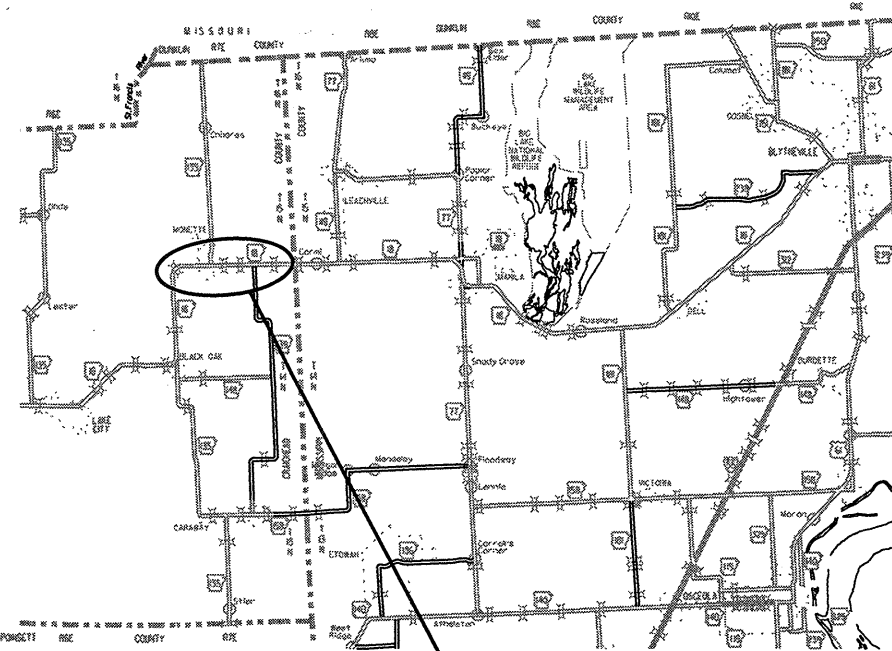


ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

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. CA1001	1	283

2 MONETTE BYPASS (S)



VICINITY MAP

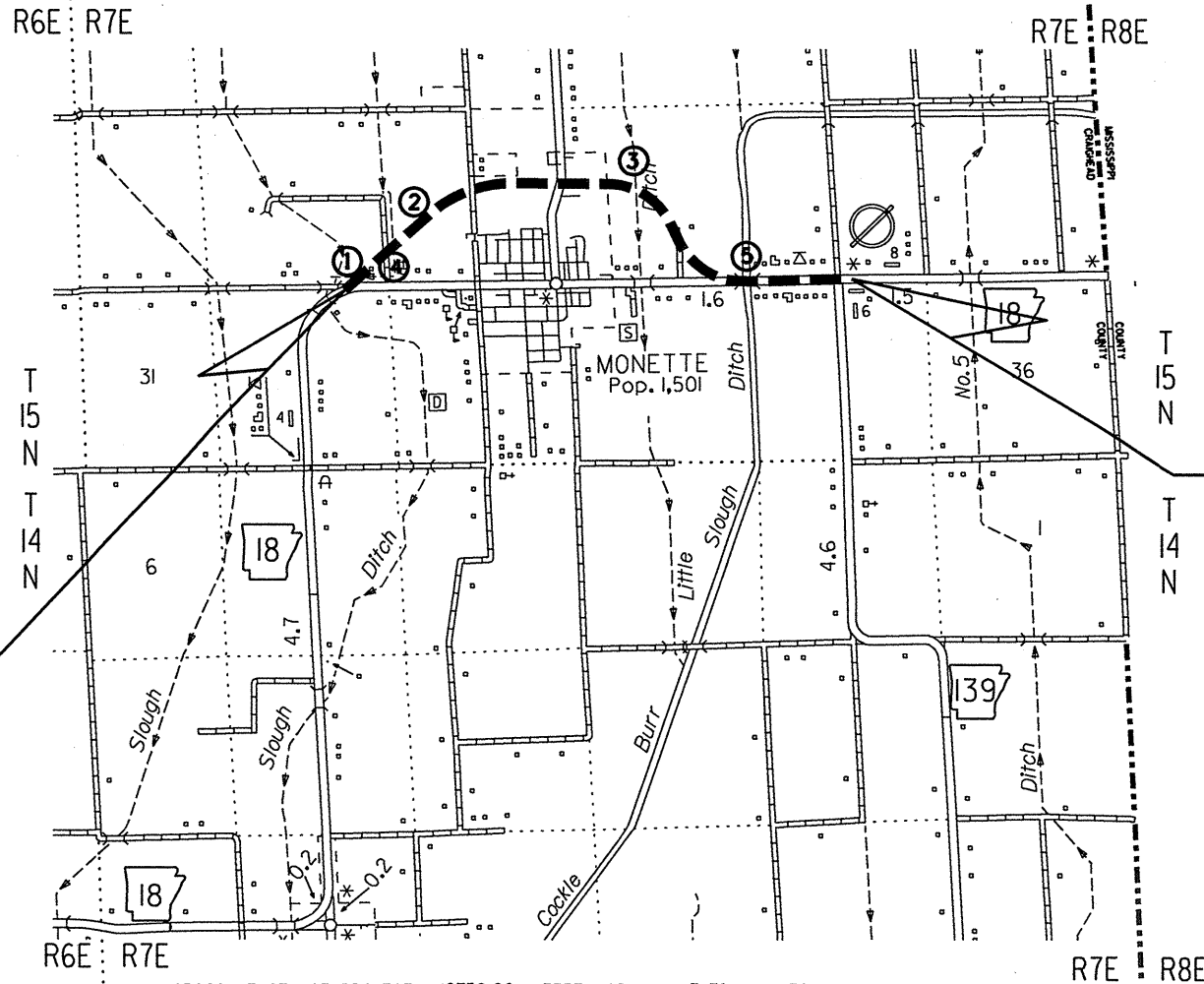
PROJECT LOCATION

STRUCTURES OVER 20' - 0" SPAN

- 1 STA. 473+03 CONSTRUCT
DBL. 11' X 6' X 188' R.C. BOX CULVERT
50° RT. FORWARD SKEW
W/3:1 WINGS LT. & RT.
D.A. = 1.96 SQ. MI., Q50 = 460 C.F.S.
SPAN = 23' - 9"
- 2 STA. 490+88 CONSTRUCT
DBL. 11' X 6' X 148' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
35° LT. FORWARD SKEW
D.A. = 1.95 SQ. MI., Q50 = 450 C.F.S.
SPAN = 23' - 8"
- 3 STA. 570+82 CONSTRUCT
QUAD. 12' X 8' X 151' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
30° RT. FORWARD SKEW
D.A. = 8.8 SQ. MI., Q50 = 950 C.F.S.
SPAN = 51' - 6"
- 4 STA. 46+00 CONSTRUCT - HWY. 18 WEST TIE
DBL. 11' X 6' X 110' R.C. BOX CULVERT
50° LT. FORWARD SKEW
W/3:1 WINGS LT. & RT.
CHANNEL CHANGE = 55 CU. YDS.
D.A. = 1.95 SQ. MI., Q50 = 450 C.F.S.
SPAN = 23' - 9"

BRIDGE DATA

- 5 BR. END STA. 613+11.92
BRIDGE NO. 07363
327' CONTINUOUS COMPOSITE W-BEAM
UNIT (60', 69', 69', 69', 60')
75' - 0" CLEAR ROADWAY
329' - 2" BRIDGE LENGTH
BR. END STA. 616+41.08

