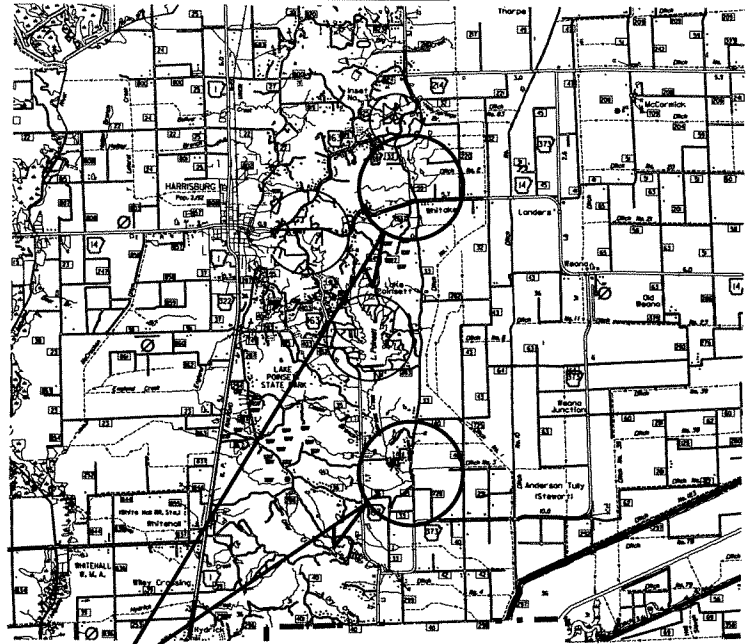


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.	BR5608		1	40

4 DITCH NO. 3 AND BRANCH OF DITCH NO. 2 STRS. & APPRS. (S)

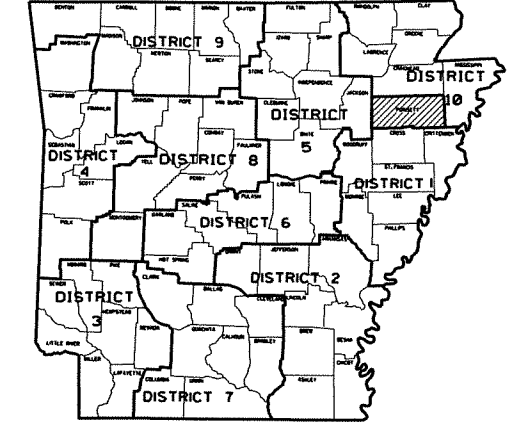
VICINITY MAP



ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

**DITCH NO. 3 AND BRANCH OF
DITCH NO. 2 STRS. & APPRS. (S)**

**COUNTY ROAD 33
POINSETT COUNTY
FED. AID PROJECT BR0-0056(23)
JOB BR5608**



ARKANSAS HIGHWAY DIST. 10

DESIGN TRAFFIC DATA
STA. 200+00 - STA. 206+00

DESIGN YEAR.....2027
2007 ADT.....70
2027 ADT.....100
2027 DHV.....10
DIRECTIONAL DISTRIBUTION....0.60
TRUCKS.....3%
DESIGN SPEED.....40 MPH

DESIGN TRAFFIC DATA
STA. 100+00 - STA. 112+00

DESIGN YEAR.....2027
2007 ADT.....30
2027 ADT.....50
2027 DHV.....4
DIRECTIONAL DISTRIBUTION....0.60
TRUCKS.....3%
DESIGN SPEED.....30 MPH

STA. 206+00.00 END JOB BR5608

FED. AID PROJECT BR0-0056(23)

STA. 112+00.00 END SITE 1

FED. AID PROJECT BR0-0056(23)

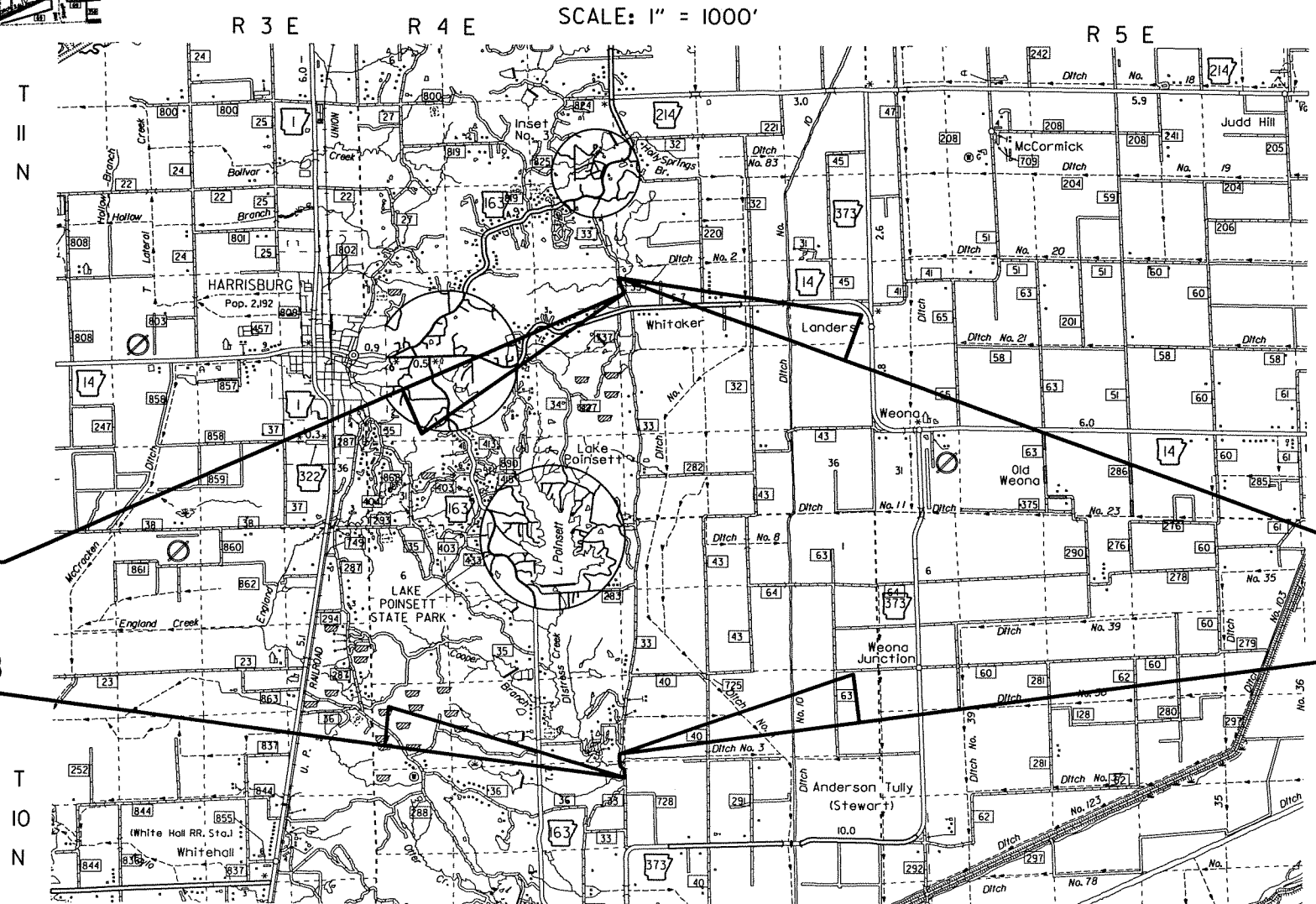
APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
FRANK W. [Signature]
DEPUTY DIRECTOR AND CHIEF ENGINEER

PROJECT LOCATION

STRUCTURES OVER 20' 0" SPAN

STA. 106+09 CONSTRUCT
QUIN. 10' X 12' X 47'
R.C. BOX CULVERT
(15° RT. FORWARD SKEW)
SPAN = 55'10.86"



STA. 200+00.00 BEGIN SITE 2
FED. AID PROJECT BR0-0056(23)

STA. 100+00.00 BEGIN JOB BR5608
FED. AID PROJECT BR0-0056(23)

STATION 200+00 - STATION 206+00			
	BEGIN	MID-POINT	END
LATITUDE	N35°34'25"	N35°34'27"	N35°34'31"
LONGITUDE	W90°39'36"	W90°39'37"	W90°39'39"

STATION 100+00 - STATION 112+00			
	BEGIN	MID-POINT	END
LATITUDE	N35°29'30"	N35°29'35"	N35°29'41"
LONGITUDE	W90°39'48"	W90°39'51"	W90°39'50"

GROSS LENGTH OF PROJECT	1800.00 FEET	OR 0.341 MILES
NET " " ROADWAY	1744.10	" 0.330 "
NET " " BRIDGE	55.90	" 0.011 "
NET " " PROJECT	1800.00	" 0.341 "

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.		BR5608	2	40
4 INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES								

INDEX OF SHEETS

SHEET NO.	TITLE	DRWG. NO.	DATE
1.	TITLE SHEETS		
2.	INDEX OF SHEETS, GOVERNING SPECIFICATIONS AND GENERAL NOTES		
3.	TYPICAL SECTION OF IMPROVEMENT AND SPECIAL DETAILS		
4-5.	SURVEY CONTROL DETAIL		
6-7.	TEMPORARY EROSION CONTROL DETAILS		
8-9.	QUANTITY SHEETS		
10.	SUMMARY OF QUANTITIES AND REVISIONS		
11-12.	PLAN AND PROFILE SHEETS		
13.	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES	1891F	04-10-03
14.	GUARD RAIL DETAILS	GR-8	07-14-10
15.	GUARD RAIL DETAILS	GR-8A	07-14-10
16.	GUARD RAIL DETAILS	GR-9	04-17-08
17.	GUARD RAIL DETAILS	GRT-1	07-14-10
18.	PRECAST CONCRETE BOX CULVERTS	PBC-1	12-15-11
19.	REINFORCED CONCRETE BOX CULVERT DETAILS	RCB-1	12-15-11
20.	EXCAVATION PAY LIMITS AND SOLID SODDING FOR BOX CULVERTS	RCB-2	11-20-03
21.	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2	10-18-96
22.	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	SHS-1	04-17-08
23.	U-CHANNEL POST ASSEMBLIES	SHS-2	10-09-03
24.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
25.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	03-11-10
26.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
27.	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
28.	TEMPORARY EROSION CONTROL DEVICES	TEC-2	06-02-94
29.	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
30.	WIRE FENCE TYPE C AND D	WF-4	08-22-02
31.	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-115X-0	08-14-63
32.	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-515X-0	09-09-63
33.	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X15	06-13-63
34.	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X153-2	06-12-63
35-40.	CROSS SECTIONS		

GOVERNING SPECIFICATIONS

THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS FOR THIS PROJECT SUPPLEMENT THE STANDARD SPECIFICATIONS, EDITION OF 2003. IN CASE OF CONFLICT, THE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL GOVERN.

GENERAL NOTES

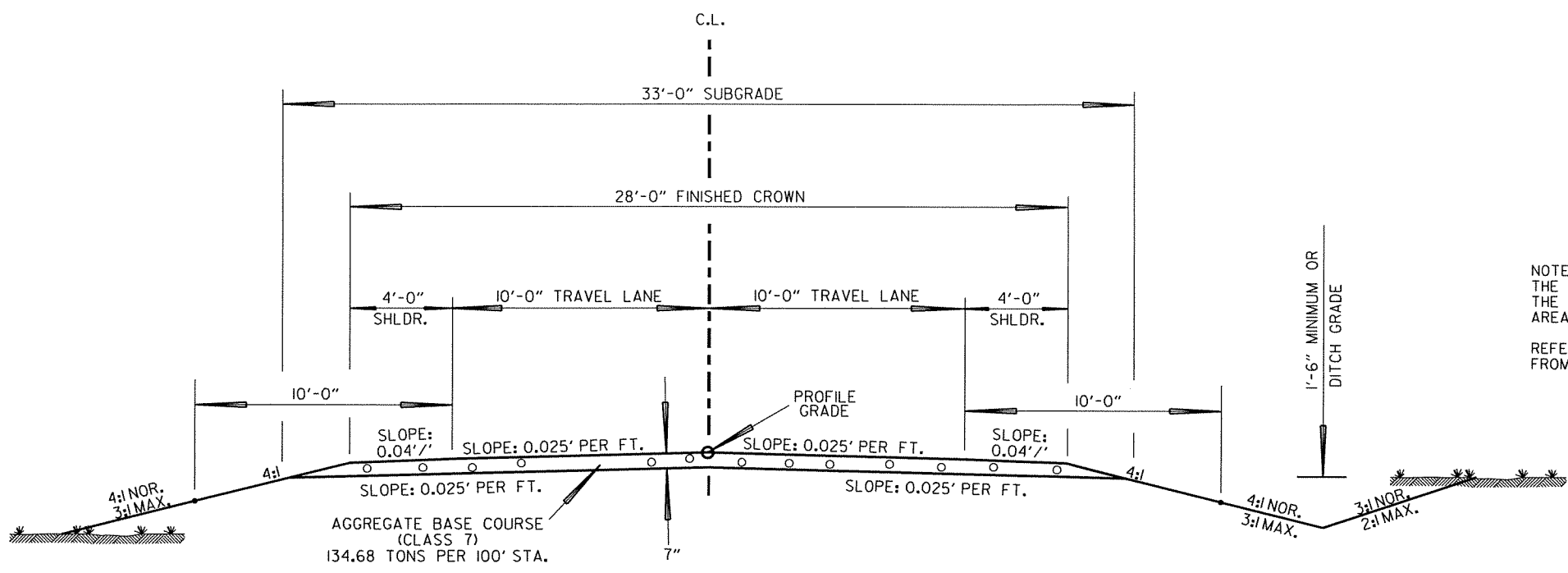
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STD. DRWG. SE-2 USING 30 M.P.H. AND 40 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER LANE EDGE POINT UNLESS OTHERWISE SHOWN.
- ALL SALVAGEABLE PIPE CULVERTS SHALL BE STORED ON THE RIGHT-OF-WAY AND REMAIN THE PROPERTY OF POINSETT COUNTY.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE PERMIT 14. REFER TO SUPPLEMENTAL SPECIFICATION 110-1, FOR PERMIT REQUIREMENTS.
- TRAFFIC IS TO BE MAINTAINED ACROSS THE EXISTING BRIDGE, SITE 1, UNTIL THE NEW BRIDGE IS COMPLETE AND OPEN TO TRAFFIC.
- THE ROAD WILL BE CLOSED, SITE 2, TO THRU TRAFFIC UNTIL THE NEW BRIDGE IS COMPLETED AND OPEN TO TRAFFIC.
- CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL OF EXISTING BRIDGE STRUCTURE.

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	FHWA-1273 REVISIONS
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 - REVISIONS OF FHWA-1273 FOR OFF-SYSTEM PROJECTS
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
723-1	GENERAL REQUIREMENTS FOR SIGNS
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB BR5608	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BR5608	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BR5608	INTERNET BIDDING
JOB BR5608	STORM WATER POLLUTION PREVENTION PLAN
JOB BR5608	UTILITY ADJUSTMENTS



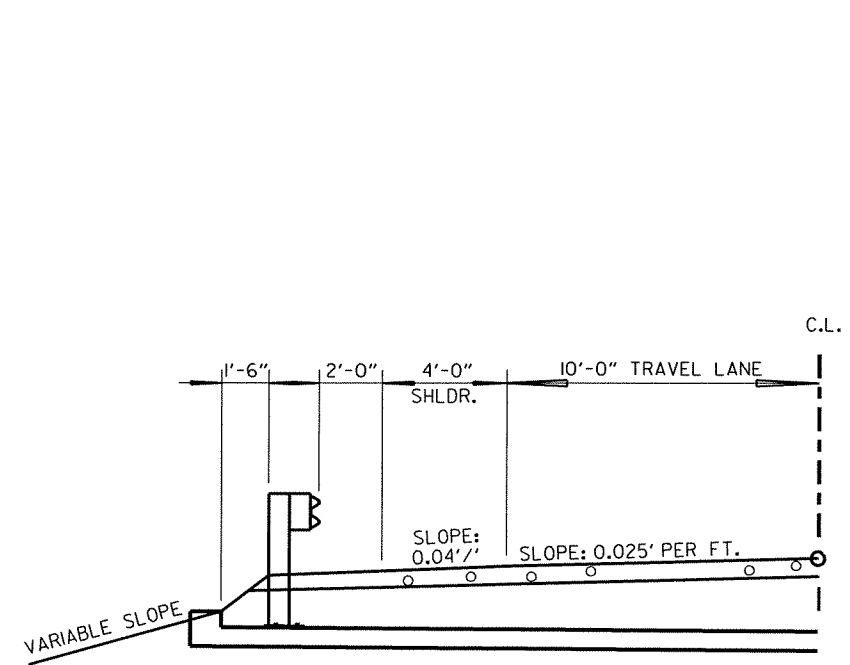
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.	BR5608	3	40	

4 TYPICAL SECTION OF IMPROVEMENT & SPECIAL DTLS.

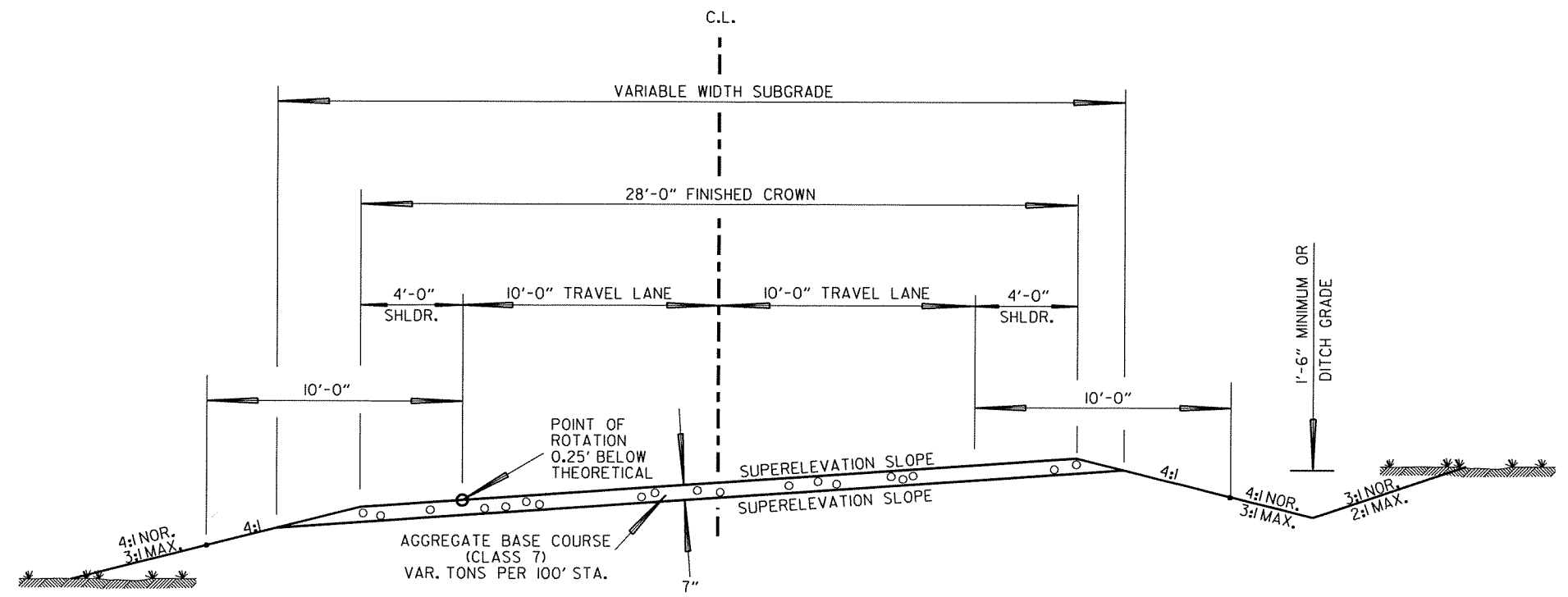


NOTES:
 THE AGGREGATE BASE COURSE IS TO BE PLACED AND SPREAD TO CONFORM TO THE TYPICAL SECTION. THE MATERIAL IN THE BASE COURSE SHALL BE UNIFORMLY COMPACTED, STABLE AND FREE OF SEGREGATED AREAS. DENSITY REQUIREMENTS ARE NOT A PART OF THIS CONTRACT.
 REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

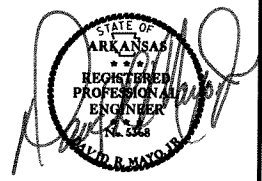
TYPICAL SECTION OF IMPROVEMENT



GUARD RAIL DETAIL



SUPERELEVATED SECTION OF IMPROVEMENT



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
				JOB NO.	BR5608	4	40	

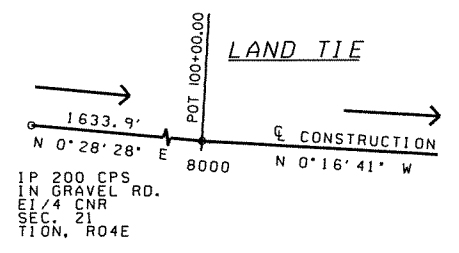
4 SURVEY CONTROL DETAIL

COORDINATES
APPROXIMATE STATE PLANE, DETERMINED FROM A SCALED LATITUDE,
AND LONGITUDE FOR THE POSITION OF THE SOLAR OBSERVATION,
AS PLOTTED ON A QUADRANGLE SHEET, PROJECTED TO GROUND.

NAME	NORTHING	EASTING	ELEVATION	PREFERENCE	DESCRIPTION
200	422174.86319	1710384.17458	*****	IP	CPS IN GRAVEL RD E1/4 CNR SEC 21, T10N, R04E SEE CM FOR ACC
201	419534.69580	1710366.68569	*****	TV	5/8" RBR SE SEC CNR
941	423869.87654	1710376.06278	227.53030	BM	5/8X24" RBR W/ALUM CAP
942	424526.28509	1710189.05446	230.91910	BM	BENCH MARK EAST OF RD 33
1001	424874.15374	1710325.53135	225.90310	SU	5/8" REBAR/ALUM CAP
1002	424414.18356	1710358.51878	228.03560	SU	REBAR/ALUM CAP
1150	424279.00077	1710296.67531	224.94610	TV	8" SPIKE NAIL
1151	424304.84948	1710231.87172	220.07180	TV	8" SPIKE NAIL
1152	424468.48447	1710095.97558	*****	TV	8" SPIKE NAIL
1153	424915.57190	1710126.17271	244.34950	TV	8" SPIKE NAIL
1154	424728.17336	1710140.37936	239.89670	TV	8" SPIKE NAIL
1155	424669.37231	1710366.27456	*****	TV	8" SPIKE NAIL
1200	422982.39166	1710385.18665	*****	TV	6" SPIKE NAIL
1201	421657.66687	1710388.79992	*****	TV	6" SPIKE NAIL
1202	420567.11339	1710382.15873	*****	TV	6" SPIKE NAIL
1203	421657.66437	1710388.79782	*****	TV	6" SPIKE NAIL
1204	422982.38686	1710385.14885	*****	TV	6" SPIKE NAIL
1524	423768.94228	1710418.26370	*****	SU	5/8X24" RBR W/ALUM CAP
1525	423929.71036	1710408.72899	*****	SU	5/8X24" RBR W/ALUM CAP
1526	423863.21214	1710489.59877	*****	SU	5/8X24" RBR W/ALUM CAP
1527	423786.59668	1710463.00790	*****	SU	5/8X24" RBR W/ALUM CAP
1528	424279.30599	1710376.60912	*****	SU	5/8X24" RBR W/ALUM CAP
1529	424357.90620	1710338.85733	*****	SU	5/8X24" RBR W/ALUM CAP
1530	424397.28721	1710413.74166	*****	SU	5/8X24" RBR W/ALUM CAP
1531	424309.66103	1710421.57304	*****	SU	5/8X24" RBR W/ALUM CAP
1532	424625.33106	1710136.54318	*****	SU	5/8X24" RBR W/ALUM CAP
1533	424570.20598	1710159.18445	*****	SU	5/8X24" RBR W/ALUM CAP
1534	424534.45794	1710085.75673	*****	SU	5/8X24" RBR W/ALUM CAP
1535	424598.18765	1710059.41738	*****	SU	5/8X24" RBR W/ALUM CAP
1536	424981.83940	1710128.62150	*****	SU	5/8X24" RBR W/ALUM CAP
1537	424988.14417	1710091.30704	*****	SU	5/8X24" RBR W/ALUM CAP
1538	425100.43206	1710094.06284	*****	SU	5/8X24" RBR W/ALUM CAP
1539	425124.83557	1710132.86191	*****	SU	5/8X24" RBR W/ALUM CAP
1540	424899.92165	1710275.06262	*****	SU	5/8X24" RBR W/ALUM CAP
1541	424891.32131	1710386.21653	*****	SU	5/8X24" RBR W/ALUM CAP
1542	424832.42416	1710345.51402	*****	SU	5/8X24" RBR W/ALUM CAP
1543	424826.39251	1710299.76534	*****	SU	5/8X24" RBR W/ALUM CAP
1544	424441.84920	1710395.07358	*****	SU	5/8X24" RBR W/ALUM CAP
1545	424379.61650	1710406.38952	*****	SU	5/8X24" RBR W/ALUM CAP
1546	424334.85939	1710365.68851	*****	SU	5/8X24" RBR W/ALUM CAP
1547	424400.58875	1710322.31891	*****	SU	5/8X24" RBR W/ALUM CAP

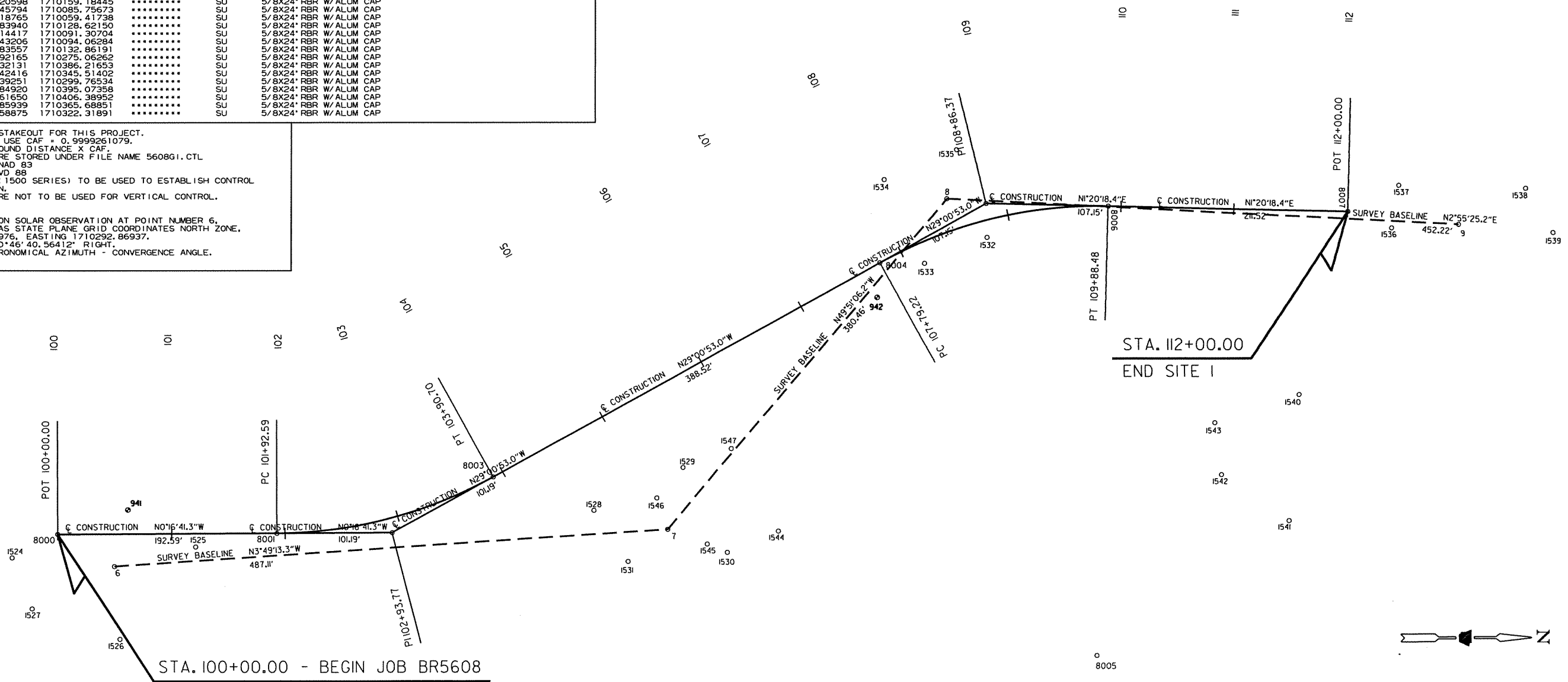
CONSTRUCTION CENTERLINE				
NAME	STATION	NORTHING	EASTING	
8000	POT 100+00.00	423808.67025	1710397.70053	
8001	PC 101+92.59	424001.25713	1710396.76564	
8002	PI 102+93.77	423999.33967	1710001.77029	
8003	PT 103+90.70	424190.92819	1710347.19589	
8004	PC 107+79.22	424530.68673	1710158.75057	
8005	PI 108+86.37	424722.27525	1710504.17617	
8006	PT 109+88.48	424731.50170	1710109.28394	
8007	POT 112+00.00	424942.96757	1710114.22473	

SURVEY BASELINE					
NAME	NORTHING	EASTING	ELEVATION	PREFERENCE	DESCRIPTION
6	423858.26528	1710425.85006	227.64540	SU	5/8X24" RBR W/ALUM CAP
7	424344.29569	1710393.39456	226.59520	SU	5/8X24" RBR W/ALUM CAP
8	424589.60372	1710102.57947	241.57420	SU	5/8X24" RBR W/ALUM CAP
9	425041.23659	1710125.64528	244.25950	SU	5/8" REBAR/ALUM CAP



USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
TO CONVERT TO GRID USE CAF = 0.9999261079.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME 5608G1.CTL
HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88
REFERENCES POINTS (1500 SERIES) TO BE USED TO ESTABLISH CONTROL
POINTS BY RESECTION.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL.

BASIS OF BEARINGS
GRID NORTH, BASED ON SOLAR OBSERVATION AT POINT NUMBER 6.
APPROXIMATE ARKANSAS STATE PLANE GRID COORDINATES NORTH ZONE.
NORTHING 423826.49976, EASTING 1710292.86937.
CONVERGENCE ANGLE 0° 45' 40.56412" RIGHT.
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.



SCALE IN FEET
SCALE RATIO 1" = 50'



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.	BR0-0056(23)			
JOB NO.							BR5608	5	40

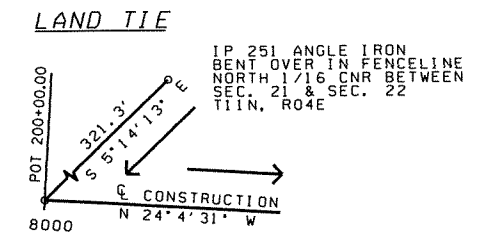
4 SURVEY CONTROL DETAIL

COORDINATES
(FEET)
APPROXIMATE STATE PLANE, DETERMINED FROM A SCALED LATITUDE,
AND LONGITUDE FOR THE POSITION OF THE SOLAR OBSERVATION,
AS PLOTTED ON A QUADRANGLE SHEET, PROJECTED TO GROUND.

NAME	NORTHING	EASTING	ELEVATION	PREFERENCE	DESCRIPTION
8000	454138.43045	1710664.75418	243.45880	CTL	5/8" REBAR/ALUM CAP
8001	454136.41436	1710410.07895	246.44360	CTL	5/8" REBAR/ALUM CAP
8002	454136.50904	1710610.45136	255.92770	CTL	5/8" REBAR/ALUM CAP
8003	454189.54962	1710631.08133	.....	.....	.....
8004	453984.35566	171005.38913	243.13250	TV	5/8" REBAR/ALUM CAP
1500	453709.17997	171094.77712	.....	.....	.....
1501	453900.89772	171019.60891	.....	.....	.....
1502	453916.98915	171069.14007	.....	.....	.....
1503	453730.29577	171141.04183	.....	.....	.....
1504	454091.25117	171071.43220	.....	.....	.....
1505	454166.13738	171071.43220	.....	.....	.....
1506	454219.45540	1710621.74120	.....	.....	.....
1507	454117.70198	1710801.52738	.....	.....	.....
1508	454166.61599	1710456.84280	.....	.....	.....
1509	454590.59607	1710460.98011	.....	.....	.....
1510	454215.93684	1710360.43228	.....	.....	.....
1511	454215.68618	1710344.79120	.....	.....	.....
1512	454784.89761	1710646.24138	.....	.....	.....
1513	454904.29818	1710629.35458	.....	.....	.....
1514	454901.61968	1710675.46817	.....	.....	.....
1515	454823.73677	1710692.50749	.....	.....	.....
1516	455023.06099	1710692.50749	.....	.....	.....
1517	455200.02843	1710660.12203	.....	.....	.....
1518	454459.26256	1710836.89665	.....	.....	.....
1519	454453.05178	1710738.77234	.....	.....	.....
1520	454556.49657	1710771.42348	.....	.....	.....

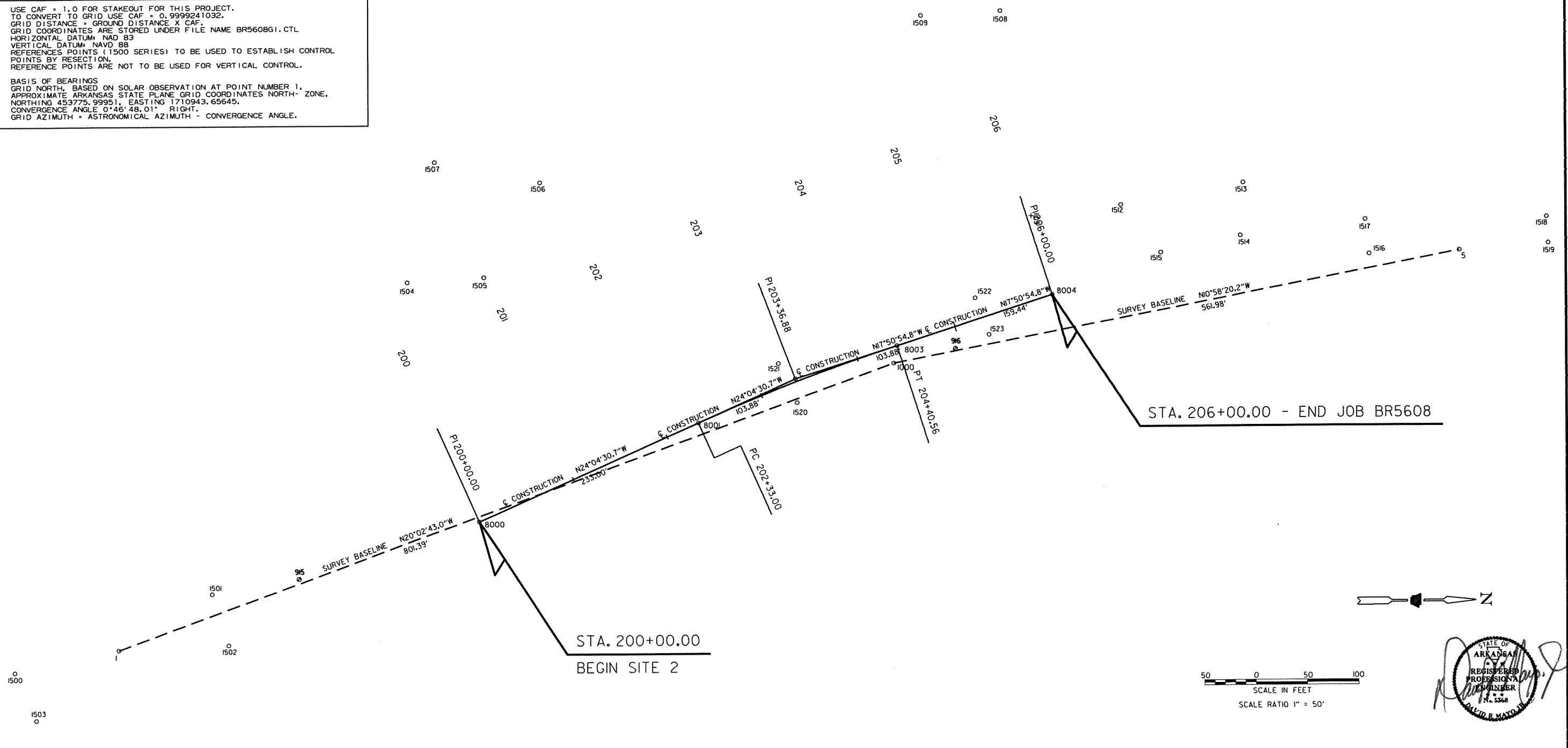
NAME	STATION	NORTHING	EASTING
8000	POT 200+00.00	454160.02469	1710951.02273
8001	PC 202+33.00	454372.75895	1710895.97278
8002	PI 203+36.88	455151.85748	1712599.69508
8003	PT 204+40.56	454566.48153	1710781.75734
8004	POT 206+00.00	454718.25041	1710732.88776

NAME	NORTHING	EASTING	ELEVATION	PREFERENCE	DESCRIPTION
1	453810.44226	1711073.52140	242.54010	CTL	5/8" REBAR/ALUM CAP
5	455114.99777	1710691.86964	257.25750	CTL	5/8" REBAR/ALUM CAP
1000	454563.28720	1710798.83426	244.24730	TV	5/8" REBAR/ALUM CAP



USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
TO CONVERT TO GRID USE CAF = 0.9999241032.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME BR5608G1.CTL
HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88
REFERENCES POINTS (1500 SERIES) TO BE USED TO ESTABLISH CONTROL
POINTS BY RESECTION.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL.

