTRICT WILL RETAIN THE SURFACE AND AGGREGATE BASE MATERIAL.

P. I. 204+76.76 - DETOUR
Δ - 16°30' 03.8" Rt.
D - 8'15' 00.0"
T - 100.70
R - 694.49
L - 200.01
PC - 203+76.06
PT - 205+76.07
e - 0.095' /'
Ls - 275.00'
ROTATE ABOUT INSIDE EDGE

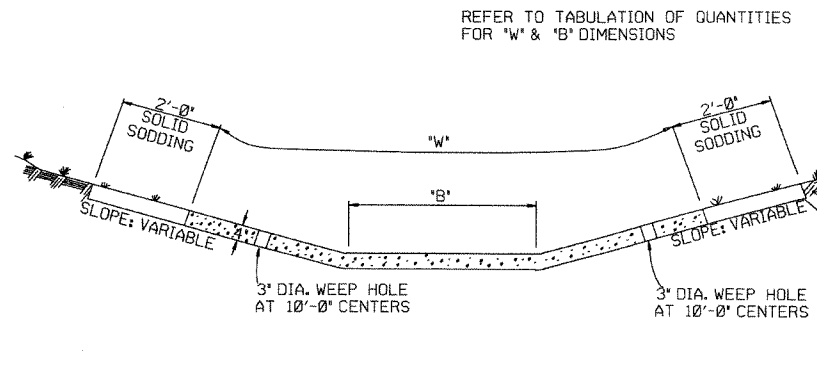
P. I. 206+96.73 - DETOUR
Δ - 17°09' 33.0" Rt.
D - 8'15' 00.0"
T - 104.78
R - 694.49
L - 207.99
PC - 205+91.96
PT - 207+99.95
e - 0.092' /'
Ls - 275.00'
ROTATE ABOUT INSIDE EDGE

DETOUR ROAD
STA. 203+51.54 BEGIN SUPERELEVATION
STA. 204+26.54 MAX. SUPER. (0.0020' /')
STA. 207+42.48 MAX. SUPER. (0.020' /')
STA. 208+17.48 END SUPERELEVATION

THIS STREAM IS CLASSIFIED AS INTERMITTENT. THE TOP OF CHANNEL ELEVATION IS 334.5 FT. MSL. REFER TO SECTION 110.06(b) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

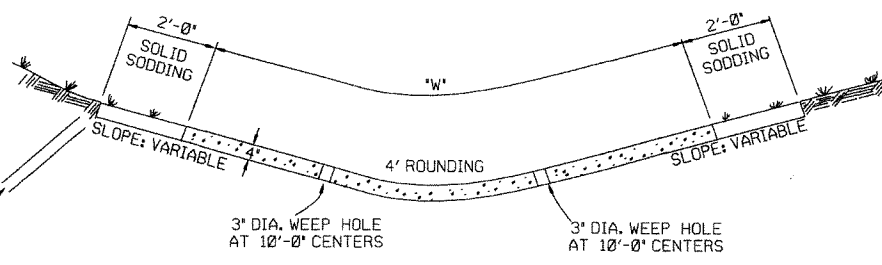


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TYPE A

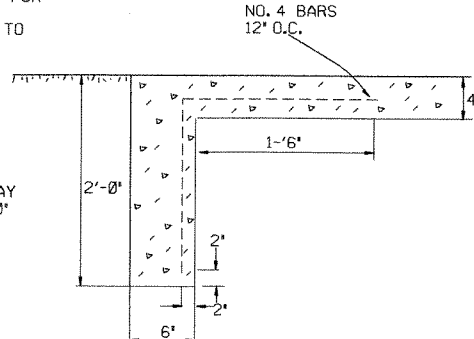
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



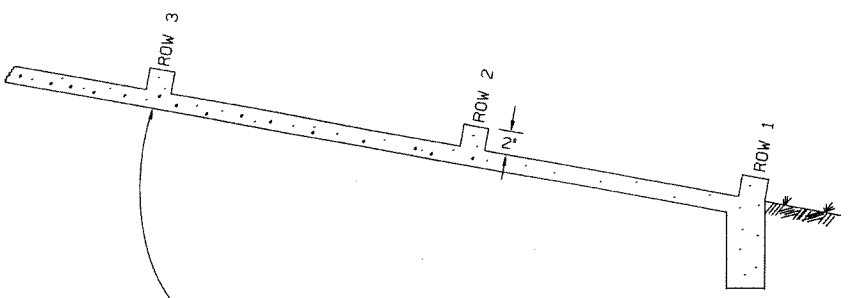
TYPE B

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'

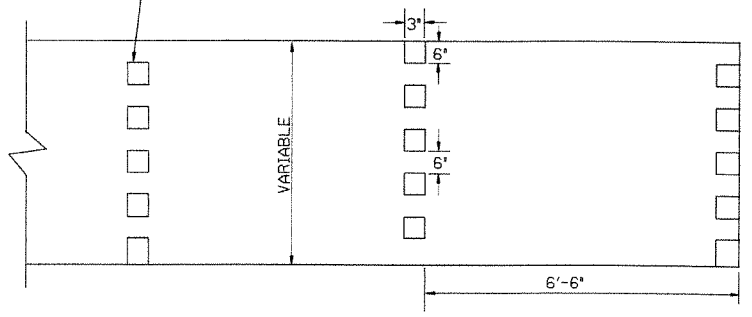


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS (NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

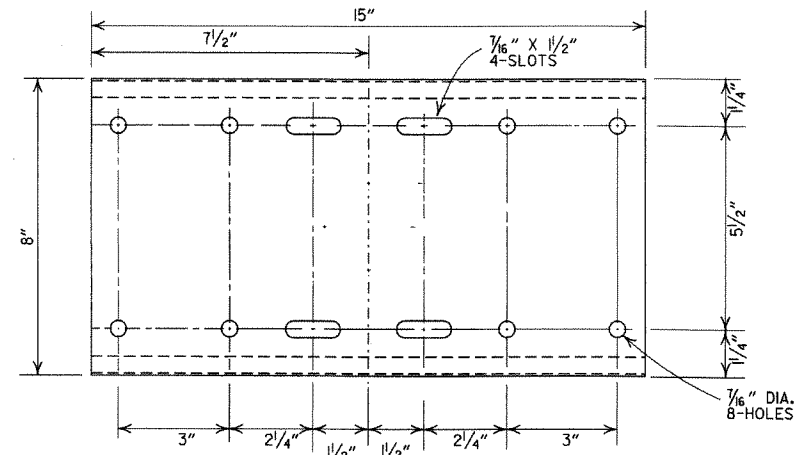
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	11-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
10-2-72	REVISED AND REDRAWN	508-10-2-72
DATE	REVISION	DATE FILM'D

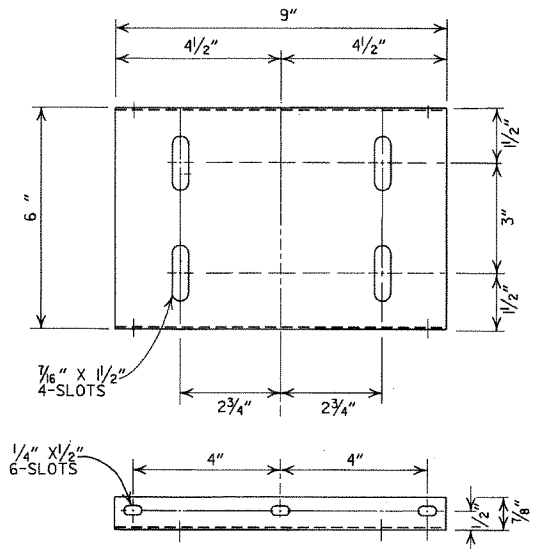
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

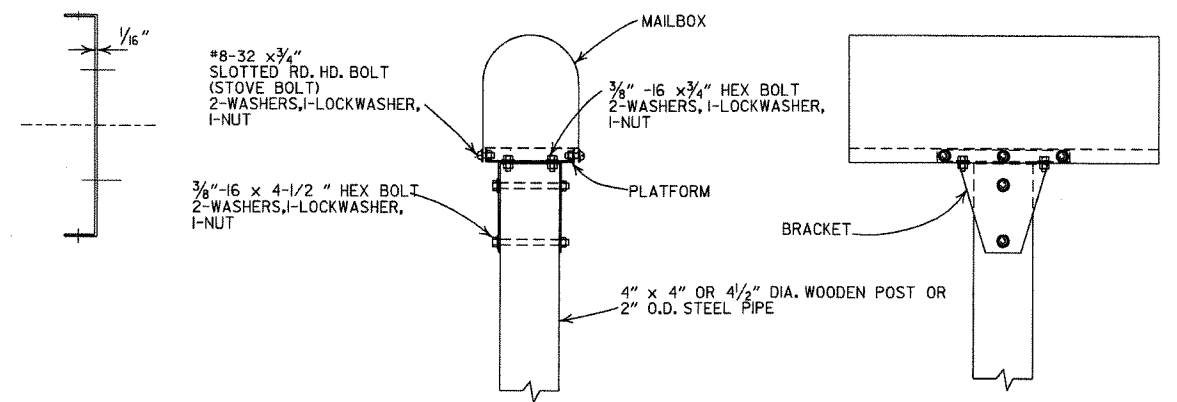
STANDARD DRAWING CDP-1



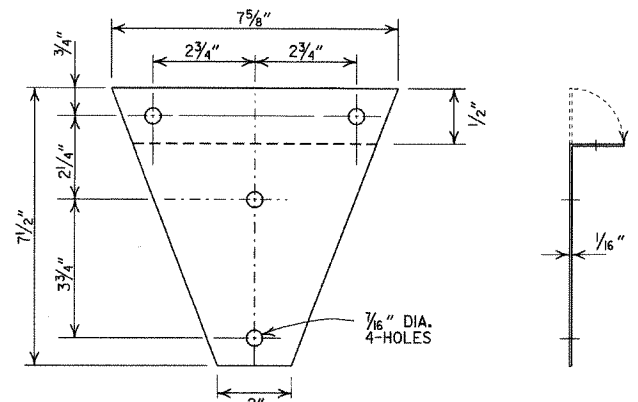
SHELF



PLATFORM

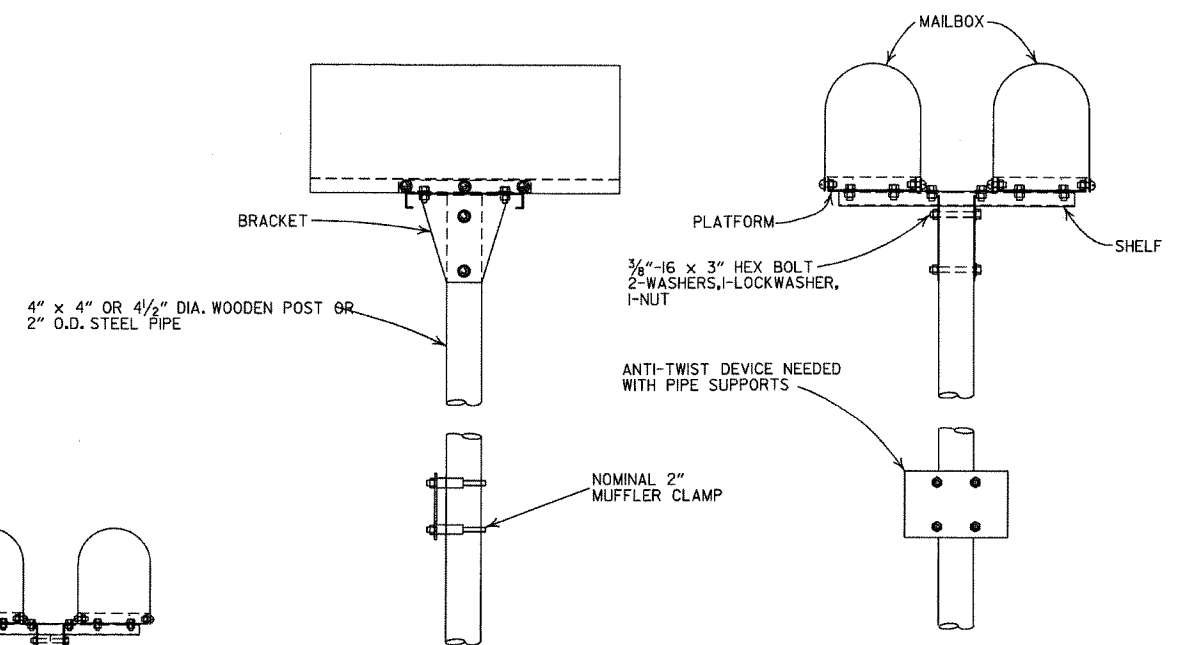


SINGLE INSTALLATION

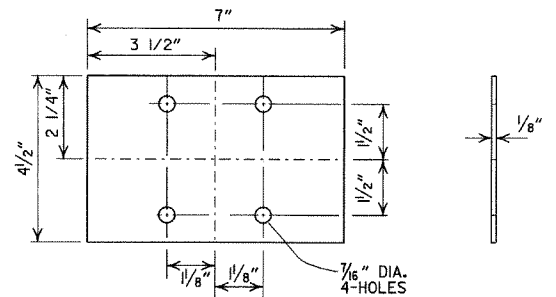


BRACKET

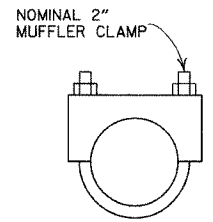
- GENERAL NOTES
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
 2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
 3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED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



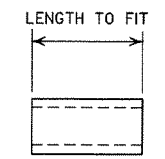
DOUBLE INSTALLATION



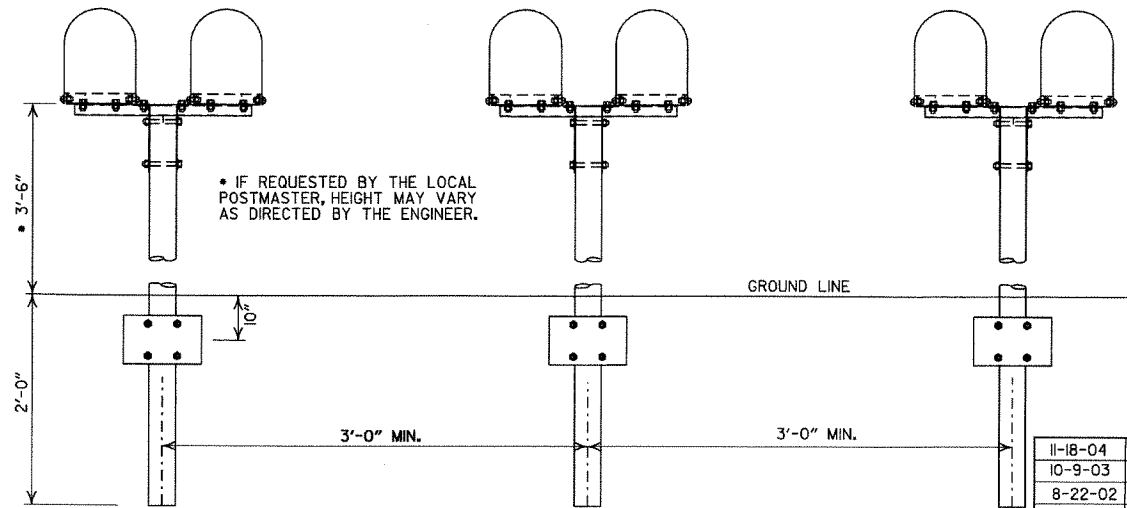
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED
		DATE
		FILED
		REVISION

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	

NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE STANDARD WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

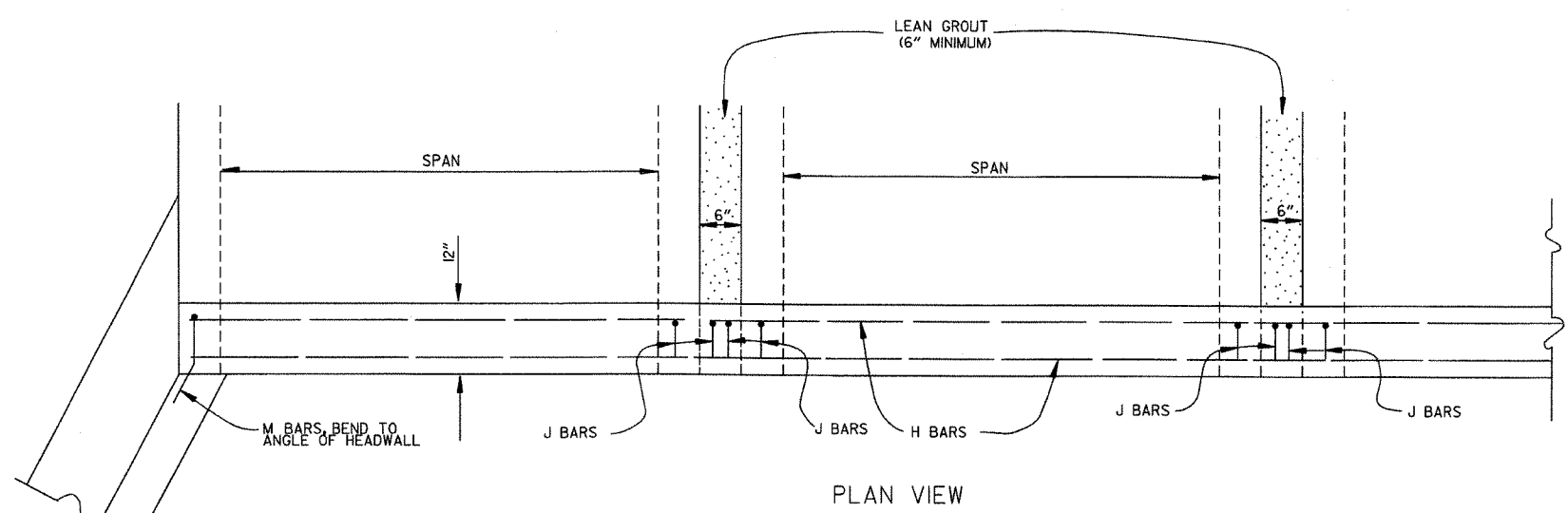
LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS: PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85. SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE. THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

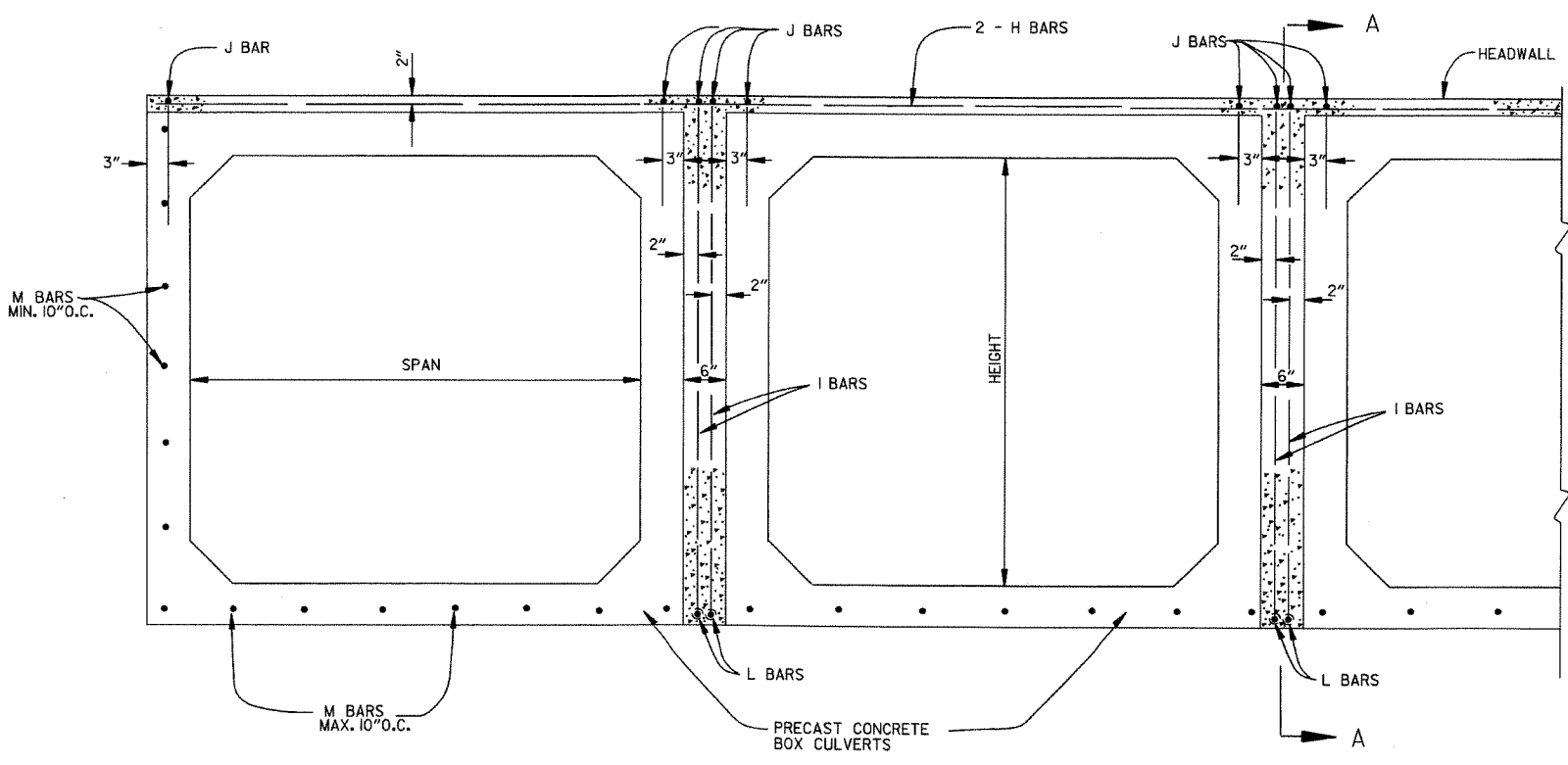
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

