DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	1	16
				① DISTRICT 9 BRIDGE DECK REHAB. (2019) (S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION

MAINTENANCE PLANS

DISTRICT 9 BRIDGE DECK REHAB. (2019) (S)

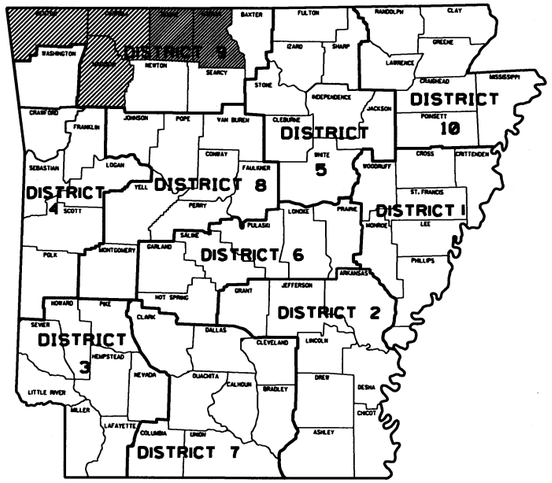
VARIOUS COUNTIES

VARIOUS ROUTES

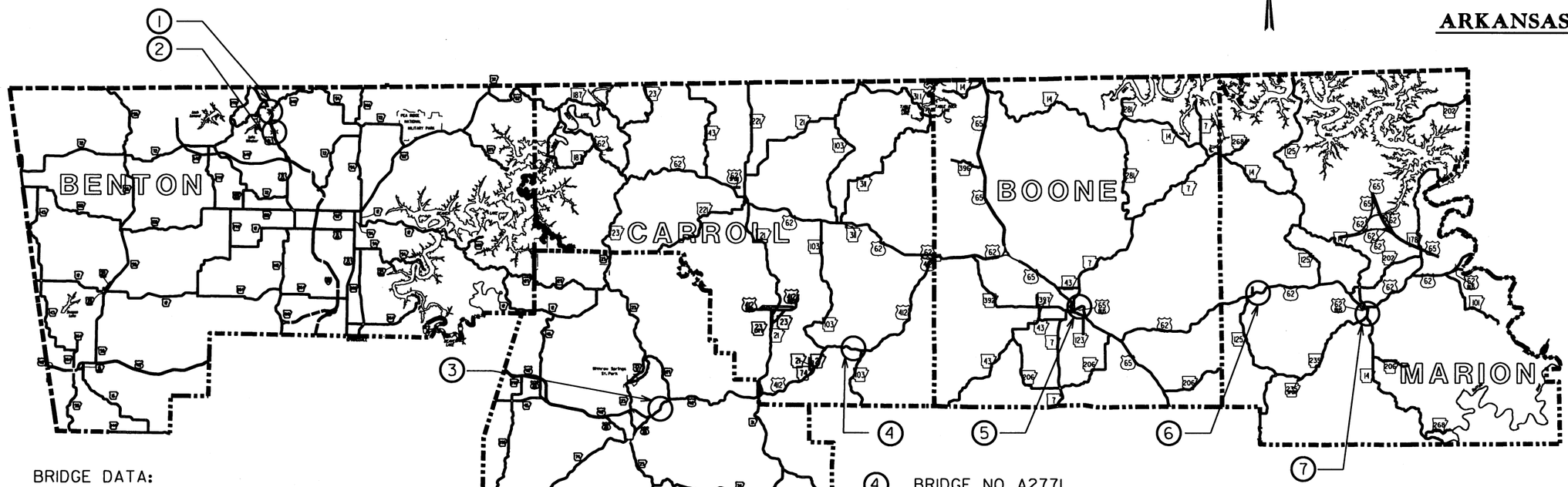
JOB 090574

FED. AID PROJ. STPF-0076(201)

Asset Name/ Str. Number	Latitude	Longitude
02157	36° 26' 48.948" N	94° 14' 21.012" W
02158	36° 28' 15.492" N	94° 14' 38.327" W
05330	36° 13' 57.000" N	93° 5' 31.596" W
A2771	36° 11' 19.068" N	93° 24' 55.943" W
03345	36° 7' 13.980" N	93° 41' 38.363" W
00338	36° 13' 24.239" N	92° 40' 46.704" W
02469	36° 14' 46.031" N	92° 50' 8.880" W



ARKANSAS HIGHWAY DIST. 9



BRIDGE DATA:

① BRIDGE NO. 02158
US 71, SEC. 19, LM 4.47
93.64' BR. LENGTH WITH 75.00' CL. RDWY.

② BRIDGE NO. 02157
US 71, SEC. 19, LM 2.69
318.63' BR. LENGTH WITH 75.00' CL. RDWY.

③ BRIDGE NO. 03345
US 412, SEC. 04, LM 2.55
357.00' BR. LENGTH WITH 28.00' CL RDWY.

④ BRIDGE NO. A2771
US 412, SEC. 05, LM 9.76
441.17' BR. LENGTH WITH 34.00' CL RDWY.

⑤ BRIDGE NO. 05330
US 65, SEC. 02, LM 0.48
398.41' BR. LENGTH WITH 50.00' CL RDWY.

⑥ BRIDGE NO. 02469
US 62, SEC. 08, LM 3.22
471.00' BR. LENGTH WITH 26.0' CL RDWY.

⑦ BRIDGE NO. 00338
SH 14, SEC. 03, LM 0.16
432.17' BR. LENGTH WITH 24.00' CL RDWY.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
7-29-19
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	2	16

(1) INDEX OF SHETS & STANDARD DRAWINGS

INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
7-24-19
JOSEPH A. SARTAIN

INDEX OF SHEETS AND STANDARD DRAWINGS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9/5/19				6	ARK.			
				JOB NO.		090574	3	16

1 GOVERNING SPECIFICATIONS & 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 - 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
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
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 090574__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 090574__	BRIDGE DECK REPAIR
JOB 090574__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090574__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 090574__	COLD MILLINGS IN RECYCLED ASPHALT PAVEMENT
JOB 090574__	COORDINATION OF WORK
JOB 090574__	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 090574__	FLEXIBLE BEGINNING OF WORK
JOB 090574__	HYDRODEMOLITION
JOB 090574__	JOINT REHABILITATION FOR BRIDGE DECKS
JOB 090574__	LATEX MODIFIED CONCRETE OVERLAY
JOB 090574__	MANAGEMENT OF HYDRODEMOLITION WASTEWATER
JOB 090574__	MANDATORY ELECTRONIC CONTRACT
JOB 090574__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 090574__	NESTING SITES OF MIGRATORY BIRDS
JOB 090574__	PARTNERING REQUIREMENTS
JOB 090574__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 090574__	SPECIAL MAINTENANCE OF TRAFFIC REQUIREMENTS
JOB 090574__	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 090574__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090574__	VALUE ENGINEERING
JOB 090574__	WATER POLLUTION CONTROL & RESTRAINING CONDITION
JOB 090574__	WARM MIX ASPHALT
JOB 090574__	WELLHEAD PROTECTION

GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATIONS FOR FLAG PERSONS.
2. 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.
3. THE CONTRACTOR SHALL FURNISH AND MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
4. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
5. WHERE EXISTING DRIVING LANES ARE TO BE OVERLAID, THE CROSS SLOPE SHALL BE AS DIRECTED BY THE ENGINEER (NORMALLY THIS WILL CONFORM TO THE EXISTING CROSS SLOPE).
6. BRIDGE ANALYSIS SHALL BE REQUIRED PER SECTION 105.14 OF THE STANDARD SPECIFICATIONS.
7. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO THAT NO LANE CLOSURES EXIST FOR THE TIME PERIOD OF THE DAY BEFORE THE HOLIDAY THROUGH THE DAY AFTER THE HOLIDAY FOR THE FOLLOWING LEGAL HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING, AND CHRISTMAS. IF THE LEGA HOLIDAY IS IMMEDIATELY FOLLOWING A WEEKEND, THE WEEKEND WILL BE CONSIDERED A PART OF THE HOLIDAY.
8. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO MODIFY THEIR SCHEDULE, DURING WORK, WHEN SPECIAL EVENTS OR OCCURRENCES MAY CAUSE TRAFFIC TO BECOME CONGESTED.
9. 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 VARIOUS ITEMS.
10. QUANTITIES ARE ESTIMATED AND MAY BE ADJUSTED BY THE ENGINEER TO MATCH SITE CONDITIONS.
11. ANY EQUIPMENT OR APPURTENANCE THAT INTERFEREDS WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
12. PREPARATORY WORK SUCH AS CLIPPING THE GRASS AND DEBRIS FROM THE EDGE OF THE EXISTING ROADAWAY OR STRUCTURE, WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED A PART OF OTHER WORK ITEMS.
13. MATERIAL GENERATED FROM THE COLD MILLING OPERATIONS SHALL REMAIN THE PROPERTY OF THE DEPARTMENT AND SHALL BE TRANSPORTED TO AND STOCKPILED AT THE LOCATION(S) SPECIFIED. NO DIRECT PAYMENT WILL BE MADE FOR LOADING, HAULING, AND STOCKPILING OF EXCESS MILLING MATERIAL; PAYMENT WILL BE CONSIDERED INCLUDED AS A PART OF OTHER ITEMS OF WORK. COLD MILLING SHALL BE STOCKPILED IN A TRAPEZOIDAL SHAPE, OR AS DIRECTED BY THE ENGINEER, WHICH CAN BE EASILY MEASURED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
9-6-19
JOSEPH A. SARTAIN

GOVERNING SPECIFICATIONS & GENERAL NOTES

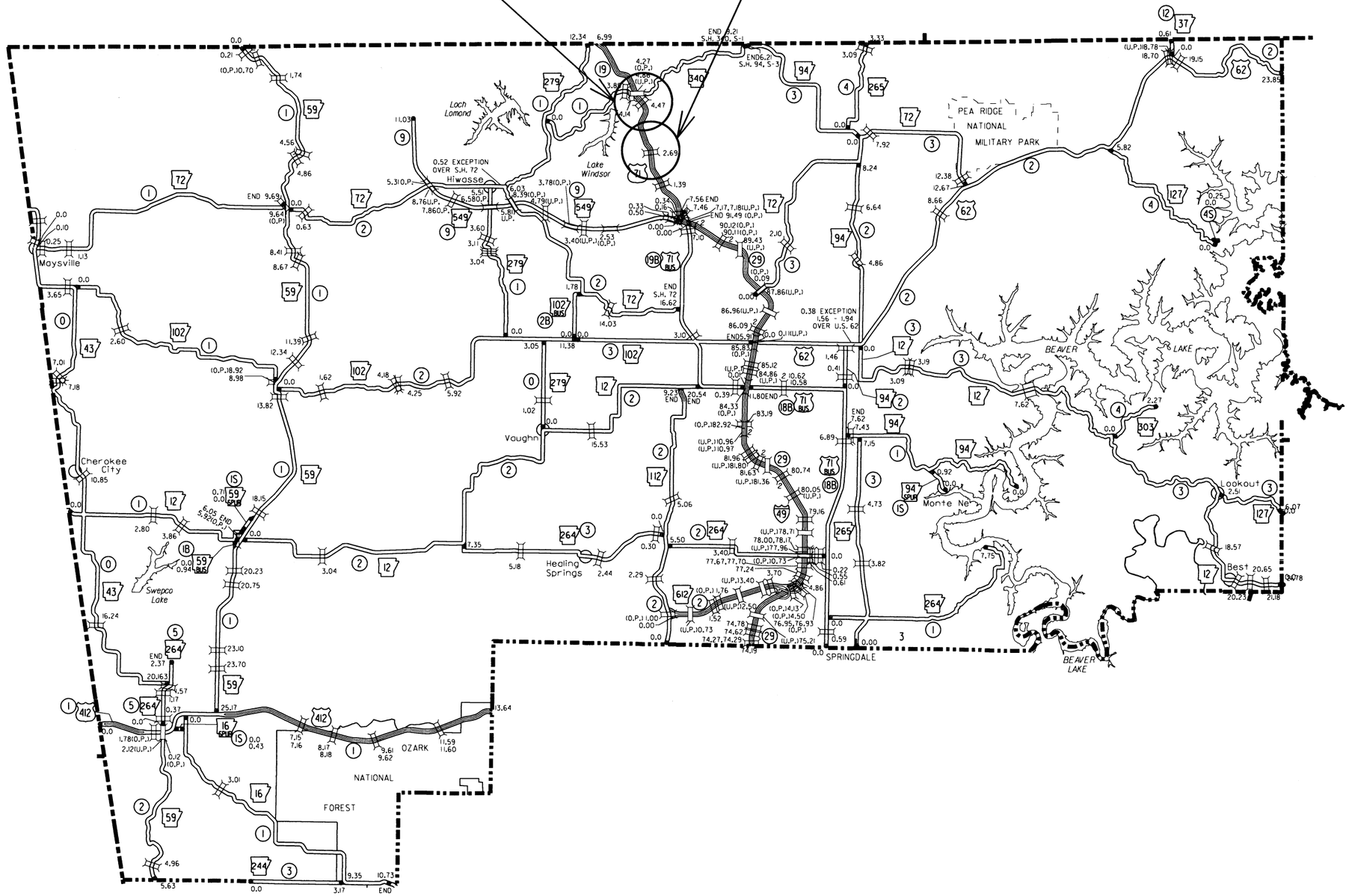
NOTE: EACH BRIDGE HAS A 12' RAISED MEDIAN SEPARATING THE NORTHBOUND AND SOUTHBOUND TRAFFIC.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	4	16

(1) BENTON COUNTY MAP

(1) BRIDGE NO. 02158
US 71, SEC. 19, LM 4.47
93.64' BR. LENGTH WITH
75.00' CL. RDWY.