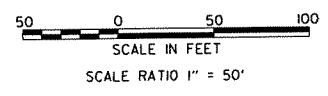
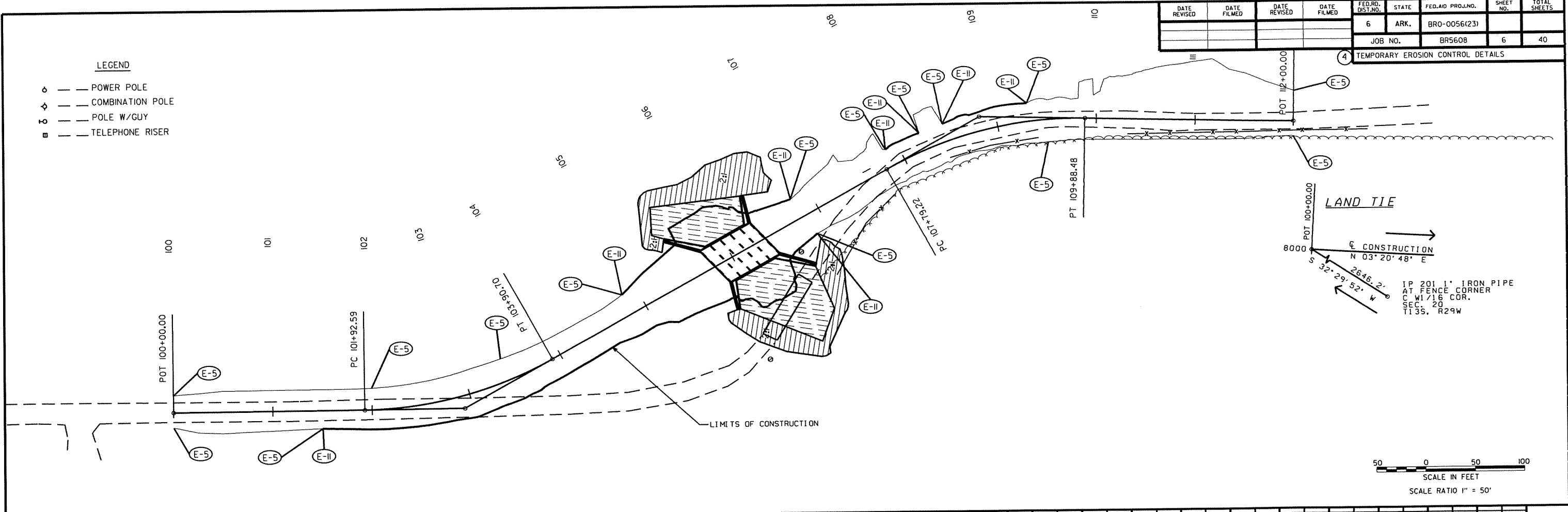
BASIS OF BEARINGS
GRID NORTH, BASED ON SOLAR OBSERVATION AT POINT NUMBER 1,
APPROXIMATE ARKANSAS STATE PLANE GRID COORDINATES NORTH-1 ZONE,
NORTHING 453775.99951, EASTING 1710943.65645.
CONVERGENCE ANGLE 0° 46' 48.01" RIGHT.
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)	6	40
				JOB NO. BR5608				

4 TEMPORARY EROSION CONTROL DETAILS

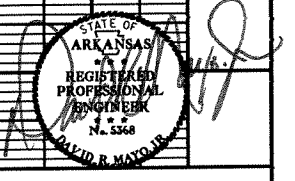
- LEGEND**
- — POWER POLE
 - ◊ — COMBINATION POLE
 - ⊕ — POLE W/GUY
 - ▣ — TELEPHONE RISER



TEMPORARY EROSION CONTROL

REVISION NO.	REVISION
1.	
2.	
3.	
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9.	
10.	

STATION	STATION	SIDE	SAND BAG DITCH CKS. (E-5)	SILT FENCE (E-II)	SEDIMENT REMOVAL & DISPOSAL	STANDARD DRAWING NUMBER
			BAGS	LIN. FT.	CU. YDS.	
100+00		LT. & RT.	12		2	TEC-1, 2&3
101+50		RT.	6		1	TEC-1, 2&3
101+50	106+86	RT.		591	18	TEC-1, 2&3
102+00		LT.	6		1	TEC-1, 2&3
103+50		LT.	6		1	TEC-1, 2&3
104+84		LT.	6		1	TEC-1, 2&3
104+84	106+80	LT.		228	7	TEC-1, 2&3
106+80		LT.	6		1	TEC-1, 2&3
106+86		RT.	6		1	TEC-1, 2&3
107+87		LT.	6		1	TEC-1, 2&3
107+87	108+24	LT.		38	1	TEC-1, 2&3
108+24		LT.	6		1	TEC-1, 2&3
108+48		LT.	6		1	TEC-1, 2&3
108+48	109+33	LT.		89	3	TEC-1, 2&3
109+33		LT.	6		1	TEC-1, 2&3
109+50		RT.	6		1	TEC-1, 2&3
112+00		LT. & RT.	12		2	TEC-1, 2&3

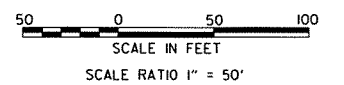
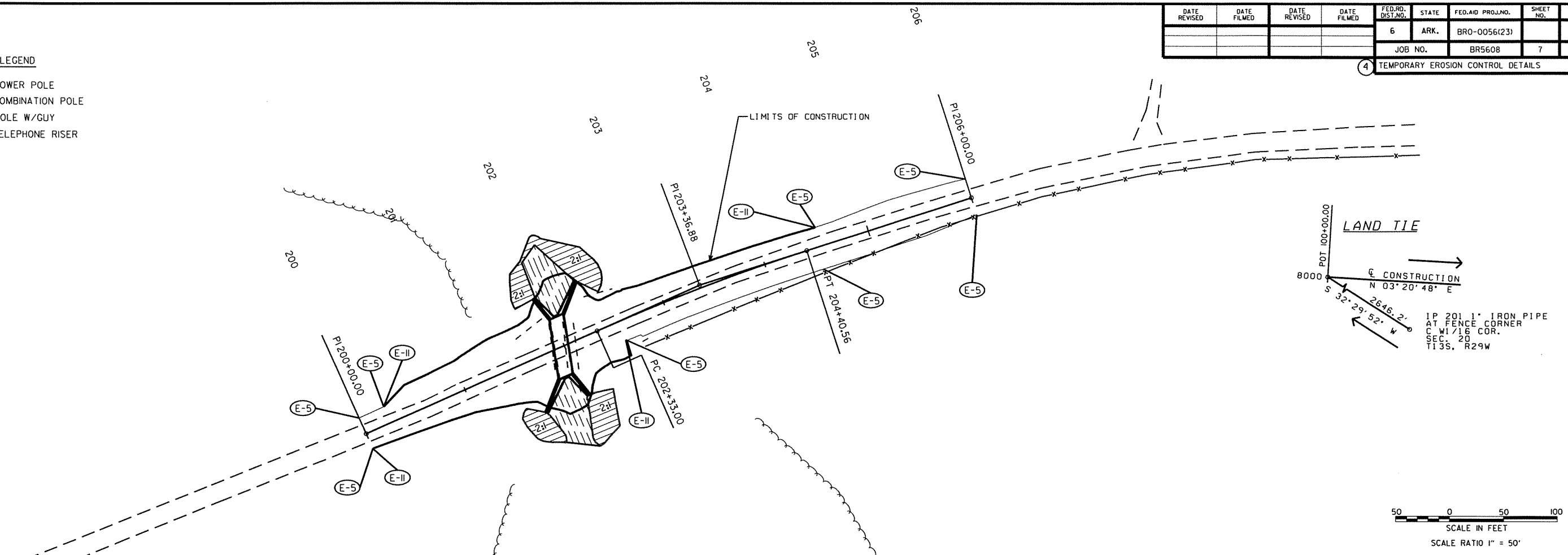


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
				JOB NO.	BR5608	7	40	

4 TEMPORARY EROSION CONTROL DETAILS

LEGEND

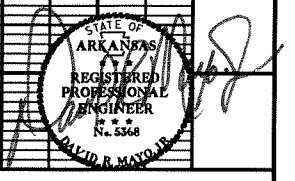
- — POWER POLE
- ◇ — COMBINATION POLE
- — POLE W/GUY
- — TELEPHONE RISER



REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

TEMPORARY EROSION CONTROL

STATION	STATION	SIDE	SAND BAG DITCH CKS. (E-5)	SILT FENCE (E-II)	SEDIMENT REMOVAL & DISPOSAL	STANDARD DRAWING NUMBER
			BAGS	LIN. FT.	CU. YDS.	
200+00		LT. & RT.	12		2	TEC-1, 2&3
200+00	202+54	RT.		291	9	TEC-1, 2&3
200+25		LT.	6		1	TEC-1, 2&3
200+25	204+54	LT.		469	14	TEC-1, 2&3
202+54		RT.	6		1	TEC-1, 2&3
204+50		RT.	6		1	TEC-1, 2&3
204+54		LT.	6		1	TEC-1, 2&3
206+00		LT. & RT.	12		2	TEC-1, 2&3



STRUCTURES

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	SOLID SODDING	WATER	CLASS 5 CONCRETE ROADWAY	UNCL. EXC. FOR STRS. ROADWAY	REINFORCED STEEL, RDWY. (GRADE 60)	STANDARD DRAWING
		LIN. FT.	LIN. FT.	LIN. FT.	SO. YDS.	M. GAL.	CU. YDS.	CU. YDS.	POUNDS	
201+97	CONSTRUCT SINGLE BOX CULVERT ON 15' L.F.S.	12	10	59	32	0.4	139.03	72	15253	R-115X-0, W-X153-2, W-X15 RCB-1, RCB-2, PBC-1
TOTALS:				59	32	0.4	139.03	72	15253	
STRUCTURES OVER 20'-0" SPAN										
106+09	CONSTRUCT QUINTUPLE BOX CULVERT ON 15' R.F.S.	10	12	47	56	0.7	354.06	142	54669	R-515X-0, W-X153-2, W-X15 RCB-1, RCB-2, PBC-1
TOTALS:				47	56	0.7	354.06	142	54669	

BASIS OF ESTIMATE:
 WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING.
 NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
 FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

TRAFFIC CONTROL DEVICES

LOCATION	W20-1		W20-3		G20-1		G20-2		BARRICADES (TYPE III)	TRAFFIC DRUMS	TOTAL	STANDARD DRAWING NUMBER					
	1500 FT.		1000 FT.		1500 FT.		1000 FT.										
	NO.	SO. FT.	NO.	SO. FT.	NO.	SO. FT.	NO.	SO. FT.									
STA. 85+00	1	16									16	TC-1, 2 & 3					
STA. 90+00			1	16							16	TC-1, 2 & 3					
STA. 100+00							1	10	1	8	18	TC-1, 2 & 3					
STA. 104+00									24	20	24	TC-1, 2 & 3					
STA. 107+00									24	20	24	TC-1, 2 & 3					
STA. 112+00							1	10	1	8	18	TC-1, 2 & 3					
STA. 122+00			1	16							16	TC-1, 2 & 3					
STA. 127+00	1	16									16	TC-1, 2 & 3					
STA. 185+00					2	32					32	TC-1, 2 & 3					
STA. 190+00							2	32			32	TC-1, 2 & 3					
STA. 200+00							1	10	1	8	18	TC-1, 2 & 3					
STA. 206+00							1	10	1	8	18	TC-1, 2 & 3					
STA. 216+00							2	32			32	TC-1, 2 & 3					
STA. 221+00					2	32					32	TC-1, 2 & 3					
TOTALS:		2	32	2	32	4	64	4	64	4	40	4	32	96	40	264	

BASE

STATION	STATION	DESCRIPTION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)
			LIN. FT.	TONS
100+00	100+50	TRANSITION	50	60
100+50	111+50	MAIN LANES	1100	1482
111+50	112+00	TRANSITION	50	60
200+00	200+50	TRANSITION	50	60
200+50	205+50	MAIN LANES	500	674
205+50	206+00	TRANSITION	50	60
TOTALS:			1800	2396

BASIS OF ESTIMATE:
 AGGREGATE BASE COURSE (CLASS 7).....134.68 TONS PER 100' STA. (MAIN LANES)
 AGGREGATE BASE COURSE (CLASS 7).....118.61 TONS PER 100' STA. (TRANSITION)

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	FENCE
				EACH	LIN. FT.
106+83	107+75	RT.	2-S-B		101
107+60		LT.	20" X 11" C.P. PIPE CULVERT	1	
108+43	109+39	RT.	2-S-B		92
110+31	112+00	RT.	2-S-B		169
201+75		LT.	30" X 36' C.P. PIPE CULVERT	1	
201+88		CENTER	48" X 47' C.M. PIPE CULVERT	1	
202+01		CENTER	108" X 47' C.M. PIPE CULVERT	1	
202+11		CENTER	48" X 48' C.M. PIPE CULVERT	1	
202+48		LT.	9" X 27' S.M. PIPE CULVERT	1	
202+69		RT.	16" X 10' C.P. PIPE CULVERT	1	
202+69	206+00	RT.	4-S-B		333
TOTALS:				7	695

EARTHWORK

STATION	STATION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
		NORMAL	CHANNEL	TOTAL	NORMAL	CHANNEL	TOTAL
CUBIC YARDS							
100+00	112+00	1224		1224	3743		3743
106+09			400	400		24	24
200+00	206+00	220		220	2875		2875
201+97			1786	1786		69	69
TOTALS:		1444	2186	3630	6618	93	6711

NOTE: EARTHWORK QUANTITIES SHOWN SHALL BE PAID AS PLAN QUANTITY.
 • AT CULVERT



TEMPORARY EROSION CONTROL

STATION	STATION	SIDE	SAND BAG DITCH CKS. (E-5)	SILT FENCE (E-II)	SEDIMENT REMOVAL & DISPOSAL
			BAG	LIN. FT.	CU. YDS.
100+00		LT. & RT.	12		2
101+50		RT.	6		1
101+50	106+86	RT.		591	18
102+00		LT.	6		1
103+50		LT.	6		1
104+84		LT.	6		1
104+84	106+80	LT.		228	7
106+80		LT.	6		1
106+86		RT.	6		1
107+87		LT.	6		1
107+87	108+24	LT.		38	1
108+24		LT.	6		1
108+48		LT.	6		1
108+48	109+33	LT.		89	3
109+33		LT.	6		1
109+50		RT.	6		1
112+00		LT. & RT.	12		2
200+00		LT. & RT.	12		2
200+00	202+54	RT.		291	9
200+25		LT.	6		1
200+25	204+54	LT.		469	14
202+54		RT.	6		1
204+50		RT.	6		1
204+54		LT.	6		1
206+00		LT. & RT.	12		2
TOTALS:			138	1706	75

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.

STONE BACKFILL

STATION	STATION	DESCRIPTION	STONE BACKFILL
			TON
100+00	112+00	ENTIRE SECTION	204
200+00	206+00	ENTIRE SECTION	63
TOTAL:			267

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

WIRE FENCE

STATION	STATION	SIDE	WIRE FENCE
			(TYPE D) LIN. FT.
106+83	107+75	RT.	101
108+43	109+39	RT.	92
110+31	112+00	RT.	169
202+69	206+00	RT.	333
TOTAL:			695

CLEARING AND GRUBBING

STATION	STATION	CLEARING & GRUBBING
		STATIONS
100+00	112+00	12
200+00	206+00	6
TOTAL:		18

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER								SUPPORT ASSEMBLIES (TYPE A)	SUPPORT ASSEMBLIES (TYPE C)	STANDARD DRAWING NUMBER
		W1-2 LT.		W1-2 RT.		OM-3L		OM-3R				
		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.				EACH	EACH
101+00	RT.	1	6.25							1		SHS - 1 & 2
105+00	LT.			1	6.25					1		SHS - 1 & 2
105+76	LT.			1		1	3.00	1	3.00			SHS - 1 & 2
105+84	RT.			1		1	3.00	1	3.00			SHS - 1 & 2
106+34	LT.			1		1	3.00	1	3.00			SHS - 1 & 2
106+42	RT.			1		1	3.00	1	3.00			SHS - 1 & 2
107+00	RT.			1	6.25					1		SHS - 1 & 2
111+00	LT.	1	6.25							1		SHS - 1 & 2
201+86	RT.			1		1	3.00	1	3.00			SHS - 1 & 2
201+94	LT.			1		1	3.00	1	3.00			SHS - 1 & 2
202+00	RT.			1		1	3.00	1	3.00			SHS - 1 & 2
202+08	LT.			1		1	3.00	1	3.00			SHS - 1 & 2
TOTALS:		2	12.50	2	12.50	8	24.00	8	24.00	4	8	

DUMPED RIPRAP

STATION	SIDE	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SO. YDS.
201+97	RT.	69	208
TOTALS:		69	208

TEMPORARY & PERMANENT SEEDING

STATION	TEMPORARY SEEDING	LIME	SEEDING	MULCH COVER	WATER	STANDARD DRAWING NO.
	ACRES	TONS	ACRES	ACRES	M. GAL.	
STA. 100+00 - STA. 112+00	2.92	3	1.46	4.38	208.5	TEC-3
STA. 200+00 - STA. 206+00	1.38	2	0.69	2.07	98.5	TEC-3
TOTALS:	4.30	5	2.15	6.45	307.0	

BASIS OF ESTIMATE:

LIME 2 TONS PER ACRE
 WATER 102 M. GALS. PER ACRE PERMANENT SEEDING
 WATER 20.4 M. GALS. PER ACRE TEMPORARY SEEDING

REMOVAL OF EXISTING BRIDGE STRUCTURES

STATION	STATION	DESCRIPTION	QUANTITY
			LUMP SUM
105+93	106+54	16'X69' BRIDGE WOOD SUBSTRUCTURE/TIMBER DECK	1.00
TOTAL:			1.00

GUARDRAIL

STATION	STATION	SIDE	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POST (TYPE I)
			LIN. FT.	EACH
104+84	107+34	LT. & RT.	500	4
TOTALS:			500	4



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.	BR5608	10	40	

4 SUMMARY OF QUANTITIES AND REVISIONS

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	18	STA.
201	GRUBBING	18	STA.
202	REMOVAL AND DISPOSAL OF FENCE	695	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	7	EACH
207	STONE BACKFILL	267	TON
210	UNCLASSIFIED EXCAVATION	3630	CU. YD.
210	COMPACTED EMBANKMENT	6711	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	2396	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	264	SO. FT.
SS & 604	BARRICADES	96	LIN. FT.
SS & 604	TRAFFIC DRUMS	40	EACH
SS & 617	GUARDRAIL (TYPE A)	500	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE D)	4	EACH
619	WIRE FENCE (TYPE D)	695	LIN. FT.
620	LIME	5	TON
620	SEEDING	2.15	ACRE
620	MULCH COVER	6.45	ACRE
SS & 620	WATER	308.1	M. GAL.
621	TEMPORARY SEEDING	4.30	ACRE
621	SILT FENCE	1706	LIN. FT.
621	SAND BAG DITCH CHECKS	138	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	75	CU. YD.
624	SOLID SODDING	88	SO. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
SS & 726	STANDARD SIGN	73.00	SO. FT.
729	CHANNEL POST SIGN SUPPORTS (TYPE A)	4	EACH
729	CHANNEL POST SIGN SUPPORTS (TYPE C)	8	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	72	CU. YD.
802	CLASS S CONCRETE - ROADWAY	139.03	CU. YD.
SS & 804	REINFORCING STEEL - ROADWAY (GRADE 60)	15253	LB.
816	DUMPED RIPRAP	69	CU. YD.
816	FILTER BLANKET	208	SO. YD.
STRUCTURE OVER 20'-0" SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	142	CU. YD.
802	CLASS S CONCRETE - ROADWAY	354.06	CU. YD.
804	REINFORCING STEEL - ROADWAY (GRADE 60)	54669	LB.

REVISION BOX

DATE	REVISION	SHEET NUMBER



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
						JOB NO.	BR5608	II
						4 PLAN AND PROFILE		

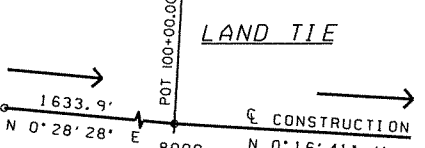
CONST.
 PI = 102+93.77
 Δ = 28°44'11.7" LT.
 D = 14°30'18.9"
 T = 101.19'
 L = 198.11'
 PC = 101+92.59
 PT = 103+90.70
 e = 0.085
 Ls = 250'
 BEGIN SUPER TRANS. 100+05.09
 BEGIN MAX. SUPER 102+55.09
 END MAX. SUPER 103+28.20
 END SUPER TRANS. 105+78.20

CONST.
 PI = 108+86.37
 Δ = 30°21'11.4" RT.
 D = 14°30'18.9"
 T = 107.15'
 L = 209.26'
 PC = 107+79.22
 PT = 109+88.48
 e = 0.085
 Ls = 250'
 BEGIN SUPER TRANS. 105+91.72
 BEGIN MAX. SUPER 108+41.72
 END MAX. SUPER 109+25.98
 END SUPER TRANS. 111+75.98

STA. 105+93 - STA. 106+54 IN PLACE
 16' X 69' TRIPLE SPAN BRIDGE
 WOOD SUBSTRUCTURE/TIMBER DECK
 STRUCTURE NO. 15916
 REMOVAL OF EXISTING BRIDGE STRUCTURE
 (SITE NO. 1) = 1.00 LUMP SUM

WIRE FENCE (TYPE D)
 STA. 106+83 - STA. 107+75 RT. = 101 FT.
 STA. 108+43 - STA. 109+39 RT. = 92 FT.
 STA. 110+31 - STA. 112+00 RT. = 169 FT.

JOSIAH J. BRINKERHOFF TRUST



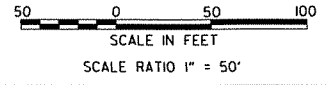
IP 200 CPS
 IN GRAVEL RD.
 1/4 CNR
 SEC. 21
 T10N, R04E

CLEARING AND GRUBBING
 STA. 100+00 - STA. 112+00 = 12 STATIONS
 STA. 200+00 - STA. 206+00 = 6 STATIONS
 TOTAL = 18 STATIONS

GERALD & BARBARA
 CRAWFORD, H/W

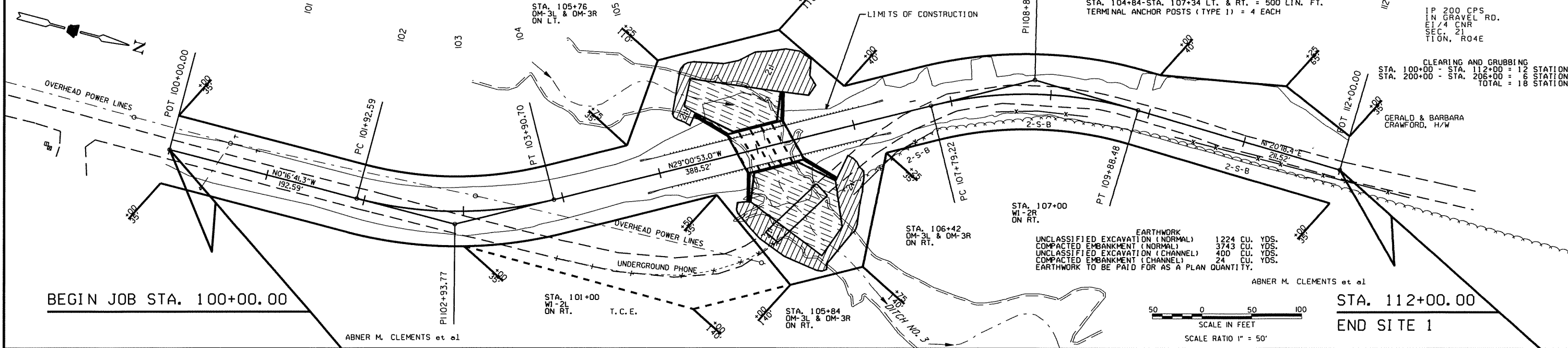
EARTHWORK
 UNCLASSIFIED EXCAVATION (NORMAL) 1224 CU. YDS.
 COMPACTED EMBANKMENT (NORMAL) 3743 CU. YDS.
 UNCLASSIFIED EXCAVATION (CHANNEL) 400 CU. YDS.
 COMPACTED EMBANKMENT (CHANNEL) 24 CU. YDS.
 EARTHWORK TO BE PAID FOR AS A PLAN QUANTITY.

ABNER M. CLEMENTS et al



STA. 112+00.00
 END SITE 1

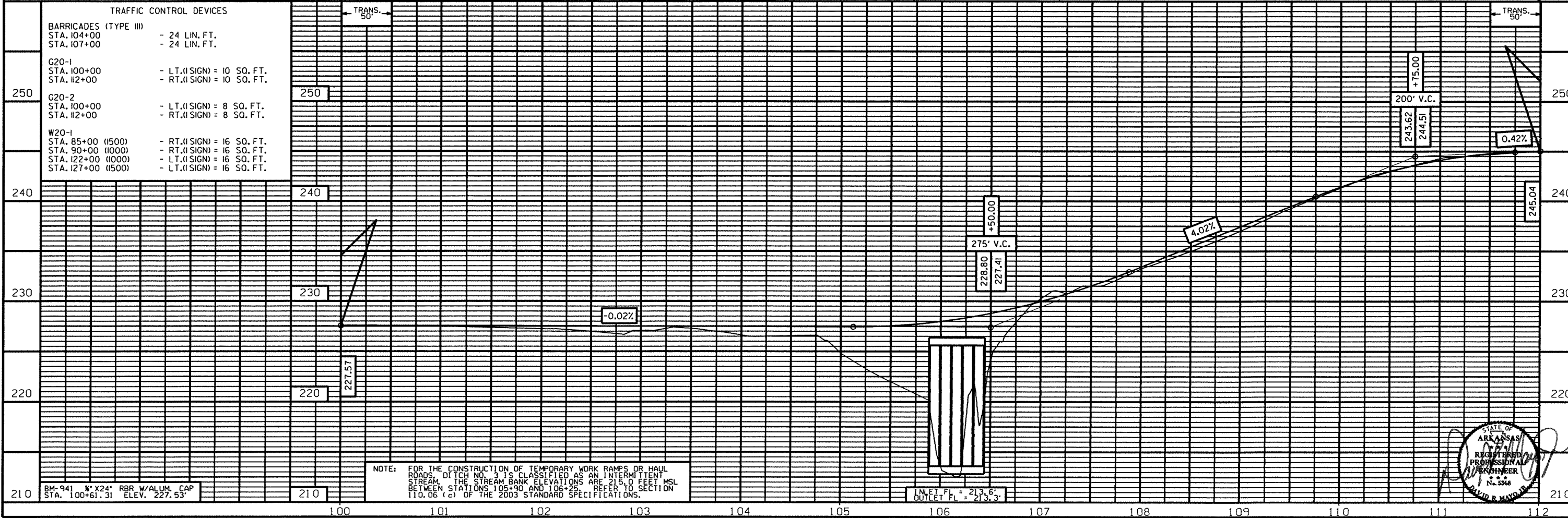
- LEGEND
- — POWER POLE
 - ◊ — COMBINATION POLE
 - ⊕ — POLE W/GUY
 - ⊞ — TELEPHONE RISER
 - — GAS METER



BEGIN JOB STA. 100+00.00

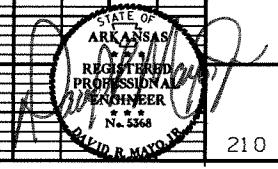
TRAFFIC CONTROL DEVICES

BARRICADES (TYPE III)	
STA. 104+00	- 24 LIN. FT.
STA. 107+00	- 24 LIN. FT.
G20-1	
STA. 100+00	- LT. (I SIGN) = 10 SQ. FT.
STA. 112+00	- RT. (I SIGN) = 10 SQ. FT.
G20-2	
STA. 100+00	- LT. (I SIGN) = 8 SQ. FT.
STA. 112+00	- RT. (I SIGN) = 8 SQ. FT.
W20-1	
STA. 85+00 (I500)	- RT. (I SIGN) = 16 SQ. FT.
STA. 90+00 (I000)	- RT. (I SIGN) = 16 SQ. FT.
STA. 122+00 (I000)	- LT. (I SIGN) = 16 SQ. FT.
STA. 127+00 (I500)	- LT. (I SIGN) = 16 SQ. FT.



NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HALL ROADS, DITCH NO. 3 IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATIONS ARE 215.0 FEET MSL BETWEEN STATIONS 105+90 AND 106+25. REFER TO SECTION 110.06 (c) OF THE 2003 STANDARD SPECIFICATIONS.

INLET FL = 213.6'
 OUTLET FL = 213.3'



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
						JOB NO.	BR5608	12
						PLAN AND PROFILE		

Q CONST.
 PI = 203+36.88
 $\Delta = 6'13'35.9''$ RT.
 $D = 3'00'00.0''$
 $T = 103.88'$
 $L = 207.55'$
 $PC = 202+33.00$
 $PT = 204+40.56$
 $e = 0.040$
 $Ls = 200'$
 BEGIN SUPER TRANS. 200+83.00
 BEGIN MAX. SUPER 202+83.00
 END MAX. SUPER 203+90.56
 END SUPER TRANS. 205+90.56

STA. 201+88 IN PLACE
 48" X 47" C.M. PIPE CULVERT
 CROSS DRAIN
 REMOVE
 STA. 202+01 IN PLACE
 108" X 47" C.M. PIPE CULVERT
 CROSS DRAIN
 REMOVE
 STA. 202+11 IN PLACE
 48" X 48" C.M. PIPE CULVERT
 CROSS DRAIN
 REMOVE

STA. 201+97 CONSTRUCT
 SINGLE 12" X 10" X 59"
 R.C. BOX CULVERT
 (15' LT. FORWARD SKEW)
 D.A. = 2.5 SO. MILES @ 25 = 1550 CFS
 = 69 CU. YDS. (COMP. EMBK.)
 = 1786 CU. YDS. (UNCL. EXCAV.)

STA. 201+75 IN PLACE
 30" X 36" C.P. PIPE CULVERT
 LT. SIDE DRAIN
 REMOVE

STA. 201+74 IN PLACE
 30" X 36" C.P. PIPE CULVERT
 LT. SIDE DRAIN
 REMOVE

EARTHWORK
 UNCLASSIFIED EXCAVATION (NORMAL) 220 CU. YDS.
 COMPACTED EMBANKMENT (NORMAL) 2875 CU. YDS.
 UNCLASSIFIED EXCAVATION (CHANNEL) 1786 CU. YDS.
 COMPACTED EMBANKMENT (CHANNEL) 69 CU. YDS.
 EARTHWORK TO BE PAID FOR AS A PLAN QUANTITY.

- LEGEND
- — POWER POLE
 - ◇ — COMBINATION POLE
 - ⊕ — POLE W/GUY
 - — TELEPHONE RISER
 - — GAS METER

STA. 202+48 IN PLACE
 9" X 27" SMOOTH METAL PIPE CULVERT
 LT. SIDE DRAIN
 REMOVE

STA. 201+94
 OM-3L & OM-3R
 ON LT.

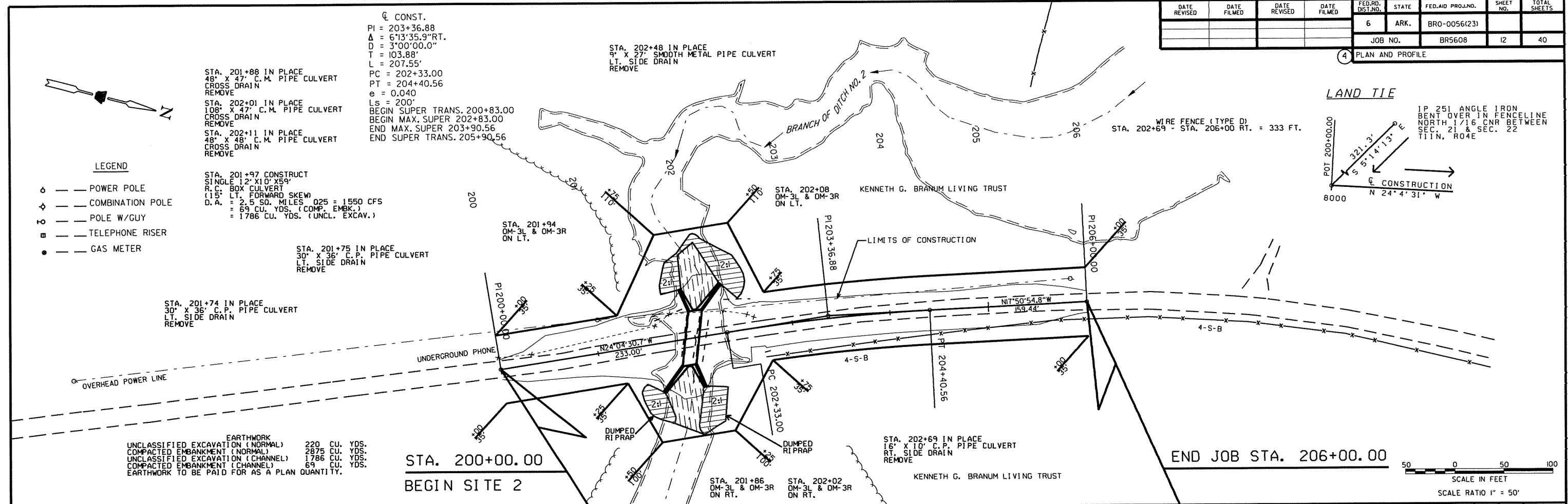
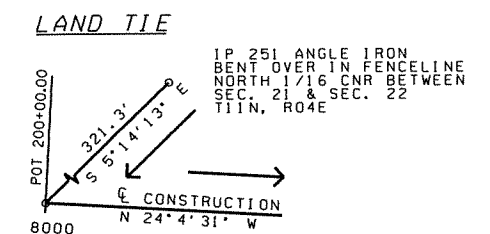
STA. 202+08
 OM-3L & OM-3R
 ON LT.

STA. 201+86
 OM-3L & OM-3R
 ON RT.

STA. 202+02
 OM-3L & OM-3R
 ON RT.

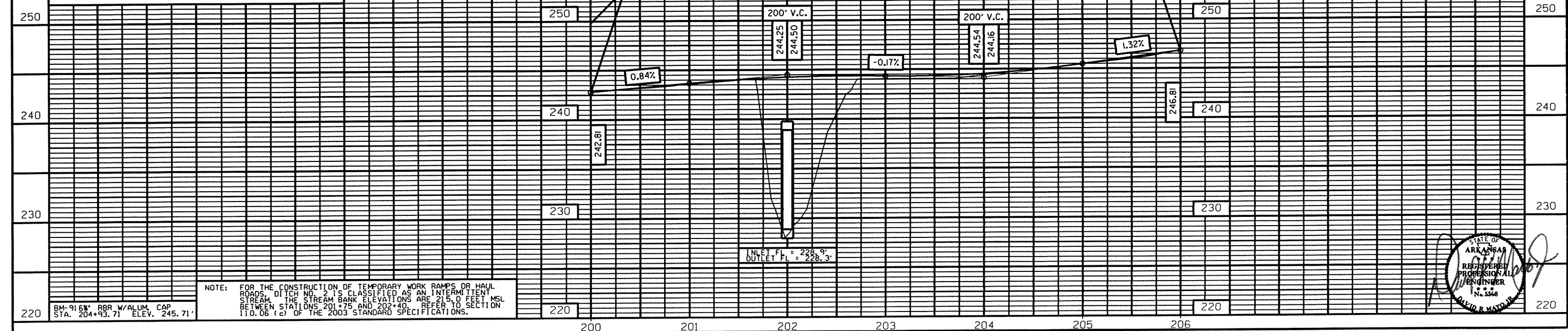
STA. 202+69 IN PLACE
 16" X 10" C.P. PIPE CULVERT
 RT. SIDE DRAIN
 REMOVE

WIRE FENCE (TYPE D)
 STA. 202+69 - STA. 206+00 RT. = 333 FT.