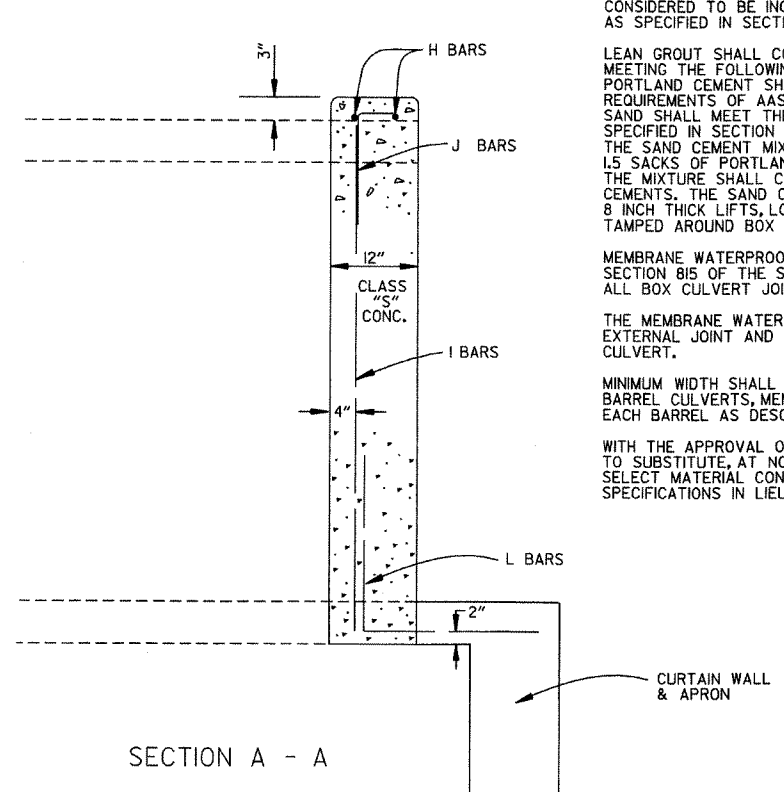
WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



PLAN VIEW



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11-8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED, JABE	

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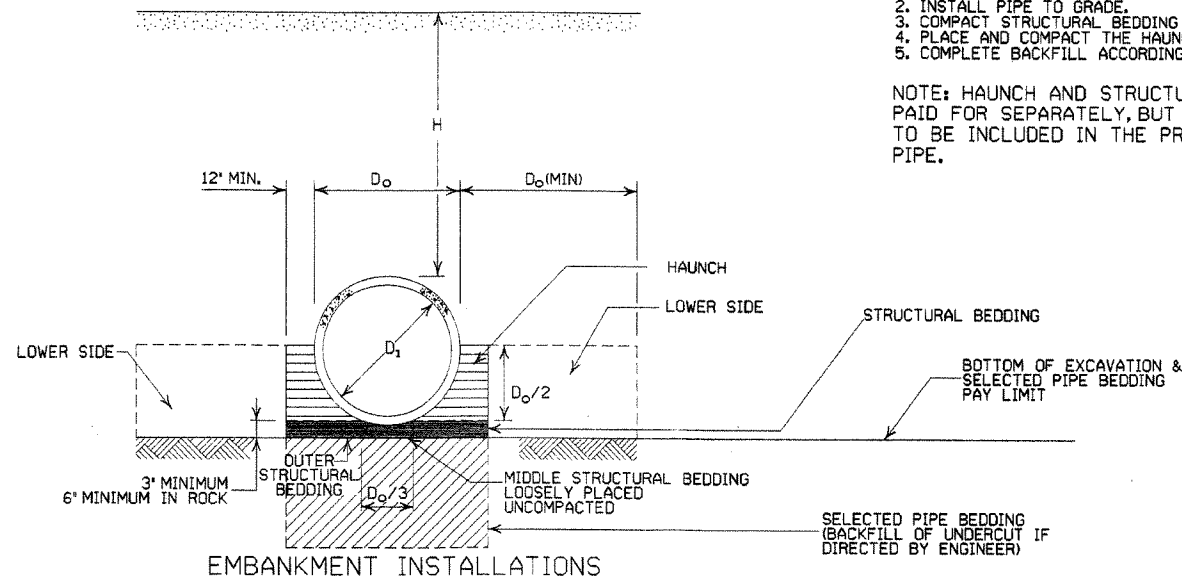
PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

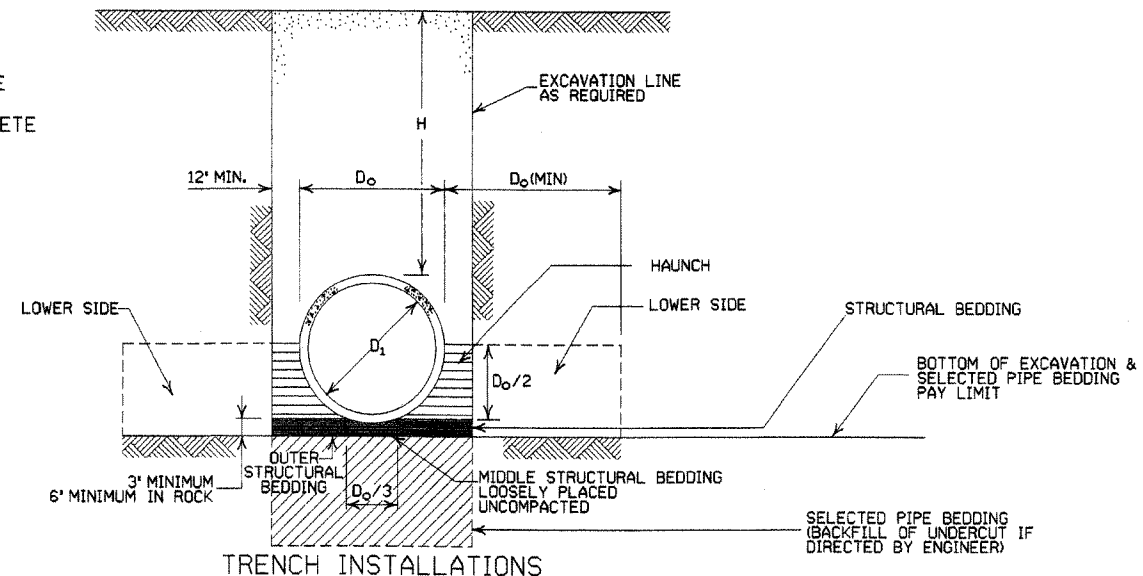
CONSTRUCTION SEQUENCE

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 SPECIFICATIONS.

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.



1. MATERIAL IN THE LOWER SIDE, HAUNCH, AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.



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.

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/4	44	26 5/8	27
42	51 1/8	51	31 7/8	31
48	58 1/2	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	77 1/4	77
108	138	138	87 1/8	87
120	154	154	96 3/8	97
132	168 3/4	169	106 1/2	107

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

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-3) OR TYPE 1 INSTALLATION MATERIAL
TYPE 3	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

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

MAXIMUM HEIGHT OF FILL OVER R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	17	27	41
TYPE 3	13	20	32

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

GENERAL NOTES

1. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
2. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
4. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE.
5. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
6. 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.
7. 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.
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 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.'

- LEGEND -

- D₁ = NORMAL INSIDE DIAMETER OF PIPE
- D_o = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- /// = UNDISTURBED SOIL

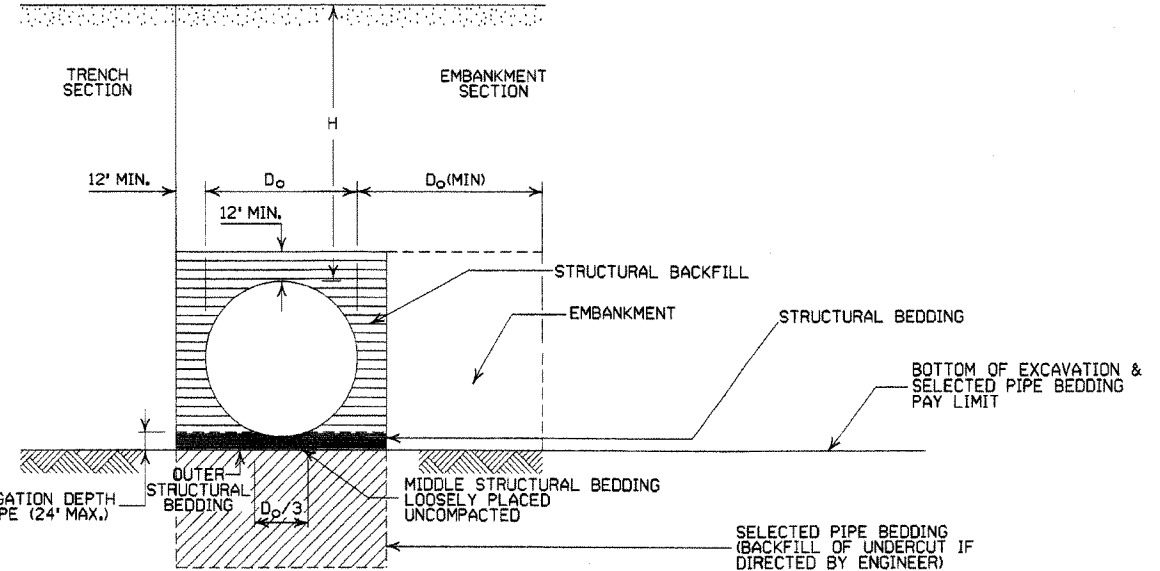
DATE	REVISION	DATE FILMED
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
**CONCRETE PIPE CULVERT
 FILL HEIGHTS & BEDDING**
 STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND) H-2Ø LOADING

PIPE DIAMETER (INCHES)	MINIMUM COVER TOP OF PIPE TO TOP OF SUBGRADE (INCHES)	MAX. FILL HEIGHT ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.064	0.079	0.109	0.136	0.168
		2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL				
12	12	84	91			
15	12	67	73			
18	12	56	61			
24	12	42	46	59		
30	12	34	36	47		
36*	12		30	39	41	70
42*	12		43	46	58	50
48*	12		37	45	58	47
		3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION** RIVETED, WELDED, HELICAL, OR BOLTED				
36	12	48	60	76	88	111
42	12	41	51	64	72	90
48	12	36	45	57	64	77
54	12	32	40	52	59	71
60*	12	29	36	49	53	64
66	12	26	33	47	49	58
72*	12	24	30	44	47	53
78	12		28	41	46	49
84*	12		26	38	45	49
90	12		24	35	43	46
96*	12		22	33	40	44
102	24			31	38	42
108*	24			30	35	39
114	24			28	34	37
120*	24			27	32	35

* MAX. FILL CAN BE INCREASED IN THESE DIAMETER PIPES BY USING THE NEXT LARGER CORRUGATION. REFER TO 'CORRUGATED METAL PIPE', REVISED 1970, PUBLISHED BY U.S. DEPARTMENT OF TRANSPORTATION, F.H.W.A., B.P.R.
 ** WHERE THE STANDARD 2 1/2 x 1/2 CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER A 3' x 1' OR 5' x 1' CORRUGATION PIPE OF THE SAME DIAMETER 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



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. 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.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	*SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-3)

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

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.

GENERAL NOTES

1. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
2. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
4. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE.
5. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
6. 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.
7. 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.'
8. 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.'

- LEGEND -

- D_o = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Hatched pattern] = STRUCTURAL BACKFILL MATERIAL
- [Diagonal lines] = UNDISTURBED SOIL
- ELONG. = ELONGATED
- EQUIV. DIA. = EQUIVALENT DIAMETER
- H = FILL COVER HEIGHT OVER PIPE (FEET)

CORRUGATED ALUMINUM PIPE (ROUND) H-2Ø LOADING

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

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
0.136	0.1345	0.135	10
0.168	0.1644	0.164	8
0.188	0.1838		7
0.218	0.2145		5
0.249	0.2451		3
0.280	0.2758		1

CORRUGATED METAL PIPE ARCHES (H - 2Ø LOADING)

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	MIN. COVER TOP OF PIPE TO TOP OF SUBGRADE FOR 2 TONS PER SQ. FT. (INCHES)	STEEL			ALUMINUM		
				MINIMUM THICKNESS REQUIRED INCHES	MAX. FILL HEIGHT ABOVE TOP OF PIPE (IN FT.) FOR THE FOLLOWING CORNER BEARING PRESSURE IN TONS PER SQ. FT.		MINIMUM THICKNESS REQUIRED INCHES	MAX. FILL HEIGHTS ABOVE TOP OF PIPE (IN FT.) FOR THE FOLLOWING CORNER BEARING PRESSURE IN TONS PER SQ. FT.	
					2 TONS	3 TONS ¹		2 TONS	3 TONS ¹
				2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL			2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL		
15	17x13	3	12	0.064	13	15+	0.060	15	
18	21x15	3	12	0.064	12	15+	0.060	14	
21	24x18	3	12	0.064	10	15+	0.060	12	15+
24	28x20	3	12	0.064	10	15	0.060	10	15+
30	35x24	3	12	0.079	9	14	0.075	9	14
36	42x29	3 1/2	12	0.079	9	13	0.075	9	13
42	49x33	4	12	0.079	8	12	0.105	8	12
48	57x38	5	12	0.109	8	12	0.135	8	12
54	64x43	6	12	0.109	8	12	0.135	8	12
60	71x47	7	12	0.138	8	12	0.164	8	12
66	77x52	8	12	0.168	8	12	0.164	8	12
72	83x57	9	12	0.168	9	13			
				3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION** RIVETED, WELDED, OR HELICAL					
36	40x31	5	12	0.079	15	15+			
42	46x36	6	12	0.079	15	15+			
48	53x41	7	12	0.079	15	15+			
54	60x46	8	12	0.079	15	15+			
60	66x51	9	12	0.079	15	15+			
66	73x55	12	12	0.079	15	15+			
72	81x59	14	18	0.079	15	15+			
78	87x63	14	18	0.079	14	15+			
84	95x67	16	18	0.109	13	15+			
90	103x71	16	24	0.109	12	15+			
96	112x75	18	24	0.109	11	15+			
102	117x79	18	24	0.109	10	15			
108	128x83	18	24	0.138	9	14			

¹ WHERE BEARING PRESSURE EXCEEDING 2 TONS PER SQUARE FOOT IS REQUIRED FOR GIVEN FILL HEIGHTS, THE FOUNDATION MATERIAL SHALL BE INVESTIGATED TO DETERMINE THE BEARING CAPACITY.
 ** WHERE THE STANDARD 2 1/2 x 1/2 CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A 3' x 1' OR 5' x 1' CORRUGATION PIPE OF THE SAME DIAMETER MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

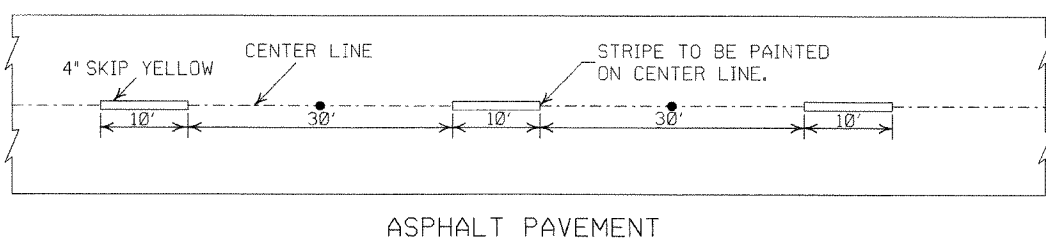
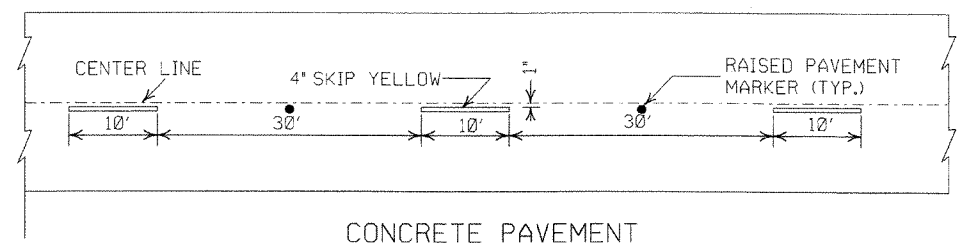
ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT
FILL HEIGHTS & BEDDING

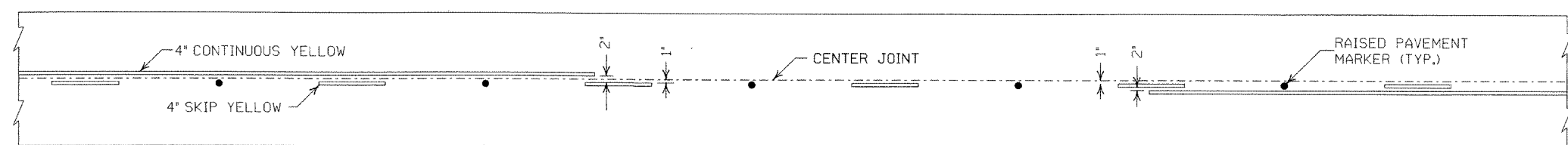
STANDARD DRAWING PCM-1

NOTES:

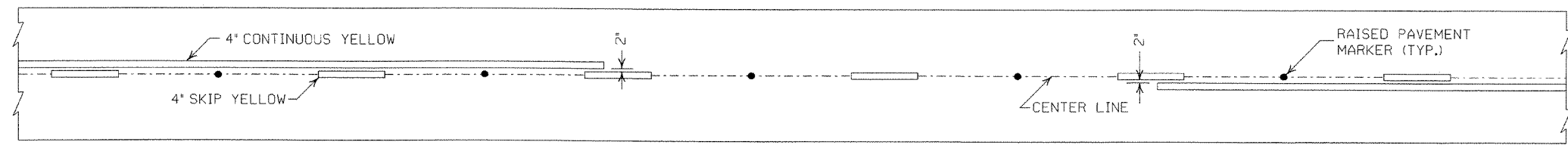
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



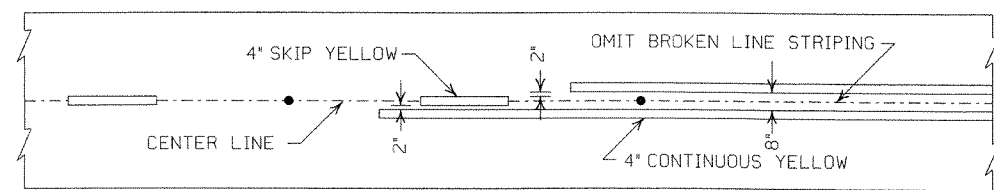
BROKEN LINE STRIPING



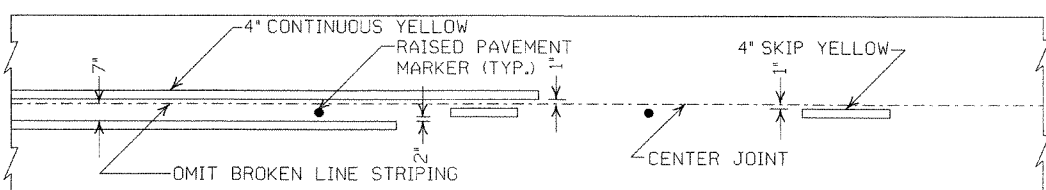
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

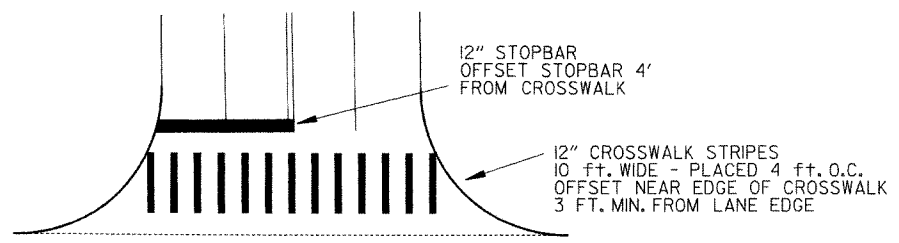


ASPHALT PAVEMENT



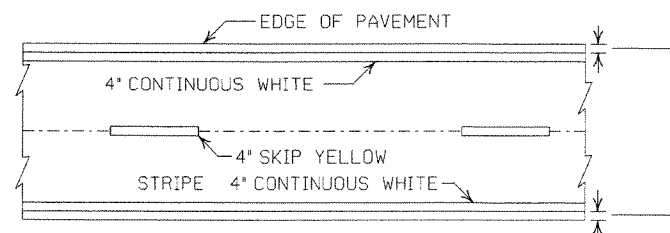
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

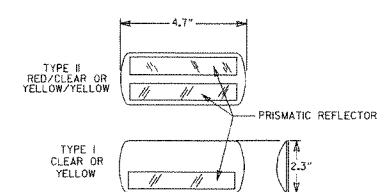


CROSSWALK AND STOPBAR DETAILS

2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

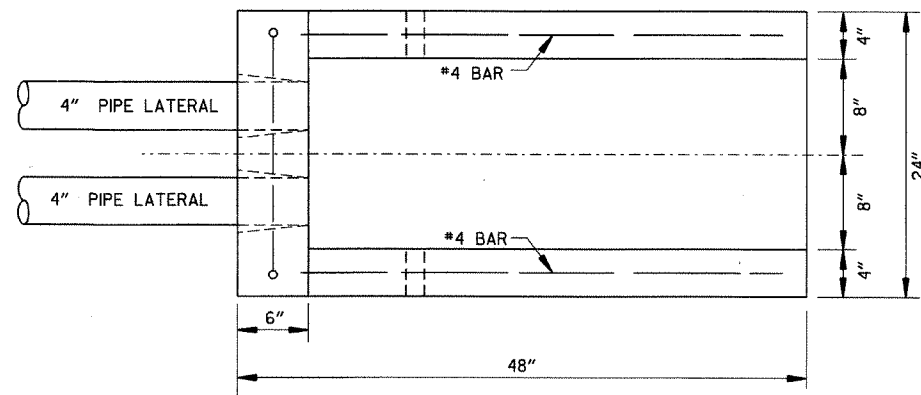
NOTE:

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

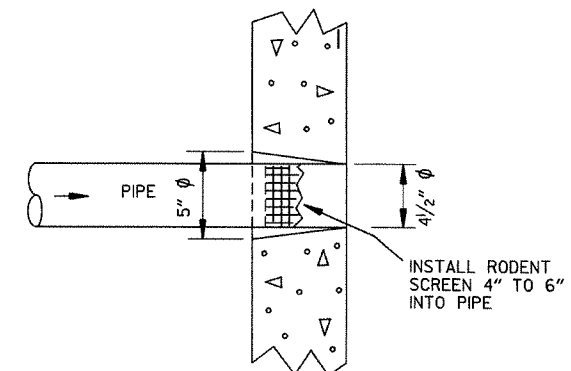
DATE	REVISION	FILMED
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION	
PAVEMENT MARKING DETAILS	
STANDARD DRAWING PM-1	

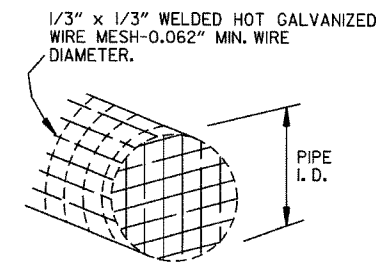
NOTE:
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



