DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	1	49

(2) SIEBENMORGEN RD. - MILL ST.
NOISE BARRIER WALL (I-40) (CONWAY) (S)

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION

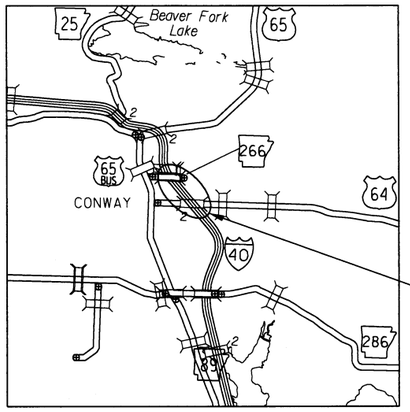
CONSTRUCTION PLANS FOR STATE HIGHWAY

SIEBENMORGEN RD. - MILL ST.
NOISE BARRIER WALL (I-40) (CONWAY) (S)

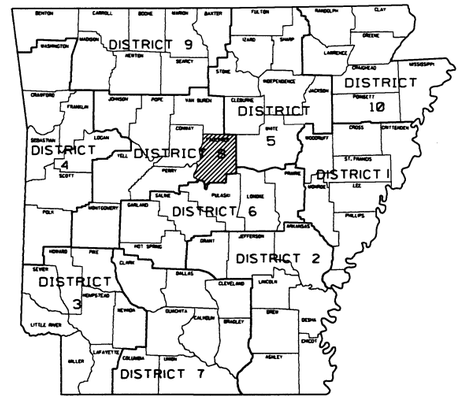
FAULKNER COUNTY
ROUTE 40 SECTION 32

JOB 080496
F.A.P. NHPP-9095(29)

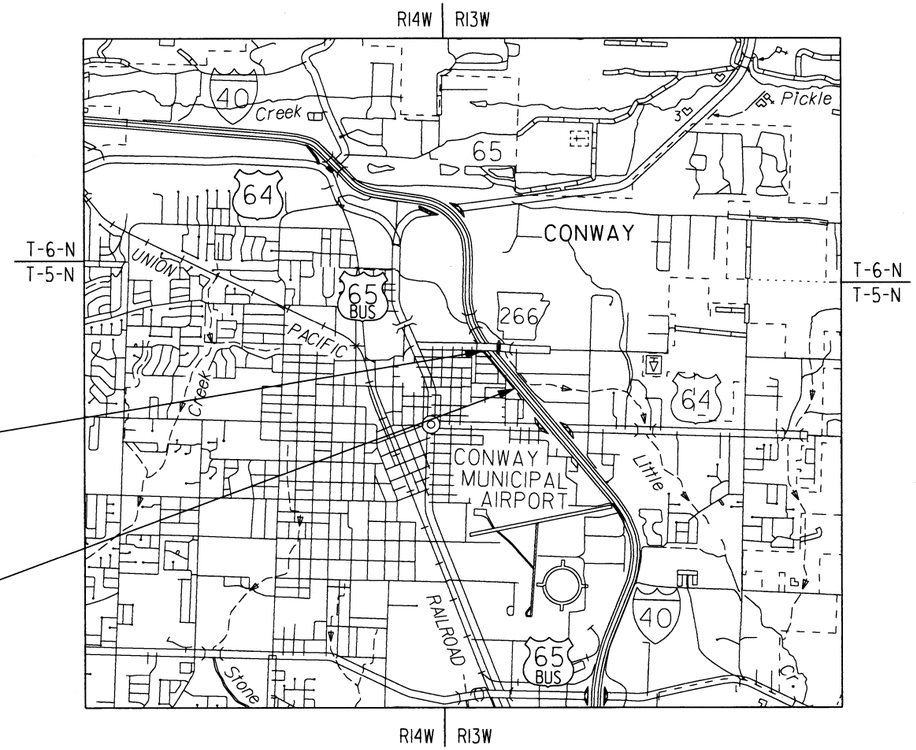
NOT TO SCALE



VICINITY MAP



ARK. HWY. DIST. NO. 8



N

DESIGN TRAFFIC DATA - I-40

DESIGN YEAR	2038
2018 ADT	63,500
2038 ADT	94,500
2038 DHV	10,395
DIRECTIONAL DIST.	0.60
TRUCKS	18%
DESIGN SPEED	70 MPH

LENGTH COMPUTED ALONG ℄ NOISE WALL

GROSS LENGTH OF PROJECT	1,651.96	FEET OR 0.313	MILES
NET LENGTH OF ROADWAY	1,651.96	FEET OR 0.313	MILES
NET LENGTH OF BRIDGES	0.00	FEET OR 0.000	MILES
NET LENGTH OF PROJECT	1,651.96	FEET OR 0.313	MILES

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°05'56"	N 35°05'50"	N 35°05'44"
LONGITUDE	W 92°25'50"	W 92°25'44"	W 92°25'37"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY G. KING

10/26/18

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-5-17		10-26-18		7-11-19		6	ARK.			
1-17-17		10-30-18				JOB NO.		080496	2	49
2-17-17		11-8-18								

(2) INDEX OF SHEETS, GOV. SPECS., & GEN. NOTES

INDEX OF SHEETS

NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	07-25-19
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
600-2	INCIDENTAL CONSTRUCTION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1	CONCRETE DITCH PAVING
620-1	MULCH COVER
JOB 080496	BIDDING REQUIREMENTS AND CONDITIONS
JOB 080496	CARGO PREFERENCE ACT REQUIREMENTS
JOB 080496	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 080496	DRILLED SHAFT FOUNDATIONS (ROCK-SOCKETED)
JOB 080496	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 080496	LIGHT POLE FOUNDATION
JOB 080496	MAINTENANCE OF TRAFFIC
JOB 080496	MANDATORY ELECTRONIC CONTRACT
JOB 080496	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 080496	PARTNERING REQUIREMENTS
JOB 080496	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB 080496	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 080496	SITE USE (A+B+C METHOD) - CALENDAR DAY CONTRACT
JOB 080496	SOIL STABILIZATION
JOB 080496	SOUND ABSORBING NOISE BARRIERS
JOB 080496	SOUND ABSORBING NOISE BARRIERS WITH LIGHTWEIGHT PANELS
JOB 080496	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080496	UTILITY ADJUSTMENTS
JOB 080496	VALUE ENGINEERING
JOB 080496	WARM MIX ASPHALT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 9066 STAMEY G. KING 7/11/19

GENERAL NOTES

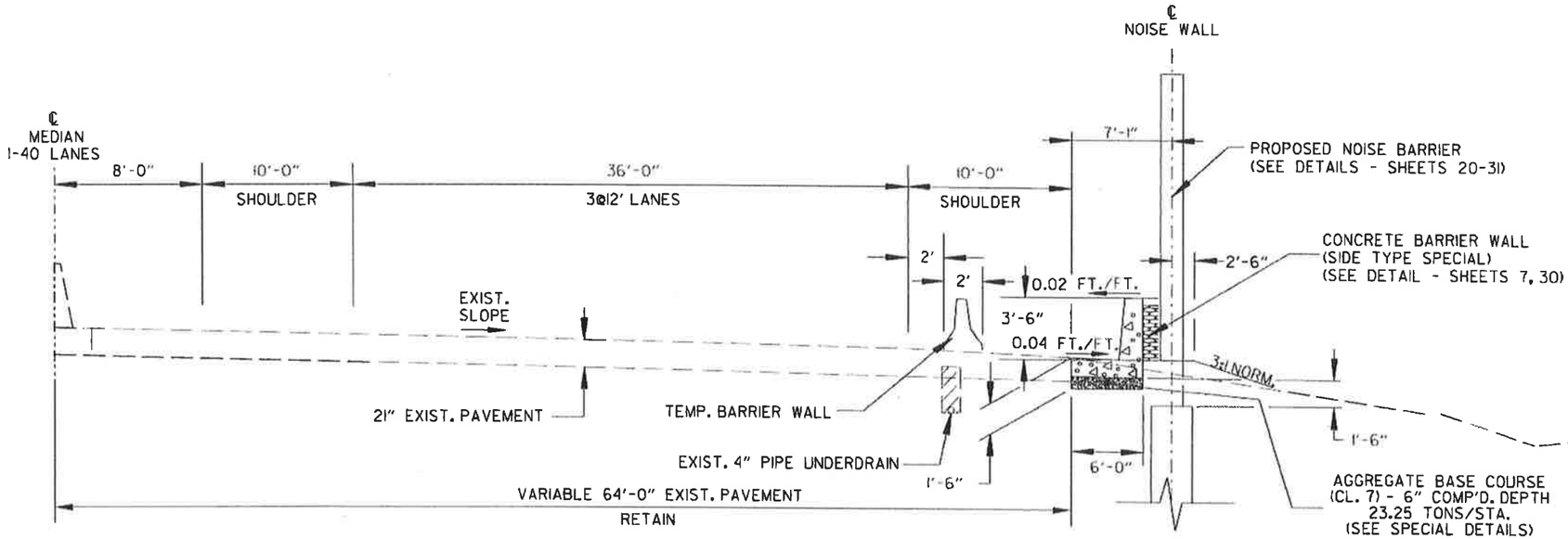
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. 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.
6. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
7. ANY EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	3	49

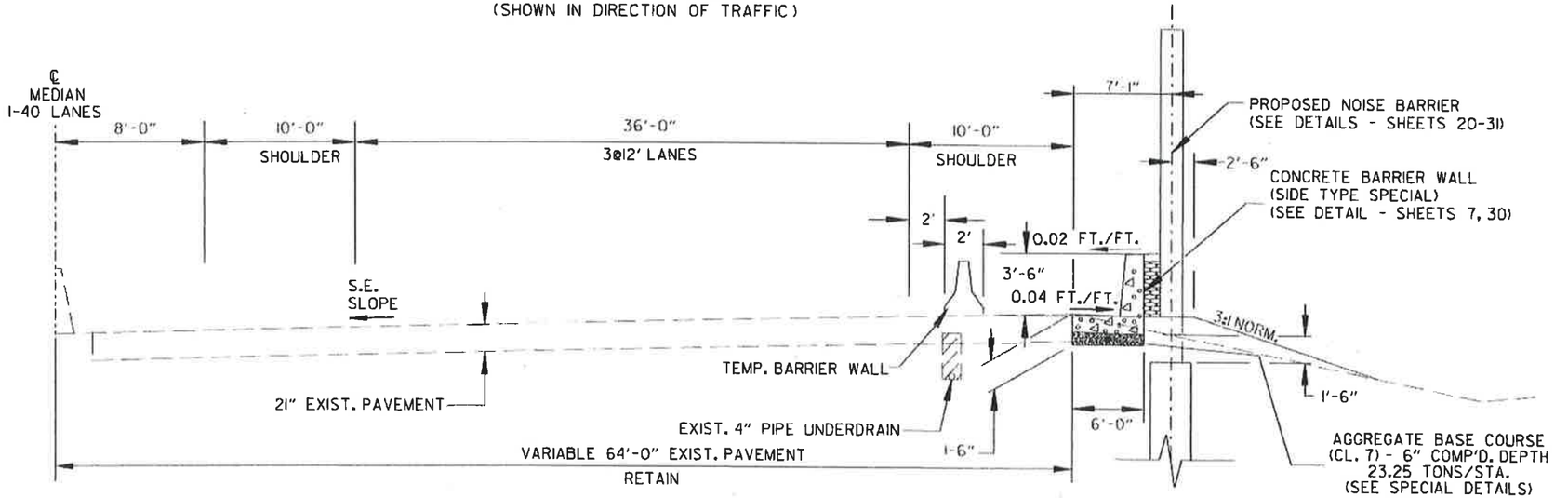
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9566
STANLEY C. KING

10/26/18



NOISE BARRIER WALL ALONG EB I-40
TYPICAL AT BARRIER POST
(NORMAL CROWN)
(SHOWN IN DIRECTION OF TRAFFIC)



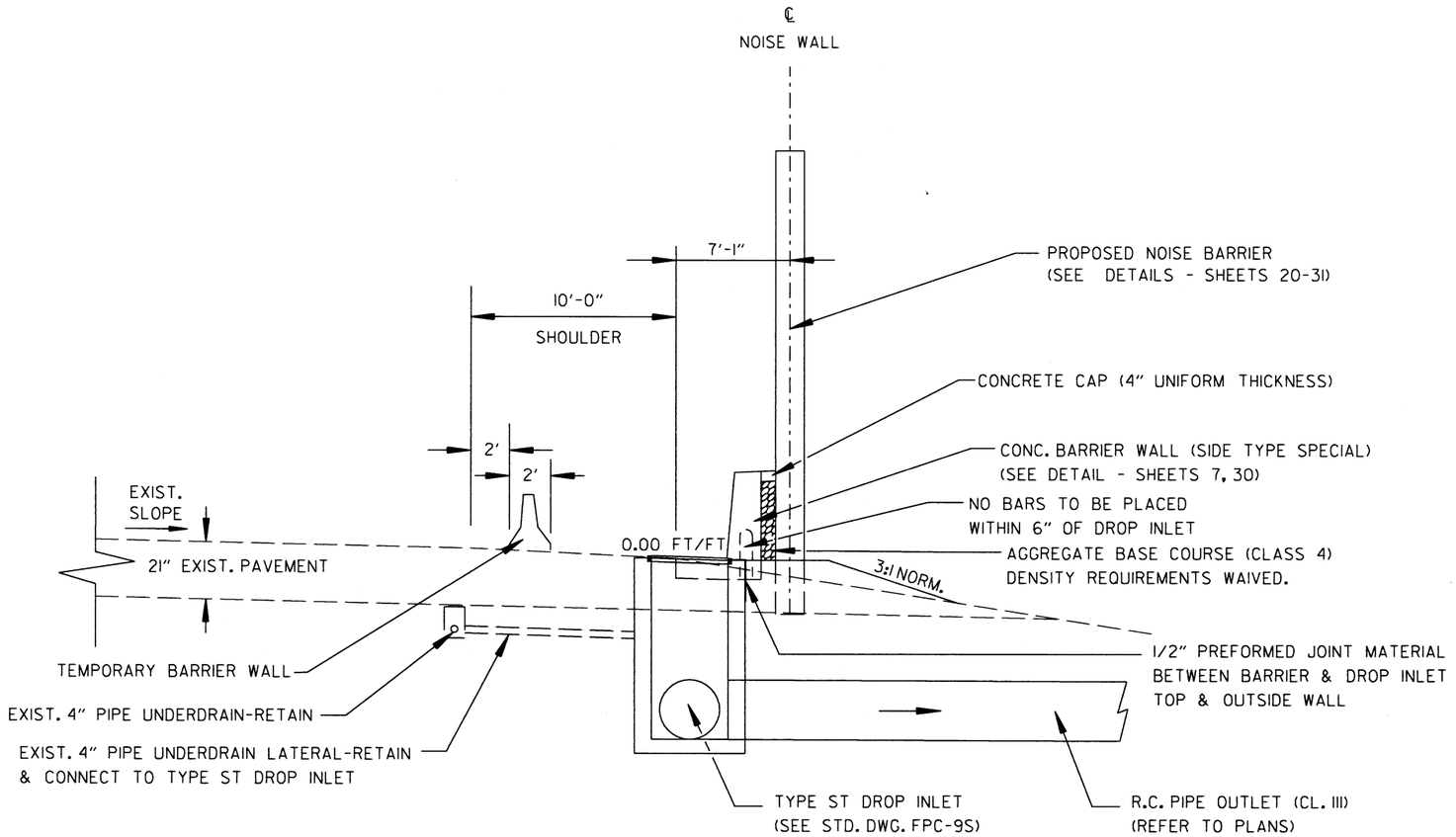
NOISE BARRIER WALL ALONG EB I-40
TYPICAL AT BARRIER POST
(SUPERELEVATION)
(SHOWN IN DIRECTION OF TRAFFIC)

NOTES:

1. 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.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
3. PAVING EQUIPMENT SHALL NOT BE ALLOWED TO TRACK ON TOP OF EDGE DRAINS.
4. ANY EXISTING ASPHALT PAVEMENT TO BE REMOVED SHALL BE SEPARATED FROM THE REMAINING ASPHALT PAVEMENT BY SAWING ALONG A NEAT LINE.
5. ANY PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN IN PLACE. DAMAGED PAVEMENT SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL FILL WITH EARTH AND/OR OTHER SUITABLE MATERIAL ALL HOLES AND TRENCHES WHERE EXISTING 4" PIPE UNDERDRAINS AND LATERALS ARE MODIFIED TO AVOID PROPOSED FOUNDATIONS. EARTH IN THE HOLES SHALL BE THOROUGHLY COMPACTED WITH A MECHANICAL TAMPER UNTIL IT IS AS FIRM AND UNYIELDING AS THE SURROUNDING MATERIAL.
7. PAYMENT FOR AGGREGATE BACKFILL BETWEEN THE CONCRETE BARRIER WALL AND THE NOISE BARRIER SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS BUT SHALL CONSIST OF AGGREGATE BASE COURSE (CLASS 4) OR EQUIVALENT. DENSITY REQUIREMENTS SHALL BE WAIVED.
8. A CONCRETE CAP (4" U.T.) SHALL BE PLACED ON TOP OF THE AGGREGATE BACKFILL. PAYMENT FOR THE CONCRETE CAP SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR ITEM SP - CONCRETE BARRIER WALL (SIDE TYPE SPECIAL).

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	4	49

(2) TYPICAL SECTIONS OF IMPROVEMENT



NOISE BARRIER WALL ALONG EB I-40
TYPICAL AT BARRIER WALL PANEL
(SHOWN IN DIRECTION OF TRAFFIC)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18

NOTES:

1. 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.

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

3. PAVING EQUIPMENT SHALL NOT BE ALLOWED TO TRACK ON TOP OF EDGE DRAINS.

4. ANY EXISTING ASPHALT PAVEMENT TO BE REMOVED SHALL BE SEPARATED FROM THE REMAINING ASPHALT PAVEMENT BY SAWING ALONG A NEAT LINE.

5. ANY PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN IN PLACE. DAMAGED PAVEMENT SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

6. THE CONTRACTOR SHALL FILL WITH EARTH AND/OR OTHER SUITABLE MATERIAL ALL HOLES AND TRENCHES WHERE EXISTING 4" PIPE UNDERDRAINS AND LATERALS ARE MODIFIED TO AVOID PROPOSED FOUNDATIONS. EARTH IN THE HOLES SHALL BE THOROUGHLY COMPACTED WITH A MECHANICAL TAMPER UNTIL IT IS AS FIRM AND UNYIELDING AS THE SURROUNDING MATERIAL.

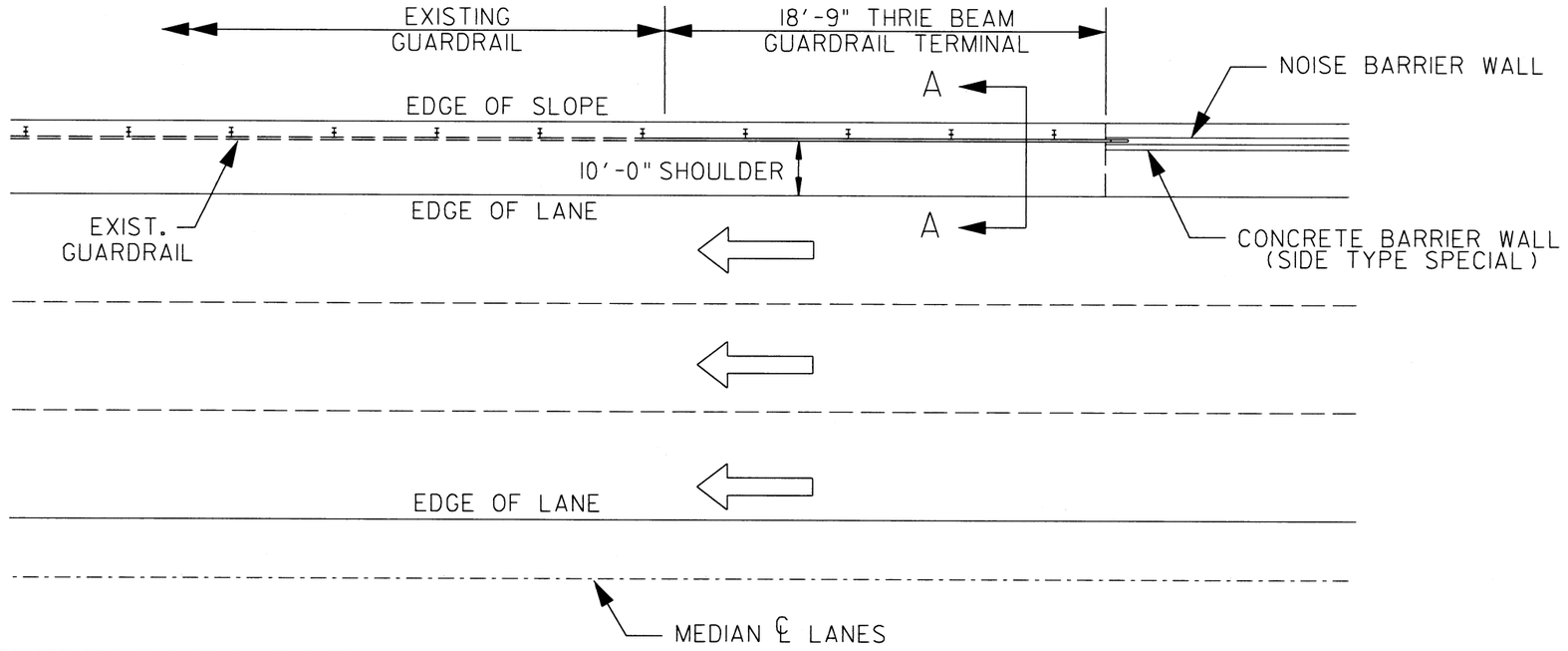
7. PAYMENT FOR AGGREGATE BACKFILL BETWEEN THE CONCRETE BARRIER WALL AND THE NOISE BARRIER SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS BUT SHALL CONSIST OF AGGREGATE BASE COURSE (CLASS 4) OR EQUIVALENT. DENSITY REQUIREMENTS SHALL BE WAIVED.

8. A CONCRETE CAP (4" U.T.) SHALL BE PLACED ON TOP OF THE AGGREGATE BACKFILL. PAYMENT FOR THE CONCRETE CAP SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR ITEM SP - CONCRETE BARRIER WALL (SIDE TYPE SPECIAL).

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	5	49

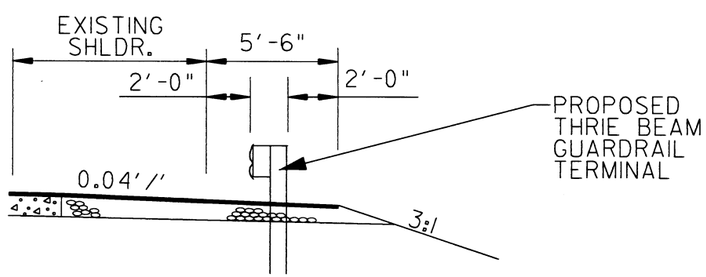
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9966
STANLEY G. KING
10/26/18



NOTE:
REFER TO STD. DWG. GR-8, GR-8A, GR-9, GR-9A, GR-10, GR-11 AND GR-12 FOR ADDITIONAL INFORMATION

TYPICAL LAYOUT OF GUARDRAIL
AT END OF CONCRETE BARRIER WALL
(N.T.S.)

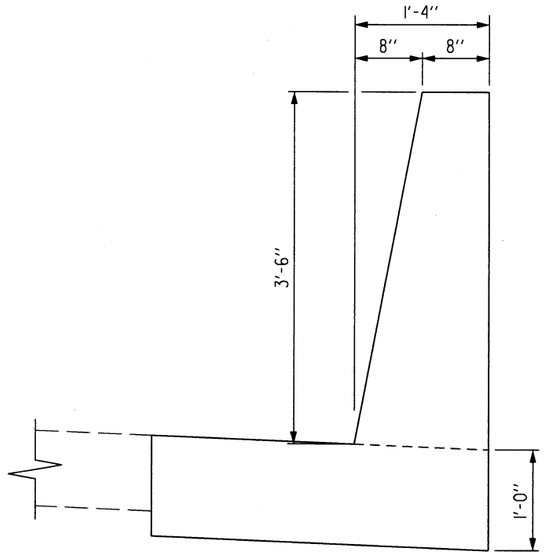


SECTION A-A

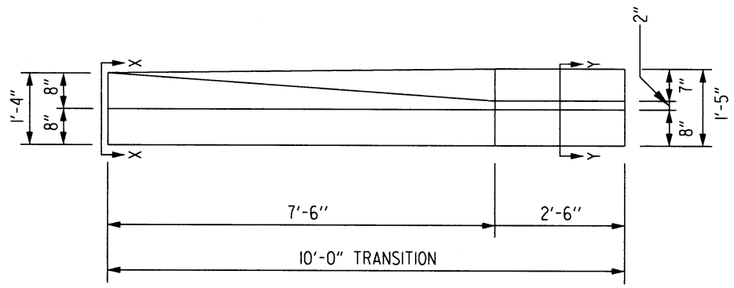
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	6	49

(2) SPECIAL DETAILS

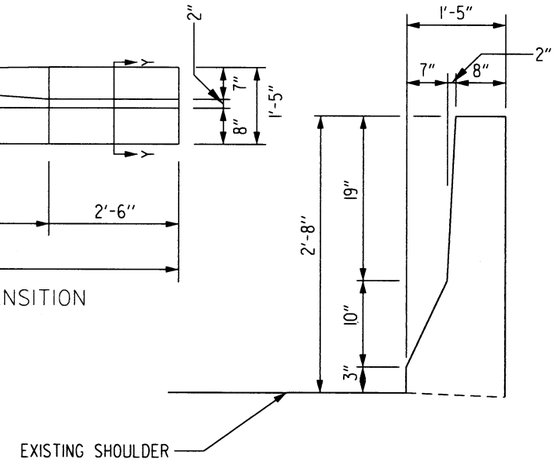
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18



SECTION X-X

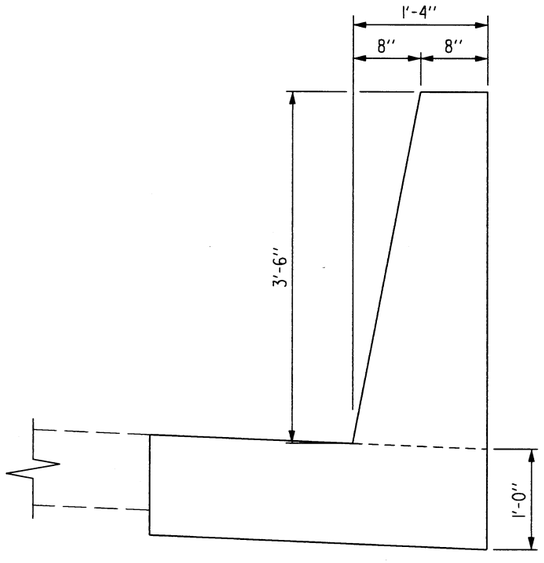


PLAN - 10'-0" TRANSITION

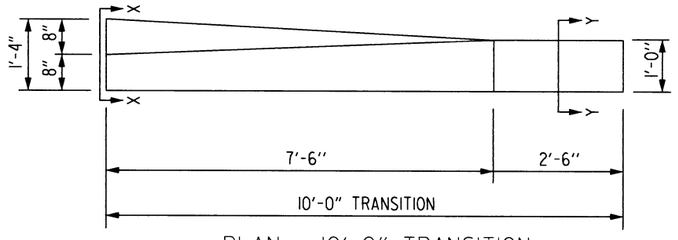


SECTION Y-Y

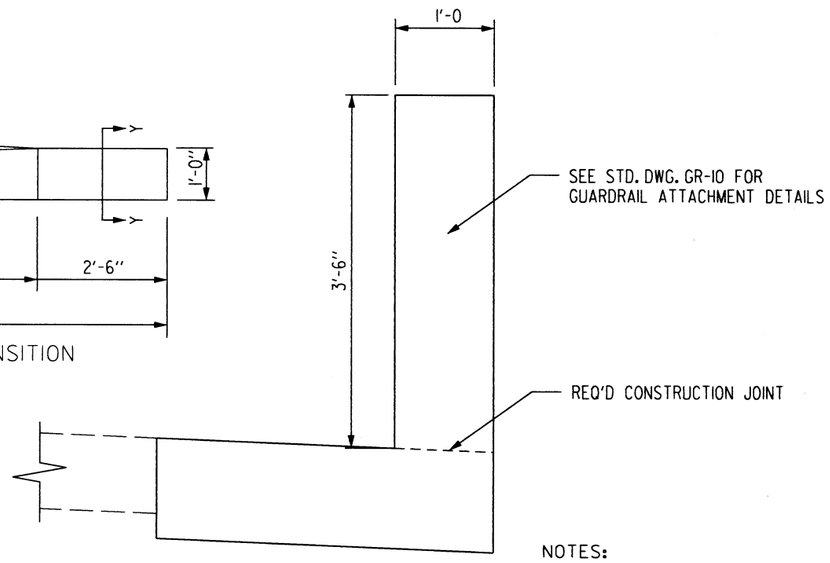
DETAIL OF BARRIER TRANSITION
AT PIER PROTECTION TYPE A
(N.T.S.)



SECTION X-X



PLAN - 10'-0" TRANSITION



SECTION Y-Y

DETAIL OF BARRIER TRANSITION
AT GUARDRAIL CONNECTIONS
(N.T.S.)

NOTES:
10'-0" TRANSITION SECTION WILL BE MEASURED AND PAID FOR AS CONCRETE BARRIER WALL (SIDE TYPE SPECIAL).

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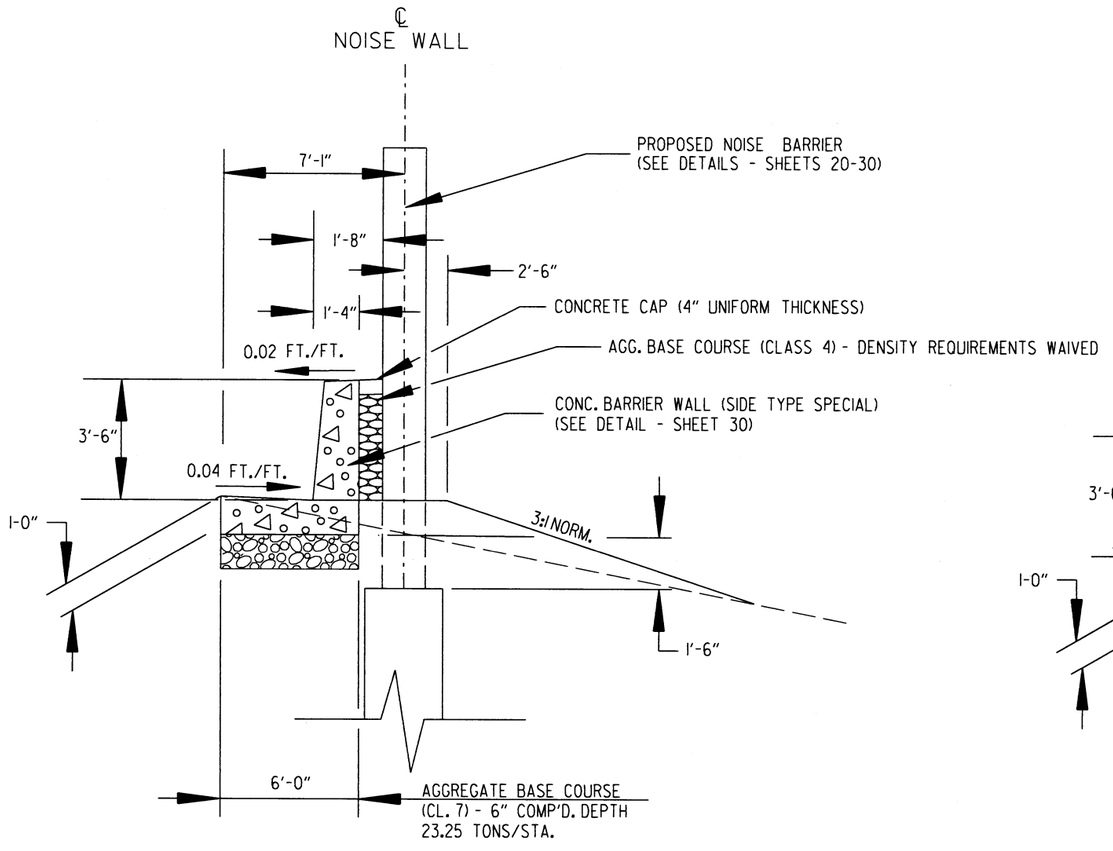
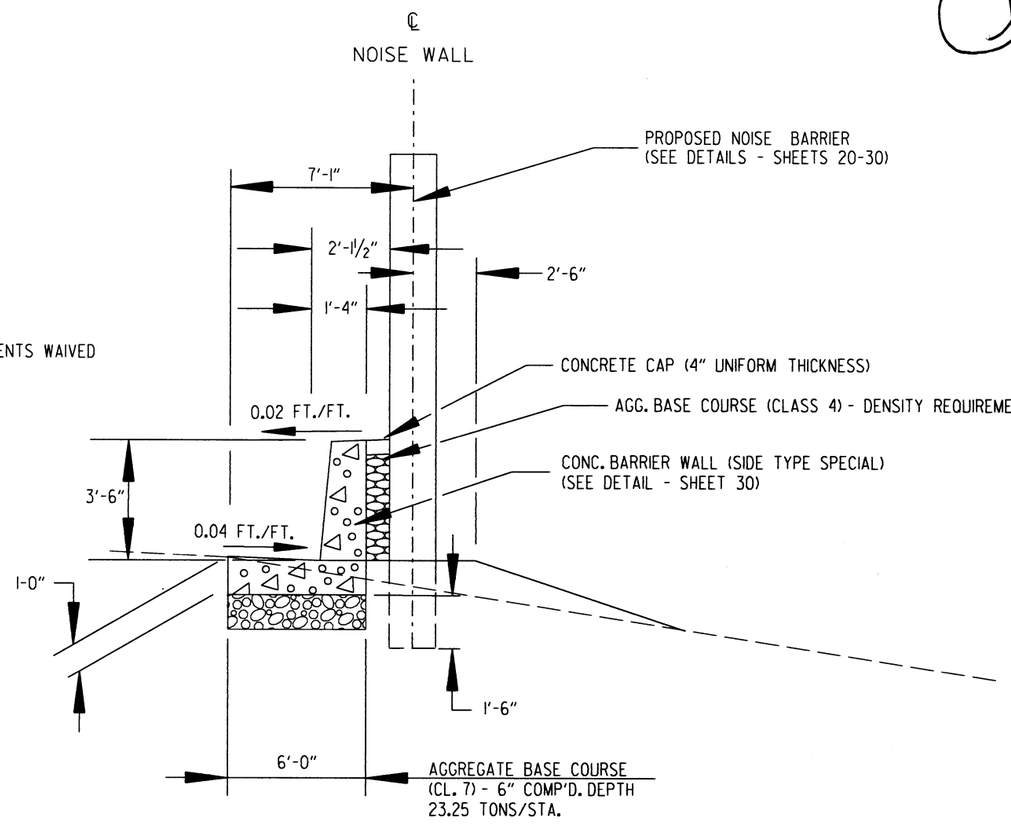
				JOB NO.		080496	7	49

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19066
STANLEY C. KING
10/26/18



AT BARRIER WALL POST



AT BARRIER WALL PANEL

DETAIL OF AGGREGATE BASE COURSE UNDER
CONCRETE BARRIER WALL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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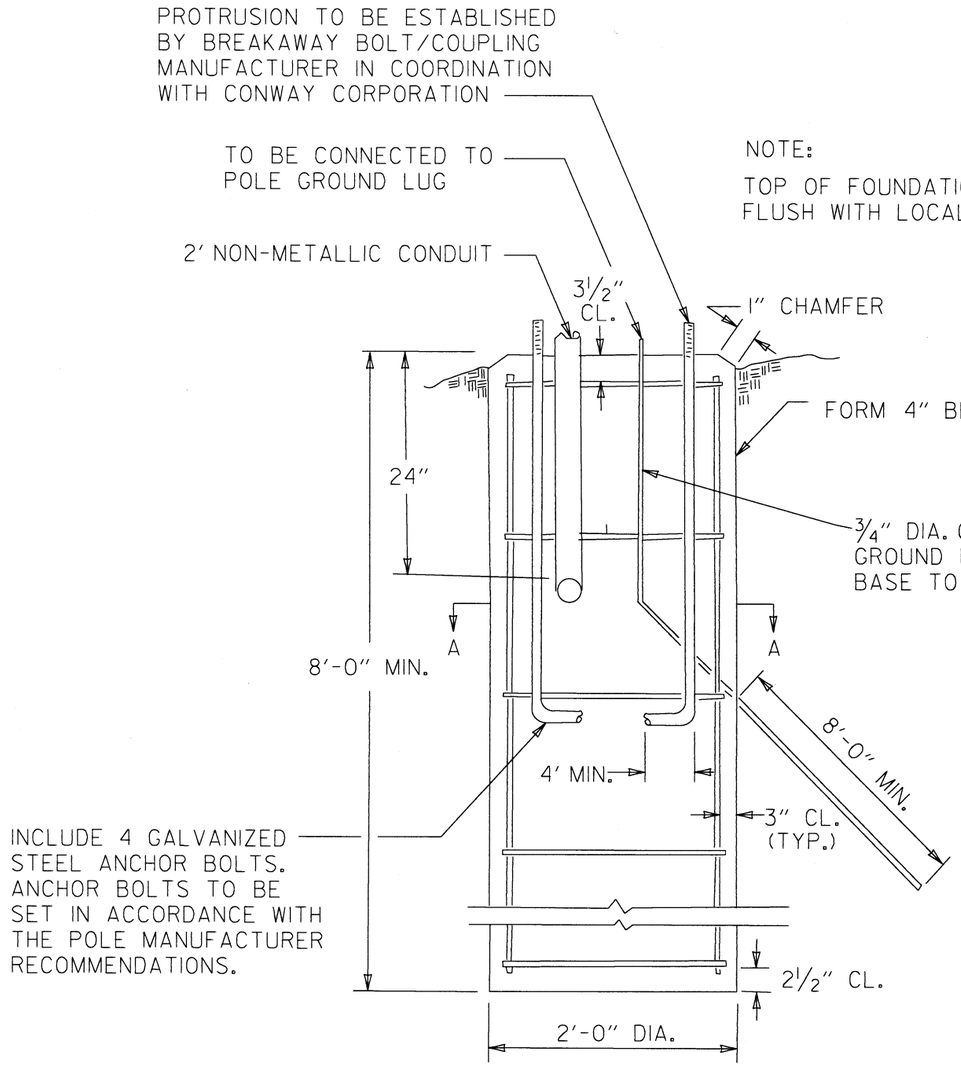
				JOB NO.		080496	8	49

(2) SPECIAL DETAILS



CONCRETE BASE

NOTE:

TOP OF FOUNDATION SHALL BE FLUSH WITH LOCAL GROUND SURFACE.

SECTION A-A

FOUNDATION NOTES:

1. CONCRETE FOR LIGHT POLE STRUCTURE FOUNDATION SHALL HAVE A MINIMUM OF 30 MPA. ALL REINFORCEMENT SHALL BE DEFORMED STEEL BARS AND CONFORM TO ASTM A6015M, GRADE 400M.
2. CONTRACTOR SHALL PROVIDE PRE-CAST OR CAST-IN-PLACE FOUNDATIONS.
3. PROVIDE WATERTIGHT CAPS FOR ANY UNUSED CONDUITS.
4. THE CONTRACTOR SHALL COORDINATE WITH THE LIGHTING FIXTURE, BREAKAWAY COUPLING/BOLT, FOUNDATION AND POLE MANUFACTURERS TO ENSURE PROPER FIT OF ALL COMPONENTS.
5. DIMENSIONS AND SIZE OF ANCHOR BOLTS, INCLUDING BOLT CIRCLE, TO BE VERIFIED BY LIGHT POLE MANUFACTURER. THREADED END OF ANCHOR BOLTS TO BE GALVANIZED IN ACCORDANCE WITH ASTM A153. ANCHOR BOLTS, FASTENERS, NUTS AND WASHERS SHALL CONFORM TO ASTM A449.
6. ASSURE THAT REINFORCING STEEL IS ALL INTERCONNECTED VIA TIE WRAPPING.
7. CONTRACTOR TO COORDINATE THE APPROPRIATE DIMENSION TO ASSURE THE MINIMUM CONDUIT DEPTH IS 2'-0" WHEN LEADING TO PULLBOX.

SPECIAL DETAILS

CITY: CONWAY

COUNTY: FAULKNER

DISTRICT: 08 SCALE: NOT TO SCALE DRAWN BY: HNM

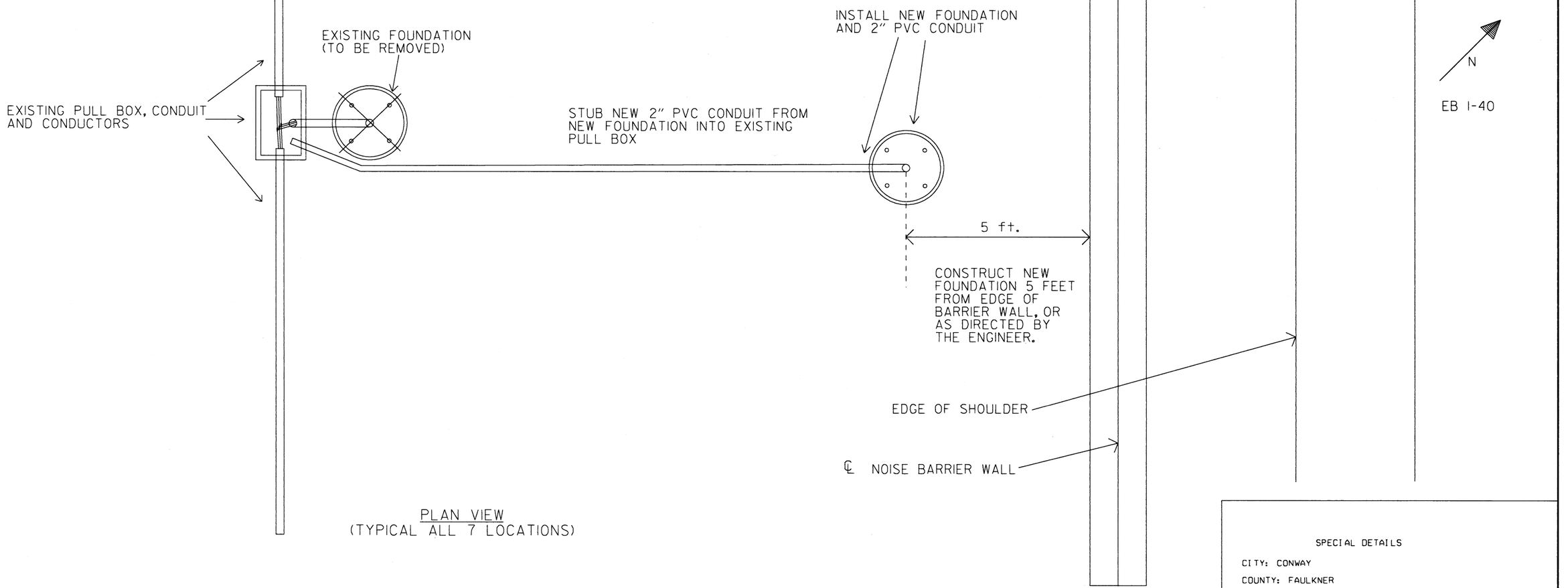
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	9	49

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9006
STANLEY C. KING
10/26/18

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH CONWAY CORPORATION FOR SAFE DE-ENERGIZING OF CIRCUIT.
2. CONTRACTOR SHALL CONSTRUCT NEW FOUNDATIONS IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.
3. AFTER COMPLETION OF NEW FOUNDATIONS, THE CONTRACTOR SHALL COORDINATE WITH CONWAY CORPORATION TO HAVE THE EXISTING POLES MOVED TO THE NEW FOUNDATIONS. ONCE THIS IS COMPLETED, THE OLD FOUNDATIONS SHALL BE DEMOLISHED TO A LEVEL OF AT LEAST 2 FEET BELOW SURROUNDING GRADE LEVEL.
4. CONTRACTOR SHALL PROVIDE BACKFILL AND SEEDING AND/OR SODDING TO RESTORE THE REMOVED FOUNDATION AREA TO A CONDITION SATISFACTORY TO THE ENGINEER.