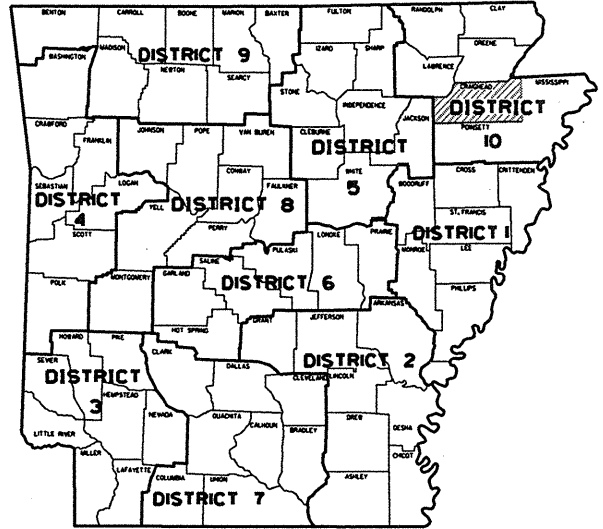


STA. 472+50.00
BEGIN JOB CA1001

STA. 640+00.00
END JOB CA1001
LOG MILE 26.89

GROSS LENGTH OF PROJECT	16750.00	FEET	OR	3.172	MILES
NET " " ROADWAY	16321.92	"	"	3.091	"
NET " " BRIDGES	428.08	"	"	0.081	"
NET " " PROJECT	16750.00	"	"	3.172	"

P.E. 100618



ARK. HWY. DIST. NO. 10

DESIGN TRAFFIC DATA

DESIGN YEAR	2035
2015 ADT	6000
2035 ADT	8000
2035 DHV	880
TRUCKS	11%
DESIGN SPEED	60 MPH

APPROVED



11-2-15
DEPUTY DIRECTOR
AND CHIEF ENGINEER

HWY. 18 MAIN LANES

PI = 572+93.94
Δ = 64°32'38.8" RT.
D = 2°45'00"
T = 1315.70'
L = 2347.06'
PC = 559+78.23
PT = 583+28.79
e = 0.0727
Ls = 540'

STA. 556+90 - IN PLACE
18" x 40' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 62' PIPE CULV'T.
LT. SIDE DRAIN
CONST. OAK STREET = 235 CU. YD.

STA. 562+50 - INSTALL
24" x 82' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 430 CU. YD.

STA. 562+50 - INSTALL
30" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 125 CU. YD.

STA. 559+50 - INSTALL
24" x 30' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 556+93 - IN PLACE
18" x 40' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 570+82 CONSTRUCT
QUAD. 12' x 8' x 15' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
30' RT. FORWARD SKEW
D.A. = 8.8 SO. MI., Q50 = 950 C.F.S.