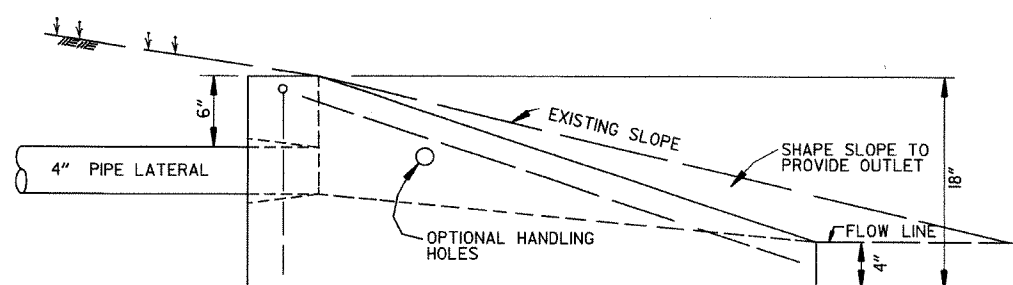
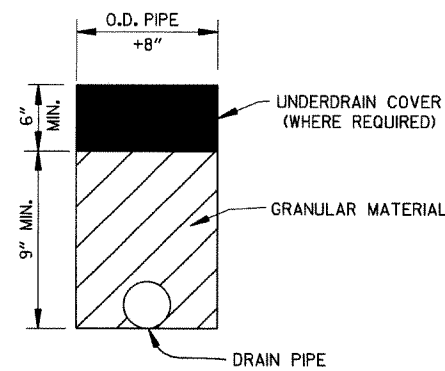
PLAN VIEW



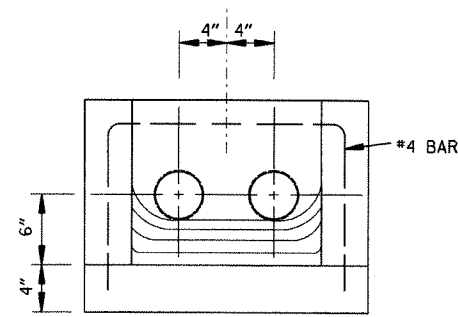
DETAIL OF HOLE FOR 4" PIPE



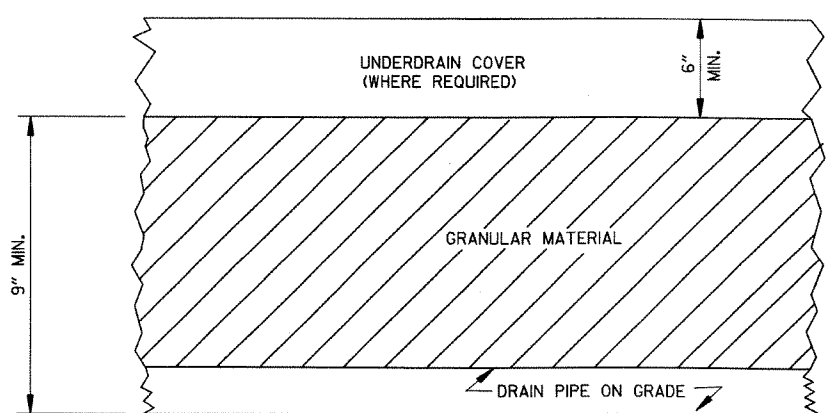
DETAIL OF RODENT SCREEN



SIDE VIEW

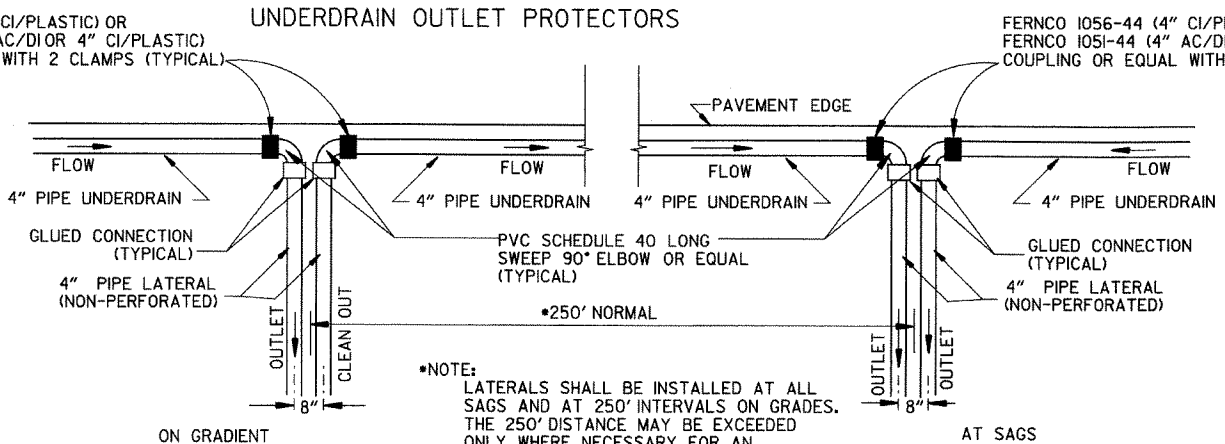


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



*NOTE:
 LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11-3-94	REVISED FOR DUAL LATERALS	11-3-94
10-1-92	SUBSTITUTED GEOTEXTILE	10-1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11-8-90	DELETED ALTERNATE NOTE	11-8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

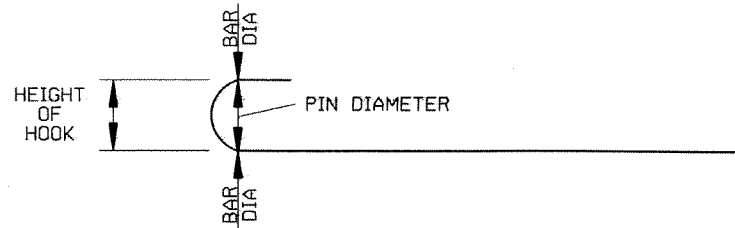
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3"	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" OR "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

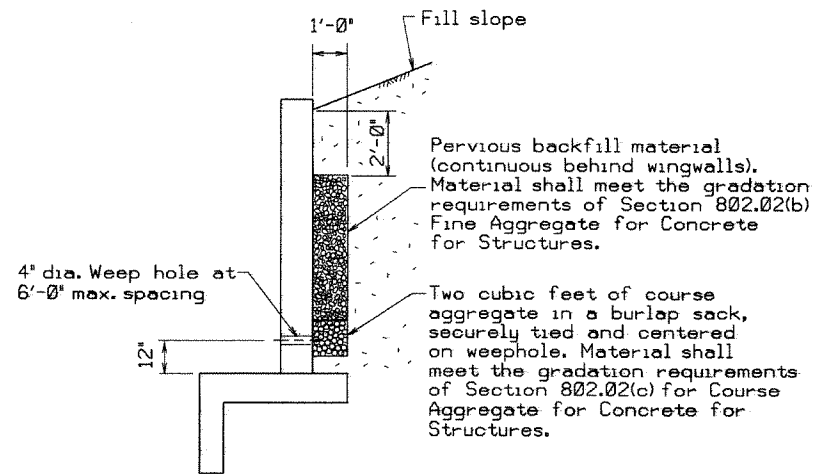
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

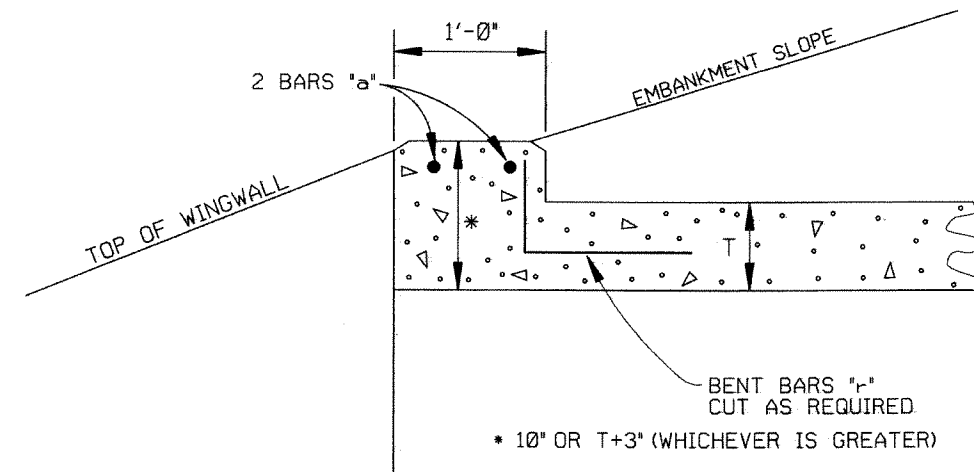
MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN WINGWALLS: THE MAXIMUM HORIZONTAL SPACING OF WEEP HOLES IN WINGWALLS SHALL BE 6'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND PLACED 12" ABOVE TOP OF WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

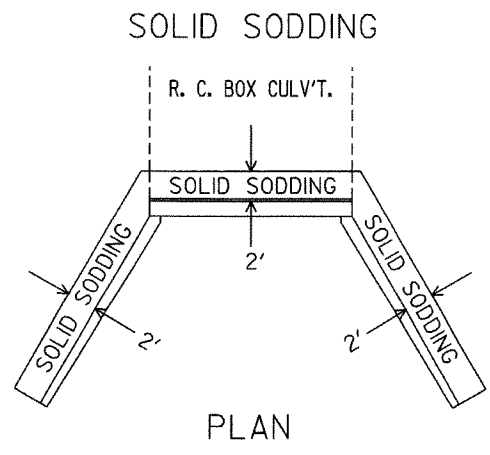
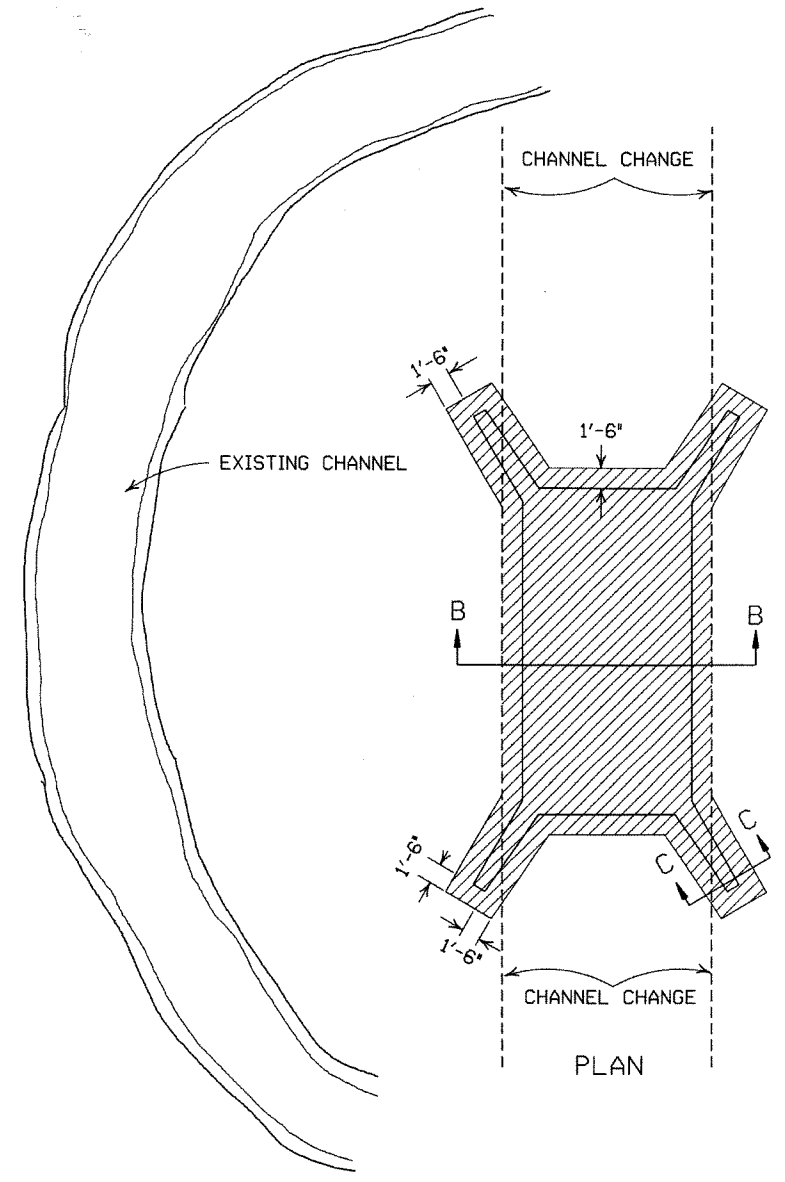
R.C. BOX CULVERT HEADWALL MODIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

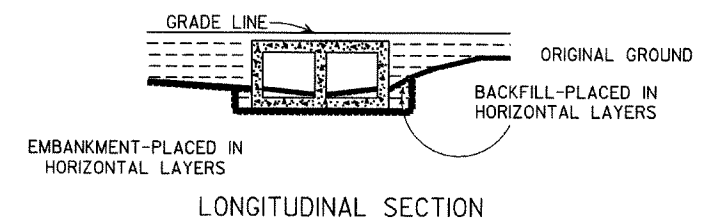
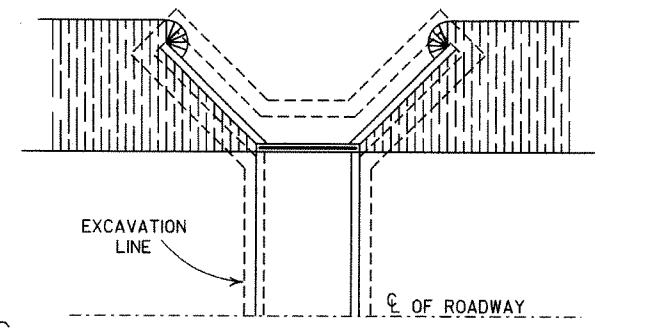
STANDARD DRAWING RCB-1

DATE	REVISION	DATE FILMED
05-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
8-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

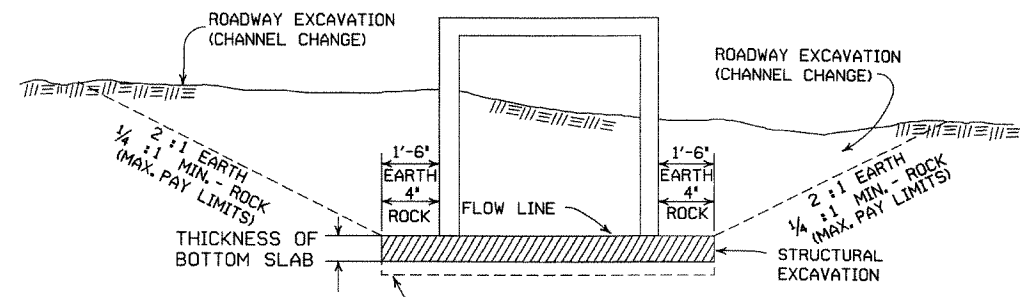
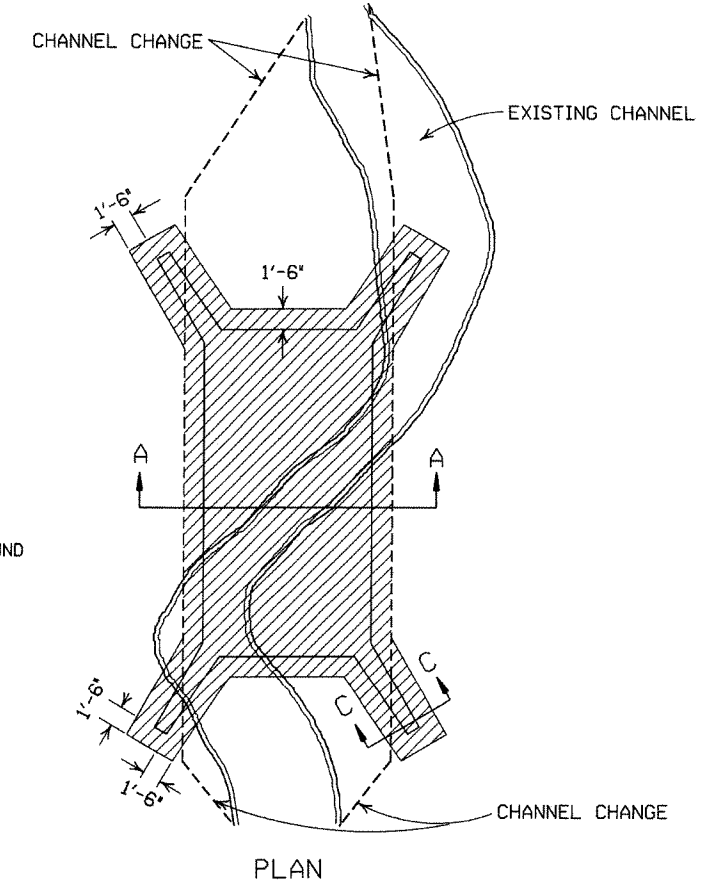


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

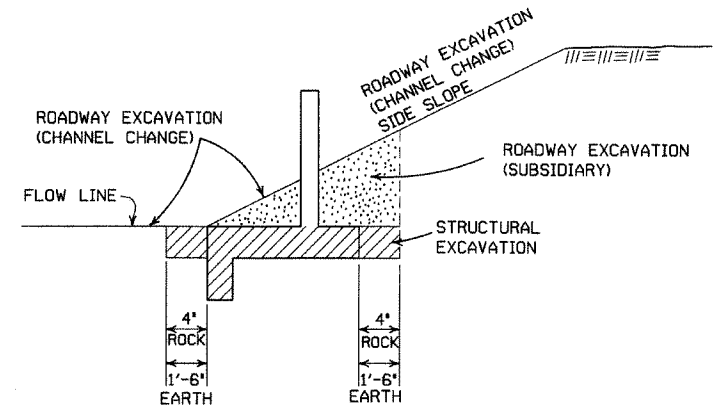


BACKFILL DETAILS FOR BOX CULVERT

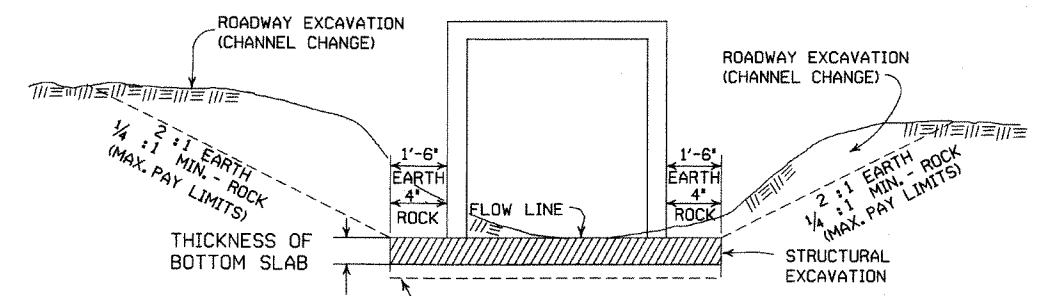


SECTION B-B
DETAILS FOR NEW CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

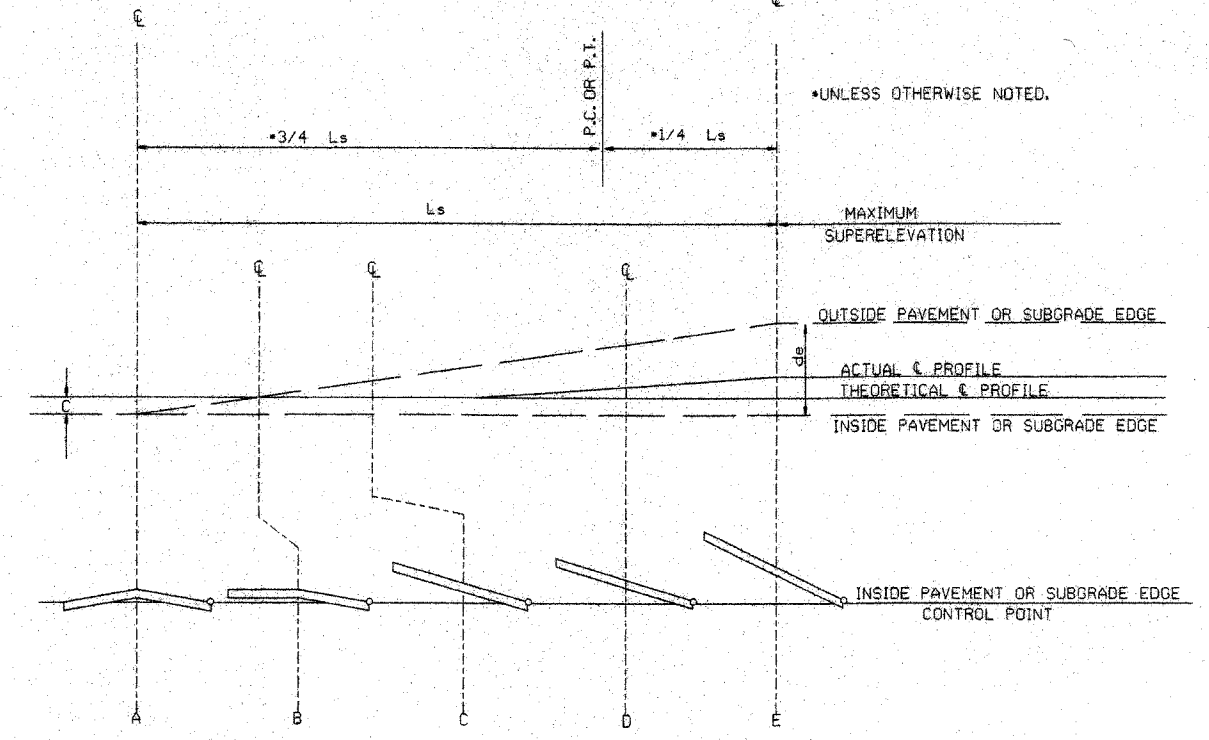
STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 30'	0.021		0.028		0.036		0.044		0.052		0.060	
2° 45'	0.023		0.031		0.040		0.048		0.056		0.064	
3° 00'	0.025		0.034		0.044		0.053		0.061		0.070	
3° 15'	0.027		0.037		0.047		0.056		0.065		0.074	
3° 30'	0.029		0.040		0.050		0.059		0.068		0.077	
3° 45'	0.031		0.042		0.052		0.061		0.070		0.079	
4° 00'	0.033		0.044		0.054		0.063		0.072		0.081	
4° 30'	0.037		0.048		0.058		0.067		0.076		0.085	
5° 00'	0.040		0.051		0.061		0.070		0.079		0.088	
5° 30'	0.043		0.054		0.064		0.073		0.082		0.091	
6° 00'	0.046		0.057		0.067		0.076		0.085		0.094	
6° 30'	0.050		0.061		0.071		0.080		0.089		0.098	
7° 00'	0.053		0.064		0.074		0.083		0.092		0.101	
7° 30'	0.056		0.067		0.077		0.086		0.095		0.104	
8° 00'	0.058		0.069		0.079		0.088		0.097		0.106	
8° 30'	0.061		0.072		0.082		0.091		0.100		0.109	
9° 00'	0.063		0.074		0.084		0.093		0.102		0.111	
10° 00'	0.066		0.077		0.087		0.096		0.105		0.114	
11° 00'	0.069		0.080		0.090		0.099		0.108		0.117	
12° 00'	0.072		0.083		0.093		0.102		0.111		0.120	
13° 00'	0.075		0.086		0.096		0.105		0.114		0.123	
14° 00'	0.078		0.089		0.099		0.108		0.117		0.126	
15° 00'	0.081		0.092		0.102		0.111		0.120		0.129	
16° 00'	0.084		0.095		0.105		0.114		0.123		0.132	
17° 00'	0.087		0.098		0.108		0.117		0.126		0.135	
18° 00'	0.090		0.101		0.111		0.120		0.129		0.138	
19° 00'	0.093		0.104		0.114		0.123		0.132		0.141	
20° 00'	0.096		0.107		0.117		0.126		0.135		0.144	
21° 00'	0.099		0.110		0.120		0.129		0.138		0.147	
22° 00'	0.102		0.113		0.123		0.132		0.141		0.150	
23° 00'	0.105		0.116		0.126		0.135		0.144		0.153	
24° 00'	0.108		0.119		0.129		0.138		0.147		0.156	