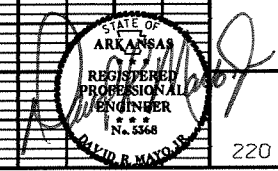


TRAFFIC CONTROL DEVICES

BARRICADES (TYPE III)	
STA. 190+00	- 24 LIN. FT.
STA. 216+00	- 24 LIN. FT.
G20-1	
STA. 200+00	- LT.(I) SIGN = 10 SQ. FT.
STA. 206+00	- RT.(I) SIGN = 10 SQ. FT.
G20-2	
STA. 200+00	- LT.(I) SIGN = 8 SQ. FT.
STA. 206+00	- LT.(I) SIGN = 8 SQ. FT.
W20-3	
STA. 185+00 (1500)	- LT. & RT.(2) SIGNS = 32 SQ. FT.
STA. 190+00 (1000)	- LT. & RT.(2) SIGNS = 32 SQ. FT.
STA. 216+00 (1000)	- LT. & RT.(2) SIGNS = 32 SQ. FT.
STA. 221+00 (1500)	- LT. & RT.(2) SIGNS = 32 SQ. FT.



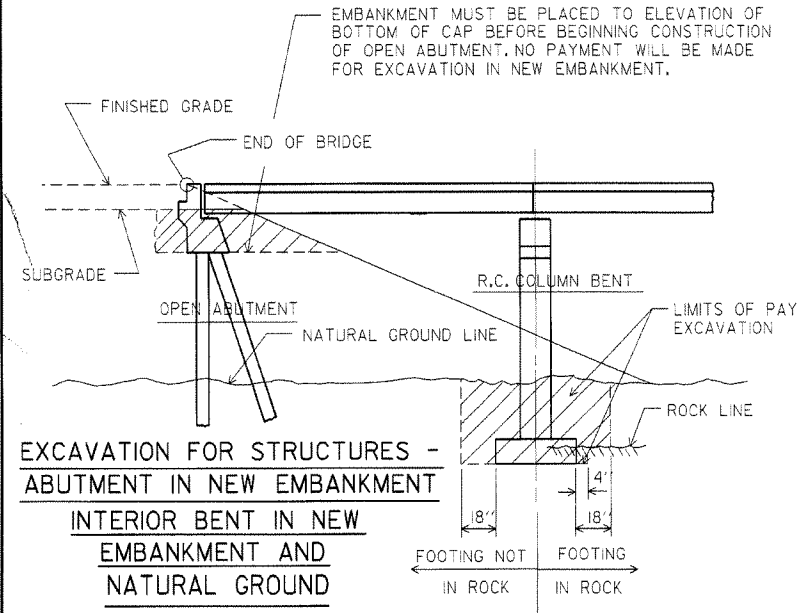
NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HALL
 ROADS, DITCH NO. 2 IS CLASSIFIED AS AN INTERMITTENT
 STREAM. THE STREAM BANK ELEVATIONS ARE 215.0 FEET MSL
 BETWEEN STATIONS 201+75 AND 202+40. REFER TO SECTION
 110.06 (c) OF THE 2003 STANDARD SPECIFICATIONS.



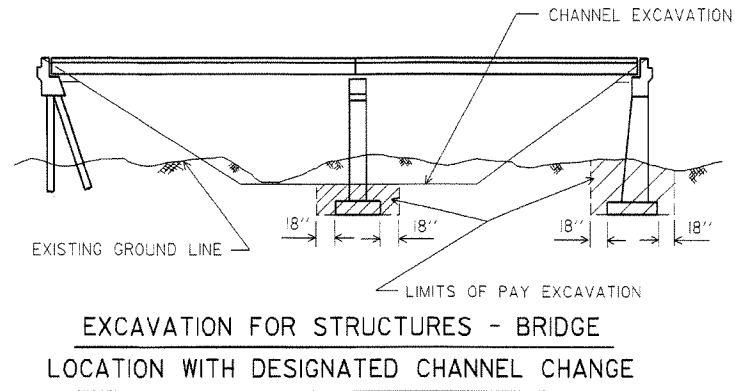
BM-916" RBR W/ALUM. CAP
 STA. 204+93.71 ELEV. 245.71'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		13	
JOB NO.							1	

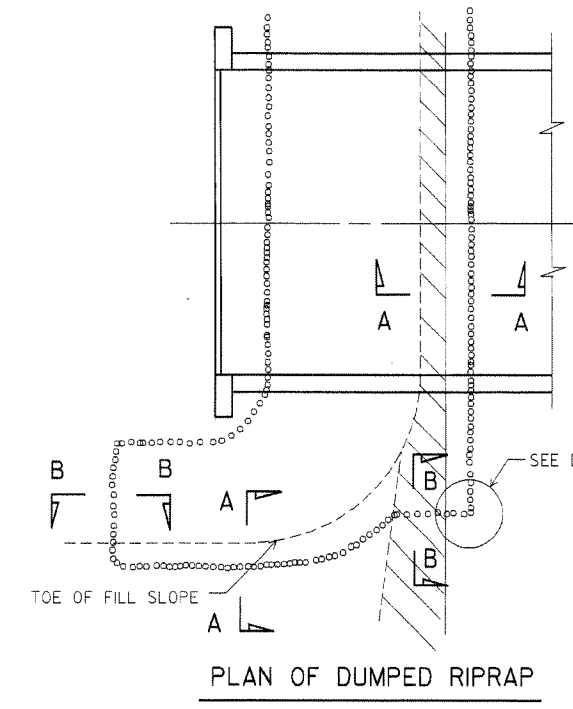
① RIP. & EXCAV. 1891F



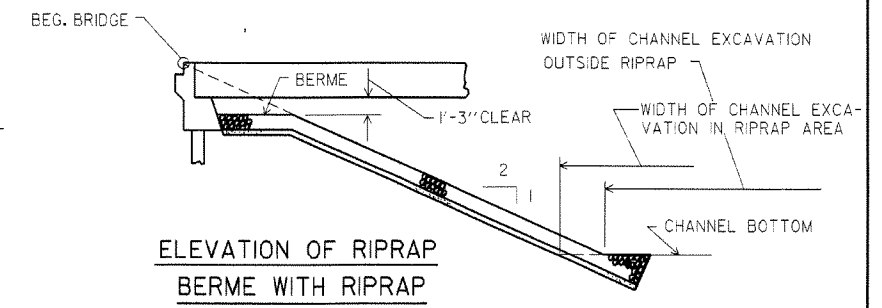
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT
INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



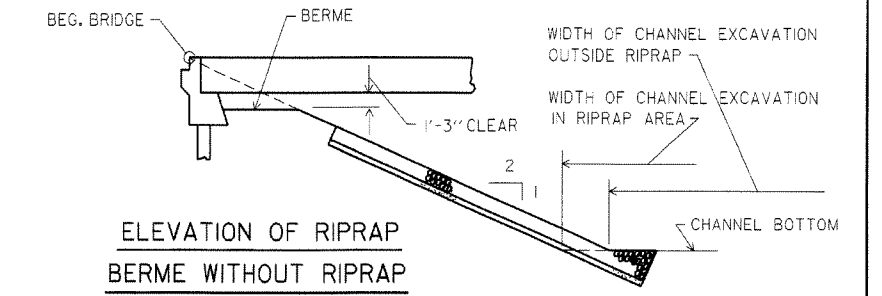
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



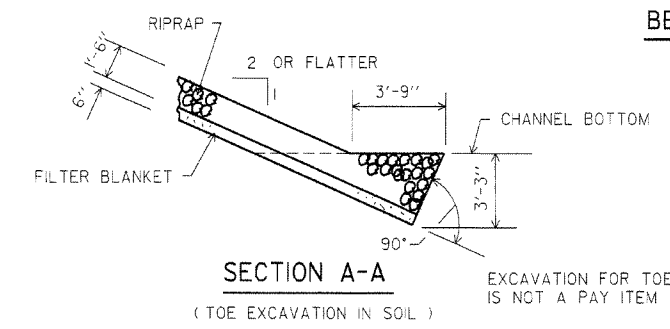
PLAN OF DUMPED RIPRAP



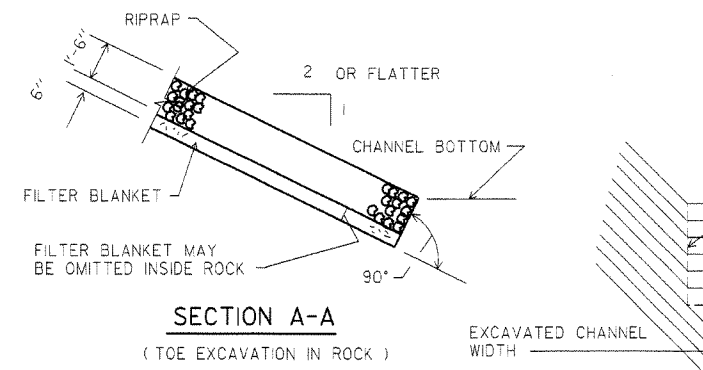
ELEVATION OF RIPRAP BERME WITH RIPRAP



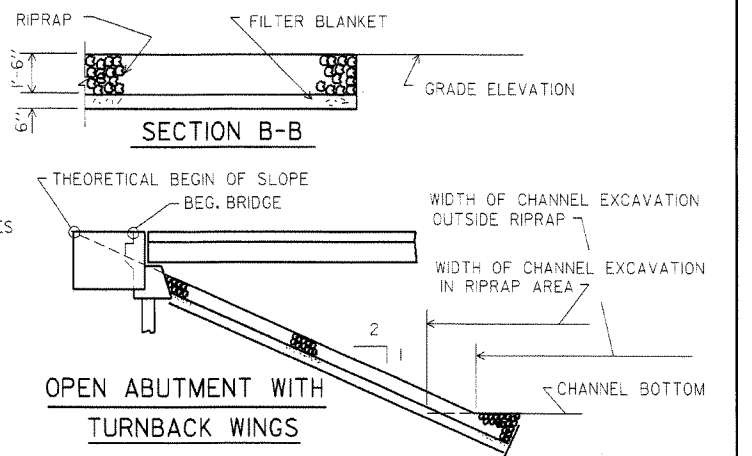
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



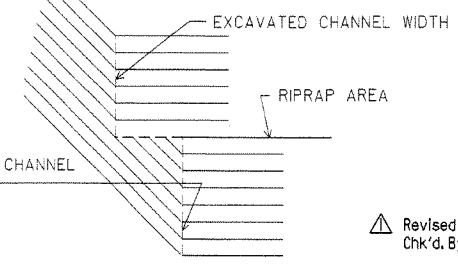
SECTION A-A (TOE EXCAVATION IN SOIL)
EXCAVATION FOR TOES IS NOT A PAY ITEM



SECTION A-A (TOE EXCAVATION IN ROCK)



OPEN ABUTMENT WITH TURNBACK WINGS

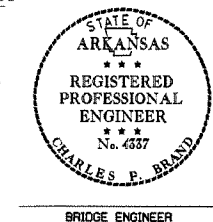


DETAIL C

NOTE: USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

NOTE: IN LIEU OF AN AGGREGATE FILTER BLANKET, A SYNTHETIC FIBER GEOTEXTILE FABRIC COMPLYING WITH THE REQUIREMENTS OF SUBSECTION 816.021(a) MAY BE USED.

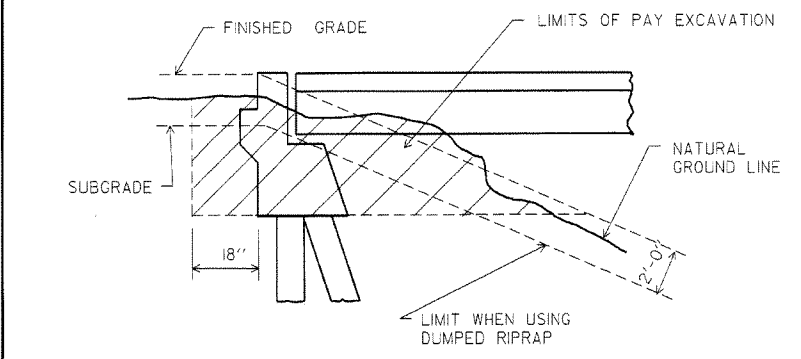
NOTE: DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



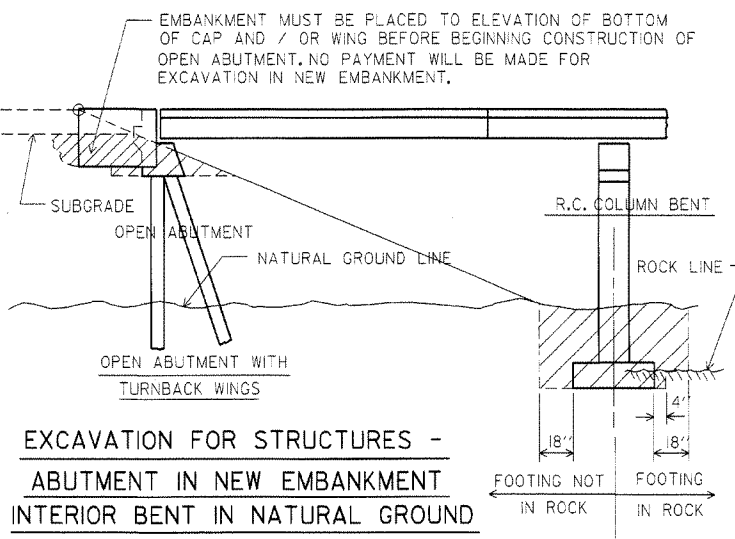
Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

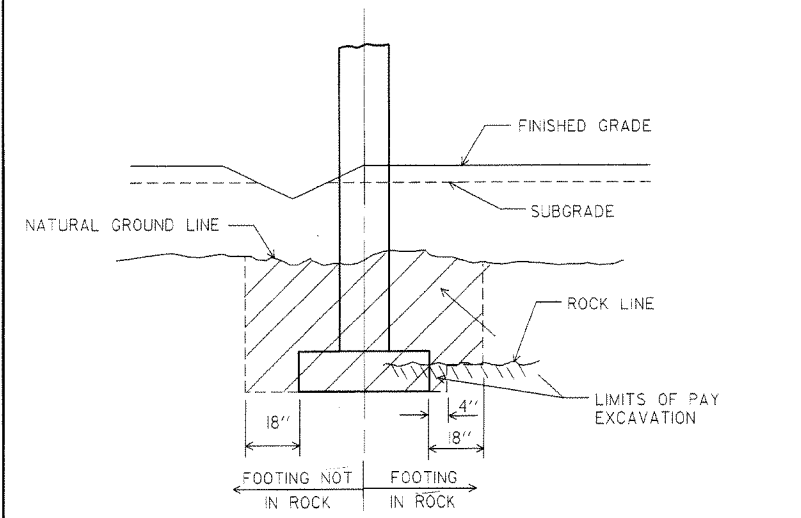
DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: BRIDGE NO. DRAWING NO. 1891F



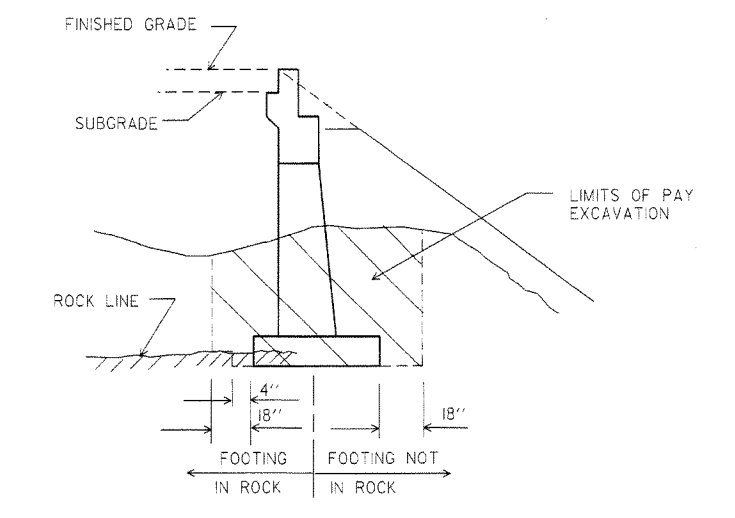
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



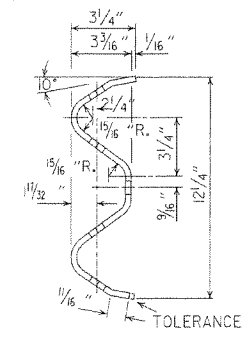
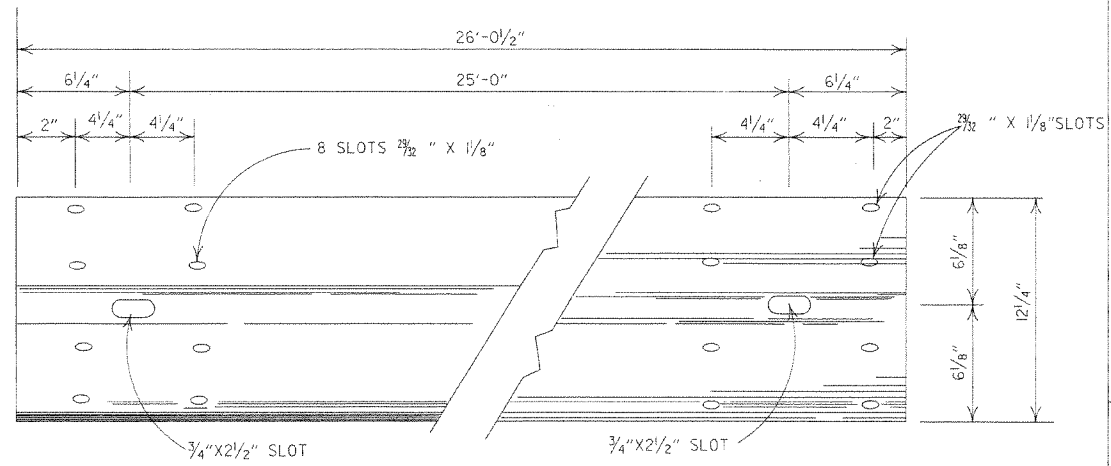
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



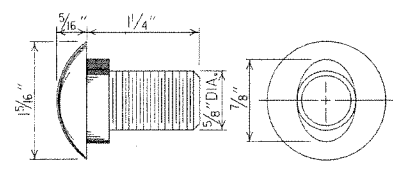
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



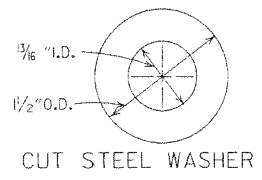
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



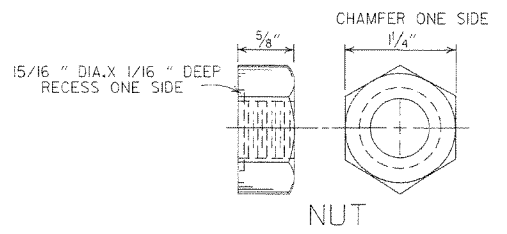
DETAILS OF W-BEAM GUARD RAIL
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



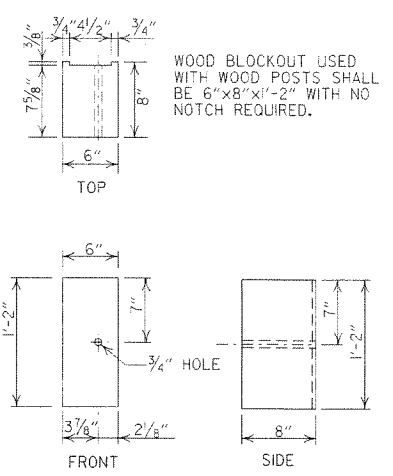
SPLICE BOLT POST BOLT - SAME EXCEPT LENGTH



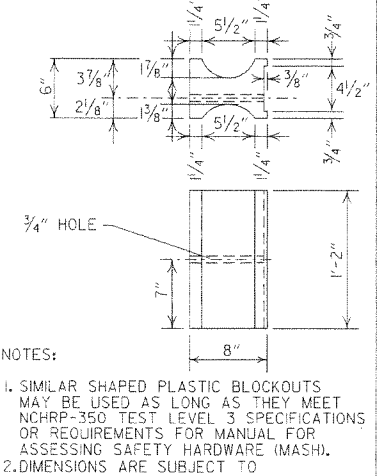
CUT STEEL WASHER



NUT

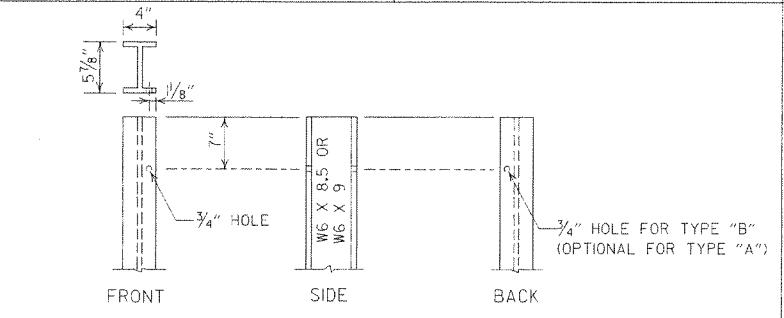


WOOD BLOCKOUT (W-BEAM)

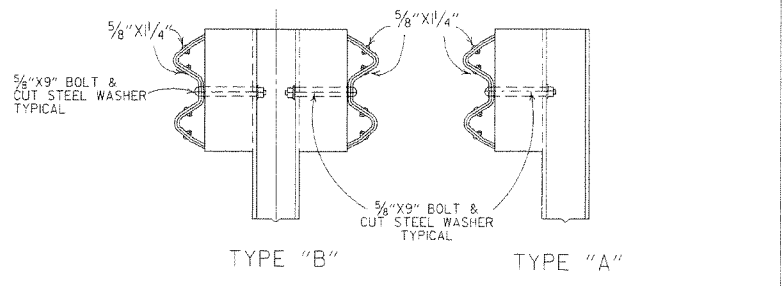


PLASTIC BLOCKOUT (W-BEAM)

NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.



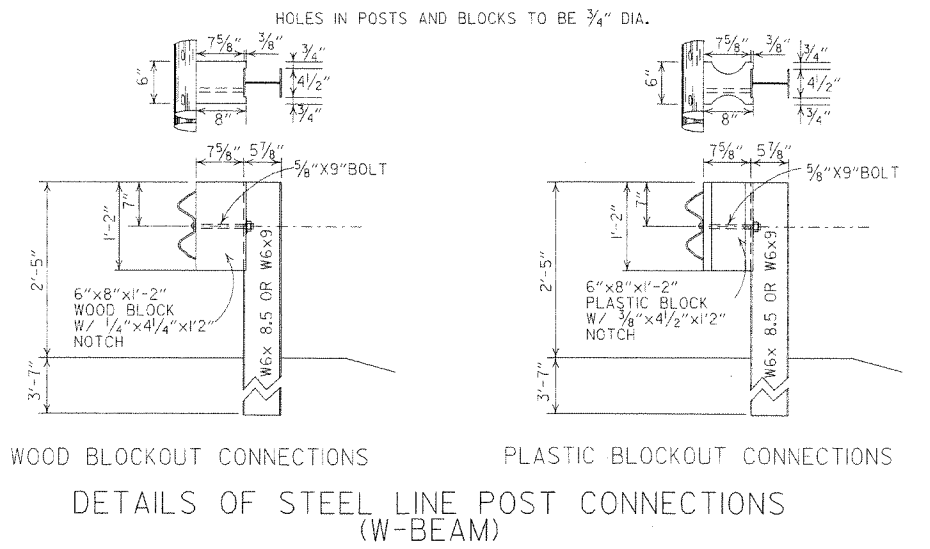
STEEL POST



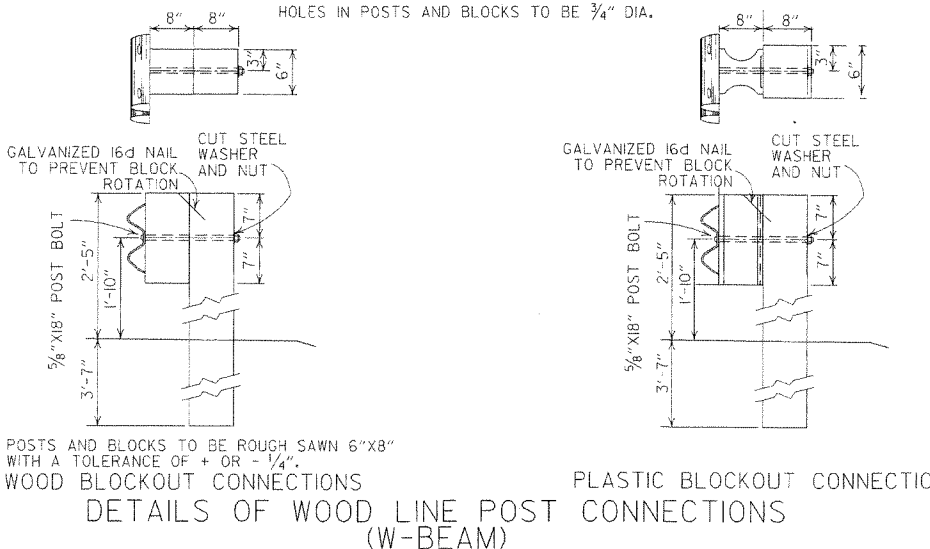
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-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 2.7F (4400 F) OR NO. 1 350 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 NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



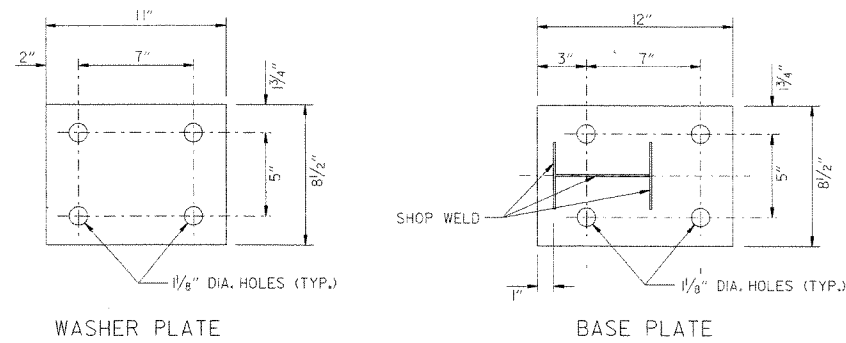
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

7-4-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	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. REVISED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87
DATE	REVISION	DATE FILM

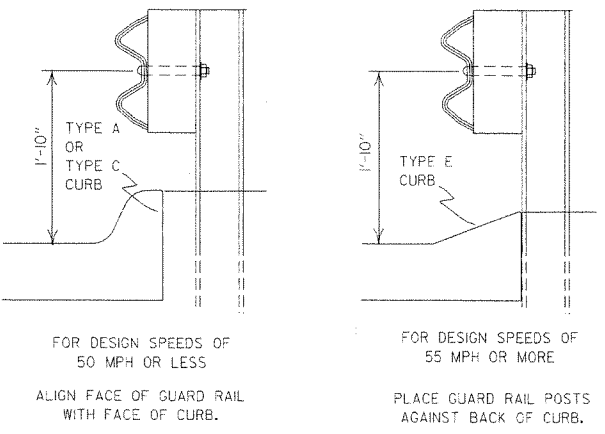
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8



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

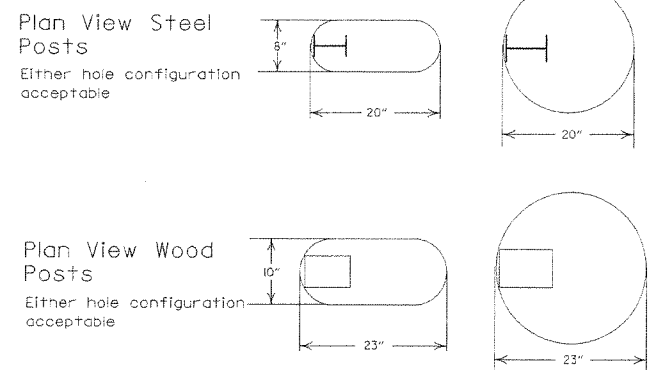
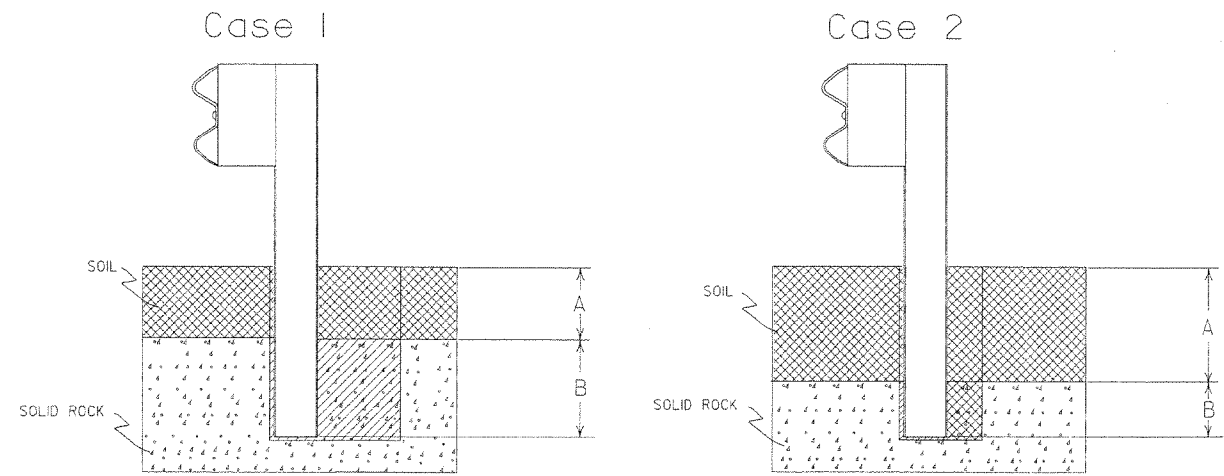


FOR DESIGN SPEEDS OF 50 MPH OR LESS
ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

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-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



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

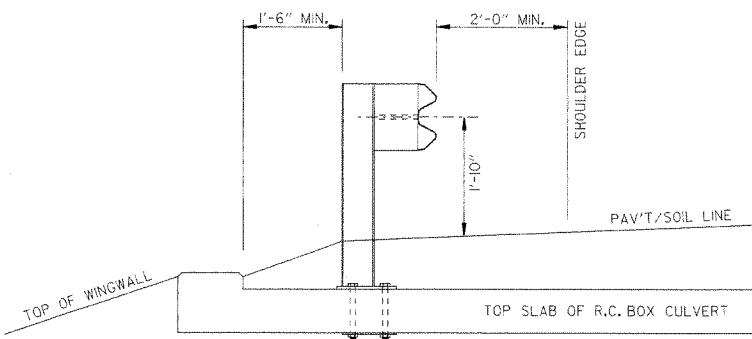
Zone A: Backfill according to Section 617.03(a).

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.

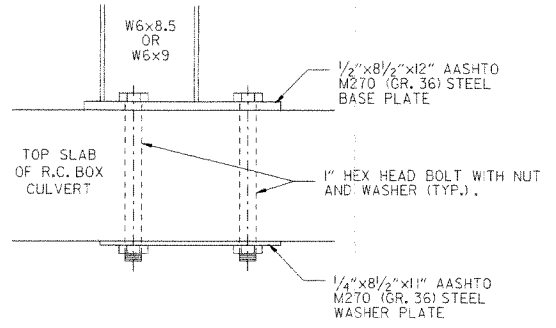
Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

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

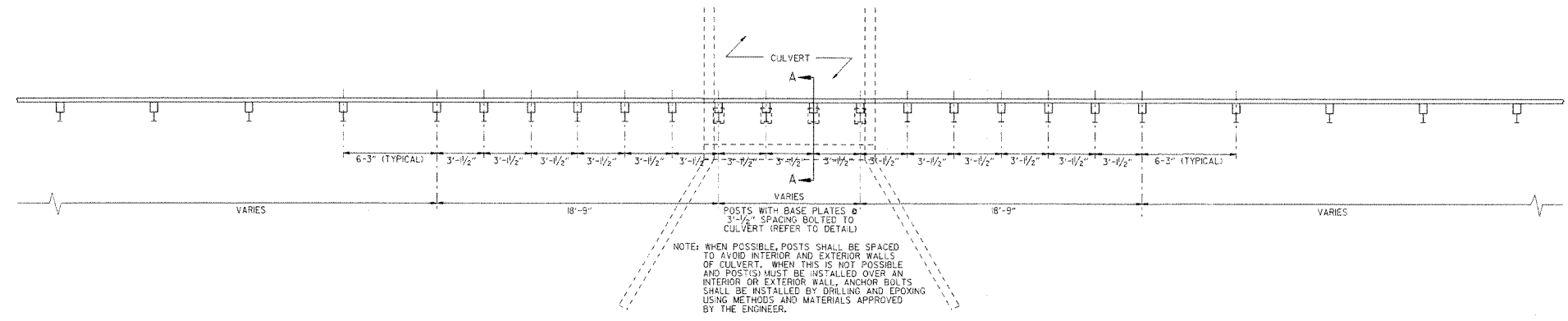
DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



SECTION A-A



DETAIL OF CONNECTION



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

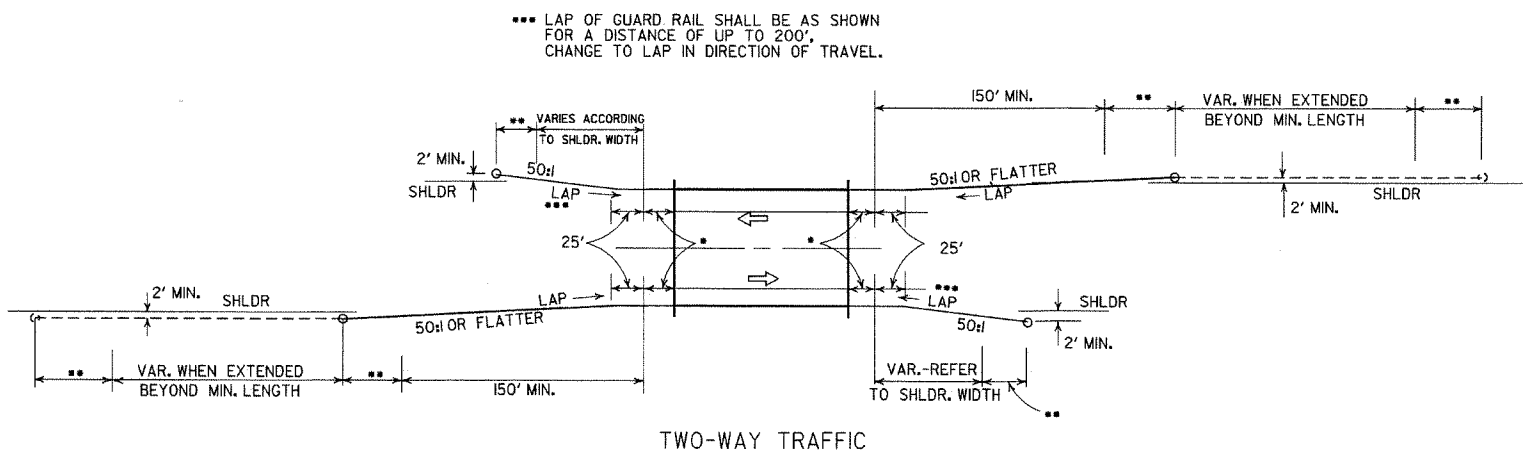
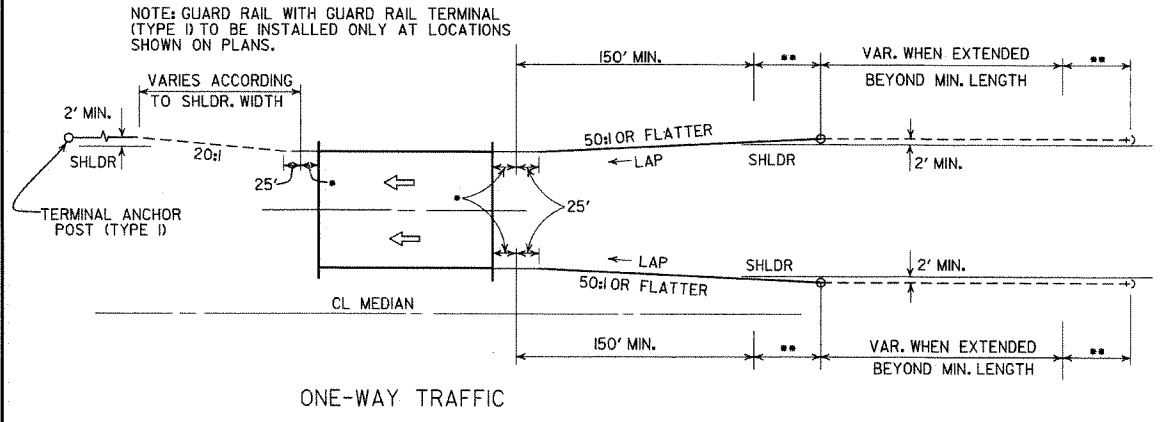
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DRWG. GR-8.