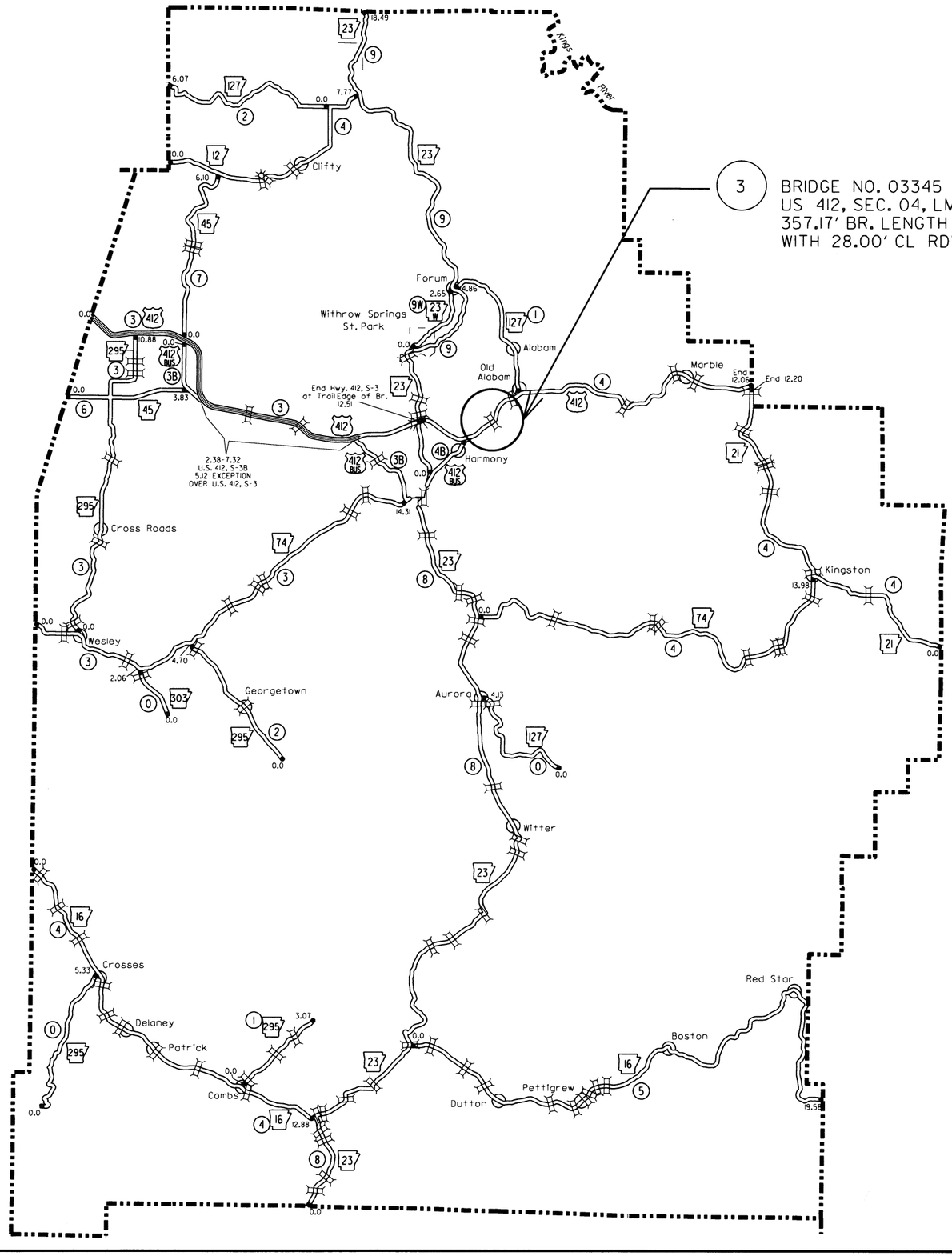
(2) BRIDGE NO. 02157
US 71, SEC. 19, LM 2.69
318.63' BR. LENGTH WITH
75.00' CL. RDWY.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
7-24-19
JOSEPH A. SARTIN

BENTON COUNTY MAP

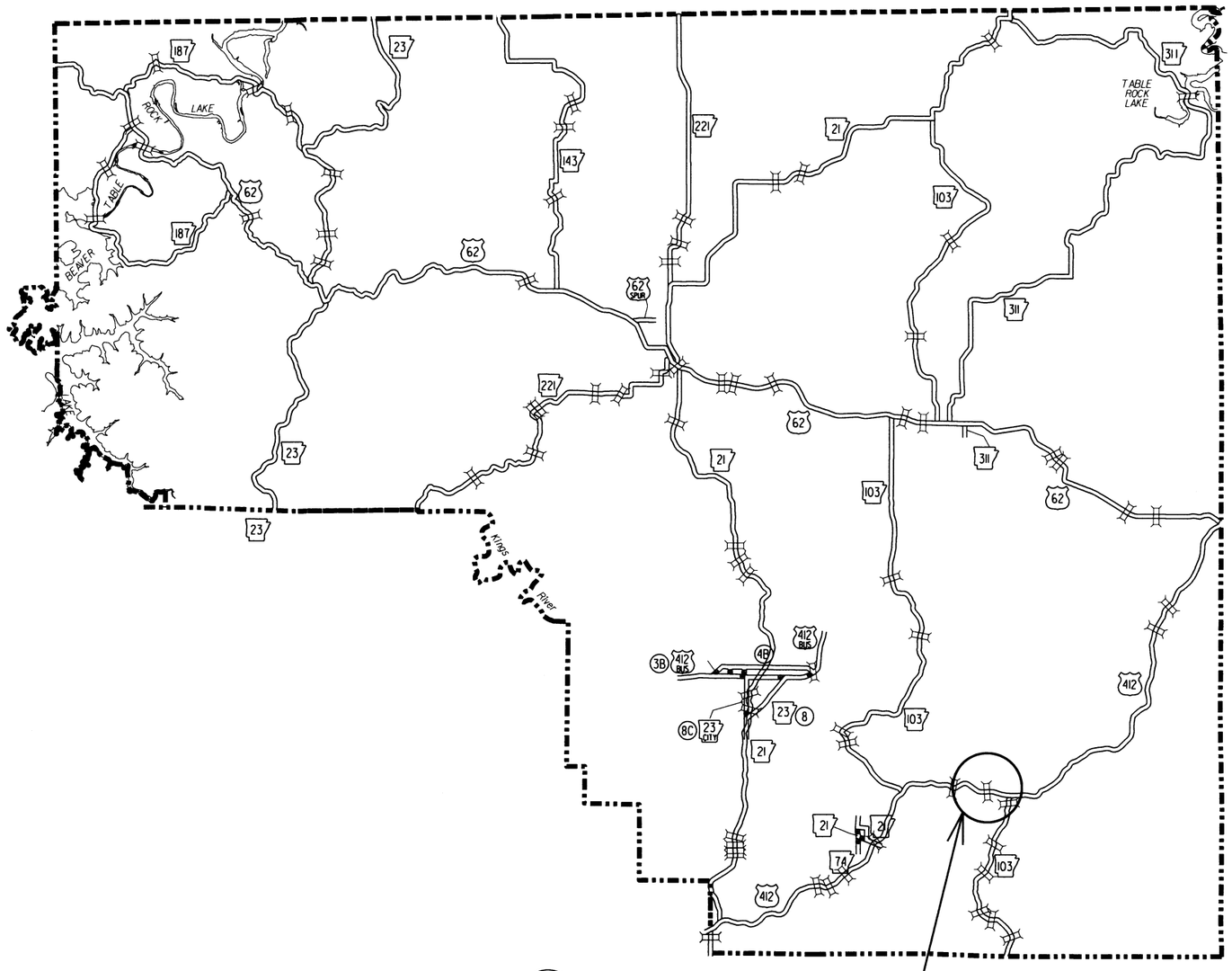
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	5	16
				(1)	MADISON COUNTY MAP			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
7-24-15
JOSEPH A. SARTIN

MADISON COUNTY MAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	6	16
				(1)		CARROLL COUNTY MAP		

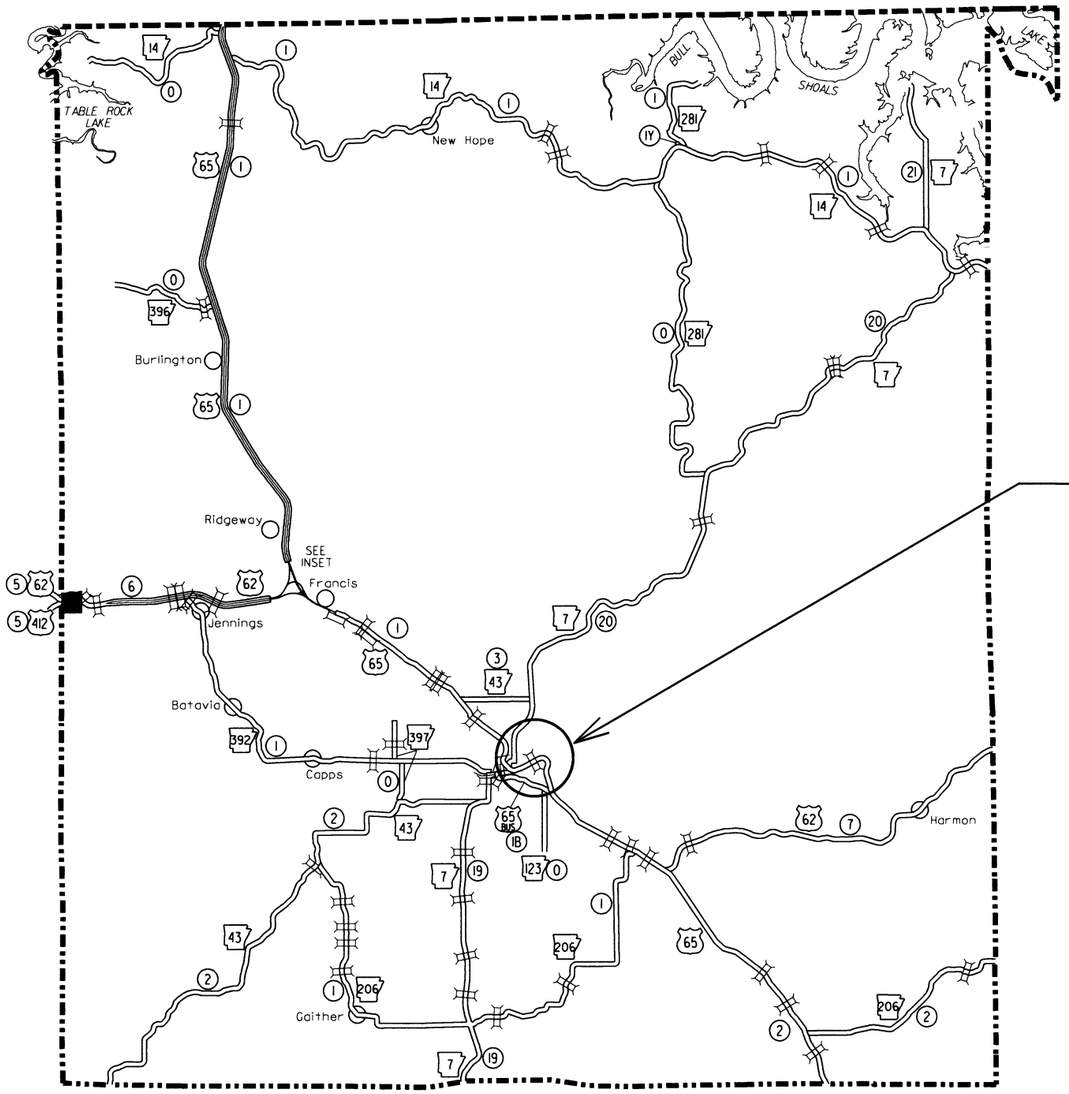


4 BRIDGE NO. A2771
US 412, SEC. 05, LM 9.76
441.17' BR. LENGTH
WITH 34.00' CL RDWY.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SAM II
7-24-19

CARROLL COUNTY MAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	7	16
				(1)		BOONE COUNTY MAP		



(5) BRIDGE NO. 05330
US 65, SEC. 02, LM 0.48
398.41' BR. LENGTH
WITH 50.00' CL RDWY.