ABBREVIATIONS

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



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

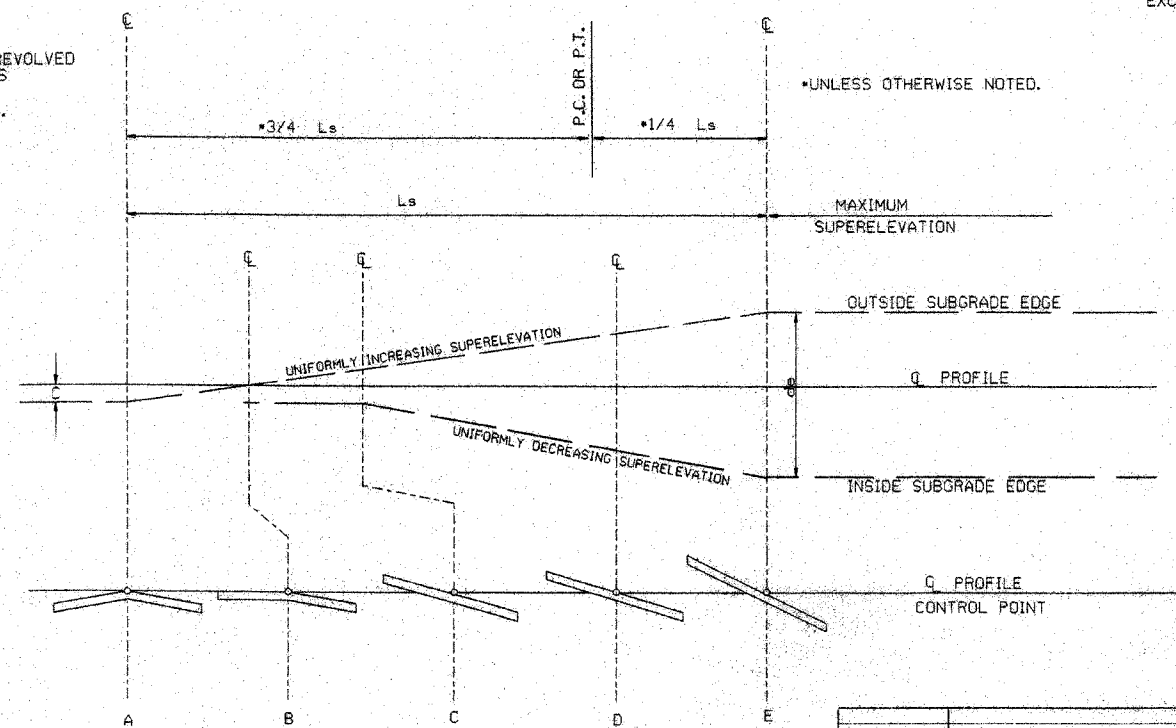
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

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

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


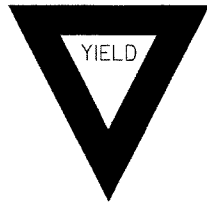






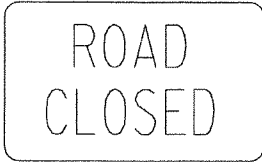
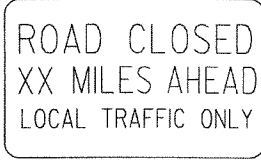
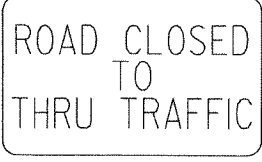
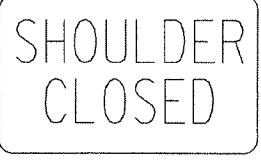
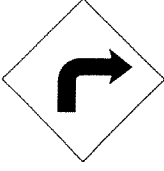
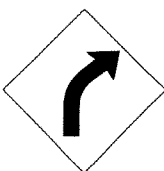



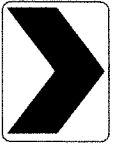
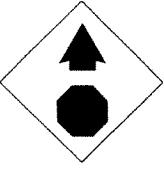
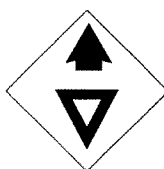
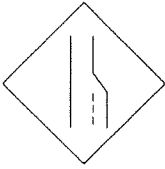

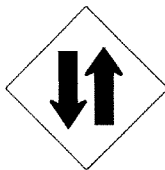

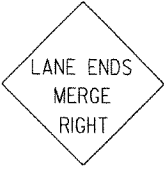






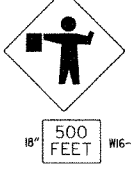


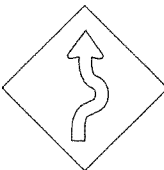



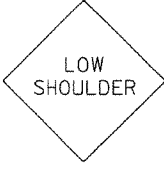


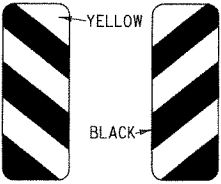
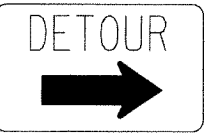

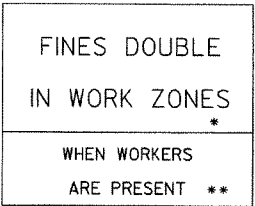
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C. RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

DATE	REVISION	DATE FILLED
10-18-96	ADDED FORMULA	18-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION
 TABLES AND METHOD OF
 SUPERELEVATION FOR TWO-WAY TRAFFIC
 STANDARD DRAWING SE-2

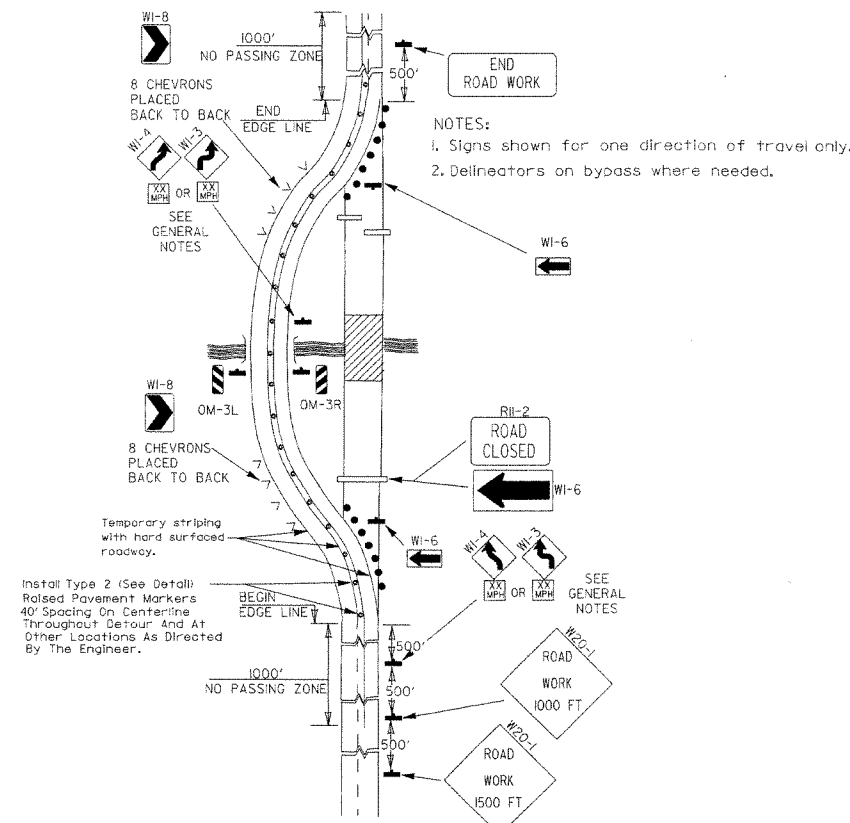
							ADVANCE DISTANCES (XXXX)	30
<p>RI-1</p>  <p>STANDARD 30"X30" EXPRESSWAY 36"X36" SPECIAL 48"X48"</p>	<p>RI-2</p>  <p>STD. 36"X36"X36" EXPWY. 48"X48"X48" FWY. 60"X60"X60"</p>	<p>R2-1</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>R2-5A</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>R2-5C</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>R4-1</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>R4-2</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD</p>	
<p>R5-1</p>  <p>STD. 30"X30" EXPWY. 36"X36" SPECIAL 48"X48"</p>	<p>R11-2</p>  <p>48"X30"</p>	<p>R11-3A</p>  <p>60"X30"</p>	<p>R11-4</p>  <p>60"X30"</p>	<p>RSP-1</p>  <p>48"X30"</p>	<p>WI-1</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>WI-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>		
<p>WI-3</p>  <p>STD. 48"X48"</p>	<p>WI-4</p>  <p>STD. 48"X48"</p>	<p>WI-6</p>  <p>STD. 48"X24" SPECIAL 60"X30"</p>	<p>WI-8</p>  <p>STD. 18"X24" SPECIAL 24"X30" EXPWY. 30"X36" FWY. 36"X48"</p>	<p>W3-1</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W3-2</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W4-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>		
<p>W5-1</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W6-3</p>  <p>EXPWY. 36"X36" SPECIAL 48"X48"</p>	<p>W8-7</p>  <p>EXPWY. 36"X36" FWY. 48"X48"</p>	<p>W9-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W13-1</p>  <p>STD. 24"X24"</p>	<p>W20-1</p>  <p>STD. 48"X48"</p>	<p>W20-2</p>  <p>STD. 48"X48"</p>	<p>W20-3</p>  <p>STD. 48"X48"</p>	
<p>W20-4</p>  <p>STD. 48"X48"</p>	<p>W20-5</p>  <p>STD. 48"X48"</p>	<p>W20-7a</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W21-2</p>  <p>STD. 30"X30" SPECIAL 36"X36"</p>	<p>W21-5</p>  <p>STD. 30"X30" SPECIAL 36"X36"</p>	<p>W24-1</p>  <p>STD. 36"X36"</p>	<p>WI-4b</p>  <p>STD. 48"X48"</p>	<p>R56-1</p>  <p>STD. 18"X18"</p>	
<p>W8-11</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W8-9</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>G20-1</p>  <p>60"X24"</p>	<p>G20-2</p>  <p>48"X24"</p>	<p>OM-3L OM-3R</p>  <p>12"X36"</p>	<p>M4-9</p>  <p>STD. 30"X24" SPECIAL 48"X36" SPECIAL 60"X48"</p>	<p>M4-10</p>  <p>48"X18"</p>	<p>R55-1</p>  <p>36"X60"</p> <p>WHEN WORKERS ARE PRESENT **</p> <p>* USE 6" C LETTERS ** USE 4" D LETTERS</p>	

GENERAL NOTES:

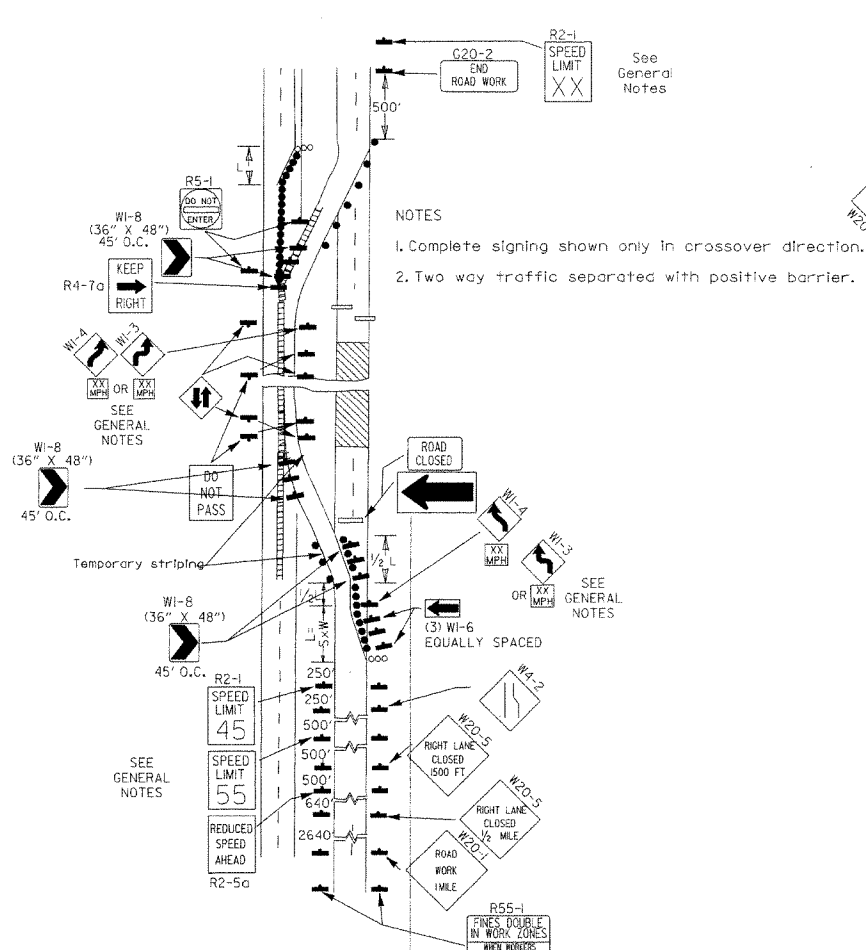
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 150' 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 50' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

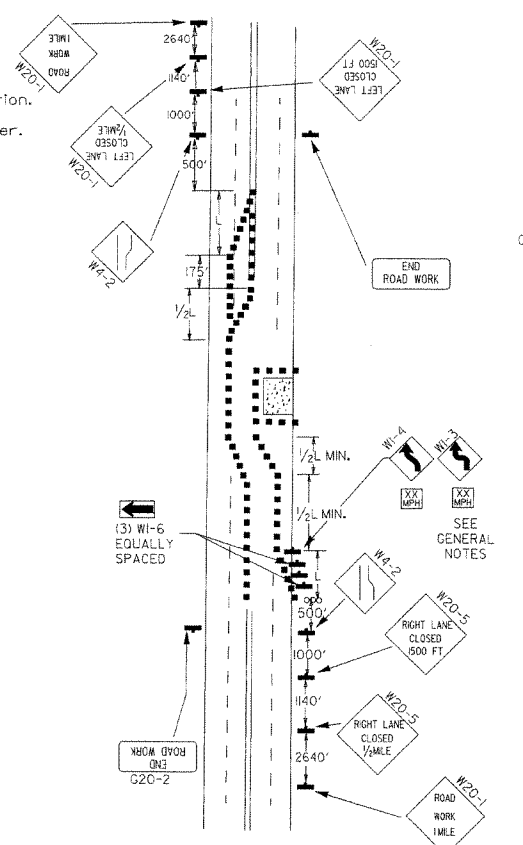
DATE	REVISION	FILMED
8-17-10	DELETED W8-9a & ADDED W8-9	
10-16-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
1-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 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	



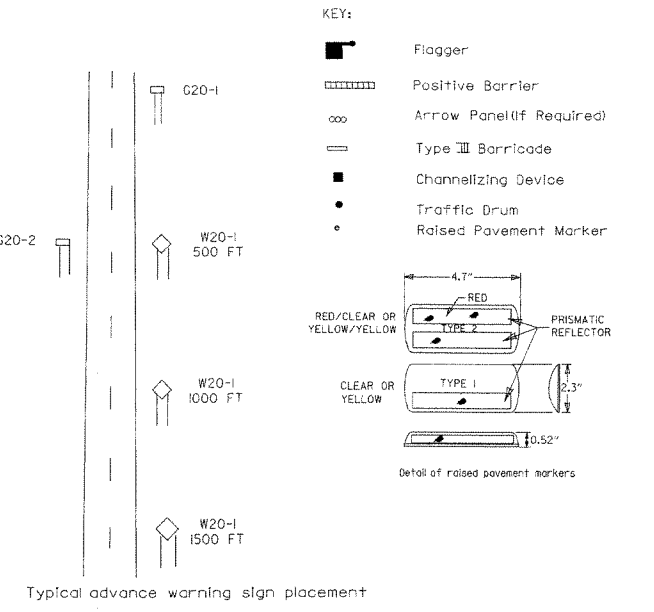
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



(B) Typical application - 4-lane divided roadway where one roadway is closed.

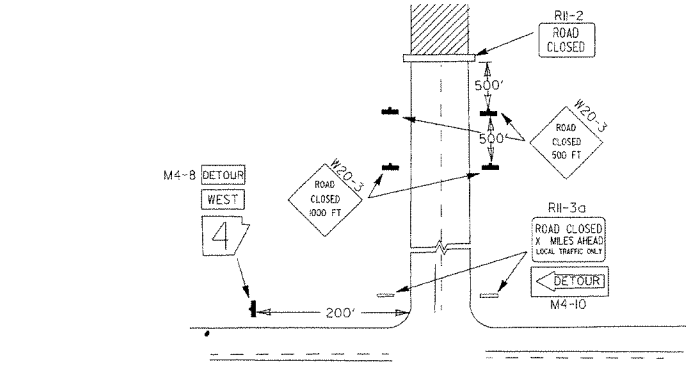


(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



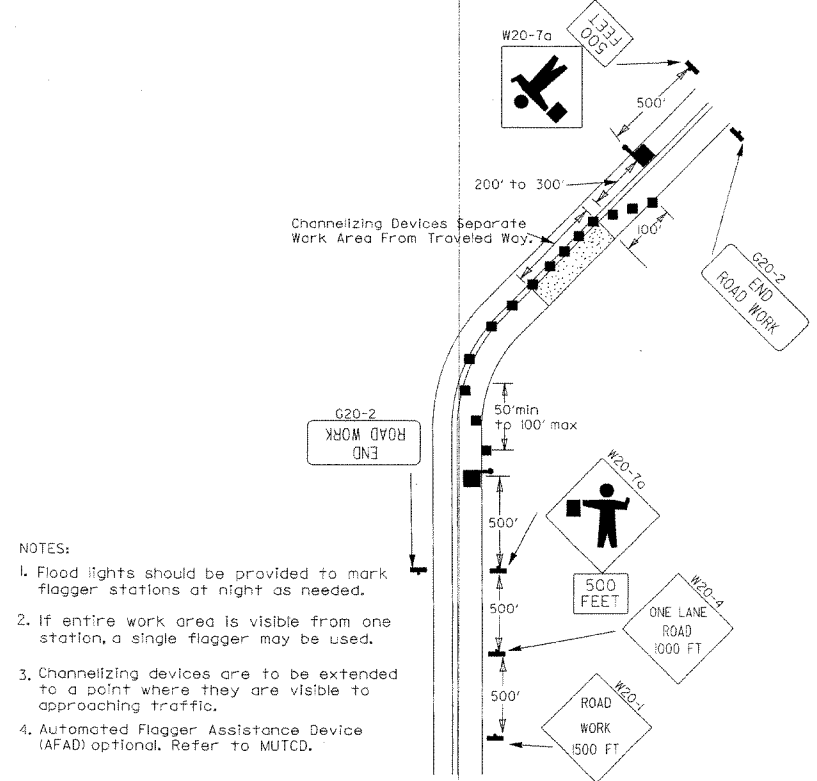
Taper formulae:
 $L = S \times W$ for speeds of 45mph or more.
 $L = \frac{WS^2}{60}$ for speeds of 40mph or less.
 Where:
 L = Minimum length of taper.
 S = Numerical value of posted speed limit prior to work or 85th percentile speed.
 W = Width of offset.

- GENERAL NOTES:
- Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
 - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(45) shall be installed to match original speed limit.
 - When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(65) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(55) shall be installed to match original speed limit.
 - 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.
 - Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 - Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 - Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



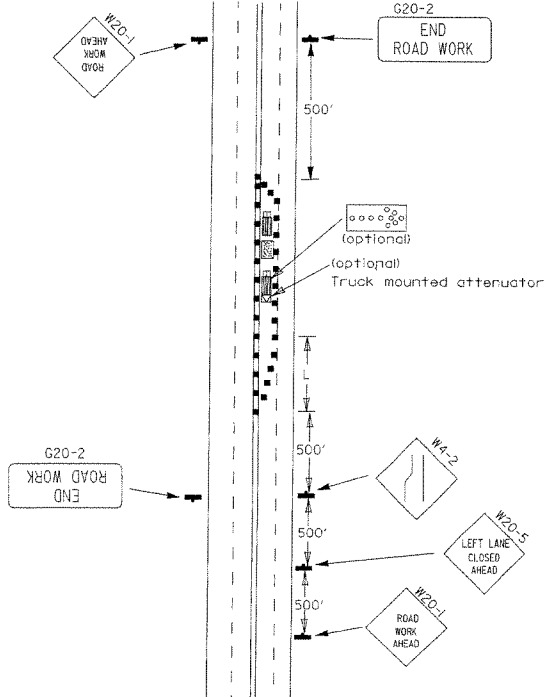
- NOTES:
- Regulatory traffic control devices to be modified as needed for the duration of the detour.
 - Street names may be used when desirable for directing detoured traffic.

(D) Typical application - roadway closed beyond detour point.



- NOTES:
- Flood lights should be provided to mark flagger stations at night as needed.
 - If entire work area is visible from one station, a single flagger may be used.
 - Channelizing devices are to be extended to a point where they are visible to approaching traffic.
 - Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.