7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	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	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
6-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87
DATE	REVISION	DATE FILM

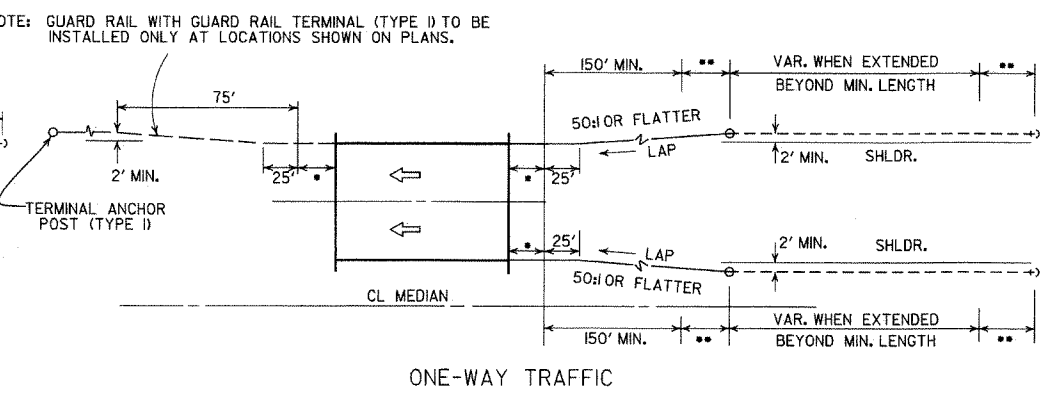
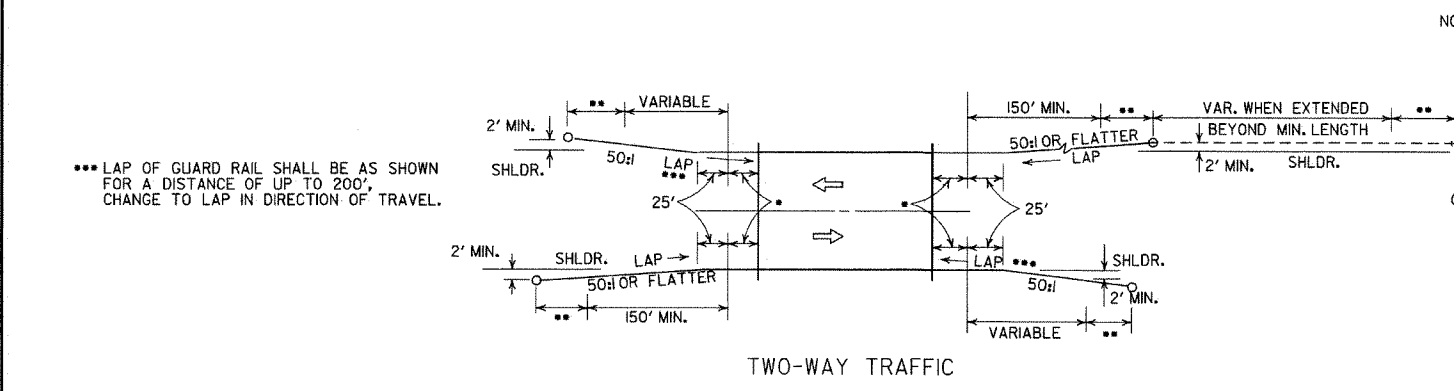
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

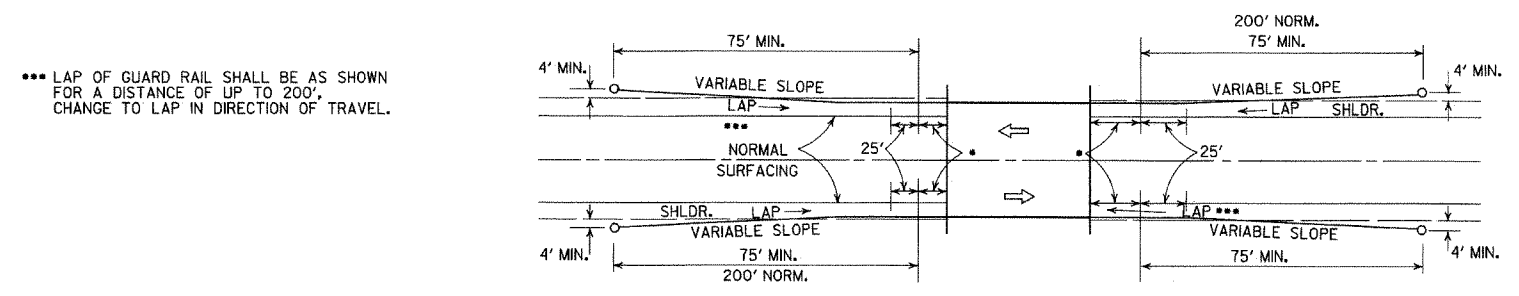
STANDARD DRAWING GR-8A



METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)



METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

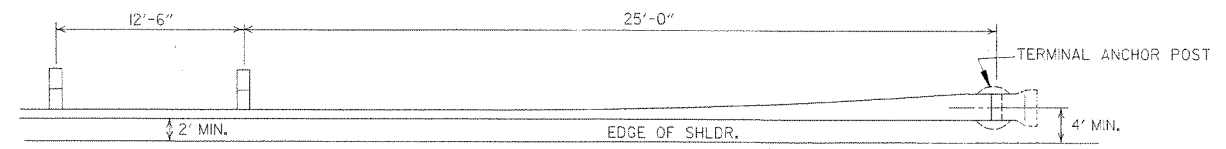


LEGEND

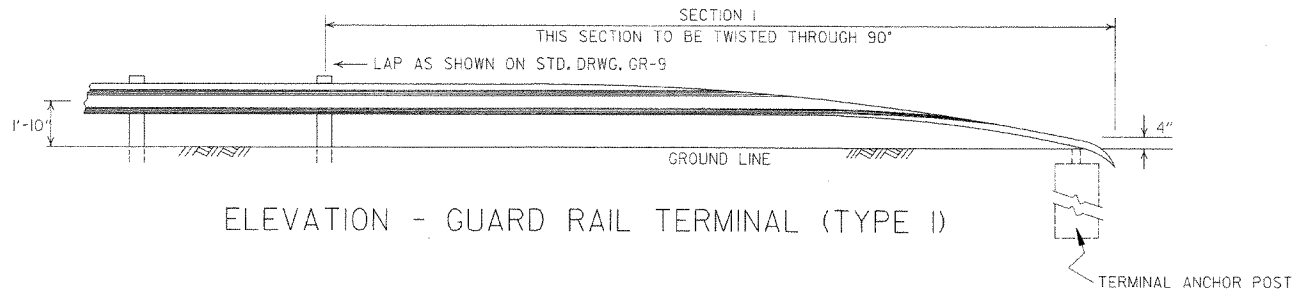
- THRIE BEAM GUARD RAIL TERMINAL
- GUARD RAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

ARKANSAS STATE HIGHWAY COMMISSION			
GUARD RAIL DETAILS			
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 FILE
STANDARD DRAWING GR-9			

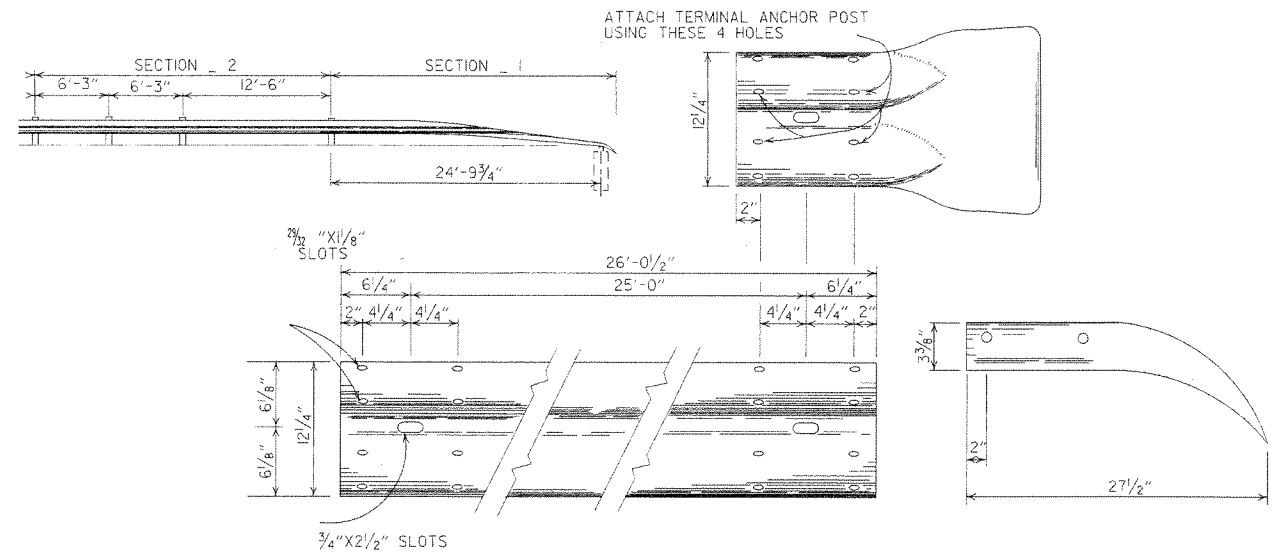


PLAN - GUARD RAIL TERMINAL (TYPE I)



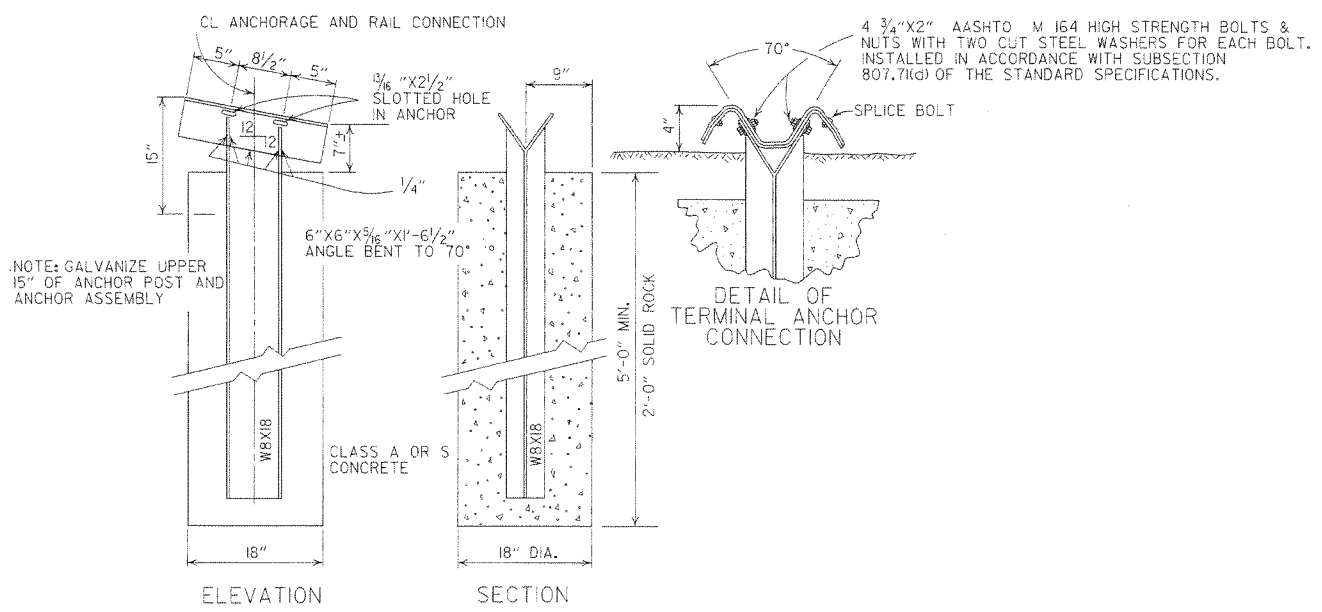
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL
SHALL BE PAID FOR AT THE PRICE BID PER
LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION



ELEVATION

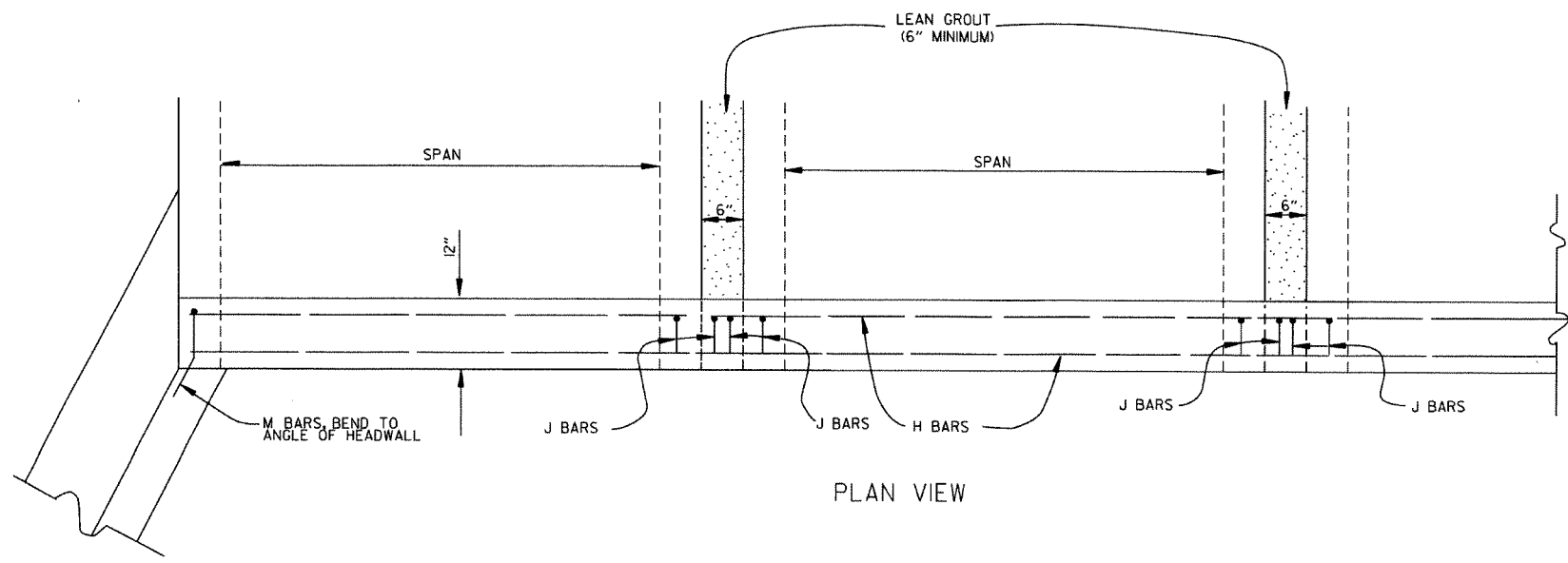
SECTION

DETAIL OF TERMINAL ANCHOR CONNECTION

NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 W 17 POST IF CONTRACTOR SO DESIRES.

DETAIL OF TERMINAL ANCHOR POST (TYPE I)

			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
			STANDARD DRAWING GRT-1
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"		
6-26-97	REVISED LAP NOTE		
10-18-96	REVISED ASTM REF. TO AASHTO		
11-3-94	DIMENSION TERMINAL DETAIL		
11-1-92	ADDED NOTE FOR PAYMENT	11-1-92	
10-1-92	DRAWN & ISSUED	10-1-92	
DATE	REVISION	DATE	FILM



BAR LIST

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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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

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

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

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION B15 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

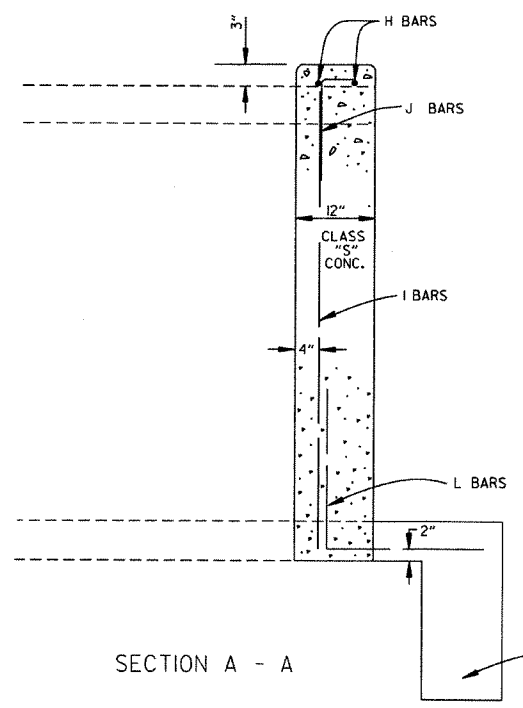
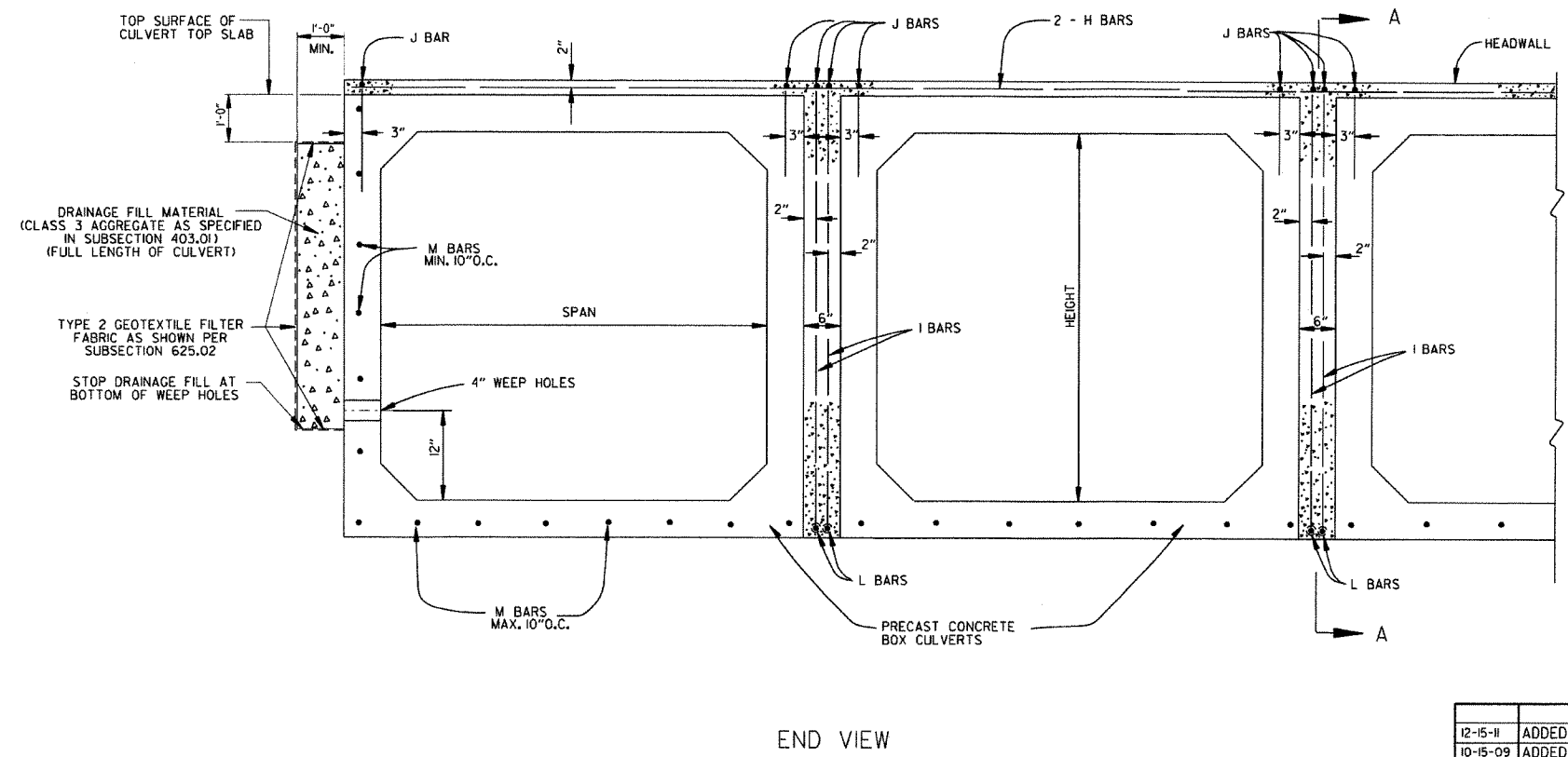
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT 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.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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

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



DATE	REVISION	DATE FILMED
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11-8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED: JABE	

ARKANSAS STATE HIGHWAY COMMISSION

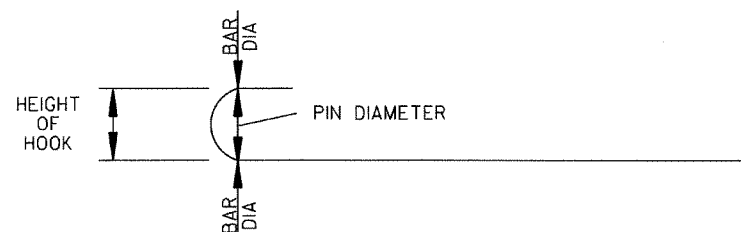
PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

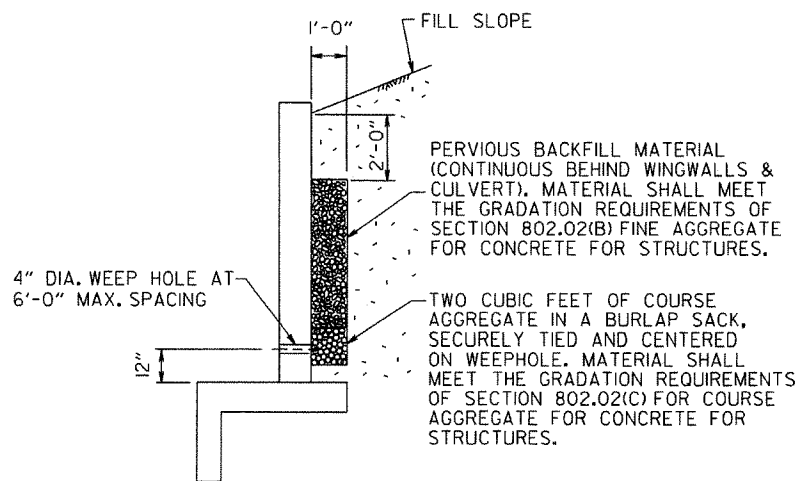
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

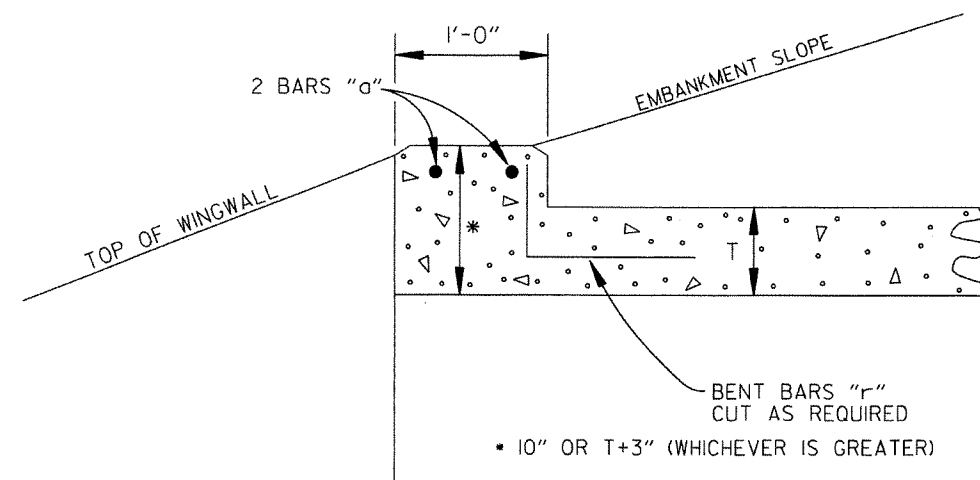
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

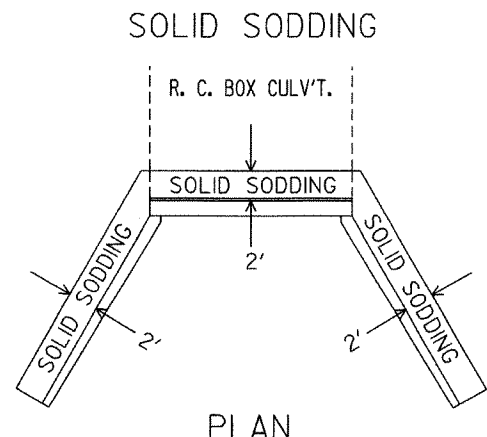


NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
12-15-11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

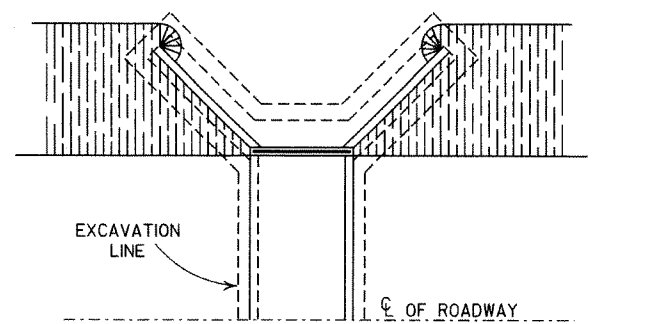
ARKANSAS STATE HIGHWAY COMMISSION
REINFORCED CONCRETE BOX CULVERT DETAILS
STANDARD DRAWING RCB-1



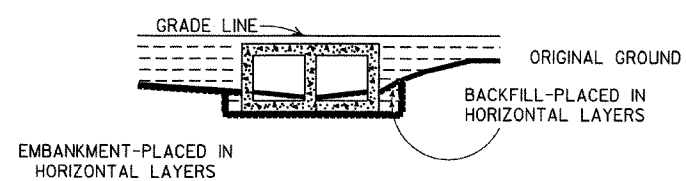
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

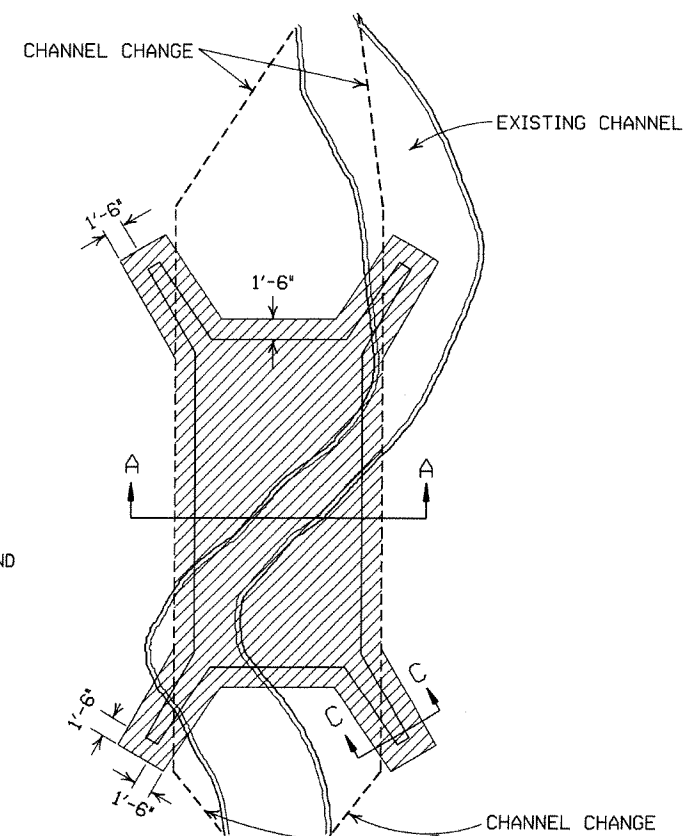


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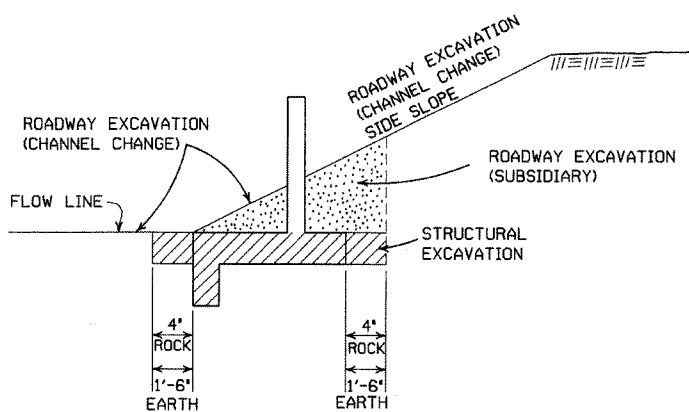


LONGITUDINAL SECTION

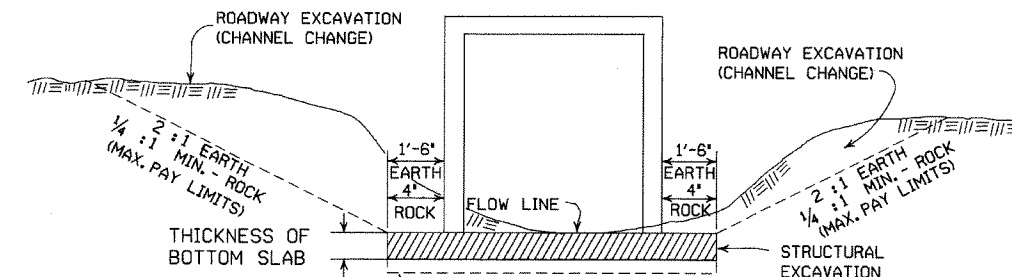
BACKFILL DETAILS FOR BOX CULVERT



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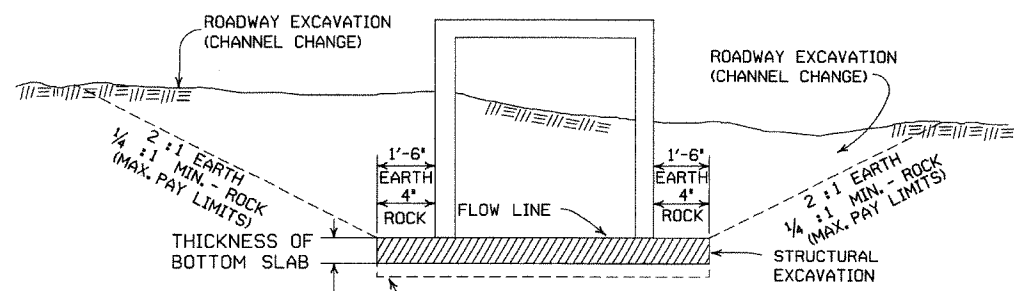


SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS



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

SECTION B-B
DETAILS FOR NEW CHANNELS

GENERAL NOTES:

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

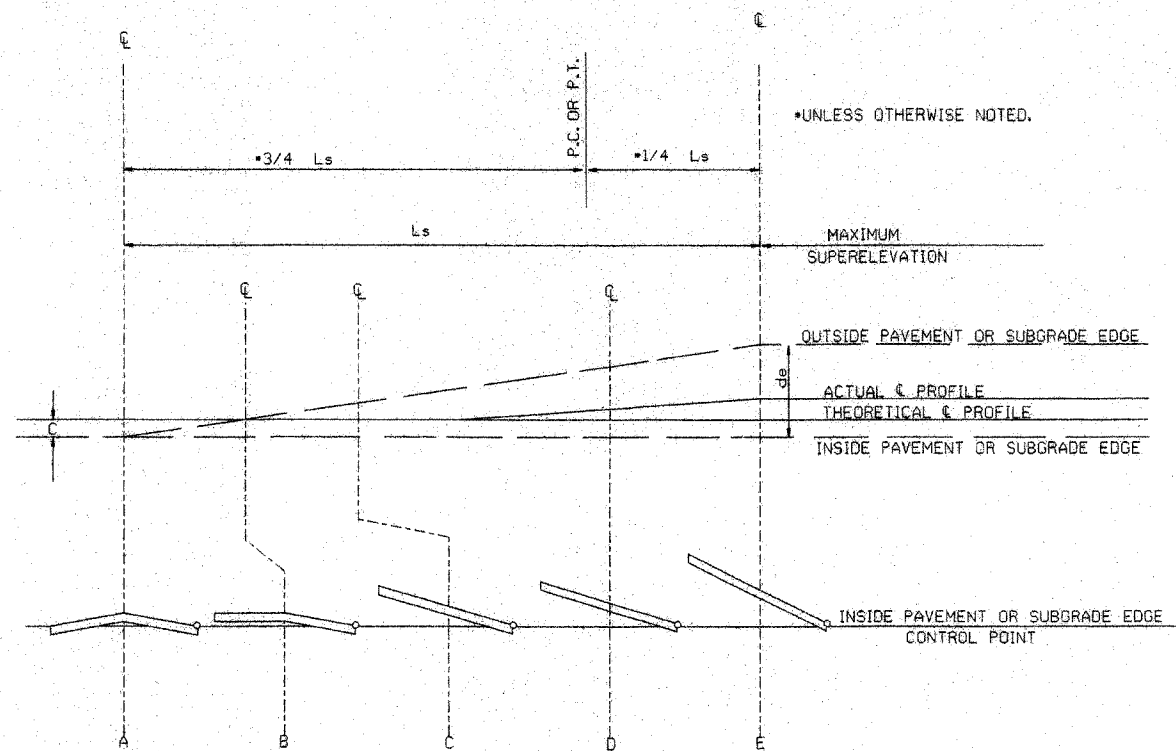
EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

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

ARKANSAS STATE HIGHWAY COMMISSION		
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS		
STANDARD DRAWING RCB-2		
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	FILMED

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	e	Ls (FT)	e	Ls (FT)	e	Ls (FT)	e	Ls (FT)	e	Ls (FT)	e	Ls (FT)
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
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.		0.021		0.023		0.028	
1° 15'	N.C.		N.C.		N.C.		0.026		0.030		0.037	
1° 30'	N.C.		N.C.		N.C.		0.032		0.037		0.046	
1° 45'	N.C.		N.C.		N.C.		0.036		0.043		0.054	
2° 00'	R.C.		0.025	175	0.031		0.040	200	0.049	250	0.062	300
2° 15'	R.C.		0.028		0.034		0.043		0.053		0.067	
2° 30'	R.C.		0.031		0.037		0.045		0.056		0.072	
2° 45'	R.C.		0.034		0.040		0.049	250	0.061	300	0.078	350
3° 00'	0.021	150	0.025		0.031		0.040		0.051		0.066	350
3° 15'	0.023		0.028		0.034		0.043		0.054		0.070	400
3° 30'	0.027		0.032		0.039		0.048	205	0.060	255	0.077	300
3° 45'	0.029		0.035		0.042		0.051	215	0.063	265	0.082	315
4° 00'	0.031		0.037		0.045		0.054	225	0.067	275	0.085	330
4° 15'	0.033		0.040		0.048		0.058	230	0.070	280	0.088	345
4° 30'	0.037		0.044		0.052		0.062	240	0.073	290	0.091	360
5° 00'	0.040		0.048		0.057		0.067	250	0.077	300	0.094	375
5° 15'	0.043		0.051	185	0.060		0.070	260	0.081	310	0.097	390
5° 30'	0.046		0.055	190	0.064		0.075	270	0.085	320	0.100	400
5° 45'	0.049		0.058	200	0.068		0.079	280	0.090	330		
6° 00'	0.050		0.060	210	0.070		0.081	290	0.093	340		
6° 15'	0.053		0.063	215	0.074		0.085	300	0.096	350		
6° 30'	0.056		0.066	220	0.077		0.088	310	0.099	360		
6° 45'	0.058		0.069	225	0.079		0.091	320	0.102	370		
7° 00'	0.061		0.072	230	0.082		0.094	330	0.105	380		
7° 15'	0.063		0.074	235	0.084		0.096	340	0.108	390		
7° 30'	0.066		0.077	240	0.087		0.099	350	0.111	400		
7° 45'	0.068		0.079	245	0.089		0.101	360	0.114			
8° 00'	0.071		0.082	250	0.092		0.104	370	0.117			
8° 15'	0.073		0.084	255	0.094		0.106	380	0.120			
8° 30'	0.076		0.087	260	0.097		0.109	390	0.123			
8° 45'	0.078		0.089	265	0.099		0.111	400	0.126			
9° 00'	0.081		0.092	270	0.101		0.114		0.129			
10° 00'	0.086		0.097	275	0.104		0.117		0.132			
11° 00'	0.092		0.103	280	0.107		0.120		0.135			
12° 00'	0.097		0.108	285	0.110		0.123		0.138			
13° 00'	0.100		0.111	290	0.113		0.126		0.141			
14° 00'	0.103		0.114	295	0.116		0.129		0.144			
15° 00'	0.106		0.117	300	0.119		0.132		0.147			
16° 00'	0.109		0.120	305	0.122		0.135		0.150			
17° 00'	0.111		0.123	310	0.125		0.138		0.153			
18° 00'	0.114		0.126	315	0.128		0.141		0.156			
19° 00'	0.117		0.129	320	0.131		0.144		0.159			
20° 00'	0.120		0.132	325	0.134		0.147		0.162			
21° 00'	0.123		0.135	330	0.137		0.150		0.165			
22° 00'	0.126		0.138	335	0.140		0.153		0.168			
23° 00'	0.129		0.141	340	0.143		0.156		0.171			
24° 00'	0.132		0.144	345	0.146		0.159		0.174			



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

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

ABBREVIATIONS

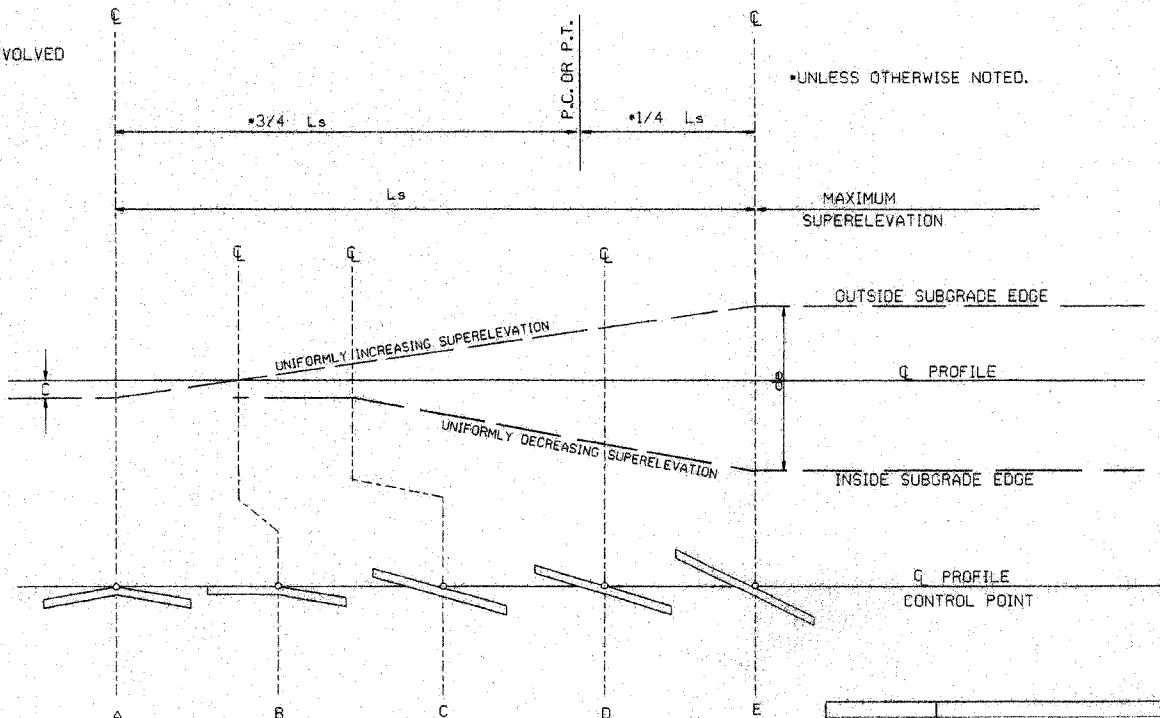
- NC - NORMAL CROWN
- RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
- e - RATE OF SUPERELEVATION (FT. PER FT.)
- Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
- L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
- d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)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

GENERAL NOTES

- ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
- SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
- LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
- 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.


