

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090423	1	20
				② HUNTSVILLE - EUREKA SPRINGS (SAFETY IMPVTS.) (SEL. SECS.) (S)				

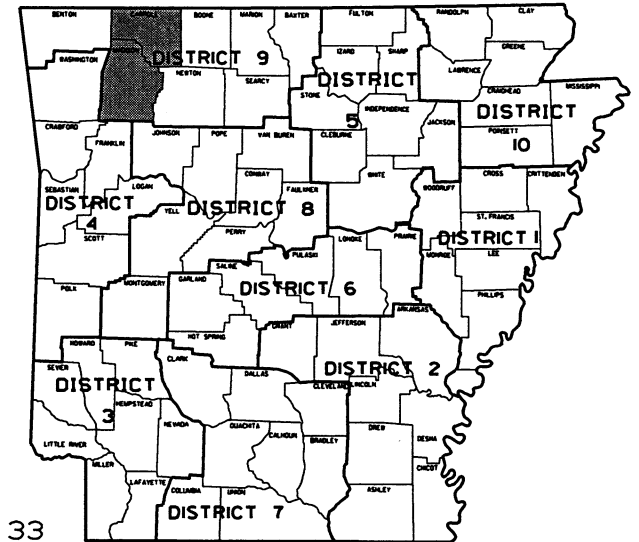
HUNTSVILLE - EUREKA SPRINGS
(SAFETY IMPVTS.) (SEL. SECS.) (S)

MADISON & CARROLL COUNTIES

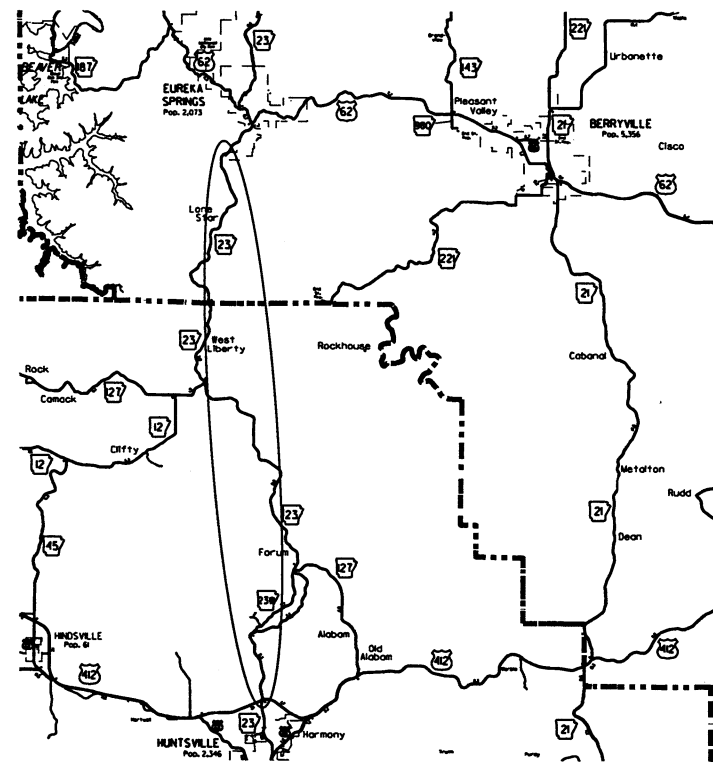
ROUTE 23 SECTIONS 9 & 10

JOB 090423

FEDERAL AID PROJ. HSIP-0044(27)



ARK. HWY. DIST. NO. 9



VICINITY MAP

LOG MILE 4.35
END HFST

LOG MILE 3.99
BEGIN HFST

NOT TO SCALE

LOG MILE 6.23
END JOB 090423

LOG MILE 1.33
END HFST

LOG MILE 1.17
BEGIN HFST



LOG MILE 18.49/
LOG MILE 0.00
END OVERLAY
LOG MILE 15.74
END SHOULDER WIDENING

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
M.E. BANKS
9-12-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

- BRIDGE DATA**
(FOR INFORMATION ONLY)
- LOG MILE 2.19 (SEC. 9) RETAIN
BRIDGE NO. 06340
272' - 8" SIX SPAN COMP. SIMPLE W-BEAM
(45' - 0", 45' - 0", 45' - 0", 45' - 0", 45' - 0", 45' - 0")
36' - 0" CLEAR ROADWAY
 - LOG MILE 2.69 (SEC. 9) RETAIN
BRIDGE NO. 06341
107' - 1" THREE SPAN COMP. SIMPLE W-BEAM
(35' - 0", 35' - 0", 35' - 0")
36' - 0" CLEAR ROADWAY
 - LOG MILE 4.05 (SEC. 9) RETAIN
BRIDGE NO. 03583
392' - 2" SIX SPAN COMPOSITE I-BEAM
(60', 60', 60', 60', 60', 90')
24' - 0" CLEAR ROADWAY

LOG MILE 4.37
END HFST

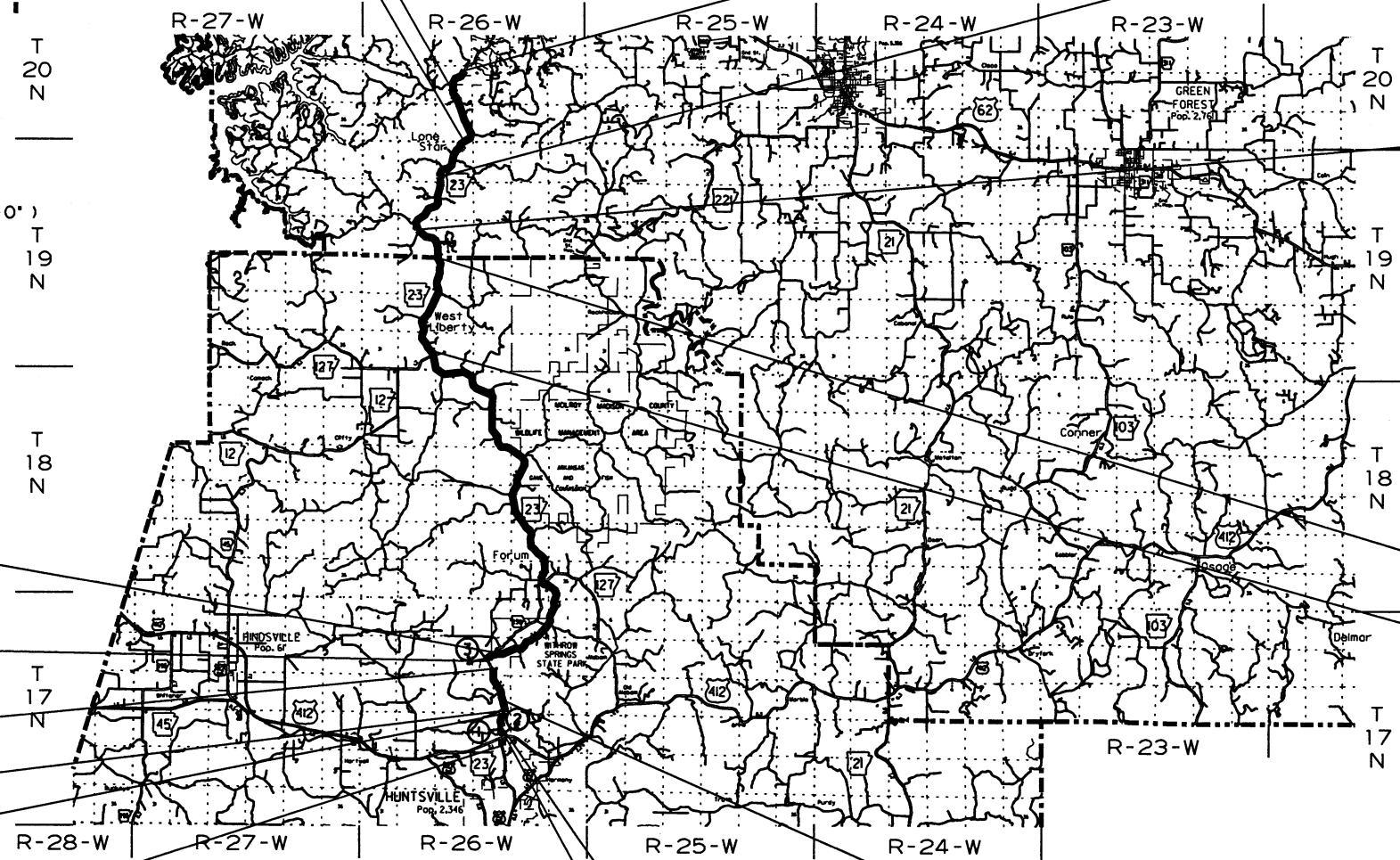
LOG MILE 3.96
END JOB EXCEPTION &
BEGIN HFST

LOG MILE 3.95
BEGIN JOB EXCEPTION

LOG MILE 2.71
END JOB EXCEPTION

LOG MILE 2.69
BEGIN JOB EXCEPTION

LOG MILE 1.67
BEGIN JOB 090423



LOG MILE 2.24
END JOB EXCEPTION
LOG MILE 2.19
BEGIN JOB EXCEPTION

LOG MILE 2.75
BEGIN SHOULDER WIDENING &
OVERLAY

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°07'34"	N 36°11'19"	N 36°18'72"
LONGITUDE	W 93°44'22"	W 93°43'13"	W 93°45'41"

LENGTH OF PROJECT CALCULATED ALONG C.L.			
GROSS LENGTH OF PROJECT	121704.00	FEET	OR 23.050 MILES
NET ROADWAY	121704.00		23.050 MILES
NET BRIDGES	0.00		0.000 MILES
NET PROJECT	121704.00		23.050 MILES

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② INDEX OF SHEETS AND STANDARD DRAWINGS



INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 5	TYPICAL SECTIONS OF IMPROVEMENT
6 - 9	SPECIAL DETAILS
10 - 11	TEMPORARY EROSION CONTROL DETAILS
12 - 18	QUANTITIES
19	SUMMARY OF QUANTITIES AND REVISIONS
20	PLAN SHEETS

ROADWAY STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	07-25-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

INDEX OF SHEETS AND STANDARD DRAWINGS

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2 GOVERNING SPECIFICATIONS AND GENERAL NOTES



GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 090423
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2	INCIDENTAL CONSTRUCTION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
617-1	GUARDRAIL TERMINAL (TYPE 2)
620-1	MULCH COVER
JOB 090423	BIDDING REQUIREMENTS AND CONDITIONS
JOB 090423	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090423	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 090423	CARGO PREFERENCE ACT REQUIREMENTS
JOB 090423	CAVE DISCOVERY
JOB 090423	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 090423	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 090423	EXTENSION FOR PIPE CULVERTS
JOB 090423	FLEXIBLE BEGINNING OF WORK
JOB 090423	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090423	HIGH FRICTION SURFACE TREATMENT
JOB 090423	MANDATORY ELECTRONIC CONTRACT
JOB 090423	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 090423	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 090423	PARTNERING REQUIREMENTS
JOB 090423	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 090423	RUMBLE STRIPS
JOB 090423	SHORING FOR CULVERTS
JOB 090423	SOIL STABILIZATION
JOB 090423	SPECIAL CLEARING
JOB 090423	SPECIAL CLEARING REQUIREMENTS
JOB 090423	STORM WATER POLLUTION PREVENTION PLAN
JOB 090423	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090423	TRIANGULAR SILT DIKE
JOB 090423	UTILITY ADJUSTMENTS
JOB 090423	VALUE ENGINEERING
JOB 090423	WARM MIX ASPHALT
JOB 090423	WATER POLLUTION CONTROL & RESTRAINING CONDITION

GENERAL NOTES

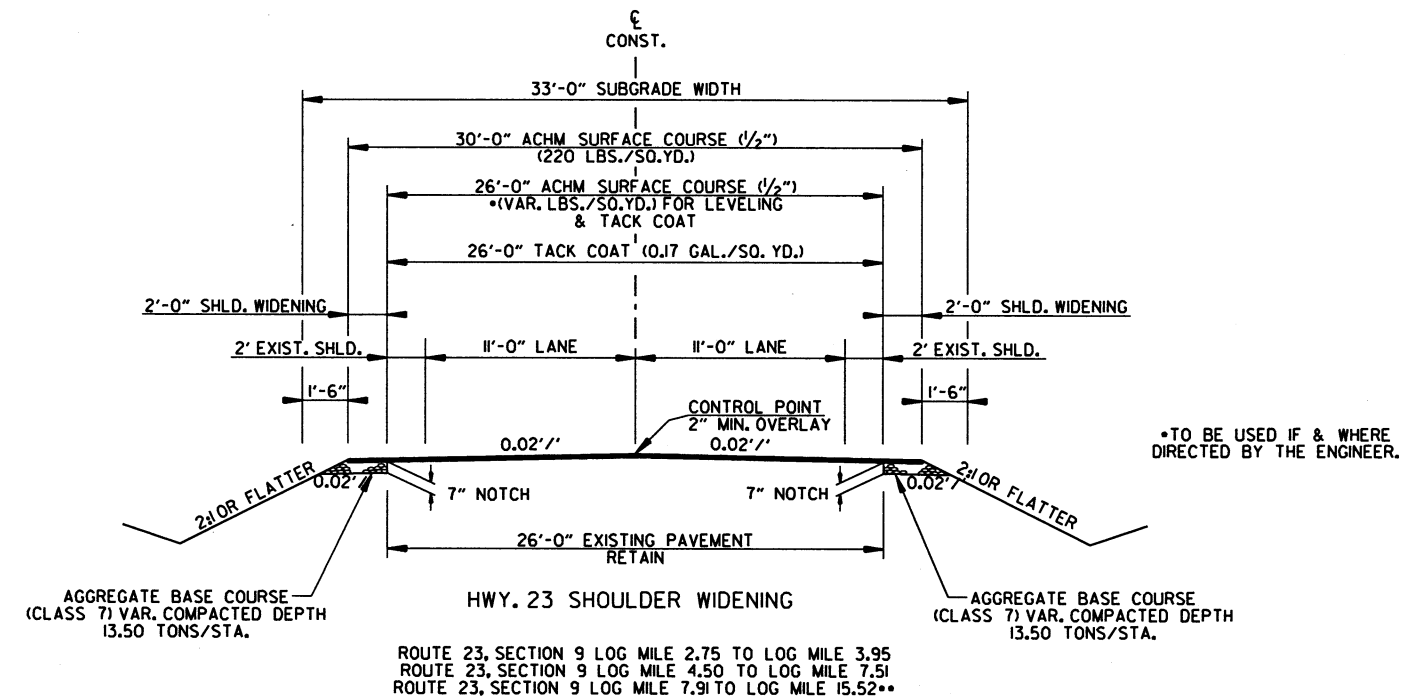
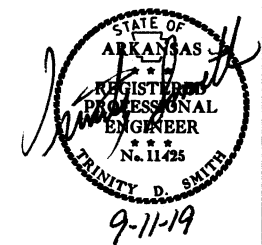
1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATIONS FOR FLAG PERSONS.
2. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
3. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE PERSPECTIVE OWNER AS PER AGREEMENT WITH SUCH OWNERS.
4. ANY EQUIPMENT 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.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. THE CONTRACTOR SHALL FURNISH AND MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
7. 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.
8. THE CONTRACTOR SHALL FURNISH AND MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
9. BRIDGE ANALYSIS SHALL BE REQUIRED PER SECTION 105.14 OF THE STANDARD SPECIFICATIONS.
10. ASPHALT DEBRIS RESULTING FROM THE PREPARATORY WORK SHALL BE REMOVED FROM THE PROJECT. THIS MATERIAL SHALL NOT BE BURIED WITHIN THE RIGHT OF WAY.
11. 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
12. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
13. 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.
14. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

8/5/2019

R090423.DGN

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				6	ARK.			
						090423	4	20

② TYPICAL SECTIONS OF IMPROVEMENT



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

**TRANSITION FROM 2 LANE OPEN SHOULDER TO 3 LANE OPEN SHOULDER

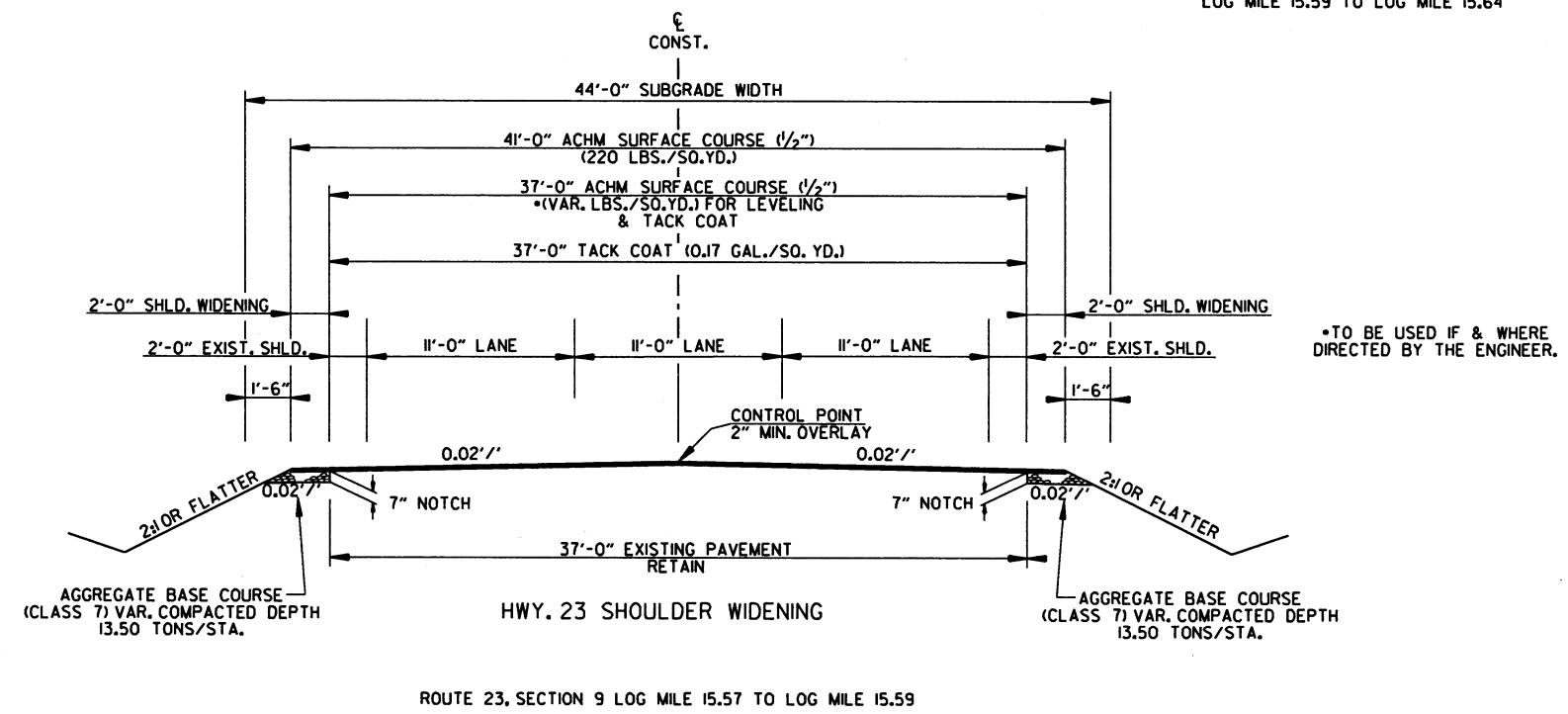
LOG MILE 15.52 TO LOG MILE 15.57
 LOG MILE 15.59 TO LOG MILE 15.64

NOTES:

LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH SECTION 410.07 UNLESS OTHERWISE APPROVED BY THE ENGINEER.

ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

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



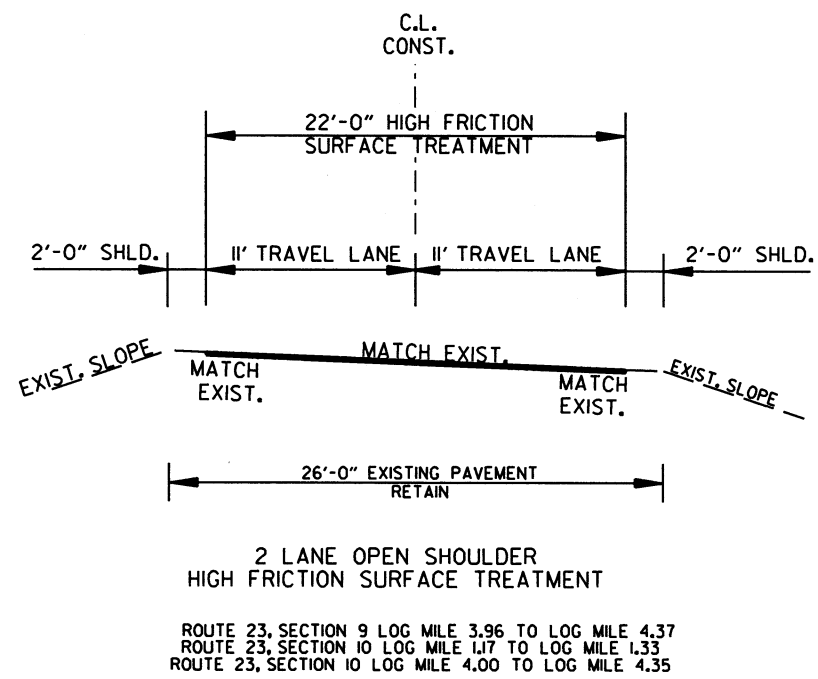
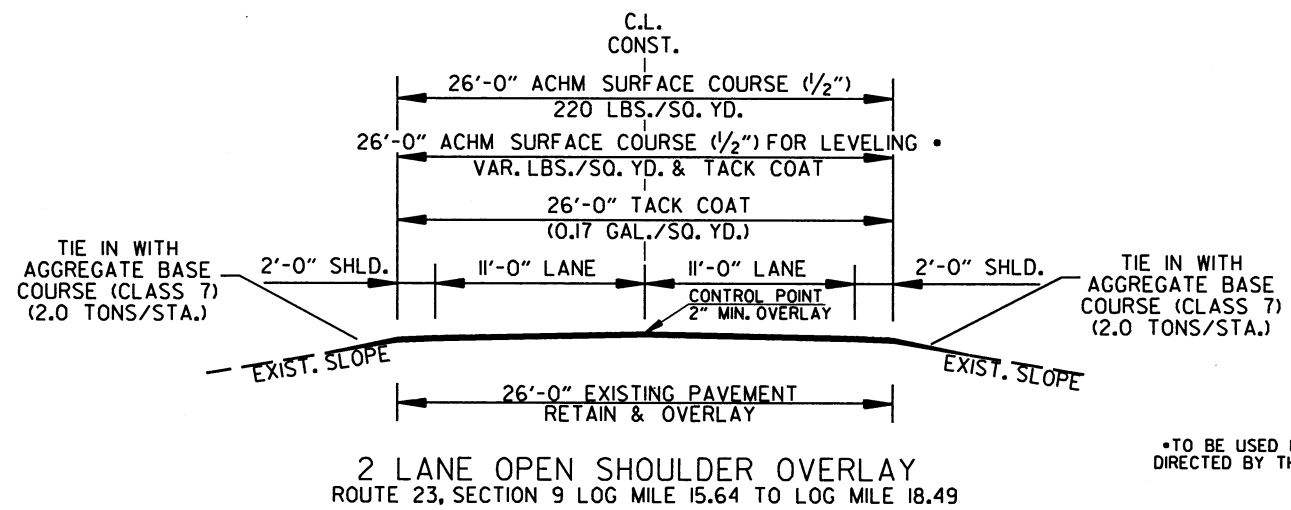
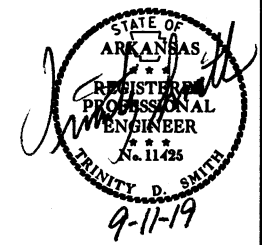
*TO BE USED IF & WHERE DIRECTED BY THE ENGINEER.

3/1/2018

R090423.DGN

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						090423	5	20

② TYPICAL SECTIONS OF IMPROVEMENT

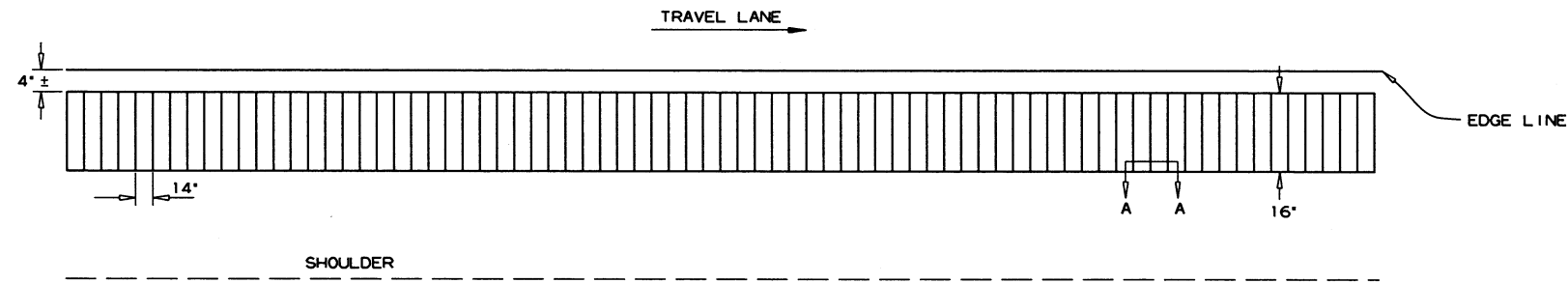


NOTES:
 LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH SECTION 410.07 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

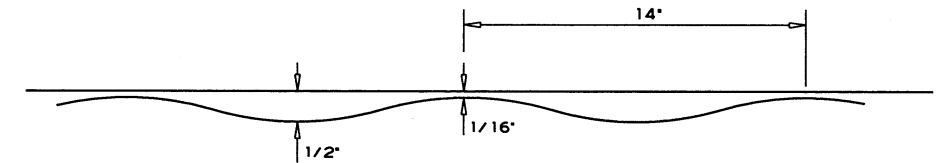
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2 SPECIAL DETAILS

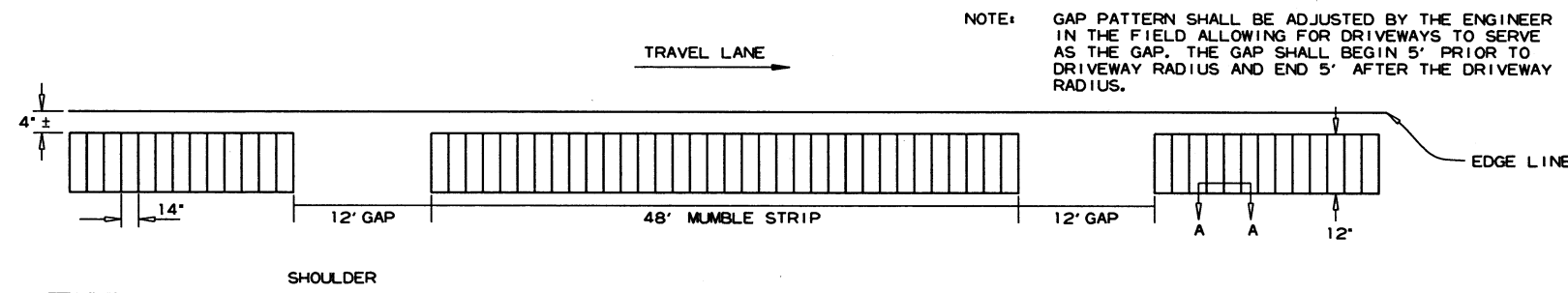


MUMBLE STRIPS (TYPE 1)



SECTION A-A

DETAIL OF MUMBLE STRIP(E)

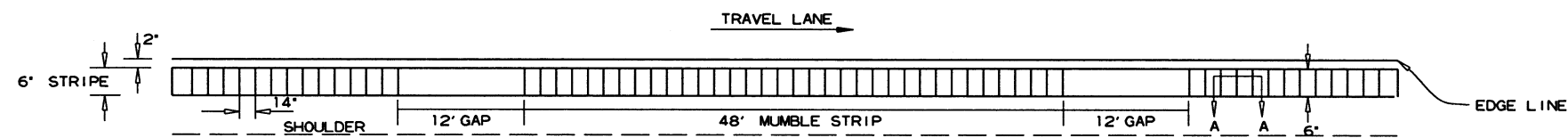


MUMBLE STRIPS (TYPE 2)

NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP. THE GAP SHALL BEGIN 5' PRIOR TO DRIVEWAY RADIUS AND END 5' AFTER THE DRIVEWAY RADIUS.

NOTES FOR MUMBLE STRIPS (LOW NOISE RUMBLE STRIPS) (TYPE 1 AND 2)

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



MUMBLE STRIPES

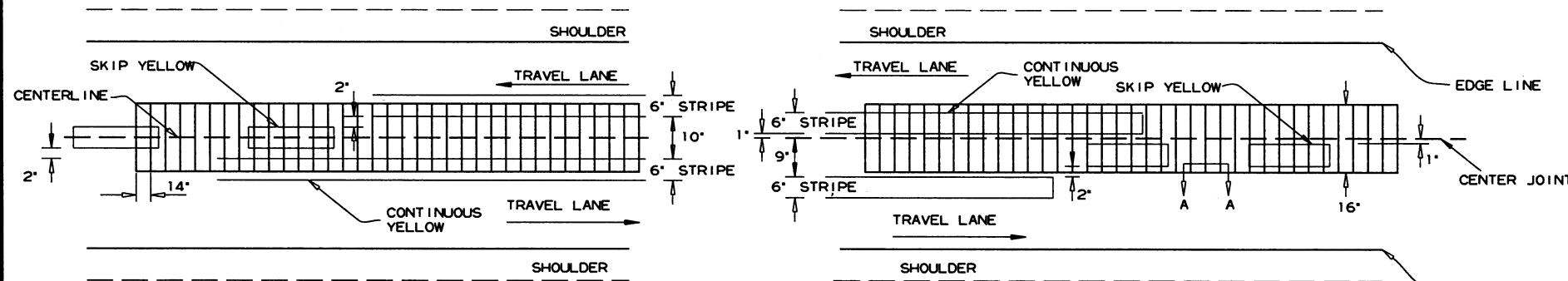
NOTE: IF SHOULDER IS GREATER THAN 4', GAPS SHALL BE PLACED FOR ACCOMMODATION OF BICYCLES.