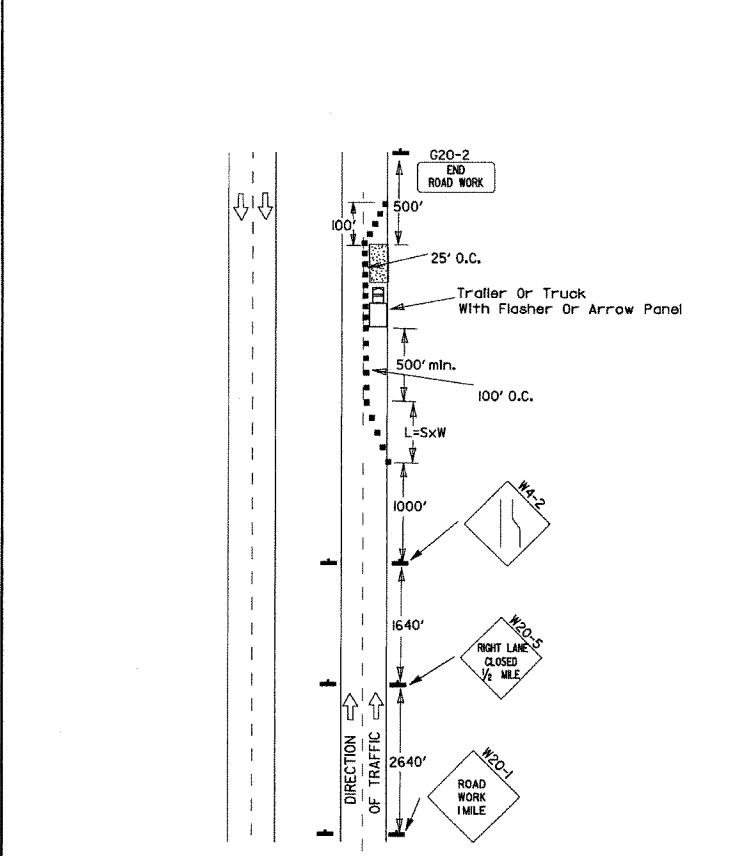
(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.



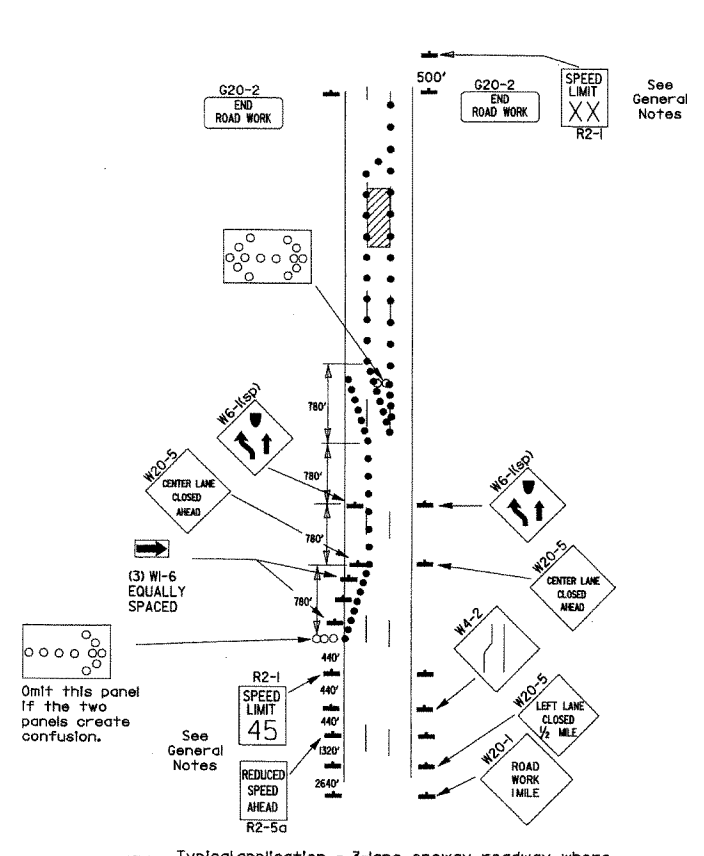
(F) Typical application - 4-lane undivided roadway with inside lane closed.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
1-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

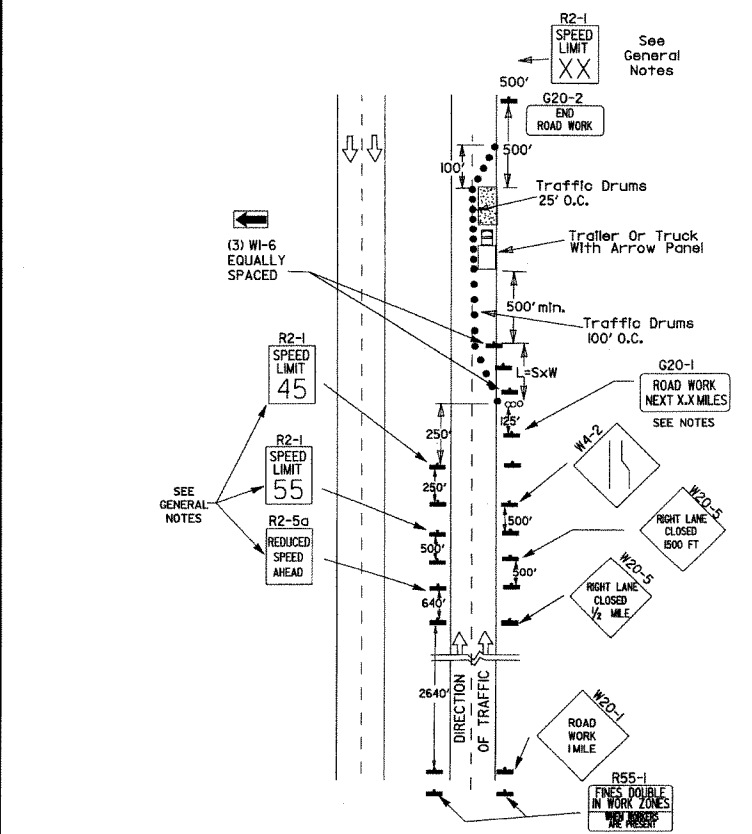
ARKANSAS STATE HIGHWAY COMMISSION
 STANDARD TRAFFIC CONTROLS
 FOR HIGHWAY CONSTRUCTION
 STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

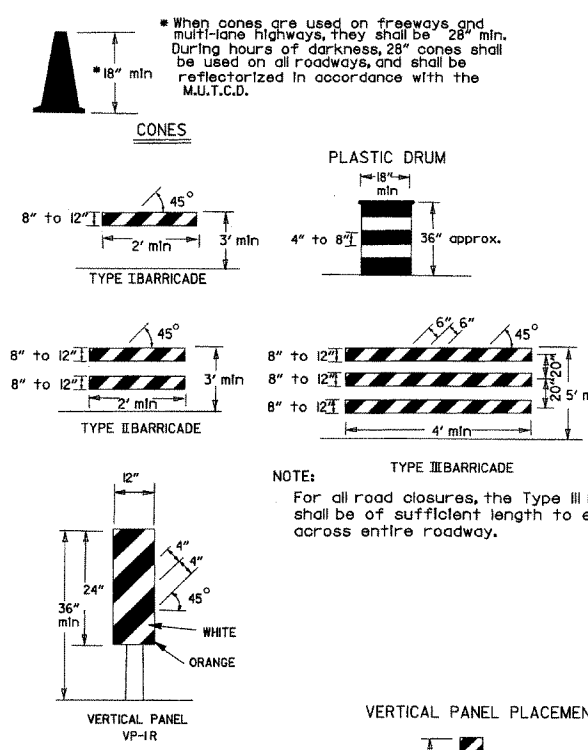


(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

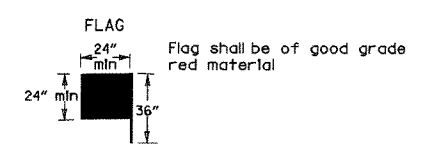
Channelizing devices



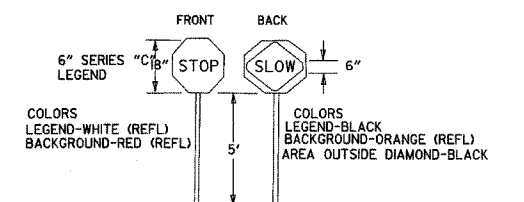
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-land vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

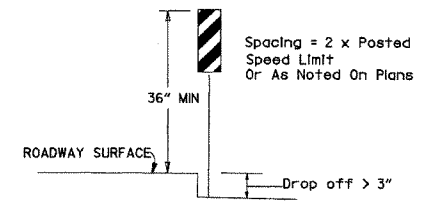
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE



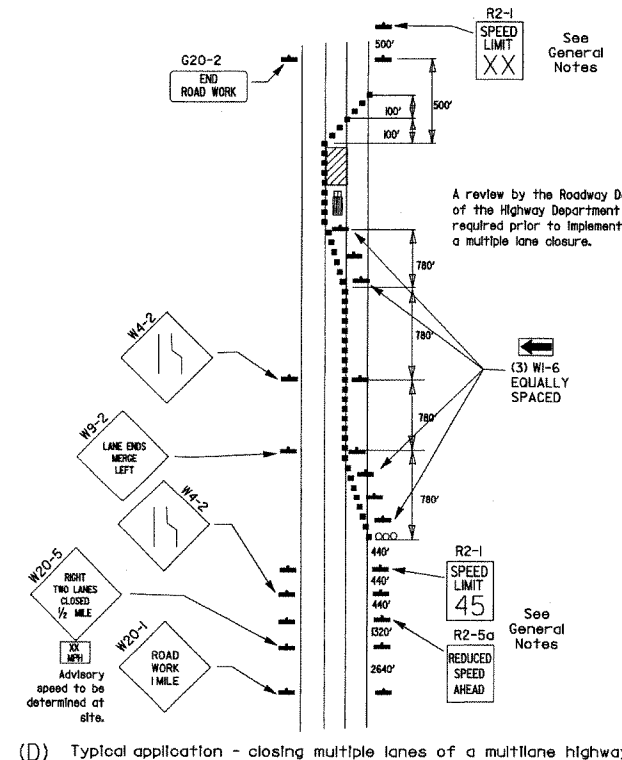
VERTICAL PANEL PLACEMENT



- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

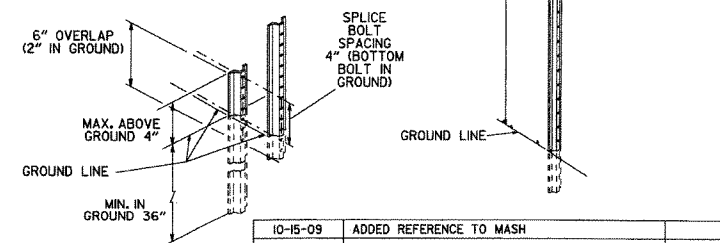
GENERAL NOTES:

- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
- When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1XX shall be installed to match original speed limit.
- 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 1 mile intervals. At the end of the work area a R2-1XX shall be installed to match original speed limit.
- 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.
- Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
- Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
- 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.
- Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
- All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
- 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.



(D) Typical application - closing multiple lanes of a multilane highway.

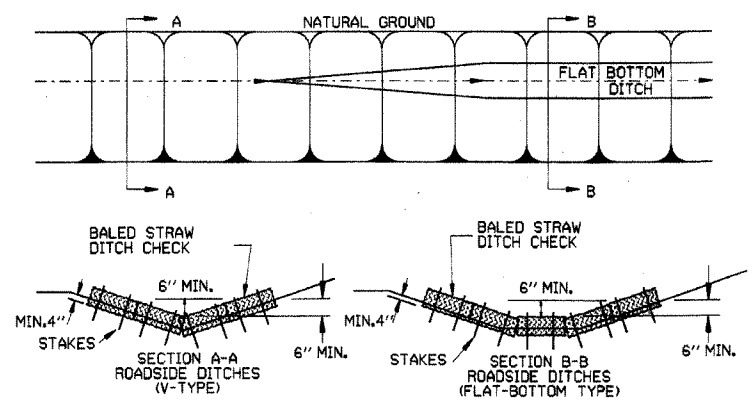
- NOTES:
- USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
 - NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.
 - SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



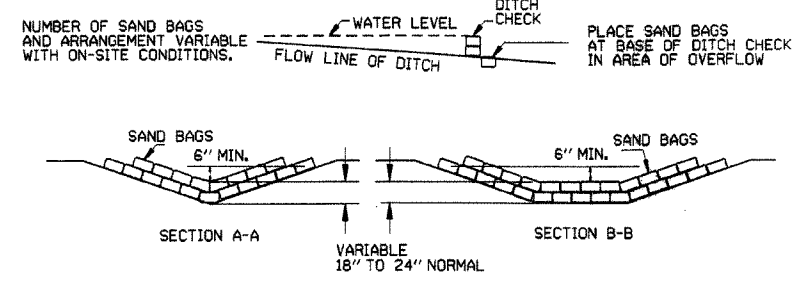
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED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

GENERAL NOTES

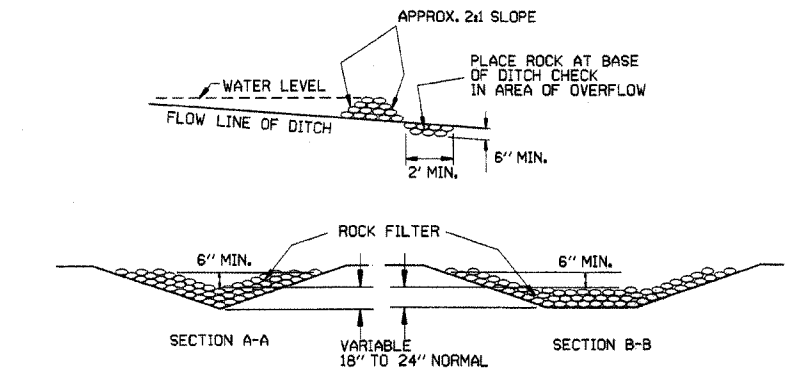
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES, THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. STRAW BALES SHALL BE KEYED INTO SOIL A MINIMUM OF 4' AND NO GAPS SHALL BE LEFT BETWEEN BALES.



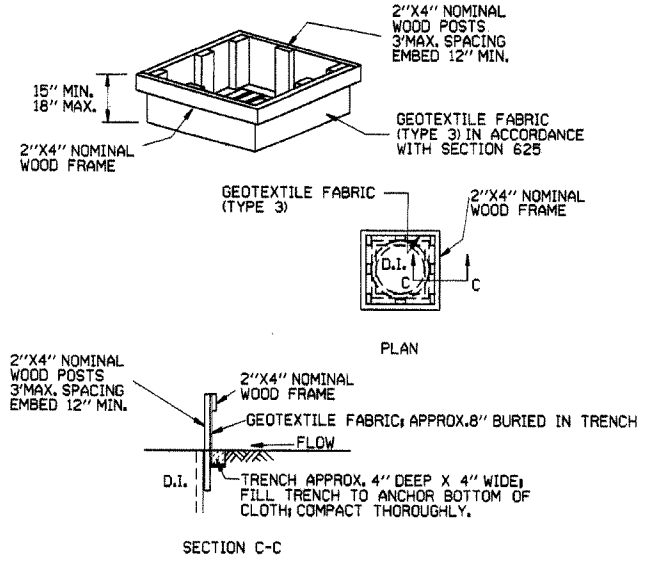
BALED STRAW DITCH CHECK (E-1)



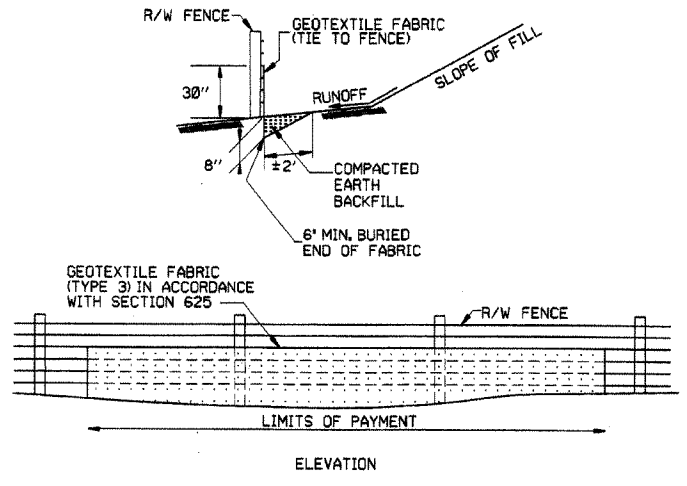
SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



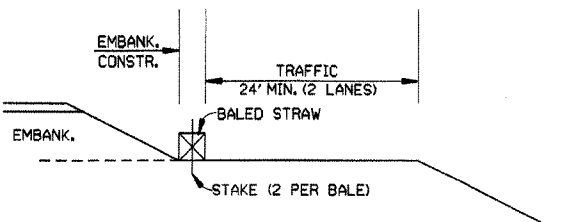
DROP INLET SILT FENCE (E-7)



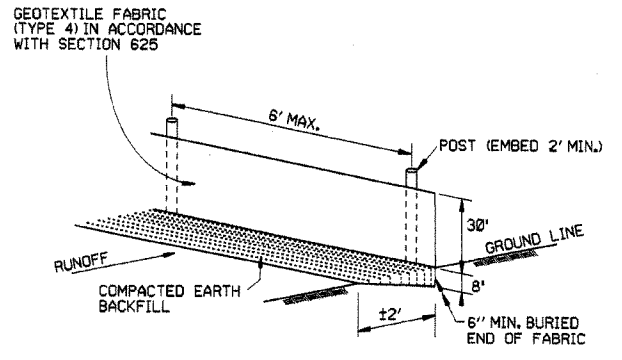
SILT FENCE ON R/W FENCE (E-4)

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

- GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES, THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.
 3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



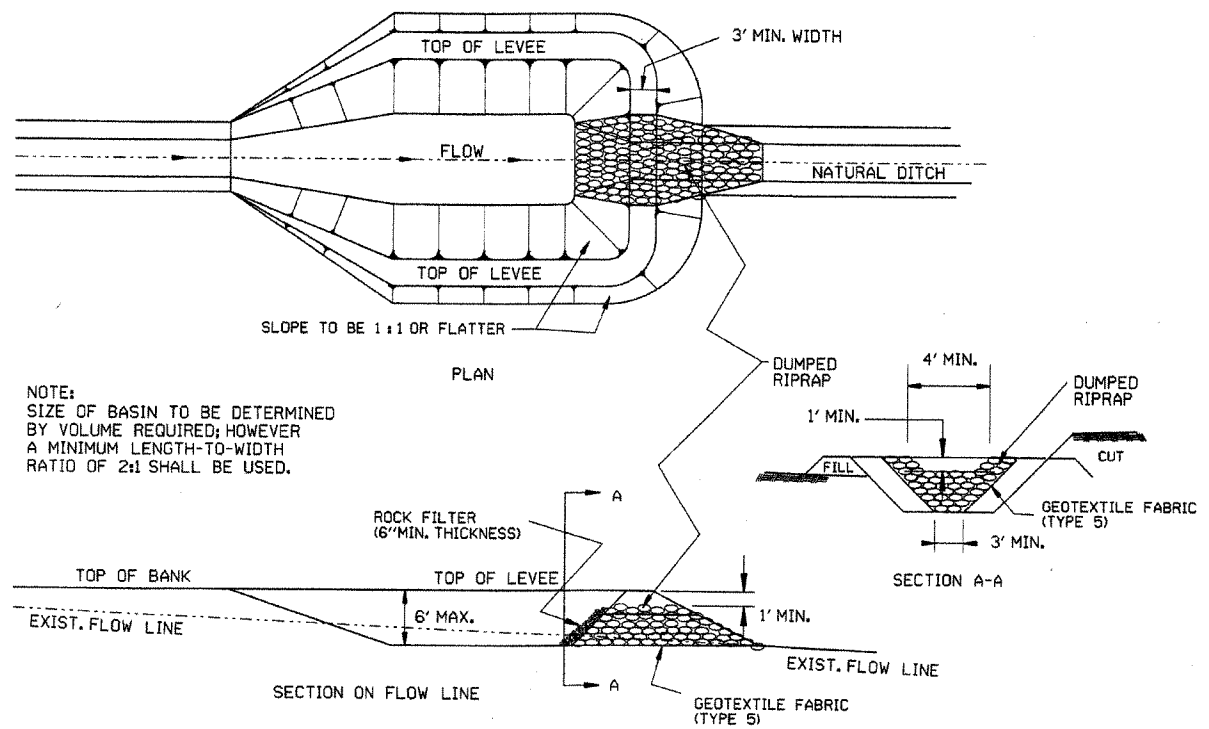
BALED STRAW FILTER BARRIER (E-2)



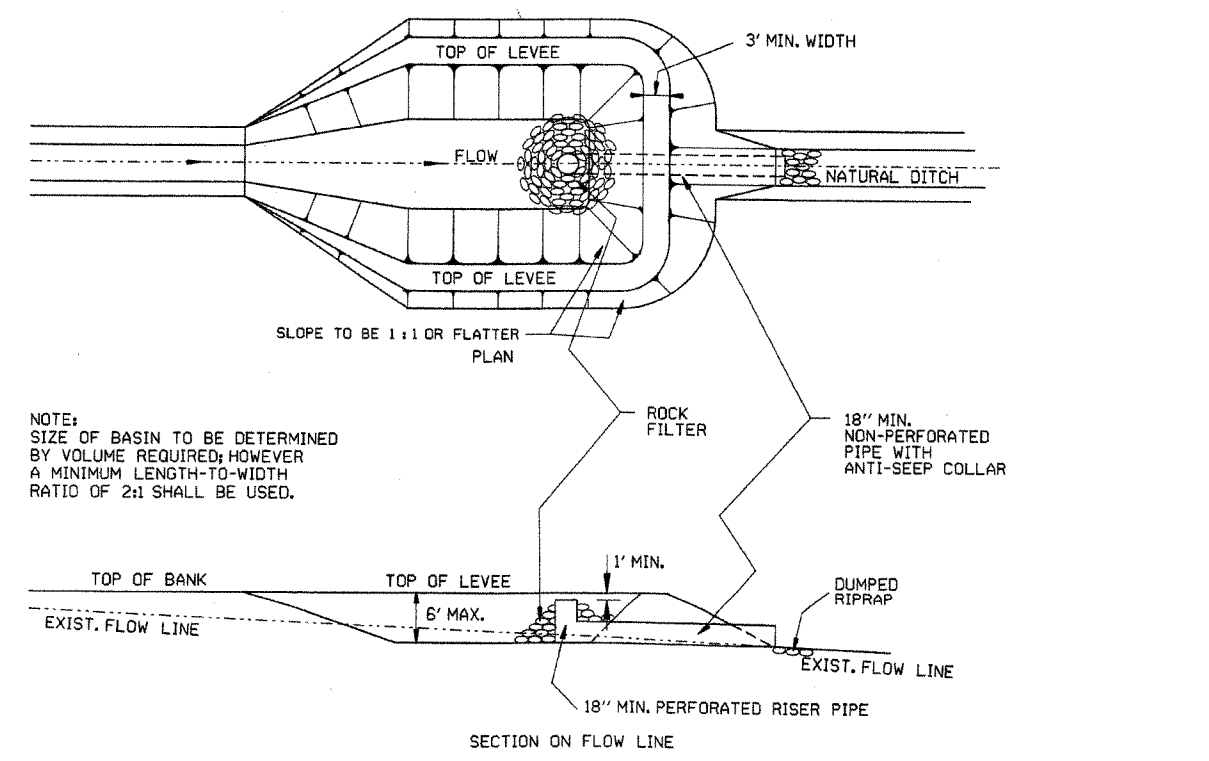
SILT FENCE (E-11)