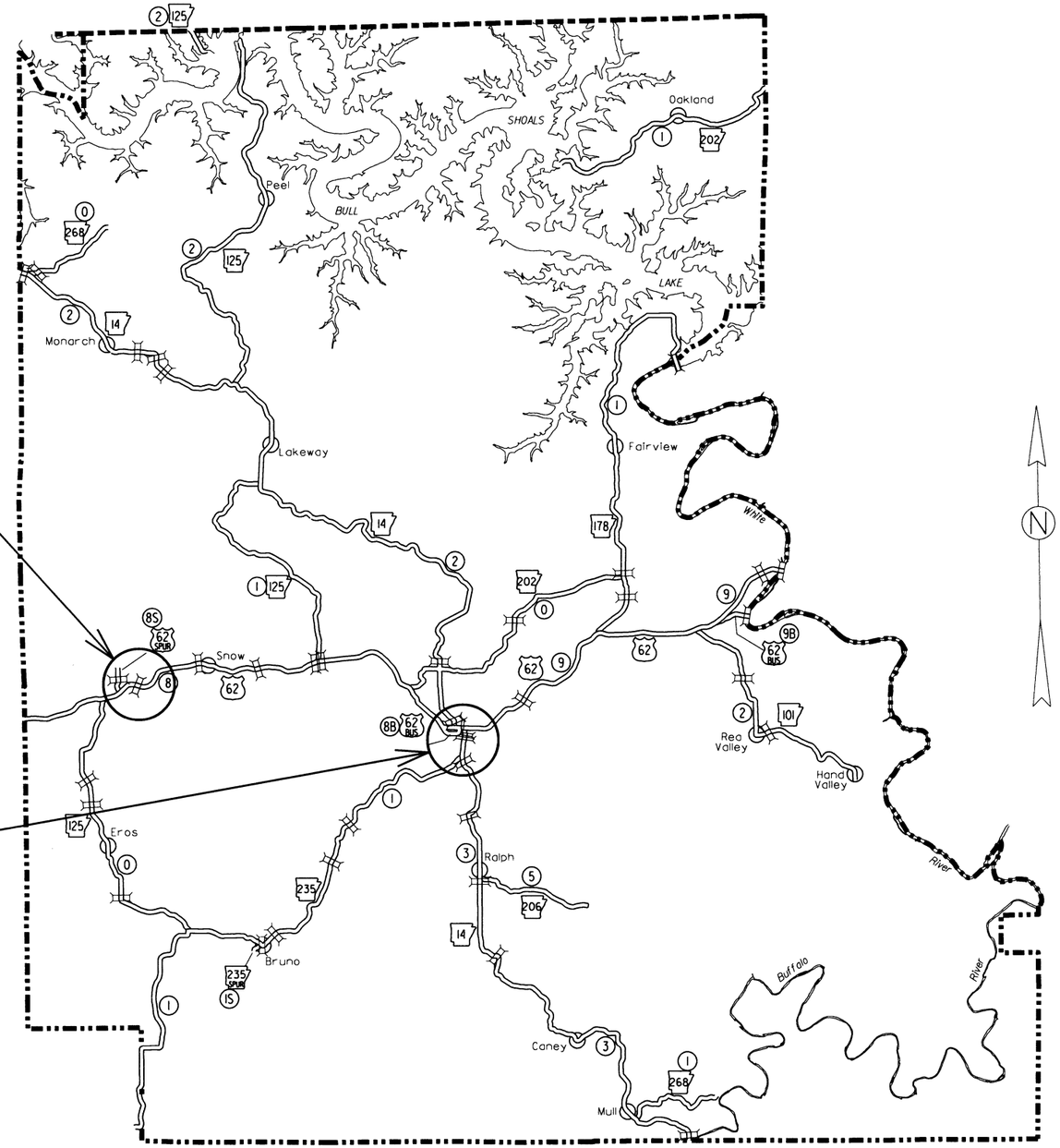
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTAIN
9-29-10

BOONE COUNTY MAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	8	16
				(1)	MARION COUNTY MAP			

(6) BRIDGE NO. 02469
US 62, SEC. 08, LM 3.22
471.00' BR. LENGTH
WITH 26.0' CL RDWY.

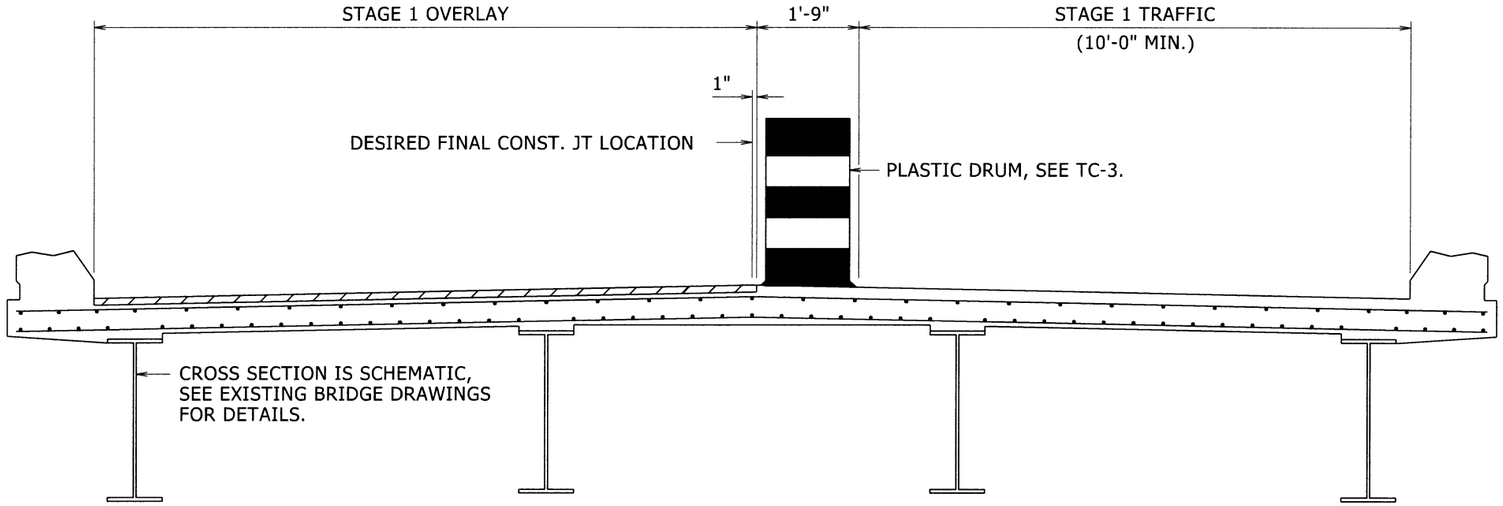
(7) BRIDGE NO. 00338
SH 14, SEC. 03, LM 0.16
432.17' BR. LENGTH
WITH 24.00' CL RDWY.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
7-24-01
JOSEPH A. SARNI

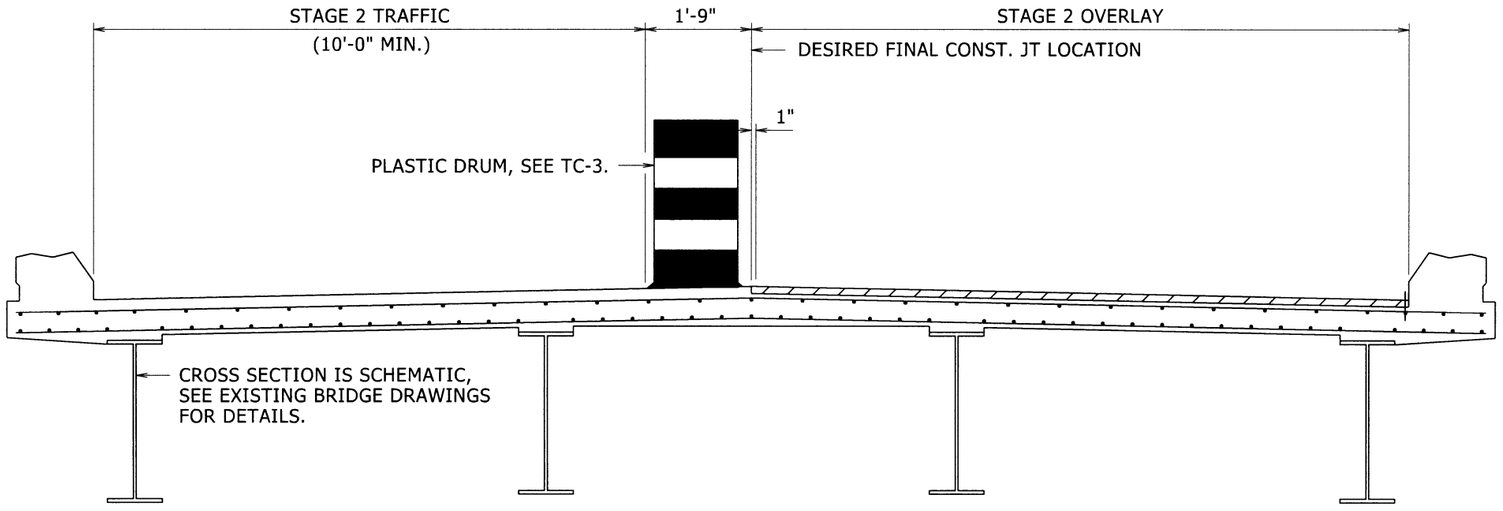
MARION COUNTY MAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	9	16
				①	MAINTENANCE OF TRAFFIC DETAILS			



STAGE 1 MAINTENANCE OF TRAFFIC

NOT TO SCALE



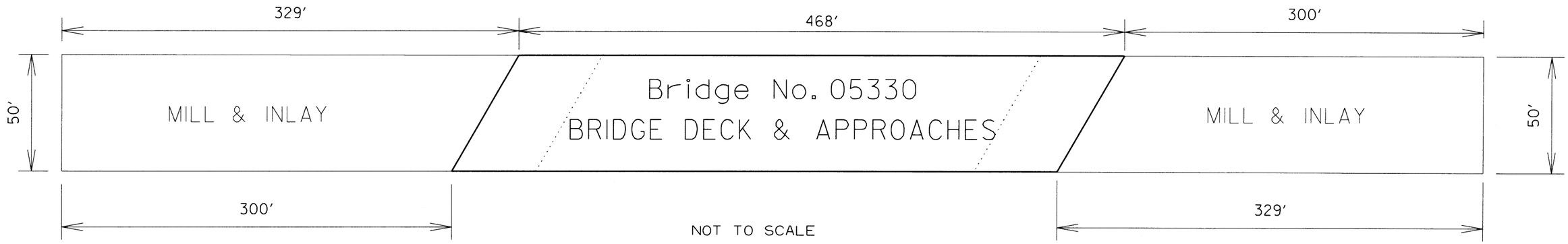
STAGE 2 MAINTENANCE OF TRAFFIC

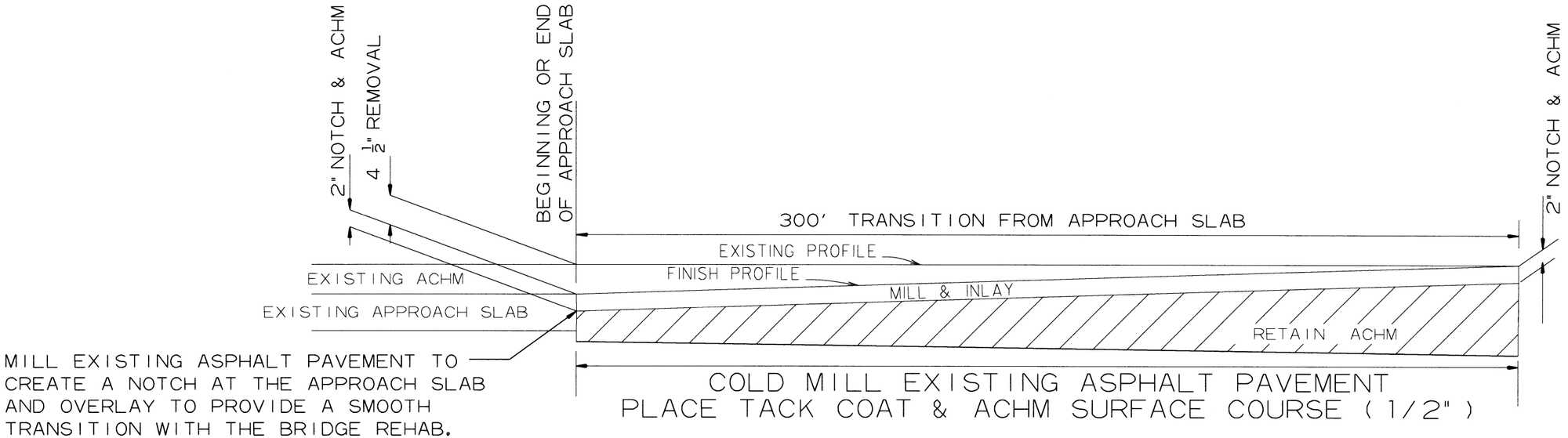
NOT TO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SAUL III
7-26-12