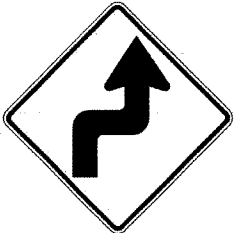
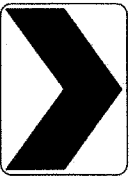



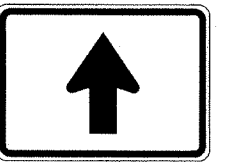
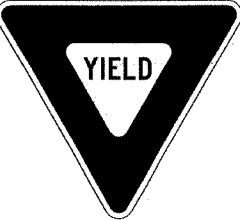

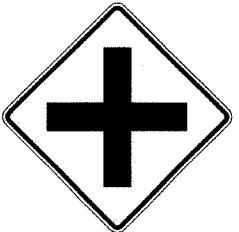

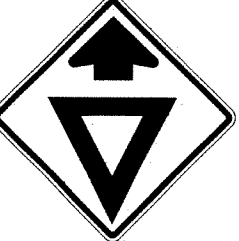

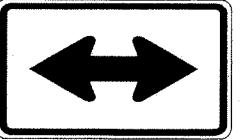
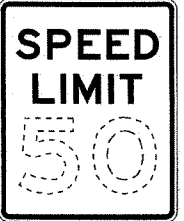

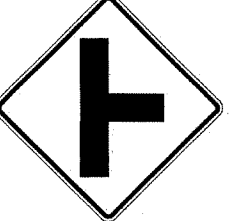






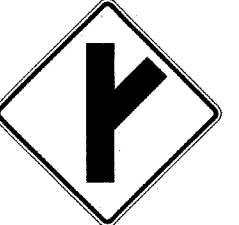

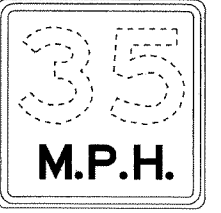
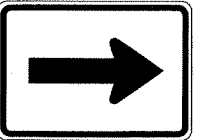
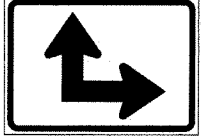
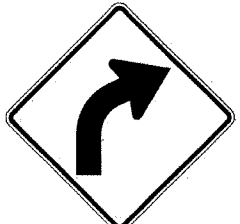
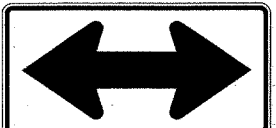
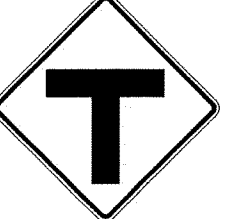

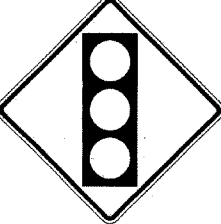



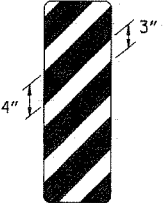


STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

SUPERELEVATION FORMULA = $\frac{L \cdot e}{L_s}$

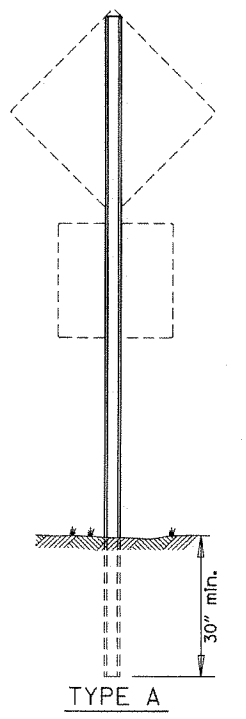
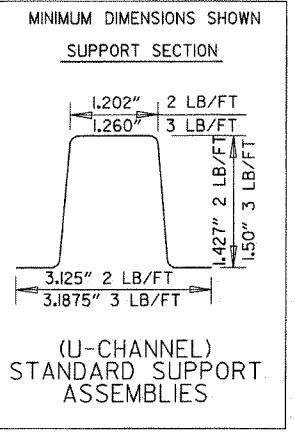
ARKANSAS STATE HIGHWAY COMMISSION		
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		
STANDARD DRAWING SE-2		
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		22	
JOB NO.				
4 STD. HWY. SIGNS & SUP ASSEMB				

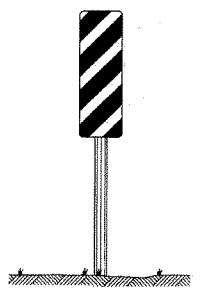
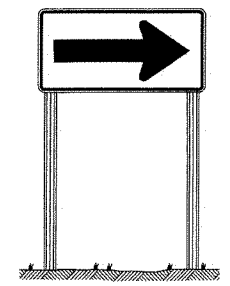
 RI-1 30"x30"	 WI-3 30"x30" (LT. OR RT.)	 WI-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"
 RI-2 36"x36"x36"	 WI-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 MI-5 County Route Marker 24"x24"	 M6-4 21"x15"
 R2-1 24"x30"	 WI-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 W5-2 36"x36"	 W8-3 36"x36"	 RI-3 12"x6"	 M6-5 21"x15"
 WI-1 30"x30" (LT. OR RT.)	 WI-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 W5-3 36"x36"	 W13-1 18"x18"	 M6-1 21"x15"	 M6-6 21"x15"
 WI-2 30"x30" (LT. OR RT.)	 WI-7 48"x24"	 W2-4 30"x30"	 W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 S4-3 24"x8"
					 S4-2 24"x10"	 OM-3 12"x36" (LT. OR RT.)

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.

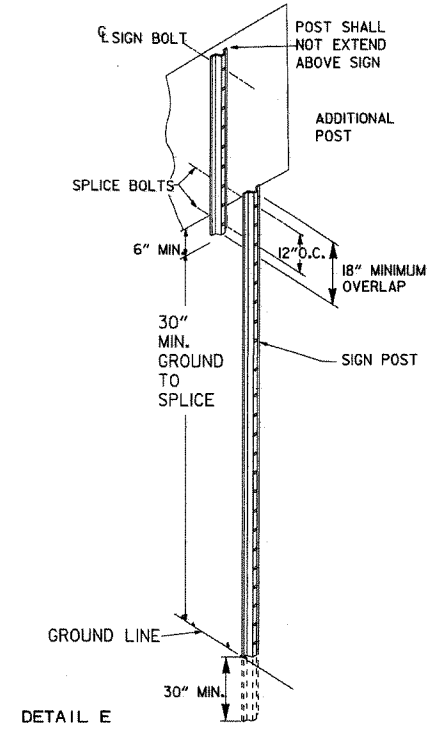
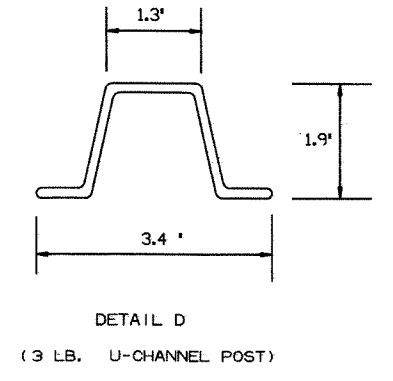
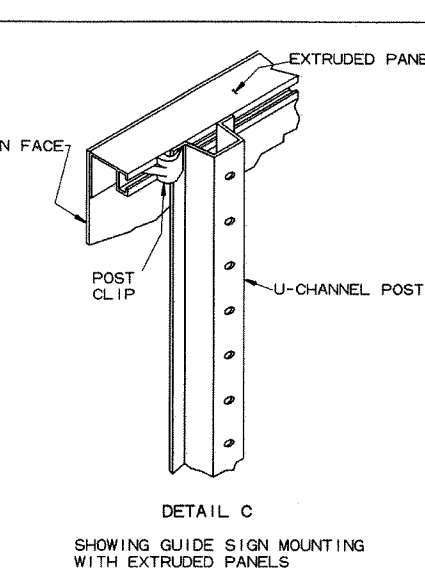
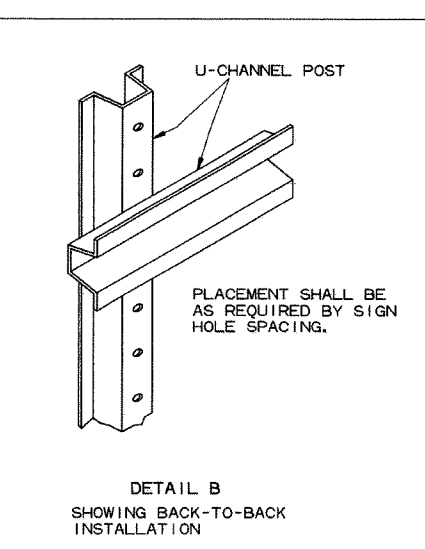
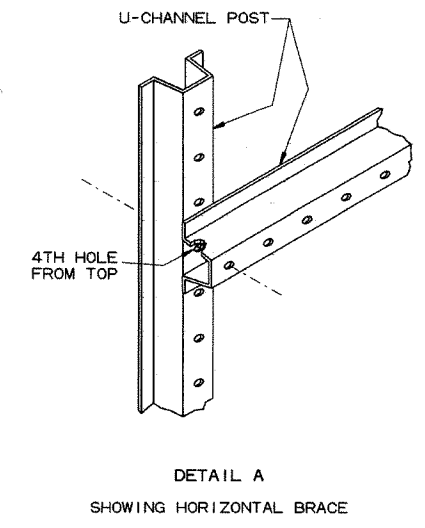
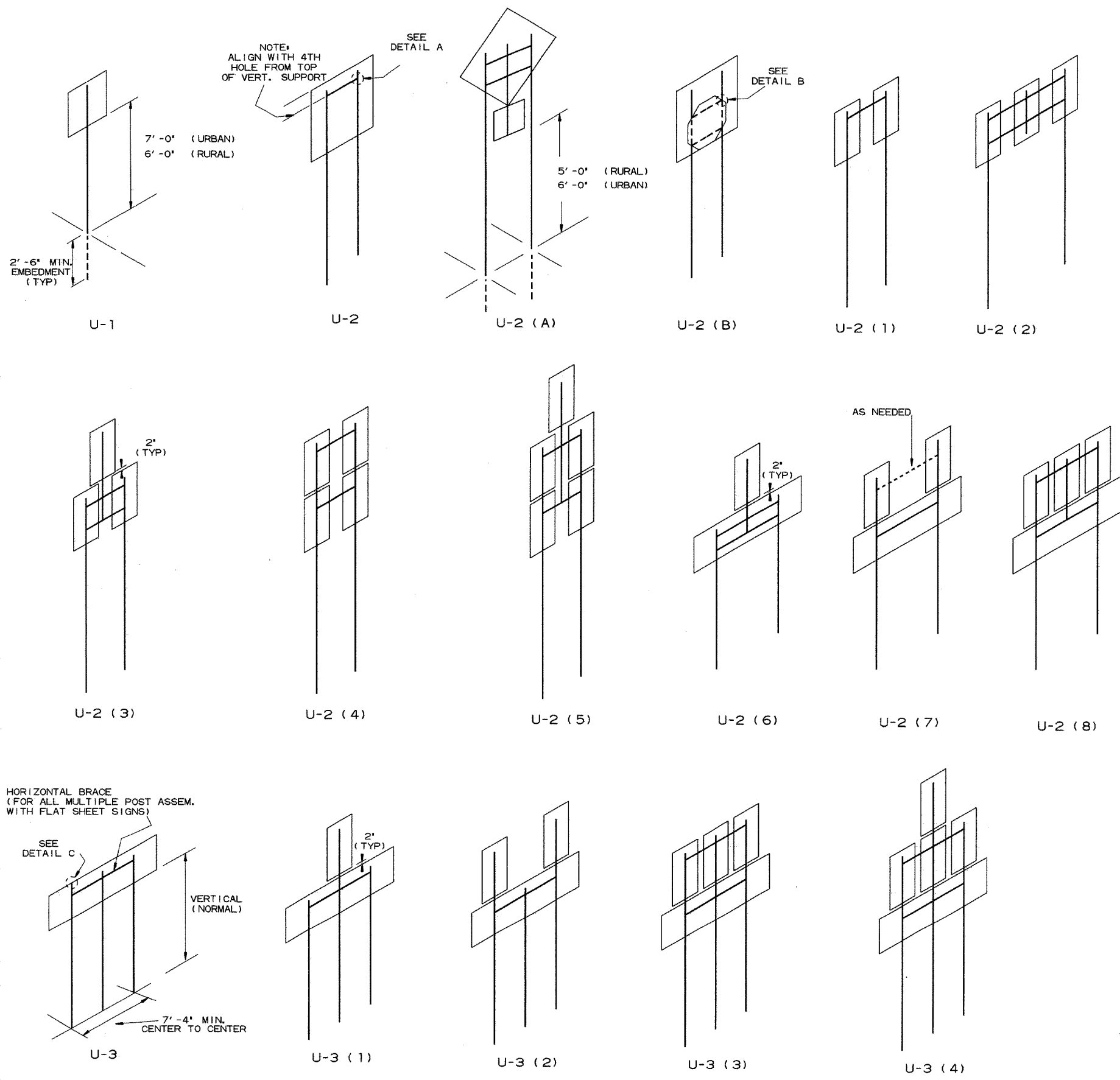


MINIMUM WEIGHT
TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED WI4-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2" - 3"	
8-12-74	ADDED S4-2 & S4-3	504-5-3-76
12-2-72	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-1-72	ADDED M6-2, 3, 4, 5, 6	500-12-21-72
12-1-72	ISSUED	562-12-1-72
DATE	REVISION	DATE FILMED


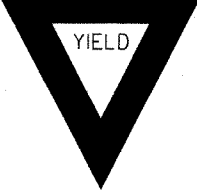

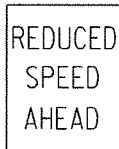




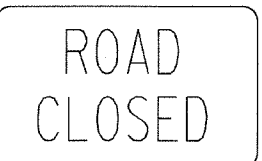
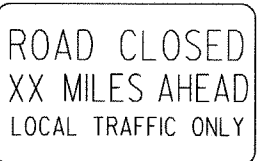
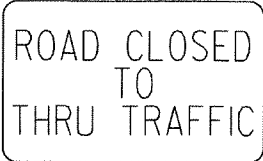

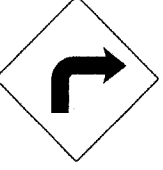

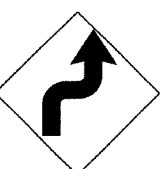

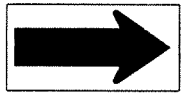
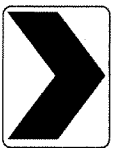
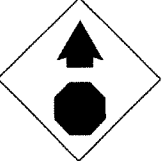
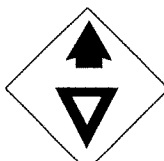
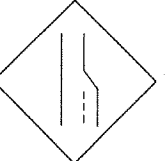

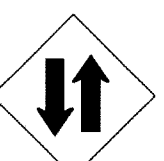

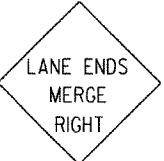


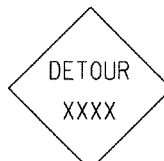
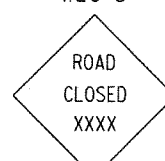

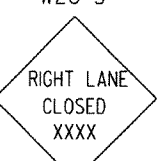


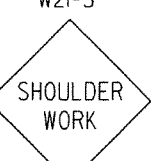
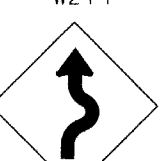
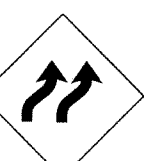

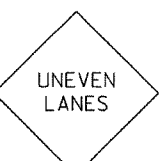
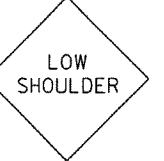
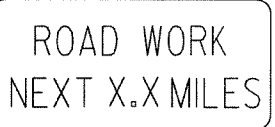
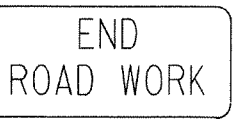
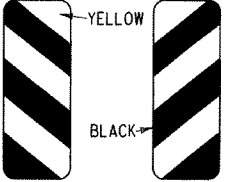


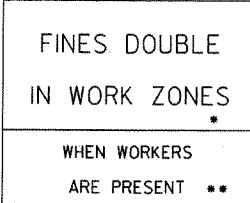
SUPPORT ASSEMBLIES
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES
STANDARD DRAWING SHS-1



NOTES:
 SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.
 SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (E).
 NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. CARRIAGE BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS.
 ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILED
10-9-03	REMOVED ROUND POST & REVISED SPACING	10-9-03
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION
 U-CHANNEL POST ASSEMBLIES
 STANDARD DRAWING SHS-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>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>WI-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>* 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

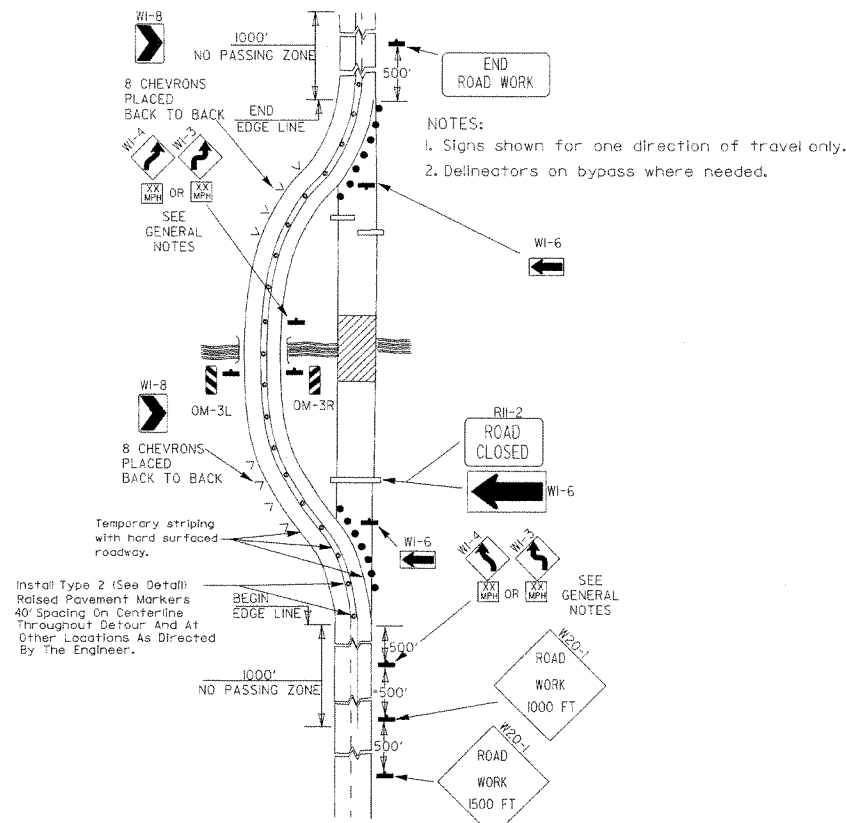
GENERAL NOTES:

- 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, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
- POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
- ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 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.

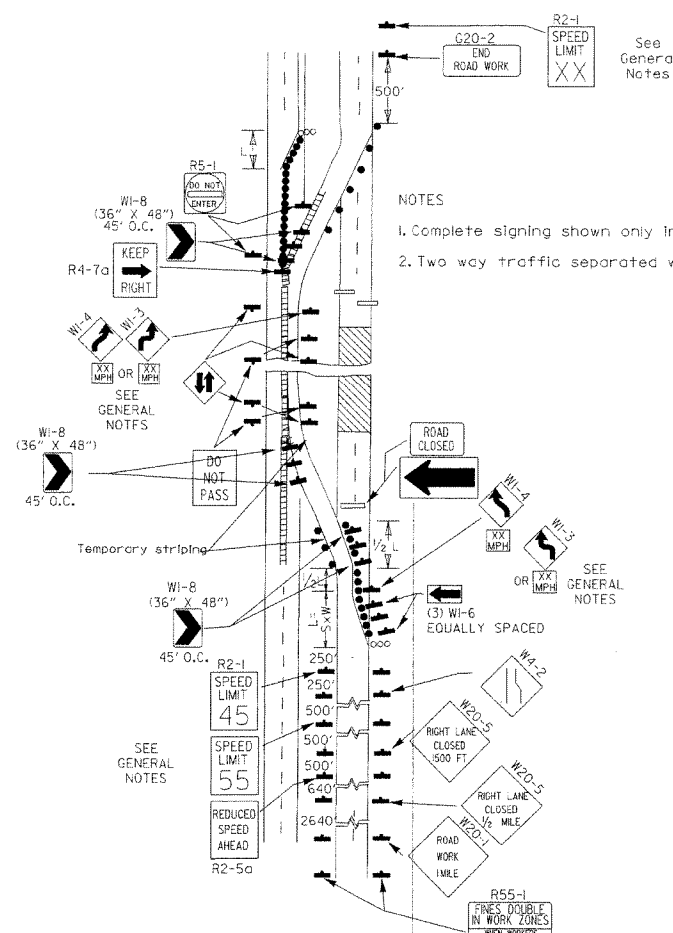
* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

12-15-81	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	
DATE	REVISION	FILMED

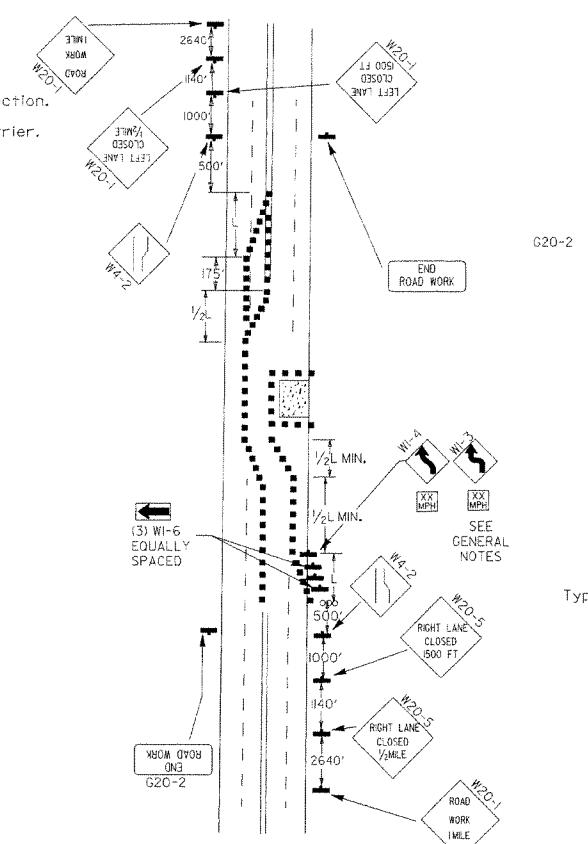
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



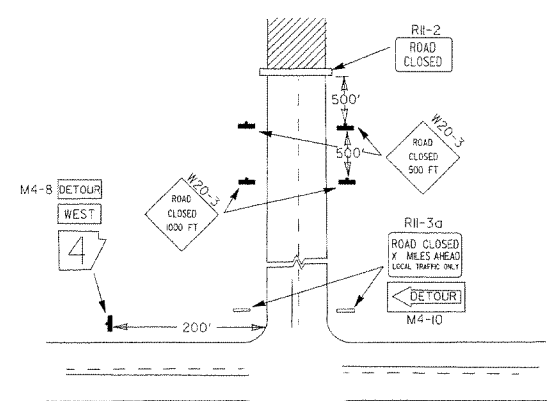
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



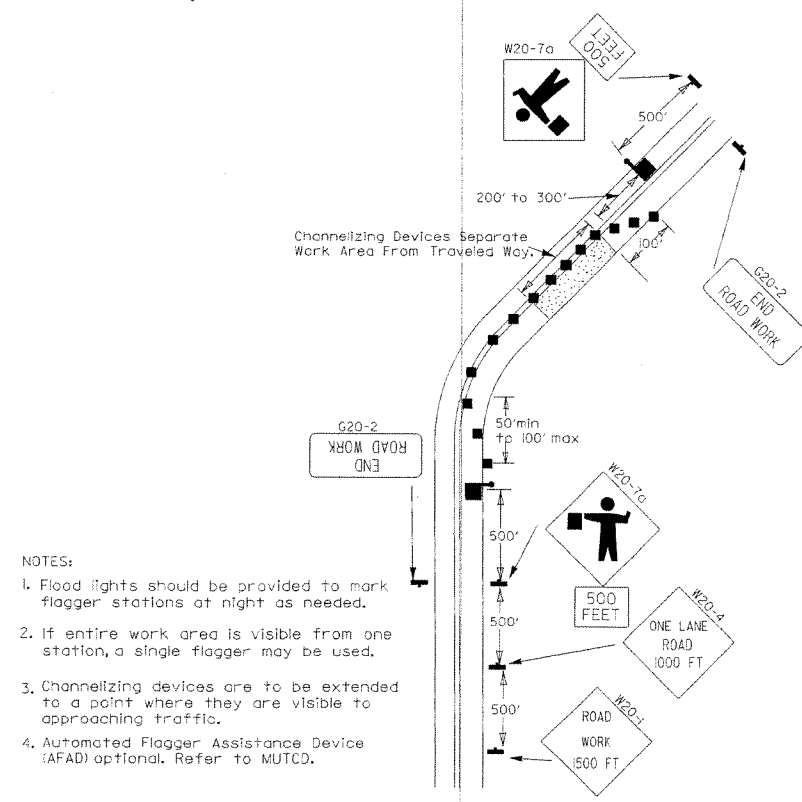
(B) Typical application - 4-lane divided roadway where one roadway is closed.



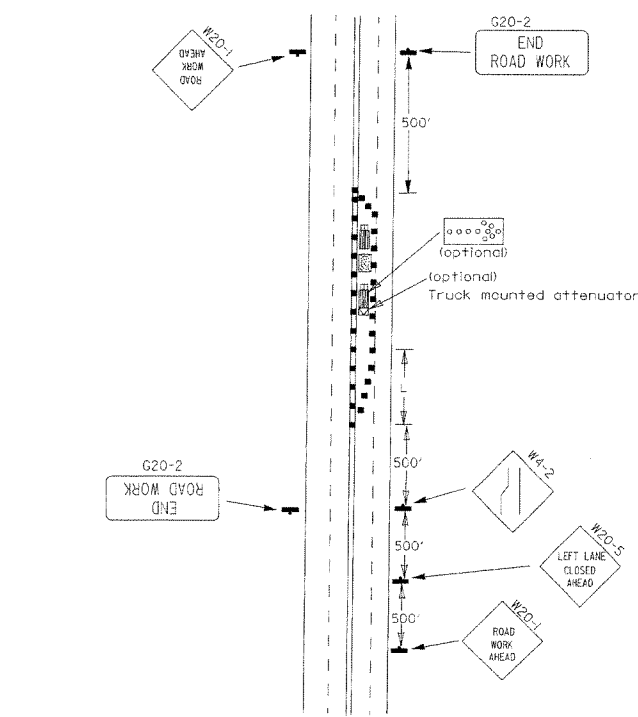
(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



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

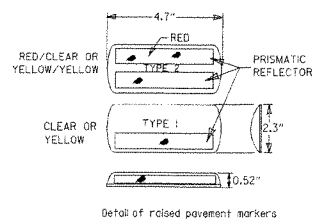


(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.



(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:

$L = S \times W$ for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:

L = Minimum length of taper.

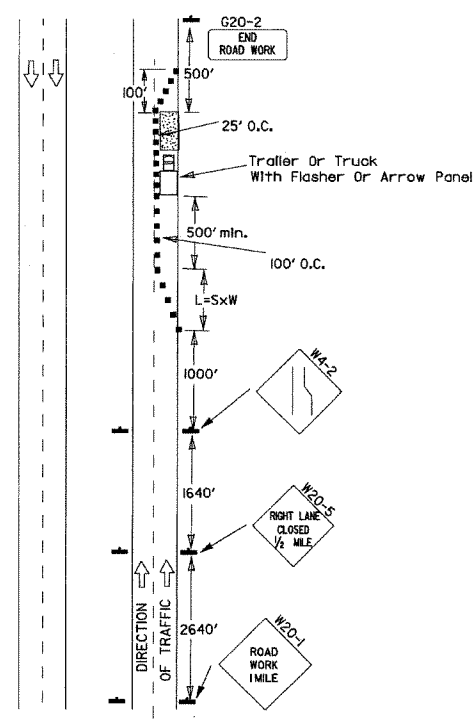
S = Numerical value of posted speed limit prior to work or 85th percentile speed.

W = Width of offset.

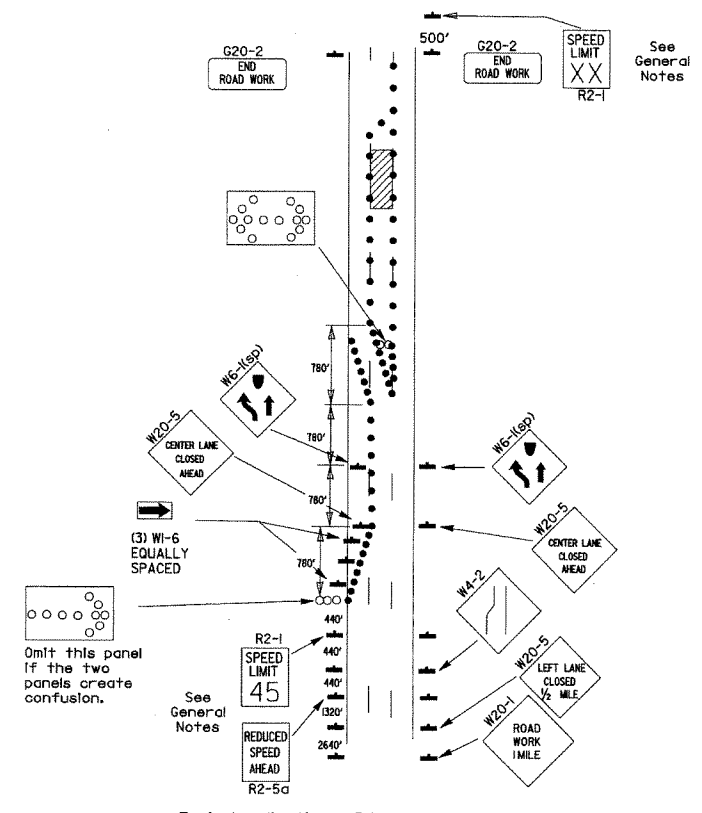
GENERAL NOTES:

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 R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-(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 1/2 mile 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.