NOTE: STRIPING IS TO BE PLACED AFTER MUMBLE STRIPES HAVE BEEN CONSTRUCTED.

NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP. THE GAP SHALL BEGIN 5' PRIOR TO DRIVEWAY RADIUS AND END 5' AFTER THE DRIVEWAY RADIUS.

NOTES FOR MUMBLE STRIPES (LOW NOISE RUMBLE STRIPES)

- MUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
- MUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
- THE 2" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
- MUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH MUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE MUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
- THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



CENTERLINE MUMBLE STRIPES

NOTE: STRIPING IS TO BE PLACED AFTER MUMBLE STRIPES HAVE BEEN CONSTRUCTED.

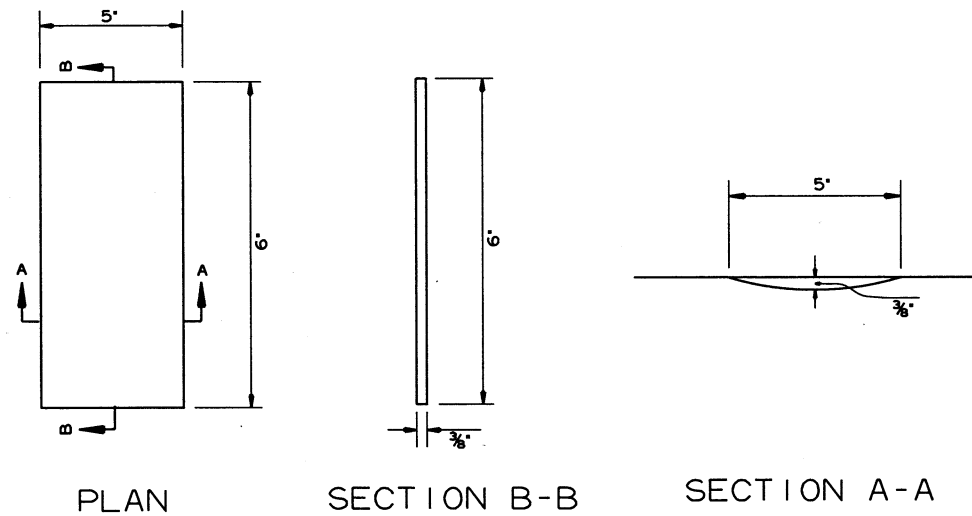
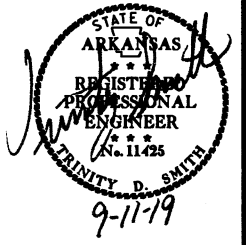
NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP. THE GAP SHALL BEGIN 5' PRIOR TO DRIVEWAY RADIUS AND END 5' AFTER THE DRIVEWAY RADIUS.

NOTES FOR CENTERLINE MUMBLE STRIPES (LOW NOISE RUMBLE STRIPES)

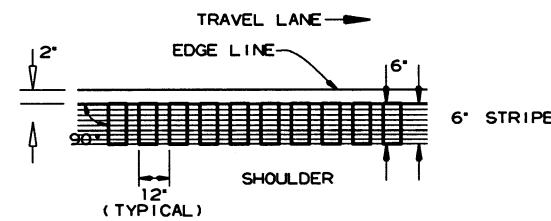
- CENTERLINE MUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
- CENTERLINE MUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE.
- THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16' LENGTH. SOME VARIATION TO SUIT SLOPE BREAKS MAY BE NECESSARY.
- PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE CENTERLINE ON WHICH MUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE MUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.

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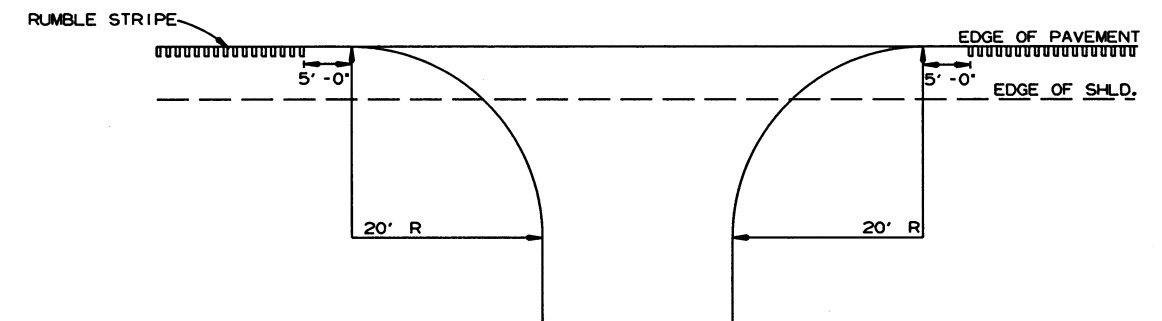
② SPECIAL DETAILS



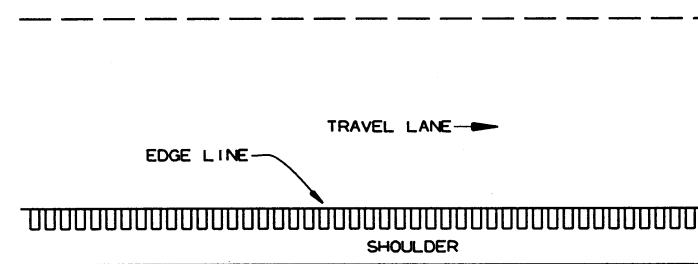
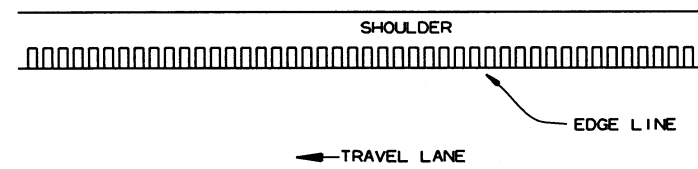
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



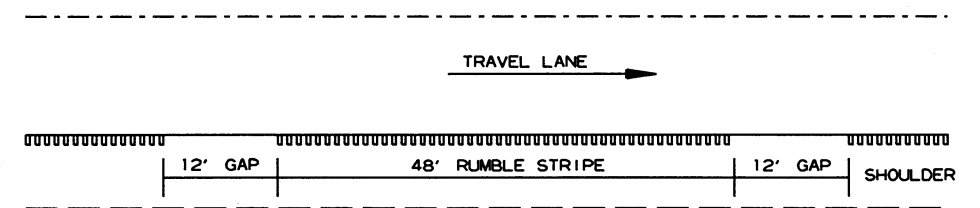
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

- RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
- RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
- RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
- THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



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

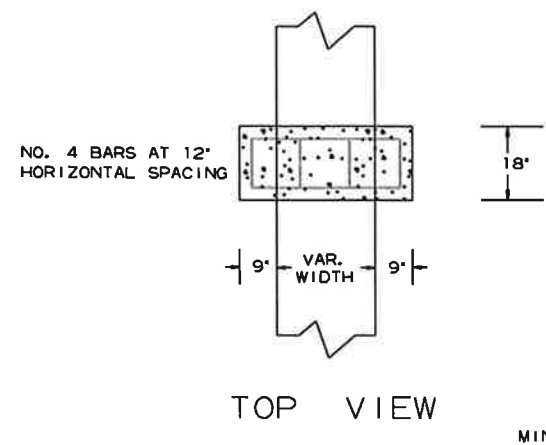
DETAIL FOR GAP PATTERN RUMBLE STRIPE

9/4/2019

R090423.DGN

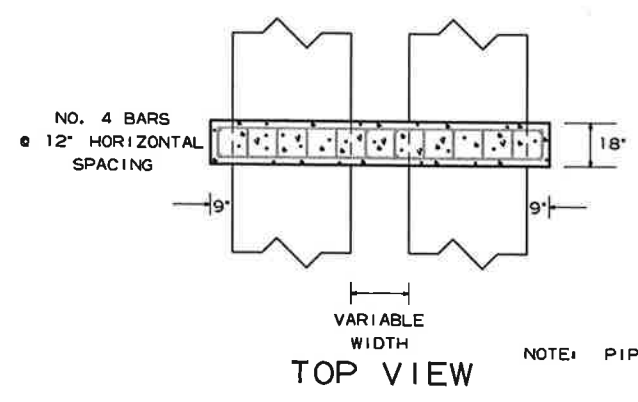
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/30/19				6	ARK.			
JOB NO. 090423							8	20

2 SPECIAL DETAILS



TOP VIEW

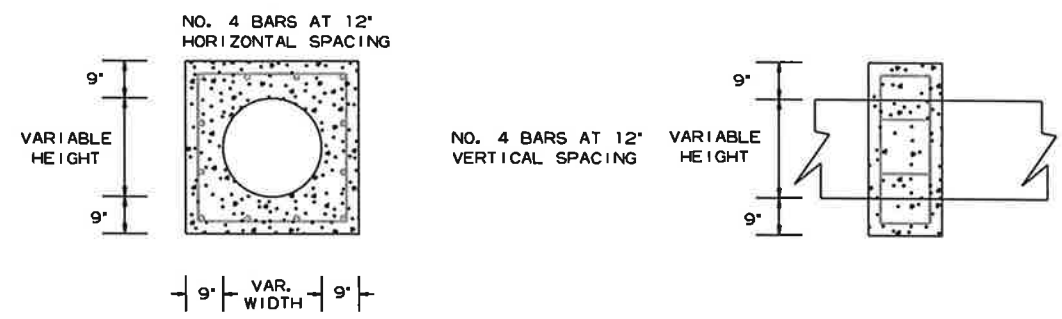
MIN 3' COVER



TOP VIEW

NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.

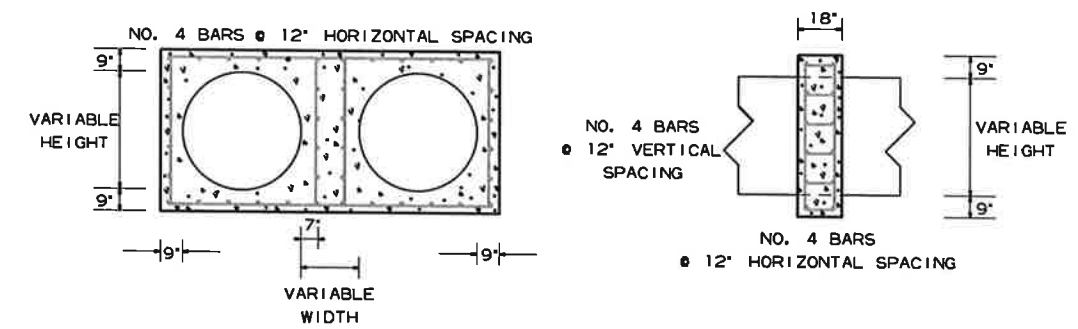
MIN. 3' COVER



FRONT VIEW

SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

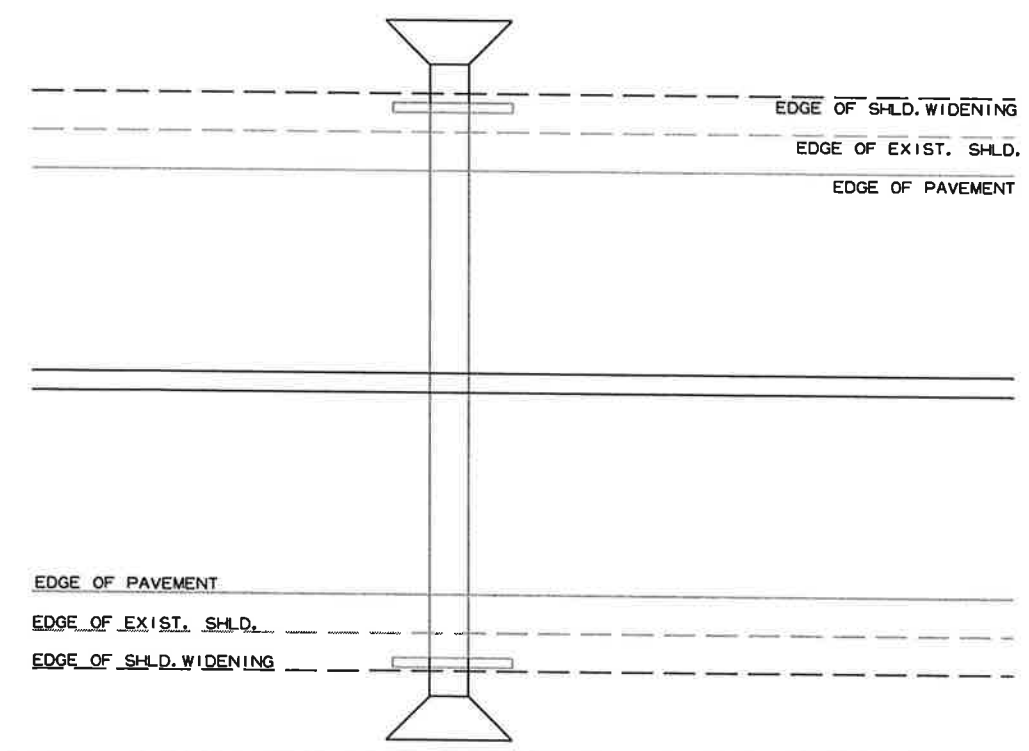


FRONT VIEW

SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

REMOVE HEADWALLS AND EXTEND 4' LT. & 4' RT. WITH A TOTAL OF 16' PER SITE



DETAIL OF CULVERT EXTENSION WITH HEADWALL

LOG MILE LOCATIONS FOR PIPE CULVERTS

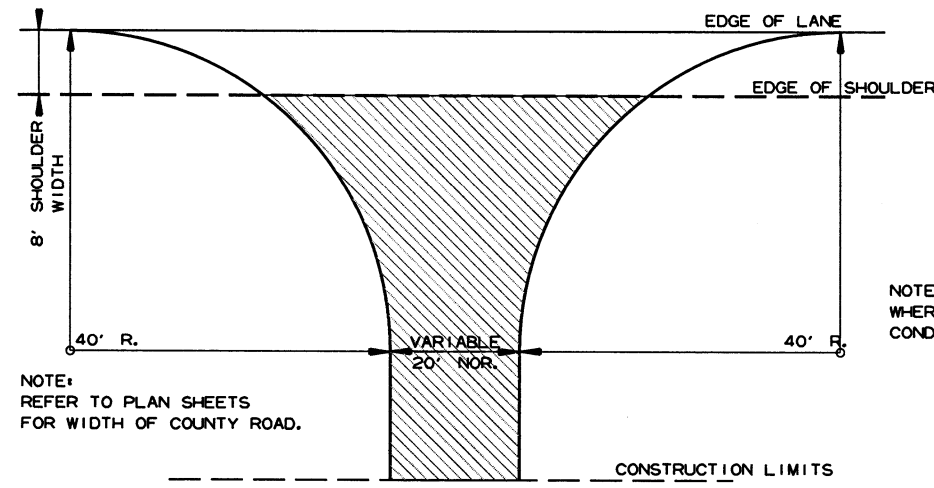
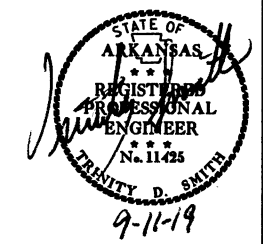
2.94	7.03	11.30
3.10	7.36	11.50
3.42	7.54	11.90
3.70	7.95	12.20
5.85	8.20	12.75
6.10	9.42	13.20
6.40	10.37	13.40
6.53	10.70	

SPECIAL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						090423	9	20

2 SPECIAL DETAILS

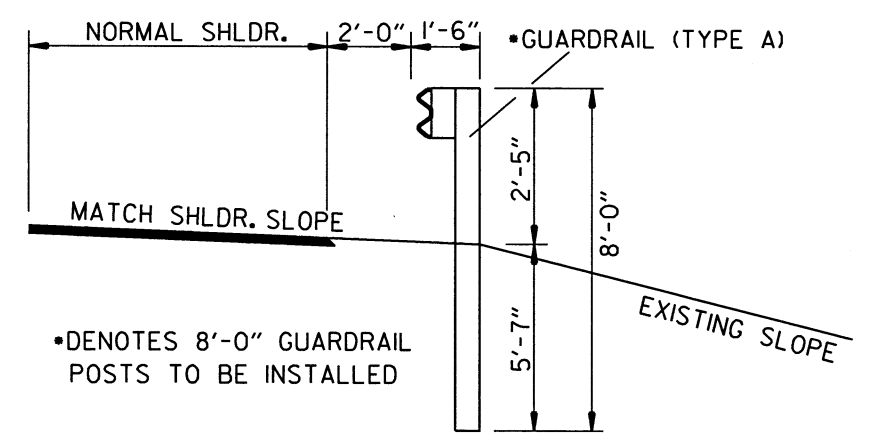


NOTE: REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

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

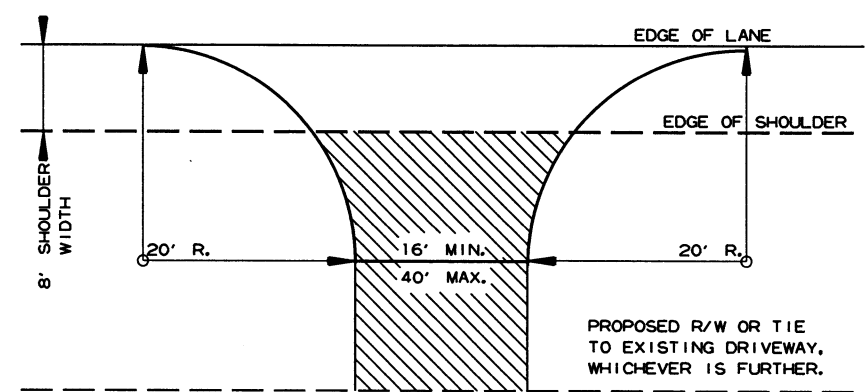
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



SECTION DETAIL FOR GUARDRAIL

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



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

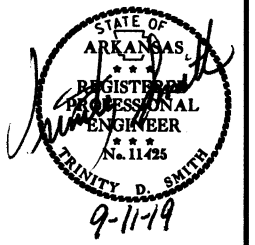
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING, OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)

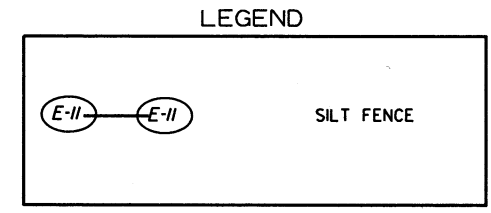
9/4/2019 R090423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090423		10	20

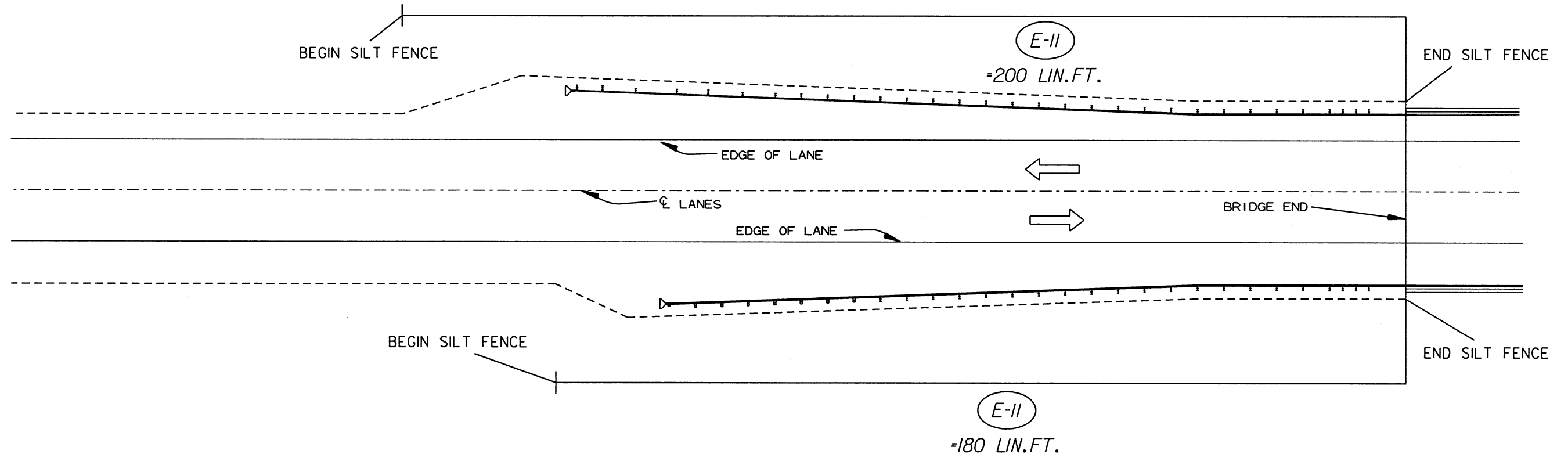
② TEMPORARY EROSION CONTROL DETAILS



DATE OF REVISION	REVISION



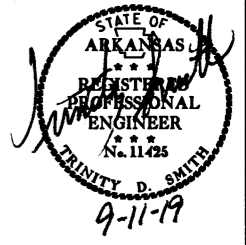
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



TYPICAL SILT FENCE INSTALLATION FOR WIDENING FOR GUARDRAIL AT BRIDGE ENDS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090423		11	20

2 TEMPORARY EROSION CONTROL DETAILS

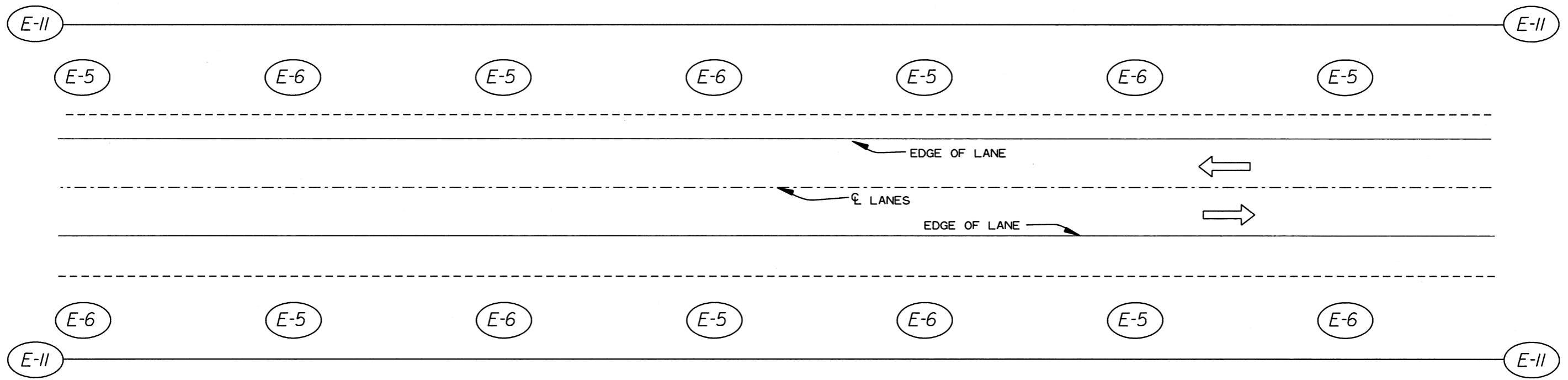


DATE OF REVISION	REVISION

LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SILT FENCE

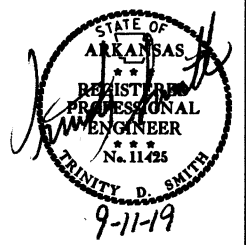
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



TYPICAL EROSION CONTROL INSTALLATION FOR SHOULDER WIDENING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090423	12	20

② QUANTITIES



ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	ENTIRE PROJECT	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS
			LIN. FT. - EACH		NO.	SQ. FT.		
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	32.0		
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	32.0		
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	32.0		
W20-1	ROAD WORK AHEAD	48"x48"	18	18	18	288.0		
G20-2	END ROAD WORK	48"x24"	20	20	20	160.0		
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	20.0		
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	18.0		
W8-1	BUMP	30"x30"	2	2	2	12.5		
R2-1	SPEED LIMIT 45 MPH	24"x30"	2	2	2	10.0		
	VERTICAL PANELS		235	235			235	
	TRAFFIC DRUMS		235	235				235
TOTALS:						604.5	235	235

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	ENTIRE PROJECT LIN. FT. - EACH	CONSTRUCTION PAVEMENT MARKINGS LIN. FT.	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
			TYPE II (YELLOW/YELLOW) EACH	6"	
				WHITE	YELLOW
			LIN. FT.		
CONSTRUCTION PAVEMENT MARKINGS	375533	375533			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	1173		1173		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	187651			187651	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (SKIP LINE) (6")	231			231	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	187651				187651
TOTALS:			1173	187882	187651

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

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

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/10/19				6	ARK.			
				JOB NO.	090423		13	20

② QUANTITIES



SPECIAL CLEARING

SECTION	LOG MILE	LOG MILE	LOCATION	SPECIAL CLEARING
				STATION
9	2.75	15.64	LT AND RT OF MAIN LANES	172
TOTAL:				172

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
ENTIRE PROJECT		HWY. 23 SHOULDER WIDENING	13108	5081	
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			500
TOTALS:			13108	5081	500

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

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

HIGH FRICTION SURFACE TREATMENT

SECTION	LOG MILE	LOG MILE	LOCATION	TOTAL LENGTH	AVG. WIDTH	HIGH FRICTION SURFACE TREATMENT
				FEET	FEET	SQ. YD.
9	3.96	4.37	MAIN LANES	2164.80	22.00	5292
10	1.17	1.33	MAIN LANES	844.80	22.00	2065
10	3.99	4.35	MAIN LANES	1900.80	22.00	4646
TOTAL:						12003

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS	
		(SINGLE) EACH	(DOUBLE)
ENTIRE PROJECT	150	144	3
TOTALS:		150	144

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
217+99	223+95	HWY. 23 LT.	589
TOTAL:			589

REMOVAL AND DISPOSAL OF ITEMS

LOG MILE	LOG MILE	LOCATION	SIGN FOUNDATIONS	GUARDRAIL	SIGNS
			EACH	LIN. FT.	EACH
2.18	2.19	HWY. 23 LT, SECTION 9		75	
2.17	2.19	HWY. 23 RT, SECTION 9		100	
2.24	2.26	HWY. 23 LT, SECTION 9		200	
2.24	2.25	HWY. 23 RT, SECTION 9		75	
2.66	2.69	HWY. 23 RT, SECTION 9		175	
2.68	2.69	HWY. 23 LT, SECTION 9		60	
2.71	2.72	HWY. 23 RT, SECTION 9		70	
2.71	2.74	HWY. 23 LT, SECTION 9		200	
15.65		HWY. 23 LT, SECTION 9	1		1
TOTALS:			1	955	1

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	500
TOTAL:	500

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

COLD MILLING ASPHALT PAVEMENT

LOG MILE	LOG MILE	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	22.00	400.00
TOTAL:				400.00

NOTE: AVERAGE MILLING DEPTH 1".

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL						*SEDIMENT REMOVAL & DISPOSAL	
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	TRIANGULAR SILT DIKE	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS		SILT FENCE
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	(E-5) BAG	(E-6) CU.YD.		(E-11) LIN. FT.
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			18.90	37.80	18.90	1927.8	18.90	18.90	18.90	385.6	10000	1100	150	5000	285
TOTALS:			18.90	37.80	18.90	1927.8	18.90	18.90	18.90	385.6	10000	1100	150	5000	285

BASIS OF ESTIMATE:
LIME2 TONS / ACRE OF SEEDING
WATER..... 102.0 M.G. / ACRE OF SEEDING
WATER..... 20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER..... 12.6 GAL. / SQ. YD. OF SOLID SODDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/10/19				6	ARK.			
							JOB NO.	090423
							14	20

② QUANTITIES

GUARDRAIL

LOG MILE	LOG MILE	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
2.17	2.19	HWY. 23 RT, SECTION 9	150	1	1
2.18	2.19	HWY. 23 LT, SECTION 9	75	1	1
2.24	2.25	HWY. 23 RT, SECTION 9	75	1	1
2.24	2.26	HWY. 23 LT, SECTION 9	150	1	1
2.67	2.69	HWY. 23 RT, SECTION 9	150	1	1
2.68	2.69	HWY. 23 LT, SECTION 9	75	1	1
2.71	2.72	HWY. 23 RT, SECTION 9	75	1	1
2.71	2.73	HWY. 23 LT, SECTION 9	150	1	1
TOTALS:			900	8	8

MUMBLE STRIPES IN ASPHALT SHOULDERS

SECTION	LOG MILE	LOG MILE	LOCATION	* MUMBLE STRIPES IN ASPHALT SHOULDERS
				LIN.FT.
9	1.67	7.51	HWY. 23 - LEFT SHOULDER	20500
9	1.67	7.51	HWY. 23 - RIGHT SHOULDER	19993
9	7.91	18.49	HWY. 23 - LEFT SHOULDER	51124
9	7.91	18.49	HWY. 23 - RIGHT SHOULDER	52513
TOTAL:				144130

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	
	CU.YD.
	100
TOTAL:	
	100

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



RUMBLE STRIPES IN ASPHALT SHOULDERS

SECTION	LOG MILE	LOG MILE	LOCATION	* RUMBLE STRIPES IN ASPHALT SHOULDERS
				LIN.FT.
10	1.10	2.70	HWY. 23 - LEFT SHOULDER	8448
10	1.10	2.70	HWY. 23 - RIGHT SHOULDER	8448
10	3.98	6.23	HWY. 23 - LEFT SHOULDER	11064
10	3.98	6.23	HWY. 23 - RIGHT SHOULDER	11160
TOTAL:				39120

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

DRIVEWAYS & TURNOUTS (P.C.C.)