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	10	16
				①		SPECIAL DETAILS		

SPECIAL DETAILS FOR MILL & INLAY





NOT TO SCALE

NOTE:

1. ARKANSAS DEPARTMENT OF TRANSPORTATION WILL ESTABLISH GRADES AND FINISH PROFILE LINE DURING COLD MILLING AND PRIOR TO ANY ACHM PLACEMENT.
2. COLD MILLING MUST BE PERFORMED PRIOR TO HYDRODEMOLITION.
3. DIMENSIONS AND QUANTITIES SHOWN ARE FOR ESTIMATING AND BIDDING PURPOSES ONLY, QUANTITIES WILL BE PAID BY ACTUAL MEASUREMENTS TAKEN IN THE FIELD.
4. REMOVAL OF ACHM OVERLAY (APPROX. 4 1/2 INCHES) OVER EXISTING BRIDGE DECK AND APPROACH SLAB OF BRIDGE NO. 05330 WILL NOT BE PAID DIRECTLY BUT CONSIDERED A PART OF OTHER WORK ITEMS.
5. COORDINATE WITH ARDOT MAINTENACE DIVISION FOR PERMANENT LANE STRIPING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTAIN
7-24-19

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9/5/19				6	ARK.			
				JOB NO.		090574	11	16
				①		QUANTITIES		

SURFACING

LOG MILE	LOG MILE	LOCATION	LENGTH	TACK COAT				ACHM SURFACE COURSE (1/2")		
				AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	POUND / SQ.YD.	PG 70-22
			FEET	FEET				FEET		TON
MAIN LANES										
0.376	0.436	US. HWY. 65- MAIN LANES (BRIDGE NO. 05330)	314.50	50.00	1747.22	0.17	297.03	50.00	220.00	192.19
0.524	0.584	US. HWY. 65- MAIN LANES (BRIDGE NO. 05330)	314.50	50.00	1747.22	0.17	297.03	50.00	220.00	192.19
TOTALS:					**3494.44**		**594.06**			**384.38**

ACHM SURFACE COURSE (1/2").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

PERMANENT PAVEMENT MARKINGS

DESCRIPTION	BRIDGE # 02157	BRIDGE # 02158	BRIDGE # 05330	BRIDGE # A2771	BRIDGE # 03345	BRIDGE # 03338	BRIDGE # 02469	THERMOPLASTIC PAVEMENT MARKING	
								6"	
								WHITE	YELLOW
	LIN. FT.							LIN. FT.	
THERMOPLASTIC PAVEMENT MARKING WHITE (6")	970	413	549	882	714	864	942	5334	
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	776	330	2194	882	714	864	942		6702
TOTALS:								**5334**	**6702**

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

MOBILIZATION

DESCRIPTION	QUANTITY	UNIT
ENTIRE PROJECT	1.00	LUMP SUM
TOTAL:	1.00	LUMP SUM

*MAINTENANCE OF TRAFFIC

DESCRIPTION	QUANTITY	UNIT
ENTIRE PROJECT	1.00	LUMP SUM
TOTAL:	1.00	LUMP SUM

* ALL TRAFFIC CONTROL DEVICES AND/OR PAVEMENT MARKINGS WILL BE PLACED IF AND WHERE DIRECTED BY THE ENGINEER. ALL ITEMS NECESSARY FOR TRAFFIC CONTROL IS SUBSIDIARY TO THE ITEM OF "MAINTENANCE OF TRAFFIC".

COLD MILLING ASPHALT PAVEMENT

LOG MILE	LOG MILE	LOCATION	AVG. WIDTH	TOTAL LENGTH	COLD MILLING ASPHALT PAVEMENT
			FEET	FEET	SQ. YD.
0.376	0.436	BRIDGE END (BRIDGE NO. 05330)	50.00	314.50	1747.22
0.524	0.584	BRIDGE END (BRIDGE NO. 05330)	50.00	314.50	1747.22
TOTAL:					**3494.44**

NOTE: AVERAGE MILLING DEPTH 4.25".
MILLING STOCKPILE LOCATION WILL BE DISTRICT 9 HEADQUARTERS LOCATED AT 4590 HWY. 65 HARRISON, AR 72602

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
9-6-19

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	12	16

① 02157, 02158, 03345, A2771, 05330, 02469, 00338 - QUANTITIES - 59643

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 090574

ROUTE	SECTION	LOG MILE	①UNIT OF STRUCTURE / ITEM NO. / ITEM / UNIT	SP & 509 JOINT REHABILITATION (TYPE A) LIN. FT.	SS & 802 GROOVING SQ. YD.	803 CLASS 1 PROTECTIVE SURFACE TREATMENT GAL.	803 CLASS 3 PROTECTIVE SURFACE TREATMENT LIN. FT.	SS & 804 REINFORCING STEEL-BRIDGE (GRADE-60) LBS.	SS & 809 SILICONE JOINT SEALANT LIN. FT.	821 MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. _) LUMP SUM	SP JOB 090574 HYDRODEMOLITION SQ. YD.	SP JOB 090574 BRIDGE DECK REPAIR SQ. FT.	SP JOB 090574 LATEX MODIFIED CONCRETE OVERLAY (1½" THICK) SQ. YD.
HWY. 71	19	2.659	EXISTING BRIDGE NO. 02157 ②	-	③ 3090	③ 64.3	1266	2020	480	-	③ 3221	2375	③ 3224
HWY. 71	19	4.417	EXISTING BRIDGE NO. 02158 ②	402	③ 1280	③ 26.6	360	575	-	-	③ 1334	675	③ 1335
HWY. 412	4	2.553	EXISTING BRIDGE NO. 03345	-	985	22.0	710	845	-	⑤ 1	1105	995	1108
HWY. 412	5	9.751	EXISTING BRIDGE NO. A2771	-	1515	33.2	878	1270	259	-	1659	1495	1663
HWY. 65	2	0.485	EXISTING BRIDGE NO. 05330	-	③ 2435	③ 51.7	792	1685	462	-	③ 2589	1980	③ 2593
HWY. 62	8	3.212	EXISTING BRIDGE NO. 02469	260	1200	27.0	938	1040	-	-	1355	1220	1360
HWY. 14	3	0.161	EXISTING BRIDGE NO. 00338	-	1005	22.9	860	875	-	-	1147	1030	1151
TOTALS FOR JOB NO. 090574				662	11510	247.7	5804	④ 8310	1201		12410	④ 9770	12434

①EXISTING BRIDGE DECK FOR BRIDGE NO. A2771 DOES HAVE A CHIP SEAL SURFACE TREATMENT.
EXISTING BRIDGE DECK FOR BRIDGE NO. 05330 DOES HAVE A 4½" ASPHALT OVERLAY.
EXISTING BRIDGE DECKS FOR BRIDGE NOS. 02157, 02158, 03345, 02469, AND 00338 DO NOT HAVE ASPHALT OVERLAYS.

②EXISTING BRIDGE NOS. 02157 AND 02158 ARE REFERENCED IN THE EXISTING DRAWINGS AS BRIDGE NOS. A2157 AND A2158, RESPECTIVELY.

③QUANTITY SHOWN INCLUDES APPROACH SLABS AND GUTTERS AS APPLICABLE.

④QUANTITY SHOWN IS FOR ESTIMATING AND BIDDING PURPOSES ONLY. ACTUAL QUANTITY, IF ANY, WILL BE DETERMINED IN THE FIELD.

⑤QUANTITY INCLUDES REMOVAL AND REPLACEMENT OF NEOPRENE STRIP SEAL JOINT MATERIAL.

JIM POOL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-24-19

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
DISTRICT 9 BRIDGE DECK REHAB. (2019) (S)
BENTON, BOONE, CARROLL, MADISON, MARION COUNTIES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAL DATE: 6/25/19 FILENAME: b090574_ql.dgn
CHECKED BY: JNP DATE: 7/19/19 SCALE: No Scale
DESIGNED BY: _____ DATE: _____
BRIDGE NO. 02157, 02158, 03345 A2771, 05330, 02469, 00338 DRAWING NO. 59643

PRINT DATE: 7/19/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8/27/19				6	ARK.			
9/5/19				JOB NO.		090574	13	16
				①		SUMMARY OF QUANTITIES & REVISIONS		

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SS & 401	TACK COAT	594	GAL.
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	365	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")	19	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	3494	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	5334	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	6702	LIN. FT.
STRUCTURES OVER 20' SPAN			
SP & 509	JOINT REHABILITATION (TYPE A)	662	LIN. FT.
SS & 802	GROOVING	11510	SQ. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	247.7	GAL.
803	CLASS 3 PROTECTIVE SURFACE TREATMENT	5804	LIN. FT.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	8310	POUND
SS & 809	SILICONE JOINT SEALANT	1201	LIN. FT.
SP	HYDRODEMOLITION	12410	SQ. YD.
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 03345)	1.00	LUMP SUM
SP	BRIDGE DECK REPAIR	9770	SQ. FT.
SP	LATEX MODIFIED CONCRETE OVERLAY (1 1/2" THICK)	12434	SQ. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
8/27/2019	REVISED THE TABLE OF AFFECTED STRUCTURE(S) IN SPECIAL PROVISION "SPECIAL SAFETY REQUIREMENTS FOR BRIDGES."	13 & 16
9/5/2019	ADDED QUANTITIES FOR THERMOPLASTIC PAVEMENT MARKING WHITE (6") AND THERMOPLASTIC PAVEMENT MARKING YELLOW (6"); ADDED FLEXIBLE BEGINNING OF WORK SPECIAL PROVISION TO GOVERNING SPECIFICATIONS	3, 11, & 16

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
9-6-19
JOSEPH A. SARTINI

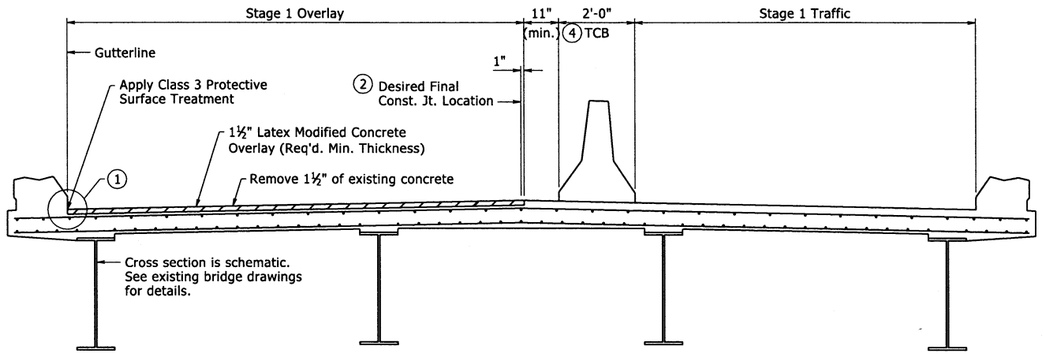
SUMMARY OF QUANTITIES & REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	14	16
				①	SEE TABLE -	LMC OVERLAY - 59644		

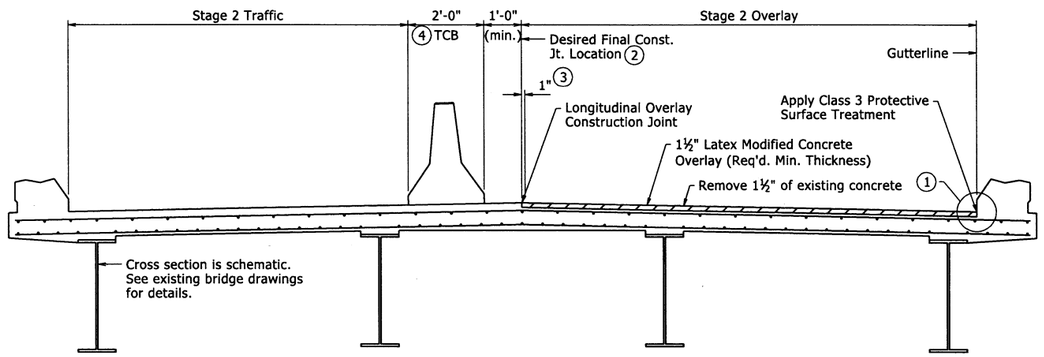
Stages of construction and traffic refer to Bridge Rehabilitation Work Zones as shown in Maintenance of Traffic Details. See Roadway Plans.