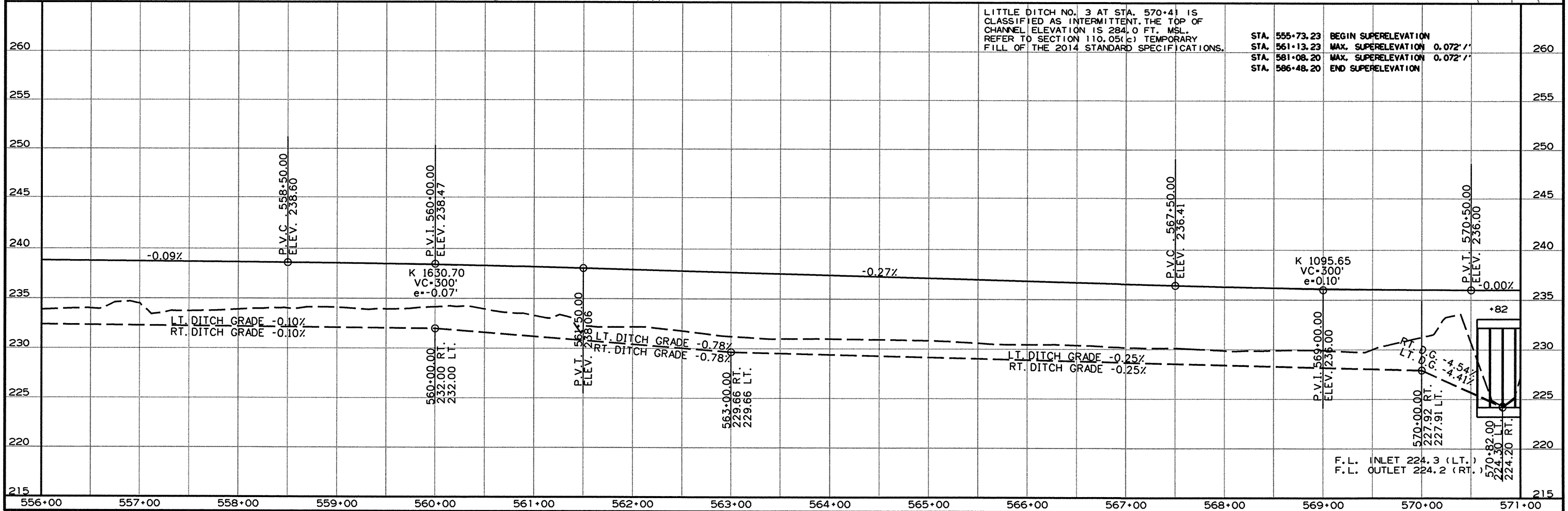
STA. 570+41 - IN PLACE
36" x 32' R.C. PIPE CULV'T.
REMOVE

CONCRETE DITCH PAVING				
STA.	STA.	SIDE	"W"	SO. YDS.
570+00	571+50.00	RT.	9	150.00
570+00	571+50.00	LT.	9	150.00

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

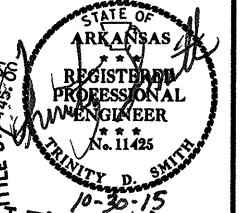
LITTLE DITCH NO. 3 AT STA. 570+41 IS
CLASSIFIED AS INTERMITTENT. THE TOP OF
CHANNEL ELEVATION IS 284.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY
FILL OF THE 2014 STANDARD SPECIFICATIONS.

STA. 555+73.23 BEGIN SUPERELEVATION
STA. 561+13.23 MAX. SUPERELEVATION 0.072' /'
STA. 581+08.20 MAX. SUPERELEVATION 0.072' /'
STA. 586+48.20 END SUPERELEVATION



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		110	283
				JOB NO. CAI001			110	283

2 PLAN AND PROFILE SHEETS



9/22/2015

CAI001.DGN

[illegible]

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

#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: GJP DATE: 8/27/15

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

[illegible]

99.11	CU, YDS.	GLASS "S" CONCRETE (Includes HDWL)
14664	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

[illegible]

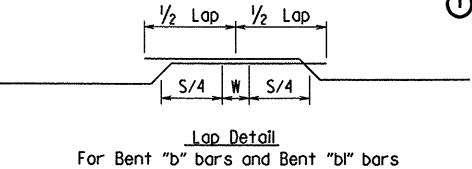
CU. YDS. PER LIN. FT.	CLASS "S" CONCRETE
	REINFORCING STEEL (GR. 60)
	ADTL. REINF. PER LONG LAP LOCATION (S)
	ADTL. REINF. FOR TRANS. LAP
	ADDITIONAL CONCRETE FOR HDWL
	TOTAL ADTL. REINF. FOR HDWL