PLAN VIEW
(TYPICAL ALL 7 LOCATIONS)

SPECIAL DETAILS

CITY: CONWAY

COUNTY: FAULKNER

DISTRICT: 08 SCALE: NOT TO SCALE DRAWN BY: HNM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	10	49

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18

REVISIONS

DATE	DESCRIPTION

STA. 7134+48.04 C.L. I-40 =
STA. 7134+40.00 C.L. NOISE WALL
BEGIN JOB 080496
LOG MILE 126.13

EXIST. ROW & C/A
7125
7130
7135
7140
℄ EXIST. I-40
S 39°41'20" E
PT 7134+34.67
TIE TO EXIST. BARRIER WALL
CONCRETE BARRIER WALL
℄ NOISE WALL
71.08'
EXIST. EB LANES I-40
CONST. LIMITS
PI 7134+40.00
PI 7135+00.00
STA. 7134+40 - STA. 7144+66
INSTALL E-11 = 1035 LIN. FT.
E-5
E-7
E-11
E-151
+50
+75
+80
+10
7145
7150
7155
PI 7151+00.00
STA. 7151+00.00
END JOB 080496

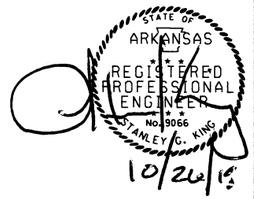
EROSION CONTROL LEGEND

E-5	SAND BAG DITCH CHECKS
E-7	DROP INLET SILT FENCE
E-11 ····· E-11	SILT FENCE

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	11	49

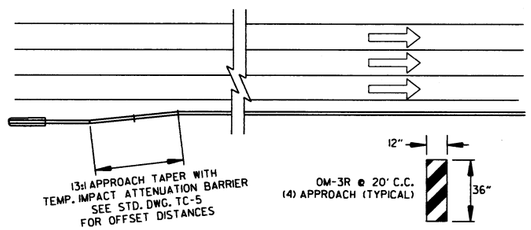
(2) MAINTENANCE OF TRAFFIC DETAILS



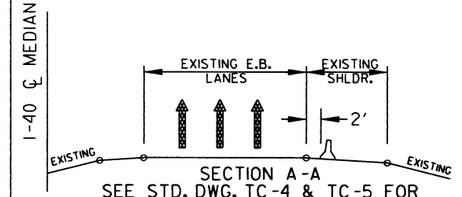
SEQUENCE OF CONSTRUCTION:

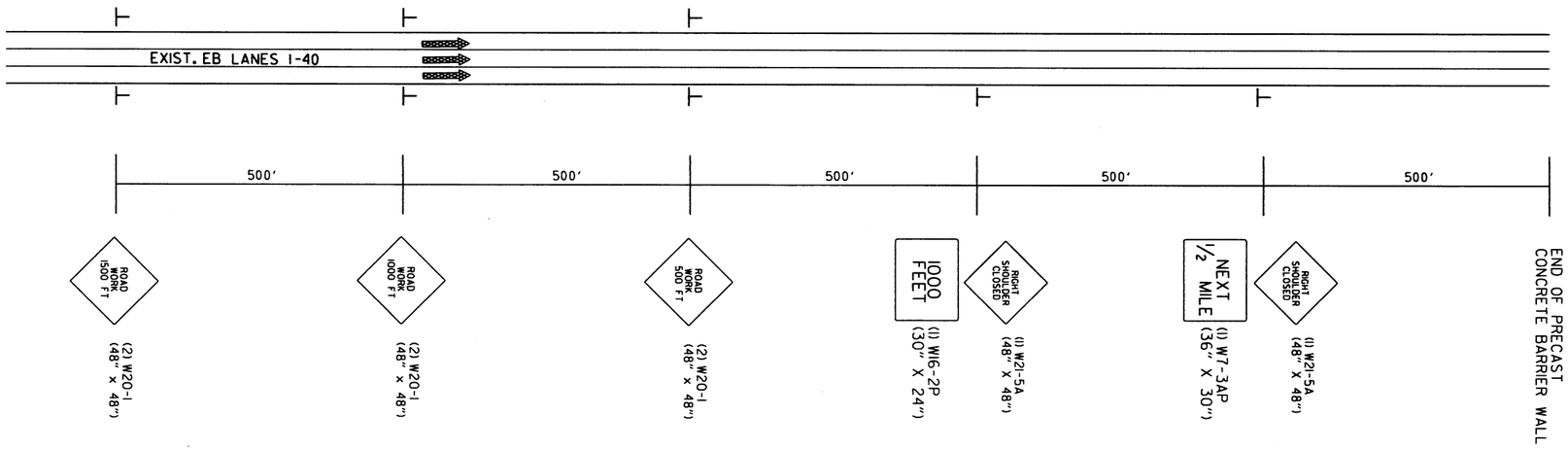
1. INSTALL ALL ADVANCE WARNING SIGNS.
2. INSTALL TEMP. PRECAST CONCRETE BARRIER WALL ON RIGHT EASTBOUND SHOULDER.
3. CONSTRUCT NOISE WALL, CONCRETE BARRIER WALL, AND STORM DRAIN.
4. REMOVE TEMP. BARRIER WALL AND ADVANCE WARNING SIGNS.

OM-3 PLACEMENT AND PRECAST CONCRETE BARRIER DETAIL



PRECAST CONCRETE BARRIER PLACEMENT DETAIL





ADVANCE WARNING & LANE CLOSURE SIGN LAYOUT DETAIL
(BEGINNING OF JOB)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	12	49

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18

EXIST. ROW & C/A

EXIST. EB LANES I-40

3 @ 12' LANES

S 1°42'28.1" W

S 39°41'20" E

EXIST. ROW & C/A

3 @ 12' LANES

CONCRETE BARRIER WALL

TEMPORARY IMPACT ATTENUATION BARRIER

TEMPORARY PRECAST BARRIER WALL

BEGIN TEMP. BARRIER WALL STA. 7131+25

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL = 2040 LIN. FT.

(4) OM-3R (12"X 36")

STA. 7134+48.04 C.L. I-40 =
STA. 7134+40.00 C.L. NOISE WALL
BEGIN JOB 080496
LOG MILE 126.13

EXIST. ROW & C/A

EXIST. EB LANES I-40

TEMPORARY PRECAST BARRIER WALL

3 @ 12' LANES

EXIST. ROW & C/A

CONCRETE DRAIN

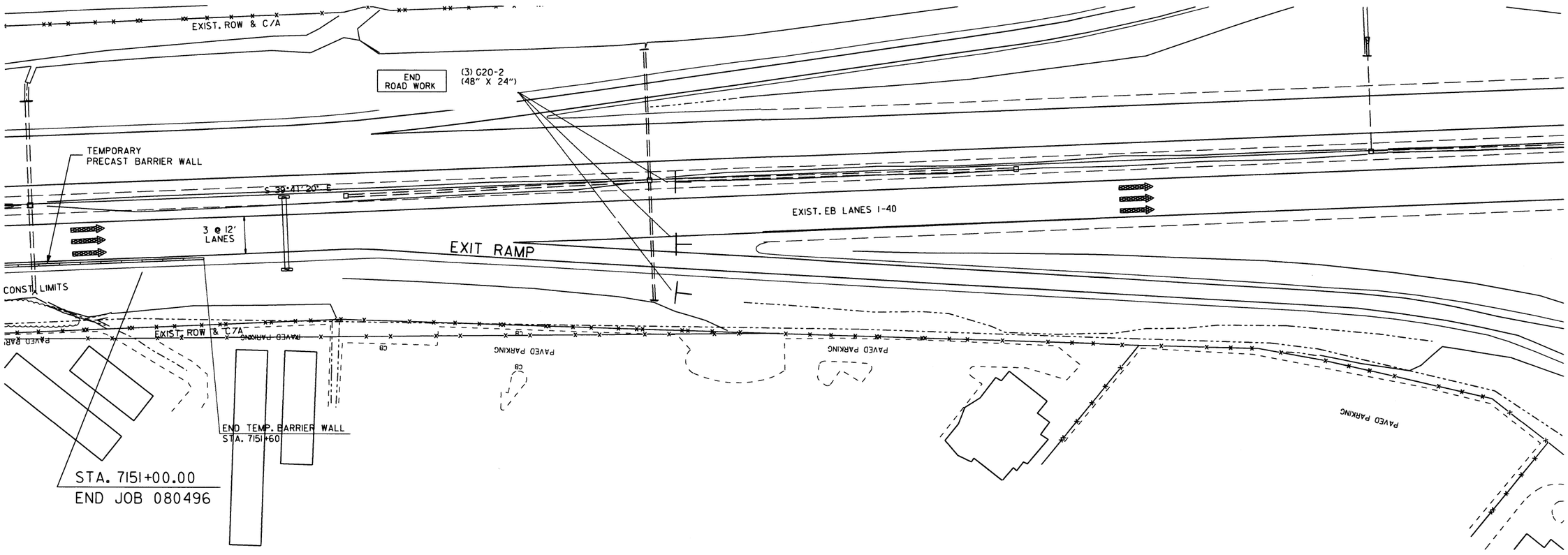
PAVED PARKING

MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	13	49

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY G. KING
10/26/18



MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	14	49

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY G. KING
10/26/18

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	CONSTRUCTION	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
			LIN. FT. - EACH		NO.	SQ. FT.	LIN. FT.	EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	32.0			
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	32.0			
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	32.0			
W-215A	RIGHT SHOULDER CLOSED	48"x48"	2	2	2	32.0			
W16-2P	1000 FEET	30"x24"	1	1	1	5.0			
W7-3AP	NEXT 1/2 MILE	36"x30"	1	1	1	7.5			
G20-2	END ROAD WORK	48"x24"	3	3	3	24.0			
OM-3R	OBJECT MARKER	12"x36"	4	4	4	12.0			
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	20.0			
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		2040	2040			2040		
	TEMPORARY IMPACT ATTENUATION BARRIER		1	1				1	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1	1					1
TOTALS:						**196.5**	**2040**	**1**	**1**

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

GRUBBING

STATION	STATION	LOCATION	GRUBBING STATION
7134+48	7151+00	NOISE WALL	17
TOTAL:			**17**

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	GUARDRAIL LIN. FT.
7149+85	7151+18.75	END OF NOISE WALL	135
TOTAL:			**135**

RELOCATION OF LIGHT POLES

STATION	DESCRIPTION	REMOVAL AND DISPOSAL OF POLE FOUNDATION	LIGHT POLE FOUNDATION	NON-METALLIC CONDUIT (2")	SOLID SODDING	WATER
		EACH	EACH	LIN. FT.	SQ. YD.	M.GAL.
7153+27	NOISE WALL ON RT.	1	1	20	3	0.04
7137+71	NOISE WALL ON RT.	1	1	20	3	0.04
7140+22	NOISE WALL ON RT.	1	1	20	3	0.04
7142+73	NOISE WALL ON RT.	1	1	20	3	0.04
7145+23	NOISE WALL ON RT.	1	1	20	3	0.04
7147+74	NOISE WALL ON RT.	1	1	20	3	0.04
7150+32	NOISE WALL ON RT.	1	1	20	3	0.04
TOTALS:		**7**	**7**	**140**	**21**	**0.28**

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL						
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	NOISE WALL	0.37	0.74	0.37	37.7	0.37				176	75	1035	47
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.10	0.20	0.10	10.2	0.10	2.00	2.00	40.8	66	50	100	9
TOTALS:			**0.47**	**0.94**	**0.47**	**47.9**	**0.47**	**2.00**	**2.00**	**40.8**	**242**	**125**	**1135**	**56**

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	15	49

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER STANLEY C. KING No. 9066
10/26/18

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
*	ENTIRE	PROJECT	BARRIER WALL FOOTING AND BACKSLOPE	611	355	
*	ENTIRE	PROJECT	LIGHT POLE FOUNDATION BACKFILL		7	
*	ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.					10
	TOTALS:			611	362	10

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

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	10	20
TOTALS:	10	20

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
7140+50.00		NOISE WALL RT	9.00	3.50	3.50	4.00	0.05
7146+50.00		NOISE WALL RT	8.00	3.50	3.11	3.56	0.04
7150+50.00		NOISE WALL RT	16.00	3.50	6.22	7.11	0.09
TOTALS:					12.83	14.67	0.18

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL
			LIN. FT.	EACH
7151+00.00	7151+18.75	C.L. NOISE WALL	25	1
TOTALS:			25	1

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	10
TOTAL:	10

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

AGGREGATE BASE COURSE

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)	
			FEET	TON / STATION	TON
MAIN LANES					
7134+61.40	7151+00.00	NOISE WALL - UNDER CONCRETE BARRIER WALL	1644.88	23.25	382.43
TOTAL:					382.43

CONCRETE BARRIER WALL (SIDE TYPE SPECIAL)

STATION	STATION	LOCATION	CONCRETE BARRIER WALL (SIDE TYPE SPECIAL)
			LIN. FT.
7134+55.00	7151+00.00	EXISTING I-40 C.L. ON RT.	1645
TOTAL:			1645

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	DROP INLETS	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	18"	TYPE ST			
		LIN. FT.	EACH		SQ.YD.	M.GAL.	
7140+50	NOISE WALL ON LT	12	1	1	5	0.06	FPC-9S, PCC-1, FES-1, FES-2
7146+50	NOISE WALL ON LT	19	1	1	5	0.06	FPC-9S, PCC-1, FES-1, FES-2
7150+50	NOISE WALL ON LT	18	1	1	5	0.06	FPC-9S, PCC-1, FES-1, FES-3
TOTALS:		49	3	3	15	0.18	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING

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

⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/26/18				6	ARK.			
				JOB NO.		080496	16	49
				②		QUANTITIES		58321

SCHEDULE OF NOISE BARRIER WALL QUANTITIES

UNIT OF STRUCTURE	ITEM NUMBER	SP JOB 080496	SP JOB 080496
	ITEM	DRILLED SHAFT (36" DIA.)	NOISE BARRIER WALL
	UNIT	LINEAR FOOT	SQUARE FOOT
NOISE WALL - ALTERNATE NO. 1		2095	28700 ①
NOISE WALL - ALTERNATE NO. 2			23910 ②

① Includes all material and labor for complete installation of Noise Barriers - Alternate No.1, as detailed on these plans, from top of Drilled Shaft to top of Noise Barrier including total length of post, surface finish of panels, textured coating and staining of panels. See SP Job 080496 "SOUND ABSORBING NOISE BARRIERS - ALTERNATE NO. 1".

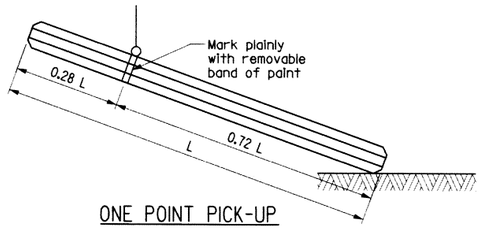
② Includes all material and labor for complete installation of Noise Barriers - Alternate No. 2, including designing, fabricating, furnishing, installing, and inspecting noise barrier panel systems. All material and labor for required design, complete installation, furnishing and placing all concrete and reinforcing steel in cast-in-place foundations are subsidiary to this pay-item. Quantity shown is from top of existing ground to top of Noise Barrier. See SP Job 080496 "SOUND ABSORBING NOISE BARRIERS - ALTERNATE NO. 2".

Note: For locations of Barrier Nos., See Sheet No. 58326.

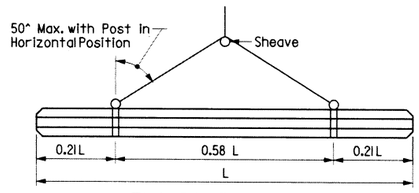
BORING LEGEND

A- Loose, brown, gray, tan & white, clayey gravel w/sand.
B- Soft, brown & gray, sandy lean clay.
C- Medium dense, brown, silty sand.
D- Loose, gray & brown, silty sand w/gravel.
E- Medium stiff, brown, sandy lean clay.
F- Gray, brown & black, silty sand.
G- Very dense, gray, poorly graded sand w/clay & gravel.
H- Brown, tan, gray, black & red, clayey sand w/gravel.
I- Dense to very dense, brown & gray, silty sand.
J- Very dense, brown & gray, poorly graded sand w/clay & gravel.
K- Very stiff, gray & brown, silt w/sand.
L- Dense, brown & gray, silty sand w/gravel.
M- Very dense, brown & gray, silty, clayey sand w/gravel.
N- Gray & orange, silt w/sand.
O- Dense, gray, tan & orange, clayey gravel w/sand.
P- Very dense, gray, silty, clayey sand w/gravel.
Q- Loose, red, brown & gray, clayey sand w/gravel.
R- Dense to very dense, brown & gray, clayey gravel w/sand.
S- Very dense, brown & gray, silty, clayey sand w/gravel.
T- Soft, brown & gray, gravelly, lean clay w/sand.
U- Medium dense, brown, clayey gravel w/sand.
V- Very hard, brown, lean clay.
W- Very dense, brown & gray, silty sand w/gravel.
X- Tan, red, gray & black, clayey gravel w/sand.
Y- Very hard, brown & gray, sandy, lean clay.
Z- Very dense, brown & gray, silty sand w/gravel.

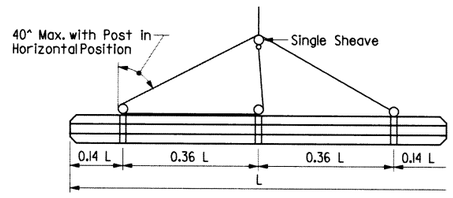
AA- Medium dense, brown, clayey gravel w/sand.
AB- Brown, gray, orange & tan, lean clay.
AC- Very dense, brown & gray, silty sand w/gravel.
AD- Soft, gray & brown, silty clay.
AE- Dense, brown, clayey sand w/gravel.
AF- Very dense, gray, clayey sand w/gravel.
AG- Tan & brown, silty clay.
AH- Dense to very dense, gray & brown, clayey sand w/gravel.
AI- Brown, tan & gray, silty clay.
AJ- Very dense, brown, tan, black & gray, clayey sand.
AK- Very dense, gray, clayey sand w/gravel.
AL- Very loose to very dense, brown & gray, silty sand.
AM- Gray & brown, clayey sand w/gravel.
AN- Dense to very dense, tan, clayey sand w/gravel.
AO- Very dense, gray, silty sand.
AP- Gray & brown, clayey sand w/gravel.
AQ- Very dense, brown & gray, silty sand.
AR- Gray & brown, lean clay w/sand.
AS- Very dense, gray & brown, clayey sand.
AT- Very dense, gray, silty sand.
AU- Gray, tan & brown, lean clay w/sand.
AV- Very dense, brown, clayey sand.
AW- Very dense, gray, silty sand.
AX- Very stiff, brown, lean clay w/sand.
AY- Very dense, brown, clayey sand.
AZ- Shale (Claystone): Dark gray to black, brown-orange stain, v. f. grain.
BA- Shale (Claystone): Dark gray-dk. brown grading to black, brown-orange stain, v. f. grain.
BB- Shale (Claystone): Dark gray, v. f. grain, mod. weathered grading to fresh.
BC- Shale (Claystone): Black, dk. brown, v. f. grain, sli. weathered w/sev. weathered seams.
BD- Shale (Claystone): Gray to dk. gray, v. f. grain, fresh.
BE- Shale (Claystone): Gray to dk. gray, v. f. grain, mod. weathered grading to fresh.
BF- Shale (Claystone): Gray to dk. gray, v. f. grain, mod. weathered grading to fresh.
BG- Shale (Claystone): Dark gray, v. f. grain, sli. weathered to fresh.
BH- Shale (Claystone): Dark gray, v. f. grain, fresh w/mod. weathered seams.



ONE POINT PICK-UP



TWO POINT PICK-UP



THREE POINT PICK-UP

MAXIMUM PICK-UP LENGTHS L

Type of Pick-Up	Precast Post
One-Point	123'
Two-Point	186'
Three-Point	245'

NOTE: Posts shall be lifted along the direction of the strong axis.

MANUFACTURE, TRANSPORTATION, AND STORAGE: See Subsection 802.21 of the Standard Specifications for more information.

Shipment of posts from the plant site will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete.

Any lifting mechanisms cast into precast post shall be removed below the surface and the hole filled with grout.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12664 CHRISTY BOYD 10/26/18

BRIDGE ENGINEER

SCHEDULE OF NOISE BARRIER WALL QUANTITIES & BORING LEGEND INTERSTATE I-40 NOISE WALL FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015

FILENAME: B080496X0-01.dgn
SCALE: NONE

DRAWING NO. 58321

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
1-5-17		2-17-17		11-8-18	
1-17-17		10-26-18		7-11-19	
1-25-17		10-30-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	17	49

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
STANLEY G. KING
NO. 9066
7/11/19

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY		UNIT
		ALTERNATE 1	ALTERNATE 2	
201	GRUBBING	17	17	STATION
202	REMOVAL AND DISPOSAL OF POLE FOUNDATION	7	7	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL	135	135	LIN. FT.
210	UNCLASSIFIED EXCAVATION	611	611	CU. YD.
210	COMPACTED EMBANKMENT	362	362	CU. YD.
SP & 210	SOIL STABILIZATION	10	10	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	382	382	TON
SS & 401	TACK COAT	20	20	GAL.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	10	10	TON
601	MOBILIZATION	1.00	1.00	LUMP SUM
SP & 603	MAINTENANCE OF TRAFFIC	1.00	1.00	LUMP SUM
SS & 604	SIGNS	197	197	SQ. FT.
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	2040	2040	LIN. FT.
SS & 605	CONCRETE DITCH PAVING (TYPE B)	13	13	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	49	49	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	3	EACH
606	SELECTED PIPE BEDDING	10	10	CU. YD.
SS & 609	DROP INLETS (TYPE ST)	3	3	EACH
SS & 617	GUARDRAIL (TYPE A)	25	25	LIN. FT.
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	1	1	EACH
620	LIME	1	1	TON
620	SEEDING	0.47	0.47	ACRE
SS & 620	MULCH COVER	2.47	2.47	ACRE
620	WATER	89.3	89.3	M.GAL.
621	TEMPORARY SEEDING	2.00	2.00	ACRE
621	SILT FENCE	1135	1135	LIN. FT.
621	SAND BAG DITCH CHECKS	242	242	BAG
621	DROP INLET SILT FENCE	125	125	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	56	56	CU. YD.
623	SECOND SEEDING APPLICATION	0.47	0.47	ACRE
624	SOLID SODDING	51	51	SQ. YD.
SP & 631	CONCRETE BARRIER WALL (SIDE TYPE SPECIAL)	1645	1645	LIN. FT.
SP	NOISE BARRIER WALL	28700		SQ. FT.
SP	NOISE BARRIER WALL WITH LIGHTWEIGHT PANELS		23910	SQ. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	1.00	LUMP SUM
710	NON-METALLIC CONDUIT (2")	140	140	LIN. FT.
SP	LIGHT POLE FOUNDATION	7	7	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	1	1	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	1	EACH
SP	DRILLED SHAFT (36" DIAMETER)	2095	0	LIN. FT.

REVISIONS

DATE	REVISION	SHEET NUMBER
1-5-17	REVISED STANDARD DRAWINGS CDP-1 AND PU-1	2, 17, 32, 43
1-17-17	ADDED PAY ITEM FOR "NOISE BARRIER WALL WITH LIGHTWEIGHT PANELS"; ADDED SPECIAL PROVISION "SOUND ABSORBING NOISE BARRIER WITH LIGHTWEIGHT PANELS"; ADDED SPECIAL PROVISION "MANDATORY ELECTRONIC DOCUMENT SUBMITTAL"	2, 17
1-25-17	REVISED SPECIAL PROVISIONS "SOUND ABSORBING NOISE BARRIER WITH LIGHTWEIGHT PANELS" AND "SOUND ABSORBING NOISE BARRIER"	17
2-17-17	REMOVED SPECIAL PROVISION "CONCRETE BARRIER WALL"; REVISED SPECIAL PROVISIONS "SOUND ABSORBING NOISE BARRIER", "SOUND ABSORBING NOISE BARRIER WITH LIGHTWEIGHT PANELS", AND "LIGHT POLE FOUNDATION"	2, 17
10-26-18	REPLACED AHTD REFERENCE WITH ARDOT; REVISED DESIGN TRAFFIC YEAR TO 2018 AND 2038; LISTED STANDARD DRAWINGS SEPARATELY FROM INDEX OF SHEETS, ADDED STANDARD DRAWINGS GR-8A, GR-11 AND GR-12, AND UPDATED STANDARD DRAWING REVISION DATES; ADDED STANDARD SPECIFICATIONS 100-4, 400-4, 400-5, 400-6, 600-2, AND 605-1; ADDED SPECIAL PROVISION "SETTLEMENT AGREEMENTS"; REVISED NOTE FOR "TYPICAL LAYOUT OF GUARDRAIL AT END OF CONCRETE BARRIER WALL" DETAIL; ADDED "SS" TO SUMMARY OF QUANTITIES FOR PAY ITEMS 414, 605, 609, AND 617; REVISED TOTAL SHEETS TO 49; RENUMBERED CROSS SECTIONS.	ALL SHEETS
10-30-18	ADDED "FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT" SPECIAL PROVISION.	2, 17
11-8-18	ADDED NOTE #8 TO THE GENERAL NOTES.	2, 17
7-11-19	ADDED SUPPLEMENTAL SPECIFICATION 306-1 "QUALITY CONTROL AND ACCEPTANCE", REMOVED SPECIAL PROVISION "SETTLEMENT AGREEMENTS", REVISED ROADWAY STANDARD DRAWING TC-3 "STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION".	2, 17

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	18	49

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18

SURVEY CONTROL COORDINATES

Project Name: 080496

Date: 9/6/2016

Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *230030,230011A,230028,230028A*
Projected to Ground Coordinates

Units: U.S. Survey Foot

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	278920.5620	0.0046	1183591.1032	0.0046	316.42	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:1
2	278499.0720	0.0053	1183943.9124	0.0052	312.065	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:2
3	278041.7121	0.0053	1184306.2291	0.0050	309.968	0.011	CTL	PD:AHTD STD. MON. STAMPED PN:3
4	277634.2336	0.0057	1184647.2887	0.0052	310.39	0.012	CTL	PD:AHTD STD. MON. STAMPED PN:4
5	277163.1372	0.0053	1185098.4447	0.0046	315.733	0.012	CTL	PD:AHTD STD. MON. STAMPED PN:5
6	276616.3128	0.0055	1185469.8280	0.0046	313.672	0.012	CTL	PD:AHTD STD. MON. STAMPED PN:6
100	279014.5165	0.0001	1183494.7200	0.0001	337.519	0.004	GPS	PD:AHTD GPS #230028
101	278991.8223	0.0001	1181731.2379	0.0001	333.845	0.003	GPS	PD:AHTD GPS #230028A
102	269801.0903	0.0001	1182729.5064	0.0001	298.567	0.001	GPS	PD:AHTD GPS #230020
103	268133.0672	0.0001	1183333.7866	0.0001	293.742	0.001	GPS	PD:AHTD GPS #230011A

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0302 - South Zone
A project CAF of: 0.9999676209 has been used to compute the above coordinates.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM:
A project Elevation Factor of: 0.9999849714 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 314.19 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-103 From NGS BM: B291, E291,D291, Z290

Basis of Bearing: Grid Bearings based on AHTD GPS points: *230030,230011A,230028,230028A*
Convergence Angle is: 0°14'54.42" Left at PN: 4
LT: 35-05-43 N LG: 92-25-37 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

C.L. CONSTRUCTION BASELINE

DESCRIPTION	HORIZONTAL ALIGNMENT POINT	STATION	C.L. NOISE WALL NORTHING	EASTING
POB	8000	7134+40.00	278959.5801	1183562.4333
PI	8001	7135+00.00	278938.7503	1183618.7004
POE	8002	7151+00.00	277707.5114	1184640.4884

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	19	49

(2) SURVEY CONTROL DETAILS

℄ EXISTING I-40

P.I. = 7124+47.25
DELTA = 41°23'48" LT.
DOC = 2°00'00"
T = 1082.42'
L = 2069.83'
P.C. = 7113+64.84
P.T. = 7134+34.67
e = MATCH EXIST.
Ls = MATCH EXIST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9086
STANLEY C. WING
10/26/18

STA. 7134+48.04 C.L. I-40 =
STA. 7134+40.00 C.L. NOISE WALL
BEGIN JOB 080496
LOG MILE 126.13

7125 — PI 7124+47.25 — EXISTING I-40 C.L. — 7130 — PT 7134+34.67 — 7135 — S39°41'20"E — EXISTING I-40 C.L. — 7140

PNI00 PD;AHTD GPS #230028

7135 — 71.08' — PI 7135+00.00 — C.L. NOISE WALL — 7140

8001

8000 — S69°41'09"E 60.00' — S45°43'52"E 134.60' — S39°55'52"E 549.66' — SURVEY BASELINE

PI 7134+40.00

PNI PD;AHTD STD. MON. STAMPED PNI

PN2 PD;AHTD STD. MON

7140 — 7145 — 7150 — POE 7151+00.00 — EXISTING I-40 C.L. — 7155

7140 — S39°41'20"E 1600.00' — C.L. NOISE WALL — 7145 — 7150 — 71.08' — 8002

S38°23'09"E 583.48' — S39°55'46"E 531.38' — SURVEY BASELINE — S43°45'41"E 652.28'

PN2 PD;AHTD STD. MON. STAMPED PN2

PN3 PD;AHTD STD. MON. STAMPED PN3

PN4 PD;AHTD STD. MON. STAMPED PN4

STA. 7151+00.00
END JOB 080496

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	20	49

(2) PLAN & PROFILE STA. 7134+48 TO 7140+00

℄ EXISTING I-40

P.I. = 7124+47.25
DELTA = 41°23'48" LT.
DOC = 2°00'00"
T = 1082.42'
L = 2069.83'
P.C. = 7113+64.84
P.T. = 7134+34.67
e = MATCH EXIST.
Ls = MATCH EXIST.

UTILITIES*:
CITY OF CONWAY- WATER, SAN. SEWER, ELECTRIC
CENTERPOINT ENERGY- GAS
WINDSTREAM- FIBER OPTIC CABLE
AT&T-TELEPHONE/FIBER OPTIC CABLE
CENTURYLINK- FIBER OPTIC CABLE

*LIST MAY NOT INCLUDE ALL UTILITIES. THE CONTRACTOR SHALL HAVE ALL UTILITIES MARKED PRIOR TO CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

STA. 7134+81 IN PLACE
IMPACT ATTENUATION BARRIER
IN MEDIAN
RETAIN

STA. 7134+81 TO STA. 7135+06 IN PLACE
CONCRETE PIER PROTECTION
RETAIN

STA. 7135+06 IN PLACE
IMPACT ATTENUATION BARRIER
IN MEDIAN
RETAIN

STA. 7136+95 IN PLACE
TYPE SPECIAL 1 DROP INLET IN MEDIAN
RETAIN

STA. 7136+95 IN PLACE
36" x 246' R.C. PIPE CULVERT
(45° LT. FWD. SKEW)
RETAIN

STA. 7136+22 IN PLACE
TYPE SPECIAL 2 DROP INLET IN MEDIAN
4' x 5' x H= 4'-6"
WITH 24" x 74' R.C. PIPE OUTLET
RETAIN

STA. 7140+00 CONSTRUCT
TYPE SPECIAL 1 DROP INLET IN MEDIAN
4' x 5' x H= 3'-5"
WITH 24" x 296' R.C. PIPE OUTLET
RETAIN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9966
STANLEY G. KING
10/26/18

EXIST. ROW & C/A
SPECIAL FLOOD HAZARD AREA
7125
℄ EXIST. I-40
7130
EXIST. ROW & C/A
EXIST. C/A
PT 7134+34.67
7135
℄ EXIST. I-40
7140
S 39°41'20" E
TIE TO EXIST. BARRIER WALL
266'
71.08'
CONCRETE BARRIER WALL
℄ NOISE WALL
S 39°41'20" E
S 6°57'34" E
10' SHOULDER
3 @ 12' LANES
10' SHOULDER
CONST. LIMITS
EXIST. ROW & C/A
PI 7134+40.00
PI 7135+00.00
EXIST. ROW
BEGIN CONCRETE BARRIER WALL AT END OF EXISTING PIER PROTECTION OF SIEBENMORGEN ROAD OVERPASS.

STA. 7134+48.04 C.L. I-40 =
STA. 7134+40.00 C.L. NOISE WALL
BEGIN JOB 080496
LOG MILE 126.13

SEE PROFILE OF NOISE WALL FOR ADDITIONAL DETAILS

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

NOTE: THERE ARE NO KNOWN ENVIRONMENTAL CONSTRAINTS ON THE EXISTING R/W IN THIS AREA. THIS AREA MAY BE USED BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND ELECTRICAL EQUIPMENT DURING CONSTRUCTION.

+25
EXIST. 36" R.C. PIPE
RETAIN

EXISTING GROUND
℄ NOISE WALL

340 335 330 325 320 315 310 305 300

7125+00 7126+00 7127+00 7128+00 7129+00 7130+00 7131+00 7132+00 7133+00 7134+00 7135+00 7136+00 7137+00 7138+00 7139+00 7140+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	21	49

(2) PLAN & PROFILE STA. 7140+00 TO 7151+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9066
STANLEY C. KING
10/26/18

STA. 7142+95 IN PLACE
TYPE SPECIAL I DROP INLET IN MEDIAN
RETAIN

STA. 7142+95 IN PLACE
24" x 174' R.C. PIPE CULVERT
RETAIN

STA. 7146+50 IN PLACE
TYPE SPECIAL I DROP INLET IN MEDIAN
4' x 5' x H= 3'-5"
WITH 24" x 344' R.C. PIPE OUTLET
RETAIN

STA. 7149+94 IN PLACE
TYPE SPECIAL I DROP INLET IN MEDIAN
RETAIN

STA. 7149+94 IN PLACE
36" x 178' R.C. PIPE CULVERT
RETAIN

EXIST. ROW & C/A

SPECIAL FLOOD HAZARD AREA

EXIST. ROW & C/A

GUARDRAIL LOCATION	GUARDRAIL TERMINAL (THRIE BEAM)
STA. 7151+00.00 TO STA. 7151+18.75 ℄ NOISE WALL LT.	1 EACH

NOTE: THE EXISTING GUARDRAIL SHALL BE REMOVED IN SUCH A MANNER THAT THE PROPOSED THRIE BEAM TERMINAL CAN BE ATTACHED TO THE PROPOSED CONCRETE BARRIER WALL (TYPE SPECIAL) AND THE REMAINING EXISTING GUARDRAIL.

7140 7145 7150 7155

℄ EXIST. I-40

S 39°41'20" E

℄ NOISE WALL

CONCRETE BARRIER WALL

THRIE BEAM GUARDRAIL TERMINAL 1 EACH

10' SHOULDER

3 @ 12' LANES

10' SHOULDER

EXIT RAMP

CONST. LIMITS

71.08'

EXIST. ROW & C/A

DURHAM ST.

EXIST. ROW & C/A

P.I. 7151+00.00

STA. 7140+50 CONSTRUCT
TYPE ST DROP INLET ALONG BARRIER WALL
(4' X 3' X H=4'-2") WITH 18" X 12' R.C.
PIPE OUTLET ON RT. (CLASS III)(TYPE 3
BEDDING) WITH FES ON RT.

STA. 7146+50 CONSTRUCT
TYPE ST DROP INLET ALONG BARRIER WALL
(4' X 3' X H=4'-2") WITH 18" X 19' R.C.
PIPE OUTLET ON RT. (CLASS III)(TYPE 3
BEDDING) WITH FES ON RT.

STA. 7150+50 CONSTRUCT
TYPE ST DROP INLET ALONG BARRIER WALL
(4' X 3' X H=4'-2") WITH 18" X 18' R.C.
PIPE OUTLET ON RT. (CLASS III)(TYPE 3
BEDDING) WITH FES ON RT.

CONST.
CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	LENGTH	SIDE	"W"	SQ.YDS.
7140+50	7140+50	9'	RT	3.50'	3.50
7146+50	7146+50	8'	RT	3.50'	3.11
7150+50	7150+50	16'	RT	3.50'	6.22

NOTE: THERE ARE NO KNOWN ENVIRONMENTAL CONSTRAINTS ON THE EXISTING R/W IN THIS AREA. THIS AREA MAY BE USED BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND ELECTRICAL EQUIPMENT DURING CONSTRUCTION.

SEE PROFILE OF NOISE WALL FOR ADDITIONAL DETAILS

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

STA. 7151+00.00
END JOB 080496

+95
EXIST. 24" R.C. PIPE
RETAIN

+50
TOP D.I. 316.58
F.L. D.I. 312.41
F.L. OUTLET 312.31

EXISTING GROUND @ ℄ NOISE WALL

+50
TOP D.I. 314.44
F.L. D.I. 310.28
F.L. OUTLET 310.15

+91
EXIST. 36" R.C. PIPE
RETAIN

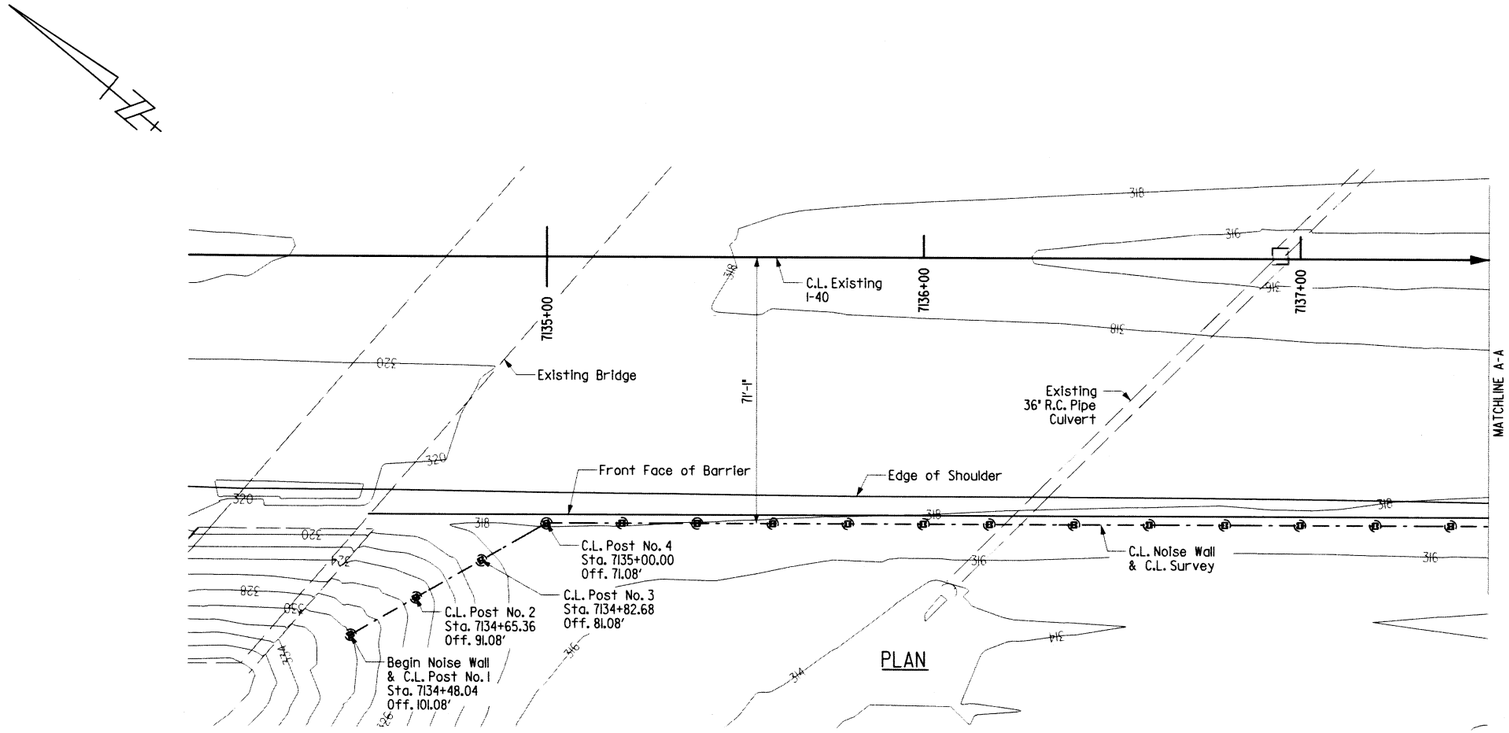
+50
TOP D.I. 313.86
F.L. D.I. 309.69
F.L. OUTLET 309.60

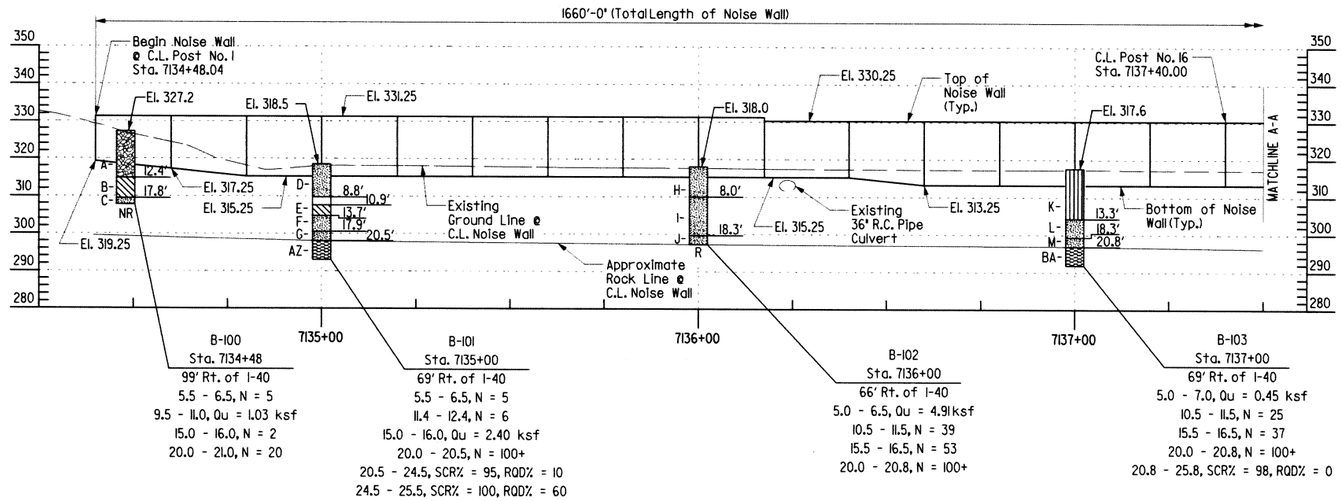
340 335 330 325 320 315 310 305 300

7140+00 7141+00 7142+00 7143+00 7144+00 7145+00 7146+00 7147+00 7148+00 7149+00 7150+00 7151+00 7152+00 7153+00 7154+00 7155+00

⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/26/18				6	ARK.			
				JOB NO.		080496	22	49
				(2)		LAYOUT		58322





PROFILE

Note: Unless otherwise noted stations and elevations shown are taken along C.L. Wall.