SECTION	LOG MILE	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY
				FEET	SQ. YD.
9	5.60	RT	HWY. 23	16	18.91
9	8.87	LT	HWY. 23	40	80.22
9	13.98	LT	HWY. 23	16	33.57
9	14.46	LT	HWY. 23	16	31.83
9	15.53	LT	HWY. 23	40	80.39
9	17.78	LT	HWY. 23	16	22.25
TOTAL:					267.17

FENCING

STATION	STATION	LOCATION	WIRE FENCE	* 16'-0" GATES
			(TYPE D-2)	EACH
			LIN. FT.	
217+99	223+95	HWY. 23 LT.	589	
	223+78	HWY. 23 LT.		1
TOTAL:			589	1

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	531	1062
TOTALS:		531 1062

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

STRUCTURES

SECTION	LOG MILE	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT								FLARED END SECTIONS FOR R.C. PIPE CULVERTS								STD. DWG. NOS.
			(CLASS III)				(CLASS V)												
			18"	60"	24"	30"	36"	42"	48"	18"	24"	30"	36"	42"	48"	60"			
9	2.94	EXTEND 18" x 35' PIPE CULVERT LT. & RT.	16							2							PCC-1, FES-1, FES-2		
9	3.10	EXTEND 42" x 37' PIPE CULVERT LT. & RT.						16					2				PCC-1, FES-1, FES-2		
9	3.42	EXTEND 48" x 38' PIPE CULVERT LT. & RT.							16						2		PCC-1, FES-1, FES-2		
9	3.70	EXTEND 30" x 36' PIPE CULVERT LT. & RT.					16				2						PCC-1, FES-1, FES-2		
9	5.85	EXTEND 30" x 48' PIPE CULVERT LT. & RT.					16				2						PCC-1, FES-1, FES-2		
9	6.10	EXTEND 30" x 36' PIPE CULVERT LT. & RT.					16				2						PCC-1, FES-1, FES-2		
9	6.40	EXTEND 24" x 32' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	6.53	EXTEND 24" x 43' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	7.03	EXTEND 60" x 50' PIPE CULVERT LT. & RT.	16												2		PCC-1, FES-1, FES-2		
9	7.36	EXTEND 24" x 41' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	7.54	EXTEND 24" x 55' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	7.95	EXTEND 30" x 40' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	8.20	EXTEND 24" x 36' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	9.42	EXTEND 24" x 46' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	10.37	EXTEND 24" x 46' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	10.70	EXTEND 24" x 42' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	11.30	EXTEND 36" x 54' PIPE CULVERT LT. & RT.							16			2					PCC-1, FES-1, FES-2		
9	11.50	EXTEND 24" x 52' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	11.90	EXTEND 24" x 44' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	12.20	EXTEND 24" x 56' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	12.75	EXTEND 24" x 38' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
9	13.20	EXTEND 24" x 46' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
	13.40	EXTEND 24" x 48' PIPE CULVERT LT. & RT.					16			2							PCC-1, FES-1, FES-2		
TOTALS:			16	16	128	160	16	16	16	2	16	20	2	2	2	2			

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

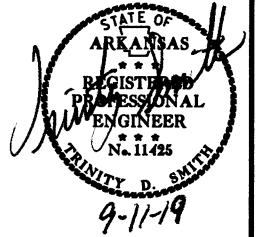
CENTERLINE MUMBLE STRIPES IN ASPHALT ROADWAYS

SECTION	LOG MILE	LOG MILE	LOCATION	* CENTERLINE MUMBLE STRIPES IN ASPHALT ROADWAYS
				LIN.FT.
9	2.75	7.51	HWY. 23	21542
9	7.91	18.49	HWY. 23	55862
TOTAL:				77404

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090423							15	20

② QUANTITIES



DRIVEWAYS & TURNOUTS (ACHM) (BOX 1 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/SQ. YD.
2.93	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
2.94	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
2.96	RT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
2.99	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
3.00	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
3.03	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.07	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
3.11	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.21	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.30	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.34	LT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
3.42	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
3.43	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.44	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.59	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.62	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.64	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.64	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.70	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.72	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.83	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.83	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.84	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
3.85	RT	HWY. 23, SECTION 9	40	26.67	2.93	0.17	4.53
3.89	RT	HWY. 23, SECTION 9	30	22.22	2.44	0.17	3.78
3.94	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
4.63	RT	HWY. 23, SECTION 9	16	24.89	2.74	0.17	4.23
4.64	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
4.76	LT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
4.79	LT	HWY. 23, SECTION 9	30	22.22	2.44	0.17	3.78
4.80	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.04	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.06	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
5.13	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.22	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
5.35	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.48	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.54	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.73	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.78	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.88	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.91	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
5.99	RT	HWY. 23, SECTION 9	30	171.19	18.83	0.17	29.10
6.17	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.31	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
6.33	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.35	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.39	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
SUBTOTALS (BOX 1 OF 6):				987.21	108.61		167.81

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

DRIVEWAYS & TURNOUTS (ACHM) (BOX 2 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/SQ. YD.
6.43	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.44	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
6.46	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.49	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.62	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.66	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.66	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.67	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.71	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.76	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.79	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.86	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
6.90	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
7.29	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
7.34	RT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
7.91	RT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
7.96	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
7.99	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.02	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.03	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.04	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.07	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.09	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.11	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
8.12	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.15	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.16	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.17	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.19	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.19	RT	HWY. 23, SECTION 9	30	22.22	2.44	0.17	3.78
8.34	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.39	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.39	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.42	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.42	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.44	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.44	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.48	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.50	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.54	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.56	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.58	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
SUBTOTALS (BOX 2 OF 6):				707.58	77.87		120.27

BASIS OF ESTIMATE:

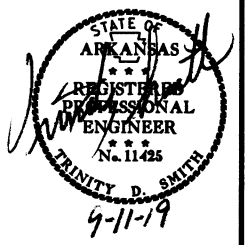
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090423		16	20

② QUANTITIES



DRIVEWAYS & TURNOUTS (ACHM) (BOX 3 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/SQ. YD.
8.61	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.64	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.69	LT	HWY. 23, SECTION 9	30	22.22	2.44	0.17	3.78
8.71	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.72	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.75	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.77	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.80	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.81	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.83	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
8.87	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.87	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.91	LT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
8.96	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
8.97	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.00	LT	HWY. 23, SECTION 9	166	82.67	9.09	0.17	14.05
9.03	RT	HWY. 23, SECTION 9	24	19.56	2.15	0.17	3.33
9.07	RT	HWY. 23, SECTION 9	24	24.00	2.64	0.17	4.08
9.09	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.10	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
9.13	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
9.14	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
9.19	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
9.19	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.21	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.25	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.32	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.36	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.36	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.41	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.47	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.48	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.49	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
9.51	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.60	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.61	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.66	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.67	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.70	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.74	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.83	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
9.86	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
9.96	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
9.96	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.06	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.09	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
10.12	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.14	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.15	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.16	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 3 OF 6):				912.01	100.34		155.02

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

DRIVEWAYS & TURNOUTS (ACHM) (BOX 4 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/SQ. YD.
10.20	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
10.21	LT	HWY. 23, SECTION 9	20	82.89	9.12	0.17	14.09
10.22	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
10.22	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.27	LT	HWY. 23, SECTION 9	16	71.34	7.85	0.17	12.13
10.32	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.47	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.50	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.55	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.61	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.75	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.81	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.83	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.86	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.90	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
10.97	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.13	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.14	RT	HWY. 23, SECTION 9	24	51.23	5.64	0.17	8.71
11.24	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.32	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
11.36	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.37	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.38	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.39	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
11.48	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
11.51	LT	HWY. 23, SECTION 9	20	22.22	2.44	0.17	3.78
11.58	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.62	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.65	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.70	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.74	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.76	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.80	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.88	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.90	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
11.91	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
11.99	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
12.05	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.11	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.19	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.19	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
12.20	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.28	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.34	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.45	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
12.47	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.50	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.57	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
12.67	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.68	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 4 OF 6):				989.46	108.88		168.18

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

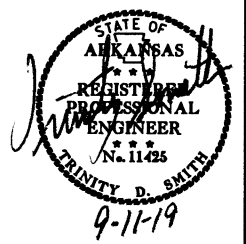
QUANTITIES

8/5/2019

R090423.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090423		17	20

② QUANTITIES



DRIVEWAYS & TURNOUTS (ACHM) (BOX 5 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/ SQ. YD.
12.73	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.80	LT	HWY. 23, SECTION 9	20	22.22	2.44	0.17	3.78
12.83	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.85	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.87	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
12.99	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
12.99	LT	HWY. 23, SECTION 9	20	22.22	2.44	0.17	3.78
12.99	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.04	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.08	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.10	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.15	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.22	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
13.25	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.31	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.31	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.40	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.40	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.50	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
13.59	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.59	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.60	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
13.62	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.70	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.71	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.75	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
13.99	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.11	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.14	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.16	LT	HWY. 23, SECTION 9	24	24.00	2.64	0.17	4.08
14.34	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.35	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.39	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.47	LT	HWY. 23, SECTION 9	40	28.67	2.93	0.17	4.53
14.56	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
14.61	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.69	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.71	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.72	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.74	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.80	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.84	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.84	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.90	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.90	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
14.99	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
15.00	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
15.02	LT	HWY. 23, SECTION 9	16	37.01	4.07	0.17	6.29
15.04	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
15.17	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
SUBTOTALS (BOX 5 OF 6):				876.10	96.37		148.91

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

DRIVEWAYS & TURNOUTS (ACHM) (BOX 6 OF 6)

LOG MILE	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		TACK COAT	
				FEET	SQ. YD.	TON	GALLONS/ SQ. YD.
15.21	LT	HWY. 23, SECTION 9	20	22.22	2.44	0.17	3.78
15.44	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
15.58	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
15.59	LT	HWY. 23, SECTION 9	24	94.45	10.39	0.17	16.06
15.63	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
15.76	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
15.79	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
15.86	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.08	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.09	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.23	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.24	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.36	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.61	LT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
16.64	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.64	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
16.82	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
16.92	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.16	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.19	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.21	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.33	LT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
17.71	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.90	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
17.99	RT	HWY. 23, SECTION 9	20	17.78	1.96	0.17	3.02
18.14	RT	HWY. 23, SECTION 9	30	22.22	2.44	0.17	3.78
18.22	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
18.23	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
18.35	LT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
18.37	RT	HWY. 23, SECTION 9	16	16.00	1.76	0.17	2.72
18.39	RT	HWY. 23, SECTION 9	16	20.44	2.25	0.17	3.47
SUBTOTALS (BOX 1 OF 6):				987.21	108.61		167.81
SUBTOTALS (BOX 2 OF 6):				707.58	77.87		120.27
SUBTOTALS (BOX 3 OF 6):				912.01	100.34		155.02
SUBTOTALS (BOX 4 OF 6):				989.46	108.88		168.18
SUBTOTALS (BOX 5 OF 6):				876.10	96.37		148.91
SUBTOTALS (BOX 6 OF 6):				609.99	67.11		103.68
TOTALS:				5082.35	559.18		863.87

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

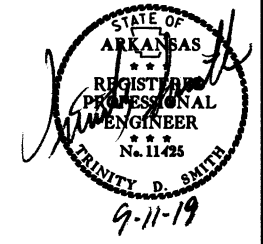
THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

8/5/2019 R090423.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090423	18	20

② QUANTITIES



BASE AND SURFACING

LOG MILE	LOG MILE	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM SURFACE COURSE (1/2")											
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	TOTAL PG 64-22 TON		
						TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON												
SHOULDER WIDENING AND OVERLAY																							
2.75	3.95	HWY. 23 MAIN LANES - TWO LANE SHOULDER WIDENING	6336.00	27.00	1710.72	26.00	18304.00	915.20				915.20						30.00	21120.00	220.00	2323.20	2323.20	
4.50	7.51	HWY. 23 MAIN LANES - TWO LANE SHOULDER WIDENING	15892.80	27.00	4291.06	26.00	45912.53	2295.63				2295.63						30.00	52976.00	220.00	5827.36	5827.36	
7.91	15.52	HWY. 23 MAIN LANES - TWO LANE SHOULDER WIDENING	40180.80	27.00	10848.82	26.00	116077.87	5803.89				5803.89						30.00	133936.00	220.00	14732.96	14732.96	
15.52	15.57	HWY. 23 MAIN LANES - TRANSITION FROM 2 LANE TO 3 LANE	264.00	27.00	71.28	VAR.	1401.45	70.07				70.07						VAR.	1374.46	220.00	151.19	151.19	
15.57	15.59	HWY. 23 MAIN LANES - THREE LANE SHOULDER WIDENING	105.60	27.00	28.51	37.00	434.13	21.71				21.71						41.00	481.07	220.00	52.92	52.92	
15.59	15.64	HWY. 23 MAIN LANES - TRANSITION FROM 3 LANE TO 2 LANE	264.00	27.00	71.28	VAR.	1401.45	70.07				70.07						VAR.	1374.46	220.00	151.19	151.19	
15.64	15.74	HWY. 23 MAIN LANES - TWO LANE SHOULDER WIDENING	528.00	27.00	142.56	26.00	1525.33	76.27				76.27						30.00	1760.00	220.00	193.60	193.60	
15.74	18.49	HWY. 23 MAIN LANES - TWO LANE OVERLAY	14520.00	4.00	580.80	26.00	41946.67	2097.33				2097.33						26.00	41946.67	220.00	4614.13	4614.13	
ADDITIONAL FOR LEVELING																							
2.75	3.95	HWY. 23 MAIN LANES	6336.00						26.00	18304.00	3111.68	3111.68	26.00	18304.00	VAR.	2013.44						2013.44	
4.50	7.51	HWY. 23 MAIN LANES	15892.80						26.00	45912.53	7805.13	7805.13	26.00	45912.53	VAR.	5050.38						5050.38	
7.91	15.52	HWY. 23 MAIN LANES	40180.80						26.00	116077.87	19733.24	19733.24	26.00	116077.87	VAR.	12768.57						12768.57	
15.52	15.57	HWY. 23 MAIN LANES	264.00						VAR.	2871.43	488.14	488.14	VAR.	2871.43	VAR.	275.86						275.86	
15.57	15.59	HWY. 23 MAIN LANES	105.60						37.00	434.13	73.80	73.80	37.00	434.13	VAR.	363.24						363.24	
15.59	15.64	HWY. 23 MAIN LANES	264.00						VAR.	2871.43	488.14	488.14	VAR.	2781.43	VAR.	275.86						275.86	
15.64	18.49	HWY. 23 MAIN LANES	15048.00						26.00	43472.00	7390.24	7390.24	26.00	43472.00	VAR.	4781.92						4781.92	
TOTALS:						17745.03		227003.43	11350.17			229943.39	39090.37	50440.54		229853.39		25529.27		254968.66		28046.55	53575.82

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
 TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

8/5/2019
R090423.DGN

QUANTITIES

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP	SPECIAL CLEARING	172	STATION
202	REMOVAL AND DISPOSAL OF FENCE	589	LIN. FT.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	1	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	955	LIN. FT.
202	REMOVAL AND DISPOSAL OF SIGNS	1	EACH
210	UNCLASSIFIED EXCAVATION	13108	CU. YD.
210	COMPACTED EMBANKMENT	5081	CU. YD.
SP & 210	SOIL STABILIZATION	500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	17745	TON
SS & 401	TACK COAT	52366	GAL.
SP	HIGH FRICTION SURFACE TREATMENT	12003	SQ. YD.
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	51158	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	2977	TON
412	COLD MILLING ASPHALT PAVEMENT	400	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	531	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	500	TON
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	267.17	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	605	SQ. FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	235	EACH
SS & 604	VERTICAL PANELS	375533	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	235	EACH
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	16	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	128	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	160	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	16	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	16	LIN. FT.
606	60" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	16	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	16	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	20	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	60" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
SS & 617	GUARDRAIL (TYPE A)	900	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	8	EACH
SS & 617	THREE BEAM GUARDRAIL TERMINAL	8	EACH
619	WIRE FENCE (TYPE D-2)	589	LIN. FT.
619	16" STEEL GATES	1	EACH
619	16' ALUMINUM GATES	1	EACH
620	LIME	38	TON
620	SEEDING	18.90	ACRE
SS & 620	MULCH COVER	37.80	ACRE
620	WATER	2313.4	M. GAL.
621	TEMPORARY SEEDING	18.90	ACRE
621	SILT FENCE	5000	LIN. FT.
621	SAND BAG DITCH CHECKS	1100	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	285	CU. YD.
621	ROCK DITCH CHECKS	150	CU. YD.
SP & 621	TRIANGULAR SILT DIKE	10000	LIN. FT.
623	SECOND SEEDING APPLICATION	18.90	ACRE
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	150	EACH
637	MAILBOX SUPPORTS (SINGLE)	144	EACH
637	MAILBOX SUPPORTS (DOUBLE)	3	EACH
SP & 642	RUMBLE STRIPES IN ASPHALT SHOULDERS	39120	LIN. FT.
SP & 642	MUMBLE STRIPES IN ASPHALT SHOULDERS	144130	LIN. FT.
SP & 642	CENTERLINE MUMBLE STRIPES IN ASPHALT ROADWAYS	77404	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	187882	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	187651	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	1173	EACH

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
9/30/2019	REVISED THE PLANS TO REMOVE A TEMPORARY CONSTRUCTION EASEMENT AND ADDED PERMANENT RIGHT OF WAY FOR THE SIGN REMOVAL. REVISED THE ASSOCIATED QUANTITIES.	13,14,19 & 20
10/30/2019	REVISED THE PLANS TO CORRECT A NOTE FOR THE EXTENSION OF PIPE CULVERTS.	8 & 19

SUMMARY OF QUANTITIES & REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/10/19				6	ARK.			
10/30/19						090423	19	20

2 SUMMARY OF QUANTITIES & REVISIONS



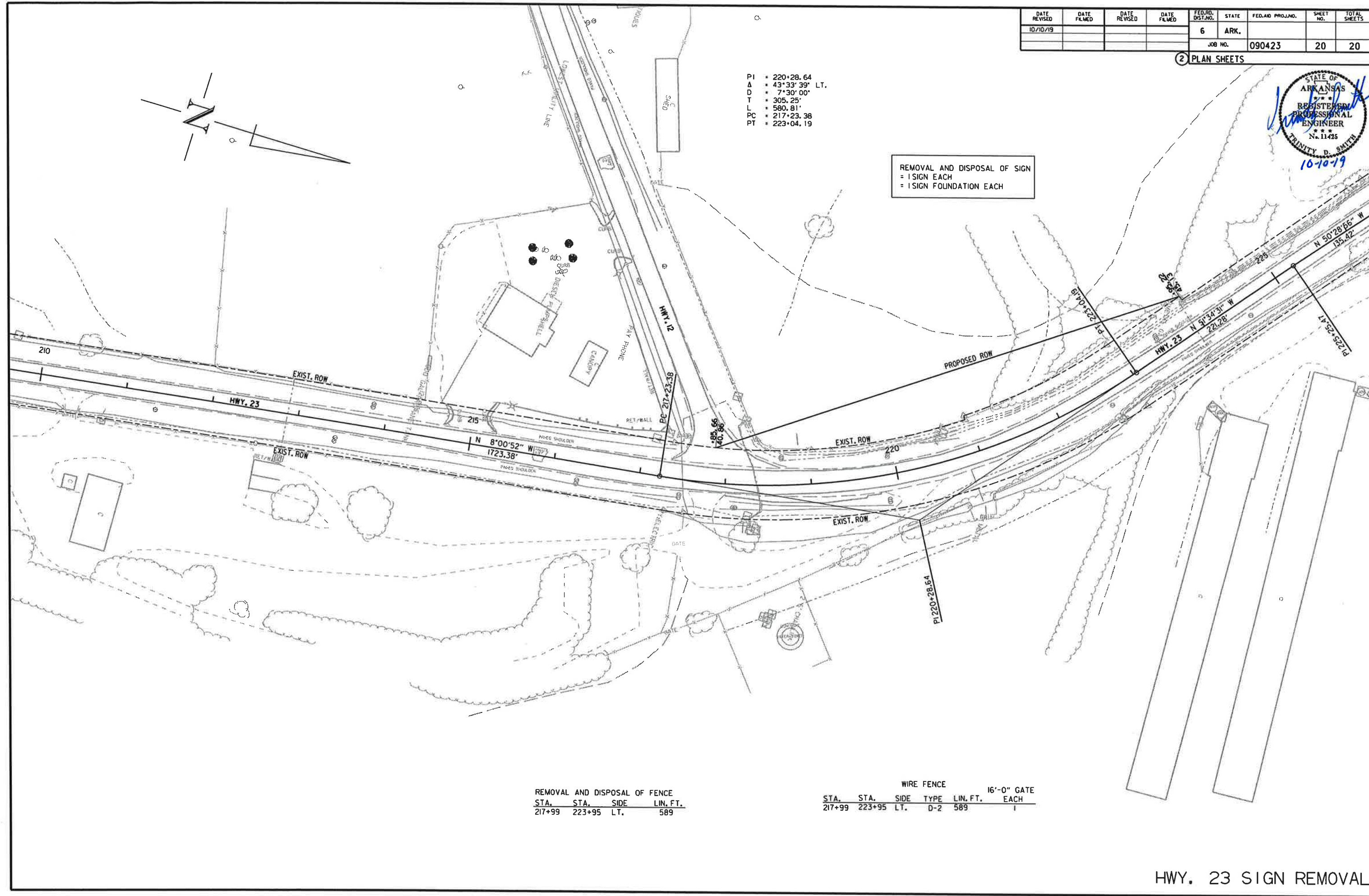
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/10/19				6	ARK.		20	20
				JOB NO.		090423	20	20

② PLAN SHEETS



PI = 220+28.64
 Δ = 43°33'39" LT.
 D = 7°30'00"
 T = 305.25'
 L = 580.81'
 PC = 217+23.38
 PT = 223+04.19

REMOVAL AND DISPOSAL OF SIGN
 = 1 SIGN EACH
 = 1 SIGN FOUNDATION EACH



REMOVAL AND DISPOSAL OF FENCE

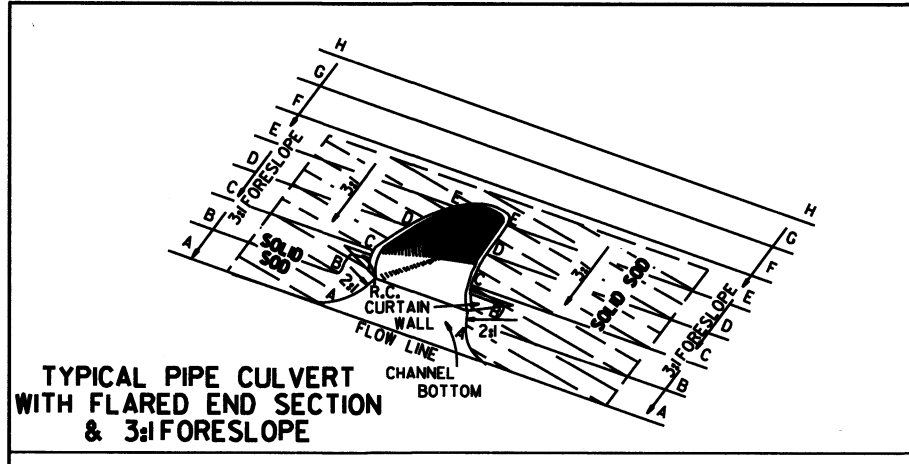
STA.	STA.	SIDE	LIN. FT.
217+99	223+95	LT.	589

WIRE FENCE

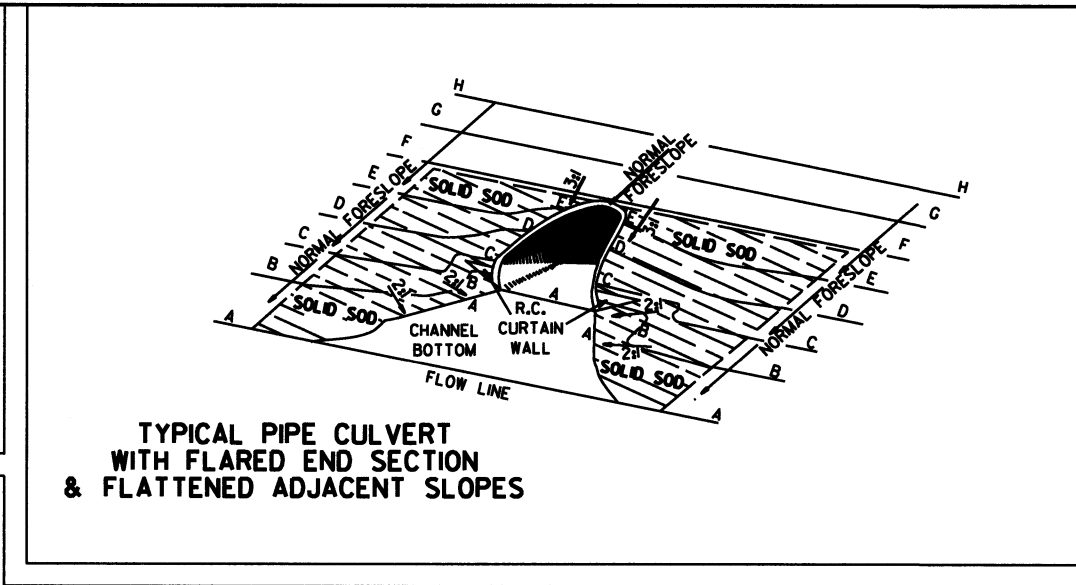
STA.	STA.	SIDE	TYPE	LIN. FT.	16'-0" GATE EACH
217+99	223+95	LT.	D-2	589	1

mh39735 9/5/2019
 R090423.DGN

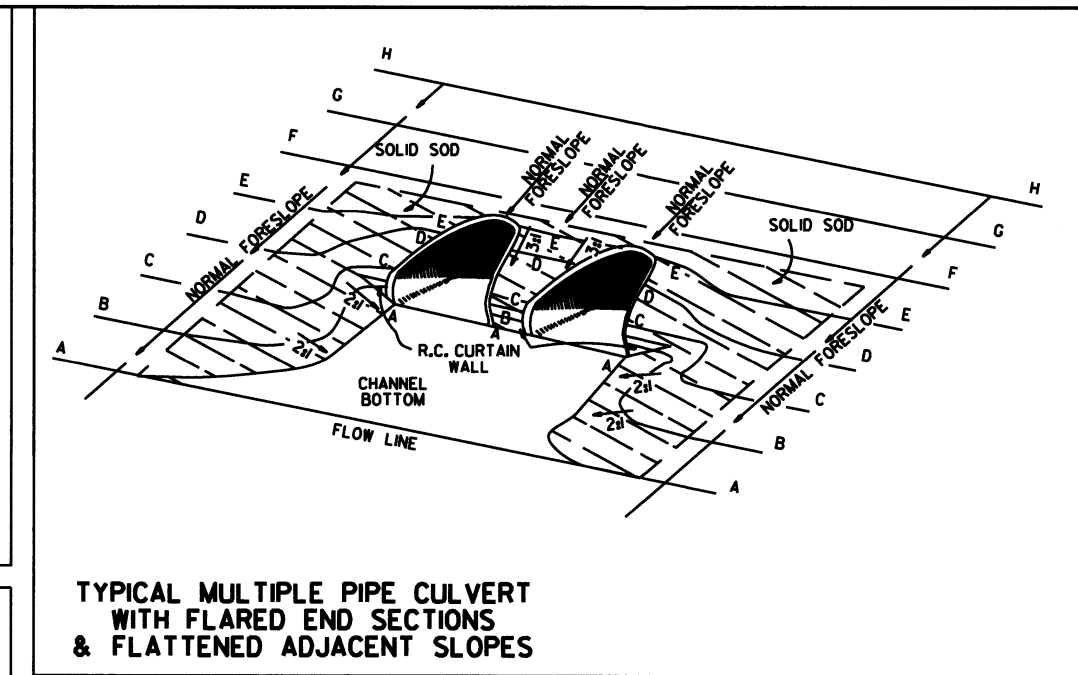
HWY. 23 SIGN REMOVAL



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



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES

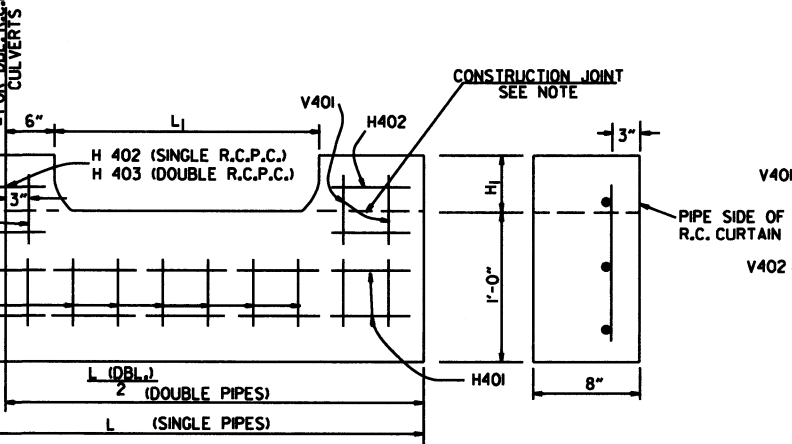


TYPICAL MULTIPLE PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

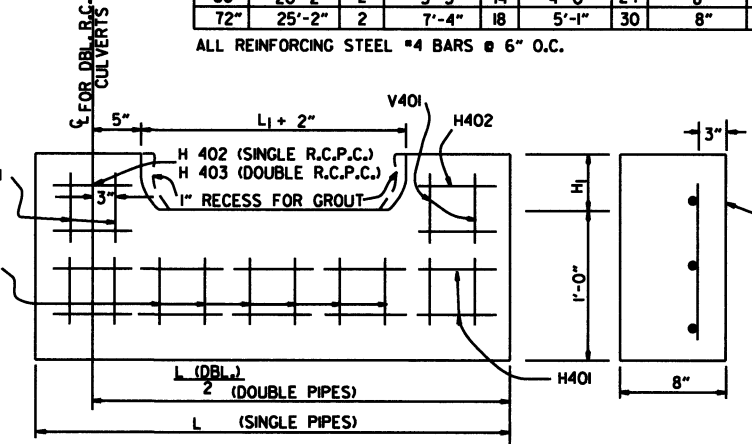
PIPE DIA.	H ₁	L ₁	L	L (DBL.) 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1 1/2"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9 1/2"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



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

R.C. CURTAIN WALL DETAILS



NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5 1/2"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.