DATE	REVISION	FILMED
3-8-10	ADDED (AFAD)	
8-20-08	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	

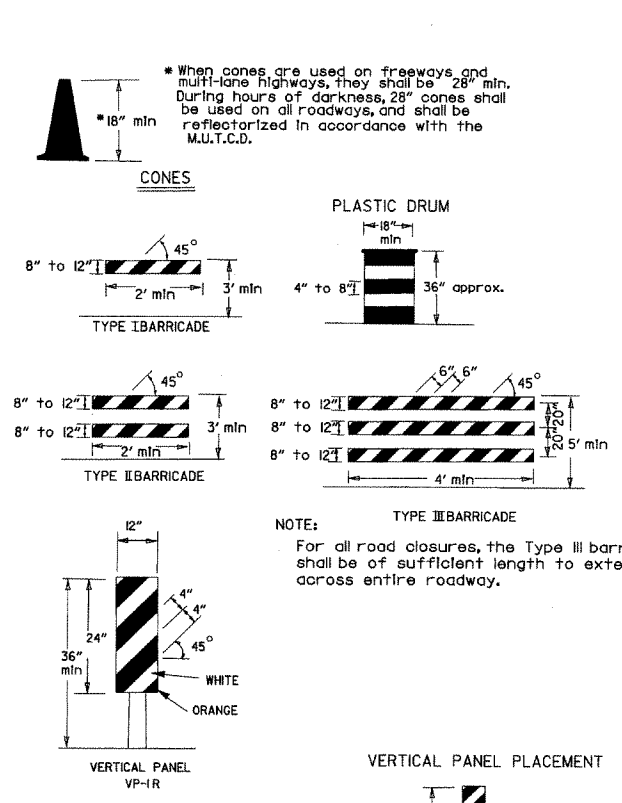


(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



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

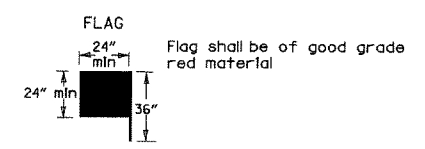
Channelizing devices



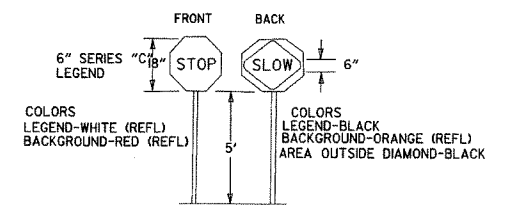
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

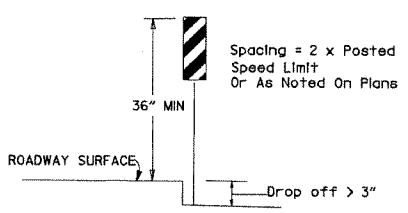
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE



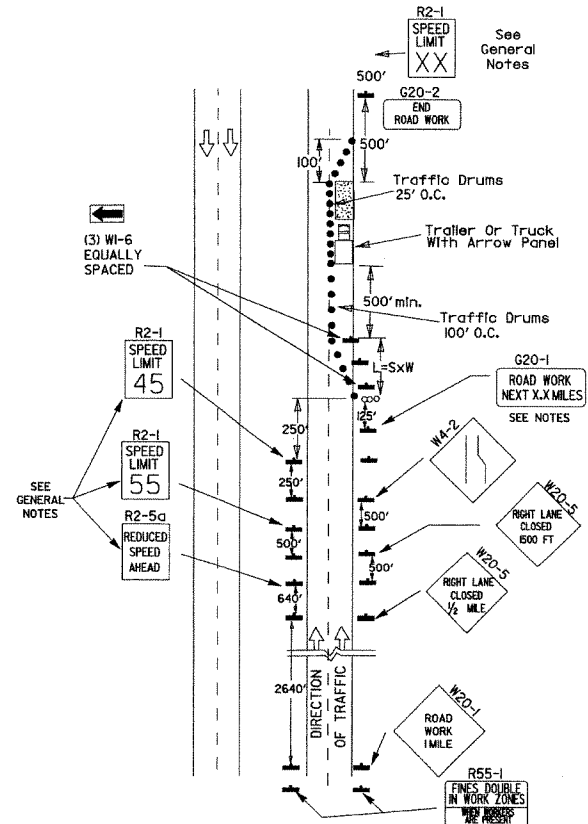
VERTICAL PANEL PLACEMENT



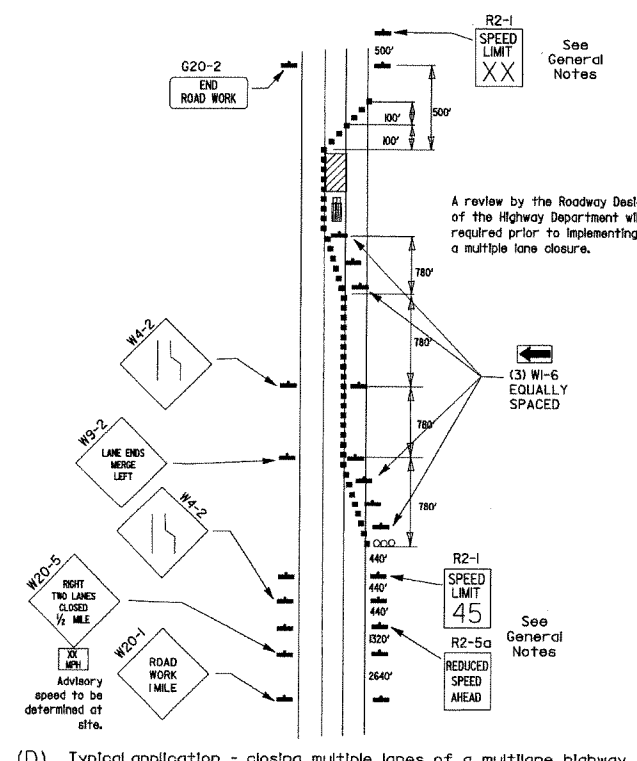
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

GENERAL NOTES:

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

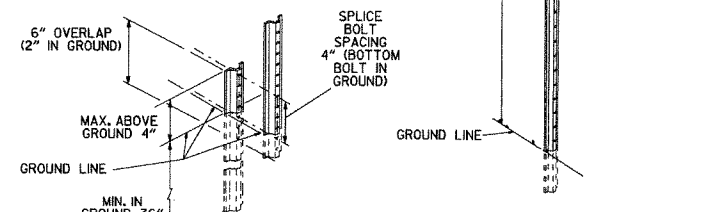


(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.



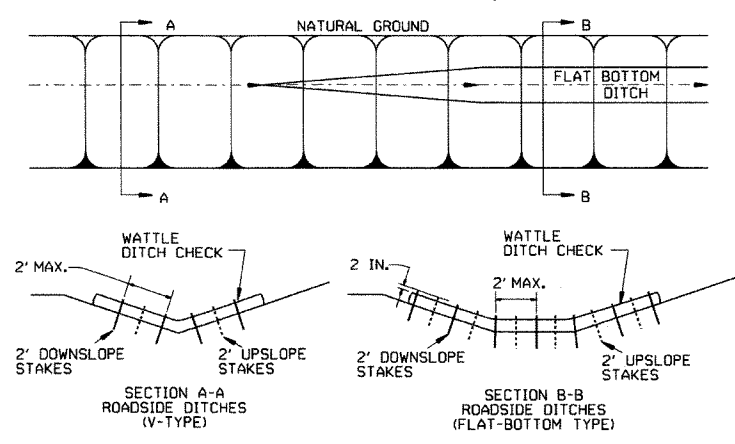
(D) Typical application - closing multiple lanes of a multilane highway.

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

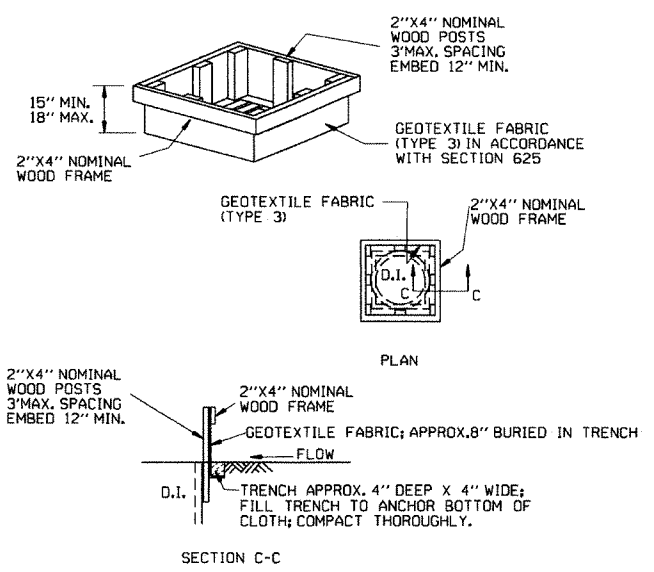


DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED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

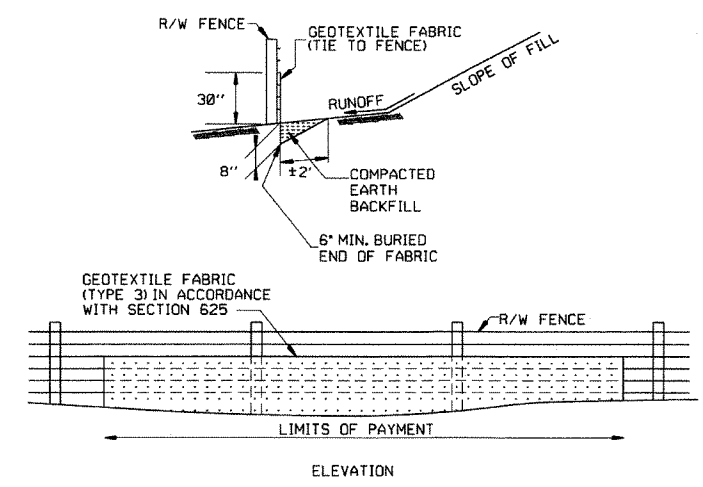
GENERAL NOTES
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



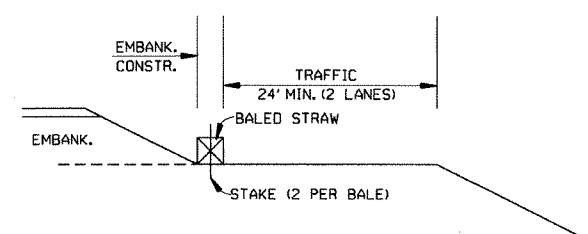
DROP INLET SILT FENCE (E-7)



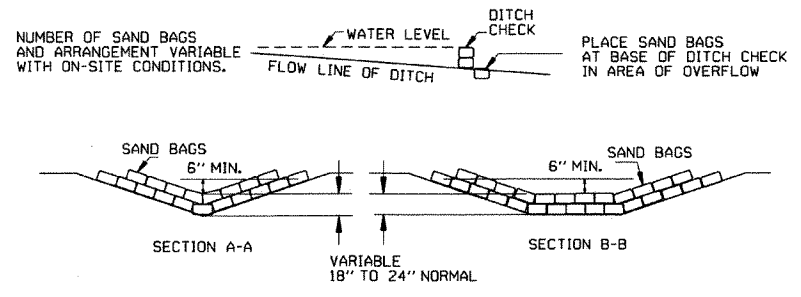
SILT FENCE ON R/W FENCE (E-4)

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

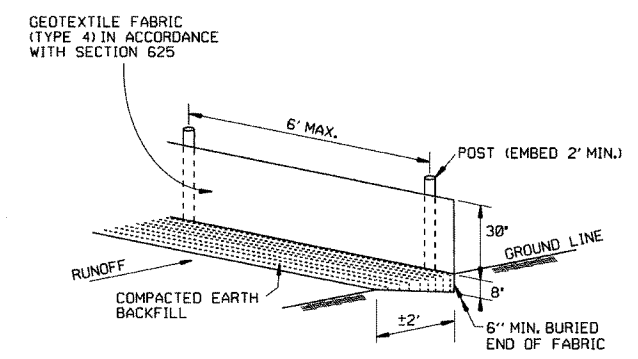
GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL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



BALED STRAW FILTER BARRIER (E-2)

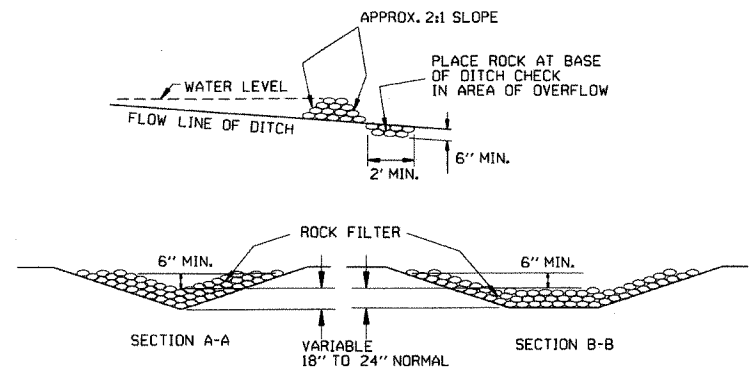


SAND BAG DITCH CHECK (E-5)



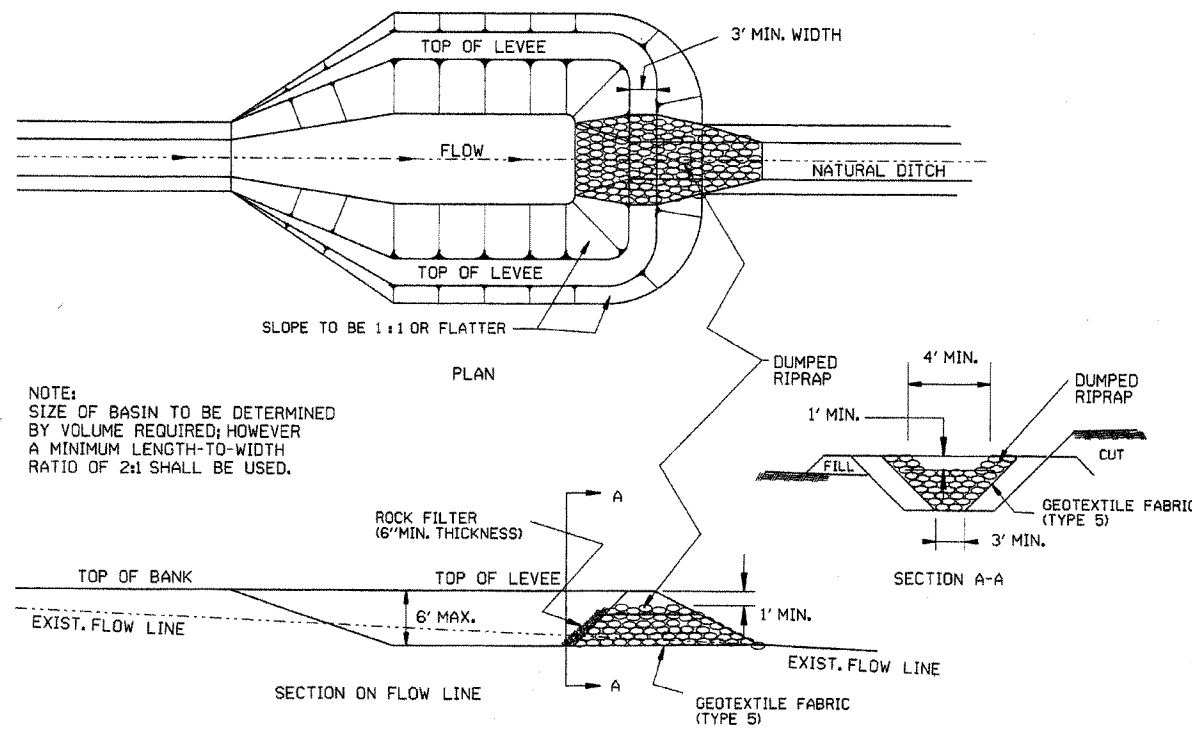
SILT FENCE (E-11)

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



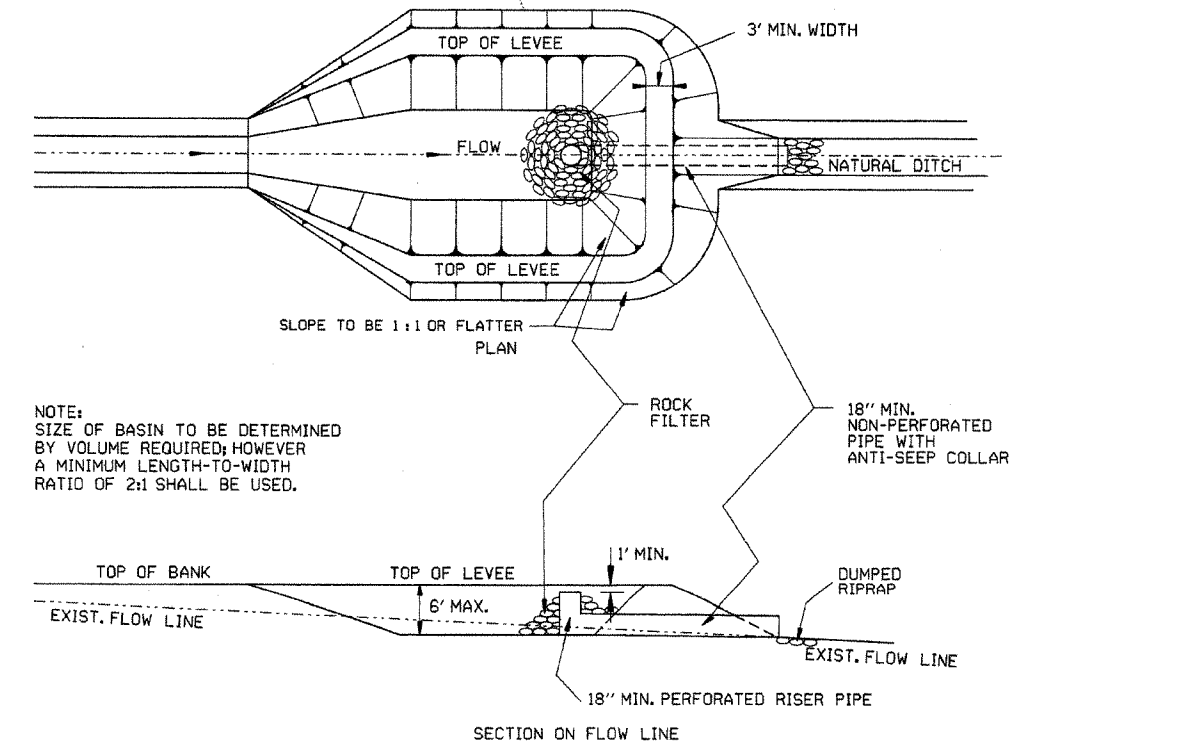
ROCK DITCH CHECK (E-6)

12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	TEMPORARY EROSION CONTROL DEVICES
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC		
6-2-94	REVISED E-1, 4, 7 & 11; DELETED E-2 & 3	6-2-94	
4-1-93	REDRAWN		
10-1-92	REDRAWN		
8-2-76	ISSUED R.D.M.	298-7-28-76	STANDARD DRAWING TEC-1
DATE	REVISION	FILMED	



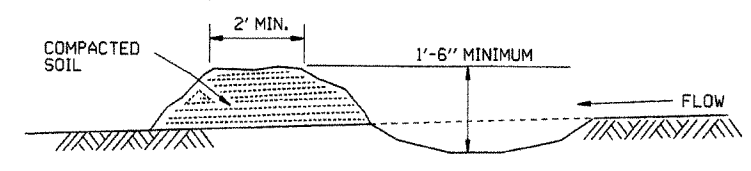
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

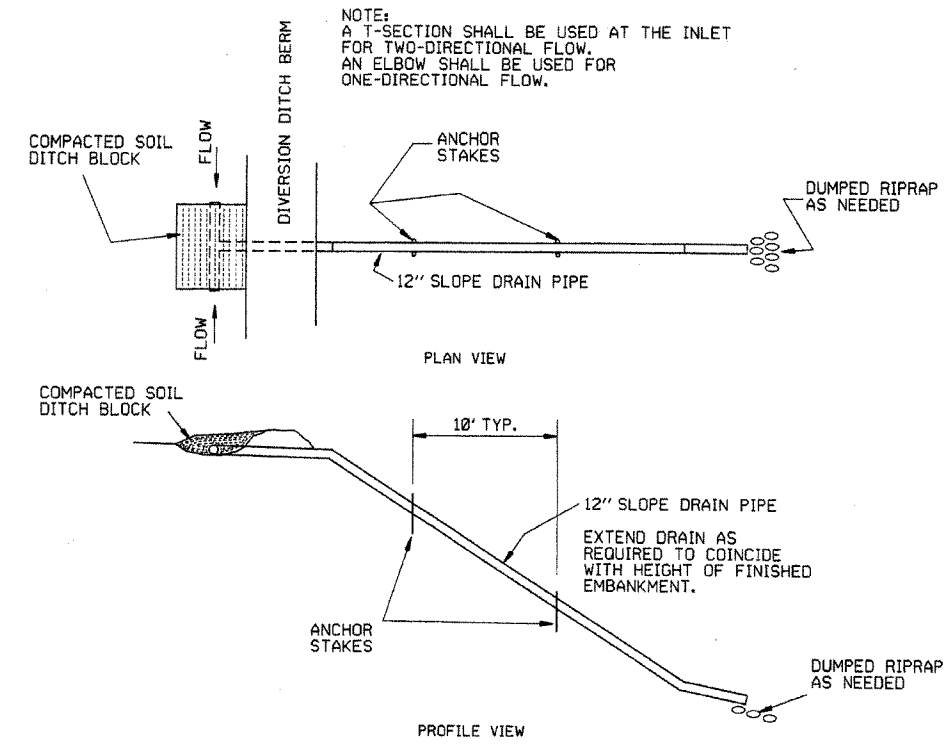


NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH PIPE OUTLET (E-10)

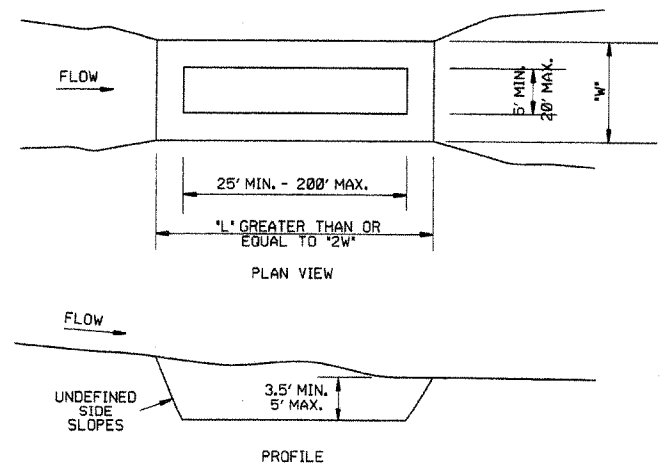


DIVERSION DITCH (E-8)



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

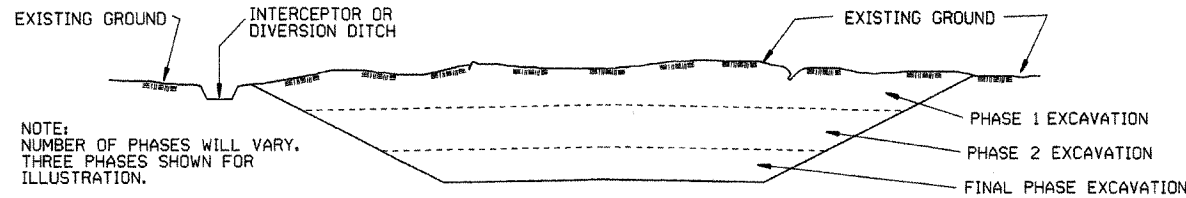
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION
 CONTROL DEVICES
 STANDARD DRAWING TEC-2

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.

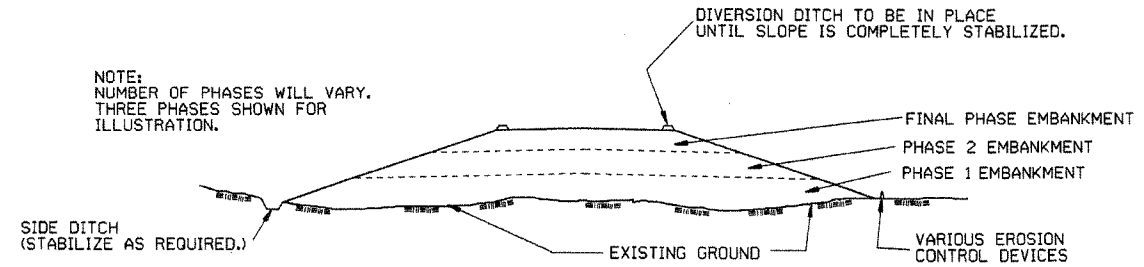
GENERAL NOTE

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	Drawn & Issued		
DATE	REVISION	6-2-94	FILMED
		STANDARD DRAWING TEC-3	

GENERAL NOTES:

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

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

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

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

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

SPLICE FOR WOVEN WIRE BETWEEN PULL POST ASSEMBLY 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: USE 3/4" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.

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

USE SAME APPROACH SPANS AS FOR CORNER POSTS

12'-0" MIN. VEHICULAR OPENING

4' MIN. HEIGHT

USE SAME APPROACH SPANS AS FOR CORNER POSTS

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.

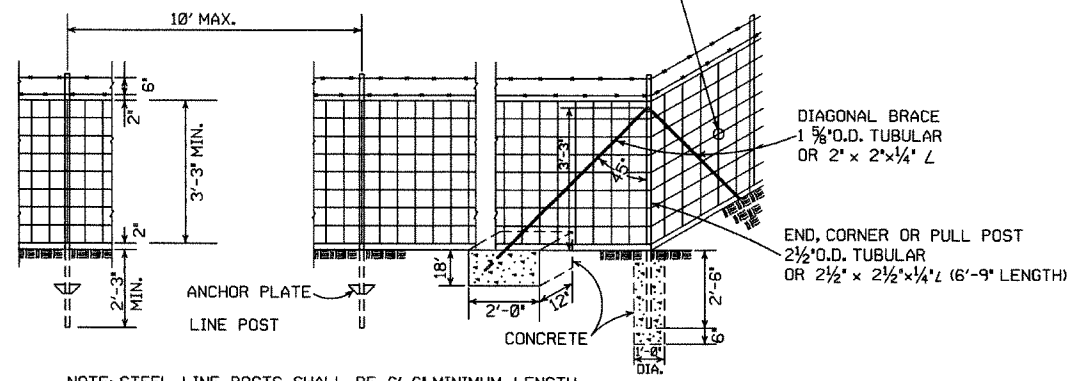
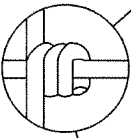
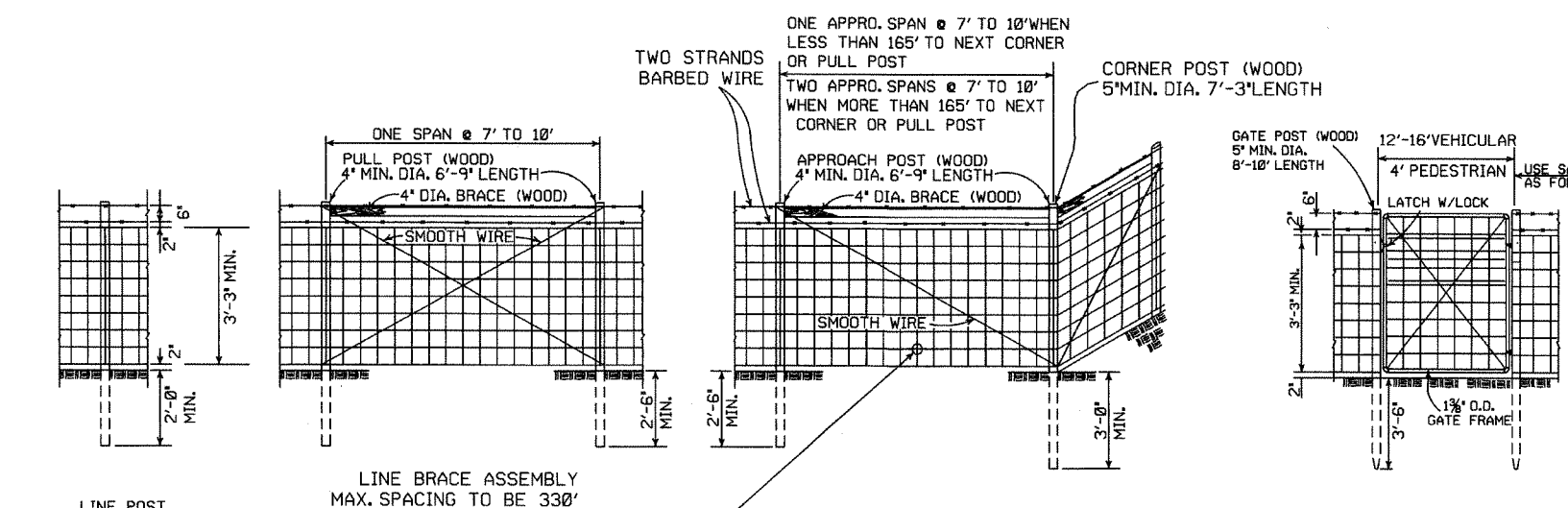
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE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

ARKANSAS STATE HIGHWAY COMMISSION

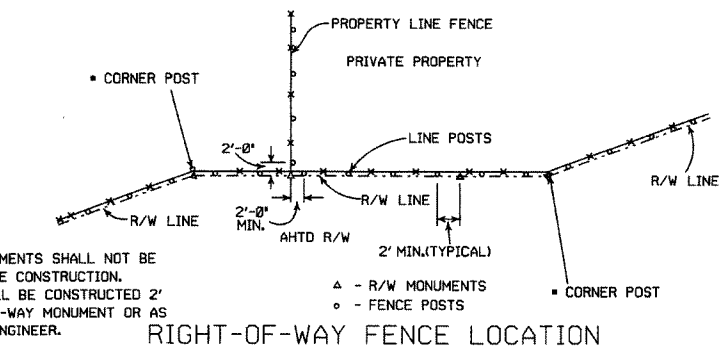
WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4

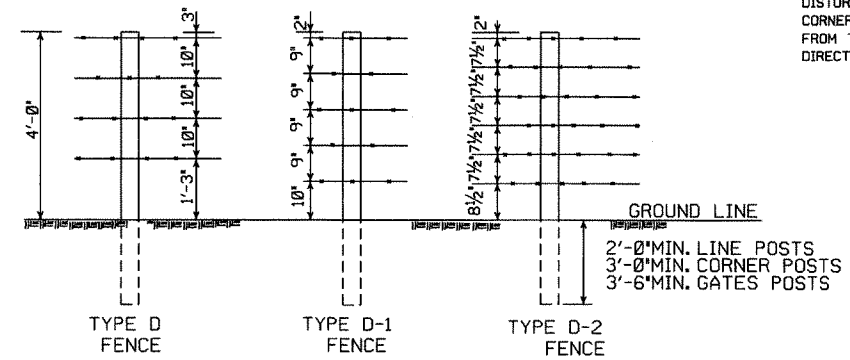
TYPE C FENCE (WOOD POSTS)



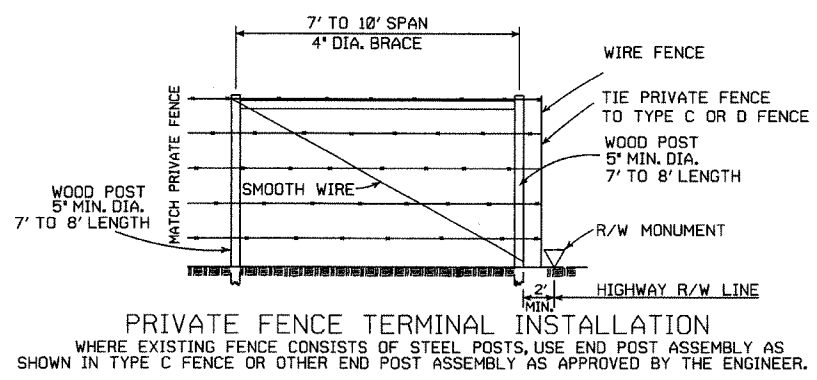
TYPE C FENCE (STEEL POSTS)



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



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



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

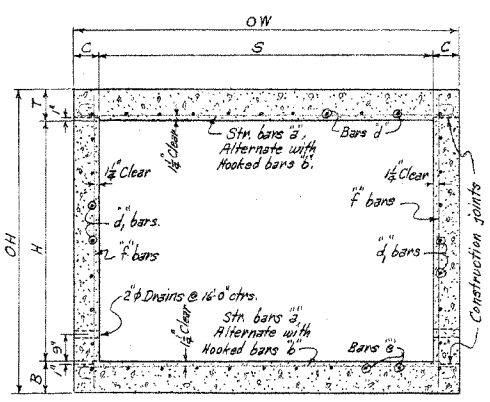
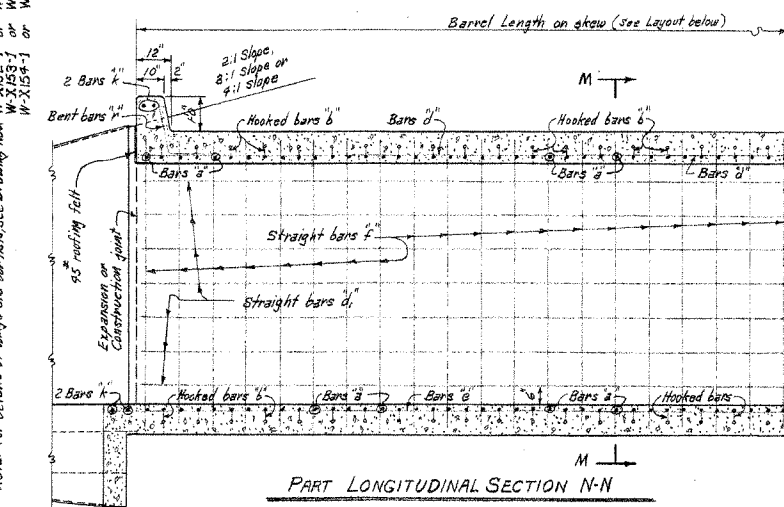
Table with columns for Depth of Cover, Clear Span, Clear Height, and various bar sizes (a, b, c, d, e, f, g, h, i, j, k) with their respective lengths and quantities.

Note: - The 'a' and 'b' bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

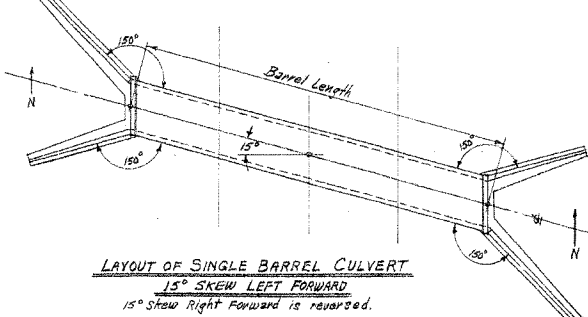
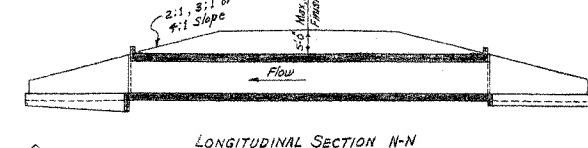
DIMENSIONS QUANTITIES

Table with columns for Barrel Dimensions (Clear Height, Overall Width, etc.) and Unit Quantities (Reinforcing Steel, Additional).

Notes regarding drawing nos. W-X152-1, W-X153-1, W-X154-1, W-X152-2, W-X153-2, W-X154-2.



GENERAL NOTES: CONCRETE- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 1/4 chamfers. REINFORCING STEEL- Reinforcing to be deformed bars of intermediate or hard grade. BAR LAP- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0" length longitudinal bars 30 diameters. CONSTRUCTION JOINTS- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans. SPECIFICATIONS- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.



DESIGN LIVE LOAD H20-S16 LOADING A.A.S.H.O. 1961 AND SPECIAL MILITARY LOADING Two 24,000 Lb. Axles @ 4'-0" ctrs. UNIT STRESSES: Class S Concrete (n=10) 1200 psi Reinforcing Steel 20,000 psi

NOTE: This drawing to be used in conjunction with Standard Drawing Nos. W-X152-1 or W-X152-2, W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW 4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS 2:1, 3:1 OR 4:1 SLOPES UNDER 5'-0" COVER SINGLES STANDARD DRAWING NO. R-115X-0

Designed By: W.C.H. 1-23-63 Checked By: P.H.S. 5-8-63 Drawn By: W.C.H. 8-14-63 Checked By: P.H.S. 10-7-63 Quantities By: W.C.H. 8-21-63 Checked By: R.G. 12-10-63

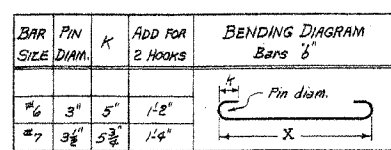
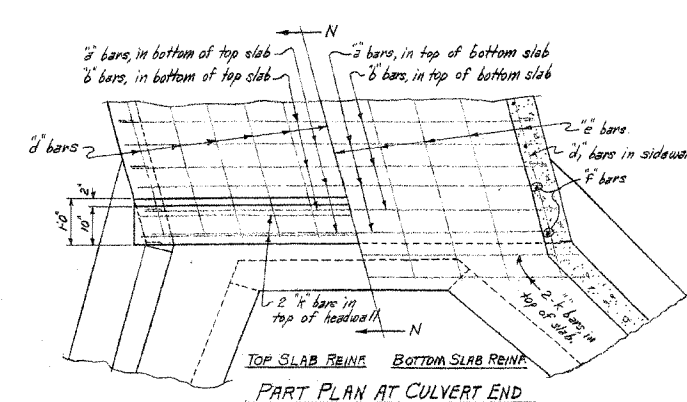


Table for Dowel Bars for Two Headwalls with columns for Span, Size, Spacing, No. Rebar, Length, and X.