Note: All pipes and utilities need to be field verified prior to construction.

GENERAL NOTES

BENCH MARK: AHTD Chisel square in southeast corner of existing bridge #3921l, N=278972.9123, E=1183535.3363, El.=339.65

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, section and subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (7th Edition with 2015 interim) and the AASHTO Standard Specifications for Stuctural Supports for Highway Signs, Luminaires, and Traffic Signals (6th Edition with 2015 interim).

MATERIALS AND STRENGTHS:

Class S Concrete (Noise Wall Panels & Posts)	f'c = 3,500 psi
Class S Concrete (Drilled Shafts)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, Gr, 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

CONCRETE: All concrete shall be Class 'S' with a minimum 28 day compressive strength f'c = 3,500 psi. All exposed corners, except the Noise Wall Panels, to be chamfered ¾" unless otherwise noted. All concrete shall be poured in the dry, except as allowed for drilled shafts.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield strength = 60,000 psi.).

PRECAST CONCRETE PANELS: The width, length, and height of panels are detailed within.

DRILLED SHAFTS: See Dwg. No. 58326 for Drilled Shaft lengths, tip elevations, and any minimum embedments into rock. No adjustment of the plan tip elevation shall be made without prior approval of the Engineer. Methods of construction of the Drilled Shafts shall be in accordance with SP Job 080496 "Drilled Shaft Foundations".

DETAIL DRAWINGS:	DRAWING NOS.
Layout of Noise wall	58322-58325
Noise Wall Schedule	58326
Noise Wall Details	58327-58330

MAINTENANCE OF TRAFFIC: See roadway drawings.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15917 CARTER D. BEARDEN 10/24/18

BRIDGE ENGINEER

ALTERNATE NO. 1
SHEET 1 OF 4
PROFILE OF NOISE WALL
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DM DATE: 03-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DM DATE: 03-2015

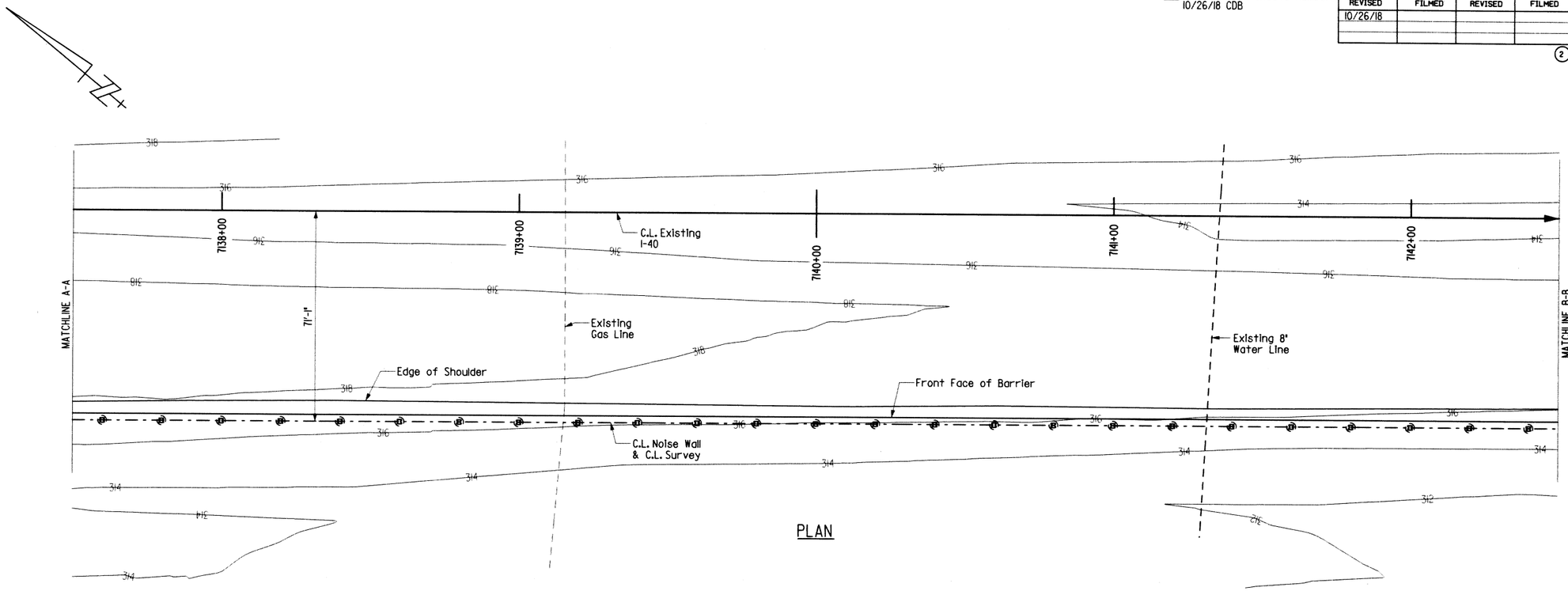
FILENAME: B080496XI-L01.dgn
SCALE: 1" = 20'-0"

DRAWING NO. 58322

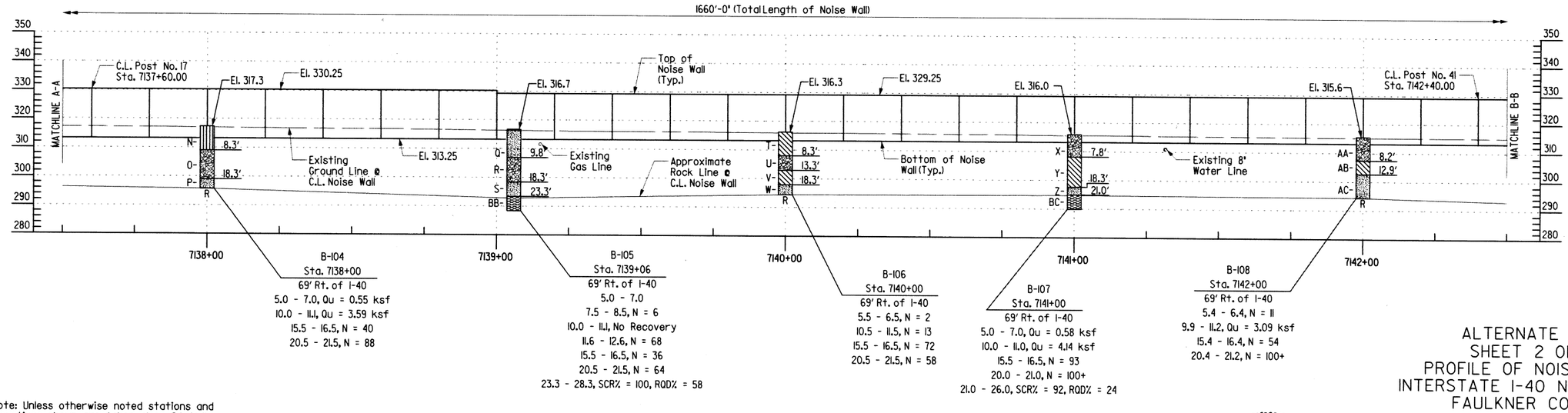
⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10/26/18			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	23	49
(2)		LAYOUT		58323



PLAN



PROFILE

Note: Unless otherwise noted stations and elevations shown are taken along C.L. Wall.

Note: All pipes and utilities need to be field verified prior to construction.

FOR BORING LEGEND SEE SHEET NO. 58321

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13... CARTER D. BERRY

10/26/18

BRIDGE ENGINEER

ALTERNATE NO. 1
SHEET 2 OF 4
PROFILE OF NOISE WALL
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DM DATE: 03-2015

CHECKED BY: CB DATE: 09-2015

DESIGNED BY: DM DATE: 03-2015

FILENAME: B080496XI-L02.dgn

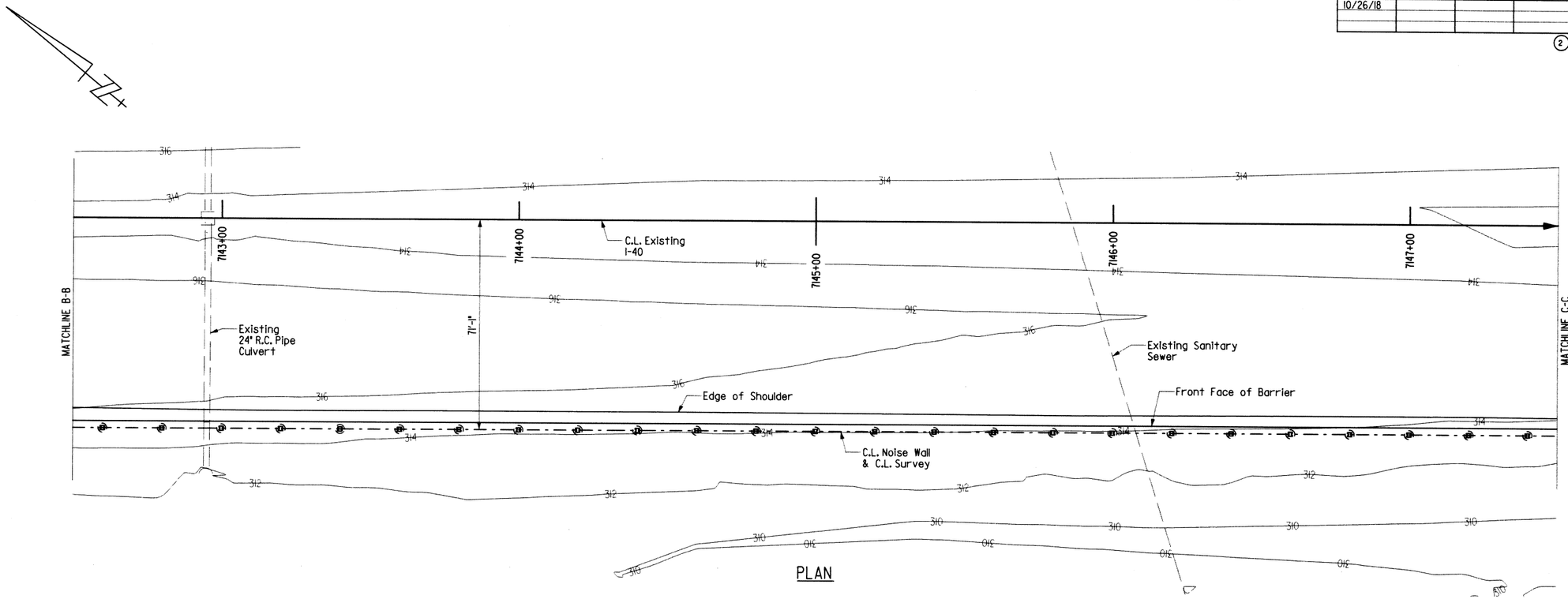
SCALE: 1" = 20'-0"

DRAWING NO. 58323

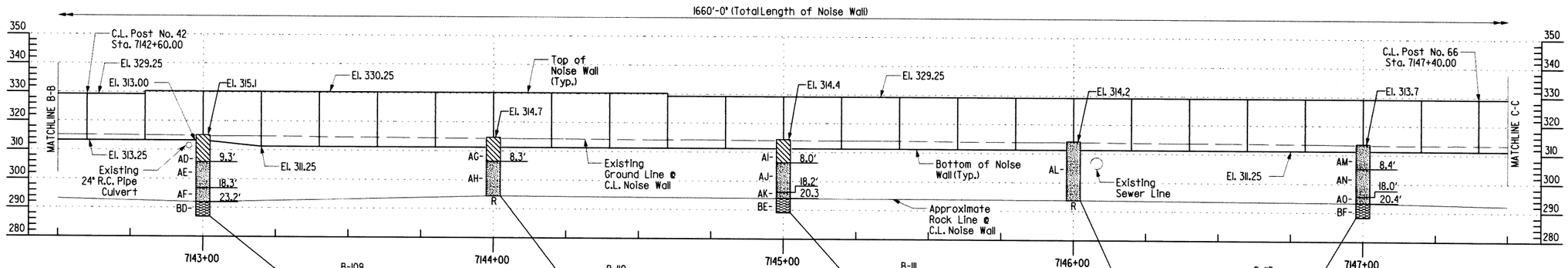
⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10/26/18			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	24	49
(2)		LAYOUT		58324



PLAN



B-109
Sta. 7143+00
69' Rt. of I-40
5.0 - 7.0, No Recovery
7.5 - 8.5, N = 2
10.5 - 11.5, N = 37
15.5 - 16.5, N = 41
20.0 - 21.4, N = 100+
23.2 - 25.8, SCR% = 69, RQD% = 54
25.8 - 28.2, SCR% = 88, RQD% = 88

B-110
Sta. 7144+00
69' Rt. of I-40
5.0 - 7.0, Qu = 5.59 ksf
10.5 - 11.5, N = 49
15.5 - 16.5, N = 81
20.0 - 20.2, N = 100+, No Recovery

B-111
Sta. 7145+00
69' Rt. of I-40
5.0 - 7.0, Qu = 3.38 ksf
10.0 - 11.2, Qu = 3.40 ksf
15.0 - 16.3, N = 100+
20.0 - 20.3, N = 100+
20.3 - 21.7, SCR% = 100, RQD% = 86
21.7 - 25.3, SCR% = 100, RQD% = 94

B-112
Sta. 7146+00
69' Rt. of I-40
5.5 - 6.5, N = 1, No Recovery
10.5 - 11.5, N = 67
15.5 - 16.5, N = 67
20.0 - 20.4, N = 100+

B-113
Sta. 7147+00
69' Rt. of I-40
5.0 - 7.0, Qu = 1.30 ksf
10.5 - 11.5, N = 39
15.0 - 15.9, N = 100+
20.0 - 20.4, N = 100+
20.4 - 21.4, SCR% = 70, RQD% = 40
21.4 - 25.4, SCR% = 100, RQD% = 100

PROFILE

Note: Unless otherwise noted stations and elevations shown are taken along C.L. Wall.

Note: All pipes and utilities need to be field verified prior to construction.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13570 CARTER D. BROOKS
10/26/18
BRIDGE ENGINEER

ALTERNATE NO. 1
SHEET 3 OF 4
PROFILE OF NOISE WALL
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DM DATE: 03-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DM DATE: 03-2015

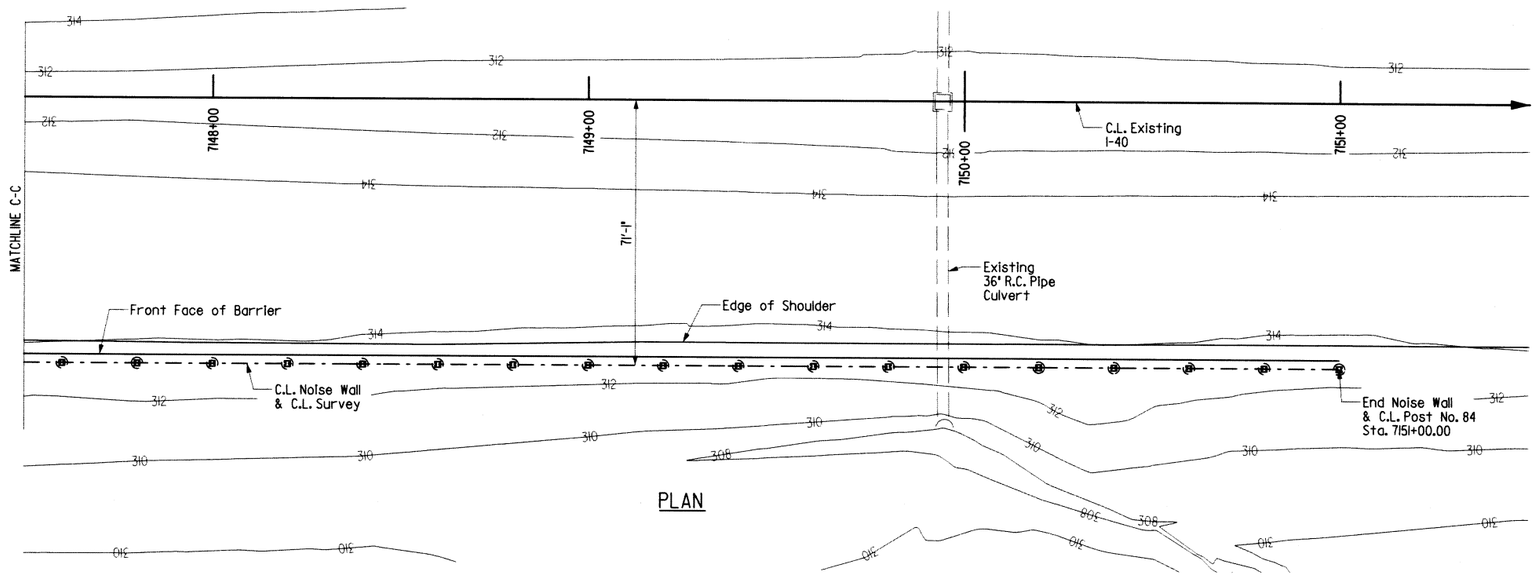
FILENAME: B080496XI-L03.dgn
SCALE: 1" = 20'-0"

DRAWING NO. 58324

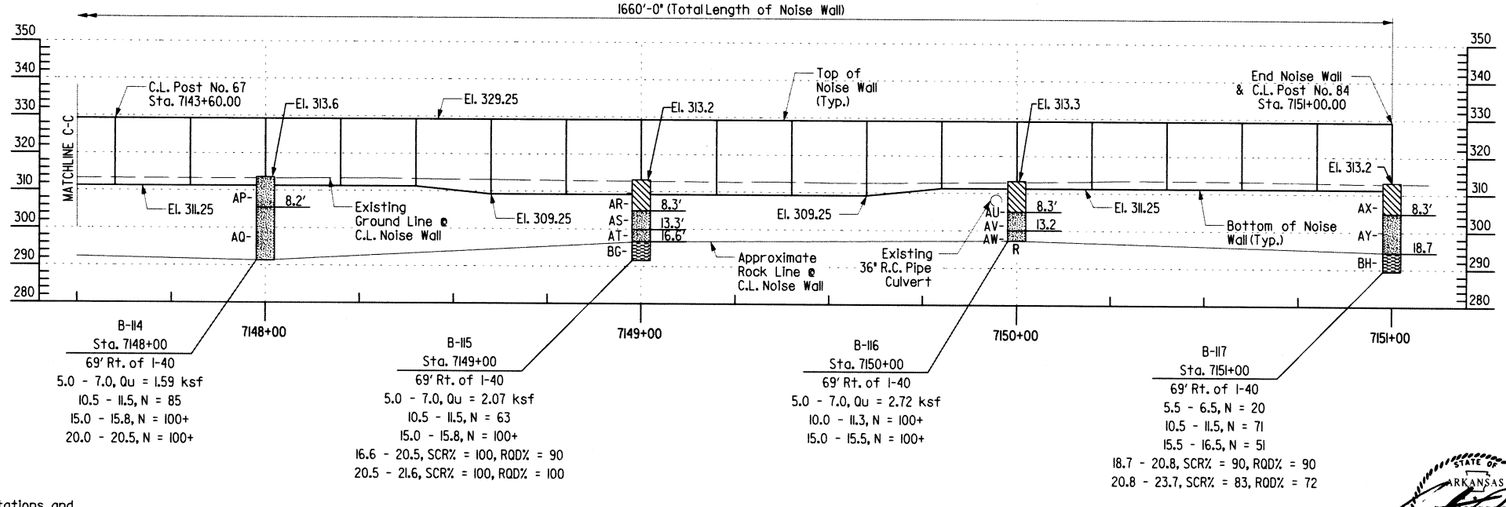
⚠ Revised total sheets number.
10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10/26/18			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	25	49
(2)		LAYOUT		58325



PLAN



PROFILE

Note: Unless otherwise noted stations and elevations shown are taken along C.L. Wall.

Note: All pipes and utilities need to be field verified prior to construction.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13178
CARTER D. CLARK
10/26/18
BRIDGE ENGINEER

ALTERNATE NO. 1
SHEET 4 OF 4
PROFILE OF NOISE WALL
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DM DATE: 03-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DM DATE: 03-2015
FILENAME: B080496XI-L04.dgn
SCALE: 1" = 20'-0"

DRAWING NO. 58325

⚠ Revised total sheets number.
10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/26/18				6	ARK.			
				JOB NO.		080496	26	49
				②		NOISE WALL SCHEDULE		58326

NOISE WALL SCHEDULE

POST NO.	BARRIER NO.	STATION @ 90 5/64	WIDTH (POST TO POST)	PANEL WIDTH	DRILLED SHAFT DEPTH (FT.)	SHAFT DIAMETER	PLAN TIP ELEVATION
1	1	7134+48.04	20.0000	19.0833	26	3.0	293.25
2	2	7134+65.36	20.0000	19.0833	25	3.0	292.25
3	3	7134+82.68	20.0000	19.0833	24	3.0	291.25
4	4	7135+00.00	20.0000	19.0833	24	3.0	291.25
5	5	7135+20.00	20.0000	19.0833	24	3.0	291.25
6	6	7135+40.00	20.0000	19.0833	24	3.0	291.25
7	7	7135+60.00	20.0000	19.0833	24	3.0	291.25
8	8	7135+80.00	20.0000	19.0833	25	3.0	290.25
9	9	7136+00.00	17.5000	16.5833	25	3.0	290.25
10	10	7136+17.50	22.5000	21.5833	25	3.0	290.25
11	11	7136+40.00	20.0000	19.0833	25	3.0	290.25
12	12	7136+60.00	20.0000	19.0833	23	3.0	290.25
13	13	7136+80.00	20.0000	19.0833	23	3.0	290.25
14	14	7137+00.00	20.0000	19.0833	23	3.0	290.25
15	15	7137+20.00	20.0000	19.0833	23	3.0	290.25
16	16	7137+40.00	20.0000	19.0833	24	3.0	289.25
17	17	7137+60.00	20.0000	19.0833	24	3.0	289.25
18	18	7137+80.00	20.0000	19.0833	24	3.0	289.25
19	19	7138+00.00	20.0000	19.0833	24	3.0	289.25
20	20	7138+20.00	20.0000	19.0833	25	3.0	288.25
21	21	7138+40.00	20.0000	19.0833	25	3.0	288.25
22	22	7138+60.00	20.0000	19.0833	26	3.0	287.25
23	23	7138+80.00	20.0000	19.0833	26	3.0	287.25
24	24	7139+00.00	20.0000	19.0833	27	3.0	286.25
25	25	7139+20.00	20.0000	19.0833	27	3.0	286.25
26	26	7139+40.00	20.0000	19.0833	27	3.0	286.25
27	27	7139+60.00	20.0000	19.0833	26	3.0	287.25
28	28	7139+80.00	20.0000	19.0833	26	3.0	287.25
29	29	7140+00.00	20.0000	19.0833	26	3.0	287.25
30	30	7140+20.00	20.0000	19.0833	25	3.0	288.25
31	31	7140+40.00	20.0000	19.0833	25	3.0	288.25
32	32	7140+60.00	20.0000	19.0833	25	3.0	288.25
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35	35	7141+20.00	20.0000	19.0833	25	3.0	288.25
36	36	7141+40.00	20.0000	19.0833	25	3.0	288.25
37	37	7141+60.00	20.0000	19.0833	25	3.0	288.25
38	38	7141+80.00	20.0000	19.0833	26	3.0	287.25
39	39	7142+00.00	20.0000	19.0833	26	3.0	287.25
40	40	7142+20.00	20.0000	19.0833	26	3.0	287.25
41	41	7142+40.00	20.0000	19.0833	27	3.0	286.25
42	42	7142+60.00	20.0000	19.0833	27	3.0	286.25

NOISE WALL SCHEDULE (CONT.)

POST NO.	BARRIER NO.	STATION @ 90 5/64	WIDTH (POST TO POST)	PANEL WIDTH	DRILLED SHAFT DEPTH (FT.)	SHAFT DIAMETER	PLAN TIP ELEVATION
43	43	7142+80.00	20.0000	19.0833	27	3.0	286.25
44	44	7143+00.00	20.0000	19.0833	28	3.0	285.25
45	45	7143+20.00	20.0000	19.0833	28	3.0	285.25
46	46	7143+40.00	20.0000	19.0833	27	3.0	286.25
47	47	7143+60.00	20.0000	19.0833	27	3.0	286.25
48	48	7143+80.00	20.0000	19.0833	26	3.0	287.25
49	49	7144+00.00	20.0000	19.0833	25	3.0	288.25
50	50	7144+20.00	20.0000	19.0833	26	3.0	287.25
51	51	7144+40.00	20.0000	19.0833	26	3.0	287.25
52	52	7144+60.00	20.0000	19.0833	26	3.0	287.25
53	53	7144+80.00	20.0000	19.0833	26	3.0	287.25
54	54	7145+00.00	20.0000	19.0833	26	3.0	287.25
55	55	7145+20.00	20.0000	19.0833	26	3.0	287.25
56	56	7145+40.00	20.0000	19.0833	26	3.0	287.25
57	57	7145+60.00	20.0000	19.0833	26	3.0	287.25
58	58	7145+80.00	20.0000	19.0833	26	3.0	287.25
59	59	7146+00.00	20.0000	19.0833	26	3.0	287.25
60	60	7146+20.00	20.0000	19.0833	26	3.0	287.25
61	61	7146+40.00	20.0000	19.0833	26	3.0	287.25
62	62	7146+60.00	20.0000	19.0833	26	3.0	287.25
63	63	7146+80.00	20.0000	19.0833	27	3.0	286.25
64	64	7147+00.00	20.0000	19.0833	27	3.0	286.25
65	65	7147+20.00	20.0000	19.0833	27	3.0	286.25
66	66	7147+40.00	20.0000	19.0833	27	3.0	286.25
67	67	7147+60.00	20.0000	19.0833	28	3.0	285.25
68	68	7147+80.00	20.0000	19.0833	28	3.0	285.25
69	69	7148+00.00	20.0000	19.0833	29	3.0	284.25
70	70	7148+20.00	20.0000	19.0833	28	3.0	285.25
71	71	7148+40.00	20.0000	19.0833	27	3.0	286.25
72	72	7148+60.00	20.0000	19.0833	22	3.0	287.25
73	73	7148+80.00	20.0000	19.0833	20	3.0	289.25
74	74	7149+00.00	20.0000	19.0833	19	3.0	290.25
75	75	7149+20.00	20.0000	19.0833	19	3.0	290.25
76	76	7149+40.00	20.0000	19.0833	19	3.0	290.25
77	77	7149+60.00	20.0000	19.0833	19	3.0	290.25
78	78	7149+80.00	20.0000	19.0833	20	3.0	291.25
79	79	7150+00.00	20.0000	19.0833	20	3.0	291.25
80	80	7150+20.00	20.0000	19.0833	21	3.0	290.25
81	81	7150+40.00	20.0000	19.0833	22	3.0	289.25
82	82	7150+60.00	20.0000	19.0833	22	3.0	289.25
83	83	7150+80.00	20.0000	19.0833	23	3.0	288.25
84	-	7151+00.00	20.0000	19.0833	23	3.0	288.25

Note: The Drilled Shaft shall be Rock Socketed a minimum depth of 6'-0". See Detail 'B' on Dwg. No. 58327 for details.

Note: All Precast Posts are to be installed from top of wall elevation to bottom of drilled shaft.

Note: Stations are referenced along C.L. Noise Wall.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 13570
CARTER D. BEVIS
10/26/18
BRIDGE ENGINEER

ALTERNATE NO. 1

NOISE WALL SCHEDULE
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

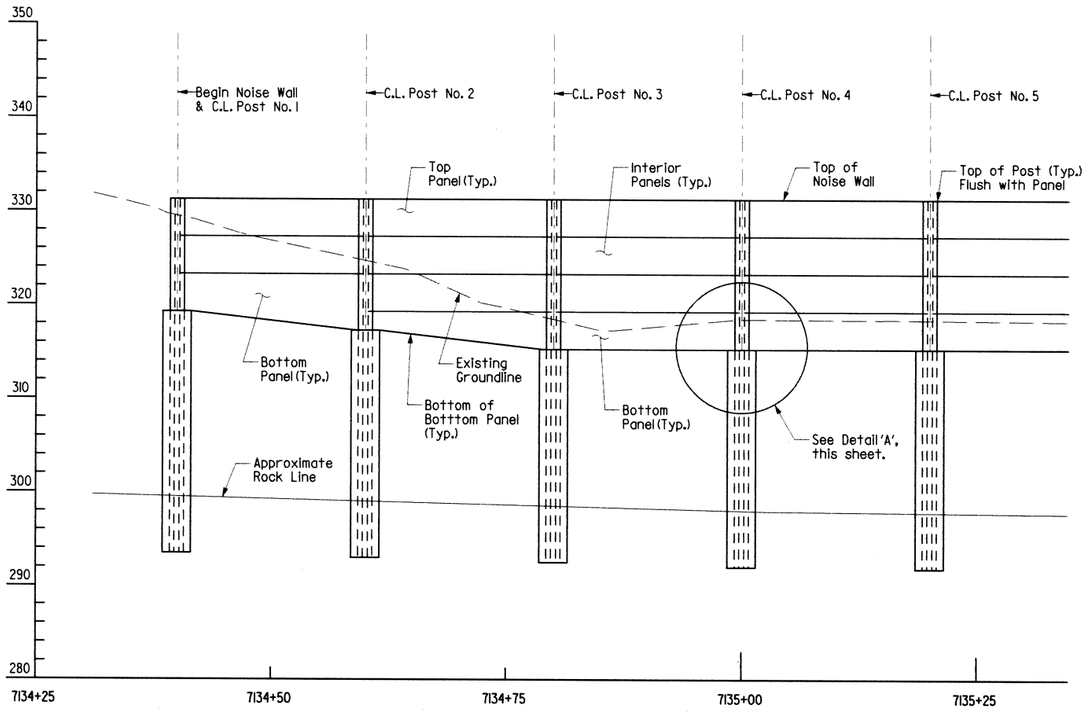
ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015
FILENAME: B080496X2-SII.dgn
SCALE: NONE

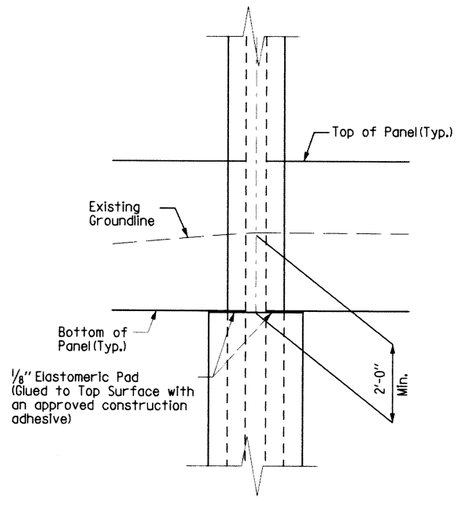
DRAWING NO. 58326

⚠ Revised total sheets number. 10/26/18 CDB

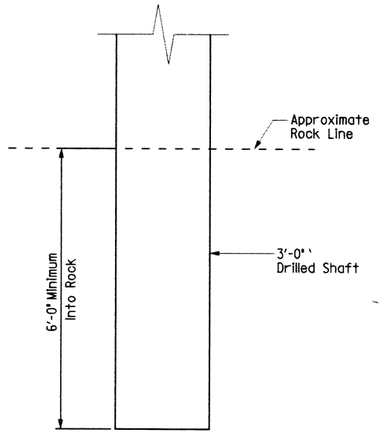
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/26/18				6	ARK.			
				JOB NO.		080496	27	49
				(2)	NOISE WALL DETAILS			58327



PART-TYPICAL ELEVATION
1/8" = 1'-0"



DETAIL 'A'
1/2" = 1'-0"
(See Typical Elevation, this sheet)



DETAIL 'B'
N.T.S.

GENERAL NOTES - NOISE BARRIER WALL

During handling and shipping, sufficient lateral support will be required to prevent excessive bowing and warping, during handling, transportation and storage. Panels shall be adequately protected by padding or other means to prevent cracking, staining, chipping or spalling of the concrete.

If a panel is damaged, the Engineer will determine as to whether or not it can be repaired or discarded. If acceptable to the Engineer, damaged panels shall be repaired in a manner approved by the Engineer. Cracked panels or panels which, as determined by the Engineer, cannot be repaired, shall be replaced by the Contractor at no additional expense to the Department. Additional inspections by the Engineer will be made prior to erection to determine if any damage occurred during storage or transportation and after erection to determine if any damage has occurred during erection.

Panels shall be erected centered between posts. All horizontal joints shall align with adjacent sections. Regarding bottom panel only, the minimum height of a panel is 2'-0". The maximum height of a panel is 6'-0".

The strength and type of lifting inserts shall be the responsibility of the Contractor. The type and location of lifting inserts shall be submitted for approval with the working drawings. After panel erection, removable lifting inserts shall be plugged with Grout and nonremovable mechanisms shall be removed below the surface of the panel and filled with grout.

Plans show recommended layout of Noise Barriers, top of post and wall elevations shall not be lowered. Ground elevations, post height and wall height is based on available data. Contractor shall perform a survey to determine exact groundline, post and wall embedment elevations, prior to preparation of shop drawings. In the event that the Contractor elects to redesign the wall system, He shall be responsible for the design of panels, walls and drilled footings. If the Contractor elects to utilize the State's design, but the field survey reveals the need to adjust column heights, the State will execute the design. Survey will be paid for under Section 635 "Roadway Construction Control".

The exterior surfaces of all Noise Barriers shall have a surface finish as specified in SP Job 080496 "SOUND ABSORBING NOISE BARRIERS ALTERNATE NO. 1". Cost of finish will not be paid for directly, but will be considered subsidiary to the pay item "NOISE BARRIER WALL".

Drawings show general features of design only. Shop drawings are required for both the noise barrier wall panels and the precast posts and shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

Elastomeric Pads shall conform to Section 808 of the Standard Specifications.

Elastomeric Pads and glue will not be paid for directly, but will be considered subsidiary to the pay item "NOISE BARRIER WALL".