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

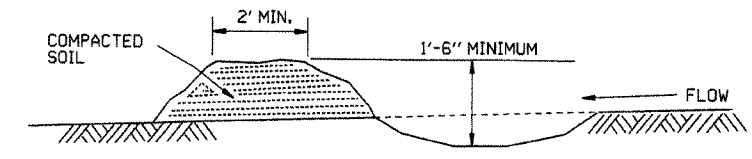
11-18-98	ADDED NOTES	11-18-98	ARKANSAS STATE HIGHWAY COMMISSION
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	TEMPORARY EROSION CONTROL DEVICES
7-15-94	Rev. E-4 & E-11 Min. 13' Buried End of Fabric		
6-2-94	Revised E-1,4,7, & 11 Deleted E-2 & 3	6-2-94	STANDARD DRAWING TEC-1
4-1-93	REDRAWN		
10-1-92	REDRAWN		
8-2-76	ISSUED R.D.M.	298-7-28-76	
DATE	REVISION	FILED	



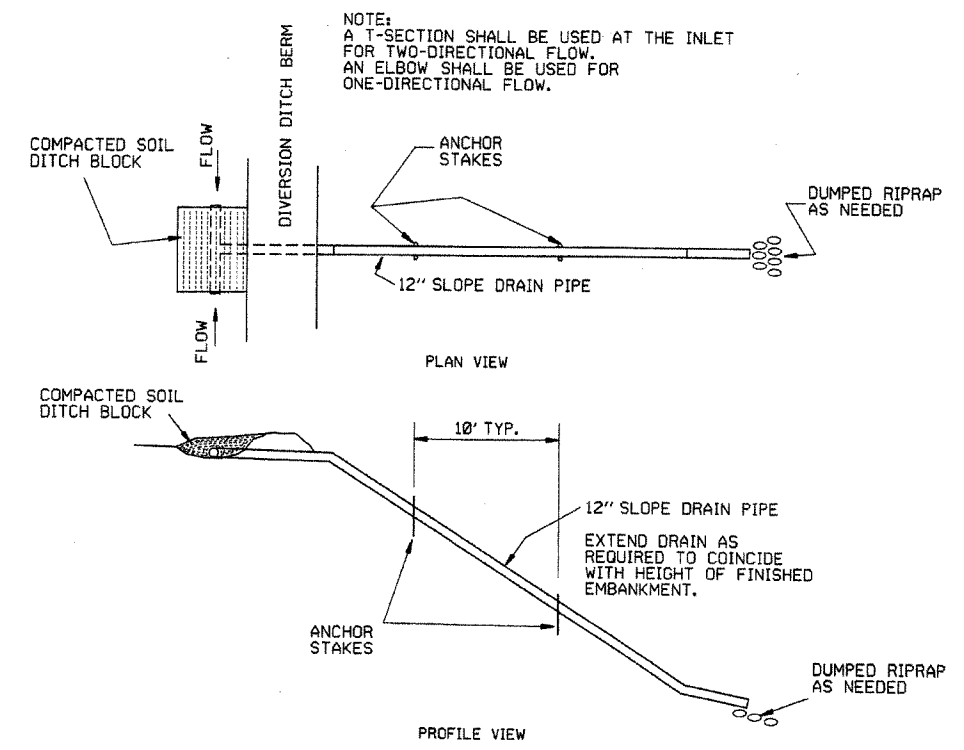
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



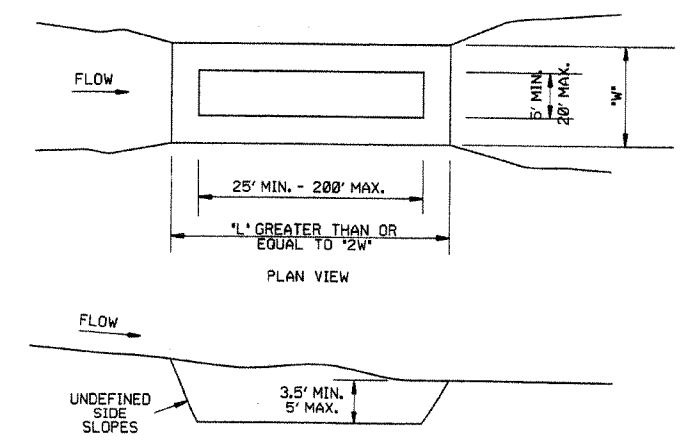
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



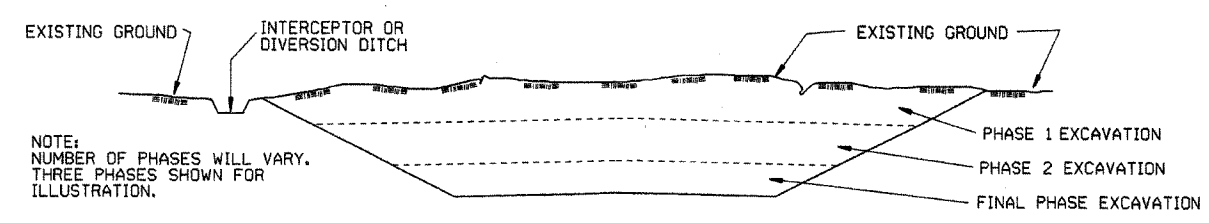
SEDIMENT BASIN (E-14)

ARKANSAS STATE HIGHWAY COMMISSION	
TEMPORARY EROSION CONTROL DEVICES	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13
4-1-93	ISSUED
DATE	REVISION
	FILMED
STANDARD DRAWING TEC-2	

CLEARING AND GRUBBING

- CONSTRUCTION SEQUENCE
1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES, DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
 2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

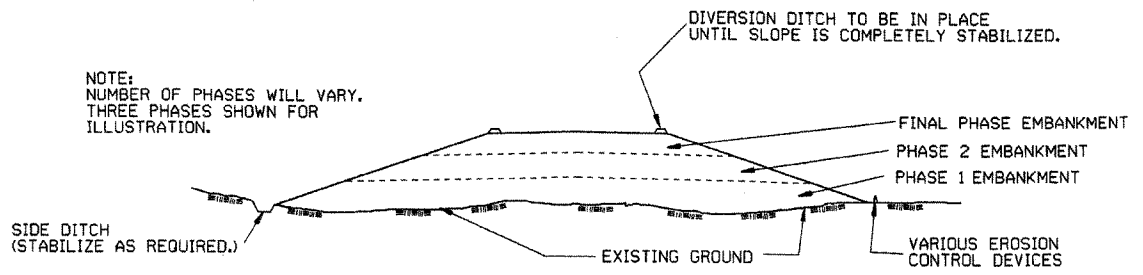
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

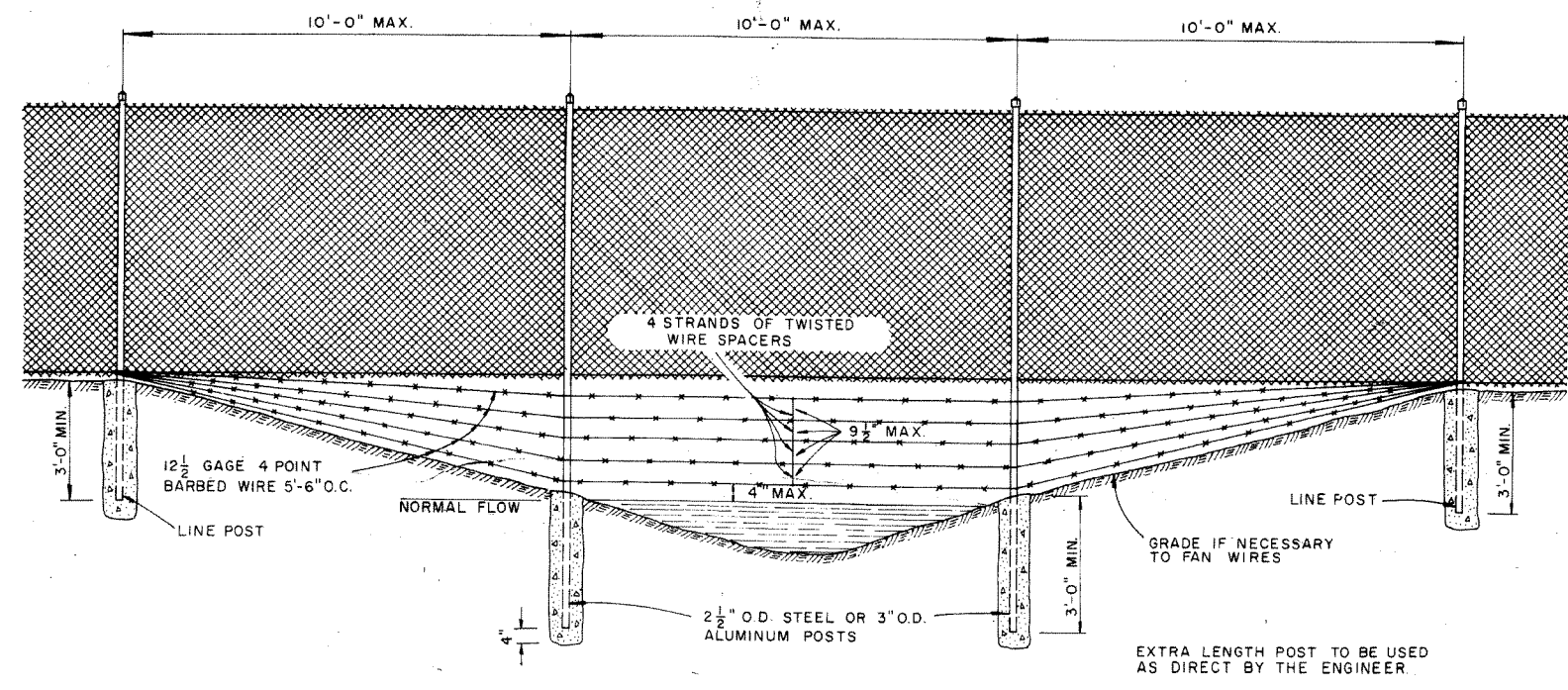
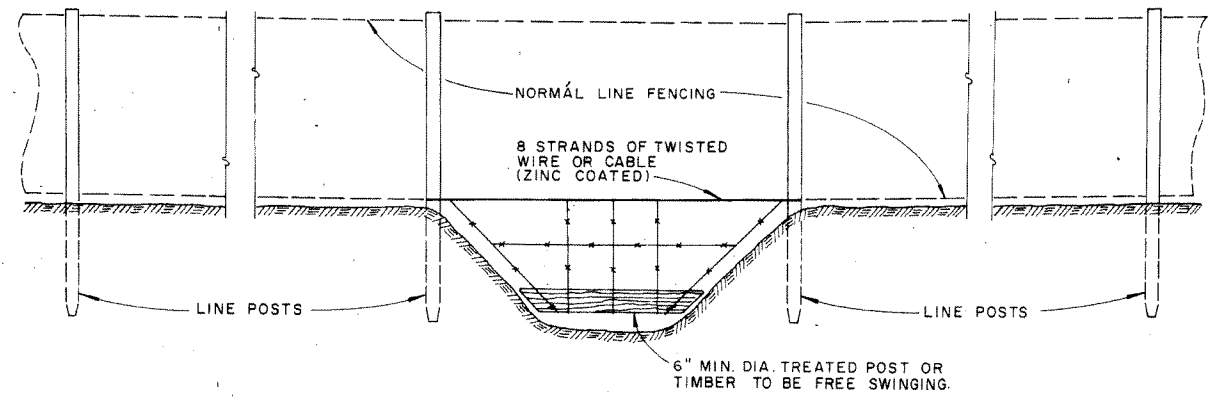
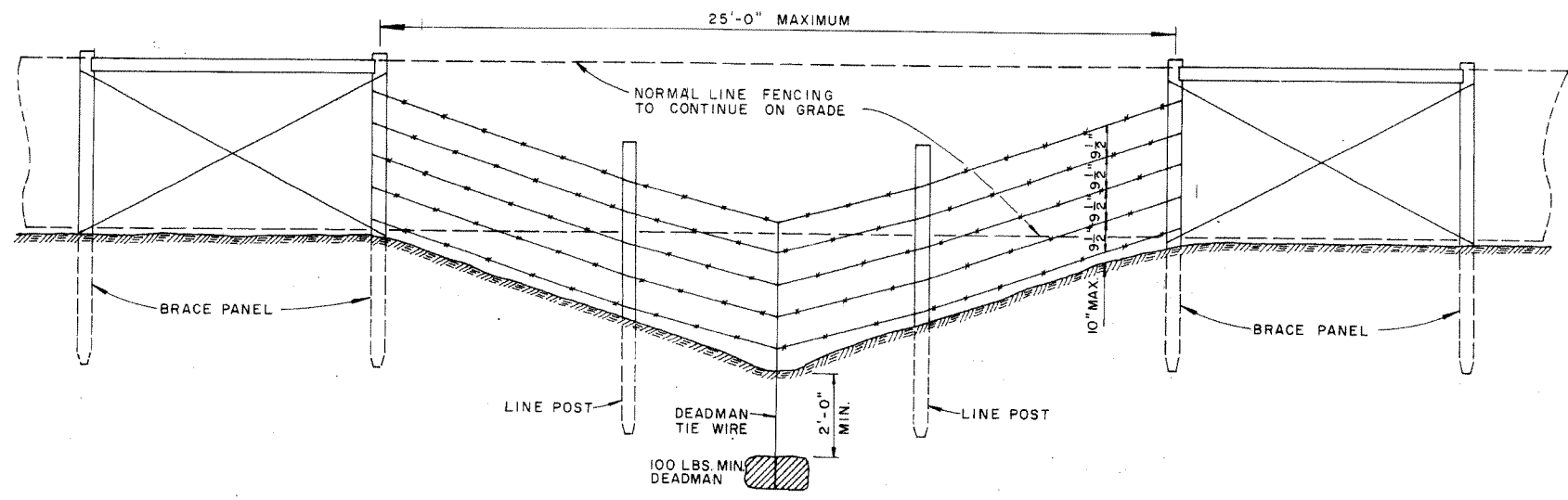
GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
11-23-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	STANDARD DRAWING TEC-3



GENERAL NOTES:
 THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.
 WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.
 IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.
 PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

ARKANSAS STATE HIGHWAY COMMISSION		
WIRE FENCE WATER GAPS		
STANDARD DRAWING		
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72
DATE	REVISION	DATE FILMD

WF-2

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.

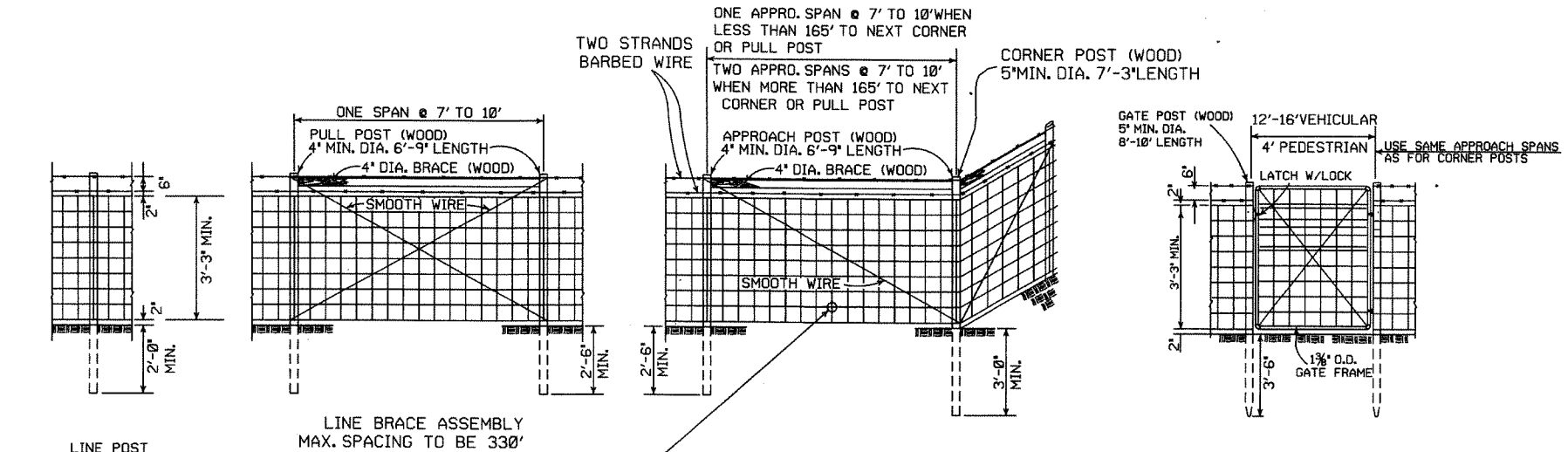
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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

NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.

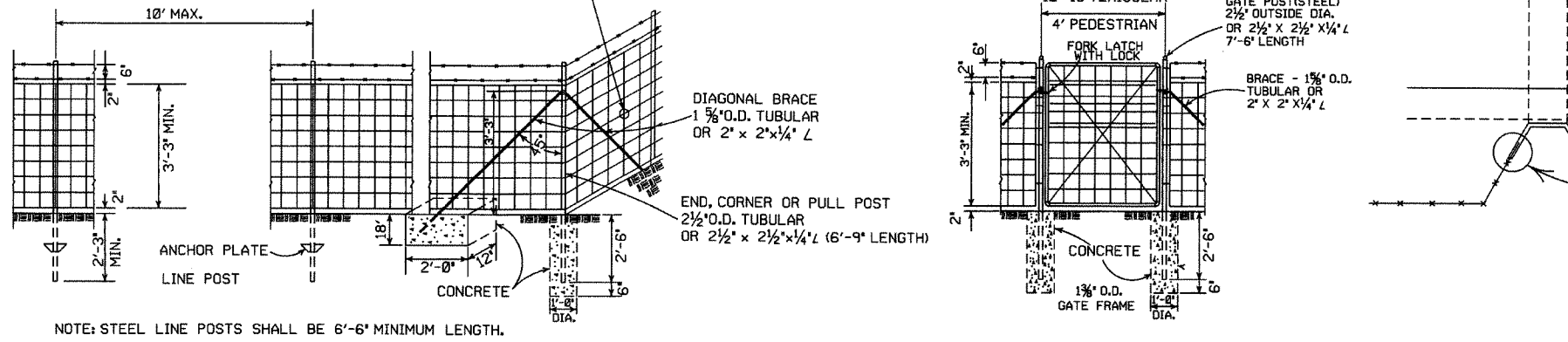
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

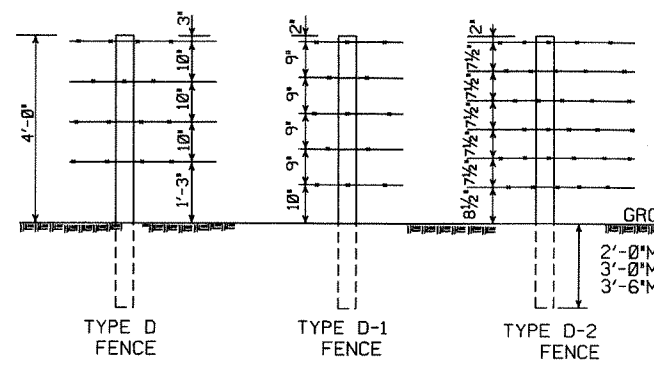


TYPE C FENCE (WOOD POSTS)

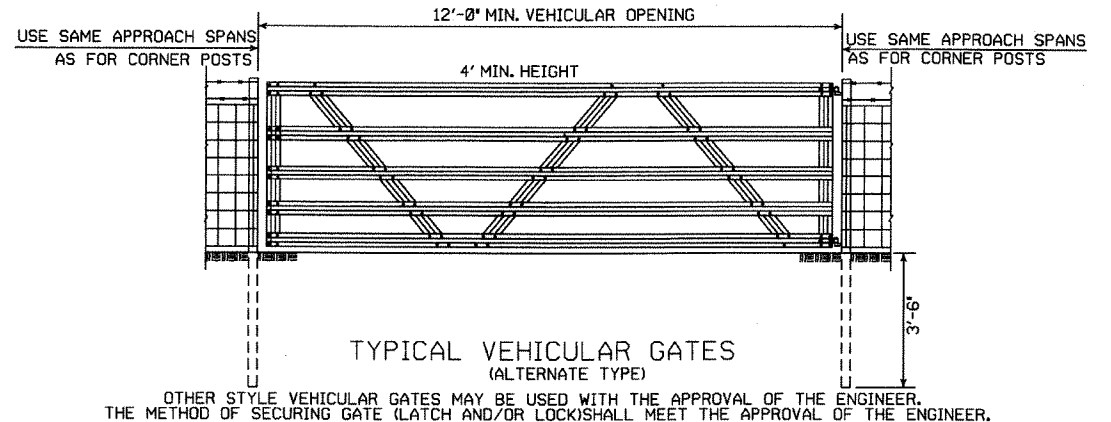
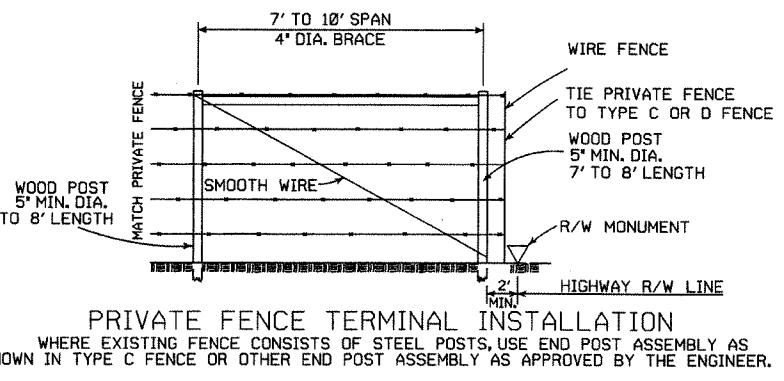
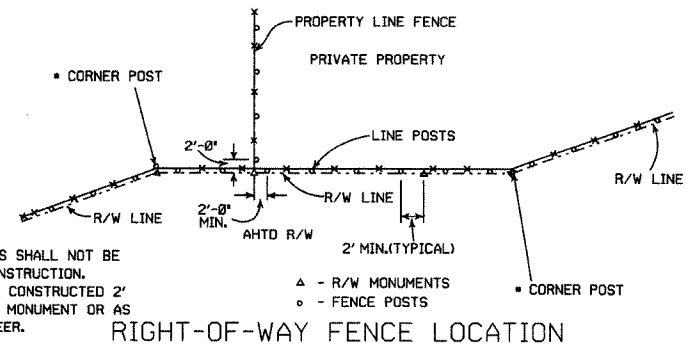