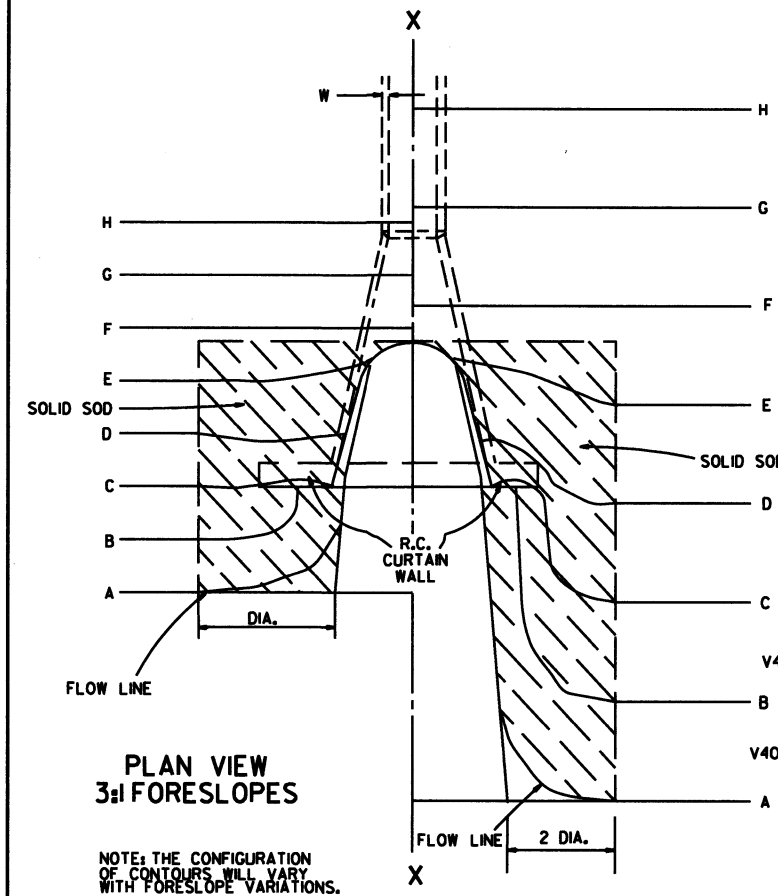
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.					
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

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

GENERAL NOTES

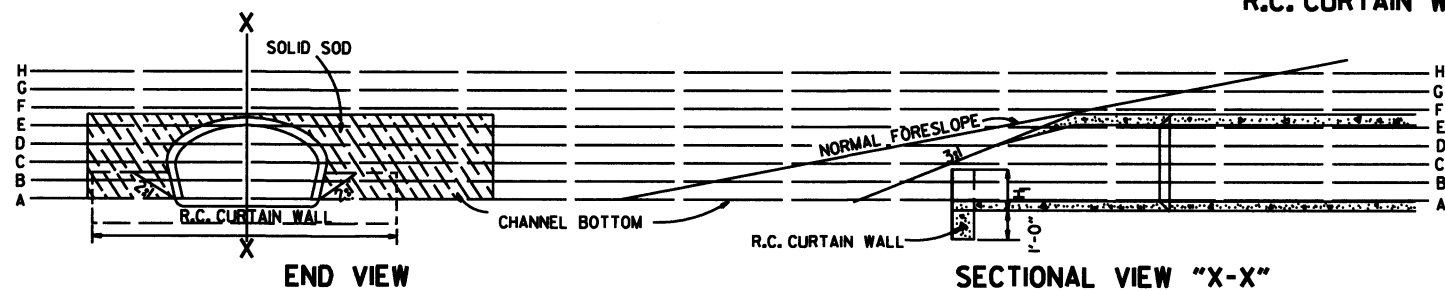
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.



PLAN VIEW 3:1 FORESLOPES

PLAN VIEW FLATTENED FORESLOPES

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



END VIEW

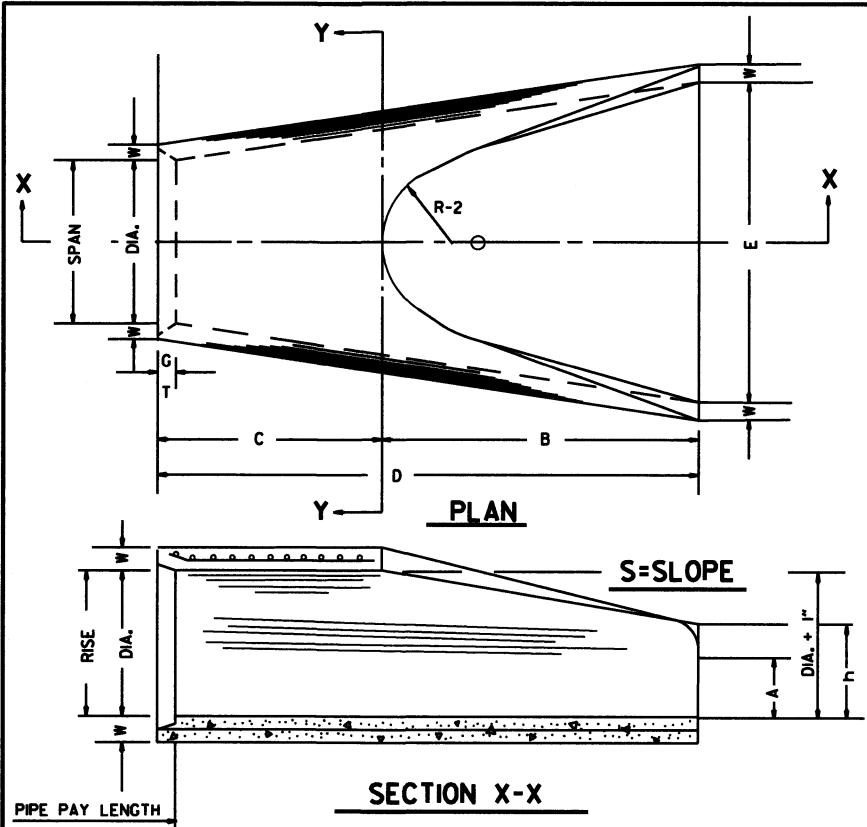
SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED	STANDARD DRAWING FES-1
10-18-98	ADDED NOTE TO SOLID SODDING		ARKANSAS STATE HIGHWAY COMMISSION
10-12-99	CORRECTED SPELLING		
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

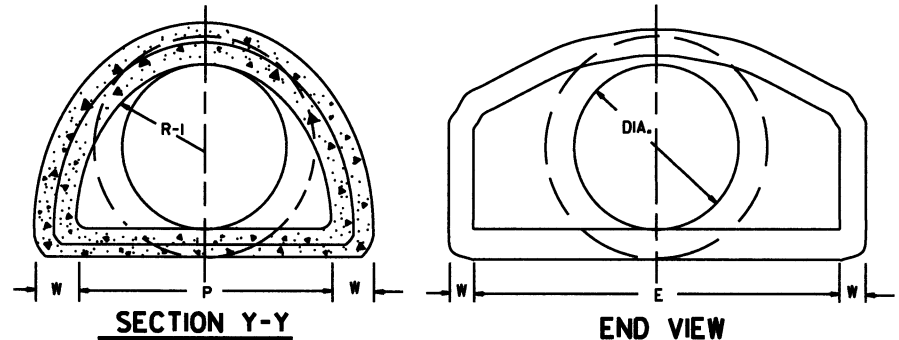
STANDARD DRAWING FES-1



SECTION X-X
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3#1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3#1	25"	33 3/4"	16 1/4"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 1/4"	6'-1 3/4"	5'-0"	3#1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 1/4"
36"	4"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/4"	6'-0"	3#1	37"	47 1/4"	24 1/4"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3#1	43"	53 1/4"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3#1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3#1	55"	65 1/2"	33 3/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3#1	61"	72 1/2"	36 1/4"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3#1	73"	77 1/4"	38 1/4"	24"	5"	13250	4'-6"

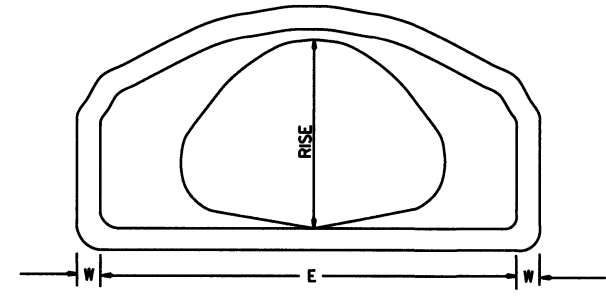


SECTION Y-Y **END VIEW**
 NOTE: TONGUE END ON UPSTREAM SECTION
 GROOVE END ON DOWNSTREAM SECTION

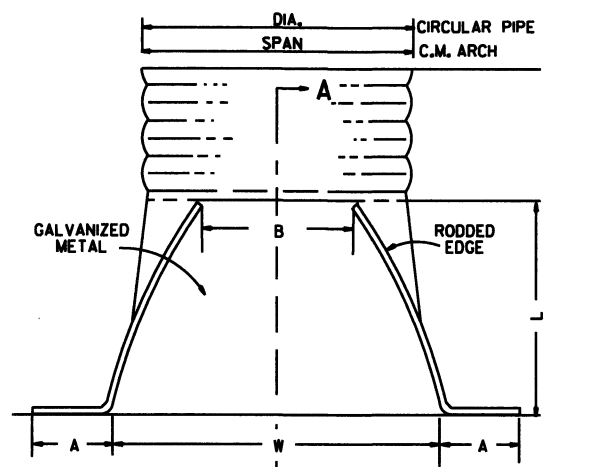
ARCH PIPE

EQUIV. DIA.	SPAN		RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2#1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2#1
21	26	26	15 1/2	16	3"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2#1
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 1/8"	15"	2 1/2"	2 1/2#1
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/4"	6'-1 1/2"	6'-0"	47 1/4"	20"	3"	2 1/2#1
36	43 1/2	44	26 3/4	27	4"	10 1/2"	4'-0"	2'-11 1/2"	6'-1 1/2"	6'-6"	54 1/4"	22"	3 1/2"	2 1/2#1
42	51 1/8	51	31 1/4	31	4 1/2"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 1/2"	2 1/2#1
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/4"	7'-10"	70 1/4"	24"	4 1/4"	2 1/2#1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/4"	24"	4 1/4"	2 1/2#1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/4"	24"	5"	2 1/2#1

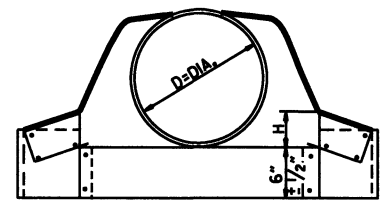
* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW CONCRETE ARCH PIPE



PLAN



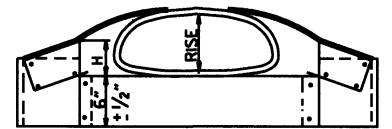
CIRCULAR PIPE

CIRCULAR PIPE

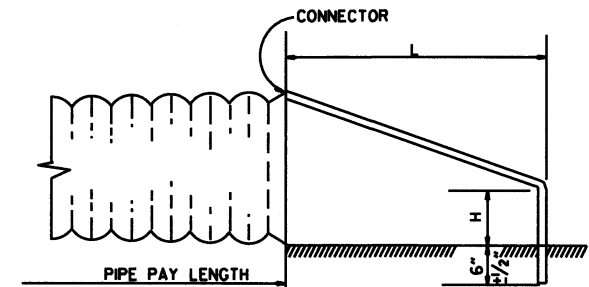
D. DIA.	GAUGE	A 1" ±	B. MAX. 1" ±	H 1" ±	L 1/2" ±	W ± 2" ±	S
12	16	6	6	6	21	24	2 1/2#1
15	16	7	8	6	26	30	2 1/2#1
18	16	8	10	6	31	36	2 1/2#1
21	16	9	12	6	36	42	2 1/2#1
24	16	10	13	6	41	48	2 1/2#1
30	14	12	16	8	51	60	2 1/2#1
36	14	14	19	9	60	72	2 1/2#1
42	12	16	22	11	69	84	2 1/2#1
48	12	18	27	12	78	90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

C.M. ARCH PIPE

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



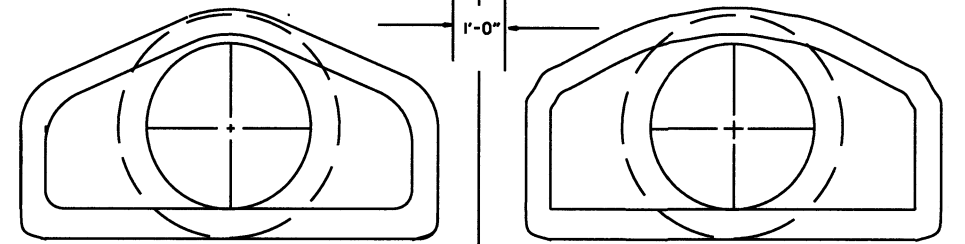
C.M. ARCH PIPE



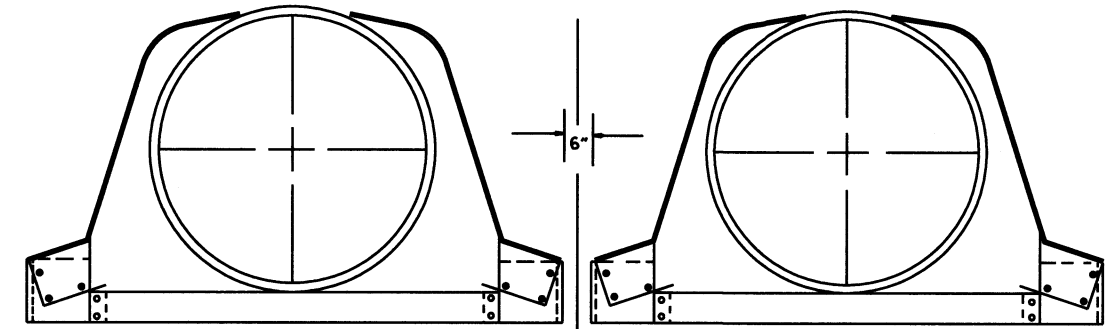
SECTION A-A

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



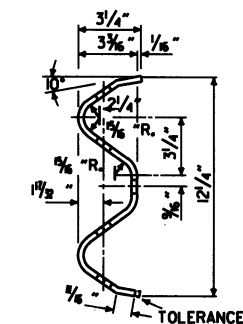
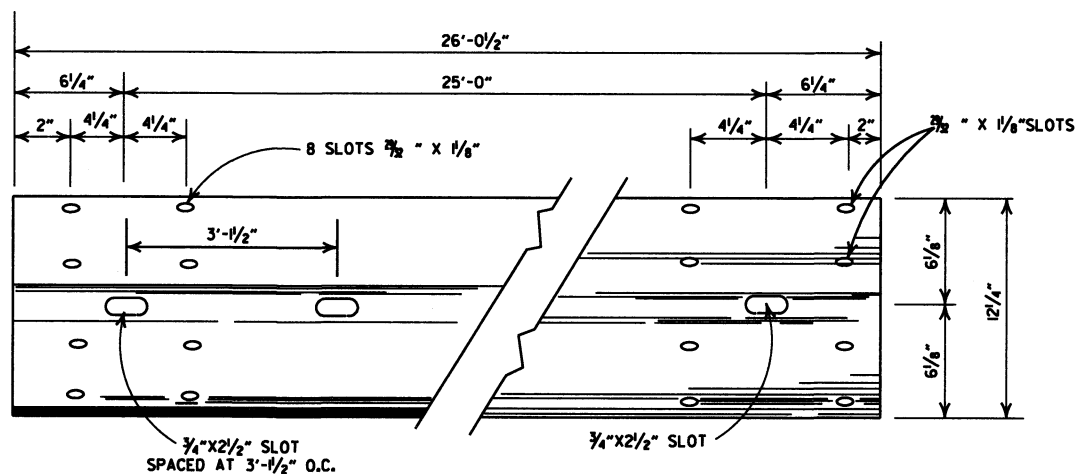
MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

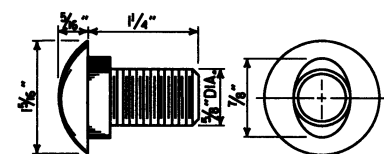
10-18-96	REVISED ASTM REF. TO AASHTO		
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P.F.E.S.	664-5-15-80	ARKANSAS STATE HIGHWAY COMMISSION
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74	
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73	
10-2-72	REVISED AND REDRAWN	760-10-2-72	
DATE	REVISION	FILE NO.	

FLARED END SECTION
STANDARD DRAWING FES-2

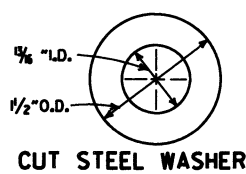


DETAILS OF W-BEAM GUARD RAIL

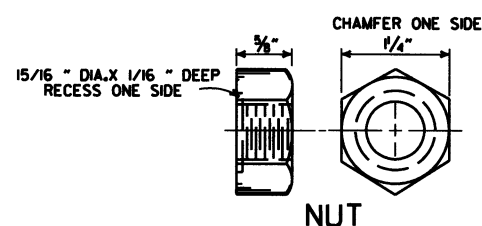
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



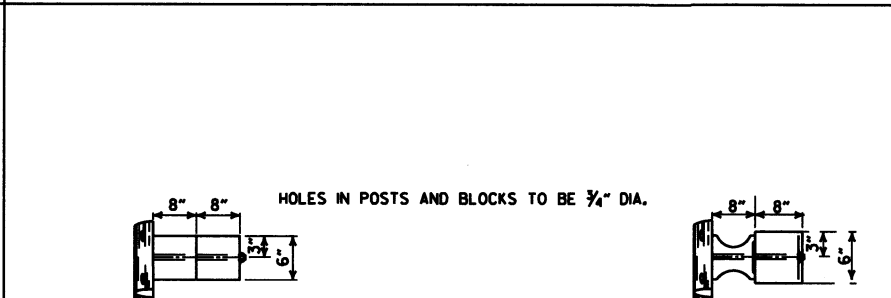
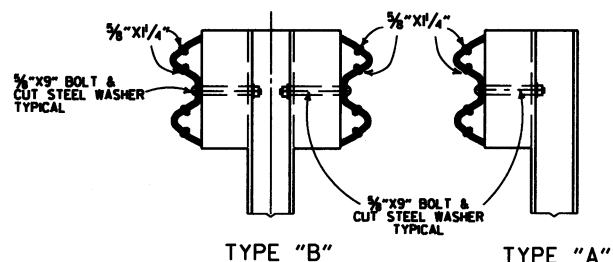
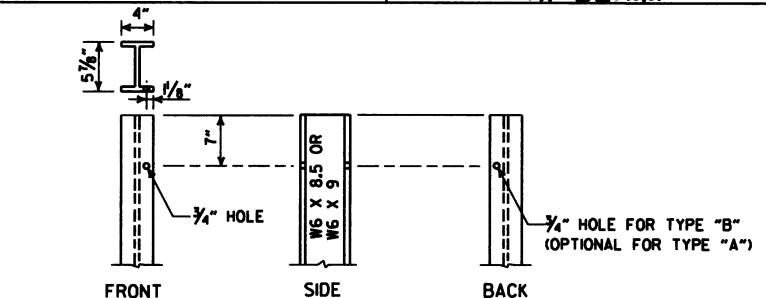
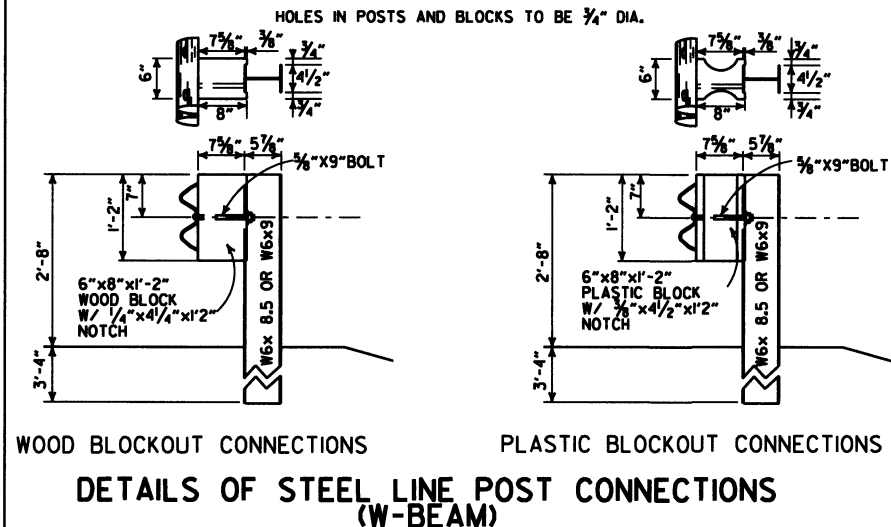
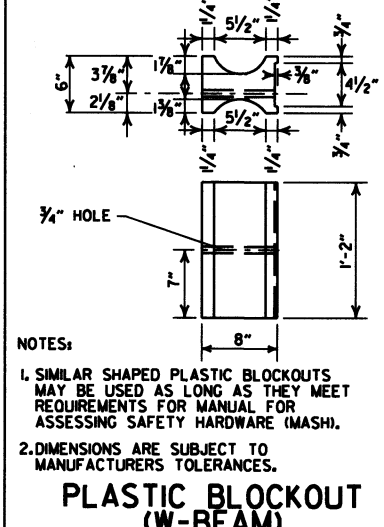
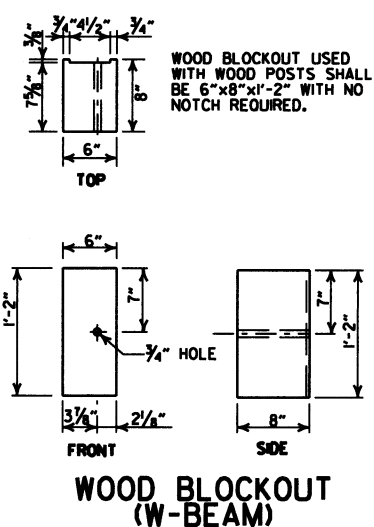
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER



NUT



-GENERAL NOTES-

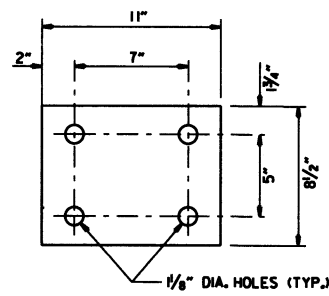
ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.
ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

8-16-17	REVISED GENERAL NOTES AND RAISED GUARD RAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "SLIP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

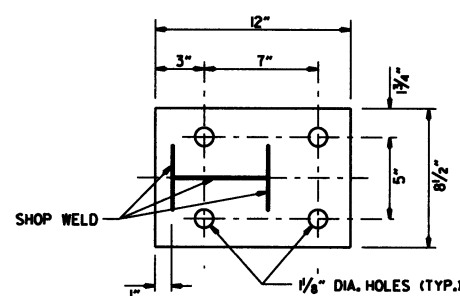
GUARD RAIL DETAILS

STANDARD DRAWING GR-8

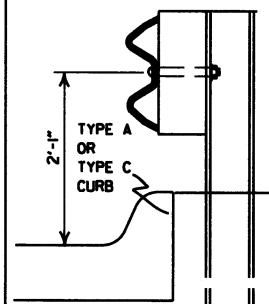


WASHER PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

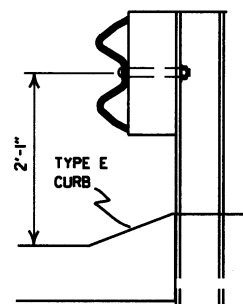


BASE PLATE



FOR DESIGN SPEEDS OF 50 MPH OR LESS

ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

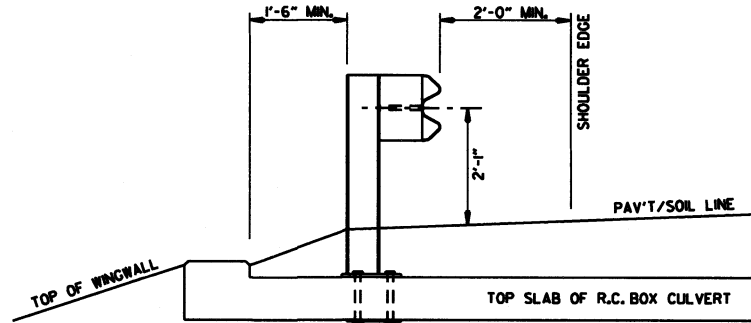


FOR DESIGN SPEEDS OF 55 MPH OR MORE

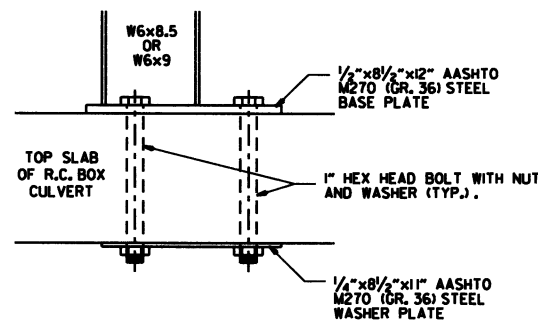
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

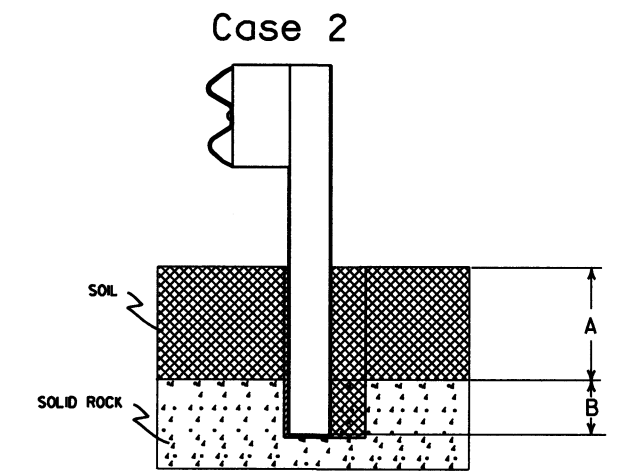
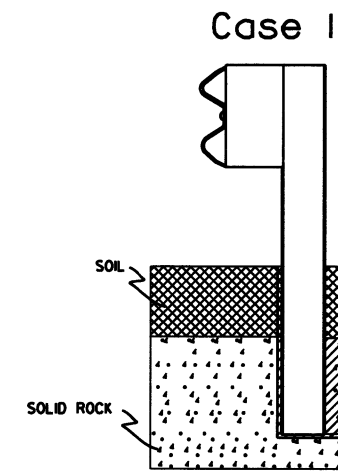
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-4, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A

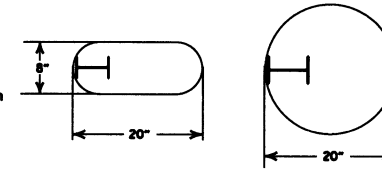


DETAIL OF CONNECTION



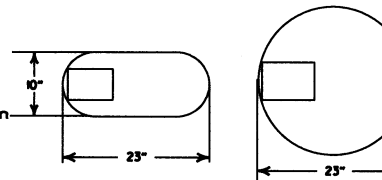
Plan View Steel Posts

Either hole configuration acceptable



Plan View Wood Posts

Either hole configuration acceptable



Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

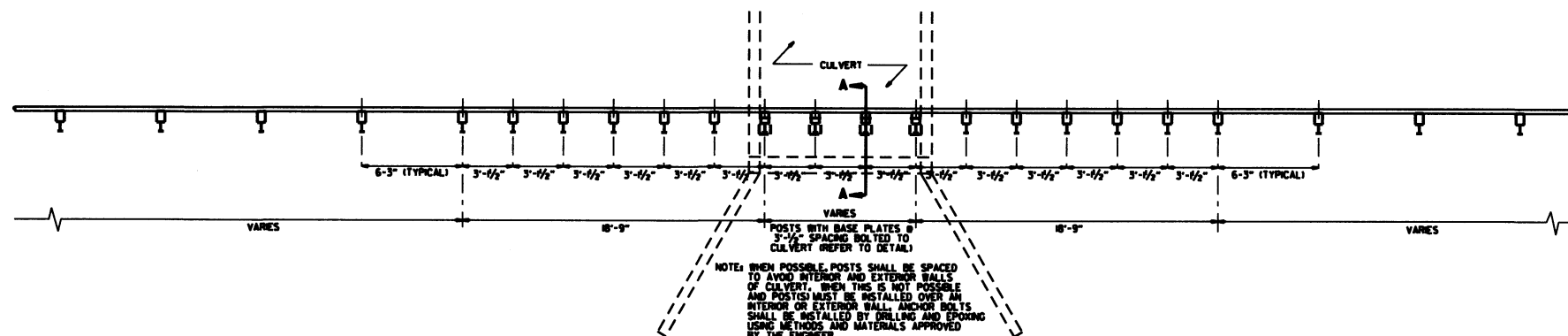
Zone A: Backfill according to Section 617.03(a).