ALTERNATE NO. 1
SHEET 1 OF 4
NOISE WALL DETAILS
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13579 CARTER D. BEARDEN
10/26/18
BRIDGE ENGINEER

DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015
FILENAME: B080496X2-SI2.dgn
SCALE: AS SHOWN

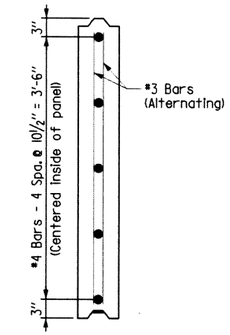
DRAWING NO. 58327

⚠ Revised total sheets number. 10/26/18 CDB

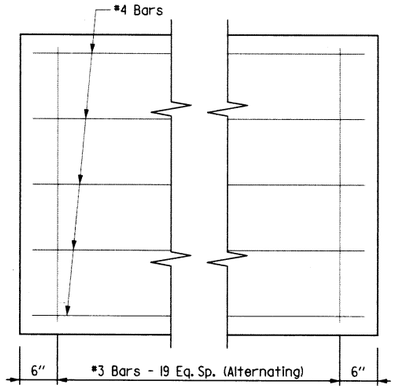
▲ Denotes: Smooth Finish on Both Sides For Top 1'-0" of All Top Panels.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10/26/18			

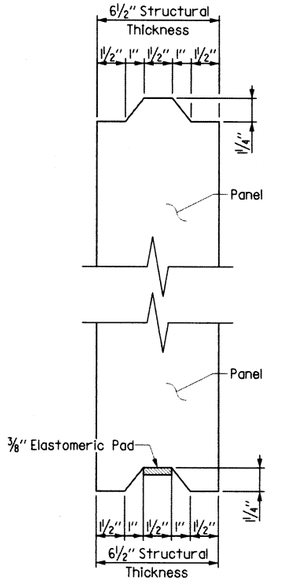
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	28	49
(2)	NOISE WALL DETAILS			58328



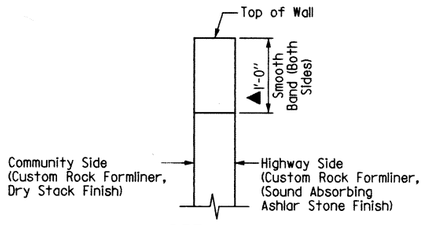
PANEL SECTION
1" = 1'-0"
(Showing Reinforcing Steel)



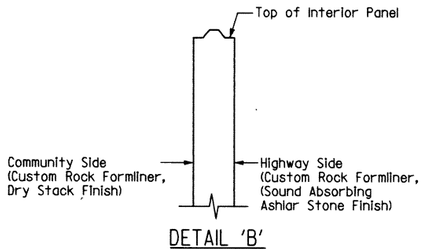
PANEL SECTION
1" = 1'-0"
(Showing Reinforcing Steel)



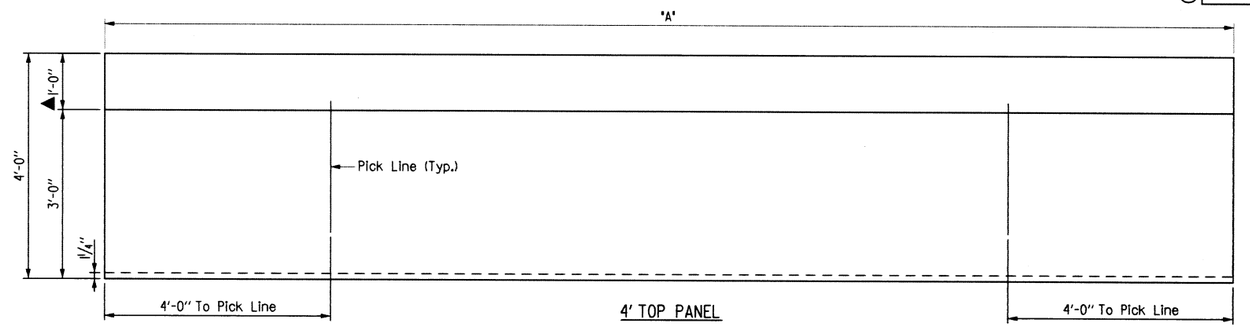
ALIGNMENT KEY &
ALIGNMENT GROOVE DETAIL
3" = 1'-0"



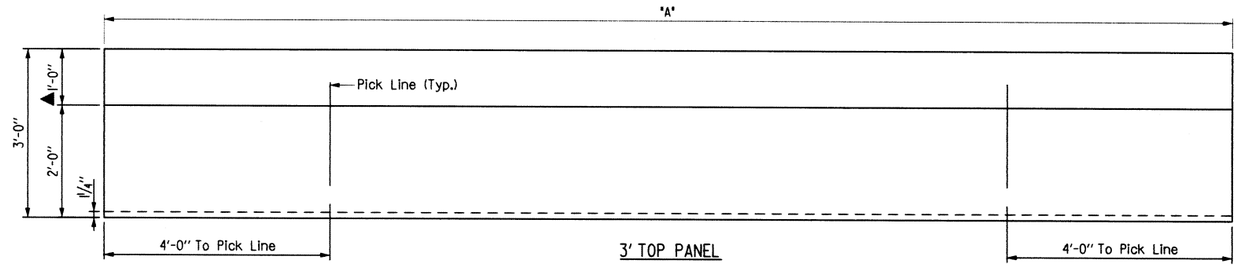
DETAIL 'A'
1" = 1'-0"
(See Panel Elevations this sheet)



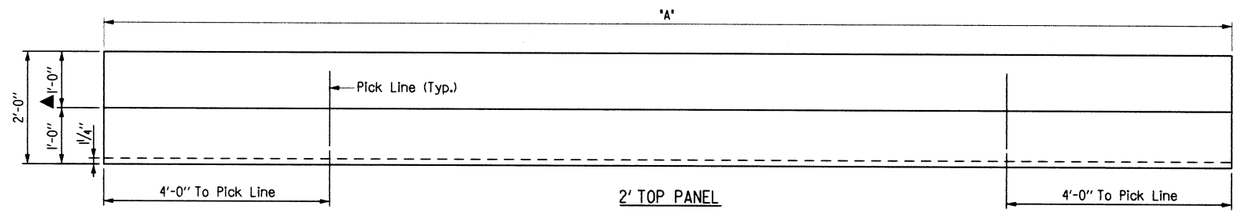
DETAIL 'B'
1" = 1'-0"
(See Panel Elevations this sheet)



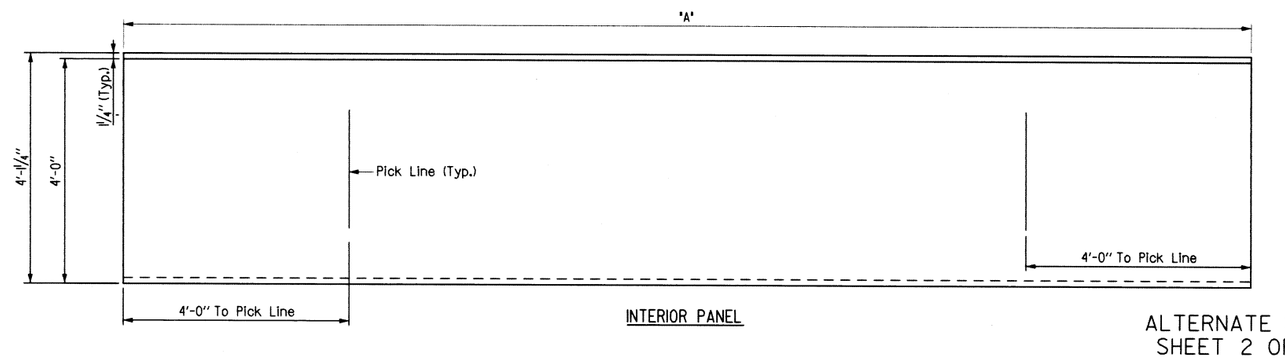
4' TOP PANEL



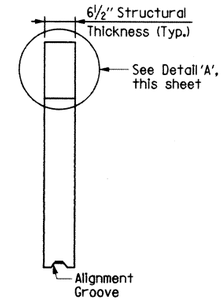
3' TOP PANEL

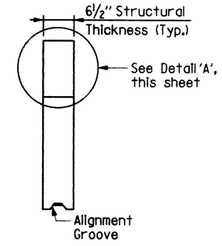


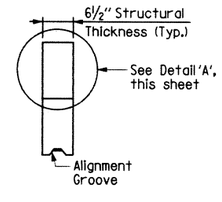
2' TOP PANEL

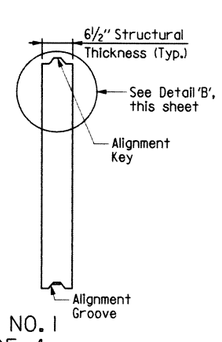


INTERIOR PANEL









PANEL ELEVATIONS
¾" = 1'-0"

TABLE OF VARIABLES

PANEL NO.	"A"
I-8 & II-83	20'-0"
9	17'-6"
10	22'-6"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15
CARTER D. BENNETT
10/26/18

BRIDGE ENGINEER

ALTERNATE NO. 1
SHEET 2 OF 4
NOISE WALL DETAILS
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

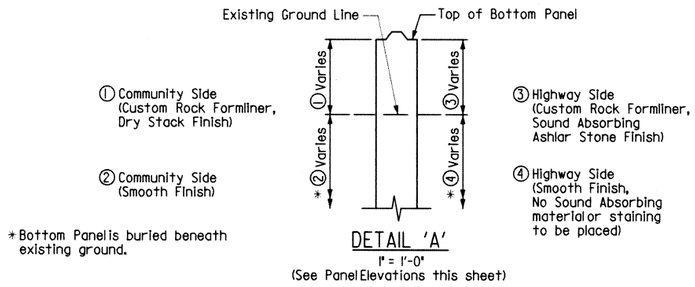
DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015

FILENAME: B080496X2-SI3.dgn
SCALE: AS SHOWN

DRAWING NO. 58328

⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/26/18				6	ARK.			
				JOB NO.		080496	29	49
				(2)		NOISE WALL DETAILS		58329



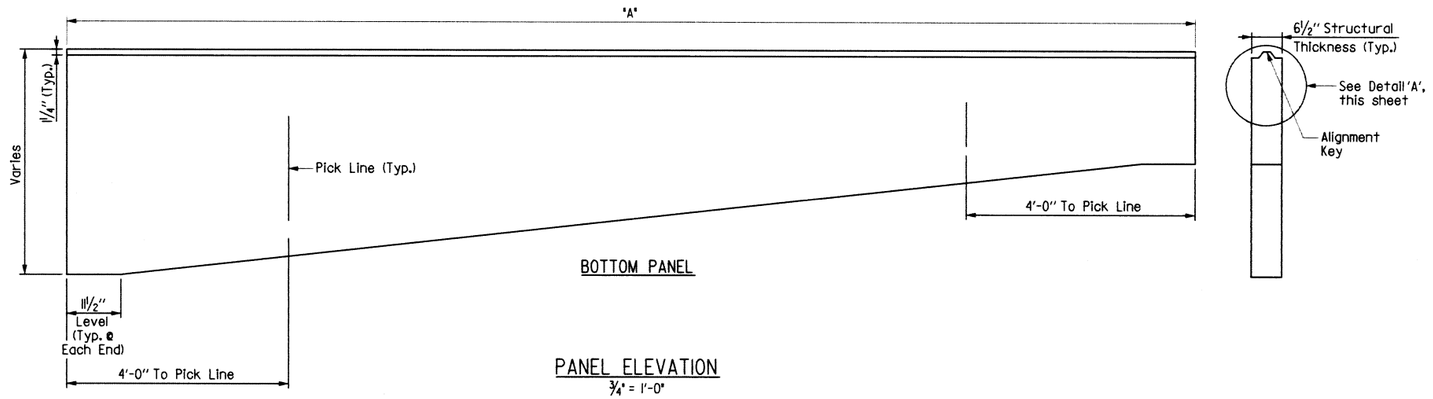
① Community Side (Custom Rock Formliner, Dry Stack Finish)

② Community Side (Smooth Finish)

③ Highway Side (Custom Rock Formliner, Sound Absorbing Ashlar Stone Finish)

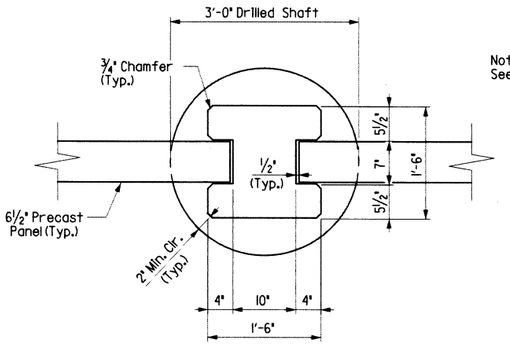
④ Highway Side (Smooth Finish, No Sound Absorbing material or staining to be placed)

DETAIL 'A'
1" = 1'-0"
(See Panel Elevations this sheet)



BOTTOM PANEL

PANEL ELEVATION
¾" = 1'-0"



Note: For Bar List, See Dwg. No. 58330.

TYPICAL POST SECTION
1" = 1'-0"

TABLE OF VARIABLES

PANEL NO.	"A"
1-8 & 11-83	20'-0"
9	17'-6"
10	22'-6"

** BAR LIST - POST NO. 1-3, 5-84

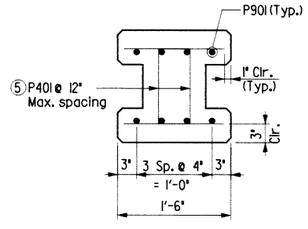
MARK	LENGTH	P.D.	BENDING DIAGRAMS (Dimensions are out to out of bars)
P401	2'-9"	2"	10½" / 1'-0" / P401
P901	*	Str.	

** BAR LIST - POST NO. 4

MARK	LENGTH	P.D.	BENDING DIAGRAMS (Dimensions are out to out of bars)
P402	2'-10"	2"	11" / 1'-0" / P402
P902	*	Str.	

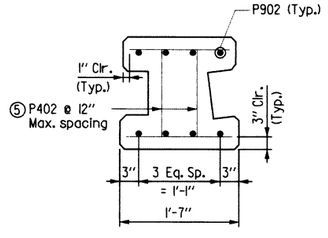
* The total bar length is to be determined by the fabricator.

** The number of bars required is to be determined by the fabricator.

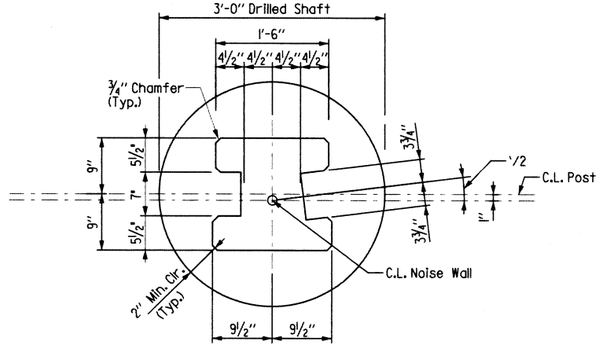


TYPICAL POST SECTION
1" = 1'-0"
(Showing Reinforcing)

⑤ Bars P401-P402 shall be placed a minimum of 3" from the ends of the precast post and spaced at 12" Max.



TYPICAL POST SECTION (POST NO. 4)
1" = 1'-0"
Showing Reinforcing



TYPICAL POST SECTION (POST NO. 4)
1" = 1'-0"
(1/2 = 2^-15^ Break in wall alignment)

ALTERNATE NO. 1
SHEET 3 OF 4
NOISE WALL DETAILS
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015

FILENAME: B080496X2-SI4.dgn
SCALE: AS SHOWN

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER CARTER D. BROWN NO. 13978 10/26/18

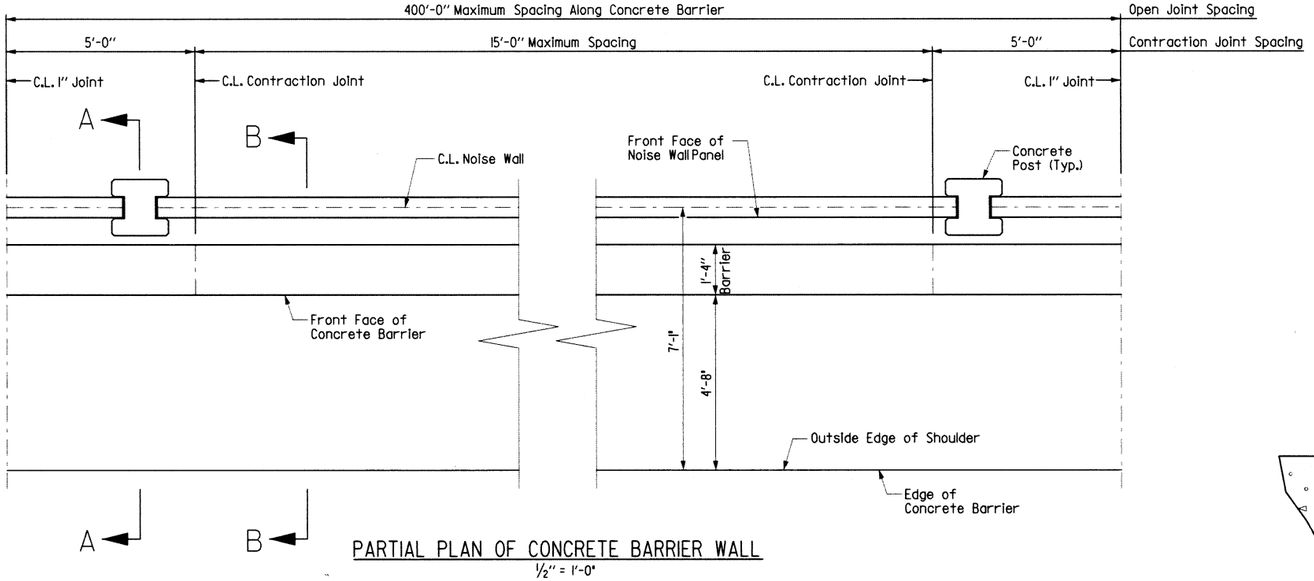
BRIDGE ENGINEER

DRAWING NO. 58329

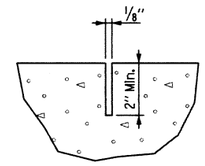
⚠ Revised total sheets number. 10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10/26/18			

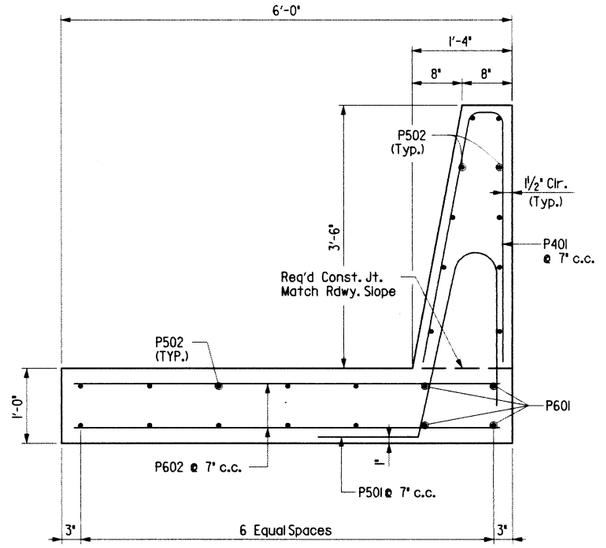
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080496	30	49
②	NOISE WALL DETAILS			58330



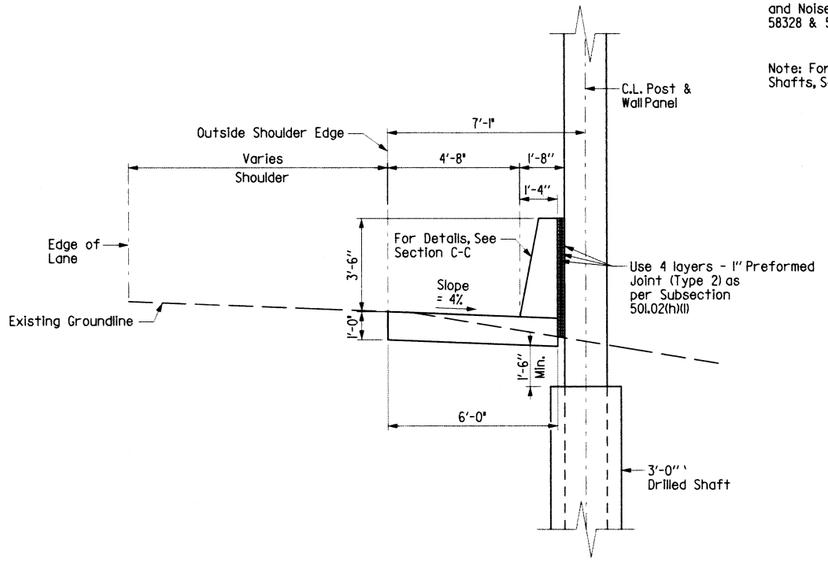
PARTIAL PLAN OF CONCRETE BARRIER WALL
½" = 1'-0"



CONTRACTION JOINT DETAIL
N.T.S.



SECTION C-C
1" = 1'-0"



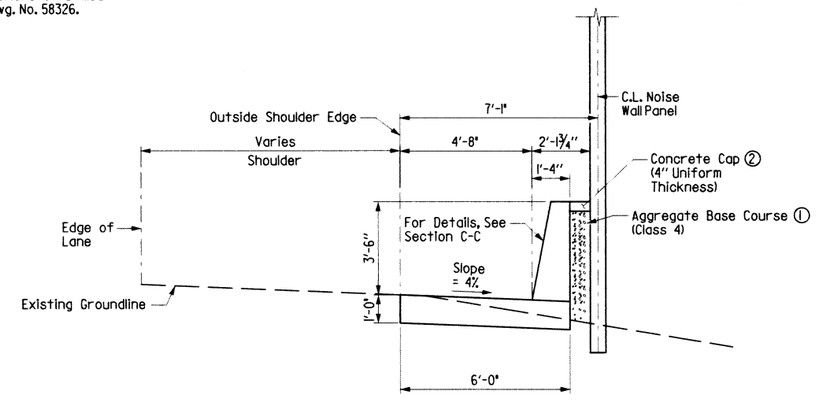
SECTION A-A
(TYPICAL SECTION @ POST)
⅜" = 1'-0"

Note: For Details of Concrete Post and Noise Wall Panels, See Dwg. Nos. 58328 & 58329.

Note: For locations of Drilled Shafts, See Dwg. No. 58326.

Note: 1" Preformed joint will not be paid for directly, but will be considered subsidiary to the item "Concrete Barrier Wall (Side Type Special)".

② The Concrete Cap shall be Class "S" concrete with a minimum 28-day compressive strenght f'c = 3500 psi. All work and materials required for the Concrete Cap will not be paid for directly, but will be considered subsidiary to the pay item "Concrete Barrier Wall (Side Type Special)".



SECTION B-B
(TYPICAL SECTION @ NOISE WALL PANEL)
⅜" = 1'-0"

① Aggregate Base Course (Class 4) will not be paid for directly, but will be considered subsidiary to the pay item "Concrete Barrier Wall (Side Type Special)".

BAR LIST - CONCRETE BARRIER WALL

MARK	P. D.	BENDING DIAGRAMS (Dimensions are out to out of bars)
P401	4"	6" p.d. 1'-11" 3¾" p.d. 2'-0" 1'-4" P501 — 4" p.d. 3'-3½" 12 2¼ 3'-4" 1'-0" P401
P501	3¾"	
P502	Str.	
P601	Str.	
P602	Str.	

ALTERNATE NO. 1
SHEET 4 OF 4
NOISE WALL DETAILS
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12320 CARTER C. BROWN 10/26/18
BRIDGE ENGINEER

DRAWN BY: DJ DATE: 08-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DJ DATE: 08-2015

FILENAME: B080496X2-SI5.dgn
SCALE: AS SHOWN

DRAWING NO. 58330

⚠ Revised total sheets number.
10/26/18 CDB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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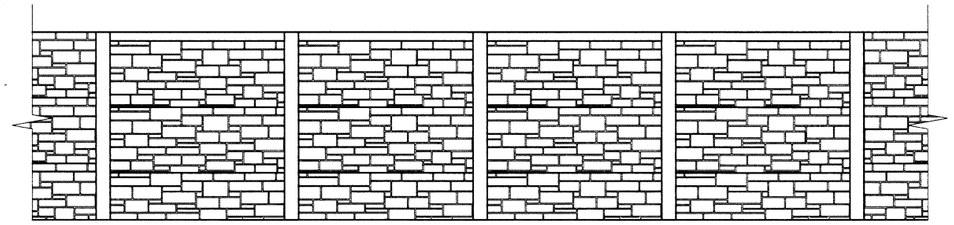
				JOB NO.		080496	31	49
				(2)	NOISE WALL ENHANCEMENT			58331



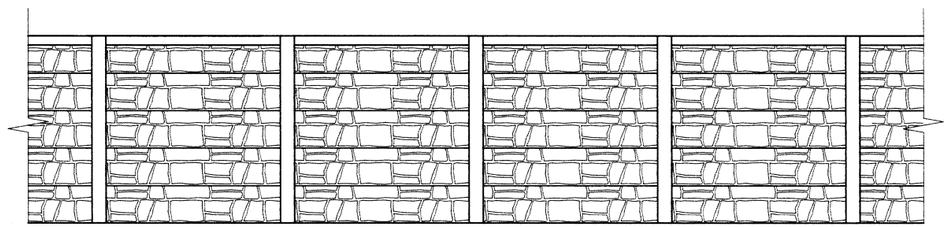
ELEVATION VIEW
(Looking from the Highway Side)
1/8" = 1'-0"

NOTES: HIGHWAY SIDE

The Highway side of the noise barrier panels will require a stain to all areas specified in SP Job 080496, "SOUND ABSORBING NOISE BARRIER".

The color of stain shall be Tan and shall match Fed Std. 595B, Color Chip No. 33522.

The pattern on the Highway side shall be Custom Rock Formliner, Ashlar Stone pattern or an approved equal.



ELEVATION VIEW
(Looking from the Community Side)
1/8" = 1'-0"

NOTES: COMMUNITY SIDE

The Community Side will require a Class 3 Textured Coating Finish which shall be applied to surfaces as specified in SP Job 080496, "SOUND ABSORBING NOISE BARRIER" and in accordance with Section 802.19.

The color of paint shall be Dark Tan and shall match Fed Std. 595B, Color Chip No. 30475.

The pattern on the Community side shall be Custom Rock Formliner, Dry Stack pattern or an approved equal.

ALTERNATE NO. 1

NOISE WALL ENHANCEMENT
INTERSTATE I-40 NOISE WALL
FAULKNER COUNTY

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13... CARTER D. BE... 10/26/18

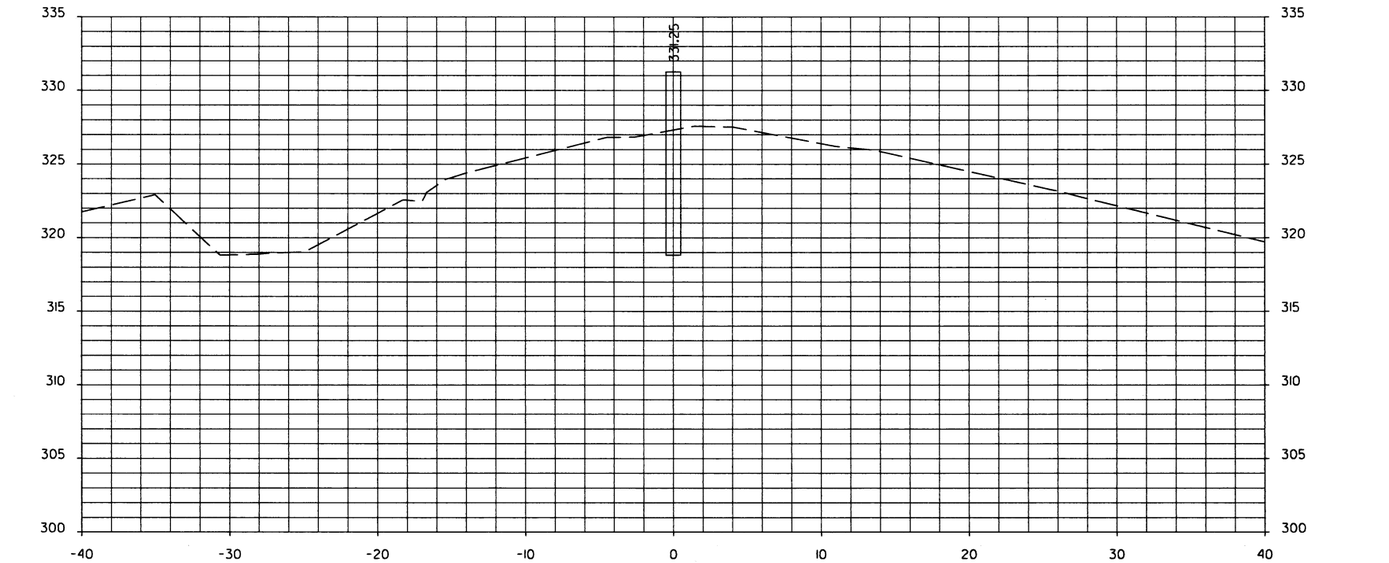
BRIDGE ENGINEER

DRAWN BY: DM DATE: 03-2015
CHECKED BY: CB DATE: 09-2015
DESIGNED BY: DM DATE: 03-2015

FILENAME: B080496X3_ENH.dgn
SCALE: 1" = 20'-0"

DRAWING NO. 58331

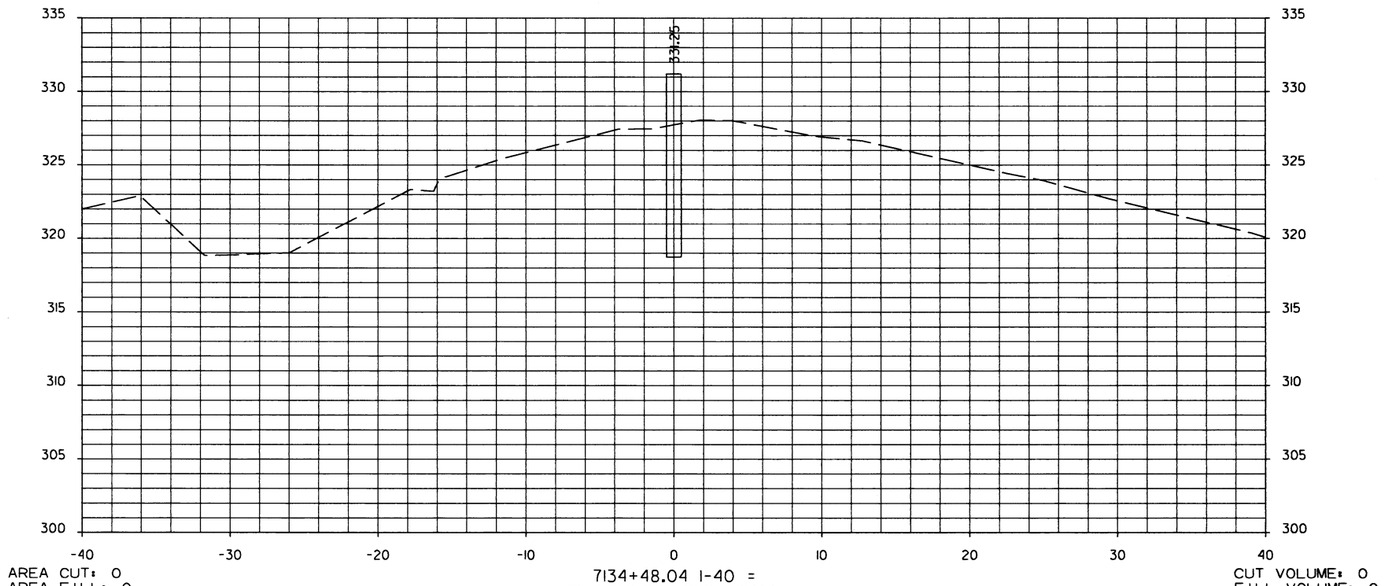
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	32	49
				(2)	CROSS SECTIONS			



AREA CUT: 0
AREA FILL: 0

7134+50.00

CUT VOLUME: 0
FILL VOLUME: 0



AREA CUT: 0
AREA FILL: 0

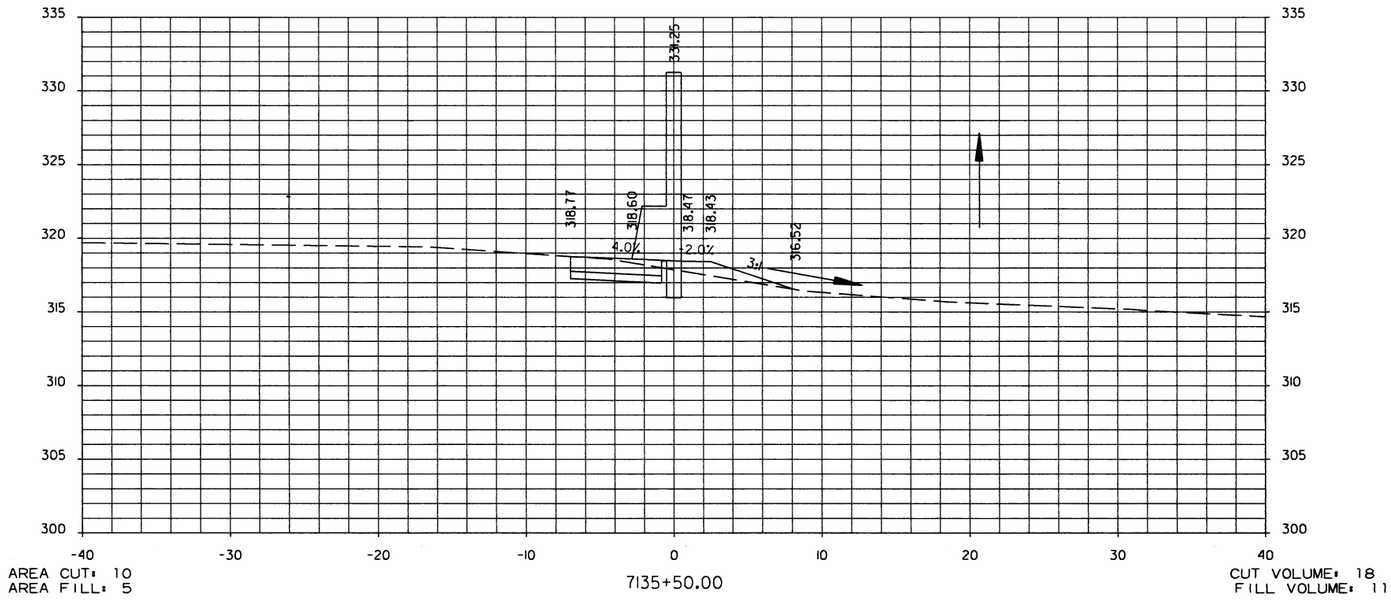
7134+48.04 I-40 =
7134+40.00 NOISE WALL

BEGIN CONSTRUCTION NOISE WALL STA. 7134+48.04

CUT VOLUME: 0
FILL VOLUME: 0

STA. 7134+48.04 TO STA. 7134+50.00
NOISE WALL

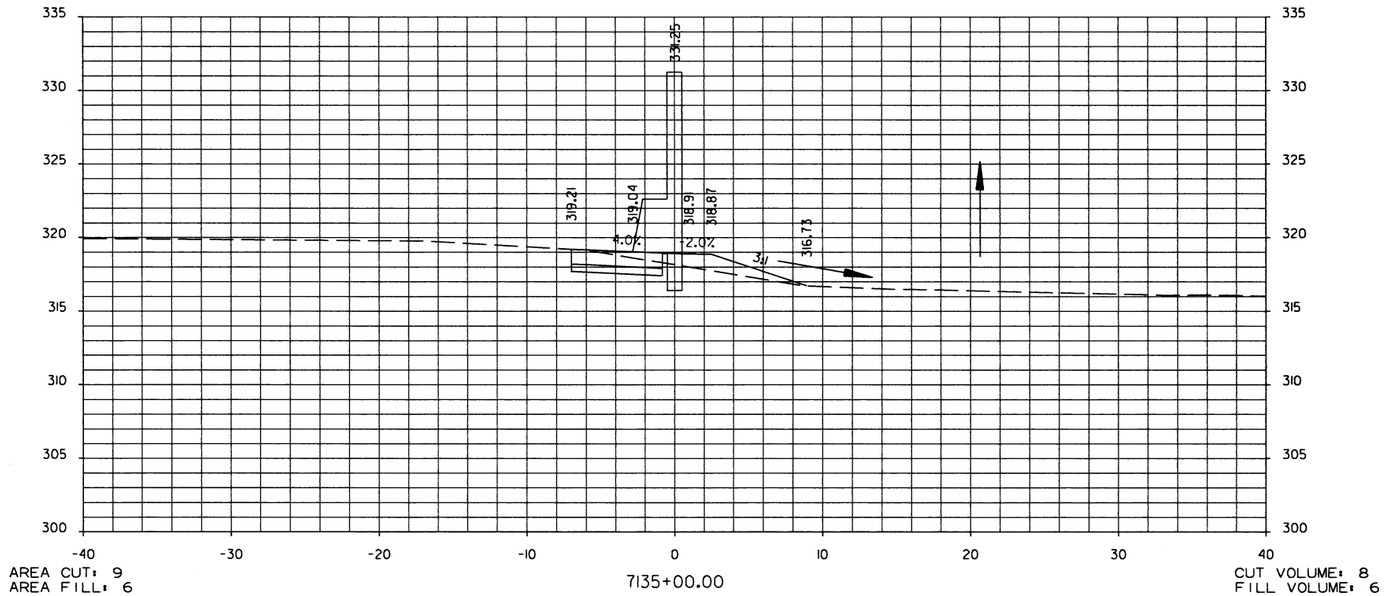
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	33	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 5

7135+50.00

CUT VOLUME: 18
FILL VOLUME: 11



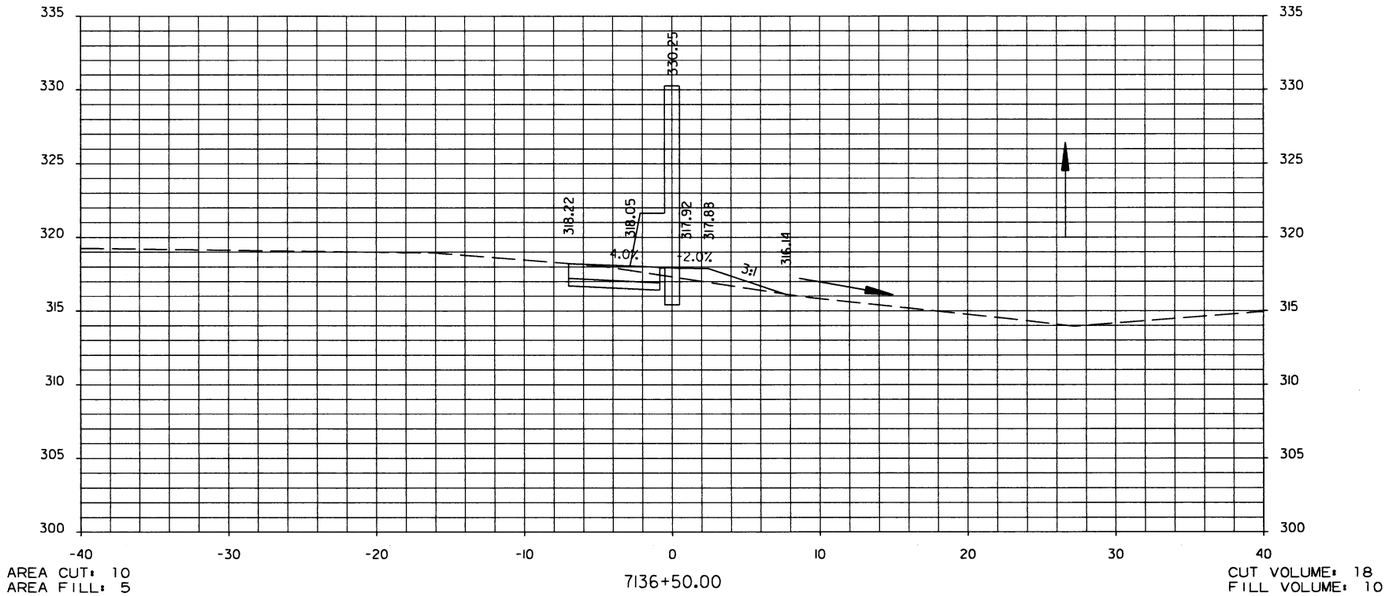
AREA CUT: 9
AREA FILL: 6

7135+00.00

CUT VOLUME: 8
FILL VOLUME: 6

STA. 7135+00.00 TO STA. 7135+50.00
NOISE WALL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	34	49
				(2)	CROSS SECTIONS			



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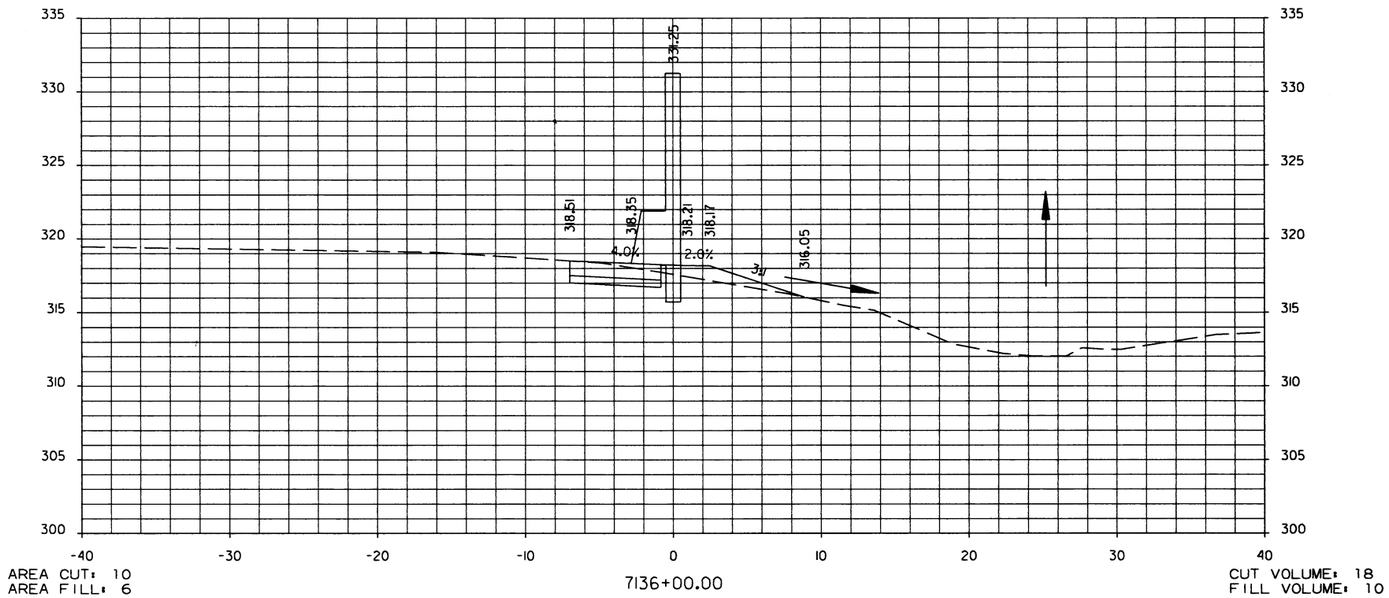
7136+50.00

CUT VOLUME: 18
FILL VOLUME: 10



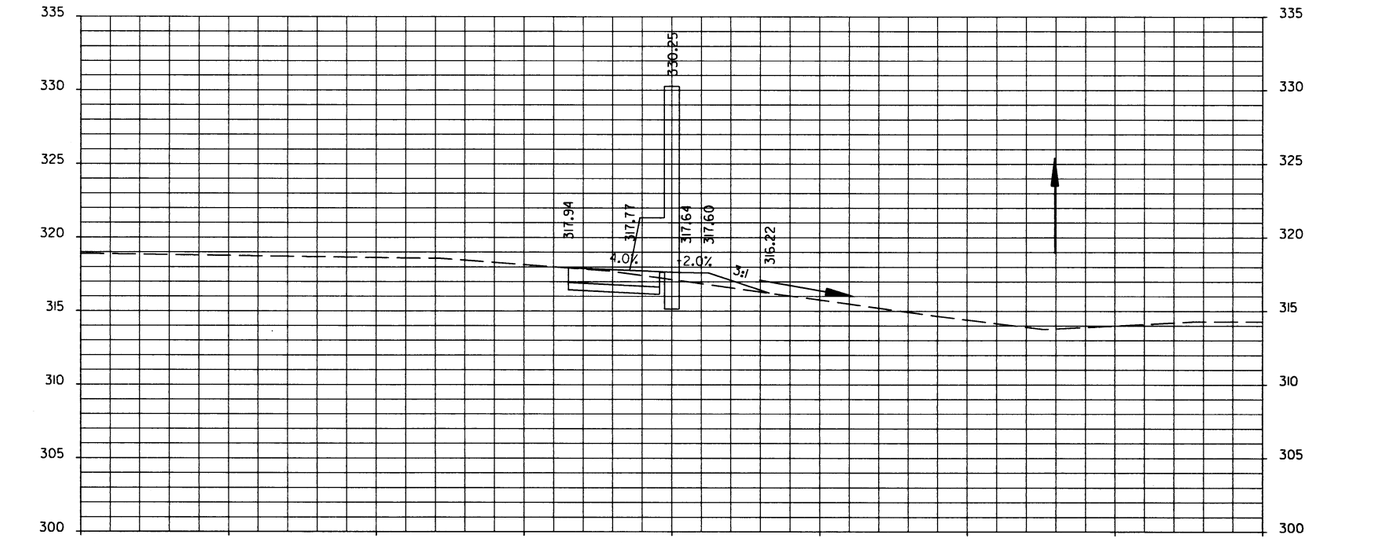
AREA CUT: 10
AREA FILL: 6

7136+00.00

CUT VOLUME: 18
FILL VOLUME: 10

STA. 7136+00.00 TO STA. 7136+50.00
NOISE WALL

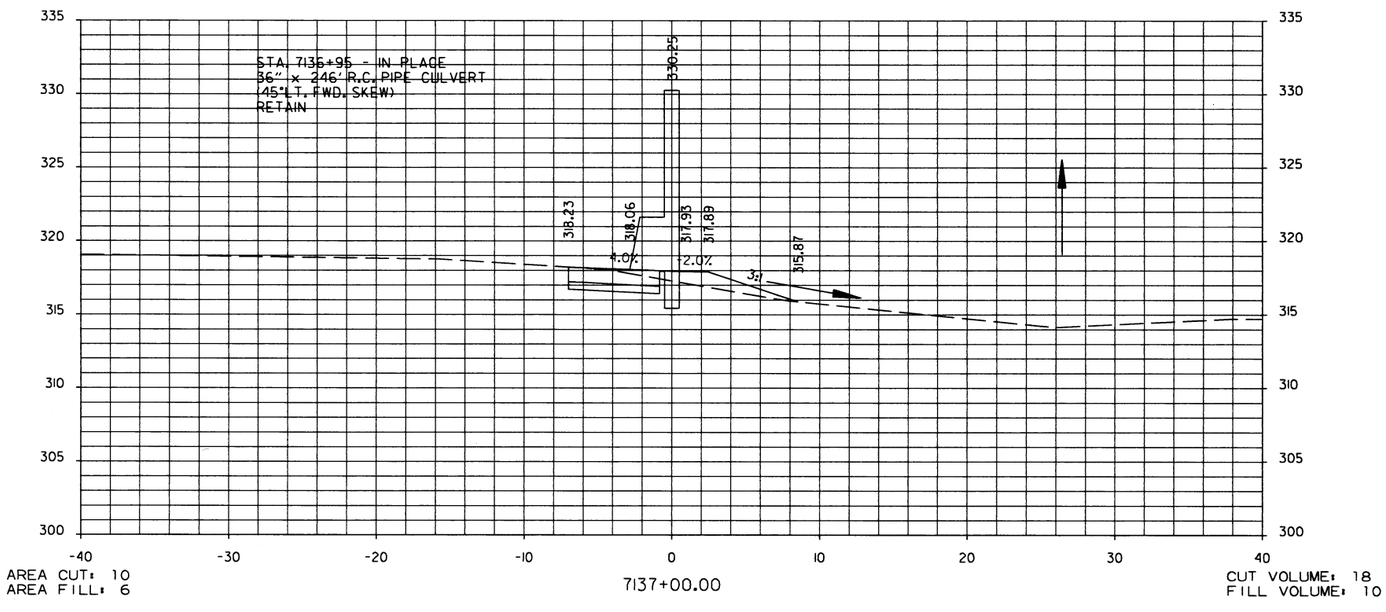
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	35	49
				(2) CROSS SECTIONS				