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

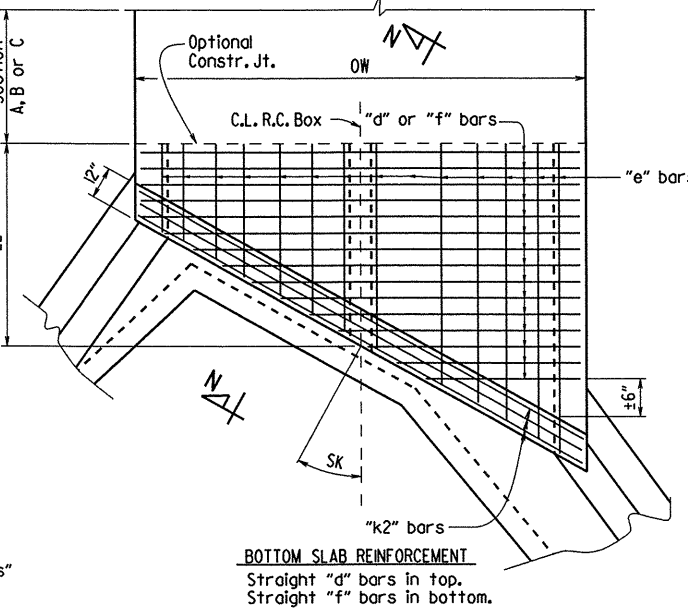
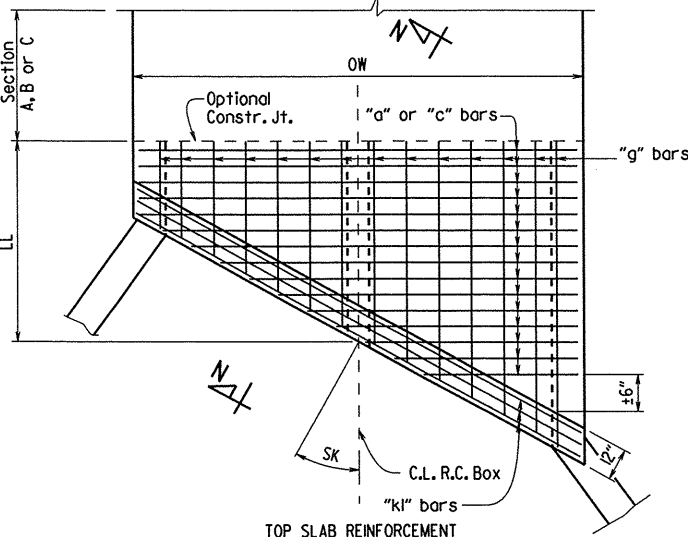


DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		28	283
				JOB NO.	CA1001		28	283