Zone B: Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B: Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

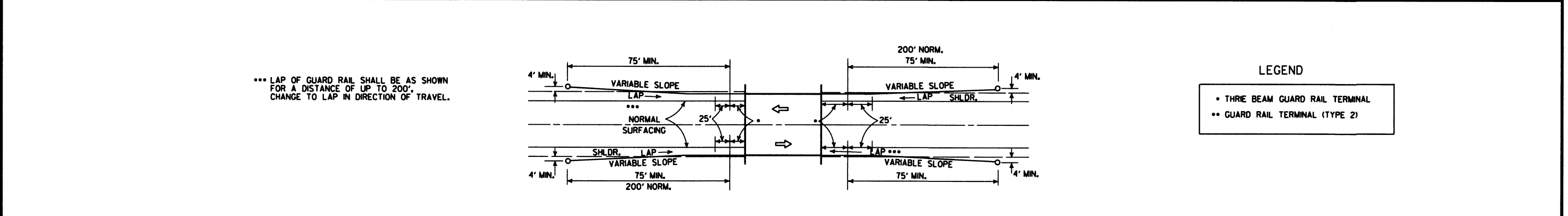
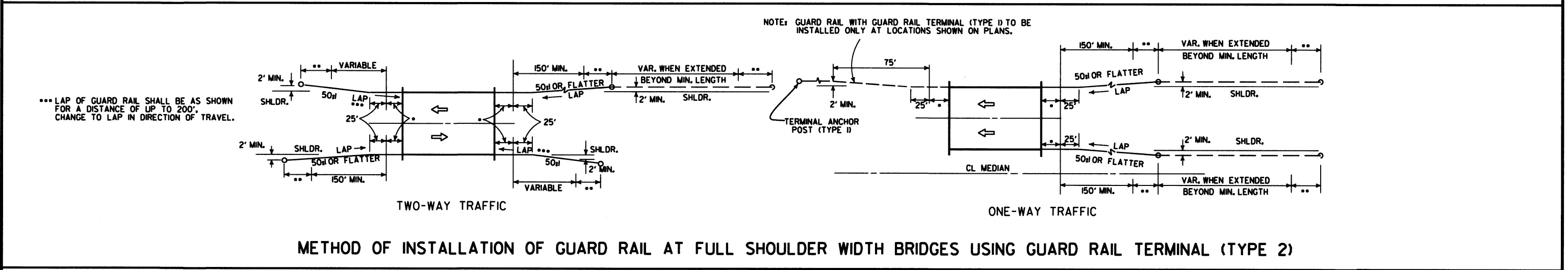
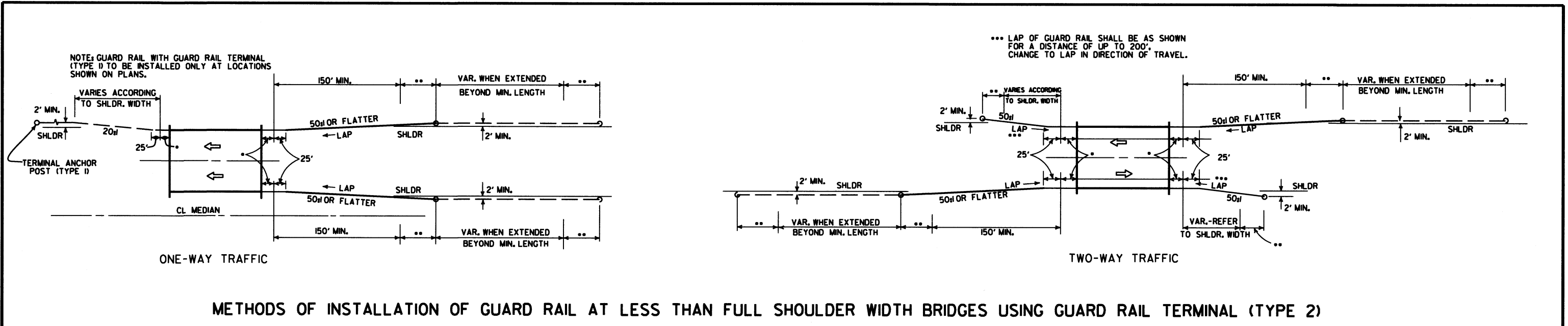
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DRWG. GR-8.

DATE	REVISION	FILED
8-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT; ADDED DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULVERT. DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	4-3-96
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	
10-18-95	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	541-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

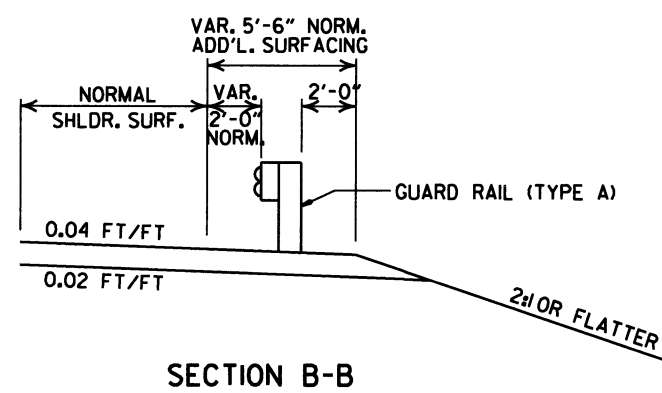
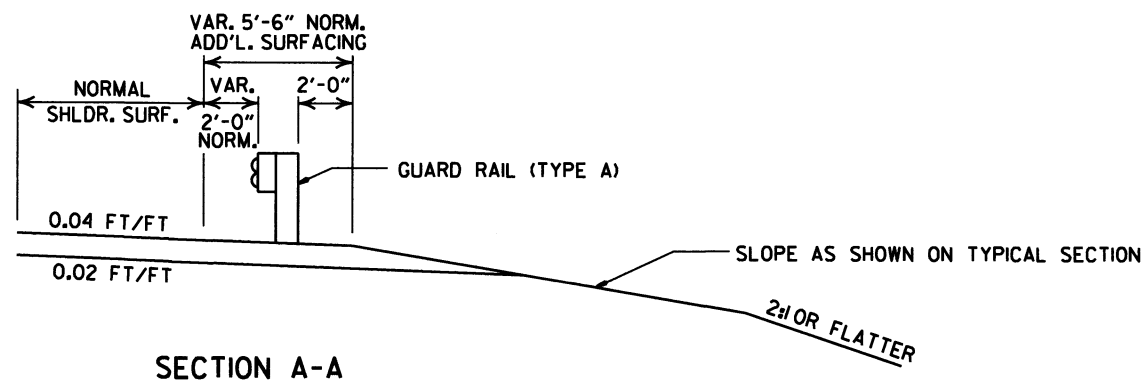
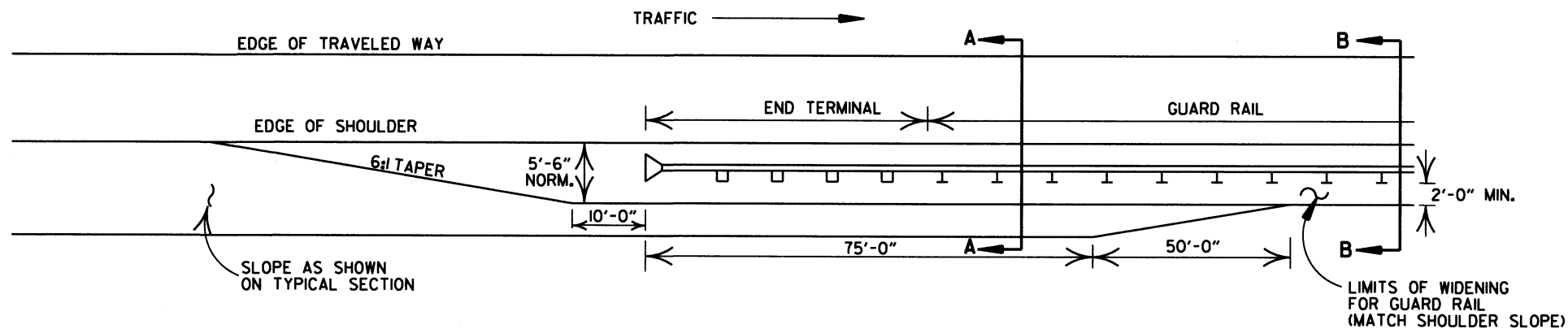
STANDARD DRAWING GR-8A



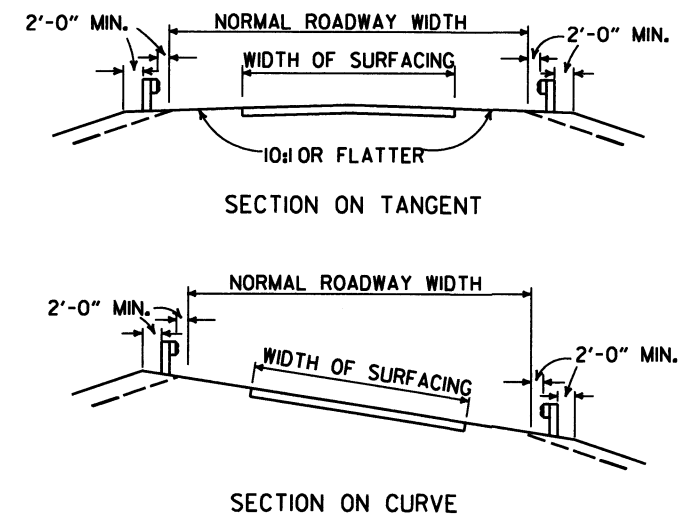
LEGEND

- THREE BEAM GUARD RAIL TERMINAL
- GUARD RAIL TERMINAL (TYPE 2)

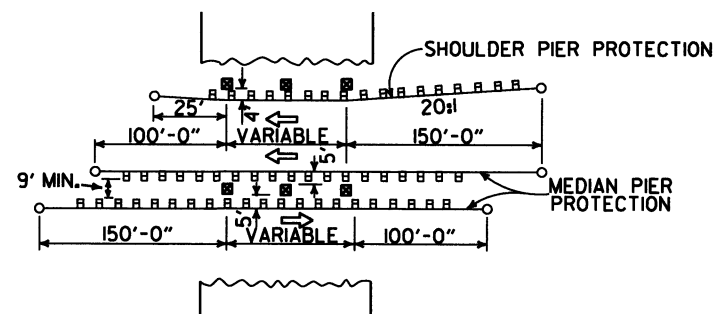
ARKANSAS STATE HIGHWAY COMMISSION		
GUARD RAIL DETAILS		
STANDARD DRAWING GR-9		
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	
DATE	REVISION	DATE FILED



DETAILS OF WIDENING FOR GUARD RAIL

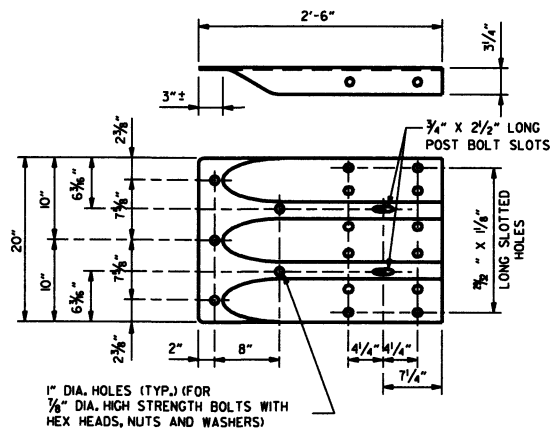


DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

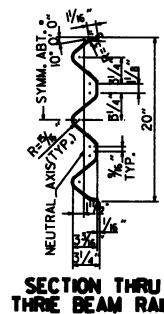


METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

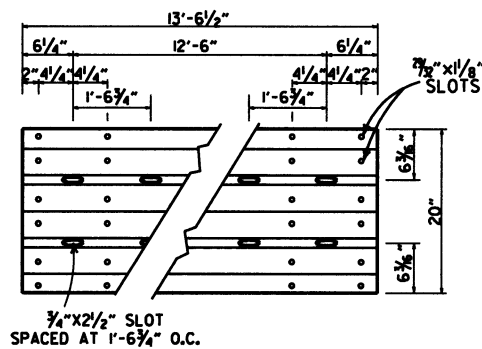
ARKANSAS STATE HIGHWAY COMMISSION			
GUARD RAIL DETAILS			
STANDARD DRAWING GR-9A			
4-17-08	MINOR REVISION		
8-10-05	DRAWN		
DATE	REVISION	DATE	FLM



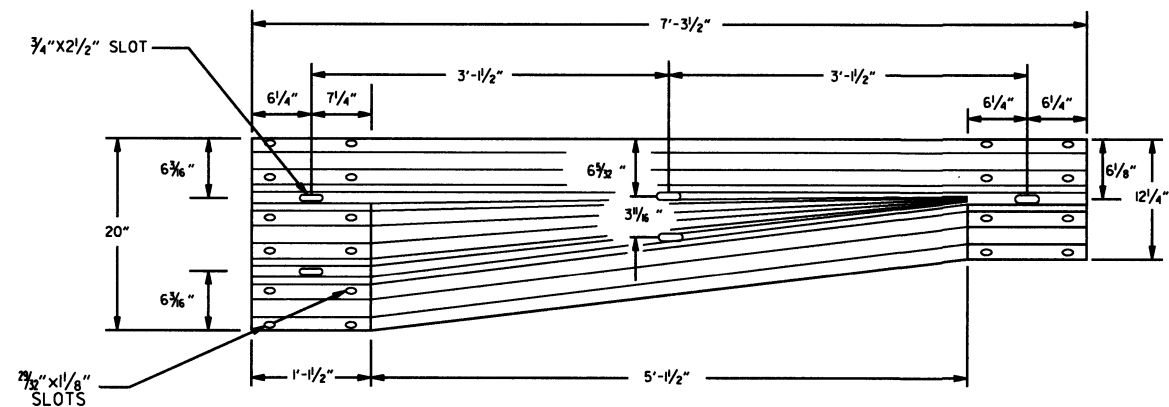
SPECIAL END SHOE



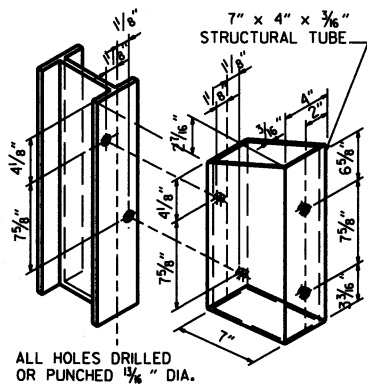
SECTION THRU THREE BEAM RAIL



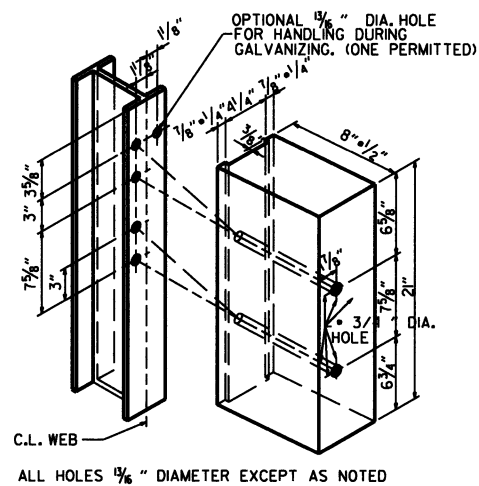
THRIE BEAM RAIL



TRANSITION SECTION

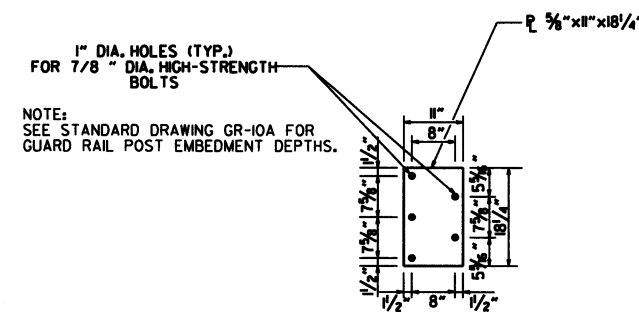


STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



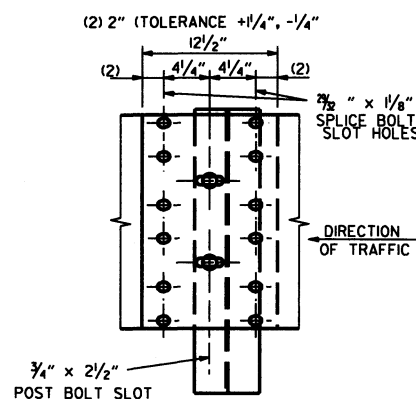
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 3/8" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

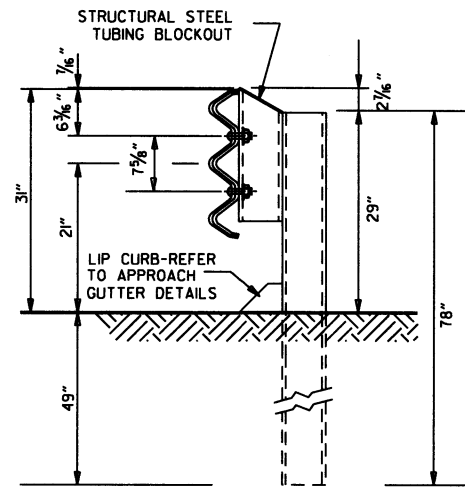
- THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.
- RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
- ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.
- ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.
- REFER TO STD. DRWG. GR-11 FOR POST DETAILS.
- USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.
- THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.
- WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILED
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGE ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

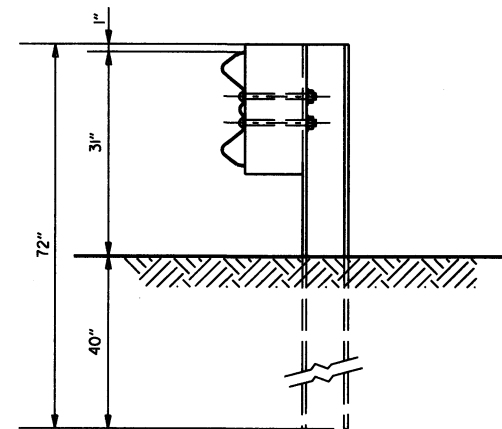
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

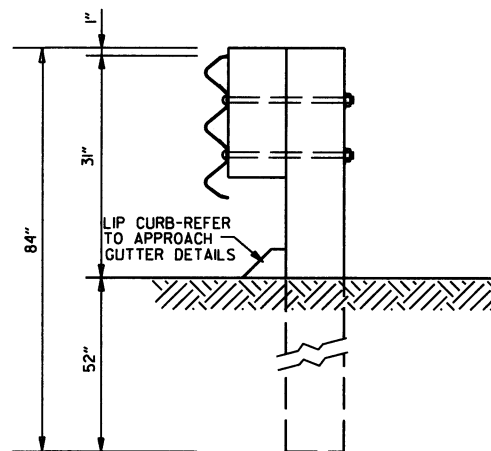
STANDARD DRAWING GR-10



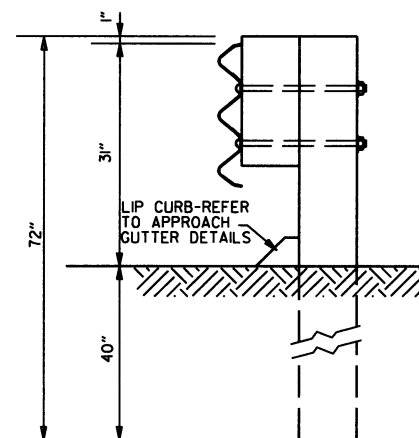
**THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7**



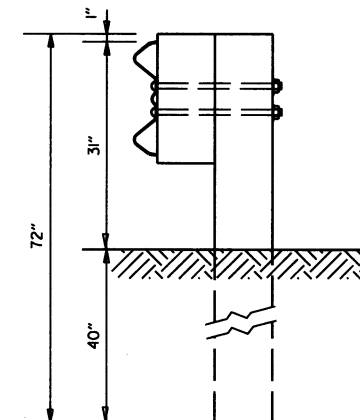
**W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8**



**THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6**



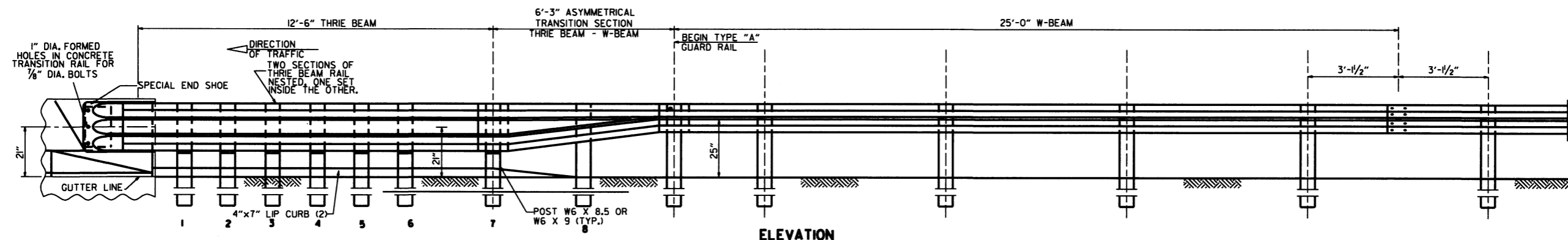
**THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7**



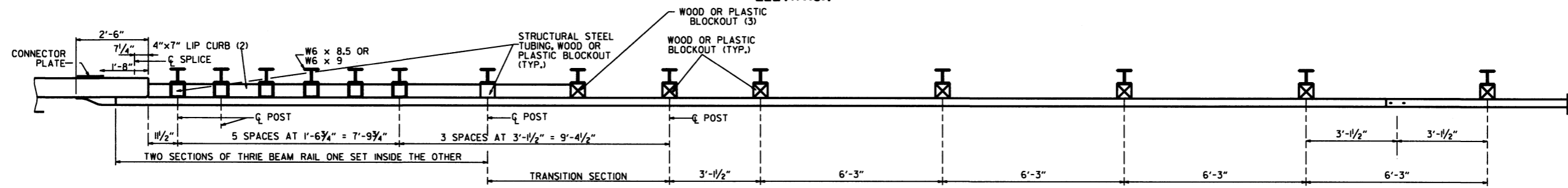
**W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8**

GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

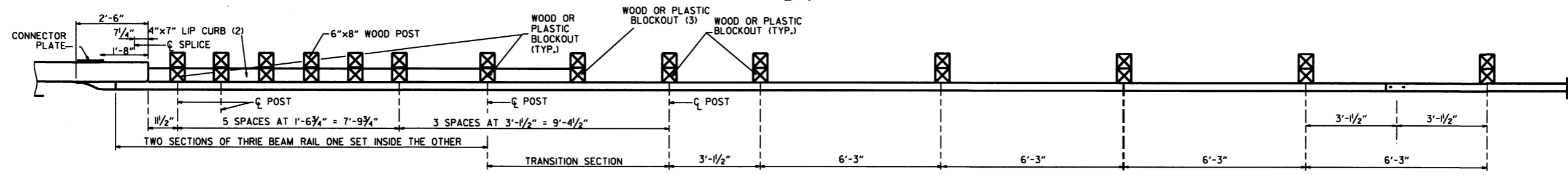
			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
			STANDARD DRAWING GR-II
8-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-II		
07-14-10	REVISED POST 8 DIMENSIONS		
8-29-07	ADDED PLASTIC BLOCKOUTS		
08-22-02	REVISED LIP CURB NOTE		
03-30-00	DRAWN & ISSUED		
DATE	REVISION		FILED



ELEVATION



PLAN



PLAN

- (1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
- (2) REFER TO APPROACH GUTTER DETAILS.
- (3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

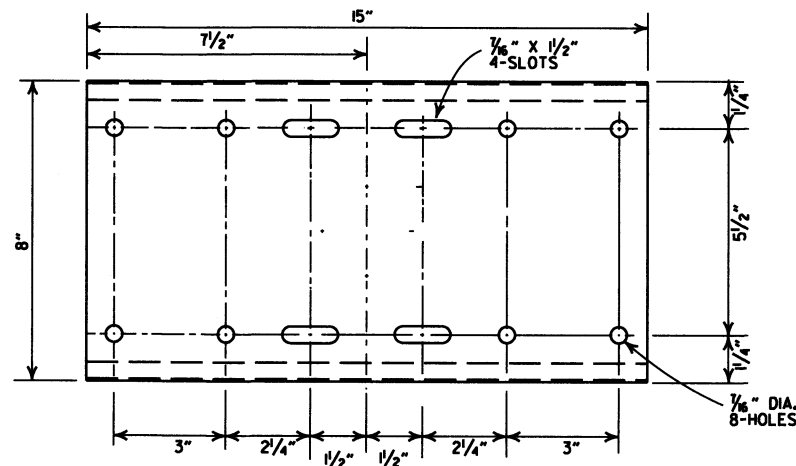
USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

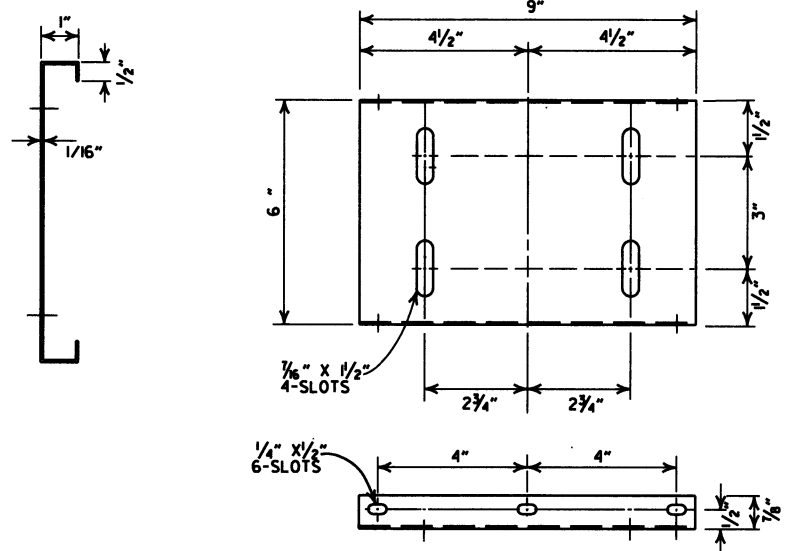
POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

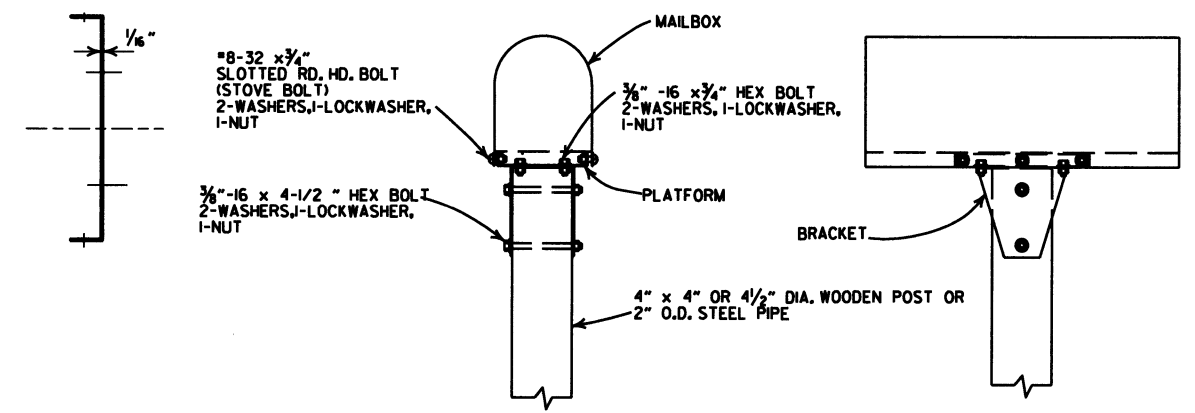
			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
			STANDARD DRAWING GR-12
8-16-17	RE-DRAWN FROM STD. DRWG. GR-10 & ISSUED		
DATE	REVISION	FILMED	