AREA CUT: 10
AREA FILL: 4

7137+50.00

CUT VOLUME: 19
FILL VOLUME: 9



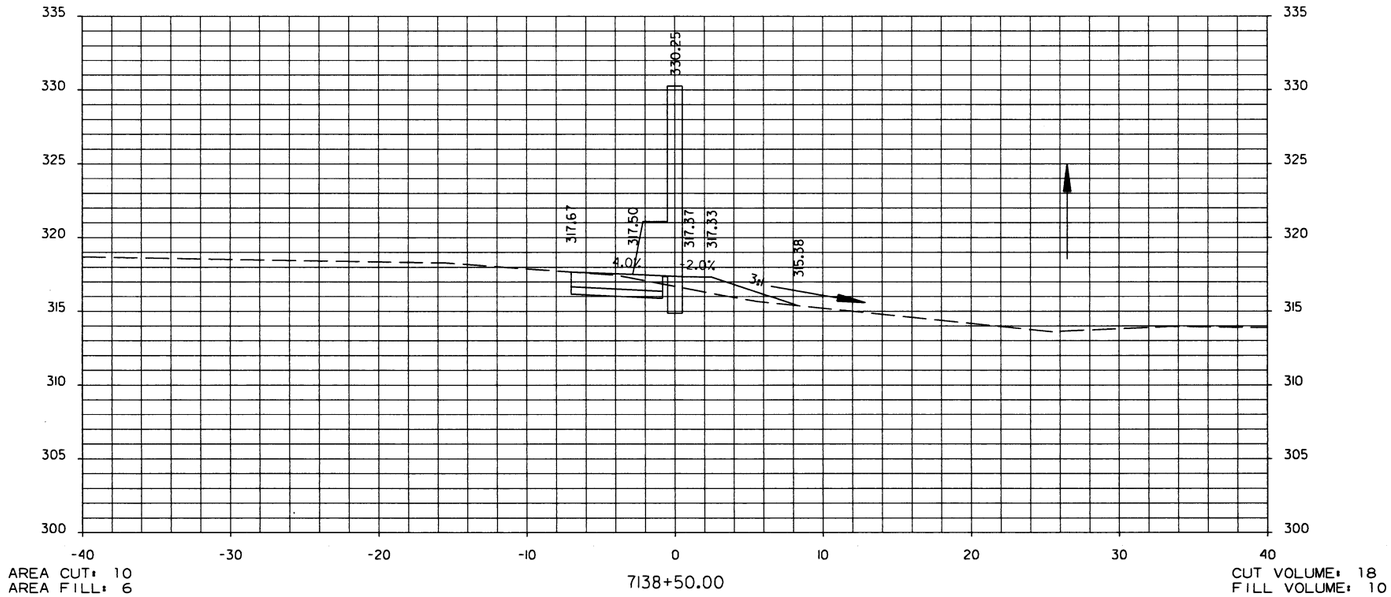
AREA CUT: 10
AREA FILL: 6

7137+00.00

CUT VOLUME: 18
FILL VOLUME: 10

STA. 7137+00.00 TO STA. 7137+50.00
NOISE WALL

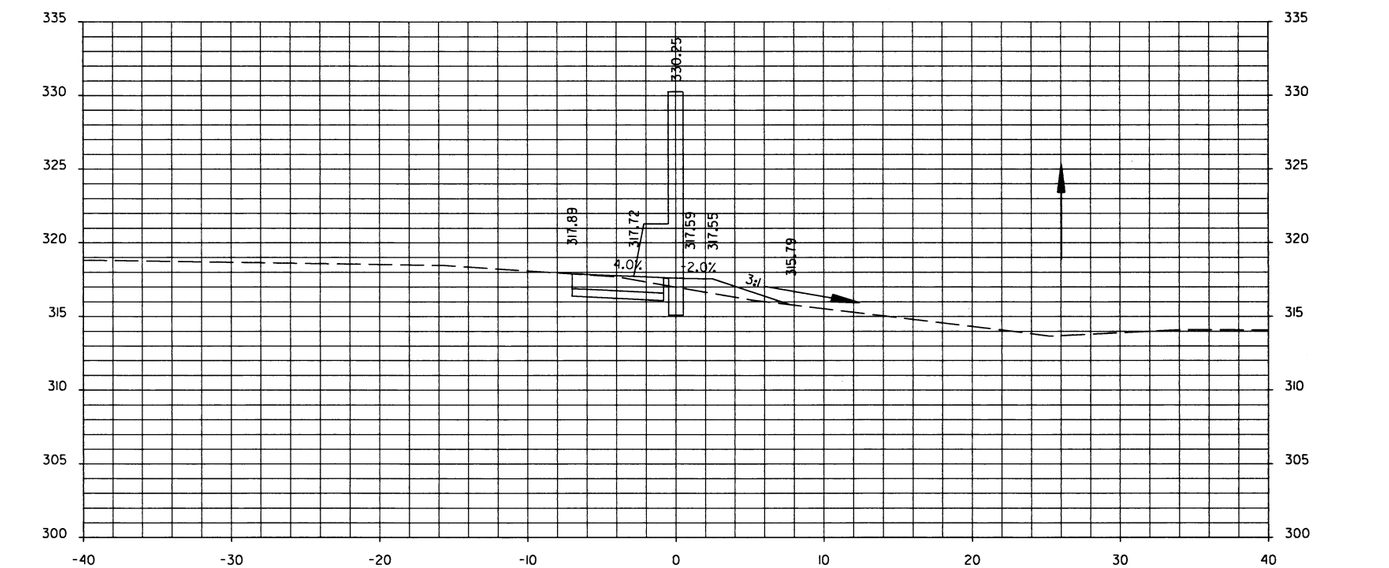
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	36	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 6

7138+50.00

CUT VOLUME: 18
FILL VOLUME: 10



AREA CUT: 10
AREA FILL: 5

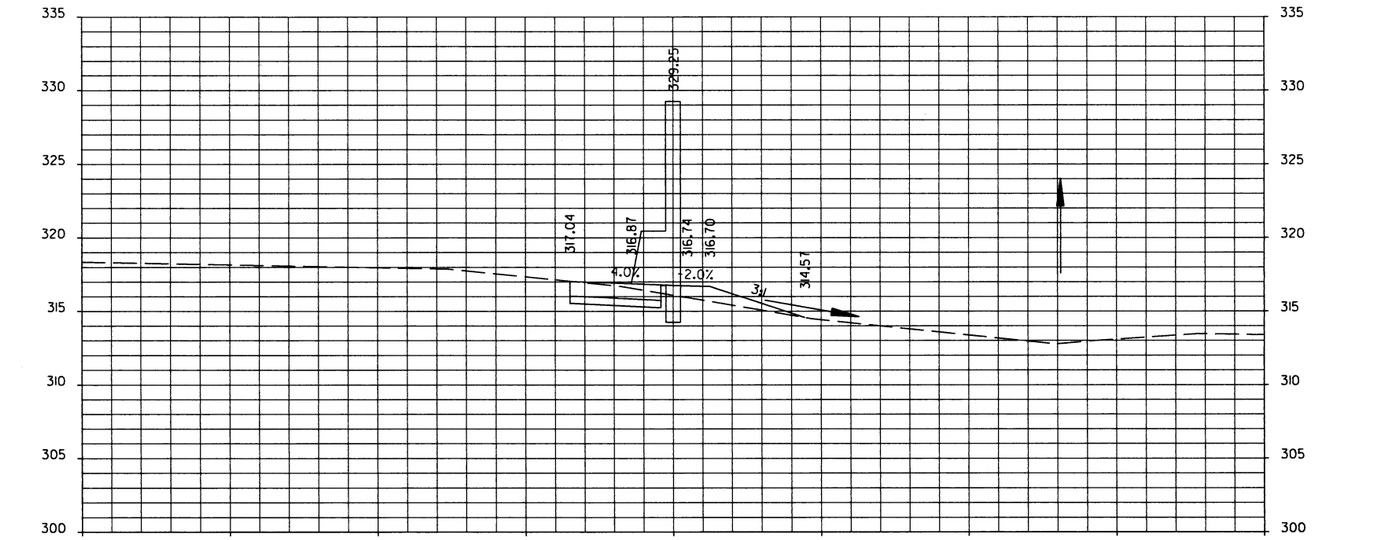
7138+00.00

CUT VOLUME: 19
FILL VOLUME: 8

STA. 7138+00.00 TO STA. 7138+50.00
NOISE WALL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	37	49

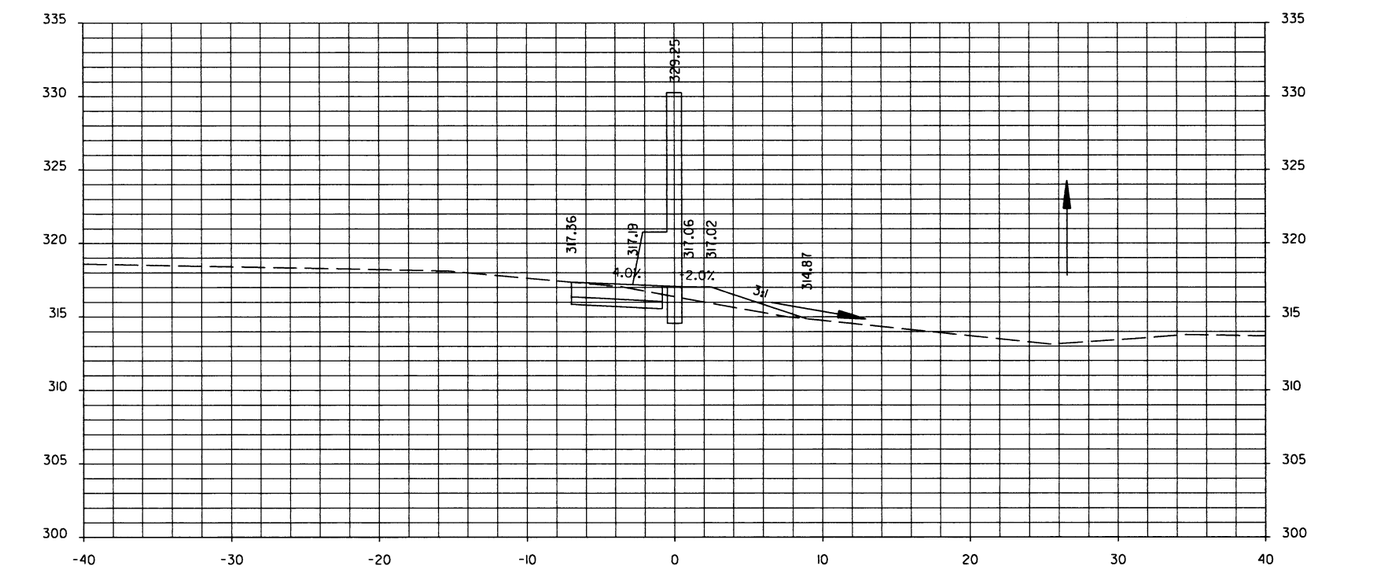
(2) CROSS SECTIONS



AREA CUT: 10
AREA FILL: 6

7139+50.00

CUT VOLUME: 18
FILL VOLUME: 11



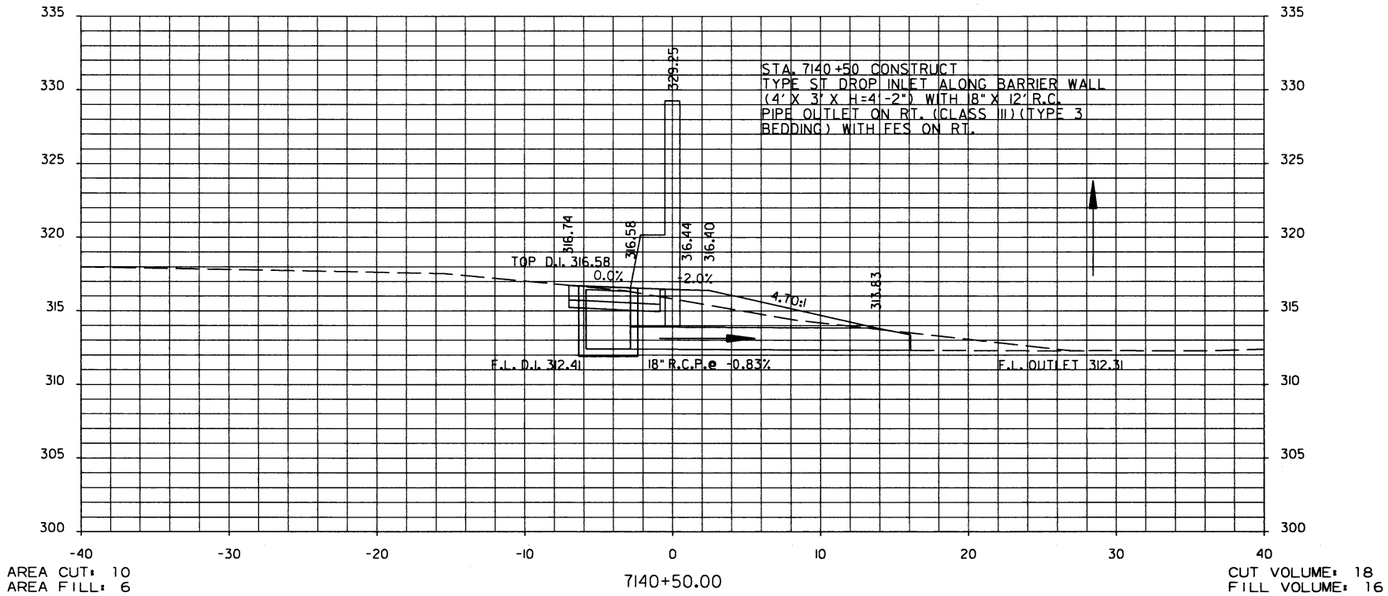
AREA CUT: 10
AREA FILL: 6

7139+00.00

CUT VOLUME: 18
FILL VOLUME: 12

STA. 7139+00.00 TO STA. 7139+50.00
NOISE WALL

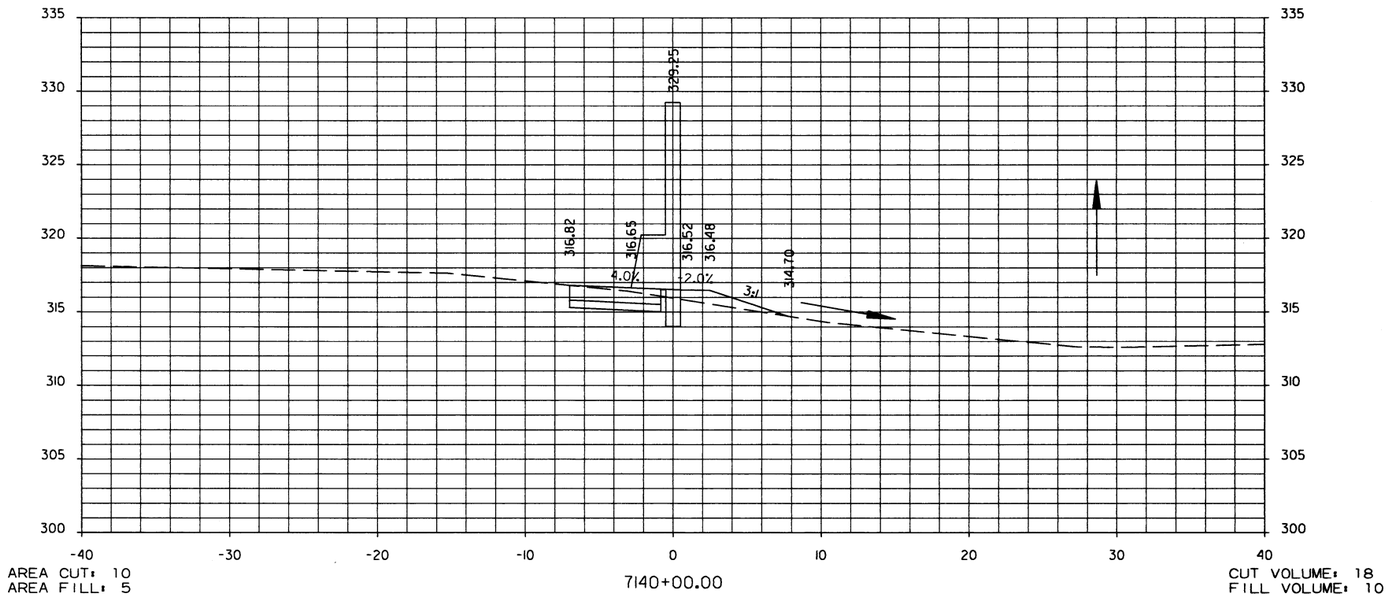
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	38	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 6

7140+50.00

CUT VOLUME: 18
FILL VOLUME: 16



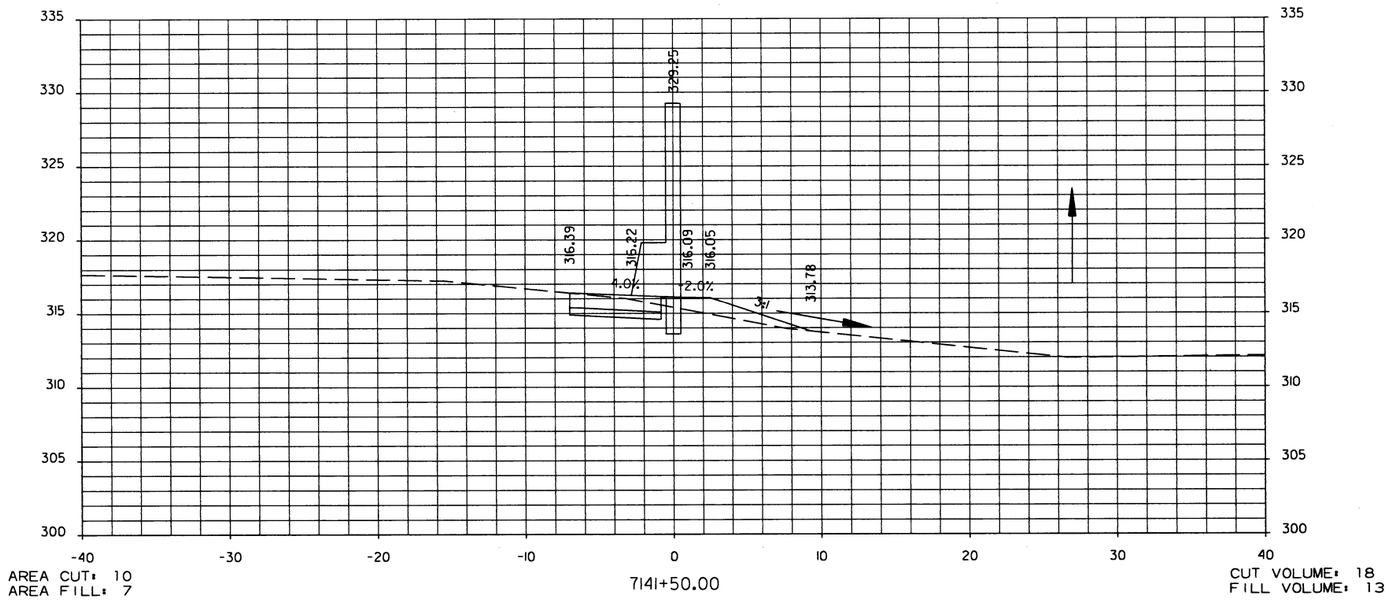
AREA CUT: 10
AREA FILL: 5

7140+00.00

CUT VOLUME: 18
FILL VOLUME: 10

STA. 7140+00.00 TO STA. 7140+50.00
NOISE WALL

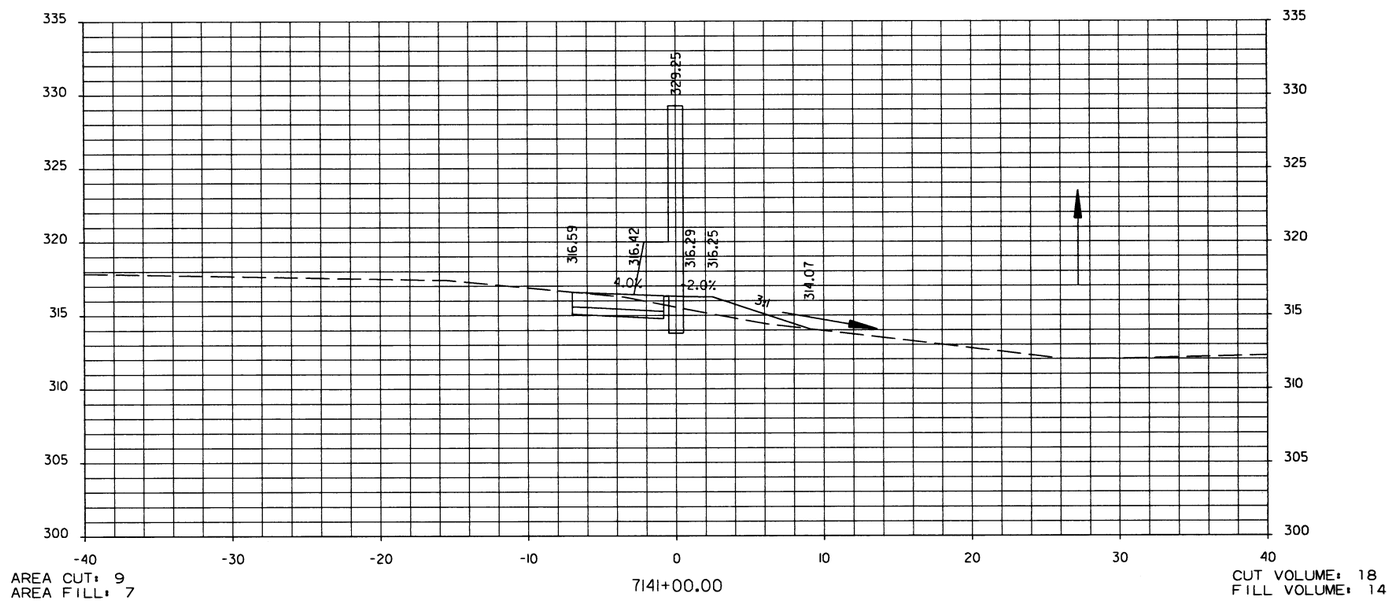
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	39	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 7

7141+50.00

CUT VOLUME: 18
FILL VOLUME: 13



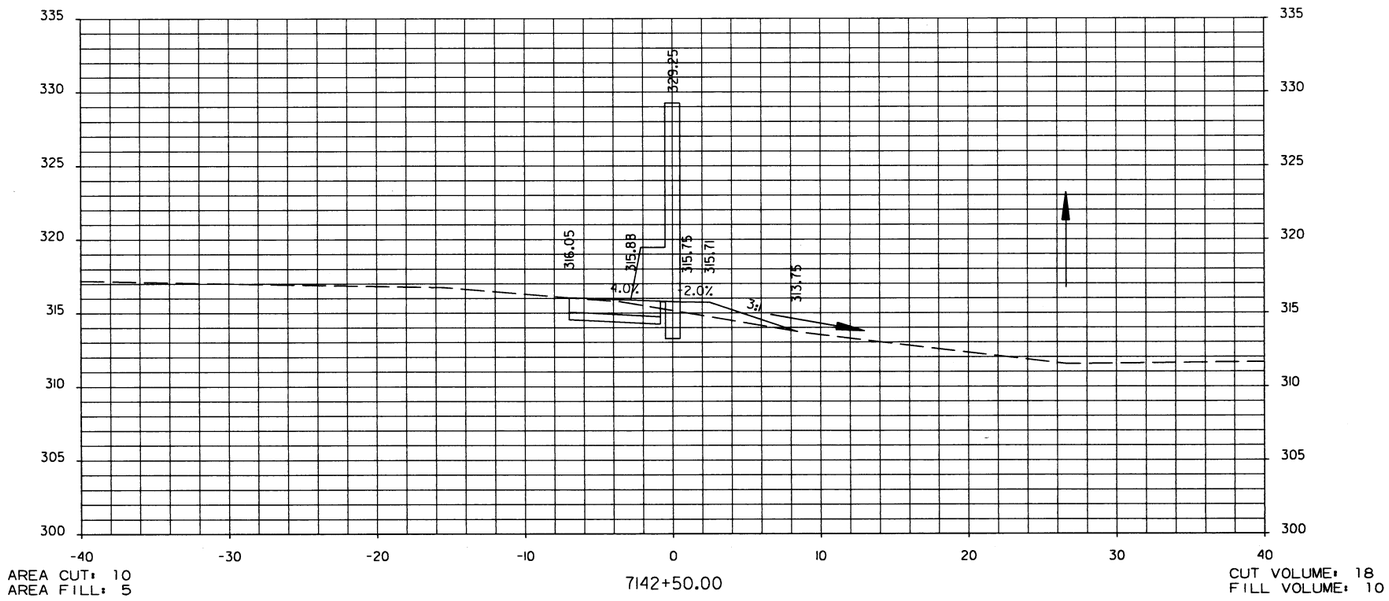
AREA CUT: 9
AREA FILL: 7

7141+00.00

CUT VOLUME: 18
FILL VOLUME: 14

STA. 7141+00.00 TO STA. 7141+50.00
NOISE WALL

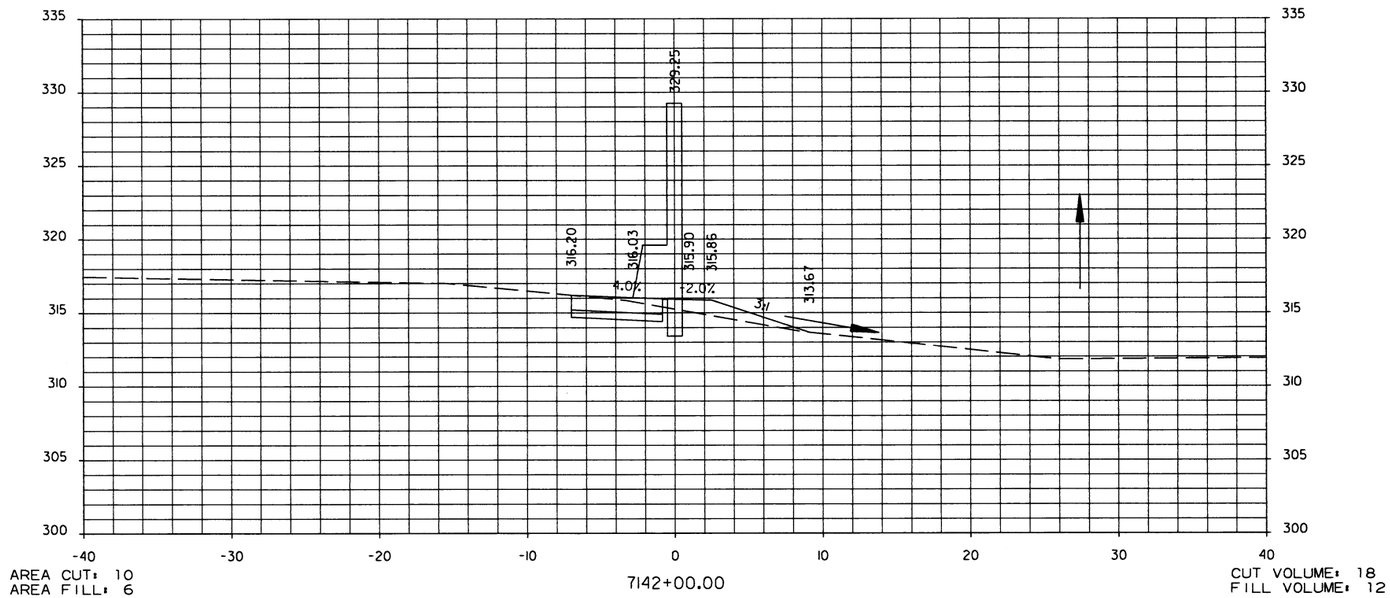
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	40	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 5

7142+50.00

CUT VOLUME: 18
FILL VOLUME: 10



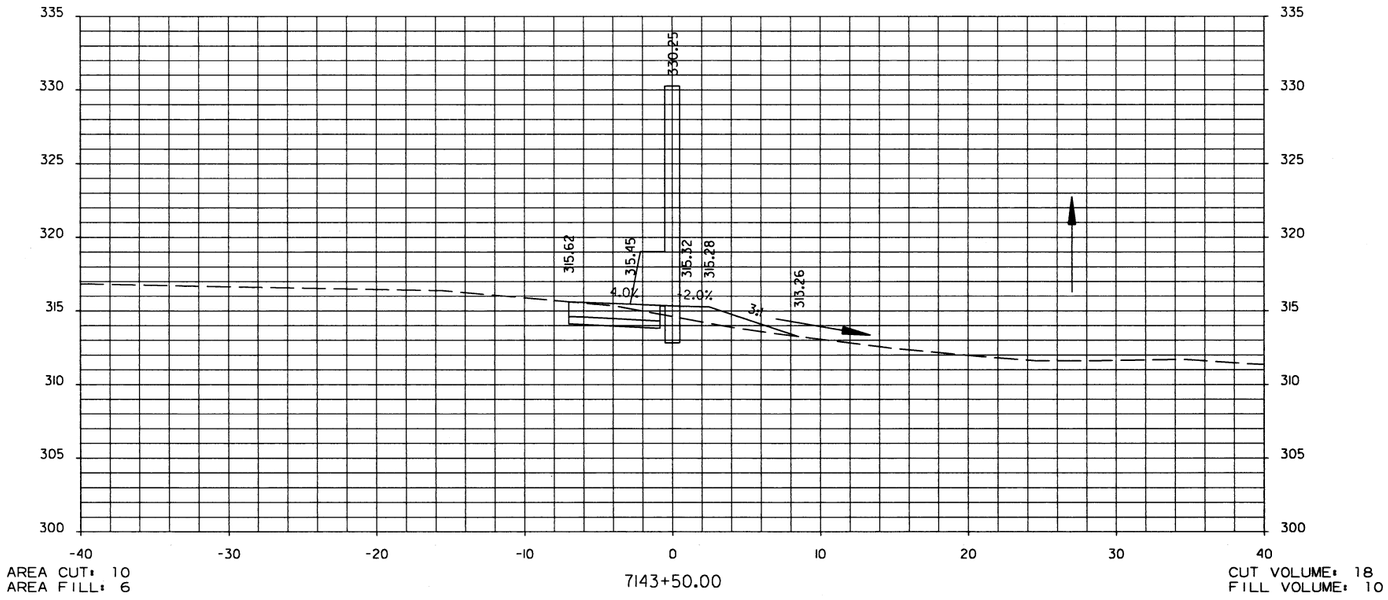
AREA CUT: 10
AREA FILL: 6

7142+00.00

CUT VOLUME: 18
FILL VOLUME: 12

STA. 7142+00.00 TO STA. 7142+50.00
NOISE WALL

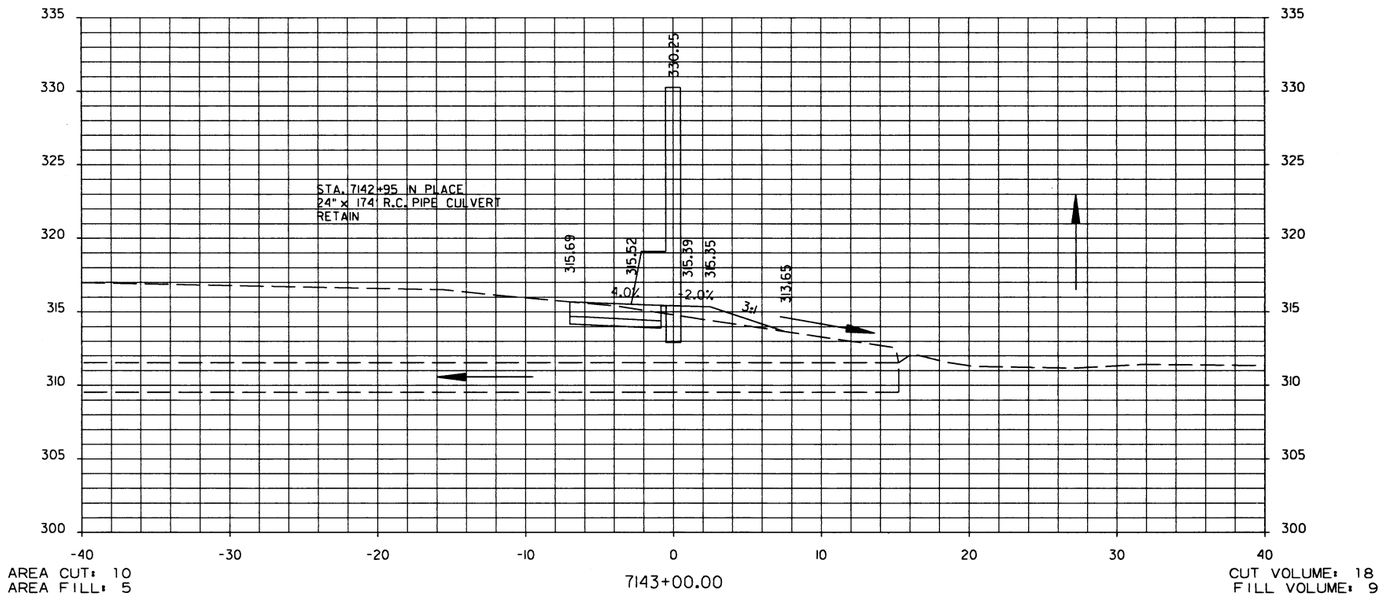
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	41	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 6

7143+50.00

CUT VOLUME: 18
FILL VOLUME: 10



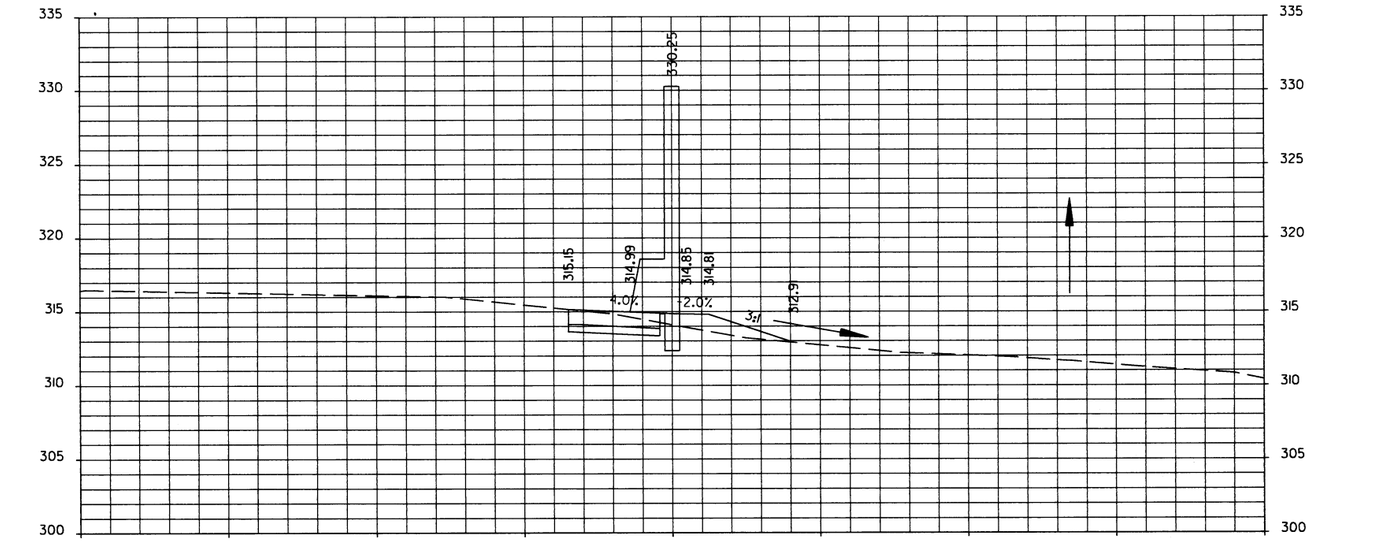
AREA CUT: 10
AREA FILL: 5

7143+00.00

CUT VOLUME: 18
FILL VOLUME: 9

STA. 7143+00.00 TO STA. 7143+50.00
NOISE WALL

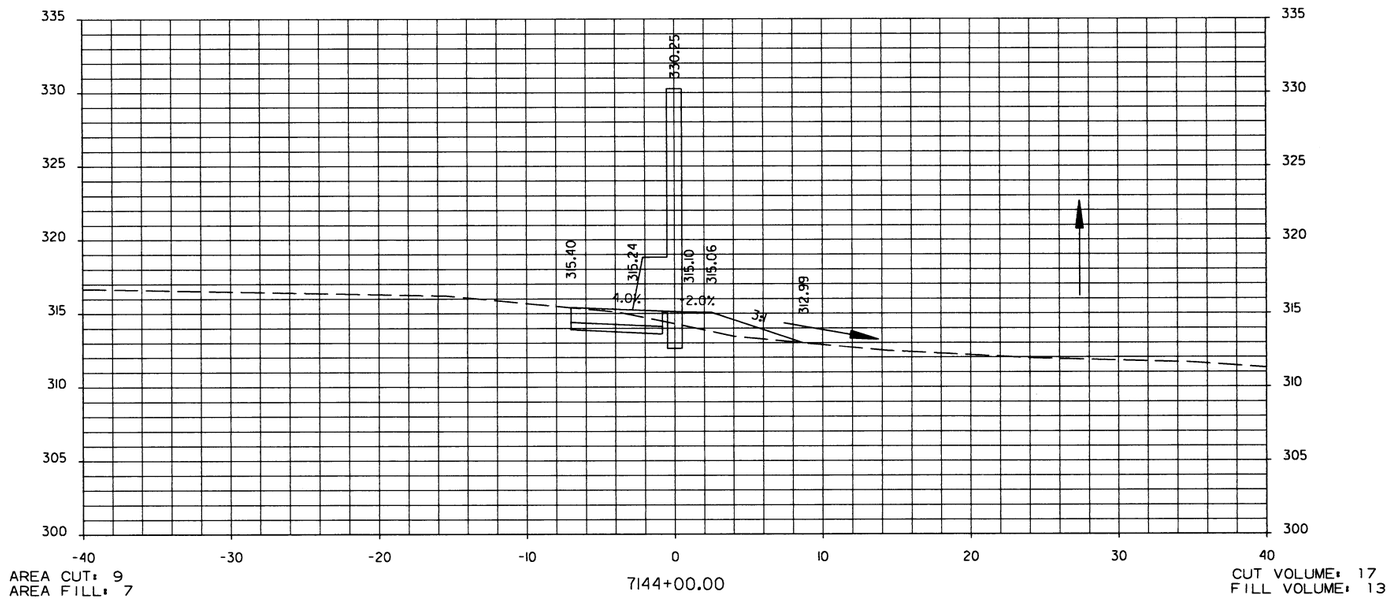
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	42	49
				(2)	CROSS SECTIONS			



AREA CUT: 9
AREA FILL: 6

7144+50.00

CUT VOLUME: 17
FILL VOLUME: 13



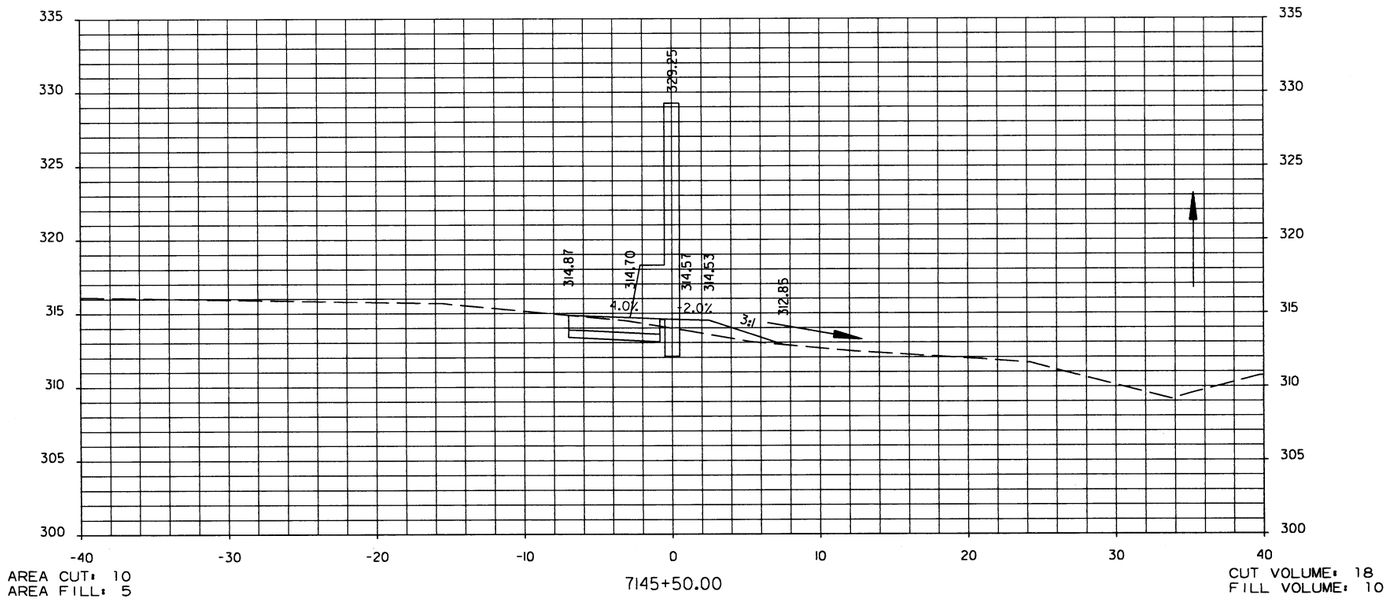
AREA CUT: 9
AREA FILL: 7

7144+00.00

CUT VOLUME: 17
FILL VOLUME: 13

STA. 7144+00.00 TO STA. 7144+50.00
NOISE WALL

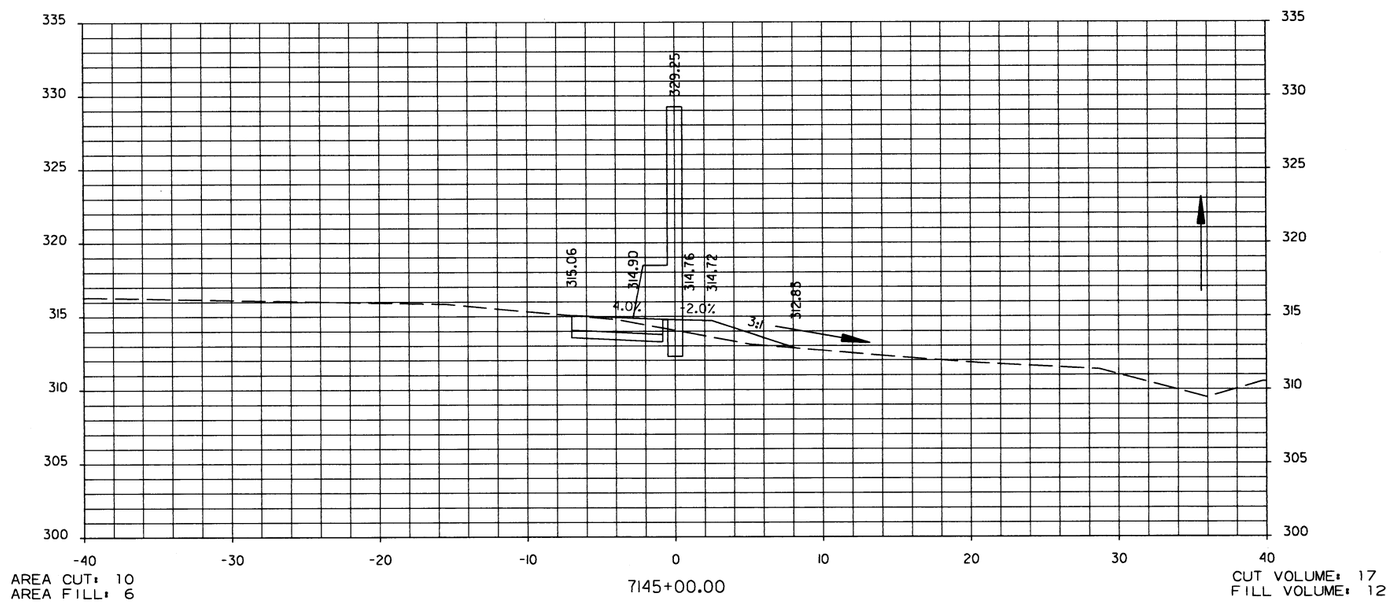
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	43	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 5