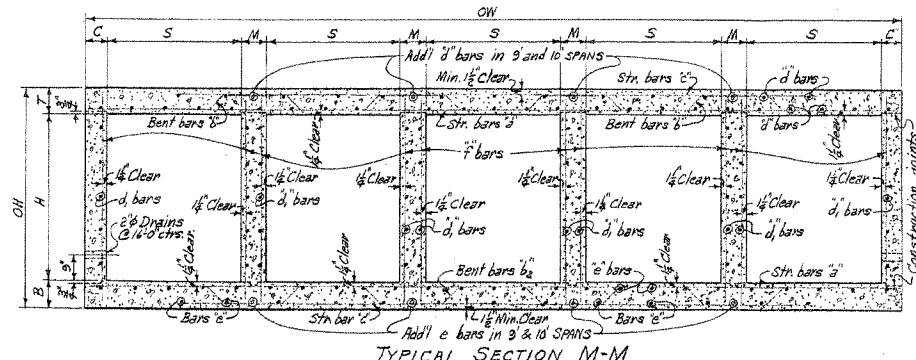
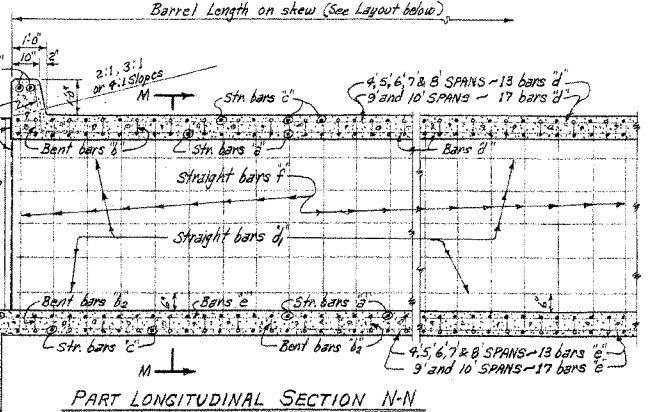
BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

Table with 11 columns for bar sizes (a through k) and 11 rows for span lengths (4' to 10'). Columns include straight, bent-up, and bent-down bar specifications with lengths and quantities.

DIMENSIONS QUANTITIES

Table with 2 main sections: BARREL DIMENSIONS (columns D through K) and UNIT QUANTITIES (columns PER LIN. FT. OF BARREL, PER LONG. LAP, PER TWO HEADWALLS & APRONS). Includes numerical data for various dimensions and quantities.

Project information table with columns: FED. ROAD No., STATE, FED. AID PROJECT, FISCAL YEAR, SHEET No., TOTAL SHEETS. Values: 6, ARK, 32.

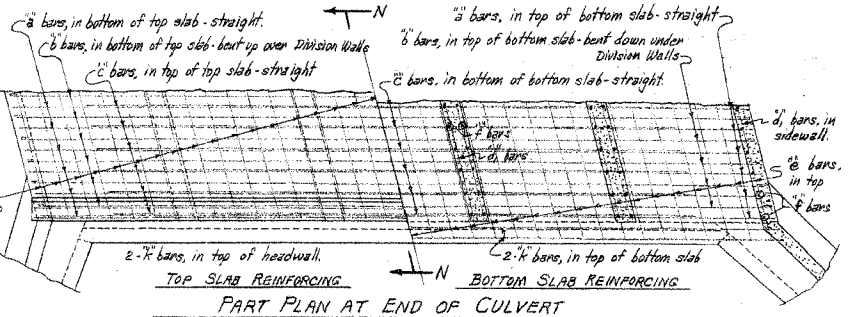
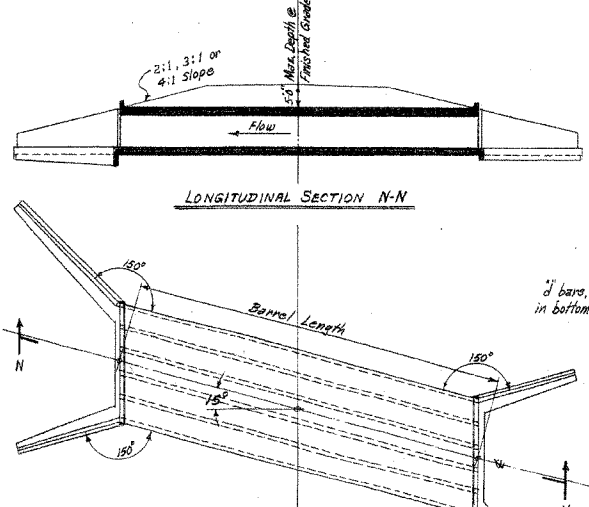
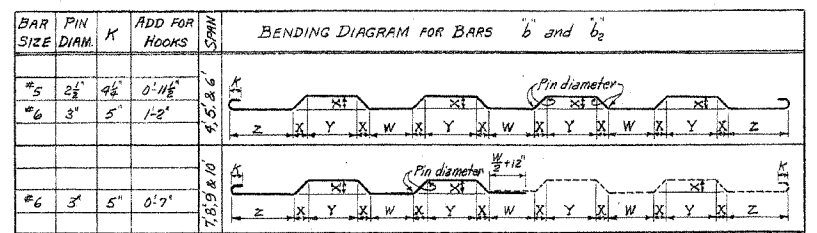


Notes: The a, b, b2 and c bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

These d, e, b1, b2 and f bars are to be spliced at center of middle span to make a full length bar. Lap #6 bars 2'-0" min. and #7 bars 2'-4" min.

DESIGN LIVE LOAD: H20-S16 LOADING, A.R.S.H.O. 1961 AND SPECIAL MILITARY LOADING: Two 28,000 lb. Axles @ 4'-0" ctrs.

GENERAL NOTES: CONCRETE- All concrete to be Class 5, and shall be poured in the dry. REINFORCING STEEL- Reinforcing to be deformed bars of intermediate or hard grade. BAR LAP- In computing the quantities of steel from the tables add one lap for each additional 23'-0" length of barrel over 32'-0".



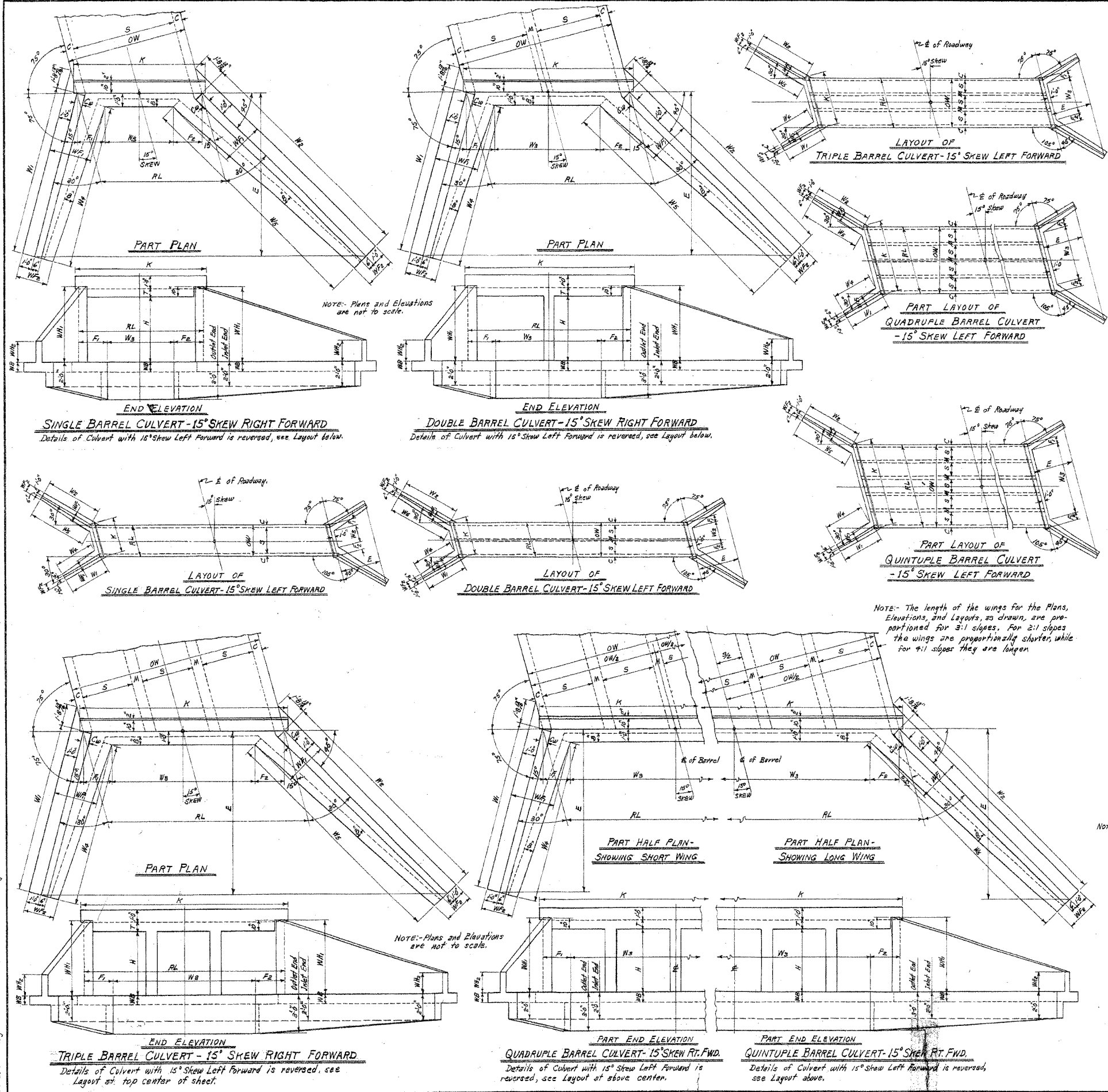
NOTE: This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X152-1 or W-X152-2, W-X153-1 or W-X153-2, W-X154-1 or W-X154-2. Also W-X15.

DOWEL BARS FOR TWO HEADWALLS: Table with columns for span length, bar size, spacing, number of bars, and total length. Includes a diagram of a dowel bar in a headwall.

CLASS 5 CONCRETE ARKANSAS STATE HIGHWAY COMMISSION DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW 4.5', 6', 7', 8', 9' & 10' SPANS 2:1, 3:1 or 4:1 SLOPES UNDER 5'-0" COVER STANDARD DRAWING NO. R-515X-0

Designed by: M.C.H. 1-28-63 Checked by: M.C.H. 5-24-63 Drawn by: M.C.H. 9-9-63 Checked by: E.H.S. 10-7-63 Quantities by: M.C.H. 9-11-63 Checked by: R.G. 1-14-68

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			33	
JOB No.					



ROADWAY LENGTH RL HEADWALL LENGTH K APRON DIMENSION W₂

RL = OW × 1.035276 K = RL × (6 1/2)° W₂ = RL × (F₁ + F₂)

USE WITH DRAWING No.	CLEAR SPAN	CLEAR HEIGHT	SUM OF FOOTING DIMENSIONS	SINGLE BARREL CULVERT					DOUBLE BARREL CULVERT					TRIPLE BARREL CULVERT					QUADRUPLE BARREL CULVERT					QUINTUPLE BARREL CULVERT				
				OW	RL	K	W ₂	OW	RL	K	W ₂	OW	RL	K	W ₂	OW	RL	K	W ₂	OW	RL	K	W ₂	OW	RL	K	W ₂	
W-X-152-1, W-X-153-1 or W-X-154-1.	4'	8'	12'	8'	12'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	16'	
	5'	9'	13'	9'	13'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	
	6'	10'	14'	10'	14'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	
	7'	11'	15'	11'	15'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	
	8'	12'	16'	12'	16'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	
	9'	13'	17'	13'	17'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	
	10'	14'	18'	14'	18'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	
	11'	15'	19'	15'	19'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	23'	
	12'	16'	20'	16'	20'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	24'	
	12'	17'	21'	17'	21'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	
W-X-152-2, W-X-153-2 or W-X-154-2.	9'	13'	17'	9'	13'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'	
	10'	14'	18'	10'	14'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	18'	
	11'	15'	19'	11'	15'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	19'	
	12'	16'	20'	12'	16'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	
	13'	17'	21'	13'	17'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	21'	
	14'	18'	22'	14'	18'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	22'	
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	17'	21'	25'	17'	21'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	25'	
	18'	22'	26'	18'	22'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	26'	
	19'	23'	27'	19'	23'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	27'	
	20'	24'	28'	20'	24'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	28'	

NOTE: The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.

Special case for these boxes. See Detail 'A' and Table 'H' for revised values of F₁, F₂, W₂ and W₃, when apron width is more than 1:0 and W₂=0. For Details 'A' and Tables 'H' for each slope, see Drawing Nos. W-X-152-1, W-X-152-2, or W-X-153-1, W-X-153-2, or W-X-154-1, W-X-154-2.

NOTE: This drawing to be used in conjunction with Standard Wing Drawings for 15° Skews for each slope as listed below.
 2:1 Slopes: W-X-152-1 or W-X-152-2 3:1 Slopes: W-X-153-1 or W-X-153-2 4:1 Slopes: W-X-154-1 or W-X-154-2.

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.
 SINGLES: R-115X-0, R-115X-1, R-215X-2
 DOUBLES: R-315X-0, R-315X-1, R-415X-2
 TRIPLES: R-515X-0, R-515X-1, R-615X-2
 QUADRUPLES: R-715X-0, R-715X-1, R-815X-2
 QUINTUPLES: R-915X-0, R-915X-1, R-1015X-2

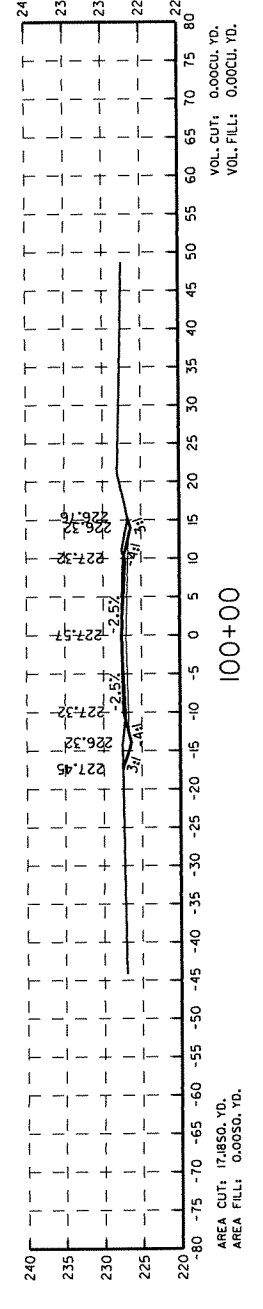
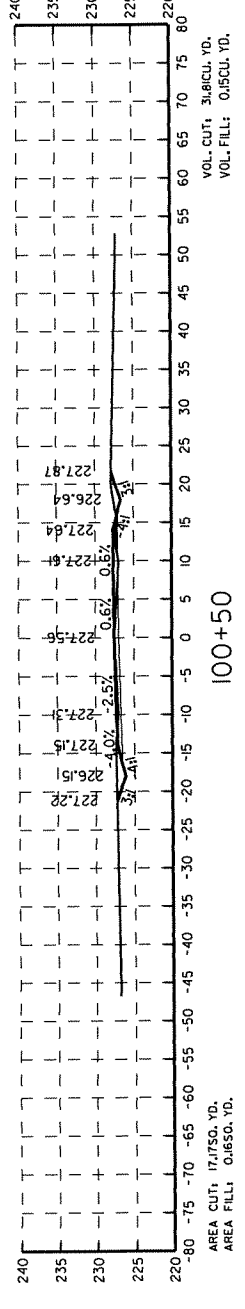
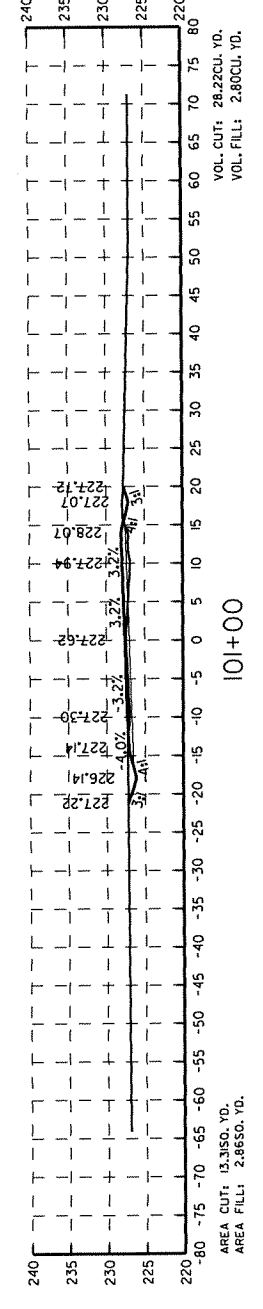
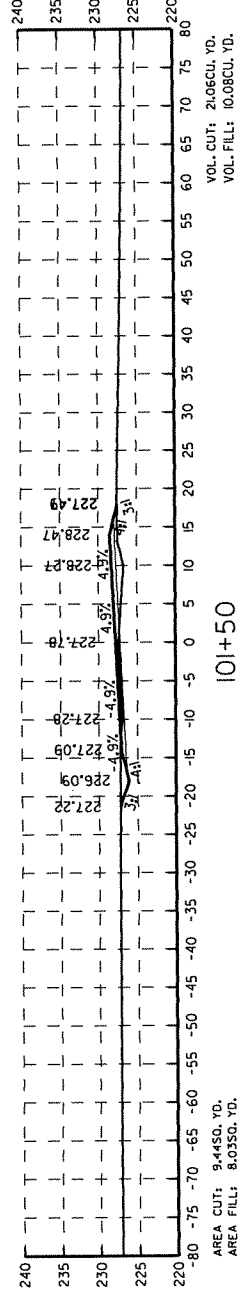
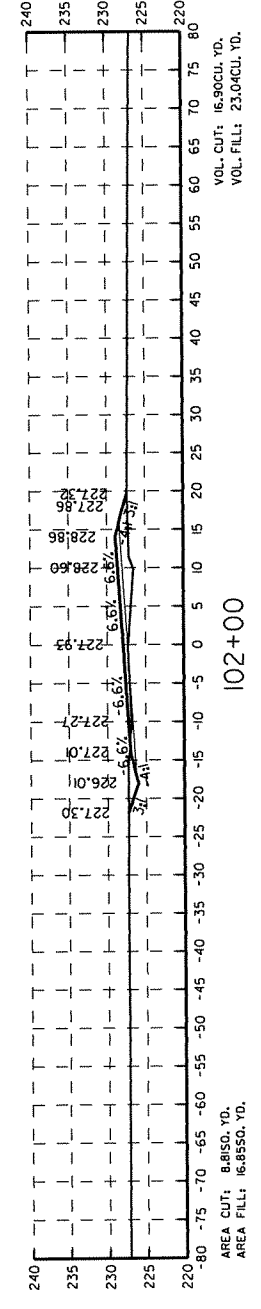
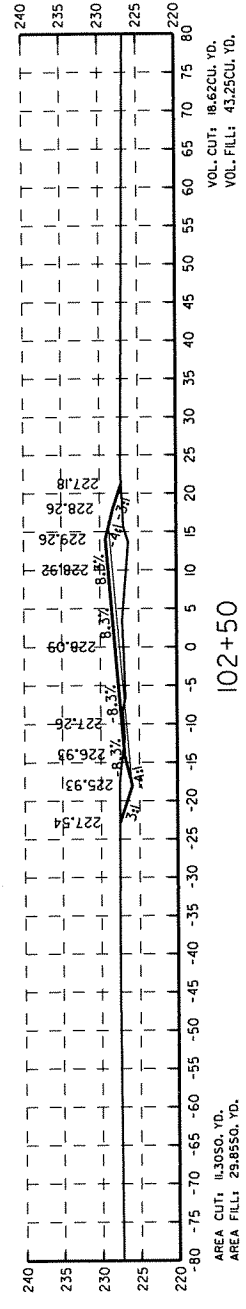
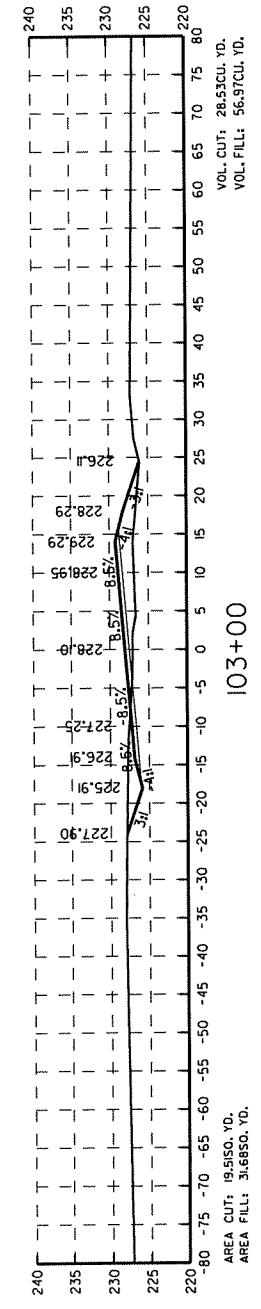
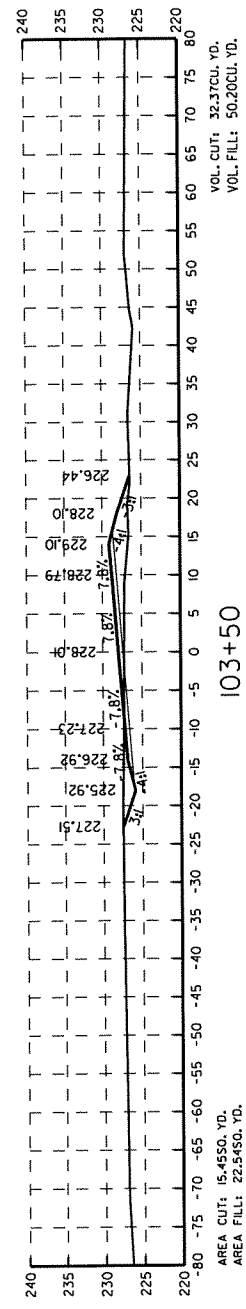
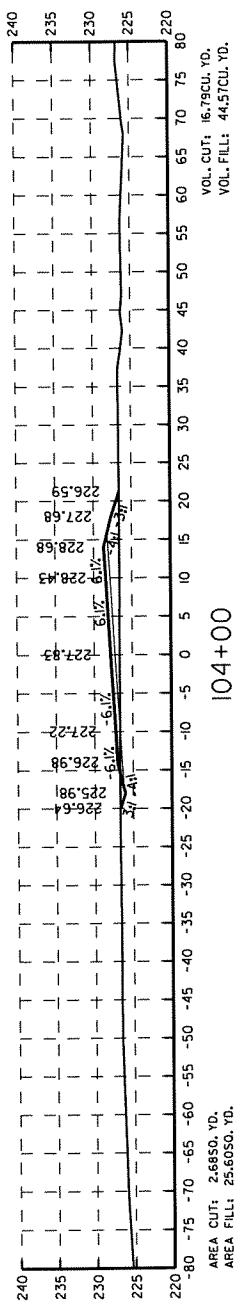
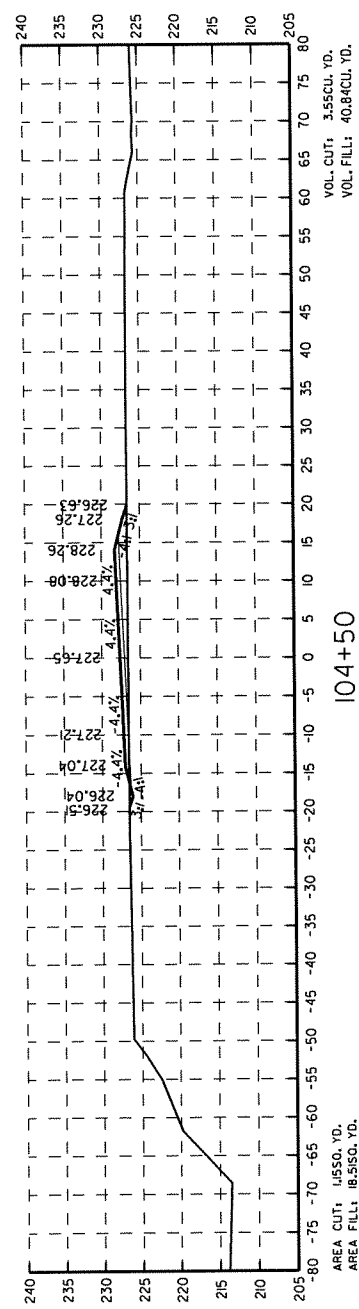
CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
 DETAILS OF STANDARD WINGS
 FOR
 REINFORCED CONCRETE BOX CULVERTS
 15° SKEW
 4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS 2:1, 3:1 & 4:1 SLOPES
 SINGLES, DOUBLES, TRIPLES, ALL DEPTHS OF COVER
 QUADRUPLES & QUINTUPLES. H=2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12.
 STANDARD DRAWING NO. W-X-15

Checked by: W.C.H. 5-22-63
 Traced by: W.C.H. 6-19-63
 Quantities by: J.E.M.
 6-20-63

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.	BR5608	35	40	

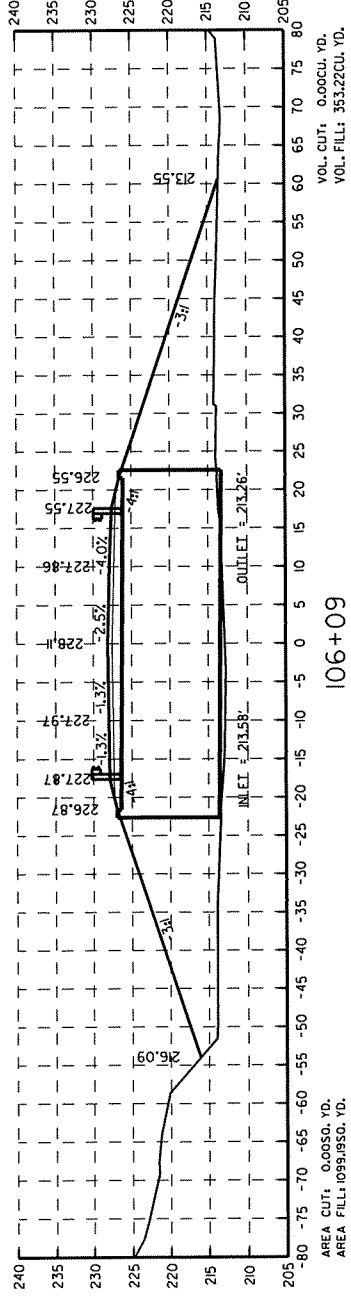
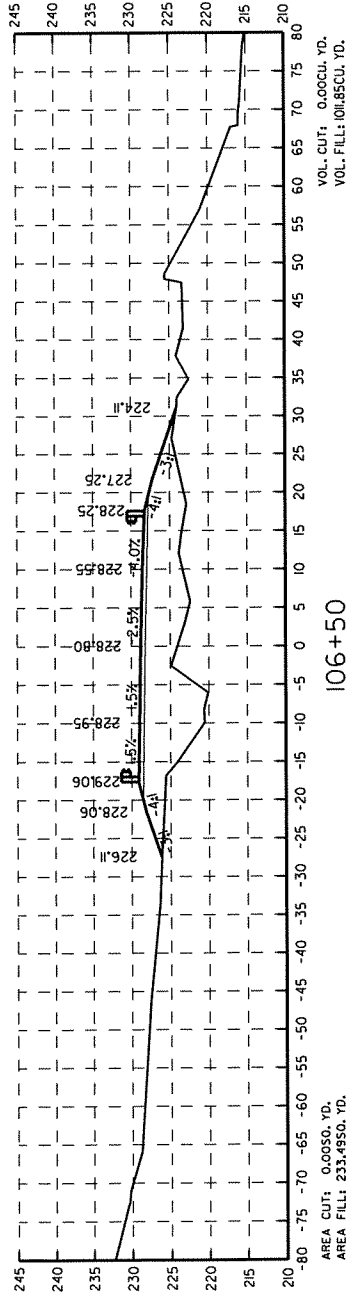
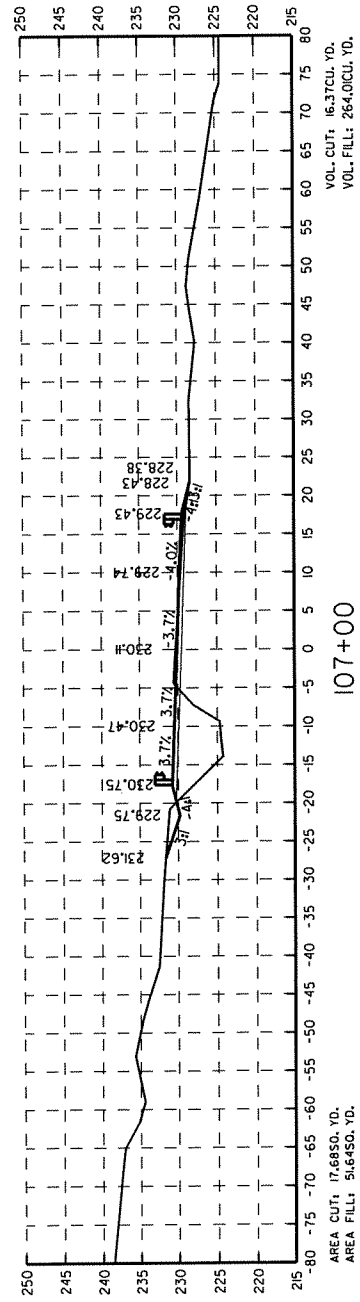
4 STA. 100+00 TO STA. 104+50



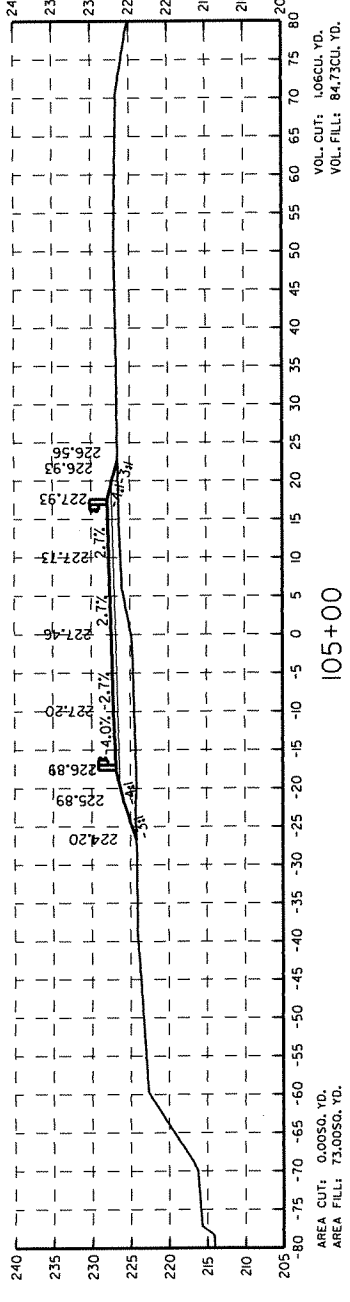
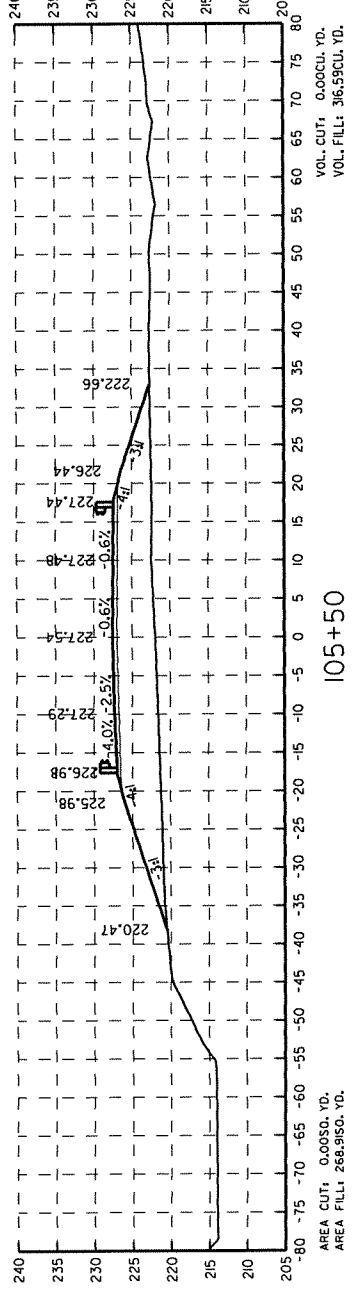
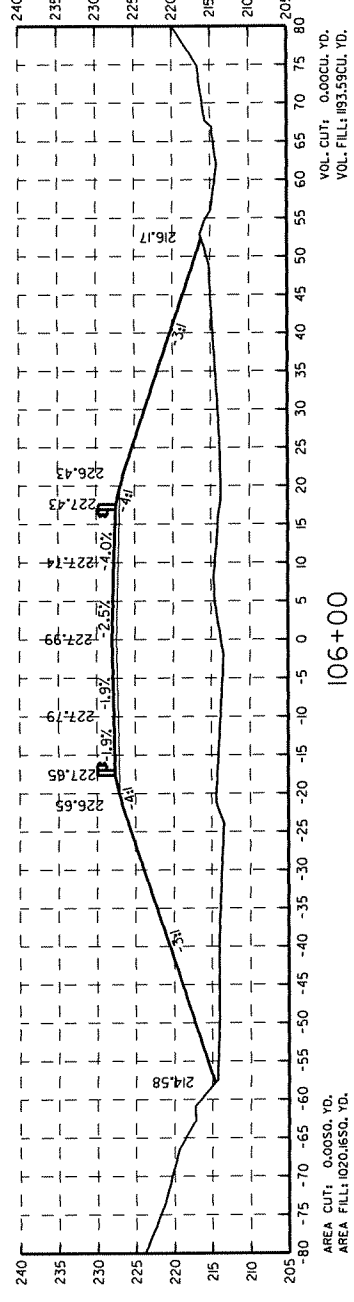
BEGIN JOB BR5608