TYPE C FENCE (STEEL POSTS)

- 4 STRANDS BARBED WIRE (D)
- 5 STRANDS BARBED WIRE (D-1)
- 6 STRANDS BARBED WIRE (D-2)



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



8-22-82	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
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE

TYPE C AND D

STANDARD DRAWING WF-4

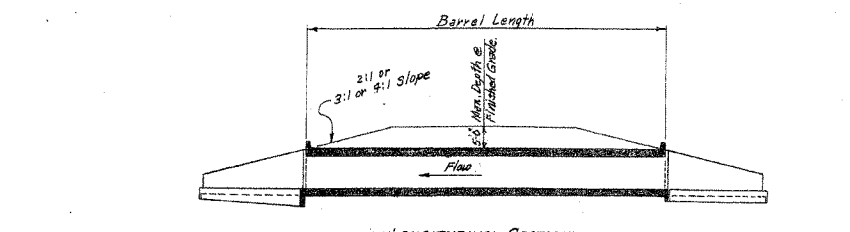
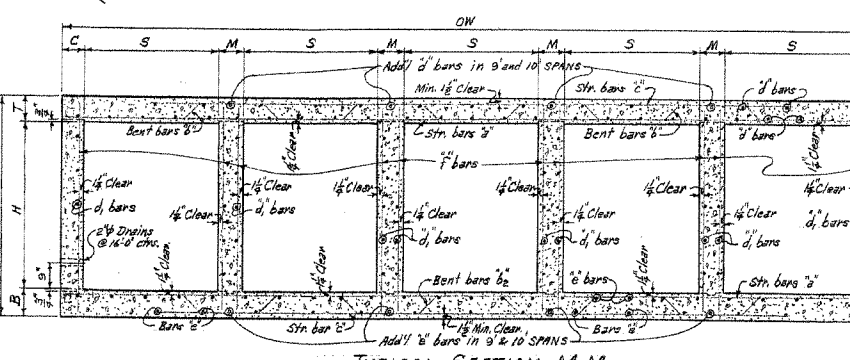
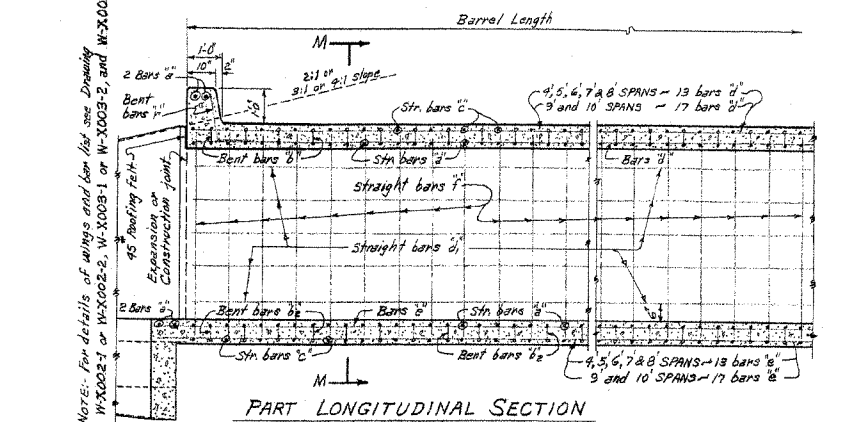
BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH																																							
			a' bars			b' bars			c' bars			d' bars			e' bars			f' bars																								
			STRAIGHT	BENT - See Diagram below	BENT - See Diagram below	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT	STRAIGHT																							
D	S	H	SIZE	NUMBER REQ'D	LENGTH	X	Y	Z	SIZE	NUMBER REQ'D	LENGTH	X	Y	Z	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	SIZE	NUMBER REQ'D	LENGTH	
0'-0" TO 5'-0" MAXIMUM	5'	12'	#5	59	25'-0"	0'-3"	2'-2"	3'-4 1/2"	#5	59	24'-10"	0'-2 1/2"	2'-3"	3'-4 1/2"	#5	59	24'-10"	0'-2 1/2"	#5	59	24'-10"	0'-2 1/2"	2'-3"	3'-4 1/2"	#5	59	24'-10"	0'-2 1/2"	2'-3"	3'-4 1/2"	#5	59	24'-10"	0'-2 1/2"	2'-3"	3'-4 1/2"	#5	59	24'-10"	0'-2 1/2"	2'-3"	3'-4 1/2"

These a, b, c, d, e and f bars are to be spliced at center of the middle span to make a full length bar. Laps for b bars 2'-0" min. and f bars 2'-4" min.

DIMENSIONS QUANTITIES

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS										UNIT QUANTITIES				
	CLEAR SPANS	CLEAR HEIGHT	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF DIVISION WALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	PER LAP	TWO HEADWALLS & APPROX.			
D	S	H	A	O	W	T	C	M	B	O	H	CUYD.	LB.	LB.	LB.
5'-0"	5'	12'	2'	40'	23'-8"	6"	8"	6"	6"	6"	6"	1.185	237.07	119.99	326.87



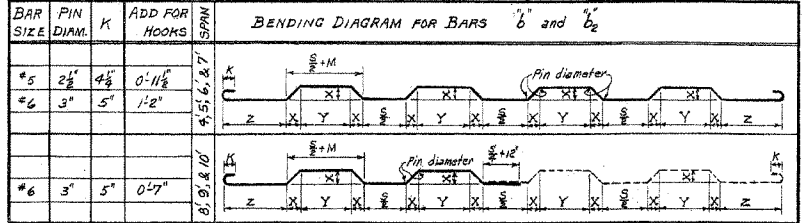
NOTE: This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

GENERAL NOTES:
 CONCRETE- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 1/4" chamfers.
 REINFORCING STEEL- Reinforcing to be deformed bars of intermediate or hard grade.
 BAR LAP- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 33'-0". Lap longitudinal bars 30 diameters.
 CONSTRUCTION JOINTS- Construction joints between wingwalls, side walls, division walls and slabs shall be only where shown on plans.
 SPECIFICATIONS- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
 H20-S16 LOADING A.A.S.H.O. 1961
 AND
 SPECIAL MILITARY LOADING
 Two 28,000 lb. Axles @ 4'-0" cts.
 UNIT STRESSES:-
 Class S Concrete (n=10) 1200 psi
 Reinforcing Steel 20,000 psi

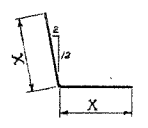
CLASS S CONCRETE
 ARKANSAS STATE HIGHWAY COMMISSION
 DETAILS OF STANDARD BARREL SECTIONS
 FOR
 REINFORCED CONCRETE BOX CULVERTS
 4, 5, 6, 7, 8, 9 & 10 SPANS 3:1 or 4:1 SLOPES
 QUINTUPLES UNDER 5'-0" COVER
 STANDARD DRAWING NO. R-500X-0

Designed By: W.C.H. 1-23-63
 Checked By: W.C.H. 3-15-63
 Drawn By: W.C.H. 3-15-63
 Quantities By: W.C.H. 3-18-63

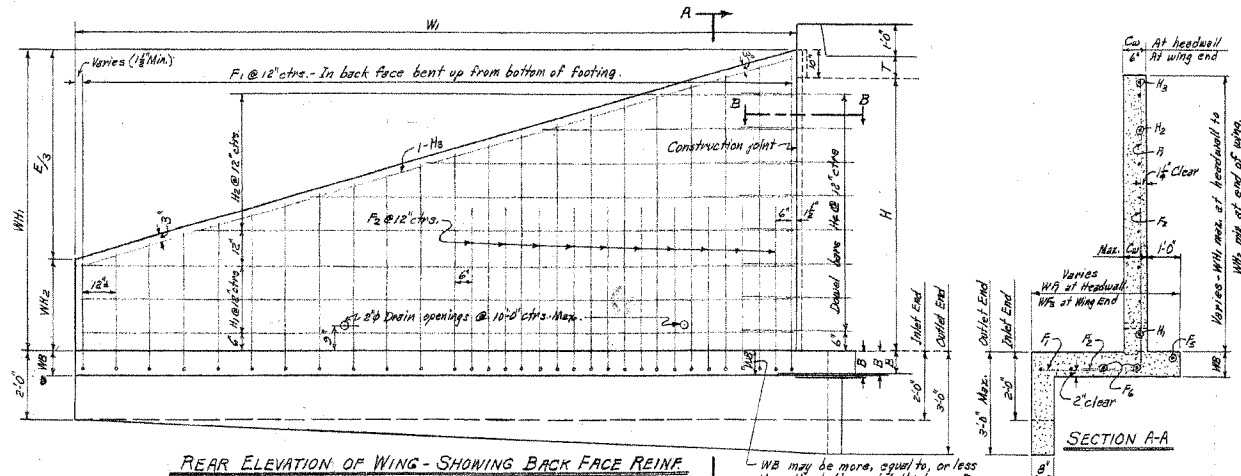


NOTE: Dimensions are to centers of bars. (b' and c').

SPANS @	SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	Z
4'	#4	12"	50	2'-5"	1'-2 1/2"		
5'	#4	12"	60	2'-6"	1'-3"		
6'	#4	12"	70	2'-7"	1'-3 1/2"		
7'	#4	12"	80	2'-8"	1'-4"		
8'	#4	12"	90	2'-9"	1'-4 1/2"		
9'	#4	12"	100	2'-10"	1'-5"		
10'	#4	12"	110	2'-11"	1'-5 1/2"		



DATE	REV.	BY	CHKD.	TOTAL
				39
JOB NO.				



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

WING DIMENSIONS

CLEAR HEIGHT OF BOX THICKNESS OF WING FOOTING AT HEADWALL C	THICKNESS OF WING AT HEADWALL C	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR FOOTING DIMENSION		PERPENDICULAR DIST. FROM HEAD TO END OF WING		LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	QUANTITY PER WING	
		AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	PERPENDICULAR	PERPENDICULAR	INLET END	OUTLET END				
2'	7"	6"	2'-0"	0'-8"	2'-4"	2'-0"	0'-10"	6'-6"	7'-1"	7'-1"	7'-1"	0.889	0.996
3'	7"	6"	3'-0"	1'-0"	2'-8"	2'-4"	1'-4"	8'-6"	9'-3"	9'-3"	9'-3"	1.338	1.466
4'	7"	6"	4'-0"	1'-8"	3'-0"	2'-8"	1'-9"	10'-6"	12'-1"	12'-1"	12'-1"	1.868	2.027
5'	7"	6"	5'-0"	1'-8"	3'-4"	2'-4"	2'-1"	12'-6"	14'-5"	14'-5"	14'-5"	2.478	2.668
6'	7"	6"	6'-0"	1'-8"	3'-4"	2'-4"	2'-1"	12'-6"	14'-5"	14'-5"	14'-5"	2.982	3.272
7'	7"	6"	7'-0"	2'-0"	3'-8"	2'-6"	2'-6"	14'-6"	16'-9"	17'-1"	17'-1"	3.490	3.861
8'	7"	6"	8'-0"	2'-0"	3'-8"	2'-6"	2'-6"	14'-6"	16'-9"	17'-1"	17'-1"	3.811	4.251
9'	7"	6"	9'-0"	2'-0"	3'-8"	2'-6"	2'-6"	14'-6"	16'-9"	17'-1"	17'-1"	3.988	4.503
10'	8"	7"	10'-0"	2'-4"	4'-2"	2'-7"	3'-1"	16'-6"	19'-0"	19'-8"	19'-8"	4.505	4.958
11'	8"	7"	11'-0"	2'-4"	4'-2"	2'-7"	3'-1"	16'-6"	19'-0"	19'-8"	19'-8"	4.537	4.951
12'	8"	7"	12'-0"	2'-8"	4'-8"	2'-9"	3'-5"	18'-6"	21'-4"	22'-4"	22'-4"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toe wall for the length W6.

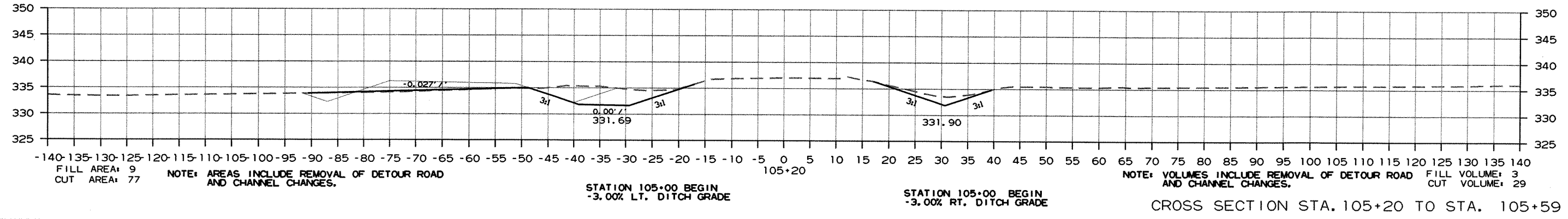
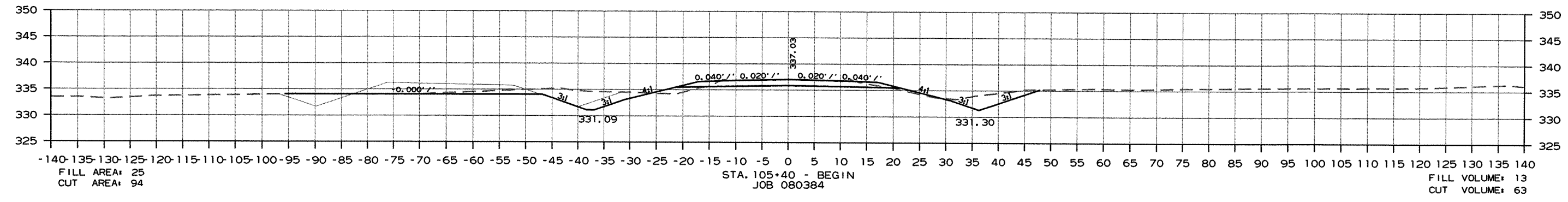
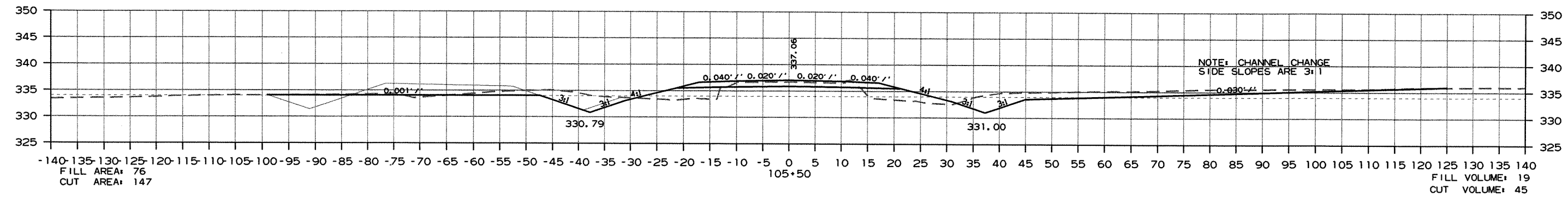
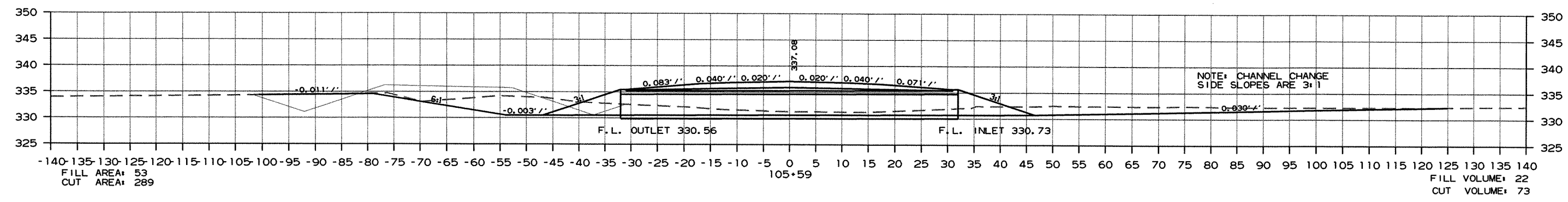
APRON DIMENSION W3

W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2" FOOTING DIMENSION	SINGLE BARREL CULVERT					DOUBLE BARREL CULVERT					TRIPLE BARREL CULVERT					QUADRUPLE BARREL CULVERT					QUINTUPLE BARREL CULVERT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
4'	7'	6"	2'-0"	0'-8"	2'-4"	2'-0"	0'-10"	6'-6"	7'-1"	7'-1"	7'-1"	0.889	0.996	1.778	1.992	2.668	2.992	3.556	3.992	4.556	5.000	5.556	6.000	6.556	7.000	7.556	8.000	8.556	9.000	9.556	10.000	10.556	11.000	11.556	12.000	12.556	13.000	13.556	14.000	14.556	15.000	15.556	16.000	16.556	17.000	17.556	18.000	18.556	19.000	19.556	20.000	20.556	21.000	21.556	22.000	22.556	23.000	23.556	24.000	24.556	25.000	25.556	26.000	26.556	27.000	27.556	28.000	28.556	29.000	29.556	30.000	30.556	31.000	31.556	32.000	32.556	33.000	33.556	34.000	34.556	35.000	35.556	36.000	36.556	37.000	37.556	38.000	38.556	39.000	39.556	40.000	40.556	41.000	41.556	42.000	42.556	43.000	43.556	44.000	44.556	45.000	45.556	46.000	46.556	47.000	47.556	48.000	48.556	49.000	49.556	50.000	50.556	51.000	51.556	52.000	52.556	53.000	53.556	54.000	54.556	55.000	55.556	56.000	56.556	57.000	57.556	58.000	58.556	59.000	59.556	60.000	60.556	61.000	61.556	62.000	62.556	63.000	63.556	64.000	64.556	65.000	65.556	66.000	66.556	67.000	67.556	68.000	68.556	69.000	69.556	70.000	70.556	71.000	71.556	72.000	72.556	73.000	73.556	74.000	74.556	75.000	75.556	76.000	76.556	77.000	77.556	78.000	78.556	79.000	79.556	80.000	80.556	81.000	81.556	82.000	82.556	83.000	83.556	84.000	84.556	85.000	85.556	86.000	86.556	87.000	87.556	88.000	88.556	89.000	89.556	90.000	90.556	91.000	91.556	92.000	92.556	93.000	93.556	94.000	94.556	95.000	95.556	96.000	96.556	97.000	97.556	98.000	98.556	99.000	99.556	100.000	100.556	101.000	101.556	102.000	102.556	103.000	103.556	104.000	104.556	105.000	105.556	106.000	106.556	107.000	107.556	108.000	108.556	109.000	109.556	110.000	110.556	111.000	111.556	112.000	112.556	113.000	113.556	114.000	114.556	115.000	115.556	116.000	116.556	117.000	117.556	118.000	118.556	119.000	119.556	120.000	120.556	121.000	121.556	122.000	122.556	123.000	123.556	124.000	124.556	125.000	125.556	126.000	126.556	127.000	127.556	128.000	128.556	129.000	129.556	130.000	130.556	131.000	131.556	132.000	132.556	133.000	133.556	134.000	134.556	135.000	135.556	136.000	136.556	137.000	137.556	138.000	138.556	139.000	139.556	140.000	140.556	141.000	141.556	142.000	142.556	143.000	143.556	144.000	144.556	145.000	145.556	146.000	146.556	147.000	147.556	148.000	148.556	149.000	149.556	150.000	150.556	151.000	151.556	152.000	152.556	153.000	153.556	154.000	154.556	155.000	155.556	156.000	156.556	157.000	157.556	158.000	158.556	159.000	159.556	160.000	160.556	161.000	161.556	162.000	162.556	163.000	163.556	164.000	164.556	165.000	165.556	166.000	166.556	167.000	167.556	168.000	168.556	169.000	169.556	170.000	170.556	171.000	171.556	172.000	172.556	173.000	173.556	174.000	174.556	175.000	175.556	176.000	176.556	177.000	177.556	178.000	178.556	179.000	179.556	180.000	180.556	181.000	181.556	182.000	182.556	183.000	183.556	184.000	184.556	185.000	185.556	186.000	186.556	187.000	187.556	188.000	188.556	189.000	189.556	190.000	190.556	191.000	191.556	192.000	192.556	193.000	193.556	194.000	194.556	195.000	195.556	196.000	196.556	197.000	197.556	198.000	198.556	199.000	199.556	200.000	200.556	201.000	201.556	202.000	202.556	203.000	203.556	204.000	204.556	205.000	205.556	206.000	206.556	207.000	207.556	208.000	208.556	209.000	209.556	210.000	210.556	211.000	211.556	212.000	212.556	213.000	213.556	214.000	214.556	215.000	215.556	216.000	216.556	217.000	217.556	218.000	218.556	219.000	219.556	220.000	220.556	221.000	221.556	222.000	222.556	223.000	223.556	224.000	224.556	225.000	225.556	226.000	226.556	227.000	227.556	228.000	228.556	229.000	229.556	230.000	230.556	231.000	231.556	232.000	232.556	233.000	233.556	234.000	234.556	235.000	235.556	236.000	236.556	237.000	237.556	238.000	238.556	239.000	239.556	240.000	240.556	241.000	241.556	242.000	242.556	243.000	243.556	244.000	244.556	245.000	245.556	246.000	246.556	247.000	247.556	248.000	248.556	249.000	249.556	250.000	250.556	251.000	251.556	252.000	252.556	253.000	253.556	254.000	254.556	255.000	255.556	256.000	256.556	257.000	257.556	258.000	258.556	259.000	259.556	260.000	260.556	261.000	261.556	262.000	262.556	263.000	263.556	264.000	264.556	265.000	265.556	266.000	266.556	267.000	267.556	268.000	268.556	269.000	269.556	270.000	270.556	271.000	271.556	272.000	272.556	273.000	273.556	274.000	274.556	275.000	275.556	276.000	276.556	277.000	277.556	278.000	278.556	279.000	279.556	280.000	280.556	281.000	281.556	282.000	282.556	283.000	283.556	284.000	284.556	285.000	285.556	286.000	286.556	287.000	287.556	288.000	288.556	289.000	289.556	290.000	290.556	291.000	291.556	292.000	292.556	293.000	293.556	294.000	294.556	295.000	295.556	296.000	296.556	297.000	297.556	298.000	298.556	299.000	299.556	300.000	300.556	301.000	301.556	302.000	302.556	303.000	303.556	304.000	304.556	305.000	305.556	306.000	306.556	307.000	307.556	308.000	308.556	309.000	309.556	310.000	310.556	311.000	311.556	312.000	312.556	313.000	313.556	314.000	314.556	315.000	315.556	316.000	316.556	317.000	317.556	318.000	318.556	319.000	319.556	320.000	320.556	321.000	321.556	322.000	322.556	323.000	323.556	324.000	324.556	325.000	325.556	326.000	326.556	327.000	327.556	328.000	328.556	329.000	329.556	330.000	330.556	331.000	331.556	332.000	332.556	333.000	333.556	334.000	334.556	335.000	335.556	336.000	336.556	337.000	337.556	338.000	338.556	339.000	339.556	340.000	340.556	341.000	341.556	342.000	342.556	343.000	343.556	344.000	344.556	345.000	345.556	346.000	346.556	347.000	347.556	348.000	348.556	349.000	349.556	350.000	350.556	351.000	351.556	352.000	352.556	353.000	353.556	354.000	354.556	355.000	355.556	356.000	356.556	357.000	357.556	358.000	358.556	359.000	359.556	360.000	360.556	361.000	361.556	362.000	362.556	363.000	363.556	364.000	364.556	365.000	365.556