7145+50.00

CUT VOLUME: 18
FILL VOLUME: 10



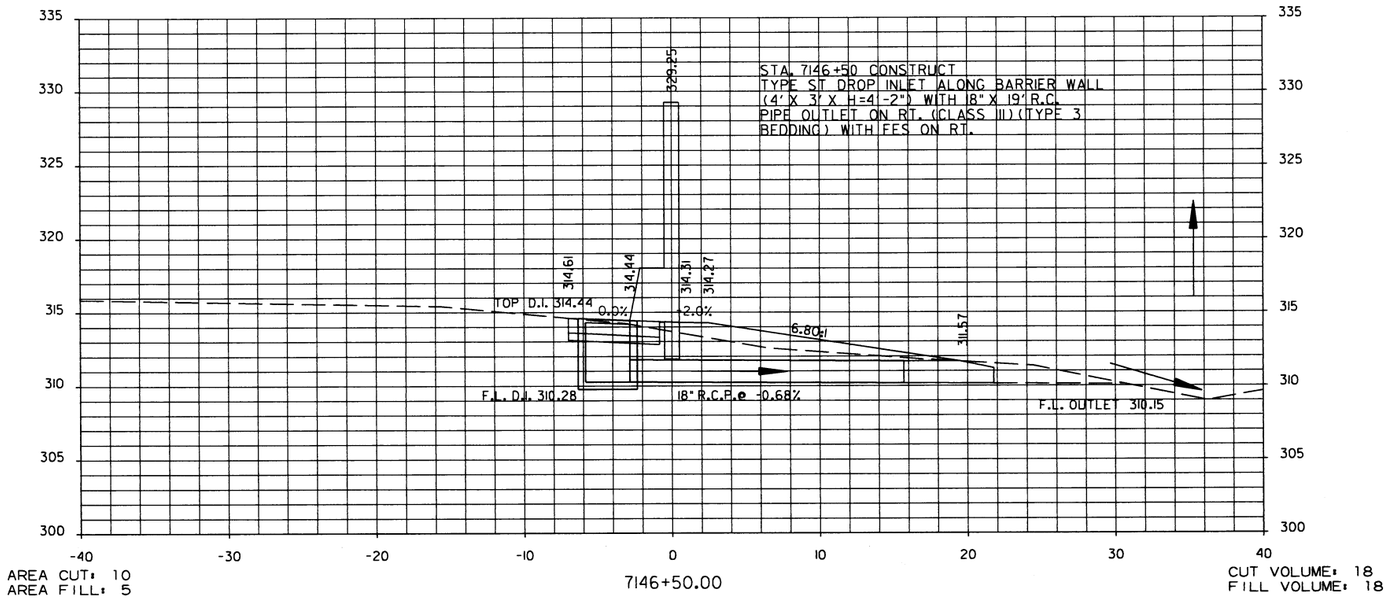
AREA CUT: 10
AREA FILL: 6

7145+00.00

CUT VOLUME: 17
FILL VOLUME: 12

STA. 7145+00.00 TO STA. 7145+50.00
NOISE WALL

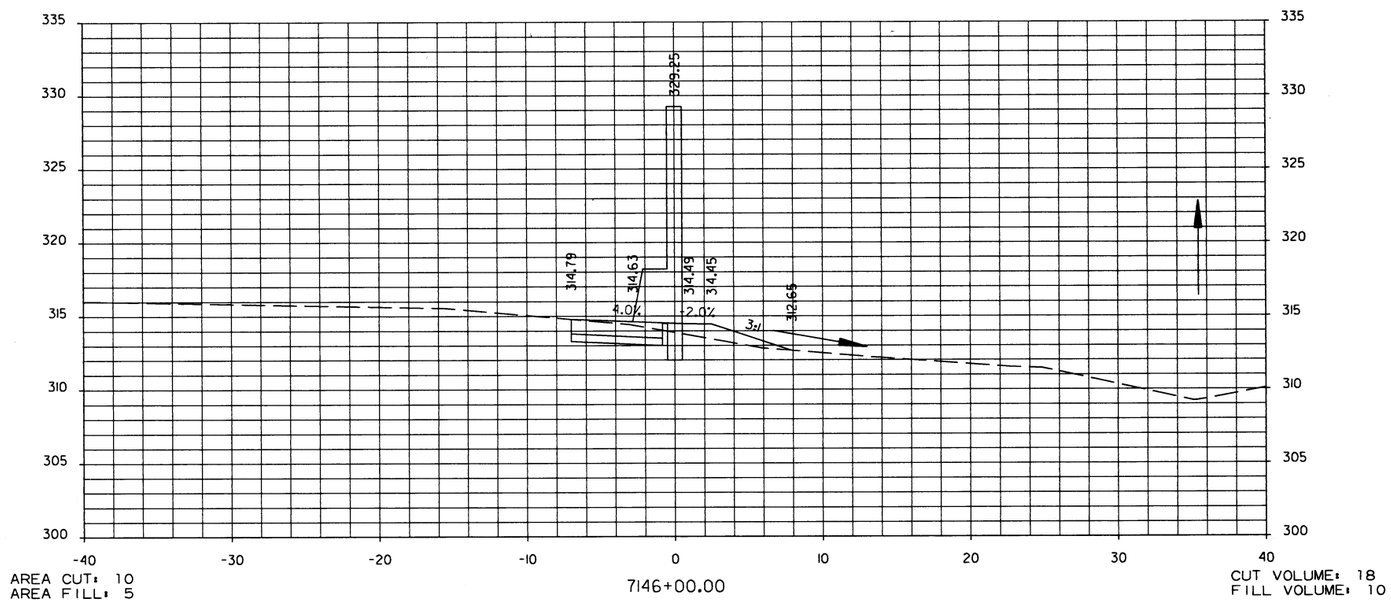
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	44	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 5

7146+50.00

CUT VOLUME: 18
FILL VOLUME: 18



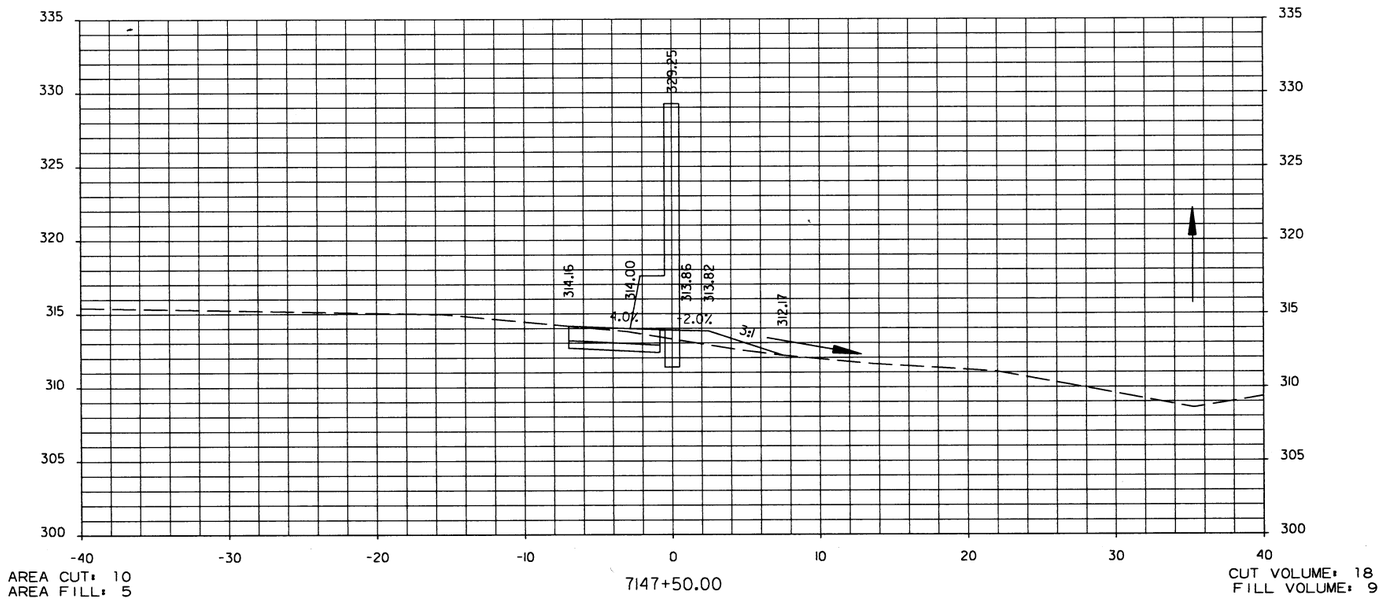
AREA CUT: 10
AREA FILL: 5

7146+00.00

CUT VOLUME: 18
FILL VOLUME: 10

STA. 7146+00.00 TO STA. 7146+50.00
NOISE WALL

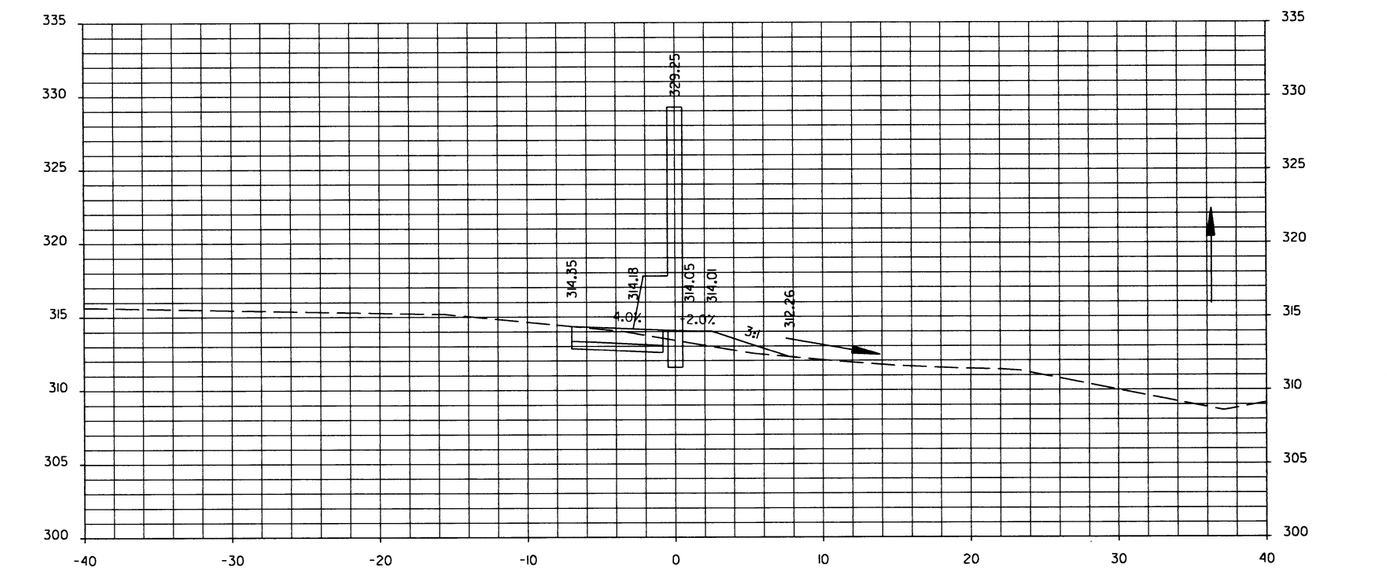
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	45	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 5

7147+50.00

CUT VOLUME: 18
FILL VOLUME: 9



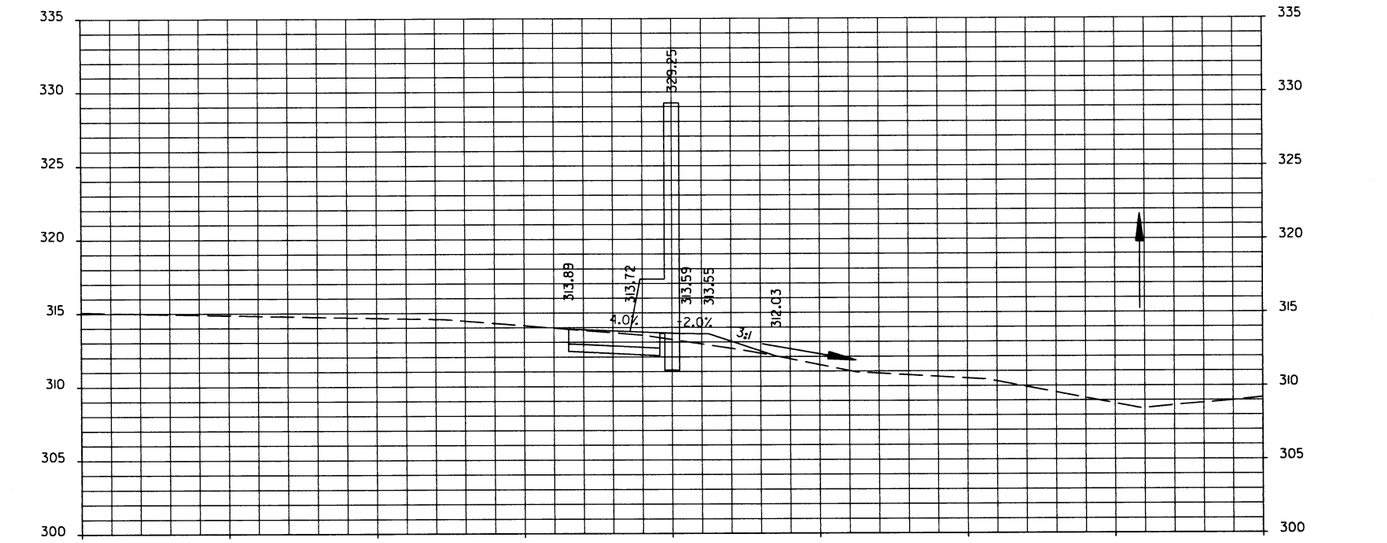
AREA CUT: 10
AREA FILL: 5

7147+00.00

CUT VOLUME: 18
FILL VOLUME: 18

STA. 7147+00.00 TO STA. 7147+50.00
NOISE WALL

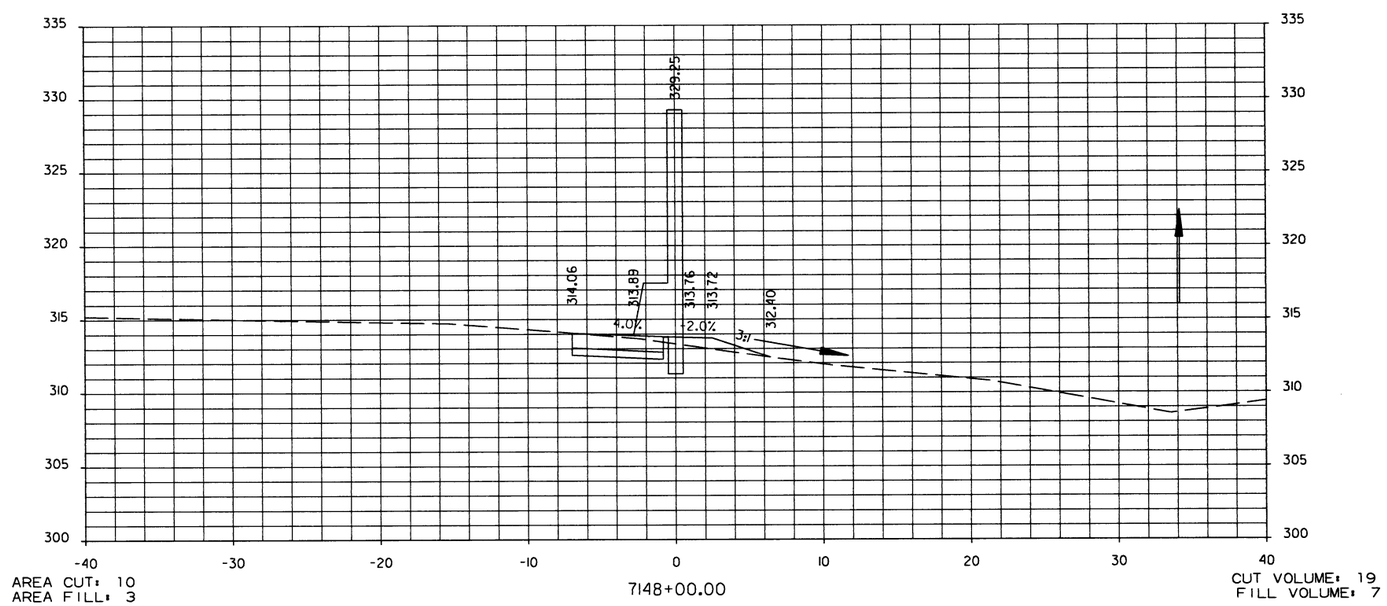
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	46	49
				(2) CROSS SECTIONS				



AREA CUT: 10
AREA FILL: 3

7148+50.00

CUT VOLUME: 19
FILL VOLUME: 6



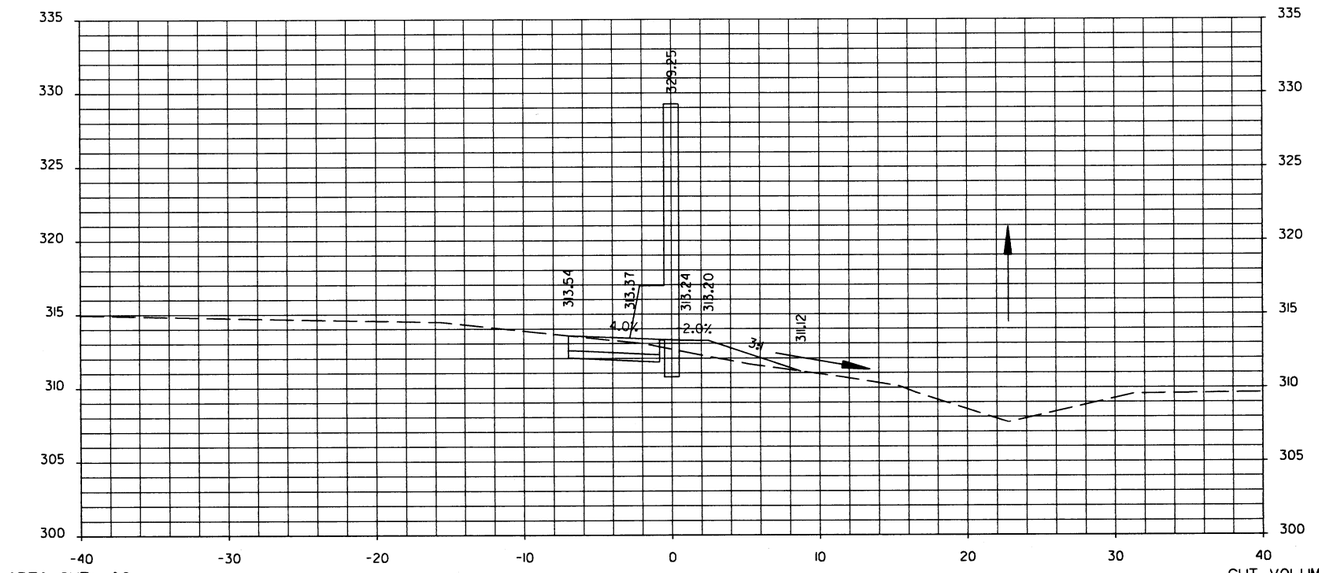
AREA CUT: 10
AREA FILL: 3

7148+00.00

CUT VOLUME: 19
FILL VOLUME: 7

STA. 7148+00.00 TO STA. 7148+50.00
NOISE WALL

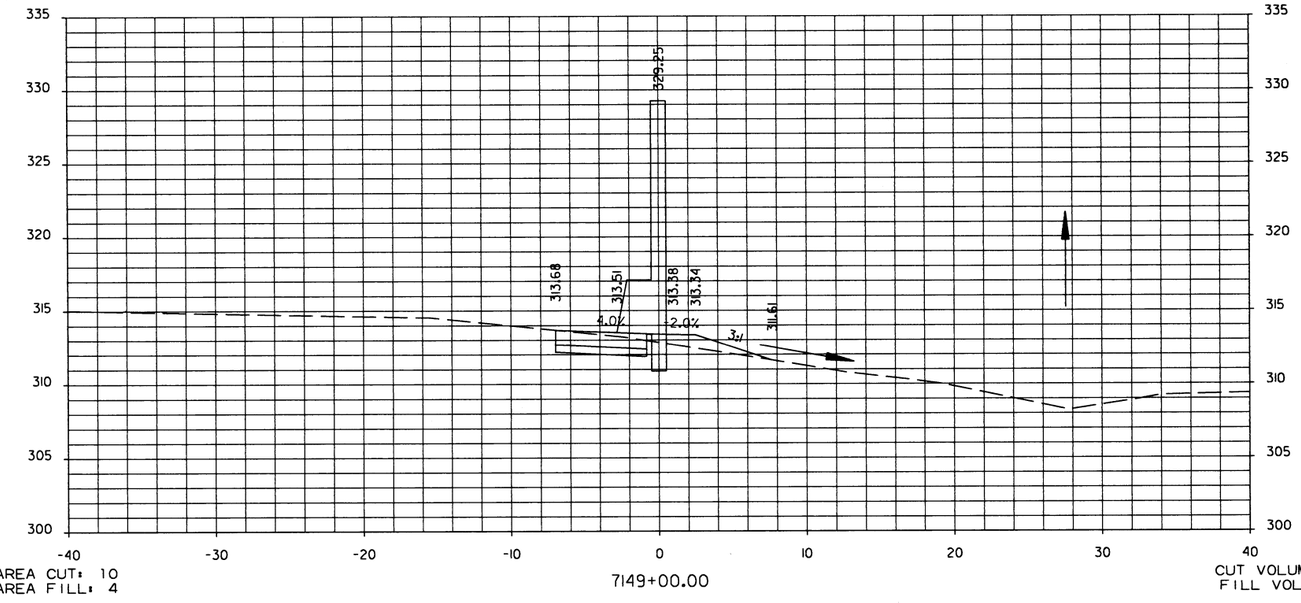
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	47	49
				(2)	CROSS SECTIONS			



AREA CUT: 10
AREA FILL: 6

7149+50.00

CUT VOLUME: 18
FILL VOLUME: 10



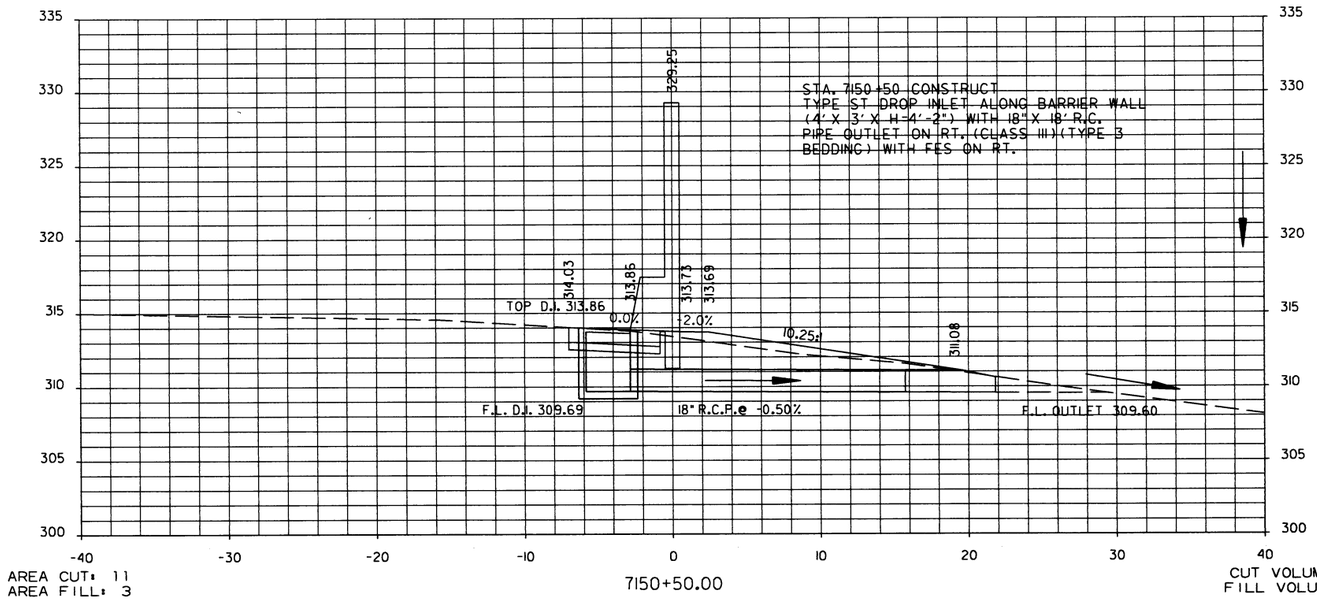
AREA CUT: 10
AREA FILL: 4

7149+00.00

CUT VOLUME: 19
FILL VOLUME: 7

STA. 7149+00.00 TO STA. 7149+50.00
NOISE WALL

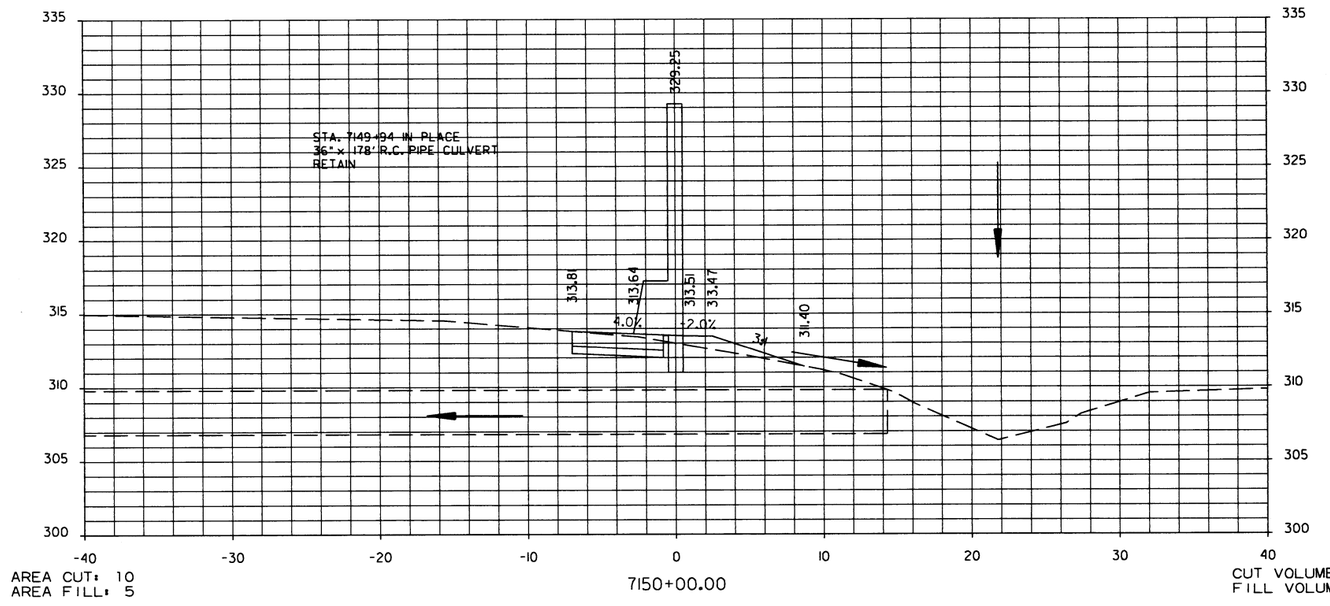
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	48	49
				(2)	CROSS SECTIONS			



AREA CUT: 11
AREA FILL: 3

7150+50.00

CUT VOLUME: 19
FILL VOLUME: 12



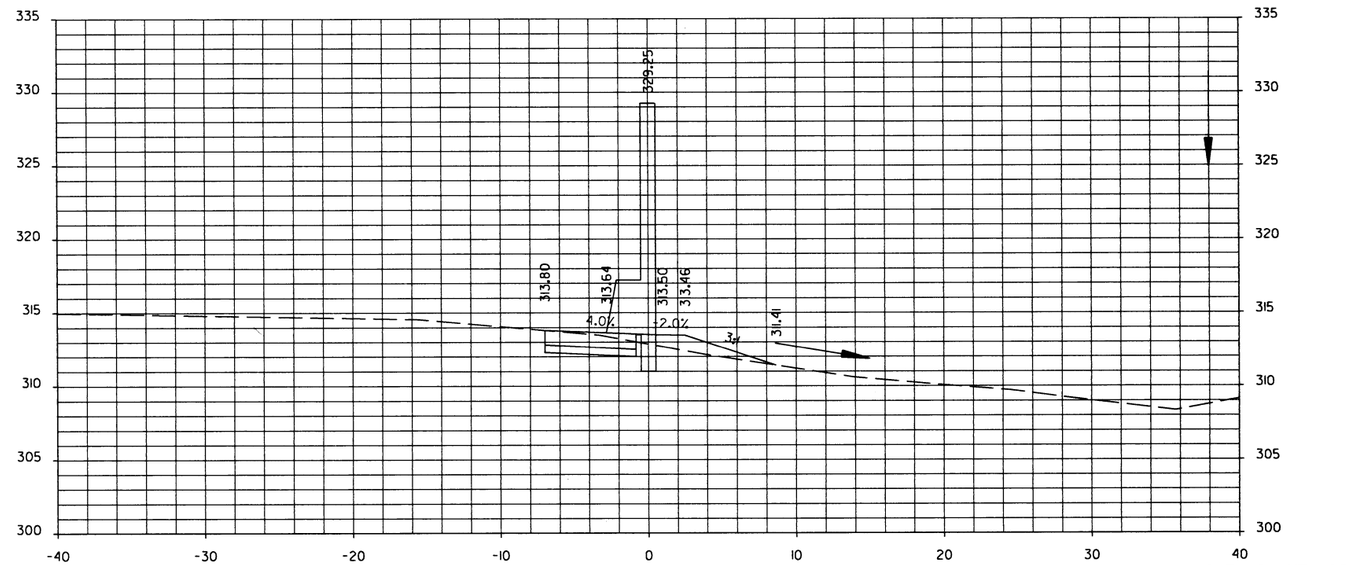
AREA CUT: 10
AREA FILL: 5

7150+00.00

CUT VOLUME: 18
FILL VOLUME: 10

STA. 7150+00.00 TO STA. 7150+50.00
NOISE WALL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-26-18				6	ARK.			
				JOB NO.		080496	49	49
				(2)	CROSS SECTIONS			



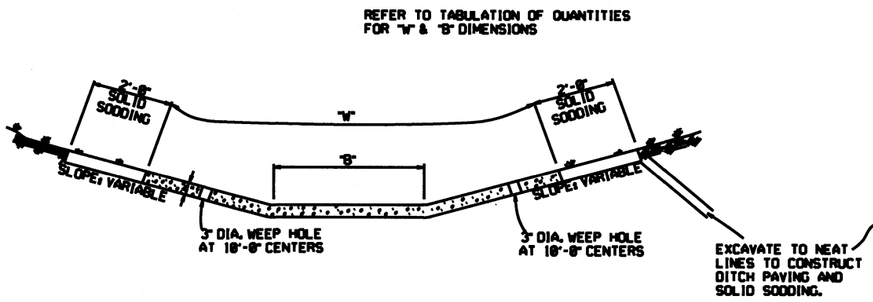
AREA CUT: 10
AREA FILL: 6

7151+00.00

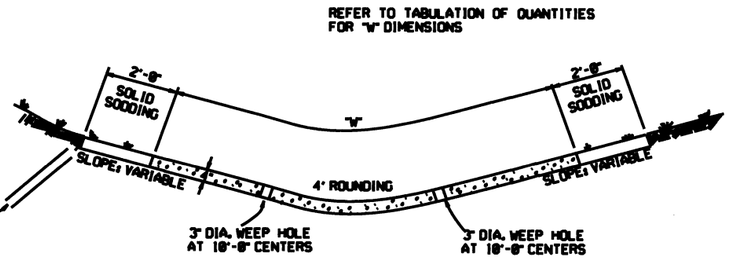
CUT VOLUME: 19
FILL VOLUME: 13

END CONSTRUCTION STA. 7151+00

STA. 7151+00.00 TO STA. 7151+00.00
NOISE WALL

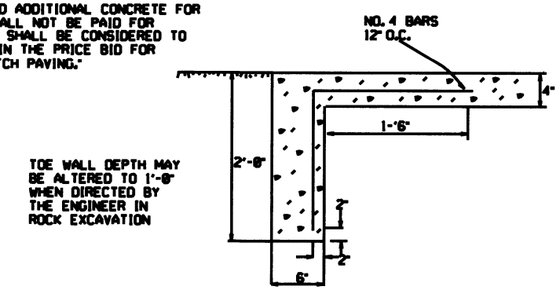


TYPE A

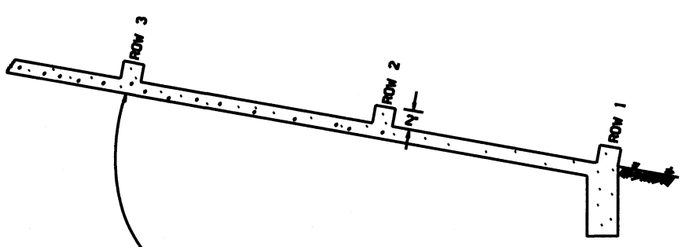


TYPE B

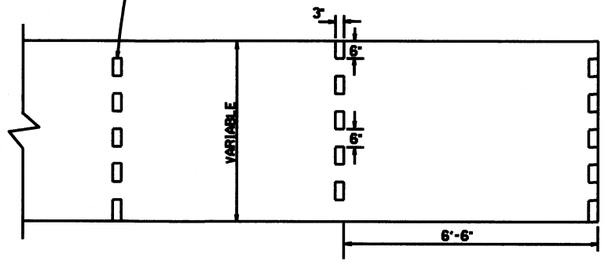
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

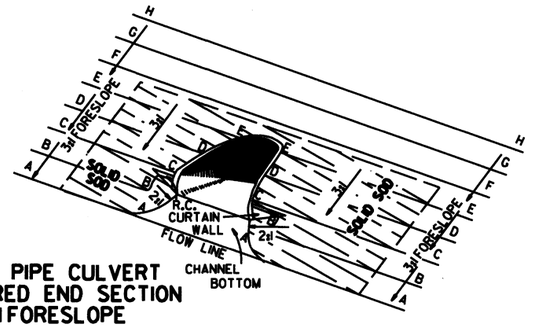
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	661-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	642-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	598-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

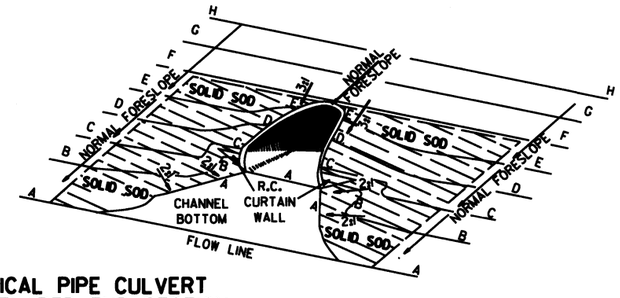
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

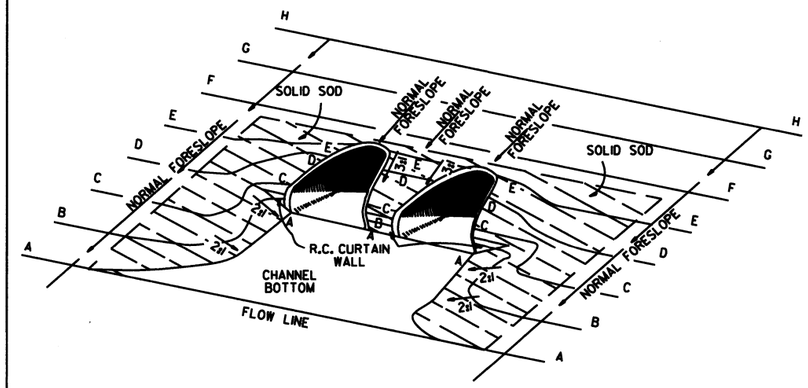
STANDARD DRAWING CDP-1



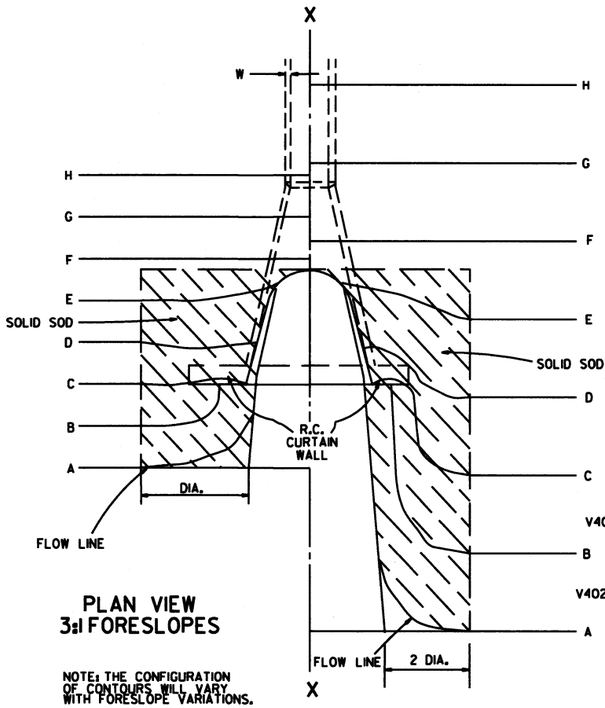
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

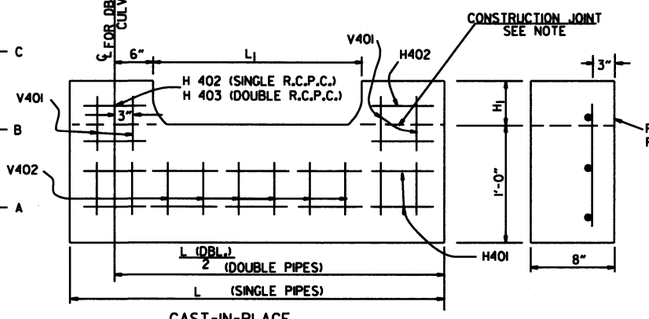
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

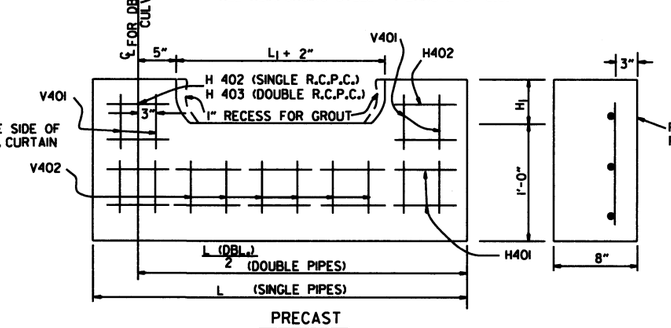
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-1½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

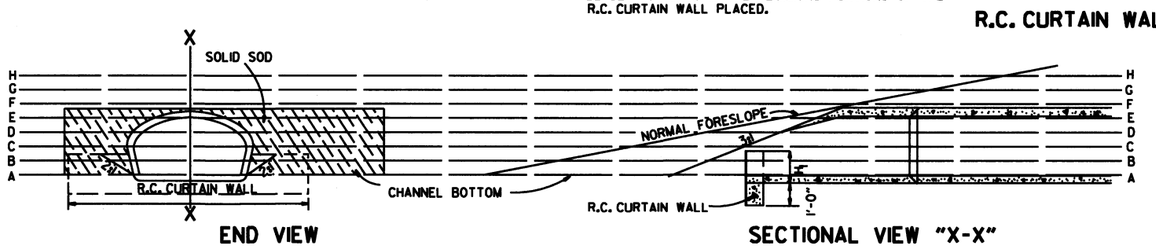
SOLID SODDING

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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