The minimum overlay placement length shall be a span length on simple span bridges and to an existing slab joint on continuous span bridges, unless otherwise approved by the Engineer. Refer to existing bridge drawings.

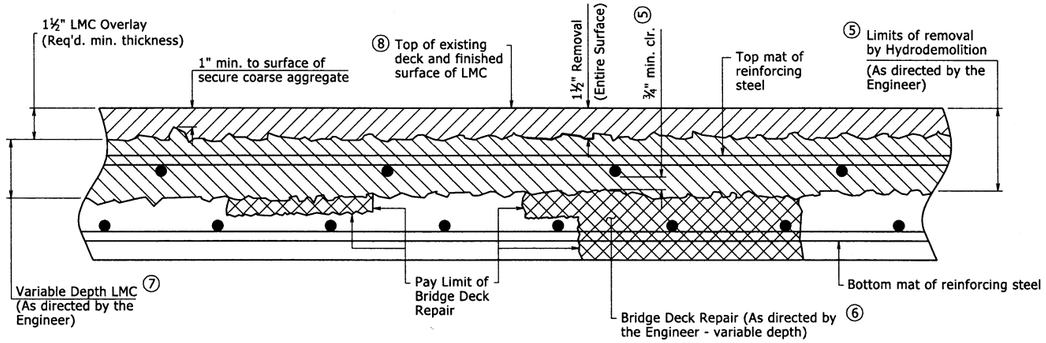
Details shown are typical for staged construction. When full width rehabilitation of a bridge deck is possible, adjust hydrodemolition and latex modified concrete overlay operations and details accordingly.



STAGE 1 LATEX MODIFIED CONCRETE OVERLAY



STAGE 2 LATEX MODIFIED CONCRETE OVERLAY



DETAILS OF HYDRODEMOLITION AND LATEX MODIFIED CONCRETE OVERLAY

Beam or Girder Spans

⑤ Removal of unsound concrete beyond 1½" below the original surface shall be at the direction of the Engineer. If the bond between existing concrete and the top mat of reinforcing steel is destroyed, then the concrete shall be removed to a minimum of ¾" clearance below the bar. This removal shall be subsidiary to the item Job SP "Hydrodemolition".

⑥ Areas requiring additional repair, as determined by the Engineer, shall be repaired in accordance with the Job SP "Bridge Deck Repair".

⑦ Depth varies to achieve minimum clearance below top mat of reinforcing steel, where required.

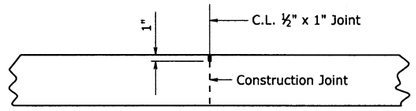
⑧ Finished surface of LMC Overlay shall match existing concrete deck surfaces unless increase is required to maintain minimum required LMC Overlay thickness and a minimum of 1½" cover to reinforcing steel and shear connectors.

① Hand tools shall be used as required to remove concrete adjacent to curbs and joints.

② For staged construction, the final construction joint location shall be established by the Engineer to satisfy MOT and construction requirements. The desired location is at the C.L. Bridge, C.L. Lane, or Edge of Lane, but in no case shall be positioned in the line of a wheel path.

③ For staged construction, saw cut and remove 1" of initial Latex Modified Concrete Overlay when preparing surface for adjacent overlay.

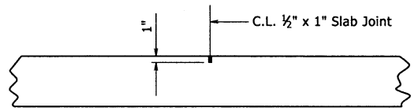
④ For staged construction, the Temporary Construction Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4 for additional details. Plastic drums shall be used in lieu of concrete barriers where shown in the Roadway Plans, see Std. Dwg. TC-3 for additional details.



Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod will not be required. Joint Sealer shall be measured and paid for as LMC Overlay. Longitudinal construction joints shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the overlay. Seal color shall be gray or other color similar to concrete.

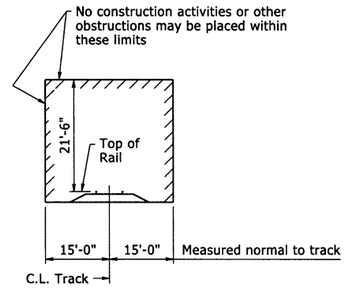
LONGITUDINAL OVERLAY CONSTRUCTION JOINT DETAIL

For Staged Construction



Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod will not be required. Joint Sealer shall be measured and paid for as LMC Overlay. Slab joints shall extend from gutterline to gutterline. Slab joints shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the overlay. Slab joints shall be placed at all pouring sequence construction joints and are required at existing slab joint locations. Pouring sequence construction joints shall align between stages of construction. The joint sealer shall extend across the deck from gutterline to gutterline. Seal color shall be gray or other color similar to concrete.

TRANSVERSE OVERLAY JOINT DETAIL



MINIMUM CONSTRUCTION CLEARANCES

Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.

REFERENCE TABLE

Bridge No.	Existing Dwg. Nos.
02157	19067, 19079, 19080, 19081, 19082, 19083, 19084, 19085, 19086, 19140
03345	05462, 05477, 10680
A2771	15942, 15945, 14990D
05330	16553, 16557, 16558, 14990D, Special Detail
02469	07025, 07030, 07031, 07032, 07033, 07034, 07035, 07036, 07037, 07038, 07039, 07040
00338	05500i, 05500p, 09565

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Specifications unless otherwise noted in the Plans.

Details shown are schematics. The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and fit the new work to the existing structure.

The operation or placement of vehicles, equipment, and/or materials on the subject bridge(s) necessary for the completion of this work shall be evaluated in accordance with Subsection 105.14. Certifications of the adequacy of all components for the anticipated loads shall address the capacity of the existing structure at all phases of this work.

Where applicable, construction activities for the existing bridge(s) over railroads shall be in accordance with the Job SP "Special Safety Requirements" and as shown in "Minimum Construction Clearances".

HYDRODEMOLITION: The entire area of the existing bridge deck and approach slabs and gutters, as applicable, shall receive hydrodemolition in accordance with the Job SP "Hydrodemolition" to a planned depth of 1½" below the existing bridge deck surface. Deteriorated concrete in the bridge deck below this depth shall be removed at the direction of the Engineer and up to the limits detailed. These areas shall be measured by the square yard and shall be paid for at the unit price bid for the item Job SP "Hydrodemolition". Prior to hydrodemolition, cold milling of the concrete deck to a maximum depth of 1" will be allowed unless there will be a conflict with the existing reinforcing steel.

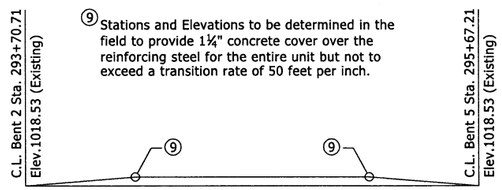
BRIDGE DECK REPAIR: After hydrodemolition, the deck surface shall be sounded and any areas of unsound, delaminated, or otherwise deteriorated concrete shall be removed at the direction of the Engineer and in accordance with Job SP "Bridge Deck Repair".

LATEX MODIFIED CONCRETE OVERLAY: The entire area of the existing bridge deck and approach slabs and gutters, as applicable, shall receive a Latex Modified Concrete (LMC) Overlay to a planned depth of 1½" below the existing bridge deck surface, in accordance with Job SP "Latex Modified Concrete Overlay". These areas shall be measured by the square yard and shall be paid for at the unit price bid for the item Job SP "Latex Modified Concrete Overlay". Areas of the existing bridge deck removed at the direction of the Engineer to a depth greater than 1½" below the existing bridge deck surface shall be filled with LMC concurrent to the placement of the 1½" LMC Overlay. This area shall be measured and paid for in accordance with Job SP "Latex Modified Concrete Overlay".

GROOVED FINISH: The LMC Overlay surface of the bridge deck and approach slabs and gutters, as applicable, shall be given a grooved finish as specified for final finishing in Subsection 802.19 for Class 7 Grooved Bridge Roadway Surface Finish and in accordance with Job SP "Latex Modified Concrete Overlay".

PROTECTIVE SURFACE TREATMENT: The longitudinal joint between the LMC Overlay and the adjacent existing concrete curb or rail shall be given a Class 3 Protective Surface Treatment as specified in Section 803 and in accordance with Job SP "Latex Modified Concrete Overlay". The roadway surface of the completed LMC Overlay shall be given a Class 1 Protective Surface Treatment as specified in Section 803.

JOINT REHABILITATION: After the placement of the LMC Overlay and if shown in the plans, the existing joints shall be given a poured silicone joint sealant as specified in Section 809 and as shown in "Poured Silicone Joint Seal Details" or a Type A Joint Rehabilitation as specified in Section 509 and Job SP "Joint Rehabilitation for Bridge Decks". Backwall repair, if shown in the plans or as directed by the Engineer, shall be completed prior to installation of the joint sealant.



Inspection reports indicate less than 1½" concrete cover to reinforcing steel is present. LMC thickening will be required to increase the reinforcing steel cover. Elevations shown are along Profile Grade Line. Additional tangent points may be allowed when approved by the Engineer.

VERTICAL ALIGNMENT FOR LMC THICKENING

Bridge No. 02157

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
7/24/19
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF LATEX MODIFIED CONCRETE OVERLAY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAL DATE: 6/25/19 FILENAME: b090574_lmc.dgn
CHECKED BY: JAP DATE: 7/19/19 SCALE: No Scale
DESIGNED BY: SID. DATE: —

BRIDGE NO. SEE TABLE DRAWING NO. 59644

PRINT DATE: 7/19/2019

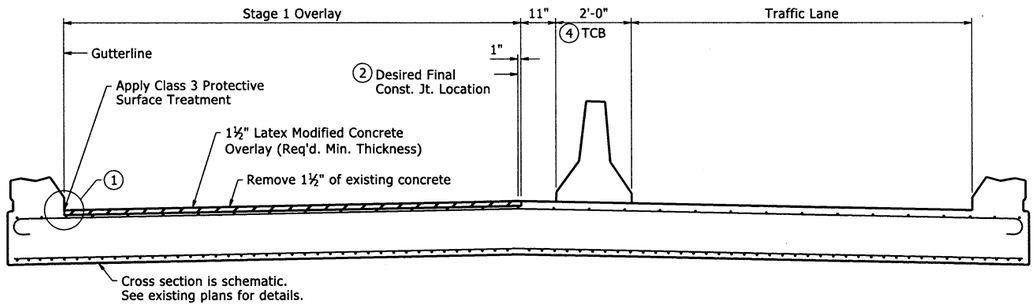
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	15	16

① SEE TABLE - LMC OVERLAY - 59645

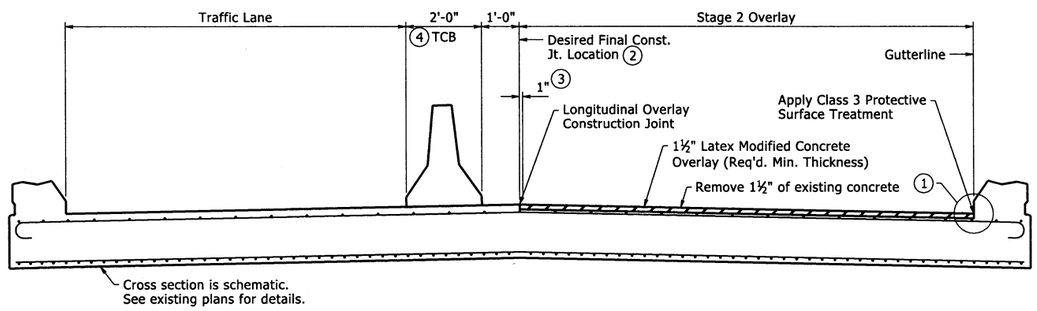
Details shown are typical for staged construction. When full width rehabilitation of a bridge deck is possible, adjust hydrodemolition and latex modified concrete overlay operations and details accordingly.