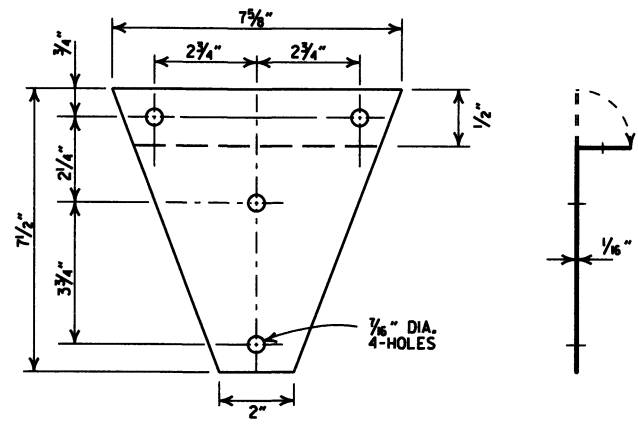
SHELF



PLATFORM

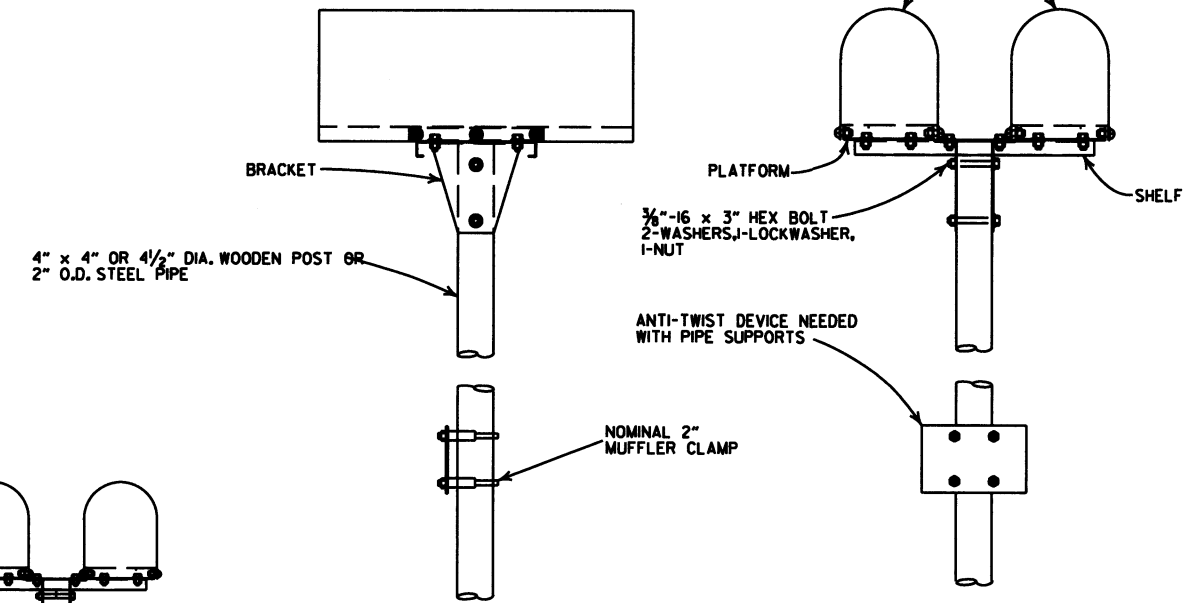


SINGLE INSTALLATION

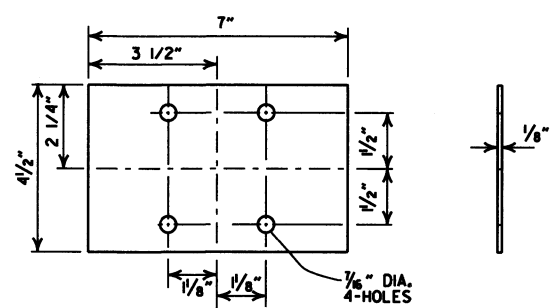


BRACKET

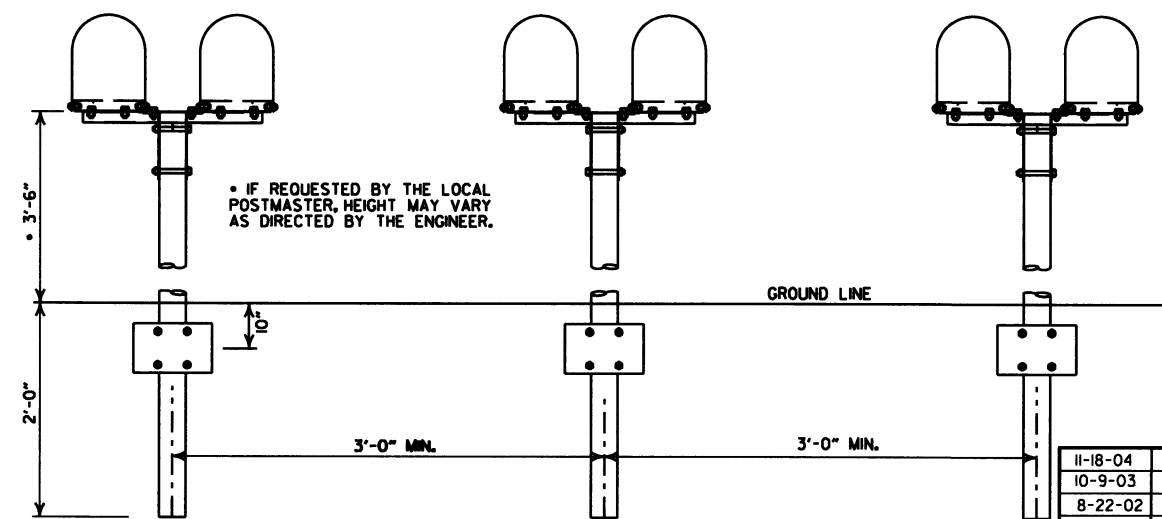
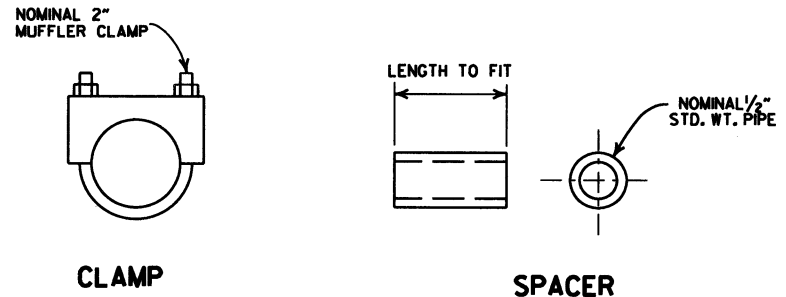
- GENERAL NOTES**
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
 2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
 3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED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



DOUBLE INSTALLATION



ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION

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

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS
STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA. INCHES	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43¾	44	26¾	27
42	51½	51	31¾	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87½	87
120	154	154	96¾	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

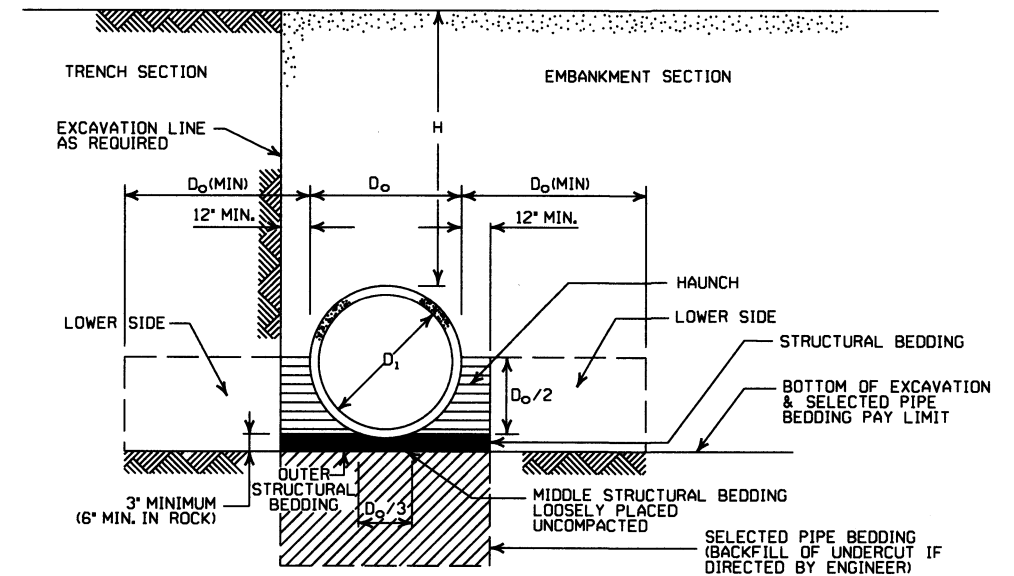
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

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

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

- * SM-3 WILL NOT BE ALLOWED.
- ** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

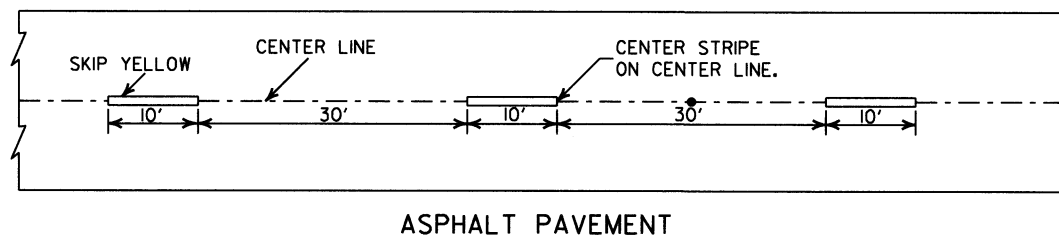
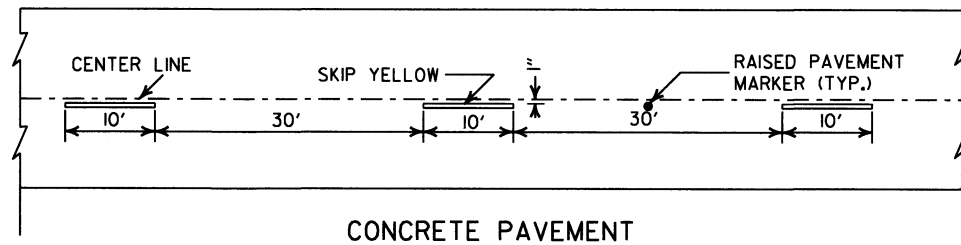
DATE	ISSUED	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1		
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS		
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE		
3-30-00	REVISED INSTALLATIONS		
11-06-97	ISSUED		

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

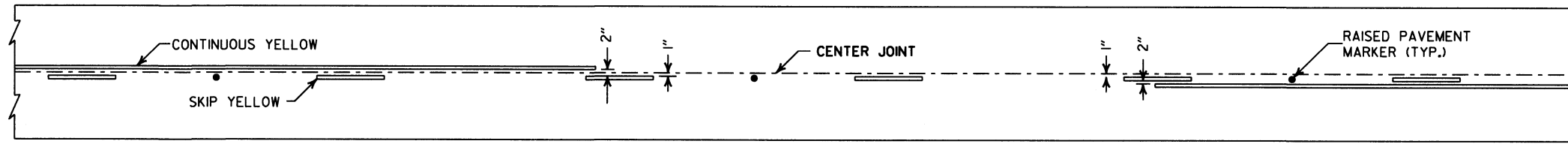




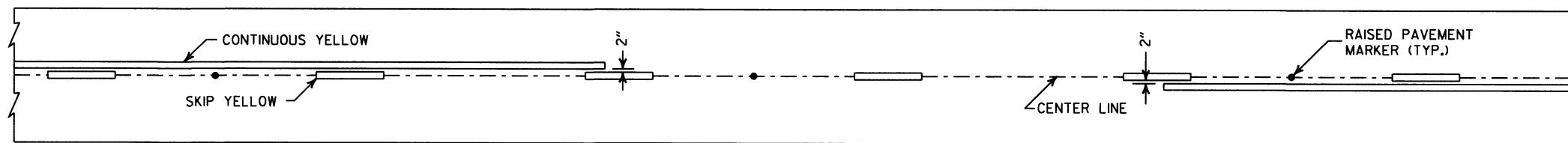
CONCRETE PAVEMENT

ASPHALT PAVEMENT

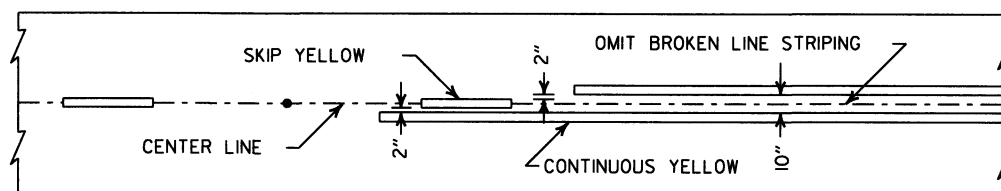
BROKEN LINE STRIPING



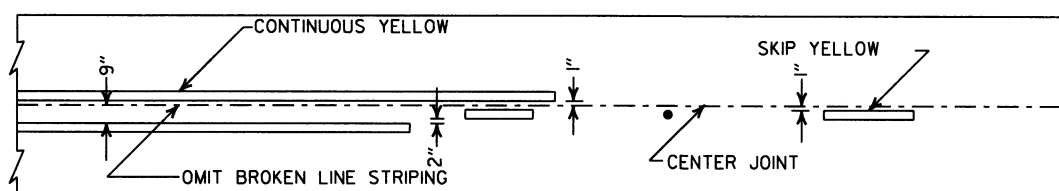
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

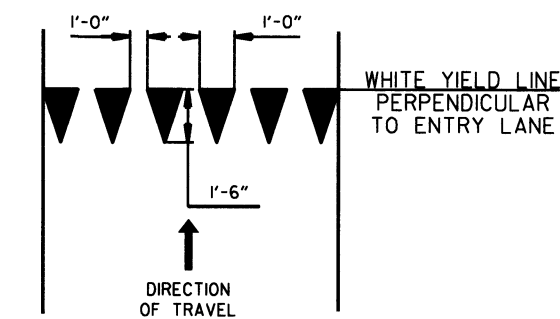


ASPHALT PAVEMENT

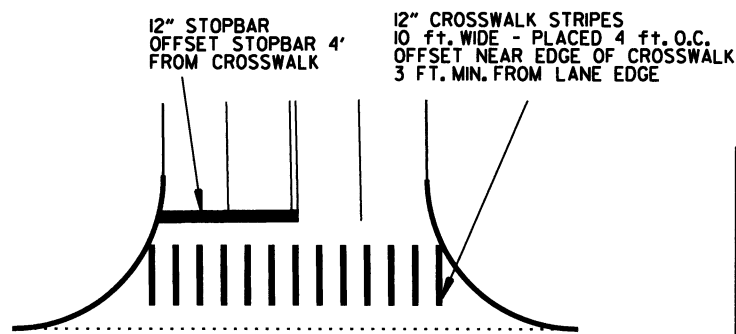


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL

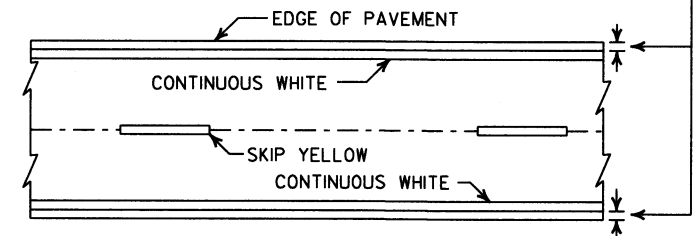


CROSSWALK AND STOPBAR DETAILS

NOTES:

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

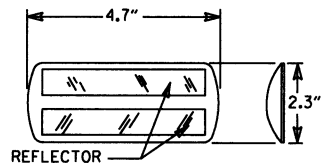
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

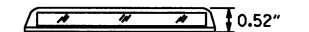
NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



PRISMATIC REFLECTOR

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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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'	N.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'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 30'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 45'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
9° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
10° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
11° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
12° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
13° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
14° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
15° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
16° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
17° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
18° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
19° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
20° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
21° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
22° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
23° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
24° 00'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	

D MAX = 24° 45'

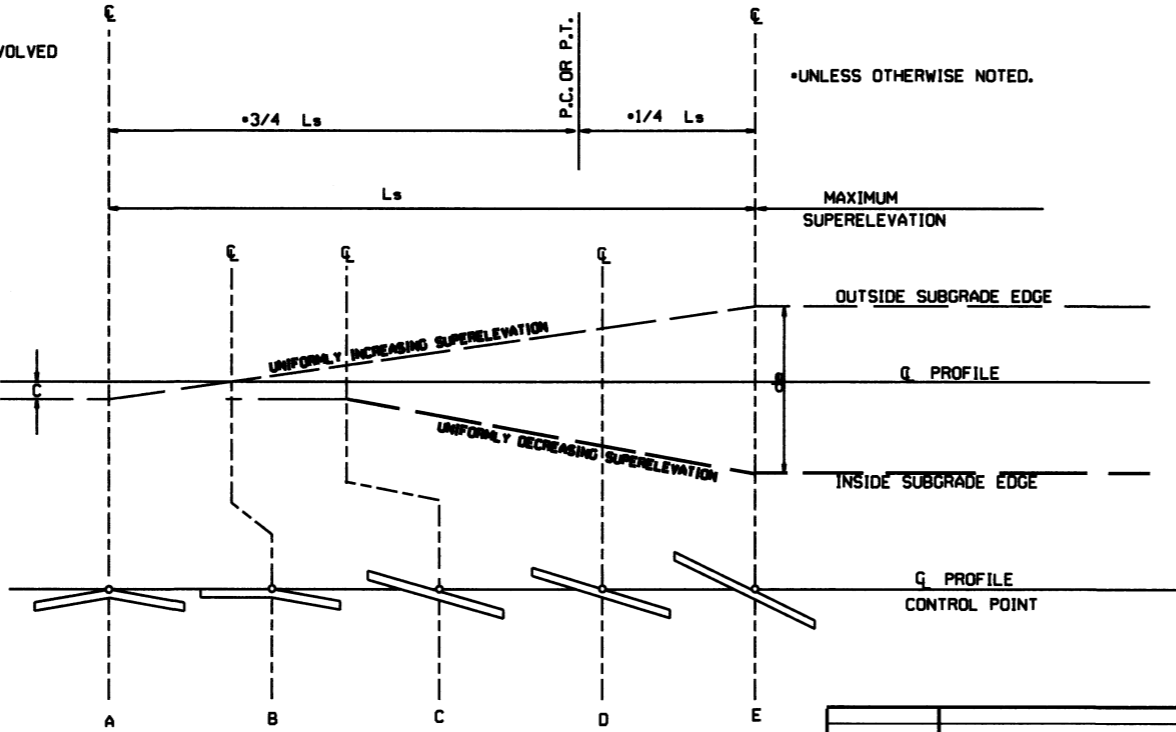
ABBREVIATIONS

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

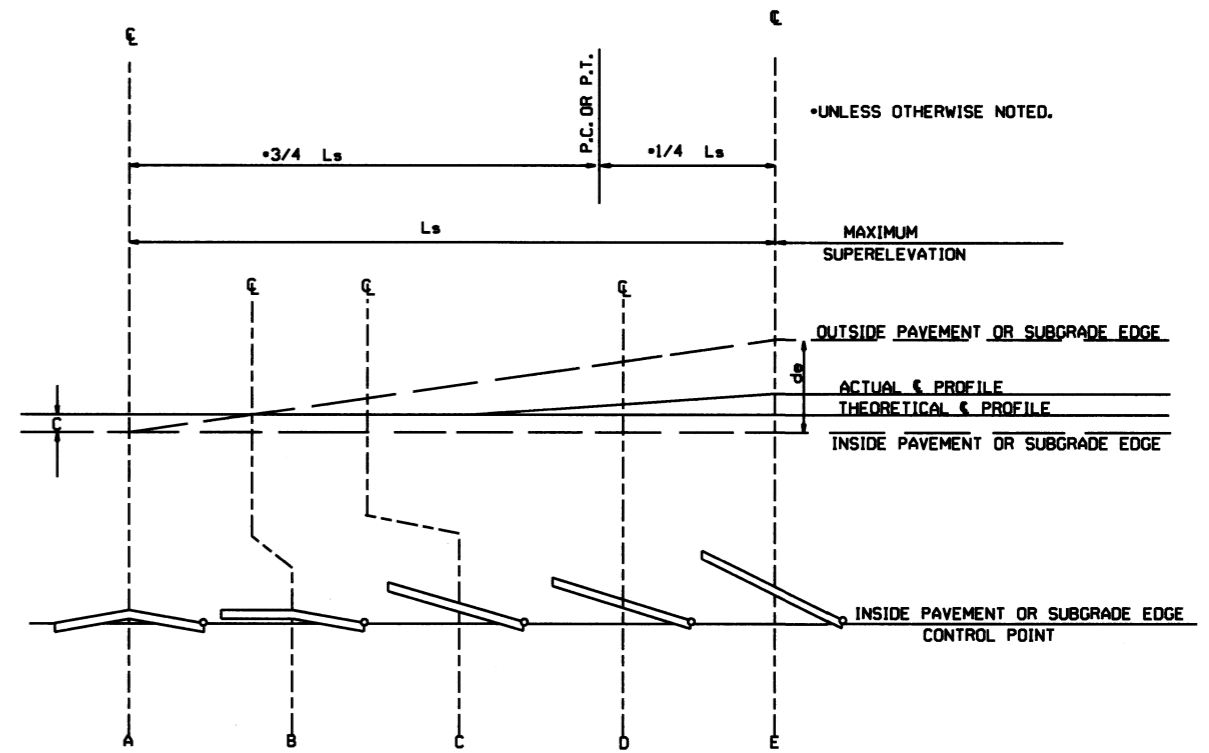
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:
 - 3 LANE UNDIVIDED - - - - - +20%
 - 4 LANE UNDIVIDED - - - - - +50%
 - 5 LANE UNDIVIDED - - - - - +80%
 - 6 LANE UNDIVIDED - - - - - +100%

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE


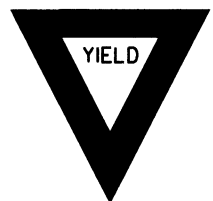
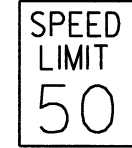


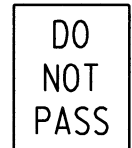



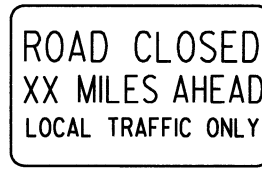
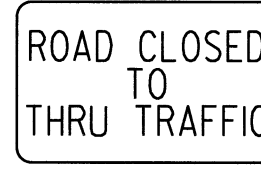

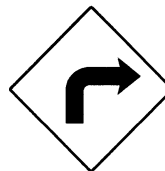
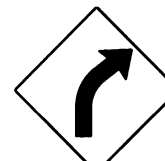





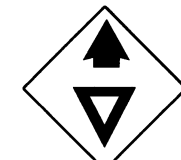
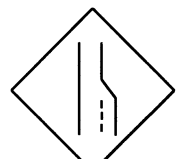












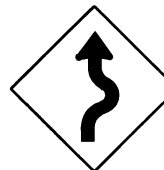



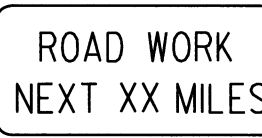
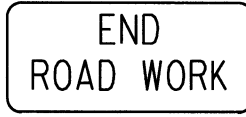
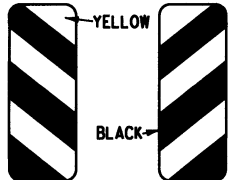


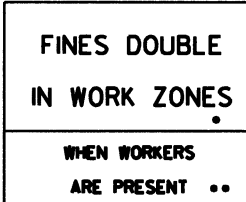


STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION	
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	
10-18-96 01-09-87 DATE	ADDED FORMULA ISSUED REVISION
534-1-9-87 DATE FILMED	
STANDARD DRAWING SE-2	

<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>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</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>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>W21-5a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</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>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>500 FEET</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>W1-4b</p>  <p>STD. 48"x48"</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>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

ADVANCE DISTANCES (XXXX)

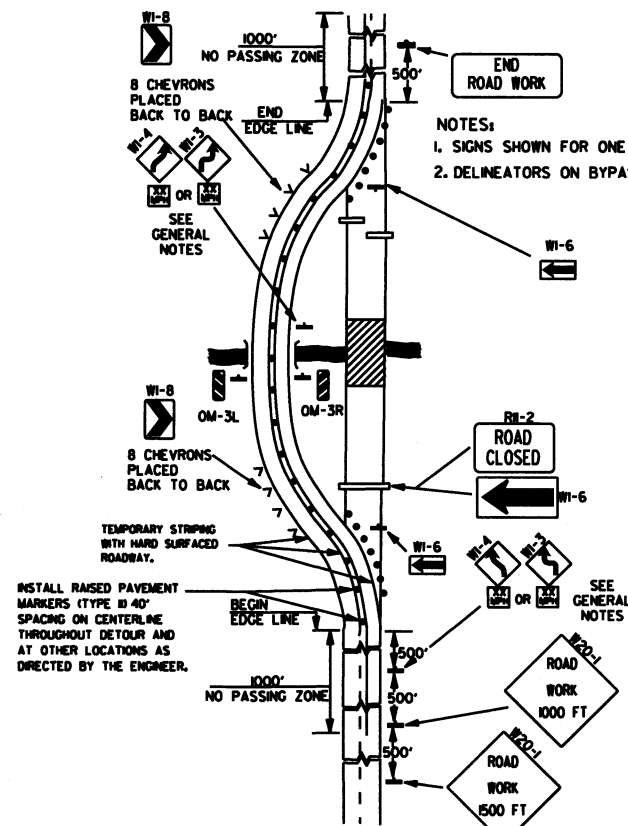
500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

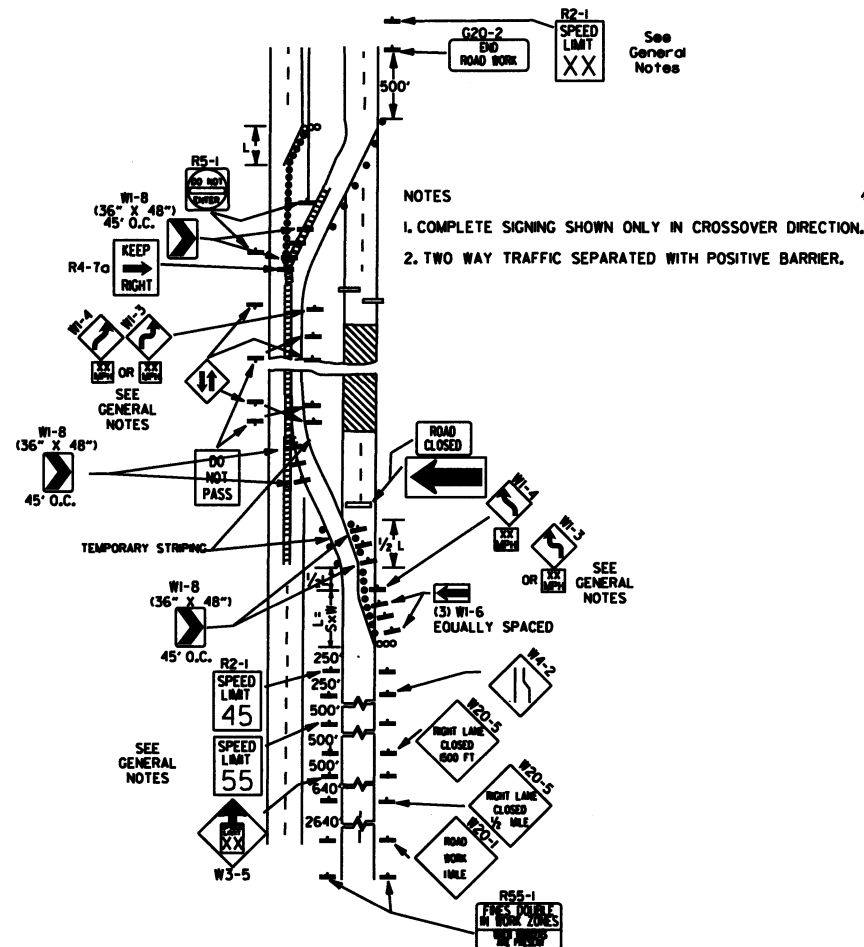
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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, DEFACTED, 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 SO. 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 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

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

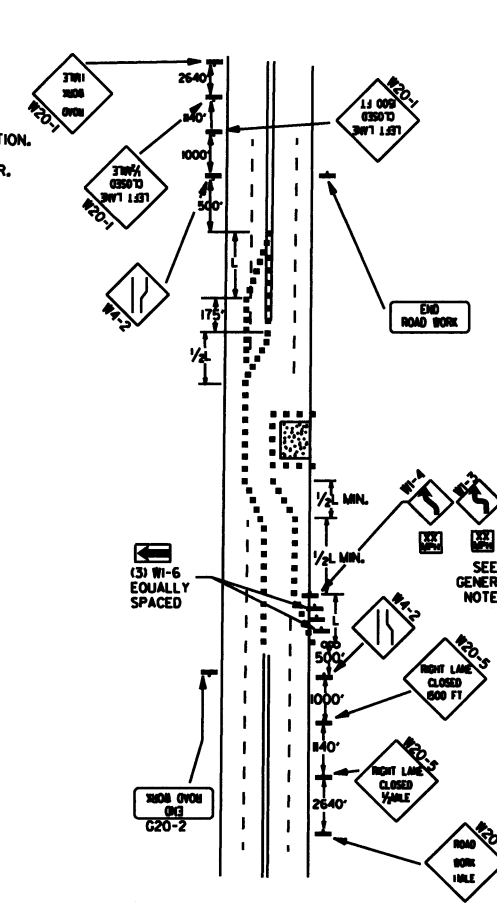
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
1-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
1-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
1-18-98	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	
DATE	REVISION	FILMED