1 SPECIAL DETAILS



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

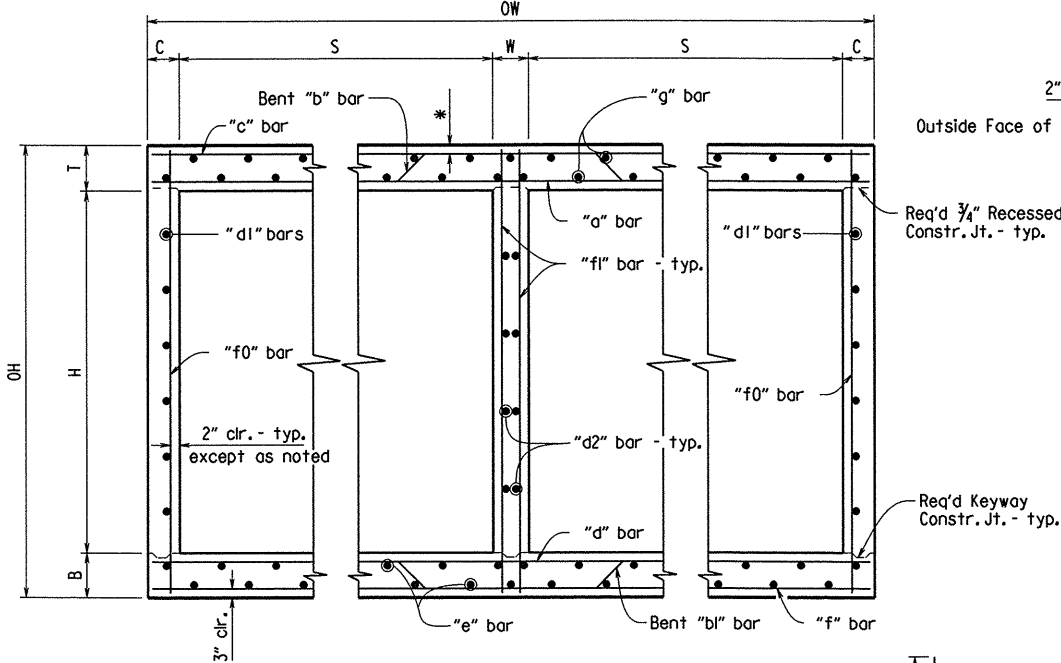


SKewed END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT
SPECIAL DETAILS

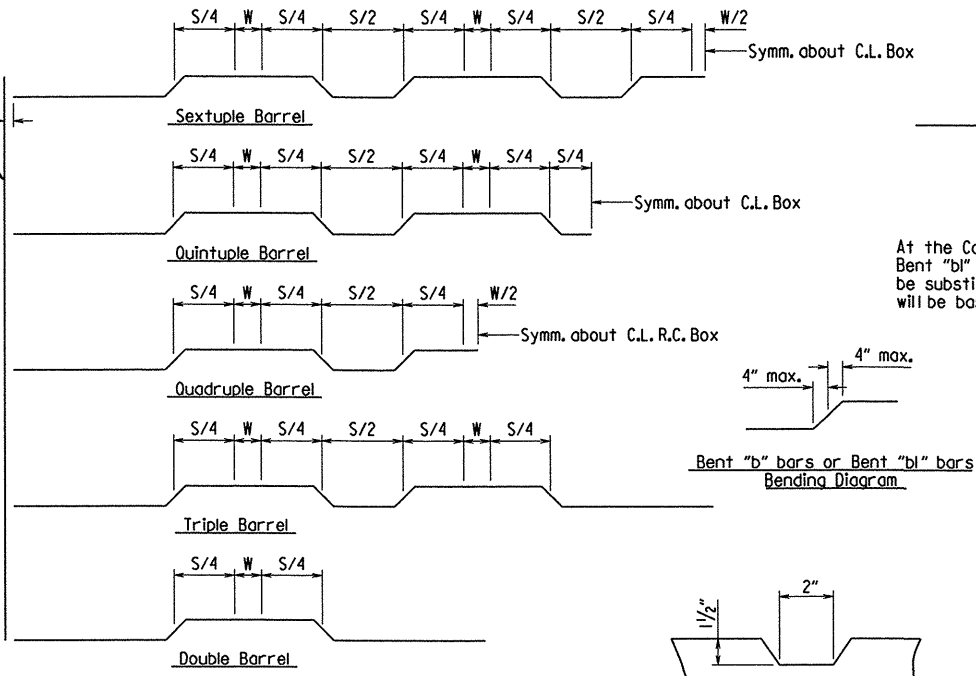
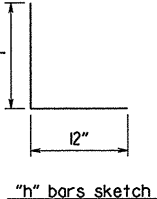
*2" clr. for fill depth (D) greater than 2 ft.
2 1/2" clr. for fill depth (D) equal to or less than 2 ft.

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.