Stages of Construction refer to Bridge Rehabilitation Work Zones as shown in Maintenance of Traffic Details. See Roadway Plans.

The minimum overlay placement length shall be from joint to joint. Details based on existing bridge drawings.



STAGE 1 LATEX MODIFIED CONCRETE OVERLAY



STAGE 2 LATEX MODIFIED CONCRETE OVERLAY

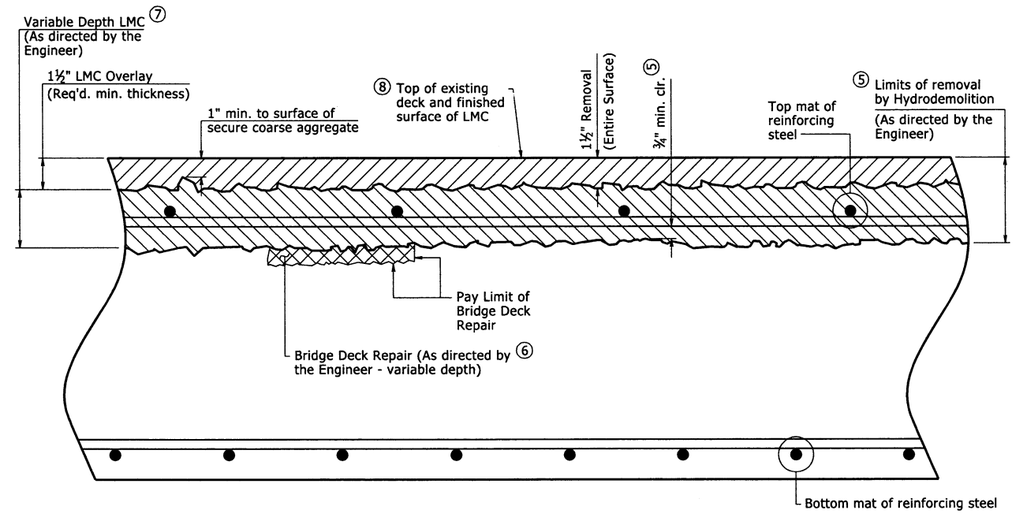
① Hand tools shall be used as required to remove concrete adjacent to curbs and joints.

② For staged construction, the final construction joint location shall be established by the Engineer to satisfy MOT and construction requirements. The desired location is at the C.L. Bridge, C.L. Lane, or Edge of Lane, but in no case shall be positioned in the line of a wheel path.

③ For staged construction, saw cut and remove 1" of initial Latex Modified Concrete Overlay when preparing surface for adjacent overlay.

④ For staged construction, the Temporary Construction Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4 for additional details.

See Dwg. No. 59644 for GENERAL NOTES, LONGITUDINAL OVERLAY CONSTRUCTION JOINT DETAIL, TRANSVERSE OVERLAY JOINT DETAIL and MINIMUM CONSTRUCTION CLEARANCES



DETAILS OF HYDRODEMOLITION AND LATEX MODIFIED CONCRETE OVERLAY

R.C. Slab Span with Voids

⑤ Removal of unsound concrete beyond 1½" below the original surface shall be at the direction of the Engineer. If the bond between existing concrete and the top mat of reinforcing steel is destroyed, then the concrete shall be removed to a minimum of ¾" clearance below the bar. This removal shall be subsidiary to the item Job SP "Hydrodemolition".

⑥ Areas requiring additional repair, as determined by the Engineer, shall be repaired in accordance with the Job SP "Bridge Deck Repair".

⑦ Depth varies to achieve minimum clearance below top mat of reinforcing steel, where required.

⑧ Finished surface of LMC Overlay shall match existing concrete deck surfaces unless increase is required to maintain minimum required LMC Overlay thickness and a minimum of 1½" cover to reinforcing steel.

REFERENCE TABLE

Bridge No.	Existing Dwg. Nos.
02158	19087, 19095, 19096A, 19097, 19140

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7/24/19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF
LATEX MODIFIED CONCRETE OVERLAY

ROUTE SEC.

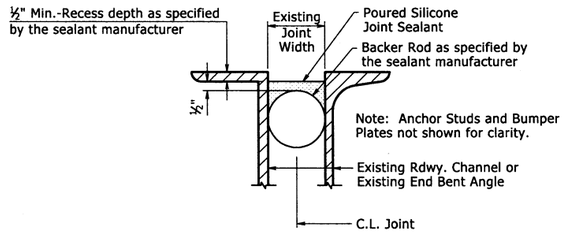
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAL DATE: 7/9/2019 FILENAME: b090574_lmc.dgn
CHECKED BY: JYP DATE: 7/24/19 SCALE: No Scale
DESIGNED BY: STD. DATE: —

BRIDGE NO. SEE TABLE DRAWING NO. 59645

PRINT DATE: 7/24/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090574	16	16
				①	02157, 03345, A2771, 05330	- JOINT REPAIR - 59646		



Existing Joint Seal shall be completely removed, backer rods placed, and Silicone Joint Sealant installed across the entire width of the bridge deck in accordance with these details, Section 809, and the Manufacturer's recommendations. Removal of existing Joint Seal will not be paid for directly, but shall be considered incidental to the item "Silicone Joint Sealant".

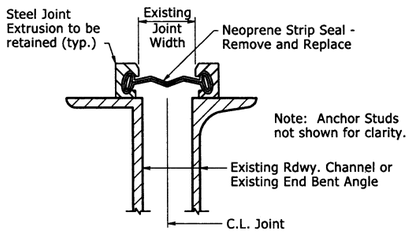
Backer rods shall be extended beyond the length of the poured joint in the initial joint repair area so that the two pieces can be properly spliced together prior to installing sealant for the adjacent joint repair. Manufacturer's recommendations shall be followed to prevent sealant leakage during repair work.

Backer rods shall be appropriately sized and set to the depth shown in the manufacturer's literature based on the joint width at the time of sealing. Except as noted, do not install more backer rod than can be sealed in the same day. The Contractor shall verify separation of the backer rod from the joint material after joint material has set.

Backer rod shall be notched or otherwise fit around any existing seal supports or bumper plates to maintain its proper depth as defined above.

POURED SILICONE JOINT SEAL DETAILS

Bridge Nos. 05330, A2771, 02157



Existing neoprene strip seal joint material shall be completely removed and new neoprene strip seal joint material shall be installed across the entire width of the bridge deck in accordance with these details, Section 809, and the Manufacturer's recommendations. Prior to installing the new joint material, the Contractor shall clean the steel extrusion at the Eningeer's direction and in accordance with the new strip seal joint material Manufacturer's recommendations.

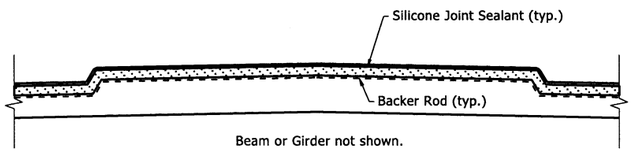
Removal and replacement of the existing neoprene strip seal joint material will require the removal of the parapet slider plates, where present. Parapet slider plates removed for this work shall be reinstalled after installation of the new neoprene strip seal joint material.

The new neoprene strip seal joint material shall provide a movement rating of four inches. The repaired expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

All work and material related to removing the existing joint material, cleaning the extrusion, removal and reinstallation of parapet slider plates, and installation of new joint material shall be paid for under the item "Modification of Existing Bridge Structure (Bridge No. _)".

STRIP SEAL JOINT DETAILS

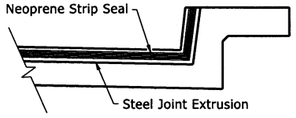
Bridge No. 03345



Beam or Girder not shown.

JOINT SEAL PLACEMENT AT MEDIAN

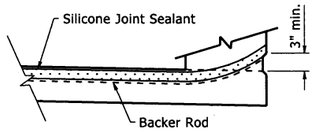
Bridge No. 02157



Beam or Truss Members not shown.

STRIP SEAL JOINT PLACEMENT AT CURB

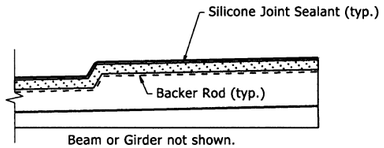
Bridge No. 03345



Beam or Girder not shown.

JOINT SEAL PLACEMENT AT RAIL

Bridge No. 02157, A2771



Beam or Girder not shown.

JOINT SEAL PLACEMENT AT SIDEWALK

Bridge No. 05330

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
CHARLES R. ELLIS
7/24/19

BRIDGE ENGINEER

DETAILS OF JOINT REPAIR

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAL DATE: 7/9/19 FILENAME: b090574_j1.dgn
CHECKED BY: JYP DATE: 7/24/19 SCALE: No Scale
DESIGNED BY: STD. DATE:

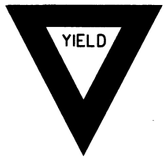
BRIDGE NO. 02157, 03345, A2771, 05330 DRAWING NO. 59646

PRINT DATE: 7/24/2019

RI-1

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

RI-2



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

R2-1

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

W3-5

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

W3-5a

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

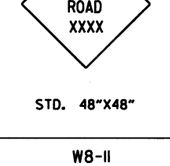
R4-1

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

R4-2

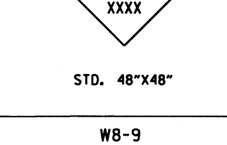
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



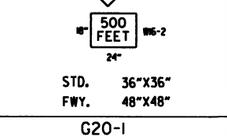
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



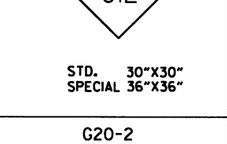
48"X30"

RII-3A



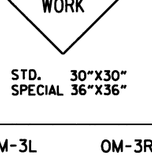
60"X30"

RII-4



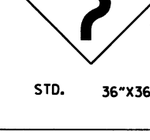
60"X30"

W21-5a



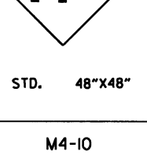
STD. 36"X36"
FWY. 48"X48"

WI-1



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

WI-2

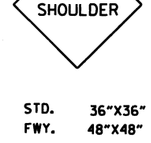


STD. 36"X36"
FWY. 48"X48"

WI-3

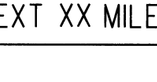
STD. 48"X48"

WI-4



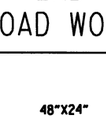
STD. 48"X48"

WI-6



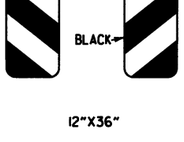
STD. 48"X24"
SPECIAL 60"X30"

WI-8



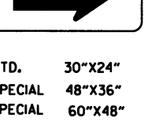
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2

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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

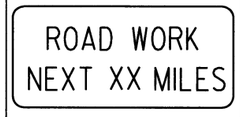
W8-11

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

W8-9

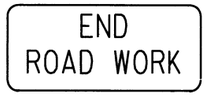
STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2



48"X24"

OM-3L OM-3R

12"X36"

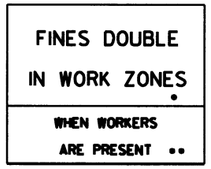
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