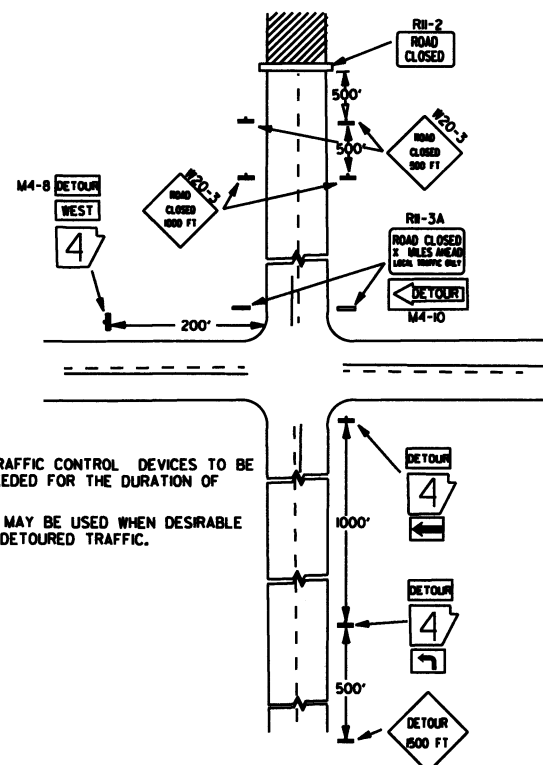
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



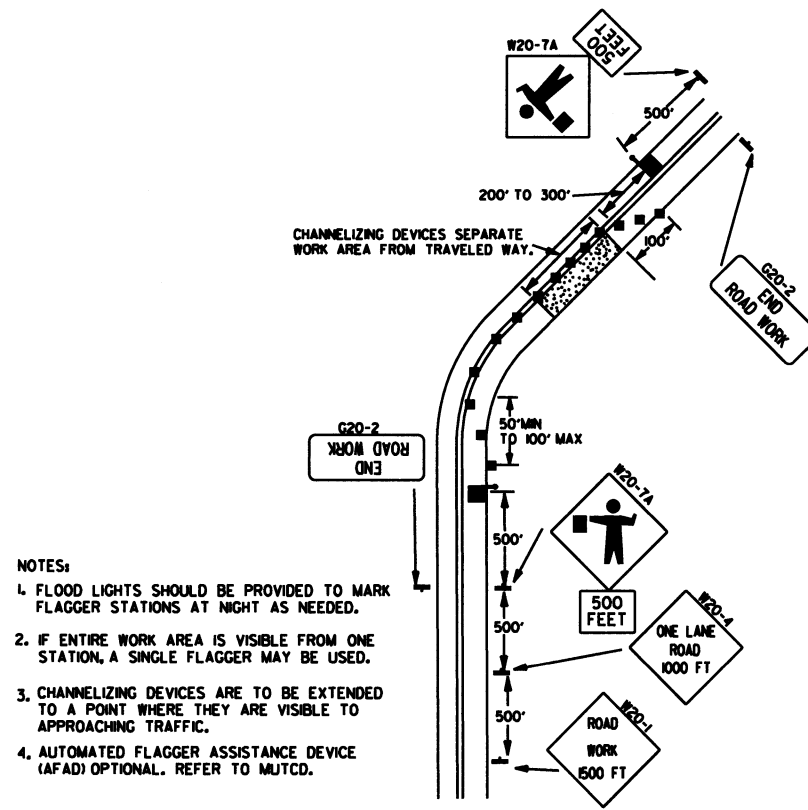
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



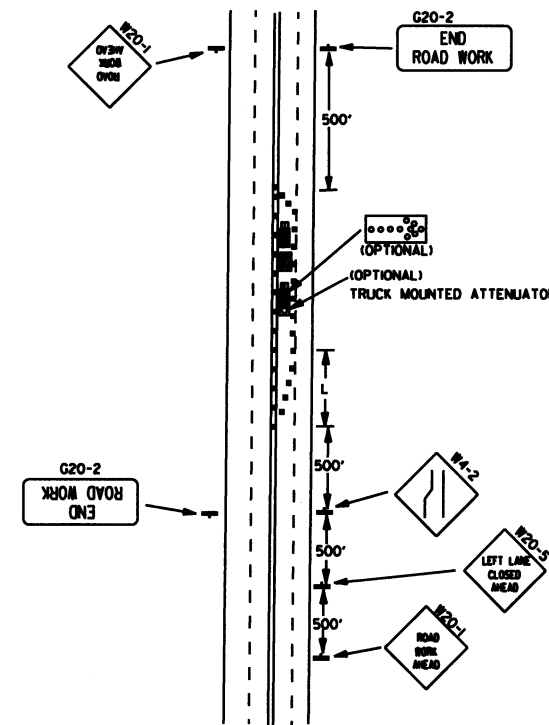
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

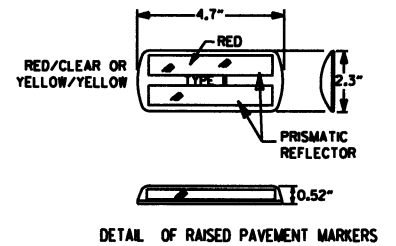


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

- KEY:
- FLAGGER
 - POSITIVE BARRIER
 - ARROW PANEL (IF REQUIRED)
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
 - RAISED PAVEMENT MARKER



TYPICAL ADVANCE WARNING SIGN PLACEMENT

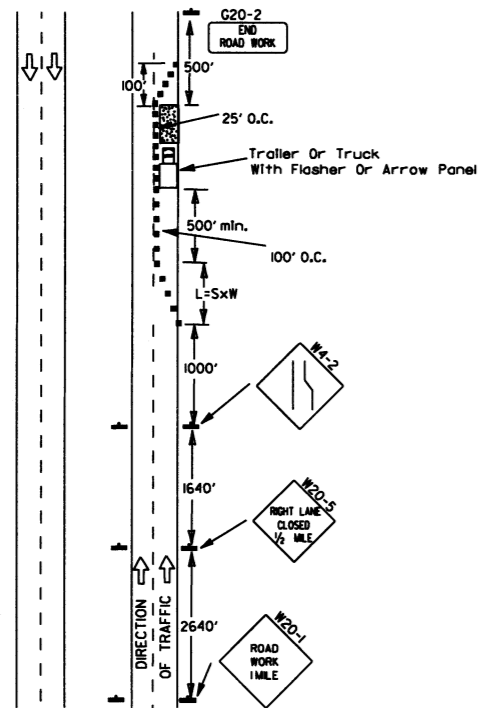
TAPER FORMULAE:

- $L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 - $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
- WHERE:
- L = MINIMUM LENGTH OF TAPER.
 - S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 - W = WIDTH OF OFFSET.

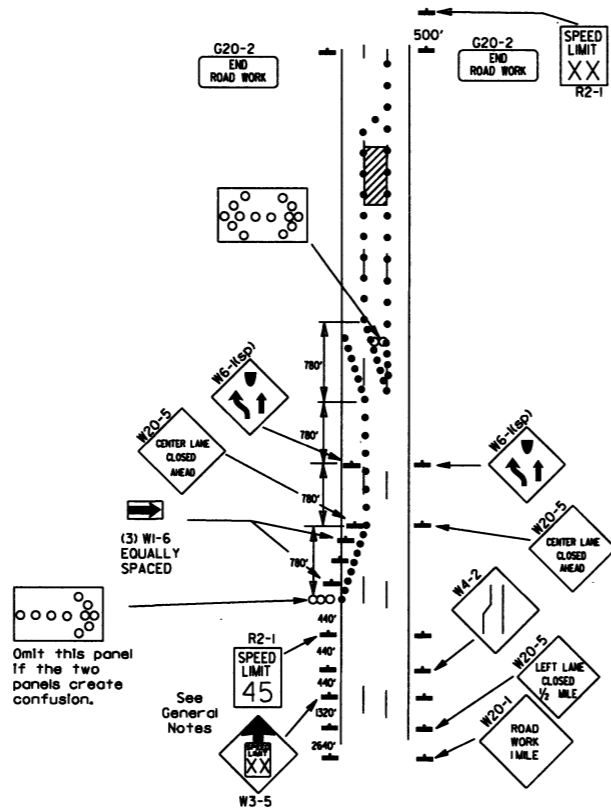
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-K55I SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXXI SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-K45I SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXXI SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILED
9-2-85	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-2-85	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-80	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R25-1	
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 VL MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	



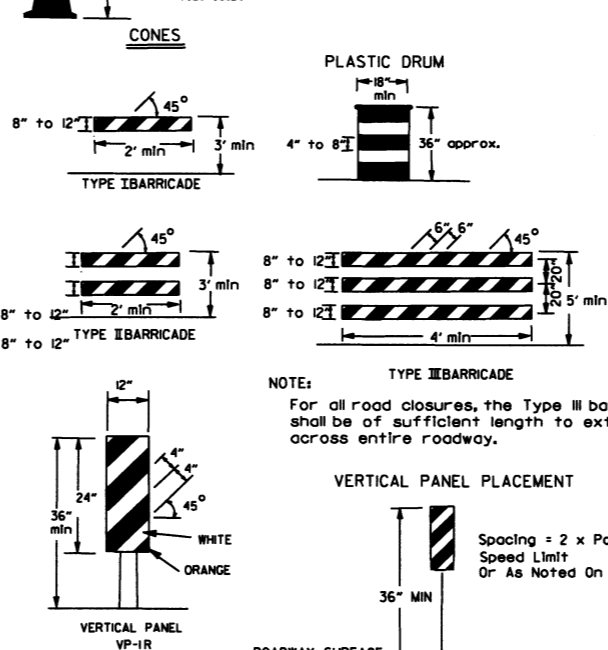
(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



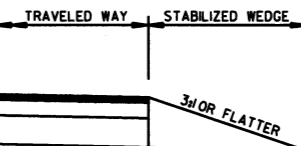
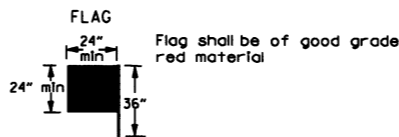
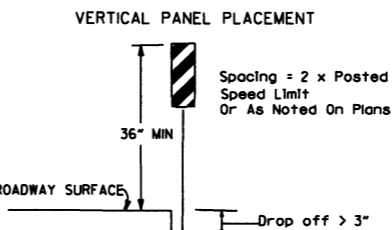
(B) Typical application - 3-lane oneway roadway where center lane is closed.

Channelizing devices

When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

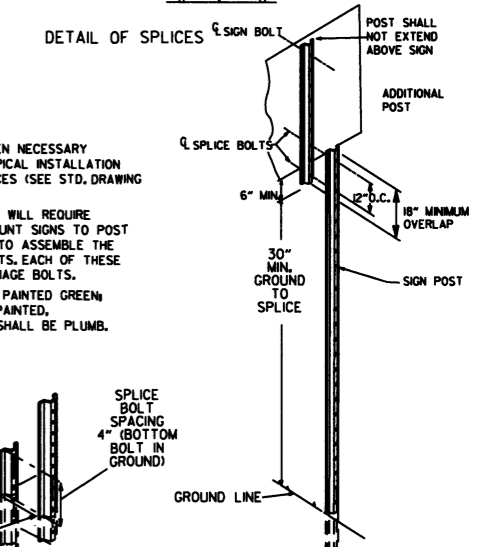
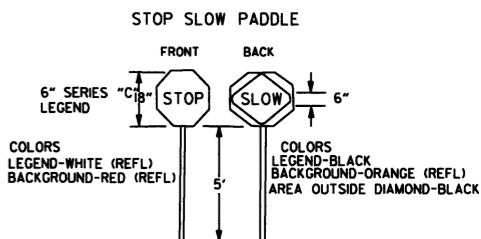


NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



STABILIZED WEDGE

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



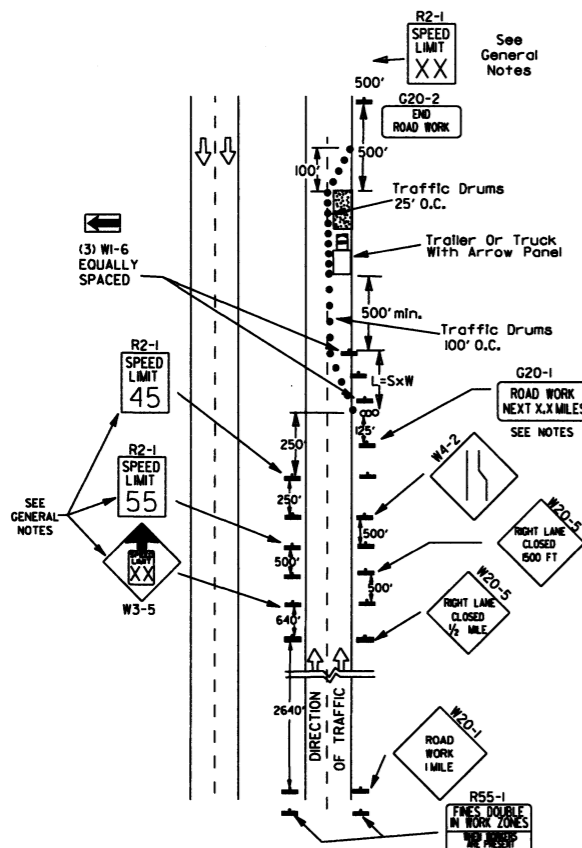
NOTE: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2) NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.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

KEY:

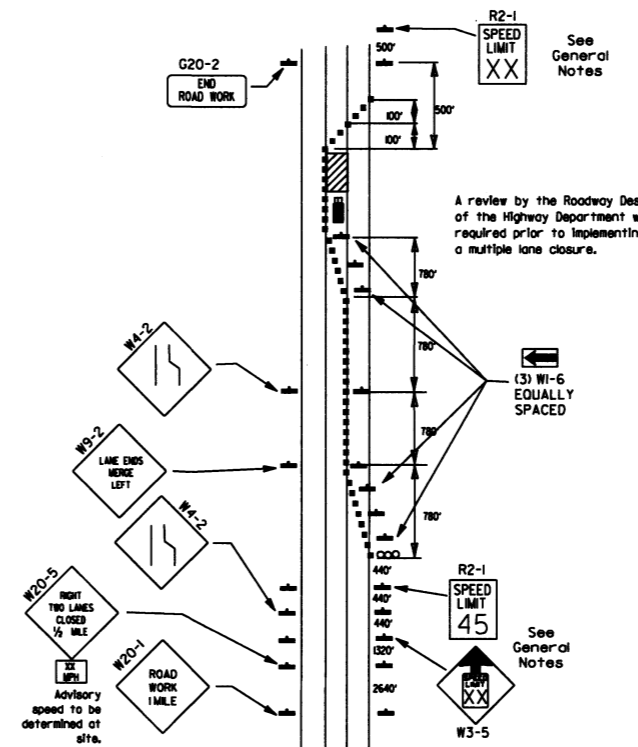
- Arrow Panel (if Required)
- Channelizing Device
- Traffic drum

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(K55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(KXX) 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(K65) 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(KXX) 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 (1/2 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.



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



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

TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽²⁾
> 12"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	PRECAST CONCRETE BARRIER ⁽³⁾ & EDGE LINES
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER ⁽³⁾ & EDGE LINES	PRECAST CONCRETE BARRIER ⁽³⁾ & EDGE LINES

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

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

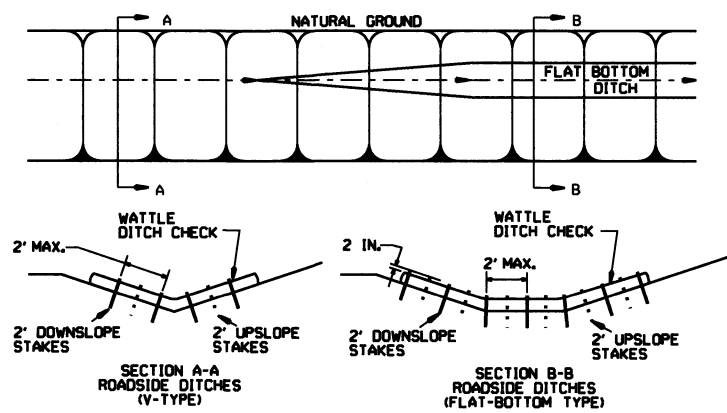
GENERAL NOTES:

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

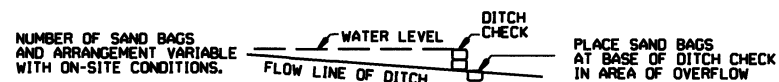
DATE	REVISION	FILMED
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96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

GENERAL NOTES

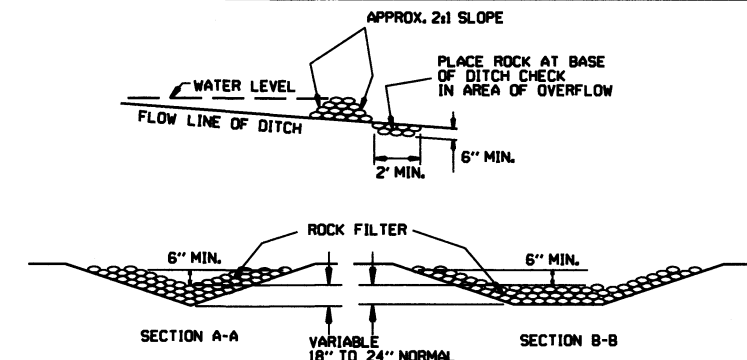
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



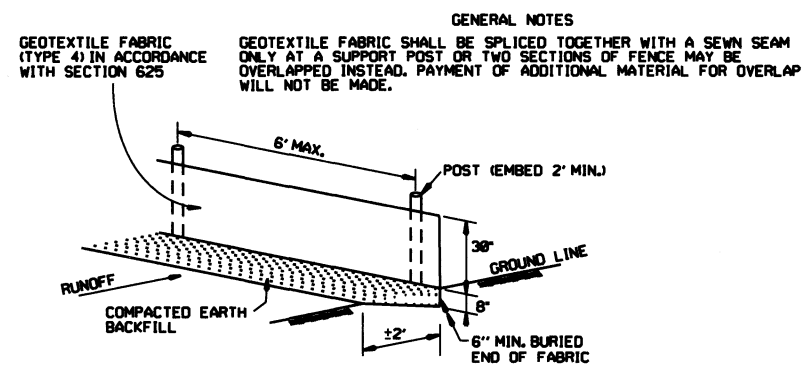
WATTLE DITCH CHECK (E-1)



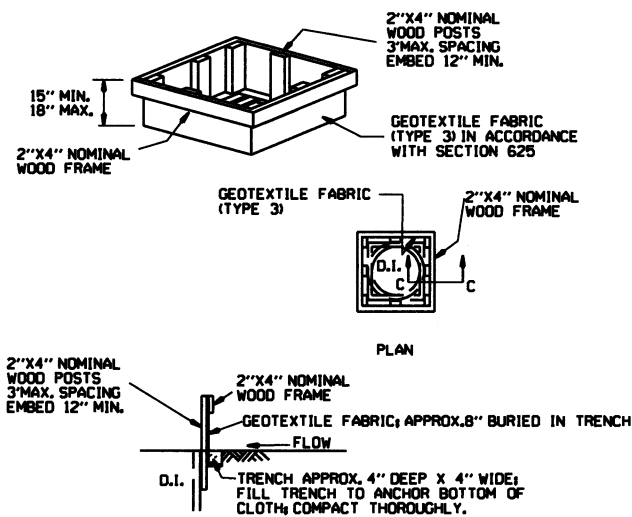
SAND BAG DITCH CHECK (E-5)



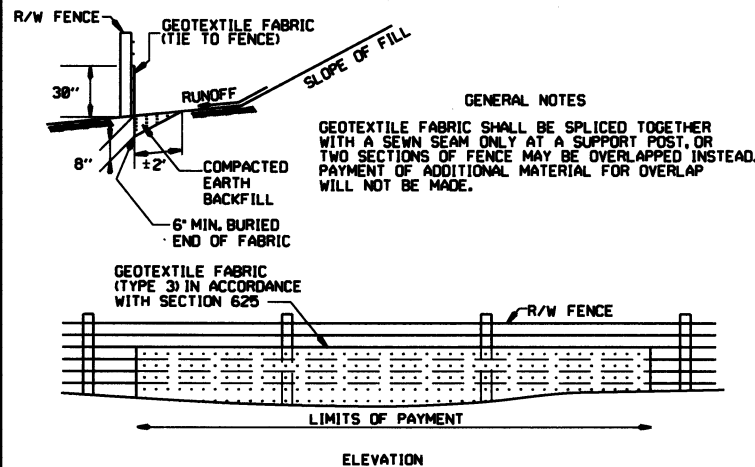
ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)



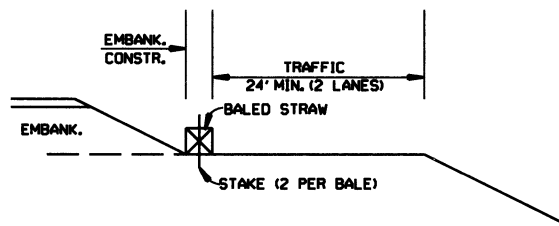
DROP INLET SILT FENCE (E-7)



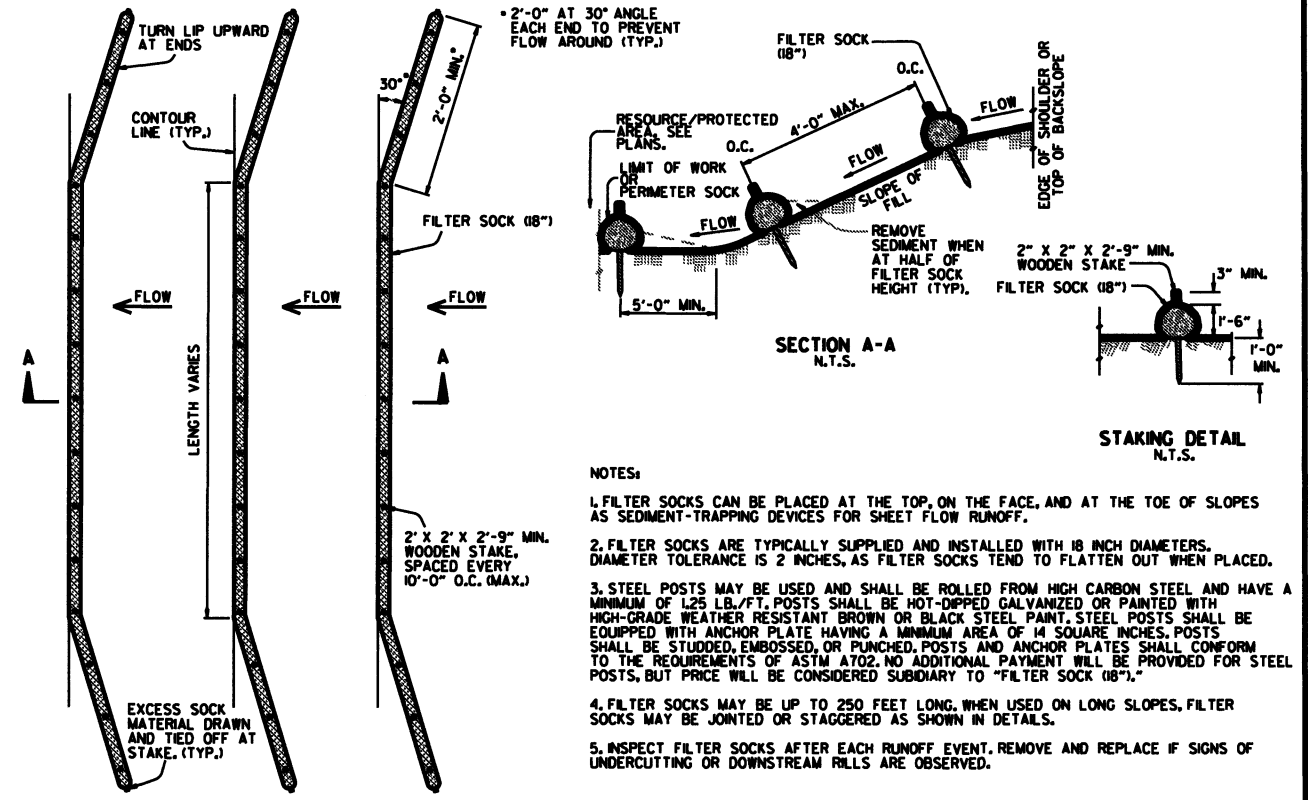
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

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



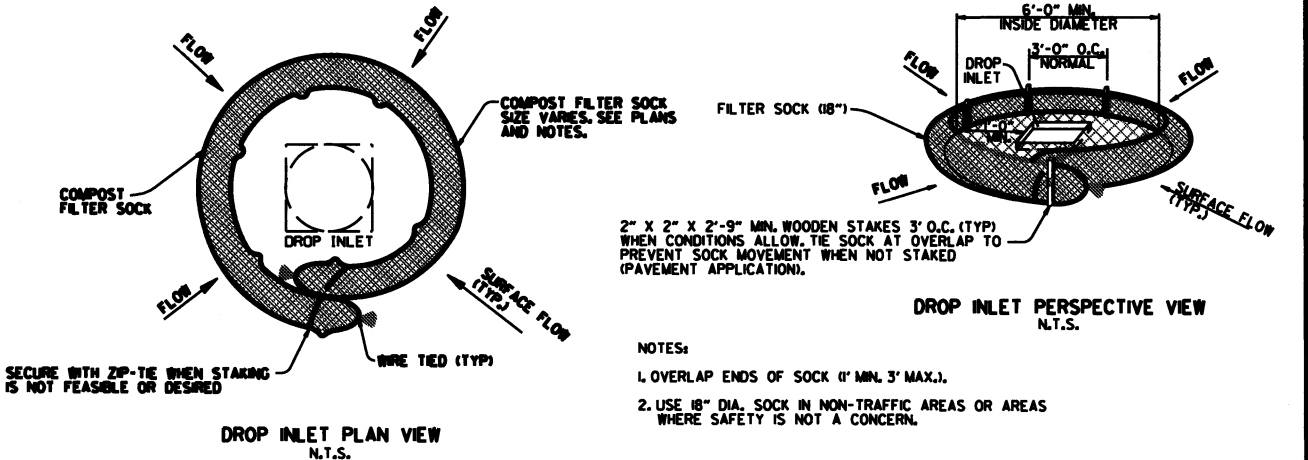
BALED STRAW FILTER BARRIER (E-2)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 125 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK 08".
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.
5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.