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080384	40	45

2 CROSS SECTIONS STA. 105+20 - STA. 105+59



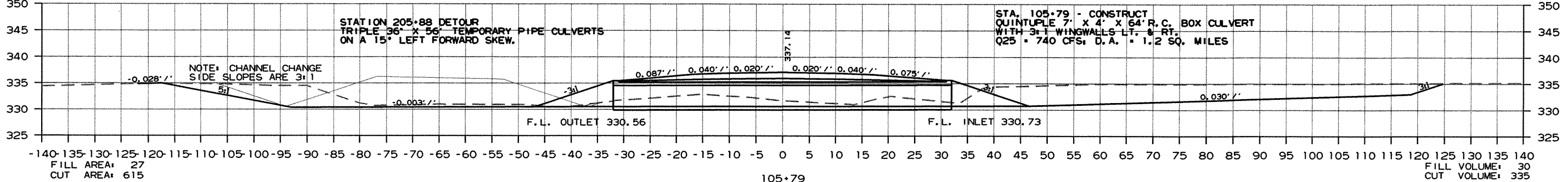
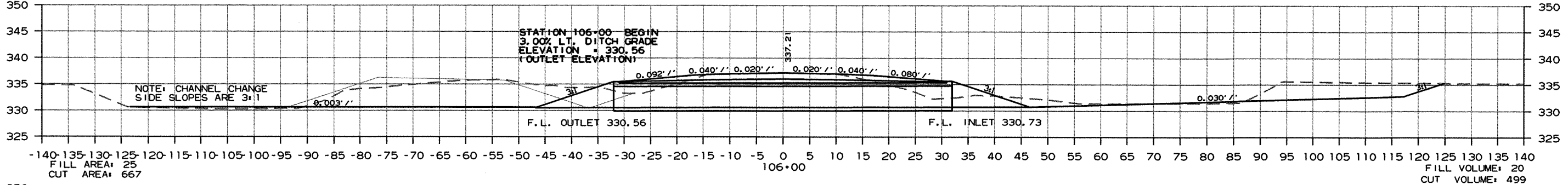
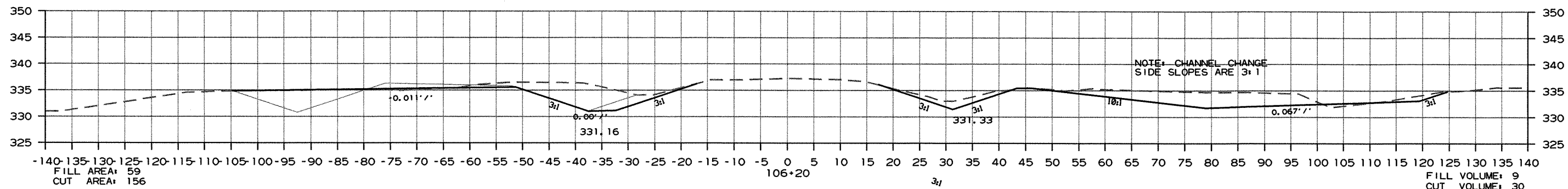
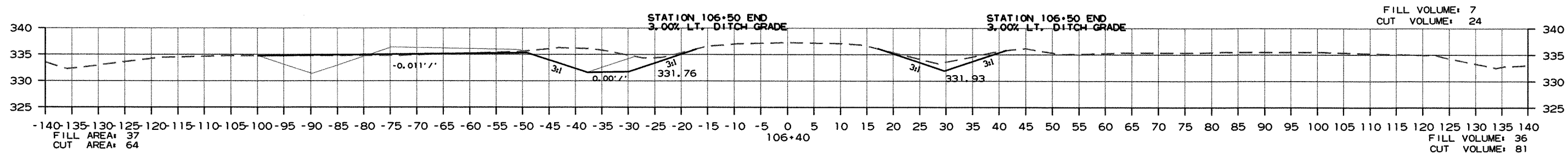
STATION 105+00 BEGIN -3.00% LT. DITCH GRADE

STATION 105+00 BEGIN -3.00% RT. DITCH GRADE

CROSS SECTION STA. 105+20 TO STA. 105+59

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. O80384							41	45

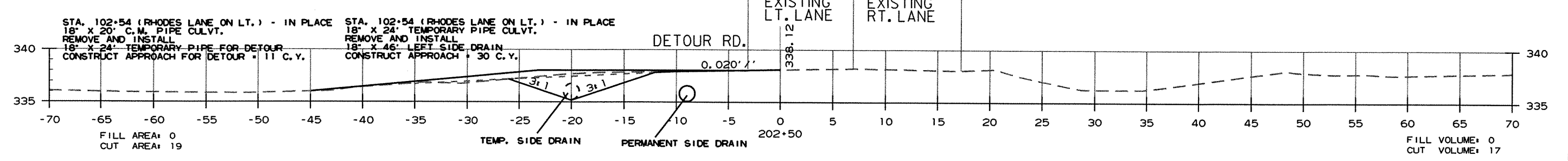
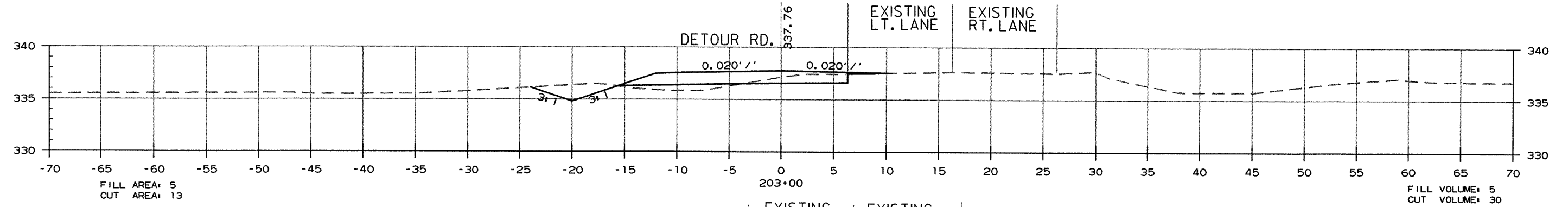
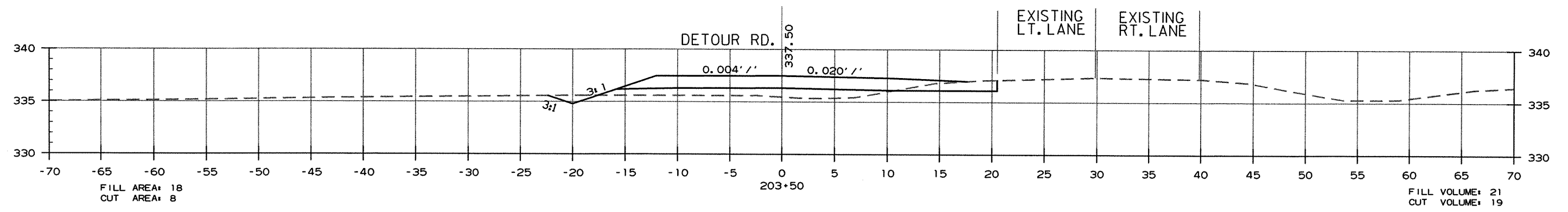
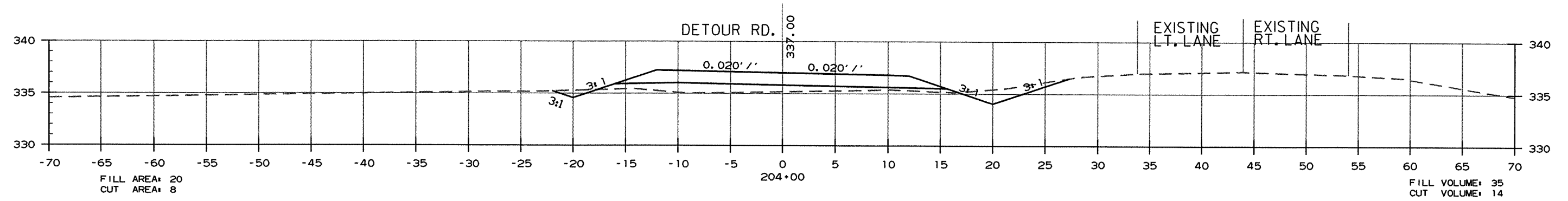
② CROSS SECTIONS STA. 105+79-STA. 106+40



CROSS SECTION STA. 105+79 TO STA. 106+40

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080384		42	45

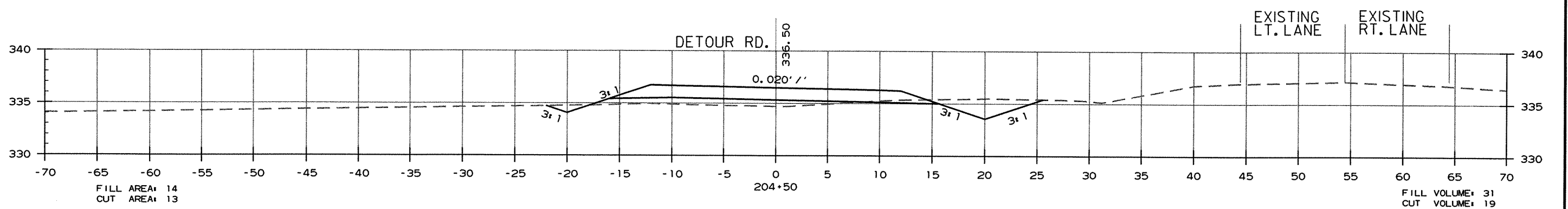
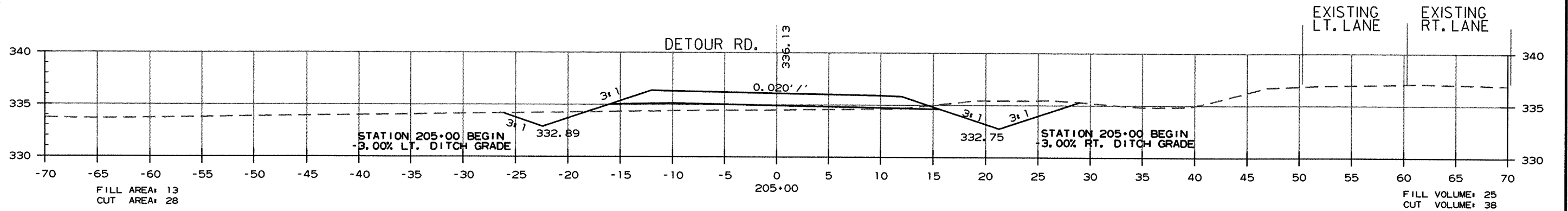
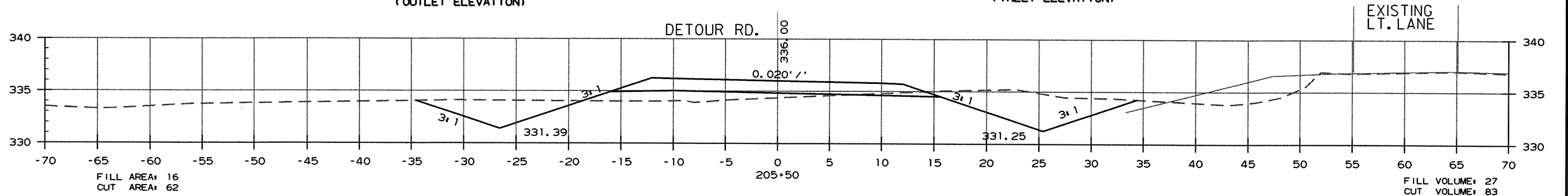
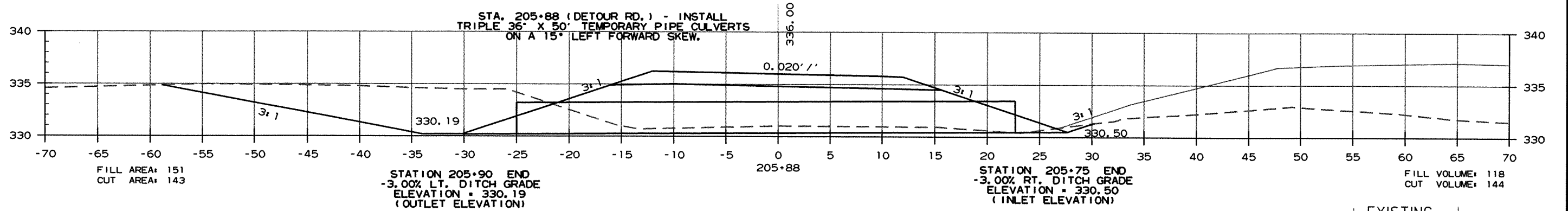
② CR. SECT. STA. 202+50-STA. 204+00



DETOUR RD.
CROSS SECTION STA. 202+50 TO STA. 204+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080384							43	45

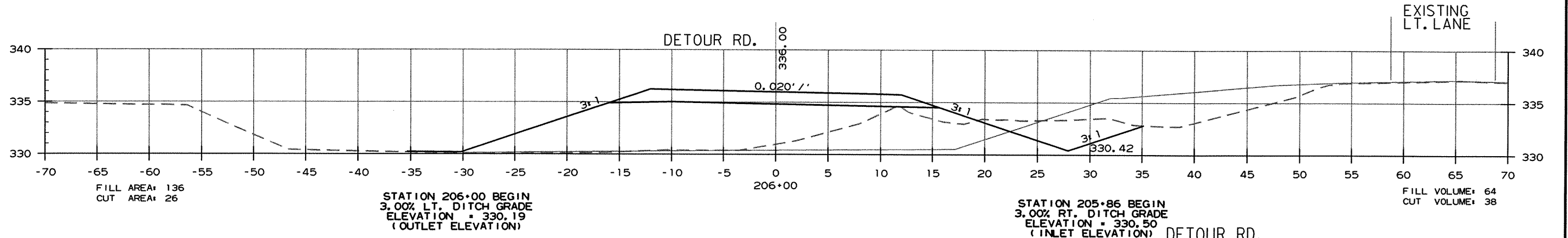
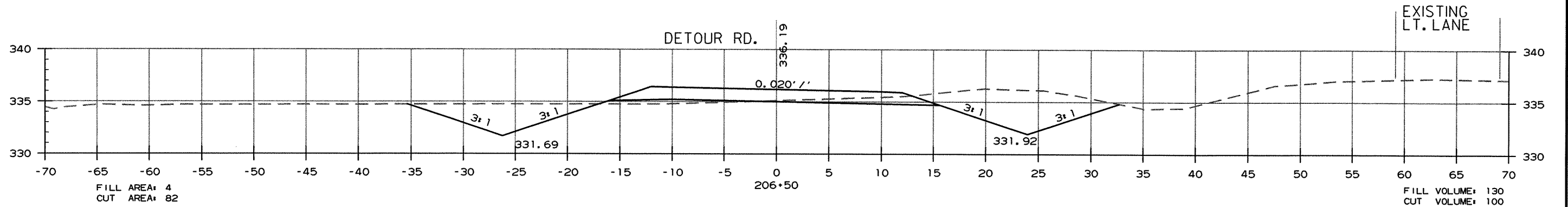
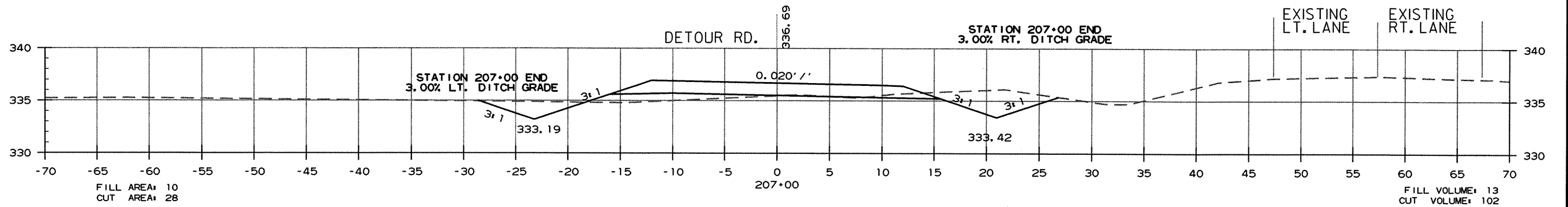
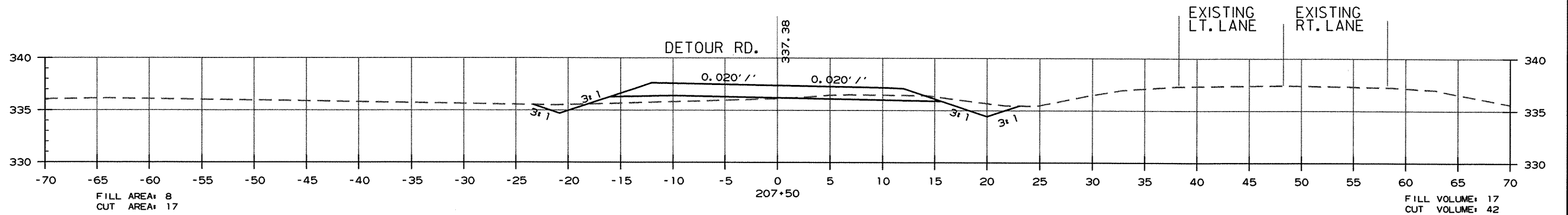
CR. SECT. STA. 204+50-STA. 205+88



DETOUR RD.
CROSS SECTION STA. 204+50 TO STA. 205+88

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080384	44	45	

CR. SECT. STA. 206+00-STA. 207+50



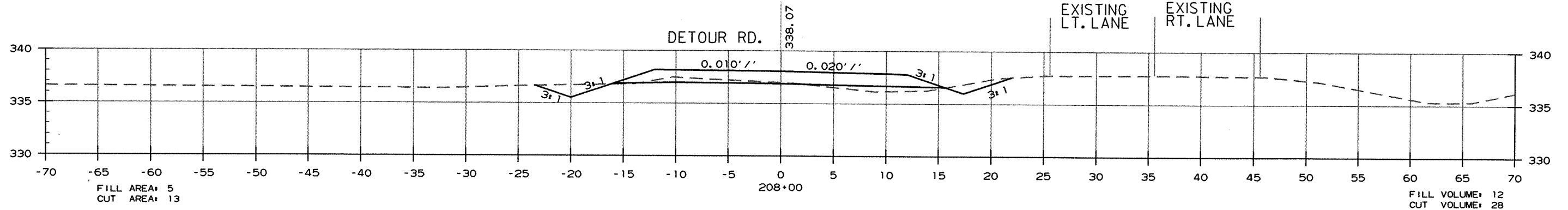
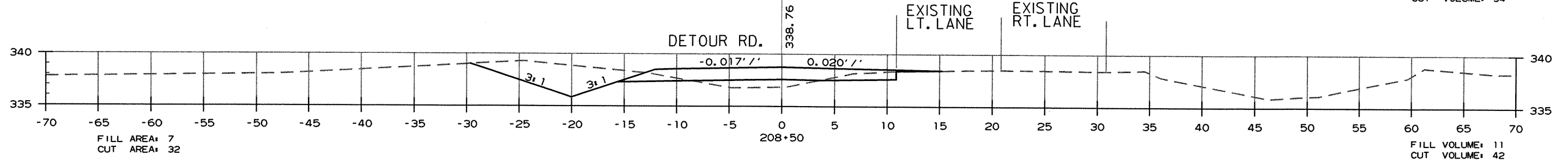
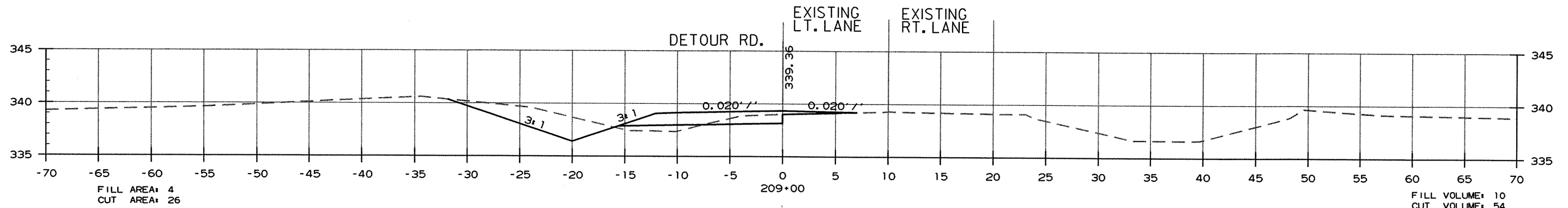
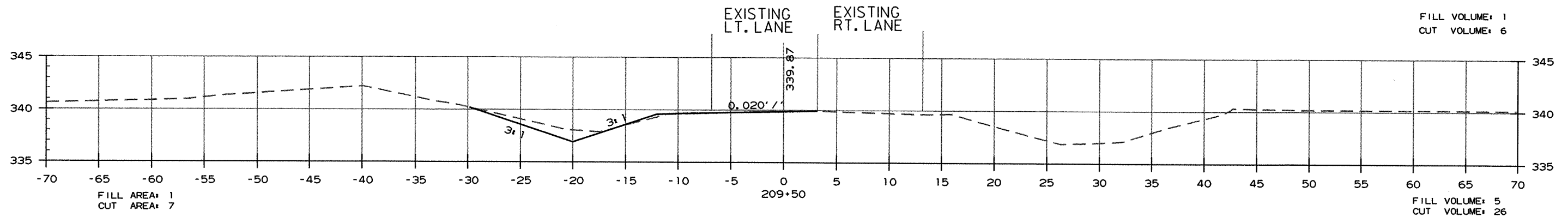
STATION 206+00 BEGIN
3.00% LT. DITCH GRADE
ELEVATION = 330.19
(OUTLET ELEVATION)

STATION 205+86 BEGIN
3.00% RT. DITCH GRADE
ELEVATION = 330.50
(INLET ELEVATION)

DETOUR RD.
CROSS SECTION STA. 206+00 TO STA. 207+50

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080384							45	45

② CR. SECT. STA. 208+00-STA. 209+50



DETOUR RD.
CROSS SECTION STA. 208+00 TO STA. 209+50