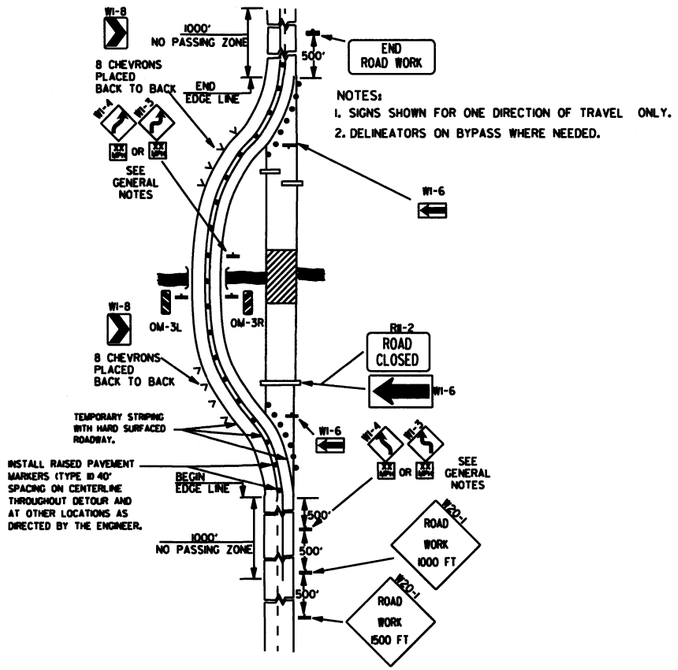
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

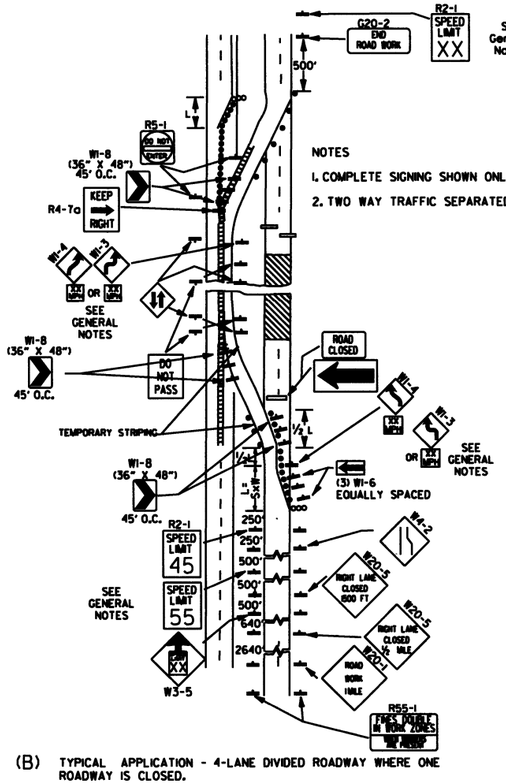
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



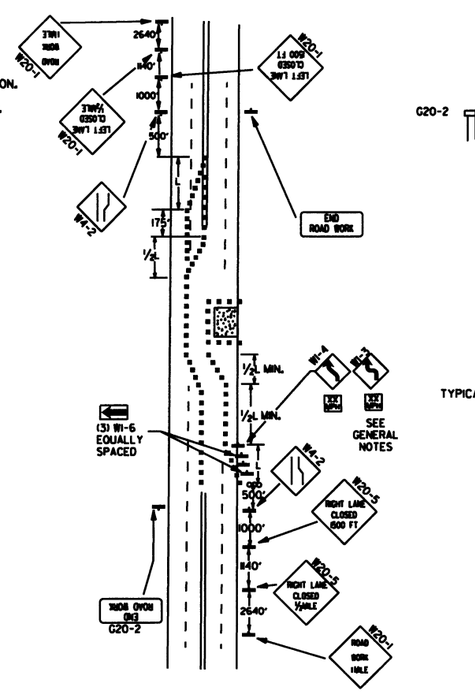
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

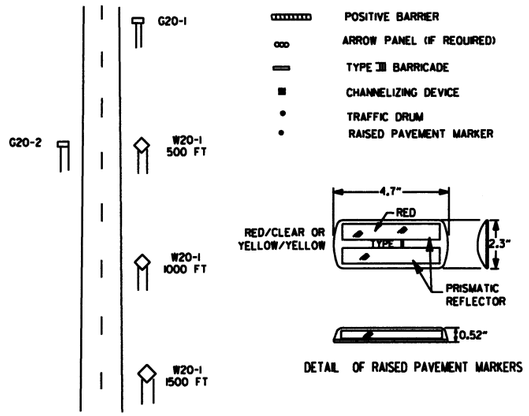


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

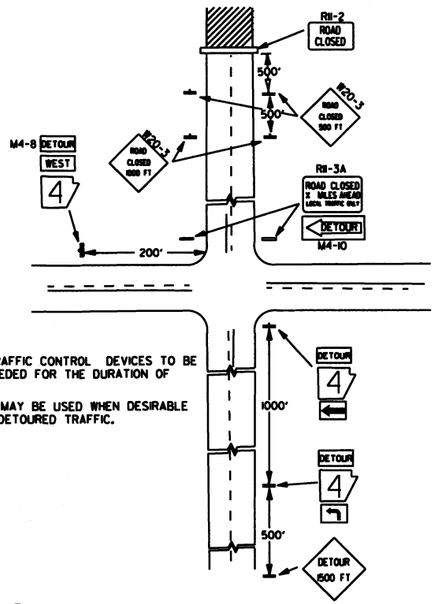
L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

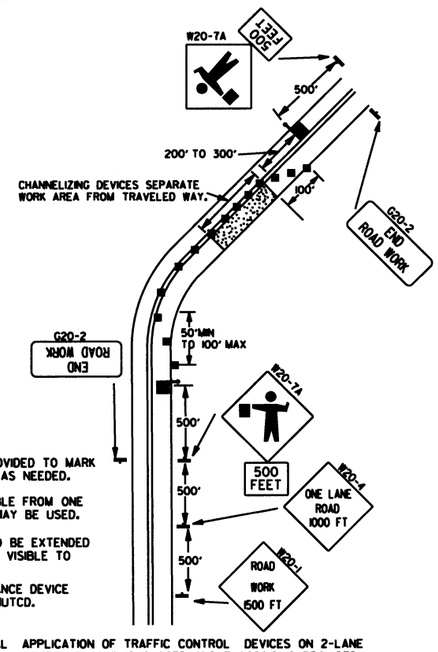
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) 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-K45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



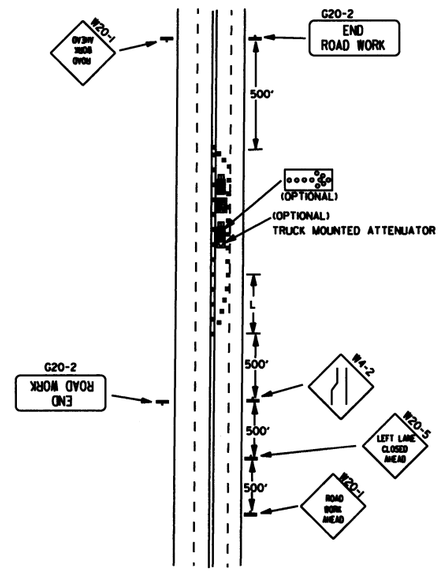
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



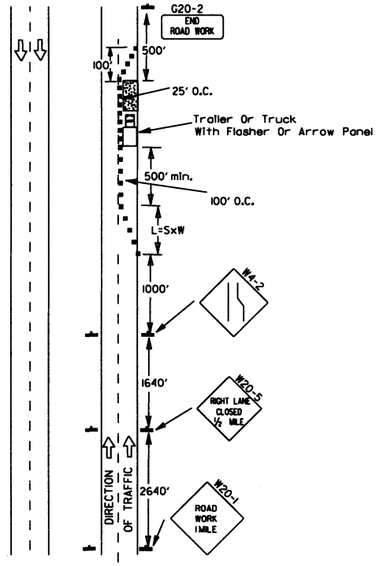
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

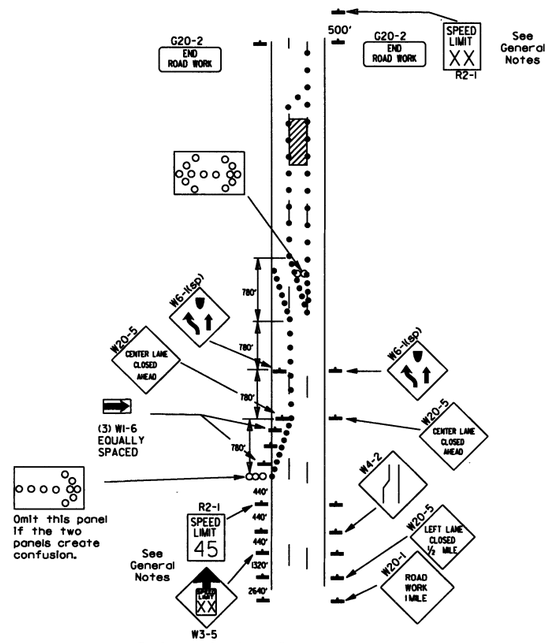
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

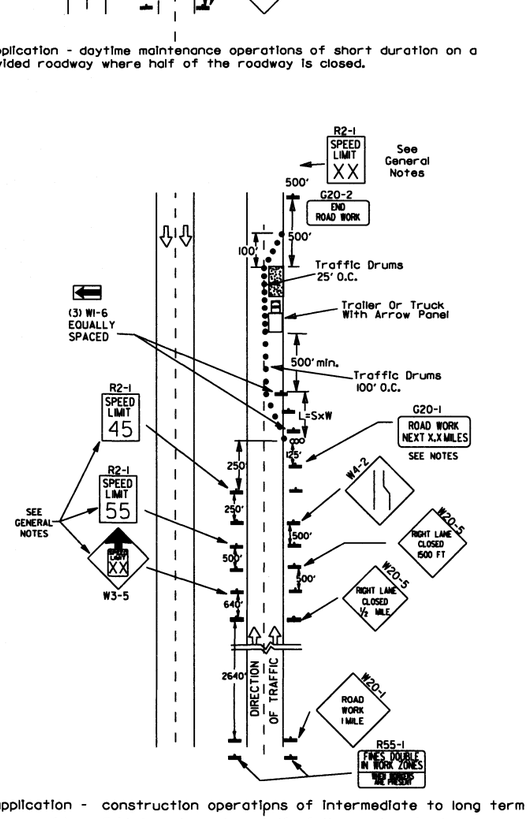
STANDARD DRAWING TC-2



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



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



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

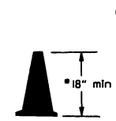
KEY:

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

GENERAL NOTES:

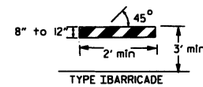
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices

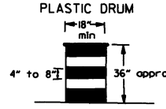


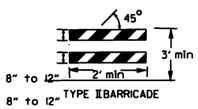
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

CONES

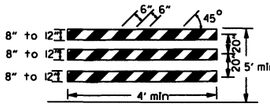


TYPE I BARRICADE



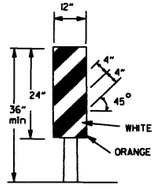


TYPE II BARRICADE



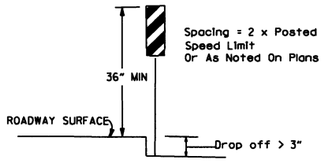
TYPE III BARRICADE

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

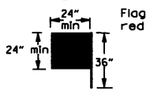


VERTICAL PANEL
VP-1R

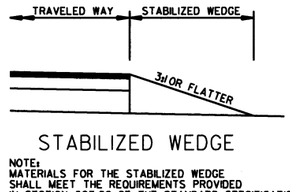
VERTICAL PANEL PLACEMENT



FLAG

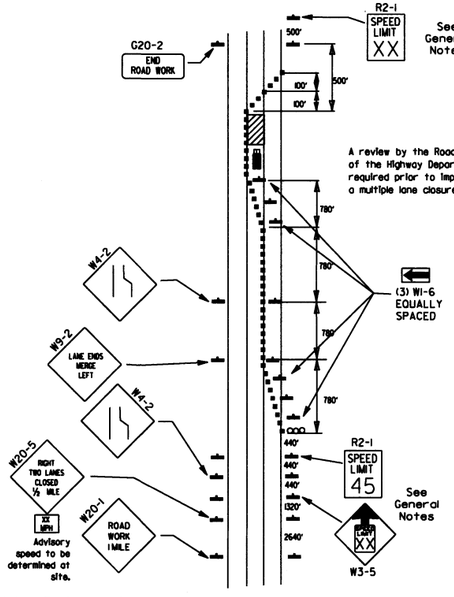


Flag shall be of good grade red material



STABILIZED WEDGE

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



A review by the Roadway Design Division of the Highway Department will be required prior to implementing a multiple lane closure.