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.	BR5608		36	40

4 STA. 105+00 TO STA. 107+00

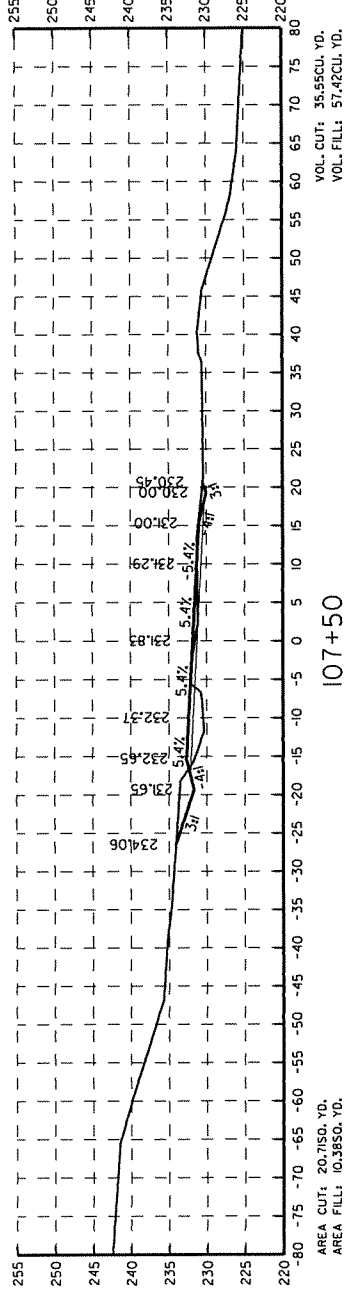
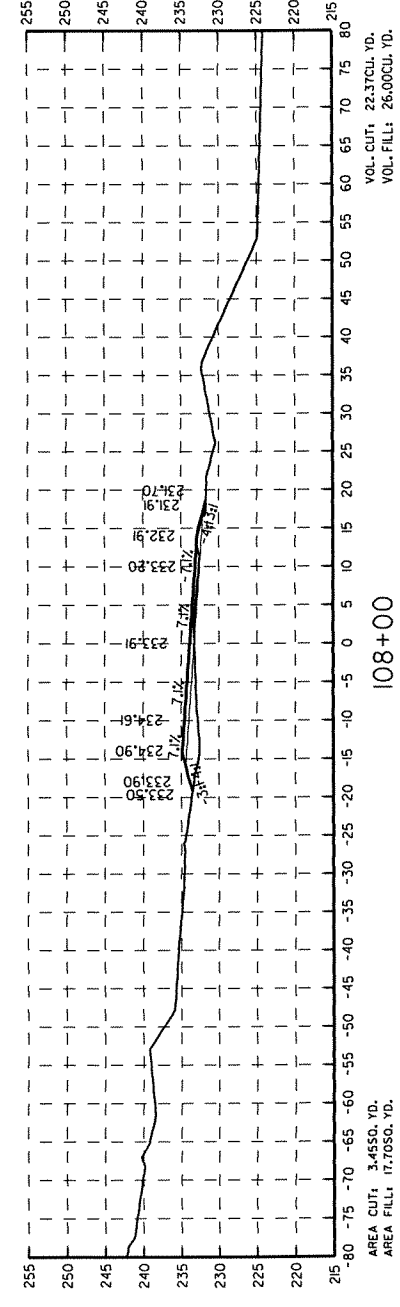
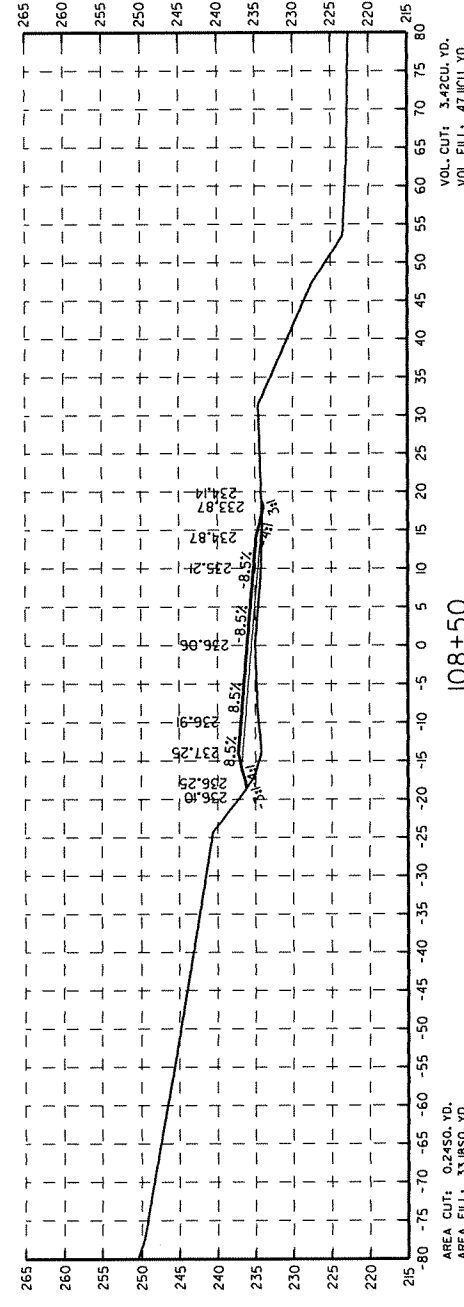
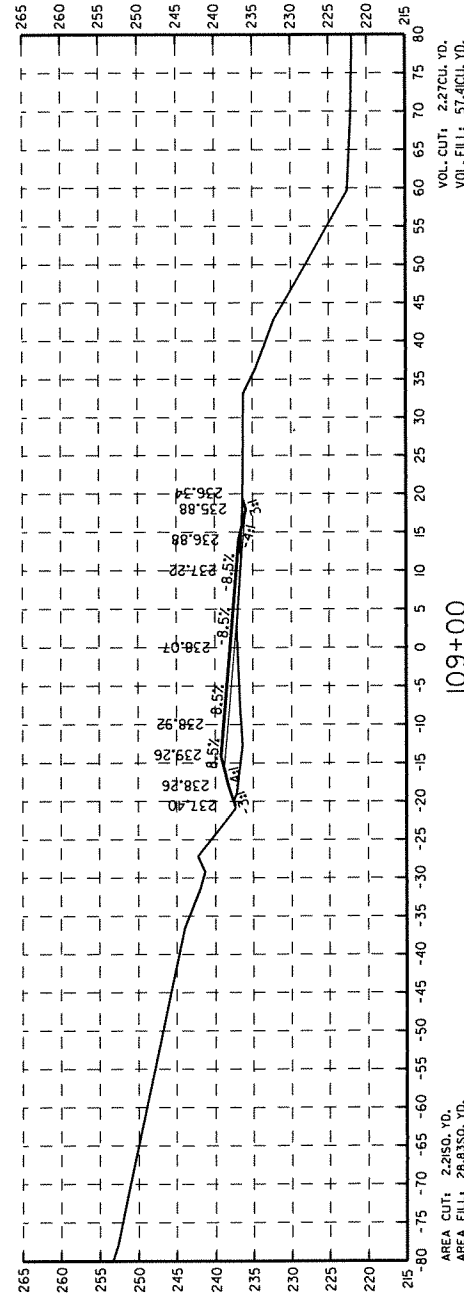
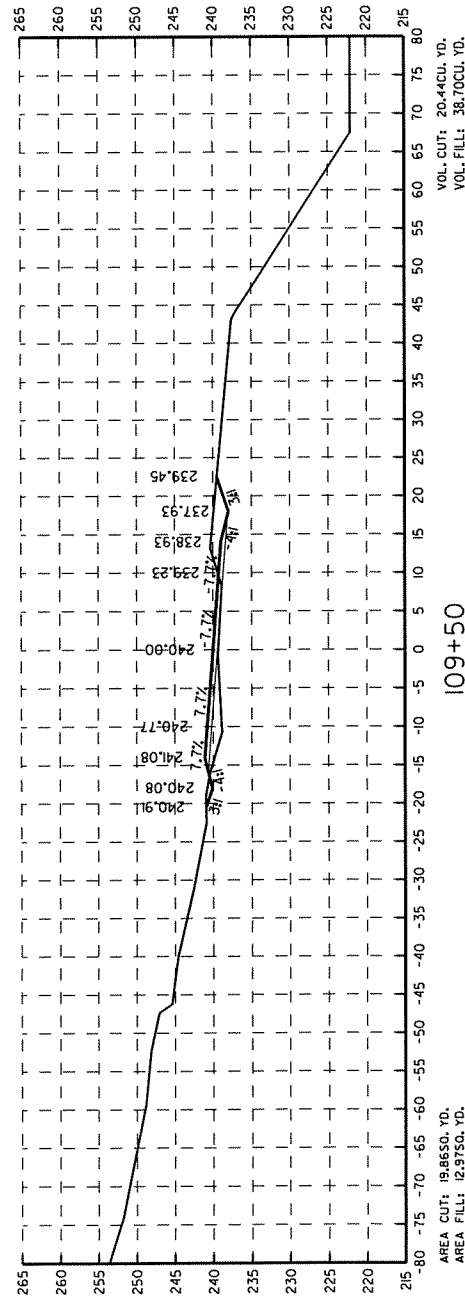
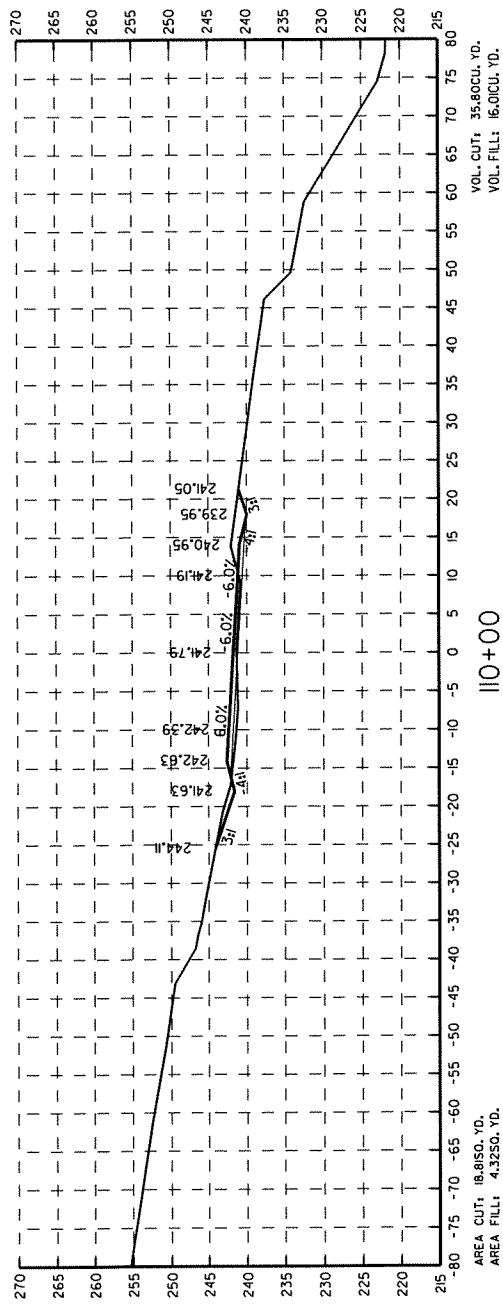


CONSTRUCT
 QUINTUPLE 10'X12'X47'
 R.C. BOX CULVERT
 (15° RT. FORWARD SKEW)
 D.A. = 11.4 SQ. MILES Q25 = 4400 CFS
 = 24 CU. YDS. (COMP. EMBK.)
 = 400 CU. YDS. (UNCL. EXCAV.)



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
				JOB NO.	BR5608		37	40

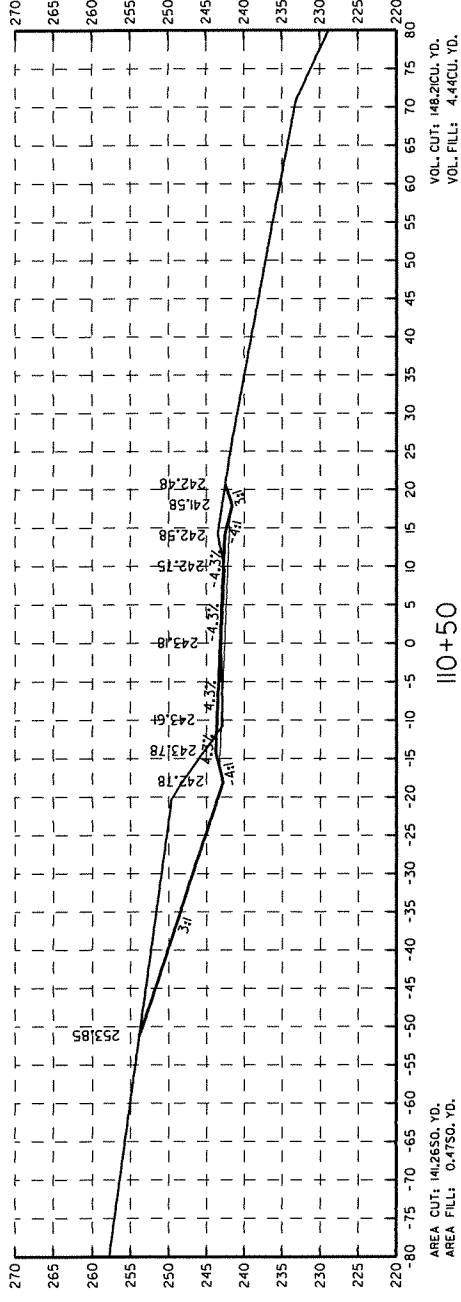
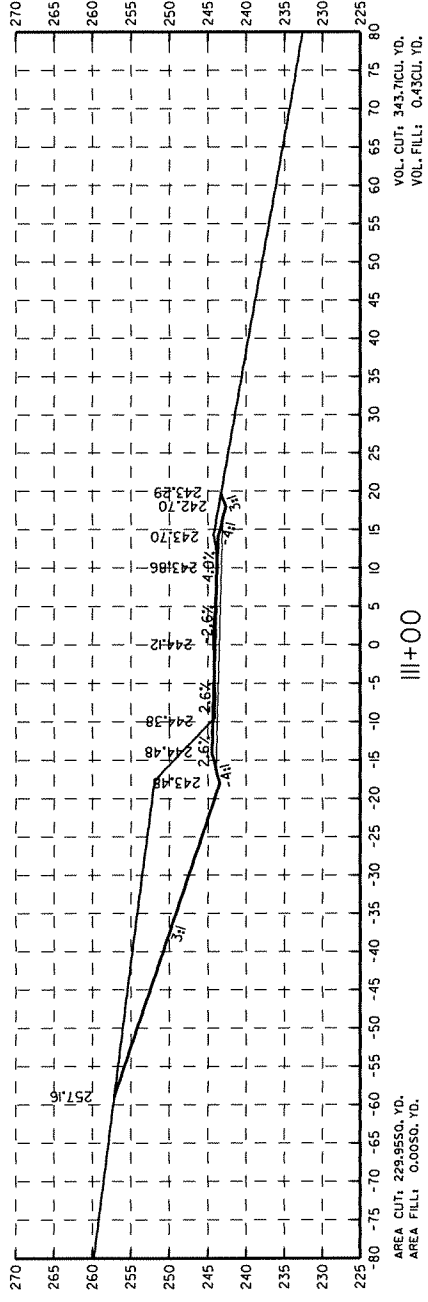
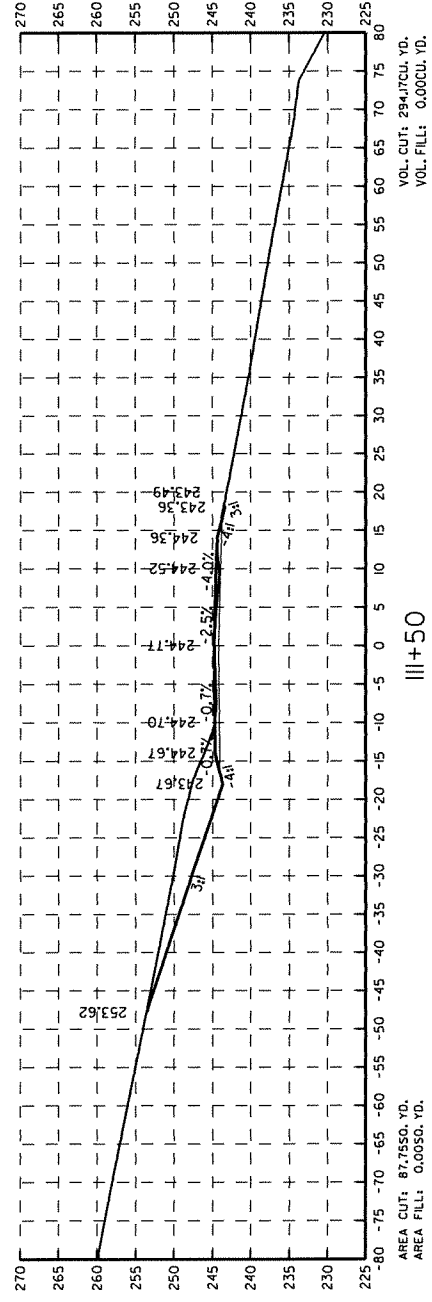
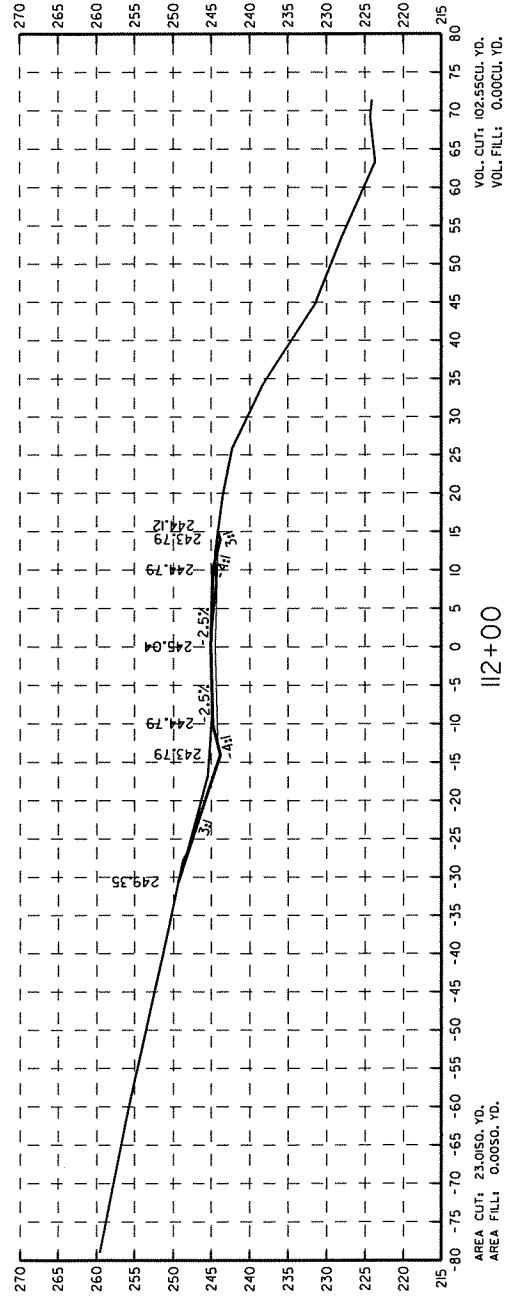
4 STA. 107+50 TO STA. 110+00

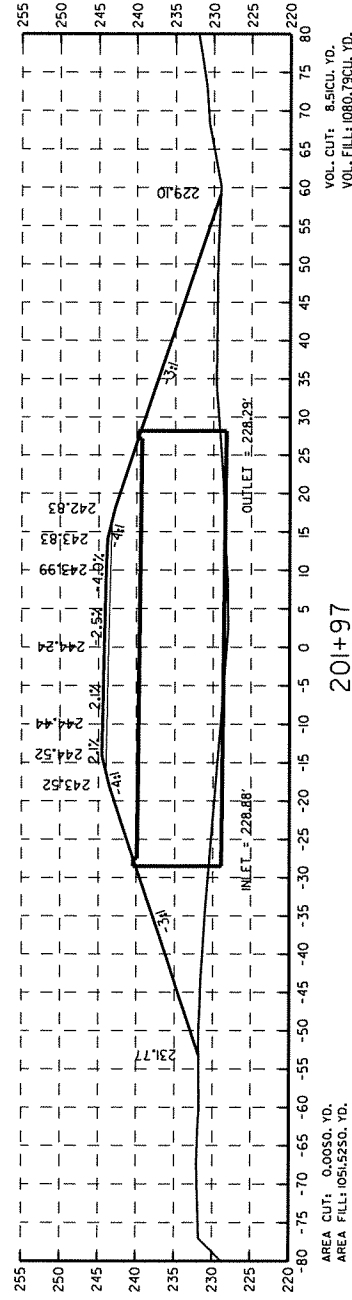
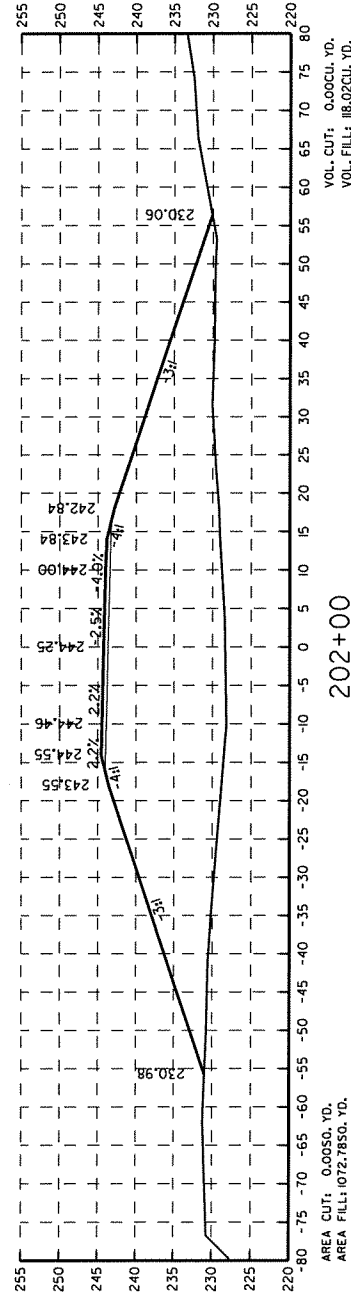
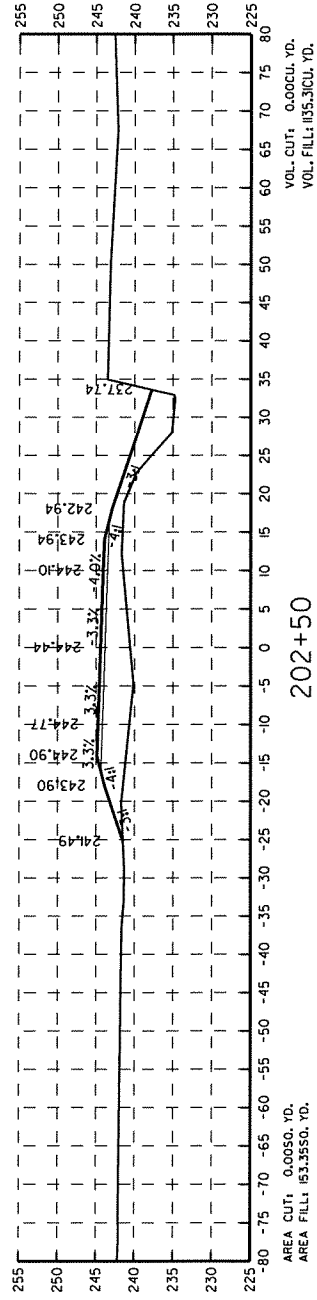


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR0-0056(23)		
				JOB NO.		BR5608	38	40

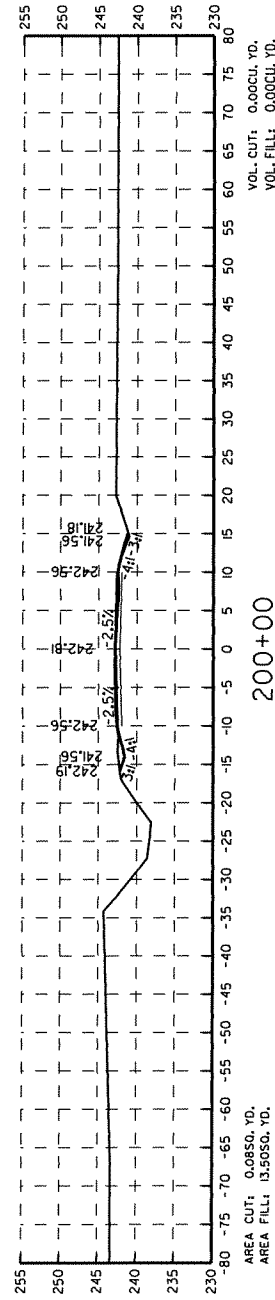
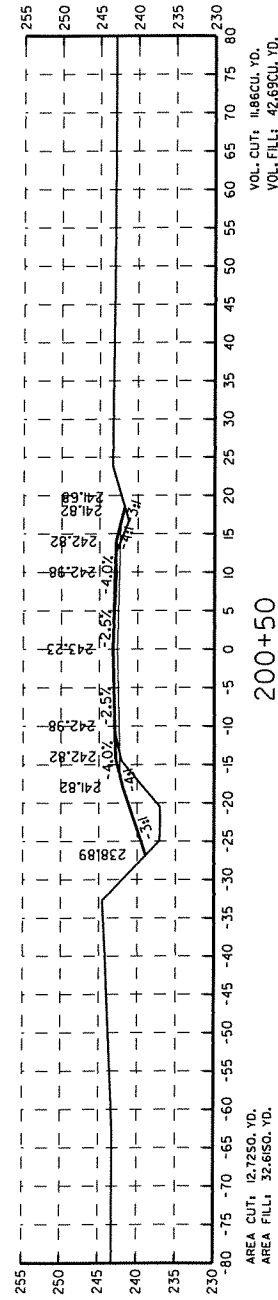
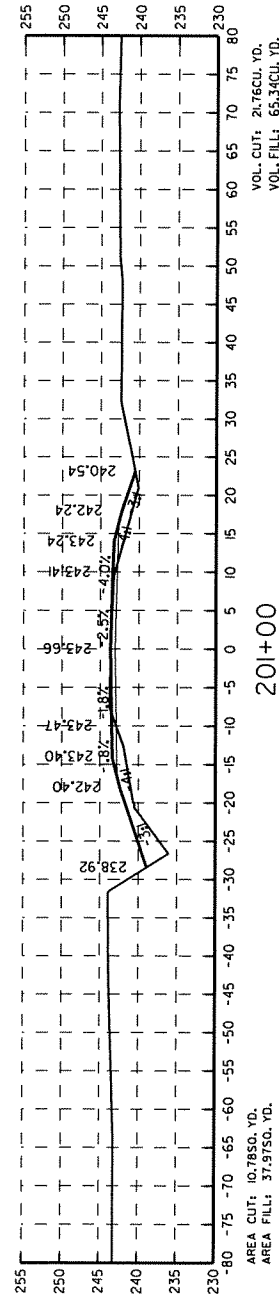
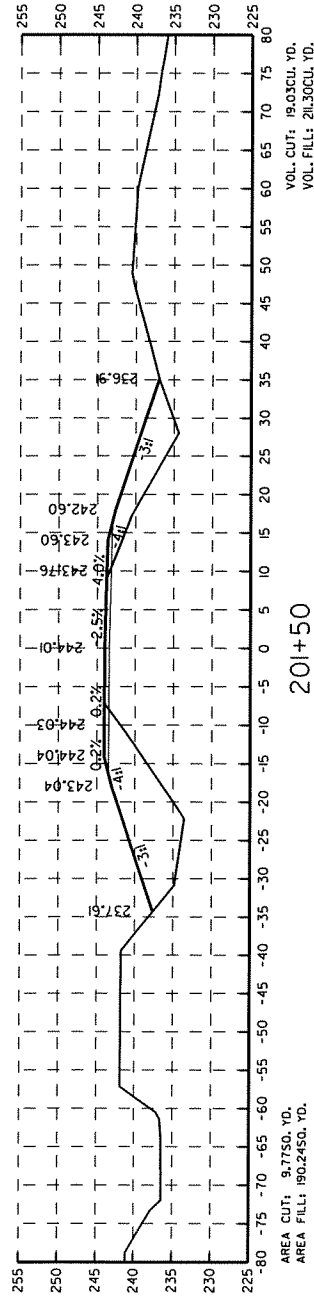
4 STA. 110+50 TO STA. 112+00

END SITE I





CONSTRUCT
SINGLE 12'X10'X59'
R.C. BOX CULVERT
(15° L.T. FORWARD SKEW)
D.A. = 2.5 SQ. MILES Q25 = 1550 CFS
= 69 CU. YDS. (COMP. EMBK.)
= 1786 CU. YDS. (UNCL. EXCAV.)

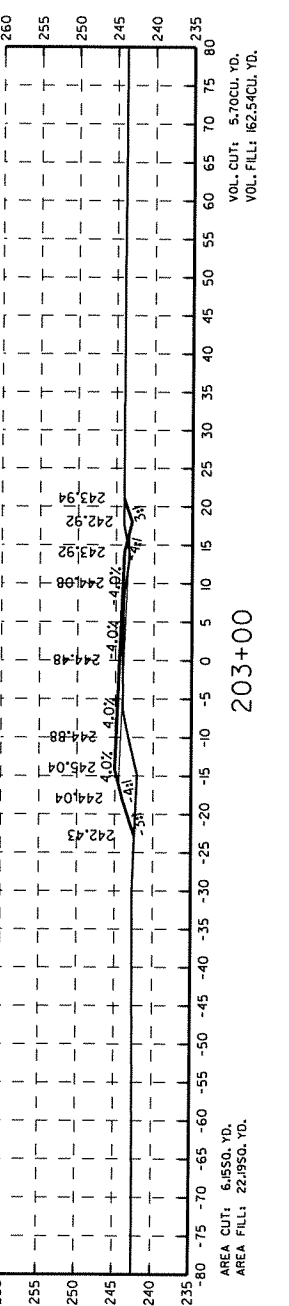
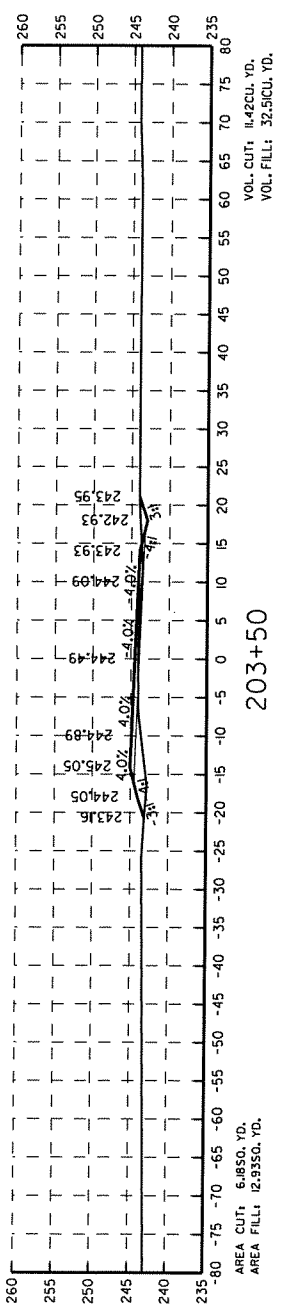
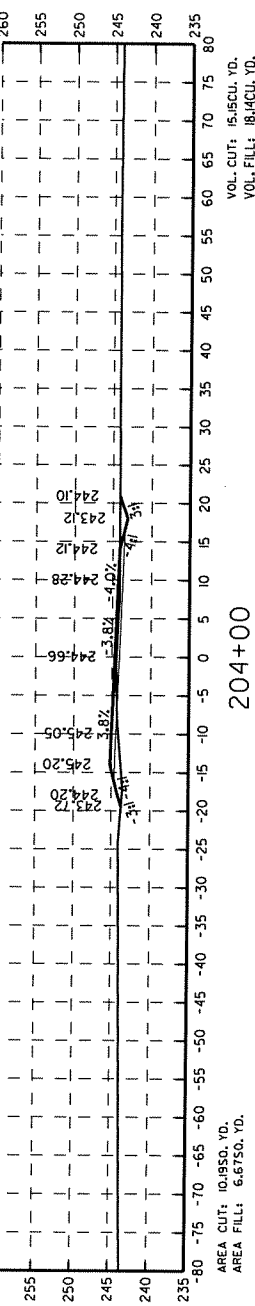
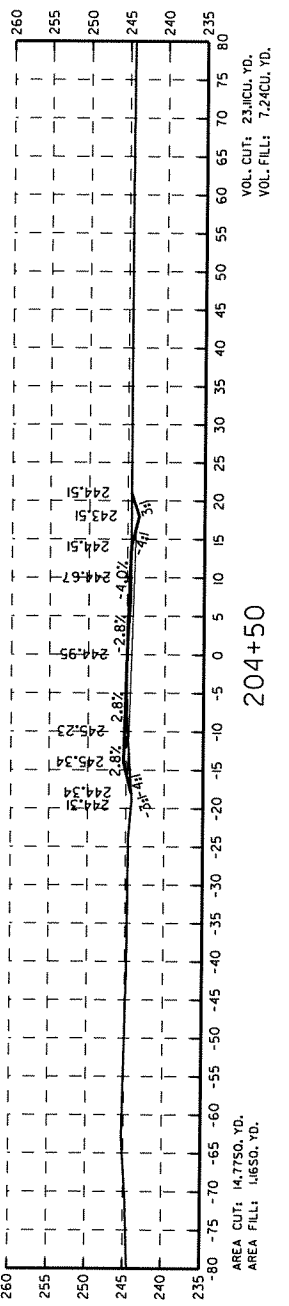
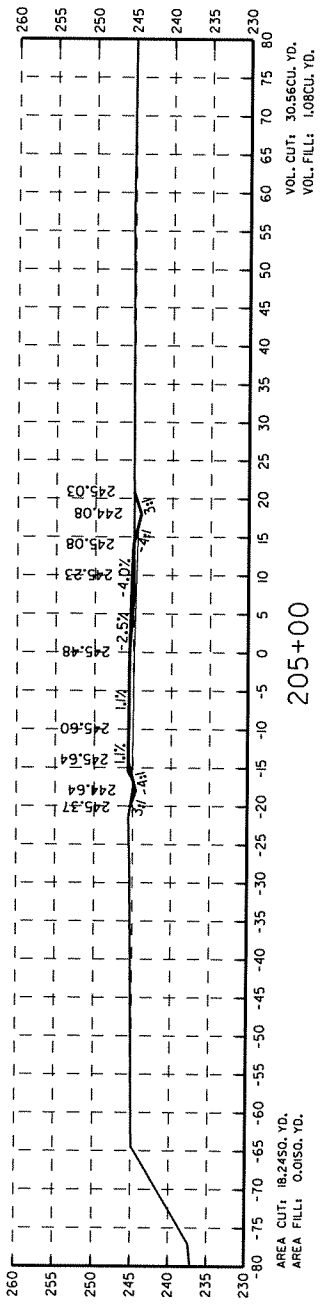
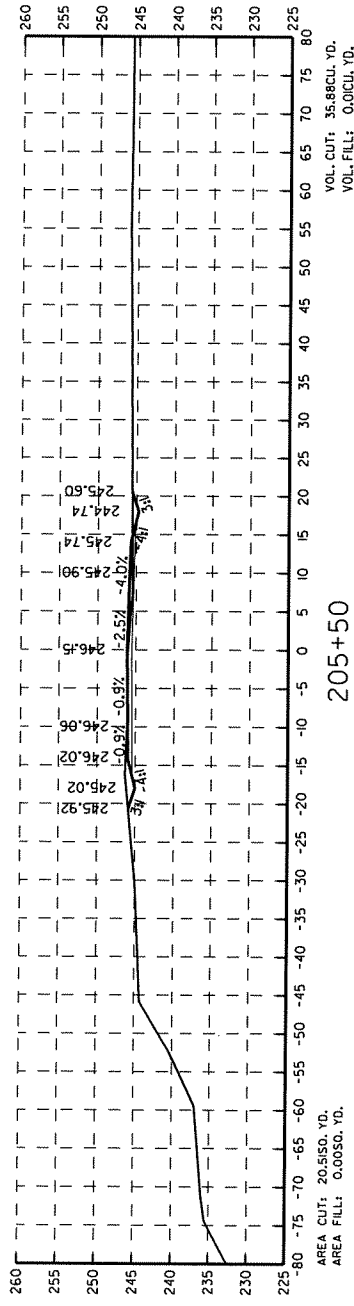
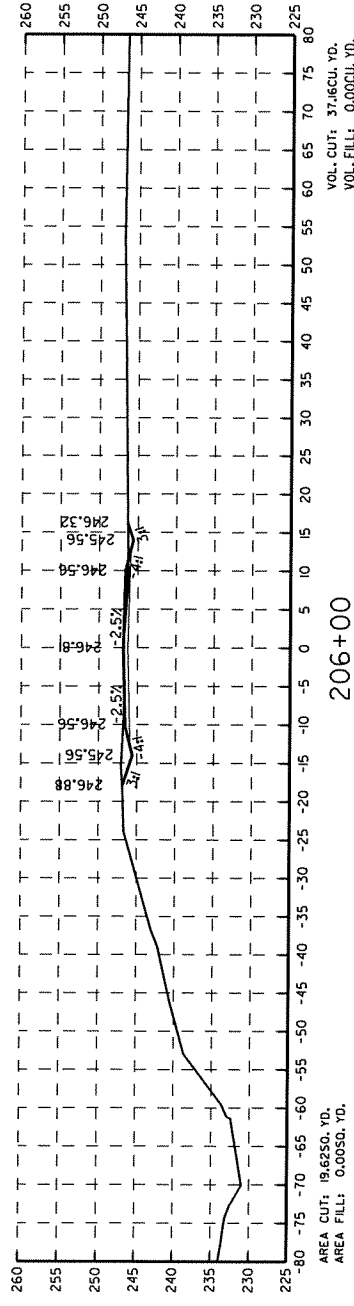


BEGIN SITE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
				JOB NO.		BR5608	39	40

4 STA. 200+00 TO STA. 202+50

END JOB BR5608



DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BRO-0056(23)		
				JOB NO.		BR5608	40	40

4 STA. 203+00 TO STA. 206+00