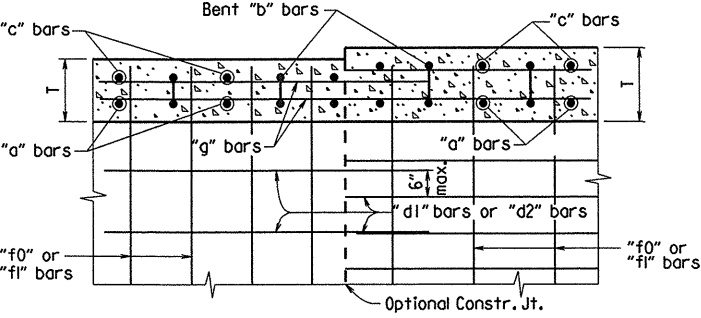


Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

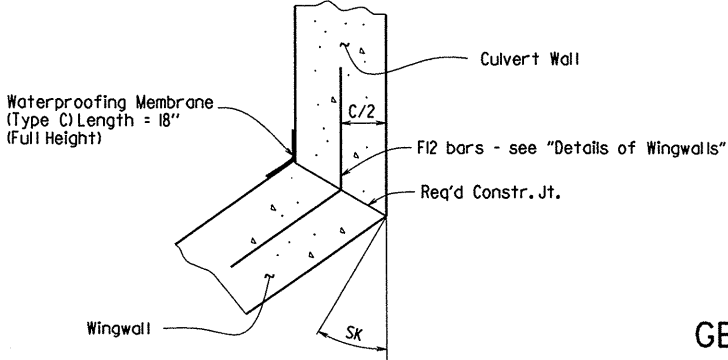


TYPICAL KEYWAY DETAIL
(All Construction Joints)



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

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



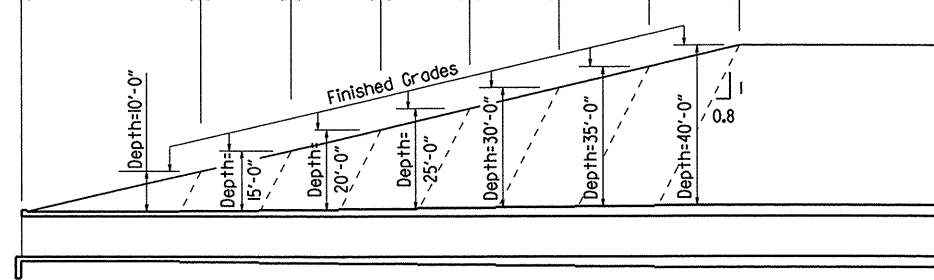
Culvert-General.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	26	283
SPECIAL DETAILS								

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

Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

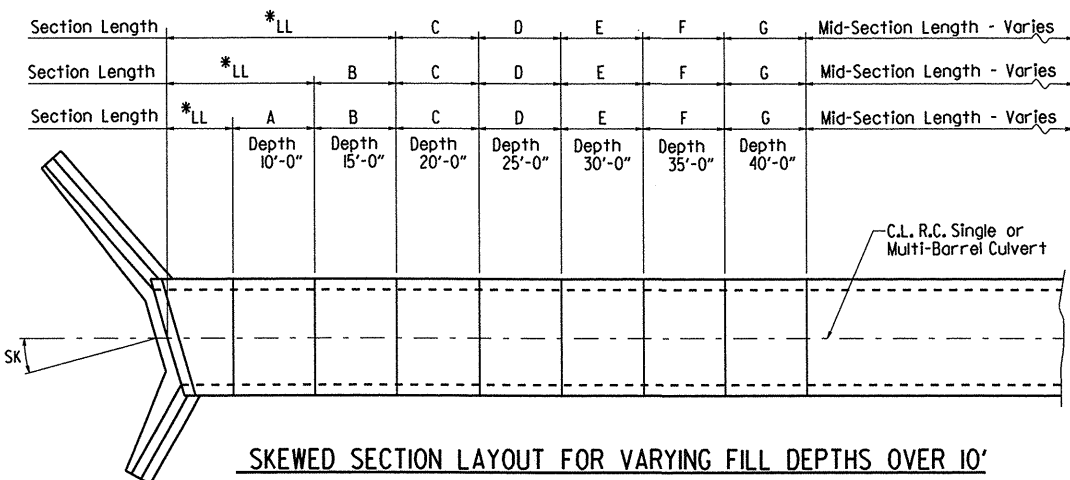
* LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.