(D) Typical application - closing multiple lanes of a multilane 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" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 12"	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" ≤ 24"	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" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

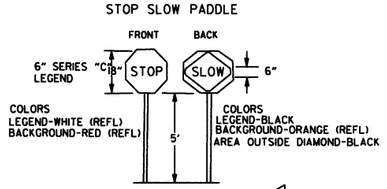
INTERSTATE AND NON-INTERSTATE

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

GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. 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.
4. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE

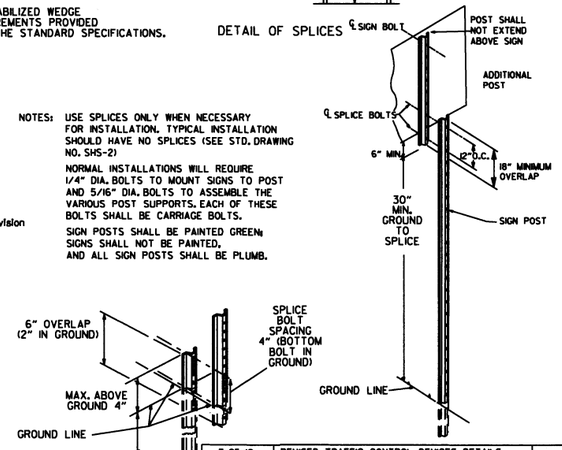


DETAIL OF SPLICES

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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

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



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

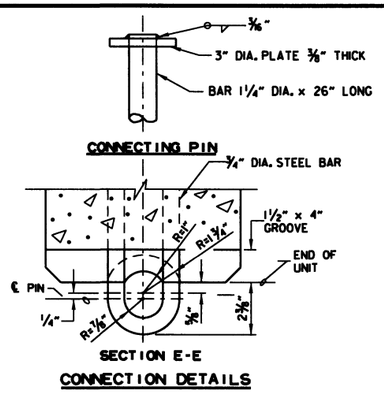
ARKANSAS STATE HIGHWAY COMMISSION

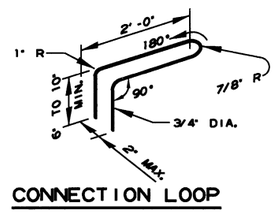
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

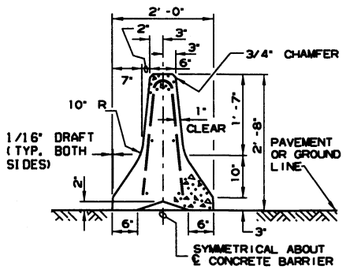
STANDARD DRAWING TC-3

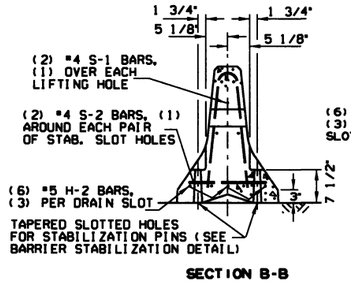
REINFORCING BAR TABLE PER BARRIER UNIT

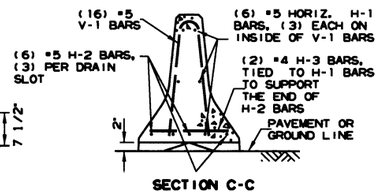
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1" MIN. CLEAR TO BAR, 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP, 1'-6"
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 1 1/2", 9", 2'-1 3/8", 4 3/8"

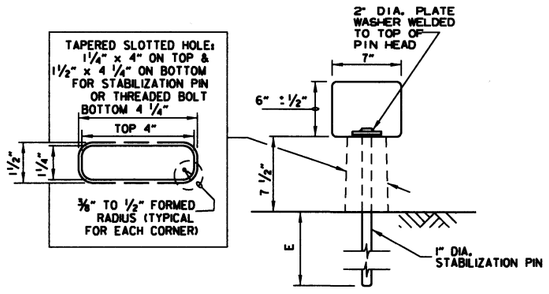






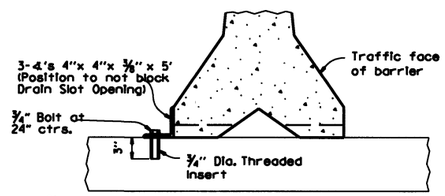






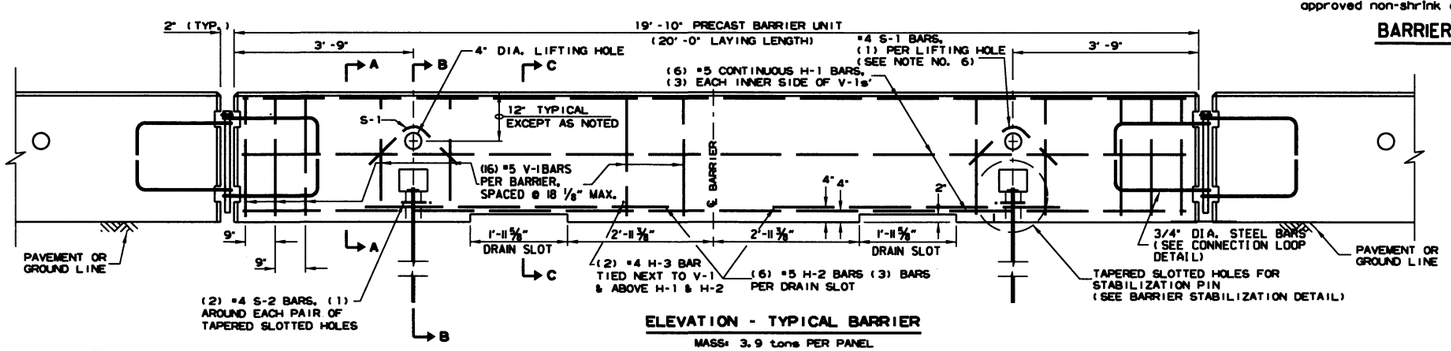
ROADWAY SECTION

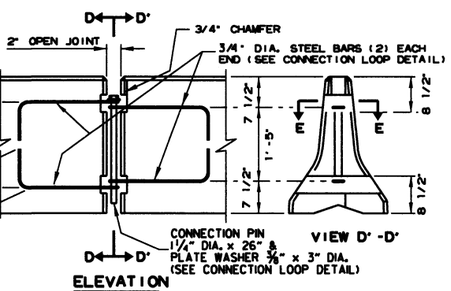
Ⓔ 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas

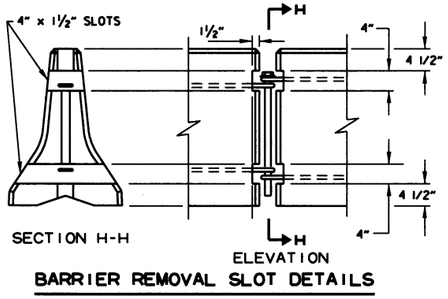


NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS







General Notes

① The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

② Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

③ Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

④ Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

⑤ Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

⑥ A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

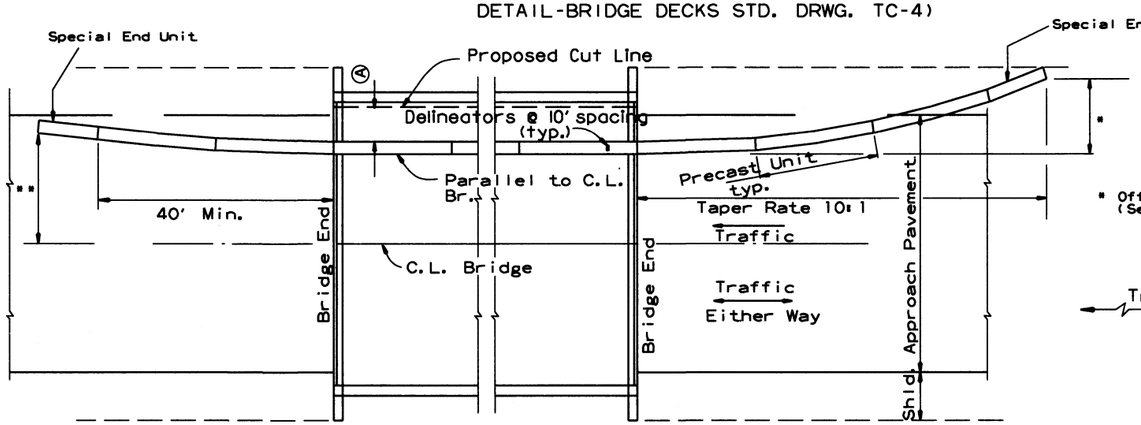
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-6-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

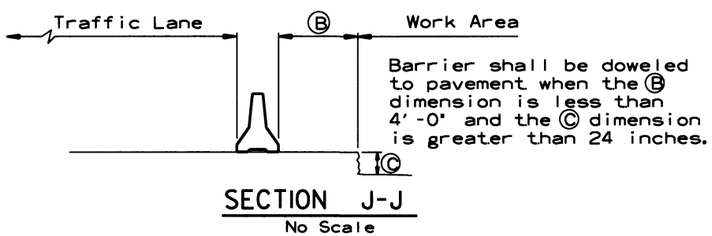
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

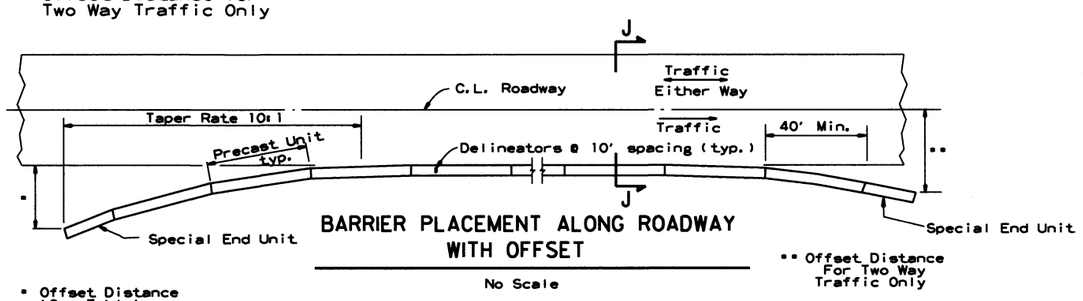
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

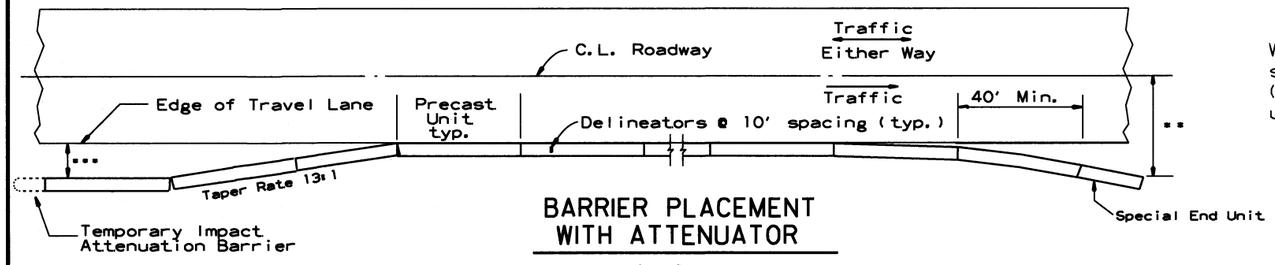
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

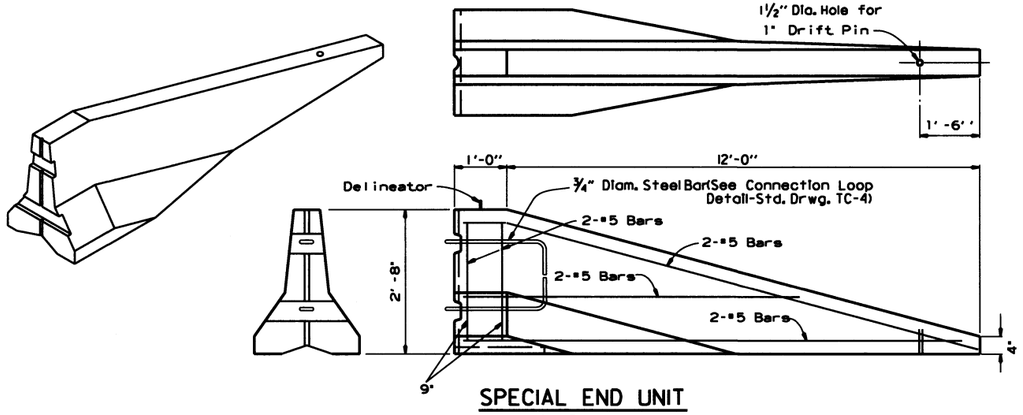


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-5-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5