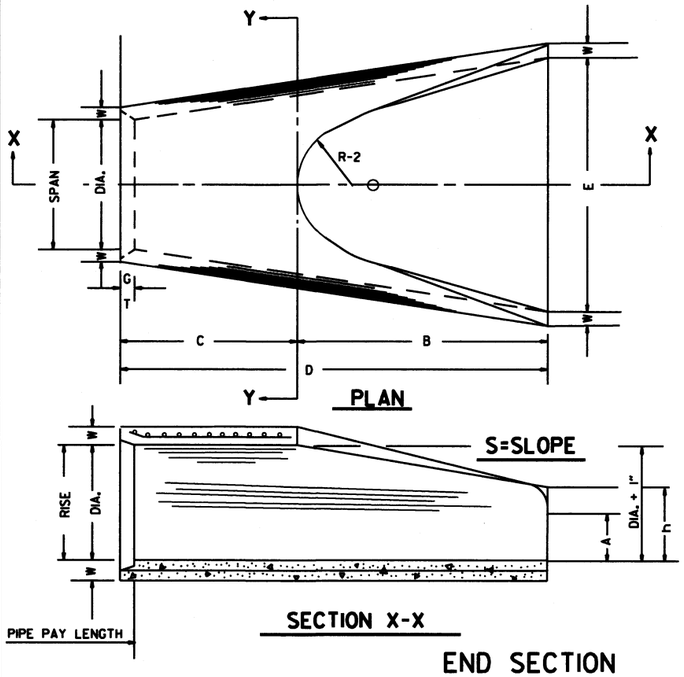
SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11-3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

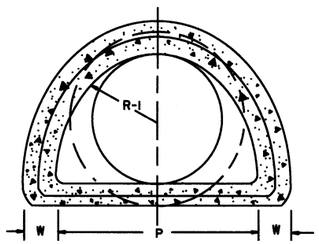
STANDARD DRAWING FES-1



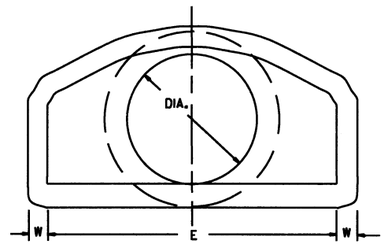
SECTION X-X

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3sl	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3sl	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3sl	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3sl	37"	47⅝"	24⅛"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3sl	43"	53⅞"	27⅛"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3sl	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3sl	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3sl	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3sl	73"	77⅝"	38⅝"	24"	5"	13250	4'-6"



SECTION Y-Y



END VIEW

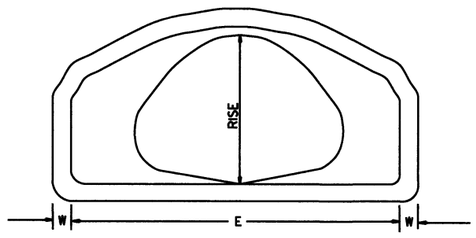
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

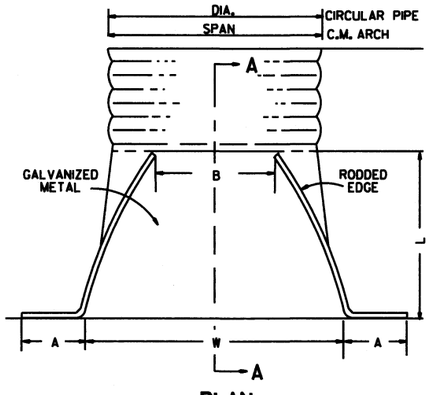
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½sl
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½sl
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½sl
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½sl
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅝"	20"	3"	2½sl
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½sl
42	51⅞	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½sl
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½sl
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼sl
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2¼sl

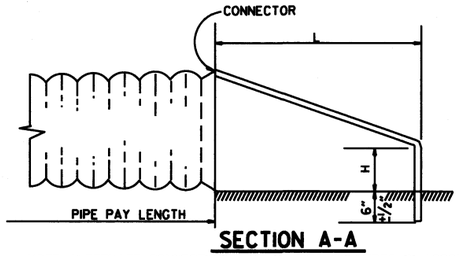
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE

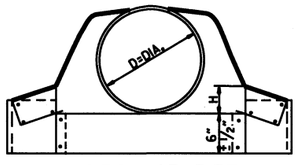


PLAN

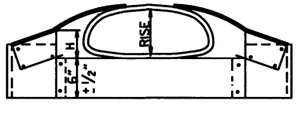


SECTION A-A

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



CIRCULAR PIPE



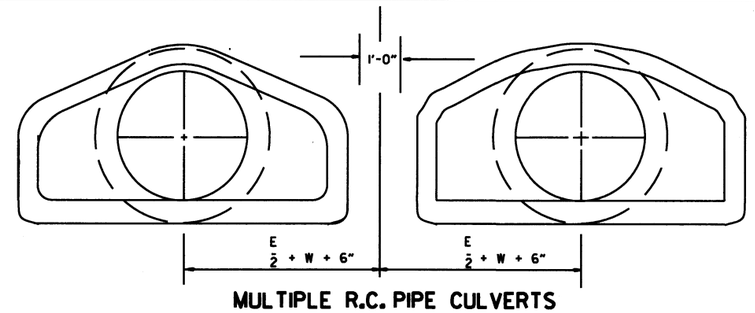
C.M. ARCH PIPE

CIRCULAR PIPE

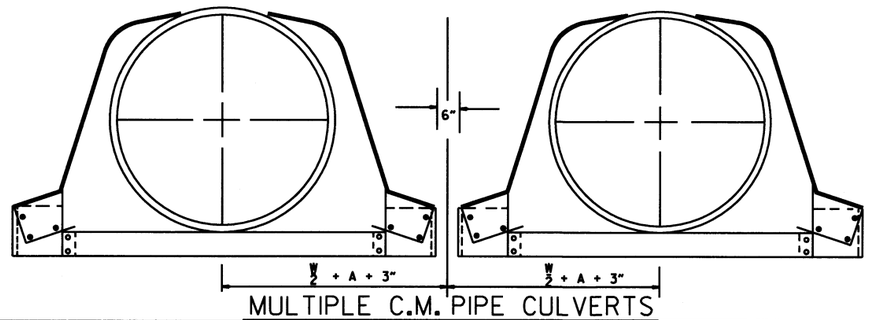
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½sl
15	16	7	8	6	26	30	2½sl
18	16	8	10	6	31	36	2½sl
21	16	9	12	6	36	42	2½sl
24	16	10	13	6	41	48	2½sl
30	14	12	16	8	51	60	2½sl
36	14	14	19	9	60	72	2½sl
42	12	16	22	11	69	84	2½sl
48	12	18	27	12	78	90	2½sl
54	12	18	30	12	84	102	2sl
60	12	18	33	12	87	114	1½sl
66	12	18	36	12	87	120	1½sl
72	12	18	39	12	87	126	1 1/3sl

C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½sl	16
18"	21	15	7	10	6	23	36	2½sl	16
21"	24	18	8	12	6	28	42	2½sl	16
24"	28	20	9	14	6	32	48	2½sl	16
30"	35	24	10	16	6	39	60	2½sl	14
36"	42	29	12	18	8	46	75	2½sl	14
42"	49	33	13	21	9	53	85	2½sl	12
48"	57	38	18	26	12	63	90	2½sl	12
54"	64	43	18	30	12	70	102	2½sl	12
60"	71	47	18	33	12	77	114	2½sl	12



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

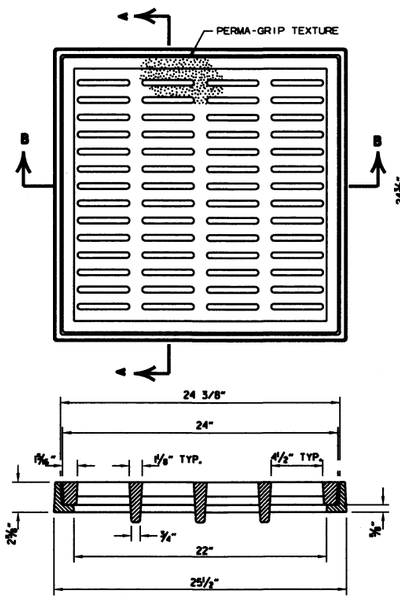
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

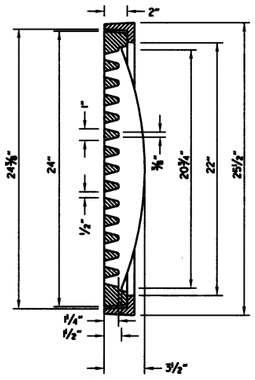
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-2



SECTION B-B

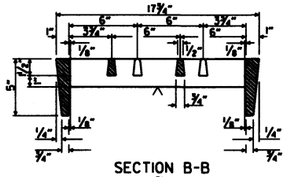


SECTION A-A

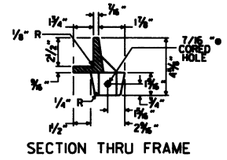
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 291 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

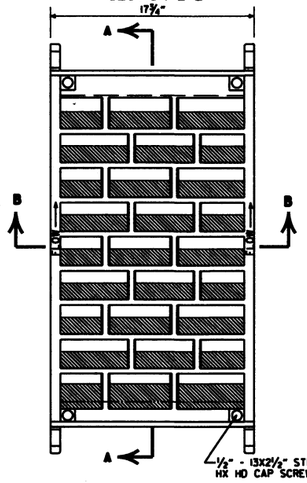
DETAILS OF PEDESTRIAN GRATE AND FRAME

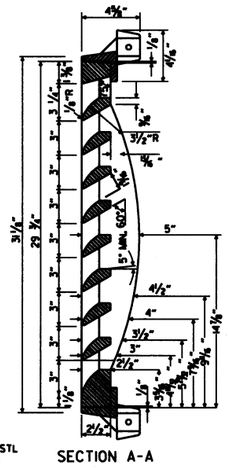


SECTION B-B



SECTION THRU FRAME



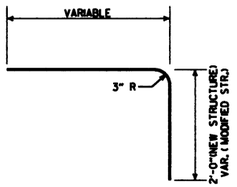


SECTION A-A

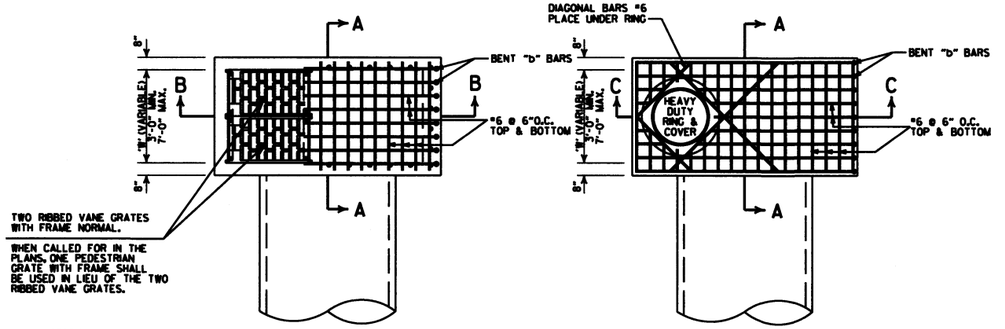
DETAILS OF RIBBED VANE GRATE AND FRAME

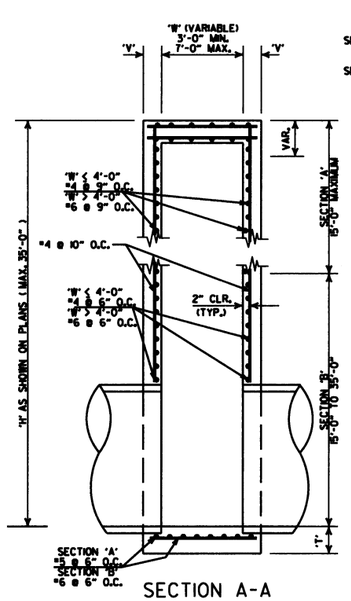
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



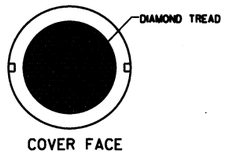
DETAIL OF BENT "b" BAR



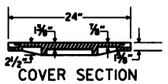


SECTION A-A

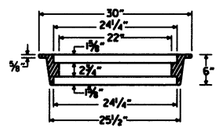
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

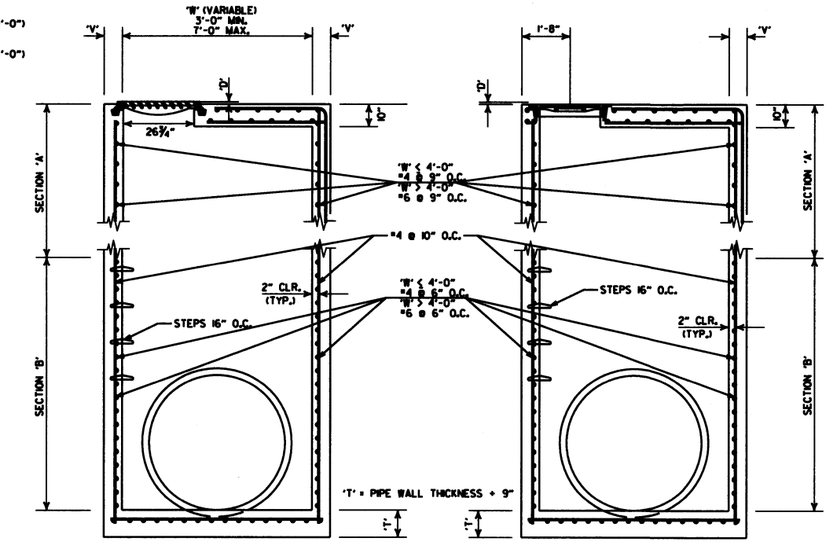
HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

SECTION 'A' 'V' = 8"

SECTION 'B' ('H'≤4'-0") 'V' = 8"

SECTION 'B' ('H'>4'-0") 'V' = 10"



SECTION B-B

SECTION C-C

DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

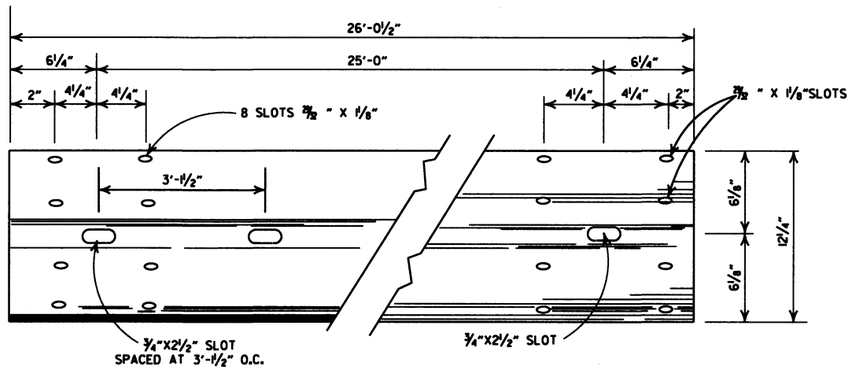
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

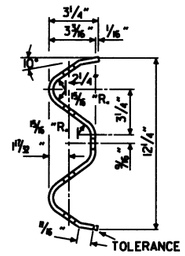
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

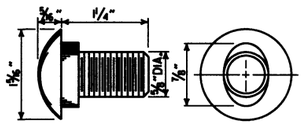
STANDARD DRAWING FPC-9S



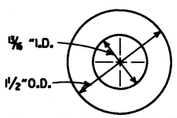


DETAILS OF W-BEAM GUARD RAIL

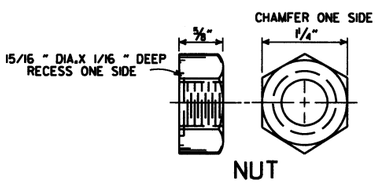
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



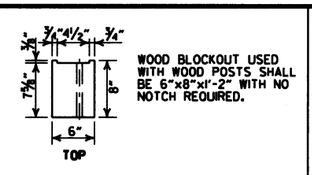
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

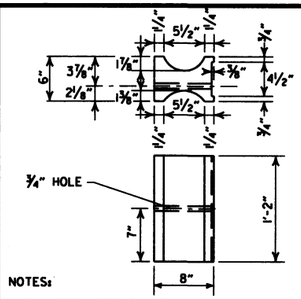


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

WOOD BLOCKOUT (W-BEAM)

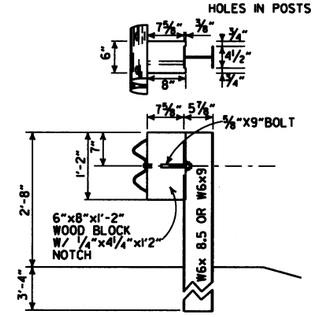


NOTES:

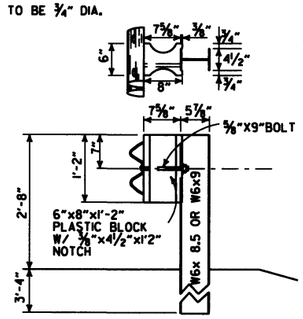
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.

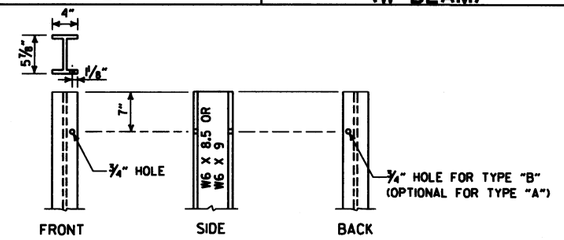


WOOD BLOCKOUT CONNECTIONS

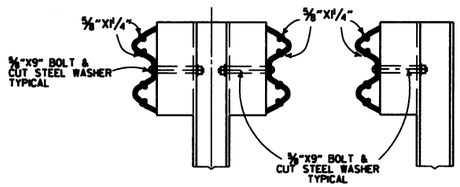


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

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 ¼" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

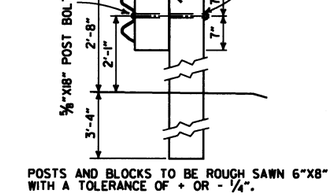
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

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

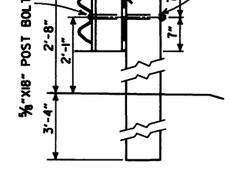
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

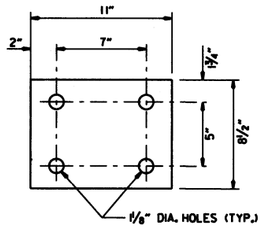
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

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

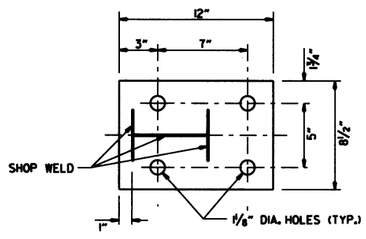
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

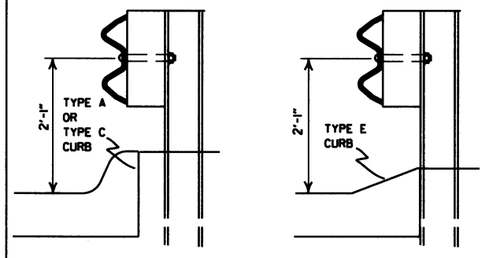


WASHER PLATE



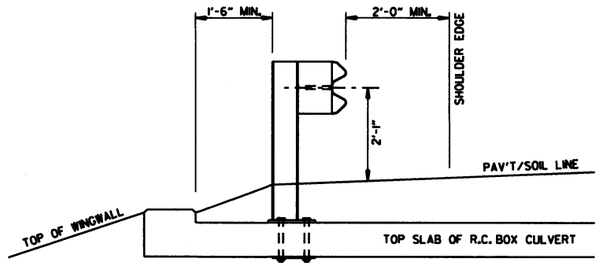
BASE PLATE

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

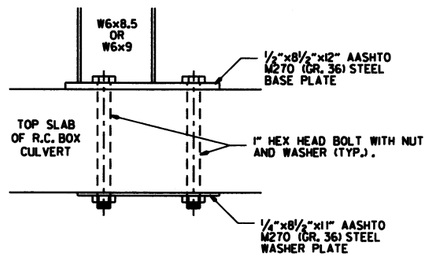


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

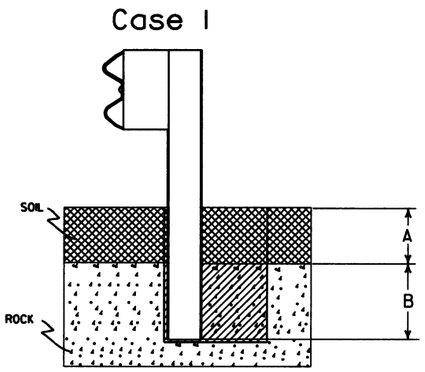
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

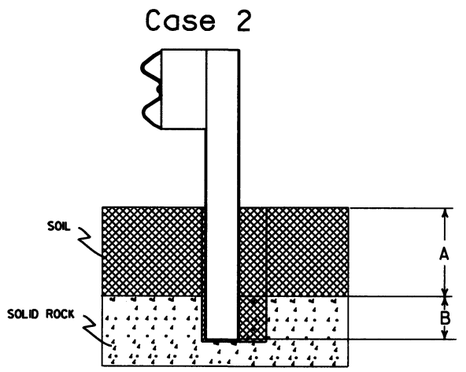


SECTION A-A

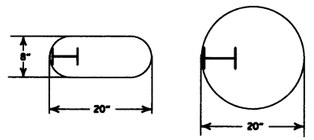


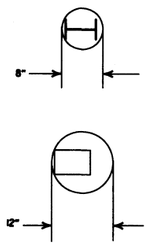
DETAIL OF CONNECTION



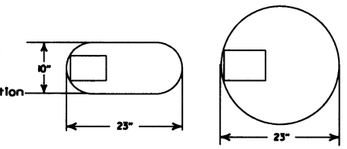


Plan View Steel Posts
Either hole configuration acceptable





Plan View Wood Posts
Either hole configuration acceptable



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

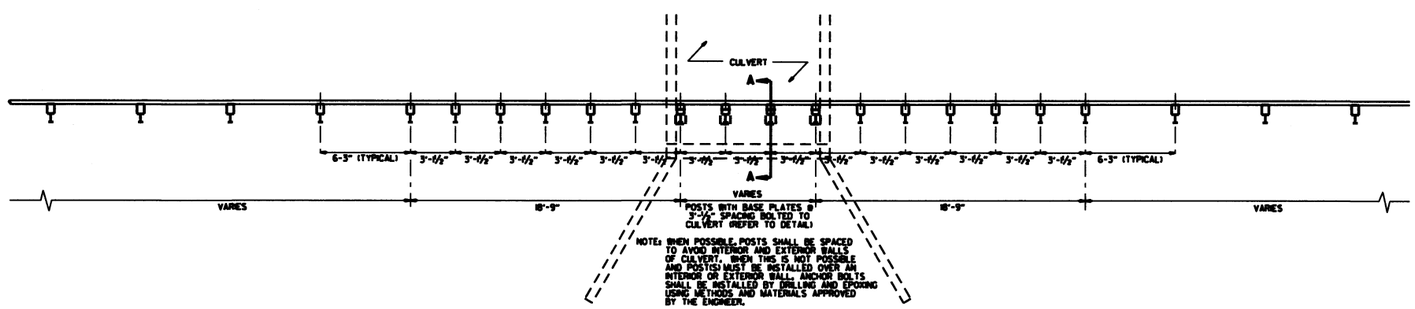
Zone A:
Backfill according to Section 617.03(a).

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

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

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

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



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

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-1.

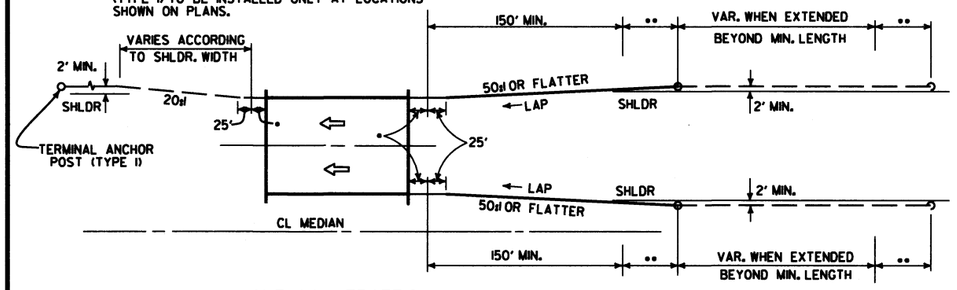
DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURBS REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

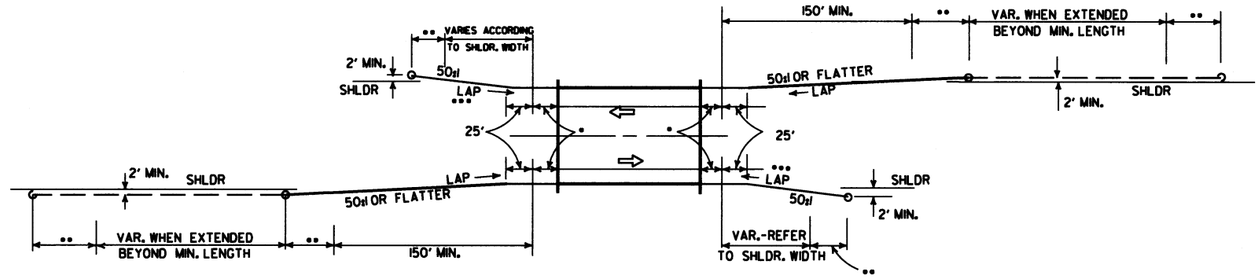
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

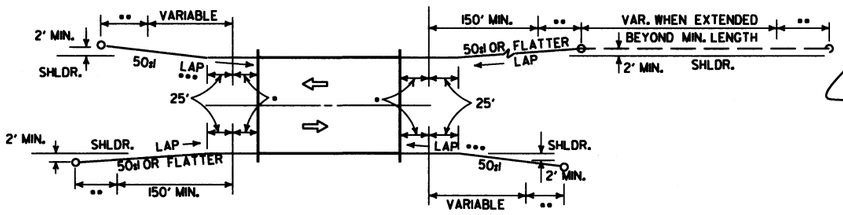
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

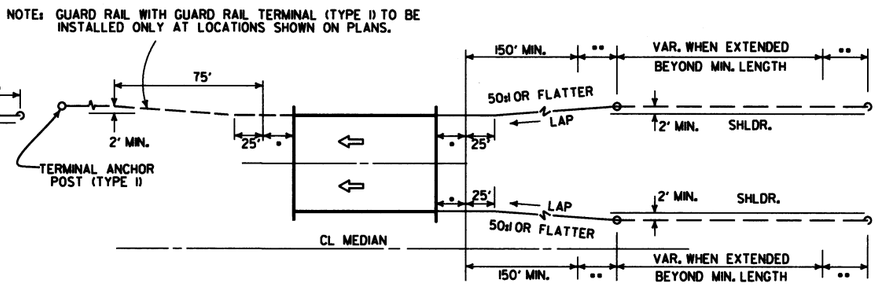
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

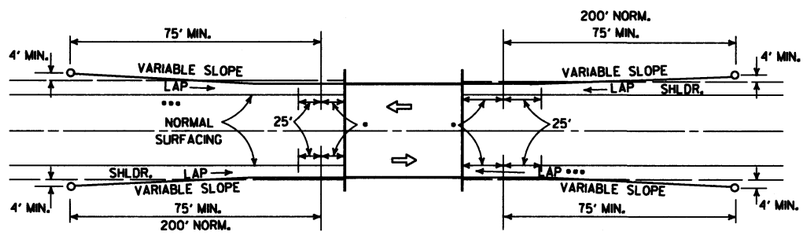
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

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

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



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

LEGEND

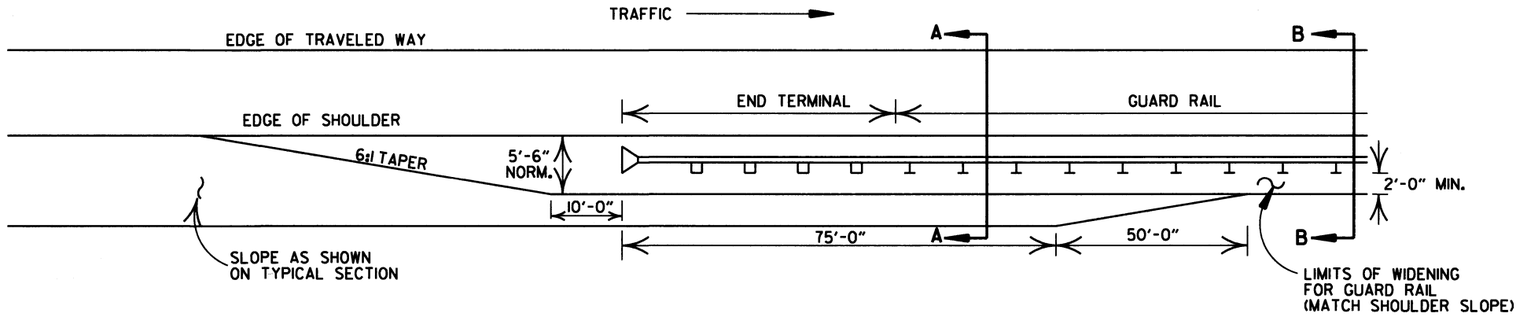
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

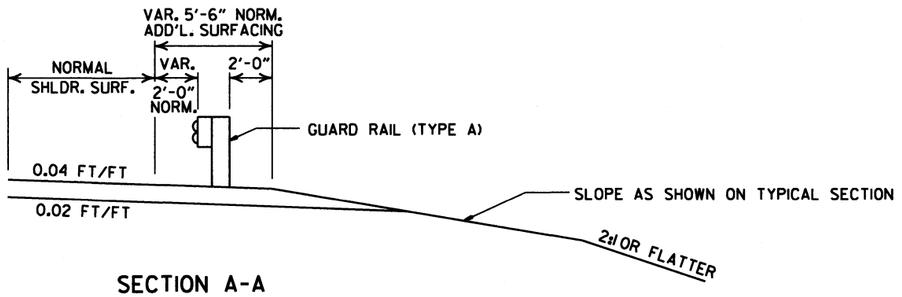
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

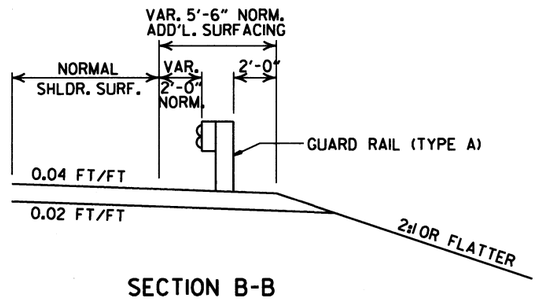
GUARD RAIL DETAILS

STANDARD DRAWING GR-9



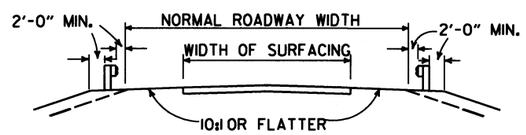


SECTION A-A

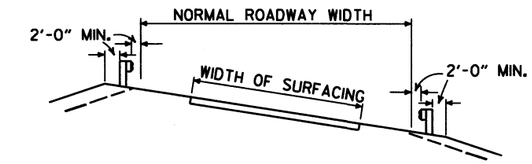


SECTION B-B

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.



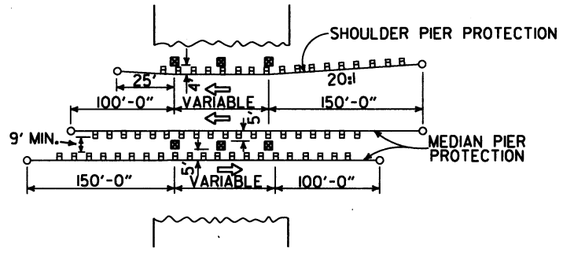
SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

DETAILS OF WIDENING FOR GUARD RAIL



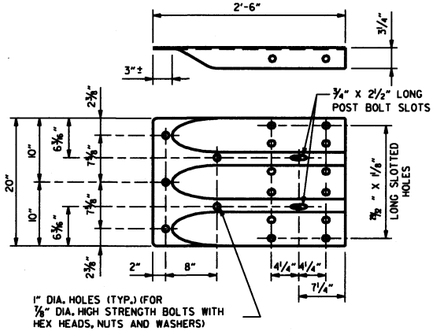
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

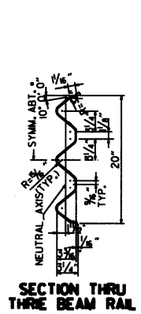
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

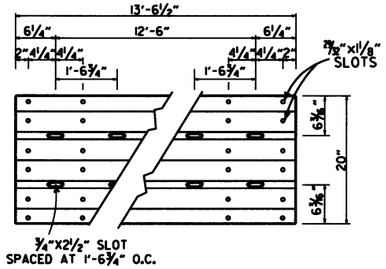
STANDARD DRAWING GR-9A



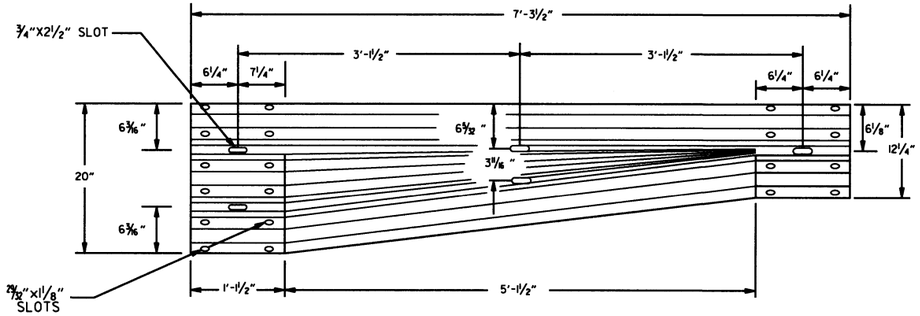
SPECIAL END SHOE



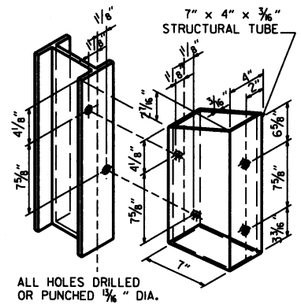
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

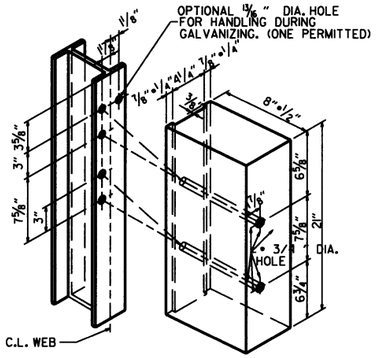


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

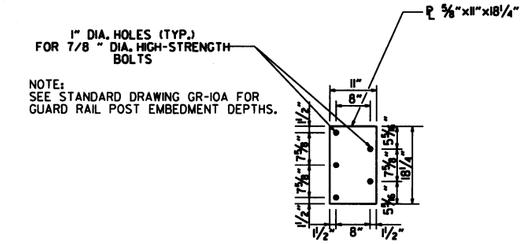
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

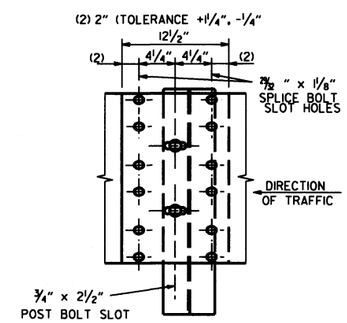
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

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

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

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

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

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

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

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

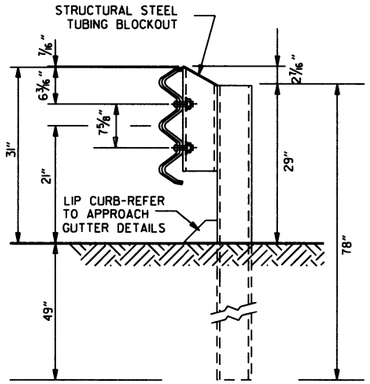
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-23-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

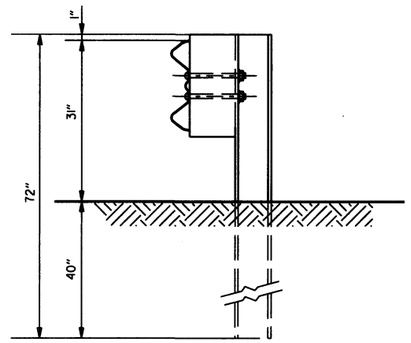
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

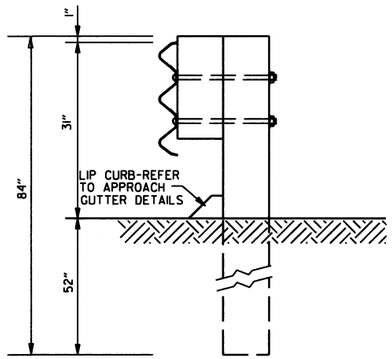
STANDARD DRAWING GR-10



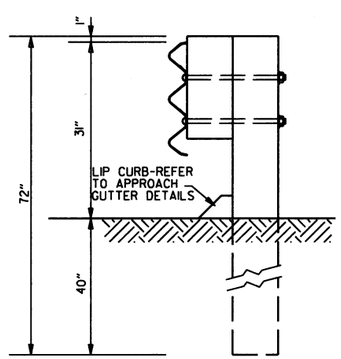
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



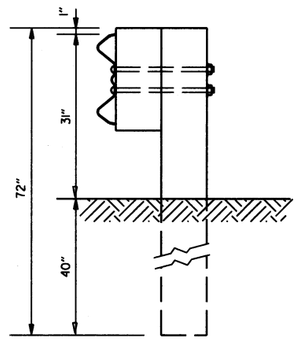
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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



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



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

GENERAL NOTES:

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

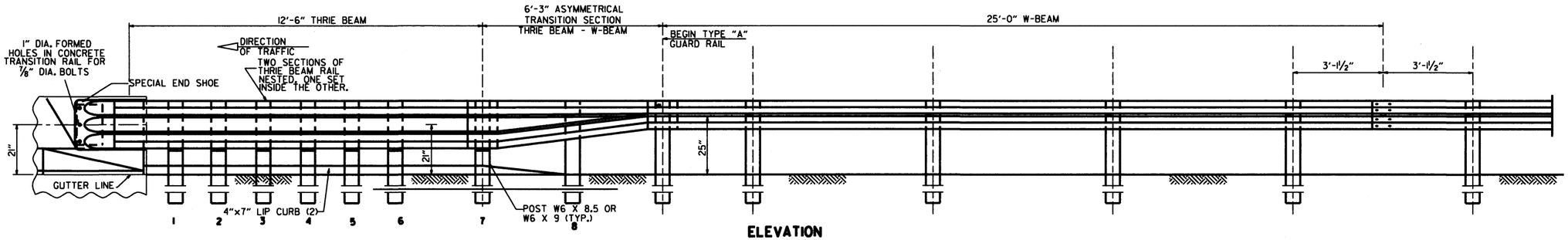
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

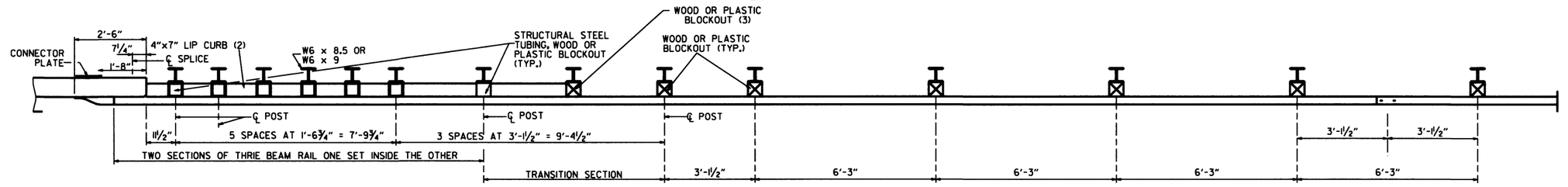
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

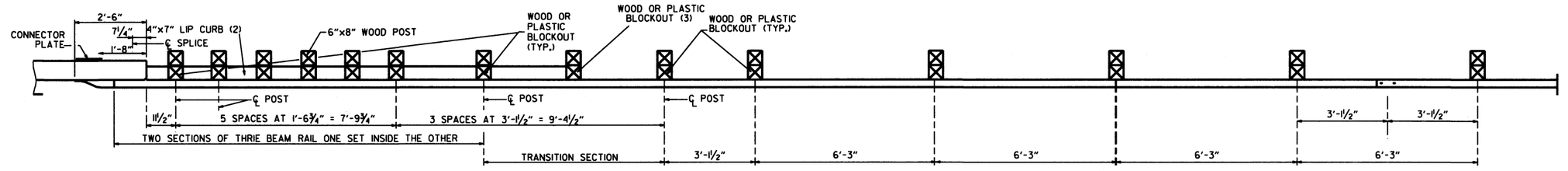
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

DATE	REVISION	FILMED
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅜	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

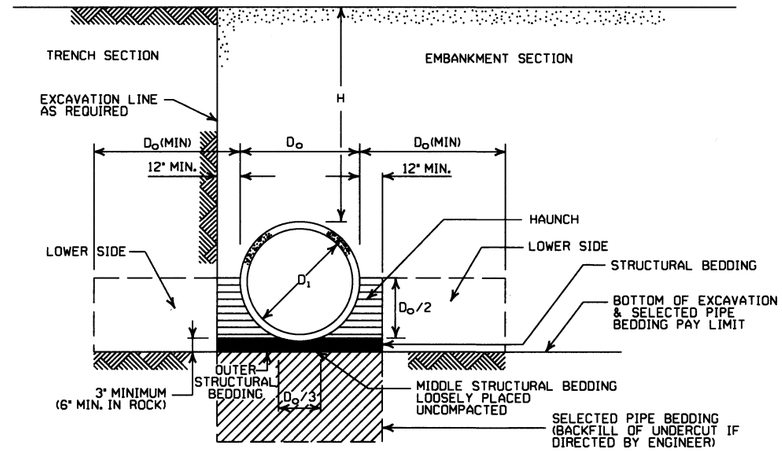
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

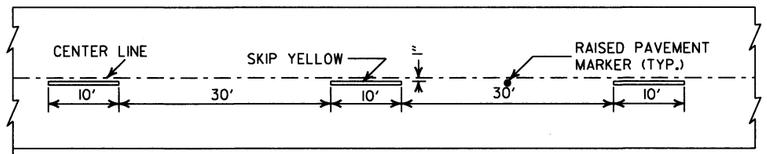
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

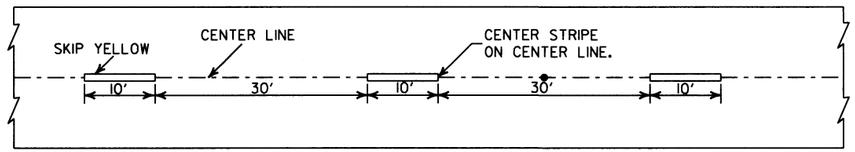
CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