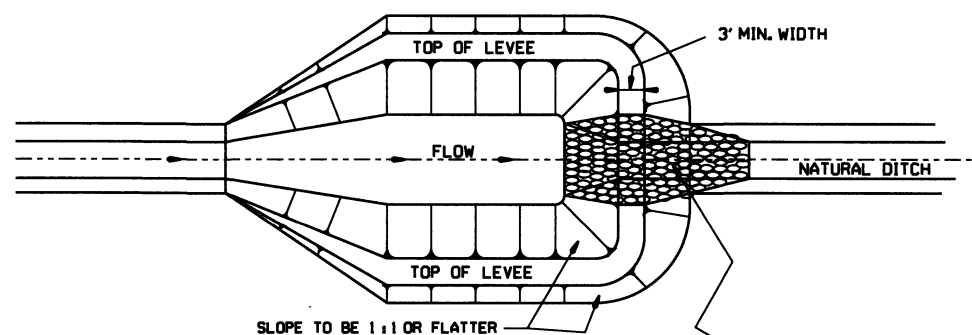
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

NOTES:

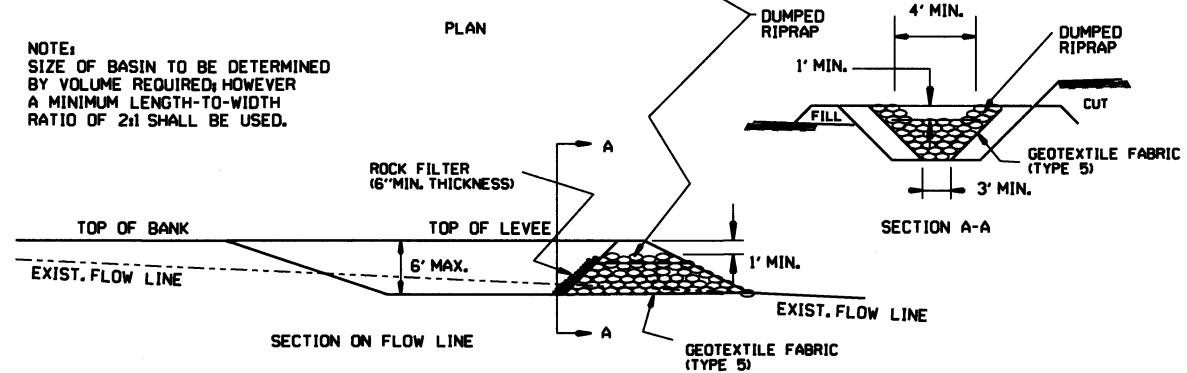
1. OVERLAP ENDS OF SOCK (1\"/>
2. USE 18\"/>

11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-22-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 1 1/2\"/>	
06-02-94	REVISED E-1, 4, 7 & 11 DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.O.M.	298-7-28-76
DATE	REVISION	FILED

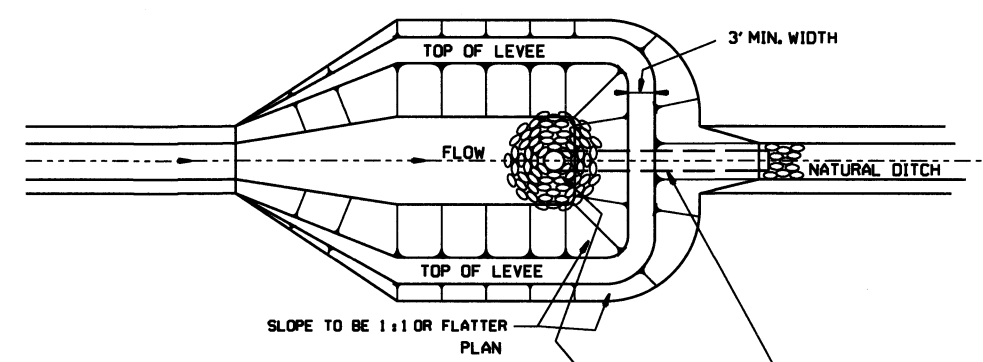
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1



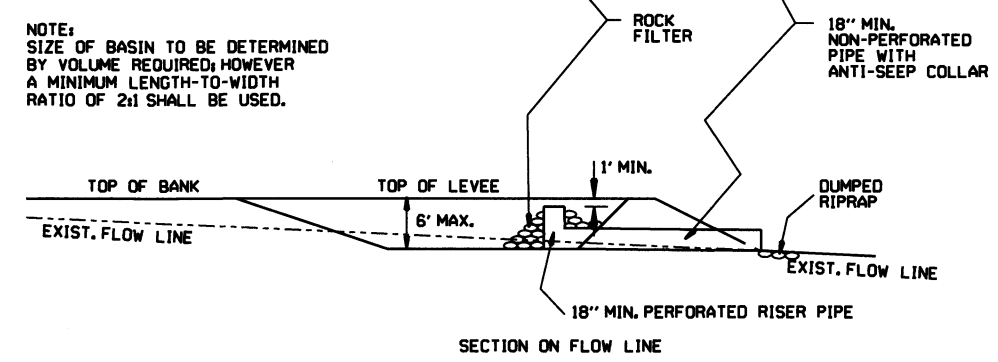
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



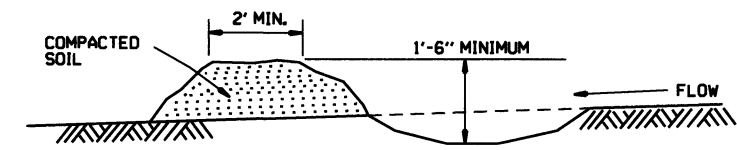
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

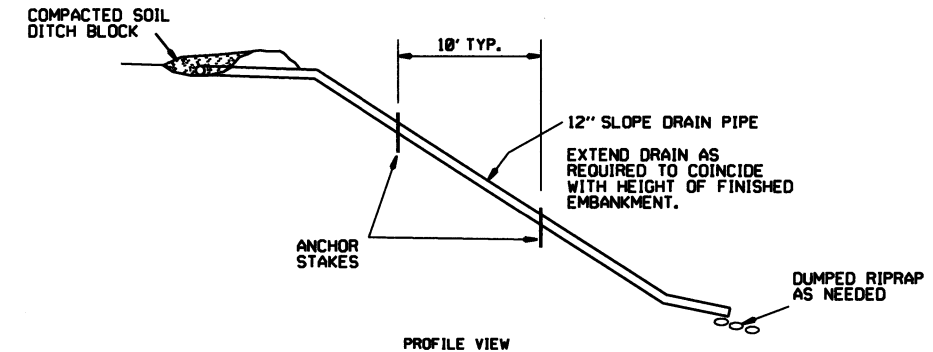
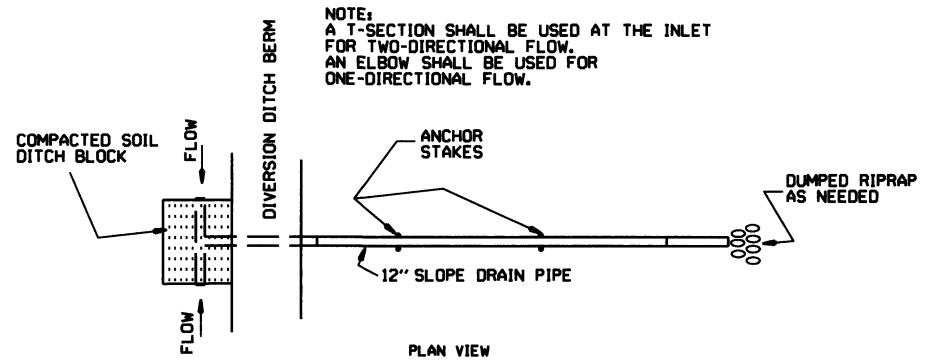


SEDIMENT BASIN WITH PIPE OUTLET (E-10)

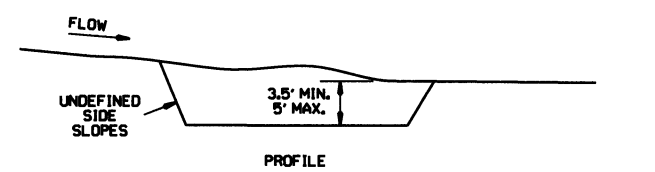
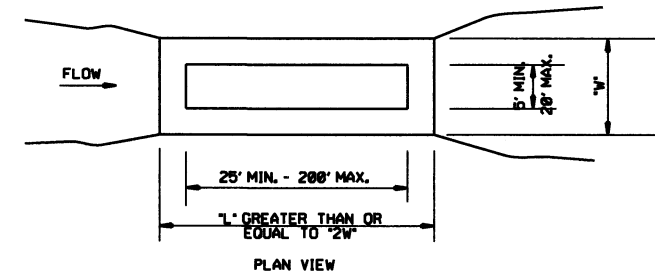


DIVERSION DITCH (E-8)

NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW.
AN ELBOW SHALL BE USED FOR
ONE-DIRECTIONAL FLOW.



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

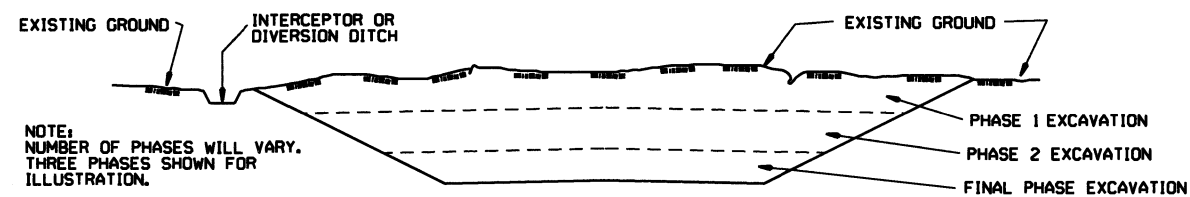
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION
 CONTROL DEVICES
 STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



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

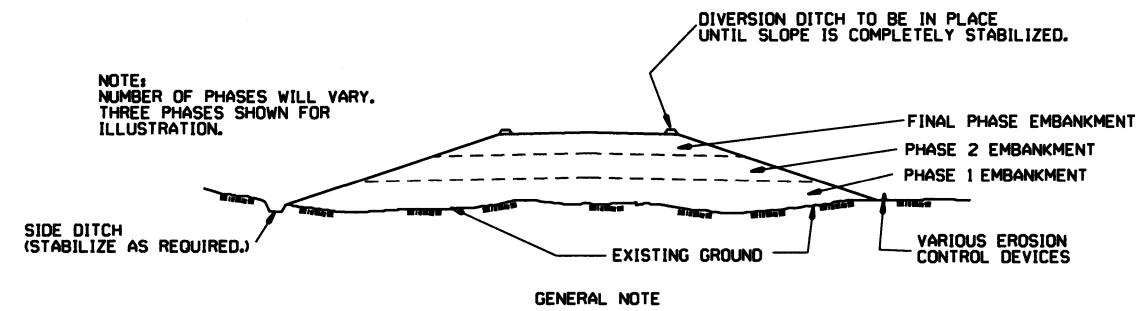
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



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

GENERAL NOTE

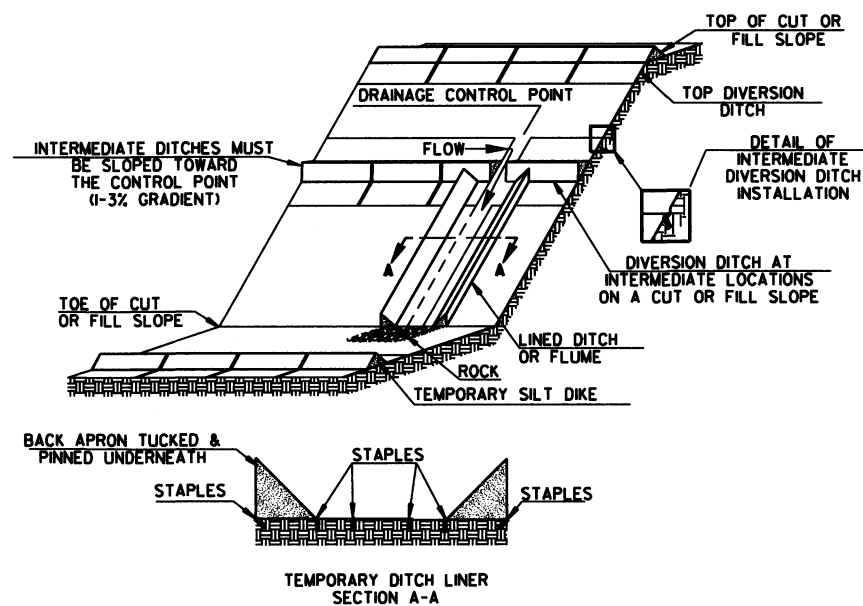
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

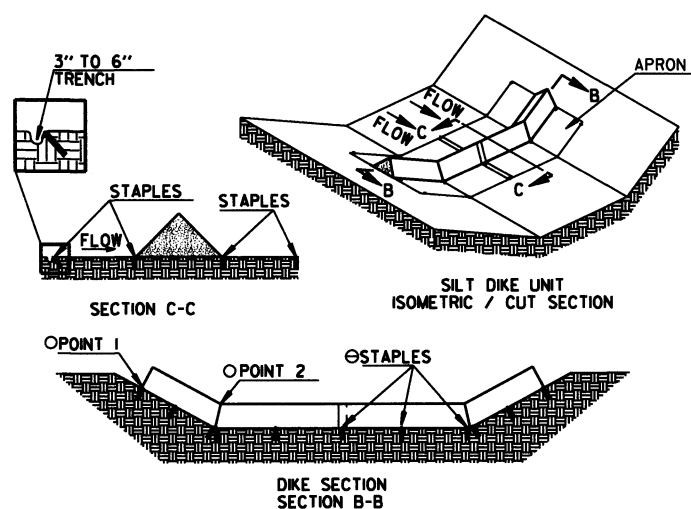
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

ARKANSAS STATE HIGHWAY COMMISSION		
TEMPORARY EROSION CONTROL DEVICES		
11-03-94	CORRECTED SPELLING	6-2-94
6-2-94	Drawn & Issued	FILMED
DATE	REVISION	

STANDARD DRAWING TEC-3

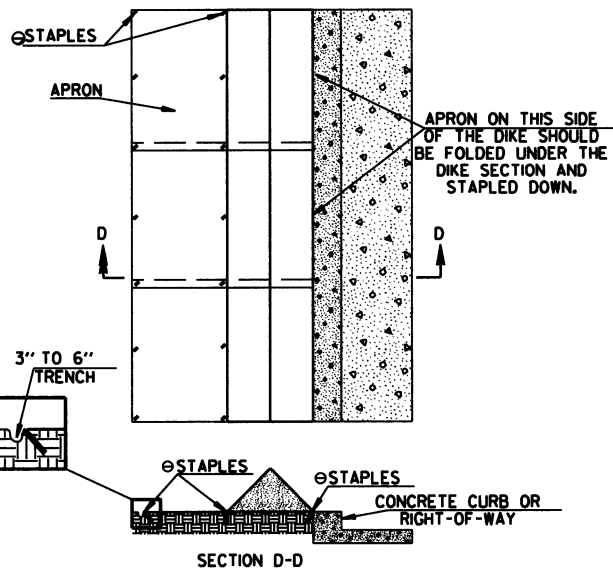


TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER

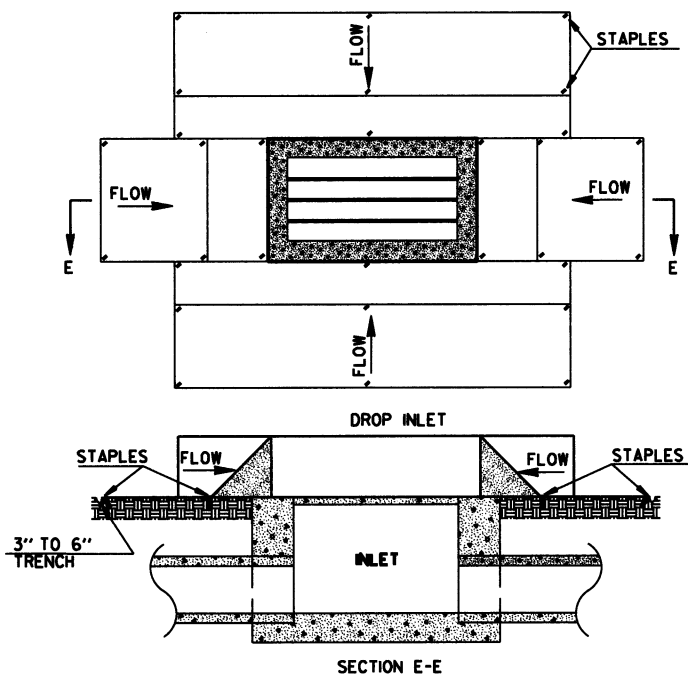


TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

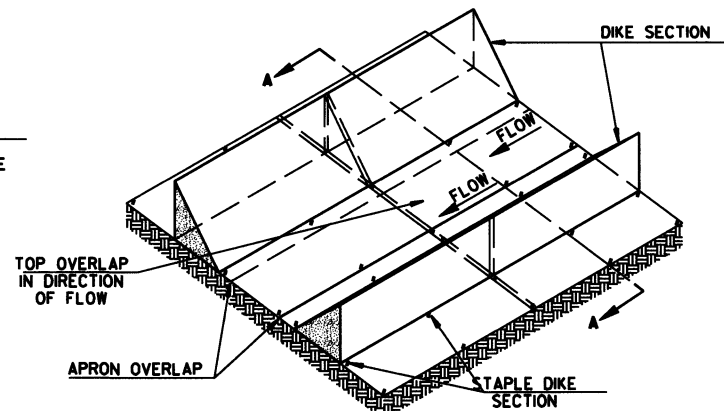
- POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ⊗ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



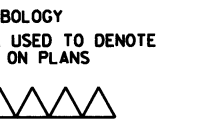
TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

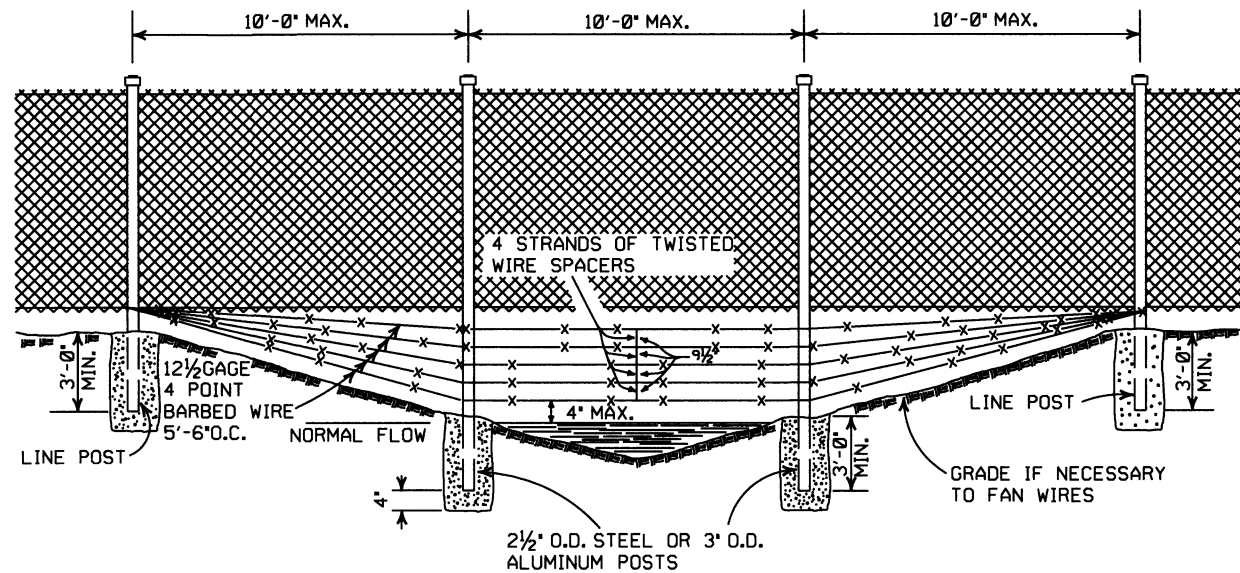
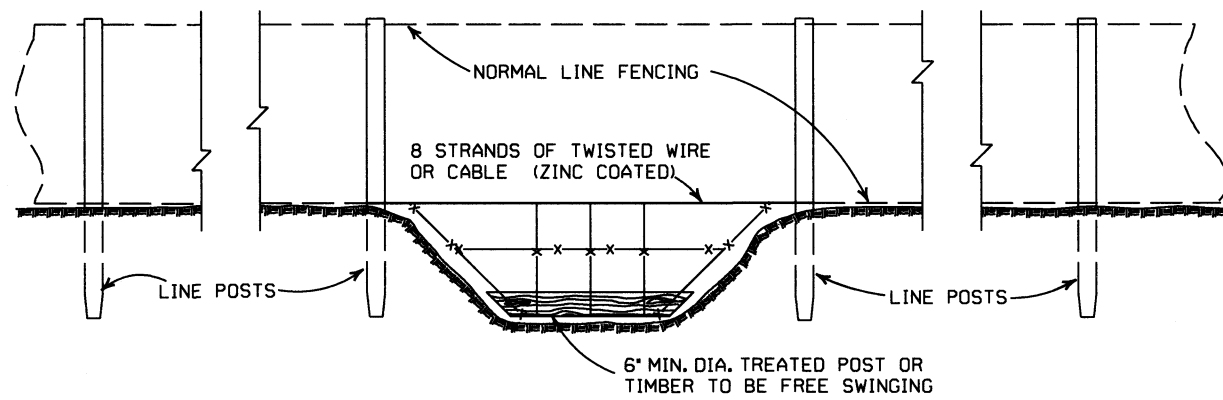
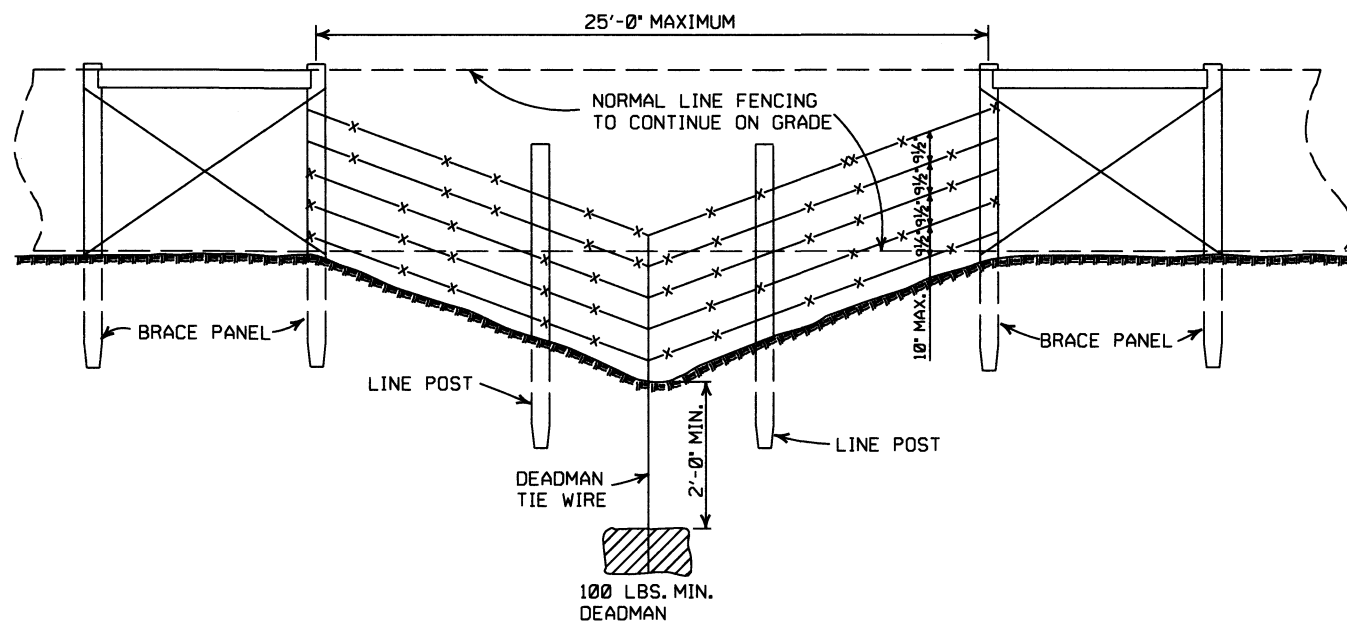
GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.
2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.
3. THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.



NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
		STANDARD DRAWING TEC-4	
7-26-12	REVISED GENERAL NOTE 2.		
12-15-11	ISSUED		
DATE	REVISION		FILMED



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.

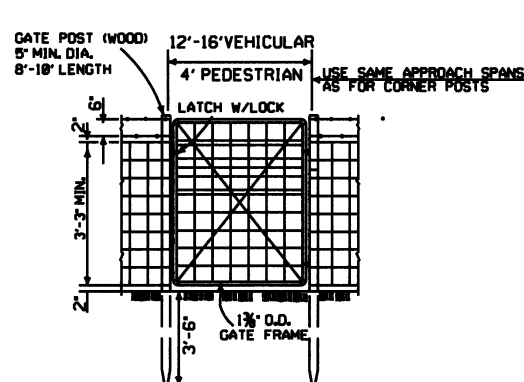
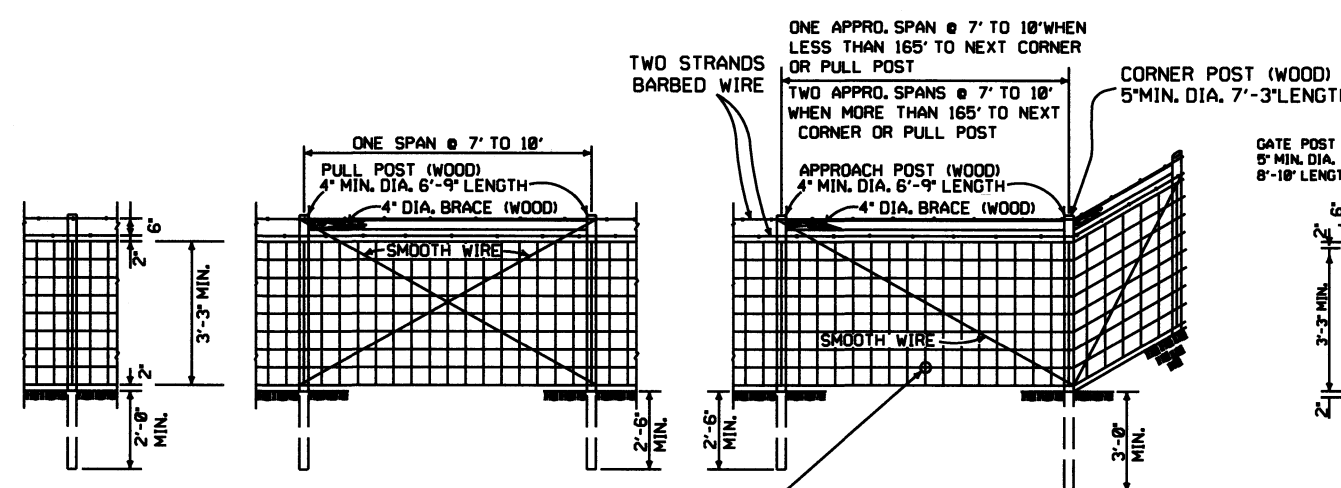
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING 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\"/>

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.

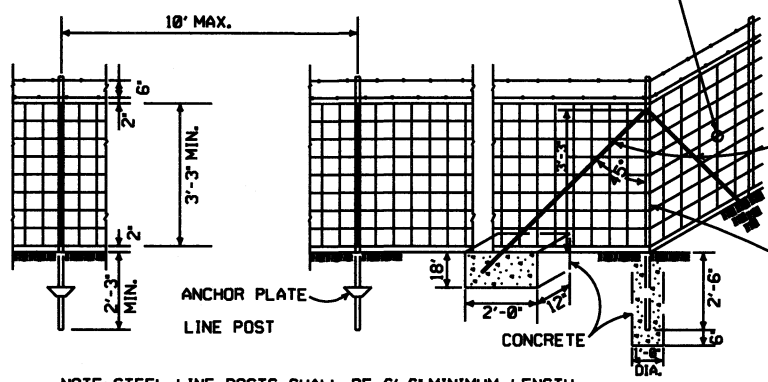
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS, WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD, WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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

LINE POST
 3\"/>

LINE BRACE ASSEMBLY
 MAX. SPACING TO BE 330'

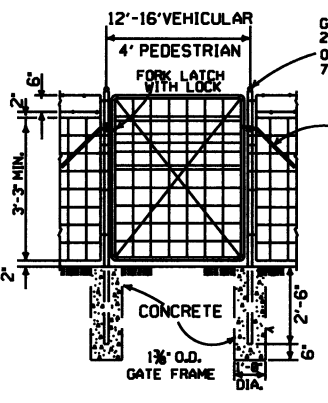
TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED



DIAGONAL BRACE
 1 1/2\"/>

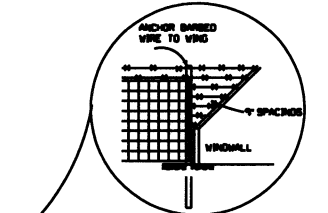
END, CORNER OR PULL POST
 2 1/2\"/>



GATE POST (STEEL)
 2 1/2\"/>

BRACE - 1 1/2\"/>

NOTE: USE 3/4\"/>



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

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

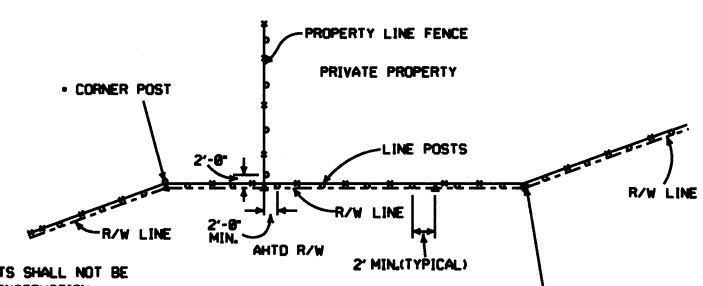
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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

NOTE: STEEL LINE POSTS SHALL BE 6'-6\"/>

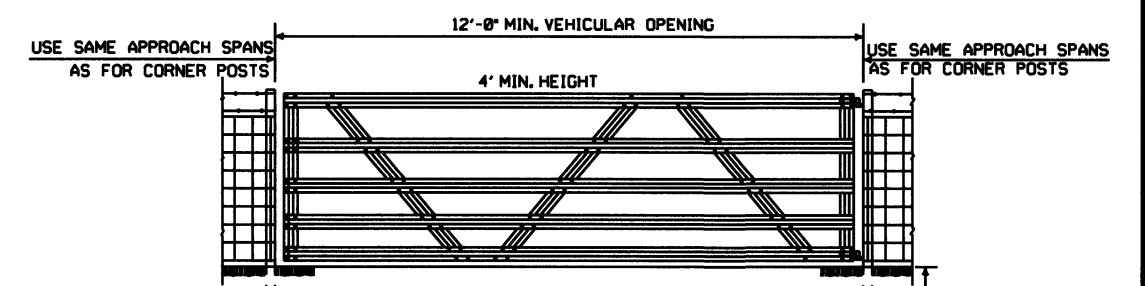
TYPE C FENCE (STEEL POSTS)

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



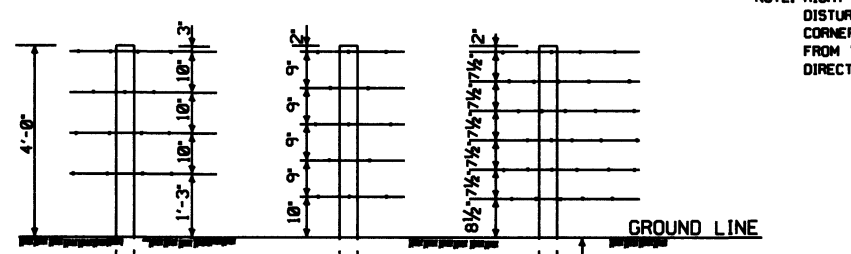
NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



TYPICAL VEHICULAR GATES (ALTERNATE TYPE)

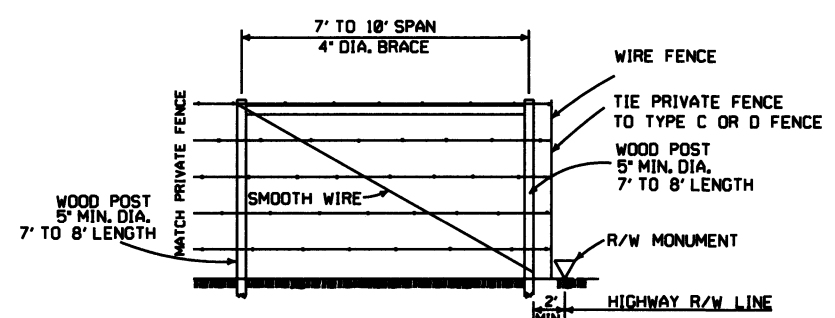
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.



GROUND LINE
 2'-0\"/>

TYPE D FENCE
 TYPE D-1 FENCE
 TYPE D-2 FENCE

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.



PRIVATE FENCE TERMINAL INSTALLATION

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

DATE	REVISION	FILMED
8-22-82	REVISED GENERAL NOTES	
10-18-86	REVISED AASHTO	
11-22-86	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

**WIRE FENCE
 TYPE C AND D**

STANDARD DRAWING WF-4