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

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes



SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



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 Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 1/4" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

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

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

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

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

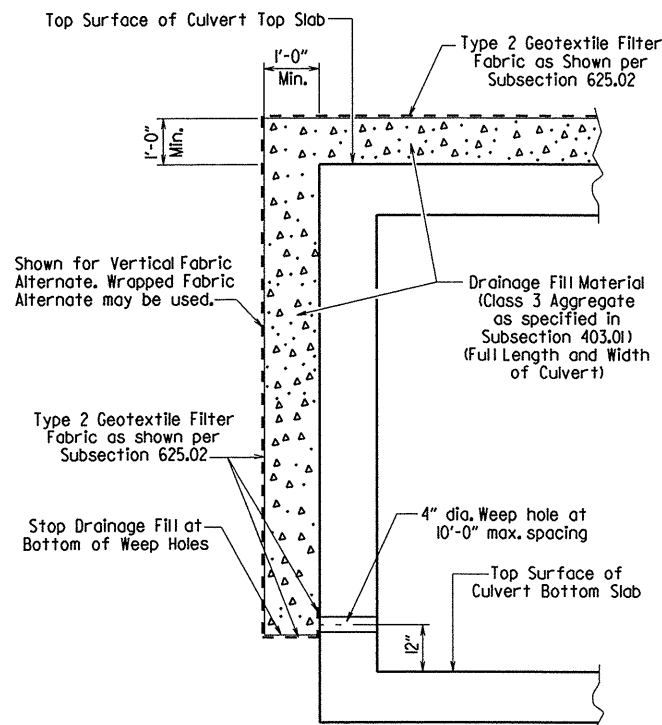
Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. All longitudinal construction joints shall be submitted to the Engineer for approval.

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

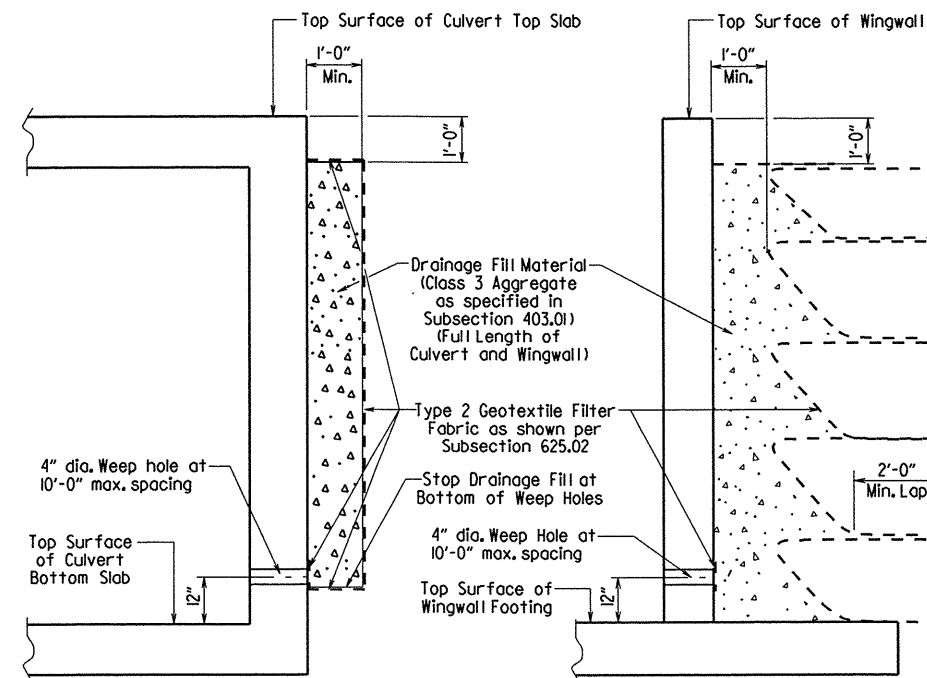
When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a fine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class 5 Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

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

WINGWALL & CULVERT DRAINAGE DETAIL

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