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

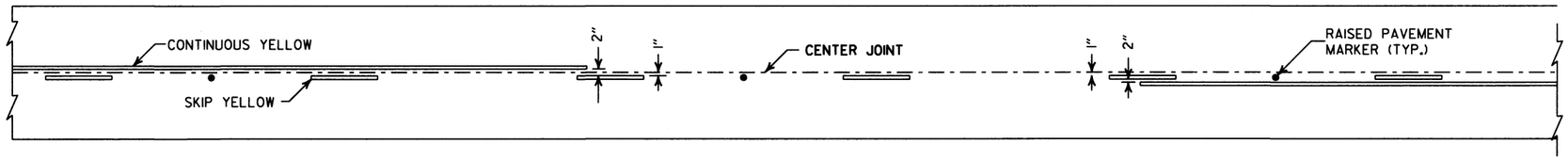


CONCRETE PAVEMENT

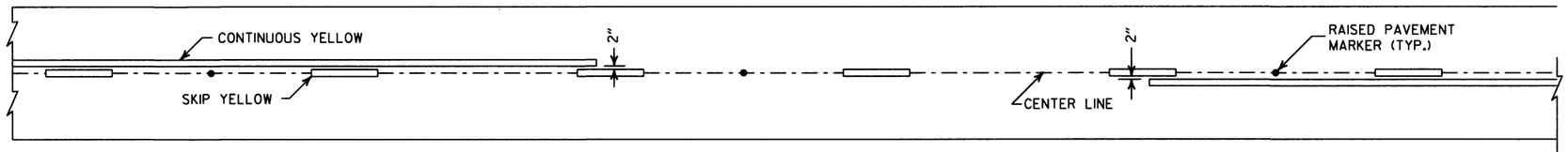


ASPHALT PAVEMENT

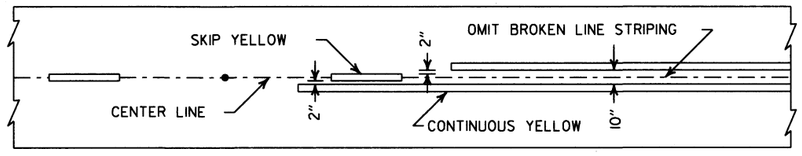
BROKEN LINE STRIPING



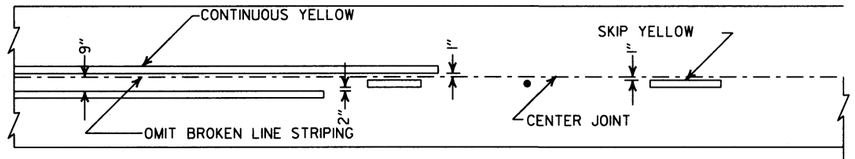
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

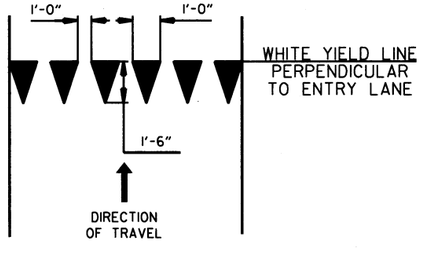


ASPHALT PAVEMENT

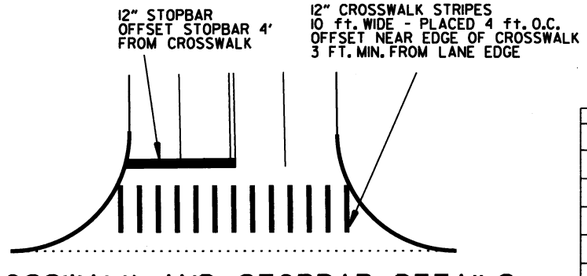


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

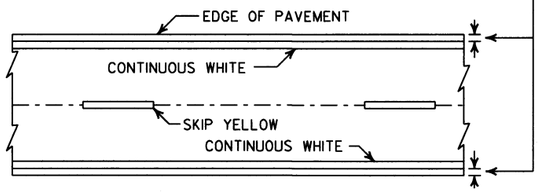


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

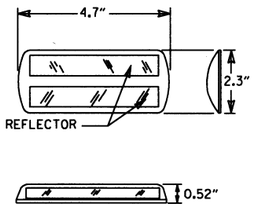
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

ARKANSAS STATE HIGHWAY COMMISSION

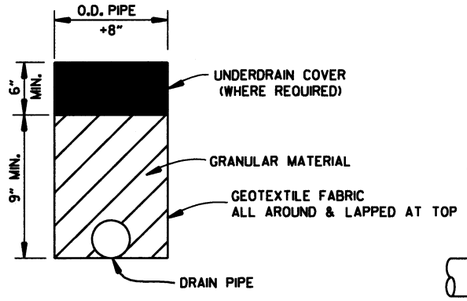
PAVEMENT MARKING DETAILS

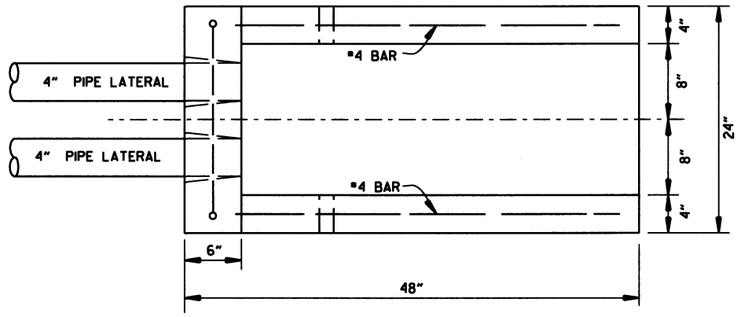
STANDARD DRAWING PM-1

NOTE:

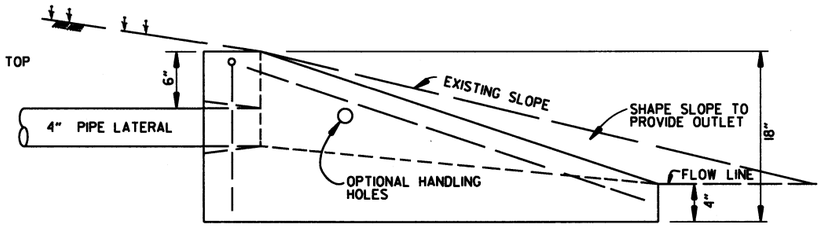
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

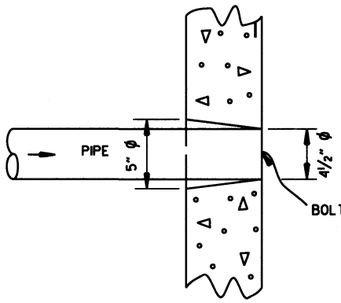




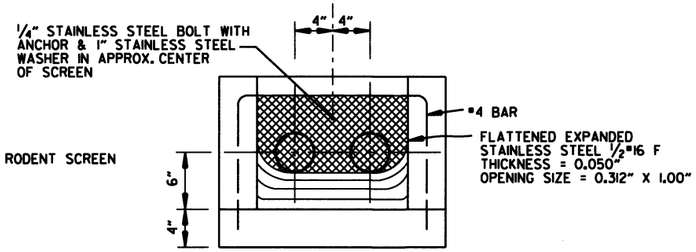
PLAN VIEW



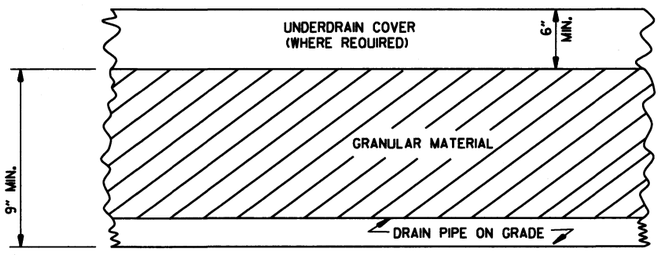
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

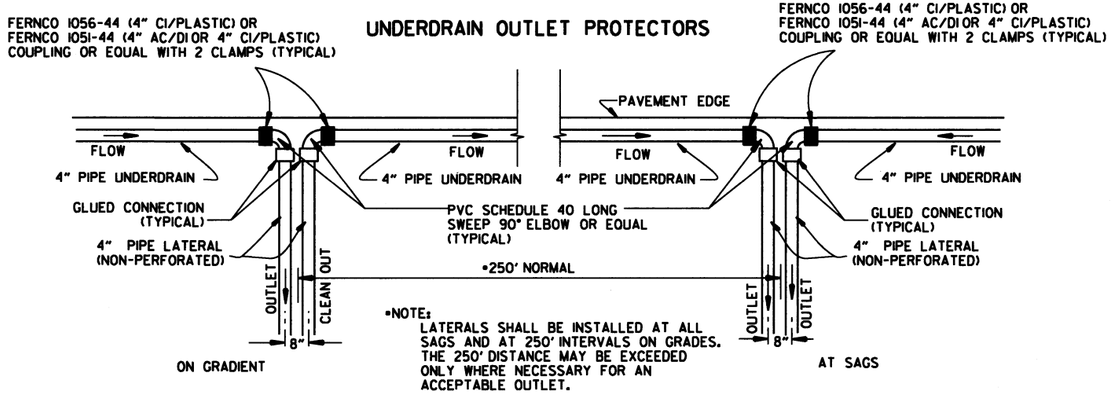


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE: 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

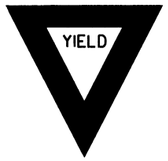
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

R1-1

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

R1-2



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

R2-1

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

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

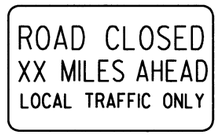
R5-1

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

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

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

W1-1

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

W1-2

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

W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

W1-6

STD. 48"X24"
SPECIAL 60"X30"

W1-8

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

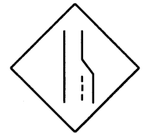
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

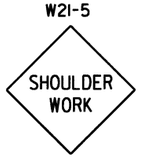
W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

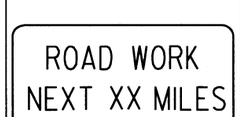
W8-11

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

W8-9

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

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

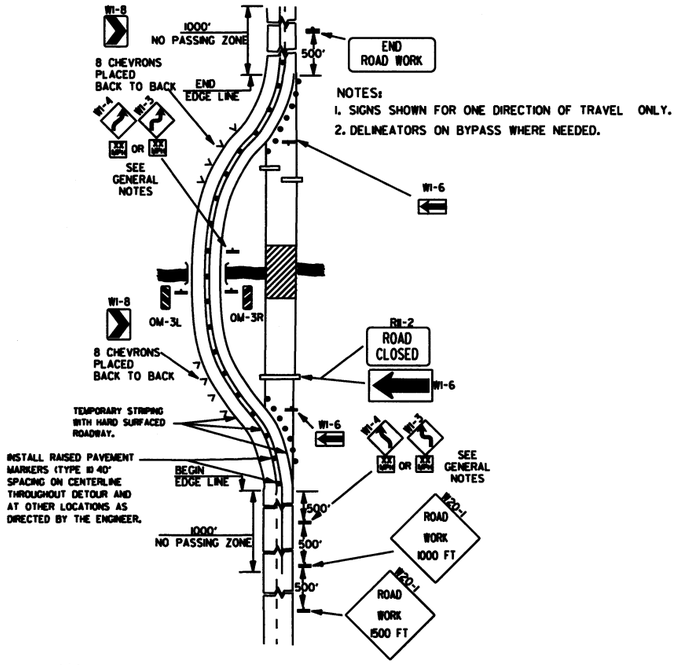
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

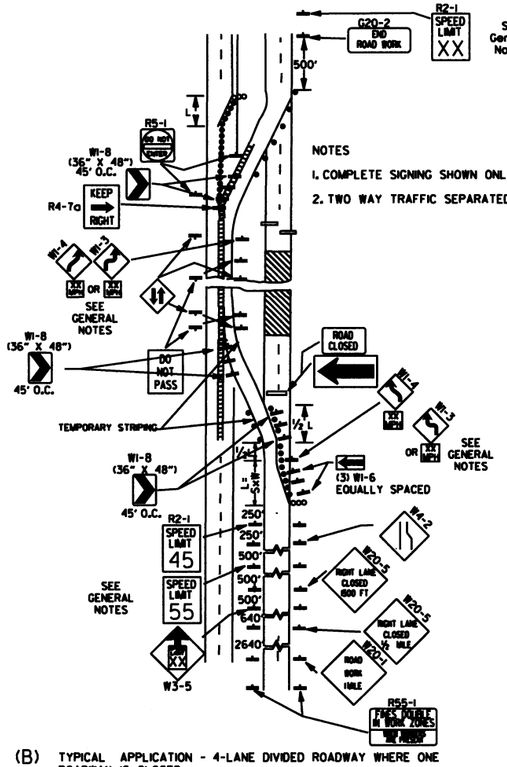
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



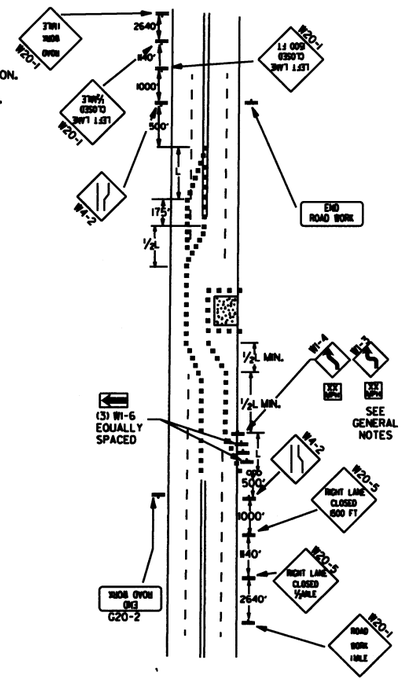
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

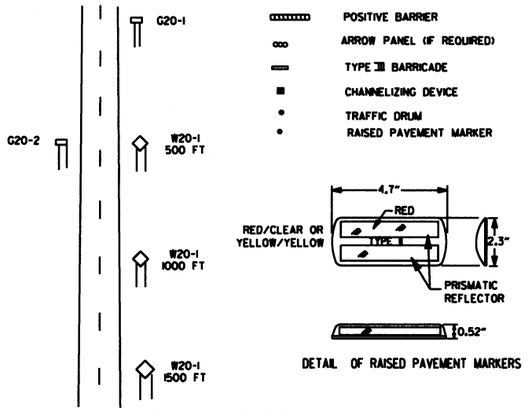


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

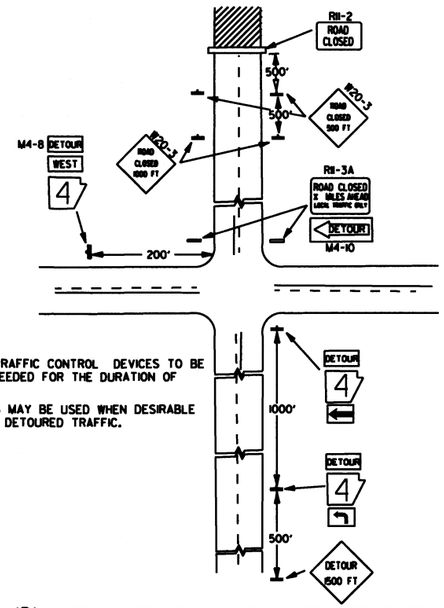
TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

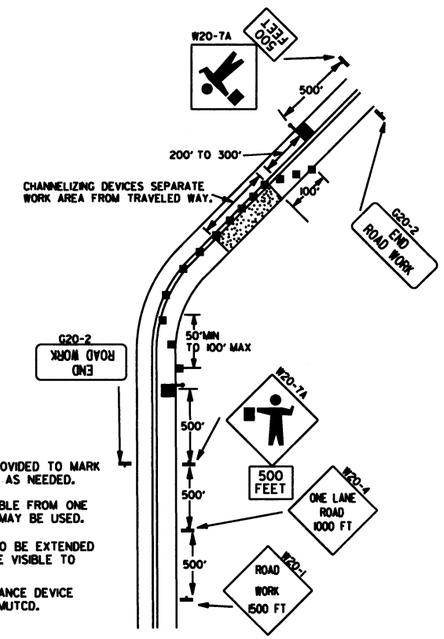
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

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



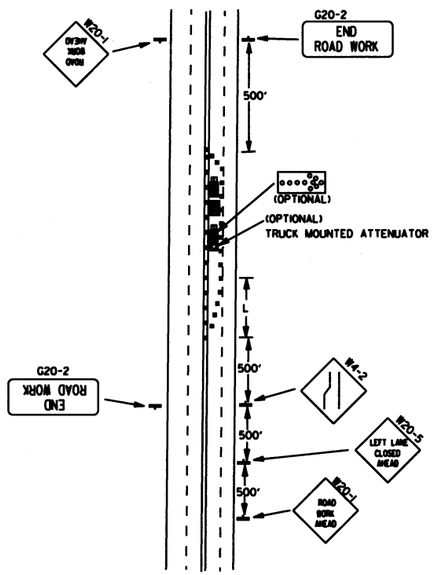
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



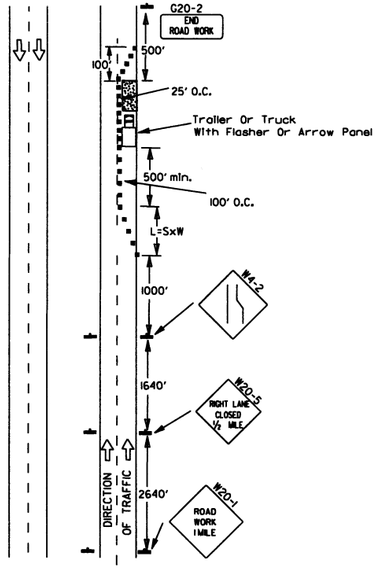
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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

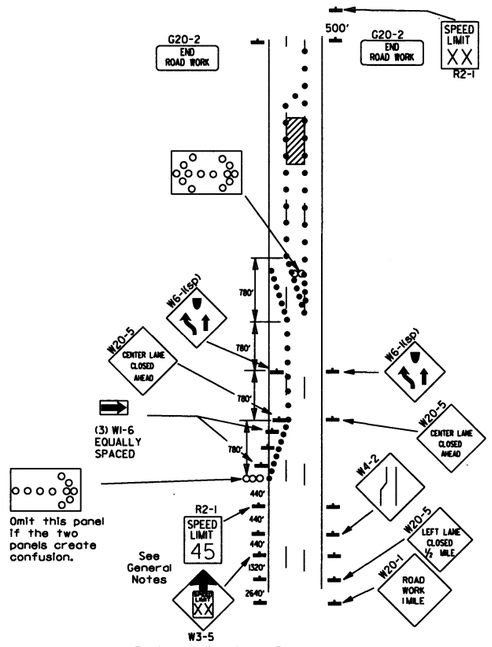
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

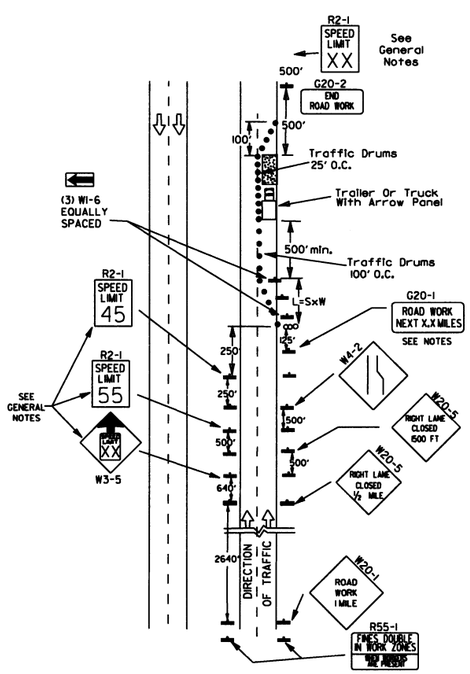
STANDARD DRAWING TC-2



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



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



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

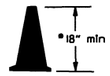
KEY:

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

GENERAL NOTES:

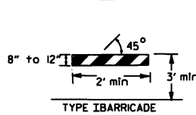
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional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

Channelizing devices

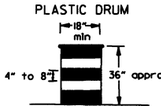


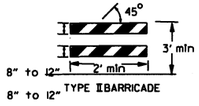
- When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be retroreflectorized in accordance with the M.U.T.C.D.

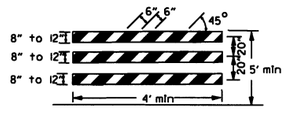
CONES



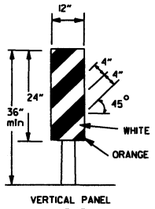
PLASTIC DRUM



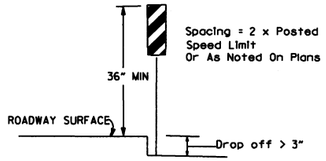




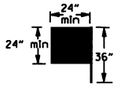
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



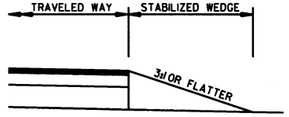
VERTICAL PANEL PLACEMENT



FLAG

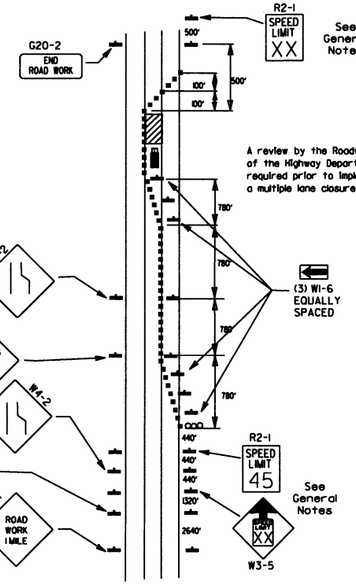


Flag shall be of good grade red material



STABILIZED WEDGE

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



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

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

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

INTERSTATE

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

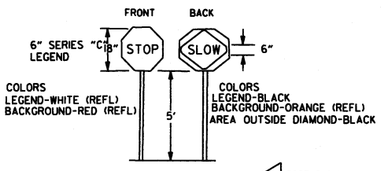
INTERSTATE AND NON-INTERSTATE

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

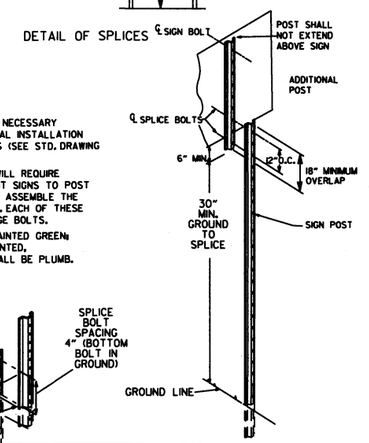
GENERAL NOTES:

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

STOP SLOW PADDLE



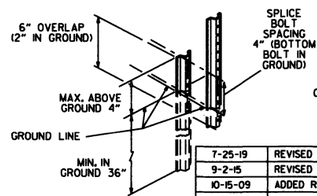
DETAIL OF SPLICES



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

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

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



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

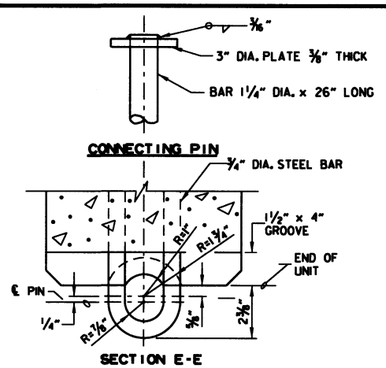
ARKANSAS STATE HIGHWAY COMMISSION

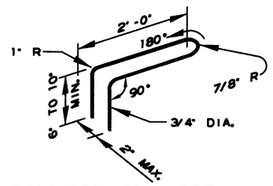
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

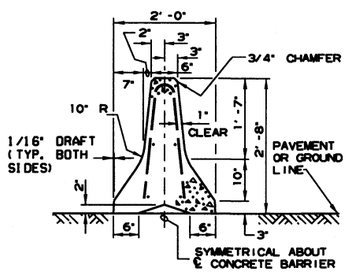
STANDARD DRAWING TC-3

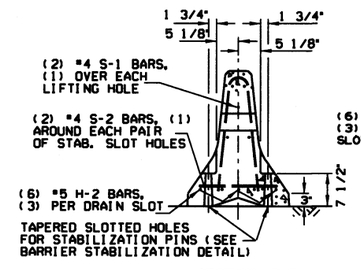
REINFORCING BAR TABLE PER BARRIER UNIT

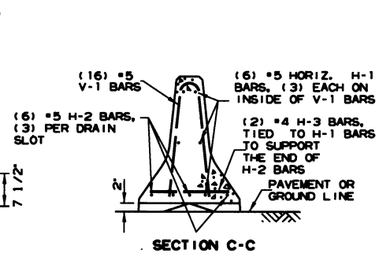
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2. TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-3" LIFTING HOLE 90° 3 3/8" R
S-2	HORIZ.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

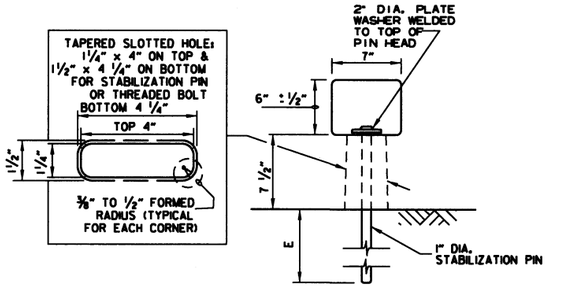


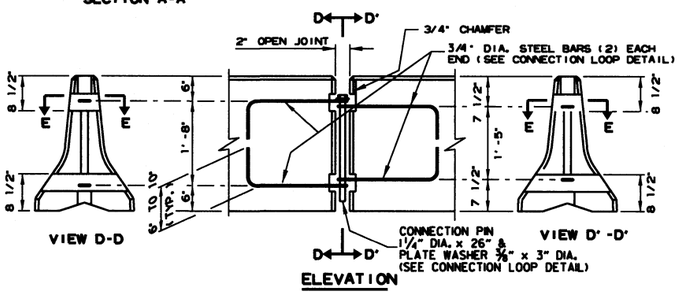


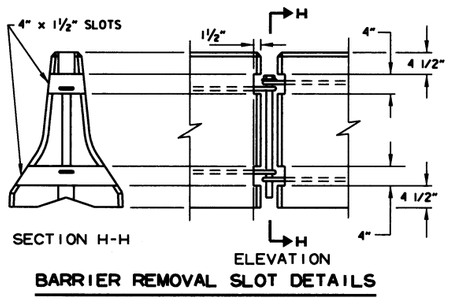


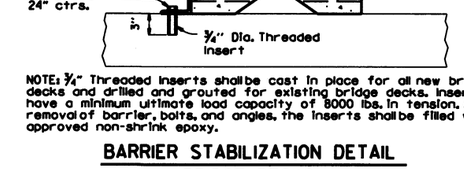






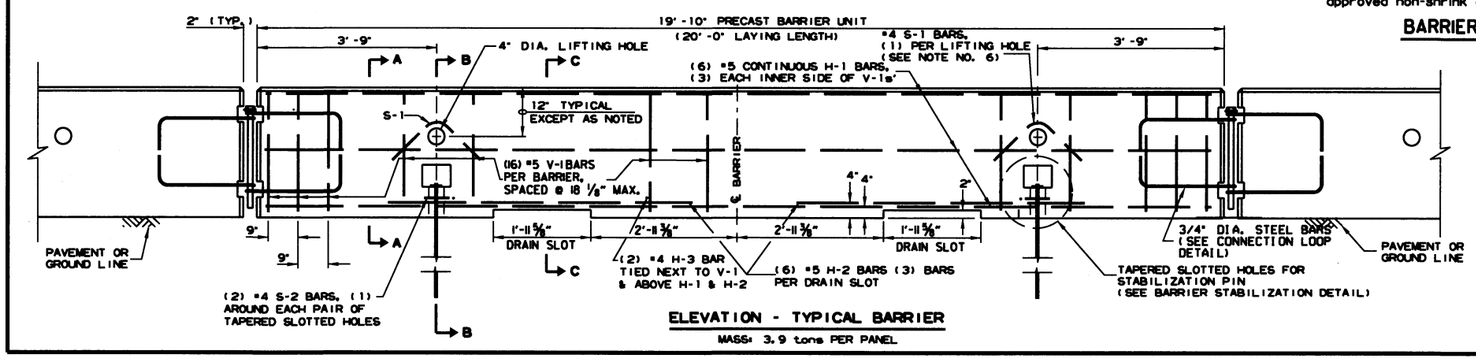






NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink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

BARRIER STABILIZATION DETAIL
BRIDGE DECKS



MASS: 3.9 tons PER PANEL

General Notes

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

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

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

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

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

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

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

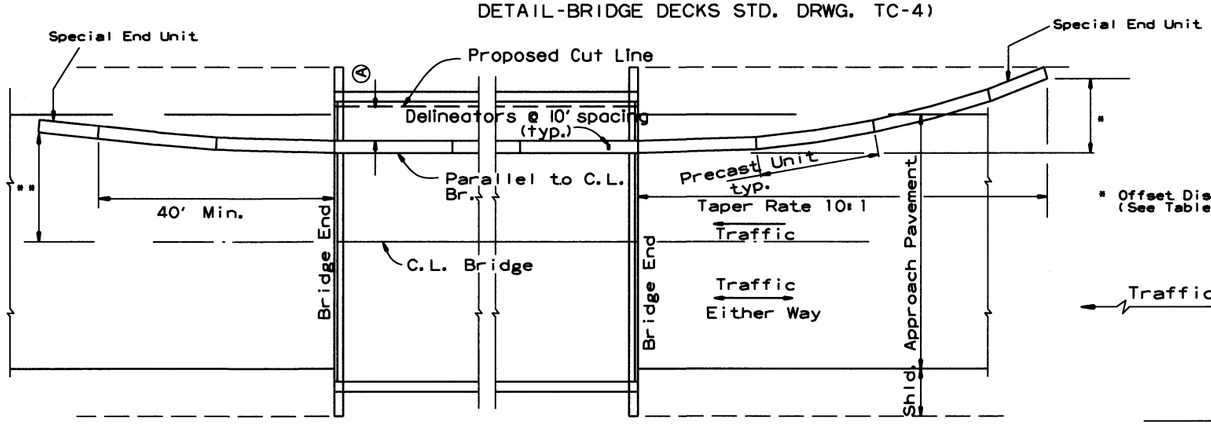
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

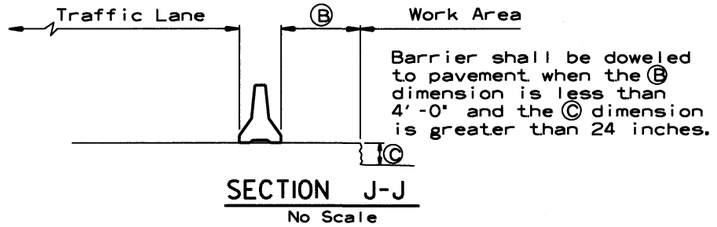
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

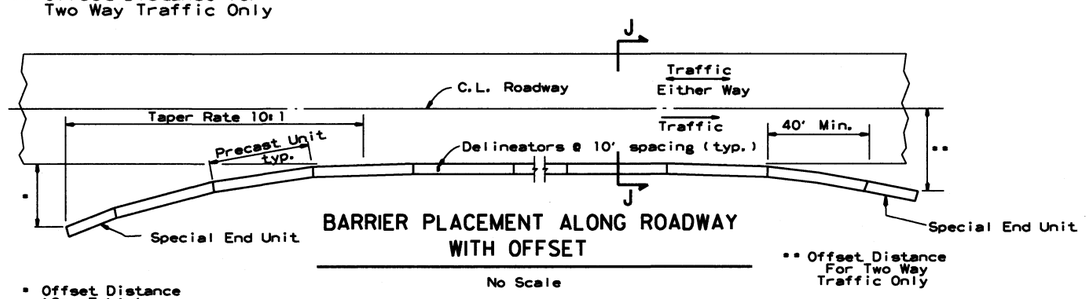
** Offset Distance for Two Way Traffic Only



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

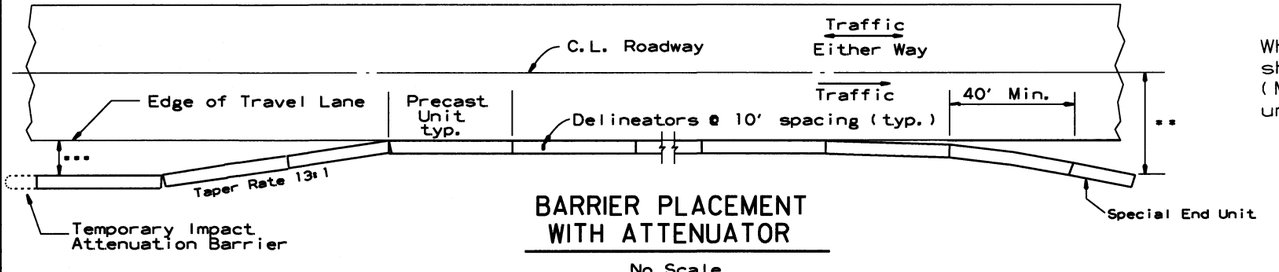
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

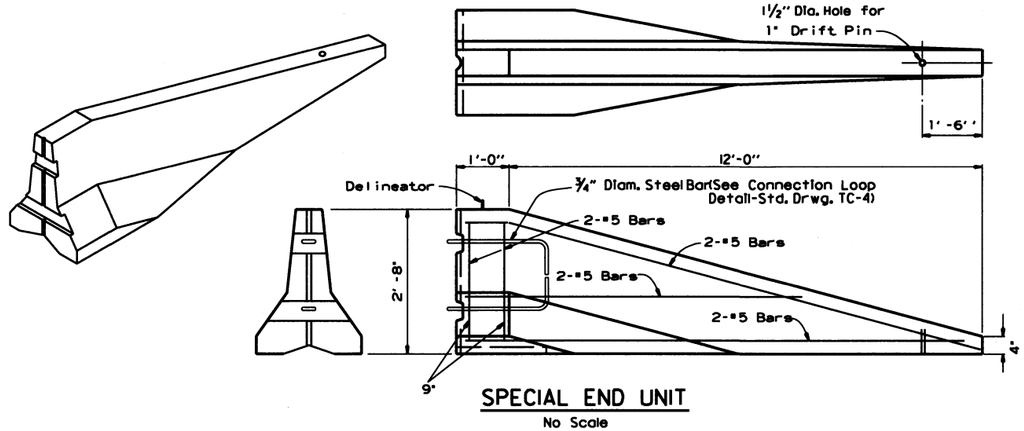


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

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

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

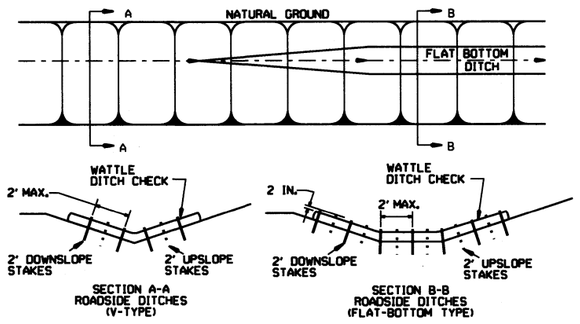
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

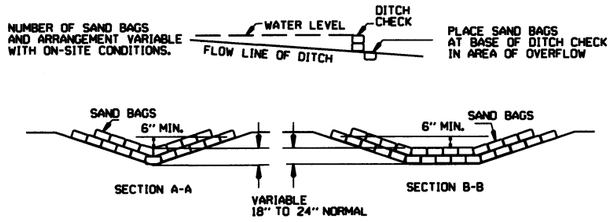
STANDARD DRAWING TC-5

GENERAL NOTES

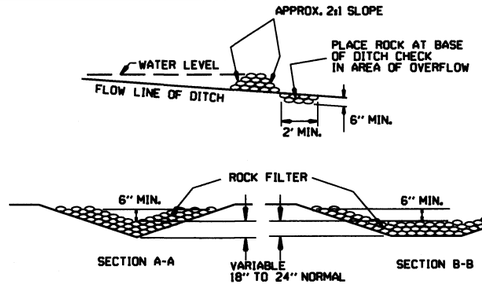
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

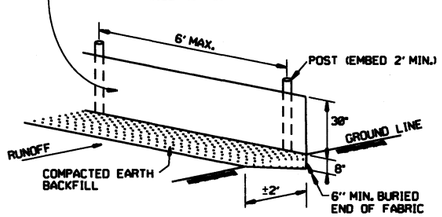


ROCK DITCH CHECK (E-6)

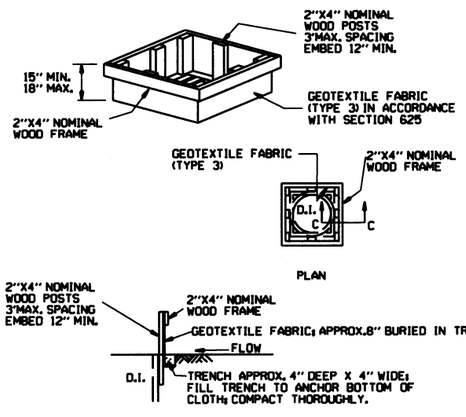
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

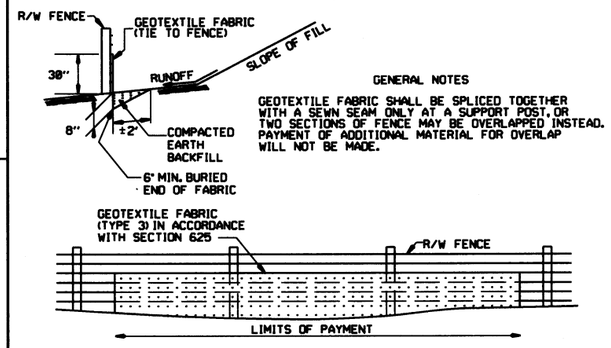
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



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.

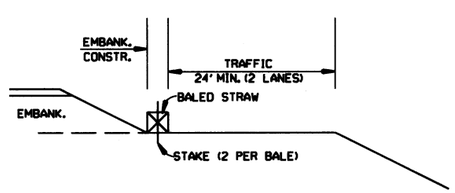
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

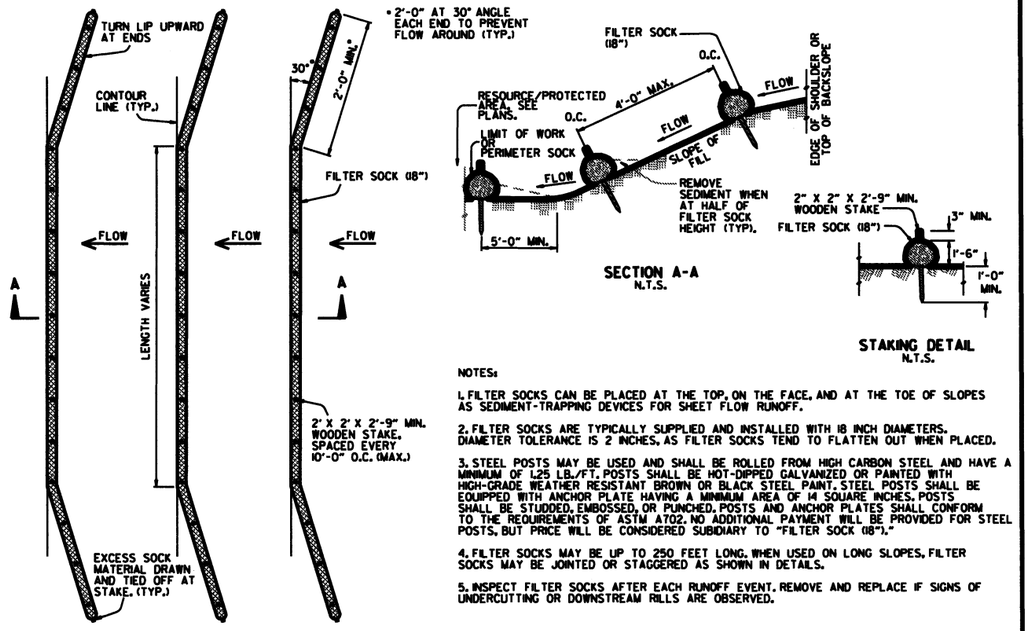
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

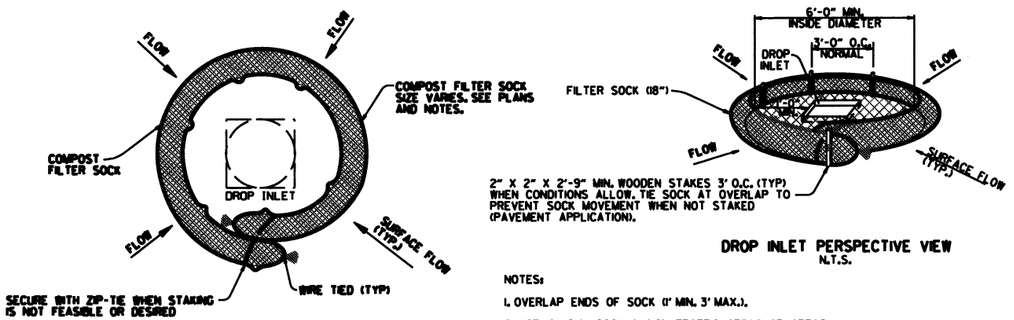
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

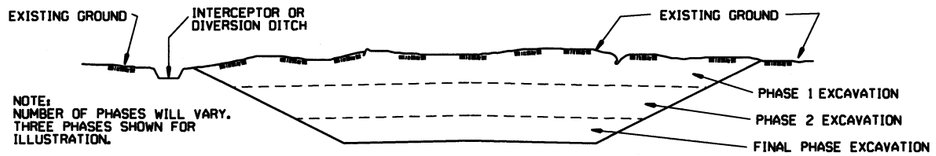
STANDARD DRAWING TEC-1

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



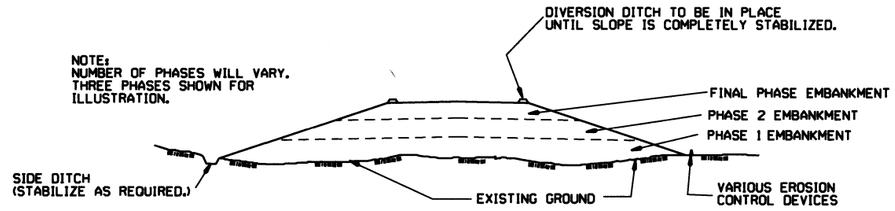
GENERAL NOTE

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



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.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3